



### FEATURES & BENEFITS

#### Data Features:

- Bit error rate testing for NATO STANAGs and Military Standards (MIL-STDs)
- DTE Interface: RS-422 or RS-232
- Synchronous: 50 bps to 19k2 kbps
- Asynchronous: 50 bps to 230.4 kbps
- Clock Source: Internal or External
- EIA-530 Standard Compliant

**Test Patterns:** Standard PRBS 63, 511 & 2047 bit, predefined text, custom text or User Defined PRBS

**Reliable Results:** Dedicated Hardware

**Statistics:** Recorded & Displayed

- BER, bit errors, bit slips
- Sync loss

**Installation:** Rack mount or Standalone

#### SPECIAL FEATURES:

**Ethernet Interface:** Control via RAP1

**Remote Control:** Via RapidM-MMI

**Calibration:** No calibration required

**Software Upgrade:** The software can be updated to add additional features

**Presets:** Factory and Custom Presets

### PRODUCT OVERVIEW

The RapidM RB8 Bit Error Rate Tester (BERT) is a standalone unit designed for the testing of serial H/V/UHF data modem communications equipment. The RB8 BERT is used to measure the number of errors (bit) in a data transmission system.

For serial testing the RB8 BERT generates a test data stream that is passed through the data transmission system. The received data stream is compared against a reference data stream to detect any errors introduced by the system under test. The RB8 BERT can detect bits in error and missed bits (also called bit slips).

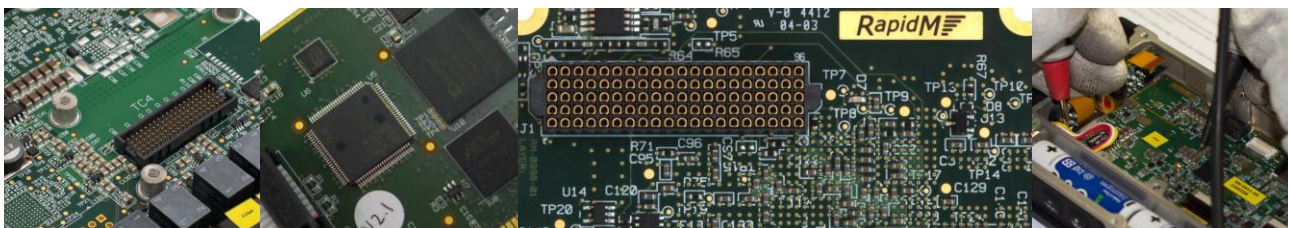
The RapidM RB8 is a Test and Measurement product that can operate independently or form part of the *RapidM* Test & Measurement System (TS8).

### TEST PATTERNS

The *RapidM RB8 BERT* generates a pseudo-random binary sequence (PRBS) based on standard test patterns. The RB8 generates these data streams at data rates from 50 bps to 19k2 kbps in synchronous and 50 bps to 230k4 bps in asynchronous DTE modes. The *RB8 BERT* is capable of generating and checking user defined patterns from 8 to 128 bits in length. A custom text sequence is also supported.

For serial data testing the 63, 511, and 2047 bit PRBS patterns are standard with continuous and burst transmission modes also supported.

The *RB8 BERT* has an intuitive graphical user interface on the front panel that displays basic error statistics and allows the user to control the operation of the BERT hardware. The *RB8 BERT* can also be controlled locally or remotely using the RapidM-MMI which provides more detailed error statistics.





