

**Application for Modification**  
Post – Repack Construction Permit  
Engineering Exhibit

**WPXR-TV – Roanoke, VA**

Facility ID: 70251

Licensee “ION MEDIA LICENSE COMPANY, LLC” is currently authorized to operate on Post-Repack DTV channel 27. The Antenna Structure has a Latitude of 37° 11' 38.0" N+ and a Longitude of 080° 09' 24.6" W-.

The purpose of this application is to request authority to modify the construction permit (0000034915) to operate from Antenna Structure Registration Number 1028319 with a Latitude of 37° 11' 56.0" N+ and a Longitude of 080° 09' 00" W-. The HAAT is 623.6 m (AGL 61.84 m) with an AMSL of 1207.8 m. An ERP of 609 kW will be utilized.

**Antenna System**

A directional top mounted antenna will be utilized. It will be affixed to an existing guyed tower structure and will not increase the overall height of the structure. Any vertical component will not exceed the horizontal pattern in any direction. Elevation and Azimuth patterns are attached.

**RF Hazard (Environmental)**

Human Exposure measurements were calculated using the OET- 65 equation and the outcome is compliant with FCC 1.1310.

<b>Calculated Maximum</b>	<b>Calculated Exposure</b>	<b>Percent of Limit</b>
mW/cm <sup>2</sup>	mW/cm <sup>2</sup>	
0.367	0.030743	8.37%

The station will coordinate with other(s) to comply with access, antenna and/or tower issues related to RF Exposure

**Broadcast Facility**

**§73.616 Interference Caused**

A calculation using *TVStudy* version 2.2.5 using an LMS database dated 2019-02-26 indicates that there is no excessive new interference created. This study used cell spacing of 2 km and a profile spacing of 1 km.

**§73.622 Maximum ERP and Antenna Height**

The application does exceed the maximum ERP for the specified HAAT. However, this application is compliant with the “Largest Station in the Market” provision. WSET-TV has a service area of 47722.7 sq. km. and WPXR-TV would be compliant with a service area of 39023.9 sq. km.

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**§73.623 DTV Allotments**

The application does not change the DTV Table of Allotments.

**§73.625 Coverage of Principal Community**

The application's ERP will sufficiently cover Roanoke, VA. RF coverage analysis attached.

**§73.1030 Radio, Research and Receiving Locations**

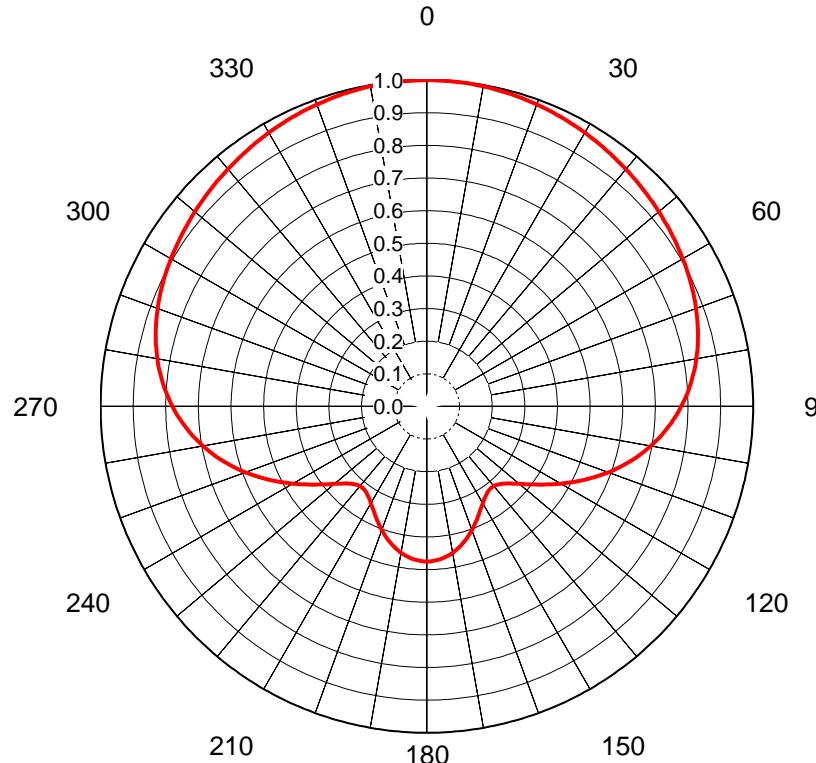
A calculation using *TVStudy* version 2.2.5 using an LMS database dated 2019-02-26 indicates that no excessive interference to any "protected" locations. As such, no coordination or notification is required.

