

5.6 Meter Ka ESA

Like all CPI Antenna Systems Division earth station antennas, this antenna system is used worldwide in broadcast applications and high density data, voice and communications networks.

The CPI Antenna Systems Division 5.6 meter earth station antenna features a computer-optimized dual reflector Gregorian optics system and close-tolerance manufacturing techniques.

This combination provides extremely accurate surface contour resulting in exceptionally high gain and closely controlled pattern characteristics. CPI Antenna Systems Division earth station antennas provide maximum durability with minimal maintenance.

The unique design of the 5.6 meter Ka-band pedestal eliminates the need for critical foundation orientation. Each pedestal is engineered with self aligning bearings of the elevation pivots. In addition, azimuth/elevation anti-backlash ball jacks are incorporated to provide smooth positioning of the antenna.

The electrical performance and exceptional versatility provides the ability to configure the antenna with your choice of linearly- or circularly- polarized 2- or 4- port combining networks. That versatility is provided at the time of initial purchase, as well as in the future, as your satellite communication requirements evolve.

The 5.6 meter Ka-band antenna is offered with two hub sizes to accommodate a variety of RF electronics integration packages.



Features

- Rugged aluminum and steel construction
- Superior Pointing Accuracy
- Advanced Gregorian optics
- 3 Year Warranty on all Structural Components
- Configured for Ka-Band transmit and receive
- Pedestal mount is designed to allow non-critical foundation orientation.
- Two Hub Sizes Available.

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Design Standards

Reflector	Aluminum painted with highly diffusive white paint
Ground Mount	Hot-dipped galvanized steel, per ASTM-A123 for structural steel.
Hardware	Sizes $\leq 3/8$ in (9.5mm), stainless steel, passivated per MIL-F-14072-E300 Sizes $\geq 3/8$ in (9.5mm), hot-dipped galvanized stainless steel, passivated per ASTM-A123

Environmental Performances

Operating Temperature	-40° to 52°C (-40° to 125°F)
Seismic (Earthquake)	1 G Vertical and Horizontal acceleration. Equivalent to a Richter Magnitude 8.3, and Grade 11 on the modified Mercalli Scale
Operational Winds	45 mph (72 km/h) Gusts to 65 mph (105 km/h)
Survival Winds	125 mph (200 km/h) in any position of operation
Rain	4 in (102 mm) per hour
Solar Radiation	360 BTU/hr/ft ² (1135 Watts/m ²)
Relative Humidity	100%
Shock and Vibration	As encountered by commercial Air, Rail and Truck shipment.
Atmospheric Conditions	As encountered by Moderately Corrosive Coastal and Industrial Areas.

Mechanical Performances

The 5.6m Antenna mechanical general specifications and performances are listed in below table. Additional information, dimensions and layout may be provided by CPI Antenna Systems Division on a case-by-case basis.

Optics Type	Dual Reflector Gregorian
Reflector Material	Precision-Formed Aluminum
Reflector Segments	16
Mount Type	EI over Az, Pedestal Mount

Antenna Pointing Range, Coarse/(Continuous)

Elevation:	0-90° (90°)
Azimuth:	205° (115°)
Polarization	180° (180°)

Hub/Enclosure Dimensions

Diameter	1.32 m (52 in) Standard Hub 2.14 m (84 in) Large Hub
Depth	1.17 m (45 in) Standard and Large Hub

Shipping Information

Packing Options

Standard Commercial Domestic Pack	Included
Ocean Export Pack - For non-containerized, packed for seal against salt water spray	OCEANSHP-LG
Air Export Pack - For freighter aircraft shipments. Lower deck AirPack requires specialized bids	AIR EXPORT PACK-LG
Container Packaging	CNTPCK-LG

