

# 9.4 Meter ESA

Like all ASC Signal earth station antennas, the 9.4 Meter Earth Station Antenna provides high gain and exceptional pattern characteristics.

This antenna system is designed for worldwide use in C-, Ku-, K- and X- Band Low Pim high density data and communications networks.

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.

This antenna system is used worldwide in broadcast applications and high density data, voice and communications networks. The ASC Signal 9.4 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. ASC Signal earth station antennas provide maximum durability with minimal maintenance.



## Features

- Rugged aluminum and steel construction
- Superior Pointing Accuracy
- Advanced Gregorian optics
- 3 Year Warranty on all Structural Components
- Configured for C- Band, X- Band, Ku- Band and K- Band transmit and receive

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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 ≤ 3/8 in (9.5mm), stainless steel, passivated per MIL-F-14072-E300<br>Sizes ≥ 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 <sup>2</sup> (1135 Watts/m <sup>2</sup> )  |
| 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 9.4m Antenna mechanical general specifications and performances are listed in below table. Additional information, dimensions and layout may be provided by ASC Signal on a case-by-case basis.

|                    |                            |
|--------------------|----------------------------|
| Optics Type        | Dual Reflector Gregorian   |
| Reflector Material | Precision-Formed Aluminum  |
| Reflector Segments | 20                         |
| Mount Type         | El over Az, Pedestal Mount |

### Antenna Pointing Range, Coarse/(Continuous)

|              |             |
|--------------|-------------|
| Elevation:   | 0-90° (90°) |
| Azimuth:     | 210° (120°) |
| Polarization | 180° (180°) |

### Hub/Enclosure Dimensions

|          |               |
|----------|---------------|
| Diameter | 2.14m (84 in) |
| Depth    | 1.22m (48 in) |

## Shipping Information

### Packing Options

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

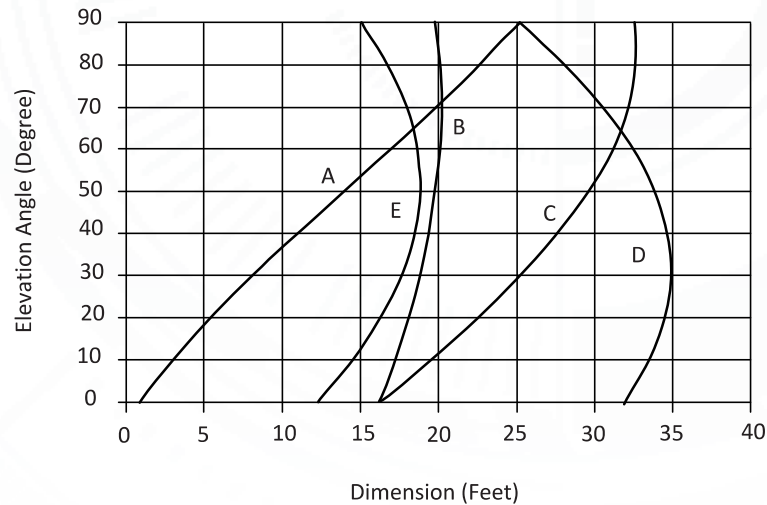
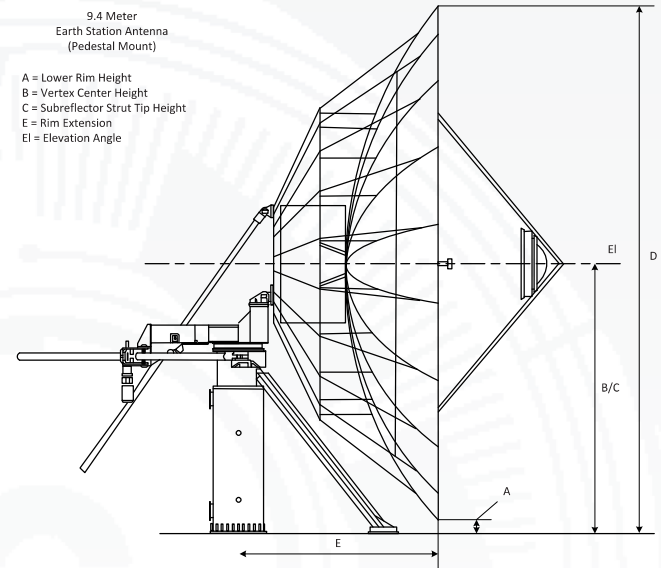
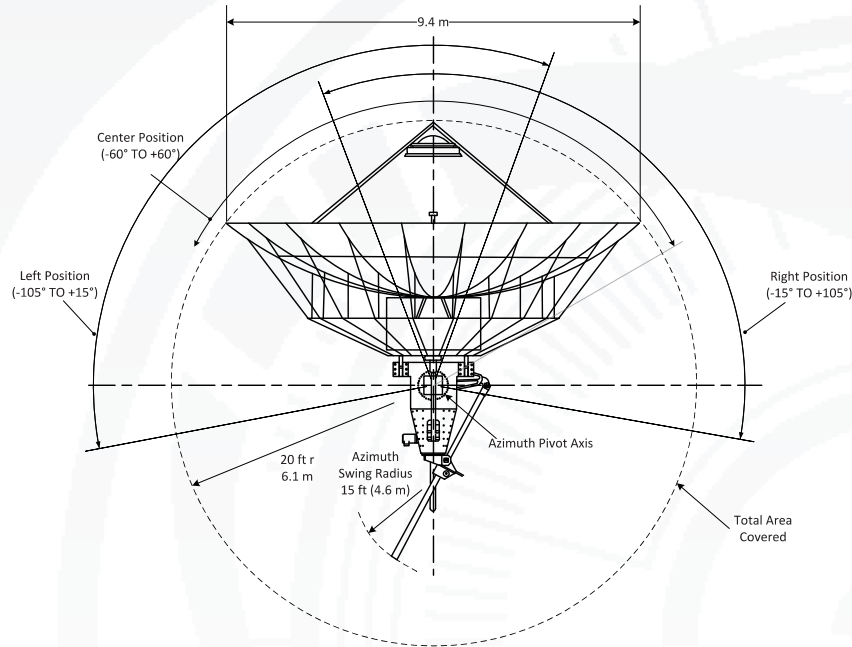
### Required Shipping Container

