



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION FOR  
A MINOR MODIFICATION OF A  
POST REPACK CONSTRUCTION PERMIT  
FILE # 0000027400  
WTTO - HOMEWOOD, ALABAMA  
DTV - CH. 21 - 1000 kW - 422 m HAAT**

Prepared for: WTTO LICENSEE, LLC

I am a Consulting Engineer, an employee in the firm of Carl T. Jones Corporation, with offices located in Springfield, Virginia. My education and experience are a matter of record with the Federal Communications Commission. I am a Licensed Professional Engineer in the Commonwealth of Virginia, License No. 7418, and in the State of New York, License No. 63418.

**GENERAL**

This office has been authorized by WTTO LICENSEE, LLC, licensee of WTTO, channel 28, facility ID number 74138, licensed to Homewood, Alabama, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for modification of its post-reassignment construction permit that authorizes WTTO to use channel 21 for its post-reassignment broadcasting. The instant application proposes only to increase WTTO's ERP, according to Section 73.622(f)(5), to achieve a coverage area on par with the "largest station in the market", which appears to be WVUA, Channel 6, licensed to Tuscaloosa, Alabama.

**DETERMINATION OF THE "LARGEST STATION IN THE MARKET"**

It appears from an analysis of the stations that are licensed to communities located in the Birmingham (Anniston & Tuscaloosa), AL Designated Market Area (DMA) that the station with the largest geographic area is WVUA, channel 6, Tuscaloosa, AL with a coverage area of 46,550 square kilometers. The instant application for an increase in ERP to 1000 kW results in a coverage area of 36,028 square kilometers for WTTO, therefore WTTO is entitled, according to Section 73.622(f)(5), to the proposed increase in its ERP.

WTTO is also entitled to submit the instant application to modify its construction permit in the first priority window, having been included in the list of repacked stations that are predicted to experience a loss of population served in excess of 1% as a result of its new channel assignment.

**DIRECTIONAL ANTENNA**

The applicant proposes to install a new Dielectric model TFU-27ETT/VP-R 6T160 elliptically polarized directional transmitting antenna with its center of radiation located at a height above ground of 327.7 meters, and a height above average terrain of 422 meters. The antenna manufacturer's horizontal plane azimuth radiation pattern for the horizontally polarized component is shown and tabulated in exhibit 2. The manufacturer's horizontal plane azimuth pattern for the vertically polarized component is shown and tabulated in exhibit 3. The manufacturer's vertical plane elevation radiation pattern, illustrating the antenna's radiation characteristics above and below the horizontal plane is shown and tabulated in Exhibit 4.

## **PREDICTED COVERAGE CONTOURS**

The predicted coverage contours were calculated in accordance with the method described in Section 73.625(b) of the Rules, utilizing the appropriate F(50,90) propagation curves (47 CFR Section 73.699, Figure 9), proposed Effective Radiated Power, and antenna height above average terrain as determined for each profile radial. The average terrain on the eight cardinal radials from 3 kilometers to 16 kilometers from the site, was determined using the NED Three Second US Terrain Database as permitted in the FCC Rules. The antenna site elevation and coordinates were determined from FCC antenna registration data. Exhibit 1 shows the predicted Noise Limited (39.46 dBu) contour, and the principal community (48 dBu) contour, which completely encompass the principal community of license, Homewood, Alabama.

## **ALLOCATION CONSIDERATIONS**

### ***Post-Transition DTV Considerations***

A study was performed, using the FCC's software, tv\_study, v. 2.2.3, to determine if the instant application for construction permit is predicted to cause new prohibited interference to post reassignment DTV stations, construction permits, DTV allotments or Class A DTV stations. The study results, shown in Appendix B, indicate that the instant application for construction permit is predicted to cause no new interference exceeding 0.5% to the populations served by any post-reassignment DTV station, construction permit, allotment or Class A DTV stations. (See Appendix B)

## **RADIO FREQUENCY IMPACT**

The FCC's guidelines and procedures for evaluating environmental effects of radio frequency (RF) emissions are generally based on recommendations by the National Council on Radiation Protection and Measurements (NCRP) in NCRP Report No. 86 (1986) and by the American National Standards Institute and the Institute of Electrical and Electronic Engineers, LLC (IEEE) in ANSI/IEEE C95.1-1992 (IEEE C95.1-1991). The guidelines define a maximum permissible exposure (MPE) level for occupational or "controlled" situations, and for "uncontrolled" environments that apply in all other cases that might affect the general public. The FCC Office of Engineering and Technology's technical bulletin No. 65 entitled, "Evaluating Compliance with FCC Guidelines for Human Exposure to Radio Frequency Electromagnetic Fields" (Edition 97-01, August 1997), provides assistance to determine whether FCC-regulated transmitting facilities, operations or devices comply with guidelines for human exposure to radio frequency electromagnetic fields as adopted by the Commission in 1996. OET Bulletin No. 65 contains the technical information necessary to evaluate compliance with the FCC's policies and guidelines.

The Maximum Permitted Exposure (MPE) level for broadcast facilities that operate on a frequency between 30 MHz and 300 MHz is 200 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) for an "uncontrolled" environment, and is 1000 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) for a "controlled" environment. The MPE level for broadcast facilities that operate on a frequency between 300 MHz and 1500 MHz, primarily UHF TV stations, is determined, in  $\mu\text{W}/\text{cm}^2$  for an "uncontrolled" environment by dividing the operating

**STATEMENT OF JOHN E. HIDLE, P.E.**  
**WTTO - Homewood, Alabama**  
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frequency in MHZ by 1.500, and is similarly determined for a “controlled” environment by dividing the operating frequency in MHZ by 0.300.

The predicted emissions of WTTO must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WTTO, which will operate on television Channel 21 (512-518 MHZ), the MPE is 343.33 microwatts per centimeter squared ( $\mu\text{W}/\text{cm}^2$ ) in an “uncontrolled” environment and  $1,716.7 \mu\text{W}/\text{cm}^2$  in a “controlled” environment. The proposed WTTO facility will operate with a maximum ERP of 1000 kW from an elliptically polarized directional transmitting antenna with a centerline height of 327.7 meters above ground level (AGL). Considering a predicted vertical plane relative field factor of 0.200 the WTTO facility is predicted to produce a power density at two meters above ground level of  $15.747 \mu\text{W}/\text{cm}^2$ , which is 4.59% of the FCC guideline value for an “uncontrolled” environment, and 0.918% of the FCC’s guideline value for “controlled” environments. There are three other full-power DTV facilities, five LPTV DTV facilities, four full-power FM stations and eleven LPFM facilities that are located at the WTTO site. The total estimated percentage of the ANSI value at the proposed site, including the cumulative radiation from all authorizations located within the relevant proximity, is 37.67% of the limit applicable to “uncontrolled” environments, and 7.534% of the limit for “controlled” environments. (See Appendix A) The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

