

ENGINEERING EXHIBIT

Digital Low Power Television Station Application for Minor Modification of Licensed Facility prepared for

Gray Television Licensee, LLC
W33EU-D Athens, GA
Facility ID 182356
Ch. 33 15 kW Directional

Gray Television Licensee, LLC (“Gray”) is the licensee of digital Low Power Television station W33EU-D, Channel 33, Facility ID 182356, Athens GA. W33EU-D is licensed to operate at 0.6 kW effective radiated power (“ERP”) with a directional antenna (file# 0000189903). *Gray* herein seeks a minor modification Construction Permit to relocate W33EU-D and to utilize a different directional antenna pattern at increased ERP and antenna height.

The proposed facility will employ a new antenna to be side-mounted on the tower structure associated with FCC Antenna Structure Registration number 1022700, located 26.9 km (16.7 miles) from the licensed site. No change to the overall structure height is proposed.

The proposed antenna is a Dielectric model TLP-8H/VP having elliptical polarization. The proposed ERP is 15 kW horizontally polarized and 4.5 kW vertically polarized using a “full service” out of channel emission mask. A plot of the directional antenna’s azimuthal pattern is supplied in Figure 1.

Figure 2 depicts the coverage contour of the proposed facility as well as that of the licensed facility, demonstrating compliance with §73.3572 for a minor change. Since the proposed 51 dB μ contour encompasses that of the licensed facility, no service loss area will be created. Considerable service improvement will result as the population within the 51 dB μ contour increases to 342,541 persons (2010 census), which is 6558 percent of the 5,223 persons within the licensed W33EU-D facility’s 51 dB μ contour.

Interference study per OET Bulletin 69¹ shows that the proposal complies with the FCC's interference protection requirements toward all digital television, television translator, LPTV, and Class A stations. FCC processing of this proposal is requested using a 1.0 km cell size and 0.1 km terrain profile increment. The results, summarized in Table 1, show that any new interference does not exceed the FCC's interference limits (0.5 percent to full power and Class A stations, and 2.0 percent to secondary stations) to any facility.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed facility was evaluated for human exposure to RF energy using the procedures outlined in the FCC's OET Bulletin Number 65. Based on OET-65 equation (10) and 25 percent antenna relative field in downward elevations (pattern data shows 25 percent or less relative field at angles 10 to 90 degrees below the antenna), the calculated power density attributable to the proposed facility at locations near the transmitter site at a height of two meters above ground level is $4.6 \mu\text{W}/\text{cm}^2$, which is 1.2 percent of the general population / uncontrolled maximum permissible exposure limit. This is well below the five percent threshold limit described in §1.1307(b) regarding sites with multiple emitters, categorically excluding the applicant from responsibility for taking any corrective action in the areas where the proposal's contribution is less than five percent.

The general public will not be exposed to RF levels attributable to the proposal in excess of the FCC's guidelines. RF exposure warning signs will continue to be posted. With respect to worker safety, the applicant will coordinate exposure procedures with all pertinent stations and will reduce power or cease operation as necessary to protect persons having access to the site, tower, or antenna from RF electromagnetic field exposure in excess of FCC guidelines. This exhibit is limited to the evaluation of exposure to RF electromagnetic field. No increase in structure height is proposed.

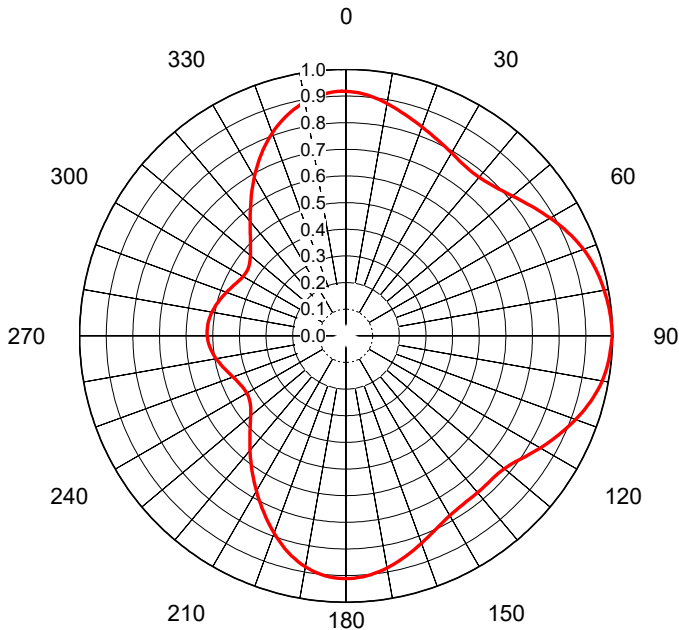
¹FCC Office of Engineering and Technology Bulletin number 69, *Longley-Rice Methodology for Evaluating TV Coverage and Interference*, February 6, 2004 ("OET-69"). This analysis employed the FCC's current "TVStudy" software with the default application processing template settings, 1 km cell size, and 0.1 km terrain increment. Comparisons of various results of this computer program (run on a Mac processor) to the FCC's implementation of TVStudy show excellent correlation.

