

KNSD Application for Modification of Post-Repack Construction Permit

November 2, 2017

Engineering Exhibit

The purpose of this application is to request modification of a post-repack construction permit (LMS file number 0000027747) for operation on channel 17 for KNSD, San Diego, CA, Facility ID 35277, licensed to Station Venture Operations, LP.

This application specifies use of the same top mount antenna location at a radiation center height of 817.9 meters AMSL on the same existing tower with the same height above average terrain (HAAT) of 578.9 meters as authorized in construction permit LMS file number 0000027747 but with the effective radiated power (ERP) increased to 385 kW.

A TVStudy 2.2.3 analysis using the default 2 km cell size and 1 km terrain profile point spacing of the proposed increase to 385 kW ERP showed the maximum amount of new interference created to any post-auction baseline facility, any application filed in the replication and first priority windows, and any granted post-auction construction permits in the LMS database dated October 26, 2017 was under 0.5%. The same study shows no new loss of population due to unique interference from the proposed facility to Mexican facilities XHENE (BPFS20111108ACK) and XHENJ (BPFS20160301ABK), both licensed to Ensenada, BN on channel 17 and XHCTME (BPFS20160524AAV) licensed to Mexicali, BN on channel 17.

Antenna System

The proposed facility will use a directional antenna with elliptical polarization. The proposed vertically polarized ERP is 192.4 kW. The vertically polarized ERP will not exceed the horizontally polarized ERP (385 kW) in any direction. Plots and tabulation of antenna data required by FCC Rules Section 73.625(c) are attached.

Environmental Statement

The requested facility will be installed on top an existing tower located in an antenna farm. The proposed antenna will replace an existing antenna and will not increase the height of the tower. Tower registration is not required due to height under 199' (47CFR17.7(a)).

RF power density from the facility using combined horizontal and vertically polarized ERP was calculated using the procedures described in FCC Office of Engineering and Technology Bulletin 65. The maximum power density at the site, allowing for up to 3 meter building height, and 2 meter person height, is calculated to be 0.01573 mW/cm² or 4.80% of the FCC maximum permissible exposure level of 0.327 mW/cm² at 491 MHz for an uncontrolled environment. At other areas in the antenna farm at higher elevation (up to 10 meters higher) with building heights as high as 4 meters the calculated power density is as high as 0.02769 mW/cm² or 8.43% of the FCC maximum permissible exposure level at 491 MHz for an uncontrolled environment. After construction of this and other post-repack facilities in the antenna farm RF power density measurements will be made at the site to determine if combined exposure levels exceed those permitted in any area of the antenna farm.

The tower and the area around the tower where the maximum field on the ground is present is secured with a fence and locked gate with required signage. At full power, RF power density on towers closer than 109m to this facility is calculated to exceed occupational exposure levels. KNSD will coordinate with other users at the site and reduce power or shut off as required to protect workers on this and nearby towers from RF exposure above the limits specified in FCC rule §1.1310.

KNSD Application for Modification of Post-Repack Construction Permit (continued)

Broadcast Facility

Compliance with 73.616:

A study using TVStudy 2.2.3 and the FCC LMS database dated 10/26/2017 showed the proposed facility complies with the interference requirements of Section 73.616 with regards to any post-auction baseline facility, any application filed in the replication and first priority window, and any granted post-auction construction permits when studied with the default settings of 2 km cell size and 1 km terrain profile point spacing.

Compliance with 73.622(i):

The proposed facility will operate on the channel assigned to KNSD for operation post-repack. The proposed KNSD facility has a service area of 22719.2 square kilometers, which is less than the service area of 22,749.5 square kilometers for the KUSI-TV licensed facility, which is licensed in the same DMA (San Diego) and thus complies with the Section 73.622(f)(5) limit on permissible maximized coverage area and the ERP and HAAT limits in 73.622(f)(8) do not apply.

Compliance with 73.623(e):

Not applicable. This application does not change the assigned channel or location of the authorized station.

Compliance with 73.625:

The proposed facility will place a 48 dB μ v/m principle community contour over San Diego, CA, the community of license. See KNSD Proposed Coverage map, attached.

Compliance with 73.1030:

A TVStudy analysis did not identify requirement for coordination or notification with any of the facilities listed in Section 73.1030.

Compliance with 73.1125:

The proposed facility will place a 48 dB μ v/m principle community contour over the main studio located at 9680 Granite Ridge Drive, San Diego, CA 92123. See KNSD Proposed Coverage map, attached.

Section 73.1650 Considerations:

This facility is 16.2 km from the Mexican border and thus is within coordination distance. While the proposed antenna height AMSL of 817.9 meters and ERP of 385 kW slightly exceed the antenna height of 805 meters and ERP of 370 kW shown on Pages 17 and 18 in "Exchange of coordination letters with IFT Regarding DTV Transition and Reconfiguration of 600 MHz Spectrum (July 2015)", "Table 6: Pre-Incentive Auction US Post-Transition DTV Allotment Plan", a TVStudy analysis showed no additional interference from the proposed facility to XHENE (BPFS20111108ACK) and XHENJ (BPFS20160301ABK), both licensed to Ensenada, BN on channel 17 and to XHCTME (BPFS20160524AAV) licensed to Mexicali, BN on channel 17. TVStudy did not identify any other Mexican stations affected by the proposed facility.

The attached KNSD Proposed Coverage Map shows the contour of a channel 17 facility created using the antenna height AMSL, ERP, and antenna pattern described IFT "Table 6" as a dash red line and illustrates the small extension of the proposed KNSD service area (solid blue line) beyond this contour.

AZIMUTH PATTERN (H-Pol): Dielectric TFU-16ETT/VP-R C180

Main beam axis of symmetry: 290° true

Electrical Beam Tilt: 1.00°

Main Beam Calculated Max. H-pol Azimuth Pattern Gain (peak) 1.83 (2.62 dBd)

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 385.0 kW 25.86 dBk

Maximum Main Beam V-Pol. Effective Radiated Power (ERP): 192.4 kW 22.84 dBk

Tabulation of Azimuth Pattern (Horizontal polarization)

Angle	RF	dBk	ERP kW
0	0.976	25.64	366.7
10	0.927	25.20	330.8
20	0.850	24.44	278.2
30	0.752	23.38	217.7
40	0.629	21.83	152.3
50	0.486	19.59	90.9
60	0.327	16.15	41.2
70	0.182	11.06	12.8
80	0.136	8.53	7.1
90	0.224	12.86	19.3
100	0.302	15.45	35.1
110	0.324	16.07	40.4
120	0.282	14.86	30.6
130	0.189	11.38	13.8
140	0.114	6.99	5.0
150	0.209	12.26	16.8
160	0.365	17.10	51.3
170	0.520	20.17	104.1
180	0.659	22.23	167.2
190	0.772	23.61	229.5
200	0.865	24.59	288.1
210	0.933	25.25	335.1
220	0.980	25.68	369.8
230	1.000	25.85	385.0
240	0.997	25.83	382.7
250	0.971	25.60	363.0
260	0.932	25.24	334.4
270	0.892	24.86	306.3
280	0.863	24.57	286.7
290	0.853	24.47	280.1
300	0.864	24.58	287.4
310	0.893	24.87	307.0
320	0.929	25.21	332.3
330	0.971	25.60	363.0
340	0.996	25.82	381.9
350	1.000	25.85	385.0

Maximum

Angle	RF	dBk	ERP kW
110	0.324	16.07	40.4
231	1.000	25.85	385.0
349	1.000	25.85	385.0

