

## PL7230T/PL7230R4 RF LBand UpLink High Power Input, 4 dB Optical Budget 8Km - 1310nm or 15Km - 1550nm

### Features & Benefits:

- ❖ L-Band: 950 – 3000 MHz
- ❖ More than 8 Km [15 Km with the PL7230T1550]
- ❖ Powerful management capabilities via a front panel LCD and rack mounted SNMP
- ❖ User control and setting of required IMD level
- ❖ LNB power control via LCD or SNMP: +13 or 18 VDC
- ❖ Variety of RF and optical connectors
- ❖ 1550nm and CWDM ITU grid laser versions are available for longer fiber runs and single fiber CWDM multiplexing solutions



### Product Description

Foxcom's Platinum L-band 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 4dB optical budget with the **PL7230R4** 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 **PL7230T** transmitters and the **PL7230R4** receiver is designed for 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.

## Specifications

**L-Band PL7230T [PL7230T1550 ] / PL7230R4 Link**  
**High Power Input, 4 dB optical budget [8Km - 1310nm & 15Km - 1550nm]**

| RF Specifications  | Units                | Typical                               | Minimum | Maximum       |
|--|----------------------|---------------------------------------|---------|---------------|
| Frequency Range - Bandwidth  | MHz                  | 950 - 3000                            |         | -             |
| Amplitude Response @ Unity Gain<br>950–3000 MHz<br>any 36 MHz          | dB                   | ±1.25<br>±0.2                         |         | ±1.5<br>±0.25 |
| Gain Stability   | dB/24hr              | ±0.2                                  |         | ± 0.25        |
| Gain slope <sup>1</sup>  | dB                   |                                       | -1.0    | +1            |
| Gain Variation over temperature  | dB                   |                                       | -2      | 2             |
| SFDR <sup>2</sup>  | dB/Hz <sup>2/3</sup> | 105                                   |         |               |
| SFDR <sup>3</sup>  | dB/Hz <sup>2/3</sup> | 104                                   |         |               |
| DR (Dynamic Range - single channel) <sup>4</sup>                       | dB                   |                                       |         | 30            |
| CNR [any 36 MHz] <sup>3</sup>  | dB                   | 53                                    |         | 53            |
| Noise Figure (NF) <sup>2</sup>   | dB                   | 30                                    | 28      | 33            |
| Noise Figure (NF) <sup>3</sup>   | dB                   | 10                                    | 9       | 12            |
| Output IP <sub>3</sub> (OIP <sub>3</sub> ) <sup>5</sup>                | dBm                  | -                                     | 15      | 20            |
| Group Delay Variation- linear @<br>950 to 1200 MHz<br>1200 to 3000 MHz | ns                   | 3<br>1.5                              |         |               |
| Input/Output Impedance   | Ohm                  | 50 or 75                              |         |               |
| 1 dB Compression Point   | dBm                  | 2                                     |         | 3             |
| Phase Noise <sup>6</sup>   | dB                   | None                                  |         |               |
| Third Order InterModulation [IMD]<br><sup>7</sup>                      | dBc                  |                                       | -55     | -40           |
| RF Input Signal Range - Total Power                                    | dBm                  |                                       | -30     | -5            |
| Maximum input without damage   |                      |                                       |         | +15           |
| Output Signal Range - Total Power <sup>8</sup>                         | dBm                  |                                       | -30     | -5            |
| TX/RX Input/Output Return Loss<br>50 Ohm<br>75 Ohm <sup>9</sup>        | dB                   | -15<br>-13                            |         | -15<br>-11    |
| Test Port [front panel sample port]<br><sup>10</sup>                   | dB                   | -20                                   | -22     | -18           |
| RF Connector Type<br>Input / Output<br>Test port                       |                      | align=center>F, SMA, BNC, N<br>F, 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<br>4 dB optical budget                       | Km                   | 1310 nm   1550 nm<br>8   15           |         |               |

**L-Band PL7230T [PL7230T1550 ] / PL7230R4 Link**  
**High Power Input, 4 dB 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 |
| <b>Electrical Specifications</b>               |   |   |     |     |
| Supply Voltage                                 | Vdc   | 12  |     |     |
| Supply Current 11<br>TX, No LNB<br>TX with LNB | Amps  | 0.45<br>0.75  |     |     |
| EMI Rating                                     | EMI Rating: FCC Part 15 Class B<br>CE Mark  |   |     |     |
| <b>Physical/Environmental Specifications</b>   |   |   |     |     |
| Operating Temperature Range                    | °C  |   | -10 | +55 |
| Storage Temperature Range                      | °C  |   | -45 | +85 |
| Relative Humidity                              | 95% non-condensing  |   |     |     |
| Altitude                                       | ft / km   | 10,000 [3.08 ] operating <sup>12</sup><br>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<br>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 |   |     |     |

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1. Within flatness spec
  2. -5 dBm RF input, link gain = 0 dB, IMD=-40 dBc @ 0 dBm optical input - max. RF input
  3. -30 dBm RF input, link gain =25 dB, IMD=-40 dBc @ 0 dBm optical input - min. RF input
  4. User adjustable
  5. -5 dBm RF in @ IMD=-40 dBc
  6. Direct modulation utilized
  7. Adjustable. Above -10 dBm input min. -50 dBc
  8. Alarm trip point: RED -2 dBm, AMBER -33 dBm
  9. -15 dB @ 950 to 3000 MHz, -11 dB @ 2500 to 3000 MHz
  10. -45 dBm minimum input
  11. Under 10° add 120 mA for Tx [laser heating]
  12. With standard adiabatic derating at 2°C/1000ft. [0.3 Km.]

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 - 1<sup>st</sup> series
- 2 - 2<sup>nd</sup> 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      18=18dB
- 10=10dB     25=25dB

### RF Connector

- 75F = 75-Ohm F
- 75BNC<sup>1</sup> = 75-Ohm BNC
- 50BNC<sup>1</sup> = 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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