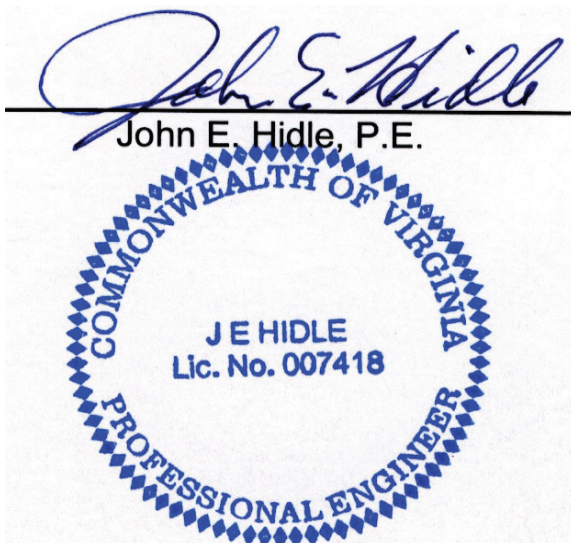
## **OCCUPATIONAL SAFETY**

The licensee of WTTO is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WTTO antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

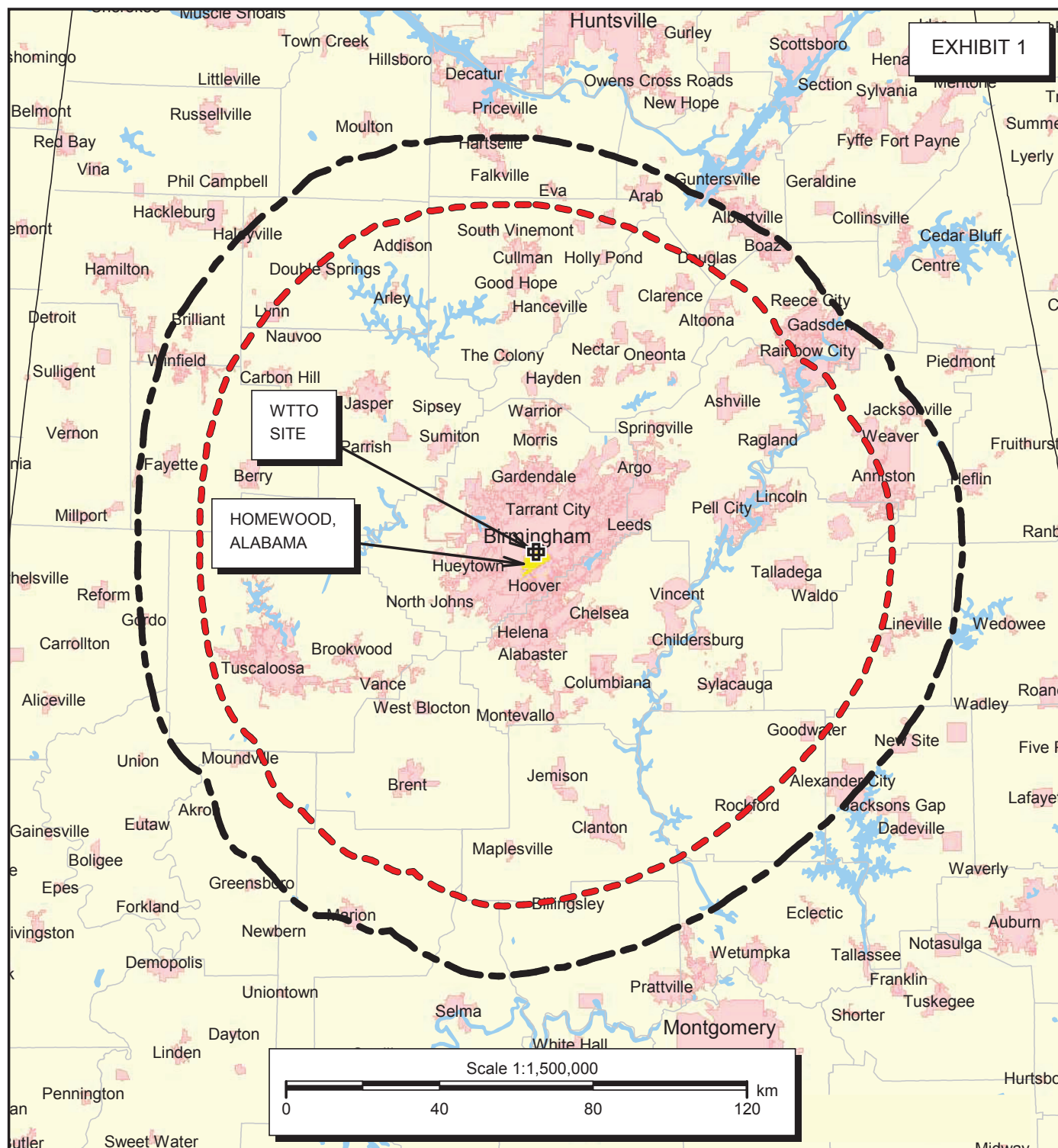
## **SUMMARY**

It is submitted that the instant application to modify WTTO's post-reassignment channel 21 construction permit by increasing WTTO's ERP to 1000 kW, as described herein, complies with the Rules, Regulations and relevant Policies of the Federal Communications Commission. This statement, FCC Form 2100, its technical sections, and the attached exhibits were prepared by me or under my direct supervision and are believed to be true and correct to the best of my knowledge and belief.

DATED: September 8, 2017







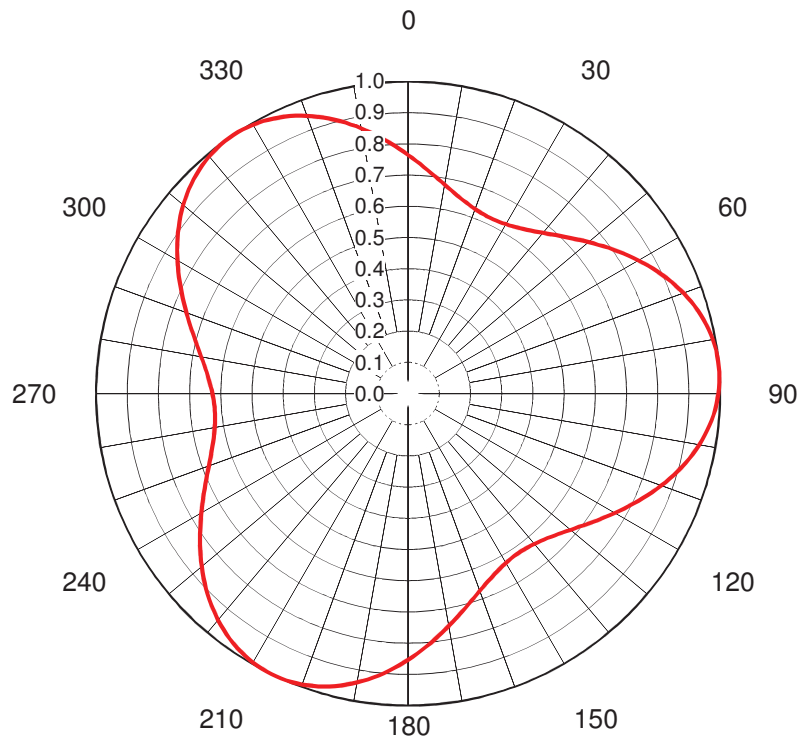
## PREDICTED COVERAGE CONTOURS

WTTO - HOMWOOD, ALABAMA  
DTV Channel 21 - 1000 kW ERP - 422 M HAAT  
SEPTEMBER, 2017

Predicted Noise Limited 39.46 dBu  
F(50,90) Coverage Contour



Predicted Principal Community 48 dBu  
F(50,90) Coverage Contour



## AZIMUTH PATTERN Horizontal Polarization

Proposal No. **C-70989 - Exhibit 2**  
 Date **1-Sep-17**  
 Call Letters **WTTO**  
 Channel **21**  
 Frequency **515 MHz**  
 Antenna Type **TFU-27ETT/VP-R 6T160 DC**  
 Gain **1.48 (1.71dB)**  
 Calculated