Minimum

Angle	RF	dBk	ERP kW
80	0.136	8.53	7.1
140	0.114	6.99	5.0
290	0.853	24.47	280.1

AZIMUTH PATTERN (H-Pol): Dielectric TFU-16ETT/VP-R C180

Main beam axis of symmetry: 290° true

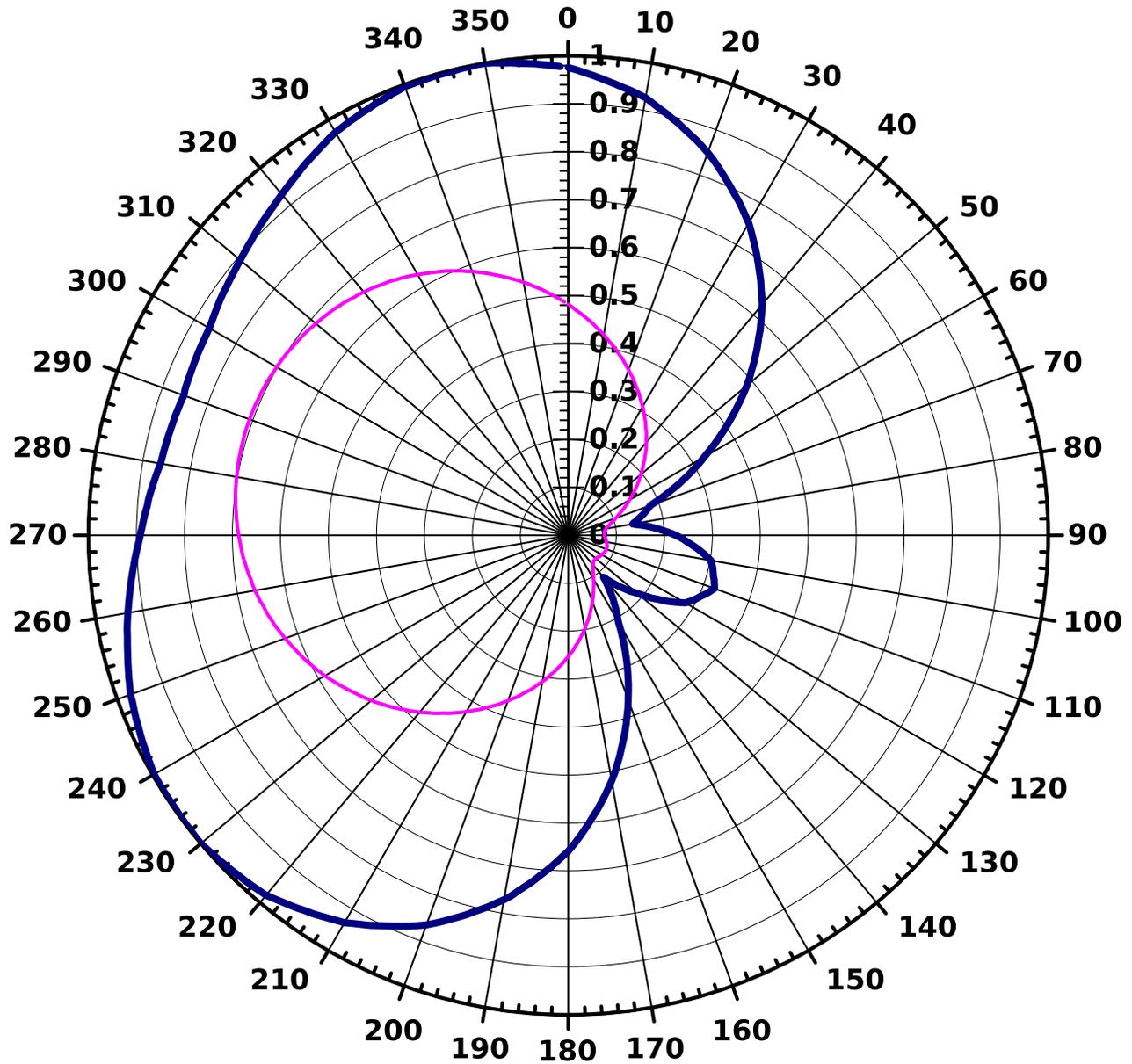
Electrical Beam Tilt: 1.00°

Main Beam Calculated Max. H-pol Azimuth Pattern Gain (peak) 1.83 (2.62 dBd)

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 385.0 kW 25.86 dBk

Maximum Main Beam V-Pol. Effective Radiated Power (ERP): 192.4 kW 22.84 dBk

AZIMUTH PATTERN RELATIVE FIELD



Blue plot shows azimuth pattern relative field for horizontal polarization
Red plot shows azimuth pattern relative field for vertical polarization