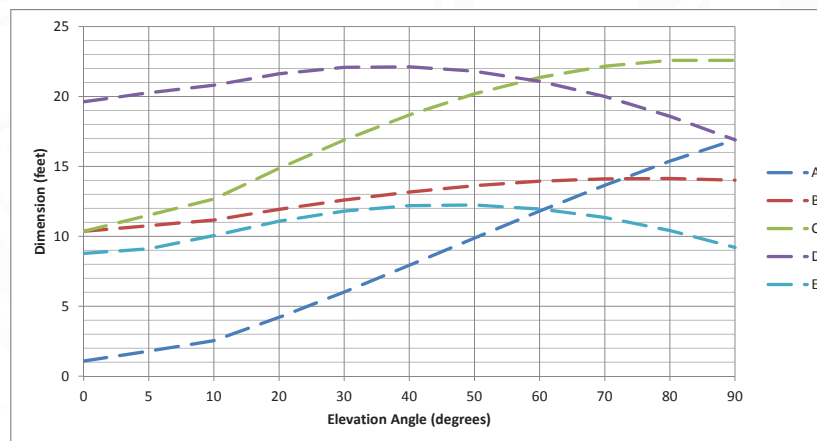
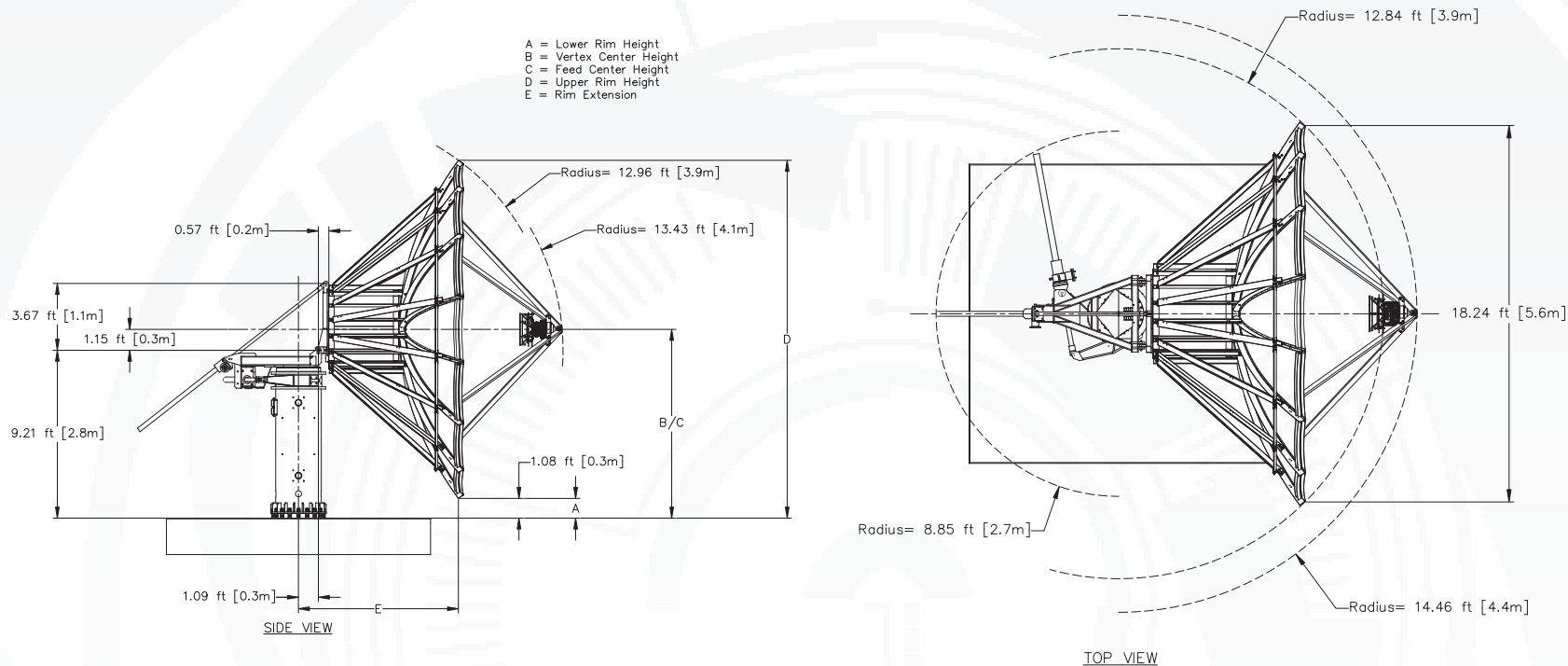
Required Shipping Container

