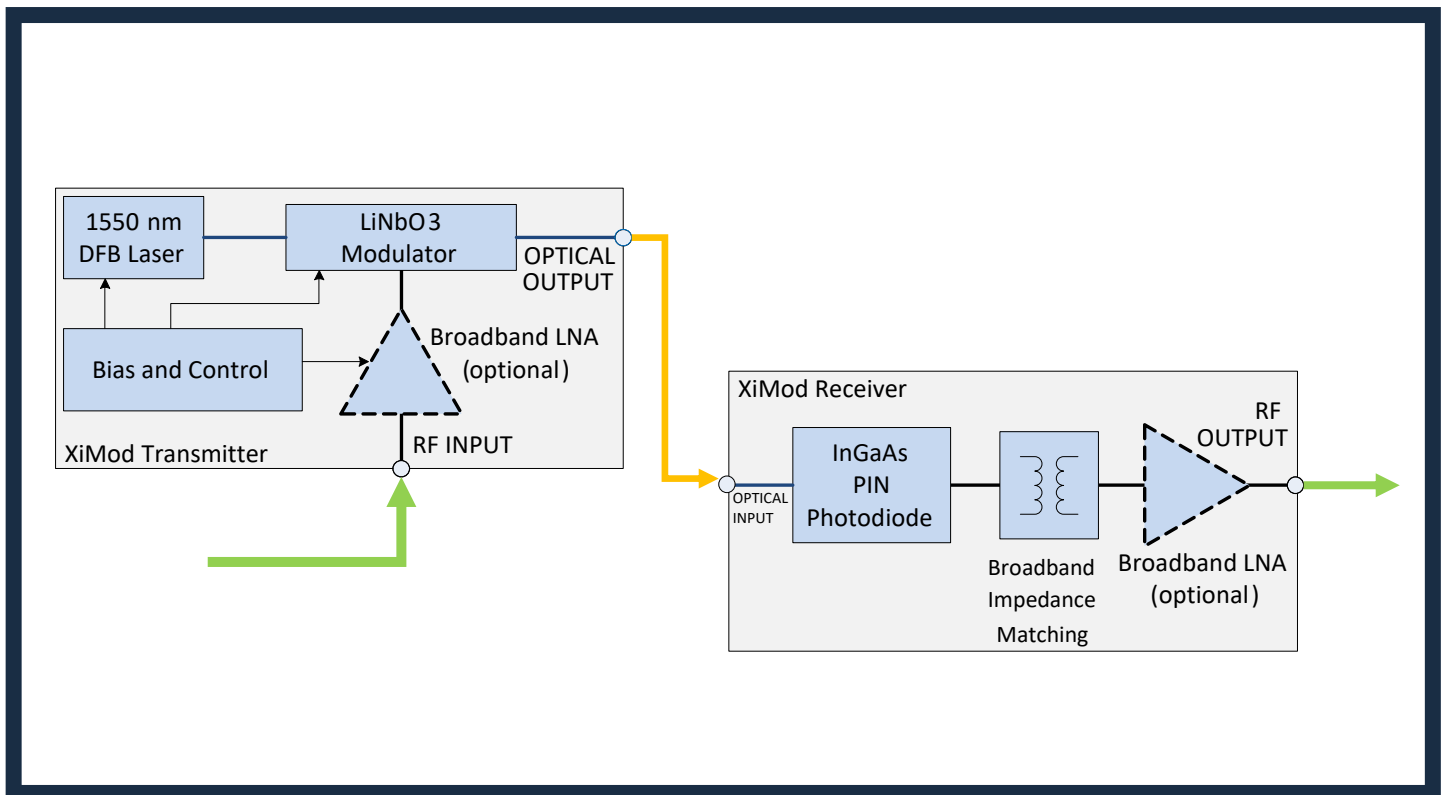


- Wide Bandwidth
  - Low Noise
  - High Dynamic Range
  - Pre- and Post-Amplified Options
  - Wide Temperature Range
  - Monitoring and Alarm
  - TTL Disable
- 
- Broadband Communications
  - Antenna Remoting
  - Sensor Systems
  - Radar Systems



Linear Photonics' χIMOD Transmitter and Receiver modules provide a complete solution for transporting wide bandwidth microwave signals over optical fiber. Optimized for frequencies up to 26 GHz, these links are used for many applications such as Antenna Distribution, Electronic Warfare (EW) systems, Radar, Sensors, and Satellite Communications (SATCOM).

