

**Prüfbericht - Nr.: 15060973 001**

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**Auftraggeber:** Andon Health Co.,Ltd  
Client: No. 3 Jinping Road, Ya An Street ,Nankai District ,TianJin China

**Gegenstand der Prüfung:** iHealth Wireless Smart Gluco-Monitoring System  
Test item:

**Bezeichnung:** BG5L **Serien-Nr.:** N/A  
Identification: FCC ID :ZRYBG5L Serial No.:  
IC: 9775A-BG5L

**Wareneingangs-Nr.:** 154018127 **Eingangsdatum:** 2013.3.1  
Receipt No.: Date of receipt:

**Zustand des Prüfgegenstandes bei Anlieferung:** Test sample(s) is/are not damaged and suitable for testing.  
Condition of test item at delivery:

**Prüfort:** • TÜV Rheinland (Shanghai) Co., Ltd.  
Testing location: • QuieTek Technology(Suzhou)Co., Ltd.  
(Detailed address refer to clause 2.1)

**Prüfgrundlage:** FCC 47 CFR Part 15, Subpart C, § 15.247  
Test specification: ANSI C63.4-2009  
ANSI C63.10-2009  
KDB 558074 D01 DTS Meas Guidance v02

**Prüfergebnis:** Der Prüfgegenstand entspricht oben genannter Prüfgrundlage(n).  
Test Result: The test item passed the test specification(s).

**Prüflaboratorium:** TÜV Rheinland (Shanghai) Co., Ltd.  
Testing Laboratory: Building 2, No. 777 Guangzhong Road West, Shanghai 200072, P.R. China

geprüft/ tested by: kontrolliert/ reviewed by:

2013-05-29 Shili / Inspector   
Datum Name/Stellung Unterschrift  
Date Name/Position Signature

2013-05-29 Jesse Huang / Reviewer   
Datum Name/Stellung Unterschrift  
Date Name/Position Signature

**Sonstiges/ Other Aspects:**

**Abkürzungen:** P(ass) = entspricht Prüfgrundlage  
F(fail) = entspricht nicht Prüfgrundlage  
N/A = nicht anwendbar  
N/T = nicht getestet

**Abbreviations:** P(ass) = passed  
F(fail) = failed  
N/A = not applicable  
N/T = not tested

Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.

This test report relates to the a. m. test item. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.

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## TEST SUMMARY

### **3.2.1 VOLTAGE REQUIREMENTS, FCC 15.31(E)**

RESULT: PASS

### **3.2.2 ANTENNA REQUIREMENTS, FCC 15.203, FCC 15.204 AND RSS-GEN 7.1.4**

RESULT: PASS

### **5.1.1 CONDUCTED OUTPUT POWER, FCC 15.247(B)(3) AND RSS-210 A8.4(2)**

RESULT: PASS

### **5.1.2 6dB&99% BANDWIDTH, FCC 15.247(A)(2) AND RSS-210 A8.2(A)**

### **5.1.3 POWER SPECTRAL DENSITY (PSD), FCC 15.247(E) AND RSS-210 A8.2**

RESULT: PASS

### **5.1.4 CONDUCTED SPURIOUS EMISSION, FCC 15.247(D) AND RSS-210 A8.5**

RESULT: PASS

### **5.1.5 BAND EDGE COMPLIANCE OF RF CONDUCTED EMISSION, FCC 15.247(D) AND RSS-210 A8.5**

RESULT: PASS

### **6.1.1 BAND EDGE RADIATED EMISSION, FCC 15.205, FCC 15.209, FCC 15.247(D), RSS-210 2.2, RSS-210 2.6 AND RSS-210 A8.5**

RESULT: Pass

### **6.1.2 RADIATED SPURIOUS EMISSION OF TRANSMITTER, FCC 15.205, FCC 15.209, FCC 15.247(D), RSS-210 2.2, RSS-210 2.6 AND RSS-210 A8.5**

RESULT: PASS

### **6.2.1 RADIATED SPURIOUS EMISSION OF RECEIVER, FCC 15.109, RSS-210 2.2, RSS-210 2.6, RSS-210 A8.5, RSS-GEN 7.2.3.2**

RESULT: PASS

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## 1. General Remarks

### 1.1 Complementary Materials

All attachments are integral parts of this test report.

## 2. Test Sites

### 2.1 Test Facilities

QuieTek Technology(Suzhou)Co.,Ltd.  
No.99 Hongye RD.Suzhou Industnal Park Loufeng Hi-Tech Development  
Zone.,Suzhou,China  
The used test equipment is in accordance with CISPR 16 for measurement of radio  
interference.

The Federal Communications Commission has reviewed the technical characteristics of  
the radiated and conducted emission facility, and has found these test facilities to be in  
compliance with the requirements of section 2.948 of the FCC rules. The description of  
the test facility is listed under FCC registration number 800392.

The Industry Canada has reviewed the technical characteristics of the radiated and  
conducted emission facility, and has found these test facilities to be in compliance. The  
description of the test facility is listed under chambers filing number 4075B.

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## 2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Equipment	Model	Serial no.	Cal. due date
3m modified semi-anechoic chamber	SAC	N/A	10.12.2014
EMI test receiver	ESCI	100280	08.11.2013
broadband antenna	BTA-H	040005H	28.07.2013
Spectrum analyzer	FSP30	100192	21.07.2013
Broadband coaxial preamplifier	BBV 9718	9718-012	04.07.2014
Double ridged broadband horn antenna	BBHA 9120 D	9120D-433	15.05.2014

## 2.3 Measurement Uncertainty

Table 2: Emission Measurement Uncertainty

Measurement Type	Frequency	Uncertainty
Antenna Port Conducted Emission	< 1GHz	±0.39dB
	> 1GHz	±0.68dB
Radiated Emission	30MHz - 1GHz	±5.34dB
	> 1GHz	±5.40dB

### 3. General Product Information

#### 3.1 Product Function and Intended Use

The EUT (Equipment Under Test) is a Gluco-Monitoring System

#### 3.2 System Details

Radio standard:	Bluetooth 4.0 BLE
Specified output power:	3.59dBm
Antenna gain:	1dBi
Antenna type:	Multilayer Chip Antenna
Antenna cable length:	N/A
Frequency range:	2402 – 2480MHz
Number of channels:	40
Channel spacing:	2MHz
Modulation type:	
Rated voltage:	3.3V
Test voltage:	3.3V

##### 3.2.1 Voltage Requirements, FCC 15.31(e)

**RESULT:**

**PASS**

All the tests were performed using steady DC 3.3V. Hence it complies with the power supply requirements.

##### 3.2.2 Antenna Requirements, FCC 15.203, FCC 15.204 and RSS-Gen 7.1.4

**RESULT:**

**PASS**

The EUT has an internal antenna which is not user accessible. Hence it complies with the requirements.

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### 3.3 Independent Operation Modes

The EUT was tested on a stand-alone basis (only attached to the test jig) and the test system was configured in a typical fashion (as a customer would normally use it).

The justification and manipulation of cables and equipment in order to simulate a worst-case behavior of the test setup has been carried out as prescribed in ANSI C63.4:2009. Testing was performed at the lowest operating frequency (2402MHz), at the operating frequency in the middle of the specified frequency band (2442MHz) and at the highest operating frequency (2480MHz) with different modulation types.

Each mode basic operation in :

- A. EUT transmits (TX mode), with full power, at lowest channel (2402MHz), a continuous modulated signal streaming with 100% duty cycle.
- B. EUT transmits (TX mode), with full power, at middle channel (2442MHz), a continuous modulated signal streaming with 100% duty cycle.
- C. EUT transmits (TX mode), with full power, at highest channel (2480MHz), a continuous modulated signal streaming with 100% duty cycle.
- D. EUT receives (RX mode), at lowest channel (2402MHz), continuously.
- E. EUT receives (RX mode), at middle channel (2442MHz), continuously.
- F. EUT receives (RX mode), at highest channel (2480MHz), continuously.

### 3.4 Noise Suppressing Parts

Refer to schematics and internal photos.

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## 4. Test Set-up and Operation Modes

### 4.1 Test Methodology

The test methodology used is based on the requirements of 47 CFR Part 15, Sections 15.31, 15.33, 15.35, 15.205, 15.207, 15.209

The test methods, which have been used, are based on ANSI C63.10-2009 and KDB 558074 D01 DTS Meas Guidance v02

For details, see under each test item.

### 4.2 Physical Configuration for Testing

The EUT was designed to get into related working mode with the control of a laptop computer through RS 232 interface.

Notes:

Two test sample was available:

For antennas conducted measurements with 50Ω connector and radiated measurements. more details, refer to section: Photographs of the Test Set-Up.

