

18.3 Meter ESA

Like all Kratos Antennas, the 18.3 Meter Earth Station Antenna gives you high-performance in C-band geostationary satellite applications. The shaped Cassegrain reflector provides superior gain and sidelobe performance, meeting stringent FCC requirements.

Precision stretch-formed and interchangeable aluminum panels are attached to a central structural steel hub with rigid, interchangeable structural trusses. The panels are coated with a solar-diffusive white coating system that provides years of environmental protection while minimizing thermal expansion effects. The reflector back structure and subreflector spars are designed to exacting rigidity requirements under wind and gravity loads. The hub provides a protective enclosure for sensitive electronics.

The Kratos "Turning Head" mount provides an efficient structure for supporting and positioning the feed/reflector system over a full 360° in 6 overlapping 90° continuous sectors. Elevation travel provides 0° to 90° of continuous travel. 360° continuous extended azimuth travel is available as an option. Antenna Control System options range from Step track, SmarTrack®, Predictive track and monopulse tracking systems.



Features

- ACompliant with FCC, ASIAsat, INTELSAT, EUTELSAT, ITU and more
- Meets INTELSAT Standard A requirements
- High-efficiency shaped Cassegrain optics
- High wind survival, enclosed base, and safety interlocks
- Use with C-band and extended C-band systems
- Linear/circular (switchable feeds available)
- Antenna Controller patented 3-point tracking
- Variable-speed motorized drive
- Design minimizes maintenance, site prep and shipping costs
- Large electronics space in hub
- Premium quality galvanized steel structure
- CE compliant

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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 65°C (-40° to 150°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 | 90 mph (144 km/h) @Any look angle |
| Survival Winds | 105 mph (168 km/h) @ Any Look Angle |
| Survival Winds | 140 mph (224 km/h) @ Stow Position |
| 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 16.0m Antenna mechanical general specifications and performances are listed in the table below. Additional information, dimensions and layout may be provided by Kratos on a case-by-case basis.

| | |
|--------------------|---------------------------|
| Optics Type | Cassegrain dual reflector |
| Reflector Material | Precision-Formed Aluminum |
| Reflector Segments | 168 |
| Mount Type | EI over Az |

Antenna Pointing Range Coarse/(Continuous)

| | |
|--------------|-------------|
| Elevation: | 0-90° (90°) |
| Azimuth: | 360° (90°) |
| Polarization | 180° (180°) |

Hub/Enclosure External Dimensions

| | |
|----------------|----------------|
| Diameter/depth | contact Kratos |
| Depth | contact Kratos |

Shipping Information

Packing Options

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

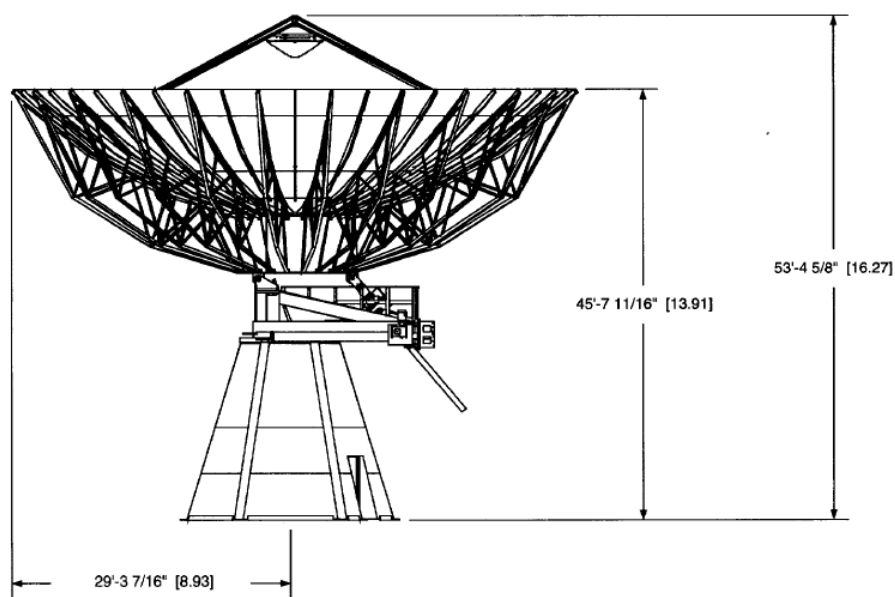
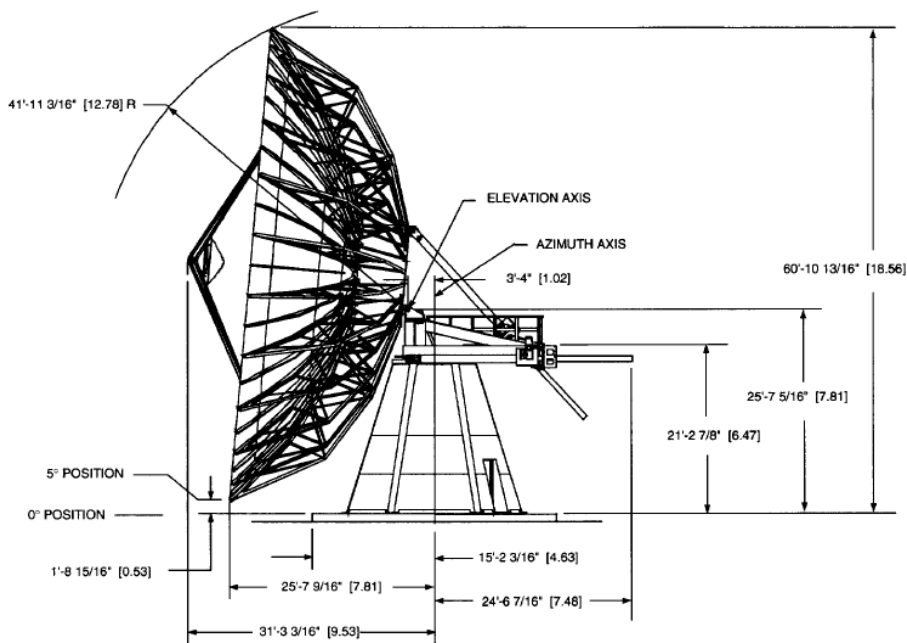
Required Shipping Container