χIMOD Transmitters feature an external modulator and an ultra low noise laser source. χIMOD Receivers feature an InGaAs high-responsivity PIN photoreceiver and provide DC to 26 GHz bandwidth in a 2" x 3" housing. Together they provide a low noise, high linearity link with unrivaled performance and dynamic range.

χIMOD modules have analog optical power monitoring, TTL alarm reporting, and TTL ON/OFF control. Embedded transmitter pre-amp and receiver post-amp options provide the flexibility to optimize your system requirements.

Transmitter Specifications		
Optical Wavelength	1550 ± 30	nm
Optical Power	9 (typ)	dBmo
Max RF Input		
Amplified	+10	dBm
Unamplified	+20	dBm
Input VSWR		
0.5 to 18 GHz	2 : 1	
18 to 26 GHz	2.5 : 1	
Power Supply		
Supply Voltage	5 ± 0.25	V
Max Current - Amplified	5	A
Max Current - Unamplified	4	A

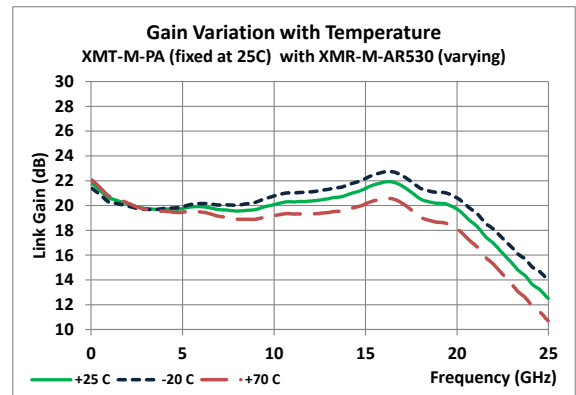
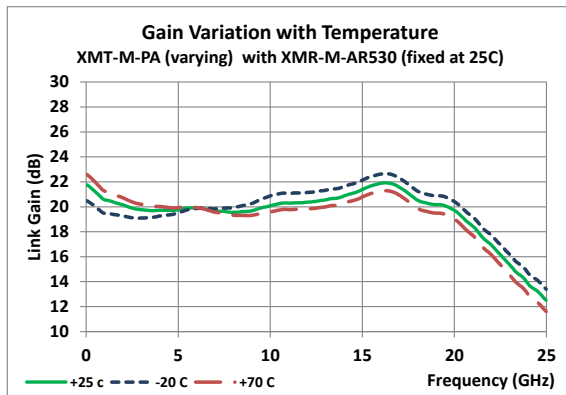
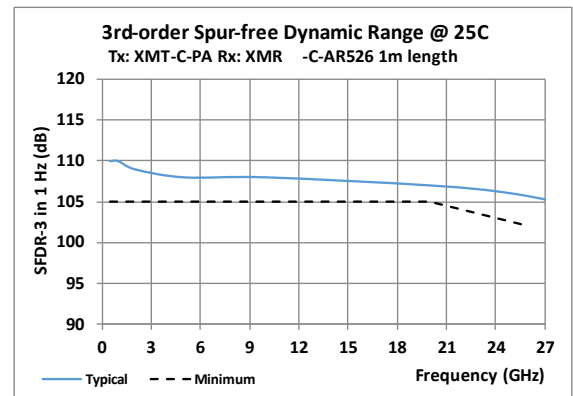
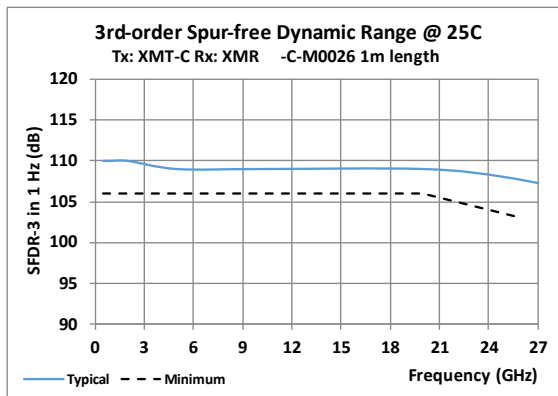
Receiver Specifications		
DC Responsivity	0.9 (typ)	A/W
Input Wavelength Range	1200 - 1600	nm
Maximum Optical Input Power	+10	dBmo
Output VSWR		
0.5 to 18 GHz	2 : 1	
18 to 26 GHz	2.5 : 1	
Power Supply		
Supply Voltage	5 ± 0.25	V
Max Current - Amplified	250	mA
Max Current - Unamplified	35	mA

