global FOXCOM
completing the picture

PL2-7220 & PL2-7230 Dual L-Band RF Links

Features & Benefits

- **24 Up or Downlinks per chassis!**
- Two L-Band RF streams per card
- Transmission distance up to 10Km
- Powerful management capabilities via a front panel LCD and rack mounted SNMP
- L-Band of 950–3000MHz
- IMizer Automatic Laser Drive Control

Product Description

Global Foxcom’s new dual Platinum L-Band link provides a dynamic solution for multiple up and downlink, short-distance applications where chassis capacity is crucial and rack space is limited. The new dual link provides modularity and high-performance in a small form factor for superior distance transmission. The Platinum chassis can be equipped with 12 double-link cards offering 24 separate L-Band transportation paths.

Utilizing Global Foxcom’s **DigiRF** technology, the user has full control of all important functions for setup, operation, and analysis via the front panel LCD or the associated sub-rack 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. Locally or remotely select the desired IMD for the optical transmitter; **IMizer™** automatically adjusts the laser drive to meet IMD requirements.

Each individual dual transmitter or dual receiver can be “hot swapped” in the sub-rack chassis maintaining the highest subsystem uptime capability. Each module contains an individual processor to maximize specification performance at all times under demanding user applications.

The dual **Platinum** transmitter and receiver are designed for sub-rack chassis mounting and are optimized for L-Band downlink application. The associated Platinum chassis, which has 12 active slots, one main control processor (MCP) slot and two redundant power supplies, is equipped with separate LNB voltage control.

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All specifications are subject to change without prior notice. Rev 04/ April 2022

PL2-7220 Link Specifications (Downlink Optimized)

RF Specifications	**With 4dB Receiver (R4)**
Frequency Range – Bandwidth	950–3000MHz
Amplitude Response @ Unity Gain 950–3000 MHz any 36 MHz	±2 ±0.25dB
Gain Variation over Temperature	±1.5dB
Gain Stability dB/25hr	±0.2dB
SFDR[1]	>100 dB/Hz$^{2/3}$
Noise Figure (NF) [1]	10dB[1]
Output IP3 (OIP3) [3]	+3dBm
CNR [any 36MHz] [1]	>57dB
Group Delay Variation	<1.5ns
Third Order Inter-Modulation [IMD] [2]	-55 to -40dBc
RF Input Signal Range–Total Power[4]	-25 to -50dBm
RF Output Signal Range–Total Power[5]	-25 to -45dBm
TX/RX Input / Output Return Loss 50 Ohm 75 Ohm[6]	-15dB -13dB
RF Connector Options	N/SMA/F/BNC50/BNC75
LNB Voltage[8]	On/Off or 13 Volts or 18 Volts
Optical Specifications	**Value**
Optical Wavelength	1310nm
Optical Power Output	2mW / 3dBm
Optical Budget / Distance[7]	4dB/10Km
Min RX Optical Input Power	-1dBm
Optical Connector Types	LC-APC

1. -50dBm RF input, link gain=20dB, IMD=-40dBc@3dB optical budget
2. User adjustable
3. -5dBm RF out @ IMD=50dBc
4. Alarm trip point: RED -2dBm, AMBER -50dBm
5. Within optical budget
6. 11dB above 2.2GHz
7. Longer when 1550nm laser is installed
8. LNB Maximum current: 300 mA

PL2-7230 Link Specifications (Uplink Optimized)

