Applicant (ACE003):	Philips Consumer Lifestyle 1600 Summer Street, Stamford, CT 06912
Manufacturer:	Philips Consumer Lifestyle 1600 Summer Street, Stamford, CT 06912
Description of Sample(s):	Product: portable speaker Brand Name: PHILIPS Model Number: SBT30/37 FCC ID: BOUSBT30
Date Sample(s) Received:	2012-03-27
Date Tested:	2012-03-29 to 2012-04-13
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 model(s) 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.

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:	portable speaker
Manufacturer:	Philips Consumer Lifestyle
Factory:	Guangzhou Lei Deng Electronics Ltd. NO.35, Li Jiang Road, Shilou Town, Panyu District, Guangzhou City, Guang Dong Province, China
Brand Name:	PHILIPS
Model Number:	SBT30/37
Additional Model Number:	SBT30KHA/37, SBT30ORG/37, SBT30BLU/37, SBT30GRN/37, SBT30PNK/37
Input Voltage:	USB Input: 5.0Vd.c. rechargeable battery3.7Vx1Pc model: PL503035 (500mA); Additional model: PL103035 (1000mA)

1.2.1 Description of EUT Operation

The Equipment Under Test (EUT) is a Philips Consumer Lifestyle, portable speaker with bluetooth 2.1+EDR. modulation by IC; and type is GFSK, π/4 DQPSK , 8DPSK modulation.

1.3 Date of Order

2012-03-27

1.4 Submitted Sample(s):

1 Sample

1.5 Test Duration

2012-03-29 to 2012-04-13

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	☒	☐	☐
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	☒	☐	☐
RF Exposure compliance	FCC 47CFR 1.1307, 2.1091, 2.1093	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)(1)	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:	2012-03-29
Ambient Temperature:	24 °C
Relative Humidity:	59 %
Atmospheric Pressure (kPa):	101
Mode of Operation:	Tx mode

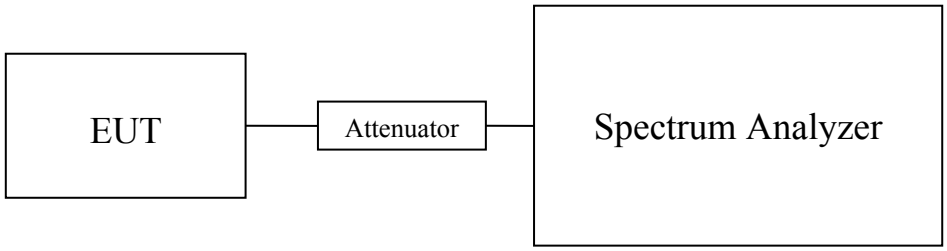
Test Method:

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 Tx Mode (2402.0 MHz to 2480.0MHz) : Pass (TX Unit)
Type of Modulation: GFSK
Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2402	1.10

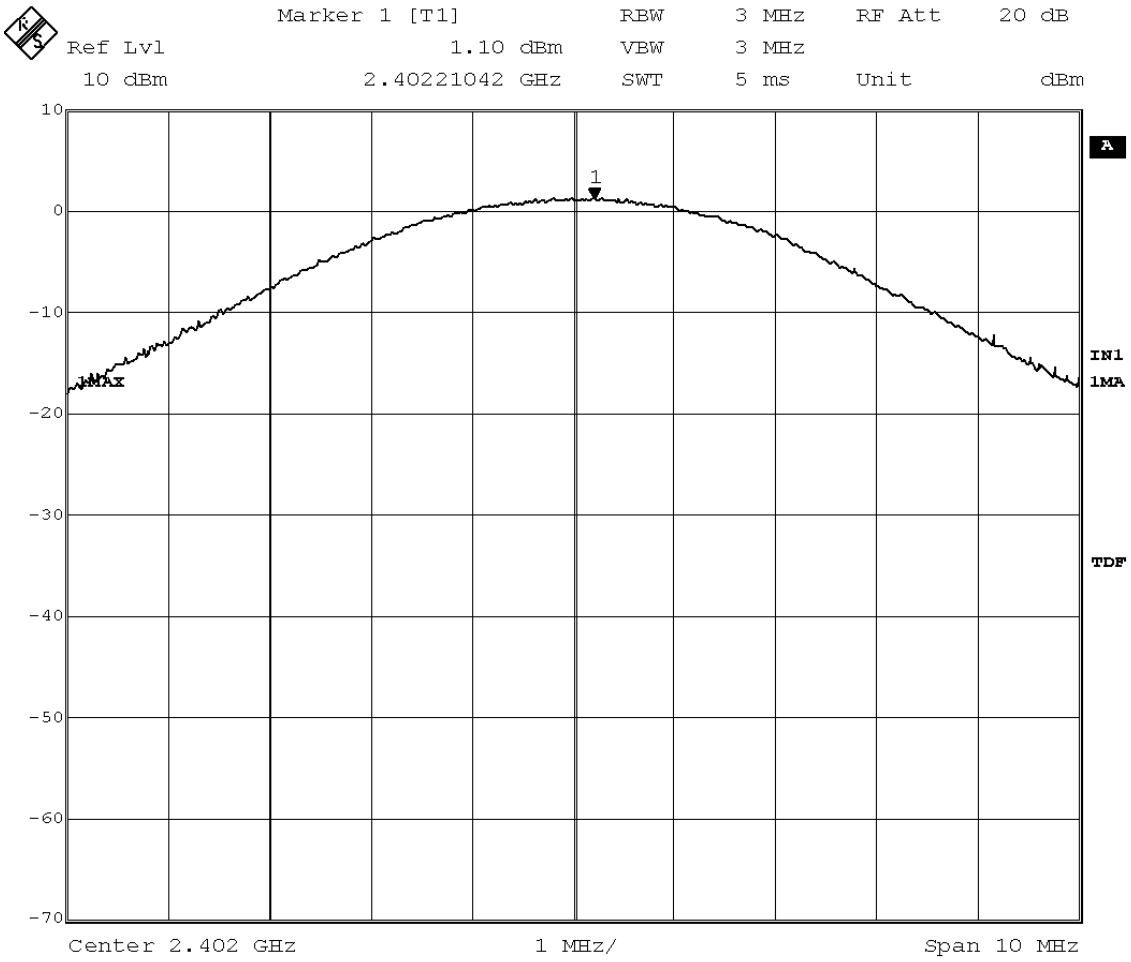
Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2441	1.64

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2480	1.61

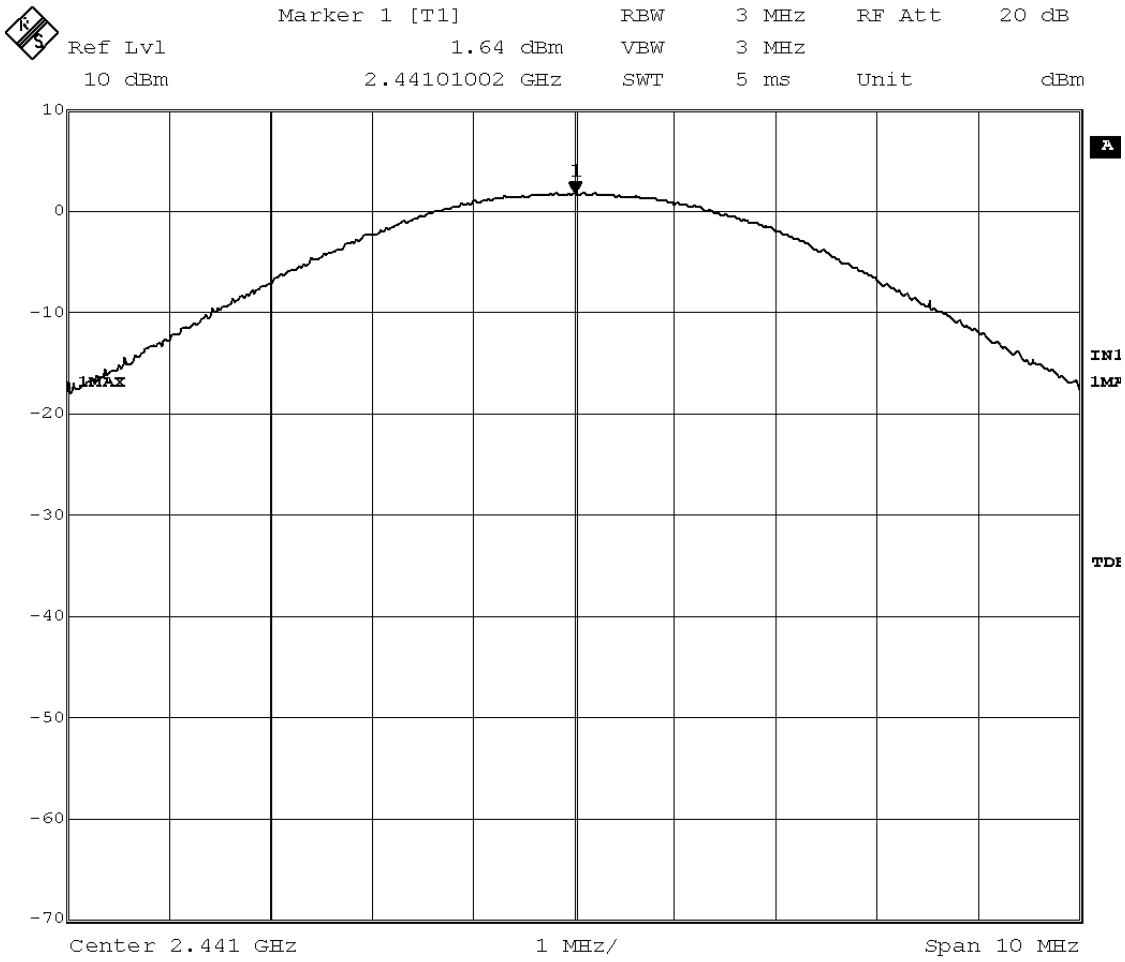
Limit: 0.125W (20.97dBm)

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

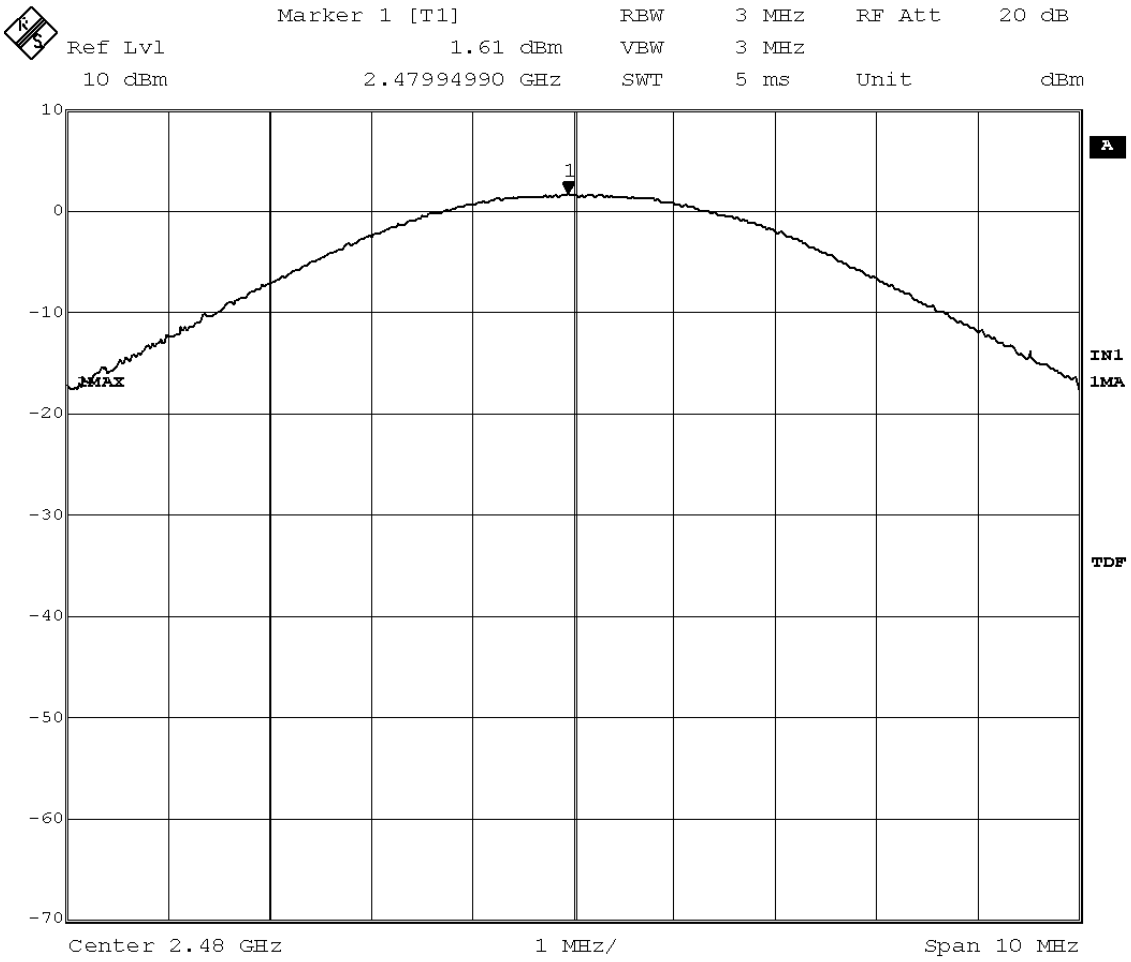
Tx: 2402MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 20 dB
Ref Lvl
1.10 dBm
VBW 3 MHz
10 dBm
2.40221042 GHz
SWT 5 ms
Unit dBm
10
0
-10
-20
-30
-40
-50
-60
-70
1
1MAx
A
IN1
1MA
TDF
Center 2.402 GHz
1 MHz/
Span 10 MHz

Tx: 2441MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 20 dB
Ref Lvl
1.64 dBm
VBW 3 MHz
10 dBm
2.44101002 GHz
SWT 5 ms
Unit dBm
10
0
-10
-20
-30
-40
-50
-60
-70
1MAX
A
Center 2.441 GHz
1 MHz/
Span 10 MHz

Tx: 2480MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 20 dB
Ref Lvl
1.61 dBm
VBW 3 MHz
10 dBm
2.47994990 GHz
SWT 5 ms
Unit dBm
10
0
-10
-20
-30
-40
-50
-60
-70
1
1MAX
A
IN1
1MA
TDF
Center 2.48 GHz
1 MHz/
Span 10 MHz

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 Tx Mode (2402.0 MHz to 2480.0MHz) : Pass (TX Unit)
Type of Modulation: π/4 DQPSK
Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2402	1.11

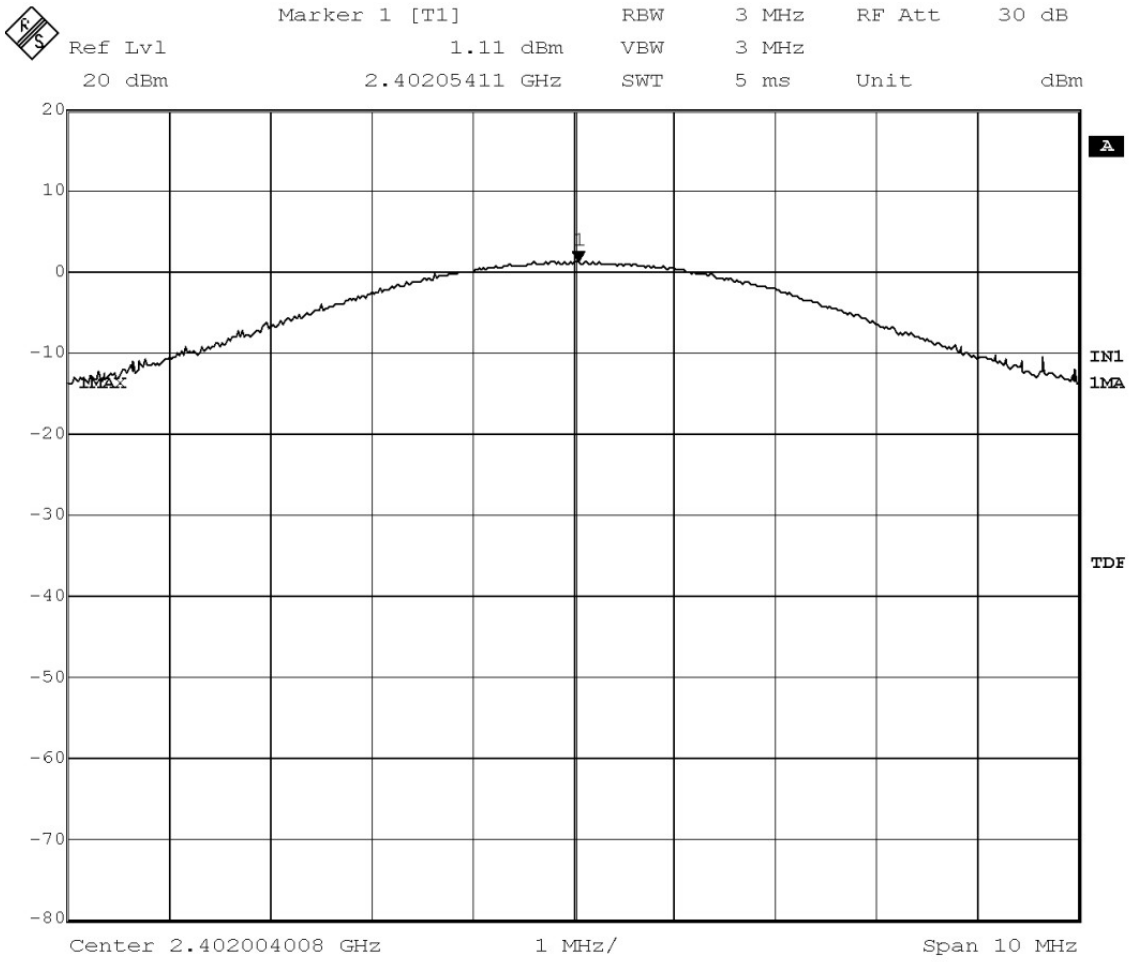
Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2441	1.52

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2480	1.60

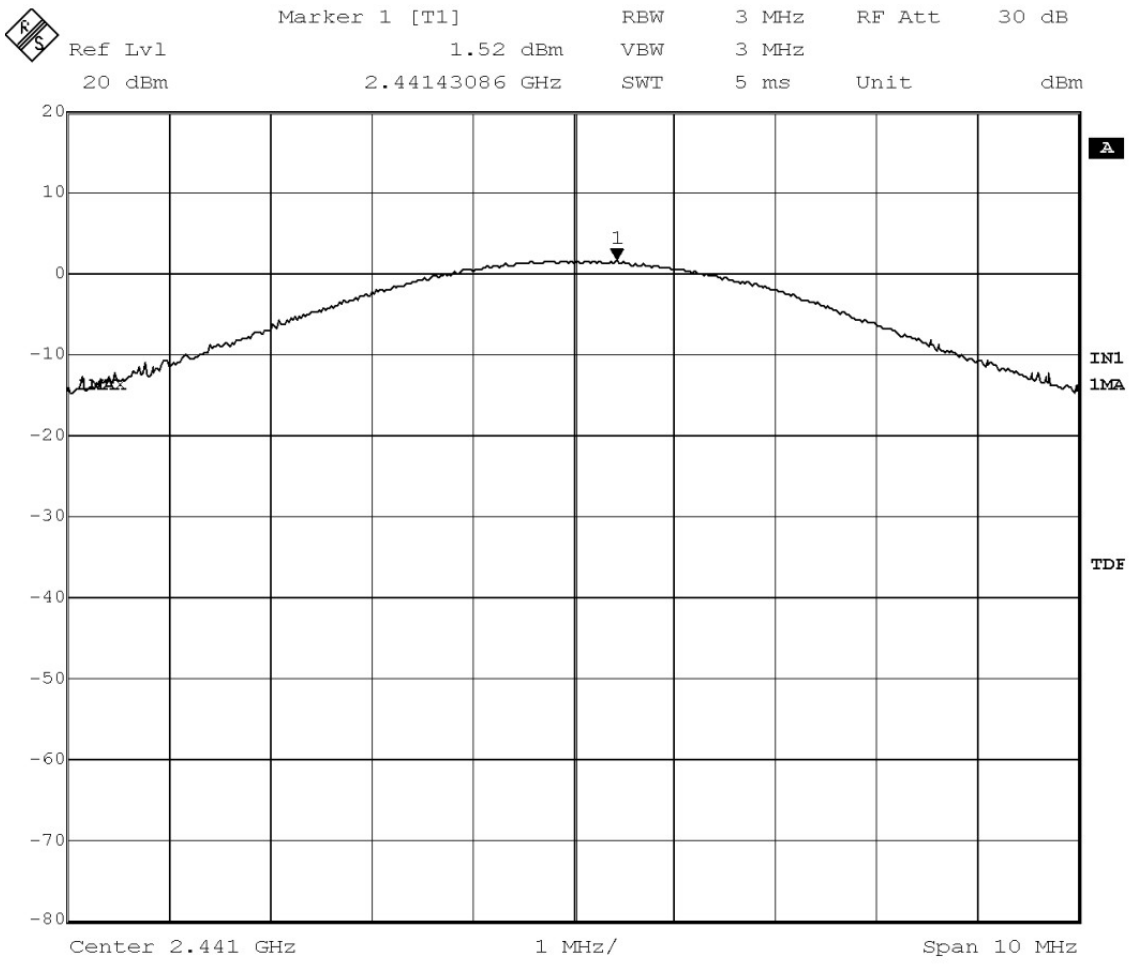
Limit: 0.125W (20.97dBm)

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

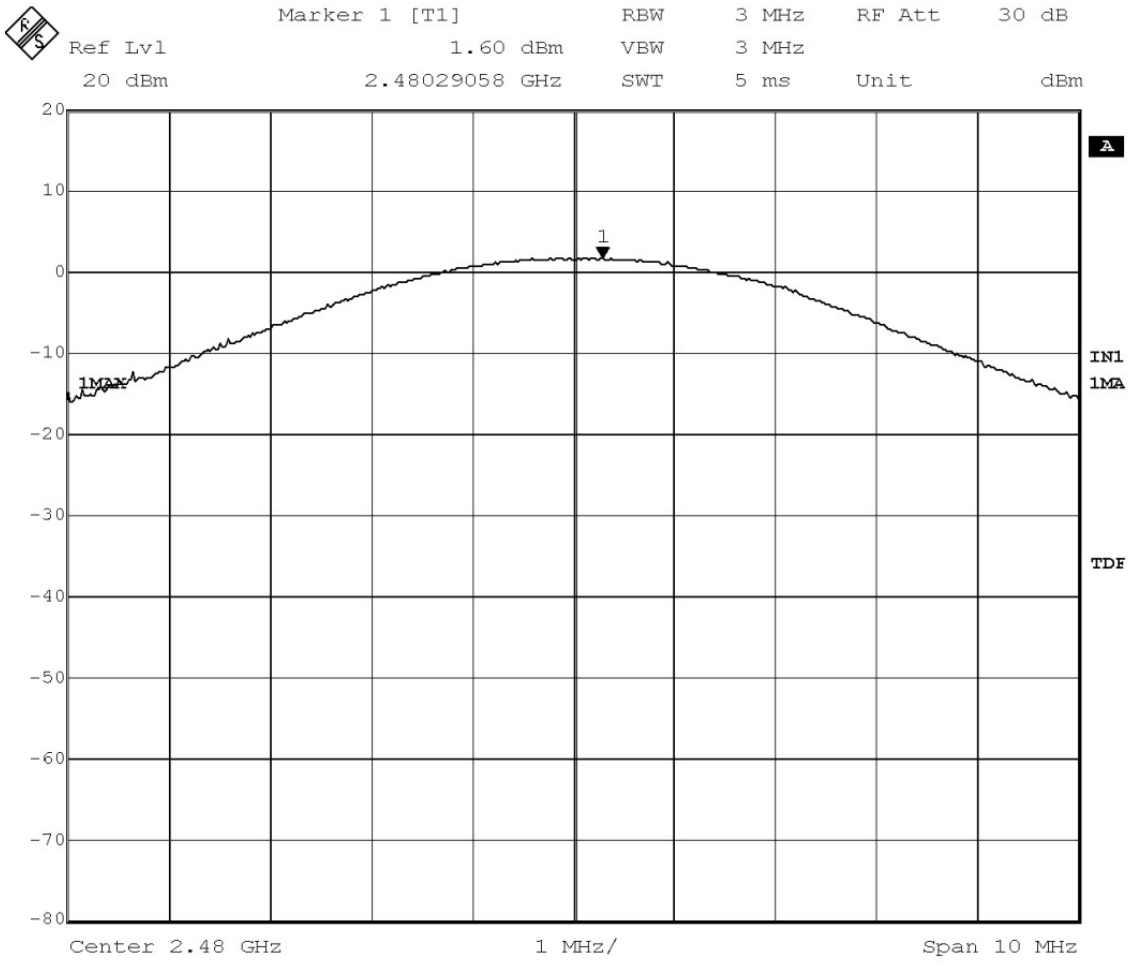
Tx: 2402MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 30 dB
Ref Lvl
1.11 dBm
VBW 3 MHz
20 dBm
2.40205411 GHz
SWT 5 ms
Unit dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
A
IN1
1MA
TDF
1MAX
Center 2.402004008 GHz
1 MHz/
Span 10 MHz

