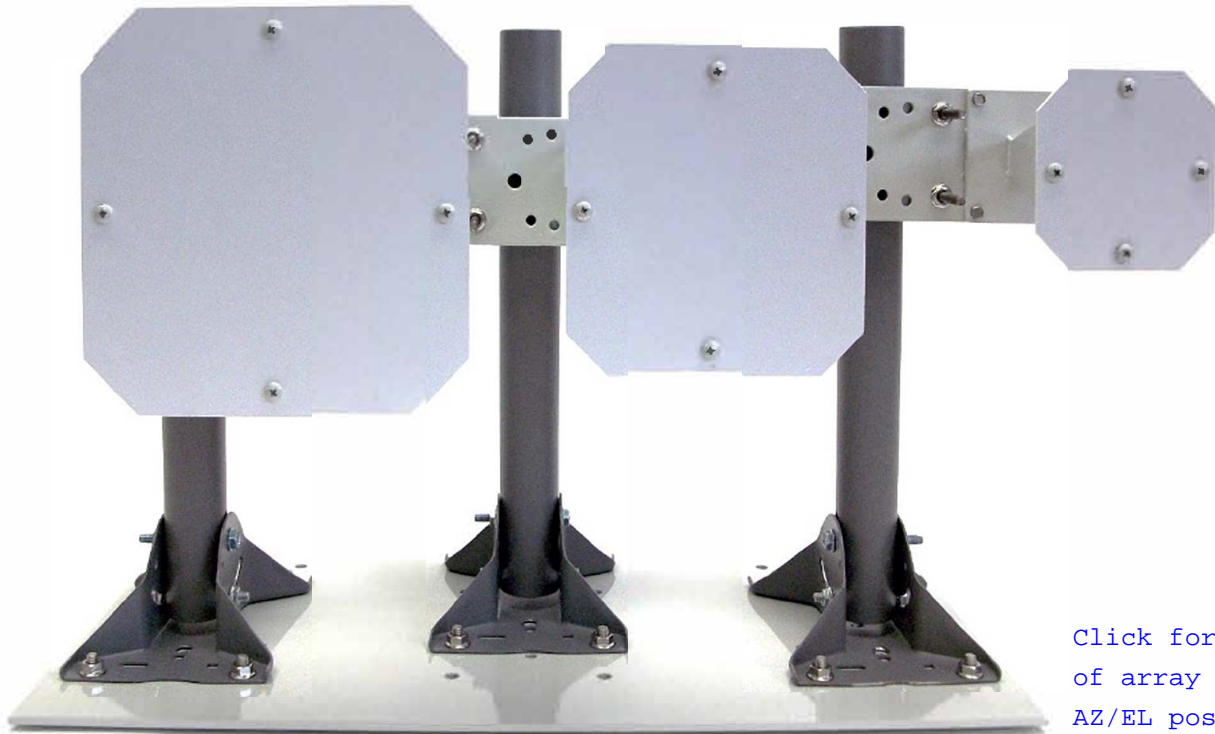


# TRUE GAIN ANTENNAS

All The Signal...®



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Geostationary belt antenna cluster:

Geostationary Belt Antennas / 3 - Band Coverage	
Antenna Cluster General Specifications	<b>Frequency Ranges:</b> 5.75 - 6.5 GHz 7.5 - 8.5 GHz 13.75 - 14.5 GHz
	<b>Gain:</b> $\geq 15$ dBi
	<b>SWR:</b> $< 2.0$ (Return Loss $\geq 9.5$ dB)
	<b>Polarization:</b> Circular
	<b>Beam Width:</b> $> 25^\circ$
	<b>Impedance:</b> 50 Ohm
	<b>Connector:</b> Amphenol high frequency SMA
	<b>Power:</b> 25W
	<b>Construction:</b> Corrosion and UV resistant surfaces including Kydex RF transparent material covers and Rexolite low loss Er material polarizers
	<b>Typical Application:</b> Geostationary belt coverage
<b>Deployment:</b> Outdoors on user supplied positioner	

Antennas were designed and built then measured in True Gain Antenna's RF lab and on our far-field range, and exhibited the target performance specifications, as shown below.

### Test Results

Note that an axial ratio of better than 3 dB is typically considered to be Circular Polarization. Beamwidth angles have about  $\pm 1^\circ$  of uncertainty.

Measurements were conducted with an Agilent 8720B / 86290C plug in, Wiltron Model 97A50 Directional Bridge, and Agilent VSWR meter.

The following tables show the typical performance of each horn:

5.75-6.5 GHz Horn							
Test Freq. (GHz)	Port	-3 dB Beamwidth (degrees °)		Axial Ratio, dB	Return Loss, dB	Gain	
		E Plane	H Plane			Linear, dBi	CP, dBic
5.75	RHCP	26	27	2.3	-14.0	13.4	16.0
	LHCP	27	25	1.7	-16.4	13.6	16.3
6.0	RHCP	27	28	1.8	-15.4	13.1	15.9
	LHCP	26	26	1.1	-12.8	13.0	15.9
6.5	RHCP	27	28	1.8	-15.4	13.8	16.8
	LHCP	26	26	1.1	-12.8	13.0	15.9

7.5-8.5 GHz Horn							
Test Freq. (GHz)	Port	-3 dB Beamwidth (degrees °)		Axial Ratio, dB	Return Loss, dB	Gain	
		E Plane	H Plane			Linear, dBi	CP, dBic
7.5	RHCP	28	26	1.0	-16.8	13.0	15.9
	LHCP	28	27	0.6	-17.7	12.8	15.8
8.0	RHCP	29	26	2.0	-13.8	12.6	15.4
	LHCP	28	27	1.1	-12.8	12.7	15.4
8.5	RHCP	26	26	1.3	-13.9	13.7	16.5
	LHCP	27	27	1.7	-14.0	13.0	15.7

13.75-14.5 GHz Horn							
Test Freq. (GHz)	Port	-3 dB Beamwidth (degrees °)		Axial Ratio, dB	Return Loss, dB	Gain	
		E Plane	H Plane			Linear, dBi	CP, dBic
13.75	RHCP	28	29	2.7	-18.4	12.9	15.5
	LHCP	27	28	2.5	-17.3	13.3	15.0
14.0	RHCP	26	25	1.2	-15.7	13.9	15.8
	LHCP	26	26	1.3	-14.0	13.9	15.8
14.5	RHCP	25	26	0.5	-16.0	14.0	16.9
	LHCP	25	27	1.4	-21.1	13.8	16.5

The following charts show graphically the antennas' respective return loss:

