



## Features

- 50 MHz – 3000 MHz
- Up to Four Flange-Mount Modules per 1U chassis
- 50 Ohm SMA and 75 Ohm BNC Options
- Variable RF Gains
- LNB Power Options 13 v / 18 v / 22 kHz

## Applications

- TVRO
- Broadcast
- Earth Stations
- Headends
- VSAT
- GPS
- Radios
- Wireless
- Cellular



The 5200 Series 3 GHz Fiber Optic Inter-Facility Link (IFL) is a high-performance, cost-effective alternative to coaxial cable for 50 MHz to 3000 MHz communications applications.

EMCORE's fiber optic IFLs function as transparent RF fiber links. These IFLs eliminate the limitations of copper systems by enabling longer transmission distance while retaining the highest level of signal quality.

In addition, EMCORE's fiber optics provide several other significant network advantages, including simplified network design, ease of installation, and immunity from EMI/RFI and lightning.

## Performance Highlights

Parameter	Minimum	Typical	Maximum	Units
Wavelength	1300	1310	1320	nm
Transmitter Optical Output	-	6	7	dBm
Receiver Optical Input	-25	-	-	dBm
Link Gain @ 1 dB Optical Loss, Max RF Gain	17	22	-	dB
Temperature Range	-20	-	+65	°C
Frequency Range	50	-	3000	MHz

See following pages for complete specifications and conditions.

## Absolute Maximum Ratings

Stresses in excess of the absolute maximum ratings can cause permanent damage to the device. These are absolute stress ratings only. Functional operation of the device is not implied at these or any other conditions in excess of those given in the operational sections of the data sheet. Exposure to absolute maximum ratings for extended periods can adversely affect device reliability.

Parameter	Condition	Min	Max	Units
Operating Temperature		-40	+75	°C
Storage Temperature		-40	+85	°C
Transmitter RF Input		-	0	dBm
Receiver Optical Input		-	7	dBm
DC Voltage		10 (GPS, Tx, Rx)	16 (Tx, Rx)	VDC
Transmitter DC Current (Standard)	10-16 VDC	-	200	mA
	(LNB-ON) 13-16 VDC	-	1,300	
	(GPS) 5 VDC	-	550	
Receiver DC Current (Standard)	10-16 VDC	-	350	mA
	(GPS) 5 VDC	-	450	

## Electrical / Optical Characteristics

Parameter	Condition	Min	Typ	Max	Units
Transmitter Wavelength		1300	-	1320	nm
Transmitter Optical Output Power		-	6	7	dBm
Receiver DC Responsivity		-	0.9	-	A/W
Fiber	Corning SMF-28 or equivalent	-	-	-	-
Connector	SC/APC -- Standard	-	-	-	-
Connector Return Loss		40	-	-	dB

## RF Characteristics, Tx

Parameter	Min	Typ	Max
Tx Gain (TG)*	-5 dB	-2 dB	-
Tx Gain Adjustment	-	-	30 dB
Noise Figure, Max Gain*	-	16 dB	18 dB
Input IP3, Over Temp Range*	4 dBm	6 dBm	-
Gain vs Temperature	-	0.05 dB/°C	-
Amplitude Flatness Full Band	± 1.5 dB		
Return Loss	-10 dB		
Input Impedance	75 Ohm BNC, 50 Ohm SMA		

\*Tested with 1m fiber

## RF Characteristics, Rx

Parameter	Min	Typ	Max
Rx Gain (RG)*	22 dB	24 dB	-
Rx Gain Adjustment	-	-	30 dB
Gain vs Temperature	-	0.05 dB/°C	-
Amplitude Flatness Full Band	± 1.5 dB		
Return Loss	-10 dB		
Output Impedance	75 Ohm BNC, 50 Ohm SMA		

## Link Characteristics, 1 dB Optical

Parameter	Condition	Performance		
		Min	Typical	Max
Link Gain	Max RF Gain	17 dB	22 dB	-
Spurious Free Dynamic Range	Max RF Gain, -20 dBm/tone	-	110 dB-Hz <sup>2/3</sup>	-
Gain vs Temperature		-	0.05 dB/°C	-
Amplitude Flatness Full Band		± 2.0 dB		

