



**STATEMENT OF JOHN E. HIDLE, P.E.  
IN SUPPORT OF AN APPLICATION FOR  
POST REPACK CONSTRUCTION PERMIT  
WPNT - PITTSBURGH, PENNSYLVANIA  
DTV - CH. 21 - 645 kW - 312 m HAAT**

Prepared for: WCWB 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 WCWB LICENSEE, LLC, licensee of WPNT channel 42, facility ID number 73907, licensed to Pittsburgh, Pennsylvania, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for construction permit, in accordance with the Incentive Auction Closing and Channel Reassignment Public Notice, DA 17-314, and the technical information provided in the confidential reassignment letter from the FCC announcing the substitution for DTV channel 42 with new DTV channel 21 to be used by WPNT for its post-reassignment broadcasting.

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**DIRECTIONAL ANTENNA**

The applicant proposes to install a new Dielectric TFU-14ETT/VP-R 3C190 elliptically polarized directional transmitting antenna with its center of radiation located at a height above ground of 218.7 meters, and a height above average terrain of 312 meters. The antenna manufacturer's directional 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. The 48 dBu contour completely encompasses the principal community of license, Pittsburgh, Pennsylvania.

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**ALLOCATION CONSIDERATIONS**

***Post-Transition DTV Considerations***

A study was performed, using the FCC's software, tv\_study, v. 2.2.2, 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. The study also shows that WPNT's proposed service area is within the baseline plus 1%.

***International DTV Considerations***

The WPNT site is located 211.1 kilometers from the nearest point on the US-Canadian border, and is 2,245.7 kilometers from the nearest point on the US/Mexican border. The above study includes all Canadian DTV facilities within the coordination distance, and predicts no effect on any Canadian facility. (See Appendix B)

**BLANKETING AND INTERMODULATION INTERFERENCE**

Other broadcast and non-broadcast facilities are either co-located with, or located within 10 km of the proposed WPNT site. The applicant does recognize its responsibility to remedy complaints of interference that might result from this proposal in accordance with applicable Rules.

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**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 for an "uncontrolled" environment by dividing the operating frequency in MHZ by 1.5, and is similarly determined for a "controlled" environment by dividing the operating

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frequency in MHZ by 0.3.

The predicted emissions of WPNT must be considered, in addition to predicted emissions from any other proposed or existing stations at the site. For WPNT, 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 WPNT facility will operate with a maximum ERP of 645 kW from an elliptically polarized directional transmitting antenna with a centerline height of 218.7 meters above ground level (AGL). Considering a conservative predicted vertical plane relative field factor of 0.300 the WPNT facility is predicted to produce a power density at two meters above ground level of 49.497  $\mu\text{W}/\text{cm}^2$ , which is 14.42% of the FCC guideline value for an "uncontrolled" environment, and 2.883% of the FCC's guideline value for "controlled" environments. There is one other full-power DTV facility and one full-power FM station that are located at the WPNT 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 63.73% of the limit applicable to "uncontrolled" environments, and 12.746% of the limit for "controlled" environments. (See Appendix A)

**OCCUPATIONAL SAFETY**

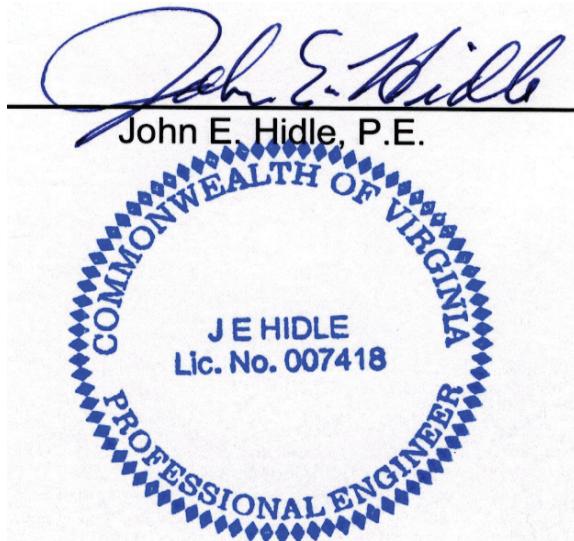
The licensee of WPNT is committed to the protection of station personnel and/or tower contractors working in the vicinity of the WPNT antenna, and is committed to reducing power or ceasing operation during times of maintenance of the transmission systems, when necessary, to ensure protection to personnel.

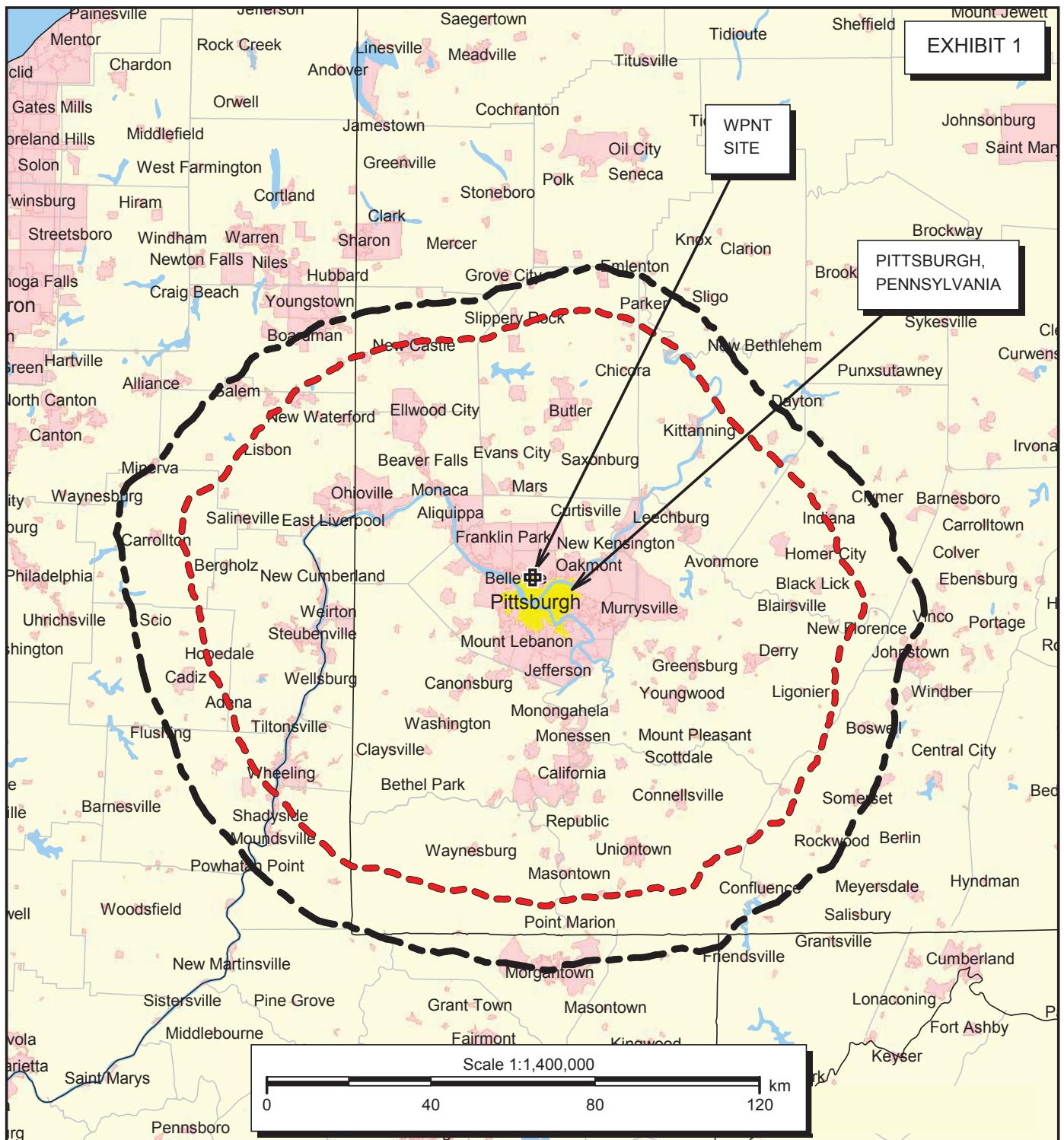
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**SUMMARY**

