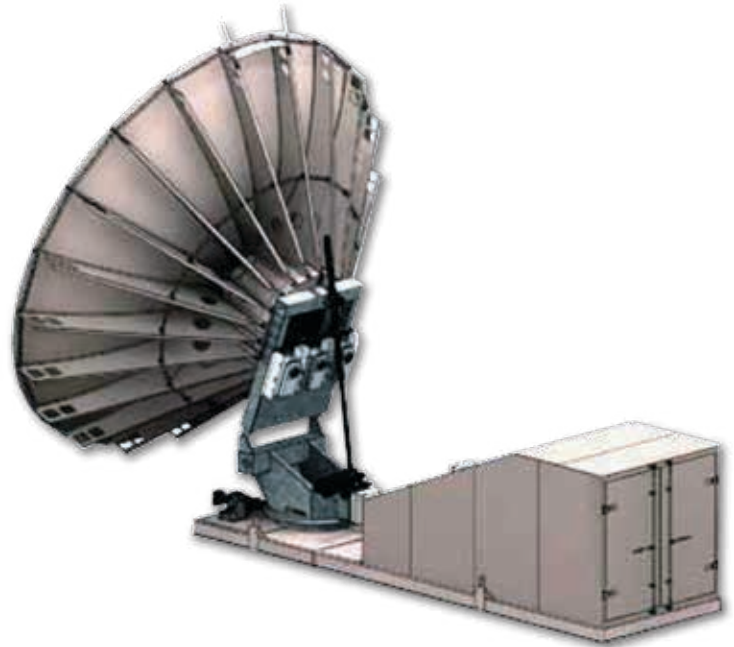


# Rapid Deployment Modular Antenna

## Satcom & Antenna Technologies Division



### Overview

The CPI Satcom & Antenna Technologies Inc. (CPI SAT) Rapid Deployable Modular Antenna (RDMA) system delivers exceptional performance for the mobile environment. The antenna has proven performance up to Ka-band frequencies.

This mobile terminal pallet mount antenna system can be configured as a 6.3 meter RDMA or a 4.8 meter RDMA-LT. Each configuration comes complete with all the antenna components, antenna controls and feed systems on a base pallet that also serves as the supporting load frame once the antenna is deployed.

The RDMA uses the proven Model 7200 antenna control system paired with the DTR digital tracking receiver for antenna controls. This antenna control system supports an 18-bit optical encoder system for highly accurate tracking required for Ka-band operation.

The RDMA can easily be transported by flatbed truck to site and offloaded by crane.

### FEATURES

- Antenna mounted to load frame that functions as shipping pallet
- Antenna components pack away into container
- Available Ku, Ka and X-band feed options
- Survives 90 mph winds in any position

### OPTIONS

- X-band low passive Intermodulation (Lo-PIM) feed systems
- Various Ku and Ka-band feed configurations with internal polarization drives
- RF electronics Integration kits
- SSPA, converters and LNA/LNB systems
- NetMAC system monitor and control
- Primary power systems

### BENEFITS:

- Easily deployable for a temporary solution

### APPLICATIONS:

- Military
- Disaster relief

# Rapid Deployment Modulator Antenna pg. 2

## 6.3m Rapid Deployable Modular Antenna

## Technical Specifications

Electrical <sup>(1)</sup>	Ku-Band 4-Port Linear Polarized		Ka-Band 4-Port Circular Polarized		X-Band 2-Port Circular Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	10.950 - 12.750	13.750 - 14.500	20.200 - 21.200	30.000 - 31.000	7.250 - 7.750	7.900 - 8.400
Antenna Gain at Midband, dBi	55.80	57.50	60.50	63.50	52.00	52.70
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Pattern Beamwidth (in degrees at midband)						
-3 dB	0.26	0.22	0.15	0.11	0.41	0.38
-15 dB	0.55	0.46	0.32	0.23	0.86	0.80
Antenna Noise Temperature						
5° Elevation	87 K		199 K		75 K	
10° Elevation	74 K		153 K		65 K	
20° Elevation	66 K		119 K		59 K	
40° Elevation	61 K		91 K		56 K	
Typical G/T (dB/K) <sup>(2)</sup>	34.8 (11.850 GHz, 60 K LNA)		36.7 (20.70 GHz, 120 K LNA)		31.2 (7.50 GHz, 60 K LNA)	
Axial Ratio	--	--	1.50 dB	1.00 dB	1.21 dB	2.00 dB
Power Handling (total)	2 kW CW		400 Watts		2 kW CW	
Cross Polarization Isolation						
On Axis	30.0 dB	30.0 dB	21.3 dB	24.8 dB	23.2 dB	18.8 dB
Within 1.0 dB Beamwidth	30.0 dB	30.0 dB	21.3 dB	24.8 dB	23.2 dB	18.8 dB
Port to Port Isolation						
Rx/Tx (Rx frequency)	0 dB	-60 dB	0 dB	-85 dB	0 dB	-120 dB
Tx/Rx (Tx frequency)	-85 dB	0 dB	-85 dB	0 dB	-120 dB	0 dB
Sidelobe Performance	ITU-RS-580, Intelsat, Eutelsat		ITU-RS-580		ITU-RS-580	
RF Specification	975-4025		975-4026		975-4024	

