

Features

- Analog RF Bandwidth to 4 GHz
- RF Transport up to 20 km
- Small Size
- High Dynamic Range
- Wide Bandwidth
- Low Noise
- Temperature Compensated
- Harsh Environment Options
- TTL Controllable On/Off
- 1310nm, 1550nm, and CWDM options



Applications

- Antenna Remoting
- Radio-over-Fiber
- Network Infrastructure
- Multicarrier/Subcarrier Multiplexed Analog Transport

Description

MACOM's Directly Modulated Fiber Optic Links provide high performance transmission of wideband RF signals up to 4 GHz over optical fiber. Featuring high reliability and small size, the DiLink transmitter and receiver modules are easily integrated into communications systems for a variety of applications including antenna remoting, radio-over-fiber, network infrastructure and multicarrier/subcarrier multiplexed analog transport.

All modules are easy to use, requiring no external tuning or alignment. They feature a single RF connector, a pigtailed optical connector, and a single DB-9 for power, control, and status/Built-in-Test (BIT) functions. Wide temperature range with environmental sealing options are also available.

1310nm and 1550nm wavelength options allow for WDM bi-directional transmission over a single fiber. CWDM wavelength options can be used to increase the channel count within a single fiber.

Electrical Characteristics

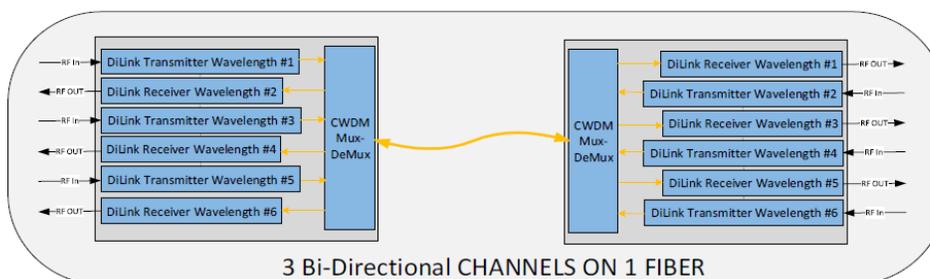
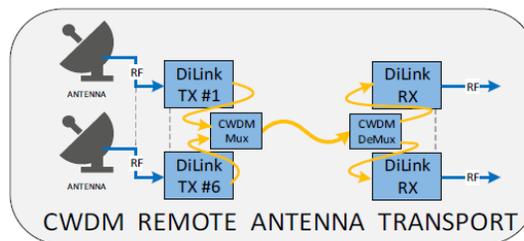
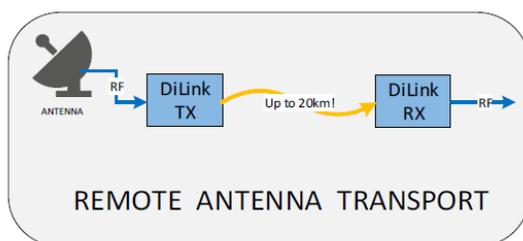
Style	Gain (dB)	Freq. (MHz)	Link Gain (dB) @ Centerband	RF Input Compression (dBm)	RF Input IP3 (dBm)	Link Noise Figure (dB)	SFDR3 Typical (dB/Hz ^{2/3})
W	0	100 - 1000	0 +/- 2	0	15	30	107
W	0	500 - 2500	0 +/- 2	0	15	30	107
W	0	1000 - 4000	0 +/- 2	0	12	30	107
W	15	100 - 1000	15 +/- 2	-6	10	30	104
W	15	500 - 2500	15 +/- 2	-6	10	30	103
W	15	1000 - 4000	15 +/- 2	-6	6	30	101
N	0	900 - 2250	0 +/- 2	4	17	30	108
N	0	2000 - 34000	0 +/- 2	2	12	28	106
N	15	900 - 2250	15 +/- 2	-1	13	30	105
N	15	2000 - 3400	15 +/- 2	-1	8	28	103

