

## Satcom & Antenna Technologies Division



### Overview

The CPI Satcom & Antenna Technologies Inc. (CPI SAT) lightweight 2.4 meter manual flyaway antenna is designed for worldwide transmit and receive operation in C, X, Ku and Ka-band. This flyaway antenna consists of a carbon fiber composite reflector, an ACME threaded locking rod elevation-over-azimuth positioner and an aluminum support structure. This results in a low-weight, manual antenna with superior stiffness and high performance under wind loading conditions.

The unique shape and the accurate reflector surface provide exceptionally low sidelobe and cross-polarization performance meeting INTELSAT and EUTELSAT requirements. Repeatability is maintained with precision registration of the nine reflector segments and the feed support structure. The interchangeable feeds are palletized for quick, easy removal and replacement, allowing the end-user to effectively change frequency bands in the field within minutes. The complete antenna system, including a single feed and a manual positioner, is packaged in robust, portable cases.

### FEATURES

- Carbon fiber reflector: Lightweight, precision surface and high stiffness
- Low profile EL over AZ positioner installed: Composite/aluminum lightweight, sturdy
- Easy deployment: Two-person assembly in less than 30 minutes, captive hardware and precision alignment. No tools required for assembly
- High performance: Low sidelobes and high EIRP capability - FCC, ITU, DISA, ARSTRAT sidelobe compliant

### OPTIONS

- Finishes
  - Standard Ford Polar White reflector / feed
  - Options Green Fed Std 595 34094 or
  - Desert Sand Fed Std 595 33303
- Feeds
  - Options 4-port, Co-Pol or CP/LP switchable
  - Bands L, C, X, Ku, DBS and/or Ka
- Integration
  - SSPB and/or LNB
  - Specify at time of order

