



RF TEST REPORT

Applicant	ID TECH
FCC ID	WQJ-IDCL-51
Brand	ID TECH
Product	AC100
Model	IDCL-51
Report No.	RXA1604-0066RF01
Issue Date	May 25, 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.

Lingling Kang

Performed by: lingling Kang

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Approved by: Kai Xu



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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: April 22, 2016 ~ May 6, 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
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E-mail: xukai@ta-shanghai.com

2 General Description of Equipment under Test

Client Information

Applicant	ID TECH
Applicant address	10721 Walker Street Cypress, CA 90630
Manufacturer	ID TECH
Manufacturer address	10721 Walker Street Cypress, CA 90630

General information

Model:	IDCL-51		
SN:	617T000007		
HW Version:	80144301		
SW Version:	ID TECH AC100 V1.00		
Power Supply:	AC adapter		
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	11.29dBm		
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)

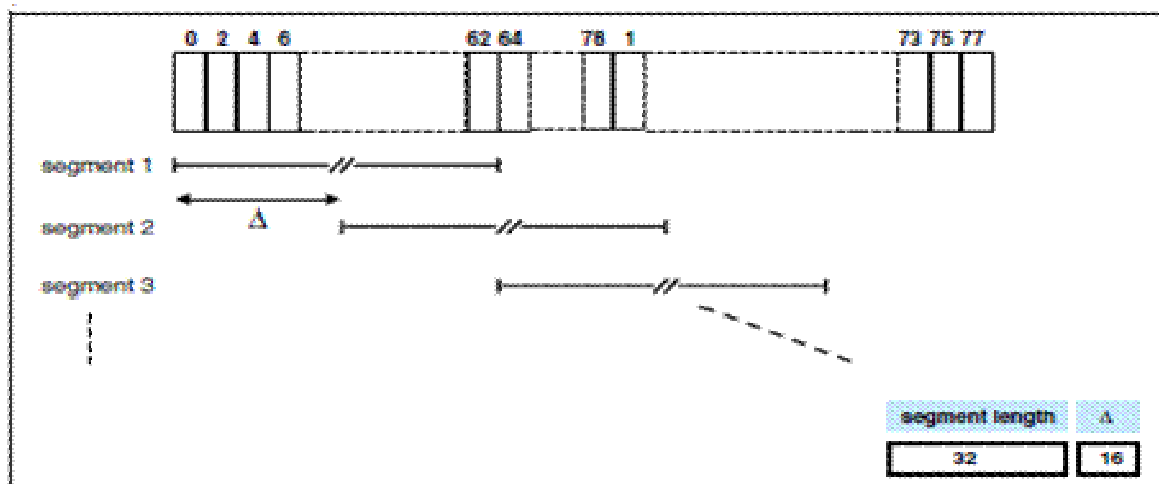
3 Information about the FHSS characteristics

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

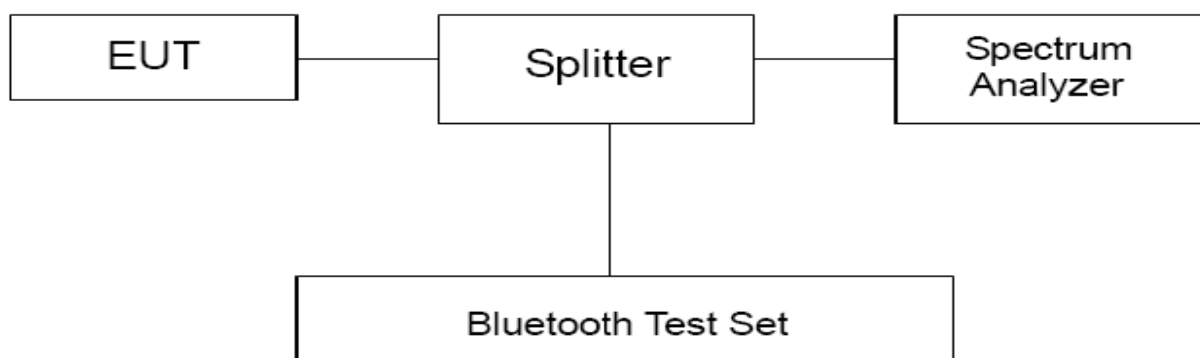
Ambient condition

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	≤ 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	10.54	10.28	10.83	PASS
39	2441	11.24	11.08	11.29	PASS
78	2480	11.10	10.88	11.03	PASS

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

4.3 Occupied Bandwidth (20dB)

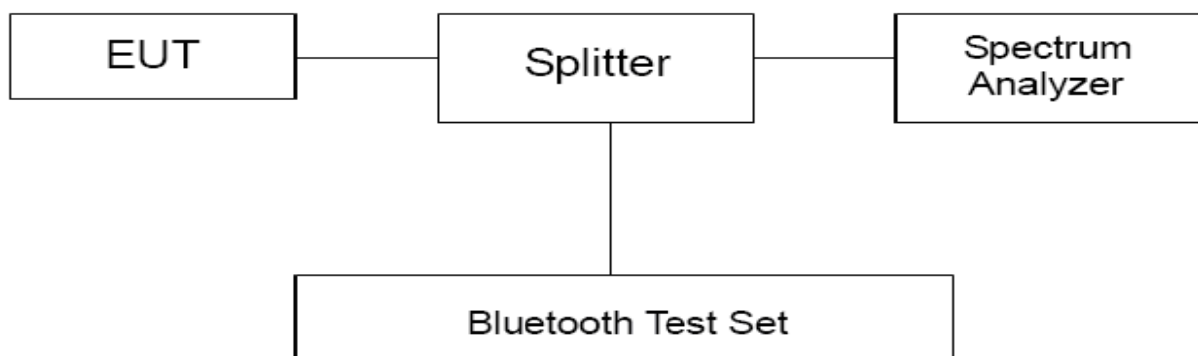
Ambient condition

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 30 kHz and VBW is set to 100 kHz on spectrum analyzer. -20dB occupied bandwidths are recorded.

