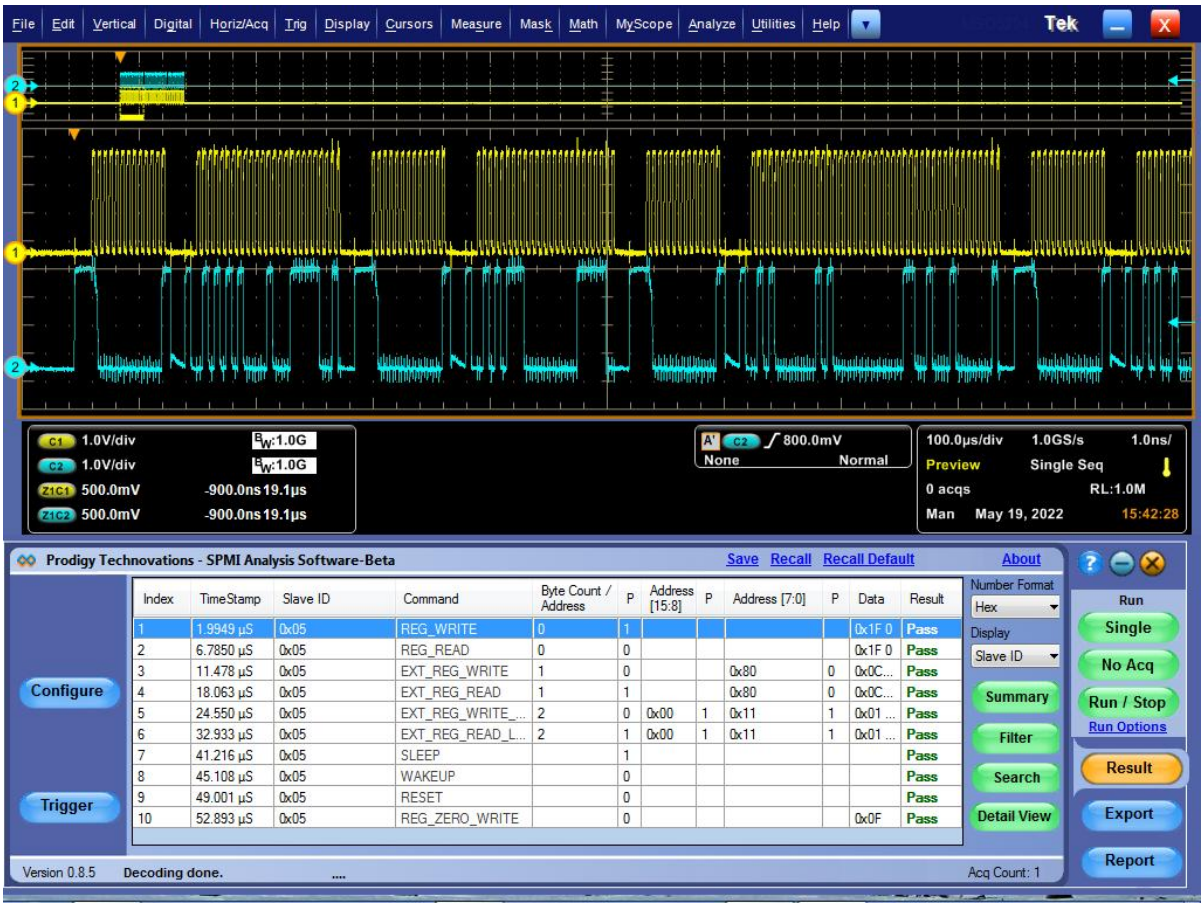
PGY-SPMI

Electrical Validation & Protocol Analysis Software



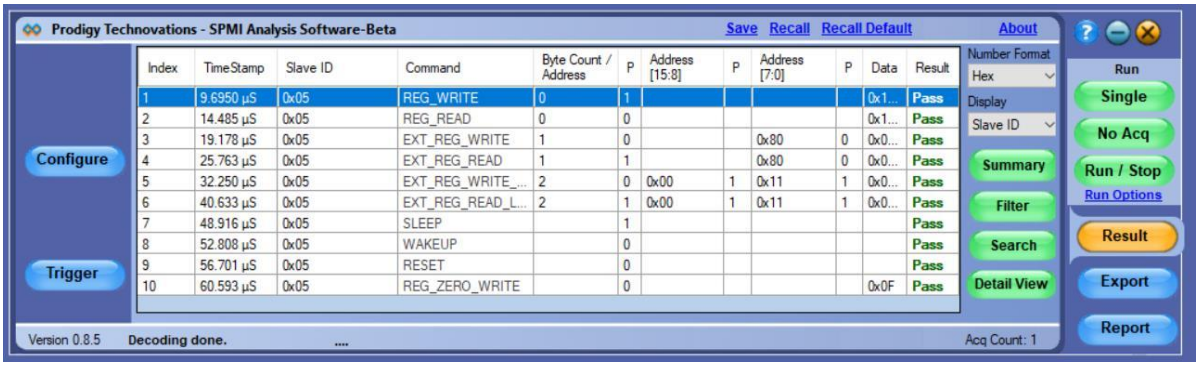
SPMI Electrical Validation and Protocol Decode Software offers electrical measurements compliance testing as specified in SPMI specification. PGY-SPMI Electrical validation and Protocol Decode software runs in Tektronix Oscilloscope provides electrical measurements and protocol decoding at click of button.

This software provides the flexibility to set reference levels for electrical measurement and customized limits makes it most versatile solution to meet different needs of characterizing SPMI Signals. Now design and test engineers can automatically make accurate and reliable electrical measurements and decode protocols in PGY-SPMI software using data acquired by Tektronix DPO5000, TDS7000, DPO/DSA/MSO7000, MSO5/6 series oscilloscope (Windows 7 or higher OS based scope only) to reduce the development and test cycle.

Key Features

- SPMI Electrical Validation and protocol Analysis using oscilloscope live channel data or stored SPMI signals (wfm (default), h5, trc format (with option)).
- Links the content to the electrical signal in the oscilloscope for easy understanding of the electrical characteristics of the protocol.
- Displays the decoded data in SPMI frame format
- Error checks for parity bits of command and data.
- Flexibility to view Slave ID in Symbol or Hex value.
- Flexibility to view decoded data in hex, binary, Decimal or octal format.
- Long duration data decode support to capture more number of SPMI protocol transactions.
- Search capabilities to locate protocol event.
- Filter capabilities to view information of Interest.
- Documentation by exporting data in CSV and TXT file format along with PDF Report Generation.
- API Support with Python.

