



**STATEMENT OF JOHN E. HIDLE, P.E.
IN SUPPORT OF AN APPLICATION FOR A
CONSTRUCTION PERMIT TO SPECIFY CHANNEL 21
IN LIEU OF CHANNEL 9 IN THE DIGITAL
TELEVISION TABLE OF ALLOTMENTS
KMYU - ST. GEORGE, UTAH
DTV - CH. 21 - 250 kW - 43 m HAAT**

Prepared for: KUTV 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, No. 7418, and in New York State, No. 63418.

GENERAL

This office has been authorized by KUTV LICENSEE, LLC, licensee of KMYU, channel 9, licensed to St. George, Utah, to prepare this statement, FCC Form 2100, Schedule A, its technical sections, and the associated exhibits in support of an application for a minor change application to specify channel 21 in lieu of channel 9 as ordered in the REPORT AND ORDER in MB Docket No. 21-53, DA 21-596.

NON-DIRECTIONAL ANTENNA

The applicant intends to install a Dielectric model TFU-21EST/VP-R O4 elliptically polarized omni-directional antenna. The antenna's center of radiation will be located at a height above ground of 7 meters, and a height above average terrain of 43 meters. The antenna's horizontal azimuth radiation patterns for both its horizontally and vertically polarized components and its vertical elevation pattern, showing its radiation characteristics above and below the horizontal plane are shown and tabulated in the antenna exhibit.

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. The map exhibit shows the predicted Noise Limited (39.46 dBu) contour, and the principal community (48 dBu) contour which completely encompasses the principal community of license, St. George, Utah.

ALLOCATION CONSIDERATIONS

Post-Transition DTV Considerations

A study was performed, using the FCC's application processing software, *tvstudy*, v. 2.2.5, 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)

International DTV Considerations

The KMYU site is located more than 1300 kilometers from the nearest point on the US-Canadian border and more than 490 kilometers from the nearest point on the US-Mexican border. Therefore no international coordination is necessary.

Class A Television Allocation Considerations

As required in Section 73.616(f) of the FCC's Rules, the study results in Appendix B shows no Class A station predicted to be affected by the re-allotment of KMYU.

Land Mobile and FM radio Considerations

The *tvstudy* results found no Land Mobile violations for this site, and the site is deemed OK toward AM radio stations.

BLANKETING AND INTERMODULATION INTERFERENCE

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

RADIO FREQUENCY IMPACT, SAFETY & COMPLIANCE SHOWING

The licensee of KMYU is committed to the protection of station personnel and/or tower contractors working in the vicinity of the KMYU antenna and will reduce power or cease operation, when necessary, to ensure protection to personnel.

As shown in Appendix A the KMYU channel 21 request for Amendment of the Table of Allotments as proposed herein will operate with a maximum ERP of 250 kW from an

STATEMENT OF JOHN E. HIDLE, P.E.
KMYU - St. George, Utah
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elliptically polarized non-directional transmitting antenna with a centerline height of 7 meters above ground level (AGL). Considering the elevation pattern provided elsewhere in this submission, the vertical plane relative field factor is less than 0.100 at all depression angles greater than 10 degrees. The proposed KMYU channel 21 facility is predicted to produce a worst-case power density at two meters above ground level, at 3.5 meters from the tower base, of $549.1 \mu\text{W}/\text{cm}^2$, which is 159.93% of the FCC guideline value of $343.33 \mu\text{W}/\text{cm}^2$ for an "uncontrolled" environment, and 31.99% of the FCC's guideline value for "controlled" environments. The proposed television facility is therefore predicted to produce a maximum power density which exceeds the FCC Guideline value of $343.33 \mu\text{W}/\text{cm}^2$ for uncontrolled environments. Further, because the proposed facility is located in close proximity to a number of other television and radio broadcast stations, the cumulative power density of all the stations operating from the shared site must be considered.

In light of the above, once the proposed facility is authorized and installed, an RFR measurement survey will be undertaken to determine the effect of the proposed facility on the RFR environment. Any changes that are deemed necessary to the existing RFR safety plan will be made accordingly. Further, the applicant is committed to reducing power or ceasing operation as necessary to protect persons having access to the site, tower or antennas from RF electromagnetic fields in excess of the FCC's occupational guidelines.

