

TECHNICAL STATEMENT  
IN SUPPORT OF REQUEST FOR EXPERIMENTAL AUTHORIZATION  
FOR ASYMMETRICAL SIDEBAND OPERATION  
-14 DBC/-10 DBC LSB/USB DIGITAL POWER  
FM BROADCAST STATION WNTB  
TOPSAIL BEACH, NORTH CAROLINA  
CHANNEL 229A

1. This Technical Statement was prepared on behalf of FM Broadcast Station WNTB, Topsail Beach, NC, in support of a request for Experimental Authorization for asymmetrical sideband operation. The request is to authorize testing with -14 dBc, lower sideband (LSB), and -10 dBc, upper sideband (USB), digital IBOC emissions. The WNTB analog facility is authorized under FCC File No. BLH-20070216AAU. See Appendix for summary of WNTB facilities based on FCC Engineering Database.

2. The applicant requests experimental authorization for -14 dBc / -10 dBc LSB/USB digital power using the MP1 mode of the Iboquity IBOC standard. As demonstrated at Figure 2 herein, the WNTB facility meets the contour overlap requirements for protection of stations affected by the USB on Channel 230.\* Figure 1 is a tabulation of all the stations first-adjacent to WNTB within 200 km that were considered in the analysis.

3. The engineering contact information for WNTB is as follows:

Paul Knight  
Engineer  
1401 Commonwealth Drive  
Wilmington, NC 28403  
(910) 262-1570  
[paul.kni@me.com](mailto:paul.kni@me.com)

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\* See FCC *Order*, MM Docket 99-325, Released: January 29, 2010, at para. 20.

4. The station proposes asymmetrical digital IBOC operation with common amplification using its main transmitting antenna. The antenna will operate with a digital effective radiated power (ERP) of 0.12 kW (LSB) and 0.30 kW (USB).

5. Use of MP1 service mode and -14 dBc/-10 dBc LSB/USB asymmetric digital sideband power levels are to be employed.

6. According to the *National Radio Systems Committee, NRSC-G202, 'FM IBOC Total Digital Sideband Power for Various Configurations,'* the total integrated power for -14 dBc/-10 dBc asymmetrical side-band operation in service mode MP1 is -11.6 dBc, which is equivalent to total integrated digital power of 0.415 kW. The proposed total digital transmitter power output (TPO) is 0.223 kW. Considering all system losses and antenna gain, the nominal non-directional total integrated digital ERP is calculated to be 0.415 kW. The analog TPO is 3.229 kW, which results in a nominal analog ERP of 6.0 kW.

7. The applicant certifies that the proposed digital operation will comply with the latest transmission system specifications of the Ibiqity HD Radio System.



Louis R. du Treil, Jr.

du Treil, Lundin & Rackley, Inc.  
5212 Station Way  
Sarasota, Florida 34233

March 31, 2023

# FM Inquiry LMS

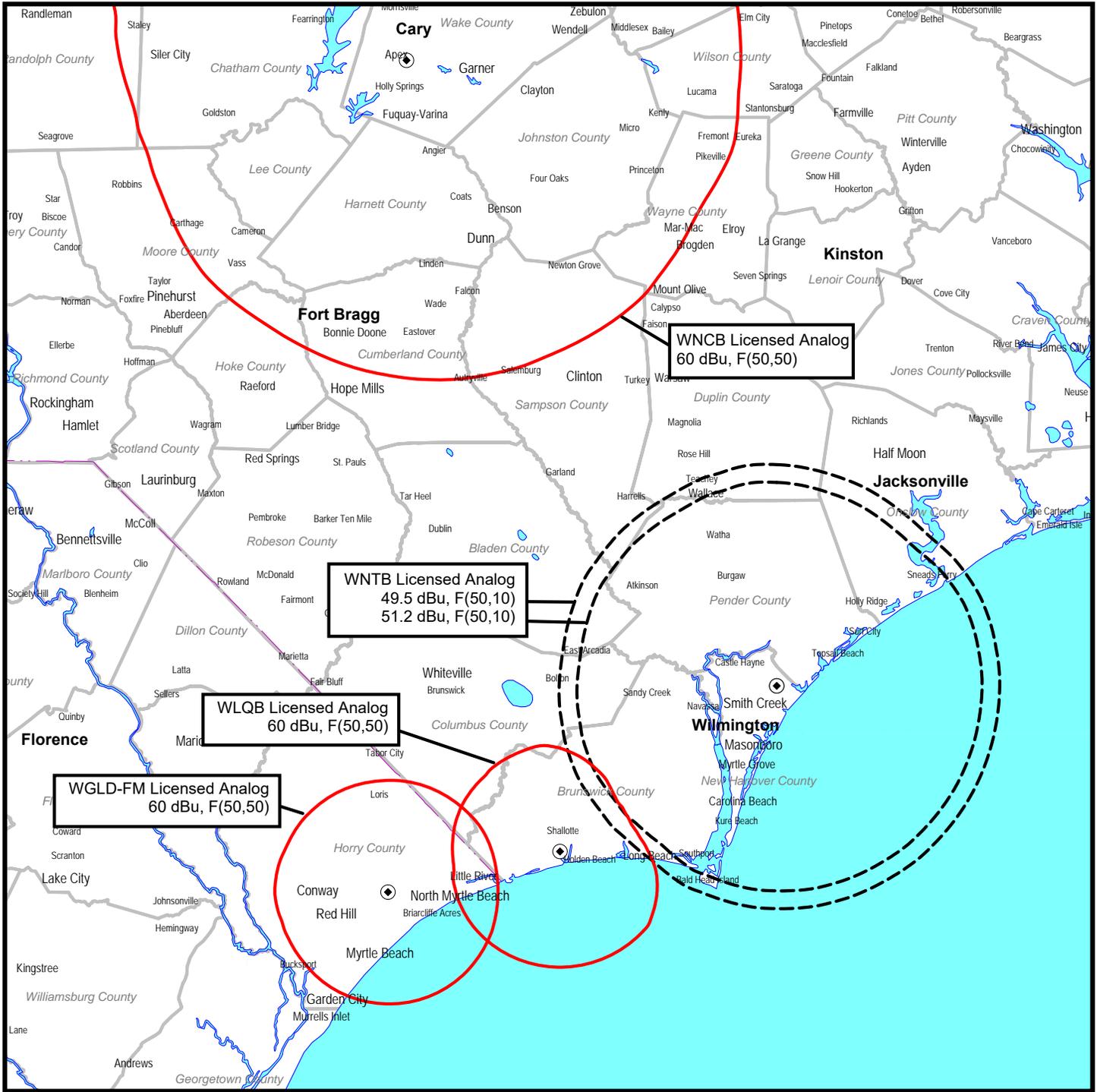
du Treil, Lundin, & Rackley, Inc., Sarasota, Florida



