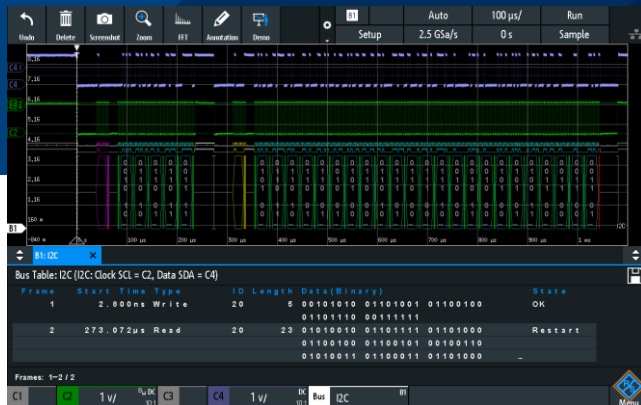




# R&S®RTx-K1, -K2, -K3, -K5, -K6, -K7 <sup>1)</sup> SERIAL PROTOCOL TRIGGERING AND DECODING



## Customize your oscilloscope with the serial protocol triggering and decoding options

Protocols such as I<sup>2</sup>C, SPI and CAN/LIN frequently transfer control messages between integrated circuits. The R&S®RTB2000, RTM3000 and RTA4000 offer versatile options for protocol-specific triggering and decoding of serial interfaces.







### Hardware based implementation

Smooth operation and a high update rate are ensured, even for long acquisitions. This is advantageous when capturing multiple packetized serial bus signals, for example.



For more information:

[www.rohde-schwarz.com/oscilloscopes-software\\_231588](http://www.rohde-schwarz.com/oscilloscopes-software_231588)

Options	Description
 -K1	<b>I<sup>2</sup>C/SPI serial triggering and decoding</b> Triggering and decoding of I <sup>2</sup> C and two-wire, three-wire and four-wire SPI buses
 -K2	<b>UART/RS-232/RS-422/RS-485 serial triggering and decoding</b> Triggering and decoding of UART based protocols and RS-232, RS-422 and RS-485 buses
 -K3	<b>CAN/LIN serial triggering and decoding</b> Triggering and decoding of CAN and LIN interfaces
 -K5	<b>I<sup>2</sup>S/LJ/RJ/TDM triggering and decoding</b> Triggering and decoding of I <sup>2</sup> S buses
 -K6	<b>MIL-STD-1553 serial triggering and decoding</b> Triggering and decoding of MIL-STD-1553 buses
 -K7	<b>ARINC 429 serial triggering and decoding</b> Triggering and decoding of ARINC 429 buses

### Decoding of up to four serial buses

Trigger and decode on four different interfaces at the same time from analog or digital channel signals.

### Trigger on start, stop, address, data and various error conditions

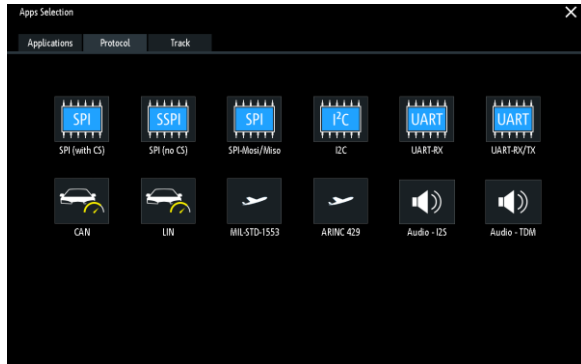
Enables the selective acquisition and analysis of relevant events and data.

### Telegram display as color-coded bus signals and decode table

For detailed analysis, results can be viewed as color-coded telegrams and in a table. You can also export the table.

