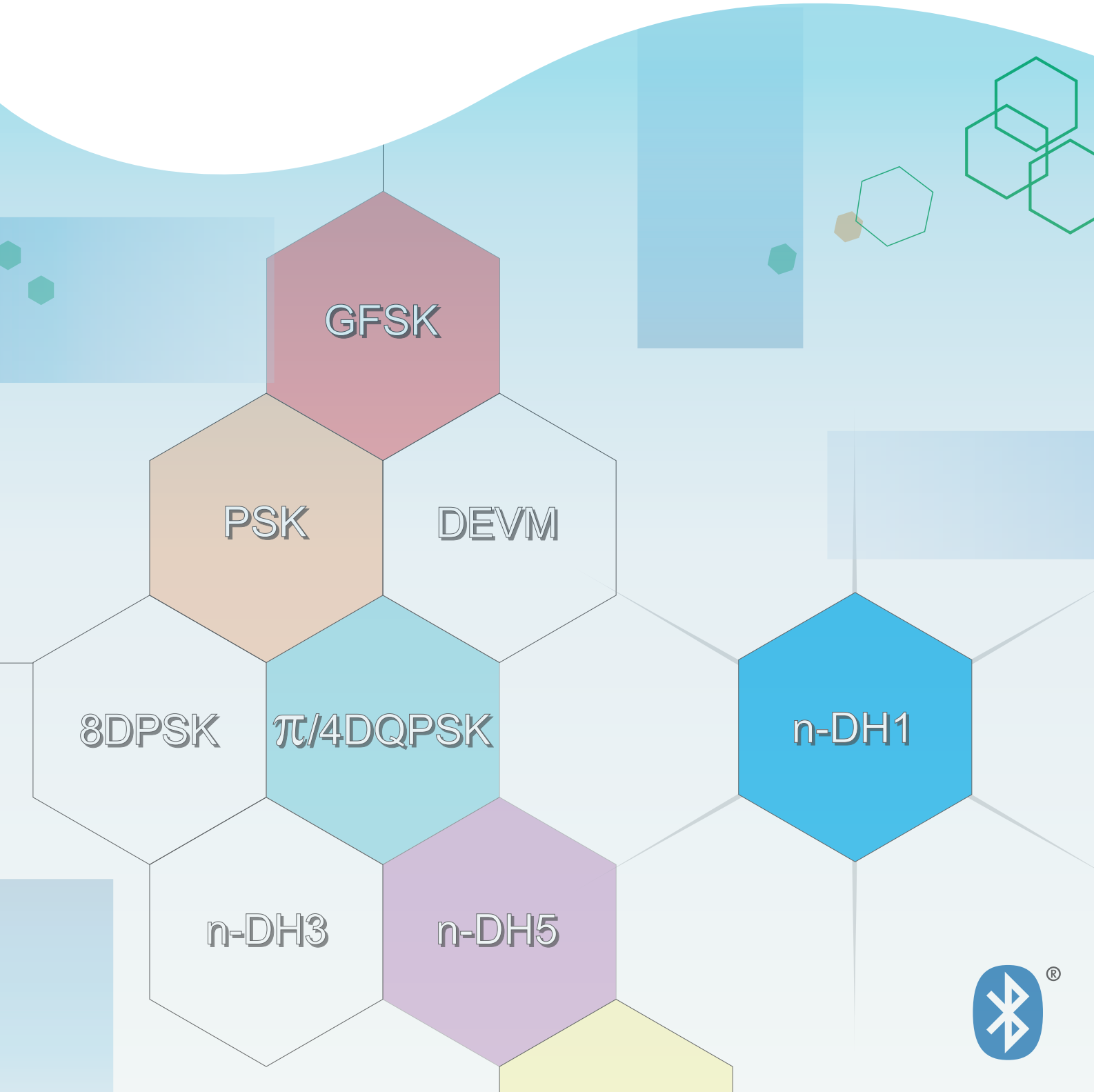
Product Information Sheet

Anritsu

MT8850A-17

IQ data output option

Protocol-free EDR measurements for the MT885xA/B

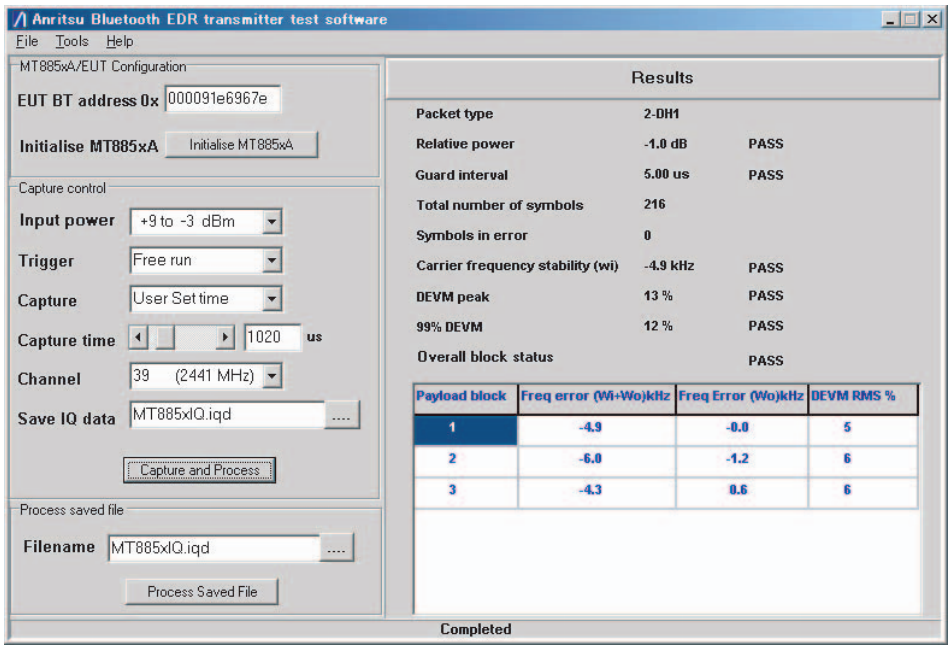


Introducing IQ Data Output Option

IQ data output is an optional PC software package for the MT885xA/B. It enables the user to perform three of the EDR transmitter measurements defined in the Bluetooth specification without the need to create a test mode connection to the EUT.

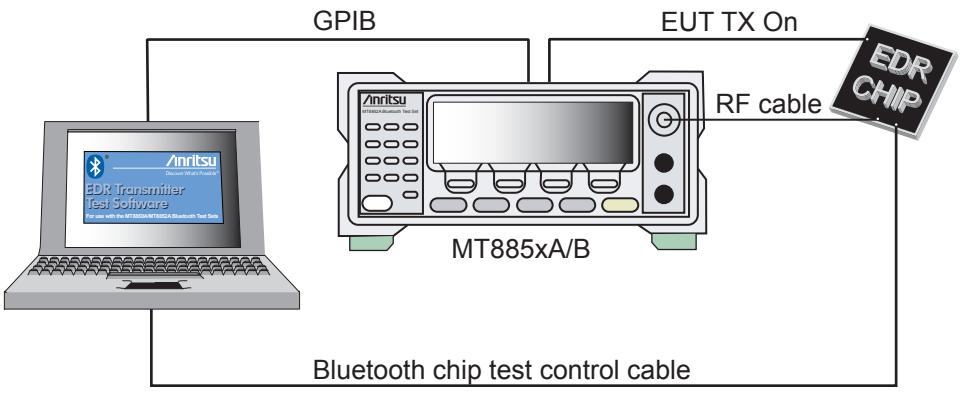
IQ data output provides users with:-

- Full implementation of three EDR transmitter test cases.
- A PC program with a simple and intuitive user interface.
- Full EDR packet support: 2-DH1, 2-DH3, 2-DH5, 3-DH1, 3-DH3, and 3-DH5.
- Functionality to print and save test results.
- An ideal tool for developing and design-proving EDR chips and products.



Setup

1. Use chip set control software to transmit EDR packets.
2. MT885xA/B demodulates the incoming packets to IQ format.
3. PC software reads IQ data file from MT885xA/B over GPIB.
4. PC software processes data file and displays measurement results.



Supported Measurements

Relative Transmit Power (TP/TRM/CA/10C)

This test ensures that the difference in average transmit power during the frequency modulated GFSK and phase modulated DPSK parts of a packet is within the range specified below.

Pass criteria = (PGFSK - 4dB) < PDPSK < (PGFSK + 1dB)

Carrier Frequency Stability (TP/TRM/CA/11C)

This test verifies the transmitter carrier frequency stability and modulation accuracy. The measurement results must fulfill the following conditions.

Average frequency error of the GFSK portion of the EDR packet - ω_i
(Pass criteria ±75kHz)

Average frequency error of each payload block - ω_o
(Pass criteria ±10kHz)

Modulation Accuracy

In this measurement, the payload is divided into 50 μs blocks and the DEVM is measured for each symbol in the block. The pass criteria for this test are as follows.

