



## **STC Test Report**

Date: 2016-01-08

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No.: DM122145

**Applicant:** GENERAL TOOLS & INSTRUMENTS CO., LLC  
75 SEAVIEW DRIVE, SECAUCUS, NJ 07094, U.S.A.

**Manufacturer:** Dongguan Huayi Mastech Co., Ltd.  
Yuliangwei Industrial Area, Qingxi Town, Dongguan, China

**Description of Sample(s):** Submitted sample(s) said to be  
Product: ToolSmart Bluetooth Enabled Digital  
Multimeter  
Brand Name: GENERAL  
Model Number: TS04  
FCC ID: YRK-GTITS04

**Date Sample(s) Received:** 2015-12-29

**Date Tested:** 2016-01-04 to 2016-01-08

**Investigation Requested:** Perform ElectroMagnetic Interference measurement in  
accordance with FCC 47CFR [Codes of Federal Regulations]  
Part 15: 2014 and ANSI C63.10: 2013 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):** ---

  
LONG Yun Jian, Along  
Authorized Signatory  
ElectroMagnetic Compatibility Department  
For and on behalf of  
STC (Dongguan) Company Limited



### **STC (Dongguan) Company Limited**

68 Fumin Nan Road, Dalang, Dongguan, China. (Zip Code : 523 770)

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### **1.0 General Details**

#### **1.1 Test Laboratory**

STC (Dongguan) Company Limited  
EMC Laboratory  
68 Fumin Nan Road, Dalang, Dongguan, Guangdong, China

Telephone: (86 769) 81119888

Fax: (86 769) 81116222

#### **1.2 Equipment Under Test [EUT]**

##### **Description of Sample(s)**

Product:	ToolSmart Bluetooth Enabled Digital Multimeter
Manufacturer:	Dongguan Huayi Mastech Co., Ltd. Yuliangwei Industrial Area, Qingxi Town, Dongguan, China
Brand Name:	GENERAL
Model Number:	TS04
Rating:	9.0Vd.c. ("6F22" size battery x1)

##### **1.2.1 Description of EUT Operation**

The Equipment Under Test (EUT) is a ToolSmart Bluetooth Enabled Digital Multimeter of GENERAL TOOLS & INSTRUMENTS CO., LLC. the transmission signal is digital modulated with channel frequency range 2402-2480MHz.

#### **1.3 Date of Order**

2015-12-29

#### **1.4 Submitted Sample(s):**

1 Sample

#### **1.5 Test Duration**

2016-01-04 to 2016-01-08

#### **1.6 Country of Origin**

China

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### **2.0 Technical Details**

#### **2.1 Investigations Requested**

Perform Electromagnetic Interference measurements in accordance with FCC 47CFR [Codes of Federal Regulations] Part 15: 2014 Regulations and ANSI C63.10: 2013 for FCC Certification. According FCC KDB 558074 DTS Measurement Guidance

#### **2.2 Test Standards and Results Summary Tables**

<b>EMISSION Results Summary</b>						
Test Condition	Test Requirement	Test Method	Class / Severity	Test Result		
				Pass	Fail	N/A
Output Power of Fundamental Emissions	FCC 47CFR 15.247(b)(3)	ANSI C63.10: 2013	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Radiated Emissions	FCC 47CFR 15.209	ANSI C63.10: 2013	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Conducted Emissions	FCC 47CFR 15.207	ANSI C63.10: 2013	N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Power Spectral Density	FCC 47CFR 15.247(e)	N/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6dB Bandwidth	FCC 47CFR 15.247(a)(2)	N/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Band Edge Emissions	FCC 47CFR 15.247(d)	N/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
RF Exposure	FCC 47CFR 15.247(i)	N/A	N/A	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Note: N/A - Not Applicable

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### **3.0 Test Results**

#### **3.1 Emission**

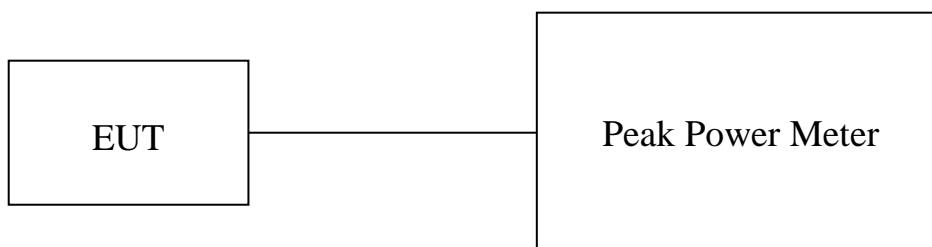
##### **3.1.1 Maximum Peak Output Power**

Test Requirement:	FCC 47CFR 15.247(b)(3)
Test Method:	N/A
Test Date:	2016-01-04
Mode of Operation:	TX mode

#### **Test Method:**

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

#### **Test Setup:**



Note: a temporary antenna connector was soldered to the RF output.

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

For Digital Transmission systems in 2400-2483.5 MHz Band: 1 Watt (30dBm)

<b>Results of Tx ModeGFSK (2402MHz to 2480MHz) : Pass (TX Unit)</b> <b>Maximum conducted output power</b>		
<b>Channel</b>	<b>Frequency(MHz)</b>	<b>Output Power(Watt)</b>
Low	2402	0.000607
Middle	2440	0.000593
High	2480	0.000533

Calculated measurement uncertainty : 30MHz to 1GHz 1.7dB  
1GHz to 26GHz 1.7dB

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### 3.1.2 Radiated Emissions

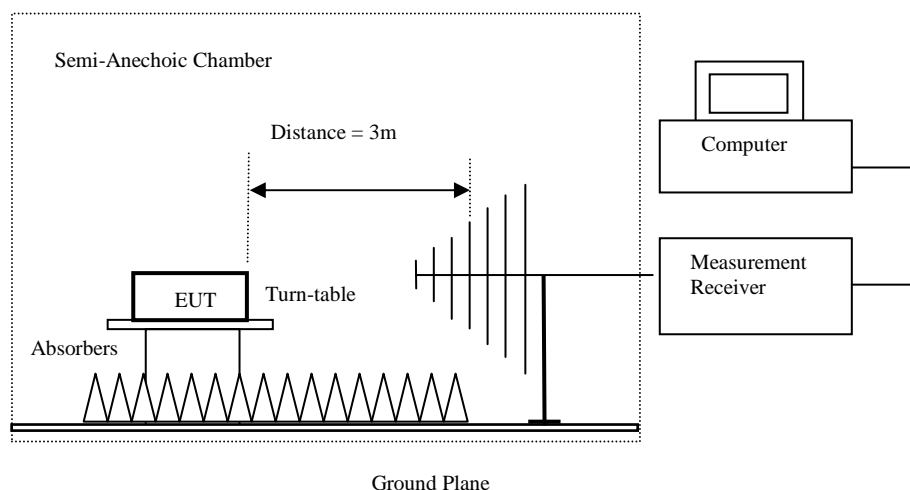
Test Requirement:	FCC 47CFR 15.209
Test Method:	ANSI C63.10: 2013
Test Date:	2016-01-07
Mode of Operation:	Tx mode

#### Test Method:

For emission measurements at or below 1 GHz, the sample was placed 0.8m above the ground plane of semi-anechoic Chamber\*. For emission measurements above 1 GHz, the sample was placed 1.5m 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, rotated about all 3 axis (X, Y & Z) and 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 “STC (Dongguan) Company Limited” with a metal ground plane filed with the FCC pursuant to section 2.948 of the FCC rules, with Registration Number: 629686.

