







ISO/IEC17025Accredited Lab.

Report No: FCC 07803151 File reference No: 2008-04-25

Applicant: Gajah International (HK) Co., Limited

Product: MP3 Bluetooth Headset

Model No: GI07Y

Trademark: N/A

Test Standards: FCC Part 15 Subpart C, Paragraph 15.247 &Part15B

Test result:

It is herewith confirmed and found to comply with the

requirements set up by ANSI C63.4&FCC Part 15 Subpart C, Paragraph 15.247&Part15B regulations for the evaluation of

electromagnetic compatibility

Approved By

Jack Chung

Jack Chung Manager

Dated: April 08,2008

Results appearing herein relate only to the sample tested The technical reports is issued errors and omissions exempt and is subject to withdrawal at

SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District, Shenzhen,CHINA.

Tel (755) 83448688 Fax (755) 83442996

Report No: 0803151 Page 2 of 68

Date: 2008-04-25



Special Statement:

The testing quality ability of our laboratory meet with "Quality Law of People's Republic of China" Clause 19.

The testing quality system of our laboratory meets with ISO/IEC-17025 requirements, which is approved by CNAS. This approval result is accepted by MRA of APLAC.

Our test facility is recognized, certified, or accredited by the following organizations:

CNAS-LAB Code: L2292

The EMC Laboratory has been assessed and in compliance with CNAS-CL01 accreditation criteria for testing Laboratories (identical to ISO/IEC 17025:1999 General Requirements) for the Competence of testing Laboratories.

FCC-Registration No.: 899988

The EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications commission. The acceptance letter from the FCC is maintained in our files. Registration No.:899988.

IC- Registration No.: IC5205A-01

The EMC Laboratory has been registered and fully described in a report filed with the (IC) Industry Canada. The acceptance letter from the IC is maintained in our files. Registration No.: IC 5205A-01.





Test Report Conclusion Content

1.0	General Details	3
1.1	Test Lab Details.	3
1.2	Applicant Details	3
1.3	Description of EUT	3
1.4	Submitted Sample	3
1.5	Test Duration.	4
1.6	Test Uncertainty	4
1.7	Test By	4
2.0	List of Measurement Equipment.	4
3.0	Technical Details	7
3.1	Summary of Test Results	7
3.2	Test Standards	7
4.0	EUT Modification	7
5.0	Power Line Conducted Emission Test.	8
5.1	Schematics of the Test.	8
5.2	Test Method and Test Procedure.	8
5.3	Configuration of the EUT	8
5.4	EUT Operating Condition.	9
5.5	Conducted Emission Limit.	9
5.6	Test Result.	9
6.0	Radiated Emission test.	14
5.1	Test Method and Test Procedure.	14
5.2	Configuration of the EUT	14
5.3	EUT Operation Condition.	14
5.4	Radiated Emission Limit	15
7.0	20dB Bandwidth Measurement.	34
8.0	Maximum Peak Output Power	38
9.0	Power Spectral Density Measurement.	40
10.0	Carrier Frequency Separation.	44
11.0	Number of Hopping Channel	46
12.0	Time of Occupancy (Dwell Time)	49
13.0	Out of Band Measurement	54
14.0	Antenna Requirement.	59
15.0	Maximum Permissible Exposure	60
16.0	FCC ID Label.	61
17.0	Photo of Test Setup and EUT View.	62

Report No: 0803151 Page 4 of 68

Date: 2008-04-25



1.0 General Details

1.1 Test Lab Details

Name: SHENZHEN TIMEWAY TECHNOLOGY CONSULTING CO LTD

Address: 5/F,Block 4, Anhua Industrial Zone.,No.8 TaiRan Rd.CheGongMiao,FuTian District,

Shenzhen, CHINA.

Telephone: (755) 83448688 Fax: (755) 83442996

Site on File with the Federal Communications Commission – United Sates

Registration Number: 899988

For 3m & 10 m OATS

Site Listed with Industry Canada of Ottawa, Canada

Registration Number: IC: 5205A-01

For 3m & 10 m OATS

1.2 Applicant Details

Applicant: Gajah International (HK) Co., Limited

Address: 9A, YinXing Block, HuaMaoXin Garden, HongLi West Road, Futian District, Shenzhen

Telephone: +86-755- 82970307 Fax: +86-755- 82970571

1.3 Description of EUT

Product: MP3 Bluetooth Headset

Manufacturer: Gajah International (HK) Co., Limited

Brand Name: N/A

Model Number: GI07Y

Additional Model Name N/A

Additional Trade Name N/A

Rating: Input: DC 3.7V; 100mA

Type of Modulation FHSS

Frequency range 2402-2480MHz

Number of Channel 79

Frequency Selection By software

Antenna type chip dielectric antenna, the antenna gain is -0.8dBi

1.4 Submitted Sample: 2 Sample

1.5 Test Duration

2008-03-26 to 2008-04-25

1.6 Test Uncertainty

Conducted Emissions Uncertainty = ± 2.4 dB Radiated Emissions Uncertainty = ± 4.2 dB

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Page 5 of 68

Report No: 0803151 Date: 2008-04-25



1.7 Test Engineer

The sample tested by

Print Name: Terry Tang

2.0	Test Equipments								
Instrument Type	Manufacturer	Model	Serial No.	Date of Cal.	Due Date				
ESPI Test Receiver	ROHDE&SCHWARZ	ESPI 3	100379	2007-12-05	2008-12-04				
Absorbing Clamp	ROHDE&SCHWARZ	MDS-21	100126	2007-12-05	2008-12-04				
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100294	2007-12-05	2008-12-04				
TWO Line-V-NETW	ROHDE&SCHWARZ	EZH3-Z5	100253	2007-12-05	2008-12-04				
Ultra Broadband ANT	ROHDE&SCHWARZ	HL562	100157	2007-12-05	2008-12-04				
ESDV Test Receiver	ROHDE&SCHWARZ	ESDV	100008	2007-03-30	2008-03-29				
4-WIRE ISN	ROHDE&SCHWARZ	ENY 41	830663/044	2008-02-18	2009-02-17				
GG ENY22 Double 2-Wire ISN	ROHDE&SCHWARZ	ENY22	83066/016	2008-02-18	2009-02-17				
Impuls-Begrenzer	ROHDE&SCHWARZ	ESH3-Z2	100281	2008-02-18	2009-02-17				
System Controller	СТ	SC100	-	2008-02-18	2009-02-17				
Printer	EPSON	РНОТО ЕХЗ	CFNH234850	2008-02-18	2009-02-17				
FM-AM Signal Generator	JUNGJIN	SG-150M	389911177	2008-02-18	2009-02-17				
Color TV Pattern Generator	PHILIPS	PM5418	LO621747	2008-02-18	2009-02-17				
Computer	IBM	8434	1S8434KCE99BLX LO*	-	-				
Oscillator	KENWOOD	AG-203D	3070002	2008-02-18	2009-02-17				
Spectrum Analyzer	HAMEG	HM5012	-	-	-				
Power Supply	LW	APS1502	-	-	-				

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Page 6 of 68

Report No: 0803151 Date: 2008-04-25

5K VA AC Power Source	California Instruments	5001iX	56060	2008-02-18	2009-02-17
CDN	EM TEST	CDN M2/M3	-	2008-02-18	2009-02-17
Attenuation	EM TEST	ATT6/75	-	2008-02-18	2009-02-17
Resistance	EM TEST	R100	-	2008-02-18	2009-02-17
Electromagnetic Injection Clamp	LITTHI	EM101	35708	2008-02-18	2009-02-17
Signal Generator	ROHDE&SCHWARZ	SMT03	100029	2008-02-18	2009-02-17
Power Amplifier	AR	150W1000	300999	2008-02-18	2009-02-17
Field probe	Holaday	HI-6005	105152	2008-02-18	2009-02-17
Bilog Antenna	Chase	CBL6111C	2576	2008-02-18	2009-02-17
ESPI Test Receiver	ROHDE&SCHWARZ	ESI26	838786/013	2008-02-18	2009-02-17
3m OATS			N/A	2008-02-18	2009-02-17
Horn Antenna	SCHWARZBECK	BBHA 9170	BBHA9170265	2007-08-16	2008-08-15
Horn Antenna	SCHWARZBECK	BBHA 9120D	9120D-631	2007-07-03	2008-07-02

Page 7 of 68

Report No: 0803151 Date: 2008-04-25



3.0 Technical Details

3.1 Summary of test results

The EUT has been tested according to the following specifications:

Requirement	CFR 47 Section	Result	Notes
Antenna Requirement	15.203, 15.247(b)(4)	PASS	Complies
Maximum Peak Out Power	15.247 (b)(1), (4)	PASS	Complies
Carrier Frequency Separation	15.247(a)(1)	PASS	Complies
20dB Channel Bandwidth	15.247 (a)(1)	PASS	Complies
Number of Hopping Channels	15.247(a)(iii), 15.247(b)(1)	PASS	Complies
Time of Occupancy (Dwell Time)	15.247(a)(iii)	PASS	Complies
Spurious Emission, Band Edge, and	15.247(d),15.205(a),	PASS	Complies
Restricted bands	15.209 (a)		
Peak Power Spectral Density	15.247(e)	PASS	Complies
Conducted Emissions	15.207(a)	PASS	Complies
RF Exposure	15.247(i), 1.1307(b)(1)	PASS	Complies

3.2 Test Standards

FCC Part 15 Subpart & Subpart C, Paragraph 15.247

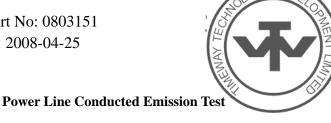
4.0 EUT Modification

No modification by Shenzhen Timeway Technology Consulting Co.,Ltd

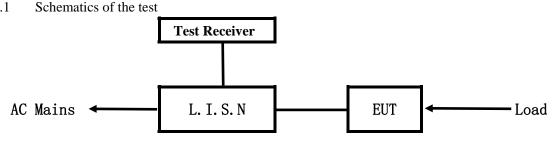
Page 8 of 68

Report No: 0803151 Date: 2008-04-25

5.



