

ENGINEERING EXHIBIT

Incentive Auction Channel Reassignment

Application for Modification of Digital Television Station Construction Permit

prepared for

San Francisco Television Station KBCW Inc

KBCW(DT) San Francisco, CA

Facility ID 69619

Ch. 28 1000 kW 490 m

San Francisco Television Station KBCW Inc (“SFTS”) is the licensee of digital television station KBCW, Channel 45, Facility ID 69619, San Francisco, CA. Reassignment of KBCW from Channel 45 to Channel 28 was specified in the *Incentive Auction Closing and Channel Reassignment Public Notice* (“CCRPN”, DA 17-317, released April 13, 2017). *SFTS* herein proposes modification of the KBCW Channel 28 Construction Permit (“CP”, file# 0000025838). This application is intended to be filed during the second filing window.¹ The CP authorizes operation at 790 kW effective radiated power (“ERP”) at 490 meters antenna height above average terrain (“HAAT”). *SFTS* proposes herein to increase the ERP to 1000 kW and utilize a different directional antenna pattern.

The licensed KBCW Channel 45 facility is located at the shared Sutro Tower in San Francisco. As with the current authorization, the proposed Channel 28 operation will employ a new antenna system to be side-mounted in lieu of the existing Channel 45 antenna on one of the three top masts on Sutro Tower. The tower structure corresponds to FCC Antenna Structure Registration number 1001289. No change to the overall structure height will result.

The proposed antenna is an elliptically polarized directional Dielectric model TFU-20DSC/VP-R C140 DC (25 percent vertical polarization). The maximum horizontally polarized ERP is 1000 kW and the maximum vertically polarized ERP is 250 kW. The vertically polarized

¹Public Notice “*Incentive Auction Task Force and Media Bureau Announce the Opening of the Second Filing Window for Eligible Full Power and Class A Television Station—October 3 Through November 2, 2017*” DA 17-911, released September 20, 2017.

component will not exceed the horizontally polarized component at any azimuth. The directional antenna's azimuthal patterns are depicted in Figures 1 and 1A for horizontal and vertical polarization, respectively. The antenna's elevation pattern is depicted in Figure 2.

Figure 3 supplies a map that demonstrates compliance with §73.625(a)(1) regarding coverage of the entire principal community. The proposed facility's predicted population exceeds 95 percent of the *CCRPN* baseline facility's population.

The proposed KBCW antenna HAAT is 490.3 meters, based on FCC 30 meter terrain data developed by OET. Pursuant to §73.625(b)(4) the calculated average terrain elevation and associated HAAT have been adjusted due to the proximity of the site to the Pacific Ocean (see Figure 3). The 225 and 270 degree radials have been truncated to include only the part of the radial extending from 3.2 kilometers to the water's edge.

Interference study per FCC OET Bulletin 69² shows that the proposal complies with the 0.5 percent limit of new interference caused to pertinent nearby post-auction full service and Class A television stations and reassignments as required by §73.616. The interference study output report is provided as Table 1.

The proposed 1000 kW ERP exceeds the maximum permitted by §73.622(f)(8)(i) for the proposed antenna HAAT of 490 meters. Section 73.622(f)(5) permits the maximum ERP to be exceeded in order to provide the same geographic coverage area as the largest station within the same market. As demonstrated in Figure 4, the total area within the proposed KBCW NLSC is 38,005 square kilometers, which does not exceed the NLSC area of KNTV(DT) (42,164 sq. km, Ch. 12, San Jose CA, BLCDT-20050923AHA). Thus, the 1000 kW ERP specified herein is in compliance with §73.622(f)(5) of the FCC's Rules.

²FCC 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, 2 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.

The nearest FCC monitoring station is 62 km distant at Livermore, CA. Using the FCC propagation curves, the proposed F(50,90) signal level at the monitoring station is 3.6 mV/m, which is below the 10 mV/m threshold of §73.1030(c) for further analysis. The site is not located within the areas requiring coordination with “quiet” zones specified in §73.1030(a) and (b). The site location is beyond the border areas requiring international coordination. There are no authorized AM stations within 3 kilometers of the site.

Human Exposure to Radiofrequency Electromagnetic Field (Environmental)

The proposed operation 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 considering 10 percent antenna relative field in downward elevations (pattern data shows less than 10 percent relative field at angles 15 to 90 degrees below the antenna), the calculated signal density near the tower at two meters above ground level attributable to the proposed facility is $5.9 \mu\text{W}/\text{cm}^2$, which is 1.6 percent of the general population/uncontrolled maximum permitted 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.