### BENEFITS:

- Lightweight
- Designed for worldwide transmit and receive

### APPLICATIONS:

- Superior stiffness and high performance under wind loading conditions

## Specifications

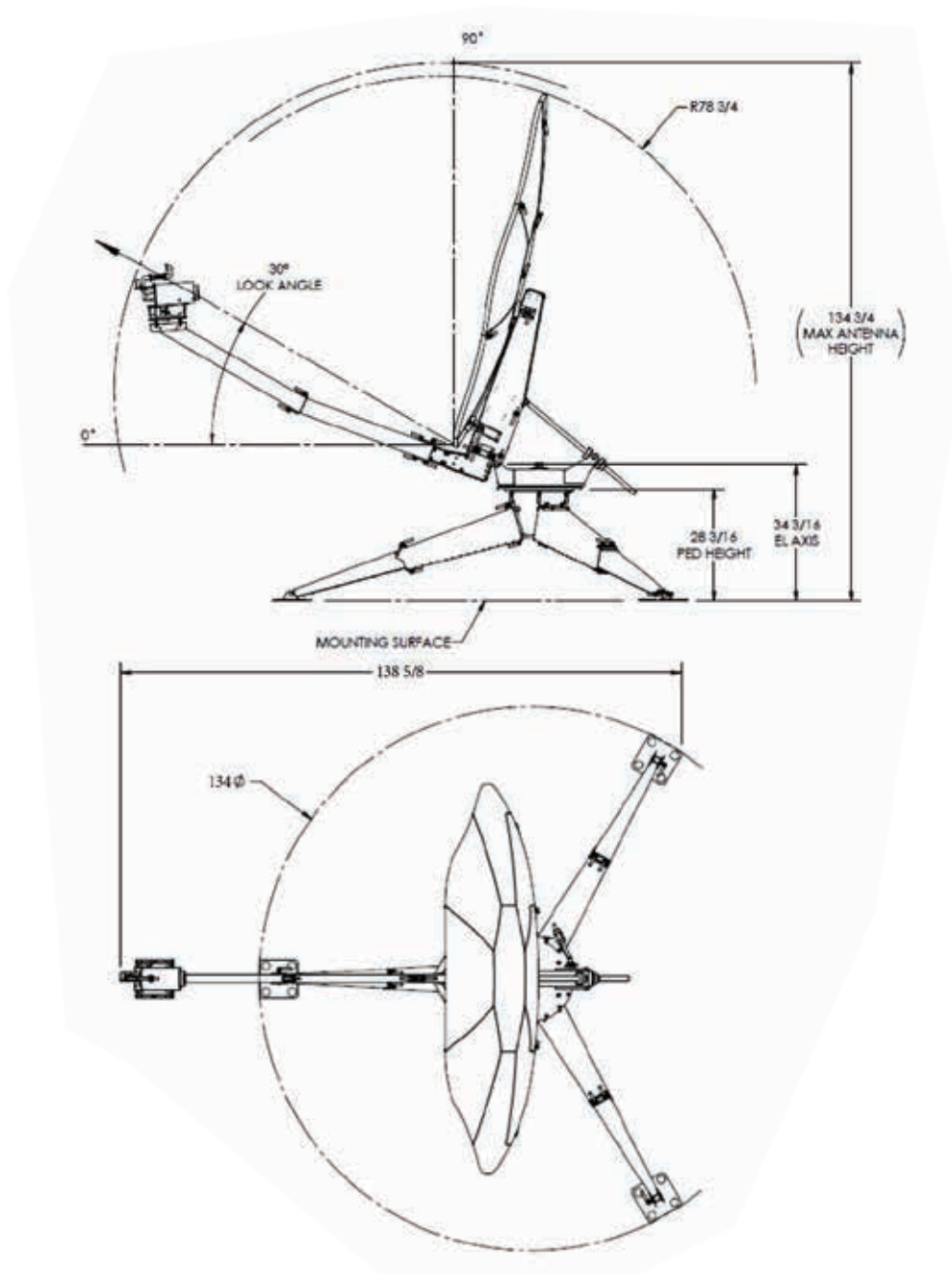
Mechanical					
Azimuth Travel	±180° Fine adjust +/-15°				
Elevation Travel	5° to 90				
Polarization Travel	±90° (linear polarization)				
Reflector Structure	Carbon fiber composite				
Pedestal Structure	Aluminum positioner elevation over azimuth positioner				
Antenna Weight (by component)					
Pedestal Total	Weight	Quantity	Reflector Total	Weight	Quantity
Pedestal w/ Legs	185 lbs (84 kg)		Case 1 (40 x 11.5 x 38")	102 lbs (46.3 kg)	1
Pedestal Case (55 x 35 X 27"/ 140 X 89 X 68.6 cm)	90 lbs (41 kg)	1	Case 2 (40 x 11.5 x 38")	87 lbs (39.5 kg)	1
	95 lbs (43 kg)	1	Case 3 (40 x 11.5 x 38")	88 lbs (39.9 kg)	1
Positioner Total	128 lbs (58 kg)				Ku Band Feed Case 28 x 21 x 15"
Positioner	66 lbs (29.9 kg)	1			X-Band Feed Case 28 x 21 x 15"
Positioner Case (43 X 27.56 X 20"/ 109.2 X 70 X 50.8 cm)	62 lbs (28.1 kg)	1			C-Band CP/LP Feed 29.8 x 20.8 17.8"
					C-Band CP Feed 40 x 18 x 13.2"
Backbeam + Feed Boom Total	198 lbs (89.8 kg)		Ku-Band Feed	15 lbs (6.8 kg)	Ku Band Feed Case 36 lbs (16.3 kg)
Backbeam + Feed Boom	89 lbs (40.4 kg)	1	X-Band Feed	26 lbs (11.8 kg)	X-Band Feed Case 36 lbs (16.3 kg)
Backbeam / Feed Boom Case (55 X 35 X 27"/ 140 X 89 X 68.6 cm)	109 lbs (49.4 kg)	1	C-Band CP/LP Feed	25 lbs (11.3 kg)	C-Band CP/LP Feed 45 lbs (20.4 kg)
			C-Band CP Feed	30 lbs (13.6 kg)	C-Band CP Feed 36 lbs (16.3 kg)
Antenna Total	371 lbs (168.3 kg) without feed and cases				
Loading					
Operational (with ballast)	30 mph (48 km/h) gusting to 45 mph (72 km/h)				
Survival (with tie-downs)	60 mph (96 km/h) gusting to 75 mph (121 km/h); >75 mph antenna must be at stow position (90°) Elevation				
Pointing Loss (operational winds)	Maximum 2.0 dB peak loss				
Temperature					
Operational	-40° to +140° F (-40° to +60° C)				
Survival	-40° to +160° F (-40° to +71° C)				
Relative Humidity (operational and survival)	0% to 95%, +86° to +140° F (+30° to +60° C)				
Solar Radiation	355 BTU/h/ft <sup>2</sup> (964 Kcal/h/m <sup>2</sup> )				
Shock and vibration	As encountered during shipment by commercial air, sea or land				
Corrosive Atmosphere	As encountered in coastal regions and/or heavily industrialized areas				

