



**FINAL REPORT OF
THE EIGHTH MEETING OF
THE SPECTRUM REVIEW WORKING GROUP
(SRWG/8)**

Bangkok, Thailand
5-7 March 2024

The views expressed in this Report should be taken as those of
SRWG/8 Meeting and not of the Organization.

Approved by the Meeting
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1. Introduction

1.1 The Eighth Meeting of the Spectrum Review Working Group (SRWG/8) of APANPIRG was held in ICAO APAC Regional Office, Bangkok, Thailand with the hybrid option of video teleconferencing on 5 – 7 March 2024.

2. Attendance

2.1 The meeting was attended by 48 participants (41 in-person attendance and 7 virtual attendance) from 14 States/Administrations and 2 International Organizations including Australia, Cambodia, China, Hong Kong China, Fiji, Indonesia, Japan, Malaysia, Philippines, Republic of Korea, Singapore, Thailand, USA, Vietnam, IATA and ICAO. The List of Participants is provided in **Attachment 1** to this Report.

3. Opening of the Meeting

3.1 The meeting was opened by Mr Chainan Chaisompong, Chairperson of the SRWG, who extended a warm welcome to all participants and expressed deep appreciation and gratitude for the efforts of all parties to make great achievements. Mr Luo Yi, Regional Officer CNS, also expressed welcome and thanks to the participants.

4. Officers and Secretariat

4.1 Mr Luo Yi, Regional Officer CNS and Ms Zhong Wenhan, Regional Officer CNS, ICAO Asia and Pacific Regional Office, acted as secretaries for the meeting with the support of Ms. Varapan Meefuengsart, the Programme Assistant of the same office. The meeting was assisted by Mr Robert Witzen, a former ICAO Officer, an expert in frequency management and the main developer of the Frequency Finder software tool, who offered his expertise voluntarily from Montreal, Canada.

5. Organization, working arrangement, language and documentation

5.1 The SRWG/8 met as a single body. The working language for the meeting was English inclusive of all documentation and this Report. A total of Eighteen (18) Working Papers and Five (5) Information Papers were considered by the meeting. The List of Papers is provided in **Attachment 2** to this Report.

Agenda Item 1: Adoption of agenda

- 1.1 The provisional agenda presented in **WP/01** was adopted as the agenda for the meeting.

Agenda Item 2: Review outcomes of relevant meetings

Review Outcomes of 41st Session of the Assembly Relevant to Spectrum - Secretariat (WP/02)

- 2.1 The paper briefly summarized the outcomes of the 41st Session of the Assembly related to aeronautical frequency spectrum for review and action by the meeting. The main points of the Technical Commission Reports and the main publications of the Assembly were highlighted. The paper also introduced the progress achieved by the Integrated Communications, Navigation, Surveillance and Spectrum (ICNSS) project, and shared working papers and resources related to the integrated CNS and spectrum global concept.

Review of Relevant ICAO Meetings - Secretariat (WP/03)

- 2.2 The paper summarized relevant information and updates with the highlight on the outcomes of SRWG/7 reviewed by CNS SG/27 and noted by APANPIRG/34. The CNS SG/27 Meeting adopted **Eight** (8) Conclusions and **Two** (2) Decisions. In addition, based on the outcome of discussions on various agenda items, the CNS SG/27 Meeting developed **Three** (3) Draft Conclusions for consideration by the APANPIRG/34, which was adopted by the APANPIRG/34 Meeting. The Meeting noted the Conclusions/Decisions adopted by the CNS SG/27 and the APANPIRG/34 and discussed the follow-up.

Review of the Report on the Results of the International Telecommunication Union (ITU) World Radiocommunication Conference (2023) (WRC-23) – Secretariat (WP/04)

- 2.3 The paper summarized the report to the Council on addressing the results of the International Telecommunication Union (ITU) World Radiocommunication Conference (2023) (WRC-23) (20 November to 15 December 2023, Dubai, United Arab Emirates) for information and action. The meeting reviewed the results of the ITU WRC-23 and noted that the WRC-23 results fully conformed to the ICAO Position. Noting that early awareness and involvement of Member States in the development of the ICAO Position contributed to the successful outcome of WRC-23, ANC was requested to place a high priority on the development of the ICAO Position for the WRC-27, in full coordination with other relevant bodies, taking due account of spectrum management activities in the regions.

- 2.4 In view of the foregoing, the meeting endorsed the following Draft Conclusion to initiate actions for timely and effective preparation for WRC-27 in APAC region for consideration by CNS SG/28 and APANPIRG/35:

Draft Conclusion SRWG/8/1 – Preparation for World Radiocommunication Conference - 2027 (WRC-27)	
That, States, a) assign high priority to aeronautical spectrum management; b) participate in the development of ICAO Position for WRC-27; c) participate in the development of States' position for WRCs at the national level to ensure support to the ICAO Position; d) ensure, to the extent possible that, aviation representatives are included in States delegations to the Asia-Pacific Telecommunity (APT) Conference Preparatory Group meetings and at WRCs;	Expected impact: ☐ Political / Global ☒ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical

e) to nominate an ICAO designated focal point or contact person for aviation issues related to the WRC-27; and f) ensure participation of the designated focal point or contact person at the ICAO Regional Preparatory Group Meetings for WRC-27, APT Conference Preparatory Group Meetings for WRC-27, and at WRC-27.	
Why: a) implement Assembly Resolution A41-7; b) support the early development and dissemination of the draft ICAO Position; c) actively participate in the preparatory work of the ITU and the meetings of APT to ensure the development of proposals by the regional telecommunication organizations to the conference are in line with the ICAO Position;	Follow-up: ☐ Required from States
When: 7-Mar-24	Status: Draft to be adopted by Subgroup
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

2.5 With regards to inquiries raised concerning item (b) of the Draft Conclusion regarding participation in the development of the ICAO Position for WRC-27 at the regional level, the Secretariat clarified that States have several means for involvement, including submitting papers to the SRWG or FSMP directly, issuing State Letters to share comments on the draft ICAO position, and participating in workshops organized by ICAO for the preparation of its position. It is essential for States/Administrations to nominate experts and allocate necessary resources for effective engagement in these processes.

2.6 Additionally, the meeting noted that the Provisional Final Act (record of decisions taken at WRC-23 comprising of new and revised provisions of the Radio Regulations, including all Appendices, new and revised Resolutions and Recommendations) approved by WRC-23 can be accessed from the ITU Website at https://www.itu.int/dms_pub/itu-r/opb/act/R-ACT-WRC.15-2023-PDF-E.pdf. The Final Acts is scheduled to be published in April 2024. The footnotes 5.A17 and 5.B17 of Table of Allocation can be found on page 8, Resolution COM 4/2 can be found on Page 448 in the Provisional Final Act.

2.7 In relation to use of the frequency band 117.975-137 MHz by the aeronautical mobile-satellite (R) service (AMS(R)S), it was highlighted that two new footnotes (5.A17 and 5.B17) in the Table of Allocation and Resolution COM 4/2 (as in the Provisional Final Act, to be later changed to Resolution 406 in the [Final Act](#)) was added governing its use and considerations to be taken by ICAO in developing SARPs and frequency assignment planning for AMS(R)S. (Note: For easy reference, Table of Allocation and Resolution COM 4/2 are provided in **Appendix A** and **Appendix B** to this Report respectively.)

2.8 The meeting noted that the frequency band 117.975 – 137 MHz (VHF band) is also allocated by the ITU to AMS(R)S at WRC-23. FSMP has agreed to form a Correspondence Group (CG), and the Terms of Reference of that group is covered in Paragraph 2.10 of this Report.

2.9 The meeting agreed that States/Administrations that intend to use or are using VHF frequencies for Satellite-based VHF experimental systems during the period of time that the relevant SARPs and planning criteria are being developed and before operational deployment, should inform ICAO of their use. Furthermore, ICAO was requested to inform all States in APAC through frequency spectrum POC to ensure that all States are aware and monitor for any possible interference it may cause to VHF terrestrial systems. States/Administrations should also inform ICAO of any interference due to VHF Satellite-based experimental systems. And, in the event of interference, the correction action should be taken as soon as practicable. **ACTION ITEM 8-1**

Terms of Reference of FMSP Space-Based VHF Correspondence Group – Australia (IP/05)

2.10 The paper presented the Terms of Reference of the Space-Based VHF Correspondence Group (CG) established by FSMP-WG/17. The meeting noted that at the World Radio Conference 2023, a new allocation to the aeronautical mobile-satellite (R) service, AMS(R)S, in the frequency band 117.975 - 137 MHz was approved. The new allocation is required to be operated in accordance with international aeronautical standards. Resolution COM 4/2 (as in the Provisional Final Act, to be later changed to Resolution 406 in the Final Act) was also approved inviting the ICAO to take into account this Resolution in the course of developing SARPs for the AMS(R)S and planning the AM(R)S and AMS(R)S in the frequency band 117.975 - 137 MHz. To facilitate these efforts, FSMP-WG/17 meeting agreed with the establishment of a Space-Based VHF Correspondence Group (CG), aiming to define its terms of reference, the expected timeframe of the project and potential deliverables. The Terms of Reference of the CG approved by FSMP-WG/18 was explained, which covered its background, objective and scope, composition, working arrangement, and deliverables. As per the meeting's request, Australia was pleased to offer updates and achievements from this Correspondence Group to the APAC region, within the bounds of the CG Terms of Reference.

Agenda Item 3: Review Frequency planning requirements for APAC Region

Agenda Item 3.1: VHF COM Frequency Allotment Plan for APAC

Progress on VHF COM Frequency Allotment Plan for APAC Region – China (WP/16)

3.1 The paper presented the latest actions taken on VHF COM Frequency Allotment Plan for APAC Region, including the statistical analyses of the actual usage of frequencies in the APAC Region, and suggested to simplify the APAC Frequency Allotment Plan by converging the various allotments of “sub services” to the main service, and proposed the twelve frequencies which have not been allotted to any services, be allotted to ACC services.

3.2 The meeting noted that the internal Aeronautical Spectrum Seminar initiated from China has invited Mr. Robert Witzel to together have a detailed review of the Frequency Allotment Plan for the APAC region. It was suggested by the seminar to simplify the VHF COM Frequency Allotment Plan for APAC Region by converging the various allotments of “sub services” to the main service to provide more flexibility when States/Administrations coordinate/assign for a new or modified frequency. The revised VHF COM Frequency Allotment Plan in Table and in Chart for APAC Region is provided in **Appendix C** to the Report and has been included in the revised Frequency Guidance Material (Management Manual). In addition, it was noted that the new allotment of twelve (12) frequencies, belonging to International and National Aeronautical Mobile Services band, having not been included in any of Asia-Pacific conference outcomes, which had been proposed to be allotted to ACC services in SRWG/7, were listed.

3.3 With the aforementioned, the meeting agreed to endorse the following Draft Conclusion to simplify the VHF COM Frequency Allotment Plan and to clarify function of these twelve frequencies for ACC service in APAC Region.

Draft Conclusion SRWG/8/2 VHF COM Frequency Allotment Plan for APAC Region		
What:	VHF COM Frequency Allotment Plan for APAC Region provided in Appendix C to the Report be adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic

		☐ Environmental ☒ Ops/Technical
Why:	Per discussion from SRWG/8 for the Region to simplify the VHF COM Frequency Allotment Plan and to clarify function of the twelve frequencies for inclusion in the next edition of the Frequency Guidance Material (Management Manual).	Follow-up: ☐ Required from States
When:	7-Mar-24	Status: Draft to be adopted by Subgroup
Who:	☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

3.4 The Secretariat will notify the CNSS of the ANB about updates of the regional VHF COM Allotment Plan to ensure the Frequency Finder tool incorporates the latest revisions. To enhance the efficiency of frequency use in the APAC region, Member States/Administrations were requested to review and update the frequencies uploaded in the Frequency Finder (FF), ensuring the database remains current. **ACTION ITEM 8-2**

Survey Result of the Necessity to Implement 128.950 MHz for Traffic Information Broadcasts By Aircraft (TIBA) in the Asia/Pacific Region - China & the Secretariat (WP/17)

3.5 The paper presented the results of the questionnaire on the necessity to implement 128.950 MHz for traffic information broadcasts by aircraft (TIBA) in the APAC region. To follow up the discussion in SRWG/7 to review the necessity to implement 128.95MHz for TIBA, the ad-hoc expert group formed by SRWG/7 has worked with the ICAO Secretariat and published a questionnaire through the ICAO APAC State Letter Ref.: T 8/8.6 – AP066/23(CNS). A total of eighteen (18) responses from States/Administrations have been received and analyzed.

3.6 Based on the survey results obtained, four States/Administrations among the eighteen responses have allotted 128.950MHz for TIBA, and four States/Administrations among the eighteen responses have allotted 128.950MHz to other services. Considering the 128.950 MHz for TIBA in the APAC region has been included in the contingency plan and to avoid potential interference to the States have implemented 128.950 MHz for TIBA, the meeting agreed that any assignment for 128.950 MHz to other services by States shall not impact the airspace that has been allotted or plan to use 128.950 MHz for TIBA, States/Administrations were also encouraged to move forward to the global frequency for air to air service at 123.450 MHz, and further study the utilization and protection of 128.950MHz in the future. Furthermore, States/Administrations who have not yet replied to the Survey are encouraged to do so by replying to the State Letter with the Survey. Further discussion will be needed in the next SRWG meeting.

Agenda Item 3.2: HF utilization in APAC

Proposed New Table with HF Frequency Assignments - Secretariat (WP/14)

3.7 The paper presented the frequency assignments in the Aeronautical HF bands that are registered with the ITU and with ICAO, and proposed to combine the two databases in a single table that can be used for further coordination of HF frequency assignments. The paper explained each element of the new table, and highlighted that the table would be used as a basis for further work on difficulties that are experienced when using frequencies from the aeronautical HF bands, which is provided in **Appendix D** of the Report. The meeting was invited to review the table and request States/Administrations to update this list with frequency assignments that are currently in use with the view to have a correct statement of frequency assignments in the aeronautical HF bands.

The Utilization of HF Bands in the APAC Region – Indonesia (WP/15)

3.8 The paper presented the results on the review of relevant documents and existing conditions of HF bands utilization in Asia Pacific region. To follow up the Action Item 7-3 from SRWG/7, an ad-hoc group with Indonesia as a rapporteur was established to conduct a review of the operational use of HF in the Asia-Pacific Region and the applicable international provisions. The ad-hoc group shared the outcomes of reviewing the HF frequency planning criteria based on Appendix 27 of ITU Radio Regulation, allotment area division according to ICAO, and the utilization of HF in the Asia-Pacific region, as well as the outcomes of the WRC-23 session on agenda item 1.9.

3.9 The meeting noted that it has been found that discrepancies persist between what is stipulated in the ITU Radio Regulations (RR) and the operational conditions, both in terms of allocation Plans and the registered HF data. It is acknowledged that there is a necessity to encourage all States or administrations to maintain precise and current information in the ITU Master International Frequency Register (MIFR). In parallel with that, the promulgation of the ICAO HF frequency List is necessary to facilitate regulatory compliance.

3.10 Moreover, the ad-hoc group and the ICAO Secretariat have been preparing a draft questionnaire, which is provided in **Appendix E** to the Report, for the APAC States to gather information regarding existing operations in the States.

3.11 Given the relevance of WP/14 and WP/15, the meeting discussed these two papers together. The meeting appreciated Robert and Indonesia for their outstanding contributions to HF utilization in APAC region. After the review of the proposed New Table with HF Frequency Assignments in WP/14 and the Draft questionnaire in WP/15, the meeting formulated and endorsed the following Decision:

Decision SRWG/8/3 –Survey on the Utilization of HF Spectrum Frequency bands	
What: To conduct a survey on the Utilization of HF Spectrum Frequency bands in the Operation of Aeronautical Communications and update the New Table with HF Frequency Assignments in the APAC Region.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: To gather information regarding existing HF operations in the APAC States, and have a correct statement of frequency assignments in the aeronautical HF bands.	Follow-up: ☒ Required from States
When: 7-Mar-24	Status: Adopted by SRWG
Who: ☐ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

3.12 Following the adoption of the aforementioned Decision, the meeting requested the ad-hoc group to persist in their efforts to refine the survey and table, ensuring that they are clear and comprehensive enough to collect information effectively from States and facilitate their responses. The Secretariat will subsequently disseminate the revised survey and updated table through a State Letter once the revisions have been finalized. In addition, China also suggested to include the useful information of WP/15 into the revised regional guidance material. **ACTION ITEM 8-3**

Agenda Item 4: Update on Frequency Finder

Agenda Item 4.1 Outcome of Frequency Finder Workshop

Agenda Item 4.2 Frequency assignment issue discussion with individual State**Outcomes of Workshop on Frequency Finder (FF) – Secretariat (WP/07)**

4.1 The paper presented the outcomes of the Workshop on Frequency Finder (FF) held at the ICAO Asia and Pacific (APAC) Regional Office (Bangkok, Thailand, 9-13 October 2023). The Workshop alternated between presentations of the frequency assignment planning theory and provisions contained in Annex 10 Vol V, Doc 9718 Vol I and II; presentations of practical examples based on that theory, using the FF tool; and exercises by the participants, using practical examples based on frequencies contained in the APAC Com list 3. The Workshop recognized the need to revisit the regional VHF COM Allotment Plan regularly, and the ICAO APAC Regional Office was reminded to inform CNSS of ANB once the regional VHF COM Allotment Plan is revised to ensure the Frequency Finder is incorporated with the latest revision.

4.2 Through the discussion, the participants of the workshop agreed that the regular publication of the Frequency List 2, i.e. List of facilities in the band 108 - 117.975 MHz and 960 - 1215 MHz, will no longer be required as the global database of frequencies included in the FF would provide an up-to-date status of frequencies assigned or used by States/Administrations. However, the access procedure by the designated contact points by States/Administrations to the FF should be provided to States accordingly. With the aforementioned, the meeting adopted the following Draft Conclusion:

Draft Conclusion SRWG/8/4 – Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the Frequency Finder		
What: Transition from the regular publication of Frequency List 2 to the global database of frequencies included in the FF to be adopted	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: The regular publication (currently once a year at the end or beginning of the year) of the Frequency List 2 i.e. List of facilities in the band 108 - 117.975 MHz and 960 - 1215 MHz will no longer be required as the global database of frequencies included in the FF would provide an up-to-date status of frequencies assigned or used by States/Administrations.	Follow-up:	☐ Required from States
When: 7-Mar-24	Status: Draft to be adopted by Subgroup	
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG		

4.3 The Secretariat emphasized the importance of installing the Frequency Finder (FF) tool for States that have not yet done so. It was highly recommended that Member States/Administrations to coordinate frequency through the FF tool and ensure the FF database remains up-to-date.

Update on Frequency Finder – Secretariat (WP/18)

4.4 The paper presented the latest work, enhancements and functionalities brought to the Frequency Finder (FF) tool to assist ICAO Regional Offices and States/Administrations to manage and coordinate aeronautical frequency assignments and SSR Mode S II/SI codes. The paper included updates on the new functionality brought to the VHF-Communications (VHF-COM) module, enhancement being brought to the VHF- Navigation systems (VHF-NAV) module, and enhancements of functions brought to the SSR module. It is foreseen, that the modified version of Frequency Finder will be distributed to the Regional Offices during the end of the second quarter of 2024. States were

invited to make extensive usage of FF, and provide feedback on FF usage, suggestions, bugs and recommendations.

Agenda Item 5: Review of Frequency Lists in the Region

Review of Frequency Lists – Secretariat (WP/08)

5.1 The paper presented the status of Frequency Lists and the coordination on aeronautical frequency utilization for the region in 2023. ICAO APAC Regional Office has duplicated its work on the VHF NAV module of Frequency Finder as well as on the existing Frequency Manager for new facility frequency planning upon request from States. Recognizing the need to migrate Frequency List 2 database from Frequency Manager to Frequency Finder, ICAO APAC Office synchronized all registered assignments on Frequency List 2 in the Frequency Manager into Frequency Finder in 2022 and has been using Frequency Finder on frequency assignments for NAV systems. During SRWG/7, the Secretariat proposed an interim solution to publish Frequency List 2 (36th edition) by Frequency Finder, which was supported by the meeting. The meeting was informed that the publication of Frequency List 2 (37th edition) will be prepared by Frequency Finder in 2024. After the adoption of the proposed **Draft Conclusion SRWG/8/4** in WP/07 of SRWG/8 by APANPIRG/35, the ICAO APAC Regional Office will stop the regular publication of Frequency List 2.

5.2 Additionally, the meeting noted that Frequency Manager is now used only for NDB assignments and the maintenance of Frequency List 1. Unfortunately, the computer for running Frequency Manager failed in January 2024. The publication of Frequency List 1 (38th edition) in 2024 may be delayed. Furthermore, it was informed that in 2023, ICAO APAC Regional Office coordinated 507 Frequency registrations in total, including 408 VHF COM frequencies (List 3), 88 NAV frequencies (List 2), and 11 NDB frequencies (List 1), the most among 7 ICAO regions.

Agenda Item 6: Frequency use by oil platform

Issues in Aeronautical Frequency Use by Oil Rigs – Secretariat (WP/09)

6.1 The paper presented the observations on the issues in aeronautical frequency use by oil rigs, and the planning of the Seminar by ICAO for information and action by the meeting. In APAC, as a long-standing practice, one oil platform may be assigned with one NDB frequency and one AOC frequency on most occasions. With more and more requests from States/Administrations for aeronautical frequency coordination in this regard, this existing practice is no longer sustainable with the consideration of the efficiency of frequency use. The widely implemented practices to share the AOC frequencies even between different companies and the possibility of time-sharing of NDB frequency were discussed. Additionally, the experience of some Administrations, like CAA UK, which has established well-developed procedures in managing offshore VHF and NDB assignments has been introduced.

6.2 The meeting noted that ICAO is planning a Seminar on Frequency Use by Oilrigs in Q3 2024 to analyze the existing frequency management process and planning criteria for oilrigs, as well as the need of frequency assignment for oilrigs and ships in aeronautical bands. The meeting urged States/Administrations to register all aeronautical frequencies for NDB and AOC on oil rigs with ICAO APAC Office, share the best practices in States/Administrations to regional forum, e.g. SRWG, and nominate experts to support and participate in the Seminar. **ACTION ITEM 8-4**

6.3 The meeting acknowledged the ongoing development of an NDB planning tool/software for the APAC region, with valuable support provided by Mr. Robert.

Agenda Item 7: Frequency Interference in the Region

Agenda Item 7.1 5G and Radio Altimeter issues

Guidance Material on the Protection of Radio Altimeter from Potential Harmful Interference from Cellular 5G Communications – Secretariat (WP/06)

7.1 The paper presented the progress of the guidance material on the protection of radio altimeter from potential harmful interference from cellular 5G communications. The meeting noted that the Secretariat has been working with FSMP and the ICAO Middle East Regional Office (MID) Radio Altimeter (RADALT) Action Group (AG) to develop and finalize guidance material to protect radio altimeters from potential harmful interference from new cellular broadband technologies such as 5G. After a discussion on the guidance material developed by RADALT AG, the FSMP-WG/16 meeting endorsed the material broadly and agreed to provide comments to the ICAO Secretariat after the meeting. On 19 January 2024, it was informed that the draft Circular 360 Guidance on Safeguarding Measures to Protect Radio Altimeters from Potential Harmful Interference is now at the final stage of development/publication in the ICAO HQ. The meeting was invited to review the contents of the Advanced Edition (unedited) – 2024.

Agenda Item 7.2 GNSS interference

ICAO Recommendations and Guidance on GNSS Vulnerability – Secretariat (WP/05)

7.2 The paper presented an overview of ICAO's Recommendations and Guidance on Global Navigation Satellite System (GNSS) vulnerability, including the Resolution COM5/5 (WRC-23), ongoing work in NSP and regional efforts in APAC. The relevant discussions in the 11th Air Navigation Conference (ANConf/11) in 2003, 12th Air Navigation Conference (ANConf/12) in 2012, 40th Session of the Assembly / State Letter 2020/89 / ITU Circular Letter 488, and 41st Session of the Assembly were summarized. The meeting also reviewed the Memorandum of Cooperation with the International Telecommunication Union (ITU), Electronic Bulletin 2011/56 on Interference to GNSS Signals, ICAO NSP Liaison Statements to RTCA and EUROCAE on Increased Protection of GNSS Receivers, GNSS Manual (DOC 9849), Amendment 93 to Annex 10, Volume I, and ongoing NSP work.

7.3 By introducing the CNS Challenges in 2024, it was noted the APANPIRG/34 meeting urged States and airspace users (through IATA) to report GNSS occurrences to ICAO APAC Office using the reporting templates which would be circulated in a State Letter. The Secretariat proposed a GNSS Interference Reporting Form for APAC, with reference to the RASG-MID SAFETY ADVISORY – 14 (RSA-14).

7.4 The meeting reviewed the proposed form and identified it was sourced from Doc 9849 Edition 3. Recognizing the original forms have been further revised in Doc 9849 Edition 4, the meeting agreed to adopt the example forms for GNSS RFI Reporting to States in Attachment to Appendix F of Doc 9849 Edition 4, which is reproduced in Appendix F of this report, through the following Decision:

Decision SRWG/8/5 – GNSS Interference Reporting Form for APAC	
What: GNSS Interference Reporting Form for APAC provided in Appendix F of the Report be adopted.	Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical
Why: Considering the reports from flight crew are essential to address GNSS related issues, States and airspace users (through IATA) were urged to report GNSS	Follow-up: ☐ Required from States

occurrences to ICAO APAC Office using the reporting templates	
When: 7-Mar-24	Status: Adopted by SRWG
Who: ☒ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG	

GNSS Radio Frequency Interference: IATA Analysis – IATA (WP/12)

7.5 The paper explored the implications of the GNSS radio frequency interference (RFI), outlined relevant ICAO and IATA initiatives, and offered a global and Asia-Pacific analysis of airline data on GPS Signal loss obtained by the IATA Flight Data Exchange (FDX) from August 2021 to December 2023. Noting that recently, elevated levels of long duration and deliberate military jamming and spoofing have threatened the integrity of Positioning, Navigation, and Timing (PNT) services across several regions, IATA recognized the importance of addressing GNSS RFI and is actively engaged in industry-wide collaborative efforts to mitigate associated risks.

7.6 The meeting noted that the workshop jointly hosted by the European Union Aviation Safety Agency (EASA) and IATA on January 25th, 2024 came up with a high-level conclusion that interference with satellite-based services can pose significant challenges to aviation safety. Mitigating measures agreed by the workshop to make PNT services provided by GNSS more resilient were elaborated, including reporting and sharing of GNSS interference event data, providing guidance from aircraft and avionic original equipment manufacturers (OEMs), alerting, and backup. It was emphasized that GNSS RFI is a significant concern for the aviation industry, and collaborative efforts among regulatory authorities, industry stakeholders, and international organizations are essential to effectively mitigate associated risks.

7.7 The meeting extended its gratitude to IATA for the informative paper and requested continued updates of the latest data from IATA. Additionally, Thailand requested IATA to provide information about GPS signal loss positions/areas to facilitate finding solutions to the issue. IATA will check internally with FDX Team and revert to Thailand.

Improving the Efficiency of GNSS Interference Detection and Localization by ADS-B Data – China (IP/04)

7.8 The paper presented the application of Automatic Dependent Surveillance-Broadcast (ADS-B) downlink data in monitoring GNSS interference in China that affects aviation flights and locating the sources of interference. The meeting noted that this technology has been applied in GNSS signal protective monitoring and interference detection in China and demonstrated impressive results in locating GNSS interference sources, resulting in a significant enhancement in the efficiency and accuracy of interference detection and localization.

7.9 Hong Kong China supported China's initiative to utilize ADS-B data for analyzing GNSS issues. Hong Kong China also shared how they used ADS-B data to categorize GNSS events into avionics, electromagnetic environment, and operational issues. By leveraging ADS-B data, Hong Kong China can enhance its understanding of GNSS disruptions beyond electromagnetic interference. Hong Kong China suggested that these analyses would be good complements to conventional reporting forms and IATA's analysis. Additionally, Hong Kong China also shared their experience in analyzing ADS-B data, such as the time for different aircraft to resume ADS-B broadcast after return of GNSS signal varies, and not all aircraft broadcast ADS-B reports with zero integrity values.

Agenda Item 8: Review the Regional Guidance Material

Proposed Revisions to Asia/Pacific Regional Aeronautical Radio Frequency Management Guidance Material – China (WP/13)

8.1 The paper presented proposed revisions to the Asia/Pacific Regional Aeronautical Radio Frequency Management Guidance Material. In addition to the editorial amendments to improve the consistency of this Guidance Material with other ICAO documents, the meeting reviewed the proposed amendments, which included a revision on the title of the document, VDL reduced channel spacing, backup frequencies, TIBA, and GBAS/VDB frequency assignment planning. The meeting encouraged States/Administrations to provide more comments/observations for the Management Manual.

8.2 Recognizing that certain refinements are required for new paragraphs concerning HF, TIBA, backup frequency, and GBAS, the meeting agreed to adopt this revision as Edition 1.1 with clear presentation for the proposed amendments to differentiate the status of text as original, agreed, to be determined (TBD). The SRWG will discuss and review the pertinent paragraphs in future meetings.
ACTION ITEM 8-5

8.3 Regarding feasibility to include C2 link into the guidance material raised by Indonesia, the Secretariat will share this concern with ICAO HQ to see whether there is any progress in this regard or if anything can be done at regional level.

8.4 With the aforementioned, the meeting formulated and adopted the following Conclusion.

Conclusion SRWG/8/6 - Asia Pacific Regional Aeronautical Radio Frequency Management Guidance Material Edition 1.1			
What: Asia Pacific Regional Aeronautical Radio Frequency Management Guidance Material Edition 1.1 provided in Appendix G to this Report be adopted.		Expected impact: ☐ Political / Global ☐ Inter-regional ☐ Economic ☐ Environmental ☒ Ops/Technical	
Why: Per discussion from SRWG/8 for the Region to utilize the Guidance Material.		Follow-up:	☐ Required from States
When: 7-Mar-24		Status: Adopted by SRWG	
Who: ☐ Sub groups ☐ APAC States ☐ ICAO APAC RO ☐ ICAO HQ ☒ Other: SRWG			

8.5 China suggested considering adding functions in FF to mark the frequency used for main or backup in FF. The meeting noted that it will depend on information shared by States, and the Secretariat will forward this idea to HQ for further consideration.

Agenda Item 9: State and regional updates

Status Report 2023 Update of Frequency Allocation in Japan (IP/02)

9.1 The paper provided an update on frequency allocation in Japan from reorganizing the domestic airspace of Fukuoka FIR. With the changing of the structure at Fukuoka FIR to respond to the future increase in demand for air traffic, which provides air traffic control by three large ACCs, 21 new frequencies have been added and 6 frequencies have been deleted from the Frequency Finder (FF). In addition, after 2023, another about 30 additions and deletions of RCAGs' frequencies are planned in Japan.

Aviation Frequency Spectrum Management in Thailand (IP/03)

9.2 The paper presented Thailand's effort to enhance the mechanism of national aviation frequency spectrum planning and management. With the introduction of the institutional relationship for governing frequency spectrum management between telecommunications and civil aviation sector, the paper highlighted the importance of Civil Aviation Authority (CAA) undertaking the establishment of a function dedicated to planning and managing aviation frequency spectrum. Thailand elaborated on the relationship between telecommunication (the National Broadcasting and Telecommunications Commission (NBTC)) and civil aviation institutional (the Civil Aviation Authority of Thailand (CAAT)) on aviation frequency management in Thailand and introduced that CAAT is in the process of establishing a new section/department to serve as the focal point for all matters related to aviation frequency spectrum in order to enhance the national aviation frequency spectrum planning and management mechanism.

Agenda Item 10: Review POC of States on Frequency Affairs

Review POC of States – Secretariat (WP/10)

10.1 The paper reviewed the current status of POCs of States on frequency-related affairs for review and update. The meeting noted that the current practice of aeronautical frequency coordination performed by the ICAO Regional Office is implemented as communication between the ICAO regional officer and the Point of Contact (POC) in different States/Administrations. The currency and completeness of the POC list are basic requirements for efficient and timely coordination. The meeting reviewed and updated POC list, which is provided in **Appendix H** to this report.

Review and Update FF Installation Status

10.2 The meeting reviewed and updated the Frequency Finder installation status in APAC, which is provided in **Appendix I** to this report.

Agenda Item 11: Review the Action Items

Review of Action Items – Secretariat (WP/11)

11.1 The paper invited the meeting to review the action items. The updated Action Items List is provided in **Appendix J** to this report.

Agenda Item 12: Next Meeting and Any Other Business

Date for Next Meeting

12.1 The Secretariat informed the meeting that the CNSS of ANB is coordinating with Singapore on hosting a 2-day WRC-27 workshop and FSMP WG/20 in February 2025, considering the difficulty on travel budget of participants, SRWG/9 is recommended for a date in connection with the workshop. The Secretariat will coordinate with concerned parties and advise SRWG members in due course.

Note of appreciation

12.2 The Meeting thanked Mr. Robert Witzen for his continuous support to SRWG and spectrum-related activities particularly in supporting this meeting remotely.

Table of Allocation

Agenda item 1.7

MOD

75.2-137.175 MHz

Allocation to services		
Region 1	Region 2	Region 3
117.975-137	AERONAUTICAL MOBILE (R) AERONAUTICAL MOBILE-SATELLITE (R) ADD 5.A17 ADD 5.B17 5.111 MOD 5.200 5.201 5.202	

ADD

5.A17 The use of the frequency band 117.975-137 MHz by the aeronautical mobile-satellite (R) service is subject to coordination under No. **9.11A**. No. **9.16** does not apply. Such use shall be limited to non-geostationary-satellite systems operated in accordance with international aeronautical standards. Resolution **COM4/2 (WRC-23)** applies. (WRC-23)

ADD

5.B17 The use of the frequency band 117.975-137 MHz by the aeronautical mobile (R) service shall have priority over use by the aeronautical mobile-satellite (R) service. (WRC-23)

Agenda item 8

MOD

5.185 *Different category of service:* in the United States, the French overseas departments and communities in Region 2 and Guyana, the allocation of the frequency band 76-88 MHz to the fixed and mobile services is on a primary basis (see No. **5.33**). (WRC-23)

Agenda item 4

MOD

5.197A *Additional allocation:* the frequency band 108-117.975 MHz is also allocated on a primary basis to the aeronautical mobile (R) service, limited to systems operating in accordance with recognized international aeronautical standards. Such use shall be in accordance with Resolution **413 (Rev.WRC-23)**. The use of the frequency band 108-112 MHz by the aeronautical mobile (R) service shall be limited to systems composed of ground-based transmitters and associated receivers that provide navigational information in support of air navigation functions in accordance with recognized international aeronautical standards. (WRC-23)

Agenda item 1.7

MOD

5.200 In the frequency band 117.975-137 MHz, the frequency 121.5 MHz is the aeronautical emergency frequency and, where required, the frequency 123.1 MHz is the aeronautical frequency auxiliary to 121.5 MHz. Mobile stations of the maritime mobile service may communicate on these frequencies under the conditions laid down in Article **31** for distress and safety purposes with stations of the aeronautical mobile service and the aeronautical mobile-satellite service. (WRC-23)

Agenda item 8

MOD

5.201 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, Egypt, Estonia, the Russian Federation, Georgia, Hungary, Iran (Islamic Republic of), Iraq (Republic of), Japan, Kazakhstan, Mali, Mongolia, Mozambique, Uzbekistan, Papua New Guinea, Poland, Qatar, Kyrgyzstan, Romania, Senegal, Somalia, Tajikistan and Turkmenistan, the frequency band 132-136 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-23)

MOD

5.202 *Additional allocation:* in Saudi Arabia, Armenia, Azerbaijan, Bahrain, the United Arab Emirates, the Russian Federation, Georgia, Iran (Islamic Republic of), Jordan, Mali, Oman, Uzbekistan, Poland, the Syrian Arab Republic, Kyrgyzstan, Romania, Senegal, Tajikistan and Turkmenistan, the frequency band 136-137 MHz is also allocated to the aeronautical mobile (OR) service on a primary basis. In assigning frequencies to stations of the aeronautical mobile (OR) service, the administration shall take account of the frequencies assigned to stations in the aeronautical mobile (R) service. (WRC-23)

MOD

5.210 *Additional allocation:* in Italy and the United Kingdom, the frequency bands 138-143.6 MHz and 143.65-144 MHz are also allocated to the space research service (space-to-Earth) on a secondary basis. (WRC-23)

MOD

5.221 Stations of the mobile-satellite service in the frequency band 148-149.9 MHz shall not cause harmful interference to, or claim protection from, stations of the fixed or mobile services operating in accordance with the Table of Frequency Allocations in the following countries: Albania, Algeria, Germany, Saudi Arabia, Australia, Austria, Bahrain, Bangladesh, Barbados, Belarus, Belgium, Benin, Bosnia and Herzegovina, Botswana, Brunei Darussalam, Bulgaria, Cameroon, China, Cyprus, Congo (Rep. of the), Korea (Rep. of), Côte d'Ivoire, Croatia, Cuba, Denmark, Djibouti, Egypt, the United Arab Emirates, Eritrea, Spain, Estonia, Eswatini, Ethiopia, the Russian Federation, Finland, France, Gabon, Georgia, Ghana, Greece, Guinea, Guinea Bissau, Hungary, India, Iran (Islamic Republic of), Ireland, Iceland, Israel, Italy, Jamaica, Japan, Jordan, Kazakhstan, Kenya, Kuwait, Lesotho, Latvia, Lebanon, Libya, Liechtenstein, Lithuania,

Agenda item 1.7

ADD

RESOLUTION COM4/2 (WRC-23)

Use of the frequency band 117.975-137 MHz by the aeronautical mobile-satellite (R) service

The World Radiocommunication Conference (Dubai, 2023),

considering

- a)* that the optimization of air traffic management (ATM) over oceanic and remote areas necessitates appropriate aeronautical surveillance and communication means, in order to meet the required communication performance for reduced separation minima;
- b)* that the allocation of the frequency band 117.975-137 MHz to the aeronautical mobile-satellite (R) service (AMS(R)S) is intended for the relay via satellite of VHF communications under the aeronautical mobile (R) service (AM(R)S), in order to complement terrestrial communication infrastructures when aircraft are operating in oceanic and remote areas;
- c)* that the AM(R)S VHF channels have become congested in some areas and AMS(R)S systems need to operate in such a manner as not to constrain AM(R)S VHF systems, without modification to aircraft equipment,

noting

- a)* that there are Standards and Recommended Practices (SARPs) developed by the International Civil Aviation Organization (ICAO) detailing frequency assignment planning criteria for AM(R)S VHF communication systems;
- b)* that frequency assignment planning between stations operated under the AM(R)S allocation in the frequency band 117.975-137 MHz is performed by competent organizations under ICAO provisions;
- c)* that the development of compatibility criteria between AMS(R)S systems proposed for operations under *considering b)* and ICAO-standardized aeronautical systems in the frequency band 117.975-137 MHz is the responsibility of ICAO;
- d)* that feeder links of AMS(R)S systems are not planned to be operated in the frequency band 117.975-137 MHz,

recognizing

- a)* that the frequency band 117.975-137 MHz is allocated on a primary basis to the AM(R)S and is used by air-ground, air-air and ground-air systems operated in accordance with ICAO SARPs, providing critical voice and data communications for ATM on a global basis;
- b)* that Annex 10 to the Convention on International Civil Aviation contains SARPs for safety aeronautical radionavigation and radiocommunication systems used by international civil aviation,

resolves

- 1 that the notifying administration for the AMS(R)S satellite system authorizing the use of the frequency band 117.975-137 MHz by this system shall take into account relevant ICAO

frequency assignment planning procedures in relation to *noting b*);

2 that, taking into account *resolves* 1, the frequency band 117.975-137 MHz may also be used by AMS(R)S experimental systems during the period of time that the relevant SARPs are being developed and before operational deployment;

3 that the interference from out-of-band emissions of the AMS(R)S space station operating in the frequency band 117.975-137 MHz to adjacent channels of the AM(R)S airborne receiving stations shall not be more than the interference from out-of-band emissions of AM(R)S aircraft stations;

4 that, in accordance with ICAO frequency assignment planning procedures the identification or selection of channels for use by AMS(R)S shall:

- take into account the operational deployment of stations operating in the AM(R)S and, when available, the aeronautical mobile (OR) service (AM(OR)S);
- not adversely affect the potential future modifications of AM(R)S channel planning when required;

5 that in assigning frequencies to stations in the AM(OR)S, the administration needs to take into account the frequencies assigned to the AMS(R)S for which coordination under Nos. **9.14** and **9.15** has been agreed to between both administrations involved in the coordination process;

6 that, space stations operating in the frequency band 117.975-137 MHz in the AMS(R)S shall not have out-of-band emissions into the frequency band 137-138 MHz that exceed a power flux-density of $-170 \text{ dB(W/(m}^2 \cdot 14 \text{ kHz))}$ at the Earth's surface;

7 that, in the frequency band 136.8-137 MHz, AMS(R)S space station receivers shall be designed to be resilient to the interference environment resulting from satellite systems operating in the frequency band 137-138 MHz; the power level(s) contained in the Annex to this Resolution and associated percentage(s) of time are to be taken into account in the development of relevant ICAO SARPs,

instructs the Secretary-General

to bring this Resolution to the attention of ICAO and the International Maritime Organization,

invites the International Civil Aviation Organization

to take into account this Resolution in the course of developing SARPs for the AMS(R)S and planning the AM(R)S and AMS(R)S in the frequency band 117.975-137 MHz.

ANNEX TO RESOLUTION COM4/2 (WRC-23)

The following table provides the power levels for several percentages of time for the AMS(R)S space station channel centre frequency between 136.8 and 136.975 MHz:

Power level (dBW/25 kHz)		AMS(R)S space station channel centre frequency (MHz)							
		136.8	136.825	136.85	136.875	136.9	136.925	136.95	136.975
% of time	50	−207	−205	−203	−201	−195.75	−190.5	−185.25	−180
	10	−184	−182	−180	−178	−172.75	−167.5	−162.25	−157
	1	−175	−173	−171	−169	−163.75	−158.5	−153.25	−148
	0.1	−167	−165	−163	−161	−155.75	−150.5	−145.25	−140
	0.01	−161	−159	−157	−155	−149.75	−144.5	−139.25	−134
	0.001	−155	−153	−151	−149	−143.75	−138.5	−133.25	−128

	0.0001	-152	-150	-148	-146	-140.75	-135.5	-130.25	-125
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Resolution COM4/2

Agenda item 1.7

ADD

RESOLUTION COM4/2 (WRC-23)

**Use of the frequency band 117.975-137 MHz by
the aeronautical mobile-satellite (R) service**

The World Radiocommunication Conference (Dubai, 2023),

considering

- a)* that the optimization of air traffic management (ATM) over oceanic and remote areas necessitates appropriate aeronautical surveillance and communication means, in order to meet the required communication performance for reduced separation minima;
- b)* that the allocation of the frequency band 117.975-137 MHz to the aeronautical mobile-satellite (R) service (AMS(R)S) is intended for the relay via satellite of VHF communications under the aeronautical mobile (R) service (AM(R)S), in order to complement terrestrial communication infrastructures when aircraft are operating in oceanic and remote areas;
- c)* that the AM(R)S VHF channels have become congested in some areas and AMS(R)S systems need to operate in such a manner as not to constrain AM(R)S VHF systems, without modification to aircraft equipment,

noting

- a)* that there are Standards and Recommended Practices (SARPs) developed by the International Civil Aviation Organization (ICAO) detailing frequency assignment planning criteria for AM(R)S VHF communication systems;
- b)* that frequency assignment planning between stations operated under the AM(R)S allocation in the frequency band 117.975-137 MHz is performed by competent organizations under ICAO provisions;
- c)* that the development of compatibility criteria between AMS(R)S systems proposed for operations under *considering b)* and ICAO-standardized aeronautical systems in the frequency band 117.975-137 MHz is the responsibility of ICAO;
- d)* that feeder links of AMS(R)S systems are not planned to be operated in the frequency band 117.975-137 MHz,

recognizing

- a)* that the frequency band 117.975-137 MHz is allocated on a primary basis to the AM(R)S and is used by air-ground, air-air and ground-air systems operated in accordance with ICAO SARPs, providing critical voice and data communications for ATM on a global basis;
- b)* that Annex 10 to the Convention on International Civil Aviation contains SARPs for safety aeronautical radionavigation and radiocommunication systems used by international civil aviation,

resolves

- 1 that the notifying administration for the AMS(R)S satellite system authorizing the use of the frequency band 117.975-137 MHz by this system shall take into account relevant ICAO

frequency assignment planning procedures in relation to *noting b*);

2 that, taking into account *resolves* 1, the frequency band 117.975-137 MHz may also be used by AMS(R)S experimental systems during the period of time that the relevant SARPs are being developed and before operational deployment;

3 that the interference from out-of-band emissions of the AMS(R)S space station operating in the frequency band 117.975-137 MHz to adjacent channels of the AM(R)S airborne receiving stations shall not be more than the interference from out-of-band emissions of AM(R)S aircraft stations;

4 that, in accordance with ICAO frequency assignment planning procedures the identification or selection of channels for use by AMS(R)S shall:

- take into account the operational deployment of stations operating in the AM(R)S and, when available, the aeronautical mobile (OR) service (AM(OR)S);
- not adversely affect the potential future modifications of AM(R)S channel planning when required;

5 that in assigning frequencies to stations in the AM(OR)S, the administration needs to take into account the frequencies assigned to the AMS(R)S for which coordination under Nos. **9.14** and **9.15** has been agreed to between both administrations involved in the coordination process;

6 that, space stations operating in the frequency band 117.975-137 MHz in the AMS(R)S shall not have out-of-band emissions into the frequency band 137-138 MHz that exceed a power flux-density of $-170 \text{ dB(W/(m}^2 \cdot 14 \text{ kHz))}$ at the Earth's surface;

7 that, in the frequency band 136.8-137 MHz, AMS(R)S space station receivers shall be designed to be resilient to the interference environment resulting from satellite systems operating in the frequency band 137-138 MHz; the power level(s) contained in the Annex to this Resolution and associated percentage(s) of time are to be taken into account in the development of relevant ICAO SARPs,

instructs the Secretary-General

to bring this Resolution to the attention of ICAO and the International Maritime Organization,

invites the International Civil Aviation Organization

to take into account this Resolution in the course of developing SARPs for the AMS(R)S and planning the AM(R)S and AMS(R)S in the frequency band 117.975-137 MHz.