### 4.3 Test Operation and Test Software

Software used for testing: Setup\_SmartRF\_Studio\_7-1.10.3 by client.

This software was running on the laptop computer connected to the EUT. It was used to enable the test operation modes listed in section 3.3 as appropriate.

### 4.4 Special Accessories and Auxiliary Equipment

The product has been tested together with a PCB Development kit (Control the EUT).

### 4.5 Countermeasures to achieve EMC Compliance

No additional measures were employed to achieve compliance.

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## 5. Test Results of Conducted Measurements at Antenna Port

### 5.1 Transmitter Parameters

#### 5.1.1 Conducted Output Power, FCC 15.247(b)(3) and RSS-210 A8.4(2)

**RESULT:**

**PASS**

Date of testing: 2013-5-25

Ambient temperature: 20°C

Relative humidity: 39.6%

Atmospheric pressure: 101.5hPa

Requirements:

For frequency hopping systems operating in the 2400-2483.5MHz band employing at least 75 non-overlapping hopping channels, the maximum peak output power shall be 1W (30dBm). For other hopping systems operating in the 2400-2483.5MHz band, the maximum peak output power shall be 0.125W (21dBm).

Test procedure:

ANSI C63.10-2009, RSS-Gen 4.8 and KDB 558074 D01 DTS Meas Guidance v02

The maximum peak output power (conducted) was measured at the antenna connector with a spectrum analyzer. The analyzer resolution bandwidth was set to 3MHz and the video bandwidth to 10MHz. The final measurement takes into account the loss generated by all the involved cables.

**Table 3: Conducted Output Power, Mode A (2402MHz)**

Reading [dBm]	RBW [MHz]	Output Power [dBm]	Limit [dBm]
1.64	3	1.64	30

Notes: Cable loss was included in reading as offset.

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**Table 4: Conducted Output Power, Mode B (2442MHz)**

Reading [dBm]	RBW [MHz]	Output Power [dBm]	Limit [dBm]
3.53	3	3.53	30

Notes: Cable loss was included in reading as offset.

**Table 5: Conducted Output Power, Mode C (2480MHz)**

Reading [dBm]	RBW [MHz]	Output Power [dBm]	Limit [dBm]
3.59	3	3.59	30

Notes: Cable loss was included in reading as offset.

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### **5.1.2 6dB&99% Bandwidth, FCC 15.247(a)(2) and RSS-210 A8.2(a)**

Date of testing: 2013-5-25

Ambient temperature: 20°C

Relative humidity: 39.6%

Atmospheric pressure: 101.5hPa

#### Requirements:

For frequency hopping systems operating in the 2400-2483.5MHz band, no bandwidth limit is specified. Test data is provided for reference.

#### Test procedure:

ANSI C63.10-2009, RSS-Gen 4.6.2 and KDB 558074 D01 DTS Meas Guidance v02

A spectrum analyzer was connected to the antenna port of the EUT. The spectrum analyzer resolution bandwidth was set to 100kHz, the video bandwidth to 300kHz and the span to 2MHz.

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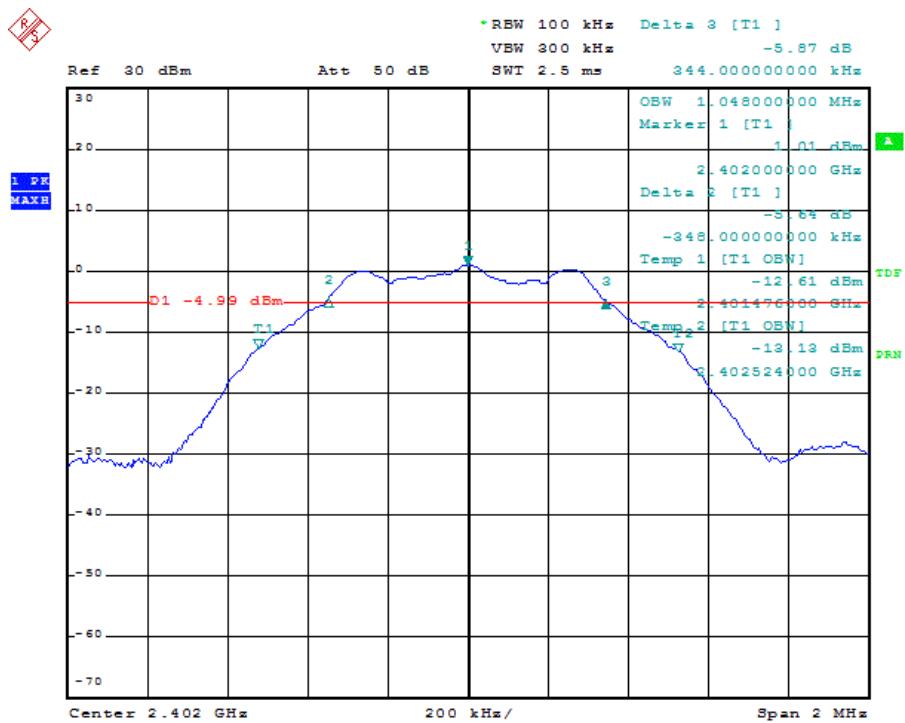
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Table 6: 6dB&99% Bandwidth

Operating Frequency [MHz]	99%dB Bandwidth[MHz]	6dB Bandwidth[MHz] limit 500KHz
2402	1.048	0.692
2442	1.048	0.688
2480	1.050	0.690

Figure 1: 6dB &99%Bandwidth, Mode A

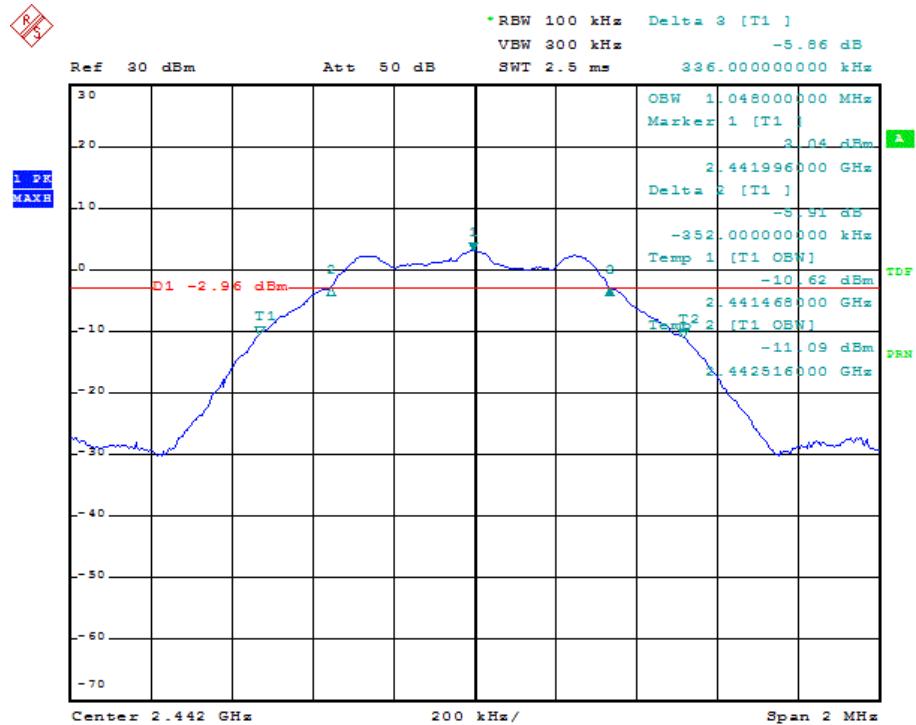


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Figure 2: 6dB & 99%Bandwidth, Mode B

