

**§ 101.3 Definitions.**

24 GHz Service. A fixed point-to-point, point-to-multipoint, and multipoint-to-multipoint radio system in the 24.25-24.45 GHz band and in the 25.05-25.25 GHz band consisting of a fixed main (nodal) station and a number of fixed user terminals. This service may encompass any digital fixed service.

**§ 101.109 Bandwidth.**

(c)

Frequency band (MHz)	Maximum authorized bandwidth
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24,250 to 25,250	40 MHz <sup>7</sup>
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<sup>7</sup>For channel block assignments in the 24,250-25,250 MHz and 38,600-40,000 MHz bands, the authorized bandwidth is equivalent to an unpaired channel block assignment or to either half of a symmetrical paired channel block assignment. When adjacent channels are aggregated, equipment is permitted to operate over the full channel block aggregation without restriction.

**Note to Footnote 7:** Unwanted emissions shall be suppressed at the aggregate channel block edges based on the same roll-off rate as is specified for a single channel block in § 101.111(a)(1) or in §§ 101.111(a)(2)(ii) and (iii) of this part as appropriate.

17. Section 101.111 is amended by adding paragraph (a)(2)(iv) and by revising paragraph (a)(4) introductory text to read as follows:

**§ 101.111 Emission limitations.**

(a)(2)(iv) The emission mask for 24 GHz Service used the equation in paragraph (a)(2)(ii) of this section applies only to the edge of each channel, but not to subchannels

established by licensees. The value of P in the equation is for the percentage removed from the carrier frequency and assumes that the carrier frequency is the center of the actual bandwidth used. The emission mask can be satisfied by locating a carrier of the subchannel sufficiently far from the channel edges so that the emission levels of the mask are satisfied. The 24 GHz emission mask shall use a value B (bandwidth) of 40 MHz, for all cases even in the case where a narrower subchannel is used (for instance the actual bandwidth is 10 MHz) and the mean output power used in the calculation is the sum of the output power of a fully populated channel.

**§ 101.113 Transmitter power limitations.**

24,250-25,250 MHz                      55 dBW

**Please read and be familiar with Section 1.1307(b)(1) Table 1 – Transmitters, Facilities and Operations Subject to Routine Environmental Evaluation.**

Local Multipoint Distribution Service and 24 GHz Service

→ *Non-building mounted antennas*: height above ground level to lowest point of antenna less than 10 meters (about 30 feet) and power greater than 1640 Watts EIRP,

→ *Building mounted antennas*: power greater than 1640 Watts EIRP – licensees required to attach a label to subscriber transceiver antennas that: 1) provides adequate notice regarding potential radiofrequency safety hazards, e.g. information regarding the safe minimum separation distance between users and transceiver antennas; and 2) references the applicable FCC-adopted limits for radio-frequency exposure specified in Section 1.1310.

**§ 101.115 Directional antennas.**

(c)

Antenna Standards

Frequency (MHz)	Category	Maximum beamwidth to 3 dB points <sup>1</sup> (included angle in degrees)	Minimum antenna gain (dbi)	Minimum radiation suppression to angle in degrees from centerline of main beam in decibels						
				5° to 10°	10° to 15°	15° to 20°	20° to 30°	30° to 100°	100° to 140°	140° to 180°
***** 24,250 to 25,250 <sup>10</sup> *****	A	2.8	38	25	29	33	36	42	55	60
	B	2.8	38	20	24	28	32	35	36	45

<sup>1</sup>If a licensee chooses to show compliance using maximum beamwidth to 3 dB points, the beamwidth limit shall apply in both the azimuth and the elevation planes.

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<sup>10</sup>DEMS User Station antennas in this band must meet performance Standard B and have a minimum antenna gain of 34 dBi. The maximum beamwidth requirement does not apply to DEMS User Stations. DEMS Nodal Stations need not comply with these standards. Stations authorized to operate in the 24,250-25,250 MHz band do not have to meet these standards, however, the Commission may require the use of higher performance antennas where interference problems can be resolved by the use of such antennas.

**§ 101.147 Frequency assignments.**

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(r) 17,700 to 19,700 and 24,250 to 25,250 MHz. \*\*\* Licensees, except 24 GHz band licensees, may use either a two-way link or one frequency of a frequency pair for a one-way link and must coordinate proposed operations pursuant to the procedures required in § 101.103.

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(r)(9)(i) Each station on channels 25 through 34 will be limited to one frequency pair per SMSA. Additional channel pairs may be assigned upon a showing that the service to be provided

will fully utilize the spectrum requested. A channel pair may be subdivided as desired by the licensee.

(ii) A frequency pair on channels 25 through 34 may be assigned to more than one licensee in the same SMSA or service area so long as the interference protection criteria of § 101.105 are met.

(iii) Channels 35 through 39 are licensed in the 24 GHz Service by Economic Areas for any digital fixed service. Channels may be used at either nodal or subscriber station locations for transmit or receive but must be coordinated with adjacent channel and adjacent area users in accordance with the provisions of § 101.509. Stations must also comply with international coordination agreements.

**§ 101.509 Interference protection criteria.**

(a) As a condition for use of frequencies in this service each licensee is required to:

(1) Engineer the system to be reasonably compatible with adjacent and co-channel operations in the same or adjacent areas on all frequencies; and

(2) Cooperate fully and in good faith to resolve whatever potential interference and transmission security problems may be present in adjacent and co-channel operations.

(b) All harmful interference to other users of co-channel and adjacent channel use in the same or adjacent geographical area are prohibited. In areas where Economic Areas are in close proximity, careful consideration should be given to minimum power requirements and to the location, height, and radiation pattern of the transmitting and receiving antennas. Licensees are expected to cooperate fully in attempting to resolve problems of potential interference before bringing the matter to the attention of the Commission.

(c) Licensee shall coordinate their facilities whenever the facilities have optical line-of-sight into other licensees' areas or are within the same geographic area. Licensees are encouraged to develop operational agreements with relevant licensees in the same or adjacent

areas. Incumbent SMSA licensee(s) shall retain exclusive rights to its channel(s) within its SMSA and must be protected.

(d) Licensees shall comply with the appropriate coordination agreements between the United States and Canada and the United States and Mexico concerning cross-border sharing and use of the 24 GHz bands which may require using channels pairs in accordance with the table in § 101.147(r)(9).

(e) The Commission recommends that coordination is not necessary if the power flux density (pfd) at the boundary of the relevant adjacent area is lower than  $-114$  dBW/m<sup>2</sup> in any 1 MHz. This value can be changed and agreed upon by both coordinating parties. Licensees should be able to deploy with a pfd up to  $-94$  dBW/m<sup>2</sup> in any 1 MHz at the boundary of the relevant adjacent area without negatively affecting the successful operations of the adjacent area licensee.

(c) An applicant or licensee may submit a petition at any time requesting clarification of the regulatory status required to provide a specific communications service.

25. Section 101.521 is revised to read as follows:

**§ 101.525 24 GHz system operations.**

(a) A licensee using the 24 GHz band may construct and operate any number of fixed stations anywhere within the area authorized to serve without prior authorization, except as follows:

(1) A station would be required to be individually licensed if:

(i) International agreements require coordination;

(ii) Submission of an Environmental Assessment is required under § 1.1307 of this chapter;

(iii) The station would affect the radio quiet zones under § 1.924 of this chapter.

(2) Any antenna structure that requires notification to the Federal Aviation Administration (FAA) must be registered with the Commission prior to construction under § 17.4 of this chapter.