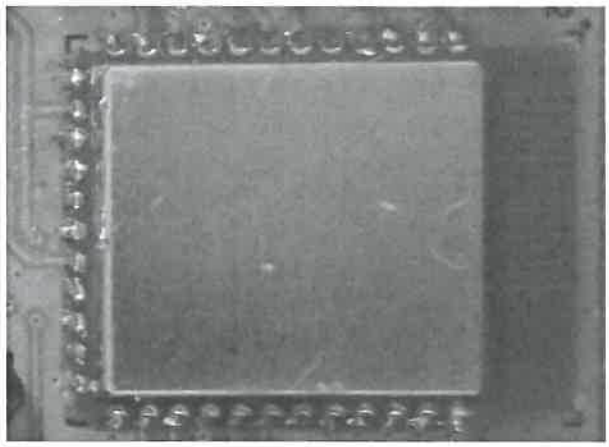
Prüfbericht-Nr.: *Test Report No.:*	**15074279 001**	**Auftrags-Nr.:** *Order No.:*	154054190	Seite 1 von 34 *Page 1 of 34*
Kunden-Referenz-Nr.: *Client Reference No.:*	487356	**Auftragsdatum:** *Order date:*	16.06.2014	
Auftraggeber: *Client:*	Cambridge Executive Limited St John's Innovation Centre, Cowley Road, Cambridge CB4 0WS, United Kingdom			
Prüfgegenstand: *Test item:*	BC118/BC119			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	BC118-x/BC119-x FCC ID :SSS-BC11X			
Auftrags-Inhalt: *Order content:*	Complete test			
Prüfgrundlage: *Test specification:*	FCC CFR47 Part 15, Subpart C ANSI C63.10-2009 KDB 558074 D01 DTS Meas Guidance v03r02			

Wareneingangsdatum: *Date of receipt:*	16.06.2014
Prüfmuster-Nr.: *Test sample No.:*	A02
Prüfzeitraum: *Testing period:*	04.08.2014 – 15.08.2014
Ort der Prüfung: *Place of testing:*	MRT Technology (Suzhou)
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result*:*	Pass



geprüft von / *tested by:*			**kontrolliert von** / *reviewed by:*		
18.08.2014	Adrian Shi / PE	Adrian Shi	18.08.2014	Sam Lin / TC	
Datum *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*	**Datum** *Date*	**Name / Stellung** *Name / Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:*	Prüfmuster vollständig und unbeschädigt *Test item complete and undamaged*

* Legende:	1 = sehr gut P(ass) = entspricht o.g. Prüfgrundlage(n)	2 = gut	3 = befriedigend F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	4 = ausreichend N/A = nicht anwendbar	5 = mangelhaft N/T = nicht getestet
Legend:	*1 = very good* *P(ass) = passed a.m. test specification(s)*	*2 = good*	*3 = satisfactory* *F(ail) = failed a.m. test specification(s)*	*4 = sufficient* *N/A = not applicable*	*5 = poor* *N/T = not tested*

V04

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)(1)& (3) AND RSS-210 A8.4(2)
RESULT: PASS

5.1.2 6DB BANDWIDTH AND 99% BANDWIDTH, FCC 15.247(A)(1)& (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

CONTENTS

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report.

2. Test Sites

2.1 Test Facilities

MRT Technology (Suzhou) Co., Ltd.
D8 Building, Youxin Industrial Park, No.2 Tian'edang Rd., Wuzhong Economic 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 809388.

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 11384A.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Instrument	Manufacturer	Type No.	Cali. Interval	Cali. Due Date
EMI Test Receiver	R&S	ESR7	1 year	2014/11/08
Two-Line V-Network	R&S	ENV216	1 year	2014/11/08
Two-Line V-Network	R&S	ENV216	1 year	2014/11/08
Temperature/ Meter Humidity	Anymetre	TH101B	1 year	2014/11/15
Spectrum Analyzer	Agilent	E4447A	1 year	2014/11/18
EMI Test Receiver	R&S	ESR7	1 year	2014/11/08
Preamplifier	MRT	AP18G40	1 year	2014/10/07
Preamplifier	MRT	AP01G18	1 year	2014/10/07
Loop Antenna	Schwarzbeck	FMZB1519	1 year	2014/11/24
TRILOG Antenna	Schwarzbeck	VULB9162	1 year	2014/11/24
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	1 year	2014/11/24
Broadband Horn Antenna	Schwarzbeck	BBHA9170	1 year	2014/12/11
Spectrum Analyzer	Agilent	N9010A	1 year	2015/01/04
Wideband Peak Power Meter	Anritsu	ML2495A	1 year	2015/01/12
Power Sensor	Anritsu	MA2411B	1 year	2015/01/12

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 bluetooth module.

The Applicant declares that the model BC118-x/BC119-x. BC119-x is BC118-x without an EEPROM. The wireless protocol and shell does not change.

About the model BC118-x/BC119-x, x is variable, it indicated A-Z or 0-9. Due to sales purpose in different countries or regions. The internal PCB design are no difference, but only distinct in model names.The test model name is BC118-A.

3.2 System Details

Radio standard:	Bluetooth 4.0 single mode
Max output power:	5.56dBm
Antenna gain:	2dBi
Antenna type:	Printed antenna
Frequency range:	2402 – 2480MHz
BLE Number of channels:	40
BLE Channel spacing:	2MHz
Modulation type:	GFSK
Rated voltage:	DC 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.

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.

Bluetooth LE 4.0 mode:
Testing was performed at the lowest operating frequency (2402MHz), at the operating frequency in the middle of the specified frequency band (2440MHz) and at the highest operating frequency (2480MHz) with different modulation types.

Bluetooth 4.0 BLE 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 (2440MHz), 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 (2440MHz), continuously.
F. EUT receives (RX mode), at highest channel (2480MHz), continuously.
G. EUT standby

3.4 Noise Suppressing Parts

Refer to schematics and internal photos.

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 v03r02

For details, see under each test item.
Note: Bluetooth 4.0 BLE is following KDB 558074 D01 DTS Meas Guidance v03r02

4.2 Physical Configuration for Testing

The EUT was designed to get into related working mode with the control of computer.

Notes:

For antenna conducted measurements, the antenna was replaced by a 50Ω antenna connector.

For antenna radiated measurements, the associated cables and computer were removed.

For more details, refer to section: Photographs of the Test Set-Up.

4.3 Test Operation and Test Software

Software used for testing: uEnergy Tools 2.0

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.

4.5 Countermeasures to achieve EMC Compliance

No additional measures were employed to achieve compliance.

5. Test Results of Conducted Measurements at Antenna Port

5.1 Transmitter Parameters

5.1.1 Conducted Output Power, FCC 15.247(b)(1)& (3) and RSS-210 A8.4(2)

RESULT: **PASS**

Date of testing: 2014-08-11

Ambient temperature: 22.3°C
Relative humidity: 40.1%
Atmospheric pressure: 101.7hPa

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 and KDB 558074 D01 DTS Meas Guidance v03r02

The maximum peak output power (conducted) was measured at the antenna connector with a Power Meter.