## Specifications

ELECTRICAL	C-Band Circular Polarized		X-Band Circular Polarized		Ka-Band Circular Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (Ghz)	3.400-4.200	5.850-6.725	7.250-7.750	7.900-8.400	19.200-21.200	29.000-31.000
Antenna Gain, Mid Band (dBi)	38.0	42.10	43.00	43.80	52.30	55.75
	1.43:1 (15.0 dB)	1.33:1 (17.0 dB)	1.33:1 (17.0 dB)	1.33:1 (17.0 dB)	1.33:1 (17.0 dB)	1.33:1 (17.0 dB)
Pattern Beamwidth (in degrees at midband) -3 dB Mid Band	2.21	1.34	1.17	1.07	0.43	0.28
Sidelobe Performance	29 - 25 log , 0°-20° 32 - 25 log , 20°- 48° -10dBi, 48° - 140° 0dBi, 140° - 180°		Meets ITU-RS-580			
Antenna Noise Temperature						
5° Elevation	70 K		33 K		106 K	
10° Elevation	62 K		26 K		85 K	
20° Elevation	52 K		24 K		74 K	
40° Elevation	52 K		23 K		74 K	
APWR Size						
Total Power Handling Capability	1kW CW		2 kW CW		250 W CW	
Cross Polarization						
On Axis	15.5		30		24.8	
Within 1.0 dB BW	17.7		30		24.8	
Aperture Resolution						
Rx/Tx (Rx frequency)	0 dB		0 dB		0 dB	
Tx/Rx (Tx frequency)	-75 dB		-110 dB		-75 dB	
Tx/Rx (Tx frequency)	-55 dB		0 dB		-70 dB	
Tx/Rx (Tx frequency)	0 dB		-110 dB		0dB	
Aperture Loss	0.30 dB		0.80 dB		0.45 dB	
Reflection Loss	0.20 dB		0.70 dB		0.35 dB	

## Specifications

ELECTRICAL	C-Band Extended 2-Port Linear		Ku-Band 2-Port XPC Linear Polarized		Ka-Band 2-Port NXPC Linear Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (Ghz)	3.400 -4.200	5.850 -6.725	10.700 -12.750	13.750 -14.500	10.700 -12.750	13.750 -14.500
Antenna Gain, Mid Band (dBi)	38.05	42.25	47.60	49.30	47.65	49.10
	1.43:1 (15.0 dB)	1.33:1 (17.0 dB)	1.43:1 (15.0 dB)	1.33:1 (17.0 dB)	1.43:1 (15.0 dB)	1.33:1 (17.0 dB)
Pattern Beamwidth (in degrees at midband) -3 dB Mid Band	2.24	1.35	0.76	0.62	0.74	0.63
Sidelobe Performance	29 - 25 log , 0°-20° 32 - 25 log , 20°- 48° -10dBi, 48° - 140° 0dBi, 140° - 180°		Meet Eutelsat.FCC 25.209 or ITU-RS-580			
Antenna Noise Temperature						
5° Elevation	47 K		63 K		67 K	
10° Elevation	42 K		46 K		50 K	
20° Elevation	43 K		42 K		52 K	
40° Elevation	42 K		35 K		44 K	
Total Power Handling Capability	1kW CW		1 kW CW		1 kW CW	
Cross Polarization						
On Axis	-35	-35	-30	-35	-35	-35
Within 1.0 dB BW		-30		-30		-27
Rejection Isolation						
Rx/Tx (Rx frequency)	0 dB	-55 dB	0 dB	-35 dB	0 dB	-30 dB
Tx/Rx (Tx frequency)	-80 dB	0 dB	-80 dB	0 dB	-85 dB	0 dB
Reflection Loss	0.20 dB	0.20 dB	0.50 dB	0.35 dB	0.50 dB	0.30 dB



Contact us at [CustomerCareSAT@cpii.com](mailto:CustomerCareSAT@cpii.com) or call us at +1 770-689-2040.

The data should be used for basic information only.

Formal, controlled specifications may be obtained from CPI for use in equipment design.



**Satcom & Antenna  
Technologies Division**  
1700 NE Cable Drive  
Conover, NC  
USA 28613

tel +1 770-689-2040  
+1 888-874-7646 (In North America)  
+1 619-240-8480 (Outside North America)  
email [CustomerCareSAT@cpii.com](mailto:CustomerCareSAT@cpii.com)  
web [www.cpii.com](http://www.cpii.com)

For more detailed information, please refer to the corresponding CPI technical description if one has been published, or contact CPI. Specifications may change without notice as a result of additional data or product refinement. Please contact CPI before using this information for system design.

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C240M Manual Flyaway 06-2021 Pending TMP