Optoelectronics

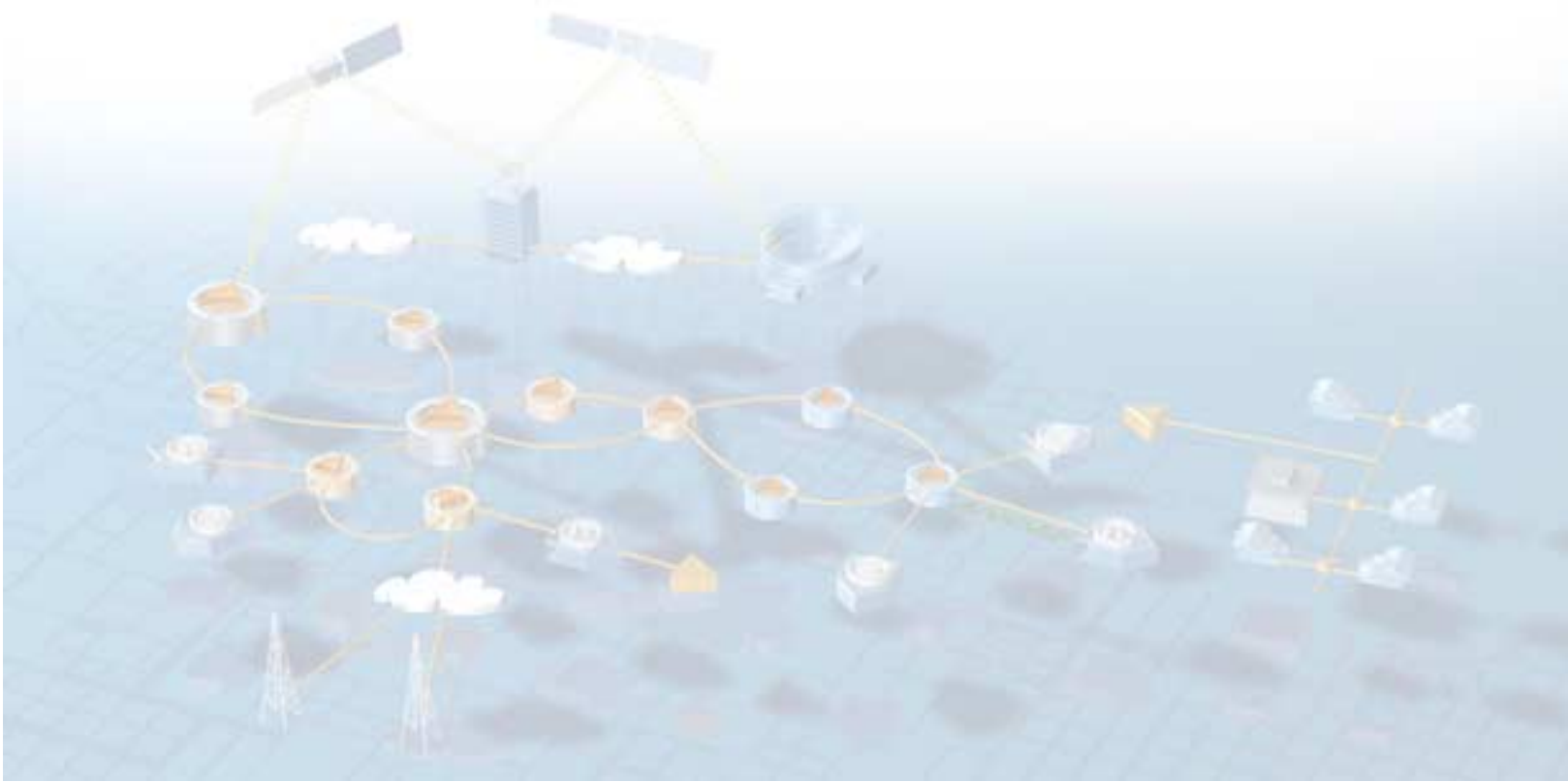
Single Wire Return Device (SWRD)