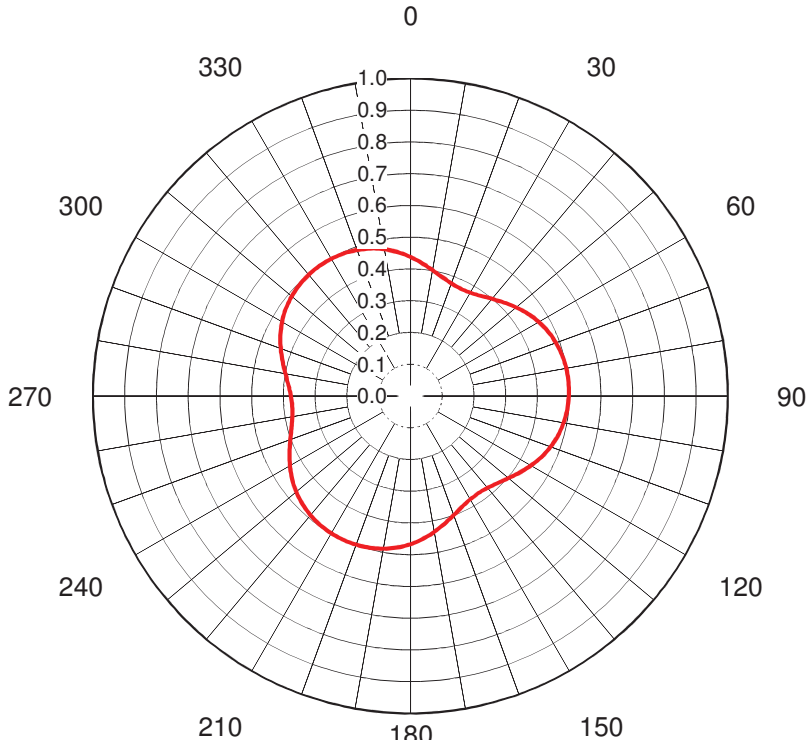
Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.765	36	0.649	72	0.954	108	0.882	144	0.622	180	0.854	216	0.972	252	0.666	288	0.737
1	0.756	37	0.654	73	0.960	109	0.873	145	0.622	181	0.863	217	0.966	253	0.660	289	0.746
2	0.746	38	0.660	74	0.966	110	0.863	146	0.622	182	0.873	218	0.960	254	0.654	290	0.756
3	0.737	39	0.666	75	0.972	111	0.854	147	0.622	183	0.882	219	0.954	255	0.649	291	0.765
4	0.728	40	0.673	76	0.977	112	0.844	148	0.623	184	0.891	220	0.947	256	0.644	292	0.775
5	0.719	41	0.680	77	0.981	113	0.834	149	0.625	185	0.900	221	0.940	257	0.640	293	0.785
6	0.711	42	0.687	78	0.985	114	0.824	150	0.627	186	0.909	222	0.933	258	0.636	294	0.794
7	0.702	43	0.694	79	0.989	115	0.814	151	0.629	187	0.917	223	0.925	259	0.632	295	0.804
8	0.695	44	0.702	80	0.992	116	0.804	152	0.632	188	0.925	224	0.917	260	0.629	296	0.814
9	0.687	45	0.711	81	0.995	117	0.794	153	0.636	189	0.933	225	0.909	261	0.627	297	0.824
10	0.680	46	0.719	82	0.997	118	0.785	154	0.640	190	0.940	226	0.900	262	0.625	298	0.834
11	0.673	47	0.728	83	0.998	119	0.775	155	0.644	191	0.947	227	0.891	263	0.623	299	0.844
12	0.666	48	0.737	84	0.999	120	0.765	156	0.649	192	0.954	228	0.882	264	0.622	300	0.854
13	0.660	49	0.746	85	1.000	121	0.756	157	0.654	193	0.960	229	0.873	265	0.622	301	0.863
14	0.654	50	0.756	86	1.000	122	0.746	158	0.660	194	0.966	230	0.863	266	0.622	302	0.873
15	0.649	51	0.765	87	0.999	123	0.737	159	0.666	195	0.972	231	0.854	267	0.622	303	0.882
16	0.644	52	0.775	88	0.998	124	0.728	160	0.673	196	0.977	232	0.844	268	0.623	304	0.891
17	0.640	53	0.785	89	0.997	125	0.719	161	0.680	197	0.981	233	0.834	269	0.625	305	0.900
18	0.636	54	0.794	90	0.995	126	0.711	162	0.687	198	0.985	234	0.824	270	0.627	306	0.909
19	0.632	55	0.804	91	0.992	127	0.702	163	0.694	199	0.989	235	0.814	271	0.629	307	0.917
20	0.629	56	0.814	92	0.989	128	0.695	164	0.702	200	0.992	236	0.804	272	0.632	308	0.925
21	0.627	57	0.824	93	0.985	129	0.687	165	0.711	201	0.995	237	0.794	273	0.636	309	0.933
22	0.625	58	0.834	94	0.981	130	0.680	166	0.719	202	0.997	238	0.785	274	0.640	310	0.940
23	0.623	59	0.844	95	0.977	131	0.673	167	0.728	203	0.998	239	0.775	275	0.644	311	0.947
24	0.622	60	0.854	96	0.972	132	0.666	168	0.737	204	0.999	240	0.765	276	0.649	312	0.954
25	0.622	61	0.863	97	0.966	133	0.660	169	0.746	205	1.000	241	0.756	277	0.654	313	0.960
26	0.622	62	0.873	98	0.960	134	0.654	170	0.756	206	1.000	242	0.746	278	0.660	314	0.966
27	0.622	63	0.882	99	0.954	135	0.649	171	0.765	207	0.999	243	0.737	279	0.666	315	0.972
28	0.623	64	0.891	100	0.947	136	0.644	172	0.775	208	0.998	244	0.728	280	0.673	316	0.977
29	0.625	65	0.900	101	0.940	137	0.640	173	0.785	209	0.997	245	0.719	281	0.680	317	0.981
30	0.627	66	0.909	102	0.933	138	0.636	174	0.794	210	0.995	246	0.711	282	0.687	318	0.985
31	0.629	67	0.917	103	0.925	139	0.632	175	0.804	211	0.992	247	0.702	283	0.694	319	0.989
32	0.632	68	0.925	104	0.917	140	0.629	176	0.814	212	0.989	248	0.695	284	0.702	320	0.992
33	0.636	69	0.933	105	0.909	141	0.627	177	0.824	213	0.985	249	0.687	285	0.711	321	0.995
34	0.640	70	0.940	106	0.900	142	0.625	178	0.834	214	0.981	250	0.680	286	0.719	322	0.997
35	0.644	71	0.947	107	0.891	143	0.623	179	0.844	215	0.977	251	0.673	287	0.728	323	0.998