Standard 40 ft land/sea container	Quantity 1
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Shipping container information is given for basic configuration and may vary depending on the selected options, please contact CPI Antenna Systems Division for specific container loading plan.

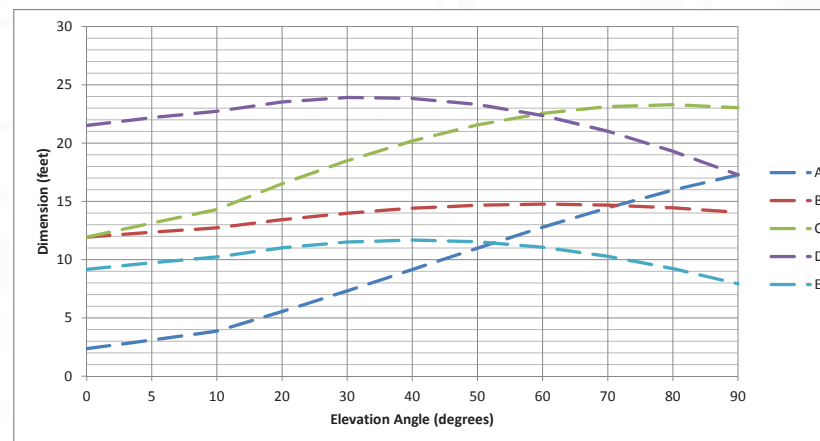
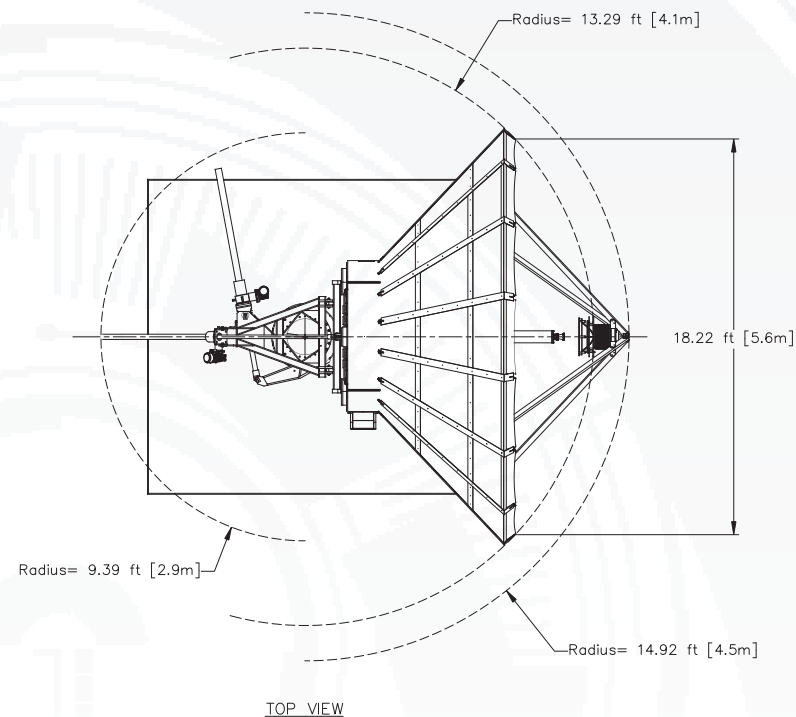
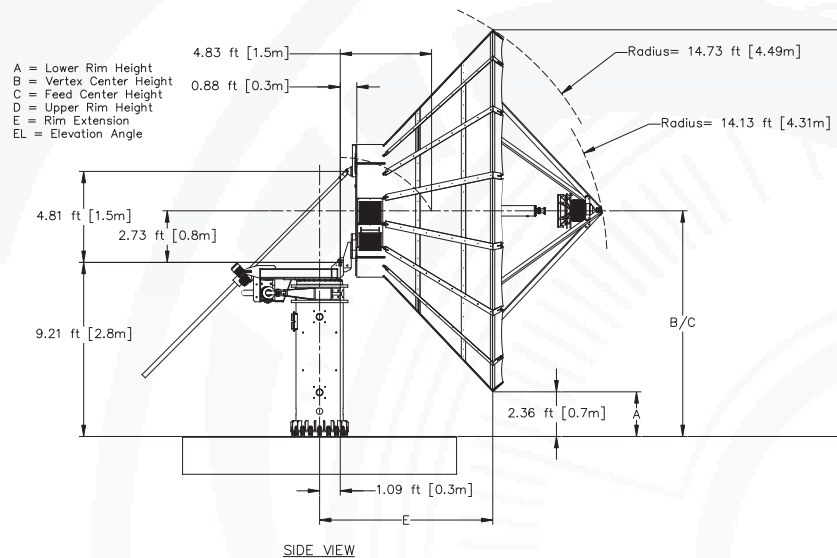
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Dimensional Drawings Standard Hub



