

PL7450T / PL7450R4 RF Link, Very High Power Range, 4dB Optical Budget 8Km - 1310nm or 15Km - 1550nm

Features & Benefits:

- ❖ Wideband: 10–3000 MHz
- ❖ More than 8Km. distance [15Km with the PL7450T1550]
- ❖ Powerful management capabilities via a front panel LCD and rack mounted SNMP
- ❖ User control and setting of required IMD level
- ❖ Wide/High RF input/output power range optimized for cellular
- ❖ 1550nm and CWDM ITU Grid laser options are available for longer fiber runs and single fiber multiplexing solutions



Product Description

Foxcom's Platinum Wideband products are designed to meet the increasing demand for modularity and high-performance in a small form factor for superior long-distance transmission. With high RF input power and wide dynamic range, the link is designed to provide full specification service up to a full 4 dB optical budget with the **PL7450R4** receiver.

Utilizing Foxcom's **DigiRF** technology, the user has full control of all important functions for setup, operation, and analysis via the front panel LCD or via the associated subrack SNMP capability.

In addition **IMizer**, an automated adjustable link calibration embedded system enables the user to align the RF links IMD/CNR to specific linearity performances without a two-tone test. Select the desired IMD for the optical transmitter, either locally or remotely, **IMizer** automatically adjusts the laser drive to meet the IMD requirements. The **IMizer** requires the use of a correction factor table above 2.5 GHz.

Each low profile individual transmitter or receiver can be "hot swapped" in the subrack chassis maintaining a best subsystem uptime capability. Each module contains an individual processor to maximize specification performance at all times under demanding user applications.

The **PL7450T** transmitter and **PL7450R4** receiver are designed for subrack chassis mounting. The associated Platinum chassis, model PL7010, has 12 active slots, one main control processor (MCP) slot and two redundant power supplies. No fans are required even under full subrack loading and full LNB powering.

The **PL7450T** transmitter and **PL7450R4** receiver are optimized for cellular application where wide RF input power range is needed and high RF output power.

Specifications

PL7450T [PL7450T1550] / PL7450R4 RF Link Wide Power Range, 4dB Optical Budget [8Km - 1310nm & 15Km - 1550nm]

RF Specifications	Units	Typical	Minimum	Maximum
Frequency Range - Bandwidth	MHz	10 - 3000		3000
Amplitude Response @ Unity Gain 10 - 3000 MHz any 36 MHz	dB	±2 ±0.25		±2.25 ±0.3
Gain Stability	dB/24hr	± 0.2		± 0.25
Gain Slope ¹	dB	0	-1.5	+1.5
Gain Variation over temperature	dB	± 1.5	-2	2
SFDR ²	dB/Hz ² /3	110		
SFDR ³	dB/Hz ² /3	95		
DR (Dynamic Range - single channel) ⁴	dB			50
CNR [1Hz] ²	dB	139	135	140
Noise Figure (NF) ²	dB	39	39	44
Noise Figure (NF) ³	dB	18	20	15
Output IP ³ (OIP ³) ⁵	dBm	20		
Group Delay Variation- linear 10 to 60 MHz 60 - 3000 MHz	ns	13 1.5		-15 -11
Input/Output Impedance	Ohm	50 or 75		
1 dB Compression Point	dBm	2		3
Phase Noise ⁶	dBm	None		
Third Order InterModulation [IMD] ⁴	dBc		-55	-40
Input Signal Range - Total Power ⁷	dBm		-50	0
Maximum Input without Damage	dBm			+15
RF Output Signal Range - Total Power ^{8 9}	dBm		-25 -25	+15 +15
TX/RX Input/Output Return Loss 50 Ohm 75 Ohm ¹³	dB	-15 -13		-15 -11
Test Port [front panel sample port] ¹⁰	dB	-20	-22	-18
RF Connector Type Input/Output Test Port			SMA, N BNC	
Optical Specifications		Typical	Minimum	Maximum
Optical Wavelength	nm	1310/1550/CWDM		
Optical Power Output	mW / dBm	2 / 3	1.7/2.5	
Optical Budget / Distance 4 dB optical budget	dBm/Km	1310 nm 1550 nm 8 15		

