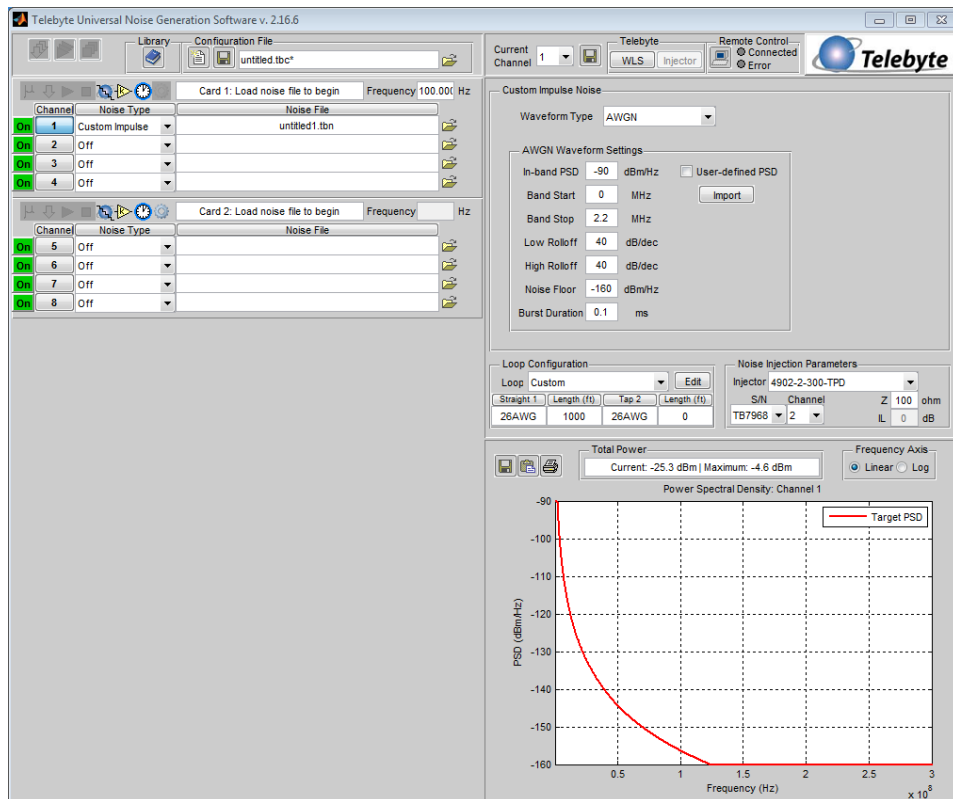




"SPE Testing Made Easy"

Universal Noise Generation Software



Industrial Noise Generator for Realistic Single Pair Ethernet (SPE) Testing

Testing with realistic noise environments is important to verify the physical layer performance of 10-BASE-T1L devices. Reporting the correct Mean Squared Error (MSE) value and calculating the corresponding SNR is a key indicator for low or error-free data traffic performance.

The Universal Noise Generation software supports Arbitrary Waveform Generators (AWGs) and noise from 20 kHz to 200 MHz on two independent noise ports. The AWG is used with the Telebyte Differential Noise Injector to inject noise with a high impedance and a crest factor greater than 5. Allows injection of differential noise on each device on the link segment or one device with combined noise (time + frequency domain) from two channels.

Alien Crosstalk or Impulse Noise may be used for system or pre-deployment testing in the lab.

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Highlights

- Bandwidth 20 kHz to 200 MHz
- Controls Multiple Independent Noise Ports
- Inject differential noise on each device on the link segment or one device with combined noise (time + frequency domain)
- Crest Factor greater than 5
- High degree of accuracy
- 2~20Mpts of Memory for arbitrary waveform output
- Standardized Impulse noises such as REIN, SHINE, PEIN, and Switching Power Supply noise
- Impulse noise pulse width from 3.3ns with rise / fall times with a minimum of 1ns adjustable in 100ps increments
- Real World Measured Impulse Noises may be imported
- Specify "6 around 1" NEXT, FEXT and number of disturbers with overlap distance
- Design custom SPE loops with Loop Configuration Editor
- Save custom noise files or entire configurations to repeat tests with ease and accuracy
- Import MATLAB (.mat), CSV, or Excel (.xls) noise files
- Remote control via Ethernet LAN or USB
- Adjust Amplitude of Crosstalk for 10BASE-T1L disturbers with coupling factor
- Alien Crosstalk or Impulse Noise for system or deployment testing
- Industrial SPE Specific Noise
 - High Frequency Impulse Noise
 - Low Frequency Impulse Noise
 - Alien Crosstalk
 - Future Industrial Noise Library (Coming Soon)
 - 10BASE-T1L Alien Crosstalk
 - 10/100BASE-T Alien Crosstalk
 - IO Link Alien Crosstalk
 - Variable Frequency Drive (VFD) Motor Impulse Noise

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Minimum Hardware Requirements

Operating System	Windows 10/11
Memory	8 GB RAM
CPU	Intel i5 / i7, 64-bit
Connectors	1 RJ-45 LAN or USB port
Display	(1920 x 1080) or higher resolution display

Supported Arbitrary Waveform Generators

Manufacturer	Part Number	Description
Siglent	SDG6022X	200 MHz Arbitrary, Sweep Function Generator 2 Channel Sine, Square, Ramp, Pulse Display Type Touchscreen
Keysight	33612A (coming soon)	Waveform generator, 2-Channels MEM Option 64MSa Memory 80MHz
Keysight	33622A (coming soon)	Waveform Generator, 2 Channels MEM Option 64MSa Memory 120 MHz

Ordering Information

Item Number	Description
4900-NS1	Universal Noise Generator Software License (Windows) Generate 10BASE-T1L Alien Crosstalk, Impulse Noise and AWGN and other Industrial Noises for system / deployment testing
4900-M01	Annual Software & Support Maintenance Contract for 4900-NS1
4900-M02	2-Year Software & Support Maintenance Contract for 4900-NS1
4900-M03	3-Year Software & Support Maintenance Contract for 4900-NS1