

purposes of providing lists of available channels. This requirement applies to communications of channel availability and other spectrum access information between the databases and fixed and Mode II devices (it is not necessary for white space devices to apply security coding to channel availability and channel access information where they are not the originating or terminating device and that they simply pass through).

(2) Communications between a Mode I device and a fixed or Mode II device for purposes of obtaining a list of available channels shall employ secure methods that ensure against corruption or unauthorized modification of the data. When a Mode I device makes a request to a fixed or Mode II device for a list of available channels, the receiving device shall check with the white space database that the Mode I device has a valid FCC Identifier before providing a list of available channels. Contact verification signals transmitted for Mode I devices are to be encoded with encryption to secure the identity of the transmitting device. Mode I devices using contact verification signals shall accept as valid for authorization only the signals of the device from which they obtained their list of available channels.

(3) A white space database shall be protected from unauthorized data input or alteration of stored data. To provide this protection, the white space database administrator shall establish communications authentication procedures that allow fixed and Mode II white space devices to be as-

sured that the data they receive is from an authorized source.

(4) Applications for certification of white space devices shall include a high level operational description of the technologies and measures that are incorporated in the device to comply with the security requirements of this section. In addition, applications for certification of fixed and Mode II white space devices shall identify at least one of the white space databases operated by a designated white space database administrator that the device will access for channel availability and affirm that the device will conform to the communications security methods used by that database.

[80 FR 73070, Nov. 23, 2015, as amended at 81 FR 4974, Jan. 29, 2016]

**§ 15.712 Interference protection requirements.**

The separation distances in this section apply to fixed and personal/portable white space devices with a location accuracy of  $\pm 50$  meters. These distances must be increased by the amount that the location uncertainty of a white space device exceeds  $\pm 50$  meters.

(a) *Digital television stations, and digital and analog Class A TV, low power TV, TV translator and TV booster stations*—(1) *Protected contour*. White space devices must protect digital and analog TV services within the contours shown in the following table. These contours are calculated using the methodology in § 73.684 of this chapter and the R-6602 curves contained in § 73.699 of this chapter.

Type of station	Protected contour		
	Channel	Contour (dBU)	Propagation curve
Analog: Class A TV, LPTV, translator and booster .....	Low VHF (2–6) .....	47	F(50,50)
	High VHF (7–13) .....	56	F(50,50)
	UHF (14–69) .....	64	F(50,50)
	Low VHF (2–6) .....	28	F(50,90)
Digital: Full service TV, Class A TV, LPTV, translator and booster.	High VHF (7–13) .....	36	F(50,90)
	UHF (14–51) .....	41	F(50,90)

(2) *Required separation distance*. White space devices must be located outside the contours indicated in paragraph (a)(1) of this section of co-channel and

adjacent channel stations by at least the minimum distances specified in the following tables.

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(i) If a device operates between two defined power levels, it must comply with the separation distances for the higher power level.

(ii) White space devices operating at 40 mW EIRP or less are not required to meet the adjacent channel separation distances.

(iii) Fixed white space devices operating at 100 mW EIRP or less per 6 megahertz across multiple contiguous TV channels with at least 3 megahertz separation between the frequency band occupied by the white space device and adjacent TV channels are not required to meet the adjacent channel separation distances.

(iv) Fixed white space devices may only operate above 4 W EIRP in less congested areas as defined in § 15.703(h).

### MODE II PERSONAL/PORTABLE WHITE SPACE DEVICES

	Required separation in kilometers from co-channel digital or analog TV (full service or low power) protected contour	
	16 dBm (40 mW)	20 dBm (100 mW)
Communicating with Mode II or Fixed device .....	1.3	1.7
Communicating with Mode I device .....	2.6	3.4