(1) All values are at rear feed flange. (2) Typical G/T at 20° elevation with clear horizon using single bolt-on LNA to feed.

Mechanical/Environmental <sup>(3)</sup>	6.3 meter RDMA
Antenna Diameter	6.3 meters (20.67 feet)
Antenna Type	Cassegrain design
Reflector Construction	20 precision-formed aluminum panels with heat-diffusing white paint Cleaned and brightened aluminum back-up structure
Hub Dimensions	60.5 in (154 cm) OD, 37 in (94 cm) depth
Mount Configuration	Elevation over azimuth, constructed of galvanized A36 steel
Drive Type	Machine screw jacks, motorized
Azimuth Travel	±90° in 30° segments with 5° overlap
Elevation Travel	5 to 90° continuous
Foundation (L x W x D)	29 ft x 12 ft x 16 in (8.8m x 3.7m x 40.6 cm)
Concrete	17.2 yds <sup>3</sup> (13.2 m <sup>3</sup> )
Reinforcing Steel	5,720 lbs. (2,595 kg)
Operational Wind Loading	45 mph (72 km/h) gusting to 60 mph (97 km/h), and 30 mph (48 km/h) gusting to 45 mph (72 km/h) at Ka-band
Survival Wind Loading	
Any Position	90 mph (145 km/h) @ 58° F (15° C)
Operational Temperature	-22° to +122° F (-30° to +50° C)
Survival Temperature	-40° to +140° F (-40° to +60° C)
Rain	Up to 6 in/h (15 cm/h)
Relative Humidity	0 to 100% with condensation
Solar Radiation	360 BTU/h/ft <sup>2</sup> (1,000 Kcal/h/m <sup>2</sup> )
Ice (survival)	1 in (2.5 cm) on all surfaces or 1/2 in (1.3 cm) on all surfaces with 80 mph (130 km/h) wind gusts
Atmospheric Conditions	As encountered in coastal regions and/or heavily industrialized areas
Shock and Vibration	As encountered during shipment by airplane, ship or truck

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

# Rapid Deployment Modulator Antenna pg. 3

## 4.8m Rapid Deployable Modular Antenna - Light

## Technical Specifications

Electrical <sup>(1)</sup>	Ku-Band 2-Port Linear Polarized		Ka-Band 2-Port Circular Polarized		X-Band 2-Port Circular Polarized	
	Receive	Transmit	Receive	Transmit	Receive	Transmit
Frequency (GHz)	10.950 - 12.750	13.750 - 14.500	20.200 - 21.200	30.000 - 31.000	7.250 - 7.750	7.900 - 8.400
Antenna Gain at Midband, dBi	53.30	55.00	58.00	60.90	49.50	50.20
VSWR	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1	1.30:1
Pattern Beamwidth (in degrees at midband)						
-3 dB	0.34	0.29	0.20	0.14	0.55	0.51
-15 dB	0.71	0.61	0.42	0.29	1.16	1.07
Antenna Noise Temperature						
5° Elevation	85 K		198 K		75 K	
10° Elevation	72 K		152 K		64 K	
20° Elevation	63 K		117 K		59 K	
40° Elevation	58 K		89 K		56 K	
Typical G/T (dB/K) <sup>(2)</sup>	32.4 (11.850 GHz, 60 K LNA)		34.3 (20.70 GHz, 120 K LNA)		28.8 (7.50 GHz, 60 K LNA)	
Axial Ratio	--	--	1.50 dB	1.00 dB	1.21 dB	2.00 dB
Power Handling (total)		2 kW CW		400 Watts		2 kW CW
Cross Polarization Isolation						
On Axis	30.0 dB	30.0 dB	21.3 dB	24.8 dB	23.2 dB	18.8 dB
Within 1.0 dB Beamwidth	30.0 dB	30.0 dB	21.3 dB	24.8 dB	23.2 dB	18.8 dB
Port to Port Isolation						
Rx/Tx (Rx frequency)	0 dB	-60 dB	0 dB	-85 dB	0 dB	-120 dB
Tx/Rx (Tx frequency)	-85 dB	0 dB	-85 dB	0 dB	-120 dB	0 dB
Sidelobe Performance	ITU-RS-580, Intelsat, Eutelsat		ITU-RS-580		ITU-RS-580	
RF Specification	975-4028		975-4029		975-4027	