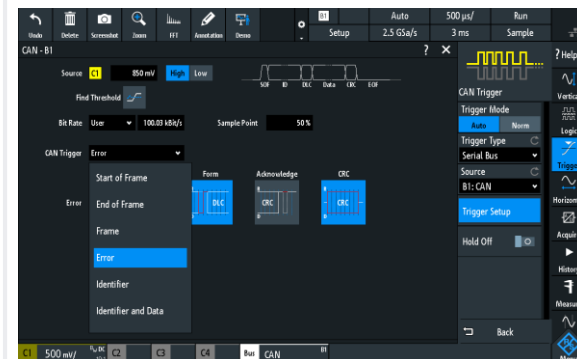
<sup>1)</sup> For R&S®RTB2000, R&S®RTM3000 and R&S®RTA4000 oscilloscopes

## Fast bus setup



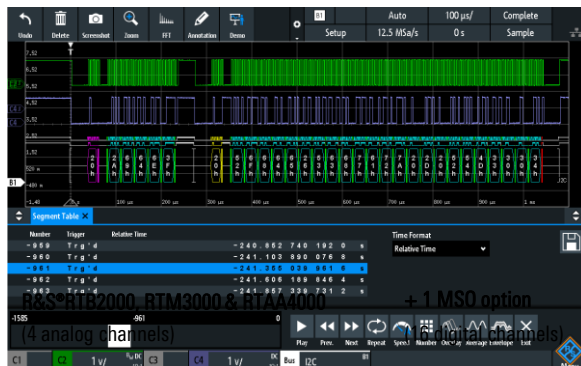
Any protocol can be configured in a few steps from the app cockpit. Once the bus to be decoded and the connected channels have been selected and the levels have been set, decoding begins automatically.

## Powerful trigger capabilities



The protocol-specific trigger lets you reliably isolate protocol events and errors. The high acquisition rates of the R&S®RTB2000, R&S®RTM3000 and R&S®RTA4000 oscilloscopes make them ideal for finding errors quickly and decoding protocol-specific results.

## Segmented memory for long time captures



Segmented memory is ideal for serial protocols. It allows you to capture only relevant packets/frames and ignore the long idle time between packets.  
**R&S®RTB2000:** 160 Msample segmented memory  
**R&S®RTM3000:** 400 Msample segmented memory  
**R&S®RTA4000:** 1 Gsample segmented memory

## Color-coded telegram display and bus table



You can analyze the decoded bus frames by overlaying the signal with color-coded data. Address and data content can be displayed in hex, bin or ASCII format. Turning on a bus table makes it easier to see the contents of multiple packets. This can be very useful when zoomed out on the oscilloscope. You can also export the table.

## Model configuration information

Base model	Order No.
R&S®RTB2002 oscilloscope, 70 MHz, 2 channels	1333.1005.02
R&S®RTB2004 oscilloscope, 70 MHz, 4 channels	1333.1005.04
R&S®RTM3002 oscilloscope, 100 MHz, 2 channels	1335.8794.02
R&S®RTM3004 oscilloscope, 100 MHz, 4 channels	1335.8794.04
R&S®RTA4004 oscilloscope, 200 MHz, 4 channels	1335.7700.04
Application bundle	Order No.
R&S®RTB-PK1 consists of the following options: -K1, -K2, -K3, -K15, -K36, -B6	1333.1092.02
R&S®RTM-PK1 consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K15, -K31, -K36, -K37, -B6	1335.8942.02
R&S®RTM-PK1US consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K15, -K31, -K36, -K37, -B6	1335.9190.02
R&S®RTA-PK1 consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K31, -K36, -K37, -B6	1335.7775.02
R&S®RTA-PK1US consists of the following options: -K1, -K2, -K3, -K5, -K6, -K7, -K31, -K36, -K37, -B6	1335.7998.02

Software option	R&S®RTB	R&S®RTM	R&S®RTA
<b>K1</b> I <sup>2</sup> C/SPI T&D	1333. 1011.02	1335. 8807.02	1335. 7681.02
<b>K2</b> UART/RS-232/RS-422/RS-485 T&D	1333. 1028.02	1335. 8813.02	1335. 7698.02
<b>K3</b> CAN/LIN T&D	1333. 1034.02	1335. 8820.02	1335. 7717.02
<b>K5</b> Audio T&D	-	1335. 8842.02	1335. 7723.02
<b>K6</b> MIL-STD-1553 T&D	-	1335. 8859.02	1335. 7730.02
<b>K7</b> ARINC 429 T&D	-	1335. 8865.02	1335. 7746.02

All options can be retrofitted