PL7450T [PL7450T1550] / PL7450R4 RF Link
Wide Power Range, 4dB Optical Budget [8Km - 1310nm & 15Km - 1550nm]

RX Optical Input Power	dBm	-1	-2	4
Optical Connector Types	Type	FC/APC or SC/APC (E2000 option)		-
Optical Return Loss	dB		-60	-55
Electrical Specifications				
Supply Voltage	Vdc	12		
Supply Current [TX]11	Amps	0.5		
Supply Current (RX)	Amps	0.45		
EMI Rating		EMI Rating: FCC Class B CE Mark		
Physical Specifications				
Operating Temperature Range	°C		-10	+55
Storage Temperature Range	°C		-45	+85
Relative Humidity		95% non-condensing		
Altitude	ft / Km	10,000 [3.08] operating12 14,000 [12.2] non-operating		
Dimensions [DxWxH]	ins/cm	12x0.8x4 / 30.5x2x10.2		
Weight	lbs./Kg	0.5 / 0.23		
MTBF	Hours	TX: 309, 481 RX: 359, 057		
MTTR	Hours	0.083		
Shock & Vibration		Designed for normal transportation environment per section 514.4 MIL-STD-810E. Designed to withstand 20G at 11 ms [½ sine pulse] in non-operating configuration.		

1. Within flatness spec
2. -0 dBm RF input, link gain = 0 dB, IMD=-40 dBc @ 3 dB opt. budget [0 dBm optical input & max. RF input]
3. -20 dBm RF input, link gain =30dB, IMD=-40 dBc @ 3 dB opt. budget [0 dBm optical input & min. RF input]
4. User adjustable
5. -0 dBm RF in @ IMD=-40 dBc
6. Direct modulation utilized
7. Alarm trip point: RED -2 dBm, AMBER -53 dBm
8. @ 0 dB optical loss
9. -@ 4 dB optical loss
10. -45 dBm minimum input
11. Under 10° add 120 mA [laser heating]
12. With standard adiabatic derating at 2°C/1000ft. [0.3 Km.]
13. -13 dB @10 to 3000MHz, -11dB @ 2500 to 3000MHz

All specifications are subject to change without notice.

Ordering Information

Example: PL7230T-50SMA-SC

L-Band, high RF input transmitter, 1310 nm laser, 50-Ohm SMA RF connector and SC/APC optical connector

PL7

2	3	0	T	Null	-	50SMA	-	SC
A	B	C	D	E		F		G

A Platinum Product

- 00 - MCP
- 01 - Chassis & PS
- 0 - 5 MHz Tx/Rx
- 1 - 10 MHz Tx/Rx
- 2 - L-Band Tx/Rx
- 3 - IF Tx/Rx
- 4 - Wideband Tx/Rx
- 5 - Data XVCR
- 6 - Accessories
- 7 - Non-chassis mount products

B Tx RF Input/Rx RF output

- 2 - Low power input
- 3 - High power input

C Product Series

- Null - None [default]
- 1 - 1st series
- 2 - 2nd series
- etc.

D Module Type

- T = Tx
- R = Rx
- S = Serial data
- E = Ethernet
- G = GigE

E Laser for Tx & Optical Budget for Rx

- Tx: Null = 1310nm laser
- 1500 = 1550nm laser
- XXXX = ITU grid
- Rx: 4=4dB 16=16dB
- 10=10dB 25= 25dB

RF Connector

- 75F = 75-Ohm F
- 75BNC¹ = 75-Ohm BNC
- 50BNC¹ = 50-Ohm BNC
- 50SMA = 50-Ohm SMA
- 50N = 50-Ohm N

G Optical Connector

- Null = FC/APC [default]
- SC = SC/APC
- E2 = E2000

1. Not available on L-Band and Wideband products

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