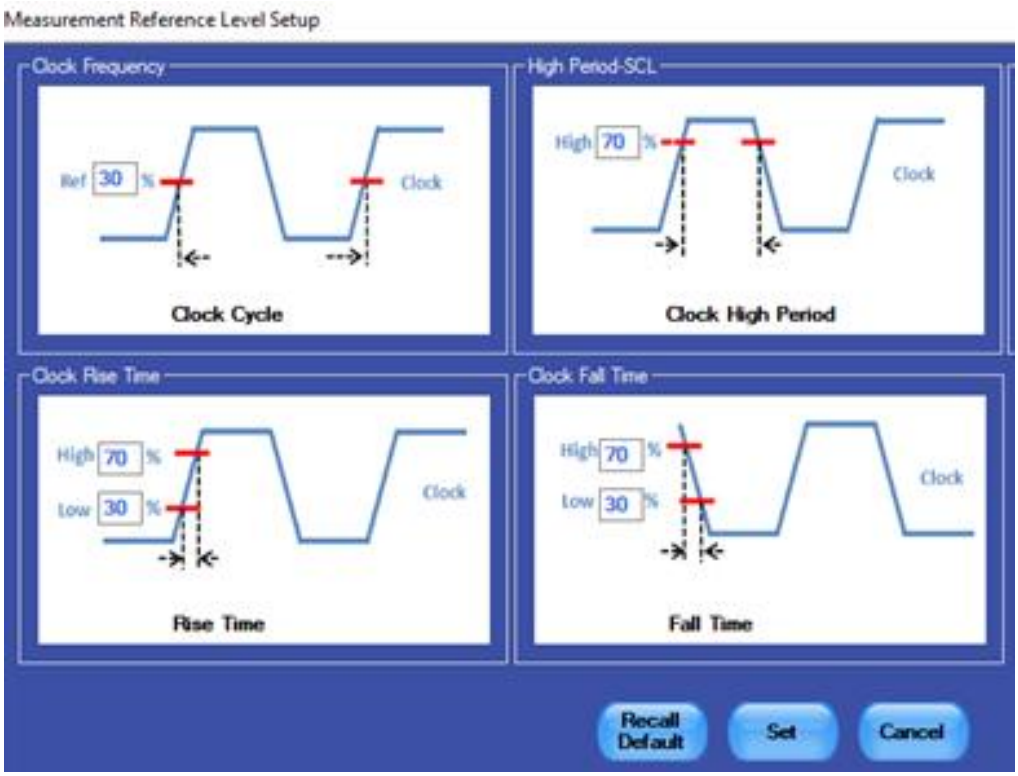
Seamless Integration with Oscilloscope



PGY-SPMI runs inside the Tektronix oscilloscopes and makes the electrical measurements, and displays the decoded data in a bus diagram, a table, and links the decoded data to electrical signal in the bus diagram.

Reference Level Setup

PGY-SPMI-EV is not just for standard electrical compliance testing, you can also vary the limits and test your device with custom limits. The intuitive limits and reference level setup allow you to configure the limits and reference levels for your custom testing needs. This enables you to test your device beyond the specification and characterize it.

