



ACION 8000

DT8150 (1.2 GHz) 1550 nm Forward Optical DM Transmitter

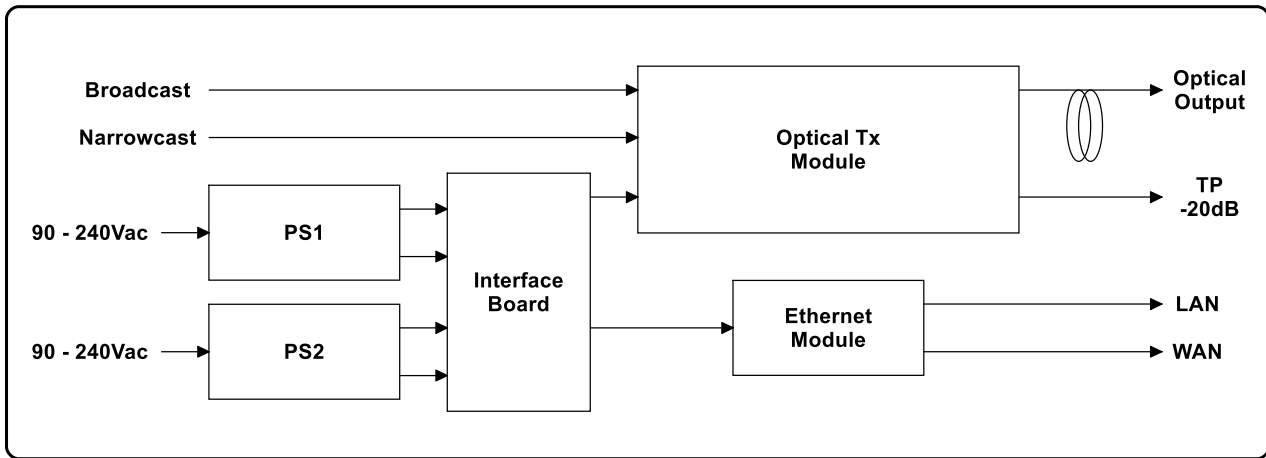
The DT8150 series are high performance head-end 1.2 GHz forward optical direct modulation transmitter (Tx) for HFC or FTTH applications. The DT8150 series Tx is a 1RU 19" standard chassis and is available in several wavelength options and configurations to meet various network requirements. The DT8150 series Tx provides a minimum optical power output of 10 dBm and can transmit RF signals over a fiber length up to 30 km with user fiber length setting in 1 km increment.

The Transmitter's adjustable OMI level and user defined AGC setting features makes it very versatile in field application with a wide range of RF input loading from analog only, analog and digital or full digital.