**§73.1650 International Agreements**

The application's transmit location is 533.7 km from Canada. As such, no coordination or notification is required.

The application's transmit location is 2014.1 km from Mexico. As such, no coordination or notification is required.

# Dielectric®



## AZIMUTH PATTERN Horizontal Polarization

Proposal No. C-71132  
 Date 4-May-18  
 Call Letters WPXR  
 Channel 27  
 Frequency 551 MHz  
 Antenna Type TFU-24GTH/VP-R S180  
 Gain 1.81 (2.57dB)  
 Calculated

Deg	Value																		
0	1.000	36	0.957	72	0.871	108	0.614	144	0.320	180	0.475	216	0.320	252	0.614	288	0.871	324	0.957
1	1.000	37	0.955	73	0.868	109	0.603	145	0.323	181	0.475	217	0.319	253	0.625	289	0.875	325	0.959
2	1.000	38	0.953	74	0.864	110	0.591	146	0.326	182	0.474	218	0.318	254	0.636	290	0.878	326	0.961
3	1.000	39	0.951	75	0.860	111	0.580	147	0.329	183	0.473	219	0.318	255	0.647	291	0.881	327	0.963
4	0.999	40	0.949	76	0.856	112	0.568	148	0.333	184	0.472	220	0.319	256	0.657	292	0.884	328	0.965
5	0.999	41	0.947	77	0.852	113	0.556	149	0.338	185	0.470	221	0.320	257	0.667	293	0.887	329	0.967
6	0.999	42	0.945	78	0.848	114	0.545	150	0.343	186	0.468	222	0.323	258	0.677	294	0.890	330	0.968
7	0.998	43	0.943	79	0.843	115	0.533	151	0.348	187	0.465	223	0.326	259	0.687	295	0.893	331	0.970
8	0.997	44	0.941	80	0.839	116	0.521	152	0.354	188	0.462	224	0.330	260	0.697	296	0.896	332	0.972
9	0.997	45	0.939	81	0.834	117	0.509	153	0.359	189	0.459	225	0.335	261	0.706	297	0.898	333	0.974
10	0.996	46	0.937	82	0.829	118	0.497	154	0.366	190	0.455	226	0.340	262	0.715	298	0.901	334	0.976
11	0.995	47	0.934	83	0.823	119	0.485	155	0.372	191	0.451	227	0.346	263	0.724	299	0.903	335	0.977
12	0.994	48	0.932	84	0.818	120	0.474	156	0.378	192	0.447	228	0.353	264	0.733	300	0.906	336	0.979
13	0.993	49	0.930	85	0.812	121	0.462	157	0.384	193	0.442	229	0.361	265	0.741	301	0.908	337	0.980
14	0.992	50	0.928	86	0.806	122	0.450	158	0.391	194	0.438	230	0.369	266	0.750	302	0.910	338	0.982
15	0.991	51	0.926	87	0.800	123	0.439	159	0.397	195	0.432	231	0.378	267	0.758	303	0.913	339	0.983
16	0.990	52	0.924	88	0.793	124	0.428	160	0.403	196	0.427	232	0.387	268	0.765	304	0.915	340	0.985
17	0.989	53	0.922	89	0.787	125	0.417	161	0.410	197	0.421	233	0.397	269	0.773	305	0.917	341	0.986
18	0.988	54	0.920	90	0.780	126	0.407	162	0.416	198	0.416	234	0.407	270	0.780	306	0.920	342	0.988
19	0.986	55	0.917	91	0.773	127	0.397	163	0.421	199	0.410	235	0.417	271	0.787	307	0.922	343	0.989
20	0.985	56	0.915	92	0.765	128	0.387	164	0.427	200	0.403	236	0.428	272	0.793	308	0.924	344	0.990
21	0.983	57	0.913	93	0.758	129	0.378	165	0.432	201	0.397	237	0.439	273	0.800	309	0.926	345	0.991
22	0.982	58	0.910	94	0.750	130	0.369	166	0.438	202	0.391	238	0.450	274	0.806	310	0.928	346	0.992
23	0.980	59	0.908	95	0.741	131	0.361	167	0.442	203	0.384	239	0.462	275	0.812	311	0.930	347	0.993
24	0.979	60	0.906	96	0.733	132	0.353	168	0.447	204	0.378	240	0.474	276	0.818	312	0.932	348	0.994
25	0.977	61	0.903	97	0.724	133	0.346	169	0.451	205	0.372	241	0.485	277	0.823	313	0.934	349	0.995
26	0.976	62	0.901	98	0.715	134	0.340	170	0.455	206	0.366	242	0.497	278	0.829	314	0.937	350	0.996
27	0.974	63	0.898	99	0.706	135	0.335	171	0.459	207	0.359	243	0.509	279	0.834	315	0.939	351	0.997
28	0.972	64	0.896	100	0.697	136	0.330	172	0.462	208	0.354	244	0.521	280	0.839	316	0.941	352	0.997
29	0.970	65	0.893	101	0.687	137	0.326	173	0.465	209	0.348	245	0.533	281	0.843	317	0.943	353	0.998
30	0.968	66	0.890	102	0.677	138	0.323	174	0.468	210	0.343	246	0.545	282	0.848	318	0.945	354	0.999
31	0.967	67	0.887	103	0.667	139	0.320	175	0.470	211	0.338	247	0.556	283	0.852	319	0.947	355	0.999
32	0.965	68	0.884	104	0.657	140	0.319	176	0.472	212	0.333	248	0.568	284	0.856	320	0.949	356	0.999
33	0.963	69	0.881	105	0.647	141	0.318	177	0.473	213	0.329	249	0.580	285	0.860	321	0.951	357	1.000
34	0.961	70	0.878	106	0.636	142	0.318	178	0.474	214	0.326	250	0.591	286	0.864	322	0.953	358	1.000
35	0.959	71	0.875	107	0.625	143	0.319	179	0.475	215	0.323	251	0.603	287	0.868	323	0.955	359	1.000