Tx: 2441MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 30 dB
Ref Lvl
1.52 dBm
VBW 3 MHz
20 dBm
2.44143086 GHz
SWT 5 ms
Unit dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
A
IN1
1MA
TDF
Center 2.441 GHz
1 MHz/
Span 10 MHz

Tx: 2480MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 30 dB
Ref Lvl
1.60 dBm
VBW 3 MHz
20 dBm
2.48029058 GHz
SWT 5 ms
Unit dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
1MAX
A
IN1
1MA
TDF
Center 2.48 GHz
1 MHz/
Span 10 MHz

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 Tx Mode (2402.0 MHz to 2480.0MHz) : Pass (TX Unit)
Type of Modulation: 8DPSK
Maximum conducted output power

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2402	1.35

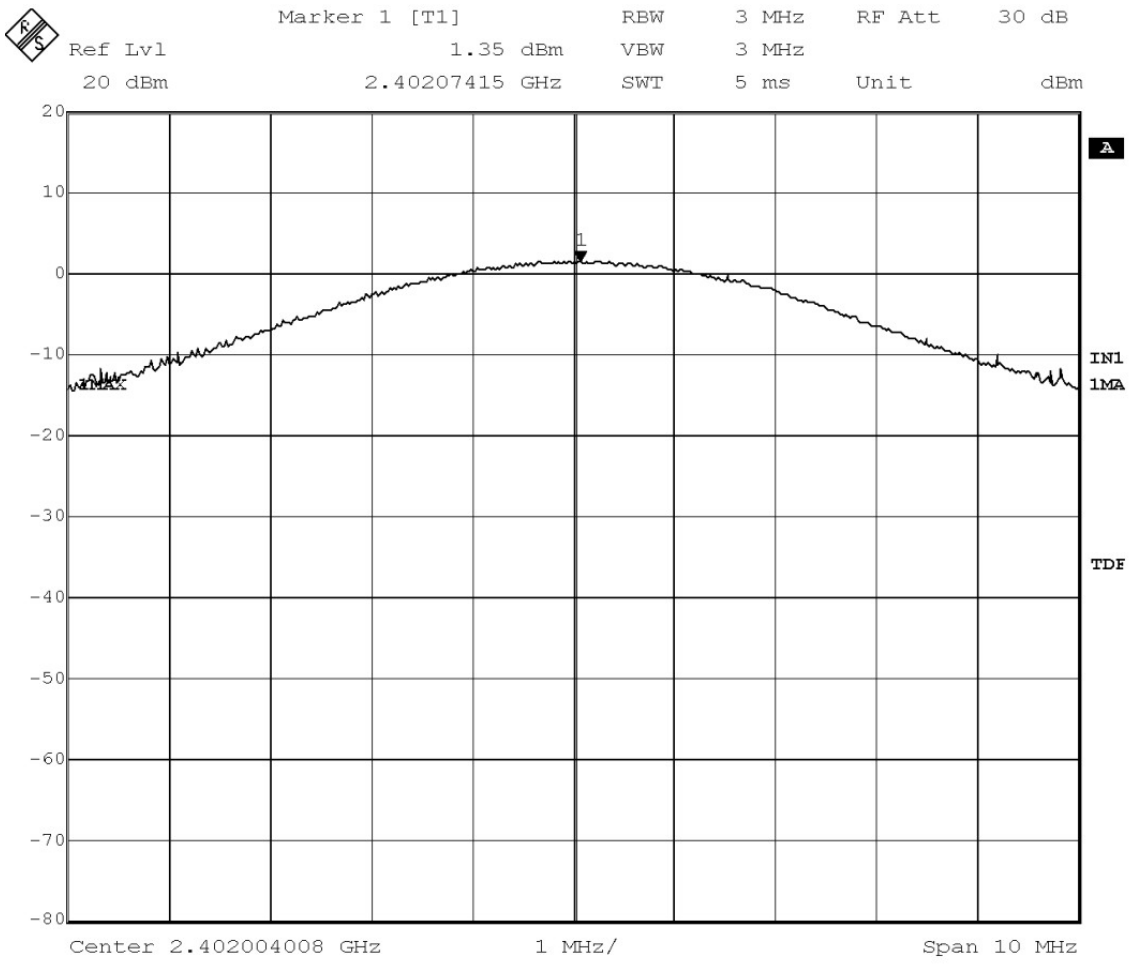
Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2441	1.54

Transmitter Frequency (MHz)	Maximum conducted output power (dBm)
2480	1.65

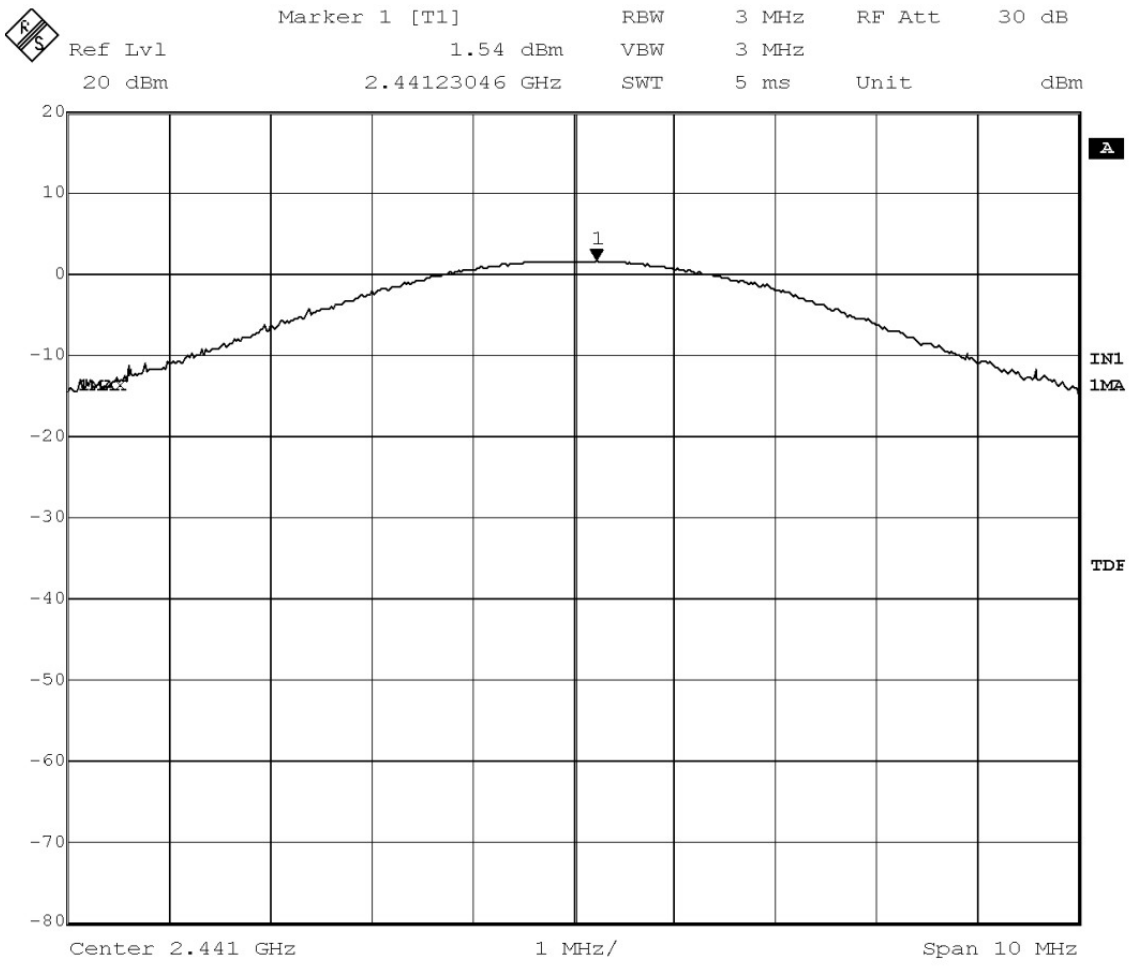
Limit: 0.125W (20.97dBm)

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

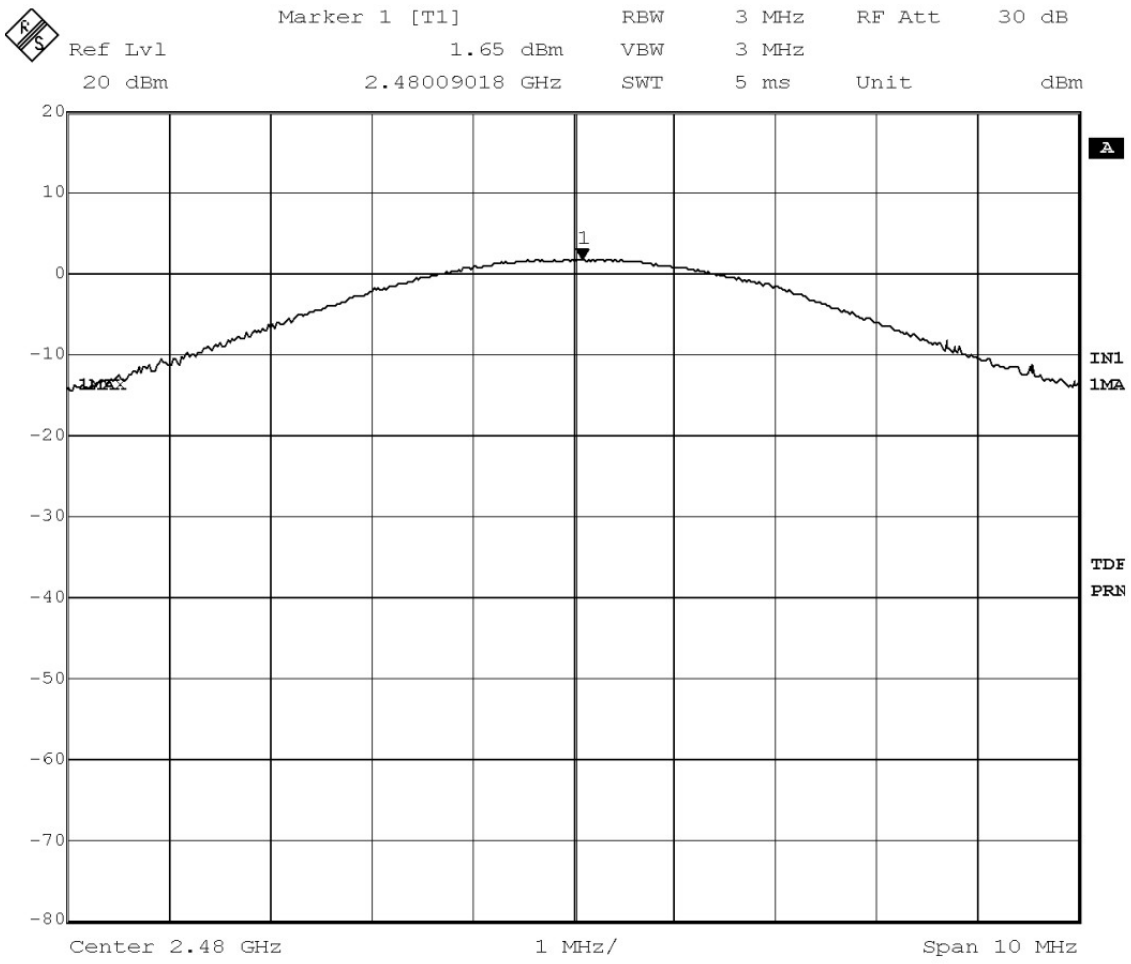
Tx: 2402MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 30 dB
Ref Lvl
1.35 dBm
VBW 3 MHz
20 dBm
2.40207415 GHz
SWT 5 ms
Unit dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
A
IN1
1MA
TDF
Center 2.402004008 GHz
1 MHz/
Span 10 MHz

Tx: 2441MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 30 dB
Ref Lvl
1.54 dBm
VBW 3 MHz
20 dBm
2.44123046 GHz
SWT 5 ms
Unit dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
A
IN1
1MA
TDF
Center 2.441 GHz
1 MHz/
Span 10 MHz

Tx: 2480MHz


Marker 1 [T1]
RBW 3 MHz
RF Att 30 dB
Ref Lvl
1.65 dBm
VBW 3 MHz
20 dBm
2.48009018 GHz
SWT 5 ms
Unit dBm
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
1
1MAX
A
IN1
1MA
TDF
PRN
Center 2.48 GHz
1 MHz/
Span 10 MHz

3.1.2 Radiated Emissions

Test Requirement:	FCC 47CFR 15.209
Test Method:	ANSI C63.4:2009
Test Date:	2012-03-29
Ambient Temperature:	23 °C
Relative Humidity:	57 %
Atmospheric Pressure (kPa):	101
Mode of Operation:	Bluetooth mode (Tx mode) with charge, Aux in mode with charge

Test Method:

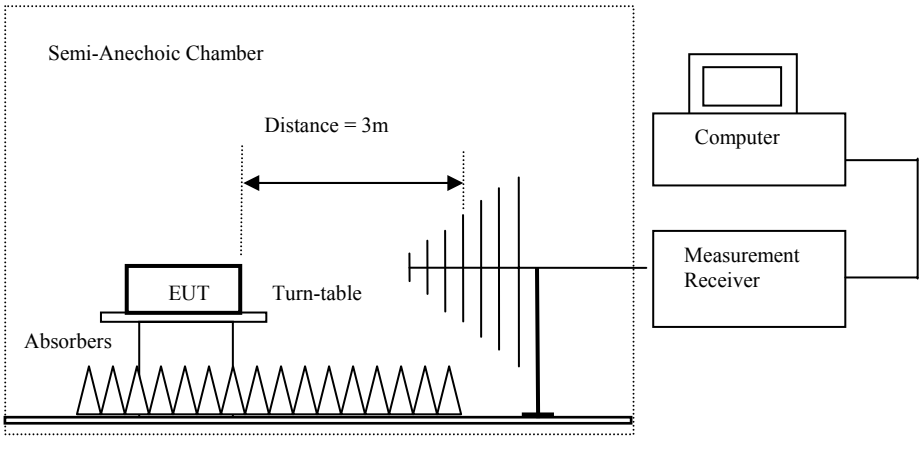
The sample was placed 0.8m above the ground plane of semi-anechoic Chamber*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, onsidered typical configuration 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:

Above 1GHz – RBW = 1 MHz, VBW= 3MHz, Detector = Peak / Average,
Below 1GHz to 30MHz – RBW = 100kHz, VBW = 300kHz Detector = Quasi-Peak,
Below 30MHz to 9kHz – RBW = 10kHz, VBW = 30kHz Detector = Quasi-Peak,
Sweep = Auto, Span = Fully capture the emissions being measured,
Trace = Max. hold

Test Setup:



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 Tx Mode (2402.0 MHz) (Above 1GHz): Pass (Type of Modulation: GFSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4804.0	5.6	41.5	47.1	74.0	-26.9	Horizontal
4804.0	3.9	41.5	45.5	74.0	-28.5	Vertical
7206.0	2.0	48.8	50.8	74.0	-23.2	Horizontal
7206.0	1.3	48.8	50.1	74.0	-23.9	Vertical
Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4804.0	-14.4	41.5	27.1	54.0	-26.9	Horizontal
4804.0	-16.1	41.5	25.4	54.0	-28.6	Vertical
7206.0	-18.0	48.8	30.8	54.0	-23.2	Horizontal
7206.0	-18.7	48.8	30.1	54.0	-23.9	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 Tx Mode (2441.0 MHz) (Above 1GHz): Pass (Type of Modulation: GFSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4882.0	12.9	41.4	54.3	74.0	-19.7	Horizontal
4882.0	9.5	41.4	50.9	74.0	-23.1	Vertical
7323.0	3.9	48.7	52.6	74.0	-21.4	Horizontal
7323.0	2.7	48.7	51.4	74.0	-22.6	Vertical

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4882.0	-7.1	41.4	34.3	54.0	-19.7	Horizontal
4882.0	-10.5	41.4	30.9	54.0	-23.1	Vertical
7323.0	-16.1	48.7	32.6	54.0	-21.4	Horizontal
7323.0	-17.3	48.7	31.4	54.0	-22.6	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 Tx Mode (2480.0 MHz) (Above 1GHz): Pass (Type of Modulation: GFSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4960.0	14.8	41.4	56.2	74.0	-17.8	Horizontal
4960.0	11.1	41.4	52.5	74.0	-21.5	Vertical
7440.0	6.1	48.6	54.7	74.0	-19.3	Horizontal
7440.0	4.5	48.6	53.1	74.0	-20.9	Vertical

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4960.0	-5.2	41.4	36.2	54.0	-17.8	Horizontal
4960.0	-8.9	41.4	32.5	54.0	-21.5	Vertical
7440.0	-13.9	48.6	34.7	54.0	-19.3	Horizontal
7440.0	-15.5	48.6	33.1	54.0	-20.9	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 Tx Mode (2402.0 MHz) (Above 1GHz): Pass (Type of Modulation: π/4 DQPSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4804.0	6.1	41.5	47.6	74.0	-26.4	Horizontal
4804.0	3.7	41.5	45.2	74.0	-28.8	Vertical
7206.0	2.8	48.8	51.6	74.0	-22.4	Horizontal
7206.0	1.5	48.8	50.3	74.0	-23.7	Vertical
Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4804.0	-13.9	41.5	27.6	54.0	-26.4	Horizontal
4804.0	-16.3	41.5	25.2	54.0	-28.8	Vertical
7206.0	-17.2	48.8	31.6	54.0	-22.4	Horizontal
7206.0	-18.5	48.8	30.3	54.0	-23.7	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 Tx Mode (2441.0 MHz) (Above 1GHz): Pass (Type of Modulation: π/4 DQPSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4882.0	12.3	41.4	53.7	74.0	-20.3	Horizontal
4882.0	11.5	41.4	52.9	74.0	-21.1	Vertical
7323.0	3.7	48.7	52.4	74.0	-21.6	Horizontal
7323.0	2.9	48.7	51.6	74.0	-22.4	Vertical

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4882.0	-7.7	41.4	33.7	54.0	-20.3	Horizontal
4882.0	-8.5	41.4	32.9	54.0	-21.1	Vertical
7323.0	-16.3	48.7	32.4	54.0	-21.6	Horizontal
7323.0	-17.1	48.7	31.6	54.0	-22.4	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 Tx Mode (2480.0 MHz) (Above 1GHz): Pass (Type of Modulation: π/4 DQPSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4960.0	13.6	41.4	55.0	74.0	-19.0	Horizontal
4960.0	11.7	41.4	53.1	74.0	-20.9	Vertical
7440.0	4.1	48.6	52.7	74.0	-21.3	Horizontal
7440.0	3.3	48.6	51.9	74.0	-22.1	Vertical

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4960.0	-6.4	41.4	35.0	54.0	-19.0	Horizontal
4960.0	-8.3	41.4	33.1	54.0	-20.9	Vertical
7440.0	-15.9	48.6	32.7	54.0	-21.3	Horizontal
7440.0	-16.7	48.6	31.9	54.0	-22.1	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 Tx Mode (2402.0 MHz) (Above 1GHz): Pass (Type of Modulation: 8DPSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4804.0	7.2	41.5	48.7	74.0	-25.3	Horizontal
4804.0	3.4	41.5	44.9	74.0	-29.1	Vertical
7206.0	3.7	48.8	52.5	74.0	-21.5	Horizontal
7206.0	3.0	48.8	51.8	74.0	-22.2	Vertical
Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4804.0	-12.8	41.5	28.7	54.0	-25.3	Horizontal
4804.0	-16.6	41.5	24.9	54.0	-29.1	Vertical
7206.0	-16.3	48.8	32.5	54.0	-21.5	Horizontal
7206.0	-17.0	48.8	31.8	54.0	-22.2	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 Tx Mode (2441.0 MHz) (Above 1GHz): Pass(Type of Modulation: 8DPSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4882.0	11.2	41.4	52.6	74.0	-21.4	Horizontal
4882.0	11.1	41.4	52.5	74.0	-21.5	Vertical
7323.0	3.1	48.7	51.8	74.0	-22.2	Horizontal
7323.0	2.7	48.7	51.4	74.0	-22.6	Vertical

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4882.0	-8.8	41.4	32.6	54.0	-21.4	Horizontal
4882.0	-8.9	41.4	32.5	54.0	-21.5	Vertical
7323.0	-16.9	48.7	31.8	54.0	-22.2	Horizontal
7323.0	-17.1	48.7	31.6	54.0	-22.4	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 Tx Mode (2480.0 MHz) (Above 1GHz): Pass(Type of Modulation: 8DPSK)

Field Strength of Harmonic Emissions PeakValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4960.0	14.1	41.4	55.5	74.0	-18.5	Horizontal
4960.0	11.3	41.4	52.7	74.0	-21.3	Vertical
7440.0	5.3	48.6	53.9	74.0	-20.1	Horizontal
7440.0	4.2	48.6	52.8	74.0	-21.2	Vertical

Field Strength of Harmonic Emissions AverageValue						
Frequency MHz	Measured Level @3m dBμV	Correction Factor dB/m	Field Strength dBμV/m	Limit @3m dBμV/m	Margin dBμV/m	E-Field Polarity
4960.0	-5.9	41.4	35.5	54.0	-18.5	Horizontal
4960.0	-8.7	41.4	32.7	54.0	-21.3	Vertical
7440.0	-14.7	48.6	33.9	54.0	-20.1	Horizontal
7440.0	-15.8	48.6	32.8	54.0	-21.2	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]:

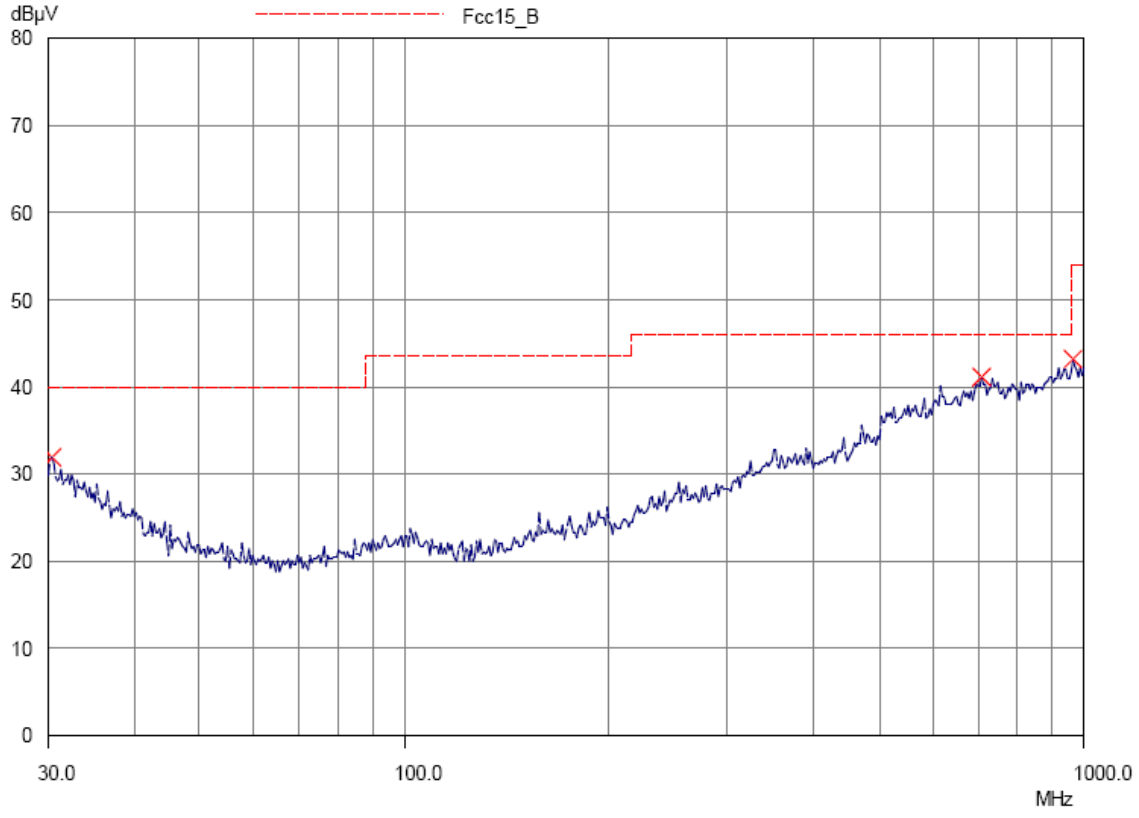
Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
30-88	100
88-216	150
216-960	200
Above960	500

