

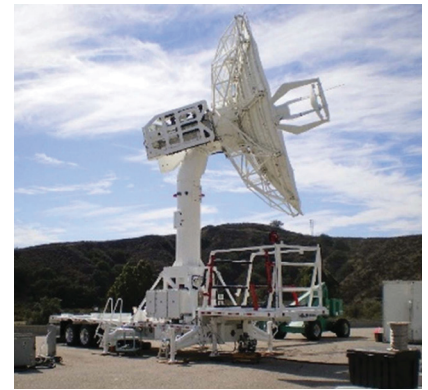


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7.3 METER REMOTE TRACKING SYSTEM (RTS)

Telemetry tracking and control (TT&C) antenna

RTS is designed to be a transportable, full-motion satellite TT&C antenna with S-band receive and L- and S-band transmit capabilities. The complete antenna system is trailer mounted for air transport on a C-17 or larger aircraft. Once on site, the system can be assembled and deployed by four technicians without external erection equipment. Full operational readiness can be achieved in less than 24 hours of arrival on site.

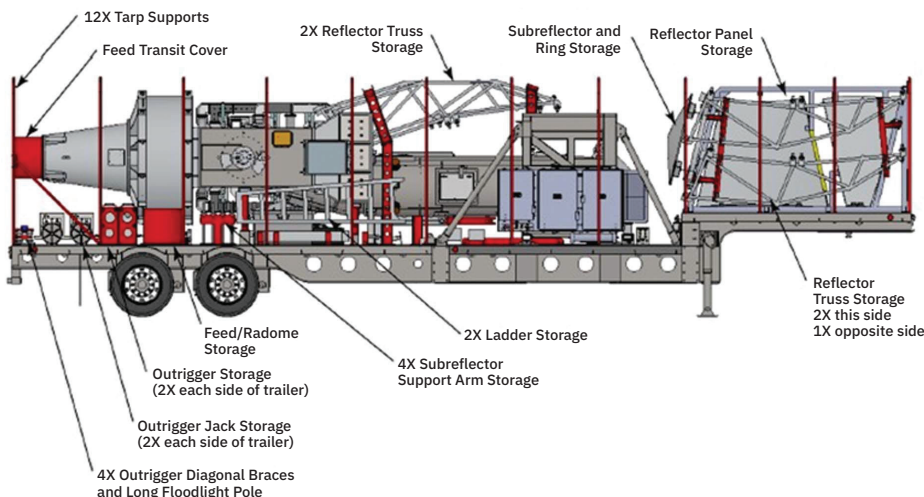


S-BAND RECEIVE/TRACKING SYSTEM

Type	Single channel monopulse (SCM)
Frequency range	2200 – 2300 MHz
Polarization	Selectable RHCP/LHCP (RHCP default)
System G/T	21.0 dB/K (min.) data chan./18.7 dB/K track chan. @ 5° elevation, clear sky
Beamwidth	1.08 deg nominal
Antenna gain	42.1 dBi @ LNA input
Axial ratio	1.5 dB maximum on beam peak, 2.5 dB maximum at -3 dB points
First sidelobe level	-12 dBp maximum

TRANSMIT

SSPA power capacity	2 kW CW (output)
L-Band gain	39.0 dBi (1750 – 1850 MHz) @ pedestal base
S-Band gain	40.4 dBi (2025 – 2120 MHz) @ pedestal base
Beamwidth	1.34 deg @ L-Band, 1.17 deg @ S-Band nominal
Polarization	Selectable RHCP/LHCP (RHCP default)
Axial ratio	2.0 dB maximum on beam peak
First sidelobe level	-12 dBp maximum
VSWR	2.0:1 maximum @ pedestal base



KEY FEATURES

- > Mission proven
- > Quick deployment
- > Precision monopulse tracking
- > 10 kilowatt transmit power capacity
- > C-17 or larger aircraft transportable
- > Satellite Control Network (SCN)
RTS Block Change (RBC) interface

KEY CHARACTERISTICS	SPECIFICATION
Pedestal type	Dual opposing drive, elevation over azimuth over 15-degree tilted third axis
Velocity	Azimuth: 17 deg/sec nominal Elevation: 7.5 deg/sec nominal Third Axis: 5 deg/sec nominal
Acceleration	Azimuth: 17 deg/sec nominal Elevation: 7.5 deg/sec nominal Third Axis: 5 deg/sec nominal
Azimuth travel	±275 deg software pre-limit, ± 275.5 software final limit, ±277 deg electrical final limit (nominal)
Elevation travel	0 to +180 deg servo -1 to +181 deg electrical (nominal) -5 to +185 deg mechanical (nominal buffer contact)
Third axis travel	±180 deg servo, ±185 deg electrical (nominal)
Tilt axis	15 deg from vertical
Backlash	All axes: zero (dual drive configuration)
Position transducers/data packs	1- & 32-speed resolver (resolution = 0.001 deg) Limit switch assembly Cable wrap potentiometer (AZ and TA)
Power requirements: antenna subsystem	120/208 VAC, 3-phase, 60 Hz, 20 KVA peak
Temperature	-40 to +50 deg C (operation and survival)
Relative humidity	to 100%, condensing
Wind (operate)	60 mph
Drive to stow position	65 mph (operational stow position)
Survive	130 mph (low-profile stow position)
Antenna System Controller (ASC) Configuration	PC-based with Red Hat Enterprise Linux (RHEL) version 7 operating system
ASC functions	Control/status communication with system controller position Position control of all three axes Control and monitoring of antenna function and status Mode control Autotrack processing Fault status detection, monitoring, and reporting
Dual drive servo amplifiers configuration (2 per axis)	Dual-opposed brushless servo drives Automatic control for single motor operation Continuous current: 25 amps RMS per motor Peak current: 2x rated current for 2 seconds Current limiting provides safe motor operation at all velocities

7.3 Meter Remote Tracking System (RTS)

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