It is submitted that the instant application for construction permit to change WPNT from channel 42 to channel 21, 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: June 15, 2017





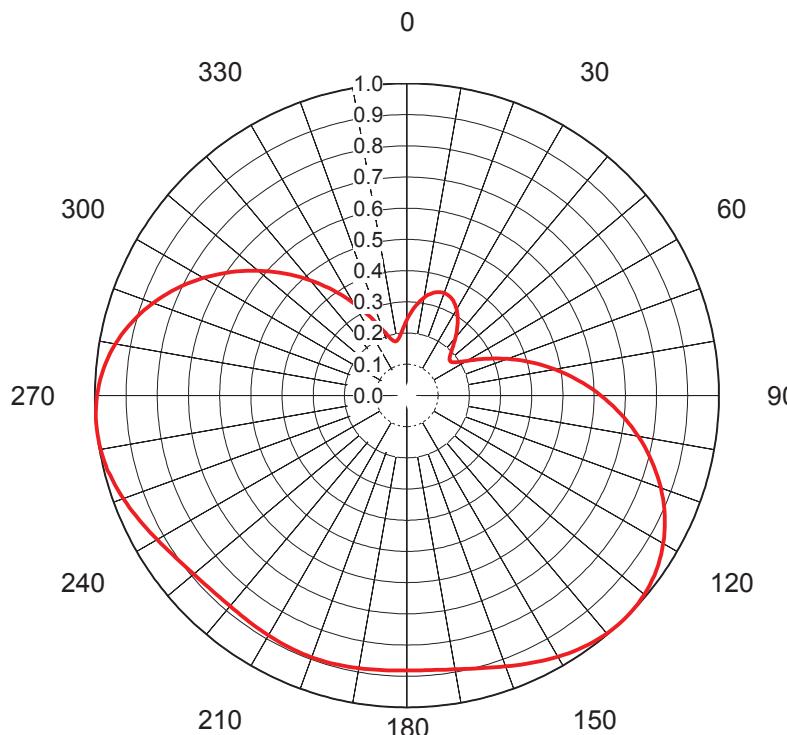
## PREDICTED COVERAGE CONTOURS

WPNT - PITTSBURGH, PENNSYLVANIA  
 DTV Channel 21 - 645 kW ERP - 312 M HAAT  
 JUNE, 2017

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



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

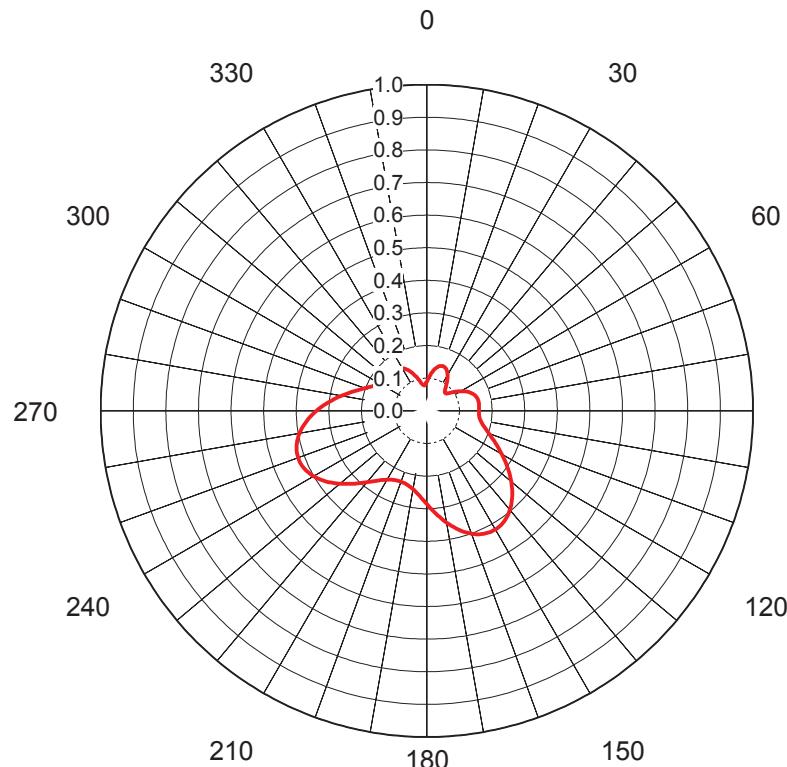


## AZIMUTH PATTERN Horizontal Polarization

Proposal No. C-70035-1  
 Date 8-Mar-17  
 Call Letters WPNT  
 Channel 21  
 Frequency 515 MHz  
 Antenna Type TFU-14ETT/VP-R 3C190  
 Gain 1.84 (2.65dB)  
 Calculated

