



中国认可  
国际互认  
检测  
TESTING  
CNAS L2264

## RF TEST REPORT

**Applicant** GREENCHIPS (HONGKONG) LIMITED  
**FCC ID** 2AK4U-GC4BT-X81  
**Product** BLE Module  
**Brand** GC  
**Model** GC4BT-X81  
**Report No.** RXA1701-0005RF02R1  
**Issue Date** March 2, 2017

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2016)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Performed by: Xianqing Li

Approved by: Kai Xu

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## Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Maximum Average conducted output power	15.247(b)(3)	PASS
2	6 dB bandwidth	15.247(a)(2)	PASS
3	Maximum power spectral density	15.247(e)	PASS
4	Band Edge	15.247(d)	PASS
5	Spurious RF Conducted Emissions	15.247(d)	PASS
6	Radiated Emissions in restricted frequency bands	15.247(d),15.205,15.209	PASS
7	Radiated Emissions	15.247(d),15.205,15.209	PASS
8	Conducted Emissions	15.207	PASS
Date of Testing: February 7, 2017 ~ February 14, 2017			



## 1. Test Laboratory

### 1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above. This report must not be used by the client to claim product certification, approval, or endorsement by CNAS or any government agencies.

### 1.2. Test facility

#### **CNAS (accreditation number: L2264)**

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

#### **FCC (recognition number is 428261)**

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

#### **IC (recognition number is 8510A)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

#### **VCCI (recognition number is C-4595, T-2154, R-4113, G-766)**

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

#### **A2LA (Certificate Number: 3857.01)**

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.



### 1.3. Testing Location

Company: TA Technology (Shanghai) Co., Ltd.  
Address: No.145, Jintang Rd, Tangzhen Industry Park, Pudong  
City: Shanghai  
Post code: 201201  
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## 2. General Description of Equipment under Test

### Client Information

<b>Applicant</b>	GREENCHIPS (HONGKONG) LIMITED
<b>Applicant address</b>	Room 1401,Tower A,Jingang mansion,251 Heyan Road, Nanjing, China
<b>Manufacturer</b>	GREENCHIPS (HONGKONG) LIMITED
<b>Manufacturer address</b>	Room 1401,Tower A,Jingang mansion,251 Heyan Road, Nanjing, China

### General information

EUT Description	
Model:	GC4BT-X81
SN:	/
Hardware Version:	V1.0
Software Version:	V1.0
Power Supply:	external power supply
Antenna Type:	Integrated antenna on PCB
Antenna Connector:	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)
Antenna Gain:	Antenna: 0 dBi
Test Mode:	Bluetooth(Low Energy)
Modulation Type:	BLE :GFSK
Max. Conducted Power	BLE : -1.873 dBm
Operating Frequency Range(s)	BLE: 2402 ~2480 MHz
Note: The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.	



### 3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

#### Test standards

- **FCC CFR47 Part 15C (2016) Radio Frequency Devices**
- **ANSI C63.10 (2013)**
- **KDB 558074 D01 DTS Meas Guidance v03r05**

## 4. Test Configuration

### Test Mode

The EUT was programmed to be in continuously transmitting mode and the transmit duty cycle is not less than 98%.

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.



## 5. Test Case Results

### 5.1. Average Power Output –Conducted

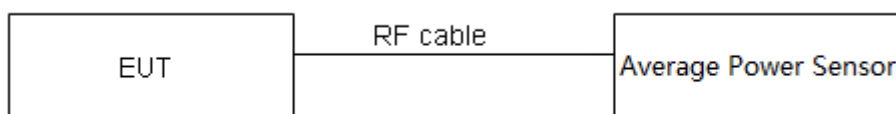
#### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### Methods of Measurement

During the process of the testing, The EUT was connected to Average power meter with a known loss. The EUT is max power transmission with proper modulation. The Average detector is used. We use Maximum Average Conducted Output Power Level Method in KDB 558074 D01 for this test.

#### Test Setup



#### Limits

Rule Part 15.247 (b) (3) specifies that " For systems using digital modulation in the 902–928 MHz, 2400–2483.5 MHz: 1 Watt."

Average Output Power	$\leq 1W$ (30dBm)
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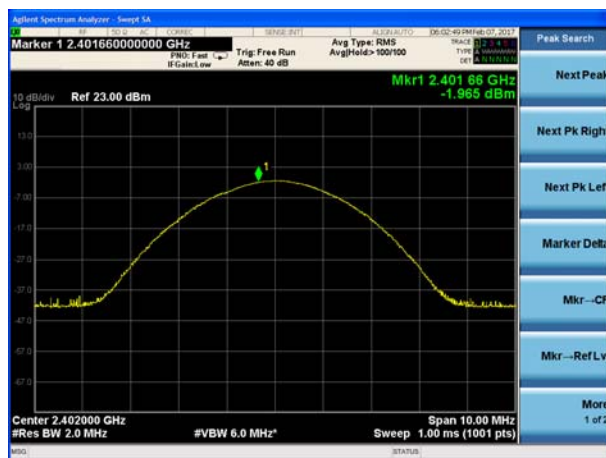
#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.44$  dB.

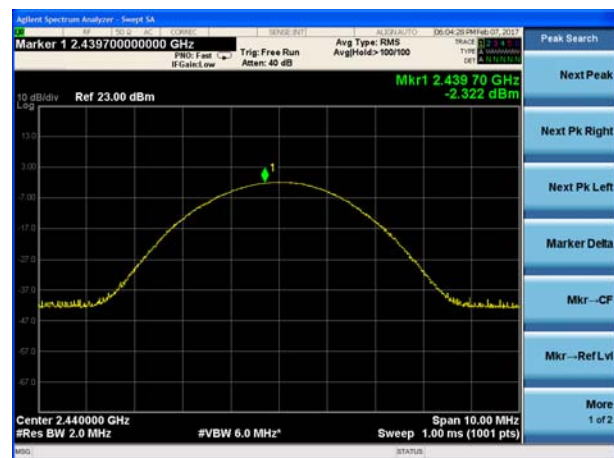
## Test Results

Network Standards	Carrier frequency (MHz)	Average Output Power (dBm)	Limit (dBm)	Conclusion
Bluetooth (Low Energy)	2402	-1.965	30	PASS
	2440	-2.322	30	PASS
	2480	-1.873	30	PASS

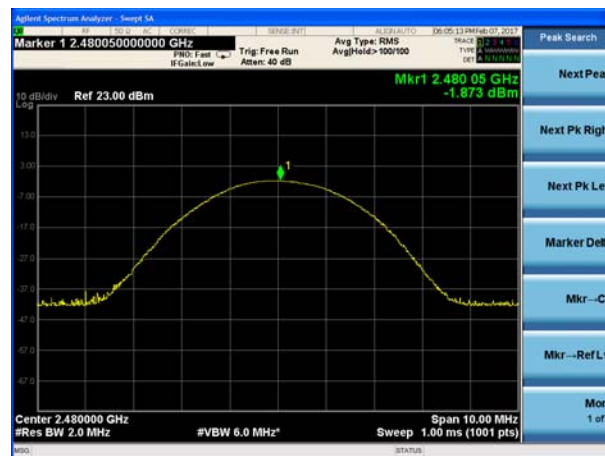
Carrier frequency (MHz): 2402  
Channel No.:0



Carrier frequency (MHz): 2440  
Channel No.:19



Carrier frequency (MHz): 2480  
Channel No.:39



## 5.2. 6dB Bandwidth

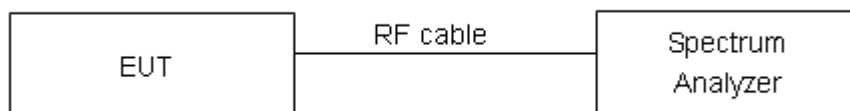
### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable. RBW is set to 100 kHz; VBW is set to 300 kHz on spectrum analyzer.

### Test Setup



### Limits

Rule Part 15.247 (a) (2) specifies that “Systems using digital modulation techniques may operate in the 902–928 MHz, 2400–2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz.”

minimum 6 dB bandwidth	≥ 500 kHz
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### Measurement Uncertainty

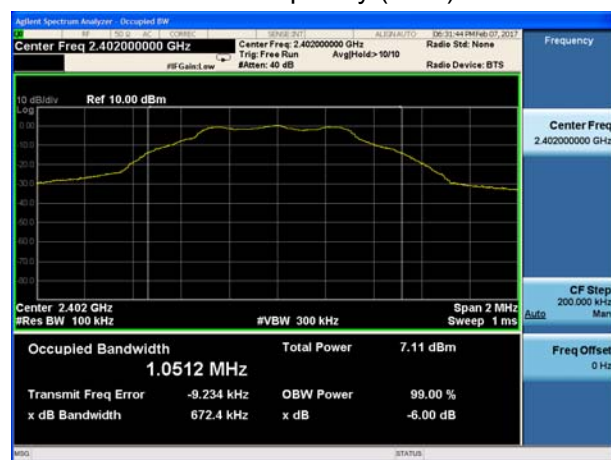
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 936$  Hz.



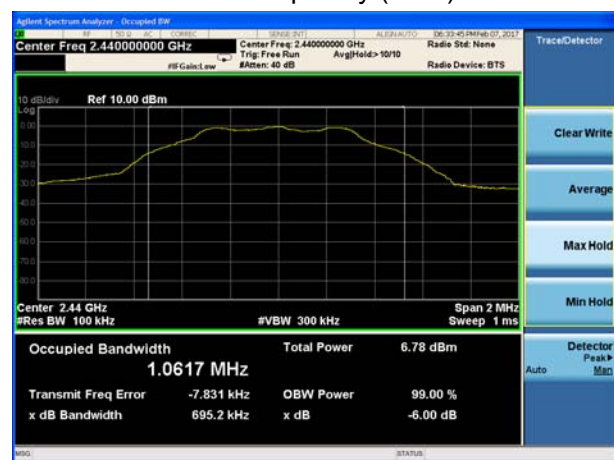
## Test Results:

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (kHz)	Limit(kHz)	Conclusion
Bluetooth (Low Energy)	2402	1051.2	672.4	500	PASS
	2440	1061.7	695.2	500	PASS
	2480	1069.8	710.6	500	PASS

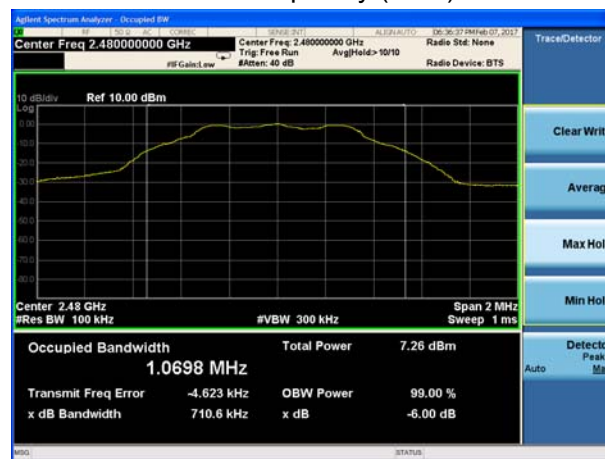
BLE Carrier frequency (MHz): 2402



BLE Carrier frequency (MHz): 2440



BLE Carrier frequency (MHz): 2480



### 5.3. Band Edge

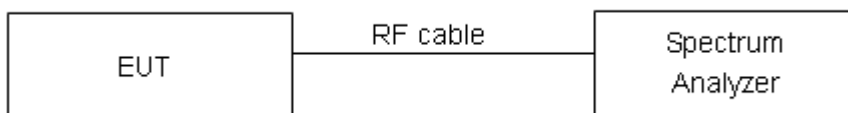
#### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

#### Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable the band edge of the lowest and highest channels were measured. The peak detector is used and RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. Spectrum analyzer plots are included on the following pages.