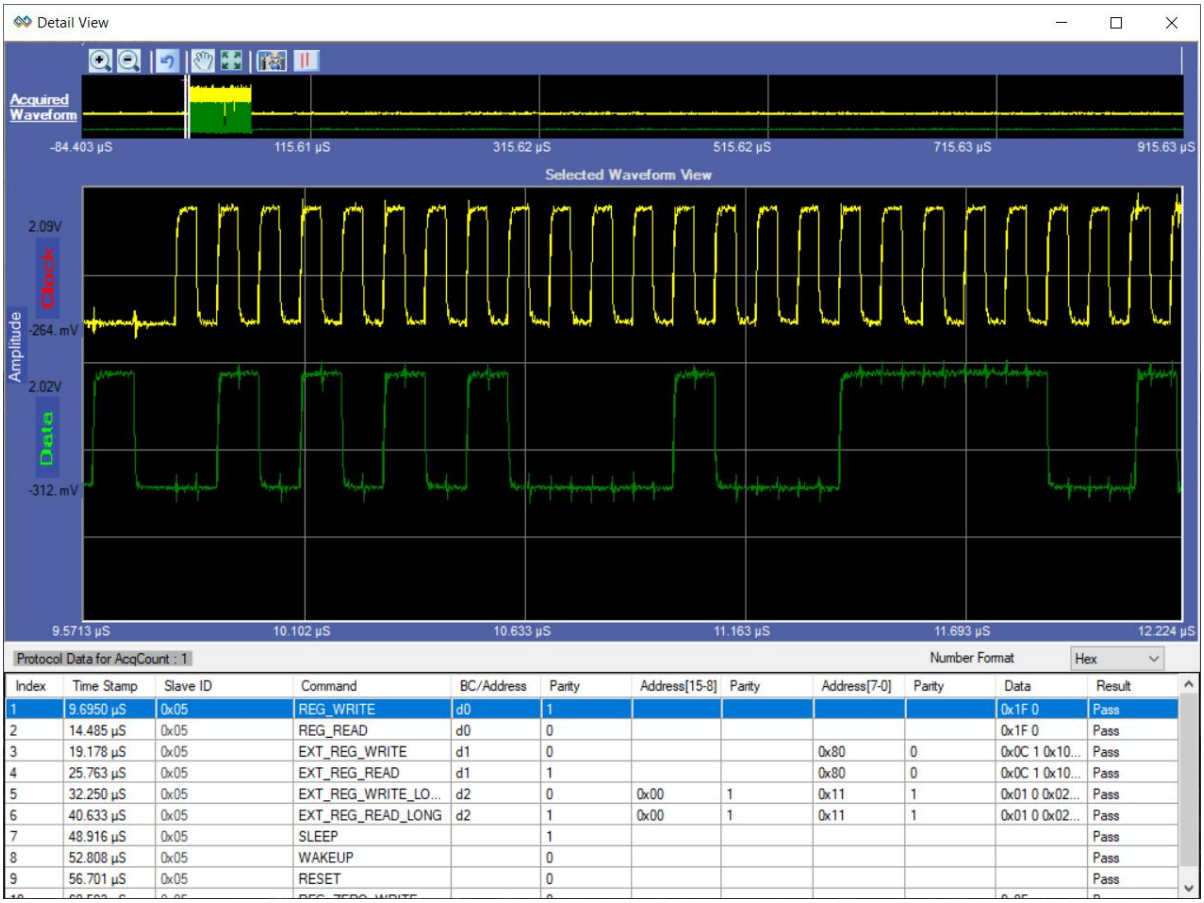


Characteristics

S.No	Electrical Parameter	Symbol
1	High Level input voltage (SDATA, SCLK)	VIH
2	Low Level input voltage (SDATA, SCLK)	VIL
3	Input threshold hysteresis (SDATA, SCLK)	VHYS
4	Output logic high	VOH
5	Output logic low	VOL
6	SCLK Clock Frequency	fSCLK
7	SCLK output transition (rise/fall) time from Master SCLK driver	tSCLKOTR
8	SCLK high time	tSCLKIH
9	SCLK low time	tSCLKIL
10	Time for SDATA output valid from SCLK rising edge	td_SDATA
11	SDATA output transition	Tsdataotr
12	SDATA setup time	tSU_STA
13	SDATA rise time	tr_SPMI
14	SDATA fall time	tf_SPMI