Deg	Value																						
0	0.242	36	0.276	72	0.370	108	0.846	144	0.988	180	0.882	216	0.883	252	0.975	288	0.885	324	0.425				
1	0.251	37	0.268	73	0.383	109	0.856	145	0.985	181	0.882	217	0.883	253	0.978	289	0.876	325	0.411				
2	0.259	38	0.259	74	0.397	110	0.866	146	0.982	182	0.882	218	0.882	254	0.982	290	0.866	326	0.397				
3	0.268	39	0.251	75	0.411	111	0.876	147	0.978	183	0.883	219	0.882	255	0.985	291	0.856	327	0.383				
4	0.276	40	0.242	76	0.425	112	0.885	148	0.975	184	0.883	220	0.882	256	0.990	292	0.846	328	0.370				
5	0.284	41	0.234	77	0.439	113	0.894	149	0.971	185	0.884	221	0.882	257	0.990	293	0.835	329	0.356				
6	0.292	42	0.225	78	0.453	114	0.903	150	0.967	186	0.885	222	0.882	258	0.993	294	0.824	330	0.342				
7	0.299	43	0.217	79	0.467	115	0.912	151	0.963	187	0.885	223	0.882	259	0.995	295	0.813	331	0.329				
8	0.306	44	0.210	80	0.482	116	0.920	152	0.959	188	0.886	224	0.883	260	0.997	296	0.801	332	0.316				
9	0.312	45	0.203	81	0.496	117	0.928	153	0.955	189	0.887	225	0.884	261	0.998	297	0.789	333	0.303				
10	0.319	46	0.196	82	0.510	118	0.935	154	0.950	190	0.888	226	0.885	262	0.999	298	0.778	334	0.290				
11	0.324	47	0.190	83	0.524	119	0.942	155	0.946	191	0.889	227	0.886	263	1.000	299	0.765	335	0.278				
12	0.329	48	0.185	84	0.538	120	0.949	156	0.942	192	0.890	228	0.888	264	1.000	300	0.753	336	0.265				
13	0.334	49	0.182	85	0.552	121	0.955	157	0.937	193	0.890	229	0.889	265	1.000	301	0.741	337	0.254				
14	0.338	50	0.178	86	0.566	122	0.961	158	0.933	194	0.891	230	0.891	266	0.999	302	0.728	338	0.242				
15	0.341	51	0.178	87	0.580	123	0.966	159	0.929	195	0.891	231	0.894	267	0.998	303	0.715	339	0.232				
16	0.344	52	0.177	88	0.594	124	0.972	160	0.924	196	0.892	232	0.896	268	0.997	304	0.702	340	0.222				
17	0.346	53	0.179	89	0.608	125	0.976	161	0.920	197	0.892	233	0.899	269	0.995	305	0.689	341	0.213				
18	0.348	54	0.181	90	0.622	126	0.981	162	0.916	198	0.893	234	0.902	270	0.993	306	0.676	342	0.204				
19	0.349	55	0.185	91	0.635	127	0.984	163	0.912	199	0.893	235	0.905	271	0.991	307	0.662	343	0.197				
20	0.349	56	0.190	92	0.649	128	0.988	164	0.909	200	0.893	236	0.909	272	0.988	308	0.649	344	0.190				
21	0.349	57	0.197	93	0.662	129	0.991	165	0.905	201	0.893	237	0.912	273	0.984	309	0.635	345	0.185				
22	0.348	58	0.204	94	0.676	130	0.993	166	0.902	202	0.893	238	0.916	274	0.981	310	0.622	346	0.181				
23	0.346	59	0.213	95	0.689	131	0.995	167	0.899	203	0.892	239	0.920	275	0.976	311	0.608	347	0.179				
24	0.344	60	0.222	96	0.702	132	0.997	168	0.896	204	0.892	240	0.924	276	0.972	312	0.594	348	0.177				
25	0.341	61	0.232	97	0.715	133	0.998	169	0.894	205	0.891	241	0.929	277	0.966	313	0.580	349	0.178				
26	0.338	62	0.242	98	0.728	134	0.999	170	0.891	206	0.891	242	0.933	278	0.961	314	0.566	350	0.178				
27	0.334	63	0.254	99	0.741	135	1.000	171	0.889	207	0.890	243	0.937	279	0.955	315	0.552	351	0.182				
28	0.329	64	0.265	100	0.753	136	1.000	172	0.888	208	0.890	244	0.942	280	0.949	316	0.538	352	0.185				
29	0.324	65	0.278	101	0.765	137	1.000	173	0.886	209	0.889	245	0.946	281	0.942	317	0.524	353	0.190				
30	0.319	66	0.290	102	0.778	138	0.999	174	0.885	210	0.888	246	0.950	282	0.935	318	0.510	354	0.196				
31	0.312	67	0.303	103	0.789	139	0.998	175	0.884	211	0.887	247	0.955	283	0.928	319	0.496	355	0.203				
32	0.306	68	0.316	104	0.801	140	0.997	176	0.883	212	0.886	248	0.959	284	0.920	320	0.482	356	0.210				
33	0.299	69	0.329	105	0.813	141	0.995	177	0.882	213	0.885	249	0.963	285	0.912	321	0.467	357	0.217				
34	0.292	70	0.342	106	0.824	142	0.993	178	0.882	214	0.885	250	0.967	286	0.903	322	0.453	358	0.225				
35	0.284	71	0.356	107	0.835	143	0.990	179	0.882	215	0.884	251	0.971	287	0.894	323	0.439	359	0.234				

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## AZIMUTH PATTERN Vertical Polarization

Proposal No. C-70035-1  
 Date 8-Mar-17  
 Call Letters WPNT  
 Channel 21  
 Frequency 515 MHz  
 Antenna Type TFU-14ETT/VP-R 3C190  
 Gain 2.72 (4.35dB)  
 Calculated