Table 3: Conducted Output Power

BLE-GFSK

Channel	Peak Output Power [dBm]	Limit [dBm)
Low	5.52	30
Middle	5.56	30
High	5.50	30

5.1.2 6dB Bandwidth and 99% Bandwidth, FCC 15.247(a)(1)& (2) and RSS-210 A8.2(a)

Date of testing: 2014-08-11

Ambient temperature: 22.3°C
Relative humidity: 40.1%
Atmospheric pressure: 101.7hPa

Requirements:

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

Systems using digital modulation techniques may operate in the 902 - 928 MHz, 2400 - 2483.5 MHz, and 5725 - 5850 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.

Test procedure:

ANSI C63.10-2009 and KDB 558074 D01 DTS Meas Guidance v03r02

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.

Table 4: 6dB & 99% Bandwidth

BLE-GFSK

Channel	99%dB Bandwidth [KHz]	6dB Bandwidth [KHz]	Limit [KHz]
Low	1119.9	833.7	**500**
Middle	1035.8	682.5	**500**
High	1034.6	682.1	**500**

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

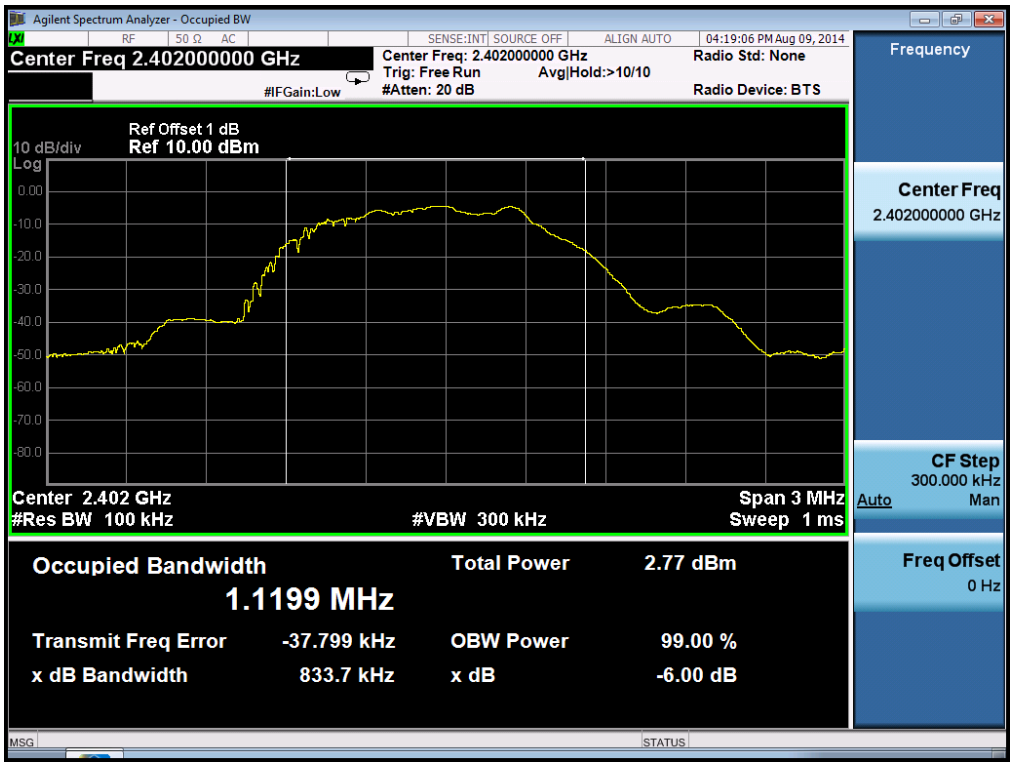


Figure 2: 6dB & 99%Bandwidth, Mode B

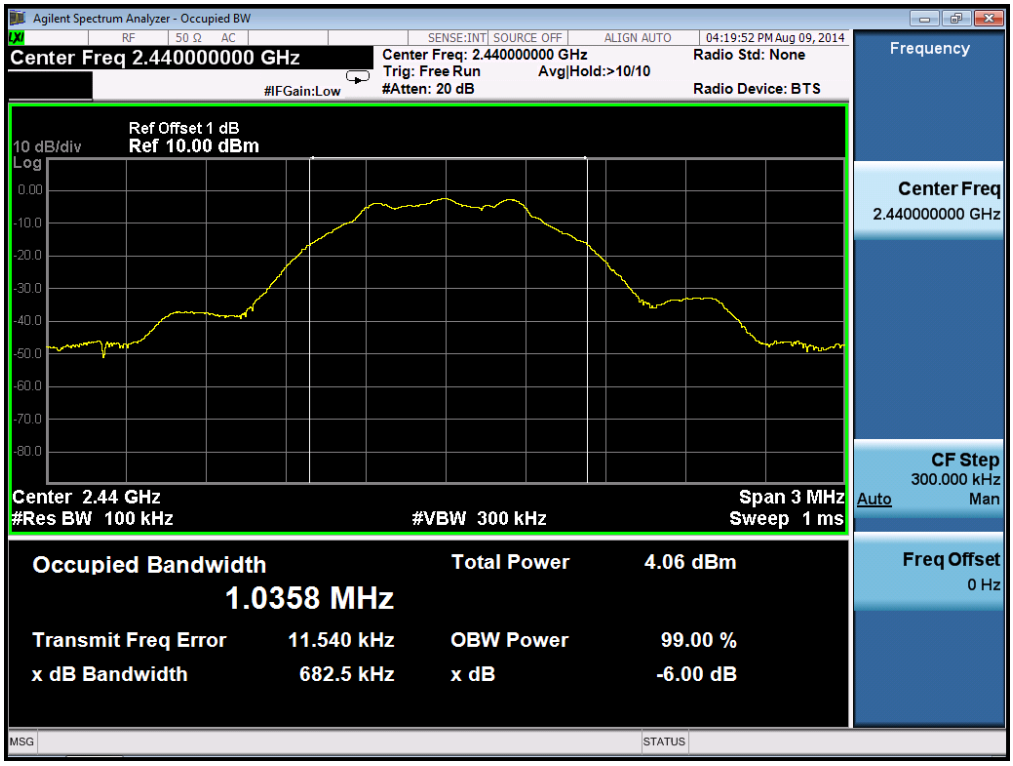


Figure 3: 6dB & 99%Bandwidth, Mode C

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

RESULT: **PASS**

Date of testing: 2014-08-11

Ambient temperature: 22.3°C
Relative humidity: 40.1%
Atmospheric pressure: 101.7hPa

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:

ANSI C63.10-2009 and KDB 558074 D01 DTS Meas Guidance v03r02

A spectrum analyzer was connected to the antenna port of the EUT. The analyzer resolution bandwidth was set to 3kHz.

