

**PRODUCT
SPECIFICATIONS**



This unique and innovative design combines the BUC, PLL LNB, OMT and TRF units into one sealed (IP67 rated) housing.



XR13F16 Transceiver Series

Andrew Corporation has developed the 3 watt Ku-band integrated transceiver. This unique and innovative design combines the BUC, PLL LNB, OMT and TRF units into one sealed (IP67 rated) housing.

This RoHS compliant transceiver is cost, weight and thermally efficient, installs easily and offers 100,000 hours MTBF at 55°C ambient (50% day/night). Weighing in at 1600 g (3.53 lb), this transceiver is compatible with lower cost Class I antennas and enables a fast and reliable installation.

The high efficiency transmitter (including upconverter) utilizes PHEMT MMICs and meets EN301428 spur requirements with a 49 dBi (2.4 m) antenna. Utilizing a dual-loop design, the transmitter PLL delivers high immunity to modem noise and spurious.

The receive side supports the full Ku-receive band, with a range of internal reference derived stabilities (50 ppm standard, 10 ppm and 3 ppm available) or configured for external 10 MHz reference.

All Andrew transceivers are either Eutelsat type approved or have type approval pending.

- All materials comply with EU directive No. 2002/95/EC (RoHS).
- Integrated OMT guarantees transmit power and noise figure
- Fully integrated housing
- Fast and easy installation
- Engineered and designed in Germany

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Polarization Diplexer (OMT)

Parameter		Minimum	Typical	Maximum	Unit	Note
XPD on Common Port	Tx	35	40		dB	
	Rx	30				
Common Port Connector			C120			18.5 mm Circular-WG Flange (Not Grooved)

Rx Sub-System (LNB)

Parameter		Minimum	Typical	Maximum	Unit	Note	
RF Input Frequency Range	Low Band	10.70		11.70	GHz		
	High Band	11.70		12.75	GHz		
IF Output Frequency Range	Low Band	950		1950	MHz		
	High Band	1100		2150	MHz		
Local Oscillator Frequency, Nominal	Low Band		9.75		GHz		
	High Band		10.60		GHz		
Local Oscillator Frequency Tolerance	XR13F16			±50	ppm	Dependent on External 10 MHz Reference	
	XR13F16Z			±10	ppm		
	XR13F16S			±3	ppm		
	XR13F16X			—	ppm		
Local Oscillator Phase Noise (SSB)	@ 1 kHz			-60	dBc/Hz		
	@ 10 kHz			-80	dBc/Hz		
	@ 100 kHz			-100	dBc/Hz		
Noise Figure @ 25°C		0.9	1.3	dB		Tx On (Carrier On or Off)	
Equivalent Noise Temperature			69	104	K		Tx On (Carrier On or Off)
RF Input Return Loss		3			dB		On Common OMT Port
Conversion Gain		50	56	62	dB		
	In-band Variation			6	dB		Max-Min
	In-band Segment Variation Any 36 MHz			1.5	dB		Max-Min
Image Band Rejection		60	80		dB		
IF Output IP3		+10			dBm		
IF Output Spurious	C/No In-band			60	dBHz		Tx On, Carrier On
	C, Out-of-band/100 kHz			-25	dBm		Tx On, Carrier On
IF Output Spectrum Inversion			No				
IF Output Impedance			75		Ohm		
IF Output Return Loss		8			dB		
IF Output Connector							F-type Receptacle
Supply Voltage/22 kHz Tone Band Switch Control							acc. EN61319
	Low Band Selected	9.0		14.0	V		
	High Band Selected	16.0		25.0	V		
	Low Band Selected	0		100	mV		18-26 kHz; 5-15 µs slope; 40-60%
	High Band Selected	400	600	800	mV		18-26 kHz; 5-15 µs slope; 40-60%
Supply Current			150	180	mA		

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Tx Sub-System (BUC with External Ref.)

Parameter	Minimum	Typical	Maximum	Unit	Note	
IF Input Frequency Range	950		1450	MHz		
RF Output Frequency Range	14.00		14.50	GHz		
Local Oscillator Frequency (Nominal)	13.05	13.05	13.05	GHz		
Deviation within Operational Conditions and Lifetime			—	ppm	Dependent on External Reference	
Local Oscillator External Reference Input	Frequency (Nominal)	10		MHz	Sine Wave, Capture Range ± 15 ppm	
	Input Level	-10	0	5		dBm
	Return Loss	-10				dB
RF Output Power	Linear Service -1 dB Gain P1dB	34.5		dBm	on OMT Common Port	
	Including Variation Over Frequency, Temp. and Lifetime	33.5		dBm		
RF Output Return Loss	8			dB	Linear Operation	
IF Input Drive Power	Nominal Operation		-19	dBm		
	No Damage Level	+5		dBm		
IF input Impedance (Nominal)		75		Ohm		
IF Input Return Loss	10			dB		
IF Input Connector					F-type Receptacle	
Conversion Gain, Linear Operation		50	53	56	dB	
	In-Band-Segment Variation (any 2 MHz Segment)			0.5	dB	Maximum-Minimum
Supply Voltage	15		30	V		
Supply Current		1.0	1.3	A	24 V, After Inrush, Carrier On	