Test Setup



Limits

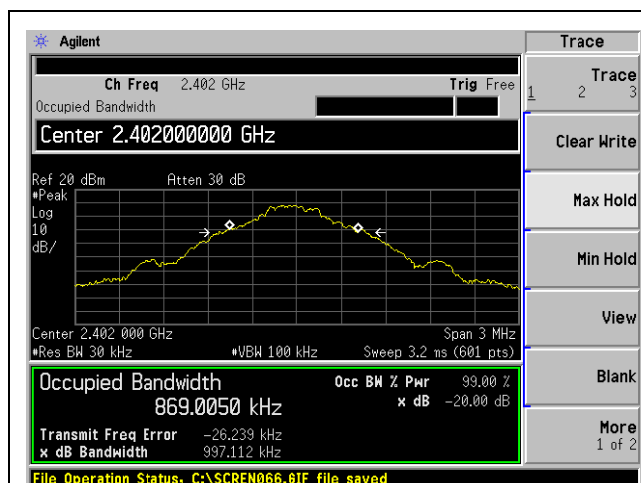
No specific occupied bandwidth requirements in part 15.247(a) (1).

Measurement Uncertainty

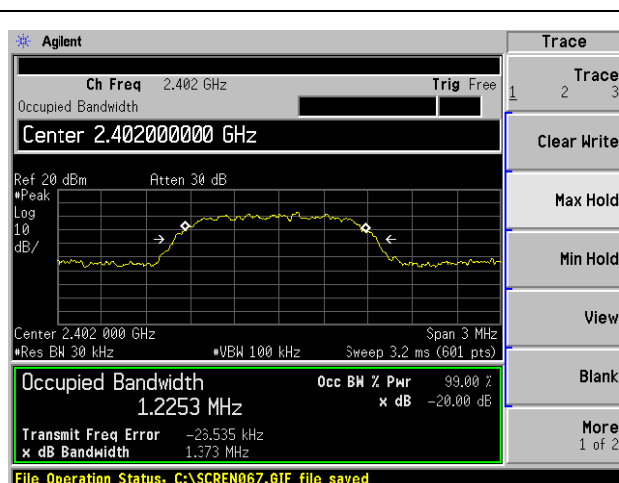
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 2$, $U=936$ Hz.

Test Results

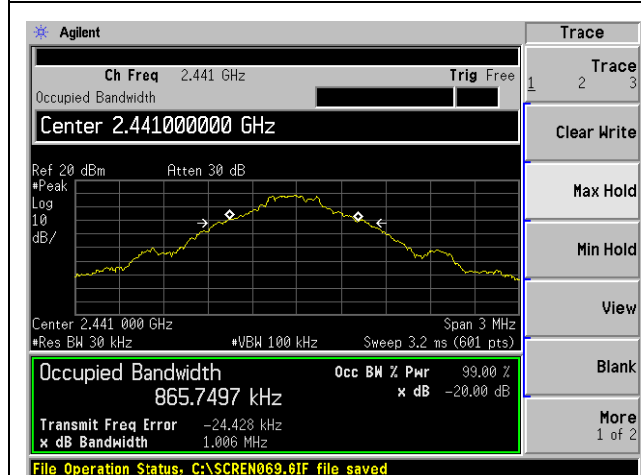
Mode	Channel	Frequency (MHz)	20dB Bandwidth(kHz)
DH5	0	2402	997
DH5	39	2441	1006
DH5	78	2480	999
2DH5	0	2402	1373
2DH5	39	2441	1348
2DH5	78	2480	1342
3DH5	0	2402	1330
3DH5	39	2441	1321
3DH5	78	2480	1337



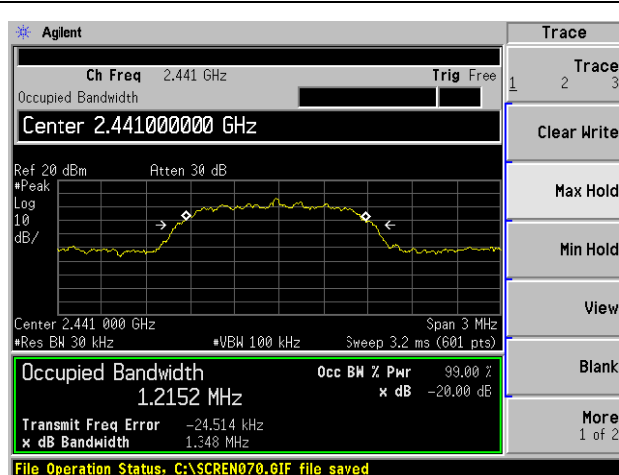
DH5, Carrier frequency (MHz): 2402
Channel No.:0



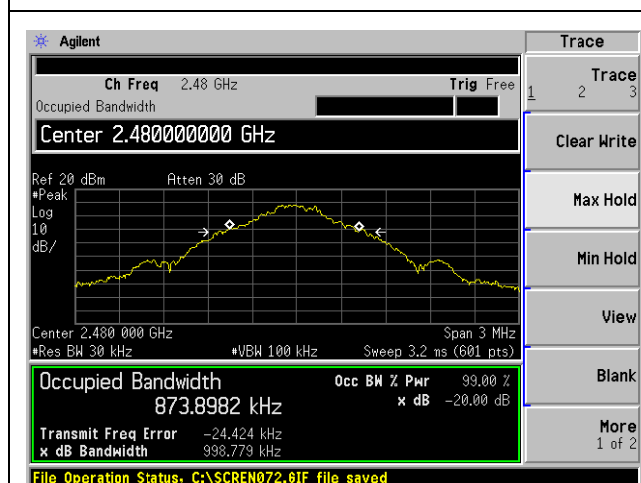
2DH5, Carrier frequency (MHz): 2402
Channel No.:0



