

Federal Communications Commission

§ 101.101

Frequency band (MHz)	Radio service				Notes
	Common carrier (Part 101)	Private radio (Part 101)	Broadcast auxiliary (Part 74)	Other (parts 15, 21, 22, 24, 25, 27, 74, 78 & 100)	
932.0–932.5	MAS	MAS		PRS.	
932.5–935.0	CC	OFS			(1).
941.0–941.5	MAS	MAS		PRS.	
941.5–944.0	CC	OFS	Aural BAS		(1).
952–958		OFS/MAS		PRS.	
958–960	MAS	OFS.			
1850–1990		OFS		PCS.	
2110–2130	CC			PET.	
2130–2150		OFS		PET.	
2160–2180	CC			ET.	
2180–2200		OFS		PET.	
2450–2500	CC	OFS	TV BAS	ISM	F/M/TF
2650–2690		OFS		MDS/ITFS.	
3700–4200	CC LTTS	OFS		SAT, ET	(2).
5925–6425	CC LTTS	OFS		SAT.	
6425–6525	LTTS	OFS	TV BAS	CARS	M.
6525–6875	CC	OFS.			
6875–7125	CC	OFS	TV BAS	CARS.	
10,550–10,680	CC	OFS DEMS.			
10,700–11,700	CC	OFS		SAT.	
12,200–12,700	MVDDS	MVDDS, POFS		DBS, NGSO FSS.	
12,700–13,250	CC LTTS	OFS	TV BAS	CARS	F/M/TF.
17,700–18,580	CC	OFS	TV BAS	SAT CARS.	
17,700–18,300	CC	OFS	TV BAS	CARS.	
18,300–18,580	CC	OFS	TV BAS	CARS SAT.	
18,580–18,820	CC	OFS	Aural BAS	SAT.	
18,820–18,920	CC	OFS		SAT	
18,920–19,160	CC	OFS	Aural BAS	SAT.	
19,160–19,260	CC	OFS		SAT	
19,260–19,700	CC	OFS	TV BAS	CARS SAT.	
21,200–23,600	CC LTTS	OFS			TF.
24,250–25,250	CC	OFS.			
29,100–29,250	LMDS	LMDS		SAT.	
31,000–31,300	CC LMDS LTTS	OFS LMDS			F/M/TF.
71,000–76,000	CC	OFS		25	F/M/TF
81,000–86,000	CC	OFS		25	F/M/TF
92,000–95,000	CC	OFS		15	F/M/TF.

BAS: Broadcast Auxiliary Service—(Part 74)
 CARS: Cable Television Relay Service—(Part 78)
 CC: Common Carrier Fixed Point-to-Point Microwave Service—(Part 101, Subparts C & I)
 DBS: Direct Broadcast Satellite—(Part 100)
 DEMS: Digital Electronic Message Service—(Part 101, Subpart G)
 ISM: Industrial, Scientific & Medical—(Part 18)
 ITFS: Instructional Television Fixed Service—(Part 74)
 LTTS: Local Television Transmission Service—(Part 101, Subpart J)
 MAS: Multiple Address System—(Part 101)
 MDS: Multipoint Distribution Service—(Part 21)
 OFS: Private Operational Fixed Point-to-Point Microwave Service—(Part 101, Subparts C & H)
 PCS: Personal Communications Service—(Part 24)
 PET: Emerging Technologies (per ET Dkt. No. 92–9, not yet assigned)
 PRS: Paging and Radiotelephone Service—(Part 22, Subpart E)
 SAT: Fixed Satellite Service—(Part 25)
 Notes:

F—Fixed
 M—Mobile
 TF—Temporary Fixed

(1)—Applications for frequencies in the 932.5–935/941.5–944 MHz bands may be filed initially during a one-week period to be announced by public notice. After these applications have been processed, the Commission will announce by public notice a filing date for remaining frequencies. From this filing date forward, applications will be processed on a daily first-come, first-served basis.