SUMMARY

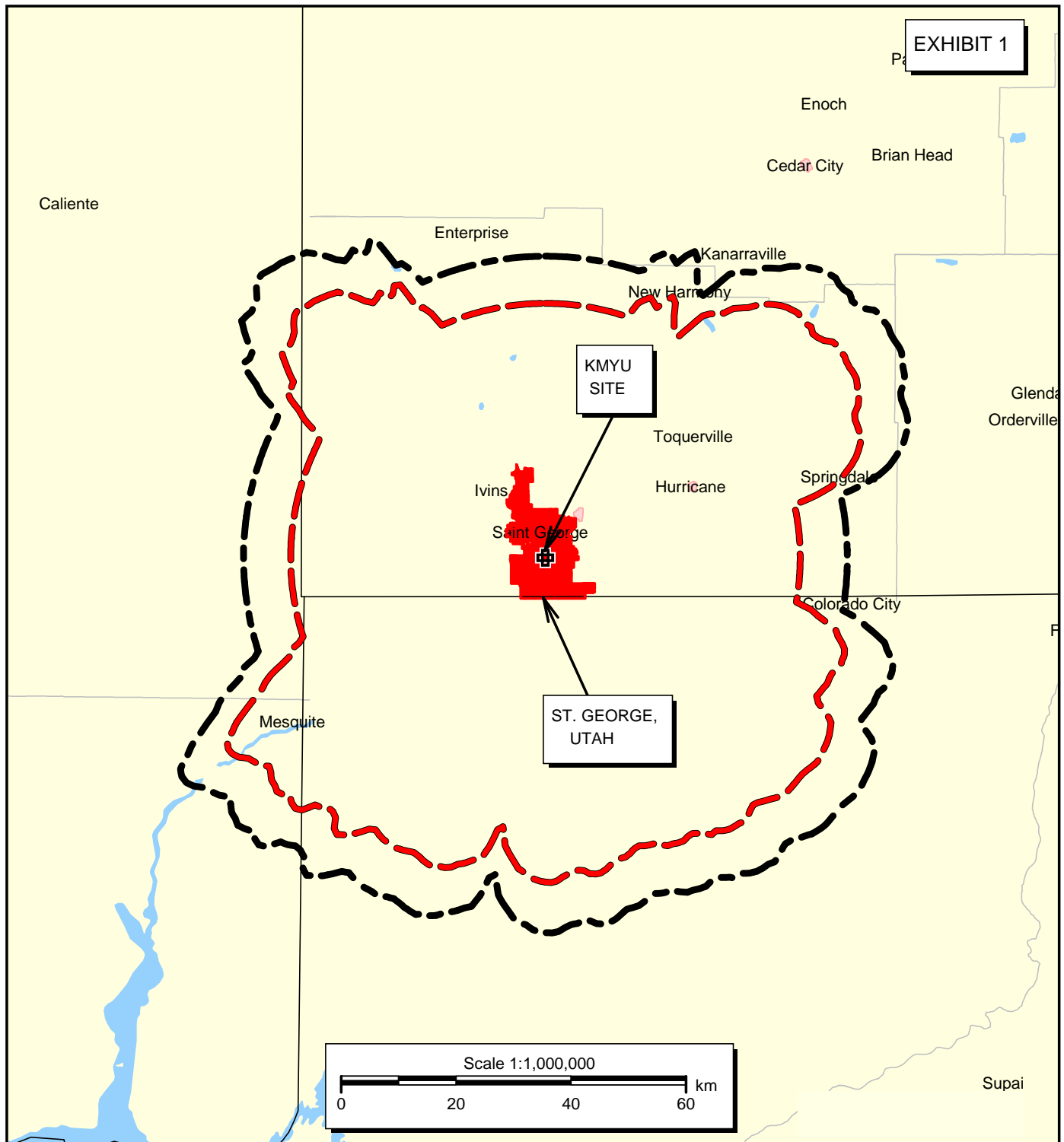
It is submitted that the instant application for construction permit for KMYU to broadcast on channel 21 in lieu of channel 9, as described herein, complies with the Rules,

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Regulations and relevant Policies of the Federal Communications Commission. This statement was prepared by me, or under my direct supervision, and its contents are believed to be true and correct to the best of my knowledge and belief.