Absolute Maximum Ratings

Parameter	Absolute Maximum
Storage Temperature	-40°C to +85°C
RF Input Level (TX)	+10 dBm
Optical Input Level (RX)	+5 dBm
Power Supply Voltage(s)	±5%
Transmitter Power Consumption	3 W
Receiver Power Consumption	3.5 W

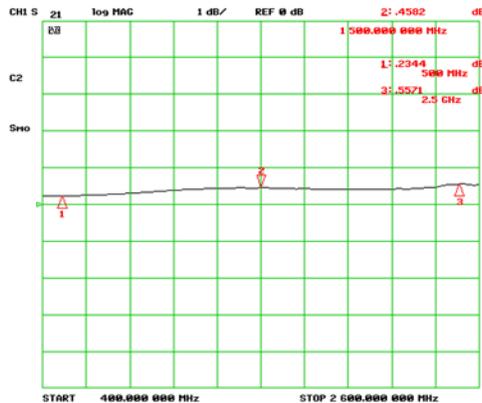
All Units

Parameter	
Gain Variation over Temp.	+/- 1 dB
Gain Flatness Full Band	+/- 1 dB
Gain Flatness over any 250 MHz	+/- 0.25 dB
RF Input/Output Return Loss	10 dB min.
RF Connector	SMA Female

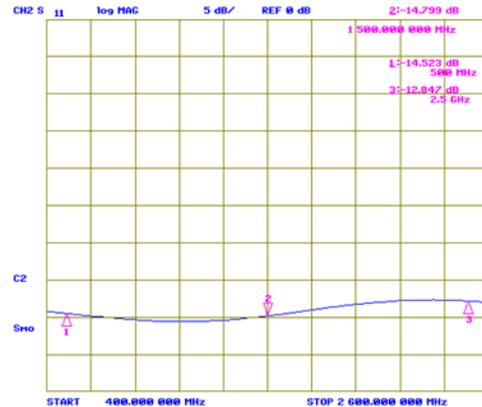


Typical Performance Curves

L-Band Link (Gain)



