



"Results You Can Count On"

**Model 4901-N18 G.shdsl Noise Module
For the 4901 Multi-Output Noise Simulator**

Overview

The Model 4901-N18 G.shdsl Noise Library provides all the tests pertaining to noise generation requirements found in the ITU Standard G.991.2 (12/2003) Single-Pair High Speed Digital Subscriber Line (SHDSL) Transceivers.

The easy-to-use interface saves time and increases accuracy by eliminating the need for manual selections and follows the actual test plan as defined by the ITU Standard. The user is not required to interpret the standard as the Noise Module automatically sets up the specific tests needed. In addition, the Model 4901 can communicate with Telebyte's line of local loop simulators where applicable.

- Some tests in this library require the 4901-D1-Micro Differential Mode Noise Injector for micro-interruptions.



**Model 4901-N18 G.shdsl Noise Module
Tests Included**

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| ANNEX A | Interferer Description |
|------------------|--|
| Table A-1 | Crosstalks (NEXT and FEXT generated in each case) |
| Test 1 | 24T1 +24SHDSL |
| Test 2 | 39SHDSL |
| Test 3 | 24 FDD ADSL +24 HDSL |
| Test 4 | 24T1 +24SHDSL |
| Test 5 | 39SHDSL |
| Test 6 | 24 FDD ADSL +24 HDSL |
| Test 7 | 24T1 +24SHDSL |
| Test 8 | 24T1 +24SHDSL |
| Test 9 | 24-T1 + 24 SHDSL asym 1 544 |
| Test 10 | 24-T1 + 24 SHDSL asym 1 544 |
| Test 11 | 49-SHDSL |
| Test 12 | 49-SHDSL |
| Test 13 | 49-SHDSL |
| Test 14 | 24-T1 + 24 SHDSL asym 1 544 |
| Test 15 | 24-SHDSL + 24-FDD ADSL |
| Test 16 | 49-SHDSL |
| Test 17 | 24-T1 + 24 SHDSL asym 1 544 |
| Test 18 | 49-SHDSL |
| Test 19 | 49-SHDSL |
| Test 20 | 24-T1 + 24 SHDSL asym 1 544 |
| Test 21 | 39-SHDSL asym 1 544 |
| Test 22 | 24-FDD ADSL + 24 SHDSL asym 1 544 |
| Test 23 | 24-SHDSL + 24-FDD ADSL |
| Test 24 | 49-SHDSL |
| Test 25 | 24-T1 + 24 SHDSL asym 1 544 |
| Test 26 | 49-SHDSL |
| Test 27 | 49-SHDSL |
| Test 28 | 49-SHDSL |
| Test 29 | 49-SHDSL |
| Test 30 | 49-SHDSL |
| Test 31 | 49-SHDSL |
| Test 32 | 49-SHDSL |
| Test 33 | 49-SHDSL |
| Test 34 | 49-SHDSL |
| Test 35 | 24 FDD ADSL +24 HDSL |
| Test 36 | 24-T1 + 24 HDSL |
| Test 37 | 24T1 +24SHDSL |
| Test 38 | 39-FDD ADSL |
| Test 39 | 24-SHDSL + 24-DSL |
| Test 40 | 24-SHDSL + 24-DSL |
| Test 41 | 49-SHDSL |
| Test 42 | 24-SHDSL + 24-DSL |
| Test 43 | 24-SHDSL + 24-DSL |
| Test 44 | 49-SHDSL |
| Test 45 | 49-DSL |
| Test 46 | 49-DSL |
| Test 47 | 24-SHDSL + 24-DSL |
| Test 48 | 49-DSL |
| Test 49 | 49-DSL |
| Test 50 | 24-SHDSL + 24-DSL |
| Test 51 | 49-DSL |
| Test 52 | 49-DSL |
| Test 53 | 24-DSL + 24 SHDSL |
| Test 54 | 49-DSL |
| Test 55 | 49-DSL |
| Test 56 | 24-DSL + 24 SHDSL |



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| ANNEX A continued | Interferer Description |
|---|--|
| Table A-2 | Impulse Noise |
| Test Loop C4 | Test Pulse Vpp: 320 mV Test Pulse Repetition Rate: 10 Hz Bit Error Ratio Upper Limit: 5.0×10^{-4} |
| Test Loop S, L= 9,000' | Test Pulse Vpp: 320 mV Test Pulse Repetition Rate: 10 Hz Bit Error Ratio Upper Limit: 5.0×10^{-4} |
| ANNEX B | Interferer Description |
| Table B-3 | Crosstalks*, Impulse Noise, Micro Interruptions |
| Test Set -1 | Test Noises A |
| Test Set -2 | Test Noises A, C, D |
| Test Set -3 | Test Noises D |
| Test Set -4 | Test Noises A, C |
| Test Set -5 | Test Noises B |
| Test Set -6 | Test Noises A, C |
| Test Set -7 | Test Noises A, B, C, D |
| Test Set -8 | None |
| Test Set -9 | Use Noise in Test Sets 1-7 which generated highest BER |
| Test Set -10 | None |
| Test Set -11 | Impulse Noise as defined in Table A-2 |
| Test Set -12 | Micro Interruption |
| <p>*Test Noise A, B, C, D are consistent with the shapes provided for different bit rates in Table B-9A of G.991.2</p> <p>As such: Test Noises A: 6 different shapes Test Noises B: 4 different shapes Test Noises C: 7 different shapes Test Noises D: 4 different shapes</p> | |
| Table B.5b (Amendment 2) | Impulse Noise |
| Test Loop #2 | Test Pulse Vpp: 320 mV Test Pulse Repetition Rate: 10 Hz Bit Error Ratio Upper Limit: 9.0×10^{-4} |



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| ANNEX F | Interferer Description |
|-----------|---|
| Table F-4 | Crosstalks (NEXT and FEXT generated in each case) |
| Test 1 | 24 HDSL2 + 24 T1 (Case 4) |
| Test 2 | 24 HDSL2 + 24 T1 (Case 14) |
| Test 3 | 24 HDSL2 + 24 T1 (Case 4) |
| Test 4 | 24 HDSL2 + 24 T1 (Case 14) |
| Test 5 | 49 SHDSL sym 2304 (Case 11) |
| Test 6 | 49 SHDSL sym 2304 (Case 11) |
| Test 7 | 24 HDSL2 + 24 T1 (Case 4) |
| Test 8 | 24 HDSL2 + 24 T1 (Case 14) |
| Test 9 | 24 HDSL2 + 24 T1 (Case 4) |
| Test 10 | 24 HDSL2 + 24 T1 (Case 14) |
| Test 11 | 49 SHDSL sym 2304 (Case 11) |
| Test 12 | 49 SHDSL sym 2304 (Case 11) |
| Test 13 | 49 SHDSL sym 2048 (Case 16) |
| Test 14 | 49 SHDSL sym 2048 (Case 16) |
| Test 15 | 24 FDD ADSL + 24 HDSL (Case 6) |
| Test 16 | 24 HDSL2 + 24 T1 (Case 4) |
| Test 17 | 24 HDSL2 + 24 T1 (Case 14) |
| Test 18 | 49 SHDSL sym 2048 (Case 16) |
| Test 19 | 49 SHDSL sym 2048 (Case 16) |