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	1	−175	−173	−171	−169	−163.75	−158.5	−153.25	−148
	0.1	−167	−165	−163	−161	−155.75	−150.5	−145.25	−140
	0.01	−161	−159	−157	−155	−149.75	−144.5	−139.25	−134
	0.001	−155	−153	−151	−149	−143.75	−138.5	−133.25	−128

	0.0001	-152	-150	-148	-146	-140.75	-135.5	-130.25	-125
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Appendix C to Report

VHF COM Frequency Allotment Plan for APAC Region (March 2024)

Function (revised)	Function	Frequencies (MHz)
TWR 118.000-118.875MHz 124.300-124.375MHz	TWR	118.000 118.025 118.050 118.075 118.100 118.125 118.150 118.175 118.200 118.225 118.250 118.275 118.300 118.325 118.350 118.375 118.400 118.425 118.450 118.475 118.500 118.525 118.550 118.575 118.600 118.625 118.650 118.675 118.700 118.725 118.750 118.775 118.800 118.825 118.850 118.875 124.300 124.325 124.350 124.375
AS 121.550-121.975MHz	AS	121.550 121.575 121.600 121.625 121.650 121.675 121.700 121.725 121.750 121.775 121.800 121.825 121.850 121.875 121.900 121.925 121.950 121.975
APP 119.000-119.275MHz 119.400-120.075MHz 120.200-120.475MHz 120.600-120.675MHz 120.800-120.875MHz 121.000-121.450MHz 123.800-123.875MHz 124.000-124.075MHz 124.200-124.275MHz 124.400-124.475MHz 124.600-124.875MHz 125.000-125.275MHz 125.400-125.675MHz 125.800-125.875MHz 126.000-126.075MHz 126.300-126.375MHz 126.500-126.575MHz 127.700-127.775MHz 127.900-127.975MHz	APP	119.500 119.525 119.550 119.575 119.600 119.625 119.650 119.675 119.800 119.825 119.850 119.875 119.900 119.925 119.950 119.975
	APP-L, APP-I, Also used for APP Direction finding or APP Surveillance radar	119.100 119.125 119.150 119.175 119.200 119.225 119.250 119.275 119.400 119.425 119.450 119.475 119.700 119.725 119.750 119.775 120.000 120.025 120.050 120.075 120.200 120.225 120.250 120.275 120.400 120.425 120.450 120.475 120.600 120.625 120.650 120.675 120.800 120.825 120.850 120.875 121.000 121.025 121.050 121.075 121.100 121.125 121.150 121.175 121.200 121.225 121.250 121.275 121.400 121.425 121.450 123.800 123.825 123.850 123.875 124.000 124.025 124.050 124.075 124.700 124.725 124.750 124.775 125.100 125.125 125.150 125.175 125.500 125.525 125.550 125.575 126.500 126.525 126.550 126.575 127.700 127.725 127.750 127.775 127.900 127.925 127.950 127.975
	APP-U	120.300 120.325 120.350 120.375 121.300 121.325 121.350 121.375 124.200 124.225 124.250 124.275 124.400 124.425 124.450 124.475 124.600 124.625 124.650 124.675 124.800 124.825 124.850 124.875 125.000 125.025 125.050 125.075 125.200 125.225 125.250 125.275 125.400 125.425 125.450 125.475

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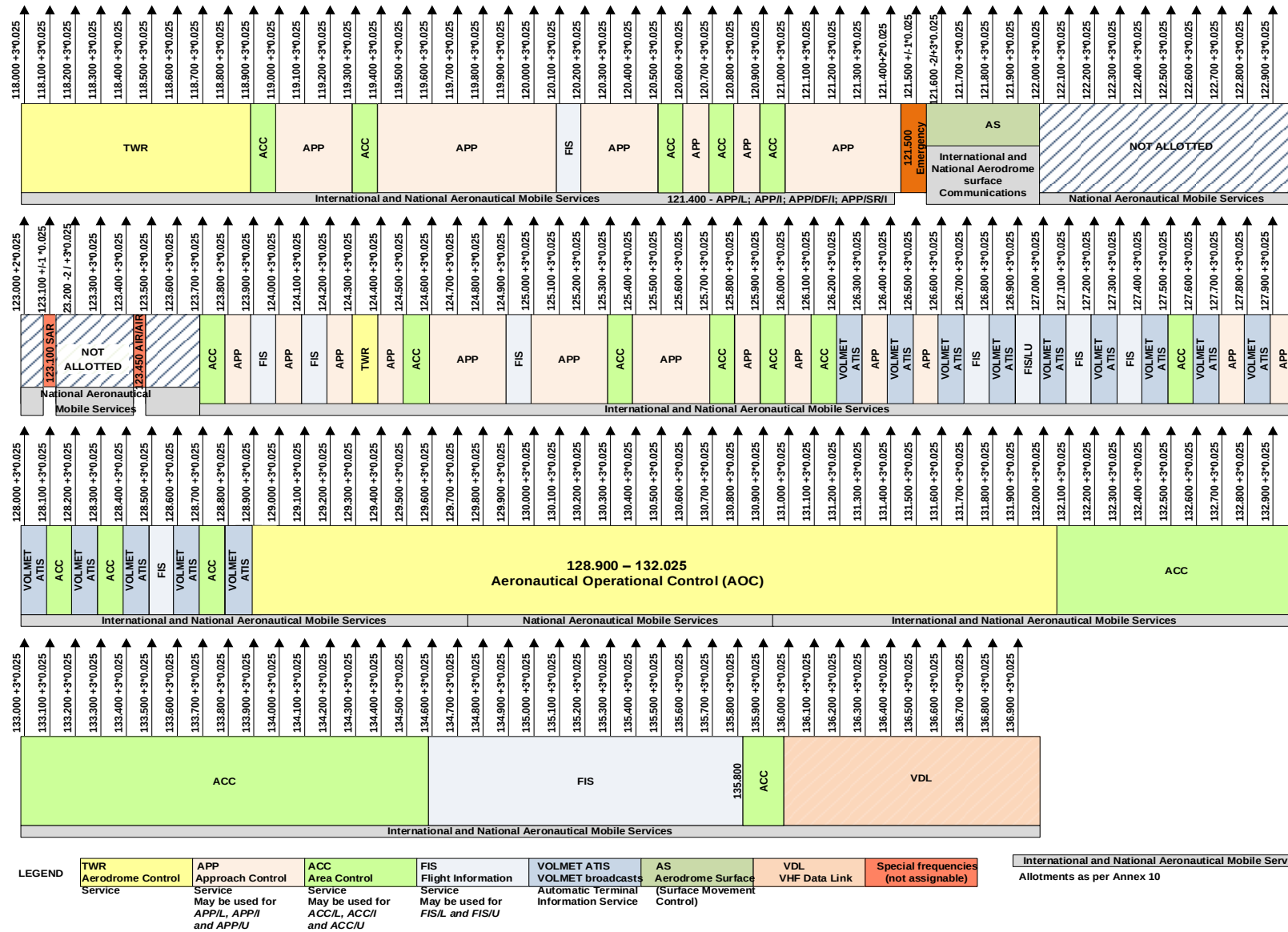
		125.600 125.625 125.650 125.675 125.800 125.825 125.850 125.875 126.000 126.025 126.050 126.075 126.300 126.325 126.350 126.375
ACC 118.900-118.975MHz 119.300-119.375MHz 120.500-120.575MHz 120.700-120.775MHz	ACC-L Also used for ACC-L Surveillance Radar	126.100 126.125 126.150 126.175 127.500 127.525 127.550 127.575 128.300 128.325 128.350 128.375 128.700 128.725 128.750 128.775
120.900-120.975MHz 123.700-123.775MHz 124.500-124.575MHz 125.300-125.375MHz 125.700-125.775MHz 125.900-125.975MHz 126.100-126.175MHz 127.500-127.575MHz 128.100-128.175MHz 128.300-128.375MHz 128.700-128.775MHz 132.050-134.575MHz 135.825-135.975MHz	ACC-U ACC-L	118.900 118.925 118.950 118.975 119.300 119.325 119.350 119.375 120.500 120.525 120.550 120.575 120.700 120.725 120.750 120.775 120.900 120.925 120.950 120.975 123.700 123.725 123.750 123.775 124.500 124.525 124.550 124.575 125.300 125.325 125.350 125.375 125.700 125.725 125.750 125.775 125.900 125.925 125.950 125.975 128.100 128.125 128.150 128.175 132.050 132.075 132.100 132.125 132.150 132.175 132.200 132.225 132.250 132.275 132.300 132.325 132.350 132.375 132.400 132.425 132.450 132.475 132.500 132.525 132.550 132.575 132.600 132.625 132.650 132.675 132.700 132.725 132.750 132.775 132.800 132.825 132.850 132.875 132.900 132.925 132.950 132.975 133.000 133.025 133.050 133.075 133.100 133.125 133.150 133.175 133.200 133.225 133.250 133.275 133.300 133.325 133.350 133.375 133.400 133.425 133.450 133.475 133.500 133.525 133.550 133.575 133.600 133.625 133.650 133.675 133.700 133.725 133.750 133.775 133.800 133.825 133.850 133.875 133.900 133.925 133.950 133.975 134.000 134.025 134.050 134.075 134.100 134.125 134.150 134.175 134.200 134.225 134.250 134.275 134.300 134.325 134.350 134.375 134.400 134.425 134.450 134.475 134.500 134.525 134.550 134.575 135.825 135.850 135.875 135.900 135.925 135.950 135.975
FIS 120.100-120.175MHz 123.900-123.975MHz 124.100-124.175MHz 124.900-124.975MHz 126.700-126.775MHz	FIS-L FIS-U	120.100 120.125 120.150 120.175 123.900 123.925 123.950 123.975 124.100 124.125 124.150 124.175 124.900 124.925 124.950 124.975 126.700 126.725 126.750 126.775 126.900 126.925 126.950 126.975

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126.900-126.975MHz 127.100-127.175MHz 127.300-127.375MHz 128.500-128.575MHz 134.600-135.800MHz		127.100 127.125 127.150 127.175 127.300 127.325 127.350 127.375 128.500 128.525 128.550 128.575
	FIS-U Also used for General purpose communications	134.600 134.625 134.650 134.675 134.700 134.725 134.750 134.775 134.800 134.825 134.850 134.875 134.900 134.925 134.950 134.975 135.000 135.025 135.050 135.075 135.100 135.125 135.150 135.175 135.200 135.225 135.250 135.275 135.300 135.325 135.350 135.375 135.400 135.425 135.450 135.475 135.500 135.525 135.550 135.575 135.600 135.625 135.650 135.675 135.700 135.725 135.750 135.775 135.800
VOLMET/ATIS 126.200-126.275MHz 126.400-126.475MHz 126.600-126.675MHz 126.800-126.875MHz 127.000-127.075MHz 127.200-127.275MHz 127.400-127.475MHz 127.600-127.675MHz 127.800-127.875MHz 128.000-128.075MHz 128.200-128.275MHz 128.400-128.475MHz 128.600-128.675MHz 128.800-128.875MHz	VOLMET/ATIS	126.200 126.225 126.250 126.275 126.400 126.425 126.450 126.475 126.600 126.625 126.650 126.675 126.800 126.825 126.850 126.875 127.000 127.025 127.050 127.075 127.200 127.225 127.250 127.275 127.400 127.425 127.450 127.475 127.600 127.625 127.650 127.675 127.800 127.825 127.850 127.875 128.000 128.025 128.050 128.075 128.200 128.225 128.250 128.275 128.400 128.425 128.450 128.475 128.600 128.625 128.650 128.675 128.800 128.825 128.850 128.875
AOC	AOC	128.900-132.025(Except 128.950MHz)
DATA LINK	DATA LINK	136.000-136.975
AIR-TO-AIR	AIR-TO-AIR	123.450 128.950 (TIBA)
NOT ALLOTTED	NOT ALLOTTED	122.000-123.675(Except 123.100MHz, 123.450MHz)

Note: The allotment of 12 yellow highlighted frequencies for ACC services has not been included in the Asia-Pacific conference outcomes.

VHF COM Frequency Allotment Plan for APAC Region (March 2024)



New Table with HF Frequency Assignments

Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
	87021068	Afghanistan	AFG	AFG	KABOUL AIRPORT	69°12'00"E - 34°35'00"N	3468.4	3467	M_MID	FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	87021075	Afghanistan	AFG	AFG	KABOUL AIRPORT	69°12'00"E - 34°34'00"N	5659.4	5658	R+5B	FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221197	Afghanistan	AFG	AFG	KABOUL	69°16'00"E - 34°33'00"N	6547	6547		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	87021079	Afghanistan	AFG	AFG	KABOUL AIRPORT	69°12'00"E - 34°35'00"N	10019.4	10018	M_MID	FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	87021082	Afghanistan	AFG	AFG	KABOUL AIRPORT	69°12'00"E - 34°35'00"N	13289.4	13288	M_MID	FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
36		Australia	AUS	AUS	CAIRNS QLD QQ	145°45'00" E ; 16°53'00" S	2852.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
35		Australia	AUS	AUS	MT ISA QLD QQ	139°31'00" E ; 20°45'00" S	2852.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
37		Australia	AUS	AUS	TOWNSVILLE QLD QQ	146°46'00" E ; 19°16'00" S	2852.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
42		Australia	AUS	AUS	ADELAIDE SA QQ	138°33'00" E ; 34°57'00" S	2890.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
40		Australia	AUS	AUS	CAIGUNA WA QQ	125°25'00" E ; 32°16'00" S	2890.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
41		Australia	AUS	AUS	CEDUNA SA QQ	133°43'00" E ; 32°08'00" S	2890.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
39		Australia	AUS	AUS	KALGOORLIE WA QQ	121°28'00" E ; 30°47'00" S	2890.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
38		Australia	AUS	AUS	PERTH WA QQ	115°58'00" E ; 31°56'00" S	2890.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
43		Australia	AUS	AUS	PT HEDLAND WA QQ	118°38'00" E ; 20°23'00" S	2918.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
44		Australia	AUS	AUS	ADELAIDE SA	138°33'00" E ; 34°57'00" S	2945.4	2944	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
47		Australia	AUS	AUS	DUBBO NSW	148°35'00" E ; 32°14'00" S	2945.4	2944	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
46		Australia	AUS	AUS	MELBOURNE VIC	144°54'00" E ; 37°44'00" S	2945.4	2944	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
45		Australia	AUS	AUS	MILDURA VIC	142°05'00" E ; 34°14'00" S	2945.4	2944	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
50	81215758	Australia	AUS	AUS	ALICE SPR NT	133°53'00"E - 23°49'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
60	81215759	Australia	AUS	AUS	BRISBANE QLD	153°05'00"E - 27°26'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
56	81215760	Australia	AUS	AUS	CAIRNS QLD	145°45'00"E - 16°53'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
57	81215761	Australia	AUS	AUS	CHARLEVIL QLD	146°16'00"E - 26°25'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
49	81215762	Australia	AUS	AUS	DARWIN NT	130°52'00"E - 12°25'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
52	81215763	Australia	AUS	AUS	GOVE NT	136°50'00"E - 12°16'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
55	81215764	Australia	AUS	AUS	LONGREACH QLD	144°16'00"E - 23°27'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
53	81215765	Australia	AUS	AUS	MT ISA QLD	139°29'00"E - 20°40'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
59	81215766	Australia	AUS	AUS	ROCKHAMPTON QL	150°29'00"E - 23°23'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
51	81215767	Australia	AUS	AUS	TENNANT CREEK	134°12'00"E - 19°39'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
58	81215768	Australia	AUS	AUS	TOWNSVILLE QLD	146°47'00"E - 19°15'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
54	81215769	Australia	AUS	AUS	WEIPA QLD	141°54'00"E - 12°39'00"S	3453.4	3452	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
73	81215849	Australia	AUS	AUS	ADELAIDE SA	138°33'00"E - 34°57'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
71	81215850	Australia	AUS	AUS	ALICE SPR NT	133°53'00"E - 23°49'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
74	81215851	Australia	AUS	AUS	BROKEN HLL NSW	141°29'00"E - 32°00'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
61	81215852	Australia	AUS	AUS	CARNARVON WA	113°40'00"E - 24°53'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
70	81215853	Australia	AUS	AUS	CEDUNA SA	133°43'00"E - 32°08'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
69	81215854	Australia	AUS	AUS	DARWIN NT	130°52'00"E - 12°25'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
67	81215855	Australia	AUS	AUS	DERBY WA	123°39'00"E - 17°22'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
62	81215856	Australia	AUS	AUS	GERALDTON WA	114°42'00"E - 28°48'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
66	81215857	Australia	AUS	AUS	KALGOORLIE WA	121°28'00"E - 30°47'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
68	81215858	Australia	AUS	AUS	KUNUNURRA WA	128°43'00"E - 15°47'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
72	81215859	Australia	AUS	AUS	LEIGH CREEK SA	138°27'00"E - 30°36'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
64	81215860	Australia	AUS	AUS	MEEKATHARRA WA	118°33'00"E - 26°37'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
63	81215861	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
65	81215862	Australia	AUS	AUS	PT HEDLAND WA	118°37'00"E - 20°22'00"S	3462.4	3461	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
75	81215958	Australia	AUS	AUS	SYDNEY NSW	150°48'00"E - 33°43'00"S	3468.4	3467	MSP	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
77	81216007	Australia	AUS	AUS	DARWIN NT	130°52'00"E - 12°25'00"S	3471.4	3470	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
76	81216008	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	3471.4	3470	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
78	81216052	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	3477.4	3476	MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
83		Australia	AUS	AUS	DARWIN NT	QQ	130°52'00" E ; 12°24'00" S	4655.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
80		Australia	AUS	AUS	DERBY WA	QQ	123°39'00" E ; 17°22'00" S	4655.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
81		Australia	AUS	AUS	HALLS CREEK WA	QQ	127°04'00" E ; 18°14'00" S	4655.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
79		Australia	AUS	AUS	PT HEDLAND WA	QQ	118°37'00" E ; 20°22'00" S	4655.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
82		Australia	AUS	AUS	WYNDHAM WA	QQ	128°08'00" E ; 15°30'00" S	4655.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
84	81216625	Australia	AUS	AUS	ADELAIDE SA	138°33'00"E - 34°57'00"S	4679.4	4678	R14A; R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
87	81216626	Australia	AUS	AUS	DUBBO NSW	148°35'00"E - 32°14'00"S	4679.4	4678	R14A; R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
86	81216627	Australia	AUS	AUS	MELBOURNE VIC	144°54'00"E - 37°44'00"S	4679.4	4678	R14A; R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
85	81216628	Australia	AUS	AUS	MILDURA VIC	142°05'00"E - 34°14'00"S	4679.4	4678	R14A; R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
88	81216629	Australia	AUS	AUS	SYDNEY NSW	150°48'00"E - 33°43'00"S	4679.4	4678	R14A; R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
89	81216725	Australia	AUS	AUS	CARNARVON WA	113°40'00"E - 24°53'00"S	4685.4	4684	R14B; R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
90	81216726	Australia	AUS	AUS	GERALDTON WA	114°42'00"E - 28°48'00"S	4685.4	4684	R14B; R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
94	81216727	Australia	AUS	AUS	KALGOORLIE WA	121°28'00"E - 30°47'00"S	4685.4	4684	R14B; R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
92	81216728	Australia	AUS	AUS	MEEKATHARRA WA	118°33'00"E - 26°37'00"S	4685.4	4684	R14B; R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
91	81216729	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	4685.4	4684	R14B; R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
93	81216730	Australia	AUS	AUS	PT HEDLAND WA	118°37'00"E - 20°22'00"S	4685.4	4684	R14B; R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
98	81216825	Australia	AUS	AUS	ADELAIDE SA	138°33'00"E - 34°57'00"S	4694.4	4693	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
96	81216826	Australia	AUS	AUS	ALICE SPR NT	133°53'00"E - 23°49'00"S	4694.4	4693	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
99	81216827	Australia	AUS	AUS	BROKEN HLL NSW	141°29'00"E - 32°00'00"S	4694.4	4693	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
95	81216828	Australia	AUS	AUS	CEDUNA SA	133°43'00"E - 32°08'00"S	4694.4	4693	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
97	81216829	Australia	AUS	AUS	LEIGH CREEK SA	138°27'00"E - 30°36'00"S	4694.4	4693	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
100	81217976	Australia	AUS	AUS	ADELAIDE SA	138°33'00"E - 34°57'00"S	5527.4	5526	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
103	81217977	Australia	AUS	AUS	DUBBO NSW	148°35'00"E - 32°14'00"S	5527.4	5526	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
102	81217978	Australia	AUS	AUS	MELBOURNE VIC	144°54'00"E - 37°44'00"S	5527.4	5526	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
101	81217979	Australia	AUS	AUS	MILDURA VIC	142°05'00"E - 34°14'00"S	5527.4	5526	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
104	81217980	Australia	AUS	AUS	SYDNEY NSW	150°48'00"E - 33°43'00"S	5527.4	5526	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
109		Australia	AUS	AUS	BRISBANE QLD	QQ	153°06'00" E ; 27°25'00" S	5559.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
108		Australia	AUS	AUS	BUNDABERG QLD	QQ	152°20'00" E ; 24°53'00" S	5559.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
106		Australia	AUS	AUS	MACKAY QLD	QQ	149°11'00" E ; 21°10'00" S	5559.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
107		Australia	AUS	AUS	ROCKHAMPTON QL	QQ	150°29'00" E ; 23°23'00" S	5559.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
105		Australia	AUS	AUS	TOWNSVILLE QLD	QQ	146°47'00" E ; 19°15'00" S	5559.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
115		Australia	AUS	AUS	ADELAIDE SA	QQ	138°33'00" E ; 34°57'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
110		Australia	AUS	AUS	ALICE SPR NT	QQ	133°53'00" E ; 23°49'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
116		Australia	AUS	AUS	BROKEN HLL NSW	QQ	141°29'00" E ; 32°00'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks	
117		Australia	AUS	AUS	CHARLEVIL QLD	QQ	146°16'00" E ; 26°25'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
118		Australia	AUS	AUS	DUBBO NSW	QQ	148°35'00" E ; 32°14'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
114		Australia	AUS	AUS	LEIGH CREEK SA	QQ	138°25'00" E ; 30°28'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
111		Australia	AUS	AUS	OONADATTA SA	QQ	135°27'00" E ; 27°34'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
113		Australia	AUS	AUS	WHYALLA SA	QQ	137°31'00" E ; 33°04'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
112		Australia	AUS	AUS	WOOMERA SA	QQ	136°49'00" E ; 31°09'00" S	5562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
119		Australia	AUS	AUS	LORD HOWE NSW	QQ	159°03'00" E ; 31°31'00" S	5652		FX	A3E	Fixed Station; Fixed service; telephony	
121	81221154	Australia	AUS	AUS	ALICE SPR NT		133°53'00"E - 23°49'00"S	6542.4	6541	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
120	81221155	Australia	AUS	AUS	DARWIN NT		130°52'00"E - 12°25'00"S	6542.4	6541	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
122	81221156	Australia	AUS	AUS	GOVE NT		136°50'00"E - 12°16'00"S	6542.4	6541	R14C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
123	81221177	Australia	AUS	AUS	TENNANT CREEK		134°12'00"E - 19°39'00"S	6542.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
128		Australia	AUS	AUS	DARWIN NT	QQ	130°52'00" E ; 12°24'00" S	6548.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
125		Australia	AUS	AUS	DERBY WA	QQ	123°39'00" E ; 17°22'00" S	6548.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
126		Australia	AUS	AUS	HALLS CREEK WA	QQ	127°49'00" E ; 18°14'00" S	6548.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
124		Australia	AUS	AUS	PT HEDLAND WA	QQ	118°37'00" E ; 20°22'00" S	6548.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
127		Australia	AUS	AUS	WYNDHAM WA	QQ	128°08'00" E ; 15°30'00" S	6548.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
	81221343	Australia	AUS	ICO	COCOS ISLAND		96°50'00"E - 12°11'00"S	6557.4	6556	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
130	81221332	Australia	AUS	AUS	DARWIN NT		130°52'00"E - 12°25'00"S	6557.4	6556	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
129	81221333	Australia	AUS	AUS	PERTH WA		115°58'00"E - 31°56'00"S	6557.4	6556	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
131	81221426	Australia	AUS	AUS	CARNARVON WA		113°40'00"E - 24°53'00"S	6566.4	6565	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
132	81221427	Australia	AUS	AUS	GERALDTON WA		114°42'00"E - 28°48'00"S	6566.4	6565	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
136	81221428	Australia	AUS	AUS	KALGOORLIE WA		121°28'00"E - 30°47'00"S	6566.4	6565	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
134	81221429	Australia	AUS	AUS	MEEKATHARRA WA		118°33'00"E - 26°37'00"S	6566.4	6565	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
133	81221430	Australia	AUS	AUS	PERTH WA		115°58'00"E - 31°56'00"S	6566.4	6565	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
135	81221431	Australia	AUS	AUS	PT HEDLAND WA		118°37'00"E - 20°22'00"S	6566.4	6565	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
140	81221634	Australia	AUS	AUS	ADELAIDE SA		138°33'00"E - 34°57'00"S	6581.4	6580	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
138	81221635	Australia	AUS	AUS	ALICE SPR NT		133°53'00"E - 23°49'00"S	6581.4	6580	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
141	81221636	Australia	AUS	AUS	BROKEN HLL NSW		141°29'00"E - 32°00'00"S	6581.4	6580	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
137	81221637	Australia	AUS	AUS	CEDUNA SA		133°43'00"E - 32°08'00"S	6581.4	6580	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
139	81221638	Australia	AUS	AUS	LEIGH CREEK SA		138°27'00"E - 30°36'00"S	6581.4	6580	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
145	81221957	Australia	AUS	AUS	DARWIN NT		130°52'00"E - 12°25'00"S	6605.4	6604	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
143	81221958	Australia	AUS	AUS	DERBY WA		123°39'00"E - 17°22'00"S	6605.4	6604	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
144	81221959	Australia	AUS	AUS	KUNUNURRA WA		128°43'00"E - 15°47'00"S	6605.4	6604	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
142	81221960	Australia	AUS	AUS	PT HEDLAND WA		118°37'00"E - 20°22'00"S	6605.4	6604	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
150	81221982	Australia	AUS	AUS	BRISBANE QLD		153°05'00"E - 27°26'00"S	6611.4	6610	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
148	81221983	Australia	AUS	AUS	CHARLEVIL QLD		146°16'00"E - 26°25'00"S	6611.4	6610	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
147	94020196	Australia	AUS	AUS	CHARLEVILLE QLD		146°15'57"E - 26°25'02"S	6611.4	6610	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
146	81221984	Australia	AUS	AUS	LONGREACH QLD		144°16'00"E - 23°27'00"S	6611.4	6610	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
149	81221985	Australia	AUS	AUS	ROCKHAMPTON QL		150°29'00"E - 23°23'00"S	6611.4	6610	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
153	81222055	Australia	AUS	AUS	CAIRNS QLD		145°45'00"E - 16°53'00"S	6617.4	6616	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
151	81222056	Australia	AUS	AUS	MT ISA QLD		139°29'00"E - 20°40'00"S	6617.4	6616	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
154	81222057	Australia	AUS	AUS	TOWNSVILLE QLD		146°47'00"E - 19°15'00"S	6617.4	6616	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
152	81222058	Australia	AUS	AUS	WEIPA QLD	141°54'00"E - 12°39'00"S	6617.4	6616	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
155	94020197	Australia	AUS	AUS	LANSDALE WA	115°52'52"E - 31°47'52"S	6638.4	6637	W{, WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	108029365	Australia	AUS	AUS	NINGI QLD	153°03'34"E - 27°04'10"S	6638.4	6637	W{, WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
156	94020198	Australia	AUS	AUS	LLANDILO NSW	150°46'56"E - 33°43'01"S	6677.4	6676	VSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
157	81222537	Australia	AUS	AUS	CARNARVON WA	113°40'00"E - 24°53'00"S	8823.4	8822	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
158	81222538	Australia	AUS	AUS	GERALDTON WA	114°42'00"E - 28°48'00"S	8823.4	8822	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
162	81222539	Australia	AUS	AUS	KALGOORLIE WA	121°28'00"E - 30°47'00"S	8823.4	8822	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
160	81222540	Australia	AUS	AUS	MEEKATHARRA WA	118°33'00"E - 26°37'00"S	8823.4	8822	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
159	81222541	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	8823.4	8822	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
161	81222542	Australia	AUS	AUS	PT HEDLAND WA	118°37'00"E - 20°22'00"S	8823.4	8822	R14	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
166	81222586	Australia	AUS	AUS	BRISBANE QLD	153°05'00"E - 27°26'00"S	8832.4	8831	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
164	81222587	Australia	AUS	AUS	CHARLEVIL QLD	146°16'00"E - 26°25'00"S	8832.4	8831	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
163	81222588	Australia	AUS	AUS	LONGREACH QLD	144°16'00"E - 23°27'00"S	8832.4	8831	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
165	81222589	Australia	AUS	AUS	ROCKHAMPTON QL	150°29'00"E - 23°23'00"S	8832.4	8831	R14F	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
168	81222666	Australia	AUS	AUS	ALICE SPR NT	133°53'00"E - 23°49'00"S	8844.4	8843	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
167	81222667	Australia	AUS	AUS	DARWIN NT	130°52'00"E - 12°25'00"S	8844.4	8843	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
170	81222668	Australia	AUS	AUS	GOVE NT	136°50'00"E - 12°16'00"S	8844.4	8843	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
169	81222669	Australia	AUS	AUS	TENNANT CREEK	134°12'00" E ; 19°39'00" S	8844.4	8843	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
174	81222869	Australia	AUS	AUS	ADELAIDE SA	138°33'00"E - 34°57'00"S	8859.4	8858	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
172	81222870	Australia	AUS	AUS	ALICE SPR NT	133°53'00"E - 23°49'00"S	8859.4	8858	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
175	81222871	Australia	AUS	AUS	BROKEN HLL NSW	141°29'00"E - 32°00'00"S	8859.4	8858	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
171	81222872	Australia	AUS	AUS	CEDUNA SA	133°43'00"E - 32°08'00"S	8859.4	8858	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
173	81222873	Australia	AUS	AUS	LEIGH CREEK SA	138°27'00"E - 30°36'00"S	8859.4	8858	R14D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
176	81222914	Australia	AUS	AUS	SYDNEY NSW	150°48'00"E - 33°43'00"S	8868.4	8867	MSP	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
177	81222972	Australia	AUS	AUS	ADELAIDE SA	138°33'00"E - 34°57'00"S	8877.4	8876	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
179	81222973	Australia	AUS	AUS	MELBOURNE VIC	144°54'00"E - 37°44'00"S	8877.4	8876	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
178	81222974	Australia	AUS	AUS	MILDURA VIC	142°05'00"E - 34°14'00"S	8877.4	8876	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
180	81222975	Australia	AUS	AUS	SYDNEY NSW	150°48'00"E - 33°43'00"S	8877.4	8876	R14G	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222989	Australia	AUS	ICO	COCOS ISLAND	96°50'00"E - 12°11'00"S	8880.4	8879	MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
181	81222987	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	8880.4	8879	MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
184	81223104	Australia	AUS	AUS	CAIRNS QLD	145°45'00"E - 16°53'00"S	8892.4	8891	R14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
182	81223105	Australia	AUS	AUS	MT ISA QLD	139°29'00"E - 20°40'00"S	8892.4	8891	M14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
185	81223106	Australia	AUS	AUS	TOWNSVILLE QLD	146°47'00"E - 19°15'00"S	8892.4	8891	M14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
183	81223107	Australia	AUS	AUS	WEIPA QLD	141°54'00"E - 12°39'00"S	8892.4	8891	M14E	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
189	81223168	Australia	AUS	AUS	DARWIN NT	130°52'00"E - 12°25'00"S	8901.4	8900	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
187	81223169	Australia	AUS	AUS	DERBY WA	123°39'00"E - 17°22'00"S	8901.4	8900	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
183	81223170	Australia	AUS	AUS	KUNUNURRA WA	128°43'00"E - 15°47'00"S	8901.4	8900	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
186	81223171	Australia	AUS	AUS	PT HEDLAND WA	118°37'00"E - 20°22'00"S	8901.4	8900	R14B	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
191		Australia	AUS	AUS	CHARLEVIL QLD	146°16'00" E ; 26°25'00" S	8910			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
193		Australia	AUS	AUS	CHARLEVIL QLD	146°16'00" E ; 26°25'00" S	8910			ML	A3E	Land mobile station; Land mobile service; Double sideband; telephony
190		Australia	AUS	AUS	MT ISA QLD	139°29'00" E ; 20°40'00" S	8910			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
192		Australia	AUS	AUS	MT ISA QLD	139°29'00" E ; 20°40'00" S	8910			ML	A3E	Land mobile station; Land mobile service; Double sideband; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
194	91020884	Australia	AUS	AUS	DOONSIDE NSW	150°52'10"E - 33°47'35"S	8922.4	8921	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
195	91020885	Australia	AUS	AUS	LANDSDALE WA	115°52'52"E - 31°47'52"S	8922.4	8921	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	108029366	Australia	AUS	AUS	NINGI QLD	153°03'34"E - 27°04'10"S	8922.4	8921	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
196		Australia	AUS	AUS	ALICE SPR NT	133°53'00" E ; 23°49'00" S	8938			FX	A3E	Fixed Station; Fixed service; telephony
4		Australia	AUS	AUS	ADELAIDE SA QQ	138°33'00" E ; 34°57'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
1		Australia	AUS	AUS	ALICE SPR NT QQ	133°53'00" E ; 23°49'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
5		Australia	AUS	AUS	BROKEN HLL NSW QQ	141°29'00" E ; 32°00'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
6		Australia	AUS	AUS	CHARLEVIL QLD QQ	146°16'00" E ; 26°25'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
7		Australia	AUS	AUS	DUBBO NSW QQ	148°35'00" E ; 32°14'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
3		Australia	AUS	AUS	LEIGH CREEK SA QQ	138°25'00" E ; 30°28'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
2		Australia	AUS	AUS	OODNADATTA SA QQ	135°27'00" E ; 27°34'00" S	10042.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
	81223799	Australia	AUS	ICO	COCOS ISLAND	96°50'00"E - 12°11'00"S	10067.4	10066	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
9	94033642	Australia	AUS	AUS	DOONSIDE NSW	150°52'10"E - 33°47'35"S	10079.4	10078	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
8	94033643	Australia	AUS	AUS	LANDSDALE WA	115°52'37"E - 31°48'37"S	10079.4	10078	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	108029367	Australia	AUS	AUS	NINGI QLD	153°03'34"E - 27°04'10"S	10079.4	10078	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
11		Australia	AUS	AUS	CAIRNS QLD QQ	145°45'00" E ; 16°53'00" S	10087.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
10		Australia	AUS	AUS	MT ISA QLD QQ	139°31'00" E ; 20°45'00" S	10087.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
12		Australia	AUS	AUS	TOWNSVILLE QLD QQ	146°46'00" E ; 19°16'00" S	10087.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
17		Australia	AUS	AUS	DARWIN NT QQ	130°52'00" E ; 12°24'00" S	10090.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
14		Australia	AUS	AUS	DERBY WA QQ	123°39'00" E ; 17°22'00" S	10090.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
15		Australia	AUS	AUS	HALLS CREEK WA QQ	127°04'00" E ; 18°14'00" S	10090.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
13		Australia	AUS	AUS	PT HEDLAND WA QQ	118°37'00" E ; 20°22'00" S	10090.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
16		Australia	AUS	AUS	WYNDHAM WA QQ	128°08'00" E ; 15°30'00" S	10090.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
18	94033655	Australia	AUS	AUS	LLANDILO NSW	150°46'56"E - 33°43'01"S	11388.4	11387	VSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
20	94033656	Australia	AUS	AUS	DARWIN NT	130°51'59"E - 12°25'02"S	11397.4	11396	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
19	94033657	Australia	AUS	AUS	PERTH WA	115°57'59"E - 31°56'02"S	11397.4	11396	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
21	94050228	Australia	AUS	AUS	LLANDILO NSW	150°47'58"E - 33°43'02"S	13262.4	13261	VAFI	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
22	94050229	Australia	AUS	AUS	PERTH AIRPORT WA	115°56'52"E - 31°56'20"S	13307.4	13306	VAFI	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
25	81225355	Australia	AUS	AUS	DARWIN NT	130°52'00"E - 12°25'00"S	13319.4	13318	MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
26		Australia	AUS	AUS	DARWIN NT	130°57'37" E ; 12°25'47" S	13319.4	13318	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
23	94050231	Australia	AUS	AUS	PERTH AIRPORT WA	115°56'52"E - 31°56'20"S	13319.4	13318	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
24	81225356	Australia	AUS	AUS	PERTH WA	115°58'00"E - 31°56'00"S	13319.4	13318	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
27	94050232	Australia	AUS	AUS	LANDSDALE WA	115°52'37"E - 31°48'37"S	13343.4	13342	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
28	94050233	Australia	AUS	AUS	LLANDILO NSW	150°47'46"E - 33°42'56"S	13343.4	13342	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	108029368	Australia	AUS	AUS	NINGI QLD	153°03'34"E - 27°04'10"S	13343.4	13342	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
29	95005373	Australia	AUS	AUS	LLANDILO NSW	150°47'33"E - 33°42'52"S	17905.4	17904	MSP	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
31	95005374	Australia	AUS	AUS	DARWIN NT	130°57'37"E - 12°25'47"S	17908.4	17907	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
30	95005377	Australia	AUS	AUS	PERTH AIRPORT WA	115°56'52"E - 31°56'20"S	17908.4	17907	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
33	95005375	Australia	AUS	AUS	DOONSIDE NSW	150°52'10"E - 33°47'35"S	17923.4	17922	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
32	95005376	Australia	AUS	AUS	LANDSDALE WA	115°52'37"E - 31°48'37"S	17923.4	17922	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	108029369	Australia	AUS	AUS	NINGI QLD	153°03'34"E - 27°04'10"S	17923.4	17922	WIII	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	95005378	Australia	AUS	ICO	COCOS ISLAND	96°49'58"E - 12°11'01"S	17962.4	17961	MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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34	95005379	Australia	AUS	AUS	PERTH AIRPORT WA	115°56'52"E - 31°56'20"S	17962.4	17961	MINO	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
48	81225837	Australia	AUS	AUS	DOONSIDE NSW	150°52'00"E - 33°47'00"S	21971.4	21970	WIII	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	108029370	Australia	AUS	AUS	NINGI QLD	153°03'34"E - 27°04'10"S	21971.4	21970	WIII	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
202		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	2970			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
203		Bangladesh	BGD	BGD	DHAKA	90°24'00" E ; 23°47'00" N	2986			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
204		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	3023.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
205		Bangladesh	BGD	BGD	DHAKA	90°24'00" E ; 23°47'00" N	3023.5			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
206		Bangladesh	BGD	BGD	DHAKA	90°00'00" E ; 24°00'00" N	3410			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
207		Bangladesh	BGD	BGD	DHAKA	90°23'00" E ; 23°46'00" N	3413			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
208		Bangladesh	BGD	BGD	DHAKA	90°23'00" E ; 23°46'00" N	3455			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
209		Bangladesh	BGD	BGD	CHITTAGONG	92°00'00" E ; 22°21'00" N	3465			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
210		Bangladesh	BGD	BGD	NARAYANGANJ	90°20'00" E ; 23°40'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
212		Bangladesh	BGD	BGD	CHITTAGONG	91°50'00" E ; 22°16'00" N	5494			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
211		Bangladesh	BGD	BGD	DHAKA	90°23'00" E ; 23°46'00" N	5494			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
213		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	5525			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
214		Bangladesh	BGD	BGD	DHAKA	90°00'00" E ; 24°00'00" N	5540			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
215		Bangladesh	BGD	BGD	DHAKA	90°00'00" E ; 24°00'00" N	5555			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
216		Bangladesh	BGD	BGD	DHAKA	90°00'00" E ; 24°00'00" N	5630			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
218		Bangladesh	BGD	BGD	CHITTAGONG	91°50'00" E ; 22°16'00" N	5673.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
217		Bangladesh	BGD	BGD	DHAKA	90°24'00" E ; 23°47'00" N	5673.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
219		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	5675			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
220		Bangladesh	BGD	BGD	DHAKA	90°00'00" E ; 24°00'00" N	6525			FX	A1A	Fixed Station; Fixed service; telegraphy
221		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	6555			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
223		Bangladesh	BGD	BGD	CHITTAGONG	91°50'00" E ; 22°16'00" N	6557			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
222		Bangladesh	BGD	BGD	DHAKA	90°23'00" E ; 23°46'00" N	6557			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
224		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	6580			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
225		Bangladesh	BGD	BGD	DHAKA	90°23'00" E ; 23°46'00" N	6590			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
226		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	6610			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
227		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	6620			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
228		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	6630			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
229		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	6660			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
230		Bangladesh	BGD	BGD	DHAKA	90°26'00" E ; 23°43'00" N	8890			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
231		Bangladesh	BGD	BGD	CHITTAGONG	91°52'00" E ; 22°28'00" N	8920			FX	A1A	Fixed Station; Fixed service; telegraphy
232		Bangladesh	BGD	BGD	CHITTAGONG	91°52'00" E ; 22°28'00" N	8920			FX	A3E	Fixed Station; Fixed service; telephony
197	81223796	Bangladesh	BGD	BGD	DHAKA	90°25'00"E - 23°50'00"N	10067.4	10066		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
198	81225357	Bangladesh	BGD	BGD	DHAKA	90°25'00"E - 23°50'00"N	13319.4	13318		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
199	81225570	Bangladesh	BGD	BGD	DHAKA	90°25'00"E - 23°50'00"N	17908.4	17907		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
200		Bangladesh	BGD	BGD	DHAKA	90°00'00" E ; 24°00'00" N	17950			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
201		Bangladesh	BGD	BGD	PATHARIA	91°20'00" E ; 24°52'00" N	17960			FX	A1A	Fixed Station; Fixed service; telegraphy
357	91810281	Bhutan	BTN	BTN	PARO	89°25'28"E - 27°24'26"N	3008.4	3007		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
358	91003945	Bhutan	BTN	BTN	PARO	89°25'20"E - 27°24'28"N	4688.4	4687		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
359	91003946	Bhutan	BTN	BTN	PARO	89°25'20"E - 27°24'28"N	8922.4	8921		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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356	91003947	Bhutan	BTN	BTN	PARO	89°25'20"E - 27°24'28"N	13343.4	13342		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
449		China	CHN	CHN	CHANGDE	111°32'00" E ; 29°06'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
439		China	CHN	CHN	CHONGYANG	114°02'00" E ; 29°32'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
447		China	CHN	CHN	FUZHOU	119°20'00" E ; 26°00'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
445		China	CHN	CHN	GUANGDE	119°25'00" E ; 30°54'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
442		China	CHN	CHN	GUTIAN 1	116°48'00" E ; 25°12'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
434		China	CHN	CHN	HUALONG	102°35'00" E ; 36°10'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
446		China	CHN	CHN	KUNMING	102°40'00" E ; 25°05'00" N	2850			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
433		China	CHN	CHN	LEDU	102°30'00" E ; 37°50'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
435		China	CHN	CHN	MINHE	103°30'00" E ; 36°50'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
444		China	CHN	CHN	MINHOU	119°08'00" E ; 26°10'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
438		China	CHN	CHN	PUQI	113°52'00" E ; 29°43'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
448		China	CHN	CHN	QIQIHAR	123°54'00" E ; 47°19'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
443		China	CHN	CHN	SHANMEI	118°38'00" E ; 24°55'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
437		China	CHN	CHN	TONGCHENG	113°48'00" E ; 29°14'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
440		China	CHN	CHN	TONGSHAN	114°30'00" E ; 29°36'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
432		China	CHN	CHN	XUNHUA 1	102°30'00" E ; 36°00'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
441		China	CHN	CHN	YANGXIN	115°12'00" E ; 29°49'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
436		China	CHN	CHN	YONGCHUAN	106°15'00" E ; 29°15'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
431		China	CHN	CHN	YURYUMQI	87°40'00" E ; 43°50'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
450		China	CHN	MAC	MACAU	113°33'00" E ; 22°12'00" N	2891.4	2890		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
451		China	CHN	CHN	TAIPEI	121°31'00" E ; 25°04'00" N	2896			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
453		China	CHN	CHN	HANGZHOU	120°28'00" E ; 30°41'00" N	2899			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
452		China	CHN	CHN	NANJING	118°40'00" E ; 32°17'00" N	2899			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
454		China	CHN	CHN	SHANGHAI	121°45'00" E ; 31°18'00" N	2899			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
455		China	CHN	CHN	LHASA	91°08'00" E ; 29°42'00" N	2900			FX	A1A	Fixed Station; Fixed service; telegraphy
456		China	CHN	MAC	MACAU	113°33'00" E ; 22°12'00" N	2900.4	2899		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
457		China	CHN	CHN	JILANTAI	105°42'00" E ; 39°42'00" N	2905			FX	A1A	Fixed Station; Fixed service; telegraphy
458		China	CHN	CHN	CHANGCHUN	125°50'00" E ; 43°03'00" N	2911			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
459		China	CHN	CHN	HARBIN	126°35'00" E ; 45°07'00" N	2911			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
460		China	CHN	CHN	DALIAN	121°40'00" E ; 38°18'00" N	2917			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
461		China	CHN	CHN	SHENYANG	123°32'00" E ; 41°49'00" N	2917			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
462		China	CHN	CHN	BEIJING	116°25'00" E ; 39°16'00" N	2933.4	2932		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
463		China	CHN	CHN	SHANGHAI	121°17'00" E ; 31°16'00" N	2933.4	2932		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
464		China	CHN	MAC	MACAU	113°33'00" E ; 22°12'00" N	2954.4	2953		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
466		China	CHN	CHN	GUIYANG	106°35'00" E ; 26°30'00" N	2965			FX	A1A	Fixed Station; Fixed service; telegraphy
467		China	CHN	CHN	GUIYANG	106°35'00" E ; 26°30'00" N	2965			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
465		China	CHN	CHN	LHASA	91°08'00" E ; 29°42'00" N	2965			FX	A1A	Fixed Station; Fixed service; telegraphy
468		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	2980			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
470		China	CHN	CHN	BAOTOU	110°39'00" E ; 40°17'00" N	2989			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
469		China	CHN	CHN	BEIJING	116°25'00" E ; 39°16'00" N	2989			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
471		China	CHN	CHN	HUHHOT	111°30'00" E ; 40°08'00" N	2989			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony

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478		China	CHN	CHN	EMEI SHAN	103°21'00" E ; 29°31'00" N	3000			FX	A1A	Fixed Station; Fixed service; telegraphy
479		China	CHN	CHN	WUHAN	114°15'00" E ; 30°35'00" N	3007.5			FX	A1A	Fixed Station; Fixed service; telegraphy
480	81214368	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	3008.4	3007		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
487	81214498	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
484	81214499	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
482	81214500	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
483	81214501	China	CHN	CHN	LANZHOU	103°27'00"E - 36°18'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
485	81214508	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
488	81214502	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
489	81214503	China	CHN	CHN	SHENYANG	123°32'00"E - 41°49'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
481	81214504	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
486	81214505	China	CHN	CHN	WUHAN	114°21'00"E - 30°33'00"N	3017.4	3016		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
490		China	CHN	CHN	GANGON	90°01'00" E ; 31°22'00" N	3020			FX	A1A	Fixed Station; Fixed service; telegraphy
491		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	3023.5			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
492		China	CHN	CHN	PAGRI	89°05'00" E ; 27°44'00" N	3025			FX	A1A	Fixed Station; Fixed service; telegraphy
493		China	CHN	CHN	QINZHOU	108°37'00" E ; 21°57'00" N	3409			FX	A1A	Fixed Station; Fixed service; telegraphy
496		China	CHN	CHN	DAYU	114°20'00" E ; 25°23'00" N	3410			FX	A1A	Fixed Station; Fixed service; telegraphy
497		China	CHN	CHN	KAIFENG	114°20'00" E ; 34°45'00" N	3410			FX	A1A	Fixed Station; Fixed service; telegraphy
495		China	CHN	CHN	LUEYANG 1	112°27'00" E ; 34°37'00" N	3410			FX	A1A	Fixed Station; Fixed service; telegraphy
494		China	CHN	CHN	MACHALA	96°41'00" E ; 31°28'00" N	3410			FX	A1A	Fixed Station; Fixed service; telegraphy
498		China	CHN	CHN	SHANGQUI SHI	115°42'00" E ; 34°24'00" N	3410			FX	A1A	Fixed Station; Fixed service; telegraphy
500		China	CHN	CHN	GUANGZHOU	113°15'00" E ; 23°10'00" N	3412			FX	A1A	Fixed Station; Fixed service; telegraphy
501		China	CHN	CHN	LONGMEN	113°24'00" E ; 23°07'00" N	3412			FX	A1A	Fixed Station; Fixed service; telegraphy
502		China	CHN	CHN	XINFENG 1	114°16'00" E ; 24°05'00" N	3412			FX	A1A	Fixed Station; Fixed service; telegraphy
499		China	CHN	CHN	ZENGCHENG	113°08'00" E ; 23°28'00" N	3412			FX	A1A	Fixed Station; Fixed service; telegraphy
508		China	CHN	CHN	GUANYANG	111°09'00" E ; 25°29'00" N	3413			FX	A1A	Fixed Station; Fixed service; telegraphy
504		China	CHN	CHN	LINGCHUAN	110°22'00" E ; 25°28'00" N	3413			FX	A1A	Fixed Station; Fixed service; telegraphy
503		China	CHN	CHN	LONGSHENG	110°01'00" E ; 25°48'00" N	3413			FX	A1A	Fixed Station; Fixed service; telegraphy
507		China	CHN	CHN	QUANZHOU 1	111°03'00" E ; 25°56'00" N	3413			FX	A1A	Fixed Station; Fixed service; telegraphy
505		China	CHN	CHN	YANGSHUO	110°29'00" E ; 24°47'00" N	3413			FX	A1A	Fixed Station; Fixed service; telegraphy
506		China	CHN	CHN	ZIYUAN	110°38'00" E ; 26°02'00" N	3413			FX	A1A	Fixed Station; Fixed service; telegraphy
514		China	CHN	CHN	JINXIU	110°11'00" E ; 24°08'00" N	3414			FX	A1A	Fixed Station; Fixed service; telegraphy
510		China	CHN	CHN	LAIBIN	109°14'00" E ; 23°44'00" N	3414			FX	A1A	Fixed Station; Fixed service; telegraphy
511		China	CHN	CHN	LIUJIANG	109°19'00" E ; 24°15'00" N	3414			FX	A1A	Fixed Station; Fixed service; telegraphy
512		China	CHN	CHN	WUXUAN	109°39'00" E ; 23°35'00" N	3414			FX	A1A	Fixed Station; Fixed service; telegraphy
513		China	CHN	CHN	XIANGZHOU	109°41'00" E ; 23°57'00" N	3414			FX	A1A	Fixed Station; Fixed service; telegraphy
509		China	CHN	CHN	XINCHENG	108°20'00" E ; 24°04'00" N	3414			FX	A1A	Fixed Station; Fixed service; telegraphy
515		China	CHN	CHN	DINGHAI	122°07'00" E ; 30°02'00" N	3415			FX	A1A	Fixed Station; Fixed service; telegraphy
516		China	CHN	CHN	BAMA 1	107°20'00" E ; 24°10'00" N	3418			FX	A1A	Fixed Station; Fixed service; telegraphy
517		China	CHN	CHN	DUAN	108°10'00" E ; 23°57'00" N	3418			FX	A1A	Fixed Station; Fixed service; telegraphy
518		China	CHN	CHN	HUANJIANG	108°20'00" E ; 24°50'00" N	3418			FX	A1A	Fixed Station; Fixed service; telegraphy
520		China	CHN	CHN	LUOCHENG	108°55'00" E ; 24°48'00" N	3418			FX	A1A	Fixed Station; Fixed service; telegraphy

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519		China	CHN	CHN	YISHAN	108°40'00" E ; 24°29'00" N	3418			FX	A1A	Fixed Station; Fixed service; telegraphy
521		China	CHN	CHN	WUZHOU	110°19'00" E ; 23°29'00" N	3419			FX	A1A	Fixed Station; Fixed service; telegraphy
522		China	CHN	CHN	WUHAN	114°15'00" E ; 30°35'00" N	3420			FX	A1A	Fixed Station; Fixed service; telegraphy
523		China	CHN	CHN	NANNING	108°20'00" E ; 22°48'00" N	3422			FX	A1A	Fixed Station; Fixed service; telegraphy
524		China	CHN	CHN	BOSE	106°37'00" E ; 23°54'00" N	3423			FX	A1A	Fixed Station; Fixed service; telegraphy
525		China	CHN	CHN	HAIKOU	110°24'00" E ; 20°00'00" N	3424			FX	A1A	Fixed Station; Fixed service; telegraphy
526		China	CHN	CHN	LHASA	91°05'00" E ; 29°48'00" N	3425			FX	A1A	Fixed Station; Fixed service; telegraphy
527		China	CHN	CHN	UIJI	106°31'00" E ; 41°27'00" N	3430			FX	A1A	Fixed Station; Fixed service; telegraphy
528		China	CHN	CHN	ZHANJIANG	110°14'00" E ; 21°33'00" N	3432			FX	A1A	Fixed Station; Fixed service; telegraphy
534		China	CHN	CHN	GUANYANG	111°09'00" E ; 25°29'00" N	3433			FX	A1A	Fixed Station; Fixed service; telegraphy
530		China	CHN	CHN	LINGCHUAN	110°22'00" E ; 25°28'00" N	3433			FX	A1A	Fixed Station; Fixed service; telegraphy
529		China	CHN	CHN	LONGSHENG	110°01'00" E ; 25°48'00" N	3433			FX	A1A	Fixed Station; Fixed service; telegraphy
533		China	CHN	CHN	QUANZHOU 1	111°03'00" E ; 25°56'00" N	3433			FX	A1A	Fixed Station; Fixed service; telegraphy
531		China	CHN	CHN	YANGSHUO	110°29'00" E ; 24°47'00" N	3433			FX	A1A	Fixed Station; Fixed service; telegraphy
532		China	CHN	CHN	ZIYUAN	110°38'00" E ; 26°02'00" N	3433			FX	A1A	Fixed Station; Fixed service; telegraphy
535		China	CHN	CHN	ZHENGZHOU	113°40'00" E ; 34°45'00" N	3440			FX	A1A	Fixed Station; Fixed service; telegraphy
536		China	CHN	CHN	SHIJIAZHUANG	114°25'00" E ; 38°05'00" N	3443			FX	A1A	Fixed Station; Fixed service; telegraphy
537		China	CHN	CHN	SHIJIAZHUANG	114°25'00" E ; 38°05'00" N	3443			FX	A1A	Fixed Station; Fixed service; telegraphy
541		China	CHN	CHN	CHANGCHUN	125°50'00" E ; 43°03'00" N	3446			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
538		China	CHN	CHN	CHAOHU	117°50'00" E ; 31°35'00" N	3446			FX	A1A	Fixed Station; Fixed service; telegraphy
539		China	CHN	CHN	DALIAN	121°31'00" E ; 38°24'00" N	3446			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
542		China	CHN	CHN	HARBIN	126°35'00" E ; 45°07'00" N	3446			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
543		China	CHN	CHN	SHANTOU	116°42'00" E ; 23°25'00" N	3446			FX	A1A	Fixed Station; Fixed service; telegraphy
540		China	CHN	CHN	SHENYANG	123°32'00" E ; 41°49'00" N	3446			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
544		China	CHN	CHN	JINAN	117°30'00" E ; 36°41'00" N	3454			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
545		China	CHN	CHN	HUOQIU	116°20'00" E ; 32°23'00" N	3455			FX	A1A	Fixed Station; Fixed service; telegraphy
546	81215831	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	3459.4	3458		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
547		China	CHN	CHN	GONGGAR	90°46'00" E ; 29°11'00" N	3460			FX	A1A	Fixed Station; Fixed service; telegraphy
549		China	CHN	CHN	HAIKOU	110°24'00" E ; 20°01'00" N	3460			FX	A1A	Fixed Station; Fixed service; telegraphy
548		China	CHN	CHN	URADZHONGHOU	108°30'00" E ; 41°38'00" N	3460			FX	A1A	Fixed Station; Fixed service; telegraphy
550		China	CHN	CHN	SHANGHAI	121°45'00" E ; 31°18'00" N	3464			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
	81215887	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	3465.4	3464		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
551		China	CHN	MAC	MACAU	113°33'00" E ; 22°12'00" N	3465.4	3464		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81215964	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	3468.4	3467		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
552		China	CHN	CHN	URUMQI	87°30'00" E ; 43°26'00" N	3468.4	3467		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
553		China	CHN	CHN	CHAYU	97°23'00" E ; 28°35'00" N	3470			FX	A1A	Fixed Station; Fixed service; telegraphy
554		China	CHN	CHN	WUHAN	114°15'00" E ; 30°35'00" N	3470			FX	A1A	Fixed Station; Fixed service; telegraphy
555		China	CHN	CHN	MEIXIAN	116°08'00" E ; 24°18'00" N	3471			FX	A1A	Fixed Station; Fixed service; telegraphy
557	81216009	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	3471.4	3470		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81216010	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	3471.4	3470		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
556		China	CHN	CHN	KUNMING	102°42'00" E ; 25°00'00" N	3471.4	3470		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
558		China	CHN	CHN	LISHUI	119°05'00" E ; 28°05'00" N	3475			FX	A1A	Fixed Station; Fixed service; telegraphy