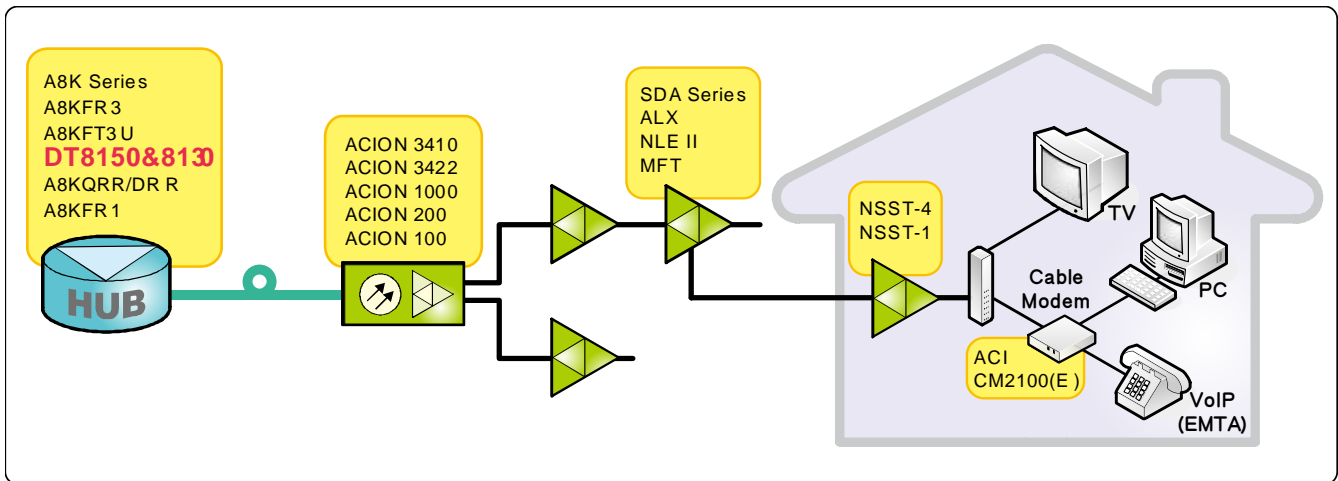
Features

- 19" standard 1RU rack design
- Transmission bandwidth up to 1.2 GHz
- Fiber distance up to 30 km with user fiber length setting in 1 km increment
- Cooled DFB laser diode with integrated optical isolator
- AGC/MGC mode selection
- 1550 nm, standard DWDM ITU Ch15 to Ch72, 100 GHz spacing
- Video/CW Mode selection
- OMI level adjustments
- User defined AGC setting
- SBS: 18 dBm
- Dual Hot-Swappable power supply
- -20 dB RF front panel test point
- Remote control and monitor functions via HMS or SNMP

Block Diagram



Application



Specifications

| ACI | | DT8150 1550nm 1.2 GHz Forward Optical DM Transmitter | | |
|--|---|---|--|------------------------|
| PARAMETERS | CONDITIONS | UNITS | SPCIFICATION | NOTES |
| Optical Specification | | | | |
| Laser Type | | | Cooled DFB LD with Isolator | |
| Optical Wavelength | | nm | 1520 - 1565 | (1) |
| Optical Power | | dBm | 10 | |
| Optical Power Tolerance | | dB | +1/-0 | |
| Optical Connector Type | | | SC/APC (standard) FC/APC, E2000/APC (optional) | |
| SBS Control Level | | dBm | 18 | |
| RF Parameter | | | | |
| Operating Bandwidth | | MHz | 50 - 1218 | |
| Channel Loading | Analog + Digital | Channel | NTSC 79ch Analog + 47ch 256QAM + 2x192 MHz OFDM | |
| | All Digital | Channel | 125ch 256 QAM + 2x192 MHz OFDM | |
| Broadcast RF Input Level | Analog | dBmV/ch | 15 | |
| | Digital | | 9 | |
| Narrowcast RF Input Level | Digital only | dBmV/ch | 15 | (2) |
| RF Return Loss (All Ports) | 75 ohm, Max | dB | -16 | |
| Broadcast & Narrowcast Flatness | 50 to 1218 MHz | dB | ± 0.6 | |
| RF Input AGC Range | AGC Mode | dBmv | +5/-10 | |
| MGC Gain Control Setting | MGC Mode | dB | 0 to 15 | |
| Front Panel Test Point Level | 50 to 1218 MHz | dB | -20 ± 0.5 | (3) |
| Test Point Flatness | 50 to 1218 MHz | dB | ± 0.6 | |
| Port-to-Port Isolation | Narrowcast to Broadcast | | 45 | |
| | Broadcast to Narrowcast | dB | 15 | |
| Distortion Performance (see Note 4) | | | | |
| 79ch analog + 47ch 256 QAM + 2x192 MHz OFDM (digital channels are -6 dB from analog) | | | | |
| Fiber Length Setting | Selectable 1 km increment | km | 0 to 30 | (4) |
| Carrier to Noise Ratio (CNR) | 79ch NTSC Analog Only 79ch NTSC + 47ch 256 QAM + 2x192MHz OFDM | Min. | 52 | (5) |
| | | | 51 | |
| Composite Second Order (CSO) | Max. | dBc | -62 | |
| Composite Triple Beat (CTB) | Max. | dBc | -65 | |
| Cross-Modulation | Max. | dBc | -62 | |
| Pre-FEC Bit Error Rate (BER) | Max. | | ≤ 10 ⁻⁹ | |
| Modulation Error Rate (MER) | Min. | dB | 38 | |
| All digital loading (125ch 256 QAM + 2x192 MHz OFDM) | | | | |
| Modulation Error Rate (MER) | | | ≥ 38 | (6) |
| Bit Error Rate (BER) | Pre-FEC | | ≤ 10 ⁻⁹ | |
| Environmental / Mechanical | | | | |
| RF Connector Type | RF Input RF Test Point | Rear Panel Front Panel | F-Type Female F-Type Female | |
| Dimensions | | D x H x W | mm | 482.6 x 43.7 x 357 |
| Operating Temperature | | | °F (°C) | 32 to 122 (0 to 50) |
| Storage Temperature | | | °F (°C) | -40 to 149 (-40 to 65) |
| Relative Humidity | Non-condensing | % | | 0 - 95 |
| Power Consumption | 0 to 50°C, Max. | W | | 18 |
| Dual Power Supply (Rear Panel) | Hot Swap | | | 90 to 240 VAC, 50/60Hz |
| LED Indicator | | | | Power, Status, AGC |
| Front Panel Control & Monitor Interface | | | | LAN & WAN (RJ45) |
| Network Management | | | | Webpage Remote NMS |

