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检测
TESTING
CNAS L2264

RF TEST REPORT

Applicant Shanghai SmartPeak Technology Co.,Ltd.
FCC ID 2AJMSC6000
Product WCDMA Smart Handheld Terminal
Brand SMARTPEAK
Model C6000
Report No. RXA1606-0101RF01
Issue Date September 13, 2016

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15C (2015)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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Summary of Measurement Results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Peak Power Output -Conducted	15.247(b)(1)	PASS
2	Occupied Bandwidth (20dB)	15.247(a)(1)	PASS
3	Frequency Separation	15.247(a)(1)	PASS
4	Time of Occupancy (Dwell Time)	15.247(a)(1)(iii)	PASS
5	Band Edge Compliance	15.247(d)	PASS
6	Spurious Radiated Emissions in the restricted band	15.247(d),15.205,15.209	PASS
7	Number of Hopping Frequency	15.247(a)(1)(iii)	PASS
8	Spurious RF Conducted Emissions	15.247(d)	PASS
9	Radiates Emission	15.247(d),15.205,15.209	PASS
10	AC Power Line Conducted Emission	15.207	PASS
Date of Testing: August 25, 2016~ September 5, 2016			

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.

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 Shanghai, China
City: Shanghai
Post code: 201201
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Website: <http://www.ta-shanghai.com>
E-mail: xukai@ta-shanghai.com

2 General Description of Equipment under Test

Client Information

Applicant	Shanghai SmartPeak Technology Co.,Ltd.
Applicant address	Room 1,No.3 Building, NO.295, Qianqiao Road, Fengxian District, Shanghai, P.R.China
Manufacturer	Shanghai SmartPeak Technology Co.,Ltd.
Manufacturer address	Room 1,No.3 Building, NO.295, Qianqiao Road, Fengxian District, Shanghai, P.R.China

Accessory Equipment Details

Name	Model	Manufacturer	Capacity	S/N
Battery	BL-C60	Shenzhen MBELL ELECTRONICS CO., LTD.	2500mAh/ 9.5Wh	MB16030403110
Charger 1	RCL-X055300c	SHENZHEN RICHLY TECHNOLOGIES CO.,LTD.	/	/
Charger 2	YLJXC-055100	DONGGUAN YINLI ELECTRONICS CO.,LTD.	/	/
Charger pedestal holder	CRD-C60	Shanghai SmartPeak Technology Co.,Ltd.	/	/

General information

Model:	C6000		
IMEI:	868692020019662		
HW Version:	P1		
SW Version:	V1.41.4649		
Power Supply:	Battery/Charger		
Antenna Type:	Internal Antenna		
Test Mode(s):	Basic Rate	Enhanced Data Rate(EDR)	
Modulation Type:	Frequency Hopping Spread Spectrum (FHSS)		
	GFSK	$\pi/4$ DQPSK	8DQPSK
Packet Type: (Maximum Payload)	DH5	2DH5	3DH5
Max. Conducted Power	10.920dBm		
Tested Frequency Range(s):	2400 ~ 2483.5 MHz		
Note: 1. The information of the EUT is declared by the manufacturer. Please refer to the specifications or user manual for details.			



2.1 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 (2015) Radio Frequency Devices**
- **ANSI C63.10 (2013)**
- **DA00-705 Filing and Frequency Measurement Guidelines For Frequency Hopping Spread Spectrum System (2000).**

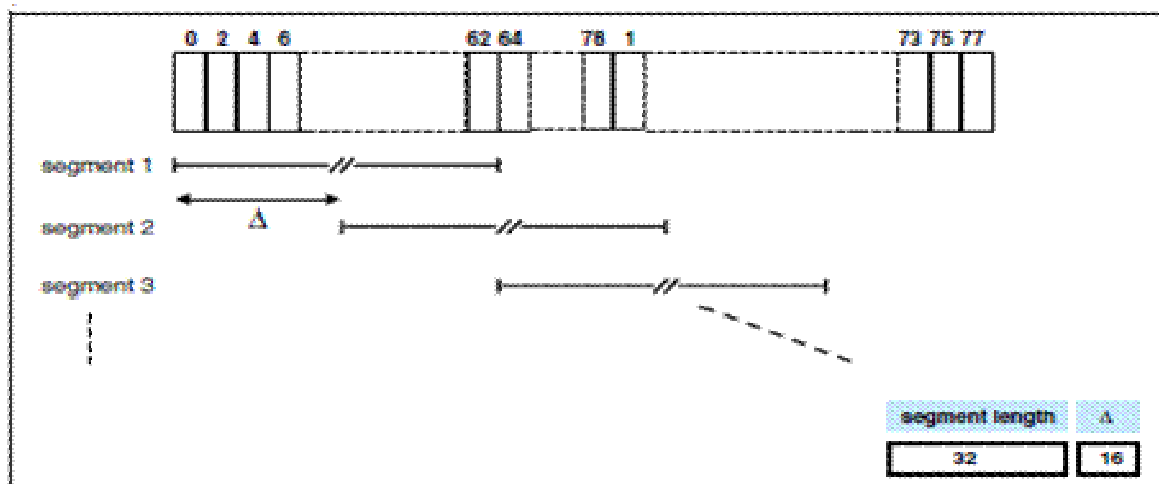
3 Information about the FHSS characteristics

3.1 Pseudorandom Frequency Hopping Sequence

Frequency Hopping Systems. A spread spectrum system in which the carrier is modulated with the coded information in a conventional manner causing a conventional spreading of the RF energy about the frequency carrier. The frequency of the carrier is not fixed but changes at fixed intervals under the direction of a coded sequence. The wide RF bandwidth needed by such a system is not required by spreading of the RF energy about the carrier but rather to accommodate the range of frequencies to which the carrier frequency can hop. The test of a frequency hopping system is that the near term distribution of hops appears random, the long term distribution appears evenly distributed over the hop set, and sequential hops are randomly distributed in both direction and magnitude of change in the hop set.

The selection scheme chooses a segment of 32 hop frequencies spanning about 64 MHz and visits these hops in a pseudo-random order. Next, a different 32-hop segment is chosen, etc. In the page, master page response, slave page response, page scan, inquiry, inquiry response and inquiry scan hopping sequences, the same 32-hop segment is used all the time (the segment is selected by the address; different devices will have different paging segments).

When the basic channel hopping sequence is selected, the output constitutes a pseudo-random sequence that slides through the 79 hops. The principle is depicted in the figure below.



Hop selection scheme in CONNECTION state.

Pseudorandom Frequency Hopping Sequence Table as below:

Channel: 08, 24, 40, 56, 40, 56, 72, 09, 01, 09, 33, 41, 33, 41, 65, 73, 53, 69, 06, 22, 04, 20, 36, 52, 38, 46, 70, 78, 68, 76, 21, 29, 10, 26, 42, 58, 44, 60, 76, 13, 03, 11, 35, 43, 37, 45, 69, 77, 55, 71, 08, 24, 08, 24, 40, 56, 40, 48, 72, 01, 72, 01, 25, 33, 12, 28, 44, 60, 42, 58, 74, 11, 05, 13, 37, 45, etc.

Each frequency used equally on the average by each transmitter.

The system receiver have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

3.2 Equal Hopping Frequency Use

All Bluetooth units participating in the Pico net are time and hop-synchronized to the channel. Each new transmission event begins on the next channel in the hopping sequence after the final channel used in the previous transmission event.

3.3 System Receiver Input Bandwidth

Each channel bandwidth is 1MHz. The system receivers have input bandwidths that match the hopping channel bandwidths of their corresponding transmitters and shift frequencies in synchronization with the transmitted signals.

4 Test Information

4.1 Test Mode

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.

Test Modes		
Band	Radiated Test Cases	Conducted Test Cases
BT	3DH5 8DQPSK (Channel 0/39/78)	DH5 GFSK(Channel 0/39/78) 2DH5 $\pi/4$ -DQPSK(Channel 0/39/78) 3DH5 8DQPSK(Channel 0/39/78)

Note: The maximum RF output power levels are 3DH5 for 8DQPSK modulation, For RSE and CSE, only the maximum RF output power is chosen.

4.2 Peak Power Output –Conducted

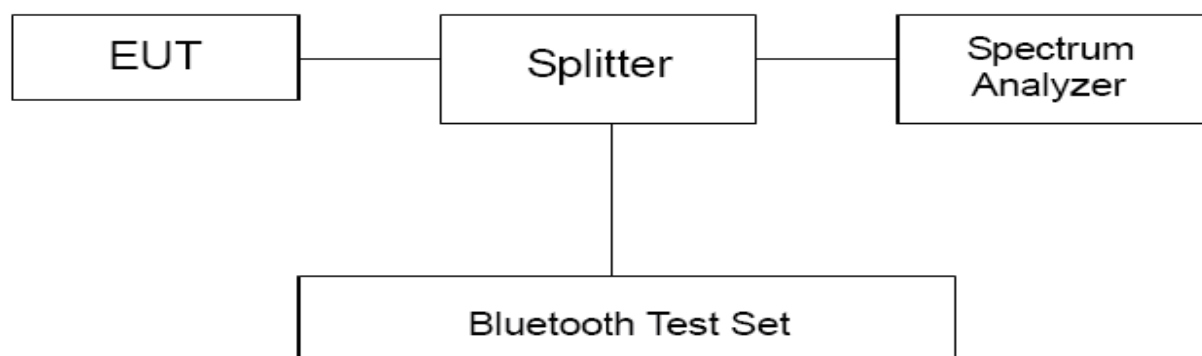
Ambient condition

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 the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The EUT is controlled by the Bluetooth test set to ensure max power transmission with proper modulation. The peak detector is used. RBW is set to 2 MHz; VBW is set to 6 MHz. These measurements have been tested at following channels: 0, 39, and 78.

Test Setup



Limits

Rule Part 15.247 (b) (1) specifies that " For frequency hopping systems operating in the 2400–2483.5 MHz band employing at least 75 non-overlapping hopping channels, and all frequency hopping systems in the 5725–5850 MHz band: 1 watt. For all other frequency hopping systems in the 2400–2483.5 MHz band: 0.125 watts."

Peak Output Power	$\leq 0.125W$ (21dBm)
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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**

Channel	Frequency (MHz)	Peak Output Power (dBm)			Conclusion
		DH5	2DH5	3DH5	
0	2402	7.966	8.838	8.971	PASS
39	2441	10.132	10.83	10.92	PASS
78	2480	7.139	8.01	8.112	PASS

Note: The measured power density (dBm) has the offset with cable loss already.

4.3 Occupied Bandwidth (20dB)

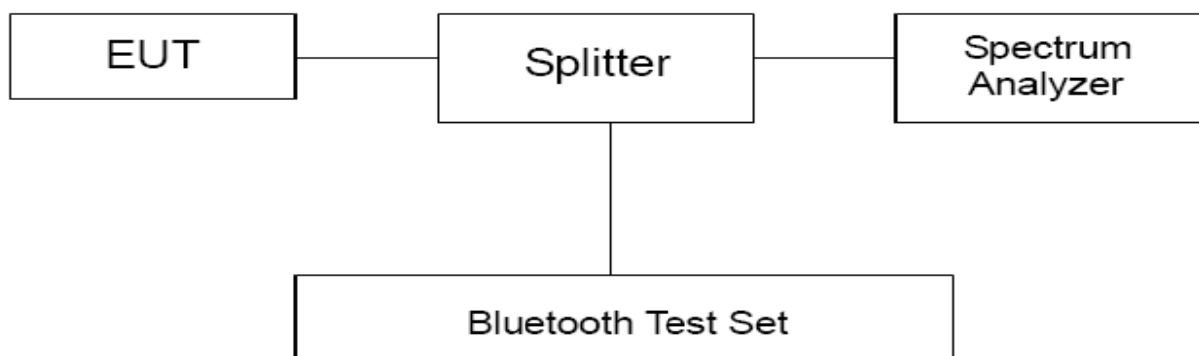
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The occupied bandwidth is measured using spectrum analyzer. RBW is set to 30kHz and VBW is set to 100kHz on spectrum analyzer. -20dB occupied bandwidths are recorded.

Test Setup



Limits

No specific occupied bandwidth requirements in part 15.247(a) (1).

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**

Mode	Channel	Frequency (MHz)	20dB Bandwidth(kHz)
DH5	0	2402	1044
DH5	39	2441	1045
DH5	78	2480	1044
2DH5	0	2402	1294
2DH5	39	2441	1293
2DH5	78	2480	1318
3DH5	0	2402	1303
3DH5	39	2441	1304
3DH5	78	2480	1301



BT DH5 CH0, Carrier frequency (MHz): 2402



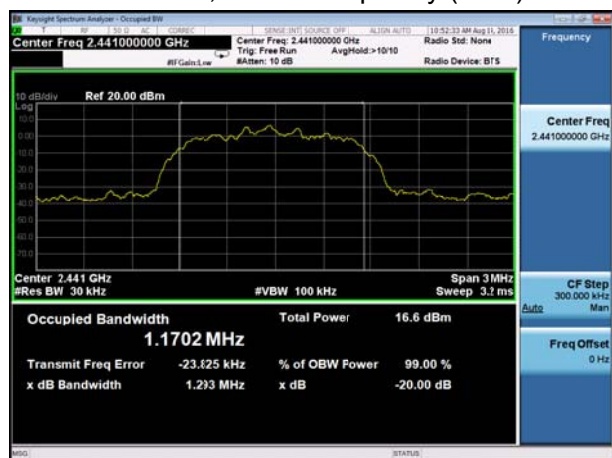
BT 2DH5 CH0, Carrier frequency (MHz): 2402



BT DH5 CH39, Carrier frequency (MHz): 2441



BT 2DH5 CH39, Carrier frequency (MHz): 2441



BT DH5 CH78, Carrier frequency (MHz): 2480



BT 2DH5 CH78, Carrier frequency (MHz): 2480



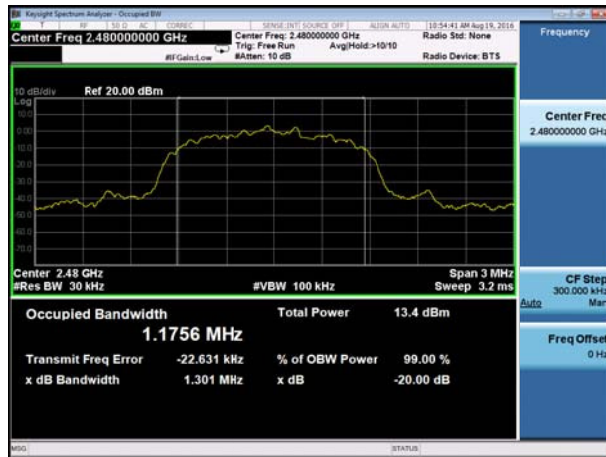
BT 3DH5 CH0, Carrier frequency (MHz): 2402



BT 3DH5 CH39, Carrier frequency (MHz): 2441



BT 3DH5 CH78, Carrier frequency (MHz): 2480



4.4 Frequency Separation

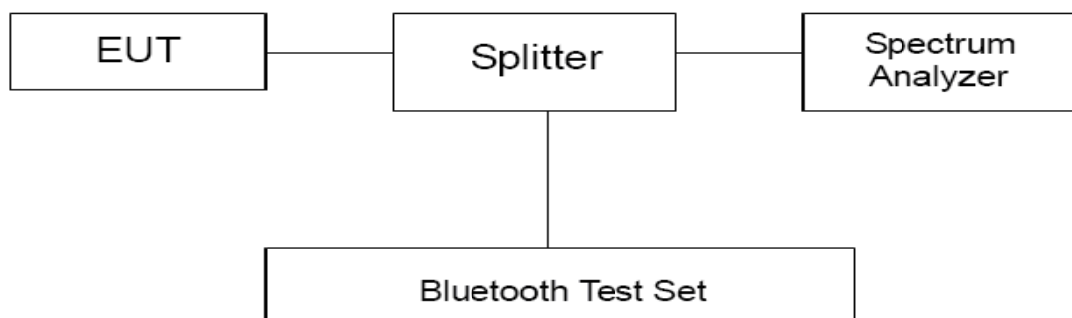
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 30 kHz and VBW is set to 100 kHz on spectrum analyzer. Set EUT on Hopping on mode.

Test setup



Limits

Rule Part 15.247(a)(1) specifies that "Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400–2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater, provided the systems operate with an output power no greater than 125 mW. "

Note: The value of two-thirds of 20 dB bandwidth is always greater than 25 kHz.

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:

Packet type	Carrier frequency (MHz)	Carrier frequency separation(kHz)	20dB Bandwidth(kHz)	Limit (kHz)	Conclusion
DH5	2441	1002	1045	696.67	PASS
2DH5	2441	999	1294	862.67	PASS
3DH5	2441	1002	1304	869.33	PASS

Note: The limit is two-thirds of 20 dB bandwidth.

BT DH5 CH39, Carrier frequency (MHz): 2441



BT 2DH5 CH39, Carrier frequency (MHz): 2441



BT 3DH5 CH39, Carrier frequency (MHz): 2441



4.5 Time of Occupancy (Dwell Time)

Ambient condition

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

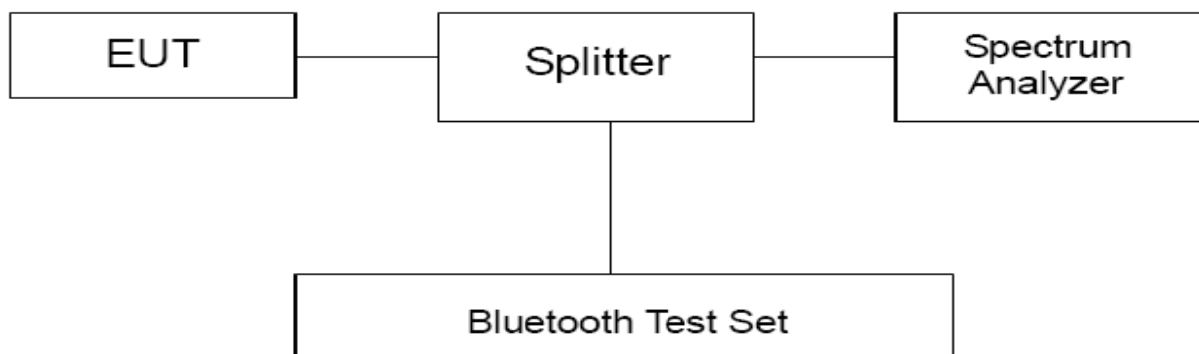
Methods of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 1MHz and VBW is set to 3MHz on spectrum analyzer .The time slot length is measured of three different packet types, which are available in the Bluetooth technology. Those are DH1, DH3 and DH5 packets. The dwell time is calculated by:

Dwell time = time slot length * hop rate * 0.4s with:

- hop rate=1600 * 1/s for DH1 packet =1600
- hop rate=1600/3 * 1/s for DH3 packet =533.33
- hop rate=1600/5 * 1/s for DH5 packet =320

Test Setup



Limits

Rule Part 22.913(a) specifies that " Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed."