DATED: July 1, 2021





PREDICTED COVERAGE CONTOURS

KMYU-D - ST. GEORGE, UTAH
DTV Channel 21 - 250 kW ERP - 43.0 M HAAT
JULY, 2021

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

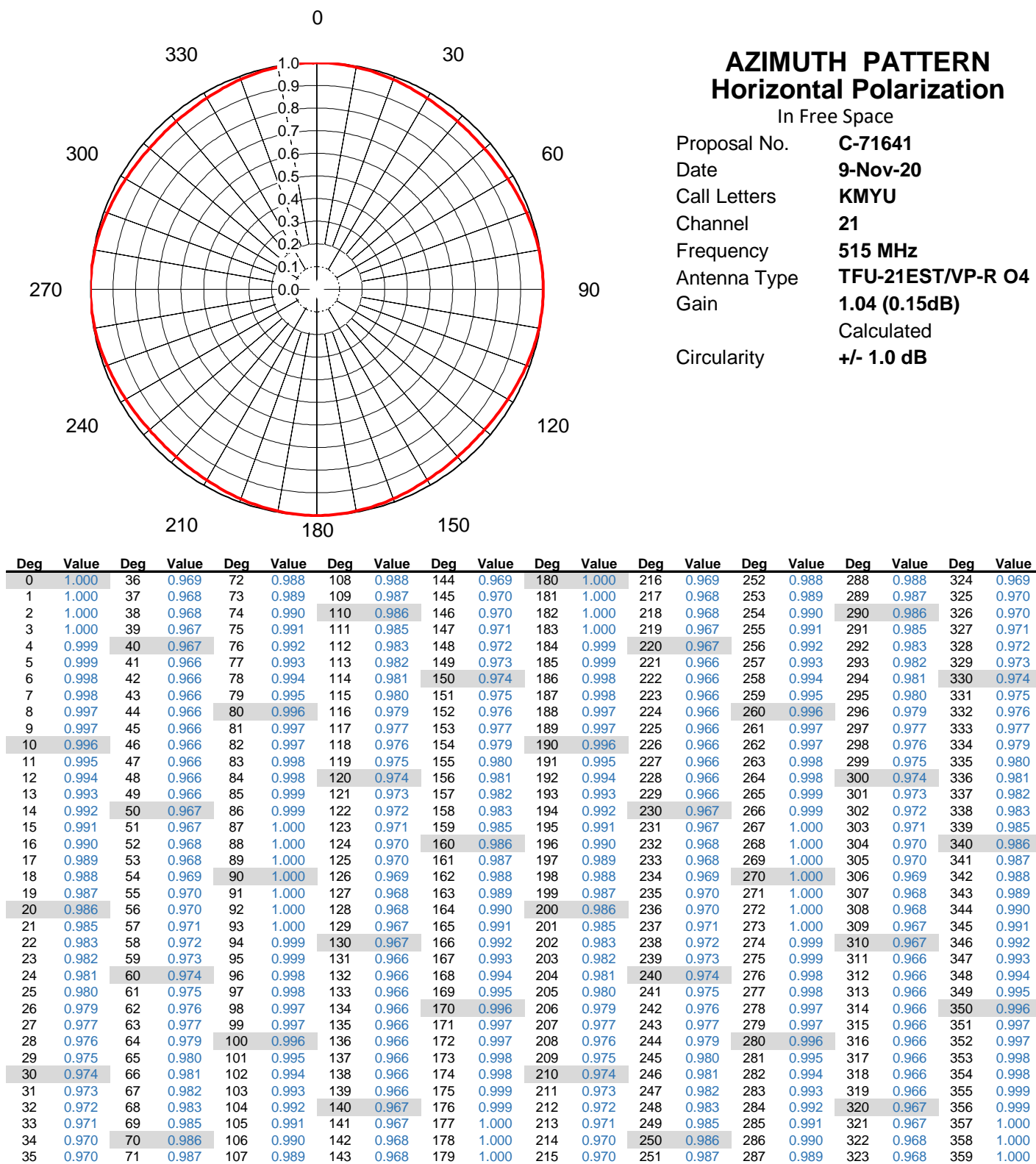


Predicted Principal Community 48 dBu
F(50,90) Coverage Contour

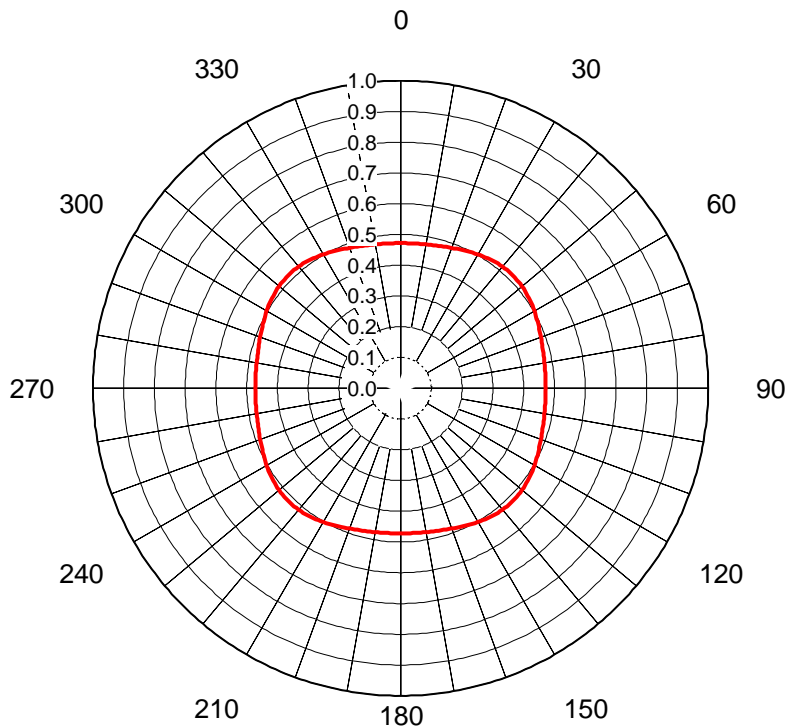
AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-71641**
Date **9-Nov-20**
Call Letters **KMYU**
Channel **21**
Frequency **515 MHz**
Antenna Type **TFU-21EST/VP-R 04**
Gain **1.04 (0.15dB)**
Circularity **+/- 1.0 dB**



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AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-71641**
 Date **9-Nov-20**
 Call Letters **KMYU**
 Channel **21**
 Frequency **515 MHz**
 Antenna Type **TFU-21EST/VP-R O4**
 Gain **1.11 (0.44dB)**
 Calculated
 Circularity **+/- 1.0 dB**

