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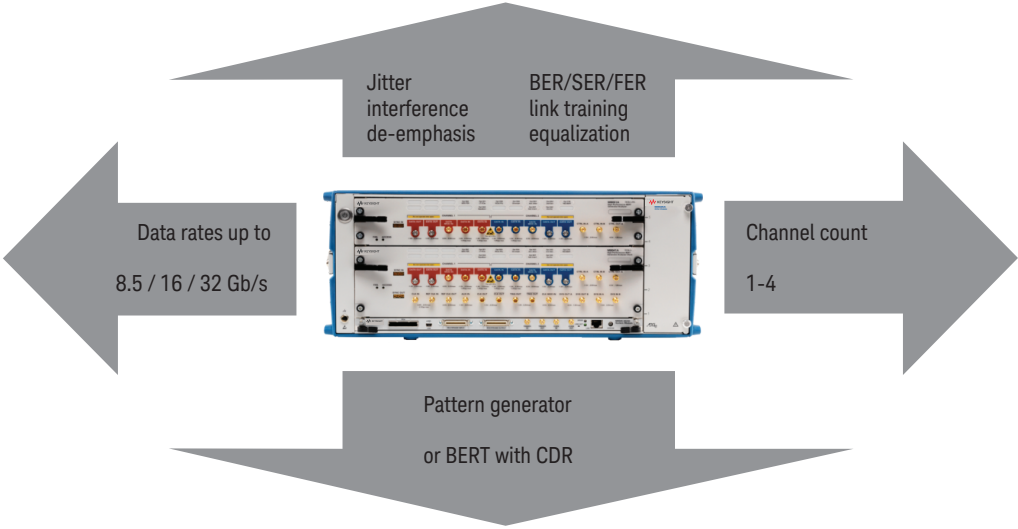
J-BERT M8020A

High-Performance BERT

Configuration Guide

The following steps will guide you through configuring a turn key J-BERT M8020A High-Performance BERT

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Available Configurations

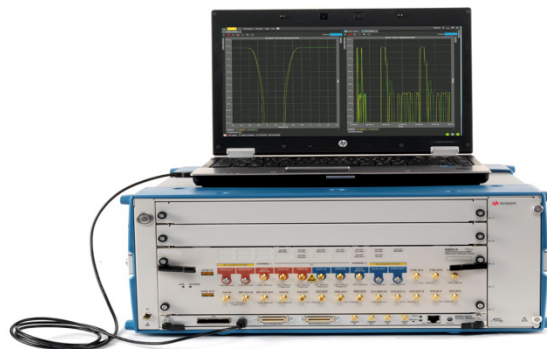
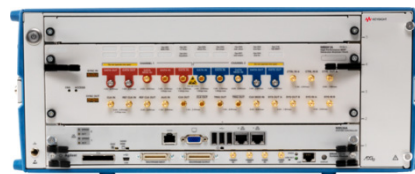
M8020A 16 Gb/s BERT

1 – 2 channels

- With embedded controller M9536A
- With external PC

Hardware selection required for this configuration:

- BERT module (refer to steps 1 and 2 below)
- 5-slot AXIe chassis required (refer to step 8 below)



M8020A 16 Gb/s BERT

Up to 4 channels

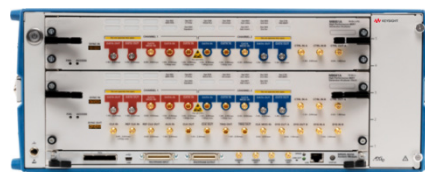
External controller, can be either laptop or desktop

- USB (any external controller will work)
- PCIe for highest throughput

(please see the list of supported PCs in the document Tested Computer List <http://literature.cdn.keysight.com/litweb/pdf/5990-7632EN.pdf>)

Hardware selection required for this configuration:

- BERT module (refer to steps 1 and 2 below)
- 2nd BERT module (refer to step 3 below)
- 5-slot AXIe chassis required (refer to step 8 below)



M8020A 32 Gb/s BERT

1 channel

With M8061A mux and N4877A CDR /Demux

Two 32 Gb/s channels possible with 2nd chassis.

