

Exhibit 13-C
Section 74.1204
Contour Protection to KMJK

This comprehensive exhibit has been prepared to demonstrate that the proposed new FM translator will not cause prohibited interference to KMJK, Channel 297C1, N. Kansas City, MO. This statement demonstrates that a lack of population and/or other factors allow this proposal to be compliant with Section 74.1204. The process commonly called "Living Way," allows for the use of U/D Analysis, also known as "signal strength ratio methodology." In this instant case the facilities to be protected are third adjacent and are to be afforded protection from signals 40 dB stronger than they present in the location of the proposed antenna location.

The KMJK F(50,50) protected contour at the proposed new FM translator application site is 70.8 dBu. Therefore the proposed new FM translator F(50,10) interfering contour with respect to KMJK is the 110.8 dBu contour. Using the FCC's FM propagation curves program (see attached), the 110.8 dBu contour was calculated to extend 320 meters from the antenna.

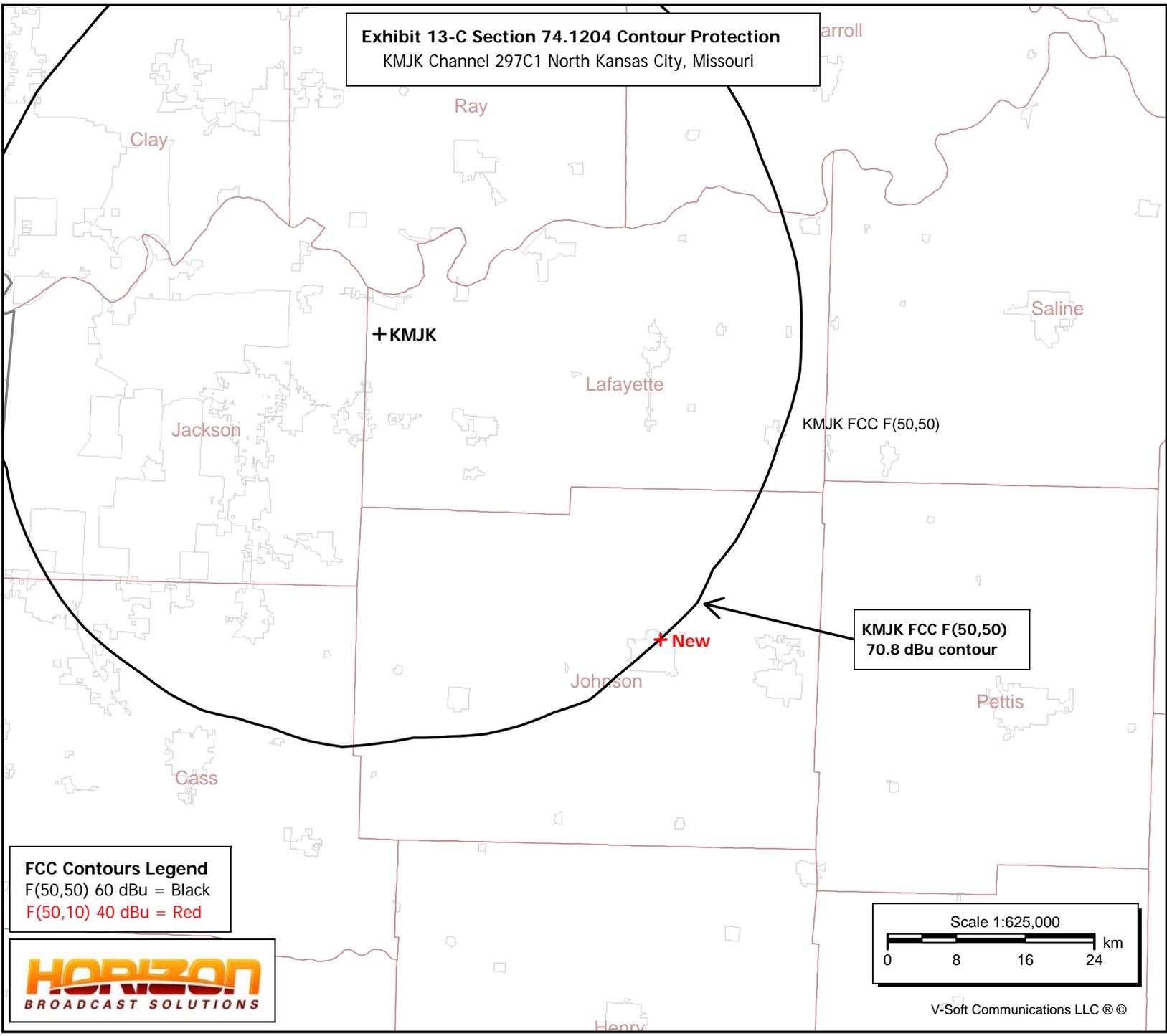
The proposed new FM translator transmit antenna will be located 51 meters above ground level. As shown on the accompanying spreadsheet and chart, using the vertical elevation pattern data (see attached) for the Nicom BKG77 three bay 0.85 wavelength antenna the ERP and contour distances have been calculated every 10 degrees from 0 degrees to 90 degrees. The contour

