

26 February 2010

To: Mr. Brian Justin, Jr.
1704 Cottonwood Road
Forest, VA 24551

From: Josh Arritt, SBE Frequency Coordinator, Roanoke/Lynchburg
3934 Electric Road
Roanoke, VA 24018

CC: Alan Novitsky, Chief Engineer WDBJ; Willis Little, Chief Engineer, WSET

Re: Experimental Beacon Coordination, *Reference FCC Correspondence 10133*

Mr. Justin,

This letter of coordination serves the requirements set forth in FCC Correspondence 10133, a response to your application for experimental licensure of a 4-meter band propagation beacon (FCC File No. 0007-EX-PL-2010) requiring you to obtain coordination with the Society of Broadcast Engineers. Please accept this letter of coordination, noting the provisions for interference protection.

Experimental Station Details

FCC Correspondence 10133 requires this document to contain specific technical details about the station. The details of the beacon station provided by you, and from your Application, as coordinated, are as follows:

Coordinates: Lat N37-31-0 Long W079-30-35 NAD83

Effective Radiated Power: 5,000 Watts

Emission: 150H - A1A (Mod CW)

Radius of Operation: 5,000km

Frequency: 70.0040 MHz to 70.0060 MHz

Your application specifies the use of a directional Yagi-Uda antenna of 70 degree 3dB beam width, directed on an East-North-Easterly heading of 60 degrees from true North. The antenna is understood to be located 15 meters above ground level, at a site located 1268 meters above mean sea level.

The intended use of this station is understood as a propagation beacon for the mid-VHF band, and as such its planned time of operation is limited to months of probable Es mode of propagation on that band. This letter is intended to coordinate the operation of your station under normal ground-wave propagation conditions, as is customarily expected of such letters.

A map displaying the geographic location of the proposed station is included as an appendix to this letter. For the purpose of this coordination, a radius of 100 kilometers has been chosen.

Potentially Affected Stations/Licenses

The 4-meter band includes the lower VHF television spectrum, specifically television Channel 4, encompassing 66MHz – 72 MHz. A search for TV Ch4 stations was conducted using the FCC's TV Query tool. Search parameters included a radius of 100 kilometers centered on the proposed station's coordinates as described in your application. This search yielded two results, both being television translators.

Translator station W04AG (FCC File No. BLTTV-1940) is licensed at a location 47.77 kilometers from the proposed station on a bearing of 231.77 degrees true north. This translator is licensed to WDBJ Television, Inc., and serves population in the Garden City and Cave Spring suburbs of Roanoke, VA, as well as eastern portions of Salem, VA. WDBJ Television, Inc, operates this station to support reception of WDBJ-DT (FCC Nile No. BLCDT-20020502AAP), a Class A television facility located on Poor Mountain, approximately 21 kilometers from the community of license (Roanoke). The portions of the community served by the translator are located in a terrain shadow from the Poor Mountain facility.

Translator station W04CI (FCC File No. BLTTV-19901105J0) is licensed at a location 45.0 kilometers from the proposed station on a bearing of 124.64 degrees true north. This translator is licensed to Gethsemane Baptist Church, and serves population south and east of the Madison Heights suburb of Lynchburg, including Appomattox. Gethsemane Baptist Church operates this station to support reception of W33AD (FCC File No. BLTTL-19821108IO), a Low Power Television (LPTV) station licensed to Concord, VA.

The proposed station, operating on 70.005MHz, has a third-order harmonic occurring at 210.015MHz. This falls within television channel 13, which is presently occupied by WSET-TV (FCC File No. BMPCDT-20080620AIR), and as such, coordination with WSET-TV was deemed appropriate.

No other potentially affected facilities were identified.

W04AG Discussion

Coordination with WDBJ Television Inc. was conducted via telephone conversation and email exchange with chief engineer Alan Novitsky. Mr. Novitsky stated he did not expect adverse effects to reception of translator station W04AG.

W04CI Discussion

Coordination with Gethsemane Baptist Church was attempted on several occasions by both this frequency coordinator and yourself, using telephone and email messages. A log of reception attempts appears in Appendix 1 of this letter. No response from the licensee was obtained from each attempt.

An attempt was made to determine if W04CI was operational on channel 4 on several occasions. Each reception attempt showed no NTSC or 8VSB signal present. Searching CDBS, no application was found to indicate the station had been taken silent. On 19 February, 2010, a visit was made to the licensed location of the translator and readings were taken with a spectrum analyzer to try to determine if the station was operational. No coherent NTSC or ATSC signals were received on Channel 4. Photo record of the spectrum analysis and geographic information regarding the reception test is provided in Appendix 2 of this letter.