AZIMUTH PATTERN (H-Pol): Dielectric TFU-16ETT/VP-R C180

Main beam axis of symmetry: 290° true

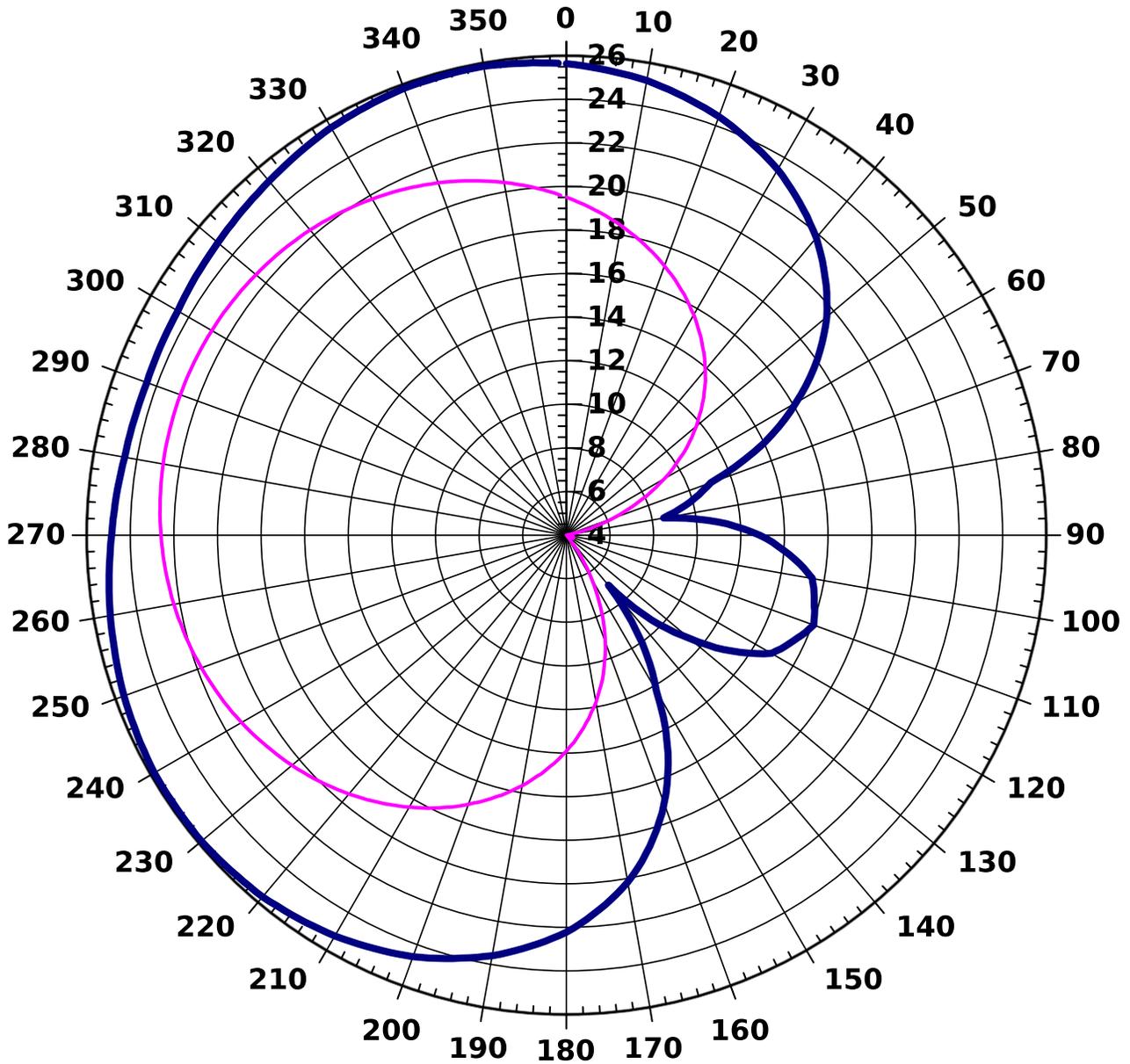
Electrical Beam Tilt: 1.00°

Main Beam Calculated Max. H-pol Azimuth Pattern Gain (peak) 1.83 (2.62 dBd)

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 385.0 kW 25.86 dBk

Maximum Main Beam V-Pol. Effective Radiated Power (ERP): 192.4 kW 22.84 dBk

AZIMUTH PATTERN ERP (dBk)



