

ENGINEERING EXHIBIT

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

Gray Television Licensee, LLC
W19FC-D Florence, SC
Facility ID 185607
Ch. 19 15 kW Directional

Gray Television Licensee, LLC (“Gray”) is the licensee of digital Low Power Television station W19FC-D, Channel 19, Facility ID 185607, Florence SC. W19FC-D is licensed to operate at 0.2 kW effective radiated power (“ERP”) with a directional antenna (file# 0000177716). *Gray* herein seeks a minor modification Construction Permit to relocate W19FC-D, increase ERP, increase antenna height, and utilize a different directional antenna pattern.

The proposed facility will employ a new antenna to be side-mounted on the tower structure associated with FCC Antenna Structure Registration number 1048801, located 38.7 km (24.1 miles) from the licensed site. No change to the overall structure height is proposed.

The proposed antenna is a Dielectric model DLP-8B having horizontal polarization. The proposed ERP is 15 kW 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 dBμ 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 dBμ contour increases to 125,756 persons (2010 census), which is a 105-fold increase beyond the 1,195 persons within the licensed W19FC-D facility’s 51 dBμ 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. 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 20 percent antenna relative field in downward elevations (pattern data shows 20 percent or less relative field at angles 20 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 $2.9 \mu\text{W}/\text{cm}^2$, which is 0.9 percent of the general population / uncontrolled maximum permissible exposure limit. This is 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 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.

Engineering Exhibit
Gray Television Licensee, LLC (W19FC-D)
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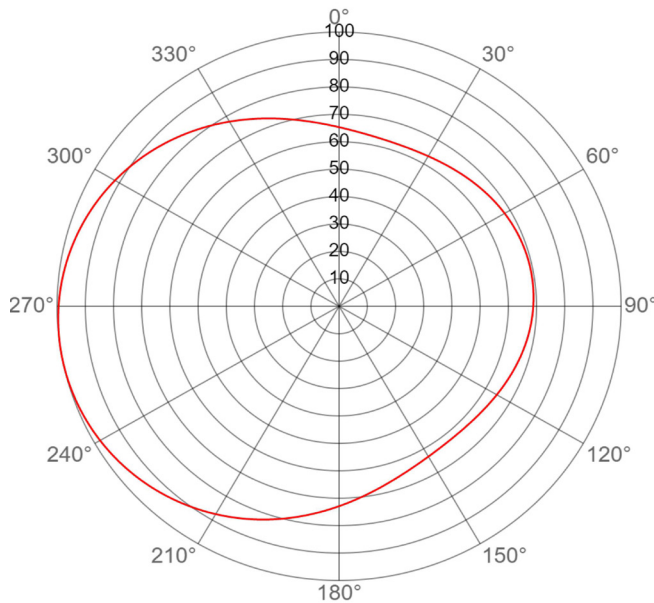


List of Attachments

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.	October 20, 2022	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600



Horizontal Polarization AZIMUTH PATTERN

Exhibit No.

