

Spirent Automotive TSN/AVB Test Solutions

Spirent Automotive TSN/AVB Test Solutions offer the complete set of tools to achieve compliance and performance testing in a single hardware platform over native BroadR-Reach or 1G Ethernet interface.

Solutions

- Conformance Testing
 - AVB Conformance Test Suites based on Avnu test plan
 - TSN Conformance Test Suites
- Performance & Functional Testing
- Spirent TestCenter Application

Applications

Automotive TSN/AVB test solutions are ideal fit for OEMs, Tier 1 suppliers, component and silicon manufacturers performing:

- R&D testing involving technology feasibility studies and performance modeling
- Device and protocol functional testing
- Conformance and certification testing
- Device, sub-system, or services performance characterization, scalability and availability
- Stress testing requiring higher device and traffic emulation scaling capability as well as higher physical interface connection
- Negative testing to characterize the system resilience

Overview

Test Automotive InCar or Car2X TSN/AVB-enabled network, cabling, devices and systems with a solution that emulates a realistic and deterministic environment accelerating product development and improving quality. Spirent's TSN/AVB solution can emulate TSN/AVB and non-TSN/AVB capable end-points allowing creation of realistic car Ethernet environment with multiple connections, domains and different traffic profiles.

Features & Benefits

- Full TSN/AVB emulation of multiple talker or listeners on each port
- A comprehensive set of TSN standards supported
- Standard specific wizards and result view allow easy to use and quick configuration and analysis possible
- Mixed TSN and non-TSN traffic generation capability on each port
- Highly scalable test topology with precise and consistent timing across the ports regardless of the scale
- TSN specific metrics and statistics measurements
- Highly accurate and precise timing measurements
- Verification of precise synchronization and presentation time
- Support for different Ethernet media type and speed: 100BASE-T1, 1000BASE-T1, 10/100/1000BASE-T, N-BASE-T and 10GBASE-T Ethernet
- Real-time capture and analysis capabilities
- Full protocol decode in Wireshark

Realism

- Realistic stateful protocol emulation to exercise protocol state machines
- Realistic emulation of an TSN/AVB or a mixed (TSN/AVB and non-TSN/AVB capable) automotive Ethernet network with multiple connections, endpoints, domains and different traffic profiles

Productivity

- Intelligent Results™ allow users to quickly confirm positive results and identify problematic areas
- Real-time traffic and protocol controls enable the tester to validate and troubleshoot problems by altering the test configuration while the test is running
- Real-time results views allow the user to see how the network responds to changes in specific test conditions without having to stop the test and save the results

Spirent Automotive TSN/AVB Test Solutions



The Spirent Advantage in Ethernet Testing

- Highly capable and accurate traffic generation and analysis
- Highly accurate timing and synchronization measurement (best in class)
- Multi-faceted solution for L2-3 conformance/performance, L4-7 and vulnerability testing in one platform
- Conformance, Functionality and Performance Testing in one platform
- Support for different Ethernet media type and speed
- Native BroadR-Reach interface with proper termination, filtering and latency compensation
- Solutions in portable, desktop and rack-mount form factor: C1 and C50
- Expandable and scalable test setup
- The most comprehensive overall Automotive solution with multiple connection technologies: Ethernet, CAN, LTE, GPS, etc.

Spirent Services

Spirent Global Services provides a variety of professional services, support services and education services—all focused on helping customers meet their complex testing and service assurance requirements. For more information, visit the Global Services website at www.spirent.com or contact your Spirent sales representative.

spirent.com

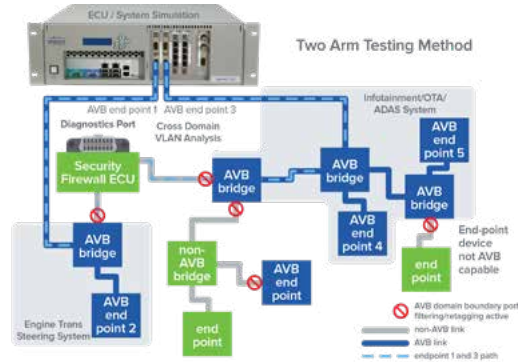
AMERICAS 1-800-SPIRENT
+1-800-774-7368 | sales@spirent.com

