

E6953A DSRC Certification Operating Council Test Solution

Overview

This configuration guide contains information to help you configure E6953A DSRC COC Test Solution to meet your test requirements. This solution enable testing of all Test Cases across IEEE802.11p, IEEE1609.3, 1609.4, 1609.2 and SAE 2945/1 defined by COC in a single PXI rack, with intuitive User Interface.



Figure 1: E6953A DSRC COC Test Solution

Basic Configuration

E6953A DSRC COC Test Solution offer 3 basic configurations depend on test coverage and test requirements.

Table 1: 3 Basic Configurations

802.11p RF config	DSRC COC protocol config	DSRC COC full config
<ul style="list-style-type: none"> Covering 802.11p Physical Layer Test Cases Software: 802.11p PHY plugin, DSRC Test Control Interface Plugin, TAP, Signal Studio, WLAN X-Series Application Hardware: PXIe Chassis, Controller, VXT, Reference Module, Accessories(Splitter, Atten and cable) 	<ul style="list-style-type: none"> Covering IEEE 1609.2/3/4 & J2945/1 Test Cases Software: 802.11p MAC Plugin, DSRC Signaling plugin, DSRC Test Control Interface Plugin, TAP Hardware: PXIe Chassis, Controller, DSRC Transceiver Module, Accessories(Splitter, Atten and cable) 	<ul style="list-style-type: none"> Covering 802.11p PHY/MAC, IEEE 1609.2/3/4 & J2945/1 Test Cases Software: 802.11p PHY/MAC Plugin, DSRC Signaling plugin, DSRC Test Control Interface Plugin, TAP, Signal Studio, WLAN X-Series Application Hardware: PXIe Chassis, Controller, VXT, Reference Module, DSRC Transceiver Module, Accessories(Splitter, Atten and cable)

Solution Architecture

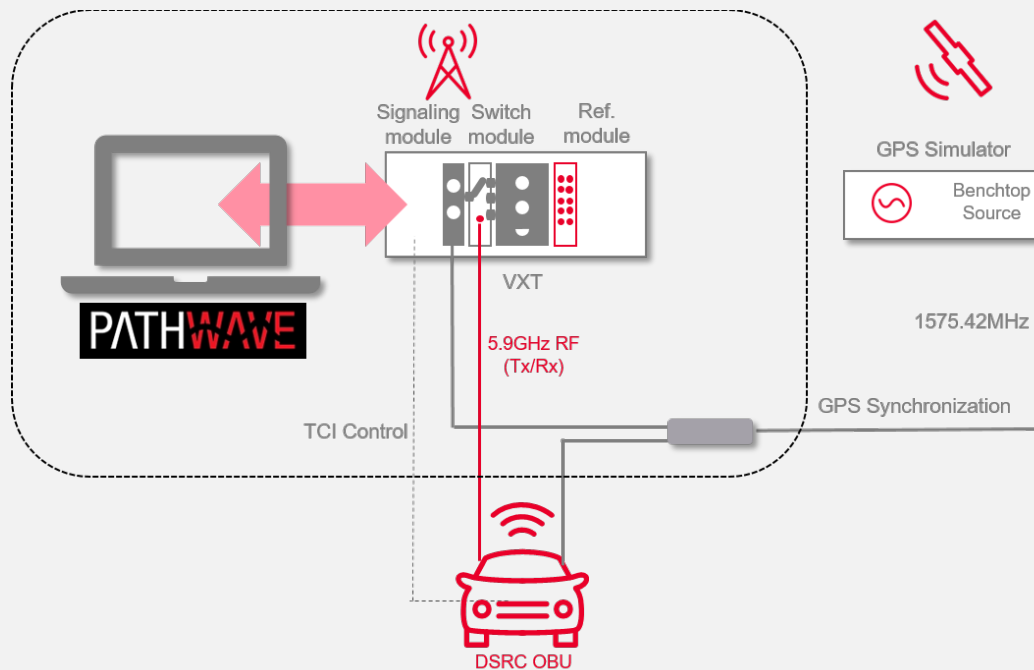


Figure 1: E6953A DSRC COC Test Solution functional diagram

Hardware

With the E6953A DSRC COC solution, you can leverage your existing PXIe equipment, such as PXI controller, VXT and reference module can be reused for many other wireless application tests.