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## AZIMUTH PATTERN Vertical Polarization

Proposal No. **C-70989 - Exhibit 3**  
 Date **1-Sep-17**  
 Call Letters **WTTO**  
 Channel **21**  
 Frequency **515 MHz**  
 Antenna Type **TFU-27ETT/VP-R 6T160 DC**  
 Gain **1.25 (0.97dB)**  
 Calculated



Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.438	36	0.388	72	0.491	108	0.475	144	0.374	180	0.467	216	0.495	252	0.396	288	0.427	324	0.500
1	0.435	37	0.390	73	0.493	109	0.472	145	0.374	181	0.470	217	0.494	253	0.393	289	0.431	325	0.500
2	0.431	38	0.393	74	0.494	110	0.470	146	0.374	182	0.472	218	0.493	254	0.390	290	0.435	326	0.500
3	0.427	39	0.396	75	0.495	111	0.467	147	0.374	183	0.475	219	0.491	255	0.388	291	0.438	327	0.500
4	0.424	40	0.399	76	0.496	112	0.464	148	0.375	184	0.477	220	0.490	256	0.385	292	0.442	328	0.500
5	0.420	41	0.403	77	0.497	113	0.461	149	0.375	185	0.479	221	0.488	257	0.383	293	0.445	329	0.499
6	0.416	42	0.406	78	0.497	114	0.458	150	0.376	186	0.481	222	0.487	258	0.381	294	0.449	330	0.499
7	0.413	43	0.409	79	0.498	115	0.455	151	0.378	187	0.483	223	0.485	259	0.379	295	0.452	331	0.499
8	0.409	44	0.413	80	0.499	116	0.452	152	0.379	188	0.485	224	0.483	260	0.378	296	0.455	332	0.498
9	0.406	45	0.416	81	0.499	117	0.449	153	0.381	189	0.487	225	0.481	261	0.376	297	0.458	333	0.497
10	0.403	46	0.420	82	0.499	118	0.445	154	0.383	190	0.488	226	0.479	262	0.375	298	0.461	334	0.497
11	0.399	47	0.424	83	0.500	119	0.442	155	0.385	191	0.490	227	0.477	263	0.375	299	0.464	335	0.496
12	0.396	48	0.427	84	0.500	120	0.438	156	0.388	192	0.491	228	0.475	264	0.374	300	0.467	336	0.495
13	0.393	49	0.431	85	0.500	121	0.435	157	0.390	193	0.493	229	0.472	265	0.374	301	0.470	337	0.494
14	0.390	50	0.435	86	0.500	122	0.431	158	0.393	194	0.494	230	0.470	266	0.374	302	0.472	338	0.493
15	0.388	51	0.438	87	0.500	123	0.427	159	0.396	195	0.495	231	0.467	267	0.374	303	0.475	339	0.491
16	0.385	52	0.442	88	0.500	124	0.424	160	0.399	196	0.496	232	0.464	268	0.375	304	0.477	340	0.490
17	0.383	53	0.445	89	0.499	125	0.420	161	0.403	197	0.497	233	0.461	269	0.375	305	0.479	341	0.488
18	0.381	54	0.449	90	0.499	126	0.416	162	0.406	198	0.497	234	0.458	270	0.376	306	0.481	342	0.487
19	0.379	55	0.452	91	0.499	127	0.413	163	0.409	199	0.498	235	0.455	271	0.378	307	0.483	343	0.485
20	0.378	56	0.455	92	0.498	128	0.409	164	0.413	200	0.499	236	0.452	272	0.379	308	0.485	344	0.483
21	0.376	57	0.458	93	0.497	129	0.406	165	0.416	201	0.499	237	0.449	273	0.381	309	0.487	345	0.481
22	0.375	58	0.461	94	0.497	130	0.403	166	0.420	202	0.499	238	0.445	274	0.383	310	0.488	346	0.479
23	0.375	59	0.464	95	0.496	131	0.399	167	0.424	203	0.500	239	0.442	275	0.385	311	0.490	347	0.477
24	0.374	60	0.467	96	0.495	132	0.396	168	0.427	204	0.500	240	0.438	276	0.388	312	0.491	348	0.475
25	0.374	61	0.470	97	0.494	133	0.393	169	0.431	205	0.500	241	0.435	277	0.390	313	0.493	349	0.472
26	0.374	62	0.472	98	0.493	134	0.390	170	0.435	206	0.500	242	0.431	278	0.393	314	0.494	350	0.470
27	0.374	63	0.475	99	0.491	135	0.388	171	0.438	207	0.500	243	0.427	279	0.396	315	0.495	351	0.467
28	0.375	64	0.477	100	0.490	136	0.385	172	0.442	208	0.500	244	0.424	280	0.399	316	0.496	352	0.464
29	0.375	65	0.479	101	0.488	137	0.383	173	0.445	209	0.499	245	0.420	281	0.403	317	0.497	353	0.461
30	0.376	66	0.481	102	0.487	138	0.381	174	0.449	210	0.499	246	0.416	282	0.406	318	0.497	354	0.458
31	0.378	67	0.483	103	0.485	139	0.379	175	0.452	211	0.499	247	0.413	283	0.409	319	0.498	355	0.455
32	0.379	68	0.485	104	0.483	140	0.378	176	0.455	212	0.498	248	0.409	284	0.413	320	0.499	356	0.452
33	0.381	69	0.487	105	0.481	141	0.376	177	0.458	213	0.497	249	0.406	285	0.416	321	0.499	357	0.449
34	0.383	70	0.488	106	0.479	142	0.375	178	0.461	214	0.497	250	0.403	286	0.420	322	0.499	358	0.445
35	0.385	71	0.490	107	0.477	143	0.375	179	0.464	215	0.496	251	0.399	287	0.424	323	0.500	359	0.442

