

ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 15 SUBPART C REQUIREMENT

OF

Product Name: USB Dongle

Brand Name: DELTA

Model Name: DFBD-CR220, DFBD-CR22I, DFBD-CR22T,
DFBD-CR22I-LF00, DFBD-CR22I-LF01, BTF-D02,
BTF-D03, BTF-D04, BTF-D05, BTF-D06, BD-210, CM5000

Model Differences: Models are variant in exterior looks

FCC ID: H79DFBD-CR220

Report No.: ER/2005/10010-02

Issue Date: Apr. 06, 2005

FCC Rule Part: §15.247

Prepared for Delta Electronics, Inc.
252, Shang Ying Rd., Kuei San Taoyuan Hsien,
333, Taiwan, R.O.C.

Prepared by SGS Taiwan Ltd.
No. 134, Wu Kung Rd., Wuku Industrial Zone,
Taipei County, Taiwan.

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VERIFICATION OF COMPLIANCE

Applicant: Delta Electronics, Inc.
252, Shang Ying Rd., Kuei San Taoyuan Hsien, 333, Taiwan, R.O.C.

Equipment Under Test: USB Dongle

Brand Name: DELTA

FCC ID Number: H79DFBD-CR220

Model No.: DFBD-CR220, DFBD-CR22I, DFBD-CR22T, DFBD-CR22I-LF00, DFBD-CR22I-LF01, BTF-D02, BTF-D03, BTF-D04, BTF-D05, BTF-D06, BD-210, CM5000

Model Difference: Models are variant in exterior looks

File Number: ER/2005/10010-02

Date of test: Apr. 04, 2005 ~ Apr. 06, 2005

Date of EUT Received: Apr. 01, 2005

We hereby certify that:

The above equipment was tested by SGS Taiwan Ltd. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4 (2003) and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rules Part 15.247

The test results of this report relate only to the tested sample identified in this report.

Test By:

Sky Wang

Date

Apr. 06, 2005

Sky Wang

Approved By

Vincent Su

Date

Apr. 06, 2005

Vincent Su

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Version

Version No.	Date
00	Apr. 06, 2005

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1. GENERAL INFORMATION

1.1. Product Description

The DELTA ELECTRONICS, INC., Ltd. Model: DFBD-CR220, DFBD-CR22I, DFBD-CR22T, DFBD-CR22I-LF00, DFBD-CR22I-LF01, BTF-D02, BTF-D03, BTF-D04, BTF-D05, BTF-D06, BD-210, CM5000 (referred to as the EUT in this report) is Bluetooth USB Dongle.

A major technical descriptions of EUT is described as following:

- A). Operation Frequency: 2402 – 2480Hz, 79 channels
- B). Rated output power: 4.63 dBm
- C). Modulation type: GFSK
- D). Antenna Designation: Micro-strip Antenna, 1.24dBi, Non-User Replaceable (Fixed)
- E). Power Supply: Input: 5 Vdc from USB port.

1.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **H79DFBD-CR220** filing to comply with Section 15.247 of the FCC Part 15, Subpart C Rules. The composite system (receiver) is compliance with Subpart B is authorized under a Doc procedure.

1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures in ANSI C63.4 (2003). Radiated testing was performed at an antenna to EUT distance 3 meters.

1.4. Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and CISPR 22/EN 55022 requirements. Site No. 1(3 &10 meters) Registration Number: 94644, Anechoic chamber (3 meters) Registration Number: 573967

1.5. Special Accessories

Not available for this EUT intended for grant.

1.6. Equipment Modifications

Not available for this EUT intended for grant.

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2. SYSTEM TEST CONFIGURATION

2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2. EUT Exercise

The EUT (Transmitter) was operated in the engineering mode to fix the Tx frequency that was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 & 13 of ANSI C63.4-2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

2.3.2 Radiated Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter(EUT) was rotated through three orthogonal axes according to the requirements in Section 8 & 13 of ANSI C63.4-2003.

