

HRT-18G FIBER-OPTIC TRANSMITTER



50 MHz to 18 GHz



FEATURES

- 50 MHz to 18 GHz frequency range
- -40°C to +85°C operating temperature
- Small size
- Plug-and-play
- No external circuits required
- Field-removable optical attenuator for high-loss installations
- Monitors for optical carrier and laser temperature

APPLICATIONS

- Antenna remoting
- Military, shipboard
- Local oscillator remoting
- Interfacility communication links
- Wideband fiber-optic delay lines

The Narda-MITEQ HRT series of fiber-optic transmitters is designed to be a high-reliability, wideband, high dynamic range product from its initial concept. Some features that contribute to its reliability are:

- Hermetically sealed KOVAR housing
- Oversized thermo-electric cooler to maintain laser stability over a wide temperature range
- Internal voltage regulation and reverse polarity protection
- RFI-shielded
- Field-proven microelectronic circuits and assembly techniques

The HRT series transmitters are for use with single-mode optical fiber to create communication and data links that are secure and provide end-to-end isolation from damaging spikes and surges.



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ELECTRICAL SPECIFICATIONS

PARAMETERS	CONDITION	UNITS	MINIMUM	TYPICAL	MAXIMUM
Operating Frequency	3 dB bandwidth		50 MHz		18 GHz
Gain (electrical to optical)		dB	10	14	20
Flatness		dB, peak-to-peak			4
Noise Figure		dB		22	25
Group Delay	Peak-to-peak	ns		0.12	0.2
VSWR	Input			1.7	2.0
Phase Noise	100 Hz offset	dBc/Hz			-100
Input Power at 1 dB Compression		dBm	-15	-10	
Maximum Input Power	No damage	dBm			+10
Impedance	Input	Ohms		50	
RF Connector Type	SMA female (male optional)				

Note: Performance is specified at 23 °C, with one meter of fiber.

OPTICAL SPECIFICATIONS

PARAMETERS	CONDITION	UNITS	MINIMUM	TYPICAL	MAXIMUM
Wavelength (other options available)		nm	1300	1310	1320
Spectral Width	FWHM	nm		0.06	0.1
Optical Power in Fiber	See note	mW	5	7	10
Side-mode Suppression Ratio		dB	30	40	
Optical Connector Type	FC/APC standard, other styles on request				
Optical Fiber	Single-mode, SMF-28 or equivalent				

Note: Units are shipped with a 3 dB optical attenuator installed. This attenuator may be removed by the customer to overcome excess fiber loss. However, take care not to saturate the receiver.

