

Gibson Guitar Corporation

ADDENDUM TO TEST REPORT 91250-12A

Bluecore4 Module: Rayson BTM-160 Bluetooth Module

Tested To The Following Standards:

FCC Part 15 Subpart C Section 15.207, 15.247
and
RSS-210 Issue 8

Report No.: 91250-12B

Date of issue: May 18, 2011



TESTING
CERT #803.01, 803.02,
803.05, 803.06

This test report bears the accreditation symbol indicating that the testing performed herein meets the test and reporting requirements of ISO/IEC 17025 under the applicable scope of EMC testing for CKC Laboratories, Inc.

We strive to create long-term, trust based relationships by providing sound, adaptive, customer first testing services. We embrace each of our customers' unique EMC challenges, not as an interruption to set processes, but rather as the reason we are in business.

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ADMINISTRATIVE INFORMATION

Test Report Information

REPORT PREPARED FOR:

Gibson Guitar Corporation
309 Plus Park Blvd.
Nashville, TN 97217

Representative: Milo Street
Customer Reference Number: 000076720

DATE OF EQUIPMENT RECEIPT:**DATE(S) OF TESTING:****REPORT PREPARED BY:**

Joyce Walker
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Project Number: 91250

October 4, 2010

October 4-18, 2010

April 6, 2011

Revision History

Original: To perform the testing of the Bluecore4 Module: Rayson BTM-160 Bluetooth Module with the requirements for FCC Part 15 Subpart C Section 15.247 and RSS-210 Issue 7 devices.

Addendum A: To add FCC Part 15 Subpart C Section 15.209 AC Conducted Emissions test data of the Bluecore4 Module: Rayson BTM-160 Bluetooth Module performed April 6, 2011. To replace original test data FCC 15.247(b)(2)_RF Power data with new FCC 15.247(b)(2)_RF Power test data.

Addendum B: In the Bandedge testing sections a horn antenna has been added to the equipment list that had been left off in error.

Report Authorization

The test data contained in this report documents the observed testing parameters pertaining to and are relevant for only the sample equipment tested in the agreed upon operational mode(s) and configuration(s) as identified herein. Compliance assessment remains the client's responsibility. This report may not be used to claim product endorsement by A2LA or any government agencies. This test report has been authorized for release under quality control from CKC Laboratories, Inc.

A handwritten signature in black ink that reads "Steve Behm".

Steve Behm
Director of Quality Assurance & Engineering Services
CKC Laboratories, Inc.

Test Facility Information



Our laboratories are configured to effectively test a wide variety of product types. CKC utilizes first class test equipment, anechoic chambers, data acquisition and information services to create accurate, repeatable and affordable test results.

TEST LOCATION(S):
CKC Laboratories, Inc.
110 Olinda Place
Brea, CA 92823

Site Registration & Accreditation Information

Location	JAPAN	CANADA	FCC
Brea A	R-2945, C-3248 & T-1572	3082D-1	90473

SUMMARY OF RESULTS

Standard / Specification: FCC Part 15 Subpart C Section 15.207, 15.247 and RSS2-10 Issue 8

Description	Test Procedure/Method	Results
AC Conducted Emissions	FCC Part 15 Subpart C Section 15.207	Pass
Frequency Separation	FCC Part 15 Subpart C Section 15.247(a)(1) / DA 00-705	Pass
Average Time of Occupancy	FCC Part 15 Subpart C Section 15.247(a)(1)(iii) / DA 00-705	Pass
RF Power Output	FCC Part 15 Subpart C Section 15.247(b)(2) / DA 00-705	Pass
Spurious Emissions	FCC Part 15 Subpart C Section 15.247(d) / DA 00-705	Pass
Bandedge	ITU-R 55/1 & DA 00-705	Pass
99% Bandwidth	RSS-210	Pass

Conditions During Testing

This list is a summary of the conditions noted for or modifications made to the equipment during testing.

Summary of Conditions
None

EQUIPMENT UNDER TEST (EUT)

The following model has been tested by CKC Laboratories: **Bluetooth Module, BTM 160**

Since the time of testing the product name has been changed to **Bluecore4 Module: Rayson BTM-160 Bluetooth Module**. Any differences between the names do not affect their EMC characteristics and therefore meets the level of testing equivalent to the tested model name shown on the data sheets.

Bluetooth Module

Manuf: Rayson Technology Corporation, LTD

Model: BTM 160

Serial: NA

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Laptop

Manuf: Acer

Model: 5741-15763

Serial: LXPW002025016349DF1601

DC Power Supply

Manuf: Topward

Model: 6306

Serial: 988614

FCC PART 15 SUBPART C

This report contains EMC emissions test results under United States Federal Communications Commission (FCC) 47 CFR 15C requirements for Unlicensed Radio Frequency Devices, Subpart C - Intentional Radiators.

15.207 AC Conducted Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**

Specification: **15.207 AC Mains - Quasi-peak**

Work Order #: **91250**

Date: 4/6/2011

Test Type: **Conducted Emissions**

Time: 12:38:23 PM

Equipment: **Bluetooth Module**

Sequence#: 7

Manufacturer: Rayson Technology Corporation, LTD

Tested By: E. Wong

Model: BTM 160

110V 60Hz

S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/12/2011	2/12/2013
T1	ANP06085	Attenuator	SA18N10W-09	12/8/2010	12/8/2012
T2	ANP01910	Cable	RG-142	3/19/2010	3/19/2012
T3	AN02343	High Pass Filter	HE9615-150K-50-720B	1/4/2011	1/4/2013
T4	AN00848.1	50uH LISN-Line 1 (dB)	3816/2nm	3/22/2011	3/22/2013
	AN00848.1	50uH LISN-Line 2 (dB)	3816/2nm	3/22/2011	3/22/2013

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Corporation, LTD	BTM 160	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

The EUT seeking limited modular approval is soldered on a unpopulated PCB placed on the wooden table

Freq 2402-2480
Tx = 2441 MHz
Firmware Setting (ext, int) = 255, 62
Measure power = 4.86dBm (0.003W)
Rx=idle
Three different antenna of the same type can used with the device: Bohua_BH051 (2dBi) Pulse W1010 (2dBi) and Pulse W1038 (4.9dBi)

The test is performed with the highest gain antenna, Pulse W1038 (4.9dBi)

SPI port is connected to remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.

AC conducted emission measured at AC port of the support power supply.

18°C, 69% Relative Humidity

Frequency range of measurement = 150kHz- 30 MHz.
150kHz- 30 MHz. ;RBW=9 kHz, VBW= 9kHz

Ext Attn: 0 dB

Measurement Data:

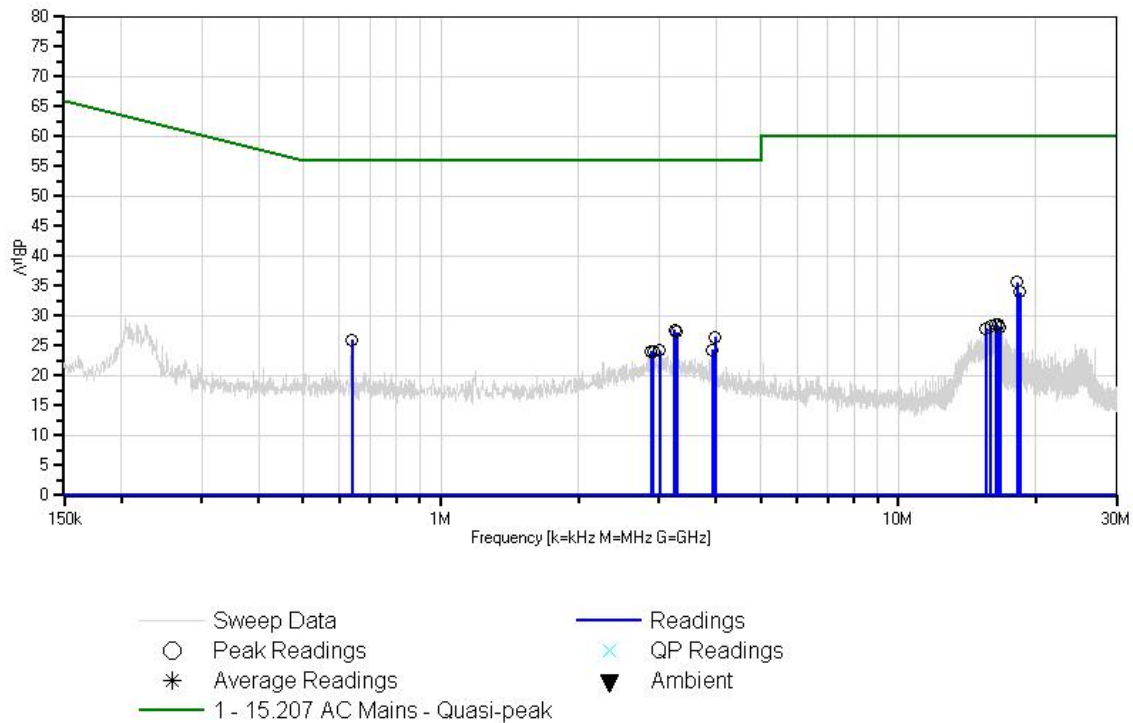
Reading listed by margin.