List of Attachments

Figure 1	Antenna Azimuthal Pattern
Figure 2	Coverage Contour Comparison
Table 1	TVStudy Analysis of Proposal
Form 2100	Saved Version of Engineering Sections of FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	May 5, 2022	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600



AZIMUTH PATTERN Horizontal Polarization

Proposal No. **20220504jmd**
Date **4-May-22**
Call Letters **Ch-33 LPTV**
Channel **33**
Frequency **587 MHz**
Antenna Type **TLP-8H/VP**
Gain **1.72 (2.36dB)**
Calculated

Pattern Number **TLP-H-33 Hpol**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.918	36	0.777	72	0.958	108	0.931	144	0.769	180	0.911	216	0.604	252	0.460	288	0.485
1	0.917	37	0.776	73	0.963	109	0.924	145	0.770	181	0.911	217	0.593	253	0.464	289	0.481
2	0.915	38	0.776	74	0.967	110	0.917	146	0.771	182	0.910	218	0.582	254	0.468	290	0.477
3	0.913	39	0.776	75	0.970	111	0.910	147	0.772	183	0.909	219	0.571	255	0.473	291	0.474
4	0.911	40	0.777	76	0.973	112	0.903	148	0.774	184	0.906	220	0.560	256	0.477	292	0.470
5	0.907	41	0.779	77	0.976	113	0.896	149	0.776	185	0.904	221	0.550	257	0.482	293	0.466
6	0.904	42	0.781	78	0.979	114	0.888	150	0.779	186	0.900	222	0.539	258	0.486	294	0.463
7	0.900	43	0.784	79	0.982	115	0.881	151	0.783	187	0.896	223	0.529	259	0.491	295	0.459
8	0.895	44	0.787	80	0.984	116	0.873	152	0.786	188	0.891	224	0.519	260	0.495	296	0.456
9	0.890	45	0.791	81	0.986	117	0.865	153	0.791	189	0.886	225	0.510	261	0.499	297	0.453
10	0.885	46	0.795	82	0.989	118	0.858	154	0.795	190	0.880	226	0.500	262	0.503	298	0.450
11	0.880	47	0.800	83	0.991	119	0.850	155	0.800	191	0.873	227	0.492	263	0.506	299	0.448
12	0.875	48	0.805	84	0.993	120	0.842	156	0.805	192	0.866	228	0.483	264	0.509	300	0.446
13	0.870	49	0.811	85	0.994	121	0.834	157	0.811	193	0.858	229	0.475	265	0.512	301	0.445
14	0.865	50	0.816	86	0.996	122	0.827	158	0.817	194	0.850	230	0.467	266	0.515	302	0.444
15	0.859	51	0.822	87	0.997	123	0.819	159	0.823	195	0.841	231	0.460	267	0.517	303	0.444
16	0.854	52	0.829	88	0.998	124	0.811	160	0.828	196	0.831	232	0.454	268	0.519	304	0.445
17	0.849	53	0.835	89	0.999	125	0.804	161	0.835	197	0.821	233	0.448	269	0.520	305	0.447
18	0.844	54	0.842	90	1.000	126	0.797	162	0.841	198	0.810	234	0.443	270	0.521	306	0.450
19	0.839	55	0.849	91	0.998	127	0.791	163	0.847	199	0.800	235	0.439	271	0.522	307	0.453
20	0.834	56	0.856	92	0.996	128	0.785	164	0.853	200	0.788	236	0.436	272	0.522	308	0.458
21	0.830	57	0.863	93	0.994	129	0.780	165	0.858	201	0.777	237	0.433	273	0.522	309	0.463
22	0.825	58	0.870	94	0.993	130	0.776	166	0.864	202	0.766	238	0.432	274	0.521	310	0.468
23	0.821	59	0.878	95	0.991	131	0.773	167	0.870	203	0.754	239	0.431	275	0.520	311	0.475
24	0.816	60	0.885	96	0.989	132	0.770	168	0.875	204	0.742	240	0.430	276	0.519	312	0.482
25	0.812	61	0.892	97	0.986	133	0.769	169	0.880	205	0.731	241	0.430	277	0.517	313	0.490
26	0.808	62	0.899	98	0.984	134	0.768	170	0.885	206	0.719	242	0.431	278	0.515	314	0.498
27	0.804	63	0.906	99	0.980	135	0.768	171	0.890	207	0.707	243	0.432	279	0.513	315	0.507
28	0.800	64	0.913	100	0.977	136	0.768	172	0.894	208	0.696	244	0.434	280	0.511	316	0.517
29	0.796	65	0.919	101	0.972	137	0.768	173	0.898	209	0.684	245	0.436	281	0.508	317	0.527
30	0.793	66	0.926	102	0.968	138	0.768	174	0.901	210	0.673	246	0.438	282	0.505	318	0.537
31	0.789	67	0.932	103	0.962	139	0.768	175	0.904	211	0.661	247	0.441	283	0.502	319	0.548
32	0.786	68	0.938	104	0.957	140	0.768	176	0.906	212	0.650	248	0.444	284	0.499	320	0.560
33	0.783	69	0.944	105	0.951	141	0.768	177	0.909	213	0.638	249	0.448	285	0.496	321	0.571
34	0.781	70	0.949	106	0.945	142	0.768	178	0.910	214	0.627	250	0.452	286	0.492	322	0.584
35	0.779	71	0.954	107	0.938	143	0.769	179	0.911	215	0.615	251	0.456	287	0.489	323	0.596