5.1

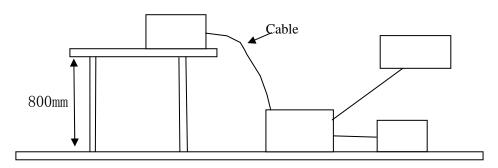


EUT: Equipment Under Test

5.2 Test Method and test Procedure

The EUT was tested according to ANSI C63.4-2003. The Frequency spectrum From 0.15MHz to 30MHz was investigated. The LISN used was 50ohm/50uH as specified by section 5.1 of ANSI C63.4 -2003.

Block diagram of Test setup



5.3 Configuration of The EUT

The EUT was configured according to ANSI C63.4-2003. All interface ports were connected to the appropriate peripherals. All peripherals and cables are listed below.

79 channels are provided to the EUT

Page 9 of 68

Report No: 0803151 Date: 2008-04-25



A. EUT

Device	Manufacturer	Model	FCC ID
MP3 Bluetooth	Gajah International (HK) Co., Limited	GI07Y	UFKGI07Y
Headset			

B. Internal Device

Device	Manufacturer	Model	FCC ID/DOC
N/A			

C. Peripherals

Device	Manufacturer	Model	FCC ID/DOC	Cable
N/A				

5.4 EUT Operating Condition

Operating condition is according to ANSI C63.4 -2003.

- A Setup the EUT and simulators as shown on follow
- B Enable AF signal and confirm EUT active to normal condition

5.5 Power line conducted Emission Limit according to Paragraph 15.207

Frequency	Class A Lim	its (dB µ V)	Class B Limits (dB \(\mu \) V)		
(MHz)	MHz) Quasi-peak Level Average Level		Quasi-peak Level	Average Level	
$0.15 \sim 0.50$	79.0	66.0	66.0~56.0*	56.0~46.0*	
$0.50 \sim 5.00$	73.0	60.0	56.0	46.0	
$5.00 \sim 30.00$	73.0	60.0	60.0	50.0	

Notes:

- 1. *Decreasing linearly with logarithm of frequency.
- 2. The tighter limit shall apply at the transition frequencies

5.6 Test Results

The frequency spectrum from 0.15MHz to 30MHz was investigated. All reading are quasi-peak values with a resolution bandwidth of 9kHz.

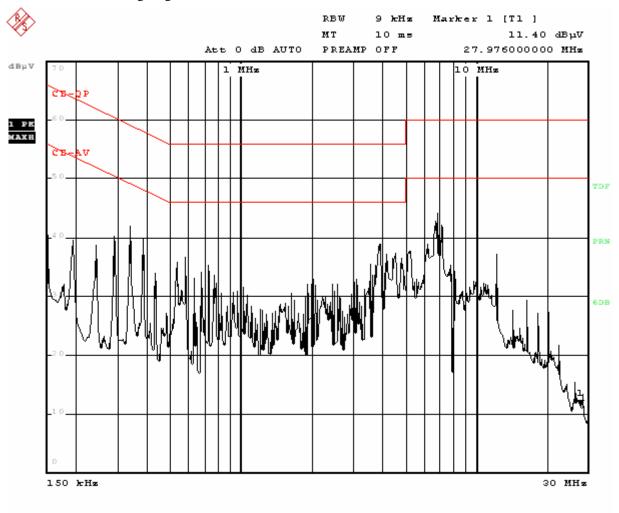
Note: the worse cases was selected to conducted the test

A Conducted Emission on Line Terminal of the power line (150kHz to 30MHz)

EUT set Condition: Low Channel

Results: Pass

Please refer to following diagram for individual



Fraguanay	Reading(dB \(\mu \) Limit			t		
Frequency (MHz)	Line		Neutral		(dB µ	V)
(WITTZ)	Quasi-peak	Average	Quasi-peak	Average	Quasi-peak	Average
0.338	41.8	40.6			59.3	49.3
3.864	38.6	37.6			56.0	46.0
6.860	43.1	40.5			60.0	50.0

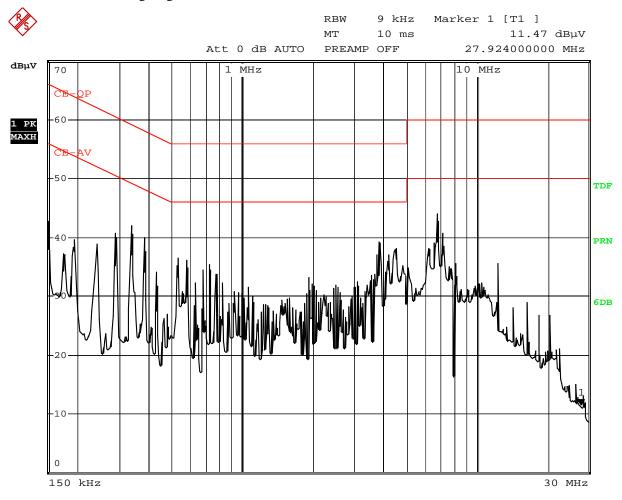
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Conducted Emission on Neutral Terminal of the power line (150kHz to 30MHz)

EUT set Condition: Low Channel

Results: Pass

Please refer to following diagram for individual



Date: 22.FEB.2008 14:11:41

Fraguanay		Reading	Limi	t		
Frequency (MHz)	Live		Neutral		(dB µ	V)
(MHZ)	Quasi-peak	Average	Quasi-peak	Average	Quasi-peak	Average
0.338			41.9	40.5	59.3	49.3
3.864			38.2	37.6	56.0	46.0
6.812			44.1	41.9	60.0	50.0

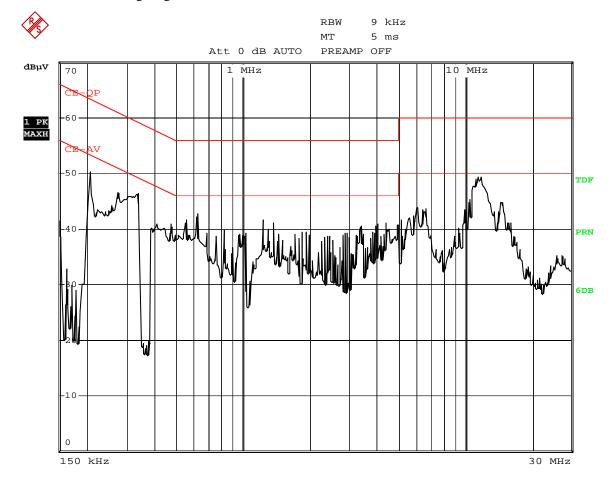
The report refers only to the sample tested and does not apply to the bulk.

C Conducted Emission on Line Terminal of the power line (150kHz to 30MHz)

EUT set Condition: USB data copy (Connected to PC)

Results: Pass

Please refer to following diagram for individual



Date: 25.APR.2008 15:44:59

Frequency		Reading	Limi	t		
	Line		Neutral		(dB µ V)	
(MHz)	Quasi-peak Average		Quasi-peak	Average	Quasi-peak	Average
0.206	49.56	44.57			63.4	53.4
0.338	44.43	31.25			59.3	49.3
0.620	39.15	34.96			56.0	46.0
3.428	36.63	36.27			56.0	46.0
11.444	31.09	26.65			60.0	50.0

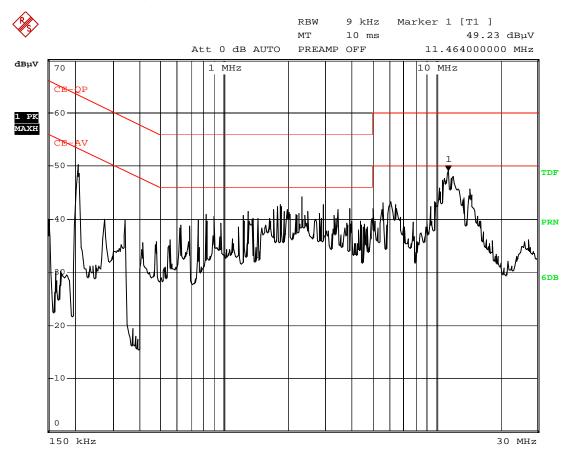
The report refers only to the sample tested and does not apply to the bulk.

D Conducted Emission on Neutral Terminal of the power line (150kHz to 30MHz)

EUT set Condition: USB data copy (Connected to PC)

Results: Pass

Please refer to following diagram for individual



Date: 25.APR.2008 15:47:56

Emp assembly		Reading	Limi	t		
Frequency (MHz)	Live		Neutral		(dB µ V)	
(MHZ)	Quasi-peak	Average	Quasi-peak	Average	Quasi-peak	Average
0.206			49.47	42.65	63.4	53.4
0.342			36.65	34.82	59.2	49.2
0.824			39.03	38.76	56.0	46.0
2.332			36.97	34.74	56.0	46.0
11.464			36.18	31.15	60.0	50.0

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Page 14 of 68

Report No: 0803151 Date: 2008-04-25



6 Radiated Emission Test

- 6.1 Test Method and test Procedure:
- (1) The EUT was tested according to ANSI C63.4 –2003. The radiated test was performed at Timeway Laboratory. This site is on file with the FCC laboratory division, Registration No.899988
- (2) The EUT, peripherals were put on the turntable which table size is 1m x 1.5 m, table high 0.8 m. All set up is according to ANSI C63.4-2003.
- (3) The frequency spectrum from 30 MHz to 1 GHz was investigated. All readings from 30 MHz to 1 GHz are quasi-peak values with a resolution bandwidth of 120 kHz. All readings are above 1 GHz, peak values with a resolution bandwidth of 1 MHz. Measurements were made at 3 meters.
- (4) The antenna high is varied from 1 m to 4 m high to find the maximum emission for each frequency.
- (5) Maximizing procedure was performed on the six (6) highest emissions to ensure EUT compliance is with all installation combinations. All data was recorded in the peak detection mode. Quasi-peak readings was performed only when an emission was found to be marginal (within -4 dB of specification limit), and are distinguished with a "QP" in the data table.
- (6) The antenna polarization : Vertical polarization and Horizontal polarization.

