Avnu Alliance Specifications and Test Plans

Founded in 2009, Avnu Alliance defines and creates conformance test procedures, plans, and tools for Audio Video Bridging/Time Sensitive Networking (AVB/TSN)-based devices and products. Avnu's goal is to enable an ecosystem of interoperable, secure, low-latency and highly reliable networked devices using the AVB/TSN specifications that are a part of the open IEEE 802.1 Ethernet standards. These standards are designed to solve performance issues such as: precise timing and real-time synchronization, bandwidth reservation, and traffic shaping while simultaneously reducing the total cost of ownership by minimizing deployment and maintenance time. The Alliance is focused on applications of these technologies in the Automotive, Professional A/V, and Industrial markets.

Incorporated in 2009, Avnu Alliance has a decade of experience in developing conformance specifications and test plans across various markets based on market accepted TSN requirements. Avnu continues to innovate in making pre-certification and certification testing more convenient for member companies, test equipment manufacturers, and test facilities. There is an active process in place to keep these documents current. All Avnu Alliance members have access to the following specifications and test plans:

Avnu Bridge Testing

These test plans address the set of requirements for Avnu Alliance Bridge (Switch) Certification for AVB/TSN devices.

Test Plan Name:	Description	Last Update
Avnu Test Plan gPTP	Test plan for 802.1AS conformance for timing and synchronization for TSN applications on bridge devices	March 2016
Avnu Bridge Test Plan MVRP	Avnu Bridge test plan for Multiple VLAN Reservation Protocol (MVRP)	Sept 2013
Avnu Bridge Test Plan 802.1BA	Profile testing for bridges and end-stations	Sept 2016
Avnu Bridge Test Plan FQTSS	Test plan for forwarding and queuing enhancement (802.1Qav Credit based shaper)	Sept 2013
Avnu Bridge Test Plan Interop	Test plan for bridge interoperability	Feb 2018
Avnu Bridge Test Plan MRP	Test plan for bridge with Multiple Registration Protocol conformance	Sept 2013
Avnu Bridge Test Plan MSRP	Test plan for bridge with Multiple Stream Registration Protocol conformance	Sept 2013

Milan End Device Testing & Specifications

These Milan test plans address the market-defined protocol for end device products to conform to specifications for media streams, formats, clocking and redundancy for device interoperability.

In addition to these Milan end device tests, a device must also pass the Pro AV tests listed in the End Station table below.

Test Plan or Specification Name:	Description	Last Update
Milan Clocking Interoperability Test Plan	Test plan for Milan end-station media clocking interoperability	June 2018
Milan AVDECC Interoperability Test Plan	Milan end-station test plan for AVDECC Interoperability	March 2019
Milan AVTP Test Plan	Milan end-station test plan for IEEE 1722: AVTP Conformance	Feb 2019
Milan Interoperability Test Plan	Milan end-station test plan for Pro Audio End-station interoperability	Jan 2016
Milan Baseline Interoperability Specification	Specification document to define a concise set of requirements upon the various AVB standards and Milan Professional Audio endpoints.	Sept 2019
Milan Formats Interoperability Specification	Definition for three stream format profiles for Pro Audio devices based on IEEE 1722-2016 Standard AAF Audio Format	Aug 2019

Milan Media Clocking Interoperability Specification	Definition for Milan required method for providing interoperable media clock synchronization for Pro Audio devices	March 2019
Redundancy Interoperability Specification	Redundancy scheme to give Pro Audio AVB devices the ability to endure against a number of network failures	June 2018
Discovery, Connection & Control Specification for Listeners & Talkers	Milan required method for providing interoperability around discovery, connection, and control mechanisms for Pro Audio AVB devices.	Oct 2018

End Station Testing & Specifications

These tests are designed to determine if a product conforms to specifications defined in the suite of AVB/TSN standards from the IEEE 14 802.1 Working Group. Successful completion of these tests provide a reasonable level of confidence that the Device Under Test(DUT) will function properly and conforms to the specifications. These tests are meant to be used for end devices in Industrial applications and others.

Test Plan or Specification Name:	Description	Last Update
Avnu Qbv Test Plan	Test plan for IEEE 802.1Qbv-2015, for scheduled traffic	October 2019
Avnu Pro AV End-station FQTSS Test Plan	Test plan for forwarding and queuing enhancements for time sensitive streams	Feb 2013
Avnu Pro AV End-station MRP, MVRP, MSRP Test Plan	Test plan for MRP/MSRP/MVRP applications	June 2013
Avnu Pro AV End-station 1722 Test Plan	Test plan for end-stations using IEEE 1722 Transport Protocol for AV devices.	March 2013
Avnu Pro AV End-station Interoperability	Product interoperability test plan for Pro AV end devices	Feb 2018
Avnu End-station gPTP Test Plan	Test plan for 802.1AS conformance	March 2016
Avnu Pro AV End-station Media Clocking Interoperability Specification	Interoperability specification for media clocking for AV end stations.	June 2013
802.1AS Recovered Clock Quality Testing Revision 1.0 Specification	Definition for methods to measure gPTP recovered clock quality for Avnu Certification	Oct 2016
Avnu Pro AV End-station and Bridge Functionality Interop Specification	Baseline specification for AVB/TSN functionality on Pro Audio devices.	Feb 2018

Avnu Automotive End Device Testing & Specifications

This suite of test plans tests for conformance for the Avnu Automotive profile specification for AVB and TSN automotive devices and bridges.

Test Plan or Specification Name:	Description	Last Update
Automotive gPTP	Test plan for Automotive general Precision Time Protocol (gPTP), a common clock for all devices based on the 802.1AS standard	Sept 2015
Automotive Network Startup	Test plan for Automotive Network & Device startup	June 2015
Automotive FQTSS (Bridge)	Bridge Test Plan for Automotive SR Classes; Forwarding and Queuing Enhancements for Time-Sensitive Streams	April 2016
Automotive End-Station	End-station test plan for Automotive media formats and SR classes	March 2016
Automotive Exceptions	Test plan for Automotive Exception Handling	Sept 2015
Automotive Diagnostics	Test plan for Automotive Diagnostic Counters	Aug 2015
Automotive Ethernet AVB Functional and Interoperability Specification	Interoperability baseline specification document for Ethernet AVB functionality on automotive devices.	Sept 2016

Members may access the Avnu Test plans and tools at this link: https://groups.avnu.org/wg/Avnu_Members/wiki/avnu-certification-program.

For details on Avnu membership, to access specification documents or for general inquiries, please visit www.avnu.org or contact admin@avnu.org. Parties interested in more detail about Milan may also visit the Milan open forum at http://milanavcommunity.proboards.com/.