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

Table 5: Power spectral density

Channel	PSD [dBm/3KHz]	Limit [dBm/3kHz]
Low	-10.934	8
Middle	-10.983	8
High	-10.921	8

Figure 4: Power spectral density, Mode A

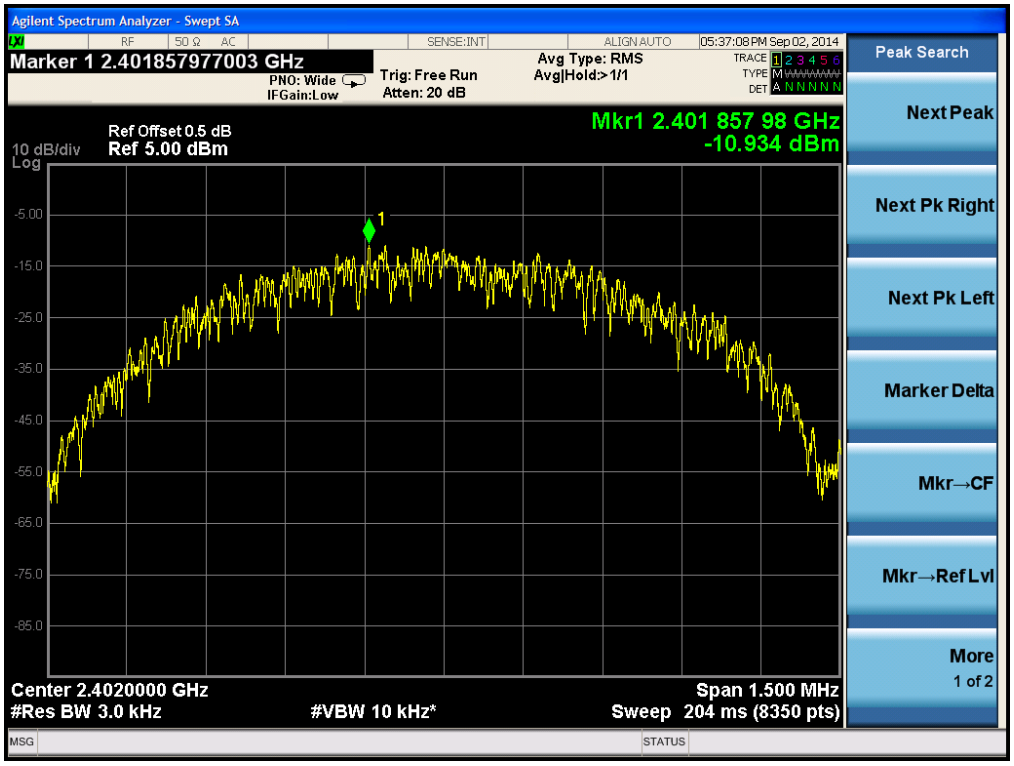


Figure 5: Power spectral density, Mode B

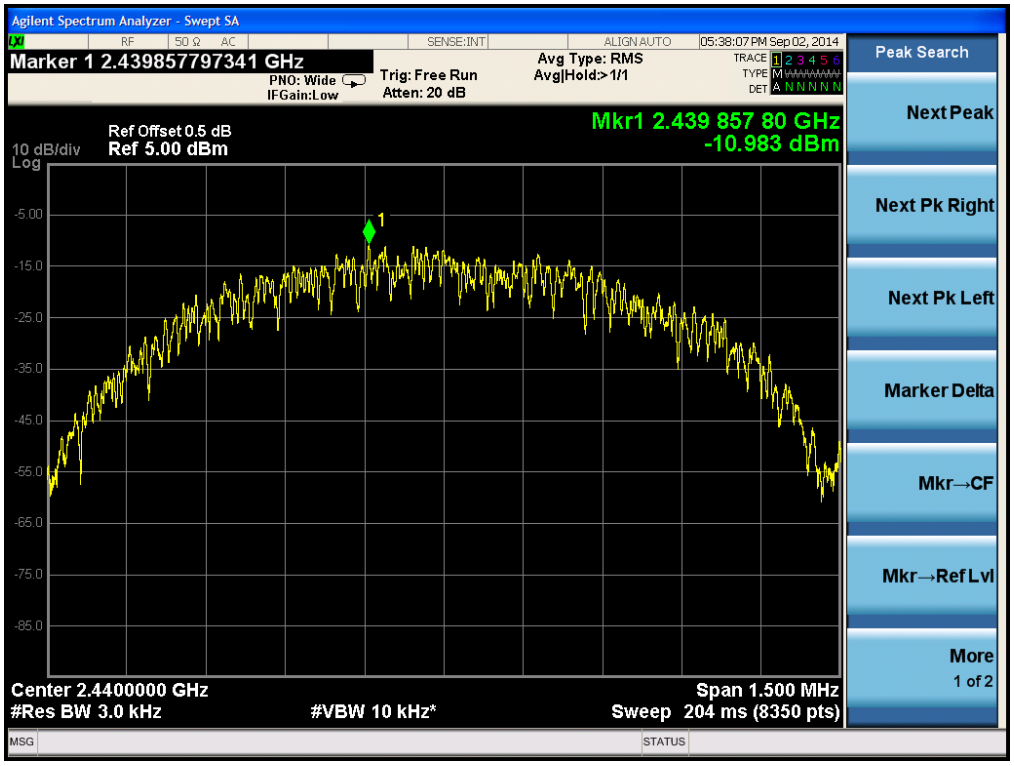
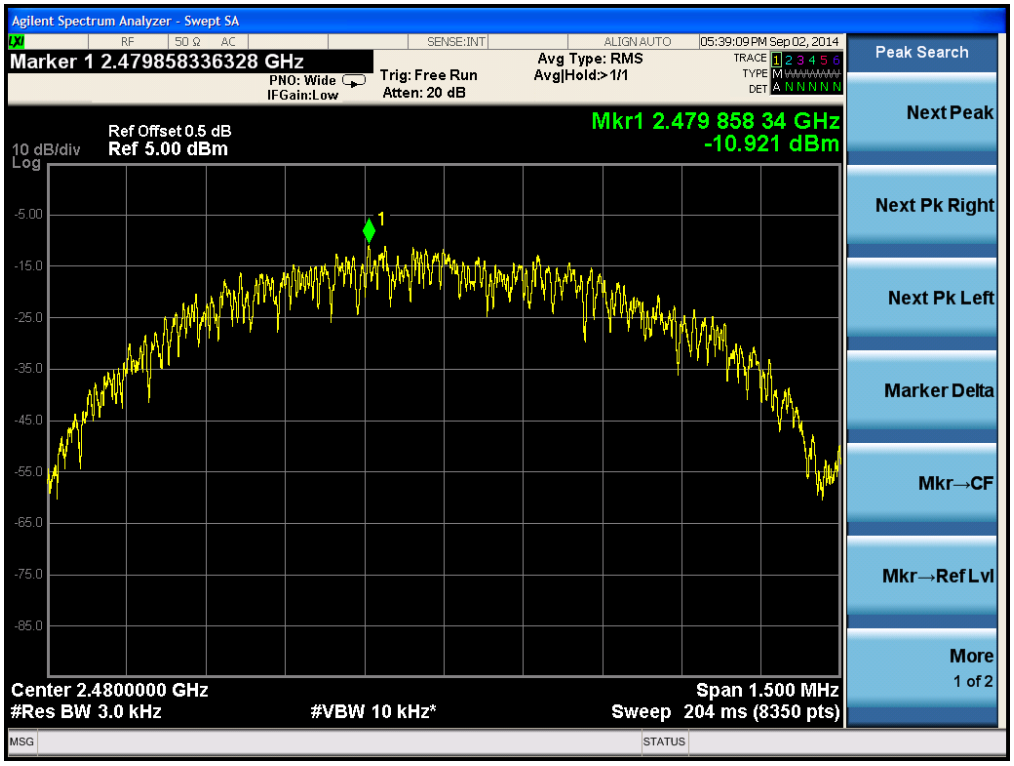


Figure 6: Power spectral density, Mode C



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

RESULT: **PASS**

Date of testing: 2014-08-11

Ambient temperature: 22.3°C
Relative humidity: 40.1%
Atmospheric pressure: 101.7hPa

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 v03r02.

