STC Test Report

Date : 2011-11-08
No. : HM167192

Applicant (MUE001): Musical Electronics Limited
8th Floor, Wlder Industrial Building, 58 Tsun Yip Street, Kwun Tong, Hong Kong

Manufacturer: Musical Electronics (Qing Yuan) Limited
Tai He Industrail Park, Qing Xin Country, Qing Yuan City, Guang Dong Province, China.

Description of Sample(s):

Product:	G-GO Portable Wireless Speaker
Brand Name:	G-PROJECT
Model Number:	G-100
FCC ID:	AUIG-100

Date Sample(s) Received: 2011-10-26

Date Tested: 2011-11-01 to 2011-11-02

Investigation Requested: Perform ElectroMagnetic Interference measurement in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2010 and ANSI C63.4:2009 for FCC Certification.

Conclusion(s): The submitted product COMPLIED with the requirements of Federal Communications Commission [FCC] Rules and Regulations Part 15. The tests were performed in accordance with the standards described above and on Section 2.2 in this Test Report.

Remark(s): For additional models details, see page 3.

Dr. LEE Kam Chuen
Authorized Signatory
ElectroMagnetic Compatibility Department
For and on behalf of
The Hong Kong Standards and Testing Centre Ltd.

The Hong Kong Standards and Testing Centre Ltd.
10 Dai Wang Street, Taipo Industrial Estate, N.T., Hong Kong
Tel: (852) 2666 1888 Fax: (852) 2664 4353 Homepage: www.hkstc.org E-mail: hkstc@hkstc.org

CONTENT:

1.0 General Details

1.1 Test Laboratory

The Hong Kong Standards and Testing Centre Ltd.
EMC Laboratory
10 Dai Wang Street, Taipo Industrial Estate
New Territories, Hong Kong

1.2 Equipment Under Test [EUT]
Description of Sample(s)

Product:	G-GO Portable Wireless Speaker
Manufacturer:	Musical Electronics (Qing Yuan) Limited Tai He Industrail Park, Qing Xin Country, Qing Yuan City, Guang Dong Province, China.
Brand Name:	G-PROJECT
Model Number:	G-100
Additional Model Number(s):	G-100B, G-100W
Input Voltage:	The AC/DC Adaptor used for the tests was provided by the applicant with the following details: Two pins (Live / Neutral) only adaptor, Model Number: AS190-090-AC180, Input: 100-240Va.c. 50/60Hz 0.7A, Output: 9Vd.c. 1.8A. Or 6Vd.c. (“AA” size battery x 4) for portable use.
Output:	5V 1A for Charge any phones or any device with a USB jack.

1.2.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Musical Electronics Limited, G-GO Portable Wireless Speaker, it is Audio System, modulation by IC; and type is frequency hopping speed spectrum Modulation.

1.3 Date of Order

2011-10-26

1.4 Submitted Sample(s):

1 Sample

1.5 Test Duration

2011-11-01 to 2011-11-02

1.6 Country of Origin

China

2.0 Technical Details

2.1 Investigations Requested

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2010 Regulations and ANSI C63.4:2009 for FCC Certification.

2.2 Test Standards and Results Summary Tables

EMISSION
Results Summary

Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Fail	N/A
Output Power of Fundamental Emissions	FCC 47CFR 15.247(b)(1)	ANSI C63.4:2009	N/A	☒	☐	☐
RF Conduct Spurious Emission	FCC 47CFR 15.247(c)	N/A	N/A	☒	☐	☐
Radiated Spurious Emissions	FCC 47CFR 15.209	ANSI C63.4:2009	N/A	☒	☐	☐
AC Mains Conducted Emissions	FCC 47CFR 15.207	N/A	N/A	☒	☐	☐
Number of Operating Channel	FCC 47CFR 15.247(a)(2)(b)(1)	N/A	N/A	☒	☐	☐
Band-edge compliance of Conducted Emission	FCC 47CFR 15.247©	N/A	N/A	☒	☐	☐
Channel Separation	FCC 47CFR 15.247(a)(1)	N/A	N/A	☒	☐	☐
Pseudorandom Hopping Algorithm	FCC 47CFR 15.247(a)(1)	N/A	N/A	☒	☐	☐
Time of Occupancy	FCC 47CFR 15.247(a)(1)(iii)	N/A	N/A	☒	☐	☐
20dB Bandwidth	FCC 47CFR 15.247(a)(2)	N/A	N/A	☒	☐	☐
Antenna requirement	FCC 47CFR 15.203	N/A	N/A	☒	☐	☐

Note: N/A – Not Applicable

3.0 Test Results

3.1 Emission

3.1.1 Maximum Peak Output Power

Test Requirement:	FCC 47CFR 15.247(b)(1)
Test Method:	N/A
Test Date:	2011-11-02
Mode of Operation:	Communication mode (connected Peak Power)

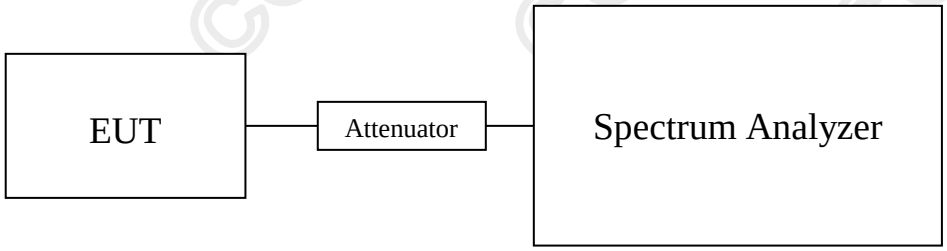
Test Method:

The RF output of the EUT was connected to the spectrum analyzer. All the attenuation or cable loss will be added to the measured maximum output power. The results are recorded in dBm.

Spectrum Analyzer Setting:

RBW = 3 MHz, VBW= 3MHz, Sweep = Auto, Span = 10MHz
Detector = Peak, Trace = Max. hold

Test Setup:



Limits for Peak Output Power of Fundamental & Harmonics Emissions [FCC 47CFR 15.247]:

The maximum peak output power shall not exceeded the following limits: For frequency hopping systems employing at least 75 hopping channels: 1 Watt For all other frequency hopping systems in the 2400-2483.5 MHz band: 0.125 Watts For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt

Results of Communication mode (connected Peak Power): Pass
Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2402	0.00127

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2441	0.00085

Transmitter Frequency (MHz)	Maximum conducted output power (Watt)
2480	0.00057

Limit: 0.125W (125mW)

Calculated measurement uncertainty : 30MHz to 1GHz 1.7dB
1GHz to 18GHz 1.7dB

3.1.2 Radiated Spurious Emissions

Test Requirement:	FCC 47CFR 15.209
Test Method:	ANSI C63.4:2009
Test Date:	2011-11-02
Mode of Operation:	Communication mode / Aux in mode connected to iPod with charging function

Test Method:

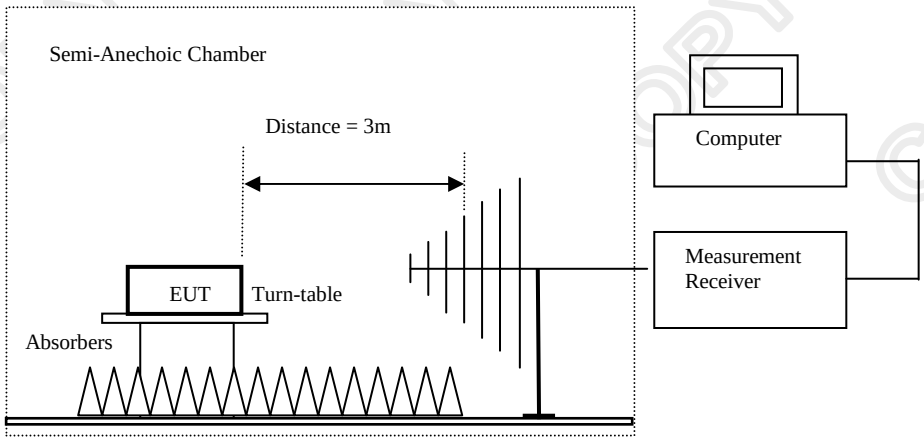
The sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

* Semi-anechoic chamber located on the G/F of "The Hong Kong Standards and Testing Centre Ltd." with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 607756.

Spectrum Analyzer Setting:

9KHz – 30MHz (Pk & Av)	RBW:	10kHz
	VBW:	30kHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
30MHz – 1GHz (QP)	RBW:	120kHz
	VBW:	120kHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold
Above 1GHz (Pk & Av)	RBW:	3MHz
	VBW:	3MHz
	Sweep:	Auto
	Span:	Fully capture the emissions being measured
	Trace:	Max. hold

Test Setup:



Ground Plane

Absorbers placed on top of the ground plane are for measurements above 1000MHz only.

