

(vi) The horizontal and vertical plane patterns that are required are the patterns for the complete directional antenna system. In the case of a composite antenna composed of two or more individual antennas, this means that the patterns for the composite antenna, not the patterns for each of the individual antennas, must be submitted.

(4) Where simultaneous use of antennas or antenna structures is proposed, the following provisions shall apply:

(i) In cases where it is proposed to use a tower of an AM broadcast station as a supporting structure for a DTV broadcast antenna, an appropriate application for changes in the radiating system of the AM broadcast station must be filed by the licensee thereof. A formal application (FCC Form 301, or FCC Form 340 for a noncommercial educational station) will be required if the proposal involves substantial change in the physical height or radiation characteristics of the AM broadcast antennas; otherwise an informal application will be acceptable. (In case of doubt, an informal application (letter) together with complete engineering data should be submitted.) An application may be required for other classes of stations when the tower is to be used in connection with a DTV station.

(ii) When the proposed DTV antenna is to be mounted on a tower in the vicinity of an AM station directional antenna system and it appears that the operation of the directional antenna system may be affected, an engineering study must be filed with the DTV application concerning the effect of the DTV antenna on the AM directional radiation pattern. Field measurements of the AM stations may be required prior to and following construction of the DTV station antenna, and readjustments made as necessary.

(5) Applications proposing the use of electrical beam tilt pursuant to section 73.622(f)(4) must be accompanied by the following:

(i) Complete description of the proposed antenna system, including the manufacturer and model number. Vertical plane radiation patterns conforming with paragraphs (c)(3)(iv), (c)(3)(v) and (c)(3)(vi) of this section.

(ii) For at least 36 evenly spaced radials, including 0 degrees corresponding to true North, a determination of the depression angle between the transmitting antenna center of radiation and the radio horizon using the formula in paragraph (b)(2) of this section.

(iii) For each such radial direction, the ERP at the depression angle, taking into account the effect of the electrical beam tilt, mechanical beam tilt, if used, and directional antenna pattern if a directional antenna is specified.

(iv) The maximum ERP toward the radio horizon determined by this process must be clearly indicated. In addition, a tabulation of the relative fields representing the effective radiation pattern toward the radio horizon in the 36 radial directions must be submitted. A value of 1.0 should be used for the maximum radiation.

[62 FR 26990, May 16, 1997, as amended at 63 FR 13562, Mar. 20, 1998; 66 FR 9985, Feb. 13, 2001; 66 FR 65135, Dec. 18, 2001]

§ 73.626 DTV distributed transmission systems.

(a) A DTV station may be authorized to operate multiple synchronized transmitters on its assigned channel to provide service consistent with the requirements of this section. Such operation is called a distributed transmission system (DTS). Except as expressly provided in this section, DTV stations operating a DTS facility must comply with all rules applicable to DTV single-transmitter stations.

(b) For purposes of compliance with this section, a station's "authorized service area" is defined as the area within its predicted noise-limited service contour determined using the facilities authorized for the station in a license or construction permit for non-DTS, single-transmitter-location operation.

(c) *Table of Distances.* The following Table of Distances describes (by channel and zone) a station's maximum service area that can be obtained in applying for a DTS authorization.

Channel	Zone	F(50,90) field strength (dBu)	Distance from reference point
2–6	1	28	108 km. (67 mi.)
2–6	2 and 3	28	128 km. (80 mi.)
7–13	1	36	101 km. (63 mi.)
7–13	2 and 3	36	123 km. (77 mi.)
14–51	1, 2 and 3	41	103 km. (64 mi.)

(1) DTV station zones are defined in § 73.609.

(2) *DTS reference point.* A station's DTS reference point is established in the FCC Order that created or made final modifications to the Post-Transition DTV Table of Allotments, § 73.622(i), and the corresponding facilities for the station's channel assignment as set forth in that FCC Order.

(d) *Determining DTS coverage.* The coverage for each DTS transmitter is determined based on the F(50,90) field strength given in the Table of Distances (in paragraph (c) of this section), calculated in accordance with § 73.625(b). The combined coverage of a DTS station is the logical union of the coverage of all DTS transmitters.

(e) *DTS protection from interference.* A DTS station must be protected from interference in accordance with the criteria specified in § 73.616. To determine compliance with the interference protection requirements of § 73.616, the population served by a DTS station shall be the population within the station's combined coverage contour, excluding the population in areas that are outside both the DTV station's authorized service area and the Table of Distances area (in paragraph (c) of this section). Only population that is predicted to receive service by the method described in § 73.622(e)(2) from at least one individual DTS transmitter will be considered.

(f) *Applications for DTS.* An application proposing use of a DTS will not be accepted for filing unless it meets all of the following conditions:

(1) The combined coverage from all of the DTS transmitters covers all of the applicant's authorized service area;

(2) Each DTS transmitter's coverage is contained within either the DTV station's Table of Distances area (pursuant to paragraph (c) of this section) or its authorized service area, except where such extension of coverage be-

yond the station's authorized service area is of a minimal amount and necessary to meet the requirements of paragraph (f)(1) of this section;

(3) Each DTS transmitter's coverage is contiguous with at least one other DTS transmitter's coverage;

(4) The coverage from one or more DTS transmitter(s) is shown to provide principal community coverage as required in § 73.625(a);

(5) The "combined field strength" of all the DTS transmitters in a network does not cause interference to another station in excess of the criteria specified in § 73.616, where the combined field strength level is determined by a "root-sum-square" calculation, in which the combined field strength level at a given location is equal to the square root of the sum of the squared field strengths from each transmitter in the DTS network at that location.

(6) Each DTS transmitter must be located within either the DTV station's Table of Distances area or its authorized service area.

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§ 73.635 Use of common antenna site.

No television license or renewal of a television license will be granted to any person who owns, leases, or controls a particular site which is peculiarly suitable for television broadcasting in a particular area and (a) which is not available for use by other television licensees; and (b) no other comparable site is available in the area; and (c) where the exclusive use of such site by the applicant or licensee would unduly limit the number of television stations that can be authorized in a particular area or would unduly restrict competition among television stations.

[28 FR 13660, Dec. 14, 1963]