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Q-SERIES® Optical

QFQR 200A-04 Series Return Path Optical Receiver

INSTALLATION & OPERATION MANUAL

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Q-Series® Optical – QFQR 200A-04 Series Return Path Optical Receiver – Installation & Operation Manual

PREFACE

1. Preface

This manual describes the QFQR 200A-04 rack mount quad return path optical receiver features, specifications, installation, adjustment and maintenance procedures to ensure the successful installation and safe use of the receiver. Users must read the manual carefully before installation and follow the installation and adjustment procedure accordingly. Otherwise, some unintended practices or circumstances may lead to damage or personal injury. Please contact ATX Networks Technical Support if you have any questions.

Important User Information

- **Caution:** Invisible laser radiation is emitted from the fiber optic connectors which connect to this unit. Exposure can cause permanent injury to the skin or eyes.
- Make sure that the chassis and the power supply are well grounded before powering the receiver on. The grounding resistance should be less than 4Ω to prevent static from damaging the photodiode and possibly injuring the user.

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DESCRIPTION

2. Description

The QFQR 200A-04 rack mount quad return path receiver is designed for the reception of optically transmitted CATV signals. The product utilizes high performance photodiodes and hybrid amplifiers. Optical power indicators and RF test ports on the front panel can be easily used to monitor the receiver's operating status.

2.1. Functional Diagram

QFQR 200A-04
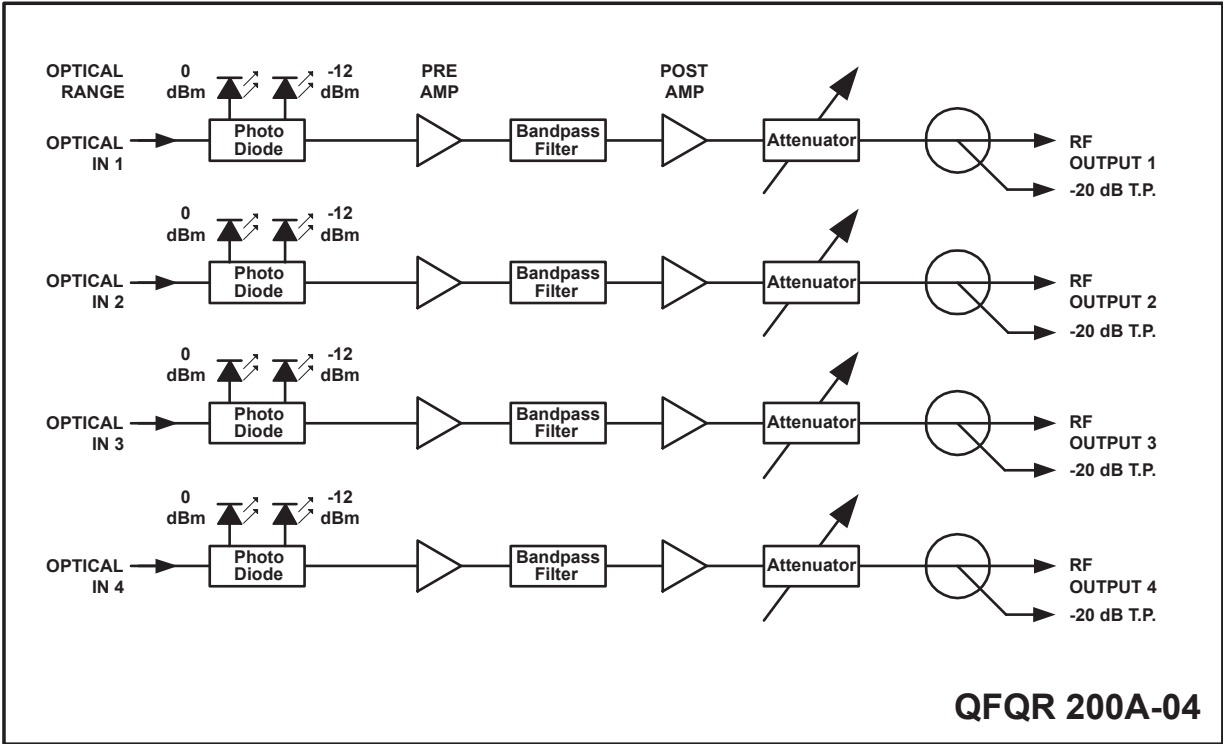
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FEATURES

3.   Features

- 1550 nm / 1310 nm dual wavelength
- 4 independent return path receivers in one 19" 1RU standard rack
- Low noise, high linearity photodiode
- 5-200 MHz RF bandwidth
- Two bandpass filters to suppress upstream noise
- Output adjustment and -20 dB RF test points are available on front panel

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SPECIFICATIONS

4.   Specifications

| SPECIFICATIONS	QFQR 200A
INPUT OPTICAL POWER	-15 to +2 dBm
RECOMMENDED OPTICAL INPUT	-10 to 0 dBm
OPTICAL RETURN LOSS	> 45 dB
OPTICAL WAVELENGTH	1100-1600nm
OPTICAL FIBER CONNECTOR	SC/APC
NOISE POWER RATIO	≥ 15 dB (for DFB laser return path transmitter) ≥ 10 dB (for FP laser return path transmitter)
FREQUENCY RANGE	5-200 MHz
FLATNESS IN BAND	± 0.75 dB
RF OUTPUT (Min)	20 dBmV @ -8 dBm Optical Input
MGC CONTROL RANGE	± 5 dB
RF RETURN LOSS	≥ 16 dB (5-200 MHz)
OUTPUT IMPEDANCE	75 Ω
OPERATING TEMPERATURE	0ºC to +50ºC (+32ºF to +122ºF)
HUMIDITY	20%-55% (without condensation)
POWER CONSUMPTION	10W
POWER SUPPLY	90-265V (50/60 Hz)
DIMENSIONS	1.75"H x 19.0"W x 12.8"D (4.45H x 48.26W x 32.5D cm)
WEIGHT	17.64 lbs (8.0 kg)

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FUNCTION GUIDE

5. Function Guide

5.1. Front Panel Guide

Front View

1. **Power Supply Indicator:** Green-Normal, Red-Fault
2. **Optical Power Indicator:** Normal when the green LED is on. (When the -12 dBm LED is on, the input optical power is 0 to -12 dBm; When the 0 dBm LED is on, the input optical power is 0 to +2 dBm; Recommended optical input 0 to -10 dBm).
3. **Attenuator:** Adjust RF output 0 to 20 dB
4. **RF Output Monitor:** 20 dB lower than the RF output

5.2. Rear Panel Guide

Rear View
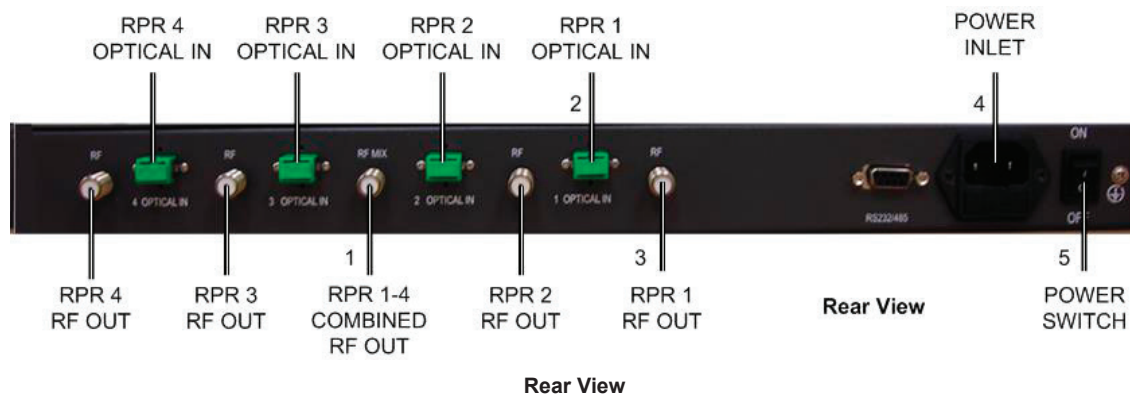
1. **RF Mix:** Combined RF output of RPR 1, 2, 3 & 4
2. **Optical IN:** SC/APC optical input connector
3. **RF:** Individual RPR RF output
4. **POWER IN:** 90-265 VAC IEC power inlet
5. **POWER Switch:** Connects AC power to internal DC power supply

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INSTALLATION & ADJUSTMENT

6.   Installation & Adjustment

Inspect the package. If the packaging has been damaged, or shows signs of water damage, please contact the freight company or contact ATX.