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 with charging mode (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Results of Aux in with charging mode (Above 30MHz): PASS
Please refer to the following table for result details

Horizontal



Results of Aux in with charging mode (Above 30MHz): PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dBµV/m	Limit @3m dBµV/m	Level @3m µV/m	Limit @3m µV/m
30.2	Horizontal	32.0	40.0	39.8	100
706.2	Horizontal	35.2	46.0	57.5	200
962.1	Horizontal	38.1	54.0	80.4	500

Remarks:

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB

1GHz to 18GHz 5.1dB

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

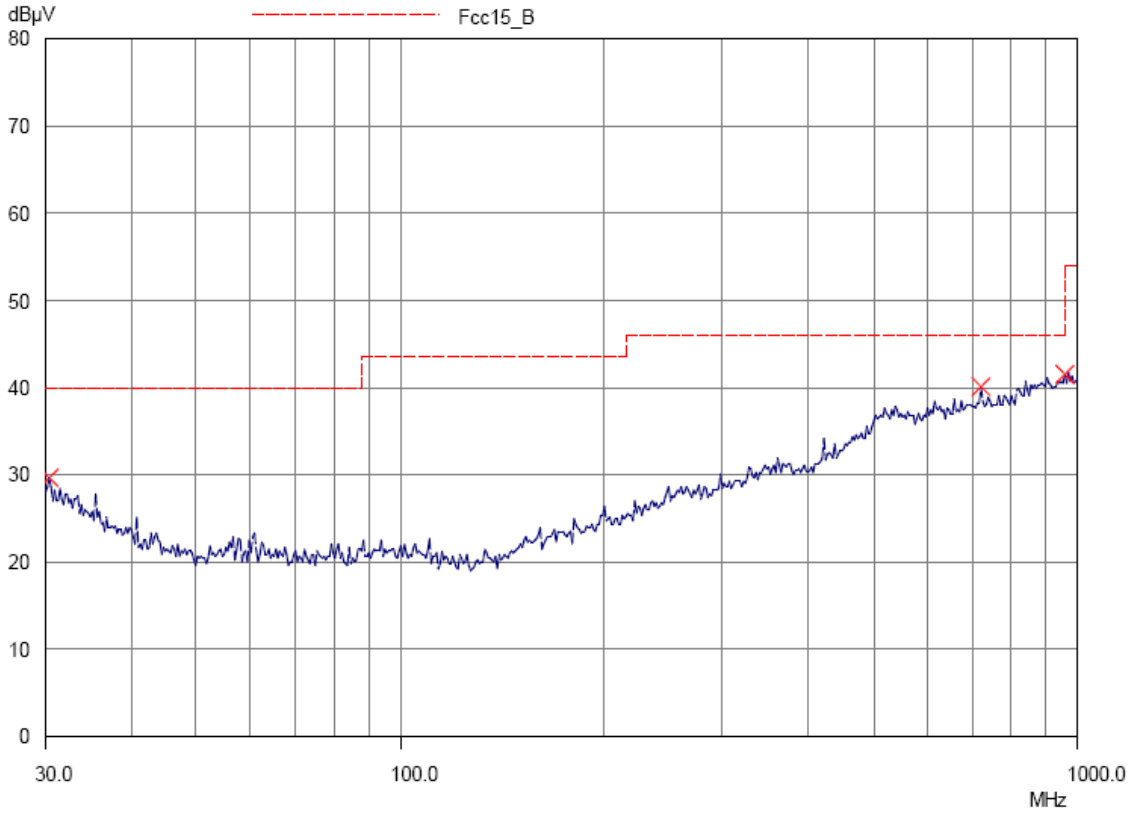
Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
30-88	100
88-216	150
216-960	200
Above960	500

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 with charging mode (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Results of Aux in with charging mode (Above 30MHz): PASS
Please refer to the following table for result details

Vertical



Results of Aux in with charging mode (Above 30MHz): PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dBµV/m	Limit @3m dBµV/m	Level @3m µV/m	Limit @3m µV/m
30.3	Vertical	30.7	40.0	34.3	100
719.6	Vertical	35.1	46.0	56.9	200
954.1	Vertical	35.6	46.0	60.3	200

Remarks:

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB

1GHz to 18GHz 5.1dB

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

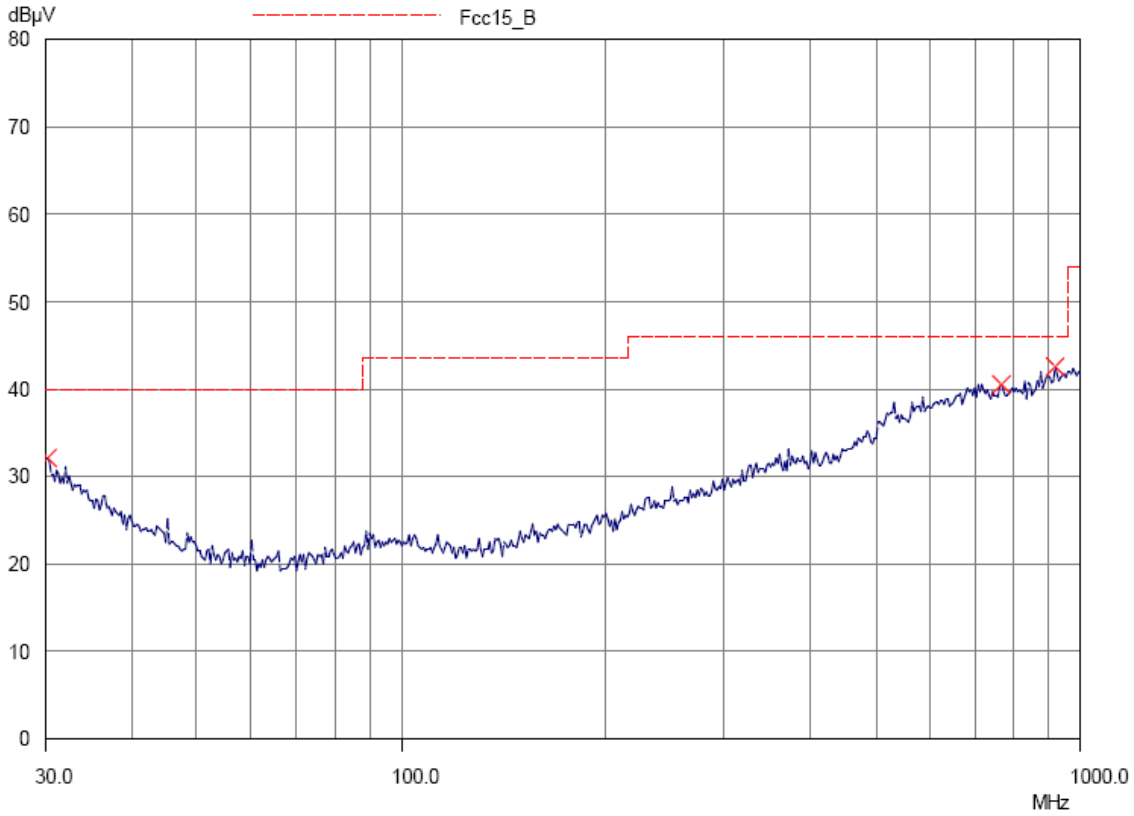
Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
30-88	100
88-216	150
216-960	200
Above960	500

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 Bluetooth mode (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Results of Bluetooth mode (Above 30MHz): PASS
Please refer to the following table for result details

Horizontal



Results of Bluetooth mode (Above 30MHz): PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dBµV/m	Limit @3m dBµV/m	Level @3m µV/m	Limit @3m µV/m
30.1	Horizontal	32.1	40.0	40.3	100
763.8	Horizontal	35.5	46.0	59.6	200
917.1	Horizontal	35.6	46.0	60.3	200

Remarks:

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB

1GHz to 18GHz 5.1dB

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

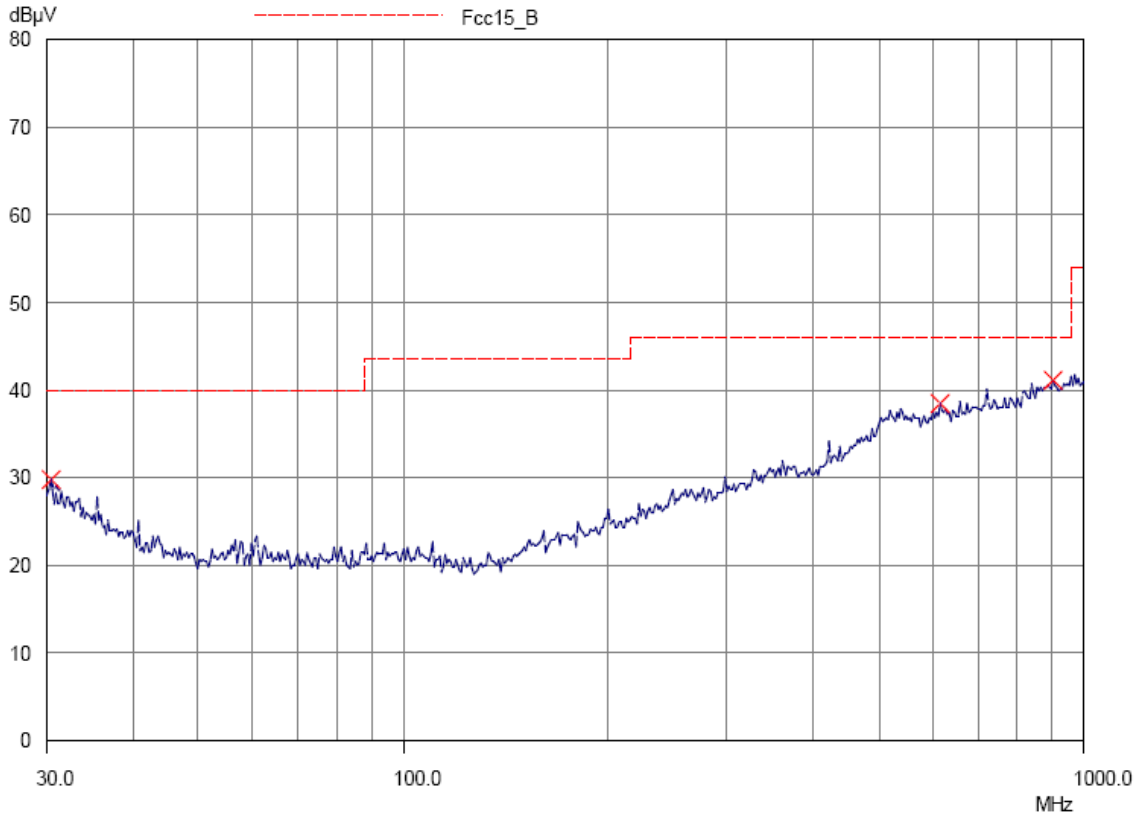
Frequency Range [MHz]	Quasi-Peak Limits [μV/m]
30-88	100
88-216	150
216-960	200
Above960	500

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 Bluetooth mode (9kHz – 30MHz): PASS
Emissions detected are more than 20 dB below the limit line(s)

Results of Bluetooth mode (Above 30MHz): PASS
Please refer to the following table for result details

Vertical



Results of Bluetooth mode (Above 30MHz): PASS

Radiated Emissions Quasi-Peak					
Emission Frequency MHz	E-Field Polarity	Level @3m dBµV/m	Limit @3m dBµV/m	Level @3m µV/m	Limit @3m µV/m
30.2	Vertical	28.6	40.0	26.9	100
613.6	Vertical	35.5	46.0	59.6	200
900.5	Vertical	35.1	46.0	56.9	200

Remarks:

Correction Factor included Antenna Factor and Cable Attenuation.

Calculated measurement uncertainty : 30MHz to 1GHz 5.2dB
1GHz to 18GHz 5.1dB

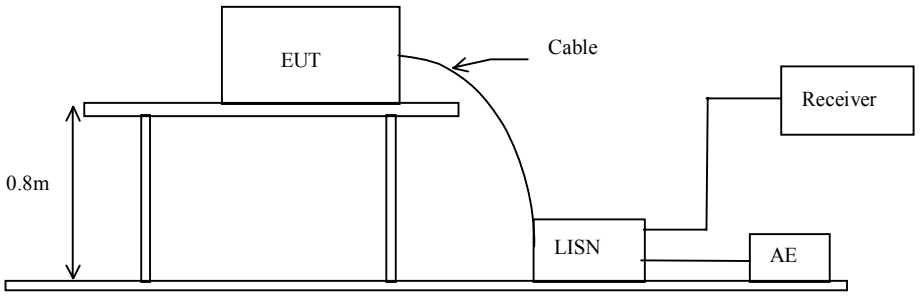
3.1.3 Conducted Emissions (0.15MHz to 30MHz)

Test Requirement:	FCC 47CFR 15.207
Test Method:	ANSI C63.4:2003
Test Date:	2012-04-03
Ambient Temperature:	24 °C
Relative Humidity:	59 %
Atmospheric Pressure (kPa):	101
Mode of Operation:	Aux in with charging mode

Test Method:

The test was performed in accordance with ANSI C63.4: 2003, 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:



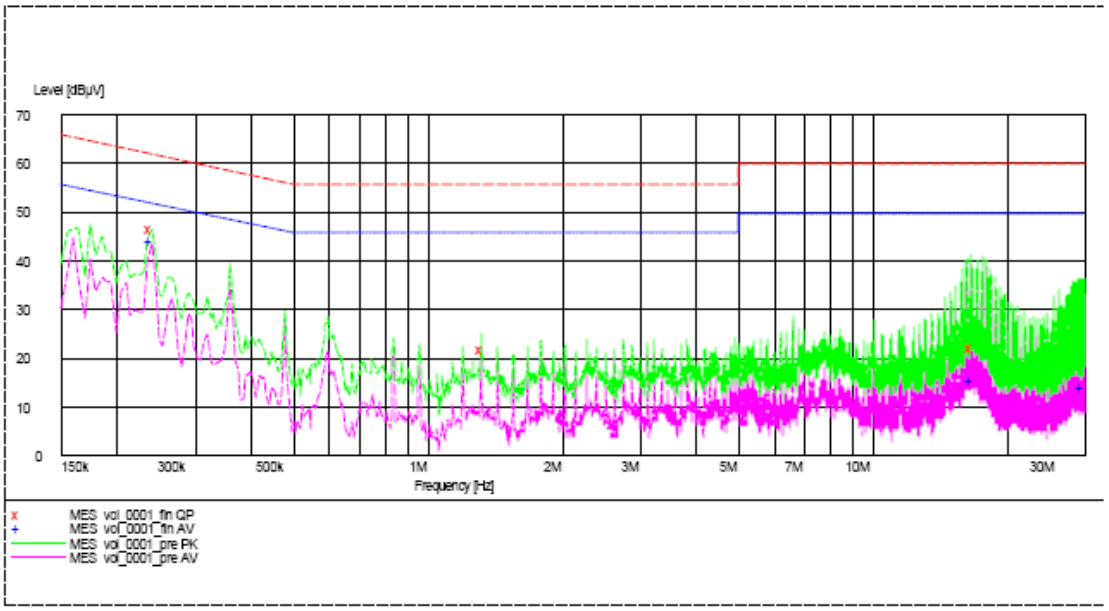
Limit for Conducted Emissions (FCC 47 CFR 15.207):

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 Aux in with charging mode (L): Pass
Please refer to the following diagram for individual results.



Results of Aux in with charging mode (L): Pass

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Live	0.240	46.7	62.0	44.0	52.0
Live	1.320	21.9	56.0	-*-	-*-
Live	16.690	22.1	56.0	15.6	50.0
Live	29.570	-*-	-*-	14.0	50.0

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

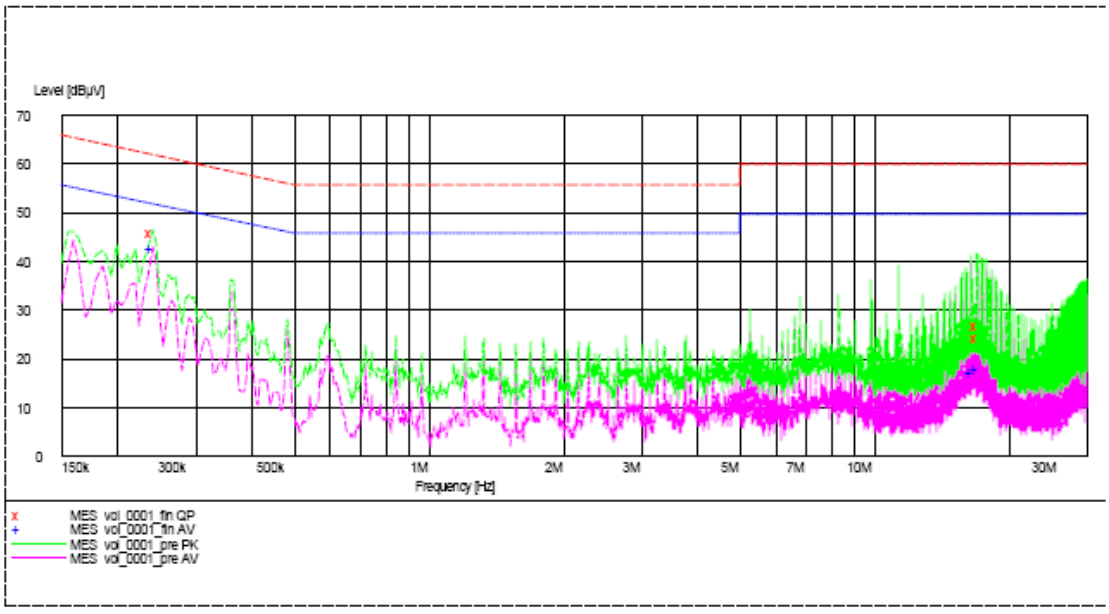
Limit for Conducted Emissions (FCC 47 CFR 15.207):

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 with charging mode (N): Pass
Please refer to the following diagram for individual results.



Results of Aux in with charging mode (N): Pass

Conductor Live or Neutral	Frequency MHz	Quasi-peak		Average	
		Level dBμV	Limit dBμV	Level dBμV	Limit dBμV
Neutral	0.240	46.0	62.0	42.9	52.0
Neutral	16.590	-*-	-*-	17.3	50.0
Neutral	16.920	24.5	60.0	-*-	-*-
Neutral	17.045	26.9	60.0	32.5	50.0

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:	2012-04-02
Ambient Temperature:	22 °C
Relative Humidity:	56 %
Atmospheric Pressure (kPa):	101
Mode of Operation:	Tx 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.

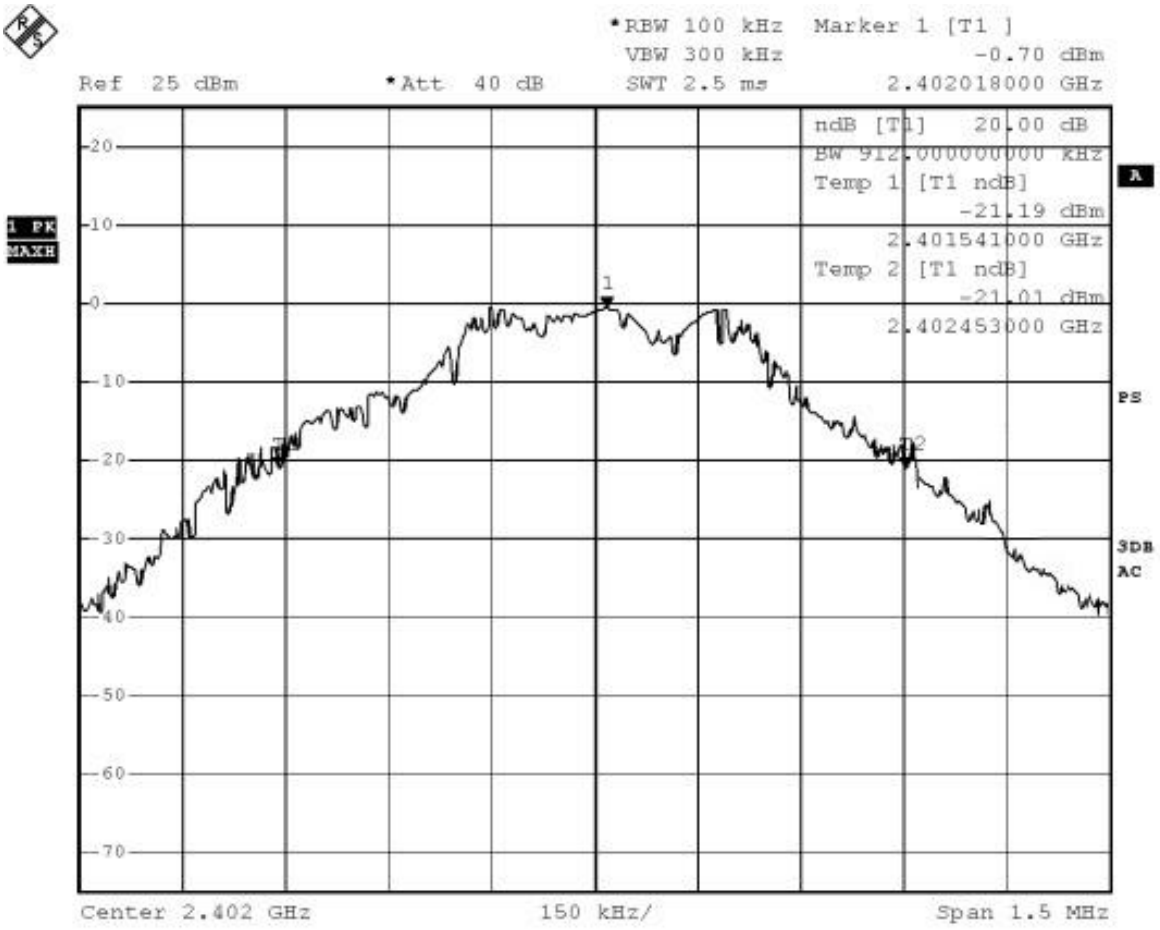
Test Setup:

As Test Setup of clause 3.1.1 in this test report.

