

(4) *In-service monitoring.* A TVBD must perform in-service monitoring of an operating channel a minimum of once every 60 seconds. There is no minimum channel availability check time for in-service monitoring.

(5) *Channel move time.* After a wireless microphone or other low power auxiliary device signal is detected on a TVBD operating channel, all transmissions by the TVBD must cease within two seconds.

(6) Personal/portable devices operating in the client mode shall identify to the fixed or Mode II personal/portable device those television channels on which it senses any signals above the detection threshold. The fixed or Mode II device shall respond in accordance with the provisions of this paragraph as if it had detected the signal itself.

(7) TVBDs communicating either directly with one another or linked through a base station must share information on channel occupancy determined by sensing. If any device in a local area group or network determines that a channel is occupied, all other linked devices will also be required to respond in accordance with the provisions of this paragraph as if it had detected the signal itself.

(d) A TVBD must incorporate the capability to display a list of identified available channels and its operating channels.

(e) Fixed TVBDs shall transmit identifying information. The identification signal must conform to a standard established by a recognized industry standards setting organization. The identification signal shall carry sufficient information to identify the device and its geographic coordinates.

(f) If a fixed TVBD device does not have a direct connection to the Inter-

net and has not yet been initialized and registered with the TV bands database, consistent with §15.713, but can receive the transmissions of another fixed TVBD, the device needing initialization may transmit to that other device on either a channel that the other TVBD has transmitted on or on a channel which the other TVBD indicates is available for use to access the database to register its location and receive a list of channels that are available for it to use. Subsequently, the newly registered TVBD must only use the television channels that the database indicates are available for it to use. Such fixed devices must re-contact the database through another fixed device to review their list of available channels at least once every 60 seconds. A fixed device may not operate as a client to another fixed device.

(g) A personal/portable TVBD operating in Mode I may only transmit upon receiving the transmissions of fixed or Mode II TVBD. A personal/portable device operating in Mode I may transmit on either an operating channel of the fixed or Mode II TVBD or on a channel the fixed or Mode II TVBD indicates is available for use.

§ 15.712 Interference protection requirements.

(a) Digital television stations, and digital and analog Class A TV, low power TV, TV translator and TV booster stations:

(1) *Protected contour.* TVBDs must protect digital and analog TV services within the contours shown in the following table. The contours are based on 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)
Digital: Full service TV, Class A TV, LPTV, translator and booster.	Low VHF (2–6)	28	F(50,90)
	High VHF (7–13)	36	F(50,90)
	UHF (14–51)	41	F(50,90)

(2) *Required separation distance.* Fixed TVBDs and personal/portable TVBDs operating in Mode II 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 table. Personal/portable TVBDs operating in Mode II must comply with the separation distances specified for an unlicensed device with an antenna height of less than 3 meters. Alternatively, Mode II personal/portable TVBDs may operate at closer separation distances, including inside the contour of adjacent channel stations, provided the power level is reduced as specified in § 15.709(a)(2).

Antenna height of unlicensed device	Required separation (km) from digital or analog TV (full service or low power) protected contour	
	Co-channel (km)	Adjacent channel (km)
Less than 3 meters	6.0	0.1
3–Less than 10 meters ...	8.0	0.1
10–30 meters	14.4	0.74

(b) *Translator receive sites and cable headends.* For translator receive sites and cable headends registered in the TV bands database, TVBDs may not operate within an arc of ± 30 degrees from a line between the registered translator or cable headend receive site and the TV station being received within a distance of 80 km from the protected contour for co-channel operation and 20 km from the protected contour for adjacent channel operation. Outside of this ± 30 degree arc, TVBDs 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.

(c) *Fixed Broadcast Auxiliary Service (BAS) Links.* For permanent BAS receive sites appearing in the Commission's Universal Licensing System or temporary BAS receive sites registered in the TV bands database, TVBDs may not operate within an arc of ± 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. Outside this ± 30 degree arc, TVBDs may not operate within 8 km from the receive site for co-channel op-

eration and 2 km from the receive site for adjacent channel operation.