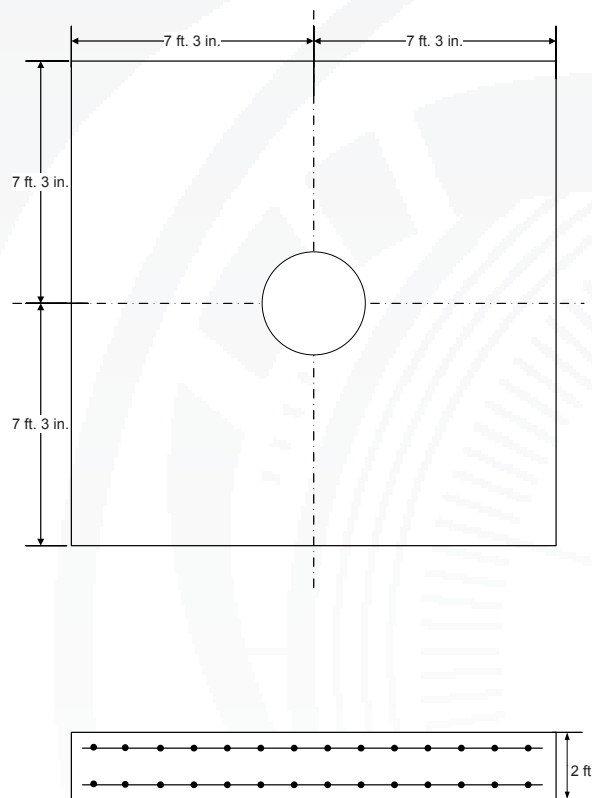
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Dimensional Drawings Large Hub