Figure 1
Antenna Azimuthal Pattern
W33EU-D Athens, GA
Facility ID 182356
Ch. 33 15 kW Directional

prepared for
Gray Television Licensee, LLC

May, 2022

prepared for
Gray Television Licensee, LLC

May, 2022

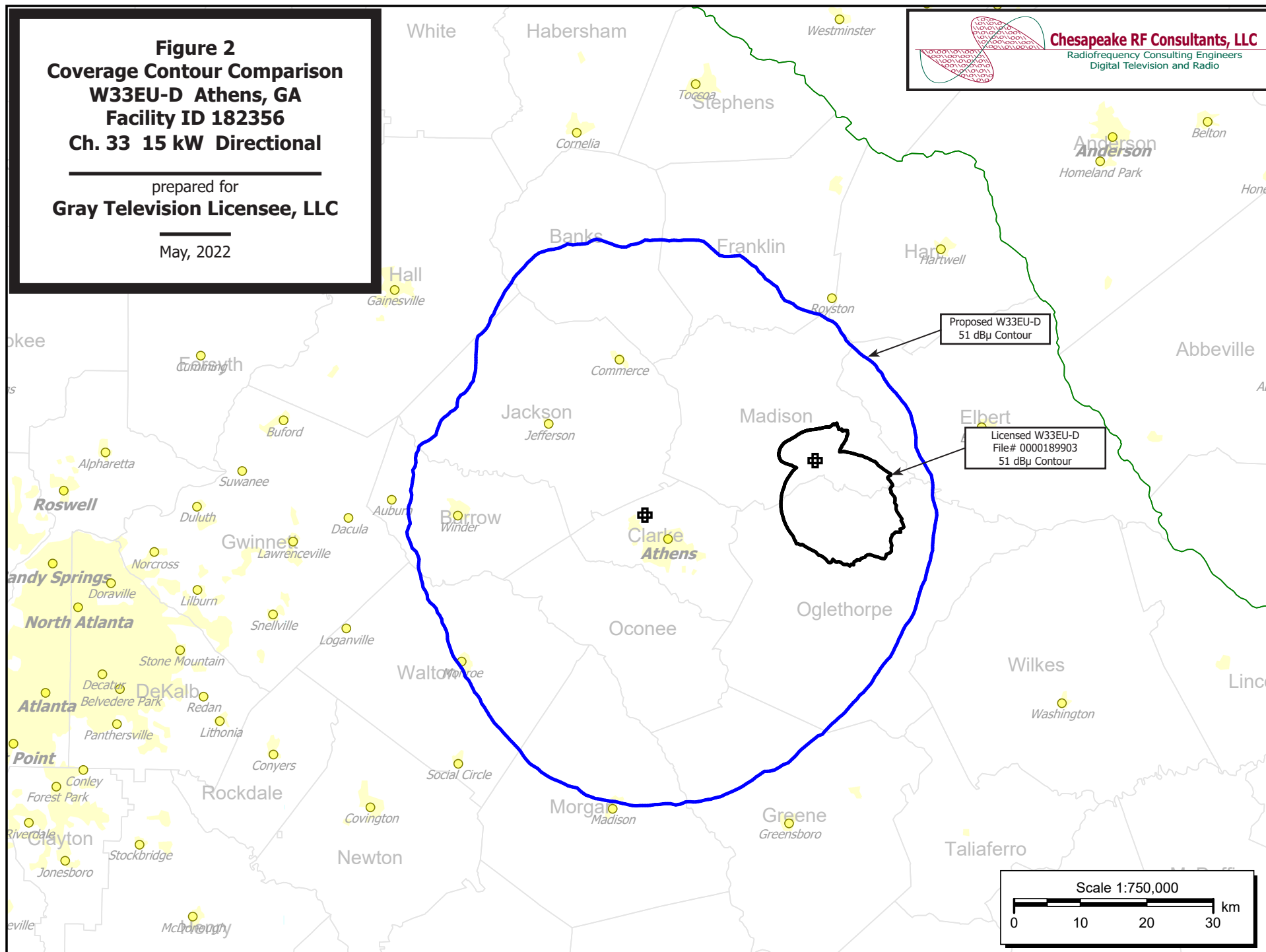


Table 1 W33EU-D TVStudy Analysis of Proposal (page 1 of 6)



tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: W33EU-D 1022700_TLP-H, Model: Longley-Rice
Start: 2022.05.05 10:24:52

Study created: 2022.05.05 10:24:52

Study build station data: LMS TV 2022-05-05

Proposal: W33EU-D D33 LD APP ATHENS, GA
File number: W33EU-D 1022700 TLP-H
Facility ID: 182356
Station data: User record
Record ID: 4390
Country: U.S.

Build options:
Protect pre-transition records not on baseline channel

Search options:
Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	WTBS-LD	N26-	TX	LIC	ATLANTA, GA	BLTTL20000620AEP	93.5 km
Yes	WSB-TV	D32	DT	LIC	ATLANTA, GA	BLANK0000153268	90.9
No	W32FV-D	D32	LD	LIC	COLUMBUS, GA	BLANK0000180159	218.6
No	W32FE-D	D32	LD	LIC	HARTWELL & ROYSTON, GA	BLANK0000153394	56.5
No	W32FN-D	D32	LD	LIC	MACON, GA	BLANK0000179563	138.9
No	W32FI-D	D32	LD	LIC	BREVARD, NC	BLANK0000074959	148.1
No	W32EO-D	D32	LD	LIC	TRYON, ETC., NC	BLANK0000119355	177.5
No	WPXH-TV	D33	DT	LIC	HOOVER, AL	BLANK0000105366	318.4
No	WFRZ-LD	D33	LD	LIC	MONTGOMERY, AL	BLANK0000081666	313.2
No	WDFX-TV	D33	DT	CP	OZARK, AL	BLANK0000035653	371.7
No	WDFX-TV	D33	DT	LIC	OZARK, AL	BLCDT20050915APH	371.7
No	WNXG-LD	D33	LD	LIC	TALLAHASSEE, FL	BLANK0000129630	387.1
