In partnership with Tata Elxsi, Spirent has developed a V2X test bed that can be used for validation and performance benchmarking of V2X applications running on V2X ECUs.

The V2X test bed provides the ability to bring real-world traffic scenarios into the LAB and thereby significantly reduces costs and time associated with extensive field testing.

It is the ideal test environment for testing and performance benchmarking of V2X applications, in various stages of the development cycle, such as from early research up to pre-production.

**V2X Test Bed Supports**

- WAVE and ITS
- Upto 25 emulated OBUs/RSUs on single DSRC hardware
- GNSS signal simulation
- CAN emulation
- Wireless channel emulation
- V2X security testing
- Functional and performance assessment of V2V and V2I/I2V safety applications
- Test report generation
About Spirent Communications

Spirent Communications (LSE: SPT) is a global leader with deep expertise and decades of experience in testing, assurance, analytics and security, serving developers, service providers, and enterprise networks.

We help bring clarity to increasingly complex technological and business challenges.

Spirent’s customers have made a promise to their customers to deliver superior performance. Spirent assures that those promises are fulfilled.

For more information, visit: www.spirent.com

Spirent V2X Emulator
Validation and Performance Benchmarking of V2X Applications

Features

• Create field scenarios around real road topologies using Google maps
• Create traffic conditions involving multiple emulated OBUs (On Board Unit) and RSUs (Road Side Unit)
• Test V2X security features of the participating OBUs and RSUs
• Accurate position simulation for the V2X ECU under test using Spirent’s GNSS simulator
  – Also simulate various atmospheric conditions that can have an impact on the accuracy of the GNSS receiver of the ECU under test
• Re-create actual real world channel conditions within the lab using Spirent Vertex Channel Emulator integrated into the test bed
• CAN restbus simulation for the controlling and observing device under test (DUT)
• Record and play back of field test scenarios within the lab environment

Requirements

• Tata Elxsi V2X Advanced Simulation Environment
• GNSS Simulator GSS6300M/GSS6700
• DG Technologies Gryphon S4 CAN-Bus Simulator
• Spirent Vertex Channel Emulator

Ordering Information

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Description</th>
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<tbody>
<tr>
<td>TEC-KIT-V2XE-BAS-01</td>
<td>V2X EMULATOR BASIC KIT</td>
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<tr>
<td>TEC-KIT-V2XE-ADV-01</td>
<td>V2X EMULATOR ADVANCED KIT</td>
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<td>V2X EMULATOR BASIC KIT - ITS-G5</td>
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<td>TEC-KIT-V2XE-BAS-03</td>
<td>V2X EMULATOR BASIC KIT - WAVE DSRC</td>
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</tbody>
</table>

Limitations

Physical channel conditions
Mobility impairments
Network wreckage

Create real road topologies
Emulate multiple OBUs using single DSRC hardware

Huge effort & time
Test conditions not replicable
Highly expensive
Longer development time

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