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.472	36	0.512	72	0.483	108	0.483	144	0.512	180	0.472	216	0.512	252	0.483	288	0.483
1	0.472	37	0.513	73	0.482	109	0.484	145	0.510	181	0.472	217	0.513	253	0.482	289	0.484
2	0.472	38	0.514	74	0.480	110	0.486	146	0.509	182	0.472	218	0.514	254	0.480	290	0.486
3	0.472	39	0.515	75	0.479	111	0.487	147	0.507	183	0.472	219	0.515	255	0.479	291	0.487
4	0.472	40	0.516	76	0.478	112	0.489	148	0.506	184	0.472	220	0.516	256	0.478	292	0.489
5	0.473	41	0.516	77	0.477	113	0.490	149	0.504	185	0.473	221	0.516	257	0.477	293	0.490
6	0.473	42	0.517	78	0.476	114	0.492	150	0.502	186	0.473	222	0.517	258	0.476	294	0.492
7	0.473	43	0.517	79	0.476	115	0.494	151	0.501	187	0.473	223	0.517	259	0.476	295	0.494
8	0.474	44	0.518	80	0.475	116	0.495	152	0.499	188	0.474	224	0.518	260	0.475	296	0.495
9	0.474	45	0.518	81	0.474	117	0.497	153	0.497	189	0.474	225	0.518	261	0.474	297	0.497
10	0.475	46	0.518	82	0.474	118	0.499	154	0.495	190	0.475	226	0.518	262	0.474	298	0.499
11	0.476	47	0.517	83	0.473	119	0.501	155	0.494	191	0.476	227	0.517	263	0.473	299	0.501
12	0.476	48	0.517	84	0.473	120	0.502	156	0.492	192	0.476	228	0.517	264	0.473	300	0.502
13	0.477	49	0.516	85	0.473	121	0.504	157	0.490	193	0.477	229	0.516	265	0.473	301	0.504
14	0.478	50	0.516	86	0.472	122	0.506	158	0.489	194	0.478	230	0.516	266	0.472	302	0.506
15	0.479	51	0.515	87	0.472	123	0.507	159	0.487	195	0.479	231	0.515	267	0.472	303	0.507
16	0.480	52	0.514	88	0.472	124	0.509	160	0.486	196	0.480	232	0.514	268	0.472	304	0.509
17	0.482	53	0.513	89	0.472	125	0.510	161	0.484	197	0.482	233	0.513	269	0.472	305	0.510
18	0.483	54	0.512	90	0.472	126	0.512	162	0.483	198	0.483	234	0.512	270	0.472	306	0.512
19	0.484	55	0.510	91	0.472	127	0.513	163	0.482	199	0.484	235	0.510	271	0.472	307	0.513
20	0.486	56	0.509	92	0.472	128	0.514	164	0.480	200	0.486	236	0.509	272	0.472	308	0.514
21	0.487	57	0.507	93	0.472	129	0.515	165	0.479	201	0.487	237	0.507	273	0.472	309	0.515
22	0.489	58	0.506	94	0.472	130	0.516	166	0.478	202	0.489	238	0.506	274	0.472	310	0.516
23	0.490	59	0.504	95	0.473	131	0.516	167	0.477	203	0.490	239	0.504	275	0.473	311	0.516
24	0.492	60	0.502	96	0.473	132	0.517	168	0.476	204	0.492	240	0.502	276	0.473	312	0.517
25	0.494	61	0.501	97	0.473	133	0.517	169	0.476	205	0.494	241	0.501	277	0.473	313	0.517
26	0.495	62	0.499	98	0.474	134	0.518	170	0.475	206	0.495	242	0.499	278	0.474	314	0.518
27	0.497	63	0.497	99	0.474	135	0.518	171	0.474	207	0.497	243	0.497	279	0.474	315	0.518
28	0.499	64	0.495	100	0.475	136	0.518	172	0.474	208	0.499	244	0.495	280	0.475	316	0.518
29	0.501	65	0.494	101	0.476	137	0.517	173	0.473	209	0.501	245	0.494	281	0.476	317	0.517
30	0.502	66	0.492	102	0.476	138	0.517	174	0.473	210	0.502	246	0.492	282	0.476	318	0.517
31	0.504	67	0.490	103	0.477	139	0.516	175	0.473	211	0.504	247	0.490	283	0.477	319	0.516
32	0.506	68	0.489	104	0.478	140	0.516	176	0.472	212	0.506	248	0.489	284	0.478	320	0.516
33	0.507	69	0.487	105	0.479	141	0.515	177	0.472	213	0.507	249	0.487	285	0.479	321	0.515
34	0.509	70	0.486	106	0.480	142	0.514	178	0.472	214	0.509	250	0.486	286	0.480	322	0.514
35	0.510	71	0.484	107	0.482	143	0.513	179	0.472	215	0.510	251	0.484	287	0.482	323	0.513