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2.4. Configuration of Tested System

Fig. 2-1 Configuration of Tested System

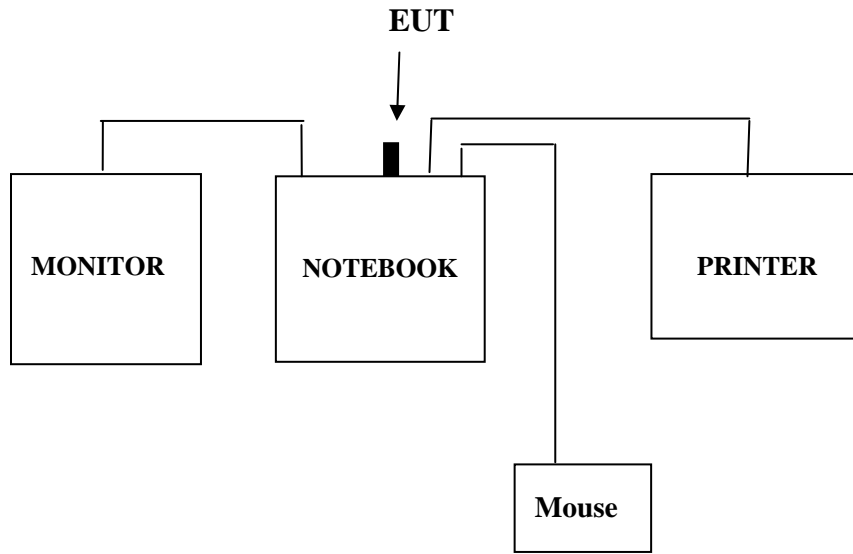


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/ Type No.	FCC ID	Series No.	Data Cable	Power Cord
1.	NOTBOOK	HP	723D	DOC	TW23420337	Shielding 1.8m	Un-shielding 1.2m
2.	PRINTER	HP	DJ640C	DOC	TH12Q110Y	Shielding 1.2m	N/A
3.	MONITOR	HP	HP1502	DOC	PE1233	Shielding 1.2m	N/A
4.	MOUSE	Microsoft	XQ913962	DOC	K023302209	N/A	Un-shielding 1.8m

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3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§15.247(b)(1)	Peak Output Power	Compliant

4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel low (2402MHz)、 mid (2441MHz) and high (2480MHz) with 741k highest data rate are chosen for peak output power.

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5. PEAK OUTPUT POWER MEASUREMENT

5.1. Standard Applicable

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 hopping channels, and all frequency hopping systems in the 5725-5850MHz band: 1Watt. For all other frequency hopping systems in the 2400 – 2483.5MHz band: 0.125 Watts.

5.2. Measurement Procedure

1. Place the EUT on the table and set it in transmitting mode.
2. Remove the antenna from the EUT and then connect a low loss RF cable from the antenna port to the power meter or spectrum. (Channel power function, RBW, VBW = 1MHz)
3. Record the max. reading.
4. Repeat above procedures until all frequency measured were complete.