### FIXED WHITE SPACE DEVICES

Antenna height above average terrain of unlicensed devices (meters)	Required separation in kilometers from co-channel digital or analog TV (full service or low power) protected contour*						
	16 dBm (40 mW)	20 dBm (100 mW)	24 dBm (250 mW)	28 dBm (625 mW)	32 dBm (1600 mW)	36 dBm (4 W)	40 dBm (10 W)
Less than 3 .....	1.3	1.7	2.1	2.7	3.3	4.0	4.5
3–10 .....	2.4	3.1	3.8	4.8	6.1	7.3	8.5
10–30 .....	4.2	5.1	6.0	7.1	8.9	11.1	13.9
30–50 .....	5.4	6.5	7.7	9.2	11.5	14.3	19.1
50–75 .....	6.6	7.9	9.4	11.1	13.9	18.0	23.8
75–100 .....	7.7	9.2	10.9	12.8	17.2	21.1	27.2
100–150 .....	9.4	11.1	13.2	16.5	21.4	25.3	32.3
150–200 .....	10.9	12.7	15.8	19.5	24.7	28.5	36.4
200–250 .....	12.1	14.3	18.2	22.0	27.3	31.2	39.5

\*When communicating with Mode I personal/portable white space devices, the required separation distances must be increased beyond the specified distances by 1.3 kilometers if the Mode I device operates at power levels no more than 40 mW EIRP or 1.7 kilometers if the Mode I device operates at power levels above 40 mW EIRP.

### PERSONAL/PORTABLE WHITE SPACE DEVICES

	Required separation in kilometers from adjacent channel digital or analog TV (full service or low power) protected contour
	20 dBm (100 mW)
Communicating with Mode II or Fixed device .....	0.1

### PERSONAL/PORTABLE WHITE SPACE DEVICES—Continued

	Required separation in kilometers from adjacent channel digital or analog TV (full service or low power) protected contour
	20 dBm (100 mW)
Communicating with Mode I device .....	0.2

### FIXED WHITE SPACE DEVICES

Antenna height above average terrain of unlicensed devices (meters)	Required separation in kilometers from adjacent channel digital or analog TV (full service or low power) protected contour*					
	20 dBm (100 mW)	24 dBm (250 mW)	28 dBm (625 mW)	32 dBm (1600 mW)	36 dBm (4 W)	40 dBm (10 W)
Less than 3 .....	0.1	0.1	0.1	0.1	0.2	0.2
3–10 .....	0.1	0.2	0.2	0.2	0.3	0.4
10–30 .....	0.2	0.3	0.3	0.4	0.5	0.6
30–50 .....	0.3	0.3	0.4	0.5	0.7	0.8
50–75 .....	0.3	0.4	0.5	0.7	0.8	0.9
75–100 .....	0.4	0.5	0.6	0.8	1.0	1.1
100–150 .....	0.5	0.6	0.8	0.9	1.2	1.3
150–200 .....	0.5	0.7	0.9	1.1	1.4	1.5
200–250 .....	0.6	0.8	1.0	1.2	1.5	1.7

\*When communicating with a Mode I personal/portable white space device that operates at power levels above 40 mW EIRP, the required separation distances must be increased beyond the specified distances by 0.1 kilometers.

(3) *Fixed white space device antenna height.* Fixed white space devices must comply with the requirements of §15.709(g) of this part.

(b) *TV translator, Low Power TV (including Class A) and Multi-channel Video Programming Distributor (MVPD) receive sites.* (1) MVPD, TV translator station and low power TV (including Class A) station receive sites located outside the protected contour of the TV station(s) being received may be registered in the white space database if they are no farther than 80 km outside the nearest edge of the relevant contour(s). Only channels received over the air and used by the MVPD, TV translator station or low power/Class A TV station may be registered.

(2) White space devices may not operate within an arc of  $\pm 30$  degrees from a line between a registered receive site and the contour of the TV station being received in the direction of the station's transmitter at a distance of up to 80 km from the edge of the protected contour of the received TV station for co-channel operation and up to 20 km from the registered receive site for adjacent channel operation, except that the protection distance shall not exceed the distance from the receive site to the protected contour.

(3) Outside of the  $\pm 30$  degree arc defined in paragraph (b)(2) of this section:

(i) White space devices operating at 4 watts EIRP or less may not operate within 8 km from the receive site for co-channel operation and 2 km from the receive site for adjacent channel operation.