Date **20 Oct 2022**

Call Letters **W19FC-D**

Channel **19**

Antenna Type **DLP B**

Location **Florence SC**

Customer **Gray TV**

Gain **1.7 (2.30 dB)**
Calculated

Drawing # **b-pattern**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.653	36	0.639	72	0.690	108	0.666	144	0.628	180	0.729	216	0.902	252	0.997	288	0.959	324	0.808
1	0.651	37	0.641	73	0.690	109	0.664	145	0.628	181	0.734	217	0.906	253	0.997	289	0.956	325	0.803
2	0.648	38	0.642	74	0.691	110	0.662	146	0.629	182	0.738	218	0.910	254	0.998	290	0.953	326	0.798
3	0.646	39	0.644	75	0.691	111	0.661	147	0.630	183	0.743	219	0.914	255	0.999	291	0.950	327	0.793
4	0.643	40	0.646	76	0.692	112	0.659	148	0.631	184	0.748	220	0.918	256	0.999	292	0.946	328	0.788
5	0.641	41	0.647	77	0.692	113	0.657	149	0.632	185	0.753	221	0.922	257	0.999	293	0.943	329	0.783
6	0.639	42	0.649	78	0.692	114	0.655	150	0.633	186	0.758	222	0.925	258	1.000	294	0.940	330	0.778
7	0.638	43	0.650	79	0.692	115	0.654	151	0.635	187	0.763	223	0.929	259	1.000	295	0.936	331	0.773
8	0.636	44	0.652	80	0.692	116	0.652	152	0.636	188	0.768	224	0.933	260	1.000	296	0.933	332	0.768
9	0.635	45	0.654	81	0.692	117	0.650	153	0.638	189	0.773	225	0.936	261	1.000	297	0.929	333	0.763
10	0.633	46	0.655	82	0.692	118	0.649	154	0.639	190	0.778	226	0.940	262	1.000	298	0.925	334	0.758
11	0.632	47	0.657	83	0.692	119	0.647	155	0.641	191	0.783	227	0.943	263	0.999	299	0.922	335	0.753
12	0.631	48	0.659	84	0.692	120	0.646	156	0.643	192	0.788	228	0.946	264	0.999	300	0.918	336	0.748
13	0.630	49	0.661	85	0.691	121	0.644	157	0.646	193	0.793	229	0.950	265	0.999	301	0.914	337	0.743
14	0.629	50	0.662	86	0.691	122	0.642	158	0.648	194	0.798	230	0.953	266	0.998	302	0.910	338	0.738
15	0.628	51	0.664	87	0.690	123	0.641	159	0.651	195	0.803	231	0.956	267	0.997	303	0.906	339	0.734
16	0.628	52	0.666	88	0.690	124	0.639	160	0.653	196	0.808	232	0.959	268	0.997	304	0.902	340	0.729
17	0.627	53	0.667	89	0.689	125	0.638	161	0.656	197	0.813	233	0.962	269	0.996	305	0.897	341	0.724
18	0.627	54	0.669	90	0.689	126	0.637	162	0.659	198	0.818	234	0.964	270	0.995	306	0.893	342	0.720
19	0.627	55	0.670	91	0.688	127	0.635	163	0.662	199	0.823	235	0.967	271	0.993	307	0.889	343	0.715
20	0.627	56	0.672	92	0.687	128	0.634	164	0.665	200	0.828	236	0.970	272	0.992	308	0.884	344	0.711
21	0.627	57	0.673	93	0.686	129	0.633	165	0.668	201	0.833	237	0.972	273	0.991	309	0.880	345	0.707
22	0.627	58	0.675	94	0.685	130	0.632	166	0.672	202	0.837	238	0.974	274	0.990	310	0.875	346	0.702
23	0.627	59	0.676	95	0.684	131	0.631	167	0.675	203	0.842	239	0.977	275	0.988	311	0.871	347	0.698
24	0.628	60	0.678	96	0.683	132	0.630	168	0.679	204	0.847	240	0.979	276	0.986	312	0.866	348	0.694
25	0.628	61	0.679	97	0.682	133	0.629	169	0.682	205	0.852	241	0.981	277	0.985	313	0.861	349	0.690
26	0.629	62	0.680	98	0.680	134	0.629	170	0.686	206	0.857	242	0.983	278	0.983	314	0.857	350	0.686
27	0.629	63	0.682	99	0.679	135	0.628	171	0.690	207	0.861	243	0.985	279	0.981	315	0.852	351	0.682
28	0.630	64	0.683	100	0.678	136	0.628	172	0.694	208	0.866	244	0.986	280	0.979	316	0.847	352	0.679
29	0.631	65	0.684	101	0.676	137	0.627	173	0.698	209	0.871	245	0.988	281	0.977	317	0.842	353	0.675
30	0.632	66	0.685	102	0.675	138	0.627	174	0.702	210	0.875	246	0.990	282	0.974	318	0.837	354	0.672
31	0.633	67	0.686	103	0.673	139	0.627	175	0.707	211	0.880	247	0.991	283	0.972	319	0.833	355	0.668
32	0.634	68	0.687	104	0.672	140	0.627	176	0.711	212	0.884	248	0.992	284	0.970	320	0.828	356	0.665
33	0.635	69	0.688	105	0.670	141	0.627	177	0.715	213	0.889	249	0.993	285	0.967	321	0.823	357	0.662
34	0.637	70	0.689	106	0.669	142	0.627	178	0.720	214	0.893	250	0.995	286	0.964	322	0.818	358	0.659
35	0.638	71	0.689	107	0.667	143	0.627	179	0.724	215	0.897	251	0.996	287	0.962	323	0.813	359	0.656

