

Charlotte, North Carolina  
Application for New FM Translator  
On Channel 256  
by  
Isothermal Community College

Exhibit 12  
Interference Analysis

June 2008

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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 12, Interference Analysis, for Isothermal Community College, 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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17 June 2008

### Narrative

This Exhibit provides details of the allocations for the proposed new to serve Charlotte, North Carolina. This proposal complies fully with the requirements of 74 C.F.R. §74.1204(a), with the exception of facilities protected under 74 C.F.R. §74.1204(d) by the Undesired to Desired (U/D) method described below.

This application is in compliance with the requirements of Public Notice DA-03-2095, FM Translator Auction No. 83 Non-Mutually Exclusive Applications dated June 30, 2003, Footnote 8. No changes are proposed. Therefore there are no new mutual exclusivities as shown in the allocation table in this exhibit.

Figure 1 shows the proposed 60 dBu F(50,50) coverage area.

### Allocations

This application proposes service to Charlotte, North Carolina, on channel 256. An updated Allocations Table is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All are protected by this application. Facilities protected by the U/D method are listed in Table 1. The allocations table was prepared using the NED 3 arcsecond terrain database which is described below.

Figure 2 shows the relationship between the proposed translator and other facilities where the lack of overlap is no more than 16 kilometers (10 miles).

### Undesired to Desired Method

Protection to some facilities is provided through the use of Undesired to Desired Signal Strength Ratio (U/D) calculations. Table 2 lists the parameters studied. Figure 3 shows the relevant contours. Note that the distance to the predicted 151.5 dBu F(50,10) contour is too small to be visible on the Figure. For the translator interference contour, free space

calculations are used. There is no population within the predicted interference area and therefore this facility is permitted under §74.1204(d). There is also no population within the 100 dBu F(50,10) interference contour, where population is calculated by the centroid method.

The proposed site is a communications tower. The undesired signal will not reach the ground. There is significant unpopulated land area in the guy field for the communications tower, resulting in a much lower translator signal at any occupied area than that studied for the U/D calculations.

The applicant recognizes that the U/D method is only a tool for predicting likely interference. Should any actual interference be experienced, the applicant will cooperate fully in correcting the interference. Corrective steps may require changes in the transmitting antenna or other steps which would require Commission authorization, may require that the translator cease operation except for brief equipment tests, or may require filtering at the receivers which report interference.

#### 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 for the comparative contours is extracted from the NGDC 30 arcsecond terrain database. The Height Above Average Terrain, ERP, and Distance to Contour for the licensed facilities and for the proposed auxiliary facilities are tabulated in this exhibit.

The contours were also evaluated using terrain 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. The USGS National Elevation Dataset has been developed by merging the highest-resolution, best-quality elevation data available across the United States into a seamless raster format. NED is the result of the maturation of the USGS effort to provide 1:24,000-scale Digital Elevation Model (DEM) data for the conterminous US and 1:63,360-scale DEM data for Alaska.

All population data is from 2000 U.S. Census SF1 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.

#### Television Channel 6 Protection

There are no television channel 6 stations requiring protection. This application proposes a channel which is not subject to television channel 6 separation requirements.

Table 1: Allocations

Timothy L. Warner, Inc.  
Asheville, North Carolina

Isothermal Community College  
Allocation Study

REFERENCE CH# 256D - 99.1 MHz, Pwr= 0.01 kw, HAAT= 0.0 M, COR= 360 M DISPLAY DATES  
35 15 05.0 N. Average Protected F(50-50)= 3.2 km DATA 06-10-08  
80 41 12.0 W. Omni-directional SEARCH 06-10-08

CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kW) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*OUT* (Overlap in km)
256D Charlotte	649897	APP NC	C	0.0 0.0	0.00 BNPFT20030317IGJ	35 15 05.0 80 41 12.0	0.010	24.0 360	7.1 Isothermal Community College	-31.12*
259C1 Kannapolis	WRFK-FM	LIC NC	DCN	348.2 168.2	4.06 BLH19940128KC	35 17 14.0 80 41 45.0	84.000 322	9.6 522	70.4 Capstar TX Limited Partner	-66.55*<
255C Spartanburg	WSPA-FM	CP SC	CX	266.9 86.0	146.37 BMPH20080213ACW	35 10 11.0 82 17 28.0	100.000 600	142.8 1047	96.8 Entercom Greenville License	40.09
255C Spartanburg	WSPA-FM	LIC SC	C	266.9 86.0	146.37 BLH19991026ACQ	35 10 11.0 82 17 28.0	100.000 580	141.3 1016	95.6 Entercom Greenville License	41.30
256C1 Whiteville	WZFX	LIC NC	CN	107.9 288.9	182.38 BLH19860909KB	34 44 05.0 78 47 25.0	100.000 299	171.0 333	71.6 WDAS License Limited Partn	85.20
253D Indian Trail	W253BA	LIC NC	C	156.1 336.1	16.63 BLFT20071002ACT	35 06 52.0 80 36 45.0	0.019	0.3 246	3.7 Positive Alternative Radio	12.71
257C3 Chester	WBT-FM	LIC SC	CX	226.2 45.9	73.62 BLH20031201APJ	34 47 30.0 81 16 06.0	7.700 182	55.7 350	37.5 Greater Media Charlotte In	26.52
256C Roanoke	WSLQ	LIC VA	CY	12.3 192.6	220.85 BMLH19830922AA	37 11 41.0 80 09 22.0	200.000 607	200.4 1184	87.5 Mel Wheeler, Inc.	108.37
GRANDFATHERED AT 200KW @ 607M HAAT.										
254D Belmont	W254AZ	LIC NC	C	271.8 91.6	30.90 BLFT20070503AAN	35 15 34.0 81 01 34.0	0.088	0.7 228	5.5 Positive Alternative Radio	25.23
254C0 Greensboro	WSMW	LIC NC	NCX	43.8 224.3	107.24 BLH20031229AAZ	35 56 42.0 79 51 45.0	100.000 375	11.3 613	78.3 Entercom Greensboro Licens	28.73
258C High Point	WMAG	LIC NC	DCX	47.8 228.3	102.97 BMLH20050613AFW	35 52 13.0 79 50 25.0	100.000 456	6.9 681	65.7 Capstar TX Limited Partner	37.05
255L1 Jefferson	WVOY-LP	LIC SC		156.2 336.4	68.90 BLL20070329AAD	34 40 59.0 80 22 57.0	0.058 39	4.1 174	2.9 The Church of God, Inc. Em	56.21
257L1 Hickory	WLRZ-LP	LIC NC		313.1 132.8	80.15 BLL20050103ACW	35 44 33.0 81 20 04.0	0.018 70	1.3 386	0.6 Lenoir-Rhyne College	69.91

Terrain database is NED 03 SEC Distance + R = 73.215 or FCC spacings in KM, Distance + M = Margin in KM  
Contour distances are on direct line to and from reference station. Reference Zone = 2. with 3rd Adj Channels.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization (C,H,V,E), Beamtilt(Y,N,X)  
Incoming contour overlap is ignored.  
"\*"affixed to 'IN' or 'OUT' values = site inside protected contour.  
"<" = Contour overlap