Block diagram of Test setup Distance = 3m Computer Pre -Amplifier EUT Turn-table Receiver

- 6.2 Configuration of The EUT

 Same as section 5.3 of this report
- 6.3 EUT Operating Condition
 Same as section 5.4 of this report.

Report No: 0803151 Page 15 of 68

Date: 2008-04-25



6.4 Radiated Emission Limit

All emission from a digital device, including any network of conductors and apparatus connected thereto, shall not exceed the level of field strength specified below:

Frequencies in restricted band are complied to limit on Paragraph 15.209.

Frequency Range (MHz)	Distance (m)	Field strength (dB µ V/m)
30-88	3	40.0
88-216	3	43.5
216-960	3	46.0
Above 960	3	54.0

Note:

- 1. RF Voltage $(dBuV) = 20 \log RF \text{ Voltage } (uV)$
- 2. In the Above Table, the higher limit applies at the band edges.
- 3. Distance refers to the distance in meters between the measuring instrument antenna and the EUT

Report No: 0803151 Page 16 of 68

Date: 2008-04-25



Test result

General Radiated Emission Data and Harmonics Radiated Emission Data

Radiated Emission In Horizontal (30MHz----1000MHz)

EUT set Condition: High Channel

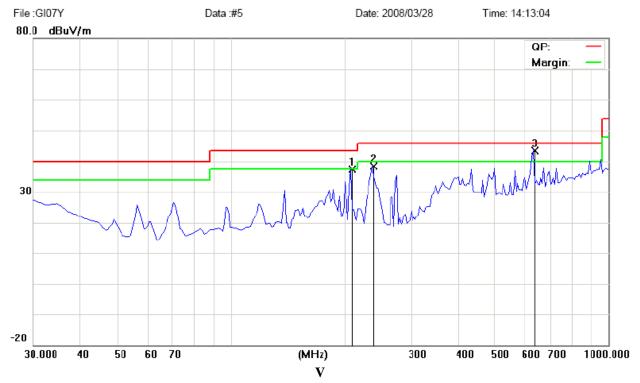
Results: Pass

Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB μ V/m)	
71.225	29.92	V	40.00	
502.875	43.63	V	46.00	
636.250	40.82	V	46.00	
209.450	209.450 37.48		43.50	
238.550	38.31	Н	46.00	
636.250	636.250 43.32		46.00	

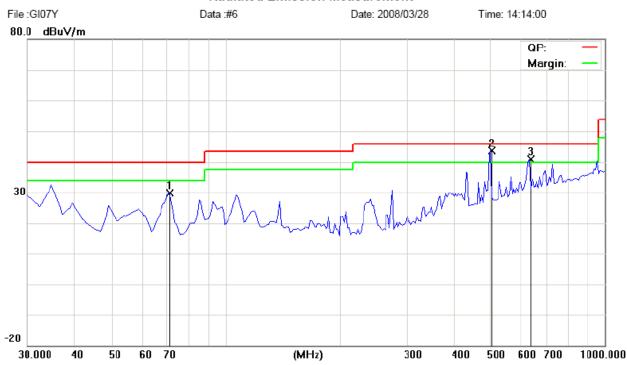


Test Figure: High Channel

Radiated Emission Measurement



Radiated Emission Measurement



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Report No: 0803151 Page 18 of 68

Date: 2008-04-25

EUT set Condition: Middle Channel

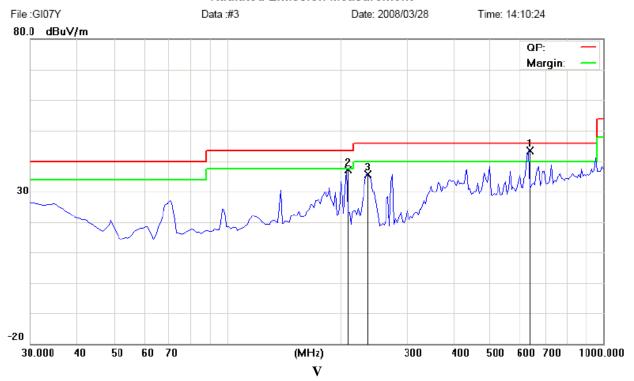
Results: Pass

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB μ V/m)	
636.250	43.32	Н	46.00	
209.450	37.10	Н	46.00	
236.125	35.53	Н	46.00	
107.600	107.600 28.15		43.50	
277.350	29.51	V	46.00	
502.875	502.875 41.48		46.00	

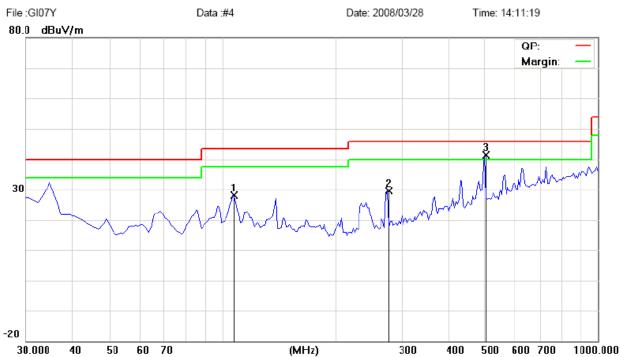


Test Figure: Middle Channel

Radiated Emission Measurement



Radiated Emission Measurement



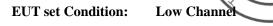
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Report No: 0803151 Page 20 of 68

Date: 2008-04-25



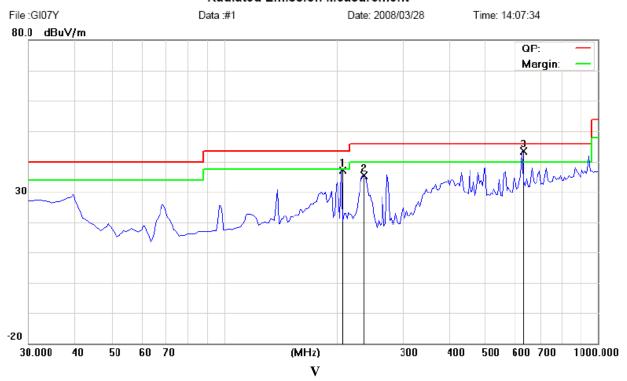
Results: Pass

Frequency (MHz)	Level@3m (dB \mu V/m)	Antenna Polarity	Limit@3m (dB \u03b4 V/m)	
207.025	37.11	Н	43.50	
236.125	25 35.43 H		46.00	
633.825	43.35	Н	46.00	
143.975 32.13		V	43.50	
500.450	42.19	V	46.00	
633.825	633.825 41.08		46.00	

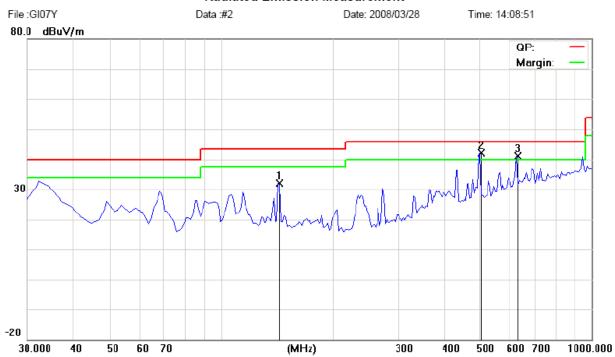


Test Figure: Low Channel

Radiated Emission Measurement



Radiated Emission Measurement



Note: 1. Emission level $(dB\mu V/m)$ = Antenna Factor (dB/m) + Cable loss (dB) + Meter Reading $(dB\mu V)$.

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Report No: 0803151 Page 22 of 68

Date: 2008-04-25

EUT set Condition: USB data copy (Connected to PC)

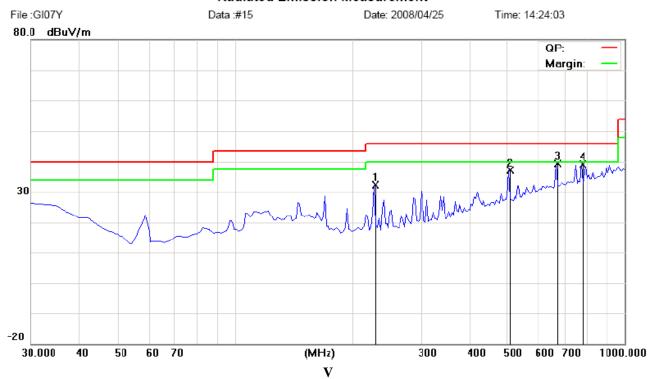
Results: Pass

Frequency (MHz)	Level@3m (dB \u03b4 V/m)	Antenna Polarity	Limit@3m (dB μ V/m)	
228.850	32.32	Н	46.00	
505.300	37.18	Н	46.00	
672.625	72.625 39.43 H		46.00	
781.750	39.05	Н	46.00	
505.300	505.300 38.94		46.00	
672.625	672.625 42.49		46.00	
755.075	42.08	V	46.00	
836.570	40.99	V	46.00	

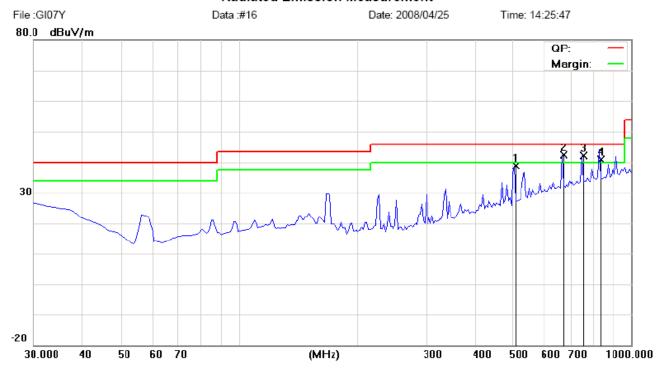


Test Figure: USB data copy (Connected to PC)

Radiated Emission Measurement



Radiated Emission Measurement



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Report No: 0803151 Page 24 of 68

Date: 2008-04-25

Operation Mode: Transmitting under Low Channel (2402MHz)