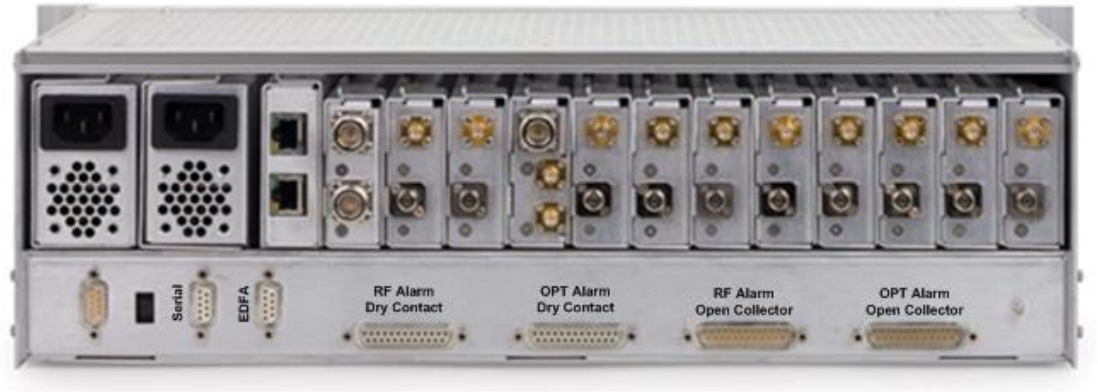
RF Specifications	**With 4dB Receiver (R4)**
Frequency Range – Bandwidth	950–3000MHz
Amplitude Response @ Unity Gain 950–3000 MHz any 36 MHz	 ±2 ±0.25dB
Gain Variation over Temperature	±1.5dB
Gain Stability dB/25hr	±0.2dB
SFDR[1]	>104 dB/Hz$^{2/3}$
Noise Figure (NF)	24 dB[1]
Output IP3 (OIP3)[4]	20dBm
CNR [any 36MHz] [1]	>55dB
Group Delay Variation	<1.5ns
Third Order Inter-Modulation [IMD][3]	-55 to -40dBc
AGC/MGC RF In/Out Signal Range[6]	-5 to -30dBm
Operating RF Input Signal Range	+2 to -30dBm
TX/RX Input / Output Return Loss 50 Ohm 75 Ohm[7]	 -15dB -13dB
RF Connector Options	N/SMA/F/BNC50/BNC75
LNB Voltage[9]	On/Off or 13 Volts or 18 Volts
Optical Specifications	**Value**
Optical Wavelength	1310nm/1550nm/CWDM
Optical Power Output	2mW / 3dBm
Optical Budget / Distance[8]	10dB/25Km
Min RX Optical Input Power dBm[5]	Above -2 / Below -7
Optical Connector Types	FC-APC / SC-APC / E2000-APC

1. -20dBm RF input, link gain=20dB, IMD=-40dBc@10dB optical budget
2. -25dBm RF input, link gain=20dB, IMD=-40dBc@16dB optical budget
3. User adjustable
4. -5dBm RF out @ IMD=50dBc
5. Bi Color Led for additional indication before alarm triggering point
6. Within optical budget, no RF alarm indication
7. -11dB above 2.2GHz
8. G652D Fiber. Almost double when 1550nm laser is installed
9. LNB Maximum current: 300 mA

Advanced Technology

Chassis

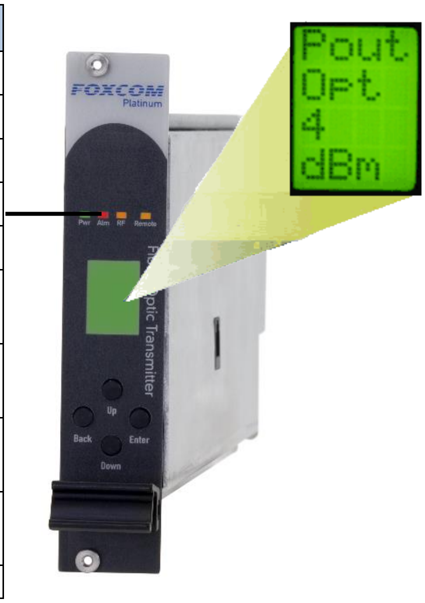
Figure 1: Rear view of 12 Slot Chassis with one MCP slot and dual Power Supply slots


Serial
EDFA
RF Alarm
Dry Contact
OPT Alarm
Dry Contact
RF Alarm
Open Collector
OPT Alarm
Open Collector