Absolute Maximum Ratings			
	Min	Max	Units
Operating Temperature			
C Type:	0	50	°C
M Type:	-20	70	
Storage Temperature	-40	70	°C
Transmitter: RF Input level			
Amplified:		+10	
Unamplified:		+20	dBm
Receiver: Optical Input Level		+10	dBmo

## XIMOD LINK PERFORMANCE

 1 m Fiber Length<sup>1</sup>, T=25°C

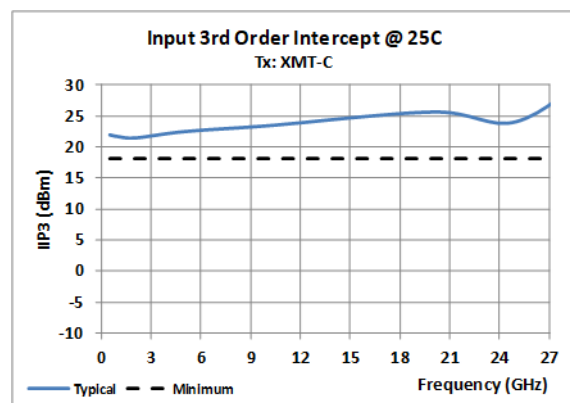
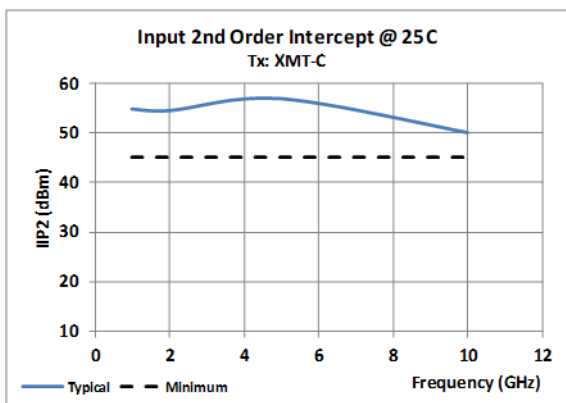
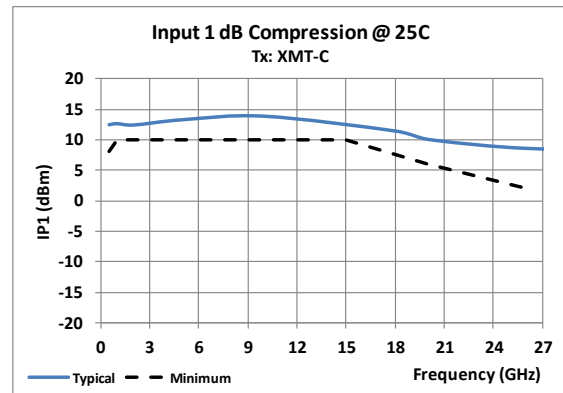
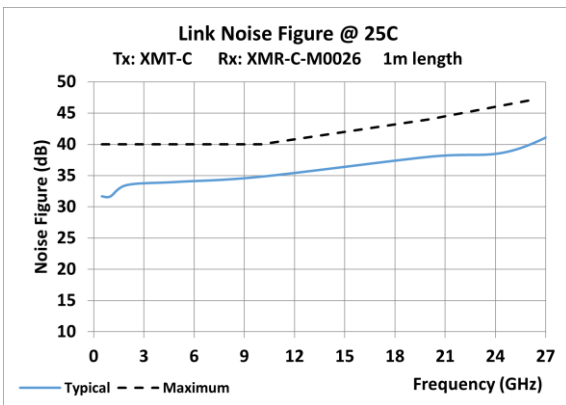
