

100 MHz. For the purposes of this paragraph (e)(1), emission bandwidth is defined as the instantaneous frequency range occupied by a steady state radiated signal with modulation, outside which the radiated power spectral density never exceeds 6 dB below the maximum radiated power spectral density in the band, as measured with a 100 kHz resolution bandwidth spectrum analyzer. The center frequency must be stationary during the measurement interval, even if not stationary during normal operation (e.g. for frequency hopping devices).

(2) Peak transmitter output power shall be measured with an RF detector that has a detection bandwidth that encompasses the 57-64 GHz band and that has a video bandwidth of at least 10 MHz, or using an equivalent measurement method.

(3) For purposes of demonstrating compliance with this paragraph (e), corrections to the transmitter output power may be made due to the antenna and circuit loss.

(f) Fundamental emissions must be contained within the frequency bands specified in this section during all conditions of operation. Equipment is presumed to operate over the temperature range -20 to +50 degrees celsius with an input voltage variation of 85% to 115% of rated input voltage, unless justification is presented to demonstrate otherwise.

(g) Regardless of the power density levels permitted under this section, devices operating under the provisions of this section are subject to the radio-frequency radiation exposure requirements specified in §§ 1.1307(b), 2.1091 and 2.1093 of this chapter, as appropriate. Applications for equipment authorization of devices operating under this section must contain a statement confirming compliance with these requirements for both fundamental emissions and unwanted emissions. Technical information showing the basis for this statement must be submitted to the Commission upon request.

(h) Any transmitter that has received the necessary FCC equipment authorization under the rules of this chapter may be mounted in a group installation for simultaneous operation with one or more other transmitter(s) that

have received the necessary FCC equipment authorization, without any additional equipment authorization. However, no transmitter operating under the provisions of this section may be equipped with external phase-locking inputs that permit beam-forming arrays to be realized.

(i) For all transmissions that emanate from inside of a building, within any one second interval of signal transmission, each transmitter with a peak output power equal to or greater than 0.1 mW or a peak power density equal to or greater than 3 nW/cm<sup>2</sup>, as measured 3 meters from the radiating structure, must transmit a transmitter identification at least once. Each application for equipment authorization for equipment that will be used inside of a building must declare that the equipment contains the required transmitter identification feature and must specify a method whereby interested parties can obtain sufficient information, at no cost, to enable them to fully detect and decode this transmitter identification information. Upon the completion of decoding, the transmitter identification data block must provide the following fields:

(1) FCC Identifier, which shall be programmed at the factory.

(2) Manufacturer's serial number, which shall be programmed at the factory.

(3) Provision for at least 24 bytes of data relevant to the specific device, which shall be field programmable. The grantee must implement a method that makes it possible for users to specify and update this data. The recommended content of this field is information to assist in contacting the operator.

[63 FR 42279, Aug. 7, 1998, as amended at 66 FR 7409, Jan. 23, 2001]

### Subpart D—Unlicensed Personal Communications Service Devices

SOURCE: 58 FR 59180, Nov. 8, 1993, unless otherwise noted.

#### § 15.301 Scope.

This subpart sets out the regulations for unlicensed personal communications services (PCS) devices operating

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in the 1910–1930 MHz and 2390–2400 MHz frequency bands.

[60 FR 13073, Mar. 10, 1995]

#### § 15.303 Definitions.

(a) *Asynchronous devices.* Devices that transmit RF energy at irregular time intervals, as typified by local area network data systems.

(b) *Coordinatable PCS device.* PCS devices whose geographical area of operation is sufficiently controlled either by necessity of operation with a fixed infrastructure or by disabling mechanisms to allow adequate coordination of their locations relative to incumbent fixed microwave facilities.

(c) *Emission bandwidth.* For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier. Compliance with the emissions limits is based on the use of measurement instrumentation employing a peak detector function with an instrument resolutions bandwidth approximately equal to 1.0 percent of the emission bandwidth of the device under measurement.

(d) *Isochronous devices.* Devices that transmit at a regular interval, typified by time-division voice systems.

(e) *Noncoordinatable PCS device.* A PCS device that is capable of randomly roaming and operating in geographic areas containing incumbent microwave facilities such that operation of the PCS device will potentially cause harmful interference to the incumbent microwave facilities.

(f) *Peak transmit power.* The peak power output as measured over an interval of time equal to the frame rate or transmission burst of the device under all conditions of modulation. Usually this parameter is measured as a conducted emission by direct connection of a calibrated test instrument to the equipment under test. If the device cannot be connected directly, alternative techniques acceptable to the Commission may be used.

(g) *Personal Communications Services (PCS) Devices [Unlicensed].* Intentional radiators operating in the frequency

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bands 1910–1930 MHz and 2390–2400 MHz that provide a wide array of mobile and ancillary fixed communication services to individuals and businesses.

(h) *Spectrum window.* An amount of spectrum equal to the intended emission bandwidth in which operation is desired.

(i) *Sub-band.* For purposes of this subpart the term sub-band refers to the spectrum allocated for isochronous or asynchronous transmission.

(j) *Thermal noise power.* The noise power in watts defined by the formula  $N=kTB$  where  $N$  is the noise power in watts,  $K$  is Boltzmann's constant,  $T$  is the absolute temperature in degrees Kelvin (e.g., 295 °K) and  $B$  is the emission bandwidth of the device in hertz.

(k) *Time window.* An interval of time in which transmission is desired.

[58 FR 59180, Nov. 8, 1993, as amended at 59 FR 32852, June 24, 1994; 60 FR 13073, Mar. 10, 1995]

#### § 15.305 Equipment authorization requirement.

PCS devices operating under this subpart shall be certified by the Commission under the procedures in subpart J of part 2 of this chapter before marketing. The application for certification must contain sufficient information to demonstrate compliance with the requirements of this subpart.

#### § 15.307 Coordination with fixed microwave service.

(a) UTAM, Inc. is designated to coordinate and manage the transition of the 1910–1930 MHz band from the Private Operational-Fixed Microwave Service (OFS) operating under part 101 of this chapter to unlicensed PCS operations.

(b) Each application for certification of equipment operating under the provisions of this subpart must be accompanied by an affidavit from UTAM, Inc. certifying that the applicant is a participating member of UTAM, Inc. In the event a grantee fails to fulfill the obligations attendant to participation in UTAM, Inc., the Commission may invoke administrative sanctions as