The Gethsemane Baptist Church website was visited on 22 February 2010, in an attempt to find more contacts for the station. The website makes mention of W33AD, UHF Channel 33, and programming availability by way of a local cable provider, Jet Broadband. No mention of W04CI, or programming availability in the Appomattox area by way of a signal on channel 4 was found.

As of the writing of this letter, the licensee has been unreachable, and the station appears to be silent.

WSET-TV Discussion

WEST-TV commenced digital television operations on channel 13 in late 2009, moving DTV operations from UHF channel 34 to their original VHF NTSC channel. Coordination discussion on the third harmonic issue was conducted via telephone conversation with engineering staff at WSET, including chief engineer Willis Little.

Given the claimed transmitter harmonic suppression, Mr. Little said he expected little to no adverse effect to reception of WSET-TV.

Coordination Provisions

As discussed, contingent on FCC approval of your station, it is requested that a preliminary test transmission period be scheduled in advance of commencement of regular operation of your proposed station. A schedule of beacon station operation, including times off-air and expected station silence date should be established, formally or informally, and shared with the potentially affected licensees' representatives. The test period and scheduling should be coordinated with the chief engineers at WDBJ and WSET.

WDBJ-DT

Mr. Alan Novitsky

2807 Hershberger Rd.

Roanoke, VA 24017

540-344-7000

anovitsky@wdbj7.com

WSET-TV

Mr. Willis Little

2320 Langhorne Rd.

Lynchburg, VA 24501

434-528-1313

wlittle@wset.com

Should the proposed station, at any point during its operation, cause harmful interference to either of these facilities, as determined by Mr. Novitsky or Mr. Little, operation of the beacon should be ceased. Interference mitigation measures can then be discussed. Suggested measures may include scheduled hours of beacon operation, antenna modifications either at the beacon station or to affected receivers, or transmitter power reduction, or other measures, as seen fit, and in accord with FCC regulations governing the license class of your beacon station. It is understood that your station will have remote control capability.

Should you require further assistance from SBE in terms of frequency coordination, please feel free to contact me.

Regards,



Joshua M. Arritt

SBE Frequency Coordinator, Roanoke/Lynchburg

Appendix 1

FCC TVQ Results

Results of an FCC TV Query search for stations on Ch4 located within 100km of the proposed station's coordinates. This query was conducted on 18 February 2010.

<http://www.fcc.gov/fcc-bin/audio/tvq.html>

W04CI	4	Z	TX	LIC	APPOMATTOX	VA	US
BLTTV-19901105JO			-	51894	0.062 kW	0. m	45.00
km	27.96	mi	124.64°	GETHSEMANE BAPTIST CHURCH			

