

FCC MAIL SECTION

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

FCC 94-154

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In the matter of DISCONTINUED BY)
)
 Amendment of Section 2.106 of the)
 Commission's Rules to Upgrade to) ET Docket No. 92-191
 Primary Status the Secondary) RM-7511
 Mobile-Satellite Service Allocation)
 at 19.7-20.2 GHz and 29.5-30 GHz)

REPORT AND ORDER

Adopted: June 13, 1994 ; Released: July 13, 1994

By the Commission: Commissioners Ness and Chong not participating.

INTRODUCTION

1. By this action, we are amending the Table of Frequency Allocations to upgrade the status of the Mobile-Satellite Service (MSS) allocation at 19.7-20.2 GHz and 29.5-30 GHz (20/30 GHz) from secondary to primary. We also are adopting related amendments to our rules to implement decisions made by the International Telecommunication Union's (ITU) 1992 World Administrative Radio Conference (WARC-92).¹ These actions will increase the variety of services that satellite operators may provide using this spectrum without impairing any existing services in these bands.

BACKGROUND

2. Traditionally, both the Commission on the domestic level and the ITU on the international level have allocated frequency bands for satellite communications based on the classification of services to be provided.² As a result of these separate allocations, different services generally are provided from separate dedicated satellites. In certain situations the

¹ See Final Acts of the World Administrative Radio Conference, Malaga-Torremolinos, 1992 (Final Acts).

² See 47 C.F.R. § 2.102(a) and Articles 6 and 8 of the ITU Radio Regulations.

Commission has permitted in-orbit satellites to provide nonconforming services when it was technically feasible to do so and interference was unlikely to be caused.³

3. More recently, the Commission has recognized the industry's increasing tendency to develop and implement space platforms that integrate a variety of services.⁴ At WARC-92 the United States proposed that the 20/30 GHz bands be reallocated for a general-satellite service, which would have included fixed and mobile satellite applications. WARC-92 did not adopt the proposal for a general-satellite service, but in the 20/30 GHz band did upgrade the MSS allocation from secondary to primary, to be shared with the fixed-satellite service (FSS).⁵

4. On July 16, 1990, Norris Satellite Communications, Inc. (Norris) submitted a Petition for Rule Making, RM-7511, requesting that the 20/30 GHz bands be reallocated for a general-satellite service that would include fixed, mobile, and broadcast applications. These bands currently are allocated to FSS on a primary basis, with a secondary allocation for MSS.⁶ In its petition, Norris argued that the 20/30 GHz allocation should be more flexible and permit a wide variety of satellite services.

5. On August 14, 1992, the Commission adopted a Notice of Proposed Rule Making (Notice) proposing to upgrade the existing domestic MSS allocation in the 20/30 GHz bands from secondary to primary.⁷ This action was in response to the Norris petition and the

³ See, e.g., Order and Authorization, 2670-DSE-MISC-88, 4 FCC Rcd 4538 (1989), at paragraph 6, authorizing Geostar Positioning Corporation to operate a transmission link in the FSS 4/6 GHz bands to provide radiodetermination satellite service to receive-only user terminals.

⁴ See, e.g., Notice of Proposed Rule Making, GEN Docket No. 90-56, 5 FCC Rcd 1255 (1990) proposing to allocate the 1530-1544 MHz and 1626.5-1645.5 MHz bands for a generic MSS; see also Report and Order, GEN Docket Nos. 84-1231, 84-1233, and 84-1234, 2 FCC Rcd 1825 (1986), recon. denied, 2 FCC Rcd 6830 (1987), further recon. denied, GEN Docket No. 84-1234, 4 FCC Rcd 6016 (1989) allocating the 1545-1559 MHz and 1646.5-1660.5 MHz bands for a generic MSS. In these proceedings the Commission adopted generic allocations, rather than separate allocations for various types of mobile-satellite services (e.g., aeronautical MSS, land MSS, maritime MSS) as is done internationally.

⁵ See Final Acts, Part A.

⁶ See 47 C.F.R. § 2.106. The 29.95-30.00 GHz band is also allocated to the Earth Exploration-Satellite Service on a secondary basis.

