

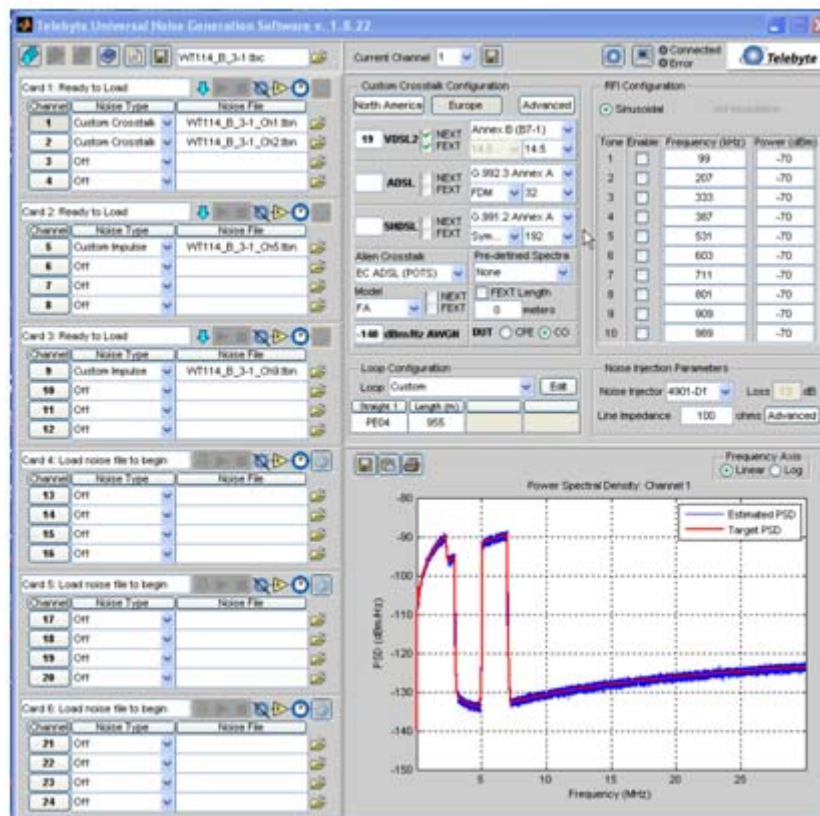


**“Results You Can Count On”**

## Model 4901-N11 TR-114 (Issue 1) Noise Module For the 4901 Multi-Output Noise Simulator

### Overview

The Model 4901 Multi-Output Noise Simulator features the industry’s first fully compliant TR-114 testing solution (per WT-114i2 Version 8). Tests include the Combined Noise Threat: Fluctuating RFI, Erasure Decoding Test, REIN and many more. 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 DSL Forum Test and Interoperability Work Group. 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. This allows the 4901-N11 Noise Module to automatically set all line lengths for the various tests.



*Select the test and the 4901-N11 automatically makes the necessary selections.*



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**Model 4901-N11 TR-114 Noise Module  
List of Tests Included**

- Refer to the Required Equipment/Software Table at the end of this document for a definition of the code found in the Hardware Configuration column.