Frequency (MHz)	Level@3m (dB \u03bc V/m)	Antenna Polarity	Limit@3m (dB \(\mu \)V/m)
2402.014	80.6 (PK) /73.5 (AV)	V	Fundamental Frequency
2402.014	76.4 (PK) /68.4 (AV)	Н	Tundamental Frequency
4804		H/V	74(Peak)/ 54(AV)
7206		H/V	74(Peak)/ 54(AV)
9608		H/V	74(Peak)/ 54(AV)
12010		H/V	74(Peak)/ 54(AV)
14412		H/V	74(Peak)/ 54(AV)
16814		H/V	74(Peak)/ 54(AV)
19216		H/V	74(Peak)/ 54(AV)
21618		H/V	74(Peak)/ 54(AV)
24020		H/V	74(Peak)/ 54(AV)

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

Operation Mode: Transmitting g under Middle Channel (2441MHz)

Frequency (MHz)	Level@3m (dB \u03bc V/m)	Antenna Polarity	Limit@3m (dB μ V/m)	
2441.032	77.3 (PK) /70.1 (AV)	Н	Fundamental Frequency	
2441.032	78.9 (PK) /72.3 (AV)	V	Tundamental Mequency	
4882		H/V	74(Peak)/ 54(AV)	
7323		H/V	74(Peak)/ 54(AV)	
9764		H/V	74(Peak)/ 54(AV)	
12205		H/V	74(Peak)/ 54(AV)	
14646		H/V	74(Peak)/ 54(AV)	
17087		H/V	74(Peak)/ 54(AV)	
19528		H/V	74(Peak)/ 54(AV)	
21969		H/V	74(Peak)/ 54(AV)	
24410		H/V	74(Peak)/ 54(AV)	

Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

2. Remark "---" means that the emissions level is too low to be measured

Report No: 0803151 Page 25 of 68

Date: 2008-04-25

Operation Mode: Transmitting under High Channel					
Frequency (MHz)	Level@3m (dB μ V/m)	Antenna Polarity	Limit@3m (dB \(\mu \) V/m)		
2480.030	79.6 (PK) /70.5 (AV)	Н	Fundamental Frequency		
2480.030	83.2 (PK) /75.6 (AV)	V			
4960	-	H/V	74(Peak)/ 54(AV)		
7440	1	H/V	74(Peak)/ 54(AV)		
9920	1	H/V	74(Peak)/ 54(AV)		
12400		H/V	74(Peak)/ 54(AV)		
14880	-	H/V	74(Peak)/ 54(AV)		
17360	1	H/V	74(Peak)/ 54(AV)		
19840	-	H/V	74(Peak)/ 54(AV)		
22320		H/V	74(Peak)/ 54(AV)		
24800		H/V	74(Peak)/ 54(AV)		

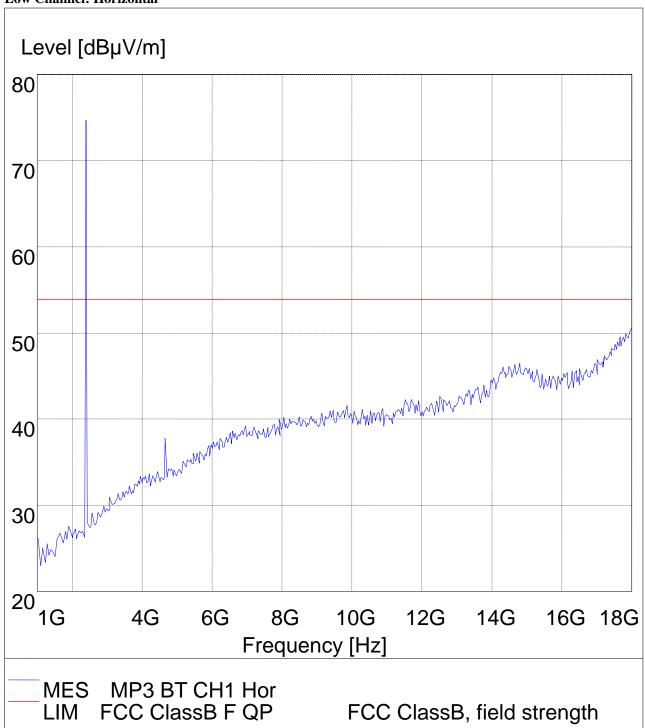
Note: 1. Level = Reading + AF + Cable - Preamp + Filter - Dist, Margin = Level - Limit

^{2.} Remark "---" means that the emissions level is too low to be measured



Please refer to the following test plots for details

Low Channel: Horizontal



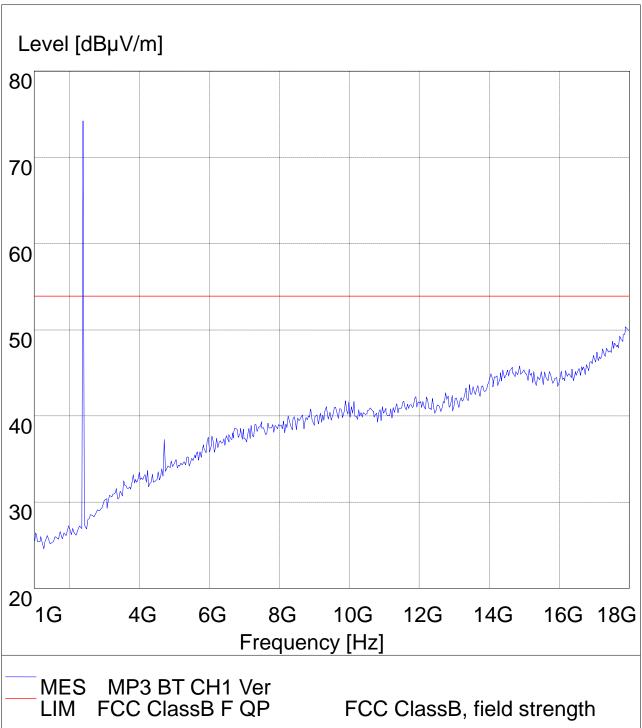
The report refers only to the sample tested and does not apply to the bulk.