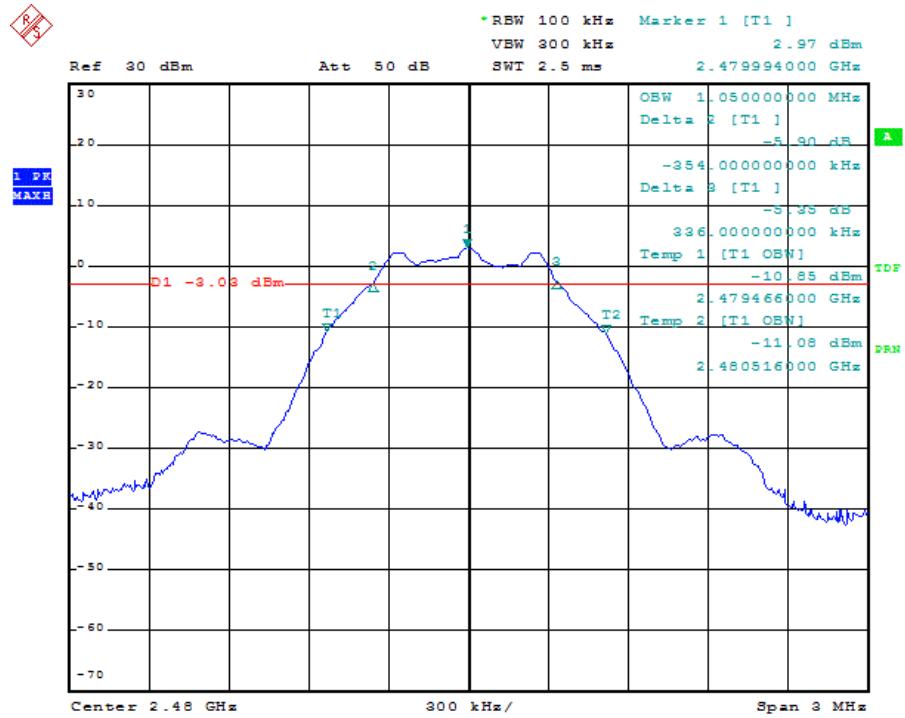


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Figure 3: 6dB & 99%Bandwidth, Mode C



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### 5.1.3 Power Spectral Density (PSD), FCC 15.247(e) and RSS-210 A8.2

#### RESULT:

PASS

Date of testing: 2013-5-25

Ambient temperature: 20°C

Relative humidity: 39.6%

Atmospheric pressure: 101.5hPa

#### Requirements:

According to FCC section 15.247(e) and RSS-A8.2(b), the same method of determining the conducted output power shall be used to determine the power spectral density. If a peak output power is measured, then a peak power spectral density measurement is required. If an average output power is measured, then an average power spectral density measurement should be used.

#### Test procedure:

KDB 558074 D01 DTS Meas Guidance v02

A spectrum analyzer was connected to the antenna port of the EUT. The analyzer resolution bandwidth was set to 100kHz.

The final measurement takes into account the loss generated by all the involved cables.

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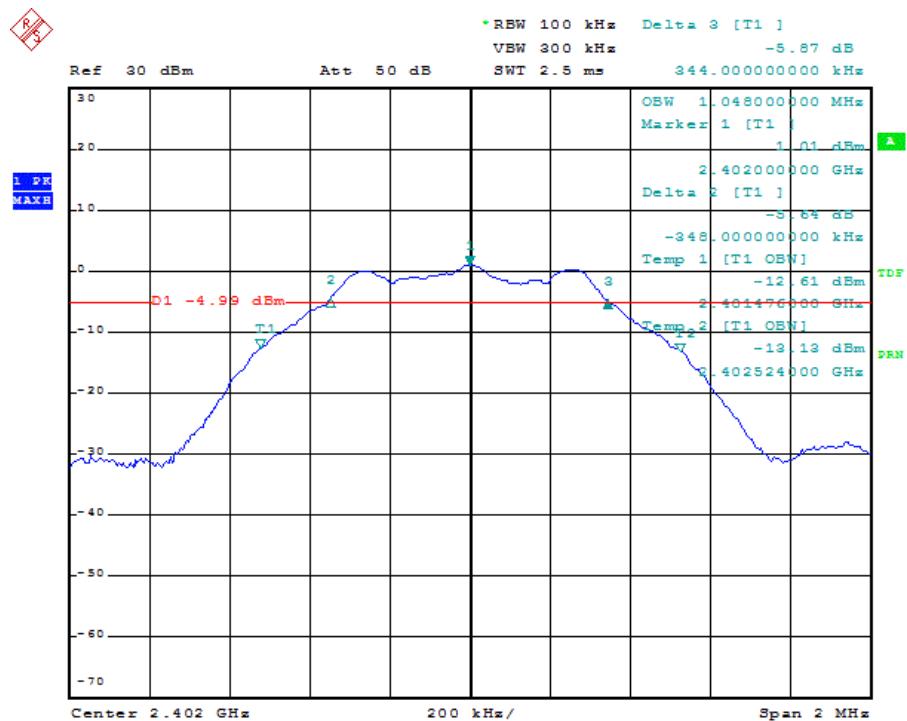
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Table 7: Power spectral density

Frequency [MHz]	Reading [dBm/100KHz]	PSD [dBm/3KHz]	Limit [dBm/3kHz]
Low	1.01	-14.19	8
Middle	2.97	-12.23	8
High	3.08	-12.12	8
<b>Correction factor=10log(3KHZ/100KHz)=-15.2dBm</b>			

Figure 4: Power spectral density, Mode A



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Figure 5: Power spectral density, Mode B

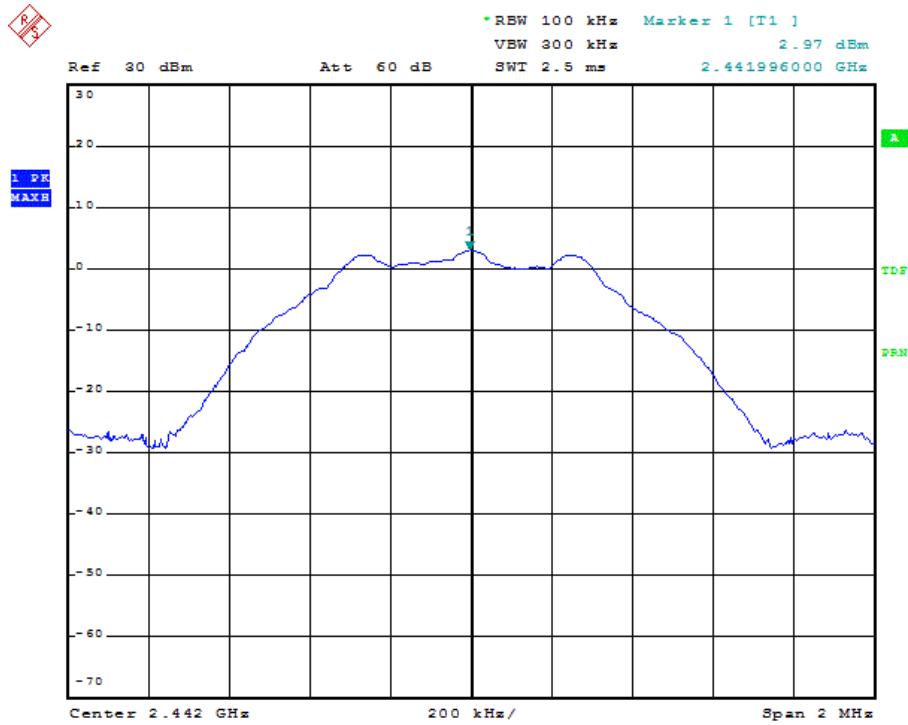
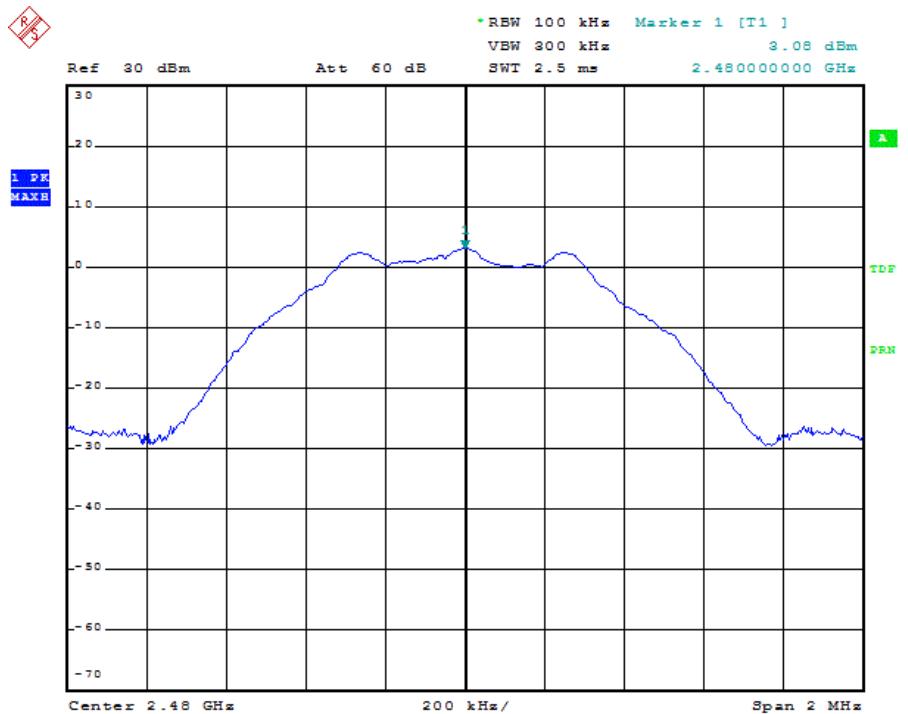


Figure 6: Power spectral density, Mode C



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### **5.1.4 Conducted Spurious Emission, FCC 15.247(d) and RSS-210 A8.5**

#### **RESULT:**

**PASS**

Date of testing: 2013-5-25

Ambient temperature: 20°C

Relative humidity: 39.6%

Atmospheric pressure: 101.5hPa

#### Requirements:

In any 100kHz bandwidth outside the frequency band, the RF power shall be at least 20dB below that of the maximum in-band 100kHz emission.

