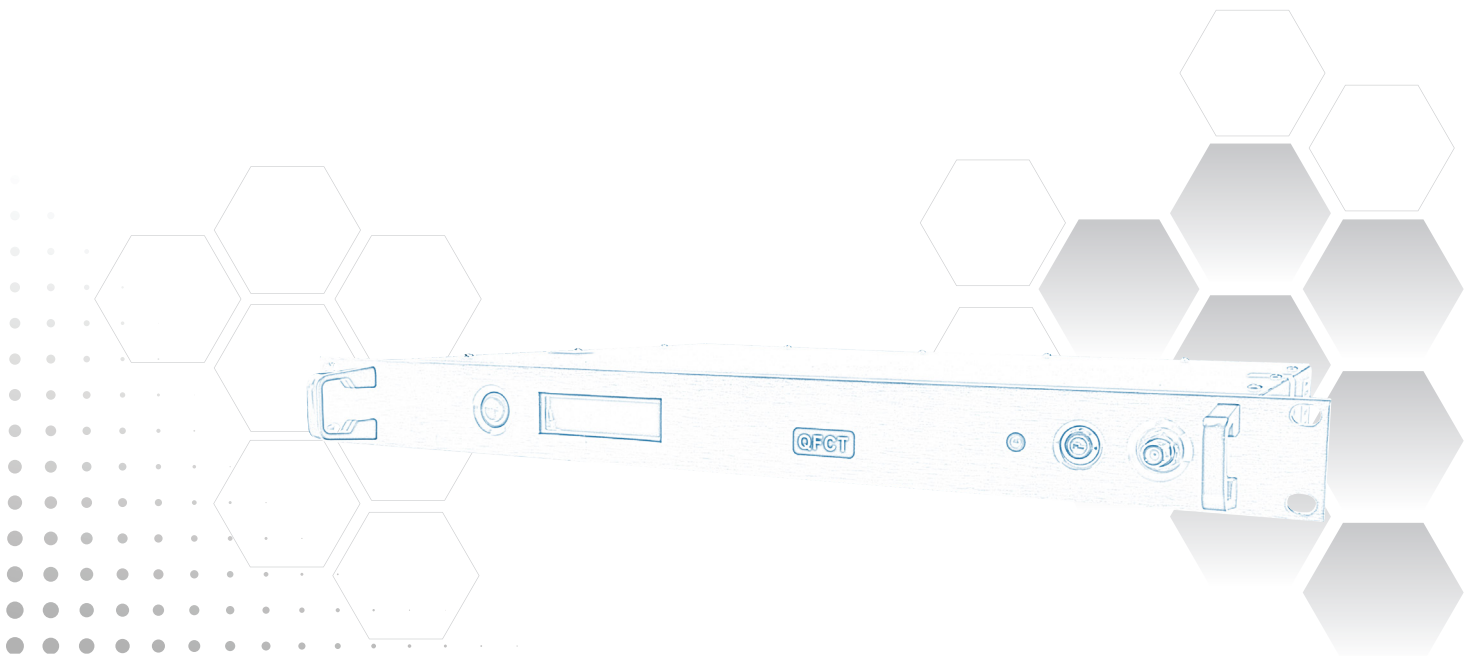




Q-SERIES® Optical

QFCT 1310nm 1GHz Quality Fiber CATV Transmitter

Installation & Operation Manual



Although every effort has been taken to ensure the accuracy of this document it may be necessary, without notice, to make amendments or correct omissions. Specifications subject to change without notice.

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TABLE OF CONTENTS

1.	<u>OPERATION NOTICE</u>	1-1
2.	<u>SYSTEM DESCRIPTION</u>	2-1
3.	<u>OPERATION</u>	3-1
3.1	<u>General Description</u>	3-1
3.2	<u>Start-up Main Menu</u>	3-1
4.	<u>SPECIFICATIONS</u>	4-1
5	<u>SERVICE & SUPPORT</u>	5-1
5.1	<u>Contact ATX Networks</u>	5-1
5.2	<u>Warranty Information</u>	5-1

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OPERATION NOTICE

1. Operation Notice

ATX Networks strongly advises you to read the following safety instructions prior to installing and operating this equipment.

1. The transmitter should have a good grounding with a grounding resistance $< 4\Omega$.
2. The machine utilizes a high performance, high reliability, and steady voltage switching power supply. It has constant voltage overflow protection and can work in 110~240 VAC electrical networks. The micro-processor monitors the output DC voltage.
3. In order to make sure reflection loss is $\approx 45\text{dB}$, use APC style connectors; other types (such as SC/PC) are not designed to mate with the QFCT1310 APC style optical connector. Keep the connector clean when installing.
4. Do not activate the transmitter without the fiber cable attached or without the fiber output port covered. Harmful laser radiation is emitted which can cause harm, especially to the eyes.
5. RF level determines the OMI of the laser and the system index (CNR, CTB, CSO). When at 59 route PAL-D, its RF level is 20dBmV. Suppose channel is N: $S_i(N) = 20 + 10\text{Lg}(59/N)$ (dBmV)
6. CNR and Channel N: $\text{CNR}(N) = \text{CNR}(59) + 10\text{Lg}(59/N)$ (dB)



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SYSTEM DESCRIPTION

2. System Description



2.1 General Description

QFCT1310 series of AM laser transmitters deliver signal transmission of NTSC, PAL, digital or compressed digital information for CATV in private networking application.