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 25GHz (10^{th} harmonics).

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

Figure 7: Conducted Spurious Emission, Mode A

Figure 8: Conducted Spurious Emission, Mode B

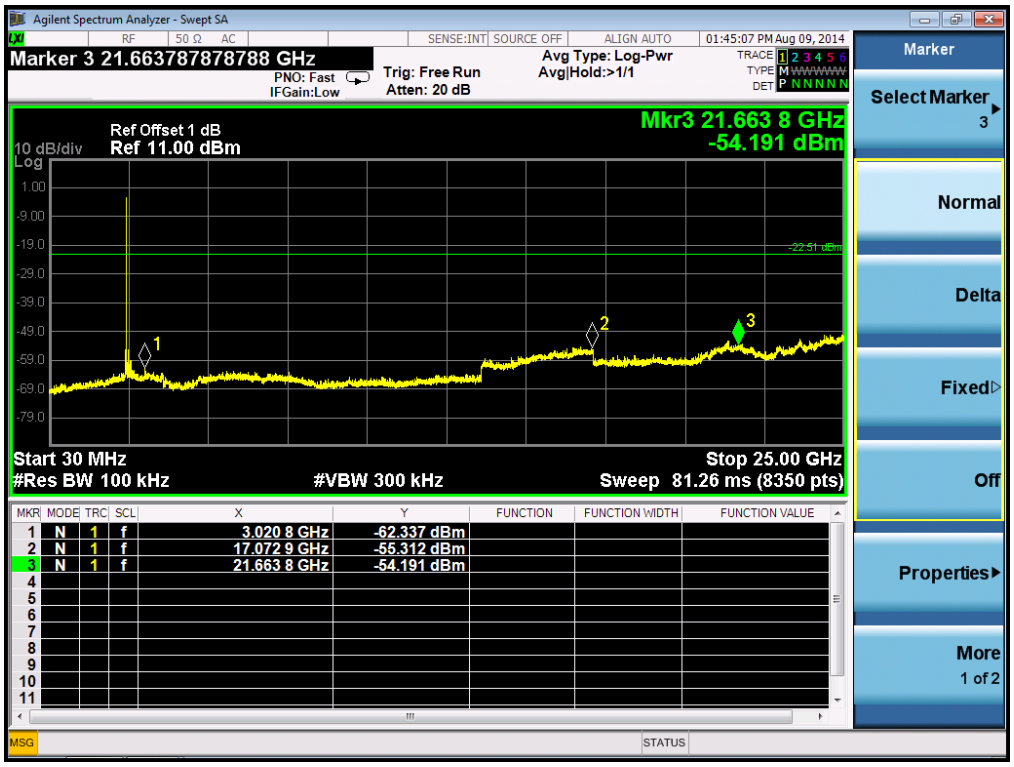
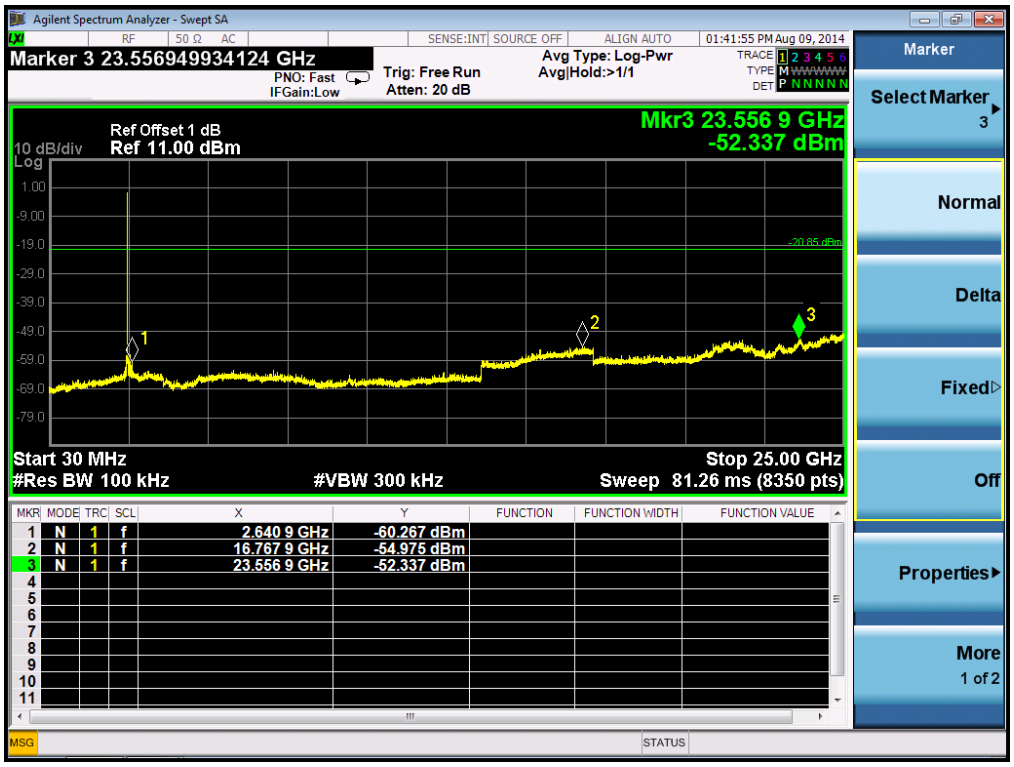


Figure 9: Conducted Spurious Emission, Mode C



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

RESULT: **PASS**

Date of testing: 2014-08-11

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 v03r02.

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.

Figure 10: Lower Band Edge Conducted, Mode A

Figure 11: Upper Band Edge Conducted, Mode C

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:	2014-08-11
Ambient temperature:	22.3°C
Relative humidity:	40.1%
Atmospheric pressure:	101.7hPa
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, must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-210 2.7.

Test procedure:

ANSI C63.10-2009, RSS-Gen 4.9 and KDB 558074 D01 DTS Meas Guidance v03r02.

