



HR6400 RF Subsystem for Airborne Internet



Keeping you connected, no matter where you fly.

The performance you need in the smallest possible footprint.

HR6400 RF Subsystem for Airborne Internet



The AeroSat HR6400 is the only airborne antenna designed to be ITU compliant. All sidelobes are kept within 3 dB of the Geostationary satellite orbit mask, plane of the horizon mask (outside the main beam) and the off-axis cross-polarization mask defined in 47 CFR CH. 1 part 25.209 for polarization skew angles up to 15 degrees.

The mechanically pointed antenna design allows for full continuous motion in azimuth and -10 to +90 degree motion in elevation providing full reception performance during maneuvers at northern latitudes.

The HR 6400 uses our existing certificated radome installations, already flying on over 20 different aircraft types.

ITU Compliant Airborne Communications

FLIGHT TESTED
COMMENCING FULL-RATE PRODUCTION



Keeping you connected, no matter where you fly.

HR6400 RF Subsystem

High Power Transceiver

Transmit:

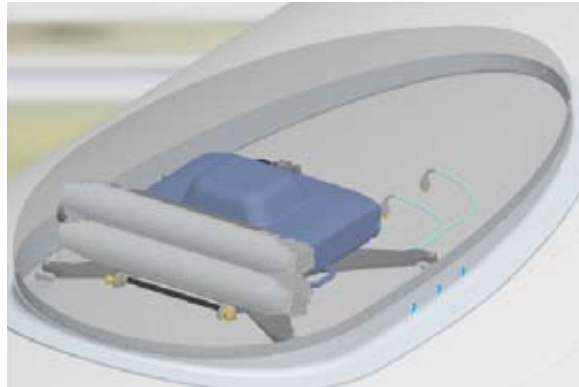
Small Signal Gain	51 dB
Gain Variation	±1.5 dB max over full band (500MHz)
	±0.5 dB max over any 36 MHz
Gain Stability	±1.0 dB
	-40° C to +55° C
Output frequency range	14.00 GHz to 14.50 GHz
Input frequency range	950 MHz to 2150 MHz
VSWR (input and output)	1.65:1 max
Spurious Response	In-band -60dBc
Power Out	+42.5 dBm minimum (20 Watts)

Receive:

Small Signal Gain	17 dB
Gain Variation	±1.5 dB max over full band (500MHz)
	±0.5 dB max over any 36 MHz
Gain Stability	±1.0 dB
	-40° C to +55° C
Input frequency range	10.70 GHz to 12.75 GHz
Output frequency range	950 MHz to 2150 MHz

Transceiver:

Power Supply	115 V AC (360 Hz to 800 Hz)
Operating Temperature (baseplate)	-40°C to +85°C
Mean Time Between Failure	20,000 Hours
Designed to	RTCA/DO-178B and RTCA/DO-160E
Weight	<20 Lbs.
Size	19.3" x 2.5" x 15.0"



The HR6400 RF subsystem is composed of five Line Replaceable Units. The externally mounted Radome, Radome Attachment Ring, and Antenna (Fuselage Mounted Unit), and the internally mounted Antenna Control Unit (ACU) and High Power Transceiver (HPT).

Antenna and Control Unit

Power ² :	<75 Watts on average
Temperature:	-55° to +70°
Mean Time Between Failure:	30,000 Hours
Certified to:	
Hardware	RTCA/DO-160E
Software	RTCA/DO-178B (Level E)
Control Interface:	Ethernet
Navigation Interface:	ARINC 429
Modes of Operation:	Pointing, BIT, Stowage, Maintenance

Antenna and Control Unit

Antenna Gain:	30.7 dBi @ 10.7 GHz
	32.3 dBi @ 12.7 GHz
	33.0 dBi @ 14.0 GHz
	33.3 dBi @ 14.5 GHz
EIRP ¹ :	42.5 dBW
G/T (25°K Sky Temperature):	11.2 dB/K @ 10.7 GHz
	12.7 dB/K @ 12.7 GHz
Receive Frequency of Operation:	10.7 GHz to 12.75 GHz
Transmit Frequency of Operation:	14.0 GHz to 14.5 GHz
Polarization:	Linear Orthogonal Tx/Rx
Cross Polarization Rejection:	20 dB
Polarization Control:	45°±60°
Antenna Element Type:	2 rows of 32, 3.4 x .75 inch horns with lenses
Field of View:	
Azimuth (continuous):	360°
Elevation:	+90° to -10°
Pointing Accuracy:	
Azimuth:	0.2°
Elevation:	0.4°
Polarization:	2.0°
Roll, Pitch, Yaw Rates of Change	7.0° / Second
Roll, Pitch, Yaw Acceleration	7.0° / Second / Second
Weight:	
Antenna	58 Lbs.
Control Electronics	17 Lbs.
Solid of Revolution:	Diameter: <32.5"
	Height: <7.5"

¹ With 20 Watt power amplifier

² Not including power amplifier



Keeping you connected, no matter where you fly.