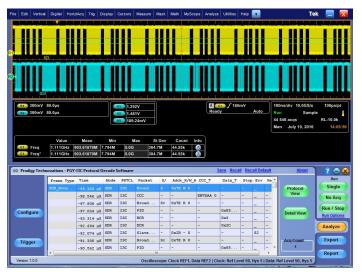
Tektronix[®]

Tektronix I3C Protocol Trigger and Decode Analysis Software



I3C Protocol Analysis view in oscilloscope waveform display

Tektronix I3C Software runs on Tektronix DPO/MSO5000, DPO7000 and DPO/DSA/MSO70000 oscilloscope series. I3C Software uses the hardware based real-time I3C protocol aware trigger, protocol analysis of long acquisition record length up to 125MB to provide superior I3C Protocol Analysis result at the press of button.

Key Features

- I3C Protocol Analysis uses oscilloscope live channel data or stored I3C signals
- Powerful I3C real-time protocol aware hardware based trigger capabilities
- Displays the decoded data in I3C frame format, SDR, DDR, TSL and TSP format
- Link protocol decoded packet to waveform in oscilloscope display
- Error status check as defined in I3C specification
- Protocol view provides bit level of each I3C packet
- Detail view correlates physical layer waveform with I3C packet data
- Long duration data decode support to capture more number of I3C 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
- Report Generation

Easy I3C Protocol Test Setup and Debug

I3C Software installed in Tektronix oscilloscopes can be launched by clicking the PGY-I3C icon in oscilloscope desktop folder. Now user has simultaneous view and control to oscilloscope as well as PGY-I3C Software. You can analyze I3C in single Acquisition mode, Repetitive mode and No Acq mode. In No Acq Mode, I3C software analyses the already captured I3C signal that is present in the acquisition memory of the oscilloscope.



I3C Software runs on MSO5204C Oscilloscope

Powerful I3C Protocol

Simple and easy to use I3C protocol aware trigger features allows engineers to capture I3C signals at specific event in I3C interface.



Triggers can be set for different commands of SDR_Broadcast, SDR_Direct and SDR_message. The I3C software is flexible and allows you to select combination of any command from any of the three frame type. This feature enables DPO7000 and DPO/MSO70000 oscilloscope series.

Protocol View

The PGY-I3C software provides the protocol view where protocol activity is listed with all frame content. You can select any I3C frame and view the bit level decoding to debug protocol issues. Search and Filter features allows you to quickly focus on specific event.

Search Type	Con	tent	C Sei	arch							
FrameType	 SDR_Broad 	cast	-	iter							
			L V								
Frame Type	7ime Stamp	Mode	Protocol	Packet Info	S/Sr	Address	CCC	Data	Stop	Error	Regult
SDR_Broadcast	-99.320 µS	SDR	I3C	BroadCast_Add	s	0x7E W 0	-	-	-	_	-
	-98.546 µS	SDR	13C	ccc	-	-	ENTDAA O	-	-	_	-
	-97.808 µS	SDR	I3C	BroadCast_Add	Sr	0x7E R 0	-	-	-	_	-
	-97.034 µS	SDR	ISC	PID	-	-	-	0x559	-	_	-
		SDR		BCR							-
	-92.694 µS	SDR	ISC	DCR	-	-	-	0x2C	-	_	-
	-92.074 µS	SDR	ISC	Slave Address	-	0x2B - 0	-	-	-	S2	-
	-91.335 µS	SDR	ISC	BroadCast_Add	Sr	0x7E R 0	-	-	-	_	-
	-90.562 µS	SDR	ISC	PID	-	-	-	0x559	-	_	-
	-86.841 µS	SDR	13C	BCR	-	-	-	0x3	-	_	-
	-86.221 µS	SDR	130	DCR	-	-	-	0x2C	-	_	-
	-85.601 µS	SDR	13C	Slave Address	-	0x2C - 0	-	-	-	_	-
SDR_Message	-84.862 µS	SDR	13C	BroadCast_Add	Sr	0x7E R 1	-	-	-	S4	-
	-74.940 µS	SDR	13C	I3C Slave Add	s	0x2B R 0	-	-	-	_	-
	-74.166 µS	SDR	13C	Data	-	-	-	0x4A 1	-	_	-
	-73.469 µS	SDR	I3C	Data	-	-	-	0x5C 0	P	_	-
SDR_Directed	-64.281 µS	SDR	I3C	BroadCast_Add	s	0x7E W 0	-	-	-	_	-
	-63.507 µS	SDR	ISC	CCC	-	-	GETPID 0	-	-	S1	-
				BCR						Error	Details
Bit Position Description					Value			No Error			
[7:6]			Device Role			C Slave					
[5]			SDR/HDR Capable			only					
[4]			Bridge Identifier		0 : Not	Bridge					
[3]			Offline Capable		0 : Awa	ys Capable					
[2]			IBI Payload			Data					
[1]			IBI Request Capable			able					
[0]		M	Max SCL Clock Frequency Capable			able					