(ii) White Space devices operating with more than 4 watts EIRP may not

operate within 10.2 km from the receive site for co-channel operation and 2.5 km from the receive site for adjacent channel operation.

(iii) For purposes of this section, a TV station being received may include a full power TV station, TV translator station or low power TV/Class A TV station.

(c) *Fixed Broadcast Auxiliary Service (BAS) links.* (1) For permanent BAS receive sites appearing in the Commission's Universal Licensing System or temporary BAS receive sites registered in the white space database, white space devices may not operate within an arc of  $\pm 30$  degrees from a line between the BAS receive site and its associated permanent transmitter within a distance of 80 km from the receive site for co-channel operation and 20 km for adjacent channel operation.

(2) Outside of the  $\pm 30$  degree arc defined in paragraph (c)(1) of this section:

(i) White space devices operating at 4 watts EIRP or less may not operate within 8 km from the receive site for co-channel operation and 2 km from the receive site for adjacent channel operation.

(ii) White Space devices operating with more than 4 watts EIRP may not operate within 10.2 km from the receive site for co-channel operation and 2.5 km from the receive site for adjacent channel operation.

(d) *PLMRS/CMRS operations.* (1) White space devices may not operate at distances less than those specified in the table below from the coordinates of the metropolitan areas and on the channels listed in §90.303(a) of this chapter.

White space device transmitter power	Required separation in kilometers from areas specified in §90.303(a) of this chapter	
	Co-channel operation	Adjacent channel operation
4 watts EIRP or less .....	134	131
Greater than 4 watts EIRP .....	136	131.5

(2) White space devices may not operate at distances less than those specified in the table below from PLMRS/

CMRS operations authorized by waiver outside of the metropolitan areas listed in §90.303(a) of this chapter.

White space device transmitter power	Required separation in kilometers from areas specified in § 90.303(a) of this chapter	
	Co-channel operation	Adjacent channel operation
4 watts EIRP or less .....	54	51
Greater than 4 watts EIRP .....	56	51.5

(e) *Offshore Radiotelephone Service.* White space devices may not operate on channels used by the Offshore Radio Service within the geographic areas specified in § 74.709(e) of this chapter.

(f) *Low power auxiliary services, including wireless microphones.* Fixed white space devices are not permitted to operate within 1 km, and personal/portable white space devices will not be permitted to operate within 400 meters, of the coordinates of registered low power auxiliary station sites on the registered channels during the designated times they are used by low power auxiliary stations.

(g) *Border areas near Canada and Mexico.* Fixed and personal/portable white space devices shall comply with the required separation distances in

§ 15.712(a)(2) from the protected contours of TV stations in Canada and Mexico. White space devices are not required to comply with these separation distances from portions of the protected contours of Canadian or Mexican TV stations that fall within the United States.

(h) *Radio astronomy services.* (1) Operation of fixed and personal/portable white space devices is prohibited on all channels within 2.4 kilometers at the following locations.

(i) The Naval Radio Research Observatory in Sugar Grove, West Virginia at 38 30 58 N and 79 16 48 W.

(ii) The Table Mountain Radio Receiving Zone (TMRZ) at 40 08 02 N and 105 14 40 W.

(iii) The following facilities:

Observatory	Latitude (deg/min/sec)	Longitude (deg/min/sec)
Arecibo Observatory .....	18 20 37 N	066 45 11 W
Green Bank Telescope (GBT) .....	38 25 59 N	079 50 23 W
Very Long Baseline Array (VLBA) Stations:		
Pie Town, NM .....	34 18 04 N	108 07 09 W
Kitt Peak, AZ .....	31 57 23 N	111 36 45 W
Los Alamos, NM .....	35 46 30 N	106 14 44 W
Ft. Davis, TX .....	30 38 06 N	103 56 41 W
N. Liberty, IA .....	41 46 17 N	091 34 27 W
Brewster, WA .....	48 07 52 N	119 41 00 W
Owens Valley, CA .....	37 13 54 N	118 16 37 W
St. Croix, VI .....	17 45 24 N	064 35 01 W
Hancock, NH .....	42 56 01 N	071 59 12 W
Mauna Kea, HI .....	19 48 05 N	155 27 20 W