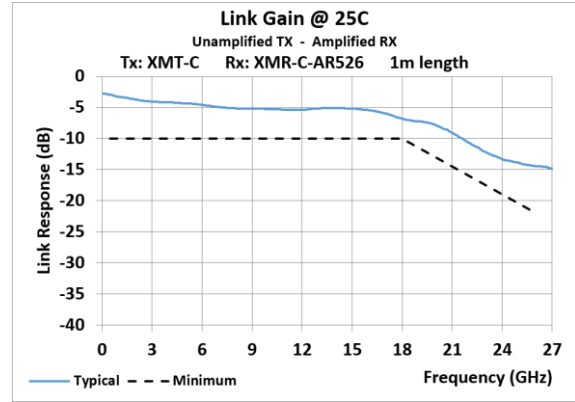
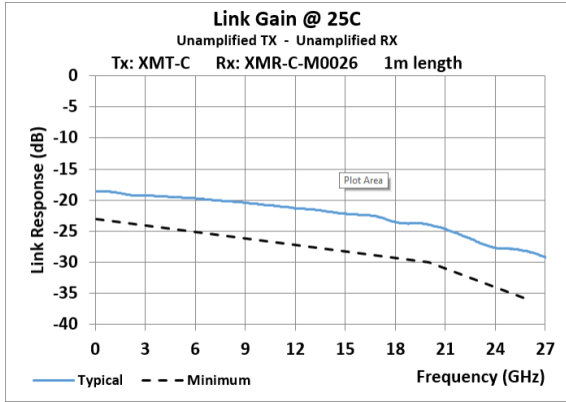
Typical Link characteristics at 20 GHz							
Link Configuration	Gain (dB)	NF (dB)	Input P1dB (dBm)	Input IP3 (dBm)	SFDR (dB/Hz <sup>2/3</sup> )	TX Model	RX Model
Unamplified Link	-25	38	13	21	109	XMT-C	XMR-C-M0026
w/ Pre-amp	4	14	-11	4	107	XMT-C-PA	XMR-C-M0026
w/ Post Amp	-7	38	13	25	109	XMT-C	XMR-C-AR526
w/ Pre-amp + Post amp	20	14	-11	5	107	XMT-C-PA	XMR-C-AR526



