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## DLS-400S

# SPIRENT DLS-400S G.SHDSL (ANNEX A) WIRELINE SIMULATOR

Spirent's DLS-400S Wireline Simulator is a pre-configured wireline simulator designed with the flexibility needed to provide a complete test solution for the ITU-T G.991.2/G.shdsl (Annex A) standards.



The DLS-8111 system provides VDSL testloops to cover the bandwidth continuously from DC to 30 MHz. The DLS-8111 can be combined with the DLS-8110 VDSL Bridged Tap Simulator to provide cable and bridged tap combinations.

### FEATURES & BENEFITS

- Full SHDSL (Annex A) solution when combining the DLS-400S and DLS-5500 series Noise Impairment products provide a complete simulation of ITU-T G.shdsl (Annex A) testloops. By giving our users the ability to custom program wireline lengths and add noise impairments, our system is the **ONLY** complete conformance and performance SHDSL testing solution available for Annex A.
- Testloops provided by a single chassis DLS-400S system configuration will allow the user to simulate the pre-configured G.shdsl (Annex A) loops: Ø, S, BT1-C, BT1-R, BT2-C, BT2-R & C4.
- Ease of programming is based on Standard Commands for Programmable Interfaces (SCPI), through IEEE 488 or RS-232 interface. This allows the incorporation of fully automated test control into a customer test environment. As an alternative, the DLS-400S can also be controlled via a PC using the DLS-1100 Series graphical software control interface.
- Passive circuitry. With a low noise floor and no additional noise from active components, passive circuitry allows for greater accuracy in testing.
- Micro Interruption\* simulation in the DLS-400S allows users to simulate an interruption on the transmission line as defined by the G.shdsl standard. Additionally, the user can custom configure the Micro Interruption and apply it to any of the pre-configured or custom defined loops.
- The DLS-400S Wireline Simulator is a key component in the comprehensive DSL test and analysis portfolio offered by Spirent Communications.

\*Please contact your Spirent sales representative for details.

## WIRELINE SIMULATOR SPECIFICATIONS

### Technology

- Cable simulation using networks of discrete R, L & C components

### Cable Simulation

- Balanced twisted copper pair

### Cable Impedance

- Complex, varies over frequency with length and gauge

### Number of Conductors

- Two

### Types of Cables

- 24 & 26 AWG PIC cables as specified in Bell Pub. 62310

### DC Rating

- Up to 300 V peak AC+DC across tip & ring

### DC Current Rating

- 100 mA (150 mA peak)

### Bandwidth

- DC to 1.5 MHz, smooth response to 2.0 MHz

### Accuracy

- For the specified bandwidth;  $\pm 0.5$  dB for all attenuations up to 20 dB, for attenuation from 20 to 70 dB the tolerance is within 5% of design to a maximum of 1.5 dB

## MECHANICAL SPECIFICATIONS

### System

- DLS 400 Chassis
- DLS 1100 Series Software
- Manual
- Power Cord
- 2 Fuses

### Options

- National Instrument IEEE 488 card for the controlling PC
- 1 or 2 DLS 5A01H Noise Impairment Generation Modules with ITU-T G.shdsl (Annex A) noise shapes

### Electrical (AC Power)

- Rated Input Voltage: 100 - 240 VAC ( $\pm 10\%$ ) (automatic line voltage sensing)
- Rated Frequency: 50 - 60 Hz
- Rated Power Consumption: 120 VA max
- Line Fuses: Type "T" 2A/250 V SLOW BLOW (2 required, 5 mm x 20 mm)

### Environmental

- Operating Temperature: +10°C to +40°C (50°F to 104°F)
- Storage Temperature: +10°C to +40°C (50°F to 104°F)
- Humidity: 90% (non-condensing) max

### Mechanical

- Weight: 28 kg (61 lbs) per chassis
- Dimensions: 194 mm x 452 mm x 494 mm (7.6" x 17.8" x 19.4") (H x W x D)

## SHDSL TEST SOLUTION

Only Spirent Communications can offer customers an end-to-end SHDSL test solution. In a typical test setup, wireline simulation is provided by the DLS-400S Wireline Simulator, and impairments are provided by DLS-5000 series Impairment Generator System.

## COMPANION PRODUCTS

- DLS-5500 Custom Noise Generator
- DLS-5405 Custom Noise Injector



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