

KEYSIGHT TECHNOLOGIES (AGILENT HP)

83496B

The Keysight 83496B is a high-performance optical and electrical multi-rate clock recovery module designed for the 86100 series Infiniium Digital Communications Analyzer (DCA) mainframes. It provides continuous clock recovery from low Mb/s rates up to 14.2 Gb/s, featuring an adjustable loop bandwidth for flexible jitter analysis of high-speed communications signals.

SPECIFICATIONS

General

Interfaces	Mainframe backplane interface (controlled via 86100 mainframe host over GPIB, LAN, or USB)
Display	None (uses the 86100 mainframe display interface)

Physical

Power Supply	Powered directly through the mainframe plug-in slot
Operating Temperature	10 °C to 40 °C °C
Weight	1.2 kg kg

General System & Compatibility

Mainframe Compatibility	Keysight 86100C and 86100D Infiniium DCA mainframes
Module Slot Requirement	Occupies 1 slot

Optical Input Specifications

Optical Wavelength Range	750 nm to 1650 nm
Optical Input Fiber Type	9/125 μm (single-mode) or 50/125 μm & 62.5/125 μm (multi-mode)
Optical Input Connector Type	Accepts Keysight 81000x series connector adapters (FC, SC, ST, LC, etc.)

Electrical Input Specifications

Electrical Input Configuration	Single-ended or differential
Electrical Input Impedance	50 Ω nominal
Electrical Input Connector Type	3.5 mm (female)

Clock Recovery Performance

Operating Data Rate Range (Option 100 & 200)	50 Mb/s to 13.5 Gb/s (continuous)
Operating Data Rate Range (Option 101 & 201)	50 Mb/s to 14.2 Gb/s (continuous)
Frequency Lock Range	±1000 ppm (typical)

Loop Bandwidth & Jitter Transfer

Loop Bandwidth Range	30 kHz to 10 MHz (selectable / rate dependent)
Loop Bandwidth Tuning Resolution	Continuous tracking and selection within range

Recovered Clock Output Specifications

Recovered Clock Output Configuration	Single-ended
Recovered Clock Output Connector Type	3.5 mm (female)
Recovered Clock Output Impedance	50 Ω nominal
Sub-rate Clock Output Ratios	1/1, 1/2, 1/4, 1/8, 1/16 (user selectable)

Configuration & Ordering Options

Option 100 Description	Optical/Electrical Multi-Rate Clock Recovery (50 Mb/s to 13.5 Gb/s)
Option 200 Description	Electrical-only Multi-Rate Clock Recovery (50 Mb/s to 13.5 Gb/s)
Option 101 Description	Optical/Electrical Multi-Rate Clock Recovery (50 Mb/s to 14.2 Gb/s)
Option 201 Description	Electrical-only Multi-Rate Clock Recovery (50 Mb/s to 14.2 Gb/s)

Performance

Residual Jitter (Option 200/201)	< 300 fs RMS (characteristic)
Jitter Peaking	< 0.1 dB (typical)
Consecutive Identical Digits (CID) Tolerance	290 bits (typical @ 10.3 Gb/s, PRBS 2 ³¹ -1 pattern, minimum loop bandwidth)

Inputs & Outputs

Recovered Clock Output Amplitude	≥ 300 mVp-p (into 50 Ω)
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Environmental

Storage Temperature	-40 °C to +70 °C
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Optical Input (Option 300)

Optical Splitter Insertion Loss (Optical In to Optical Out)	3.5 dB (typical @ 1310/1550 nm), 4.0 dB (typical @ 850 nm) (Option 300)
Optical Return Loss	> 30 dB (typical @ 1310/1550 nm), > 20 dB (typical @ 850 nm) (Option 300)

TECHNOLOGY

Optical & Electrical Clock Recovery

APPLICATIONS

High-Speed Digital Communications Test

Generated by SpecAtlasHub (specatlashub.com). Specifications are compiled from available sources and are subject to change — verify critical values against the manufacturer before purchase.