#### Test Setup



#### Limits

Rule Part 15.247(d) specifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits.”

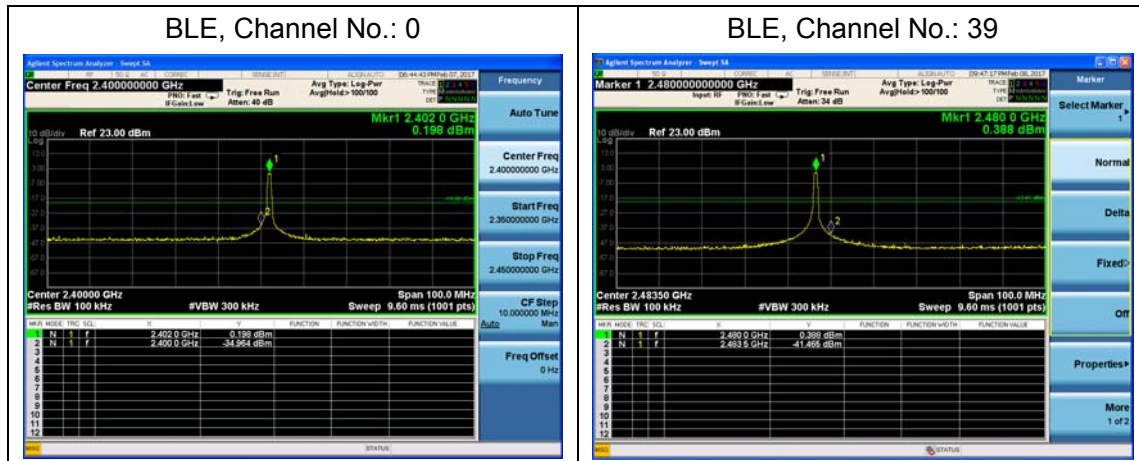
#### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

Frequency	Uncertainty
2GHz-3GHz	1.407 dB



## Test Results: PASS



## 5.4. Power Spectral Density

### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

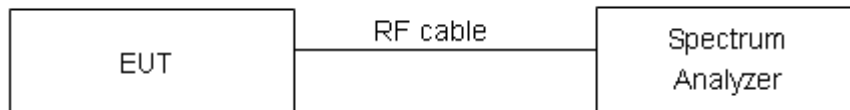
### Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

RBW is set to 3 kHz and VBW is set to 10 kHz for BLE on spectrum analyzer.

Set the span to 1.5 times the DTS channel bandwidth. Sweep time = auto couple. Trace mode = max hold. The Average power spectral density is recorded.

### Test setup



### Limits

Rule Part 15.247(e) specifies that” For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. ”

Limits	$\leq 8 \text{ dBm} / 3\text{kHz}$
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### Measurement Uncertainty

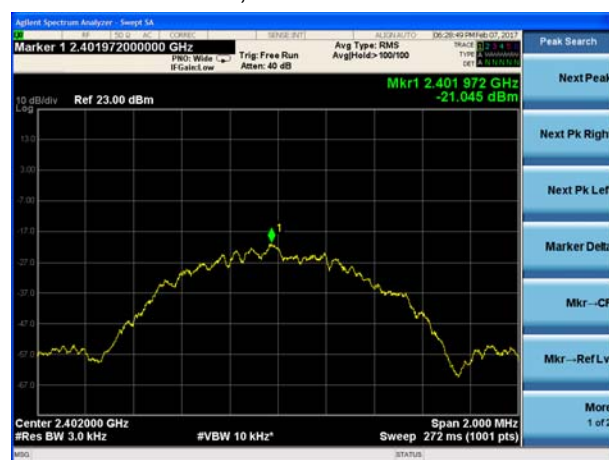
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 2$ ,  $U = 0.75\text{dB}$ .



## Test Results:

Network Standards	Channel Number	Power Spectral Density (dBm / 3kHz)	Limit (dBm / 3kHz)	Conclusion
Bluetooth (Low Energy)	0	-21.045	8	PASS
	19	-22.108	8	PASS
	39	-21.515	8	PASS

BLE, Channel No.: 0



BLE, Channel No.: 19



BLE, Channel No.: 39





## 5.5. Spurious RF Conducted Emissions

### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Method of Measurement

The EUT was connected to the spectrum analyzer with a known loss. The spectrum analyzer scans from 30MHz to the 10th harmonic of the carrier. The peak detector is used. RBW and VBW are set to 100 kHz, Sweep is set to ATUO.

The test is in transmitting mode.

### Test setup



### Limits

Rule Part 15.247(d) pacifies that “In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power.”

Network Standards	Carrier frequency (MHz)	Reference value (dBm)	Limit
Bluetooth (Low Energy)	2402	-0.286	-20.286
	2440	-0.499	-20.449
	2480	0.625	-20.625

### Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

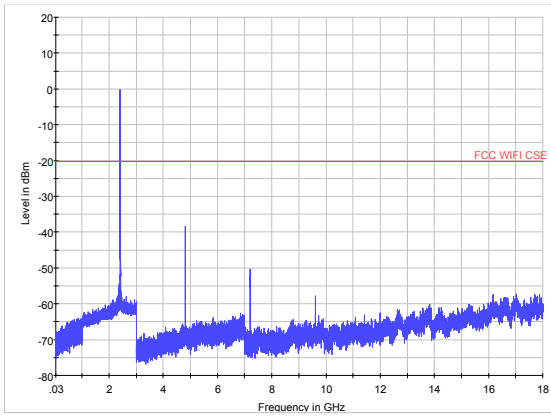
Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

**Test Results:**

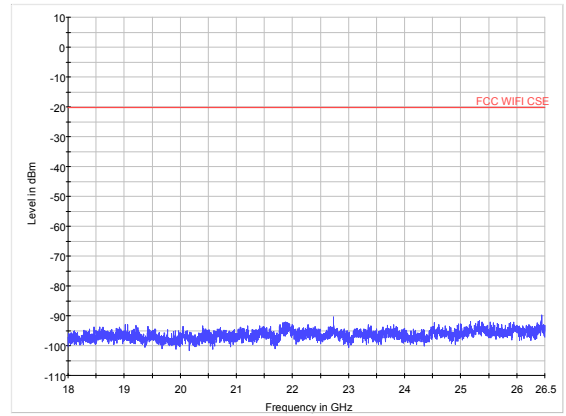
If disturbances were found more than 20dB below limit line, the mark is not required for the EUT.

The signal beyond the limit is carrier

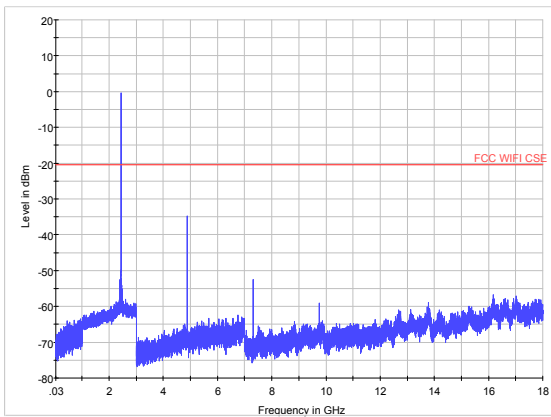
Test Data File Name	Frequency (MHz)	Peak (dBm)	Limit (dBm)	Margin (dB)
CSE_GC4BT-X81_BT LE CH0_0.03-18GHz	4803.3	-38.4	-20.286	18.1
CSE_GC4BT-X81_BT LE CH19_0.03-18GHz	4879.5	-34.8	-20.449	14.4
CSE_GC4BT-X81_BT LE CH39_0.03-18GHz	4959.8	-34.8	-20.625	14.2



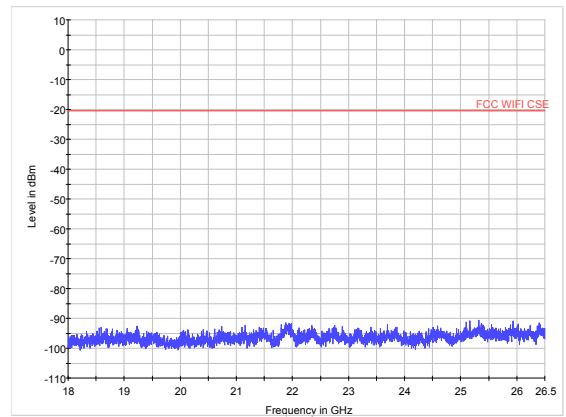
BLE CH0 30MHz to 18GHz



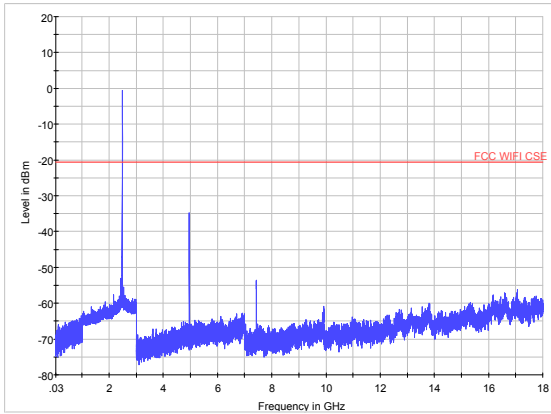
BLE CH0 18GHz to 26.5GHz



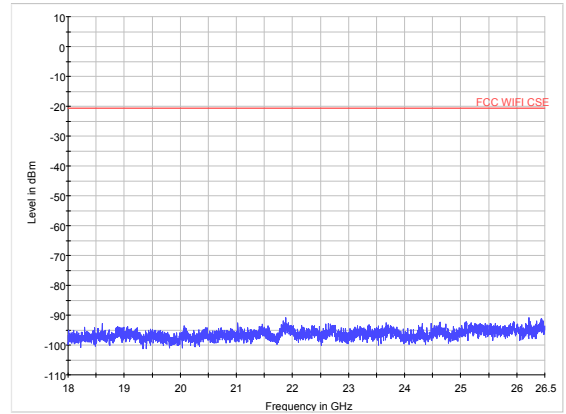
BLE CH19 30MHz to 18GHz



BLE CH19 18GHz to 26.5GHz



BLE CH39 30MHz to 18GHz



BLE CH39 3GHz to 18GHz

## 5.6. Radiated Emissions in the Restricted Band

### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Method of Measurement

The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. RBW is set to 100kHz. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing. Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

Set the spectrum analyzer in the following:

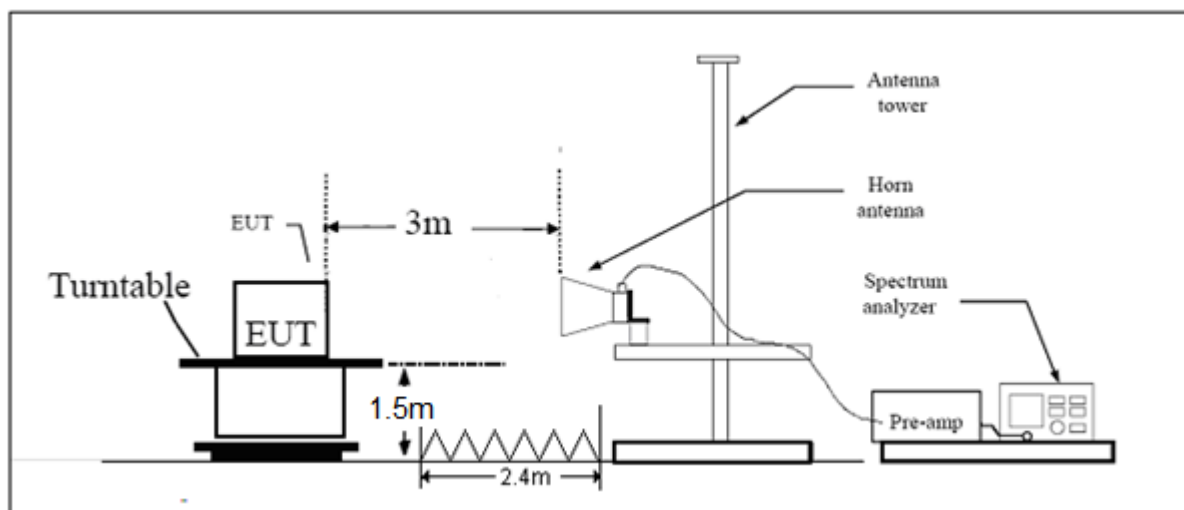
- (a) PEAK: RBW=VBW=1MHz / Sweep=AUTO
- (b) AVERAGE: RBW=1MHz / VBW=1MHz / Sweep=AUTO

This setting method can refer to **KDB 558074**.