Description

The Single Wire Return Device (SWRD) is a data conversion device which receives IP packets that have been QPSK modulated, processes the IP packets, and forwards the packets onto an Ethernet network. The SWRD has immediate application for Fiber-to-the-Premises (FTTP) customers to reduce the amount of special cabling required inside the home. Current FTTP architectures require the set-top box (STB) to send all upstream communication via Ethernet transport. The SWRD eliminates the need for an Ethernet port on the set-top boxes and for wiring Cat 5 cable to each STB, by allowing the STB to communicate upstream using traditional QPSK RF transmission.

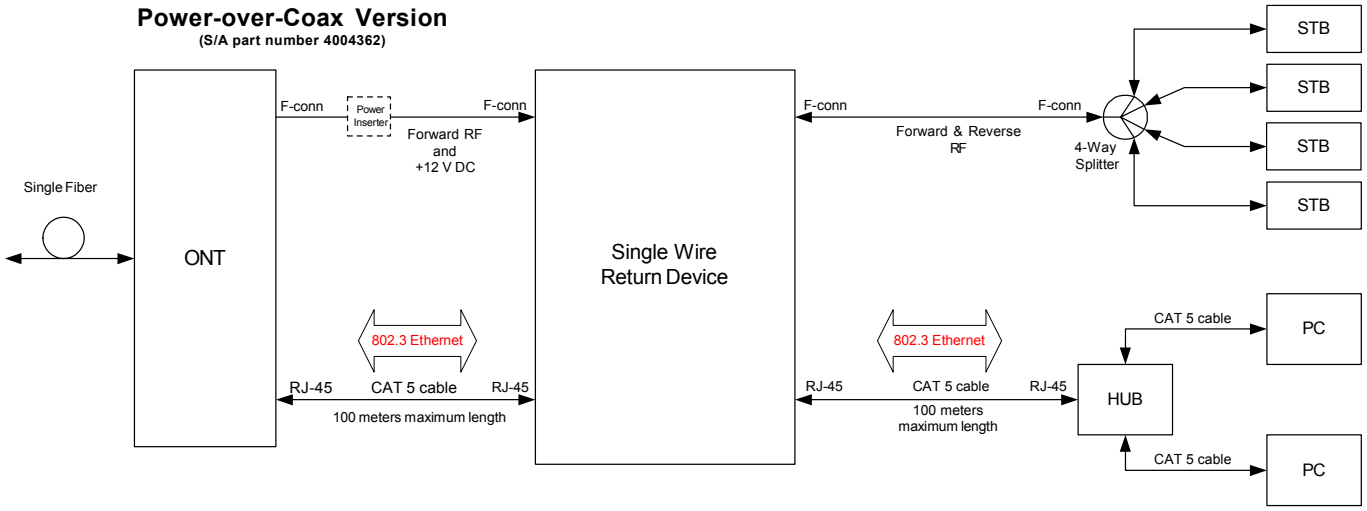
Features

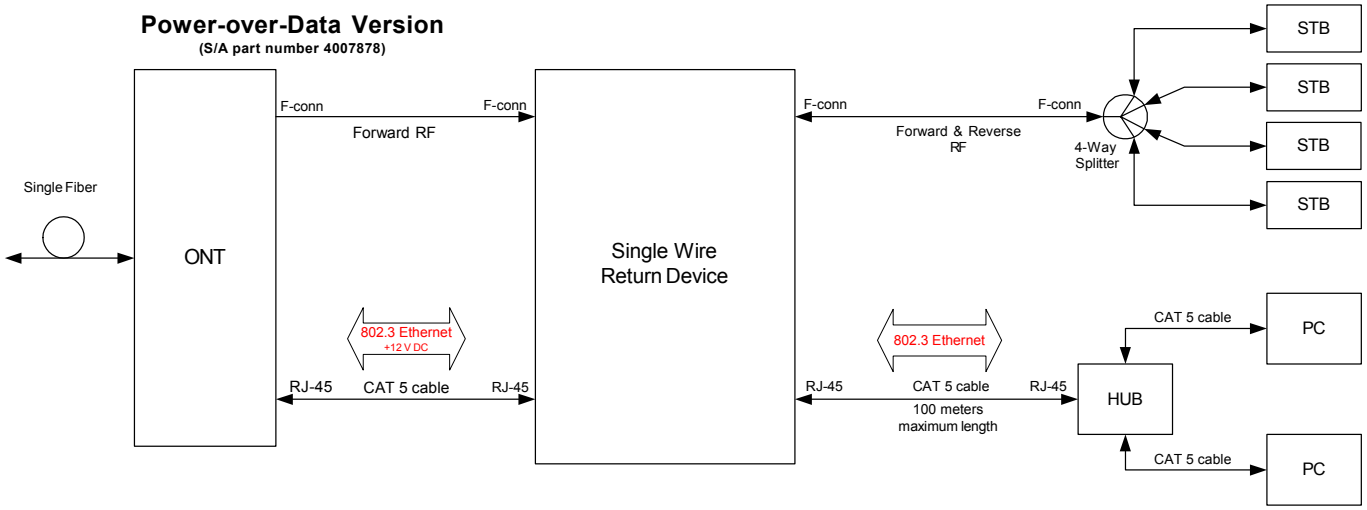
- Small physical size, similar to the current Scientific-Atlanta Drop Amp dimensions
- Low power dissipation
- Powered directly from the Optical Network Terminal (ONT) with an F-connector plug
- Available Power-over-Data (PoD) version which provides for powering over Ethernet cabling – not compliant with IEEE 802.3af.
- Industrial temperature operating range (-40°C to +60°C)
- Designed for “side of home” installations
- Video forward path pass-through with minimal insertion loss
- Coax reverse path QPSK demodulator operating at 18.5 MHz with a maximum bit rate of 3.088 Mbps
- Scientific-Atlanta proprietary data protocol to ensure error-free data conversion
- High-performance internal Ethernet switch enables line rates up to 100 Mbps
