

(g) *Geo-location capability.* The capability of a white space device to determine its geographic coordinates and geo-location uncertainty. This capability is used with a white space database approved by the FCC to determine the availability of spectrum at a white space device's location.

(h) *Less congested area.* Geographic areas where at least half of the TV channels for the bands that will continue to be allocated and assigned only for broadcast service are unused for broadcast and other protected services and available for white space device use. Less congested areas in the UHF TV band are also considered to be less congested areas in the 600 MHz service band.

(i) *Mode I personal/portable device.* A personal/portable white space device that does not use an internal geo-location capability and access to a white space database to obtain a list of available channels. A Mode I device must obtain a list of available channels on which it may operate from either a fixed white space device or Mode II personal/portable white space device. A Mode I device may not initiate a network of fixed and/or personal/portable white space devices nor may it provide a list of available channels to another Mode I device for operation by such device.

(j) *Mode II personal/portable device.* A personal/portable device that uses an internal geo-location capability and access to a white space database, either through a direct connection to the Internet or through an indirect connection to the Internet by way of fixed device or another Mode II device, to obtain a list of available channels. A Mode II device may select a channel itself and initiate and operate as part of a network of white space devices, transmitting to and receiving from one or more fixed devices or personal/portable devices. A Mode II personal/portable device may provide its list of available channels to a Mode I personal/portable device for operation on by the Mode I device.

(k) *Network initiation.* The process by which a fixed or Mode II white space device sends control signals to one or more fixed white space devices or per-

sonal/portable white space devices and allows them to begin communications.

(l) *Operating channel.* An available channel used by a white space device for transmission and/or reception.

(m) *Personal/portable device.* A white space device that transmits and/or receives radiocommunication signals on available channels at unspecified locations that may change.

(n) *Receive site.* The location where the signal of a full service television station is received for rebroadcast by a television translator or low power TV station, including a Class A TV station, or for distribution by a Multiple Video Program Distributor (MVPD) as defined in 47 U.S.C. 602(13).

(o) *Sensing only device.* A personal/portable white space device that uses spectrum sensing to determine a list of available channels. Sensing only devices may transmit on any available channels in the frequency bands 512–608 MHz (TV channels 21–36).

(p) *Spectrum Act.* Title VI of the Middle Class Tax Relief and Job Creation Act of 2012 (Pub. L. 112–96).

(q) *Spectrum sensing.* A process whereby a white space device monitors a television channel to detect whether the channel is occupied by a radio signal or signals from authorized services.

(r) *Television bands.* The broadcast television frequency bands at 54–72 MHz (TV channels 2–4), 76–88 MHz (TV channels 5–6), 174–216 MHz (TV channels 7–13) and 470–608 MHz (channels 14–36).

(s) *White space database.* A database system approved by the Commission that maintains records on authorized services and provides lists of available channels to white space devices and unlicensed wireless microphone users.

[80 FR 73070, Nov. 23, 2015, as amended at 84 FR 34796, July 19, 2019]

#### § 15.705 Cross reference.

(a) The provisions of subparts A, B, and C of this part apply to white space devices, except where specific provisions are contained in this subpart.

(b) The requirements of this subpart apply only to the radio transmitter contained in the white space device. Other aspects of the operation of a white space device may be subject to requirements contained elsewhere in this chapter. In particular, a white

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space device that includes a receiver that tunes within the frequency range specified in §15.101(b) and contains digital circuitry not directly associated with the radio transmitter is also subject to the requirements for unintentional radiators in subpart B.

### § 15.706 Information to the user.

(a) In addition to the labeling requirements contained in §15.19, the instructions furnished to the user of a white space device shall include the following statement, placed in a prominent location in the text of the manual:

This equipment has been tested and found to comply with the rules for white space devices, pursuant to part 15 of the FCC rules. These rules are designed to provide reasonable protection against harmful interference. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- (1) Reorient or relocate the receiving antenna.
- (2) Increase the separation between the equipment and receiver.
- (3) Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- (4) Consult the manufacturer, dealer or an experienced radio/TV technician for help.

(b) In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

### § 15.707 Permissible channels of operation.

(a)(1) *470–698 MHz band.* All white space devices are permitted to operate on available channels in the frequency bands 470–698 MHz (TV channels 14–51), subject to the interference protection requirements in §§15.711 and 15.712.

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(2) *600 MHz duplex gap.* White space devices may operate in the 657–663 MHz segment of the 600 MHz duplex gap.

(3) *600 MHz service band.* White space devices may operate on frequencies in the bands 617–652 MHz and 663–698 MHz in areas where 600 MHz band licensees have not commenced operations, as defined in §27.4 of this chapter.

(4) *Channel 37 guard band.* White space devices are not permitted to operate in the band 614–617 MHz.

(b) Only fixed white space devices that communicate only with other fixed white space devices may operate on available channels in the bands 54–72 MHz (TV channels 2–4), 76–88 MHz (TV channels 5 and 6), and 174–216 MHz (TV channels 7–13), subject to the interference protection requirements in §§15.711 and 15.712.

[80 FR 73070, Nov. 23, 2015, as amended at 81 FR 4974, Jan. 29, 2016; 84 FR 34796, July 19, 2019]

### § 15.709 General technical requirements.

(a) *Radiated power limits.* The maximum white space device EIRP per 6 MHz shall not exceed the limits of paragraphs (a)(2) through (4) of this section.

(1) *General requirements.* (i) White space devices may be required to operate with less power than the maximum permitted to meet the co-channel and adjacent channel separation requirements of §15.712 of this part.

(ii) Mode I personal/portable devices are limited to 40 mW, if the white space device that controls it is limited to 40 mW.

(2) *TV bands and 600 MHz service band.* (i) Fixed devices: Up to 4 W (36 dBm) EIRP, and up to 10 W (40 dBm) EIRP in less congested areas in the TV bands and 600 MHz service band at locations where they meet the co-channel and adjacent channel separation distances of §§15.712(a)(2) and 15.712(i) of this part, respectively. Operation in the 602–620 MHz band is limited to a maximum of 4 W (36 dBm) EIRP.

(ii) Personal/Portable devices: Up to 100 mW (20 dBm) EIRP.

(3) *608–614 MHz band (channel 37).* Up to 40 mW (16 dBm) EIRP.

(ii) Personal/Portable devices: Up to 100 mW (20 dBm) EIRP.