ROHDE&SCHWARZ
Make ideas real

R&S®RTx-K133: JITTER DECOMPOSITION

For R&S®RTO2000 and R&S®RTP oscilloscopes

Oscilloscope software

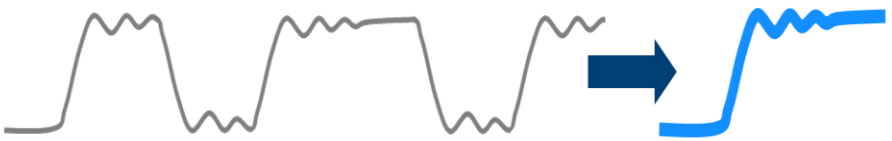
Gain valuable insight into the individual jitter components of your transmitter interface to characterize the jitter budget or to identify the root causes of failures. The R&S®RTx-K133 option provides the decomposition of the commonly known jitter components such as random jitter (RJ) and deterministic jitter (DJ) components such as data dependent jitter (DDJ) and periodic jitter (PJ).

Key specifications	Base unit: R&S®RTO2000	Base unit: R&S®RTP
Analysis bandwidth	600 MHz to 6 GHz	4 GHz to 16 GHz
Jitter components	Total jitter at bit error rate (TJ@BER) Deterministic jitter (DJ) Data dependent jitter (DDJ) Duty cycle distortion (DCD) Intersymbol interference (ISI) Periodic jitter (PJ) Random jitter (RJ)	
Result displays	Table, histogram, track, spectrum	
Additional displays	BER bathtub curve for TJ or for DJ and RJ, step response, synthetic eye diagram for DJ or DDJ only	
Reference clock	Clock data recovery: PLL first/second order, or feed forward Constant clock Explicit clock signal	

Your benefit	Features
Accurate results	The Rohde & Schwarz jitter decomposition algorithm starts with the calculation of the step responses that fully characterize the deterministic behavior of the transmission system. The user benefits from accurate measurement results even for relatively short signal sequences.
Get valuable insight into your design	The R&S®RTx-K133 option provides new functions to gain valuable insight into the signal characteristic and root causes of failures: ► Reconstruct synthetic eye diagrams for DJ or DDJ ► Calculate and display BER bathtub curves for selected jitter components ► Calculate and display the system characteristic step response ► The individual jitter components can be displayed as a table, histogram, track and spectrum
Automatic setup	Start your decomposition calculation with the “quick start analysis” function. This automatically configures the setup and displays a default set of measurements and plots. For individual configuration, a “help” dialog is available that illustrates the setup parameters and setup progress.

For more information, visit www.rohde-schwarz.com/catalog/sw_rtx-k133

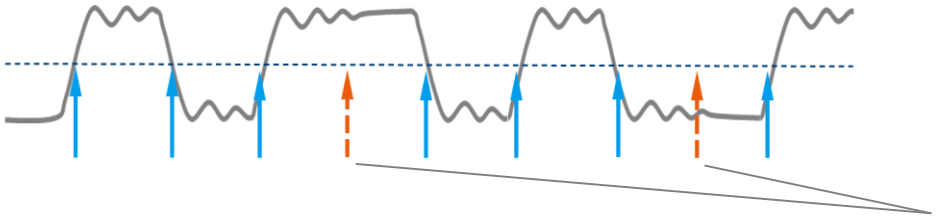
Rohde & Schwarz signal model based approach



Calculated step response describes deterministic behavior of the system

Parametric signal model includes all signal information for highly accurate and reliable jitter decomposition

Legacy TIE based approach



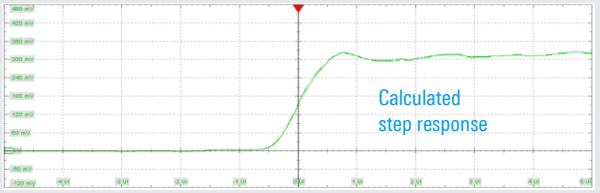
Array of TIE measurements

Requires artificially inserted TIE values

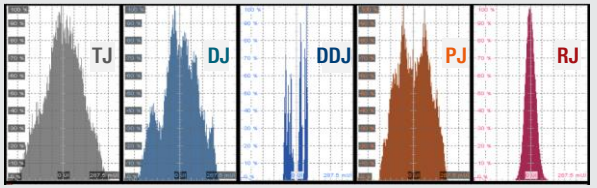
Reduces signal information to a set of TIE measurements at the voltage threshold

Model configuration information	
Oscilloscope	**Order No.**
R&S®RTO2000, 600 MHz to 6 GHz, 4 channels	1329.7002.64
R&S®RTP, 4 GHz to 16 GHz, 4 channels	1320.5007.16
Software option	**Order No.**
R&S®RTO-K133 advanced jitter analysis	1801.4832.02
R&S®RTP-K133 advanced jitter analysis	1800.6860.02

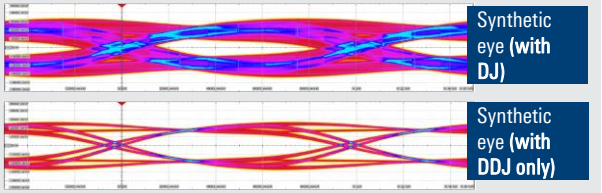
More result data for faster debugging



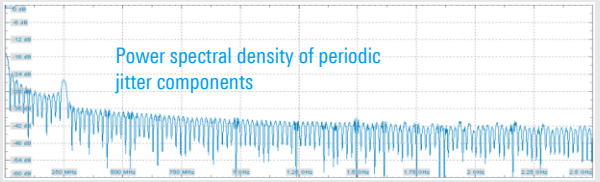
Understand deterministic channel characteristic



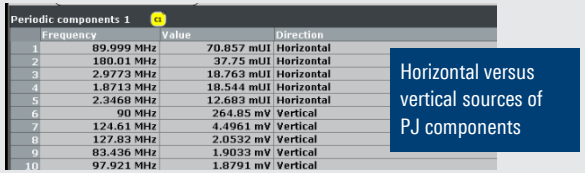
View individual jitter components



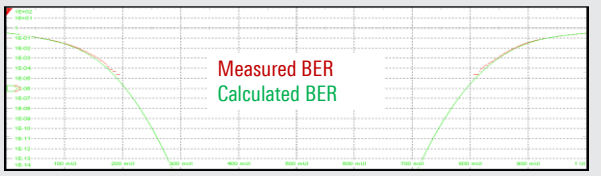
Select which jitter component to include



Detect root causes in the spectrum



Detect root causes of PJ in a table report



Calculate TJ for selected components

Rohde & Schwarz GmbH & Co. KG | Europe, Africa, Middle East +49 89 4129 12345 | North America 1 888 TEST RSA (1 888 837 87 72)
Latin America +1 410 910 79 88 | Asia Pacific +65 65 13 04 88 | China +86 800 810 82 28 / +86 400 650 58 96
www.rohde-schwarz.com | customersupport@rohde-schwarz.com
R&S® is a registered trademark of Rohde & Schwarz GmbH & Co. KG | PD 3608.4222.32 | Version 01.02 | March 2020 (gs)