Figure 1

**Antenna Azimuthal Pattern
W19FC-D Florence, SC
Facility ID 185607
Ch. 19 15 kW Directional**

prepared for
Gray Television Licensee, LLC

October, 2022



prepared for
Gray Television Licensee, LLC

October, 2022

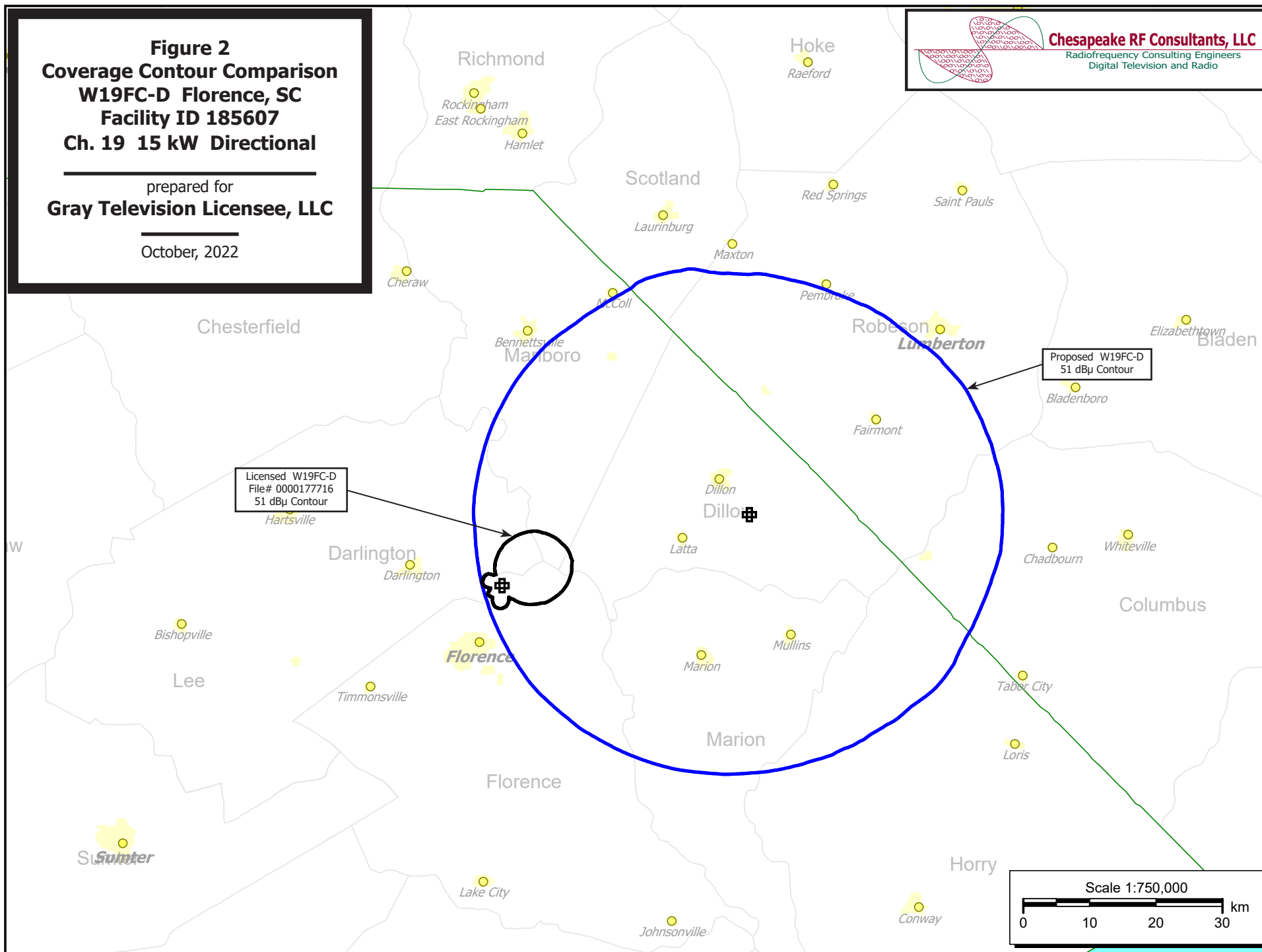
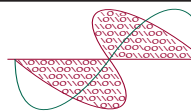


