

Error Analyzer SBF 28G / SBF 32G



(Illustration similar)

Self-synchronizing Bit Error Rate Tester with Error Counters

Gap Free Coverage of Bit Rates between 1 and 28 Gbps

Data Threshold and Clock Phase Adjustment for Eye Contour Analysis

Latest Technology Using SiGe and InPh Integrated Circuits

Operation via Front Panel or Graphical User Interface on PC (via USB-Interface)

Brief Description

The Bit Error Analyzer SBF 28G is used to detect errors contained in a data stream. Together with the SYMPULS Pattern Generators BPG 28G, BPG 40G or BPG 60G it forms a complete measurement set for bit error rate testing (BERT).

Synchronous clock and data signals are needed to perform a measurement. Six different pseudo random binary sequences (PRBS) of length $2^7 - 1$, $2^9 - 1$, $2^{11} - 1$, $2^{15} - 1$, $2^{23} - 1$ and $2^{31} - 1$ structured according to the CCITT standard can be analysed at bit rates between 1 and 28 Gbps.

Two different error rates can be measured: Errors per Bit and Errors per Time. The time interval for error measurements can be chosen between 10^5 and 10^{14} periods for the Error/Bit measurement and between 10^{-5} und 10^4 seconds for the Error/Time measurement.

The integrated data threshold and clock phase adjustment allows a detailed analysis of the connected data signal, e. g. eye contour analysis.

The instrument can be operated via its front panel or remotely controlled via its USB-interface. An easy-to-use graphical user interface is included in the supplied software. Additionally self-programmed software may be used to control the instrument.

Technical Specifications

SBF 28G	
Synchronisation	1 Gbps ... 28 Gbps (with External Clock), Phase Tolerance between Data and Clock Signal: $\pm 20\%$ of the Clock Period, Phase Shifting of ± 50 ps through Adjustable Delay, Self-Synchronizing in the Complete Frequency Range, Synchronisation LED
Clock Input	0,5 GHz ... 15 GHz (Clock Rate=Bit Rate/2), AC Coupled, $U_i = 0,3 \dots 1,0 V_{pp}$, 50 Ω SMA, $ r < 0,2$
Pattern	PRBS $2^{31} - 1$, $2^{23} - 1$, $2^{15} - 1$, $2^{11} - 1$, $2^9 - 1$, $2^7 - 1$
Data Input	NRZ or /NRZ, Polarity Reversible, $U_i = 0,1 \dots 0,8 V_{pp}$, 50 Ω 2.92mm (K), $ r < 0,2$, Adjustable Data Threshold, Display of Data Balance: LED Display of 1 / 0 Distribution after Decision Unit
Clock Output	(Bit Rate)/2, 0,4 V_{pp} , 50 Ω 2.92mm (K)
Trigger Output	Selectable: 1. Clock/64 2. Word Frame Trigger 0,4 V_{pp} , AC Coupled, 50 Ω SMA, $ r < 0,2$
Error Counter	Error Rate Measurement (Resolution 6 Digits: 5 Mantissa, 1 Exponent): 1. Error/Time: $10^7 \dots 10^{-4}$ / s Gate Time: 10 $\mu s \dots 10.000$ s 2. Error/Bit: $10^{-3} \dots 10^{-14}$ Gate Time: $10^5 \dots 10^{14}$ Clock Periods Single or Repetitive Measurement, Error Display: LED
Interface	High Speed USB, Max. Data Transmission Rate 2 MByte/s
Software	Graphical User Interface for Operation
Dimensions	19" Desktop, W x H x D = 462 x 135 x 435 mm
Weight	approx. 8 kg
Power Supply	115 V/230 V/50-60 Hz/85 VA

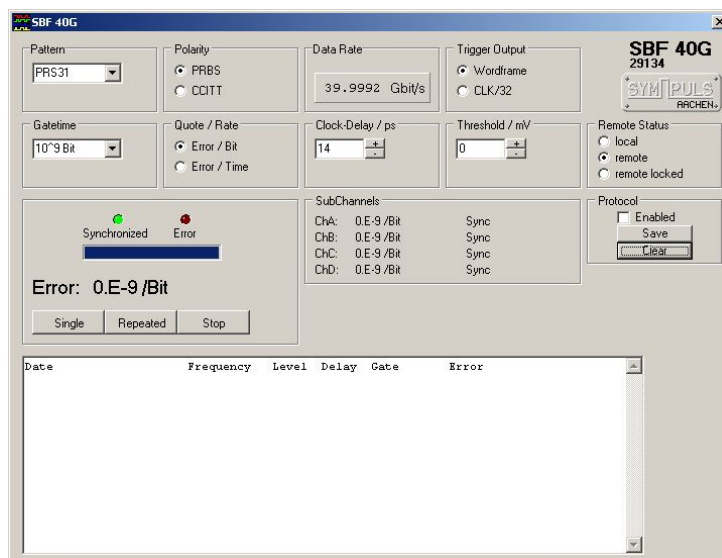
SBF 28G - Optionally Available

Option 1 SBF 32G, Maximum Data Rate 32 Gbps

Option 2 Full Clock Input 1 GHz ... 28 GHz (Clock Rate = Bit Rate)

Graphical User Interface

All instrument settings can be changed via an easy-to-use graphical user interface on your PC. The measurement results are displayed and can be saved to a file.



Graphical User Interface of the Operating Software (Illustration similar)

Ordering Information

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Included in delivery:

- SBF 28G
- User Manual, 115/230 V Mains, USB Cable,
- CD-ROM with Device Drivers and Operating Software

**The instrument is produced by SYMPULS in Germany.
We offer a reliable service and 24 month warranty.**