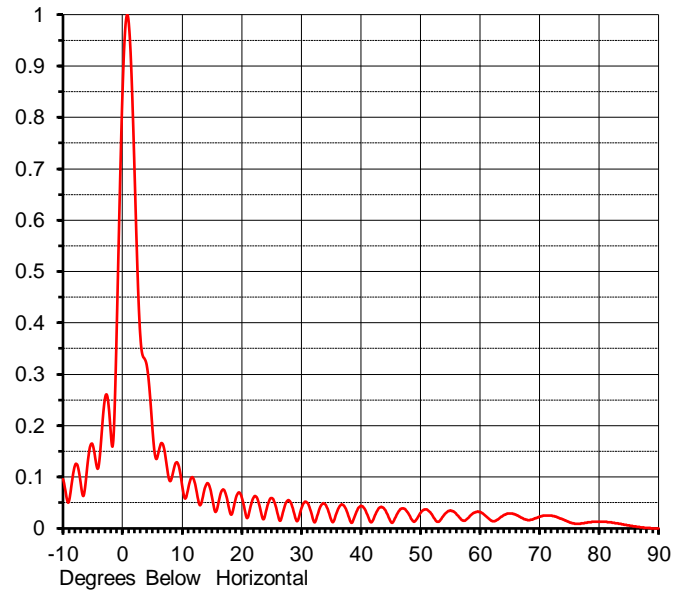
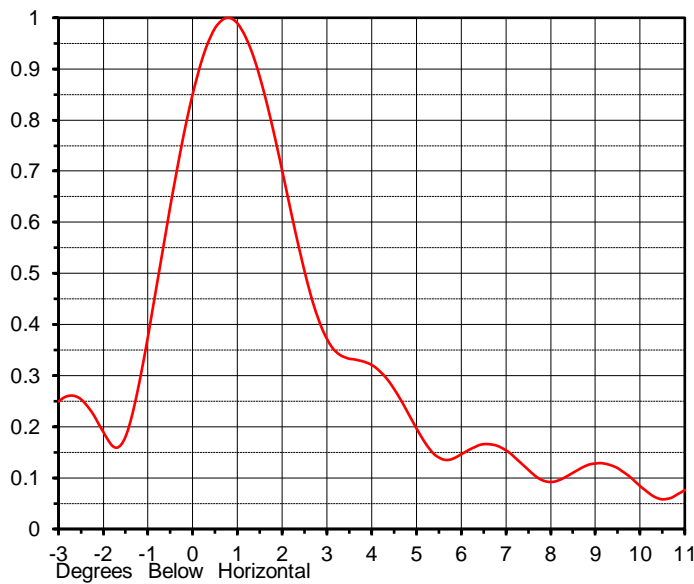
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ELEVATION PATTERN

Proposal No. **C-71641**
 Date **9-Nov-20**
 Call Letters **KMYU**
 Channel **21**
 Frequency **515 MHz**
 Antenna Type **TFU-21EST/VP-R 04**

RMS Directivity at Main Lobe **21.5 (13.32 dB)**
 RMS Directivity at Horizontal **15.6 (11.93 dB)**
Calculated

Beam Tilt **0.80 deg**
 Pattern Number **080**



Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.096	10.0	0.084	30.0	0.038	50.0	0.030	70.0	0.023
-9.0	0.053	11.0	0.076	31.0	0.050	51.0	0.037	71.0	0.025
-8.0	0.122	12.0	0.094	32.0	0.017	52.0	0.026	72.0	0.025
-7.0	0.086	13.0	0.045	33.0	0.036	53.0	0.013	73.0	0.022
-6.0	0.112	14.0	0.084	34.0	0.047	54.0	0.026	74.0	0.017
-5.0	0.162	15.0	0.062	35.0	0.018	55.0	0.035	75.0	0.012
-4.0	0.122	16.0	0.044	36.0	0.032	56.0	0.029	76.0	0.009
-3.0	0.249	17.0	0.075	37.0	0.046	57.0	0.016	77.0	0.010
-2.0	0.190	18.0	0.033	38.0	0.022	58.0	0.020	78.0	0.011
-1.0	0.377	19.0	0.058	39.0	0.024	59.0	0.030	79.0	0.013
0.0	0.851	20.0	0.061	40.0	0.044	60.0	0.032	80.0	0.013
1.0	0.989	21.0	0.021	41.0	0.029	61.0	0.024	81.0	0.013
2.0	0.701	22.0	0.060	42.0	0.015	62.0	0.015	82.0	0.012
3.0	0.372	23.0	0.044	43.0	0.039	63.0	0.017	83.0	0.010
4.0	0.321	24.0	0.029	44.0	0.037	64.0	0.026	84.0	0.008
5.0	0.197	25.0	0.059	45.0	0.014	65.0	0.029	85.0	0.006
6.0	0.146	26.0	0.030	46.0	0.026	66.0	0.027	86.0	0.004
7.0	0.154	27.0	0.034	47.0	0.039	67.0	0.021	87.0	0.002
8.0	0.092	28.0	0.054	48.0	0.029	68.0	0.016	88.0	0.001
9.0	0.128	29.0	0.021	49.0	0.013	69.0	0.018	89.0	0.000
								90.0	0.000

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KMYU
Channel 21 -St. George UT
ERP = 250000.00 WATTS