TR-114 (Annex A)		
Standard Section	Test Case	Hardware Configuration
A.1.4/8.1 CRC error reporting verification test	24 AA8d Self-NEXT + FEXT + AWGN (-140 dBm/Hz) @ 900 ft (26 AWG)	1
	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2000 ft(26 AWG) + 100 ft BT(26 AWG)	
	24 AA8d Self-NEXT + FEXT + AWGN (-140 dBm/Hz) @ 3200 ft (26 AWG)	
	12 AA8d Self +12 ADSL2plus -NEXT + FEXT +AWGN (-140 dBm/Hz) @ 5500 ft (26 AWG) + 100 ft BT (26 AWG)	
	24 AA8d Self-NEXT + FEXT +AWGN (-140 dBm/Hz) @ 2000 ft (26 AWG)	
	24 AA8d Self-NEXT + FEXT + AWGN (-140 dBm/Hz) @ 2400 ft (26 AWG)	
A.1.5/8.1 CPE Margin verification test	24 AA8d Self-NEXT + FEXT + AWGN (-140 dBm/Hz) @ 900 ft (26 AWG)	1
	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2000 ft (26 AWG) + 100 ft BT (26 AWG)	
	24 AA8d Self-NEXT + FEXT +AWGN (-140 dBm/Hz) @ 3200 ft (26 AWG)	
	12 AA8d Self+ ADSL2plus NEXT + FEXT + AWGN (-140 dBm/Hz) @ 5500 ft(26 AWG) + 100 ft BT (26 AWG)	
	24 AA8d Self-NEXT + FEXT + AWGN (-140 dBm/Hz) @ 2000 ft (26 AWG)	
	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2400 ft (26 AWG)	
A.2 Performance tests for Band-Profile AA8d	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 300 ft (26 AWG)	1
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 600 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 900 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 1200 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT + AWGN (-140 dBm/Hz) @ 1600 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2000 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2400 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2800 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 3200 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 3600 ft (26 AWG)	
	24 VDSL2 NEXT + FEXT +AWGN (-140 dBm/Hz) @ 4000 ft (26 AWG)	
	12 VDSL2 + 12 ADSL2plus XT + AWGN (-140 dBm/Hz) @ 4500 ft (26 AWG)	
	12 VDSL2 + 12 ADSL2plus XT+ AWGN (-140 dBm/Hz) @ 5500 ft (26 AWG)	
	12 VDSL2 + 12 ADSL2plus XT + AWGN (-140 dBm/Hz) @ 6500 ft (26 AWG)	
	-140 dBm/Hz AWGN @ 7500 ft (26AWG)	
	-140 dBm/Hz AWGN @ 8500 ft (26AWG)	
A.3 REIN Testing for AA8d	24 VDSL2 NEXT + FEXT + AWGN (-140 dBm/Hz) @ 1200 ft (26 AWG)	2
	24 VDSL2 NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 4000 (26 AWG)	
A.4.1 Long Term Stability Test	-140 dBm/Hz AWGN @ 2000 ft (26 AWG)	1
A.5 Fluctuating Noise Testing	-140 dBm/Hz AWGN @ 2000 ft [26 kHz to 8.5 MHz] (26 AWG)	1



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**Model 4901-N11 TR-114 Noise Module  
List of Tests Included (con't)**

TR-114 (Annex A) continued		
Standard Section	Test Case	Hardware Configuration
8.2 Erasure decoding Tests	235 us REIN bursts + AA8d Crosstalk @ 1200 ft [250µs -15µs correction] (26 AWG)	2
	735 us REIN bursts + AA8d Crosstalk @ 1200 ft [750µs -15µs correction] (26 AWG)	
	985 us REIN bursts + AA8d Crosstalk @ 1200 ft (1 msec -15µs correction) (26 AWG)	
	1235 us REIN bursts + AA8d Crosstalk @ 1200 ft (1.2 msec - 15µs correction) (26 AWG)	
	235 us REIN bursts + AA8d Crosstalk @ 4000 ft (26 AWG)	
	735 us REIN bursts + AA8d Crosstalk @ 4000 ft [750 µs - 15 µs correction] (26 AWG)	
	985 us REIN bursts + AA8d Crosstalk @ 4000 ft [1msec - 15µs correction] (26 AWG)	
	1235 us REIN bursts + AA8d Crosstalk @ 4000 ft [1.2 msec - 15 µs correction] (26 AWG)	
9.1 PTM Throughput Test	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 600 ft (VTU-C) (26 AWG)	1
	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2400 ft (VTU-C) (26 AWG)	
	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 600 ft (VTU-R) (26 AWG)	
	24 AA8d Self-NEXT + FEXT+ AWGN (-140 dBm/Hz) @ 2400 ft (VTU-R) (26 AWG)	