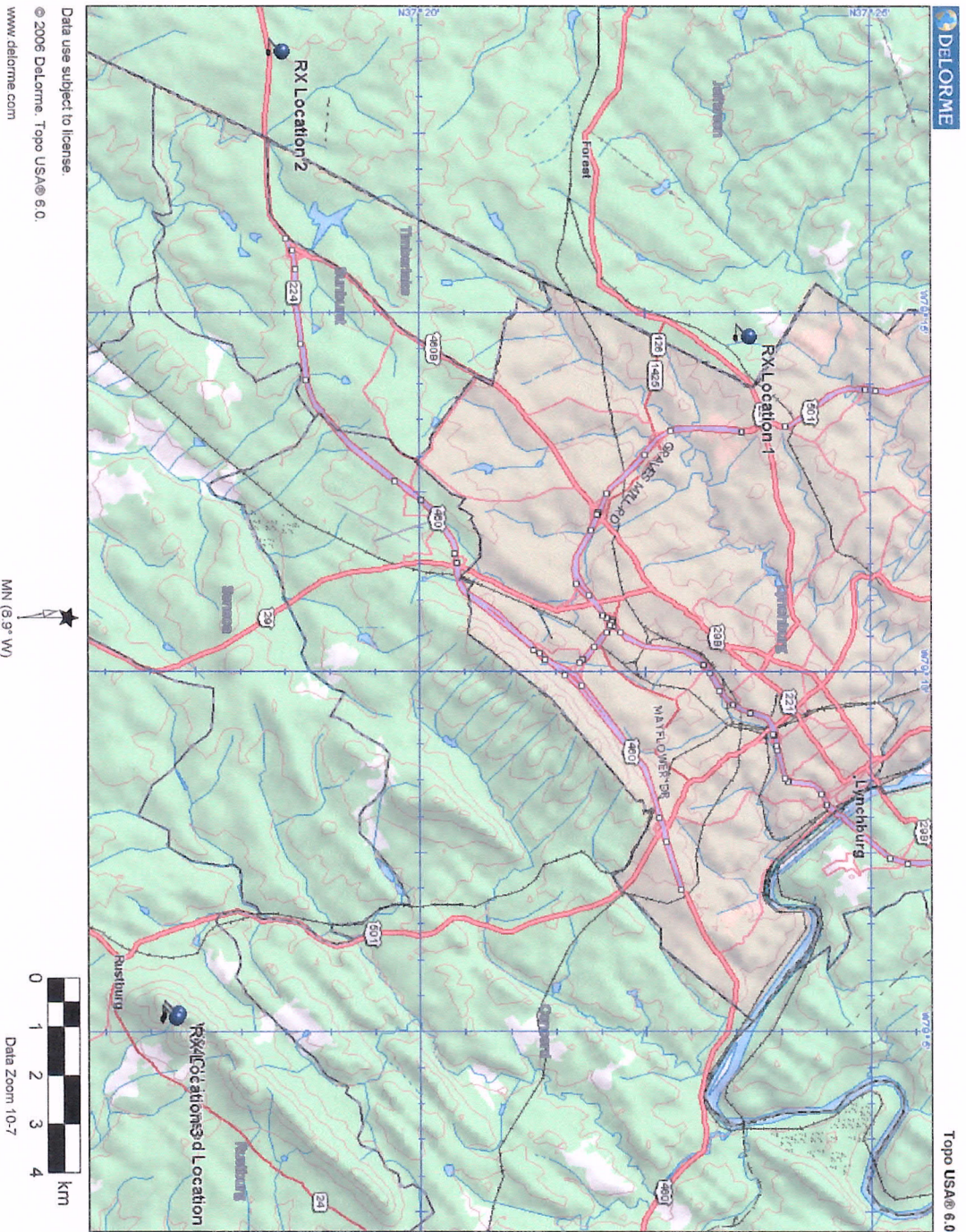
W04AG	4		TX	LIC	GARDEN CITY, ETC.	VA	US
BLTTV-1940			-	71327	0.008 kW	0. m	47.77
km	29.68	mi	231.77°	WDBJ TELEVISION, INC.			