#### Test Setup:



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

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### Limits for Radiated Emissions [FCC 47 CFR 15.247 Class B]:

Frequency Range [MHz]	Quasi-Peak Limits [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
Above 960	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) (GFSK) (9kHz – 30MHz): Pass

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

### Result of Tx mode (2402.0 MHz) (GFSK) (1GHz-26GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4804.0	15.0	41.5	56.5	74.0	17.5	Vertical
4804.0	13.0	42.4	55.4	74.0	18.6	Horizontal
7206.0	9.1	45.1	54.2	74.0	19.8	Vertical
7206.0	8.3	46.2	54.5	74.0	19.5	Horizontal
9608.0	6.8	48	54.8	74.0	19.2	Vertical
9608.0	5.2	48.8	54.0	74.0	20.0	Horizontal
12010.0	3.4	51.8	55.2	74.0	18.8	Vertical
12010.0	3.5	52.4	55.9	74.0	18.1	Horizontal

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### Result of Tx mode (2402.0 MHz) (GFSK) (1GHz-26GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dBu	E-Field Polarity
4804.0	1.2	41.5	42.7	54.0	11.3	Vertical
4804.0	-0.5	42.4	41.9	54.0	12.1	Horizontal
7206.0	-4.4	45.1	40.7	54.0	13.3	Vertical
7206.0	-6.0	46.2	40.2	54.0	13.8	Horizontal
9608.0	-8.5	48.0	39.5	54.0	14.5	Vertical
9608.0	-9.7	48.8	39.1	54.0	14.9	Horizontal
12010.0	-11.1	51.8	40.7	54.0	13.3	Vertical
12010.0	-11.0	52.4	41.4	54.0	12.6	Horizontal

### Result of Tx mode (2440.0 MHz) (GFSK) (9kHz – 30MHz): Pass

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

### Result of Tx mode (2440.0 MHz) (GFSK) (1GHz-26GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4880.0	15.1	41.6	56.7	74.0	17.3	Vertical
4880.0	12.3	42.5	54.8	74.0	19.2	Horizontal
7320.0	1.5	53.2	54.7	74.0	19.3	Vertical
7320.0	8.3	46.3	54.6	74.0	19.4	Horizontal
9760.0	6.7	48.1	54.8	74.0	19.2	Vertical
9760.0	6.7	48.9	55.6	74.0	18.4	Horizontal
12200.0	4.4	51.6	56.0	74.0	18.0	Vertical
12200.0	3.4	52.5	55.9	74.0	18.1	Horizontal

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### Result of Tx mode (2440.0 MHz) (GFSK) (1GHz-26GHz): Pass

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4880.0	0.3	41.6	41.9	54.0	12.1	Vertical
4880.0	-3.0	42.5	39.5	54.0	14.5	Horizontal
7320.0	-5.0	45.2	40.2	54.0	13.8	Vertical
7320.0	-6.4	46.3	39.9	54.0	14.1	Horizontal
9760.0	-8.7	48.1	39.4	54.0	14.6	Vertical
9760.0	-7.8	48.9	41.1	54.0	12.9	Horizontal
12200.0	-9.8	51.6	41.8	54.0	12.2	Vertical
12200.0	-11.7	52.5	40.8	54.0	13.2	Horizontal

### Result of Tx mode (2480.0 MHz) (GFSK) (9kHz – 30MHz): Pass

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

### Result of Tx mode (2480.0 MHz) (GFSK) (1GHz-26GHz): Pass

Field Strength of Spurious Emissions Peak Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4960.0	14.6	41.4	56.0	74.0	18.0	Vertical
4960.0	12.5	42.7	55.2	74.0	18.8	Horizontal
7440.0	9.2	45.6	54.8	74.0	19.2	Vertical
7440.0	8.6	46.5	55.1	74.0	18.9	Horizontal
9920.0	6.3	48.6	54.9	74.0	19.1	Vertical
9920.0	4.6	49.7	54.3	74.0	19.7	Horizontal
12400.0	4.0	51.7	55.7	74.0	18.3	Vertical
12400.0	3.4	52.7	56.1	74.0	17.9	Horizontal

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### **Result of Tx mode (2480.0 MHz) (GFSK) (1GHz-26GHz): Pass**

Field Strength of Spurious Emissions Average Value						
Frequency MHz	Measured Level @3m dBuV	Correction Factor dB/m	Field Strength dBuV/m	Limit @3m dBuV/m	Margin dB	E-Field Polarity
4960.0	0.0	41.4	41.4	54.0	12.6	Vertical
4960.0	-2.9	42.7	39.8	54.0	14.2	Horizontal
7440.0	-6.3	45.6	39.3	54.0	14.7	Vertical
7440.0	-6.3	46.5	40.2	54.0	13.8	Horizontal
9920.0	-9.7	48.6	38.9	54.0	15.1	Vertical
9920.0	-9.7	49.7	40.0	54.0	14.0	Horizontal
12400.0	-10.7	51.7	41.0	54.0	13.0	Vertical
12400.0	-10.9	52.7	41.8	54.0	12.2	Horizontal

#### Remarks:

No additional spurious emissions found between lowest internal used/generated frequency and 30 MHz

\* 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 : 9kHz-30MHz 3.3dB  
30MHz -1GHz 4.6dB  
1GHz -26GHz 4.4dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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