TR-114 (Annex B)		
Standard Section	Test Case	Hardware Configuration
B.2.1 Long Term Stability Test	-140 dBm/Hz at both ends of loop @ 150 m	1
	-140 dBm/Hz at both ends of loop @ 300 m	
B.3 Rate adaptive performance tests for BA8b	BA8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	1
	BA8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) @ 300 m (PE 0.4mm)	
	BA8b Self-XT + MD_EX+ AWGN (-140 dBm/Hz) @ 750 m (PE 0.4mm)	
	BA8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) @ 1200 m (PE 0.4mm)	
	BA8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) @ 1800 m (PE 0.4mm)	
B.4 Rate adaptive performance tests for BA12a	BA12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	1
	BA12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 450 m (PE 0.4mm)	
	BA12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 1050 m (PE 0.4mm)	
	BA12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 1500 m (PE 0.4mm)	
B.5 Rate adaptive performance tests for BA17a	BA17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	1
	BA17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 450 m (PE 0.4mm)	
	BA17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 900 m (PE 0.4mm)	
B.6 Rate adaptive performance tests for BB8b	BB8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 150 m (PE 0.4mm)	5
	BB8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 300 m (PE 0.4mm)	
	BB8b Self-XT + MD_EX+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 750 m (PE 0.4mm)	
	BB8b Self-XT + MD_EX+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1200 m (PE 0.4mm)	
	BB8b Self-XT + MD_EX + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1800 m (PE 0.4mm)	



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**Model 4901-N11 TR-114 Noise Module  
List of Tests Included (con't)**

TR-114 (Annex B) continued		
Standard Section	Test Case	Hardware Configuration
B.7 Rate adaptive performance tests for BB12a	BB12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 150 m (PE 0.4mm)	5
	BB12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)	
	BB12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)	
	BB12a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)	
B.8 Rate adaptive performance tests for BB17a	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 150 m (PE 0.4mm)	5
	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)	
	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)	
	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)	
B.9 Rate adaptive performance tests for BA17a with DBPO and UPBO	BA17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	1
	BA17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 450 m (PE 0.4mm)	
	BA17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) @ 900 m (PE 0.4mm)	
B.10 Rate adaptive performance tests for BB17a with DBPO and UPBO	BB17a Self-XT + MD_CAB27+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 150 m (PE 0.4mm)	5
	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)	
	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)	
	BB17a Self-XT + MD_CAB27 + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)	
B.11 Rate adaptive performance tests for BA8c with DPBO and UPBO (Table 80)	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 150 m (TP-100)	1
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 450 m (TP-100)	
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 1050 m (TP-100)	
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 1200 m (TP-100)	
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 1500 m (TP-100)	
B.11 Rate adaptive performance tests for BA8c with DPBO and UPBO (Table 81)	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	1
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 450 m (PE 0.4mm)	
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 1050 m (PE 0.4mm)	
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 1200 m (PE 0.4mm)	
	BA8c Self XT + MD CAB27+ AWGN (-140 dBm/Hz) @ 1500 m (PE 0.4mm)	



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**Model 4901-N11 TR-114 Noise Module  
List of Tests Included (con't)**