Dwell time	≤ 400ms
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Measurement Uncertainty

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

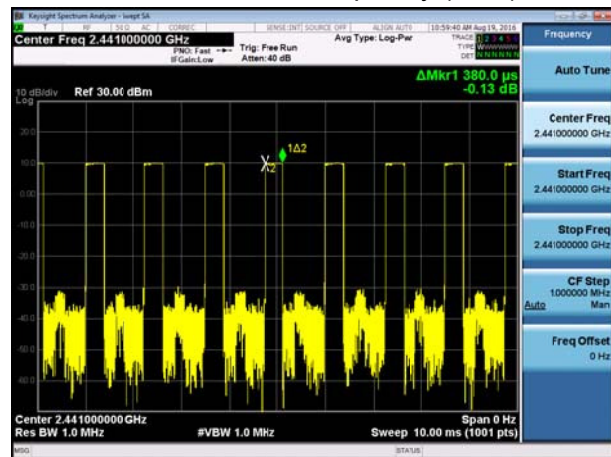
Requirements	Uncertainty	
Dwell Time	DH1	$U=0.64\text{ms}$
	DH3	$U=0.80\text{ms}$
	DH5	$U=0.70\text{ms}$
	2DH1	$U=0.64\text{ms}$
	2DH3	$U=0.80\text{ms}$
	2DH5	$U=0.70\text{ms}$
	3DH1	$U=0.64\text{ms}$
	3DH3	$U=0.80\text{ms}$
	3DH5	$U=0.70\text{ms}$

Test Results:

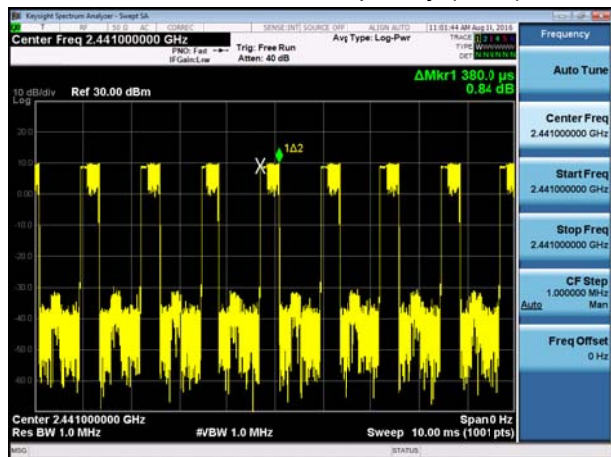
Channel 39					
Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
DH1	1600	0.380	243.20	400	PASS
DH3	533.33	1.620	345.60	400	PASS
DH5	320	2.880	368.64	400	PASS
2DH1	1600	0.380	243.20	400	PASS
2DH3	533.33	1.620	345.60	400	PASS
2DH5	320	2.880	368.64	400	PASS
3DH1	1600	0.380	243.20	400	PASS
3DH3	533.33	1.610	343.46	400	PASS
3DH5	320	2.880	368.64	400	PASS
Note: Dwell time = time slot length * hop rate * 0.4s					



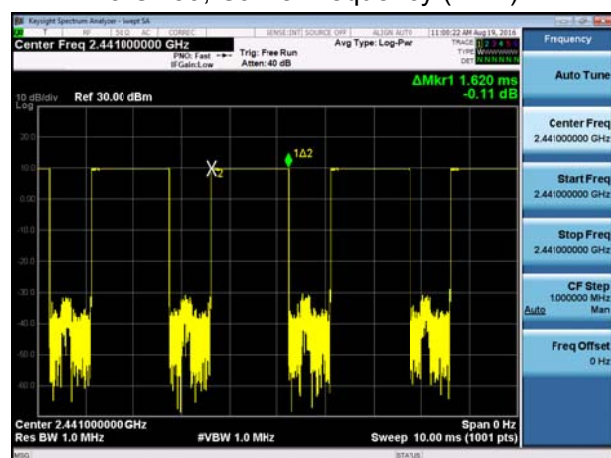
BT DH1 CH39, Carrier frequency (MHz): 2441



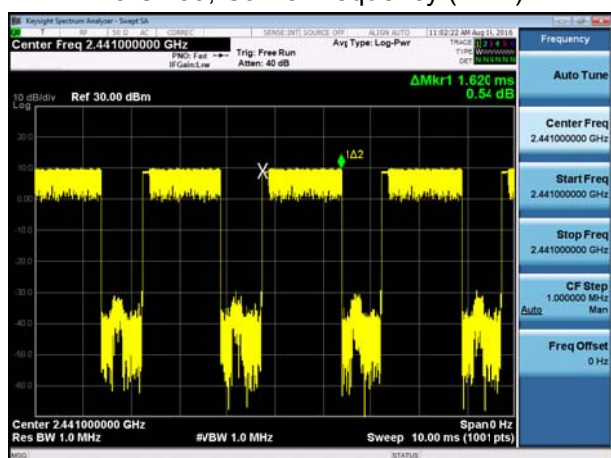
BT 2DH1 CH39, Carrier frequency (MHz): 2441



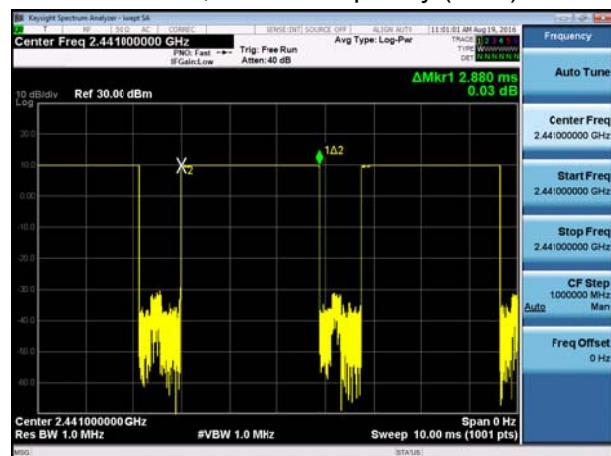
BT DH3 CH39, Carrier frequency (MHz): 2441



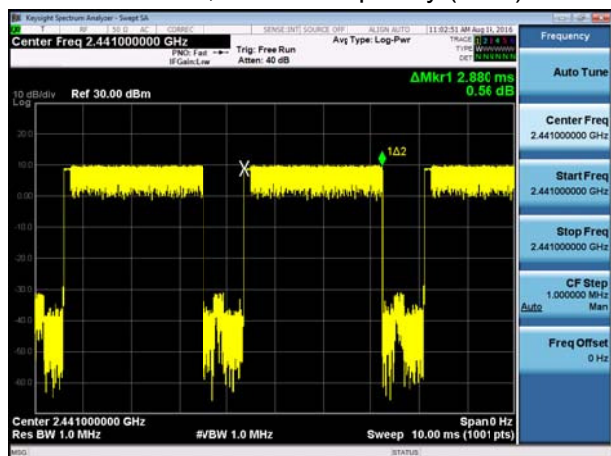
BT 2DH3 CH39, Carrier frequency (MHz): 2441



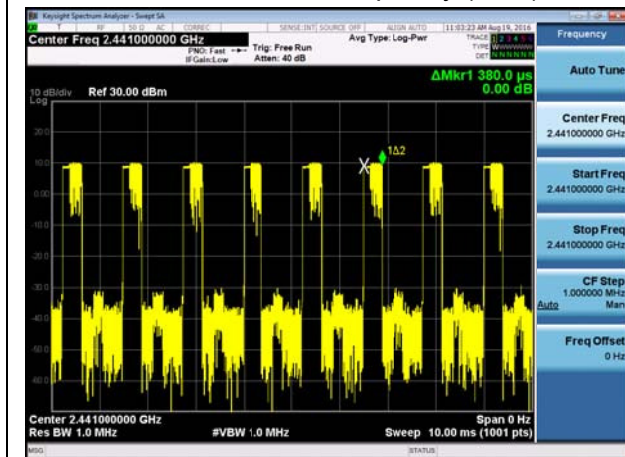
BT DH5 CH39, Carrier frequency (MHz): 2441



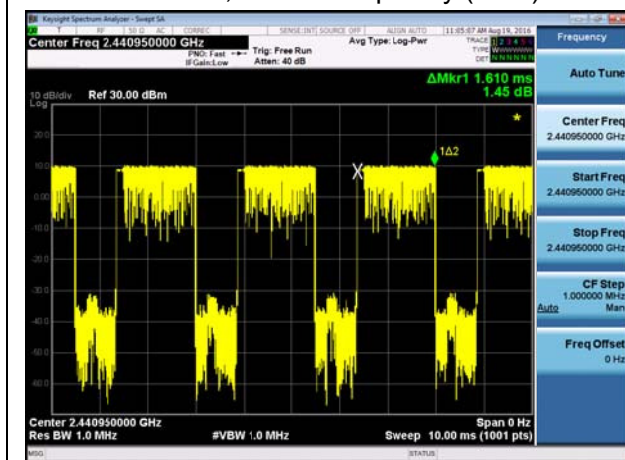
BT 2DH5 CH39, Carrier frequency (MHz): 2441



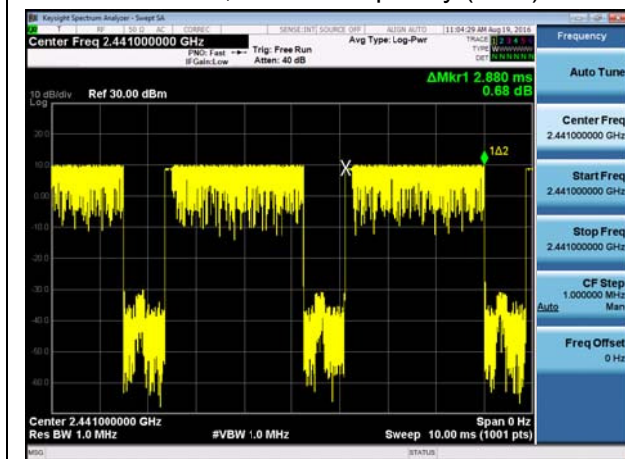
BT 3DH1 CH39, Carrier frequency (MHz): 2441



BT 3DH3 CH39, Carrier frequency (MHz): 2441



BT 3DH5 CH39, Carrier frequency (MHz): 2441



4.6 Band Edge Compliance

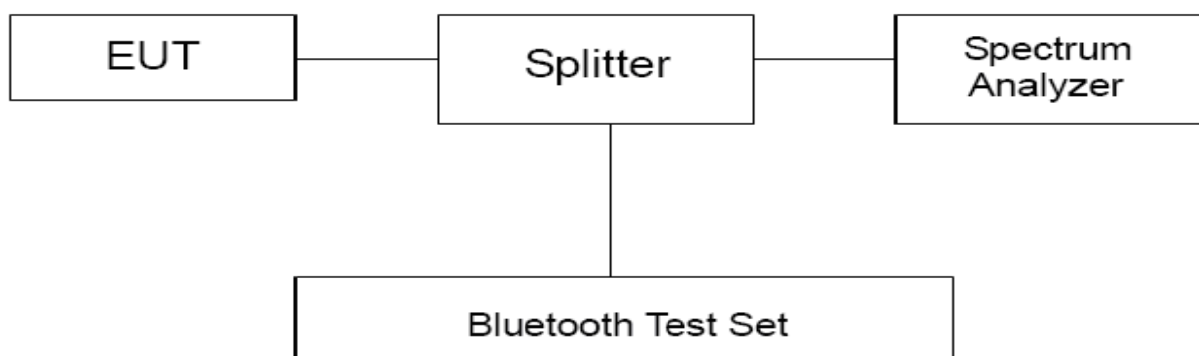
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. The lowest and highest channels were measured. The peak detector is used. RBW is set to 100 kHz and VBW is set to 300 kHz on spectrum analyzer. EUT test for Hopping On mode and Hopping Off mode.

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 $k = 1.96$.

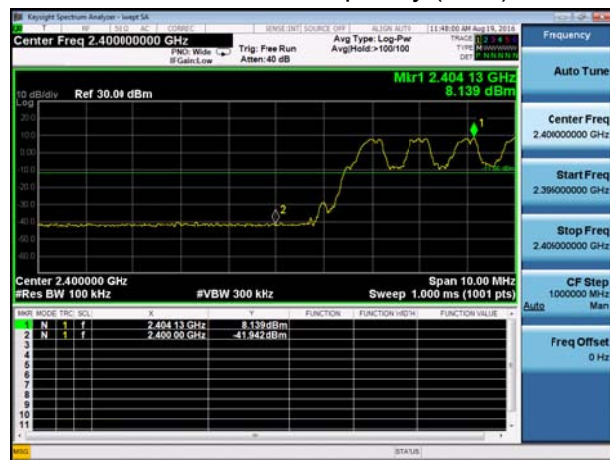
Frequency	Uncertainty
2GHz-3GHz	1.407 dB



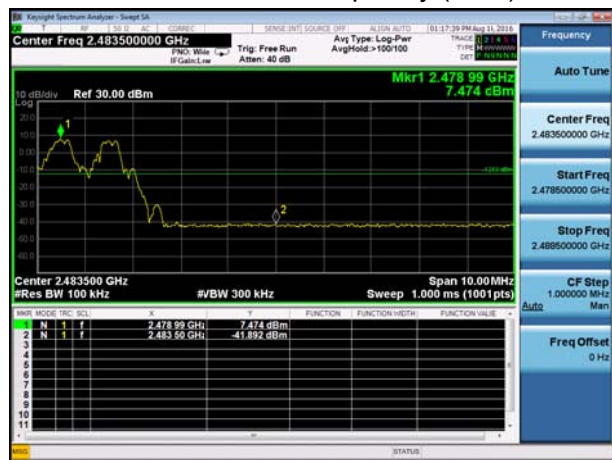
Test Results

Hopping On

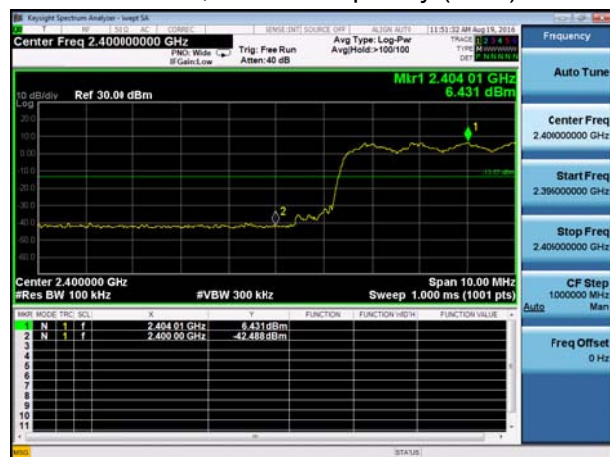
BT DH5 CH0, Carrier frequency (MHz): 2402



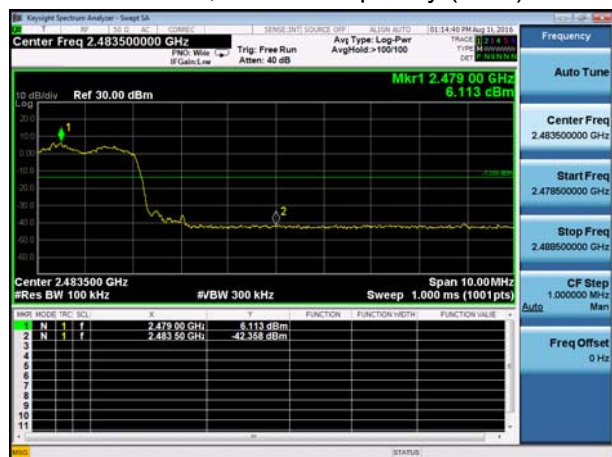
BT DH5 CH78, Carrier frequency (MHz): 2480



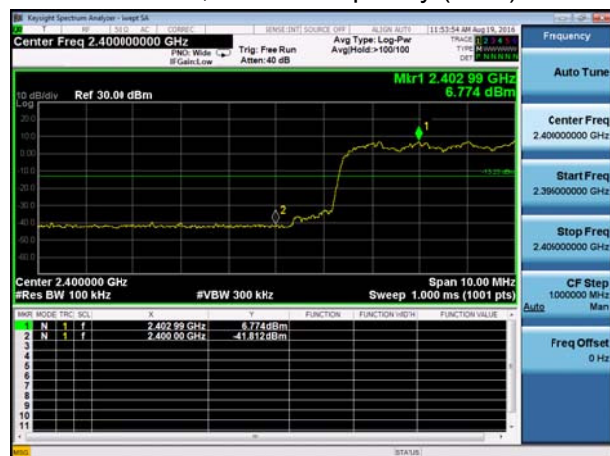
BT 2DH5 CH0, Carrier frequency (MHz): 2402



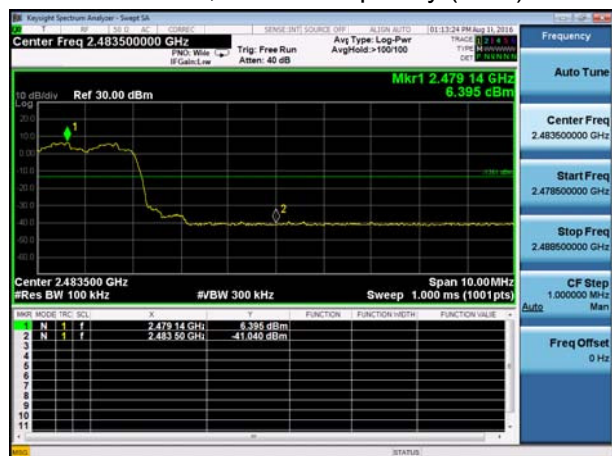
BT 2DH5 CH78, Carrier frequency (MHz): 2480



BT 3DH5 CH0, Carrier frequency (MHz): 2402



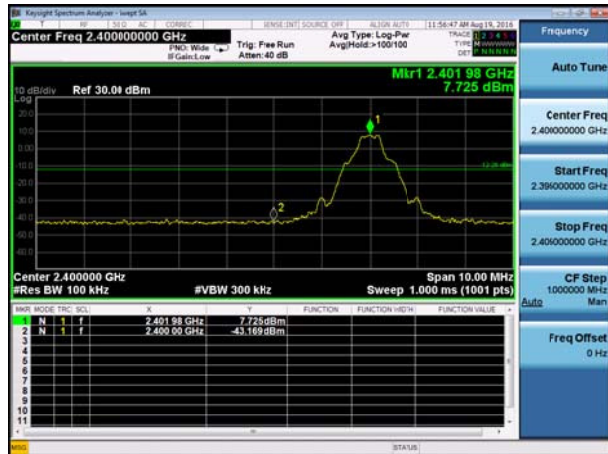
BT 3DH5 CH78, Carrier frequency (MHz): 2480



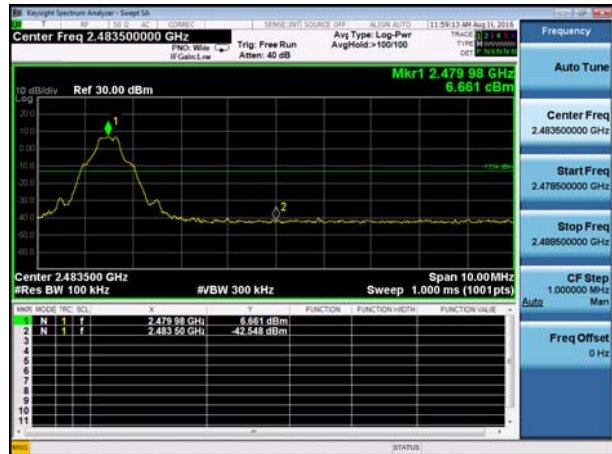


Hopping Off

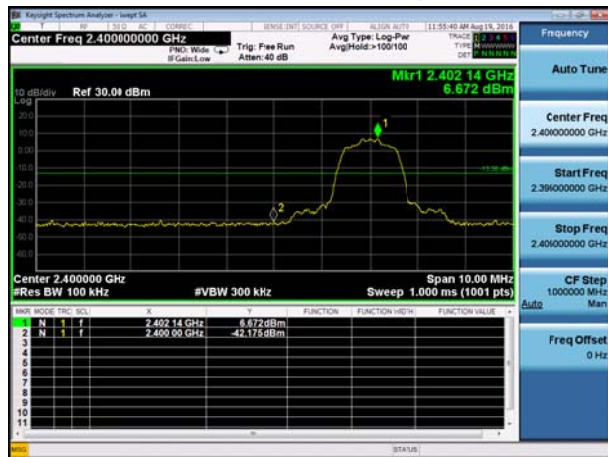
BT DH5 CH0, Carrier frequency (MHz): 2402



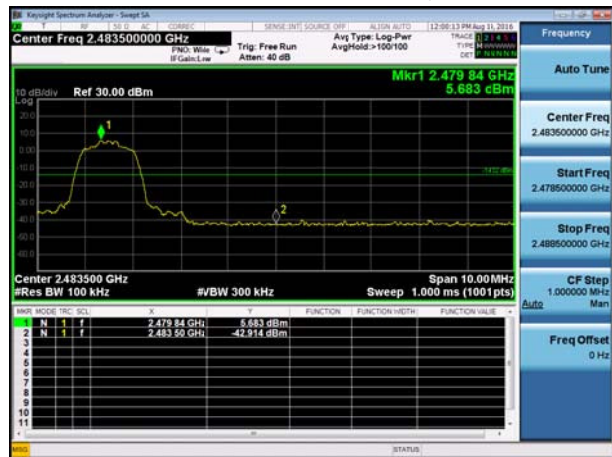
BT DH5 CH78, Carrier frequency (MHz): 2480



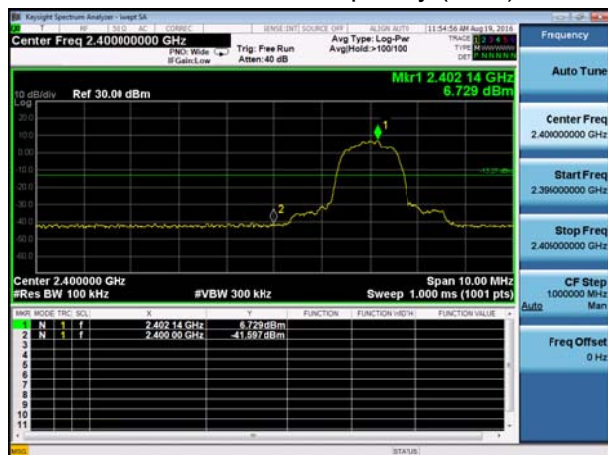
BT 2DH5 CH0, Carrier frequency (MHz): 2402



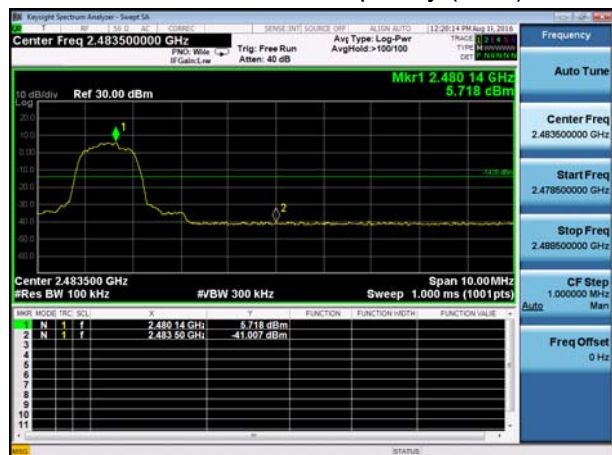
BT 2DH5 CH78, Carrier frequency (MHz): 2480



BT 3DH5 CH0, Carrier frequency (MHz): 2402



BT 3DH5 CH78, Carrier frequency (MHz): 2480



4.7 Spurious Radiated Emissions in the Restricted Band

Ambient condition

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

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. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.