Page 27 of 68

Report No: 0803151 Date: 2008-04-25



Low Channel: Vertical

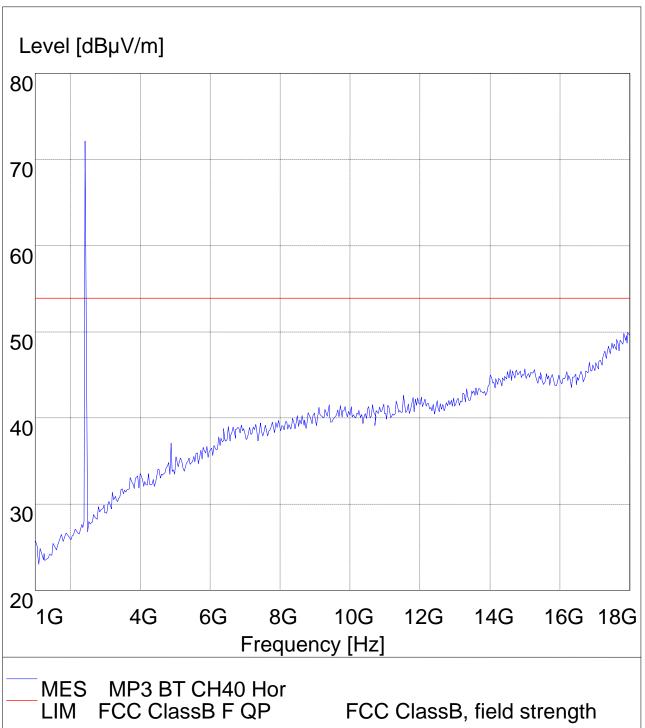


Page 28 of 68

Report No: 0803151 Date: 2008-04-25



Middle Channel : Horizontal

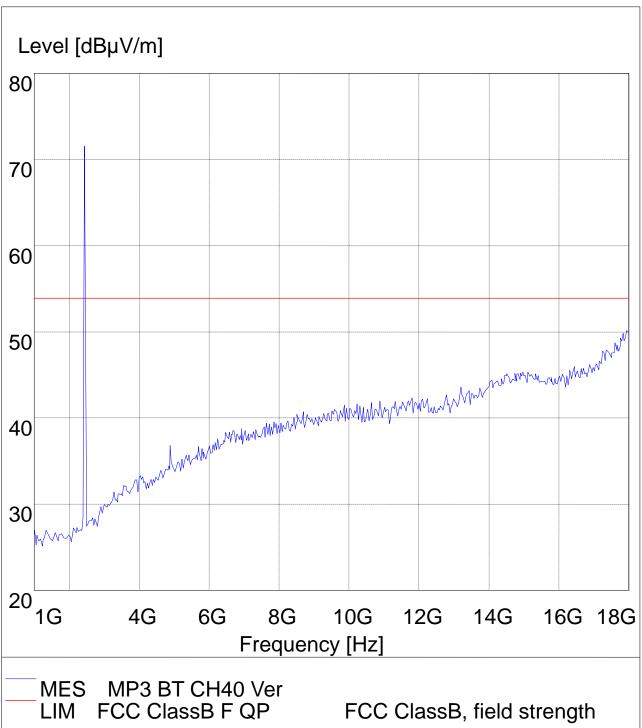


Page 29 of 68

Report No: 0803151 Date: 2008-04-25



Middle Channel :: Vertical

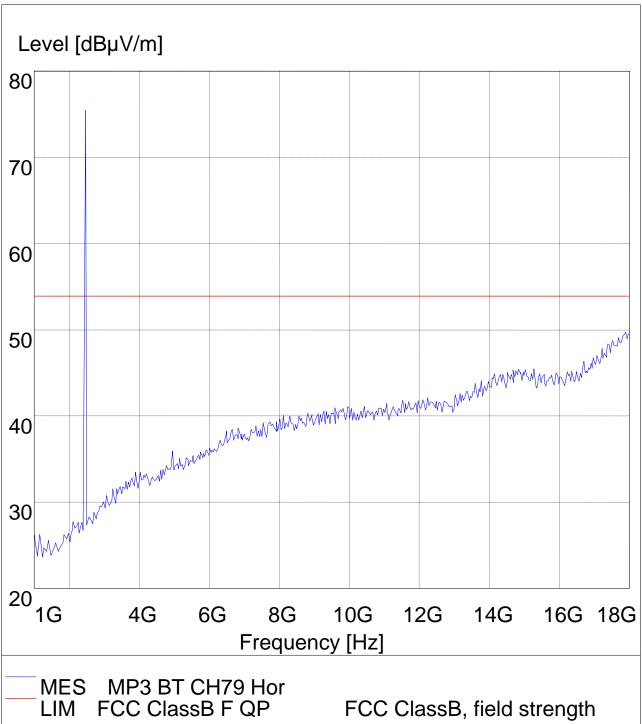


Page 30 of 68

Report No: 0803151 Date: 2008-04-25



High Channel: Horizontal

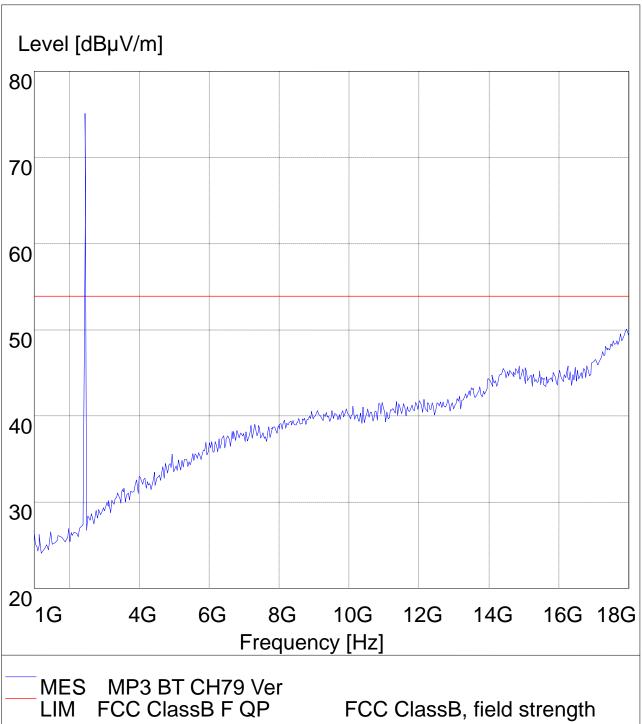


Page 31 of 68

Report No: 0803151 Date: 2008-04-25



High Channel: Vertical

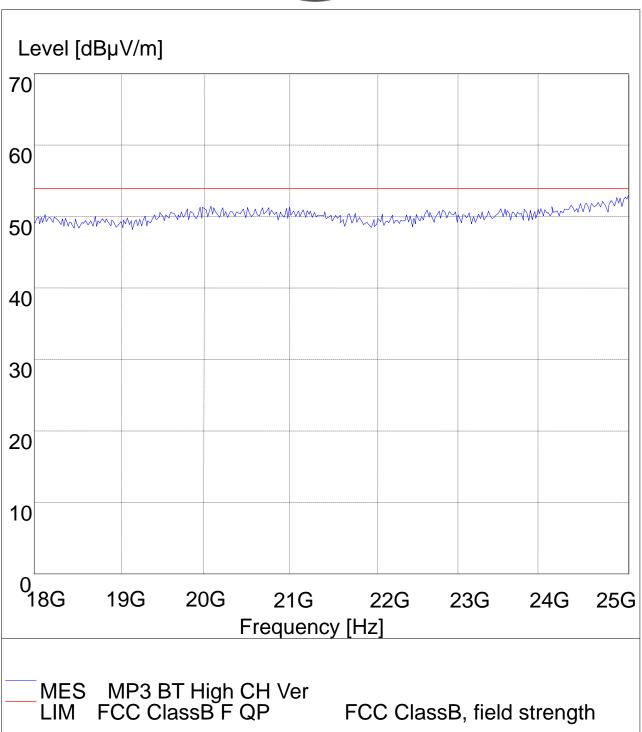


Page 32 of 68

Report No: 0803151 Date: 2008-04-25



18-25G Horizontal

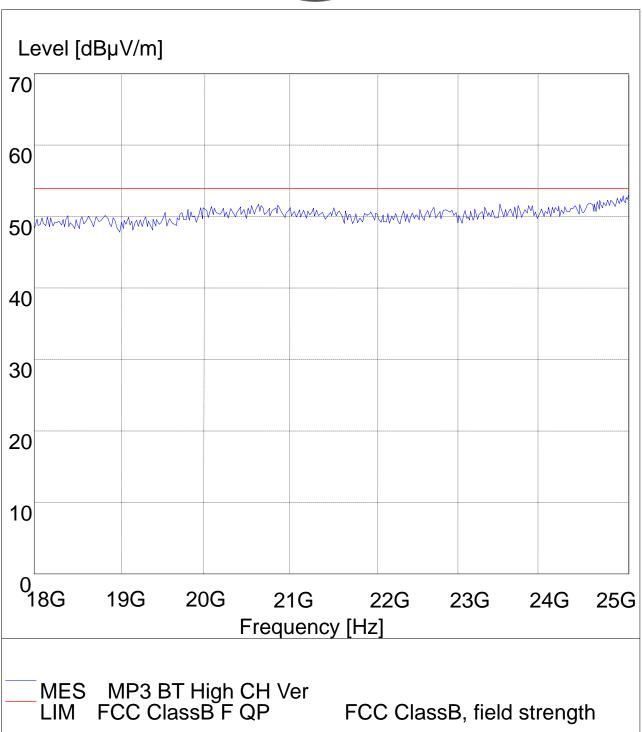


Page 33 of 68

Report No: 0803151 Date: 2008-04-25



18-25G Vertical



Report No: 0803151 Page 34 of 68

Date: 2008-04-25



7.0 20dB Bandwidth Measurement

7.1 Regulation

According to §15.247(b)(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. According to §15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

7.2 Limits of 20dB Bandwidth Measurement

The minimum of 20dB Bandwidth Measurement is <1MHz

7.3 Test Procedure.

- 1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel RBW > the 20 dB bandwidth of the emission being measured VBW \geq RBW Sweep = auto Detector function = peak Trace = max hold
- 3. Measure the highest amplitude appearing on spectral display and record the level to calculate results. 6. Repeat above procedures until all frequencies measured were complete.

7.4 Test Result

EU'	Т	MP3 Bluetooth Headset		Model		GI07Y	
Mod	de	Keep Transmitting		Input Voltage		DC 3.7V	
Temper	ature	24	24 deg. C, Humic		dity 56% R		RH
Channel		el Frequency (MHz)	ey 20 dB Bandwidth (kHz)		1,14,111	num Limit (kHz)	Pass/ Fail
Low		2402 886			<	<1000	Pass
Middle		2441	886		<	<1000	Pass
High		2480	878		<	<1000	Pass

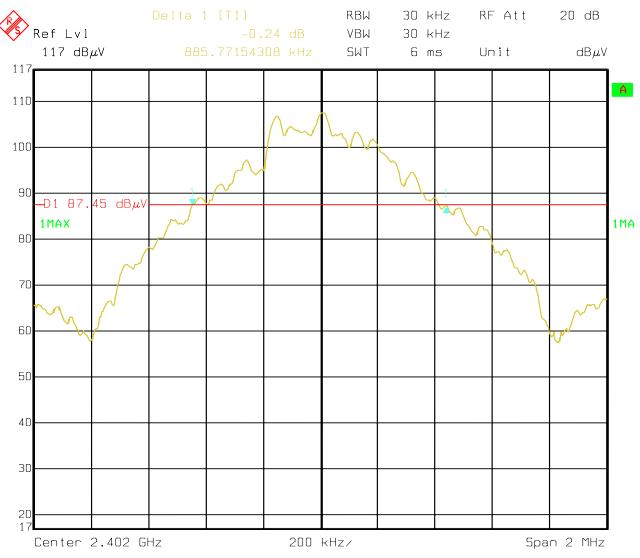
Page 35 of 68

Report No: 0803151 Date: 2008-04-25



Test Figure:

1. Condition: Low Channel



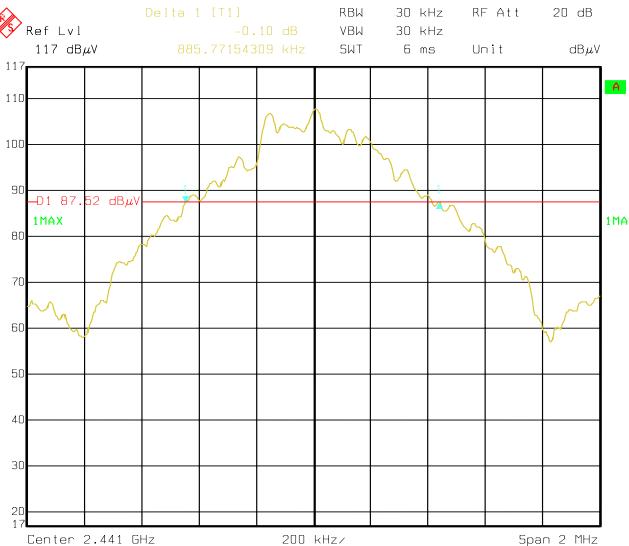
Date: 28.MAR.2008 10:16:07

Page 36 of 68

Report No: 0803151 Date: 2008-04-25



2. Condition: Middle Channel



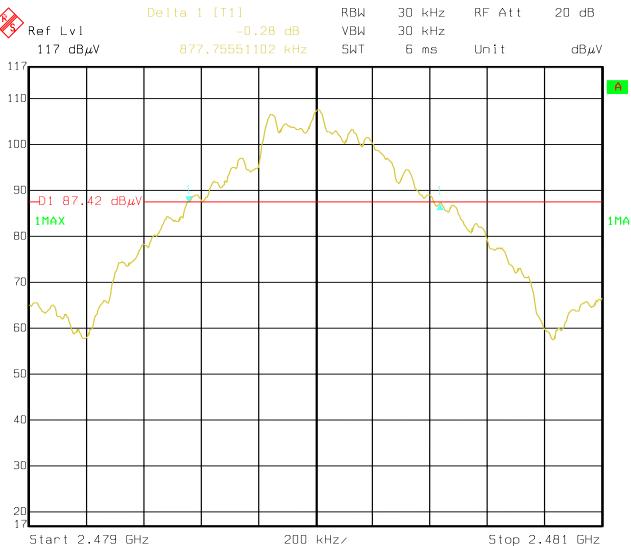
Date: 28.MAR.2008 10:14:40

Page 37 of 68

Report No: 0803151 Date: 2008-04-25



3. High Channel



Date: 28.MAR.2008 10:17:55

Report No: 0803151 Page 38 of 68

Date: 2008-04-25



8. Maximum Peak Output Power

8.1 Regulation

According to \$15.247(b)(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 2400-2483.5MHz band:0.125 watts. According to \$15.247(b)(4), the conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

8.2 Limits of Maximum Peak Output Power

The Maximum Peak Output Power Measurement is 30dBm.