Listed stations are within 200 km of the point at 034-18-04 077-48-07.

Callsign	Chan.	Class	Service	Status	City	State	Latitude	Longitude	Distance (km)	
ARN		DA	Antenna ID	Rotation	ERP (kW)	HAAT (m)	RCAMSL (m)	Rec. Type	Facility ID	Bearing (deg)
<b>WLQB</b>	<b>228</b>	<b>A</b>	<b>FM</b>	<b>MOD</b>	<b>OCEAN ISLE BEACH</b>	<b>NC</b>	<b>033-55-37.6</b>	<b>078-23-47</b>	<b>68.77</b>	
<b>BMLH-20170502AAC</b>		<b>DRL</b>	<b>14716</b>	<b>0</b>	<b>6</b>	<b>100</b>	<b>106</b>	<b>C</b>	<b>3122</b>	<b>232.93</b>
<b>WGLD-FM</b>	230	A	FM	L2C	CONWAY	SC	033-50-07.6	078-52-05	111.15	
BLH-19960529KB		NDIR			3.7	128	135	C	17485	242.5
<b>WNCB</b>	230	C	FM	L2C	CARY	NC	035-42-50.6	078-49-03	182.11	
BLH-20080416AAZ		DRL	71375		100	453	557	C	53596	329.8

Figure 2



## IBOC PERMISSIBLE ERP ANALYSIS

FM STATION WNTB  
TOPSAIL BEACH, NORTH CAROLINA  
CHANNEL 229A (93.7 MHZ)

du Treil, Lundin & Rackley, Inc. Sarasota, Florida 34237

# FCC ENGINEERING DATABASE FACILITIES FOR WNTB



du Treil, Lundin, & Rackley, Inc., Sarasota, Florida

## FM Inquiry LMS

**Callsign:** WNTB      **Service:** FM    **Status:** L2C      **App. Status:** GRA      **Rec. Type:** C  
**Channel:** 229      **Class:** A      **Application File No.:** BLH-20070216AAU      **FRN:** 0012810867  
**Fac. ID:** 73954      **Loc Record ID:** 21e6d42809b0445ab569c1b6063ebeb7      **Rule 73.215 Auth. Req.:** Y  
**City:** TOPSAIL BEACH      **State:** NC    **Country:** US      **CP Expiration Date:**  
**Party Name:**      **Last Change Date:** 2007-03-16

<b>Latitude (NAD 83):</b> 034-18-04.6	<b>Vertical HAAT (m):</b> 99.9	<b>Vertical Height AGL (m):</b> 90.1
<b>Longitude (NAD 83):</b> 077-48-05.9	<b>Horizontal HAAT (m):</b> 99.9	<b>Horizontal Height AGL (m):</b> 90.1
<b>Vertical RCAMSL (m):</b> 104.4	<b>Maximum HAAT (m):</b> 104	<b>Overall Height AGL (m):</b> 106.7
<b>Horizontal RCAMSL (m):</b> 104.4	<b>Vertical ERP (kW):</b> 6	<b>Site Elevation AMSL (m):</b>
	<b>Horizontal ERP (kW):</b> 6	
	<b>Max. Vertical ERP (kW):</b> 6	
	<b>Max. Horizontal ERP (kW):</b> 6	