Table 1 W19FC-D TVStudy Analysis of Proposal (page 1 of 4)



tvstudy v2.2.5 (4uoc83)
Database: localhost, Study: W19FC-D 1048801, Model: Longley-Rice
Start: 2022.10.20 11:27:19

Study created: 2022.10.20 11:27:18

Study build station data: LMS TV 2022-10-19

Proposal: W19FC-D D19 LD APP FLORENCE, SC
File number: W19FC-D 1048801
Facility ID: 185607
Station data: User record
Record ID: 4713
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	WCCB	D18	DT	LIC	CHARLOTTE, NC	BLANK0000097908	163.1 km
No	WLFL	D18	DT	LIC	RALEIGH, NC	BLANK00000125309	162.3
No	WQDH-LD	D18	LD	LIC	WILMINGTON, NC	BLANK0000083869	129.5
No	WLCN-CD	D18	DC	LIC	CHARLESTON, SC	BLDTA20090616AAY	166.8
Yes	W18FC-D	D18	LD	APP	FLORENCE, SC	BLANK00000185726	38.6
No	W18FC-D	D18	LD	LIC	FLORENCE, SC	BLANK00000177715	38.6
No	WANF	D19	DT	LIC	ATLANTA, GA	BLANK00000152289	466.0
No	WBPI-CD	D19	DC	LIC	AUGUSTA, GA	BLANK0000059661	259.3
No	WUNC-TV	D19	LD	LIC	CHAPEL HILL, NC	BLANK00000115730	162.3
Yes	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK00000146857	162.1
Yes	WYDO	D19	DT	LIC	GREENVILLE, NC	BLANK00000129688	199.0
Yes	DDW50EQ-D	D19	LD	APP	LUMBERTON, NC	BLANK0000086353	110.0
No	WGSR-LD	D19	LD	LIC	REIDSVILLE, NC	BLANK0000072219	223.6
No	W19EU-D	D19	LD	LIC	WILMINGTON, NC	BLANK00000195949	95.2
No	W19EU-D	D19	LD	APP	WILMINGTON, NC	BLANK00000202088	95.2
No	DWLOW-LP	N19-	TX	APP	BEAUFORT, SC	BLTT20000302AAU	255.2
Yes	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK00000184937	164.2
No	WKPZ-CD	D19	DC	LIC	KINGSPORT, TN	BLANK00000001584	380.7
No	WKPZ-CD	D19	DC	LIC	KINGSPORT, TN	BLANK00000001597	380.7
No	WZBJ-CD	D19	DC	LIC	LYNCHBURG, VA	BLANK00000198690	332.8
No	WAVY-TV	D19	DT	LIC	PORTSMOUTH, VA	BLANK00000125371	372.6
No	WUNC-TV	D20	DT	LIC	CHAPEL HILL, NC	BLANK00000138116	167.1
No	WDMC-LD	D20	LD	LIC	CHARLOTTE, NC	BLANK00000164588	158.6
No	W20EY-D	D20	LD	LIC	WILMINGTON, NC	BLANK00000178057	107.5
No	WCBD-TV	D20	DT	LIC	CHARLESTON, SC	BLANK00000184909	162.4