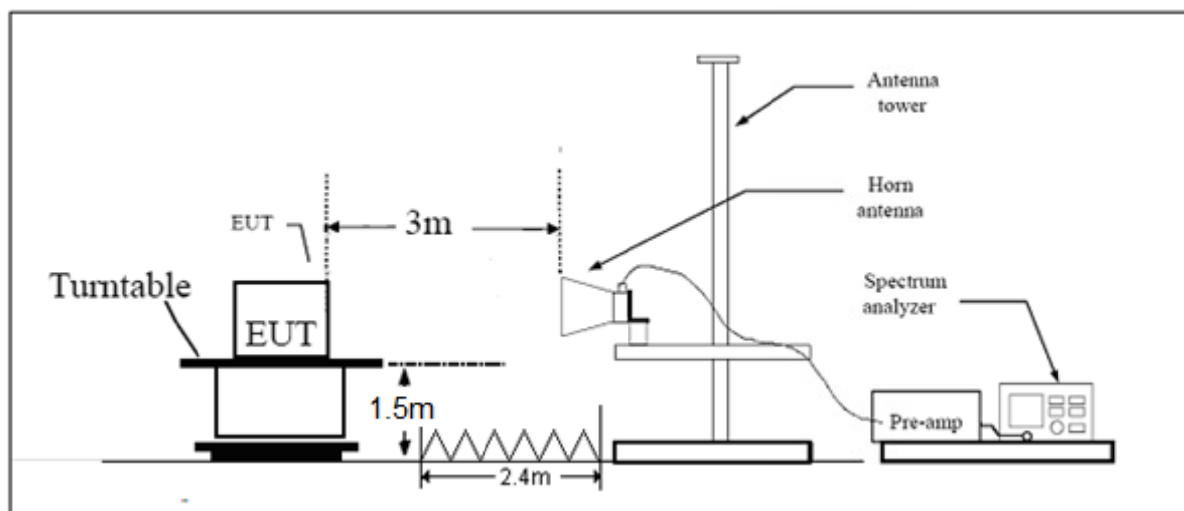
Set the spectrum analyzer in the following:

- PEAK: RBW=VBW=1MHz / Sweep=AUTO
- The dwell time per channel of the hopping signal is less than 100 ms, then the reading obtained with the 10 Hz VBW may be further adjusted by a “duty cycle correction factor”, derived from $20\log(\text{dwell time}/100 \text{ ms})$, in an effort to demonstrate compliance with the 15.209 limit.
If the emission is pulsed, modify the unit for continuous operation; use the settings shown above, then correct the reading by subtracting the peak- average correction factor, derived from the appropriate duty cycle calculation.

This setting method can refer to **DA00-705**.

The test is in transmitting mode. The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis) and docking mode. The worst emission was found in stand-up position (Y axis) and the worst case was recorded.

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
¹ 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	(²)
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=74dBuV/m

Average Limit=54dBuV/m

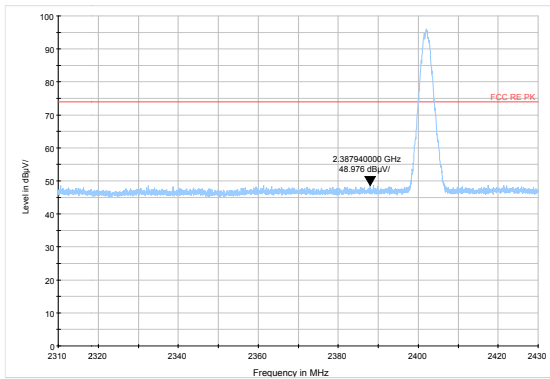
Measurement Uncertainty

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.

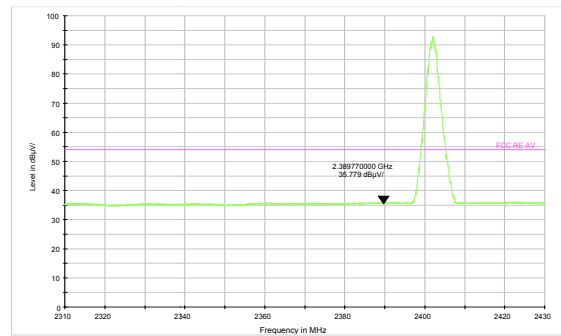


Test Results:

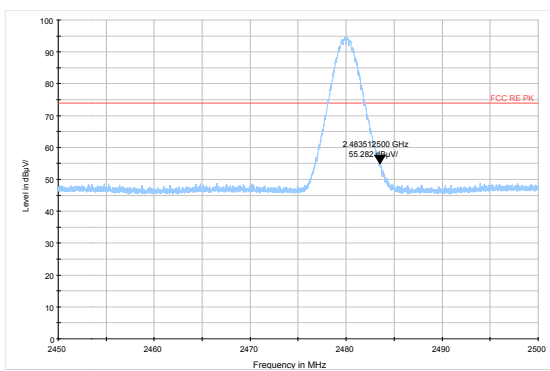
DH5-Channel 0: Peak



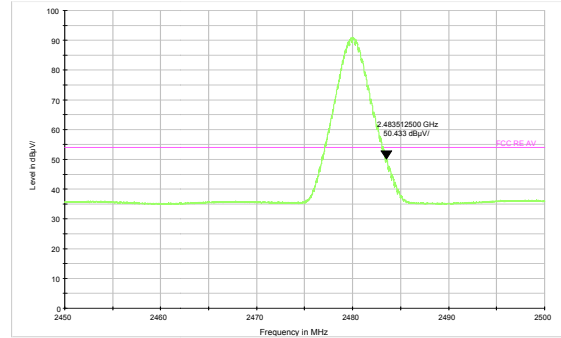
DH5-Channel 0: Average



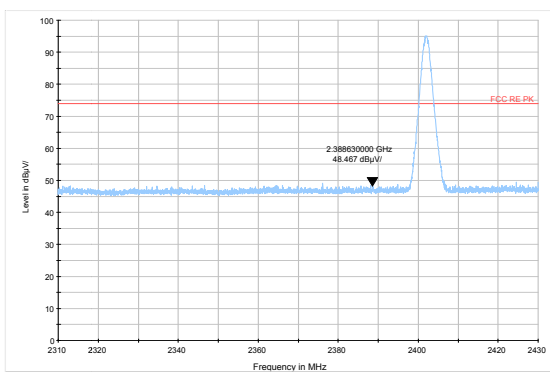
DH5-Channel 78: Peak



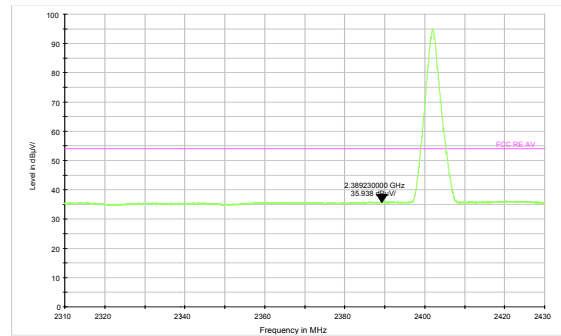
DH5-Channel 78: Average



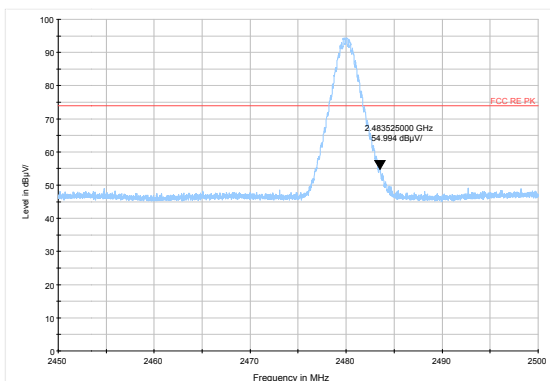
3DH5-Channel 0: Peak



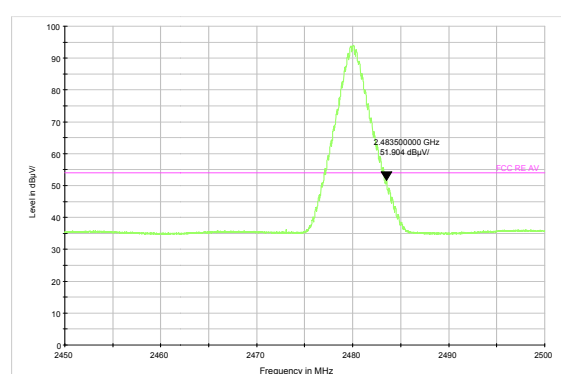
3DH5-Channel 0: Average



3DH5-Channel 78: Peak



3DH5-Channel 78: Average



4.8 Number of hopping Frequency

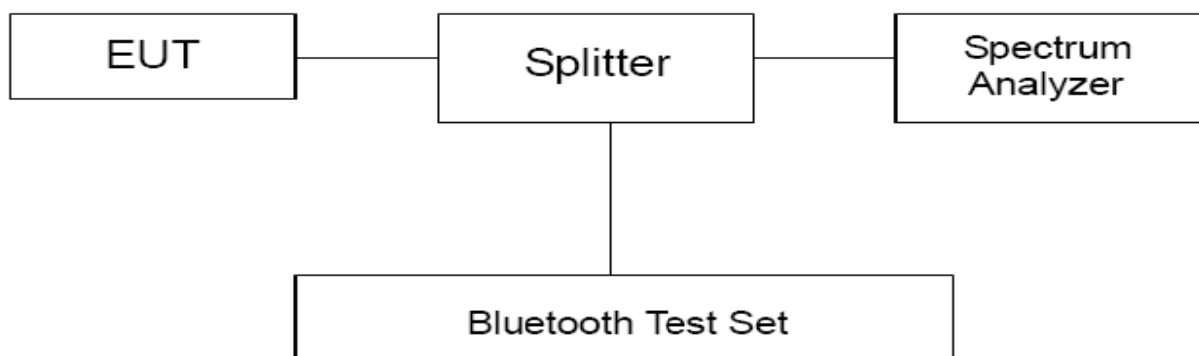
Ambient condition

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

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter with a known loss. RBW is set to 1MHz and VBW is set to 1 MHz on spectrum analyzer. Set EUT on Hopping on mode.

Test setup



Limits

Rule Part 15.247(a) (1) (iii) specifies that” Frequency hopping systems in the 2400–2483.5 MHz band shall use at least 15 channels.”

Limits	≥ 15 channels
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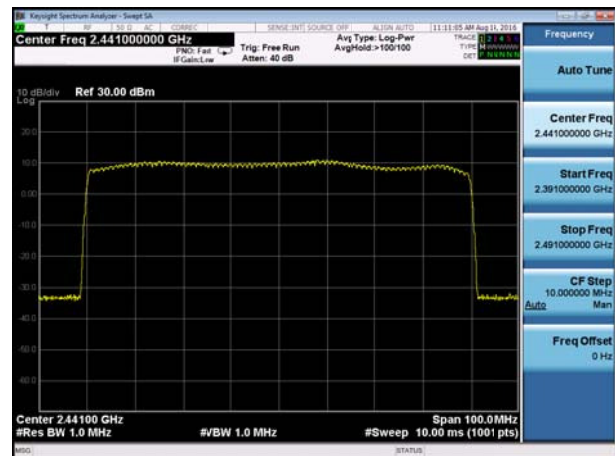
Test Results:

	Number of hopping channels	conclusion
DH5	79	PASS
2DH5	79	PASS
3DH5	79	PASS

DH5 2400 MHz – 2483.5 MHz



2DH5 2400 MHz – 2483.5 MHz



3DH5 2400 MHz – 2483.5 MHz



4.9 Spurious RF Conducted Emissions

Ambient condition

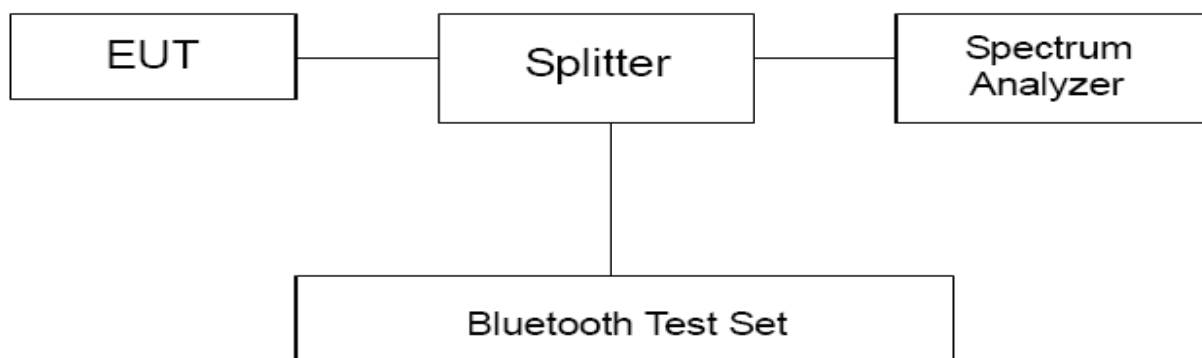
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer and Bluetooth test set via a power splitter 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.”

Mode	Carrier frequency (MHz)	Reference value (dBm)	Limit
DH5	2402	4.747	-15.253
	2441	1.776	-18.224
	2480	1.468	-18.532
EDR (3DH5)	2402	5.827	-14.173
	2441	6.825	-13.175
	2480	1.779	-18.221

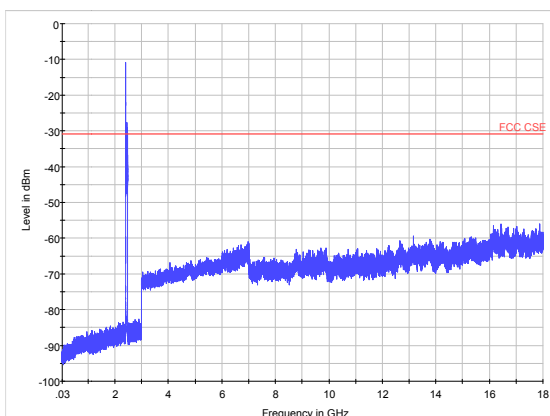
Measurement Uncertainty

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

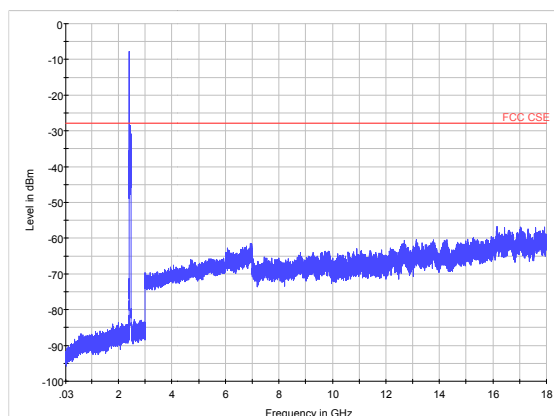
Frequency	Uncertainty
100kHz-2GHz	0.684 dB
2GHz-26GHz	1.407 dB

