REPORT No.: SZ16030023W02

FCC RF TEST REPORT

APPLICANT	:	Digital Spring LLC
PRODUCT NAME	:	Soil Moisture Sensor Stick
MODEL NAME	:	DS-0919
TRADE NAME	:	Daisy Sensor
BRAND NAME	:	Daisy Sensor
FCC ID	:	2AHNK-DS0919
STANDARD(S)	:	47 CFR Part 15 Subpart C
ISSUE DATE	:	2016-04-12

SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

MORLAB GROUP
FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road, Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China
Tel: 86-755-36698555 Fax: 86-755-36698525
Http://www.morlab.com E-mail: service@morlab.cn

DIRECTORY

Change History		
Issue	Date	Reason for change
1.0	2016-04-12	First edition

TEST REPORT DECLARATION

Applicant	Digital Spring LLC
Applicant Address	11496 Meadow Grass LN, San Diego, CA 92128
Manufacturer	Swi Wah Plastic Tooling and Molding Co.
Manufacturer Address	Dongguan City, Guang Dong Province 523002 China
Product Name	Soil Moisture Sensor Stick
Model Name	DS-0919
Brand Name	Daisy Sensor
HW Version	V1.0
SW Version	V1.0
Test Standards	47 CFR Part 15 Subpart C
Test Date	2016-03-11 to 2016-03-30
Test Result	PASS

Tested by : Zou Jian

Zou Jian

Reviewed by : Qiu Xiaojun

Qiu Xiaojun

Approved by : Peng Huarui

Peng Huarui

1. TECHNICAL INFORMATION

Note: Provide by applicant.

1.1 Applicant Information

Company:	Digital Spring LL
Address:	11496 Meadow Grass LN, San Diego, CA 92128

1.2 Equipment under Test (EUT) Description

Brand Name:	Daisy Sensor
Trade Name:	Daisy Sensor
Model Name:	DS-0919
Frequency Range:	The frequency range used is 2402MHz - 2480MHz (40 channels, at intervals of 2MHz);
Modulation Type:	GFSK
Antenna Type:	PCB Antenna
Antenna Gain:	3.3 dBi

NOTE:

The EUT is a Soil Moisture Sensor Stick, it contain Bluetooth 4.0 LE EUT operating at 2.4GHz ISM band; the frequencies allocated for the Bluetooth 4.0 LE is F(MHz)=2402+2*n (0<=n<=39). The lowest, middle, highest channel numbers of the Bluetooth EUT used and tested in this report are separately 0 (2402MHz), 19 (2440MHz) and 39 (2480MHz).

For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.2.1 Identification of all used EUTs

The EUT identity consists of numerical and letter characters, the letter character indicates the test sample, and the following two numerical characters indicate the software version of the test sample.

EUT Identity	Hardware Version	Software Version
A01	V1.0	V1.0

1.3 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 15 Subpart C (Bluetooth, 2.4GHz ISM band radiators) for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 15 (10-1-13 Edition)	Radio Frequency Devices

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Test Date	Result
1	15.203	Antenna Requirement	N.A	**PASS**
2	15.247(b)	Peak Output Power	Mar 22, 2016	**PASS**
3	15.247(a)	Bandwidth	Mar 22, 2016	**PASS**
4	15.247(d)	Conducted Spurious Emission and Band Edge	Mar 22, 2016	**PASS**
5	15.247(d)	Restricted Frequency Bands	Mar 30, 2016	**PASS**
6	15.209 ,15.247(d)	Radiated Emission	Mar 30, 2016	**PASS**
7	15.247(e)	Power spectral density (PSD)	Mar 22, 2016	**PASS**

The tests of Conducted Emission and Radiated Emission were performed according to the method of measurements prescribed in ANSI C63.10 2013.

1.3.1 Test Environment Conditions

During the measurement, the environmental conditions were within the listed ranges:

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR PART 15C REQUIREMENTS

2.1 Antenna requirement

2.1.1 Applicable Standard

According to FCC 15.203, 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.

2.1.2 Result: Compliant

The EUT has a permanently and irreplaceable attached antenna. Please refer to the EUT internal photos.

2.2 Peak Output Power

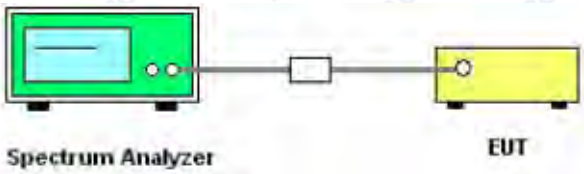
2.2.1 Requirement

According to FCC section 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: The maximum peak conducted output power of the intentional radiator shall not exceed 1 Watt.

2.2.2 Test Description

The measured output power was calculated by the reading of the spectrum analyzer and calibration.

A. Test Setup:



The EUT (Equipment under the test) which is powered by the Battery is coupled to the Spectrum analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading, all test result in Spectrum analyzer.

B. Equipments List:

Please reference ANNEX A (1.4).

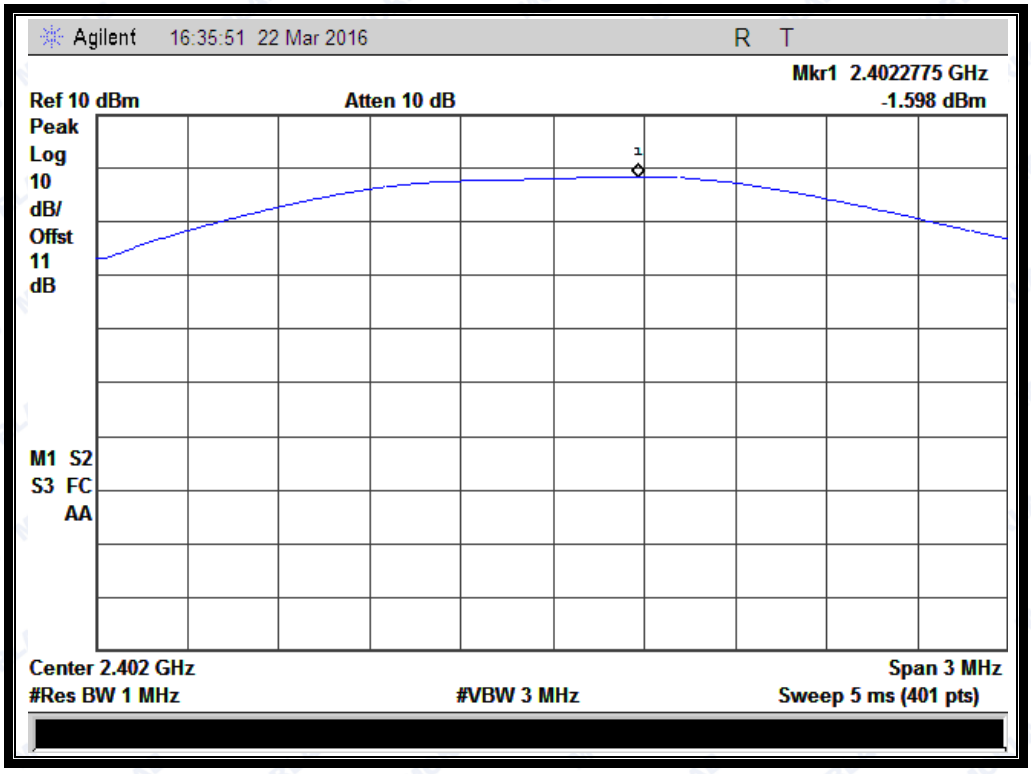
2.2.3 Test Result

The lowest, middle and highest channels are selected to perform testing to verify the conducted RF output peak power of the EUT.

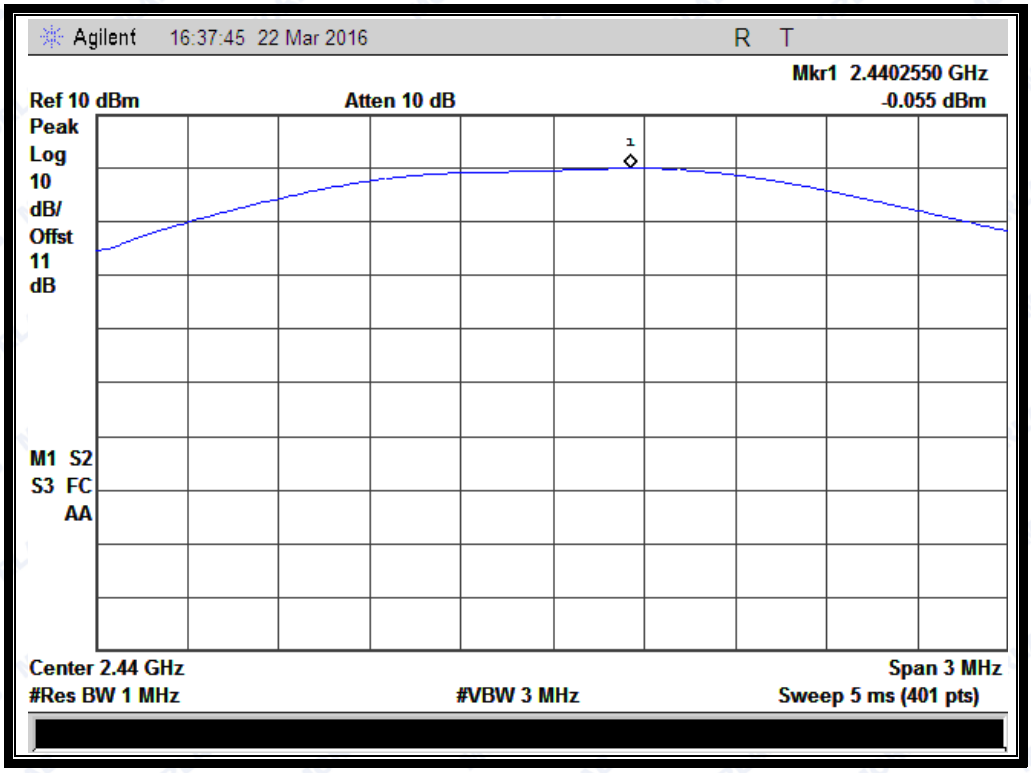
A. Test Verdict:

Channel	Frequency (MHz)	Measured Output Peak Power		Refer to Plot	Limit		Verdict
		dBm	W		dBm	W	
0	2402	-1.60	0.00069	Plot A	30	1	PASS
19	2440	-0.06	0.00099	Plot B			PASS
39	2480	1.78	0.00151	Plot C			PASS