#### Test procedure:

ANSI C63.10-2009, RSS-Gen 4.9 and KDB 558074 D01 DTS Meas Guidance v02

A spectrum analyzer was connected to the antenna port of the EUT. The analyzer resolution bandwidth was set to 100kHz. For each channel investigated, the in-band and out-of-band emission measurements were performed. The out-of-band emissions were measured from 30MHz to 26GHz (10<sup>th</sup> harmonics).

The final measurement takes into account the loss generated by all the involved cables.

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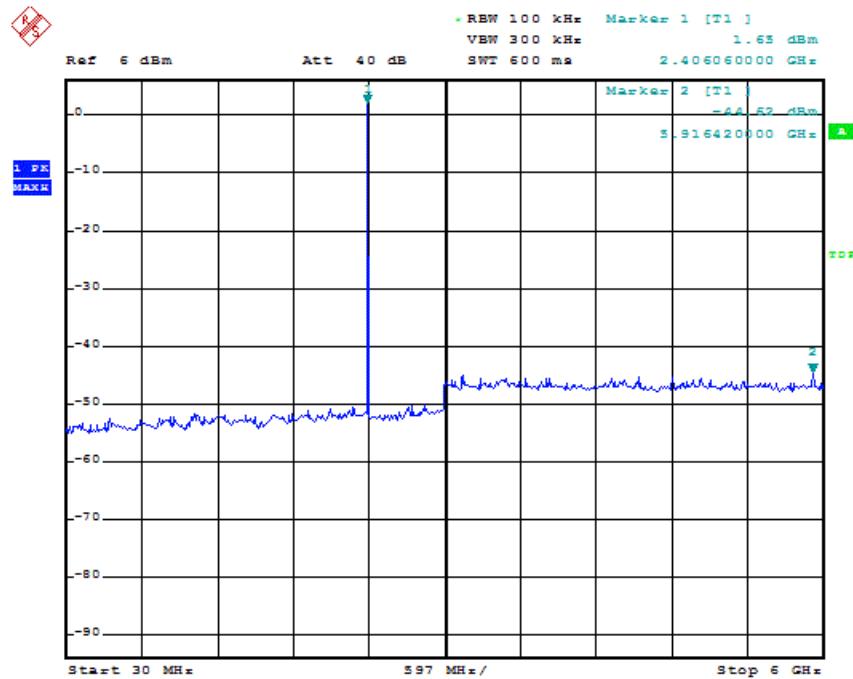
Table 8: Conducted Spurious Emission, Mode A

Frequency [MHz]	Reading [dBm]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
7178	-34.51	-34.51	-18.35	16.16
5916	-44.62	-44.62	-18.35	26.27
2402	1.65	1.65	N/A	N/A

Notes: Cable loss was included in reading as offset.

Limit = Reading of fundamental + Correction factor – 20dB

Figure 7: Conducted Spurious Emission, 30MHz – 6GHz, Mode A



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Figure 8: Conducted Spurious Emission, 6 – 26GHz, Mode A

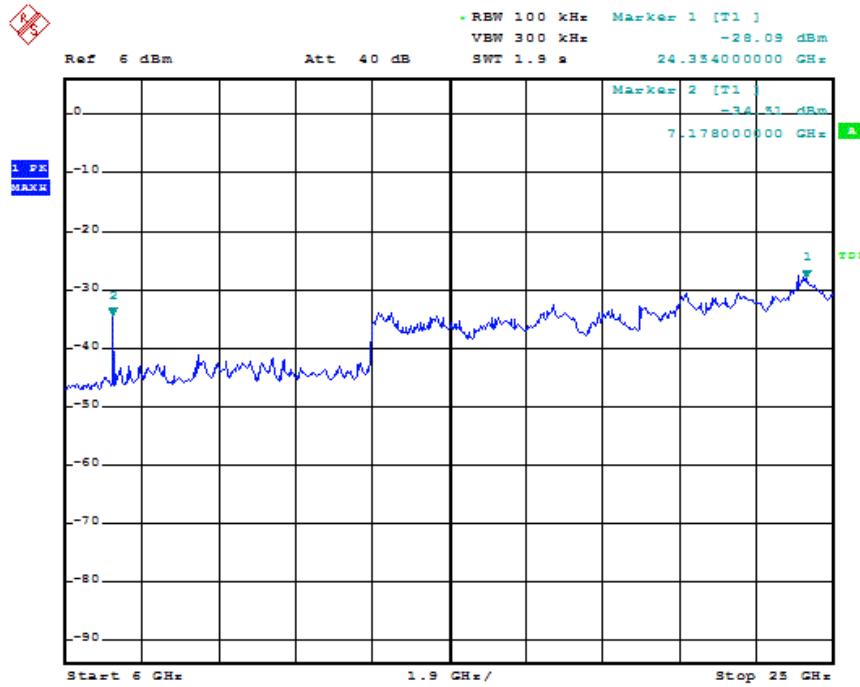


Table 9: Conducted Spurious Emission, Mode B

Frequency [MHz]	Reading [dBm]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
7292	-34.44	-34.44	-16.15	18.29
4889	-43.8	-43.8	-16.15	27.65
2442	3.85	3.85	NA	N/A

Notes: Cable loss was included in reading as offset.

Limit = Reading of fundamental + Correction factor – 20dB

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Figure 9: Conducted Spurious Emission, 30MHz – 6GHz, Mode B

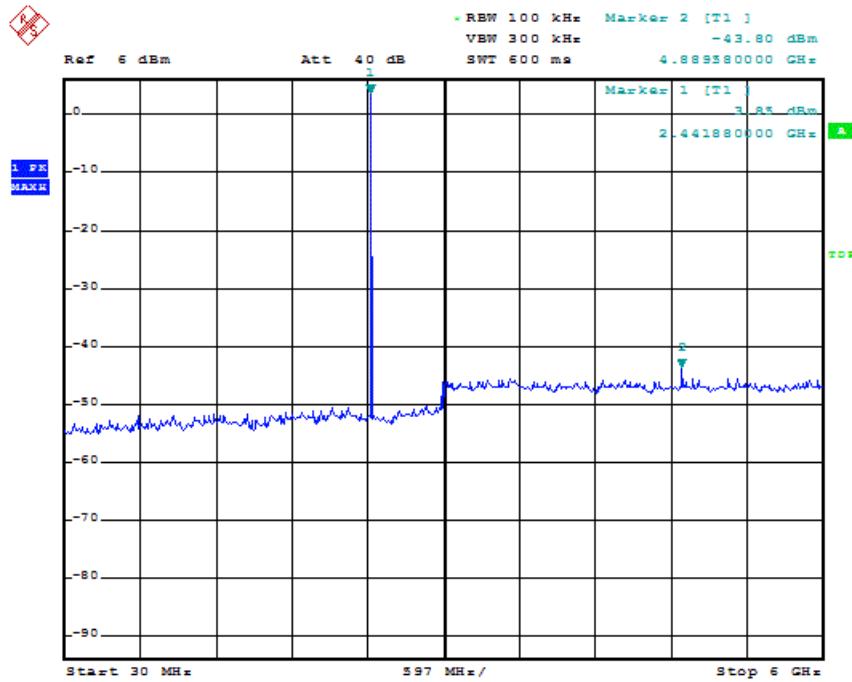
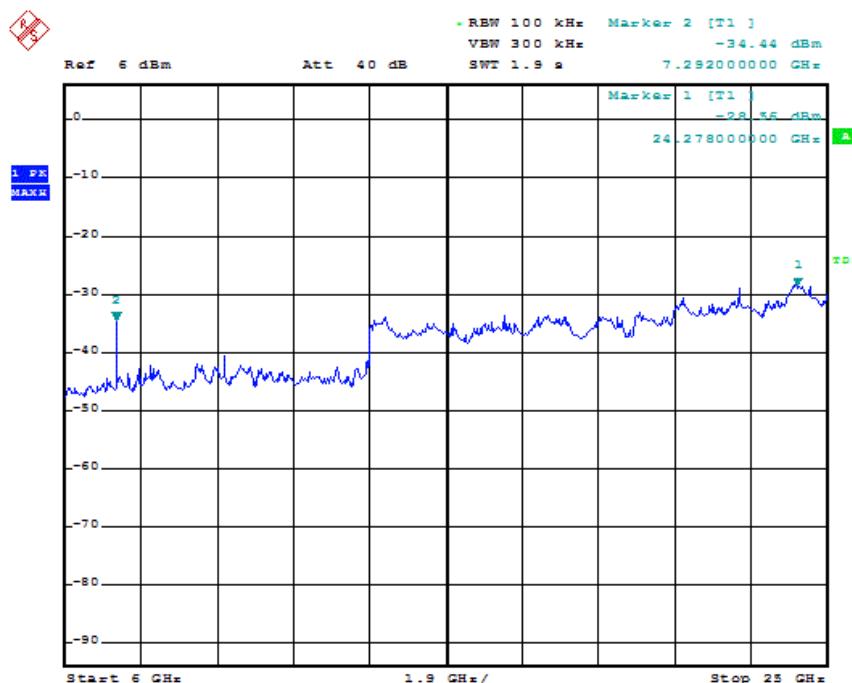