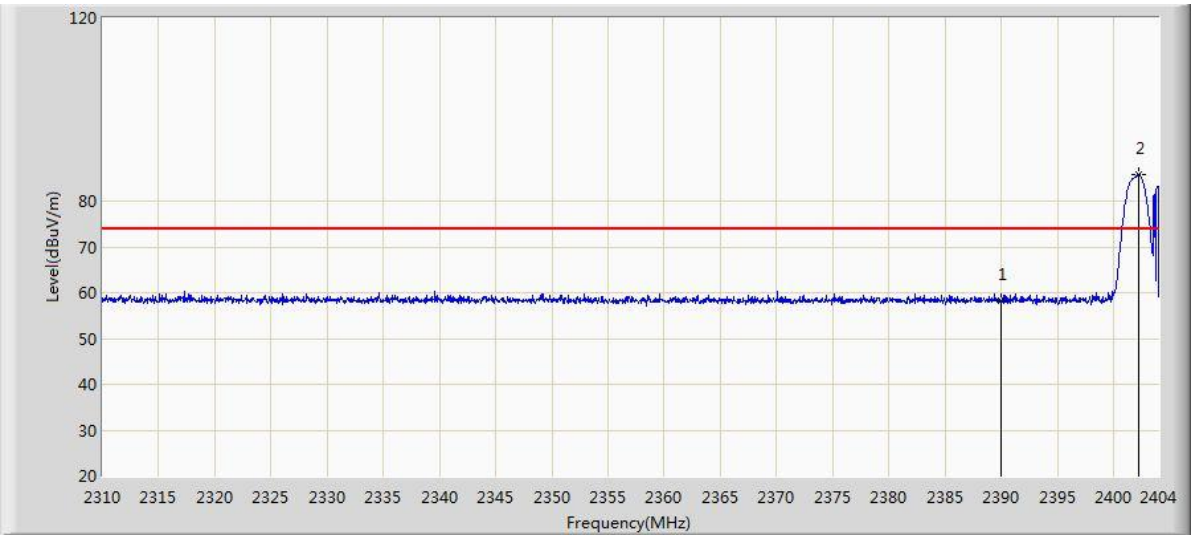
The EUT was placed on a nonconductive turntable 0.8m above the ground plane. Measurements were made at 3m distance. The EUT was rotated 360° and the antenna was raised and lowered from 1 to 4m in order to determine the emission's maximum level.

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.

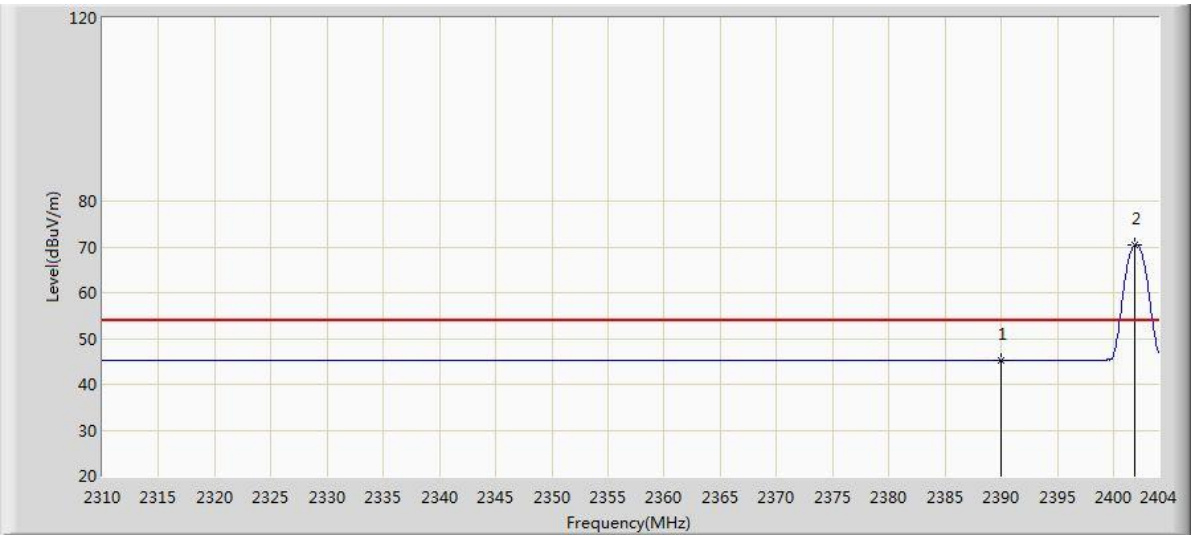
Figure 12: Band Edge Radiated Emission, Mode A

Horizontal-PK



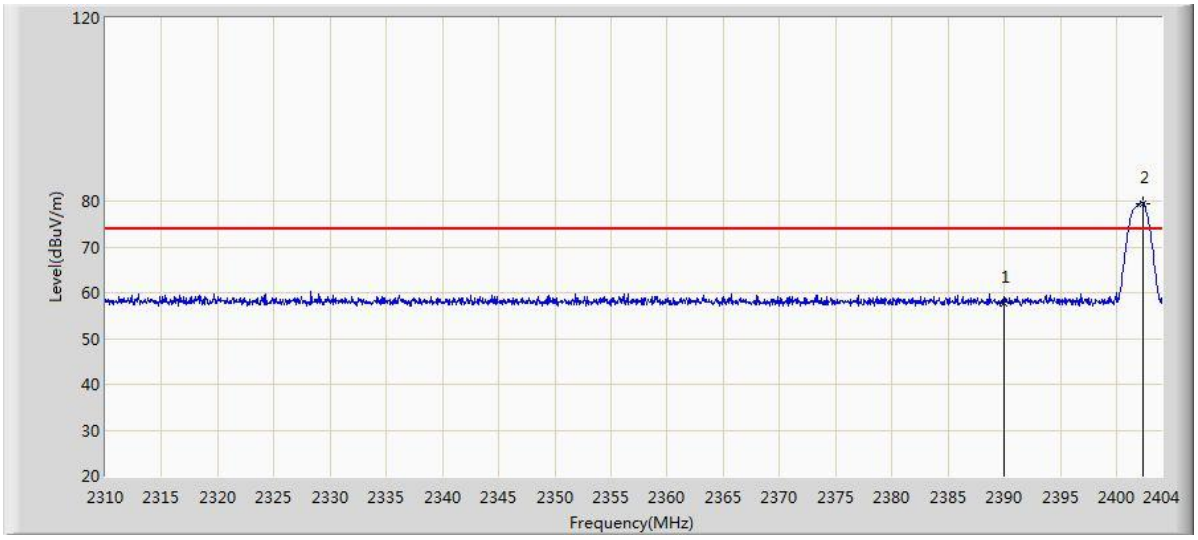
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2390.000	58.253	27.569	-15.747	74.000	30.684	PK
2402.214	85.861	55.200	11.861	74.000	30.661	PK