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Y axis) and the antenna is vertical.

The test is in transmitting mode.

### Test setup



Note: Area side: 2.4mX3.6m

## Limits

Spurious Radiated Emissions are permitted in any of the frequency bands listed below:

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
<sup>1</sup> 0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	( <sup>2</sup> )
13.36 - 13.41			

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

## §15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

Peak Limit=74 dBuV/m

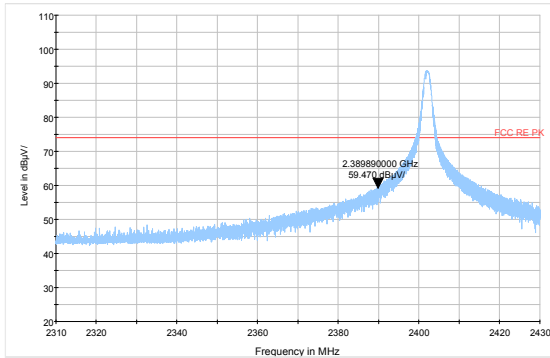
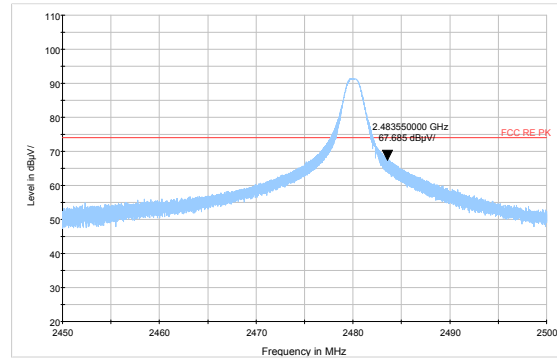
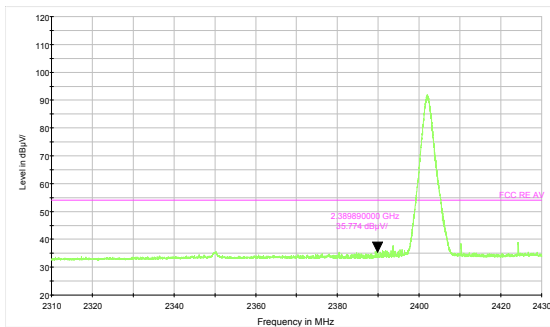
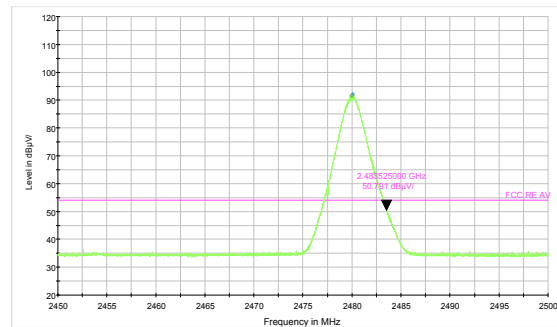
Average Limit=54 dBuV/m

## Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U = 3.55$  dB.

**Test Results:**

The signal beyond the limit is carrier.

**BLE -Channel 0: Peak****BLE -Channel 39: Peak****BLE -Channel 0: Average****BLE -Channel 39: Average**

## 5.7. Radiates Emission

### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	102.5kPa

### Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration. Sweep the whole frequency band through the range from 9 kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, below 30MHz, the center of the loop shall be 1 meters; above 30MHz, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

Set the spectrum analyzer in the following:

Below 1GHz (detector: Peak and Quasi-Peak)

RBW=100 kHz / VBW=300 kHz / Sweep=AUTO

Above 1GHz (detector: Peak):

(a) PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

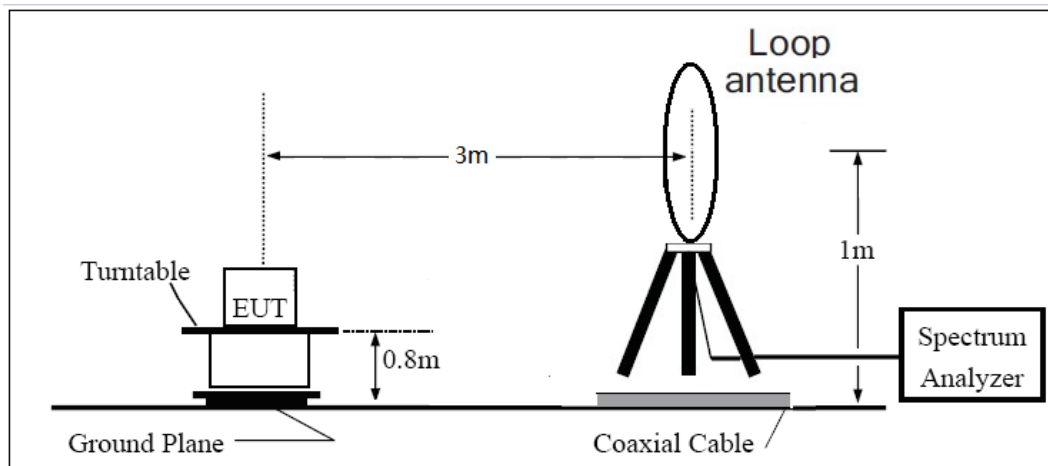
(b) AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the worst case was recorded.

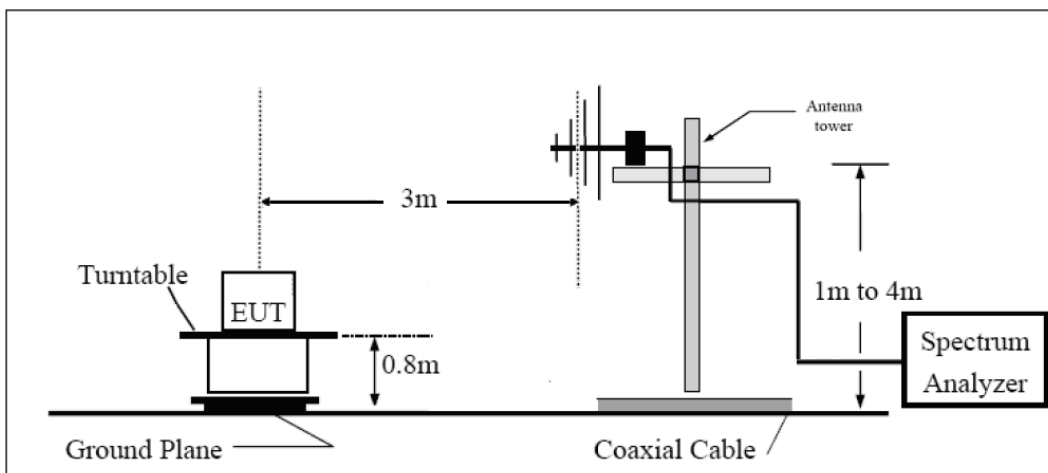
The test is in transmitting mode.

## Test setup

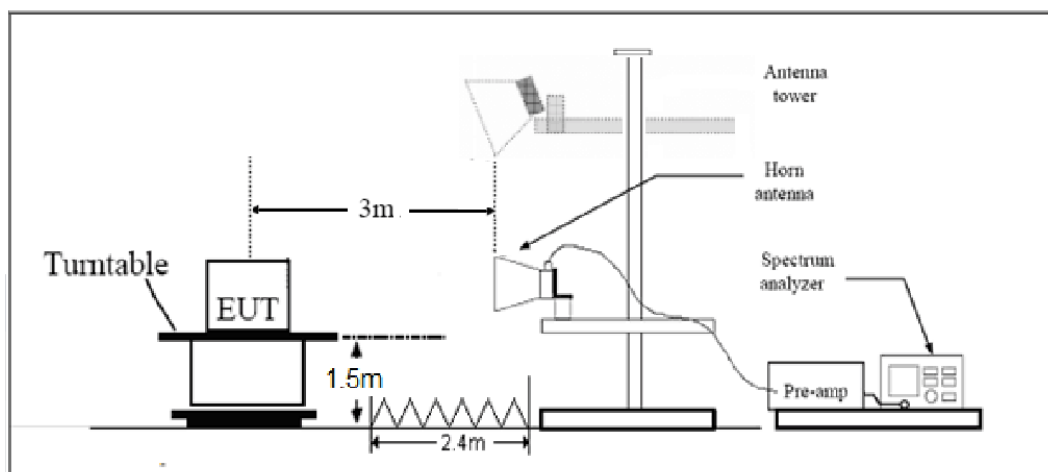
### 9KHz ~ 30MHz



### 30MHz ~ 1GHz



### Above 1GHz



Note: Area side:2.4mX3.6m



## Limits

Rule Part 15.247(d) specifies that “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) (see § 15.205(c)).”

Limit in restricted band

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

## §15.35(b)

There is also a limit on the radio frequency emissions, as measured using instrumentation with a peak detector function, corresponding to 20 dB above the maximum permitted average limit.

## Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ .

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
Above 1GHz	3.68 dB

## Test result

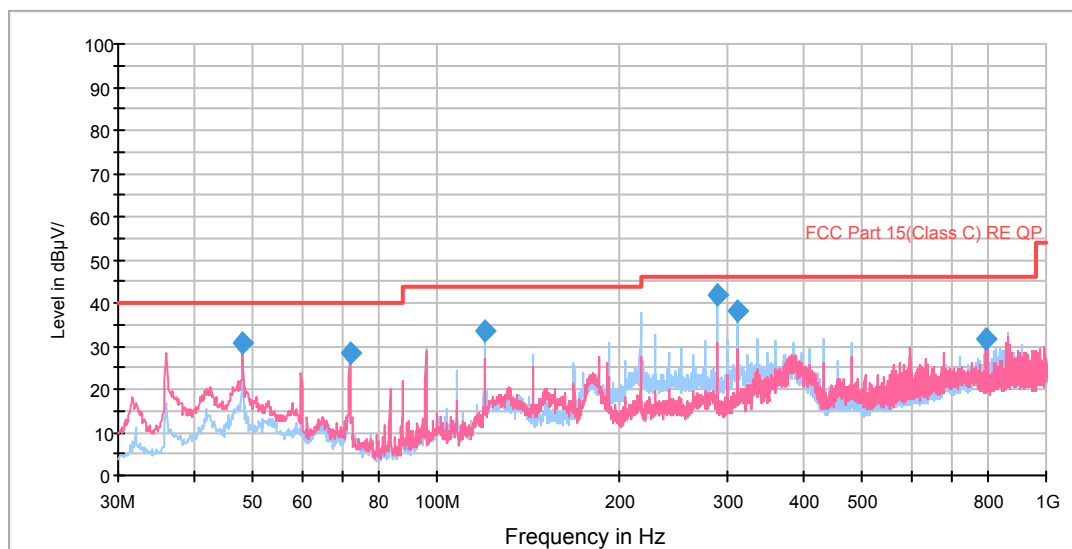
Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

The following graphs display the maximum values of horizontal and vertical by software.

For above 1GHz, Blue trace uses the peak detection, Green trace uses the average detection.