**Test Results:**

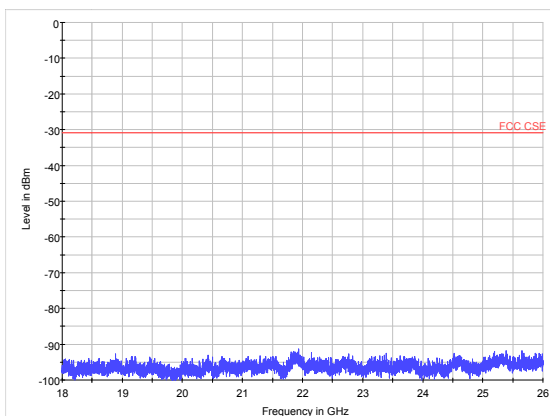
GFSK-CH0 30MHz to 18GHz



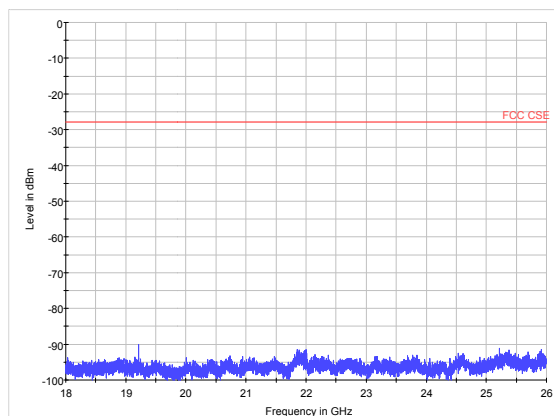
EDR-CH0 30MHz to 18GHz



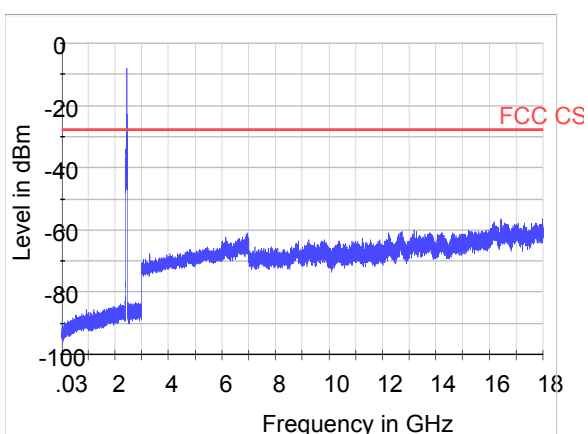
GFSK-CH0 18GHz to 26.5GHz



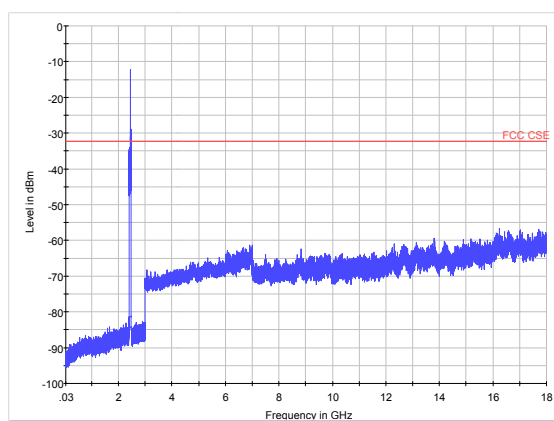
EDR-CH0 18GHz to 26.5GHz



GFSK-CH39 30MHz to 18GHz

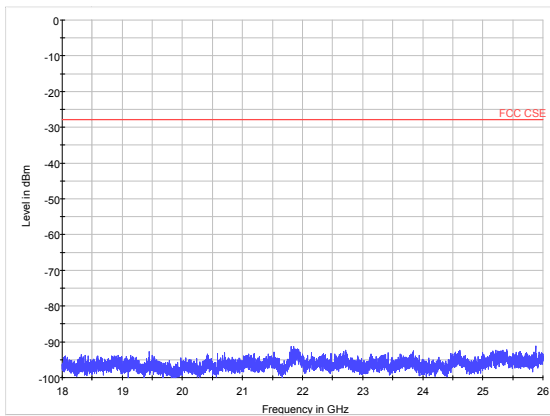


EDR-CH39 30MHz to 18GHz

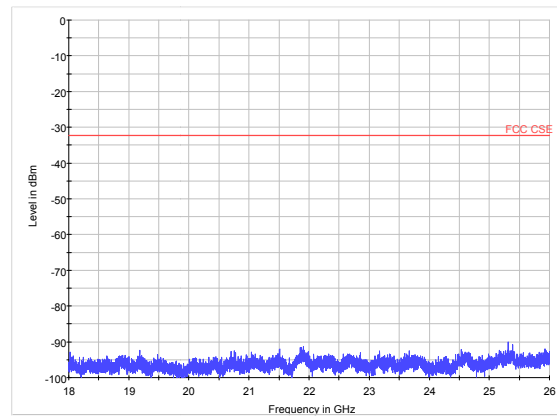




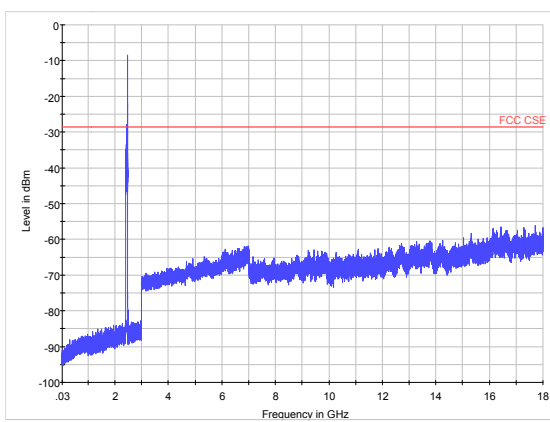
GFSK-CH39 18GHz to 26.5GHz



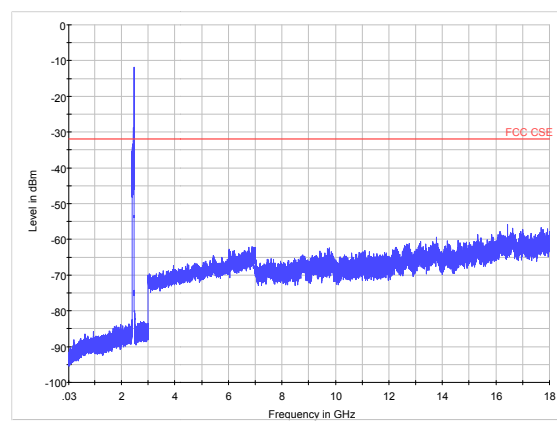
EDR-CH39 18GHz to 26.5GHz



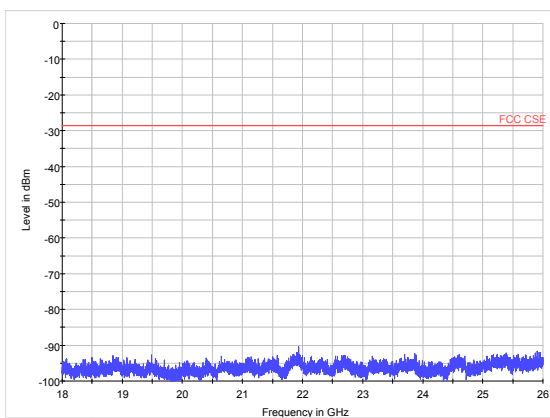
GFSK-CH78 30MHz to 18GHz



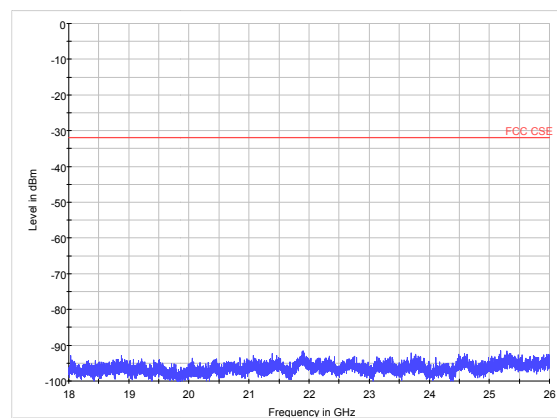
EDR-CH78 30MHz to 18GHz



GFSK-CH78 18GHz to 26.5GHz



EDR-CH78 18GHz to 26.5GHz



4.10 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=100kHz / VBW=300kHz / Sweep=AUTO

Above 1GHz(detector: Peak):

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

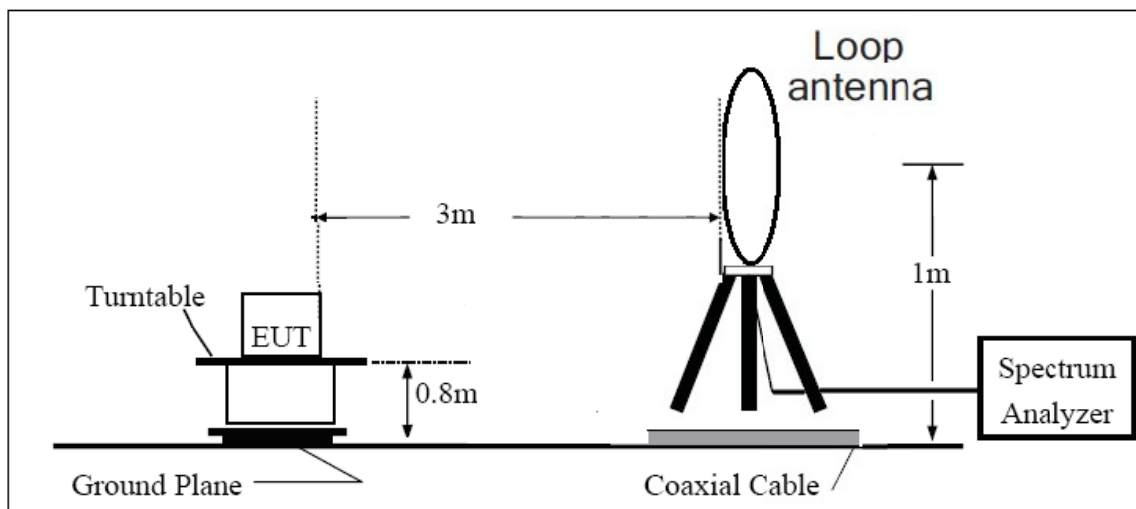
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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. Then this mode was measured in the following mode: EUT with cradle and EUT without cradle. The worst emission was found in EUT with cradle mode and the worst case was recorded.

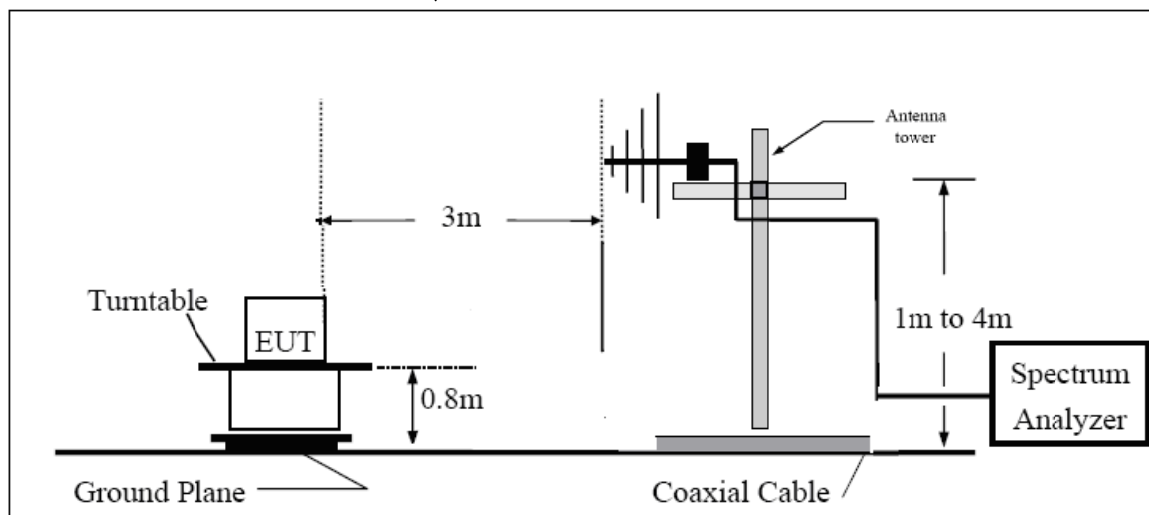
The test is in transmitting mode.

Test setup

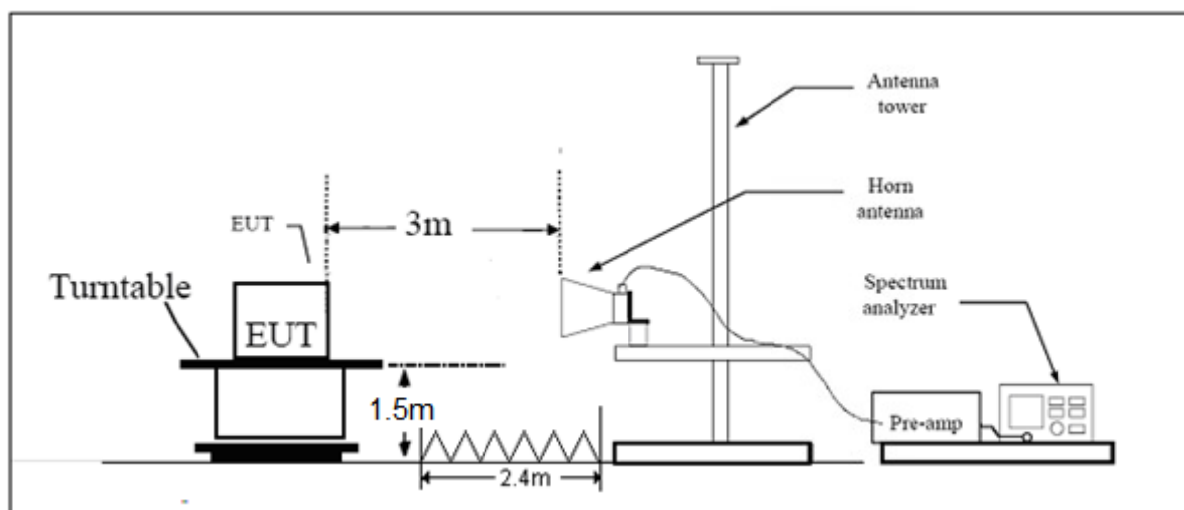
9KHz~~~ 30MHz



30MHz~~~ 1GHz



Above 1GHz



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

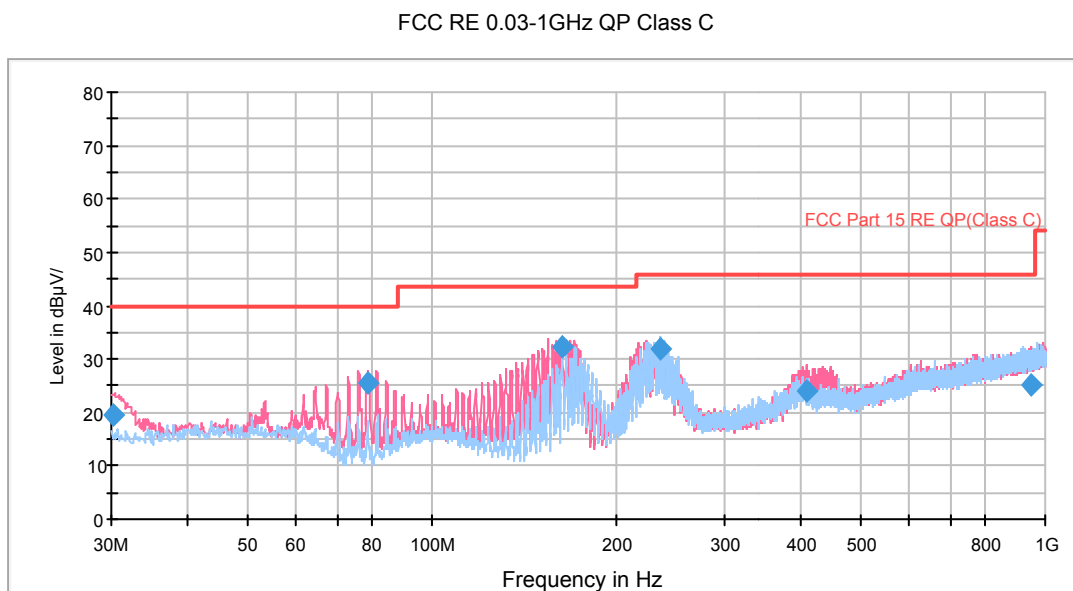
Test result

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.

GFSK-Channel 0

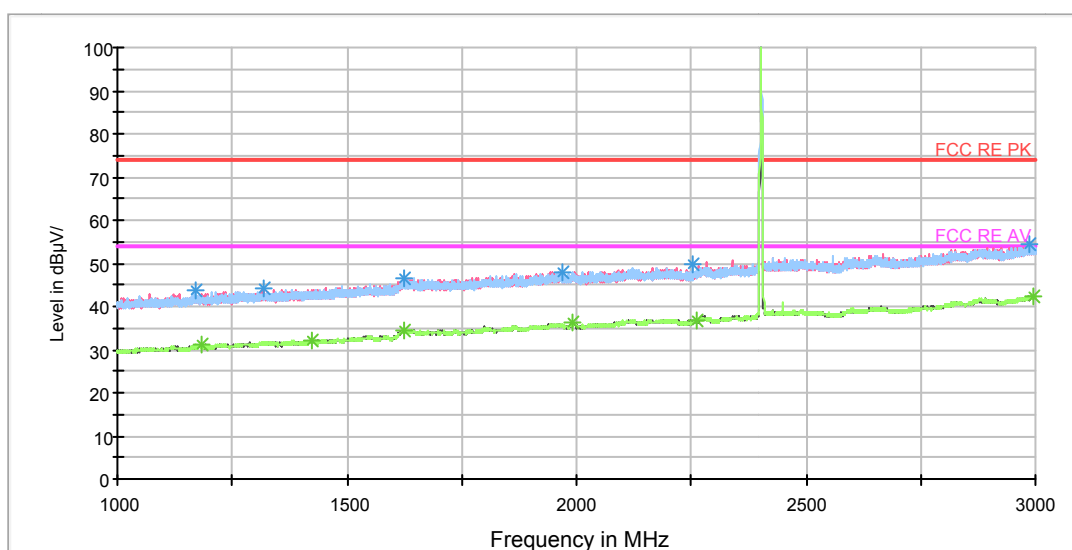


Radiates Emission from 30MHz to 1GHz

Note: This graph displays the maximum values of horizontal and vertical by software

Frequency (MHz)	Quasi-Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
30.120000	19.4	100.0	V	194.0	31.3	11.9	20.6	40.0
78.380000	25.5	100.0	V	354.0	34.0	8.5	14.5	40.0
162.731250	32.4	100.0	V	248.0	42.3	9.9	11.1	43.5
235.563750	32.0	125.0	H	275.0	45.5	13.5	14.0	46.0
407.572500	23.9	125.0	V	341.0	42.1	18.2	22.1	46.0
945.637500	25.2	100.0	V	0.0	51.2	26.0	20.8	46.0

RE 1G-3GHz PK+AV



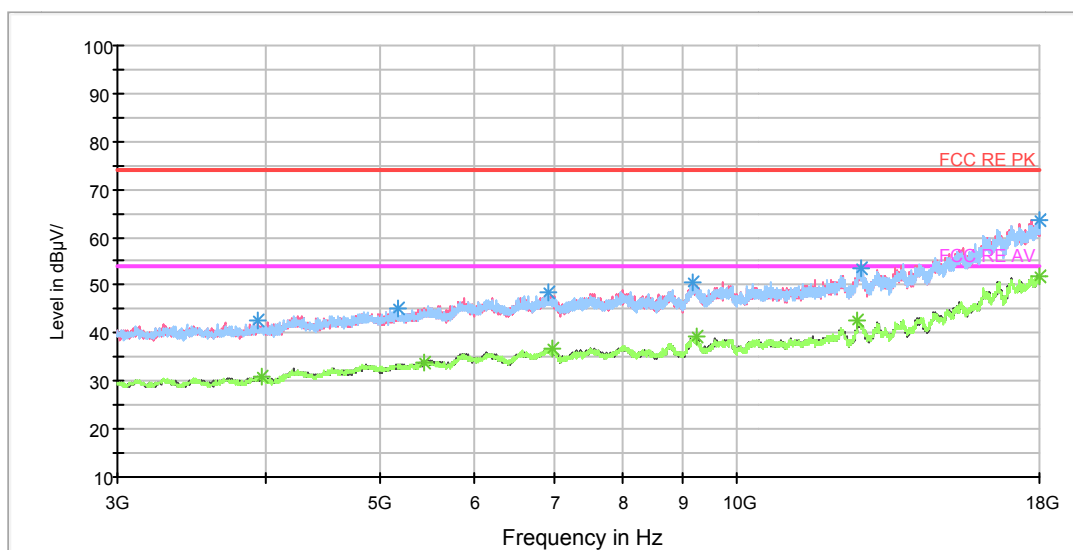
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1168.250000	43.5	400.0	H	165.0	51.6	-8.1	30.5	74
1319.750000	44.4	301.0	V	325.0	51.7	-7.3	29.6	74
1625.000000	46.5	301.0	H	204.0	51.3	-4.8	27.5	74
1967.250000	48.1	201.0	V	1.0	51.6	-3.5	25.9	74
2986.500000	54.4	101.0	H	131.0	56.6	2.2	19.6	74
2252.750000	49.6	301.0	H	195.0	51.8	-2.2	24.4	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1184.250000	31.0	301.0	V	279.0	39.1	-8.1	23.0	54
1424.750000	32.1	301.0	V	352.0	39.0	-6.9	21.9	54
1623.500000	34.6	101.0	V	343.0	39.4	-4.8	19.4	54
1991.250000	36.3	400.0	V	139.0	39.6	-3.3	17.7	54
2994.250000	42.4	201.0	V	19.0	44.7	2.3	11.6	54
2263.750000	36.6	400.0	V	102.0	38.5	-1.9	17.4	54