5.3. Measurement Result

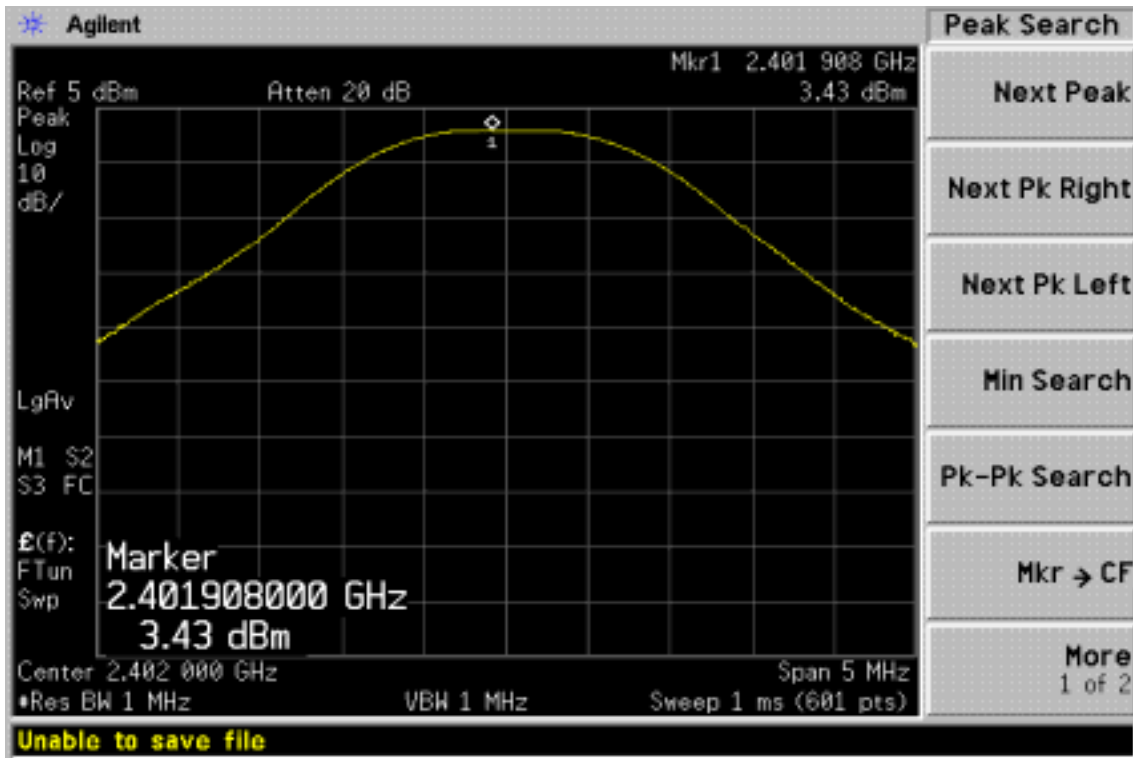
CH	Frequency (MHz)	Reading Power dBm	Cable Loss	Output Power dBm	Output Power W	Limit (W)
LOW	2402.00	3.43	1.20	4.63	0.00290	1
MID	2441.00	2.27	1.20	3.47	0.00222	1
HIGH	2480.00	1.07	1.20	2.27	0.00169	1

5.4. Measurement Equipment Used:

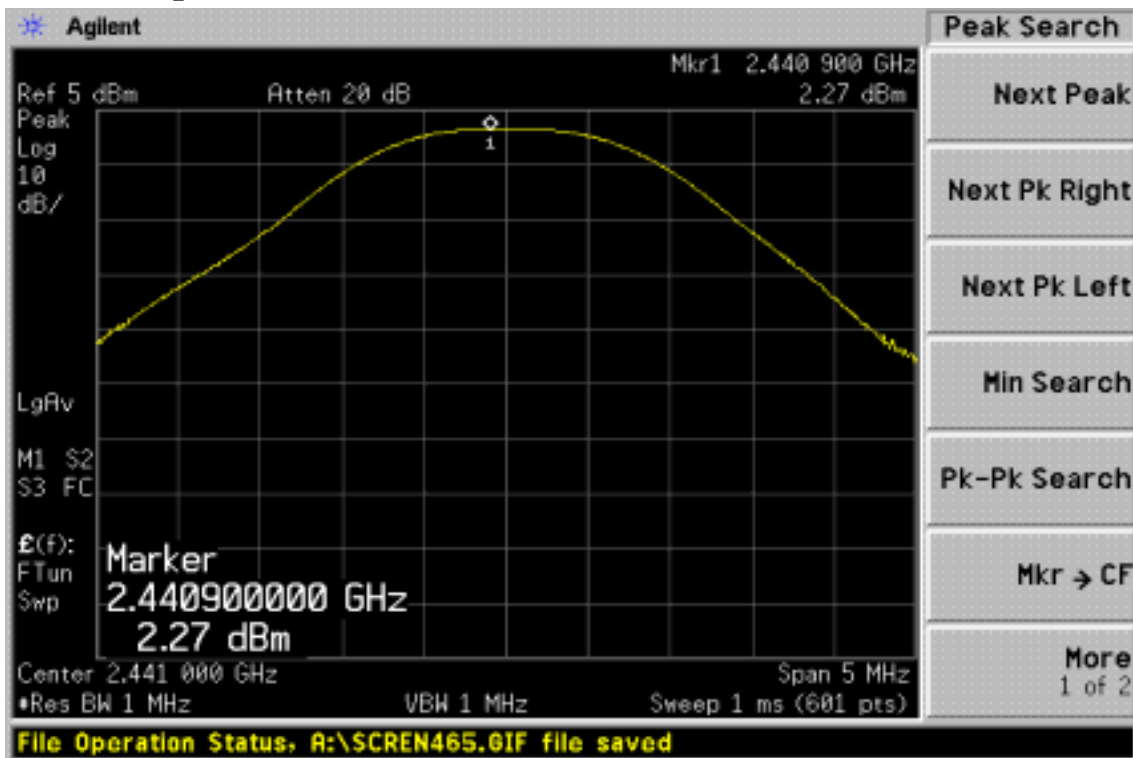
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	R&S	FSP 40	100034	05/27/2004	05/26/2005
Spectrum Analyzer	Agilent	E7405A	US41160416	08/27/2004	08/27/2005
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S6W5	N/A	10/07/2004	10/06/2005