## DC Voltage\*

Input Voltage		5 V	10 to 16 V
Transmitter	(Standard)	-	200 mA
	(LNB-ON)	-	1300 mA
	(GPS)	550 mA	-
Receiver	(Standard)	-	350 mA
	(GPS)	450 mA	-

\*Ripple and noise: 100 mVp-p >100 kHz; 200 mVp-p <100 kHz

## Mechanical

Mechanical	Dimensions	Weight
Transmitter / Receiver -- Standard	5.3" X 2.50" X 1.4"	0.90 lbs
	13.46 cm X 6.35 cm X 3.56 cm	0.40 kg
Transmitter / Receiver -- Outdoor	5.3" X 2.50" X 1.9"	0.95 lbs
	13.41 cm X 6.35 cm X 4.83 cm	0.42 kg

## Pin Information

Plug-in D-Sub	Transmitter	Receiver
1	Laser On / Off (0 V = OFF, Open ON)	NC
2	RS-232 Tx (Monitor & Control)	RS-232 Tx (Monitor & Control)
3	RS-232 Rx (Monitor & Control)	RS-232 Rx (Monitor & Control)
4	+10 to +16 VDC	+10 to +16 VDC
5	GND	GND
6	NC	NC
7	Laser bias monitor (1 v = 50 mA)	PD optical level monitor (1 v = 1 mA) (see table below)
8	Open Collector Alarm (see figure below)	Open Collector Alarm (see figure below)
9	Laser RF level monitor (see table below)	RF level output monitor
10	5 VDC (GPS only)	5 VDC (GPS only)
11	NC (reserved for factory)	NC (reserved for factory)
12	NC (reserved for factory)	NC (reserved for factory)
13	NC	NC
14	NC	NC
15	NC	NC

## Transmitter Monitoring

LED Indicator	RF Status	Summary Status
Off	--	No Power
Blink Green	Low	Normal
Green	Normal	Normal
Blink Red	High	Normal
Red	Excessive High	Alarm