Limits for 20dB Spectrum Bandwidth Measurement:

Center Frequency [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2402.0	912.0	25.0

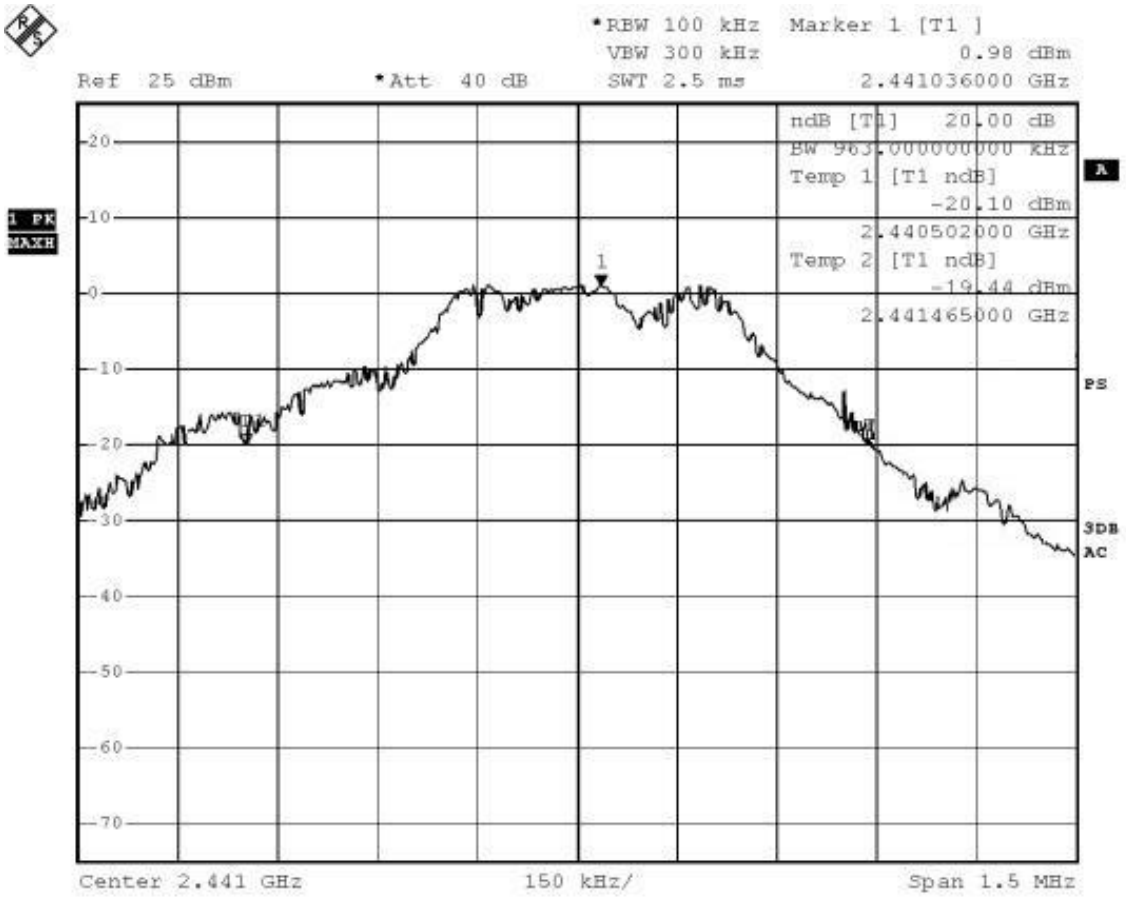
20dB Bandwidth of Fundamental Emission on 2402MHz (GFSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2441.0	963.0	25.0

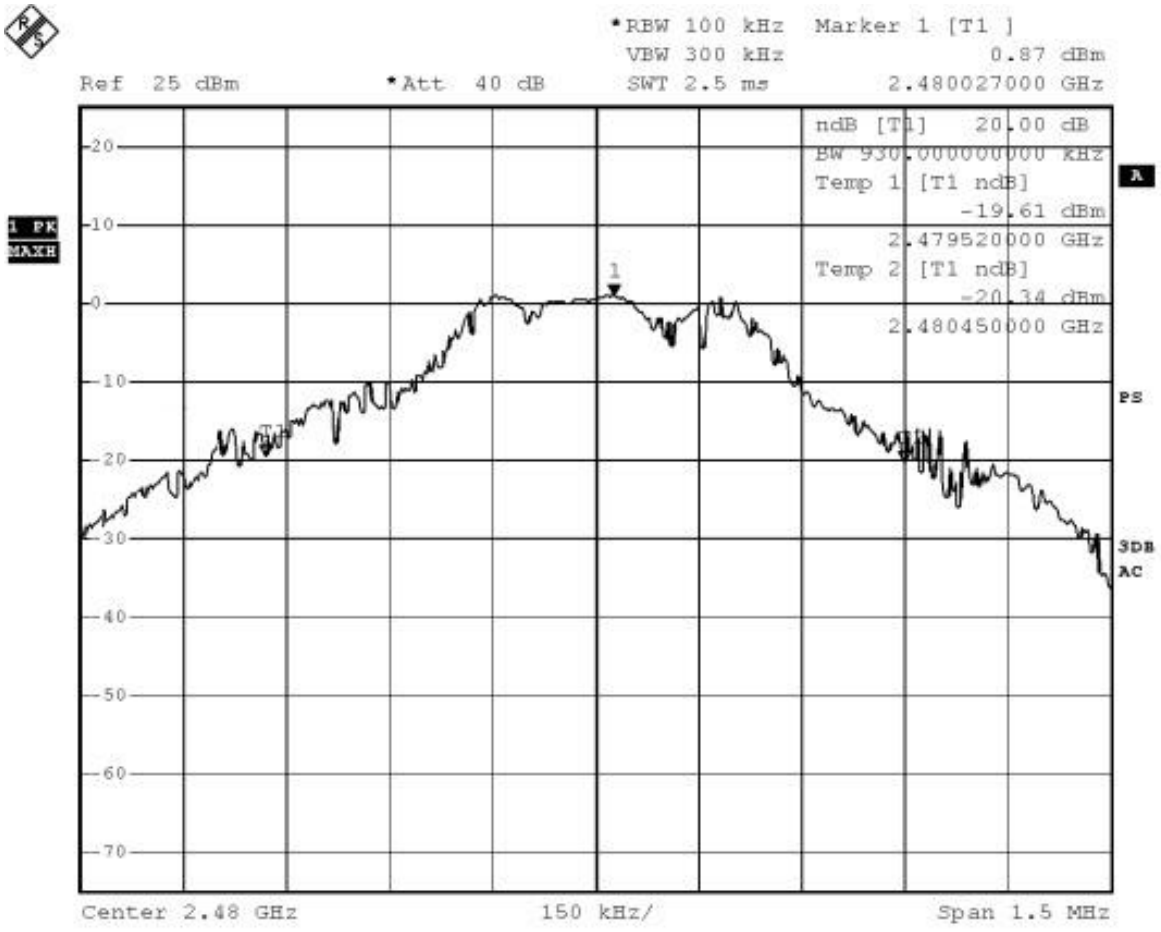
20dB Bandwidth of Fundamental Emission on 2441MHz (GFSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2480.0	930.0	25.0

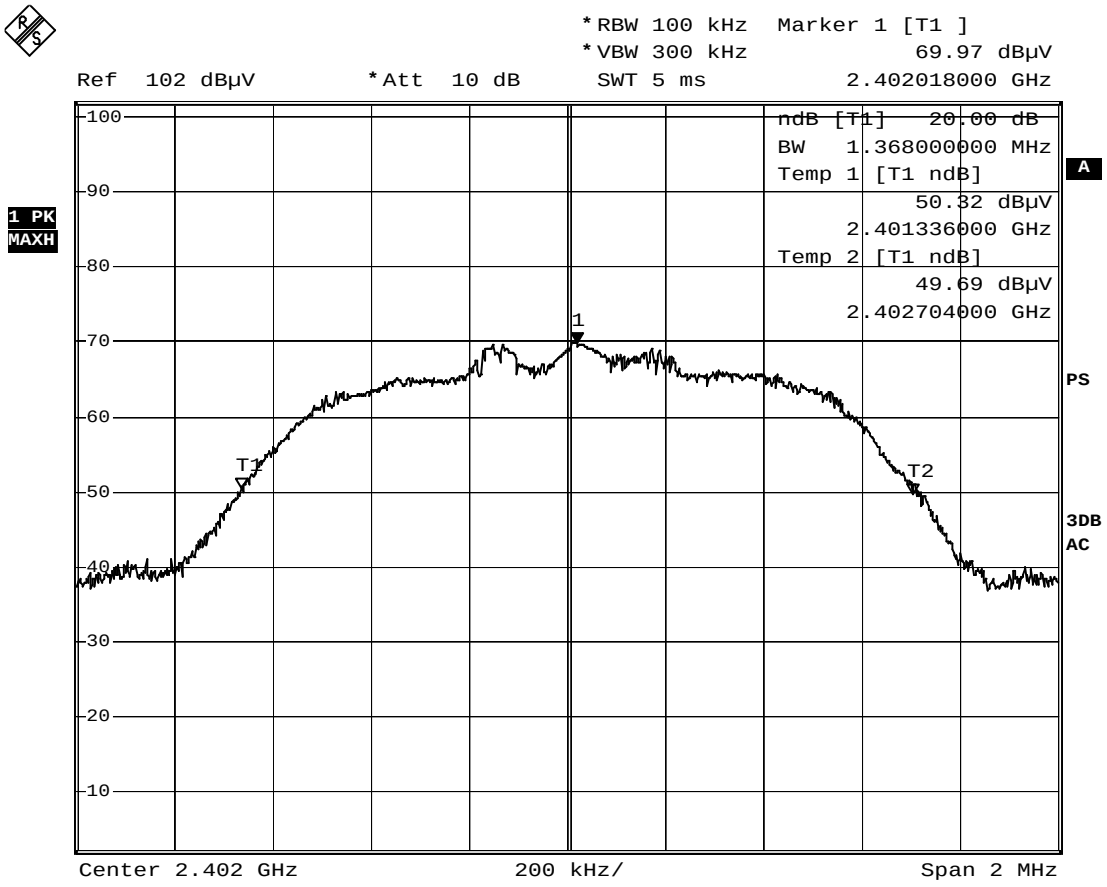
20dB Bandwidth of Fundamental Emission on 2480MHz (GFSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Center Frequency [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2402.0	1368.0	25.0

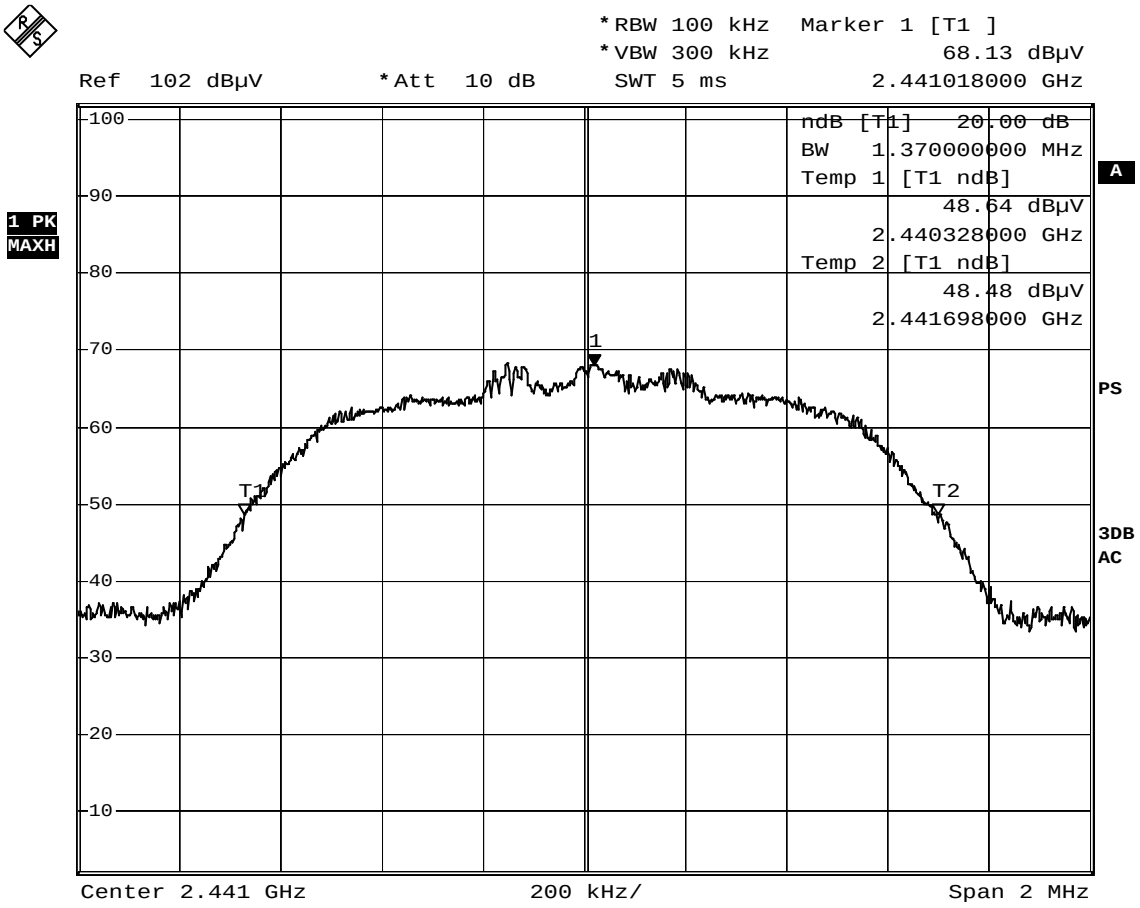
20dB Bandwidth of Fundamental Emission on 2402MHz (π/4 DQPSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2441.0	1370.0	25.0

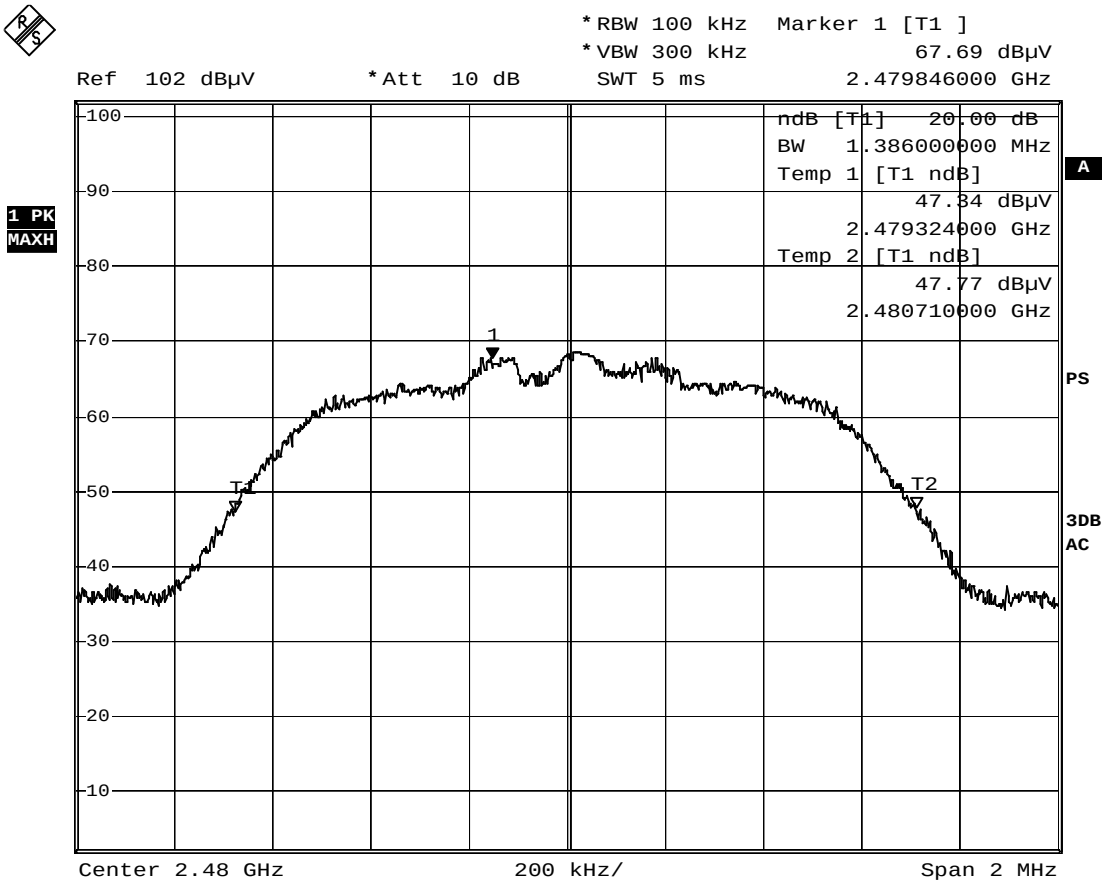
20dB Bandwidth of Fundamental Emission on 2441MHz (π/4 DQPSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2480.0	1386.0	25.0

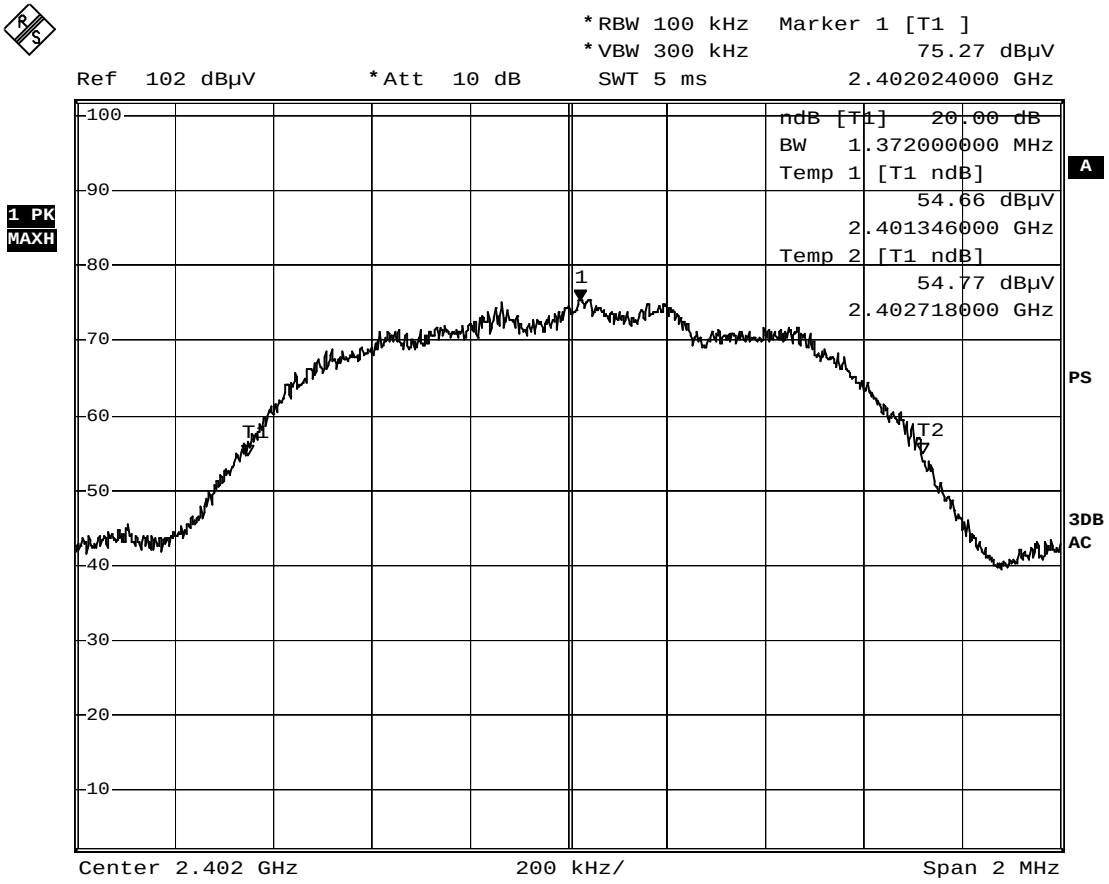
20dB Bandwidth of Fundamental Emission on 2480MHz (π/4 DQPSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Center Frequency [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2402.0	1372.0	25.0

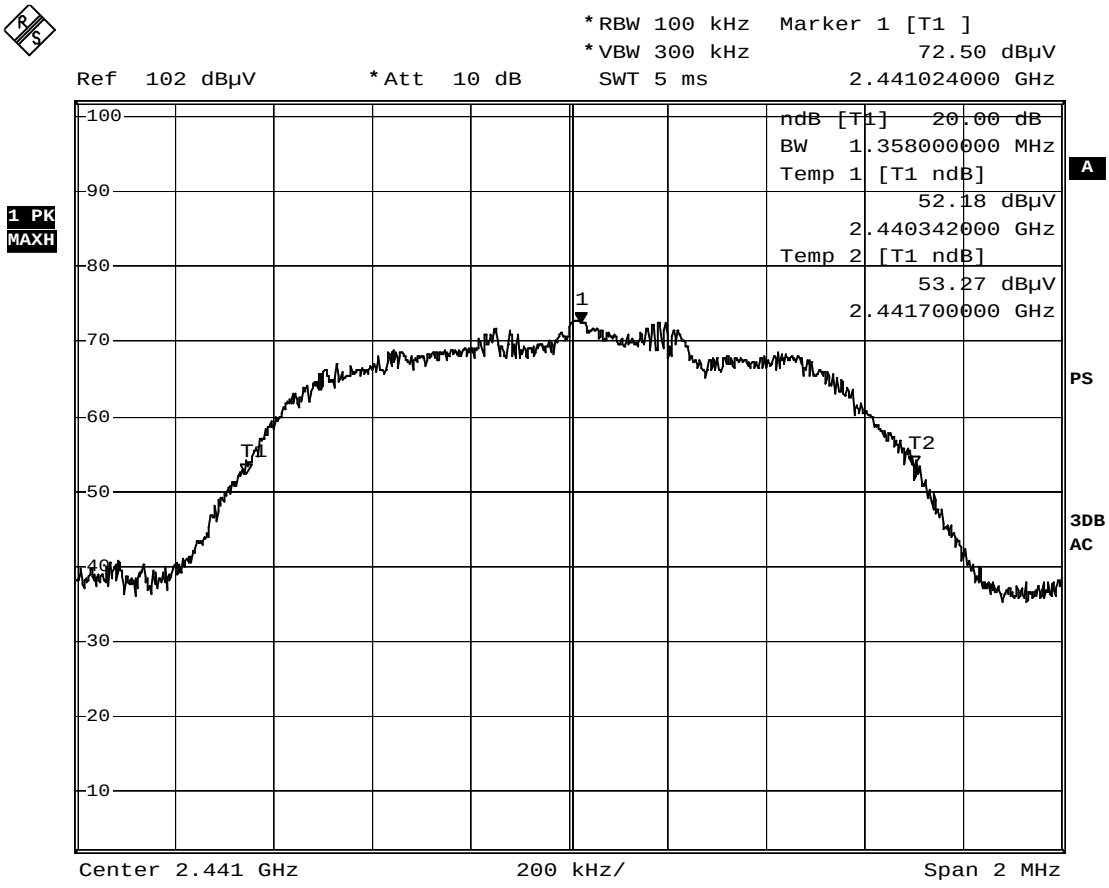
20dB Bandwidth of Fundamental Emission on 2402MHz (8DPSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2441.0	1356.0	25.0