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

RE 3-18GHz PK+AV



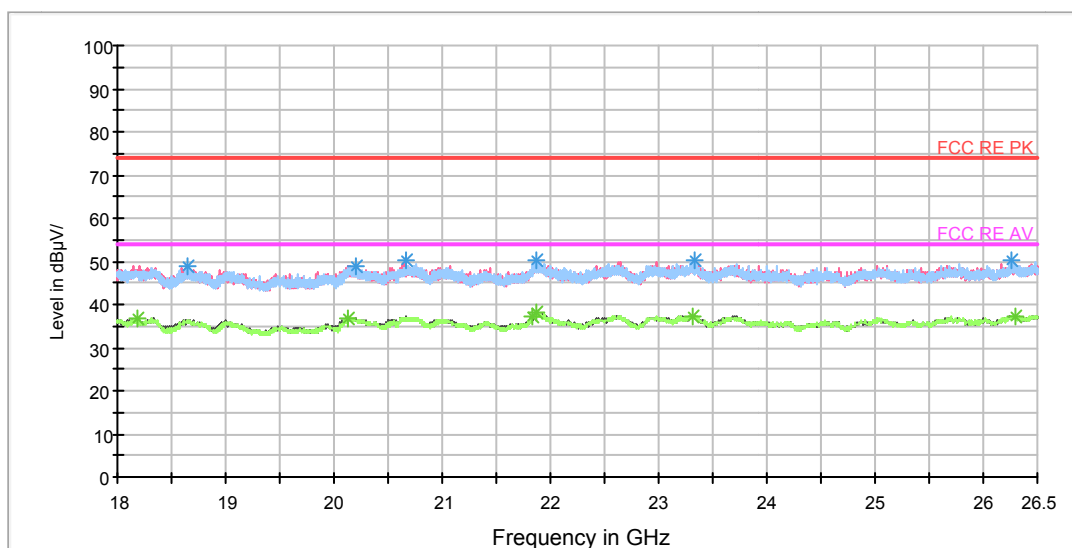
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3943.125000	42.7	400.0	V	0.0	43.8	-1.1	31.3	74
5178.750000	45.2	101.0	V	0.0	47.4	2.2	28.8	74
6939.375000	48.3	301.0	H	119.0	54.4	6.1	25.7	74
9161.250000	50.6	201.0	V	136.0	60.9	10.3	23.4	74
12725.625000	53.7	400.0	H	0.0	67.6	13.9	20.3	74
17996.250000	63.5	400.0	H	0.0	88.9	25.4	10.5	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3973.125000	30.9	101.0	H	169.0	31.8	-0.9	23.1	54
5446.875000	33.9	201.0	V	218.0	36.7	2.8	20.1	54
6976.875000	36.7	301.0	V	178.0	43.0	6.3	17.3	54
9241.875000	39.2	400.0	V	54.0	49.1	9.9	14.8	54
12641.250000	42.7	301.0	H	1.0	57.2	14.5	11.3	54
18000.000000	52.0	101.0	V	336.0	77.5	25.5	2.0	54

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

RE 18-26.5GHz PK+AV



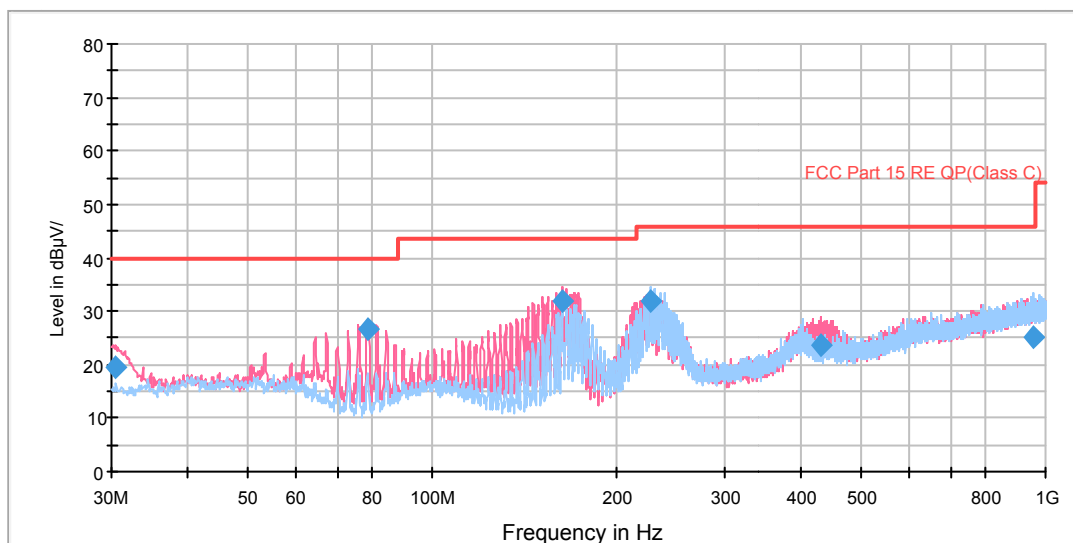
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18646.000000	49.0	H	0.0	53.2	-4.2	25.0	74
20201.500000	49.1	V	192.0	55.0	-5.9	24.9	74
20673.250000	50.0	H	17.0	56.6	-6.6	24.0	74
21879.187500	50.1	H	0.0	58.1	-8.0	23.9	74
23336.937500	50.4	H	208.0	56.4	-6.0	23.6	74
26259.875000	50.0	H	0.0	55.4	-5.4	24.0	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18187.000000	36.7	V	0.0	39.3	-2.6	17.3	54
20138.812500	36.9	V	0.0	42.7	-5.8	17.1	54
21837.750000	37.3	V	205.0	45.3	-8.0	16.7	54
21866.437500	37.9	H	71.0	45.9	-8.0	16.1	54
23319.937500	37.4	V	0.0	43.4	-6.0	16.6	54
26298.125000	37.4	V	164.0	42.8	-5.4	16.6	54

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

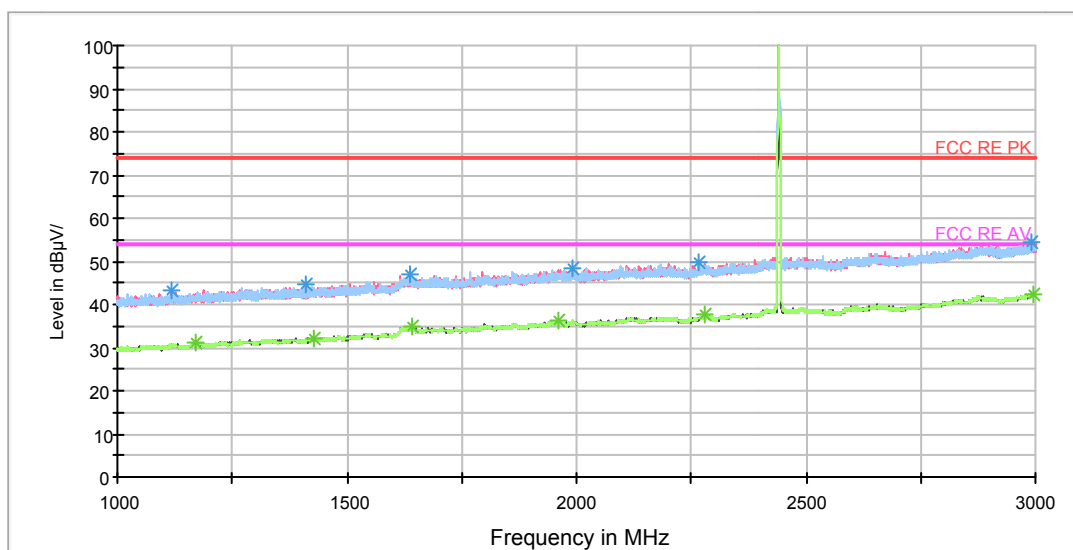
FCC RE 0.03-1GHz QP Class C



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)
30.520000	19.5	100.0	V	0.0	31.4	11.9	20.5	40.0
78.420000	26.7	125.0	V	0.0	35.2	8.5	13.3	40.0
162.610000	31.9	100.0	V	248.0	41.8	9.9	11.6	43.5
227.192500	31.8	125.0	H	269.0	44.9	13.1	14.2	46.0
429.233750	23.6	125.0	V	0.0	42.1	18.5	22.4	46.0
954.808750	25.3	125.0	H	201.0	51.4	26.1	20.7	46.0

RE 1G-3GHz PK+AV



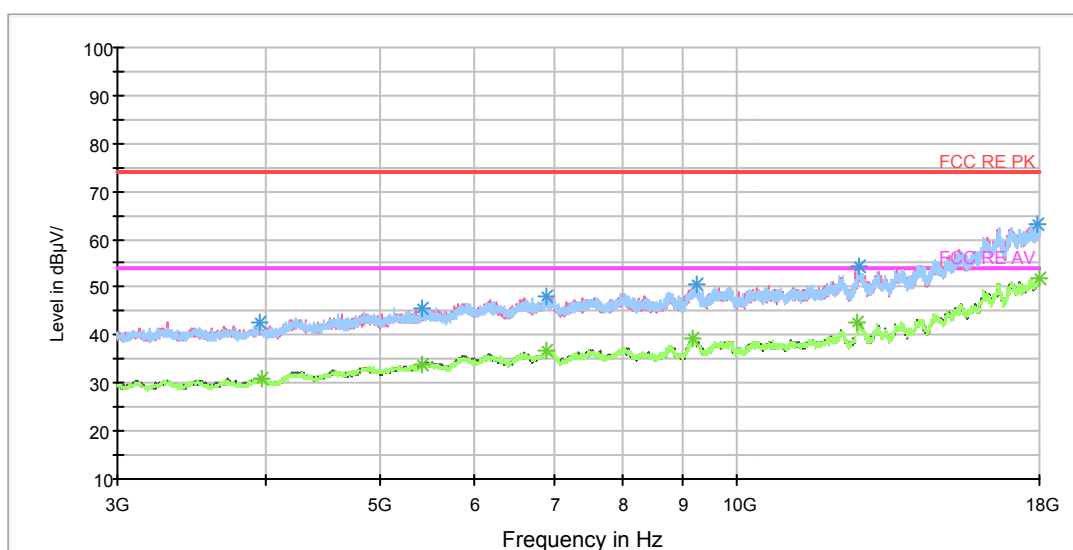
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1119.750000	43.4	301.0	V	0.0	51.9	-8.5	30.6	74
1410.750000	44.8	101.0	V	0.0	51.9	-7.1	29.2	74
1636.500000	47.0	400.0	H	325.0	51.7	-4.7	27.0	74
1989.750000	48.6	301.0	V	41.0	52.0	-3.4	25.4	74
2992.500000	54.2	400.0	V	340.0	56.4	2.2	19.8	74
2264.500000	49.6	201.0	V	0.0	51.5	-1.9	24.4	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1169.000000	31.0	301.0	H	0.0	39.1	-8.1	23.0	54
1427.750000	32.1	400.0	H	316.0	39.0	-6.9	21.9	54
1641.000000	34.7	201.0	H	147.0	39.4	-4.7	19.3	54
1959.750000	36.2	101.0	V	0.0	39.4	-3.2	17.8	54
2994.500000	42.4	201.0	V	222.0	44.7	2.3	11.6	54
2279.750000	37.5	201.0	V	0.0	38.8	-1.3	16.5	54

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

RE 3-18GHz PK+AV



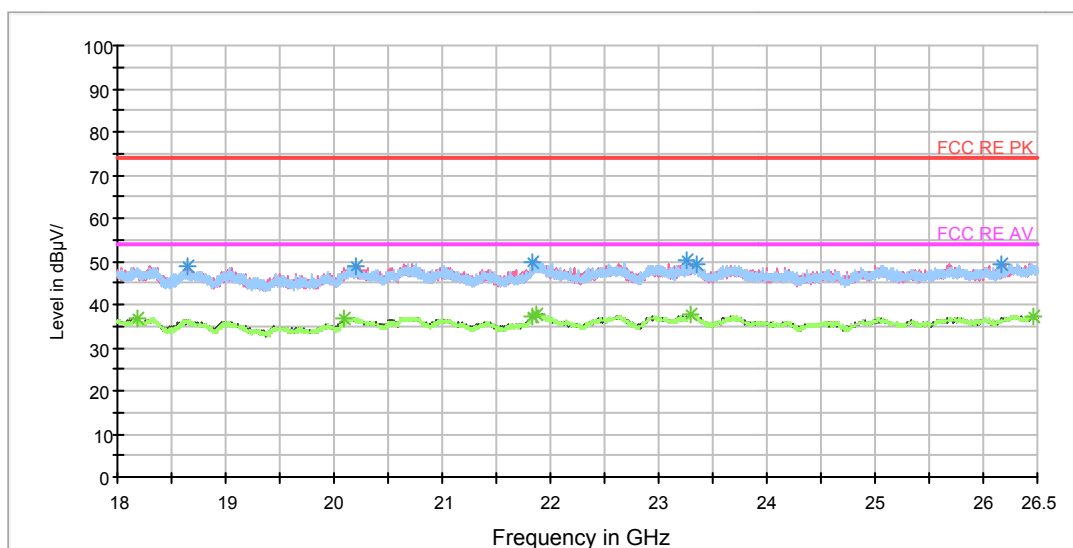
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3954.375000	42.7	400.0	H	204.0	43.7	-1.0	31.3	74
5416.875000	45.4	400.0	V	216.0	48.1	2.7	28.6	74
6915.000000	48.1	101.0	H	52.0	54.3	6.2	25.9	74
9240.000000	50.8	101.0	H	126.0	60.7	9.9	23.2	74
12675.000000	54.4	301.0	V	0.0	68.5	14.1	19.6	74
17917.500000	63.3	201.0	V	29.0	89.0	25.7	10.7	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3969.375000	31.1	400.0	V	216.0	32.0	-0.9	22.9	54
5431.875000	33.9	101.0	H	0.0	36.7	2.8	20.1	54
6892.500000	36.7	201.0	H	270.0	42.9	6.2	17.3	54
9183.750000	39.3	400.0	V	198.0	49.3	10.0	14.7	54
12643.125000	42.8	101.0	V	285.0	57.2	14.4	11.2	54
17996.250000	51.9	301.0	V	279.0	77.3	25.4	2.1	54

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

RE 18-26.5GHz PK+AV



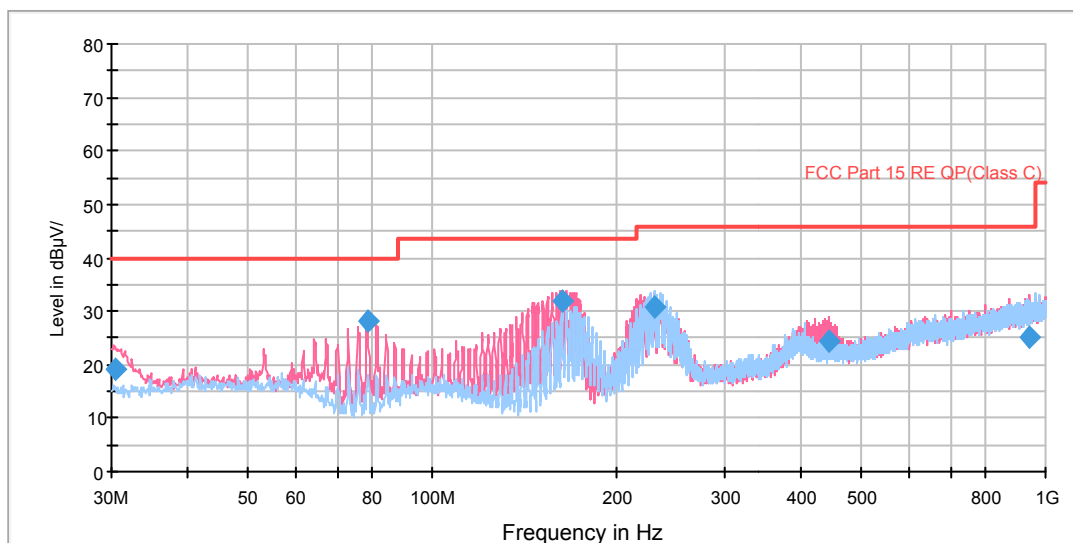
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18640.687500	49.0	V	41.0	53.2	-4.2	25.0	74
20196.187500	48.9	V	314.0	54.8	-5.9	25.1	74
21832.437500	49.9	V	179.0	57.9	-8.0	24.1	74
23264.687500	50.2	V	0.0	56.2	-6.0	23.8	74
23350.750000	49.4	V	0.0	55.3	-5.9	24.6	74
26167.437500	49.4	H	0.0	54.8	-5.4	24.6	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18192.312500	36.8	V	41.0	39.4	-2.6	17.2	54
20101.625000	36.7	V	192.0	42.5	-5.8	17.3	54
21839.875000	37.1	H	0.0	45.1	-8.0	16.9	54
21868.562500	37.8	V	0.0	45.8	-8.0	16.2	54
23304.000000	37.5	V	0.0	43.5	-6.0	16.5	54
26457.500000	37.4	V	219.0	42.8	-5.4	16.6	54

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

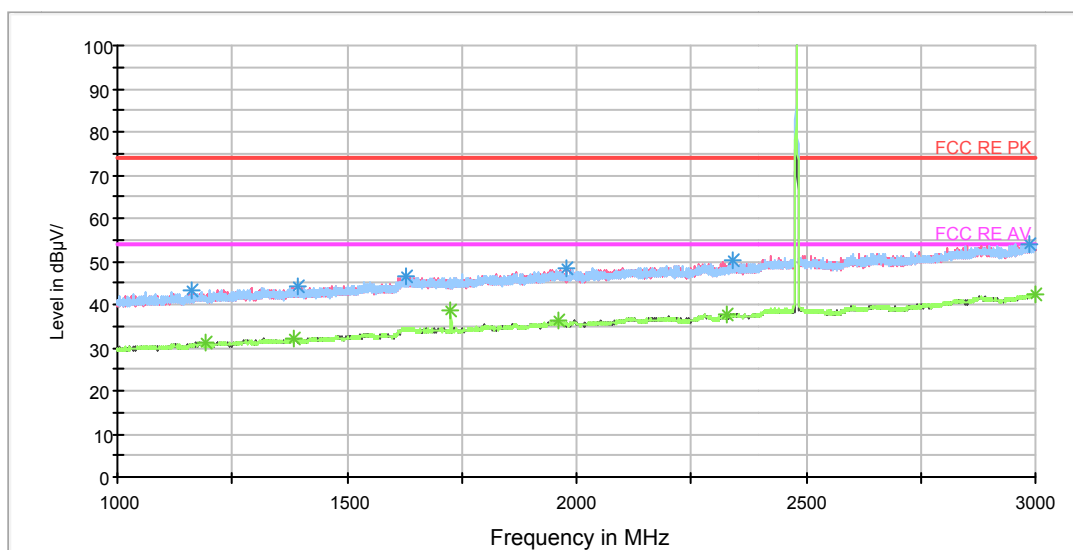
FCC RE 0.03-1GHz QP Class C



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)
30.440000	19.1	100.0	V	17.0	31.0	11.9	20.9	40.0
78.460000	28.0	125.0	V	352.0	36.5	8.5	12.0	40.0
162.886250	31.9	100.0	V	251.0	41.8	9.9	11.6	43.5
229.941250	30.9	100.0	H	47.0	44.1	13.2	15.1	46.0
443.023750	24.3	100.0	V	22.0	43.1	18.8	21.7	46.0
940.137500	25.1	125.0	V	352.0	51.1	26.0	20.9	46.0

