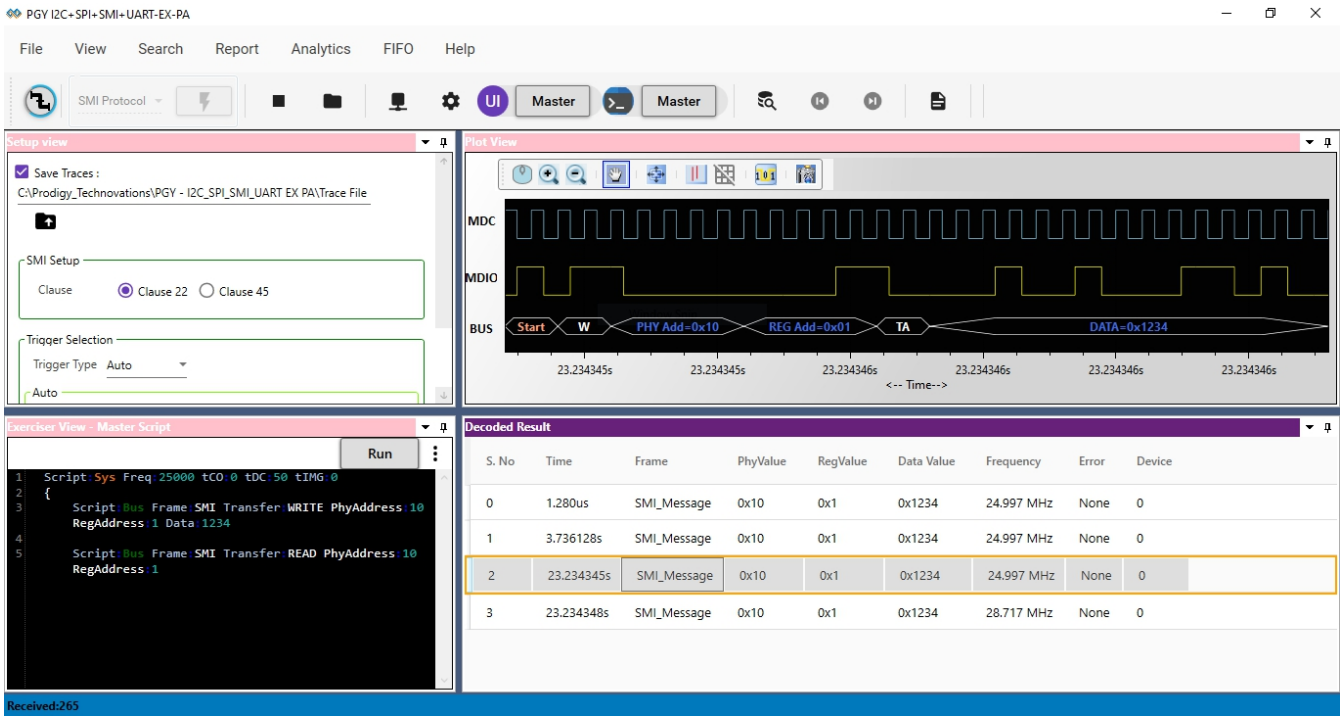
PGY-SMI-EX-PD SMI Protocol Exerciser and Analyzer

SMI also called as Management Data Input/Output, or MDIO, is a 2-wire serial bus that is used to manage physical layer devices in media access controllers (MACs) in Gigabit Ethernet equipment. The management of these PHYs is based on the access and modification of their various registers.

PGY-SMI-EX-PD is the leading instrument that enables the design and test engineers to test the SMI designs for its specifications by configuring PGY-SMI -EX-PD as master/slave, generating SMI traffic with error injection capability and decoding SMI Protocol packets.