Engineering Exhibit
San Francisco Television Station KBCW Inc
(page 4 of 4)

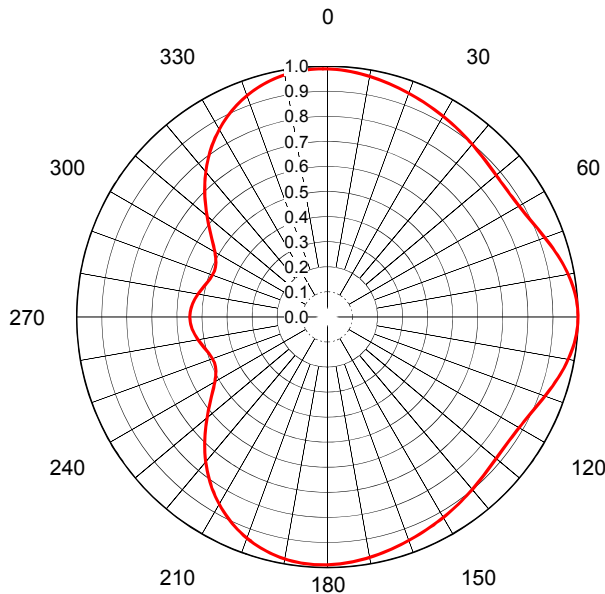


List of Attachments

Figure 1, 1A	Antenna Azimuthal Pattern
Figure 2	Antenna Elevation Pattern
Figure 3	Proposed Coverage Contours
Figure 4	Maximum ERP per §73.622(f)
Table 1	OET Bulletin 69 Interference Study
Form 2100	Saved Version of Engineering Sections from FCC Form at Time of Upload

Chesapeake RF Consultants, LLC

Joseph M. Davis, P.E.	October 10, 2017	
207 Old Dominion Road	Yorktown, VA 23692	703-650-9600



AZIMUTH PATTERN Horizontal Polarization

In Free Space

Proposal No. **C-70770-1**
Date **31-May-17**
Call Letters **KBCW**
Channel **28**
Frequency **557 MHz**
Antenna Type **TFU-20DSC/VP-R C140 DC**
Gain **1.4 (1.47dB)**
Calculated

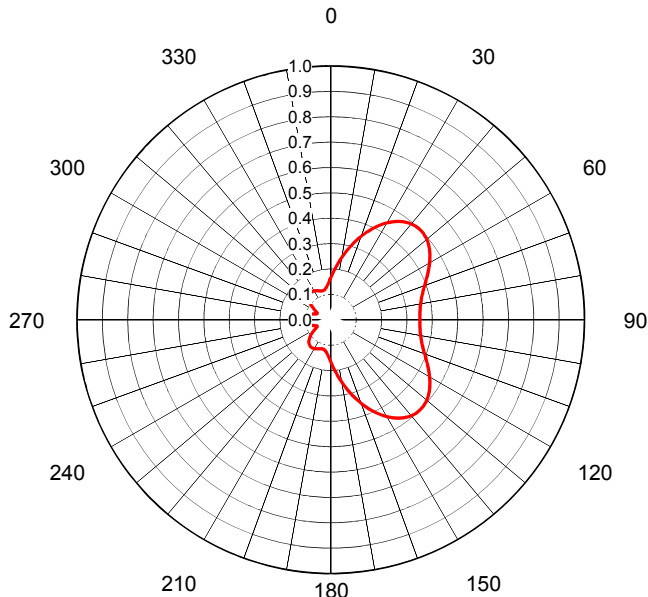
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0	0.989	36	0.909	72	0.934	108	0.934	144	0.909	180	0.989	216	0.801	252	0.492	288	0.492
1	0.989	37	0.907	73	0.940	109	0.929	145	0.912	181	0.990	217	0.790	253	0.495	289	0.490
2	0.988	38	0.904	74	0.946	110	0.924	146	0.914	182	0.990	218	0.778	254	0.498	290	0.488
3	0.987	39	0.901	75	0.951	111	0.919	147	0.917	183	0.990	219	0.767	255	0.502	291	0.487
4	0.985	40	0.899	76	0.956	112	0.913	148	0.919	184	0.989	220	0.755	256	0.506	292	0.486
5	0.984	41	0.897	77	0.962	113	0.909	149	0.922	185	0.989	221	0.742	257	0.511	293	0.488
6	0.982	42	0.894	78	0.967	114	0.904	150	0.924	186	0.988	222	0.730	258	0.515	294	0.489
7	0.980	43	0.892	79	0.971	115	0.900	151	0.927	187	0.986	223	0.717	259	0.519	295	0.492
8	0.978	44	0.890	80	0.976	116	0.896	152	0.929	188	0.985	224	0.704	260	0.524	296	0.495
9	0.976	45	0.888	81	0.980	117	0.892	153	0.932	189	0.983	225	0.691	261	0.528	297	0.500
10	0.974	46	0.885	82	0.984	118	0.889	154	0.934	190	0.981	226	0.678	262	0.532	298	0.505
11	0.972	47	0.884	83	0.988	119	0.886	155	0.937	191	0.978	227	0.665	263	0.535	299	0.512
12	0.969	48	0.882	84	0.991	120	0.884	156	0.939	192	0.975	228	0.652	264	0.539	300	0.518