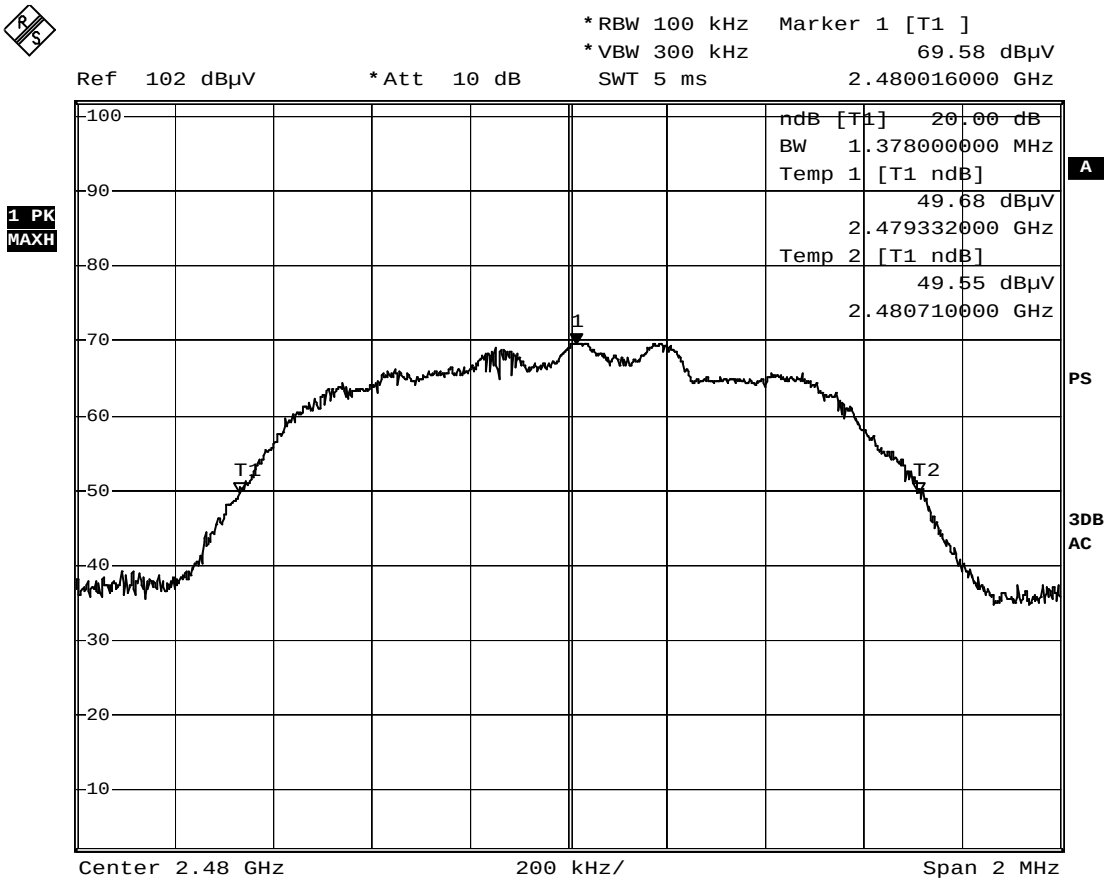
20dB Bandwidth of Fundamental Emission on 2441MHz (8DPSK)



Limits for 20dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	20dB Bandwidth [kHz]	FCC Limits [kHz]
2480.0	1378.0	25.0

20dB Bandwidth of Fundamental Emission on 2480MHz (8DPSK)

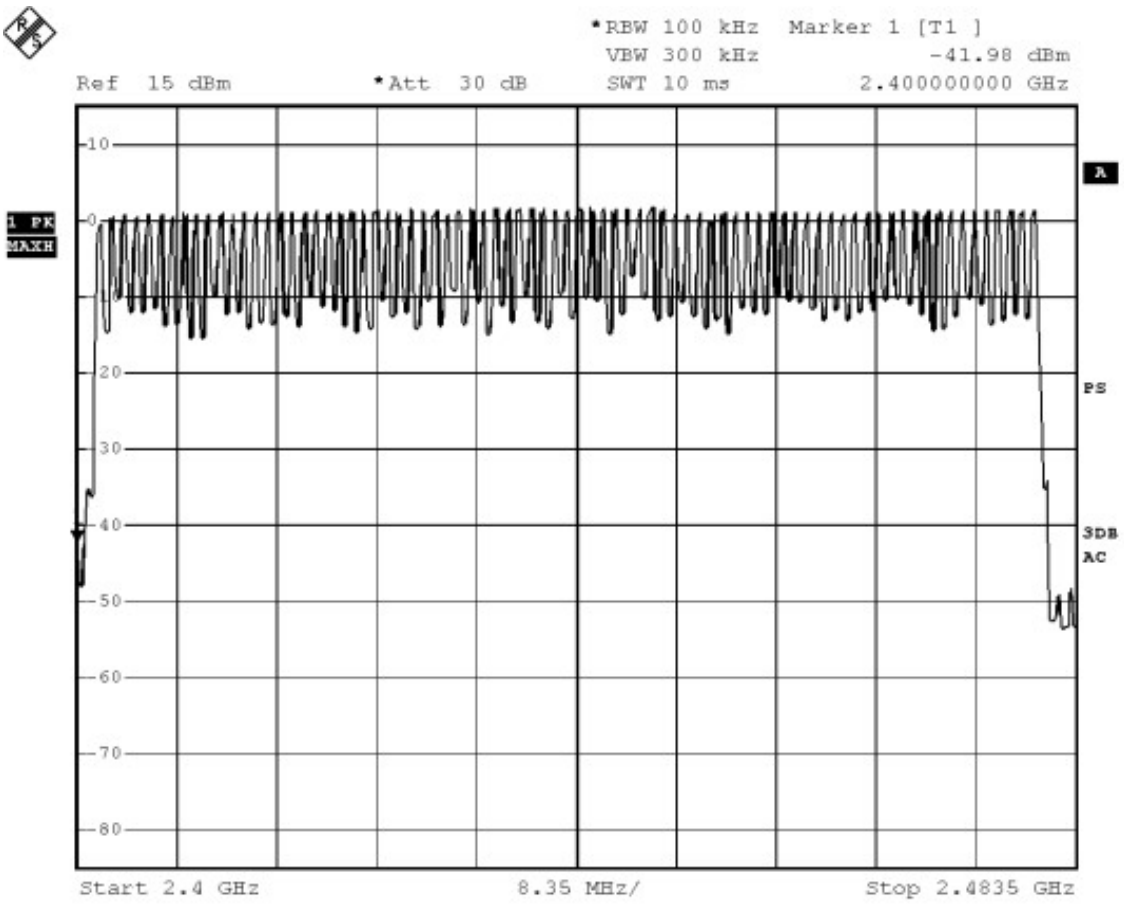


Number of Operating Channel

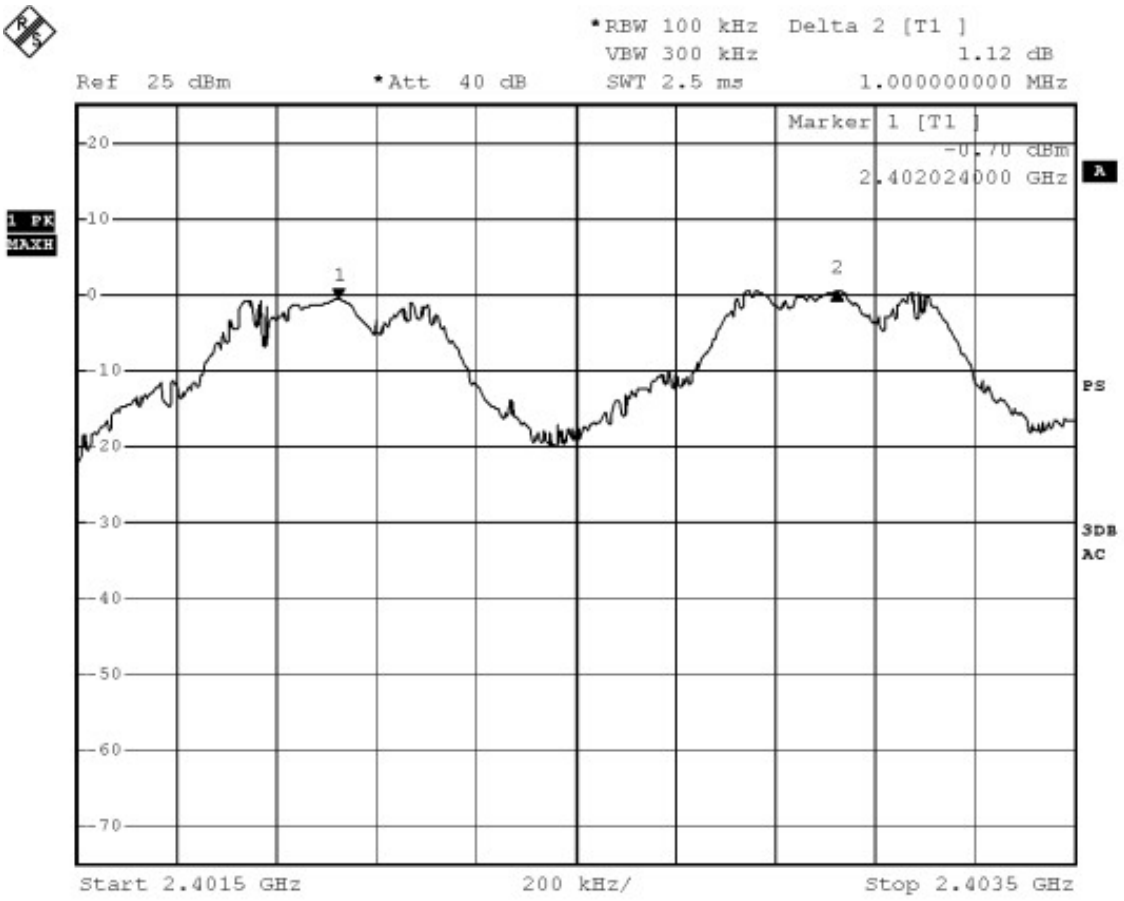
Requirements:
Frequency hopping system in the 2400-2483.5MHz band shall use at least 15 non-overlapping channels.

Item	Frequency（MHz）	Item	Frequency（MHz）	Item	Frequency（MHz）
1	2402	**31**	2432	**61**	2462
2	2403	**32**	2433	**62**	2463
3	2404	**33**	2434	**63**	2464
4	2405	**34**	2435	**64**	2465
5	2406	**35**	2436	**65**	2466
6	2407	**36**	2437	**66**	2467
7	2408	**37**	2438	**67**	2468
8	2409	**38**	2439	**68**	2469
9	2410	**39**	2440	**69**	2470
10	2411	**40**	2441	**70**	2471
11	2412	**41**	2442	**71**	2472
12	2413	**42**	2443	**72**	2473
13	2414	**43**	2444	**73**	2474
14	2415	**44**	2445	**74**	2475
15	2416	**45**	2446	**75**	2476
16	2417	**46**	2447	**76**	2477
17	2418	**47**	2448	**77**	2478
18	2419	**48**	2449	**78**	2479
19	2420	**49**	2450	**79**	2480
20	2421	**50**	2451		
21	2422	**51**	2452		
22	2423	**52**	2453		
23	2424	**53**	2454		
24	2425	**54**	2455		
25	2426	**55**	2456		
26	2427	**56**	2457		
27	2428	**57**	2458		
28	2429	**58**	2459		
29	2430	**59**	2460		
30	2431	**60**	2461		

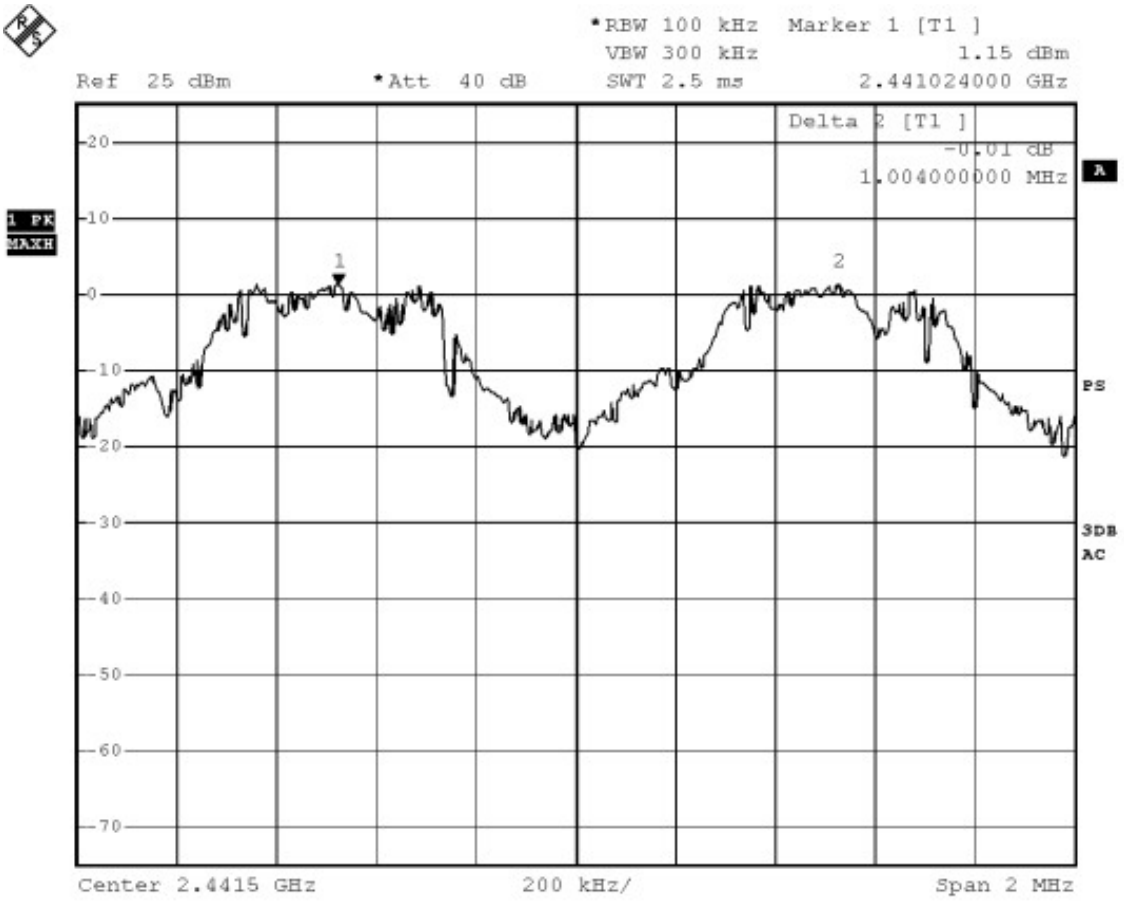
Number of Hopping frequencies = 79 Channels (GFSK)



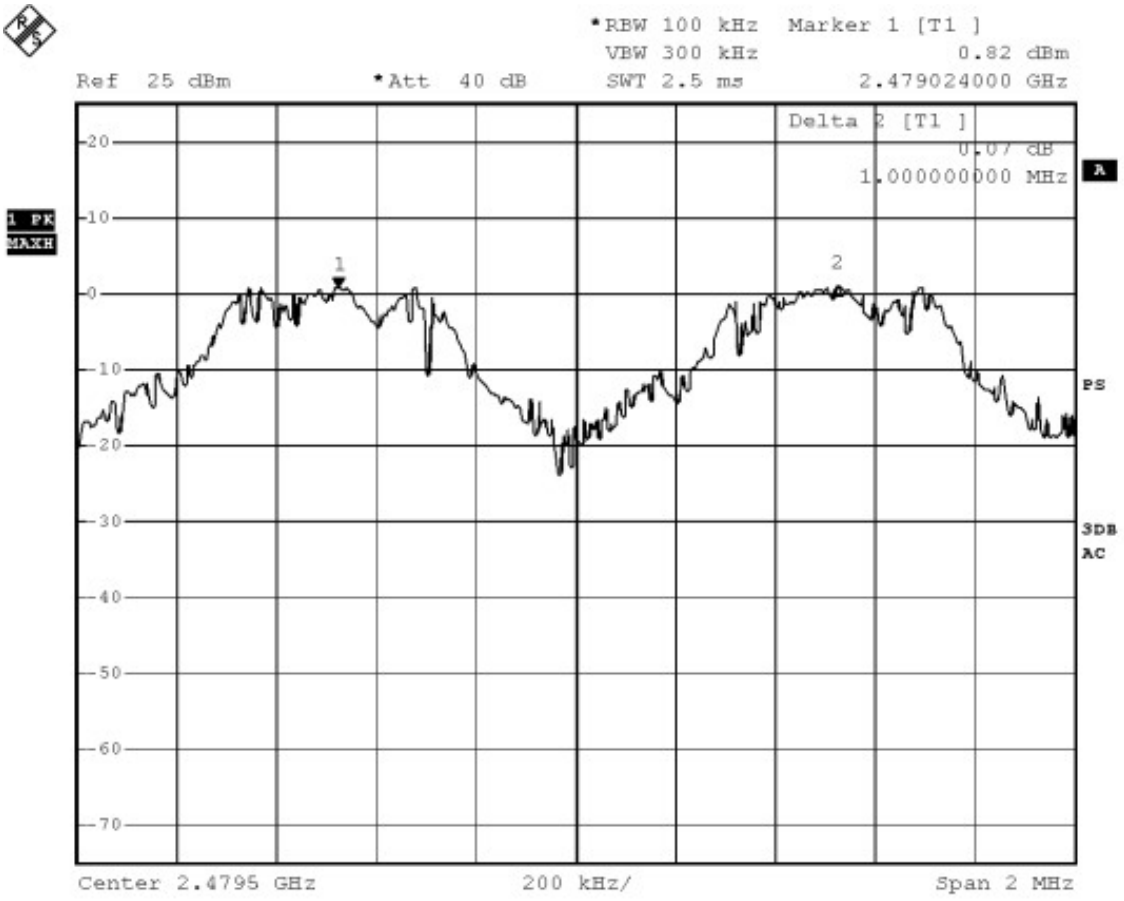
Channel Separation (Lowest) (GFSK)



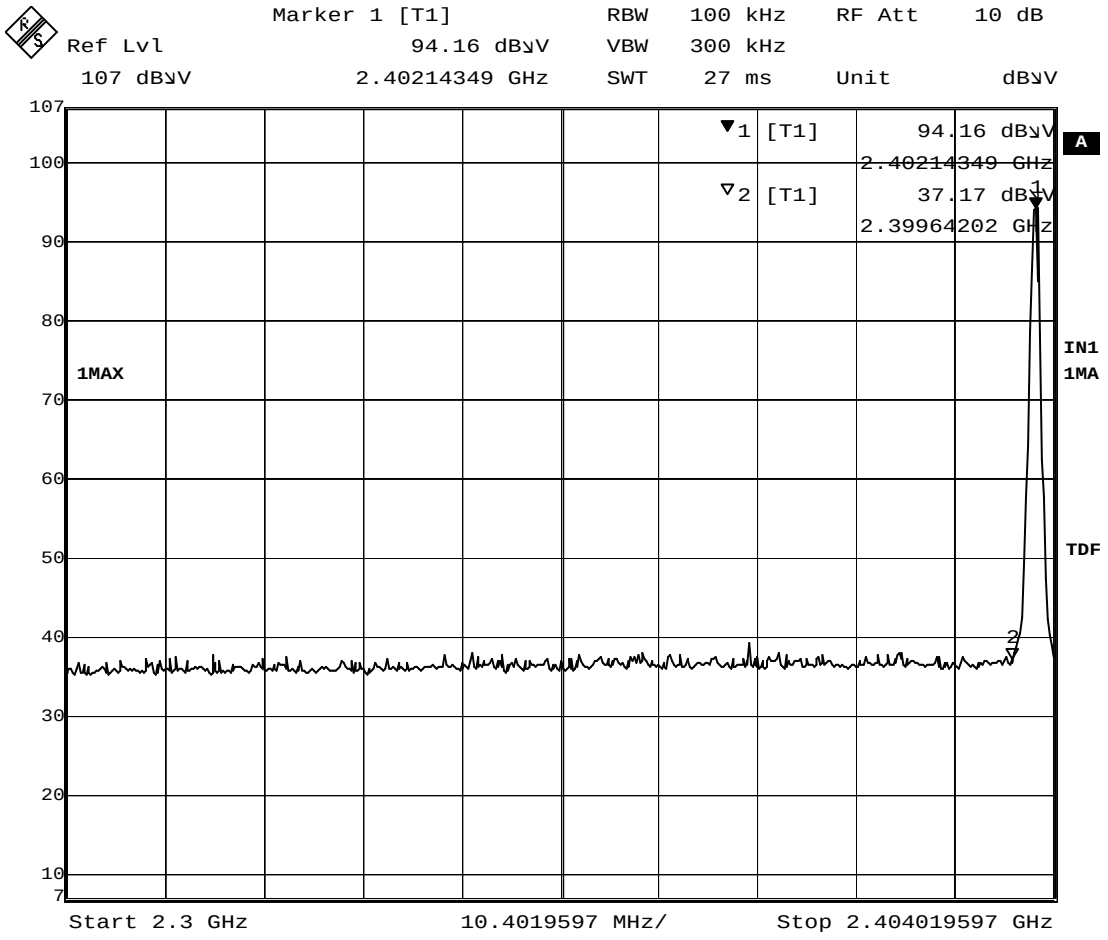
Channel Separation (Mid) (GFSK)



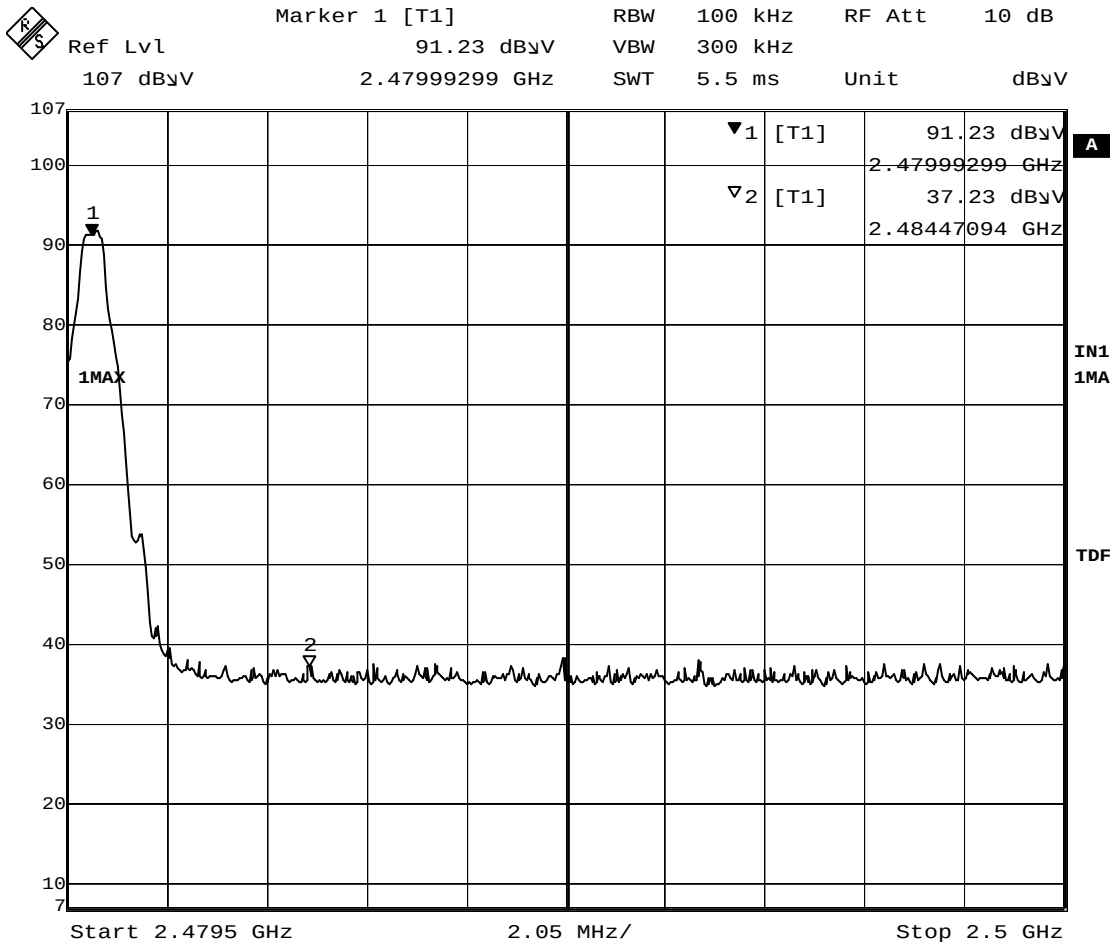
Channel Separation (Highest) (GFSK)