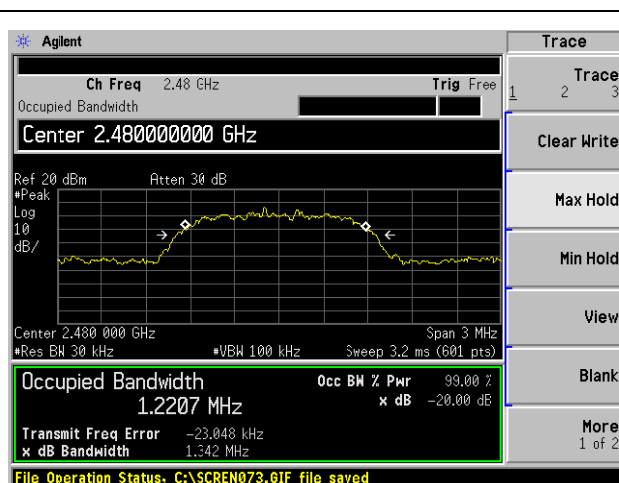
DH5, Carrier frequency (MHz): 2441
Channel No.:39



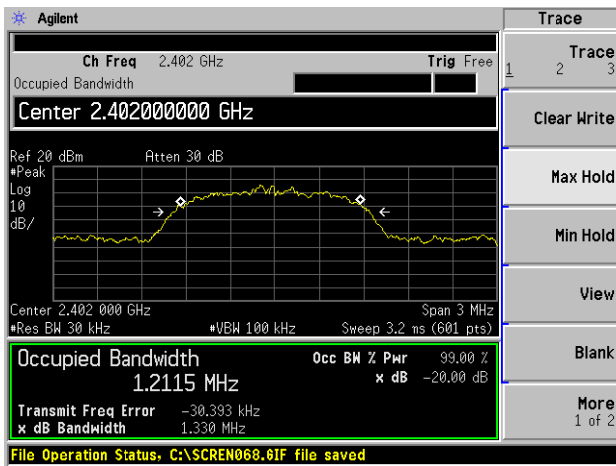
2DH5, Carrier frequency (MHz): 2441
Channel No.:39



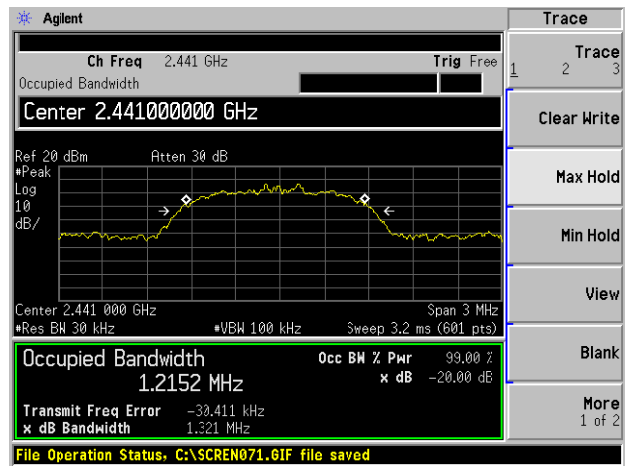
DH5, Carrier frequency (MHz): 2480
Channel No.:78



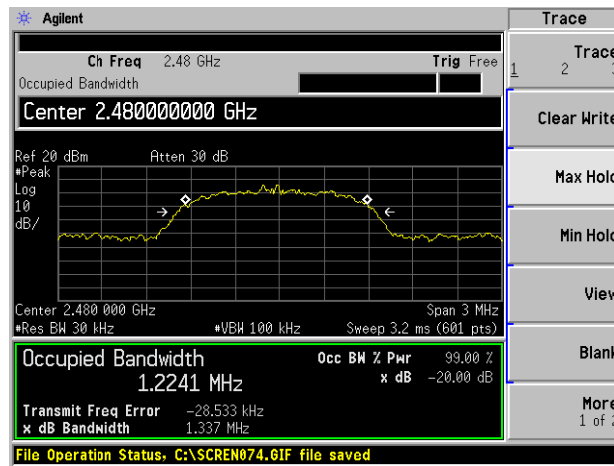
2DH5, Carrier frequency (MHz): 2480
Channel No.:78



3DH5, Carrier frequency (MHz): 2402
Channel No.:0



3DH5, Carrier frequency (MHz): 2441
Channel No.:39



3DH5, Carrier frequency (MHz): 2480
Channel No.:78

4.4 Frequency Separation

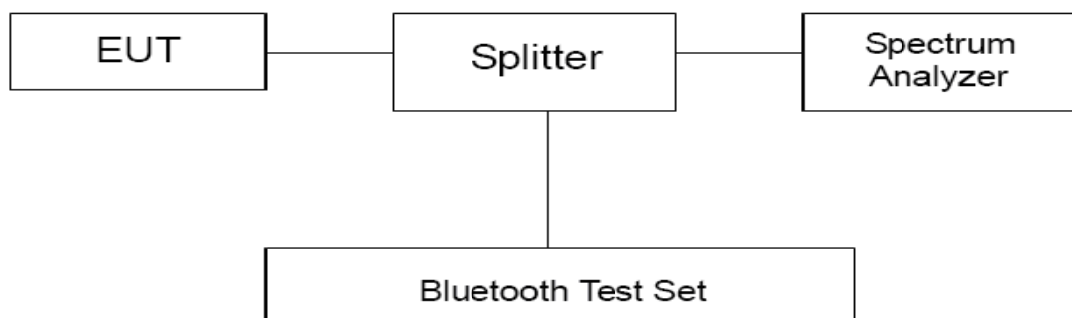
Ambient condition

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.