Horizontal-AV



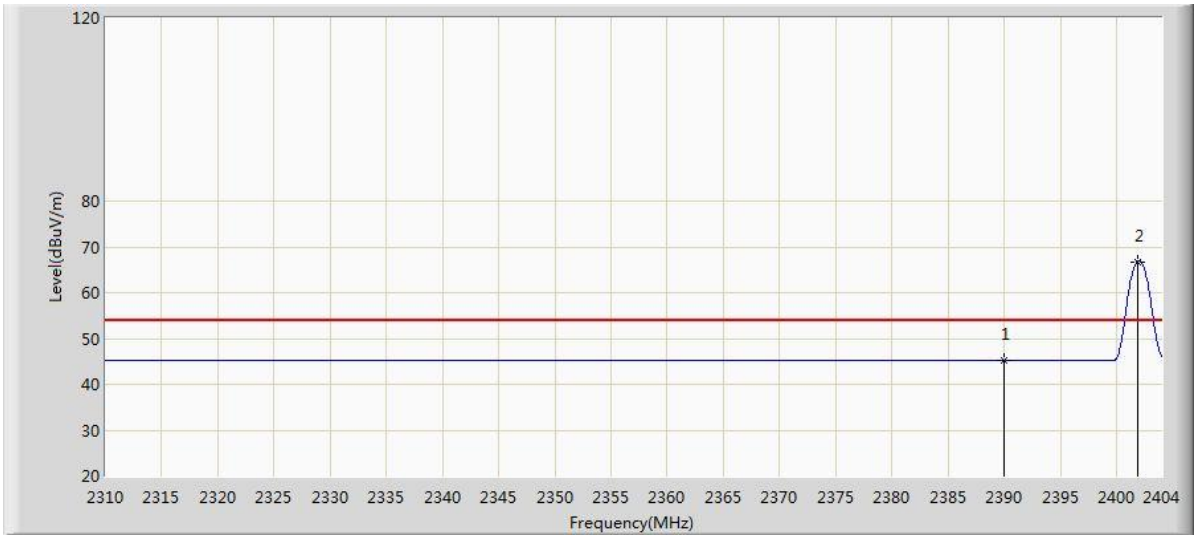
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2390.000	45.214	14.530	-8.786	54.000	30.684	AV
2401.885	70.465	39.804	16.465	54.000	30.661	AV

Vertical-PK



Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2390.000	57.695	27.011	-16.305	74.000	30.684	PK
2402.355	79.553	48.892	5.553	74.000	30.661	PK

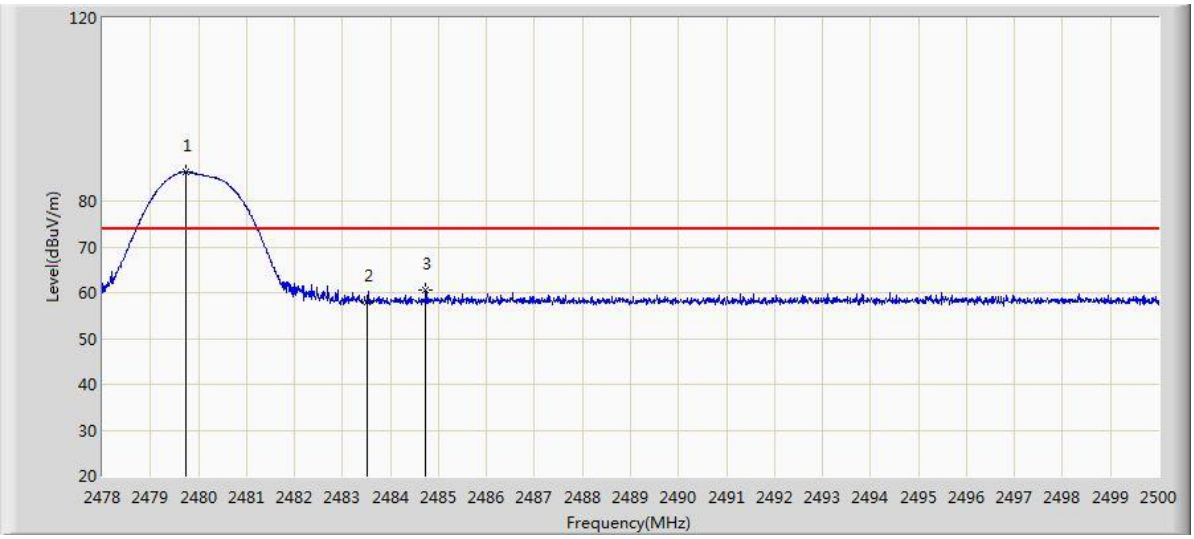
Vertical-AV



Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2390.000	45.222	14.538	-8.778	54.000	30.684	AV
2401.885	66.769	36.108	12.769	54.000	30.661	AV

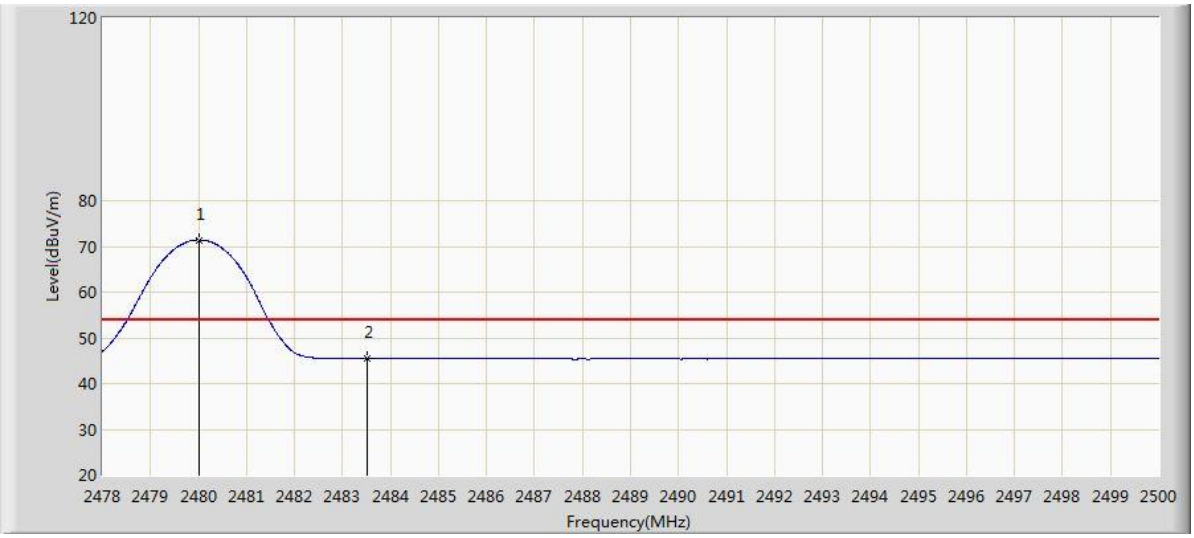
Figure 13: Band Edge Radiated Emission, Mode C