The unit is packaged in a rack-mounted casing of 1.75-inch height (1RU) and 19-inch width. Each unit is equipped with a self-governed power supply with 110-240V AC input.

2.2 Product Highlights

1. Transmits NTSC, PAL, analog, digital, or compressed digital signals
2. 1310nm operation
3. Optically isolated distributed AM feedback laser
4. 47-1000MHz RF input bandwidth
5. Up to 78 NTSC channels
6. Front panel RF test point
7. Low RF drive levels are required for the built-in RF amplifier
8. Industry standard select monitoring interface RS-232

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OPERATION

3. Operation

This section of the manual will give an overview of the available menus in the QFCT1310 series transmitter. All instructions in this section refer to the representation of the front panel shown in the diagram below. The user can scroll through the menus by using the push button that is on the front panel, located in the right of the LCD screen.



3.1 General Description

There is a status LED located to the left of the power supply key switch on the front panel. When it is green, the device is working properly. When it is red, the laser has encountered a fault condition. When it is flashing red, there is an alarm.

- Plug in power supply. The digital panel will display "READY: KEY OFF", and there will be Red light.
- In order to protect the laser, there is time-delay function. After turning on with the key, the laser initialize after 10 seconds. Then the LED will turn to Green from Red and the digital panel will display the model of the machine.

3.2 Start-up Main Menu

Press **select** button and the following menu will be displayed in sequence.

- **Menu #1**
ATX Networks, INC
(800) 565-7488
- **Menu #2**
LD BIAS
Read-only menu, displays laser bias temperature
- **Menu #3**
COOLING/HEATING
Read-only menu, displays the amount of current that the thermoelectric cooler requires to maintain the laser temperature at nominal 25°C
- **Menu #4**
UNIT TEMP
Read-only menu, tells the system temperature
- **Menu #5**
+5V READS
Read-only menu, displays the voltage +5V
- **Menu #6**
-5V READS
Read-only menu, displays the voltage -5V
- **Menu #7**
+24V READS
Read-only menu, displays the voltage +24V
- **Menu #8**
S/N
Read-only menu, displays the serial number

1. If the LCD screen displays "INTERLOCK", and the red LED is flashing, it means that the RS-232 port at the back panel is loose.
2. If RF input level is too high, there will be an alarm (LED flashing red). You should shut off the power, adjust RF input level to nominal range and then apply power to the transmitter.
3. +5V voltage (+5V READS) $>\pm 0.5V$ alarm.
-5V voltage (-5V READS) $>\pm 0.5V$ alarm.
4. If any fault occurred, there will be alarm (LED flashing red). Microprocessor will shut off the laser automatically, and digital panel will show the reason of the fault.

SPECIFICATIONS

4. Specifications

SPECIFICATIONS	QFCT
RF	
FREQUENCY RANGE	54-1000 MHz
CHANNEL LOADING	78 NTSC
RF INPUT SENSITIVITY	15 dBmV \pm 3
FLATNESS	\pm 0.75 dB
RF INPUT IMPEDANCE	75 Ω
RF RETURN LOSS	47-550 MHz \geq 16 dB 550-1000 MHz \geq 14 dB
RF TEST POINT IMPEDANCE	75 Ω (-20 dB)
CARRIER-TO-NOISE RATIO	\geq 51 dB ⁽¹⁾
COMP. 2nd ORD.	\leq -60 dBc
COMP. TR. BT.	\leq -65 dBc
OPTICAL	
WAVELENGTH	1310nm \pm 20
OPTICAL OUTPUT POWER	4-22mW
OPTICAL RETURN LOSS	\geq 45 dB
LASER TYPE	Cooled DFB
MODULATION METHOD	Directly Modulated
ELECTRICAL & ENVIRONMENTAL	
TOTAL POWER CONSUMPTION	30W (max)
AC POWER INPUT RANGE	100-240 VAC
DC POWER INPUT RANGE	40-60 VDC
OPERATING TEMPERATURE	0°C to +50°C (+32°F to +122°F)
HUMIDITY	20%-55% (without condensation)
DIMENSIONS	1.75"H x 19.0"W x 14.25"D (4.45H x 48.26W x 36.20D cm)
WEIGHT	8.75 lbs (3.97 kg)
NOTE: (1) Based on received optical input of 0 dBm.	

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SERVICE & SUPPORT

5. Service & Support

5.1 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 & OPTICAL TECHNICAL SUPPORT

Tel: (905) 428-6068
Toll Free: (800) 565-7488 (USA & Canada only)

► Press *3 for **Technical Support**

► Then press 2 for **RF & Optical Products (MAXNET, SignalOn, HFC Enhance, PCI Filters, Q-Series, FLEXNET, SCN, SMAC FiberLinx)**

Email: rfsupport@atxnetworks.com

CUSTOMER SERVICE

ATX Networks
1-501 Clements Road West
Ajax, ON L1S 7H4 Canada

Tel: (905) 428-6068
Toll Free: (800) 565-7488 (USA & Canada only)

► Press *1 for **Customer Service**

Fax: (905) 427-1964
Toll Free Fax: (866) 427-1964 (USA & Canada only)

Web: www.atxnetworks.com
Email: support@atxnetworks.com

5.2 Warranty Information

The ATX Networks' products have a one year warranty and is subject to ATX Networks' standard warrantee terms. There are no user serviceable components inside the unit. The warranty is void if the unit is opened or is damaged due to misuse.



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