Figure 10: Conducted Spurious Emission, 6 – 26GHz, Mode B



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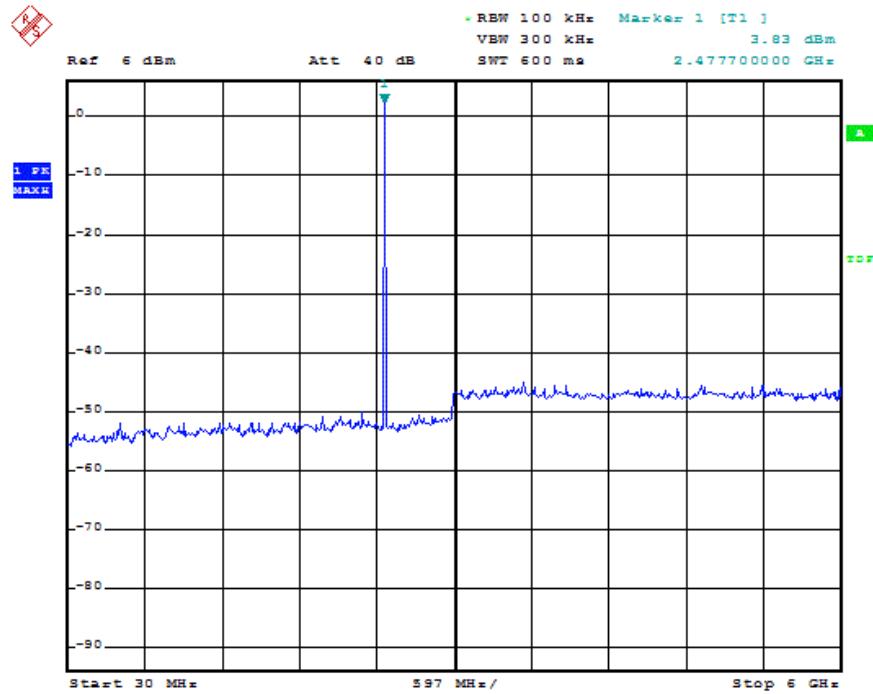
Table 10: Conducted Spurious Emission, Mode C

Frequency [MHz]	Reading [dBm]	Emission Level [dBm]	Limit [dBm]	Margin [dB]
24240	-28.33	-28.33	-16.17	12.16
N/A	N/A	N/A	N/A	N/A
2480	3.83	3.83	N/A	N/A

Notes: Cable loss was included in reading as offset.

Limit = Reading of fundamental + Correction factor – 20dB

Figure 11: Conducted Spurious Emission, 30MHz – 6GHz, Mode C

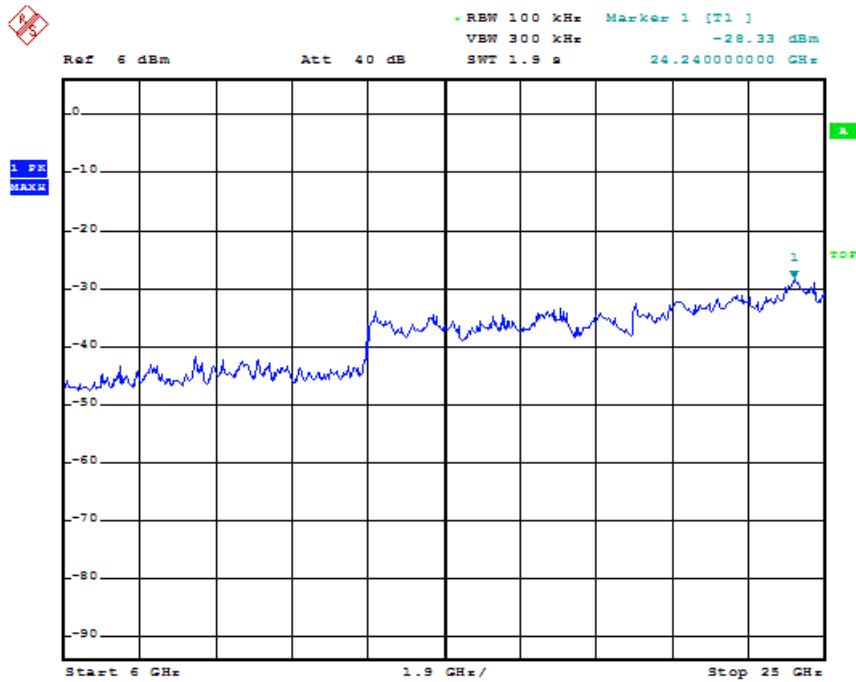


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Figure 12: Conducted Spurious Emission, 6 – 26GHz, Mode C



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### **5.1.5 Band Edge Compliance of RF Conducted Emission, FCC 15.247(d) and RSS-210 A8.5**

#### **RESULT:**

**PASS**

Date of testing: 2013-5-25

Ambient temperature: 20°C

Relative humidity: 39.6%

Atmospheric pressure: 101.5hPa

#### Requirements:

In any 100kHz bandwidth outside the frequency band, the RF power shall be at least 20dB below that of the maximum in-band 100kHz emission.

#### Test procedure:

ANSI C63.10-2009 and KDB 558074 D01 DTS Meas Guidance v02

A spectrum analyzer was connected to the antenna port of the EUT. The analyzer resolution bandwidth was set to 100kHz and video bandwidth was set to 300kHz. Allow the trace to stabilize. Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission.

The final measurement takes into account the loss generated by all the involved cables.

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Figure 13: Lower Band Edge Conducted