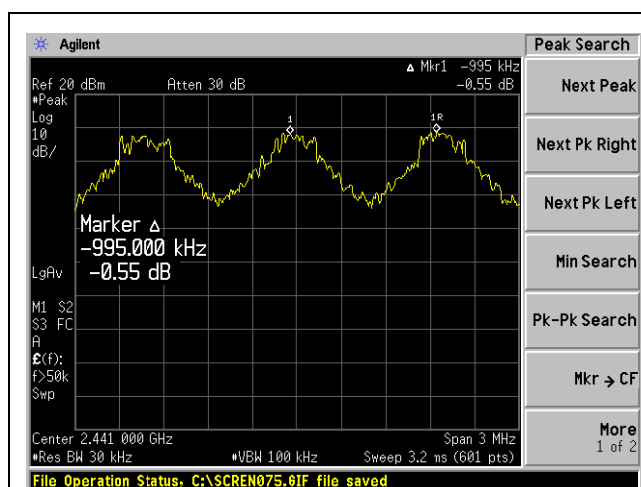
Measurement Uncertainty

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

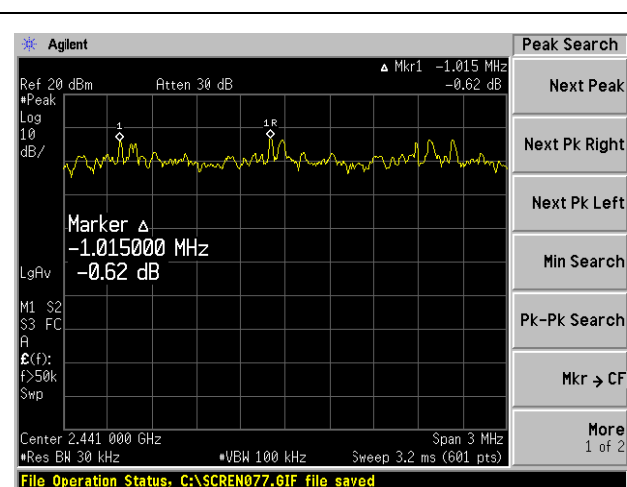
Test Results:

Packet type	Carrier frequency (MHz)	Carrier frequency separation(kHz)	20dB Bandwidth(kHz)	Limit (kHz)	Conclusion
DH5	2441	995	1006	670.67	PASS
2DH5	2441	1015	1348	898.67	PASS
3DH5	2441	920	1321	880.67	PASS

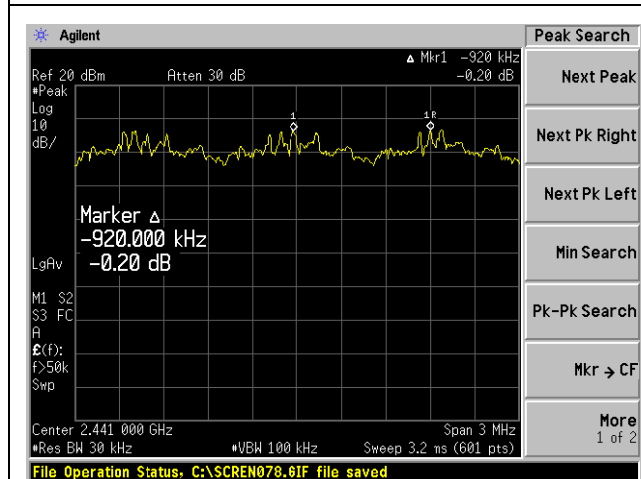
Note: The limit is two-thirds of 20 dB bandwidth.



DH5 Carrier frequency (MHz): 2441



2DH5 Carrier frequency (MHz): 2441



3DH5 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

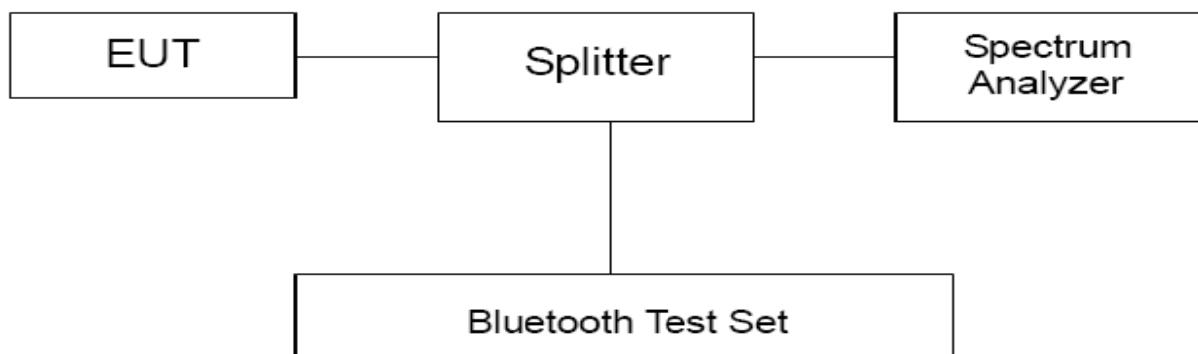
Methods of Measurement

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 1MHz 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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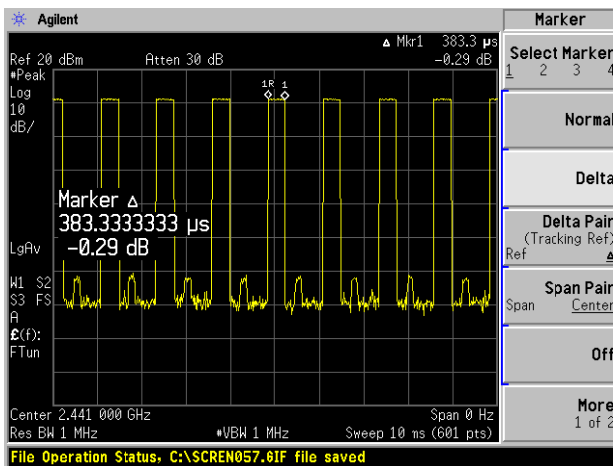
Measurement Uncertainty