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Peak Power Output Data Plot (CH Low)

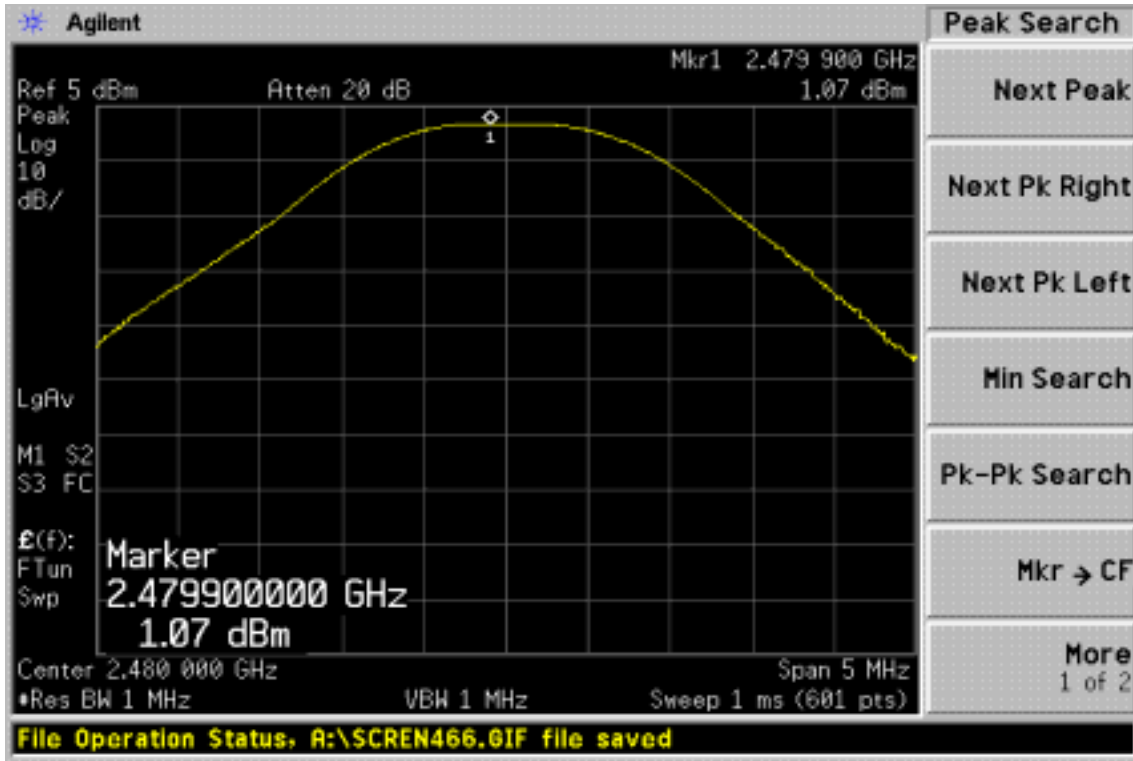


Peak Power Output Data Plot (CH Mid)



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Peak Power Output Data Plot (CH High)



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