distance ranges from a maximum distance of 320 meters at 0 degrees to 35 meters at 50 degrees and 90 degrees. That data was calculated in the attached charts to plot the distance the interfering contour extends into free space. The contour does reach the ground in a small area near the tower. The area extends from 10 meters to 33 meters from the tower base. The only building in this small area is the KOKO radio offices and studios. The attached Google Earth screenshot shows the area around the tower site. Clearly identified on the screenshot are circles located 10 meters and 33 meters from the tower base. The interfering contour also comes to within approximately 14 meters of ground level in an area from approximately 209 meters to 214 meters from the tower base. There are only single story structures within this area. The tower is located at the highest elevation point in the immediate area. Therefore it is believed that the proposed new FM translator will not cause prohibited interference to KMJK as the interfering contour does not reach the ground where there are occupied buildings.

Exhibit 13-C Section 74.1204 Contour Protection
KMJK Channel 297C1 North Kansas City, Missouri

New
Warrensburg, MO
Latitude: 38-46-32 N
Longitude: 093-43-12 W
ERP: 0.25 kW
HAAT: 65.87 m
Channel: 300
Frequency: 107.9 MHz
AMSL Height: 304.18 m
Elevation: 253.18 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None

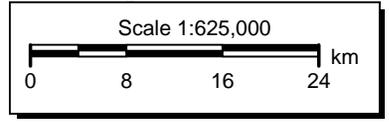
KMJK
N. Kansas City, MO
BLH20071003AAO
Latitude: 39-05-40 N
Longitude: 094-05-47 W
ERP: 100.00 kW
HAAT: 299.0 m
Channel: 297
Frequency: 107.3 MHz
AMSL Height: 538.6 m
Elevation: 256.6 m
Horiz. Pattern: Omni
Vert. Pattern: No
Prop Model: None



FCC Contours Legend
F(50,50) 60 dBu = Black
F(50,10) 40 dBu = Red



**KMJK FCC F(50,50)
70.8 dBu contour**



Select Contour Type: F(50,50) Service Contour -- FM and NTSC (analog) TV
F(50,10) Interfering Contour
 F(50,90) Digital TV Service Contour

Select Channel Range: (not TV Virtual Channel) FM Radio or TV Transmit Channels 2-6
 TV Transmit Channels 7-13
 TV Transmit Channels 14-69

Find This: Field Strength, given a Distance (in km)
Distance, Given a Field Strength (in dBu)
 FM ERP, given Distance and Field Strength [F(50,50) Service Contour]

ERP (kW) Distance (km)

HAAT (meters) Field (dBu)

Results:

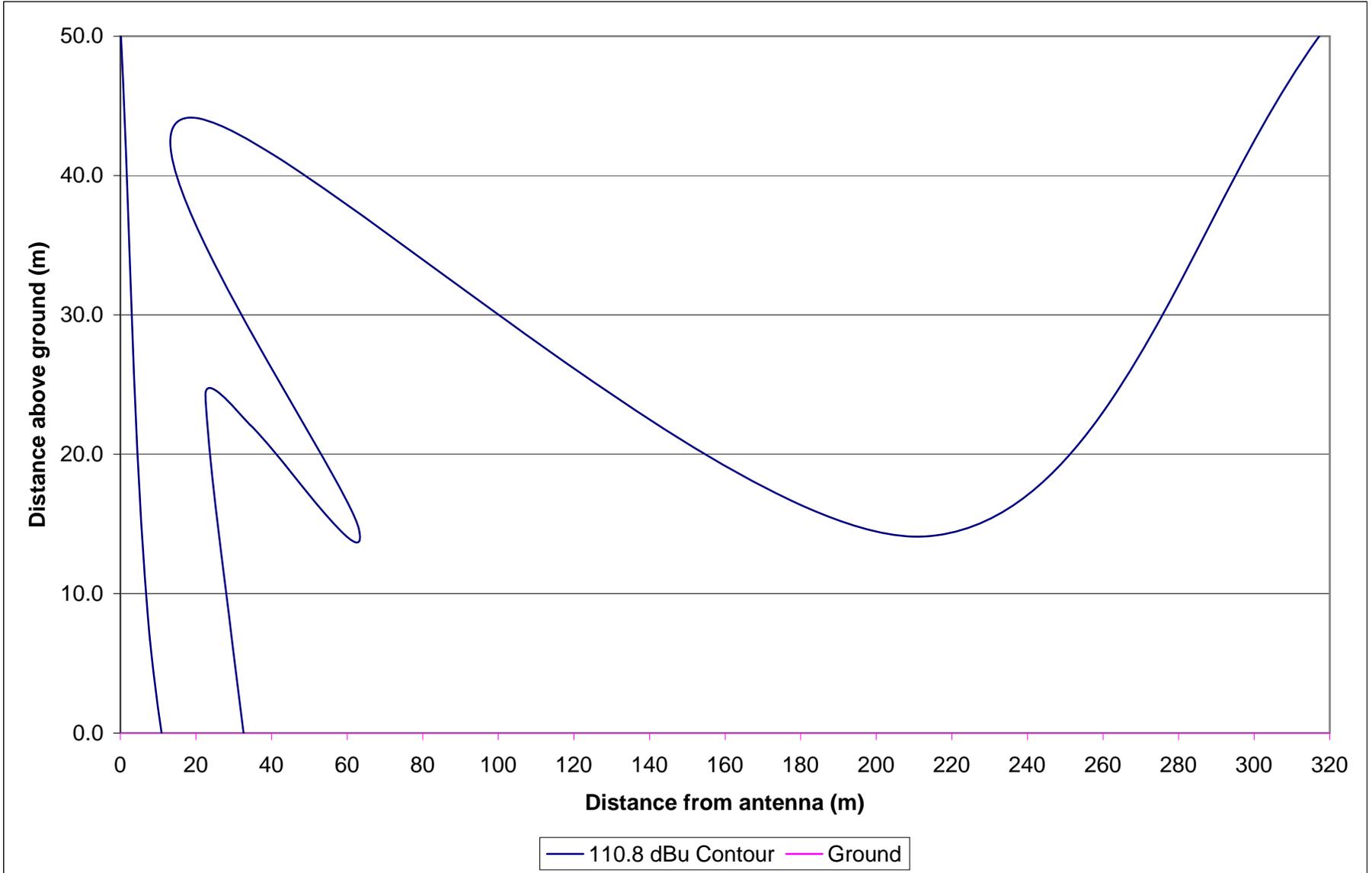
Calculated Distance = 0.320 km

Free Space equation used to compute distance.
 Entered HAAT is less than 30 meters; changed to 30 meters for calculations.