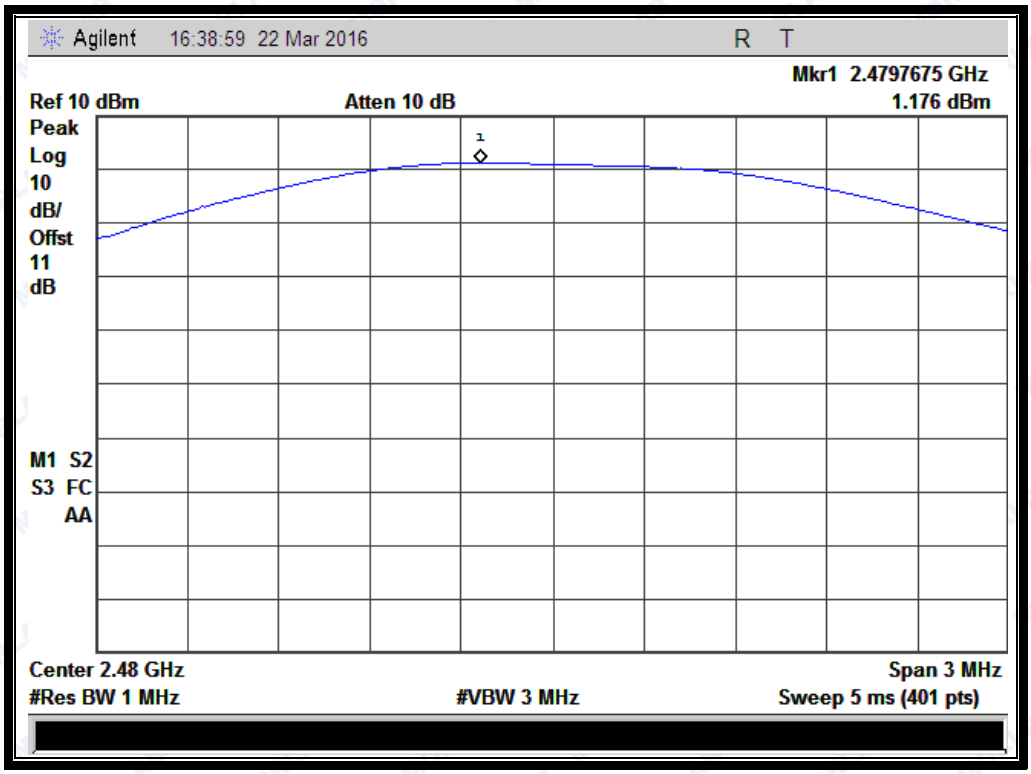
B. Test Plots:



(Plot A: Channel 0: 2402MHz)



(Plot B: Channel 19: 2440MHz)



(Plot C: Channel 39: 2480MHz)

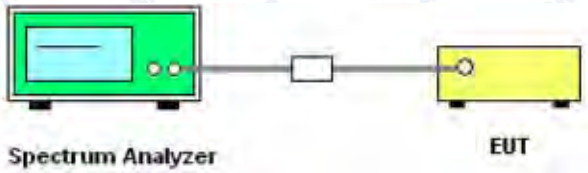
2.3 6dB Bandwidth

2.3.1 Requirement

According to FCC section 15.247(a) (2), 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.

2.3.2 Test Description

A. Test Set:



The EUT which is powered by the battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

B. Equipments List:

Please reference ANNEX A(1.4).

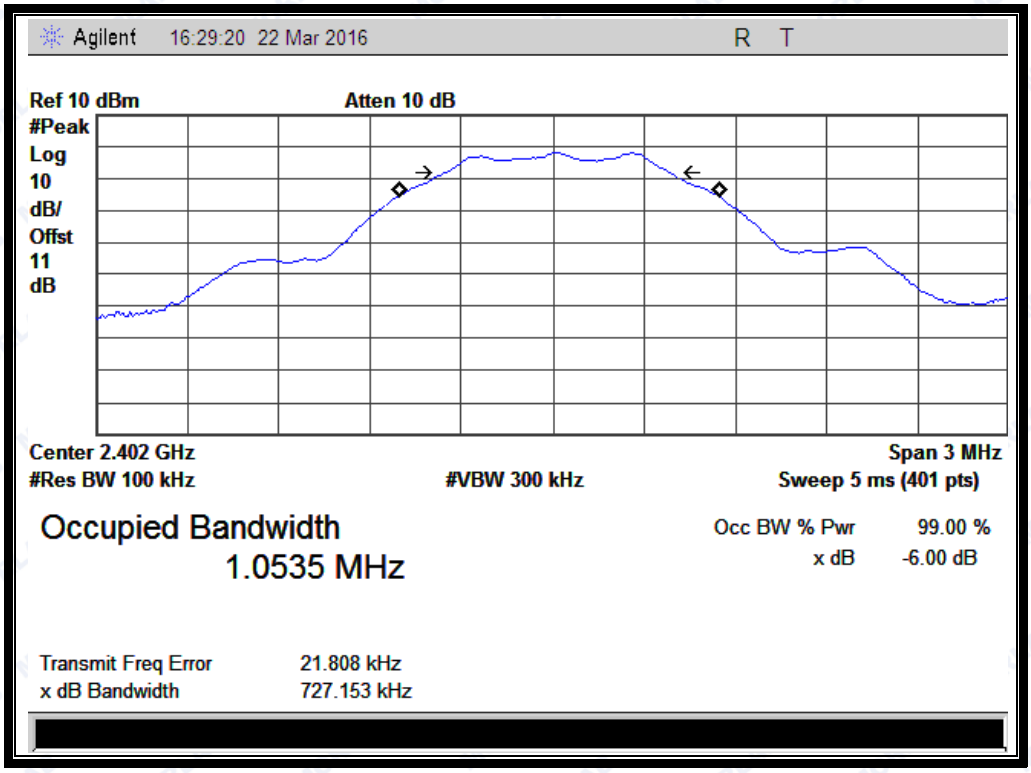
2.3.3 Test Result

The lowest, middle and highest channels are selected to perform testing to record the 6 dB bandwidth of the EUT.

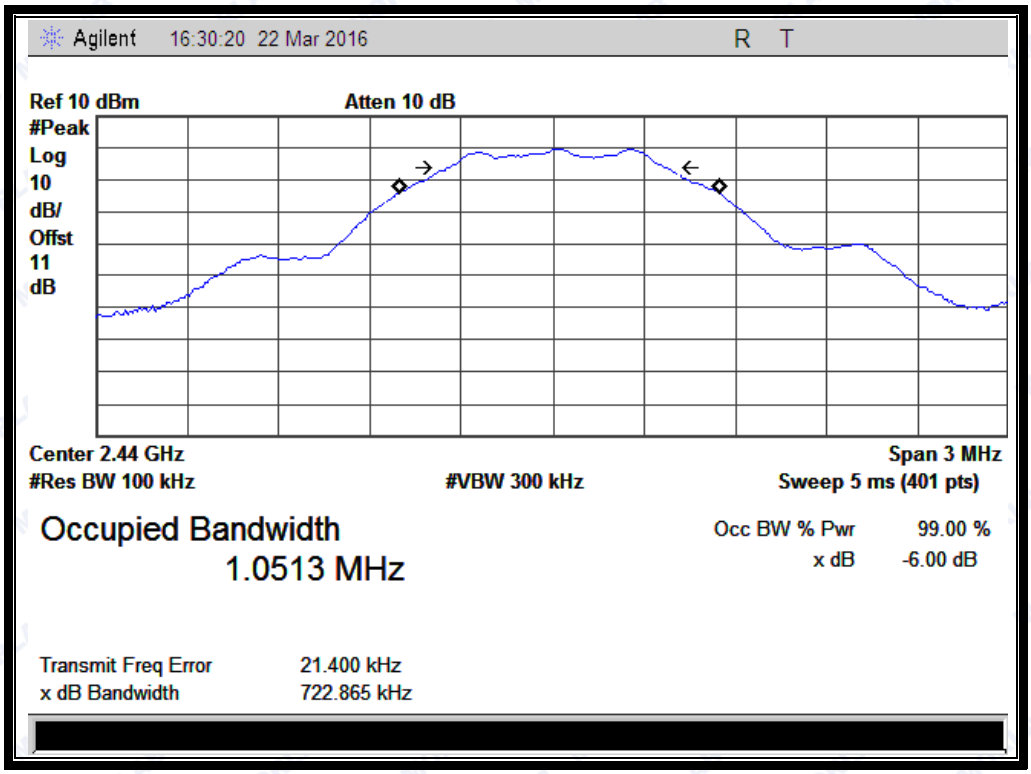
A. Test Verdict:

Channel	Frequency (MHz)	6 dB Bandwidth (MHz)	Refer to Plot	Limits(kHz)	Result
0	2402	0.7272	Plot A	≥500	PASS
19	2440	0.7229	Plot B	≥500	PASS
39	2480	0.7358	Plot C	≥500	PASS

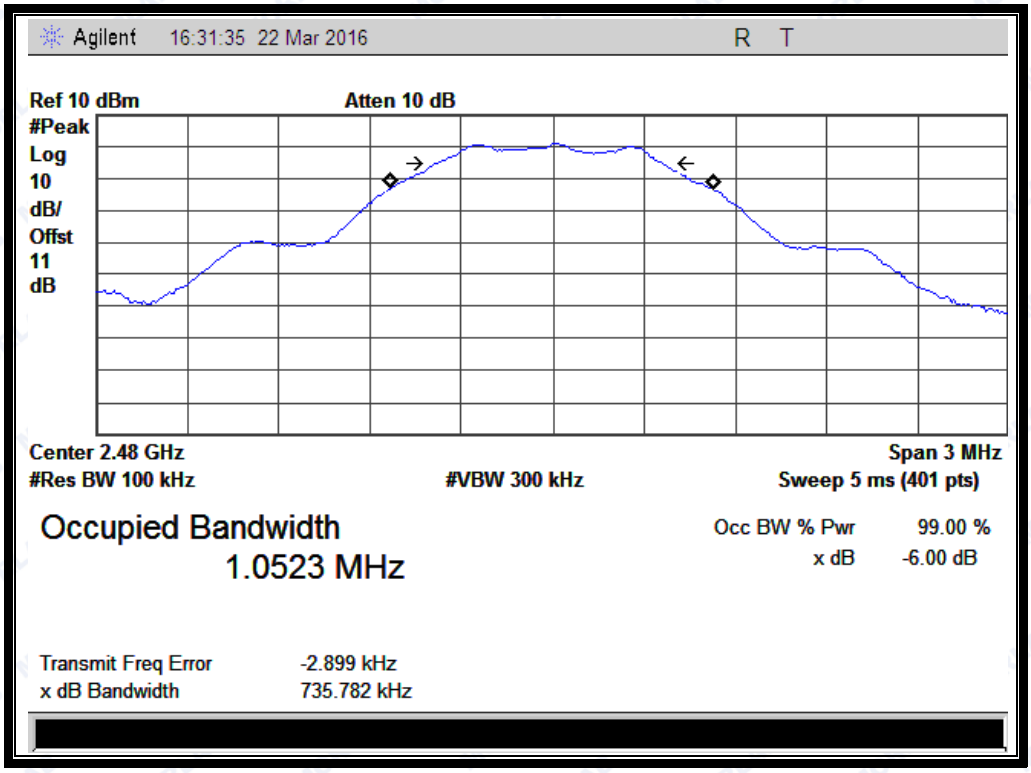
B. Test Plots:



(Plot A: Channel 0: 2402MHz)



(Plot B: Channel 19: 2440 MHz)



(Plot C: Channel 39: 2480MHz)

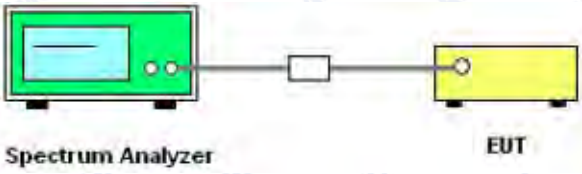
2.4 Conducted Spurious Emissions and Band Edge

2.4.1 Requirement

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement.

2.4.2 Test Description

A. Test Set:



The EUT which is powered by the Battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

Make the measurement with the spectrum analyzer's resolution bandwidth (RBW) = 100 kHz. In order to make an accurate measurement, set the span greater than RBW.

B. Equipments List:

Please reference ANNEX A (1.4).

2.4.3 Test Result

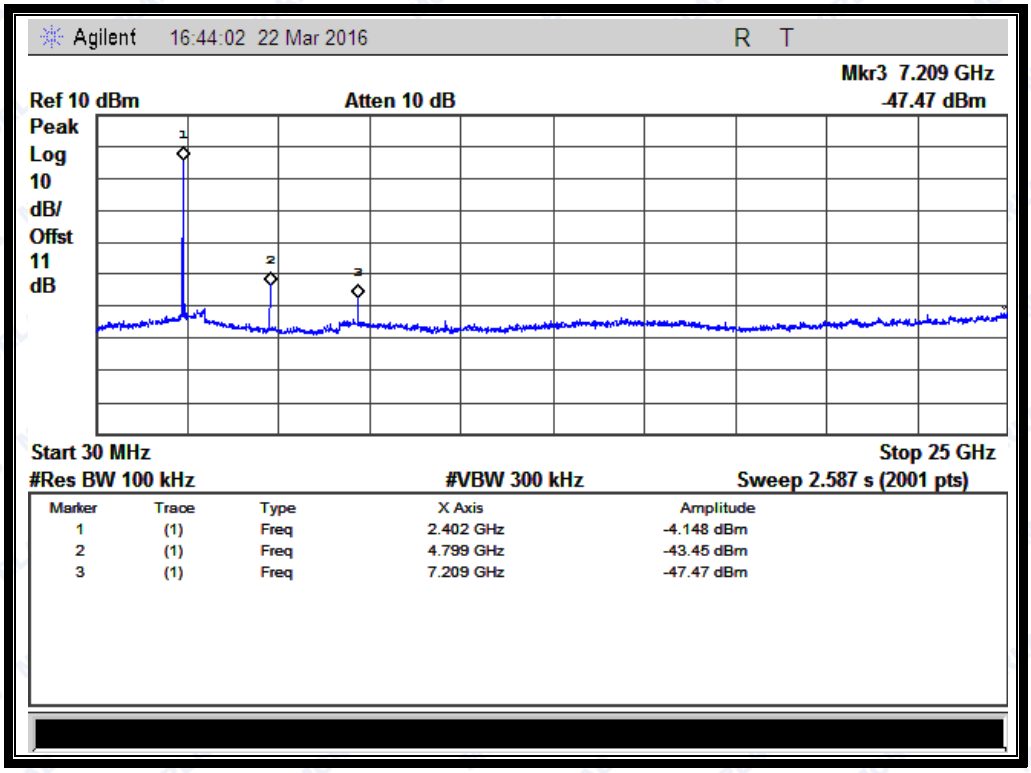
The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the spurious emissions.

A. Test Verdict:

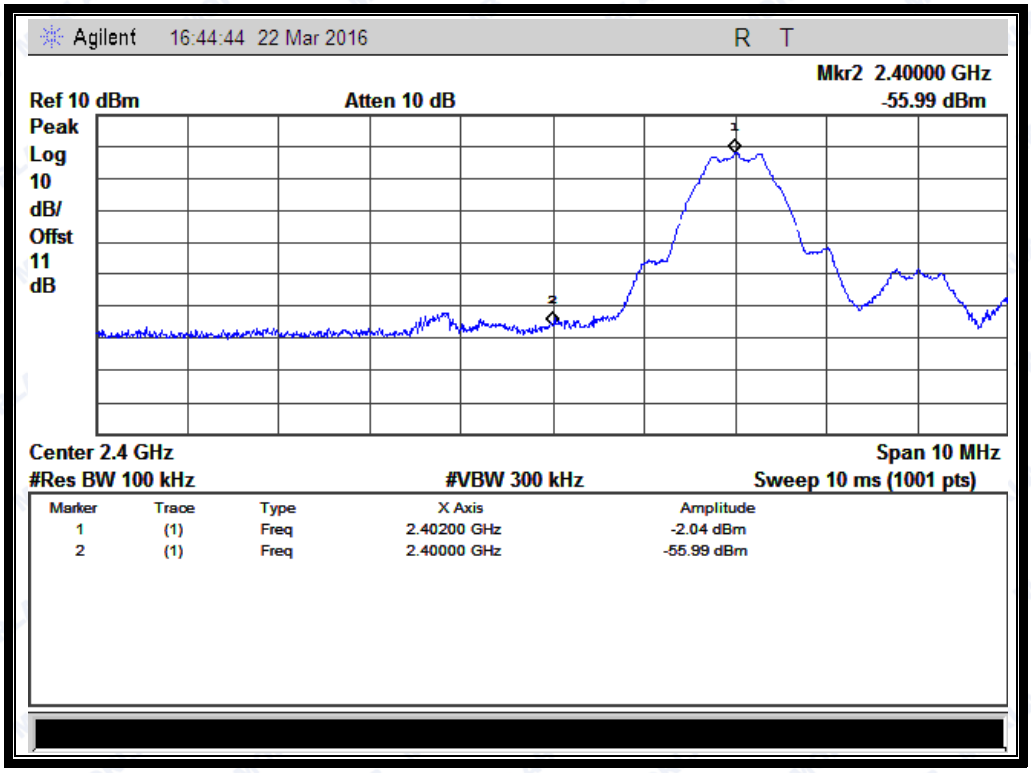
Channel	Frequency (MHz)	Measured Max. Out of Band Emission (dBm)	Refer to Plot	Limit (dBm)		Verdict
				Carrier Level	Calculated -20dBc Limit	
0	2402	-43.45	Plot A.1	-4.15	-24.15	PASS
19	2440	-41.87	Plot B.1	-0.71	-20.71	PASS
39	2480	-39.55	Plot C.1	-0.34	-20.34	PASS

B. Test Plots:

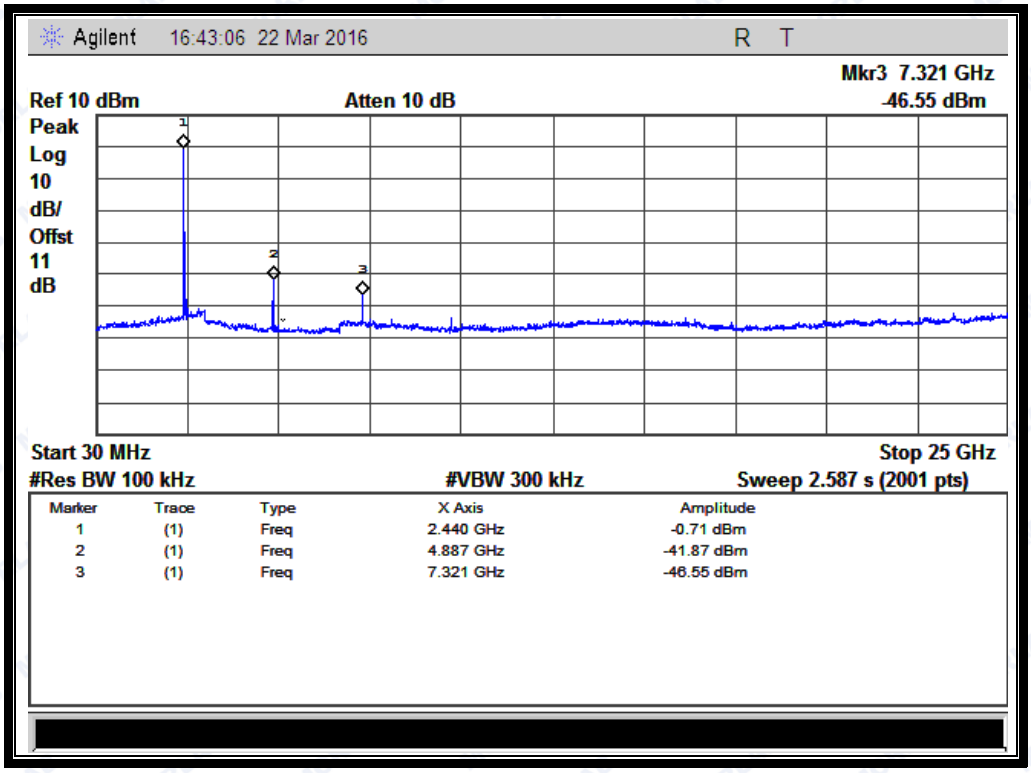
Note: the power of the EUT transmitting frequency should be ignored.