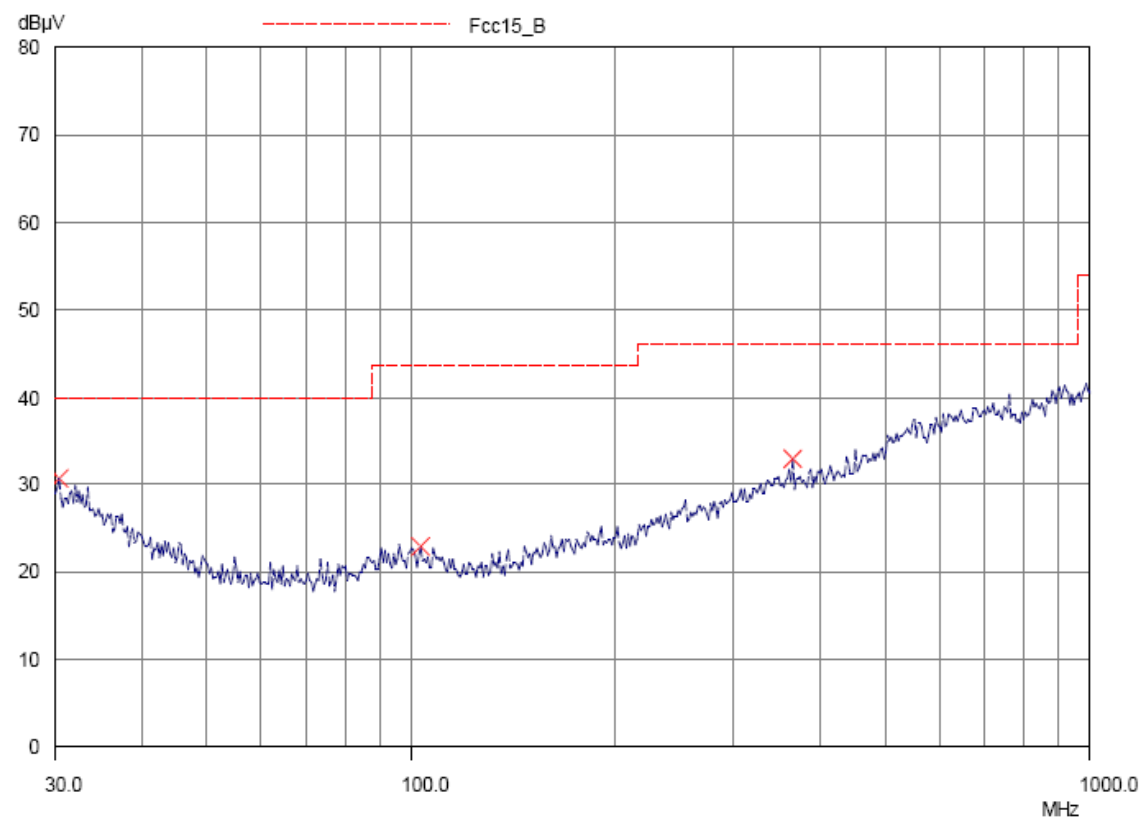
Frequency Range	Quasi-Peak Limits
[MHz]	[ $\mu\text{V/m}$ ]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

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 (30MHz – 1GHz) ( Low): Pass**

Please refer to the following table for result details

#### Horizontal



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**Result of TX mode (30MHz – 1GHz) ( Low): Pass**

<b>Radiated Emissions Quasi-Peak</b>					
Emission Frequency MHz	E-Field Polarity	Level @3m dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Level @3m dB $\mu$ V/m	Limit @3m dB $\mu$ V/m
30.2	Horizontal	30.7	40.0	34.3	100
103.5	Horizontal	22.9	43.5	14.0	150
363.4	Horizontal	32.9	46.0	44.2	200

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

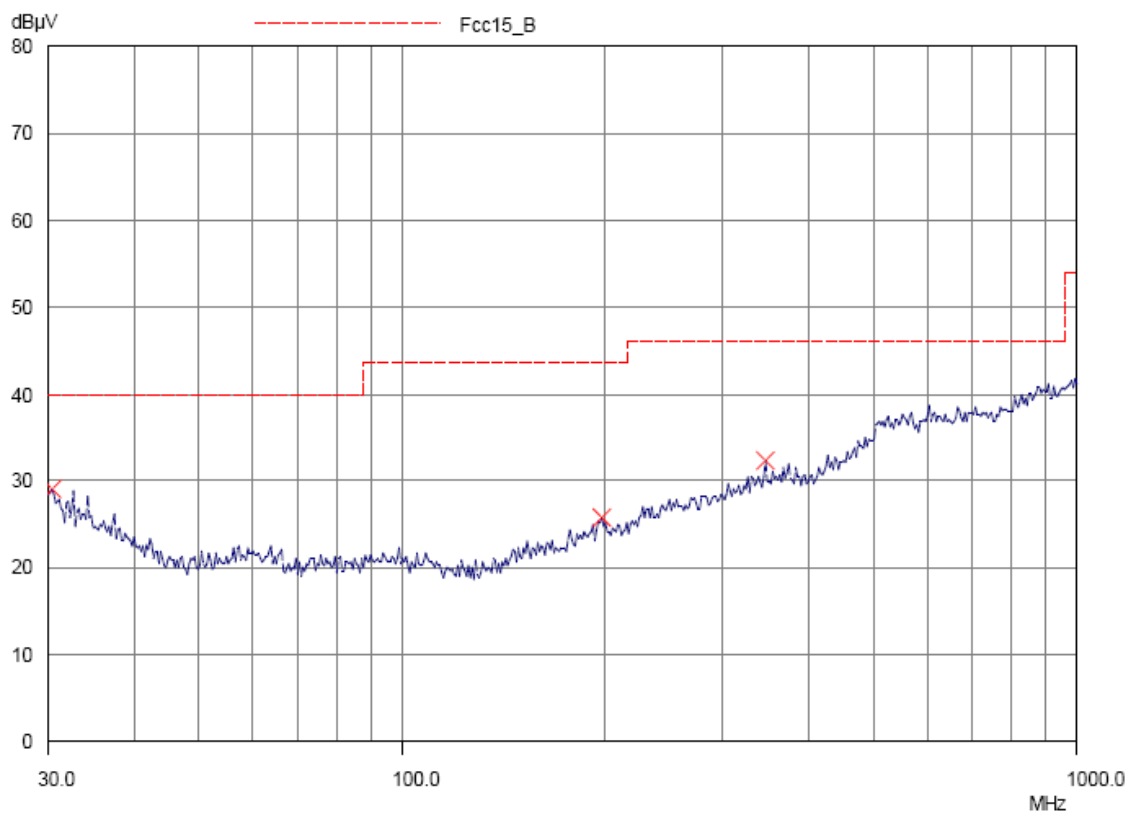
Frequency Range	Quasi-Peak Limits
[MHz]	[ $\mu$ V/m]
0.009-0.490	2400/F (kHz)
0.490-1.705	24000/F (kHz)
1.705-30	30
30-88	100
88-216	150
216-960	200
Above960	500

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 (30MHz – 1GHz) ( Low): Pass**

Please refer to the following table for result details

Vertical



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**Result of TX mode (30MHz – 1GHz) ( Low): Pass**

<b>Radiated Emissions Quasi-Peak</b>					
Emission Frequency MHz	E-Field Polarity	Level @ 3m dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m	Level @ 3m dB $\mu$ V/m	Limit @ 3m dB $\mu$ V/m
30.3	Vertical	29.1	40.0	28.5	100
197.3	Vertical	25.7	43.5	19.3	150
344.4	Vertical	32.2	46.0	40.7	200

Remarks:

Calculated measurement uncertainty (30MHz – 1GHz): 4.6dB

Emissions in the vertical and horizontal polarizations have been investigated and the worst-case test results are recorded in this report.

