

**TECHNICAL STATEMENT
KTTC LICENSE, LLC
W50DR-D 15 KW-DA 603 M AMSL CH. 34
LA CROSSE, WISCONSIN**

INTRODUCTION

KTTC License, LLC (“KTTC”), the licensee of digital television translator W50DR-D Channel 50, Facility ID No. 35676, is seeking authority to operate on a replacement channel in the Special Displacement Window in accordance with the procedures set forth in Public Notice DA 17-442 for secondary television stations whose channels have been repurposed for the new, flexible 600 MHz Band wireless services or reserved for the 600 MHz guard band and duplex gap (i.e. formerly channels 38 thru 51).¹ Accordingly, KTTC submits the foregoing displacement application for operation on Channel 34

PROPOSED DISPLACEMENT FACILITY

W50DR-D will continue to utilize its licensed transmitter site for the proposed Channel 34 facility. It will employ a new directional antenna system with 1.05 degrees electrical beam tilt. The antenna radiation center height will be 603.0 meters above mean sea level (AMSL) and the maximum effective radiated power (ERP) will be 15.0 kW. It also will employ a full service out-of-channel emission mask. A plot of the new azimuth pattern is shown in [Figure 1](#).

INTERFERENCE PROTECTION AND OET-69 ANALYSIS SETTINGS

A copy of the *TVStudy* analysis summary is provided in [Figure 2](#). This summary indicates that no interference check failures were found and therefore the proposal is not predicted to cause new interference beyond the normal tolerance to any existing or post-auction stations.² The summary further reflects that the following analysis settings were used:

Study cell size: 1.0 kilometer
Profile point spacing: 1.0 kilometer

¹ *The Incentive Auction Task Force And Media Bureau Announce Procedures for Low Power Television, Television Translator and Replacement Translator Stations During the Post-Incentive Auction Transition*, Public Notice, DA 17-442 (rel. May 12, 2017)

² *TVStudy* Program, Version 2.2.5.



ENVIRONMENTAL IMPACT

The displacement application specifies an existing FCC registered tower that was constructed before March 16, 2001.³ Given that the collocation of W50DR-D's antenna will not result in a substantial increase in the size of the existing antenna-supporting structure,⁴ the criteria outlined in 47 CFR § 1.1307(a) for certain types of facilities that may significantly affect the environment do not apply. With regard to the rules for limiting human exposure to radio-frequency (RF) energy in 47 CFR § 1.1307(b), this application seeks authority to operate a television broadcast antenna in full compliance with those guidelines as described in more detail below. The following technical specifications are proposed for W50DR-D:

Frequency :	590 - 596 MHz (UHF Channel 34)
Effective Radiated Power:	15.0 kW
Antenna Type:	DIE TFU-8WB; 70 degrees rotation
Antenna Polarization:	Horizontal
Antenna Height:	229.4 meters AGL
Location coordinates:	43-48-23.0 N, 091-22-03.0 (NAD83)
Site elevation:	373.6 meters AMSL
Overall tower height:	249.7 meters AGL
FCC ASRN:	1035149

Using the methodology for predicting power density levels for UHF broadcast antennas outlined in *FCC OET Bulletin No. 65, Edition 97-01*, (OET-65), a worst-case power density of

³ 47 CFR Part 1, App. B, § III.A. "An antenna may be mounted on an existing tower constructed on or before March 16, 2001 without such collocation being reviewed through the Section 106 process set forth in the NPA, unless: 1. The mounting of the antenna will result in a substantial increase in the size of the tower as defined in Stipulation I.E, above; or, 2. The tower has been determined by the FCC to have an adverse effect on one or more historic properties, where such effect has not been avoided or mitigated through a conditional no adverse effect determination, a Memorandum of Agreement, a programmatic agreement, or a finding of compliance with Section 106 and the NPA; or, 3. The tower is the subject of a pending environmental review or related proceeding before the FCC involving compliance with Section 106 of the National Historic Preservation Act; or, 4. The collocation licensee or the owner of the tower has received written or electronic notification that the FCC is in receipt of a complaint from a member of the public, an Indian Tribe, a SHPO or the Council, that the collocation has an adverse effect on one or more historic properties."

⁴ 47 CFR Part 1, App. B, § I.C. A substantial increase in size means: "(1) The mounting of the proposed antenna on the tower would increase the existing height of the tower by more than 10%, or by the height of one additional antenna array with separation from the nearest existing antenna not to exceed twenty feet, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to avoid interference with existing antennas; or (2) The mounting of the proposed antenna would involve the installation of more than the standard number of new equipment cabinets for the technology involved, not to exceed four, or more than one new equipment shelter; or (3) The mounting of the proposed antenna would involve adding an appurtenance to the body of the tower that would protrude from the edge of the tower more than twenty feet, or more than the width of the tower structure at the level of the appurtenance, whichever is greater, except that the mounting of the proposed antenna may exceed the size limits set forth in this paragraph if necessary to shelter the antenna from inclement weather or to connect the antenna to the tower via cable; or (4) The mounting of the proposed antenna would involve excavation outside the current tower site, defined as the current boundaries of the leased or owned property surrounding the tower and any access or utility easements currently related to the site."



