



Description

The RLM return path laser module is a plug-in transmitter designed to fit into the AMCP1315. The RLM provides an economic solution for upstream transmission of DOCSIS return data or other two-way HFC applications.

The plug-in module is used together with a diplexer inside the AMCP1315 to suit a variety of frequency band-splits. This makes the AMCP1315 optical node a versatile unit for connecting multi-apartment buildings (MDU).

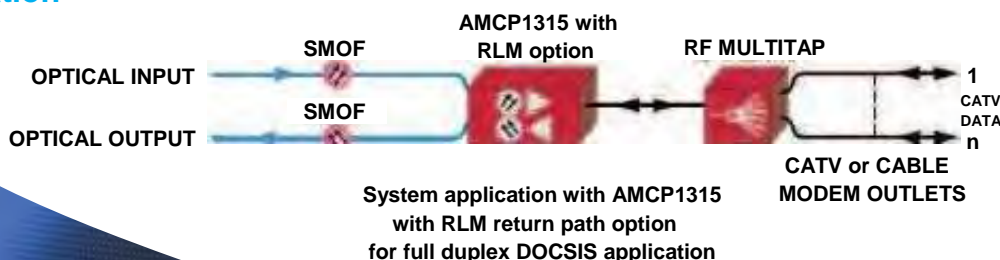
The RLM can be optioned for two different modes of status monitoring:

- 1) The pilot-only model verifies if the AMCP1315 has a valid optical input. If it doesn't, the laser of the pilot tone is switched off. This can be detected at the headend site as a remote alarm condition. The operation mode is jumper selectable on the RLM module.
- 2) The SMS (Status Monitoring System) model sends a continuous repeated data stream to the associated RPQRM return path receiver. The data is then decoded and made available to the readout on the OCM chassis and the NMS3 network management system.

Features

- Plug and play optical laser and diplexer modules.
- Return bandwidth of 5 to 200 MHz available, limited only by plug-in diplexer.
- High optical power output with outstanding DOCSIS performance, permitting higher speed modulation modes in the upstream path.
- Full compatible with all AM, FSK, QAM, QPSK, and FM transmission systems for 1310 nm and 1550nm.
- Selection of FP and DFB lasers available, including CWDM wavelengths.
- Choice of frequency band splits via the AMCP1315 diplexer options.
- LED indicators monitoring the presence of optical output power and laser bias current. Plus a summary of the alarm status when optioned with SMS.
- FSK status monitoring option via 4.5 MHz pilot carrier and associated RP4RM return path receiver. No transponder needed.

Application



Specifications

Optical Performance

Operating wavelength:	1310 nm, 1510 nm, 1530 nm, 1550 nm, 1570 nm.
Output power	
RLM-FP-[z]:	1mW
RLM-DFB-[z]:	2mW
RLM-DFBO-[z]:	1mW
RLM-1550-[z]:	2mW
Optical return loss:	> 55 dB
Optical connector:	SC/APC

RF Performance

RF frequency	
No diplexer:	5 to 200 MHz
with 30/45 diplexer:	5 to 30 MHz
with 42/54 diplexer:	5 to 42 MHz
with 65/85 diplexer:	5 to 65 MHz
RF flatness	
5 to 200 MHz:	± 0.5 dB
RF input level:	10 dBmV @ 6% OMI
Modulation adjust control:	0 to 20 dB
RF impedance:	75 ohms
RF test point:	20 dB below RF modulation level
RF pilot level (option)	13.5 dB below RF reference level

Link Performance

CNR:	> 47 dB
IMD ² :	> 55 dB

Measured in a typical system with PBN RP4RM, 6.0% OMI.

Monitored Parameters with SMS Option

The SMS option conveys the following parameters and respective alarm reports

- 1) Module code
- 2) Serial number
- 3) Switch selectable node identifier
- 4) Internal temperature
- 5) Optical input power at AMCP receiver
- 6) RLM optical output power
- 7) RLM laser bias current
- 8) RLM DC supply voltage
- 9) Urgent alarm status
- 10) Non-urgent alarm status
- 11) AMCP1315 summary alarm status
- 12) RLM summary alarm status

The reading of these status monitoring parameters is available only with RPQRM optical return path receiver at the headend site.

General

Power:	From AMCP1315
Operating Temperature:	0 to 45° C
Dimensions: (HxWxD)	44 x 35 x 150 mm
Ship size:	Inside AMCP1315, unless otherwise specified
Weight:	200 g
RF connectors:	F-type

Ordering Information

RLM-[Y]-[Z]

Return path laser module for AMCP 1315

Y	<u>EP</u>	1mW (0dBm) 1310nm FP isolated laser
	<u>DFB0</u>	1mW (0dBm) 1310nm DFB isolated laser
	<u>DFB</u>	2mW (3dBm) 1310nm DFB isolated laser
	<u>1510</u>	2mW (3dBm) 1510 nm DFB CWDM laser
	<u>1530</u>	2mW (3dBm) 1530 nm DFB CWDM laser
	<u>1550</u>	2mW (3dBm) 1550 nm DFB CWDM laser
	<u>1570</u>	2mW (3dBm) 1570 nm DFB CWDM laser

Z	<u>P4.5</u>	4.5 MHz pilot carrier
	<u>SMS</u>	4.5 MHz pilot with FSK status data transmitter