RE 1G-3GHz PK+AV



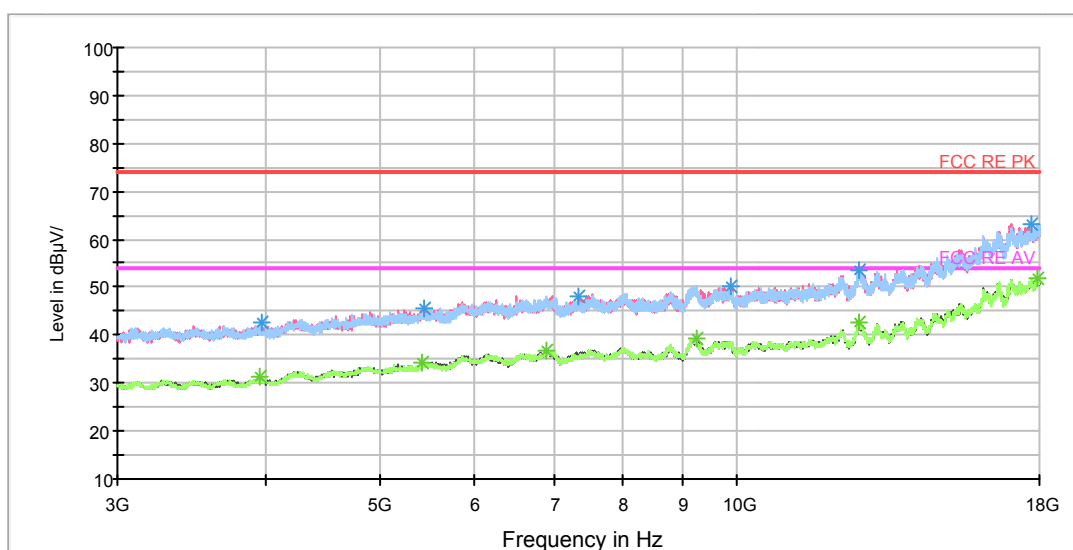
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1161.750000	43.1	301.0	H	224.0	51.4	-8.3	30.9	74
1391.500000	44.2	201.0	V	28.0	51.2	-7.0	29.8	74
1630.250000	46.6	101.0	V	0.0	51.3	-4.7	27.4	74
1976.500000	48.3	400.0	V	270.0	52.0	-3.7	25.7	74
2988.750000	53.9	101.0	H	0.0	56.1	2.2	20.1	74
2340.000000	50.4	301.0	V	324.0	51.7	-1.3	23.6	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1190.000000	31.1	301.0	H	168.0	39.3	-8.2	22.9	54
1383.750000	32.3	400.0	H	259.0	39.3	-7.0	21.7	54
1726.750000	38.8	301.0	H	196.0	43.9	-5.1	15.2	54
1960.000000	36.2	400.0	V	232.0	39.4	-3.2	17.8	54
3000.000000	42.4	201.0	V	0.0	44.7	2.3	11.6	54
2325.500000	37.5	301.0	H	271.0	39.1	-1.6	16.5	54

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

RE 3-18GHz PK+AV



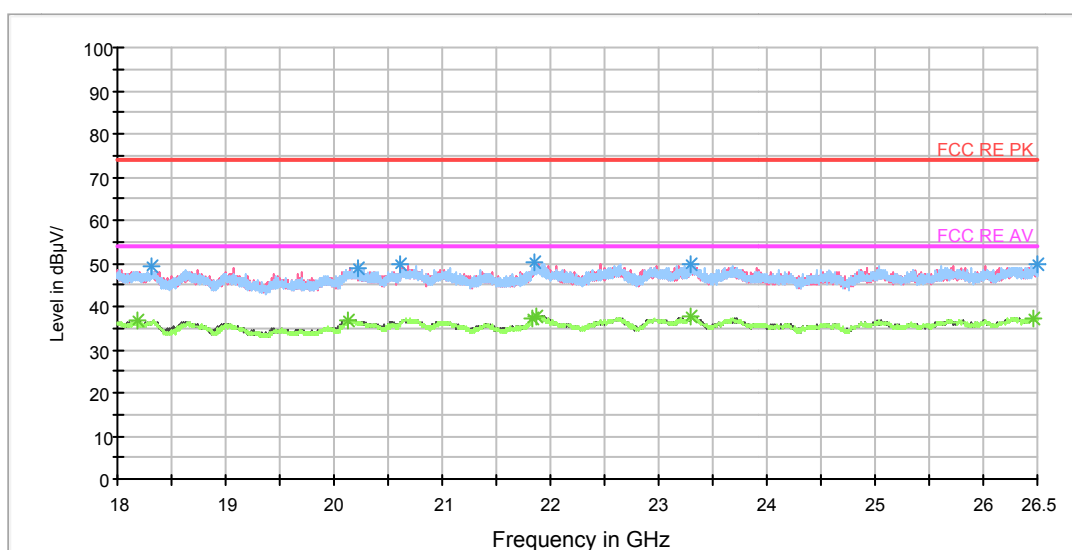
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3973.125000	42.5	300.0	H	48.0	43.4	-0.9	31.5	74
5446.875000	45.4	300.0	H	255.0	48.2	2.8	28.6	74
7336.875000	48.1	201.0	V	0.0	55.1	7.0	25.9	74
9883.125000	50.2	300.0	H	137.0	60.5	10.3	23.8	74
12695.625000	53.6	101.0	H	184.0	67.7	14.1	20.4	74
17709.375000	63.3	301.0	V	316.0	88.0	24.7	10.7	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3956.250000	31.1	101.0	V	203.0	32.1	-1.0	22.9	54
5420.625000	34.2	301.0	V	353.0	36.9	2.7	19.8	54
6915.000000	36.7	400.0	H	0.0	42.9	6.2	17.3	54
9241.875000	39.3	201.0	V	354.0	49.2	9.9	14.7	54
12676.875000	42.6	301.0	V	0.0	56.8	14.2	11.4	54
17921.250000	52.0	201.0	V	156.0	77.7	25.7	2.0	54

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

RE 18-26.5GHz PK+AV



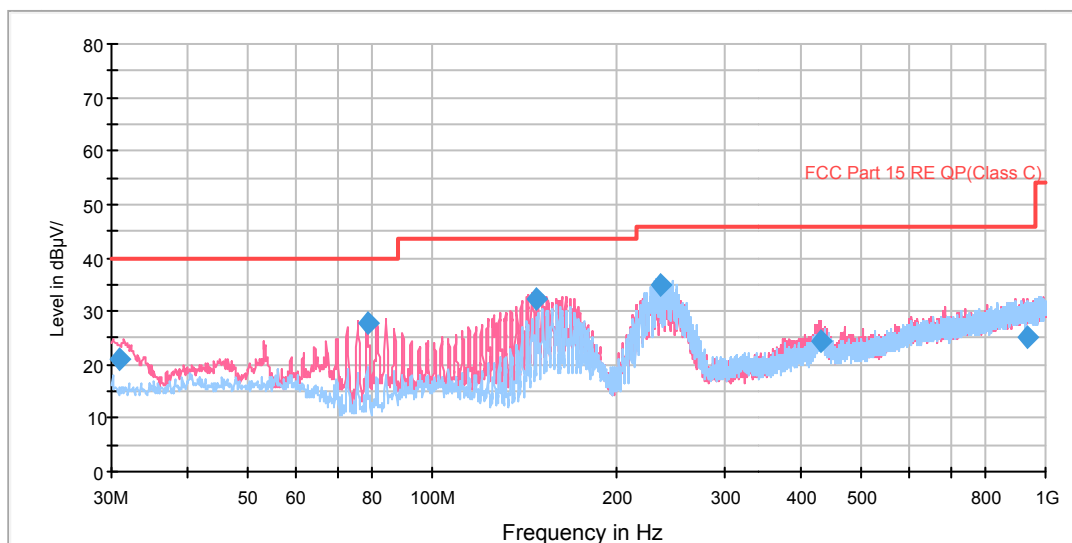
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18314.500000	49.2	H	0.0	52.3	-3.1	24.8	74
20213.187500	48.9	V	314.0	54.8	-5.9	25.1	74
20608.437500	49.8	H	0.0	56.3	-6.5	24.2	74
21853.687500	50.1	H	166.0	58.1	-8.0	23.9	74
23299.750000	49.8	H	220.0	55.8	-6.0	24.2	74
26493.625000	49.6	H	0.0	55.0	-5.4	24.4	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18179.562500	36.6	V	178.0	39.2	-2.6	17.4	54
20131.375000	36.9	V	287.0	42.7	-5.8	17.1	54
21837.750000	37.3	H	234.0	45.3	-8.0	16.7	54
21878.125000	37.8	V	0.0	45.8	-8.0	16.2	54
23305.062500	37.5	V	0.0	43.5	-6.0	16.5	54
26460.687500	37.4	V	138.0	42.8	-5.4	16.6	54

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

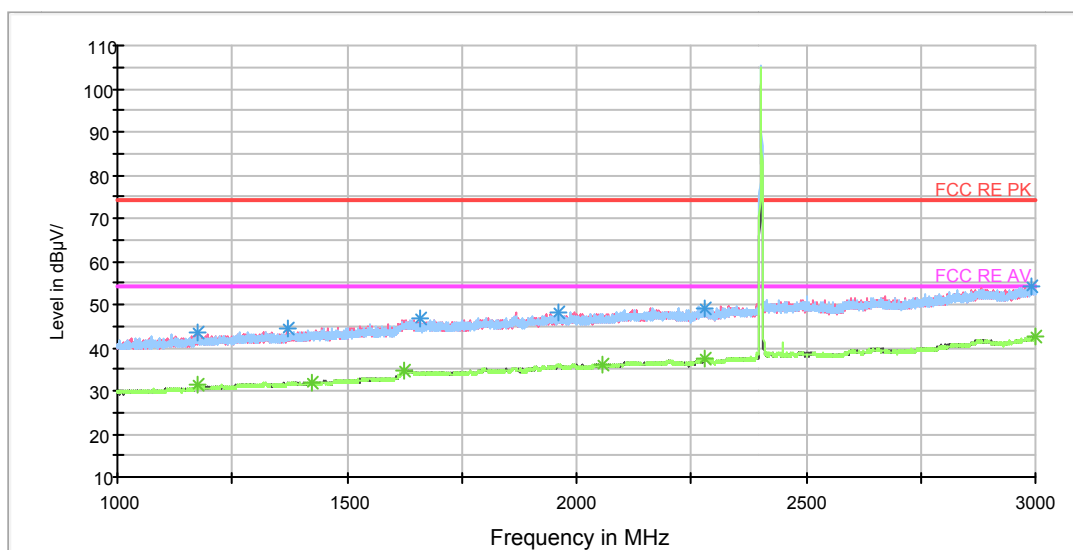
FCC RE 0.03-1GHz QP Class C



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)
30.855000	20.9	100.0	V	0.0	32.8	11.9	19.1	40.0
78.538750	27.9	125.0	V	352.0	36.4	8.5	12.1	40.0
148.421250	32.4	100.0	V	328.0	41.5	9.1	11.1	43.5
235.276250	35.0	125.0	H	70.0	48.5	13.5	11.0	46.0
430.927500	24.4	100.0	V	0.0	42.9	18.5	21.6	46.0
937.110000	25.3	100.0	V	358.0	51.2	25.9	20.7	46.0

RE 1G-3GHz PK+AV



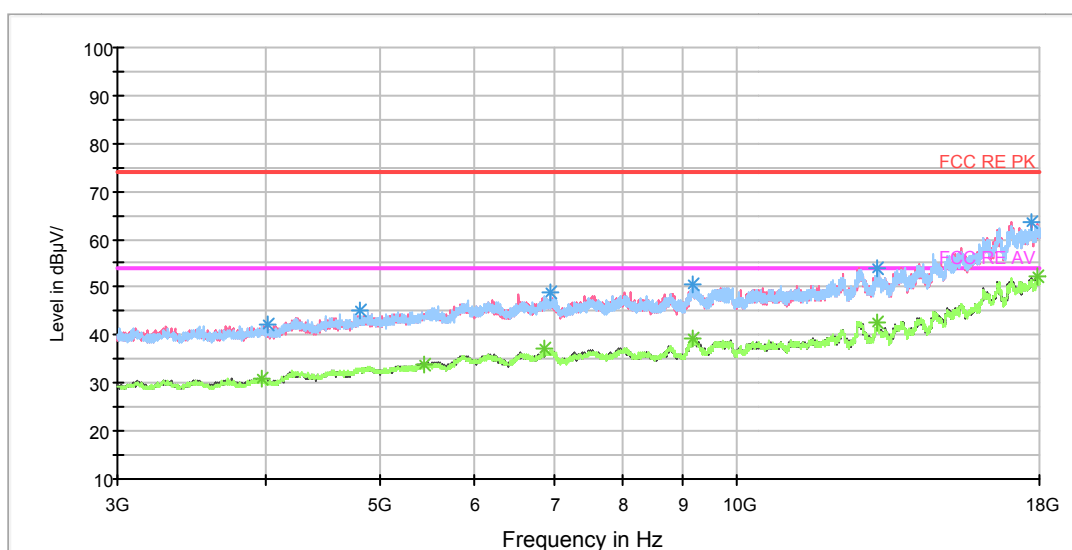
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1174.750000	43.6	400.0	V	0.0	51.6	-8.0	30.4	74
1369.000000	44.4	101.0	V	212.0	51.6	-7.2	29.6	74
1658.500000	46.8	400.0	H	277.0	52.0	-5.2	27.2	74
1960.250000	48.0	301.0	H	164.0	51.2	-3.2	26.0	74
2990.000000	54.4	400.0	H	156.0	56.6	2.2	19.6	74
2280.250000	49.2	400.0	V	132.0	50.5	-1.3	24.8	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1174.000000	31.2	400.0	V	215.0	39.3	-8.1	22.8	54
1423.250000	32.0	400.0	V	0.0	38.9	-6.9	22.0	54
1622.750000	34.6	201.0	H	0.0	39.4	-4.8	19.4	54
2056.500000	36.2	201.0	V	0.0	39.4	-3.2	17.8	54
2999.250000	42.4	302.0	V	318.0	44.7	2.3	11.6	54
2279.750000	37.5	302.0	V	146.0	38.8	-1.3	16.5	54

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

RE 3-18GHz PK+AV



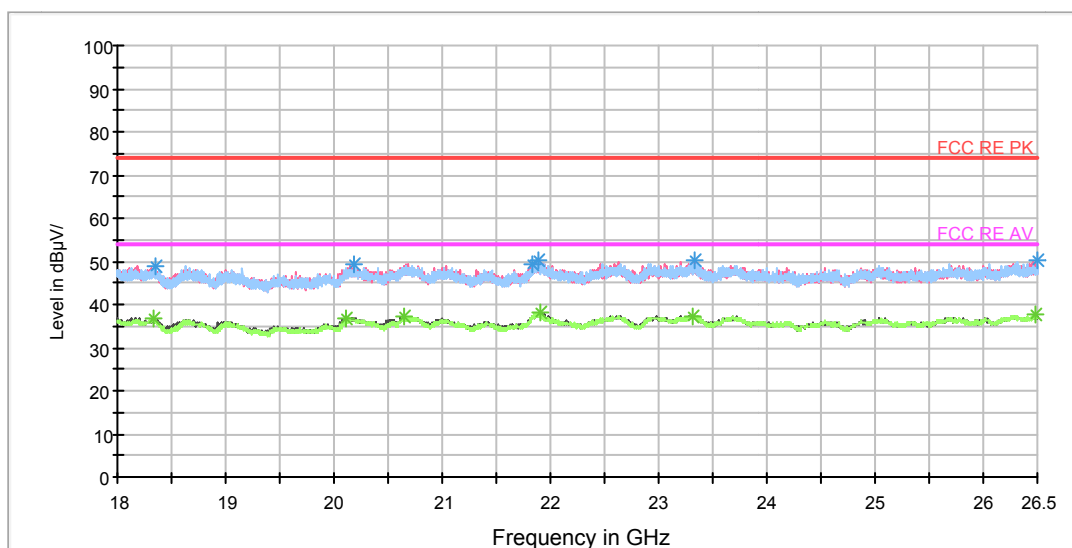
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4010.625000	42.1	301.0	V	155.0	43.2	-1.1	31.9	74
4803.750000	45.3	301.0	H	36.0	46.6	1.3	28.7	74
6952.500000	48.9	101.0	H	0.0	55.1	6.2	25.1	74
9166.875000	50.6	301.0	V	341.0	60.8	10.2	23.4	74
13155.000000	53.9	201.0	V	298.0	68.1	14.2	20.1	74
17705.625000	63.8	400.0	V	0.0	88.5	24.7	10.2	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3967.500000	30.9	102.0	V	0.0	31.8	-0.9	23.1	54
5441.250000	34.0	301.0	V	233.0	36.9	2.9	20.0	54
6890.625000	37.0	101.0	H	89.0	43.1	6.1	17.0	54
9159.375000	39.4	101.0	H	229.0	49.8	10.4	14.6	54
13151.250000	42.8	301.0	H	51.0	57.0	14.2	11.2	54
17911.875000	52.2	102.0	V	333.0	77.7	25.5	1.8	54

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

RE 18-26.5GHz PK+AV



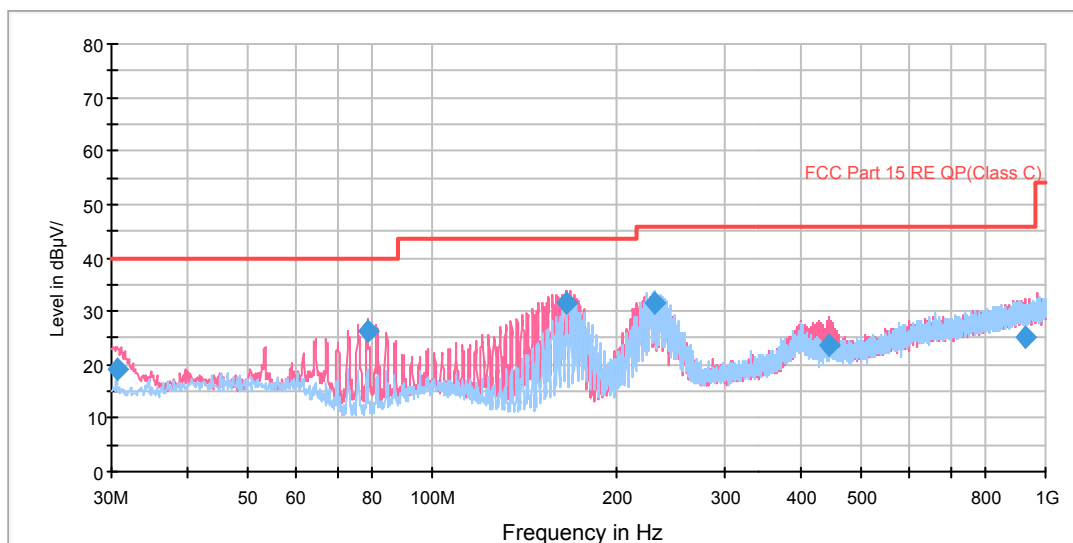
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18350.625000	48.8	H	207.0	52.1	-3.3	25.2	74
20189.812500	49.3	H	98.0	55.2	-5.9	24.7	74
21835.625000	49.4	H	0.0	57.4	-8.0	24.6	74
21888.750000	50.0	V	271.0	58.0	-8.0	24.0	74
23327.375000	50.1	V	311.0	56.1	-6.0	23.9	74
26500.000000	50.4	H	5.0	55.9	-5.5	23.6	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18327.250000	36.8	H	58.0	40.0	-3.2	17.2	54
20104.812500	36.9	V	0.0	42.7	-5.8	17.1	54
20655.187500	37.3	H	249.0	43.9	-6.6	16.7	54
21913.187500	38.0	V	284.0	46.0	-8.0	16.0	54
23323.125000	37.4	H	85.0	43.4	-6.0	16.6	54
26484.062500	37.5	H	5.0	42.9	-5.4	16.5	54