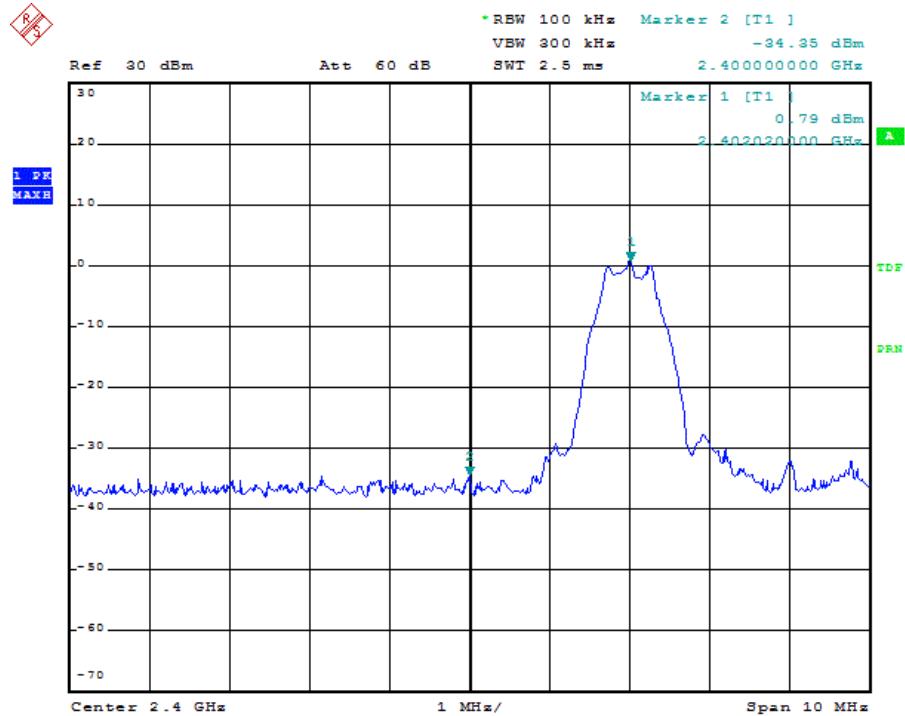
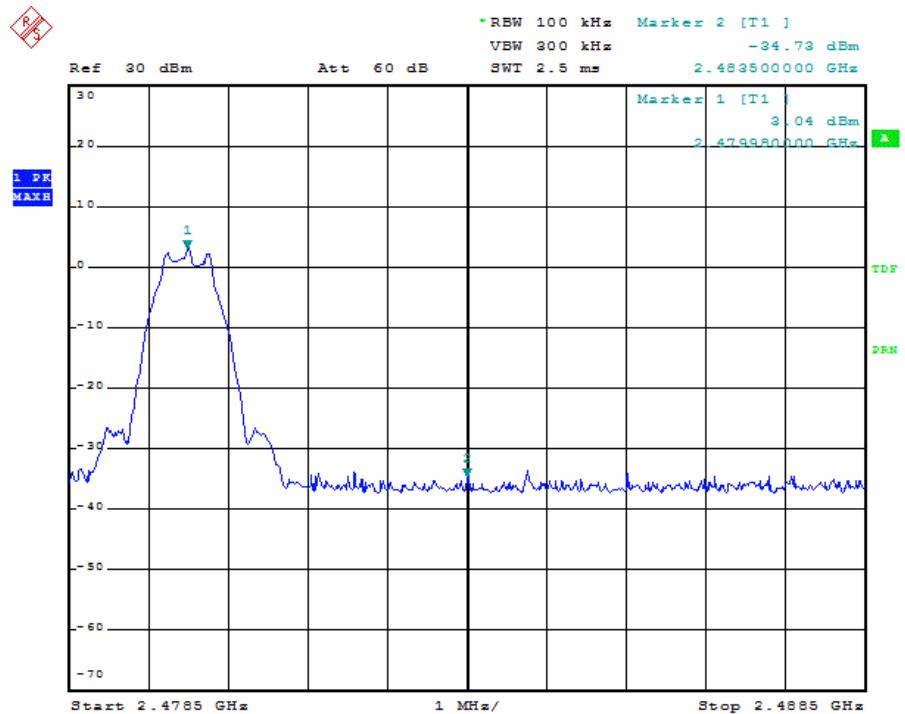


Figure 14: Upper Band Edge Conducted



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## 6. Test Results of Radiated Measurements

### 6.1 Transmitter Parameters

#### 6.1.1 Band Edge Radiated Emission, FCC 15.205, FCC 15.209, FCC 15.247(d), RSS-210 2.2, RSS-210 2.6 and RSS-210 A8.5

**RESULT:** Pass

Date of testing: 2013-4-27

Ambient temperature: 23.5°C

Relative humidity: 45%

Atmospheric pressure: 101.5hPa

Measurement distance: 3m

Kind of test site: Semi Anechoic Chamber

#### Requirements:

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-210 2.7 (Table 1), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-210 2.7 (Table 2 and 3).

#### Test procedure:

ANSI C63.10-2009, RSS-Gen 4.9 and KDB 558074 D01 DTS Meas Guidance v02

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Measurements were made at 3m distance. The EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level.

Measurements were taken using both horizontal and vertical antenna polarization. The rotation through the three orthogonal axes is normally not needed for equipment that is not hand-held or body-worn. The EUT was pretested in floor-standing condition and in the table position and the worst case condition was table position which was used for the final measurements.

Measurements were performed using a spectrum analyzer with a suitable span to encompass the peak of the fundamental and using the following settings: Peak: RBW & VBW = 1MHz, Average: RBW = 1MHz, VBW = 10Hz.

The highest emission amplitudes relative to the appropriate limit were measured and recorded in this report.

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Table 11: Band Edge Radiated Emission

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	2390.000	52.380	16.079	-21.620	74.000	36.302	PK
2	Horizontal	2401.632	85.993	49.596	11.993	74.000	36.396	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	2390.000	40.557	4.256	-13.443	54.000	36.302	AV
2	Horizontal	2402.064	84.744	48.344	30.744	54.000	36.401	AV

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Vertical	2390.000	51.233	15.592	-22.767	74.000	35.642	PK
2	Vertical	2401.920	76.393	40.701	2.393	74.000	35.692	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Vertical	2390.000	39.883	4.242	-14.117	54.000	35.642	AV
2	Vertical	2402.064	73.763	38.071	19.763	54.000	35.692	AV

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	2480.248	83.604	46.543	9.604	74.000	37.061	PK
2	Horizontal	2483.500	50.346	13.256	-23.654	74.000	37.089	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	2480.092	82.550	45.490	28.550	54.000	37.059	AV
2	Horizontal	2483.500	41.812	4.722	-12.188	54.000	37.089	AV

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Vertical	2480.212	73.206	37.166	-0.794	74.000	36.039	PK
2	Vertical	2483.500	52.005	15.949	-21.995	74.000	36.055	PK

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Vertical	2479.948	71.718	35.679	17.718	54.000	36.038	AV
2	Vertical	2483.500	40.183	4.127	-13.817	54.000	36.055	AV

Notes: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.  
Average limit in dBuV/m is calculated as follows: Average limit = 20 x log(500uV/m).  
Peak limit in dBuV/m is calculated as follows: Peak limit = Average limit + 20dB.

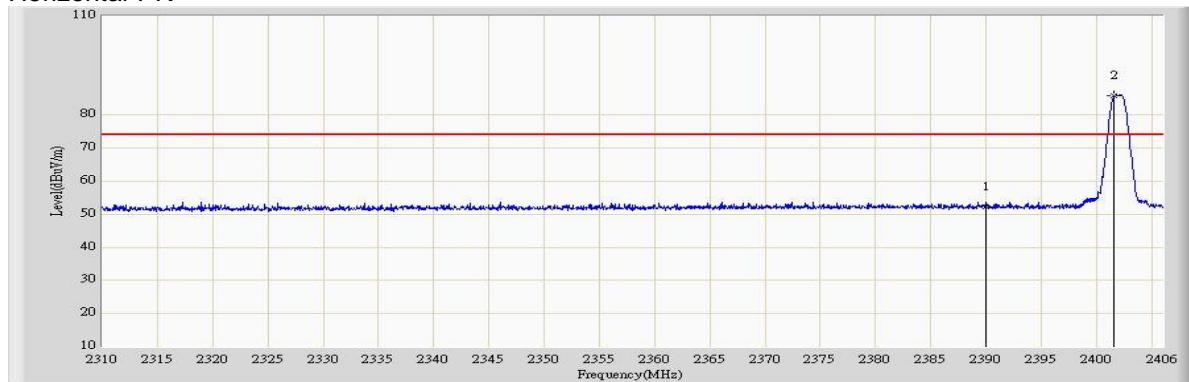
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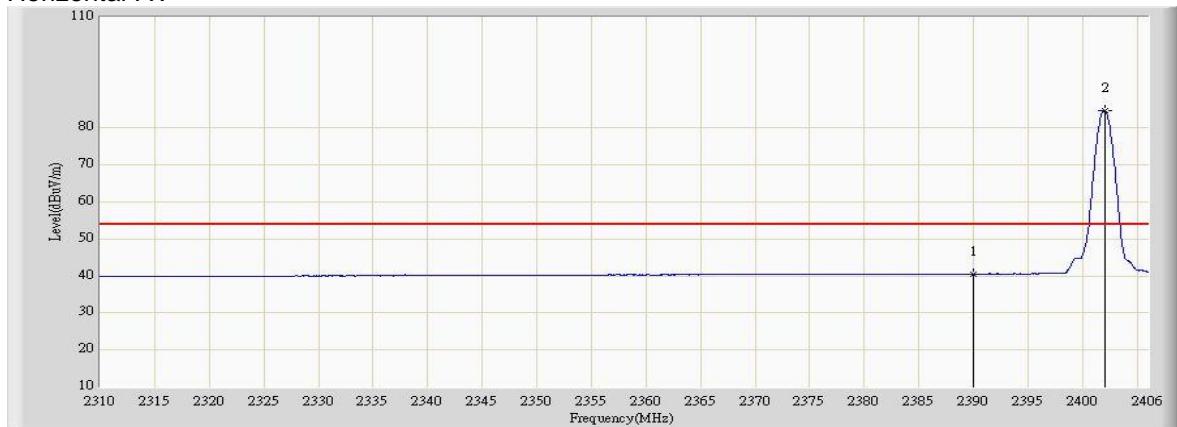
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Figure 15: Band Edge Radiated Emission, Spectral Diagram, Mode A (2402MHz)