## BLE-Channel 0

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

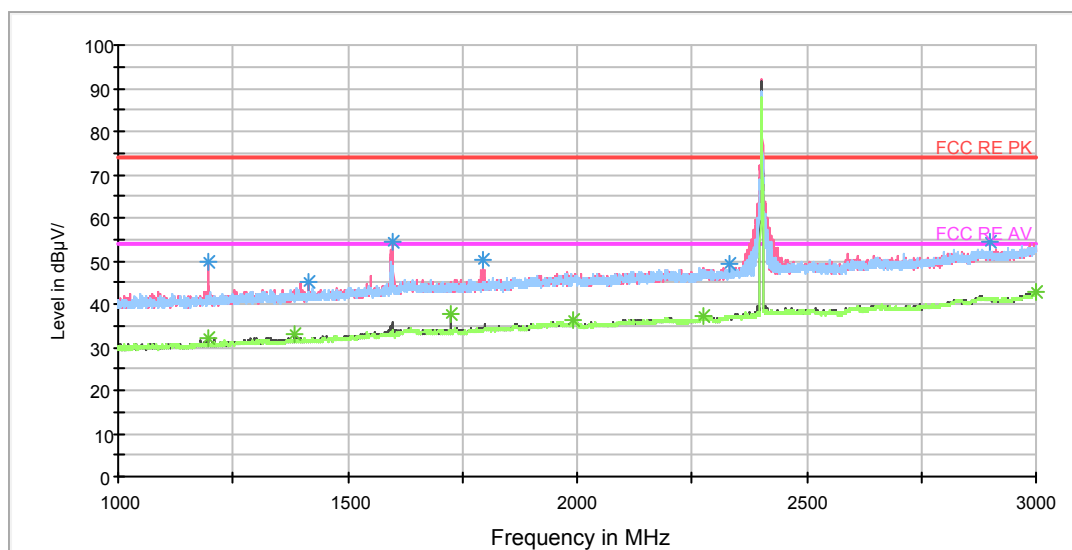
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
47.985138	30.6	121.0	V	110.0	50.8	-20.2	9.4	40.0
72.012619	28.2	101.0	H	304.0	55.7	-27.5	11.8	40.0
119.987581	33.3	130.0	H	240.0	60.9	-27.6	10.2	43.5
288.020000	41.7	105.0	H	137.0	65.1	-23.4	4.3	46.0
312.007500	38.4	101.0	H	124.0	61.5	-23.1	7.6	46.0
799.736750	31.5	125.0	V	17.0	46.3	-14.8	14.5	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss (cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

## RE 1G-3GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

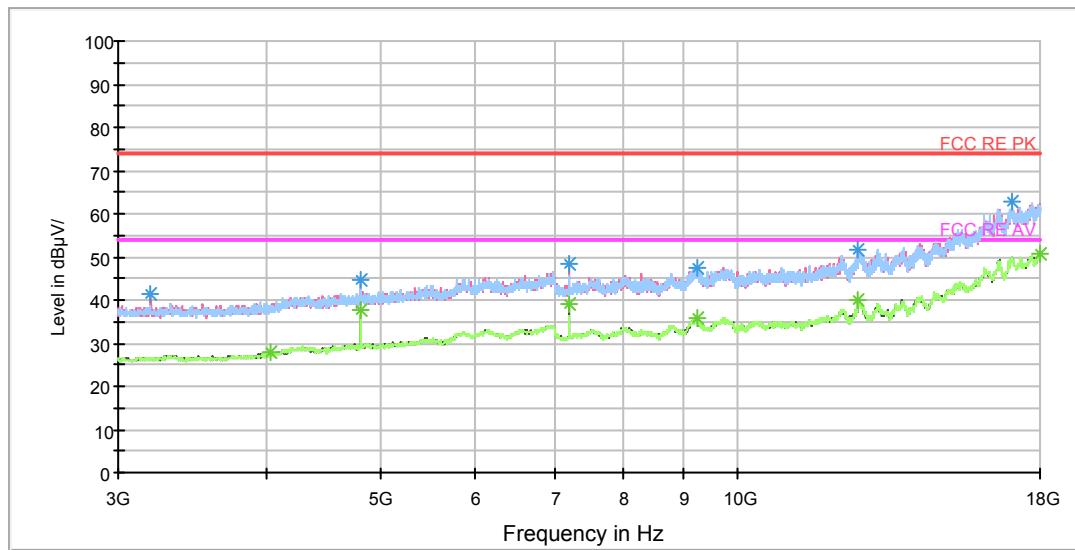
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1196.250000	49.7	105.0	V	86.0	57.9	-8.2	24.3	74
1415.750000	45.2	105.0	V	356.0	52.2	-7.0	28.8	74
1598.500000	54.3	105.0	V	259.0	60.7	-6.4	19.7	74
1795.250000	50.4	105.0	V	199.0	54.7	-4.3	23.6	74
2333.500000	49.2	105.0	V	0.0	50.6	-1.4	24.8	74
2898.750000	54.3	205.0	H	271.0	56.4	-2.1	19.7	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1196.250000	32.0	105.0	V	86.0	40.2	-8.2	22.0	54
1386.000000	33.0	105.0	V	6.0	40.0	-7.0	21.0	54
1725.750000	37.6	205.0	V	2.0	42.7	-5.1	16.4	54
1991.250000	36.2	205.0	V	0.0	39.5	-3.3	17.8	54
2275.500000	37.4	205.0	V	16.0	38.9	-1.5	16.6	54
2999.750000	42.6	205.0	V	0.0	44.9	-2.3	11.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## RE 3-18GHz PK+AV



## Radiates Emission from 3GHz to 18GHz

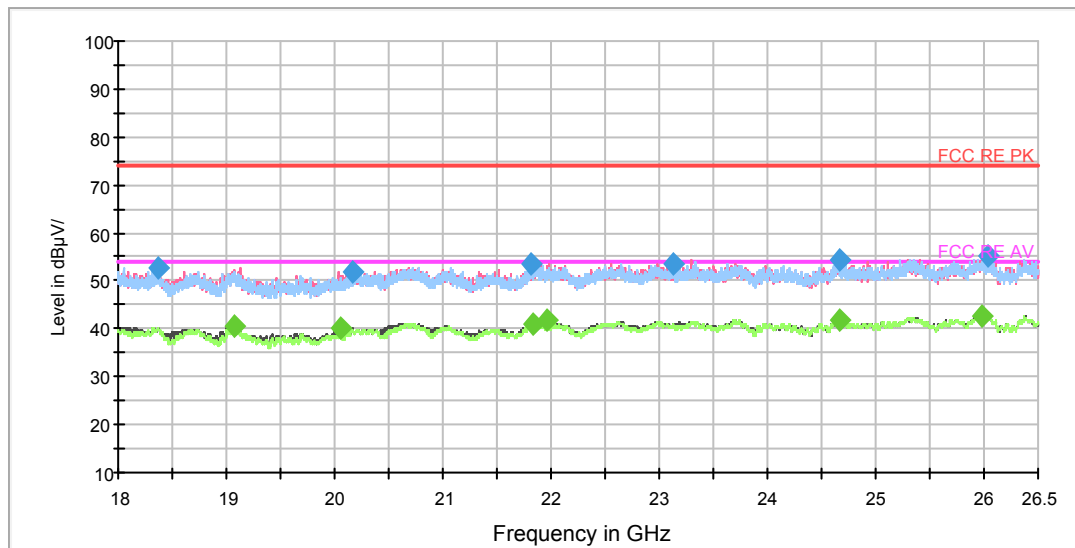
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3198.750000	41.5	105.0	V	231.0	44.4	-2.9	32.5	74
4803.750000	44.8	105.0	H	17.0	46.1	-1.3	29.2	74
7205.625000	48.5	105.0	V	299.0	54.9	-6.4	25.5	74
9238.125000	47.6	105.0	H	61.0	57.5	-9.9	26.4	74
12650.625000	51.6	105.0	H	222.0	65.7	-14.1	22.4	74
17047.500000	62.6	105.0	V	276.0	87.1	-24.5	11.4	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4036.875000	27.7	105.0	H	0.0	28.7	-1.0	26.3	54
4803.750000	37.5	105.0	H	17.0	38.8	-1.3	16.5	54
7205.625000	39.0	105.0	V	299.0	45.4	-6.4	15.0	54
9232.500000	36.0	105.0	V	0.0	45.9	-9.9	18.0	54
12643.125000	39.9	105.0	V	184.0	54.3	-14.4	14.1	54
17992.500000	50.6	105.0	H	246.0	75.9	-25.3	3.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## RE 18-26.5GHz PK+AV



## Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18366.562500	52.7	101.0	H	54.0	56.0	-3.3	21.3	74
20161.125000	52.0	101.0	V	180.0	57.8	-5.8	22.0	74
21817.562500	53.5	101.0	H	0.0	61.5	-8.0	20.5	74
23128.687500	53.6	101.0	V	0.0	59.7	-6.1	20.4	74
24662.937500	54.6	101.0	V	180.0	60.6	-6.0	19.4	74
26037.812500	55.1	101.0	H	36.0	60.5	-5.4	18.9	74

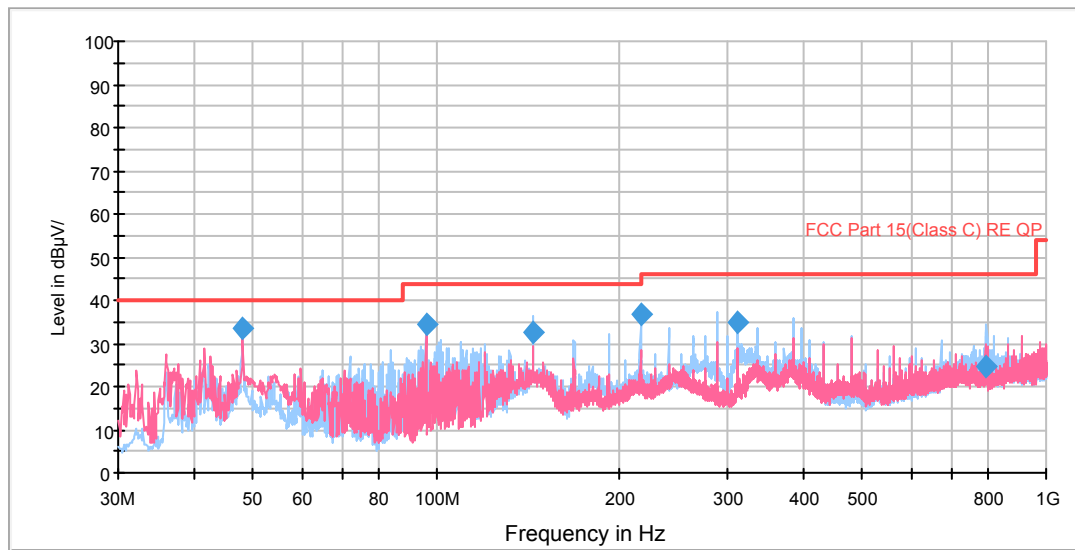
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
19071.000000	40.5	101.0	V	124.0	45.7	-5.2	13.5	54
20053.812500	40.2	101.0	V	0.0	45.9	-5.7	13.8	54
21832.437500	41.2	101.0	V	180.0	49.2	-8.0	12.8	54
21963.125000	41.9	101.0	V	107.0	49.9	-8.0	12.1	54
24665.062500	42.0	101.0	H	54.0	48.0	-6.0	12.0	54
25990.000000	42.8	101.0	V	142.0	48.2	-5.4	11.2	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## BLE-Channel 19

