

## W281AJ

### Sites

Site: W281AJ\_co\_App  
N37°45'27.60" W81°11'17.60" 724.5 m  
W281AJco Tx.Ht.AGL: 90.0 m Total ERPd: 0.25 kW  
Model: 1 Use file-horizontal/160.0° 104.1000 MHz

Site: WCIR\_Lic\_2nd  
N37°56'51.00" W81°18'32.00" 987.0 m  
WCIR2nd Tx.Ht.AGL: 40.0 m Total ERPd: 5.00 kW  
Model: 1 Isotropic-horizontal/0.0° 103.7000 MHz

Site: WHAJ\_Lic\_2nd  
N37°15'05.00" W81°11'20.00" 1116.6 m  
WHAJ2nd Tx.Ht.AGL: 159.4 m Total ERPd: 100.00 kW  
Model: 1 Isotropic-horizontal/0.0° 104.5000 MHz

### Field strength at remote

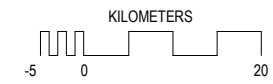
■ = 72.5 dBuV/m

Display threshold level: -120.0 dBmW  
RX Antenna - Type: ISOTROPIC  
Height: 60.0 m AGL Gain: 6.00 dBd

### Field strength at remote

■ = 74.5 dBuV/m

Display threshold level: -120.0 dBmW  
RX Antenna - Type: ISOTROPIC  
Height: 60.0 m AGL Gain: 6.00 dBd



W281AJ

Thu Jul 21 15:36:06 2016

Figure 3  
Contours at Translator  
Site

Table 2

User specified data is entered only in yellow highlighted cells

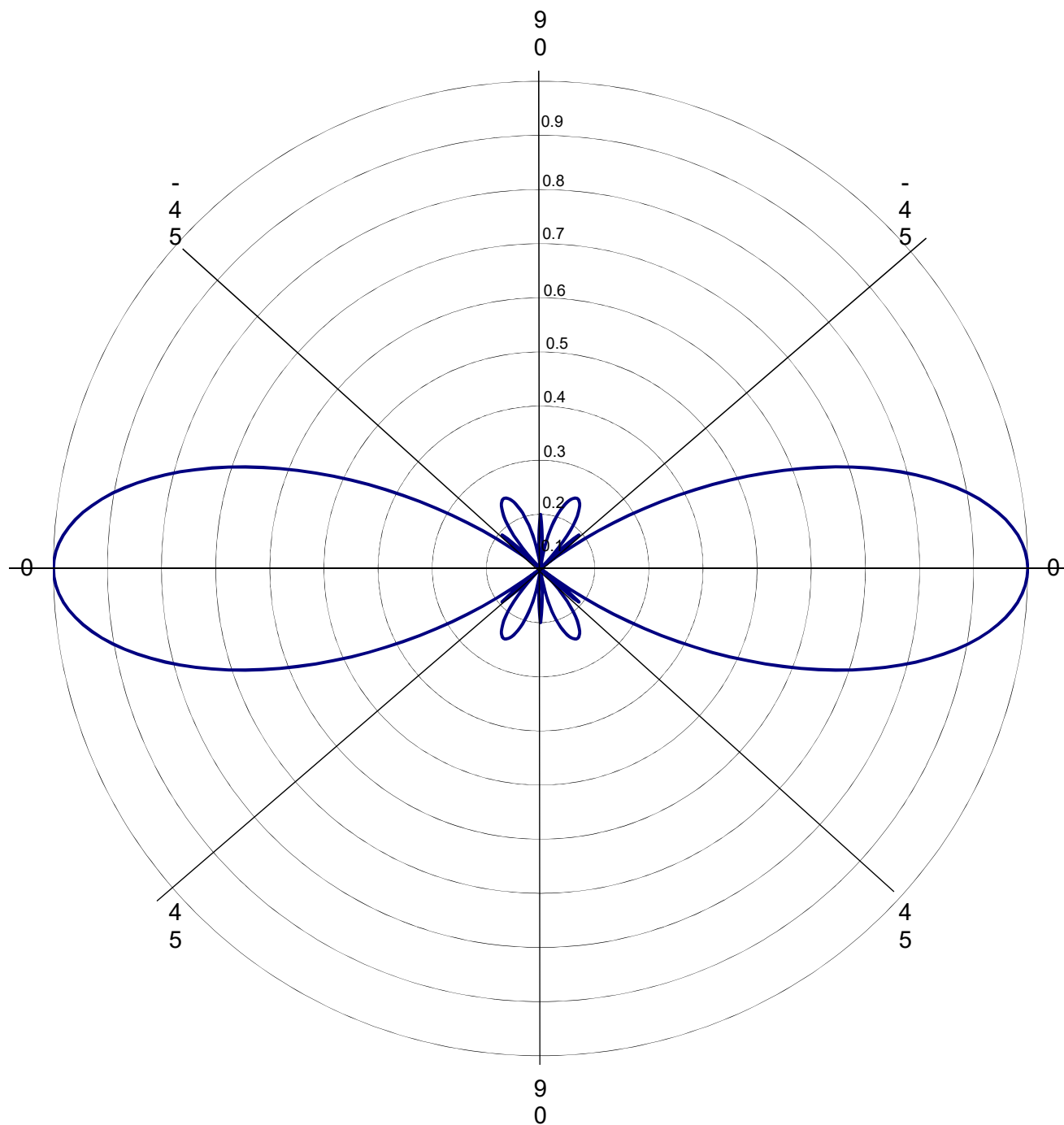
Antenna Manufacturer	Shively Labs
Antenna Type	6815
Station	W281AJ-Tx
Frequency (MHz)	104.1
Channel #	281
Wavelength (in)	113.4
Number of Bays	2
Bay Spacing (in)	86
Beam Tilt Angle (Deg)	0
Center (1) or End (0) Fed	1
End Bay Line Length Delta (in)	0
Tee Offset Length for Center Fed (in)	0
Computed (0) or Custom (1) Excitation	0
Figure	FIGURE 1
Total Gain	0.964
Azimuth Gain	1
Computed Elevation Gain	0.964