(2) Frequencies in this band are shared with stations in the fixed satellite service outside the contiguous United States. Applications for new permanent or temporary facilities in these bands will not be accepted for locations in the contiguous United States. Licensees, as of April 19, 2018, of existing permanent and temporary point-to-point Fixed Service links in the contiguous United States have until December 5, 2023, to self-relocate their point-to-point links out of the 3,700–4,200 MHz band. Such licensees may seek reimbursement of their reasonable costs based on the “comparable facilities” standard used for the transition of microwave links out of other bands, see § 101.73(d) of this chapter (defining comparable facilities as facilities possessing certain characteristics in terms of throughput, reliability and operating costs) subject to the demonstration requirements and reimbursement administrative provisions administrative provisions in part 27, subpart O, of this chapter.

[61 FR 26677, May 28, 1996, as amended at 62 FR 23165, Apr. 29, 1997; 62 FR 24582, May 6, 1997; 65 FR 38327, June 20, 2000; 65 FR 54175, Sept. 7, 2000; 65 FR 59357, Oct. 5, 2000; 67 FR 43037, June 28, 2002; 69 FR 3266, Jan. 23, 2004; 69 FR 72047, Dec. 10, 2004; 70 FR 4787, Jan. 31, 2005; 76 FR 59571, Sept. 27, 2011; 81 FR 79944, Nov. 14, 2016; 85 FR 22889, Apr. 23, 2020]

§ 101.103 Frequency coordination procedures.

(a) Assignment of frequencies will be made only in such a manner as to facilitate the rendition of communication service on an interference-free basis in each service area. Unless otherwise indicated, each frequency available for use by stations in these services will be assigned exclusively to a single applicant in any service area. All applicants for, and licensees of, stations in these services must cooperate in the selection and use of the frequencies assigned in order to minimize interference and thereby obtain the most effective use of the authorized facilities. In the event harmful interference occurs or appears likely to occur between two or more radio systems and such interference cannot be resolved between the licensees thereof, the Commission may specify a time sharing arrangement for the stations involved or may, after notice and opportunity for hearing, require the licensees to make such changes in operating techniques or equipment as it may deem necessary to avoid such interference.

(b)(1) Operations in the bands 31,000-31,075 MHz and 31,225-31,300 MHz licensed prior to March 11, 1997, were licensed on an unprotected basis and are subject to harmful interference from similarly licensed operations in that band.

(i) Operations licensed in the Local Multipoint Distribution Service and those operations licensed prior to March 11, 1997, except in the Local Television Transmission Service, operating in these bands are equally protected against harmful interference from each other.

(ii) In the case of operations licensed prior to March 11, 1997, except in the Local Television Transmission Service, that are licensed on a point-to-radius basis, LMDS licensees shall be subject to the protection requirement established in this section in the case of existing links operated by such licensees, and in the case of links added by such licensees in the future in accordance with the terms of their point-to-radius licenses.

(iii) An LMDS licensee may not initiate operations within the point-to-ra-

dius area licensed to an operator (other than an operator in the Local Television Transmission Service) prior to March 11, 1997, even if such operator has not initiated operations to the fullest extent of the license. An LMDS licensee, however, may initiate operations at the border of such operator's license area without prior coordination if the LMDS licensee's operations would not cause harmful interference to the other operator's existing operations.

(iv) An operator (other than an operator in the Local Television Transmission Service) licensed on a point-to-radius basis prior to March 11, 1997, may add additional stations within its license area. Such operator shall coordinate with any affected LMDS licensee if its new operations might cause harmful interference to the existing operations of such LMDS licensee.

(v) Operations licensed prior to March 11, 1997, on a point-to-point basis may not be extended or otherwise modified through the addition of point-to-point links. Such operations shall be limited to the use of frequency pairs licensed as of March 11, 1997. Operations licensed in the Local Television Transmission Service as of March 11, 1997, may continue to operate, but such operators may not expand existing operations nor initiate new operations.

(2) Operations in the 31,075-31,225 MHz band licensed prior to March 11, 1997, shall receive no protection against harmful interference from authorized operations in the Local Multipoint Distribution Service in that band.

(3) Non-LMDS operations in the entire 31,000-31,300 MHz band licensed after March 11, 1997, based on applications refiled no later than June 26, 1998 are unprotected with respect to each other and subject to harmful interference from each other.

(i) Such operations and any operations licensed prior to March 11, 1997, in the band are unprotected with respect to each other and subject to harmful interference from each other.

(ii) Such operations are licensed on a secondary basis to LMDS operations licensed in the band, may not cause interference to LMDS operations, and are

not protected from interference from LMDS operations.

