Data Sheet

ADTRAN

1602-O

RFoG Micronode with OBI Mitigation

FTTH | Gigabit | Low TCO

Benefits

- **Optical Beat Interference (OBI) mitigation technology for upstream transmission resiliency**
- **Simple, plug and play micronode solution for converting Radio Frequency signals at the customer premises**
- **Requires no active electronics in the splitter cabinet**
- **Extends the life of existing Radio Frequency headend**
- **Provides a cost effective migration path for Cable Multiple System Operators fiber deployments**
- **Compact packaging for easy installation**

Overview

Cable MSOs are deploying more fiber in their networks than ever before, but they face the challenge of executing this strategy in a cost effective manner. Minimizing upgrade cost and complexity by maintaining their headend and customer premises equipment are key factors to success. In addition, as take rates, high speed data service speed tiers, and data usage continue to increase strategies are needed to mitigate the rising occurrence of optical beat interference (OBI).

ADTRAN RFoG solutions with OBI Mitigation enable cable operators to extend service offerings over fiber to residential, business and MDU markets.

These solutions do not require powering at the splitter cabinet and use conventional optical splitters ultimately saving OpEx.

The ADTRAN 1602-O Radio Frequency over Glass (RFoG) micronode with OBI Mitigation is the perfect solution for Cable MSOs who are making the transition to fiber, but are still looking to utilize the Radio Frequency (RF) signals generated by their current headend equipment. The ADTRAN 1602-O provides a cost effective solution for converting these RF signals at the customer premises to useable signals that can traverse the legacy Coax wiring present in many homes.

Product Specifications

Optical Specifications Rx

- **Distortion Performance (CNR), minimum:** 48 dB
- **Distortion Performance (CSO), maximum:** 60 –dBc
- **Distortion Performance (CTB), maximum:** 65 –dBc
- **Distortion Performance Note (CNR):** 50–552 MHz CW Analog; 552–1002 MHz digital, -4 dBm receive
- **Distortion Performance Note (CSO):** 50–552 MHz CW Analog; 552–1002 MHz digital, 0 dBm receive
- **Distortion Performance Note (CTB):** 50–552 MHz CW Analog; 552–1002 MHz digital, 0 dBm receive
- **Input Power, maximum:** 0 dBm
- **Input Power, minimum:** -6 dBm
- **LED Indicator, green:** Optical input power
- **Technology Type:** Passive optical network 1/10G (PON) compatible | RF over glass (RFoG)
- **Wavelength, maximum:** 1565.00 nm
- **Wavelength, minimum:** 1525.00 nm

RF Specifications Rx

- **Operating Frequency Band:** 54–1002 MHz
- **Flatness:** ±2.0 dB
- **Output Level, typical:** 17 dBmV @ 550 MHz, 77 dBµV @ 550 MHz
- **Return Loss, minimum:** 16 dB
- **Tilt Across Frequency Band, typical:** 5.00 dB

Optical Specifications Tx

- **Laser Type:** Distributed feedback (DFB) Class 1
- **Technology Type:** Passive optical network (PON) compatible | RF over glass (RFoG)
- **Wavelength, nominal:** 1610.00 nm
- **Dynamic Range at NPR, minimum:** 15 dB @ 30 dB
- **Laser Activation Time:** 1.0 µs
- **LED Indicator, green:** Upstream RF activity
- Optical Beat Interference (OBI) Mitigation Technology Type: Lambda Motion™ Wavelength Randomization
- **Output Power, typical:** 3 dBm

Product Specifications

Rf Specifications Tx

- **Flatness:** ±1.5 dB
- **Input Activation Level, typical:** 14.000 dBmV | 74.000 dBµV
- **Input Power Range, typical:** 20–45 dBmV | 80–105 dBµV
- **Operating Frequency Band:** 5–42 MHz
- **Return Loss, minimum:** 16 dB

Electrical Specifications

- **Electrical Safety Standard:** CE | IEC 60825-1 | TüV | US FCC Part 15B
- **Power Consumption at Voltage, maximum:** 4.8 W @ 12 Vdc
- **Surge Capability Test Method:** IEEE C62.41-A3 (6 kV, 200 A, Ring wave) on both ports
- **Voltage Range:** 8.5–18 Vdc

Environmental Specifications

- **Operating Temperature:** -40 ºC to +65 ºC (-40 ºF to +149 ºF)
- **Relative Humidity:** 5%–95%, non-condensing

Mechanical Specifications

- **LED Indicator, green:** dc input power
- **Optical Port Interface:** SC/APC Female
- **RF Port Impedance:** 75 ohm
- **RF Port Interface:** F Female

General Specifications

- **Application:** Indoor | Outdoor (enclosure required)
- **Warranty:** One year

Dimensions

- Height: 30.23 mm | 1.19 in
- Length 163321 mm | 6.43 in
- Net Weight 0.30 kg | 0.66 lb
- Width 101.06 mm | 4.00 in

Regulatory Compliance/ Certifications

- ISO 9001:2008

Ordering Information

Hardware Options	Part No.
ADTRAN 1602-O RFoG Micronode with OBI Mitigation, 1550/1610, 42/54 MHz, w/10G Filter and Power Inserter	1721602OF1
Accessories	
External Power Supply (sold separately)	172PWRF1

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