9.69 $\mu\text{W}/\text{cm}^2$ at points 2 meters above ground (approximate human head height) was determined for the proposed Channel 34 facility. This worst-case exposure level was calculated using 100 percent antenna relative field. The maximum exposure limits applicable to Channel 34, as established for uncontrolled and controlled situations in 47 CFR § 1.1310, are 393 $\mu\text{W}/\text{cm}^2$ and 1,967 $\mu\text{W}/\text{cm}^2$ respectively. Because the worst-case exposure level determined for the proposed facility is not more than 5% of those guidelines and considering that suitable warning signs will be posted, no further showing of compliance is necessary. Accordingly, this application complies with the RF exposure limits and is categorically excluded from environmental processing by 47 CFR § 1.1306.

Respectfully submitted,

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April 10, 2018

Attachments

Figure 1 – Directional Antenna Pattern Plot

Figure 2 – *TVStudy* Analysis Summary

Horizontal Polarization AZIMUTH PATTERN

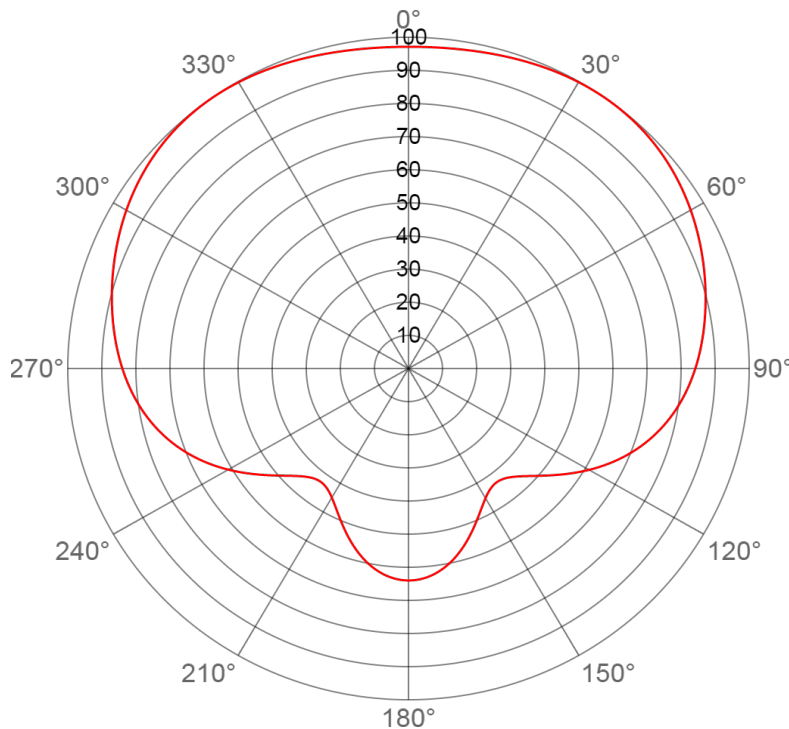


Exhibit No. **Figure 1**
Date **10 Apr 2018**
Call Letters **W50DR-D**
Channel **34**
Antenna Type **TFU-8WB**
Location **La Crosse, WI**
Customer **KTTC License, LLC**

