

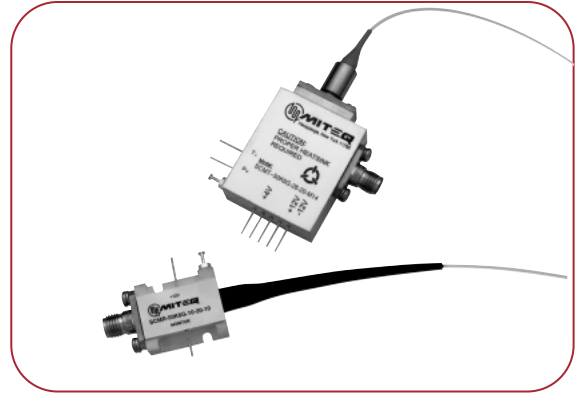
50 kHz - 6 GHz SCM FIBER OPTIC LINK

FEATURES

- Bandwidth 50 kHz to 6 GHz
- Small size
- No external control circuits required
- Transimpedance amplifier in both transmitter and receiver

APPLICATIONS

- Antenna remoting
- Local oscillator remoting
- Interfacility communication links



ELECTRICAL SPECIFICATIONS

PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Operating frequency	3 dB bandwidth		50 kHz		6 GHz
Gain		dB	10	18	25
Noise figure		dB		12	20
Group delay	Peak-to-peak	ns		0.1	0.2
VSWR	Input/output				2:1
Phase noise	100 Hz offset	dBc	100		
Input power at 1 dB compression		dBm	-14	-13	
Spurious-free dynamic range	1 Hz bandwidth	dB/Hz ^{2/3}	100	103	
Maximum input power	No damage	dBm			+10
Maximum output power	Saturated	dBm			+10
Impedance	Input/output	Ohms		50	
RF connectors	SMA female (male optional)				

NOTE: -30 dBm input power, 1m of fiber.

OPTICAL PERFORMANCE SPECIFICATIONS

PARAMETERS	CONDITION	UNITS	MIN.	TYP.	MAX.
Fiber optic connectors	FC/APC (Other standard available)				
Fiber	Single mode fiber (9/125 μ m)				
Wavelength		nm	1530	1550	1560
Spectral width	FWHM	nm		0.06	0.1
Optical power in fiber	Reference only	mW	3	5	9
Side mode suppression ratio		dB	30	40	