| | |
|-----------------------------------|----------------|
| Standard 20 ft land/sea container | contact Kratos |
| Standard 40 ft land/sea container | contact Kratos |

Shipping container information is given for basic configuration and may vary depending on the selected options, please contact Kratos for specific container loading plan.

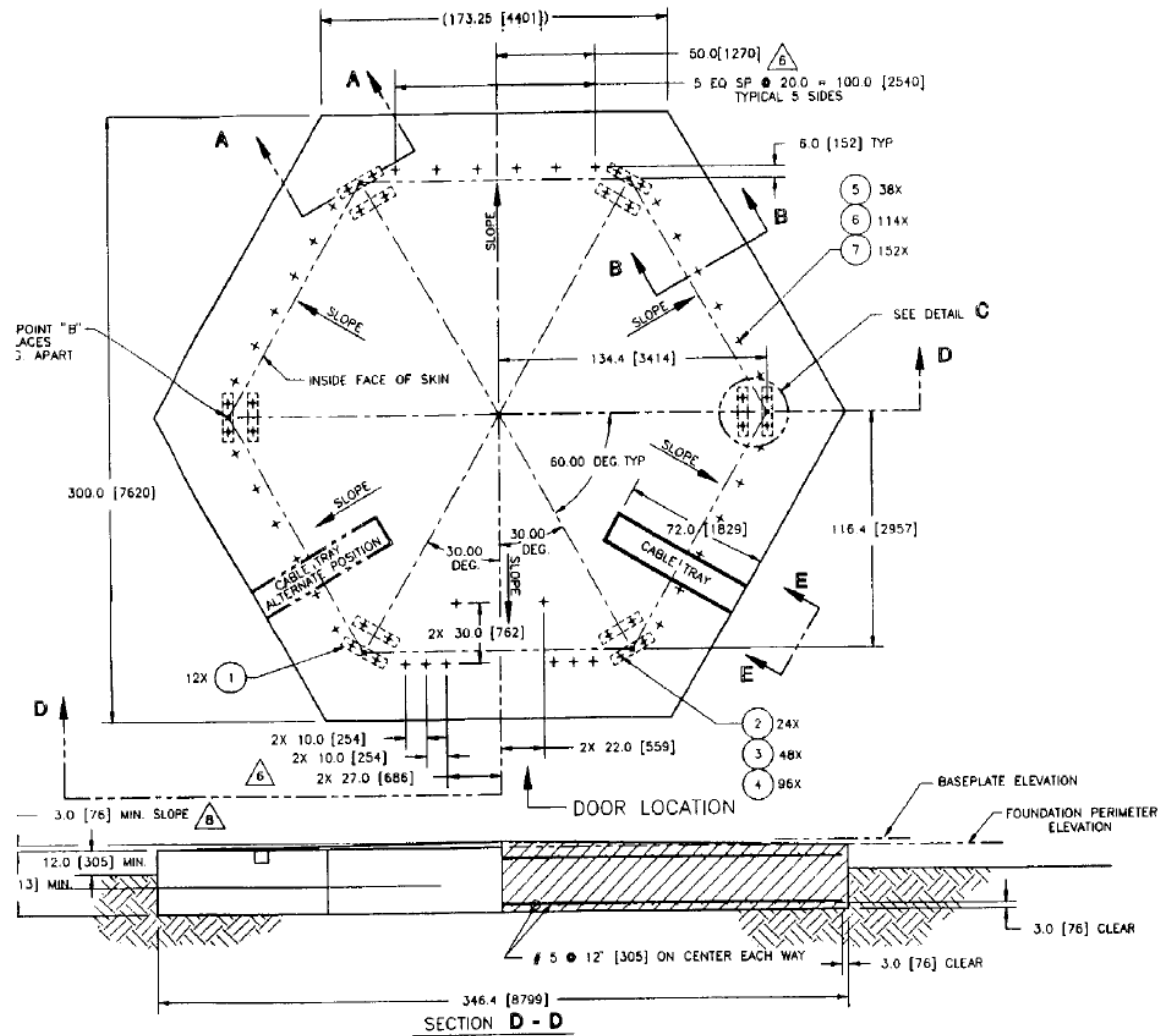
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Dimensional Drawings