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Date: 2016-01-08

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### **3.1.3 Power Spectral Density**

Test Requirement: FCC 47CFR 15.247(e)  
Test Method: ANSI C63.10: 2013  
Test Date: 2016-01-04  
Mode of Operation: TX mode

#### **Test Method:**

The RF output of the EUT was connected to the spectrum analyzer. Set the fundamental frequency as the center frequency of the spectral analyzer. Use RBW=3kHz , VBW= 10kHz , Set the span to 1.5 times the DTS channel bandwidth. Detector = peak, Sweep time = auto couple , Trace mode = max hold. Measure the Power Spectral Density (PSD) and record the results in dBm.

#### **Test Setup:**

As Test Setup of clause 3.1.1 in this test report.

#### **Test Limit:**

The maximum power spectral density (PSD) shall not exceeded 8dBm in any 3kHz band.

#### **Results of TX ModeGFSK (Tx:2402MHz to 2480MHz) : Pass (TX Unit)**

##### **Maximum power spectral density**

<b>Transmitter Frequency (MHz)</b>	<b>Maximum Power spectral density level / 3kHz band (dBm/ 3kHz)</b>	<b>Maximum Power spectral density / 3kHz band limit</b>
2402.0	-14.17	<b>8dBm/ 3kHz</b>
2440.0	-14.45	<b>8dBm/ 3kHz</b>
2480.0	-15.27	<b>8dBm/ 3kHz</b>

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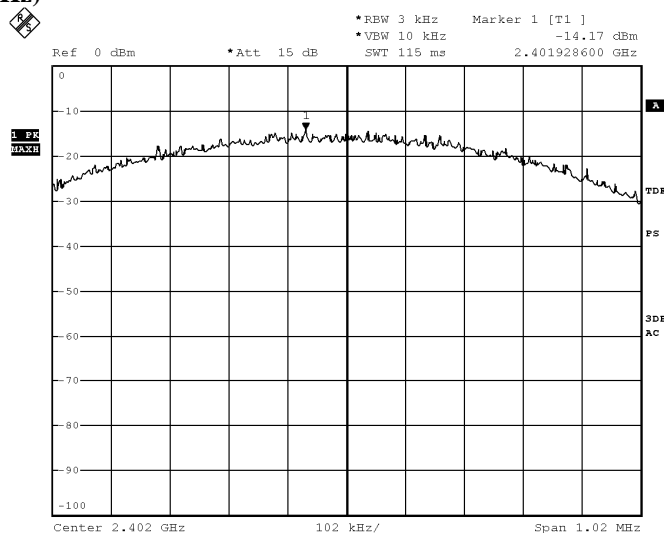
## STC Test Report

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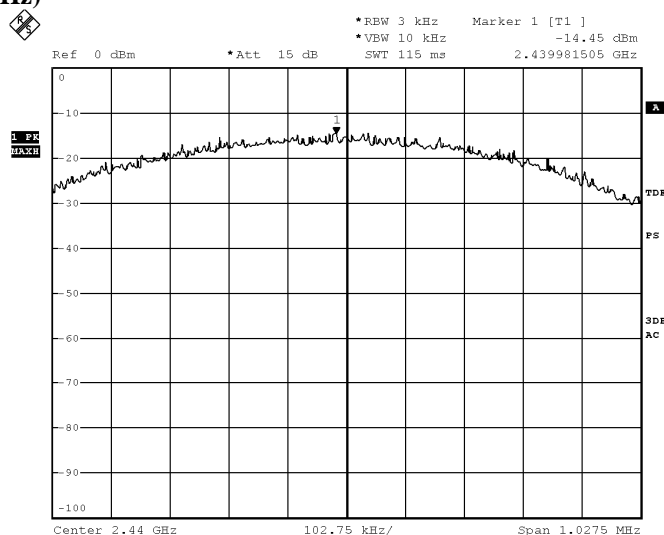
### TX modeGFSK (Tx:2405MHz to 2475MHz) CH 1 (2402.0 MHz)



BMP

Date: 4.JAN.2016 13:38:13

### CH 6 (2440.0 MHz)



BMP

Date: 4.JAN.2016 13:36:49

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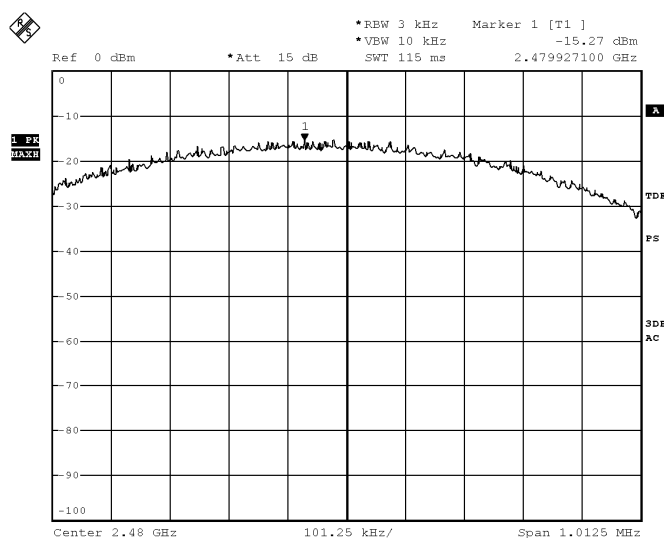
## STC Test Report

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### **CH 11 (2480.0 MHz)**



BMP

Date: 4.JAN.2016 13:34:53

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### **3.1.4 6dB Spectrum Bandwidth Measurement**

Test Requirement:	FCC 47CFR 15.247(a)(2)
Test Method:	ANSI C63.10: 2013
Test Date:	2016-01-04
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.