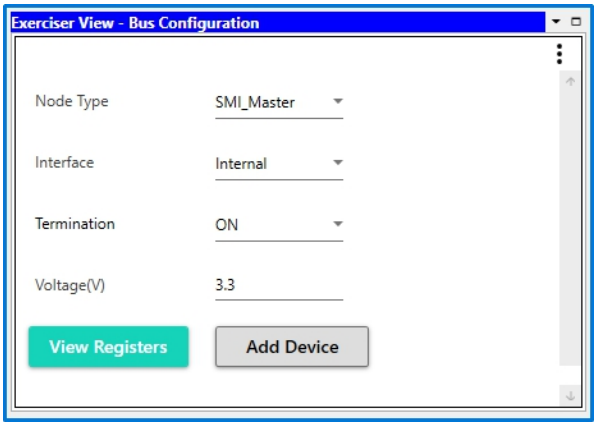
Features
● Supports SMI speeds of up to 25MHz
● Ability to configure it as Master or Slave
● Simultaneously generate SMI traffic and Protocol decode of the Bus
● SMI Master and Slaves
● Support for SMI Clause 22 & 45
● Variable SMI data speeds and Duty cycle
● Continuous streaming of protocol data to host computer to provides large buffer
● Timing diagram of Protocol decoded bus
● Listing view of Protocol activity
● Ability to write exerciser script to combine multiple data frame generation at different data speeds
● USB 2.0/3.0 host computer interface
● API support for automation in Python or C++

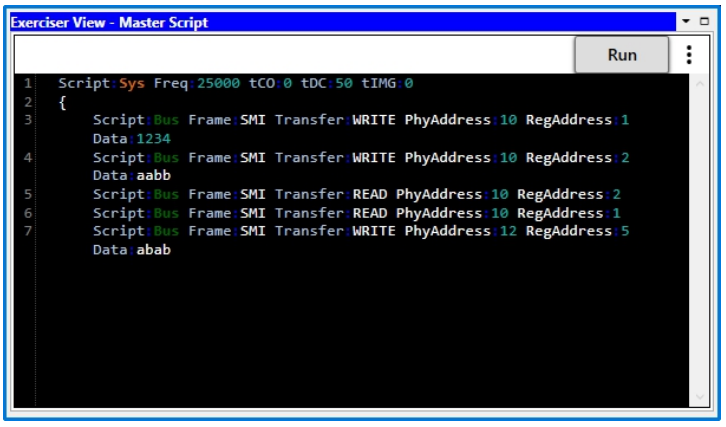
Multi Domain view



Multidomain View provides the complete view of SMI Protocol activity in single GUI. User can easily setup the analyzer to generate SMI traffic using a GUI or script. User can capture Protocol activity at specific event and decode the transition between Master and Slave. The decoded results can be viewed in timing diagram and Protocol listing window with autocorrelation. This comprehensive view of information makes it industry best, offering an easy to use solution to debug the SMI protocol activity.