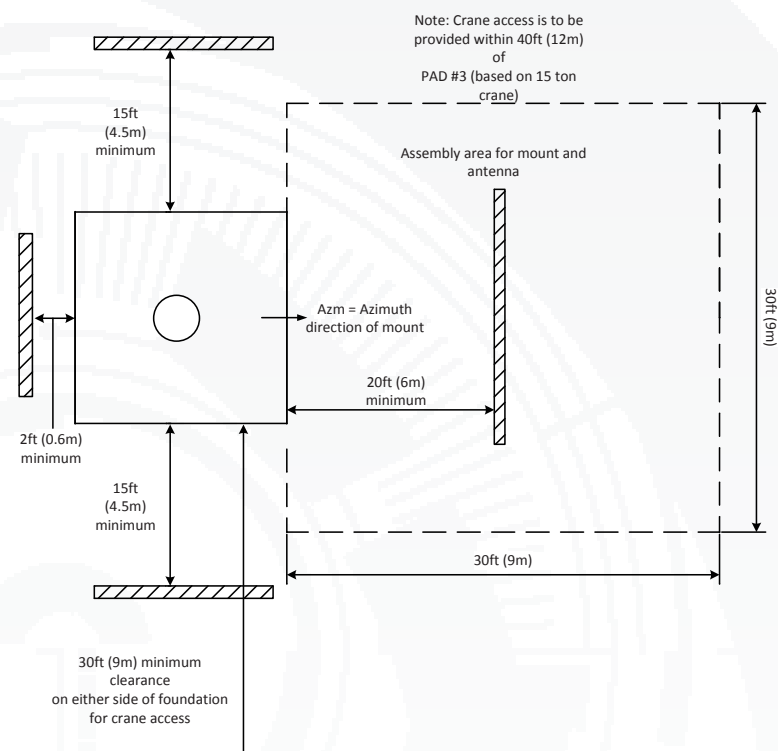
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Typical Foundation Design



Foundation information are provided in bulletin 237684, please contact CPI Antenna Systems Division.

Typical Foundation Information



Soil Bearing Capacity,	2000 lb/ft ² (9770 kg/m ²)
Reinforcing Steel,	
Concrete Compressive Strength,	3000 psi (211 kg/cm ²)
Foundation Size:	(for specific standard soil and typical design)
Length	14 ft 6 in (4.42 m)
Width	14 ft 6 in (4.42 m)
Depth	2 ft (0.61m)
Concrete Volume	15.6 yd ³ (12 m ³)

NOTE: Other typical foundation designs are available. Soil borings and foundation analysis should be performed by a qualified civil engineer.

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Motor Drive Speed Summary

	Variable	
Azimuth	0.05°/s	0.5°/s
Elevation	0.05°/s	0.5°/s
Polarization	1°/s	

Motorization

One motorization system is available for this antenna: the NGC tracking system that can support Steptrack, Smartrack and Ephemeris orbital tracking application.

The NGC-IDU controller can also operate the Sub-Reflector tracking system SRT-3-56, 3 axis Control Sub-Reflector Carriage, required for Ka application.

Motor Kit

Azimuth/Elevation Motor Kit	NGC-MK56KA
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SRT Kit

3 axis Control Sub-Reflector Carriage	SRT-3-56
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Polarization Drive Kit (DC Step Motors)

Standard Temperature (> -20°C)	NGC-PK5DRA
Low Temperature operation (< -20°C)	NGC-PK9DRA-LO

Outdoor Unit Controller (Tracking)

Power 200 - 230 VAC, 3 Phase 50/60 Hz	NGC-ODU-208-5-HA
Power 380 - 460 VAC, 3 Phase 50/60 Hz	NGC-ODU-380-5-HA

Antenna controller, motorization and options are detailed in specific bulletins, please contact CPI Antenna Systems Division..

Antenna Configuration

Earth Station Antennas

Motorizable Mount with Az/EI Jackscrews, Standard Hub.	ES56KA-1
Motorizable Mount with Az/EI Jackscrews., Large Hub	ES56KA-1-LH

Motorization and NGC Options

Indoor	
NGC-IDU	NGC Rack Mounted Antenna Controller W/LCD Touch Panel
NGC-001	NGC-IDU Analog Telephone Modem
NGC-002	NGC-IDU Spectrum Analyzer Card, Analog
NGC-003	NGC-IDU DVB Receiver Card
NGC-004-02	NGC IDU, L-Band Internal Beacon Receiver
NGC-006	NGC-IDU Emergency Stop Button
NGC-007	NGC-IDU 10 Mhz Reference Source
NGC-008	NGC-IDU Redundant Power Supply
NGC-009	NGC-IDU Rack Slides
NGC-101	NGC-IDU Step Tracking Software
NGC-102	NGC-IDU Smartrack Software
NGC-103	NGC-IDU Predictive Track Software
NGC-104	NGC-IDU Full Tracking Capability Software
NGC-106	NGC-IDU Remote Access Software Package
NGC-107	NGC-IDU Spectrum Analyzer Enhanced User Interface
NGC-108	Receive Pattern Test Tool
NGC-109	Redundancy Control Software
NGC-111	Sand/Dust Deviator Feature
NGC-119	NGC High Availability System Redundancy Software