(iii) Such operations licensed on a point-to-point basis may not be extended or otherwise modified through the addition of point-to-point links. Such operations licensed on a point-to-radius basis may add additional stations within the licensed area.

(c) Frequency diversity transmission will not be authorized in these services in the absence of a factual showing that the required communications cannot practically be achieved by other means. Where frequency diversity is deemed to be justified on a protection channel basis, it will be limited to one protection channel for the bands 3,700–4,200, 5,925–6,425, and 6,525–6,875 MHz, and a ratio of one protection channel for three working channels for the bands 10,550–10,680 and 10,700–11,700 MHz. In the bands 3,700–4,200, 5,925–6,425, and 6,525–6,875 MHz, no frequency diversity protection channel will be authorized unless there is a minimum of three working channels, except that where a substantial showing is made that a total of three working channels will be required within three years, a protection channel may be authorized simultaneously with the first working channel. A protection channel authorized under such exception will be subject to termination if applications for the third working channel are not filed within three years of the grant date of the applications for the first working channel. Where equipment employing digital modulation techniques with cross-polarized operation on the same frequency is used, the protection channel authorized under the above conditions may be considered to consist of both polarizations of the protection frequency where such is shown to be necessary.

(d) *Frequency coordination.* For each frequency authorized under this part, the following frequency usage coordination procedures will apply:

(1) *General requirements.* Proposed frequency usage must be prior coordinated with existing licensees, permittees and applicants in the area, and other applicants with previously filed applications, whose facilities could affect or be affected by the new proposal in terms of frequency interference on

active channels, applied-for channels, or channels coordinated for future growth. Coordination must be completed prior to filing an application for regular authorization, or a major amendment to a pending application, or any major modification to a license. In coordinating frequency usage with stations in the fixed satellite service, applicants must also comply with the requirements of §101.21(f). In engineering a system or modification thereto, the applicant must, by appropriate studies and analyses, select sites, transmitters, antennas and frequencies that will avoid interference in excess of permissible levels to other users. All applicants and licensees must cooperate fully and make reasonable efforts to resolve technical problems and conflicts that may inhibit the most effective and efficient use of the radio spectrum; however, the party being coordinated with is not obligated to suggest changes or re-engineer a proposal in cases involving conflicts. Applicants should make every reasonable effort to avoid blocking the growth of systems as prior coordinated. The applicant must identify in the application all entities with which the technical proposal was coordinated. In the event that technical problems are not resolved, an explanation must be submitted with the application. Where technical problems are resolved by an agreement or operating arrangement between the parties that would require special procedures be taken to reduce the likelihood of interference in excess of permissible levels (such as the use of artificial site shielding) or would result in a reduction of quality or capacity of either system, the details thereof may be contained in the application.

(2) Coordination procedure guidelines are as follows:

(i) Coordination involves two separate elements: notification and response. Both or either may be oral or in written form. To be acceptable for filing, all applications and major technical amendments must certify that coordination, including response, has been completed. The names of the licensees, permittees and applicants with which coordination was accomplished must be specified. If such notice and/or response is oral, the party

providing such notice or response must supply written documentation of the communication upon request;

(ii) Notification must include relevant technical details of the proposal. At minimum, this should include, as applicable, the following:

Applicant's name and address.

Transmitting station name.

Transmitting station coordinates.

Frequencies and polarizations to be added, changed or deleted.

Transmitting equipment type, its stability, actual output power, emission designator, and type of modulation(s) (loading). Notification shall indicate if modulations lower than the values listed in the table to §101.141(a)(3) of the Commission's rules will be used.

Transmitting antenna type(s), model, gain and, if required, a radiation pattern provided or certified by the manufacturer.

Transmitting antenna center line height(s) above ground level and ground elevation above mean sea level.

Receiving station name.

Receiving station coordinates.

Receiving antenna type(s), model, gain, and, if required, a radiation pattern provided or certified by the manufacturer.

Receiving antenna center line height(s) above ground level and ground elevation above mean sea level.

Path azimuth and distance.

Estimated transmitter transmission line loss expressed in dB.

Estimated receiver transmission line loss expressed in dB.

For a system utilizing ATPC, maximum transmit power, coordinated transmit power, and nominal transmit power.

NOTE: The position location of antenna sites shall be determined to an accuracy of no less than ± 1 second in the horizontal dimensions (latitude and longitude) and ± 1 meter in the vertical dimension (ground elevation) with respect to the National Spatial Reference System.