Test Lead: Black

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	18.166M	28.4	+5.8	+0.4	+0.3	+0.8	+0.0	35.7	50.0	-14.3	Black
2	18.454M	26.6	+5.8	+0.4	+0.3	+0.9	+0.0	34.0	50.0	-16.0	Black
3	3.242M	21.5	+5.7	+0.2	+0.2	+0.1	+0.0	27.7	46.0	-18.3	Black
4	3.276M	21.1	+5.7	+0.2	+0.2	+0.1	+0.0	27.3	46.0	-18.7	Black
5	3.982M	20.3	+5.7	+0.2	+0.2	+0.1	+0.0	26.5	46.0	-19.5	Black
6	639.410k	19.8	+5.7	+0.1	+0.3	+0.1	+0.0	26.0	46.0	-20.0	Black
7	16.319M	21.6	+5.7	+0.3	+0.3	+0.7	+0.0	28.6	50.0	-21.4	Black
8	16.508M	21.5	+5.7	+0.3	+0.3	+0.7	+0.0	28.5	50.0	-21.5	Black
9	15.941M	21.4	+5.7	+0.3	+0.3	+0.7	+0.0	28.4	50.0	-21.6	Black
10	3.926M	18.1	+5.7	+0.2	+0.2	+0.1	+0.0	24.3	46.0	-21.7	Black
11	3.012M	18.0	+5.7	+0.2	+0.2	+0.1	+0.0	24.2	46.0	-21.8	Black
12	2.880M	17.9	+5.7	+0.2	+0.2	+0.1	+0.0	24.1	46.0	-21.9	Black

13	16.697M	21.1	+5.7	+0.3	+0.3	+0.7	+0.0	28.1	50.0	-21.9	Black
14	2.919M	17.8	+5.7	+0.2	+0.2	+0.1	+0.0	24.0	46.0	-22.0	Black
15	15.562M	21.0	+5.7	+0.3	+0.3	+0.6	+0.0	27.9	50.0	-22.1	Black

CKC Laboratories, Inc Date: 4/6/2011 Time: 12:38:23 PM Gibson Guitar Corporation WO#: 91250
15.207 AC Mains - Quasi-peak Test Lead: Black 110V 60Hz Sequence#: 7 Ext ATTN: 0 dB



Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**
 Specification: **15.107 AC Mains Class B - Average**
 Work Order #: **91250**
 Test Type: **Conducted Emissions**
 Equipment: **Bluetooth Module**
 Manufacturer: **Rayson Technology Corporation, LTD**
 Model: **BTM 160**
 S/N: **NA**

Date: 4/6/2011
 Time: 12:42:27 PM
 Sequence#: 8
 Tested By: E. Wong
 110V 60Hz

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/12/2011	2/12/2013
T1	ANP06085	Attenuator	SA18N10W-09	12/8/2010	12/8/2012
T2	ANP01910	Cable	RG-142	3/19/2010	3/19/2012
T3	AN02343	High Pass Filter	HE9615-150K-50-720B	1/4/2011	1/4/2013
	AN00848.1	50uH LISN-Line 1 (dB)	3816/2nm	3/22/2011	3/22/2013
T4	AN00848.1	50uH LISN-Line 2 (dB)	3816/2nm	3/22/2011	3/22/2013

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Corporation, LTD	BTM 160	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

The EUT seeking limited modular approval is soldered on a unpopulated PCB placed on the wooden table

Freq 2402-2480
 Tx = 2441 MHz
 Firmware Setting (ext, int) = 255, 62
 Measure power = 4.86dBm (0.003W)
 Rx=idle
 Three different antenna of the same type can used with the device: Bohua_BH051 (2dBi) Pulse W1010 (2dBi) and Pulse W1038 (4.9dBi)

The test is performed with the highest gain antenna, Pulse W1038 (4.9dBi)

SPI port is connected to remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.

AC conducted emission measured at AC port of the support power supply.

18°C, 69% Relative Humidity

Frequency range of measurement = 150kHz- 30 MHz.
 150kHz- 30 MHz. ;RBW=9 kHz, VBW= 9kHz

Ext Attn: 0 dB

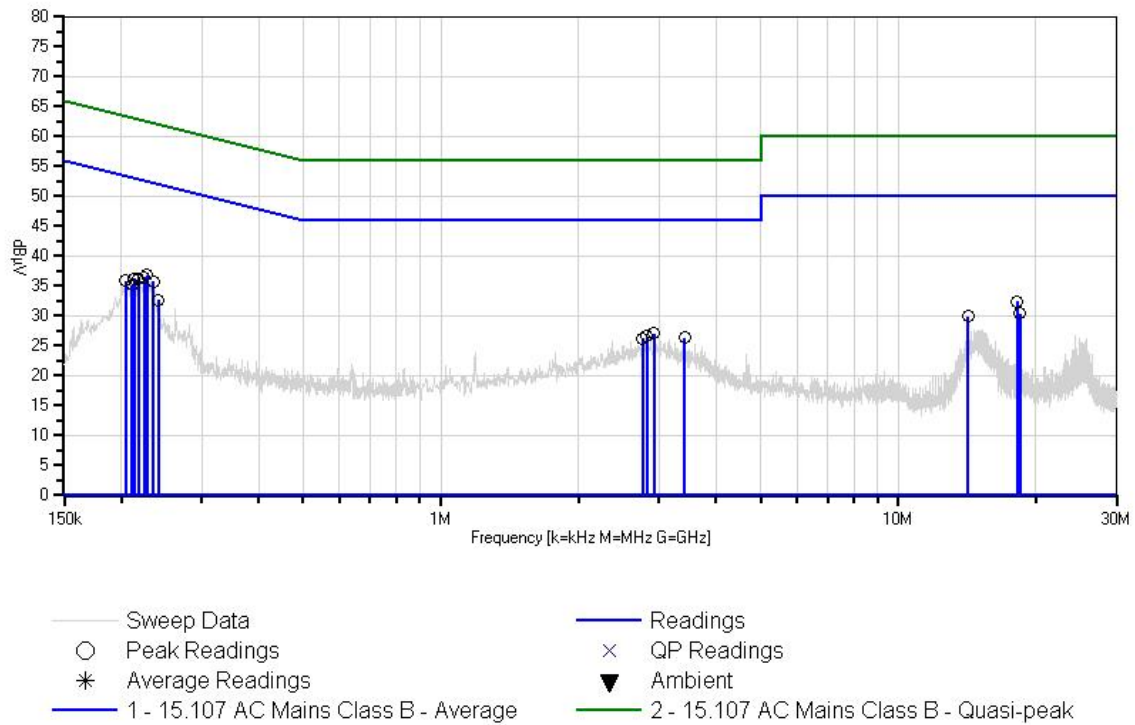
Measurement Data:

Reading listed by margin.

Test Lead: White

#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	T4 dB	Dist Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	227.811k	30.8	+5.7	+0.1	+0.1	+0.2	+0.0	36.9	52.5	-15.6	White
2	224.902k	30.4	+5.7	+0.1	+0.1	+0.2	+0.0	36.5	52.6	-16.1	White
3	235.083k	29.7	+5.7	+0.1	+0.1	+0.2	+0.0	35.8	52.3	-16.5	White
4	218.357k	30.0	+5.7	+0.1	+0.1	+0.2	+0.0	36.1	52.9	-16.8	White
5	213.267k	30.1	+5.7	+0.1	+0.1	+0.2	+0.0	36.2	53.1	-16.9	White
6	204.540k	29.8	+5.7	+0.1	+0.1	+0.2	+0.0	35.9	53.4	-17.5	White
7	18.166M	24.9	+5.8	+0.4	+0.3	+1.0	+0.0	32.4	50.0	-17.6	White
8	211.085k	29.1	+5.7	+0.1	+0.1	+0.2	+0.0	35.2	53.2	-18.0	White
9	2.927M	20.8	+5.7	+0.2	+0.2	+0.2	+0.0	27.1	46.0	-18.9	White
10	240.901k	26.6	+5.7	+0.1	+0.1	+0.2	+0.0	32.7	52.1	-19.4	White
11	2.825M	20.3	+5.7	+0.2	+0.2	+0.2	+0.0	26.6	46.0	-19.4	White
12	3.412M	20.1	+5.7	+0.2	+0.2	+0.2	+0.0	26.4	46.0	-19.6	White
13	18.454M	22.9	+5.8	+0.4	+0.3	+1.0	+0.0	30.4	50.0	-19.6	White
14	2.765M	20.0	+5.7	+0.2	+0.2	+0.2	+0.0	26.3	46.0	-19.7	White
15	14.211M	22.9	+5.7	+0.3	+0.3	+0.7	+0.0	29.9	50.0	-20.1	White

CKC Laboratories, Inc Date: 4/6/2011 Time: 12:42:27 PM Gibson Guitar Corporation WO#: 91250
 15.107 AC Mains Class B - Average Test Lead: White 110V 60Hz Sequence#: 8 Ext ATTN: 0 dB



Test Setup Photos



15.247(a)(1) Frequency Separation

Test Data Sheets

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**
 Specification: **15.247 (a)(1) Frequency separation**
 Work Order #: **91250**
 Test Type: **Conducted**
 Equipment: **Bluetooth Module**
 Manufacturer: Rayson Technology Company, LTD
 Model: BTM 160
 S/N: NA

Date: 10/15/2010
 Time: 10:29:29
 Sequence#: 4
 Tested By: E. Wong

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
	AN03174	36" 40GHz cable	NA	10/28/2009	10/28/2011

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Company, LTD	BTM 160	NA

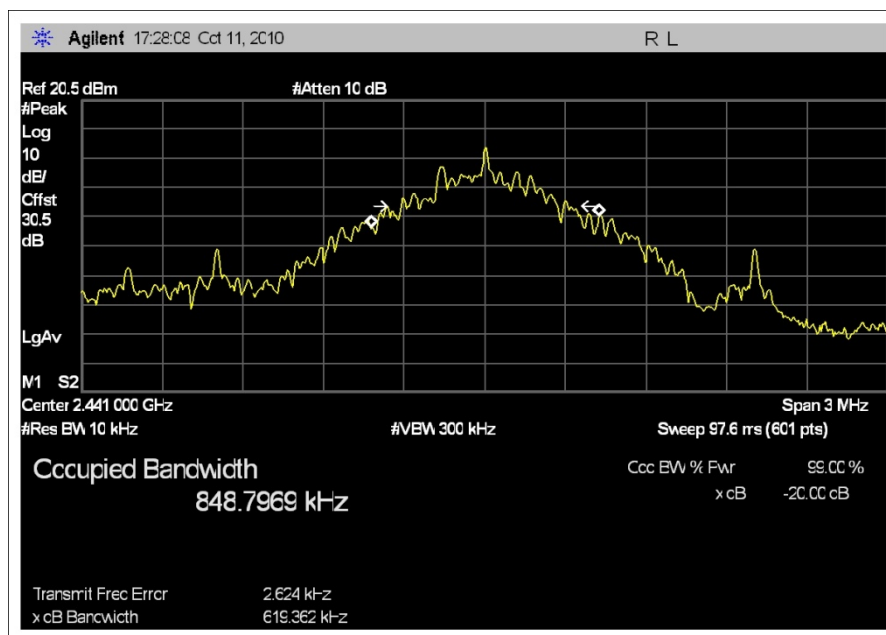
Support Devices:

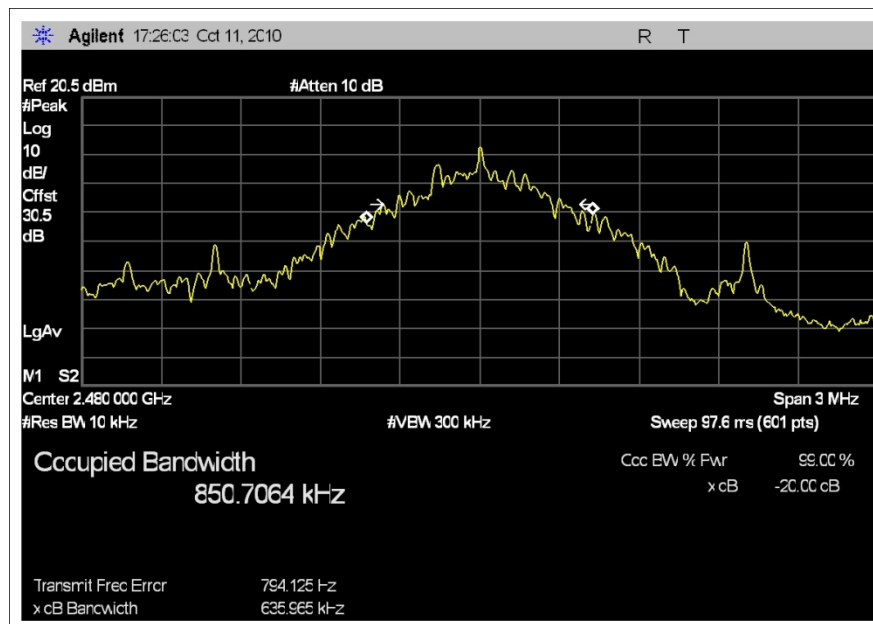
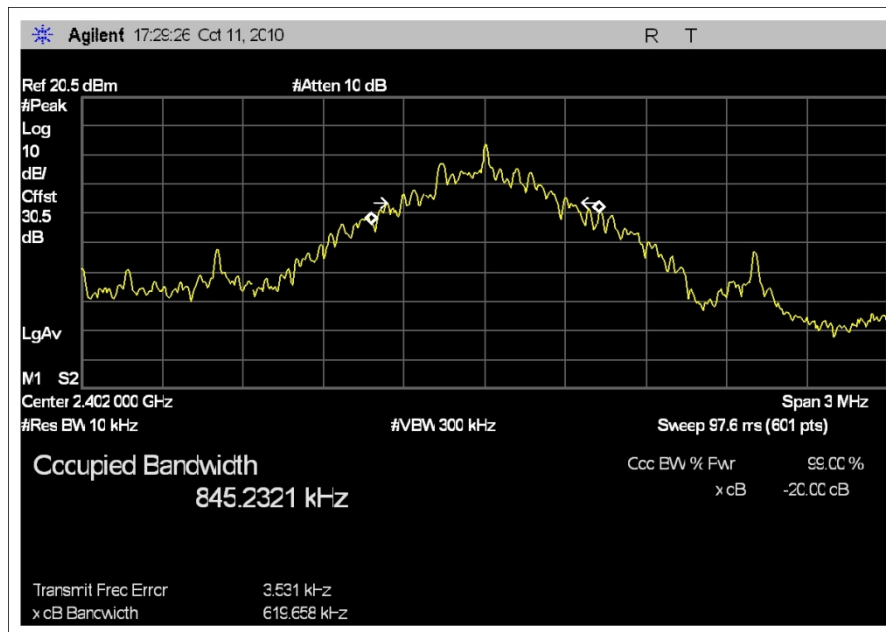
Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

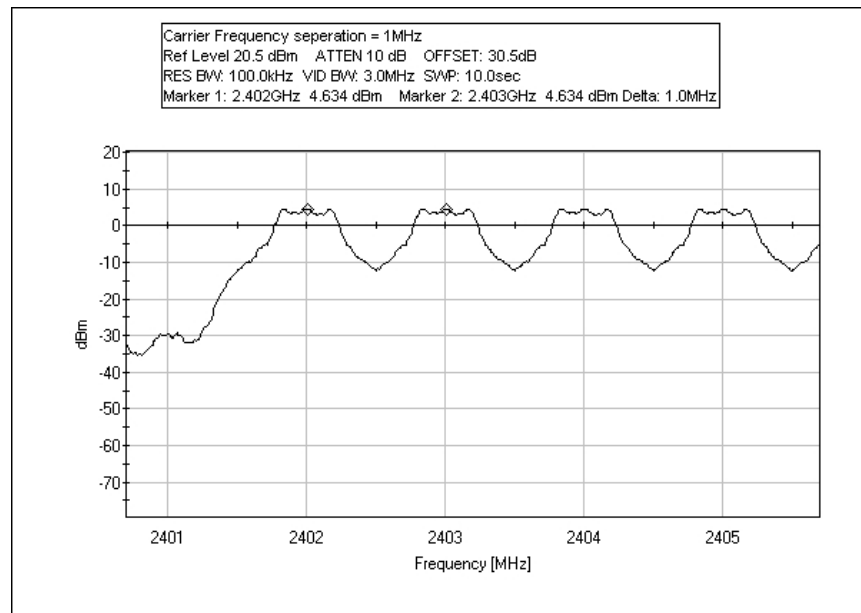
Test Conditions / Notes:

The EUT seeking limited modular approval is soldered on an unpopulated PCB placed on the test bench.
 Freq 2402-2480
 Tx = 2402 MHz, 2441 MHz, 2480 MHz
 Firmware Setting (ext, int) = 255, 62
 Measure power = 4.93dBm, 4.86dBm, 4.15dBm (0.003W)
 SPI port is connected to a remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.
 Evaluation performed at the antenna port.
 15.31(e) The battery powered device obtains 7.4V DC from a support power supply to simulate the usage of a new battery.
 26°C and 47% Relative Humidity

1) *Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater*

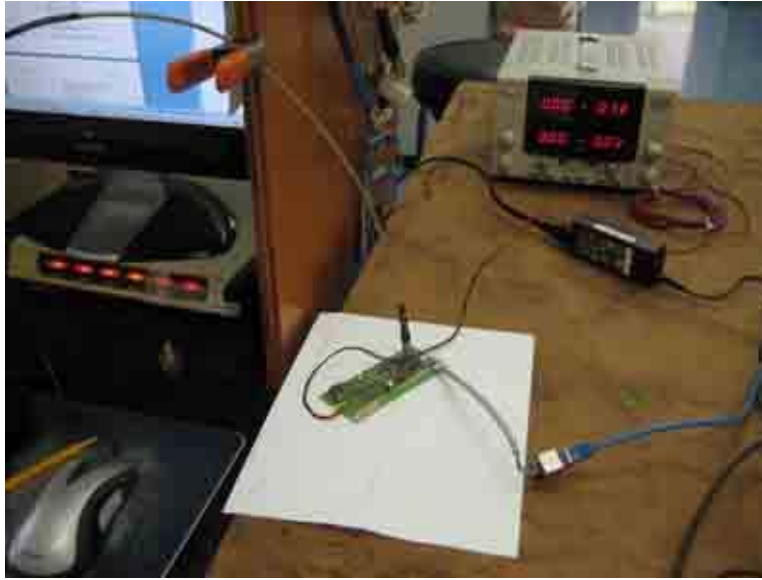






Results: Measure Maximum -20dB BW= 640kHz, measured Channel separation = 1 MHz

Test Setup Photos



15.247(a)(1)(iii) Average Time of Occupancy

Test Data Sheets

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**

Specification: **15.247 (a)(1)(iii) Average occupancy time.**

Work Order #: **91250**

Date: 10/15/2010

Test Type: **Conducted**

Time: 10:29:29

Equipment: **Bluetooth Module**

Sequence#: 4

Manufacturer: Rayson Technology Company, LTD

Tested By: E. Wong

Model: BTM 160

S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
	AN03174	36" 40GHz cable	NA	10/28/2009	10/28/2011

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Company, LTD	BTM 160	NA

Support Devices:

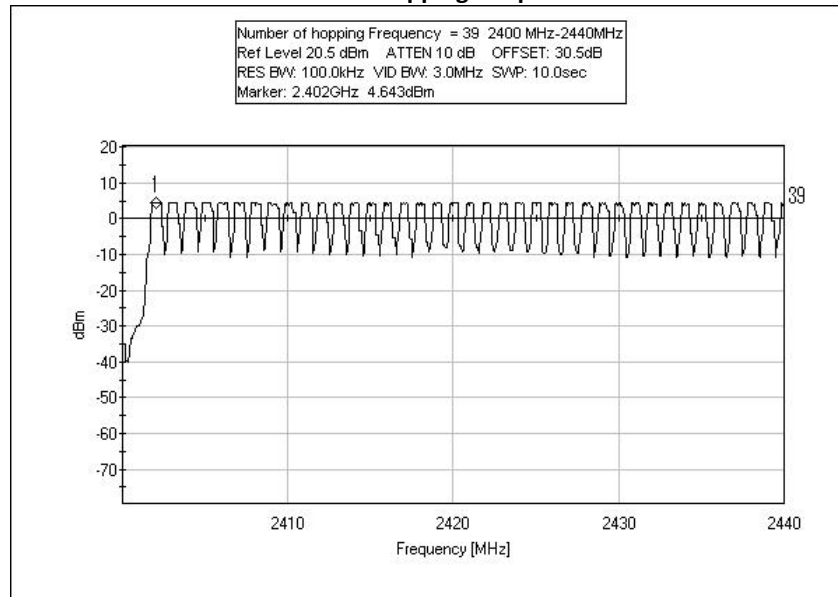
Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