US Government & Defense
info@spirentfederal.com | spirentfederal.com

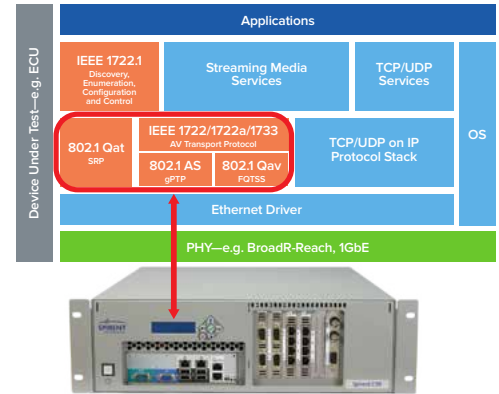
EUROPE AND THE MIDDLE EAST
+44 (0) 1293 767979 | emeainfo@spirent.com

ASIA AND THE PACIFIC
+86-10-8518-2539 | salesasia@spirent.com

Performance & Functional Testing using Spirent TestCenter Application



Conformance Testing - TWorkbench TSN/AVB Conformance Test Suites



Ordering information

Spirent TestCenter Application - Bundled Packages

Part Number	Description
AUTO-SWB-201	Automotive IEEE 802.1BA AVB Protocol Includes A, B, C & D licenses below
AUTO-SWB-202	Professional AV IEEE 802.1BA AVB Protocol Includes A, B, C, D & E licenses below
AUTO-SWB-203	TSN Pack 1 - All AVB and TSN standards included except for IEEE 802.1Qbu & IEEE 802.3br Includes A, B, C, D, E, F & G licenses below
AUTO-SWB-204	TSN Pack 2 - Pre-emption Bundle: IEEE 802.1Qbu & IEEE 802.3br Includes H & I licenses below
AUTO-SWB-205	TSN Super Pack (includes Pack 1 and Pack 2) Includes A, B, C, D, E, F, G, H & I licenses below

Individual Packages and License References

A	AUTO-SW-A001	IEEE 802.1AS-Rev: Timing and Synchronization for Time-Sensitive Applications (gPTP)
B	AUTO-SW-A002	IEEE 802.1Qat: Stream Reservation Protocol (SRP)
C	AUTO-SW-A003	IEEE 802.1Qav: Forwarding and Queuing for Time-Sensitive Streams (FQTS)
D	AUTO-SW-A004	IEEE 1722: Layer 2 AVB Transport
E	AUTO-SW-A005	IEEE 1733: Layer 3 AVB Transport
F	AUTO-SW-A006	IEEE 802.1Qci - Per Stream Filtering & Policing
G	AUTO-SW-A007	IEEE 802.1Qbv: Time Aware Shaper
H	AUTO-SW-A008	IEEE 802.3br: Interspersing Express Traffic
I	AUTO-SW-A009	IEEE 802.1Qbu: Pre-emption (per chassis license-all capable port in the chassis are enabled)

Spirent TWorkbench Application (Conformance)

TEC-SPT-AVBA-1	Automotive AVB Conformance Test Suite Pack 1
TEC-SUITE-TSN-PRE	TTsuite-TSN-Preemption Conformance test package for TSN Pre-emption (IEEE802.1Qbu & 802.3br)
TEC-SUITE-TSN-TAS	TTsuite-TSN-Time Aware Shaper Conformance test package for TSN Time Aware Shaper (IEEE802.1Qbv)
TEC-SUITE-TSN-FP	TTsuite-TSN-Filtering & Policing Conformance test package for TSN Filtering & Policing (IEEE802.1Qci)
TEC-SUITE-TSN-RED	TTsuite-TSN-Redundancy Conformance test package for TSN Redundancy (IEEE802.1CB)
TEC-SUITE-TSN-TSP	TSN Conformance Test Suite Pack TSN conformance test suite pack includes Pre-emption (PRE), Time Aware Shaper (TAS), Filtering & Policing (FP) and Redundancy (Red) test packs