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Final

Revision 1.0

Datasheet Template



TEST SYSTEM DATASHEET TEMPLATE

N7606B Signal Studio for *Bluetooth*® Datasheet

Bluetooth SIG Confidential

ABSTRACT: N7606B Signal Studio for *Bluetooth*® Datasheet.

**Revision History**

Revision	Date	Description
V1.0.0.0	28 February 2008	Test System Datasheet for N7606B Signal Studio for Bluetooth

Contributors

Name	Company
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1 Test System Overview

CREATE *BLUETOOTH* WAVEFORMS WITH EASE FOR RECEIVER TESTING

N7606B Signal Studio for *Bluetooth* is a flexible signal creation software tool which simplifies the creation of standard-based waveforms for *Bluetooth* and *Bluetooth* ultra low power testing. You can easily create fully-coded *Bluetooth* packets and *Bluetooth* modulated data streams that comply with *Bluetooth* version 2.1 + EDR standard and ultra low power test specification v0.5d9.

The software's intuitive graphical user interface provides convenient access to the RF and baseband parameters, providing the versatility you need to configure waveforms for both component and receiver design verification and testing. The N7606B software allows you to download *Bluetooth* waveform files to the N5162A MXG ATE, N5182A MXG, E4438C ESG or E8267D PSG vector signal generators for RF and baseband IQ signal playback.

More information can be found in the online help:

<http://wireless.agilent.com/wireless/helpfiles/n7606b/n7606b.htm>

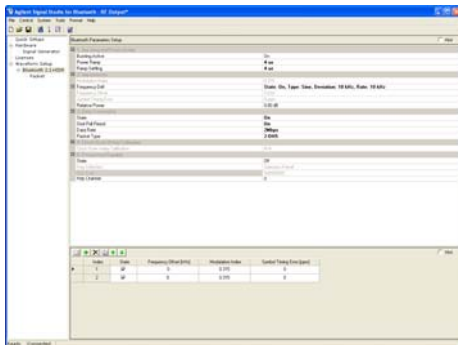


Fig 1. Signal Studio for Bluetooth user interface



Fig 2. MXG, ESG, and PSG vector signal generators

1.1 KEY FEATURES

- Signal Creation functionality
 - Standard-based signals for *Bluetooth* v 2.1+EDR and low energy wireless
 - Fully coded *Bluetooth* packets and *Bluetooth* modulated data streams for both basic and enhanced data rate
 - Dirty transmitter test setup for receiver sensitivity tests using DHx, 2-DHx, 2-EVx, 3-DHx and 3-EVx packet types
 - Frequency hopping in baseband waveforms for *Bluetooth* v 2.1+EDR with selection kernel sequence or user-defined hopping sequence
 - Simple BER test optimization using plot results of BER vs. payload gate delay with E4438C opt UN7
 - Data stream and packet payload types: PN9, PN15, user-defined pattern, custom user files
- Signal Generator Control and Additive Impairments
 - Compatible instruments: N5162A MXG ATE, N5182A MXG, E4438C ESG, E8267D PSG signal generators
 - Control frequency, amplitude, ALC, waveform scaling, triggers, markers, and more
 - Add signal impairments: carrier frequency offset, symbol timing error, modulation index, frequency drift, relative power, AWGN and more
- Application Programming Interface (API) for automating signal creation

2 Test System Scope

2.1 TEST COVERAGE

N7606B Signal Studio for *Bluetooth* with a vector signal generator creates signals for the following tests:

Test cases for certification testing of the *Bluetooth* RF Layer Identifier1

Receiver tests

Sensitivity/single-slot packets RCV/CA/01/C

Sensitivity/multi-slot packets RCV/CA/02/C

C/I performance RCV/CA/03/C

Blocking performance RCV/CA/04/C

Inter-modulation performance RCV/CA/05/C

Maximum input level RCV/CA/06/C

Receiver tests

Enhanced data rate sensitivity RCV/CA/07/C

Enhanced data rate BER* floor sensitivity RCV/CA/08/C

Enhanced data rate C/I performance TP/RCV/CA/09/C

Enhanced data rate maximum input level RCV/CA/10/C

*BER testing requires E4438C with option UN7 (see diagram below)