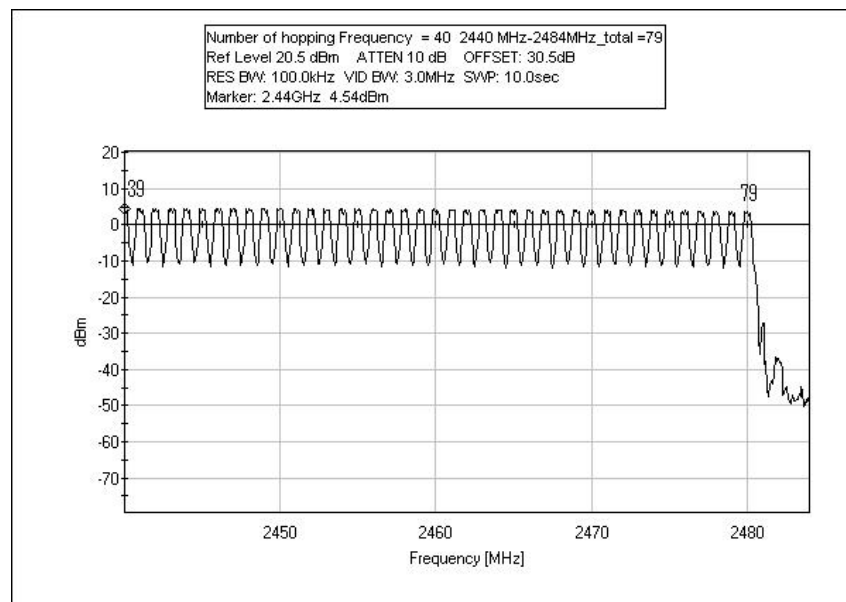
The EUT seeking limited modular approval is soldered on an unpopulated PCB placed on the test bench.
 Freq 2402-2480
 Tx = 2402 MHz, 2441 MHz, 2480 MHz
 Firmware Setting (ext, int) = 255, 62
 Measure power = 4.93dBm, 4.86dBm, 4.15dBm (0.003W)
 Receiver circuit is not active.
 SPI port is connected to remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.
 Evaluation performed at eth antenna port.
 15.31(e) The battery powered device obtains 7.4V DC from a support power supply to simulate the usage of a new battery.
 26°C and 47% Relative Humidity

(iii) Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

Number of Hopping Frequencies

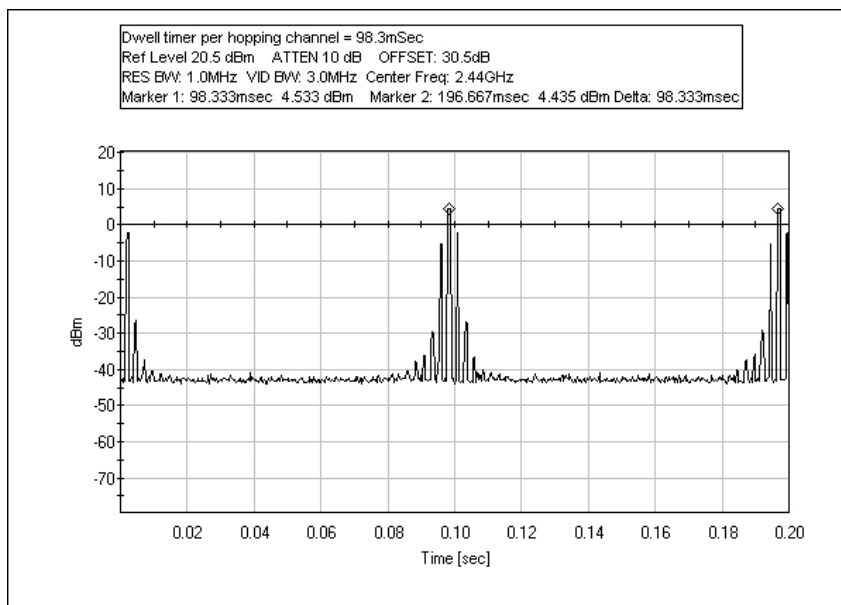


Number of Hopping Frequencies 1 = 39

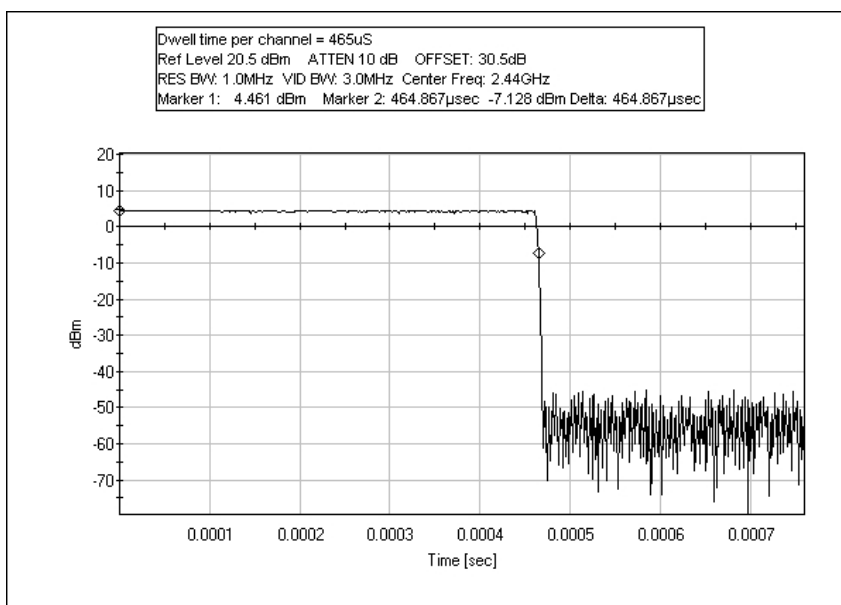


Number of Hopping Frequencies 2 = 40

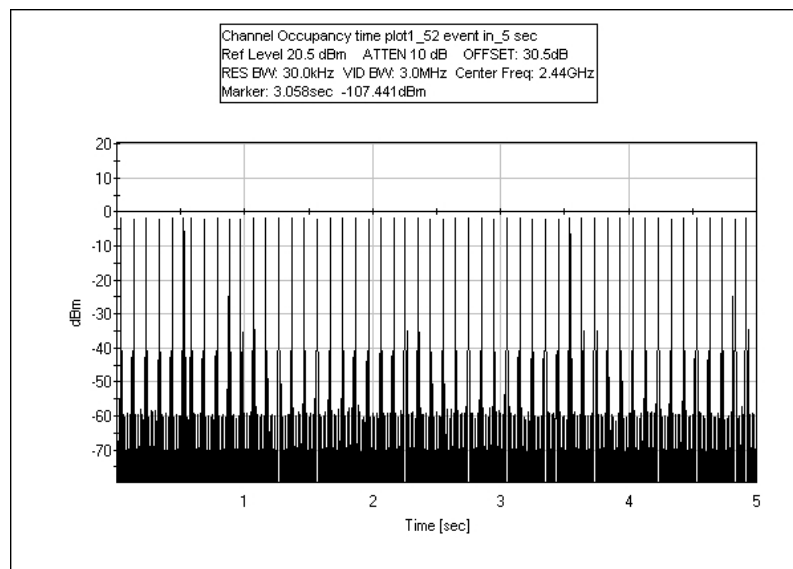
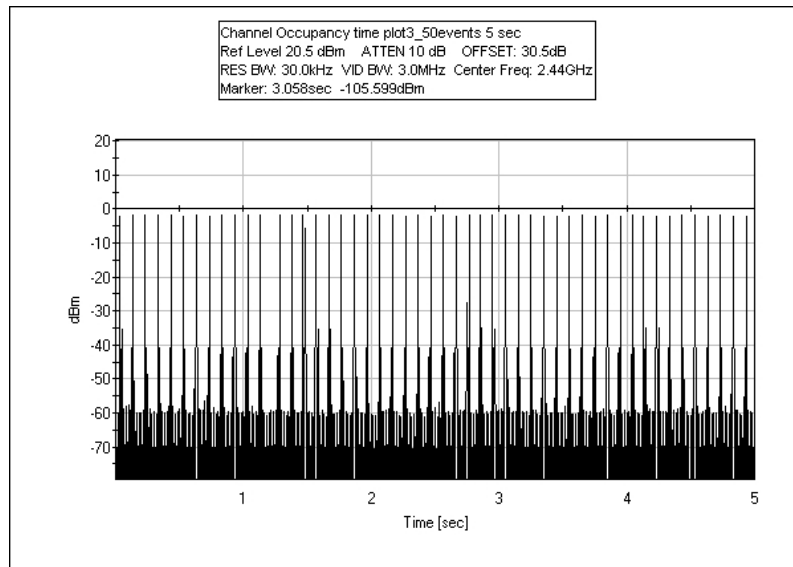
Total Number of Hopping Frequency/Channel = 79

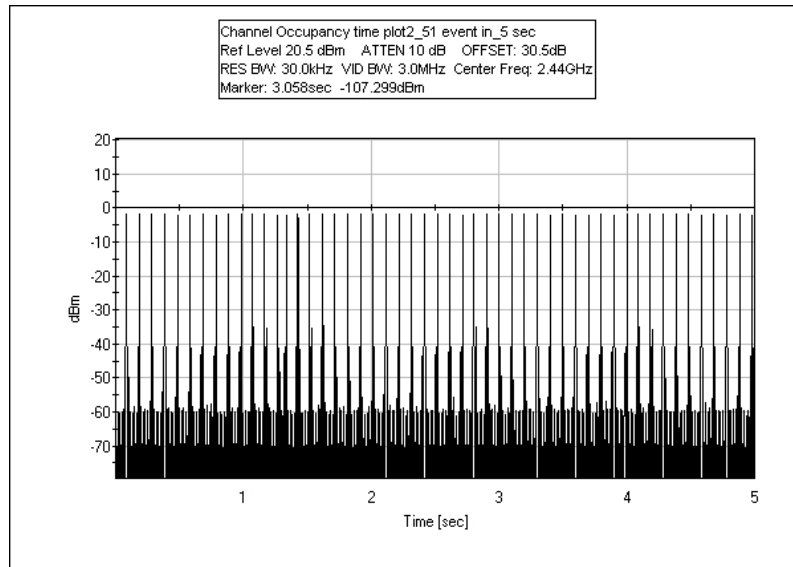


Dwell Time Per Hopping Channel



Dwell Time Per Channel = 465uS





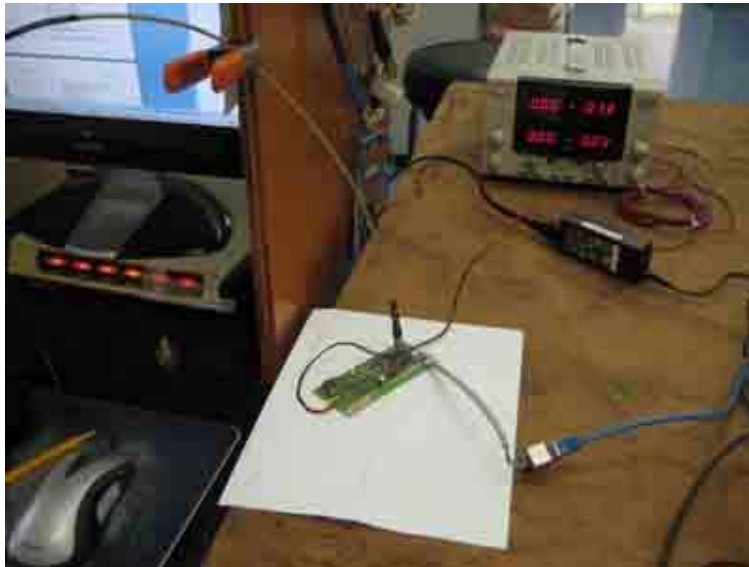
Average 51 events per 5 sec.