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

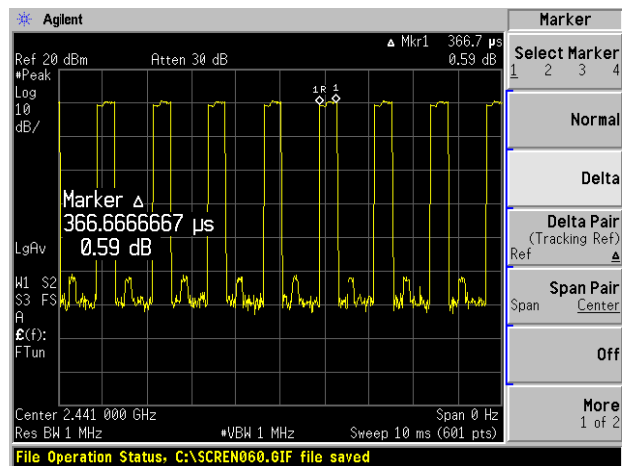
Requirements	Uncertainty	
Dwell Time	DH1	$U=0.64\text{ms}$
	DH3	$U=0.80\text{ms}$
	DH5	$U=0.70\text{ms}$
	2DH1	$U=0.64\text{ms}$
	2DH3	$U=0.80\text{ms}$
	2DH5	$U=0.70\text{ms}$
	3DH1	$U=0.64\text{ms}$
	3DH3	$U=0.80\text{ms}$
	3DH5	$U=0.70\text{ms}$

Test Results:

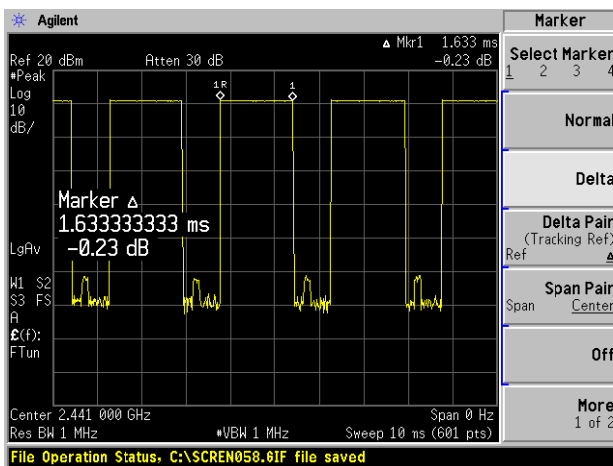
Channel 39					
Packet type	hop rate (1/s)	Time slot length(ms)	Dwell time (ms)	Limit (ms)	Conclusion
DH1	1600	0.38	243.20	400	PASS
DH3	533.33	1.63	347.73	400	PASS
DH5	320	2.88	368.64	400	PASS
2DH1	1600	0.37	236.80	400	PASS
2DH3	533.33	1.65	352.00	400	PASS
2DH5	320	2.88	368.64	400	PASS
3DH1	1600	0.37	236.80	400	PASS
3DH3	533.33	1.63	347.73	400	PASS
3DH5	320	2.90	371.20	400	PASS
Note: Dwell time = time slot length * hop rate * 0.4s					