13	0.967	49	0.880	85	0.993	121	0.882	157	0.942	193	0.972	229	0.639	265	0.542	301	0.527
14	0.965	50	0.879	86	0.996	122	0.880	158	0.944	194	0.968	230	0.626	266	0.544	302	0.535
15	0.962	51	0.878	87	0.997	123	0.879	159	0.947	195	0.964	231	0.614	267	0.546	303	0.545
16	0.960	52	0.877	88	0.999	124	0.877	160	0.949	196	0.960	232	0.601	268	0.547	304	0.555
17	0.957	53	0.877	89	0.999	125	0.877	161	0.952	197	0.955	233	0.589	269	0.548	305	0.566
18	0.954	54	0.877	90	1.000	126	0.877	162	0.954	198	0.950	234	0.577	270	0.549	306	0.577
19	0.952	55	0.877	91	0.999	127	0.877	163	0.957	199	0.945	235	0.566	271	0.548	307	0.589
20	0.949	56	0.877	92	0.999	128	0.877	164	0.960	200	0.939	236	0.555	272	0.547	308	0.601
21	0.947	57	0.879	93	0.997	129	0.878	165	0.962	201	0.933	237	0.545	273	0.546	309	0.614
22	0.944	58	0.880	94	0.996	130	0.879	166	0.965	202	0.927	238	0.535	274	0.544	310	0.626
23	0.942	59	0.882	95	0.993	131	0.880	167	0.967	203	0.920	239	0.527	275	0.542	311	0.639
24	0.939	60	0.884	96	0.991	132	0.882	168	0.969	204	0.913	240	0.518	276	0.539	312	0.652
25	0.937	61	0.886	97	0.988	133	0.884	169	0.972	205	0.905	241	0.512	277	0.535	313	0.665
26	0.934	62	0.889	98	0.984	134	0.885	170	0.974	206	0.897	242	0.505	278	0.532	314	0.678
27	0.932	63	0.892	99	0.980	135	0.887	171	0.976	207	0.889	243	0.500	279	0.528	315	0.691
28	0.929	64	0.896	100	0.976	136	0.890	172	0.978	208	0.881	244	0.495	280	0.524	316	0.704
29	0.927	65	0.900	101	0.971	137	0.892	173	0.980	209	0.872	245	0.492	281	0.519	317	0.717
30	0.924	66	0.904	102	0.967	138	0.894	174	0.982	210	0.863	246	0.489	282	0.515	318	0.730
31	0.922	67	0.909	103	0.962	139	0.897	175	0.984	211	0.853	247	0.488	283	0.511	319	0.742
32	0.919	68	0.913	104	0.956	140	0.899	176	0.985	212	0.844	248	0.486	284	0.506	320	0.755
33	0.917	69	0.919	105	0.951	141	0.901	177	0.987	213	0.833	249	0.487	285	0.502	321	0.767
34	0.914	70	0.924	106	0.946	142	0.904	178	0.988	214	0.823	250	0.488	286	0.498	322	0.778
35	0.912	71	0.929	107	0.940	143	0.906	179	0.989	215	0.812	251	0.490	287	0.495	323	0.790



