



International Certification Corp.

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FCC RF Exposure Report

FCC ID : SQGBT800
Equipment : BTv4.0 Dual Mode USB HCI Module
refer to item 1.1 for more details
Model No. : BT800 refer to item 1.1 for more details
Brand Name : Laird Technologies
Applicant : Laird Technologies
Address : 11160 Thompson Ave. / Lenexa, Kansas / 66219 / USA
Standard : 47 CFR FCC Part 2.1093
Received Date : Jun. 25, 2013
Tested Date : Jun. 25 ~ Jul. 08, 2013

We, International Certification Corp., would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Approved & Reviewed by:



Gary Chang / Manager





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Release Record

Report No.	Version	Description	Issued Date
FA362601	Rev. 01	Initial issue	Aug. 09, 2013
FA362601	Rev. 02	Modified evaluation method	Aug. 13, 2013



1 EXPOSURE EVALUATION OF PORTABLE OR MOBILE DEVICES

Human exposure to RF emissions from portable devices (47 CFR §2.1093), as defined by the FCC, must be evaluated with respect to the FCC-adopted limits for SAR. Evaluation of mobile devices, as defined by the FCC, may also be performed with respect to SAR limits, but in such cases it is usually simpler and more cost-effective to evaluate compliance with respect to field strength or power density limits. For certain devices that are designed to be used in both mobile and portable configurations similar to those described in 47 CFR §2.1091(d)(4), such as certain desktop phones and wireless modem modules, compliance for mobile configurations is also satisfied when the same device is evaluated for SAR compliance in portable configurations.

1.1 PRODUCT DETAILS

The following models are provided to this EUT.

Model Name	Description	Difference
BT800	BTv4.0 Dual Mode USB HCI Module	---
BT810	BTv4.0 Dual Mode USB HCI Module (BG carrier board)	BT800 module mounted onto a PCB carrier board to change footprint – no other differences.
BT820	BTv4.0 Dual Mode USB Dongle	BT800 module mounted onto a carrier board with USB connector.
◆ The above models, model BT810 and BT820 were selected as representative ones for the radiated final test and only its data was recorded in this report.		



1.2 SAR TEST EXCLUSION THRESHOLD FOR 100MHz to 6GHz and $\leq 50\text{mm}$

Frequency (MHz)	5	10	15	20	25	Separation distance (mm)
150	39	77	116	155	194	SAR Test Exclusion Threshold (mW)
300	27	55	82	110	137	
450	22	45	67	89	112	
835	16	33	49	66	82	
900	16	32	47	63	79	
1500	12	24	37	49	61	
1900	11	22	33	44	54	
2450	10	19	29	38	48	
3600	8	16	24	32	40	
5200	7	13	20	26	33	
5400	6	13	19	26	32	
5800	6	12	19	25	31	

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0 \text{ for 1-g SAR and } \leq 7.5 \text{ for 10-g extremity SAR, where}$

- $f(\text{GHz})$ is the RF channel transmit frequency in GHz
- Power and distance are rounded to the nearest mW and mm before calculation
- The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion.



1.3 EVALUATION RESULTS

Frequency (MHz)	Maximum Conducted Average Power (dBm)	Maximum Conducted Average Power (mW)	Antenna Gain (dBi)
2480 (BT EDR)	7.94	6.22	0.5
2480 (BT LE)	7.61	5.77	0.5

[(max. power of channel, including tune-up tolerance, mW)/(min. test separation distance, mm)] * [$\sqrt{f(\text{GHz})}$]
=6.22 / 5 * $\sqrt{2.48} = 1.96 < 3.0$

SAR Test Exclusion Thresholds is < 10mW and 3.0 for separation distance 5mm. Therefore, SAR test is not required.

==END==