Yes	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086	91.4
Yes	W33ER-D	D33	LD	CP	AUGUSTA, GA	BLANK0000155485	120.6
No	W33ES-D	D33	LD	LIC	CHULA, GA	BLANK0000179394	298.8
No	WCAC-LD	D33	LD	LIC	LAGRANGE, GA	BLDTL20130411AAA	182.7
Yes	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679	137.2
No	WDID-LD	D33	LD	LIC	SAVANNAH, GA	BLANK0000106516	287.4
No	WKHA	D33	DT	LIC	HAZARD, KY	BLANK0000075043	356.2
No	W33EH-D	D33	LD	LIC	BLACK MOUNTAIN, NC	BLANK0000082269	198.8
No	WTNG-CD	D33	DC	LIC	LUMBERTON-PEMBROKE, NC	BLANK0000081109	403.0
No	WUNL-TV	D33	DT	LIC	WINSTON-SALEM, NC	BLANK0000121301	382.8
Yes	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852	228.7
No	W33DN-D	D33	LD	LIC	FLORENCE, SC	BLANK0000179271	339.4
Yes	WNGS-LD	D33	LD	LIC	GREENVILLE, SC	BLANK0000059653	139.8
No	WPDP-CD	D33-	DC	LIC	CLEVELAND, TN	BLANK0000081661	168.2
No	WPGD-TV	D33	DT	LIC	HENDERSONVILLE, TN	BMLCDT20131125BGF	397.9
No	WKXT-LD	D33	LD	CP	Knoxville, TN	BLANK0000108601	227.9
No	WKXT-LD	D33	LD	LIC	Knoxville, TN	BLANK0000178491	227.9
Yes	WATC-DT	D34	DT	LIC	ATLANTA, GA	BLANK0000107129	96.1
No	W34FO-D	D34	LD	LIC	AUGUSTA, GA	BLANK0000179561	109.3
No	WXVK-LD	D34z	LD	CP	Columbus, GA	BLANK0000116354	221.6
No	WSST-TV	D34	DT	LIC	CORDELE, GA	BLANK0000064103	236.2
No	W34FX-D	D34	LD	CP	MONTROSE, GA	BLANK0000154775	138.9
No	W34FT-D	D34	LD	CP	WASHINGTON, GA	BNPDTL20090825BXG	67.7
No	W34EP-D	D34	LD	LIC	SAPPHIRE VALLEY,ETC., NC	BLANK0000119380	143.9
No	WNSC-TV	D34	DT	LIC	ROCK HILL, SC	BLANK0000105822	239.1
No	WVLT-TV	D34	DT	LIC	KNOXVILLE, TN	BLANK0000081956	227.9