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	[μV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Communication mode – CH0 (9kHz – 1GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level dBμV	Correction Factor dB/m	Field Strength dBμV/m	Field Strength μV/m	Limit μV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Results of Communication mode – CH0 (30MHz – 1000MHz): PASS

Field Strength of Spurious Emissions Quasi-Peak						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
59.2	20.4	9.3	29.7	40.0	-10.3	Vertical
373.0	18.3	17.1	35.4	46.0	-10.6	Vertical
437.0	15.3	18.6	33.9	46.0	-12.1	Vertical
533.3	21.1	21.3	42.4	46.0	-3.6	Vertical
384.0	16.5	18.1	34.6	46.0	-11.4	Horizontal
405.3	17.4	18.4	35.8	46.0	-10.2	Horizontal

Result of Communication mode – CH0 (1GHz – 26GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dB?	Correction Factor dB/m	Field Strength dB? /m	Limit @3m dB? /m	Margin dB? /m	E-Field Polarity
2402.0	68.5	27.7	96.2	--	--	Vertical
1633.3	28.7	25.3	54.0	74.0	-20.0	Vertical
4804.0	6.0	32.1	38.1	74.0	-35.9	Vertical

Result of Communication mode – CH0 (1GHz – 26GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dB?	Correction Factor dB/m	Field Strength dB? /m	Limit @3m dB? /m	Margin dB? /m	E-Field Polarity
2402.0	48.5	27.7	76.2	--	--	Vertical
1633.3	12.3	25.3	37.6	54.0	-16.4	Vertical
4804.0	2.2	32.1	34.3	54.0	-19.7	Vertical

Result of Communication mode – CH39 (9kHz – 1GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level dBµV	Correction Factor dB/m	Field Strength dBµV/m	Field Strength µV/m	Limit µV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Results of Communication mode – CH39 (30MHz – 1000MHz): PASS

Field Strength of Spurious Emissions Quasi-Peak						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
59.2	20.4	9.3	29.7	40.0	-10.3	Vertical
373.0	18.3	17.1	35.4	46.0	-10.6	Vertical
437.0	15.3	18.6	33.9	46.0	-12.1	Vertical
533.3	21.1	21.3	42.4	46.0	-3.6	Vertical
384.0	16.5	18.1	34.6	46.0	-11.4	Horizontal
405.3	17.4	18.4	35.8	46.0	-10.2	Horizontal

Result of Communication mode – CH39 (1GHz – 26GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dB?	Correction Factor dB/m	Field Strength dB? /m	Limit @3m dB? /m	Margin dB? /m	E-Field Polarity
2441.0	67.1	27.6	94.7	--	--	Vertical
1633.3	28.7	25.3	54.0	74.0	-20.0	Vertical
4884.0	5.7	32.2	37.9	74.0	-36.1	Vertical

Result of Communication mode – CH39 (1GHz – 26GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dB?	Correction Factor dB/m	Field Strength dB? /m	Limit @3m dB? /m	Margin dB? /m	E-Field Polarity
2441.0	47.1	27.7	74.8	--	--	Vertical
1633.3	12.3	25.3	37.6	54.0	-16.4	Vertical
4884.0	2.2	32.2	34.4	54.0	-19.6	Vertical

Result of Communication mode – CH78 (9kHz – 1GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level dBµV	Correction Factor dB/m	Field Strength dBµV/m	Field Strength µV/m	Limit µV/m	E-Field Polarity
Emissions detected are more than 20 dB below the FCC Limits						

Results of Communication mode – CH78 (30MHz – 1000MHz): PASS

Field Strength of Spurious Emissions Quasi-Peak						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
59.2	20.4	9.3	29.7	40.0	-10.3	Vertical
373.0	18.3	17.1	35.4	46.0	-10.6	Vertical
437.0	15.3	18.6	33.9	46.0	-12.1	Vertical
533.3	21.1	21.3	42.4	46.0	-3.6	Vertical
384.0	16.5	18.1	34.6	46.0	-11.4	Horizontal
405.3	17.4	18.4	35.8	46.0	-10.2	Horizontal

Result of Communication mode – CH78 (1GHz – 26GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dB?	Correction Factor dB/m	Field Strength dB? /m	Limit @3m dB? /m	Margin dB? /m	E-Field Polarity
2480.0	65.3	27.5	92.8	--	--	Vertical
1633.3	28.7	25.3	54.0	74.0	-20.0	Vertical
4961.0	5.5	32.2	37.7	74.0	-36.3	Vertical

Result of Communication mode – CH78 (1GHz – 26GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dB?	Correction Factor dB/m	Field Strength dB? /m	Limit @3m dB? /m	Margin dB? /m	E-Field Polarity
2480.0	45.3	27.5	72.8	--	--	Vertical
1633.3	12.3	25.3	37.6	54.0	-16.4	Vertical
4961.0	1.9	32.2	34.1	54.0	-19.9	Vertical

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 18GHz 5.1dB

Limits for Radiated Emissions [FCC 47 CFR 15.209 Class B]:

Frequency Range	Quasi-Peak Limits
[MHz]	[µV/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

The emission limits shown in the above table are based on measurement employing a CISPR quasi-peak detector and above 1000MHz are based on measurements employing an average detector.

Result of Aux in mode connected to iPod with charging function (9kHz – 30MHz): Pass
Emissions detected are more than 20 dB below the limit line(s)

Result of Aux in mode connected to iPod with charging function (30MHz – 1GHz): Pass

Field Strength of Spurious Emissions Quasi-Peak						
Frequency MHz	Measured Level @3m dBµV	Correction Factor dB/m	Field Strength dBµV/m	Limit @3m dBµV/m	Margin dBµV/m	E-Field Polarity
84.3	19.5	8.4	27.9	40.0	-12.1	Vertical
190.0	18.0	11.3	29.3	43.5	-14.2	Horizontal
216.0	11.0	12.3	23.3	43.5	-20.2	Horizontal
288.0	17.8	14.8	32.6	46.0	-13.4	Horizontal
356.0	7.7	17.5	25.2	46.0	-20.8	Horizontal
442.5	11.8	18.7	30.5	46.0	-15.5	Horizontal

Result of Aux in mode connected to iPod with charging function (1GHz – 26GHz): Pass
Emissions detected are more than 20 dB below the limit line(s)

Remarks:

* Denotes restricted band of operation.
Measurements were made using a peak detector. Any emission less than 1000MHz and falling within the restricted bands of FCC Rules Part 15 Section 15.205 and the limits of FCC Rules Part 15 Section 15.209 were applied.

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.1dB
1GHz to 18GHz 5.1dB

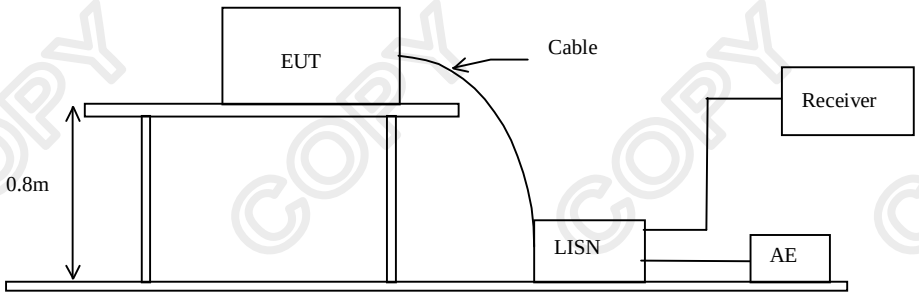
3.1.3 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement:	FCC 47CFR 15.207
Test Method:	ANSI C63.4:2009
Test Date:	2011-11-01
Mode of Operation:	Communication Mode / Aux-in mode connected to iPod with charging function

Test Method:

The test was performed in accordance with ANSI C63.4: 2009, with the following: an initial measurement was performed in peak and average detection mode on the live line, any emissions recorded within 30dB of the relevant limit line were re-measured using quasi-peak and average detection on the live and neutral lines with the worst case recorded in the table of results.