|                                   |            |
|-----------------------------------|------------|
| Standard 20 ft land/sea container | Quantity 1 |
| Standard 40 ft land/sea container | Quantity 1 |

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

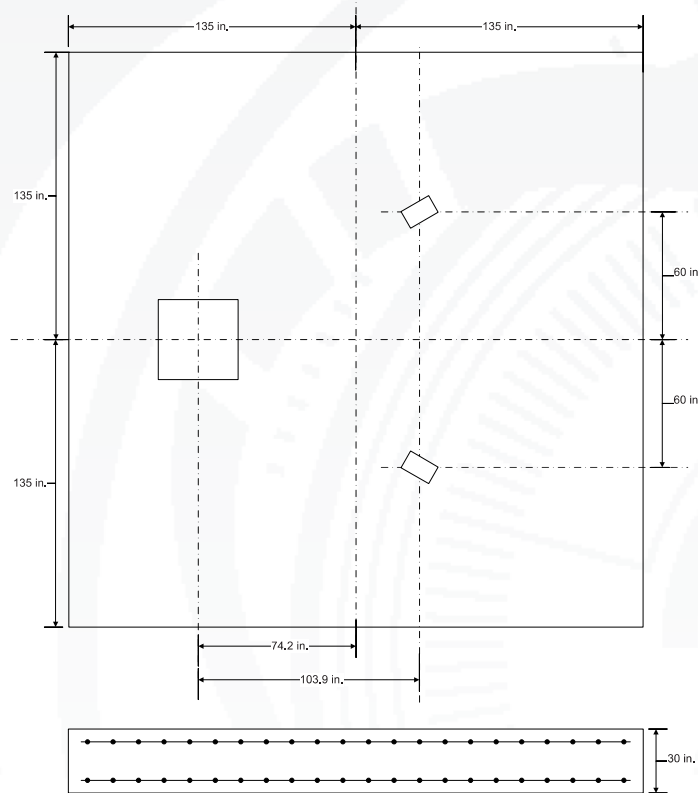
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## Dimensional Drawings



