

Milledgeville, Georgia
Application for Engineering Special Temporary Authority
for FM Station WGUR
On Channel 205
by
Georgia College & State University

Exhibit 4
Comprehensive Technical Exhibit

November 2011

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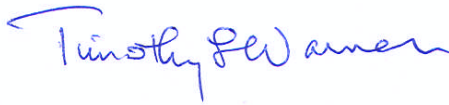
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Declaration

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 4, Comprehensive Technical Exhibit, for Georgia College & State 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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Narrative

This Exhibit supports an application for Special Temporary Authority (“STA”) for FM station WGUR, Milledgeville, Georgia. WGUR operates from licensed facilities attached to a campus building. That tower is being removed as part of building renovations. WGUR proposes temporary operation from an existing roof top tower on a nearby campus building. This Exhibit supports the request for STA. A separate application for new permanent facilities is being prepared. Figure 1 shows that the proposed STA operation will not extend the primary service contour beyond the licensed service contour.

The proposed modified facilities create no new mutual exclusivities as shown in the allocation table in this exhibit. However, the WGUR licensed facilities have third adjacent channel overlap with WRGC-FM, Milledgeville, Georgia.¹

Grandfathered Third Adjacent Contour Overlap with WRGC-FM

Figure 2 shows the licensed 60 dBu F(50,50) coverage area and the proposed STA 60 dBu F(50,50) coverage area, and the corresponding 100 dBu F(50,10) interference areas to WRGC-FM. As shown on Figure 2, the WGUR 60 dBu service contours and 100 dBu interference contours are completely within the WRGC-FM 60 dBu service contour. The proposed STA operation would reduce the interference area to WRGC-FM from 0.57 square kilometers to 0.42 square kilometers. Of the STA interference area, 0.27 square kilometers is

¹ WGUR currently operates with a small, grandfathered third adjacent channel overlap with WRGC-FM, which is also licensed to the University. The STA will result in no new overlap, and the current overlap will be reduced by the requested STA operations.

existing interference area, and 0.15 square kilometers is new area. The transmitter site, and the interference area, move away from WRGC-FM.

WGUR also receives interference from the WRGC-FM licensed facilities, as permitted for Class D facilities. The proposed STA operation will reduce the area of overlap between the WRGC-FM 100 dBu F(50,10) contour and the WGUR service contour from 3.07 square kilometers to 1.53 square kilometers. No new overlap is proposed.

For both interference created and interference received, the proposed STA operation (1) reduces the area of contour overlap, (2) creates no new areas of overlap, and (3) moves the area of overlap farther from the licensed WRGC-FM facilities.

The STA proposes an increase in height above ground. For all except a small area to the Southeast, the height above average terrain remains less than 30 meters. The proposed Effective Radiated Power is decreased so that the proposed 60 dBu F(50,50) service contour remains within the licensed service contour.

It is anticipated that the application for modified facilities will be granted prior to the expiration of the proposed STA.

Allocations

This application proposes service to Milledgeville, Georgia, on channel 205. An updated Table 2: Allocations is included in this exhibit with a list of the stations, construction permits, allocations, and applications studied. All are protected by this application, except as noted above for WRGC-FM. WGUR is a Class D facility which has no requirement to avoid incoming interference overlap of contours. The allocations table was prepared using the NED 03 arcsecond terrain database which is described below.

Height Above Average Terrain Calculations

Transmitting antenna height above average terrain (“HAAT”) and the distance to the predicted 60.0 dBu F(50,50) contour are tabulated in Table 1. Terrain data is extracted from the latest available 3 arcsecond database, described below. The elevation of terrain along the 8 radials are extracted by a computer program which complies with the averaging methods of §73.312(d).

Table 1: Height Above Average Terrain

Bearing (degrees)	60 dBu F(50,50) (kilometers)	HAAT (meters)
0.0	4.00	-1.6
45.0	4.00	-5.0
90.0	4.00	-7.4
135.0	4.13	32.3
180.0	4.00	8.1
225.0	4.00	-8.9
270.0	4.00	3.0
315.0	4.00	3.4
Average		3.0

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.

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.