(2) Operation within the band 608–614 MHz is prohibited within the areas defined by the following coordinates (all coordinates are NAD 83):

(i) Pie Town, NM

North latitude (deg/min/sec)	West longitude (deg/min/sec)
35 25 56.28 .....	107 44 56.40
35 15 57.24 .....	107 41 27.60
33 52 14.16 .....	107 30 25.20
33 22 39.36 .....	107 49 26.40
33 57 38.52 .....	109 36 10.80
34 04 46.20 .....	109 34 12.00
34 27 20.88 .....	109 12 43.20
35 15 30.24 .....	108 25 55.20

(ii) Kitt Peak, AZ

North latitude (deg/min/sec)	West longitude (deg/min/sec)
34 08 18.24 .....	111 36 46.80
33 54 10.08 .....	109 38 20.40
32 09 25.56 .....	113 42 03.60
31 29 15.72 .....	111 33 43.20
33 20 36.60 .....	113 36 14.40
34 09 20.52 .....	112 34 37.20

(iii) Los Alamos, NM

North latitude (deg/min/sec)	West longitude (deg/min/sec)
36 25 54.12 .....	106 06 07.20
36 32 26.88 .....	105 59 27.60

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North latitude (deg/min/sec)	West longitude (deg/min/sec)
36 45 23.40 .....	105 48 03.60
36 48 10.44 .....	105 30 21.60
36 13 37.92 .....	105 26 38.40
35 38 40.92 .....	105 48 36.00
35 36 51.48 .....	105 49 30.00
34 06 17.28 .....	107 10 48.00
34 16 18.12 .....	107 17 16.80
35 21 22.68 .....	106 51 07.20

(iv) Ft. Davis, TX

North latitude (deg/min/sec)	West longitude (deg/min/sec)
30 42 16.92 .....	103 55 22.80
30 35 49.92 .....	103 41 52.80
30 32 35.88 .....	103 43 04.80
30 25 20.64 .....	103 49 48.00
30 24 30.24 .....	103 52 30.00
30 26 14.28 .....	103 57 54.00
30 33 03.60 .....	104 09 10.80
30 40 03.36 .....	104 05 9.60
30 43 11.28 .....	103 58 48.00

(v) N. Liberty, IA

North latitude (deg/min/sec)	West longitude (deg/min/sec)
42 03 27.00 .....	90 54 16.56
41 59 03.12 .....	90 46 49.44
41 34 19.20 .....	90 51 11.16
41 19 27.12 .....	90 58 58.80
41 02 09.96 .....	91 07 18.84
41 07 51.24 .....	92 03 44.64
41 50 03.12 .....	92 36 20.16
42 28 50.16 .....	91 44 35.16

(vi) Brewster, WA

North latitude (deg/min/sec)	West longitude (deg/min/sec)
48 18 00.36	119 35 27.60
48 16 40.08	119 34 51.60
48 15 20.52	119 34 33.60
48 12 26.64	119 34 08.40
48 07 51.96	119 34 33.60
48 06 44.64	119 34 48.00
47 58 44.40	119 36 03.60
47 55 06.60	119 37 40.80
47 52 48.72	119 39 03.60
48 00 49.68	119 59 06.00
48 26 59.64	119 46 04.80
48 26 08.52	119 43 22.80

(vii) Owens Valley, CA

North latitude (deg/min/sec)	West longitude (deg/min/sec)
37 05 49.56	118 02 13.20
37 03 27.36	118 01 08.40
36 29 09.96	118 06 50.40
36 30 48.60	118 11 56.40
36 37 08.04	118 16 37.20
37 25 12.72	118 41 16.80
37 27 30.24	118 41 02.40
37 44 45.96	118 39 03.60
37 59 49.92	118 32 09.60
37 46 12.72	118 20 09.60