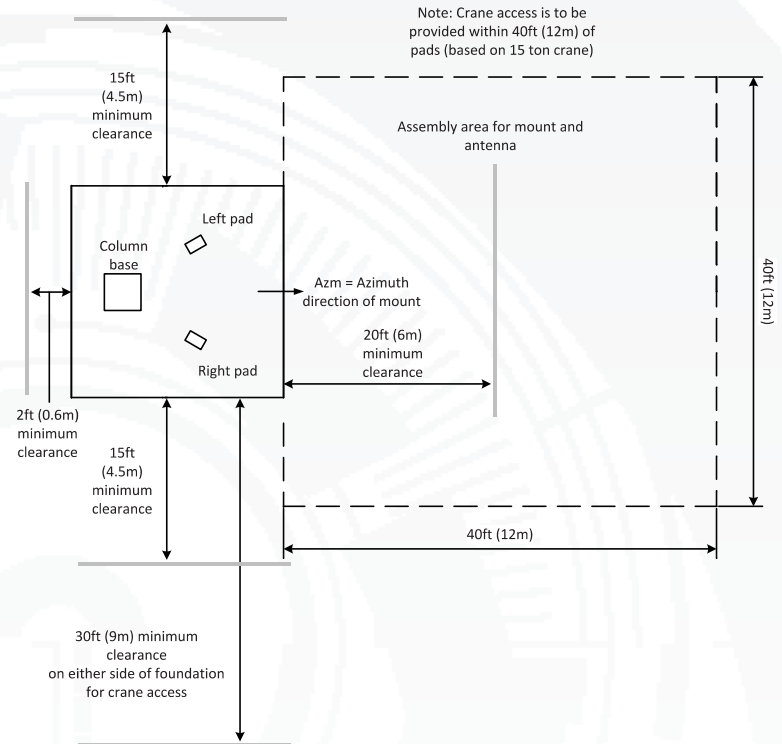
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## Typical Foundation Design



Foundation information are provided in bulletin 237742, please contact ASC Signal.

## Typical Foundation Information



|                                |   |
|--------------------------------|---|
| Soil Bearing Capacity,         | 2000 lb/ft <sup>2</sup> (9770 kg/m <sup>2</sup> ) |
| Reinforcing Steel,             | 2.93 tons (2660 kg)                               |
| Concrete Compressive Strength, | 3000 psi (211 kg/cm <sup>2</sup> )                |
| Foundation Size:               | (for specific standard soil and typical design)   |
| Length                         | 22.5 ft (6.86 m)                                  |
| Width                          | 22.5 ft (6.86 m)                                  |
| Depth                          | 2.5 ft (0.76 m)                                   |
| Concrete Volume                | 46.9 yd <sup>3</sup> (35.86 m <sup>3</sup> )      |

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.

### Motor Kit

|                             |          |
|-----------------------------|----------|
| Azimuth/Elevation Motor Kit | NGC-MK94 |
|-----------------------------|----------|

### Polarization Drive Kit (DC Step Motors)

|                                     |               |
|-------------------------------------|---------------|
| Standard Temperature (> -20°C)      | NGC-PK9DRA    |
| 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 |
| Power 380 - 460 VAC, 3 Phase 50/60 Hz | NGC-ODU-380-5 |

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

## Antenna Configuration

### Earth Station Antennas

|  |         |
|--|---------|
| Motorizable Mount with Az/EI Jackscrews. | ES94K-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-003          | NGC-IDU DVB Receiver Card                             |
| NGC-RTX-2        | 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-115          | Uplink Power Control Software Function                |
| NGC-ULPC-INTFC   | Uplink Power Control System Single Channel            |
| NGC-ULPC-INTFC-2 | Uplink Power Control System Dual Channel              |
| 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 Annunciator      |
| NGC-211          | Dual Path NGC Redundancy                              |
| NGC-AESC         | Environmental System Controller                       |
| RED11-x          | Hub Mounted 1:1 LNA/LNB Redundancy Plate              |
| RED12-x          | Hub Mounted 1:2 LNA/LNB Redundancy Plate              |

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

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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 |
|----------------------|------|--------|----|----|--------------------|------------------|------------------|----------------------|---------------------|----------------------|----------------------|
| 2CPWCR-94-206        | 2    |        | X  |    |                    | X                |                  |                      |                     |                      |                      |
| 4CPNC-94-206         | 4    |        | X  |    | X                  |                  |                  | X                    |                     |                      |                      |
| 4CPWC-94             | 4    |        | X  |    |                    | X                |                  |                      | X                   |                      |                      |
| 4LPNC-94             | 4    |        |    | X  | X                  |                  |                  | X                    |                     |                      |                      |
| 4LPWWC-94            | 4    |        |    | X  |                    | X                |                  |                      |                     | X                    |                      |

| X- BAND FEED SYSTEMS | PORT | CP | LOW PIM | RX 7.25 - 7.75 GHz | TX 7.9 - 8.4 GHz |
|----------------------|------|----|---------|--------------------|------------------|
| 2CPX-94              | 2    | X  |         | X                  | X                |
| 4CPX-94              | 4    | X  |         | X                  | X                |
| 2CPMX-94             | 2    | X  | X       | X                  | X                |
| 4CPMX-94             | 4    | X  | X       | X                  | X                |

