

Harlan, Kentucky  
Application for New FM Translator  
On Channel 242  
by  
Eastern Kentucky University

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 Eastern Kentucky University, 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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20 June 2008

### Narrative

This Exhibit provides details of the allocations for the proposed new translator to serve Harlan, Kentucky. This application is filed in response to Public Notice DA-08-1151, Dated May 16, 2008. This is the initial long form application for facilities which ECU filed an expression of interest for the in 2003 filing window. This proposal complies fully with the requirements of 47 C.F.R. 74.1204(a).

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 Harlan, Kentucky, on channel 242. 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. 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 of the proposed interference contours is no more than 16 kilometers (10 miles). Figure 2a provides an expanded scale to show the lack of prohibited contour overlap. Allotments and channel reservations are shown as class maximum facilities.

### 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

Eastern Kentucky University  
Allocation Study

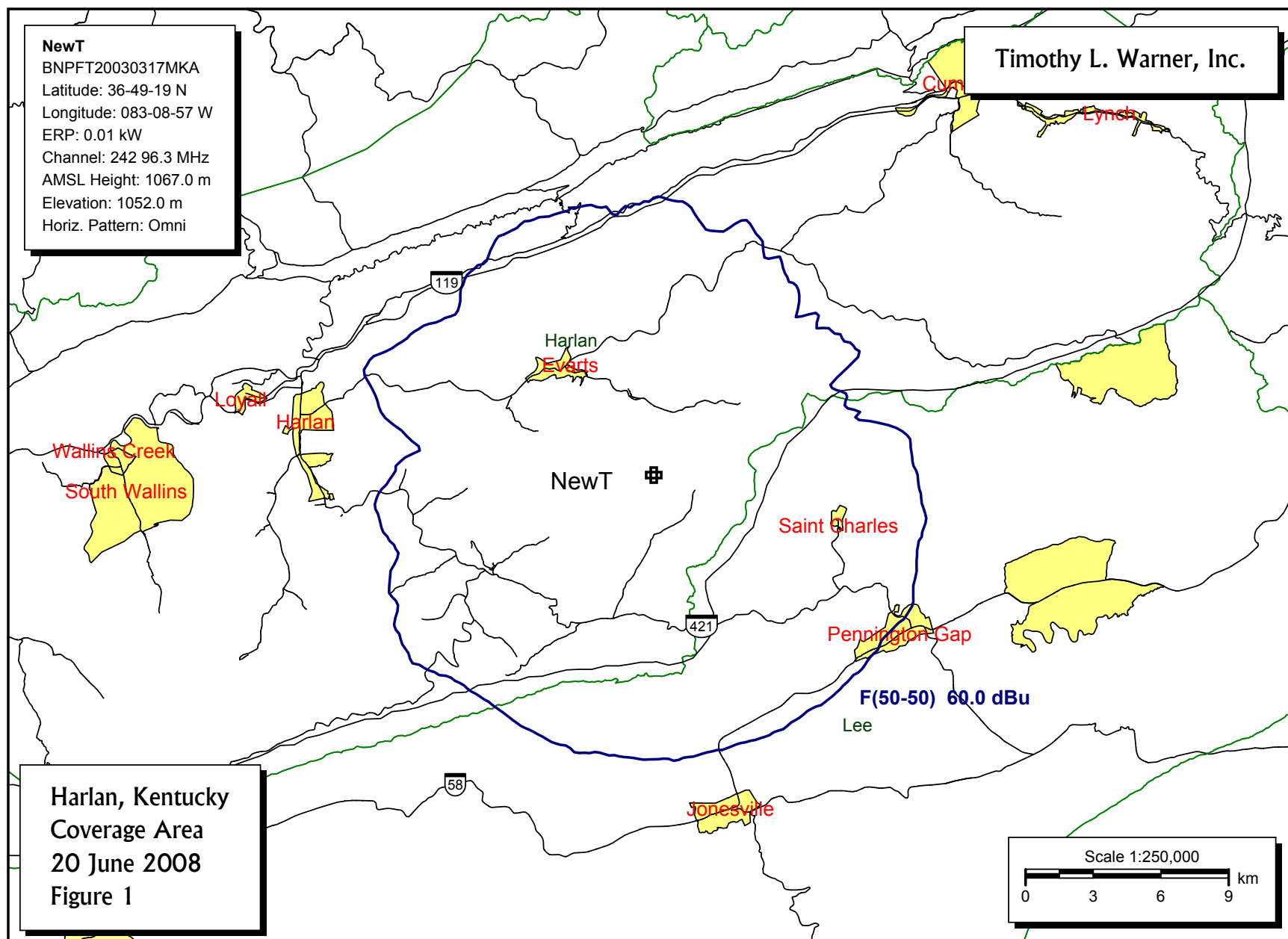
REFERENCE CH# 242D - 96.3 MHz, Pwr= 0.01 kw, HAAT= 459.6 M, COR= 1067 M DISPLAY DATES  
36 49 19.0 N. Average Protected F(50-50)= 12.2 km DATA 06-19-08  
83 08 57.0 W. Omni-directional SEARCH 06-19-08