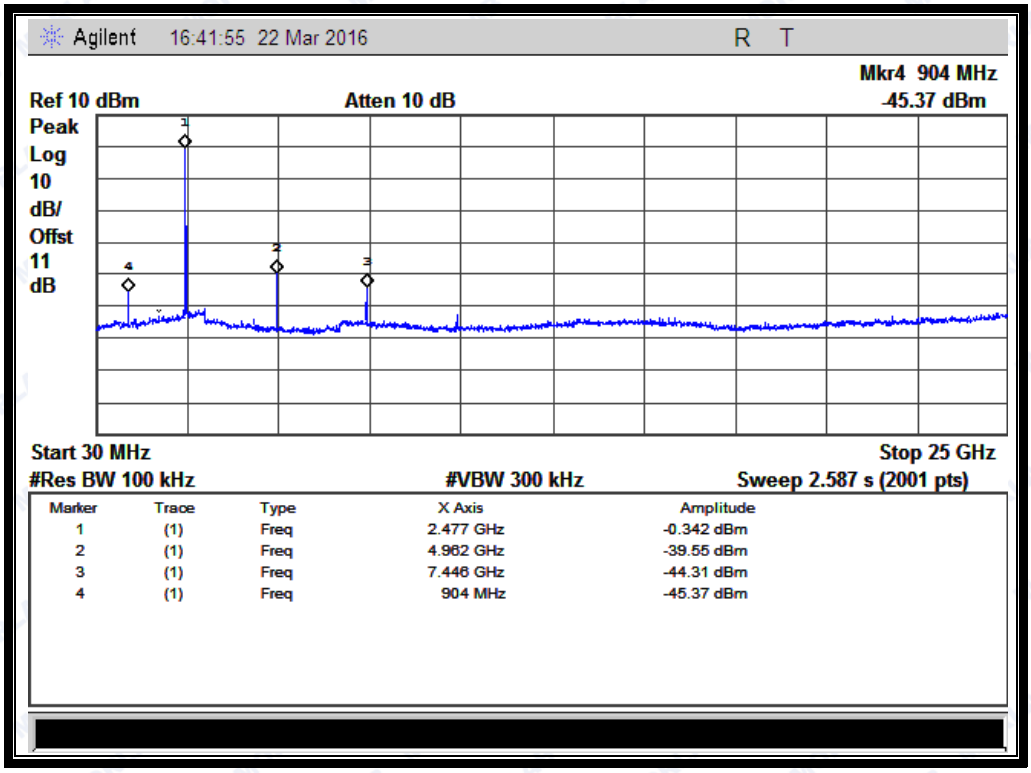
(Plot A.1: Channel = 0, 30MHz to 25GHz)



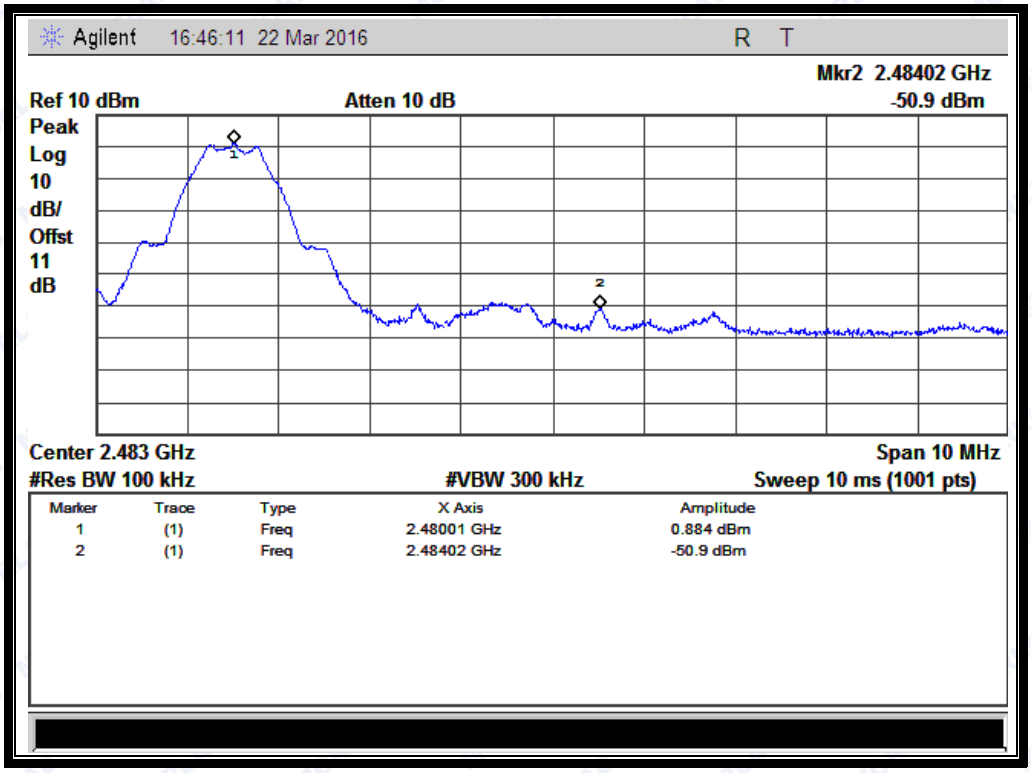
(Band Edge@ Channel = 0)



(Plot B.1: Channel = 19, 30MHz to 25GHz)



(Plot C.1: Channel = 39, 30MHz to 25GHz)



(Band Edge@ Channel = 39)

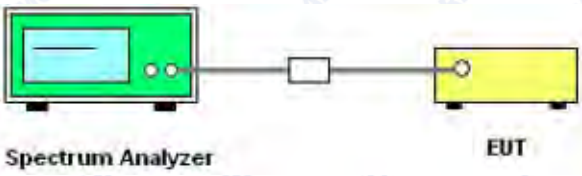
2.5 Power spectral density (PSD)

2.5.1 Requirement

For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density.

2.5.2 Test Description

A. Test Set:



The EUT which is powered by the battery, is coupled to the Spectrum Analyzer; the RF load attached to the EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

B. Equipments List:

Please reference ANNEX A (1.4).

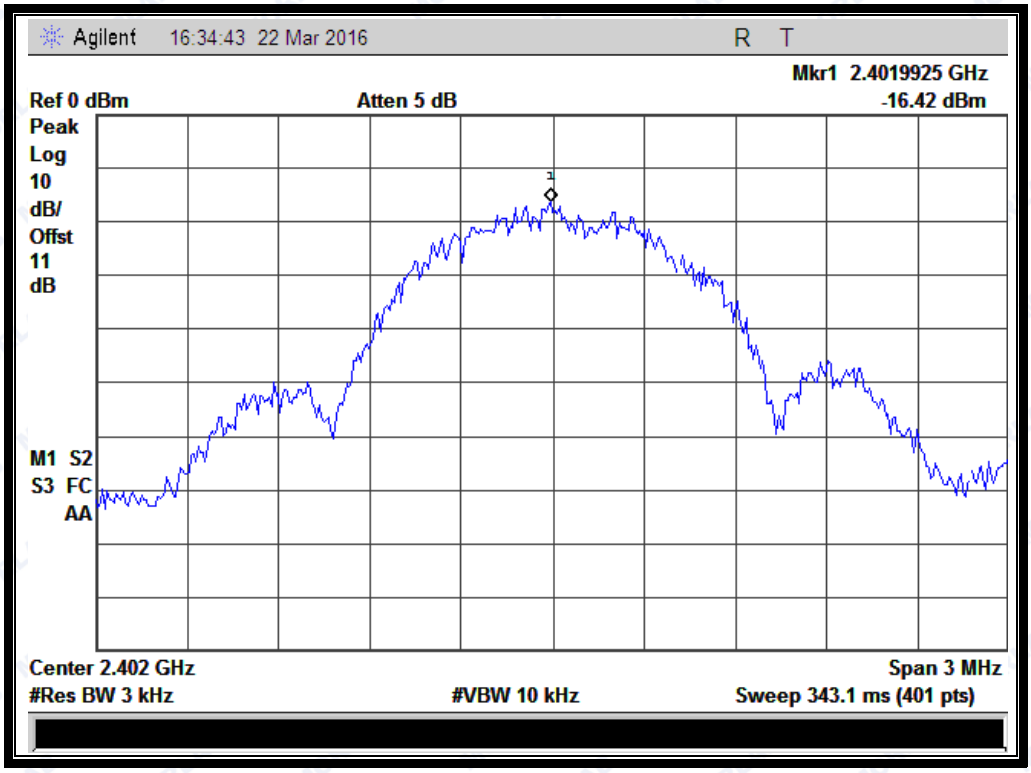
2.5.3 Test Result

The lowest, middle and highest channels are tested.

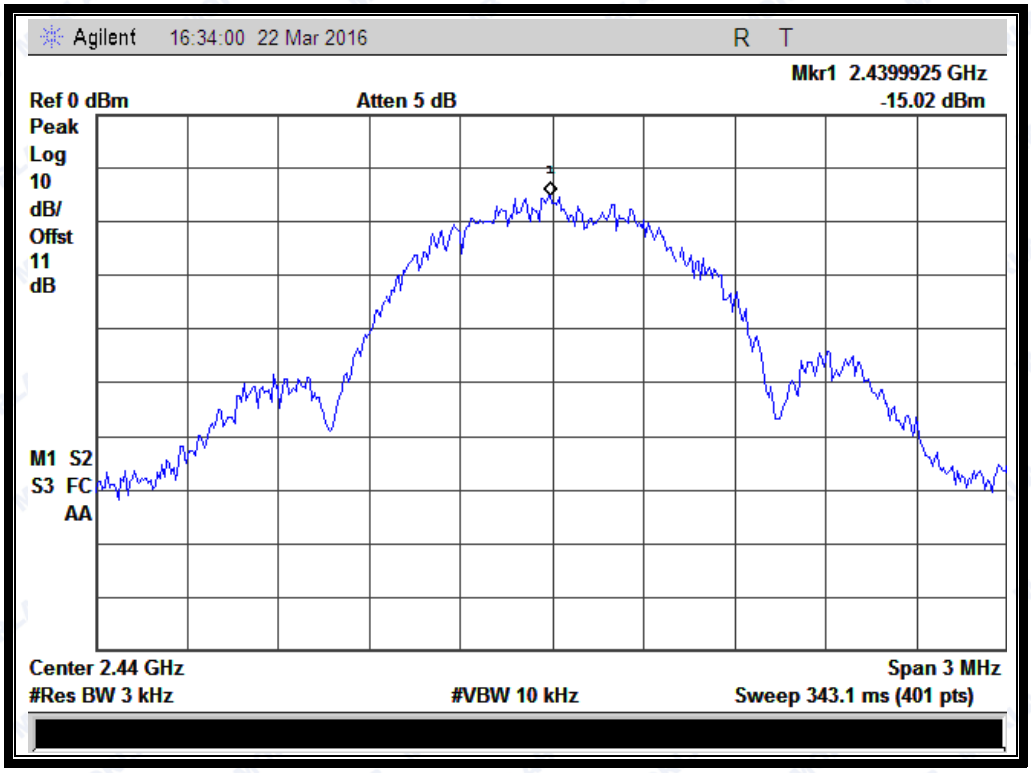
A. Test Verdict:

Spectral power density (dBm/3kHz)					
Channel	Frequency (MHz)	Measured PSD (dBm/3kHz)	Refer to Plot	Limit (dBm/3kHz)	Verdict
0	2402	-16.42	Plot A	8	PASS
19	2440	-15.02	Plot B	8	PASS
39	2480	-13.66	Plot C	8	PASS
Measurement uncertainty: ±1.3dB					

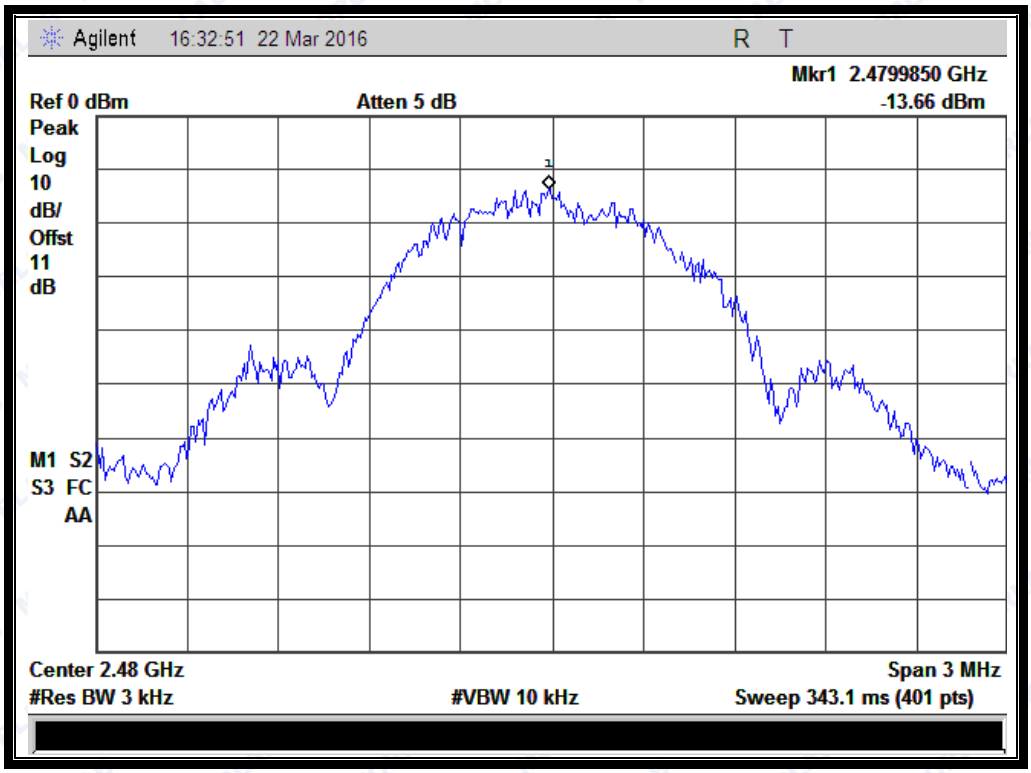
B. Test Plots:



(Plot A: Channel = 0)



(Plot B: Channel = 19)



(Plot C: Channel = 39)

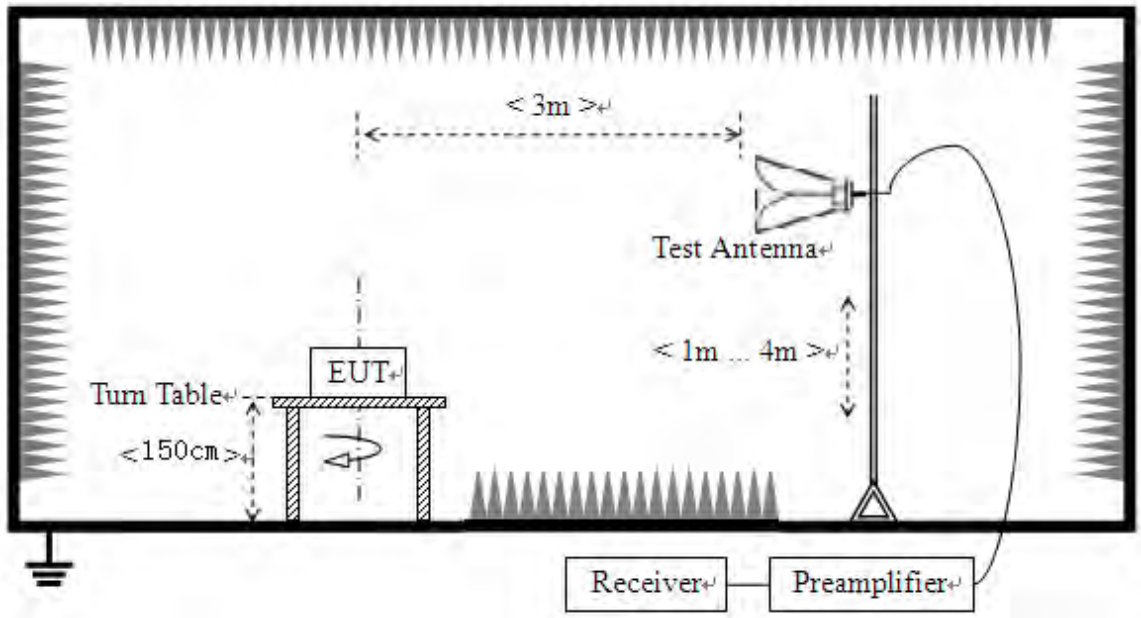
2.6 Restricted Frequency Bands

2.6.1 Requirement

According to FCC section 15.247(d), in any 100kHz 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 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, In addition, radiated emissions which fall in the restricted bands, as defined in 15.205(a), must also comply with the radiated emission limits specified in 15.209(a).

2.6.2 Test Description

A. Test Setup



The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength.

B. Equipments List:

Please reference ANNEX A(1.4).

2.6.3 Test Result

The lowest and highest channels are tested to verify the Restricted Frequency Bands.

The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

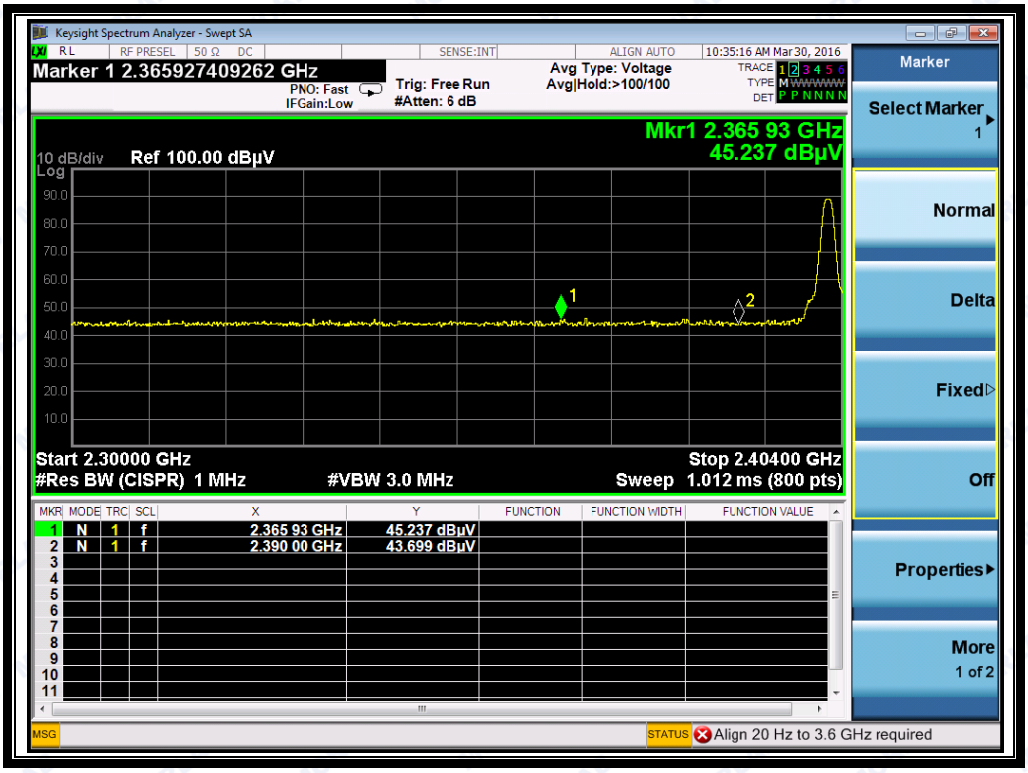
A_{Factor}: Antenna Factor at 3m

Note: Restricted Frequency Bands were performed when antenna was at vertical and horizontal polarity, and only the worse test condition (vertical) was recorded in this test report.