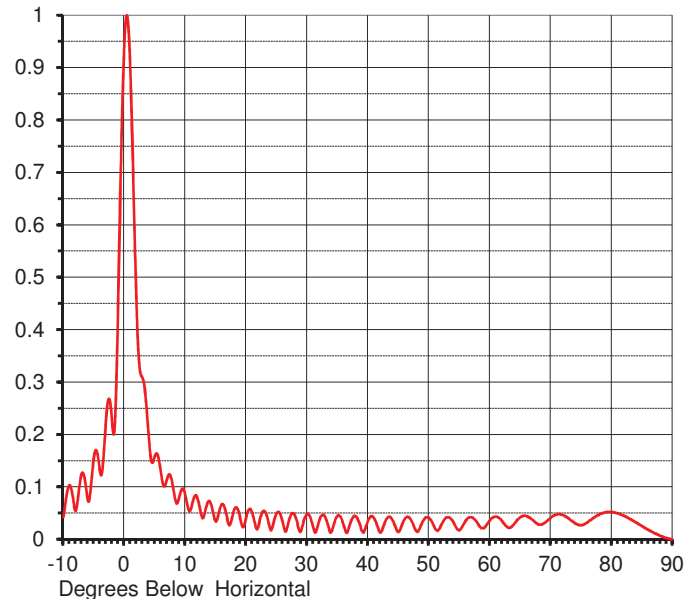
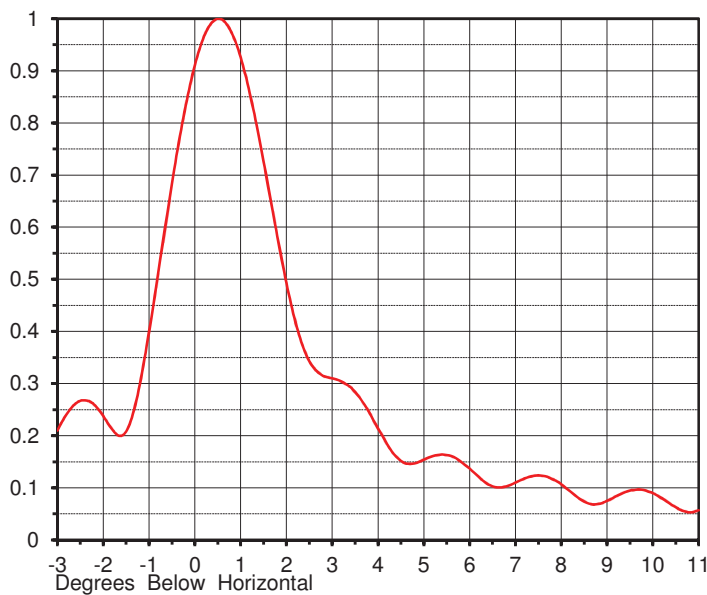
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## ELEVATION PATTERN

Proposal No. **C-70989 - Exhibit 4**  
 Date **1-Sep-17**  
 Call Letters **WTTO**  
 Channel **21**  
 Frequency **515 MHz**  
 Antenna Type **TFU-27ETT/VP-R 6T160 D C**

RMS Directivity at Main Lobe **25.0 ( 13.98 dB )**  
 RMS Directivity at Horizontal **22.1 ( 13.44 dB )**  
**Calculated**

Beam Tilt **0.40 deg**  
 Pattern Number **27E250040**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.042	10.0	0.085	30.0	0.048	50.0	0.041	70.0	0.041
-9.0	0.103	11.0	0.060	31.0	0.023	51.0	0.021	71.0	0.047
-8.0	0.054	12.0	0.079	32.0	0.035	52.0	0.027	72.0	0.046
-7.0	0.124	13.0	0.042	33.0	0.042	53.0	0.042	73.0	0.039
-6.0	0.076	14.0	0.073	34.0	0.014	54.0	0.033	74.0	0.030
-5.0	0.155	15.0	0.034	35.0	0.045	55.0	0.017	75.0	0.027
-4.0	0.131	16.0	0.067	36.0	0.027	56.0	0.035	76.0	0.032
-3.0	0.227	17.0	0.034	37.0	0.027	57.0	0.042	77.0	0.041
-2.0	0.224	18.0	0.055	38.0	0.044	58.0	0.030	78.0	0.048
-1.0	0.454	19.0	0.042	39.0	0.016	59.0	0.021	79.0	0.051
0.0	0.941	20.0	0.042	40.0	0.035	60.0	0.036	80.0	0.052
1.0	0.894	21.0	0.051	41.0	0.040	61.0	0.043	81.0	0.050
2.0	0.453	22.0	0.024	42.0	0.013	62.0	0.035	82.0	0.045
3.0	0.308	23.0	0.054	43.0	0.038	63.0	0.022	83.0	0.039
4.0	0.199	24.0	0.018	44.0	0.037	64.0	0.029	84.0	0.032
5.0	0.158	25.0	0.050	45.0	0.014	65.0	0.042	85.0	0.025
6.0	0.129	26.0	0.032	46.0	0.038	66.0	0.044	86.0	0.018
7.0	0.114	27.0	0.035	47.0	0.038	67.0	0.037	87.0	0.012
8.0	0.100	28.0	0.045	48.0	0.015	68.0	0.028	88.0	0.006
9.0	0.079	29.0	0.016	49.0	0.034	69.0	0.031	89.0	0.002
								90.0	0.000

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# SUMMARY OF RADIOFREQUENCY RADIATION STUDY

WTTO, Homewood, AL  
Channel 21, 1000 kW, 422 m HAAT  
September, 2017

CALL	SERVICE	CHANNEL	FREQUENCY	POLAR- IZATION	ANTENNA HEIGHT	ERP (kW)	VERT. RELATIVE FIELD FACTOR	WORST-CASE PREDICTED POWER DENSITY (mW/cm <sup>2</sup> )	WORST-CASE PREDICTED POWER DENSITY (μW/cm <sup>2</sup> )	FCC UNCONTROLLED LIMIT (μW/cm <sup>2</sup> )	PERCENT OF UNCONTROLLED LIMIT
WABM**	DT	20	509	H	327.7	900.000	0.200	0.01134	11.338	339.33	3.34%
WABM**	DT	20	509	V	327.7	225.000	0.200	0.00283	2.835	339.33	0.84%
WTTO***	DT	21	515	H	327.7	1000.000	0.200	0.01260	12.598	343.33	3.67%
WTTO***	DT	21	515	V	327.7	250.000	0.200	0.00315	3.149	343.33	0.92%
WIAT	DT	30	569	H	326.4	1000.000	0.300	0.02857	28.573	379.33	7.53%
WVUA	DT	6	85	H & V	307	26.000	0.300	0.00168	1.681	200.00	0.84%
WUOA-LD (CP)	DT	17	491	H	115.8	15.000	0.300	0.00348	3.483	327.33	1.06%
W21DM-D (APP)	DT	21	515	H	115.8	10.000	0.300	0.00232	2.322	343.33	0.68%
WBXA-CD	DT	24	533	H	100	10.000	0.300	0.00313	3.131	355.33	0.88%
WBUN-CD	DT	27	551	H	176	15.000	0.300	0.00149	1.490	367.33	0.41%
W47EI-D	DT	16	485	H	93	7.830	0.300	0.00284	2.843	323.33	0.88%
WZZK-FM	FM	284	104.7	H & V	308	97.800	<note 1>	0.00064	0.644	200.00	0.32%
WBPT	FM	295	106.9	H & V	308	97.000	<note 2>	0.01542	15.420	200.00	7.71%
WUHT	FM	299	107.7	H & V	308.3	42.000	<note 2>	0.00669	6.685	200.00	3.34%
WERC-FM	FM	288	105.5	H & V	94	29.500	<note 3>	0.00726	7.260	200.00	3.63%
WBFR (CP)	FM	208	89.5	H & V	87	0.210	1.000	0.00194	1.942	200.00	0.97%
W210CA	FM	210	89.9	H & V	258	0.180	1.000	0.00018	0.184	200.00	0.09%
W241AI	FM	241	96.1	H & V	250	0.099	1.000	0.00011	0.108	200.00	0.05%
W252BE (APP)	FM	252	98.3	H & V	136	0.100	1.000	0.00037	0.372	200.00	0.19%
W256CD (CP)	FM	256	99.1	H & V	258	0.130	1.000	0.00013	0.133	200.00	0.07%
W261BX	FM	261	100.1	H & V	258	0.035	1.000	0.00004	0.036	200.00	0.02%
W271BNAI	FM	271	102.1	H	258	0.085	1.000	0.00004	0.043	200.00	0.02%
W276BQ (CP)	FM	276	103.1	H & V	344	0.250	1.000	0.00014	0.143	200.00	0.07%
W281AB	FM	281	104.1	H	250	0.250	1.000	0.00014	0.136	200.00	0.07%
W286BK	FM	286	105.1	H	190	0.099	1.000	0.00009	0.094	200.00	0.05%
W297BF	FM	297	107.3	H	258	0.099	1.000	0.00005	0.050	200.00	0.03%