Deg	Value																
0	0.089	36	0.104	72	0.155	108	0.193	144	0.411	180	0.286	216	0.265	252	0.419	288	0.213
1	0.093	37	0.100	73	0.156	109	0.197	145	0.413	181	0.280	217	0.270	253	0.417	289	0.208
2	0.096	38	0.096	74	0.157	110	0.202	146	0.416	182	0.275	218	0.275	254	0.416	290	0.202
3	0.100	39	0.093	75	0.158	111	0.208	147	0.417	183	0.270	219	0.280	255	0.413	291	0.197
4	0.104	40	0.089	76	0.159	112	0.213	148	0.419	184	0.265	220	0.286	256	0.411	292	0.193
5	0.108	41	0.086	77	0.160	113	0.219	149	0.420	185	0.261	221	0.291	257	0.408	293	0.188
6	0.112	42	0.083	78	0.161	114	0.225	150	0.420	186	0.257	222	0.297	258	0.404	294	0.184
7	0.116	43	0.081	79	0.161	115	0.231	151	0.420	187	0.253	223	0.303	259	0.400	295	0.181
8	0.120	44	0.080	80	0.161	116	0.238	152	0.420	188	0.250	224	0.309	260	0.396	296	0.177
9	0.124	45	0.079	81	0.161	117	0.245	153	0.419	189	0.247	225	0.316	261	0.392	297	0.174
10	0.127	46	0.078	82	0.161	118	0.252	154	0.418	190	0.244	226	0.322	262	0.387	298	0.172
11	0.131	47	0.079	83	0.161	119	0.259	155	0.416	191	0.241	227	0.329	263	0.382	299	0.169
12	0.134	48	0.080	84	0.161	120	0.266	156	0.414	192	0.239	228	0.335	264	0.376	300	0.167
13	0.136	49	0.081	85	0.161	121	0.273	157	0.411	193	0.237	229	0.341	265	0.370	301	0.165
14	0.139	50	0.084	86	0.161	122	0.280	158	0.408	194	0.236	230	0.348	266	0.364	302	0.164
15	0.141	51	0.086	87	0.161	123	0.287	159	0.405	195	0.234	231	0.354	267	0.358	303	0.163
16	0.143	52	0.089	88	0.160	124	0.295	160	0.401	196	0.233	232	0.360	268	0.352	304	0.162
17	0.144	53	0.093	89	0.160	125	0.302	161	0.397	197	0.232	233	0.366	269	0.345	305	0.161
18	0.145	54	0.097	90	0.160	126	0.310	162	0.392	198	0.232	234	0.372	270	0.338	306	0.160
19	0.145	55	0.100	91	0.160	127	0.317	163	0.388	199	0.231	235	0.377	271	0.331	307	0.160
20	0.146	56	0.104	92	0.160	128	0.324	164	0.383	200	0.231	236	0.383	272	0.324	308	0.160
21	0.145	57	0.108	93	0.160	129	0.331	165	0.377	201	0.231	237	0.388	273	0.317	309	0.160
22	0.145	58	0.112	94	0.160	130	0.338	166	0.372	202	0.232	238	0.392	274	0.310	310	0.160
23	0.144	59	0.116	95	0.161	131	0.345	167	0.366	203	0.232	239	0.397	275	0.302	311	0.160
24	0.143	60	0.120	96	0.162	132	0.352	168	0.360	204	0.233	240	0.401	276	0.295	312	0.160
25	0.141	61	0.124	97	0.163	133	0.358	169	0.354	205	0.234	241	0.405	277	0.287	313	0.161
26	0.139	62	0.128	98	0.164	134	0.364	170	0.348	206	0.236	242	0.408	278	0.280	314	0.161
27	0.136	63	0.131	99	0.165	135	0.370	171	0.341	207	0.237	243	0.411	279	0.273	315	0.161
28	0.134	64	0.135	100	0.167	136	0.376	172	0.335	208	0.239	244	0.414	280	0.266	316	0.161
29	0.131	65	0.138	101	0.169	137	0.382	173	0.329	209	0.241	245	0.416	281	0.259	317	0.161
30	0.127	66	0.141	102	0.172	138	0.387	174	0.322	210	0.244	246	0.418	282	0.252	318	0.161
31	0.124	67	0.144	103	0.174	139	0.392	175	0.316	211	0.247	247	0.419	283	0.245	319	0.161
32	0.120	68	0.146	104	0.177	140	0.396	176	0.309	212	0.250	248	0.420	284	0.238	320	0.161
33	0.116	69	0.149	105	0.181	141	0.400	177	0.303	213	0.253	249	0.420	285	0.231	321	0.161
34	0.112	70	0.151	106	0.184	142	0.404	178	0.297	214	0.257	250	0.420	286	0.225	322	0.161
35	0.108	71	0.153	107	0.188	143	0.408	179	0.291	215	0.261	251	0.420	287	0.219	323	0.160
																	0.086

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## ELEVATION PATTERN

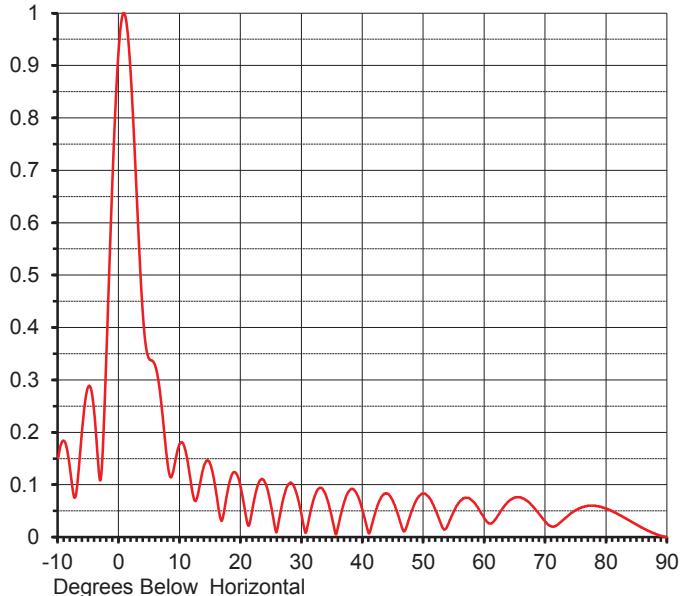
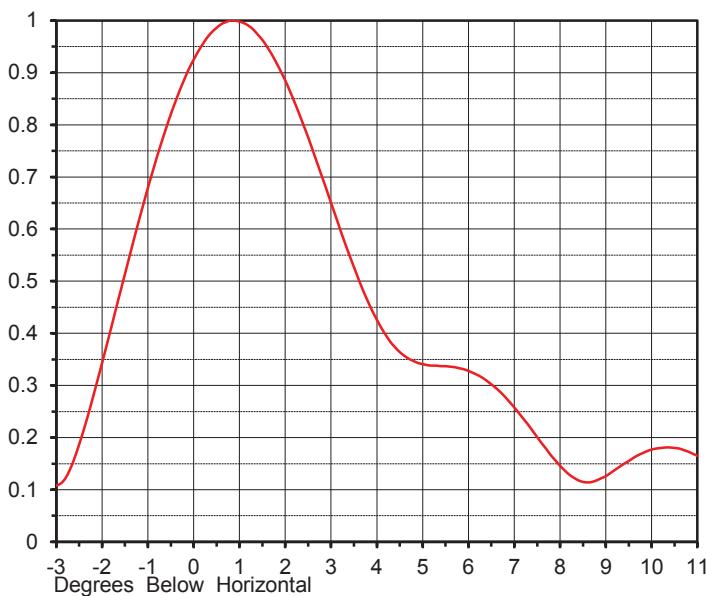
Proposal No. C-70035-1  
 Date 8-Mar-17  
 Call Letters WPNT  
 Channel 21  
 Frequency 515 MHz  
 Antenna Type TFU-14ETT/VP-R 3C190

RMS Directivity at Main Lobe  
 RMS Directivity at Horizontal

**13.3 ( 11.24 dB )**  
**11.8 ( 10.72 dB )**

Calculated

Beam Tilt 0.75 deg  
 Drawing Number 14E133075



Angle	Field								
-10.0	0.151	10.0	0.179	30.0	0.039	50.0	0.083	70.0	0.029
-9.0	0.183	11.0	0.159	31.0	0.025	51.0	0.074	71.0	0.020
-8.0	0.125	12.0	0.088	32.0	0.075	52.0	0.050	72.0	0.024
-7.0	0.087	13.0	0.085	33.0	0.094	53.0	0.020	73.0	0.034
-6.0	0.213	14.0	0.138	34.0	0.078	54.0	0.024	74.0	0.044
-5.0	0.288	15.0	0.138	35.0	0.033	55.0	0.051	75.0	0.052
-4.0	0.228	16.0	0.080	36.0	0.023	56.0	0.069	76.0	0.057
-3.0	0.112	17.0	0.036	37.0	0.069	57.0	0.075	77.0	0.060
-2.0	0.377	18.0	0.099	38.0	0.091	58.0	0.069	78.0	0.060
-1.0	0.709	19.0	0.124	39.0	0.083	59.0	0.054	79.0	0.058
0.0	0.941	20.0	0.093	40.0	0.049	60.0	0.035	80.0	0.054
1.0	0.995	21.0	0.029	41.0	0.007	61.0	0.026	81.0	0.049
2.0	0.865	22.0	0.061	42.0	0.045	62.0	0.038	82.0	0.043
3.0	0.625	23.0	0.106	43.0	0.076	63.0	0.056	83.0	0.037
4.0	0.410	24.0	0.103	44.0	0.083	64.0	0.069	84.0	0.030
5.0	0.339	25.0	0.056	45.0	0.067	65.0	0.076	85.0	0.023
6.0	0.324	26.0	0.017	46.0	0.034	66.0	0.075	86.0	0.017
7.0	0.247	27.0	0.076	47.0	0.014	67.0	0.069	87.0	0.011
8.0	0.137	28.0	0.103	48.0	0.049	68.0	0.057	88.0	0.006
9.0	0.132	29.0	0.088	49.0	0.075	69.0	0.043	89.0	0.002
									90.0 0.000

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**SUMMARY OF RADIOFREQUENCY  
RADIATION STUDY**

WPNT, Pittsburgh, PA

Channel 21, 645 kW, 314.9 m HAAT  
June, 2017

<u>CALL</u>	<u>SERVICE</u>	<u>CHANNEL</u>	<u>FREQUENCY</u>	<u>POLAR- IZATION</u>	<u>ANTENNA HEIGHT</u>	<u>ERP (kW)</u>	<u>VERT. RELATIVE FIELD FACTOR</u>	<u>WORST-CASE PREDICTED POWER DENSITY (<math>\mu</math>W/cm<sup>2</sup>)</u>	<u>FCC UNCONTROLLED LIMIT (<math>\mu</math>W/cm<sup>2</sup>)</u>	<u>PERCENT OF UNCONTROLLED LIMIT</u>
WPGH-TV**	DT	20	509	H	204.8	535.000	0.300	39.114	339.33	11.53%
WPGH-TV**	DT	20	509	V	204.8	229.300	0.300	16.764	339.33	4.94%
WPNT***	DT	21	515	H	216.7	645.000	0.300	42.074	343.33	12.25%
WPNT***	DT	21	515	V	216.7	113.800	0.300	7.423	343.33	2.16%
WLTJ	FM	225	92.9	H & V	162	43.000	<note 1>	65.698	200.00	32.85%

**TOTAL PERCENTAGE OF FCC GUIDELINE VALUE = 63.73%**

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

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

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

note 1: FM Model Antenna: EPA Type 1; 4-bay, full wave spaced antenna,



## WPNT - PITTSBURGH, PENNSYLVANIA

### Longley-Rice Interference Analysis

tvstudy v2.2.2  
Database: localhost, Study: WPNT\_21\_619C\_312H\_645K, Model: Longley-Rice  
Start: 2017.05.31 19:33:49

Study created: 2017.05.31 19:33:42

Study build station data: LMS TV 2017-05-16 (10)

Proposal: WPNT D21 DT LIC PITTSBURGH, PA  
File number: WPNT\_21\_619C\_312H\_645K  
Facility ID: 73907  
Station data: User record  
Record ID: 495  
Country: U.S.  
Zone: I

Non-U.S. records included

Stations potentially affected:

Call	Chan	Svc	Status	City, State	File Number	Distance
WPGH-TV	D20	DT	BL	PITTSBURGH, PA	DTVBL73875	0.0 km
WHSV-TV	D20	DT	BL	HARRISONBURG, VA	DTVBL4688	241.1
WFPT	D21	DT	BL	FREDERICK, MD	DTVBL40626	267.5
WCPB	D21	DT	BL	SALISBURY, MD	DTVBL40618	445.4
WWJ-TV	D21	DT	BL	DETROIT, MI	DTVBL72123	341.6
WROC-TV	D21	DT	BL	ROCHESTER, NY	DTVBL73964	355.4
WBNS-TV	D21	DT	LIC	COLUMBUS, OH	BLCDT20021025ABK	263.1
WSEE-TV	D21	DT	BL	ERIE, PA	DTVBL49711	174.4
WWCW	D21	DT	BL	LYNCHBURG, VA	DTVBL24812	354.3
WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	147.2
WTOO-CD	D22	DC	BL	BOLIVAR, PA	DTVBL68403	124.2
WWKH-CD	D22	DC	BL	UNIONTOWN, PA	DTVBL68409	77.1