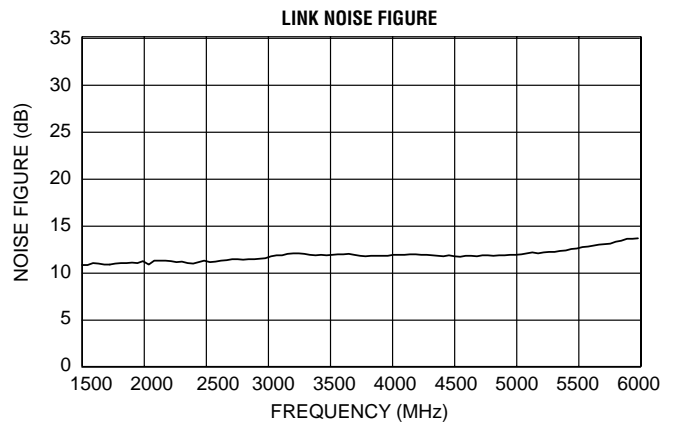
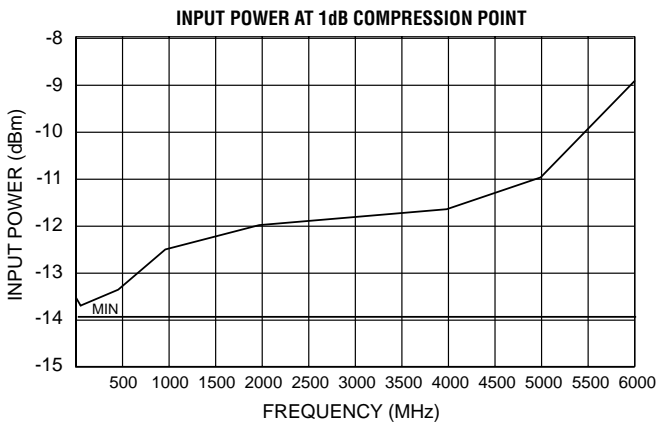
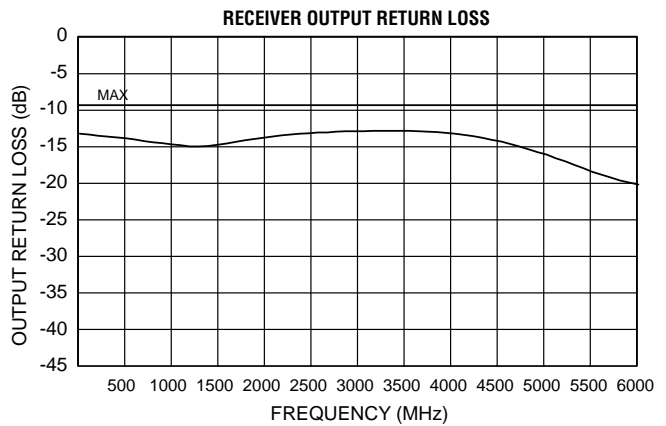
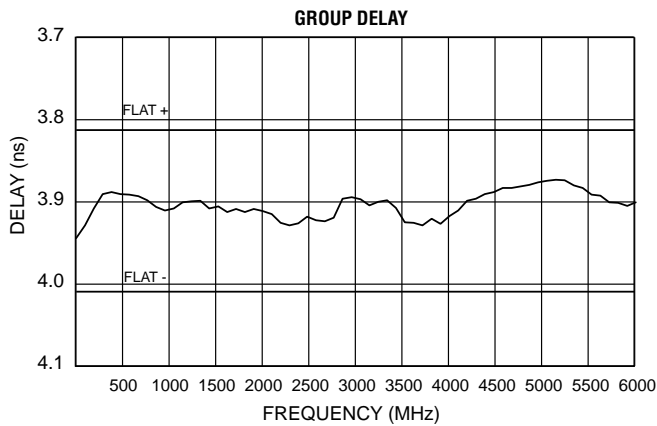
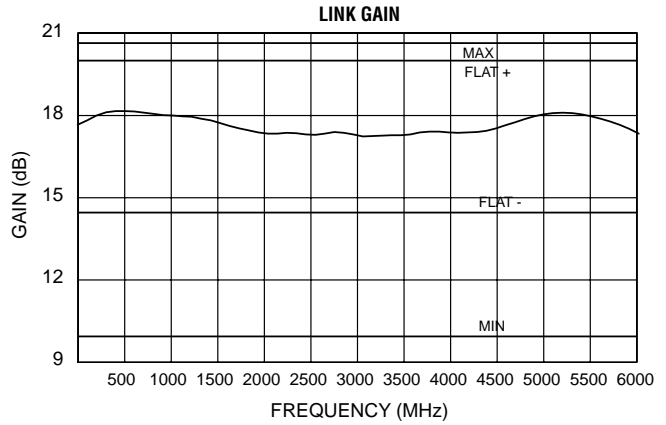
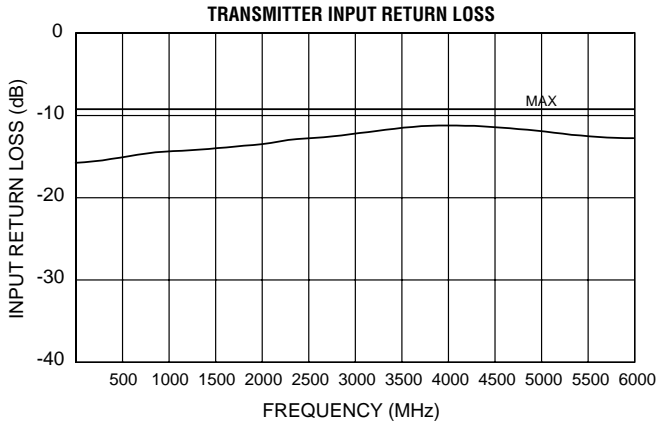
POWER REQUIREMENTS