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(viii) St. Croix, VI

North latitude (deg/min/sec)	West longitude (deg/min/sec)
18 29 15.36	64 22 38.28
18 06 51.12	64 08 03.84
18 04 31.44	64 06 12.24
18 02 02.76	64 04 33.96
17 59 26.52	64 03 09.36
17 56 43.80	64 01 59.52
17 53 56.04	64 01 04.80
17 51 03.96	64 00 25.56
17 48 09.72	64 00 02.16
17 42 19.08	63 58 57.36
17 39 07.92	63 58 15.96
17 42 10.44	64 39 37.44
17 43 57.00	64 50 46.32
18 07 24.24	66 02 36.96
18 16 13.80	65 44 56.04

(ix) Hancock, NH

North latitude (deg/min/sec)	West longitude (deg/min/sec)
44 08 59.64	71 32 01.68
43 46 24.60	71 18 57.60
42 58 41.88	71 15 14.04
42 29 25.08	71 52 51.96
42 34 05.88	72 07 08.76
42 34 41.52	72 09 41.76
42 55 47.28	72 55 03.72

(x) Mauna Kea, HI

North latitude (deg/min/sec)	West longitude (deg/min/sec)
20 11 01.32	153 03 43.20
20 00 52.92	152 35 56.40
19 46 42.60	152 35 34.80
19 32 33.36	152 36 28.80
19 18 31.68	152 38 38.40
19 04 44.04	152 42 07.20
18 51 16.56	152 46 51.60
18 38 15.72	152 52 44.40
18 25 46.56	152 59 49.20
18 13 55.20	153 07 55.20
18 02 46.68	153 17 06.00
17 52 26.40	153 27 14.40
17 42 57.96	153 38 16.80
17 35 20.04	153 50 45.60
17 27 52.20	154 03 10.80
17 21 27.00	154 16 15.60
17 16 08.40	154 29 49.20
17 11 57.84	154 43 51.60
17 08 57.48	154 58 08.40
17 07 09.12	155 12 43.20
17 23 53.52	155 27 21.60
19 29 13.92	155 36 21.60
19 47 53.88	155 29 27.60
19 48 52.92	155 27 39.60
19 48 58.68	155 27 14.40

(3) Operation within the band 608–614 MHz is prohibited within the following areas:

(i) The National Radio Quiet Zone as defined in §1.924(a)(1) of this chapter.

(ii) The islands of Puerto Rico, Desecheo, Mona, Vieques or Culebra

(i) 600 MHz service band: Fixed and personal/portable devices operating in

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the 600 MHz Service Band must comply with the following co-channel and adjacent channel separation distances outside the defined polygonal area encompassing the base stations or other radio facilities deployed by a part 27 600 MHz Service Band licensee that has commenced operations, as defined in §27.4 of this chapter.

(1) Fixed white space devices may only operate above 4 W EIRP in less congested areas as defined in §15.703(h).

(2) If a device operates between two defined power levels, it must comply with the separation distances for the higher power level.

(3) For the purpose of this rule, co-channel means any frequency overlap between a channel used by a white space device and a five megahertz spectrum block used by a part 27 600 MHz band licensee, and adjacent channel means a frequency separation of zero to four megahertz between the edge of a channel used by a white space device and the edge of a five megahertz spectrum block used by a part 27 600 MHz band licensee.

(4) On frequencies used by wireless uplink services:

### MODE II PERSONAL/PORTABLE WHITE SPACE DEVICES

	600 MHz band wireless uplink spectrum Minimum co-channel separation distances in kilometers between white space devices and any point along the edge of a polygon representing the outer edge of base station or other radio facility deployment	
	16 dBm (40 mW)	20 dBm (100 mW)
Communicating with Mode II or Fixed device .....	5	6
Communicating with Mode I device .....	10	12

