

Spirent TTsuite-OPEN-EthernetSwitch

Overview

TTsuite-OPEN-EthernetSwitch enables customers to validate the compliance of an Ethernet switch as part of an in-vehicle network.

The OPEN Alliance SIG (One Pair EtherNet Special Interest Group) promotes communication inside vehicles based on Ethernet. The TC11 standard defined by this committee focuses on the compliance of an Ethernet switch in such network infrastructure. The TC11 test suite is categorized under different sections based on the requirements applicable in the Automotive context to the behavior of an Ethernet switch like Forwarding, Filtering, QoS and Timing behaviors.



Technical Specifications/ Test Categories

- Prep MAC Learning
- Operation and Forwarding
- Start Up Performance
- IEEE 8021 Port Based Security
- Port Disabling
- Handling of Jumbo Frames
- Read Out Device ID
- Frame Buffer Size
- Limited Queue Size
- Negative Address Learning for Multicast Frames
- Port Filtering and Bridge Delaying Rate
- Block Untagged Frames with invalid Length in the Length Type Field
- Block tagged Frames with invalid Length in the Length Type Field
- Release Ports

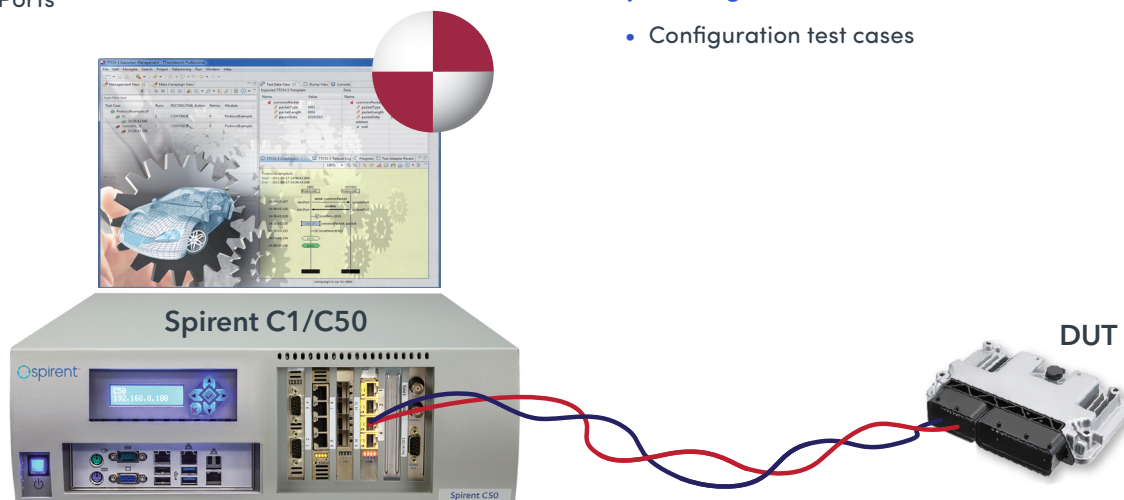
Test Cases for Switch Capabilities

These general test cases are currently available for the validation of all features and functionalities of an Ethernet switch:

- General
 - Operating as a store and forward switch
 - Address learning
 - Ageing
 - Frame filtering
 - Handling of tagged and untagged frames
- Address resolution
- Virtual LAN (VLAN)
- Time Synchronization based on Time-Sensitive Networking (TSN)
- Quality of Service (QoS)
- Filtering of incoming frames

Upcoming in Next Releases

- Configuration test cases



Benefits

- Test framework compatible to Windows & Linux
- Out-of-the box test execution
- Implemented, using standardized test language
- Easy to add or modify test cases
- Fast logging in different formats

Requirements

- Spirent C1/C50 with any of these NIC cards
 - NIC-33
 - NIC-43
 - NIC-47
 - NIC-65

Test Specifications

Standard	Description
OPEN Alliance TC11 Test Spec v1.0	OPEN TC11 Switch Semiconductor Test Specification

Protocol Specifications

Standard	Description
IEEE Std 802.1X-2010	IEEE Standard for Local and metropolitan area networks Port Based Network Access Control
IEEE Std 802.1AE-2006	IEEE Standard for Local and Metropolitan Area Networks: Media Access Control (MAC) Security
IEEE Std 802.1D-2004	IEEE Standard for Local and metropolitan area networks: Media Access Control (MAC) Bridge
IEEE Std 802.3-2015	IEEE Standard for Ethernet
IEEE Std 802.1Q- 2014	IEEE 802.1Q – Bridges and Bridged Networks
IEEE Std 1588-2008	IEEE Standard for a Precision Clock Synchronization Protocol for Networked Measurement and Control Systems
IEEE Std 802.1AS-2011	Timing and Synchronization for Time-Sensitive Applications in Bridged Local Area Networks, New York
IEEE Std 1722-2011	IEEE Standard for Layer 2 Transport Protocol for Time-Sensitive Applications in Bridged Local Area Networks

Ordering Information

Product Number	Description
TEC-SUITE-OS-SWITCH	TTsuite-OPEN-EthernetSwitch
TEC-SVC-1015-TS-1Y	TTsuite support and maintenance 1 year
TEC-TT-WP	TTworkbench Professional
TEC-SVC-1015-WB-1Y	TTworkbench support and maintenance 1 year