⁷ See Notice of Proposed Rule Making (Notice), ET Docket No. 92-191, 7 FCC Rcd 5626 (1992).

decisions of WARC-92 regarding these bands.⁸ The Commission also requested comment on a suggestion submitted by the National Aeronautics and Space Administration (NASA) that the 20/30 GHz bands be partitioned and separate technical standards be adopted for each part, so that systems with significantly different antenna gains and modulation techniques could be accommodated in a spectrum efficient manner. Comments were filed by Norris and TRW, Inc. (TRW) and reply comments by Calling Communications Corporation (Calling) and Endgate Technology Corporation (Endgate).

DISCUSSION

MSS Upgrade

6. In the Notice, the Commission concluded that upgrading the secondary MSS allocation to shared primary status with FSS would promote the most efficient use of this spectrum. It stated that a multi-service allocation would allow expanded opportunities for other satellite services, promote development of satellite services in the 20/30 GHz band, and enable satellite operators to respond flexibly to market demands in their use of these bands. The Commission also agreed with NASA that use of digital transmission and advanced technologies, such as "electronically hopping" spot-beam antennas and on-board switches, will reduce technical differences between MSS and FSS; and that the removal of requirements to operate multiple services in separate frequency bands would simplify satellite communications system-design and improve spectrum and orbital efficiency.

7. Comments supporting our proposal to upgrade the 20/30 GHz MSS allocation from secondary to primary were filed by Calling, Endgate, and Norris. Calling and Endgate agree with our tentative assessment in the Notice that technology, rather than restrictive service definitions, should determine access to the 20/30 GHz bands in order to encourage the development of this unused spectrum.⁹ They further concur that upgrading the allocation will provide service providers more flexibility and permit a wider variety of services. Norris states that aggregating services on the same satellite would promote spectrum efficiency, reduce transaction costs, and achieve economies of scale and scope.¹⁰

8. While TRW does not object to the proposals set forth in the Notice, it requested clarification that the proposed MSS upgrade would not remove FSS uses currently

⁸ The Commission did not propose allocating 20/30 GHz for broadcasting, noting that the international Table of Frequency Allocations does not include a broadcasting-satellite service in these bands and that the general satellite proposal had not been adopted at WARC-92.

⁹ See Calling Reply at 1 (December 2, 1992); Endgate Reply at 1 (December 2, 1992).

¹⁰ See Norris at 3 (November 2, 1992).

permitted under Section 25.202(a)(2) of the Rules.¹¹ In particular, TRW expresses concern with the domestic application of international footnote 873E. This issue is discussed in the WARC-92 Implementation section, infra.

9. We continue to believe that upgrading the MSS allocation at 20/30 GHz to primary status will promote more efficient use of this spectrum. We agree with the commenting parties that a multiple service allocation would expand opportunities for satellite services and enable satellite operators to better satisfy consumer requirements. In view of the fact that the 20/30 GHz bands currently are not utilized for FSS and only represent 20 percent of the frequencies available to FSS between 17 GHz and 30 GHz, we conclude that a primary allocation for MSS in the 20/30 GHz bands will have no significant adverse impact on FSS. Accordingly, we are upgrading the MSS allocation at 20/30 GHz to primary status. The MSS primary allocation will be shared with the existing primary FSS allocation. This amendment to the domestic Allocations Table is consistent with the WARC-92 decisions.¹²

WARC-92 Implementation

10. In addition to upgrading the secondary allocation of MSS at 20/30 GHz in Region 2, WARC-92 modified certain footnotes and adopted additional new footnotes to the international Allocations Table that apply to these bands.¹³ These footnotes pertain to operations of the satellite services and to allocations specific to certain countries. In the Notice, we proposed updating the domestic Table of Frequency Allocations to reflect these changes.

11. In its comments, TRW expresses concern with the application of international footnote 873E as it applies to permissible FSS uses.¹⁴ Footnote 873E limits MSS services in

¹¹ See TRW at 2 (November 2, 1992). Section 25.202(a)(2) states that Fixed-Satellite service frequencies may be used for links between radiodetermination satellites and control centers.

¹² We are making no change to the secondary allocation for the Earth Exploration-Satellite Service at 29.95-30.00 GHz.

¹³ In the 19.7-20.2 GHz band, footnote 873 was modified and footnotes 873A, 873B, 873C, 873D, and 873E were added. In the 29.5-30.0 GHz band, footnote 883 was modified and footnotes 882A, 882B, 882C, and 882D were added. See Final Acts, supra.