(iii) For transmitters employing digital modulation techniques, the notification should clearly identify the type of modulation. Upon request, additional details of the operating characteristics of the equipment must also be furnished;

(iv) Response to notification should be made as quickly as possible, even if no technical problems are anticipated. Any response to notification indicating potential interference must specify the technical details and must be provided to the applicant, in writing, within the 30-day notification period. Every reasonable effort should be made by all applicants, permittees and licensees to eliminate all problems and conflicts. If no response to notification is received within 30 days, the applicant will be deemed to have made reasonable efforts to coordinate and may file its application without a response;

(v) The 30-day notification period is calculated from the date of receipt by the applicant, permittee, or licensee being notified. If notification is by mail, this date may be ascertained by:

(A) The return receipt on certified mail;

(B) The enclosure of a card to be dated and returned by the recipient; or

(C) A conservative estimate of the time required for the mail to reach its destination. In the last case, the estimated date when the 30-day period would expire should be stated in the notification.

(vi) An expedited prior coordination period (less than 30 days) may be requested when deemed necessary by a notifying party. The coordination notice should be identified as "expedited" and the requested response date should be clearly indicated. However, circumstances preventing a timely response from the receiving party should be accommodated accordingly. It is the responsibility of the notifying party to receive written concurrence (or verbal, with written to follow) from affected parties or their coordination representatives.

(vii) All technical problems that come to light during coordination must be resolved unless a statement is included with the application to the effect that the applicant is unable or unwilling to resolve the conflict and briefly the reason therefor;

(viii) Where a number of technical changes become necessary for a system during the course of coordination, an attempt should be made to minimize the number of separate notifications for these changes. Where the changes

are incorporated into a completely revised notice, the items that were changed from the previous notice should be identified. When changes are not numerous or complex, the party receiving the changed notification should make an effort to respond in less than 30 days. When the notifying party believes a shorter response time is reasonable and appropriate, it may be helpful for that party to so indicate in the notice and perhaps suggest a response date;

(ix) If, after coordination is successfully completed, it is determined that a subsequent change could have no impact on some parties receiving the original notification, these parties must be notified of the change and of the coordinator's opinion that no response is required;

(x) Applicants, permittees and licensees should supply to all other applicants, permittees and licensees within their areas of operations, the name, address and telephone number of their coordination representatives. Upon request from coordinating applicants, permittees and licensees, data and information concerning existing or proposed facilities and future growth plans in the area of interest should be furnished unless such request is unreasonable or would impose a significant burden in compilation;

(xi) Parties should keep other parties with whom they are coordinating advised of changes in plans for facilities previously coordinated. If applications have not been filed 6 months after coordination was initiated, parties may assume that such frequency use is no longer desired unless a second notification has been received within 10 days of the end of the 6 month period. Renewal notifications are to be sent to all originally notified parties, even if coordination has not been successfully completed with those parties; and

(xii) Any frequency reserved by a licensee for future use in the bands subject to this part must be released for use by another licensee, permittee or applicant upon a showing by the latter that it requires an additional frequency and cannot coordinate one that is not reserved for future use.

(e) Where frequency conflicts arise between co-pending applications in the

Private Operational Fixed Point-to-Point Microwave, Common Carrier Fixed Point-to-Point Microwave and Local Television Transmission Services, it is the obligation of the later filing applicant to amend his application to remove the conflict, unless it can make a showing that the conflict cannot be reasonably eliminated. Where a frequency conflict is not resolved and no showing is submitted as to why the conflict cannot be resolved, the Commission may grant the first filed application and dismiss the later filed application(s) after giving the later filing applicant(s) 30 days to respond to the proposed action.