Notes:

- (1) DWDM ITU Standard ch15 to ch72, 100GHz spacing
- (2) Digital channels are -6dB from analog after combined with Broadcast Input
- (3) Relative to the Broadcast Input
- (4) Fiber Length Setting via Webpage Remote NMS and Front Panel LAN/WAN
- (5) 3.2% OMI/ch, digital channels are -6 dB from analog, Rx optical power = 0 dBm, CNR degraded by 1 dB at 30 km of fiber, fiber length setting from 0 to 30 km with 1 km increment
- (6) Rx optical power = 0 dBm, Fiber length = 0 to 30 km. Fiber length setting from 0 to 30 km with 1 km increment

Part Number Ordering Matrix

| DT8150 1550nm Configuration Sheet | | | | | | | | | | | | | | | | |
|---|--|----------|----------|----------|----------|----------|---|---|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Customer: _____ | | | | | | | | | | | | | | | | |
| Created By: _____ Order Date: _____ | | | | | | | | | | | | | | | | |
| ORDERING MATRIX | | | | | | | | | | | | | | | 2019/12/6 | |
| Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| PART NUMBER | D | T | 8 | 1 | 5 | 0 | | | | | | | | | | |
| 7~8 <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> | OPTICAL CONNECTOR SC: SC/APC with shutter FC: FC/APC | | | | | | 13~14 <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> | CONTROL INTERFACE SN: SNMP(LAN) | | | | | | | | |
| 9~10 <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> | OPTICAL WAVELENGTH 15: : 100 GHz ITU-T channel 72: 00: 1550 nm Standard (Non-ITU) | | | | | | 15~16 <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> | POWER SUPPLY / POWER CORD SA: Single AC(110~240 VAC) / North American power cord DA: Dual AC(110~240 VAC) / North American SD: Single DC 48V DD: Dual DC 48V EA: Single AC(110~240 VAC) / European power cord UA: Dual AC(110~240 VAC) / European power cord | | | | | | | | |
| 11~12 <input style="width: 20px;" type="text"/> <input style="width: 20px;" type="text"/> | OPTICAL OUTPUT LEVEL 07 : ≥ 7 dBm (7~8 dBm) 09 : ≥ 9 dBm (9~10 dBm) 10 : ≥ 10 dBm (10~11 dBm) | | | | | | | | | | | | | | | |
| NOTES: | | | | | | | | | | | | | | | | |
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