Outdoor	
NGC-201	NGC ODU Low Temperature Kit (-40 C)
NGC-202	NGC ODU High Temperature Kit (+60 C)
NGC-205	NGC ODU AC Polarization Drive Interface
NGC-206	NGC Exterior Emergency Stop Button
NGC-207	Pre Movement Alert Warning Light And Announcator
NGC-211	Dual Path NGC Redundancy
NGC-AESC	Environmental System Controller
NGC-HTR-56KA-xxx	Kit, Heater Controller, De-Ice, Reflector, 5.6M

Antenna controller, motorization and options are detailed in specific bulletins, please contact CPI Antenna Systems Division..

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Feed Matrix

Ka- BAND FEED SYSTEMS	PORT	CP	LP	RX 17.7 - 21.2 GHz	RX 18.3 - 20.2 GHz	RX 20.2 - 21.2 GHz	RX 21.4 - 22.0 GHz	TX 27.0 - 30.5 GHz	TX 27.5 - 31.0 GHz	TX 28.3 - 30.0 GHz	TX 30.0 - 31.0 GHz
4CPMKA-56-206	4	X				X					X
4CPWKA-56-206	4	X			X					X	
4CPWWKA-56-206	4	X		X					X		
4LPWWKA-56	4		X	X					X		
4LPEUTKA-56	4		X				X	X			

For Monopulse application, please contact CPI Antenna Systems Division.

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Antenna Options and Spares

Anchor Bolt and Template Kits Options	
302217	Anchor Bolt and Template Kit 5.6M Ka-Band Earth Station Antenna.
Heating Options	
FH56KA	Feed Heater and Anti Dew Kit, 5.6M Ka-Band ESA
WEC-56KA-PO	Electric Hot Air De-Ice System for 5.6m Ka band with Standard Hub
WEC-56KA-PO-LH	Electric Hot Air De-Ice System for 5.6m Ka band with Large Hub
Environment Systems Options	
PDCPKA-56-208	Precipitation Deviator, 208/230 VAC.
PDCPKA-56-380	Precipitation Deviator, 380/415 VAC.

Please contact CPI Antenna Systems Division for specific application.

Hub Equipment Options	
EMRGYLT-115	Emergency Hub Light Kit, 115 VAC
EMRGYLT-230	Emergency Hub Light Kit, 230 VAC
FV56KA-115	Fan Vent Kit, 115 VAC
FV56KA-230	Fan Vent Kit, 230 VAC
HUBHTR-230	Antenna Hub Heater, 230 VAC
HUBLCNTR-115/240	Hub Power Center, 115/240 VAC
HUBLCNTR-230	Hub Power Center, 230 VAC
HUBLT-115	Hub Light Kit, 115 VAC
HUBLT-230	Hub Light Kit, 230 VAC

Safety Options	
ANTGND-9	Foundation Installed Grounding Kit
LRK9	Lightning Rod Kit
MANPL56	Maintenance Platform and Ladder Kit
OBWRNLT-UNV	Obstruction Warning Light Kit

Other Options	
223711-56	Theodolite Alignment Kit
209906-2	Lubrication and Maintenance Kit
FTST	Feed System Testing
TK-MAN-LG	Tool Kit, Large Manual Antennas
TK-MOT-LG	Tool Kit, Large Motorized Antennas

EARTH STATION ANTENNA