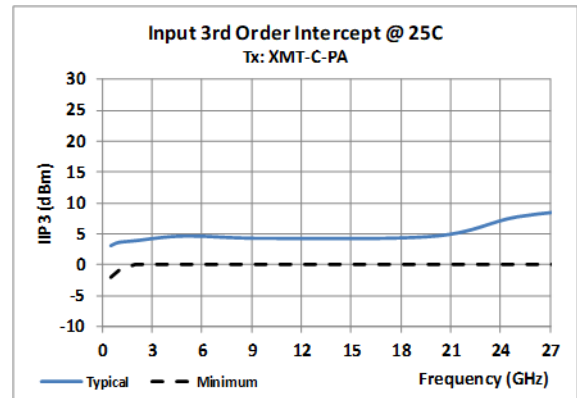
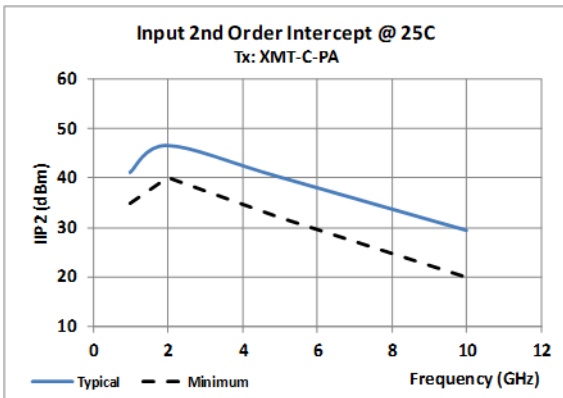
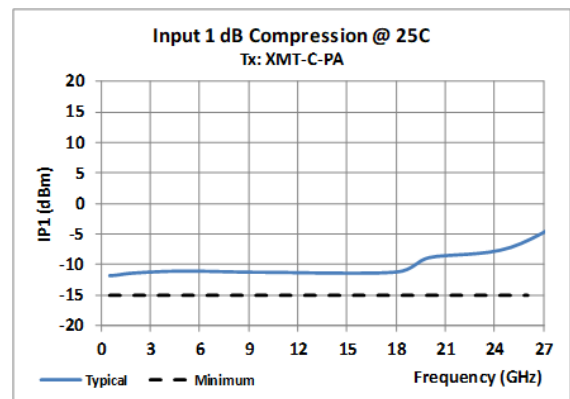
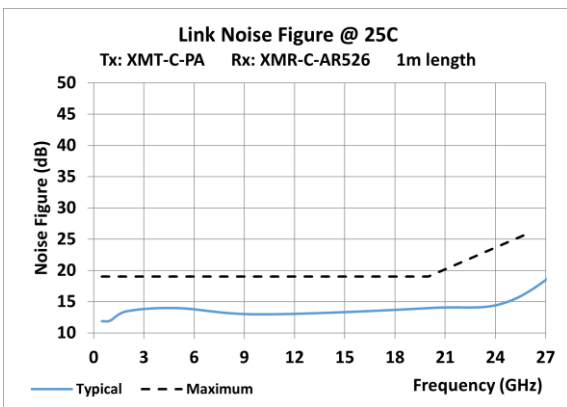
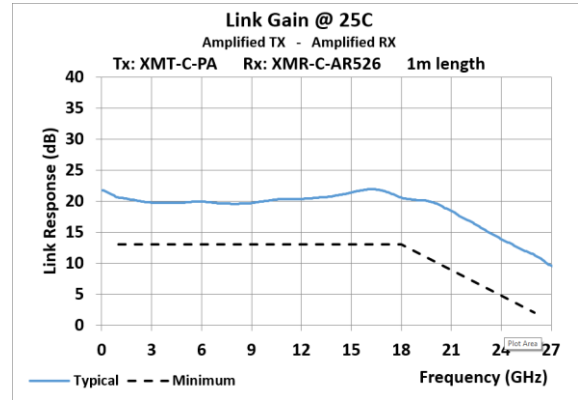
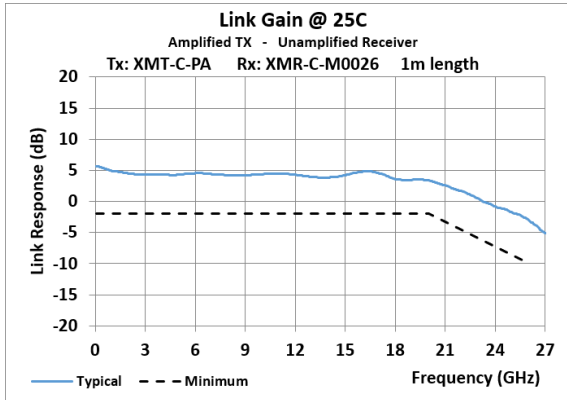
<sup>1</sup>Assumes 0 dB optical loss. Optical link loss will affect the Gain, Noise Figure, and Linearity characteristics of any analog optical link. See our application note. Contact Linear Photonics for assistance with optimizing a link to meet your system needs.