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560		China	CHN	CHN	DAMU	110°35'00" E ; 41°40'00" N	3480			FX	A1A	Fixed Station; Fixed service; telegraphy
559		China	CHN	CHN	SUZUO	113°30'00" E ; 43°50'00" N	3480			FX	A1A	Fixed Station; Fixed service; telegraphy
561		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	3481			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
562		China	CHN	CHN	GUANGZHOU	113°16'00" E ; 23°11'00" N	3482			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
563		China	CHN	CHN	COMA	91°22'00" E ; 28°21'00" N	3485			FX	A1A	Fixed Station; Fixed service; telegraphy
564		China	CHN	CHN	JINAN	117°30'00" E ; 36°41'00" N	3485			FX	A1A	Fixed Station; Fixed service; telegraphy
566	81216140	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	3486.4	3485		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
565	81216141	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	3486.4	3485		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
567		China	CHN	CHN	SHAOGUAN	113°36'00" E ; 24°48'00" N	3488			FX	A1A	Fixed Station; Fixed service; telegraphy
568		China	CHN	CHN	DONGWU	117°00'00" E ; 45°35'00" N	3490			FX	A1A	Fixed Station; Fixed service; telegraphy
569		China	CHN	CHN	HUIYANG	114°21'00" E ; 23°06'00" N	3493			FX	A1A	Fixed Station; Fixed service; telegraphy
585		China	CHN	CHN	DAWA 1	122°05'00" E ; 40°00'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
578		China	CHN	CHN	DONGSHENG	110°00'00" E ; 39°50'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
574		China	CHN	CHN	DONGUJUMQINQI	116°57'00" E ; 45°20'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
577		China	CHN	CHN	ETUOKE	107°58'00" E ; 39°05'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
584		China	CHN	CHN	GAIXIAN	122°20'00" E ; 40°28'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
582		China	CHN	CHN	JINING	113°06'00" E ; 41°02'00" N	3500			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
571		China	CHN	CHN	JIXIAN	131°08'00" E ; 44°43'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
576		China	CHN	CHN	LINHE	107°24'00" E ; 40°47'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
586		China	CHN	CHN	PANSHAN	122°05'00" E ; 41°10'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
572		China	CHN	CHN	SUNIDZUOQI 1	113°48'00" E ; 43°40'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
573		China	CHN	CHN	TAIBUSQI	115°16'00" E ; 41°52'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
570		China	CHN	CHN	WUTAI SHAN	113°32'00" E ; 29°02'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
581		China	CHN	CHN	XILINHAOTE	116°05'00" E ; 43°56'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
583		China	CHN	CHN	XINING	101°55'00" E ; 36°35'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
580		China	CHN	CHN	XIXIAN	110°55'00" E ; 36°40'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
575		China	CHN	CHN	YINGKOU	122°30'00" E ; 40°39'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
579		China	CHN	CHN	YONGHE	110°41'00" E ; 36°45'00" N	3500			FX	A1A	Fixed Station; Fixed service; telegraphy
587	81216467	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	4667.4	4666		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
588		China	CHN	CHN	ANQING	117°05'00" E ; 30°35'00" N	4684			FX	A1A	Fixed Station; Fixed service; telegraphy
589		China	CHN	CHN	CHONGYANG	114°02'00" E ; 29°32'00" N	5480			FX	A1A	Fixed Station; Fixed service; telegraphy
590	81217359	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	5488.4	5487		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
591		China	CHN	CHN	CHENGDU	104°09'00" E ; 30°16'00" N	5493			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
593		China	CHN	CHN	CHONGQING	106°33'00" E ; 29°51'00" N	5493			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
592		China	CHN	CHN	GUIYANG	106°31'00" E ; 26°18'00" N	5493			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
594		China	CHN	CHN	WUTAISHAN	113°32'00" E ; 39°02'00" N	5500			FX	A1A	Fixed Station; Fixed service; telegraphy
595		China	CHN	CHN	TAIPEI	121°31'00" E ; 25°04'00" N	5505			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
596		China	CHN	CHN	HEFEI	117°17'00" E ; 31°51'00" N	5520			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
597		China	CHN	CHN	BEIJING	116°24'00" E ; 39°56'00" N	5525			FX	R3E	Fixed Station; Fixed service; Single sideband; reduced carrier; telephony
598		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	5610			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
599		China	CHN	CHN	CHONGQING	106°33'00" E ; 29°51'00" N	5610			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
601		China	CHN	CHN	DAXIAN	107°08'00" E ; 31°27'00" N	5610			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony

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600		China	CHN	CHN	NANCHONG	106°41'00" E ; 30°22'00" N	5610			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
602		China	CHN	CHN	LHASA	91°08'00" E ; 29°40'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
603	81219688	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	5629.4	5628		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
604	81219689	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	5629.4	5628		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
604		China	CHN	CHN	SHANGHAI	121°17'00" E ; 31°16'00" N	5629.4	5628		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
605		China	CHN	CHN	GUANGZHOU	113°16'00" E ; 23°11'00" N	5634			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
607		China	CHN	CHN	HAIKOU	110°18'00" E ; 20°33'00" N	5634			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
606		China	CHN	CHN	SHANTOU	116°26'00" E ; 23°41'00" N	5634			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
608	81220307	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	5656.4	5655		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
609		China	CHN	CHN	TIANJIN	117°10'00" E ; 39°10'00" N	5657			FX	A1A	Fixed Station; Fixed service; telegraphy
610	81220332	China	CHN	CHN	URUMQI	87°29'00"E - 43°54'00"N	5659.4	5658		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
611	81220333	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	5659.4	5658		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
612		China	CHN	CHN	YURYUMQI	87°40'00" E ; 43°50'00" N	5660			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
613		China	CHN	CHN	LHASA	91°08'00" E ; 29°40'00" N	5670			FX	A1A	Fixed Station; Fixed service; telegraphy
614	81220864	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	5674.4	5673		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
617		China	CHN	CHN	CHAOGE	107°08'00" E ; 41°37'00" N	6525			FX	A1A	Fixed Station; Fixed service; telegraphy
616		China	CHN	CHN	DINGKOUXIAN	107°00'00" E ; 40°17'00" N	6525			FX	A1A	Fixed Station; Fixed service; telegraphy
615		China	CHN	CHN	TACHENG	82°59'00" E ; 46°45'00" N	6525			FX	A1A	Fixed Station; Fixed service; telegraphy
619		China	CHN	CHN	URADZHONGHOUQI	108°31'00" E ; 39°30'00" N	6525			FX	A1A	Fixed Station; Fixed service; telegraphy
618		China	CHN	CHN	WUYUANXIAN	108°16'00" E ; 41°06'00" N	6525			FX	A1A	Fixed Station; Fixed service; telegraphy
622	81221035	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	6533.4	6532		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
621	81221038	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	6533.4	6532		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
620	81221036	China	CHN	CHN	GUANGZHOU	113°38'00"E - 23°09'00"N	6533.4	6532		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
623	81221037	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	6533.4	6532		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
624		China	CHN	CHN	XIAN	108°55'00" E ; 34°15'00" N	6534			FX	A1A	Fixed Station; Fixed service; telegraphy
625		China	CHN	CHN	XIAN	108°21'00" E ; 34°17'00" N	6541			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
627		China	CHN	CHN	YANAN	109°33'00" E ; 36°07'00" N	6541			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
626		China	CHN	CHN	YULIN	109°16'00" E ; 38°48'00" N	6541			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
628	81221168	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	6542.4	6541		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
630	81221340	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	6557.4	6556		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
629	81221341	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	6557.4	6556		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
632		China	CHN	CHN	BAOTOU	110°39'00" E ; 40°17'00" N	6565			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
631		China	CHN	CHN	BEIJING	116°25'00" E ; 39°16'00" N	6565			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
633		China	CHN	CHN	HUHHOT	111°30'00" E ; 40°08'00" N	6565			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
639	81221485	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
637	81221486	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
635	81221487	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
636	81221488	China	CHN	CHN	LANZHOU	103°27'00"E - 36°18'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
640	81221489	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
641	81221490	China	CHN	CHN	SHENYANG	123°32'00"E - 41°49'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
634	81221491	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
638	81221492	China	CHN	CHN	WUHAN	114°21'00"E - 30°33'00"N	6572.4	6571		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
643		China	CHN	CHN	CHENGDU	104°09'00" E ; 30°16'00" N	6574			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
645		China	CHN	CHN	CHONGQING	106°33'00" E ; 29°51'00" N	6574			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
644		China	CHN	CHN	GUIYANG	106°31'00" E ; 26°18'00" N	6574			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
642		China	CHN	CHN	LHASA	91°31'00" E ; 29°22'00" N	6574			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
646		China	CHN	CHN	CHANGSHA	113°04'00" E ; 28°11'00" N	6580			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
647		China	CHN	CHN	GUANGZHOU	113°16'00" E ; 23°11'00" N	6580			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
649		China	CHN	CHN	GUILIN	110°26'00" E ; 25°02'00" N	6580			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
648		China	CHN	CHN	NANNING	108°11'00" E ; 22°37'00" N	6580			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
650		China	CHN	CHN	FOOZHOU	120°02'00" E ; 26°44'00" N	6634			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
651		China	CHN	CHN	HANGZHOU	120°28'00" E ; 30°41'00" N	6634			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
652		China	CHN	CHN	SHANGHAI	121°45'00" E ; 31°18'00" N	6634			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
653	81222166	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	6638.4	6637		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
654		China	CHN	CHN	WUHAN	114°15'00" E ; 30°35'00" N	6644			FX	A1A	Fixed Station; Fixed service; telegraphy
655		China	CHN	CHN	YURYUMQI	87°40'00" E ; 43°50'00" N	6667			FX	A3E	Fixed Station; Fixed service; telephony
656	81222443	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	6680.4	6679		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
657		China	CHN	HKG	KAI TAK	114°12'00" E ; 22°20'00" N	6685			FG	A1B	Aeronuatical Station (AM(OR)S); Double sideband; telegraphy
658	81222581	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	8829.4	8828		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
659		China	CHN	CHN	GUILIN	110°26'00" E ; 25°02'00" N	8840			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
660		China	CHN	CHN	SHANGHAI	121°25'00" E ; 31°55'00" N	8850			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
661	81222764	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	8850.4	8849		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
663		China	CHN	CHN	KUNMING	102°30'00" E ; 24°30'00" N	8854			FX	A1A	Fixed Station; Fixed service; telegraphy
662		China	CHN	CHN	TAIPEI	121°31'00" E ; 25°04'00" N	8854			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
664		China	CHN	CHN	LANZHOU	103°37'00" E ; 36°30'00" N	8867			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
671	81223147	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
668	81223148	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
666	81223149	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
667	81223150	China	CHN	CHN	LANZHOU	103°27'00"E - 36°18'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
669	81223155	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
672	81223151	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
673	81223152	China	CHN	CHN	SHENYANG	123°32'00"E - 41°49'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
665	81223153	China	CHN	CHN	URUMQI	87°30'00" E - 43°26'00" N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
670	81223154	China	CHN	CHN	WUHAN	114°21'00"E - 30°33'00"N	8898.4	8897		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
677	81223187	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
676	81223190	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
675	81223188	China	CHN	CHN	GUANGZHOU	113°38'00"E - 23°11'00"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
674	81223197	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
678	81223189	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
679	81223274	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	8922.4	8921		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
680		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	8943.4	8942		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
681		China	CHN	CHN	LHASA	91°05'00" E ; 29°48'00" N	8950			FX	A1A	Fixed Station; Fixed service; telegraphy
682		China	CHN	CHN	LHASA	91°08'00" E ; 29°40'00" N	8950			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
683	81223486	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	8961.4	8960		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
360		China	CHN	CHN	URUMQI	87°29'00" E ; 43°54'00" N	10018			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
361	81223574	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	10019.4	10018		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
367	81223707	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
365	81223708	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
363	81223709	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
364	81223710	China	CHN	CHN	LANZHOU	103°27'00"E - 36°18'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
368	81223711	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
369	81223712	China	CHN	CHN	SHENYANG	123°32'00"E - 41°49'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
362	81223713	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
366	81223714	China	CHN	CHN	WUHAN	114°21'00"E - 30°33'00"N	10043.4	10042		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
370		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	10049			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
371	81223736	China	CHN	CHN	BEIJING	116°25'00"E - 39°16'00"N	10049.4	10048		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
372	81223737	China	CHN	CHN	SHANGHAI	121°45'00"E - 31°18'00"N	10049.4	10048		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
373		China	CHN	CHN	BEIJING	116°25'00" E ; 39°16'00" N	10063			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
375	81223797	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	10067.4	10066		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
374	81223798	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	10067.4	10066		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
376		China	CHN	CHN	KUNMING	102°40'00" E ; 25°05'00" N	10080			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
377		China	CHN	CHN	SUNGSAN	121°32'00" E ; 25°04'00" N	10082.5			FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
378		China	CHN	CHN	SHANGHAI	121°24'00" E ; 31°18'00" N	10100			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
379		China	CHN	CHN	CHENGDU	104°09'00" E ; 30°16'00" N	11276			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
381		China	CHN	CHN	CHONGQING	106°33'00" E ; 29°51'00" N	11276			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
380		China	CHN	CHN	GUIYANG	106°31'00" E ; 26°18'00" N	11276			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
684	104042877	China	CHN	HKG	CAPE D AGUILAR	114°15'09"E - 22°12'40"N	11298.4	11297		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
383		China	CHN	CHN	KUNMING	102°45'00" E ; 25°00'00" N	11315			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
382		China	CHN	CHN	URUMQI	87°29'00" E ; 43°54'00" N	11315			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
384	81224532	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	11382.4	11381		FD	A1AAN	Aeronautical Station (AM(R)S); Double sideband; telegraphy
385	81224532	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	11382.4	11381		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
386	81224538	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	11385.4	11384		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
388		China	CHN	CHN	FUZHOU	118°24'00" E ; 26°06'00" N	11400			BC	A3E	Sound Broadcasting
387		China	CHN	CHN	LHASA	91°05'00" E ; 29°48'00" N	11400			FX	A3E	Fixed Station; Fixed service; telephony
389		China	CHN	CHN	SHANGHAI	121°24'00" E ; 31°18'00" N	11400			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
390		China	CHN	CHN	YURYUMQI	87°40'00" E ; 43°50'00" N	13264			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
391		China	CHN	CHN	SHANGHAI	121°24'00" E ; 31°18'00" N	13265			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
392		China	CHN	CHN	BEIJING	116°25'00" E ; 39°55'00" N	13270			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
393		China	CHN	CHN	SHANGHAI	121°24'00" E ; 31°18'00" N	13275			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
394	81225157	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	13283.4	13282		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
395	81225170	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	13286.4	13285		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
396	81225180	China	CHN	CHN	URUMQI	87°10'00"E - 43°26'00"N	13289.4	13288		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
397		China	CHN	CHN	SHIQUANHE	79°45'00" E ; 32°35'00" N	13295			FX	A1A	Fixed Station; Fixed service; telegraphy
398		China	CHN	CHN	TAIPEI	121°31'00" E ; 25°04'00" N	13296			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
406	81225240	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	13298.4	13297		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
403	81225241	China	CHN	CHN	GUANGZHOU	113°18'00"E - 23°09'00"N	13298.4	13297		FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
401	81225242	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
402	81225243	China	CHN	CHN	LANZHOU	103°27'00"E - 36°18'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
399	81225249	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	13298.4	13297		FD	A1AAN	Aeronautical Station (AM(R)S); Double sideband; telegraphy
404	81225249	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
407	81225244	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
408	81225245	China	CHN	CHN	SHENYANG	123°32'00"E - 41°49'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
400	81225246	China	CHN	CHN	URUMQI	87°30'00"E - 43°26'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
405	81225247	China	CHN	CHN	WUHAN	114°21'00"E - 30°33'00"N	13298.4	13297		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
409		China	CHN	CHN	SHANGHAI	121°30'00" E ; 31°15'00" N	13300			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
412	81225272	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
414	81225273	China	CHN	CHN	BEIJING	116°25'00"E - 39°16'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
411	81225278	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
410	81225274	China	CHN	CHN	GUANGZHOU	113°38'00"E - 23°09'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
413	81225275	China	CHN	CHN	SHANGHAI	121°17'00"E - 31°16'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
415	81225276	China	CHN	CHN	SHANGHAI	121°45'00"E - 31°18'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
416	81225324	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	13310.4	13309		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
416	81225358	China	CHN	CHN	GUANGZHOU	113°16'00"E - 23°11'00"N	13319.4	13318		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
419		China	CHN	CHN	GUANGZHOU	113°16'00" E ; 23°11'00" N	13319.4	13318		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
418	81225359	China	CHN	CHN	KUNMING	102°42'00"E - 25°00'00"N	13319.4	13318		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
420	81225428	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	13334.4	13333		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
421		China	CHN	CHN	YURYUMQI	87°40'00" E ; 43°50'00" N	13344			FX	A3E	Fixed Station; Fixed service; telephony
422		China	CHN	HKG	C D AGUILAR	114°15'00" E ; 22°13'00" N	13352			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
426	81225550	China	CHN	CHN	BEIJING	116°32'00"E - 40°03'00"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
425	81225551	China	CHN	CHN	GUANGZHOU	113°38'00"E - 23°09'00"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
423	81225558	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
423	81225558	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	17905.4	17904		FD	A1AAN	Aeronautical Station (AM(R)S); Double sideband; telegraphy
424		China	CHN	MAC	MACAU	113°33'00" E ; 22°12'00" N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
427	81225552	China	CHN	CHN	SHANGHAI	121°45'00"E - 31°18'00"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81225574	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	17908.4	17907		FD	A1AAN	Aeronautical Station (AM(R)S); Double sideband; telegraphy
428	81225574	China	CHN	MAC	MACAU	113°33'00"E - 22°12'00"N	17908.4	17907		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
429		China	CHN	MAC	MACAU	113°33'00" E ; 22°12'00" N	17908.4	17907		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
430	81225662	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	17941.4	17940		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
472	81225760	China	CHN	CHN	SHANGHAI	121°45'00"E - 31°18'00"N	21926.4	21925		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
473	81225772	China	CHN	CHN	KUNMING	102°45'00"E - 25°00'00"N	21932.4	21931		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
474	81225783	China	CHN	CHN	URUMQI	89°29'00"E - 43°54'00"N	21938.4	21937		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
475	81225796	China	CHN	CHN	BEIJING	116°25'00"E - 39°16'00"N	21950.4	21949		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
476	81225839	China	CHN	HKG	C D AGUILAR	114°15'00"E - 22°13'00"N	21971.4	21970		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
477	81225838	China	CHN	CHN	GUANGZHOU	113°16'00"E - 23°11'00"N	21971.4	21970		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
695	81214367	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	3008.4	3007		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
700	81214807	Fiji	FJI	FJI	LABASA	179°21'00"E - 16°28'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
704	81214808	Fiji	FJI	FJI	LABASA	179°21'00"E - 16°28'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
696	81214809	Fiji	FJI	FJI	MATEI	179°52'00"W - 16°42'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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696	81214810	Fiji	FJI	FJI	MATEI	179°52'00"W - 16°42'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
697	81214811	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
698	81214813	Fiji	FJI	FJI	NAUSORI	178°34'00"E - 18°03'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
702	81214815	Fiji	FJI	FJI	ROTUMA	177°00'00"E - 12°29'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
699	81214817	Fiji	FJI	FJI	SAVUSAVU	179°19'00"E - 16°48'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
703	81214818	Fiji	FJI	FJI	SAVUSAVU	179°19'00"E - 16°48'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
705	81215967	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	3468.4	3467		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
706	81220211	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	5644.4	5643		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
709	81221126	Fiji	FJI	FJI	LABASA	179°21'00"E - 16°28'00"S	6539.4	6538		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
707	81221127	Fiji	FJI	FJI	NAUSORI	178°33'00"E - 18°02'00"S	6539.4	6538		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
708	81221128	Fiji	FJI	FJI	SAVUSAVU	179°19'00"E - 16°48'00"S	6539.4	6538		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
715	81221288	Fiji	FJI	FJI	LABASA	179°21'00"E - 16°28'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
719	81221289	Fiji	FJI	FJI	LABASA	179°21'00"E - 16°28'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
719	81221290	Fiji	FJI	FJI	MATEI	179°52'00"W - 16°42'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
716	81221291	Fiji	FJI	FJI	MATEI	179°52'00"W - 16°42'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
711	81221292	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
712	81221294	Fiji	FJI	FJI	NAUSORI	178°33'00"E - 18°02'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
713	81221295	Fiji	FJI	FJI	NAUSORI	178°34'00"E - 18°03'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
717	81221296	Fiji	FJI	FJI	ROTUMA	177°00'00"E - 12°29'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
714	81221298	Fiji	FJI	FJI	SAVUSAVU	179°19'00"E - 16°48'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
718	81221299	Fiji	FJI	FJI	SAVUSAVU	179°19'00"E - 16°48'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
720	81222165	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	6638.4	6637		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
720	81222714	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	8847.4	8846		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
722	81222715	Fiji	FJI	FJI	ROTUMA	177°00'00"E - 12°29'00"S	8847.4	8846		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
723	81222915	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	8868.4	8867		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
724	81223314	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	8931.4	8930		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
688	81223817	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	10073.4	10072		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
689	81224124	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	11340.4	11339		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
690	81224135	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	11343.4	11342		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
691	81225277	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
692	81225426	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	13334.4	13333		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
693	81225553	Fiji	FJI	FJI	NADI	177°25'00"E - 17°47'00"S	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
694	81225606	Fiji	FJI	FJI	SUVA	178°32'00"E - 18°00'00"S	17917.4	17916		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
741		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	2850			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
743		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	2850			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
745		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
747		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	2850			FX	A3E	Fixed Station; Fixed service; telephony
740		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2850			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
742		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2850			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
744		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2850			FX	A1A	Fixed Station; Fixed service; telegraphy
746		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2850			FX	A3E	Fixed Station; Fixed service; telephony
748		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	2855			FX	A1A	Fixed Station; Fixed service; telegraphy

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751		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	2855			FX	A3E	Fixed Station; Fixed service; telephony
750		India	IND	IND	PANDU	91°45'00" E ; 26°20'00" N	2855			FX	A1A	Fixed Station; Fixed service; telegraphy
753		India	IND	IND	PANDU	91°45'00" E ; 26°20'00" N	2855			FX	A3E	Fixed Station; Fixed service; telephony
749		India	IND	IND	TIRUCHIRAPALLI	78°46'00" E ; 10°50'00" N	2855			FX	A1A	Fixed Station; Fixed service; telegraphy
752		India	IND	IND	TIRUCHIRAPALLI	78°46'00" E ; 10°50'00" N	2855			FX	A3E	Fixed Station; Fixed service; telephony
756		India	IND	IND	BANGALORE	77°38'00" E ; 12°58'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
762		India	IND	IND	CALCUTTA	88°24'00" E ; 22°34'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
754		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
758		India	IND	IND	HYDERABAD	78°30'00" E ; 17°20'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
761		India	IND	IND	JHARSUGUDA	84°01'00" E ; 21°55'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
760		India	IND	IND	JUBBULPORE	79°59'00" E ; 23°10'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
757		India	IND	IND	MADURAI	78°10'00" E ; 9°58'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
759		India	IND	IND	NAGPUR	79°09'00" E ; 21°09'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
755		India	IND	IND	POONA	73°55'00" E ; 18°31'00" N	2861			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
763		India	IND	IND	CALCUTTA	88°24'00" E ; 22°34'00" N	2868			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
764		India	IND	IND	ASANSOL	87°01'00" E ; 23°42'00" N	2880			FX	A1A	Fixed Station; Fixed service; telegraphy
765		India	IND	IND	ASANSOL	87°01'00" E ; 23°42'00" N	2880			FX	A3E	Fixed Station; Fixed service; telephony
766		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	2885			FC	A1B	Coast Station; MAritime Mobile Service; Double sideband; telegraphy
767		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2890			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
768		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2890			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
769		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2890			FX	A1A	Fixed Station; Fixed service; telegraphy
770		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2890			FX	A3E	Fixed Station; Fixed service; telephony
771		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	2895			FX	A1A	Fixed Station; Fixed service; telegraphy
772		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	2895			FX	A3E	Fixed Station; Fixed service; telephony
774		India	IND	IND	GONDA	81°56'00" E ; 27°10'00" N	2900			FX	A1A	Fixed Station; Fixed service; telegraphy
776		India	IND	IND	GONDA	81°56'00" E ; 27°10'00" N	2900			FX	A3E	Fixed Station; Fixed service; telephony
773		India	IND	IND	NEW DELHI	77°10'00" E ; 28°32'00" N	2900			FX	A1A	Fixed Station; Fixed service; telegraphy
775		India	IND	IND	NEW DELHI	77°10'00" E ; 28°32'00" N	2900			FX	A3E	Fixed Station; Fixed service; telephony
779		India	IND	IND	DORNAKAL	80°04'00" E ; 17°34'00" N	2910			FX	A1A	Fixed Station; Fixed service; telegraphy
782		India	IND	IND	DORNAKAL	80°04'00" E ; 17°34'00" N	2910			FX	A3E	Fixed Station; Fixed service; telephony
778		India	IND	IND	KAZIPET	79°30'00" E ; 17°59'00" N	2910			FX	A1A	Fixed Station; Fixed service; telegraphy
781		India	IND	IND	KAZIPET	79°30'00" E ; 17°59'00" N	2910			FX	A3E	Fixed Station; Fixed service; telephony
777		India	IND	IND	SECUNDERABAD	78°30'00" E ; 17°26'00" N	2910			FX	A1A	Fixed Station; Fixed service; telegraphy
780		India	IND	IND	SECUNDERABAD	78°30'00" E ; 17°26'00" N	2910			FX	A3E	Fixed Station; Fixed service; telephony
783		India	IND	IND	BHUSAWAL	75°46'00" E ; 21°05'00" N	2930			FX	A1A	Fixed Station; Fixed service; telegraphy
786		India	IND	IND	BHUSAWAL	75°46'00" E ; 21°05'00" N	2930			FX	A3E	Fixed Station; Fixed service; telephony
784		India	IND	IND	JHANSI	78°30'00" E ; 25°24'00" N	2930			FX	A1A	Fixed Station; Fixed service; telegraphy
787		India	IND	IND	JHANSI	78°30'00" E ; 25°24'00" N	2930			FX	A3E	Fixed Station; Fixed service; telephony
785		India	IND	IND	JUBBULPORE	79°57'00" E ; 23°13'00" N	2930			FX	A1A	Fixed Station; Fixed service; telegraphy
788		India	IND	IND	JUBBULPORE	79°57'00" E ; 23°13'00" N	2930			FX	A3E	Fixed Station; Fixed service; telephony
795		India	IND	IND	AGARTALA	91°23'00" E ; 23°50'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
810		India	IND	IND	AGARTALA	91°23'00" E ; 23°50'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony

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793		India	IND	IND	AGRA	78°05'00" E ; 27°10'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
798		India	IND	IND	AHMEDABAD	72°38'00" E ; 23°02'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
800		India	IND	IND	AMRITSAR	74°55'00" E ; 31°37'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
803		India	IND	IND	BANGALORE	77°38'00" E ; 12°58'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
809		India	IND	IND	CALCUTTA	88°24'00" E ; 22°34'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
801		India	IND	IND	COIMBATORE	77°00'00" E ; 11°00'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
802		India	IND	IND	DELHI	77°12'00" E ; 28°38'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
812		India	IND	IND	DIBRUGARH	95°01'00" E ; 27°28'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
790		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
806		India	IND	IND	LUCKNOW	80°59'00" E ; 26°55'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
794		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
805		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
789		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
799		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
804		India	IND	IND	NAGPUR	79°09'00" E ; 21°09'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
808		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
796		India	IND	IND	PT BLAIR	92°43'00" E ; 11°41'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
811		India	IND	IND	PT BLAIR	92°43'00" E ; 11°41'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
791		India	IND	IND	SRINAGAR	74°51'00" E ; 34°06'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
797		India	IND	IND	TEZPUR	92°50'00" E ; 26°37'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
792		India	IND	IND	UDAIPUR SIKAR	75°33'00" E ; 27°42'00" N	2931			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
807		India	IND	IND	VARANASI	83°00'00" E ; 25°20'00" N	2931			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
815		India	IND	IND	DORNAKAL	80°04'00" E ; 17°34'00" N	2935			FX	A1A	Fixed Station; Fixed service; telegraphy
818		India	IND	IND	DORNAKAL	80°04'00" E ; 17°34'00" N	2935			FX	A3E	Fixed Station; Fixed service; telephony
814		India	IND	IND	KAZIPET	79°30'00" E ; 17°59'00" N	2935			FX	A1A	Fixed Station; Fixed service; telegraphy
817		India	IND	IND	KAZIPET	79°30'00" E ; 17°59'00" N	2935			FX	A3E	Fixed Station; Fixed service; telephony
813		India	IND	IND	SECUNDERABAD	78°38'00" E ; 17°36'00" N	2935			FX	A1A	Fixed Station; Fixed service; telegraphy
816		India	IND	IND	SECUNDERABAD	78°38'00" E ; 17°36'00" N	2935			FX	A3E	Fixed Station; Fixed service; telephony
820		India	IND	IND	BHOPAL	77°22'00" E ; 23°18'00" N	2942			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
819		India	IND	IND	DELHI SAFDARJG	77°11'00" E ; 28°35'00" N	2942			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
822		India	IND	IND	JHARSUGUDA	84°02'00" E ; 21°54'00" N	2942			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
821		India	IND	IND	MADRAS	80°10'00" E ; 13°00'00" N	2942			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
826		India	IND	IND	CHANDIGARH	77°10'00" E ; 30°55'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
825		India	IND	IND	COIMBATORE	77°00'00" E ; 11°00'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
829		India	IND	IND	GAUHATI	91°47'00" E ; 26°11'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
823		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
827		India	IND	IND	LUCKNOW	80°59'00" E ; 26°55'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
824		India	IND	IND	TRIVANDRUM	76°59'00" E ; 8°29'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
828		India	IND	IND	VARANASI	83°00'00" E ; 25°20'00" N	2945			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
830		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	2950			FX	A1A	Fixed Station; Fixed service; telegraphy
831		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	2950			FX	A3E	Fixed Station; Fixed service; telephony
832		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2955			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
833		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2955			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
834		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2955			FX	A1A	Fixed Station; Fixed service; telegraphy
835		India	IND	IND	SIMLA	77°10'00" E ; 31°06'00" N	2955			FX	A3E	Fixed Station; Fixed service; telephony
836		India	IND	IND	MADRAS	80°13'00" E ; 13°06'00" N	2960			FX	A1A	Fixed Station; Fixed service; telegraphy
837		India	IND	IND	MADRAS	80°13'00" E ; 13°06'00" N	2960			FX	A3E	Fixed Station; Fixed service; telephony
839		India	IND	IND	CALCUTTA	88°27'00" E ; 22°38'00" N	2966.4	2965		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
838		India	IND	IND	MUMBAI	72°51'00" E ; 19°05'00" N	2966.4	2965		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
844		India	IND	IND	ADRA	86°45'00" E ; 23°30'00" N	2975			FX	A1A	Fixed Station; Fixed service; telegraphy
850		India	IND	IND	ADRA	86°45'00" E ; 23°30'00" N	2975			FX	A3E	Fixed Station; Fixed service; telephony
840		India	IND	IND	BILASPUR	82°09'00" E ; 22°06'00" N	2975			FX	A1A	Fixed Station; Fixed service; telegraphy
846		India	IND	IND	BILASPUR	82°09'00" E ; 22°06'00" N	2975			FX	A3E	Fixed Station; Fixed service; telephony
842		India	IND	IND	CHAKRADHARPUR	85°40'00" E ; 22°40'00" N	2975			FX	A1A	Fixed Station; Fixed service; telegraphy
848		India	IND	IND	CHAKRADHARPUR	85°40'00" E ; 22°40'00" N	2975			FX	A3E	Fixed Station; Fixed service; telephony
845		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	2975			FX	A1A	Fixed Station; Fixed service; telegraphy
851		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	2975			FX	A3E	Fixed Station; Fixed service; telephony
843		India	IND	IND	KHURDA ROAD	85°45'00" E ; 20°10'00" N	2975			FX	A1A	Fixed Station; Fixed service; telegraphy
849		India	IND	IND	KHURDA ROAD	85°45'00" E ; 20°10'00" N	2975			FX	A3E	Fixed Station; Fixed service; telephony
841		India	IND	IND	WALTAIR	83°10'00" E ; 17°48'00" N	2975			FX	A1A	Fixed Station; Fixed service; telegraphy
847		India	IND	IND	WALTAIR	83°10'00" E ; 17°48'00" N	2975			FX	A3E	Fixed Station; Fixed service; telephony
852		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	2995			FX	A1A	Fixed Station; Fixed service; telegraphy
853		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	2995			FX	A3E	Fixed Station; Fixed service; telephony
864		India	IND	IND	CALCUTTA	88°24'00" E ; 22°34'00" N	3001			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
862		India	IND	IND	DELHI	77°12'00" E ; 28°38'00" N	3001			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
861		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	3001			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
863		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	3001			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
860		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	3001			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
865		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	3005			FX	A1A	Fixed Station; Fixed service; telegraphy
866		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	3005			FX	A3E	Fixed Station; Fixed service; telephony
867		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3007			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
868		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3007			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
869		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3007			FX	A1A	Fixed Station; Fixed service; telegraphy
870		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3007			FX	A3E	Fixed Station; Fixed service; telephony
871		India	IND	IND	MUMBAI	72°32'00" E ; 19°05'00" N	3010			FX	A1A	Fixed Station; Fixed service; telegraphy
872		India	IND	IND	MUMBAI	72°49'00" E ; 18°54'00" N	3010			FX	A1A	Fixed Station; Fixed service; telegraphy
873		India	IND	IND	MUMBAI	72°32'00" E ; 19°05'00" N	3010			FX	A3E	Fixed Station; Fixed service; telephony
874		India	IND	IND	MUMBAI	72°49'00" E ; 18°54'00" N	3010			FX	A3E	Fixed Station; Fixed service; telephony
875		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	3015			FX	A1B	Fixed Station; Fixed service; telegraphy
876		India	IND	IND	AJMER	74°30'00" E ; 26°00'00" N	3020			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
877		India	IND	IND	AJMER	74°30'00" E ; 26°00'00" N	3020			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
878		India	IND	IND	AJMER	74°30'00" E ; 26°00'00" N	3020			FX	A1A	Fixed Station; Fixed service; telegraphy
879		India	IND	IND	AJMER	74°30'00" E ; 26°00'00" N	3020			FX	A3E	Fixed Station; Fixed service; telephony
881		India	IND	IND	AHMEDABAD	QQ 72°38'00" E ; 23°04'00" N	3400			FX	A1B	Fixed Station; Fixed service; telegraphy

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
880		India	IND	IND	JAMNAGAR	QQ	70°10'00" E ; 22°28'00" N	3400		FX	A1B	Fixed Station; Fixed service; telegraphy
882		India	IND	IND	MUMBAI	QQ	72°53'00" E ; 19°05'00" N	3400		FX	A1B	Fixed Station; Fixed service; telegraphy
883		India	IND	IND	AJMER		74°30'00" E ; 26°00'00" N	3410		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
884		India	IND	IND	AJMER		74°30'00" E ; 26°00'00" N	3410		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
885		India	IND	IND	AJMER		74°30'00" E ; 26°00'00" N	3410		FX	A1A	Fixed Station; Fixed service; telegraphy
886		India	IND	IND	AJMER		74°30'00" E ; 26°00'00" N	3410		FX	A3E	Fixed Station; Fixed service; telephony
887		India	IND	IND	GOA		73°51'00" E ; 15°25'00" N	3411.5		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
888		India	IND	IND	SRINAGAR AIRPT		74°51'00" E ; 34°06'00" N	3412.5		FD	R3E	Aeronautical Station (AM(R)S); Single sideband; Reduced carrier; telephony
889		India	IND	IND	JAIPUR		75°52'00" E ; 26°55'00" N	3415		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
891		India	IND	IND	JAIPUR		75°52'00" E ; 26°55'00" N	3415		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
893		India	IND	IND	JAIPUR		75°52'00" E ; 26°55'00" N	3415		FX	A1A	Fixed Station; Fixed service; telegraphy
895		India	IND	IND	JAIPUR		75°52'00" E ; 26°55'00" N	3415		FX	A3E	Fixed Station; Fixed service; telephony
890		India	IND	IND	PATNA		85°13'00" E ; 25°37'00" N	3415		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
892		India	IND	IND	PATNA		85°13'00" E ; 25°37'00" N	3415		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
894		India	IND	IND	PATNA		85°13'00" E ; 25°37'00" N	3415		FX	A1A	Fixed Station; Fixed service; telegraphy
896		India	IND	IND	PATNA		85°13'00" E ; 25°37'00" N	3415		FX	A3E	Fixed Station; Fixed service; telephony
897		India	IND	IND	CALCUTTA		88°00'00" E ; 22°30'00" N	3417.5		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
898		India	IND	IND	CALCUTTA		88°00'00" E ; 22°30'00" N	3417.5		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
899		India	IND	IND	CALCUTTA		88°00'00" E ; 22°30'00" N	3417.5		FX	A1A	Fixed Station; Fixed service; telegraphy
900		India	IND	IND	CALCUTTA		88°00'00" E ; 22°30'00" N	3417.5		FX	A3E	Fixed Station; Fixed service; telephony
901		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	3420		FX	A1A	Fixed Station; Fixed service; telegraphy
902		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	3420		FX	A3E	Fixed Station; Fixed service; telephony
903		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	3420		FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
904		India	IND	IND	INDORE		75°30'00" E ; 24°00'00" N	3425		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
905		India	IND	IND	INDORE		75°30'00" E ; 24°00'00" N	3425		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
906		India	IND	IND	INDORE		75°30'00" E ; 24°00'00" N	3425		FX	A1A	Fixed Station; Fixed service; telegraphy
907		India	IND	IND	INDORE		75°30'00" E ; 24°00'00" N	3425		FX	A3E	Fixed Station; Fixed service; telephony
908		India	IND	IND	GOA		73°51'00" E ; 15°25'00" N	3432.5		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
909		India	IND	IND	ERODE		77°45'00" E ; 11°20'00" N	3440		FX	A1A	Fixed Station; Fixed service; telegraphy
910		India	IND	IND	ERODE		77°45'00" E ; 11°20'00" N	3440		FX	A3E	Fixed Station; Fixed service; telephony
911		India	IND	IND	DELHI		77°15'00" E ; 28°30'00" N	3465		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
913		India	IND	IND	DELHI		77°15'00" E ; 28°30'00" N	3465		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
915		India	IND	IND	DELHI		77°15'00" E ; 28°30'00" N	3465		FX	A1A	Fixed Station; Fixed service; telegraphy
917		India	IND	IND	DELHI		77°15'00" E ; 28°30'00" N	3465		FX	A3E	Fixed Station; Fixed service; telephony
912		India	IND	IND	HYDERABAD		78°00'00" E ; 18°00'00" N	3465		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
914		India	IND	IND	HYDERABAD		78°00'00" E ; 18°00'00" N	3465		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
916		India	IND	IND	HYDERABAD		78°00'00" E ; 18°00'00" N	3465		FX	A1A	Fixed Station; Fixed service; telegraphy
918		India	IND	IND	HYDERABAD		78°00'00" E ; 18°00'00" N	3465		FX	A3E	Fixed Station; Fixed service; telephony
920	81215969	India	IND	IND	DELHI		77°07'00"E - 28°32'00"N	3468.4	3467	FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
919	81215968	India	IND	IND	MUMBAI		72°51'00"E - 19°09'00"N	3468.4	3467	FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
921		India	IND	IND	CALCUTTA		88°00'00" E ; 22°30'00" N	3470		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
922		India	IND	IND	CALCUTTA		88°00'00" E ; 22°30'00" N	3470		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
923		India	IND	IND	CALCUTTA	88°00'00" E ; 22°30'00" N	3470			FX	A1A	Fixed Station; Fixed service; telegraphy
924		India	IND	IND	CALCUTTA	88°00'00" E ; 22°30'00" N	3470			FX	A3E	Fixed Station; Fixed service; telephony
925		India	IND	IND	POONA	73°52'00" E ; 18°31'00" N	3470			FX	A1A	Fixed Station; Fixed service; telegraphy
926		India	IND	IND	POONA	73°52'00" E ; 18°31'00" N	3470			FX	A3E	Fixed Station; Fixed service; telephony
928	81216012	India	IND	IND	CALCUTTA	88°24'00"E - 22°34'00"N	3471.4	3470		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
927	81216013	India	IND	IND	MADRAS	80°17'00"E - 13°04'00"N	3471.4	3470		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
929		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	3472.5			FX	A1B	Fixed Station; Fixed service; telegraphy
930		India	IND	IND	LUCKNOW	81°00'00" E ; 26°46'00" N	3475			FX	A1A	Fixed Station; Fixed service; telegraphy
931		India	IND	IND	LUCKNOW	81°00'00" E ; 26°46'00" N	3475			FX	A3E	Fixed Station; Fixed service; telephony
932		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3480			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
933		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3480			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
934		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3480			FX	A1A	Fixed Station; Fixed service; telegraphy
935		India	IND	IND	INDORE	75°30'00" E ; 24°00'00" N	3480			FX	A3E	Fixed Station; Fixed service; telephony
938		India	IND	IND	BHAVNAGAR PARA	72°10'00" E ; 21°50'00" N	3485			FX	A1A	Fixed Station; Fixed service; telegraphy
941		India	IND	IND	BHAVNAGAR PARA	72°10'00" E ; 21°50'00" N	3485			FX	A3E	Fixed Station; Fixed service; telephony
942		India	IND	IND	CALCUTTA	88°00'00" E ; 23°30'00" N	3485			FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
943		India	IND	IND	CALCUTTA	88°00'00" E ; 23°30'00" N	3485			FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
944		India	IND	IND	CALCUTTA	88°00'00" E ; 23°30'00" N	3485			FX	A1A	Fixed Station; Fixed service; telegraphy
945		India	IND	IND	CALCUTTA	88°00'00" E ; 23°30'00" N	3485			FX	A3E	Fixed Station; Fixed service; telephony
937		India	IND	IND	GONDAL	70°45'00" E ; 21°55'00" N	3485			FX	A1A	Fixed Station; Fixed service; telegraphy
940		India	IND	IND	GONDAL	70°45'00" E ; 21°55'00" N	3485			FX	A3E	Fixed Station; Fixed service; telephony
936		India	IND	IND	JUNAGADH	70°30'00" E ; 21°30'00" N	3485			FX	A1A	Fixed Station; Fixed service; telegraphy
939		India	IND	IND	JUNAGADH	70°30'00" E ; 21°30'00" N	3485			FX	A3E	Fixed Station; Fixed service; telephony
947		India	IND	IND	AGARTALA	91°15'00" E ; 23°53'00" N	3499			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
946		India	IND	IND	CALCUTTA	88°24'00" E ; 22°38'00" N	3499			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
948		India	IND	IND	GAUHATI	91°43'00" E ; 26°05'00" N	3499			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
950		India	IND	IND	MOHAN BARI	95°01'00" E ; 27°29'00" N	3499			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
949		India	IND	IND	SILCHAR	92°59'00" E ; 24°55'00" N	3499			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
952		India	IND	IND	AGARTALA	QQ	91°15'00" E ; 23°53'00" N	4655		FX	A1B	Fixed Station; Fixed service; telegraphy
951		India	IND	IND	CALCUTTA	QQ	88°28'00" E ; 22°39'00" N	4655		FX	A1B	Fixed Station; Fixed service; telegraphy
956		India	IND	IND	CALCUTTA	QQ	88°28'00" E ; 22°39'00" N	4655		FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
955		India	IND	IND	DELHI	QQ	77°12'00" E ; 28°35'00" N	4655		FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
953		India	IND	IND	KUMBIGRAM	QQ	92°59'00" E ; 24°55'00" N	4655		FX	A1B	Fixed Station; Fixed service; telegraphy
954		India	IND	IND	MOHAN BARI	QQ	95°01'00" E ; 27°20'00" N	4655		FX	A1B	Fixed Station; Fixed service; telegraphy
957		India	IND	IND	BANGALORE		76°30'00" E ; 13°30'00" N	4660		FB	A1A	Base Station; Land Mobile Service; Double sideband; telegraphy
958		India	IND	IND	BANGALORE		76°30'00" E ; 13°30'00" N	4660		FB	A3E	Base Station; Land Mobile Service; Double sideband; telephony
959		India	IND	IND	AHMEDNAGAR		74°48'00" E ; 19°06'00" N	4665		FX	A1A	Fixed Station; Fixed service; telegraphy
960		India	IND	IND	AHMEDNAGAR		74°48'00" E ; 19°06'00" N	4665		FX	A3E	Fixed Station; Fixed service; telephony
961		India	IND	IND	BANGALORE		77°35'00" E ; 12°58'00" N	4670		FX	A1A	Fixed Station; Fixed service; telegraphy
964		India	IND	IND	BANGALORE		77°35'00" E ; 12°58'00" N	4670		FX	A3E	Fixed Station; Fixed service; telephony
963		India	IND	IND	CALCUTTA		88°20'00" E ; 22°35'00" N	4670		FX	A1A	Fixed Station; Fixed service; telegraphy
966		India	IND	IND	CALCUTTA		88°20'00" E ; 22°35'00" N	4670		FX	A3E	Fixed Station; Fixed service; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
962		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	4670			FX	A1A	Fixed Station; Fixed service; telegraphy
965		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	4670			FX	A3E	Fixed Station; Fixed service; telephony
967		India	IND	IND	POONA	73°32'00" E ; 18°31'00" N	4690			FX	A1A	Fixed Station; Fixed service; telegraphy
968		India	IND	IND	POONA	73°32'00" E ; 18°31'00" N	4690			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
969		India	IND	IND	MADRAS	80°15'00" E ; 13°00'00" N	4695			FX	A1A	Fixed Station; Fixed service; telegraphy
970		India	IND	IND	MADRAS	80°15'00" E ; 13°00'00" N	4695			FX	A3E	Fixed Station; Fixed service; telephony
971		India	IND	IND	BANGALORE	77°38'00" E ; 12°58'00" N	4700			FA	A1B	Aeronautical Sation (AMS); Double sideband; telegraphy
973		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	4700			FA	A1B	Aeronautical Sation (AMS); Double sideband; telegraphy
972		India	IND	IND	TIRUCHIRAPALLI	78°46'00" E ; 10°50'00" N	4700			FA	A1B	Aeronautical Sation (AMS); Double sideband; telegraphy
974		India	IND	IND	MYSORE	76°38'00" E ; 12°20'00" N	5485			FX	A1B	Fixed Station; Fixed service; telegraphy
975		India	IND	IND	BANGALORE	77°35'00" E ; 12°58'00" N	5490			FX	A1B	Fixed Station; Fixed service; telegraphy
976		India	IND	IND	ADRA	86°45'00" E ; 23°30'00" N	5495			FX	A1A	Fixed Station; Fixed service; telegraphy
979		India	IND	IND	ADRA	86°45'00" E ; 23°30'00" N	5495			FX	A3E	Fixed Station; Fixed service; telephony
978		India	IND	IND	CALCUTTA	88°20'00" E ; 22°35'00" N	5495			FX	A1A	Fixed Station; Fixed service; telegraphy
981		India	IND	IND	CALCUTTA	88°20'00" E ; 22°35'00" N	5495			FX	A3E	Fixed Station; Fixed service; telephony
977		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	5495			FX	A1A	Fixed Station; Fixed service; telegraphy
980		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	5495			FX	A3E	Fixed Station; Fixed service; telephony
983		India	IND	IND	LUCKNOW	81°00'00" E ; 26°45'00" N	5500			FX	A1A	Fixed Station; Fixed service; telegraphy
986		India	IND	IND	LUCKNOW	81°00'00" E ; 26°45'00" N	5500			FX	A3E	Fixed Station; Fixed service; telephony
982		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	5500			FX	A1A	Fixed Station; Fixed service; telegraphy
985		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	5500			FX	A3E	Fixed Station; Fixed service; telephony
984		India	IND	IND	SHILLONG	91°53'00" E ; 25°35'00" N	5500			FX	A1A	Fixed Station; Fixed service; telegraphy
987		India	IND	IND	SHILLONG	91°53'00" E ; 25°35'00" N	5500			FX	A3E	Fixed Station; Fixed service; telephony
988		India	IND	IND	BHUJ	70°00'00" E ; 23°30'00" N	5505			FB	A1B	Base Station; Land Mobile Service; Double sideband; telegraphy
990		India	IND	IND	BHUJ	70°00'00" E ; 23°30'00" N	5505			FX	A1B	Fixed Station; Fixed service; telegraphy
989		India	IND	IND	HYDERABAD	78°15'00" E ; 17°15'00" N	5505			FB	A1B	Base Station; Land Mobile Service; Double sideband; telegraphy
991		India	IND	IND	HYDERABAD	78°15'00" E ; 17°15'00" N	5505			FX	A1B	Fixed Station; Fixed service; telegraphy
992		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	5510			FX	A1B	Fixed Station; Fixed service; telegraphy
997		India	IND	IND	AHMEDABAD	72°38'00" E ; 23°02'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1003		India	IND	IND	AMRITSAR	74°55'00" E ; 31°37'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1010		India	IND	IND	BANGALORE	77°38'00" E ; 12°58'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1012		India	IND	IND	BEGUMPET	78°30'00" E ; 17°20'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1000		India	IND	IND	BELGAUM	74°34'00" E ; 15°52'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
996		India	IND	IND	BHAVNAGAR	72°11'00" E ; 21°46'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1009		India	IND	IND	BHOPAL	77°36'00" E ; 23°16'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1023		India	IND	IND	BHUBANESHWAR	85°54'00" E ; 20°28'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
993		India	IND	IND	BHUJ	69°49'00" E ; 23°15'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1024		India	IND	IND	CALCUTTA	88°24'00" E ; 22°38'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1007		India	IND	IND	COIMBATORE	77°00'00" E ; 11°00'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1008		India	IND	IND	DELHI	77°12'00" E ; 28°38'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1021		India	IND	IND	GAYA	85°01'00" E ; 24°49'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1011		India	IND	IND	GWALIOR	78°10'00" E ; 26°14'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
1004		India	IND	IND	INDORE	75°50'00" E ; 22°44'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1005		India	IND	IND	JAIPUR	75°52'00" E ; 26°55'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1002		India	IND	IND	JAMMU	74°54'00" E ; 32°44'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1020		India	IND	IND	JHARSUGUDA	84°01'00" E ; 21°51'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
999		India	IND	IND	JODHPUR	73°04'00" E ; 26°18'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
994		India	IND	IND	KESHOD	70°16'00" E ; 21°18'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1017		India	IND	IND	LUCKNOW	80°59'00" E ; 26°55'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1015		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1001		India	IND	IND	MANGALORE	74°53'00" E ; 12°52'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
998		India	IND	IND	MUMBAI	72°51'00" E ; 19°05'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1014		India	IND	IND	NAGPUR	79°09'00" E ; 21°09'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1022		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1025		India	IND	IND	PT BLAIR	92°43'00" E ; 11°41'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
995		India	IND	IND	RAJKOT	70°56'00" E ; 22°18'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1013		India	IND	IND	TIRUCHIRAPALLI	78°46'00" E ; 10°50'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1006		India	IND	IND	TRIVANDRUM	76°59'00" E ; 8°29'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1018		India	IND	IND	VARANASI	83°00'00" E ; 25°20'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1016		India	IND	IND	VIJAYAWADA	80°39'00" E ; 16°31'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1019		India	IND	IND	VIZAGAPATAM	83°20'00" E ; 17°42'00" N	5512			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1026		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	5513			FX	A1A	Fixed Station; Fixed service; telegraphy
1027		India	IND	IND	DELHI	77°00'00" E ; 28°44'00" N	5513			FX	A3E	Fixed Station; Fixed service; telephony
1028		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	5514			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1045		India	IND	IND	AGARTALA	QQ	91°15'00" E ; 23°53'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1031		India	IND	IND	AHMEDABAD	QQ	72°38'00" E ; 23°04'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1041		India	IND	IND	ALLAHABAD	QQ	81°44'00" E ; 25°27'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1043		India	IND	IND	BAGHDOGRA	QQ	88°20'00" E ; 26°41'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1037		India	IND	IND	BHOPAL	QQ	77°20'00" E ; 23°17'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1044		India	IND	IND	CALCUTTA	QQ	88°28'00" E ; 22°39'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1035		India	IND	IND	COIMBATORE	QQ	77°03'00" E ; 11°02'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1047		India	IND	IND	DELHI		77°07'00" E ; 28°23'00" N	5515		FX	A1B	Fixed Station; Fixed service; telegraphy
1036		India	IND	IND	DELHI	QQ	77°12'00" E ; 28°35'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1046		India	IND	IND	GAUHATI	QQ	91°36'00" E ; 26°06'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1030		India	IND	IND	JAMNAGAR	QQ	70°01'00" E ; 22°28'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1033		India	IND	IND	JODHPUR	QQ	73°03'00" E ; 26°16'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1040		India	IND	IND	MADRAS	QQ	80°11'00" E ; 13°00'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1029		India	IND	IND	MUMBAI		72°32'00" E ; 18°33'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1032		India	IND	IND	MUMBAI	QQ	72°53'00" E ; 19°05'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1039		India	IND	IND	NAGPUR	QQ	79°03'00" E ; 21°06'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1034		India	IND	IND	SRINAGAR	QQ	74°47'00" E ; 33°59'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1038		India	IND	IND	TIRUCHIRAPALLI	QQ	78°43'00" E ; 10°46'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1042		India	IND	IND	VIZAGAPATAM	QQ	83°14'00" E ; 17°43'00" N	5515		FX	A3E	Fixed Station; Fixed service; telephony
1050		India	IND	IND	DONAKONDA		79°29'00" E ; 15°50'00" N	5520		FX	A1A	Fixed Station; Fixed service; telegraphy