8.3 Test Procedure

- 1. Check the calibration of the measuring instrument (spectrum analyzer) using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = approximately 5 times the 20 dB bandwidth, centered on a hopping channel; RBW > the 20 dB bandwidth of the emission being measured; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold
- 3. Measure the highest amplitude appearing on spectral display and record the level to calculate results.
- 4. Repeat above procedures until all frequencies measured were complete.

Page 39 of 68

Report No: 0803151 Date: 2008-04-25



8.4Test Results

EUT		MP3 Bluetoo	oth Headset		Model		GI07Y
Mode		Keeping Tra	ansmitting Input Vo		Input Voltage		C3.7V
Temperature	mperature 24 deg. C, Humidity		ity	50	5% RH		
Channel	Channel Frequency Peak (MHz)		Peak Power (dBm)	Output	Peak P Lin (dB	nit	Pass/ Fail
Low		2402	-1.80		30		Pass
Middle		2441	-2.21		30		Pass
High		2480	-2.49		30)	Pass

Note: 1. the result basic equation calculation as follow:

Peak Power Output = Peak Power Reading + Cable loss + Attenuator

Report No: 0803151 Page 40 of 68

Date: 2008-04-25



9.1 Regulation

According to §15.247(e), for digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

9.2 Limits of Power Spectral Density Measurement

The Maximum Power Spectral Density Measurement is 8dBm.

9.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer to MAX HOLD mode with RBW = 3 kHz.
- 3. Measure the highest amplitude appearing on spectral display and record the level to calculate results.
- 4. Repeat above procedures until all frequencies measured were complete.

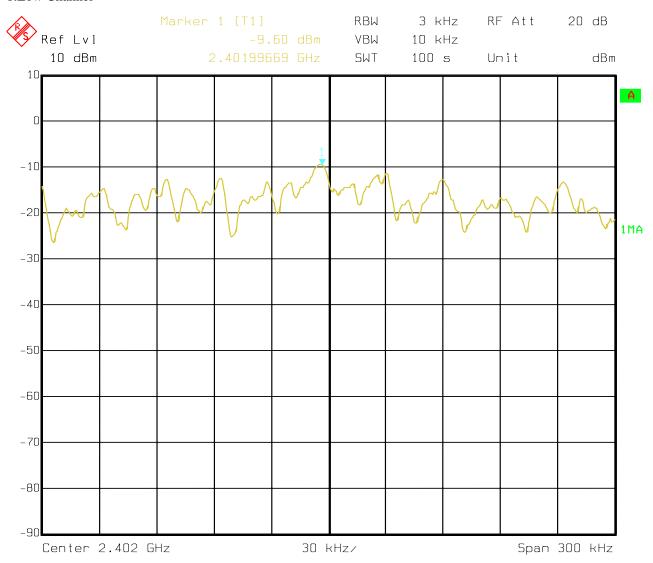
9.4Test Result

EUT		MP3 Bluetoo	th Headset	Model		GI07Y			
Mode		Keeping Tra	nsmitting	Input Voltage		DC3.7V			
Temperature	9	24 deg	24 deg. C, Humidity		ity 56		Iumidity 56% RH		5% RH
Channel	Cha	annel Frequency (MHz)	Final RF Po Level in 3kH: (dBm)		Maximum Limit (dBm)		Pass/ Fail		
Low		2402	-9.60		8		Pass		
Middle		2441	-9.54		8		Pass		
High		2480	-9.56		8		Pass		

Date: 2008-04-25

9.5Photo of Power Spectral Density Measurement

1.Low Channel



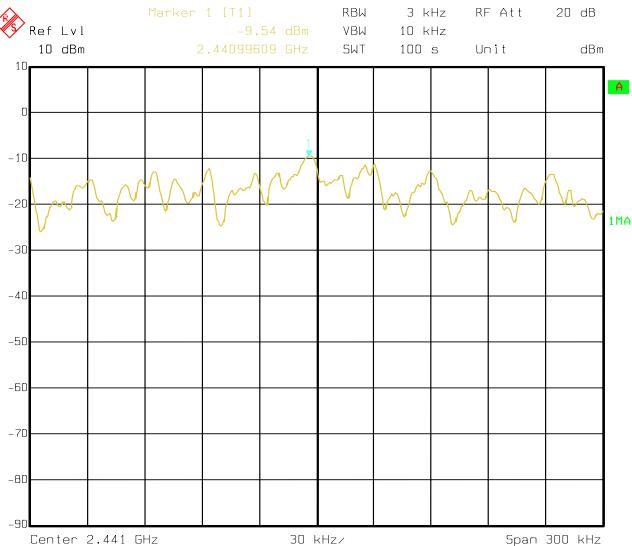
Date: 28.MAR.2008 11:20:29

Page 42 of 68

Report No: 0803151 Date: 2008-04-25



2. Middle Channel



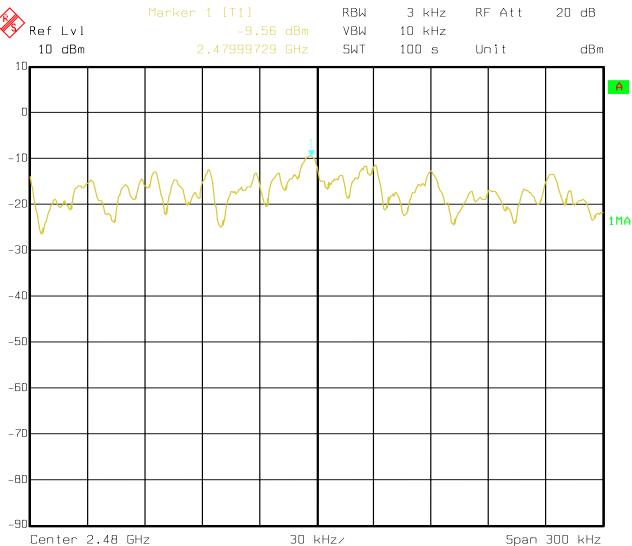
Date: 28.MAR.2008 11:17:03

Page 43 of 68

Report No: 0803151 Date: 2008-04-25



3. High Channel



Date: 28.MAR.2008 11:14:14

Report No: 0803151 Page 44 of 68

Date: 2008-04-25



10. Carrier Frequency Separation

10.1 Regulation

According to §15.247(a)(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. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW.

10.2 Limits of Carrier Frequency Separation

The Maximum Power Spectral Density Measurement is 25kHz or two-thirds of the 20dB bandwidth of the hopping Channel which is great.

10.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = wide enough to capture the peaks of two adjacent channels: Resolution (or IF) Bandwidth (RBW) \geq 1% of the span; Video (or Average) Bandwidth (VBW) \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold
- 3. Measure the separation between the peaks of the adjacent channels using the marker-delta function.
- 4. Repeat above procedures until all frequencies measured were complete.

10.4Test Result

EUT		MP3 Bluetooth Headset		Model		GI07Y	
Mode		Keeping Transmitting		Input Voltage		DC3.7V	
Temperature		24 deg	g. C,	Humidity		56% RH	
Channel	Cha	annel Frequency (MHz)	Carrier Frequency Separation		Lin	nit	Pass/ Fail
Middle		2441	1MHz		≥ 25 kHz or 20		Pass
					dB band	dwidth	

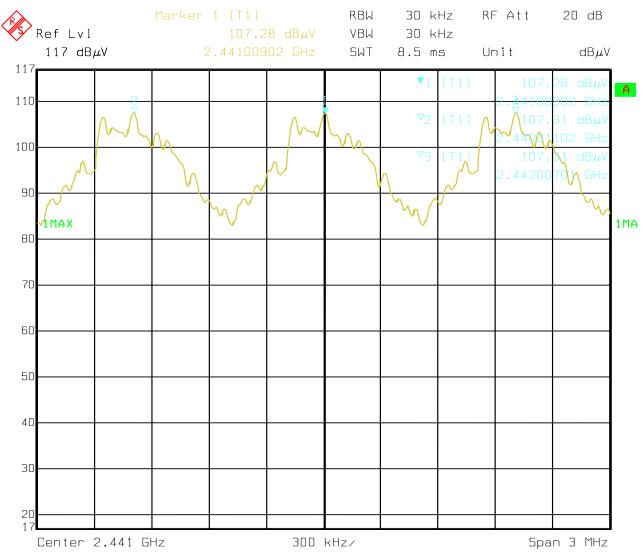
Page 45 of 68

Report No: 0803151 Date: 2008-04-25



Test Plots

Middle Channel



Date: 28.MAR.2008 12:05:41

Report No: 0803151 Page 46 of 68

Date: 2008-04-25



11. Number of Hopping Channels

11.1 Regulation

According to §15.247(a)(1)(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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used. According to §15.247(b)(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.

11.2 Limits of Number of Hopping Channels

The frequency hopping systems in the 2400-2483.5MHz band shall use at least 15 channels.

11.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = the frequency band of operation; RBW \geq 1% of the span; VBW \geq RBW; Sweep = auto; Detector function = peak; Trace = max hold
- 3. Record the number of hopping channels.