Figure 1
Antenna Azimuthal Pattern
Horizontal Polarization
KBCW(DT) San Francisco, CA
Facility ID 69619
Ch. 28 1000 kW 490 m

prepared for
San Francisco Television Station KBCW Inc

October, 2017



AZIMUTH PATTERN Vertical Polarization

In Free Space

Proposal No. **C-70770-1**
Date **31-May-17**
Call Letters **KBCW**
Channel **28**
Frequency **557 MHz**
Antenna Type **TFU-20DSC/VP-R C140 DC**
Gain **2.91 (4.64dB)**
Calculated

Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value	Deg	Value
0	0.166	36	0.478	72	0.384	108	0.384	144	0.478	180	0.166	216	0.133	252	0.074	288	0.074
1	0.173	37	0.483	73	0.380	109	0.389	145	0.473	181	0.160	217	0.132	253	0.078	289	0.070
2	0.180	38	0.487	74	0.376	110	0.394	146	0.468	182	0.154	218	0.132	254	0.082	290	0.067
3	0.188	39	0.490	75	0.373	111	0.399	147	0.462	183	0.149	219	0.131	255	0.087	291	0.064
4	0.196	40	0.493	76	0.370	112	0.404	148	0.455	184	0.144	220	0.130	256	0.091	292	0.062
5	0.204	41	0.496	77	0.367	113	0.409	149	0.448	185	0.139	221	0.129	257	0.095	293	0.060
6	0.213	42	0.498	78	0.364	114	0.415	150	0.441	186	0.135	222	0.128	258	0.099	294	0.059
7	0.221	43	0.499	79	0.362	115	0.420	151	0.433	187	0.132	223	0.126	259	0.103	295	0.059
8	0.231	44	0.500	80	0.360	116	0.426	152	0.425	188	0.129	224	0.124	260	0.107	296	0.060
9	0.240	45	0.500	81	0.358	117	0.432	153	0.417	189	0.126	225	0.122	261	0.110	297	0.061
10	0.249	46	0.500	82	0.356	118	0.438	154	0.408	190	0.124	226	0.119	262	0.114	298	0.063
11	0.259	47	0.499	83	0.355	119	0.444	155	0.399	191	0.122	227	0.117	263	0.117	299	0.066
12	0.269	48	0.498	84	0.354	120	0.449	156	0.390	192	0.121	228	0.114	264	0.119	300	0.069
13	0.279	49	0.496	85	0.353	121	0.455	157	0.380	193	0.120	229	0.111	265	0.121	301	0.073
14	0.289	50	0.493	86	0.352	122	0.460	158	0.370	194	0.119	230	0.107	266	0.123	302	0.077
15	0.299	51	0.491	87	0.352	123	0.466	159	0.361	195	0.119	231	0.104	267	0.125	303	0.080
16	0.310	52	0.487	88	0.351	124	0.471	160	0.351	196	0.119	232	0.100	268	0.126	304	0.084
17	0.320	53	0.484	89	0.351	125	0.475	161	0.340	197	0.119	233	0.096	269	0.126	305	0.089
18	0.330	54	0.480	90	0.351	126	0.480	162	0.330	198	0.120	234	0.093	270	0.126	306	0.093
19	0.340	55	0.475	91	0.351	127	0.484	163	0.320	199	0.120	235	0.089	271	0.126	307	0.096
20	0.351	56	0.471	92	0.351	128	0.487	164	0.310	200	0.121	236	0.084	272	0.126	308	0.100
21	0.361	57	0.466	93	0.352	129	0.491	165	0.299	201	0.122	237	0.080	273	0.125	309	0.104
22	0.370	58	0.460	94	0.352	130	0.493	166	0.289	202	0.123	238	0.077	274	0.123	310	0.107
23	0.380	59	0.455	95	0.353	131	0.496	167	0.279	203	0.124	239	0.073	275	0.121	311	0.111
24	0.390	60	0.449	96	0.354	132	0.498	168	0.269	204	0.125	240	0.069	276	0.119	312	0.114
25	0.399	61	0.444	97	0.355	133	0.499	169	0.259	205	0.126	241	0.066	277	0.117	313	0.117
26	0.408	62	0.438	98	0.356	134	0.500	170	0.249	206	0.127	242	0.063	278	0.114	314	0.119
27	0.417	63	0.432	99	0.358	135	0.500	171	0.240	207	0.128	243	0.061	279	0.110	315	0.122
28	0.425	64	0.426	100	0.360	136	0.500	172	0.231	208	0.129	244	0.060	280	0.107	316	0.124
29	0.433	65	0.420	101	0.362	137	0.499	173	0.221	209	0.130	245	0.059	281	0.103	317	0.126
30	0.441	66	0.415	102	0.364	138	0.498	174	0.213	210	0.131	246	0.059	282	0.099	318	0.128
31	0.448	67	0.409	103	0.367	139	0.496	175	0.204	211	0.132	247	0.060	283	0.095	319	0.129
32	0.455	68	0.404	104	0.370	140	0.493	176	0.196	212	0.132	248	0.062	284	0.091	320	0.130
33	0.462	69	0.399	105	0.373	141	0.490	177	0.188	213	0.133	249	0.064	285	0.087	321	0.131
34	0.468	70	0.394	106	0.376	142	0.487	178	0.180	214	0.133	250	0.067	286	0.082	322	0.132
35	0.473	71	0.389	107	0.380	143	0.483	179	0.173	215	0.133	251	0.070	287	0.078	323	0.132



Figure 1A
Antenna Azimuthal Pattern
Vertical Polarization
KBCW(DT) San Francisco, CA
Facility ID 69619
Ch. 28 1000 kW 490 m

prepared for
San Francisco Television Station KBCW Inc

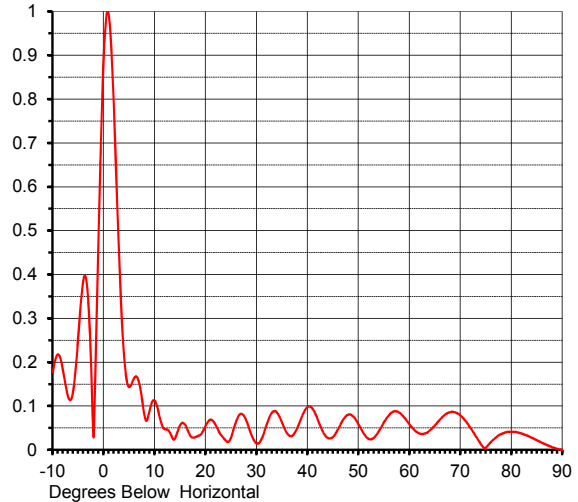
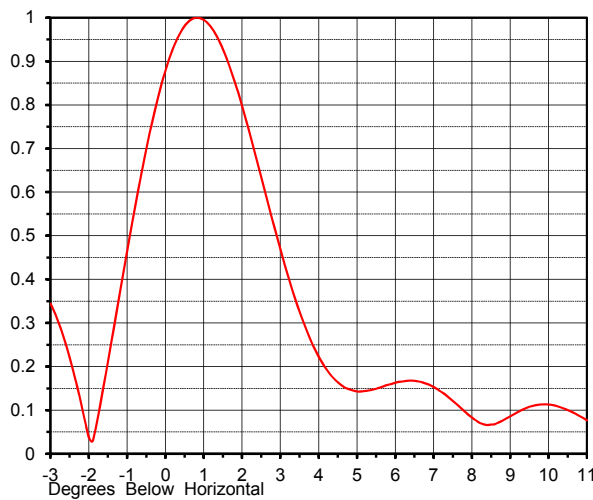
October, 2017

