

# PGY-SSIC MIPI SSIC Protocol Analysis Software

# **SSIC Protocol Analysis Software**

#### Features:

PGY-SSIC MIPI-SSIC Protocol Analysis Software is the oscilloscope-based protocol analysis tool for SSIC serial bus using live and saved oscilloscope signals. PGY-SSIC Software gives insight of SSIC signals from electrical waveform to protocol packet details. This software runs inside Tektronix oscilloscopes.

- Simultaneous display of protocol packet data with detail frame information in tree structure format and correlating with electrical waveform for easy debug
- Overlaying decoded data bits on waveform for PWM and HS signals for easy understanding of signal transition
- Protocol view provides time synchronized protocol activities between TX and RX lanes with timing info and direction of protocol events
- Protocol view provides messaging in bit pattern for easy interpretation
- Protocol view provides symbol details and its 8bit and 10bit values
- Flexibility to view 8B/10B decoded data in bus diagram
- Real-time protocol aware trigger enables acquiring signals at specific protocol event
- Flexibility to filter out sync, com, idle and skip states in decoded data allowing user to focus on main protocol events
- Markers M1 and M2 in detail views allow easy timing measurements
- Software seamlessly integrates with Tektronix windows based oscilloscope and supports protocol analysis using live data from oscilloscope
- Search and filter capabilities to locate protocol event
- Long duration data decode support to capture more numbers of events
- Offline analysis capabilities using WFM files
- Documentation by exporting data in CSV and TXT file format





#### Seamless Integration with Oscilloscope

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Select	0 0	Oscill Wave	l Sour	e Files									Run Single No Acq
	<u>s</u>	ignal Tx/	And the second second	<u>inment</u> Lane		Source		Ref Type	Ref Level	Hyste	resis		Run / Stop
TIT	1	Tx	•	Lane 0	-	CH1	-	PERCENTAGE -	50 9	10	%		
Trigger		Rx	•	Lane 1	•	CH2	•	PERCENTAGE -	50 9	10	%		Analyze
		Rx	+	Lane 2	-	СНЗ	-	PERCENTAGE -	50 9	10	%		
		Rx	•	Lane 3	٣	CH4	+	PERCENTAGE -	50 9	10	%		Export
Version :1.0.2													

PGY-SSIC MIPI-SSIC Protocol Analysis Software runs inside the Tektronix high performance windows oscilloscopes. Engineers can configure PGY-SSIC Software to automatically import the data from oscilloscopes live channels or wfm file format. This enables live and offline protocol testing of SSIC protocol.

- SSIC signal source for protocol analysis could be live channels of oscilloscope or saved wfm file format data
- Protocol aware trigger leverages Tektronix oscilloscope serial pattern trigger and enables setting protocol trigger
- Supports Single Acquisition, Repetitive and No Acq mode using oscilloscope live data.

#### PGY-SSIC MIPI-SSIC Result Analysis

**Result Pane:** Provides results from PGY-SSIC Protocol Analysis Software. PGY-SSIC Software displays each lane of decoded data. By collapsing, each burst packet provides different frames and content within each frame. PGY-SSIC software links decoded frame of individual lane to corresponding electrical waveform in oscilloscope display and helps in correlating protocol activity with physical layer information.

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100mV 400µs 100mV 400µs 100mV 200µs 100mV 200µs 48.0ns 1.96ns 100mV 200µs 48.0ns 1.96ns	10 83.12µs 10 1.817ms 40 1.724ms 41 1.724ms 576.741Hz	Ready Auto	10.0ms/div 10.0GS/s Previow Sampl 0 acqs Auto July 10, 2014	100ps/pt le 1 RL:1.0k 10:14:00
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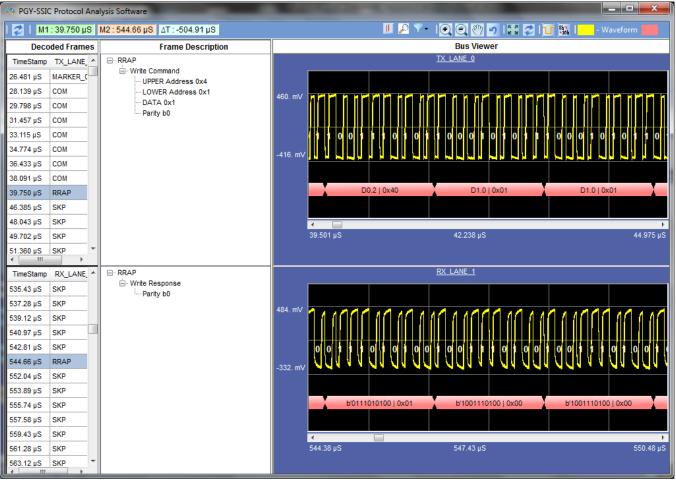
Result pane displays decoded results with oscilloscope waveform display