Appendix 2

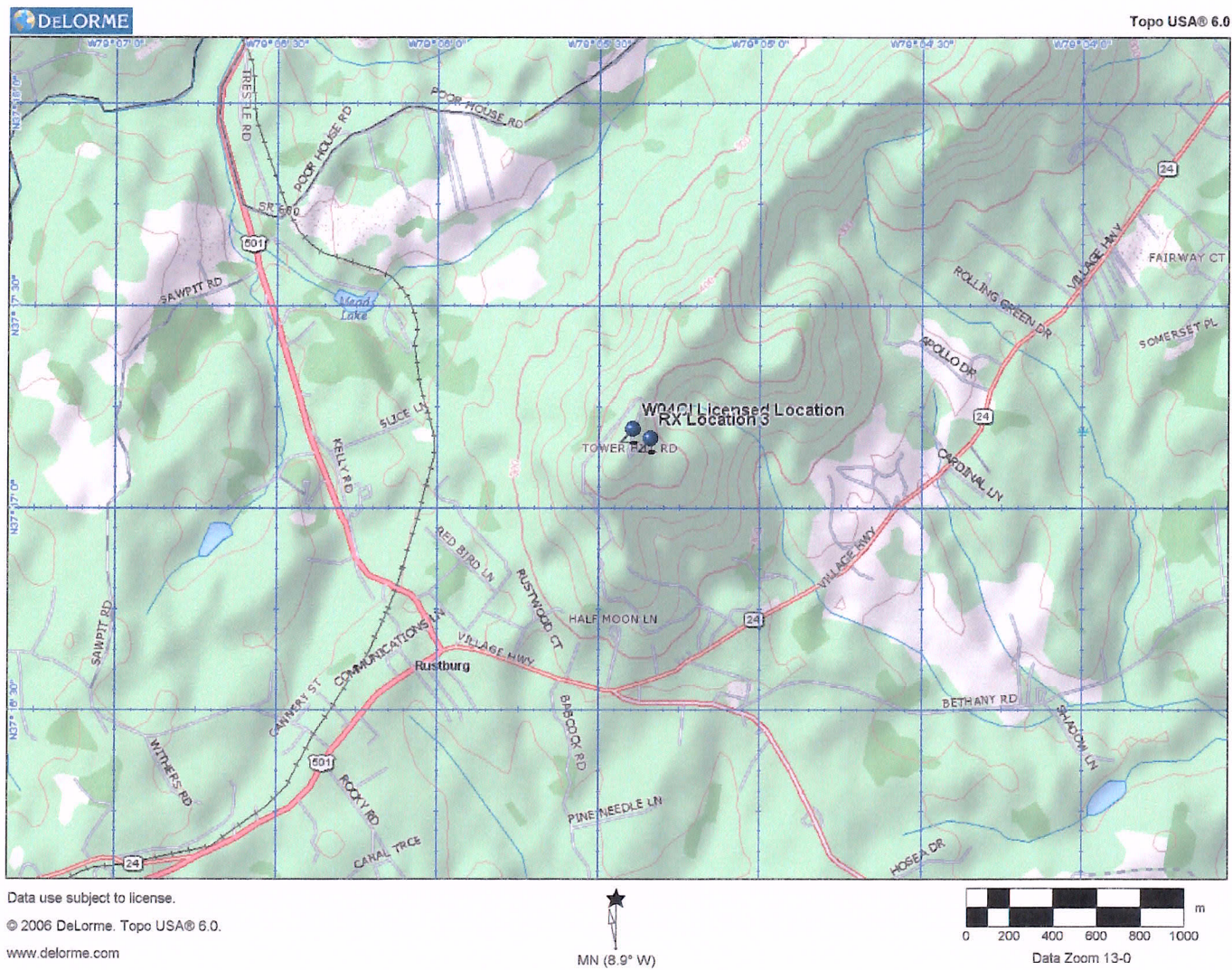
W04CI Reception Attempts Log

Date / Time	Location	Dist/Bearing to W04CI	Equipment	Result	Operator
12 Feb 2010, 1405 EST	NR N37-18' W79-19'	19.84kM / 96 degrees	Kenwood TH-F6, Icom IC-R10	No aural or visual carriers detected	Brian Justin
13 Feb 2010, 1600 EST	NR N37-29' W79-15'	18.3kM / 130 degrees	Icom IC-R10	No aural or visual carriers detected	Brian Justin
14 Feb 2010, 1330 EST	NR N37-29' W79-15'	18.3kM / 130 degrees	Kenwood TH-F6, HP-8561A	No aural or visual carriers detected	Brian Justin
19 Feb 2010 1530 EST	N37-17-08.5 W79-05-23.8	0.09kM / 300 degrees	Aeroflex IFR-2345A and telescoping whip, Icom IC-706MkIIIG and mag-mounted 38-inch whip	No aural or visual carriers detected (See results p. 10)	Joshua M. Arritt
22 Feb 2010 1055EST	NR N37-18' W79-19'	19.84kM / 96 degrees	Kenwood TH-F6	No aural or visual carriers detected	Brian Justin