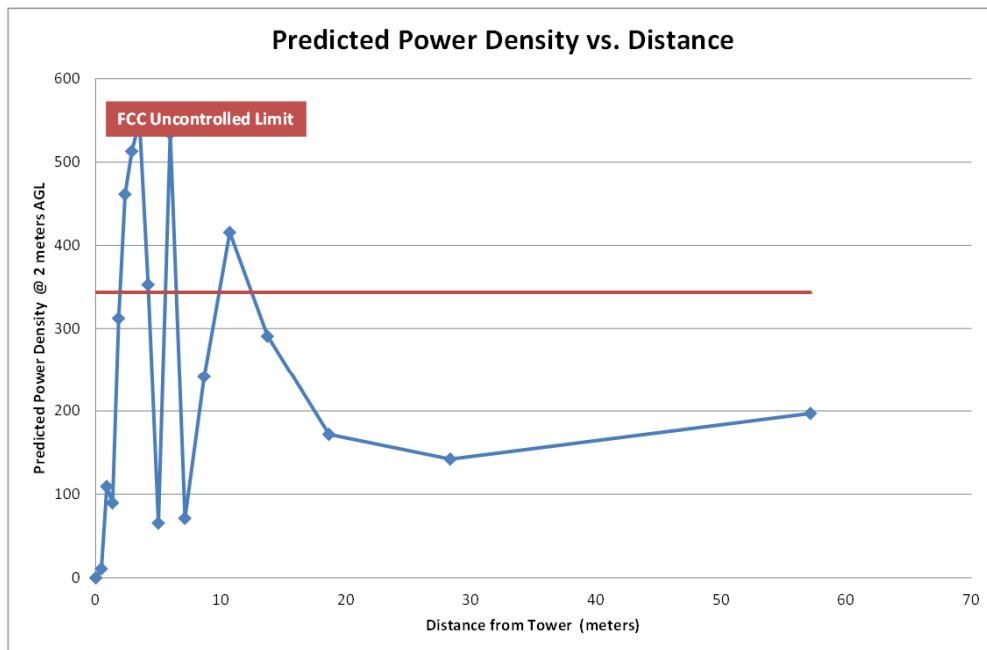
APPENDIX A

Maximum ERP 250 kW

Polarization ----- 2 Circular
 Antenna Height Above Ground -- 7 meters 23.0 feet
 FCC Uncontrolled RFR Limit ---- 343.33 $\mu\text{W}/\text{cm}^2$

Maximum Computed Power Density 549.088 $\mu\text{W}/\text{cm}^2$
 159.93% of limit

Angle Below Horizontal (degrees)	<Point X> Horiz Distance from tower to 2 m AGL (meters)	Slant Distance from antenna to Point X (meters)	Vertical Pattern (REL. FIELD)	KMYU ERP (kW)	KMYU Calculated Power Density $\mu\text{W}/\text{cm}^2$	Percent Limit	Limit Exceeded?
0			1.000	250.0000			
5	57.2	57.4	0.197	9.7023	196.925	57.36%	No
10	28.4	28.8	0.084	1.7640	142.127	41.40%	No
15	18.7	19.3	0.062	0.9610	172.009	50.10%	No
20	13.7	14.6	0.061	0.9303	290.763	84.69%	No
25	10.7	11.8	0.059	0.8703	415.314	120.97%	Yes
30	8.7	10.0	0.038	0.3610	241.148	70.24%	No
35	7.1	8.7	0.018	0.0810	71.204	20.74%	No
40	6.0	7.8	0.044	0.4840	534.339	155.63%	Yes
45	5.0	7.1	0.014	0.0490	65.464	19.07%	No
50	4.2	6.5	0.030	0.2250	352.799	102.76%	Yes
55	3.5	6.1	0.035	0.3063	549.088	159.93%	Yes
60	2.9	5.8	0.032	0.2560	513.024	149.43%	Yes
65	2.3	5.5	0.029	0.2103	461.449	134.40%	Yes
70	1.8	5.3	0.023	0.1323	312.035	90.88%	No
75	1.3	5.2	0.012	0.0360	89.748	26.14%	No
80	0.9	5.1	0.013	0.0423	109.488	31.89%	No
85	0.4	5.0	0.004	0.0040	10.607	3.09%	No
90	0.0	5.0	0.000	0.0000	0.000	0.00%	No