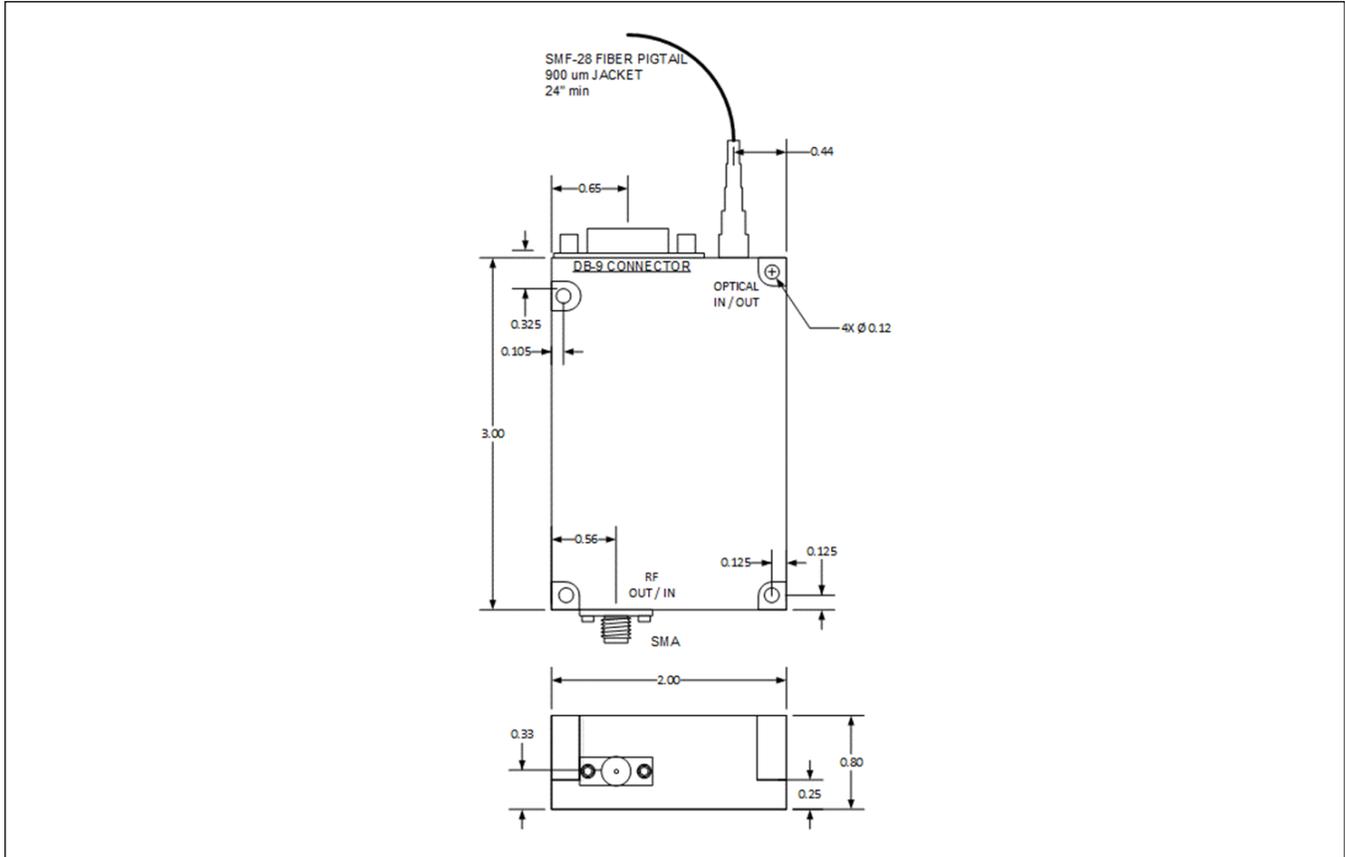
L-Band Link (Input Return Loss)



Ordering Information

D L m w s f g c v t	m Module Type T Transmitter R Receiver	g Link Gain 0 0 dB 1 15 dB C custom
example: DLT3W40FSM Transmitter 1310 nm Wideband 1000 to 4000 MHz 0 dB Link Gain FC/APC Single Supply -40 to +70 °C	w Wavelength 3 1310 5 1550 C custom	c Connector F FC/APC S SC/APC C custom
	s Style W Wideband N HDN/LN I Obsolete - Contact Factory	v Voltage M multiple supply (Receiver Only) +12, +5, -5 V S single supply +5 V
	f Frequency Range 1 Obsolete - Contact Factory 2 100 to 1000 (W style only) 3 500 to 2500 (W style only) 4 1000 to 4000 (W style only) 5 Obsolete - Contact Factory 6 Obsolete - Contact Factory 7 900 to 2250 (N style only) 8 2000 to 3400 (N style only) C custom	t Temp Range (Operating) C 0 to 50 °C M -40 to +70 °C

Outline



DiLink PINOUT (D-SUB 9-Pin Male)		
PIN #	Function	Description
1	+12V ±0.6V (Multi-Supply Only)	Power Supply Input (+12V ±0.6V)
2	+5V ±0.25V	Power Supply Input (+5V ±0.25V)
3	+5V ±0.25V (Multi-Supply Only)	Power Supply Input (+5V ±0.25V)
4	ALARM OUT	TTL Low Output if Unit is in Alarm
5	GROUND	Power Supply Ground
6	Optical Power Monitor	Analog Output 0.25V/mW
7	Power On (Active LOW)	Must Ground this Pin to Enable Output
8	Laser Current Monitor	Analog Output 100 mA/V (TX Only)
9	N/C	-

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