No non-directional AM stations found within 0.8 km

Directional AM stations within 3.2 km:
WRFC 960 L DAN D ATHENS, GA BL19860624AA
WRFC 960 L DAN N ATHENS, GA BL19860624AA

Record parameters as studied:

Channel: D33
Mask: Full Service

Table 1 W33EU-D TVStudy Analysis of Proposal
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Latitude: 33 59 35.90 N (NAD83)
Longitude: 83 24 55.90 W
Height AMSL: 327.3 m
HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: DIE TLP-H 90.0 deg
Elev Pattern: Generic
Elec Tilt: 0.50

50.6 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	12.6 kW	93.4 m	41.6 km
45.0	9.52	98.9	40.8
90.0	15.0	108.4	44.1
135.0	8.94	119.5	42.5
180.0	12.4	116.8	43.9
225.0	3.96	104.0	37.0
270.0	4.07	93.1	35.9
315.0	3.96	96.6	36.2

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 104 m

Distance to Canadian border: 856.4 km

Distance to Mexican border: 1574.2 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 263.5 degrees Distance: 121.5 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 295.8 degrees Distance: 2044.5 km

Study cell size: 1.00 km
Profile point spacing: 0.10 km

Maximum new IX to full-service and Class A: 0.50%
Maximum new IX to LPTV: 2.00%

Interference to BLANK0000153268 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WSB-TV	D32	DT	LIC	ATLANTA, GA	BLANK0000153268	
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700 TLP-H	90.9 km
	WPCH-TV	D31	DT	LIC	ATLANTA, GA	BLANK0000152274	5.2
	WFSU-TV	D32	DT	LIC	TALLAHASSEE, FL	BLEDT20030730ACW	379.3
	WAXN-TV	D32	DT	LIC	KANNAPOLIS, NC	BLANK0000146859	372.1
	WNPX-TV	D32	DT	LIC	FRANKLIN, TN	BLANK0000087615	372.7
	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086	2.2
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679	133.9

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
30398.3 5,898,752	29157.7 5,813,636	28947.2 5,789,223	28814.9 5,761,921	0.46 0.47

Undesired	Total IX	Unique IX, before	Unique IX, after
W33EU-D D33 LD APP	143.2 36,066	132.3 27,302	
WPCH-TV D31 DT LIC	36.8 17,006	26.9 8,397	
WFSU-TV D32 DT LIC	17.0 2,523	16.0 2,523	
WAXN-TV D32 DT LIC	2.0 1,047	1.0 892	
WNPX-TV D32 DT LIC	12.1 1,128	12.1 1,128	
WIRE-CD D33 DC LIC	1.0 190	1.0 190	
WGNM D33 DT LIC	142.7 2,519	141.7 2,519	

Interference to BLANK0000130086 LIC scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
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Table 1 W33EU-D TVStudy Analysis of Proposal
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Desired:	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086			
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700	TLP-H	91.4	km
	WSB-TV	D32	DT	LIC	ATLANTA, GA	BLANK0000153268		2.2	
	WPXH-TV	D33	DT	LIC	HOOVER, AL	BLANK0000105366		228.2	
	WDFX-TV	D33	DT	CP	OZARK, AL	BLANK0000035653		305.5	
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679		132.0	
	WATC-DT	D34	DT	LIC	ATLANTA, GA	BLANK0000107129		36.8	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
6743.2	3,979,536	6577.9	3,923,154	4956.0	3,192,824	4952.1	3,191,697	0.08	0.04
Undesired		Total IX		Unique IX, before		Unique IX, after			
W33EU-D	D33 LD APP	23.7	9,522			3.9	1,127		
WSB-TV	D32 DT LIC	1262.5	572,183	1102.5	503,155	1099.5	502,705		
WPXH-TV	D33 DT LIC	8.9	4,415	1.0	34	1.0	34		
WGNM	D33 DT LIC	201.2	74,429	26.7	9,104	24.7	8,590		
WATC-DT	D34 DT LIC	439.3	199,787	233.6	112,126	233.6	112,126		

