

## PGY-I3C I3C Protocol Trigger & Decode Software



### I3C Protocol Trigger & Decode Software

I3C interface would make significant changes to the mode in which sensors are interfaced to host processor in mobile and automotive applications PGY-I3C Protocol Trigger & Decode Software enables engineers to quickly decode the protocol intensive I3C signals. It enables easy debugging of I3C Protocol issues by triggering on specific I3C Protocol packet and content and decoding the acquired waveform. PGY-I3C provides industry first protocol decode capabilities in Tektronix windows oscilloscope.

PGY-I3C Software runs inside Tektronix make oscilloscopes such as DPO/MSO5000, DPO7000 and DPO/DSA/MSO70000 oscilloscope series. PGY-I3C utilizes 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 a button.

#### Features:

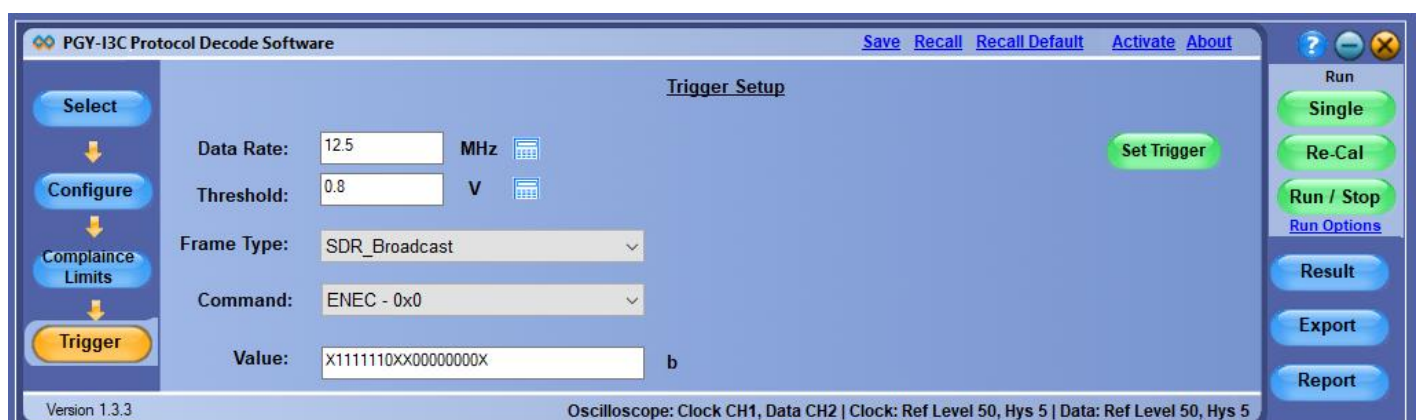
- I3C protocol Analysis using oscilloscope live channel data or stored I3C signals
- Powerful I3C real-time protocol aware hardware-based trigger capabilities
- Displays the decoded data in I3C frame format, SDR, DDR, TSL and TSP format
- Links protocol decoded packet to waveform in oscilloscope display
- Error status check as defined in I3C specification
- Protocol view provides bit level decoding of each I3C packet
- Detail view correlates physical layer waveform with I3C packet data
- Ability to process long acquisition memory enables the decoding of more protocol activities
- 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:



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

## Powerful I3C Protocol Aware Hardware Based Real-Time Trigger:

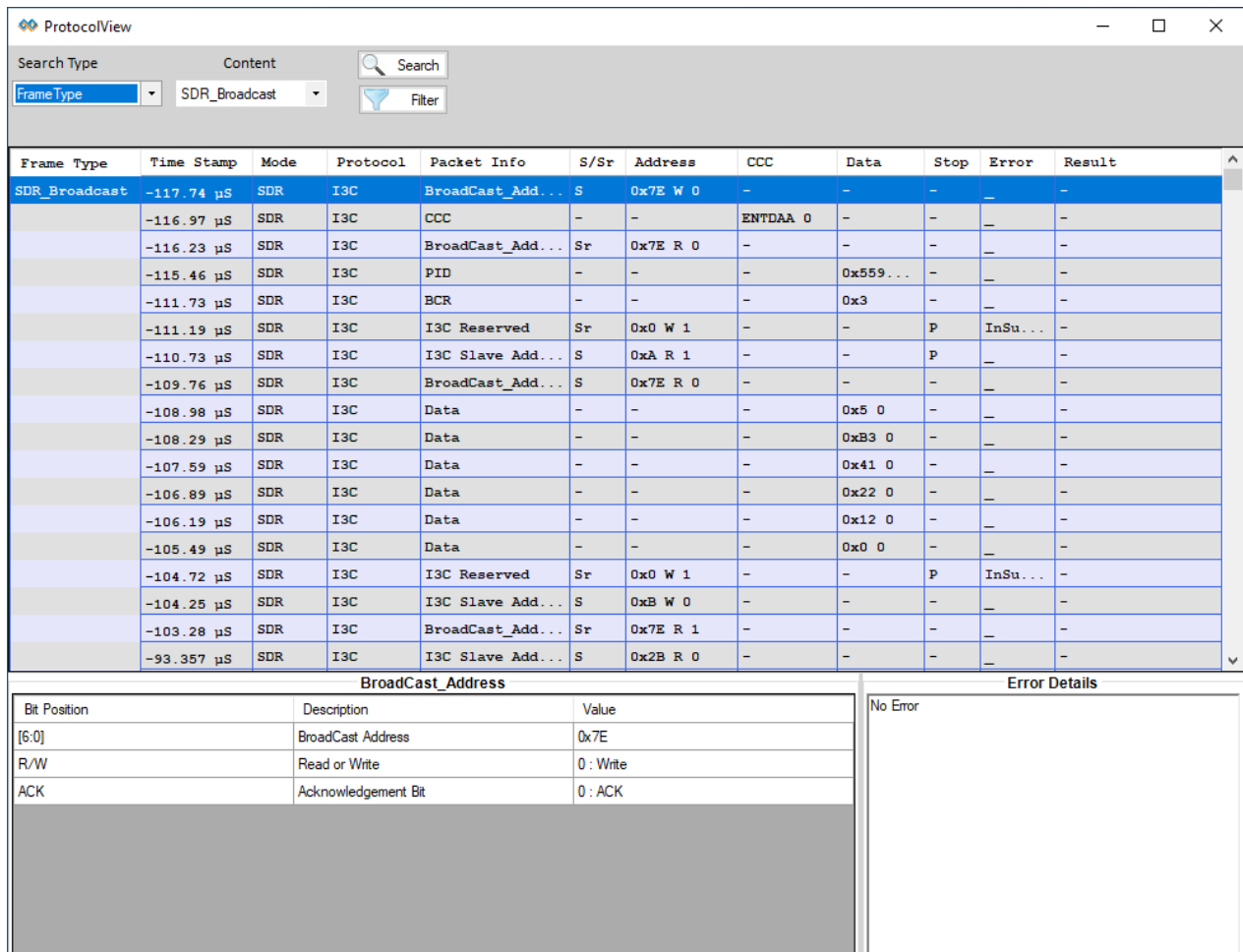


Simple easy to use I3C protocol aware trigger features allows engineers to capture I3C signals at specific event in I3C interface.

Trigger can be set for different commands of SDR\_Broadcast, SDR\_Direct and SDR\_message. I3C software provides the flexibility to select combination of any command from of any three frame types. This feature can be used on DPO7000, DPO/MSO70000 oscilloscope series.

## Protocol View

PGY-I3C Software provides the protocol view, where protocol activity is listed with all frame content. User can select any I3C frame and view its bit level decoding to debug protocol issues. Search and Filter features allows user to quickly focus on specific event.