Test Setup:



Limit for Conducted Emissions (FCC 47 CFR 15.207):

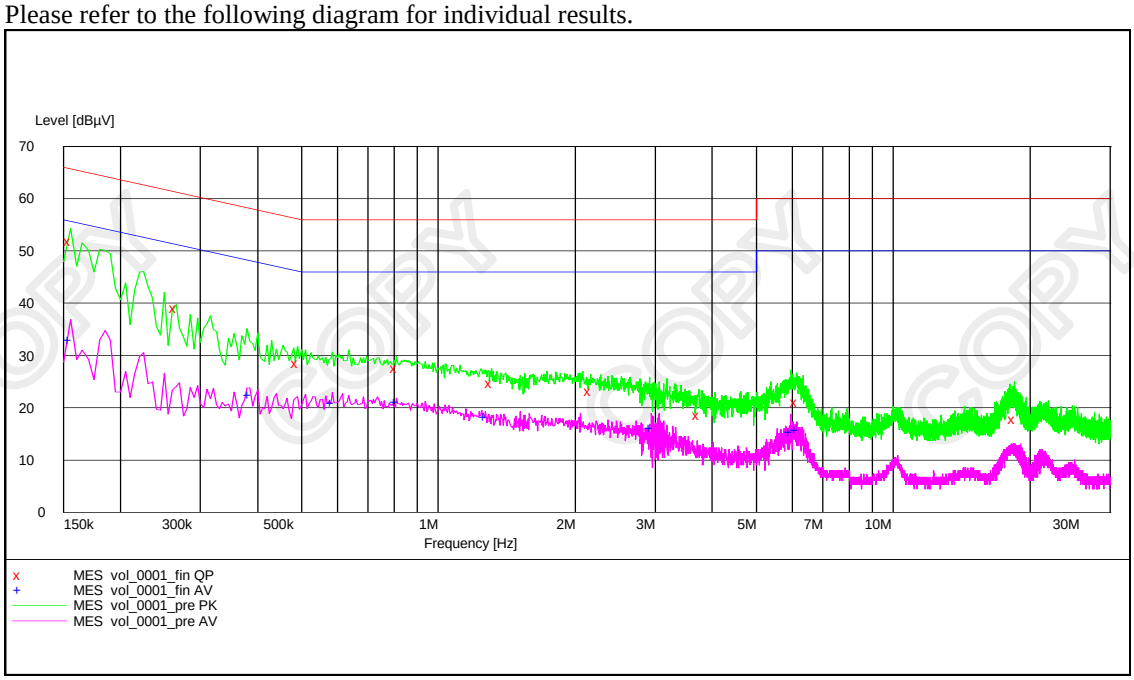
Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Communication Mode: Pass

Please refer to the following diagram for individual results.



Results of Communication Mode: Pass

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBµV	Limit dBµV	Level dBµV	Limit dBµV
Live	0.155	51.8	66.0	32.9	56.0
Live	0.385	-*-	-*-	22.4	48.0
Live	0.585	-*-	-*-	20.9	46.0
Live	0.810	27.7	56.0	-*-	-*-
Live	1.270	-*-	-*-	18.2	46.0
Live	2.160	23.2	56.0	-*-	-*-
Live	3.740	18.6	56.0	-*-	-*-
Live	5.950	-*-	-*-	15.3	50.0
Live	6.150	21.0	60.0	-*-	-*-
Neutral	0.265	39.1	61.0	-*-	-*-
Neutral	0.490	28.5	56.0	-*-	-*-
Neutral	0.810	-*-	-*-	21.0	46.0
Neutral	1.310	24.8	56.0	-*-	-*-
Neutral	2.940	-*-	-*-	16.2	46.0
Neutral	6.135	-*-	-*-	15.8	50.0
Neutral	18.480	17.9	60.0	-*-	-*-

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

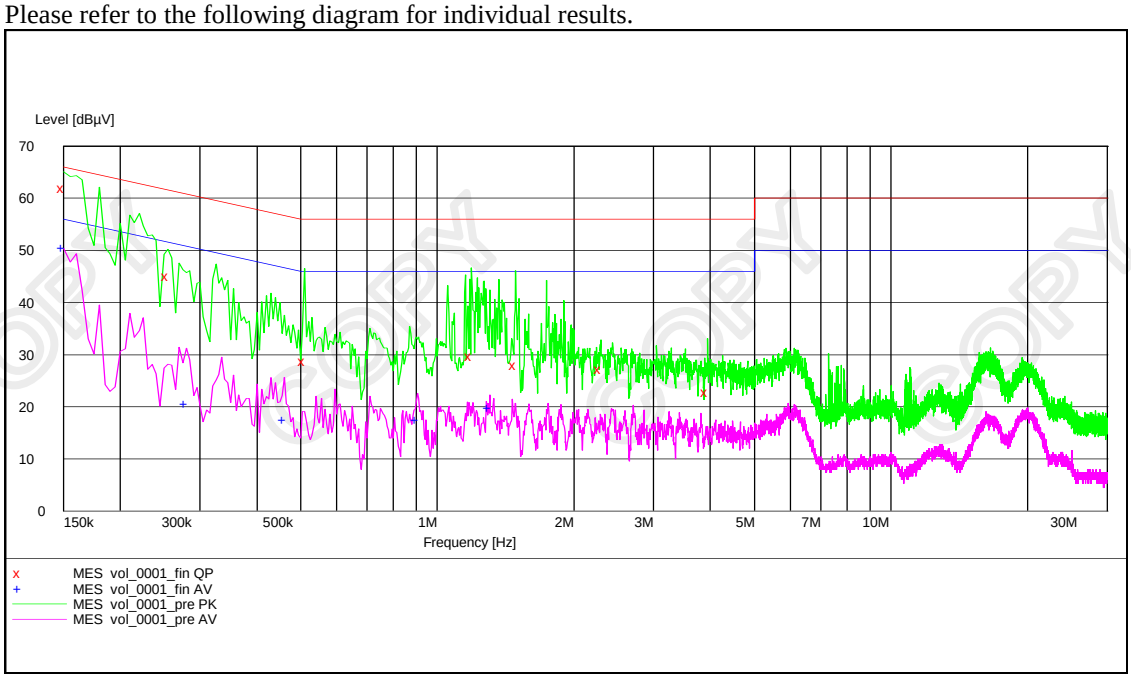
Limit for Conducted Emissions (FCC 47 CFR 15.207):

Frequency Range [MHz]	Quasi-Peak Limits [dBµV]	Average [dBµV]
0.15-0.5	66 to 56*	56 to 46*
0.5-5.0	56	46
5.0-30.0	60	50

* Decreases with the logarithm of the frequency.

Limits for Conducted Emissions Test, please refer to limit lines (Quasi-Peak and Average) in the following diagram.

Results of Aux-in mode connected to iPod with charging function: Pass
Please refer to the following diagram for individual results.



Results of Aux-in mode connected to iPod with charging function: Pass

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBµV	Limit dBµV	Level dBµV	Limit dBµV
Live	0.150	62.0	66.0	-*-	-*-
Live	0.280	-*-	-*-	20.5	51.0
Live	1.190	29.7	56.0	-*-	-*-
Live	1.305	-*-	-*-	19.8	46.0
Live	1.490	28.0	56.0	-*-	-*-
Live	2.295	27.3	56.0	-*-	-*-
Live	3.945	22.9	56.0	-*-	-*-
Neutral	0.150	-*-	-*-	50.4	56.0
Neutral	0.255	45.2	62.0	-*-	-*-
Neutral	0.460	-*-	-*-	17.4	47.0
Neutral	0.510	28.7	56.0	-*-	-*-
Neutral	0.905	-*-	-*-	17.5	46.0

Remarks:
Calculated measurement uncertainty : 3.97dB
-*- Emission(s) that is far below the corresponding limit line.

3.1.4 20dB Bandwidth Measurement

Test Requirement:	FCC 47CFR 15.247(a)(1)
Test Method:	ANSI C63.4:2009
Test Date:	2011-11-02
Mode of Operation:	Communication Mode

Test Method:

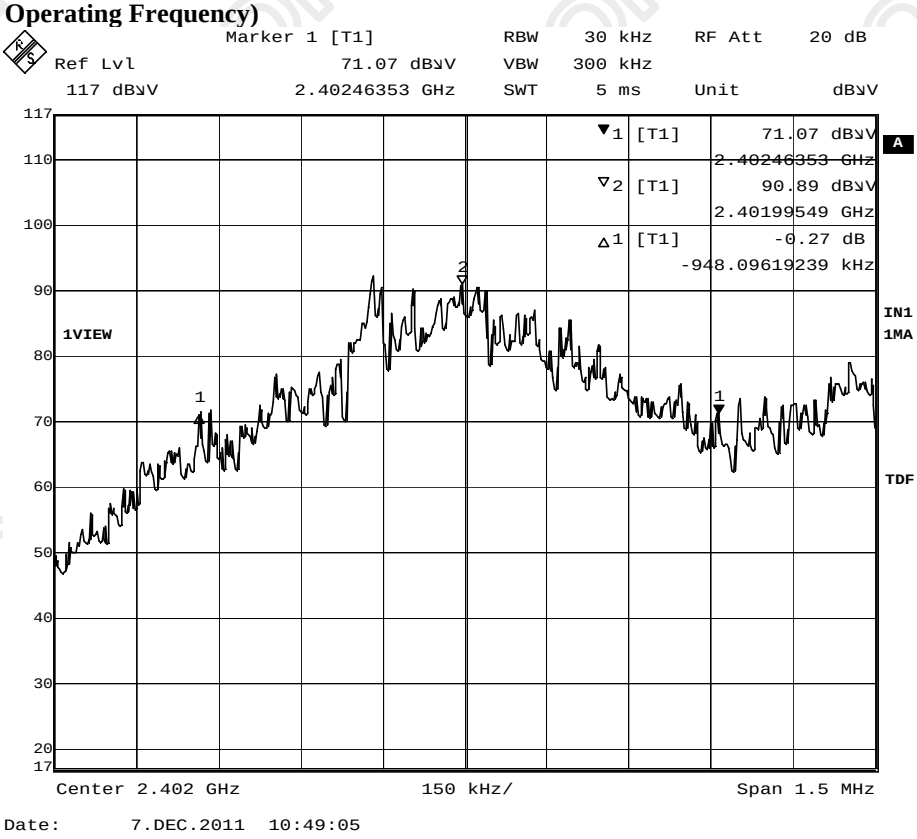
The bandwidth is measured at an amplitude level reduced from the reference level by a specified ratio. The reference level is the level of the highest amplitude signal observed from the transmitter at the fundamental frequency. Once the reference level is established, the equipment is conditioned with typical modulating signal to produce the worst-case (i.e. the widest) bandwidth.

Test Setup:

As Test Setup of clause 3.1.1 in this test report.

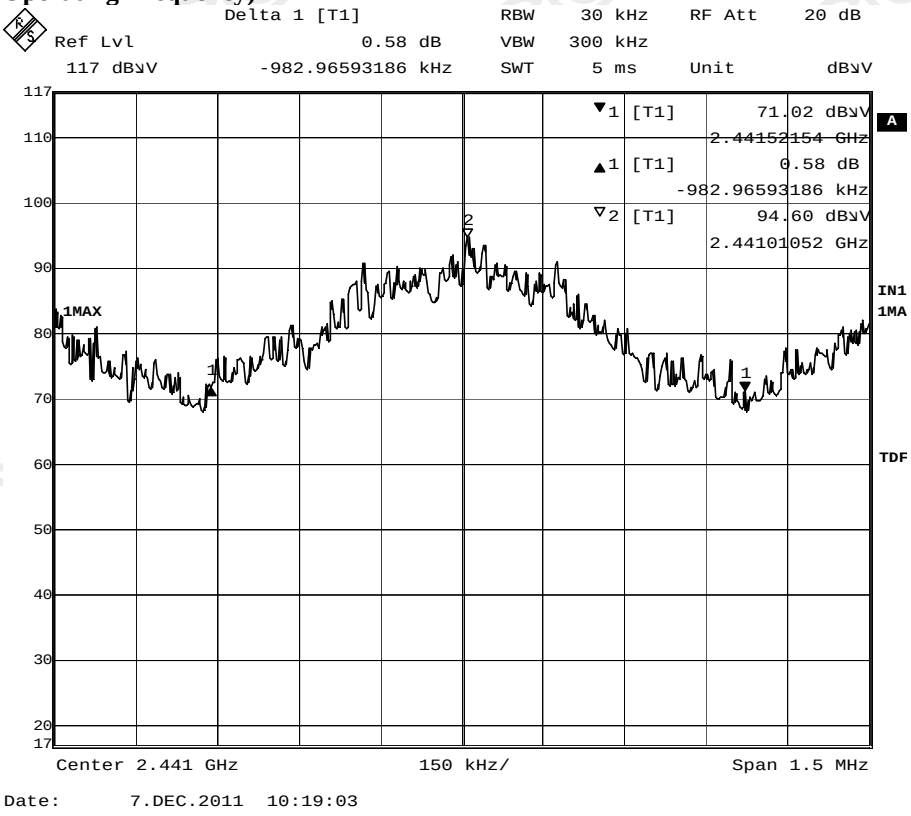
Fundamental Frequency [MHz]	20dB Bandwidth [kHz]	FCC Limits [MHz]
2402	948.1	Within 2400-2483.5

(Lowest Operating Frequency)



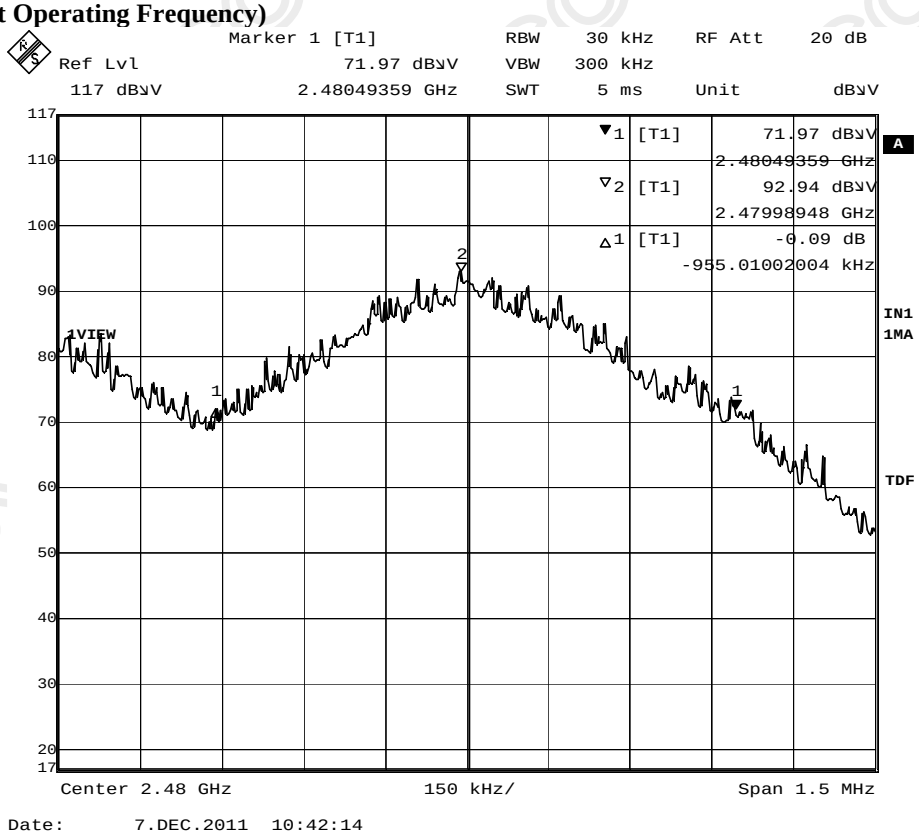
Fundamental Frequency [MHz]	20dB Bandwidth [kHz]	FCC Limits [MHz]
2441	983.0	Within 2400-2483.5

(Middle Operating Frequency)



Fundamental Frequency [MHz]	20dB Bandwidth [kHz]	FCC Limits [MHz]
2480	955.0	Within 2400-2483.5

(Highest Operating Frequency)



Channel Centre Frequency

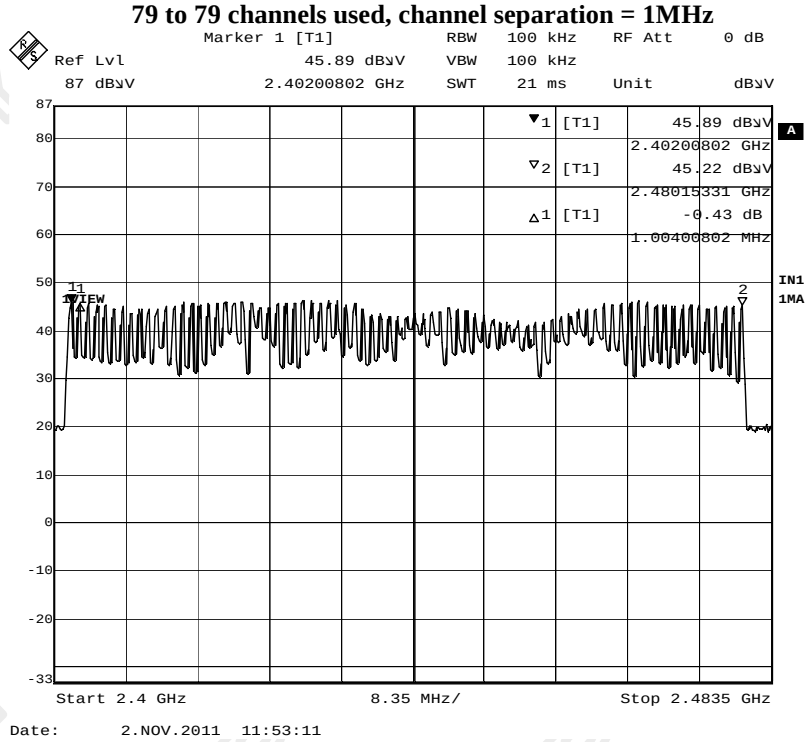
Requirements:
Frequency hopping system in the 2400-2483.5MHz band shall use at least 79 (Channel 0 to 78) non-overlapping channels.