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D19
Mask: Full Service
Latitude: 34 22 5.00 N (NAD83)
Longitude: 79 19 20.00 W
Height AMSL: 120.1 m
HAAT: 0.0 m
Peak ERP: 15.0 kW
Antenna: DIE DLP-B 260.0 deg
Elev Pattn: Generic
Elec Tilt: 1.00

49.3 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	6.40 kW	80.2 m	37.9 km
45.0	6.42	81.3	38.1
90.0	7.12	90.1	39.8
135.0	5.94	97.6	39.9

Table 1 W19FC-D TVStudy Analysis of Proposal
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180.0	7.97	91.3	40.5
225.0	13.1	90.2	42.8
270.0	14.9	88.2	43.2
315.0	10.9	82.6	40.9

Database HAAT does not agree with computed HAAT
Database HAAT: 0 m Computed HAAT: 88 m

Distance to Canadian border: 855.6 km

Distance to Mexican border: 1927.5 km

Conditions at FCC monitoring station: Powder Springs GA
Bearing: 265.1 degrees Distance: 500.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 293.3 degrees Distance: 2369.9 km

No land mobile station failures found

Study cell size: 1.00 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 BLANK0000185726 APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W18FC-D	D18	LD	APP	FLORENCE, SC	BLANK0000185726	
Undesireds:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	38.6 km
	WCCB	D18	DT	LIC	CHARLOTTE, NC	BLANK0000097908	144.0
	WLFL	D18	DT	LIC	RALEIGH, NC	BLANK0000125309	190.3
	W19EU-D	D19	LD	LIC	WILMINGTON, NC	BLANK0000195949	132.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
6244.3	271,801	6235.2	271,662	6157.2	269,206	6108.9 268,710	0.79 0.18
Undesired		Total IX		Unique IX, before		Unique IX, after	
W19FC-D	D19 LD APP	48.3	496			48.3 496	
WCCB	D18 DT LIC	68.0	2,207	58.0	2,188	58.0 2,188	
WLFL	D18 DT LIC	20.1	268	10.0	249	10.0 249	

Interference to BLANK0000146857 LIC scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK0000146857	
Undesireds:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	162.1 km
	WCCB	D18	DT	LIC	CHARLOTTE, NC	BLANK0000097908	0.9
	WLFL	D18	DT	LIC	RALEIGH, NC	BLANK0000125309	204.3
	WANF	D19	DT	LIC	ATLANTA, GA	BLANK0000152289	368.1
	WBPI-CD	D19	DC	LIC	AUGUSTA, GA	BLANK0000059661	223.7
	WYDO	D19	DT	LIC	GREENVILLE, NC	BLANK0000129688	308.5
	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK0000184937	276.4
	WKPZ-CD	D19	DC	LIC	KINGSPORT, TN	BLANK0000001584	218.7
	WZBJ-CD	D19	DC	LIC	LYNCHBURG, VA	BLANK0000198690	272.2
	WUNF-TV	D20	DD	LIC	ASHEVILLE, NC	BLANK0000093577	165.5
	WUNC-TV	D20	DT	LIC	CHAPEL HILL, NC	BLANK0000138116	156.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
35316.3	3,711,440	34337.8	3,645,461	32590.9	3,546,140	32173.6 3,530,958	1.28 0.43
Undesired		Total IX		Unique IX, before		Unique IX, after	
W19FC-D	D19 LD APP	678.1	20,538			417.3 15,182	
WCCB	D18 DT LIC	99.0	8,760	77.1	6,542	76.1 6,542	