This function uses the FCC's CURVES program to make calculations of the F(50,50) FM and NTSC (analog) TV service curves, the F(50,10) interfering signal curves, and the F(50,90) digital TV service curves. Printable copies of these propagation curves are available at [FM and TV Propagation Curves Graphs \(/media/radio/fm-and-tv-propagation-curves-graphs\)](https://www.fcc.gov/media/radio/fm-and-tv-propagation-curves-graphs).

Proposed New Channel 300D - Warrensburg, MO
Section 74.1204 Contour Protection to KMJK, Channel CH297C1 N. Kansas City, MO

(110.8 dBu F(50,10) interfering contour shown)



The proposed CH300D interfering contour with respect to KMJK does not reach the ground where there is population or occupied buildings.

Angle of Elevation	Relative Field Value	ERP (watts)	ERP (dBk)	110.8 dBu contour (meters)
-----	-----	-----	-----	-----
0	1.000	250	-6.021	320
-10	0.678	115	-9.396	217
-20	0.049	1	-32.217	20
-30	0.270	18	-17.393	73
-40	0.148	5	-22.615	45
-50	0.107	3	-25.433	35
-60	0.238	14	-18.489	76
-70	0.220	12	-19.172	70
-80	0.145	5	-22.793	45
-90	0.114	3	-24.883	35

Angle of Elevation (Degrees)	Relative Field	ERP (watts)	ERP (dBk)	110.8 dBu Contour (Meters)
0	1.00	250	-6.289	320
10	0.678	115	-7.489	217
20	0.049	1	-12.003	20
30	0.27	18	-25.305	73
40	0.148	5	-20.356	45
50	0.107	3	-15.763	35
60	0.238	14	-15.893	76
70	0.22	12	-18.471	70
80	0.145	5	-22.71	45
90	0.114	3	-24.926	35

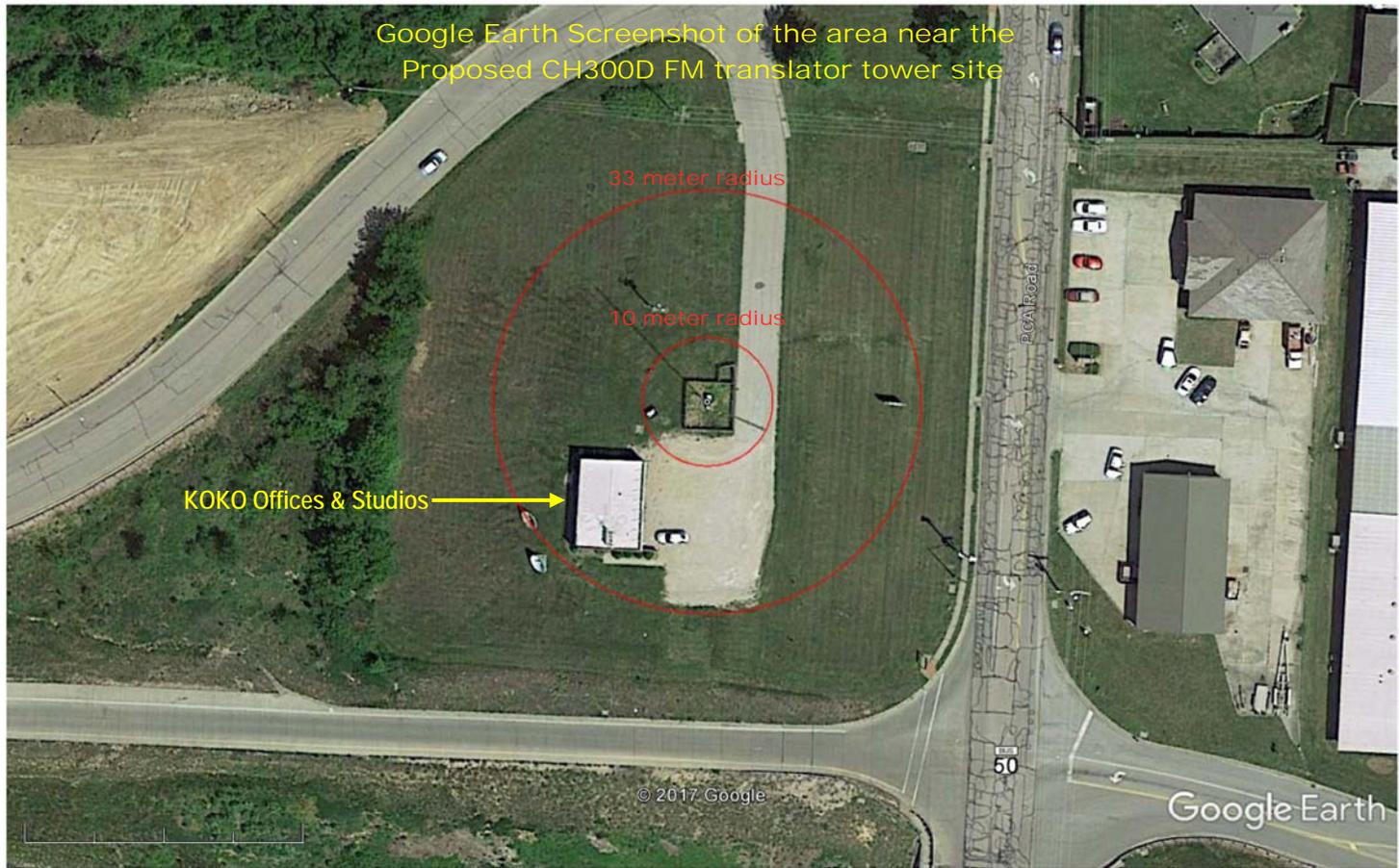
Θ (°)	Θ (radians)	R (m)	x'	y'	y = 51 - y'	Gnd
0	0	320	320	0	51.0	0
10	0.175	217	213.7	37.7	14.1	0
20	0.349	20	18.8	6.8	44.2	0
30	0.524	73	63.2	36.5	14.5	0
40	0.698	45	34.5	28.9	22.1	0
50	0.873	35	22.5	26.8	24.2	0
60	1.047	76	38.0	65.8	-14.8	0
70	1.222	70	23.9	65.8	-14.8	0
80	1.396	45	7.8	44.3	6.7	0
90	1.571	35	0.0	35	51	0