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

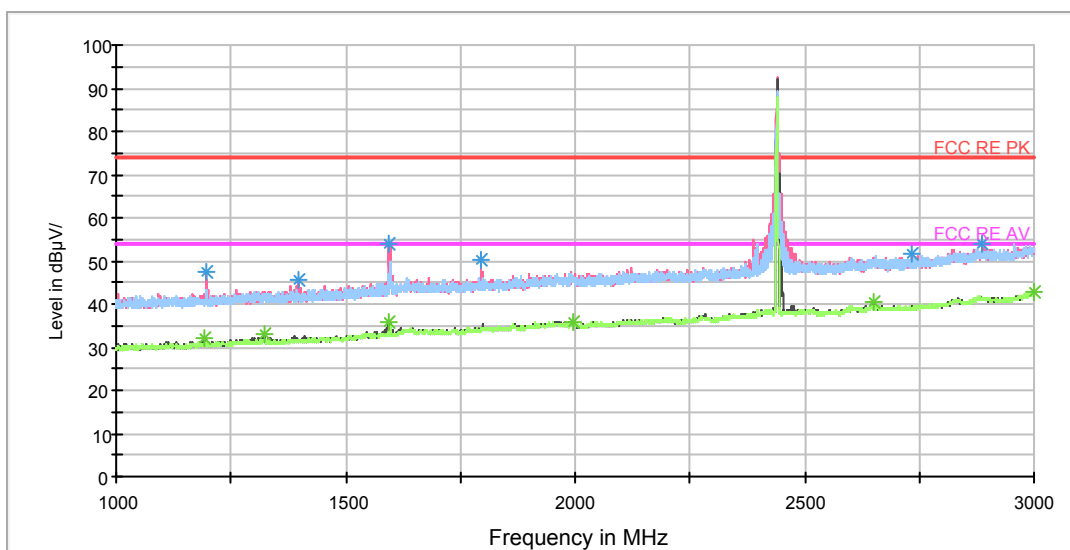
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
47.985138	33.6	121.0	V	22.0	53.8	-20.2	6.4	40.0
96.000100	34.4	224.0	H	264.0	59.8	-25.4	9.1	43.5
144.015062	32.6	224.0	H	250.0	62.4	-29.8	10.9	43.5
216.017500	37.0	180.0	H	157.0	62.7	-25.7	9.0	46.0
312.007500	35.1	101.0	H	52.0	58.2	-23.1	10.9	46.0
799.456000	24.8	104.0	H	325.0	39.6	-14.8	21.2	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

## RE 1G-3GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

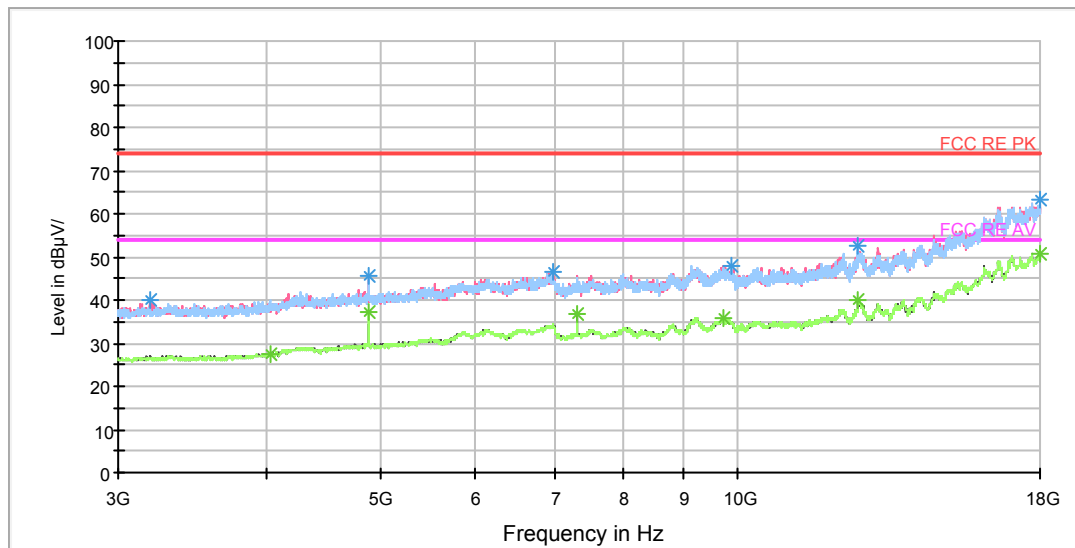
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1197.000000	47.6	205.0	V	72.0	55.8	-8.2	26.4	74
1395.750000	45.6	105.0	V	0.0	52.7	-7.1	28.4	74
1595.750000	53.9	105.0	V	197.0	60.3	-6.4	20.1	74
1794.500000	50.4	105.0	V	197.0	54.7	-4.3	23.6	74
2734.750000	51.7	105.0	V	167.0	52.3	-0.6	22.3	74
2886.250000	53.7	205.0	H	154.0	55.9	-2.2	20.3	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1191.750000	31.9	105.0	V	77.0	40.1	-8.2	22.1	54
1322.500000	33.0	105.0	V	7.0	40.3	-7.3	21.0	54
1594.500000	35.8	105.0	V	345.0	42.2	-6.4	18.2	54
1993.750000	36.0	205.0	H	0.0	39.3	-3.3	18.0	54
2650.500000	40.3	105.0	V	271.0	40.7	-0.4	13.7	54
2998.750000	42.6	105.0	V	352.0	44.9	-2.3	11.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## RE 3-18GHz PK+AV



## Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3193.125000	39.8	105.0	V	0.0	42.7	-2.9	34.2	74
4878.750000	45.4	105.0	H	0.0	47.2	-1.8	28.6	74
6995.625000	46.7	105.0	V	229.0	53.2	-6.5	27.3	74
9888.750000	47.9	105.0	H	0.0	58.2	-10.3	26.1	74
12639.375000	52.4	105.0	H	42.0	66.9	-14.5	21.6	74
18000.000000	63.1	105.0	H	0.0	88.6	-25.5	10.9	74

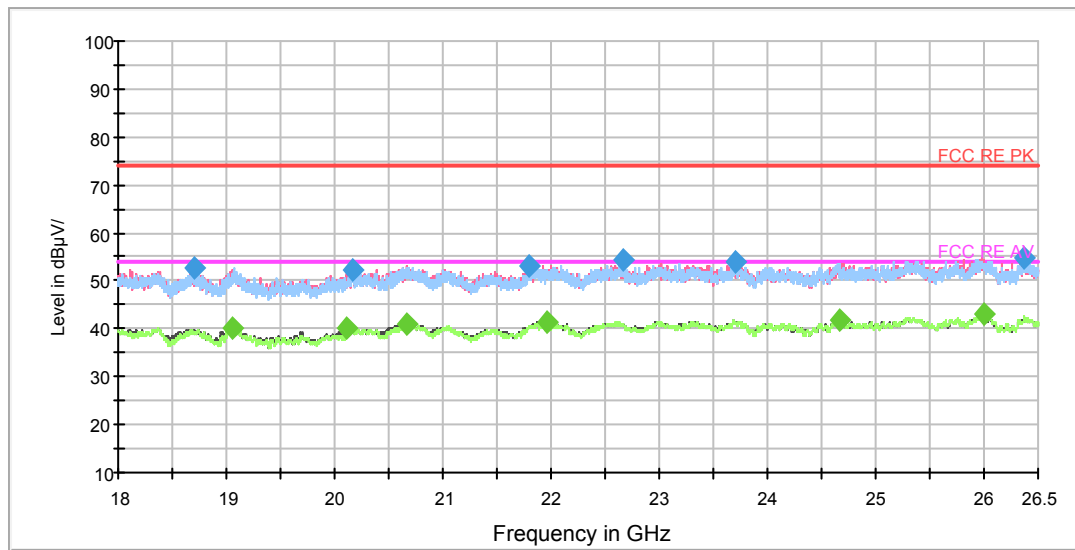
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4029.375000	27.6	105.0	V	91.0	28.7	-1.1	26.4	54
4878.750000	37.2	105.0	H	0.0	39.0	-1.8	16.8	54
7320.000000	36.8	105.0	V	320.0	43.7	-6.9	17.2	54
9738.750000	35.8	105.0	H	42.0	45.8	-10.0	18.2	54
12643.125000	40.0	105.0	H	109.0	54.4	-14.4	14.0	54
17998.125000	50.8	105.0	V	160.0	76.2	-25.4	3.2	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)



RE 18-26.5GHz PK+AV



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18712.937500	52.7	101.0	H	35.0	57.1	-4.4	21.3	74
20167.500000	52.3	101.0	H	0.0	58.1	-5.8	21.7	74
21804.812500	53.0	101.0	V	161.0	61.0	-8.0	21.0	74
22664.375000	54.2	101.0	H	0.0	60.8	-6.6	19.8	74
23697.125000	53.9	101.0	H	53.0	59.8	-5.9	20.1	74
26377.812500	54.9	101.0	V	161.0	60.3	-5.4	19.1	74

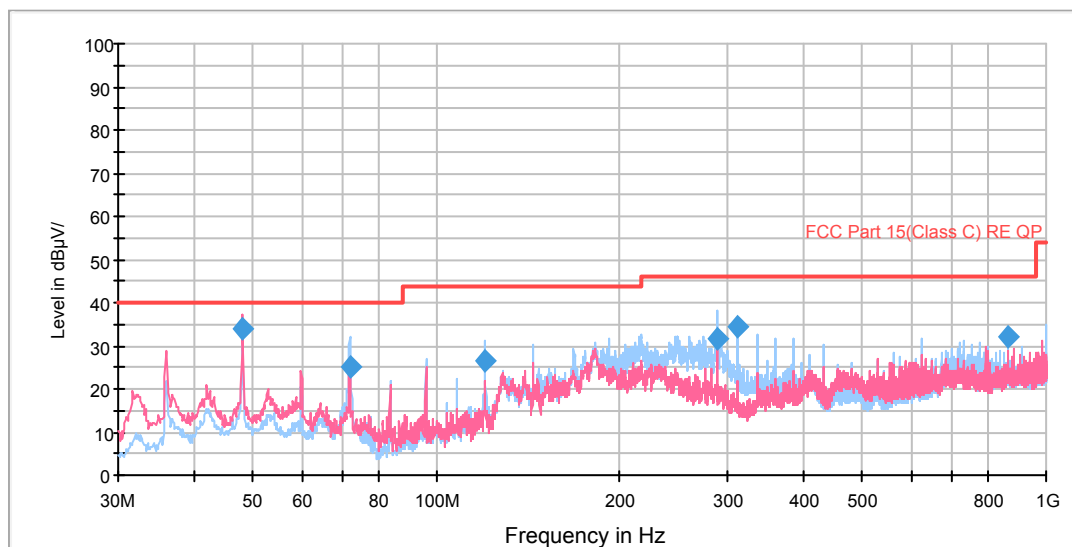
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
19063.562500	40.3	101.0	V	143.0	45.5	-5.2	13.7	54
20108.000000	40.1	101.0	V	107.0	45.9	-5.8	13.9	54
20672.187500	41.1	101.0	V	180.0	47.7	-6.6	12.9	54
21964.187500	41.4	101.0	V	16.0	49.4	-8.0	12.6	54
24665.062500	42.0	101.0	V	71.0	48.0	-6.0	12.0	54
25995.312500	42.9	101.0	H	0.0	48.3	-5.4	11.1	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## BLE-Channel 39