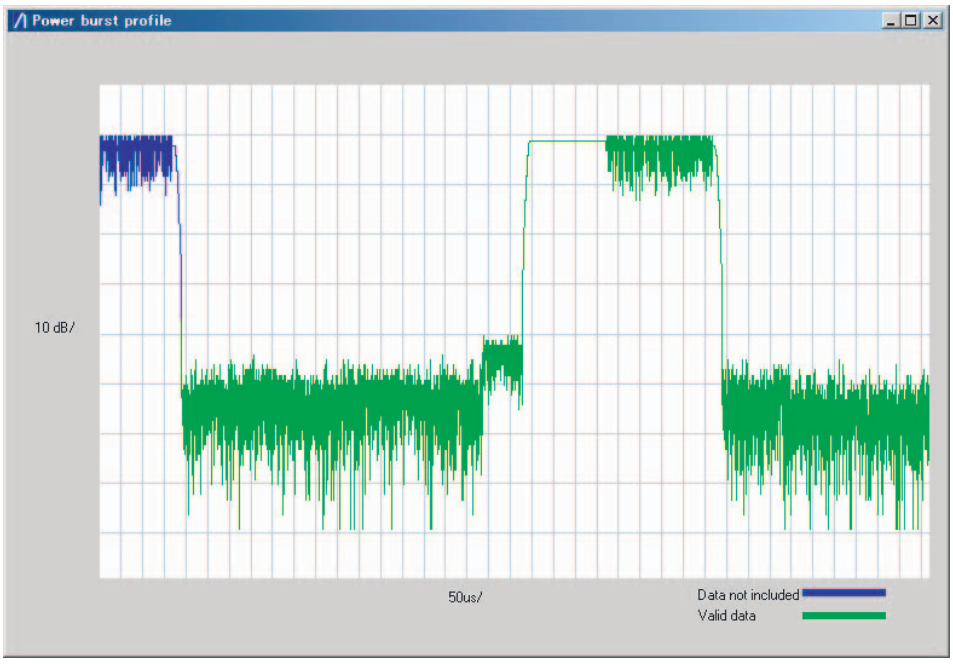
RMS DEVM < 20%, Peak DEVM <35% for 2Mbps payload.
RMS DEVM <13%,Peak DEVM <25% for 3Mbps payload.

99% of all symbols <30% DEVM for 2Mbps payload.
99% of all symbols <20% DEVM for 3Mbps payload.

Differential phase encoding (TP/TRM/CA/12C)

In this measurement the EUT transmits a packet with a defined PRBS9 payload. For each packet received the payload is demodulated and compared with the defined ideal packet to give a resultant symbol error value.

View Power Burst Profile for the Captured EDR packet



Example profile of a 2-DH1 EDR packet

Print and Save Results to a File

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ANRITSU Bluetooth EDR transmitter test results

Date :              20 May 2007
Time :              11:26

Bluetooth address :0x000091e6967e
Packet type :                        2-DH1

TP/TRM/CA/10/C Relative transmitter power test

Relative power :                   -1.0 dB      PASS
Guard interval :                    5.00 us     PASS

TP/TRM/CA/12/C EDR Differential Phase Encoding test

Total number of symbols :           216
symbols in errors :                 0

TP/TRM/CA/11/C EDR Carrier Frequency Stability and Modulation
Accuracy test

Carrier frequency stability (wi): -4.9 kHz      PASS
DEVM peak :                         13 %        PASS
DEVM 99% :                          12 %        PASS
Overall block status :                          PASS

Payload   | Freq error | Freq error | DEVM RMS  |
 Block    | (Wi+Wo)kHz |    (Wo)kHz |     %     |
-------------------------------------------------
    1     |    -4.9    |    -0.0    |     5     |
    2     |    -6.0    |    -1.2    |     6     |
    3     |    -4.3    |     0.6    |     6     |
-------------------------------------------------
```

TP/TRM/CA/10/C (EDR Relative Transmit Power)

Displayed results:	Differential power for GFSK to PSK modulation.
Measurement range:	+22 dBm to –35 dBm average power.
Accuracy:	± 0.2 dB for differential power < 6 dB (+17 dBm to -30 dBm average power)
Resoulution:	0.1 dB

TP/TRM/CA/11/C (EDR Carrier Frequency Stability and Modulation Accuracy)

Displayed results:	Carrier frequency stability (ω_1)
	Block frequency error (ω_o)
	Block frequency error (ω_o + ω_o)
	RMS DEVM for each payload block
	Peak DEVM for all payload symbols
	99% DEVM
	Guard band time
	Carrier frequency stability and block frequency error accuracy: MT885xA/B reference frequency oscillator error ± 1 kHz Maximum ω_1 error ± 40 kHz Carrier frequency stability and block frequency error resolution: 0.1 kHz DEVM accuracy: MT885xA/B receiver residual DEVM <5% RMS, π/4DQPSK and 8DPSK

TP/TRM/CA/12/C (EDR Differential Phase Encoding)

Displayed results:	Packet error analysis with display of number of failed symbols.

General

Packet types supported: 2-DH1, 2-DH3, 2-DH5, 3-DH1, 3-DH3, 3-DH5

Note

It is not necessary to have the IQ data output option to perform EDR measurements with MT8852B using a test mode connection.

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Ordering information:

Part number	Item
MX8850A-17	IQ data output

CE

Part number: 13000-00194 Rev. C June 2007