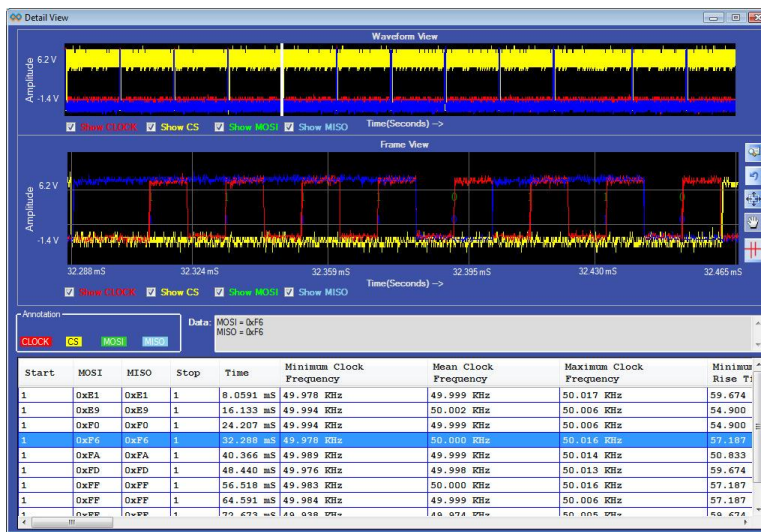# PGY-SPI SPI Electrical Validation & Protocol Decode Software

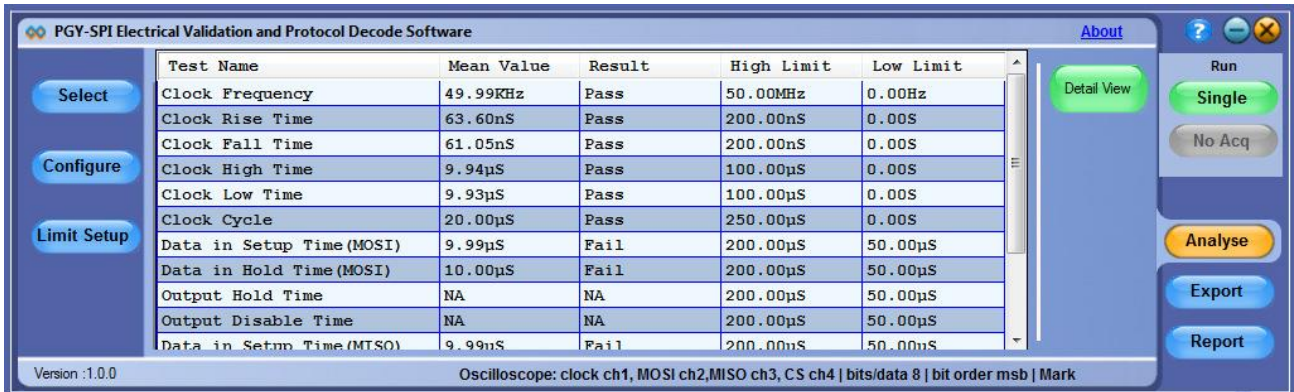## SPI Electrical Validation & Protocol Decode Software

Engineers, designing and testing SPI hardware and firmware, need to measure electrical parameters and monitor protocol of SPI interface to ensure inter-operability. Engineers, test and debug their designs with easy-to-use instruments such as oscilloscopes to capture the electrical signals but use time-consuming and error prone tools to make electrical measurements and protocol analysis. Often, they need a single tool or instrument to cross-examine the protocol layer and the PHY layer to debug the designs to reduce development and testing cycles.

The PGY-SPI Electrical measurements and Protocol Decode Software offers electrical measurements and protocol decoding for SPI bus. This software provides the flexibility to set reference levels for electrical measurement and customised limits makes it most versatile solution to meet different needs of characterising SPI Signals. Now design and test engineers can automatically make accurate and reliable electrical measurements and decode protocols in PGY-SPI software using data acquired by Tektronix DPO5000, TDS7000, DPO/DSA/MSO7000 oscilloscope series to reduce the development and test cycle.

Features:

- Automated electrical measurements with customizable reference level of SPI electrical signal.
- Automated measurements independent of speed of SPI Bus
- Customizable measurement limit setup for pass/fail validation of electrical signal to enable measurements at different data speed.
- Decodes SPI signals MOSI and MISO for easy understanding of protocol
- Links the protocol content to the electrical signal in the oscilloscope for easy understanding of the electrical characteristics of the protocol
- Overlays the protocol data on analog waveform in a waveform plot window
- Zooms the selected SPI packet content in the decode table in the waveform plot waveform window for easy analysis of electrical characteristics of the I2C frame
- Ability to view protocol decode data in hexadecimal, decimal, binary, octal, and ASCII formats
- Ability to store the SPI protocol data in CSV and txt format
- Utility features like zoom, undo, and fit screen for easy debugging while correlating the protocol data to the waveform
- Report generation in html format
- Supports wfm and isf file formats for offline analysis
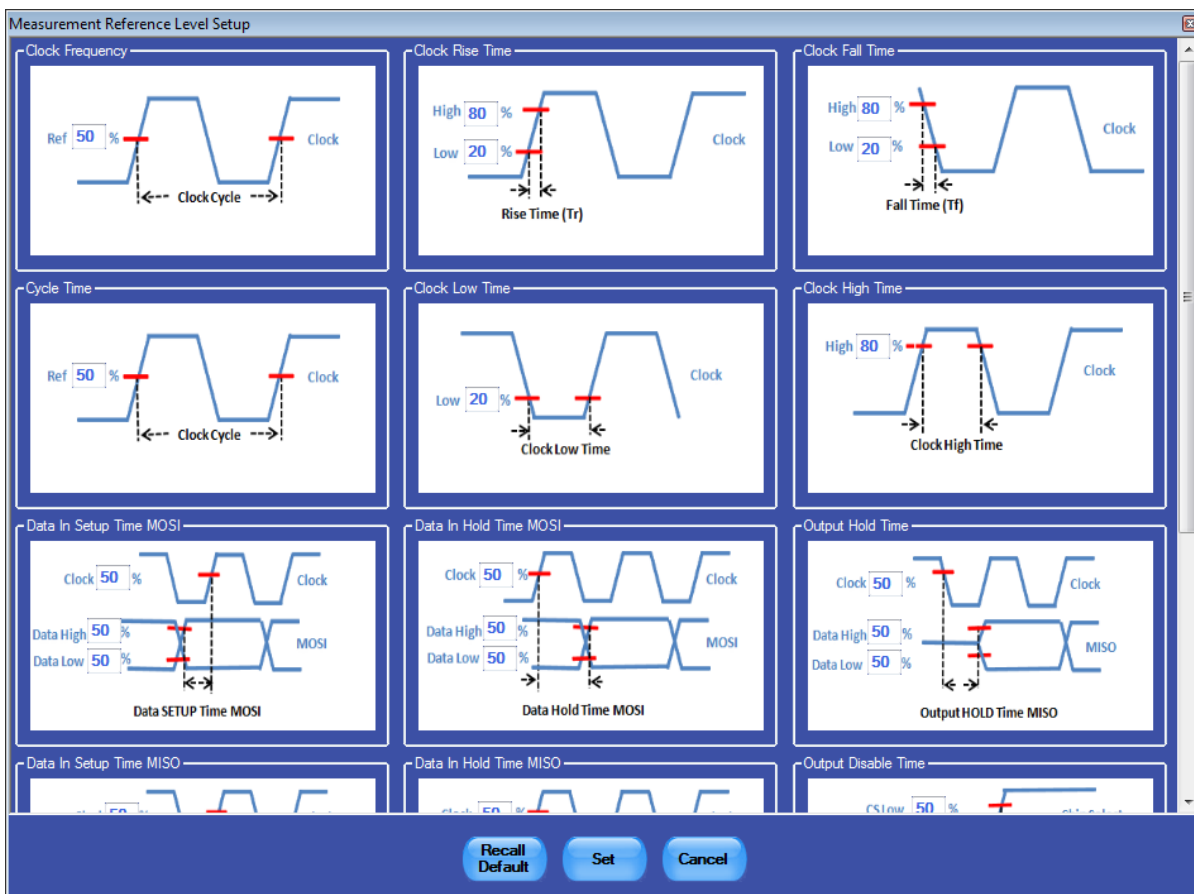
Seamless Integration with Oscilloscope

PGY-SPI Software runs inside the Tektronix oscilloscopes and makes the electrical measurements, decodes protocols and displays the decoded data in a table, and links the decoded data to electrical signal in the waveform plot. SPI Protocol-based trigger can be set up using the built-in SPI trigger capabilities in Tektronix oscilloscopes.

Reference Level setup

There are no standard measurements limits defined for SPI Bus for pass/fail test. The limits are varying in nature depending upon the SPI Bus speed. In order to characterise and validate SPI signals PGY-SPI software provides graphical measurement reference level setup to set measurement reference level of SPI signals. These limits are automatically applied while making selected SPI measurements in PGY-SPI software and reduces test time offering reliable measurements.

Characteristics:

Electrical Measurements	Clock Frequency	Data In Hold time MOSI
	Clock High Time	Output Disable Time
	Clock Low Time	Output Hold time
	Clock Rise Time	Data In Setup Time MISO
	Clock Fall Time	
	Clock Cycle Time	Data In Hold Time MISO
	Chip Select Deselect Time	Chip Select Hold Time
	Data in Setup Time MOSI	Chip Select Setup Time
Bus Speed	Custom; Limited by oscilloscope Bandwidth	
Protocol Decode	Hexadecimal, Octal, Binary, Decimal, ASCII	
Waveform window	Overlay of protocol decode data on waveform	
Report Generation	Customizable report in html format	
Export of data	CSV and Txt format	

Oscilloscopes Supported

The following Tektronix oscilloscopes are supported:
• DPO5000 Series
• DPO7000 Series
• DPO/MSO/DSA 70000 Series

Ordering Information

PGY-SPI Electrical Validation and Protocol Decode Software (shipment includes CD with PGY-SPI software and license key)

Contact Information

Address:	Prodigy Technovations Pvt Ltd 294, 7th Cross, 7th main, BTM 2nd Stage, Bengaluru – 560076. Karnataka India.
Website:	www.prodigytechno.com
Technical Support:	contact@prodigytechno.com
Phone:	+91-80-42126100

About Prodigy Technovations Pvt Ltd

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.