Horizontal-PK



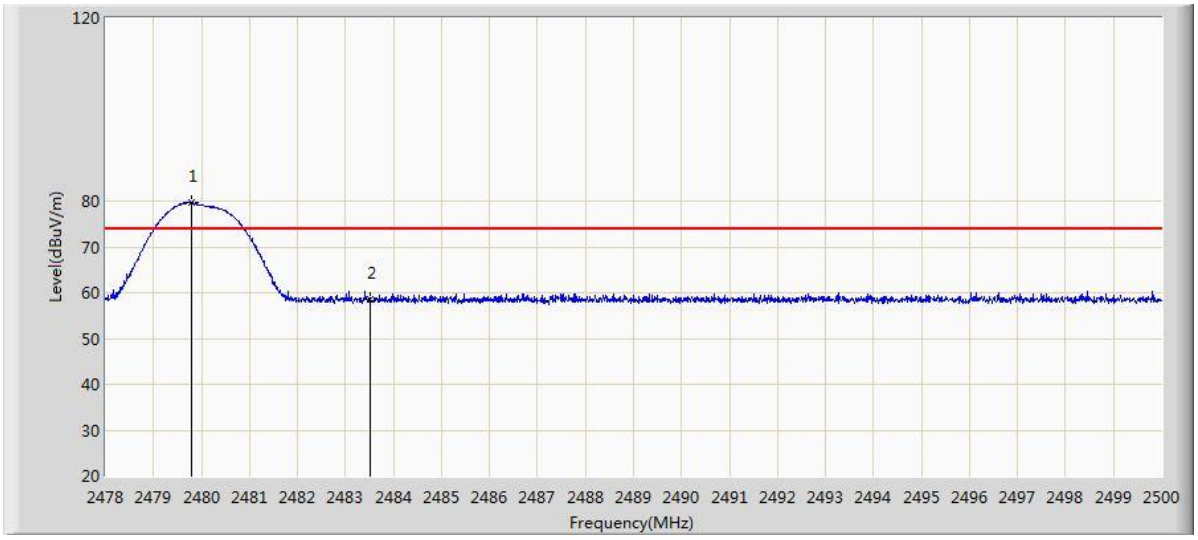
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2479.738	86.265	55.603	12.265	74.000	30.662	PK
2483.500	57.936	27.263	-16.064	74.000	30.673	PK
2484.732	60.598	29.922	-13.402	74.000	30.676	PK

Horizontal-AV



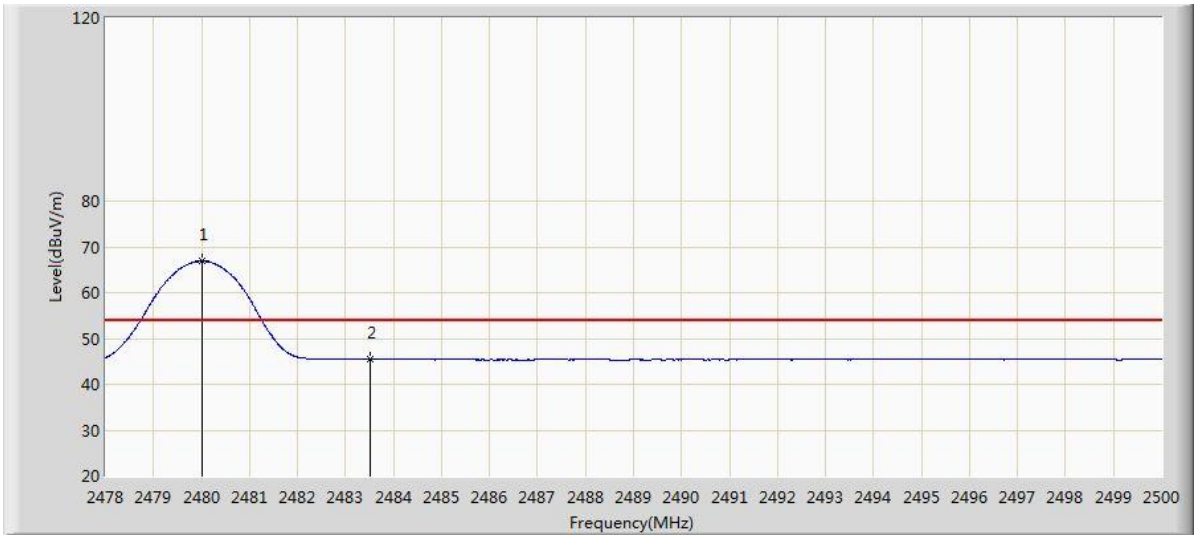
Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2480.002	71.448	40.786	17.448	54.000	30.662	AV
2483.500	45.439	14.766	-8.561	54.000	30.673	AV

Vertical-PK



Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2479.804	79.629	48.967	5.629	74.000	30.662	PK
2483.500	58.531	27.858	-15.469	74.000	30.673	PK

Vertical-AV



Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
2480.002	66.864	36.202	12.864	54.000	30.662	AV
2483.500	45.395	14.722	-8.605	54.000	30.673	AV

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:	2014-08-11
Ambient temperature:	22.3°C
Relative humidity:	40.1%
Atmospheric pressure:	101.7hPa
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, must comply with the radiated emission limits specified in FCC 15.209(a) and RSS-210 2.7.

Test procedure:

ANSI C63.10-2009, RSS-Gen 4.9 and KDB 558074 D01 DTS Meas Guidance v03r02.

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.

Table 6: Radiated Spurious Emission of Transmitter, Mode A

Mark	Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
Horizontal	168.225	18.785	40.133	-24.715	43.500	-21.349	PK
	400.055	25.236	40.175	-20.764	46.000	-14.940	PK
	5352.000	45.314	38.503	-28.686	74.000	6.811	PK
	7230.500	50.779	37.019	-23.221	74.000	13.760	PK
Vertical	73.650	29.073	50.519	-10.927	40.000	-21.446	PK
	168.225	26.376	47.724	-17.124	43.500	-21.349	PK
	4757.000	44.840	38.688	-29.160	74.000	6.152	PK
	5870.500	46.287	38.058	-27.713	74.000	8.229	PK

Table 7: Radiated Spurious Emission of Transmitter, Mode B

Mark	Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
Horizontal	168.225	19.336	40.684	-24.164	43.500	-21.349	PK
	400.055	25.155	40.094	-20.845	46.000	-14.940	PK
	5964.000	46.449	38.111	-27.551	74.000	8.338	PK
	7298.500	50.105	36.126	-23.895	74.000	13.979	PK
Vertical	79.470	29.888	52.047	-10.112	40.000	-22.158	PK
	168.225	26.965	48.313	-16.535	43.500	-21.349	PK
	5768.500	46.142	38.252	-27.858	74.000	7.890	PK
	8114.500	51.419	36.358	-22.581	74.000	15.060	PK

Table 8: Radiated Spurious Emission of Transmitter, Mode C

Mark	Frequency [MHz]	Measure Level [dBuV/m]	Reading Level [dBuV]	Over Limit [dB]	Limit [dBuV/m]	Factor	Type
Horizontal	168.225	19.232	40.580	-24.268	43.500	-21.349	PK
	528.095	21.157	34.124	-24.843	46.000	-12.967	PK
	5615.500	46.156	38.749	-27.844	74.000	7.406	PK
	7247.500	49.527	35.693	-24.473	74.000	13.834	PK
Vertical	75.590	30.050	51.938	-9.950	40.000	-21.889	PK
	168.225	26.343	47.691	-17.157	43.500	-21.349	PK
	4961.000	44.886	38.096	-29.114	74.000	6.790	PK
	7264.500	50.139	36.244	-23.861	74.000	13.895	PK

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

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:	2014-08-11
Ambient temperature:	22.3°C
Relative humidity:	40.1%
Atmospheric pressure:	101.7hPa
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 and RSS-Gen.