Step 1 : Select DSRC solution PXI Components Option

Item	Description
E6953A-300	PXIe Chassis, M9010A, 10-slot, 3U, 25 GB/s
E6953A-301	PXIe Embedded Controller, M9037A, Intel i7, 4 GB RAM, 240 GB SSD
E6953A-302	VXT, M9421A, PXIe Vector Transceiver
E6953A-303	PXIe Frequency Reference, M9300A, 10MHz and 100 MHz
E6953A-304	DSRC Transceiver module
E6953A-305	M9155C PXI Hybrid Dual SPDT Coaxial Switch, DC to 26.5 GHz, Underminated

Step 2 : Select DSRC solution Accessories Option (Recommended)

Item	Description
E6953A-201	Power Splitter, Atten 40 dB and Cables



Software

The Keysight Test Automation Platform (TAP) provides powerful, flexible and extensible creation of test sequences and test plans with additional capabilities that optimize your test software development and overall performance. TAP also includes qualified certification test cases.

Step 3 : Select DSRC solution Automation Test Software Option	
Item	Description
KS8400A	Test Automation on PathWave
N7617B	Signal Studio for WLAN 802.11a/b/g/j/p/n/ac/ah/ax (9FP/FFP/RFP required)
N9077A	WLAN 802.11a/b/g/n/ac/ah/af Measurement Application (2FP required)
KS83200B	DSRC Framework
KS83201B	802.11p PHY COC Plugin
KS83202B	802.11p MAC COC Plugin
KS83204B	DSRC COC Signaling Plugin
KS83205B	DSRC Test Control Interface Plugin

Licensing

The following licenses are required to enable the DSRC solution:

Item	Description
N7617B	Signal Studio - ARB WaveForm creation
N9077A	WLAN Measurement Application
KS8400A	TAP Development System
KS83200B	DSRC Framework
KS83201B-1FP/1TP	DSRC 80211P PHY CoC test suite
KS83202B-1FP/1TP	DSRC 80211P MAC CoC test suite
KS83204B-1FP/1TP	DSRC CoC signalling (1609.2/3/4, J2945/1)
KS83205B-1FP/1TP	DSRC TCI Interface support

Services

To explore your requirements and available services, please contact your local Keysight representative

E6953A DSRC COC Test solution

Greater safety on the road starts with verification and certification of your mission-critical DSRC communication systems. To suit a range of requirements and budgets, we offer PXIe solutions—compact and scalable—that support RF measurements and protocol testing.

The foundation is Keysight's leadership in wireless technology and measurement science:

- The Keysight M9421A PXIe vector transceiver (VXT) is purpose-built to enable rapid solution creation and faster throughput in manufacturing test of wireless components, power amplifiers, and RF front-end modules. It covers 60 MHz to 3.8 or 6 GHz with modulation and analysis bandwidths up to 160 MHz. With FPGA-accelerated measurements and deep software, the ready-to-run VXT lets you start closer to your finish line.
- A common set of RF PHY layer measurements is available across Keysight tools for R&D, design verification, certification, and manufacturing test.
- Covers all CoC Test Cases in single, integrated PXI frame including IEEE 802.11p, IEEE 1609.3, IEEE 1609.4, IEEE 1609.2 and J2945/1
- The Keysight Test Automation Platform (TAP) provides powerful, flexible and extensible creation of test sequences and test plans with additional capabilities that optimize your test software development and overall performance. TAP also includes qualified certification test cases.

Conclusion

This single platform is designed to be easily expandable to address future test needs in DSRC and C-V2X.

In addition, Keysight offers a full range of professional consulting services—available worldwide—to help accelerate your time to market and ensure the success of your DSRC development projects.

Learn more at: www.keysight.com

For more information on Keysight Technologies' products, applications or services, please contact your local Keysight office. The complete list is available at: www.keysight.com/find/contactus