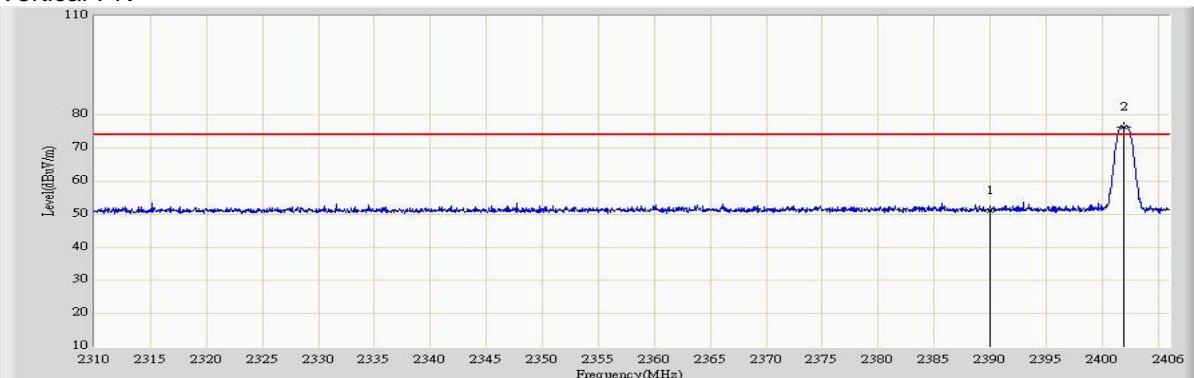
Horizontal-PK



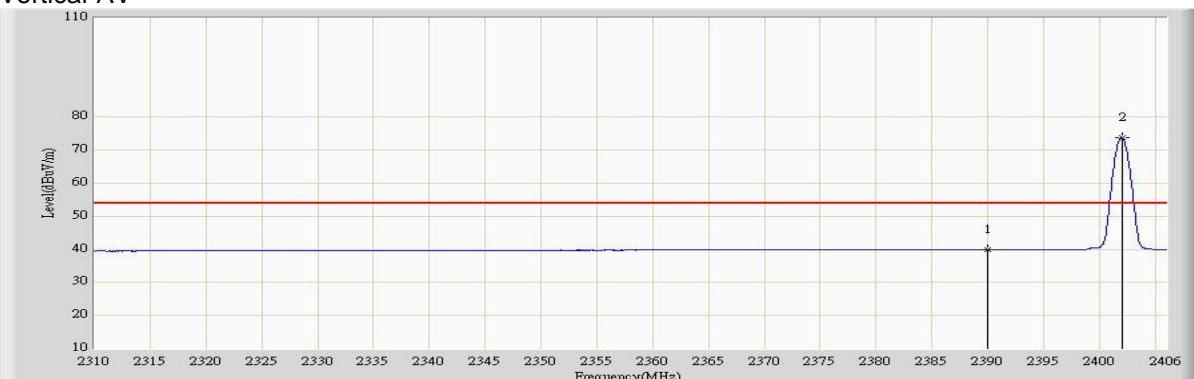
Horizontal-AV



Vertical-PK



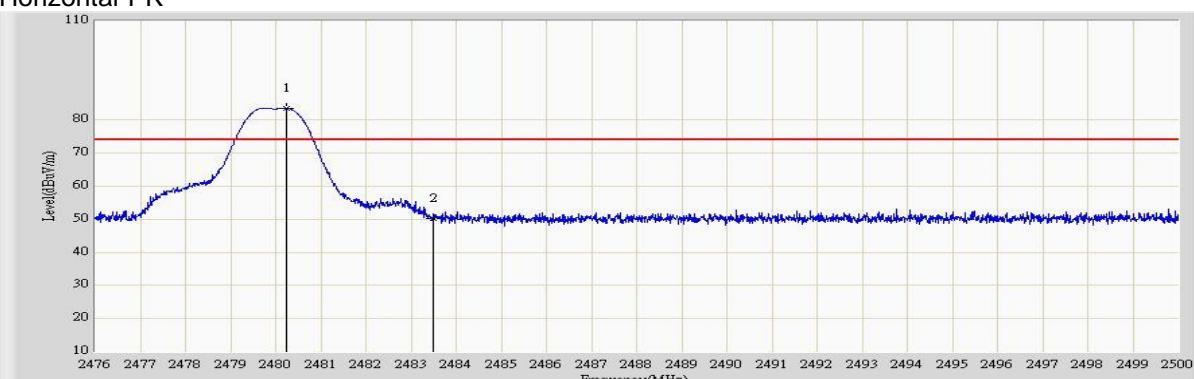
Vertical-AV



Note: The upper diagram shows the vertical peak value and the lower diagram shows the horizontal value.

**Figure 16: Band Edge Radiated Emission, Spectral Diagram, Mode C (2402MHz)**

Horizontal-PK

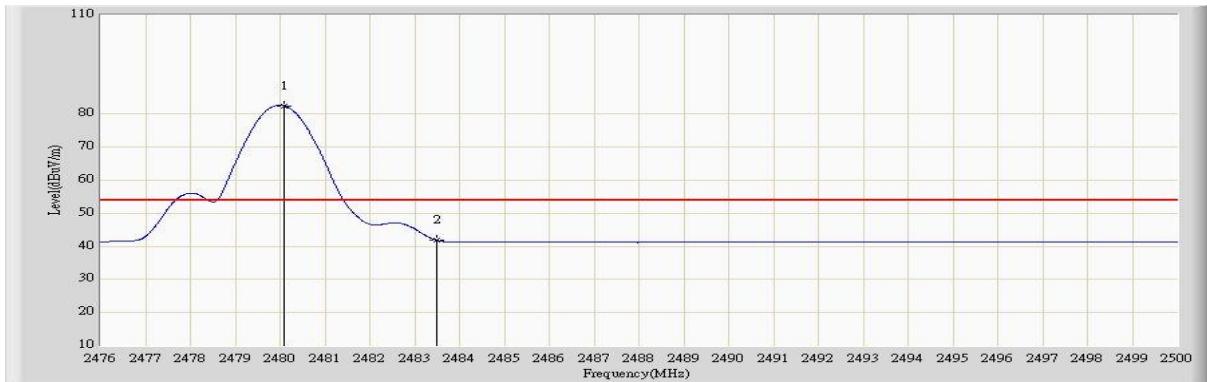


Horizontal-AV

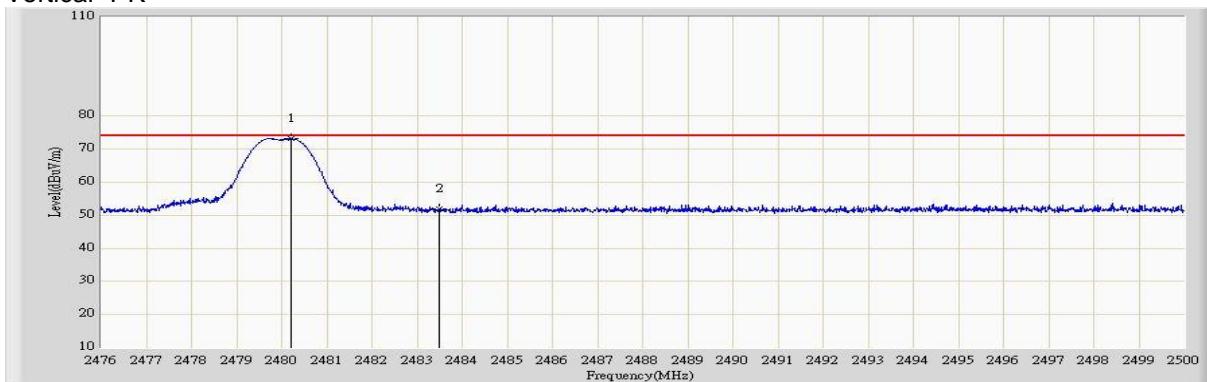
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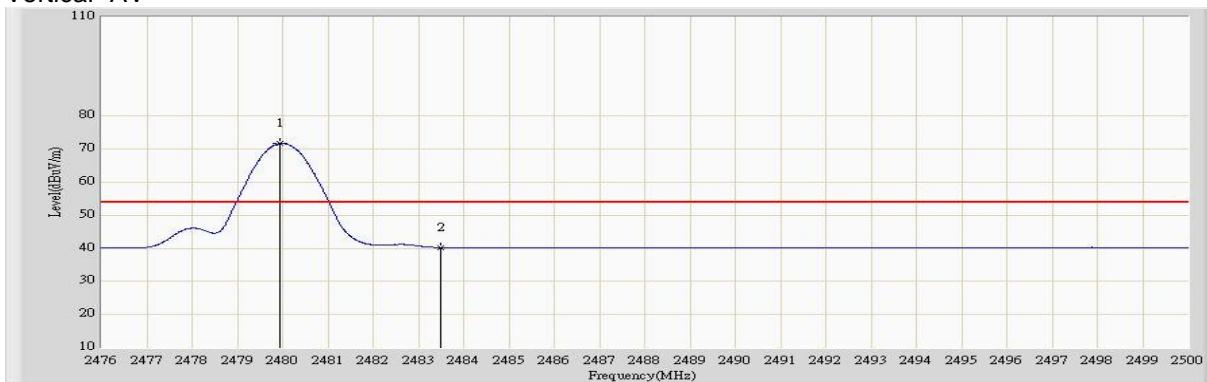
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Vertical -PK



Vertical -AV



Note: The upper diagram shows the vertical peak value and the lower diagram shows the horizontal value.