11.4Test Result

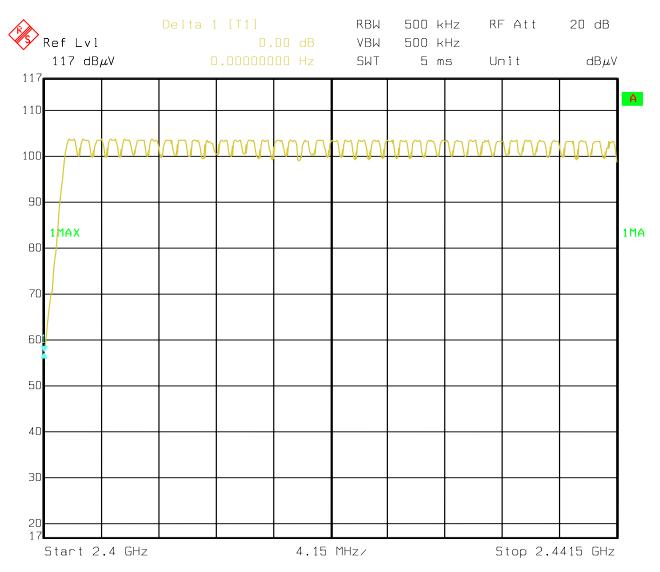
EUT	M	P3 Bluetooth Headset	Model		(GI07Y
Mode	K	Ceeping Transmitting	Input Voltage D		C3.7V	
Temperature	24 deg. C,		Humidity		56% RH	
Operating Frequency		Number of hopping channels		Lin	nit	Pass/ Fail
2402-2480MHz		79		≥ 1	.5	Pass

Page 47 of 68

Report No: 0803151 Date: 2008-04-25



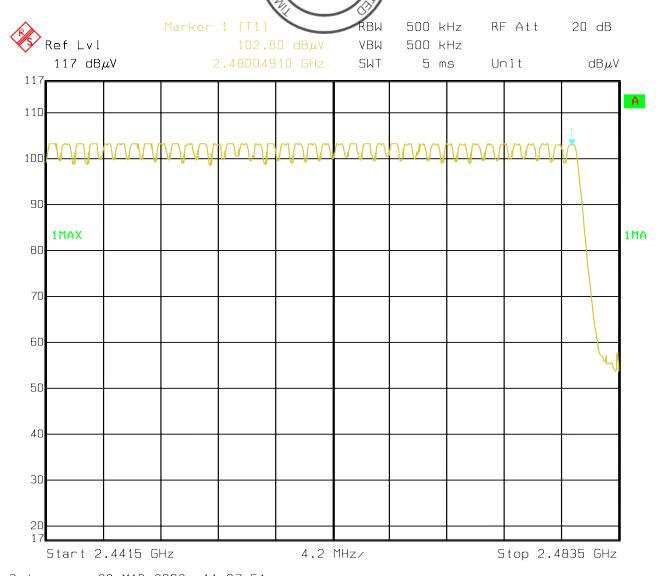
Test Plot



Date: 28.MAR.2008 11:05:23



Date: 2008-04-25



Date: 28.MAR.2008 11:07:51

Report No: 0803151 Page 49 of 68

Date: 2008-04-25



12. Time of Occupancy (Dewell Time)

12.1 Regulation

According to §15.247(a)(1)(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. Frequency hopping systems may avoid or suppress transmissions on a particular hopping frequency provided that a minimum of 15 channels are used.

12.2 Limits of Carrier Frequency Separation

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

12.3 Test Procedure

- 1. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- 2. Set the spectrum analyzer as follows: Span = zero span, centered on a hopping channel; RBW = 1 MHz; VBW \geq RBW; Sweep = as necessary to capture the entire dwell time per hopping channel; Detector function = peak;

Trace = max hold

- 3. Measure the dwell time using the marker-delta function.
- 4. Repeat above procedures until all frequencies measured were complete.
- 5. Repeat this test for different modes of operation (e.g., data rate, modulation format, etc.), if applicable.

Page 50 of 68

Report No: 0803151 Date: 2008-04-25



12.4Test Result

EUT	MP3 Bluetoo		oth Headset	Model		(GI07Y
Mode	Mode Keeping Transmittin		ansmitting	Input Voltage		D	C3.7V
Temperature	e	24 deş	g. C,	Humidity		56% RH	
Channel		Reading	Hoping Rate		Actual		Limit
Low		2.89	266.667 ho	266.667 hop/s		1	0.4s
Middle		2.89	266.667 hop/s		0.31		0.4s
High		2.89	266.667 hc	p/s	0.3	1	0.4s

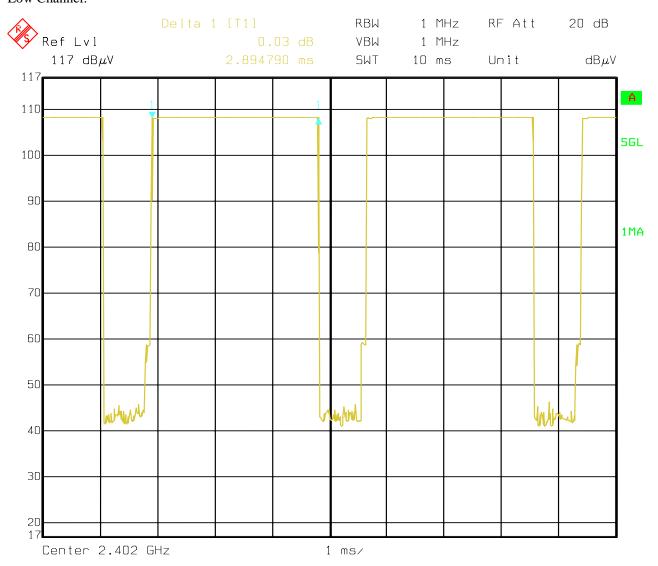
Actual = Reading \times (Hopping rate / Number of channels) \times Test period Test period = 0.4 [seconds / channel] \times 79 [channel] = 31.6 [seconds] NOTE: The EUT makes worst case 1600 hops per second or 1 time slot has a length of 625 μ s with 79 channels. A DH1 Packet needs 5 time slot for transmitting and 1 time slot for receiving. Then the EUT makes worst case 266.667 hops per second with 79 channels.

Page 51 of 68

Report No: 0803151 Date: 2008-04-25



Test Plots: Low Channel:



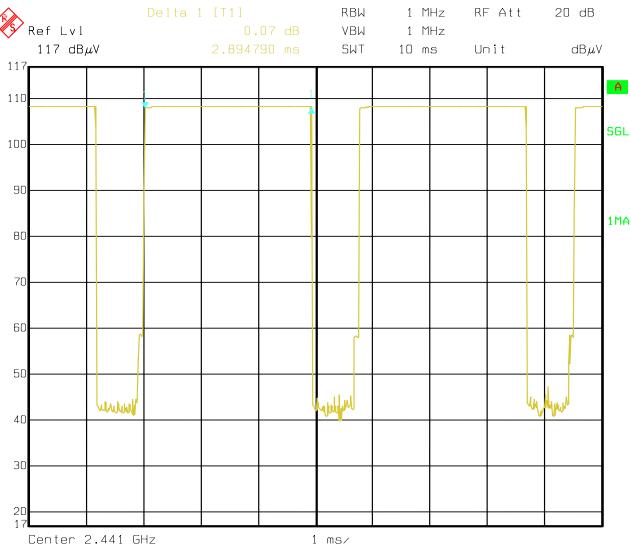
Date: 28.MAR.2008 10:55:46

Page 52 of 68

Report No: 0803151 Date: 2008-04-25



Middle Channel:



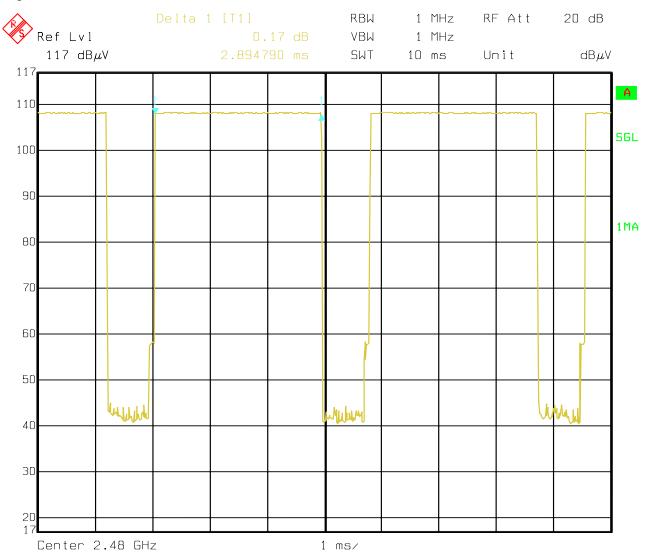
Date: 28.MAR.2008 10:57:47

Page 53 of 68

Report No: 0803151 Date: 2008-04-25



High Channel



Date: 28.MAR.2008 10:59:57

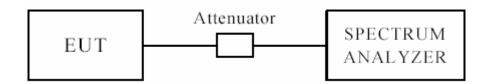
Report No: 0803151 Page 54 of 68

Date: 2008-04-25



13 Out of Band Measurement

10.1 Test Setup



13.2 Limits of Out of Band Emissions Measurement

- 1. Below –20dB of the highest emission level of operating band (in 100kHz Resolution Bandwidth).
- 2. Fall in the restricted bands listed in section 15.205. The maximum permitted average field strength is listed in section 15.209.

13.3 Test Procedure

For signals in the restricted bands above and below the 2.4-2.483GHz allocated band a measurement was made of the amplitude of the spurious emissions with respect to the intentional signals. The relative amplitude, in dBc, was applied to the average and peak filed strength of the intentional signal made on the OATS to calculate the field strength of the unintentional signals.

The spectrum plots (Peak RBW=VBW=1MHz; Average RBW=1MHz, VBW=10Hz) are attached on the following pages.