PARAMETERS	CURRENT @ 25°C BASE PLATE	UNITS	MIN.	TYP.	MAX.
Transmitter	200 mA, 250 mA (max.)	4	(VDC)	(VDC)	(VDC)
	105 mA, 300 mA (max.)*	5	+11	+12	+15
	325** mA	1	-11	-12	-15
Receiver	100 mA	1	+3	+4	+6
		4	+11	+12	+15

* At low case temperatures, < 5°C, the laser cooler switches to heat mode and will exceed 105 mA typical current.

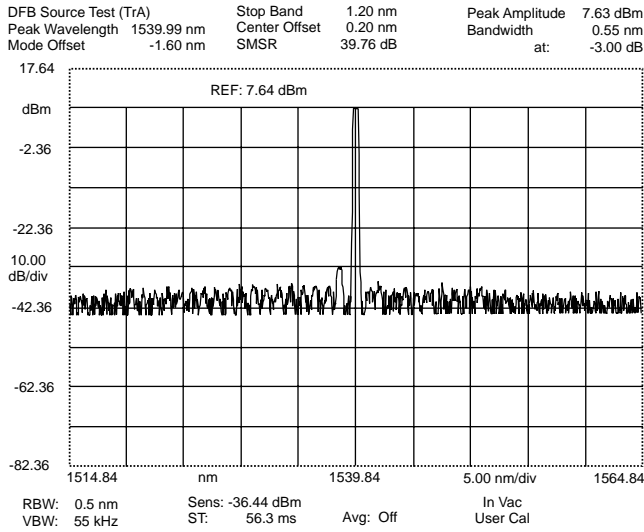
** 1.2 A at maximum laser cooling.

TYPICAL TEST DATA

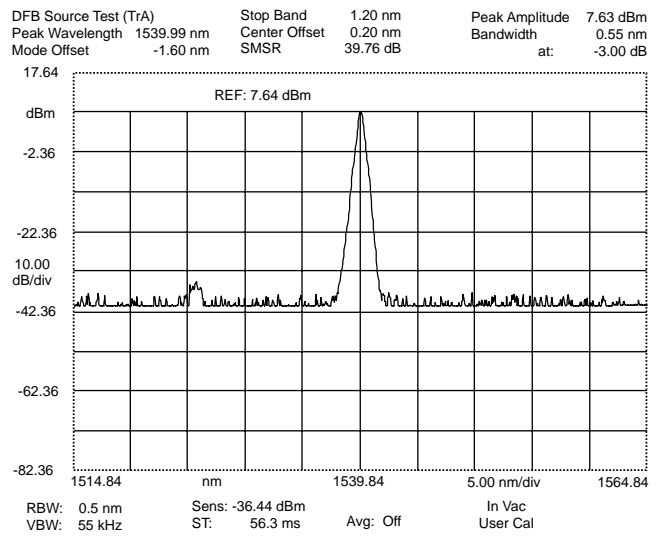


TYPICAL TEST DATA (CONT.)