¹⁴ TRW at 4.

the 20/30 GHz band to networks that also provide FSS in this band.¹⁵ TRW requests that we clarify that the implementation of the provisions of the international allocation would not affect its proposed use of a portion of this band for FSS feeder links supporting a low-Earth orbit (LEO) system for which it has an application pending.¹⁶ In particular, TRW questions whether the proposed co-primary MSS and FSS allocation would require a system to provide both MSS and FSS in this band, and if so, whether that requirement would prevent it from using 20/30 GHz frequencies for the feeder links of its Odyssey LEO MSS system.¹⁷

12. TRW also expresses concern about the implementation of International Radio Regulation 2613 (RR 2613), which provides interference protection to FSS geostationary operations from non-geostationary operations.¹⁸ TRW argues that RR 2613 should apply only to operations that use exclusive FSS allocations, and not to operations that may use the co-primary MSS and FSS allocation proposed for 20/30 GHz. To address this concern, TRW proposes the following U.S. footnote: "RR 2613 shall not be applied to require non-geostationary systems of the Mobile-Satellite Service to cease or reduce feeder link operations in the 19.7-20.2 GHz and 29.5-30.0 GHz bands."

13. With regard to TRW's concern with permissible uses of the 20/30 GHz band, WARC-92 maintained the allocation for FSS in this band when it upgraded MSS to primary. We also are retaining the domestic FSS primary allocation, and therefore upgrading MSS to primary will not affect permissible uses of the FSS. We note that the definition of FSS includes feeder links for the space telecommunication services.

14. With regard to TRW's proposal to exempt non-geostationary systems using the 20/30 GHz band from applications of RR 2613, we note that the MSS Above 1 GHz Negotiated Rule Making Committee (Rule Making Committee) examined feeder link

¹⁵ Footnote 873E states: The use of the bands 19.7-20.1 GHz and 29.5-29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. 873B.

¹⁶ See TRW applications for authority to construct a LEO-MSS system in the 1610-1626.5 MHz and 2483.5-2500 MHz bands, file nos. 20-DSS-P-91(12) and CSS-91-015.

¹⁷ Feeder links are considered to be a FSS operation. TRW's Odyssey MSS operations would occur in the 1610-1626.5 and 2483.5-2500 MHz bands.

¹⁸ RR 2613 states: "Non-geostationary space stations shall cease or reduce to negligible level their emissions, and their associated earth stations shall not transmit to them, whenever there is insufficient angular separation between non-geostationary satellites and geostationary satellites, and whenever there is unacceptable interference (the level of accepted interference shall be fixed by agreement between the administrations concerned, using the relevant CCIR Recommendations as a guide) to geostationary-satellite space systems in the fixed-satellite service operating in accordance with these Regulations."

requirements of low-Earth orbiting (LEO) systems and addressed how these feeder links could share this band.¹⁹ The Rule Making Committee addressed the application of RR 2613 to non-geostationary systems that plan to use feeder links in the 20/30 GHz band and recommended that the U.S. seek international agreement that RR 2613 would not be invoked to terminate operations of non-geostationary systems unless certain conditions are met.²⁰ The Rule Making Committee also recommended that the Commission require that affected operators coordinate use of the shared bands. We intend to discuss these issues in more detail and determine the domestic implementation of the international regulations in the proceeding that addresses service rules for "big" LEO satellites.²¹

15. With the exception of TRW's concern regarding footnote 873E, no party objected to the proposed changes to the international Table of Frequency Allocations. Accordingly, we are updating the Table of Frequency Allocations to conform with the Final Acts of WARC-92. The texts of these footnotes are set forth in the Appendix.²²

¹⁹ See Report of the MSS Above 1 GHz Negotiated Rule Making Committee, dated April 6, 1993. The Rule Making Committee, chartered by the Commission in January 1993 pursuant to the Negotiated Rule Making Act of 1990 (NRA) (Pub. L. 101-648), was convened to provide expert advice and recommendations to the FCC on technical matters related to the establishment and regulation of a MSS in the 1610-1626.5 and 2483.5-2500 MHz bands. The Rule Making Committee's goal was to reach consensus on recommended technical rules. In accordance with the NRA, the Rule Making Committee's recommendations served as the basis for proposals the Commission made to govern use of these bands by LEO satellites. See Public Notice in CC Docket No. 92-166, dated December 15, 1992.

