**DATA SHEET**

# Opti Max™ Optical Node Series

## OM2741, OM4, OM6

## DWDM Analog Return Transmitter

## FEATURES

- Compatible with legacy CommScope headend analog receivers
- Supports 204 MHz upstream performance
- Supports status monitoring
- Supports high-loss, high optical output multiwavelength passive architectures
- Available in ITU Channels 19 through 63
- Compatible with OM2741, OM4 series, and OM6 series nodes

CommScope DWDM Analog Return Transmitters are fully compatible with Opti Max OM2741, OM4 series, and OM6 series nodes. The transmitter is an excellent choice for facilitating multiwavelength planning over a single fiber, which allows end users to maximize fiber capacity. In addition, the transmitter can support the migration of CWDM wavelengths onto the usable DWDM spectrum. Available in 45 different wavelengths, DWDM Analog Transmitters support a variety of HFC and Fiber Deep wavelength plans and network configurations.

## SPECIFICATIONS

| Characteristics | Specification |
|---|---|
| **Physical** | |
| Dimensions (H x L x W) | 6.0 in x 4.3 in  x 1.25 in (15.24 cm x 10.9 cm x 3.2 cm) |
| Weight | ≤ 1.1 lb (≤ 0.5 kg) |
| **Environmental** | |
| Operating Temperature Range | -40° to 60°C (-40° to 140°F) |
| Storage Temperature Range | -40° to 85°C (-40° to 185°) |
| Humidity | 5% to 95% non-condensing |
| **Optical** | |
| Optical Output Power[1] | 7.0 ± 0.4 dBm |
| Transmitted Wavelength | 100 GHz spacing, ITU channels 19–63 |
| Wavelength Accuracy[2] | ± 0.5 nm (max) |
| Optical Power Test Point | 1 ± 10% mW/V |
| Output Power Stability Over Temperature | ± 0.6 (max) |
| Optical Power in Off State | -20 dBm |
| Optical Connector | SC/APC |
| LED Indicators | |
| Fault | Optical Output Power: Red = high alarm (5.51 mW limit); low alarm (4.51 mW limit); Off = normal operating limits<br>Laser Bias Current: Red = high alarm (100 mA limit); Off = normal operating limits; Laser Temperature: Red = high alarm (+1.5°C limit); low alarm (-1.5°C limit); Off = normal operating limits |
| Status | Green = transmitter is on; Off = transmitter is disabled |
| **RF** | |
| RF Bandwidth | 5–204 MHz |
| Input Level (Total Power)[3] | 20 dBmV (nominal); 50 dBmV (max) |
| Return Loss[4] | -19 dB, 5–120 MHz; -17 dB, 120–204 MHz |
| Test Point Insertion Loss[5] | 20 ± 0.5 dB |
| Frequency Response Flatness[6] | ± 0.5 dB (max) |
| Response Deviation[7] | 0.35 $dB_{pk-pk}$ (max) |
| Average RF Gain[1] | -17.07 ± 0.4 dB |
| Gain Variation Over Temperature[8]<br>$T_{bp}$ = -30° ± 2°C<br>$T_{bp}$ = 85° ± 2°C | <br>-6 ± 0.5 dB<br>0.8 ± 0.5 dB |
| Optical Modulation Index (OMI), % per channel[9] | 25.0 ± 1.2% |
| AGC Pilot Tone<br>Frequency Accuracy[10]<br>Peak Optical Modulation Index[1] | <br>± 250 Hz<br>3 ± 0.40% |

## SPECIFICATIONS

| Characteristics | Specification |
|---|---|
| **Link Performance[11]** | |
| Dynamic Range for NPR > = 40 dB[12] | |
| 80 MHz Loading (5–85 MHz) | 12 dB (min) |
| 199 MHz Loading (5–204 MHz) | 9 dB (min) |
| Peak NPR[12] | |
| 80 MHz Loading (5–85 MHz) | 46 dB (min) |
| 199 MHz Loading (5–204 MHz) | 43 dB (min) |
| Dynamic Range for BER < = 1.00E-06[13] | |
| 80 MHz Loading (5–85 MHz) | 24 dB (min) |
| 199 MHz Loading (5–204 MHz) | 19 dB (min) |
| Intermodulation Spurious Outputs | -55 dBc (max) |
| Broadband Spurious Outputs | -65 dBc (max) |
| Low Frequency Noise Rise[14] | 3 dB (max) |
| **Power Requirements** | |
| Supply Current @ +24V | 180 mA (max) |
| Supply Current @ +34V | 130 mA (max) |