For Protocol validation and debugging, PGY-SSIC software provides Detail View and Protocol View

**Detail View**: PGY-SSIC Software displays Detail View which correlates the protocol event to electrical waveform in a single view. It provides low level information from binary values for PWM and HS signals to packet level information for easy interpretation. TX and RX lane decoded data is displayed. Markers can be placed on decoded frames to know the timing value between protocol events in different lanes. Frame description provides dropdown tree structure information to know the message and packet content. Bus viewer synchronously displays selected protocol packets waveform with a bus diagram. This contains symbol info, overlaying of binary info on waveform and 8B/10B data display. Filter and search features enable focus on protocol event of interest for easy analysis.



**Detail View** 

**Protocol View:** Protocol View synchronizes multiple lane data and displays it in the time synchronized event viewer. This offers insight about the communication between host and device with the timing data. User can quickly view the direction of communication, type of packet being exchanged, speed at which it is exchanged, lane number and main functions of packet. User can focus on event of interest using filter and search features in Protocol View. Packet detail contains each packets status at bit level for easy understanding of the protocol status. Symbol tables give symbols, 8 bit and 10bit values of each symbol.



/1 : Not Set	M2 : Not Set	∆T : Not	Set	💿 Fi	lter 🍳	Search 🔘 View	Visibilit	ty 🔹				
Timestamp	Direction	Packet		Gear	Lane	SubType						-
1.4795 mS	Tx 🗪 Rx	RRAP		LS G1	0	Write Command						
1.5268 mS	Tx 🖛 Rx	RRAP		LS G1	1	Write Response						
1.5923 mS	Tx 🗪 Rx	RRAP		LS G1	0	Write Command						
1.6302 mS	Tx 🖛 Rx	RRAP		LS G1	1	Write Response						
2.0406 mS	Tx 🗪 Rx	MARKER_0		HS G1A	0							
2.0408 mS	Tx 🗪 Rx	TS1_Ordere	dSet	HS G1A	0	Disable Scrambling	de-asserted ,	Loopback de-a	sserted , Nor	mal Training	1	
2.0409 mS	Tx 🗪 Rx	TS1_Ordere	dSet	HS G1A	0	Disable Scrambling	de-asserted ,	Loopback de-a	sserted , Nor	mal Training	6	
2.0411 mS	Tx 🗪 Rx	TS1_Ordere	dSet	HS G1A	0	Disable Scrambling	de-asserted ,	Loopback de-a	sserted , Nor	mal Training		-
Packet Details							Symbol De	tails	_			
FRAME	NALITY	TS1 Orde D0.0					Symbol	10 Bit Value	8 Bit Value			
			0000				K28.5	0xFA	0xBC	E		
	-			Tracia			K28.5	0x305	0xBC			
				Normal Training			K28.5	0xFA	0xBC			
LINK_CONFIG_	FIELD_bit1		Loopba	Loopback de-asserted			K28.5	0x305	0xBC			
LINK_CONFIG_	FIELD_bit2		Disable	Disable Scrambling de-asserted			D0.0	0x274	0x0			
TS1_IDENTIFIER D10.			D10.2	D10.2			D0.0	0x274	0x0			
_						D10.2	0x155	0x4A				

# **Protocol View**

**Protocol Aware Trigger:** PGY-SSIC software leverages option ST6G in Tektronix oscilloscope and sets real time protocol-based trigger condition. PGY-SSIC supports both PWM and HS speed for Protocol aware trigger.

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Select		Trigger Event		Trigger :	Setup Trigger Pattern	Run
Configure	Trigger Source:	CH1 -	8b10b	•	01111010000111101000011110100001110101000	No Acq
Connigure	Data Rate:	1.25	Gbps			Run / Stop
Trigger	Trigger On:	LinkCommand		•		
					Cat Triance	Analyze
					Set Trigger	Export
Version :1.0.2						

Protocol Aware Trigger Types							
Burst Type	Protocol Packet Type						
	Write Command						
	Write Response						
	Read Command						
PWM	Read Response						
	Marker0						
	TS1 Order Set						
	TS2 order Set						
	Skip Order Set						
	Link Command						
	Link Management Packet						
	Transaction Packet						
	Data Packet						
HS (8B/10B)	Isochronous Data Packet						





# **Oscilloscopes Supported**

- MSO5000 Series Oscilloscope
- DPO70000 Series Oscilloscope
- MSO70000 Series Oscilloscope
- DSA70000 Series Oscilloscope

# **Ordering Information**

PGY-SSIC MIPI SSIC Protocol Analysis Software (shipment includes PGY-SSIC MIPI-SSIC Protocol analysis Software CD)

#### **Contact Information**

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# 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.