Table 2: Allocations

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Asheville, North Carolina

Allocation Study
Georgia College & State University

REFERENCE		CH# 205D - 88.9 MHz, Pwr= 0.026 kw, HAAT= 3.0 M, COR= 121 M								DISPLAY DATES		
33 04 53.0 N.		Average Protected F(50-50)= 4.0 km								DATA 11-15-11		
83 13 52.0 W.		Omni-directional								SEARCH 11-15-11		
CH CITY	CALL	TYPE	ANT STATE	AZI. <--	DIST FILE #	LAT. LNG.	Pwr(kw) HAAT(M)	INT(km) COR(M)	PRO(km) LICENSEE	*IN* (Overlap	*OUT* in km)	
205C3 Macon	WBKG	LIC	DCX GA	221.0 40.8	46.7 BLED20050510ABV	32 45 51.0 83 33 32.0	5.500 153	80.9 264	27.3 American Family Association	-38.2*<	6.6	
205C3 Athens	WMSL	LIC	DC GA	345.3 165.1	94.7 BMLLED20051128AFV	33 54 25.0 83 29 35.0	20.000 91	109.7 320	38.6 Prince Avenue Christian School	-18.9*<	43.4	
205D Milledgeville To Channel 220A	WGUR	LIC	HN GA	195.6 15.6	0.3 BLED1417	33 04 44.0 83 13 55.0	0.037 1	13.9 115	4.4	-17.6*	-16.8*	
202C3 Milledgeville	WRGC-FM	LIC	DEX GA	250.1 70.1	4.4 BLED20110217AAV	33 04 05.0 83 16 30.0	4.800 117	0.9 239	12.3 Georgia College & State Univ	-0.5<	-8.3*<	
06 2E Wrens	WCES-TV	LI	HN GA	77.1 257.6	90.3 BLEDT20090612ACF	33 15 33.0 82 17 09.0	7.900 429	4.2 544	85.2 Georgia Public Telecommunions	89.4R	0.9M	
206A Smithboro	WAKP	LIC	DV GA	313.5 133.4	38.0 BLED20100726AIQ	33 19 00.0 83 31 40.0	2.900 67	29.1 219	19.8 Network of Glory, Inc.	5.0	12.5	
204A Sparta	WJDS	LIC	V GA	39.6 219.7	33.5 BLED20001115AAE	33 18 48.0 83 00 05.0	2.000 41	20.1 194	13.5 Augusta Radio Fellowship Inc	9.4	14.2	
205C2 Claxton	NEW	CP	DEX GA	123.1 303.9	157.1 BNPED20071022BIT	32 18 06.0 81 49 57.0	45.000 76	121.1 123	36.4 Radio Training Network, Inc	32.0	107.9	
203D Macon	W203BH	LIC	C GA	237.4 57.1	49.2 BLFT20011031ABN	32 50 31.0 83 40 29.0	0.010 129	0.2 247	6.4 Calvary Chapel Of Twin Falls	45.0	41.3	
205C2 The Rock	WKEU-FM	LIC	DC GA	264.6 84.0	106.5 BLED19991215ABA	32 59 11.0 84 21 56.0	5.000 233	60.4 466	19.5 Georgia Public Radio, Inc.	42.1	74.2	
206C1 Aiken	WLJK	LIC	HN SC	74.1 254.9	134.7 BLED19890814KA	33 24 18.0 81 50 15.0	10.000 419	88.3 498	59.2 South Carolina Educational	42.4	69.9	
206A Forsyth	WBIB-FM	LIC	CX GA	267.3 86.9	67.5 BLED20101220AAF	33 03 01.0 83 57 10.0	0.100 53	13.2 234	9.5 Believers In Broadcasting,	50.3	52.3	
206D Dublin	W206BP	LIC	C GA	150.6 330.8	67.9 BLFT20070122AJJ	32 32 53.0 82 52 31.0	0.038 61	10.4 138	7.3 Edgewater Broadcasting, Inc	52.9	54.1	
208C2 Thomson	WQAI	LIC	DEX GA	41.7 222.1	98.6 BLED20091105ADM	33 44 32.0 82 31 17.0	49.000 145	4.5 275	43.0 Educational Media Foundation	90.2	55.3	
202A Dublin	WAWH	LIC	C GA	156.9 337.0	65.2 BLED20000222ABG	32 32 27.0 82 57 27.0	0.400 25	1.4 105	8.0 American Family Association	59.8	56.8	
203C1 Atlanta	WRAS	LIC	CN GA	304.6 124.0	119.1 BLED19870417KD	33 41 04.0 84 17 23.0	100.000 133	7.0 401	58.2 Georgia State University	108.0	59.3	
202D Warner Robins Translator for KAWZ, Twin Falls, ID. Amended 971229	W202BA	LIC	CN GA	216.1 35.8	69.9 BLFT19980715TD	32 34 19.0 83 40 15.0	0.013 116	0.3 223	6.9 Calvary Chapel Of Twin Falls	65.7	62.6	

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

WGUR

BLED1417

Latitude: 33-04-44 N

Longitude: 083-13-55 W

ERP: 0.037 kW

Channel: 205 88.9 MHz

AMSL Height: 115.0 m

Elevation: 98.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

WGURsta

application

Latitude: 33-04-53 N

Longitude: 083-13-52 W

ERP: 0.026 kW

Channel: 237 95.3 MHz

AMSL Height: 121.0 m

Elevation: 98.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

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STA 60 dBu F(50,50)

WGUR

Milledesville

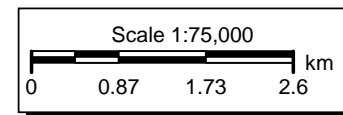
WGURsta

Baldwin

Licensed 60 dBu F(50,50)

WGURLicensed and STA Contours
November 2011

Figure 1



WGUR

BLED1417

Latitude: 33-04-44 N

Longitude: 083-13-55 W

ERP: 0.037 kW

Channel: 205 88.9 MHz

AMSL Height: 115.0 m

Elevation: 98.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

Prop Model: None

Overlap Areas

■ Overlap Area Removed

■ Overlap Area Maintained

■ Overlap Area Extended

WGURsta

application

Latitude: 33-04-53 N

Longitude: 083-13-52 W

ERP: 0.026 kW

Channel: 237 95.3 MHz

AMSL Height: 121.0 m

Elevation: 98.0 m

Horiz. Pattern: Omni

Vert. Pattern: No

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WRGC-FM 60 dBu F(50,50)

WGUR STA 60 dBu F(50,50)

WGUR STA 100 dBu F(50,10)

Milledgeville

WGUR Licensed 100 dBu F(50,10)

WRGC-FM

WRGC-FM 100 dBu F(50,10)

Licensed 60 dBu F(50,50)

WGUR

Third Adjacent Channel Overlap

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Figure 2