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
1054		India	IND	IND	DONAKONDA	79°29'00" E ; 15°50'00" N	5520			FX	A3E	Fixed Station; Fixed service; telephony
1048		India	IND	IND	GUNTAKAL	77°15'00" E ; 15°07'00" N	5520			FX	A1A	Fixed Station; Fixed service; telegraphy
1052		India	IND	IND	GUNTAKAL	77°15'00" E ; 15°07'00" N	5520			FX	A3E	Fixed Station; Fixed service; telephony
1049		India	IND	IND	PAKALA	79°00'00" E ; 13°18'00" N	5520			FX	A1A	Fixed Station; Fixed service; telegraphy
1053		India	IND	IND	PAKALA	79°00'00" E ; 13°18'00" N	5520			FX	A3E	Fixed Station; Fixed service; telephony
1051		India	IND	IND	SAKRIGALIGHAT	87°50'00" E ; 25°00'00" N	5520			FX	A1A	Fixed Station; Fixed service; telegraphy
1055		India	IND	IND	SAKRIGALIGHAT	87°50'00" E ; 25°00'00" N	5520			FX	A3E	Fixed Station; Fixed service; telephony
1058		India	IND	IND	CALCUTTA	88°20'00" E ; 22°35'00" N	5525			FX	A1A	Fixed Station; Fixed service; telegraphy
1061		India	IND	IND	CALCUTTA	88°20'00" E ; 22°35'00" N	5525			FX	A3E	Fixed Station; Fixed service; telephony
1056		India	IND	IND	DELHI	77°09'00" E ; 28°32'00" N	5525			FX	A1A	Fixed Station; Fixed service; telegraphy
1059		India	IND	IND	DELHI	77°09'00" E ; 28°32'00" N	5525			FX	A3E	Fixed Station; Fixed service; telephony
1057		India	IND	IND	NAGPUR	79°09'00" E ; 21°06'00" N	5525			FX	A1A	Fixed Station; Fixed service; telegraphy
1060		India	IND	IND	NAGPUR	79°09'00" E ; 21°06'00" N	5525			FX	A3E	Fixed Station; Fixed service; telephony
1063		India	IND	IND	CALCUTTA	QQ	88°28'00" E ; 22°39'00" N	5530		FX	A1B	Fixed Station; Fixed service; telegraphy
1062		India	IND	IND	MADRAS	QQ	80°11'00" E ; 13°00'00" N	5530		FX	A1B	Fixed Station; Fixed service; telegraphy
1064		India	IND	IND	DELHI		77°00'00" E ; 28°44'00" N	5540		FX	A1B	Fixed Station; Fixed service; telegraphy
1067		India	IND	IND	AJMER		74°50'00" E ; 26°30'00" N	5545		FX	A1A	Fixed Station; Fixed service; telegraphy
1070		India	IND	IND	AJMER		74°50'00" E ; 26°30'00" N	5545		FX	A3E	Fixed Station; Fixed service; telephony
1066		India	IND	IND	MUMBAI		72°49'00" E ; 18°54'00" N	5545		FX	A1A	Fixed Station; Fixed service; telegraphy
1069		India	IND	IND	MUMBAI		72°49'00" E ; 18°54'00" N	5545		FX	A3E	Fixed Station; Fixed service; telephony
1065		India	IND	IND	SURENDRANAGAR		71°45'00" E ; 22°45'00" N	5545		FX	A1A	Fixed Station; Fixed service; telegraphy
1068		India	IND	IND	SURENDRANAGAR		71°45'00" E ; 22°45'00" N	5545		FX	A3E	Fixed Station; Fixed service; telephony
1071		India	IND	IND	AHMEDABAD		72°38'00" E ; 23°02'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1073		India	IND	IND	AMRITSAR		74°55'00" E ; 31°37'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1081		India	IND	IND	CALCUTTA		88°24'00" E ; 22°34'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1074		India	IND	IND	COIMBATORE		77°00'00" E ; 11°00'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1075		India	IND	IND	DELHI		77°12'00" E ; 28°38'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1082		India	IND	IND	GAUHATI		91°47'00" E ; 26°11'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1078		India	IND	IND	LUCKNOW		80°59'00" E ; 26°55'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1077		India	IND	IND	MADRAS		80°17'00" E ; 13°04'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1072		India	IND	IND	MUMBAI		72°54'00" E ; 18°55'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1076		India	IND	IND	NAGPUR		79°09'00" E ; 21°09'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1080		India	IND	IND	PATNA		85°13'00" E ; 25°37'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1079		India	IND	IND	VARANASI		83°00'00" E ; 25°20'00" N	5547		FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1097		India	IND	IND	BARAUNI		86°00'00" E ; 25°27'00" N	5555		FX	A1A	Fixed Station; Fixed service; telegraphy
1114		India	IND	IND	BARAUNI		86°00'00" E ; 25°27'00" N	5555		FX	A3E	Fixed Station; Fixed service; telephony
1091		India	IND	IND	BHOPAL		77°26'00" E ; 23°23'00" N	5555		FX	A1A	Fixed Station; Fixed service; telegraphy
1108		India	IND	IND	BHOPAL		77°26'00" E ; 23°23'00" N	5555		FX	A3E	Fixed Station; Fixed service; telephony
1088		India	IND	IND	BHUSAWAL		75°46'00" E ; 21°00'00" N	5555		FX	A1A	Fixed Station; Fixed service; telegraphy
1105		India	IND	IND	BHUSAWAL		75°46'00" E ; 21°00'00" N	5555		FX	A3E	Fixed Station; Fixed service; telephony
1090		India	IND	IND	COCHIN		76°16'00" E ; 9°58'00" N	5555		FX	A1A	Fixed Station; Fixed service; telegraphy
1107		India	IND	IND	COCHIN		76°16'00" E ; 9°58'00" N	5555		FX	A3E	Fixed Station; Fixed service; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
1087		India	IND	IND	DHOND	74°34'00" E ; 18°26'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1104		India	IND	IND	DHOND	74°34'00" E ; 18°26'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1092		India	IND	IND	ITARSI	77°45'00" E ; 22°36'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1109		India	IND	IND	ITARSI	77°45'00" E ; 22°36'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1093		India	IND	IND	JHANSI	78°30'00" E ; 25°24'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1110		India	IND	IND	JHANSI	78°30'00" E ; 25°24'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1098		India	IND	IND	KATIHAR	87°40'00" E ; 25°35'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1115		India	IND	IND	KATIHAR	87°40'00" E ; 25°35'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1099		India	IND	IND	MANIHARIGHAT	87°55'00" E ; 25°55'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1116		India	IND	IND	MANIHARIGHAT	87°55'00" E ; 25°55'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1086		India	IND	IND	MANMAD	74°23'00" E ; 20°13'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1103		India	IND	IND	MANMAD	74°23'00" E ; 20°13'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1096		India	IND	IND	MOKAMEHGHAT	85°56'00" E ; 25°20'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1113		India	IND	IND	MOKAMEHGHAT	85°56'00" E ; 25°20'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1083		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1084		India	IND	IND	MUMBAI	73°53'00" E ; 19°05'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1100		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1101		India	IND	IND	MUMBAI	73°53'00" E ; 19°05'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1095		India	IND	IND	MUZAFFARPUR	85°22'00" E ; 26°04'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1112		India	IND	IND	MUZAFFARPUR	85°22'00" E ; 26°04'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1085		India	IND	IND	POONA	73°54'00" E ; 18°30'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1102		India	IND	IND	POONA	73°54'00" E ; 18°30'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1089		India	IND	IND	SHOLAPUR	75°53'00" E ; 17°41'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1106		India	IND	IND	SHOLAPUR	75°53'00" E ; 17°41'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1094		India	IND	IND	SONPUR	85°14'00" E ; 25°41'00" N	5555			FX	A1A	Fixed Station; Fixed service; telegraphy
1111		India	IND	IND	SONPUR	85°14'00" E ; 25°41'00" N	5555			FX	A3E	Fixed Station; Fixed service; telephony
1117		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	5559			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1118		India	IND	IND	INDORE	75°50'00" E ; 22°44'00" N	5560			FX	A1A	Fixed Station; Fixed service; telegraphy
1120		India	IND	IND	INDORE	75°50'00" E ; 22°44'00" N	5560			FX	A3E	Fixed Station; Fixed service; telephony
1119		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	5560			FX	A1A	Fixed Station; Fixed service; telegraphy
1121		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	5560			FX	A3E	Fixed Station; Fixed service; telephony
1122		India	IND	IND	CALICUT	75°49'00" E ; 11°05'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy
1129		India	IND	IND	CALICUT	75°49'00" E ; 11°05'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1123		India	IND	IND	COCHIN	76°17'00" E ; 9°58'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy
1130		India	IND	IND	COCHIN	76°17'00" E ; 9°58'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1126		India	IND	IND	ERODE	77°45'00" E ; 11°20'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy
1133		India	IND	IND	ERODE	77°45'00" E ; 11°20'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1128		India	IND	IND	MADRAS	80°13'00" E ; 13°06'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy
1135		India	IND	IND	MADRAS	80°13'00" E ; 13°06'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1125		India	IND	IND	PODANUR	77°00'00" E ; 10°58'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy
1132		India	IND	IND	PODANUR	77°00'00" E ; 10°58'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1124		India	IND	IND	SHORANUR	76°20'00" E ; 10°48'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy

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1131		India	IND	IND	SHORANUR	76°20'00" E ; 10°48'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1127		India	IND	IND	TIRUCHIRAPALLI	78°46'00" E ; 10°50'00" N	5565			FX	A1A	Fixed Station; Fixed service; telegraphy
1134		India	IND	IND	TIRUCHIRAPALLI	78°46'00" E ; 10°50'00" N	5565			FX	A3E	Fixed Station; Fixed service; telephony
1140		India	IND	IND	CALCUTTA	88°24'00" E ; 22°34'00" N	5566.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1138		India	IND	IND	DELHI	77°12'00" E ; 28°38'00" N	5566.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1137		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	5566.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1141		India	IND	IND	JORHAT	94°16'00" E ; 26°46'00" N	5566.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1139		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	5566.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1136		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	5566.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1142		India	IND	IND	AGARTALA	91°23'00" E ; 23°50'00" N	5568			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1143		India	IND	IND	GAUHATI	91°47'00" E ; 26°11'00" N	5568			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1144		India	IND	IND	IMPHAL	93°58'00" E ; 24°44'00" N	5568			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1145		India	IND	IND	MEWAR	74°30'00" E ; 24°30'00" N	5575			FX	A1A	Fixed Station; Fixed service; telegraphy
1146		India	IND	IND	MEWAR	74°30'00" E ; 24°30'00" N	5575			FX	A3E	Fixed Station; Fixed service; telephony
1147		India	IND	IND	KUMBIGRAM	92°59'00" E ; 24°55'00" N	5579.6			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1148		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	5581.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1151		India	IND	IND	AGARTALA	91°15'00" E ; 23°53'00" N	5582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1149		India	IND	IND	BAGHDOGRA	88°20'00" E ; 26°41'00" N	5582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1150		India	IND	IND	CALCUTTA	88°24'00" E ; 22°38'00" N	5582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1152		India	IND	IND	GAUHATI	91°43'00" E ; 26°05'00" N	5582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1154		India	IND	IND	JORHAT	94°11'00" E ; 26°44'00" N	5582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1153		India	IND	IND	SILCHAR	92°59'00" E ; 24°55'00" N	5582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1155		India	IND	IND	AGARTALA	91°23'00" E ; 23°50'00" N	5584.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1157		India	IND	IND	CALCUTTA	88°20'00" E ; 22°35'00" N	5585			FX	A1A	Fixed Station; Fixed service; telegraphy
1159		India	IND	IND	CALCUTTA	88°20'00" E ; 22°35'00" N	5585			FX	A3E	Fixed Station; Fixed service; telephony
1156		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	5585			FX	A1A	Fixed Station; Fixed service; telegraphy
1158		India	IND	IND	KHARAGPUR	87°21'00" E ; 22°26'00" N	5585			FX	A3E	Fixed Station; Fixed service; telephony
1160		India	IND	IND	POONA	73°32'00" E ; 18°31'00" N	5595			FX	A1A	Fixed Station; Fixed service; telegraphy
1161		India	IND	IND	POONA	73°32'00" E ; 18°31'00" N	5595			FX	A3E	Fixed Station; Fixed service; telephony
1164		India	IND	IND	AMBALA	77°00'00" E ; 30°00'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy
1171		India	IND	IND	AMBALA	77°00'00" E ; 30°00'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1168		India	IND	IND	CALCUTTA	88°28'00" E ; 22°39'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy
1175		India	IND	IND	CALCUTTA	88°28'00" E ; 22°39'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1165		India	IND	IND	DELHI	77°12'00" E ; 28°35'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy
1172		India	IND	IND	DELHI	77°12'00" E ; 28°35'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1162		India	IND	IND	JODHPUR	73°03'00" E ; 26°16'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy
1169		India	IND	IND	JODHPUR	73°03'00" E ; 26°16'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1166		India	IND	IND	KANPUR	80°00'00" E ; 26°00'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy
1173		India	IND	IND	KANPUR	80°00'00" E ; 26°00'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1167		India	IND	IND	MADRAS	80°15'00" E ; 13°00'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy
1174		India	IND	IND	MADRAS	80°15'00" E ; 13°00'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1163		India	IND	IND	POONA	73°32'00" E ; 18°31'00" N	5600			FA	A1A	Aeronautical Sation (AMS); Double sideband; telegraphy

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1170		India	IND	IND	POONA	73°32'00" E ; 18°31'00" N	5600			FA	A3E	Aeronautical Sation (AMS); Double sideband; telephony
1176		India	IND	IND	UTTARKASHI	78°15'00" E ; 30°00'00" N	5600			FX	A1B	Fixed Station; Fixed service; telegraphy
1177		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	5604			FD	A1A	Aeronautical Station (AM(RS)); Double sideband; telegraphy
1178		India	IND	IND	BANGALORE	77°35'00" E ; 12°58'00" N	5605			FX	A1B	Fixed Station; Fixed service; telegraphy
1184		India	IND	IND	ASANSOL	87°01'00" E ; 23°42'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1191		India	IND	IND	ASANSOL	87°01'00" E ; 23°42'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1185		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1192		India	IND	IND	CALCUTTA	88°16'00" E ; 22°20'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1193		India	IND	IND	CALCUTTA	88°14'00" E ; 22°21'00" N	5625			FX	A1B	Fixed Station; Fixed service; telegraphy
1183		India	IND	IND	DINAPORE	85°00'00" E ; 25°36'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1190		India	IND	IND	DINAPORE	85°00'00" E ; 25°36'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1180		India	IND	IND	KANPUR	80°20'00" E ; 26°30'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1187		India	IND	IND	KANPUR	80°20'00" E ; 26°30'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1181		India	IND	IND	LUCKNOW	80°53'00" E ; 26°51'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1188		India	IND	IND	LUCKNOW	80°53'00" E ; 26°51'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1182		India	IND	IND	MOGHAL SARAI	83°11'00" E ; 25°11'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1189		India	IND	IND	MOGHAL SARAI	83°11'00" E ; 25°11'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1179		India	IND	IND	TUNDLA	78°17'00" E ; 27°14'00" N	5625			FX	A1A	Fixed Station; Fixed service; telegraphy
1186		India	IND	IND	TUNDLA	78°17'00" E ; 27°14'00" N	5625			FX	A3E	Fixed Station; Fixed service; telephony
1194		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	5634			FD	A1A	Aeronautical Station (AM(RS)); Double sideband; telegraphy
1196		India	IND	IND	CALCUTTA	88°28'00" E ; 22°39'00" N	5635			FX	A1B	Fixed Station; Fixed service; telegraphy
1195		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	5635			FX	A1B	Fixed Station; Fixed service; telegraphy
1197	81219750	India	IND	IND	MUMBAI	72°51'00" E - 19°09'00" N	5635.4	5634		FD	J3EJN	Aeronuatical Station (AM(RS)); Single sideband; Suppressed carrier; telephony
1205		India	IND	IND	AGRA	77°59'00" E ; 27°11'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1214		India	IND	IND	AGRA	77°59'00" E ; 27°11'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1203		India	IND	IND	BHOPAL	77°26'00" E ; 23°23'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1212		India	IND	IND	BHOPAL	77°26'00" E ; 23°23'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1201		India	IND	IND	BHUSAWAL	75°46'00" E ; 21°00'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1210		India	IND	IND	BHUSAWAL	75°46'00" E ; 21°00'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1204		India	IND	IND	ITARSI	77°45'00" E ; 22°36'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1213		India	IND	IND	ITARSI	77°45'00" E ; 22°36'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1206		India	IND	IND	JHANSI	78°30'00" E ; 25°24'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1215		India	IND	IND	JHANSI	78°30'00" E ; 25°24'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1200		India	IND	IND	MANMAD	74°23'00" E ; 20°13'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1209		India	IND	IND	MANMAD	74°23'00" E ; 20°13'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1198		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1207		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1199		India	IND	IND	POONA	73°54'00" E ; 18°30'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1208		India	IND	IND	POONA	73°54'00" E ; 18°30'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1202		India	IND	IND	SHOLAPUR	75°53'00" E ; 17°41'00" N	5640			FX	A1A	Fixed Station; Fixed service; telegraphy
1211		India	IND	IND	SHOLAPUR	75°53'00" E ; 17°41'00" N	5640			FX	A3E	Fixed Station; Fixed service; telephony
1220		India	IND	IND	DELHI	77°12'00" E ; 28°35'00" N	5645			FD	A1B	Aeronautical Station (AM(RS)); Double sideband; telegraphy

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1222		India	IND	IND	DELHI	QQ	77°12'00" E ; 28°35'00" N	5645		FX	A1B	Fixed Station; Fixed service; telegraphy
1216		India	IND	IND	INDORE		75°50'00" E ; 22°44'00" N	5645		FX	A1A	Fixed Station; Fixed service; telegraphy
1218		India	IND	IND	INDORE		75°50'00" E ; 22°44'00" N	5645		FX	A3E	Fixed Station; Fixed service; telephony
1221		India	IND	IND	JODHPUR	QQ	73°03'00" E ; 26°16'00" N	5645		FX	A1B	Fixed Station; Fixed service; telegraphy
1217		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	5645		FX	A1A	Fixed Station; Fixed service; telegraphy
1219		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	5645		FX	A3E	Fixed Station; Fixed service; telephony
1223		India	IND	IND	GOA		73°51'00" E ; 15°25'00" N	5649		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1225		India	IND	IND	DELHI		77°00'00" E ; 28°44'00" N	5650		FX	A1B	Fixed Station; Fixed service; telegraphy
1224		India	IND	IND	MUMBAI		72°49'00" E ; 18°54'00" N	5650		FX	A1B	Fixed Station; Fixed service; telegraphy
1232		India	IND	IND	AGARTALA		91°15'00" E ; 23°53'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1230		India	IND	IND	BAGHDOGRA		88°20'00" E ; 26°41'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1231		India	IND	IND	CALCUTTA		88°28'00" E ; 22°39'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1227		India	IND	IND	DELHI		77°12'00" E ; 28°35'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1229		India	IND	IND	GAYA		84°57'00" E ; 24°45'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1233		India	IND	IND	KUMBIGRAM		92°59'00" E ; 24°55'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1228		India	IND	IND	MADRAS		80°11'00" E ; 13°00'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1234		India	IND	IND	MOHAN BARI		95°01'00" E ; 27°29'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1226		India	IND	IND	MUMBAI		72°53'00" E ; 19°05'00" N	5655		FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1235		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	5655		FX	A1A	Fixed Station; Fixed service; telegraphy
1236		India	IND	IND	RANCHI		85°16'00" E ; 23°23'00" N	5655		FX	A3E	Fixed Station; Fixed service; telephony
1238	81220338	India	IND	IND	DELHI		77°07'00" E - 28°32'00" N	5659.4	5658	FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1237	81220337	India	IND	IND	MUMBAI		72°51'00" E - 19°09'00" N	5659.4	5658	FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1239		India	IND	IND	GORAKHPUR		83°23'00" E ; 26°42'00" N	5660		FX	A1A	Fixed Station; Fixed service; telegraphy
1241		India	IND	IND	GORAKHPUR		83°23'00" E ; 26°42'00" N	5660		FX	A3E	Fixed Station; Fixed service; telephony
1240		India	IND	IND	SHILLONG		91°52'00" E ; 25°35'00" N	5660		FX	A1B	Fixed Station; Fixed service; telegraphy
1242		India	IND	IND	AHMEDABAD	QQ	72°38'00" E ; 23°04'00" N	5665		FX	A1B	Fixed Station; Fixed service; telegraphy
1244		India	IND	IND	DELHI	QQ	77°12'00" E ; 28°35'00" N	5665		FX	A1B	Fixed Station; Fixed service; telegraphy
1243		India	IND	IND	MUMBAI	QQ	72°53'00" E ; 19°05'00" N	5665		FX	A1B	Fixed Station; Fixed service; telegraphy
1245		India	IND	IND	CALCUTTA		88°20'00" E ; 22°42'00" N	5668.5		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1250		India	IND	IND	BHUBANESHWAR	QQ	85°48'00" E ; 20°16'00" N	5670		FX	A1B	Fixed Station; Fixed service; telegraphy
1251		India	IND	IND	CALCUTTA	QQ	88°28'00" E ; 22°39'00" N	5670		FX	A1B	Fixed Station; Fixed service; telegraphy
1246		India	IND	IND	DELHI		77°00'00" E ; 28°44'00" N	5670		FX	A1B	Fixed Station; Fixed service; telegraphy
1247		India	IND	IND	DELHI		77°00'00" E ; 28°44'00" N	5670		FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
1248		India	IND	IND	MADRAS	QQ	80°11'00" E ; 13°00'00" N	5670		FX	A1B	Fixed Station; Fixed service; telegraphy
1249		India	IND	IND	VIZAGAPATAM	QQ	83°14'00" E ; 17°43'00" N	5670		FX	A1B	Fixed Station; Fixed service; telegraphy
1252		India	IND	IND	MADRAS		80°10'00" E ; 13°00'00" N	5672.5		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1253		India	IND	IND	PT BLAIR		92°43'00" E ; 11°41'00" N	5674.5		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1255		India	IND	IND	DELHI		77°07'00" E ; 28°23'00" N	5675		FX	A1A	Fixed Station; Fixed service; telegraphy
1257		India	IND	IND	DELHI		77°07'00" E ; 28°23'00" N	5675		FX	A3E	Fixed Station; Fixed service; telephony
1254		India	IND	IND	MUMBAI		72°32'00" E ; 19°33'00" N	5675		FX	A1A	Fixed Station; Fixed service; telegraphy
1256		India	IND	IND	MUMBAI		72°32'00" E ; 19°33'00" N	5675		FX	A3E	Fixed Station; Fixed service; telephony
1258		India	IND	IND	BANGALORE		77°35'00" E ; 12°58'00" N	5680		FX	A1B	Fixed Station; Fixed service; telegraphy

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
1259		India	IND	IND	CALCUTTA	88°00'00" E ; 22°30'00" N	6530			FX	A1A	Fixed Station; Fixed service; telegraphy
1260		India	IND	IND	CALCUTTA	88°00'00" E ; 22°30'00" N	6530			FX	A3E	Fixed Station; Fixed service; telephony
1266		India	IND	IND	BANGALORE	77°38'00" E ; 12°58'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1272		India	IND	IND	CALCUTTA	88°27'00" E ; 22°39'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1263		India	IND	IND	COCHIN	76°16'00" E ; 9°57'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1265		India	IND	IND	COIMBATORE	77°03'00" E ; 11°02'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1267		India	IND	IND	HYDERABAD	78°31'00" E ; 17°28'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1270		India	IND	IND	MADRAS	80°11'00" E ; 13°00'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1262		India	IND	IND	MANGALORE	74°55'00" E ; 12°58'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1261		India	IND	IND	MUMBAI	72°52'00" E ; 19°05'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1269		India	IND	IND	NAGPUR	79°02'00" E ; 21°07'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1268		India	IND	IND	TIRUCHIRAPALLI	78°43'00" E ; 10°46'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1264		India	IND	IND	TRIVANDRUM	76°55'00" E ; 8°28'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1271		India	IND	IND	VIZAGAPATAM	85°13'00" E ; 17°43'00" N	6533			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1273		India	IND	IND	MADRAS	80°14'00" E ; 13°04'00" N	6535			FX	A1A	Fixed Station; Fixed service; telegraphy
1274		India	IND	IND	MADRAS	80°14'00" E ; 13°04'00" N	6535			FX	A3E	Fixed Station; Fixed service; telephony
1275		India	IND	IND	INDORE	75°50'00" E ; 22°44'00" N	6540			FX	A1A	Fixed Station; Fixed service; telegraphy
1276		India	IND	IND	INDORE	75°50'00" E ; 22°44'00" N	6540			FX	A3E	Fixed Station; Fixed service; telephony
1278		India	IND	IND	CALCUTTA	88°28'00" E ; 22°39'00" N	6543			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1279		India	IND	IND	GAUHATI	91°36'00" E ; 26°06'00" N	6543			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1277		India	IND	IND	GAYA	84°57'00" E ; 24°45'00" N	6543			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1281		India	IND	IND	JORHAT	94°10'00" E ; 26°44'00" N	6543			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1280		India	IND	IND	KUMBIGRAM	92°59'00" E ; 24°55'00" N	6543			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1285		India	IND	IND	AGARTALA	91°15'00" E ; 23°53'00" N	6550			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1283		India	IND	IND	ALLAHABAD	81°44'00" E ; 25°27'00" N	6550			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1284		India	IND	IND	BAGHDOGRA	88°20'00" E ; 26°04'00" N	6550			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1282		India	IND	IND	DELHI	77°12'00" E ; 28°35'00" N	6550			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1287		India	IND	IND	MOHAN BARI	95°01'00" E ; 27°29'00" N	6550			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1286		India	IND	IND	TEZPUR	92°48'00" E ; 26°43'00" N	6550			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1289	81221344	India	IND	IND	CALCUTTA	88°24'00" E - 22°38'00" N	6557.4	6556		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1288	81221345	India	IND	IND	MADRAS	80°11'00" E - 13°00'00" N	6557.4	6556		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1291		India	IND	IND	DELHI	77°00'00" E ; 28°34'00" N	6570			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1290		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	6570			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1292		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	6582			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1294		India	IND	IND	MADRAS	80°11'00" E ; 13°00'00" N	6583			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1293		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	6583			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1295		India	IND	IND	BANGALORE	77°40'00" E ; 12°57'00" N	6587			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1296		India	IND	IND	CALCUTTA	88°28'00" E ; 22°39'00" N	6587			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1300		India	IND	IND	BAGHDOGRA	88°20'00" E ; 26°04'00" N	6590			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1301		India	IND	IND	CALCUTTA	88°28'00" E ; 22°39'00" N	6590			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1298		India	IND	IND	DELHI	77°12'00" E ; 28°35'00" N	6590			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1299		India	IND	IND	MADRAS	80°11'00" E ; 13°00'00" N	6590			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy

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1297		India	IND	IND	MUMBAI	72°53'00" E ; 19°05'00" N	6590			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1302		India	IND	IND	AHMEDABAD	72°38'00" E ; 23°04'00" N	6595			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1304		India	IND	IND	GAYA	84°57'00" E ; 24°45'00" N	6595			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1303		India	IND	IND	TIRUCHIRAPALLI	78°43'00" E ; 10°46'00" N	6595			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1306		India	IND	IND	COCHIN	76°16'00" E ; 9°57'00" N	6597			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1305		India	IND	IND	JAMNAGAR	70°01'00" E ; 22°28'00" N	6597			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1307		India	IND	IND	JHARSUGUDA	84°03'00" E ; 21°55'00" N	6597			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1310		India	IND	IND	BEGUMPET	78°28'00" E ; 17°27'00" N	6599			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1311		India	IND	IND	BHUBANESHWAR	85°48'00" E ; 20°16'00" N	6599			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1309		India	IND	IND	DELHI	77°07'00" E ; 28°34'00" N	6599			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1308		India	IND	IND	JODHPUR	73°03'00" E ; 26°16'00" N	6599			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1312		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	6612			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1313		India	IND	IND	AMRITSAR	74°55'00" E ; 31°37'00" N	6624			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1314		India	IND	IND	CALCUTTA	88°20'00" E ; 22°42'00" N	6624			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1315		India	IND	IND	JODHPUR	73°03'00" E ; 26°14'00" N	6625.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1316		India	IND	IND	MADRAS	80°10'00" E ; 13°00'00" N	6629.1			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1318		India	IND	IND	DELHI SAFDARJG	77°11'00" E ; 28°35'00" N	6630			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1317		India	IND	IND	POONA	73°55'00" E ; 18°35'00" N	6630			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1321	81222415	India	IND	IND	CALCUTTA	88°24'00"E - 22°38'00"N	6677.4	6676		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1319		India	IND	IND	JAIPUR	75°52'00" E ; 26°55'00" N	6677.4	6676		FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1320	81222414	India	IND	IND	MUMBAI	72°51'00"E - 19°05'00"N	6677.4	6676		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1322		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	6679.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1324		India	IND	IND	HYDERABAD	78°30'00" E ; 17°20'00" N	6679.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1323		India	IND	IND	KOTA	75°52'00" E ; 25°10'00" N	6679.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1325		India	IND	IND	MADRAS	80°17'00" E ; 13°04'00" N	6679.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1326		India	IND	IND	SAMBALPUR	84°01'00" E ; 21°28'00" N	6679.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1327		India	IND	IND	TEZPUR	92°50'00" E ; 26°37'00" N	6679.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1328		India	IND	IND	AHMEDABAD	72°38'00" E ; 23°02'00" N	6681.6			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1329		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	8828.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1330		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	8845.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1331	81222990	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	8880.4	8879		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1332		India	IND	IND	PT BLAIR	92°43'00" E ; 11°40'00" N	8882			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1337		India	IND	IND	GAUHATI	91°47'00" E ; 26°11'00" N	8888			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1334		India	IND	IND	JAMMU	74°54'00" E ; 32°44'00" N	8888			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1333		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	8888			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1335		India	IND	IND	UDAIPUR SIKAR	75°33'00" E ; 27°42'00" N	8888			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1336		India	IND	IND	VARANASI	83°00'00" E ; 25°20'00" N	8888			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1340		India	IND	IND	AHMEDABAD	72°38'00" E ; 23°02'00" N	8896.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1341		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	8896.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1338		India	IND	IND	PORBANDAR	69°49'00" E ; 21°37'00" N	8896.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1339		India	IND	IND	RAJKOTM	70°56'00" E ; 22°18'00" N	8896.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1342		India	IND	IND	AHMEDABAD	72°38'00" E ; 23°03'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
1344		India	IND	IND	AMRITSAR	74°55'00" E ; 31°37'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1346		India	IND	IND	BANGALORE	77°38'00" E ; 12°58'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1347		India	IND	IND	BEGUMPET	78°30'00" E ; 17°20'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1352		India	IND	IND	BHUBANESHWAR	85°54'00" E ; 20°28'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1353		India	IND	IND	CALCUTTA	88°24'00" E ; 22°38'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1345		India	IND	IND	DELHI	77°12'00" E ; 28°38'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1349		India	IND	IND	LUCKNOW	80°59'00" E ; 26°55'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1343		India	IND	IND	MUMBAI	72°54'00" E ; 18°55'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1348		India	IND	IND	NAGPUR	79°09'00" E ; 21°09'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1351		India	IND	IND	PATNA	85°13'00" E ; 25°37'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1350		India	IND	IND	VARANASI	83°00'00" E ; 25°20'00" N	8938			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1354		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	8961.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1355		India	IND	IND	BAGHDOGRA	88°20'00" E ; 26°41'00" N	8963			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1356		India	IND	IND	CALCUTTA	88°24'00" E ; 22°38'00" N	8963			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1357		India	IND	IND	GAUHATI	91°43'00" E ; 26°05'00" N	8963			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1358		India	IND	IND	JORHAT	94°11'00" E ; 26°44'00" N	8963			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1359		India	IND	IND	MOHAN BARI	95°01'00" E ; 27°29'00" N	8963			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
726	81223576	India	IND	IND	DELHI	77°07'00"E - 28°32'00"N	10019.4	10018		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81223575	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	10019.4	10018		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
725		India	IND	IND	MUMBAI	72°51'00" E ; 19°09'00" N	10019.4	10018		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
727		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	10048			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
728		India	IND	IND	SRINAGAR AIRPT	74°51'00" E ; 34°06'00" N	10050.5			FD	R3E	Aeronautical Station (AM(R)S); Single sideband; Reduced carrier; telephony
731	81223800	India	IND	IND	CALCUTTA	88°24'00"E - 22°38'00"N	10067.4	10066		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
730	81223801	India	IND	IND	MADRAS	80°11'00"E - 13°00'00"N	10067.4	10066		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
729	81223802	India	IND	IND	TRIVANDRUM	76°59'00"E - 8°29'00"N	10067.4	10066		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
732		India	IND	IND	GOA	73°51'00" E ; 15°25'00" N	11337.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
734	81224542	India	IND	IND	CALCUTTA	88°27'00"E - 22°38'00"N	11388.4	11387		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
733	81224541	India	IND	IND	MUMBAI	72°51'00"E - 19°05'00"N	11388.4	11387		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
736	81225184	India	IND	IND	DELHI	77°07'00"E - 28°32'00"N	13289.4	13288		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
735	81225183	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	13289.4	13288		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
738	81225360	India	IND	IND	CALCUTTA	88°24'00"E - 22°38'00"N	13319.4	13318		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
737	81225361	India	IND	IND	MADRAS	80°11'00"E - 13°00'00"N	13319.4	13318		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
739		India	IND	IND	SRINAGAR AIRPT	74°51'00" E ; 34°06'00" N	13353.5			FD	R3E	Aeronautical Station (AM(R)S); Single sideband; Reduced carrier; telephony
855	81225765	India	IND	IND	DELHI	77°07'00"E - 28°32'00"N	21929.4	21928		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
854	81225764	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	21929.4	21928		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
857	81225781	India	IND	IND	DELHI	77°07'00"E - 28°32'00"N	21935.4	21934		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
856	81225780	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	21935.4	21934		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
858	81225797	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	21950.4	21949		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
859	81225840	India	IND	IND	MUMBAI	72°51'00"E - 19°09'00"N	21971.4	21970		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1385		Indonesia	INS	INS	AMBON	128°05'00" E ; 3°42'00" S	2957.4	2956	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1384		Indonesia	INS	INS	BIAK	136°07'00" E ; 1°12'00" S	2957.4	2956	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1383		Indonesia	INS	INS	JAYAPURA	140°31'00" E ; 2°34'00" S	2957.4	2956	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1386		Indonesia	INS	INS	MENADO	124°55'00" E ; 1°32'00" N	2957.4	2956	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1387		Indonesia	INS	INS	UJUNG Pandang	119°33'00" E ; 5°04'00" S	2957.4	2956	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1388	81214701	Indonesia	INS	INS	BALIKPAPAN	116°54'00"E - 1°16'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1390	81214702	Indonesia	INS	INS	BANDJARMASIN	114°45'00"E - 3°27'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1395	81214703	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1389	81214704	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1391	81214705	Indonesia	INS	INS	KUPANG	123°40'00"E - 10°10'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1393	81214706	Indonesia	INS	INS	MEDAN	98°41'00"E - 3°34'00"N	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1394	81214707	Indonesia	INS	INS	PALEMBANG	104°42'00"E - 2°54'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1392	81214708	Indonesia	INS	INS	PONTIANAK	109°24'00"E - 0°09'00"S	3417.4	3416	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1398	81216014	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	3471.4	3470	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1396	81216015	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	3471.4	3470	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1397	81216016	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	3471.4	3470	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1399	81218698	Indonesia	INS	INS	AMBON	128°05'00"E - 3°42'00"S	5551.4	5550	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1400	81218699	Indonesia	INS	INS	MENADO	124°55'00"E - 1°32'00"N	5551.4	5550	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1401	81218700	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	5551.4	5550	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1402	81219280	Indonesia	INS	INS	BALIKPAPAN	116°54'00"E - 1°16'00"S	5575.4	5574	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1403	81219281	Indonesia	INS	INS	BANDJARMASIN	114°45'00"E - 3°27'00"S	5575.4	5574	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1405	81219282	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	5575.4	5574	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1404	81219283	Indonesia	INS	INS	KUPANG	123°40'00"E - 10°10'00"S	5575.4	5574	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1407	81219320	Indonesia	INS	INS	BIAK	136°07'00"E - 1°12'00"S	5581.4	5580	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1406	81219321	Indonesia	INS	INS	JAYAPURA	140°31'00"E - 2°34'00"S	5581.4	5580	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1408	81219727	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	5632.4	5631	R6D, MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1410	81219728	Indonesia	INS	INS	MEDAN	98°41'00"E - 3°34'00"N	5632.4	5631	R6D, MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1411	81219729	Indonesia	INS	INS	PALEMBANG	104°42'00"E - 2°54'00"S	5632.4	5631	R6D, MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1409	81219730	Indonesia	INS	INS	PONTIANAK	109°24'00"E - 0°09'00"S	5632.4	5631	R6D, MINO	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1412	81221187	Indonesia	INS	INS	AMBON	128°05'00"E - 3°42'00"S	6545.4	6544	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1413	81221188	Indonesia	INS	INS	MENADO	124°55'00"E - 1°32'00"N	6545.4	6544	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1414	81221189	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	6545.4	6544	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1417	81221346	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	6557.4	6556	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1415	81221347	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	6557.4	6556	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1416	81221348	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	6557.4	6556	MSEA	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1418	81221592	Indonesia	INS	INS	BALIKPAPAN	116°54'00"E - 1°16'00"S	6578.4	6577	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1419	81221593	Indonesia	INS	INS	BANDJARMASIN	114°45'00"E - 3°27'00"S	6578.4	6577	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1421	81221594	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	6578.4	6577	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1420	81221595	Indonesia	INS	INS	KUPANG	123°40'00"E - 10°10'00"S	6578.4	6577	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1422	81221828	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	6596.4	6595	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1424	81221829	Indonesia	INS	INS	MEDAN	98°41'00"E - 3°34'00"N	6596.4	6595	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1425	81221830	Indonesia	INS	INS	PALEMBANG	104°42'00"E - 2°54'00"S	6596.4	6595	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1423	81221831	Indonesia	INS	INS	PONTIANAK	109°24'00"E - 0°09'00"S	6596.4	6595	R6D	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1427	81222115	Indonesia	INS	INS	BIAK	136°07'00"E - 1°12'00"S	6632.4	6631	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1426	81222116	Indonesia	INS	INS	JAYAPURA	140°31'00"E - 2°34'00"S	6632.4	6631	R6C	FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1429	81222618	Indonesia	INS	INS	BIAK	136°07'00"E - 1°12'00"S	8835.4	8834	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1428	81222619	Indonesia	INS	INS	JAYAPURA	140°31'00"E - 2°34'00"S	8835.4	8834	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1430	81223027	Indonesia	INS	INS	BALIKPAPAN	116°54'00"E - 1°16'00"S	8883.4	8882	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1431	81223028	Indonesia	INS	INS	BANDJARMASIN	114°45'00"E - 3°27'00"S	8883.4	8882	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1433	81223029	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	8883.4	8882	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1432	81223030	Indonesia	INS	INS	KUPANG	123°40'00"E - 10°10'00"S	8883.4	8882	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1434	81223259	Indonesia	INS	INS	AMBON	128°05'00"E - 3°42'00"S	8919.4	8918	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1435	81223260	Indonesia	INS	INS	MENADO	124°55'00"E - 1°32'00"N	8919.4	8918	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1436	81223261	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	8919.4	8918	R6C	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1437	81223439	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	8958.4	8957	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1439	81223440	Indonesia	INS	INS	MEDAN	98°41'00"E - 3°34'00"N	8958.4	8957	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1440	81223441	Indonesia	INS	INS	PALEMBANG	104°42'00"E - 2°54'00"S	8958.4	8957	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1438	81223442	Indonesia	INS	INS	PONTIANAK	109°24'00"E - 0°09'00"S	8958.4	8957	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1360	81223803	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	10067.4	10066	MSEA	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1365	81224008	Indonesia	INS	INS	AMBON	128°05'00"E - 3°42'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1361	81224009	Indonesia	INS	INS	BALIKPAPAN	116°54'00"E - 1°16'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1366	81224010	Indonesia	INS	INS	BANDJARMASIN	114°45'00"E - 3°27'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1364	81224011	Indonesia	INS	INS	BIAK	136°07'00"E - 1°12'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1373	81224012	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1362	81224013	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1363	81224014	Indonesia	INS	INS	JAYAPURA	140°31'00"E - 2°34'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1367	81224015	Indonesia	INS	INS	KUPANG	123°40'00"E - 10°10'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1371	81224016	Indonesia	INS	INS	MEDAN	98°41'00"E - 3°34'00"N	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1368	81224017	Indonesia	INS	INS	MENADO	124°55'00"E - 1°32'00"N	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1372	81224018	Indonesia	INS	INS	PALEMBANG	104°42'00"E - 2°54'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1369	81224019	Indonesia	INS	INS	PONTIANAK	109°24'00"E - 0°09'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1370	81224020	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	11310.4	11309	R6D	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1374	81224208	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	11367.4	11366	R6F	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1376	81224209	Indonesia	INS	INS	MEDAN	98°41'00"E - 3°34'00"N	11367.4	11366	R6F	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1377	81224210	Indonesia	INS	INS	PALEMBANG	104°42'00"E - 2°54'00"S	11367.4	11366	R6F	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1375	81224211	Indonesia	INS	INS	PONTIANAK	109°24'00"E - 0°09'00"S	11367.4	11366	R6F	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1380	81225096	Indonesia	INS	INS	DENPASAR	115°10'00"E - 8°45'00"S	11397.4	11396	MSEA	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1378	81225097	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	11397.4	11396	MSEA	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1379	81225098	Indonesia	INS	INS	UJUNG Pandang	119°33'00"E - 5°04'00"S	11397.4	11396	MSEA	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1381	81225362	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	13319.4	13318	MSEA	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1382	81225573	Indonesia	INS	INS	JAKARTA	106°51'00"E - 6°09'00"S	17908.4	17907	MEA	FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1454		Japan	J	J	FUKUOKA	130°27'00" E ; 33°35'00" N	2858.4	2857		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1455		Japan	J	J	OSAKA	135°26'00" E ; 34°47'00" N	2858.4	2857		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1457		Japan	J	J	SAPPORO	141°41'00" E ; 42°49'00" N	2858.4	2857		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1456		Japan	J	J	TOKYO	139°46'00" E ; 35°33'00" N	2858.4	2857		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1458		Japan	J	J	TOKYO	139°51'00" E ; 35°44'00" N	2864.4	2863		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1459		Japan	J	J	FUKUOKA	130°27'00" E ; 33°25'00" N	2921.4	2920		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1460		Japan	J	J	OSAKA	135°26'00" E ; 34°47'00" N	2921.4	2920		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1462		Japan	J	J	SAPPORO	141°41'00" E ; 42°49'00" N	2921.4	2920		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1461		Japan	J	J	TOKYO	139°46'00" E ; 35°33'00" N	2921.4	2920		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1463		Japan	J	J	FUKUOKA	130°27'00" E ; 33°35'00" N	2927.4	2926		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1464		Japan	J	J	TOKYO	140°19'00" E ; 36°20'00" N	2927.4	2926		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1466		Japan	J	J	NARITA	140°23'00" E ; 35°45'00" N	2933.4	2932		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1465		Japan	J	J	TOKYO TOMOBE	140°19'00" E ; 36°20'00" N	2933.4	2932		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1467	81214315	Japan	J	J	NAHA	127°40'00"E - 26°11'00"N	2999.4	2998		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1469	81214316	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	2999.4	2998		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1468	81214317	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	2999.4	2998		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1470	81214907	Japan	J	J	FUKUOKA	130°27'00"E - 33°35'00"N	3435.4	3434		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1471	81214908	Japan	J	J	OSAKA	135°26'00"E - 34°47'00"N	3435.4	3434		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1473	81214909	Japan	J	J	SAPPORO	141°41'00"E - 42°49'00"N	3435.4	3434		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1472	81214910	Japan	J	J	TOKYO	139°46'00"E - 35°33'00"N	3435.4	3434		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	118003640	Japan	J	J	KASAMA	140°18'38"E - 36°19'48"N	3456.4	3455		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1474	91017417	Japan	J	J	DIAMOND NAGOYA	136°55'03"E - 35°15'18"N	3480.4	3479		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1475	81216071	Japan	J	J	FUKUOKA	130°27'00"E - 33°35'00"N	3480.4	3479		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1476	81216072	Japan	J	J	OSAKA	135°36'00"E - 34°47'00"N	3480.4	3479		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1478	81216073	Japan	J	J	SAPPORO	141°41'00"E - 42°49'00"N	3480.4	3479		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1477	81216074	Japan	J	J	TOKYO	139°46'00"E - 35°46'00"N	3480.4	3479		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1479	81216182	Japan	J	J	FUKUOKA	130°27'00"E - 33°35'00"N	3489.4	3488		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1480	81216183	Japan	J	J	TOKYO	140°19'00"E - 36°20'00"N	3489.4	3488		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1481	91017420	Japan	J	J	DIAMOND NAGOYA	136°55'03"E - 35°15'18"N	5626.4	5625		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1482	84013359	Japan	J	J	YAO	135°36'00"E - 34°35'00"N	5626.4	5625		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1484	81219690	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	5629.4	5628		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1483	81219691	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	5629.4	5628		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1485	81221039	Japan	J	J	NAHA	127°40'00"E - 26°11'00"N	6533.4	6532		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1487	81221040	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	6533.4	6532		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1486	81221041	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	6533.4	6532		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1488	81221409	Japan	J	J	NAHA	127°40'00"E - 26°11'00"N	6563.4	6562		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1490	81221410	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	6563.4	6562		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1489	81221411	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	6563.4	6562		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1492	88015193	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	6656.4	6655		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1491	88015194	Japan	J	J	TOMOBE	140°19'00"E - 36°30'00"N	6656.4	6655		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1493	81222444	Japan	J	J	TOKYO	139°51'00"E - 35°44'00"N	6680.4	6679		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1494	81222582	Japan	J	J	TOKYO	139°51'00"E - 35°44'00"N	8829.4	8828		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1495	91017424	Japan	J	J	DIAMOND NAGOYA	136°55'03"E - 35°15'18"N	8886.4	8885		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1496	84013360	Japan	J	J	YAO	135°36'00"E - 34°35'00"N	8886.4	8885		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1497	81223193	Japan	J	J	NAHA	127°40'00"E - 26°11'00"N	8904.4	8903		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1499	81223194	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	8904.4	8903		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1498	81223195	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	8904.4	8903		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1501	88015195	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	8952.4	8951		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1500	88015196	Japan	J	J	TOMOBE	140°19'00"E - 36°20'00"N	8952.4	8951		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1442	81223738	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	10049.4	10048		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1441	81223739	Japan	J	J	TOKYO HANEDA	140°19'00"E - 36°20'00"N	10049.4	10048		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1444	88015197	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	11331.4	11330		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1443	88015198	Japan	J	J	TOMOBE	140°19'00"E - 36°20'00"N	11331.4	11330		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1445	81224537	Japan	J	J	NAHA	127°40'00"E - 26°11'00"N	11385.4	11384		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1447	81225223	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	13274.4	13273		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1446	81225224	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	13274.4	13273		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1448	81225158	Japan	J	J	TOKYO	139°51'00"E - 35°44'00"N	13283.4	13282		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1449	81225280	Japan	J	J	NAHA	127°40'00"E - 26°11'00"N	13301.4	13300		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1451	81225281	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	13301.4	13300		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1450	81225282	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	13301.4	13300		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1453	81225555	Japan	J	J	NARITA	140°23'00"E - 35°45'00"N	17905.4	17904		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1452	81225556	Japan	J	J	TOKYO TOMOBE	140°19'00"E - 36°20'00"N	17905.4	17904		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1507	81214819	Kiribati	KIR	KIR	ABEMAMA	173°50'00"E - 0°30'00"N	3426.4	3425		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1505	81214820	Kiribati	KIR	KIR	BUTARITARI	172°49'00"E - 3°05'00"N	3426.4	3425		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1508	81214821	Kiribati	KIR	KIR	TABITEUEA NO	174°47'00"E - 1°14'00"S	3426.4	3425		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1506	81214822	Kiribati	KIR	KIR	TARAWA	173°07'00"E - 1°22'00"N	3426.4	3425		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1509	81214823	Kiribati	KIR	KIR	TARAWA	173°07'00"E - 1°23'00"N	3426.4	3425		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1512	81221300	Kiribati	KIR	KIR	ABEMAMA	173°50'00"E - 0°30'00"N	6554.4	6553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1510	81221301	Kiribati	KIR	KIR	BUTARITARI	172°49'00"E - 3°05'00"N	6554.4	6553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1513	81221302	Kiribati	KIR	KIR	TABITEUEA NO	174°47'00"E - 1°14'00"S	6554.4	6553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1511	81221303	Kiribati	KIR	KIR	TARAWA	173°07'00"E - 1°23'00"N	6554.4	6553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1514	81221304	Kiribati	KIR	KIR	TARAWA	173°07'00"E - 1°23'00"N	6554.4	6553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1516	81222716	Kiribati	KIR	KIR	ABEMAMA	173°50'00"E - 0°30'00"N	8847.4	8846		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1515	81222717	Kiribati	KIR	KIR	BUTARITARI	172°49'00"E - 3°05'00"N	8847.4	8846		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1517	81222718	Kiribati	KIR	KIR	TABITEUEA NO	174°47'00"E - 1°14'00"S	8847.4	8846		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1518	81222719	Kiribati	KIR	KIR	TARAWA	173°07'00"E - 1°23'00"N	8847.4	8846		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1519	81222916	Kiribati	KIR	KIR	CHRISTMAS I	157°29'00"W - 1°59'00"N	8868.4	8867		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1502	81224125	Kiribati	KIR	KIR	TARAWA	172°56'00"E - 1°21'00"N	11340.4	11339		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1503	81224126	Kiribati	KIR	KIR	TARAWA	173°07'00"E - 1°23'00"N	11340.4	11339		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1504	81225283	Kiribati	KIR	KIR	CHRISTMAS I	157°29'00"W - 1°59'00"N	13301.4	13300		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1559		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	2869.5			FD	H3E	Aeronuatical Station (AM(R)S); Single sideband; Full carrier; telephony
1560		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	2988.5			FD	H3E	Aeronuatical Station (AM(R)S); Single sideband; Full carrier; telephony
1562		Malaysia	MLA	MLA	KUCHING	110°20'00" E ; 1°29'00" N	5624			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1561		Malaysia	MLA	MLA	LABUAN	115°16'00" E ; 5°17'00" N	5624			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1563		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	5625.5			FD	H3E	Aeronuatical Station (AM(R)S); Single sideband; Full carrier; telephony
1564		Malaysia	MLA	MLA	KUCHING	110°20'00" E ; 1°29'00" N	5625.5			FD	H3E	Aeronuatical Station (AM(R)S); Single sideband; Full carrier; telephony
1565	81220308	Malaysia	MLA	MLA	KLANG TX STN	101°28'00"E - 3°02'00"N	5656.4	5655		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1566		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	5674.5			FD	H3E	Aeronuatical Station (AM(R)S); Single sideband; Full carrier; telephony
1567	81221349	Malaysia	MLA	MLA	KLANG TX STN	101°28'00"E - 3°02'00"N	6557.4	6556		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1568		Malaysia	MLA	MLA	KUCHING	110°20'00" E ; 1°29'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony

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1569		Malaysia	MLA	MLA	KOTA KINABALU	116°03'00" E ; 5°57'00" N	6589.5			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1570		Malaysia	MLA	MLA	SANDAKAN	118°04'00" E ; 5°54'00" N	6589.5			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1571		Malaysia	MLA	MLA	KUCHING	110°20'00" E ; 1°29'00" N	6590.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1573		Malaysia	MLA	MLA	KOTA KINABALU	116°03'00" E ; 5°57'00" N	8868			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1572		Malaysia	MLA	MLA	KUCHING	110°19'00" E ; 1°28'00" N	8868			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1575		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	8869.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1574		Malaysia	MLA	MLA	KUCHING	110°19'00" E ; 1°28'00" N	8869.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1576		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	8883.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1577	81223380	Malaysia	MLA	MLA	KLANG TX STN	101°28'00"E - 3°02'00"N	8943.4	8942		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1553	81223804	Malaysia	MLA	MLA	KLANG TX STN	101°28'00"E - 3°02'00"N	10067.4	10066		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1554	81225099	Malaysia	MLA	MLA	KLANG TX STN	101°28'00"E - 3°02'00"N	11397.4	11396		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1555		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	13289.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1556		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	13313.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1557	81225363	Malaysia	MLA	MLA	KLANG TX STN	101°28'00"E - 3°02'00"N	13319.4	13318		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1558		Malaysia	MLA	MLA	KLANG	101°28'00" E ; 2°59'00" N	17966.5			FD	H3E	Aeronautical Station (AM(R)S); Single sideband; Full carrier; telephony
1578		Maldives	MLD	MLD	HULULE	73°31'00" E ; 4°11'00" N	8930.5			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1629		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	2875			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1628		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	2875			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1627		Mongolia	MNG	MNG	ULAN GOM	92°00'00" E ; 50°00'00" N	2875			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1630		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	2896			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1631		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	2973			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1632		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°50'00" N	2994			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1645		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	3008			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1646		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	3008			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1647		Mongolia	MNG	MNG	ULIASUTAI	96°50'00" E ; 47°40'00" N	3015			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1648		Mongolia	MNG	MNG	UNDURKHAN	110°50'00" E ; 47°40'00" N	3015			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1649		Mongolia	MNG	MNG	MALCHIN	93°01'00" E ; 49°07'00" N	3425.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1650		Mongolia	MNG	MNG	ULGEI	89°20'00" E ; 49°00'00" N	3432.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1651		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	3446.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1652		Mongolia	MNG	MNG	ERDENI UB	108°00'00" E ; 47°55'00" N	3453.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1653		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	3460.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1654		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	3488.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1655		Mongolia	MNG	MNG	BAIAN DUNG	113°20'00" E ; 49°20'00" N	3495.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1656		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	4661.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1657		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	4661.5			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1658		Mongolia	MNG	MNG	MANKHAN	92°00'00" E ; 47°00'00" N	4668.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1659		Mongolia	MNG	MNG	BAIANDELGER SH	112°01'00" E ; 46°00'00" N	4682.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1660		Mongolia	MNG	MNG	BAIANDELGER SH	112°01'00" E ; 46°00'00" N	4682.5			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1661		Mongolia	MNG	MNG	BAIANDELGER SH	112°01'00" E ; 46°00'00" N	4682.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1662		Mongolia	MNG	MNG	BAIANDELGER SH	112°01'00" E ; 46°00'00" N	4682.5			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1663		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	5482.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1664		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	5500			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy

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1665		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	5500			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1666		Mongolia	MNG	MNG	ULGEI	89°20'00" E ; 49°00'00" N	5505			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1667		Mongolia	MNG	MNG	BULGAN	103°30'00" E ; 48°50'00" N	5506			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1668		Mongolia	MNG	MNG	ARVAIHEER	102°00'00" E ; 46°10'00" N	5515			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1669		Mongolia	MNG	MNG	ULIASUTAI	96°50'00" E ; 47°40'00" N	5537.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1670		Mongolia	MNG	MNG	UNDURKHAN	110°05'00" E ; 47°40'00" N	5544			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1671		Mongolia	MNG	MNG	UNDURKHAN	110°05'00" E ; 47°40'00" N	5544			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1672		Mongolia	MNG	MNG	ULAN GOM	92°00'00" E ; 50°00'00" N	5566.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1673		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	5581.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1674		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	5596.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1675		Mongolia	MNG	MNG	ULAN BATOR	106°40'00" E ; 49°00'00" N	5610			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1676		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	5612.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1677		Mongolia	MNG	MNG	CHOIBALSAN	114°30'00" E ; 48°05'00" N	5624			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1678		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°50'00" N	5632.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1679		Mongolia	MNG	MNG	UNDURKHAN	110°50'00" E ; 47°40'00" N	5642.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1680		Mongolia	MNG	MNG	URTU	113°10'00" E ; 46°50'00" N	5649			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1681		Mongolia	MNG	MNG	URTU	113°10'00" E ; 46°50'00" N	5649			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1682		Mongolia	MNG	MNG	UBURKHANGAI	102°55'00" E ; 46°10'00" N	5664			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1683		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	5677			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1684		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	6552			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1685		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	6589.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1686		Mongolia	MNG	MNG	TSETSERLIG	101°20'00" E ; 47°32'00" N	6604.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1687		Mongolia	MNG	MNG	ALTAN BULAK	106°30'00" E ; 50°20'00" N	6627			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1688		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	6642			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1689		Mongolia	MNG	MNG	ULIASUTAI	96°50'00" E ; 47°40'00" N	6657			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1690		Mongolia	MNG	MNG	ALTAN TESLI	92°50'00" E ; 47°20'00" N	6672			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1691		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°00'00" N	8825			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1692		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	8845			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1693		Mongolia	MNG	MNG	ULIASUTAI	96°50'00" E ; 47°40'00" N	8855			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1694		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	8865			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1695		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	8875			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1696		Mongolia	MNG	MNG	GOBI ALTAI	96°10'00" E ; 46°30'00" N	8895			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1697		Mongolia	MNG	MNG	UNDURKHAN	110°50'00" E ; 47°40'00" N	8913.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1698		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°50'00" N	8922			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1700		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	8947.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1699		Mongolia	MNG	MNG	UBURKHANGAI	102°55'00" E ; 46°10'00" N	8947.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1701		Mongolia	MNG	MNG	TSETSERLIG	101°10'00" E ; 47°30'00" N	8961.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1579		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	10012			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1580		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	10012			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1581		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	10030			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1582		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	10030			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1583		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°50'00" N	10039			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy

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1584		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°50'00" N	10039			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1585		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	10057			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1586		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	10057			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1587		Mongolia	MNG	MNG	ULAN GOM	92°00'00" E ; 50°00'00" N	10075			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1588		Mongolia	MNG	MNG	ULAN GOM	92°00'00" E ; 50°00'00" N	10075			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1589		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 47°05'00" N	10085			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1590		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 47°05'00" N	10085			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1591		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	10093			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1592		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	10093			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1593		Mongolia	MNG	MNG	ULGEI	89°20'00" E ; 49°00'00" N	11275			FA	A1B	Aeronautical Station (AMS); Double sideband; telegraphy
1594		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	11280.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1595		Mongolia	MNG	MNG	BULAGAN	103°30'00" E ; 48°50'00" N	11306			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1596		Mongolia	MNG	MNG	TSETSERLIG	101°10'00" E ; 47°30'00" N	11328			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1597		Mongolia	MNG	MNG	UBURKHANGAI	102°55'00" E ; 46°10'00" N	11347			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1598		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°55'00" N	11366			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1599		Mongolia	MNG	MNG	UNDURKHAN	110°50'00" E ; 47°40'00" N	11375			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1600		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	11395			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1601		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	13264.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1602		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	13264.5			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1603		Mongolia	MNG	MNG	GOBI ALTAI	96°10'00" E ; 46°30'00" N	13285			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1604		Mongolia	MNG	MNG	GOBI ALTAI	96°10'00" E ; 46°30'00" N	13285			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1605		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	13295			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1606		Mongolia	MNG	MNG	KOBDO	91°35'00" E ; 48°00'00" N	13295			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1607		Mongolia	MNG	MNG	ULIASUTAI	96°50'00" E ; 47°40'00" N	13305			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1608		Mongolia	MNG	MNG	ULIASUTAI	96°50'00" E ; 47°40'00" N	13305			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1609		Mongolia	MNG	MNG	ULAN GOM	92°00'00" E ; 50°00'00" N	13315			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1610		Mongolia	MNG	MNG	ULAN GOM	92°00'00" E ; 50°00'00" N	13315			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1611		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	13325			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1612		Mongolia	MNG	MNG	MUREN	100°10'00" E ; 49°30'00" N	13325			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1613		Mongolia	MNG	MNG	ALTAN BULAK	106°30'00" E ; 50°20'00" N	13335			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1614		Mongolia	MNG	MNG	ALTAN BULAK	106°30'00" E ; 50°20'00" N	13335			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1615		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	13350			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1616		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	13350			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1617		Mongolia	MNG	MNG	TAMTSAK BULAK	117°20'00" E ; 47°10'00" N	17905			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1618		Mongolia	MNG	MNG	TAMTSAK BULAK	117°20'00" E ; 47°10'00" N	17905			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1619		Mongolia	MNG	MNG	KHONGOR	113°00'00" E ; 45°50'00" N	17916.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1620		Mongolia	MNG	MNG	KHONGOR	113°00'00" E ; 45°50'00" N	17916.5			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1621		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	17925			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1622		Mongolia	MNG	MNG	TCHOIBOLSAN	114°30'00" E ; 48°05'00" N	17925			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1623		Mongolia	MNG	MNG	UNDURKHAN	110°50'00" E ; 47°40'00" N	17940			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1624		Mongolia	MNG	MNG	UNDURKHAN	110°50'00" E ; 47°40'00" N	17940			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1625		Mongolia	MNG	MNG	SAIN SHANDA	110°05'00" E ; 44°05'00" N	17950			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy

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1626		Mongolia	MNG	MNG	UBURKHANGAI	102°55'00" E ; 46°10'00" N	17956.5			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1633		Mongolia	MNG	MNG	ALTAN BULAC	106°30'00" E ; 50°20'00" N	21930			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1634		Mongolia	MNG	MNG	ALTAN BULAC	106°30'00" E ; 50°20'00" N	21930			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1635		Mongolia	MNG	MNG	GOBI ALTAI	96°10'00" E ; 46°30'00" N	21950			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1636		Mongolia	MNG	MNG	GOBI ALTAI	96°10'00" E ; 46°30'00" N	21950			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1637		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	21960			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1638		Mongolia	MNG	MNG	DALANTSZADAGAD	104°30'00" E ; 43°38'00" N	21960			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1639		Mongolia	MNG	MNG	UBURKHANGAI	102°55'00" E ; 46°10'00" N	21970			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1640		Mongolia	MNG	MNG	UBURKHANGAI	102°55'00" E ; 46°10'00" N	21970			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1641		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	21980			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1642		Mongolia	MNG	MNG	ULAN BATOR	107°00'00" E ; 47°55'00" N	21980			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
1643		Mongolia	MNG	MNG	TSETSERLIG	101°10'00" E ; 47°30'00" N	21990			FD	A1B	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1644		Mongolia	MNG	MNG	TSETSERLIG	101°10'00" E ; 47°30'00" N	21990			FD	F1B	Aeronautical Station (AM(R)S); Frequency modulation; telegraphy
234		Myanmar	BRM	BRM	TOEGYAUNGGALE	96°14'00" E ; 16°52'00" N	2988.5			FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
246	81214973	Myanmar	BRM	BRM	BHAMO	97°15'00"E - 24°16'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
237	81214974	Myanmar	BRM	BRM	GANGAW	94°07'00"E - 22°09'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
240	81214975	Myanmar	BRM	BRM	HOMALIN	94°54'00"E - 24°52'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
236	81214976	Myanmar	BRM	BRM	HTILIN	94°06'00"E - 21°42'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
235	81214977	Myanmar	BRM	BRM	KALEMYO	94°04'00"E - 23°10'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
238	81214978	Myanmar	BRM	BRM	KYAUKTU	94°08'00"E - 21°24'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
249	81214979	Myanmar	BRM	BRM	LASHIO	97°45'00"E - 22°59'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
244	81214980	Myanmar	BRM	BRM	MANDALAY	96°08'00"E - 21°56'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
245	81214981	Myanmar	BRM	BRM	MOMEIK	96°38'00"E - 23°05'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
247	81214982	Myanmar	BRM	BRM	MYITKYINA	97°24'00"E - 25°28'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
241	81214983	Myanmar	BRM	BRM	NYAUNG U	94°58'00"E - 21°12'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
242	81214984	Myanmar	BRM	BRM	PAKOKKU	95°06'00"E - 21°20'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
239	81214985	Myanmar	BRM	BRM	PAUK	94°31'00"E - 21°27'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
248	81214986	Myanmar	BRM	BRM	PUTAO	97°27'00"E - 27°20'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
243	81214987	Myanmar	BRM	BRM	SINKALING KHAM	95°42'00"E - 26°00'00"N	3441.4	3440		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
250	81216095	Myanmar	BRM	BRM	AKYA	92°52'00"E - 20°07'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
253	81216096	Myanmar	BRM	BRM	BAS SEIN	94°47'00"E - 16°48'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
255	81216097	Myanmar	BRM	BRM	HEHO	96°48'00"E - 20°45'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
261	81216098	Myanmar	BRM	BRM	KAWTHAUNG	98°33'00"E - 10°03'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
264	81216099	Myanmar	BRM	BRM	KENG TUNG	99°37'00"E - 21°17'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
251	81216100	Myanmar	BRM	BRM	KYAUKPYU	93°32'00"E - 19°26'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
256	81216101	Myanmar	BRM	BRM	LOIKAW	97°18'00"E - 19°41'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
254	81216102	Myanmar	BRM	BRM	MAGWE	94°57'00"E - 20°10'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
268	81216103	Myanmar	BRM	BRM	MERGUI	98°37'00"E - 12°27'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
263	81216104	Myanmar	BRM	BRM	MONGHSAT	99°16'00"E - 20°32'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
262	81216105	Myanmar	BRM	BRM	MONGTONG	98°55'00"E - 20°17'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
258	81216106	Myanmar	BRM	BRM	MOULMEIN	97°40'00"E - 16°27'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
259	81216107	Myanmar	BRM	BRM	PA AN	97°40'00"E - 16°53'00"N	3483.4	3482		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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257	81216108	Myanmar	BRM	BRM	PAPUN	97°27'00"E - 18°04'00"N	3483.4	3482		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
252	81216110	Myanmar	BRM	BRM	SANDOWAY	94°18'00"E - 18°25'00"N	3483.4	3482		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
265	81216111	Myanmar	BRM	BRM	TACHILEIK	99°56'00"E - 20°29'00"N	3483.4	3482		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
267	81216112	Myanmar	BRM	BRM	TAVOY	98°13'00"E - 14°06'00"N	3483.4	3482		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
266	81216109	Myanmar	BRM	BRM	YANGON	96°08'00"E - 16°54'00"N	3483.4	3482		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
260	81216113	Myanmar	BRM	BRM	YE	97°52'00"E - 15°18'00"N	3483.4	3482		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
280	81217669	Myanmar	BRM	BRM	BHAMO	97°15'00"E - 24°16'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
271	81217670	Myanmar	BRM	BRM	GANGAW	94°07'00"E - 22°09'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
274	81217671	Myanmar	BRM	BRM	HOMALIN	94°54'00"E - 24°52'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
270	81217672	Myanmar	BRM	BRM	HTILIN	94°06'00"E - 21°42'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
269	81217673	Myanmar	BRM	BRM	KALEMYO	94°04'00"E - 23°10'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
272	81217674	Myanmar	BRM	BRM	KYAUKTU	94°08'00"E - 21°24'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
283	81217675	Myanmar	BRM	BRM	LASHIO	97°45'00"E - 22°59'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
278	81217676	Myanmar	BRM	BRM	MANDALAY	96°08'00"E - 21°56'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
279	81217677	Myanmar	BRM	BRM	MOMEIK	96°38'00"E - 23°05'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
281	81217678	Myanmar	BRM	BRM	MYITKYINA	97°24'00"E - 25°28'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
275	81217679	Myanmar	BRM	BRM	NYAUNG U	94°58'00"E - 21°12'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
276	81217680	Myanmar	BRM	BRM	PAKOKKU	95°06'00"E - 21°20'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
273	81217681	Myanmar	BRM	BRM	PAUK	94°31'00"E - 21°27'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
282	81217682	Myanmar	BRM	BRM	PUTAO	97°27'00"E - 27°20'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
277	81217683	Myanmar	BRM	BRM	SINKALING KHAM	95°42'00"E - 26°00'00"N	5509.4	5508		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
284	81218727	Myanmar	BRM	BRM	AKYAB	92°52'00"E - 20°08'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
287	81218728	Myanmar	BRM	BRM	BASSEIN	94°47'00"E - 16°48'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
289	81218729	Myanmar	BRM	BRM	HEHO	96°48'00"E - 20°45'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
295	81218730	Myanmar	BRM	BRM	KAWTHAUNG	98°33'00"E - 10°03'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
298	81218731	Myanmar	BRM	BRM	KENGTUNG	99°37'00"E - 21°17'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
285	81218732	Myanmar	BRM	BRM	KYAUKPYU	93°32'00"E - 19°26'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
290	81218733	Myanmar	BRM	BRM	LOIKAW	97°18'00"E - 19°41'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
288	81218734	Myanmar	BRM	BRM	MAGWE	94°57'00"E - 20°10'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
302	81218735	Myanmar	BRM	BRM	MERGUI	98°37'00"E - 12°27'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
297	81218736	Myanmar	BRM	BRM	MONGHSAT	99°16'00"E - 20°32'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
296	81218737	Myanmar	BRM	BRM	MONGTONG	98°55'00"E - 20°17'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
292	81218738	Myanmar	BRM	BRM	MOULMEIN	97°40'00"E - 16°27'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
293	81218739	Myanmar	BRM	BRM	PA AN	97°40'00"E - 16°53'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
291	81218740	Myanmar	BRM	BRM	PAPUN	97°27'00"E - 18°04'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
286	81218742	Myanmar	BRM	BRM	SANDOWAY	94°18'00"E - 18°25'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
299	81218743	Myanmar	BRM	BRM	TACHILEIK	99°56'00"E - 20°29'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
301	81218744	Myanmar	BRM	BRM	TAVOY	98°13'00"E - 14°06'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
300	81218741	Myanmar	BRM	BRM	YANGON	96°08'00"E - 16°54'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
294	81218745	Myanmar	BRM	BRM	YE	97°52'00"E - 15°18'00"N	5554.4	5553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
303		Myanmar	BRM	BRM	TOEGYAUNGGALE	96°14'00" E ; 16°52'00" N	5674.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
304		Myanmar	BRM	BRM	AKYAB	92°53'00" E ; 20°08'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony

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306		Myanmar	BRM	BRM	BASSEIN	94°47'00" E ; 16°49'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
308		Myanmar	BRM	BRM	HEHO	96°48'00" E ; 20°44'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
313		Myanmar	BRM	BRM	KENG TUNG	99°38'00" E ; 21°19'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
309		Myanmar	BRM	BRM	LOIKAW	97°13'00" E ; 19°41'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
307		Myanmar	BRM	BRM	MAGWE	94°57'00" E ; 20°10'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
305		Myanmar	BRM	BRM	MAZIN	94°20'00" E ; 18°28'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
312		Myanmar	BRM	BRM	MERGUI	98°37'00" E ; 12°27'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
314		Myanmar	BRM	BRM	MINGALADON	96°08'00" E ; 16°58'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
310		Myanmar	BRM	BRM	MOULMEIN	97°40'00" E ; 16°27'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
311		Myanmar	BRM	BRM	TAVOY	98°12'00" E ; 14°06'00" N	6589			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
317		Myanmar	BRM	BRM	BHAMO	97°15'00" E ; 24°16'00" N	6659			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
315		Myanmar	BRM	BRM	KALEMYO	94°04'00" E ; 23°12'00" N	6659			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
320		Myanmar	BRM	BRM	LASHIO	97°45'00" E ; 22°59'00" N	6659			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
316		Myanmar	BRM	BRM	MANDALAY	96°08'00" E ; 21°56'00" N	6659			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
318		Myanmar	BRM	BRM	MYITKYINA	97°22'00" E ; 25°23'00" N	6659			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
319		Myanmar	BRM	BRM	PUTAO	97°27'00" E ; 27°20'00" N	6659			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
332	81222590	Myanmar	BRM	BRM	BHAMO	97°15'00"E - 24°16'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
323	81222591	Myanmar	BRM	BRM	GANGAW	94°07'00"E - 22°09'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
326	81222592	Myanmar	BRM	BRM	HOMALIN	94°54'00"E - 24°52'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
322	81222593	Myanmar	BRM	BRM	HTILIN	94°06'00"E - 21°42'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
321	81222594	Myanmar	BRM	BRM	KALEMYO	94°04'00"E - 23°10'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
324	81222595	Myanmar	BRM	BRM	KYAUKTU	94°08'00"E - 21°24'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
335	81222596	Myanmar	BRM	BRM	LASHIO	97°45'00"E - 22°59'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
330	81222597	Myanmar	BRM	BRM	MANDALAY	96°08'00"E - 21°56'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
331	81222598	Myanmar	BRM	BRM	MOMEIK	96°38'00"E - 23°05'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
333	81222599	Myanmar	BRM	BRM	MYITKYINA	97°24'00"E - 25°28'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
327	81222600	Myanmar	BRM	BRM	NYAUNG	94°58'00"E - 21°12'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
328	81222601	Myanmar	BRM	BRM	PAKOKKU	95°06'00"E - 21°20'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
325	81222602	Myanmar	BRM	BRM	PAUK	94°31'00"E - 21°27'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
334	81222603	Myanmar	BRM	BRM	PUTAO	97°27'00"E - 27°20'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
329	81222604	Myanmar	BRM	BRM	SINKALING KHAM	95°42'00"E - 26°00'00"N	8832.4	8831		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
336		Myanmar	BRM	BRM	TOEGYAUNGGALE	96°14'00" E ; 16°52'00" N	8883.5			FD	J3E	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
337	81223467	Myanmar	BRM	BRM	AKYAB	92°52'00"E - 20°08'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
340	81223468	Myanmar	BRM	BRM	BASSEIN	94°47'00"E - 16°48'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
342	81223469	Myanmar	BRM	BRM	HEHO	96°48'00"E - 20°45'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
348	81223470	Myanmar	BRM	BRM	KAWTHAUNG	98°33'00"E - 10°03'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
351	81223471	Myanmar	BRM	BRM	KENG TUNG	99°37'00"E - 21°17'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
338	81223472	Myanmar	BRM	BRM	KYAUKPYU	93°32'00"E - 19°26'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
343	81223473	Myanmar	BRM	BRM	LOIKAW	97°18'00"E - 19°41'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
341	81223474	Myanmar	BRM	BRM	MAGWE	94°57'00"E - 20°10'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
355	81223475	Myanmar	BRM	BRM	MERGUI	98°37'00"E - 12°27'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
350	81223476	Myanmar	BRM	BRM	MONGHSAT	99°16'00"E - 20°32'00"N	8961.4	8960		FD	J3EJN	Aeronautical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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349	81223477	Myanmar	BRM	BRM	MONGTONG	98°55'00"E - 20°17'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
345	81223478	Myanmar	BRM	BRM	MOULMEIN	97°40'00"E - 16°27'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
346	81223479	Myanmar	BRM	BRM	PA AN	97°40'00"E - 16°53'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
344	81223480	Myanmar	BRM	BRM	PAPUN	97°27'00"E - 18°04'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
339	81223482	Myanmar	BRM	BRM	SANDOWAY	94°18'00"E - 18°25'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
352	81223483	Myanmar	BRM	BRM	TACHILEIK	99°56'00"E - 20°29'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
354	81223484	Myanmar	BRM	BRM	TAVOY	98°13'00"E - 14°06'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
353	81223481	Myanmar	BRM	BRM	YANGON	96°08'00"E - 16°54'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
347	81223485	Myanmar	BRM	BRM	YE	97°52'00"E - 15°18'00"N	8961.4	8960		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
233		Myanmar	BRM	BRM	TOEGYAUNGGALE	96°14'00" E ; 16°52'00" N	13289.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1719		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°33'00" S	3009.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1720		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°33'00" S	5499.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1721		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°30'00" S	6527.4	6526		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1722		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°33'00" S	8918.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1712		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°32'00" S	10094.5			FD	A1A	Aeronautical Station (AM(R)S); Double sideband; telegraphy
1713		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°32'00" S	10094.5			FD	H3E	Aeronuatical Station (AM(R)S); Single sideband; Full carrier; telephony
1714		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°32'00" S	10094.5			FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1715		Nauru	NRU	NRU	NAURU ISLAND	166°55'00" E ; 0°32'00" S	10094.5			FD	R3E	Aeronuatical Station (AM(R)S); Single sideband; Reduced carrier; telephony
1716	81225414	Nauru	NRU	NRU	NAURU ISLAND	166°55'00"E - 0°30'00"S	13325.4	13324		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1717	81225608	Nauru	NRU	NRU	NAURU ISLAND	166°55'00"E - 0°30'00"S	17917.4	17916		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1718	81225798	Nauru	NRU	NRU	NAURU ISLAND	166°55'00"E - 0°30'00"S	21950.4	21949		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1738		New Zealand	NZL	NZL	AUCKLAND	174°48'00" E ; 37°01'00" S	2864.4	2863		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1741	81214370	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	3008.4	3007		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1742	81214510	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	3017.4	3016		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1744	81214609	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	3405.4	3404		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1743	81214610	New Zealand	NZL	NZL	CHRISTCHURCH	172°33'00"E - 43°33'00"S	3405.4	3404		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1745	81214806	New Zealand	NZL	CKH	RAROTONGA	159°49'00"W - 21°12'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1746	81215970	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	3468.4	3467		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1747	98032144	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	4688.4	4687		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1749	81216883	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	4697.4	4696		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1748	81216884	New Zealand	NZL	NZL	CHRISTCHURCH	172°33'00"E - 43°33'00"S	4697.4	4696		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1750	98032145	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	5584.4	5583		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1755	81219495	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	5593.4	5592		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1754	81219496	New Zealand	NZL	NZL	CAMPBELL I	169°09'00"E - 52°33'00"S	5593.4	5592		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1751	81219497	New Zealand	NZL	NZL	CHATHAM IS	176°31'00"W - 43°57'00"S	5593.4	5592		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1753	81219498	New Zealand	NZL	NZL	INVERCARGILL	168°37'00"E - 46°19'00"S	5593.4	5592		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1752	81219499	New Zealand	NZL	NZL	RAOUL ISLAND	177°55'00"W - 29°16'00"S	5593.4	5592		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1756	81220213	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	5644.4	5643		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1757	98032146	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	6536.4	6535		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1759	81221305	New Zealand	NZL	NIU	NIUE	169°55'00"W - 19°05'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1758	81221287	New Zealand	NZL	CKH	RAROTONGA	159°49'00"W - 21°12'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1760	81222168	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	6638.4	6637		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1761	81222445	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	6680.4	6679		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1762	81222583	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	8829.4	8828		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1764	81222721	New Zealand	NZL	NIU	NIUE	169°55'00"W - 19°01'00"S	8847.4	8846		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1763	81222712	New Zealand	NZL	CKH	RAROTONGA	159°49'00"W - 21°12'00"S	8847.4	8846		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1765	81222917	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	8868.4	8867		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1766	98032147	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	8922.4	8921		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1767	98032148	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	8931.4	8930		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1723	81223820	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	10073.4	10072		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1724	98032149	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	10079.4	10078		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1725	81224123	New Zealand	NZL	CKH	RAROTONGA	159°49'00"W - 21°12'00"S	11340.4	11339		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1726	98032150	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	11352.4	11351		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1727	89007695	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	13262.4	13261		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1728	81225159	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	13283.4	13282		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1729	81225430	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	13334.4	13333		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1730	98032151	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	13352.4	13351		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1731	86015247	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	13355.4	13354		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1732	81225493	New Zealand	NZL	CKH	RAROTONGA	159°49'00"W - 21°12'00"S	13355.4	13354		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1733	81225559	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	17905.4	17904		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1734	98032152	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	17917.4	17916		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1735	98032153	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	17929.4	17928		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1736	81225664	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	17941.4	17940		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1737	81225678	New Zealand	NZL	CKH	RAROTONGA	159°49'00"W - 21°12'00"S	17950.4	17949		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1739	98032154	New Zealand	NZL	NZL	AUCKLAND AIRPORT	174°48'34"E - 37°00'57"S	21950.4	21949		FD	J2DEN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; data
1740	81225842	New Zealand	NZL	NZL	AUCKLAND	174°48'00"E - 37°01'00"S	21971.4	21970		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81215973	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 24°54'00"N	3468.4	3467		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81215974	Pakistan	PAK	PAK	LAHORE	74°24'00"E - 31°32'00"N	3468.4	3467		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219544	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 24°54'00"N	5602.4	5601		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219545	Pakistan	PAK	PAK	LAHORE	74°24'00"E - 31°32'00"N	5602.4	5601		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81220344	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 24°54'00"N	5659.4	5658		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81220345	Pakistan	PAK	PAK	LAHORE	74°24'00"E - 31°32'00"N	5659.4	5658		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222417	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 25°54'00"N	6677.4	6676		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81223582	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 24°54'00"N	10019.4	10018		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81223583	Pakistan	PAK	PAK	LAHORE	74°24'00"E - 31°32'00"N	10019.4	10018		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81224543	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 25°54'00"N	11388.4	11387		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81225188	Pakistan	PAK	PAK	KARACHI	67°09'00"E - 24°54'00"N	13289.4	13288		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1788		Papua New Gu	PNG	PNG	PT MORESBY	147°10'00"E ; 9°30'00" S	2906.4	2905		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1789	81214321	Papua New Gu	PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	2999.4	2998		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1791	81214746	Papua New Gu	PNG	PNG	MADANG	145°48'00"E - 5°13'00"S	3420.4	3419		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1792	81214747	Papua New Gu	PNG	PNG	NADZAB	146°40'00"E - 6°34'00"S	3420.4	3419		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1793	81214748	Papua New Gu	PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	3420.4	3419		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1790	81214749	Papua New Gu	PNG	PNG	WEWAK	143°38'00"E - 3°34'00"S	3420.4	3419		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1795	81214827	Papua New Gu	PNG	PNG	MADANG	145°48'00"E - 5°13'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1796	81214828	Papua New Gu PNG	PNG	NADZAB	146°40'00"E - 6°34'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1797	81214829	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1794	81214830	Papua New Gu PNG	PNG	WEWAK	143°38'00"E - 3°34'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1800		Papua New Gu PNG	PNG	GOROKA	QQ	145°24'00" E ; 6°05'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1806		Papua New Gu PNG	PNG	GOROKA	QQ	145°24'00" E ; 6°05'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1801		Papua New Gu PNG	PNG	MADANG	QQ	145°47'00" E ; 5°14'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1807		Papua New Gu PNG	PNG	MADANG	QQ	145°47'00" E ; 5°14'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1803		Papua New Gu PNG	PNG	MOMOTE	QQ	147°26'00" E ; 2°04'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1809		Papua New Gu PNG	PNG	MOMOTE	QQ	147°26'00" E ; 2°04'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1799		Papua New Gu PNG	PNG	MT HAGEN	QQ	144°10'00" E ; 5°50'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1805		Papua New Gu PNG	PNG	MT HAGEN	QQ	144°10'00" E ; 5°50'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1802		Papua New Gu PNG	PNG	NADZAB	QQ	147°00'00" E ; 6°43'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1808		Papua New Gu PNG	PNG	NADZAB	QQ	147°00'00" E ; 6°43'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1798		Papua New Gu PNG	PNG	WEWAK	QQ	143°40'00" E ; 3°35'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1804		Papua New Gu PNG	PNG	WEWAK	QQ	143°40'00" E ; 3°35'00" S	4661		FX	A3E	Fixed Station; Fixed service; telephony	
1810	81216415	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	4661.4	4660		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1811	81217937	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	5524.4	5523		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1813	81218935	Papua New Gu PNG	PNG	NADZAB	146°40'00"E - 6°34'00"S	5566.4	5565		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1814	81218936	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	5566.4	5565		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1812	81218937	Papua New Gu PNG	PNG	WEWAK	143°58'00"E - 3°34'00"S	5566.4	5565		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1815		Papua New Gu PNG	PNG	WEWAK	QQ	143°40'00" E ; 3°35'00" S	5659		FX	A3E	Fixed Station; Fixed service; telephony	
1816	85010836	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	6533.4	6532		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1822		Papua New Gu PNG	PNG	FINSCHHAFEN	QQ	147°52'00" E ; 6°36'00" S	6561		FX	A3E	Fixed Station; Fixed service; telephony	
1818		Papua New Gu PNG	PNG	GOROKA	QQ	145°24'00" E ; 6°05'00" S	6561		FX	A3E	Fixed Station; Fixed service; telephony	
1820		Papua New Gu PNG	PNG	LAE	QQ	147°00'00" E ; 6°44'00" S	6561		FX	A3E	Fixed Station; Fixed service; telephony	
1819		Papua New Gu PNG	PNG	MADANG	QQ	145°48'00" E ; 5°13'00" S	6561		FX	A3E	Fixed Station; Fixed service; telephony	
1817		Papua New Gu PNG	PNG	MT HAGEN	QQ	144°10'00" E ; 5°50'00" S	6561		FX	A3E	Fixed Station; Fixed service; telephony	
1821		Papua New Gu PNG	PNG	PT MORESBY	QQ	147°13'00" E ; 9°26'00" S	6561		FX	A3E	Fixed Station; Fixed service; telephony	
1828		Papua New Gu PNG	PNG	FINSCHHAFEN	QQ	147°52'00" E ; 6°36'00" S	6562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
1824		Papua New Gu PNG	PNG	GOROKA	QQ	145°24'00" E ; 6°05'00" S	6562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
1826		Papua New Gu PNG	PNG	LAE	QQ	147°00'00" E ; 6°44'00" S	6562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
1825		Papua New Gu PNG	PNG	MADANG	QQ	145°48'00" E ; 5°13'00" S	6562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
1823		Papua New Gu PNG	PNG	MT HAGEN	QQ	144°10'00" E ; 5°50'00" S	6562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
1827		Papua New Gu PNG	PNG	PT MORESBY	QQ	147°13'00" E ; 9°26'00" S	6562.5		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony	
1830	81221892	Papua New Gu PNG	PNG	MADANG	145°48'00"E - 5°13'00"S	6599.4	6598		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1829	81221893	Papua New Gu PNG	PNG	WEWAK	143°38'00"E - 3°34'00"S	6599.4	6598		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1833		Papua New Gu PNG	PNG	MADANG	QQ	145°48'00" E ; 5°13'00" S	6603		FX	A3E	Fixed Station; Fixed service; telephony	
1835		Papua New Gu PNG	PNG	MOMOTE	QQ	147°26'00" E ; 2°04'00" S	6603		FX	A3E	Fixed Station; Fixed service; telephony	
1832		Papua New Gu PNG	PNG	MT HAGEN	QQ	144°18'00" E ; 5°50'00" S	6603		FX	A3E	Fixed Station; Fixed service; telephony	
1834		Papua New Gu PNG	PNG	NADZAB	QQ	147°00'00" E ; 6°44'00" S	6603		FX	A3E	Fixed Station; Fixed service; telephony	
1831		Papua New Gu PNG	PNG	WEWAK	QQ	143°40'00" E ; 3°35'00" S	6603		FX	A3E	Fixed Station; Fixed service; telephony	
1836		Papua New Gu PNG	PNG	GOROKA	QQ	145°24'00" E ; 6°05'00" S	6604.4	6603		FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony

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Key	BR ID	Country	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
1837	81222078	Papua New Gu PNG	PNG	MADANG	145°48'00"E - 5°13'00"S	6623.4	6622		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1838	81222079	Papua New Gu PNG	PNG	NADZAB	146°40'00"E - 6°34'00"S	6623.4	6622		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1839	81222080	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	6623.4	6622		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1840	81222642	Papua New Gu PNG	PNG	MADANG	145°48'00"E - 5°13'00"S	8838.4	8837		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1841	81222643	Papua New Gu PNG	PNG	NADZAB	146°40'00"E - 6°34'00"S	8838.4	8837		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1842	81222644	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	8838.4	8837		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1844	81222886	Papua New Gu PNG	PNG	NADZAB	146°40'00"E - 6°34'00"S	8862.4	8861		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1845	81222887	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	8862.4	8861		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1843	81222888	Papua New Gu PNG	PNG	WEWAK	143°38'00"E - 3°34'00"S	8862.4	8861		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1846	81223199	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1848	81223216	Papua New Gu PNG	PNG	MADANG	145°48'00"E - 5°13'00"S	8907.4	8906		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1848	81223217	Papua New Gu PNG	PNG	WEWAK	143°38'00"E - 3°34'00"S	8907.4	8906		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1784	81223689	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	10040.4	10039		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1785		Papua New Gu PNG	PNG	PT MORESBY	QQ 147°13'00" E ; 9°26'00" S	10087.5			FX	J3E	Fixed Station; Fixed service; Single sideband; suppressed carrier; telephony
1786	81225084	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	11394.4	11393		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1787	81225287	Papua New Gu PNG	PNG	PT MORESBY	147°10'00"E - 9°30'00"S	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1777		Philippines	PHL	CEBU	123°58'00" E ; 10°19'00" N	3495			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1778		Philippines	PHL	DAVAO	125°39'00" E ; 7°08'00" N	3495			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1774		Philippines	PHL	LAOAG	120°32'00" E ; 18°11'00" N	3495			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1775		Philippines	PHL	MANILA	121°01'00" E ; 14°31'00" N	3495			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1776		Philippines	PHL	ZAMBOANGA	122°03'00" E ; 6°55'00" N	3495			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1782		Philippines	PHL	CEBU	123°58'00" E ; 10°19'00" N	6617			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1783		Philippines	PHL	DAVAO	125°39'00" E ; 7°08'00" N	6617			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1779		Philippines	PHL	LAOAG	120°32'00" E ; 18°11'00" N	6617			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1780		Philippines	PHL	MANILA	121°01'00" E ; 14°31'00" N	6617			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1781		Philippines	PHL	ZAMBOANGA	122°03'00" E ; 6°55'00" N	6617			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1768		Philippines	PHL	MCKINLEY RIZAL	QQ 121°02'00" E ; 14°31'00" N	11400			FX	A1B	Fixed Station; Fixed service; telegraphy
1769		Philippines	PHL	MANILA	121°02'00" E ; 14°31'00" N	13296			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1770		Philippines	PHL	MANILA	121°02'00" E ; 14°31'00" N	13312			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1771		Philippines	PHL	MANILA	121°03'00" E ; 14°31'00" N	17909			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1772		Philippines	PHL	MANILA	121°02'00" E ; 14°31'00" N	17965			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
1773		Philippines	PHL	MAKATI RIZAL	QQ 121°01'00" E ; 14°34'00" N	21967			FX	F1B	Fixed Station; Fixed service; Frequency modulation; telegraphy
1526	81214318	Republic of Kor KOR	KOR	GIMPO	126°48'00"E - 37°33'00"N	2999.4	2998		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147343	Republic of Kor KOR	KOR	KOR	126°27'39"E - 37°26'28"N	3005.4	3004		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147353	Republic of Kor KOR	KOR	KOR	126°46'21"E - 37°33'56"N	3005.4	3004		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1528	81214369	Republic of Kor KOR	KOR	KIMPO	126°48'00"E - 37°33'00"N	3008.4	3007		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1530	81214911	Republic of Kor KOR	KOR	BUSAN	129°08'00"E - 35°10'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1529	81214912	Republic of Kor KOR	KOR	SEOUL	126°56'00"E - 37°31'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1531	94026039	Republic of Kor KOR	KOR	KIMPO	126°48'00"E - 37°33'00"N	3456.4	3455		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1536	81216184	Republic of Kor KOR	KOR	BUSAN	129°03'00"E - 35°07'00"N	3489.4	3488		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1535	81216185	Republic of Kor KOR	KOR	DAEGU	128°26'00"E - 35°42'00"N	3489.4	3488		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1532	81216186	Republic of Kor KOR	KOR	GUNSAN	126°43'00"E - 35°59'00"N	3489.4	3488		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1533	81216187	Republic of Kor	KOR	GWANGJU	126°55'00"E - 35°07'00"N	3489.4	3488		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1534	81216188	Republic of Kor	KOR	SEOUL	126°57'00"E - 37°29'00"N	3489.4	3488		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1537	81216777	Republic of Kor	KOR	KIMPO	126°48'00"E - 37°33'00"N	4688.4	4687		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147344	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	4688.4	4687		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147354	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	4688.4	4687		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1539	81217684	Republic of Kor	KOR	BUSAN	129°07'00"E - 35°10'00"N	5509.4	5508		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1538	81217685	Republic of Kor	KOR	SEOUL	126°56'00"E - 37°31'00"N	5509.4	5508		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1544	81219509	Republic of Kor	KOR	BUSAN	129°03'00"E - 35°07'00"N	5596.4	5595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1545	81219510	Republic of Kor	KOR	BUSAN	129°08'00"E - 35°10'00"N	5596.4	5595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1543	81219511	Republic of Kor	KOR	DAEGU	128°26'00"E - 35°42'00"N	5596.4	5595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1540	81219512	Republic of Kor	KOR	GUNSAN	126°43'00"E - 35°59'00"N	5596.4	5595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1541	81219513	Republic of Kor	KOR	GWANGJU	126°55'00"E - 35°07'00"N	5596.4	5595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1542	81219514	Republic of Kor	KOR	SEOUL	126°57'00"E - 37°29'00"N	5596.4	5595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1546	81219682	Republic of Kor	KOR	GIMPO	126°48'00"E - 37°33'00"N	5626.4	5625		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1547	81221042	Republic of Kor	KOR	GIMPO	126°48'00"E - 37°33'00"N	6533.4	6532		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147345	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	6533.4	6532		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147355	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	6533.4	6532		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1549	81222326	Republic of Kor	KOR	BUSAN	129°07'00"E - 35°10'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1548	81222327	Republic of Kor	KOR	SEOUL	126°56'00"E - 37°31'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1551	81223054	Republic of Kor	KOR	BUSAN	129°07'00"E - 35°10'00"N	8886.4	8885		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1550	81223055	Republic of Kor	KOR	SEOUL	126°56'00"E - 37°31'00"N	8886.4	8885		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1552	81223196	Republic of Kor	KOR	GIMPO	126°48'00"E - 37°33'00"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147346	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147356	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	8904.4	8903		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1520	81223819	Republic of Kor	KOR	KIMPO	126°48'00"E - 37°33'00"N	10073.4	10072		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147347	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	10073.4	10072		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147357	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	10073.4	10072		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1521	94026040	Republic of Kor	KOR	KIMPO	126°48'00"E - 37°33'00"N	10082.4	10081		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1522	81225284	Republic of Kor	KOR	GIMPO	126°48'00"E - 37°33'00"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147348	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147358	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147349	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	13304.4	13303		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147359	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	13304.4	13303		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1523	81225429	Republic of Kor	KOR	KIMPO	126°48'00"E - 37°33'00"N	13334.4	13333		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147350	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	13334.4	13333		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147360	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	13334.4	13333		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1524	81225557	Republic of Kor	KOR	KIMPO	126°48'00"E - 37°33'00"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147351	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147361	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	17905.4	17904		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1525	81225607	Republic of Kor	KOR	KIMPO	126°48'00"E - 37°33'00"N	17917.4	17916		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147352	Republic of Kor	KOR	KOR	126°27'39"E - 37°26'28"N	17917.4	17916		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	117147362	Republic of Kor	KOR	KOR	126°46'21"E - 37°33'56"N	17917.4	17916		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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1527	81225841	Republic of Kor	KOR	KOR	KIMPO	126°48'00"E - 37°33'00"N	21971.4	21970		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1858	81214831	Samoa	SMO	SMO	FALEOLO	172°00'00"W - 13°49'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
6553	81221306	Samoa	SMO	SMO	FALEOLO	172°00'00"W - 13°49'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1860	81222722	Samoa	SMO	SMO	FALEOLO	172°00'00"W - 13°49'00"S	8847.4	8846		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1857	81224127	Samoa	SMO	SMO	FALEOLO	172°00'00"W - 13°49'00"S	11340.4	11339		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81220309	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	5656.4	5655		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81221352	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	6557.4	6556		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81222169	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	6638.4	6637		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81222418	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	6677.4	6676		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81223317	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	8931.4	8930		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81223381	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	8943.4	8942		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81223834	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	10079.4	10078		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	93012896	Singapore	SNG	SNG	JURONG	103°42'10"E - 1°20'20"N	11286.4	11285		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81224544	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	11388.4	11387		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81225101	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	11397.4	11396		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81225364	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	13319.4	13318		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81225431	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	13334.4	13333		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81225643	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	17935.4	17934		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81225799	Singapore	SNG	SNG	JURONG	103°42'00"E - 1°20'00"N	21950.4	21949		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
1850		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	2959			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1851		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	3008			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1852		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	5498			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1853		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	5526			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1854		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	8889			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1855		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	8917			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1856		Solomon Islanc	SLM	SLM	HONIARA	160°04'00" E ; 9°26'00" S	8924			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
1849		Solomon Islanc	SLM	SLM	HONIARA	159°58'00" E ; 9°25'00" S	11319			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony	
686	81216011	Sri Lanka	SLK	CLN	CLN	RATMALANA	79°55'00"E - 6°54'00"N	3471.4	3470		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
687		Sri Lanka	SLK	CLN	CLN	RATMALANA	79°53'00" E ; 6°49'00" N	5673			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
685		Sri Lanka	SLK	CLN	CLN	RATMALANA	79°53'00" E ; 6°49'00" N	13288			FD	A3E	Aeronautical Station (AM(R)S); Double sideband; telephony
	81214709	Thailand	THA	THA	KHON KAEN ARPT	102°50'00"E - 16°27'00"N	3417.4	3416		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214710	Thailand	THA	THA	LOEI AIRPORT	101°44'00"E - 17°27'00"N	3417.4	3416		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214711	Thailand	THA	THA	SAKON NAKHON	104°08'00"E - 17°16'00"N	3417.4	3416		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214712	Thailand	THA	THA	UBON R THANI	104°52'00"E - 15°15'00"N	3417.4	3416		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214713	Thailand	THA	THA	UDON THANI ARP	102°48'00"E - 17°23'00"N	3417.4	3416		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214913	Thailand	THA	THA	HATYAI INT ARP	100°25'00"E - 6°56'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214914	Thailand	THA	THA	NARATHIWAT	101°47'00"E - 6°32'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214915	Thailand	THA	THA	PATTANI AIRPT	101°10'00"E - 6°47'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214916	Thailand	THA	THA	PHUKET INT ARP	98°19'00"E - 8°08'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214917	Thailand	THA	THA	SURAT THANI	99°07'00"E - 9°08'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214918	Thailand	THA	THA	TRANG	99°36'00"E - 7°33'00"N	3435.4	3434		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	
	81214988	Thailand	THA	THA	BANGKOK CENTRE	100°33'00"E - 13°43'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony	

