Functions	Requirement ID	Capabilities	Details
Ku-Band Receive Polarization	GRS REC.1540	Ku-band Receive VSWR	The VSWR at receive Port 1 and receive Port 2 shall not exceed 1.3:1 over the receive frequency band as measured at the antenna interface point
Ku-Band Low Noise Amplifier (LNA)	GRS REC.1600	LNA Configuration	The LNA configuration shall be a Line Replaceable Unit (LRU)
	GRS REC.1610.a	LNA Gain	50 dB minimum
	GRS REC.1610.b	LNA Noise Temperature	65K maximum
	GRS REC.1610.c	LNA input waveguide VSWR	1 : 1.25
	GRS REC.1610.e	LNA Test Inject	30 dB couplers on waveguide inputs (2 ea.) into both Horizontal and Vertical receive channels
	GRS REC.1610.f	P1dB	>15 dBm
	GRS REC.1610.g	OIP3	>25 dBm
	GRS REC.1670	Phase Matching	The Data and Tracking Channel LNAs shall be phase matched to +/-10 degrees
Ku-Band Receive Channel Performance	GRS REC.1810	Gain Slope	The gain slope over the reference bandwidth for each receive channel shall be as specified in Table 2-2
	GRS REC.1820	Gain Stability	The peak gain variation for the antenna assembly at the output of the LNA shall not exceed the following values: 1. Time at Constant Temperature ±0.10 dB/hour ±0.20 dB/24 hours ±1.0 dB/month 2. Temperature ±0.6 dB/full temperature range specified in GRS REC.6022 ±0.5 dB/20°F temperature range within the range specified in GRS REC.6022
	GRS REC.1830	Receive Peak-to-Peak Amplitude Ripple	The peak-to-peak amplitude ripple of the receive channels over the reference bandwidths shall not exceed the values given in Table 2-2. The MA requirement shall be met in a channel bandwidth of 4.2 MHz anywhere in the overall MA band pass in each of the 2 receive paths through the LNA assembly
	GRS REC.1840	Ku-band Receive Phase Deviation	The Ku-band antenna Ku-band phase deviation is defined in Table 2-2. The MA requirement is over any 4.2 MHz reference bandwidth in the MA frequency range
	GRS REC.1850	Ku-band Receive Phase Deviation From Linear	The receive peak-to-peak deviation from linear phase from the aperture through the Ku-band LNA to the IFL interface over the service bandwidths shall not exceed the values given in Table 2-2. The MA service requirements shall be met over the MA service bandwidth
	GRS REC.1860	Ku-band Range and Range Rate Phase Drift	The phase drift of the antenna Ku-band receive channels shall not exceed 1.9° RMS in one second for spectral components below 2 kHz.
	GRS REC.1870	Ku-band Receive AM to PM Conversion	AM to PM conversion with the specified input signal levels through the Ku-band LNA Assembly to the antenna interface point shall not exceed 0.5°/dB
Environmental Specifications	GRS REC.6020	Ambient Temperature	The antenna system equipment located in a non-controlled environment shall operate over the ambient temperature range of –12°C to 55°C (10° to 130°F).
Safety	GRS REC.7210	Surface Temperature	All antenna system equipment capable of exceeding 51.1 C (124 degrees F) at their surface shall be guarded to prevent inadvertent contact.