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Typical Foundation Design



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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.

Motor Kit

| | |
|-----------------------------|-----------|
| Azimuth/Elevation Motor Kit | NGC-MK183 |
|-----------------------------|-----------|

Outdoor Unit Controller (Tracking)

| | |
|---------------------------------------|-----------------|
| Power 200 - 230 VAC, 3 Phase 50/60 Hz | NGC-ODU-208-183 |
| Power 380 - 460 VAC, 3 Phase 50/60 Hz | NGC-ODU-380-183 |

Antenna controller, motorization and options are detailed in specific bulletins, please contact Kratos..

Antenna Configuration

Earth Station Antennas

| | |
|--|---------|
| Motorizable Mount with Az/EI Jackscrews. | ES183-1 |
|--|---------|

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-002-EDR | NGC-IDU Spectrum Analyzer Card, Analog Enhanced Dynamic Range |
| NGC-003 | NGC-IDU DVB Receiver Card |
| NGC-004-02 | NGC IDU, L-Band Internal Beacon Receiver |
| NGC-004-02-IDU | NGC 1RU, L-Band 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-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 |

Antenna controller, motorization and options are detailed in specific bulletins, please contact Kratos..

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Feed Matrix

| C- BAND FEED SYSTEMS | PORT | Co-Pol | CP | LP | RX 3.625 - 4.2 GHz | RX 3.4 - 4.2 GHz | RX 4.5 - 4.8 GHz | TX 5.850 - 6.425 GHz | TX 5.850 -6.725 GHz | TX 5.725 - 6.725 GHz | TX 6.725 - 7.025 GHz |
|----------------------|------|--------|----|----|--------------------|------------------|------------------|----------------------|---------------------|----------------------|----------------------|
| 4CPWWC-18-206 | 4 | | X | | | X | | | | X | |
| 4LPWWC-18-VP | 4 | | | X | | X | | | | X | |

Antenna Options and Spares

Anchor Bolt and Template Kits Options

| | |
|----------------|----------------|
| contact Kratos | Foundation Kit |
|----------------|----------------|

Azimuth and Elevation Cross Axis Waveguide Options

| | |
|--------------|--|
| XAPC-183 | C-Band cross Axis and Polarization Axis Waveguide Kit. |
| XAPC-183-UPG | C-Band Cross Axis and Polarization Axis Waveguide Kit Upgrade. Upgrades XAPC-183 for use with 4-port C-Band Feeds. |

Heating Options

| | |
|-----------------|--|
| FHC-160 | C-Band Feed Heater |
| WEC183R-208-100 | Electric Hot Air De-Ice System, 208 VAC, 3 Phase |
| WEC183R-380-100 | Electric Hot Air De-Ice System, 380 VAC, 3 Phase |

Hub Equipment Options

| | |
|------------------|----------------------------------|
| EMRGYLT-115 | Emergency Hub Light Kit, 115 VAC |
| EMRGYLT-230 | Emergency Hub Light Kit, 230 VAC |
| 721734 | Fan Vent Kit, 115 VAC |
| 578904 | 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-18 | Foundation Installed Grounding Kit |
| LRK183 | Lightning Rod Kit |
| MANPL183 | Full Maintenance Platform and Ladder Kit |
| OBWRNLT-UNV | Obstruction Warning Light Kit |

Other Options

| | |
|-------------|------------------------------------|
| 209906-18 | Lubrication and Maintenance Kit |
| 201769-18 | Handwheel Kit |
| FTST | Feed System Testing |
| TK-VEP-XXLG | Tool Kit, Large Motorized Antennas |



Kratos Antenna Solutions
3801 E. Plano Parkway, Suite 200
Plano Texas 75074
USA
Phone: +1-214-291-7654
Fax: +1-214-291-7655
Email: Space@KratosDefense.com

for information visit: www.KratosDefense.com

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