**Antenna Type:** NDIR    **Antenna ID:**      **Rotation (°):**

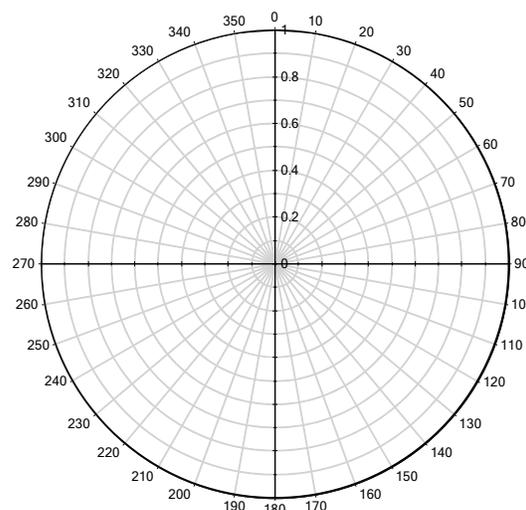
0° 1.000	90° 1.000	180° 1.000	270° 1.000
10° 1.000	100° 1.000	190° 1.000	280° 1.000
20° 1.000	110° 1.000	200° 1.000	290° 1.000
30° 1.000	120° 1.000	210° 1.000	300° 1.000
40° 1.000	130° 1.000	220° 1.000	310° 1.000
50° 1.000	140° 1.000	230° 1.000	320° 1.000
60° 1.000	150° 1.000	240° 1.000	330° 1.000
70° 1.000	160° 1.000	250° 1.000	340° 1.000
80° 1.000	170° 1.000	260° 1.000	350° 1.000

**Antenna Make:** ERI  
**Antenna Model:** LP-4E

**Last Change Date:**

**Ant. Record ID:** 21e6d42809b0445ab569c1b6063ebeb7

*Note: Rotation or tilt is not applied to the pattern shown*



<b>Type:</b> GTOWER	<b>ASRN:</b> 1218146	<b>FAA Study No.:</b> 2016-ASO-14914-OE	<b>Structure Height (m):</b> 114.3
<b>Latitude (NAD 83):</b> 34-18-04.6	<b>Date Received:</b> 03/20/2018	<b>Structure Height (ft):</b> 375.0	
<b>Longitude (NAD 83):</b> 077-48-05.9	<b>Date Entered:</b> 03/20/2018	<b>Ground Elevation (m):</b> 14.3	
	<b>Date Issued:</b> 03/20/2018	<b>Ground Elevation (ft):</b> 46.9	
	<b>Date Constructed:</b> 11/10/2000	<b>Overall Height AGL (m):</b> 114.3	
	<b>Date Dismantled:</b>	<b>Overall Height AGL (ft):</b> 375.0	
<b>Struct. Address:</b>		<b>Overall Height AMSL (m):</b> 128.6	
North of Route 17		<b>Overall Height AMSL (ft):</b> 421.9	
Wrightsville Beach	NC		
<b>Entity Name:</b> Vertical Bridge S3 Assets, LLC			

RF HAZARD STATEMENT  
IN SUPPORT OF REQUEST FOR EXPERIMENTAL AUTHORIZATION  
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-14 DBC/-10 DBC LSB/USB DIGITAL POWER  
FM BROADCAST STATION WNTB  
TOPSAIL BEACH, NORTH CAROLINA  
CHANNEL 229A

With respect to the potential for human exposure to radio frequency (RF) energy, calculations prepared in accordance with FCC Bulletin OET-65 (Edition 97-01) indicate that the proposal will not result in human exposure to RF energy at ground level in excess of FCC standards. Power density calculations were conducted at 2-m above ground based on the following conservative assumptions, with the following results:

Call Sign	Channel	Average ERP (kW)	Distance (m)	Relative Field Factor*	FCC Limit† (mW/cm <sup>2</sup> )	Percentage of Limit
WNTB (digital)	229 (93.7 MHz)	0.415 kW (H&V); 0.83 kW (Total)	90.1	1.0	200	1.79%

As indicated above, the exposure to RF energy at 2-m above ground level will not exceed 1.79% of the FCC limit for general population / uncontrolled exposure. Therefore, the proposal complies with the FCC limits for human exposure to RF energy and it is categorically excluded from environmental processing. The applicant, in coordination with other users of the transmission facility, shall reduce power or cease operation as necessary to protect persons having access to the tower or antenna from RF energy in excess of the FCC guidelines.

\* This is a worst-case estimate of the relative field factor in the downward direction for this facility.  
† for general population/uncontrolled environments