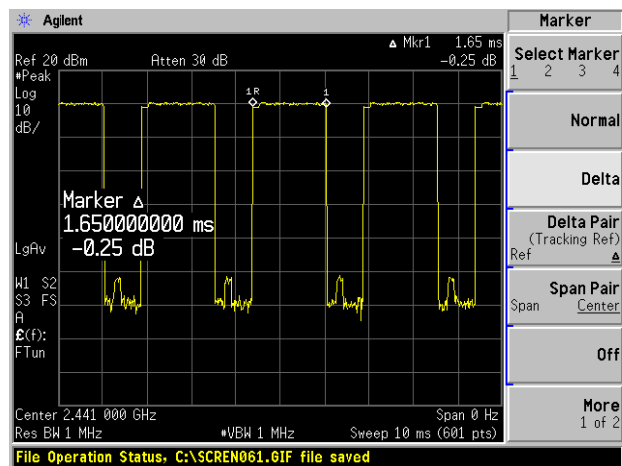
DH1, Carrier frequency (MHz): 2441



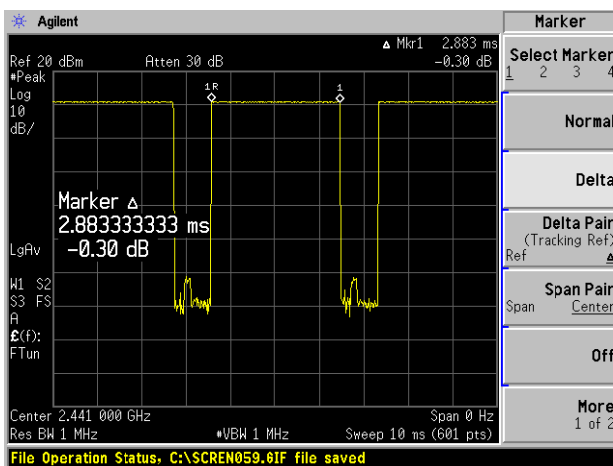
2DH1, Carrier frequency (MHz): 2441



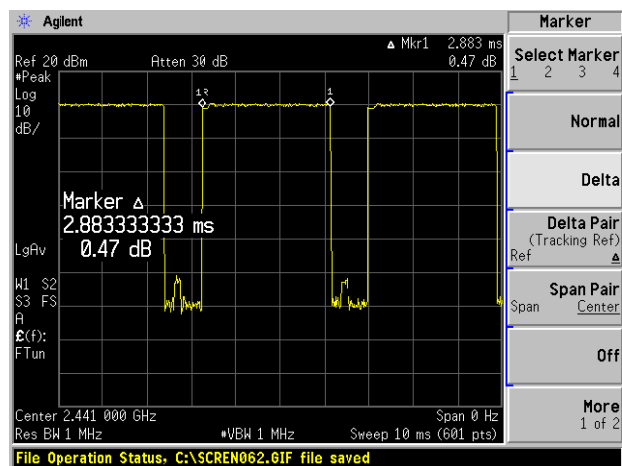
DH3, Carrier frequency (MHz): 2441



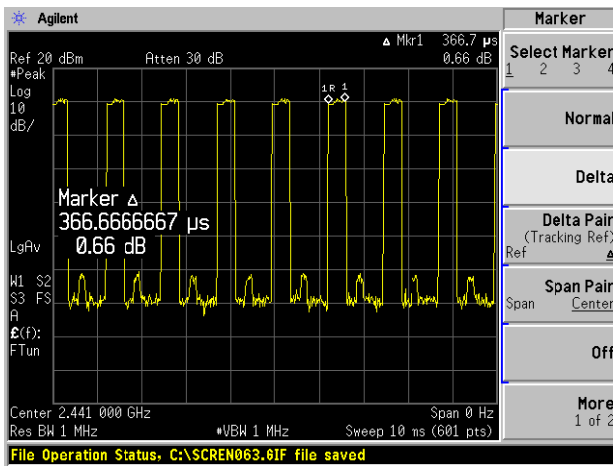
2DH3, Carrier frequency (MHz): 2441



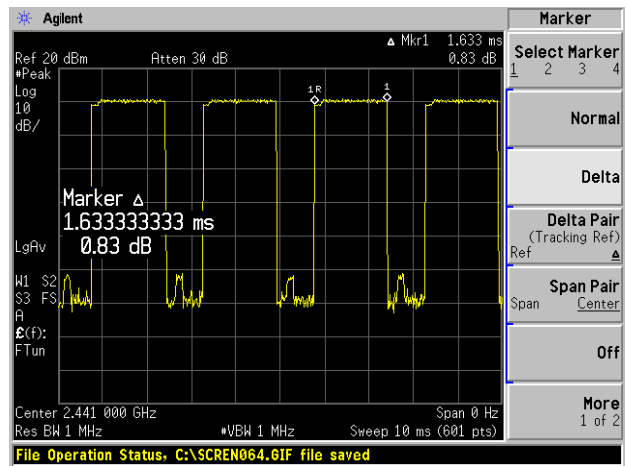
DH5, Carrier frequency (MHz): 2441



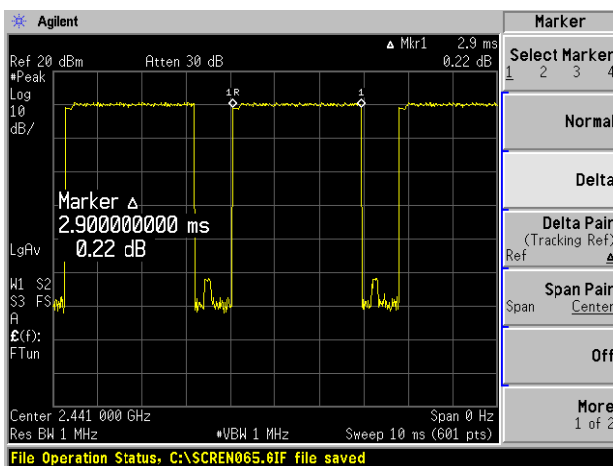
2DH5, Carrier frequency (MHz): 2441



3DH1, Carrier frequency (MHz): 2441



3DH3, Carrier frequency (MHz): 2441