**NOTES:**

1. Measured at $T_a$ = 25° ± 5°C.
2. The wavelength accuracy is determined by measuring the worst-case high and low wavelengths as the module is operated over the full operating temperature range. The worst-case measured values are then subtracted from the nominal wavelength and the results are compared to the wavelength accuracy specification. The “Start-of-Life” specification value shall apply until the first 1,000 hours of operation have elapsed, after which time the “End-of-Life” specification value shall apply.
3. The maximum RF input level must be tolerated for at least one hour with no damage.
4. Measured in a 75 Ω system.
5. The RF test point insertion loss is measured relative to the module input with a 0 dB JXP PAD installed. The entire RF test point response must be contained within the indicated limits over the 5–204 MHz RF bandwidth. The RF test point return loss is measured in a 75 Ω system.
6. Measured over the 5–204 MHz RF bandwidth. The specified plus/minus value may be interpreted as a peak-to-peak value of twice the indicated value (e.g., ± 0.5 dB may be interpreted as 1.0 $dB_{pk\text{-}pk}$) to simplify the measurement.
7. The RF response deviation applies to any 6 MHz band within the 5–204 MHz RF bandwidth.
8. The RF gain variation over temperature is the change in the average RF gain as the DUT is operated over temperature. The receiver temperature is held at $T_a$ = 25° ± 1°C, and the optical power at the receiver input is held constant to within ± 0.1 dB. The gain will vary in an approximately linear manner as the base plate temperature deviates from $T_{bp}$ = 25° ± 5°C.
9. The peak optical modulation index (OMI) is specified at $T_a$ = 25° ± 5°C and is derived from the specified average RF gain value and 20 dBmV nominal RF input level.
10. The AGC pilot tone frequency accuracy is determined by measuring the worst-case high and low tone frequency as the module is operated over the full operating temperature range. The worst-case tone frequency values are then subtracted from the nominal frequency and the results are compared to the AGC pilot tone frequency accuracy specification.
11. Test link consisted of 40 km of SMF-28 fiber, plus passive loss sufficient to obtain an optical input power of -6 dBm at the test receiver. The test receiver was a CHP-2RRX, CHP-4RRX, GX2-RX200BX2, or GX2-RX200BX4 return path receiver set to medium gain. The passive loss must be located between the fiber and the test receiver.
12. Tested with a 41 MHz notch (5–85 MHz loading) and a 100 MHz notch (5–204 MHz loading). The pilot tone must be turned on during NPR testing.
13. The BER dynamic range is tested with a 13 channel (5–85 MHz loading) and a 33 channel (5–204 MHz loading) QAM-64 load at a total nominal input power equal to 20 dBmV. The BER is measured without any forward error correction (Pre-FEC).
14. The low frequency noise rise is tested with a 199.25 MHz tone set to a nominal input power level equal to 20 dBmV and with the pilot tone enabled. The noise floor is measured at 5 MHz with the 199.25 MHz carrier on and with the carrier off. The difference in the noise floor level is the low frequency noise rise.

## ORDERING INFORMATION

| Ordering Part Number | Manufacturing Part Number | Description |
|---|---|---|
| 1510389-xx1* | 1508954-xx1* | OM2741/OM4/OM6 DWDM Analog Transmitter, SC/APC |

* When referencing ordering or manufacturing part numbers, replace xx with the required ITU channel. For example, 1510389-191/1508954-191 indicates the module supports ITU Channel 19. Available in ITU Channels 19 through 63.

## RELATED PRODUCTS

| | |
|---|---|
| CH3 Chassis | CHP Chassis |
| Remote PHY Device (RPD) | XE4202M Remote OLT (R-OLT) |
| Power Supplies | Optical Service Cables |

Contact Customer Care for product information and sales:

- United States: 866-36-ARRIS
- International: +1-678-473-5656

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**Note:** Specifications are subject to change without notice.



1513402_DWDM Tx_DS_RevB