Model AST 4.5M Carbon Fiber Folding Bat-Wing Antenna

Product Features

• Comprised of a high precision, close tolerance Carbon Fiber, Ring Focus reflector, sub-reflector, heavy duty elevation-over-azimuth positioner, and an optional heavy duty trailer for transport, the 4.5M Folding Bat-Wing Antenna is a state-of-the-art, satellite earth station.

• An additional benefit is that, since Carbon Fiber reflectors have excellent environmental performance, (the temperature's influence on the R.M.S. is ≤ 0.01mm) they do not require air conditioning to maintain constant temperature control. This is a major benefit when operating at high frequencies.

• Carbon Fiber reflectors exhibit panel accuracies of R.M.S ≤ 0.13mm, and an assembled accuracy of 0.25mm R.M.S. The reflector surface accuracy and precision permits the antenna to operate with a variety of transmit and receive feeds. The antenna can be configured with multiple linear or circular polarized C-band, X-band, Ku-band and Ka-band feed systems. Each feed system has been designed to be easily removable and stored for transport, if required.

• The antenna system points to, and tracks, a GEO satellite via either an Antenna Control, System offering a full AC servo performance with adaptive step tracking, auto acquisition time of 15 minutes, for unparalleled tracking performance.

• The antenna meets the standards of FCC, ITU and Eutelsat regulations.

• Various industries such as Broadcast & Media, Military Communications, Emergency & Public safety, Oil and Gas, etc, are easily supported by this system.

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ELECTRICAL SPECIFICATION												
4.5 Transportable ESA Electrical Parameters	With X-Band 2 port circular polarized feed		With C-Band 2 port linear polarized feed		With C-Band 2 port circular polarized feed		With Ku-Band 2 port linear polarized feed		With Ka-Band 2 port circular polarized feed		With Ka-Band 2 port linear polarized feed	
(DA4500P-A01)	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx	Rx	Tx
Frequency (GHz)	7.25	7.9	3.4	5.85	3.625	5.85	10.7	13.75	17.7	27.5	17.7	27.5
	7.75	8.4	4.2	6.425	4.2	6.425	12.75	14.5	21.2	31	21.2	31
Polarization	Tx-RHCP or LHCP configurable Rx-Orthogonal to Tx		Linear H/V Tx orthogonal to Rx		Tx-RHCP or LHCP configurable Rx-Orthogonal to Rx		Linear H/V Tx orthogonal to Rx		Tx-RHCP or LHCP configurable Rx-Orthogonal to Rx		Tx-RHCP or LHCP configurable Rx-Orthogonal to Rx	
Antenna gain at mid-band ±0.2db (X band ±0.5db)	48.3	49	42.3	46.7	42.3	46.7	52.2	53.9	56.2	59.7	56.2	59.7
Antenna Noise Temperature (clear sky)												
20° Elevation (k)	52		33		33		53		108		108	
40° Elevation (k)	53		34		34		41		103		103	
Side lobe performance	Meets ITU-R S.580 and S.465											
Cross polarization (Axis)	21.3dB	21.3dB	30dB	30dB	20.7dB	27.3dB	35dB	35dB	27.3dB	30.7dB	27.3dB	30.7dB
Compliance Port-to-port Isolation												
Rx/Tx (Rx frequency-Rx band isolation)	18 dB		35 dB		20 dB		35 dB		20 dB		20 dB	
Tx/Rx (Tx frequency-Tx band isolation)		85dB		85dB		85dB		85dB		85 dB		85 dB
VSWR	1.5:1	1.5:1	1.5:1	1.4:1	1.5:1	1.4:1	1:4	1:4	1.5:1	1.4:1	1.5:1	1.4:1
Axial ratio	1.0dB	1.0dB			2dB	2dB			2dB	2dB		
Feed insertion loss	0.15dB	0.15dB	0.3dB	0.3dB	0.5dB	0.5dB	0.4dB	0.3dB	0.5dB	0.5dB	0.45dB	0.45dB
Output waveguide flange interface	CPR-112G	CPR-112G	CPR-229G	CPR-137G	CPR-229G	CPR-137G	WR-75	WR-75	WR-42	WR-28	WR-42	WR-28

MECHANICAL SPECIFICATION		ENVIRONMENTAL REQUIREMENTS	
Mounting	Elevation over azimuth	Relative humidity	0 - 95%
Reflector equivalent diameter	4.5 m	Operational temperature	-40°C-+55°C (Optional-40°C - +60°C)
Configuration	Ring Focus		
Reflector configuration	Segmented(3 Piece)	Storage temperature	-40°C-+60°C(Optional -50°C - +70°C)
Antenna adjustment	Elevation: 0º to 90º Azimuth: ±110º Polarization: 90º	Operational wind loading	30mph (48 km/h) Gusting to 45 mph (72 km/h)
Manual drive	Hand crank on Az and El, and Pol Axis	Wind loading survival (STOW)	201 km/hr (125 mph)
Antenna weight	<1900Kg		