No non-directional AM stations found within 0.8 km

Directional AM stations within 3.2 km:

WZUM 1550 C DA2 X BRADDOCK, PA BMJP20041029AHI  
WAOB 860 L DA2 D MILLVALE, PA BML20090709APC  
WAOB 860 L DA2 N MILLVALE, PA BML20090709APC  
KQV 1410 L DA2 D PITTSBURGH, PA BL19981229AC  
KQV 1410 L DA2 N PITTSBURGH, PA BL19981229AC  
WBGG 970 L DA2 D PITTSBURGH, PA BMML20121121ASR  
WBGG 970 L DA2 N PITTSBURGH, PA BMML20121121ASR

Record parameters as studied:

Channel: D21  
Latitude: 40 29 43.00 N (NAD83)  
Longitude: 80 0 16.00 W  
Height AMSL: 618.7 m  
HAAT: 312.0 m  
Peak ERP: 645 kW  
Antenna: DIE-TFU-18JTT-R 3C190 (ID 43259) 0.0 deg

**Appendix B - Interference Analysis  
WPNT - Pittsburgh, Pennsylvania  
Channel 21 - 645 kW - Page 2**

39.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	37.8 kW	273.8 m	72.8 km
45.0	28.4	288.5	72.3
90.0	250	346.5	92.7
135.0	645	338.9	100.0
180.0	502	310.5	95.0
225.0	507	335.7	97.7
270.0	636	329.0	99.0
315.0	197	270.1	81.6

Proposal service area is within baseline plus 1.0%

Proposal service area population is more than 95.0% of baseline

\*\*Proposal is within coordination distance of Canadian border  
Distance to Canadian border: 211.1 km

Distance to Mexican border: 2245.7 km

Conditions at FCC monitoring station: Laurel MD  
Bearing: 117.5 degrees Distance: 309.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:  
Bearing: 277.2 degrees Distance: 2130.3 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 DTVBL73875 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPGH-TV	D20	DT	BL	PITTSBURGH, PA	DTVBL73875	
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	0.0 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	0.0
	WKYC	D19	DT	BL	CLEVELAND, OH	DTVBL73195	172.6
	WTVS	D20	DT	BL	DETROIT, MI	DTVBL16817	341.6
	WBGH-CD	D20z	DC	LIC	BINGHAMTON, NY	BLANK0000004524	381.2
	WOHZ-CD	D20	DC	BL	MANSFIELD, OH	DTVBL41892	222.4
	WHSV-TV	D20	DT	BL	HARRISONBURG, VA	DTVBL4688	241.1
	WVPB-TV	D20	DT	BL	HUNTINGTON, WV	DTVBL71657	291.4
	WSEE-TV	D21	DT	BL	ERIE, PA	DTVBL49711	174.4
	CBLT-DT	D20	DT	LIC	TORONTO, ON	BLANKCANADA234	353.5

Service area	Terrain-limited		IX-free, before		IX-free, after		Percent New IX
25609.1	3,132,520	24086.0	3,010,251	24042.0	3,005,855	24034.0	3,005,454

Undesired	Total IX	Unique IX, before	Unique IX, after
WPNT D21 DT BL	12.0	247	12.0
WPNT D21 DT LIC	20.0	648	20.0
WTVS D20 DT BL	24.0	4,028	16.0
WOHZ-CD D20 DC BL	8.0	99	0.0

**Appendix B - Interference Analysis**  
**WPNT - Pittsburgh, Pennsylvania**  
**Channel 21 - 645 kW - Page 3**

WHSV-TV D20 DT BL	8.1	121	8.1	121	8.1	121
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Interference to DTVBL4688 BL, scenario 1  
Proposal causes no interference.

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Interference to DTVBL40626 BL, scenario 1

Desired:	Call WFPT	Chan D21	Svc DT	Status BL	City, State FREDERICK, MD	File Number DTVBL40626	Distance
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	267.5 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	267.5
	WHSV-TV	D20	DT	BL	HARRISONBURG, VA	DTVBL4688	135.6
	WCPB	D21	DT	BL	SALISBURY, MD	DTVBL40618	177.8
	WWCW	D21	DT	BL	LYNCHBURG, VA	DTVBL24812	295.7
	WVBT	D21	DT	BL	VIRGINIA BEACH, VA	DTVBL65387	280.1
	WMPB	D22	DT	BL	BALTIMORE, MD	DTVBL65944	50.2
	WTOO-CD	D22	DC	BL	BOLIVAR, PA	DTVBL68403	156.6

Service area 10205.6	Terrain-limited 4,799,943	IX-free, before 8967.1	IX-free, after 4,481,057	Percent New IX 8270.6	New IX 3,841,465	8266.6	3,841,407	0.05	0.00
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Undesired	Total IX	Unique IX, before	Unique IX, after
WPNT D21 DT BL	107.2	12,306	47.6 5,855
WPNT D21 DT LIC	111.1	12,364	51.6 5,913
WCPB D21 DT BL	334.7	446,691	103.6 89,589
WWCW D21 DT BL	31.9	49,424	12.0 288
WVBT D21 DT BL	155.8	331,556	36.0 56,154
WMPB D22 DT BL	377.8	275,375	262.2 129,562

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Interference to DTVBL40618 BL, scenario 1  
Proposal causes no interference.

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Interference to DTVBL72123 BL, scenario 1  
Proposal causes no interference.

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Interference to DTVBL73964 BL, scenario 1  
Proposal causes no interference.

