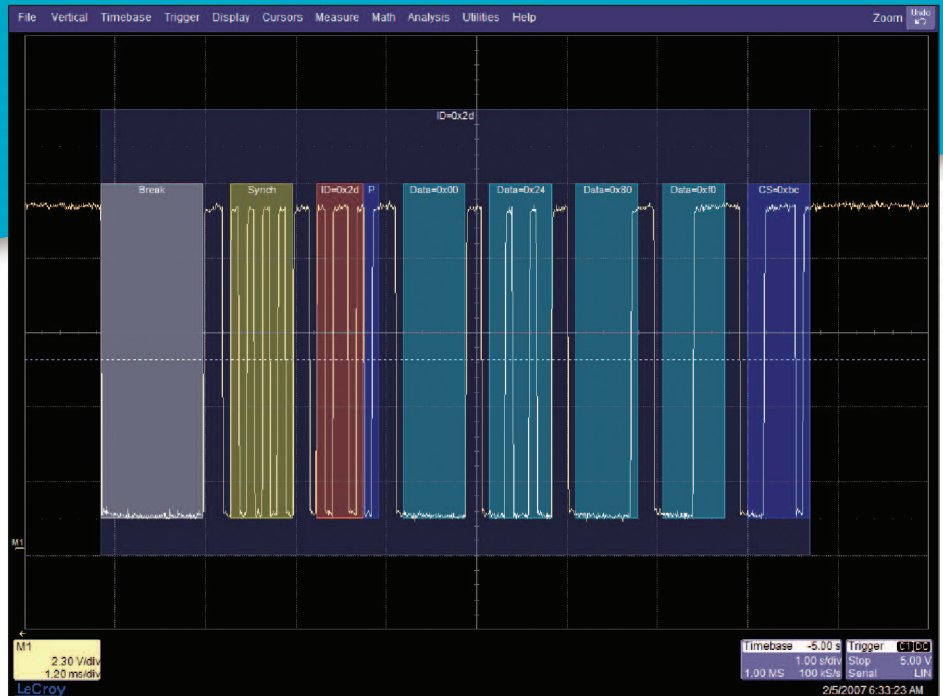


## LINbus TD Trigger and Decode Option

### Leading Features

- LIN 1.3, 2.x, J2602 Supported
- Powerful and flexible triggering, including triggers for:
  - Break (Start of Message)
  - Message ID
  - Message ID + DATA
  - Error Frame
- Powerful conditional DATA triggering (>, >=, <, <=, <>, in range, out of range)
- Error Frame triggering supports multiple error frame types:
  - Checksum
  - Header Parity
  - Sync Byte
  - Any combination of the above
- Decode is performed quickly, even on long records, using advanced software algorithms
- Hexadecimal decodes
- Easily learn the LIN protocol with intuitive color-coded decode overlay
- Convenient table display with quick “zoom to message” capability
- Quick Search capability for specific message packets
- Available in WaveRunner Xi or WaveSurfer Xs oscilloscopes



Trigger on exactly the message packets you want with powerful conditional DATA triggering. Apply a color-coded, easy-to-understand, decode over your LIN messages. Search for and find specific message packets in long acquisitions.

### Complete LIN Triggering—No Compromises

Full support for LIN 1.3, 2.x, and J2602 ensures that no matter what version of LIN you use, you’ll be able to trigger and decode. In addition, triggering provides complete capability to trigger on any event with completely definable Message ID and DATA triggers, or flexible Error Frame triggering.

### Powerful Conditional Data Triggering

Completely isolate specific events for better understanding and debug. Use a conditional LIN DATA trigger to select a range of DATA values to trigger on, not just a single DATA value.

### The Most Intuitive Decode

Patented software algorithms deconstruct the waveform into protocol decode information, then overlay the decoded data on the waveform. Depending on the timebase setting or zoom ratio, the decode information is condensed or expanded to better assist in understanding events during short

or long acquisitions. Various sections of the protocol are color-coded to make it easy-to-understand, especially for users new to LIN serial data. The decode operation is fast—even with long acquisitions. LIN busses with mixed LIN versions are easily and completely decoded.