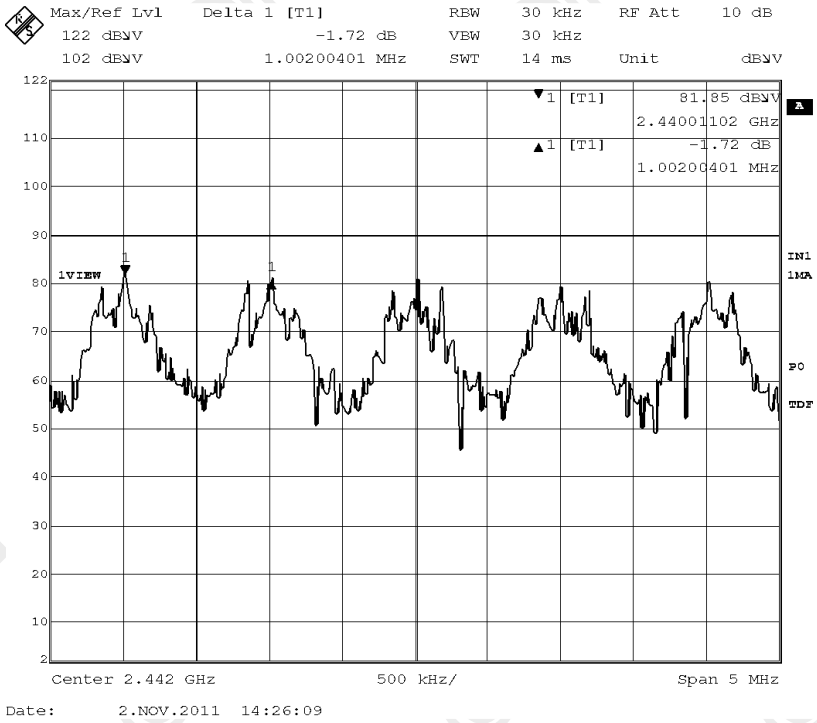
The EUT operates in according with the Bluetooth system specification within the 2400 - 2483.5 MHz frequency band.
RF channels for Bluetooth systems are spaced 1 MHz and are ordered in channel number k. In order to comply with out-of-band regulations, a lower frequency guard band of 2.0 MHz and a higher frequency guard band of 3.5MHz is used.

The operating frequencies of each channel are as follows:

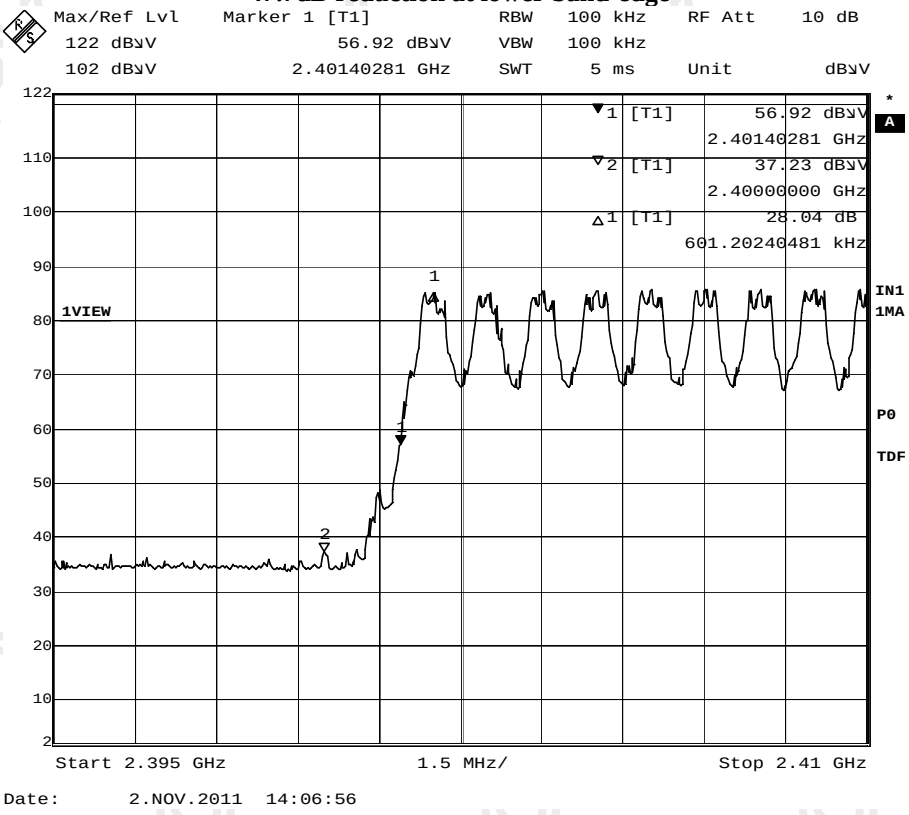
First RF channel start from 2400MHz + 2MHz guard band = 2402MHz
Frequency of RF Channel = 2402+k MHz, k = 0,…,78 (Channel separation = 1MHz)

79 to 79 channels used, channel separation = 1MHz

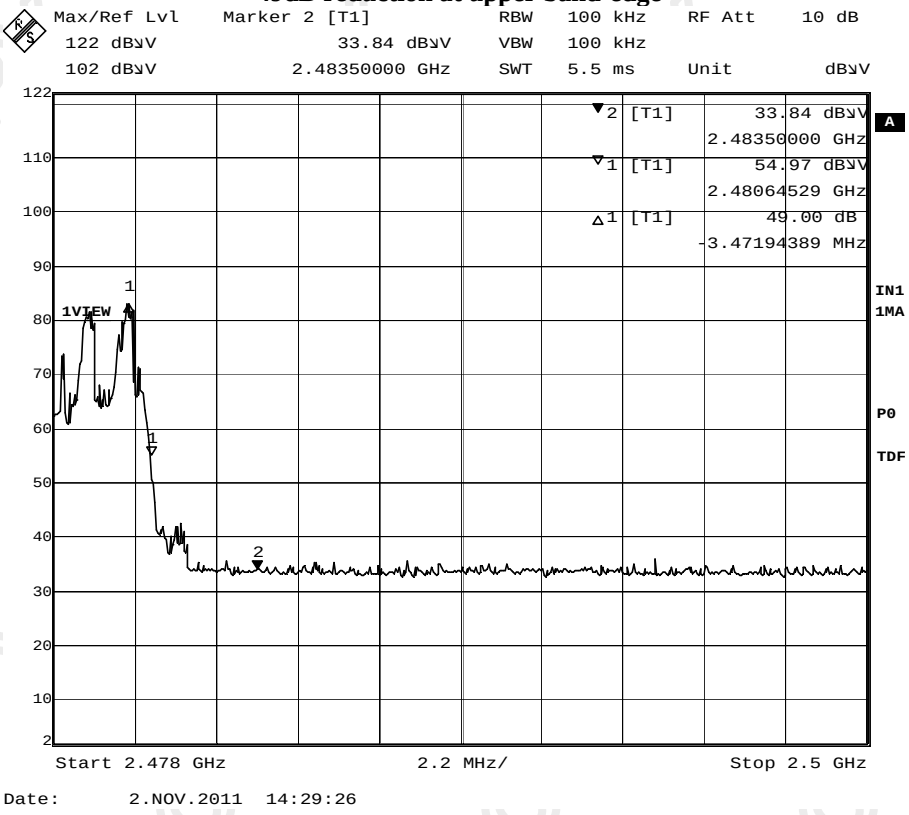




47.7dB reduction at lower band-edge



49dB reduction at upper band-edge



Antenna Requirement

Test Requirements: § 15.203

Test Specification:

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. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Test Results:

The EUT has 1 [Inverted-F Antenna (PCB layout)] which is permanently attached to the main unit and attached on PCB board, the antenna gain = 2.12dBi. All component install on inside of EUT. User unable to remove or changed the Antenna.

Pseudorandom Hopping Algorithm

Requirements:

The channel frequencies shall be selected from a pseudorandom ordered list of hopping frequencies. Each frequency must be used equally by the transmitter.