(d) *PLMRS/CMRS operations.* TVBDs may not operate at distances less than 134 km for co-channel operations and 131 km for adjacent channel operations from the coordinates of the metropolitan areas and on the channels listed in § 90.303(a) of this chapter. For PLMRS/CMRS operations outside of the metropolitan areas listed in § 90.303(a) of this chapter, co-channel and adjacent channel TVBDs may not operate closer than 54 km and 51 km, respectively from a base station.

(e) *Offshore Radiotelephone Service.* TVBDs 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.* (1) TVBDs will not be permitted to operate within 1 km of the coordinates of registered wireless microphone sites during designated times on the channels used by wireless microphones.

(2) In the 13 metropolitan areas listed in § 90.303(a) of this chapter and nearby areas where private land mobile services and commercial land mobile services are authorized by waiver, operation of TVBDs will not be permitted to operate on the first channel on each side of TV channel 37 (608–614 MHz) that is available, i.e., not occupied by a licensed service, at all locations within the protection range of the coordinates of each such area as set forth in § 15.712(d).

(g) *Border areas near Canada and Mexico.* (1) Fixed and personal/portable TVBDs shall not operate within 32 kilometers of the Canadian Border.

(2) Fixed and personal/portable TVBDs shall not operate within 40 kilometers of the Mexican border on UHF channels, or within 60 kilometers of that border on VHF channels.

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

(1) The Naval Radio Research Observatory in Sugar Grove, West Virginia.

(2) The Table Mountain Radio Receiving Zone (TMRZ) at 40°07'50" N and 105°15'40" W.

(3) The following facilities.

Observatory	Longitude (deg/min/sec)	Latitude (deg/min/sec)
Allen Telescope Array	121°28'24" W	40°49'04" N.
Arecibo Observatory	066°45'11" W	18°20'46" N.
Green Bank Telescope (GBT)	079°50'24" W	38°25'59" N.
Very Large Array (VLA)	107°37'04" W	34°04'44" N.
Very Long Baseline Array (VLBA) Stations:		
Pie Town, AZ	108°07'07" W	34°18'04" N.
Kitt Peak, AZ	111°36'42" W	31°57'22" N.
Los Alamos, NM	106°14'42" W	35°46'30" N.
Ft. Davis, TX	103°56'39" W	30°38'06" N.
N. Liberty, IA	091°34'26" W	41°46'17" N.
Brewster, WA	119°40'55" W	48°07'53" N.
Owens Valley, CA	118°16'34" W	37°13'54" N.
St. Croix, VI	064°35'03" W	17°45'31" N.
Hancock, NH	071°59'12" W	42°56'01" N.
Mauna Kea, HI	155°27'29" W	19°48'16" N.

§ 15.713 TV bands database.

(a) *Purpose.* The TV bands database serves the following functions:

(1) To determine and provide to a TVBD, upon request, the available TV channels at the TVBD's location. Available channels are determined based on the interference protection requirements in § 15.712.

(2) To register the identification information and location of fixed TVBDs.

(3) 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 TV bands 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.
- (iii) Low power television stations.
- (iv) Television translator and booster stations.
- (v) Broadcast Auxiliary Service stations (including receive only sites), except low power auxiliary stations.
- (vi) Private land mobile radio service stations.
- (vii) Commercial mobile radio service stations.
- (viii) Offshore radiotelephone service stations.

(2) Facilities that are not recorded in Commission databases. Identifying and location information will be entered into the TV bands database in accordance with the procedures established

by the TV bands database administrator(s). These include:

- (i) Cable television headends.
- (ii) Class A television station receive sites.
- (iii) Low power television station receive sites.
- (iv) Television translator station receive sites.
- (v) Sites where low power auxiliary stations, including wireless microphones and wireless assist video devices, are used and their schedule for operation.
- (vi) Fixed TVBD registrations.

(c) *Restrictions on registration.* (1) Television translator, low power TV and Class A station receive sites within the protected contour of the station being received are not eligible for registration in the database.

(2) Cable television headends within the protected contour of a television channel are not eligible to register that channel in the database.

(d) *Determination of available channels.* The TV bands database will determine the available channels at a location using the interference protection requirements of § 15.712, the location information supplied by a TVBD, and the data for protected stations/locations in the database. The TV bands database will also check for proximity of a TVBD to the Canadian and Mexican borders where operation may be prohibited pursuant to § 15.712(g).