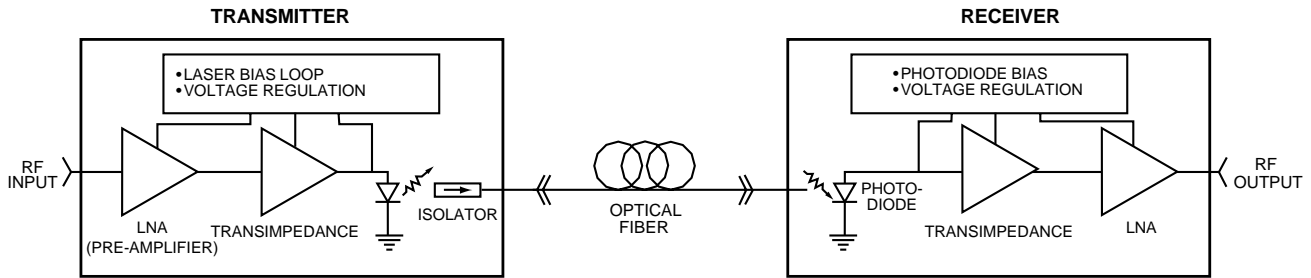
**TRANSMITTER SPECTRUM
50 nM SPAN**



**TRANSMITTER SPECTRUM
5 nM SPAN**



BLOCK DIAGRAM



ORDERING INFORMATION

Transmitter Part number: SCMT-50K6G-28-20-M14

Receiver Part number: SCMR-50K6G-10-20-10

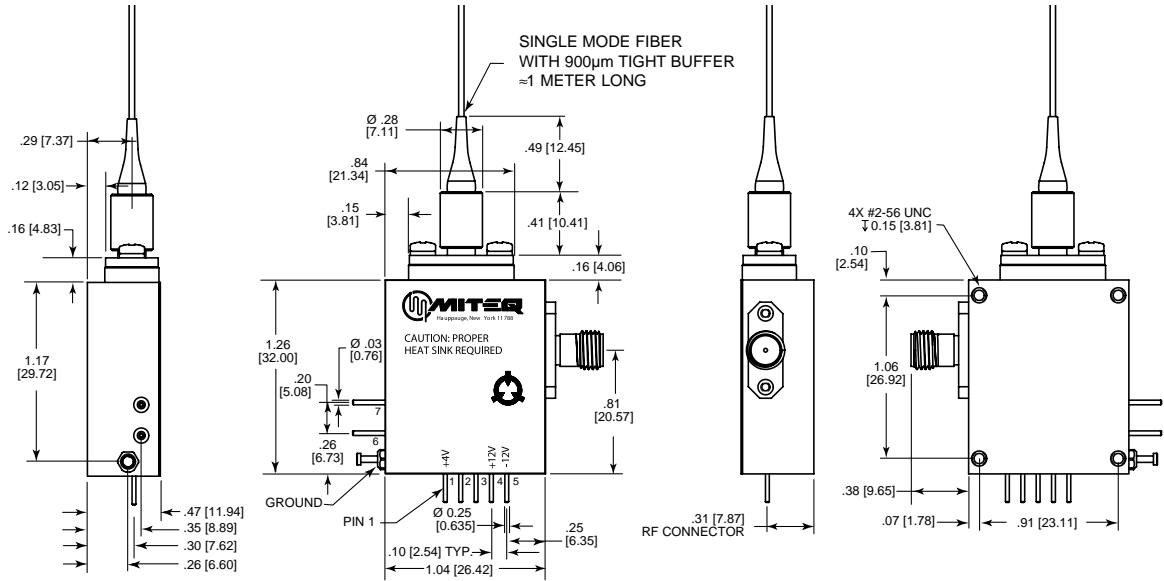
ENVIRONMENTAL CONDITIONS

Operating temperature -20 to +50°C

Storage temperature -40 to +85°C

Humidity..... 95% relative humidity, noncondensing

TRANSMITTER OUTLINE DRAWING



APPLY ALL VOLTAGES SIMULTANEOUSLY, OR IN THE FOLLOWING ORDER:

- +4V
- -12V
- +12V

TRANSMITTER POWER SUPPLY

PIN	VOLTAGE	CURRENT (AMPS)	NOTES
1	+4	0.325	@25°C BASE PLATE TEMP FOR MAXIMUM COOLING
2	-4	1	OPTIONAL (LASER HEATER)
3	N/C		
4	+12	0.2	
5	-12	0.12	