### FIXED WHITE SPACE DEVICES

Antenna height above average terrain of unlicensed devices (meters)	600 MHz band wireless uplink spectrum Minimum co-channel separation distances in kilometers between white space devices and any point along the edge of a polygon representing the outer edge of base station or other radio facility deployment *						
	16 dBm (40mW)	20 dBm (100 mW)	24 dBm (250mW)	28 dBm (625 mW)	32 dBm (1600 mW)	36 dBm (4 W)	40 dBm (10 W)
Less than 3 .....	5	6	7	9	12	15	19
3—10 .....	9	11	14	17	22	27	34
10—30 .....	15	19	24	30	38	47	60
30—50 .....	20	24	31	38	49	60	60
50—75 .....	24	30	37	47	60	60	60
75—100 .....	27	34	43	54	60	60	60
100—150 .....	33	42	53	60	60	60	60
150—200 .....	39	49	60	60	60	60	60
200—250 .....	43	54	60	60	60	60	60

\*When communicating with Mode I personal/portable white space devices, the required separation distances must be increased beyond the specified distances by 5 kilometers if the Mode I device operates at power levels no more than 40 mW EIRP or 6 kilometers if the Mode I device operates at power levels above 40 mW EIRP.

### PERSONAL/PORTABLE WHITE SPACE DEVICES

	600 MHz band wireless uplink spectrum Minimum adjacent channel separation distances in kilometers between white space devices and any point along the edge of a polygon representing the outer edge of base station or other radio facility deployment
	20 dBm (100 mW)
Communicating with Mode II or Fixed device .....	0.1

### PERSONAL/PORTABLE WHITE SPACE DEVICES—Continued

	600 MHz band wireless uplink spectrum Minimum adjacent channel separation distances in kilometers between white space devices and any point along the edge of a polygon representing the outer edge of base station or other radio facility deployment
	20 dBm (100 mW)
Communicating with Mode I device .....	0.3

FIXED WHITE SPACE DEVICES

Antenna height above average terrain of unlicensed devices (meters)	600 MHz band wireless uplink spectrum Minimum adjacent channel separation distances in kilometers between white space devices and any point along the edge of a polygon representing the outer edge of base station or other radio facility deployment *					
	20 dBm (100 mW)	24 dBm (250mW)	28 dBm (625 mW)	32 dBm (1600 mW)	36 dBm (4 W)	40 dBm (10 W)
Less than 3 .....	0.1	0.2	0.2	0.3	0.4	0.4
3–10 .....	0.3	0.3	0.4	0.5	0.6	0.8
10–30 .....	0.4	0.6	0.7	0.9	1.1	1.4
30–50 .....	0.6	0.7	0.9	1.2	1.4	1.8
50–75 .....	0.7	0.9	1.1	1.4	1.8	2.2
75–100 .....	0.8	1.0	1.3	1.6	2.0	2.6
100–150 .....	1.0	1.3	1.6	2.0	2.5	3.1
150–200 .....	1.2	1.4	1.8	2.3	2.9	3.6
200–250 .....	1.3	1.6	2.0	2.6	3.2	4.1

\*When communicating with Mode I personal/portable white space devices, the required separation distances must be increased beyond the specified distances by 0.1 kilometers.

(5) On frequencies used by wireless downlink services: 35 kilometers for co-channel operation, and 31 kilometers for adjacent channel operation.

(j) *Wireless Medical Telemetry Service.*

(1) White space devices operating in the

608–614 MHz band (channel 37) are not permitted to operate within an area defined by the polygon described in §15.713(j)(11) plus the distances specified in the tables below:

MODE II PERSONAL/PORTABLE WHITE SPACE DEVICES

	Required co-channel separation distances in kilometers from WMTS sites	
	16 dBm (40 mW)	20 dBm (100 mW)
Communicating with Mode II or Fixed device .....	0.38	0.48
Communicating with Mode I device .....	0.76	0.96