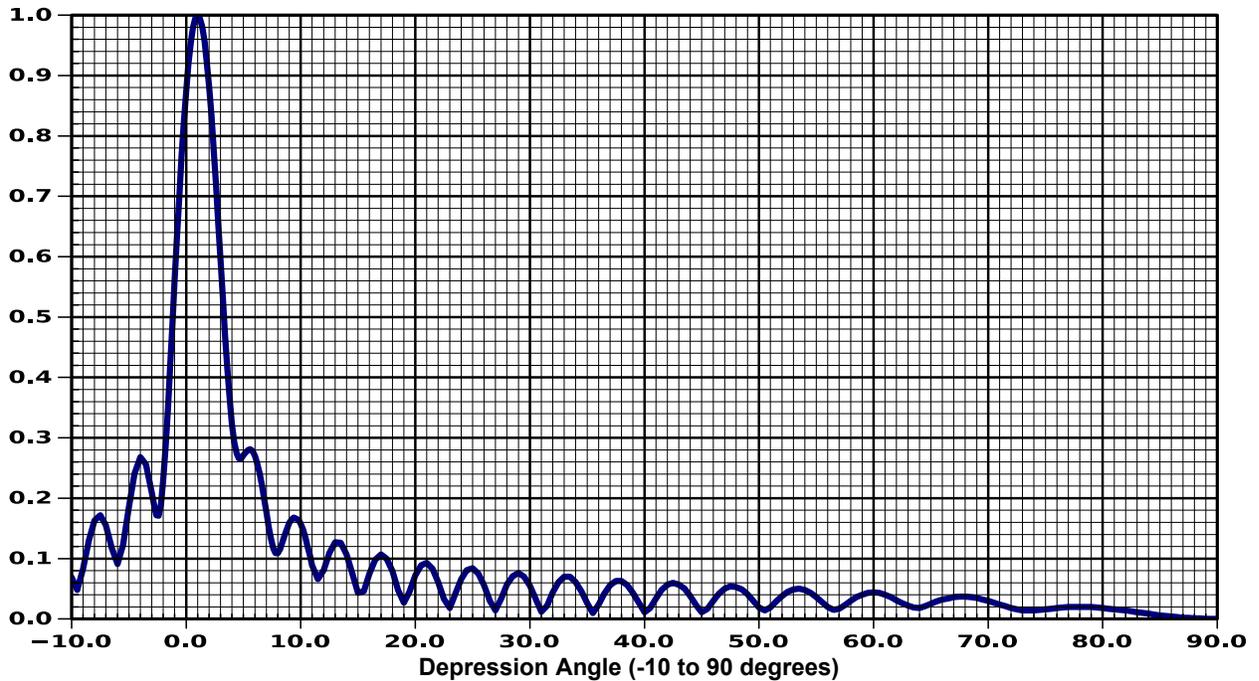
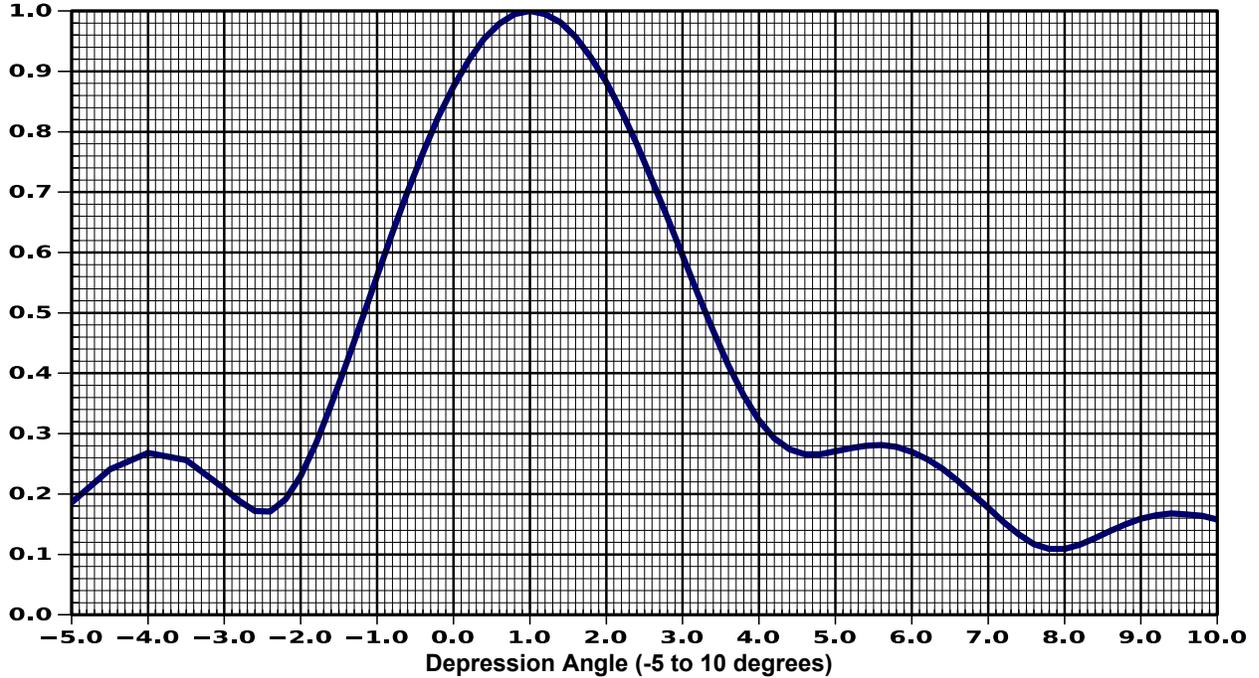
Blue plot shows effective radiated power (dBk) for horizontal polarization
Red plot shows effective radiated power (dBk) for vertical polarization