Hardware selection required for this configuration:

- BERT module (refer to steps 1 and 2 below)
- Multiplexer (refer to step 5 below)
- 5-slot AXIe chassis required (refer to step 8 below)




Available Configurations (continued)

The J-BERT M8020A high-performance BERT is scalable containing:

- BERT modules M8041A, M8051A and M8061A
- Software
- Infrastructure such as chassis and embedded controller
- And accessories.

The following steps will guide you through configuring a turnkey J-BERT M8020A high-performance BERT.

Step 1 Choose the 1st BERT module – basic selection



M8041A 8.5/16 Gb/s Generator Analyzer Clock, 3-slot AXIe module
1 selection out of the following 4 options is a must

Option-No	Description
M8041A-C08	BERT one channel, data rate up to 8.5 Gb/s
M8041A-C16	BERT one channel, data rate up to 16 Gb/s
M8041A-G08	Pattern generator one channel, data rate up to 8.5 Gb/s
M8041A-G16	Pattern generator one channel, data rate up to 16 Gb/s

Note: If pattern generator only option G08 or G16 is ordered: It is not possible that you order additional analyzer options.

Step 2 Choose the 1st BERT module – optional selection

M8041A 8.5/16 Gb/s Generator Analyzer Clock, 3-slot AXIe module

Option-No	Description
M8041A-0A2	Second channel for analyzer, license, only valid if option C08 or C16 are ordered
M8041A-0A3	Analyzer equalization, module-wide license, only valid if option C08 or C16 are ordered
M8041A-0G2	Second channel for pattern generator, license
M8041A-0G3	Advanced jitter sources for receiver characterization, module wide license
M8041A-0G4	Multi-tap de-emphasis, module-wide license
M8041A-0G6	Reference clock input with multiplying PLL, clock group wide license
M8041A-0G7	Advanced interference sources for receiver characterization, module wide license
M8041A-0S1	Interactive link training for PCI Express, clock group wide license, requires option 0G4 to allow de-emphasis negotiation. Only valid if option C08 or C16 are ordered
M8041A-0S2	SER/FER Analysis for coded and retimed loopback, clock group wide license. Only valid if option C08 or C16 are ordered

Available Configurations (continued)

Step 3 Choose the 2nd BERT module – basic selection



M8051A 8.5/16 Gb/s Generator Analyzer Clock, 2-slot AXIe module

Requires a M8041A module. If more than 2 channels are needed, 1out of the following 4 options is a must

Option-No	Description
M8051A-C08	BERT one channel, data rate up to 8.5 Gb/s
M8051A-C16	BERT one channel, data rate up to 16 Gb/s
M8051A-G08	Pattern generator one channel, data rate up to 8.5 Gb/s
M8051A-G16	Pattern generator one channel, data rate up to 16 Gb/s

Note: In case a M8041A and a M8051A is ordered, you also need an external controller. All 5 slots in a 5 slot AXIe slot are used. If pattern generator only option G08 or G16 is ordered: It is not possible that you order additional analyzer options

Step 4 Choose the 2nd BERT module – optional selection

M8051A 8.5/16 Gb/s Generator Analyzer Clock, 2-slot AXIe module

Option-No	Description
	Second channel for analyzer, license
M8051A-0A3	Analyzer equalization, module-wide license
M8051A-0G2	Second channel for pattern generator, license
M8051A-0G3	Advanced jitter sources for receiver characterization, module wide license
M8051A-0G4	Multi-tap de-emphasis, module-wide license
M8041A-0G7	Advanced interference sources for receiver characterization, module wide license

Available Configurations (continued)

Step 5 Choose the 3rd BERT module M8061A multiplexer



**2:1 32.4 Gb/s when used with M8020A with de-emphasis option.
In case the M8041A and M8051A are selected please ensure that an additional chassis is ordered e.g M9505A or M9502A.**

Option-No	Description
M8061A-001	Multiplexer 2:1
M8061A-004	4-tap de-emphasis
M8051A-008	Extension to 8-tap de-emphasis

Step 6 Choose BER software, must choose one of the two options.