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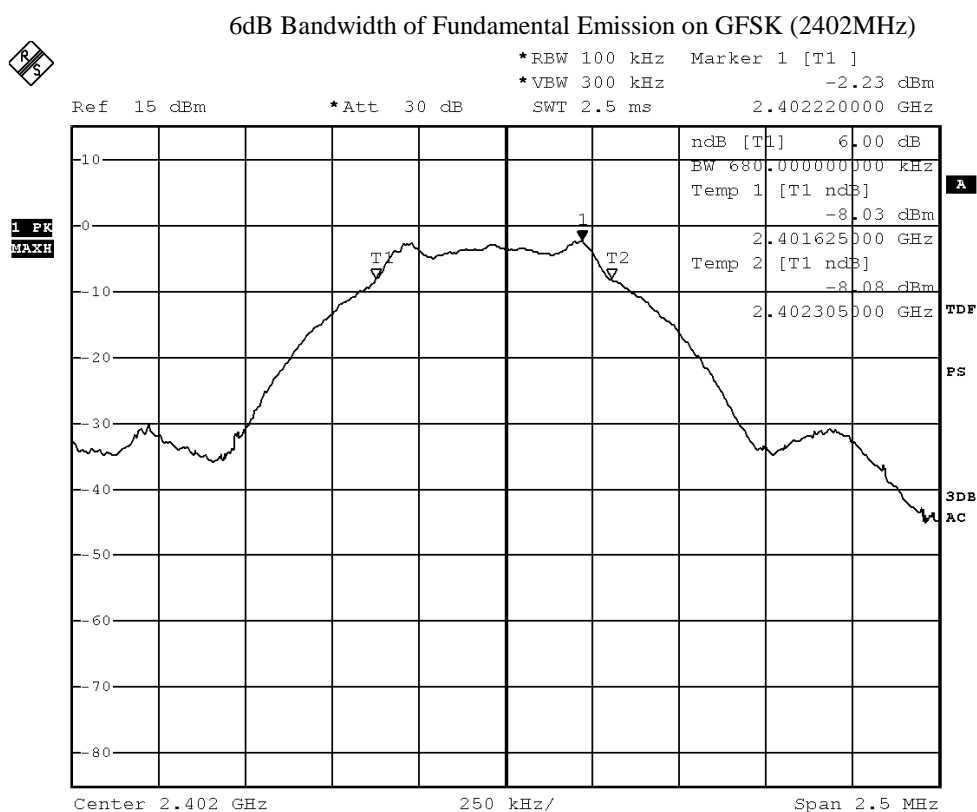
Date: 2016-01-08

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No.: DM122145

### Limits for 6dB Spectrum Bandwidth Measurement:

Center Frequency [MHz]	6dB Bandwidth kHz]	FCC Limits [kHz]
2402.0	680	> 500



BMP

Date: 4.JAN.2016 13:22:16

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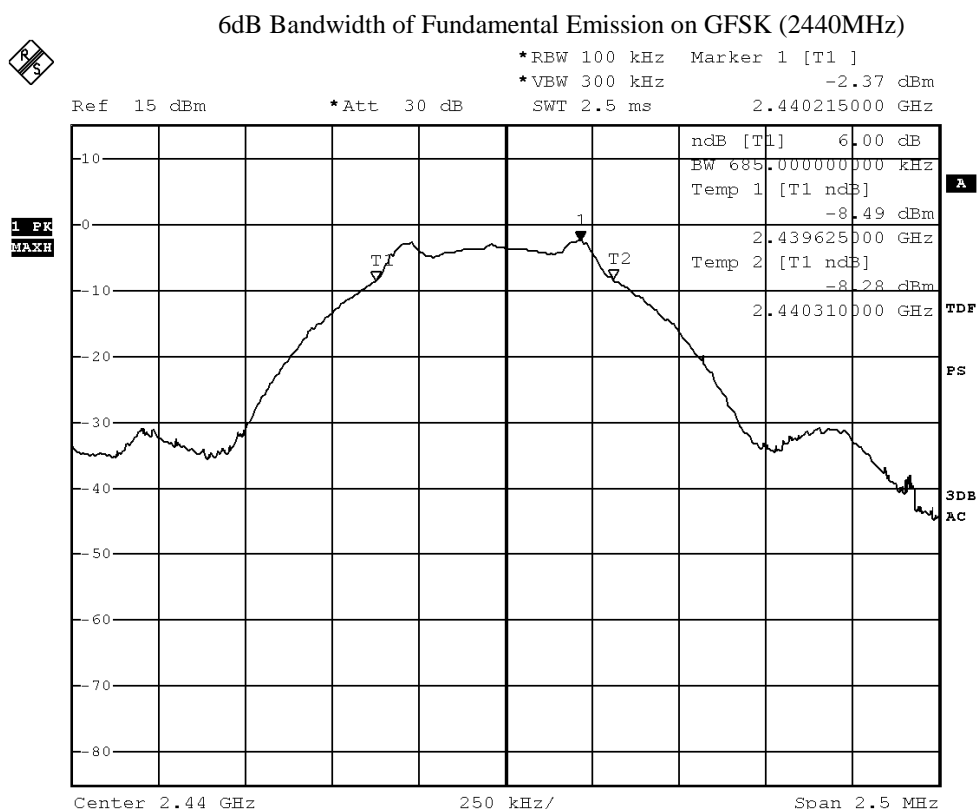
Date: 2016-01-08

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### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	6dB Bandwidth [kHz]	FCC Limits [kHz]
2440.0	685	> 500