Interference to BLANK0000155485 CP scenario 1									
Desired:	Call	Chan	Svc	Status	City, State	File Number		Distance	
	W33ER-D	D33	LD	CP	AUGUSTA, GA	BLANK0000155485			
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700	TLP-H	120.6	km
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679		144.3	
	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852		141.7	
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
835.4	286,183	788.7	263,663	753.0	257,894	751.0	256,838	0.26	0.41
Undesired		Total IX		Unique IX, before		Unique IX, after			
W33EU-D	D33 LD APP	3.0	1,078			2.0	1,056		
WGNM	D33 DT LIC	26.8	1,924	24.8	463	24.8	463		
WRLK-TV	D33 DT LIC	10.9	5,306	8.9	3,845	7.9	3,823		

Interference to BLANK0000113679 LIC scenario 1									
Desired:	Call	Chan	Svc	Status	City, State	File Number		Distance	
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679			
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700	TLP-H	137.2	km
	WSB-TV	D32	DT	LIC	ATLANTA, GA	BLANK0000153268		133.9	
	WPXH-TV	D33	DT	LIC	HOOVER, AL	BLANK0000105366		312.6	
	WDFX-TV	D33	DT	CP	OZARK, AL	BLANK0000035653		259.7	
	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086		132.0	
	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852		286.0	
	WSST-TV	D34	DT	LIC	CORDELE, GA	BLANK0000064103		99.5	
	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
19541.2	744,848	19416.5	743,286	19319.6	737,897	19221.2	735,641	0.51	0.31
Undesired		Total IX		Unique IX, before		Unique IX, after			
W33EU-D	D33 LD APP	107.3	2,566			98.3	2,256		
WSB-TV	D32 DT LIC	11.9	1,448	0.0	0	0.0	0		
WPXH-TV	D33 DT LIC	3.0	105	1.0	86	1.0	86		
WDFX-TV	D33 DT CP	10.0	219	9.0	28	9.0	28		
WIRE-CD	D33 DC LIC	48.7	4,442	34.8	2,784	33.8	2,784		
WRLK-TV	D33 DT LIC	8.0	249	8.0	249	2.0	19		
WSST-TV	D34 DT LIC	30.2	584	30.2	584	30.2	584		

Interference to BLANK0000113679 LIC scenario 2									
Desired:	Call	Chan	Svc	Status	City, State	File Number		Distance	
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679			
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700	TLP-H	137.2	km
	WSB-TV	D32	DT	LIC	ATLANTA, GA	BLANK0000153268		133.9	
	WPXH-TV	D33	DT	LIC	HOOVER, AL	BLANK0000105366		312.6	
	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086		132.0	

Table 1 W33EU-D TVStudy Analysis of Proposal
(page 4 of 6)



WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852	286.0
WSST-TV	D34	DT	LIC	CORDELE, GA	BLANK0000064103	99.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
19541.2 744,848	19416.5 743,286	19328.6 737,925	19230.2 735,669	0.51 0.31

Undesired	Total IX	Unique IX, before	Unique IX, after
W33EU-D D33 LD APP	107.3 2,566		98.3 2,256
WSB-TV D32 DT LIC	11.9 1,448	0.0 0	0.0 0
WPXH-TV D33 DT LIC	3.0 105	1.0 86	1.0 86
WIRE-CD D33 DC LIC	48.7 4,442	35.8 2,975	34.8 2,975
WRLK-TV D33 DT LIC	8.0 249	8.0 249	2.0 19
WSST-TV D34 DT LIC	30.2 584	30.2 584	30.2 584

Interference to BLANK0000111852 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852	
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700 TLP-H	228.7 km
	WAXN-TV	D32	DT	LIC	KANNAPOLIS, NC	BLANK0000146859	128.5
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679	286.0
	WTNG-CD	D33	DC	LIC	LUMBERTON-PEMBROKE, NC	BLANK0000081109	179.7
	WUNL-TV	D33	DT	LIC	WINSTON-SALEM, NC	BLANK0000121301	256.0
	WNSC-TV	D34	DT	LIC	ROCK HILL, SC	BLANK0000105822	80.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
24484.0 1,229,293	24392.1 1,228,287	23692.6 1,202,271	23691.7 1,202,248	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
W33EU-D D33 LD APP	4.0 26		1.0 23
WAXN-TV D32 DT LIC	43.1 4,205	2.0 45	2.0 45
WGNM D33 DT LIC	29.8 555	24.7 552	22.8 552
WTNG-CD D33 DC LIC	39.2 2,219	27.2 1,744	27.2 1,744
WUNL-TV D33 DT LIC	174.5 6,479	81.3 1,774	81.3 1,774
WNSC-TV D34 DT LIC	537.1 19,832	468.0 17,039	468.0 17,039