RE 30M-1GHz QP



Radiates Emission from 30MHz to 1GHz

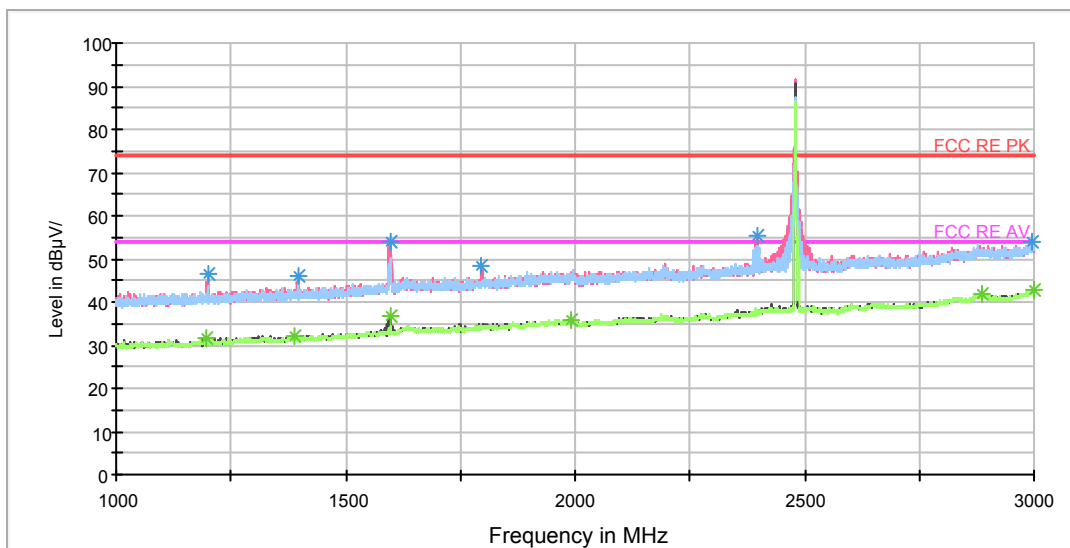
Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
47.985138	34.2	125.0	V	217.0	54.4	-20.2	5.8	40.0
72.012619	25.0	105.0	H	98.0	52.5	-27.5	15.0	40.0
119.987581	26.4	101.0	H	34.0	54.0	-27.6	17.1	43.5
288.020000	31.6	105.0	H	259.0	55.0	-23.4	14.4	46.0
312.007500	34.6	101.0	H	249.0	57.7	-23.1	11.4	46.0
864.038750	32.2	105.0	H	16.0	45.1	-12.9	13.8	46.0

Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

## RE 1G-3GHz PK+AV



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 3GHz

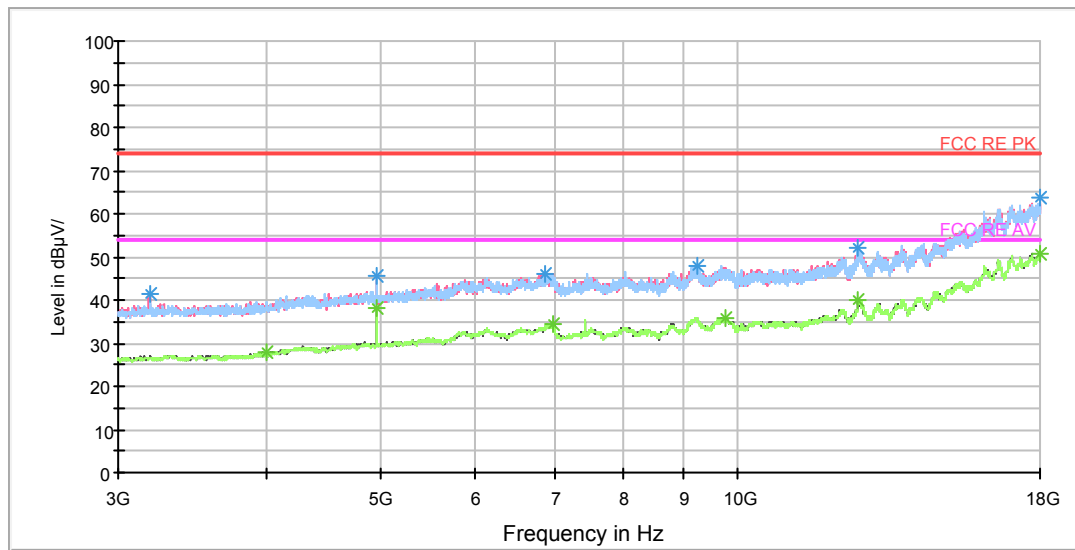
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1199.250000	46.3	105.0	V	134.0	54.5	-8.2	27.7	74
1398.000000	46.0	105.0	V	356.0	53.1	-7.1	28.0	74
1599.000000	53.8	105.0	V	254.0	60.2	-6.4	20.2	74
1793.750000	48.2	105.0	V	320.0	52.5	-4.3	25.8	74
2397.000000	55.2	105.0	V	356.0	56.5	-1.3	18.8	74
2994.500000	54.1	103.0	H	134.0	56.4	-2.3	19.9	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1197.750000	31.7	105.0	V	68.0	39.9	-8.2	22.3	54
1389.750000	32.3	105.0	V	0.0	39.3	-7.0	21.7	54
1596.250000	36.7	105.0	V	0.0	43.1	-6.4	17.3	54
1989.500000	36.0	105.0	V	349.0	39.4	-3.4	18.0	54
2885.000000	41.8	205.0	V	37.0	44.0	-2.2	12.2	54
2998.750000	42.6	205.0	H	222.0	44.9	-2.3	11.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 3-18GHz PK+AV



Radiates Emission from 3GHz to 18GHz

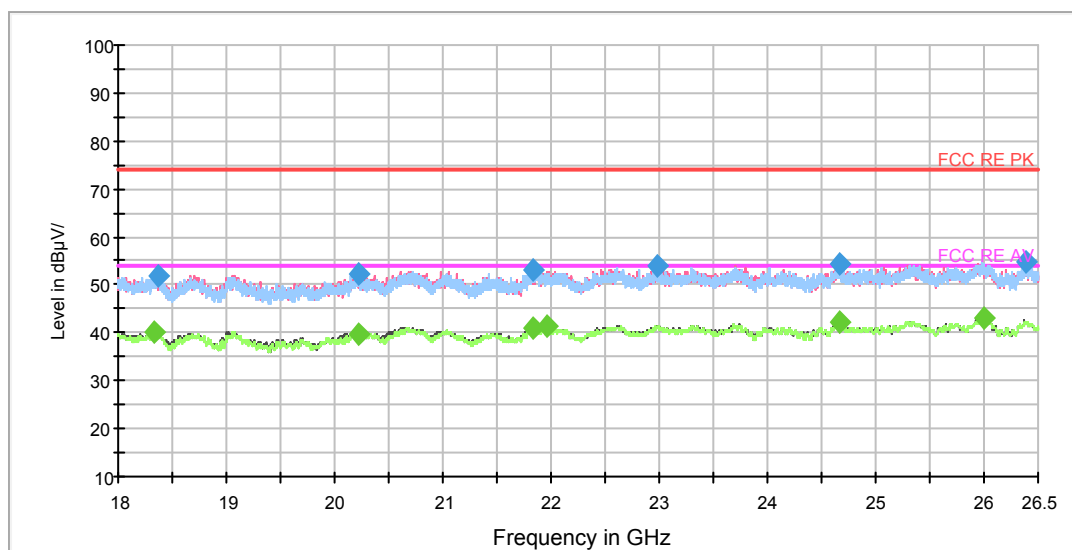
Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3189.375000	41.5	105.0	V	344.0	44.4	-2.9	32.5	74
4959.375000	45.6	105.0	H	0.0	47.4	-1.8	28.4	74
6868.125000	46.1	105.0	V	114.0	52.0	-5.9	27.9	74
9234.375000	48.0	105.0	H	0.0	57.9	-9.9	26.0	74
12635.625000	52.3	105.0	H	0.0	66.4	-14.1	21.7	74
17990.625000	63.5	105.0	V	0.0	88.7	-25.2	10.5	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4006.875000	27.8	105.0	H	0.0	28.9	-1.1	26.2	54
4959.375000	38.1	105.0	H	0.0	39.9	-1.8	15.9	54
6997.500000	34.2	105.0	V	68.0	40.7	-6.5	19.8	54
9750.000000	36.0	105.0	H	84.0	45.8	-9.8	18.0	54
12643.125000	40.2	105.0	V	184.0	54.6	-14.4	13.8	54
18000.000000	50.7	105.0	V	298.0	76.2	-25.5	3.3	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## RE 18-26.5GHz PK+AV



## Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18377.187500	51.9	101.0	H	0.0	55.3	-3.4	22.1	74
20214.250000	52.5	101.0	H	165.0	58.4	-5.9	21.5	74
21837.750000	53.0	101.0	H	0.0	61.0	-8.0	21.0	74
22988.437500	53.9	101.0	V	71.0	60.1	-6.2	20.1	74
24659.750000	54.4	101.0	V	0.0	60.4	-6.0	19.6	74
26387.375000	54.8	101.0	H	17.0	60.2	-5.4	19.2	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18335.750000	40.3	101.0	V	180.0	43.5	-3.2	13.7	54
20216.375000	39.8	101.0	H	0.0	45.7	-5.9	14.2	54
21836.687500	41.0	101.0	V	161.0	49.0	-8.0	13.0	54
21967.375000	41.5	101.0	V	0.0	49.5	-8.0	12.5	54
24660.812500	42.1	101.0	V	178.0	48.1	-6.0	11.9	54
25991.062500	42.9	101.0	V	180.0	48.3	-5.4	11.1	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

## 5.8. Conducted Emission

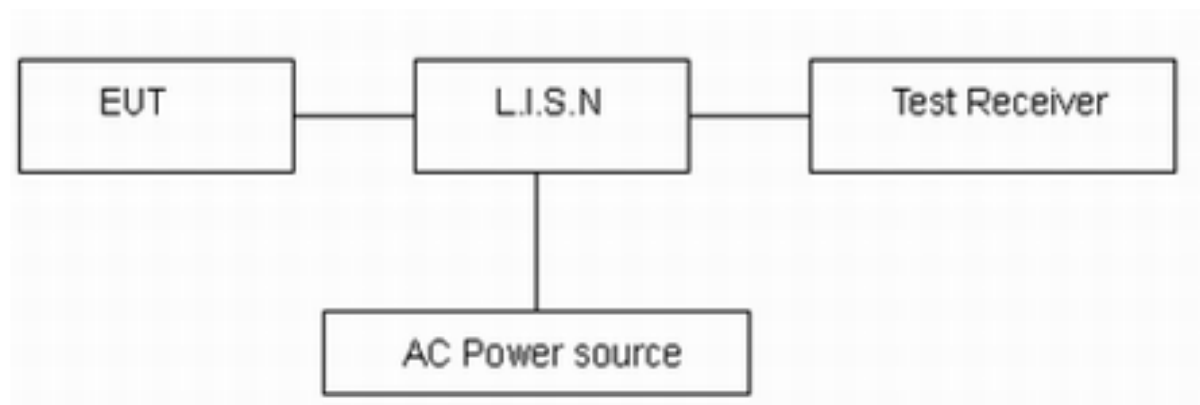
### Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

### Methods of Measurement

The EUT is placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10-2013. Connect the AC power line of the EUT to the L.I.S.N. Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9 kHz, VBW is set to 30kHz. The measurement result should include both L line and N line.  
The test is in transmitting mode.

### Test Setup



Note: AC Power source is used to change the voltage 110V/60Hz.

### Limits

Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50

\*: Decreases with the logarithm of the frequency.

### Measurement Uncertainty

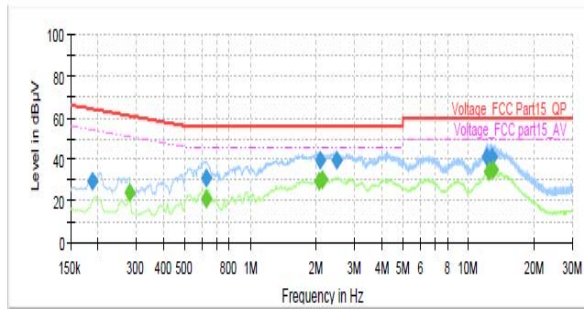
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor  $k = 1.96$ ,  $U = 2.69$  dB.

**Test Results:**

Following plots, Blue trace uses the peak detection and Green trace uses the average detection.

