

Spirent AING-5000

Automotive Impairment Noise Generator (Simulator) for Automotive Ethernet ECU Development

Automotive Noise Testing Solutions

Automotive environments are noisy environments and noiseless environments in the real world don't exist. Automotive Ethernet cabling within automobiles are susceptible to external noise bleeding into the cable binder. These alien noises can be continuous, impulsive or even RFI in nature. Automotive Ethernet ECU's need to be able to protect themselves from these harsh noise environments. With complex in-vehicle networking systems in today's systems, the need to withstand these noise conditions has never been more critical.

Impulse Shaping Functionality

- Allows users the ability to shape both time and frequency domain parameters
- User selectable filter for start and stop frequencies

Shaped Spectrum Features

- User selectable breakpoints to shape power levels (selectable for both time and frequency domain)
- Unlimited breakpoint settings to allow maximum flexibility of impulse noise

Overview

Automotive Ethernet ECU manufacturers, chipset vendors and research and development organizations seek a competitive advantage by being first to deliver world-class products to market. Spirent supports these efforts by providing automotive development and testing solutions that enable our customers to deliver products first to market. Spirent solution users know that this advantage translates into total development cost savings, robust performance, and on schedule product development execution.

The Spirent AING-5000 helps address this automotive market requirement by generating real automotive noise that can be used in a bench/desktop or lab environment versus physical EMC chambers. This allows real noise environments to be directly injected in the Ethernet cabling without the frequent need for physical EMC chamber testing, saving development cost and resource availability (EMC chamber). Only milestone physical EMC chamber testing would be required (prototype sign off, first production sample, production sign off/PPAP as examples) and any ECU engineering changes can be virtually vetted with "real automotive noise" quickly.

The Spirent AING-5000 is a flexible noise impairment generator developed for Automotive Ethernet wire requirements. This impairment generator is packaged with a user interface tool to allow easy creation and customization of a variety of noise conditions.

Spirent AING-5000 will allow developers to create continuous background noise, electro mechanical switching impulsive events, and RFI noise – noise conditions/types that are problematic. Testing these real world conditions has become a necessity, but a very costly and time consuming endeavor if a physical EMC chamber is the only verification tool available. Automotive Ethernet ECU developers can now optimize the features in this noise generator tool to create unlimited testing scenarios to identify the impact noise conditions have on Automotive Ethernet ECU transmission.



AING-5000
Automotive Impairment Noise Generator



Noise Injector

Spirent AING-5000

Automotive Impairment Noise Generator (Simulator) for Automotive Ethernet ECU Development

Key Features

- Perform advanced modeling of Impulse scenarios, automotive starter on/off scenarios, electro mechanical on/off switch simulation, Fan motor conditions, etc.
- Shaping/filtering in both Frequency and Time domain
- Pre-packaged with real-world measured impulse noises, Alternator Noise, AM/FM radio band carriers
- User selectable settings for noise duration, number of bursts, burst spacing
- Settings for start and stop frequency band parameters
- Generate continuous RFI according to user defined PSD profile
- Unlimited power spectral shaping levels
- High impedance noise injection unit included suitable for injecting noise on 2 wire automotive cabling

For more information, visit: www.spirent.com

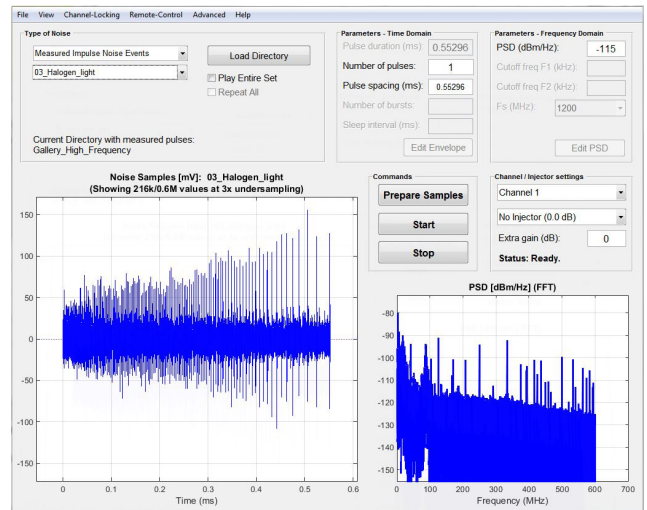
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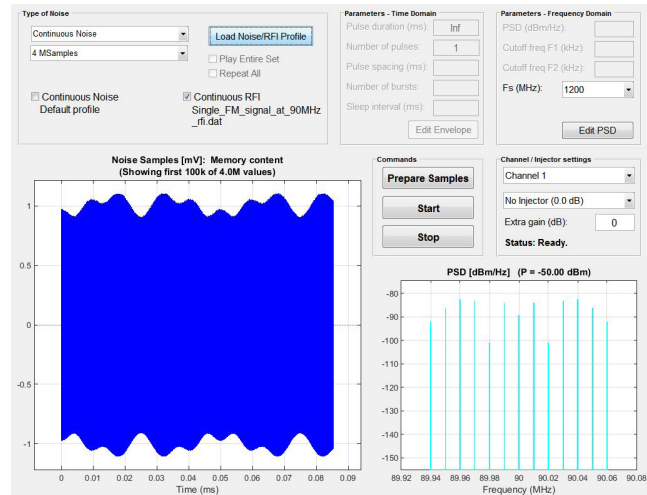
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The Spirent AING-5000 also comes pre-packaged with a set of baseline real-world measured noise events specifically designed to test Automotive Ethernet. The figure displays a screen capture of the Spirent AING-5000 tool illustrating a continuous impulse noise event.



Radio Frequency Interference

- Ability to easily modify/customize measured RFI noises
- Ability to apply narrow band noise power and spectrum levels to pinpoint design issues



The product can easily be integrated into an automated test environment allowing for control of the system in a customer's own scripting environment. Spirent has the ability to capture and record customer noise events as an additional engineering service and add these to the noise library.

Requirements

Requires the use of Spirent AING-5000 automotive impairment noise generator and noise injector.

Ordering Information

Description	Part Number
Automotive Impairment Noise Generator with 1 Noise Injector	AING-5000-1
Automotive Impairment Noise Generator with 2 Noise Injectors	AING-5000-2
Automotive Impairment Noise Generator with 4 Noise Injectors	AING-5000-4
Automotive Impairment Noise Generator with 8 Noise Injectors	AING-5000-8