

KEYSIGHT TECHNOLOGIES (AGILENT HP)

86103A

The Agilent / Keysight 86103A is an optical and electrical receiver plug-in module for the Infiniium DCA 86100 series mainframes. It provides an integrated, calibrated optical channel with a 2.85 GHz unfiltered bandwidth and switchable hardware reference filters, alongside a 20 GHz electrical channel. It is designed for testing and characterizing optical telecommunication and data communication waveforms, including SDH/SONET (155 and 622 Mb/s), Fibre Channel (1.063 Gb/s), and Gigabit Ethernet (1.250 Gb/s) signals.

SPECIFICATIONS

General

Interfaces	Optical input, 3.5 mm female electrical input, mainframe backplane slot interface
Display	None (uses mainframe display)

Physical

Power Supply	Powered by mainframe backplane slot
Operating Temperature	10 to 40 °C

Optical Channel Specifications

Wavelength Range	1000 nm - 1600 nm
Unfiltered Optical Bandwidth	2.85 GHz
Fiber Type Compatibility	9/125 µm (single-mode) to 62.5/125 µm (multimode)
Maximum Fiber Core Diameter	62.5 µm
Calibrated Wavelengths	1310 nm, 1550 nm
Optical Channel RMS Noise (155/622 Mb/s)	1 µW (characteristic)
Optical Channel RMS Noise (1.063/1.250 Gb/s)	1.5 µW (characteristic)

Reference Receiver Characteristics

Supported Reference Filter Rates	155 Mb/s, 622 Mb/s, 1.063 Gb/s, 1.250 Gb/s
SDH/SONET Standard Compliance	OC-3/STM-1 (155 Mb/s), OC-12/STM-4 (622 Mb/s)
Fibre Channel Standard Compliance	FC1063 (1.063 Gb/s)
Ethernet Standard Compliance	Gigabit Ethernet (1.250 Gb/s)
Reference Receiver Configuration	Automatically switchable hardware filters

Electrical Channel Specifications

Electrical Bandwidth	20 GHz
Electrical Channel Input Connector	3.5 mm (female)
Maximum DC Input Voltage	±2 Vdc
Electrical RMS Noise (12.4 GHz BW)	0.25 mV (characteristic)
Electrical RMS Noise (20 GHz BW)	0.5 mV (characteristic)
Input Impedance	50 Ω (nominal)

System Integration & Compatibility

Compatible Mainframes	86100A, 86100B, 86100C Infiniium DCA/DCA-J
Required Mainframe Slot Count	1 slot

Physical & Environmental

Storage Temperature Range	-40 °C to +70 °C
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Compliance & Calibration

Recommended Calibration Cycle	1 year
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Optical Channel

Optical Return Loss	> 33 dB
Maximum Peak Optical Input Power	10 mW
Maximum Average Optical Input Power	5 mW
Detector Type	InGaAs photodiode
Optical Channel RMS Noise (2.8 GHz BW)	1.5 μW (characteristic) / 2.5 μW (maximum)

Electrical Channel

Maximum Safe Input Power (Electrical)	±2 V DC + 16 dBm
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Inputs & Outputs

Optical Input Connector Type	HMS-10/HP connector interface (user-interchangeable 81000 series adapters)
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Optical Channel Performance

Integrated Power Meter Range	-30 dBm to +3 dBm
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Options

Option 110	155 Mb/s and 622 Mb/s reference receiver filters
Option 120	1.063 Gb/s and 1.250 Gb/s reference receiver filters
Option 130	2.488 Gb/s reference receiver filter
Option 140	1.063 Gb/s, 1.250 Gb/s, and 2.488 Gb/s reference receiver filters

TECHNOLOGY

Sampling Oscilloscope Plug-in Module

APPLICATIONS

Optical and Electrical Waveform Analysis and Compliance Testing

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