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
	81214989	Thailand	THA	THA	CHIANG RAI ARP	99°49'00"E - 19°53'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214990	Thailand	THA	THA	CHIANGMAI ARPT	98°58'00"E - 18°49'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214991	Thailand	THA	THA	HUA HIN AIRPT	99°57'00"E - 12°38'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214992	Thailand	THA	THA	LAMPANG AIRPT	99°31'00"E - 18°17'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214993	Thailand	THA	THA	MAE HONG SON	97°58'00"E - 19°17'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214994	Thailand	THA	THA	MAE SARIANG	97°55'00"E - 18°12'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214995	Thailand	THA	THA	MAE SOT AIRPT	98°33'00"E - 16°41'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214996	Thailand	THA	THA	NAN AIRPORT	100°47'00"E - 18°46'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214997	Thailand	THA	THA	PAI	98°26'00"E - 19°18'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214998	Thailand	THA	THA	PHITSANULOK	100°16'00"E - 16°47'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214999	Thailand	THA	THA	PHRAE	100°11'00"E - 18°08'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81215000	Thailand	THA	THA	TAK AIRPORT	99°10'00"E - 16°53'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81215001	Thailand	THA	THA	UTTARADIT ARPT	100°14'00"E - 17°40'00"N	3441.4	3440		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217435	Thailand	THA	THA	HATYAI INT ARP	100°25'00"E - 6°56'00"N	5491.4	5490		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217436	Thailand	THA	THA	NARATHIWAT	101°47'00"E - 6°32'00"N	5491.4	5490		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217437	Thailand	THA	THA	PATTANI AIRPT	101°10'00"E - 6°47'00"N	5491.4	5490		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217438	Thailand	THA	THA	PHUKET INT ARP	98°19'00"E - 8°08'00"N	5491.4	5490		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217439	Thailand	THA	THA	SURAT THANI	99°07'00"E - 9°08'00"N	5491.4	5490		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217440	Thailand	THA	THA	TRANG	99°36'00"E - 7°33'00"N	5491.4	5490		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217904	Thailand	THA	THA	BANGKOK CENTRE	100°33'00"E - 13°43'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217905	Thailand	THA	THA	CHIANG RAI ARP	99°49'00"E - 19°53'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217906	Thailand	THA	THA	CHIANGMAI ARPT	98°58'00"E - 18°49'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217907	Thailand	THA	THA	HUA HIN AIRPT	99°57'00"E - 12°38'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217908	Thailand	THA	THA	LAMPANG AIRPT	99°31'00"E - 18°17'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217909	Thailand	THA	THA	MAE HONG SON	97°58'00"E - 19°17'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217910	Thailand	THA	THA	MAE SARIANG	98°55'00"E - 18°12'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217911	Thailand	THA	THA	MAE SOT AIRPT	98°33'00"E - 16°41'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217912	Thailand	THA	THA	NAN AIRPORT	100°47'00"E - 18°46'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217913	Thailand	THA	THA	PAI	98°26'00"E - 19°18'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217914	Thailand	THA	THA	PHITSANULOK	100°16'00"E - 16°47'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217915	Thailand	THA	THA	PHRAE	100°11'00"E - 18°08'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217916	Thailand	THA	THA	TAK AIRPORT	99°10'00"E - 16°53'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81217917	Thailand	THA	THA	UTTARADIT ARPT	100°14'00"E - 17°40'00"N	5521.4	5520		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219731	Thailand	THA	THA	KHON KAEN ARPT	102°50'00"E - 16°27'00"N	5632.4	5631		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219732	Thailand	THA	THA	LOEI AIRPORT	101°44'00"E - 17°27'00"N	5632.4	5631		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219733	Thailand	THA	THA	SAKON NAKHON	104°08'00"E - 17°16'00"N	5632.4	5631		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219734	Thailand	THA	THA	UBON R THANI	104°52'00"E - 15°15'00"N	5632.4	5631		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81219735	Thailand	THA	THA	UDON THANI ARP	102°48'00"E - 17°23'00"N	5632.4	5631		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221597	Thailand	THA	THA	HATYAI INT ARP	100°25'00"E - 6°56'00"N	6578.4	6577		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221598	Thailand	THA	THA	NARATHIWAT	101°47'00"E - 6°32'00"N	6578.4	6577		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221599	Thailand	THA	THA	PATTANI AIRPT	101°10'00"E - 6°47'00"N	6578.4	6577		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221600	Thailand	THA	THA	PHUKET INT ARP	98°19'00"E - 8°08'00"N	6578.4	6577		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
	81221601	Thailand	THA	THA	SURAT THANI	99°07'00"E - 9°08'00"N	6578.4	6577		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221602	Thailand	THA	THA	TRANG	99°36'00"E - 7°33'00"N	6578.4	6577		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221840	Thailand	THA	THA	KHON KAEN ARPT	102°50'00"E - 16°27'00"N	6596.4	6595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221841	Thailand	THA	THA	LOEI AIRPORT	101°44'00"E - 17°27'00"N	6596.4	6595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221842	Thailand	THA	THA	SAKON NAKHON	104°08'00"E - 17°16'00"N	6596.4	6595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221843	Thailand	THA	THA	UBON R THANI	104°52'00"E - 15°15'00"N	6596.4	6595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221844	Thailand	THA	THA	UDON THANI ARP	102°48'00"E - 17°23'00"N	6596.4	6595		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222328	Thailand	THA	THA	BANGKOK CENTRE	100°33'00"E - 13°43'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222329	Thailand	THA	THA	CHIANG RAI ARP	99°49'00"E - 19°53'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222330	Thailand	THA	THA	CHIANGMAI ARPT	98°58'00"E - 18°49'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222331	Thailand	THA	THA	HUA HIN AIRPT	99°57'00"E - 12°38'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222332	Thailand	THA	THA	LAMPANG AIRPT	99°31'00"E - 18°17'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222333	Thailand	THA	THA	MAE HONG SON	97°58'00"E - 19°17'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222334	Thailand	THA	THA	MAE SARIANG	97°55'00"E - 18°12'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222335	Thailand	THA	THA	MAE SOT AIRPT	99°33'00"E - 16°41'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222336	Thailand	THA	THA	NAN AIRPORT	100°47'00"E - 18°46'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222337	Thailand	THA	THA	PAI	98°26'00"E - 19°18'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222338	Thailand	THA	THA	PHITSANULOK	100°16'00"E - 16°47'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222339	Thailand	THA	THA	PHRAE	100°11'00"E - 18°08'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222340	Thailand	THA	THA	TAK AIRPORT	99°10'00"E - 16°53'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222341	Thailand	THA	THA	UTTARADIT ARPT	100°14'00"E - 17°40'00"N	6668.4	6667		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222419	Thailand	THA	THA	BANGKOK	100°30'00"E - 13°44'00"N	6677.4	6676		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81223031	Thailand	THA	THA	DONMUANG	100°37'00"E - 13°55'00"N	8883.4	8882		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81224545	Thailand	THA	THA	BANGKOK	100°30'00"E - 13°44'00"N	11388.4	11387		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	85010814	Tonga	TON	TON	FUAAMOTU	175°09'00"W - 21°14'00"S	3468.4	3467		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84020246	Tonga	TON	TON	FUAAMOTU	175°09'00"W - 21°14'00"S	5644.4	5643		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84020247	Tonga	TON	TON	FUAAMOTU	175°09'00"W - 21°14'00"S	8868.4	8867		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84020248	Tonga	TON	TON	FUAAMOTU	175°09'00"W - 21°14'00"S	13301.4	13300		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1862	81214832	Tuvalu	TUV	TUV	FUNAFUTI	179°13'00"E - 8°31'00"S	3426.4	3425		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1863	81221307	Tuvalu	TUV	TUV	FUNAFUTI	179°13'00"E - 8°31'00"S	6554.4	6553		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1864	81222723	Tuvalu	TUV	TUV	FUNAFUTI	179°13'00"E - 8°31'00"S	8847.4	8846		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
1861	81224128	Tuvalu	TUV	TUV	FUNAFUTI	179°13'00"E - 8°31'00"S	11340.4	11339		FD	J3E	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81214839	Vanuatu	VUT	VUT	PT VILA	168°18'00"E - 17°44'00"S	3426.4	3425		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81221320	Vanuatu	VUT	VUT	PT VILA	168°18'00"E - 17°44'00"S	6554.4	6553		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81222747	Vanuatu	VUT	VUT	PT VILA	168°18'00"E - 17°44'00"S	8847.4	8846		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	81224131	Vanuatu	VUT	VUT	PT VILA	168°18'00"E - 17°44'00"S	11340.4	11339		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84013049	Viet Nam	VTN	VTN	HO CHI MINH V	106°39'00"E - 10°48'00"N	5656.4	5655		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84013050	Viet Nam	VTN	VTN	HO CHI MINH V	106°39'00"E - 10°48'00"N	8943.4	8942		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84013051	Viet Nam	VTN	VTN	HO CHI MINH V	106°39'00"E - 10°48'00"N	11397.4	11396		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony
	84013052	Viet Nam	VTN	VTN	HO CHI MINH V	106°39'00"E - 10°48'00"N	13310.4	13309		FD	J3EJN	Aeronuatical Station (AM(R)S); Single sideband; Suppressed carrier; telephony

Notes relevant to the table HF_APAC 2024
a) When the field Key is empty and the field BR ID contains a number, the record is not listed in the ICAO data base; it is only listed in the ITU database (MIFR);

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Key	BR ID	Country	.	Geo. Area	Location	Coord	Assigned Frequency	reference frequency	Allotment	Class	Emission class	Remarks
b)	When the field Key contains a number and the field BR ID is empty, the record is not listed in the ITU database (MIFR); it is only listed in the ICAO database;											
c)	When both the fields Key and BR ID contain a number, the record is listed in both the ICAO database as well as the ITU database (IFL/MIFR).											

Survey Questionnaire
The Utilization of HF Spectrum Frequency bands to the Operation of Aeronautical Communications in the APAC Region

Please proceed to answer following questions until you reach to “End of Questionnaire”

1. Does your State/Administration implement the HF frequency bands between 2 850 kHz and 22 000 kHz for aeronautical communication purposes?
☐ YES
☐ NO (Proceed to Question No. 16)
2. How much **Power** is transmitted for HF communication (e.g. A/G, Broadcast) in its current operational mode?

3. Does your State/Administration refer to Table CNS II-4 HF Network Designators in the APAC ANP Vol. II, Part III (CNS), in order to assign the HF frequency?
☐ YES
☐ NO
4. Are there any other users currently assigning the HF frequency band aside from the Air Navigation Service Provider (e.g., Airline operator)?
☐ YES
☐ NO (Proceed to Question No. 8)
5. In relation to the above, what kinds of services that utilize the HF frequency (e.g., Long-distance operational control (LDOC))?

6. Referring to Question No. 5, what channels do you use for this HF frequency assignment?

7. Referring to Question No. 5, how much power is transmitted to each service?

8. Does your State/Administration refer to the Appendix 27 - Radio Regulations of the Frequency Allotment Plan for the Aeronautical Mobile (R) Service and related information, in order to assign the HF frequency?

☐ YES

☐ NO

9. Does your State/Administration refer to the Appendix 26 - Radio Regulation of the Provisions and associated Frequency Allotment Plan for the aeronautical mobile (OR) service in the bands allocated exclusively to that service between 3 025 kHz and 18 030 kHz, in order to assign to the specific services?

☐ YES

☐ NO (Proceed to Question No. 12)

10. In relation to the above, what kinds of services utilize the frequency band 3 025 kHz and 18 030 kHz?

11. Does your State/Administration register the HF frequency allocated to The Master International Frequency Register (MIFR) of ITU?

☐ YES

☐ NO

12. In accordance with Resolution A41-7 adopted by the Assembly - 41st Session, the Assembly urges Member States, international organizations, and other civil aviation stakeholders to support firmly the ICAO frequency spectrum strategy and the ICAO position at WRCs and in regional and other international activities conducted in preparation for WRCs. In relation to that, is your state or administration actively involved in the discussion of Agenda Items at WRC-23?

☐ YES

☐ NO

13. As per the aforementioned agenda to the WRC-23, do you comprehend Agenda Item 1.9 of the WRC-23?

☐ YES

☐ NO

14. Related to the previous Question, do you foresee any issues with regard to Agenda Item 1.9, considering the existence of the HF frequency allotted?

☐ YES - Please provide details:

☐ NO

15. As pointed out by the ICAO APAC Secretariat during the SRWG/7 meeting, there's Frequency List No. 4 that was discussed in 1999 and then revisited in 2007. According to that, is it necessary for ICAO APAC to update the database of Frequency List No. 4?

☐ YES

☐ NO

16. Are there any other issues pertinent to your situation that ICAO should consider regarding the HF frequency band?

-End of Questionnaire-

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GNSS Interference Reporting Form for APAC
1.Example form for use by ATS Personnel

GNSS RFI REPORTING FORM FOR USE BY ATS PERSONNEL	
Originator of report	
Organization	
Department	
Street address	
Zip code/city	
Name/surname	
Phone number	
E-Mail	
Date and time of report	
Description of interference	
Source of initial interference report	☐ Pilot ☐ Engineer/technician ☐ Other
Observability of the interference	Interference was noticeable: ☐ only on board the aircraft (flying, not on the ground)

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GNSS RFI REPORTING FORM FOR USE BY ATS PERSONNEL	
	☐ only on the ground (aircraft parked/taxiing) or by means of ground detection systems available ☐ both
Number of received reports	
Coordinates of the area of occurrence/time (UTC)	UTC: ____ Lat: ____ Long: ____ FL/Altitude: ____
Problem duration:	Days, hours, minutes, seconds _____ ☐ continuous ☐ intermittent
Affected GNSS element	☐ GPS ☐ GLONASS ☐ GALILEO ☐ BDS ☐ Other constellation ☐ EGNOS ☐ WAAS ☐ BDSBAS ☐ Other SBAS ☐ GBAS (VHF data-link for GBAS)
Affected constellation frequency	☐ L1 ☐ L5 ☐ Both
Used GNSS contingency procedure	☐ Radar vectoring ☐ Switch to procedures based on conventional nav aids (e.g. DME/DME or VOR/DME-based PBN, DME and VOR-based conventional, ILS) ☐ Diversion to another airport ☐ Missed approach ☐ Use of alternate means for communication (e.g. VHF) ☐ Other: ____
In case of report by pilot	
Airline name	
Aircraft type and registration	
Flight number	
Airway/route flown	
Reported on-board failure	☐ Total loss of navigation capabilities ☐ Need to change the navigation procedure ☐ Inability to fly RNP and request for radar vectoring ☐ Inability to fly a GNSS-based approach (GLS, SLS) ☐ GNSS fault (1 or 2) ☐ TAWS/EGPWS warnings or loss of terrain and surface functionalities ☐ Loss of ADS-B ☐ Wind and ground speed wrong presentations ☐ Aircraft clock anomaly ☐ Loss of situational awareness (SVS, Cockpit Display of Traffic Information)

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GNSS RFI REPORTING FORM FOR USE BY ATS PERSONNEL	
	☐ Loss of communication functions (CPDLC, ACARS) ☐ AHRS failure ☐ Map shift ☐ Other: ____
Information on presumed source of interference	
Presumed location of interference source	Lat: ____ Long: ____ or Nearest city or landmark:
Interfering frequency (if known)	
Signal strength and reference bandwidth (if known)	
Further descriptions of the interference case	☐ Spectrum plot ☐ Map ☐ Other material:

2.Example form for use by pilots

GNSS RFI REPORTING FORM FOR USE BY PILOTS	
Originator of report	
Organization	
Department	
Street address	
Zip code/city	
Name/surname	
Phone number	
E-mail	
Date and time of report	
Description of interference	
Reported failure and operational impact	☐ Total loss of navigation capabilities ☐ Need to change the navigation procedure ☐ Inability to fly RNP and request for radar vectoring ☐ Inability to fly a GNSS-based approach (GLS, SLS) ☐ GNSS fault (1 or 2) ☐ TAWS/EGPWS warnings or loss of terrain and surface functionalities

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	☐ Loss of ADS-B ☐ Wind and ground speed wrong presentations ☐ Aircraft clock anomaly ☐ Loss of situational awareness (SVS, Cockpit Display of Traffic Information) ☐ Loss of communication functions (CPDLC, ACARS) ☐ AHRS failure ☐ Map shift ☐ Other: ____
Used GNSS contingency procedure	☐ Request for radar vectoring ☐ Switch to another mean of navigation (e.g. DME/DME, VOR/DME, ILS) ☐ Diversion to another airport ☐ Missed approach ☐ Use of alternate means for communication (e.g. VHF) ☐ Other: ____
Affected GNSS element	☐ GPS ☐ GLONASS ☐ GALILEO ☐ BDS ☐ other constellation ☐ EGNOS ☐ WAAS ☐ BDSBAS ☐ other SBAS ☐ GBAS (VHF data-link for GBAS)
Affected constellation frequency	☐ L1 ☐ L5 ☐ Both
Aircraft type and registration	
Flight number	
Airway/route flown (airport RWY/gateway/parking gate in case of on-ground detection)	
Coordinates of the area of occurrence/time (UTC)	UTC: ____Lat: ____Long: ____FL/Altitude: ____
Problem duration	Days, hours, minutes, seconds _____ ☐ continuous ☐ intermittent



Asia/Pacific Regional Frequency Management Manual

Edition 1.1

International Civil Aviation Organization

Editorial note:

- Black normal– Asia/Pacific Regional Aeronautical Radio Frequency Management Guidance Material Ed 1.0
- Light Gray Highlight – adopted in SRWG/8
- Yellow Highlight – need to be further explored

AMENDMENTS

Amendments are announced in the supplements to the *Publications Catalogue*; the Catalogue and its supplements are available on the ICAO website at www.icao.int. The space below is provided to keep a record of such amendments.

RECORD OF AMENDMENTS, CORRIGENDA AND ADDENDA

[illegible]

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ABBREVIATIONS

AAC	Aeronautical Administrative Communications
ACC	Area Control Centre
ADF	Automatic Direction Finder
AFIS	Aerodrome Flight Information Service
AM(R)S	Aeronautical Mobile (Route) Service
ANP	Air Navigation Plan (for APAC)
ANSP	Air Navigation Service Provider
AOC	Aeronautical Operational Control
APAC	Asia and Pacific
APANPIRG	Asia/Pacific Air Navigation Planning and Implementation Regional Group
APP	Approach Control Service
ARNS	Aeronautical Radionavigation Service
AS	Aerodrome Surface Communications
ATC	Air Traffic Control
ATIS	Automatic Terminal Information Service
ATS	Air Traffic Service
CAA	Civil Aviation Authority/Administration
CNS	Communications, Navigation and Surveillance
COM	Communications
CPM	Conference Preparatory Meetings (ITU)
CSC	Common Signaling Channel
D/U	Wanted/ Unwanted Signal Ratio
DME	Distance Measuring Equipment
DOC	Designated Operational Coverage
DOH	Designated Operational Height
DOR	Designated Operational Range
DVOR	Doppler VHF Omni-Directional Range
EIRP or e.i.r.p	Equivalent Isotropically Radiated Power or Effective Isotropic Radiated Power
FIS	Flight Information Service
FSMP	Frequency Spectrum Management Panel (successor of ACP WG/F (frequency))
GBAS	Ground-Based Augmentation System
GPIP	Glide Path Intersection Point
HF	High Frequency
ICAO	International Civil Aviation Organization
ICT	Information and Communication Technology
ILS	Instrument Landing System
ITU	International Telecommunication Union
ITU-R	ITU Radiocommunication Sector
LTP	Landing Threshold Point
MIFR	Master International Frequency Register (ITU)
MOPS	Minimum Operational Performance Standards
NDB	Non-directional Radio Beacon
NSP	Navigation Systems Panel (ICAO)
PAR	Precision Approach Radar
PIRGs	Planning and Implementation Groups
RR	Radio Regulations (ITU)

SARPs	Standards and Recommended Practices
SRWG	the Spectrum Review Working Group of APANPIRG
SST	The Supersonic Transport
TIBA	Traffic Information Broadcasts by Aircraft
TRD	True Radiation Direction
TWR	Aerodrome Control Tower
VDB	VHF Data Broadcast (used with GBAS)
VDL	VHF Digital Link
VHF	Very High Frequency
VOLMET	Meteorological Information for Aircraft in Flight
VOR	VHF Omnidirectional Radio Range
WRC	World Radiocommunication Conference (ITU)

Chapter 1

INTRODUCTION

This **manual** has been developed under a recommendation from the fourth meeting of the Spectrum Review Working Group (SRWG/4) of APANPIRG which was held via video conferencing from 09 to 10 June 2020. It is for States/Administrations in the APAC region to implement the frequency assignments in a coordinated manner with ANSP, CAA and national frequency Authorities to satisfy future operational needs or the introduction of new technologies, with emphasis on communication and navigation systems.

1.1 OBJECTIVE and SCOPE

1.1.1 Aeronautical services are recognized internationally to be prime users of radio frequencies. The civil aviation community must accordingly develop and present, as necessary, its agreed policies and its quantified and qualified statements of requirement for radio frequency spectrum to ensure the continuing availability of adequate radio spectrum and, ultimately, the ongoing viability of air navigation services throughout the world.

1.1.2 For the APAC Region, the Secretariat is developing, with the support of ICAO contracting states, materials to support frequency assignment planning in the region.

1.1.3 In accordance with above, the prime objectives of this document are:

- a) to provide background information on the international spectrum management institutional framework.
- b) to provide a convenient record for important frequency planning principles and coordination procedure.
- c) to provide frequency assignment planning criteria to secure that aeronautical radio communication and navigation systems are protected from harmful interference on a uniform basis.

1.1.4 This **manual** describes general references in aeronautical frequency management of APAC region, including the introduction and relationships between the main participants, overview of the framework and process of aeronautical spectrum management, etc.

1.1.5 This **manual** is suitable for national authorities, telecommunication authorities (or telecommunication administrations), ATCs, aerodromes, and airlines which will manage or use aeronautical frequencies.

1.1.6 This **manual** is not intended to and shall not replace the relevant requirements stipulated in Annex 10 and Doc 9718. In the event of any inconsistency or conflict between this document and Annex 10 and Doc 9718, Annex 10 and Doc 9718 shall take precedence.

1.1.6.1 Regions and States may supplement the material in Doc 9718 or use different frequency assignment planning criteria to meet regional requirements.

Chapter 2

BACKGROUND

2.1 Institutional framework

2.1.1 ITU

2.1.1.1 The International Telecommunication Union (ITU) is the United Nations specialized agency for information and communication technologies (ICTs). To facilitate international connectivity in communications networks, ITU allocate global radio spectrum and satellite orbits to specific users, develop the technical standards that ensure networks and technologies seamlessly interconnect.

Note: Other specialized agencies, such as ICAO, would not be barred from any kind of work touching upon aeronautical telecommunications including standardization activities.

2.1.1.2 The legal framework of ITU comprises the basic instruments of the Union, which have treaty status and are binding on ITU Member States. These instruments are the Constitution and Convention of the International Telecommunication Union and the Administrative Regulations, which complement the Constitution and the Convention. The Radio Regulations (RR) form an integral part of the Administrative Regulations.

2.1.1.3 The RR include allocations, provisions on licensing, interference resolution, safety and distress procedures and other aspects. Within the RR, the finite useable radio spectrum, from approximately 8.3 kHz to 275 GHz, is allocated to user services in response to their recognized demands, and among three ITU world Regions in accordance with the major regional spectrum requirements for these services in the relevant region. To enable new technologies and changes in spectrum usage, an ITU World Radiocommunication Conference (WRC) is held every 4 years where parts of the Radio Regulations are revised and updated.

2.1.1.4 Aviation services are recognized important users of radio spectrum to create safe and expeditious conditions to support air operations. The AM(R)S, the ARNS and their satellite service counterparts are important components in the mobile and radiodetermination families of users with (normally) exclusive allocations made on a worldwide basis to ensure global harmonization. The RR are used as the framework for the relevant ICAO Annexes and the Standards and Recommended Practices (SARPs) contained therein.

2.1.2 ICAO

2.1.2.1 Pursuant to the provisions in Art 37 of the Convention on International Civil Aviation, ICAO develops Standards and Recommended Practices (SARPs) for Communication, (radio) Navigation and Surveillance (CNS) systems. These standards include technical characteristics and protection requirements to secure interference free operation of these systems and are incorporated in Annex 10.

2.1.2.2 In order to provide for more detailed guidance material on the provisions in Annex 10 for CNS systems, ICAO has developed Doc 9718. Doc 9718 is (currently) published in two parts:

- Volume I which contains material relevant to the allocation and use of aeronautical frequency bands by the ITU.
- Volume II which contains material relevant to the frequency assignment planning for CNS systems.

2.1.2.3 ICAO is accorded observer status at relevant ITU WRCs and also participates at meetings of the ITU-R study groups, including the Conference Preparatory Meetings (CPMs) which prepare the technical and regulatory basis for WRCs. Within ICAO, the necessary activity to support these ITU-generated functions exists at two levels:

- a) At the worldwide level, through the work of the Air Navigation Commission, with the assistance of the FSMP (and communication divisional meetings or air navigation conferences, as required), to prepare the coordinated ICAO policies, spectrum estimates and technical inputs for ITU conferences and ITU-R study groups. The ICAO spectrum strategy, policy statements and the ICAO Position for WRCs are approved by the Council; and
- b) At the regional level, by the ICAO Regional Offices, through coordination of frequency assignment plans with states/administrations, using agreed ICAO planning criteria. This activity is supported by the Regional Planning and Implementation Groups (PIRGs).

2.1.2.4 At a Regional level, Air Navigation Plans have been developed. These ANPs contain, based on Regional Air Navigation Agreements, provisions that States have agreed to apply on the use of aeronautical radio communication, navigation and surveillance systems, including material relevant to frequency assignment planning.

2.1.3 National and regional authorities

2.1.3.1 Within ITU Member States, the telecommunication authorities / administrations normally control and operate the mechanism which develops the national proposals for amending the Radio Regulations for submission to the ITU WRCs. The outcome of these discussions in the WRCs normally results in material being incorporated in the ITU Radio Regulations or in ITU-R Recommendations and subsequently being applied through national regulation by national telecommunication authorities.

2.1.3.2 To develop and maintain the ICAO Spectrum Strategy and Policy on Radio Frequency Spectrum, a coordinated aeronautical position (the ICAO Position) and other materials must be established for every ITU WRC to support the update of the ITU Radio Regulations (RR). All ICAO Contracting States and relevant international organizations are encouraged to present proposals to develop the ICAO Position.

2.1.3.3 National and international (regional) preparatory committees function as the coordination medium to which the aeronautical requirements and proposals, either from ICAO coordinated or nationally derived, are presented by the national aviation authorities for consideration.

2.1.3.4 It is essential that aeronautical participation in these national and regional activities be ensured in order to support and defend aviation requirements.

2.1.4 Relationship between ITU RR and ICAO SARPS

2.1.4.1 The Radio Regulations have treaty status, and there is an inherent obligation on States to comply, unless an exception is stated and embodied in the Final Acts of the Conference which created the regulation. Aeronautical services are obliged to operate within the framework established by the Radio Regulations.

2.1.4.2 ICAO is recognized internationally as the competent international body to coordinate a worldwide policy for the operational use of specified systems used by aviation. Furthermore, the ICAO Annexes contain procedures for regular and emergency communications that are specifically developed for aviation purposes, taking account of the operational conditions. These procedures supplement the basic requirements of the Radio Regulations for procedures in aeronautical communications.

2.1.4.3 The Radio Regulations and ICAO SARPs together thus form a complementary set of regulatory provisions without any overlap. The Radio Regulations must evolve within the general telecommunications environment with its many and diverse users of the radio frequency spectrum, while the ICAO SARPs respond to the operational safety aspects of air navigation and are developed and agreed by aviation within the ICAO organizational framework.

2.2 Spectrum coordination and management

2.2.1 General

2.2.1.1 In using frequency bands for radio services, ITU Members and ICAO Contracting States shall bear in mind that radio frequencies are limited natural resources and that they must be used rationally, efficiently and economically, in conformity with the provisions of Radio Regulations, Annex 10 to the ICAO Convention and national and regional planning.

2.2.1.2 Any new assignment or any change of frequency or other basic characteristic of an existing assignment shall be made in such a way as to avoid causing harmful interference to services rendered by stations using frequencies assigned in accordance with this manual.

2.2.1.3 Frequency assignment planning should ensure the availability and protection from harmful interference of the frequencies provided for distress and safety purposes.

2.2.2 Frequency coordination and registration

2.2.2.1 The coordination and registration of frequency assignments is the prerogative of the ITU and must be performed in accordance with procedures laid down in the Radio Regulations. Frequencies are registered in the Master International Frequency Register (MIFR) maintained at ITU Headquarters in Geneva. However, Incorporation of aeronautical frequencies in the MIFR is not subject to a technical analysis of the assignment for protecting other assignments in the COM lists from harmful interference

2.2.2.2 In exclusive aeronautical bands, actual (day-to-day) coordination of frequency assignments is being undertaken by ICAO, through the ICAO Regional Offices. The Regional Office's frequency coordination role includes the coordination

with the ICAO regional offices of regions that may be affected by the proposed frequency assignments, or, if bilateral coordination is required in the region(s), the State(s)/ Administration(s) that may be affected. Agreed frequency assignment are registered by ICAO in the ICAO global frequency database.

2.2.2.3 To support this coordination, the ICAO Regional Offices have developed the necessary procedures, including the relevant frequency assignment planning criteria. Coordination of frequency assignments is taking place in close (in most cases) co-operation with the national civil aviation authorities.

2.2.2.4 Although in some cases aeronautical frequency assignments, notably those in HF and LF/MF bands, are registered with the ITU by the countries operating these services, other frequency assignments, particularly those in bands above 100 MHz, tend to be recorded only in national registers or in the ICAO Regional Air Navigation Plans. Because of this, de facto, the ICAO frequency register within ICAO forms the basis for international coordination of frequency assignment and provide the most accurate statement of frequency assignment.

2.2.2.5 This does not dispense with the more general requirement for the coordination of a frequency assignment within the ITU and the registration of this frequency assignment in the MIFR, if international protection of that assignment is necessary.

2.2.2.6 Coordination and registration of frequency assignments in the HF bands (between 2850 kHz and 22000 kHz) is only taking place through the ITU. However, ICAO is considering developing, in parallel, a relevant ICAO list of HF frequency assignments.

2.2.2.7 Coordination and registration of frequency assignments for radar stations and on-board autonomous radio navigation systems is not being coordinated through ICAO. However, in the case of assigning SSR mode S II/SI codes ICAO Regional Office performs the coordination and listing of these codes.

2.2.2.8 List of frequency bands coordinated by ICAO is given in Table 2.1.

Table 2.1 List of frequency bands

Symbols	Frequency range	Facility
LF/MF	190 – 495 kHz and 505 – 526.5 kHz	NDB and locator
VHF	108 – 117.975 MHz 117.975 – 137 MHz	ILS localizer (below 112 MHz), VOR and GBAS Air-ground communications (e.g., VDL Mode 4)
UHF	328.6 – 335.4 MHz 960 – 1215 MHz	ILS glide path DME/TACAN SSR

2.2.3 Procedure of Coordination for aeronautical frequency in APAC Region

2.2.3.1 The ICAO Third Asia/Pacific Regional Air Navigation (ASIA/PAC/3 RAN) Meeting in 1993 agreed that the ICAO APAC Regional Office would continue to maintain its frequency selection and coordination role, including the maintenance and promulgation of Frequency List Nos.1, 2 and 3 in a timely and periodic manner.

2.2.3.2 with the successful implementation of Frequency Finder, there is no more Frequency List No. 3 published by the ICAO APAC Regional Office after the 29th Edition in January 2016, and is replaced by the up-to-date database in Frequency Finder.

Note: Frequency Finder is the ICAO aeronautical radio frequency management tool for VHF COM and NAV frequency assignments (and SSR II/SI code).

2.2.3.3 The updated Frequency Lists of Nos. 1 and 2 are published on the APAC website under – CNS More Documents through secure portal of ICAO APAC website webpage, or can be downloaded from the ICAO database with Frequency Finder.

Note: ICAO APAC Office synchronized all registered assignments on Frequency List No.2 into Frequency Finder in 2022 and has been using Frequency Finder on frequency assignments for NAV systems.

2.2.3.4 Currently, States/Administrations can submit to the Regional Office their requests for new or modified frequency assignments in any format (e.g., letter, email).

- a) The administrative aspects of the frequency coordination can be improved by States/Administrations using Frequency Finder to generate electronic submissions for new or modified frequency assignments. This option permits States/Administrations to check a selected frequency to satisfy any operational need and to check the

compatibility of this (proposed) frequency with other frequency assignments in the Frequency List No.2 or No.3. It greatly facilitates the final coordination that is performed by the ICAO Regional Office. The electronic submission(s) as generated with Frequency Finder, in the format of an Excel file, can be sent to the ICAO Regional Office through email.

- b) The second option for States/Administrations to submit to the Regional Office requests for registering new or modified frequency assignments, also by electronic means, through a locally generated Excel or Word file that follows the template as in [Appendix A](#).
- c) The third option is for States/Administrations to submit to the Regional Office requests for new of modified frequency assignment by letter. The preferred format of the characteristics for these submissions is in [Appendix B](#).

2.2.3.5 The basic aeronautical coordination procedure is depicted as Figure 2-1.

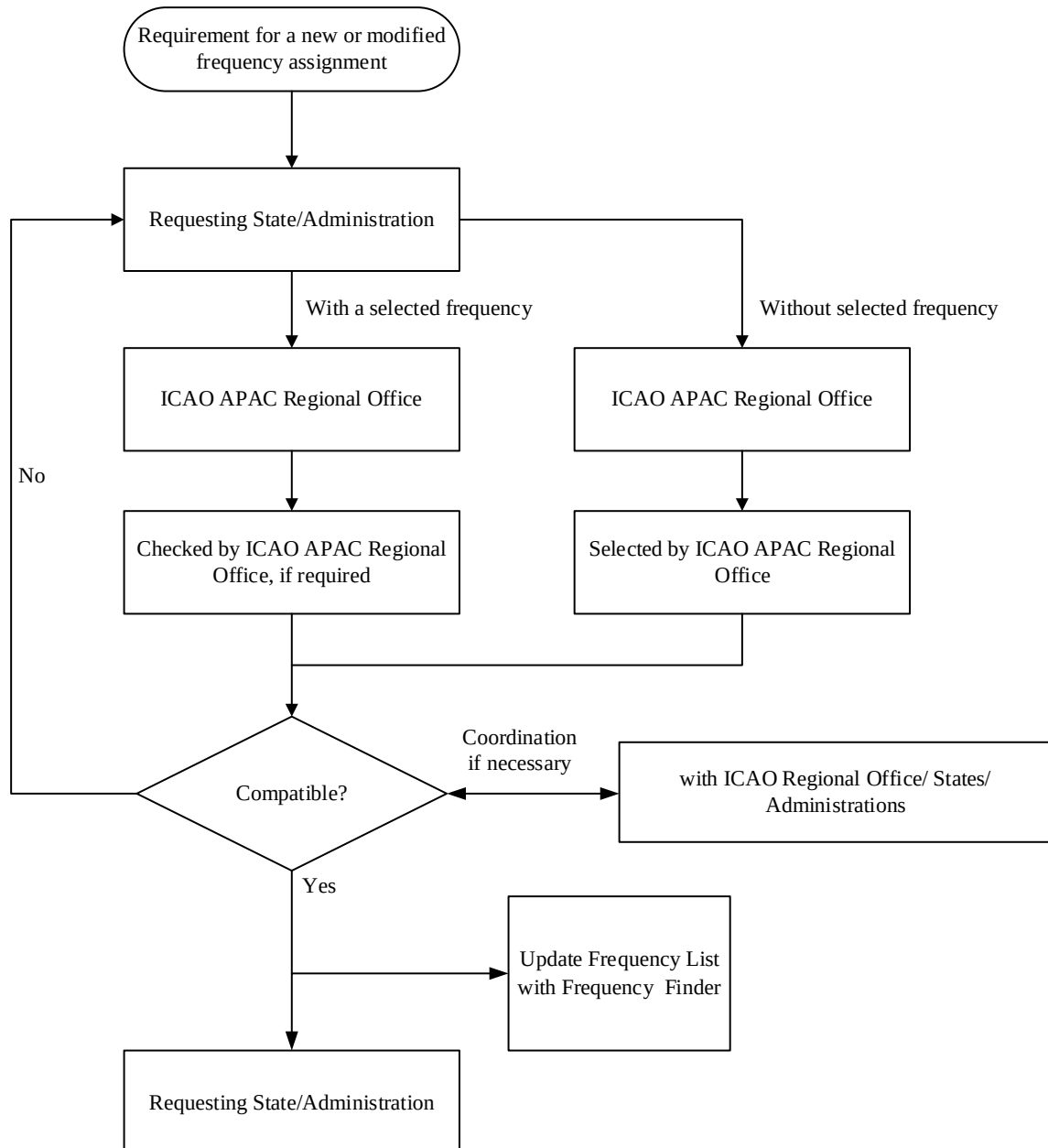


Figure 2-1 The basic aeronautical coordination procedure

Chapter 3

AIR-GROUND COMMUNICATION FREQUENCY MANAGEMENT

3.1 HF Air-ground Communication Frequency bands

3.1.1 HF bands (between 2850 kHz and 22 000 kHz) coordination is recommended to be carried out between States. Coordination and registration of HF frequencies is undertaken by the ITU, through the Radio Regulatory Authorities in each country. ICAO does not coordinate assignments for HF frequencies. ICAO is considering developing, in parallel, a relevant ICAO list of HF frequency assignments. Pre-coordination of HF frequencies could be arranged through the ICAO ASIA/PAC Office in Bangkok. However, the national radio regulator is required to develop a proposal for the registering required frequency assignments with the ITU. Such proposals should be based on the provisions of Appendix 27 to the ITU Radio Regulations, together with the information contained in the ITU International Frequency List (IFL) taking into consideration the protection requirements for HF as contained in Appendix 27.

3.1.2 Appendix 27 to the Radio Regulations (RR) contains the frequency allotment plan for the AM(R)S in the HF bands. This appendix contains the plan for HF frequency allotments to major world air route areas and to regional and domestic air route areas as well as VOLMET areas. It also includes worldwide frequency allotments, which are for the use of aircraft operating agencies for AOC, to be assigned in accordance with RR 27/217.

3.1.3 The technical characteristics for HF aviation equipment in Appendix 27 of the Radio Regulations, since they form part of the Radio Regulations, enjoy the same status as compulsory treaty obligations.

3.2 VHF Air-ground Communication Frequency bands

3.2.1 The general allotment of frequency band 117.975 – 137.000 MHz shall be as shown in Table 3.1. Specific allotments to services are to be determined regionally.

Table 3.1 Allotment table of frequency band 117.975 – 137.000 MHz

Block allotment frequencies (MHz)	Worldwide utilization	Remarks
118.000 –121.450 inclusive	International and National Aeronautical Mobile Services	Specific international allotments will be determined in the light of regional agreement. National assignments are covered by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
121.500	Emergency frequency	See Annex 10, Volume V, 4.1.3.1. Channels 121.475 and 121.525 are not assignable.
121.550 –121.9917inclusive	International and National Aerodrome Surface Communications	Reserved for ground movement, pre-flight checking, air traffic services clearances, and associated operations.
122.000 –123.050 inclusive	National Aeronautical Mobile Services	Reserved for national allotments. National assignments are covered by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
123.100	Auxiliary frequency SAR	See Annex 10, Volume V, 4.1.3.4. Channels 123.075 and 123.125 are not assignable.
123.150 –123.425inclusive	National Aeronautical Mobile Services	Reserved for national allotments. National assignments are covered

		by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
123.450	Air-to-air communications	Reserved for air-to-air communication. Designated for use as provided for in Annex 10, Volume V, 4.1.3.2.
123.475-123.6917 inclusive	National Aeronautical Mobile Services	Reserved for national allotments. National assignments are covered by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
123.700 –129.6917 inclusive	International and National Aeronautical Mobile Services	Specific international allotments will be determined in the light of regional agreement. National assignments are covered by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
129.700 –130.8917 inclusive	National Aeronautical Mobile Services	Reserved for national allotments but may be used in whole or in part, subject to regional agreement. National assignments are covered by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
130.900 –136.875 inclusive	International and National Aeronautical Mobile Services	Specific international allotments will be determined in light of regional agreement. National assignments are covered by the provisions in Annex 10, Volume V, 4.1.4.8 and 4.1.4.9.
136.900 –136.975 inclusive	International and National Aeronautical Mobile Services	Reserved for VHF air-ground data link communications.

3.2.2 In accordance with the provisions of Annex 10, the emergency channel (121.500 MHz) shall be used only for genuine emergency purposes, and where a requirement is established for the use of a frequency auxiliary to 121.500 MHz, the frequency 123.100 MHz shall be used.

3.2.3 The Thirteenth Meeting of the APANPIRG agreed to adopted a regionally protected frequency of 128.950 MHz for Traffic Information Broadcasts by Aircraft (TIBA) to permit reports and relevant supplementary information of an advisory nature to be transmitted by pilots. States/Administrations could re-allot this frequency to other services accordingly their own needs. However, any assignment for 128.950 MHz to other services should not impact the airspace which have allotted or plan to allot 128.950 MHz to TIBA.

3.2.4 Common signalling channels for VDL

3.2.4.1 The frequency 136.975 MHz is reserved on a worldwide basis to provide a common signalling channel (CSC) to the VHF digital link Mode 2 (VDL Mode 2).

3.2.4.2 In areas where VDL Mode 4 is implemented, the frequencies 136.925 MHz and 113.250 MHz shall be provided as common signalling channels (CSCs) to the VHF digital link Mode 4 (VDL Mode 4).

3.2.5 Frequencies should be assigned to all VHF Aeronautical Mobile Service (AMS) facilities in accordance with the principles laid out in Annex 10, Volume V and ICAO Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718) Volumes I and II, and take into account:

- (a) agreed geographical separation criteria based on 25 kHz or 8.33 kHz interleaving between channels;
- (b) agreed geographical separation criteria for the implementation of VDL services;
- (c) the need for maximum economy in frequency demands and in radio spectrum utilization; and
- (d) a deployment of frequencies which ensures that international services are planned to be free of interference from other services using the same band.

3.2.6 The priority order to be followed in the assignment of frequencies to service is:

- (a) ATS channels serving international services (ACC, APP, TWR, FIS);
- (b) ATS channels serving national purposes;
- (c) channels serving international VOLMET services;
- (d) channels serving ATIS and PAR; and
- (e) channels used for other than ATS purposes.

3.2.7 The criteria used for frequency assignment planning for VHF AMS facilities serving international requirements should, to the extent practicable, also be used to satisfy the need for national VHF AMS facilities.

3.2.8 Special provisions should be made, by agreement between the States concerned, for the sharing and the application of reduced protection of non-ATS frequencies in the national sub-bands, so as to obtain a more economical use of the available frequency spectrum consistent with operational requirements.

3.2.9 States should ensure that no air/ground frequency is utilized outside its designated operational coverage and that the stated operational requirements for coverage of a given frequency can be met for the transmission sites concerned, taking into account terrain configuration.

3.2.10 APAC region has agreed to base frequency assignment planning on 25 kHz frequency separation, according to the conclusions of ASIA/PAC/3 RAN (DOC9614), APANPIRG/26, etc. The complete regional 117.975MHz-137MHz frequency band utilization plan is shown in [Appendix C](#).

3.2.11 For co-frequency assignments, the minimum geographical separation between facilities shall be such that the DOC of each facility is separated by a distance not less than:

- (a) that required to provide a D/U ratio of 20 dB; or
- (b) the sum of the distance to the radio horizon of the DOC area of each facility.

Alternatively, in areas where the frequency congestion is severe, a protection ratio of 14 dB can be used on the basis of a regional air navigation agreement.

3.2.12 For adjacent frequency assignments, the minimum geographical separation between facilities shall be such that points at the edge of the designated operational coverage of each facility are separated by a distance sufficient to ensure operations free from harmful interference.

Note : The edge of the DOC is at the maximum range and maximum height.

3.2.13 Services and designated operational coverage (DOC)

3.2.13.1 Frequencies for aeronautical radio communication services are (normally) implemented to satisfy the operational need for specific services. These services, and their uniform DOC areas, are as in Table 3.2.

Table 3.2 Table of uniform designated operational coverage (DOC)

Service	SYMBOL	Designated Operational Coverage (DOC)		Comments	Mode
		Range (NM)	Height (ft)		
Aerodrome					
Aerodrome control tower	TWR	25	4000	Height above ground	A/G
Aerodrome flight information service	AFIS	25	4000	Height above ground	A/G
Aerodrome surface communications	AS	Limits of aerodrome	Surface		A/G
Approach					
Precision approach radar	PAR	25	4000	Height above ground	A/G
Approach control service (lower)	APP-L	50	12000		A/G
Approach control service (intermediate)	APP-I	75	25000		A/G
Approach control service (upper)	APP-U	150	45000		A/G
En-Route					
Area control centre (lower)	ACC-L	Area	25000	Within specified area;	A/G

Service	SYMBOL	Designated Operational Coverage (DOC)		Comments	Mode
		Range (NM)	Height (ft)		
				max range 155 NM	
Area control centre (intermediate)	ACC-I	Area	25000	Within specified area; max range 130 NM	A/G
Area control centre (upper)	ACC-U	Area	45000	Within specified area; max range 200 NM	A/G
Flight information service (lower)	FIS-L	Area	25000	Within specified area; max range 155 NM	A/G
Flight information service or Flight information service (upper)	FIS or FIS-U	Area	45000	Within specified area; max range 200 NM	A/G
Meteorological information for aircraft in flight	VOLMET	200	45000	Maximum range 200 NM	BC
Other functions					
Automatic terminal information service	ATIS	200	45000		BC
Air-to-air	A/A	200	45000	Maximum range 200 NM	A/G
Air-to-ground	A/G	200	45000	Maximum range 200 NM	A/G
Aeronautical operational control	AOC	100	25000	Not protected; max. range 100 NM	A/G
Emergency	EM	N/A	N/A	No frequency coordination required	A/G
Search and rescue	SAR	N/A	N/A	No frequency coordination required	A/G
VHF En-Route General Purpose	GP	200	45000	Maximum range 200 NM	A/G

Note 1: Different DOC areas may be specified by States.

Note 2: DOC for AOC-only provided to enable compatibility assessment when frequencies for AOC are shared with air traffic control (ATC) services; different DOC may be specified.

Note 3: For area services, no frequency protection is provided outside the specified area.

Note 4: Unless specified by States, the DOC for A/A and A/G is assumed at 45 000 ft/200 NM.

Note 5: Mode: A/G: air-ground communications; BC: (ground) broadcast communications.

Note 6: No coordination of frequency assignment planning is necessary for the emergency frequency 121.500 MHz and the SAR frequency 123.100 MHz as these services are available globally at each station where this service is required.

3.2.13.2 Non-standard DOC (range and height) may be implemented as and when required. Reduced DOC, where operationally acceptable, may alleviate frequency congestion.

3.2.14 The criteria of Geographical separation

3.2.14.1 Applying the methodology as described in Handbook on Radio Frequency Spectrum Requirements for Civil Aviation (Doc 9718), Volume II, paragraph 2.8, separation distances between the edges of the designated coverage areas are shown in Table 3.3.

Table 3.3 Minimum geographical co-frequency separation distances between the edges of the DOC

		VICTIM											
	Service	TWR 25/4000	AFIS 25/4000	AS Surface	APP-U 150/450	APP-I 75/250	APP-L 50/120	ACC-U Area/450	ACC-L Area/250	FIS-U Area/450	FIS-L Area/250	VOLMET 260/450	ATIS 200/450
INTERFERE	TWR	156	156		338	273	212	338	273	338	273	338	338
	AFIS	156	156		338	273	212	338	273	338	273	338	338
	AS (Note 2)			25									
	APP-U	338	338		520	455	394	520	455	520	455	520	520
	APP-I	273	273		455	390	329	325	390	455	390	455	455
	APP-L	212	212		394	329	268	394	329	394	329	394	394
	ACC-U (Note 1)	338	338		520	455	394	520	455	520	455	520	520

		VICTIM											
	Service	TWR 25/4000	AFIS 25/4000	AS Surface	APP-U 150/450	APP- I 75/250	APP-L 50/120	ACC-U Area/450	ACC-L Area/250	FIS-U Area/450	FIS- L Area/250	VOLMET 260/450	ATIS 200/450
	ACC-L (Note 1)	273	273		455	390	329	455	390	455	390	455	455
	FIS-U (Note 1)	338	338		520	455	394	520	455	520	455	520	520
	FIS-L (Note 1)	273	273		455	390	329	455	390	455	390	455	455
	VOLMET	338	338		520	455	394	520	455	520	455	15	15
	ATIS	338	338		520	455	394	520	455	520	455	15	15

Note 1: All distances are in NM.

Note 2: Frequencies for aerodrome surface communications should be selected from the band 121.600 – 121.975 MHz. This band is reserved exclusively for aerodrome surface communications. No separation distances with other services are provided. Should it be necessary to share frequencies for AS with air/ground communication services, the minimum geographical separation distance can be calculated as shown in paragraph 2.7.2.1.1 and assuming a designated operational coverage for aerodrome surface communications of 5 NM/100 ft.

3.2.14.2 For stations operating on the first adjacent frequency with the same characteristics, a separation distance of 10 NM is to be maintained between the ground transmitter and the ground receiver. This is considered to be not a frequency assignment planning constraint but rather an implementation issue for States to consider when implementing or modifying frequency assignments. A practical measure may be to avoid assigning a first adjacent frequency to the same location.

3.2.14.3 The designated coverage for VDL Mode 2 and VDL Mode 4 facilities need to be separated from the designated coverage of a co-frequency VHF-COM voice (DSB-AM) system with at least the distance to the radio horizon of each service.

Note: This applies also to frequency assignments between VDL facilities.

3.2.14.4 Table 3.4 present the guard band (channels) between VDL operating on adjacent frequencies with other VDL or VHF COM voice (DSB-AM) systems.

Table 3.4 25 kHz guard band (channels) between DSB-AM, VDL mode 2 and VDL mode 4 (air-air)

		Interference source		
		DSB-AM	VDL 2	VDL 4
Victim	DSB-AM		1	2
	VDL 2	1	1	1
	VDL 4	2	1	1

Note: The numbers in Table are guard-bands (channels). The next frequency that can be used without frequency planning constrain is 1 channel higher (e.g., a desired DSB-AM station that is interfered by a VDL Mode 2 aircraft station requires one 25 kHz guard band. The next frequency, 50 kHz away, can be used in the same designated operational coverage without any frequency assignment planning constraint.

3.2.14.5 Table 3.5 present the guard band (channels) for VDL Mode 2, VDL Mode 4 and VHF COM voice (DSB-AM) systems, when operating with aircraft on the surface of an airport.

Table 3.5 25 kHz guard band (channels) between DSB-AM and VDL (modes 2 and 4) on the surface of an airport

		Interference source		
		DSB-AM	VDL 2	VDL 4
Victim	DSB-AM	-	4	4
	VDL 2	4	1	1
	VDL 4	4	1	1

3.2.14.6 VDL services can be deployed on channels separated by 25 kHz subject to sufficient distance separation between transmit and receive antennas of such services on the ground, which is estimated up to about 3 NM.

