3. Testobject Data

3.1 General EUT Description

Equipment under Test:	Bluetooth (TM) Transceiver
Type Designation:	USB Adaptor II
Kind of Device: (optional)	
Voltage Type:	DC
Voltage level:	5V

General product description:

Bluetooth is a short-range radio link intended to be a cable replacement between portable and/or fixed electronic devices.

Bluetooth operates in the unlicensed ISM Band at 2.4 GHz. In the US a band of 83.5 MHz width is available. In this band, 79 RF channels spaced 1MHz apart are defined. The channel is represented by a pseudo-random hopping sequence through the 79 channels. The channel is devided into time slots, with a nominal slot length of 625µs, where each slot corresponds to different RF hop frequencies. The nominal hop rate is 1600 hops/s. All frequencies are equally used. The average time of occupancy is 0.3797 s within a 30 second period.
The symbol rate on the channel is 1 Ms/s.

The EUT provides the following ports:

Ports
USB port
Enclosure

The main components of EUT are listed and described in Chapter 3.2

3.2 EUT Main components:
Type, S/N, Short Descriptions etc. used in this Test Report

Short Description	Equipment under Test	Type Designation	Serial No.	HW Status	SW Status	Date of Receipt
EUT A	USB Transceiver	USB Adaptor II	-	BRBLU03-002A0-02	Firmware 16.4	11.11.2002
EUT A is equipped with an integrated antenna.						
EUT B	USB Transceiver	USB Adaptor II	-	BRBLU03-002A0-02	Firmware 16.4	11.11.2002
EUT B is equipped with a temporary antenna connector.						

NOTE: The short description is used to simplify the identification of the EUT in this test report

3.3 Ancillary Equipment

For the purposes of this test report, ancillary equipment is defined as equipment which is used in conjunction with the EUT to provide operational and control features to the EUT. It is necessary to configure the system in a typical fashion, as a customer would normally use it. But never the less Ancillary Equipment can influence the test results.

Short Description	Equipment under Test	Type Designation	HW Status	SW Status	Serial No.	FCC Id
AE 1	Laptop	IBM Thinkpad	-	-	-	-

3.4 EUT Setups

This chapter describes the combination of EUT's and ancillary equipment used for testing.

Setup No.	Combination of EUTs	Description
setup 1	EUT A + AE1	used for radiated measurements
setup 2	EUT B + AE1	used for conducted measurements

3.5 Operating Modes

This chapter describes the operating modes of the EUT's used for testing.

Op. Mode	Description of Operating Modes	Remarks
op-mode 1	TX mode, the EUT transmits continuously on 2402 MHz	
op-mode 2	TX mode, the EUT transmits continuously on 2441 MHz	
op-mode 3	TX mode, the EUT transmits continuously on 2480 MHz	
op-mode 4	inquiry mode	
op-mode 5	paging mode	
op-mode 6	10 neighbouring channels	The EUT is set to transmit on ten neighbouring channels one after the other to see the channel separation.

4. Test Results

4. 1 Occupied Bandwidth

Standard FCC Part 15, Subpart C 10-1-98

The test was performed according to: ANSI C63.4 1992

4.1.1 Test Description

The test set-up was made in accordance to the general provisions of ANSI C63.4-1992.

The Equipment Under Test (EUT) was setup in a shielded room to perform the occupied bandwidth measurements.

The reference level is the level of the highest amplitude signal observed from the transmitter at either the fundamental frequency or first-order modulation products in all typical modes of operation, including the unmodulated carrier, even if atypical.

The results recorded were measured with the modulation which produce the worst-case (widest) occupied bandwidth.

The resolution bandwidth for measuring the reference level and the occupied bandwidth was 10 kHz.

The reference level of the spectrum analyser was set equal to the reference level of the EUT.

4.1.2 Test Limits

FCC Part 15, Subpart C, §15.247 (a) (1) (ii)
(1) Frequency hopping systems operating in the 2400 - 2483.5 MHz band should use at least 75 hopping frequencies.
(2) The average time of occupancy on any frequency should not be greater than 0.4 seconds within a 30 second period.
(3) The maximum 20 dB bandwidth of the hopping channel is 1MHz.

4.1.3 Test Protocol

Temperature: 24 °C
Air Pressure: 1008 hPa
Humidity: 37 %

Op. Mode	Setup	Port	Test Parameter
op-mode 1	setup 2	temporary antenna connector	

20 dB Bandwidth MHz	Remarks
0,8384	Please see annex for the measurement plot.

Remark: none