Gain **1.6 (1.90 dB)**
Calculated
Drawing # **WB-C160H**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.971	36	1.000	72	0.914	108	0.730	144	0.430	180	0.640	216	0.428	252	0.728	288	0.913	324	1.000
1	0.971	37	1.000	73	0.910	109	0.721	145	0.432	181	0.640	217	0.428	253	0.736	289	0.916	325	1.000
2	0.972	38	1.000	74	0.906	110	0.713	146	0.434	182	0.639	218	0.429	254	0.744	290	0.920	326	0.999
3	0.972	39	0.999	75	0.902	111	0.703	147	0.438	183	0.637	219	0.430	255	0.752	291	0.924	327	0.999
4	0.972	40	0.998	76	0.899	112	0.694	148	0.442	184	0.635	220	0.433	256	0.759	292	0.928	328	0.999
5	0.973	41	0.998	77	0.895	113	0.685	149	0.447	185	0.632	221	0.436	257	0.766	293	0.931	329	0.998
6	0.973	42	0.997	78	0.891	114	0.675	150	0.452	186	0.628	222	0.441	258	0.773	294	0.935	330	0.998
7	0.974	43	0.996	79	0.887	115	0.665	151	0.459	187	0.624	223	0.446	259	0.780	295	0.939	331	0.997
8	0.975	44	0.995	80	0.883	116	0.655	152	0.465	188	0.620	224	0.452	260	0.786	296	0.942	332	0.996
9	0.975	45	0.993	81	0.880	117	0.644	153	0.473	189	0.615	225	0.459	261	0.792	297	0.946	333	0.995
10	0.976	46	0.992	82	0.876	118	0.634	154	0.481	190	0.609	226	0.467	262	0.798	298	0.949	334	0.994
11	0.977	47	0.990	83	0.872	119	0.623	155	0.489	191	0.603	227	0.475	263	0.804	299	0.953	335	0.993
12	0.978	48	0.988	84	0.868	120	0.612	156	0.497	192	0.596	228	0.484	264	0.810	300	0.956	336	0.992
13	0.979	49	0.986	85	0.864	121	0.601	157	0.506	193	0.589	229	0.493	265	0.815	301	0.959	337	0.991
14	0.981	50	0.984	86	0.859	122	0.590	158	0.515	194	0.582	230	0.503	266	0.820	302	0.962	338	0.990
15	0.982	51	0.982	87	0.855	123	0.579	159	0.524	195	0.574	231	0.513	267	0.825	303	0.965	339	0.989
16	0.983	52	0.979	88	0.851	124	0.568	160	0.533	196	0.566	232	0.523	268	0.830	304	0.968	340	0.987
17	0.984	53	0.977	89	0.847	125	0.557	161	0.542	197	0.557	233	0.534	269	0.835	305	0.971	341	0.986
18	0.986	54	0.974	90	0.842	126	0.546	162	0.550	198	0.548	234	0.545	270	0.840	306	0.974	342	0.985
19	0.987	55	0.972	91	0.837	127	0.535	163	0.559	199	0.540	235	0.556	271	0.844	307	0.977	343	0.984
20	0.988	56	0.969	92	0.833	128	0.524	164	0.567	200	0.531	236	0.567	272	0.849	308	0.979	344	0.983
21	0.989	57	0.966	93	0.828	129	0.514	165	0.575	201	0.522	237	0.578	273	0.853	309	0.982	345	0.981
22	0.990	58	0.963	94	0.823	130	0.504	166	0.583	202	0.513	238	0.589	274	0.857	310	0.984	346	0.980
23	0.992	59	0.960	95	0.817	131	0.494	167	0.590	203	0.504	239	0.600	275	0.862	311	0.986	347	0.979
24	0.993	60	0.956	96	0.812	132	0.485	168	0.597	204	0.495	240	0.611	276	0.866	312	0.988	348	0.978
25	0.994	61	0.953	97	0.806	133	0.476	169	0.604	205	0.487	241	0.622	277	0.870	313	0.990	349	0.977
26	0.995	62	0.950	98	0.801	134	0.468	170	0.610	206	0.478	242	0.632	278	0.874	314	0.991	350	0.976
27	0.996	63	0.946	99	0.795	135	0.461	171	0.616	207	0.470	243	0.643	279	0.878	315	0.993	351	0.975
28	0.997	64	0.943	100	0.788	136	0.454	172	0.621	208	0.463	244	0.653	280	0.882	316	0.994	352	0.974
29	0.998	65	0.939	101	0.782	137	0.448	173	0.625	209	0.456	245	0.663	281	0.886	317	0.996	353	0.974
30	0.998	66	0.936	102	0.775	138	0.442	174	0.629	210	0.450	246	0.673	282	0.889	318	0.997	354	0.973
31	0.999	67	0.932	103	0.768	139	0.438	175	0.632	211	0.444	247	0.683	283	0.893	319	0.997	355	0.972
32	0.999	68	0.928	104	0.761	140	0.435	176	0.635	212	0.440	248	0.693	284	0.897	320	0.998	356	0.972
33	1.000	69	0.925	105	0.754	141	0.432	177	0.637	213	0.435	249	0.702	285	0.901	321	0.999	357	0.972
34	1.000	70	0.921	106	0.746	142	0.431	178	0.639	214	0.432	250	0.711	286	0.905	322	0.999	358	0.971
35	1.000	71	0.917	107	0.738	143	0.430	179	0.640	215	0.430	251	0.720	287	0.909	323	0.999	359	0.971

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FIGURE 2

Analysis Summary

TVSTUDY, VERSION 2.2.5.