BMP

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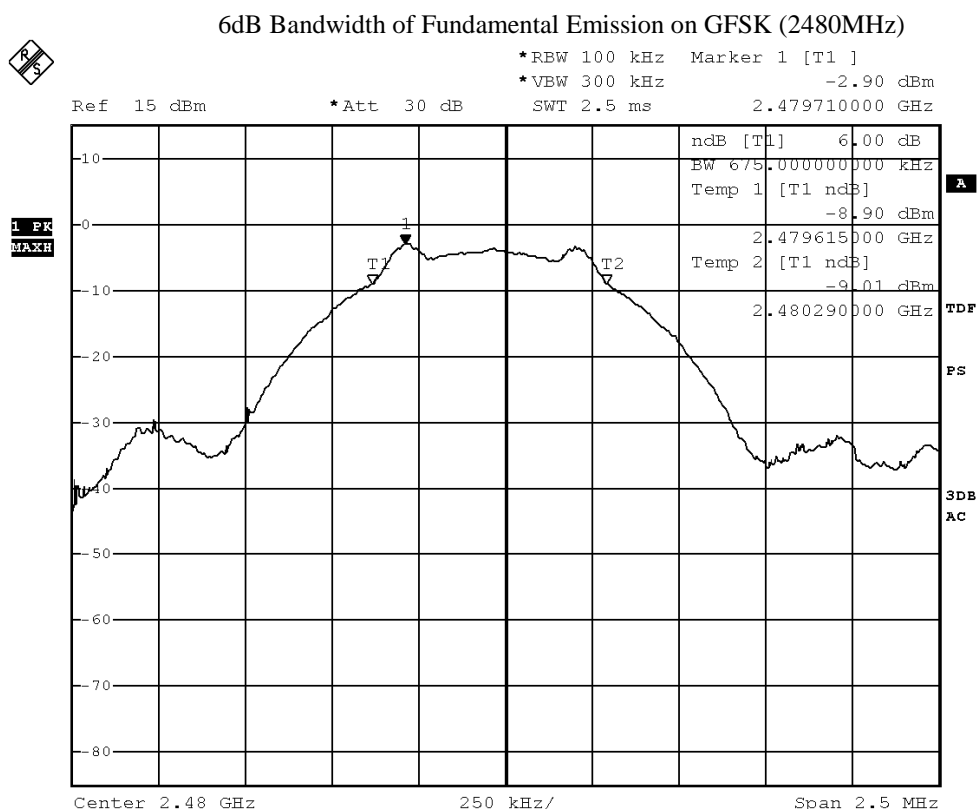
Date: 2016-01-08

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### Limits for 6dB Spectrum Bandwidth Measurement:

Frequency Range [MHz]	6dB Bandwidth [kHz]	FCC Limits [kHz]
2480.0	675	> 500



BMP

Date: 4.JAN.2016 13:19:39

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### **3.1.5 Band Edges Measurement**

Test Requirement:	FCC 47CFR 15.247
Test Method:	ANSI C63.10: 2013
Test Date:	2016-01-04
Mode of Operation:	TX mode

#### **Test Method:**

The band edge 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. The RBW are set to 100kHz and VBW are set to 300kHz for this measurement.

#### **Test Setup:**

As Test Setup of clause 3.1.2 in this test report.

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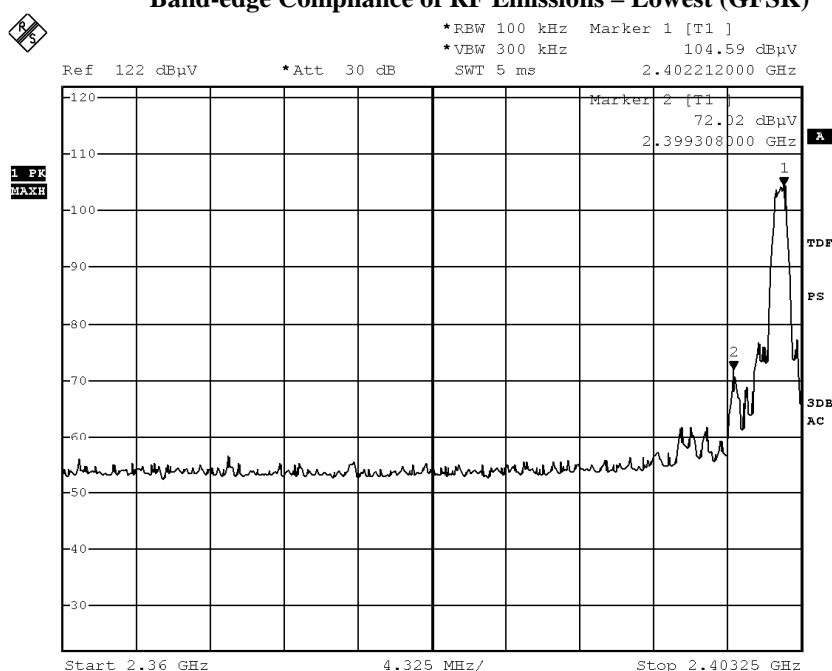
### Band-edge Compliance of RF Conducted Emissions Measurement:

#### Limit :

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required.

Frequency Range	Radiated Emission Attenuated below the Fundamental
[MHz]	[dB]
2400 – Lowest Fundamental (2402)	32.57

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



BMP

Date: 4.JAN.2016 13:24:09

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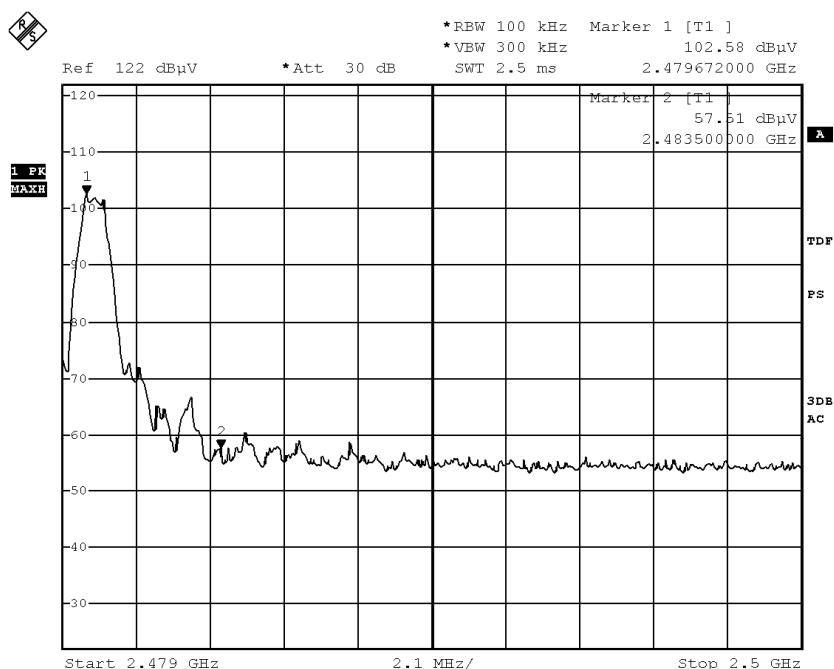
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### Band-edge Compliance of RF Conducted Emissions Measurement:

Frequency Range	Radiated Emission Attenuated below the Fundamental
[MHz]	[dB]
2483.5 - Highest Fundamental (2480)	44.97

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



BMP

Date: 4.JAN.2016 13:27:08

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### **Band-edge Compliance of RF Radiated Emissions Measurement:**

#### **Limit :**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. Attenuation below the general limits specified in Section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a) (see Section 5.205(c)).