Report No: 0803151 Page 55 of 68

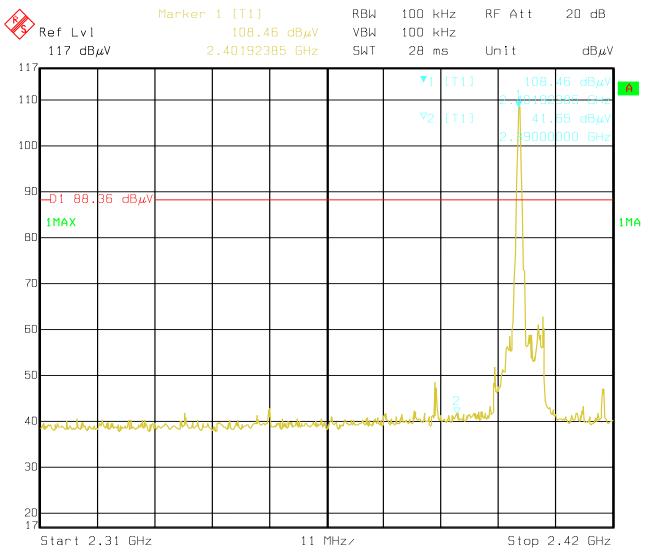
Date: 2008-04-25



13.4 Out of Band Test Result

Product:	MP3 Bluetooth Headset	Test Mode:	Low Channel
Mode	Keeping Transmitting	Input Voltage	DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 28.MAR.2008 10:24:57

Page 56 of 68

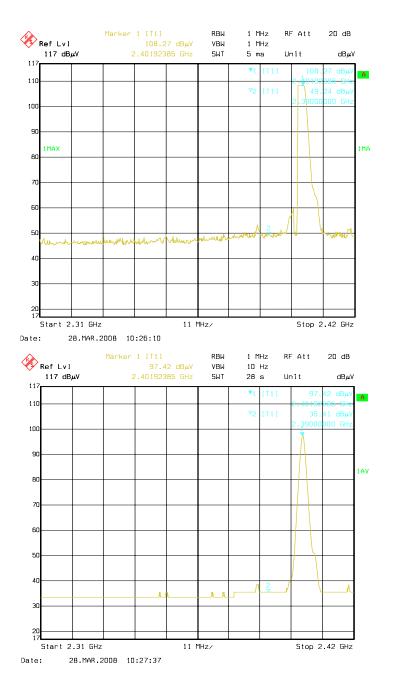
Report No: 0803151 Date: 2008-04-25



13.4 Out of Band Test Result

Product:	MP3 Bluetooth Headset		Test Mode:	Low Channel		
Mode	Keeping Transmitting		de Keeping Trans		Input Voltage	DC3.7V
Temperature	24 deg. C		Humidity	56% RH		
Test Result:	Pass		Detector	PK		
The Max. FS in	PK (dBµV/m)	44.8	Limit	$74(dB\mu V/m)$		
Restrict Band	$AV(dB\mu V/m)$	36.7	Lillill	$54(dB\mu V/m)$		

Test Figure:



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Report No: 0803151 Page 57 of 68

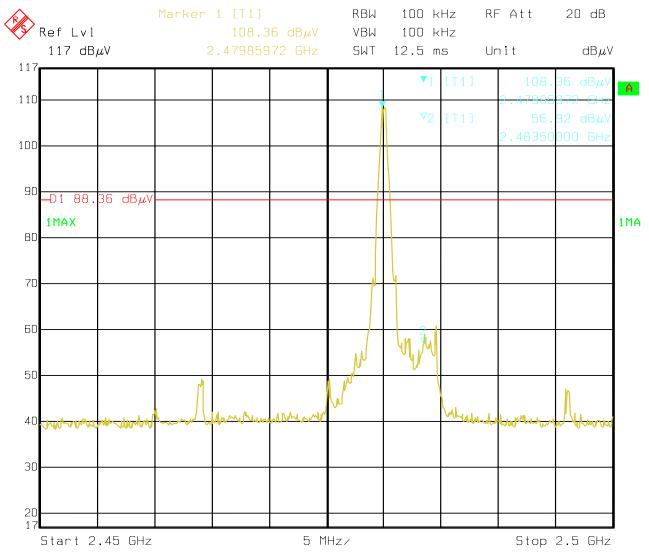
Date: 2008-04-25



13.4 Out of Band Test Result

Product:	MP3 Bluetooth Headset	Test Mode:	High Channel
Mode	Keeping Transmitting		DC3.7V
Temperature	24 deg. C,	Humidity	56% RH
Test Result:	Pass	Detector	PK

Test Figure:



Date: 28.MAR.2008 10:23:48

Page 58 of 68

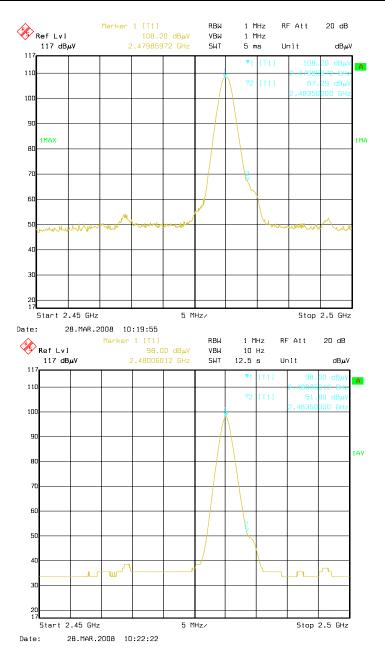
Report No: 0803151 Date: 2008-04-25



13.4 Out of Band Test Result

Product:	MP3 Bluet	ooth Headset	Test Mode:	High Channel
Mode	Keeping	Гransmitting	Input Voltage	DC3.7V
Temperature	24 deg. C,		Humidity	56% RH
Test Result:	Pass		Detector	PK
The Max. FS in	PK (dBμV/m)	52.8	Limit	$74(dB\mu V/m)$
Restrict Band	$AV(dB\mu V/m)$	40.5	Lillit	$54(dB\mu V/m)$

Test Figure:



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Report No: 0803151 Page 59 of 68

Date: 2008-04-25



14.0 Antenna Requirement

14.1 Standard Applicable

For intentional device, according to FCC 47 CFR Section 15.203, an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

And according to FCC 47 CFR Section 15.247 (b), if transmitter antennas of directional gain greater than 6 dBi

are used, the power shall be reduced by the mount in dB that the directional gain of the antenna exceeds 6 dBi.

14.2 Antenna Connected construction

The antenna is chip dielectric antenna. The maximum Gain of this antenna is -0.8dBi

Report No: 0803151 Page 60 of 68

Date: 2008-04-25



15.0 Maximum Permissible Exposure

Applicable Standard

According to §1.1307(b)(5), systems operating under the provisions of this section shall be oper-ated in a manner that ensure that the public is not exposed to radio frequency energy level in excess of the Commission's guideline. This is a Portable device.

According to §1.1310 and §2.1093 RF exposure is calculated.

Measurement Result

This is a portable device and the Max peak output power is -1.80 dBm (0.6607W), so the EIRP is 0.6607*0.832=0.5497mW which is lower than low threshold 60/fGHz mW (25mW), d<2.5cm in general population category;

The SAR measurement is not necessary.

Page 61 of 68

Report No: 0803151 Date: 2008-04-25

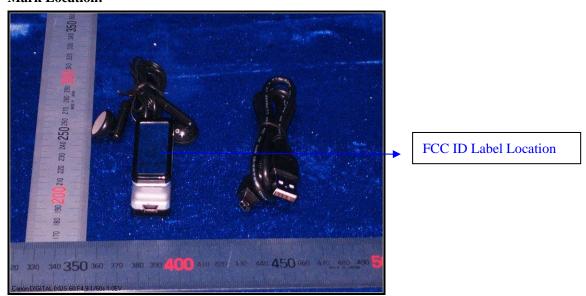


16.0 FCC ID Label

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

The label must not be a stick-on paper label. The label on these products must be permanently affixed to the product and readily visible at the time of purchase and must last the expected lifetime of the equipment not be readily detachable.

Mark Location:



Page 62 of 68

Report No: 0803151 Date: 2008-04-25



17.0 Photo of testing

17.1 Conducted test View—N/A

17.2 Emission Radiated test View--



Page 63 of 68

Report No: 0803151 Date: 2008-04-25



17.3 Photo for the EUT



Page 64 of 68

Report No: 0803151 Date: 2008-04-25



17.4 Photo for the EUT



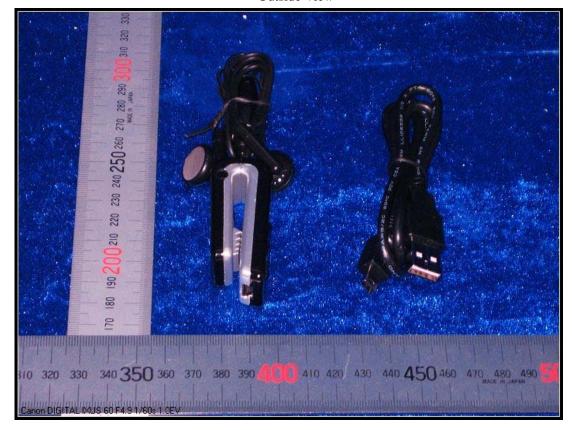
Page 65 of 68

Report No: 0803151 Date: 2008-04-25



17.4 Photo for the EUT

Outside View



Page 66 of 68

Report No: 0803151 Date: 2008-04-25





Page 67 of 68

Report No: 0803151 Date: 2008-04-25

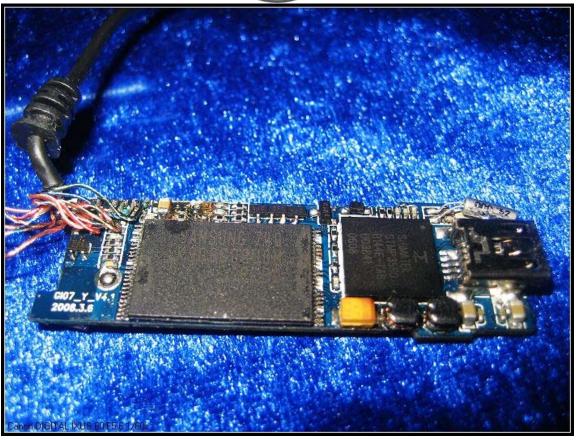




Page 68 of 68

Report No: 0803151 Date: 2008-04-25





End of the report