### Convenient Table Display Summarizes Results

Turn your oscilloscope into a protocol analyzer with the Table display of decoded information. Custom configure the Table to display only the information you want and export Table data to an Excel file. Touch a message in the table and automatically zoom for detail.

### Search and Zoom

LIN messages can be quickly located by searching on Break, ID, or Error. In a long acquisition, pressing NEXT advances the single message view to the message to the right or left of the current message.

# Specifications and Ordering Information

## Specifications

	<b>Definition</b>
Protocol Setup	Select LIN Version 1.3, 2.x, or SAE J2602. Select BitRate (1.2, 2.4, 4.8, 9.6, 10.417, 19.2 kb/s, or user-defined 1-20 kb/s) Decodes LIN messages on busses with mixed LIN Versions.
	<b>Decode Capability</b>
Format	Hexadecimal
Decode Setup	Threshold definition required. Default is to Percent amplitude. Select BitRate.
Decode Input	Any analog Channel, Memory, or Math trace.
# of Decoded Waveforms	<b>Up to 4 busses may be decoded at one time.</b> In addition, zooms can be displayed (with decoded information).
Location	Overlaid over DATA waveform, on Grid. (Note: Use multi-grid if there is more than one decoder ON)
Visual Aid	Color Coding for Start Bit, Stop Bit, Parity Bit, and DATA. Decode information is intelligently annotated based on timebase setting.
	<b>Trigger Capability</b>
Format	Hexadecimal
Trigger Setup	Trigger on (Sync) Break (Start of Message), Frame ID, Frame ID+DATA, Error Frame (Any combination of Checksum, Header Parity, or Sync Byte error frames)
ADDRESS (ID) Condition Setup	Specify One ADDRESS with condition of =
DATA Condition Setup	<=, <, =, >, >=, <>, in range, out of range, don't care.
DATA Setup	Hexadecimal: # Data Bytes = 0 to 8. Data can be defined by nibble. Triggers on that data pattern regardless of position or in user settable location.
Bit Rates	1.2, 2.4, 4.8, 9.6, 10.417, 19.2 kb/s selectable. Any value from 1 kb/s to 20 kb/s may be entered.
Trigger Input	Any analog Channel or the EXT input.
Trigger Design	Internal to oscilloscope, settable like any other oscilloscope trigger.
	<b>Search Capability</b>
Pattern Search	Search by Next Frame, Next ID in Hexadecimal format, or Next Error Frame.
	<b>Other</b>
Compatible With ...	TD (Trigger and Decode) Option fully compatible with WaveRunner Xi and WaveSurfer Xs (retrofit kits available and required for some WaveRunner Xi and WaveSurfer Xs oscilloscopes). D (Decode) Option fully compatible with WR6000, WP7000, and WM8000 Series.

## Ordering Information

### Product Description

LIN Trigger and Decode Option

LIN Decode only Option

Retrofit Kit for WaveRunner Xi or WaveSurfer Xs so that serial number earlier than LCRY0608 (WaveRunner Xi) or LCRY0304 (WaveSurfer Xs) can support the Trigger and Decode Option.

\* Requires WaveRunner Xi or WaveSurfer Xs oscilloscope with serial number LCRY0608 (for WaveRunner Xi) or LCRY0304 (for WaveSurfer Xs) or later.

† Available only on WaveRunner 6000, WavePro 7000, and WaveMaster 8000 Series oscilloscopes.

### Product Code

LINbus TD\*

LINbus D†

FPGA-RK

### Customer Service

LeCroy oscilloscopes and probes are designed, built, and tested to ensure high reliability. In the unlikely event you experience difficulties, our digital oscilloscopes are fully warranted for three years, and our probes are warranted for one year.

This warranty includes:

- No charge for return shipping
- Long-term 7-year support
- Upgrade to latest software at no charge



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