### **Result: Band-edge Compliance of RF Radiated Emissions (Lowest)-GFSK**

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2390.0	18.4	36.8	55.2	74.0	18.8	Vertical

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2390.0	9.5	36.8	46.3	54.0	7.7	Vertical

### **Result: Band-edge Compliance of RF Radiated Emissions (Highest) -GFSK**

Field Strength of Band-edge Compliance Peak Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2483.5	20.1	36.8	56.9	74.0	17.1	Vertical

Field Strength of Band-edge Compliance Average Value						
Frequency MHz	Measured Level @3m dB $\mu$ V	Correction Factor dB/m	Field Strength dB $\mu$ V/m	Limit @3m dB $\mu$ V/m	Margin dB $\mu$ V/m	E-Field Polarity
2483.5	10.5	36.8	47.3	54.0	6.7	Vertical

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### **3.1.6 RF Exposure**

Test Requirement:	FCC 47CFR 15.247(i)
Test Date:	2016-01-08
Mode of Operation:	Tx mode

#### **Requirements:**

In 15.247(i), an equipment shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess of the limits in §§ 1.1310 and 2.1093 of this chapter.

Applications to the Commission for construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities must contain a statement confirming compliance with the limits unless the facility, operation, or transmitter is categorically excluded, as discussed below. Technical information showing the basis for this statement must be submitted to the Commission upon request.

According to KDB447498 D01 General RF Exposure Guidance v06, unless specifically required by the published RF exposure KDB procedures, standalone 1-g head or body and 10-g extremity SAR evaluation for general population exposure conditions, by measurement or numerical simulation, is not required when the corresponding SAR Exclusion Threshold condition.

#### **Test Results:**

##### **RF Exposure Evaluation**

The Maximum conducted output power = 0.607 mW (at frequency = 2.402 GHz)

**It's Conducted source-based time-averaging output power = 0.586 mW (at frequency = 2.402 GHz)**

**Since the SAR test exclusion thresholds for 2450MHz at test separation distances  $\leq 5$  mm = 10mW and the Conducted source-based time-averaging output power is less than 10mW.**

**Therefore, the SAR evaluation can be exempted.**

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### Appendix A

#### List of Measurement Equipment

EQP NO.	DESCRIPTION	MANUFACTURER	MODEL NO.	SERIAL NO.	LAST CAL	DUE CAL
EMD004	LISN	ROHDE & SCHWARZ	ESH3-Z5	100102	2015.3.24	2016.03.24
EMD022	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESCS30	100314	2015.3.24	2016.03.24
EMD035	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESCI	100441	2015.3.24	2016.03.24
EMD036	EMI TEST RECEIVER	ROHDE & SCHWARZ	ESIB 26	100388	2015.3.24	2016.03.24
EMD041	TWO-LINE V-NETWORK	ROHDE & SCHWARZ	ENV216	100261	2015.3.24	2016.03.24
EMD061	BICONILOG ANTENNA	ETS.LINDGREN	3142C	00060439	2014.11.29	2016.11.29
EMD062	DOUBLE-RIDGED WAVEGUIDE (1GHZ – 18GHZ)	ETS.LINDGREN	3117	00075933	2014.11.15	2015.11.15
EMD084	MULTI-DVICE CONTROLLER	ETS.LINDGREN	2090	00060107	N/A	N/A
EMD088	VIDEO CONTOL UNIT	ETS.LINDGREN	Y21953A	2601073	N/A	N/A
EMD093	MONITOR	VIEWSONIC	VA9036	Q8X064201876	N/A	N/A
EMD102	INTELLIGENT FREQUENCY	AINUO LNSTRUMENT CO., LTD	AN97005SS	79707454	N/A	N/A
EMD103	INTELLIGENT FREQUENCY	AINUO LNSTRUMENT CO., LTD	AN97005SS	79707455	N/A	N/A
EMD105	FACT-3 EMC CHAMBER	ETS.LINDGREN	FACT-3	3803	N/A	N/A
EMD106	SHIELDING ROOM #1	ETS.LINDGREN	RFD-100	3802	N/A	N/A
EMD111	POWER METER	ROHDE & SCHWARZ	NRVD	102051	2015.3.24	2016.03.24
	100V INSERTION UNIT	ROHDE & SCHWARZ	URV5-Z4	100464	2015.3.24	2016.03.24
EMD113	PRE-AMPLIFIER	ROHDE & SCHWARZ	N/A	1129588	2015.3.24	2016.03.24
EMD124	LOOP ANTENNA	ETS-LINDGREN	6502	00104905	2014.04.28	2016.04.28
EMD131	STANDARD GAIN HORN ANTENNA (18GHZ – 26.5GHZ)	CHENGDU AINFO LNC.	JXTXLB-42-15-C-KF	J2021100721001	2015.04.09	2017.04.09
RE01	RF CABLE	N/A	N/A	N/A	2014-9-28	2016.09.27
RE02	RF CABLE	N/A	N/A	N/A	2014-9-28	2016.09.27