Table 1 W19FC-D TVStudy Analysis of Proposal
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WLFL D18 DT LIC	6.0	299	1.0	106	1.0	106
WANF D19 DT LIC	93.1	3,963	22.0	886	20.0	808
WBFI-CD D19 DC LIC	58.2	1,855	10.1	91	5.0	42
WYDO D19 DT LIC	383.1	22,447	96.0	6,025	67.0	5,353
WCSC-TV D19 DT LIC	558.6	8,055	424.4	4,728	289.7	2,983
WZBJ-CD D19 DC LIC	12.1	3,754	2.0	664	2.0	664
WUNF-TV D20 DD LIC	374.3	22,414	323.4	19,627	322.4	19,627
WUNC-TV D20 DT LIC	630.7	54,535	398.8	39,206	395.8	39,028

Interference to BLANK0000129688 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WYDO	D19	DT	LIC	GREENVILLE, NC	BLANK0000129688	
Undesireds:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	199.0 km
	WLFL	D18	DT	LIC	RALEIGH, NC	BLANK0000125309	125.2
	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK0000146857	308.5
	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK0000184937	325.7
	WAVY-TV	D19	DT	LIC	PORTSMOUTH, VA	BLANK0000125371	204.7
	WUNC-TV	D20	DT	LIC	CHAPEL HILL, NC	BLANK0000138116	186.1
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
34227.2		1,331,757		34226.2		1,292,923	0.00
				1,331,757		32499.4	0.00
				1,292,923		32499.4	
Undesired			Total IX		Unique IX, before		Unique IX, after
W19FC-D D19 LD APP			2.0		0		0
WLFL D18 DT LIC			577.0		24,400		502.1
WSOC-TV D19 DT LIC			93.0		1,470		25.0
WCSC-TV D19 DT LIC			18.1		14		1.0
WAVY-TV D19 DT LIC			1158.6		15,945		1105.6
WUNC-TV D20 DT LIC			4.0		168		0

Interference to BLANK0000086353 APP scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	DDW50EQ-D	D19	LD	APP	LUMBERTON, NC	BLANK0000086353	
Undesireds:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	110.0 km
	WLFL	D18	DT	LIC	RALEIGH, NC	BLANK0000125309	64.1
	WUNC-TV	D19	LD	LIC	CHAPEL HILL, NC	BLANK0000115730	64.1
	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK0000146857	147.3
	WYDO	D19	DT	LIC	GREENVILLE, NC	BLANK0000129688	162.9
	W19EU-D	D19	LD	LIC	WILMINGTON, NC	BLANK0000195949	136.0
	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK0000184937	274.2
	WAVY-TV	D19	DT	LIC	PORTSMOUTH, VA	BLANK0000125371	285.2
	WUNC-TV	D20	DT	LIC	CHAPEL HILL, NC	BLANK0000138116	58.5
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
3717.2		235,894		3702.3		198,851	0.07
				235,874		2965.8	0.00
				198,851		2963.8	
Undesired			Total IX		Unique IX, before		Unique IX, after
W19FC-D D19 LD APP			12.0		814		2.0
WLFL D18 DT LIC			222.7		16,463		16.9
WUNC-TV D19 LD LIC			255.1		18,245		89.4
WSOC-TV D19 DT LIC			266.8		18,605		75.7
WYDO D19 DT LIC			181.2		12,463		29.9
WCSC-TV D19 DT LIC			2.0		0		0.0
WAVY-TV D19 DT LIC			1.0		814		0.0
WUNC-TV D20 DT LIC			371.3		10,368		172.7

Interference to BLANK0000184937 LIC scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK0000184937	
Undesireds:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	164.2 km
	WBFI-CD	D19	DC	LIC	AUGUSTA, GA	BLANK0000059661	218.4
	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK0000146857	276.4
	WCBD-TV	D20	DT	LIC	CHARLESTON, SC	BLANK0000184909	1.8