(f)(1) *Coordination and information sharing between MVDDS and NGSO FSS licensees in the 12.2 GHz to 12.7 GHz band.* Prior to the construction or addition of an MVDDS transmitting antenna in this frequency band, the MVDDS licensee shall provide notice of intent to construct the proposed antenna site to NGSO FSS licensees operating in the 12.2–12.7 GHz frequency band and maintain an Internet web site of all existing transmitting sites and transmitting antennas that are scheduled for operation within one year including the “in service” dates. In addition to the location of a proposed new transmitting antenna, MVDDS licensees shall provide to the NGSO FSS licensees a technical description of the operating characteristics of the proposed transmission facility. At a minimum, the following information must be included in each notification:

- (i) Name of MVDDS licensee;
- (ii) Geographic location (including NAD83 coordinates) of proposed MVDDS transmitting antenna;
- (iii) Maximum EIRP per 24 MHz;
- (iv) Height above average terrain of the transmitting antenna;
- (v) Type of antenna to be utilized;
- (vi) Main beam azimuth and altitude orientation for the proposed transmitting antenna;
- (vii) Theoretically modeled antenna radiation pattern;
- (viii) Type(s) of emissions, and;
- (ix) Description of the proposed service area.

(2) If the proposed MVDDS antenna site does not meet the minimum spacing requirements on the date of original notification or on subsequent annual anniversary dates of non-operation as set forth in §101.129, then the MVDDS licensee shall not construct the proposed transmission facility unless all NGSO FSS licensees having active subscribers within the minimum separation distance agree to a shorter spacing. Nothing in this section shall preclude MVDDS and NGSO FSS licensees from agreeing to accept the siting of new MVDDS transmitting antennas that do not meet the minimum distance set forth in §101.129. Incumbent point-to-point licensees' (those not licensed as MVDDS) facilities are to be operated in the band 12,200–12,700 MHz following the procedures, technical standards, and requirements of §101.105 in order to protect stations providing Direct Broadcast Satellite Service.

(g) *Licensees operating in Basic Trading Areas authorized in the Local Multipoint Distribution Service.* (1) When the transmitting facilities in a Basic Trading Area (BTA) are to be operated in the bands 29,100–29,250 MHz and 31,000–31,300 MHz and the facilities are located within 20 kilometers of the boundaries of a BTA, each licensee must complete the frequency coordination process of paragraph (d)(2) of this section with respect to neighboring BTA licensees that may be affected by its operations prior to initiating service. In addition, all licensed transmitting facilities operating in the bands 31,000–31,075 MHz and 31,225–31,300 MHz and located within 20 kilometers of neighboring facilities must complete the frequency coordination process of paragraph (d)(2) of this section with respect to such authorized operations before initiating service.

(2) Response to notification should be made as quickly as possible, even if no technical problems are anticipated. Any response to notification indicating potential interference must specify the technical details and must be provided to the applicant, either electronically or in writing, within the 30-day notification period. Every reasonable effort should be made by all licensees to eliminate all problems and conflicts. If

no response to notification is received within 30 days, the licensee will be deemed to have made reasonable efforts to coordinate and commence operation without a response. The beginning of the 30-day period is determined pursuant to paragraph (d)(2)(v) of this section.

(h) *Special requirements for operations in the band 29,100–29,250 MHz.* (1)(i) Local Multipoint Distribution Service (LMDS) receive stations operating on frequencies in the 29,100–29,250 MHz band within a radius of 75 nautical miles of the geographic coordinates provided by a non-GSO-MSS licensee pursuant to §101.113(c)(2) or (c)(3)(i) (the “feeder link earth station complex protection zone”) shall accept any interference caused to them by such earth station complexes and shall not claim protection from such earth station complexes.

(ii) LMDS licensees operating on frequencies in the 29,100–29,250 MHz band outside a feeder link earth station complex protection zone shall cooperate fully and make reasonable efforts to resolve technical problems with the non-GSO MSS licensee to the extent that transmissions from the non-GSO MSS operator’s feeder link earth station complex interfere with an LMDS receive station.

(2) No more than 15 days after the release of a public notice announcing the commencement of LMDS auctions, feeder link earth station complexes to be licensed pursuant to §25.257 of this chapter shall be specified by a set of geographic coordinates in accordance with the following requirements: no feeder link earth station complex may be located in the top eight (8) metropolitan statistical areas (MSAs), ranked by population, as defined by the Office of Management and Budget as of June 1993, using estimated populations as of December 1992; two (2) complexes may be located in MSAs 9 through 25, one of which must be Phoenix, AZ (for a complex at Chandler, AZ); two (2) complexes may be located in MSAs 26 to 50; three (3) complexes may be located in MSAs 51 to 100, one of which must be Honolulu, Hawaii (for a complex at Waimea); and the three (3) remaining complexes must be located at least 75 nautical miles from the borders