Study created: 2018.04.09 22:17:09

Study build station data: LMS TV 2018-04-09

Proposal: W50DR-D D34 LD APP LA CROSSE, WI
File number: W50DR-D34-F Study 3
Facility ID: 35676
Station data: User record
Record ID: 116
Country: U.S.
Zone: II

Build options:

Protect pre-transition records not on baseline channel

Search options:

Non-U.S. records included

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	K33LN-D	D33	DC	LIC	MINNEAPOLIS, MN	BLDTA20111219AEB	199.5 km
No	K33LJ-D	D33	LD	CP	ROCHESTER, MN	BNPDTL20100216ADX	85.9
No	W33DH-D	D33	LD	CP	EAU CLAIRE, WI	BLANK0000036215	116.2
Yes	WLAX	D33	DT	CP	LA CROSSE, WI	BLANK0000027619	0.4
Yes	W33DG-D	D33	LD	CP	LA CROSSE, WI	BNPDTL20100201AEU	31.7
No	WZAW-LD	D33	LD	LIC	WAUSAU, WI	BLANK0000013771	205.2
No	KMZM-LD	D34	LD	LIC	Cedar Rapids, IA	BLANK0000004392	168.2
No	KMZM-LD	D34	LD	CP	Cedar Rapids, IA	BLANK0000036461	158.9
No	KQIN	D34	DT	LIC	DAVENPORT, IA	BLEDT20120921ADS	288.8
No	WEDE-CD	D34	DC	LIC	ARLINGTON HEIGHTS, IL	BLDTA20140430ACQ	371.9
No	WCIA	D34	DT	CP	CHAMPAIGN, IL	BLANK0000028445	476.7
No	WCIA	D34	DT	APP	CHAMPAIGN, IL	BLANK0000034728	476.7
No	WCPX-TV	D34	DT	CP	CHICAGO, IL	BLANK0000026971	372.0
No	WCPX-TV	D34	DT	APP	CHICAGO, IL	BLANK0000034347	372.0
No	W34EM-D	D34	LD	CP	LEE, IL	BNPDTL20100524AFR	267.5
No	WQEC	D34	DT	APP	QUINCY, IL	BLANK0000035763	425.5
No	WQEC	D34	DT	LIC	QUINCY, IL	BLEDT20040715ADL	425.5
No	NEW	D34	LD	APP	DULUTH, MN	BNPDTL20100513ABP	336.3
No	K34MP-D	D34	LD	CP	OAKLAND, MN	BNPDTL20100510AJY	139.0
No	K34JX-D	D34	LD	LIC	ST. JAMES, MN	BLDTL20091204ADL	260.4
Yes	KTCATV	D34	DT	LIC	ST. PAUL, MN	BLEDT20060802AAO	197.0
No	K34HO-D	D34	LD	LIC	WILLMAR, MN	BLDTL20100122ABL	328.3
No	KUSD-TV	D34	DT	LIC	VERMILLION, SD	BLEDT20100310ABZ	445.1
Yes	WWRS-TV	D34	DT	CP	MAYVILLE, WI	BLANK0000026658	232.3
No	WISN-TV	D34	DT	LIC	MILWAUKEE, WI	BLCDT20101104AAA	288.0
Yes	W34EO-D	D34	LD	CP	WAUSAU, WI	BLANK0000008337	152.1
No	KRIN	D35	DT	LIC	WATERLOO, IA	BLEDT20050218ABQ	170.3

No	KSTP-TV	D35	DT	APP	ST. PAUL, MN	BLANK0000036053	198.2
No	KSTP-TV	D35	DT	LIC	ST. PAUL, MN	BLCDT20090622ABR	198.1
Yes	WEZY-LP	D35	LD	CP	TOMAH, WI	BD1SDTL20120511AEI	63.7

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D34
Mask: Full Service
Latitude: 43 48 23.00 N (NAD83)
Longitude: 91 22 3.00 W
Height AMSL: 603.0 m
HAAT: 334.5 m
Peak ERP: 15.0 kW
Antenna: DIE TFU-8WB 70.0 deg
Elev Pattn: Generic
Elec Tilt: 1.05

50.7 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	12.7 kW	337.8 m	56.9 km
45.0	14.8	375.6	59.6
90.0	14.6	369.6	59.2
135.0	13.2	384.9	59.4
180.0	7.63	296.3	52.0
225.0	3.64	322.6	49.4
270.0	4.23	300.7	49.0
315.0	6.55	288.5	50.7

Distance to Canadian border: 471.2 km

Distance to Mexican border: 1794.4 km

Conditions at FCC monitoring station: Allegan MI

Bearing: 105.1 degrees Distance: 458.2 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:

Bearing: 255.2 degrees Distance: 1213.1 km

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%

---- Below is IX received by proposal W50DR-D34-F Study 3 ----

Proposal receives 7.19% interference from scenario 1

Proposal receives 7.19% interference from scenario 2

No IX check failures found.