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**6.1.2 Radiated Spurious Emission of Transmitter, FCC 15.205, FCC 15.209, FCC 15.247(d), RSS-210 2.2, RSS-210 2.6 and RSS-210 A8.5**

**RESULT:**

**PASS**

Date of testing: 2013-4-27

Ambient temperature: 23.5°C

Relative humidity: 45%

Atmospheric pressure: 101.5hPa

Frequency range: 30MHz – 25GHz

Measurement distance: 3m

Kind of test site: Semi Anechoic Chamber

**Requirements:**

Radiated emissions which fall in the restricted bands, as defined in FCC 15.205(a) and RSS-210 2.7 (Table 1), must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-210 2.7 (Table 2 and 3).

**Test procedure:**

ANSI C63.10-2009, RSS-Gen 4.9 and KDB 558074 D01 DTS Meas Guidance v02

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The EUT was pretested in floor-standing condition and in the table position and the worst case condition was table position which was used for the final measurements. The rotation through the three orthogonal axes is normally not needed for equipment that is not hand-held or body-worn.

The spectrum was examined from 30MHz to the 10th harmonic of the highest fundamental transmitter frequency (25GHz). Final radiated emission measurements were made at 3m distance.

At each frequency where a spurious emission was found, the EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level. Measurements were taken using both horizontal and vertical antenna polarizations.

For frequencies between 30MHz and 1GHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1GHz, measurements were performed using the following settings: Peak: RBW & VBW = 1MHz, Average: RBW = 1MHz, VBW = 10Hz.

The highest emission amplitudes relative to the appropriate limit were recorded in this report. Emissions other than those mentioned are small or not detectable.

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**Table 12: Radiated Emission, Average and Peak Data, 1 – 25GHz, Horizontal and Vertical Antenna Orientations, Mode A (2402MHz)**

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	4808.000	43.902	52.228	-30.098	74.000	-8.326	PK
2	Horizontal	7205.000	62.338	65.798	-11.662	74.000	-3.460	PK
3	Vertical	4808.000	46.525	54.959	-27.475	74.000	-8.434	PK
4	Vertical	7205.000	64.474	67.970	-9.526	74.000	-3.496	PK

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values.

**Table 13: Radiated Emission, Average and Peak Data, 1 – 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2442MHz)**

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	4884.500	42.249	50.551	-31.751	74.000	-8.303	PK
2	Horizontal	7324.000	57.217	60.477	-16.783	74.000	-3.260	PK
3	Vertical	4884.500	46.804	55.091	-27.196	74.000	-8.288	PK
4	Vertical	7324.000	54.825	58.085	-19.175	74.000	-3.260	PK

**Table 14: Radiated Emission, Average and Peak Data, 1 – 25GHz, Horizontal and Vertical Antenna Orientations, Mode B (2442MHz)**

No	Mark	Frequency (MHz)	Measure Level (dBuV/m)	Reading Level (dBuV)	Over Limit (dB)	Limit (dBuV/m)	Factor (dB)	Type
1	Horizontal	4961.000	41.138	49.477	-32.862	74.000	-8.339	PK
2	Horizontal	7443.000	51.855	54.748	-22.145	74.000	-2.893	PK
3	Vertical	4961.000	49.201	57.402	-24.799	74.000	-8.201	PK
4	Vertical	7443.000	53.107	56.000	-20.893	74.000	-2.893	PK

Note: All correction factors (antenna, cable, pre-amplifier) are included in the measurement values. Above 18 GHz emission far below limit

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## 6.2 Receiver Parameters

### 6.2.1 Radiated Spurious Emission of Receiver, FCC 15.109, RSS-210 2.2, RSS-210 2.6, RSS-210 A8.5, RSS-Gen 7.2.3.2

#### RESULT:

PASS

Date of testing:	2013-4-27
Ambient temperature:	23.5°C
Relative humidity:	45%
Atmospheric pressure:	101.5hPa
Frequency range:	30MHz – 12.5GHz
Measurement distance:	3m
Kind of test site:	Semi Anechoic Chamber

#### Requirements:

The emissions from the unintentional radiator shall not exceed the field strength specified in 15.109(a) and RSS-210 Table 2 (and RSS-Gen Table 1).

#### Test procedure:

ANSI C63.4-2009 and RSS-Gen 4.10.

The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Before final measurements of radiated emissions were performed, the EUT was scanned to determine its emission spectrum profile. The EUT was pretested in floor-standing condition and in the table position and the worst case condition was table position which was used for the final measurements. The rotation through the three orthogonal axes is normally not needed for equipment that is not hand-held or body-worn. The spectrum was examined from 30MHz to the 5th harmonic of the highest fundamental operation frequency (12.5GHz). Final radiated emission measurements were made at 3m distance.

Measurements were taken using both horizontal and vertical antenna polarizations.

For frequencies between 30MHz and 1GHz, the spectrum analyzer's 6 dB bandwidth was set to 120 kHz, and the analyzer was operated in the CISPR quasi-peak detection mode. For emissions above 1GHz, measurements were performed using the following settings: Peak: RBW & VBW = 1MHz, Average: RBW = 1MHz, VBW = 10Hz. The highest emission amplitudes relative to the appropriate limit were recorded in this report. No spurious emission was found in the range 30MHz – 12500MHz. emission in mode D, E, F all signals found in the pre-testing were more than 20 dB below the limit .

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## 7. Photographs of the Test Setup

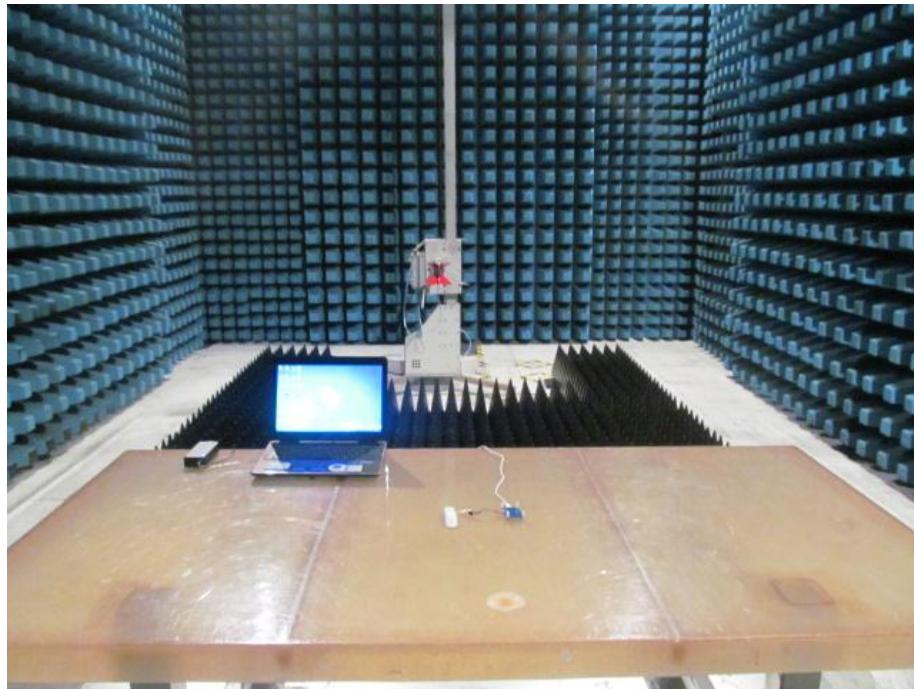
Photograph 1: Set-up for Conducted RF test at Antenna Port



Photograph 2: Set-up for Radiated Emission, 30MHz-1000MHz



**Photograph 3: Set-up for Radiated Emission, 1G-18GHz**



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