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Interference to BLCDT20021025ABK LIC, scenario 1

Desired:	Call WBNS-TV	Chan D21	Svc DT	Status LIC	City, State COLUMBUS, OH	File Number BLCDT20021025ABK	Distance
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	263.1 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	263.1
	WLWT	D20	DT	BL	CINCINNATI, OH	DTVBL46979	158.9
	WOHZ-CD	D20	DC	BL	MANSFIELD, OH	DTVBL41892	94.7
	WVPB-TV	D20	DT	BL	HUNTINGTON, WV	DTVBL71657	178.9
	WFYI	D21	DT	LIC	INDIANAPOLIS, IN	BLEDT20100803ADB	270.5
	WRLW-CD	D21	DC	BL	SALEM, IN	DTVBL55315	304.2
	WKYT-TV	D21	DT	BL	LEXINGTON, KY	DTVBL24914	245.3
	WZPX-TV	D21	DT	BL	BATTLE CREEK, MI	DTVBL71871	345.7
	WWJ-TV	D21	DT	BL	DETROIT, MI	DTVBL72123	275.6
	WSEE-TV	D21	DT	BL	ERIE, PA	DTVBL49711	344.0

**Appendix B - Interference Analysis**  
**WPNT - Pittsburgh, Pennsylvania**  
**Channel 21 - 645 kW - Page 4**

WCVN-TV	D22	DT	BL	COVINGTON, KY	DTVBL34204	164.3
WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	172.3
WBGU-TV	D22	DT	BL	BOWLING GREEN, OH	DTVBL6568	149.3
WSAZ-TV	D22	DT	BL	HUNTINGTON, WV	DTVBL36912	176.7
<b>Service area</b>		<b>Terrain-limited</b>		<b>IX-free, before</b>	<b>IX-free, after</b>	<b>Percent New IX</b>
29747.3	2,847,721	28835.8	2,784,795	27494.2	2,720,773	27506.2
					2,720,926	-0.04
						-0.01

Undesired		Total IX	Unique IX, before	Unique IX, after
WPNT D21	DT BL	484.7	16,686	377.1 9,011
WPNT D21	DT LIC	472.7	16,533	365.0 8,858
WLWT D20	DT BL	11.9	1,488	7.9 1,229
WOHZ-CD D20	DC BL	107.7	11,642	59.9 5,700
WFYI D21	DT LIC	446.1	28,279	257.4 257.4 16,457
WKYT-TV D21	DT BL	379.5	17,621	215.2 6,961
WZPX-TV D21	DT BL	8.0	499	0.0 0 0
WWJ-TV D21	DT BL	252.2	14,537	47.9 2,004 47.9 2,004
WSEE-TV D21	DT BL	4.0	34	4.0 34 4.0 34
WBGU-TV D22	DT BL	40.0	484	12.0 115 12.0 115
WSAZ-TV D22	DT BL	27.9	299	15.9 158 15.9 158

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Interference to DTVBL49711 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WSEE-TV	D21	DT	BL	ERIE, PA	DTVBL49711	
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	174.4 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	174.4
	WWJ-TV	D21	DT	BL	DETROIT, MI	DTVBL72123	264.1
	WROC-TV	D21	DT	BL	ROCHESTER, NY	DTVBL73964	231.1
	WBNS-TV	D21	DT	LIC	COLUMBUS, OH	BLCDT20021025ABK	344.0
	WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	171.9
	CFTO-TV-21D21	DT	LIC		ORILLIA, ON	BLANKCANADA195	313.3
	CICO-DT-28D22	DT	LIC		KITCHENER, ON	BLANKCANADA183	137.8

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
13544.5	556,413	13034.7	531,269	12849.6 520,710 12845.6 520,655 0.03 0.01
2090.9	545	2090.9	545	2090.9 545 2090.9 545 0.00 0.00
(in Canada)				

Undesired		Total IX	Unique IX, before	Unique IX, after
WPNT D21	DT BL	128.9	2,518	96.8 1,472
WPNT D21	DT LIC	133.0	2,573	100.8 1,527
WWJ-TV D21	DT BL	12.1	301	0.0 0 0
WROC-TV D21	DT BL	72.2	8,368	56.2 8,041 56.2 8,041
WBNS-TV D21	DT LIC	16.1	719	0.0 0 0.0 0

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Interference to DTVBL24812 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WWCW	D21	DT	BL	LYNCHBURG, VA	DTVBL24812	
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	354.3 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	354.3
	WUNC-TV	D20	DT	BL	CHAPEL HILL, NC	DTVBL69080	166.9
	WHSV-TV	D20	DT	BL	HARRISONBURG, VA	DTVBL4688	167.2
	WFPT	D21	DT	BL	FREDERICK, MD	DTVBL40626	295.7
	WCPB	D21	DT	BL	SALISBURY, MD	DTVBL40618	373.8
	WUNG-TV	D21	DT	BL	CONCORD, NC	DTVBL69124	235.0

**Appendix B - Interference Analysis**  
**WPNT - Pittsburgh, Pennsylvania**  
**Channel 21 - 645 kW - Page 5**

WUNJ-TV	D21	DT	BL	WILMINGTON, NC	DTVBL69332	356.6
WVBT	D21	DT	BL	VIRGINIA BEACH, VA	DTVBL65387	282.3
WUVC-DT	D22	DT	BL	FAYETTEVILLE, NC	DTVBL16517	209.4
WCVE-TV	D22	DT	BL	RICHMOND, VA	DTVBL9987	180.6

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
38813.3 1,404,367	32342.1 1,213,115	31621.1 1,194,563	31621.1 1,194,563	0.00 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
WPNT D21 DT BL	19.8	0	19.8
WPNT D21 DT LIC	19.8	0	19.8
WUNC-TV D20 DT BL	91.9	6,610	36.0
WCPB D21 DT BL	4.0	48	0.0
WUNG-TV D21 DT BL	573.8	13,680	454.0
WUNJ-TV D21 DT BL	115.8	6,269	8.0
WVBT D21 DT BL	63.5	405	59.6
WCVE-TV D22 DT BL	11.9	73	8.0

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Interference to DTVBL70491 BL, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	147.2 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	147.2
	WBNS-TV	D21	DT	LIC	COLUMBUS, OH	BLCDT20021025ABK	172.3
	WSEE-TV	D21	DT	BL	ERIE, PA	DTVBL49711	171.9
	WCVN-TV	D22	DT	BL	COVINGTON, KY	DTVBL34204	336.1
	WDWO-CD	D22	DC	BL	DETROIT, MI	DTVBL68444	213.1
	WLLA	D22	DT	BL	KALAMAZOO, MI	DTVBL11033	361.7
	WBGU-TV	D22	DT	BL	BOWLING GREEN, OH	DTVBL6568	194.8
	WTOO-CD	D22	DC	BL	BOLIVAR, PA	DTVBL68403	268.8
	WWKH-CD	D22	DC	BL	UNIONTOWN, PA	DTVBL68409	211.2
	WSAZ-TV	D22	DT	BL	HUNTINGTON, WV	DTVBL36912	289.1
	WNWO-TV	D23	DT	BL	TOLEDO, OH	DTVBL73354	162.4
	WPXI	D23	DT	BL	PITTSBURGH, PA	DTVBL73910	148.8
	CICO-DT-28D22	DT	LIC		KITCHENER, ON	BLANKCANADA183	261.5