Exerciser

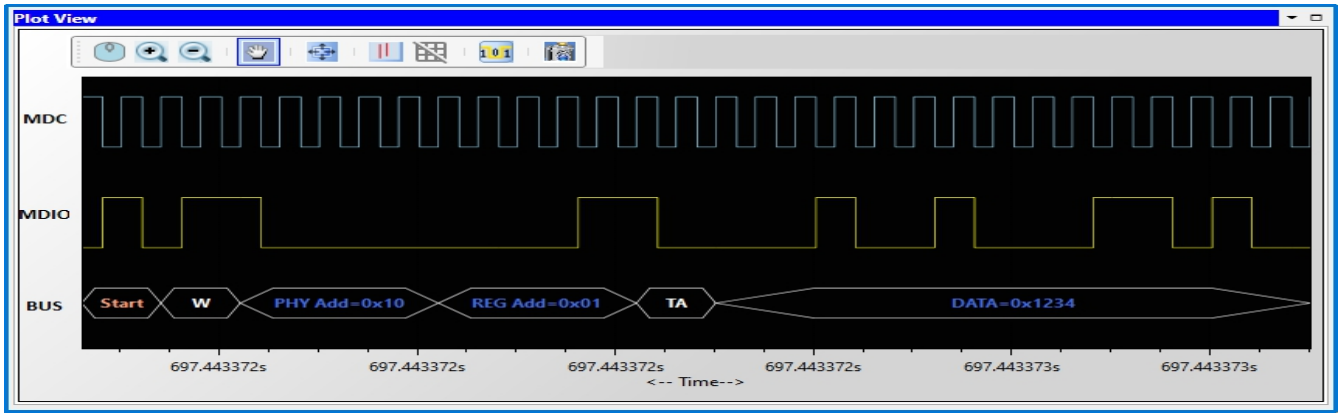




PGY-SMI-EX-PD supports SMI traffic generation using GUI and Script. User can generate simple traffic generation using the GUI to test the DUT. Script based GUI provides flexibility to emulate the complete expected traffic in real world including error injections. In this sample script user can generate SMI traffic as below:

Script line #1: Set system Frequency 25MHz, CLK to DATA delay to 0ns, Duty cycle 50%, System inter message gap to 0us
Script line #3: WRITE
Script line #4: WRITE
Script line #5: READ
Script line #6: READ
Script line #7: WRITE

Timing Diagram and Protocol Listing View



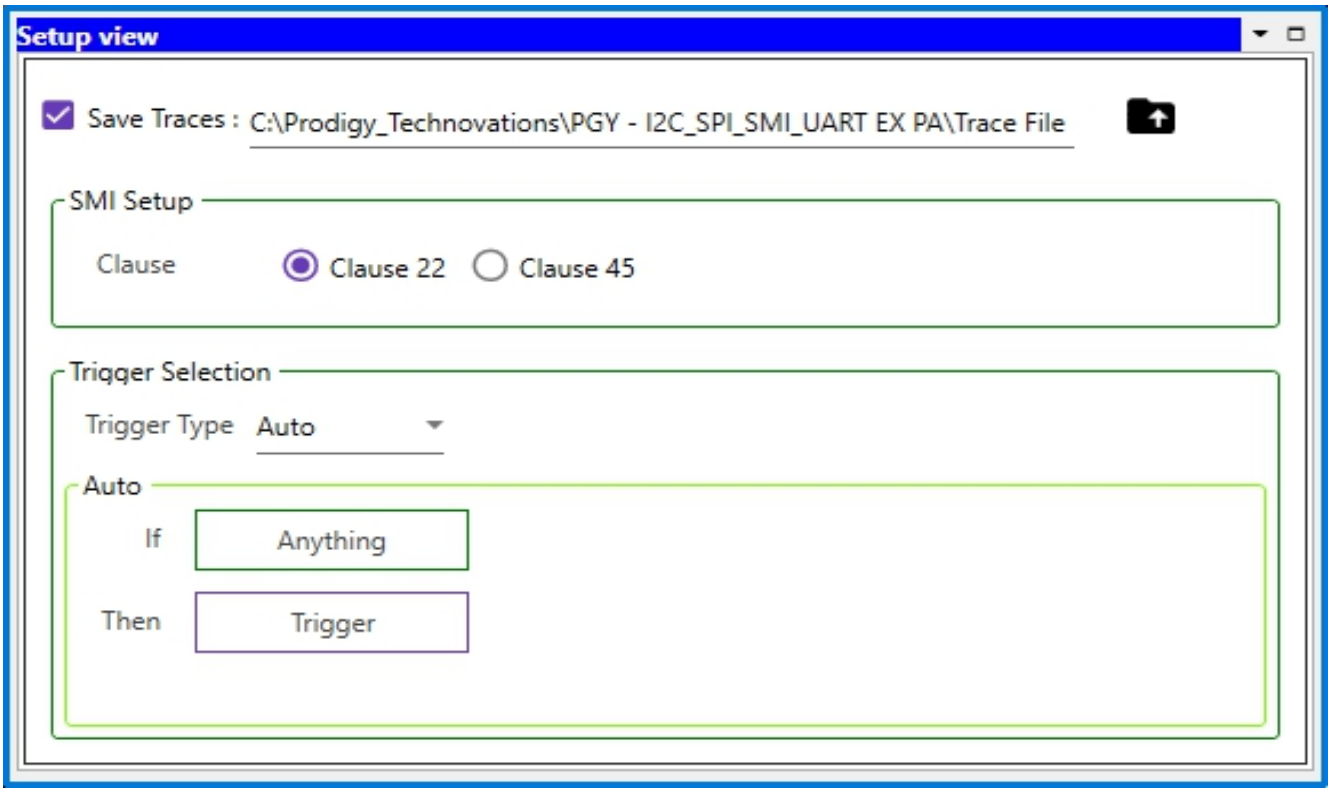
Timing view provides the plot of MDC and MDIO signals with bus diagram. Overlaying of Protocol bits on the digital timing waveform will help easy debugging of Protocol decoded data. Cursor and Zoom features will make it convenient to analyze Protocol in timing diagram for any timing errors.