Table 1 W19FC-D TVStudy Analysis of Proposal
(page 4 of 4)



Service area		Terrain-limited		IX-free, before		IX-free, after		Percent New IX	
34170.8	1,028,539	34170.8	1,028,539	34133.2	1,028,258	33914.8	1,023,309	0.64	0.48
Undesired		Total IX		Unique IX, before		Unique IX, after			
W19FC-D	D19 LD APP	227.2	4,953			218.3	4,949		
WBFI-CD	D19 DC LIC	1.0	0	0.0	0	0.0	0		
WSOC-TV	D19 DT LIC	26.7	132	25.7	132	18.8	128		
WCBD-TV	D20 DT LIC	10.9	149	10.9	149	9.9	149		

Interference to proposal scenario 1
**MX: 3.31% interference received

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	
Undesireds:	W18FC-D	D18	LD	APP	FLORENCE, SC	BLANK0000185726	38.6 km
	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK0000146857	162.1
	W19EU-D	D19	LD	LIC	WILMINGTON, NC	BLANK0000195949	95.2
	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK0000184937	164.2

Service area		Terrain-limited		IX-free		Percent IX	
5152.9	147,802	5152.9	147,802	4949.3	142,913	3.95	3.31
Undesired		Total IX		Unique IX		Prct Unique IX	
W18FC-D	D18 LD APP	23.2	2,240	23.2	2,240	0.45	1.52
WSOC-TV	D19 DT LIC	114.4	1,894	114.4	1,894	2.22	1.28
WCSC-TV	D19 DT LIC	66.1	755	66.1	755	1.28	0.51

Interference to proposal scenario 2
2.16% interference received

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	W19FC-D	D19	LD	APP	FLORENCE, SC	W19FC-D 1048801	
Undesireds:	W18FC-D	D18	LD	LIC	FLORENCE, SC	BLANK0000177715	38.6 km
	WSOC-TV	D19	DT	LIC	CHARLOTTE, NC	BLANK0000146857	162.1
	W19EU-D	D19	LD	LIC	WILMINGTON, NC	BLANK0000195949	95.2
	WCSC-TV	D19	DT	LIC	CHARLESTON, SC	BLANK0000184937	164.2

Service area		Terrain-limited		IX-free		Percent IX	
5152.9	147,802	5152.9	147,802	4967.4	144,609	3.60	2.16
Undesired		Total IX		Unique IX		Prct Unique IX	
W18FC-D	D18 LD LIC	5.0	544	5.0	544	0.10	0.37
WSOC-TV	D19 DT LIC	114.4	1,894	114.4	1,894	2.22	1.28
WCSC-TV	D19 DT LIC	66.1	755	66.1	755	1.28	0.51

**Channel and
Facility
Information**

Section	Question	Response
Facility ID	185607	
State	South Carolina	
City	FLORENCE	
LPD Channel	19	

Antenna Location
Data

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1048801
Coordinates (NAD83)	Latitude	34° 22' 05.0" N+
	Longitude	079° 19' 20.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	598.0 meters
	Support Structure Height	576.0 meters
	Ground Elevation (AMSL)	35.1 meters
Antenna Data	Height of Radiation Center Above Ground Level	85 meters
	Height of Radiation Center Above Mean Sea Level	120.1 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	DLP-12B
	Rotation	260 degrees
	Electrical Beam Tilt	1.0
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Horizontal
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	90	0.686	180	0.692	270	0.686
10	0.995	100	0.653	190	0.689	280	0.729
20	0.979	110	0.633	200	0.678	290	0.778
30	0.953	120	0.627	210	0.662	300	0.828
40	0.918	130	0.632	220	0.646	310	0.875
50	0.875	140	0.646	230	0.632	320	0.918
60	0.828	150	0.662	240	0.627	330	0.953
70	0.778	160	0.678	250	0.633	340	0.979
80	0.729	170	0.689	260	0.653	350	0.995

Additional Azimuths

Degree	V _A
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