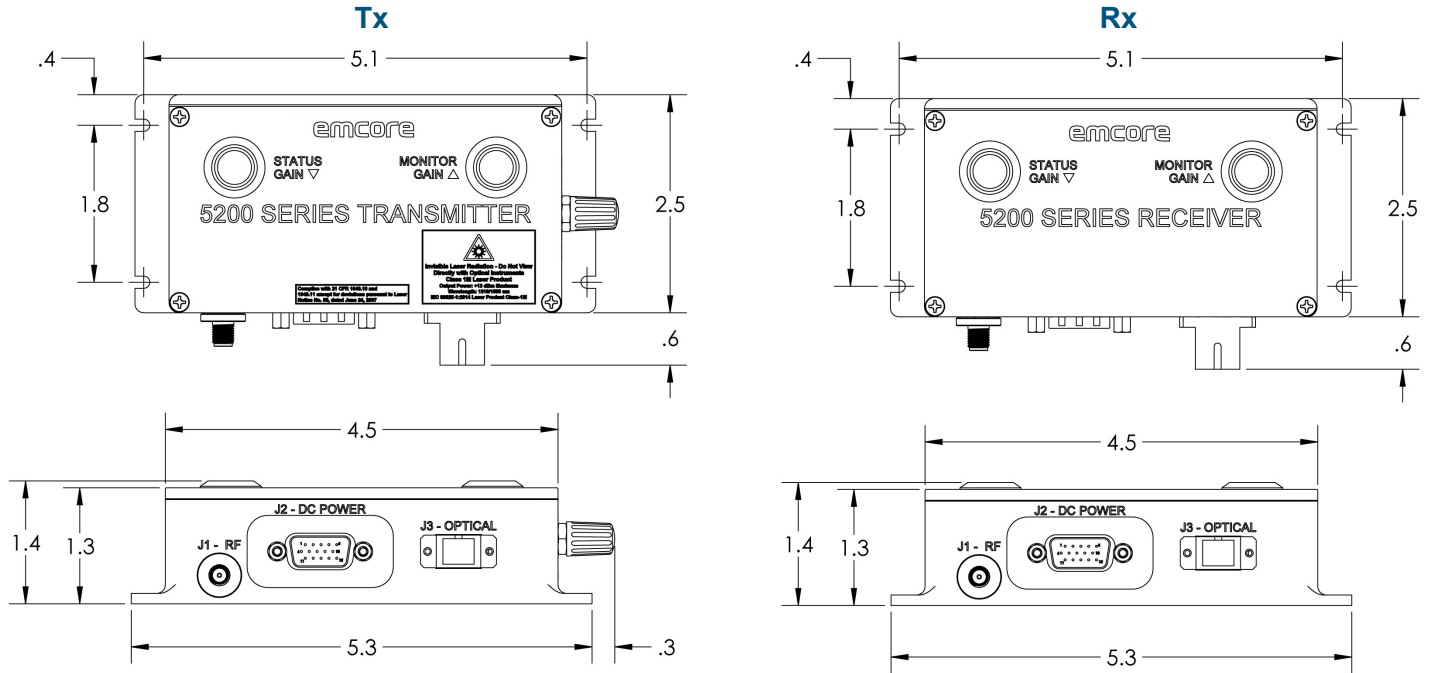
## Receiver Monitoring

LED Indicator	RF Status	Summary Status
Off	--	No Power
Blink Green	Low	Normal
Green	Normal	Normal
Blink Red	High	Normal
Red	Excessive High	Alarm

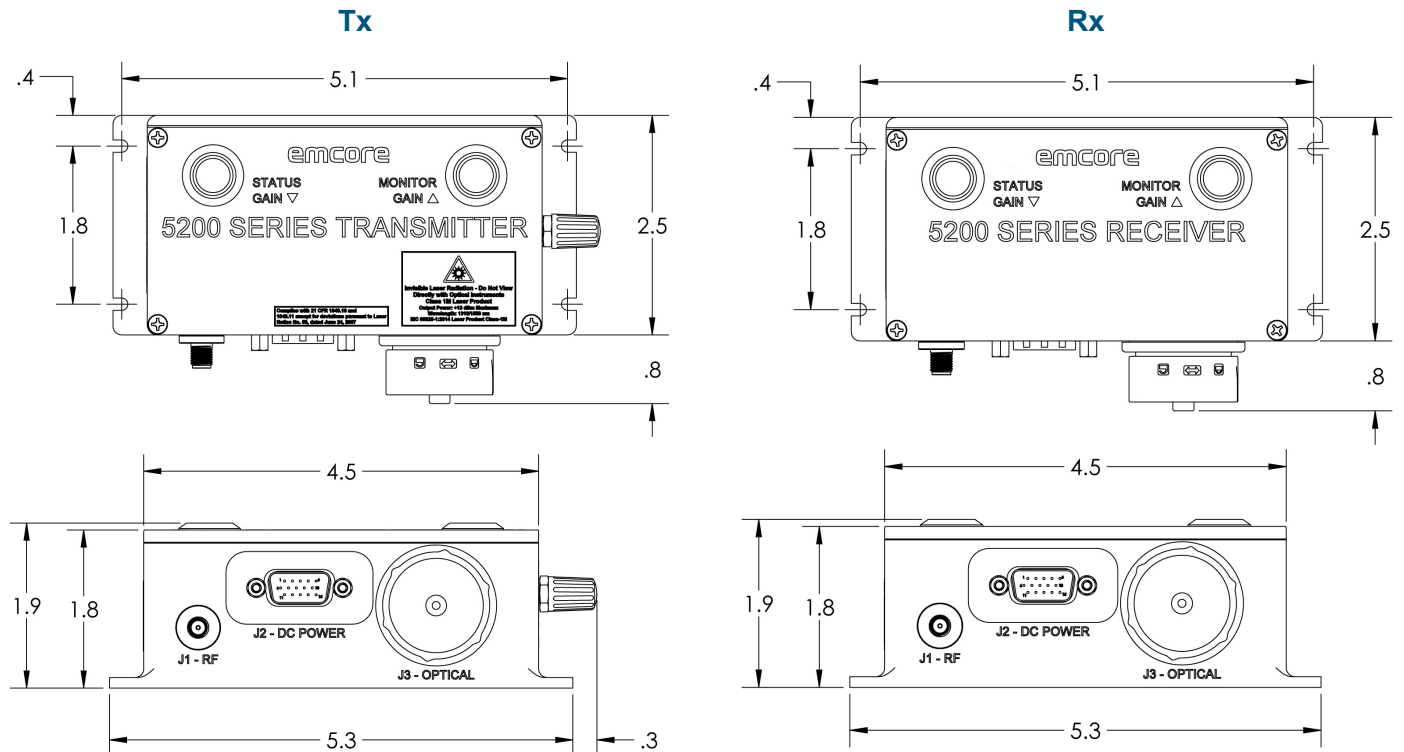
## Pin #8 -- Open Collector Alarm Circuit