EUT Pseudorandom Hopping Algorithm

The EUT is a Bluetooth device, the Pseudo-random hopping pattern; hopping characteristics and algorithm are based on the Bluetooth specification.

Occupancy Time

Requirements:

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 channel employed.
No requirements for Digital Transmission System.

Measurement Data:

DH5 Packet:

DH5 Packet permit maximum 1600/79/6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). The Dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds

Fig. A
[Pulse duration of Lowest Channel]

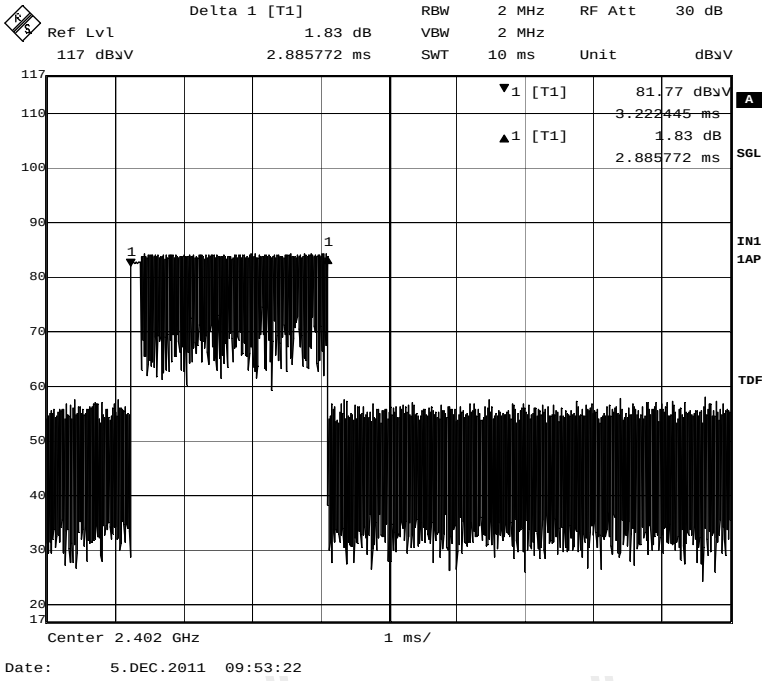


Fig. B
[Pulse duration of Middle Channel]

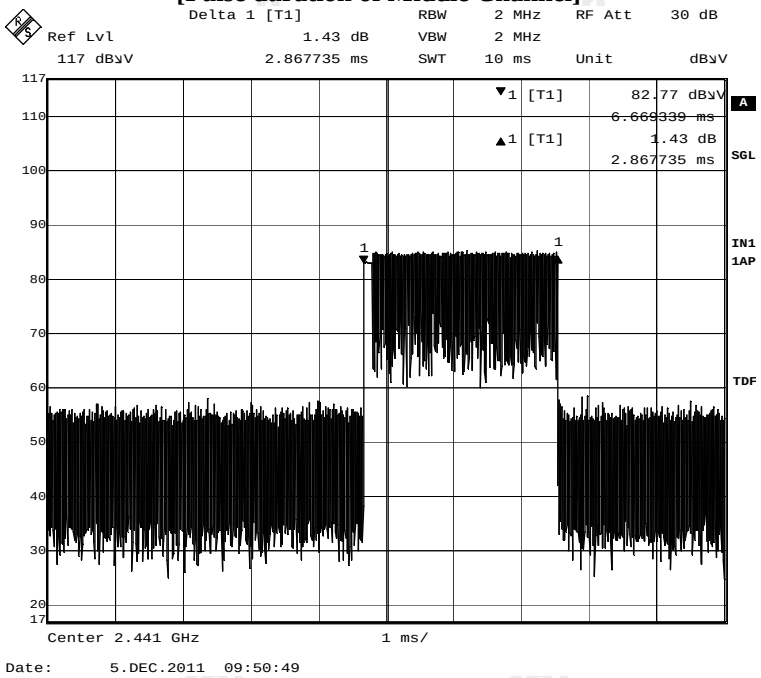
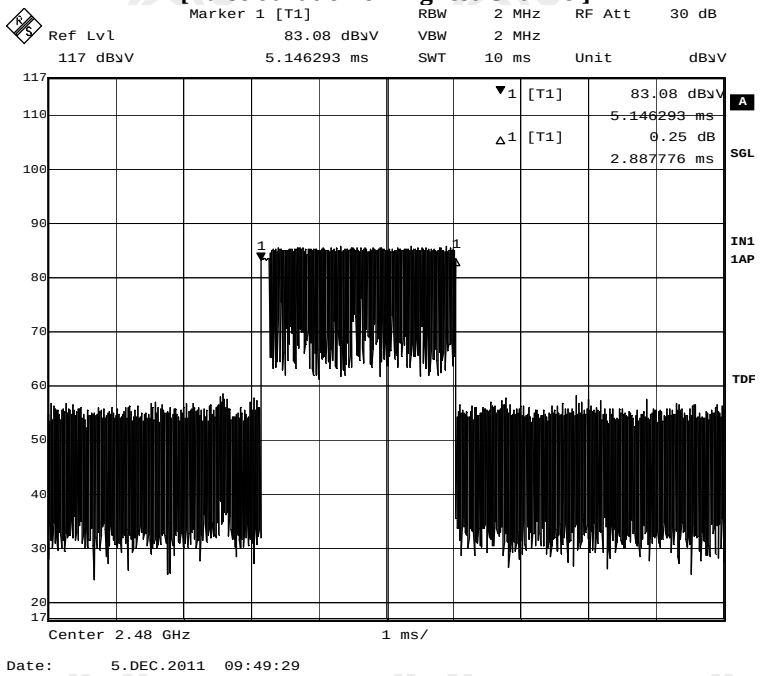


Fig. C
[Pulse duration of Highest Channel]



DH3 Packet:

DH3 Packet permit maximum 1600/79/4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). The Dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds

Fig. D
[Pulse duration of Lowest Channel]

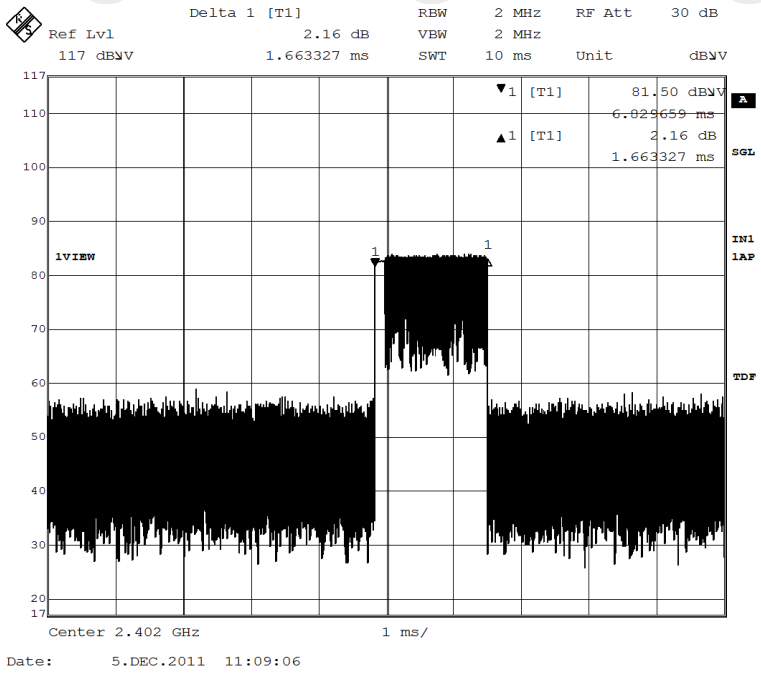


Fig. E
[Pulse duration of Middle Channel]