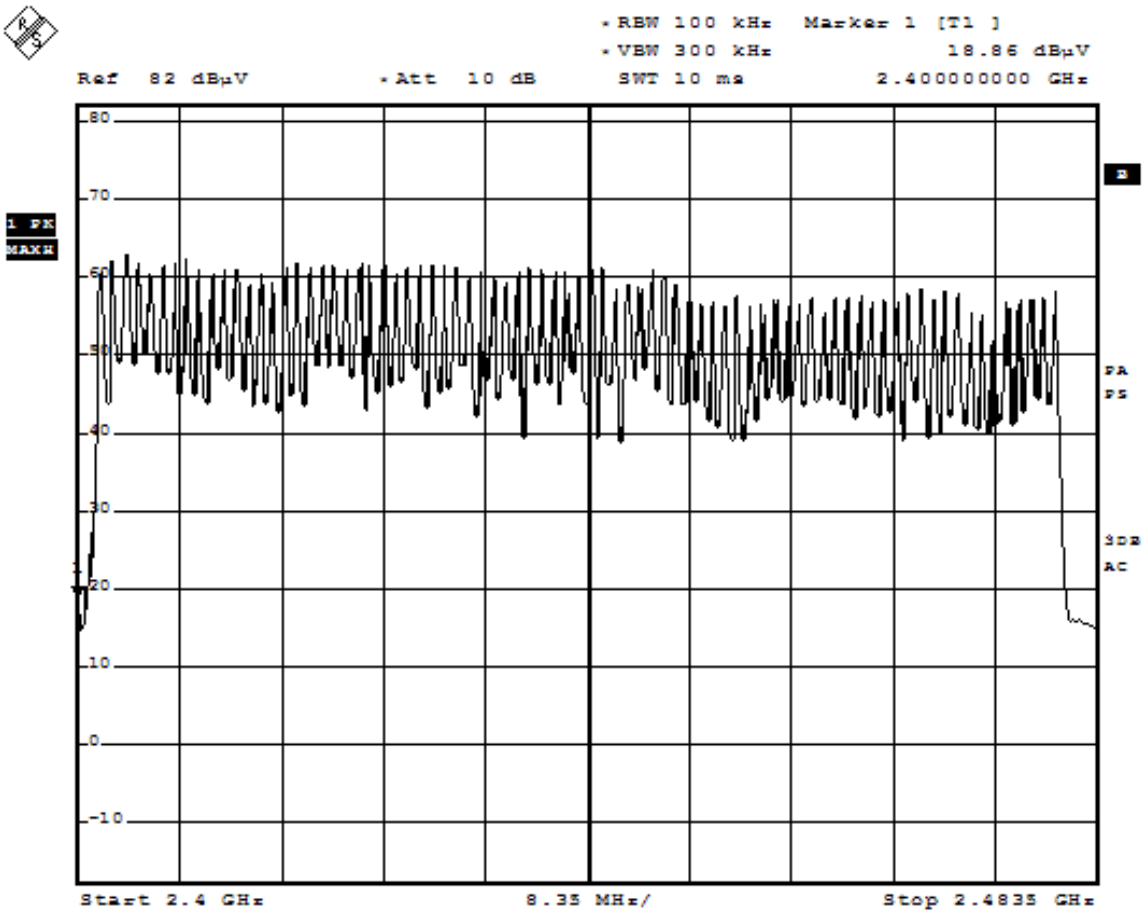
Band-edge Compliance of RF Emissions – Lowest (GFSK)



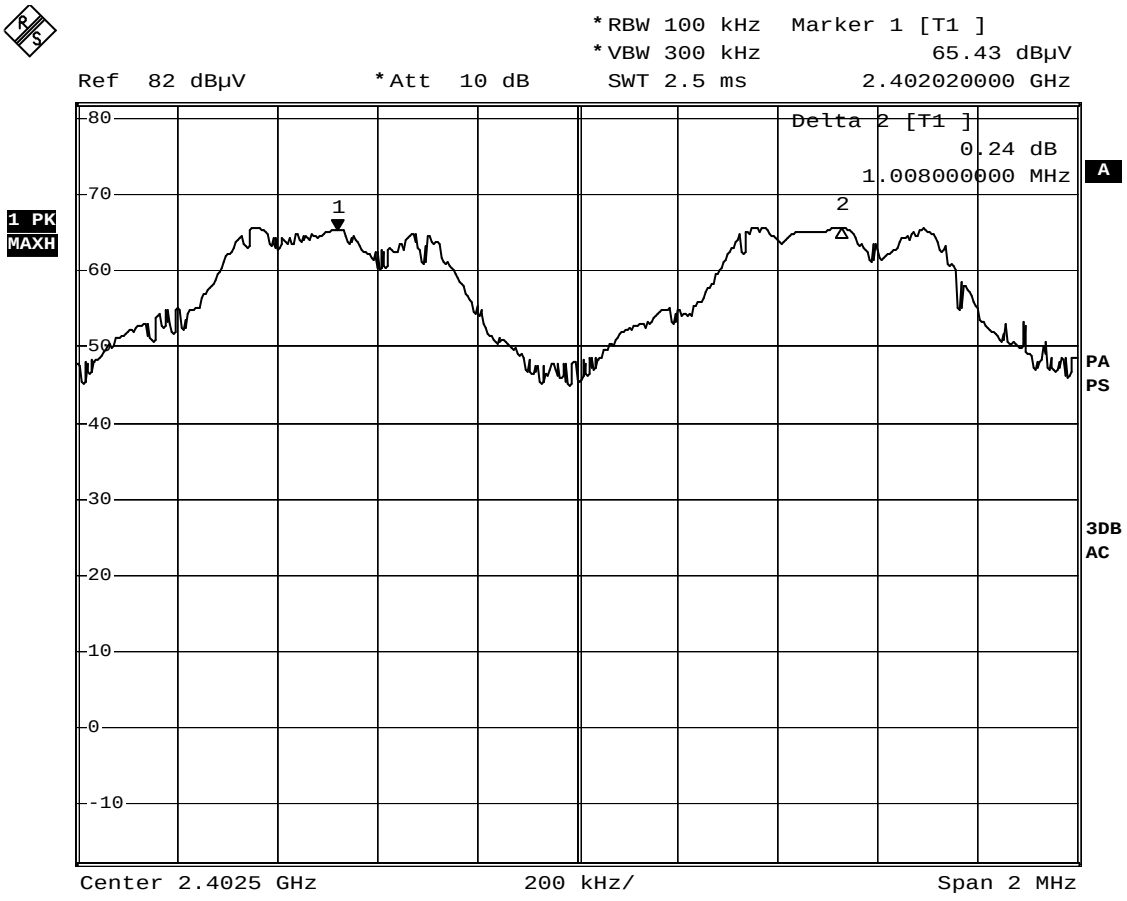
Band-edge Compliance of RF Emissions – Highest (GFSK)



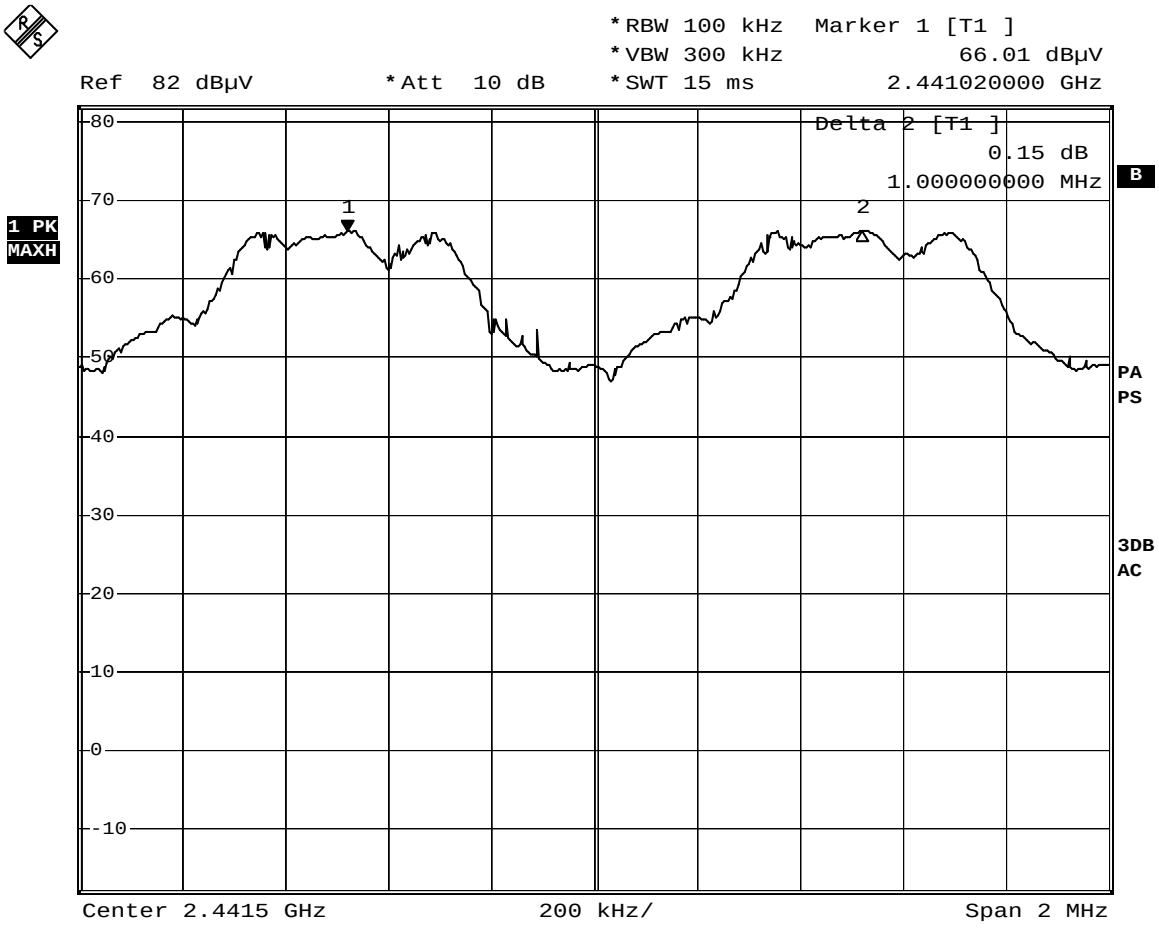
Number of Hopping frequencies = 79 Channels (π/4 DQPSK)



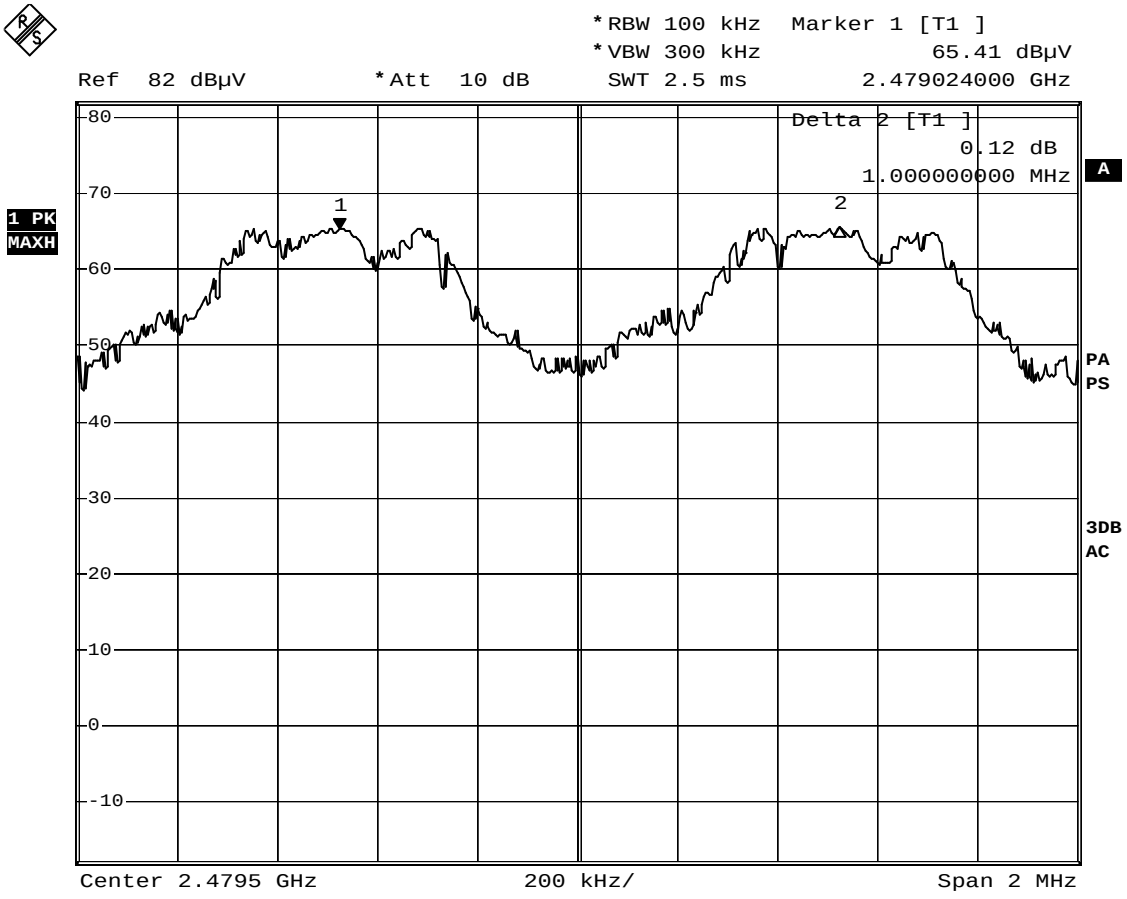
Channel Separation (Lowest) (π/4 DQPSK)



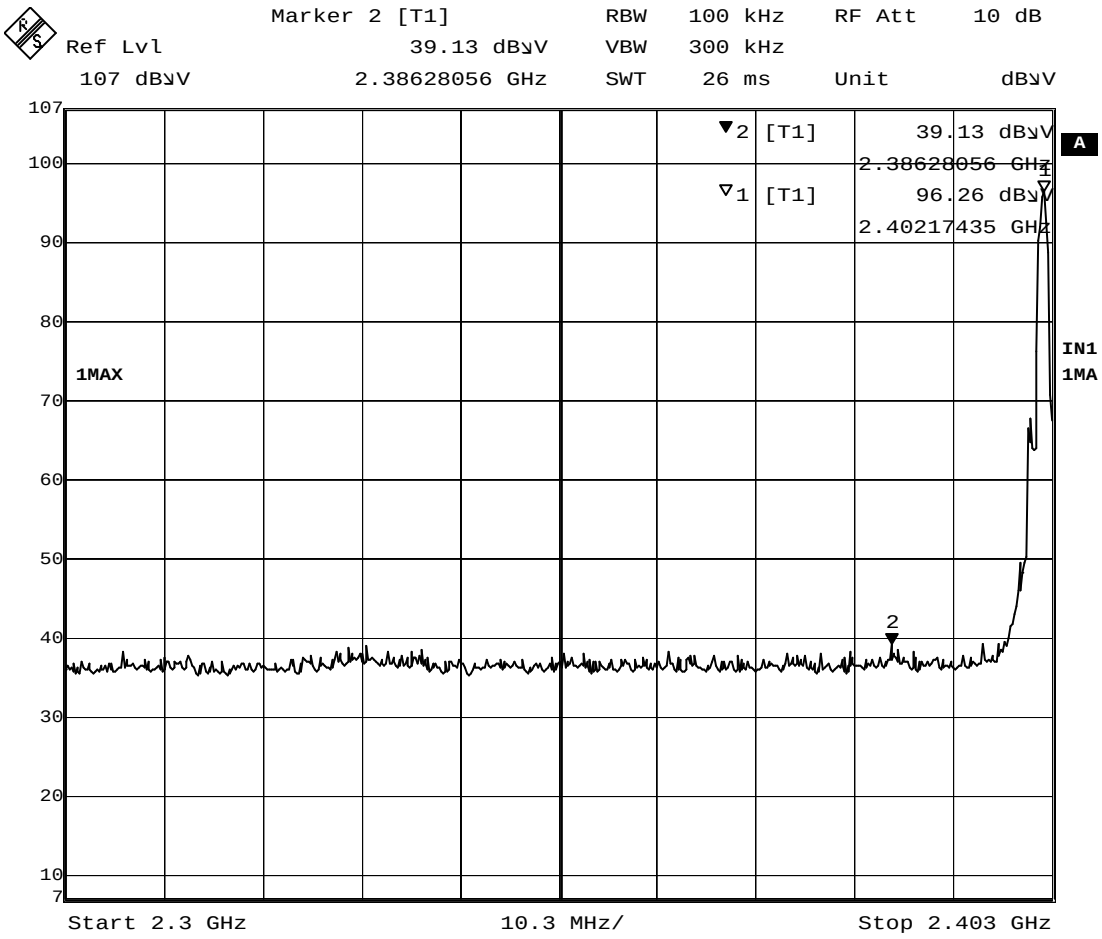
Channel Separation (Mid) (π/4 DQPSK)



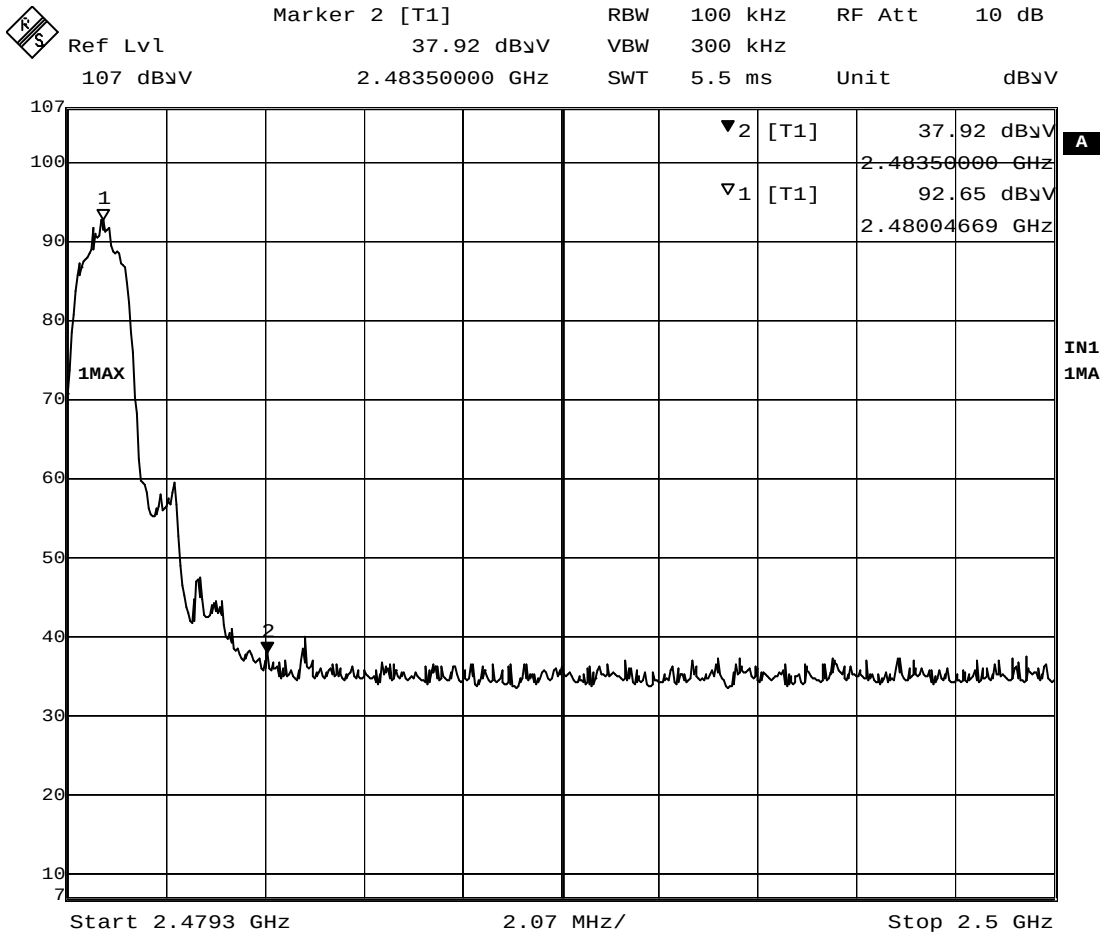
Channel Separation (Highest) (π/4 DQPSK)



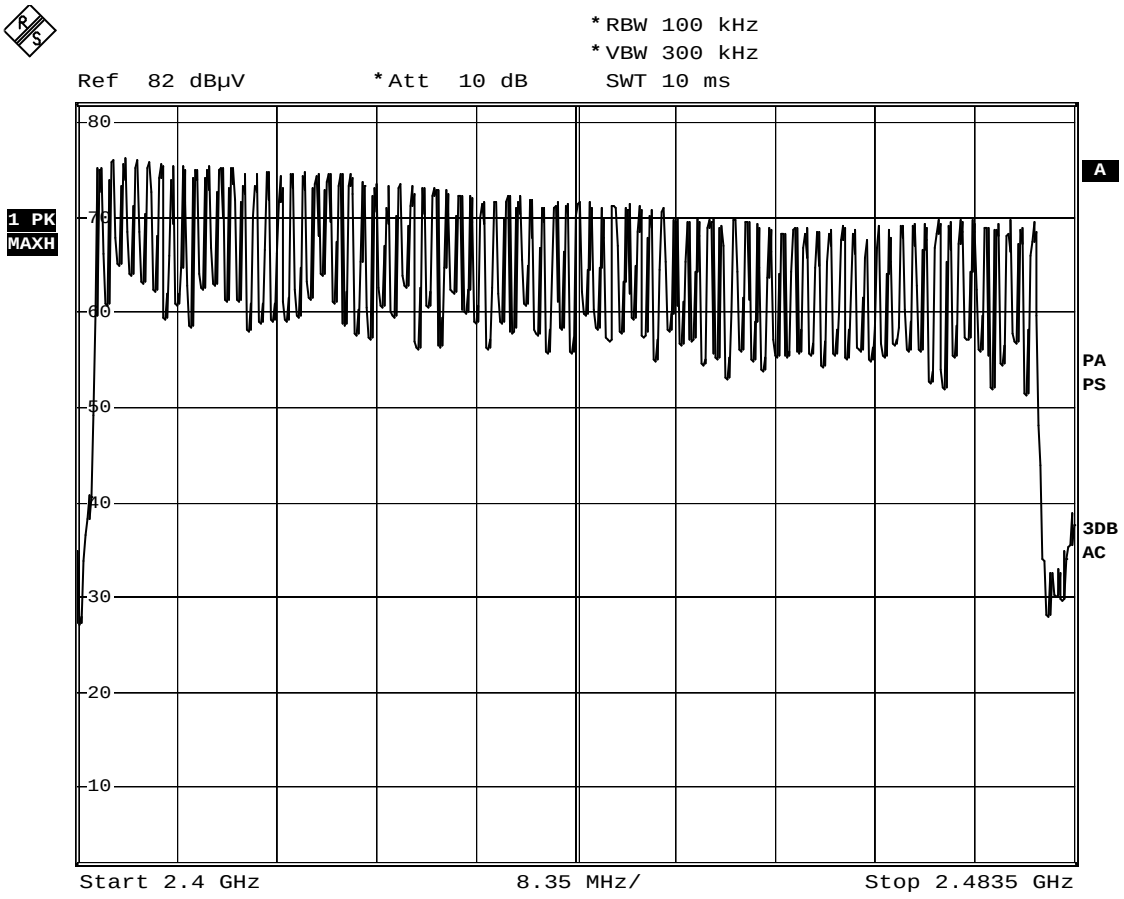
Band-edge Compliance of RF Emissions – Lowest (π/4 DQPSK)