CH CITY	CALL	TYPE STATE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap in km)	*OUT*
242D Harlan	651902	APP KY	C	0.0 0.0	0.00 BNPFT20030317MKA	36 49 19.0 83 08 57.0	0.010	43.3 1067	12.3 Eastern Kentucky University	-55.54*	-55.54*
243C1 Williamson	WXCC	LIC WV	ZCX	45.6 226.1	110.39 BLH20071205ABF	37 30 48.0 82 15 20.0	75.000 339	108.0 759	73.7 East Kentucky Radio Network	-7.89<	22.32
241C3 Barbourville	WKKQ	LIC KY	NCN	274.4 93.9	67.02 BLH19920903KC	36 51 55.0 83 53 55.0	25.000 99	58.2 458	37.3 Barbourville Community Bro	-2.09<	14.25
245C Bristol	WXBQ-FM	LIC VA	DCN	115.3 295.9	100.34 BLH19950914KB	36 25 59.0 82 08 11.0	75.000 683	14.2 1308	97.0 Bristol Broadcasting Company	73.46	3.16
240C2 Colonial Heights	WRZK	LIC TN	ZCX	123.0 303.4	60.00 BLH20031125ALT	36 31 36.0 82 35 13.0	7.400 382	4.9 841	53.7 Murray Communications	42.54	6.12
242A Seymour	WJBZ-FM	LIC TN	CN	206.9 26.6	109.95 BLH19950320KB	35 56 17.0 83 42 11.0	2.900 146	79.6 451	26.5 Seymour Communications	17.76	38.28
242D Mill Point	977425	APP TN	C	112.1 292.6	78.13 BNPFT20030826APG	36 33 18.0 82 20 25.0	0.010	26.6 653	7.9 Way-fm Media Group, Inc.	39.10	25.74
242D Mill Point	632398	APP TN	C	112.1 292.6	78.15 BNPFT20030311AIT	36 33 18.0 82 20 24.0	0.010	26.5 653	7.9 Way-fm Media Group, Inc.	39.18	25.78
244D Hazard	W244BW	LIC KY	C	2.7 182.7	38.85 BLFT20050304ABR	37 10 18.0 83 07 42.0	0.010	0.2 623	7.4 Philip H. Hayes	26.39	31.22
245D Barbourville	W245AS	LIC KY	C	273.8 93.4	64.50 BLFT20050509AAV	36 51 30.0 83 52 15.0	0.055	0.5 388	4.8 Eastern Kentucky University	52.90	59.45
242C3 Stanford	WXKY-FM	LIC KY	C	297.6 116.6	171.55 BMLED20040907ABM	37 31 27.0 84 52 12.0	4.900 223	99.1 542	38.1 Educational Media Foundation	59.79	87.65
242A Morehead	WIVY	LIC KY	NCX	351.5 171.3	151.99 BLH20070911AAL	38 10 33.0 83 24 28.0	2.150 158	76.5 453	25.4 Gateway Radio Works, Inc.	63.93	86.66
244A Annville	WANV	LIC KY	NCX	299.9 119.3	90.43 BLH20060823AAC	37 13 24.0 84 02 01.0	1.850 152	2.2 506	25.4 F.t.g. Broadcasting, Inc.	75.80	64.85
243C3 Biltmore Forest	WOXL-FM	LIC NC	ZCX	162.6 342.9	143.25 BLH20020220AAL	35 35 23.0 82 40 26.0	1.850 357	62.3 1105	41.0 Saga Communications Of Nor	68.44	83.22