ELEVATION PATTERN

Proposal No. **C-70770-1**
 Date **31-May-17**
 Call Letters **KBCW**
 Channel **28**
 Frequency **557 MHz**
 Antenna Type **TFU-20DSC/VP-R C140 D**

RMS Directivity at Main Lobe **17.7 (12.48 dB)**
 RMS Directivity at Horizontal **14.5 (11.61 dB)**
Calculated

Beam Tilt **0.75 deg**
 Pattern Number **20Q177075**



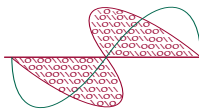
Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.0	0.177	10.0	0.112	30.0	0.015	50.0	0.057	70.0	0.078
-9.0	0.218	11.0	0.072	31.0	0.026	51.0	0.037	71.0	0.065
-8.0	0.180	12.0	0.047	32.0	0.060	52.0	0.025	72.0	0.049
-7.0	0.120	13.0	0.038	33.0	0.085	53.0	0.028	73.0	0.030
-6.0	0.136	14.0	0.027	34.0	0.084	54.0	0.044	74.0	0.012
-5.0	0.263	15.0	0.057	35.0	0.061	55.0	0.064	75.0	0.006
-4.0	0.389	16.0	0.056	36.0	0.037	56.0	0.080	76.0	0.019
-3.0	0.326	17.0	0.031	37.0	0.032	57.0	0.088	77.0	0.029
-2.0	0.029	18.0	0.029	38.0	0.051	58.0	0.084	78.0	0.036
-1.0	0.514	19.0	0.035	39.0	0.080	59.0	0.073	79.0	0.040
0.0	0.906	20.0	0.056	40.0	0.098	60.0	0.057	80.0	0.041
1.0	0.988	21.0	0.069	41.0	0.093	61.0	0.044	81.0	0.040
2.0	0.767	22.0	0.055	42.0	0.068	62.0	0.037	82.0	0.037
3.0	0.438	23.0	0.034	43.0	0.041	63.0	0.037	83.0	0.033
4.0	0.208	24.0	0.020	44.0	0.027	64.0	0.045	84.0	0.027
5.0	0.143	25.0	0.030	45.0	0.030	65.0	0.057	85.0	0.022
6.0	0.165	26.0	0.067	46.0	0.048	66.0	0.070	86.0	0.016
7.0	0.148	27.0	0.082	47.0	0.070	67.0	0.081	87.0	0.011
8.0	0.077	28.0	0.065	48.0	0.080	68.0	0.086	88.0	0.006
9.0	0.091	29.0	0.033	49.0	0.075	69.0	0.085	89.0	0.002
								90.0	0.000



Figure 2
Antenna Elevation Pattern
KBCW(DT) San Francisco, CA
Facility ID 69619
Ch. 28 1000 kW 490 m

prepared for
San Francisco Television Station KBCW Inc

October, 2017



Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

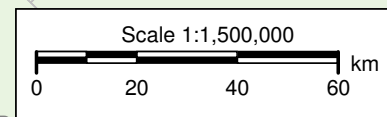
Figure 3
Proposed Coverage Contours
KBCW(DT) San Francisco, CA
Facility ID 69619
Ch. 28 1000 kW 490 m

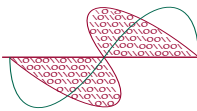
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Proposed KBCW
48 dBμ
(Principal Community)
41 dBμ
(Noise Limited Service Contour)

Proposed Digital Coverage	Area (sq. km)	Population (2010 Census)
Within Noise Limited Service Contour	38,004.8	8,124,546
OET Bulletin 69: TVStudy		
Within noise limited contour	39,466.5	8,227,562
Not affected by terrain losses	33,733.2	7,375,199
Lost to all interference	4,825.2	588,788
Net Interference-Free Service	28,908.0	6,786,411





Chesapeake RF Consultants, LLC
Radiofrequency Consulting Engineers
Digital Television and Radio