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

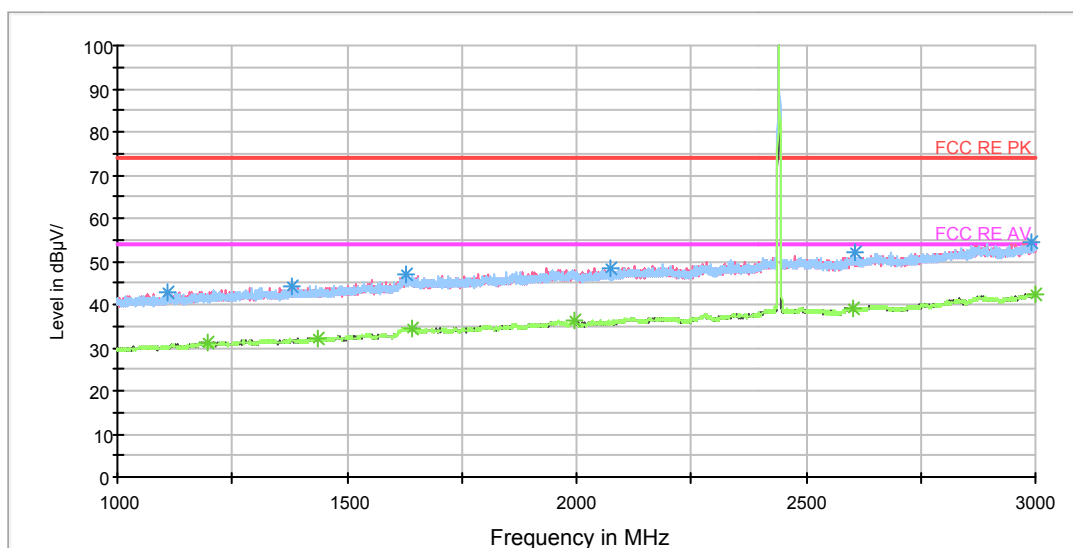
FCC RE 0.03-1GHz QP Class C



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)
30.640000	19.3	100.0	V	37.0	31.2	11.9	20.7	40.0
78.461250	26.2	125.0	V	22.0	34.7	8.5	13.8	40.0
165.395000	31.6	100.0	V	331.0	41.6	10.0	11.9	43.5
229.820000	31.6	114.0	H	260.0	44.8	13.2	14.4	46.0
442.653750	23.8	100.0	V	0.0	42.6	18.8	22.2	46.0
930.441250	25.1	114.0	V	158.0	51.0	25.9	20.9	46.0

RE 1G-3GHz PK+AV



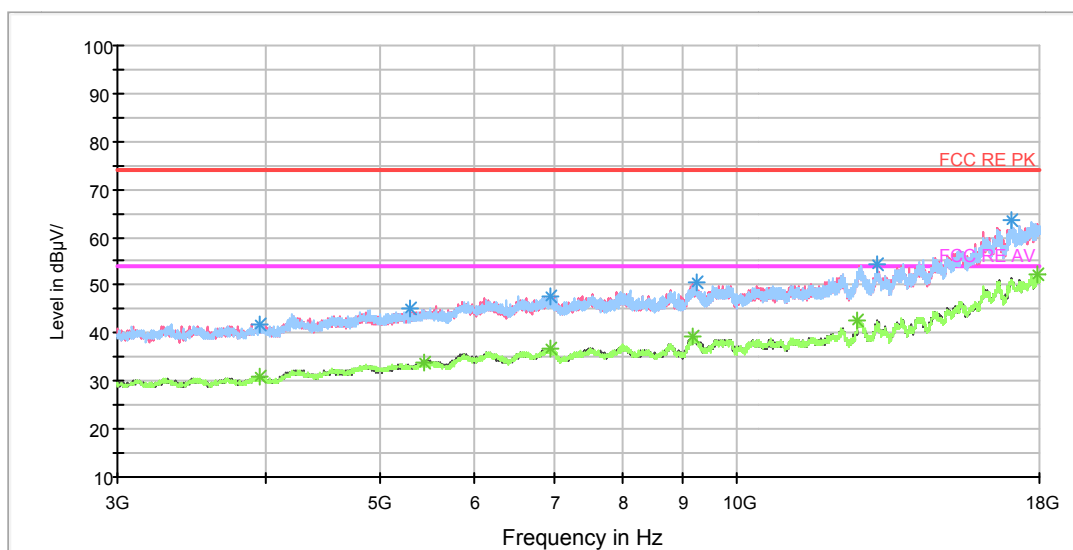
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1111.250000	42.9	400.0	H	110.0	51.6	-8.7	31.1	74
1380.250000	44.4	201.0	V	260.0	51.4	-7.0	29.6	74
1630.500000	47.0	101.0	H	0.0	51.7	-4.7	27	74
2074.750000	48.5	201.0	H	0.0	51.6	-3.1	25.5	74
2993.250000	54.5	201.0	V	0.0	56.7	2.2	19.5	74
2605.000000	52.1	400.0	V	62.0	52.4	0.3	21.9	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1195.000000	31.1	301.0	H	93.0	39.3	-8.2	22.9	54
1435.750000	32.2	400.0	V	136.0	39.1	-6.9	21.8	54
1640.000000	34.6	400.0	V	53.0	39.3	-4.7	19.4	54
1996.250000	36.1	201.0	V	0.0	39.4	-3.3	17.9	54
2998.000000	42.3	201.0	V	130.0	44.6	2.3	11.7	54
2603.750000	39.3	400.0	V	164.0	39.6	0.3	14.7	54

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

RE 3-18GHz PK+AV



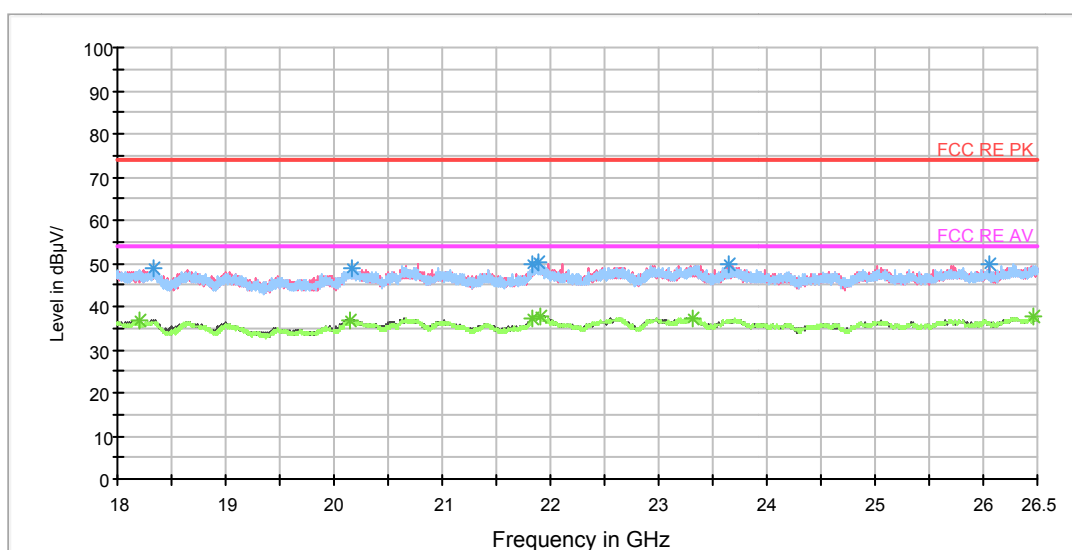
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3958.125000	42.0	301.0	V	190.0	50.2	-1.0	32.0	74
5302.500000	45.1	201.0	H	255.0	52.0	2.4	28.9	74
6950.625000	47.8	300.0	H	31.0	52.5	6.2	26.2	74
9251.250000	50.5	300.0	H	185.0	53.8	9.6	23.5	74
13132.500000	54.6	400.0	H	0.0	56.9	14.1	19.4	74
17041.875000	63.5	400.0	H	188.0	63.8	24.6	10.5	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3956.250000	31.0	201.0	H	178.0	32.0	-1.0	23.0	54
5443.125000	34.0	101.0	V	208.0	36.9	2.9	20.0	54
6971.250000	36.7	301.0	V	0.0	43.0	6.3	17.3	54
9189.375000	39.3	101.0	V	114.0	49.4	10.1	14.7	54
12648.750000	42.7	201.0	H	241.0	56.9	14.2	11.3	54
17917.500000	52.1	201.0	V	298.0	77.8	25.7	1.9	54

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

RE 18-26.5GHz PK+AV



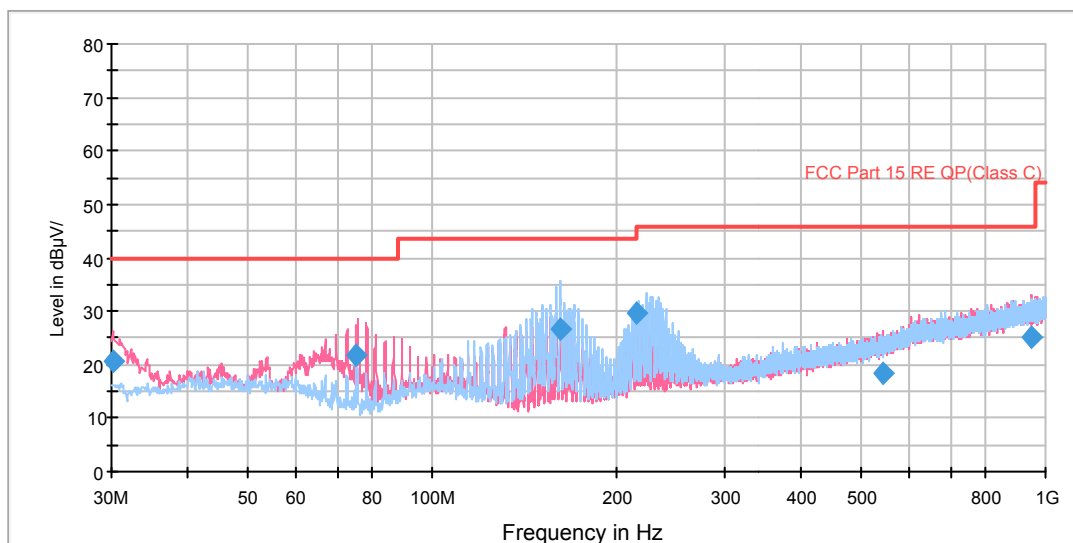
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18326.187500	49.0	H	73.0	52.2	-3.2	25.0	74
20170.687500	48.9	V	153.0	54.7	-5.8	25.1	74
21833.500000	50.0	V	261.0	58.0	-8.0	24.0	74
21893.000000	50.1	V	56.0	58.1	-8.0	23.9	74
23648.250000	50.0	V	85.0	55.9	-5.9	24.0	74
26062.250000	49.8	V	261.0	55.2	-5.4	24.2	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18195.500000	36.7	V	0.0	39.3	-2.6	17.3	54
20148.375000	36.8	V	167.0	42.6	-5.8	17.2	54
21837.750000	37.2	H	250.0	45.2	-8.0	16.8	54
21899.375000	37.9	V	85.0	45.9	-8.0	16.1	54
23307.187500	37.4	H	236.0	43.4	-6.0	16.6	54
26464.937500	37.5	H	0.0	42.9	-5.4	16.5	54

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

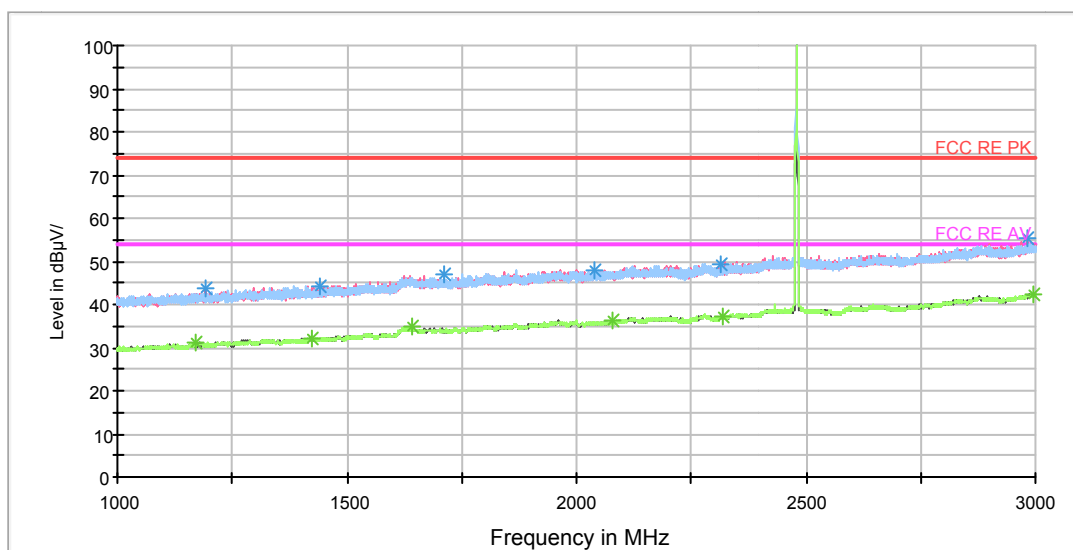
FCC RE 0.03-1GHz QP Class C



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)
30.200000	20.7	100.0	V	252.0	32.6	11.9	19.3	40.0
75.390000	21.7	114.0	V	238.0	30.3	8.6	18.3	40.0
162.322500	26.7	100.0	H	300.0	36.5	9.8	16.8	43.5
214.985000	29.6	125.0	H	325.0	42.2	12.6	13.9	43.5
544.748750	18.5	100.0	V	152.0	39.4	20.9	27.5	46.0
949.922500	25.2	100.0	V	0.0	51.2	26.0	20.8	46.0

RE 1G-3GHz PK+AV



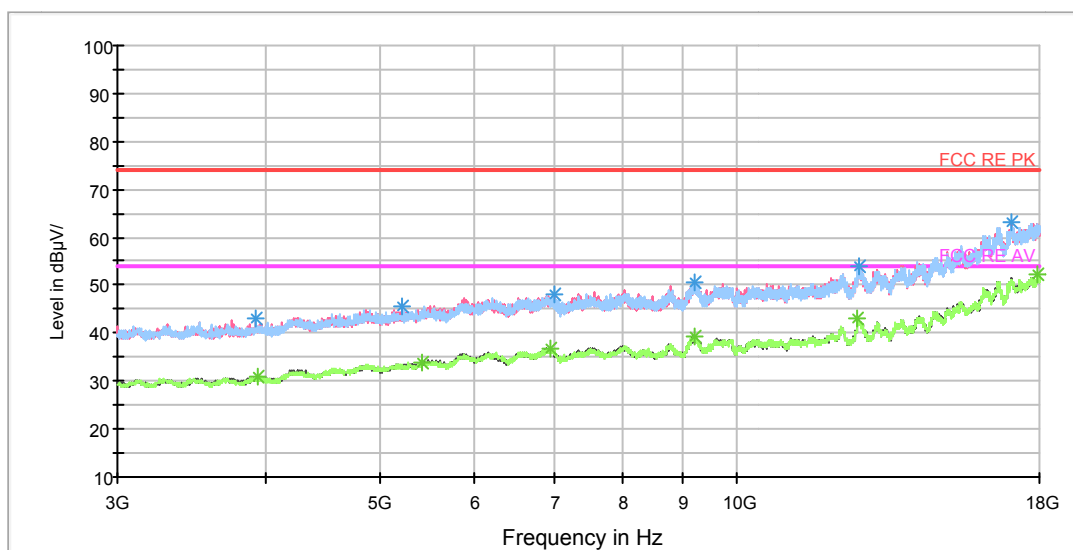
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1190.500000	43.8	101.0	V	0.0	52.0	-8.2	30.2	74
1441.500000	44.3	101.0	H	10.0	51.2	-6.9	29.7	74
1711.500000	46.9	400.0	H	350.0	51.7	-4.8	27.1	74
2038.000000	48.0	101.0	H	92.0	51.3	-3.3	26.0	74
2983.000000	55.2	101.0	V	231.0	57.4	2.2	18.8	74
2315.000000	49.4	301.0	H	8.0	51.2	-1.8	24.6	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1171.500000	31.0	400.0	H	267.0	39.1	-8.1	23.0	54
1421.750000	32.2	201.0	H	118.0	39.1	-6.9	21.8	54
1640.000000	34.7	101.0	V	304.0	39.4	-4.7	19.3	54
2077.000000	36.2	301.0	V	174.0	39.2	-3.0	17.8	54
2997.250000	42.4	301.0	V	249.0	44.7	2.3	11.6	54
2318.500000	37.2	201.0	H	259.0	39.0	-1.8	16.8	54

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

RE 3-18GHz PK+AV



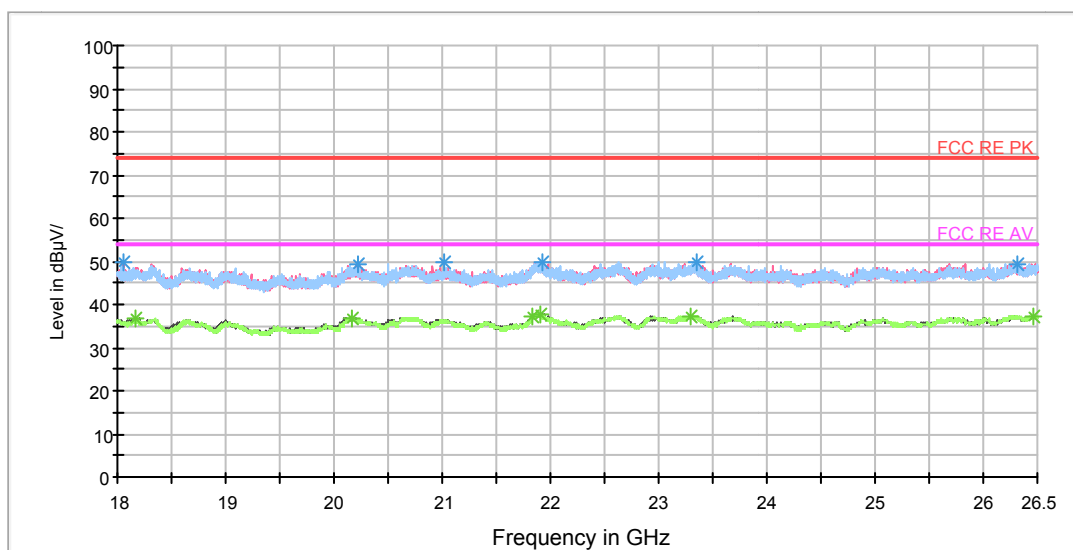
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3920.625000	43.1	100.0	V	176.0	44.3	-1.2	30.9	74
5216.250000	45.4	101.0	H	0.0	47.5	2.1	28.6	74
7014.375000	48.0	301.0	V	256.0	54.5	6.5	26.0	74
9198.750000	50.7	301.0	V	0.0	60.9	10.2	23.3	74
12654.375000	54.1	202.0	H	0.0	68.1	14.0	19.9	74
17043.750000	63.1	201.0	V	13.0	87.7	24.6	10.9	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3937.500000	30.9	301.0	V	319.0	32.0	-1.1	23.1	54
5422.500000	33.9	301.0	V	156.0	36.6	2.7	20.1	54
6958.125000	36.7	202.0	H	280.0	42.9	6.2	17.3	54
9198.750000	39.4	301.0	V	0.0	49.6	10.2	14.6	54
12643.125000	42.9	202.0	H	245.0	57.3	14.4	11.1	54
17919.375000	52.1	400.0	H	92.0	77.9	25.8	1.9	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)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18052.062500	49.8	V	300.0	51.8	-2.0	24.2	74
20215.312500	49.1	V	286.0	55.0	-5.9	24.9	74
21020.687500	49.6	H	31.0	57.0	-7.4	24.4	74
21918.500000	49.9	V	137.0	57.9	-8.0	24.1	74
23343.312500	49.7	H	18.0	55.6	-5.9	24.3	74
26307.687500	49.5	H	0.0	54.9	-5.4	24.5	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18173.187500	36.6	V	41.0	39.1	-2.5	17.4	54
20157.937500	36.9	V	353.0	42.7	-5.8	17.1	54
21833.500000	37.4	V	246.0	45.4	-8.0	16.6	54
21905.750000	37.8	V	232.0	45.8	-8.0	16.2	54
23305.062500	37.4	H	45.0	43.4	-6.0	16.6	54
26467.062500	37.4	H	18.0	42.8	-5.4	16.6	54

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

4.11 Conducted Emission

Ambient condition

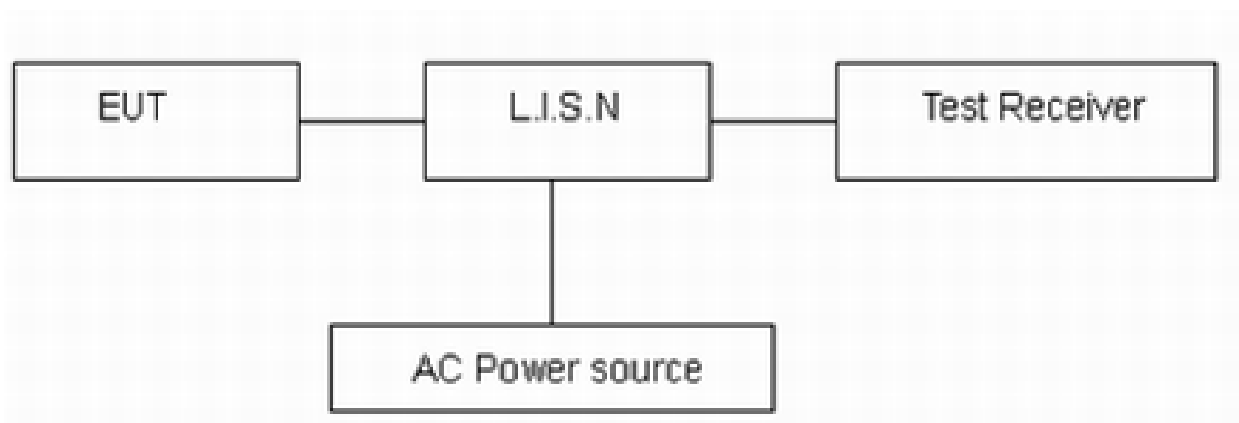
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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 from 220V/50Hz to 110V/60Hz.

