# DOCSIS
Channel Emulator
Test Platform

The all-in-one, affordable and scalable DCE fast-tracks your subscriber equipment for certification and deployment in any cable system.

> Impair Higher Channel Counts in Sync

Averna's DOCSIS Channel Emulator (DCE) allows OEM/ODM labs to facilitate their internal validation and external certifications for SCTE 40 with multi-system operators (MSOs). It is an innovative platform that leverages National Instruments' Vector Signal Transceiver (VST), features FPGA processing, and deploys user-friendly development tools.

With the DCE, you can acquire, impair and easily generate up to 24 DOCSIS or EuroDOCSIS downstream (DS) channels in real-time. And the DCE's software-based approach and modular architecture allow you to make easy updates and customizations based on your current test needs and future requirements.

The DCE maintains sync between the CMTS and CPE
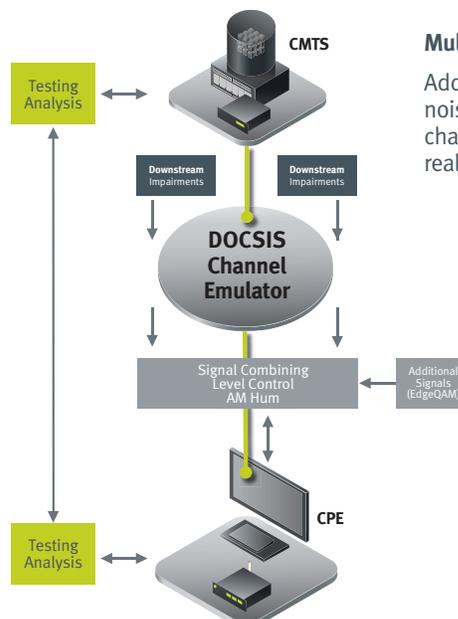
Multiple Impairments

Add micro-reflections, phase noise, AWGN, CTB, CSO, C/I, channel scaling and more in real-time.

CMTS

Testing Analysis

Downstream Impairments

Downstream Impairments

DOCSIS Channel Emulator

Signal Combining Level Control AM Hum

Additional Signals (EdgeQAM)

CPE

Testing Analysis

Averna

We are global test experts

Consult Averna's cable and broadband test experts for developing the best test strategies, deploying the ideal test solution for your budget, or outsourcing some or all of your testing.

Major Features and Benefits

- Most feature-filled, lowest-cost DOCSIS and EuroDOCSIS solution on the market
- Simple and intuitive interface
- Real-time Spectral and Constellation displays
- Expandable: 8 channel blocks of 80 MHz can be added with additional modules
- Modular COTS architecture

Options*

- CMTS automation
- Traffic generation for BER testing
- RF conditioning/interconnect subsystem
- 24-channel configuration
- Full cable-plant loading

We are a leading NI Platinum Alliance Partner and have over 50 certified NI LabVIEW™, NI TestStand™, and LabWindows™/CVI™ architects, developers, and instructors on staff.

The Best Channel Emulator on the Market

The DCE's NI VST-based acquisition capabilities allow you to acquire multiple windows of 80 MHz spectrum of bandwidth, while its FPGA processing lets you add impairments such as micro-reflections, phase noise, and AWGN in real-time.

The DCE is the core of a complete turnkey testing solution for up to 24 bonded DS channels that can include full cable-plant loading, AM hum impairments, analysis hardware and software, and automation.*

- **Base System Capabilities**
  - Multi-channel simultaneous processing (3x80 MHz input bandwidth)
  - Frequency range: 65 MHz–1.004 GHz
  - AWGN: 80 MHz
  - Tilt
  - Frequency shift

- **Per Channel Capabilities**
  - Micro-Reflections: Main path plus up to 4 paths per channel
  - Phase Noise, Impulse Noise, and Channel Scaling
  - AWGN: Bandwidth matches channel bandwidth
  - Discrete impulsive AWGN noise
  - Composite Triple Beat (CTB), Composite Second Order (CSO), and Carrier-to-Interference (C/I)
  - Custom Filtering (e.g., Group Delay, Amplitude Variation)
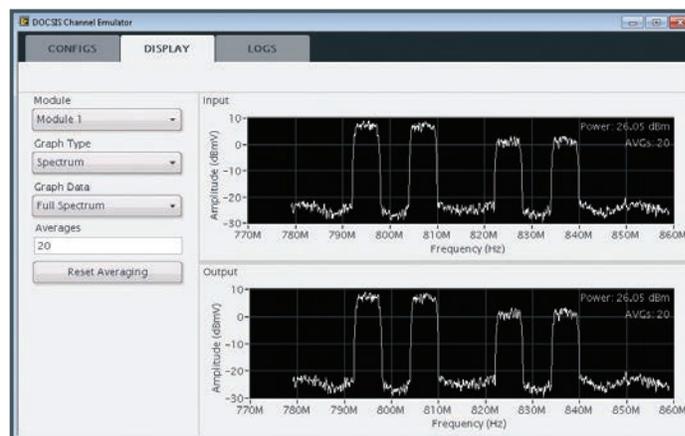
Intuitive interface with real-time Spectral and Constellation displays

*Customer-specific options require additional Averna services.

Averna