²⁰ The three conditions are: 1) the administrations of the systems involved must engage in bilateral or multilateral discussions and reach agreement as to a level of "accepted interference," 2) after the systems are in operation, the non-geostationary system must exceed the accepted interference level and, 3) the interference in excess of the agreed level must be caused by the failure of the non-geostationary system to maintain sufficient angular separation between the satellites of the two systems.

²¹ See Amendment of the Commission's Rules to Establish Rules and Policies Pertaining to a Mobile-Satellite Service in the 1610-1626.5/2483.5-2500 MHz Frequency Bands, Notice of Proposed Rule Making, in CC Docket No. 92-166, 9 FCC Rcd 1094 (1994).

²² We note that the 29.5-30.0 GHz band lies immediately adjacent to the 27.5-29.5 GHz band, which is currently the subject of a negotiated rule making proceeding regarding the proposed Local Multipoint Distribution Service. See, Notice of Proposed Rule Making in the Matter of Rulemaking to Amend Part 1 and Part 21 of the Commission's Rules to Redesignate the 27.5-29.5 GHz Frequency Band and to Establish Rules and Policies for Local Multipoint Distribution Service (LMDS Rule Making), CC Docket 92-297, 8 Fcc Rcd 557 (1993); Second Notice of Proposed Rule Making in LMDS Rule Making, CC Docket 92-297, 9 FCC Rcd 1394 (1994). We do not expect difficulty for the two services to avoid harmful

Technical Issues

16. In the Notice, we requested comment on any technical standards that we should consider. In particular, we requested comment on NASA's suggestion to partition the 20/30 GHz bands into sub-bands, each with its own set of standards, to accommodate systems with different antenna gains and modulation techniques.

17. Calling, Endgate, and Norris argue that it is premature to consider adopting technical rules. According to Norris, partitioning the 20/30 GHz band as suggested by NASA might not be needed to permit provision of envisioned services. Further, Norris notes that NASA's Advanced Communications Technology Satellite (ACTS) experiments are intended to demonstrate the technical feasibility of various satellite operations at 20/30 GHz.²³ It urges the Commission to defer consideration of technical rules and standards until results from the ACTS experiments are available.

18. We agree that it would be premature to partition the 20/30 GHz band at this time. We expect that the experimental results obtained from the ACTS experiments will provide significant new technical and operational information directly related to future use of this band. Therefore, we decline to consider technical rules and standards at this time.

CONCLUSION

19. By this action, we are upgrading to primary the existing secondary MSS allocation at 19.7-20.2 and 29.5-30 GHz and implementing changes in related footnotes to the international Table of Allocations that were adopted by WARC-92. This allocation will provide increased opportunities for mobile satellite communications and increase spectrum efficiency. This action is consistent with Commission goals of providing for service to the public utilizing this band and promoting development of innovative satellite technologies and related industries.

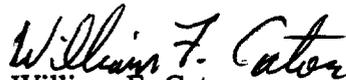
interference.

²³ NASA launched ACTS in September 1993. ACTS provides a research vehicle for satellite communications using the 20/30 GHz band. This satellite enables the satellite communications industry to test key technologies and develop new commercial services. These technologies include 20/30 GHz hardware, "electronically hopping" spot-beam antennas, and two types of on-board signal switches: a baseband processor switch and an intermediate frequency (IF) switch matrix. New services that might be developed include supercomputer access, satellite-based cellular networks, narrowband mobile systems, and a variety of video services. Experimental testing began December 6, 1993, and 17 different experiments had been started by February 1994.

Ordering Clauses

20. Accordingly, IT IS ORDERED That Part 2 of the Commission's Rules, 47 C.F.R. Part 2, IS AMENDED as set forth in the attached Appendix, effective 30 days after publication in the Federal Register. IT IS FURTHER ORDERED, That this proceeding IS TERMINATED. Authority for this Rule Making is contained in Sections 4(i), 303(c), 303(f), 303(g), and 303(r) of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154(i), 303(c), 303(f), 303(g), and 303(r).