Figure 4
Maximum ERP per §73.622(f)
KBCW(DT) San Francisco, CA
Facility ID 69619
Ch. 28 1000 kW 490 m

prepared for
San Francisco Television
Station KBCW Inc

October, 2017

KNTV Ch. 12 San Jose, CA
BLCDT-20050923AHA
36 dBμ Contour (NLSC)
Area: 42,164 sq. km

Proposed KBCW
41 dBμ Contour (NLSC)
Area: 38,005 sq. km

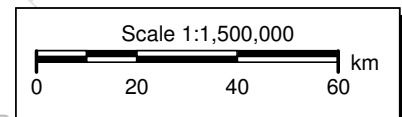


Table 1 KBCW OET Bulletin 69 Interference Study
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tvstudy v2.2.3 (6K70F1)
Database: localhost, Study: KBCW C140DC 1000KW (3438), Model: Longley-Rice
Start: 2017.10.10 14:13:39

Study created: 2017.10.10 14:13:20

Study build station data: LMS TV 2017-10-07 LMSTV

Proposal: KBCW D28 DT APP SAN FRANCISCO, CA
File number: KBCW C140DC 1000KW
Facility ID: 69619
Station data: User record
Record ID: 717
Country: U.S.
Zone: II

Stations potentially affected by proposal:

IX	Call	Chan	Svc	Status	City, State	File Number	Distance
No	KBTB-CD	D27	DC	LIC	SACRAMENTO, CA	BLDTA20140908ADO	123.9 km
No	KCSM-TV	D27	DT	CP	SAN MATEO, CA	BLANK0000028093	0.0
Yes	KKPM-CD	D28+	DC	LIC	CHICO, CA	BLDTA20100914AHF	170.3
Yes	KBVU	D28	DT	LIC	EUREKA, CA	BLCDT20130607AAU	355.3
Yes	KMMD-CD	D28	DC	CP	SALINAS, CA	BLANK0000028150	154.4
Yes	KMPH-TV	D28	DT	LIC	VISALIA, CA	BLCDT20030204AGN	338.6
Yes	KPIX-TV	D29	DT	LIC	SAN FRANCISCO, CA	BLCDT20091112AIZ	0.0

No non-directional AM stations found within 0.8 km

No directional AM stations found within 3.2 km

Record parameters as studied:

Channel: D28
Latitude: 37 45 19.00 N (NAD83)
Longitude: 122 27 10.00 W
Height AMSL: 521.4 m
HAAT: 490.3 m
Peak ERP: 1000 kW
Antenna: TFU-20DSC-C140 DC 20170531 0.0 deg
Elev Pattn: Generic
Elec Tilt: 0.75

40.1 dBu contour:

Azimuth	ERP	HAAT	Distance
0.0 deg	978 kW	495.2 m	115.9 km
45.0	790	514.5	115.1
90.0	1000	515.2	117.4
135.0	790	504.2	114.4
180.0	978	403.9	108.3
225.0	477	514.4	110.4
270.0	301	515.3	106.1
315.0	477	513.8	110.3

Database HAAT does not agree with computed HAAT
Database HAAT: 490 m Computed HAAT: 497 m

ERP exceeds maximum
ERP: 1000 kW ERP maximum: 521 kW

**Proposal service area extends beyond baseline plus 1.0%
Proposal service area population is more than 95.0% of baseline

Distance to Canadian border: 1167.0 km

Distance to Mexican border: 731.2 km

**Proposal is within coordination distance of FCC monitoring station
Conditions at FCC monitoring station: Livermore CA
Bearing: 92.9 degrees Distance: 61.5 km
ERP: 986 kW HAAT: 515.9 m Field strength: 71.6 dBu, 3.8 mV/m

Proposal is not within the West Virginia quiet zone area

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Conditions at Table Mountain receiving zone:
Bearing: 74.6 degrees Distance: 1507.5 km

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 BLDTA20100914AHF LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KKPM-CD	D28+	DC	LIC	CHICO, CA	BLDTA20100914AHF	
Undesireds:	KBCW	D28	DT	BL	SAN FRANCISCO, CA	DTVBL69619	170.3 km
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	170.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
10809.9	760,037	10634.3		758,534	10622.4	758,483	10618.4 758,361 0.04 0.02
Undesired		Total IX		Unique IX, before		Unique IX, after	
KBCW D28 DT BL		12.0		51	12.0	51	
KBCW D28 DT APP		15.9		173		15.9 173	

Interference to BLCDT20130607AAU LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KBVU	D28	DT	LIC	EUREKA, CA	BLCDT20130607AAU	
Undesireds:	KBCW	D28	DT	BL	SAN FRANCISCO, CA	DTVBL69619	355.3 km
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	355.3
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
19699.8	135,249	15133.8		120,827	15133.8	120,827	15129.8 120,827 0.03 0.00
Undesired		Total IX		Unique IX, before		Unique IX, after	
KBCW D28 DT BL		0.0		0	0.0	0	
KBCW D28 DT APP		4.0		0		4.0 0	