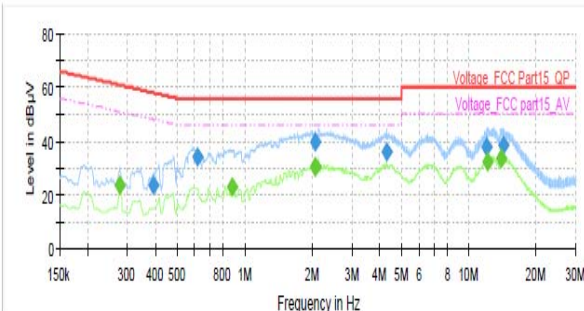
BLE, Channel No.: 0

L Line

**Final Result**

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.188250	29.29	---	64.11	34.82	1000.0	9.000	L1	ON	19.2
0.278250	---	23.87	50.87	27.00	1000.0	9.000	L1	ON	19.2
0.627000	---	21.16	46.00	24.84	1000.0	9.000	L1	ON	19.3
0.627000	31.30	---	56.00	24.70	1000.0	9.000	L1	ON	19.3
2.060250	---	29.60	46.00	16.40	1000.0	9.000	L1	ON	19.1
2.080500	39.44	---	56.00	16.56	1000.0	9.000	L1	ON	19.1
2.141250	---	30.55	46.00	15.45	1000.0	9.000	L1	ON	19.1
2.499000	39.88	---	56.00	16.12	1000.0	9.000	L1	ON	19.0
12.158250	40.70	---	60.00	19.30	1000.0	9.000	L1	ON	19.4
12.351750	---	34.27	50.00	15.73	1000.0	9.000	L1	ON	19.4
12.851250	40.70	---	60.00	19.30	1000.0	9.000	L1	ON	19.5
12.907500	---	34.61	50.00	15.39	1000.0	9.000	L1	ON	19.5

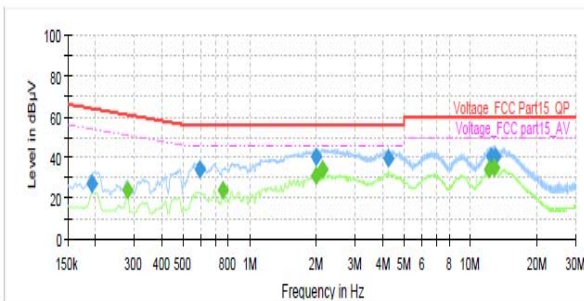
N Line

**Final Result**

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.278250	---	23.86	50.87	27.01	1000.0	9.000	N	ON	19.2
0.393000	23.36	---	58.00	34.64	1000.0	9.000	N	ON	19.2
0.613500	34.15	---	56.00	21.85	1000.0	9.000	N	ON	19.3
0.879000	---	22.84	46.00	23.16	1000.0	9.000	N	ON	19.2
2.062500	---	30.59	46.00	15.41	1000.0	9.000	N	ON	19.1
2.069250	39.39	---	56.00	16.61	1000.0	9.000	N	ON	19.1
2.069250	---	30.50	46.00	15.50	1000.0	9.000	N	ON	19.1
4.287750	36.21	---	56.00	19.79	1000.0	9.000	N	ON	19.1
12.021000	37.60	---	60.00	22.40	1000.0	9.000	N	ON	19.4
12.133500	---	32.44	50.00	17.56	1000.0	9.000	N	ON	19.4
14.007750	---	33.60	50.00	16.40	1000.0	9.000	N	ON	19.4
14.192250	38.52	---	60.00	21.48	1000.0	9.000	N	ON	19.4

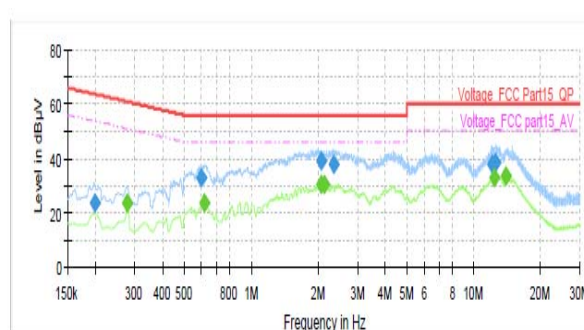
BLE, Channel No.: 19

L Line

**Final Result**

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.192750	27.42	---	63.92	36.49	1000.0	9.000	L1	ON	19.2
0.278250	---	23.84	50.87	27.03	1000.0	9.000	L1	ON	19.2
0.591000	34.43	---	56.00	21.57	1000.0	9.000	L1	ON	19.3
0.757500	---	23.67	46.00	22.33	1000.0	9.000	L1	ON	19.2
2.001750	---	30.66	46.00	15.34	1000.0	9.000	L1	ON	19.1
2.008500	40.12	---	56.00	15.88	1000.0	9.000	L1	ON	19.1
2.134500	---	33.97	46.00	12.03	1000.0	9.000	L1	ON	19.1
4.267500	39.34	---	56.00	16.66	1000.0	9.000	L1	ON	19.1
12.113250	---	34.34	50.00	15.66	1000.0	9.000	L1	ON	19.4
12.331500	40.01	---	60.00	19.99	1000.0	9.000	L1	ON	19.4
12.801750	---	34.66	50.00	15.34	1000.0	9.000	L1	ON	19.5
12.891750	40.60	---	60.00	19.40	1000.0	9.000	L1	ON	19.5

N Line

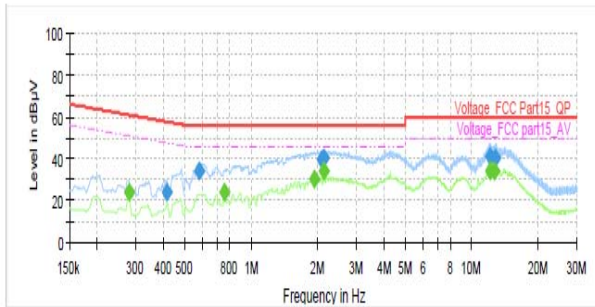
**Final Result**

Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.199500	23.68	---	63.63	39.95	1000.0	9.000	N	ON	19.2
0.278250	---	23.81	50.87	27.06	1000.0	9.000	N	ON	19.2
0.600000	32.97	---	56.00	23.03	1000.0	9.000	N	ON	19.3
0.618000	---	23.59	46.00	22.41	1000.0	9.000	N	ON	19.3
2.069250	---	30.45	46.00	15.55	1000.0	9.000	N	ON	19.1
2.071500	39.14	---	56.00	16.86	1000.0	9.000	N	ON	19.1
2.132250	---	30.52	46.00	15.48	1000.0	9.000	N	ON	19.1
2.348250	37.80	---	56.00	18.20	1000.0	9.000	N	ON	19.0
12.097500	37.72	---	60.00	22.28	1000.0	9.000	N	ON	19.4
12.448500	---	32.70	50.00	17.30	1000.0	9.000	N	ON	19.4
12.520500	38.18	---	60.00	21.82	1000.0	9.000	N	ON	19.4
14.005500	---	33.75	50.00	16.25	1000.0	9.000	N	ON	19.4



## BLE, Channel No.: 39

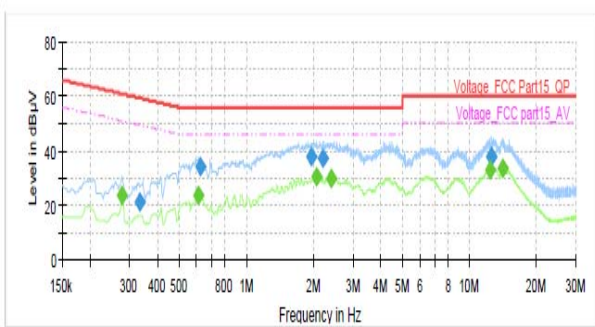
## L Line



## Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.278250	---	23.80	50.87	27.06	1000.0	9.000	L1	ON	19.2
0.415500	24.34	---	57.54	33.20	1000.0	9.000	L1	ON	19.2
0.584250	34.05	---	56.00	21.95	1000.0	9.000	L1	ON	19.3
0.757500	---	23.72	46.00	22.28	1000.0	9.000	L1	ON	19.2
1.936500	---	30.58	46.00	15.42	1000.0	9.000	L1	ON	19.1
2.076000	39.67	---	56.00	16.33	1000.0	9.000	L1	ON	19.1
2.139000	40.39	---	56.00	15.61	1000.0	9.000	L1	ON	19.1
2.139000	---	34.00	46.00	12.00	1000.0	9.000	L1	ON	19.1
12.104250	40.70	---	60.00	19.30	1000.0	9.000	L1	ON	19.4
12.144750	---	34.30	50.00	15.70	1000.0	9.000	L1	ON	19.4
12.657750	---	34.48	50.00	15.52	1000.0	9.000	L1	ON	19.5
12.797250	40.39	---	60.00	19.61	1000.0	9.000	L1	ON	19.5

## N Line



## Final Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.278250	---	23.87	50.87	27.00	1000.0	9.000	N	ON	19.2
0.334500	21.31	---	59.34	38.03	1000.0	9.000	N	ON	19.2
0.611250	---	23.83	46.00	22.17	1000.0	9.000	N	ON	19.3
0.620250	34.25	---	56.00	21.75	1000.0	9.000	N	ON	19.3
1.954500	37.93	---	56.00	18.07	1000.0	9.000	N	ON	19.1
2.060250	---	30.53	46.00	15.47	1000.0	9.000	N	ON	19.1
2.202000	37.12	---	56.00	18.88	1000.0	9.000	N	ON	19.1
2.397750	---	29.81	46.00	16.19	1000.0	9.000	N	ON	19.0
12.437250	---	32.74	50.00	17.26	1000.0	9.000	N	ON	19.4
12.475500	38.02	---	60.00	21.98	1000.0	9.000	N	ON	19.4
12.511500	38.00	---	60.00	22.00	1000.0	9.000	N	ON	19.4
14.055000	---	33.19	50.00	16.81	1000.0	9.000	N	ON	19.4



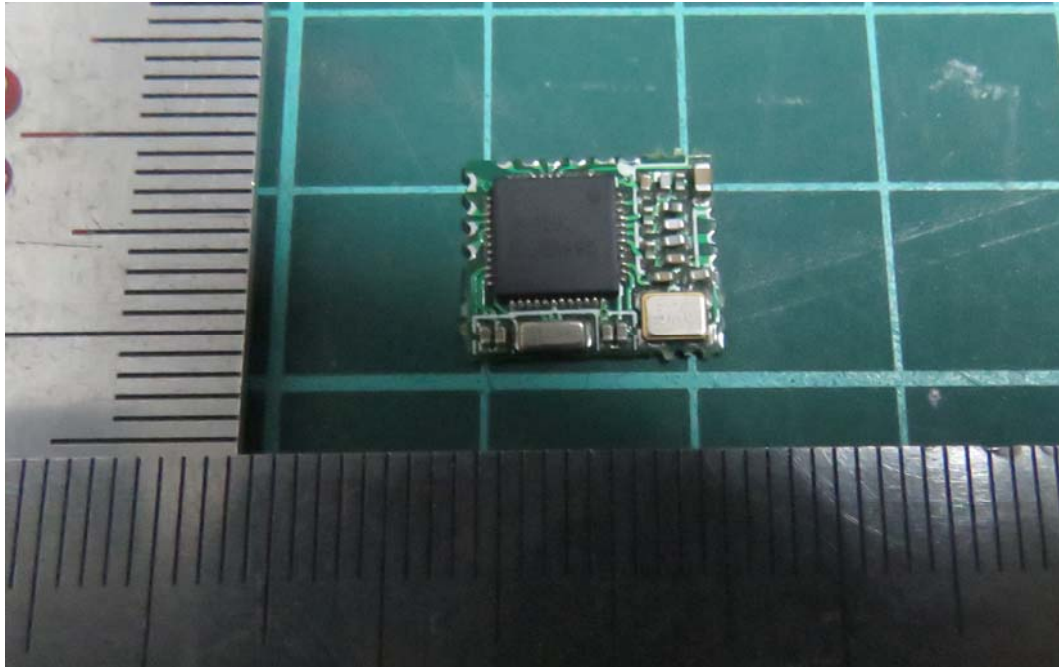
## 6. Main Test Instruments

Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time
Spectrum Analyzer	FSV30	R&S	100815	2016-12-16	2017-12-15
EMI Test Receiver	ESCI	R&S	100948	2016-06-01	2017-05-31
TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2014-12-06	2017-12-05
Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2014-12-06	2017-12-05
Loop Antenna	FMZB1519	SCHWARZBECK	1519-047	2014-02-19	2017-02-18
Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2015-01-30	2018-01-29
EMI Test Receiver	ESCS30	R&S	100138	2016-12-16	2017-12-15
LISN	ENV216	R&S	101171	2016-12-17	2019-12-16
Spectrum Analyzer	N9010A	Agilent	MY47191109	2016-05-21	2017-05-20
MOB COMMS DC SUPPLY	66319D	Agilent	MY43004105	2016-05-21	2017-05-20
Peak Power Meter	U2021XA	Keysight	MY55240003	2016-06-26	2017-06-25
RF Cable	SMA 15cm	Agilent	0001	2017-02-06	2017-08-05

