

# 2.4 Meter Motorized Flyaway Antenna Model C240FA

## Satcom & Antenna Technologies Division



### Overview

The CPI Satcom & Antenna Technologies Inc. (CPI SAT) lightweight 2.4 meter motorized 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, a cable-driven elevation-over-azimuth positioner and an aluminum /CFRP support structure.

This results in a low-weight, motorized antenna with superior stiffness and high performance under wind loading conditions.

The unique shape and the accurate reflectors 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 motorized positioner is packaged in eight robust, portable cases.

### FEATURES:

- Carbon fiber reflector: lightweight, precision surface and high stiffness
- Cable-driven positioner: composite/aluminum construction, lightweight, sturdy
- Easy deployment: two-person assembly in less than 30 minutes, captive hardware and precision alignment. No tools required for assembly
- Auto-acquisition with DVB reference
- 100-240 VAC input
- High performance: Low sidelobes and high EIRP capability - FCC, ITU, DISA, ARSTRAT sidelobe compliant

### OPTIONS:

- **Finishes**  
Standard ford polar white reflector / feed  
Options: green feed std. 595 34094 or desert sand feed std. 595 33303
- **Controller**  
Options acquisition DVB and/or beacon receiver  
Spectrum analyzer display feature
- **Integration**  
SSPB and/or LNB  
Specify at time of order

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## Specifications

MECHANICAL <sup>(1)</sup>	
Azimuth Travel	±180°
Elevation Travel	5° to 90°
Polarization Travel	±90° (linear polarization)
Reflector Structure	Carbon fiber composite
Pedestal Structure	Cable drive positioner elevation over azimuth positioner
Antenna Weight (by component)	Weight
Pedestal Case Total	185 lbs (84 kg)
Pedestal w/ Legs	87 lbs (39.5 kg)
Pedestal Case (55 x 35 x 27" / 140 x 89 x 68.6 cm)	98 lbs (44.5 kg)
Positioner Case Total	128 lbs (58 kg)
Positioner	70 lbs (31.7 kg)
Positioner Case (27.56 x 43 x 20" / 50.8 x 70 x 109.2 cm)	58 lbs (26.3 kg)
Backbeam/Feed Boom Case Total	198 lbs (89.8 kg)
Backbeam + Feed Boom	99 lbs (44.9 kg)
Backbeam / Feed Boom Case (55 x 35 x 27" / 140 x 89 x 68.6 cm)	99 lbs (44.9 kg)
Reflector Total	278 lbs (126 kg)
Petals	Case 1 & 2 petals, 39 lbs (17.7 kg), Case 3 petals: 53 lbs (24 kg)
Each Petal Case (40 x 11.5 x 38" / 101.5 x 29 x 96.5 cm)	49 lbs (22.2 kg)
Controller and feed (Ka or Ku) Case (36 x 27 x 18" / 91.5 x 68.5 x 46cm)	75 lbs (34 kg)
Antenna Total	425 lbs (192.8 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, performance dependent on controller
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 area

<sup>(1)</sup> Some specifications may vary based on the combination of equipment, options and/or upgrades ordered.

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ELECTRICAL <sup>(1)</sup>	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)	37.90	42.30	43.00	43.70	52.30	55.50
VSWR	1.43:1 (15.0 dB)	1.33:1 (17.0 dB)	1.3:1 (17.7 dB)	1.3:1 (17.7 dB)	1.3:1 (17.7 dB)	1.3:1 (17.7 dB)
Pattern Beamwidth (in degrees at midband) -3 dB Mid Band	2.21	1.37	1.17	1.07	0.43	0.29
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	
Total Power Handling Capability	1kW CW		1kW CW		500W CW	
Cross Polarization						
On Axis Within 1.0 dB BW	15.5	17.7	30	30	28.8	28.8
Port-to-Port Isolation						
Rx/Tx (Rx frequency)	0 dB	-55 dB	0 dB	-110 dB	0 dB	-70 dB
Tx/Rx (Tx frequency)	0.30 dB	0.20 dB	-110 dB	0.70 dB	-75 dB	0.35 dB
Feed Insertion Loss	0.30 dB	0.20 dB	0.80 dB	0.70 dB	0.45 dB	0.35 dB

<sup>(1)</sup> Some specifications may vary based on the combination of equipment, options and/or upgrades ordered.

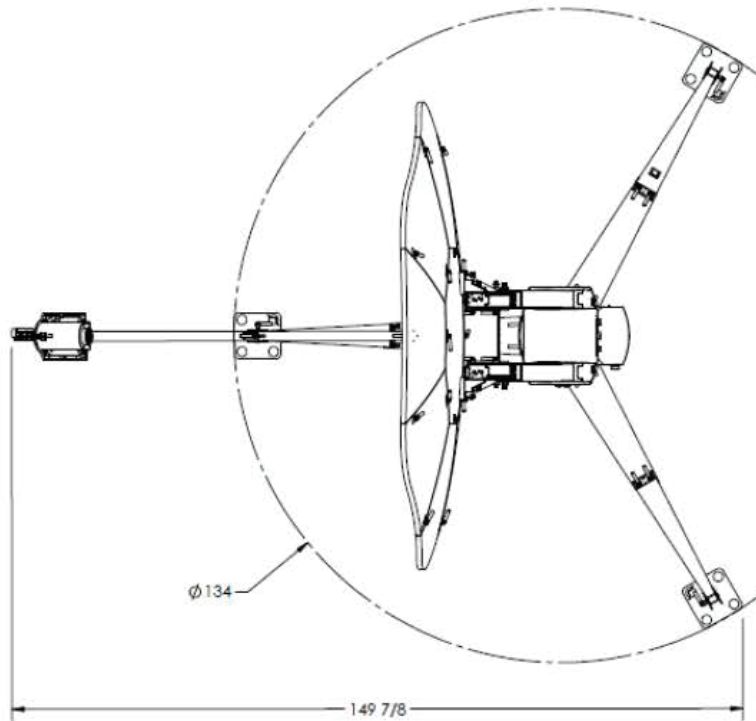
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## Specifications

ELECTRICAL <sup>(1)</sup>	C-Band Extended 2-Port Linear		Ku-Band 2-Port XPC Linear Polarized		Ku-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)	37.70	42.20	47.60	49.30	47.60	49.15
VSWR	1.43:1 (15.0 dB)	1.3:1 (17.0 dB)	1.43:1 (15.0 dB)	1.33:1 (17.0 dB)	1.43:1 (15.0 dB)	1.3:1 (17.0 dB)
Pattern Beamwidth (in degrees at midband) -3 dB Mid Band	2.23	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		500W CW		500W CW	
Cross Polarization						
On Axis	-35		-35		-30	
Within 1.0 dB BW	-35 -30		-35 -30		-35 -27	
Port-to-Port Isolation						
Rx/Tx (Rx frequency)	0 dB		0 dB		0 dB	
Tx/Rx (Tx frequency)	-80 dB		-80 dB		-85 dB	
Tx/Rx (Tx frequency)	-55 dB		-35 dB		-30 dB	
Rx/Rx (Rx frequency)	0 dB		0 dB		0 dB	
Feed Insertion Loss	0.20 dB		0.50 dB		0.30 dB	

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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

+1 770-689-2040

1 888-874-7646  
(In North America)

1 619-240-8480  
(Outside North America)

[CustomerCareSAT@cpii.com](mailto:CustomerCareSAT@cpii.com)  
[www.cpii.com](http://www.cpii.com)

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