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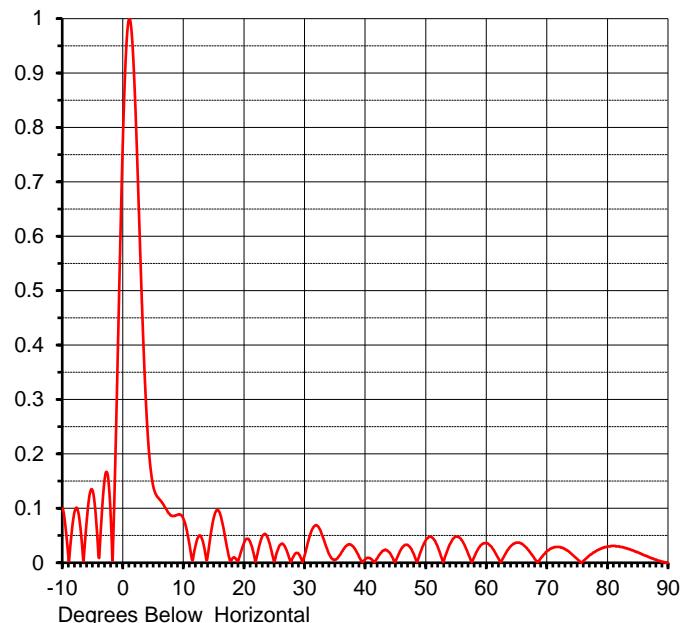
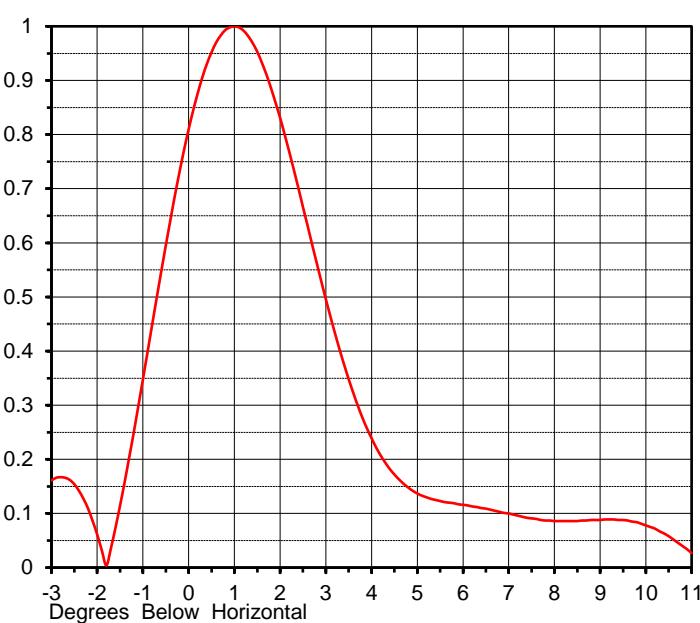
## ELEVATION PATTERN