**TOTAL PERCENTAGE OF FCC GUIDELINE VALUE = 37.67%**

\* For television stations a very conservative vertical relative field factor of 0.3 was assumed pursuant to OET Bulletin 65.

\*\* WABM is proposing elliptical polarization, the table above includes both the proposed horizontal and vertical power levels

\*\*\*WTTO is proposing elliptical polarization, the table above includes both the proposed horizontal and vertical power levels

note 1: FM Model Antenna: EPA Type 1; 8-bay, 0.5 wavelength spaced antenna

note 2: FM Model Antenna: EPA Type 1; 8-bay, 0.94 wavelength spaced antenna

note 3: Per the WERC-FM Application for Construction Permit, FCC File No. BPH-20030113ACN, the maximum ground level power density is 7.26 uW/cm².



## WTTO - HOMEWOOD, ALABAMA Longley-Rice Interference Analysis

tvstudy v2.2.3 (Dxtpx3)  
Database: localhost, Study: WTTO\_21\_27ET6T160\_1000K, Model: Longley-Rice  
Start: 2017.09.07 09:50:41

Study created: 2017.09.07 09:49:56

Study build station data: LMS TV 2017-09-06 (34)

Proposal: WTTO D21 DT APP HOMEWOOD, AL  
File number: WTTO\_21\_27ET6T160\_1000K  
Facility ID: 74138  
Station data: User record  
Record ID: 1459  
Country: U.S.  
Zone: II

Search options:  
Non-U.S. records included  
Stations affected by proposal:

Call	Chan	Svc	Status	City, State	File Number	Distance
WABM	D20	DT	CP	BIRMINGHAM, AL	BLANK0000025680	0.0 km
WDHN	D21	DT	LIC	DOTHAN, AL	BLCDT20090303ACR	286.2
WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	230.8
WAPT	D21	DT	LIC	JACKSON, MS	BLCDT20081126ALZ	352.0
WJKT	D21	DT	CP	JACKSON, TN	BLANK0000027712	331.1
WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDT20060414AAU	308.9
WFIQ	D22	DT	LIC	FLORENCE, AL	BLEDT20060718ACG	151.2
WCOV-TV	D22	DT	CP	MONTGOMERY, AL	BLANK0000025355	178.3

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D21  
Latitude: 33 29 4.80 N (NAD83)  
Longitude: 86 48 25.20 W  
Height AMSL: 616.3 m  
HAAT: 422.0 m  
Peak ERP: 1000 kW  
Antenna: TFU 27ETT 6T160 0.0 deg  
Elev Pattn: Generic  
Elec Tilt: 0.4

39.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	585 kW	436.9 m	107.6 km
45.0	511	382.1	101.6
90.0	990	411.7	110.8
135.0	428	416.0	102.7
180.0	729	431.4	109.4
225.0	819	426.7	110.2
270.0	393	436.2	103.6
315.0	933	433.0	112.2

ERP exceeds maximum  
ERP: 1000 kW ERP maximum: 766 kW

\*\*Proposal service area extends beyond baseline plus 1.0%  
Proposal service area population is more than 95.0% of baseline

# **Appendix B - Interference Analysis** **WTTO - Homewood, Alabama** **Channel 21 - 1000 kW - Page 2**

Distance to Canadian border: 980.1 km

Distance to Mexican border: 1283.3 km

Conditions at FCC monitoring station: Powder Springs GA  
 Bearing: 77.1 degrees Distance: 197.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
 Bearing: 299.6 degrees Distance: 1792.8 km

No land mobile station failures found

Study cell size: 2.00 km  
 Profile point spacing: 1.00 km

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

## ----- Interference to BLANK0000025680 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WABM	D20	DT	CP	BIRMINGHAM, AL	BLANK0000025680	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	0.0 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	0.0
	WIIQ	D19	DT	LIC	DEMOPOLIS, AL	BLEDT20090511AHE	159.6
	WHNT-TV	D19	DT	LIC	HUNTSVILLE, AL	BLCDDT20111118COZ	141.7
	WKRQ-TV	D20	DT	CP	MOBILE, AL	BLANK0000027663	325.3
	WANN-CD	D20	DC	CP	ATLANTA, GA	BLANK0000028242	231.1
	WDNN-CD	D20	DC	CP	DALTON, GA	BLANK0000028630	215.4
	WMPN-TV	D20	DT	LIC	JACKSON, MS	BLEDT20080807AAP	365.5
	WZTV	D20	DT	CP	NASHVILLE, TN	BLANK0000028847	308.9
-----							
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
29807.2	1,696,718	28746.6	1,671,059	28181.3	1,660,828	28145.4 1,660,289	0.13 0.03
Undesired			Total IX	Unique IX, before		Unique IX, after	
WTTO D21 DT BL	112.3		4,502	112.3 4,502			
WTTO D21 DT APP	148.2		5,041			148.2 5,041	
WIIQ D19 DT LIC	64.2		203	32.1 58		32.1 58	
WHNT-TV D19 DT LIC	36.0		576	20.0 313		20.0 313	
WKRQ-TV D20 DT CP	304.9		2,063	244.9 1,512		244.9 1,512	
WANN-CD D20 DC CP	19.9		219	19.9 219		19.9 219	
WDNN-CD D20 DC CP	12.0		586	12.0 586		12.0 586	
WMPN-TV D20 DT LIC	48.0		1,085	16.0 653		16.0 653	
WZTV D20 DT CP	48.1		1,837	32.0 1,574		32.0 1,574	

## ----- Interference to BLCDDT20090303ACR LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WDHN	D21	DT	LIC	DOTHAN, AL	BLCDDT20090303ACR	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	286.2 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	286.2
	WCTV	D20	DT	CP	THOMASVILLE, GA	BLANK0000025442	145.3
	WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	294.5
	WCOV-TV	D22	DT	CP	MONTGOMERY, AL	BLANK0000025355	114.6
	WTWC-TV	D22	DT	CP	TALLAHASSEE, FL	BLANK0000025125	142.0
-----							
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
22899.1	452,377	22746.1	451,978	22377.2	449,623	22381.2 449,605	-0.02 0.00
Undesired			Total IX	Unique IX, before		Unique IX, after	
WTTO D21 DT BL	121.0		251	52.5 120			