(1) All values are at rear feed flange. (2) Typical G/T at 20° elevation with clear horizon using single bolt-on LNA to feed.

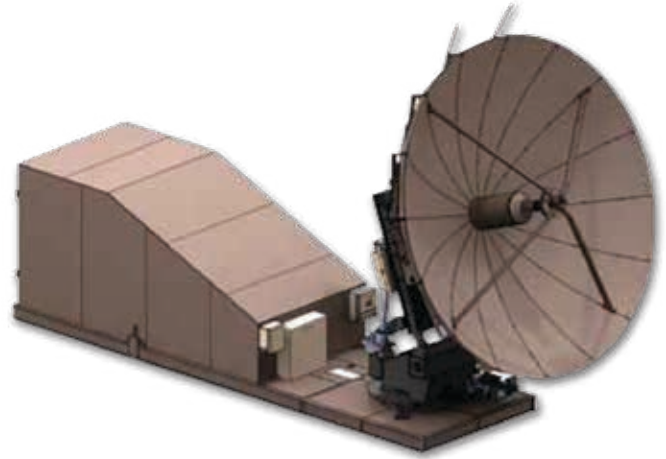
Mechanical/Environmental <sup>(3)</sup>	4.8 meter RDMA-LT
Antenna Diameter	4.8 meters (15.7 feet)
Antenna Type	Cassegrain design
Reflector Construction	16 precision-formed aluminum panels with heat-diffusing white paint Cleaned and brightened aluminum back-up structure
Hub Dimensions	60.5 in (154 cm) OD, 37 in (94 cm) depth
Mount Configuration	Elevation over azimuth, constructed of galvanized A36 steel
Drive Type	Machine screw jacks, motorized
Azimuth Travel	±90° in 30° segments with 5° overlap
Elevation Travel	5 to 90° continuous
Foundation (L x W x D)	29 ft x 12 ft x 16 in (8.8m x 3.7m x 40.6 cm)
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Ice (survival)	1 in (2.5 cm) on all surfaces or 1/2 in (1.3 cm) on all surfaces with 80 mph (130 km/h) wind gusts
Atmospheric Conditions	As encountered in coastal regions and/or heavily industrialized areas
Shock and Vibration	As encountered during shipment by airplane, ship or truck

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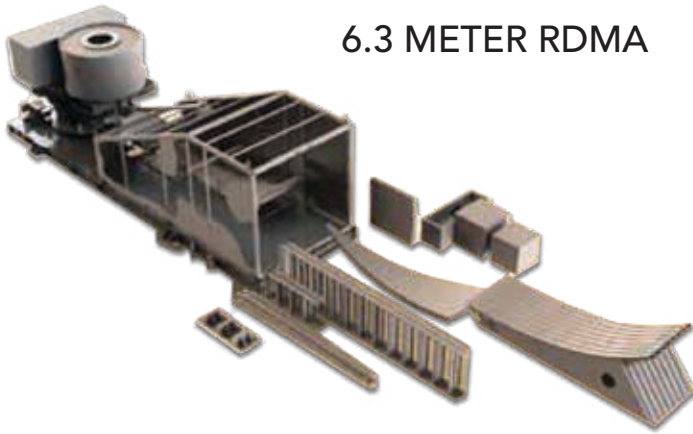
# CPI Rapid Deployment Modulator Antenna



6.3 METER RDMA



4.8 METER RDMA-LT



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.