FEDERAL COMMUNICATIONS COMMISSION


William F. Caton
Acting Secretary

APPENDIX

Final Regulatory Flexibility Analysis

21. The Commission certifies that the Regulatory Flexibility Act of 1980 does not apply to this rule making proceeding because there will not be a significant economic impact on a substantial number of small business entities, as defined by Section 601(3) of the Regulatory Flexibility Act. The Secretary shall send a copy of the Report and Order, including the certification, to the Chief Counsel for Advocacy of the Small Business Administration in accordance with paragraph 603(a) of the Regulatory Flexibility Act, Public Law No. 96-354, 94 Stat. 1164, 5 U.S.C. Section 601 et seq (1981).

RULE CHANGES

Part 2 of Chapter I of Title 47 of the Code of Federal Regulations is amended as follows:

PART 2 - FREQUENCY ALLOCATIONS AND RADIO TREATY MATTERS; GENERAL RULES AND REGULATIONS

1. The authority citation in Part 2 continues to read:

AUTHORITY: Sections 4, 302, 303, and 307 of the Communications Act of 1934, as amended, 47 U.S.C. Sections 154, 302, 303, and 307, unless otherwise noted.

2. Section 2.106, the Table of Frequency Allocations is amended as follows:

- a. In columns 1, 2, 3, and 5; the band 19.7-20.2 GHz is removed and the bands 19.7-20.1 GHz and 20.1-20.2 GHz are added, and related footnotes added according to the following table.
- b. In columns 1, 2, 3, and 5; the band 29.5-30 GHz is removed and the bands 29.5-29.9 GHz and 29.9-30 GHz are added, and related footnotes added according to the following table.
- c. Upon amending the Table of Frequency Allocations, the affected sections will read as follows:

Section 2.106 Table of Frequency Allocations

International table			United States table		FCC use designators	
Region 1 - allocation GHz	Region 2 - allocation GHz	Region 3 - allocation GHz	Government Allocation GHz	Non-Government Allocation GHz	Rule part (s)	Special-use frequencies
(1)	(2)	(3)	(4)	(5)	(6)	(7)
19.7-20.1 FIXED-SATELLITE (space-to- Earth). Mobile-Satellite (space-to- Earth). 873	19.7-20.1 FIXED-SATELLITE (space-to- Earth). MOBILE-SATELLITE (space-to- Earth). 873 873A 873B 873C 873D 873E	19.7-20.1 FIXED-SATELLITE (space-to- Earth). Mobile-Satellite (space-to- Earth). 873	19.7-20.2	19.7-20.1 FIXED-SATELLITE (space-to- Earth). MOBILE-SATELLITE (space-to- Earth). 873A 873B 873C 873D 873E		
20.1-20.2	FIXED-SATELLITE (space-to-Earth). MOBILE-SATELLITE (space-to-Earth).			20.1-20.2 FIXED-SATELLITE (space-to- Earth). MOBILE-SATELLITE (space-to- Earth). 873A 873B 873C 873D		
873 873A 873B 873C 873D						

* * * * *

International table			United States table		FCC use designators	
Region 1 - allocation GHz	Region 2 - allocation GHz	Region 3 - allocation GHz	Government Allocation GHz	Non-Government Allocation GHz	Rule part (s)	Special-use frequencies
(1)	(2)	(3)	(4)	(5)	(6)	(7)

* * * * *

29.5-29.9 FIXED-SATELLITE (Earth-to-space) 882D Mobile-Satellite (Earth-to-space). Earth Exploration -Satellite (Earth-to-space) 882C 882B 883	29.5-29.9 FIXED-SATELLITE (Earth-to-space) 882D MOBILE-SATELLITE (Earth-to-space). Earth Exploration -Satellite (Earth-to-space) 882C 873A 873B 873C 873E 882B 883	29.5-29.9 FIXED-SATELLITE (Earth-to-space) 882D Mobile-Satellite (Earth-to-space). Earth Exploration -Satellite (Earth-to-space) 882C 882B 883	29.5-30.0	29.5-29.9 FIXED-SATELLITE (Earth-to-space). MOBILE-SATELLITE (Earth-to-space). 873A 873B 873C 873E 29.9-30.0 FIXED-SATELLITE (Earth-to-space). MOBILE-SATELLITE (Earth-to-space). 873A 873B 873C 882		
29.9-30	FIXED-SATELLITE (Earth-to-space) 882D MOBILE-SATELLITE (Earth-to-space). Earth Exploration-Satellite (Earth-to-space) 882C 873A 873B 873C 882 882A 882B 883					