- Compliant with Ethernet IEEE 802.3 and TCP/IP standards



Single Wire Return Device

Block Diagram





Single Wire Return Device

Specifications

RF Specifications	Units	Specification	Notes
Forward Insertion Loss (46 - 870 MHz)	dB	< 1.5	
Frequency Response	dB	±0.75	
Reverse Insertion Loss (18.5 MHz)	dB	< 3.5	
Reverse Input Level	dBmV	+31 to +51	
Electrical Specifications			
Surge Resistance (Ethernet Ports)	kV	1.5 kV -1 Positive, 1 Negative	1
Surge Resistance (RF Ports)	kV	1.5 kV -1 Positive, 1 Negative	1
Forward Pass Band	MHz	46 - 870	
Reverse Operating Frequency	MHz	18.5	
Ethernet components, ports, and cabling	n/a	IEEE 802.3 compliant	
Maximum Length of power supply coax cable	ft.	50	
Power Supply			
Input voltage range	V DC	12 ±2.0 V DC	
Input current	Amps	0.25	
Environmental			
Temperature range	°F °C	-40 to +140 -40 to +60	
Housing Dimensions	in. cm	6.87W x 1.29D x 5.77H 17.45W x3.28D x14.66H	
Weight	lbs kg	1.5 .68	
Compliance & Safety			
US Safety		UL 60950-1	
EU Safety		IEC/EN 60950-1	
IP Rating		NEMA 4 (IP56)	
US/Can – EMC Emissions		FCC Part 15, Class B	
EU EMC Emissions		EN 55022 EN55024	

Note:
1. Per GR1089 Standard for surge testing

Ordering Information

Description	Part Number
FTTP Single Wire Return Device (5 per box)	4004362
FTTP Single Wire Return Device w/PoD (5 per box)	4007878

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1-800-722-2009 or 770-236-6900
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