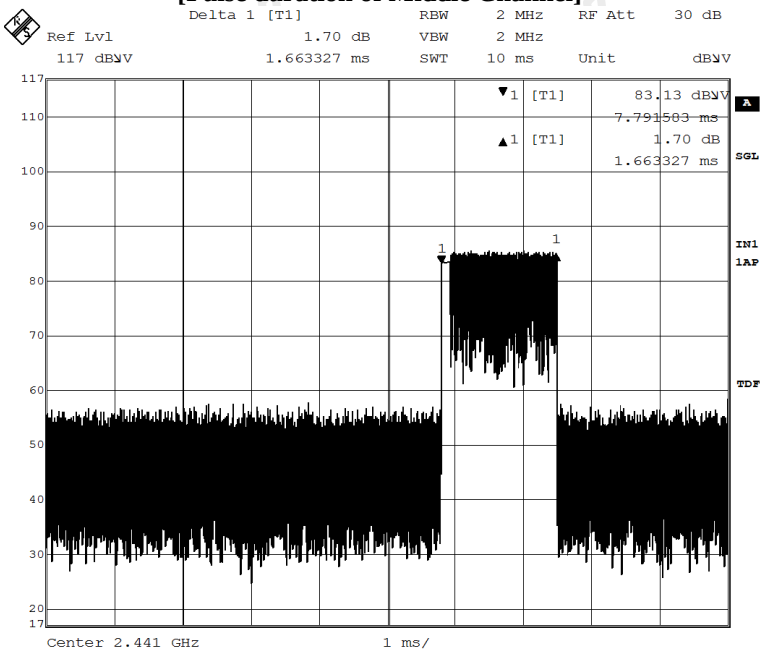
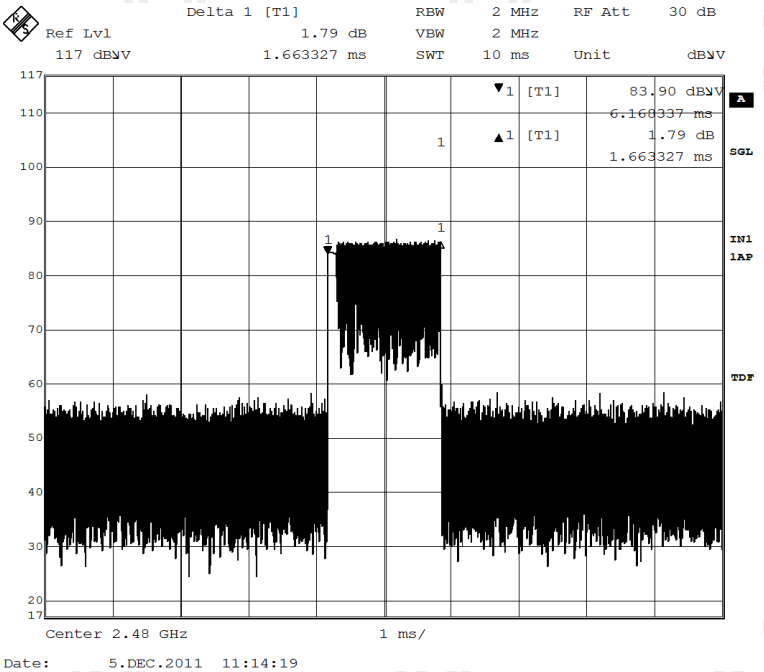


Fig. F
[Pulse duration of Highest Channel]



DH1 Packet:

DH1 Packet permit maximum 1600/79/2 = 10.12 hops per second in each channel (3 time slots RX, 1 time slot TX). The Dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds

Fig. G
[Pulse duration of Lowest Channel]

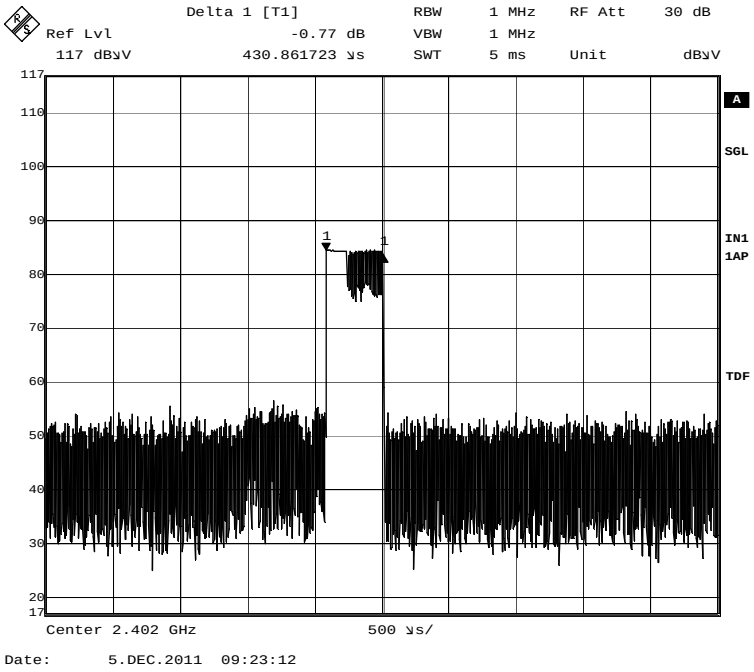


Fig. H
[Pulse duration of Middle Channel]

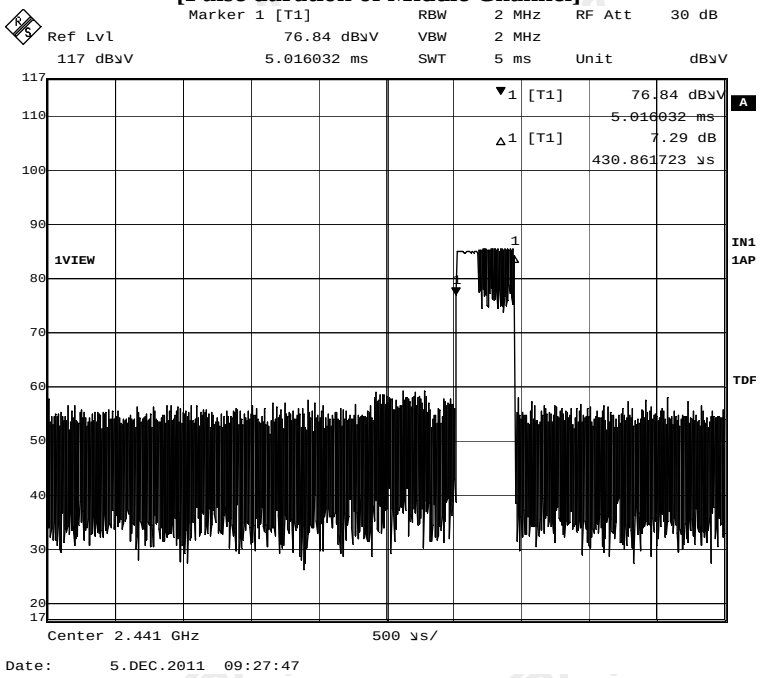
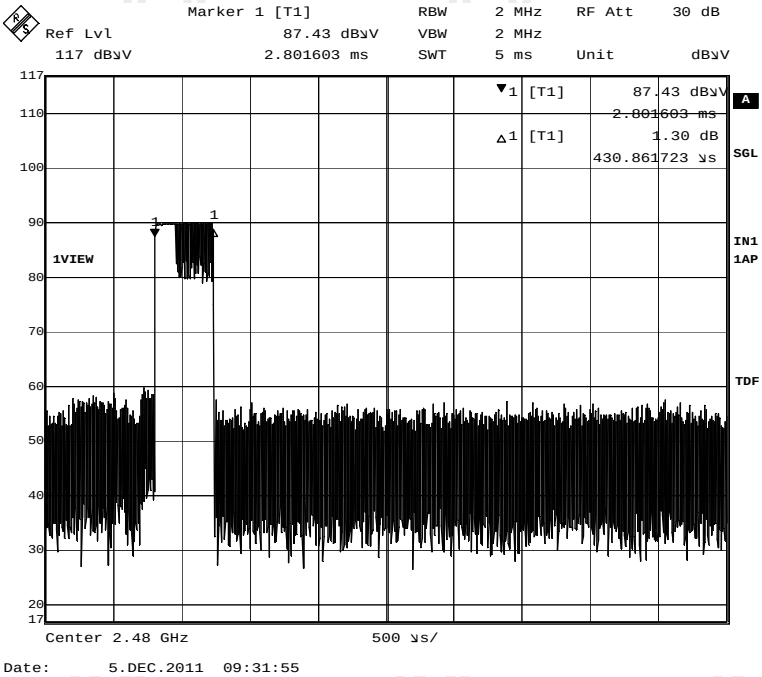


Fig. I
[Pulse duration of Highest Channel]



Time of occupancy:

Data Packet	Frequency (MHz)	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Results
DH5	2402	2.8858	0.308	0.400	Complies
DH5	2441	2.8677	0.306	0.400	Complies
DH5	2480	2.8878	0.308	0.400	Complies
DH3	2402	1.6633	0.266	0.400	Complies
DH3	2441	1.6633	0.266	0.400	Complies
DH3	2480	1.6633	0.266	0.400	Complies
DH1	2402	0.4309	0.138	0.400	Complies
DH1	2441	0.4309	0.138	0.400	Complies
DH1	2480	0.4309	0.138	0.400	Complies