ELEVATION PATTERN Dielectric TFU-16ETT/VP-R C180

Electrical Beam Tilt: 1.0°

Calculated Maximum Elevation Gain (H + V polarization):	16.20	12.10 dBd
RMS Gain at Horizontal (H + V polarization):	12.40	10.93 dBd
Maximum Main Beam H-Pol. Effective Radiated Power (ERP):	385.0 kW	25.86 dBk
Maximum Main Beam V-Pol. Effective Radiated Power (ERP):	192.4 kW	22.84 dBk

Relative Field



ELEVATION PATTERN Dielectric TFU-16ETT/VP-R C180

Electrical Beam Tilt: 1.0°

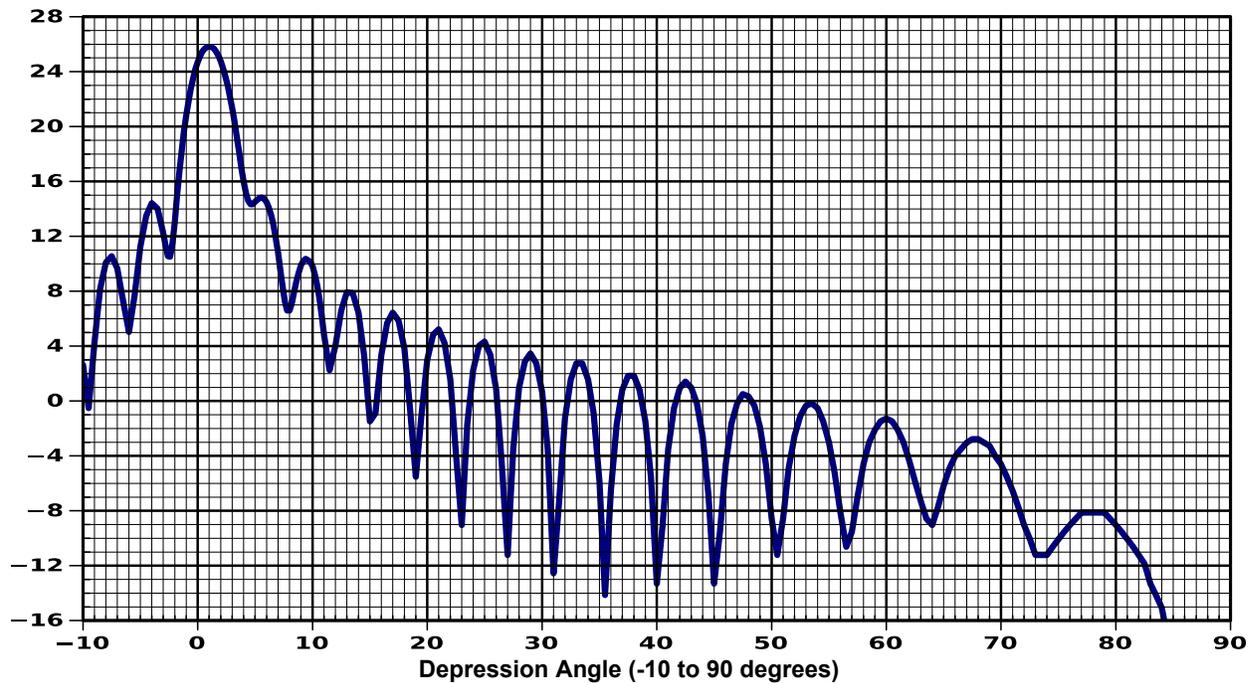
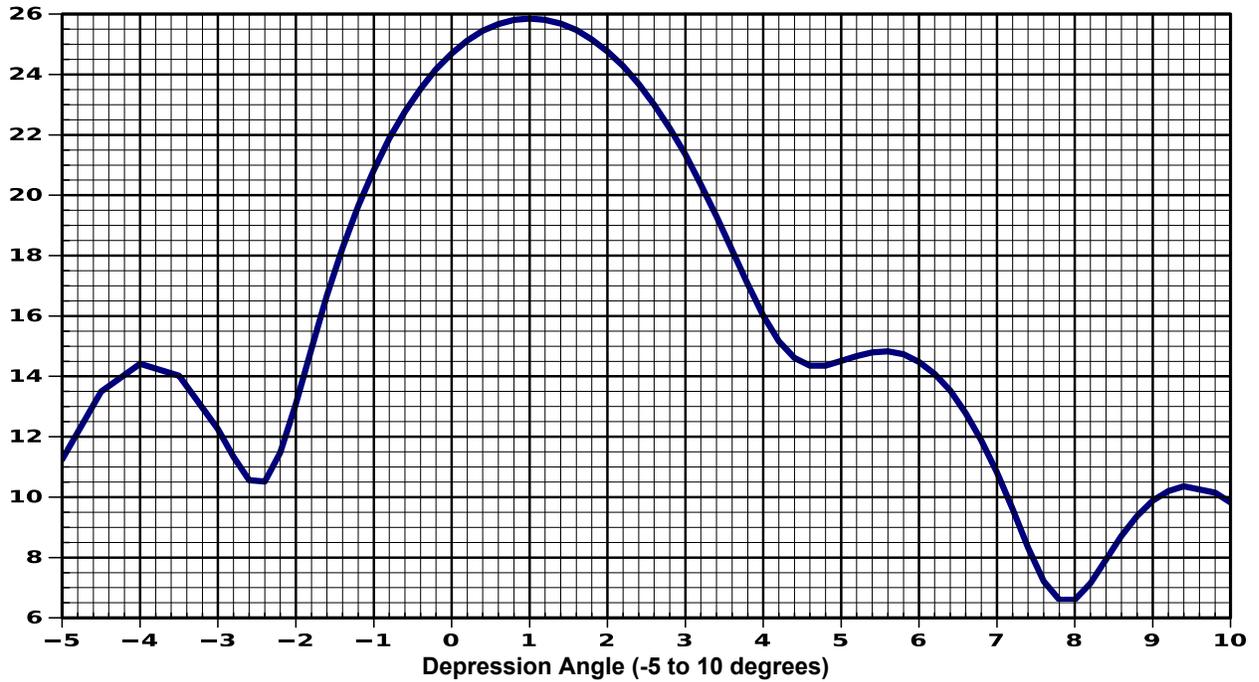
Calculated Maximum Elevation Gain (H + V polarization): 16.20 12.10 dBd