| Ku- BAND FEED SYSTEMS | PORT | LP | RX 10.7 - 12.5 GHz | RX 10.7 - 12.75 GHz | RX 10.7 - 11.7 GHz | TX 12.75- 13.25 GHz | TX 12.75 - 14.5 GHz | TX 13.0 - 14.5 GHz | TX 13.75- 14.5 GHz | TX 13.75- 14.8 GHz |
|-----------------------|------|----|--------------------|---------------------|--------------------|---------------------|---------------------|--------------------|--------------------|--------------------|
| 2LPKU-94              | 2    | X  |                    | X                   |                    |                     |                     |                    |                    | X                  |
| 2LPKUR-94-W           | 2    | X  |                    | X                   |                    |                     |                     |                    |                    |                    |
| 4LPKU-94-1            | 4    | X  |                    | X                   |                    |                     |                     |                    |                    | X                  |
| 4LPKU-94-2            | 4    | X  |                    |                     | X                  | X                   |                     |                    |                    | X                  |
| 4LPKU-94-4            | 4    | X  |                    | X                   |                    |                     |                     | X                  |                    |                    |
| 4LPKU-94-6            | 4    | X  | X                  |                     |                    |                     | X                   |                    |                    |                    |

| K- BAND FEED SYSTEMS | PORT | CP | LP | RX 10.7 - 12.75 GHz | TX 17.3 - 18.4 GHz |
|----------------------|------|----|----|---------------------|--------------------|
| 2LPKK-94             | 2    |    | X  | X                   | X                  |
| 4LPKK-94             | 4    |    | X  | X                   | X                  |
| 4CPKK-94             | 4    | X  |    | X                   | X                  |

For redundant application, LNA support kits are available for each of the above feeds. Please contact ASC Signal.

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## Antenna Options and Spares

| Anchor Bolt and Template Kits Options |                          |
|---------------------------------------|--------------------------|
| 303410                                | Anchor Bolt Template Kit |
| 175370                                | Foundation Kit           |

| Azimuth and Elevation Cross Axis Waveguide Options |   |
|--|---|
| XAPKK-94   | K-Band cross Axis and Polarization Axis Waveguide Kit.  |
| XAPKK-94-UPG                                       | K-Band Cross Axis and Polarization Axis Waveguide Kit Upgrade. Upgrades XAPKK-49 for use with 4-port K-Band Feeds.                                      |
| XAPKU-94   | Ku-Band Cross Axis and Polarization Axis Waveguide Kit. Single run for 2-Port Ku-Band Feeds.  |
| XAPKU-94-UPG                                       | Ku-Band Cross Axis and Polarization Axis Waveguide Kit Upgrade. Upgrades XAPKU-49 for use with 4-Port Ku-Band Feeds. Provides Additional Waveguide Run. |

| Heating Options |  |
|-----------------|--|
| FH5A            | Ku and K-Band Feed Heater  |
| WEC94R-208-100  | Electric Hot Air De-Ice System, 208 VAC, 3 Phase (not for Ka band) |
| WEC94R-380-100  | Electric Hot Air De-Ice System, 380 VAC, 3 Phase (not for Ka band) |

| Hub Equipment Options |                                  |
|-----------------------|----------------------------------|
| EMRGYLT-115           | Emergency Hub Light Kit, 115 VAC |
| EMRGYLT-230           | Emergency Hub Light Kit, 230 VAC |
| FV8HV2-115            | Fan Vent Kit, 2 Louvers. 115 VAC |
| FV8HV2-230            | Fan Vent Kit, 2 Louvers. 230 VAC |
| FV8HV4-115            | Fan Vent Kit, 4 Louvers. 115 VAC |
| FV8HV4-230            | Fan Vent Kit, 4 Louvers. 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                     |
| MANPL94        | Maintenance Platform and Ladder Kit   |
| OBWRNLT-115    | Obstruction Warning Light Kit, 115VAC |
| OBWRNLT-230    | Obstruction Warning Light Kit, 230VAC |

| Other Options |                                    |
|---------------|------------------------------------|
| 209906-2      | Lubrication and Maintenance Kit    |
| BRNG-76-KU    | Guard, Feed Window Ku-band         |
| FTST          | Feed System Testing                |
| TK-MAN-LG     | Tool Kit, Large Manual Antennas    |
| TK-MOT-LG     | Tool Kit, Large Motorized Antennas |

| Environment Systems Options |                                      |
|-----------------------------|--------------------------------------|
| PDKU-94-208                 | Precipitation Deviator, 208/230 VAC. |
| PDKU-94-380                 | Precipitation Deviator, 380/415 VAC. |

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Request A Quote