### UNAMPLIFIED λIMOD TRANSMITTER



## AMPLIFIED XiMOD TRANSMITTER



## XiMOD TRANSMITTER

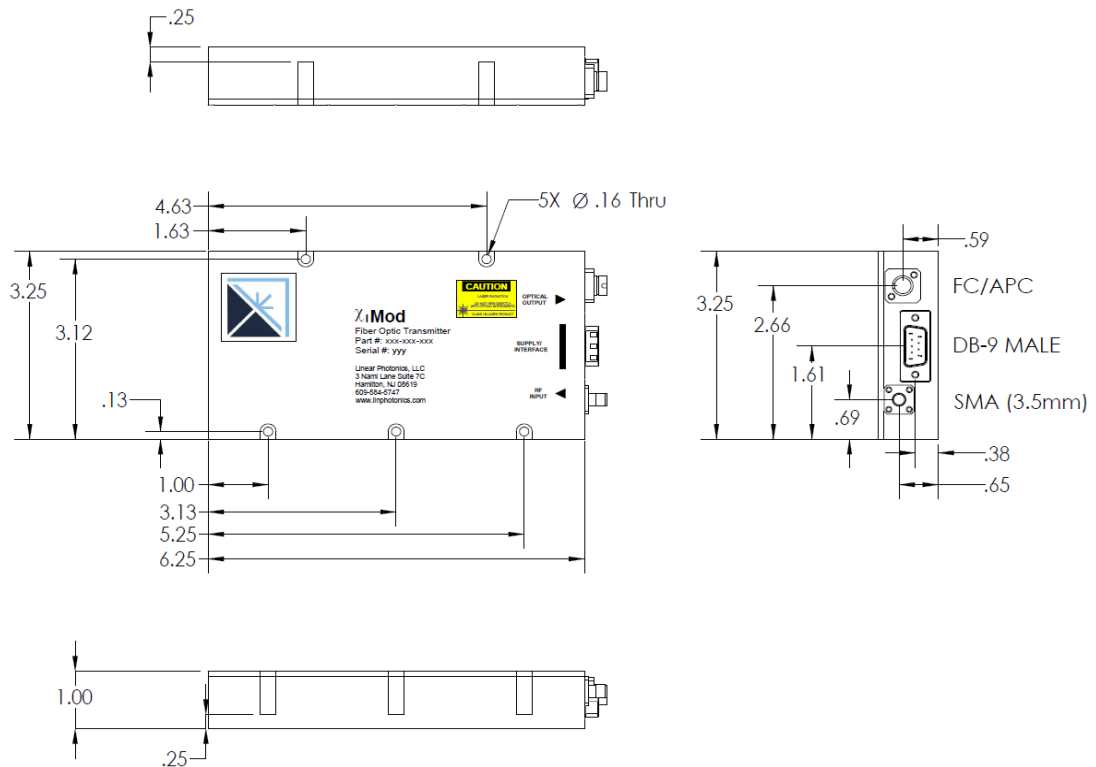
Transmitter Ordering Information

XMT - t - a

t Temperature Range      a Amplifier Option

C: 0 to 50°C      omitted: No Preamplifier, DC to 26 GHz  
M: -20 to 70°C      PA: Preamplifier 0.5-26 GHz