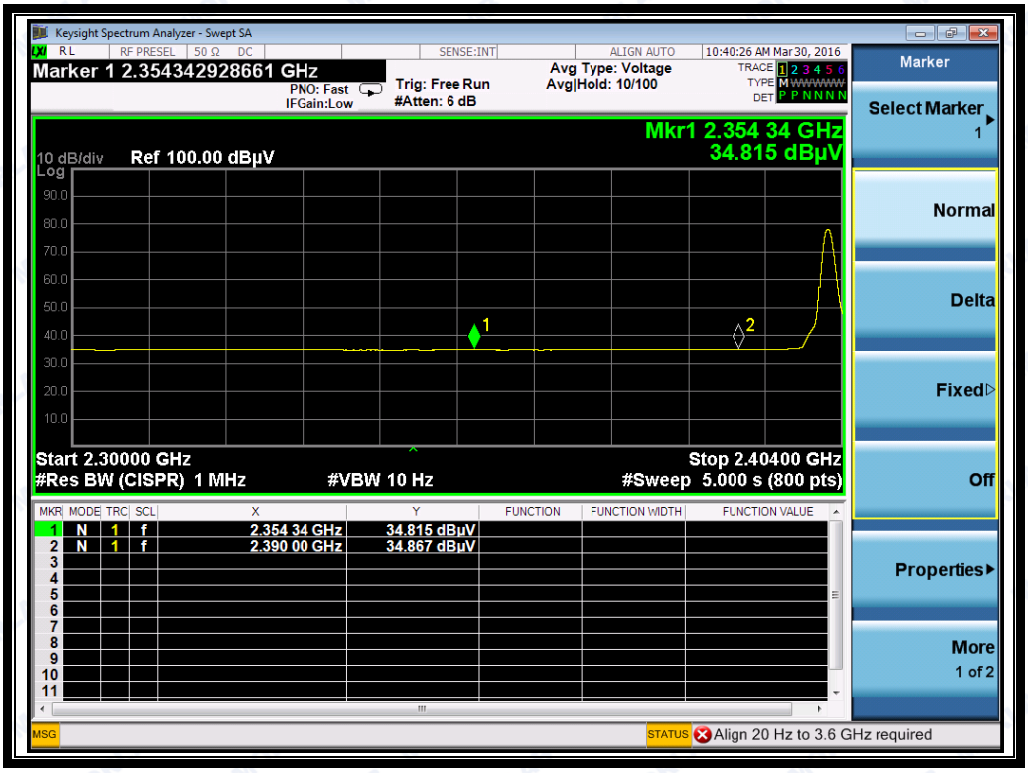
A. Test Verdict:

Channel	Frequency (MHz)	Detector	Receiver Reading U_R (dBuV)	A_T (dB)	A_{Factor} (dB@3m)	Max. Emission E (dBμV/m)	Limit (dBμV/m)	Verdict
		PK/ AV						
0	2365.93	PK	45.24	-33.63	32.56	44.17	74	Pass
0	2354.34	AV	34.82	-33.63	32.56	33.75	54	Pass
39	2483.65	PK	52.20	-33.18	32.5	51.52	74	Pass
39	2483.62	AV	41.55	-33.18	32.5	40.87	54	Pass

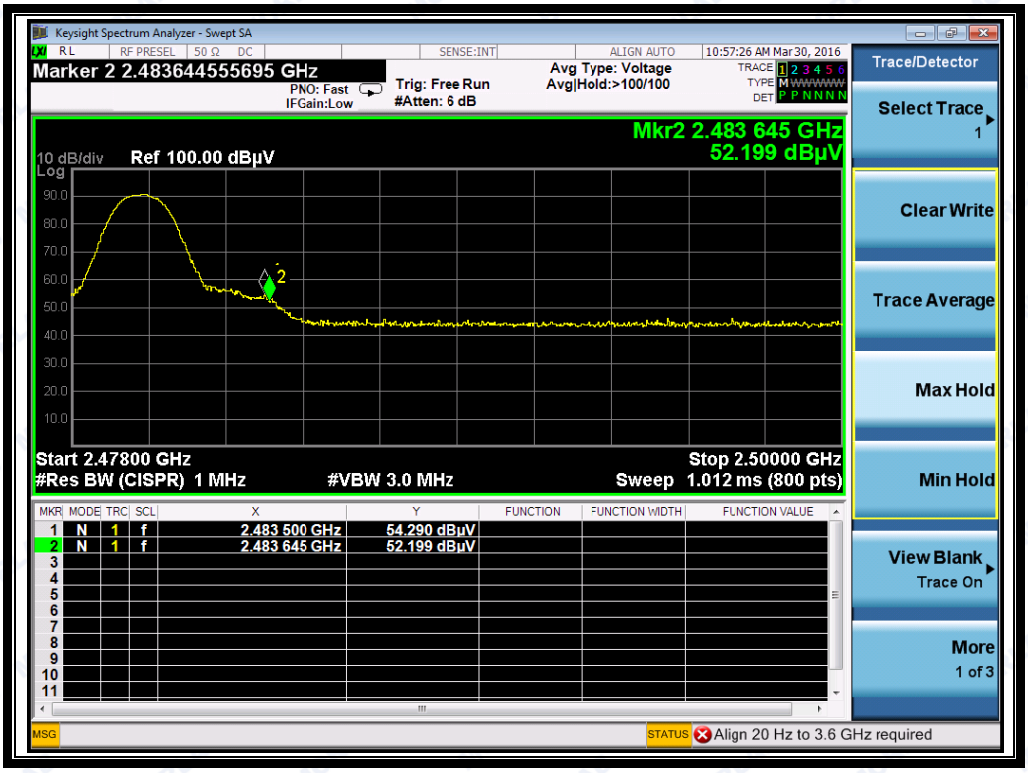
B. Test Plots:



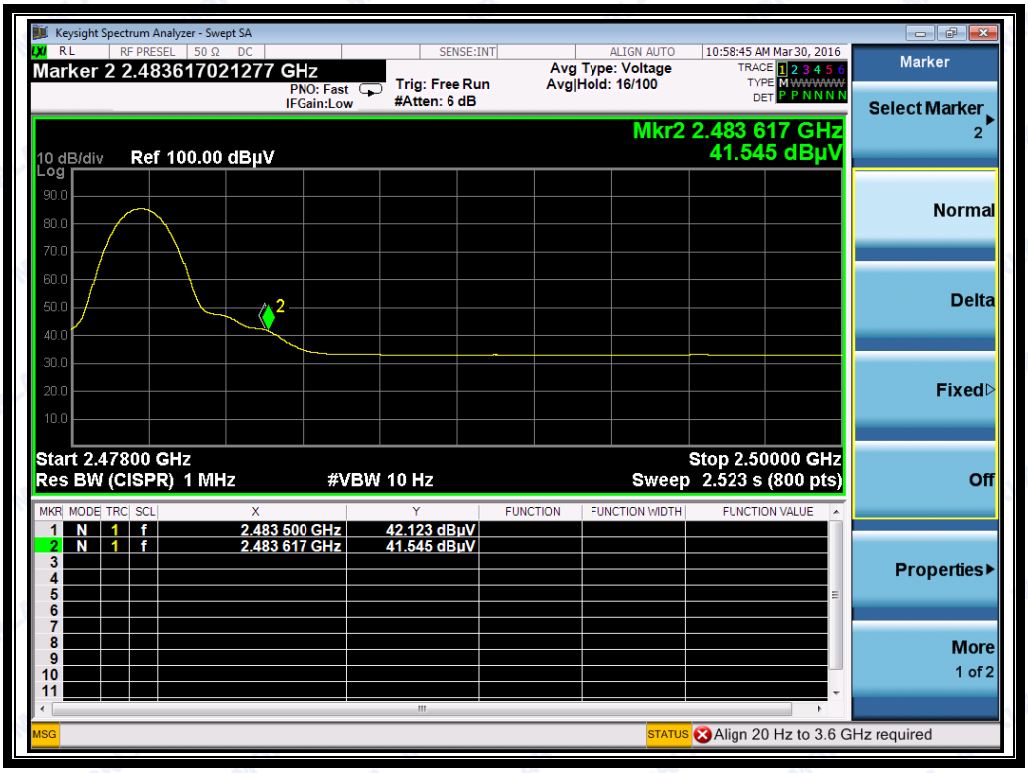
(Plot A1: Channel = 0 PEAK)



(Plot A2: Channel = 0 AVG)



(Plot B1: Channel = 39 PEAK)



(Plot B2: Channel = 39 AVG)

2.7 Radiated Emission

2.7.1 Requirement

According to FCC section 15.247(d), radiated emission outside the frequency band attenuation below the general limits specified in FCC section 15.209(a) is not required. In addition, radiated emissions which fall in the restricted bands, as defined in FCC section 15.205(a), must also comply with the radiated emission limits specified in FCC section 15.209(a).

According to FCC section 15.209 (a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency (MHz)	Field Strength (μV/m)	Measurement Distance (m)
0.009 - 0.490	2400/F(kHz)	300
0.490 - 1.705	24000/F(kHz)	30
1.705 - 30.0	30	30
30 - 88	100	3
88 - 216	150	3
216 - 960	200	3
Above 960	500	3

Note:

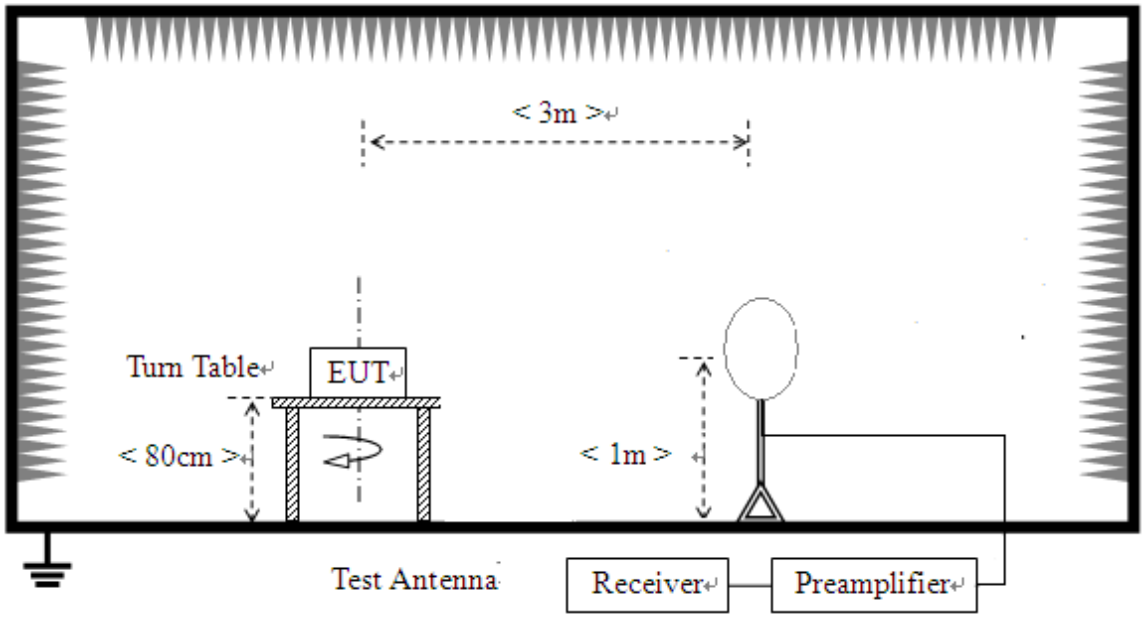
1. For Above 1000MHz, the emission limit in this paragraph is based on measurement instrumentation employing an average detector, measurement using instrumentation with a peak detector function, corresponding to 20dB above the maximum permitted average limit.
2. For above 1000MHz, limit field strength of harmonics: 54dBuV/m@3m (AV) and 74dBuV/m@3m (PK)