Option-No	Description
M8070A-0TP	Transportable License for M8000 Software
M8070A-ONP	Network license for M8000 Software

Step 7 Test Automation Software for PCIe, USB, SATA RX test with M8000, is not part of the J-BERT M8020A structure. Don't forget to order, if needed

Option-No	Description
N5990A-010	Required option
N5990A-101	Support for PCI Express Gen1, Gen2 and Gen3 Receiver Tests for J-BERT and M8000
N5990A-102	Support for USB3.0 Receiver Tests for J-BERT, M8000 and ParBERT 7 Gbit/s
N5990A-103	Support for SATA 1.0, 2.0 and 3.0 RSG Tests for J-BERT and M8000
N5990A-301	PCI Express 3.0 Link Training suite for J-BERT and M8000

Available Configurations (continued)

Step 8	Choose the infrastructure.
	Usage of standards AXIe chassis are possible, but please be aware that Keysight Technologies, Inc. is the only vendor that provides the USB interface. Usage without a chassis is not possible.
Option-No	Description
M8020A-BU1	AXIe chassis, 5-slot with embedded AXIe controller. Software is pre-installed on embedded controller. Recommended configuration if a customer needs a M8041A. Cannot be ordered when a M8051A is selected
M8020A-BU2	AXIe chassis, 5-slot, does not include a PC. Customer requires an external PC. Recommended configuration if customer needs a M8041A with M8051A or M8061A.
M9048A	Only needed if option M8020A-BU2 is selected and highest download speed is required. Not needed if the USB interface is used. PCIe desktop adapter: Gen2, x8, clock isolation
M9045B	Only needed if option M8020A-BU2 is selected and highest download speed is required. Not needed if the USB interface is used. PCIe laptop adapter: Gen1, x1

Step 9	Choose accessories
Option-No	Description
M8048A-001	ISI channels, four short traces, 8 to 13 inches
M8048A-002	ISI channels, four long traces, 14 to 34 inches
M8048A-801	Short matched cable pair, SMA (f) to SMA (f) for cascading M8048A ISI channels
M8041A-801	Matched cable pair, 2.92 mm (f) to 2.92 mm (f), two pairs are recommended for connecting M8041A with M8061A
M8051A-801	Clock distribution cable for M8051A
15442A	Four SMA cables, unmatched

Note: Content of default accessories included in shipment.

M8041A module

8 x 50 Ω terminations, commercial calibration report ("UK6"), certificate of calibration, ESD protection kit

M8051A module

4 x 50 Ω terminations, clock synchronization cable, commercial calibration report ("UK6"), certificate of calibration

M8020A-BU1

M9505A AXIe chassis with embedded controller, USB cable, getting started guide, AXIe filler panel, power cord

M8020A-BU2

M905A AXIe chassis, USB cable, getting started guide, filler panel, power cord

M8070A

CD-ROM with M8070A system software

Recommended Accessories

Please order for M8041A and M8051A at least one set of matched pair M8041-801 per data out and data in to achieve best signal performance.

Available Configurations *(continued)*

Step 10 Option-No	Choose warranty and service plan Description
R-51B-001-Z	Return to Keysight – 3 years
R-51B-001-5Z	Warranty Assurance Plan – Return to Keysight – 5 years
R-50C-011-3	Calibration Assurance Plan – Return to Keysight – 3 years
R-50C-011-5	Calibration Assurance Plan – Return to Keysight – 5 years
R-1380-M8000	Productivity assistance

Publication title	Pub number
M8020A J-BERT High-Performance BERT datasheet	5991-3647EN
M8048A ISI channel datasheet	5991-3648EN
M9052A and M9505A 2-and 5 slot AXle chassis data sheet	5990-6584EN
M8061A Multiplexer with de-emphasis data sheet	5991-2506A
M9505A AXle Chassis 5-slot data sheet	5990-6584EN

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