TR-114 (Annex B) continued		
Standard Section	Test Case	Hardware Configuration
B.12 VDSL2oPOTS and VDSL2oISDN test cases for CRC error reporting verification test	BA8b Crosstalk+ AWGN (-140 dBm/Hz) @ 300 m (PE 0.4mm)	5
	BA8b Crosstalk+ AWGN (-140 dBm/Hz) @ 1200 m (PE 0.4mm)	
	BA8b Crosstalk+ AWGN (-140 dBm/Hz) @ 1800 m (PE 0.4mm)	
	BA8c Crosstalk+ AWGN (-140 dBm/Hz) @ 150 m (TP-100)	
	BA8c Crosstalk+ AWGN (-140 dBm/Hz) @1050 m (TP-100)	
	BA8c Crosstalk+ AWGN (-140 dBm/Hz) @ 1500 m (TP-100)	
	BA12a Crosstalk+ AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	
	BA12a Crosstalk+ AWGN (-140 dBm/Hz) @ 1050 m (PE 0.4mm)	
	BA12a Crosstalk+ AWGN (-140 dBm/Hz) @ 1500 m (PE 0.4mm)	
	BA17a Crosstalk+ AWGN (-140 dBm/Hz) @150 m (PE 0.4mm)	
	BA17a Crosstalk+ AWGN (-140 dBm/Hz) @ 900 m (PE 0.4mm)	
	BA17a Crosstalk+ AWGN (-140 dBm/Hz) @ 1200 m (PE 0.4mm)	
	BA17a Crosstalk with D & UPBO+ AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)	
	BA17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) @ 900 m (PE 0.4mm)	
	BB8b Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 300 m (PE 0.4mm)	
	BB8b Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1200 m (PE 0.4mm)	
	BB8b Crosstalk+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1800 m (PE 0.4mm)	
	BB12a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)	
	BB12a Crosstalk+ AWGN (-140 dBm/Hz) +(Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)	
	BB12a Crosstalk+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)	
	BB17a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)	
	BB17a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 900 m (PE 0.4mm)	
	BB17a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)	
	BB17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 150 m (PE 0.4mm)	
	BB17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)	
	BB17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)	



**Model 4901-N11 TR-114 Noise Module  
List of Tests Included (con't)**

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TR-114 (Annex B) continued				
Standard Section	Test Case	Hardware Configuration		
B.13/B.14 VDSL2oPOTS and VDSL2oISDN test cases for CPE margin verification test	BA8b Crosstalk + AWGN (-140 dBm/Hz) @ 300 m (PE 0.4mm)	5		
	BA8b Crosstalk+ AWGN (-140 dBm/Hz) @ 1200 m (PE 0.4mm)			
	BA8b Crosstalk + AWGN (-140 dBm/Hz) @ 1800 m (PE 0.4mm)			
	BA12a Crosstalk + AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)			
	BA12a Crosstalk + AWGN (-140 dBm/Hz) @ 1050 m (PE 0.4mm)			
	BA12a Crosstalk + AWGN (-140 dBm/Hz) @ 1500 m (PE 0.4mm)			
	BA17a Crosstalk + AWGN (-140 dBm/Hz) @150 m (PE 0.4mm)			
	BA17a Crosstalk + AWGN (-140 dBm/Hz) @ 900 m (PE 0.4mm)			
	BA17a Crosstalk + AWGN (-140 dBm/Hz) @ 1200 m (PE 0.4mm)			
	BA17a Crosstalk with D & UPBO+ AWGN (-140 dBm/Hz) @ 150 m (PE 0.4mm)			
	BA17a Crosstalk with D &UPBO+ AWGN (-140 dBm/Hz) @ 900 m (PE 0.4mm)			
	BA8c Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) @ 150 m (TP-100)			
	BA8c Crosstalk with D &UPBO + AWGN (-140 dBm/Hz) @ 1050 m (TP-100)			
	BA8c Crosstalk with D & UPBO+ AWGN (-140 dBm/Hz) @ 1500 m (TP-100)			
	BB8b Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 300 m (PE 0.4mm)			
	BB8b Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1200 m (PE 0.4mm)			
	BB8b Crosstalk+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1800 m (PE 0.4mm)			
	BB12a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)			
	BB12a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)			
	BB12a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m			
	BB17a Crosstalk+ AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 450 m (PE 0.4mm)			
	BB17a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) + (Same Pair ISDN/line sharing noise) @ 900 m (PE 0.4mm)			
	BB17a Crosstalk + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)			
	BB17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 150 m (PE 0.4mm)			
	BB17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1050 m (PE 0.4mm)			
	BB17a Crosstalk with D & UPBO + AWGN (-140 dBm/Hz) + (Same Pair ISDN/line sharing noise) @ 1500 m (PE 0.4mm)			
	B.15.3 REIN Testing for BA8c in rate adaptive mode		BA8c with D & UPBO+ AWGN (-140 dBm/Hz) @ 100 m (0.5mm TP-100)	2
			BA8c with D & UPBO + AWGN (-140 dBm/Hz) @ 300 m (0.5mm TP-100)	
			BA8c with D & UPBO + AWGN (-140 dBm/Hz) @ 500 m (0.5mm TP-100)	
			BA8c with D & UPBP + AWGN (-140 dBm/Hz) @ 1000 m (0.5mm TP-100)	
B 15.4 REIN Testing for BA8c in fixed rate mode	BA8c with D & UPBO+ AWGN (-140 dBm/Hz) @ 100 m (0.5mm TP-100)	2		
	BA8c with D & UPBO + AWGN (-140 dBm/Hz) @ 400 m (0.5mm TP-100)			
	BA8c with D & UPBO + AWGN (-140 dBm/Hz) @ 900 m (0.5mm TP-100)			
	BA8c with D & UPBP + AWGN (-140 dBm/Hz) @ 1300 m (0.5mm TP-100)			
	BA8c with D & UPBP + AWGN (-140 dBm/Hz) @ 1500 m (0.5mm TP-100)			
B.16 Single High Impulse Noise (SHINE) Testing for BA8c	1000 msec burst + BA8c Self-XT+ AWGN @ 1500 m (TP-100)	2		
	100 msec burst + BA8c Self-XT + AWGN@ 1500 m (TP-100)			