After unpacking, check the equipment and accessories according to packing list. If there are any questions, please contact ATX.

If you suspect the equipment has been damaged, please do not turn on the power in order to avoid worse damage. Please contact ATX.

6.1.   Supplies & Tools

An optical power meter

A digital multimeter

A frequency analyzer

A standard fiber test jumper (FC/APC or SC/APC)

Denatured or 99% pure isopropyl alcohol and lint-free fiber optic cleaning wipes

6.2.   Installation

a)   Install the receiver into a standard 19" rack and ground the case.

b)   Check voltage with a digital multi-meter in accordance with power requirements.

c)   Make sure the fiber connector is clean and verify the input optical power is normal by means of optical power meter (0 dBm to -10 dBm recommended), then insert the fiber connector into the fiber adaptor.

d)   After powering on the receiver, check the power and optical power LED indicators to ensure normal operation.

Troubleshooting during installation:

•   **RF Output Low:** Check the connection of RF adaptor and the coaxial cable.

•   **No RF Output:** Check the optical power indicator. If Red, check the optical input power.

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CLEANING & MAINTENANCE

7.   Cleaning & Maintenance

Fiber connectors can be easily contaminated by dust or dirt, which can result in decreased optical input power. If optical receiver power and RF output levels of the receiver decline, you should clean fiber connectors. The cleaning method is recommended below:
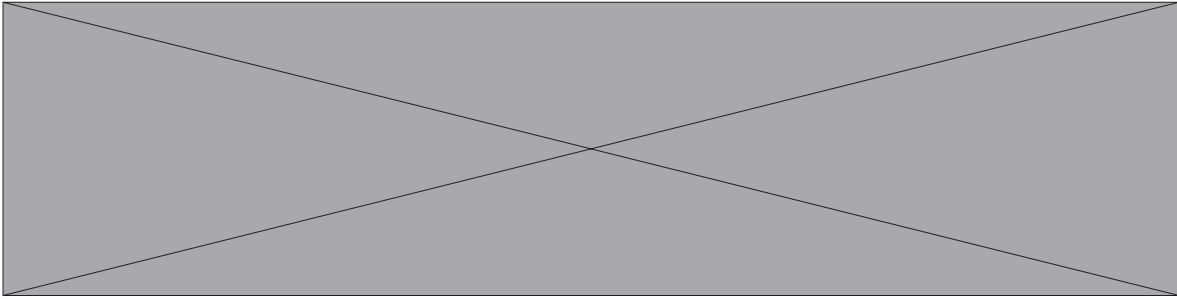
a)   Remove power from the receiver.

b)   Carefully unplug the fiber connector from the adapter.

c)   Using isopropyl alcohol and lint-free wipes carefully clean the faces of the optical connector. After cleaning, allow 1 to 2 minutes until the connector's surface is dry.

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SERVICE & SUPPORT

8. Service & Support

8.1. Contact ATX Networks

Please contact ATX Technical Support for assistance with any ATX products. Please contact ATX Customer Service to obtain a valid RMA number for any ATX products that require service and are in or out-of-warranty before returning a failed module to the factory.

RF Products
(MAXNET, SignalOn, HFC Enhance, PCI Filters, Q-Series, SCN, SMAC, FiberLinx)

TECHNICAL SUPPORT
Tel: (905) 428-6068 – press *3 then press 2
Toll Free: (800) 565-7488 – press *3 then press 2 (USA & Canada only)
Email: rfsupport@atxnetworks.com

CUSTOMER SERVICE
ATX Networks
1-501 Clements Road West
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Toll Free: (800) 565-7488 – press *1 (USA & Canada only)
Fax: (905) 427-1964
Toll Free Fax: (866) 427-1964 (USA & Canada only)
Email: support@atxnetworks.com
Web: www.atxnetworks.com

8.2. Warranty Information

All of ATX Networks' products have a 1-year warranty that covers manufacturer's defects or failures.

NOTE: There are adhesive tape seals on both sides of the case. Any unauthorized removal of this tape seal by the user will void the 1-year warranty.

ATX Networks
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