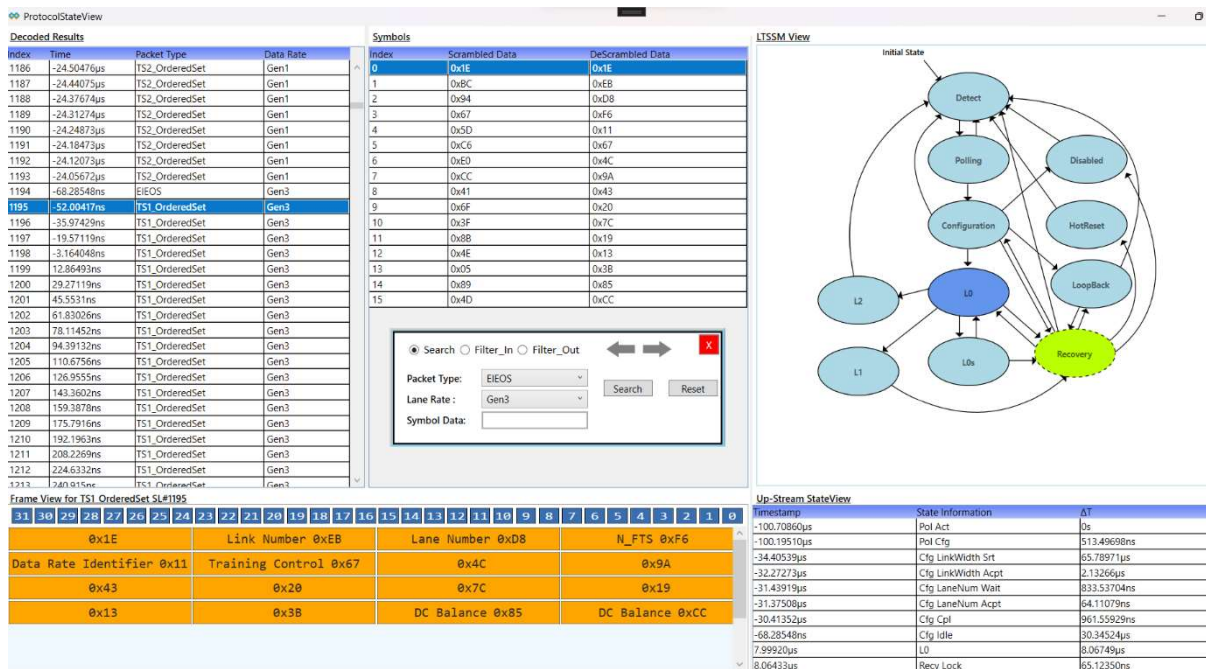


PCIe Protocol Decode Software



The screenshot displays the PCIe Protocol Decode Software interface, which is divided into several key sections:

- Decoded Results:** A table listing decoded packets with columns for Index, Time, Packet Type, and Data Rate. The table shows a sequence of packets, including Ordered Sets (TS1, TS2, Gen3) and EIOS.
- Symbols:** A table showing symbol data with columns for Index, Scrambled Data, and DeScrambled Data. It lists symbols 0 through 15.
- LTSSM View:** A state transition diagram showing the Link Training and Status State Machine (LTSSM) states. States include Detect, Polling, Configuration, L0, L1, L2, L3a, L3b, Disabled, HotReset, LoopBack, and Recovery. Arrows indicate the transitions between these states.
- Up-Stream StateView:** A table providing detailed state information and timing data. It includes columns for Timestamp, State Information, and ΔT. The table shows various states like Pol Act, Pol Cfg, Cfg LinkWidth Srt, Cfg LinkWidth Acpt, Cfg LaneNum Wait, Cfg LaneNum Acpt, Cfg Cpl, Cfg Idle, L0, and Recy Lock, along with their respective timestamps and timing differences.

Protocol decoding along with LTSSM diagram and timing information

Data rate of PCIe interface is rapidly increasing to address the new and emerging applications in automotive, AI, ML and cloud storage applications. Time to market is continuously shrinking to address the market needs. This has driven the designers to look for efficient and easy to use PCIe Protocol Analysis tools in many forms such as oscilloscope based PCIE Protocol decoders and Standalone PCIe Protocol Analyzers.

PGY-PCIe is a PCIe Protocol Decoding software that runs inside Tektronix oscilloscope which has windows OS and easily decodes the PCIe Waveforms acquired by the oscilloscope. This reduces the debug and test time for design and test engineers while debugging link bring up challenges in PCIe interface.