Interference to BLANK0000028150 CP, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KMMD-CD	D28	DC	CP	SALINAS, CA	BLANK0000028150	
Undesireds:	KBCW	D28	DT	BL	SAN FRANCISCO, CA	DTVBL69619	154.4 km
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	154.4
	KMPH-TV	D28	DT	LIC	VISALIA, CA	BLCDT20030204AGN	245.0
	KPIX-TV	D29	DT	LIC	SAN FRANCISCO, CA	BLCDT20091112AIZ	154.4
Service area		Terrain-limited		IX-free, before		IX-free, after	Percent New IX
12112.4	782,014	8971.6		649,296	8735.9	631,741	8708.0 631,738 0.32 0.00
Undesired		Total IX		Unique IX, before		Unique IX, after	
KBCW D28 DT BL		167.9		17,555	155.9	17,553	
KBCW D28 DT APP		195.9		17,558		183.9 17,556	
KMPH-TV D28 DT LIC		75.8		2	67.8	0	
KPIX-TV D29 DT LIC		4.0		0	0.0	0	

Interference to BLCDT20030204AGN LIC, scenario 1

	Call	Chan	Svc	Status	City, State	File Number	Distance
Desired:	KMPH-TV	D28	DT	LIC	VISALIA, CA	BLCDT20030204AGN	
Undesireds:	KBCW	D28	DT	BL	SAN FRANCISCO, CA	DTVBL69619	338.6 km
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	338.6
	KGMC	D27	DT	CP	CLOVIS, CA	BLANK0000028225	37.1

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KCET	D28	DT	LIC	LOS ANGELES, CA	BLEDT20090615ADO	281.4
KMMD-CD	D28	DC	CP	SALINAS, CA	BLANK0000028150	245.0
KBFX-CD	D29	DC	LIC	BAKERSFIELD, CA	BLTTA20101018ACF	137.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
36426.1 1,725,397	30859.3 1,697,871	30151.4 1,693,493	30147.4 1,693,493	0.01 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
KBCW D28 DT BL	103.8 1,103	39.9 247	
KBCW D28 DT APP	115.8 1,103		43.9 247
KGMC D27 DT CP	471.7 3,274	443.7 3,270	435.7 3,270
KCET D28 DT LIC	12.1 0	8.0 0	8.0 0
KMMD-CD D28 DC CP	139.8 853	75.9 0	75.9 0
KBFX-CD D29 DC LIC	68.5 5	60.5 4	60.5 4

Interference to BLCDDT20030204AGN LIC, scenario 2

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KMPH-TV	D28	DT	LIC	VISALIA, CA	BLCDDT20030204AGN	
Undesireds:	KBCW	D28	DT	BL	SAN FRANCISCO, CA	DTVBL69619	338.6 km
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	338.6
	KGMC	D27	DT	CP	CLOVIS, CA	BLANK0000028225	37.1
	KCET	D28	DT	APP	LOS ANGELES, CA	BMPEDT20090206ACI	281.4
	KMMD-CD	D28	DC	CP	SALINAS, CA	BLANK0000028150	245.0
	KBFX-CD	D29	DC	LIC	BAKERSFIELD, CA	BLTTA20101018ACF	137.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
36426.1 1,725,397	30859.3 1,697,871	30151.4 1,693,493	30147.4 1,693,493	0.01 0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
KBCW D28 DT BL	103.8 1,103	39.9 247	
KBCW D28 DT APP	115.8 1,103		43.9 247
KGMC D27 DT CP	471.7 3,274	443.7 3,270	435.7 3,270
KCET D28 DT APP	16.1 0	8.0 0	8.0 0
KMMD-CD D28 DC CP	139.8 853	75.9 0	75.9 0
KBFX-CD D29 DC LIC	68.5 5	56.4 4	56.4 4

Interference to BLCDDT20091112AIZ LIC, scenario 1

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KPIX-TV	D29	DT	LIC	SAN FRANCISCO, CA	BLCDDT20091112AIZ	
Undesireds:	KBCW	D28	DT	BL	SAN FRANCISCO, CA	DTVBL69619	0.0 km
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	0.0
	KKPM-CD	D28+	DC	LIC	CHICO, CA	BLDTA20100914AHF	170.3
	KMMD-CD	D28	DC	CP	SALINAS, CA	BLANK0000028150	154.4

Service area	Terrain-limited	IX-free, before	IX-free, after	Percent New IX
37642.7 8,340,753	31937.2 7,480,594	31472.4 7,473,343	31476.4 7,473,387	-0.01 -0.00

Undesired	Total IX	Unique IX, before	Unique IX, after
KBCW D28 DT BL	4.0 44	4.0 44	
KBCW D28 DT APP	0.0 0		0.0 0
KKPM-CD D28+ DC LIC	12.1 15	12.1 15	12.1 15
KMMD-CD D28 DC CP	448.8 7,192	448.8 7,192	448.8 7,192