3.2.15 Guidance on the use of backup frequencies.

3.2.15.1 Backup frequencies may be operationally required to provide an alternative air-ground communication channel in cases where an operational radio frequency is not available. Examples include: intentional interference; unintentional interference (e.g., badly designed FM broadcasting stations); stuck microphone; and phony air traffic controllers.

3.2.15.2 Implementation of backup frequencies should be limited only to the following ATC services: AS, TWR, APP, ACC, COLMET, and FIS. Other air-ground communication services such as ATIS, AFIS, A/A, A/G, GP, and AOC do not require backup communication channels.

3.2.15.3 Backup frequencies should only be implemented at aerodromes with a clear operational requirement. The number of backup frequencies for the AS, TWR, and APP should not exceed two (with a maximum of one backup frequency for TWR and one backup frequency for APP services).

3.2.15.4 Backup frequencies should not be provided when communication channels are lost due to malfunctioning of the ground infrastructure.

3.2.15.5 The assessment of the required number of backup frequencies should be kept to the minimum needed. Where possible, it should be based on experience (e.g., number of days per year that a communication channel is not available).

3.2.15.6 Where operationally feasible, arrangements should be in place to share backup frequencies either between different services (at the same ATC centre) or between different facilities (e.g., different aerodromes or different ACC/FIS from different ATC centres).

3.2.15.7 Adjacent ATS units are encouraged to make suitable arrangements to share backup frequencies where possible, operationally feasible and spectrally efficient.

3.2.15.8 In the COM list in the global table of frequency assignments, backup frequencies are identified as such.

Chapter 4

RADIO NAVIGATION AID FREQUENCY MANAGEMENT

4.1 Non-Directional Radio Beacons (NDB)

4.1.1 Frequency band – The radio frequencies assigned to NDBs shall be selected from those available in that portion of the spectrum between 190 kHz and 1 750 kHz. The coordination and registration of bands 190–495 kHz and 505– 526.5kHz take place in ICAO Regional office.

4.1.2 NDB frequency management should take into account the following:

- (a) the interference protection required at the edge of the rated coverage;
- (b) the application of the figures shown for typical ADF equipment;
- (c) the geographical spacings and the respective rated coverages;
- (d) the possibility of interference from spurious radiation generated by non-aeronautical sources (e.g., electric power services, power line communication systems, industrial radiation, etc.).

4.1.3 The 1979 World Administrative Radio Conference adopted regulations concerning the assignment of frequencies for aeronautical radio beacons operating in the LF/MF frequency bands. A minimum protection ratio (wanted/unwanted signal ratio) of 15 dB is to be used as the basis for frequency assignment planning (RR Appendix 12).

4.1.4 The minimum value of field strength in the rated coverage of an NDB should be 70^μmicrovolts per metre. In order to obtain a satisfactory service within the rated coverage of an NDB located in latitudes between 40°N and 50°S, a minimum value of field strength of 120 microvolts per metre would be required, except where practical experience in the operation of NDBs over several years has revealed that a minimum field strength of 70 microvolts per metre would be adequate to meet all the operational needs. In some specific areas, field strength values considerably in excess of 120 microvolts per metre would be required. Such areas are: Indonesia and Papua New Guinea, Myanmar, Malay Peninsula, Thailand, Lao People's Democratic Republic, Democratic Kampuchea, Viet Nam and Northern Australia.

Note: Based on the latest propagation and noise data available to the ITU, studies of minimum field strengths required at the boundary of the rated coverage was shown in 6.3 of Attachment C, Annex 10. Attention is called particularly to the assumptions made.

4.1.5 NDB Frequency assignments should be based on the criteria contained in Annex 10, Volume I, Chapter 3 paragraph 3.4.3 and the guidance material contained in Attachment C paragraph 6 of Annex 10, Volume I.

4.1.6 Where locators associated with ILS facilities serving opposite ends of a single runway are assigned a common frequency, provision shall be made to ensure that the facility not in operational use cannot radiate.

4.1.7 To alleviate frequency congestion problems at locations where two separate ILS facilities serve opposite ends of a single runway, the assignment of a common frequency to both of the outer locators should be permitted, and the assignment of a common frequency to both of the inner locators should be permitted, provided that:

- (a) the operational circumstances permit;
- (b) each locator is assigned a different identification signal; and
- (c) arrangements are made whereby locators using the same frequency cannot radiate simultaneously.

4.2 Instrument Landing System (ILS)

4.2.1 Frequency band and channel spacing

4.2.1.1 Frequency band –The Localizer is operating in the frequency band 108 – 112MHz. This band is also used for VOR and GBAS/VDB systems. Localizers cannot be assigned a frequency allotted for a VOR and vice versa. The Glide Path is operating in the frequency band 328.6–335.4MHz. The Localizer and Glide Path frequencies are paired as shown in Appendix E.

4.2.1.2 Channel spacing 100 kHz – The channel spacing for the Localizer is 100 kHz and for the Glide Path is 300 kHz. The Localizer operates on odd 100 kHz channels in the VHF band.

4.2.1.3 Channel spacing 50 kHz – The use of 50 kHz channels for the localizer (and 150 kHz for the glide path) is permitted as stipulated in Annex 10, Volume V, paragraph 4.2.2.1.

Note: Such use shall not cause harmful interference to ILS receivers not capable of tuning to these (50/150 kHz) channels and is subject to the condition that the operational service to international operators using airborne equipment designed for 100 kHz channel spacing (150 kHz for the Glide Path) is not derogated.

4.2.1.4 When the ILS is associated with a DME, the DME channels must be selected as **Appendix E**. Further guidance on DME frequency assignment planning, including the ILS/DME channel pairing, is in section 4.5.

4.2.2 Designated Operational Coverage (DOC)

4.2.2.1 The horizontal Designated Operational Coverage of the Localizer and Glide Path is shown in Figure 4-1. The DOC can be extended (optional) with a range of 10 NM outside the clearance sector of the Localizer as promulgated by States/Administrations.

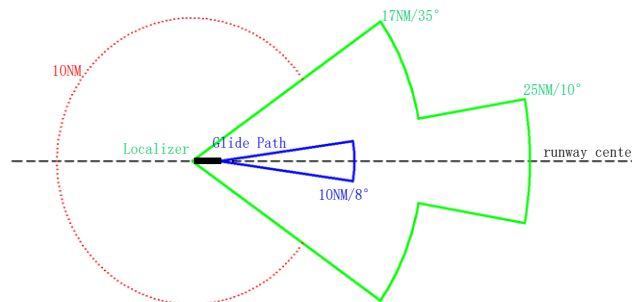


Figure 4-1. DOC of the ILS Localizer and Glide Path

4.2.2.2 The maximum protection height for the localizer DOC is 6250 ft and for the Glide Path 2500 ft. This height is relative to the elevation of the Localizer transmitter.

4.2.2.3 States/Administrations may modify the coverage to meet specific operational requirements. Unless a (modified) DOC is provided, the standard DOC as in paragraph 4.2.2.1 is used in the frequency assignment planning process.

4.2.2.4 When the ILS is associated with a DME, the DOC of the DME is typically the same as for the Localizer. However, States/Administrations may require the associated DME to provide coverage in a larger area.

Note: In practice, many frequency assignments for a DME, associated with an ILS, have a DOC of 10.000 ft/100 NM. Frequency assignment planning criteria for DME are in section 4.5.

4.2.3 The minimum field strength for a Localizer is 40 $\mu\text{V/m}$ (or 32 dB $\mu\text{V/m}$ or - 116 dBW) throughout the DOC. For a Glide Path the minimum field strength is 400 $\mu\text{V/m}$ (or 52 dB $\mu\text{V/m}$ or - 106 dBW).

4.2.4 ILS serving both ends of the same runway.

To alleviate frequency congestion problems at locations where two separate ILS facilities serve opposite ends of the same runway or different runways at the same airport, the assignment of identical ILS localizer and glide path paired frequencies should be permitted provided that:

- the operational circumstances permit;
- each localizer is assigned a different identification signal; and
- arrangements are made whereby the localizer and glide path not in operational use cannot radiate.

4.2.5 Information on the planning of identifications can be found in section 4.6.

4.2.6 A compatibility assessment for potential interference that can be caused by FM broadcasting stations operating in the frequency band 87 – 108 MHz is necessary before a Localizer frequency can be put into operational use. The FM immunity performance requirements for Localizer receivers are contained in Annex 10, Volume I, paragraph 3.1.4. Additional information on the process to assess compatibility with FM broadcast stations is in Recommendation ITU-R SM.1009.

4.2.7 Frequency Assignment Planning Principles

4.2.7.1 When the main direction of radiation of the ILS system is not known, for frequency assignment planning purposes, the coverage is assumed to be omnidirectional. The localizer coverage is originated from the location of the Localizer; the Glide Path coverage is originated from the location of the Glide Path.

4.2.7.2 The criteria must be applied in respect of each localizer installation, in the sense that while of two localizers, the first may not cause interference to the use of the second, nevertheless the second may cause interference to the use of the first.

4.2.7.3 The DOC for the Localizer is much larger than that for the Glide Path. When a localizer frequency has been assigned, the associated Glide Path frequency is automatically protected from harmful interference from other co-channel ILS facilities. However, when non-co-channel Localizer frequency has been assigned, a separate adjacent channel compatibility assessment is necessary for the Glide Path frequency with regard to other nearby ILS facilities operating on adjacent Glide Path frequencies. Therefore, the frequency assignment planning for Localizer and Glide Path has to be performed separately.

4.2.7.4 In so far as the wanted and unwanted carriers may produce a heterodyne note, the protection ratio ensures that the instrumentation is not affected. However, in cases where a voice facility is used, the heterodyne note may interfere with this facility.

4.2.8 Required Distance Separations of ILS/ILS Facilities

4.2.8.1 The minimum required separation distances between the desired ILS system and potentially interfering ILS systems are based on the assumption that protection against interference is afforded to the desired signal from the undesired signal is 20 dB. This corresponds to a disturbance of not more than 15 microamperes at the limit of the service distance of the ILS.

4.2.8.2 The minimum D/U ratios requirements within the DOC and different frequency separation to protect different receivers of Localizer / Glide Path can be referred to Annex 10, Volume I, Attachment C 2.6.2.1, 2.6.2.2.

4.2.8.3 Table 4.1 provides the minimum geographical separation distances between the edge of coverage of a desired ILS facility and the location of an undesired ILS facility, established using the method in **Appendix D**.

Table 4.1 Separation distances between the edge of coverage of a desired ILS and an undesired ILS

Undesired Facility:					
Localizer (e.i.r.p. = 30 dBW)	Δf :	Distance for 100 kHz receiver (desired facility)	D/U	Distance for 50 kHz receiver (desired facility)	D/U
	0 kHz	268 NM	36 dB	268 NM	36 dB
	0 kHz	135 NM	20 dB	135 NM	20 dB
	50 kHz	94 NM	-7 dB	36 NM	-34 dB
	100 kHz	n/a	n/a	n/a	n/a
	150 kHz	9 NM	-50 dB	9 NM	-50 dB
Glide Path (e.i.r.p. = 20 dBW)	Δf :	300 kHz receiver	D/U	150 kHz receiver	D/U
	0 kHz	88 NM	36 dB	74 NM	36 dB
	0 kHz	71 NM	20 dB	58 NM	20 dB
	150 kHz	36 NM	-0 dB	11 NM	-20 dB
	300 kHz	11 NM	-20 dB	1 NM	-40 dB
	450 kHz	1 NM	-40	-	-
Localizer (e.i.r.p. = 17 dBW)	Δf :	100 kHz receiver	D/U	50 kHz receiver	D/U
	0 kHz	135 NM	36 dB	135 NM	36 dB
	0 kHz	112 NM	20 dB	112 NM	20 dB
	50 kHz	44 NM	-7 dB	10 NM	-34 dB
	100 kHz	n/a	n/a	n/a	n/a
	150 kHz	1 NM	-50 dB	1 NM	-50 dB
Glide Path	Δf :	300 kHz receiver	D/U	150 kHz receiver	D/U

(e.i.r.p. = 14 dBW)	0 kHz	88 NM	36 dB	74 NM	36 dB
	0 kHz	71 NM	20 dB	58 NM	20 dB
	150 kHz	36 NM	-0 dB	11 NM	-20 dB
	300 kHz	11 NM	-20 dB	1 NM	-40 dB
	450 kHz	1 NM	-40	- - -	- - -

4.2.8.4 In Regions where both 100 kHz and 50 kHz Localizer channels are being used (300 kHz and 150 kHz channels for the Glide Path), the protection of the Localizer is based on the protection of receivers designed for 100 kHz channel spacing.

4.2.9 Geographical separation distances between (desired) Localizer and (undesired) adjacent frequency VOR facilities is as Table 4.2.

Table 4.2 Geographical separation distances between (desired) Localizer and (undesired) VOR

VOR Tx (dBW)	ΔF (kHz)	D/U(dB)	D (NM)	Remarks
17	50	-7	72	Undesired VOR; 100 kHz receiver;
17	50	-34	15	Undesired VOR; 50 kHz receiver;
17	100	-46	5	Undesired VOR; 50/100 kHz receiver;
17	150	-50	3	Undesired VOR; 50/100 kHz receiver;
20	50	-7	80	Undesired VOR; 100 kHz receiver;
20	50	-34	19	Undesired VOR; 50 kHz receiver;
20	100	-46	7	Undesired VOR; 50/100 kHz receiver;
20	150	-50	4	Undesired VOR; 50/100 kHz receiver;
30	50	-7	107	Undesired VOR; 100 kHz receiver;
30	50	-34	36	Undesired VOR; 50 kHz receiver;
30	100	-46	16	Undesired VOR; 50/100 kHz receiver;
30	150	-50	13	Undesired VOR; 50/100 kHz receiver;

Note: ITU-R aeronautical propagation curve for the Localizer: 108 MHz, $h_1 = 20$ ft, $h_2 = 6250$ ft; 5% of the time. The minimum required separation distance is measured from the location of the (undesired) VOR to the closest point of the DOC of the Localizer

4.2.10 Geographical separation distance between (desired) Localizer and the location of an (undesired) GBAS/VDB as Table 4.3.

Table 4.3 Geographical separation distances between a desired Localizer and an undesired GBAS/VDB

GBAS/VDB Tx (dBW)	ΔF (kHz)	D/U(dB)	D (NM)	Remarks
17	0	26	187	
17	25	0	108	
17	50	-34	20	
17	75	-46	5	
17	100	-65	0	Planning freedom

Note: ITU-R aeronautical propagation curve for the Localizer: 108 MHz, $h_1 = 45$ ft, $h_2 = 6250$ ft; 5% of the time. The minimum required separation distance is measured from the location of the (undesired) GBAS/VDB to the closest point of the DOC of the Localizer

4.2.11 Practical experience in the operation of ILSs over several years has revealed that the minimum required separation distances of Annex 10, Volume I, Table C-3 can protect against interference to the desired signal. Required Localizer and Glide Path separation distances is shown in Table 4.4. These separation distances can be used in areas where the frequency congestion is severe.

Table 4.4 Required distance separations

	Frequency separation	Minimum separation between second facility and the protection point of the first facility km (NM)	
		List A	List B

Localizer	Co-channel	148(80)	148(80)
	50kHz	37(20)	9(5)
	100kHz	9(5)	0
	150kHz	0	0
	200kHz	0	0
Glide path	Co-channel	93(50)	93(50)
	150kHz	20(11)	2(1)
	300kHz	2(1)	0
	450kHz	0	0
	600kHz	0	0
List A refers to the use of localizer receivers designed for 100 kHz channel spacing coupled with glide path receivers designed for 300 kHz channel spacing. List B refers to the use of localizer receivers designed for 50 kHz channel spacing coupled with glide path receivers designed for 150 kHz channel spacing. <i>Note 1. The above figures are based on the assumption of protection points for the localizer at 46 km (25 NM) distance and 1900 m (6250 ft) height and for the ILS glide path at 18.5 km (10 NM) distance and 760 m (2500 ft) height.</i> <i>Note 2. States, in applying the separations shown in the table, have to recognize the necessity to site the ILS and VOR facilities in a manner which will preclude the possibility of airborne receiver error due to overloading by high unwanted signal levels when the aircraft is in the initial and final approach phases.</i> <i>Note 3. States, in applying the separations shown in the table, have to recognize the necessity to site the ILS glide path facilities in a manner which will preclude the possibility of erroneous glide path indications due to reception of adjacent channel signals when the desired signal ceases to radiate for any reason while the aircraft is in the final approach phase.</i>			

Note: The application of the figures given in Table 4.4 will only be correct within the limitations set by the assumptions. If more precise determination of separation distances is required in areas of frequency congestion, this may be determined for each facility from appropriate propagation curves, taking into account the particular directivity factors, radiated power characteristics and the operational requirements as to coverage. Where reduced separation distances are determined by taking into account directivity, etc., flight measurements at the ILS protection point and at all points on the approach path should be made wherever possible to ensure that a protection ratio of at least 20 dB is achieved in practice.

4.3 VHF Omnidirectional Range (VOR)

4.3.1 Frequency band and channel spacing

4.3.1.1 VOR is operating in the frequency band 108–117.975MHz. Within band 108–111.975MHz, frequencies ending in either even tenths or even tenths plus a twentieth of a megahertz are used only by VOR and therefore cannot cause co-channel interference to the ILS Localizer. In areas where 50 kHz channel spacing is introduced measures are in place to avoid that no harmful adjacent channel interference is caused to the ILS Localizer.

4.3.1.2 The channel spacing is 100 kHz. The use of 50 kHz VOR channels is permitted as stipulated in Annex 10, Volume V, paragraph 4.2.3.1.

Note: The use of 50 kHz VOR channels shall not cause harmful interference to VOR receivers not capable of tuning to these channels and the operational service to international operators using airborne 100 kHz equipment is not derogated.

4.3.1.3 In aera where VDL Mode 4 is implemented, the frequency 113.250 is reserved as common signalling channel for VDL Mode 4.

4.3.1.4 VOR facilities are often associated with DME facilities. The associated DME channels shall be selected in Appendix E. Further guidance on DME frequency assignment planning, including the VOR/DME channel pairing, is in section 4.5.

Note: A separate compatibility assessment for the DME facilities associated with a VOR facility is required in all cases.

4.3.2 The designated operational coverage (DOC) of the VOR is determined through the operational requirement as promulgated by States/Administrations. In many cases the DOC is circular and can typically vary from 25 NM to

approximately 200 NM and with the protected altitude up to between 10 000 feet and 45 000 feet normally, may be extended up to 60 000 feet. Protection from harmful interference is only provided within the DOC.

Note: When the VOR is associated with a DME, the DOC of the DME is typically the same as for the VOR.

4.3.3 The field strength or power density in space of VOR signals required should be $90 \mu\text{V/m}$ (39 dB $\mu\text{V/m}$) or 107 dBW/m² (or - 110 dBW at 118 MHz) throughout the DOC.

4.3.4 A compatibility assessment for potential interference that can be caused by FM broadcasting stations operating in the frequency band 87 – 108 MHz is necessary. The FM immunity performance requirements for VOR receivers are contained in Annex 10, Volume I, paragraph 3.3.8. Additional information on the process to assess compatibility with FM broadcast stations is in Recommendation ITU-R SM.1009.

4.3.5 Information on the planning of identifications can be found in section 4.6.

4.3.6 Protection criteria for a desired VOR and an undesired VOR or Localizer or GBAS/VDB.

4.3.6.1 Localizer and VOR facilities cannot operate on the same frequency. Adjacent channel compatibility with an (undesired) Localizer is assessed in the same way as adjacent channel interference from a VOR assessed.

4.3.6.2 The protection of VOR facilities operating on the same frequency is based on a desired to undesired (D/U) signal ratio of 20dB. This corresponds to a bearing error of less than 1 degree due to unwanted signals.

4.3.6.3 Protection requirement for a desired VOR from interference by an undesired localizer or VOR facility is contained in DOC 9718, Volume II, paragraph 3.4.

4.3.6.4 Protection criteria for a desired VOR from interference by an undesired GBAS/VDB is contained in DOC 9718, Volume II, paragraph 3.5.

4.3.6.5 Where both 100 kHz and 50 kHz VOR channels are being used, the protection of the VOR is based on the protection of receivers designed for 100 kHz channel spacing.

4.3.7 Sectorized coverage

4.3.7.1 Application of the calculation methods described above may produce incorrect results if sectorization (key-holing) is used. Figure 4-2 can be used to explain the problem:

4.3.7.2 Consider A to be the desired VOR facility and B the undesired one. The “Critical Point” is most exposed to interference from facility B because it is the point of the DOC of facility A which is nearest to transmitter B.

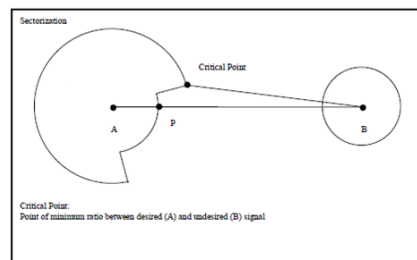


Figure 4-2 Geometry for determining the test points

4.3.8 Table 4.5 to Table 4.7 present the co- and adjacent frequency separation distance between the edge of the DOC of the (desired) VOR and the location of the (undesired) VOR or ILS-Localizer.

Table 4.5 Minimum separation distances between desired VOR and undesired VOR or LOC

ΔF (kHz)	D/U (dB)	Tx = 17 dBW		Tx = 20 dBW		Tx=30 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	
0	20	147	268	150	271	160	284	Desired VOR at 45000 ft
50	-7	120	134	123	174	133	231	50/100 kHz receiver
50	-34	93	5	96	11	106	43	100 kHz receiver
100	-46	81	<0.5	84	<0.5	94	7	50/100 kHz receiver
150	-50	77	<0.5	80	<0.5	90	<0.5	50/100 kHz receiver

Table 4.6 Minimum separation distances between desired VOR and undesired VOR or LOC

ΔF (kHz)	D/U (dB)	Tx = 17 dBW		Tx = 20 dBW		Tx=30 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	Desired VOR at 25000 ft
0	20	147	208	150	212	160	225	50/100 kHz receiver
50	-7	120	115	123	131	133	175	100 kHz receiver
50	-34	93	9	96	13	106	42	50 kHz receiver
100	-46	81	<0.5	84	<0.5	94	10	50/100 kHz receiver
150	-50	77	<0.5	80	<0.5	90	5	50/100 kHz receiver

Table 4.7 Minimum separation distances between desired VOR and undesired VOR or LOC

ΔF (kHz)	D/U (dB)	Tx = 17 dBW		Tx = 20 dBW		Tx=30 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	Desired VOR at 10000 ft
0	20	147	143	150	147	160	161	50/100 kHz receiver
50	-7	120	71	123	82	133	115	100 kHz receiver
50	-34	93	10	96	14	106	29	50 kHz receiver
100	-46	81	1	84	3	94	11	50/100 kHz receiver
150	-50	77	<0.5	80	1	90	7	50/100 kHz receiver

Note1: The separation distances are between the edge of coverage for a desired VOR and the location of an undesired VOR (or Localizer) facility. The EIRP of the undesired VOR (or Localizer) is as specified in column "Tx".

Note2: ITU-R aeronautical propagation curve for 108 MHz and 5% of the time. The antenna height of the desired aircraft receiver is indicated in the "Remarks" column, and the antenna height of undesired Localizer is 6 ft, undesired VOR is 20 ft.

4.3.9 Table 4.8 presents the co- and adjacent frequency separation distance between the edge of the DOC of the (desired) VOR and the location of the (undesired) GBAS/VDB station.

Table 4.8 Distance between the edge of the DOC of the desired VOR (50 kHz receiver) from GBAS/VDB

VOR Height (ft)	Co-frequency D/U = 26 dB L = 153 dB	1st adj freq. (+/-25 kHz) D/U = 0 dB L = 126 dB	2nd adj freq. (+/- 50 kHz) D/U = - 34 dB L = 92 dB	3rd adj freq. (+/-75 kHz) D/U = -46 dB L = 87 dB	4th adj freq. (+/- 100 kHz) D/U = -65 dB L = 61 dB
5 000	127 NM	80 NM	9 NM	5 NM	Frequency assignment planning freedom
10 000	161 NM	111 NM	8 NM	5 NM	
15 000	186 NM	135 NM	8 NM	4 NM	
20 000	206 NM	155 NM	8 NM	3 NM	
25 000	225 NM	172 NM	8 NM	2 NM	
30 000	242 NM	189 NM	7 NM	Frequency assignment planning freedom	
35 000	237 NM	203 NM	6 NM		
40 000	271 NM	217 NM	5 NM		
45 000	284 NM	228 NM	3 NM		
50 000	297 NM	242 NM	Planning freedom		
60 000	320 NM	264 NM			

Note 1: With minimum separation distances less than 0.5 NM frequency assignment planning freedom is assumed.

Note 2: Separation distances ≤ 5 NM may be considered as operational insignificant.

Note3: ITU-R aeronautical propagation curve for 108 MHz and 5% of the time. The antenna height of undesired GBAS/VDB is 45 ft.

4.4 Ground Based Augmentation System (GBAS)

4.4.1 The GNSS ground-based augmentation system (GBAS) VHF data broadcast (VDB) frequency band is 108 to 117.975MHz. The lowest assignable frequency is 108.025 MHz and the highest assignable frequency is 117.950 MHz, the channel spacing is 25 kHz.

4.4.2 Designated Operational Coverage (DOC)

4.4.2.1 The minimum DOC required for a GBAS VDB to provide approach services is as shown in Figure 4-3.

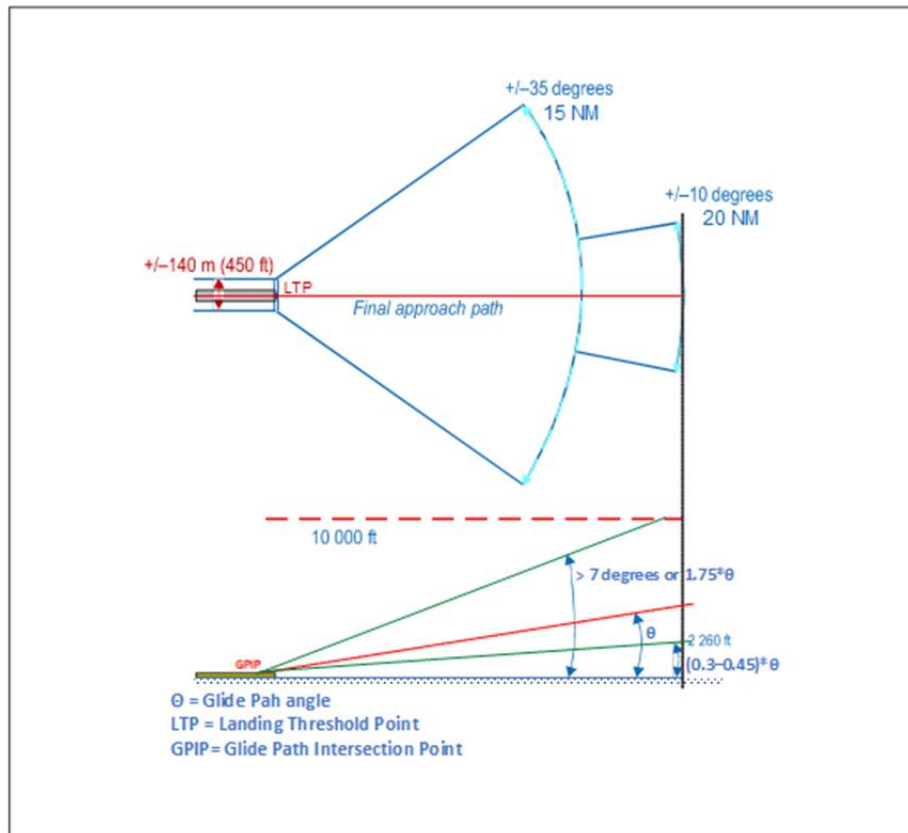


Figure 4-3 Minimum required DOC of GBAS

4.4.2.2 For GBAS approaches supported by the minimum DOC, the vertical coverage is limited by a plane that extends from the glide path intersection point (GPIP) with an angle of 0.3 times the glide path angle. For a glide path of 3 degrees, this angle is 0.9 degrees. At 20 NM, this plane is 2 260 ft above the earth. The upper limit of the coverage to be used for frequency assignment planning for this case is 10.000 ft above the runway threshold.

4.4.2.3 Typically, the DOC for GBAS VDB facilities is referenced to the location and the elevation of the threshold of the runway. However, in cases where such information is not available, the coverage may be referenced to the location of the VDB transmitter. In this case, considering the offset of the VDB transmitter from the runway threshold, for frequency assignment planning purposes, the DOC of the GBAS should be extended by 3 NM from the location of the VDB transmitter or the aerodrome reference point (ARP), in which case a circular coverage may need to be considered or assumed.

4.4.2.4 Figure 4-3 presents the minimum approach DOC, States/Administrations may specify an extended DOC based on the operational requirements. More information on establishing the DOC is in Annex 10, Volume I, Attachment D, paragraph 7.3.

4.4.2.5 It is recommended to assume a single omnidirectional coverage that encompasses all GBAS DOCs at an airport, if feasible. At a particular airport the set of GBAS DOC that are supported may include one or multiple GBAS DOC at all runways or a subset of runways. Furthermore, each GBAS DOC may be described either by the minimum DOC according to Figure 4 3 or by an extended DOC as specified by the GBAS service provider. When frequency coordination is not feasible assuming single omnidirectional coverage, it may be feasible to protect coverage only in the GBAS DOC's.

4.4.3 GBAS/VDB positioning service EIRP

4.4.3.1 The EIRP for the GBAS/VDB when providing the approach service is typically 17dBW (50 W) to provide service down to about 2 000 ft at the lower edge of the DOC.

4.4.3.2 The EIRP for the GBAS/VDB when providing the positioning service is in Table 4.9.

Table 4.9 Typical EIRP for GBAS/VDB positioning service

Range (NM)	EIRP (dBW)	EIRP (W)
50	14	25
100	20	100
150	23	200
200	26	400

Note: The EIRP of a GBAS/VDB system shall be provided as Peak Envelope Power. Since MOPS specify the output power to be measured as mean power over a bit-sequence in the preamble, care must be taken that the PEP is used for calculation.

4.4.4 For frequency assignment planning purposes, it is assumed the field strength of the desired corresponds to the minimum field strength, as defined in Annex10, Volume I, throughout the designated operational coverage. The minimum field strength is 215 $\mu\text{V/m}$ (-99 dBW/m²) which is equivalent to a power level at the aircraft antenna output of -102 dBW with an ideal isotropic antenna (for the horizontal component of the GBAS/VDB signal). The maximum field strength is (SIS max) 0.879 V/m (- 27 dBW/m² when converted to power flux density or -29 dBW when converted to power at the output of an isotropic antenna).

4.4.5 For use in civil aviation, the GBAS signal is horizontally polarized. The value for cross polarization isolation between horizontal and vertical polarization assumed to be 10 dB.

4.4.6 The risk of interference from FM broadcasting stations in the band 87 – 108 MHz caused by unwanted emissions into the aeronautical band or generated in the airborne receiver should be taken into account. The relevant Recommendation for GBAS is ITU-R SM.1841.

4.4.7 Information on the planning of identifications can be found in section 4.6.

4.4.8 Besides the frequency, co-ordination must also take into account reference path data selectors (RPDS) and reference station data selectors (RSDS) and time slots. More information on the use and coordination of RPDSs and RSDSs is in Annex 10, Volume I, Appendix B. However as these are currently not planned to be used in the APAC Region, no relevant planning criteria have been developed yet.

4.4.9 Protection requirements

4.4.9.1 Protection requirements for GBAS/VDB receivers.

The GBAS/VDB receiver shall be capable to achieve a message failure rate of not more than one failed message per 1000 data messages. The D/U ratios in Table 4.10 will meet this requirement.

Table 4.10 Co- and adjacent channel protection requirements for GBAS/VDB receivers

Frequency offset	VDB/VDB	VDB/VOR	VDB/ILS	VDB/VHF-COM
Co-frequency	26 dB	26 dB	26 dB	n/a
+/- 25 kHz	-18 dB	0 dB	0 dB	n/a
+/- 50 kHz	-43 dB	-34 dB	-34 dB	-32 dB
+/- 58.33 kHz	n/a	n/a	n/a	-38 dB
+/- 66.66 kHz	n/a	n/a	n/a	-41 dB
+/- 75 kHz	-46 dB	-46 dB	-46 dB	-45 dB
+/- 83.33 kHz	n/a	n/a	n/a	-47 dB
+/- 91.66 kHz	n/a	n/a	n/a	-49 dB
+/- 100 kHz	-46 dB	-46 dB	-46 dB	-51 dB
+/-975 kHz	-46 dB	-46 dB	-46 dB	-51 dB
≥ 1000 kHz	-46 dB	-60 dB	-60 dB	-77 dB

4.4.9.2 For the calculation of the minimum geographical separation distance between a desired GBAS VDB facility and an undesired GBAS VDB (or localizer, VOR or VDL Mode 4) facility, the generic model described in Appendix D, need to be applied.

4.4.10 The separation distances between desired and undesired GBAS stations in Table 4.11 were calculated for desired GBAS facilities providing approach services.

Table 4.11 Minimum separation distances between desired and undesired GBAS stations

Frequency offset	D/U (dB)	L (dB)	Distance from DOC of desired station to undesired station	Distance between the GBAS stations
0 (Co- channel)	26	145	149 NM	172 NM
25 kHz	-18	101	24 NM	47 NM
50 kHz	-43	76	0 NM	0 NM
$\Delta f \geq 75$ kHz	-46	73	0 NM	0 NM

Note: It's assumed that the GBAS VDB is within 3 miles of all runway ends supported by the GBAS and that all runway ends are supported by the minimum approach DOC illustrated in Figure 4-3.

4.4.11 The calculation of the minimum separation distances between the edge of coverage (DOC) of a desired GBAS VDB facility and the location of an undesired VOR or Localizer in Table 4.12 and **Error! Reference source not found..**

Table 4.12 Minimum separation distances between the DOC of the desired GBAS and the location of the undesired VOR or localizer

D/U (dB)	VOR or localizer (17dBW)			VOR (27dBW)		VOR (30dBW)	
	L(dB) 5%	VOR Distance (NM)	Localizer Distance (NM)	L(dB) 5%	VOR Distance (NM)	L(dB) 5%	VOR Distance (NM)
26 ($\Delta f = 0$ kHz)	145	149	149	155	163	156	201
0 ($\Delta f = 25$ kHz)	119	68	38	129	101	132	111
-34 ($\Delta f = 50$ kHz)	85	4	4	95	13	98	17
-46 ($\Delta f = 75$ kHz)	73	0	0	83	3	86	4
-46 ($\Delta f = 100$ kHz)	73	0	0	83	3	86	4
-46 ($\Delta f = 975$ kHz)	73	0	0	83	3	86	4
-60 ($\Delta f \geq 1000$ kHz)	59	0	0	69	0	72	0

Note: The parameters used in the calculations below are:

Height of the antenna of the (undesired) VOR is 20 ft above local terrain.

Height of the antenna of the (undesired) Localizer is 6 ft above local terrain.

Height of the (desired) VDB aircraft is 10,000 ft.

ITU-R aeronautical propagation curves (Recommendation P.528-4) for 112 MHz, 5% of the time

4.4.12 Interference from VHF-COM signals

4.4.12.1 On-board compatibility

No frequency assignment planning constraints have been identified to secure the compatibility between the on-board transmission of VHF-COM signals and the reception of GBAS/VDB signals on the same aircraft.

4.4.12.2 Air-to-air interference can be expected as in Table 4.13.

Table 4.13 Minimum separation distances between aircraft

Δf (kHz)	D/U	10dBW		14 dBW		17dBW		20 dBW	
		L (dB)	D(NM)	L (dB)	D(NM)	L (dB)	D(NM)	L (dB)	D(NM)
50	-32 dB	80	1.5	84	2	87	3	91	4.5
58.3	-38 dB	74	0.6	78	1	81	1	84	2
66.6	-41 dB	71	0.4	75	0.7	78	1	81	3
75	-45 dB	67	0.3	71	0.4	74	0.6	77	0.9
83.3	-47 dB	65	0.2	69	0.3	72	0.5	75	0.7
91.6	-49 dB	63	0.1	67	0.3	70	0.4	73	0.5
100	-51 dB	61	0.1	65	0.2	68	0.3	71	0.4
125	-46 dB	47	0	61	0.1	64	0.2	67	0.2

The minimum separation distances as in Table 4.13 were calculated assuming isotropic antennas on board the desired and the undesired aircraft. Taking into account that the effect of the actual antenna diagram of the VHF-COM and the GBAS/VDB antenna as well as the transient effect of air-to-air interference, at a frequency separation greater than 100 kHz no air-to-air interference is expected.

Note: An aircraft EIRP. of 20 dBW (100 W) is not normally used. For aircraft EIRP. of 17dBW (50 W) or less, a minimum frequency separation between the aircraft VHF-COM and the GBAS/VDB receiver of 50 kHz may be recommended.

4.4.12.3 Ground-to-air interference

At short distances, as shown in Table 4.13, interference from a VHF-Ground facility can be expected when the EIRP of the ground station is between 14 dBW (25W) to 20 dBW (100W). Maintaining a minimum frequency separation of 100 kHz between the assigned GBAS/VDB and VHF-COM frequency would avoid such interference. One option is to ensure in the frequency assignment planning process that a guard band of 100 kHz is introduced which would exclude the frequencies between 117.900 – 117.975 MHz to be used for GBAS/VDB.

Note: This condition seems to be extremely conservative. Taking into account the actual antenna diagram and the geography of short distances to the (interfering) VHF COM station, it may be sufficient to only exclude the frequency 117.950 MHz from being assigned to a GBAS/VDB station.

4.4.13 Airborne Contribution Factor

4.4.13.1 In extreme cases where the assumptions as in paragraph 4.4.9 cannot be applied or are not offering the GBAS/VDB compatibility calculations for GBAS versus GBAS, Localizer and VOR facilities may include the use of the Airborne Contribution Factor (ACF). This will require larger protection distances between the desired GBAS/VDB and the undesired GBAS/VDB, Localizer and VOR and, in the case of adjacent channel interference, over a range of plus/minus 1 MHz. In this case it may be difficult if not impossible to find a proper GBAS/VDB frequency that can be assigned and, in return, such a frequency assignment will prohibit in a large area the addition of new VOR or Localizer facilities.

4.4.13.2 The airborne contribution factor compensates for antenna gain variations in the horizontal plane (between the direction of the desired versus the undesired transmitter) and on-board transmission line loss variation (between the frequency of the desired and undesired signal). The airborne contribution factor can be calculated with $15 + \text{Min}(6, 6 \times \text{frequency offset (in kHz)} / 1000)$ with a maximum frequency offset of 1 000 kHz.

4.4.13.3 **Error! Reference source not found.** contains requirements for GBAS VDB receivers accounting for ACF.

Table 4.14 Co- and adjacent channel protection requirements for GBAS/VDB; signal-in-space

Frequency offset	VDB/VDB	VDB/VOR	VDB/ILS	VDB/VHF-COM
Co-frequency	41 dB	41 dB	41 dB	n/a
+/- 25 kHz	-3 dB	15 dB	15 dB	n/a
+/- 50 kHz	-27 dB	-18 dB	-18 dB	
+/- 58.33 kHz	n/a	n/a	n/a	
+/- 66.66 kHz	n/a	n/a	n/a	
+/- 75 kHz	-30 dB	-30 dB	-30 dB	
+/- 83.33 kHz	n/a	n/a	n/a	
+/- 91.66 kHz	n/a	n/a	n/a	
+/- 100 kHz				
+/- 975 kHz	-25 dB	-25 dB	-25 dB	
≥ 1000 kHz	-25 dB	-39 dB	-39 dB	

4.5 Distance Measuring Equipment (DME)

4.5.1 Frequency band and channel spacing

4.5.1.1 The DME operates on paired interrogation and reply frequencies (each combination of these frequencies is a “channel”) in the frequency band 960 – 1215 MHz. A number of these channels are in turn paired with ILS or VOR frequencies. The DME channelling arrangement is shown in Appendix D.

Note: The frequency band 960 – 1215 MHz is also used for TACAN. TACAN operates with the same channeling scheme as the DME and can be paired with a VOR (VOR/TAC). From the frequency assignment planning point of view TACAN is equivalent to DME.

4.5.1.2 The spacing between DME channels is 1MHz. DME X and Y channels with the same channel number use the same interrogator frequency but with different pulse coding. The reply frequency for the X and Y channel is different as well as the pulse coding. The Y channels reuse the reply frequencies within the interrogation frequency block (1025 – 1150 MHz).

4.5.2 The Designated Operational Coverage (DOC) of the DME is normally as promulgated by States/Administrations. When the DME is associated with an ILS or a VOR, the DOC of the DME is normally not less than the DOC of the ILS or VOR.

4.5.3 The peak equivalent isotopically radiated power shall not be less than that required to ensure a peak pulse power density of -89 dBW/m² under all operational weather conditions at any point within coverage. Minus 111 dBW at the antenna corresponds to a power flux density of -89 dBW/m² at the mid-band frequency.

4.5.4 Information on the planning of identifications can be found in section 4.6.

4.5.5 Protection requirements

Notes: For frequency planning purposes,

- 1) There is no difference between DME/N and DME/P.
- 2) TACAN facilities are treated in the same way as DME stations.
- 3) No criteria are defined for DME/W and DME/Z.

4.5.5.1 The necessary desired to undesired (D/U) signal ratios needed to protect the desired transponder reply signal at an airborne receiver from the various co-frequency/adjacent frequency, same code/different code, undesired transponder reply signal combinations that may exist.

4.5.5.2 The prerequisite for any D/U calculation to be valid is that the minimum signal of the (desired) DME (-111 dBW) at the aircraft antenna is achieved at all points throughout the coverage.

4.5.5.3 In making an assignment, each DME facility must be treated as the desired source with the other acting as the undesired. If both satisfy their unique D/U requirement, then the channel assignment may be made. This “reverse” check is necessary if the DME facilities being considered radiate with different EIRP or have a different DOC.

4.5.5.4 To each X or Y DME channel corresponds a specific reply frequency within the band 960 - 1215 MHz. X and Y DME channels do not have reply frequencies in common. Hence, for the protection of the desired transponder replies from other co-channel transponder replies, it is sufficient to consider only DME facilities with the same channel designation (including the pulse code). However, for DME facilities operating on Y channels, the reply frequency may be the same as the interrogator frequency of another DME X facility.

4.5.5.5 For co-channel assignments, the D/U signal ratio should be at least 8 dB throughout the service volume.

4.5.5.6 For Adjacent frequency assignments, the minimum required D/U ratio within the operational service volume shall be in accordance with the values given in Table 4.15.

The following values are assumed for the adjacent-channel emissions of the transponder (P_u):

- 200 mW (-7 dBW) on the first adjacent frequency;
- 2 mW (-27 dBW) on the second adjacent frequency.

Table 4.15 Protection criteria for the DME Ground Station (Interrogator)

Type of assignment	A	B
Co-frequency:		
Same pulse code	8	8
Different pulse code	8	-43
First adjacent frequency:		
Same pulse code	$-(P_u - 1)$	-42
Different pulse code	$-(P_u + 7)$	-75
Second adjacent frequency:		
Same pulse code	$-(P_u + 19)$	-75
Different pulse code	$-(P_u + 27)$	-75
Note 1: The D/U ratios in column A protect those DME/N interrogators operating on X or Y channels. Column A applies to decoder rejection of 6 microseconds. Note 2: The D/U ratios in column B protect those DME/N or DME/P interrogators utilizing discrimination in conformance with 3.5.5.3.4.2 and 3.5.5.3.4.3 of Chapter 3, Annex 10, Volume I and providing a decoder rejection conforming to 3.5.5.3.5 of Chapter 3, Annex 10, Volume I Note 3: P_u is the peak effective radiated power of the undesired signal in dBW. Note 4: The frequency protection requirement is dependent upon the antenna patterns of the desired and undesired facility and the EIRP of the undesired facility.		

Note 5: In assessing adjacent channel protection, the magnitude of D/U ratio in column A should not exceed the magnitude of the value in column B.

4.5.5.7 Separation requirement for DME reply frequencies which are separated by 63MHz. The channel assignment plan for DME is such that the transponder reply frequency for each Y channel is the same as the interrogation frequency of another DME channel. When the reply frequency of one DME matches the interrogation frequency of a second DME, a minimum separation distance of 15 NM (28km) between these (ground) facilities would be required, in general.

4.5.5.8 Table 4.16 to Table 4.18 present the co- and adjacent frequency separation distance between the edge of the DOC of the (desired) DME and the location of the (undesired) DME.

Table 4.16 Minimum separation distances between desired DME and undesired DME

ΔF (MHz)	D/U (dB)	Tx = 27 dBW		Tx = 30 dBW		Tx=37 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	Desired DEM at 45000 ft
0	8	146	256	149	260	156	265	co-channel
1	8	112	3	112	3	112	3	first adjacent channel
63			15		15		15	

Table 4.17 Minimum separation distances between desired DME and undesired DME

ΔF (MHz)	D/U (dB)	Tx = 27 dBW		Tx = 30 dBW		Tx=37 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	Desired DME at 25000 ft
0	8	146	197	149	200	156	204	co-channel
1	8	112	6	112	6	112	6	first adjacent channel
63			15		15		15	

Table 4.18 Minimum separation distances between desired DME and undesired DME

ΔF (MHz)	D/U (dB)	Tx = 27 dBW		Tx = 30 dBW		Tx=37 dBW		Remarks
		L (dB)	D (NM)	L (dB)	D (NM)	L (dB)	D (NM)	Desired DME at 10000 ft
0	8	146	131	149	133	156	137	co-channel
1	8	112	5	112	5	112	5	first adjacent channel
63			15		15		15	

Note1: The separation distances are between the edge of coverage for a desired DME and the location of an undesired DME. The EIRP of the undesired DME is as specified in column "Tx".

Note2: ITU-R aeronautical propagation curve for 1080 MHz and 5% of the time. The antenna height of the desired aircraft receiver is indicated in the "Remarks" column, and the antenna height of undesired DME is 20 ft.

4.5.6 Sectorized DOC of the DME.

4.5.6.1 Similar to VOR (as described in section 4.3), the DME DOC may be sectorized (instead of circular). In this case, compatibility of the DME with other DME assignments needs to be assured at the critical point which is the closest point of the DOC of the desired DME (with sectorized DOC) and any potential interfering DME transponder.

4.5.7 Use of directional antenna.

4.5.7.1 When omnidirectional DOC is not required, the use of a DME with directional antenna is encouraged, subject to the proviso that the operational requirements for the service to be provided by this facility are met. In Particular, they are useful for the replacement of ILS marker beacons. The directional DME could provide a means to mitigate frequency congestion.

4.5.7.2 The compatibility of DMEs with directional antennas can be examined basically along the same lines as those developed for omnidirectional DME. However, because of the variable antenna gain of a DME with directional antenna, the value of the quantity K (EIRP of the desired minus the EIRP of the undesired facility) in the above formulas depends in general on the position of the airborne receiver. It is noted in particular that because of the orientation of a DME with directional antenna, the minimum D/U value is not necessarily attained along the direct line connecting desired and undesired facilities, as opposed to the case of compatibility between omnidirectional DME.

4.5.7.3 In the presence of at least one DME with directional antenna, the following method should be applied. At first an appropriate number of points is selected along the edge of the DOC of the desired DME, regardless of the type of its antenna. Subsequently at all such points the required D/U criteria are checked. Compatibility is ensured if at all such points the required D/U criteria are met.

4.6 Identifications of Radio Navigation Aids

4.6.1 Identifications of navigation aids shall be so composed, if possible, as to facilitate association with the name of the point in plain language. The Table 4.19 provides an overview of the requirements which have to be taken into account for identifications.

Table 4.19 The requirements have to be taken into account for identifications

Facility	Identification	Remarks
NDB and Locator	2 or 3 letters of the International Morse Code.	
ILS	2 or 3 letters of the International Morse Code which may be preceded by the letter I.	Transmitted by the localizer.
ILS/DME	ILS: 2 or 3 letters of the International Morse Code which may be preceded by the letter I. DME: Identical to associated ILS.	Associated DME identification signal.
VOR	2 or 3 letters of the International Morse Code.	
VOR/DME (VOR/TACAN also called VORTAC)	VOR: 2 or 3 letters of the International Morse Code. DME: Identical to associated VOR.	Associated DME identification signal.
DME (TACAN)	Letters and numerals of the International Morse Code.	Independent DME identification signal for stand-alone DME facility.
GBAS	4 characters (Only upper-case letters, numeric digits and IA-5 "space" are used. The rightmost character is transmitted first. For a three-character GBAS ID, the rightmost (first transmitted) character shall be IA-5 "space".)	The GBAS ID is normally identical to the location indicator at the nearest aerodrome

4.6.2 The identification TST is reserved for radio navigation facilities on test and should not be used for other purposes.

4.6.3 Coded identification shall not be duplicated within 1 100 km (600 NM) of the location of the radio navigation aid concerned, except as noted hereunder.

Note: When two radio navigation aids operating in different bands of the frequency spectrum are situated at the same location, their radio identifications are normally the same.

4.6.4 States/Administrations' requirements for identifications shall be notified to the Regional Offices for coordination.

Appendix A

TEMPLATE FOR AN EXCEL OR WORD FILE THAT CAN BE USED FOR ELECTRONIC SUBMISSION OF ONE (OR MORE) NEW OR MODIFIED FREQUENCY ASSIGNMENTS FOR NAV SYSTEMS TO THE REGIONAL OFFICE

Essential characteristics should to be included in the submission to the Regional Office:

Country	
Location	
Latitude	
Longitude	
Frequency	
Channel	
VHFDOC	
VHFPwr	
DMEDOC	
DMEPwr	
Cat	
Remarks	
TRD	

In the table, the following format should be used:

Country	Country name as per ICAO directory	
Location	Name of the location of the NAV facility	
Latitude	Latitude in the format xxDyy'zz'' (e.g. 32D44'55'')	
Longitude	Longitude in the format xxxDyy'zz'' (e.g.054D55'56'')	
Facility	Select one of the following facilities	
	- ILS - ILS/DME - VOR - VOR/DME - DME - TACAN - GBAS	
Frequency	xxx.yyy (e.g. 109.200 or 113.450) [MHz]	
	<i>A frequency can be proposed by a State or selected by the Regional Office and is subject to a compatibility assessment with or frequency assignments in the COM list 2</i>	
Channel	DME channel (e.g. 36X or 45Y)	
VHFDOC	xxx/yyy e.g. 200/250	xxx is the range of the coverage (e.g. 200 is 200 NM) yyy is the height (FL) of the coverage (e.g. 250 is FL 250 or 25000ft)
DMEDOC	xxx/yyy e.g. 200/250	xxx is the range of the DME coverage (e.g. 200 is 200 NM) yyy is the height (FL) of the DME coverage (e.g. 250 is FL 250 or 25000ft)
Remarks	Optional, as provided by the State	
Cat	Category; either ICAO or NAT	
VHFPwr	As provided by the State	
DMEPwr	As provided by the State	

Note: The values for VHFPwr and DMEPwr are for the effective isotopically radiated power (e.i.r.p) of the relevant facility. In the absence of such information, the following values are assumed in the frequency assignment planning process:

Appendix A

ILS/Localizer	30 dBW	
ILS/DME	27 dBW (e.i.r.p for the associated DME)	
VOR	Range <50 NM	e.i.r.p 17 dBW
	Range 50 – 100 NM	e.i.r.p 20 dBW
	Range 100 – 150 NM	e.i.r.p 23 dBW
	Range > 150 NM	e.i.r.p 30 dBW
VOR/DME	Range <50 NM	e.i.r.p 27 dBW (landing DME)
	Range 150 -150 NM	e.i.r.p 30 dBW (terminal DME)
	Range >150 NM	e.i.r.p 37 dBW (en route DME)

DME only as for DME associated with VOR.