Protocol Analysis

The Detail view in I3C Protocol software allows you to correlate protocol activity with the physical layer waveform. The bus diagram in detail view displays protocol packet content. Decoded bit level information is overplayed on the waveform to corelate the packet level information on to waveform.

3 I3C Decode and												
V CI	LOCK 🗹 D	ATA				aveform View						
986. mV	1 N U U U U U U U U U U	MILL							nin			
-523. mV												
-105.6	1µS		54.400 µS		214.40	μS	3	74.40 µS			534.40 µS	694.40 µS
V S0	cL 🛛 s	DA DA		•	alacted	I3C Frame / Mes						1
							saye					
986.mV	10000	nnnn	10000	nannann	nnı	nnnnn	IUUUU	1000	1nn	nnr	INNNNNN	
		0 0 1		1 1 0 0 1 1 0	1 T	0 0 0 0 0 1	0 0 0 3	0 0 0	1 0 0	0 0 0	100100	
							- 199 - 199 - 199					
		and he	ليبا لهيا ا	and burning	بيا ليد.				a character		hapment formation	
0x2B	1 0	MID :0x2	AC : Prodig	Tech 1				Random	Value :(0x9044	1120	
-62.18	3.15	-61.3	-61.364 uS -60.54			15 uS -59.72				-58.9	908 μS -58.089 μS	
			<u> </u>		<u> </u>						<u> </u>	-98.089 µS
	Legends		Dat	a : 0x55990444120		^				nnotation		
- sc											Transmit Bit PID Ai Parity Bit DCR	
<u> </u>								Data Dit				
						Detailed View						
Frame Type	Time Stamp	Mode	Protocol	Packet Info	Start	Address	CCC	Data	Stop	Error	Result	
	-73.469 µS	SDR	ISC	Data	-	-	-	0x5C 0	P	-	-	
SDR_Directed	-64.281 µS	SDR	130	BroadCast	S	0x7E W 0	-	-	-	-	-	
	-63.507 µS	SDR	130	CCC	-	-	GE7P	-	-	S1	-	
	-62.769 µS	SDR	13C	I3C Slave	Sr	0x2B R 0	-	-	-	-	-	
	-61.996 µS	SDR	130	PID	-	-	-	0x55	P	-	-	
SDR_Directed	-50.017 µS	SDR SDR	130	BroadCast	s -	0x7E W 0	-	-	-		-	
	-49.244 µS	SDR	13C 13C	ISC Slave	- Sr	0x2B R 0	GE7P	-		51	-	
	-48.506 µS			ISC Slave	ST	UX2B R D	-	- 0x55	- P	-	-	
	47 700					-	-	0x55		-	-	
	-47.732 µS	SDR	130			0.000 14 0						
DR_Broadcast	-35.754 µS	SDR	I3C	BroadCast	s	0x7E W 0	-	-	-	S6	-	
DR_Broadcast					s -	0x7E W 0	- сети	- - 0x0 1	-	S6	-	

Report Generation

The flexibility of the I3C Protocol Trigger and decode Analysis software allows you to export the decode data in TXT and CSV file formats. Report Generation capability allows you to have different waveform images including the oscilloscope screenshot in pdf format report. Report header, Comments and Test attributes can be added to the report.

Tektronix Oscilloscopes supported

DPO/MSO5000C series; DPO7000C series; DPO/MSO/DSA 70000C series

Ordering information

Models

PGY-I3C-PD (shipment includes CD with PGY-I3C Protocol Trigger and Decode Analysis Software). License is locked to oscilloscope.

Datasheet

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* European toll-free number. If not accessible, call: +41 52 675 3777

For Further Information. Tektronix maintains a comprehensive, constantly expanding collection of application notes, technical briefs and other resources to help engineers working on the cutting edge of technology. Please visit www.tek.com.

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