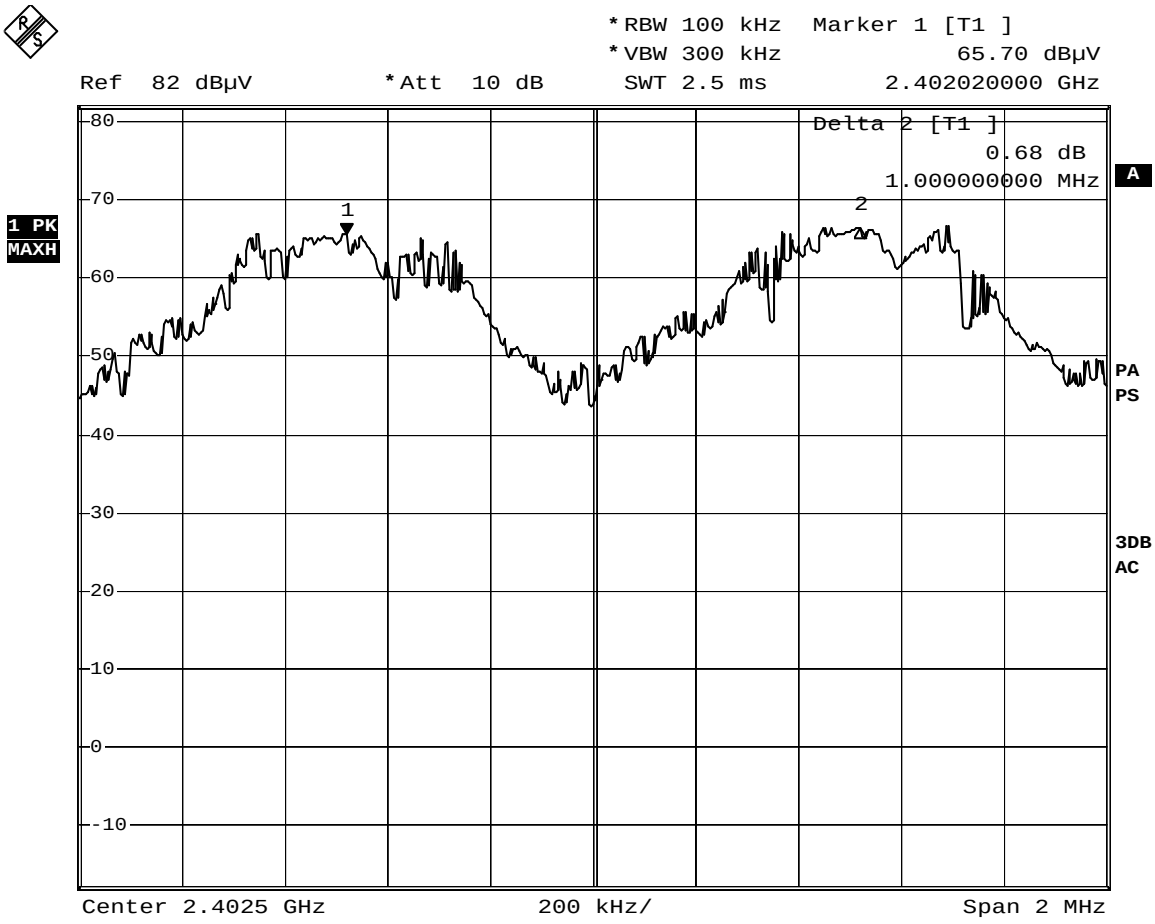
Band-edge Compliance of RF Emissions – Highest (π/4 DQPSK)



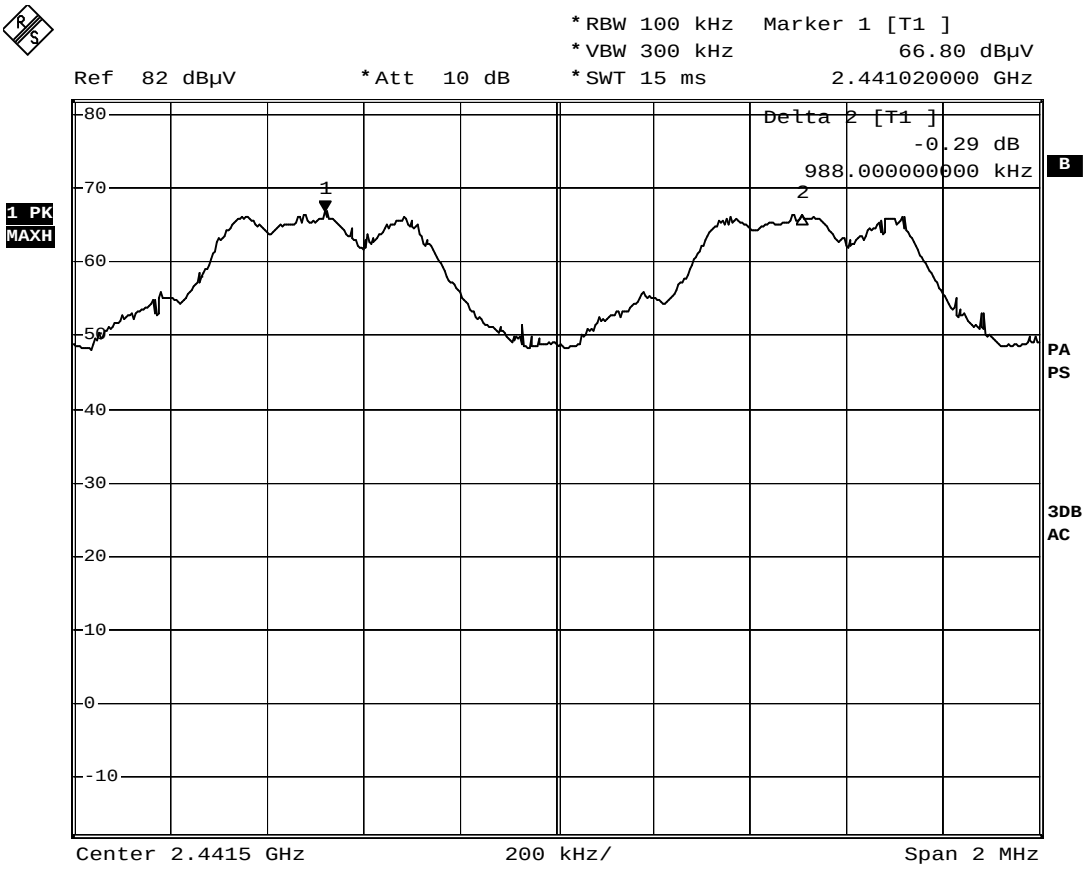
Number of Hopping frequencies = 79 Channels (8DPSK)



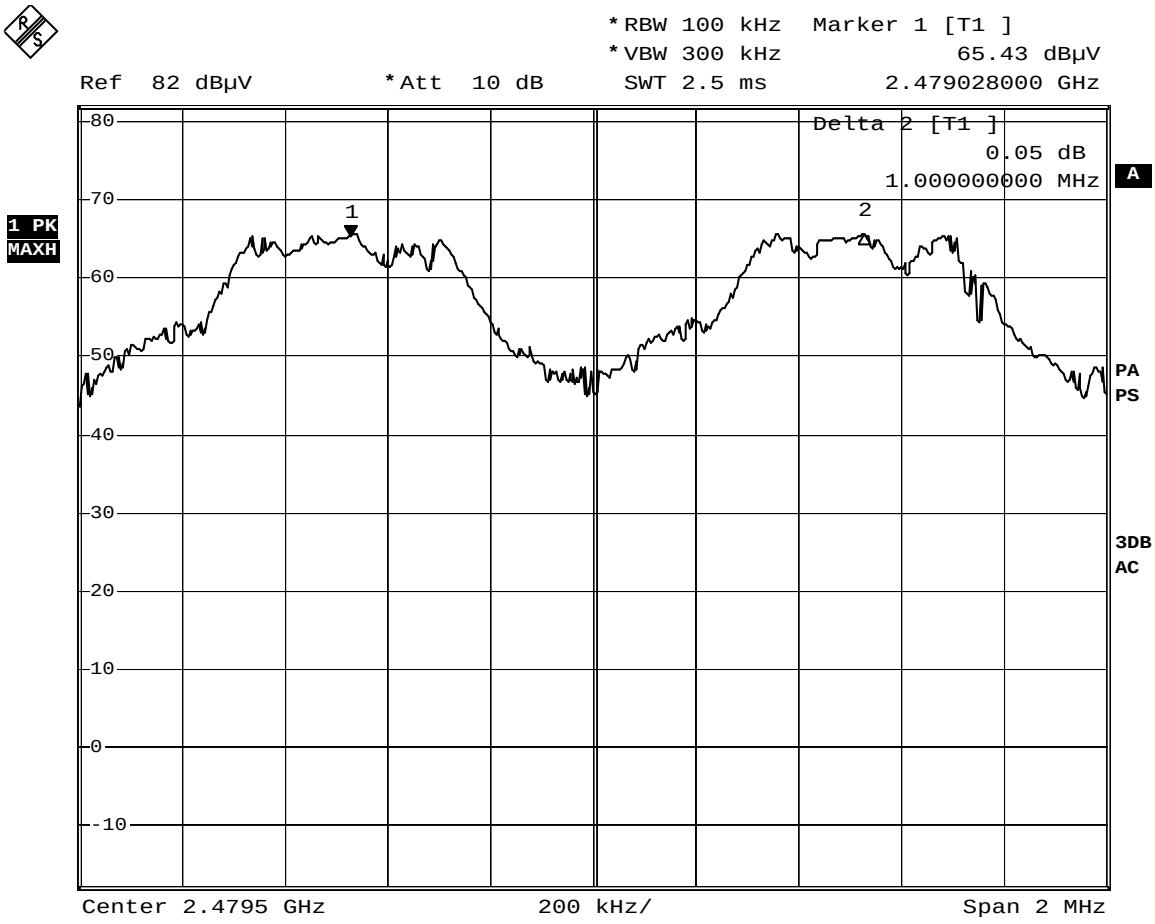
Channel Separation (Lowest) (8DPSK)



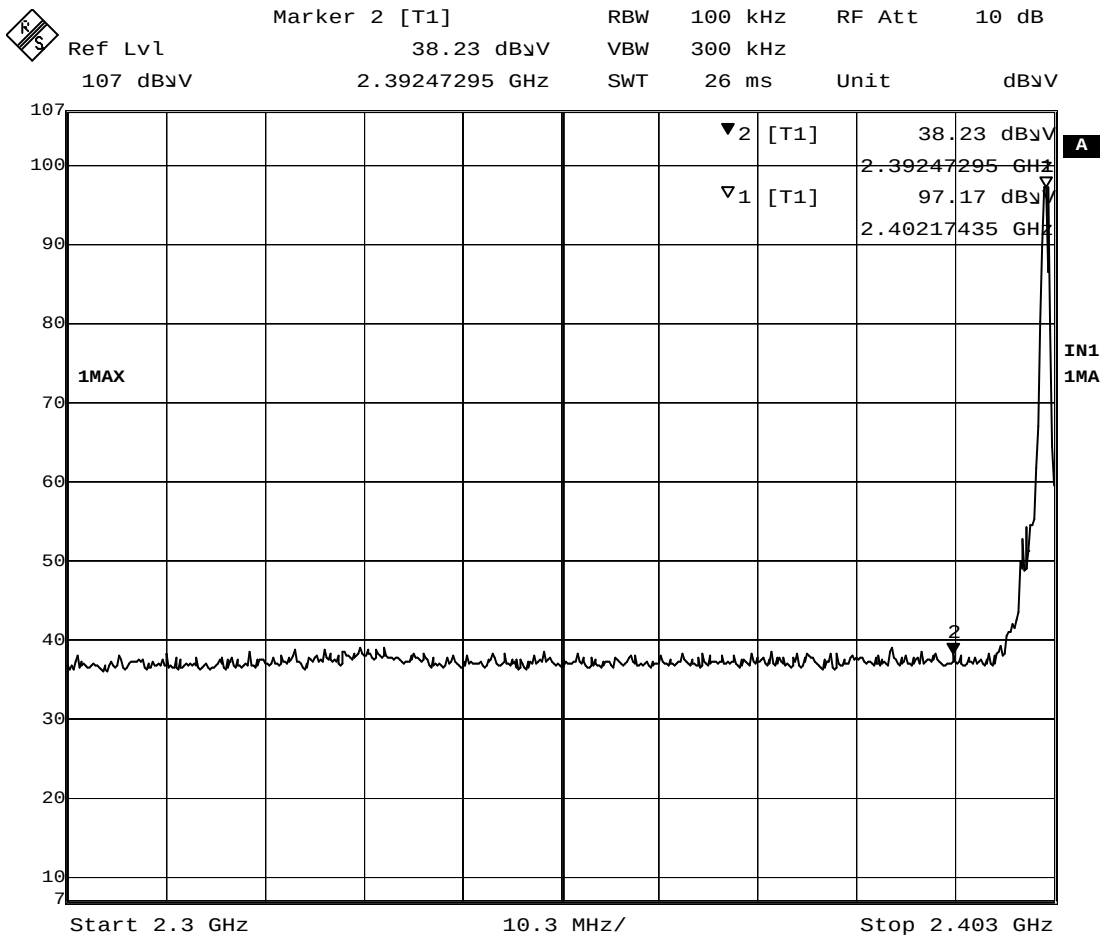
Channel Separation (Mid) (8DPSK)



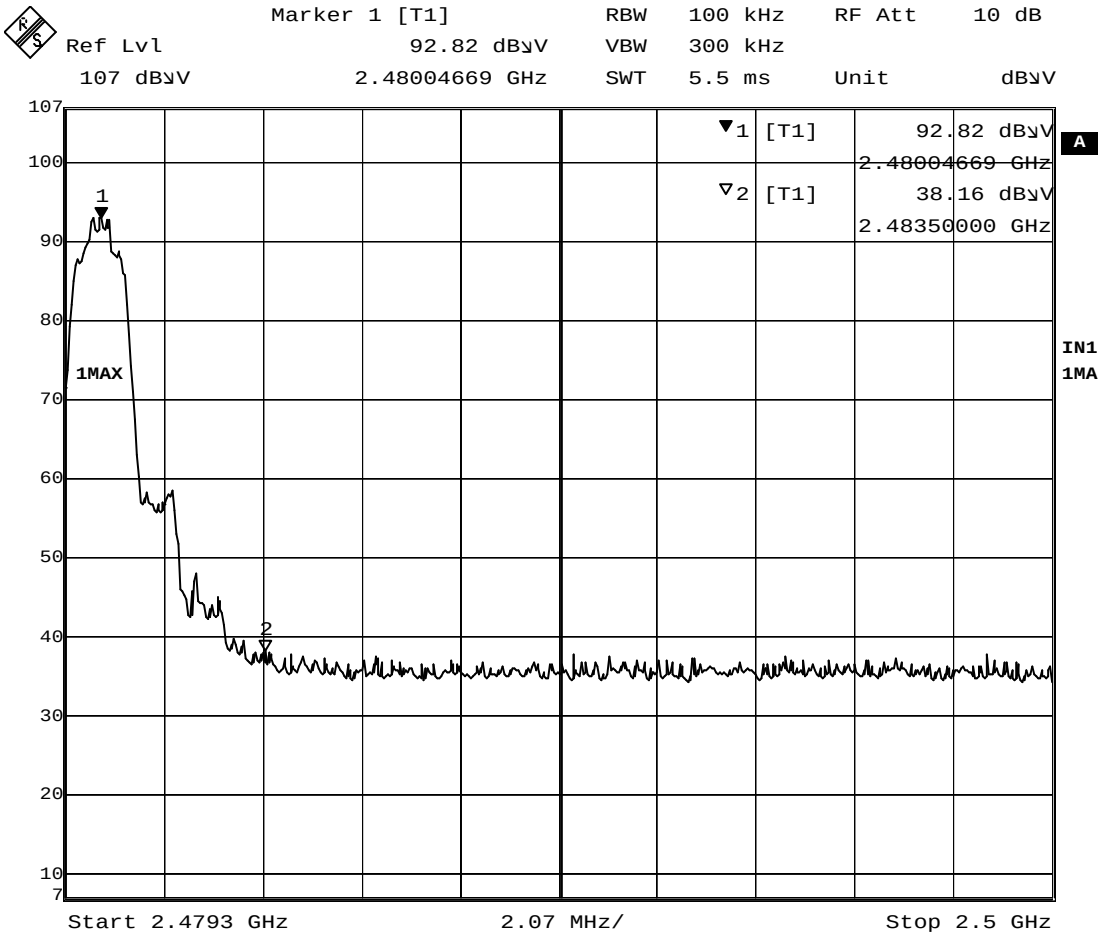
Channel Separation (Highest) (8DPSK)



Band-edge Compliance of RF Radiated Emissions（Lowest）(8DPSK)



Band-edge Compliance of RF Radiated Emissions （Highest）(8DPSK)



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 Antenna which is permanently attached to the main unit and attached on PCB board, the antenna gain = 0 dBi. 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.

Pseudorandom Frequency Hopping

The embedded FHSS engine uses 79 hopping frequencies. Each channel frequency is selected from a pseudorandom ordered list of hopping frequencies, from 2402.0MHz to 2480.0MHz with separating in 963.0 kHz apart from each of the channels. A single data frame is transmitted on each frequency location before skipping to the next hopping frequency in the list. Each channel is occupied 8 milliseconds.

Typically, the initiation of an FHSS communication is as follows

1. The initiating party sends a request via a predefined frequency or control channel.
2. The receiving party sends a number, known as a seed back to the initiating party.
3. The initiating party sends a synchronization signal acknowledging to the receiving party as it has successfully established a transmission link.
4. The communication begins, and both the receiving and the sending party change their frequencies along an unpredictable hopping sequence with pseudorandom properties.

System Receiver Input Bandwidth

The receiver bandwidth is equal to the receiver bandwidth in the 79 hopping channel mode, which is 1180. 0 kHz. The receiver bandwidth was verified during RF hopping to the relative channel.

Receiver Hopping Capability

The associated receiver has the ability to shift frequencies in synchronization with the transmitted signals, with they start connect with a same channel and then hop to next channel with a same formula among each other.

Test Requirement:	FCC 47CFR 15.247(a)(1)
Test Method:	N/A
Test Date:	2012-03-30
Ambient Temperature:	24 °C
Relative Humidity:	58 %
Atmospheric Pressure (kPa):	101

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: Number of RF channel: 79
Observed duration of occupancy: 0.4x79=31.6s
Period observed: 2s
Duration of short burst: 2.9ms

Maximum Time of occupancy: (7 x 0.0029)/2 x 31.6 = 0.32074
See fig. A to F.

Remark: The Occupancy Time of the Lowest, Middle and Highest operating frequency has been examined and the worst case test result is recorded in this test report.

Fig. A Pulse Train (DH1)

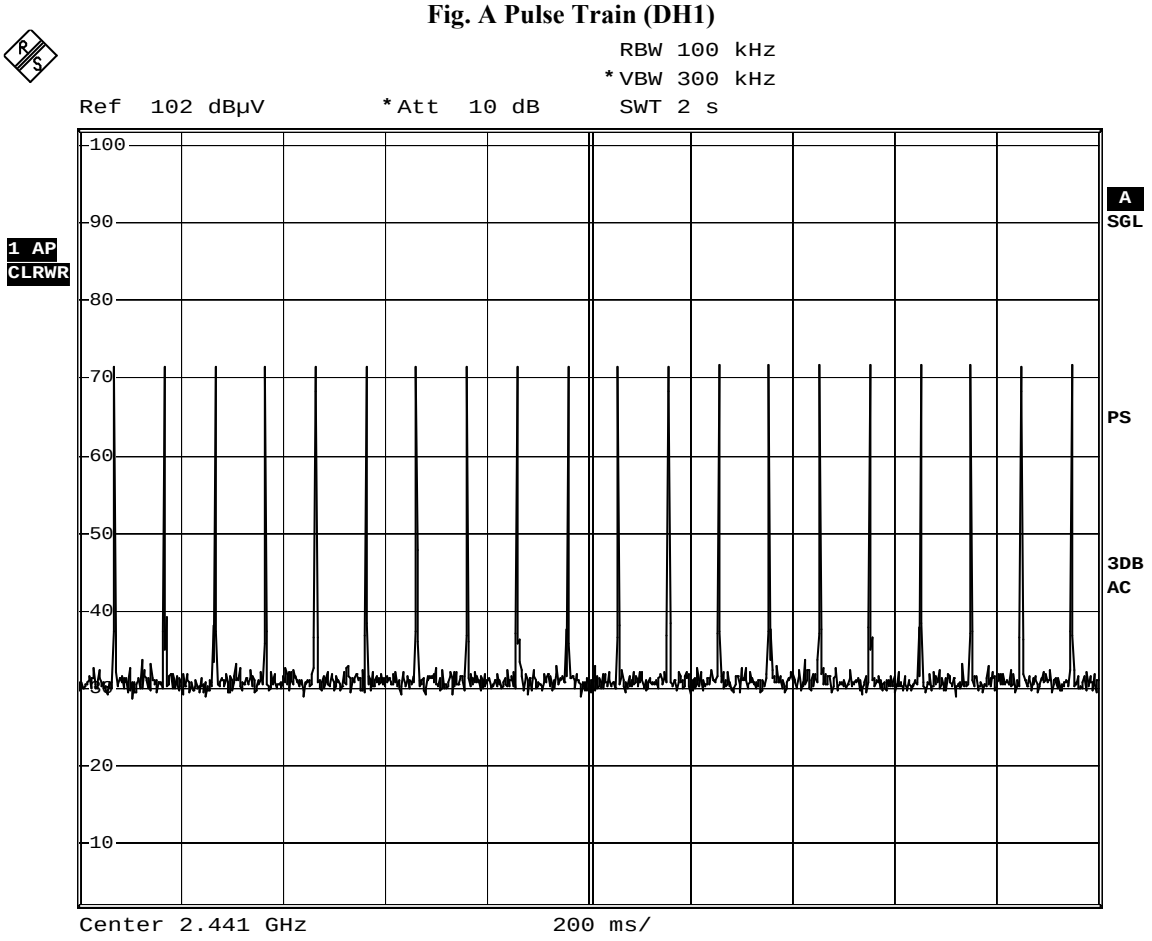


Fig B. Single Pulse (DH1)

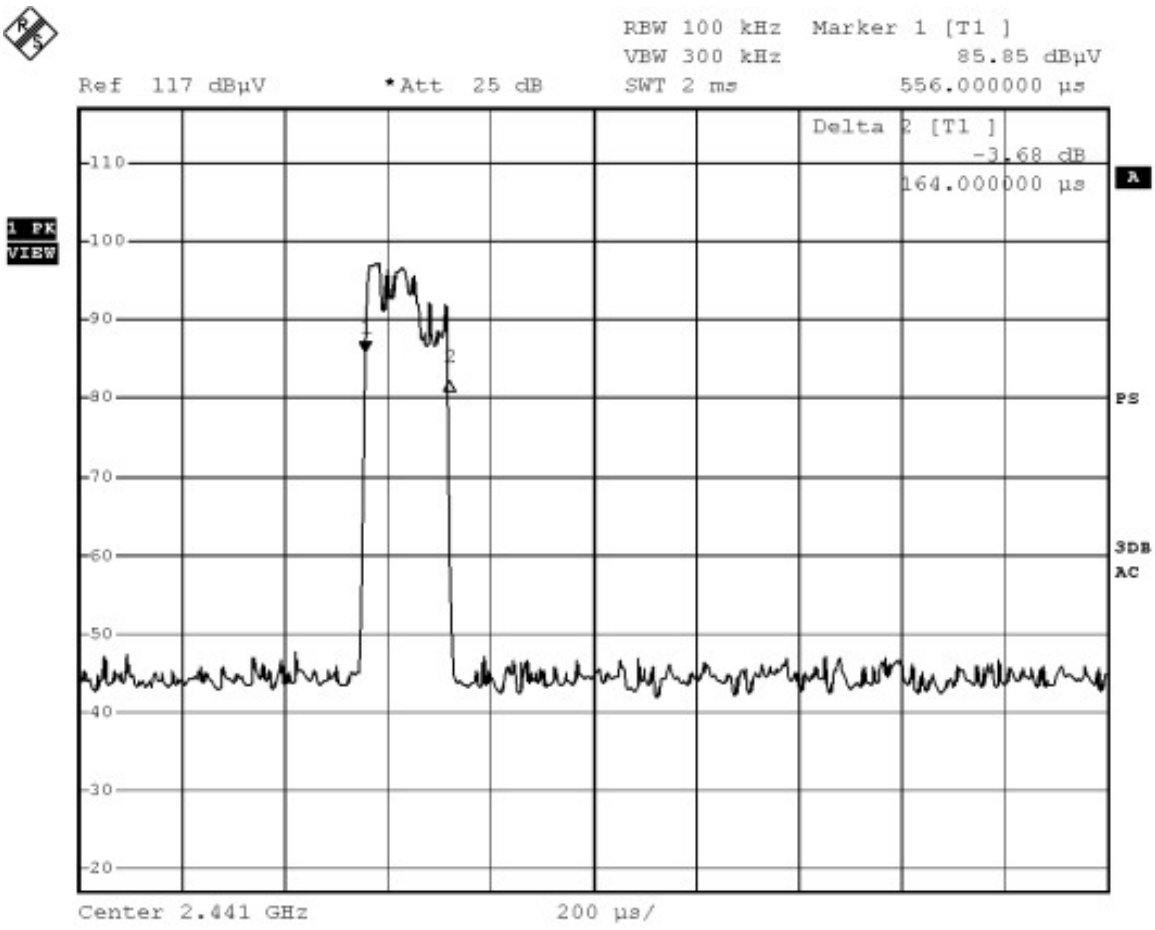


Fig. C Pulse Train (DH3)

