

Ku-Band Transceiver



Technical Specifications

Transmit Path

Model	300W	400W	500W
P1dB min. (dBm)	+54	+55	+56
Gain min @ max. gain set (dB)	75	76	77
Power Consumption	2800W	3000W	4000W
Unit Weight	80 Kg (176lbs)		
Dimensions (L x W x H)	39.00" x 18.50" x 12.10" (99.00 x 47.00 x 30.70 cm)		

Transmit Path

IF Input		RF Output	
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	Frequency range (Non-inverting)	14.00 – 14.50 GHz 13.75 – 14.50 GHz (optional)
Input Connector	Type N female	Output connector	WR 75
Input Return Loss	18 dB / 50 Ω	Output Return Loss	20 dB (18 dB for coaxial output)
Gain Specification		Third order IMD (2 tones 5 MHz apart)	-25 dBc max at 3dB total back-off from rated P1dB
Gain control range	20 dB (0.1 dB step size)	Spurious (in band)	-55 dBc max
Gain flatness	3.0 dB p-p max over 36 MHz	Noise Power Density	-70 dBm/Hz max in TX band -135 dBm/Hz max in 10.95 – 12.75 GHz in RX band
Gain stability	3.0 dB p-p max over temp. range		

Receive Path

RF Input		Gain Specification	
RF Input Frequency	10.95 – 12.75 GHz * Field selectable bands	Gain (LNB + Receiver)	80 dB @ max gain set
Bands	1) 10.95 – 11.70 GHz 2) 11.70-12.20 GHz 3) 12.25-12.75 GHz	Gain control range	20 dB (0.1 dB step size)
RF Input Interface	WR75	Gain flatness	±2.5 dB max over full RF band
Input VSWR	2.5:1	Gain stability	±3.0 dB max over temp. range
		Spurious	-55 dBc
		Image Rejection	50 dB
IF Output		LNB Parameters	
Frequency range	70 ± 18 MHz (140 ± 36 MHz optional)	LNB type	Phase locked to 10 MHz ref. (from Transceiver via cox. cable)
Output Level	+10 dBm	Noise Temperature	65°K
Output Connector	Type N female / 50 Ω	L-band Output Frequency	950-1750 MHz
Output Return Loss	18 dB/50 Ω	L-band Output Interface	Type N female 50 Ω
		Conversion Gain	60 dB
		DC power	12±18V DC (via coaxial cable)
		LNA Parameters (optional)	
		Noise Temperature	85°K
		Output Interface	Type N female 50 Ω
		Gain	60 dB
		DC Power	12±18V DC (via coaxial cable)

Common Parameters (Tx & Rx)

Synthesizer step size		Environmental	
Synthesizer step size	1 MHz (option 125 KHz)	Cooling	Forced Air
Frequency Stability		Operational	-30°C to +55°C standard (-40°C to +55°C option)
± 2 x 10 ⁻⁸ over 0°C to +50°C	± 2 x 10 ⁻¹⁰ / day	Storage	-55°C to +85°C
Aging	± 5 x 10 ⁻⁸ / year	Humidity	Up to 100% condensing
Phase Noise	(With internal 10MHz reference)	Altitude	3,000 m AMSL (derated 2°C/300m)
Offset frequency	Phase noise (max)	Power Requirements	
100 Hz	-60 dBc/Hz	AC input voltage	220 VAC (47-63 Hz)
1000 Hz	-70 dBc/Hz	AC Connector	MS3102R20-19P
10 KHz	-80 dBc/Hz	Mechanical	
100 KHz	-90 dBc/Hz	Dimensions	See Table above
Monitor & Control		Packaging	Weatherproof for outdoor use
Serial port (RS-485)	MS3112E10-6P		
Serial port (RS-232)	MS3112E10-6P		
Redundancy Port	MS3112E16-26P		
Discrete Port	MS3112E12-10P		

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