

DOCSIS Test Products



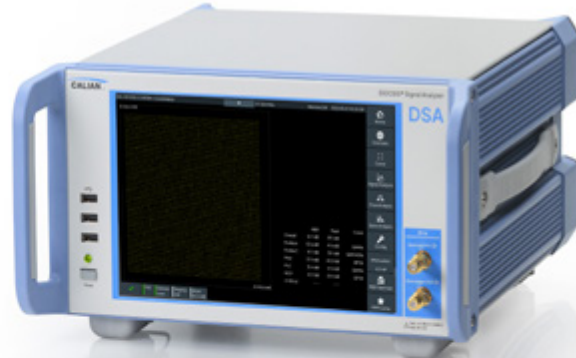
SFD – DOCSIS Signal Generator

The Calian SFD generates high-fidelity OFDM and SC-QAM signals for DOCSIS 4.0, legacy DOCSIS, and digital cable TV in line with J.83 A/B/C and analog cable TV standards. Its downstream frequency range covers from 47 MHz to 1794 MHz. The upstream frequency range covers from 5 MHz to 204 MHz. Downstream and upstream DOCSIS OFDM and SC-QAM carriers are modulated in real-time using Ethernet data traffic or an internally generated internal PN23 data sequence.

The digital signal generation capabilities of the Calian SFD make it ideal for testing tuners, cable modems and upstream CMTS receivers in R&D and production environments. The available RF cable impairment simulate real world transmission environments for a variety of testing scenarios, plus it can add phase noise, AWGN noise, RF tilt, AM hum, and a defined bit error rate in the transmit signal, allowing network engineers to stress-test equipment under realistic conditions.

Key Features

- High-fidelity, real-time DOCSIS signal generation for both downstream and upstream OFDM and SC-QAM channels
- Playout arbitrary (ARB) waveform files up to 200 MHz bandwidth
- Multi-channel SC-QAM generation above 1002 MHz
- RF cable impairment simulation (e.g. phase noise, AWGN, RF tilt, AM hum)



DSA – DOCSIS Signal Analyzer

The Calian DSA enables high-fidelity, real-time analysis of DOCSIS signals and spectrum analysis to give users a better understanding of their networks. Downstream DOCSIS 4.0 OFDM and legacy SC-QAM carriers can be received up to 1794 MHz, while upstream OFDMA and ATDMA burst carriers are also supported up to 684 MHz.

Real-time BER analysis and MER measurements over time are sure to capture transient issues in cable networks since every sample is received and processed. Constellation display and IQ density display features provide critical information in understanding why a carrier might be degraded. Channel analysis measurements help pinpoint the cause of performance issues. Along with advanced features, such as dynamic upstream analysis, SFD upstream analysis and cable modem ranging, makes the Calian DSA a powerful and essential tool for cable operators and network engineers to support long-term network performance troubleshooting.

Key Features

- High-fidelity DOCSIS downstream and upstream SC-QAM and OFDM signal analysis
- Long term BER measurements
- MER, constellation plots and channel analysis measurements over time
- Advanced features: Dynamic upstream analysis to analyze real world live network traffic, cable modem ranging and SFD upstream analysis when paired with SFD



CLGD – DOCSIS Cable Load Generator

The Calian CLGD emulates an entire DOCSIS 4.0 RF cable plant from a single easy to configure product. Multiple standards compliant DOCSIS OFDM carriers up to 1794 MHz with ITU J.83 A/B/C carriers up to 1218 MHz and analog TV carriers can be generated simultaneously emulating a cable headend. Multiple DOCSIS burst carriers can be transmitted simultaneously on the upstream up to 204 MHz emulating cable modems. For DOCSIS 4.0 applications, the CLGD can be used to transmit multiple upstream DOCSIS OFDMA carriers up to 684MHz at the same time as downstream carriers for Full Duplex cable plant emulation.

The ability to transmit factory or custom arbitrary (ARB) waveform files at the same time as the modulated carriers enhance the type of cable plant scenarios emulated. Real-world RF impairments can be simulated by configuring RF tilt, micro-reflections, phase noise, AM hum, AWGN noise, and narrowband interferers. The flexible multichannel signal generation capabilities of the Calian CLGD enable it to simulate network loading in a reproducible manner. It's ideal for testing tuners, cable modems, amplifiers and upstream CMTS receivers.

Key Features

- Emulate RF cable plant in a single device
- Real-time modulation of DOCSIS 4.0 and legacy DOCSIS signals
- Playout arbitrary (ARB) waveform files up to 200 MHz bandwidth
- Simulate real-world RF impairments (e.g. AWGN, phase noise, AM hum, RF tilt, narrowband interference, micro-reflections)



AureLink – DOCSIS 4.0 Remote PHY Test Platform

The Calian AureLink DOCSIS 4.0 Remote PHY Test Platform is an industry-standard FPGA-based Remote PHY ideal for in-lab cable modem testing, supporting both full duplex (FDX) and frequency division duplex (FDD) in a single platform. It supports full cable modem throughput testing and provides comprehensive visibility into Remote PHY status, making it an essential tool for validating DOCSIS 4.0 deployments in lab and field environments.

With its programmable architecture, AureLink is engineered for flexibility and future-proofing, allowing it to adapt to evolving DOCSIS standards and network configurations. It supports a wide range of test scenarios, from basic connectivity checks to advanced performance benchmarking, and integrates seamlessly into existing test infrastructure. Whether used by equipment manufacturers or service providers, AureLink delivers the consistency, precision, and scalability needed to accelerate DOCSIS 4.0 rollouts and maintain high-quality broadband service delivery.

Key Features

- Industry standard-compliant Remote PHY for cable modem testing
- Full throughput testing for DOCSIS 4.0 cable modems
- FDD and FDX support in a single platform
- Debug interoperability issues between CCAP core and cable modems

Contact Calian today

to learn more about how our products can enhance your DOCSIS testing capabilities.