**Appendix B - Interference Analysis**  
**WTTO - Homewood, Alabama**  
**Channel 21 - 1000 kW - Page 3**

WTTO D21 DT APP	108.9	213			48.4	138
WCTV D20 DT CP	23.9	225	4.0	15	4.0	15
WPBA D21 DT LIC	16.2	41	0.0	0	0.0	0
WCOV-TV D22 DT CP	264.4	1,935	208.1	1,845	216.1	1,901
WTWC-TV D22 DT CP	35.8	244	15.9	34	15.9	34

-----  
Interference to BLEDT20041013ABK LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	230.8 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	230.8
	WANN-CD	D20	DC	CP	ATLANTA, GA	BLANK0000028242	5.4
	WDNN-CD	D20	DC	CP	DALTON, GA	BLANK0000028630	125.1
	WDHN	D21	DT	LIC	DOTHAN, AL	BLCDDT20090303ACR	294.5
	WEBA-TV	D21	DT	CP	ALLENDALE, SC	BLANK0000025022	279.7
	WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDDT20060414AAU	357.2
	WHSB-TV	D22	DT	CP	MONROE, GA	BLANK0000028032	2.8
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
17319.4		5,217,180		17127.4		4,927,230	0.80 0.36
				15490.3		4,909,541	
Undesired		Total IX		Unique IX, before		Unique IX, after	
WTTO D21 DT BL		296.3		38,605			
WTTO D21 DT APP		460.6		59,604		296.5	41,014
WANN-CD D20 DC CP		932.2		176,489		432.2	99,598
WDNN-CD D20 DC CP		24.0		2,184		0.0	0
WDHN D21 DT LIC		52.0		7,281		16.0	225
WEBA-TV D21 DT CP		24.1		1,426		4.0	0
WUXP-TV D21 DT LIC		48.0		7,955		12.0	1,969
WHSB-TV D22 DT CP		888.7		139,395		428.6	59,736

-----  
Interference to BLCDDT20081126ALZ LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WAPT	D21	DT	LIC	JACKSON, MS	BLCDDT20081126ALZ	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	352.0 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	352.0
	WMPN-TV	D20	DT	LIC	JACKSON, MS	BLEDT20080807AAP	14.2
	KKYK-CD	D21	DC	APP	LITTLE ROCK, AR	BLANK0000029217	346.5
	WHNO	D21	DT	LIC	NEW ORLEANS, LA	BLCDDT20050413AAK	263.3
	WHLT	D22	DT	APP	HATTIESBURG, MS	BLANK000002705	139.2
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
30301.7		793,621		30173.9		771,323	0.04 0.02
				27881.4			
Undesired		Total IX		Unique IX, before		Unique IX, after	
WTTO D21 DT BL		4.0		21			
WTTO D21 DT APP		24.2		224		16.1	182
WMPN-TV D20 DT LIC		1829.4		15,005		1817.4	14,914
WHNO D21 DT LIC		271.0		2,184		147.1	1,173
WHLT D22 DT APP		304.0		3,895		200.1	3,017

-----  
Interference to BLCDDT20081126ALZ LIC, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WAPT	D21	DT	LIC	JACKSON, MS	BLCDDT20081126ALZ	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	352.0 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	352.0
	WMPN-TV	D20	DT	LIC	JACKSON, MS	BLEDT20080807AAP	14.2
	KKYK-CD	D21	DC	APP	LITTLE ROCK, AR	BLANK0000029217	346.5
	WHNO	D21	DT	LIC	NEW ORLEANS, LA	BLCDDT20050413AAK	263.3



**Appendix B - Interference Analysis**  
**WTTO - Homewood, Alabama**  
**Channel 21 - 1000 kW - Page 4**

WHLT	D22	DT	LIC	HATTIESBURG, MS	BLCDT20091216AAL	139.2		
Service area	Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
30301.7	793,621	30173.9	791,620	27889.4	771,456	27877.3	771,295	0.04 0.02
Undesired	Total IX		Unique IX, before		Unique IX, after			
WTTO D21 DT BL	4.0	21	4.0	21				
WTTO D21 DT APP	24.2	224			16.1	182		
WMPN-TV D20 DT LIC	1829.4	15,005	1817.4	14,914	1817.4	14,914		
WHNO D21 DT LIC	271.0	2,184	155.2	1,215	147.1	1,173		
WHLT D22 DT LIC	295.9	3,923	192.1	3,045	192.1	3,045		

-----  
Interference to BLANK0000027712 CP, scenario 1

Desired:	Call WJKT	Chan D21	Svc DT	Status CP	City, State JACKSON, TN	File Number BLANK0000027712	Distance			
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	331.1 km			
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	331.1			
	KTEJ	D20	DT	LIC	JONESBORO, AR	BLEDT20110818AAQ	151.1			
	WBII-CD	D20	DC	LIC	HOLLY SPRINGS, MS	BLDTA20090513AFM	106.4			
	KKYK-CD	D21	DC	APP	LITTLE ROCK, AR	BLANK0000029217	327.2			
	WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDT20060414AAU	213.8			
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX			
24143.4	655,780	24063.3	655,373		23848.7	651,833	23800.4	650,451	0.20	0.21
Undesired				Total IX		Unique IX, before		Unique IX, after		
WTTO	D21	DT	BL	12.0	275	4.0	20			
WTTO	D21	DT	APP	76.5	1,801			52.4	1,402	
KTEJ	D20	DT	LIC	4.0	16	4.0	16	4.0	16	
WBII-CD	D20	DC	LIC	150.4	2,736	146.4	2,569	146.4	2,569	
WUXP-TV	D21	DT	LIC	56.2	768	52.2	680	36.0	536	

-----  
Interference to BLCDT20060414AAU LIC, scenario 1

Desired:	Call WUXP-TV	Chan D21	Svc DT	Status LIC	City, State NASHVILLE, TN	File Number BLCDT20060414AAU	Distance		
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	308.9 km		
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	308.9		
	WKYT-TV	D21	DT	CP	LEXINGTON, KY	BLANK0000024945	289.5		
	WJKT	D21	DT	CP	JACKSON, TN	BLANK0000027712	213.8		
	WTVW	D22	DT	APP	EVANSVILLE, IN	BLANK0000028341	202.0		
	WCTE	D22	DT	LIC	COOKEVILLE, TN	BLEDT20110413ACS	130.5		
Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
33232.6	2,316,872	32320.9	2,305,293	31093.0	2,265,835	30984.0	2,260,165	0.35	0.25
Undesired				Total IX		Unique IX, before		Unique IX, after	
WTTO	D21	DT	BL	153.5	3,952	97.0	1,527		
WTTO	D21	DT	APP	294.7	10,032		206.1	7,197	
WKYT-TV	D21	DT	CP	356.1	9,627	224.1	5,870	224.1	5,870
WJKT	D21	DT	CP	329.3	4,539	240.9	2,570	208.6	2,160
WCTE	D22	DT	LIC	601.6	28,574	485.5	23,645	485.5	23,645