51 events/ 5sec = 10.2 events per sec.

0.4 sec x 79 channel = 31.6 sec.

In 31.6 sec, there are 31.6 sec x 10.2 event/sec x 465uS = 0.15 Sec

Test Setup Photos



15.247(b)(2) RF Power Output

Test Data Sheets

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**
Specification: **15.247 (B)(1) RF Output power**

Work Order #: **91250**

Date: 10/15/2010

Test Type: **Conducted**

Time: 10:29:29

Equipment: **Bluetooth Module**

Sequence#: 4

Manufacturer: Rayson Technology Corporation, LTD

Tested By: E. Wong

Model: BTM 160

S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
	AN03174	36" 40GHz cable	NA	10/28/2009	10/28/2011

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Corporation, LTD	BTM 160	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

The EUT seeking limited modular approval is soldered on an unpopulated PCB placed on the test bench.
Freq 2402-2480
Tx = 2402 MHz, 2441 MHz, 2480 MHz
Firmware Setting (ext, int) = 255, 62
Measure power = 4.93dBm, 4.86dBm, 4.15dBm (0.003W)
SPI port is connected to remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.
Evaluation performed at the antenna port.

15.31(e) The battery powered device obtains 7.4V DC from a support power supply to simulate the usage of a new battery.

26°C, 47% Relative Humidity

Additional 15.31 (e) compliances: the 3.3 V supply voltage was varied between 85% and 115% of the nominal rated supply voltage, no change in power level was observed.

(b) The maximum peak conducted output power of the intentional radiator shall not exceed the following:

(1) For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725-5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts.

Test method, FCC document DA 00-705

Result

2402 MHz	4.93dBm	0.003W
2441 MHz	4.86dBm	0.003W
2480 MHz	4.15dBm	0.003W

Test Setup Photos



15.247(d) Spurious Emissions

Test Data Sheets

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**

Specification: **FCC 15.247 (d) (FCC 15.209)**

Work Order #: **91250**

Date: 10/14/2010

Test Type: **Radiated Scan**

Time: 15:44:09

Equipment: **Bluetooth Module**

Sequence#: 1

Manufacturer: Rayson Technology Company, LTD

Tested By: E. Wong

Model: BTM 160

S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
T2	AN00309	Preamp	8447D	5/7/2010	5/7/2012
T3	AN01995	Biconilog Antenna	CBL6111C	3/8/2010	3/8/2012
T4	ANP05050	Cable	RG223/U	4/16/2009	4/16/2011
T5	ANP05198	Cable	8268	1/5/2009	1/5/2011
T6	AN00849	Horn Antenna	3115	4/23/2010	4/23/2012
T7	AN00786	Preamp	83017A	8/5/2010	8/5/2012
T8	AN02948	Cable	32022-2-2909K-24TC	9/21/2009	9/21/2011
T9	ANP05565	Cable	ANDL-1-PNMN-54	9/3/2010	9/3/2012
	AN01413	Horn Antenna	84125-80008	11/13/2008	11/13/2010
	AN00314	Loop Antenna	6502	6/30/2010	6/30/2012
T10	AN02744	High Pass Filter	11SH10-3000/T10000-O/O	3/5/2010	3/5/2012
T11	AN02746	Low Pass Filter	11SL10-2000/U6000-O/O	11/20/2009	11/20/2011

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Company, LTD	BTM 160	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

The EUT (limited modular approval) is soldered on an unpopulated PCB placed on the wooden table lined with Styrofoam of 10 cm in thickness.
 Freq 2402-2480
 Tx = 2402 MHz, 2441 MHz, 2480 MHz
 Firmware Setting (ext, int) = 255, 62
 Measure power = 4.93dBm, 4.86dBm, 4.15dBm (0.003W)
 Receiver circuit is not active.
 Three different antenna of the same type can be used with the device; Bohua_BH051 (2dBi), Pulse W1010 (2dBi) and Pulse W1038 (4.9dBi)
 The test is performed with antenna: Pulse W1038 (4.9dBi)
 SPI port is connected to a remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.
 Emissions profile with the product and the antenna rotated along its three orthogonal axes was evaluated. Reported data is the worst case emissions.
 15.31(e) The battery powered device obtains 7.4V DC from a support power supply to simulate the usage of a new battery.
 26°C & 47% relative humidity
 Frequency range of measurement = 9 kHz- 25 GHz.
 9 kHz -150 kHz; RBW=200 Hz, VBW=200 Hz;150 kHz-30 MHz; RBW=9 kHz, VBW=9 kHz;30 MHz-1000 MHz; RBW=120 kHz, VBW=120 kHz,1000 MHz-2500 MHz; RBW=1 MHz, VBW=1 MHz.

Ext Attn: 0 dB

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6 T10	T3 T7 T11	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	1627.960M	61.0	+0.0	+0.0	+0.0	+0.0	+0.0	52.1	54.0	-1.9	Vert
	Ave		+0.0	+26.1	-38.2	+0.4			Y		
			+2.4	+0.0	+0.4						
2	1628.000M	60.2	+0.0	+0.0	+0.0	+0.0	+0.0	51.3	54.0	-2.7	Vert
	Ave		+0.0	+26.1	-38.2	+0.4			Z		
			+2.4	+0.0	+0.4						
3	1628.073M	59.6	+0.0	+0.0	+0.0	+0.0	+0.0	50.7	54.0	-3.3	Horiz
	Ave		+0.0	+26.1	-38.2	+0.4			X		
			+2.4	+0.0	+0.4						
4	1601.977M	58.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.2	54.0	-4.8	Horiz
	Ave		+0.0	+25.9	-38.2	+0.4			Y		
			+2.4	+0.0	+0.3						
5	1601.984M	58.4	+0.0	+0.0	+0.0	+0.0	+0.0	49.2	54.0	-4.8	Vert
	Ave		+0.0	+25.9	-38.2	+0.4			Y		
			+2.4	+0.0	+0.3						
6	1653.983M	57.9	+0.0	+0.0	+0.0	+0.0	+0.0	49.1	54.0	-4.9	Horiz
	Ave		+0.0	+26.2	-38.2	+0.4			X		
			+2.4	+0.0	+0.4						
7	1653.985M	57.9	+0.0	+0.0	+0.0	+0.0	+0.0	49.1	54.0	-4.9	Vert
	Ave		+0.0	+26.2	-38.2	+0.4			Y		
			+2.4	+0.0	+0.4						
8	1602.000M	58.2	+0.0	+0.0	+0.0	+0.0	+0.0	49.0	54.0	-5.0	Vert
	Ave		+0.0	+25.9	-38.2	+0.4			Z		
			+2.4	+0.0	+0.3						