Decoded Result

S. No	Time	Frame	PhyValue	RegValue	Data Value	Frequency	Error	Device
0	1.280us	SMI_Message	0x10	0x1	0x1234	24.997 MHz	None	0
1	3.736128s	SMI_Message	0x10	0x1	0x1234	24.997 MHz	None	0
2	23.234345s	SMI_Message	0x10	0x1	0x1234	24.997 MHz	None	0
3	23.234348s	SMI_Message	0x10	0x1	0x1234	28.717 MHz	None	0
4	697.443372s	SMI_Message	0x10	0x1	0x1234	24.997 MHz	None	0
5	697.443374s	SMI_Message	0x10	0x2	0xAABB	24.997 MHz	None	0
6	697.443377s	SMI_Message	0x10	0x2	0xAABB	30.291 MHz	None	0
7	697.443379s	SMI_Message	0x10	0x1	0x1234	28.654 MHz	None	0
8	697.443382s	SMI_Message	0x12	0x5	0xABAB	24.997 MHz	None	0

Protocol window provides the decoded packet information in each state and all packet details with error info in packet. Selected frame in Protocol listing window will be auto correlated in timing view to view the timing information of the packet.

Setup View



PGY-SMI-EX-PD supports both Clause 22 and Clause 45. Users can set this in the setup view according to their preference.

SMI Specifications

PGY-SMI Specification	Features	PGY- SMI -EX-PD
Exerciser:		
Configurable	1 Master + 2 Slaves	✔
SMI Traffic Generation	Custom SMI traffic generation Simulate real world network traffic	✔
MDC Frequency	100KHz to 25MHz	✔
Voltage Drive Level	1V to 3.3V at steps of 100mV	✔
MDC Duty Cycle variation	25%, 50% and 75%	✔
MDC & MDIO Delay	User Defined	✔
Delay between two messages	User Defined	✔
Clause Supported	Clause 22 & Clause 45	✔
API Support	Support for Automation of operation using Python or C++	✔
Protocol Analysis:		
Supports	SMI protocol decode	✔
Protocol Views	Timing Diagram View Protocol Listing View Bus-Diagram to display Protocol packets with timing diagram plot	✔
Capture Duration	Continuous streaming Protocol Data to host HDD/SSD	✔
Host Connectivity	USB 3.0 / 2.0 interface	✔

Ordering Information

PGY-SMI-EX-PD SMI Exerciser and Protocol Analyzer

Deliverables for PGY-SMI-EX-PD

PGY- SMI -EX-PD Unit
USB 3.0 cable
PGY- SMI -EX-PD Software in CD
12V DC adapter
Flying lead probe cable with female connector to connect to DUT

Warranty Information

Hardware Warranty - 2 years
Software and Firmware Warranty - 1 year
Probes (covered under warranty for any manufacturing defect) - 6 months

Contact Information

+91-80-42126100

contact@prodigytehcno.com

www.prodigytechno.com

Prodigy Technovations Pvt. Ltd.
294, 3rd Floor, 7th Cross,
7th Main BTM II Stage,
Bangalore 560076.
Karnataka, India.

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.