Appendix A

List of Measurement Equipment

Radiated Emission

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM276	Broadband Horn Antenna	A-INFOMW	JXTXLB-10180-SF	J2031090903007	2010/08/21	2013/08/21
EM215	MULTIDEVICE CONTROLLER	EMCO	2090	00024676	N/A	N/A
EM216	MINI MAST SYSTEM	EMCO	2075	00026842	N/A	N/A
EM217	ELECTRIC POWERED TURNTABLE	EMCO	2088	00029144	N/A	N/A
EM218	ANECHOIC CHAMBER	ETS-Linggren	FACT-3	--	2011/10/25	2012/10/25
EM174	BICONILOG ANTENNA	EMCO	3142B	1671	2010/02/09	2012/02/09
EM229	EMI Test Receiver	R&S	ESIB40	100248	2011/04/26	2012/04/26
EM022	LOOP ANTENNA	EMCO	6502	1189-2424	2010/09/07	2012/09/07

Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM119	LISN	R & S	ESH3-Z5	846695/030	2011/01/07	2012/01/07
EM181	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB7	100072	2011/04/26	2012/04/26
EM179	IMPULSE LIMITER	ROHDE & SCHWARZ	ESH3-Z2	357-8810.52/54	2011/01/24	2012/01/24
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057-99A	2011/01/23	2012/01/23

Remarks:-

CM Corrective Maintenance
N/A Not Applicable or Not Available
TBD To Be Determined

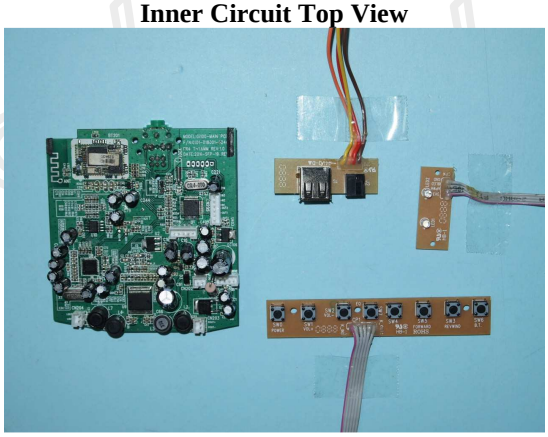
Appendix B

Photographs of EUT

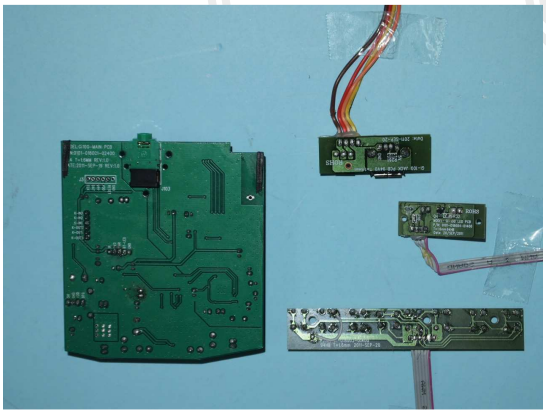
Front View of the product

Rear View of the product

Inner Circuit Top View

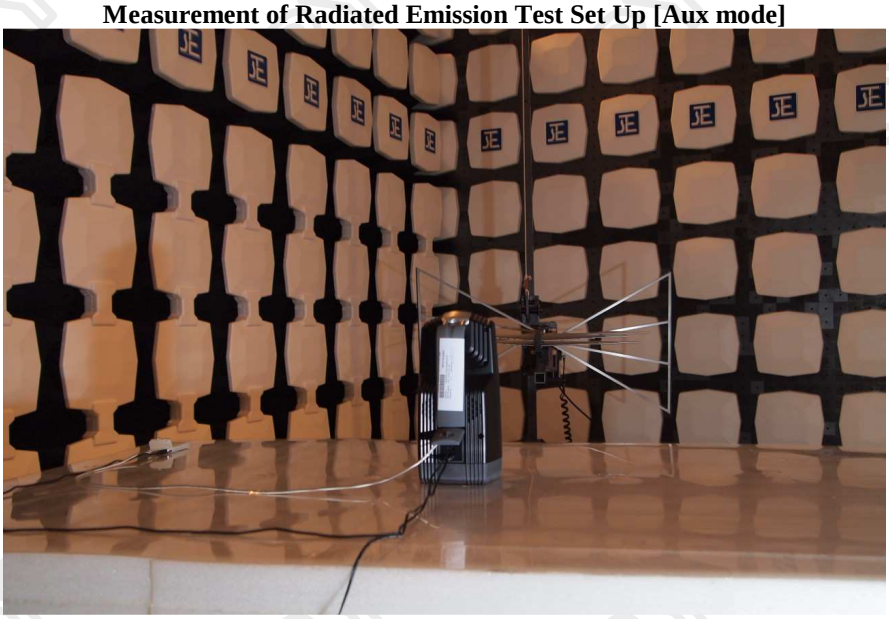


Inner Circuit Bottom View

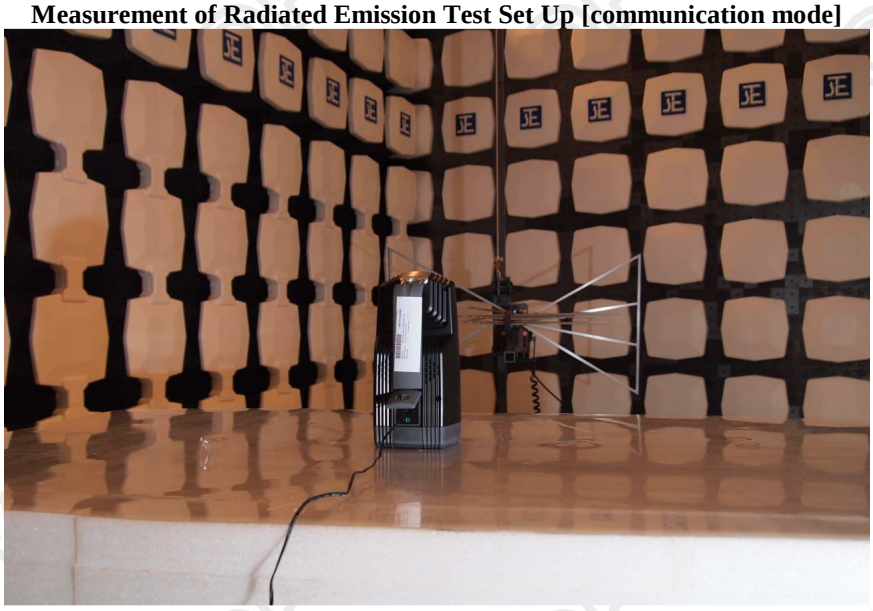


Photographs of EUT

Measurement of Radiated Emission Test Set Up [Aux mode]

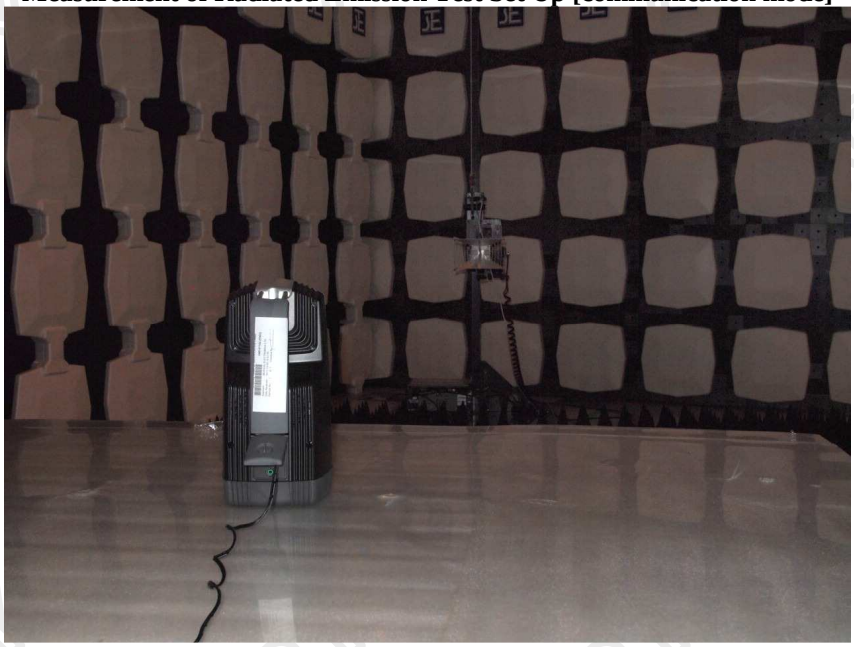


Measurement of Radiated Emission Test Set Up [communication mode]



Photographs of EUT

Measurement of Radiated Emission Test Set Up [communication mode]



Measurement of Conducted Emission Test Set Up [Aux mode]

Measurement of Conducted Emission Test Set Up [Communication mode]

******* End of Test Report *******