Interference to BLANK0000059653 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WNGS-LD	D33	LD	LIC	GREENVILLE, SC	BLANK0000059653	
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700 TLP-H	139.8 km
	W32FI-D	D32	LD	LIC	BREVARD, NC	BLANK0000074959	36.1
	W32EO-D	D32	LD	LIC	TRYON, ETC., NC	BLANK0000119355	39.2
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679	264.1
	W33EH-D	D33	LD	LIC	BLACK MOUNTAIN, NC	BLANK0000082269	69.8
	WUNL-TV	D33	DT	LIC	WINSTON-SALEM, NC	BLANK0000121301	243.6
	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852	163.0
	WKXT-LD	D33	LD	CP	Knoxville, TN	BLANK0000108601	182.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
9581.5 1,192,985	8801.0 1,116,574	8721.1 1,113,610	8720.1 1,113,610	0.01 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
W33EU-D D33 LD APP	5.0 0		1.0 0
W32FI-D D32 LD LIC	1.0 0	0.0 0	0.0 0
W32EO-D D32 LD LIC	7.0 188	6.0 111	6.0 111
WGNM D33 DT LIC	2.0 0	1.0 0	0.0 0
W33EH-D D33 LD LIC	41.0 1,360	31.0 1,054	31.0 1,054
WUNL-TV D33 DT LIC	9.0 557	5.0 298	5.0 298
WRLK-TV D33 DT LIC	36.0 1,501	23.0 1,034	22.0 1,034

Interference to BLANK0000107129 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WATC-DT	D34	DT	LIC	ATLANTA, GA	BLANK0000107129	
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700 TLP-H	96.1 km
	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086	36.8

Table 1 W33EU-D TVStudy Analysis of Proposal
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WPDP-CD	D33-	DC	LIC	CLEVELAND, TN	BLANK0000081661	119.7
W34EY-D	D34	DC	LIC	HUNTSVILLE, AL	BLANK0000069366	204.7
WBIH	D34	DT	LIC	SELMA, AL	BLANK0000110807	279.2
WSST-TV	D34	DT	LIC	CORDELE, GA	BLANK0000064103	249.0
WNSC-TV	D34	DT	LIC	ROCK HILL, SC	BLANK0000105822	326.4
WVLT-TV	D34	DT	LIC	KNOXVILLE, TN	BLANK0000081956	219.2
WEAC-CD	D35	DC	LIC	JACKSONVILLE, AL	BLANK0000112954	139.8
WTCI	D35	DT	CP	CHATTANOOGA, TN	BLANK0000034751	147.6

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26288.6 5,735,211	25369.4 5,699,243	25120.6 5,662,532	25115.7 5,662,251	0.02 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
W33EU-D D33 LD APP	5.9 355	4.9 281	
WIRE-CD D33 DC LIC	27.8 3,360	26.8 3,360	
WPDP-CD D33- DC LIC	6.0 653	5.0 479	
W34EY-D D34 DC LIC	9.9 106	6.0 106	
WBIH D34 DT LIC	33.8 1,578	20.9 1,229	
WSST-TV D34 DT LIC	10.9 560	6.0 169	
WNSC-TV D34 DT LIC	21.0 1,257	19.0 1,246	
WVLT-TV D34 DT LIC	142.2 27,302	122.3 25,347	
WEAC-CD D35 DC LIC	4.0 39	3.0 32	
WTCI D35 DT CP	19.0 3,992	15.0 2,614	

Interference to BLANK0000107129 LIC scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WATC-DT	D34	DT	LIC	ATLANTA, GA	BLANK0000107129	
Undesireds:	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700 TLP-H	96.1 km
	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086	36.8
	WPDP-CD	D33-	DC	LIC	CLEVELAND, TN	BLANK0000081661	119.7
	W34EY-D	D34	DC	LIC	HUNTSVILLE, AL	BLANK0000069366	204.7
	WBIH	D34	DT	LIC	SELMA, AL	BLANK0000110807	279.2
	WSST-TV	D34	DT	LIC	CORDELE, GA	BLANK0000064103	249.0
	WNSC-TV	D34	DT	LIC	ROCK HILL, SC	BLANK0000105822	326.4
	WVLT-TV	D34	DT	LIC	KNOXVILLE, TN	BLANK0000081956	219.2
	WEAC-CD	D35	DC	LIC	JACKSONVILLE, AL	BLANK0000112954	139.8
	WTCI	D35	DT	LIC	CHATTANOOGA, TN	BLANK0000144354	147.6

