

## OPTICAL COMMUNICATIONS MAINFRAME RETURN PATH QUAD RECEIVER MODULE



### Description

The *Light Link® Series 3* return path quad receiver module (RPQRM) is designed to plug into PBN's optical communications mainframe system (OCM).

This unit incorporates four independent optical return path receivers that operate at any wavelength between 1300...1610 nm. This unit also suits CWDM and DWDM applications.

The user can set each receiver individually for operation in either manual gain control (MGC) mode or automatic gain control (AGC) mode. In AGC mode the receiver employs a 4.5 MHz pilot detection to maintain its constant gain. There is also an FSK demodulator option, which allows for complete field node status monitoring. This feature can automatically detect the type of connected field node, being an AMCP1315, ODN1315, PBN-DN1, CPON, or any other compatible optical node.

Comprehensive status monitoring of each receiver within the module is available via the OCM user interface. The RPQRM extracts the field node data, including its own operational parameters for display at the OCM user interface and the NMS3 network manager. This allows complete supervision of the connected optical field nodes. The status is reported through the network management system.

### Features

- ✓ Plug and play OCM module.
- ✓ Four return path receivers in one module.
- ✓ Bandwidth 5...200 MHz.
- ✓ 1300...1610 nm operating wavelength, to suit CWDM and DWDM applications.
- ✓ User selectable MGC or AGC.
- ✓ Pilot based automatic gain control (AGC) over fibre optic link with adjustable RF output level.
- ✓ Capability for individual receivers to be configured for redundant return path applications via NMS3.
- ✓ Multi-level mute function on individual receivers to suppress unwanted RF power levels due to ingress.
- ✓ Comprehensive status monitoring of individual receivers plus remote node status monitoring with SMS option.
- ✓ FSK demodulator option for automatic detection of field node type, with status monitoring.
- ✓ PBN NMS3 network manager compatible, including RF power level and ingress management control.

# Specifications

## Optical Performance

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Operating wavelength:	1300...1610 nm
Optical input:	-10...+3 dBm
Optical connectors:	SC/APC, E2000/APC
Return loss:	> 50 dB

## RF Performance

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RF frequency:	5...200 MHz
RF output level: <sup>(1)</sup>	40 dBmV
RF flatness: <sup>(2)</sup>	± 0.75 dB
RF gain range:	0...20 dB
RF impedance:	75 Ω
RF return loss:	> 14 dB
RF gain control:	MGC / AGC (user select)
RF detection for AGC:	4.5 MHz pilot level
Receiver isolation:	> 65 dB
Multi-level mute function:	+6 dB...-42 dB (6 dB stages) < -60 dB attenuation (off)
RF Test point:	-20 dB
RF connectors:	
Module:	GSK female
Paddle-board:	F-type
Test points:	Mini-SMB
Alarm:	Front panel LEDs, integrated SMS

(1) Measured in a typical system with PBN ODNRT-A, -2 dBm input, 6 % OMI.

(2) Optimum performance measured up to 160 MHz.

## Link Performance

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CNR: <sup>(3)</sup>	> 48 dB
IMD <sub>2</sub> : <sup>(4)</sup>	< -52 dBc
NPR: <sup>(5)</sup>	> 40 dB over dynamic range of 15 dB

(3) Measured in a typical system with PBN ODNRT-A over 5 MHz NBW, -2 dBm input, 6% OMI, 10km single mode optical fibre.

(4) Measured in a typical system with PBN ODNRT-A, 4 channels, (11.5 MHz, 26.5 MHz, 45.5 MHz and 58.5 MHz), 0 dBm, 6 % OMI. IMD2 is measured at f1 ± f2.

(5) Measured in a typical system with PBN ODNRT-A, 10 km single mode optical fibre using 35 MHz noise loading.

## General

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Power:	Powered by OCM system
Operating temperature:	0...45 °C
Dimensions (H×W×D):	160 x 44 x 360 mm
Ship size (H×W×D):	280 x 70 x 570 mm
Weight:	1.2 kg
Ship weight:	1.7 kg
Network Management:	NMS3 via OCM system

## Order Details

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### RPQRM-[X]-[Y]

Return path quad receiver module

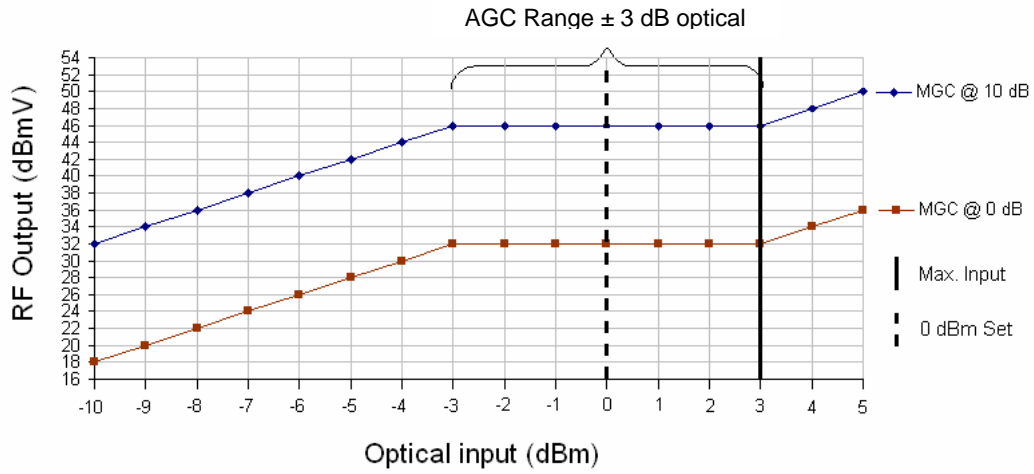
### Options:

**X** SC SC/APC connectors  
E E2000/APC connectors

**Y** 0 No status monitoring of remote nodes  
SMS Status monitoring of remote nodes

**Note:** Status monitoring of remote nodes is achieved with PBN's range of return path optical transmitters which have been optioned with SMS.

## Optical Input Verses RF Output, AGC Range



## CNR Performance, ODNRT – RPQRM, 4 Channels