ex: XMT-C    XiMod Transmitter, 0 to 50°C, No Preamplifier



XiMod TRANSMITTER PINOUT		
	Function	Description
pin 1	NO CONNECT	
pin 2	POWER	Power Supply Input (+5V)
pin 3	NO CONNECT	
pin 4	ALARM	TTL Low Output if Overtemp or Overcurrent
pin 5	GROUND	
pin 6	OPTICAL PWR MON	Analog Output 0.25V/mW
pin 7	POWER DOWN (Active Low)	TTL Low Input disables output power
pin 8	LASER CURRENT MON	Analog Output 100 mA/V
pin 9	EXTERNAL RESET	TTL Low Input pulse will reset modulator bias

## XiMOD RECEIVER

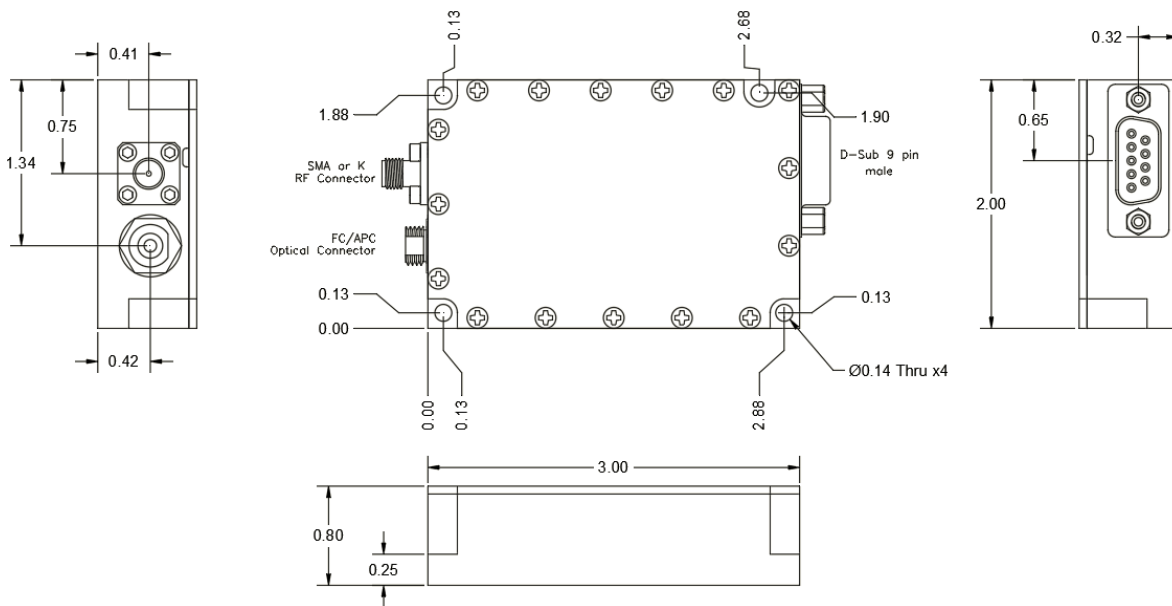
Receiver Ordering Information

XMR - t - a

t Temperature Range      a Amplifier and Band Options

C: 0 to 50°C                                      M0026: DC to 26 GHz, Passive  
M: -20 to 70°C                                    AR526: 0.5 to 26 GHz, Extended Low End Postamp

ex: XMR-M-M0026      XiMod Receiver, -20 to 70°C, DC to 26 GHz



XiMod RECEIVER PINOUT		
	Function	Description
pin 1	NO CONNECT	
pin 2	+5 ±0.25 V	Unamp: 20 mA max      Amp: 200 mA max
pin 3	NO CONNECT	
pin 4	ALARM	TTL HIGH Output if low optical power
pin 5	GROUND	
pin 6	OPTICAL PWR MON	Analog Output 0.5 V/mW
pin 7	NO CONNECT	
pin 8	NO CONNECT	
pin 9	NO CONNECT	