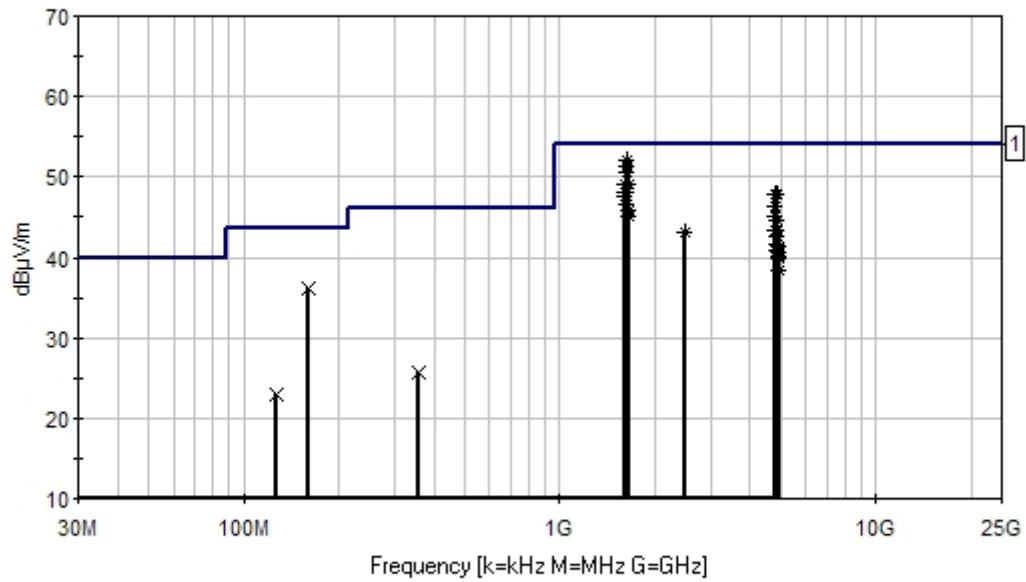
^ 1601.984M	59.7	+0.0	+0.0	+0.0	+0.0	+0.0	50.5	54.0	-3.5	Vert
		+0.0	+25.9	-38.2	+0.4			Y		
		+2.4	+0.0	+0.3						
^ 1602.000M	59.6	+0.0	+0.0	+0.0	+0.0	+0.0	50.4	54.0	-3.6	Vert
		+0.0	+25.9	-38.2	+0.4			Z		
		+2.4	+0.0	+0.3						
^ 1601.985M	56.2	+0.0	+0.0	+0.0	+0.0	+0.0	47.0	54.0	-7.0	Vert
		+0.0	+25.9	-38.2	+0.4			X		
		+2.4	+0.0	+0.3						
12 1628.000M Ave	57.0	+0.0	+0.0	+0.0	+0.0	+0.0	48.1	54.0	-5.9	Horiz
		+0.0	+26.1	-38.2	+0.4			Z		
		+2.4	+0.0	+0.4						
13 1601.985M Ave	57.2	+0.0	+0.0	+0.0	+0.0	+0.0	48.0	54.0	-6.0	Horiz
		+0.0	+25.9	-38.2	+0.4			X		
		+2.4	+0.0	+0.3						
14 4882.100M Ave	46.7	+0.0	+0.0	+0.0	+0.0	+0.0	47.9	54.0	-6.1	Horiz
		+0.0	+33.1	-37.1	+0.7			Z		
		+4.1	+0.4	+0.0						
15 4803.675M Ave	46.5	+0.0	+0.0	+0.0	+0.0	+0.0	47.8	54.0	-6.2	Horiz
		+0.0	+33.0	-37.1	+0.7			Z		
		+4.2	+0.5	+0.0						
^ 4803.675M	59.8	+0.0	+0.0	+0.0	+0.0	+0.0	61.1	54.0	+7.1	Horiz
		+0.0	+33.0	-37.1	+0.7			Z		
		+4.2	+0.5	+0.0						
17 1602.000M Ave	56.8	+0.0	+0.0	+0.0	+0.0	+0.0	47.6	54.0	-6.4	Horiz
		+0.0	+25.9	-38.2	+0.4			Z		
		+2.4	+0.0	+0.3						
^ 1601.977M	60.2	+0.0	+0.0	+0.0	+0.0	+0.0	51.0	54.0	-3.0	Horiz
		+0.0	+25.9	-38.2	+0.4			Y		
		+2.4	+0.0	+0.3						
^ 1602.000M	59.2	+0.0	+0.0	+0.0	+0.0	+0.0	50.0	54.0	-4.0	Horiz
		+0.0	+25.9	-38.2	+0.4			Z		
		+2.4	+0.0	+0.3						
^ 1601.990M	58.8	+0.0	+0.0	+0.0	+0.0	+0.0	49.6	54.0	-4.4	Horiz
		+0.0	+25.9	-38.2	+0.4			X		
		+2.4	+0.0	+0.3						
21 1627.977M Ave	55.5	+0.0	+0.0	+0.0	+0.0	+0.0	46.6	54.0	-7.4	Horiz
		+0.0	+26.1	-38.2	+0.4			Y		
		+2.4	+0.0	+0.4						
^ 1628.073M	61.0	+0.0	+0.0	+0.0	+0.0	+0.0	52.1	54.0	-1.9	Horiz
		+0.0	+26.1	-38.2	+0.4			X		
		+2.4	+0.0	+0.4						
^ 1628.000M	59.9	+0.0	+0.0	+0.0	+0.0	+0.0	51.0	54.0	-3.0	Horiz
		+0.0	+26.1	-38.2	+0.4			Z		
		+2.4	+0.0	+0.4						
^ 1627.977M	57.1	+0.0	+0.0	+0.0	+0.0	+0.0	48.2	54.0	-5.8	Horiz
		+0.0	+26.1	-38.2	+0.4			Y		
		+2.4	+0.0	+0.4						
25 1627.985M Ave	55.5	+0.0	+0.0	+0.0	+0.0	+0.0	46.6	54.0	-7.4	Vert
		+0.0	+26.1	-38.2	+0.4			X		
		+2.4	+0.0	+0.4						

^	1627.960M	62.0	+0.0	+0.0	+0.0	+0.0	+0.0	53.1	54.0	-0.9	Vert
			+0.0	+26.1	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1628.000M	61.5	+0.0	+0.0	+0.0	+0.0	+0.0	52.6	54.0	-1.4	Vert
			+0.0	+26.1	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1627.985M	57.9	+0.0	+0.0	+0.0	+0.0	+0.0	49.0	54.0	-5.0	Vert
			+0.0	+26.1	-38.2	+0.4					
			+2.4	+0.0	+0.4						
29	160.006M	50.7	+0.0	-27.7	+10.7	+0.3	+0.0	36.1	43.5	-7.4	Horiz
			+2.1	+0.0	+0.0	+0.0					
			+0.0	+0.0	+0.0						
30	4804.116M Ave	45.0	+0.0	+0.0	+0.0	+0.0	+0.0	46.3	54.0	-7.7	Vert
			+0.0	+33.0	-37.1	+0.7					
			+4.2	+0.5	+0.0						
^	4804.116M	58.9	+0.0	+0.0	+0.0	+0.0	+0.0	60.2	54.0	+6.2	Vert
			+0.0	+33.0	-37.1	+0.7					
			+4.2	+0.5	+0.0						
32	1654.000M Ave	54.7	+0.0	+0.0	+0.0	+0.0	+0.0	45.9	54.0	-8.1	Vert
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1653.985M	59.5	+0.0	+0.0	+0.0	+0.0	+0.0	50.7	54.0	-3.3	Vert
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1654.000M	57.9	+0.0	+0.0	+0.0	+0.0	+0.0	49.1	54.0	-4.9	Vert
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1653.980M	56.5	+0.0	+0.0	+0.0	+0.0	+0.0	47.7	54.0	-6.3	Vert
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
36	1654.000M Ave	53.9	+0.0	+0.0	+0.0	+0.0	+0.0	45.1	54.0	-8.9	Horiz
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1653.983M	60.2	+0.0	+0.0	+0.0	+0.0	+0.0	51.4	54.0	-2.6	Horiz
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1654.000M	56.0	+0.0	+0.0	+0.0	+0.0	+0.0	47.2	54.0	-6.8	Horiz
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
^	1653.965M	51.2	+0.0	+0.0	+0.0	+0.0	+0.0	42.4	54.0	-11.6	Horiz
			+0.0	+26.2	-38.2	+0.4					
			+2.4	+0.0	+0.4						
40	4804.200M Ave	43.8	+0.0	+0.0	+0.0	+0.0	+0.0	45.1	54.0	-8.9	Horiz
			+0.0	+33.0	-37.1	+0.7					
			+4.2	+0.5	+0.0						
^	4804.200M	58.6	+0.0	+0.0	+0.0	+0.0	+0.0	59.9	54.0	+5.9	Horiz
			+0.0	+33.0	-37.1	+0.7					
			+4.2	+0.5	+0.0						
42	4803.733M Ave	43.7	+0.0	+0.0	+0.0	+0.0	+0.0	45.0	54.0	-9.0	Vert
			+0.0	+33.0	-37.1	+0.7					
			+4.2	+0.5	+0.0						

^	4803.733M	55.4	+0.0 +0.0 +4.2	+0.0 +33.0 +0.5	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	56.7	54.0 Z	+2.7	Vert
44	4803.890M Ave	43.7	+0.0 +0.0 +4.2	+0.0 +33.0 +0.5	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	45.0	54.0 Y	-9.0	Vert
^	4803.890M	57.8	+0.0 +0.0 +4.2	+0.0 +33.0 +0.5	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	59.1	54.0 Y	+5.1	Vert
46	4882.055M Ave	43.5	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	44.7	54.0 X	-9.3	Horiz
47	4881.833M Ave	42.2	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	43.4	54.0 Z	-10.6	Vert
^	4881.833M	53.1	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	54.3	54.0 Z	+0.3	Vert
49	4804.080M Ave	42.0	+0.0 +0.0 +4.2	+0.0 +33.0 +0.5	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	43.3	54.0 Y	-10.7	Horiz
^	4804.080M	56.3	+0.0 +0.0 +4.2	+0.0 +33.0 +0.5	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	57.6	54.0 Y	+3.6	Horiz
51	2483.500M Ave	49.1	+0.0 +0.0 +2.8	+0.0 +28.5 +0.0	+0.0 -37.9 +0.0	+0.0 +0.5	+0.0	43.0	54.0 Bandedge_H_Z worse case	-11.0	Horiz
^	2483.500M	68.1	+0.0 +0.0 +2.8	+0.0 +28.5 +0.0	+0.0 -37.9 +0.0	+0.0 +0.5	+0.0	62.0	54.0 Bandedge_H_Z worse case	+8.0	Horiz
53	4882.090M Ave	41.4	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	42.6	54.0 X	-11.4	Vert
54	4882.030M Ave	40.4	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	41.6	54.0 Y	-12.4	Vert
^	4882.090M	56.9	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	58.1	54.0 X	+4.1	Vert
^	4882.030M	55.9	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	57.1	54.0 Y	+3.1	Vert
57	4959.850M Ave	40.0	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	41.4	54.0 Z	-12.6	Horiz
^	4959.850M	51.6	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	53.0	54.0 Z	-1.0	Horiz
59	4882.150M Ave	39.6	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	40.8	54.0 Y	-13.2	Horiz

^	4882.055M	58.5	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	59.7	54.0 X	+5.7	Horiz
^	4882.150M	57.6	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	58.8	54.0 Y	+4.8	Horiz
^	4882.100M	56.9	+0.0 +0.0 +4.1	+0.0 +33.1 +0.4	+0.0 -37.1 +0.0	+0.0 +0.7	+0.0	58.1	54.0 Z	+4.1	Horiz
63	4960.085M Ave	39.2	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	40.6	54.0 Y	-13.4	Horiz
64	4959.760M Ave	39.1	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	40.5	54.0 Y	-13.5	Vert
65	4959.960M Ave	38.7	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	40.1	54.0 X	-13.9	Vert
^	4959.960M	56.8	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	58.2	54.0 X	+4.2	Vert
67	4960.059M Ave	38.5	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	39.9	54.0 X	-14.1	Horiz
^	4960.059M	57.3	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	58.7	54.0 X	+4.7	Horiz
^	4960.085M	55.9	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	57.3	54.0 Y	+3.3	Horiz
70	4959.850M Ave	37.1	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	38.5	54.0 Z	-15.5	Vert
^	4959.760M	54.7	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	56.1	54.0 Y	+2.1	Vert
^	4959.850M	48.3	+0.0 +0.0 +4.1	+0.0 +33.2 +0.4	+0.0 -37.0 +0.0	+0.0 +0.7	+0.0	49.7	54.0 Z	-4.3	Vert
73	360.030M	34.6	+0.0 +3.4 +0.0	-27.8 +0.0 +0.0	+15.1 +0.0 +0.0	+0.3 +0.0	+0.0	25.6	46.0	-20.4	Horiz
74	128.000M	36.8	+0.0 +1.8 +0.0	-27.8 +0.0 +0.0	+12.0 +0.0 +0.0	+0.2 +0.0	+0.0	23.0	43.5	-20.5	Horiz

CKC Laboratories, Inc Date: 10/14/2010 Time: 15:44:09 Gibson Guitar WO#: 91250
 FCC 15.247 (d) (FCC 15.209) Test Distance: 3 Meters Sequence#: 1 Ext ATTN: 0 dB



— Readings
 × Peak Readings
 — 1 - FCC 15.247 (d) (FCC 15.209)
 * Average Readings

Test Setup Photos







ITU-R 55/1 Bandedge

Test Data

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**

Specification: **Bandedge plot**

Work Order #: **91250**

Date: 10/15/2010

Test Type: **Radiated Scan**

Time: 10:29:29

Equipment: **Bluetooth Module**

Sequence#: 4

Manufacturer: Rayson Technology Company, LTD

Tested By: E. Wong

Model: BTM 160

S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
T1	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
T3	AN00786	Preamplifier	83017A	8/5/2010	8/5/2012
T4	AN02948	Cable	32022-2-2909K-24TC	9/21/2009	9/21/2011
T5	ANP05565	Cable	ANDL-1-PNMN-54	9/3/2010	9/3/2012
T6	AN00849	Horn Antenna	3115	4/23/2010	4/23/2012

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Company, LTD	BTM 160	NA

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

The EUT seeking limited modular approval is soldered on an unpopulated PCB placed on the wooden table lined with Styrofoam of 10 cm in thickness.