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
26074.7 4,165,775	25541.2 4,122,640	24982.0 4,089,910	24982.0 4,089,910	0.00 0.00
281.1 0	281.1 0	277.1 0	277.1 0	0.00 0.00

(in Canada)

Undesired	Total IX	Unique IX, before	Unique IX, after
WPNT D21 DT BL	31.9	1,086	19.9
WPNT D21 DT LIC	31.9	1,086	19.9
WDWO-CD D22 DC BL	20.1	1,517	0.0
WDWO-CD D22 DC BL	4.0	0	0.0
WBGU-TV D22 DT BL	419.0	25,986	334.8
WBGU-TV D22 DT BL	4.0	0	0.0
WTOO-CD D22 DC BL	4.0	143	0.0
WWKH-CD D22 DC BL	16.0	812	8.0
WSAZ-TV D22 DT BL	120.2	2,797	80.2
WPXI D23 DT BL	39.9	3,870	28.0
CICO-DT-28 D22 DT LIC	36.2	2,731	4.0

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Interference to DTVBL68403 BL, scenario 1

Call	Chan	Svc	Status	City, State	File Number	Distance
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**Appendix B - Interference Analysis**  
**WPNT - Pittsburgh, Pennsylvania**  
**Channel 21 - 645 kW - Page 6**

Desired:	WTOO-CD	D22	DC	BL	BOLIVAR, PA	DTVBL68403		
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	124.2	km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	124.2	
	WMPB	D22	DT	BL	BALTIMORE, MD	DTVBL65944	178.6	
	WPHY-CD	D22	DC	BL	TRENTON, NJ	DTVBL74464	287.3	
	WXXI-TV	D22	DT	BL	ROCHESTER, NY	DTVBL57274	326.5	
	WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	268.8	
	WOLF-TV	D22	DT	BL	HAZLETON, PA	DTVBL73375	247.6	
	WWKH-CD	D22	DC	BL	UNIONTOWN, PA	DTVBL68409	104.9	
	WCVE-TV	D22	DT	BL	RICHMOND, VA	DTVBL9987	319.7	
	WHAG-TV	D23	DT	BL	HAGERSTOWN, MD	DTVBL25045	86.4	
	WPXI	D23	DT	BL	PITTSBURGH, PA	DTVBL73910	123.6	
Service area								
8918.9	416,539	6579.7	304,969	6451.5	302,851	6451.5	302,851	Percent New IX
							0.00	0.00
Undesired		Total	IX		Unique IX, before		Unique IX, after	
WPNT D21 DT BL		4.0		20	0.0	0		
WPNT D21 DT LIC		4.0		20		0.0	0	
WVPX-TV D22 DT BL		36.0		596	12.0	255	12.0	255
WOLF-TV D22 DT BL		16.1		302	12.1	258	12.1	258
WWKH-CD D22 DC BL		84.1		1,393	76.1	1,251	76.1	1,251
WPXI D23 DT BL		20.0		212	4.0	13	4.0	13

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**Interference to DTVBL68409 BL, scenario 1**

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WWKH-CD	D22	DC	BL	UNIONTOWN, PA	DTVBL68409	
Undesireds:	WPNT	D21	DT	BL	PITTSBURGH, PA	DTVBL73907	77.1 km
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	77.1
	WMPB	D22	DT	BL	BALTIMORE, MD	DTVBL65944	250.4
	WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	211.2
	WTOO-CD	D22	DC	BL	BOLIVAR, PA	DTVBL68403	104.9
	WCVE-TV	D22	DT	BL	RICHMOND, VA	DTVBL9987	315.6
	WSAZ-TV	D22	DT	BL	HUNTINGTON, WV	DTVBL36912	266.6
	WPXI	D23	DT	BL	PITTSBURGH, PA	DTVBL73910	73.8
Service area							
3713.8	416,138	3251.3	384,557	3122.5	369,966	3122.5	369,966
						Percent New IX	
						0.00	0.00
Undesired		Total	IX		Unique IX, before		Unique IX, after
WPNT D21 DT BL		76.5		10,325	8.0	1,293	
WPNT D21 DT LIC		76.5		10,325		8.0	1,293
WVPX-TV D22 DT BL		56.3		5,052	20.1	2,586	20.1
WTOO-CD D22 DC BL		32.3		973	24.2	809	24.2
WSAZ-TV D22 DT BL		12.1		471	0.0	0	0.0
WPXI D23 DT BL		68.4		9,121	4.0	573	4.0

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**Interference to proposal, scenario 1**

1.43% interference

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WPNT	D21	DT	LIC	PITTSBURGH, PA	WPNT_21_619C_312H_645K	
Undesireds:	WPGH-TV	D20	DT	BL	PITTSBURGH, PA	DTVBL73875	0.0 km
	WFPT	D21	DT	BL	FREDERICK, MD	DTVBL40626	267.5
	WWJ-TV	D21	DT	BL	DETROIT, MI	DTVBL72123	341.6

**Appendix B - Interference Analysis  
WPNT - Pittsburgh, Pennsylvania  
Channel 21 - 645 kW - Page 7**

WROC-TV	D21	DT	BL	ROCHESTER, NY	DTVBL73964	355.4
WBNS-TV	D21	DT	LIC	COLUMBUS, OH	BLCDT20021025ABK	263.1
WSEE-TV	D21	DT	BL	ERIE, PA	DTVBL49711	174.4
WWCW	D21	DT	BL	LYNCHBURG, VA	DTVBL24812	354.3
WVPX-TV	D22	DT	BL	AKRON, OH	DTVBL70491	147.2
WTOO-CD	D22	DC	BL	BOLIVAR, PA	DTVBL68403	124.2
WWKH-CD	D22	DC	BL	UNIONTOWN, PA	DTVBL68409	77.1

Service area	Terrain-limited			IX-free	Percent IX	
25232.0	3,130,837	23681.8	3,024,148	22995.1	2,980,964	2.90      1.43

Undesired	Total IX	Unique IX	Prcnt Unique IX
WPGH-TV D20 DT BL	4.0	4	0.00      0.00
WWJ-TV D21 DT BL	16.0	7,124	0.00      0.00
WBNS-TV D21 DT LIC	361.2	32,601	1.09      0.29
WSEE-TV D21 DT BL	256.7	28,170	0.64      0.15
WVPX-TV D22 DT BL	47.9	6,501	0.10      0.03
WTOO-CD D22 DC BL	8.1	59	0.03      0.00
WWKH-CD D22 DC BL	141.0	5,181	0.51      0.15