In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), also should comply with the radiated emission limits specified in Section 15.209(a)(above table)

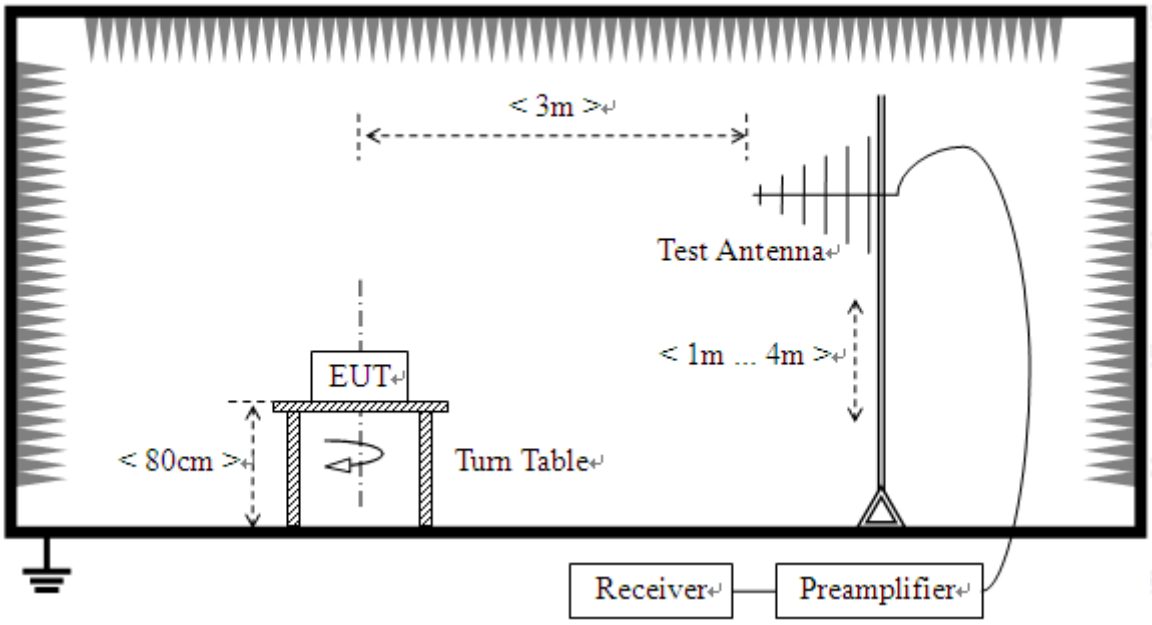
2.7.2 Test Description

A. Test Setup:

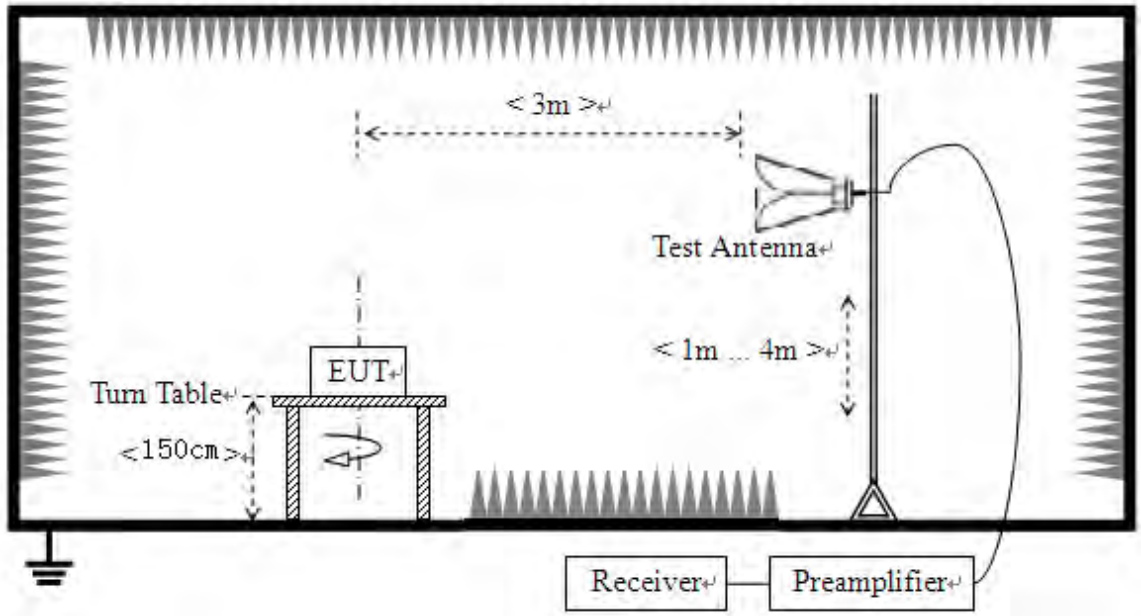
1) For radiated emissions from 9kHz to 30MHz



2) For radiated emissions from 30MHz to1GHz



3) For radiated emissions above 1GHz



The test site semi-anechoic chamber has met the requirement of NSA tolerance 4dB according to the standards: ANSI C63.10 (2013). For radiated emissions below or equal to 1GHz,The EUT was set-up on insulator 80cm above the Ground Plane, For radiated emissions above 1GHz, The EUT was set-up on insulator 150cm above the Ground Plane. The set-up and test methods were according to ANSI C63.10.

For the radiated emission test above 1GHz:

Place the measurement antenna away from each area of the EUT determined to be a source of emissions at the specified measurement distance, while keeping the measurement antenna aimed at the source of emissions at each frequency of significant emissions, with polarization oriented for maximum response. The measurement antenna may have to be higher or lower than the EUT, depending on the radiation pattern of the emission and staying aimed at the emission source for receiving the maximum signal. The final measurement antenna elevation shall be that which maximizes the emissions. The measurement antenna elevation for maximum emissions shall be restricted to a range of heights of from 1 m to 4 m above the ground or reference ground plane.

The EUT is located in a 3m Semi-Anechoic Chamber; the antenna factors, cable loss and so on of the site as factors are calculated to correct the reading.

For the Test Antenna:

(a) In the frequency range of 9kHz to 30MHz, magnetic field is measured with Loop Test Antenna.

The Test Antenna is positioned with its plane vertical at 1m distance from the EUT. The center of the Loop Test Antenna is 1m above the ground. During the measurement the Loop Test Antenna rotates about its vertical axis for maximum response at each azimuth about the EUT.

(b) In the frequency range above 30MHz, Bi-Log Test Antenna (30MHz to 1GHz) and Horn Test Antenna (above 1GHz) are used. Test Antenna is 3m away from the EUT. Test Antenna height is varied from 1m to 4m above the ground to determine the maximum value of the field strength. The emission levels at both horizontal and vertical polarizations should be tested.

B. Equipments List:

Please reference ANNEX A(1.4).

2.7.3 Test Result

According to ANSI C63.10, because of peak detection will yield amplitudes equal to or greater than amplitudes measured with the quasi-peak (or average) detector, the measurement data from a spectrum analyzer peak detector will represent the worst-case results, if the peak measured value complies with the quasi-peak limit, it is unnecessary to perform an quasi-peak measurement.

The measurement results are obtained as below:

$E\ [dB\mu V/m] = U_R + A_T + A_{Factor}\ [dB]$; $A_T = L_{Cable\ loss}\ [dB] - G_{preamp}\ [dB]$

A_T: Total correction Factor except Antenna

U_R: Receiver Reading

G_{preamp}: Preamplifier Gain

A_{Factor}: Antenna Factor at 3m

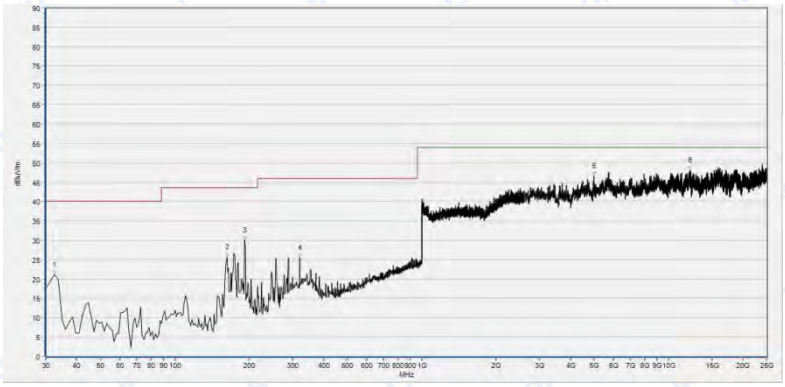
During the test, the total correction Factor A_T and A_{Factor} were built in test software.

Note: All radiated emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

The low frequency, which started from 9KHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit line per 15.31(o) was not reported.