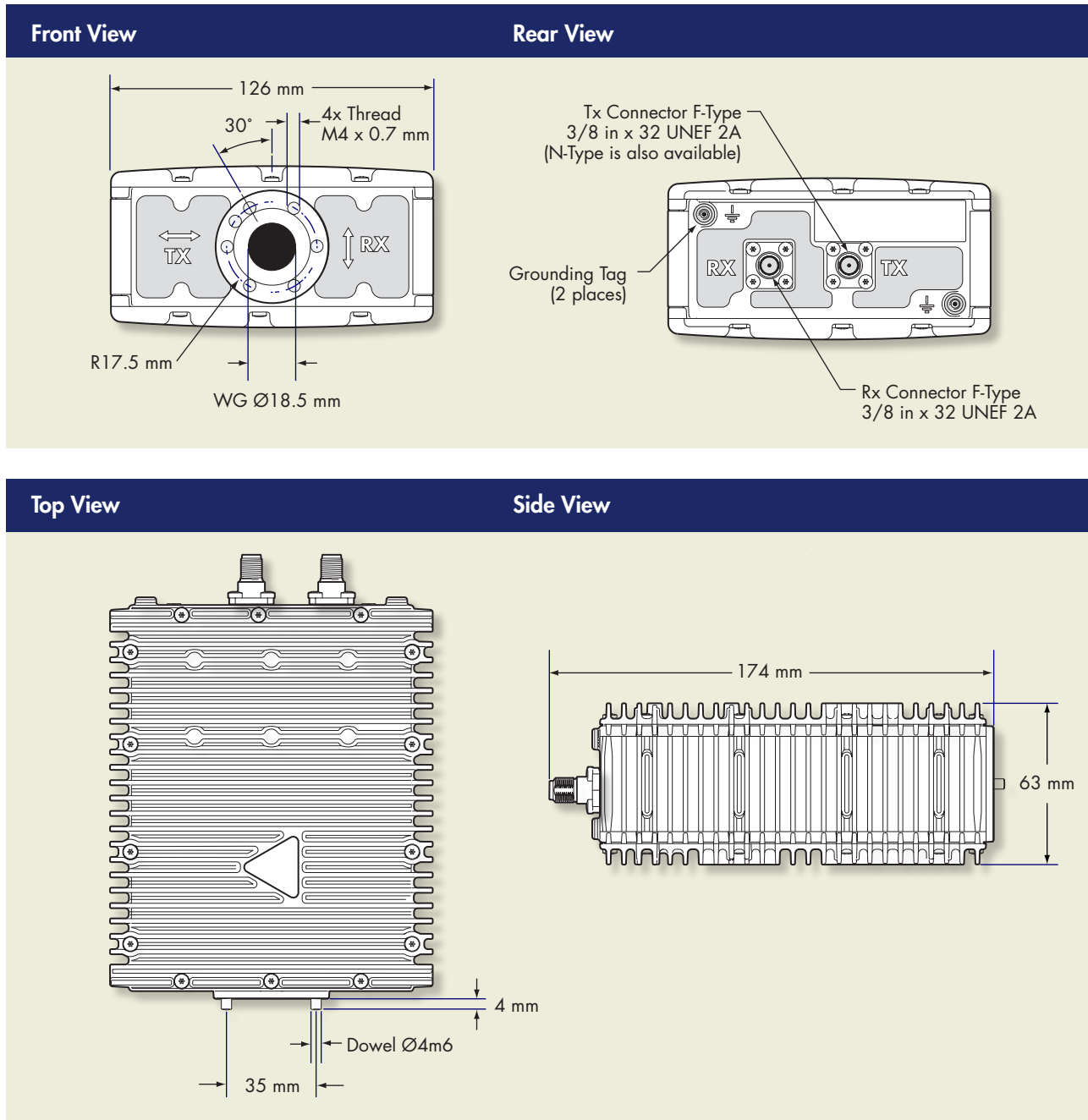
General Specifications

Parameter	Minimum	Typical	Maximum	Unit	Note
Weight			1600	g	Radio Module without Feed
Operating Temperature	-40		55	°C	
Moisture/Humidity Protection					IP67

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Mechanical Specifications



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