3DH5, Carrier frequency (MHz): 2441

4.6 Band Edge Compliance

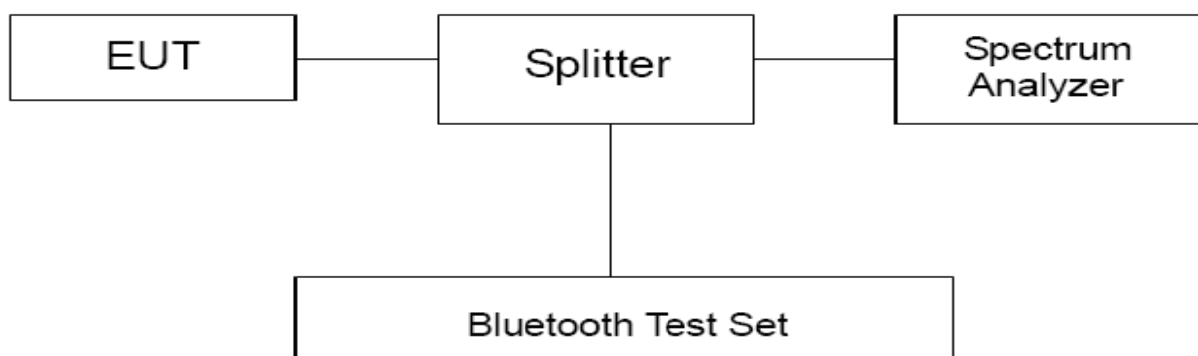
Ambient condition

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

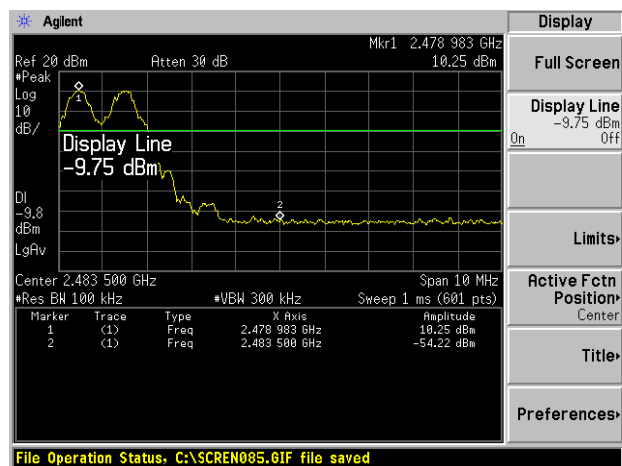
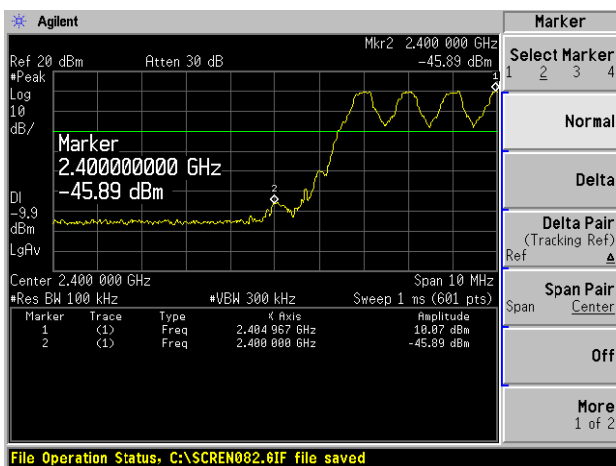
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

Frequency	Uncertainty
2GHz-3GHz	1.407 dB

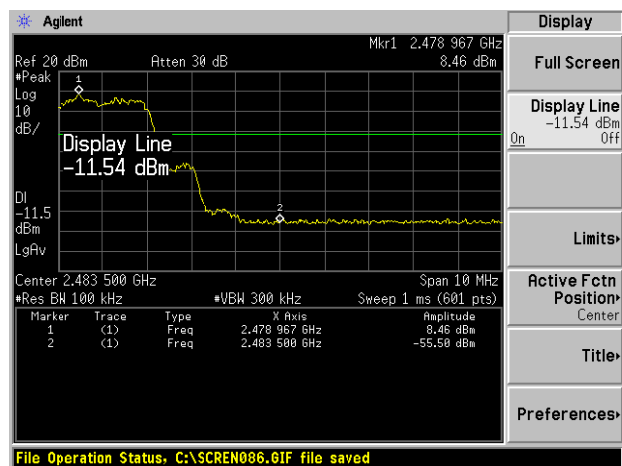
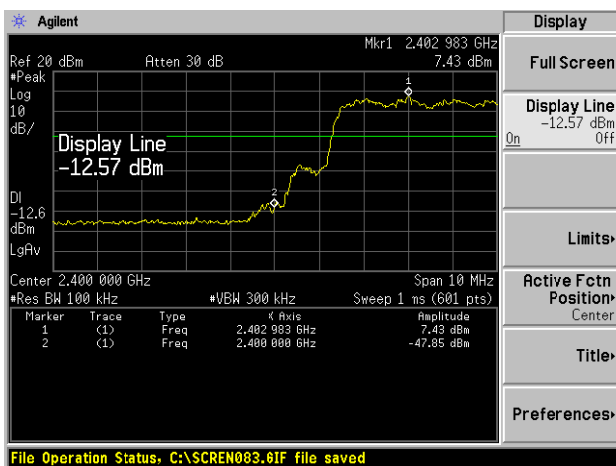


Test Results

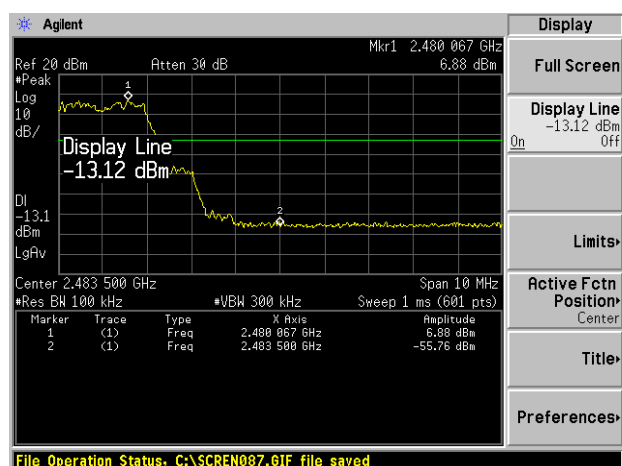
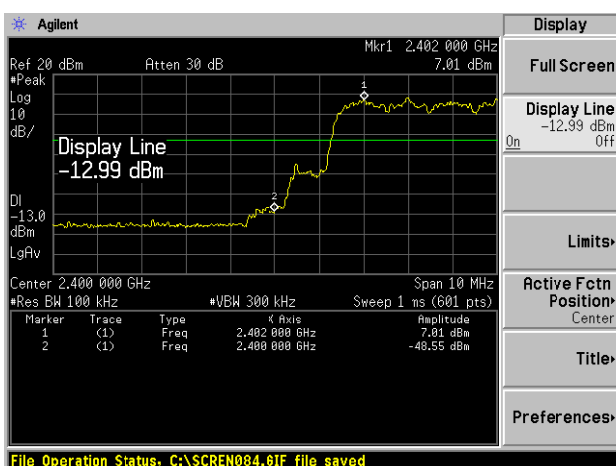
Hopping On-DH5