FIXED WHITE SPACE DEVICES

Antenna height above average terrain of unlicensed devices (meters)	Required co-channel separation distances in kilometers from WMTS sites *					
	16 dBm (40 mW)	20 dBm (100 mW)	24 dBm (250 mW)	28 dBm (625 mW)	32 dBm (1600 mW)	36 dBm (4 watts)
Less than 3 .....	0.38	0.48	0.60	0.76	0.96	1.20
3–10 .....	0.70	0.88	1.10	1.38	1.74	2.20
10–30 .....	1.20	1.55	1.95	2.45	3.05	3.80
30–50 .....	1.55	2.00	2.50	3.15	3.95	4.95
50–75 .....	1.90	2.45	3.05	3.85	4.85	6.10
75–100 .....	2.20	2.80	3.55	4.45	5.60	7.05
100–150 .....	2.70	3.45	4.35	5.45	6.85	8.65
150–200 .....	3.15	3.95	5.00	6.30	7.90	9.95
200–250 .....	3.50	4.40	5.60	7.00	8.80	11.00

\*When communicating with Mode I personal/portable white space devices, the required separation distances must be increased beyond the specified distances by 0.38 kilometers if the Mode I device operates at power levels no more than 40 mW EIRP, or 0.48 kilometers if the Mode I device operates at power levels above 40 mW EIRP.

(2) White space devices operating in the 602–608 MHz band (channel 36) and 614–620 MHz band (channel 38) are not permitted to operate within an area de-

fined by the polygon described in §15.713(j)(11) plus the distances specified in the tables below:

## MODE II PERSONAL/PORTABLE WHITE SPACE DEVICES

	Required adjacent channel separation distances in meters from WMTS sites	
	16 dBm (40 mW)	20 dBm (100 mW)
Communicating with Mode II or Fixed device .....	8	13
Communicating with Mode I device .....	16	26

## FIXED WHITE SPACE DEVICES

Required adjacent channel separation distances in meters from WMTS sites*					
16 dBm (40 mW)	20 dBm (100 mW)	24 dBm (250 mW)	28 dBm (625 mW)	32 dBm (1600 mW)	36 dBm (4 watts)
8 .....	13	20	32	50	71

\*When communicating with Mode I personal/portable white space devices, the required separation distances must be increased beyond the specified distances by 8 meters if the Mode I device operates at power levels no more than 40 mW EIRP, or 13 meters if the Mode I device operates at power levels above 40 mW EIRP.

(k) *488–494 MHz band in Hawaii.* White space devices are not permitted to operate in the 488–494 MHz band in Hawaii.

[80 FR 73070, Nov. 23, 2015, as amended at 81 FR 4974, Jan. 29, 2016]

**§ 15.713 White space database.**

(a) *Purpose.* The white space database serves the following functions:

(1) To determine and provide to a white space device, upon request, the available channels at the white space device's location in the TV bands, the 600 MHz guard bands, the 600 MHz duplex gap, the 600 MHz service band, and channel 37. Available channels are determined based on the interference protection requirements in § 15.712. A database must provide fixed and Mode II personal portable white space devices with channel availability information that includes scheduled changes in channel availability over the course of the 48 hour period beginning at the time the white space devices make a re-check contact. In making lists of available channels available to a white space device, the white space database shall ensure that all communications and interactions between the white space database and the white space device include adequate security measures such that unauthorized parties cannot access or alter the white space database or the list of available channels sent to white space devices or otherwise affect the database system or white space devices in performing their intended functions or in providing adequate

interference protections to authorized services operating in the TV bands. In addition, a white space database must also verify that the FCC identifier (FCC ID) of a device seeking access to its services is valid; under this requirement the white space database must also verify that the FCC ID of a Mode I device provided by a fixed or Mode II device is valid. A list of devices with valid FCC IDs and the FCC IDs of those devices is to be obtained from the Commission's Equipment Authorization System.

(2) To determine and provide to an unlicensed wireless microphone user, upon request, the available channels at the microphone user's location in the 600 MHz guard bands, the 600 MHz duplex gap, and the 600 MHz service band. Available channels are determined based on the interference protection requirements in § 15.236.

(3) To register the identification information and location of fixed white space devices and unlicensed wireless microphone users.

(4) To register protected locations and channels as specified in paragraph (b)(2) of this section, that are not otherwise recorded in Commission licensing databases.

(b) *Information in the white space database.* (1) Facilities already recorded in Commission databases. Identifying and location information will come from the official Commission database. These services include:

- (i) Digital television stations.
- (ii) Class A television stations.