Computed Array Excitation		
Bay #	Bay Amp.	Bay Phase (Deg)
1	1	0.00
2	1	0.00

Custom Excitation	
Bay Amp.	Bay Phase (Deg)
1	
1	

Phase for Null Fill	Phase for Beam Tilt
0.00	0.00
0.00	0.00

## ANTENNA ELEVATION PATTERN



Polar Plot

Antenna Mfg: Shively Labs  
Antenna Type: 6815  
Station: W281AJ-Tx  
Frequency: 104.1  
Channel: 281  
Figure: FIGURE 1

Date: 7/21/2016

Beam Tilt	0	
Gain (Max)	0.964	-0.161 dB
Gain (Horizon)	0.964	-0.161 dB

**Shively Labs**

A Division of Howell Laboratories Bridgton, ME 207-647-3327

Table 2

## Analysis of Signal Levels At 10 m Above Ground Level

Translator H Above 10 M Above Ground	80	
Translator ERP	250	
Translator channel	281	
Translator HAAT	126	
Interference Contour	112.5	
Highest signal at 10 M above ground	109.72	<b>Adequate Choice</b>

Depression Angle, Degrees	Relative Field	ERP Watts	dBk	Kilometers	Free Space Signal
90	0.000	0.0000	-320.1	0.0800	-191.23
85	0.069	1.1950	-29.2	0.0803	99.60
80	0.130	4.2538	-23.7	0.0812	105.01
75	0.182	8.3155	-20.8	0.0828	107.76
70	0.221	12.2393	-19.1	0.0851	109.20
65	0.243	14.7575	-18.3	0.0883	109.69
60	0.243	14.7910	-18.3	0.0924	109.31
55	0.218	11.9009	-19.2	0.0977	107.88
50	0.165	6.7899	-21.7	0.1044	104.86
45	0.082	1.6685	-27.8	0.1131	98.07
40	0.030	0.2287	-36.4	0.1245	88.61
35	0.167	6.9957	-21.6	0.1395	102.48
30	0.323	26.0076	-15.8	0.1600	106.99
25	0.486	59.0938	-12.3	0.1893	109.09
20	0.646	104.3623	-9.8	0.2339	109.72
15	0.789	155.6540	-8.1	0.3091	109.04
10	0.902	203.5115	-6.9	0.4607	106.74
5	0.975	237.6249	-6.2	0.9179	101.42
4	0.984	242.0197	-6.2	1.1468	99.57
3	0.991	245.4845	-6.1	1.5286	97.13
2	0.996	247.9846	-6.1	2.2923	93.66
1	0.999	249.4949	-6.0	4.5839	87.67

**Notes:**

Antenna radiation center above 10 meters above ground (meters):	80
Maximum ERP (watts) at 0° Depression angle:	250

Free Space Signal =  $106.92 - 20 \cdot \log(\text{distance in km}) + \text{dBk}$