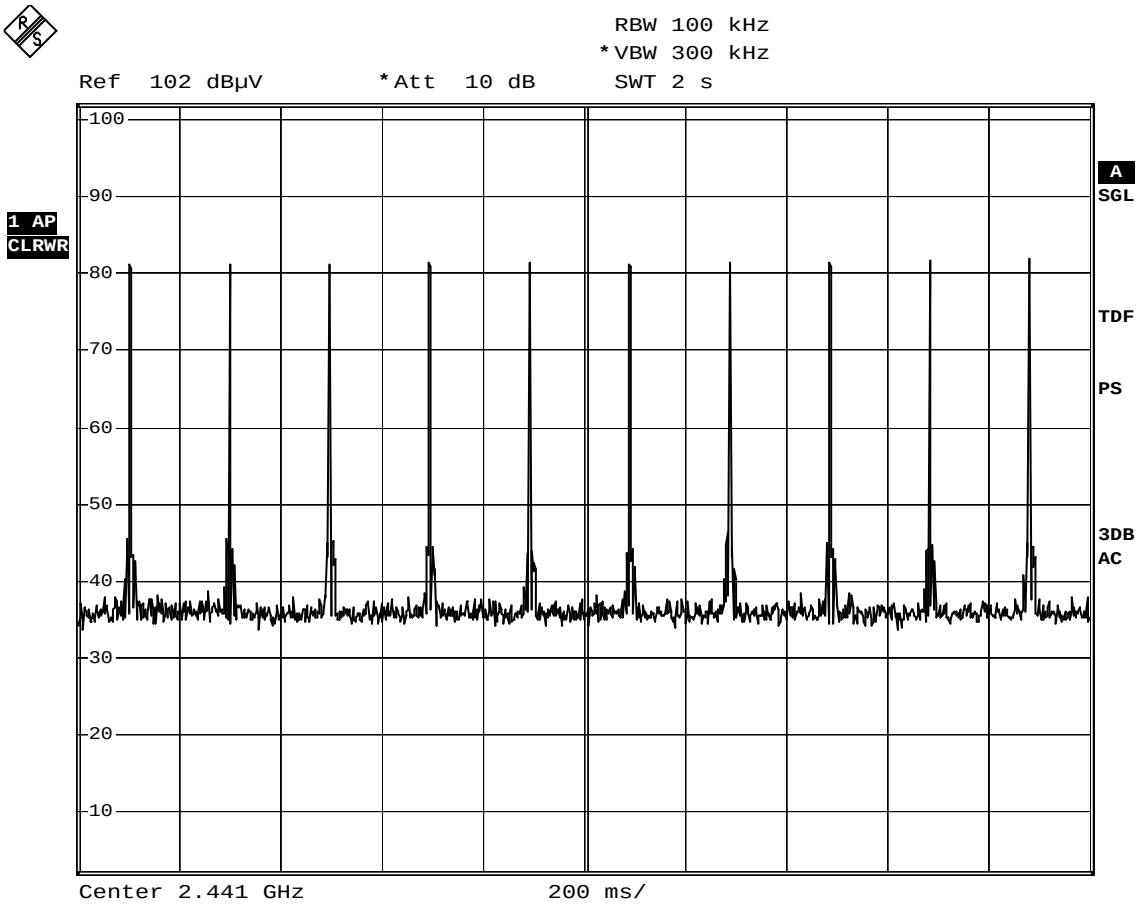


Fig D. Single Pulse (DH3)

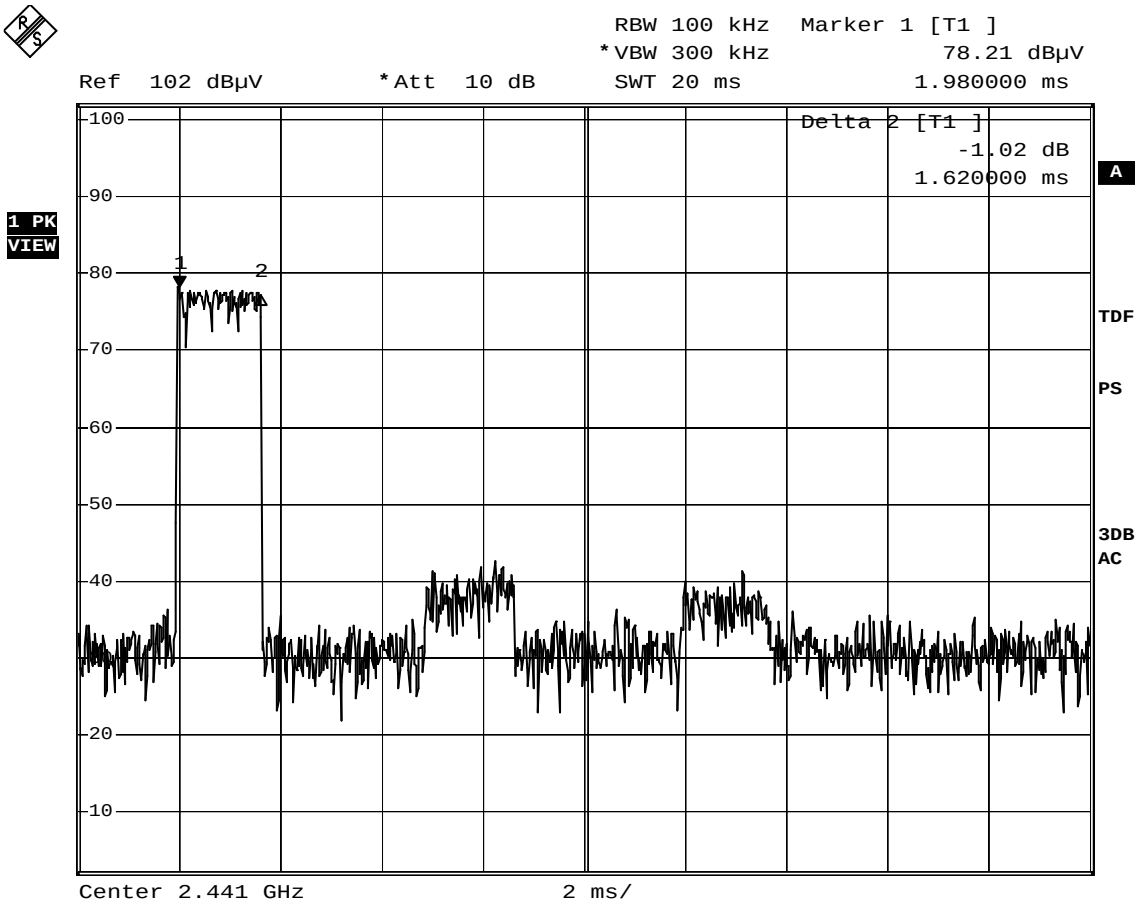


Fig. E Pulse Train (DH5)

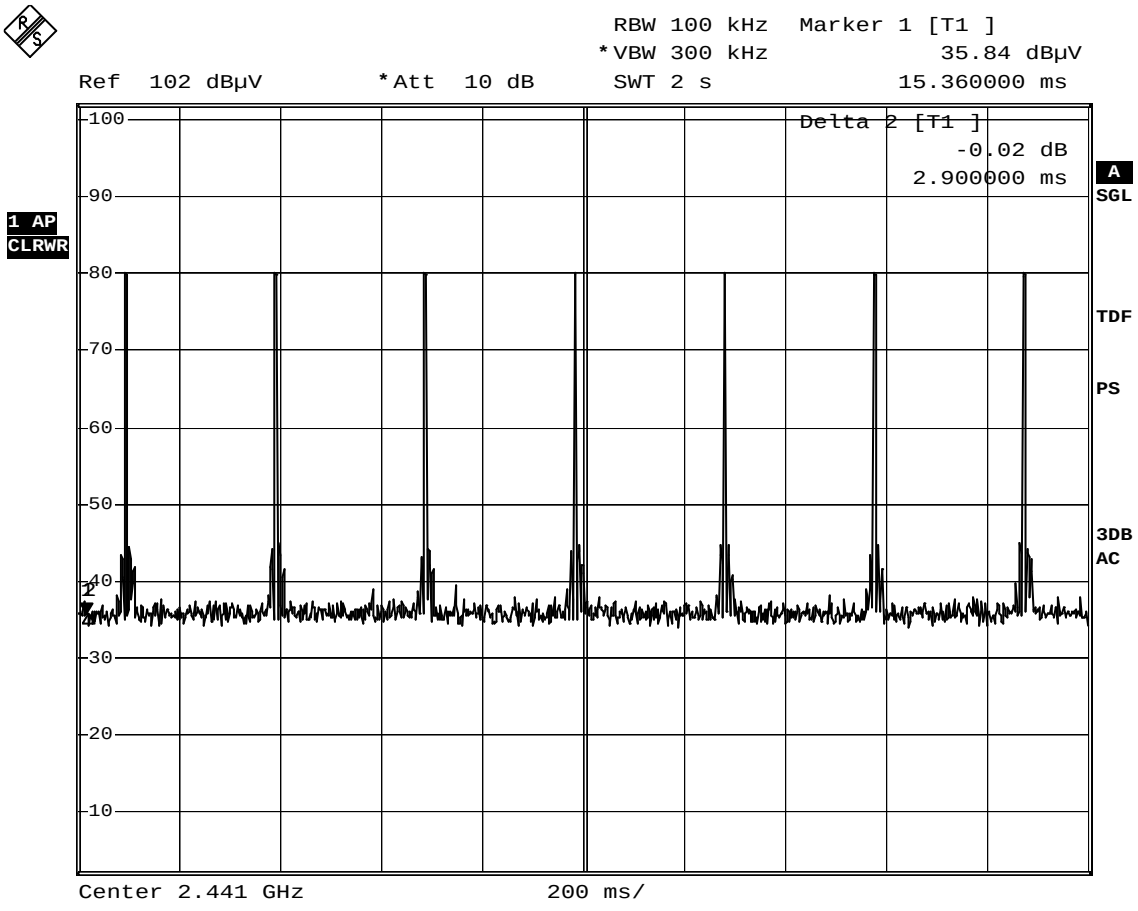
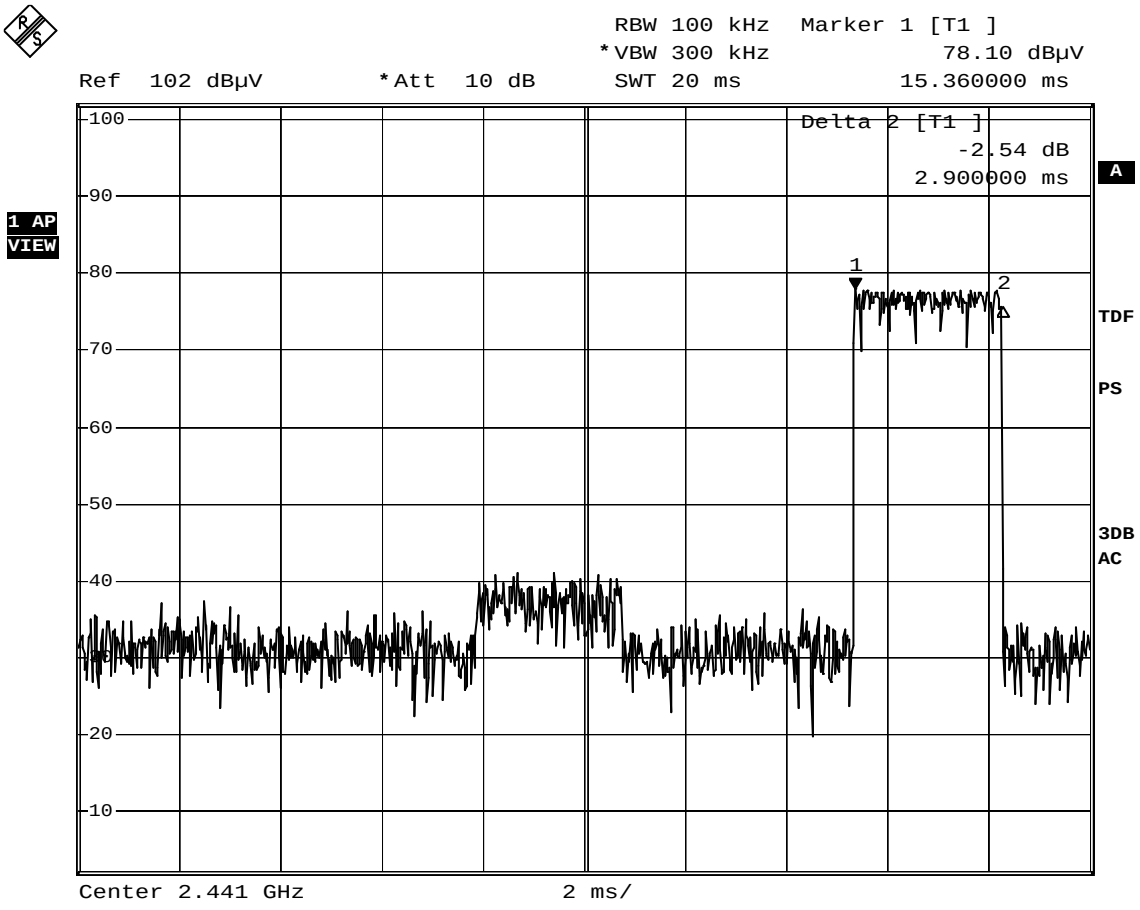


Fig F. Single Pulse (DH5)



RF Exposure

Test Requirement:	FCC 47CFR 15.247(i)
Test Date:	2012-04-06
Ambient Temperature:	24 °C
Relative Humidity:	58 %
Atmospheric Pressure (kPa):	101
Mode of Operation:	Tx mode

Test Method:

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the Commission's guidelines.

Test Results:

The EUT complied with the requirement(s) of this section.
EUT meets the requirements of these sections as proven through MPE calculation
The MPE calculation for EUT @ 20cm
Based on the highest P =1.46 mW

$Pd = PG/ 4\pi R^2 = (1.46 \times 1.0)/12.566 * (20)^2$
$= (1.46)/12.566 \times 400 = 1.46 /5026.4$
$= 0.00029 \text{ mW/cm}^2$

where:
*Pd = power density in mW/cm2
* G = Antenna numeric gain (1.0); Log G = g/10 (g = 0 dBi).
* P = Conducted RF power to antenna (1.46 mW).
* R = Minimum allowable distance.(20 cm)

*The power density Pd = 0.0000398 mW/cm^2 is less than 1 mW/cm^2 (listed MPE limit)
*The SAR evaluation is not needed (this is a desk top device, R> 20 cm)
* The EUT(antenna) must be 0.2 meters away from the General Population.

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	2012/08/21
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
EM194	BICONILOG ANTENNA	EMCO	3142B	1795	2010/10/06	2012/10/06
EM229	EMI TEST RECEIVER	R&S	ESIB40	100248	2011/04/26	2012/04/26

Line Conducted

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EM232	LISN	SCHAFFNER	NNB41	04/100082	2011/04/18	2012/04/18
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	2012/01/27	2013/01/29
EM154	SHIELDING ROOM	SIEMENS MATSUSHITA COMPONENTS	N/A	803-740-057-99A	2012/01/27	2013/01/29

Remarks:-

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

Appendix B

Ancillary Equipment

ITEM NO.	DESCRIPTION	MODEL NO.	FCC ID	REMARK
1	DELL COMPUTER	DMC	N/A	N/A
2	DELL MONITOR	E551C	ARSCM356N	RESOLUTION:800x600(DURING TESTING) 1.0M UNSHIEDED POWER CORD CONNECTED TO THE COMPUTER 2.8M SHIELDED CABLE CONNECTED TO THE COMPUTER
3	DELL KEYBOARD	SK-8110	N/A	1.8M SHIELDED COILED CABLE CONNECTED TO THE COMPUTER
4	DELL MOUSE	N/A	N/A	2.4M UNSHIELDED CABLE CONNECTED TO THE COMPUTER
5	LASER PRINTER	HP LaserJet 1020 Plus	N/A	1.8M UNSHIELDED POWER CORD 2.8M SHIELDED CABLE (BUNDLED TO 1M) CONNECTED TO THE COMPUTER

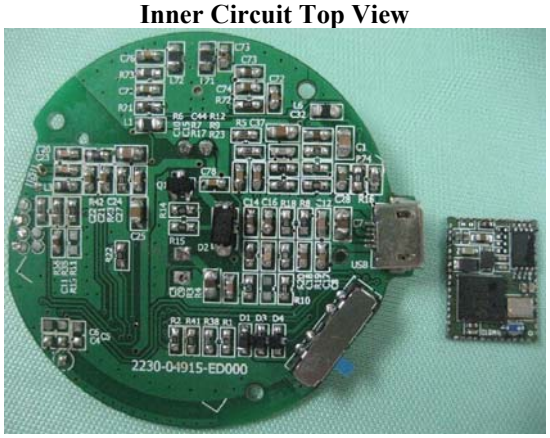
Appendix C

Photographs of EUT

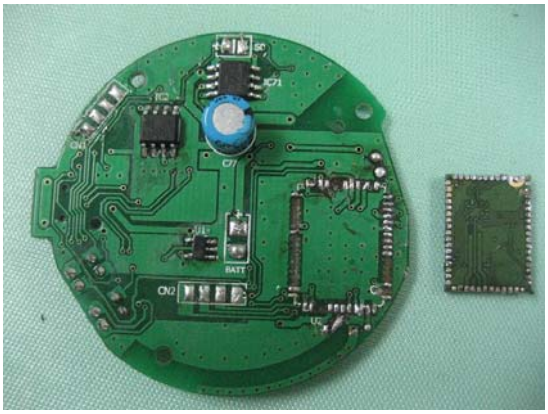
Front View of the product

Rear View of the product

Inner Circuit Top View

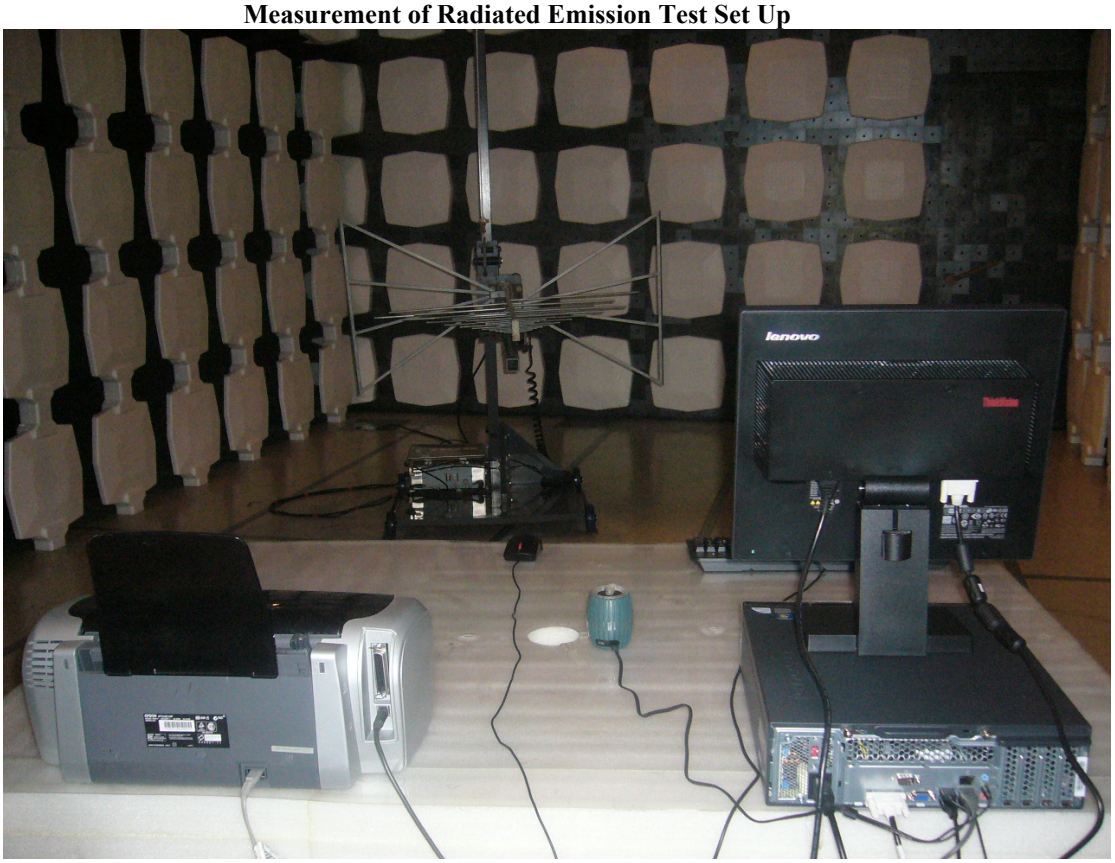


Inner Circuit Bottom View



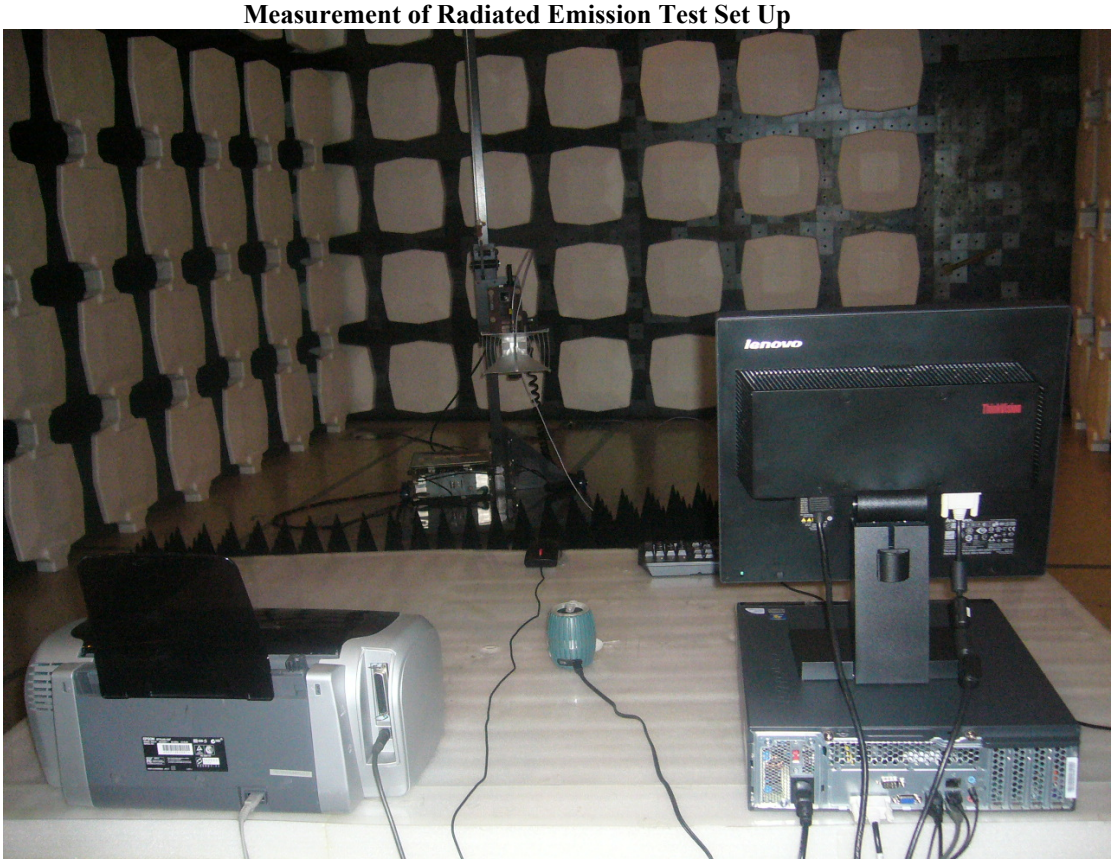
Photographs of EUT

Measurement of Radiated Emission Test Set Up



Photographs of EUT

Measurement of Radiated Emission Test Set Up



Photographs of EUT

Measurement of Conducted Emission Test Set Up

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