KMYU - ST. GEORGE, UTAH

JULY 2021

APPENDIX B

Longley-Rice Interference Analysis

tvstudy v2.2.5 (4uoc83)
 Database: localhost, Study: KMYU 21 CP BLANK0000129216, Model: Longley-Rice
 Start: 2021.07.01 11:51:25

Study created: 2021.07.01 11:51:25

Study build station data: LMS TV 2021-07-01

Proposal: KMYU D21 DT CP ST. GEORGE, UT
 File number: BLANK0000129216
 Facility ID: 35822
 Station data: LMS TV 2021-07-01
 Record ID: 25076ff37529362a017546b1505dlffb
 Country: U.S.
 Zone: II

Build options:
 Protect pre-transition records not on baseline channel

Search options:
 Non-U.S. records included
 Baseline record excluded if station has CP

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KBLR	D20	DT	LIC	PARADISE, NV	BLANK0000058879	173.4 km
Yes	KHSV	D21	DT	APP	LAS VEGAS, NV	BLANK0000127675	173.5
No	KEJT-CD	D21	DC	LIC	SALT LAKE CITY, UT	BLANK0000059449	417.0
No	KSNV	D22	DT	LIC	LAS VEGAS, NV	BLANK0000112809	173.7

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D21
 Latitude: 37 3 48.00 N (NAD83)
 Longitude: 113 34 26.00 W
 Height AMSL: 964.6 m
 HAAT: 43.0 m
 Peak ERP: 250 kW
 Antenna: Omnidirectional
 Elev Pattn: Generic
 Elec Tilt: 0.80

39.5 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	250 kW	-58.0 m	52.8 km
45.0	250	114.5	70.1
90.0	250	-15.2	52.8
135.0	250	91.0	67.1
180.0	250	78.6	65.1
225.0	250	120.6	70.7
270.0	250	5.8	52.8
315.0	250	114.8	70.2

Appendix B - Interference Analysis **KMYU - St. George, Utah** **Channel 21- 250 kW - Page 2**

Database HAAT does not agree with computed HAAT
Database HAAT: 43 m Computed HAAT: 57 m

Distance to Canadian border: 1326.5 km

Distance to Mexican border: 494.1 km

Conditions at FCC monitoring station: Douglas AZ
Bearing: 148.7 degrees Distance: 715.3 km

Proposal is not within the West Virginia quiet zone area

Conditions at Table Mountain receiving zone:
Bearing: 62.3 degrees Distance: 798.2 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 BLANK0000127675 APP scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KHSV	D21	DT	APP	LAS VEGAS, NV	BLANK0000127675	
Undesireds:	KMYU	D21	DT	BL	ST. GEORGE, UT	DTVBL35822	173.5 km
	KMYU	D21	DT	CP	ST. GEORGE, UT	BLANK0000129216	173.5
	KBLR	D20	DT	LIC	PARADISE, NV	BLANK0000058879	0.1
	K21DO-D	D21	DC	CP	PALM SPRINGS, CA	BLANK0000127568	271.3
	KSNV	D22	DT	LIC	LAS VEGAS, NV	BLANK0000112809	0.2
	Service area	Terrain-limited		IX-free, before		IX-free, after	Percent New IX
33331.0	1,969,732	20785.7	1,919,395	20329.6	1,919,191	20329.6 1,919,191	0.00 0.00
Undesired	Total IX		Unique IX, before		Unique IX, after		
KMYU D21 DT BL	287.8	201	287.8	201			
KMYU D21 DT CP	287.8	201			287.8	201	
KBLR D20 DT LIC	24.0	0	16.0	0	16.0	0	
KSNV D22 DT LIC	152.3	3	144.3	3	144.3	3	

----- Interference to proposal scenario 1

The applicant agrees to accept the predicted received interference.

****MX: 6.24% interference received**

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KMYU	D21	DT	CP	ST. GEORGE, UT	BLANK0000129216	
Undesireds:	KHSV	D21	DT	APP	LAS VEGAS, NV	BLANK0000127675	173.5 km
	Service area	Terrain-limited		IX-free		Percent IX	
13020.5	165,358	9042.7	144,781	8144.8	135,742	9.93 6.24	
Undesired	Total IX		Unique IX		Prcnt Unique IX		
KHSV D21 DT APP	897.9	9,039	897.9	9,039	9.93	6.24	