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26288.6 5,735,211	25369.4 5,699,243	25120.6 5,662,532	25115.7 5,662,251	0.02 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
W33EU-D D33 LD APP	5.9 355	4.9 281	
WIRE-CD D33 DC LIC	27.8 3,360	26.8 3,360	
WPDP-CD D33- DC LIC	6.0 653	5.0 479	
W34EY-D D34 DC LIC	9.9 106	6.0 106	
WBIH D34 DT LIC	33.8 1,578	20.9 1,229	
WSST-TV D34 DT LIC	10.9 560	6.0 169	
WNSC-TV D34 DT LIC	21.0 1,257	19.0 1,246	
WVLT-TV D34 DT LIC	142.2 27,302	122.3 25,347	
WEAC-CD D35 DC LIC	4.0 39	3.0 32	
WTCI D35 DT LIC	19.0 3,992	15.0 2,614	

Interference to proposal scenario 1
2.64% interference received

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	W33EU-D	D33	LD	APP	ATHENS, GA	W33EU-D 1022700 TLP-H	
Undesireds:	WIRE-CD	D33	DC	LIC	ATLANTA, GA	BLANK0000130086	91.4 km
	WGNM	D33	DT	LIC	MACON, GA	BLANK0000113679	137.2
	WRLK-TV	D33	DT	LIC	COLUMBIA, SC	BLANK0000111852	228.7
	WNGS-LD	D33	LD	LIC	GREENVILLE, SC	BLANK0000059653	139.8
	WKXT-LD	D33	LD	CP	Knoxville, TN	BLANK0000108601	227.9

Service area	Terrain-limited	IX-free	Percent IX
5102.8 347,948	5018.3 346,763	4817.3 337,595	4.00 2.64

Undesired	Total IX	Unique IX	Prcnt Unique IX
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Table 1 W33EU-D TVStudy Analysis of Proposal
(page 6 of 6)



WIRE-CD D33 DC LIC	31.6	6,510	25.7	5,335	0.51	1.54
WGNM D33 DT LIC	166.3	3,738	150.4	2,496	3.00	0.72
WRLK-TV D33 DT LIC	5.9	69	3.0	65	0.06	0.02
WNGS-LD D33 LD LIC	16.0	97	5.0	26	0.10	0.01

Channel and Facility Information

Section	Question	Response
Facility ID	182356	
State	Georgia	
City	ATHENS	
LPD Channel	33	

Primary station proposed to be rebroadcast:

Facility Id	Call Sign	City	State
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Antenna Location Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1022700
Coordinates (NAD83)	Latitude	33° 59' 35.9" N+
	Longitude	083° 24' 55.9" W-
	Structure Type	GTOWER-Guyed Structure Used for Communication Purposes
	Overall Structure Height	120.4 meters
	Support Structure Height	116.7 meters
	Ground Elevation (AMSL)	231.3 meters
Antenna Data	Height of Radiation Center Above Ground Level	96 meters
	Height of Radiation Center Above Mean Sea Level	327.3 meters
	Effective Radiated Power	15 kW

Antenna
Technical Data

Section	Question	Response
Antenna Type	Antenna Type	Directional Custom
	Do you have an Antenna ID?	No
	Antenna ID	
Antenna Manufacturer and Model	Manufacturer:	Dielectric
	Model	TLP-8H/VP
	Rotation	90 degrees
	Electrical Beam Tilt	0.5
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Elliptical
Elevation Radiation Pattern	Does the proposed antenna propose elevation radiation patterns that vary with azimuth for reasons other than the use of mechanical beam tilt?	No
	Uploaded file for elevation antenna (or radiation) pattern data	
	Out-of-Channel Emission Mask:	Full Service

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	Value	Degree	Value	Degree	Value	Degree	Value
0	1.000	90	0.911	180	0.521	270	0.918
10	0.977	100	0.880	190	0.511	280	0.885
20	0.917	110	0.788	200	0.477	290	0.834
30	0.842	120	0.673	210	0.446	300	0.793
40	0.776	130	0.560	220	0.468	310	0.777
50	0.768	140	0.467	230	0.560	320	0.816
60	0.779	150	0.430	240	0.688	330	0.885
70	0.828	160	0.452	250	0.810	340	0.949
80	0.885	170	0.495	260	0.891	350	0.984

Additional Azimuths

Degree	V _A
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