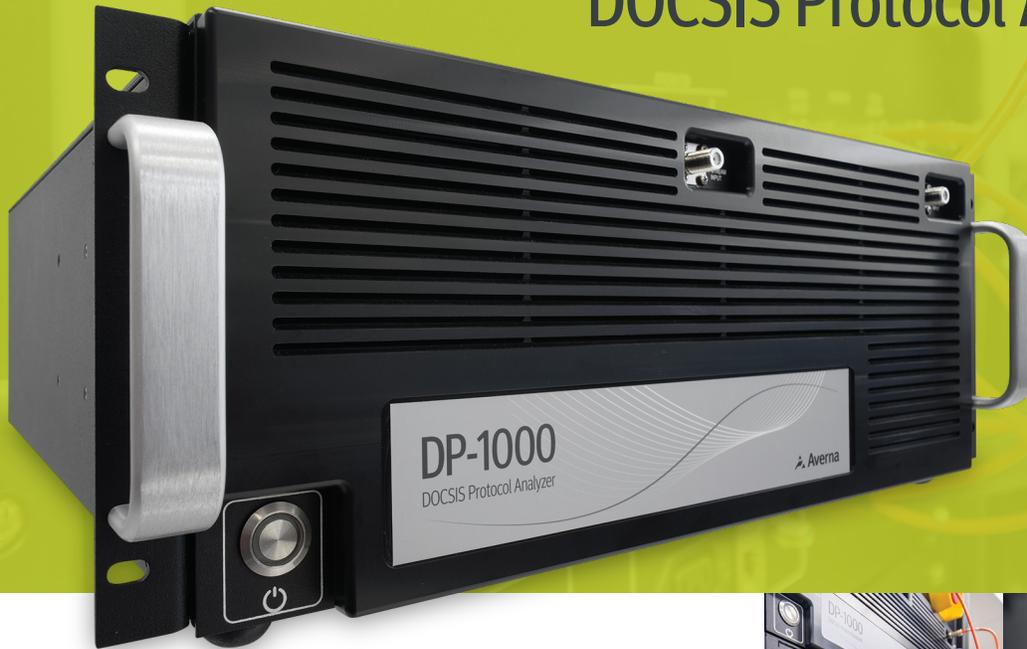


DOCSIS  
3.1  
SOLUTION

# 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 a cost-effective solution for both DOCSIS 3.0 and 3.1

Optional DOCSIS vector signal analyzer (VSA) for RF measurements like SNR, MER, and EVM

### Other Broadband Products

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

### → 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 DS/US SC-QAM channels, 2K1 OFDM(A) DS/US channels, 1 x2 OFDM(A) DS/US channels, as well as mixed-mode configurations consisting of SC-QAM, OFDM and OFDMA channels. It offers numerous channel filtering, demodulation, display, measurements 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

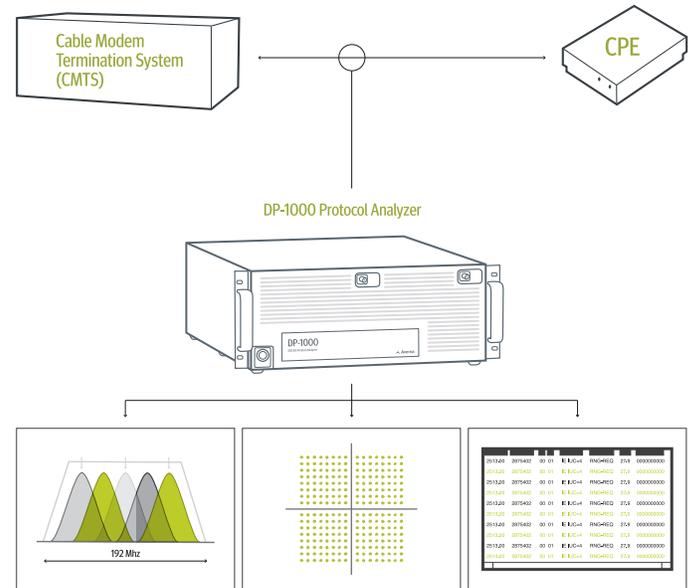
## → DP-1000 Highlights

- 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 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
- Optional DOCSIS vector signal analyzer (VSA) for RF measurements like SNR, MER, and EVM
- Complete API to fully automate configuration, capture and analysis

## → 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.

DP-1000  
DOCSIS Protocol Analyzer

## 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 5V TOL, Max.: -0.5/5.5V
Output (50Ω)	1 x SMA female Level: TTL 5V
Synchronization	
Input (50Ω)	1 x SMA female Level: TTL 5V TOL, 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" 256 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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