

WKBR-FM
Summerville, South Carolina
Application for Modified Facilities for
Noncommercial FM Station
On Channel 205 Class C1
by
Spirit Broadcasting Group, Inc.

Exhibit 21
Television Channel 6 Protection Under 47 C.F.R. §73.525

March 2013

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Declaration

I declare, under penalty of perjury, that I am a technical consultant to broadcasting and other communications systems, that I have over twenty-five years of experience in the engineering of broadcast and other communications systems, that I am familiar with the Federal Communications Commission's Rules found in the Code of Federal Regulations Title 47, that I am a Professional Engineer registered in North Carolina, that I have prepared or supervised the preparation of the attached Exhibit 21, Television Channel 6 Protection Under 47 C.F.R. §73.525 for Spirit Broadcasting Group, Inc., and that all of the facts therein, except for facts of which the Federal Communications Commission may take official notice, are true to the best of my knowledge and belief.



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30 March 2013

Narrative

This Exhibit provides details of the Television Channel 6 Protection under 47 C.F.R. §73.525 for the proposed modified facilities for WKBR-FM to serve Summerville, South Carolina.

Interference Calculations

The only television channel six station which is an effected station according to §73.525(a)(1) is WCES-DT, Wrens, Georgia. Protection is provided under the contour methods in §73.525(e). Figure 1 shows the WCES-DT 47 dBu F(50,50) Grade B contour. The corresponding WKBR-FM interference contour is also show.

The Effective Radiated Power for the Summerville facility is adjusted for mixed polarization as follows:

$$\text{Power} = [\text{Horizontal ERP} + (\text{Vertical ERP}/A)] \quad \text{where in this case } A=40$$

because the entire predicted interference area lies outside any cities with populations of 50,000 persons or more¹.

For this facility, the proposed ERP is 70,000 Watts Vertical and 1,750 Watts Horizontal. Therefore $P = 71,750$ Watts.

Interference Population

The is no area where WCES-DT is predicted to receive interference from the Summerville proposal. This application is therefore in compliance with the limit of no more than 3,000 persons as listed in §73.525(c).

¹ §73.525(e)(4)(ii)

Source of Data

Transmitter location, effective radiated power, directional antenna pattern, and elevation data are extracted from the Commission's CDBS. All contours for existing and proposed facilities are calculated using height above average terrain calculated at one degree horizontal increments. Terrain data is extracted from the V-Soft Communications NED 03 terrain database. The NED 03 database is derived from the USGS National Elevation Data 30 meter terrain database.

All population data is from 2010 U.S. Census PL data files. Population is counted by considering the location of the centroid of each census bloc. The data for each block is counted if it falls within the area being counted.

Figure 1: TV Channel 6 Study
 Spirit Broadcasting Group, Inc.

FMCommander Single Allocation Study - 03-30-2013 - NED 03 SEC
 WKBRmod's Overlaps (In= 15.54 km, Out= 4.82 km)

WKBRmod CH 205 C1 DA
 Lat= 33 11 33.0, Lng= 80 33 51.0
 71.75 kW 96.2 M HAAT, 124 M COR
 Intef. = 59.0 dBu Prot. = 47 dBu

WCES-TV CH 06 2E BLEDT20090612ACF
 Lat= 33 15 33.0, Lng= 82 17 09.0
 7.9 kW 429.4 M HAAT, 544 M COR