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- d. INTERNATIONAL FOOTNOTES Nos. 873 and 883 are revised, and Nos. 873A, 873B, 873C, 873D, 873E, 882A, 882B, 882C, and 882D are added:

* * * * *

873 Additional allocation: in Afghanistan, Algeria, Angola, Saudi Arabia, Bahrain, Bangladesh, Brazil, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Costa Rica, Egypt, the United Arab Emirates, Gabon, Guatemala, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Nigeria, Oman, Pakistan, the Philippines, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Tanzania, Chad, Thailand, Togo, Tunisia, and Zaire, the band 19.7-21.2 GHz is also allocated to the fixed and mobile services on a primary basis. This additional use shall not impose any limitation on the power flux-density of space stations in the fixed-satellite service in the band 19.7-21.2 GHz and of space stations in the mobile-satellite service in the band 19.7-20.2 GHz where such allocation to the mobile-satellite service is on a primary basis in the latter band.

873A In order to facilitate interregional coordination between networks in the mobile-satellite and fixed-satellite services, carriers in the mobile-satellite service that are most susceptible to interference shall, to the extent practicable, be located in the higher parts of the bands 19.7-20.2 GHz and 29.5-30 GHz.

873B In the bands 19.7-20.2 GHz and 29.5-30 GHz in Region 2, and in the bands 20.1-20.2 GHz and 29.9-30 GHz in Regions 1 and 3, networks which are both in the fixed-satellite service and in the mobile-satellite service may include links between earth stations at specified or unspecified points or while in motion, through one or more satellites for point-to-point and point-to-multipoint communications.

873C In the bands 19.7-20.2 GHz and 29.5-30 GHz, the provisions of No. 953 do not apply with respect to the mobile-satellite service.

873D The allocation to the mobile-satellite service is intended for use by networks which use narrow spot-beam antennas and other advanced technology at the space stations. Administrations operating systems in the mobile-satellite service in the band 19.7-20.1 GHz in Region 2 and in the band 20.1-20.2 GHz shall take all practicable steps to ensure the continued availability of these bands for administrations operating fixed and mobile systems in accordance with the provisions of No. 873.

873E The use of the bands 19.7-20.1 GHz and 29.5-29.9 GHz by the mobile-satellite service in Region 2 is limited to satellite networks which are both in the fixed-satellite service and in the mobile-satellite service as described in No. 873B.

* * * * *

882A Additional allocation: the bands 27.500-27.501 GHz and 29.999-30.000 GHz are also allocated to the fixed-satellite service (space-to-Earth) on a primary basis for the beacon transmissions intended for up link power control.

Such space-to-Earth transmissions shall not exceed an equivalent isotropically radiated power (e.i.r.p.) of +10 dBW in the direction of adjacent satellites on the geostationary-satellite orbit. In the band 27.500-27.501 GHz, such space-to-Earth transmissions shall not produce a power flux-density in excess of the values specified in No. 2578 on the Earth's surface.

882B Additional allocation: the band 27.501-29.999 GHz is also allocated to the fixed-satellite service (space-to-Earth) on a secondary basis for beacon transmissions intended for up link power control.

882C In the band 28.5-30 GHz, the earth exploration-satellite service is limited to the transfer of data between stations and not to the primary collection of information by means of active or passive sensors.

882D The band 27.5-30 GHz may be used by the fixed-satellite service (Earth-to-space) for the provision of feeder links for the broadcasting-satellite service.

883 Additional allocation: in Afghanistan, Algeria, Saudi Arabia, Bahrain, Bangladesh, Brunei Darussalam, Cameroon, China, the Congo, the Republic of Korea, Egypt, the United Arab Emirates,

Ethiopia, Guinea, India, Indonesia, Iran, Iraq, Israel, Japan, Jordan, Kenya, Kuwait, Lebanon, Malaysia, Mali, Morocco, Mauritania, Nepal, Niger, Pakistan, Qatar, Syria, Singapore, Somalia, Sudan, Sri Lanka, Chad, and Thailand, the band 29.5-31 GHz is also allocated to the fixed and mobile services on a secondary basis. The power limits specified in Nos. 2505 and 2508 shall apply.

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