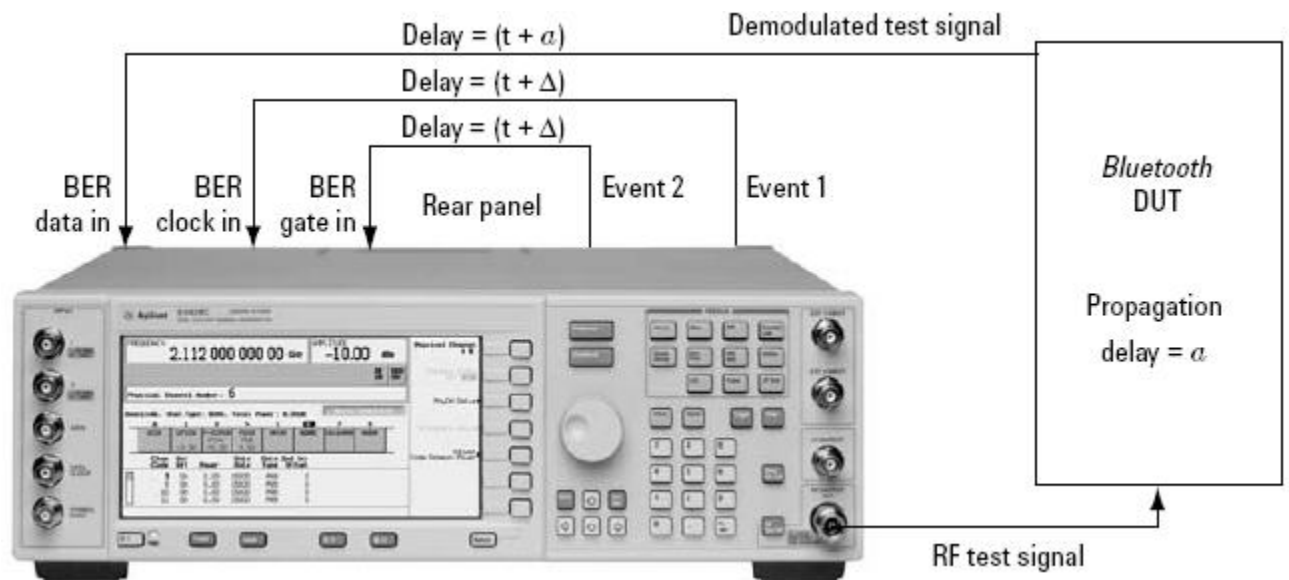


Diagram of BER setup



2.2 PERFORMANCE CHARACTERISTICS OF SIGNAL GENERATORS

N5182A MXG SIGNAL GENERATOR

Performance Data for N5182A and N5162A (Amplitude =-10dBm)¹

Link Type	ACL (Basic Data Rate)	ACL(Enhanced Data Rate)
Packet Type	DH1	3-DH1
Modulation Type	GFSK (BT = 0.5)	GFSK(BT = 0.5) + D8PSK
Packet Data Type	Standard	Standard
Frequency	2402 MHz	2402 MHz
FSK Error ²	0.52	
ACP ² (dBm)		65.94 dBm at k=2 -83 dBm at k=3,4...78

E4438C ESG SIGNAL GENERATOR

Performance Data for E4438C (Amplitude =-10dBm)¹

Link Type	ACL (Basic Data Rate)	ACL(Enhanced Data Rate)
Packet Type	DH1	3-DH1
Modulation Type	GFSK (BT = 0.5)	GFSK(BT = 0.5) + D8PSK
Packet Data Type	Standard	Standard
Frequency	2402 MHz	2402 MHz
FSK Error ²	0.79	
ACP ² (dBm)		65.95 dBm at k=2

E8267D PSG SIGNAL GENERATOR

Performance Data for E8267D (Amplitude =-10dBm)¹

Link Type	ACL (Basic Data Rate)	ACL(Enhanced Data Rate)
Packet Type	DH1	3-DH1
Modulation Type	GFSK (BT = 0.5)	GFSK(BT = 0.5) + D8PSK
Packet Data Type	Standard	Standard
Frequency	2402 MHz	2402 MHz
FSK Error ²	0.77	
ACP ² (dBm)		65.94 dBm at k=2 -83 dBm at k=3,4...78

Footnotes

1. Performance characteristics apply after execution of an I/Q calibration when the instrument is maintained within +/- 5°C of the calibrated temperature.
2. Measured (meas): A measured value indicating expected performance. This data is not warranted and is measured at room temperature (approximately 25°C).



2.3 VERSION

Bluetooth version 2.1 + EDR standard

Low energy wireless - ultra low power test specification v0.5d9 (to be updated as specification changes)

2.4 SUPPORT CONTACT INFORMATION

Provide the following contact information for test system support. Note that the email address for the support contact will be published on the Test System Recognition page and that this person may be contacted by Bluetooth members as well as customs agency officers in countries where the test system may be shipped.

- Agilent Technologies, Inc.
- Kevin Bertlin
- Kevin_bertlin@agilent.com
- (707) 577-4897.
- <http://www.home.agilent.com/agilent/product.jsp?cc=US&lc=eng&ckey=1328828&nid=-536902344.754495.00&id=1328828>