

# Providing the N4010A Wireless Connectivity Test Set with graphical views and additional capabilities

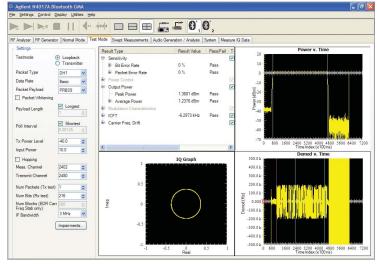
Save time and money with the N4017A Bluetooth Graphic Measurement Application. When used with the Agilent N4010A Wireless Connectivity Test Set, this PC-based software tool streamlines the development and testing of your Bluetooth products. Incorporating Bluetooth signal generator and signal analysis features, the N4017A application performs sensitivity searches and conducts lengthy tests at the touch of a button. The ability to fully-configure the test set, and display both numerical and graphical results, makes the N4017A an ideal development tool for R&D engineers, and a well-designed debug tool for manufacturing test engineers.

#### **Features**

- Operates in four different modes: analyzer, generator, test mode and both ACL and SCO normal mode (with swept measurements using a test mode connection and audio analysis using ACL and SCO normal mode)
- Provides PC control of N4010A in RF analyzer and generator modes for CW and BT signals

# Agilent N4017A *Bluetooth*® Graphical Measurement Application

## **Product Overview**



- Enables swept measurements, including BER versus channel and power versus channel
- Provides graphical views of power versus time, demod versus time, and IQ including zoom capabilities
- Set audio tone parameters and perform audio measurements such as SINAD, distortion, frequency, and level (when N4010A Option 113 is present)
- Numerical view with detailed results
- Export of text-based reports with setup and results data. Ability to save graphs, or copy and paste them into other packages
- Provides the ability to capture IQ data from the EUT and save it as a waveform or a .csv file
- Allows you to manage the arb waveform files in the test set
- Provides a wide range of measurements in analyzer, normal, and test mode

#### **Measurements**

- · Average power
- Delta F2 maximum
- Peak power
- · Delta F2 average
- ICFT
- Delta F2/delta F1 ratio
- Carrier frequency drift
- Bit error rate (BER)
- Carrier frequency drift rate
- · Packet error rate (PER)
- Delta F1 average



# Supports *Bluetooth* **Enhanced Data Rate Testing**

# **Bluetooth** Enhanced Data Rate (EDR) Option 205

When used in conjunction with the N4010A test set, N4017A Option 205 (N4017A-205) allows the user to supply, measure, and analyze *Bluetooth* EDR signals. EDR allows for a higher data throughput, provides support for multiple *Bluetooth* links, and results in lower power consumption in the *Bluetooth* design. There are a number of new settings and results available when using Option 205 specifically designed for *Bluetooth* EDR.

#### **EDR** results

- Differential phase encoding shows packet error rate and bit error rate
- Carrier frequency stability and modulation accuracy measures over blocks of 50 ms and up to a maximum of 200 blocks
- Relative transmit power ensures the difference in average transmit power during GFSK and DPSK portions are within range
- Bit error rate (BER) results for EDR Rx sensitivity, EDR Rx BER floor performance, and EDR Rx maximum input level test cases
- New graphs include measurement constellation and differential EVM versus symbol
- Guard interval measurements are provided

### **New EDR settings**

- · Packet type (DH1, DH3, or DH5)
- · Data rate: 2 or 3 Mbps

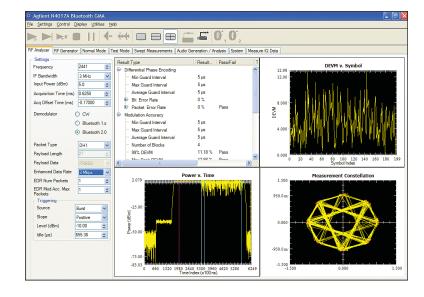
The capability of Agilent's N4010A test set to measure EDR depends upon the option(s) selected.

Option 107 (*Bluetooth* EDR link plus measurements) supports EDR test mode, enabling loopback testing of EDR devices. Six of the eight EDR test cases are built-in to the test set. Key EDR transmitter measurements include relative transmit power, carrier frequency stability, modulation accuracy, differential phase encoding, and guard interval. Receiver measurements include EDR sensitivity, EDR BER floor performance, and EDR maximum input level.

Available at a lower price, N4010A Option 106 enables transmit measurements only, while N4010A Option 105 allows the user to perform both transmitter and receiver measurements but does not support normal or loopback test mode for *Bluetooth* EDR.