The screenshot shows the ProtocolView window with a search bar and filter options. The main table displays the following data:

| Frame Type    | Time Stamp | Mode | Protocol | Packet Info      | S/Sr | Address  | CCC      | Data     | Stop | Error   | Result |
|---------------|------------|------|----------|------------------|------|----------|----------|----------|------|---------|--------|
| SDR_Broadcast | -117.74 μS | SDR  | I3C      | BroadCast_Add... | S    | 0x7E W 0 | -        | -        | -    | -       | -      |
|               | -116.97 μS | SDR  | I3C      | CCC              | -    | -        | ENTDAA 0 | -        | -    | -       | -      |
|               | -116.23 μS | SDR  | I3C      | BroadCast_Add... | Sr   | 0x7E R 0 | -        | -        | -    | -       | -      |
|               | -115.46 μS | SDR  | I3C      | PID              | -    | -        | -        | 0x559... | -    | -       | -      |
|               | -111.73 μS | SDR  | I3C      | BCR              | -    | -        | -        | 0x3      | -    | -       | -      |
|               | -111.19 μS | SDR  | I3C      | I3C Reserved     | Sr   | 0x0 W 1  | -        | -        | P    | InSu... | -      |
|               | -110.73 μS | SDR  | I3C      | I3C Slave Add... | S    | 0xA R 1  | -        | -        | P    | -       | -      |
|               | -109.76 μS | SDR  | I3C      | BroadCast_Add... | S    | 0x7E R 0 | -        | -        | -    | -       | -      |
|               | -108.98 μS | SDR  | I3C      | Data             | -    | -        | -        | 0x5 0    | -    | -       | -      |
|               | -108.29 μS | SDR  | I3C      | Data             | -    | -        | -        | 0xB3 0   | -    | -       | -      |
|               | -107.59 μS | SDR  | I3C      | Data             | -    | -        | -        | 0x41 0   | -    | -       | -      |
|               | -106.89 μS | SDR  | I3C      | Data             | -    | -        | -        | 0x22 0   | -    | -       | -      |
|               | -106.19 μS | SDR  | I3C      | Data             | -    | -        | -        | 0x12 0   | -    | -       | -      |
|               | -105.49 μS | SDR  | I3C      | Data             | -    | -        | -        | 0x0 0    | -    | -       | -      |
|               | -104.72 μS | SDR  | I3C      | I3C Reserved     | Sr   | 0x0 W 1  | -        | -        | P    | InSu... | -      |
|               | -104.25 μS | SDR  | I3C      | I3C Slave Add... | S    | 0xB W 0  | -        | -        | -    | -       | -      |
|               | -103.28 μS | SDR  | I3C      | BroadCast_Add... | Sr   | 0x7E R 1 | -        | -        | -    | -       | -      |
|               | -99.357 μS | SDR  | I3C      | I3C Slave Add... | S    | 0x2B R 0 | -        | -        | -    | -       | -      |

The detailed view for the selected Broadcast Address frame shows the following bit-level information:

| Bit Position | Description         | Value     |
|--------------|---------------------|-----------|
| [6:0]        | BroadCast Address   | 0x7E      |
| R/W          | Read or Write       | 0 : Write |
| ACK          | Acknowledgement Bit | 0 : ACK   |

The Error Details section shows "No Error".

### Protocol Analysis of I3C Signals:

Detail view in I3C Protocol software allows the user to correlate to protocol activity with physical layer waveform. The bus diagram in detail view shows protocol packet content. Decoded bit level information is overlaid on the waveform to relate the packet level information on to waveform.

### Documentation of Protocol Analysis

PGY-I3C I3C Protocol Trigger and decode software provides flexibility of exporting the decode data in txt and csv file format. Report Generation capability allows user to have different waveform images including the oscilloscope screenshot in pdf format report. Report header, comments and test attributes can be added to report.



## Oscilloscopes Supported

DPO/MSO5000 series, DPO7000 series, DPO/MSO/DSA 70000 series

## Ordering Information:

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

## Contact Information

|                           |  |
|---------------------------|--|
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## About Prodigy Technovations Pvt Ltd

Technovations Pvt Ltd ([www.prodigytechno.com](http://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.