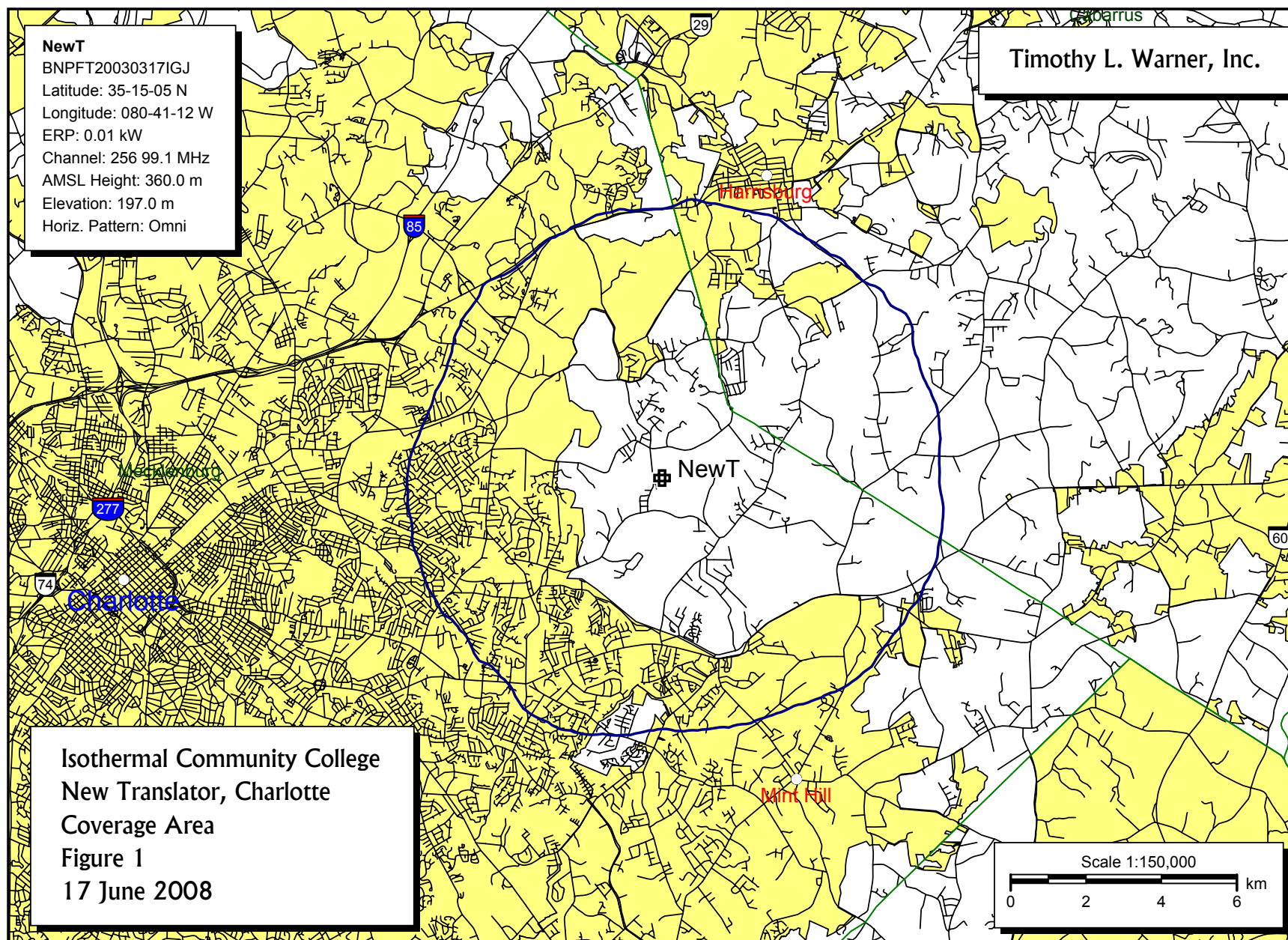
**Table 2: Facilities Protected by U/D Method**

Facility	WRFX-FM Kannapolis, North Carolina
Relationship	259C1 third adjacent
Distance (km)	4.06
Bearing (degrees)	168.2
ERP (kW, on azimuth)	82.7
HAAT (m, on azimuth)	299.2
Ratio	40
Signal Strength (dBu)	111.5
Translator Signal Strength	151.5
Translator distance (km)	.001



**NewT**  
BNPFT20030317IGJ  
Latitude: 35-15-05 N  
Longitude: 080-41-12 W  
ERP: 0.01 kW  
Channel: 256 99.1 MHz  
AMSL Height: 360.0 m  
Elevation: 197.0 m  
Horiz. Pattern: Omni

Timothy L. Warner, Inc.



**Isothermal Community College**  
**New Translator, Charlotte**  
**Coverage Area**  
**Figure 1**  
**17 June 2008**

Scale 1:150,000  
0 2 4 6 km