Interference to proposal, scenario 1
7.98% interference

Desired:	Call	Chan	Svc	Status	City, State	File Number	Distance
	KBCW	D28	DT	APP	SAN FRANCISCO, CA	KBCW C140DC 1000KW	
Undesireds:	KBTB-CD	D27	DC	LIC	SACRAMENTO, CA	BLDTA20140908ADO	123.9 km
	KKPM-CD	D28+	DC	LIC	CHICO, CA	BLDTA20100914AHF	170.3
	KMMD-CD	D28	DC	CP	SALINAS, CA	BLANK0000028150	154.4
	KMPH-TV	D28	DT	LIC	VISALIA, CA	BLCDDT20030204AGN	338.6
	KPIX-TV	D29	DT	LIC	SAN FRANCISCO, CA	BLCDDT20091112AIZ	0.0

Service area	Terrain-limited	IX-free	Percent IX
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39466.5	8,227,562	33733.2	7,375,199	28908.0	6,786,411	14.30	7.98
Undesired		Total IX		Unique IX		Prcnt Unique IX	
KBTW-CD D27 DC LIC	20.1	3,082	0.0	0	0.00	0.00	
KKPM-CD D28+ DC LIC	2783.7	516,744	1618.3	170,116	4.80	2.31	
KMMD-CD D28 DC CP	1998.2	51,785	1850.6	20,884	5.49	0.28	
KMPH-TV D28 DT LIC	1292.1	388,788	139.0	45,272	0.41	0.61	
KPIX-TV D29 DT LIC	8.0	5,813	4.0	5,806	0.01	0.08	

**Channel and
Facility
Information**

Section	Question	Response
Proposed Community of License	Facility ID	69619
	State	California
	City	SAN FRANCISCO
	DTV Channel	28
Facility Type	Facility Type	Commercial
	Station Type	Main
Zone	Zone	2

**Antenna Location
Data**

Section	Question	Response
Antenna Structure Registration	Do you have an FCC Antenna Structure Registration (ASR) Number?	Yes
	ASR Number	1001289
Coordinates (NAD83)	Latitude	37° 45' 19.0" N+
	Longitude	122° 27' 10.0" W-
	Structure Type	TOWER-A free standing or guyed struct
	Overall Structure Height	297.7 meters
	Support Structure Height	237.7 meters
	Ground Elevation (AMSL)	254.2 meters
Antenna Data	Height of Radiation Center Above Ground Level	267.2 meters
	Height of Radiation Center Above Average Terrain	490.3 meters
	Height of Radiation Center Above Mean Sea Level	521.4 meters
	Effective Radiated Power	1000 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:	DIE
	Model	TFU-20DSC/VP-R C140 DC
	Rotation	0 degrees
	Electrical Beam Tilt	0.75
	Mechanical Beam Tilt	Not Applicable
	toward azimuth	
	Polarization	Elliptical
DTV and DTS: Elevation 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	

Directional Antenna Relative Field Values (Pre-rotated Pattern)

Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)	Degree	V _A (Authorized Value)
0	0.989	90	1.000	180	0.989	270	0.549
10	0.974	100	0.976	190	0.981	280	0.524
20	0.949	110	0.924	200	0.939	290	0.488
30	0.924	120	0.884	210	0.863	300	0.518
40	0.899	130	0.879	220	0.755	310	0.626
50	0.879	140	0.899	230	0.626	320	0.755
60	0.884	150	0.924	240	0.518	330	0.863
70	0.924	160	0.949	250	0.488	340	0.939
80	0.976	170	0.974	260	0.524	350	0.981

Additional Azimuths

Degree	V _A
358	0.990
182	0.990

**Construction
Permit
Certifications**

Section	Question	Response
Post-Incentive Auction Expedited Processing	It will operate on the DTV channel for this station as established in the post-incentive auction channel reassignment public notice.	Yes
	It will operate post-incentive auction facilities that do not expand the noise-limited service contour in any direction beyond that established by the post-incentive auction channel reassignment public notice.	No
	It will operate post-incentive auction facilities that match or reduce by no more than five percent with respect to predicted population from those defined in the post-incentive auction channel reassignment public notice.	Yes
	The antenna structure to be used by this facility has been registered by the Commission and will not require re-registration to support the proposed antenna, OR the FAA has previously determined that the proposed structure will not adversely affect safety in air navigation and this structure qualifies for later registration under the Commission's phased registration plan, OR the proposed installation on this structure does not require notification to the FAA pursuant to 47 C.F.R. Section 17.7.	Yes
Environmental Effect	Would a Commission grant of Authorization for this location be an action which may have a significant environmental effect? (See Section 1.1306 of 47 C.F.R.)	No
Broadcast Facility	The proposed facility complies with the applicable engineering standards and assignment requirements of 47 C. F.R. Sections 73.616, 73.622(i), 73.623(e), 73.625, 73.1030, and 73.1125.	Yes