## Flange Mount Package - 5.3" x 2.50" x 1.4" (13.46 cm x 6.35 cm x 3.56 cm)



## Flange Mount Package - Outdoor 5.3" x 2.50" x 1.9" (13.41 cm x 6.35 cm x 4.83 cm)



## Ordering Information - Transmitter

Part Number	Model Number	Description
G1526-002-001	5203TV-B5-1306-SA-66	Tx, 50-3000 MHz, 1310 nm, +6 dBm, 50 Ohm BNC, SC-APC, Variable Gain, Outdoor
G1526-002-003	5203TV-S5-1306-SA-66	Tx, 50-3000 MHz, 1310 nm, +6 dBm, 50 Ohm SMA, SC-APC, Variable Gain, Outdoor
G1526-002-005	5202TV-B7-1306-SA-66	Tx, 50-2500 MHz, 1310 nm, +6 dBm, 75 Ohm BNC, SC-APC, Variable Gain, Outdoor
G1526-002-007	5203TVG-S5-1306-SA-66	Tx, 50-3000 MHz, 1310 nm, +6 dBm, 50 Ohm SMA, SC-APC, Variable Gain, GPS Only, +5 VDC, Outdoor
G1526-004-001	5203TV-B5-1306-SA	Tx, 50-3000 MHz, 1310 nm, +6 dBm, 50 Ohm BNC, SC-APC, Variable Gain
G1526-004-003	5203TV-S5-1306-SA	Tx, 50-3000 MHz, 1310 nm, +6 dBm, 50 Ohm SMA, SC-APC, Variable Gain
G1526-004-005	5202TV-B7-1306-SA	Tx, 50-2500 MHz, 1310 nm, +6 dBm, 75 Ohm BNC, SC-APC, Variable Gain
G1526-004-007	5203TVG-S5-1306-SA	Tx, 50-3000 MHz, 1310 nm, +6 dBm, 50 Ohm SMA, SC-APC, Variable Gain, GPS Only, +5 VDC

Contact factory for custom versions of the fiber transmitter

## Ordering Information - Receiver

Part Number	Model Number	Description
G1527-004-001	5203RV-B5-SA	Rx, 50-3000 MHz, 50 Ohm BNC, SC/APC, Variable Gain
G1527-004-003	5203RV-S5-SA	Rx, 50-3000 MHz, 50 Ohm SMA, SC/APC, Variable Gain
G1527-004-005	5202RV-B7-SA	Rx, 50-2500 MHz, 75 Ohm BNC, SC/APC, Variable Gain
G1527-004-007	5203RVG-S5-SA	Rx, 50-3000 MHz, 50 Ohm SMA, SC/APC, Variable Gain, GPS Only, +5 VDC
G1527-002-001	5203RV-B5-SA-66	Rx, 50-3000 MHz, 50 Ohm BNC, SC/APC, Variable Gain, Outdoor
G1527-002-003	5203RV-S5-SA-66	Rx, 50-3000 MHz, 50 Ohm SMA, SC/APC, Variable Gain, Outdoor
G1527-002-005	5202RV-B7-SA-66	Rx, 50-2500 MHz, 75 Ohm BNC, SC/APC, Variable Gain, Outdoor
G1527-002-007	5203RVG-S5-SA-66	Rx, 50-3000 MHz, 50 Ohm SMA, SC/APC, Variable Gain, GPS Only, +5 VDC, Outdoor

Contact factory for custom versions of the fiber receiver

## Laser Safety

This product meets the appropriate standard in Title 21 of the Code of Federal Regulations (CFR), FDA/CDRH Class 1M laser product. This device has been classified with the FDA/CDRH under accession number 0220191. All Versions of this laser are Class 1M laser product, tested according to IEC 60825-1:2007 / EN 60825-1:2007

Wavelength = 1.3 μm.

Maximum power = 30 mW.

**Complies with 21 CFR 1040.10 and 1040.11 except for deviations pursuant to Laser Notice No. 50, dated June 24, 2007**



\*Caution - Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

\*IEC is a registered trademark of the International Electrotechnical Commission.