Note: The e.i.r.p values for DME apply also for TACAN facilities

TRD Runway azimuth

Note: If no TRD, circler coverage assumed.

Appendix B

PREFERRED FORMAT OF THE CHARACTERISTICS OF SUBMISSIONS

Reference of submission:

Date:

Subject: Application for xx, at xx (location name)

Contact information of the civil aviation authority of States

Suggested basic information of a submission:

Function of the proposed assignments,

Details of the facility: VHF-COM, ILS, VOR, GBAS, DME,

Frequency Range (if request RO for proposal) or proposed frequency,

Transmit Power (EIRP) and DOC,

Latitude/Longitude:

Minimum information required with reference to the following screenshot:

Country, Location, Latitude/Longitudes, Service.

The screenshot displays a web-based form for VHF COM assignment. The form is titled 'Station' and 'New assignment'. It includes the following fields and controls:

- MOD DN**: A dropdown menu.
- Region**: A dropdown menu with 'APAC' selected.
- Key**: A text field with 'D 422346'.
- Cat**: A dropdown menu.
- Channel spacing**: Two buttons, '25 kHz' and '8.33 kHz'.
- Country**: A text field.
- Ctry**: A dropdown menu.
- Location**: A text field.
- Latitude**: A text field with 'D' and 'N' indicators.
- Longitude**: A text field with 'D' and 'W' indicators.
- Service**: A dropdown menu with 'Service?' selected.
- DOC**: A text field.
- Range (NM)**: A dropdown menu.
- Height (feet)**: A dropdown menu.
- Frequency**: A text field with '0.000'.
- ER family**: A dropdown menu with 'Example: ER-BOT-01'.
- Set Area Service**: A button.
- FIR SECTORNAME**: A text field with 'No area service set or selected'.
- PolyID**: A dropdown menu with 'Enter Poly ID'.
- Reset**: A button.
- Remarks**: A text area.
- TEST**: A button.

Fig. 1 VHF COM

STATION

Insert from menu or type name

Region APAC New assignment Cat Select

Country Select from drop-down menu Ctry

Location Select from drop-down menu or type new name

Latitude ? D ? ' ? " ? N S Frequency 0.000

Longitude ? D ? ' ? " ? E W Channel 000X

Glide Path 0.000

Facility Select

ID Enter ID

Designated Operational Coverage		Range (NM)	Height (feet)	eirp (dBW)
VHF facility	n/a	? v	Select v	Selec v
DME/TACAN	n/a	Selec v	Select v	Selec v

Remarks ENTER REMARKS

System

ILS 1

VOR 2

DME 3

GBAS 5

VDL M4 6

Channel spacing

100 kHz

50 kHz

25 kHz

Fig. 2 VHF NAV

Appendix C

REGIONAL 117.975-137MHz FREQUENCY ALLOTMENT PLAN

Function	Frequencies (MHz)
TWR 118.000-118.875MHz 124.300-124.375MHz	118.000 118.025 118.050 118.075 118.100 118.125 118.150 118.175 118.200 118.225 118.250 118.275 118.300 118.325 118.350 118.375 118.400 118.425 118.450 118.475 118.500 118.525 118.550 118.575 118.600 118.625 118.650 118.675 118.700 118.725 118.750 118.775 118.800 118.825 118.850 118.875 124.300 124.325 124.350 124.375
AS 121.550-121.975MHz	121.550 121.575 121.600 121.625 121.650 121.675 121.700 121.725 121.750 121.775 121.800 121.825 121.850 121.875 121.900 121.925 121.950 121.975
APP 119.000-119.275MHz 119.400-120.075MHz 120.200-120.475MHz 120.600-120.675MHz 120.800-120.875MHz 121.000-121.450MHz 123.800-123.875MHz 124.000-124.075MHz 124.200-124.275MHz 124.400-124.475MHz 124.600-124.875MHz 125.000-125.275MHz 125.400-125.675MHz 125.800-125.875MHz 126.000-126.075MHz 126.300-126.375MHz 126.500-126.575MHz 127.700-127.775MHz 127.900-127.975MHz	119.500 119.525 119.550 119.575 119.600 119.625 119.650 119.675 119.800 119.825 119.850 119.875 119.900 119.925 119.950 119.975 119.100 119.125 119.150 119.175 119.200 119.225 119.250 119.275 119.400 119.425 119.450 119.475 119.700 119.725 119.750 119.775 120.000 120.025 120.050 120.075 120.200 120.225 120.250 120.275 120.400 120.425 120.450 120.475 120.600 120.625 120.650 120.675 120.800 120.825 120.850 120.875 121.000 121.025 121.050 121.075 121.100 121.125 121.150 121.175 121.200 121.225 121.250 121.275 121.400 121.425 121.450 123.800 123.825 123.850 123.875 124.000 124.025 124.050 124.075 124.700 124.725 124.750 124.775 125.100 125.125 125.150 125.175 125.500 125.525 125.550 125.575 126.500 126.525 126.550 126.575 127.700 127.725 127.750 127.775 127.900 127.925 127.950 127.975 120.300 120.325 120.350 120.375 121.300 121.325 121.350 121.375 124.200 124.225 124.250 124.275 124.400 124.425 124.450 124.475 124.600 124.625 124.650 124.675

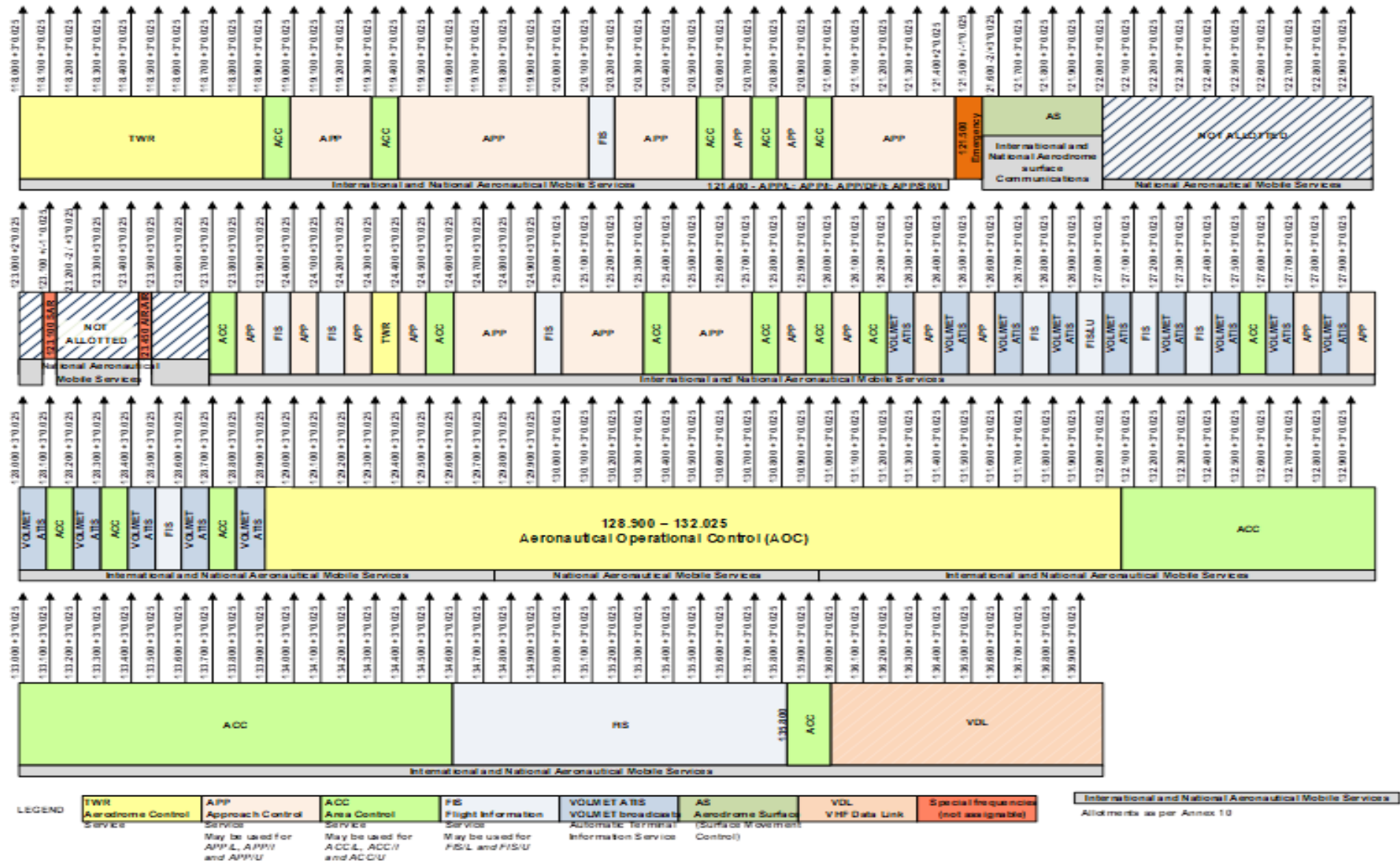
	124.800 124.825 124.850 124.875 125.000 125.025 125.050 125.075 125.200 125.225 125.250 125.275 125.400 125.425 125.450 125.475 125.600 125.625 125.650 125.675 125.800 125.825 125.850 125.875 126.000 126.025 126.050 126.075 126.300 126.325 126.350 126.375
ACC 118.900-118.975MHz 119.300-119.375MHz 120.500-120.575MHz 120.700-120.775MHz 120.900-120.975MHz 123.700-123.775MHz 124.500-124.575MHz 125.300-125.375MHz 125.700-125.775MHz 125.900-125.975MHz 126.100-126.175MHz 127.500-127.575MHz 128.100-128.175MHz 128.300-128.375MHz 128.700-128.775MHz 132.050-134.575MHz 135.825-135.975MHz	126.100 126.125 126.150 126.175 127.500 127.525 127.550 127.575 128.300 128.325 128.350 128.375 128.700 128.725 128.750 128.775 118.900 118.925 118.950 118.975 119.300 119.325 119.350 119.375 120.500 120.525 120.550 120.575 120.700 120.725 120.750 120.775 120.900 120.925 120.950 120.975 123.700 123.725 123.750 123.775 124.500 124.525 124.550 124.575 125.300 125.325 125.350 125.375 125.700 125.725 125.750 125.775 125.900 125.925 125.950 125.975 128.100 128.125 128.150 128.175 132.050* 132.075* 132.100 132.125 132.150 132.175 132.200 132.225 132.250 132.275 132.300 132.325 132.350 132.375 132.400 132.425 132.450 132.475 132.500 132.525 132.550 132.575 132.600 132.625 132.650 132.675 132.700 132.725 132.750 132.775 132.800 132.825 132.850 132.875 132.900 132.925 132.950 132.975 133.000 133.025 133.050 133.075 133.100 133.125 133.150 133.175 133.200 133.225 133.250 133.275 133.300 133.325 133.350 133.375 133.400 133.425 133.450 133.475 133.500 133.525 133.550 133.575 133.600 133.625 133.650 133.675 133.700 133.725 133.750 133.775 133.800 133.825 133.850 133.875 133.900 133.925 133.950 133.975 134.000 134.025 134.050 134.075 134.100 134.125 134.150 134.175 134.200 134.225 134.250 134.275 134.300 134.325 134.350 134.375 134.400 134.425 134.450 134.475 134.500 134.525* 134.550* 134.575* 135.825* 135.850* 135.875* 135.900* 135.925* 135.950* 135.975*
FIS 120.100-120.175MHz 123.900-123.975MHz	120.100 120.125 120.150 120.175 123.900 123.925 123.950 123.975 124.100 124.125 124.150 124.175

124.100-124.175MHz	124.900 124.925 124.950 124.975
124.900-124.975MHz	126.700 126.725 126.750 126.775
126.700-126.775MHz	126.900 126.925 126.950 126.975
126.900-126.975MHz	127.100 127.125 127.150 127.175
127.100-127.175MHz	127.300 127.325 127.350 127.375
127.300-127.375MHz	128.500 128.525 128.550 128.575
128.500-128.575MHz	134.600 134.625 134.650 134.675
134.600-135.800MHz	134.700 134.725 134.750 134.775
	134.800 134.825 134.850 134.875
	134.900 134.925 134.950 134.975
	135.000 135.025 135.050 135.075
	135.100 135.125 135.150 135.175
	135.200 135.225 135.250 135.275
	135.300 135.325 135.350 135.375
	135.400 135.425 135.450 135.475
	135.500 135.525 135.550 135.575
	135.600 135.625 135.650 135.675
	135.700 135.725 135.750 135.775
	135.800
VOLMET/ATIS	126.200 126.225 126.250 126.275
126.200-126.275MHz	126.400 126.425 126.450 126.475
126.400-126.475MHz	126.600 126.625 126.650 126.675
126.600-126.675MHz	126.800 126.825 126.850 126.875
126.800-126.875MHz	127.000 127.025 127.050 127.075
127.000-127.075MHz	127.200 127.225 127.250 127.275
127.200-127.275MHz	127.400 127.425 127.450 127.475
127.400-127.475MHz	127.600 127.625 127.650 127.675
127.600-127.675MHz	127.800 127.825 127.850 127.875
127.800-127.875MHz	128.000 128.025 128.050 128.075
128.000-128.075MHz	128.200 128.225 128.250 128.275
128.200-128.275MHz	128.400 128.425 128.450 128.475
128.400-128.475MHz	128.600 128.625 128.650 128.675
128.600-128.675MHz	128.800 128.825 128.850 128.875
128.800-128.875MHz	
AOC	128.900-132.025(Except 128.950MHz)
DATA LINK	136.000-136.975
AIR-TO-AIR	123.450 128.950 (TIBA)
NOT ALLOTTED	122.000-123.675(Except 123.100MHz, 123.450MHz)

*: Adopted by SRWG/8.

Note: In Australia, Myanmar, New Zealand, Thailand the frequency of 128.950 MHz has been allotted to TIBA.

graphical presentation Of Regional 117.975-137MHz frequency Allotment plan



Appendix D

GENERIC CALCULATION METHOD FOR GEOGRAPHICAL SEPARATION DISTANCES

- a. For the calculation of minimum separation distances with a (desired) facility and an (undesired) facility the generic model as described in Chapter 1 of DOC 9718 has been established.
- b. To establish minimum geographical separation distances between a desired facility and an undesired facility, the following parameters are used:
 - a) The minimum received desired power P_d of the desired facility (dBW).
 - b) D/U ratio. The prerequisite for any D/U calculation to be valid is that the minimal receive power is achieved at all points throughout the coverage.
 - c) EIRP of the undesired facility T_x (dBW).
 - d) Designated operational range of the desired facility.
 - e) ITU-R aeronautical propagation curve for 5% of the time.
- c. The generic method establishes the minimum geographical separation distance between the edge of the DOC of the desired facility and undesired facility. This distance provides for the transmission loss (attenuation) of the undesired signal to a level that meets the D/U requirement for the desired signal, $L = T_x - P_d + D/U$. This distance is obtained with using the relevant (frequency) ITU propagation curve applicable for the maximum height of the DOC of the desired facility and the site elevation of the undesired facility.
- d. When the minimum distance from the edge of coverage from the desired facility to the undesired facility has been established, the station-to-station separation distance can be obtained by adding the DOR to the minimum distance from the edge of coverage to the undesired facility.
- e. These steps need to be undertaken in the reverse direction whereby the desired facility becomes the undesired facility and the undesired facility becomes the desired facility. The maximum distance between the two processes determine the minimum separation between the two facilities.

Appendix E

PAIRING OF ILS/VOR/DME CHANNELS

Source: Annex 10, Volume 1, Table A			DME parameters					
			Interrogation				Reply	
				Pulse codes				
Channel pairing					DME/P mode			
DME channel number	VHF frequency MHz	GS frequency MHz	Frequency MHz	DME/N μ s	Initial approach μ s	Final approach μ s	Frequency MHz	Pulse codes μ s
* 1X	–	–	1 025	12	–	–	962	12
** 1Y	–	–	1 025	36	–	–	1 088	30
* 2X	–	–	1 026	12	–	–	963	12
** 2Y	–	–	1 026	36	–	–	1 089	30
* 3X	–	–	1 027	12	–	–	964	12
** 3Y	–	–	1 027	36	–	–	1 090	30
* 4X	–	–	1 028	12	–	–	965	12
** 4Y	–	–	1 028	36	–	–	1 091	30
* 5X	–	–	1 029	12	–	–	966	12
** 5Y	–	–	1 029	36	–	–	1 092	30
* 6X	–	–	1 030	12	–	–	967	12
** 6Y	–	–	1 030	36	–	–	1 093	30
* 7X	–	–	1 031	12	–	–	968	12
** 7Y	–	–	1 031	36	–	–	1 094	30
* 8X	–	–	1 032	12	–	–	969	12
** 8Y	–	–	1 032	36	–	–	1 095	30
* 9X	–	–	1 033	12	–	–	970	12
** 9Y	–	–	1 033	36	–	–	1 096	30
* 10X	–	–	1 034	12	–	–	971	12
** 10Y	–	–	1 034	36	–	–	1 097	30
* 11X	–	–	1 035	12	–	–	972	12
** 11Y	–	–	1 035	36	–	–	1 098	30
* 12X	–	–	1 036	12	–	–	973	12
** 12Y	–	–	1 036	36	–	–	1 099	30
* 13X	–	–	1 037	12	–	–	974	12
** 13Y	–	–	1 037	36	–	–	1 100	30
* 14X	–	–	1 038	12	–	–	975	12
** 14Y	–	–	1 038	36	–	–	1 101	30

Appendix E

*	15X	—	—	1 039	12	—	—	976	12
**	15Y	—	—	1 039	36	—	—	1 102	30
*	16X	—	—	1 040	12	—	—	977	12
**	16Y	—	—	1 040	36	—	—	1 103	30
?	17X	108		1 041	12	—	—	978	12
	17Y	108.05		1 041	36	36	42	1 104	30
	18X	108.1	334.7	1 042	12	12	18	979	12
	18Y	108.15	334.55	1 042	36	36	42	1 105	30
	19X	108.2		1 043	12	—	—	980	12
	19Y	108.25		1 043	36	36	42	1 106	30
	20X	108.3	334.1	1 044	12	12	18	981	12
	20Y	108.35	333.95	1 044	36	36	42	1 107	30
	21X	108.4		1 045	12	—	—	982	12
	21Y	108.45		1 045	36	36	42	1 108	30
	22X	108.5	329.9	1 046	12	12	18	983	12
	22Y	108.55	329.75	1 046	36	36	42	1 109	30
	23X	108.6		1 047	12	—	—	984	12
	23Y	108.65		1 047	36	36	42	1 110	30
	24X	108.7	330.5	1 048	12	12	18	985	12
	24Y	108.75	330.35	1 048	36	36	42	1 111	30
	25X	108.8		1 049	12	—	—	986	12
	25Y	108.85		1 049	36	36	42	1 112	30
	26X	108.9	329.3	1 050	12	12	18	987	12
	26Y	108.95	329.15	1 050	36	36	42	1 113	30
	27X	109		1 051	12	—	—	988	12
	27Y	109.05		1 051	36	36	42	1 114	30
	28X	109.1	331.4	1 052	12	12	18	989	12
	28Y	109.15	331.25	1 052	36	36	42	1 115	30
	29X	109.2		1 053	12	—	—	990	12
	29Y	109.25		1 053	36	36	42	1 116	30
	30X	109.3	332.0	1 054	12	12	18	991	12
	30Y	109.35	331.85	1 054	36	36	42	1 117	30
	31X	109.4		1 055	12	—	—	992	12
	31Y	109.45		1 055	36	36	42	1 118	30

32X	109.5	332.6	1 056	12	12	18	993	12
32Y	109.55	332.45	1 056	36	36	42	1 119	30
33X	109.6		1 057	12	–	–	994	12
33Y	109.65		1 057	36	36	42	1 120	30
34X	109.7	333.2	1 058	12	12	18	995	12
34Y	109.75	333.05	1 058	36	36	42	1 121	30
35X	109.8		1 059	12	–	–	996	12
35Y	109.85		1 059	36	36	42	1 122	30
36X	109.9	333.8	1 060	12	12	18	997	12
36Y	109.95	333.65	1 060	36	36	42	1 123	30
37X	110		1 061	12	–	–	998	12
37Y	110.05		1 061	36	36	42	1 124	30
38X	110.1	334.4	1 062	12	12	18	999	12
38Y	110.15	334.25	1 062	36	36	42	1 125	30
39X	110.2		1 063	12	–	–	1 000	12
39Y	110.25		1 063	36	36	42	1 126	30
40X	110.3	335.0	1 064	12	12	18	1 001	12
40Y	110.35	334.85	1 064	36	36	42	1 127	30
41X	110.4		1 065	12	–	–	1 002	12
41Y	110.45		1 065	36	36	42	1 128	30
42X	110.5	329.6	1 066	12	12	18	1 003	12
42Y	110.55	329.45	1 066	36	36	42	1 129	30
43X	110.6		1 067	12	–	–	1 004	12
43Y	110.65		1 067	36	36	42	1 130	30
44X	110.7	330.2	1 068	12	12	18	1 005	12
44Y	110.75	330.05	1 068	36	36	42	1 131	30
45X	110.8		1 069	12	–	–	1 006	12
45Y	110.85		1 069	36	36	42	1 132	30
46X	110.9	330.8	1 070	12	12	18	1 007	12
46Y	110.95	330.65	1 070	36	36	42	1 133	30
47X	111		1 071	12	–	–	1 008	12
47Y	111.05		1 071	36	36	42	1 134	30
48X	111.1	331.7	1 072	12	12	18	1 009	12

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	48Y	111.15	331.55	1 072	36	36	42	1 135	30
	49X	111.2		1 073	12	–	–	1 010	12
	49Y	111.25		1 073	36	36	42	1 136	30
	50X	111.3	332.3	1 074	12	12	18	1 011	12
	50Y	111.35	332.15	1 074	36	36	42	1 137	30
	51X	111.4		1 075	12	–	–	1 012	12
	51Y	111.45		1 075	36	36	42	1 138	30
	52X	111.5	332.9	1 076	12	12	18	1 013	12
	52Y	111.55	332.75	1 076	36	36	42	1 139	30
	53X	111.6		1 077	12	–	–	1 014	12
	53Y	111.65		1 077	36	36	42	1 140	30
	54X	111.7	333.5	1 078	12	12	18	1 015	12
	54Y	111.75	333.35	1 078	36	36	42	1 141	30
	55X	111.8		1 079	12	–	–	1 016	12
	55Y	111.85		1 079	36	36	42	1 142	30
	56X	111.9	331.1	1 080	12	12	18	1 017	12
	56Y	111.95	330.95	1 080	36	36	42	1 143	30
	57X	112		1 081	12	–	–	1 018	12
	57Y	112.05		1 081	36	–	–	1 144	30
	58X	112.1		1 082	12	–	–	1 019	12
	58Y	112.15		1 082	36	–	–	1 145	30
	59X	112.2		1 083	12	–	–	1 020	12
	59Y	112.25		1 083	36	–	–	1 146	30
**	60X	–		1 084	12	–	–	1 021	12
**	60Y	–		1 084	36	–	–	1 147	30
**	61X	–		1 085	12	–	–	1 022	12
**	61Y	–		1 085	36	–	–	1 148	30
**	62X	–		1 086	12	–	–	1 023	12
**	62Y	–		1 086	36	–	–	1 149	30
**	63X	–		1 087	12	–	–	1 024	12
**	63Y	–		1 087	36	–	–	1 150	30
**	64X	–		1 088	12	–	–	1 151	12
**	64Y	–		1 088	36	–	–	1 025	30

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**	65X	—	1 089	12	—	—	1 152	12
**	65Y	—	1 089	36	—	—	1 026	30
**	66X	—	1 090	12	—	—	1 153	12
**	66Y	—	1 090	36	—	—	1 027	30
**	67X	—	1 091	12	—	—	1 154	12
**	67Y	—	1 091	36	—	—	1 028	30
**	68X	—	1 092	12	—	—	1 155	12
**	68Y	—	1 092	36	—	—	1 029	30
**	69X	—	1 093	12	—	—	1 156	12
**	69Y	—	1 093	36	—	—	1 030	30
	70X	112.3	1 094	12	—	—	1 157	12
**	70Y	112.35	1 094	36	—	—	1 031	30
	71X	112.4	1 095	12	—	—	1 158	12
**	71Y	112.45	1 095	36	—	—	1 032	30
	72X	112.5	1 096	12	—	—	1 159	12
**	72Y	112.55	1 096	36	—	—	1 033	30
	73X	112.6	1 097	12	—	—	1 160	12
**	73Y	112.65	1 097	36	—	—	1 034	30
	74X	112.7	1 098	12	—	—	1 161	12
**	74Y	112.75	1 098	36	—	—	1 035	30
	75X	112.8	1 099	12	—	—	1 162	12
**	75Y	112.85	1 099	36	—	—	1 036	30
	76X	112.9	1 100	12	—	—	1 163	12
**	76Y	112.95	1 100	36	—	—	1 037	30
	77X	113	1 101	12	—	—	1 164	12
**	77Y	113.05	1 101	36	—	—	1 038	30
	78X	113.1	1 102	12	—	—	1 165	12
**	78Y	113.15	1 102	36	—	—	1 039	30
	79X	113.2	1 103	12	—	—	1 166	12
**	79Y	113.25	1 103	36	—	—	1 040	30
	80X	113.3	1 104	12	—	—	1 167	12
	80Y	113.35	1 104	36	36	42	1 041	30
	81X	113.4	1 105	12	—	—	1 168	12
	81Y	113.45	1 105	36	36	42	1 042	30

82X	113.5	1 106	12	—	—	1 169	12
82Y	113.55	1 106	36	36	42	1 043	30
83X	113.6	1 107	12	—	—	1 170	12
83Y	113.65	1 107	36	36	42	1 044	30
84X	113.7	1 108	12	—	—	1 171	12
84Y	113.75	1 108	36	36	42	1 045	30
85X	113.8	1 109	12	—	—	1 172	12
85Y	113.85	1 109	36	36	42	1 046	30
86X	113.9	1 110	12	—	—	1 173	12
86Y	113.95	1 110	36	36	42	1 047	30
87X	114	1 111	12	—	—	1 174	12
87Y	114.05	1 111	36	36	42	1 048	30
88X	114.1	1 112	12	—	—	1 175	12
88Y	114.15	1 112	36	36	42	1 049	30
89X	114.2	1 113	12	—	—	1 176	12
89Y	114.25	1 113	36	36	42	1 050	30
90X	114.3	1 114	12	—	—	1 177	12
90Y	114.35	1 114	36	36	42	1 051	30
91X	114.4	1 115	12	—	—	1 178	12
91Y	114.45	1 115	36	36	42	1 052	30
92X	114.5	1 116	12	—	—	1 179	12
92Y	114.55	1 116	36	36	42	1 053	30
93X	114.6	1 117	12	—	—	1 180	12
93Y	114.65	1 117	36	36	42	1 054	30
94X	114.7	1 118	12	—	—	1 181	12
94Y	114.75	1 118	36	36	42	1 055	30
95X	114.8	1 119	12	—	—	1 182	12
95Y	114.85	1 119	36	36	42	1 056	30
96X	114.9	1 120	12	—	—	1 183	12
96Y	114.95	1 120	36	36	42	1 057	30
97X	115	1 121	12	—	—	1 184	12
97Y	115.05	1 121	36	36	42	1 058	30
98X	115.1	1 122	12	—	—	1 185	12

98Y	115.15	1 122	36	36	42	1 059	30
99X	115.2	1 123	12	–	–	1 186	12
99Y	115.25	1 123	36	36	42	1 060	30
100X	115.3	1 124	12	–	–	1 187	12
100Y	115.35	1 124	36	36	42	1 061	30
101X	115.4	1 125	12	–	–	1 188	12
101Y	115.45	1 125	36	36	42	1 062	30
102X	115.5	1 126	12	–	–	1 189	12
102Y	115.55	1 126	36	36	42	1 063	30
103X	115.6	1 127	12	–	–	1 190	12
103Y	115.65	1 127	36	36	42	1 064	30
104X	115.7	1 128	12	–	–	1 191	12
104Y	115.75	1 128	36	36	42	1 065	30
105X	115.8	1 129	12	–	–	1 192	12
105Y	115.85	1 129	36	36	42	1 066	30
106X	115.9	1 130	12	–	–	1 193	12
106Y	115.95	1 130	36	36	42	1 067	30
107X	116	1 131	12	–	–	1 194	12
107Y	116.05	1 131	36	36	42	1 068	30
108X	116.1	1 132	12	–	–	1 195	12
108Y	116.15	1 132	36	36	42	1 069	30
109X	116.2	1 133	12	–	–	1 196	12
109Y	116.25	1 133	36	36	42	1 070	30
110X	116.3	1 134	12	–	–	1 197	12
110Y	116.35	1 134	36	36	42	1 071	30
111X	116.4	1 135	12	–	–	1 198	12
111Y	116.45	1 135	36	36	42	1 072	30
112X	116.5	1 136	12	–	–	1 199	12
112Y	116.55	1 136	36	36	42	1 073	30
113X	116.6	1 137	12	–	–	1 200	12
113Y	116.65	1 137	36	36	42	1 074	30
114X	116.7	1 138	12	–	–	1 201	12
114Y	116.75	1 138	36	36	42	1 075	30

	115X	116.8	1 139	12	–	–	1 202	12
	115Y	116.85	1 139	36	36	42	1 076	30
	116X	116.9	1 140	12	–	–	1 203	12
	116Y	116.95	1 140	36	36	42	1 077	30
	117X	117	1 141	12	–	–	1 204	12
	117Y	117.05	1 141	36	36	42	1 078	30
	118X	117.1	1 142	12	–	–	1 205	12
	118Y	117.15	1 142	36	36	42	1 079	30
	119X	117.2	1 143	12	–	–	1 206	12
	119Y	117.25	1 143	36	36	42	1 080	30
	120X	117.3	1 144	12	–	–	1 207	12
	120Y	117.35	1 144	36	–	–	1 081	30
	121X	117.4	1 145	12	–	–	1 208	12
	121Y	117.45	1 145	36	–	–	1 082	30
	122X	117.5	1 146	12	–	–	1 209	12
	122Y	117.55	1 146	36	–	–	1 083	30
	123X	117.6	1 147	12	–	–	1 210	12
	123Y	117.65	1 147	36	–	–	1 084	30
	124X	117.7	1 148	12	–	–	1 211	12
**	124Y	117.75	1 148	36	–	–	1 085	30
	125X	117.8	1 149	12	–	–	1 212	12
**	125Y	117.85	1 149	36	–	–	1 086	30
	126X	117.9	1 150	12	–	–	1 213	12
**	126Y	117.95	1 150	36	–	–	1 087	30
* These channels are reserved exclusively for national allotments. ** These channels may be used for national allotment on a secondary basis. The primary reason for reserving these channels is to provide protection for the secondary surveillance radar (SSR) system. 108.0 MHz is not scheduled for assignment to ILS service. The associated DME operating channel No. 17X may be assigned for emergency use. The reply frequency of channel No. 17X (i.e. 978 MHz) is also utilized for the operation of the universal access transceiver (UAT). Standards and Recommended Practices for UAT are found in Annex 10, Volume III, Part I, Chapter 12.								

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	36. Mr Shahid Hussain (Associate focal point) (updated on 11 May 2023)	Senior Joint Director Com Ops Headquarters Pakistan Civil Aviation Authority Terminal-1 JIAP Karachi Pakistan Post Code 75200	Tel: +92 (21) 9907 2215 Fax: +92 (21) 9924 2187 Email: shahid.hussain@caapakistan.com.pk
	37. Mr. Suhail Yousaf (Associate focal point) (updated on 18 Nov 2022)	Senior Assistant Director Com Ops Headquarters Pakistan Civil Aviation Authority Terminal-1 JIAP Karachi Pakistan Post Code 75200	Tel: +92 (21) 9907 2428 Fax: +92 (21) 9924 2187 E-mail: suhail.yousaf@caapakistan.com.pk
	38. Ms. Engr Kaniz Fatima (Associate focal point)	Senior Assistant Director CNS Headquarters Pakistan Civil Aviation Authority Terminal-1 JIAP Karachi Pakistan Post Code 75200	Tel: +92 (21) 9907 2213 Fax: +92 (21) 9924 2206 Email: kaniz.fatima@caapakistan.com.pk
14.	PHILIPPINES		
	39. Mr. Charlemagne P. Gilo (Main focal point) FF version 2020-4 (updated on 18 May 2021)	Division Chief III Air Traffic Services Civil Aviation Authority of the Philippines MIA Road, Pasay City Manila 1300 <u>PHILIPPINES</u>	Tel: +63 (2) 7944 2216 Fax: +63 917 813 6075 E-mail: ats_atd@caap.gov.ph ; charlemagne.gilo@gmail.com ;
	40. Ms. Amneris G. Gabriel (Associate focal point) (updated on 18 May 2021)	Department Manager III Air Traffic Services Civil Aviation Authority of the Philippines MIA Road, Pasay City Manila 1300 <u>PHILIPPINES</u>	Tel: +63 (2) 7944 2268 Fax: E-mail: vannieggabriel@gmail.com aicd@caap.gov.ph

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	STATE/NAME	TITLE/ORGANIZATION	TEL/FAX/E-MAIL
	41. Mr. Joe Marie Anthony E. Eligio (Associate focal point) (updated on 18 May 2021)	Head ATS Procurement Training Air Traffic Management Officer V Civil Aviation Authority of the Philippines MIA Road, Pasay City Manila 1300 <u>PHILIPPINES</u>	Tel: Fax: E-mail: joemarie_eligio_atzcaap@yahoo.com.ph
	42. Mr. Norrick T. Baes Mr. Josue Sugui (Alternate/Associate focal point) (updated on 618 March 2024)	Division Chief III Air Navigation Services Civil Aviation Authority of the Philippines MIA Road, Pasay City Manila 1300 <u>PHILIPPINES</u>	Tel: +63 2 82464 988 2207 Fax: Email: anfquad_chief@caap.gov.ph E-mail: josuesugui@yahoo.com;
15.	REPUBLIC OF KOREA		
	43. Ms. Shin Suyong Ms. Kim Yu Jin (Main focal point) (updated on 716 March Sep 2024)	Assistant Director Ministry of Land, Infrastructure and Transport (-MOLIT) #11, Doum-ro 6, Sejong City 30103, <u>REPUBLIC OF KOREA</u>	Tel : +82(44) 201 43644362 Fax : +82 (44) 201 5637 E-mail : yong404@korea.kr kyjin22@korea.kr
	44. Mr. Lee Kyung Won (Associate focal point) (updated on 04 Jun 2021)	Assistant Director Ministry of Land, Infrastructure and Transport (MOLIT) 54, Gonghangjinip-ro 42beon-gil Gangseo-gu, Busan <u>REPUBLIC OF KOREA</u>	Tel : +82(51) 974 2182 Fax : +82(51) 974 2188 E-mail : junag333@korea.kr

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	STATE/NAME	TITLE/ORGANIZATION	TEL/FAX/E-MAIL
	45. Ms. Son Hyang Jin Mr. Choi Jeoung Mook (Associate focal point) (updated on 704 March Jun 2024)	Assistant Director Ministry of Land, Infrastructure and Transport (MOLIT) Gonghang-ro 2, Jeju Si 54, Gonghangjinip-ro 42beon-gil Gangseo-gu, Busan Jeju Special Self-governing Province REPUBLIC OF KOREA	Tel : +82(51) 974 2181 Fax : +82(51) 974 2188 E-mail : hjhj777@korea.kr Tel : +82 (64) 797 1784 Fax : +82 (64) 797 1799 E-mail : mkke@korea.kr
16.	SINGAPORE		
	46. Mr. Mr. Eric Ng (Main focal point) (updated on 12 Jan 2024)	Principal Engineer Aeronautical Telecommunications & Engineering Division Civil Aviation Authority of Singapore Singapore Changi Airport, P.O Box 1 SINGAPORE 918141	Tel: + 65 9177 1083 Fax: +65 Email: eric_ng@caas.gov.sg
	47. Mr. Chew Keng Boon (Associate focal point) (updated on 12 Jan 2024)	Head (Communications) Aeronautical Telecommunications & Engineering Division Civil Aviation Authority of Singapore Singapore Changi Airport, P.O Box 1 SINGAPORE 918141	Tel: +65 9680 5953 Fax: +65 Email: chew_keng_boon@caas.gov.sg
	48. Mr. Loh Wen Cong Sherman (Associate focal point) (updated on 12 Jan 2024)	Engineer Aeronautical Telecommunications & Engineering Division Civil Aviation Authority of Singapore Singapore Changi Airport, P.O Box 1 SINGAPORE 918141	Tel: +65 9222 3360 Fax: +65 Email: sherman_loh@caas.gov.sg
17.	SRI LANKA		

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	STATE/NAME	TITLE/ORGANIZATION	TEL/FAX/E-MAIL
	49. Mr. M. A. K. Prasanna (Main focal point) (updated on 31 Oct 2022)	Director, Air Navigation Services Civil Aviation Authority of Sri Lanka <u>SRI LANKA</u>	Tel: +94112358849/+94112253863 Fax: - E-mail: dans@caa.lk
	50. Ms. Abhimani Peiris (Associate focal point) (updated on 31 Oct 2022)	Civil Aviation Inspector Air Traffic Management –Technical Civil Aviation Authority of Sri Lanka <u>SRI LANKA</u>	Tel: - Fax: - E-mail: caiatmtech@caa.lk
18.	THAILAND		
	51. Mr. Chavalit Ithiapa (primary contact)	ANS Officer Civil Aviation Authority of Thailand 333/105 Lak Si Plaza, Khamphaeng Phet 6 Road Talat Bang Khen, Lak Si, Bangkok 10210 <u>THAILAND</u>	Tel: +66 (2) 568 8831 Ext. 2510 Fax: E-mail: chavalit.i@caat.or.th
	52. Mr. Chainan Chaisompong (Associate focal point)	Air Traffic Engineering Manager Aeronautical Radio of Thailand Ltd. 102 Ngamduplee, Rama IV Road Tungmahamek, Bangkok 10120 <u>THAILAND</u>	Tel: +66 (2) 287 8391 Fax: - E-mail: chainan.ch@aerorhai.co.th
	53. Mr. Nattaporn Pornsawat (Associate focal point) (updated on 07 May 2021)	ANS Officer Civil Aviation Authority of Thailand 333/105 Lak Si Plaza, Khamphaeng Phet 6 Road Talat Bang Khen, Lak Si, Bangkok 10210 <u>THAILAND</u>	Tel: Fax: E-mail: nattaporn.p@caat.or.th

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	STATE/NAME	TITLE/ORGANIZATION	TEL/FAX/E-MAIL
19.	USA		
	54. Mr. Shayne Campbell (Main focal point) (updated on 08 Jul 2022)	Senior Air Traffic Representative, Asia Pacific Federal Aviation Administration Air Traffic Organization, System Operations American Embassy, Singapore 27 Napier Rd. Singapore INTL 258508	Tel: +65 6476 9413 Email: shayne.a.campbell@faa.gov
	55. Ms. Lorena Carvajal (Associate focal point) (updated on 01 Jun 2021)	Spectrum Engineer Spectrum Assignments and Engineering Office FAA National Headquarters 800 Independence Ave SW Washington, DC 20591-0001	Cell: +1 (202) 507 0598 Office: +1 (202) 267 7051 Email: Lorena.carvajal@faa.gov
20.	VIET NAM		
	56. Mr. Nguyen The Hung (Main focal point) (updated on 13 Oct 2023)	Director/Air Navigation Department, CAAV No 119 Nguyen Son Str, Long Bien Dist, Ha Noi, Viet Nam	Tel: 84 24 38723600 Email: hungand@caa.gov.vn
	57. Mr. Vu Ngoc Tuan (Associate focal point) (Frequency Finder operator) (updated on 13 Oct 2023)	CNS Officer/Air Navigation Department, CAAV No 119 Nguyen Son Str, Long Bien Dist, Ha Noi, Viet Nam	Tel: 84 24 38720199 Email: vungoctuan@caa.gov.vn
	58. Mr. Be Nhat Hoan (Associate focal point) (Frequency Finder operator) (updated on 13 Oct 2023)	Director/CNS Department, Viet Nam Air Traffic Management Corporation No 6/200 Nguyen Son Str, Long Bien Dist, Ha Noi, Viet Nam	Tel: 84 913003737 Email: benhathoan@vatm.vn

FREQUENCY FINDER INSTALLATION STATUS TABLE

No.	States/ Administrations	FF Installed?	FF version	Organization name	Contact	Remark
1	Australia	Yes	FF2023.03R	AsA	Spencer.Robinson@AirservicesAustralia.com	
2	China	Yes	FF2020.04R	CAAC	zhangjia@caac.gov.cn	
3	India	Yes	FF2020.04R	AAI	Freq Mgmt, CHQ afsmcnschq@AAI.AERO	
4	Indonesia	Yes	FF2023.03R	DGCA-INS	Abdul Aziz azizsabdul@gmail.com	
5	Japan	Yes	FF2023.03R	JCAB	瀧岡 祐治 <takioka-y46i6@mlit.go.jp>	
6	Malaysia	Yes	FF2020.04R	CAAM	Syahroni Bin Chek Rus syahroni@caam.gov.my	
7	Philippines	Yes	FF2020.04R	CAAP	Charlemagne P. Gilo charlemagne.gilo@gmail.com	Unable to synchronize with APAC DB [sync error]
8	Thailand	Yes	FF2023.02R	CAAT	Mr. Chavalit Ithiapa chavalit.i@caat.or.th	
9	Thailand	Yes	FF2023.02R	CAAT	Mr. Nattaporn Pornsawat nattaporn.p@caat.or.th	
10	Thailand	Yes	FF2023.04R	AEROTHAI	Mr. Chainan Chaisompong chainan.ch@aerothai.co.th	
11	Republic of Korea	Yes	FF2023.02R	MOLIT	Ms Hyangjin Son hjhj777@korea.kr	

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Updated SRWG Action List

Reference	Who	What	Due date	Status	Completed on	Result	Comment
A 4-5	All	States to provide ICAO Regional Office with information of all facilities that are in operation to improve the currency of Frequency lists	30-Mar-24	Open On-going		In progress	
A 4-7	All, Robert Witzen	Create ad hoc group to draft Table of Content first, then develop the regional guidance material on aeronautical frequency spectrum management in a shared way by States.	31/03/2023 CNS SG/27	Close		CAAC volunteered to share a draft and lead the adhoc group. Decided to be contined in SRWG/5. CNS SG/27 adopted the Conclusion CNS SG/27/05 (SRWG/7/1) - Asia Pacific Regional Aeronautical Radio Frequency Management Guidance Material Edition 1.0.	1. follow up VTC on 3 July. 2. Ad hoc drafting group meeting with CAAC on 10 July Draft Conclusion SRWG/7/1 endorsed in SRWG/7
A4-8	Robert Witzen, All	to run new VHF COM simulations	End-2023	Close		To be conducted with required raw data submission from States/Administration	
A5-2	ICAO	to host a regional WRC-23 preparatory meeting upon coordination with ICAO HQ after lifting of travel restriction.	31/12/2022 13-14 Feb 23	Open Closed			
A5-3	ICAO	to resolve firewall query of Australia for FF installation and use.		Closed			Already replied during report
A5-4	ICAO	to inform ICAO HQ to consider the feasibility incorporating terrain data into future version of Frequency Finder	SRWG/7	Open Closed			
A5-5	ICAO, India, Thailand, China, Japan, Mr. Robert Witzen	ad-hoc group led by India to further explore the issue of 50 kHz channel spacing in the frequency band 108-117.975 MHz for ILS (LOC)/VOR operations and provide the inputs to SRWG/6. To coordinate with Japan to participate in ad-hoc group.	31/03/2022 SRWG/7	Open Closed			Completed with the paperfrom India.

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Reference	Who	What	Due date	Status	Completed on	Result	Comment
A5-6	ICAO	to take appropriate follow up action to improve the awareness on the potential of emerging technologies and the necessity to consider the development of software tool like Frequency Finder to support the frequency assignment planning at regional office in future.	SRWG/7	Open On-going			Currently a new technology implemented in FF is using GBAS/VDB Ongoing stuies in NSP and FSMP are on LDACS in the DMEband
A5-10	ICAO	to conduct a in-person workshop for Frequency Finder after new release of FF along with online course proposed by ICAO HQ for new release of FF is available	SRWG/7 Tentatively October 2023	Close		The Workshop on Frequency Finder (FF) was held at the ICAO Asia and Pacific (APAC) Regional Office from 9 to 13 October 2023 in Bangkok, Thailand.	Has a Workshop been planned? A workshop F2F is necessary as part of the User Acceptance Test.
A6-1	ICAO, SRWG	Recommended to undertake an analysis on VHF COM simulation in 3 - 5 years from now (2025-2028) to assess the severity of the congestion	2025-2028	Open			
A6-2	ICAO	Review the registered frequencies from the simulation conducted in 2016 in the Frequency Finder, and remove those temporary frequencies in the Frequency Finder in previous simulation service	SRWG/7	Open Closed			
A6-3	ICAO	Establish an ad-hoc group (in offline mode through email list) to review the VHF COM Frequency Allotment Plan for APAC in terms of effective use of frequencies in the region, including the review of non-safety critical frequency use. (superceded by A7-1)	SRWG/7	Closed (superceded by A7-1)			
A6-4	ICAO	Publish questionnaire for APAC states for possible introduction of 50 kHz channel spacing in the APAC region via State Letter from ICAO APAC Regional Office (follow up of A5-5)	SRWG/7	Open Closed			
A6-5	ICAO	Probable augmentation of the Frequency Finder tool to incorporate indication to States to coordinate or not to coordinate	SRWG/7	Open			

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Reference	Who	What	Due date	Status	Completed on	Result	Comment
A6-6	China, ICAO	To summarize the revised planning principle/criteria in the format used in WP04 of SRWG/1	SRWG/7	Closed (Incorporated into Guidance Material)			
A6-7	ICAO	State Letter on updated Guidance Material to invite APAC States for review and comments (Follow-up of A4-7) (Superceded by A7-2)	SRWG/7	Open Closed			
A5-9 A6-8	ICAO	Administrations of Member States in APAC region would take necessary follow up actions in line with FSMP at national and regional level, to support CAAs work with National telecommunication regulators to prevent and monitor any impact of 5G to Radio Altimeters (avoid the future safety issues on radio altimeter due to 5G implementation).	SRWG/7	Open On-going			HQ SL: Ref.: SP 74/1-21/22, 25 March 2021, Subject: Potential safety concerns regarding interference to radio altimeters
A6-3 A7-1	China as Rapporteur and Mr Robert Witzen as Advisor with participation from volunteering States/Administration, ICAO	Ad-hoc Expert group led by China to address issues identified in current frequency allotment plan. Tasks of this group: - Study the allotment plan; - Analyze the real use of allotment registered in FF; - Understand the current situation; - Identify existing issues and rooms for improvement; - Develop suggestions in both technical and administrative perspectives; - Explore the potential in reallocating sub-bands/pools; - Produce a survey on the usage of TIBA in the Region; and - Review content of Guidance Material (as discussed in WP08)	SRWG/8	On-going		SRWG/8: WP/16 – Progress on VHF COM Frequency Allotment Plan for APAC Region Ad-hoc group will be kept to discuss any relevant issue related to the VHF COM allotment plan	

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Reference	Who	What	Due date	Status	Completed on	Result	Comment
A7-2	ICAO	After circulating to APAC States for review of Guidance Material, ad-hoc group to review virtually the material	CNS SG/27	Close		A State Letter Ref.: T 8/8.9 – AP035/23 (CNS) was circulated on 22 February 2023 to invite States/Administrations to review the Asia Pacific Regional Aeronautical Radio Frequency Management Guidance Material Edition 1.0. Only 3 replies were received without substantial comments. The Secretariat coordinated with Chair of SRWG and it was agreed there is no need for another online meeting of SRWG/7 participants to run through the Guidance Material 1.0 again. The Asia Pacific Regional Aeronautical Radio Frequency Management Guidance Material will be updated further if any comments/observations are received from Member States.	
A7-3	Indonesia as Rapporteur with participation from volunteering States/Administration, ICAO	Ad-hoc group rapporteur by Indonesia to share the experience in this Region on handling HF resource utilization and provide recommendations, produce a survey on the usage of HF in the Region, review eANP Vol II relevant tables, review outcomes from former ICAO meetings, and suggestions to Agenda Item 1.9 in WRC-23 if deemed necessary.	SRWG/8	On-going		SRWG/8: WP/15 - Utilization of HF Bands in APAC Ad-hoc group will be kept to discuss any relevant issue related to HF	

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Reference	Who	What	Due date	Status	Completed on	Result	Comment
A8-1	ICAO, States/Administrations	The States/Administrations that intend to use or is using VHF frequencies for Satellite-based VHF experimental systems during the period of time that the relevant SARPs and planning criteria are being developed and before operational deployment, should inform ICAO of their use. ICAO shall inform all States in APAC through frequency spectrum POC to ensure that all States are aware and monitor for any possible interference it may cause to VHF terrestrial systems. States/Administrations should also inform ICAO of any interference due to VHF Satellite-based experimental systems. And, in the event of interference, the correction action should be taken as soon as practicable.	SRWG/9	Open			
A8-2	ICAO, States/Administrations	The Secretariat will notify the ANB CNSS about the updates of the regional VHF COM Allotment Plan to ensure the Frequency Finder tool incorporates the latest revisions. Member States/Administrations are requested to review and update the frequencies uploaded in the Frequency Finder (FF), ensuring the database remains current.	SRWG/9	Open			
A8-3	ICAO, HF Ad-hoc group with Indonesia as Rapporteur	The ad-hoc group refines the survey on the Utilization of HF Spectrum Frequency bands in the Operation of Aeronautical Communications and the New Table with HF Frequency Assignments in the APAC Region, ensuring that they are clear and comprehensive enough to collect information effectively from States and facilitate their responses. The Secretariat disseminate the revised survey and updated table through a State Letter once the revisions have been finalized.	SRWG/9	Open			
A8-4	States/Administrations	The States/Administrations register all aeronautical frequencies for NDB and AOC on oil rigs with ICAO APAC Office, share the best practices in States/Administrations to regional forum, e.g. SRWG, and nominate experts to support and participate in the Seminar for the frequency use for oil rigs.	SRWG/9	Open			

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Reference	Who	What	Due date	Status	Completed on	Result	Comment
A8-5	SRWG	Recognizing that certain refinements are required for new paragraphs concerning HF, TIBA, backup frequency, and GBAS, the meeting agreed to adopted this revision as Edition 1.1 with clear presentation for the proposed amendments to differentiate the status of text as original, agreed, to be determined (TBD). The SRWG will discuss and review the pertinent paragraphs in future meetings.	SRWG/9	Open			