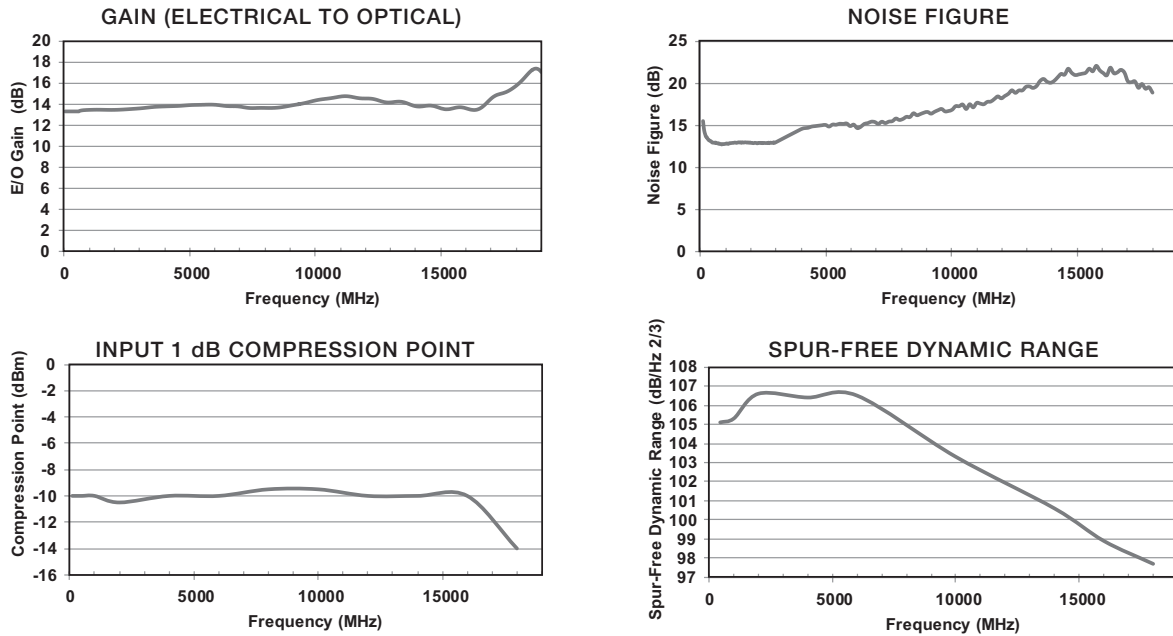
POWER SUPPLY AND MONITOR

PIN	DESCRIPTION	VOLTAGE (VDC)			TYPICAL CURRENT (A)	NOTE
		MIN	NOM	MAX		
1	Laser Diode Cooler	3	4	6	0.250	Current increases with case temperature up to 1.2 A
2	Laser Temperature Monitor	-0.5		+0.5		< -0.5 V indicates laser temperature is too high
3	Optical Power Monitor	-2.5	-2.0	-1.5		
4	Ground, Chassis					
5	Laser and Amplifier Bias	+11	+12	+15	0.39	
6	Laser Diode Heater	-15	-12	-11	0.01 (0.7 A maximum)	Current will increase as case temperature goes below approximately 5 °C

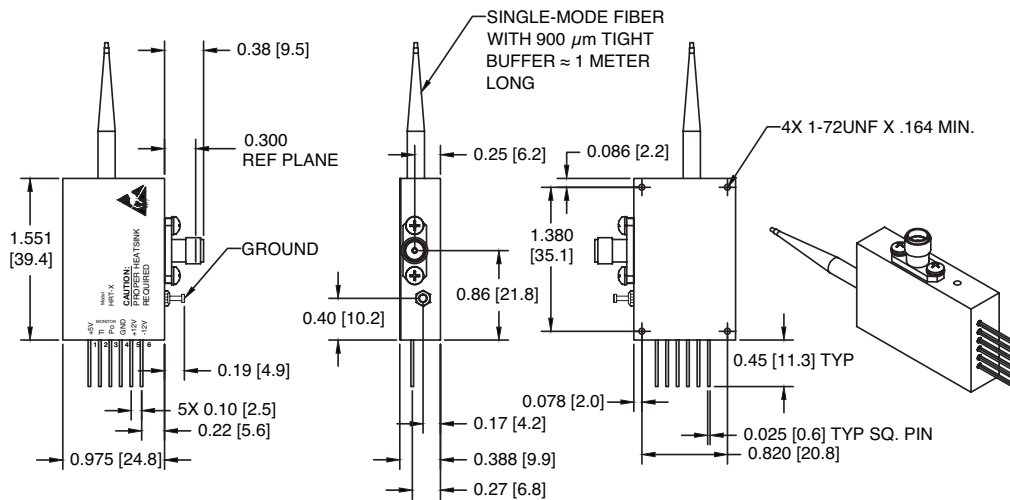
Notes: Values with 25 °C baseplate temperature.

The +5 V supply connection does not have an internal voltage regulator or reverse polarity protection in order to lower heat dissipation due to the potential high current this connection can draw to supply the laser cooler.

TYPICAL TEST DATA



TRANSMITTER OUTLINE DRAWING

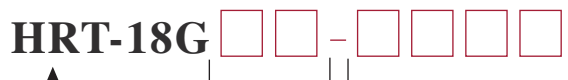


Notes: Dimensions shown are in inches and those shown in brackets [] are in millimeters.
Unit weight is approximately 65 grams.

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ORDERING INFORMATION

Specify by part number: HRT-



Standard Model Number

Specify Optical Connector (see chart)

Specify Optical Wavelength (see chart)

OPTICAL CONNECTOR CHART

DESIRED CONNECTOR	PART NUMBER POST FIX
FC/APC	standard (omit post fix)
SC/APC	-SA
SC/PC	-SC
ST/PC	-ST
E2000/APC	-EA
LC/APC	-LA
LC/PC	-LC

WAVELENGTH CHART

DESIRED WAVELENGTH	PART NUMBER POST FIX
1310 nm	standard (omit post fix)
1550 nm	-1550

Note: Other wavelengths available as special order.

ENCLOSURES



Enclosures are available for multiple transmitter or receiver combinations.

The material presented in this datasheet was current at the time of publication. Narda-MITEQ's continuing product improvement program makes it necessary to reserve the right to change our mechanical and electrical specifications without notice. If either of these parameters is critical, please contact the factory to verify that the information is current.

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