Remarks:-

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

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### **Appendix B**

#### **Photographs of EUT**

**Front View of the product**



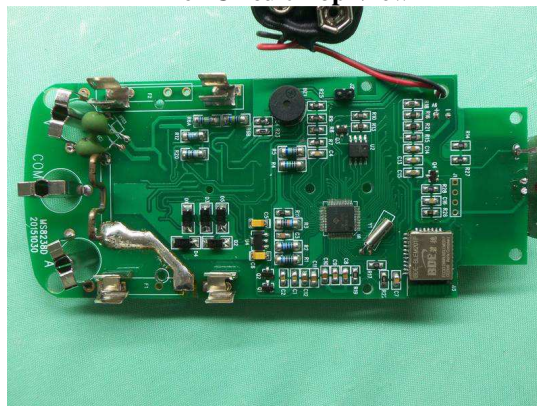
**Rear View of the product**



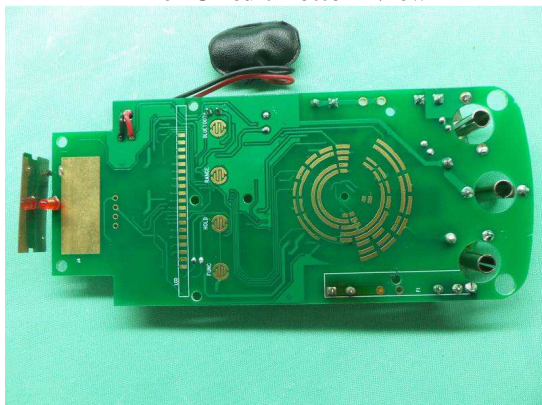
**Inside View of the product**



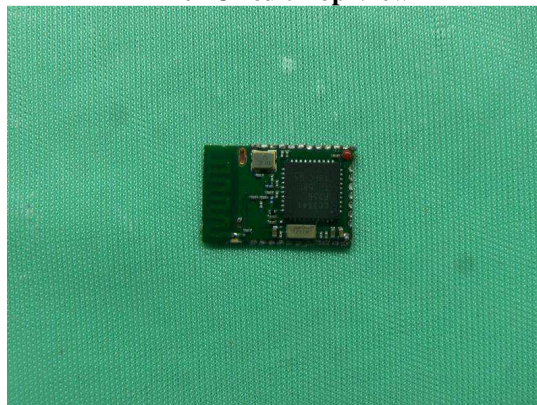
**Inner Circuit Top View**



**Inner Circuit Bottom View**



**Inner Circuit Top View**



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### **Photographs of EUT**

**Inner Circuit Bottom View**



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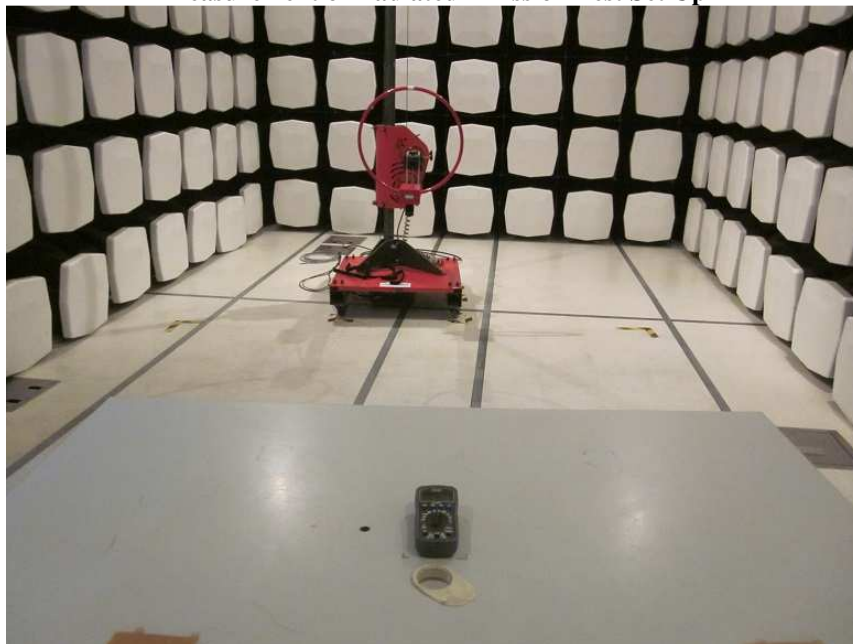
Date: 2016-01-08

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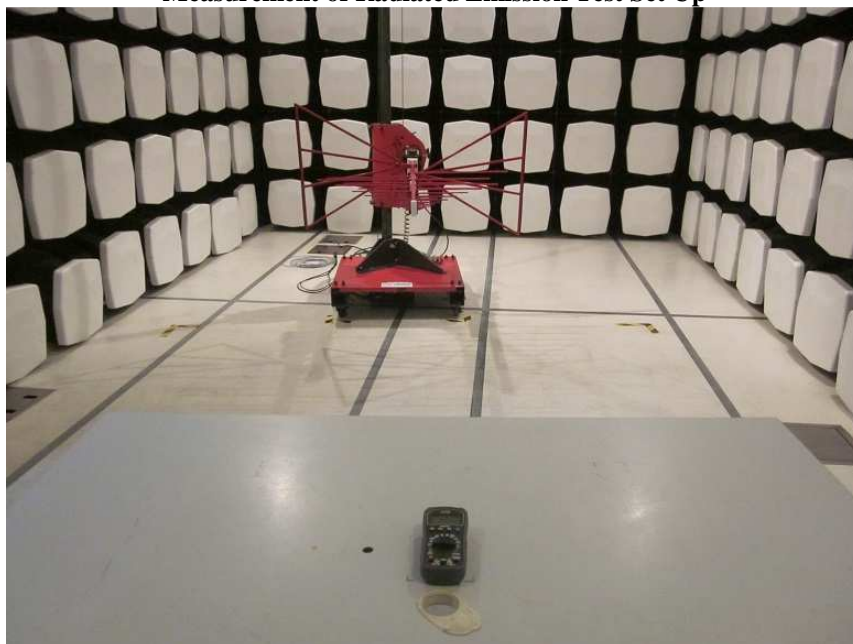
No.: DM122145

### **Photographs of EUT**

**Measurement of Radiated Emission Test Set Up**



**Measurement of Radiated Emission Test Set Up**



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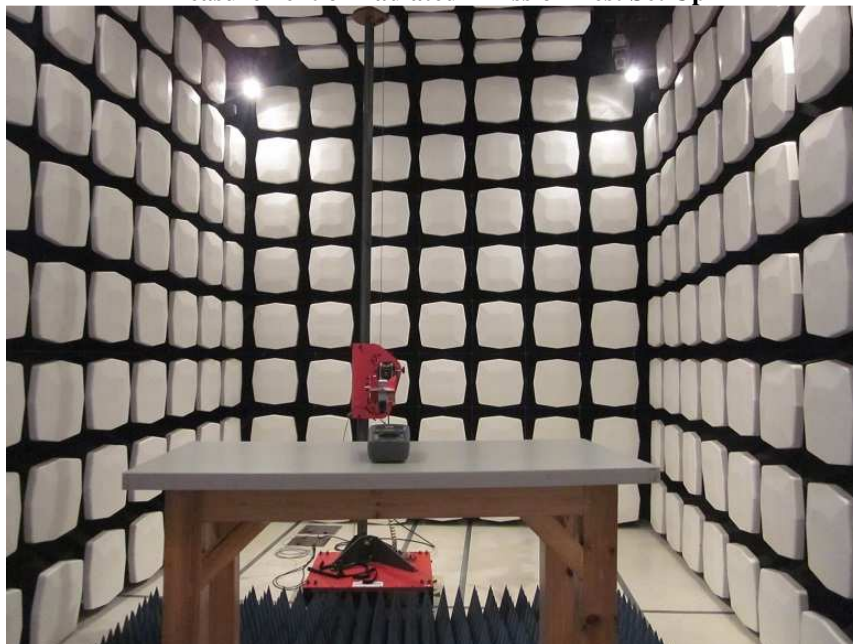
Date: 2016-01-08

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### **Photographs of EUT**

**Measurement of Radiated Emission Test Set Up**



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

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