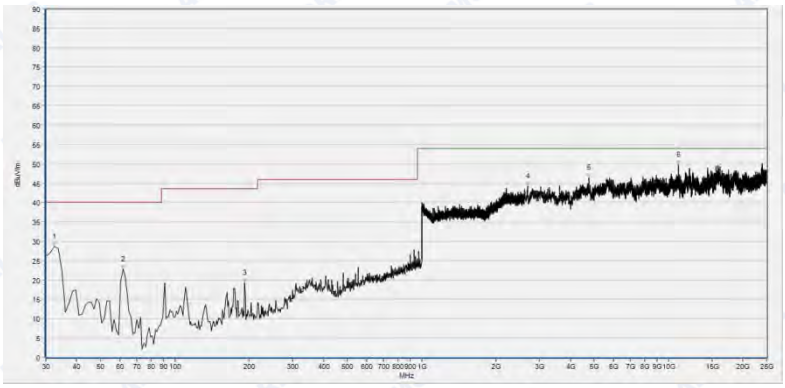
A. Test Plots for the Whole Measurement Frequency Range:

Plots for Channel = 0



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	21.12	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
162.328	25.67	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
191.464	30.01	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
320.150	25.49	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
4974.832	46.52	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS
12205.237	48.10	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS

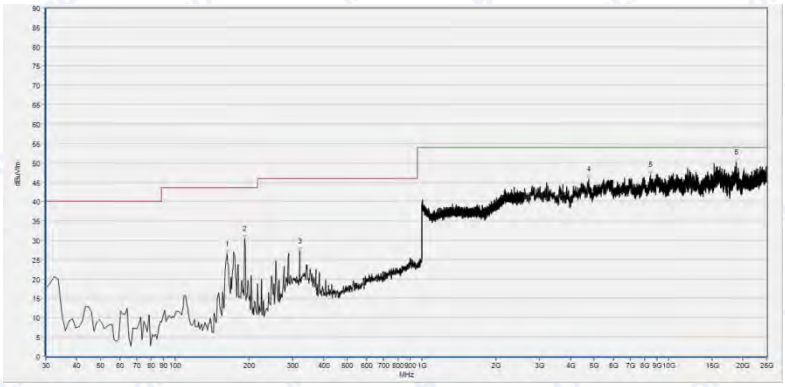
(Antenna Horizontal, 30MHz to 25GHz)



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
32.428	28.68	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
61.564	22.72	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
191.464	19.34	N.A	N.A	N.A	43.50	N.A	Vertical	PASS
2681.469	44.24	N.A	N.A	74.0	N.A	54.00	Vertical	PASS
4767.085	46.34	N.A	N.A	74.0	N.A	54.00	Vertical	PASS
10975.050	49.79	N.A	N.A	74.0	N.A	54.00	Vertical	PASS

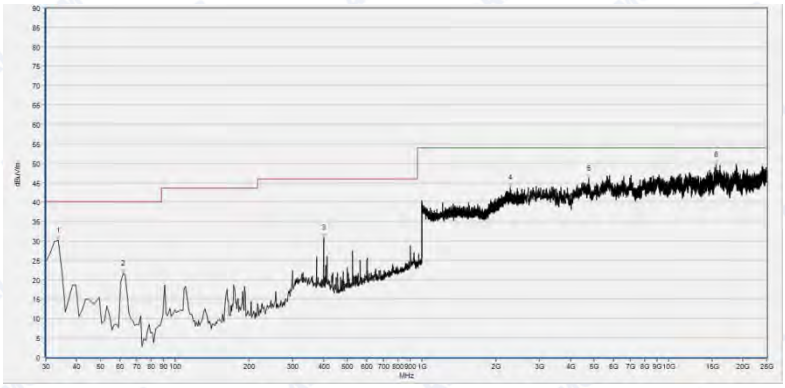
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 19



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
162.328	26.44	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
191.464	30.33	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
320.150	27.18	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
4738.571	45.67	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS
8457.647	46.94	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS
18800.182	50.17	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS

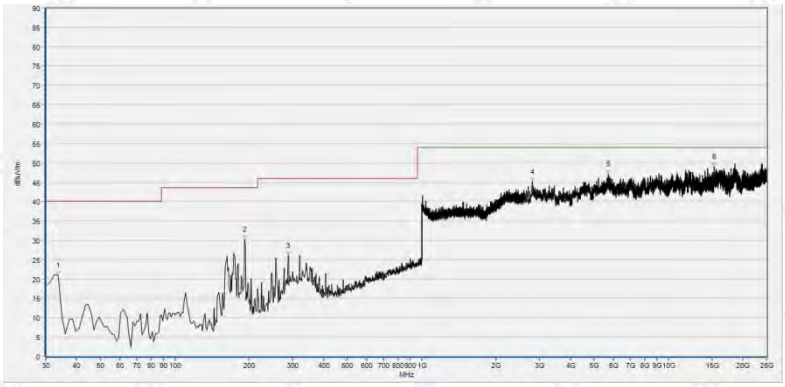
(Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
33.642	30.24	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
61.564	21.69	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
400.275	30.81	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2285.634	43.70	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
4758.938	46.01	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
15598.436	49.63	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

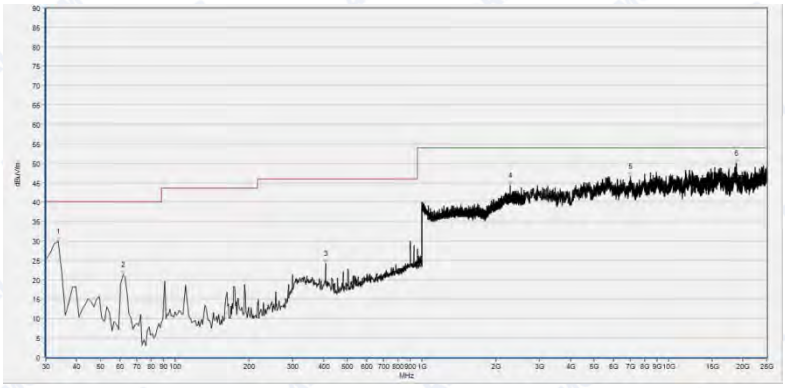
(Antenna Vertical, 30MHz to 25GHz)

Plot for Channel = 39



Fre. (MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
33.642	21.02	N.A	N.A	N.A	40.00	N.A	Horizontal	PASS
191.464	30.24	N.A	N.A	N.A	43.50	N.A	Horizontal	PASS
287.372	26.03	N.A	N.A	N.A	46.00	N.A	Horizontal	PASS
2799.600	45.06	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS
5691.762	47.01	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS
15341.808	48.89	N.A	N.A	74.0	N.A	54.00	Horizontal	PASS

(Antenna Horizontal, 30MHz to 25GHz)



Fre.(MHz)	Pk	QP	AV	Limit-PK	Limit-QP	Limit-AV	Antenna	Verdict
33.642	29.87	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
61.564	21.24	N.A	N.A	N.A	40.00	N.A	Vertical	PASS
407.559	24.08	N.A	N.A	N.A	46.00	N.A	Vertical	PASS
2286.275	44.29	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
7007.492	46.63	N.A	N.A	74.0	N.A	54.0	Vertical	PASS
18792.035	49.99	N.A	N.A	74.0	N.A	54.0	Vertical	PASS

(Antenna Vertical, 30MHz to 25GHz)

ANNEX A GENERAL INFORMATION

1.1 Identification of the Responsible Testing Laboratory

Company Name:	Shenzhen Morlab Communications Technology Co., Ltd.
Department:	Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China
Responsible Test Lab Manager:	Mr. Su Feng
Telephone:	+86 755 36698555
Facsimile:	+86 755 36698525

1.2 Identification of the Responsible Testing Location

Name:	Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory
Address:	FL.3, Building A, FeiYang Science Park, No.8 LongChang Road, Block 67, BaoAn District, ShenZhen, GuangDong Province, P. R. China

1.3 Facilities and Accreditations

Shenzhen Morlab Communications Technology Co., Ltd. Morlab Laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L3572.

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, Block 67, BaoAn District, Shenzhen, 518101 P. R. China. The test site is constructed in conformance with the requirements of ANSI C63.10 2013 and CISPR Publication 22; the FCC registration number is 695796.

1.4 Maximum measurement uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for test performed on the EUT as specified in CISPR 16-1-2:

Measurements	**Frequency**	**Uncertainty**
Conducted emissions	9KHz~30MHz	2.44dB
Radiated emissions	9KHz~30MHz	2.44dB
	30MHz~200MHz	2.93dB
	200MHz~1000MHz	2.95dB
	1GHz~18GHz	2.26dB
	18GHz~40GHz	1.94dB

This uncertainty represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2

1.5 Test Equipments Utilized

1.5.1 Conducted Test Equipments

Conducted Test Equipment						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal. Due**
1	Spectrum Analyzer	MY45101810	E4407B	Agilent	2016.03.02	2017.03.01
2	USB Wideband Power Sensor	MY54210011	U2021XA	Agilent	2016.03.02	2017.03.01
3	EXA Signal Analzyer	MY53470838	N9010A	Agilent	2015.08.26	2016.08.25
4	RF cable	CB01	RF01	Morlab	N/A	N/A
5	Attenuator	(n.a.)	10dB	Resnet	N/A	N/A
6	SMA connector	CN01	RF03	HUBER-SUHNER	N/A	N/A

1.5.2 Radiated Test Equipments

Radiated Test Equipments						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal.Due Date**
1	System Simulator	GB45360846	8960-E5515C	Agilent	2015.05.07	2016.05.06
2	Receiver	MY54130016	N9038A	Agilent	2015.05.07	2016.05.06
3	Test Antenna - Bi-Log	N/A	VULB9163	Schwarzbeck	2015.05.14	2016.05.13
4	Test Antenna - Horn	9170C-531	BBHA9170	Schwarzbeck	2016.03.02	2017.03.01
5	Test Antenna - Loop	1519-022	FMZB1519	Schwarzbeck	2016.03.02	2017.03.01
6	Test Antenna - Horn	71688	BBHA 9120D	Schwarzbeck	2016.03.02	2017.03.01
7	Coaxial cable(N male)	CB02	EMC02	Morlab	N/A	N/A
8	Coaxial cable(N male)	CB03	EMC03	Morlab	N/A	N/A
9	1-18GHz pre-Amplifier	MA02	TS-PR18	Rohde&Schwarz	2016.03.02	2017.03.01
10	18-26.5GHz pre-Amplifier	MA03	TS-PR18	Rohde&Schwarz	2016.03.02	2017.03.01

1.5.3 Conducted Emission Test Equipments

Conducted Emission Test Equipments						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal. Date**	**Cal. Due**
1	Receiver	595WX11007	PMM9010	Narda S.T.S/PMM	2015.05.07	2016.05.06
2	LISN	812744	NSLK 8127	Schwarzbeck	2015.06.18	2016.06.17
3	Pulse Limiter (20dB)	9391	VTSD 9561-D	Schwarzbeck	2015.05.07	2016.05.06
4	Coaxial cable(BNC)	CB01	EMC01	Morlab	N/A	N/A

1.5.4 Climate Chamber

Climate Chamber						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Climate Chamber	2004012	HL4003T	Yinhe	2016.03.02	2017.03.01

1.5.5 Vibration Table

Vibration Table						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Vibration Table	N/A	ACT2000-S015L	CMI-COM	2016.03.02	2017.03.01

1.5.6 Anechoic Chamber

Anechoic Chamber						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Anechoic Chamber	N/A	9m*6m*6m	Changning	2015.05.14	2016.05.13

1.5.7 Auxiliary Test Equipment

Auxiliary Test Equipment						
No.	**Equipment Name**	**Serial No.**	**Type**	**Manufacturer**	**Cal.Date**	**Cal.Due Date**
1	Computer	N.A	N.A	Asus	N.A	N.A

***** END OF REPORT *****