

KEYSIGHT TECHNOLOGIES (AGILENT HP)

86108B

The Keysight 86108B is a Precision Waveform Analyzer plug-in module designed for the 86100C and 86100D Infiniium DCA wide-bandwidth oscilloscope mainframes. It integrates two high-bandwidth electrical channels, an ultra-low-jitter precision timebase, and high-performance clock recovery, making it an industry-standard solution for the accurate analysis of high-speed electrical communication signals up to 32 Gb/s with outstanding residual jitter of less than 50 fs RMS.

SPECIFICATIONS

General

Interfaces	Controlled via mainframe interfaces (GPIB, LAN, USB)
Display	Uses mainframe display (86100C/D)

Physical

Power Supply	Powered directly through mainframe plug-in interface slots
Operating Temperature	10 °C to 40 °C °C

Vertical System

Number of Input Channels	2 (electrical)
Electrical Bandwidth (-3 dB)	35 GHz (Option LBW) / 50 GHz (Option HBW)
Input Impedance	50 Ω (nominal)
Input Connector Type	2.4 mm female (Option LBW) / 1.85 mm female (Option HBW)

Horizontal System & Timebase

Residual Jitter with Precision Timebase (RMS)	< 50 fs (typically < 45 fs)
Timebase Type	Integrated Precision Timebase

Trigger & Integrated Clock Recovery

Clock Recovery Operational Rate Range	50 Mb/s to 16 Gb/s (Option 216) / 50 Mb/s to 32 Gb/s (Option 320)
Clock Recovery PLL Loop Bandwidth	Adjustable (up to 20 MHz)

Measurement & Waveform Analysis

Supported Jitter Measurements	Total Jitter (TJ), Random Jitter (RJ), Deterministic Jitter (DJ), Data Dependent Jitter (DDJ), Duty Cycle Distortion (DCD), Periodic Jitter (PJ)
Supported Amplitude Measurements	One Level, Zero Level, Eye Height, Eye Width, Eye Crossing %, Q-Factor

System Hardware & Platform

Mainframe Compatibility	Keysight / Agilent 86100C Infiniium DCA-J, 86100D Infiniium DCA-X
Module Width	Double-wide module (occupies 2 slots)

Ordering Configurations & Options

Option LBW	35 GHz electrical channel bandwidth
Option HBW	50 GHz electrical channel bandwidth
Option 216	Clock recovery 50 Mb/s to 16 Gb/s
Option 320	Clock recovery 50 Mb/s to 32 Gb/s

Vertical System (Oscilloscope)

Maximum Safe Input Voltage	±2 V (DC + peak AC)
RMS Noise (Option LBW, 25 GHz)	250 µV (typical), 450 µV (maximum)
RMS Noise (Option HBW, 35 GHz)	310 µV (typical), 550 µV (maximum)

Clock Recovery

Minimum Input Signal Level for Clock Recovery	20 mVp-p (50 Mb/s to 16 Gb/s), 40 mVp-p (16 Gb/s to 32 Gb/s)
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Software & Analysis

Required Software / Mainframe Options	86100C/D Option 200 (Enhanced Jitter Analysis) and Option 300 (Amplitude Analysis)
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Electrical Channels

Dynamic Range	±400 mV
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Precision Timebase

Internal Precision Timebase Frequency Range	2 GHz to 16 GHz (Option 216) / 2 GHz to 32 GHz (Option 320)
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Options

Option 400	PLL and Jitter Spectrum Analysis Software
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APPLICATIONS

High-speed digital communications, optical/electrical transceiver testing, jitter and signal integrity analysis

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