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.

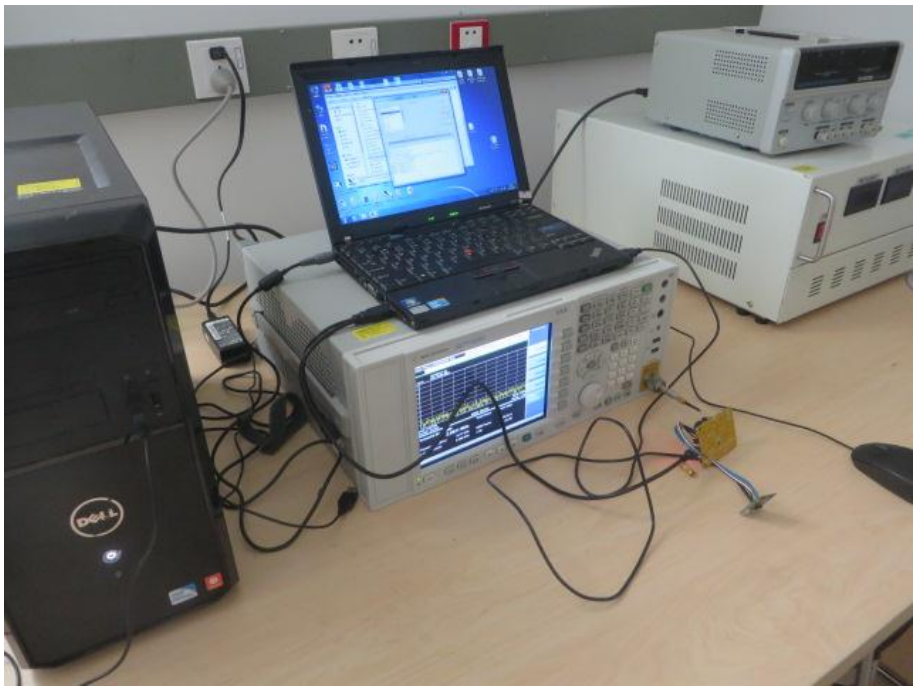
Measurements were taken using both horizontal and vertical antenna polarizations.

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.

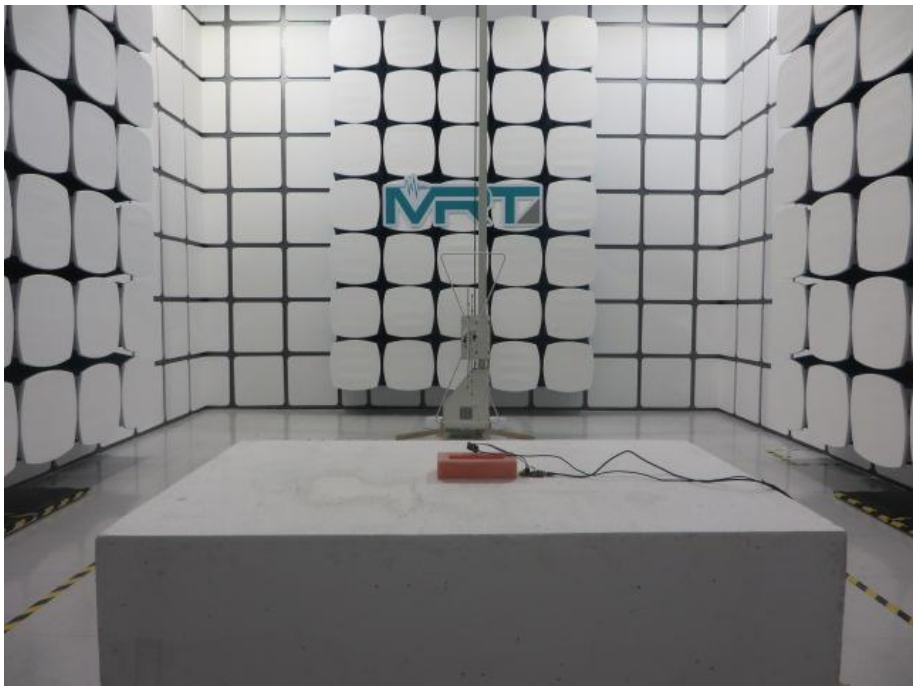
The highest emission amplitudes relative to the appropriate limit were recorded in this report. No spurious emission was found in the range 30MHz – 12500MHz. Emission in mode D, E, F, all signals found in the pre-testing were more than 20 dB below the limit.

7. Photographs of the Test Setup

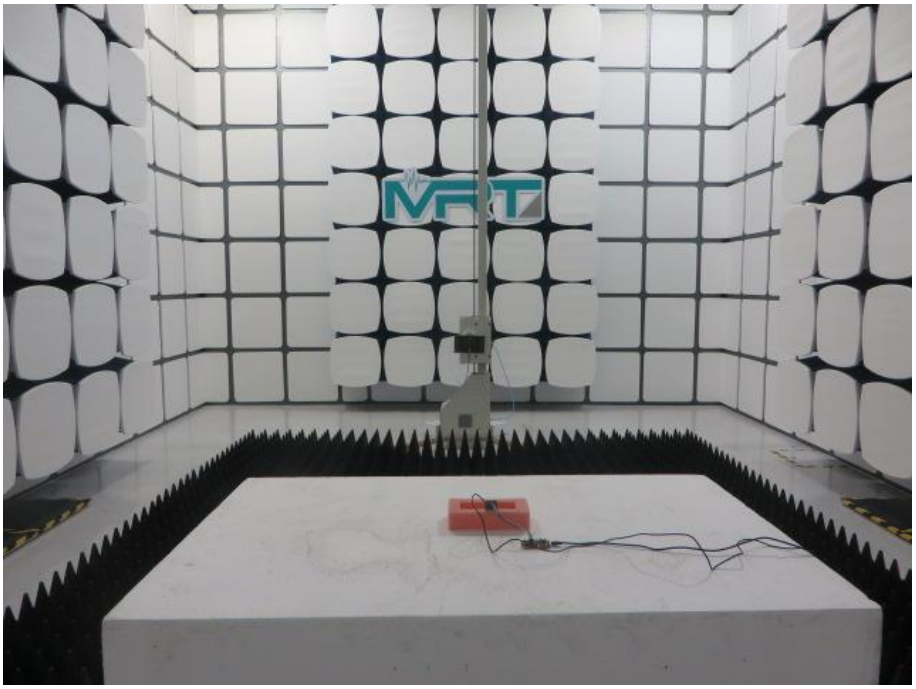
Photograph 1: Set-up for Conducted RF test at Antenna Port



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



Photograph 3: Set-up for Radiated Spurious Emission, Above 1GHz



8. List of Tables

9. List of Figures

10. List of Photographs