Google Earth Screenshot of the area near the Proposed CH300D FM translator tower site

33 meter radius

10 meter radius

KOKO Offices & Studios



Google Earth

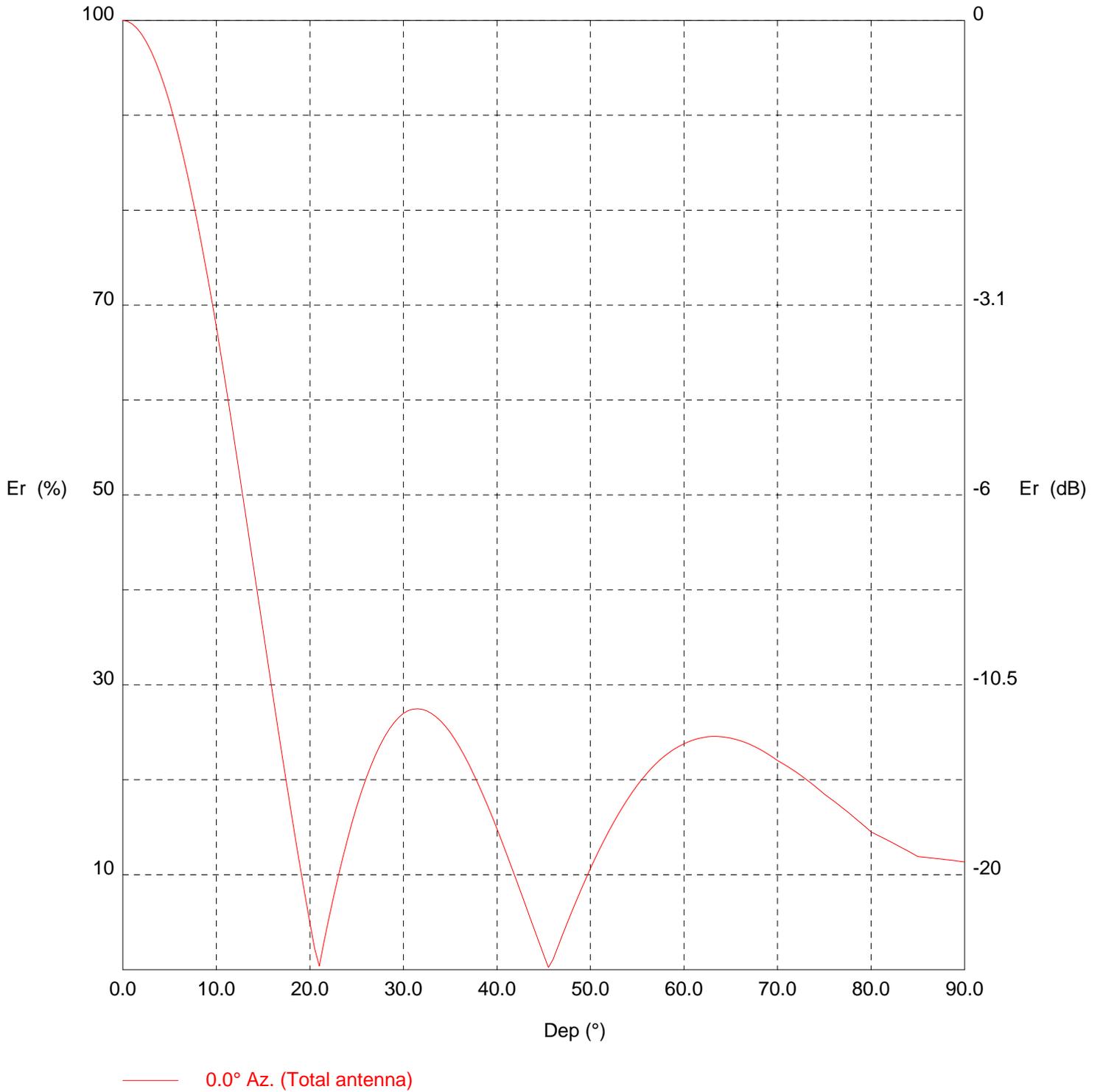


TX station: BKG77/3 GENERIC

Site name:

Frequency: 100.00 MHz

Vertical diagram



TX station: BKG77/3 GENERIC

Site name:

Frequency: 100.00 MHz

Vertical diagram at an azimuth of 0° degrees

Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)	Dep (°)	Er (%)	ERP (KW)
0.0	100.0	1.37	30.0	27.0	0.10	60.0	23.8	0.08
0.5	99.9	1.37	30.5	27.3	0.10	60.5	24.0	0.08
1.0	99.6	1.36	31.0	27.4	0.10	61.0	24.2	0.08
1.5	99.2	1.35	31.5	27.5	0.10	61.5	24.3	0.08
2.0	98.5	1.33	32.0	27.4	0.10	62.0	24.5	0.08
2.5	97.8	1.31	32.5	27.3	0.10	62.5	24.5	0.08
3.0	96.8	1.28	33.0	27.0	0.10	63.0	24.6	0.08
3.5	95.7	1.26	33.5	26.6	0.10	63.5	24.6	0.08
4.0	94.4	1.22	34.0	26.2	0.09	64.0	24.5	0.08
4.5	92.9	1.18	34.5	25.6	0.09	64.5	24.5	0.08
5.0	91.3	1.14	35.0	25.0	0.09	65.0	24.4	0.08
5.5	89.5	1.10	35.5	24.2	0.08	65.5	24.3	0.08
6.0	87.6	1.05	36.0	23.4	0.08	66.0	24.1	0.08
6.5	85.5	1.00	36.5	22.5	0.07	66.5	23.9	0.08
7.0	83.3	0.95	37.0	21.6	0.06	67.0	23.7	0.08
7.5	81.0	0.90	37.5	20.6	0.06	67.5	23.5	0.08
8.0	78.6	0.85	38.0	19.5	0.05	68.0	23.3	0.07
8.5	76.0	0.79	38.5	18.4	0.05	68.5	23.0	0.07
9.0	73.4	0.74	39.0	17.3	0.04	69.0	22.7	0.07
9.5	70.6	0.68	39.5	16.1	0.04	69.5	22.4	0.07
10.0	67.8	0.63	40.0	14.8	0.03	70.0	22.0	0.07
10.5	64.7	0.57	40.5	13.6	0.03	70.5	21.7	0.06
11.0	61.6	0.52	41.0	12.3	0.02	71.0	21.4	0.06
11.5	58.5	0.47	41.5	11.0	0.02	71.5	21.1	0.06
12.0	55.3	0.42	42.0	9.6	0.01	72.0	20.8	0.06
12.5	52.1	0.37	42.5	8.3	0.01	72.5	20.4	0.06
13.0	48.8	0.33	43.0	6.9	0.01	73.0	20.1	0.06
13.5	45.5	0.28	43.5	5.6	0.00	73.5	19.7	0.05
14.0	42.2	0.24	44.0	4.2	0.00	74.0	19.3	0.05
14.5	38.9	0.21	44.5	2.9	0.00	74.5	18.9	0.05
15.0	35.7	0.17	45.0	1.5	0.00	75.0	18.5	0.05
15.5	32.4	0.14	45.5	0.2	0.00	75.5	18.1	0.05
16.0	29.1	0.12	46.0	1.1	0.00	76.0	17.8	0.04
16.5	25.9	0.09	46.5	2.4	0.00	76.5	17.4	0.04
17.0	22.7	0.07	47.0	3.6	0.00	77.0	17.0	0.04
17.5	19.6	0.05	47.5	4.9	0.00	77.5	16.6	0.04
18.0	16.5	0.04	48.0	6.1	0.01	78.0	16.2	0.04
18.5	13.5	0.02	48.5	7.3	0.01	78.5	15.8	0.03
19.0	10.5	0.02	49.0	8.5	0.01	79.0	15.4	0.03
19.5	7.7	0.01	49.5	9.6	0.01	79.5	14.9	0.03
20.0	4.9	0.00	50.0	10.7	0.02	80.0	14.5	0.03
20.5	2.2	0.00	50.5	11.7	0.02	80.5	14.3	0.03
21.0	0.4	0.00	51.0	12.7	0.02	81.0	14.0	0.03
21.5	2.9	0.00	51.5	13.7	0.03	81.5	13.8	0.03
22.0	5.3	0.00	52.0	14.7	0.03	82.0	13.5	0.03
22.5	7.5	0.01	52.5	15.6	0.03	82.5	13.3	0.02
23.0	9.7	0.01	53.0	16.4	0.04	83.0	13.0	0.02
23.5	11.7	0.02	53.5	17.2	0.04	83.5	12.7	0.02
24.0	13.7	0.03	54.0	18.0	0.04	84.0	12.5	0.02
24.5	15.5	0.03	54.5	18.7	0.05	84.5	12.2	0.02
25.0	17.1	0.04	55.0	19.4	0.05	85.0	11.9	0.02
25.5	18.7	0.05	55.5	20.1	0.06	85.5	11.9	0.02
26.0	20.1	0.06	56.0	20.7	0.06	86.0	11.8	0.02
26.5	21.4	0.06	56.5	21.2	0.06	86.5	11.8	0.02
27.0	22.6	0.07	57.0	21.7	0.06	87.0	11.7	0.02
27.5	23.6	0.08	57.5	22.2	0.07	87.5	11.6	0.02
28.0	24.5	0.08	58.0	22.6	0.07	88.0	11.6	0.02
28.5	25.3	0.09	58.5	22.9	0.07	88.5	11.5	0.02
29.0	26.0	0.09	59.0	23.3	0.07	89.0	11.5	0.02
29.5	26.6	0.10	59.5	23.5	0.08	89.5	11.4	0.02