Transmitter and Receiver with LCD and LED Indicators

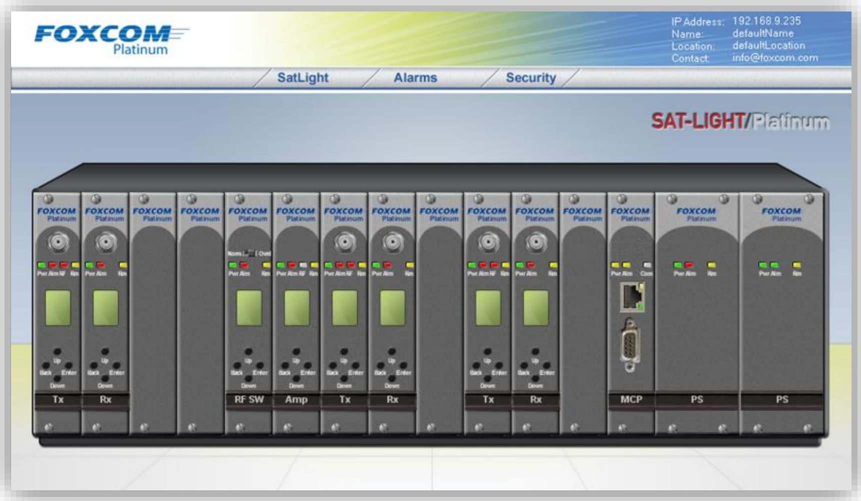
Figure 2: Transmitter with LCD and LED Indicators
(Only Transmitter is shown here; Receivers are available and provide corresponding information)

LED Name	Color	Description
Power	Green	Power On
	No Light	Power Off
Status/Alarms	Green	No Alarms
	Amber	Minor Alarms
	Red	Critical Alarm
RF Input	Green	Input within specification
	Amber	Input below specifications
	Red	No input or above specifications
Remote	Yellow	Main processor control in effect
	No Light	No Main Processor Control


Pout
Opt
4
dBm
FOXCOM
Platinum
Pwr
Alm
RF
Remote
Fiber Optic Transmitter
Up
Back
Enter
Down

SNMP Graphic User Interface (GUI) for Monitoring & Control

Figure 3: SNMP GUI



IP Address: 192.168.9.235
Name: defaultName
Location: defaultLocation
Contact: info@foxcom.com

The SNMP GUI enables the user to perform detailed monitoring & control of the system, including detection, such as:

- General data about the system, including version control
- Card status
- Optical power input and output monitoring
- RF power input and output monitoring
- AGC/MGC selection
- LNB voltage selection (18V/13V/none)
- IMD selection (TX only)
- Power supply monitoring, such as DC Voltage, AC/DC Failures, Temperature, Fan speed
- Alarm history and alarm severity
- System statistics

