

DOCSIS
3.1
SOLUTION

DP-1000

DOCSIS Protocol Analyzer



Ensure smooth 24-7 operation for your MAC layer with the **industry-standard** DOCSIS 3.1 protocol analyzer – developed with **major industry players**.

 **Averna**



DP-1000

DOCSIS Protocol Analyzer

Key Features

Real-time capture, filter and complete analysis of all DOCSIS MAC-layer data through FPGA-based signal processing

Developed in conjunction with major industry players, and provides the most cost-effective solution for both DOCSIS 3.0 and 3.1

Other Broadband Products

Jupiter 310 Design Verification System
Automated PHY layer testing for DOCSIS 3.0 and 3.1 devices

DOCSIS Manufacturing Verification Test System
High-volume DOCSIS compliance testing for customer-premises equipment (CPE)

DOCSIS Channel Emulator (DCE)
Ideal for SCTE 40 certification and network troubleshooting

→ Ensure Smooth 24-7 Operation for Your MAC Layer

Averna's DOCSIS Protocol Analyzers are the industry standard for functional DOCSIS and EuroDOCSIS network analysis, providing exceptional visibility into the MAC layer. Multiple system operators (MSOs), chipset manufacturers, product developers and certification bodies use them to quickly find and correct trouble spots.

→ Best Tool on the Market for DOCSIS 3.0 & 3.1 Protocol Analysis

Optimized for real-time signal processing with FPGA technology, the DP-1000 analyzes up to 32x8 single or bonded US/DS channels (DOCSIS 3.0) and 2x1 OFDM US/DS channels (DOCSIS 3.1), with numerous channel-filtering, demodulation, triggering, display, and upgrade features.

As a passive sniffer between CMTS and CPE devices, the DP-1000 silently captures and filters DOCSIS MAC-layer data in real-time to verify RF parameters, validate MAC-level communication, troubleshoot interoperability issues, and improve network performance.



New Product Innovation Award from Frost & Sullivan



5-Diamond Ranking and Innovation Award from Broadband Technology Report

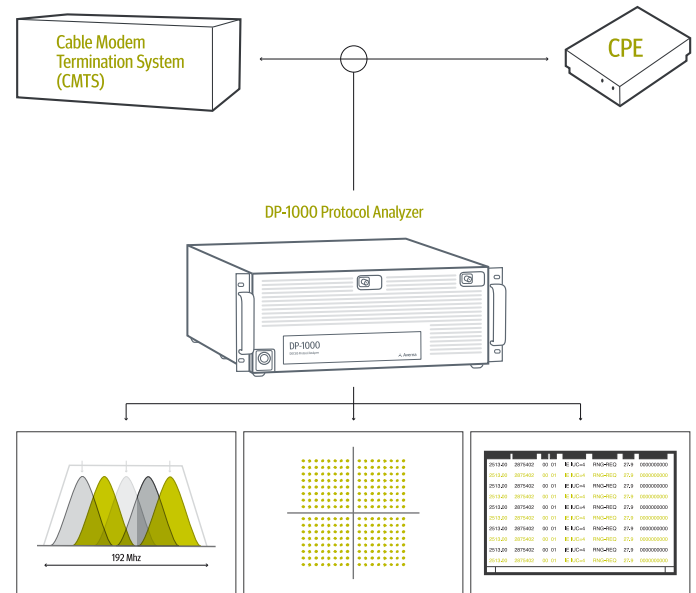
→ DP-1000 Highlights

- Supports both DOCSIS 3.0 and 3.1 protocols through FPGA-based signal processing
- Input frequency range of 5 MHz–1.8 GHz (DS) and 5–200 MHz (US)
- Acquisition cards of 200-MHz bandwidth with upgrade capabilities for both US and DS
- Contained in a single, 19-inch (48 cm), 4U rack for minimal footprint (60 lbs/27 kg)
- FPGA-based architecture is highly flexible, configurable, upgradable and extendable
- Many channel-filtering and display features like placement, burst, constellation, and spectrum

→ Handles Multiple DOCSIS 3.1 Challenges

- Network bandwidth and channel expansion
- Orthogonal Frequency Division Multiplexing (OFDM)
- New modulation schemes of up to 4096 QAM
- Mixed-mode operation: supports both DOCSIS 3.0 and 3.1 devices

→ Industry-Leading DOCSIS Expertise Built-in



Deploy the DP-1000 to monitor, analyze and fix MAC-layer issues in real-time.

Operates standalone or can be easily integrated into Avera's Jupiter 310 or other platforms

DP-1000
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RF Specifications

Frequency	
Input Frequency	5 MHz to 1.8 GHz (DS) 5 MHz to 200 MHz (US)
Resolution	10 Hz
Phase Noise (1 GHz @ 10 kHz offset)	< -110 dBc/Hz, 10 kHz offset
Internal Reference	10 MHz +/-1 ppm/year aging
Temperature Stability	+/- 1 ppm (max.)
Amplitude	
Noise Floor	-164 dBm/Hz
Noise Figure	10 dB
Maximum Input	15 dBm
Baseband	
Real-time Bandwidth	200 MHz per card
Sample Rate	245.76 MS/s (DS DOCSIS 3.0) 204.8 MS/s (US DOCSIS 3.0) 256 MS/s (DS/US DOCSIS 3.1)
Dynamic Range	70 dB
SFDR	90 dB
Output Resolution	16-bit

General

Weight	
	27 kg (59.52 lbs)
Size	
Unit	4 U
Rackmount	48 cm (19 in)
Deep	61 cm (24 in)
Temperature	
Operating	0°C (32°F) to 35°C (95°F)
Storage	-20°C (-4°F) to 70°C (158°F)
Relative Humidity	
	10% to 90% (non-condensing)
Power*	
	90-264 VAC
	50/60 Hz
	400 watts (typ.)

Specifications are subject to change without notice.

* IEC 60320-C14 power connector inlet
IEC 60320-C13 to NEMA 5-15P, 3 m (9.8 ft) North American power cord included
IEC 60320-C13 to CEE 7/7, 3 m (9.8 ft) European power cord included
Rackmount brackets included

Connectivity

RF Connectors	
RF Inputs (75Ω)	2 x Type F female
10.24 MHz Reference	
10.24 MHz REF Input (50Ω)	1 x SMA female
10.24 MHz REF Output (50Ω)	1 x SMA female
Triggering	
Input (50Ω)	1 x SMA female Level: TTL 5VTOL, Max.: -0.5/5.5V
Output (50Ω)	1 x SMA female Level: TTL 5V
Synchronization	
Input (50Ω)	1 x SMA female Level: TTL 5VTOL, Max.: -0.5/5.5V
Output (50Ω)	1 x SMA female Level: TTL 5V
Ethernet	
	1 x 10/100/1000 Mbps RJ-45 LAN port
Peripherals	
	4 x USB 3.0 Type A peripheral ports (back)
	2 x USB 2.0/1.1 Type A peripheral ports (back)
Storage	
	Internal: 4 x 2.5" 250 GB SSD
	External: RAID PCIe connector
Display	
	1 x VGA port
Compliance	
	FCC 47 Part 15 Class A
	European Directive 98/336/EEC Class A (Emissions)
	European Directive 2002/95/EC (RoHS)



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