RMS Gain at Horizontal (H + V polarization): 12.40 10.93 dBd

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 385.0 kW 25.86 dBk

Maximum Main Beam V-Pol. Effective Radiated Power (ERP): 192.4 kW 22.84 dBk

ERP (dBK)



KNSD Application for Modification of Post-Repack Construction Permit

**73.625(c)
November 1, 2017**

ELEVATION PATTERN Dielectric TFU-16ETT/VP-R C180

Electrical Beam Tilt: 1.0°

Calculated Maximum Elevation Gain (H + V polarization): 16.20 12.10 dBd

RMS Gain at Horizontal (H + V polarization): 12.40 10.93 dBd

Maximum Main Beam H-Pol. Effective Radiated Power (ERP): 385.0 kW 25.86 dBk

Maximum Main Beam V-Pol. Effective Radiated Power (ERP): 192.4 kW 22.84 dBk

Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field	Angle	Field
-10.00	0.069	1.20	0.995	8.20	0.116	21.5	0.083	39.0	0.043	56.5	0.015	74.0	0.014
-9.50	0.048	1.40	0.981	8.40	0.127	22.0	0.061	39.5	0.027	57.0	0.017	74.5	0.015
-9.00	0.083	1.60	0.957	8.60	0.139	22.5	0.033	40.0	0.011	57.5	0.023	75.0	0.016
-8.50	0.130	1.80	0.923	8.80	0.150	23.0	0.018	40.5	0.018	58.0	0.030	75.5	0.017
-8.00	0.163	2.00	0.882	9.00	0.159	23.5	0.042	41.0	0.034	58.5	0.036	76.0	0.018
-7.50	0.172	2.20	0.834	9.20	0.165	24.0	0.066	41.5	0.048	59.0	0.040	76.5	0.019
-7.00	0.155	2.40	0.779	9.40	0.168	24.5	0.081	42.0	0.057	59.5	0.043	77.0	0.020
-6.50	0.118	2.60	0.720	9.60	0.166	25.0	0.084	42.5	0.060	60.0	0.044	77.5	0.020
-6.00	0.091	2.80	0.658	9.80	0.164	25.5	0.075	43.0	0.057	60.5	0.043	78.0	0.020
-5.50	0.123	3.00	0.595	10.0	0.158	26.0	0.056	43.5	0.050	61.0	0.040	78.5	0.020
-5.00	0.186	3.20	0.531	10.2	0.148	26.5	0.030	44.0	0.038	61.5	0.036	79.0	0.020
-4.50	0.241	3.40	0.470	10.4	0.135	27.0	0.014	44.5	0.023	62.0	0.031	79.5	0.019
-4.00	0.268	3.60	0.413	10.6	0.120	27.5	0.034	45.0	0.011	62.5	0.026	80.0	0.018
-3.50	0.256	3.80	0.363	10.8	0.105	28.0	0.057	45.5	0.017	63.0	0.022	80.5	0.017
-3.00	0.209	4.00	0.322	11.0	0.089	28.5	0.071	46.0	0.030	63.5	0.019	81.0	0.016
-2.80	0.188	4.20	0.292	11.5	0.066	29.0	0.076	46.5	0.042	64.0	0.018	81.5	0.015
-2.60	0.172	4.40	0.274	12.0	0.081	29.5	0.070	47.0	0.050	64.5	0.021	82.0	0.014
-2.40	0.171	4.60	0.266	12.5	0.109	30.0	0.055	47.5	0.054	65.0	0.025	82.5	0.013
-2.20	0.191	4.80	0.266	13.0	0.127	30.5	0.034	48.0	0.053	65.5	0.029	83.0	0.011
-2.00	0.230	5.00	0.271	13.5	0.126	31.0	0.012	48.5	0.049	66.0	0.032	83.5	0.010
-1.80	0.284	5.20	0.276	14.0	0.107	31.5	0.022	49.0	0.041	66.5	0.034	84.0	0.009
-1.60	0.348	5.40	0.280	14.5	0.075	32.0	0.044	49.5	0.030	67.0	0.036	84.5	0.007
-1.40	0.417	5.60	0.281	15.0	0.043	32.5	0.061	50.0	0.019	67.5	0.037	85.0	0.006
-1.20	0.489	5.80	0.278	15.5	0.046	33.0	0.070	50.5	0.014	68.0	0.037	85.5	0.005
-1.00	0.561	6.00	0.270	16.0	0.075	33.5	0.070	51.0	0.019	68.5	0.036	86.0	0.004
-0.80	0.633	6.20	0.258	16.5	0.098	34.0	0.061	51.5	0.029	69.0	0.035	86.5	0.003
-0.60	0.701	6.40	0.242	17.0	0.107	34.5	0.046	52.0	0.038	69.5	0.032	87.0	0.002
-0.40	0.765	6.60	0.222	17.5	0.100	35.0	0.026	52.5	0.045	70.0	0.030	87.5	0.002
-0.20	0.824	6.80	0.200	18.0	0.079	35.5	0.010	53.0	0.049	70.5	0.027	88.0	0.001
0.00	0.875	7.00	0.177	18.5	0.048	36.0	0.024	53.5	0.050	71.0	0.024	88.5	0.001
0.20	0.919	7.20	0.154	19.0	0.027	36.5	0.042	54.0	0.048	71.5	0.021	89.0	0.000
0.40	0.954	7.40	0.133	19.5	0.045	37.0	0.056	54.5	0.043	72.0	0.018	89.5	0.000
0.60	0.979	7.60	0.117	20.0	0.072	37.5	0.063	55.0	0.036	72.5	0.016	90.0	0.000
0.80	0.995	7.80	0.109	20.5	0.089	38.0	0.063	55.5	0.028	73.0	0.014		
1.00	1.000	8.00	0.109	21.0	0.093	38.5	0.056	56.0	0.020	73.5	0.014		