Capture FlexRay Bus Signals with Dedicated FlexRay Triggers

Capture the desired FlexRay bus signal by specifying combinations of trigger bit conditions of the Frame Start, Payload preamble, Null frame, Sync frame, Startup frame indicators, Frame ID, Cycle count and (Payload) Data. Triggers can also be activated on combinations of the FlexRay bus signal bit conditions and other analog signals, or CRC errors on the FlexRay bus.

Simultaneous Display of Analysis Results and Corresponding Signal Waveforms

After signal capture, waveforms are displayed together with a list of analyzed frames. Frame waveforms can also be zoomed. Using 8 MW of internal memory, continuous bus waveforms of up to 80 ms can be captured at a sampling rate of 100 MS/s and analyzed. Since the frame waveform at the cursor in the list is automatically displayed, bus signals can be observed while the analysis results are viewed. The effect of noise and level fluctuations on the communication data can be easily determined for quick and efficient debugging. Analysis results can be saved to a file in text format.
The bit width can be displayed according to the bit rate with two cursors, and values can be checked while the cursor is moved by one or several bits at a time. In the example below, the area corresponding to the frame ID is shown using two cursors, and one bit width is indicated by the two dotted line cursors.

The desired frame or segment can be located from within the data captured by searching using the Frame ID, Cycle Count, Sync frame, and CRC Error (with AND logic). When frames are found that match the search conditions, their signal waveforms are displayed in the zoom area.

### Specifications

- **Supported FlexRay bus:** FlexRay Protocol Specification version 2.1
- **Max. sampling rate:** 2GS/s
- **Bandwidth:** 500MHz
- **Max. record length:** 16MW (changeable depends on model)
- **FlexRay signal input:** Differential signal input between BP and BM using a differential probe.
- **Bit rate:** 10Mbps/5Mbps/2.5Mbps

#### Trigger functions

- **Trigger source:** CH1 or CH3: FlexRay signal
  - The other CHs: Analog signal
- **Trigger types:**
  - Frame Start/ Payload preamble, Null frame, Sync Frame, Startup Frame Indicators / Frame ID / Cycle count (Payload) Data, CRC Error Trigger
  - Combination trigger of FlexRay signal and the other analog signals.

#### Analysis functions

- **Analysis target channels:** CH1, CH3, CH4*, CH7* (**: DL7480 only)
- **Max. analyzable length:**
  - 8MW (701450/701470)
  - 2MW (701460/701480)
- **Min. required sampling rate for analysis:**
  - Eight(8) times or more of the FlexRay signal bit rate
  - Approximate point is accepted when the sample rate and the multiple of eight(8) times as bit rate are different.
- **Number of analyzeable frame:** Max. 4,000
- **Auxiliary analysis functions:**
  - Bit value display, Search function, Field jump function, FlexRay cursor, Cursor jump function
  - Error detection: Header CRC / CRC discrepancy error
  - Others: Voting window management, Bit Clock Alignment management

### Model Number and Suffix Codes

<table>
<thead>
<tr>
<th>Model Number</th>
<th>Suffix Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>701450</td>
<td>DL7440</td>
<td>DL7440 with 4 CH input and maximum 4 MW memory</td>
</tr>
<tr>
<td>701460</td>
<td>DL7440</td>
<td>DL7440 with 4 CH input and maximum 16 MW memory</td>
</tr>
<tr>
<td>701470</td>
<td>DL7440</td>
<td>DL7440 with 8 CH input and maximum 4 MW memory</td>
</tr>
<tr>
<td>701480</td>
<td>DL7440</td>
<td>DL7440 with 8 CH input and maximum 16 MW memory</td>
</tr>
<tr>
<td>DL7480</td>
<td>DL7480</td>
<td>DL7480 with 8 CH input and maximum 16 MW memory</td>
</tr>
</tbody>
</table>

#### Options

- **Power cable**
  - DF: UL/CWA standard
  - CG: BS standard
  - TN: AS standard
  - WS: USB standard
- **Internal storage drive**
  - J1: Floppy disk drive
  - J2: Zip® drive

- **Logic input for 701450/701470**
  - 4: Select /N3 for models 701450 and 701470, and /N4 for models 701460 and 701480. Logic probes are sold separately.

#### Accessories (Sold separately)

- **Optional math function**
  - User-defined math function
  - Power Supply Analysis Function
  - Pre-SPN Bus Analyzer
  - Pre-SPN + Bus Analyzer

- **Add four FLEXRay probes**
  - /B5
  - /B7

- **Add four additional probes**
  - /G4
  - /F8

- **Add four passive probes**
  - /C7
  - /C10

### NOTICE

- Before operating the product, read the instruction manual thoroughly for proper and safe operation.
- If this product is to be used with a system requiring safeguards that directly involve personnel safety, please contact the Yokogawa sales offices.

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