The N4017A Graphical Measurement Application Option 205 allows transmitter results to be displayed with Option 105, Option 106, and Option 107, and receiver measurements to be displayed for both Option 105 and Option 107.

RF generator mode for EDR receiver testing is currently only supported for N4010A-105 EDR Tx/Rx solution.



#### **Order Information**

Model number	Description
N4010A	Wireless Connectivity Test Set – required for N4017A operation
N4010A-101	Bluetooth test – required for N4017A operation
N4010A-107	Bluetooth EDR link plus measurements – works with N4017A-205
N4010A-105	Bluetooth EDR transmit and receive – works with N4017A-205
N4010A-106	Bluetooth EDR transmit – works with N4017A-205
N4010A-110	Additional input/output connectivity – required for N4017A operation
N4010A-113	Bluetooth audio generation and analysis – optional for N4017A operation
N4017A	Bluetooth Graphical Measurement Application
N4017A-205	EDR option – requires either N4010A 105, 106, or 107

## **Licensing Options**

With two licensing options for the N4017A available, select the one that works best for you. Please note your choice is a one-time decision made during the license redemption process and cannot be reversed.

- Licensed to the N4010A
   Recommended for customers that prefer to use the N4017A on a particular instrument
- Licensed to the PC
   Recommended for customers that prefer to use the N4017A on a particular PC

## **Related Literature**

*N4010A Wireless Connectivity Test Set,* Brochure, 5989-4150EN

*N4010A Wireless Connectivity Test Set,* Data Sheet, 5989-4035EN

N4010A Wireless Connectivity Test Set, Configuration Guide, 5989-3486EN

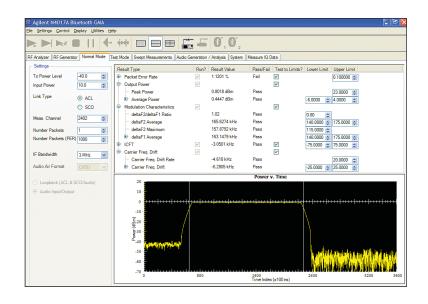
Bluetooth Enhanced Data Rate (EDR): The Wireless Evolution, Application Note, 5989-4204EN

#### For More Information

Learn more about the N4017A application at

www.agilent.com/find/n4017a

For details on the N4010A test set visit www.agilent.com/find/n4010a



# Agilent Email Updates

#### www.agilent.com/find/emailupdates

Get the latest information on the products and applications you select.



#### www.agilent.com/find/quick

Quickly choose and use your test equipment solutions with confidence.



#### www.agilent.com/find/open

Agilent Open simplifies the process of connecting and programming test systems to help engineers design, validate and manufacture electronic products. Agilent offers open connectivity for a broad range of system-ready instruments, open industry software, PC-standard I/O and global support, which are combined to more easily integrate test system development.

Bluetooth and the Bluetooth logo are registered trademarks owned by Bluetooth SIG, Inc., U.S.A. and licensed to Agilent Technologies, Inc.

# Remove all doubt

Our repair and calibration services will get your equipment back to you, performing like new, when promised. You will get full value out of your Agilent equipment throughout its lifetime. Your equipment will be serviced by Agilent-trained technicians using the latest factory calibration procedures, automated repair diagnostics and genuine parts. You will always have the utmost confidence in your measurements.

Agilent offers a wide range of additional expert test and measurement services for your equipment, including initial start-up assistance onsite education and training, as well as design, system integration, and project management.

For more information on repair and calibration services, go to

www.agilent.com/find/removealldoubt

## www.agilent.com

For more information on Agilent Technologies' products, applications or services, please contact your local Agilent office. The complete list is available at:

www.agilent.com/find/contactus

Phone or Fax

#### **United States:**

(tel) 800 829 4444 (fax) 800 829 4433

#### Canada:

(tel) 877 894 4414 (fax) 800 746 4866

#### China:

(tel) 800 810 0189 (fax) 800 820 2816

#### Europe:

(tel) 31 20 547 2111

#### Janan:

(tel) (81) 426 56 7832 (fax) (81) 426 56 7840

#### Korea:

(tel) (080) 769 0800 (fax) (080) 769 0900

#### Latin America:

(tel) (305) 269 7500

#### Taiwan:

(tel) 0800 047 866 (fax) 0800 286 331

#### Other Asia Pacific Countries:

(tel) (65) 6375 8100 (fax) (65) 6755 0042 Email: tm\_ap@agilent.com Revised: 09/12/06

Product specifications and descriptions in this document subject to change without notice.

© Agilent Technologies, Inc. 2005, 2006 Printed in USA, September 19, 2006 5989-2771EN

