HFC Enhance® NT/NB UPGRADED DFB RETURN PATH TRANSMITTER

D3.1/CCAP™ Compliant

1. Overview

Figure #1 illustrates the HEFN****C Upgraded DFB-based Return Path Transmitters.

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Figure #1 HEFN**C Upgraded Return Path Transmitter**

2. Installation

1. Power off the NT/NB Node.
2. Open the NT/NB Node; locate the existing return transmitter module in the optical section of the node. The return path transmitter is located on the left side of the node, underneath the Fiber Management Tray.
3. Swing the Fiber Management Tray up to provide access to the return transmitter(s).
4. Disconnect the fiber connector and then remove the existing return transmitter and replace it with the new upgraded HEFN****C Return Path Transmitter provided. Secure the return path transmitter by tightening the captive screws located on the module. The RF input connection to the return path transmitter is made at the bottom of the return transmitter modules DB-style connector.
5. Reconnect the appropriate fiber connector to the new return transmitter. Dress the fiber inside the node to prevent it being damaged or pinched when the node is closed. **(NOTE: Always clean the fiber connectors to prevent contamination. Also ensure that the fiber connectors are of the same type, mismatching fiber connectors can cause low signal level or damage to the fiber connector faces).**
6. Tilt the Fiber Management Tray back down into the node and secure.
7. Power the NT/NB Node back on.
8. Optical output power of the HEFN****C Return Path Transmitter can be measured at the 1V/mW OPT PWR Test Point on the transmitter. Be sure to ground the ground lead of the multimeter to a ground in the node when monitoring these test points.
9. RF input level into the return path transmitter can be measured at the -20 dB Test Point on the transmitter.
10. The transmitter also features an LED which illuminates GREEN when the transmitter status is nominal and RED when the transmitter has a fault.
11. When everything is connected and the unit is powered, adjust the level of the transmitter for optimum RF drive level (see Section #3).

3. Setting Laser Drive Levels

The HFC Enhance Upgraded Return Path Transmitters for the NT/NB nodes have been optimized based on the assumption that they will be driven with 37 MHz of loading(1). The optimum drive level (using 6 carriers) is noted on the label beside the upgraded return transmitters RF test point and is labeled "LEV".

12. The Return Path can be optimized by injecting a carrier at the node port 4 output test point of level "EXPECTED RETURN CARRIER LEVEL" (expected level is a system specific design specification) + 20 dB and adjust padding until the level measured on the return transmitter RF test point equals the value (in dBmV) that is noted on the label beside the return path transmitter's RF test point. The label location is shown in Figure #3 below. The reverse pad locations for each port are shown in Figure #2 below.

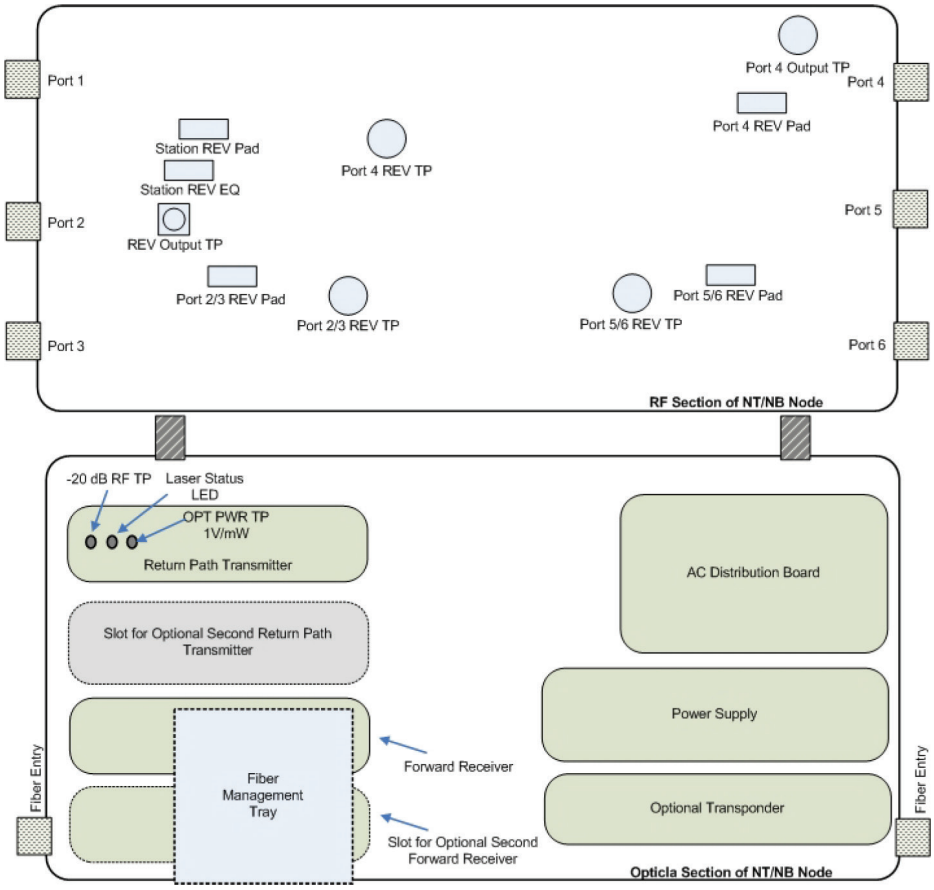

Figure #2 NT/NB Node Overview

Figure #3 Laser Drive Level Label

(1) The optimum operating point for the transmitter is selected as the point that is 5 dB above the location where the noise side of the NPR curve crosses 41 dB. The NPR curve is generated using 37 MHz of noise loading and the per carrier power level is calculated assuming that the total power is calculated at the optimum operating point is spread across 6 carriers. Hence, the optimum drive level for the HEFN****C assumes a total of 6 carriers of loading.

Service & Support

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
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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
Ajax, ON L1S 7H4 Canada

Tel: (905) 428-6068 – press *1
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

Warranty Information

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

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ATX Networks
1-501 Clements Road West, Ajax, ON L1S 7H4 Canada
Tel: 905.428.6068 | Toll Free: 800.565.7488 | support@atxnetworks.com