Limits

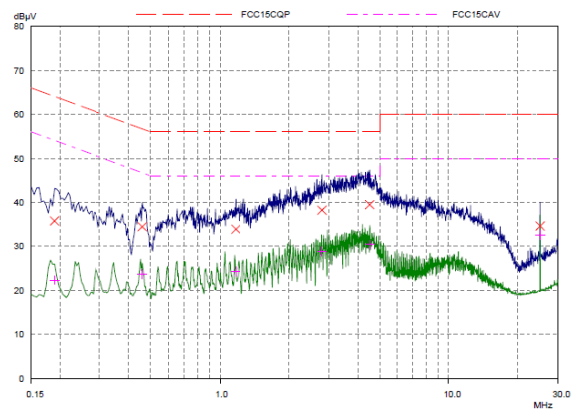
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46 *
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

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.

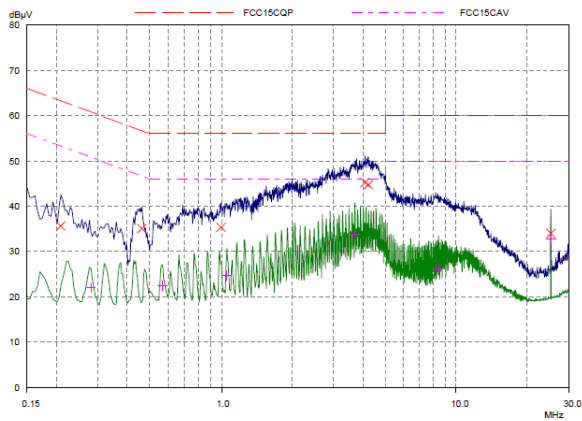
**Test Results:**

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

Basic Rate-CH0 L Line**Final Measurement Results**

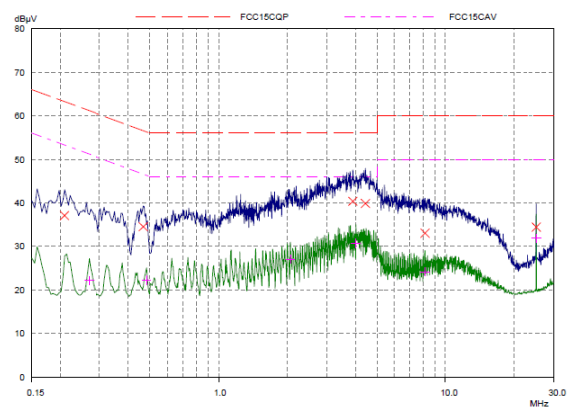
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.18906	35.75	64.08	28.33	L1	gnd
0.45859	34.47	56.72	22.25	L1	gnd
1.16953	33.88	56.00	22.12	L1	gnd
2.79453	38.19	56.00	17.81	L1	gnd
4.50156	39.49	56.00	16.51	L1	gnd
25.22812	34.60	60.00	25.40	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.18906	22.31	54.08	31.77	L1	gnd
0.45859	23.68	46.72	23.04	L1	gnd
1.16953	24.31	46.00	21.69	L1	gnd
2.79453	28.79	46.00	17.21	L1	gnd
4.50156	30.40	46.00	15.60	L1	gnd
25.22812	32.55	50.00	17.45	L1	gnd

Basic Rate-CH0 N Line**Final Measurement Results**

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.20859	35.62	63.26	27.64	N	gnd
0.4625	35.05	56.65	21.60	N	gnd
0.99375	35.32	56.00	20.68	N	gnd
4.07987	45.22	56.00	10.78	N	gnd
4.2125	44.72	56.00	11.28	N	gnd
25.22812	33.98	60.00	26.02	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.2789	21.91	50.85	28.94	N	gnd
0.56406	22.37	46.00	23.63	N	gnd
1.05234	24.70	46.00	21.30	N	gnd
3.99687	33.71	46.00	12.29	N	gnd
8.45468	26.21	50.00	23.79	N	gnd
25.22812	32.83	50.00	17.17	N	gnd

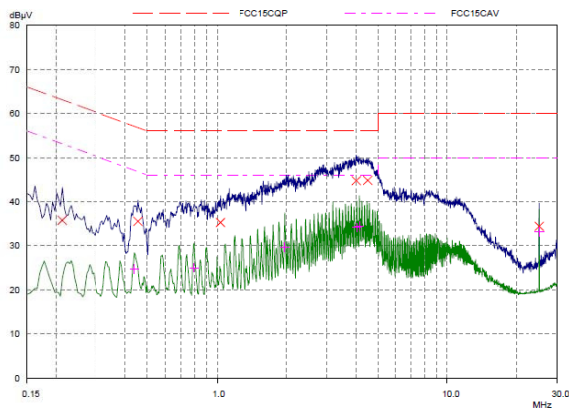
Basic Rate-CH39 L Line**Final Measurement Results**

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.20859	37.08	63.26	26.18	L1	gnd
0.4664	34.51	56.58	22.07	L1	gnd
3.89218	40.36	56.00	15.64	L1	gnd
4.42343	39.85	56.00	16.15	L1	gnd
8.15781	33.03	60.00	26.97	L1	gnd
25.22812	34.42	60.00	25.58	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.26718	22.17	51.21	29.04	L1	gnd
0.48203	22.18	46.30	24.12	L1	gnd
2.07187	27.10	46.00	18.90	L1	gnd
4.02109	30.70	46.00	15.30	L1	gnd
8.15781	24.15	50.00	25.85	L1	gnd
25.23203	31.88	50.00	18.12	L1	gnd



Basic Rate-CH39 N Line

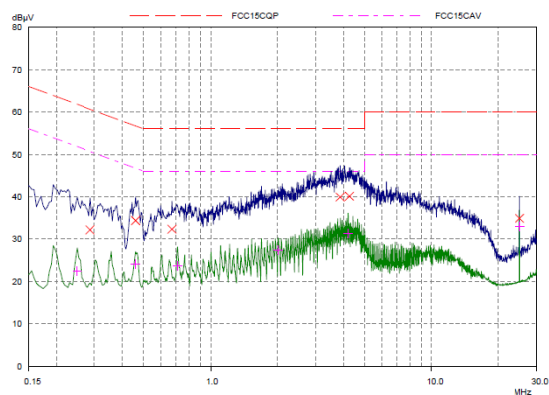


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.2125	35.75	63.11	27.36	N	gnd
0.45468	35.53	56.79	21.26	N	gnd
1.03281	35.26	56.00	20.74	N	gnd
4.02109	44.76	56.00	11.24	N	gnd
4.50548	44.83	56.00	11.17	N	gnd
25.22812	34.38	60.00	25.62	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.43906	24.73	47.08	22.35	N	gnd
0.79453	25.01	46.00	20.99	N	gnd
1.97421	29.88	46.00	16.32	N	gnd
4.0328	34.15	46.00	11.85	N	gnd
4.14217	34.45	46.00	11.55	N	gnd
25.22812	33.23	50.00	16.77	N	gnd

Basic Rate-CH78 L Line

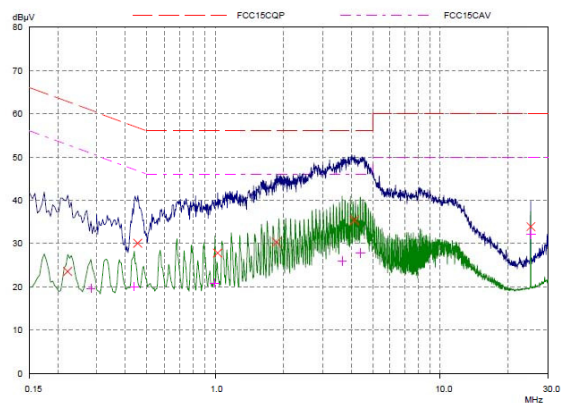


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.26871	32.16	60.62	28.46	L1	gnd
0.46859	34.35	56.72	22.37	L1	gnd
0.66953	32.33	56.00	23.67	L1	gnd
3.86484	39.90	56.00	16.10	L1	gnd
4.25937	40.11	56.00	15.89	L1	gnd
25.22812	34.88	60.00	25.12	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.24765	22.38	51.84	29.46	L1	gnd
0.46859	24.10	46.72	22.62	L1	gnd
0.70859	23.66	46.00	22.34	L1	gnd
2.02109	27.43	46.00	18.57	L1	gnd
4.20078	31.30	46.00	14.70	L1	gnd
25.22812	33.03	50.00	16.97	L1	gnd

Basic Rate-CH78 N Line



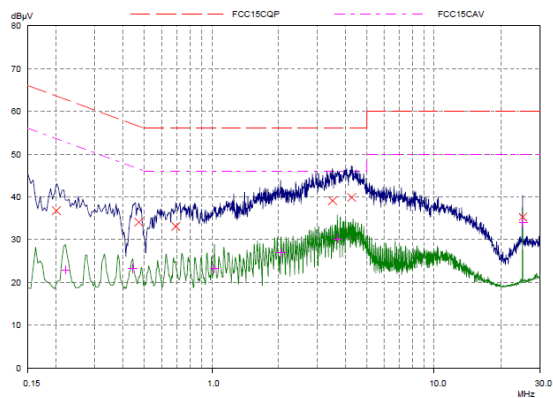
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.22031	23.51	62.81	39.30	N	gnd
0.45468	30.07	56.79	26.72	N	gnd
1.02499	27.80	56.00	28.20	N	gnd
1.86875	30.27	56.00	25.73	N	gnd
4.13046	35.36	56.00	20.64	N	gnd
25.22812	33.90	60.00	26.10	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.2789	19.62	50.85	31.23	N	gnd
0.43906	20.05	47.08	27.03	N	gnd
0.96765	20.89	46.00	25.11	N	gnd
3.65	25.89	46.00	20.11	N	gnd
4.38828	27.82	46.00	18.18	N	gnd
25.22812	32.11	50.00	17.89	N	gnd



EDR-CH0 L Line

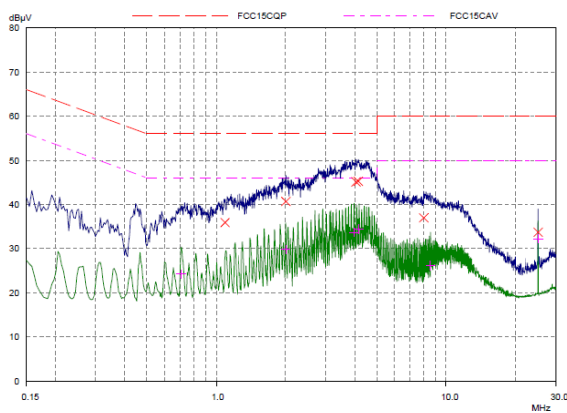


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.20078	36.78	63.58	26.80	L1	gnd
0.47031	34.07	56.51	22.44	L1	gnd
0.68906	33.05	56.00	22.95	L1	gnd
3.50546	38.07	56.00	16.93	L1	gnd
4.275	39.85	56.00	16.15	L1	gnd
25.22812	35.24	60.00	24.76	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.22031	22.93	52.81	29.88	L1	gnd
0.44296	23.28	47.01	23.73	L1	gnd
1.02499	23.16	46.00	22.84	L1	gnd
2.06406	26.87	46.00	19.13	L1	gnd
3.68515	30.14	46.00	15.86	L1	gnd
25.22812	33.93	50.00	16.07	L1	gnd

EDR-CH0 N Line

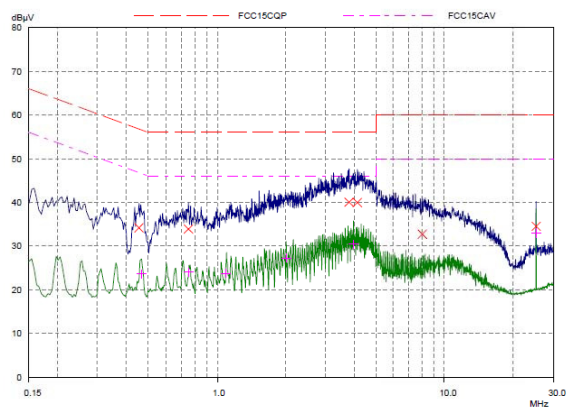


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
1.0914	35.88	56.00	20.12	N	gnd
2.02109	40.67	56.00	15.33	N	gnd
4.05234	45.08	56.00	10.92	N	gnd
4.13828	45.24	56.00	10.76	N	gnd
8.03281	36.96	60.00	23.04	N	gnd
25.22812	33.68	60.00	26.32	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.70468	24.24	46.00	21.76	N	gnd
2.01718	26.76	46.00	16.24	N	gnd
3.97031	33.67	46.00	12.33	N	gnd
4.17734	34.40	46.00	11.60	N	gnd
8.5875	26.15	50.00	23.85	N	gnd
25.22812	32.18	50.00	17.82	N	gnd

EDR-CH39 L Line



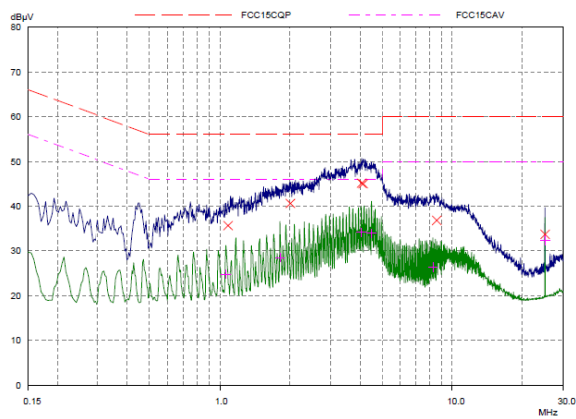
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.45468	34.17	56.79	22.62	L1	gnd
0.74765	33.89	56.00	22.11	L1	gnd
3.79843	40.05	56.00	15.95	L1	gnd
4.13046	39.94	56.00	16.06	L1	gnd
8.0289	32.72	60.00	27.28	L1	gnd
25.22812	34.52	60.00	25.48	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.4664	23.59	46.58	22.99	L1	gnd
0.74765	23.99	46.00	22.01	L1	gnd
1.0914	23.73	46.00	22.27	L1	gnd
2.02109	27.26	46.00	18.74	L1	gnd
3.97421	30.39	46.00	15.61	L1	gnd
25.22812	32.96	50.00	17.04	L1	gnd



EDR-CH39 N Line

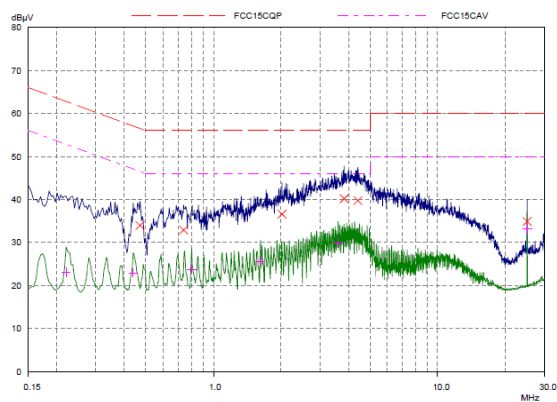


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
1.08359	35.62	56.00	20.38	N	gnd
2.02109	40.59	56.00	15.41	N	gnd
4.06015	45.14	56.00	10.86	N	gnd
4.11875	45.00	56.00	11.00	N	gnd
8.81063	38.80	60.00	23.20	N	gnd
25.22812	33.68	60.00	26.32	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
1.06015	24.77	46.00	21.23	N	gnd
1.82578	28.48	46.00	17.52	N	gnd
4.04453	34.09	46.00	11.91	N	gnd
4.47421	33.95	46.00	12.05	N	gnd
8.28281	26.34	50.00	23.66	N	gnd
25.22812	32.40	50.00	17.60	N	gnd

EDR-CH78 L Line

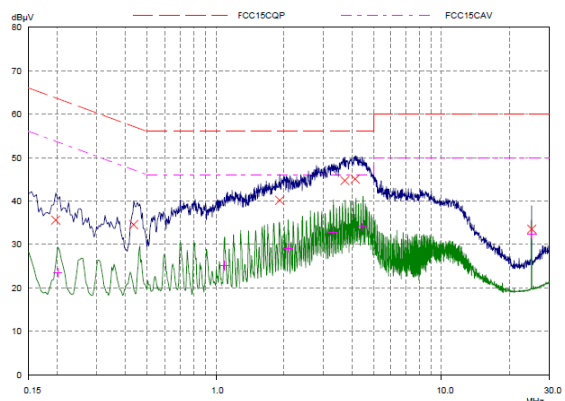


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.47031	33.93	56.51	22.58	L1	gnd
0.73593	32.89	56.00	23.11	L1	gnd
2.03281	36.59	56.00	19.41	L1	gnd
3.82187	40.15	56.00	15.85	L1	gnd
4.39609	39.73	56.00	16.27	L1	gnd
25.22812	34.90	60.00	25.10	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.22031	23.02	52.81	29.79	L1	gnd
0.43908	22.96	47.08	24.12	L1	gnd
0.79843	23.74	46.00	22.26	L1	gnd
1.83046	25.58	46.00	20.42	L1	gnd
3.59921	29.89	46.00	16.11	L1	gnd
25.22812	33.23	50.00	16.77	L1	gnd

EDR-CH78 N Line



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.19887	35.58	63.74	28.16	N	gnd
0.43515	34.53	57.15	22.62	N	gnd
1.92734	40.13	56.00	15.87	N	gnd
3.72031	44.89	56.00	11.31	N	gnd
4.13046	45.04	56.00	10.96	N	gnd
25.22812	33.52	60.00	26.48	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.20078	23.44	53.58	30.14	N	gnd
1.0914	25.14	46.00	20.86	N	gnd
2.10312	29.11	46.00	16.89	N	gnd
3.31796	32.79	46.00	13.21	N	gnd
4.46203	34.16	46.00	11.84	N	gnd
25.22812	32.26	50.00	17.74	N	gnd

5 Main Test Instruments

Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time
BT Base Station Simulator	CBT	R&S	100271	2016-05-21	2017-05-20
Loop Antenna	FMZB1519	SCHWARZBEC K	1519-047	2014-02-29	2017-02-28
EMI Test Receiver	ESCS30	R&S	100138	2015-12-17	2016-12-16
Artificial main network	ENV216	R&S	101171	2013-12-18	2016-12-17
Signal Analyzer	FSV30	R&S	100815	2015-12-17	2016-12-16
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
Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
Spectrum Analyzer	N9010A	Agilent	MY47191109	2016-05-21	2017-05-20
Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2015-01-30	2018-01-29
RF Cable	SMA 15cm	Agilent	0001	2016-08-05	2017-08-04

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