Freq 2402-2480

Tx = 2402 MHz, 2441 MHz, 2480 MHz

Firmware Setting (ext, int) = 255, 62

Measure power = 4.93dBm, 4.86dBm, 4.15dBm (0.003W)

Receiver circuit is not active.

Three different antenna of the same type can used with the device; Bohua_BH051 (2dBi), Pulse W1010 (2dBi) and Pulse W1038 (4.9dBi)

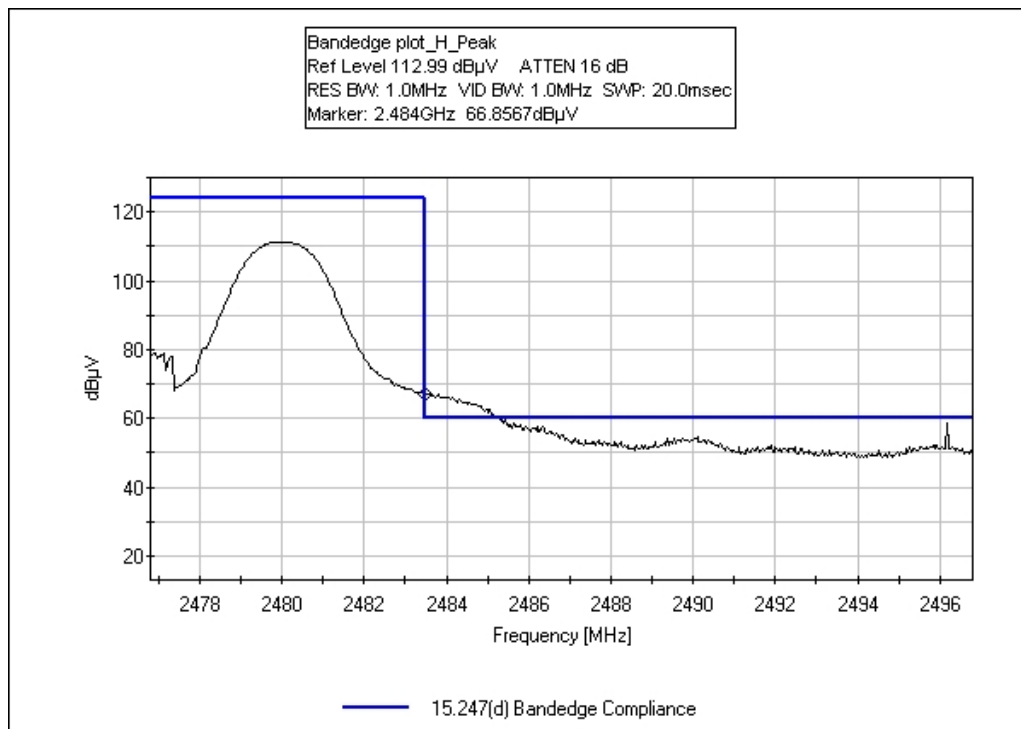
The test is performed with the highest gain antenna, Pulse W1038 (4.9dBi)

SPI port is connected to remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.

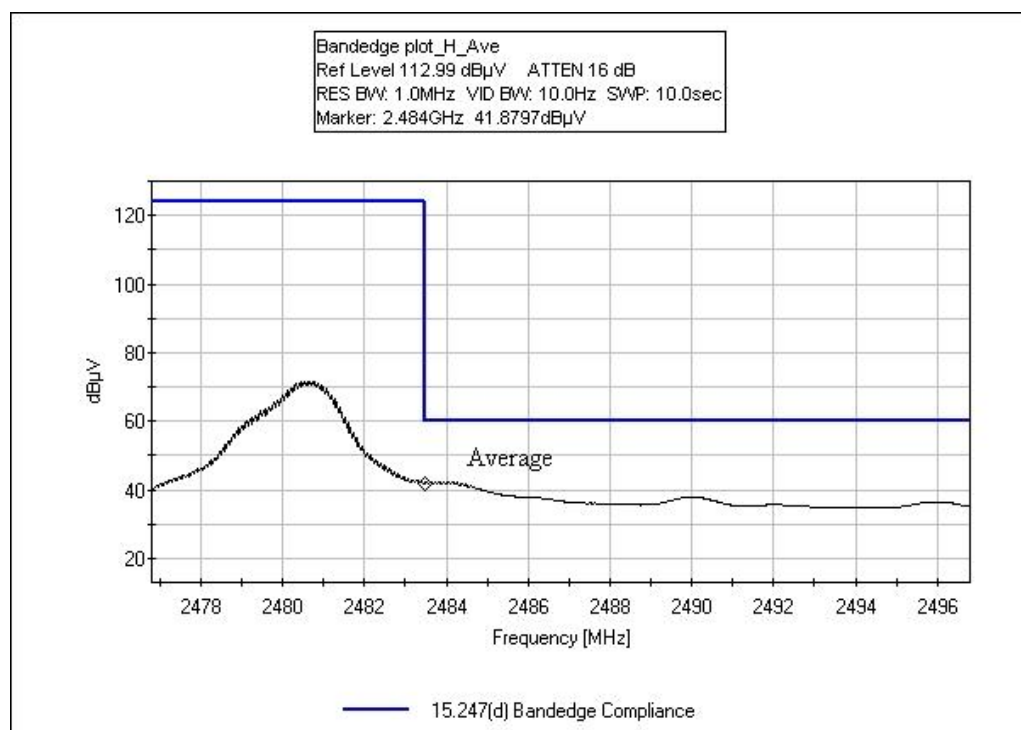
Emissions profile with the product and the antenna rotated along its three orthogonal axes was evaluated. Reported data is the worst case emissions.

15.31(e) The battery powered device obtains 7.4V DC from a support power supply to simulate the usage of a new battery.

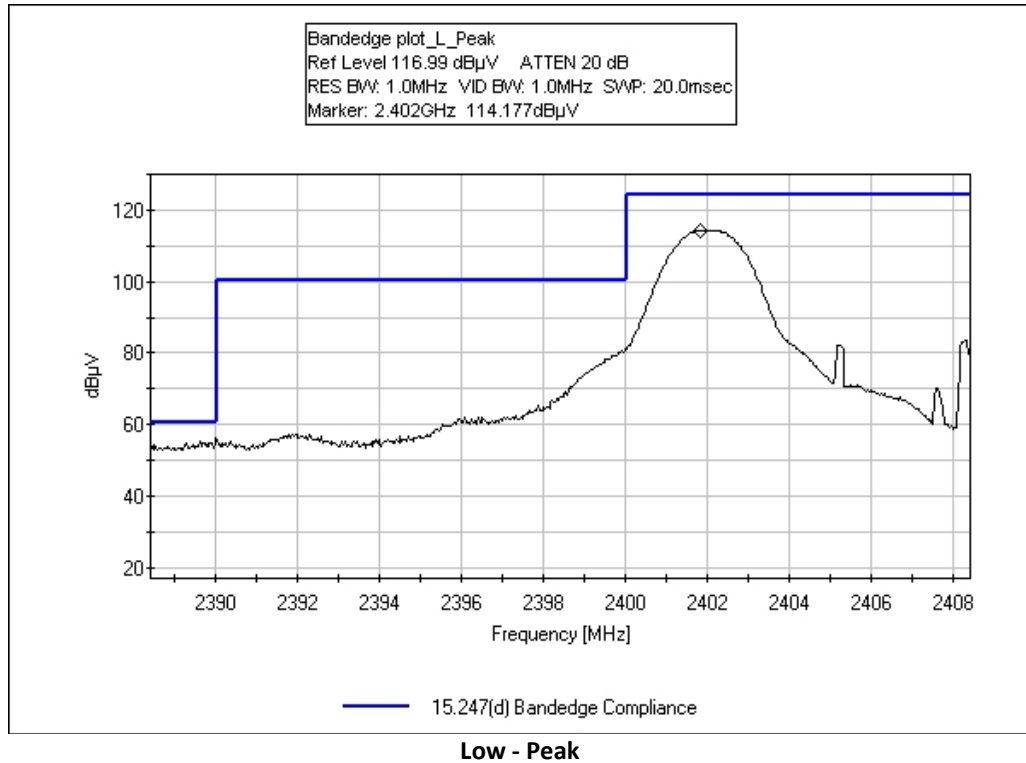
26°C and 47% relative humidity



High - Peak



High - Average



Test Setup Photos



RSS-210 99% Bandwidth

Test Data

Test Location: CKC Laboratories, Inc • 110 N. Olinda Place • Brea, CA 92823 • (714) 993-6112

Customer: **Gibson Guitar Corporation**

Specification: **99% bw**

Work Order #: **91250**

Date: 10/15/2010

Test Type: **Conducted**

Time: 10:29:29

Equipment: **Bluetooth Module**

Sequence#: 4

Manufacturer: Rayson Technology Company, LTD

Tested By: E. Wong

Model: BTM 160

S/N: NA

Test Equipment:

ID	Asset #	Description	Model	Calibration Date	Cal Due Date
	AN02869	Spectrum Analyzer	E4440A	2/21/2009	2/21/2011
	AN03174	36" 40GHz cable	NA	10/28/2009	10/28/2011

Equipment Under Test (* = EUT):

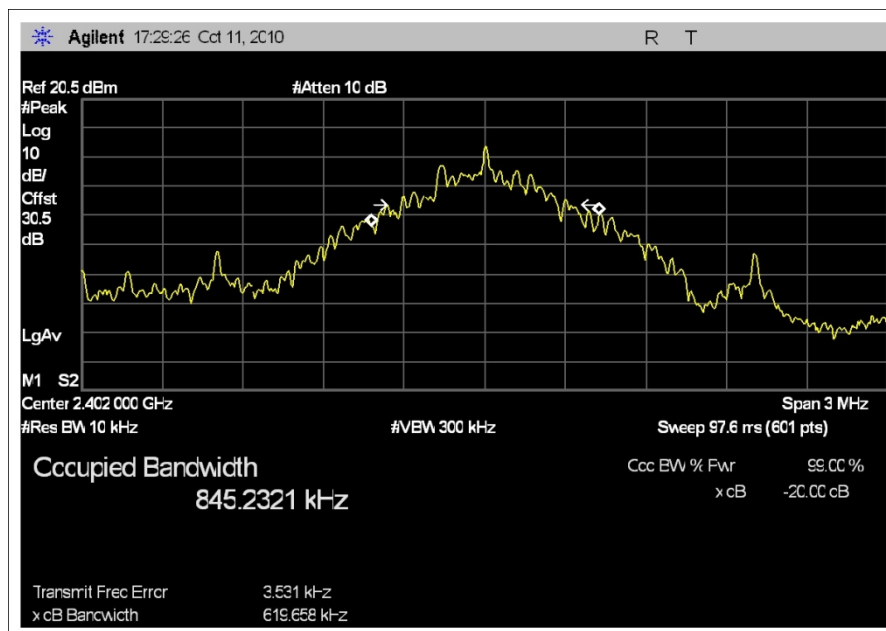
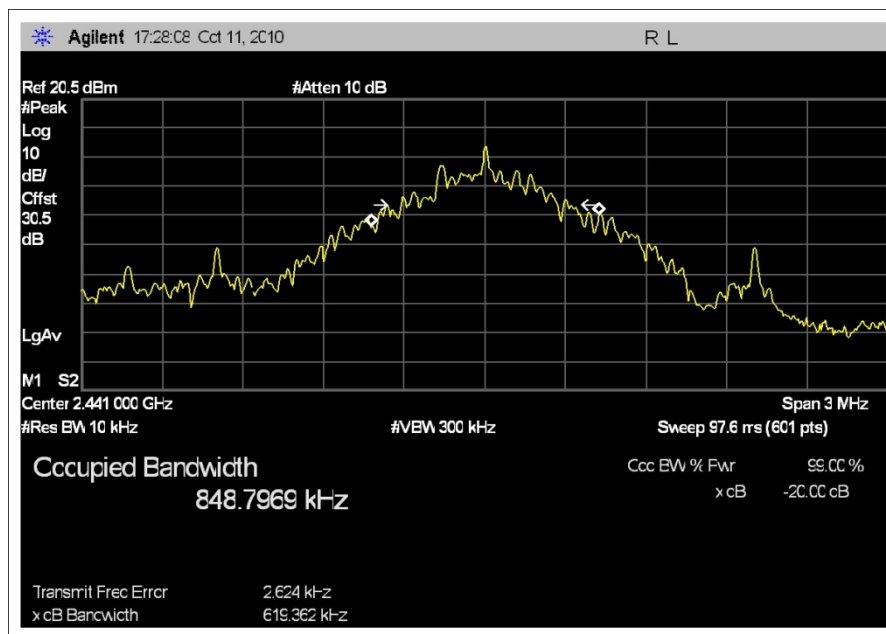
Function	Manufacturer	Model #	S/N
Bluetooth Module*	Rayson Technology Company, LTD	BTM 160	NA

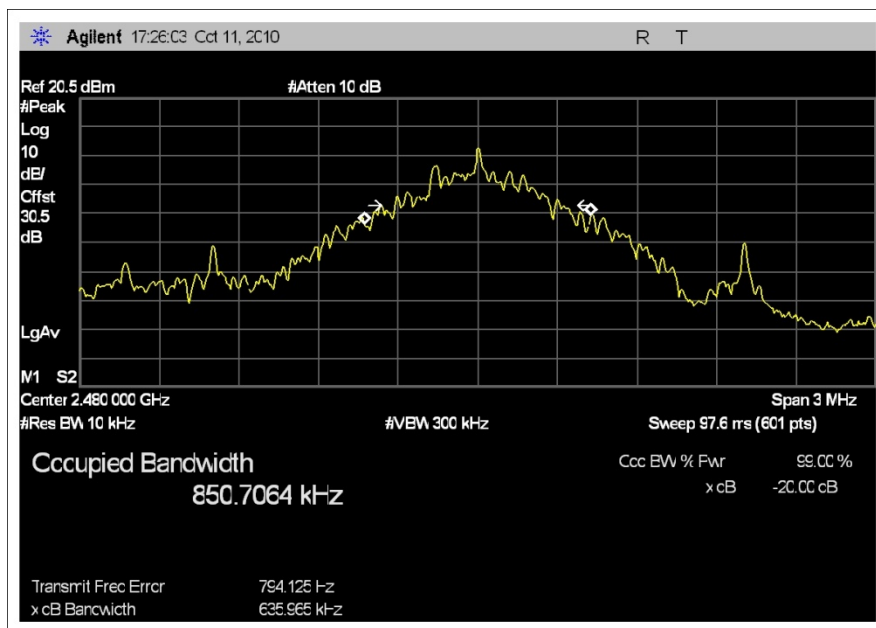
Support Devices:

Function	Manufacturer	Model #	S/N
Laptop	Acer	5741-15763	LXPW002025016349DF1601
DC Power Supply	Topward	6306	988614

Test Conditions / Notes:

The EUT seeking limited modular approval is soldered on an unpopulated PCB placed on the test bench.
 Freq 2402-2480
 Tx = 2402 MHz, 2441 MHz, 2480 MHz
 Firmware Setting (ext, int) = 255, 62
 Measure power = 4.93dBm, 4.86dBm, 4.15dBm (0.003W)
 SPI port is connected to remote support laptop. The remote support lap top is running test software to exercise all the intended functionality of the EUT.
 Evaluation performed at the antenna port.
 15.31(e) The battery powered device obtains 7.4V DC from a support power supply to simulate the usage of a new battery.
 26°C and 47% Relative Humidity





Test Setup Photos



SUPPLEMENTAL INFORMATION

Measurement Uncertainty

Uncertainty Value	Parameter
4.73 dB	Radiated Emissions
3.34 dB	Mains Conducted Emissions
3.30 dB	Disturbance Power

The reported measurement uncertainties are calculated based on the worst case of all laboratory environments from CKC Laboratories, Inc. test sites. Only those parameters which require estimation of measurement uncertainty are reported. The reported worst case measurement uncertainty is less than the maximum values derived in CISPR 16-4-2. Reported uncertainties represent expanded uncertainties expressed at approximately the 95% confidence level using a coverage factor of $k=2$. Compliance is deemed to occur provided measurements are below the specified limits.

Emissions Test Details

TESTING PARAMETERS

The cables were routed consistent with the typical application by varying the configuration of the test sample. Interface cables were connected to the available ports of the test unit. The effect of varying the position of the cables was investigated to find the configuration that produced maximum emissions. Cables were of the type and length specified in the individual requirements. The length of cable that produced maximum emissions was selected.

The equipment under test (EUT) was set up in a manner that represented its normal use, as shown in the setup photographs. Any special conditions required for the EUT to operate normally are identified in the comments that accompany the emissions tables.

The emissions data was taken with a spectrum analyzer or receiver. Incorporating the applicable correction factors for distance, antenna, cable loss and amplifier gain, the data was reduced as shown in the table below. The corrected data was then compared to the applicable emission limits. Preliminary and final measurements were taken in order to ensure that all emissions from the EUT were found and maximized.

CORRECTION FACTORS

The basic spectrum analyzer reading was converted using correction factors as shown in the highest emissions readings in the tables. For radiated emissions in $\text{dB}\mu\text{V}/\text{m}$, the spectrum analyzer reading in $\text{dB}\mu\text{V}$ was corrected by using the following formula. This reading was then compared to the applicable specification limit.

SAMPLE CALCULATIONS		
	Meter reading	(dBμV)
+	Antenna Factor	(dB)
+	Cable Loss	(dB)
-	Distance Correction	(dB)
-	Preamplifier Gain	(dB)
=	Corrected Reading	(dBμV/m)

TEST INSTRUMENTATION AND ANALYZER SETTINGS

The test instrumentation and equipment listed were used to collect the emissions data. A spectrum analyzer or receiver was used for all measurements. For testing emissions, an appropriate reference level and a vertical scale size of 10 dB per division were used.

SPECTRUM ANALYZER/RECEIVER DETECTOR FUNCTIONS

The notes that accompany the measurements contained in the emissions tables indicate the type of detector function used to obtain the given readings. Unless otherwise noted, all readings were made in the "Peak" mode. Whenever a "Quasi-Peak" or "Average" reading is listed as one of the highest readings, this is indicated as a "QP" or an "Ave" on the appropriate rows of the data sheets. The following paragraphs describe in more detail the detector functions and when they were used to obtain the emissions data.

Peak

In this mode, the spectrum analyzer/receiver readings recorded all emissions at their peak value as the frequency band selected was scanned. By combining this function with another feature of the measuring device called "peak hold," the measuring device had the ability to measure transients or low duty cycle transient emission peak levels. In this mode the measuring device made a slow scan across the frequency band selected and measured the peak emission value found at each frequency across the band.

Quasi-Peak

When the true peak values exceeded or were within 2 dB of the specification limit, quasi-peak measurements were taken using the quasi-peak detector.

Average

For certain frequencies, average measurements may be made using the spectrum analyzer/receiver. To make these measurements, the test engineer reduces the video bandwidth on the measuring device until the modulation of the signal is filtered out. At this point the measuring device is set into the linear mode and the scan time is reduced.