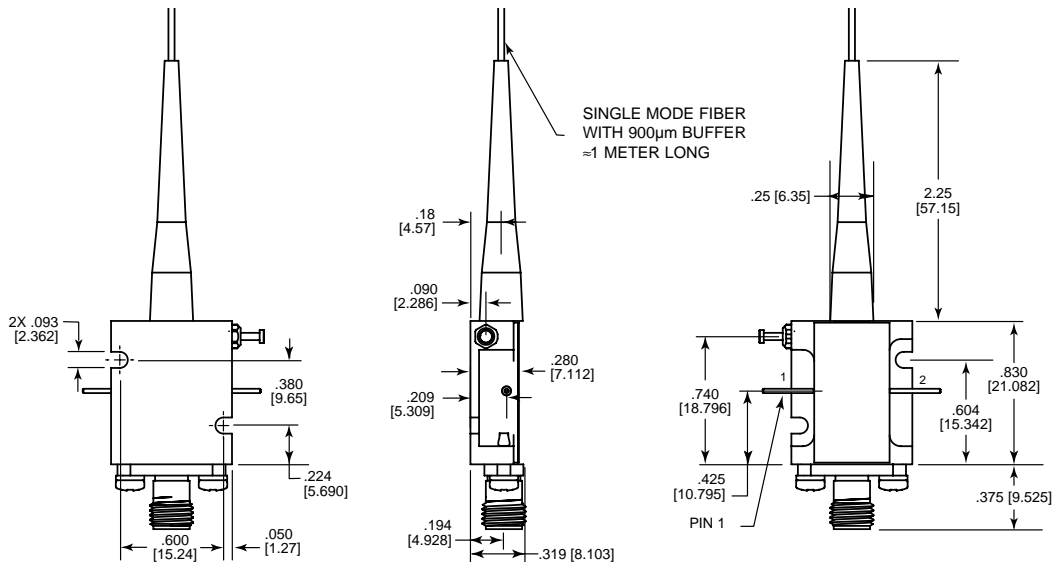
RF CONNECTOR: SMA (FEMALE STANDARD)
 OPTICAL CONNECTOR: FC/APC STANDARD (OTHER STANDARDS AVAILABLE)
 OPTICAL FIBER: 9/125 SINGLE MODE

TRANSMITTER OPERATIONAL STATUS

PIN	DESCRIPTION	NORMAL VOLTAGE	NOTES
6	OPTICAL POWER MONITOR	-2.5 V TO -1.5 V	0 VOLTS INDICATES NO LASER LIGHT
7	LASER TEMP MONITOR	-0.5 V TO +0.5 V	<-0.5 INDICATES HIGH LASER TEMP >+0.5 INDICATES LOW LASER TEMP

NOTE: ALLOW 2 MINUTES FOR LASER TEMP STABILIZATION AFTER APPLYING POWER.

RECEIVER OUTLINE DRAWING



RECEIVER POWER SUPPLY

PIN	VOLTAGE	CURRENT (AMPS)	NOTES
1	PHOTOCURRENT MONITOR		REFER TO "OPERATIONAL STATUS"
2	+12	0.1	

RECEIVER OPERATIONAL STATUS

PIN	DESCRIPTION	NORMAL VOLTAGE	NOTES
1	OPTICAL CARRIER DETECT	> 1.0 UP TO +8	0 VOLTS INDICATES NO CARRIER PRESENT. VOLTAGE INCREASES APPROXIMATELY 1.3 V/mW WITH DETECTED OPTICAL POWER.

RF CONNECTOR: SMA (FEMALE STANDARD)
 OPTICAL CONNECTOR: FC/APC STANDARD (OTHER STANDARDS AVAILABLE)
 OPTICAL FIBER: 9/125 SINGLE MODE

NOTE: DIMENSIONS SHOWN IN BRACKETS [] ARE IN MILLIMETERS.