Table 1. SPMI Timing Requirements

Detail View

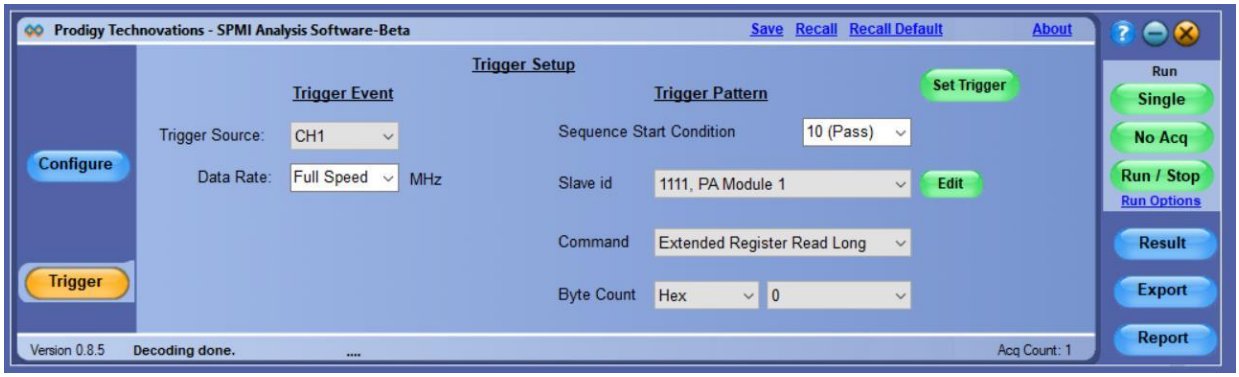


Index	Time Stamp	Slave ID	Command	BC/Address	Parity	Address[15-8]	Parity	Address[7-0]	Parity	Data	Result
1	9.6950 µS	0x05	REG_WRITE	d0	1					0x1F 0	Pass
2	14.485 µS	0x05	REG_READ	d0	0					0x1F 0	Pass
3	19.178 µS	0x05	EXT_REG_WRITE	d1	0			0x80	0	0x0C 1 0x10...	Pass
4	25.763 µS	0x05	EXT_REG_READ	d1	1			0x80	0	0x0C 1 0x10...	Pass
5	32.250 µS	0x05	EXT_REG_WRITE_LO...	d2	0	0x00	1	0x11	1	0x01 0 0x02...	Pass
6	40.633 µS	0x05	EXT_REG_READ_LONG	d2	1	0x00	1	0x11	1	0x01 0 0x02...	Pass
7	48.916 µS	0x05	SLEEP		1						Pass
8	52.808 µS	0x05	WAKEUP		0						Pass
9	56.701 µS	0x05	RESET		0						Pass

In Detail View, engineers can view the analog waveform, details of electrical measurements in single view. If there is any failure in electrical measurement, designers can quickly correlate with the analog waveforms. User can select any row in the detail view; corresponding analog waveform will be zoomed and displayed. In the same row, engineers can view all the electrical measurements corresponding to the selected row. Utility features such as zoom, cursors, and markers make custom measurement while debugging.

Powerful SPMI Protocol Aware Hardware Based Real-Time Trigger

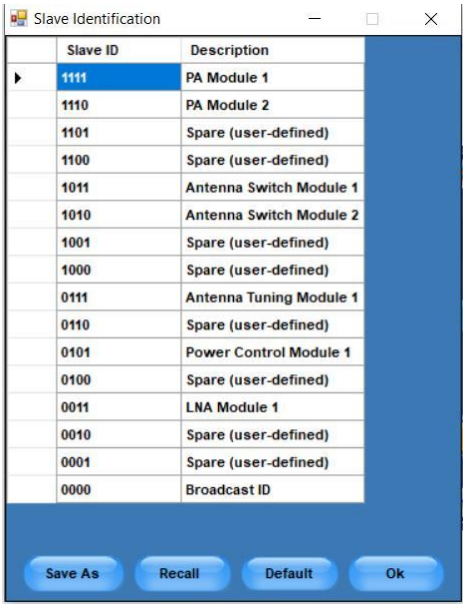
Simple, easy-to-use SPMI protocol-aware trigger feature allows engineers to capture SPMI signals at specific event in SPMI interface.



Select any of the live channels Ch1 to CH4 as trigger source and set the trigger pattern. The trigger can set to full speed, half speed or any custom data rate. SPMI provides the flexibility to select a combination of any one of the sixteen slave IDs, any command and command dependent parameters such as Byte count, Address, or Data.

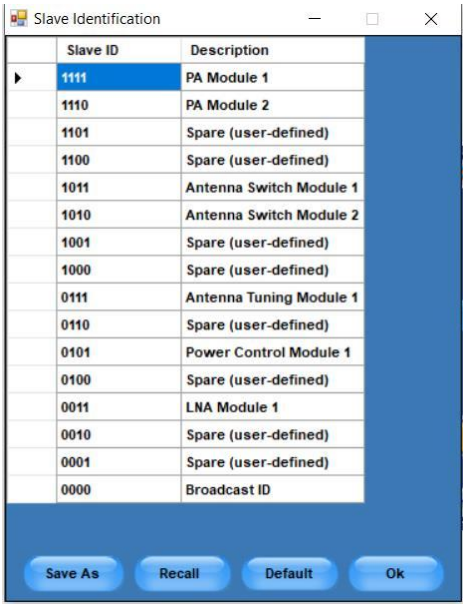
Symbol table for Slave ID

PGY-SPMI Software provides the flexibility to view the decoded data in symbol table. SPMIspecification documents provide guidelines to describe the Slave IDs. PGY-SPMI software has the default slave ID table. However, the user can edit the default table and apply the custom described slave IDs for easy analysis of protocol activities.