Proposal No. **C-71132**  
 Date **4-May-18**  
 Call Letters **WPXR**  
 Channel **27**  
 Frequency **551 MHz**  
 Antenna Type **TFU-24GTH/VP-R S180**

RMS Directivity at Main Lobe  
 RMS Directivity at Horizontal

**21.5 ( 13.32 dB )**  
**14.1 ( 11.49 dB )**  
**Calculated**

Beam Tilt **1.00 deg**  
 Pattern Number **24G215100**



Angle	Field								
-10.0	0.100	10.0	0.078	30.0	0.017	50.0	0.043	70.0	0.022
-9.0	0.003	11.0	0.027	31.0	0.057	51.0	0.046	71.0	0.028
-8.0	0.096	12.0	0.036	32.0	0.068	52.0	0.026	72.0	0.029
-7.0	0.054	13.0	0.043	33.0	0.045	53.0	0.007	73.0	0.024
-6.0	0.084	14.0	0.019	34.0	0.015	54.0	0.036	74.0	0.016
-5.0	0.129	15.0	0.086	35.0	0.006	55.0	0.048	75.0	0.006
-4.0	0.009	16.0	0.088	36.0	0.019	56.0	0.039	76.0	0.004
-3.0	0.161	17.0	0.034	37.0	0.033	57.0	0.014	77.0	0.014
-2.0	0.061	18.0	0.008	38.0	0.029	58.0	0.013	78.0	0.021
-1.0	0.348	19.0	0.005	39.0	0.009	59.0	0.032	79.0	0.027
0.0	0.810	20.0	0.039	40.0	0.007	60.0	0.036	80.0	0.030
1.0	1.000	21.0	0.036	41.0	0.006	61.0	0.025	81.0	0.031
2.0	0.831	22.0	0.010	42.0	0.010	62.0	0.006	82.0	0.029
3.0	0.496	23.0	0.050	43.0	0.023	63.0	0.015	83.0	0.027
4.0	0.239	24.0	0.040	44.0	0.018	64.0	0.031	84.0	0.023
5.0	0.137	25.0	0.005	45.0	0.005	65.0	0.037	85.0	0.019
6.0	0.116	26.0	0.034	46.0	0.027	66.0	0.033	86.0	0.014
7.0	0.100	27.0	0.021	47.0	0.032	67.0	0.021	87.0	0.009
8.0	0.086	28.0	0.010	48.0	0.014	68.0	0.006	88.0	0.005
9.0	0.088	29.0	0.015	49.0	0.018	69.0	0.010	89.0	0.002
						90.0	0.000		

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**WPXR-Application**  
Latitude: 37-11-56 N  
Longitude: 080-09-00  
ERP: 609.00 kW  
Channel: 27  
Frequency: 551.0 MHz  
AGL: 61.84 m  
HAAT: 623.58 m  
AMSL: 1207.84 m  
Horiz. Pattern: Direct  
Vert. Pattern: Yes  
Elec Tilt: 1.0