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**Model 4901-N11 TR-114 Noise Module  
List of Tests Included (con't)**

TR-114 (Annex B) continued		
Standard Section	Test Case	Hardware Configuration
B.17.1 Type 1 Combined Threat Noise test including high level REIN	BA8c Self-XT+ AWGN (-140 dBm/Hz) @ 500 m (TP-100)	3
	BA8c Self-XT+ AWGN (-140 dBm/Hz) @ 900 m (TP-100)	
B.17.2 Type 2 Combined Threat Noise Test including fluctuating RFI	BA8c Self-XT+ AWGN (-140 dBm/Hz) @ 500 m (TP-100)	4
	BA8c Self-XT + AWGN (-140 dBm/Hz) @ 900 m (TP-100)	
9.1 PTM Throughput Test	BA17a Crosstalk w/ D&UPBO @ 150 m	1
	BB17a Crosstalk w/ D&UPBO @ 150 m	
	BA30a Crosstalk w/ D&UPBO @ 50 m	
	BB30a Crosstalk w/ D&UPBO @ 50 m	

The following table shows the different software/equipment configurations. Please refer to the Hardware Configuration column in the test listing for the reference number that corresponds to the table.

Required Equipment/Software	Hardware Configuration Code				
	1	2	3	4	5
	QTY	QTY	QTY	QTY	QTY
4901-PC Telebyte 4U-High Industrial Computer	1	1	1	1	1
4901-NS Universal Noise Generation Software	1	1	1	1	1
4901-N11 Noise Module for TR-114	1	1	1	1	1
4901-AWGx (2 or 4 port 128Ms AWG card)	1	2	3	4	2
4901-D1 Differential Mode Noise Injector	2	2	2	2	-
4901-D1-PS Power Supply for 4901-D1	1	1	1	1	1
4901-PC-SC-6-1 6-to-1 Signal Combiner	-	-	1	1	-
4901-ISDN2 Dual Channel ISDN Splitter & 50-to-150-ohm Matching Impedance Transformer	-	-	-	-	1