

## E SERIES

# SV6E-X

Mid-Frequency Digital Test Module



## Multi-Protocol Digital Exerciser and Analyzer With 200 MHz I/O Speeds

The SV6E-X is an all-inclusive solution for mid-frequency digital interface development and test. Capable of supporting popular protocols such as I2C, I3C (up to v1.2), SPI, SoundWire, and RFFE, this module replaces racks of equipment that are typically required for I/O testing. For any given protocol, the SV6E-X contains three instruments in one: a **protocol exerciser**, a **protocol analyzer** with fine-resolution timing analysis, and a **real-time oscilloscope** with a full suite of conformance test capability. All three categories of instrumentation features are accessible simultaneously and in real-time using the award winning Pinetree software.

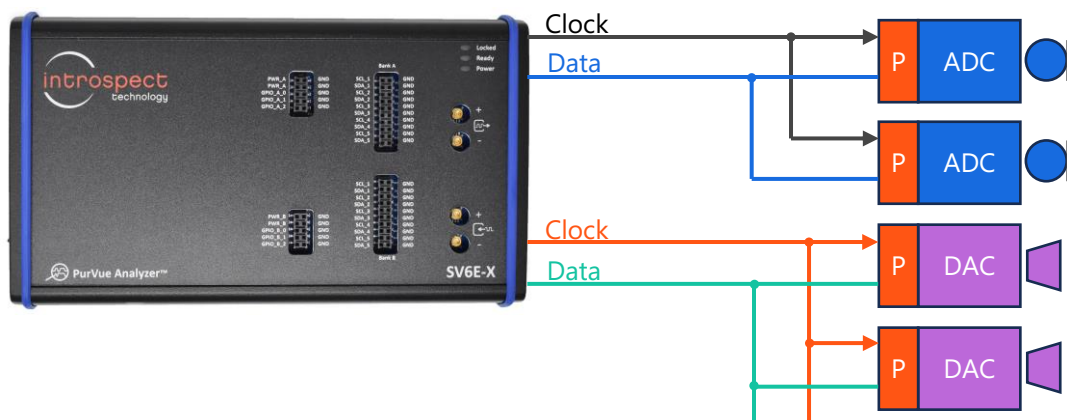
### KEY FEATURES:

- **Selectable protocols:** provides true native protocol handshake with a built-in API for popular digital protocols
- **Device instances:** integrates up to 4 parallel devices, each with its own independent protocol stack
- **PurVue Analyzer option:** available 1 Gbps real-time oscilloscope that can connect to any channel
- **Protocol analysis:** easily trigger on protocol-specific commands

### KEY BENEFITS:

- **Future proof:** use a single investment in hardware to evolve protocol testing over multiple generations of product development
- **Flexible:** programmable voltage levels and input/output timings offer true functional stress testing and characterization capabilities
- **Automated:** scripting capability ideal for debug tasks, verification and full-fledged production screening of devices and system boards

## Typical Application: MIPI SoundWire Device Testing



## General Specifications

FEATURE	DESCRIPTION	BENEFIT
Available Protocols	I3C (up to v1.2), I3C Basic (up to v1.2), JESD403-1 SidebandBus, Quad SPI, Octal SPI, SoundWire, RFFE	Load a protocol license at any time without the need for a hardware upgrade
Number of I/O Channels	2 banks of 10 channels each	Emulates the most complex multi-drop protocol situations
Maximum Data Rate	400 Mbps in DDR mode (200 MHz clock frequency)	Provides a future-proof investment for next generation device data rates
On-Board Memory	1 GByte	Can stream to PC for larger memory capacity

## Electrical Specifications

FEATURE	DESCRIPTION	BENEFIT
Voltage Range	0.8V to 3.6V in 1mV steps	Supports a wide array of devices under test
Push/Pull and Open-Drain Drivers	Selectable per channel	Enables mixed bus testing for I2C and I3C applications
Bus High-Keepers	Selectable per channel	Useful for multiple low-power protocols
Timing Resolution	2.5 ns logic, 100 ps analog	Fine and coarse capabilities depend on the parameter being set and the protocol being exercised

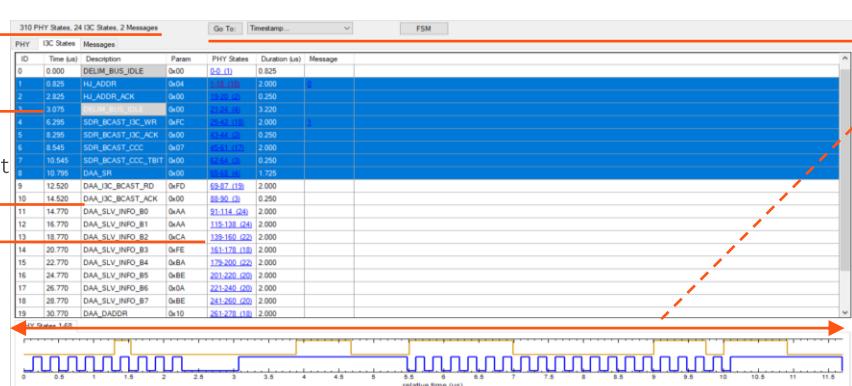
## Detailed Analysis Capability

Capture summary

Precision time stamps

Human-readable event lists

Hyperlinks to toggle from protocol layer to physical layer view



The screenshot displays the software's capture summary interface. At the top, it shows '310 PHY States, 24 I3C States, 2 Messages'. Below this is a table with columns: ID, Time (s), Description, Param, PHY States, Duration (s), and Message. The table lists various events such as 'DELPHI\_BURST\_ROLE', 'H3C\_ADR', 'H3C\_ADR\_ACK', 'SDR\_BCAST\_I3C\_WR', 'SDR\_BCAST\_I3C\_ACK', 'SDR\_BCAST\_I3C', 'SDR\_BCAST\_I3C\_TBIT', 'DAA\_SR', 'DAA\_I3C\_BCAST\_RD', 'DAA\_I3C\_BCAST\_ACK', 'DAA\_SLV\_INFO\_B0', 'DAA\_SLV\_INFO\_B1', 'DAA\_SLV\_INFO\_B2', 'DAA\_SLV\_INFO\_B3', 'DAA\_SLV\_INFO\_B4', 'DAA\_SLV\_INFO\_B5', 'DAA\_SLV\_INFO\_B6', 'DAA\_SLV\_INFO\_B7', and 'DAA\_BADDR'. Below the table is a waveform view showing a signal over time, with a red dashed line indicating a selected event.

Powerful search

Dynamically adjust timing diagram span based on selected events