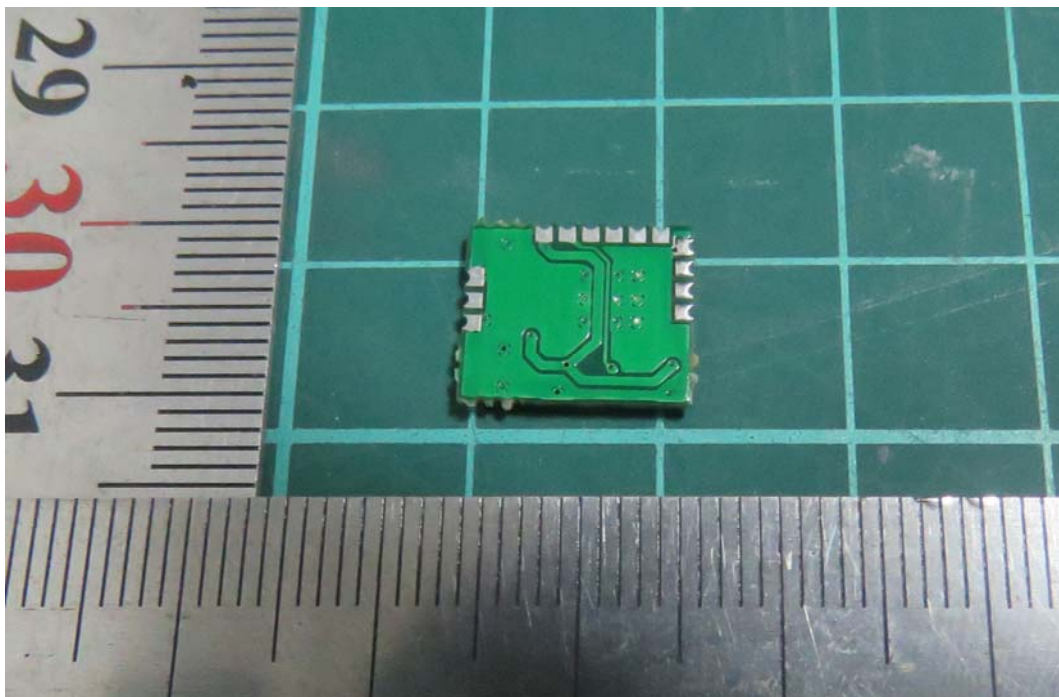
\*\*\*\*\*END OF REPORT \*\*\*\*\*

## ANNEX A: EUT Appearance and Test Setup

### A.1 EUT Appearance



Front Side

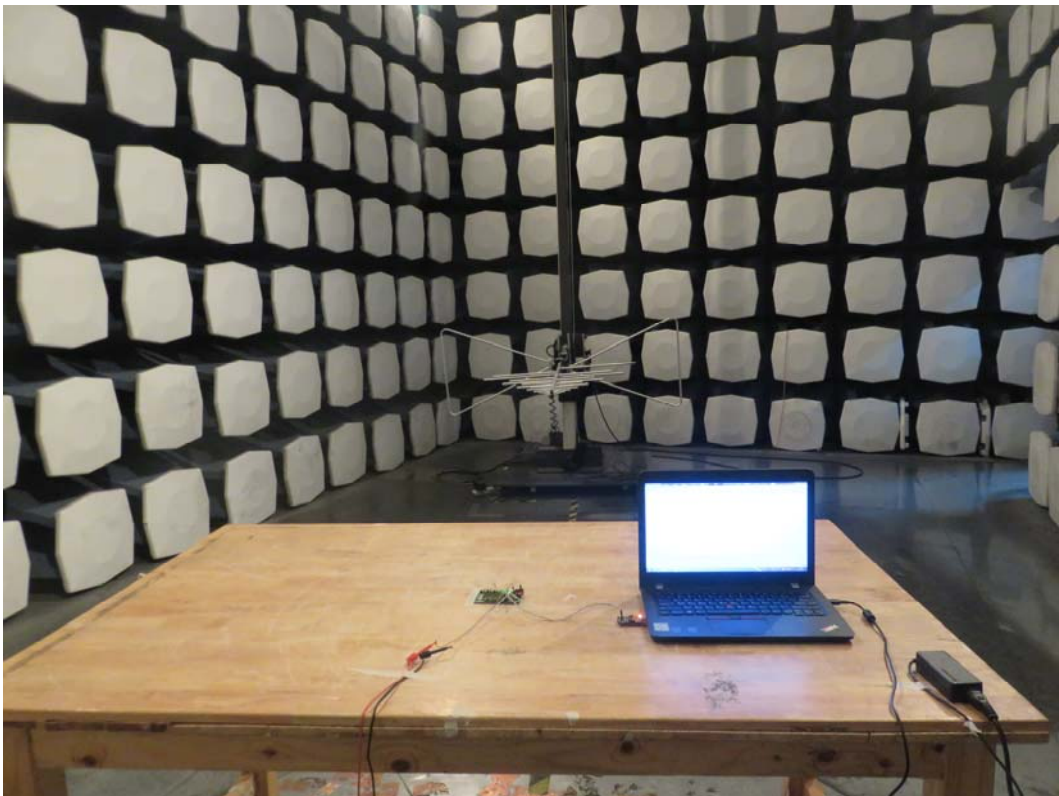
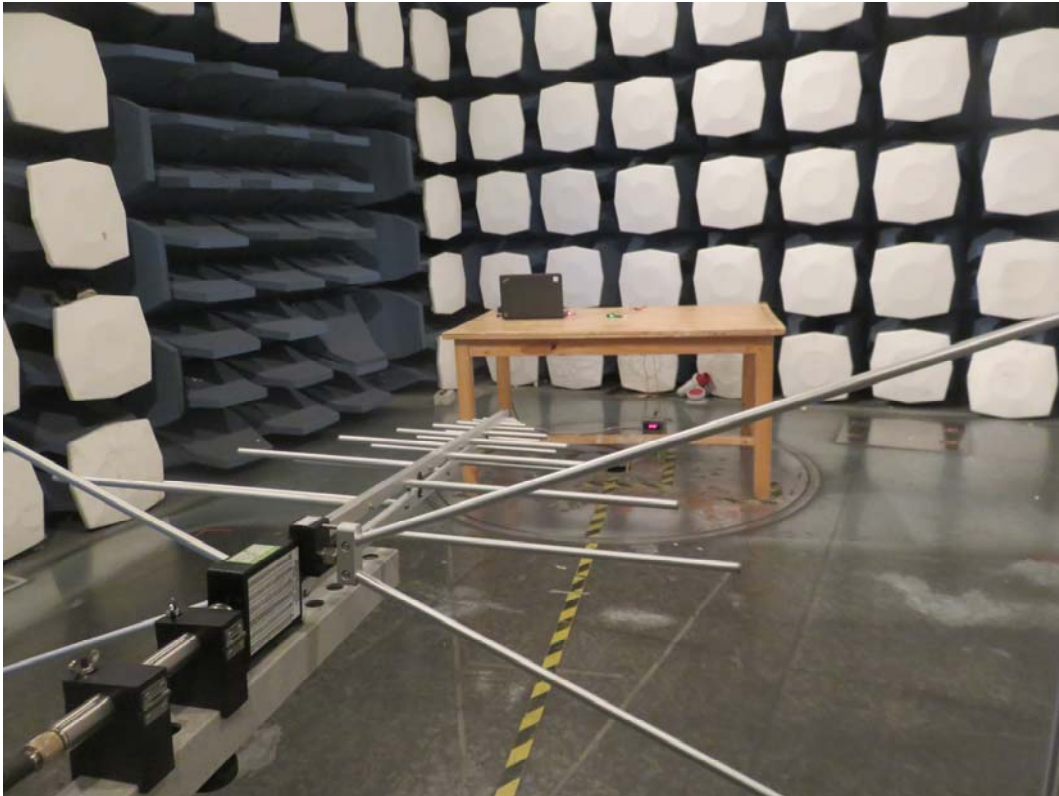


Back Side

a: EUT

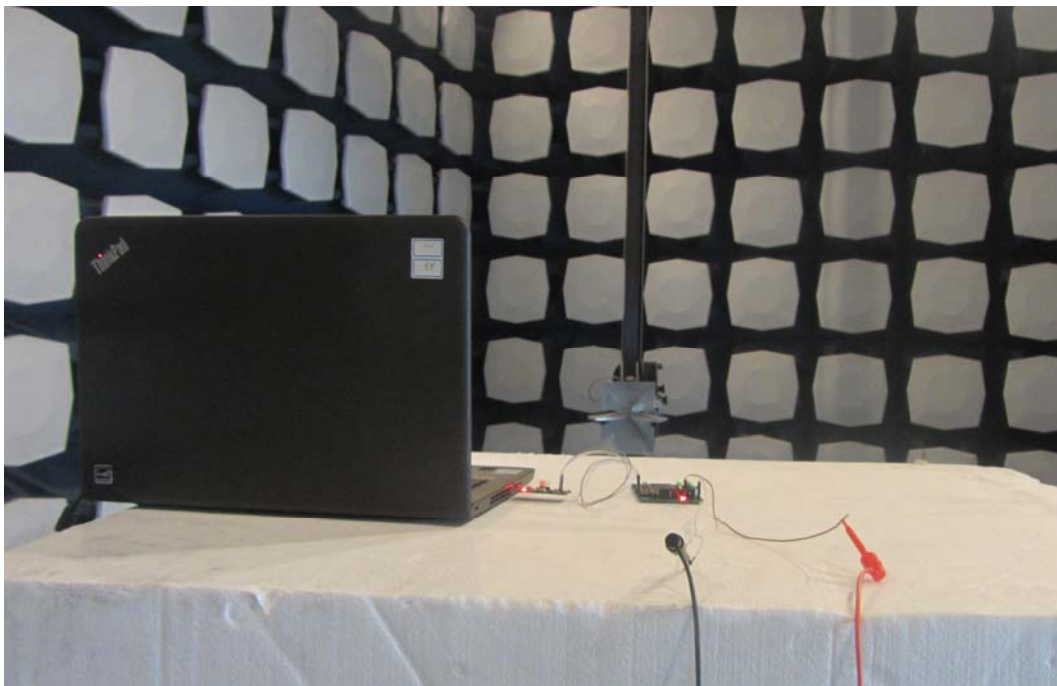
Picture 1 EUT and Accessory

## A.2 Test Setup



30M Hz-1GHz





Above 1GHz

**Picture 2 Radiated Emission Test Setup**



**Picture 3 Conducted Emission Test Setup**