Receive location map 1

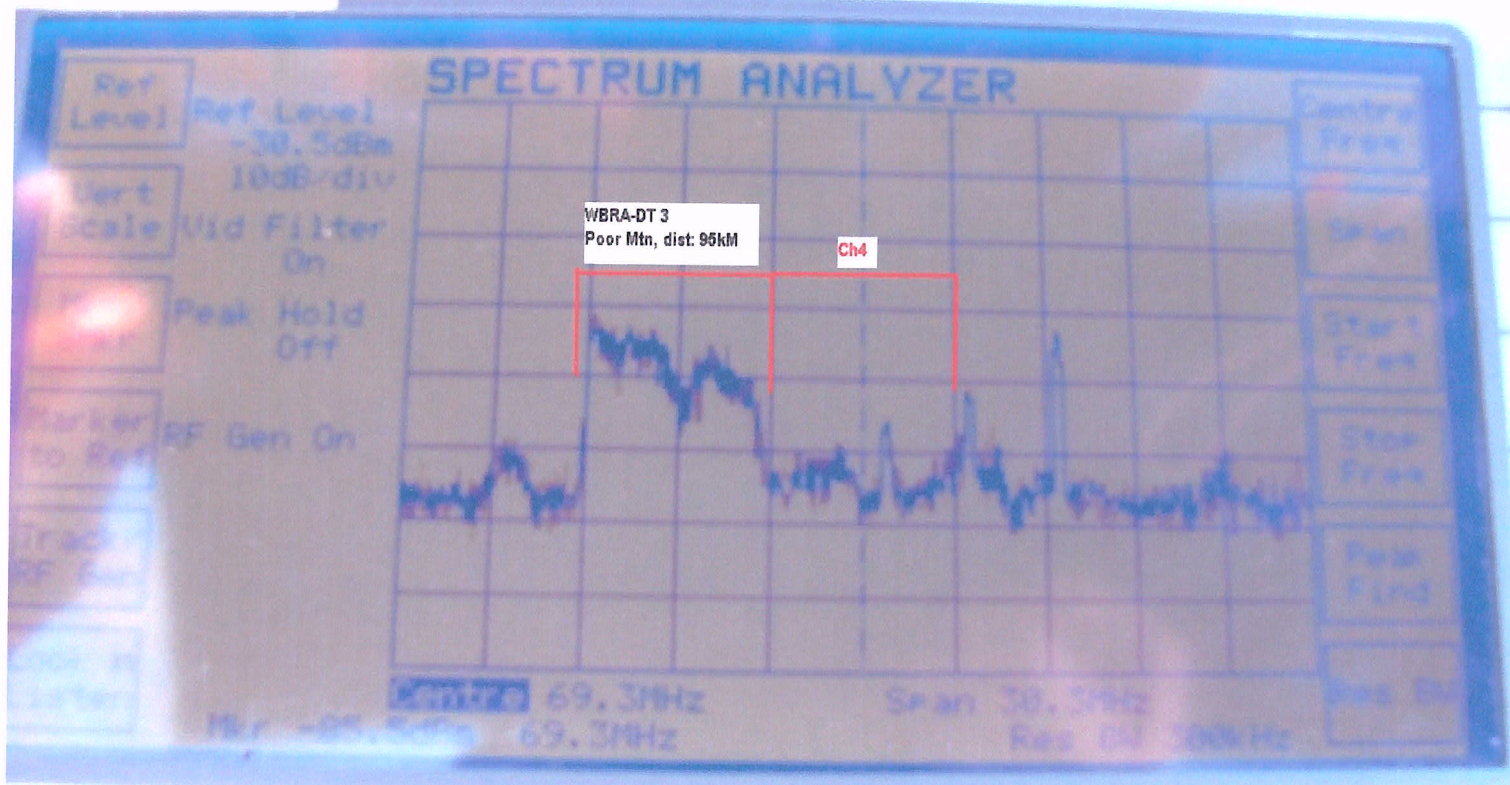


Receive location map 2 (detail of 19 Feb 2010 measurement location)



Reception Result, 19 Feb 2010

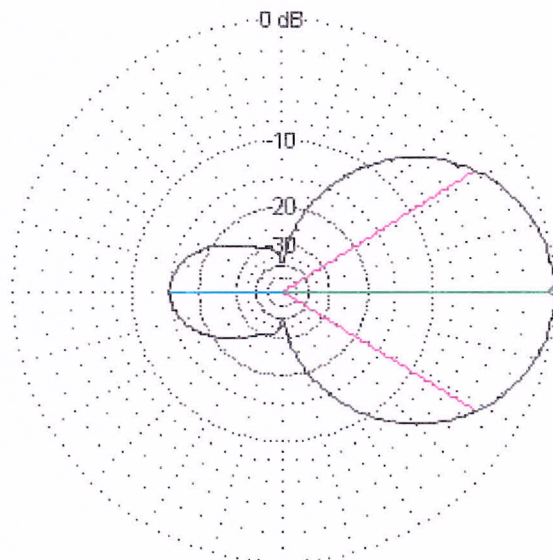
CALL DATE 04 June 08
CALL DATE 04 June 10
CH 294806.170
SR PL 4064



Subject: 70MHz yagi polar plot...
From: "Justin, Brian" <bjustin@harris.com>
Date: Tue, 23 Feb 2010 16:10:04 -0500
To: jarritt@vt.edu
CC: walzms@att.net

*** Total Field**

EZNEC



70.005 MHz

Azimuth Plot
Elevation Angle 0.0 deg.
Outer Ring 8.06 dBi

Cursor Az 0.0 deg.
Gain 8.06 dBi
0.0 dBmax

Slice Max Gain 8.06 dBi @ Az Angle = 0.0 deg.
Front/Back 15.0 dB
Beamwidth 64.0 deg.; -3dB @ 328.0, 32.0 deg.
Sidelobe Gain -6.94 dBi @ Az Angle = 180.0 deg.
Front/Sidelobe 15.0 dB

Free space plot shows 3-ele yagi aimed at 90degs, but actual antenna will be aimed at 60 degs true. Polarization will be horizontal. Yagi to be mounted on NE leg of tower with 4 foot wide tower blocking in the direction of South West.

-Brian