Typical L-Band Downlink

Figure 4: Typical mass L-Band downlink application using the dual Platinum link

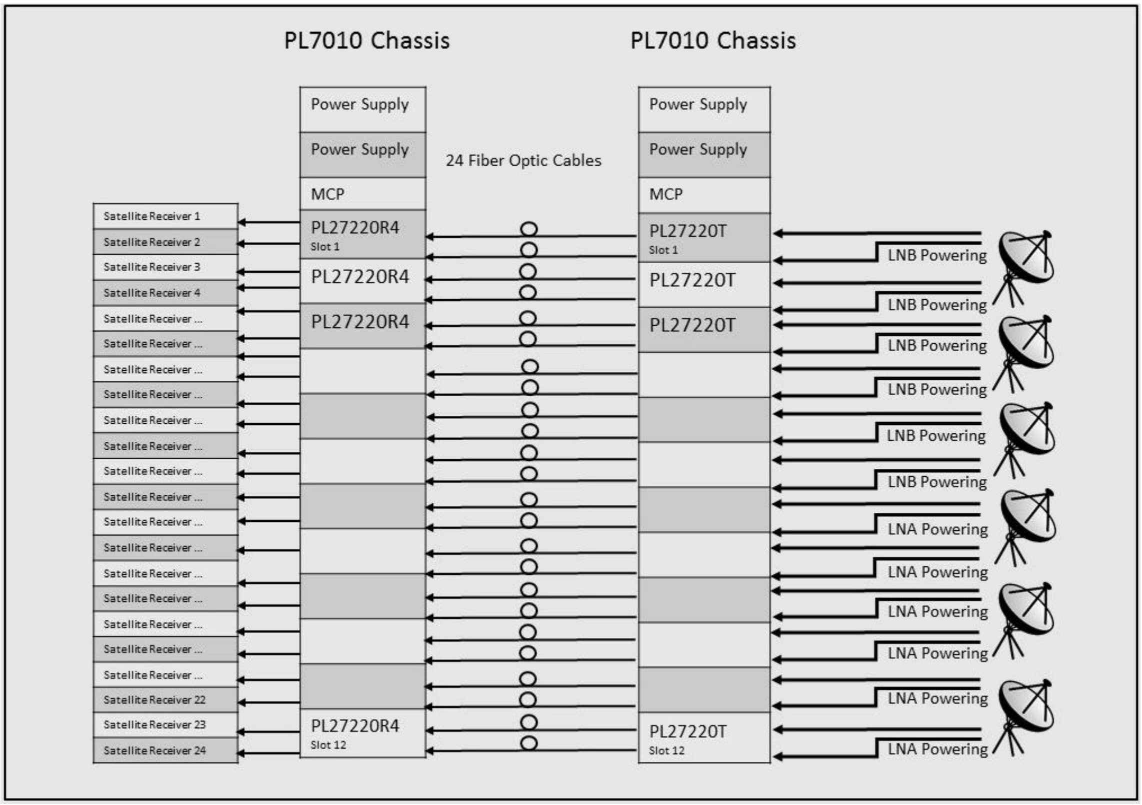

PL7010 Chassis
PL7010 Chassis
Power Supply
Power Supply
MCP
PL27220R4
Slot 1
PL27220R4
PL27220R4
PL27220R4
Slot 12
24 Fiber Optic Cables
Power Supply
Power Supply
MCP
PL27220T
Slot 1
PL27220T
PL27220T
PL27220T
Slot 12
Satellite Receiver 1
Satellite Receiver 2
Satellite Receiver 3
Satellite Receiver 4
Satellite Receiver ...
Satellite Receiver 22
Satellite Receiver 23
Satellite Receiver 24
LNB Powering
LNA Powering

Figure 4 represents a typical L-band downlink within a teleport. The system is comprised of two fully populated sets of 19” 3RU indoor chassis (PL7010) with dual power supplies and an MCP Card.

The downlink consists of 12 PL2-7220T dual transmitters at the antenna site receiving 24 L-band signals from six dishes and 12 PL2-7220R4 dual receivers at the indoor site.

Ordering Information

PL2-7220T-1310-50SMA-LC	Dual L-Band Transmitter, Downlink optimized -25 to -50dBm, RF-In, 50 Ohm SMA connector
PL2-7230T-1310-75F-LC	Dual L-Band Transmitter, Uplink optimized -5 to -25dBm, RF-In, 75F connector
PL2-7220R4-50SMA-LC	Dual L-Band Receiver, Downlink optimized -25 to -35dBm, RF-Out, 50 Ohm SMA connector
PL2-7230R4-75F-LC	Dual L-Band Receiver, Uplink optimized -5 to -25dBm, RF-Out, 75F connector

Recommended Accessories

Active Accessories

- 28dB Gain RF Amp
- 55dB Gain RF Amp
- Redundancy RF Switch
- Optical Ethernet Link

Passive Accessories

- Wideband RF Splitter
- IF RF Splitter
- 10MHz/L-Band Diplexer
- L-Band RF Splitter
- 2way Optical Splitter
- 1310/1550nm MUX/DeMUX