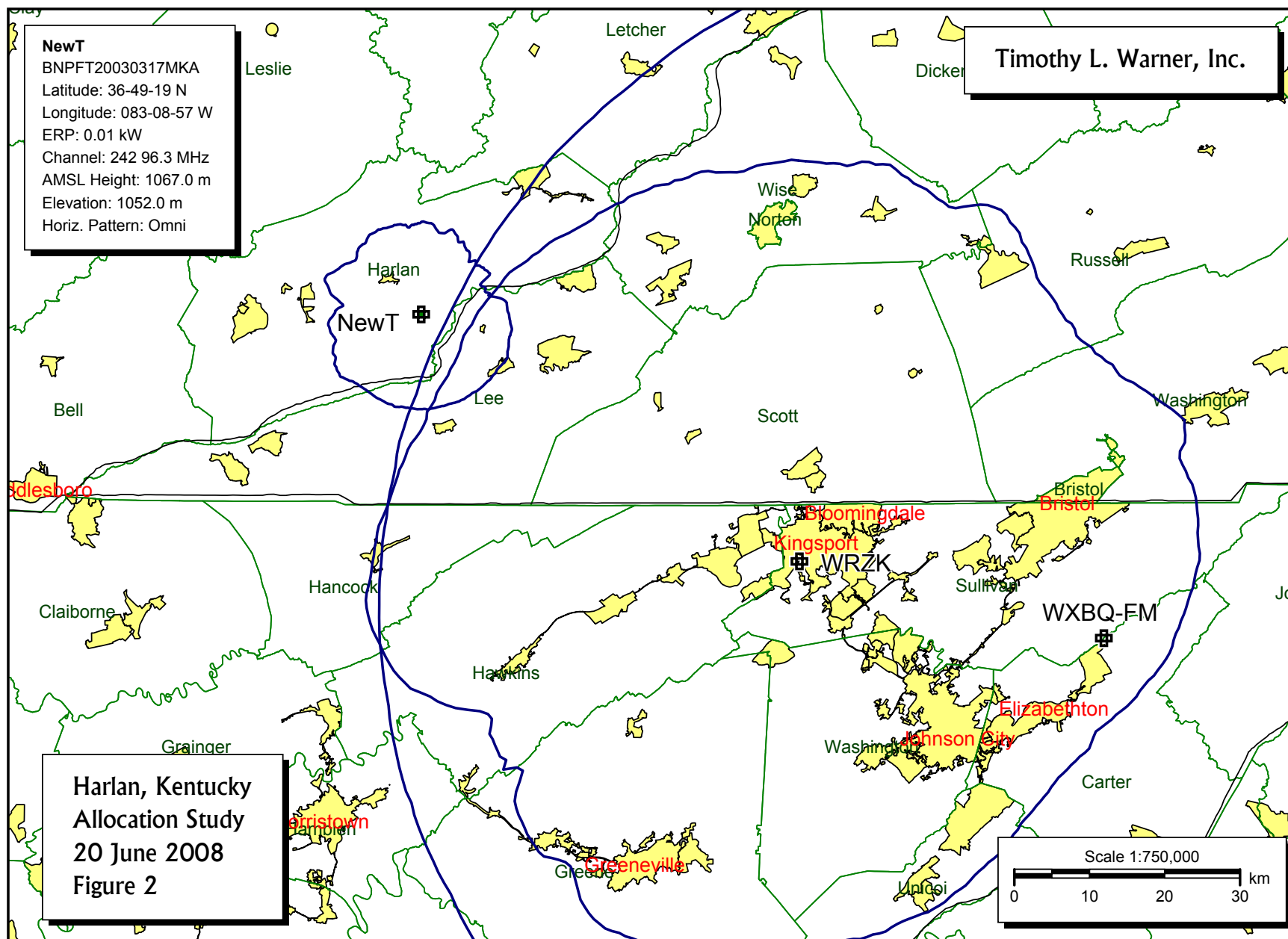
Terrain database is NED 03 SEC Distance + R = 73.215 or FCC spacings in KM, Distance + M = Margin in KM  
Contour distances are on direct line to and from reference station. Reference Zone = 2. with 3rd Adj Channels.  
Ant Column: (D= DA Standard, Z= DA 73.215, N= Not DA 73.215, \_= Omni), Polarization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

**NewT**  
BNPFT20030317MKA  
Latitude: 36-49-19 N  
Longitude: 083-08-57 W  
ERP: 0.01 kW  
Channel: 242 96.3 MHz  
AMSL Height: 1067.0 m  
Elevation: 1052.0 m  
Horiz. Pattern: Omni

**Timothy L. Warner, Inc.**



**Harlan, Kentucky  
Coverage Area  
20 June 2008  
Figure 1**





**NewT**  
BNPFT20030317MKA  
Latitude: 36-49-19 N  
Longitude: 083-08-57 W  
ERP: 0.01 kW  
Channel: 242.96.3 MHz  
AMSL Height: 1067.0 m  
Elevation: 1052.0 m  
Horiz. Pattern: Omni

**Timothy L. Warner, Inc.**

Harlan

Everts

**WXBQ-FM F(50,50) 60.0 dBu**

**F(50-10) 100.0 dBu**

NewT

**WKKQ F(50,50) 60.0 dBu**

Saint Charles

**Harlan, Kentucky**  
**Allocation Study Detail**  
**20 June 2008**  
**Figure 2a**

Dennisville Gap

Scale 1:100,000

0 1 2 3 km