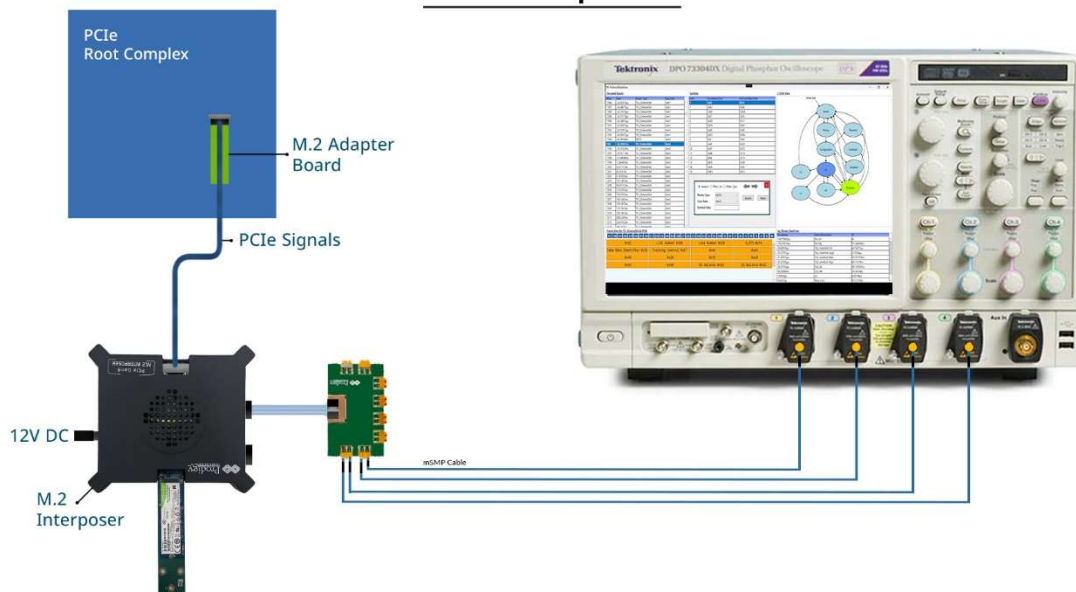
This solution helps in debugging the protocol layer issues and correlating it to physical layer resulting in a reduction in debugging time.

User can capture the X1 lane both upstream and downstream traffic. In X2 PCIe traffic can be captured during the upstream or downstream using an four channel oscilloscope. In X4 system, user can either capture upstream or downstream traffic and analyze the PCIe Traffic using differential probes.

Key Features	
❖	Decodes the scrambled PCIe protocol packets
❖	Simultaneously decodes the PCIe protocol packets at 2.5 Gbps, 5 Gbps, 8 Gbps and 16 Gbps present in the acquired waveform.
❖	Displays the time stamp, PCIe packet type.
❖	Displays the LTSSM State information.
❖	Decoding of TS1, TS2, DLLP and TLP Packets
❖	Decoding of protocol packets by merging lanes to support X2 and X4 PCIe interface
❖	Export the decoded data CSV or TXT file format.
❖	Report generation

Root Complex (RC) and End Points (EP) are connected using different topologies. When it is connected point to point, the connector could be M.2, U.2 or other connector. In these scenarios, Prodigy Technovations provides the interposer which ensures the signals are available to the oscilloscope probing at an mSMP Connector and maintains connectivity between RC and EP. This simplifies the probing challenge and easily acquire the PCIe Signals

X4 Interposer



If the PCIe interface is embedded, then engineer can use solder down probe tips to access the PCIe Signals. A typical recommended probe to acquire 16Gbps signals could have bandwidth of 24GHz or more.

Recommended oscilloscope to acquire PCIe 8Gbps and 16Gbps signals can be 10GHz and 20GHz or more.

Ordering Information

PGY-PCIe Protocol Decode Software

(Shipment includes CD with PGY-PCIe Protocol Decode Software)

PGY-PCIe-X4-Int-M.2

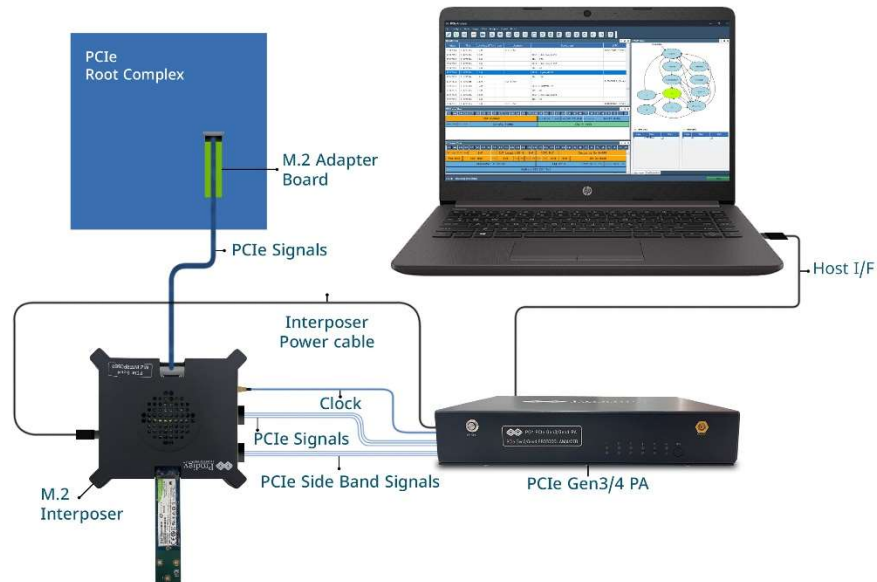
Interposer to support M.2 interface at 16Gbps.

PGY-PCIE-X4-Int-U.2

Interposer to Support to U.2 Interface at 16Gbps

If you need support any other interposer, please write to contact@prodigytechno.com

Prodigy Technovations also provides standalone PCIe Protocol Analyzers to support PCIeGen3/4 Protocol Analysis. Typical Test setup for PCIe Protocol Analysis with M.2 interface is shown. Prodigy can also provide different interposers based on user needs.



Contact Information

About Prodigy Technovations

Prodigy Technovations Pvt Ltd (www.prodigytechno.com) is a leading global technology provider of Protocol Decode, and Physical layer testing solutions on test and measurement equipment. The company's ongoing efforts include successful implementation of innovative and comprehensive protocol decode and physical Layer testing solutions that span the serial data, telecommunications, automotive, and defense electronics sectors worldwide.



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