## RB8 HARDWARE

### PHYSICAL CHARACTERISTICS

<b>SIZE, WEIGHT &amp; COLOR</b>	Width: 212.2 mm Depth: 225.6 mm	Height: 41.1 mm (excl. front panel) Height: 44.1 mm (incl. front panel)	Weight: 2.2 kg	Color: Black Grey (RAL 7021), Saddlewood Powder (VX 7517)
<b>ENVIRONMENTAL SPECIFICATIONS</b>	Climatic	<ul style="list-style-type: none"> <li>o Storage/Operation: -30 °C to +70 °C (MIL-STD-810F)</li> <li>o Humidity: 90% non-condensing at 30 °C (MIL-STD-810F)</li> </ul>		
	Mechanical	<ul style="list-style-type: none"> <li>o Vibration: Surface Ship, Marine Vehicles, Aircraft, Min. Integrity (MIL-STD-810F)</li> <li>o Shock: 40 G, 11 ms (MIL-STD-810F)</li> </ul>		
	EMC	<ul style="list-style-type: none"> <li>o MIL-STD-461E (RE101, RE102, CE102, CS101, CS114, RS101, RS103)</li> </ul>		
	Safety/CE Marking	<ul style="list-style-type: none"> <li>o CE Marking - Directives 2006/95/EC as amended</li> <li>o SANS 60950-1:2010 / IEC 60950-1:2012</li> </ul>	<ul style="list-style-type: none"> <li>o LVD - Low Voltage Directive 2014/35/UE</li> <li>o EMC - Electromagnetic Compatibility Directive 2014/30/UE</li> <li>o EDD – Eco-Design Directive 2009/125/EC</li> </ul>	
	MTBF	<ul style="list-style-type: none"> <li>o &gt; 40,000 hours</li> </ul>		

**INSTALLATION** Compact design: The unit occupies a width less than ½ of an 1U 19" rack slot, *RapidM* 19" rack-mountable tray available.

**PRESETS** Factory and Custom Presets

INTERFACES	USE	DETAILS
<b>REMOTE CONTROL (DE9M)</b>	Configuration and Control	Remote Control Pins: RS-422 balanced or RS-232 Protocol: Control Protocol (RAP1 + RIPC, ASCII S5066 Annex E)
<b>ETHERNET CTRL PORT (RJ45)</b>	Configuration and Control	Remote Control: 10/100 Base T (IEEE 802.3U compatible), embedded TCP/IP Stack Protocol: Control Protocol (RAP1 + RIPC)
<b>ETHERNET DATA PORT (RJ45)</b>	Packet Data Transfer	Protocol: Protocol: RAP1/RAW over TCP/IP, UDP.
<b>LOCAL CONTROL</b>	Configuration and Control	Local control via 32x202 pixel graphical LCD display and 16-key keypad. 3 bi-colour LED indicators. Alphanumeric and digit keypad for fast data entry, 4-way navigation button
<b>DTE (DB25F)</b>	Modem Data Communication	RS-422 balanced, RS-232 unbalanced, MIL-STD-188-114 (interoperable), EIA 530A compliant. Split Half Duplex operation, Synchronous, Standard and High-speed Async modes
<b>RADIO CONTROL (DB25M)</b>	Modem Status Indications	Radio Control Pins (2 channels): RS-232, up to 115200 bps, 1/2 stop bits, 7/8 bit data Protocol: Control Protocol (RAP1 + RIPC)

### BIT ERROR RATE TESTER

<b>TESTS</b>	A number of tests can be run from the RB8 including: <ul style="list-style-type: none"> <li>• Serial Data BERT <ul style="list-style-type: none"> <li>o Bit error rate testing</li> <li>o Mil-Std 188-110B, Mil-Std 188-110B-F, STANAG 4539 (HF)</li> </ul> </li> </ul>
<b>TEST PATTERNS</b>	Depending on the test being performed and the required rate, different test patterns can be used: <ul style="list-style-type: none"> <li>• Standard 63, 511 &amp; 2047 bit pseudo-random binary sequence (PRBS) test patterns</li> <li>• User-defined custom text</li> <li>• Pre-defined text</li> <li>• User defined PRBS (8 – 128 bits)</li> </ul>
<b>SERIAL STATISTICS</b>	By comparing the return data stream to the known test sequence various metrics can be measured, including the following: <ul style="list-style-type: none"> <li>• Bit Error Rate (BER)</li> <li>• Frame Error Rate</li> <li>• Packet Error Rate</li> <li>• Bit Slips</li> <li>• Synchronisation Loss</li> </ul>
<b>USER INTERFACE</b>	The Front Panel Display provides a quick and convenient method to control the RB8 and view basic test results. RapidM-MMI can be connected to control the RB8 remotely as well as view more detailed test statistics.

ORDERING INFORMATION	STOCK NUMBER	DESCRIPTION
RB8 HF & V/UHF Bit Error Rate Tester – 32 kbps	RME-B1-RA-B8V01	BERT: RB8 BER Tester, 32kbps V01

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