-----  
Interference to BLEDT20060718ACG LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WFIQ	D22	DT	LIC	FLORENCE, AL	BLEDT20060718ACG	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	151.2 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	151.2
	WCOV-TV	D22	DT	CP	MONTGOMERY, AL	BLANK0000025355	326.2
	WHSG-TV	D22	DT	CP	MONROE, GA	BLANK0000028032	328.2

**Appendix B - Interference Analysis**  
**WTTO - Homewood, Alabama**  
**Channel 21 - 1000 kW - Page 5**

	WHLT	D22	DT	APP	HATTIESBURG, MS		BLANK0000002705		377.8					
	WCTE	D22	DT	LIC	COOKEVILLE, TN		BLEDT20110413ACS		283.5					
	Service area		Terrain-limited		IX-free, before		IX-free, after		Percent	New IX				
20448.9	546,563		20252.8		544,258		20108.5		541,451	20084.5	540,917	0.12	0.10	
Undesired				Total IX		Unique IX, before		Unique IX, after						
WTTO	D21	DT	BL	72.1		1,584		32.1		702				
WTTO	D21	DT	APP	96.2		2,118				56.1		1,236		
WCOV-TV	D22	DT	CP	96.2		2,014		56.1		1,132		56.1		1,132
WHSG-TV	D22	DT	CP	20.0		167		0.0		0		0.0		0
WCTE	D22	DT	LIC	12.0		91		8.0		32		8.0		32

-----  
Interference to BLANK0000025355 CP, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WCOV-TV	D22	DT	CP	MONTGOMERY, AL	BLANK0000025355	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	178.3 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	178.3
	WDHN	D21	DT	LIC	DOTHAN, AL	BLCDDT20090303ACR	114.6
	WFIQ	D22	DT	LIC	FLORENCE, AL	BLEDT20060718ACG	326.2
	WPFN-CD	D22	DC	LIC	PANAMA CITY, FL	BLDTA20141222AAC	202.7
	WTWC-TV	D22	DT	CP	TALLAHASSEE, FL	BLANK0000025125	252.8
	WHSG-TV	D22	DT	CP	MONROE, GA	BLANK0000028032	258.9
	WHLT	D22	DT	APP	HATTIESBURG, MS	BLANK0000002705	297.6

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
34610.1	868,189	34325.3	863,935	33121.0	841,097	33125.0	841,100	-0.01 -0.00
Undesired		Total IX		Unique IX, before		Unique IX, after		
WTTO D21 DT BL		16.0	248	12.0	133			
WTTO D21 DT APP		12.0	245			8.0	130	
WDHN D21 DT LIC		396.5	12,215	222.0	7,253	222.0	7,253	
WFIQ D22 DT LIC		60.3	433	20.1	72	20.1	72	
WPFN-CD D22 DC LIC		4.0	0	4.0	0	4.0	0	
WTWC-TV D22 DT CP		455.7	11,180	216.8	3,898	216.8	3,898	
WHSG-TV D22 DT CP		181.0	4,210	112.5	1,715	112.5	1,715	
WHLT D22 DT APP		378.0	2,368	337.9	2,124	337.9	2,124	

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Interference to BLANK0000025355 CP, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WCOV-TV	D22	DT	CP	MONTGOMERY, AL	BLANK0000025355	
Undesireds:	WTTO	D21	DT	BL	HOMEWOOD, AL	DTVBL74138	178.3 km
	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	178.3
	WDHN	D21	DT	LIC	DOTHAN, AL	BLCDDT20090303ACR	114.6
	WFIQ	D22	DT	LIC	FLORENCE, AL	BLEDT20060718ACG	326.2
	WPFN-CD	D22	DC	LIC	PANAMA CITY, FL	BLDTA20141222AAC	202.7
	WTWC-TV	D22	DT	CP	TALLAHASSEE, FL	BLANK0000025125	252.8
	WHSG-TV	D22	DT	CP	MONROE, GA	BLANK0000028032	258.9
	WHLT	D22	DT	LIC	HATTIESBURG, MS	BLCDDT20091216AAL	297.6

Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX
34610.1	868,189	34325.3	863,935	33113.0	841,271	33117.0	841,274	-0.01 -0.00
Undesired		Total IX		Unique IX, before		Unique IX, after		
WTTO D21 DT BL		16.0	248	12.0	133			
WTTO D21 DT APP		12.0	245			8.0	130	
WDHN D21 DT LIC		396.5	12,215	222.0	7,253	222.0	7,253	
WFIQ D22 DT LIC		60.3	433	20.1	72	20.1	72	
WPFN-CD D22 DC LIC		4.0	0	0.0	0	0.0	0	
WTWC-TV D22 DT CP		455.7	11,180	216.8	3,898	216.8	3,898	
WHSG-TV D22 DT CP		181.0	4,210	112.5	1,715	112.5	1,715	
WHLT D22 DT LIC		390.0	2,194	345.9	1,950	345.9	1,950	

**Appendix B - Interference Analysis**  
**WTTO - Homewood, Alabama**  
**Channel 21 - 1000 kW - Page 6**

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Interference to proposal, scenario 1  
2.14% interference

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WTTO	D21	DT	APP	HOMEWOOD, AL	WTTO_21_27ET6T160_1000	
Undesireds:	WDHN	D21	DT	LIC	DOTHAN, AL	BLCDT20090303ACR	286.2 km
	WPBA	D21	DT	LIC	ATLANTA, GA	BLEDT20041013ABK	230.8
	WAPT	D21	DT	LIC	JACKSON, MS	BLCDT20081126ALZ	352.0
	WJKT	D21	DT	CP	JACKSON, TN	BLANK0000027712	331.1
	WUXP-TV	D21	DT	LIC	NASHVILLE, TN	BLCDT20060414AAU	308.9
	WFIQ	D22	DT	LIC	FLORENCE, AL	BLEDT20060718ACG	151.2
	WCOV-TV	D22	DT	CP	MONTGOMERY, AL	BLANK0000025355	178.3

Service area	Terrain-limited	IX-free	Percent IX
36198.2 1,877,089	34774.3 1,843,733	33241.1 1,804,266	4.41 2.14

Undesired	Total IX	Unique IX	Prcnt Unique IX
WDHN D21 DT LIC 881.3	17,201	524.7	9,405 1.51 0.51
WPBA D21 DT LIC 271.8	8,233	84.0	2,437 0.24 0.13
WAPT D21 DT LIC 160.2	3,042	120.0	2,815 0.35 0.15
WJKT D21 DT CP 67.8	2,002	4.0	34 0.01 0.00
WUXP-TV D21 DT LIC 331.4	15,873	247.5	12,181 0.71 0.66
WFIQ D22 DT LIC 12.0	212	0.0	0 0.00 0.00
WCOV-TV D22 DT CP 273.2	4,840	112.5	1,107 0.32 0.06