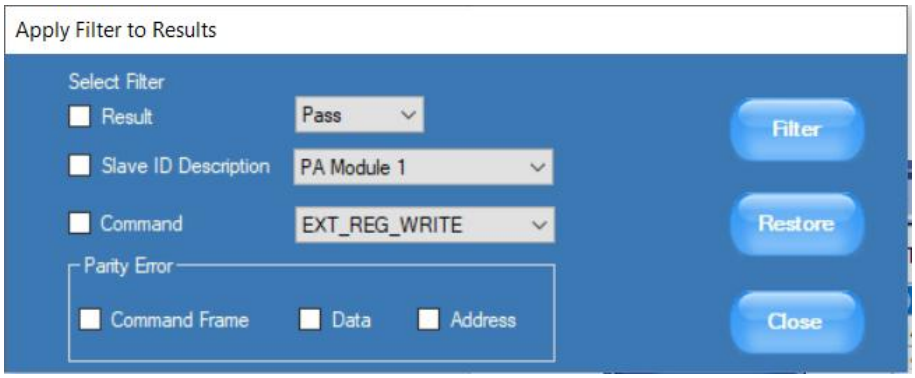


Results Summary

Protocol Summary provides a quick result view of protocol analysis of SPMI signals. This view lists pass/fail status of SSC, parity bit in command, address and data in the acquired data. This helps in locating the cause of SPMI Protocol packet failure.

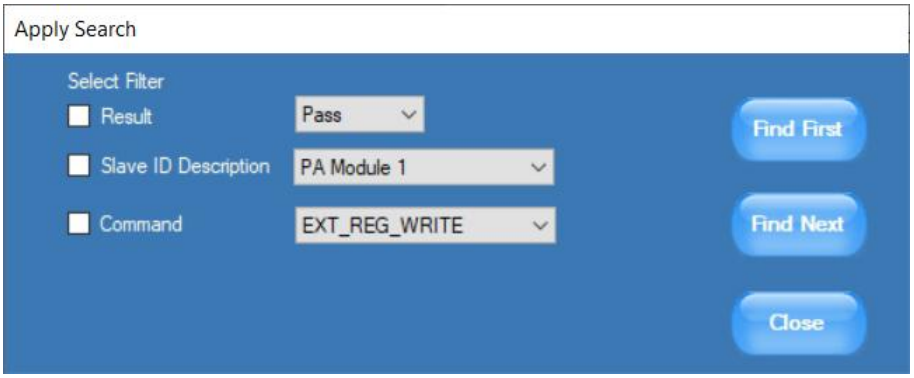


Filter



It is extremely challenging to view information of interest while there are hundreds of protocol transactions taking place between various devices. These problems compound during protocol analysis of a long record length. PGY-SPMI software solves this problem using the filter feature. By filtering information for Slave ID or specific command, or parity error type, user can view only specific data of interest. Filters provide filtering of information using individual packet content or combination of packet content.

Search



During protocol analysis, users tend to capture a large amount data capture any non-repeatable event. It is also extremely difficult locate the SPMI packet of interest. SPMI Software's Search filter in is able to quickly locate the required Slave ID or command or Combination of both.

Tektronix Oscilloscopes Supported:

- DPO/MSO5000 series
- DPO7000 series
- DPO/MSO/DSA 70000 series
- MSO 5 series MSO MSO54, MSO56, MSO58, MSO58LP
- MSO 6 series MSO64, MSO64B, MSO66B, MSO68B series.
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Note: All need to be windows 7 or higher OS based

Ordering Information

The ordering information is as follows:

PGY-SPMI (shipment includes CD with PGY-SPMI Electrical Validation and Protocol Decode Software) License is locked to the oscilloscope.

Contact Information

About Prodigy Technovations Pvt Ltd

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.