Hopping On-2DH5

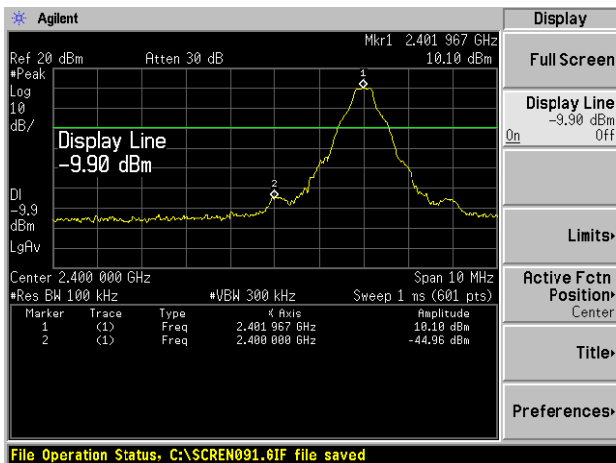


Hopping On-3DH5

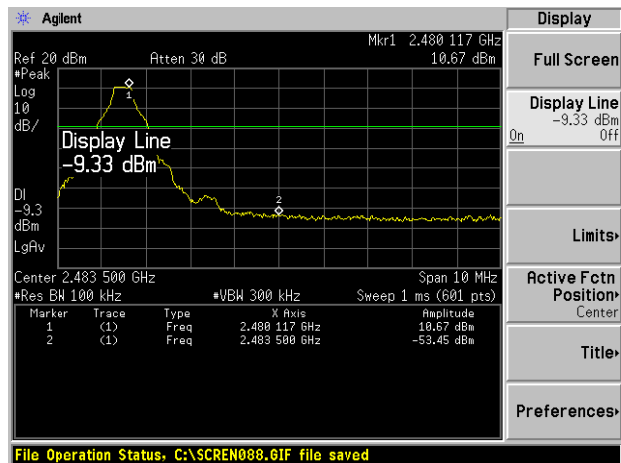




Hopping Off-DH5

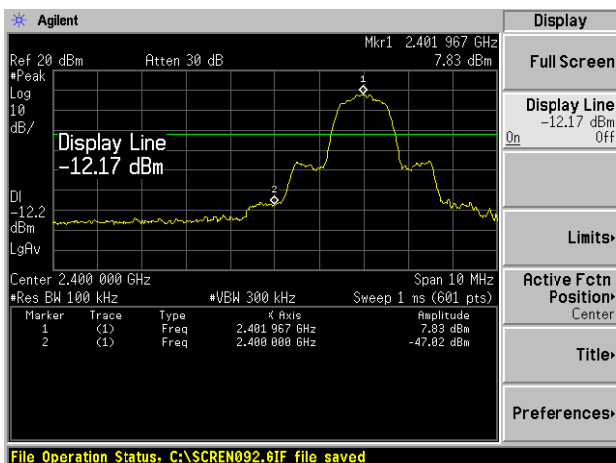


Carrier frequency (MHz): 2402, Channel No.:0

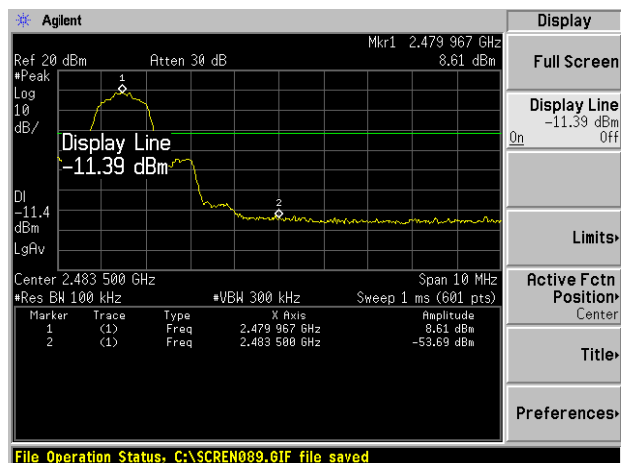


Carrier frequency (MHz): 2480, Channel No.:78

Hopping Off-2DH5

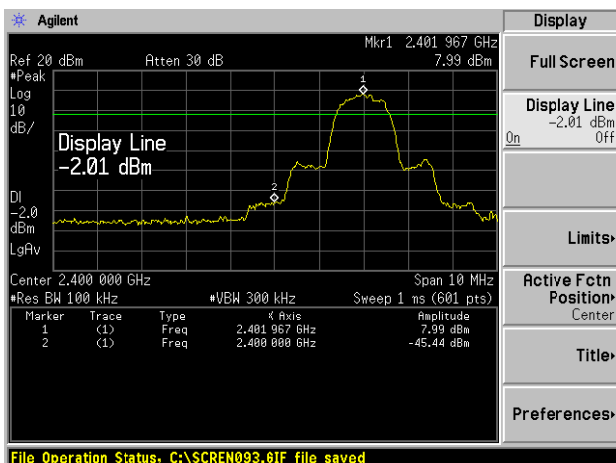


Carrier frequency (MHz): 2402, Channel No.:0

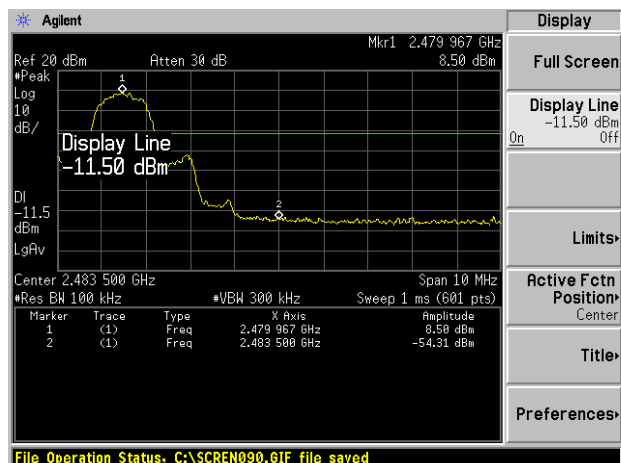


Carrier frequency (MHz): 2480, Channel No.:78

Hopping Off-3DH5



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



Carrier frequency (MHz): 2480, Channel No.:78

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.

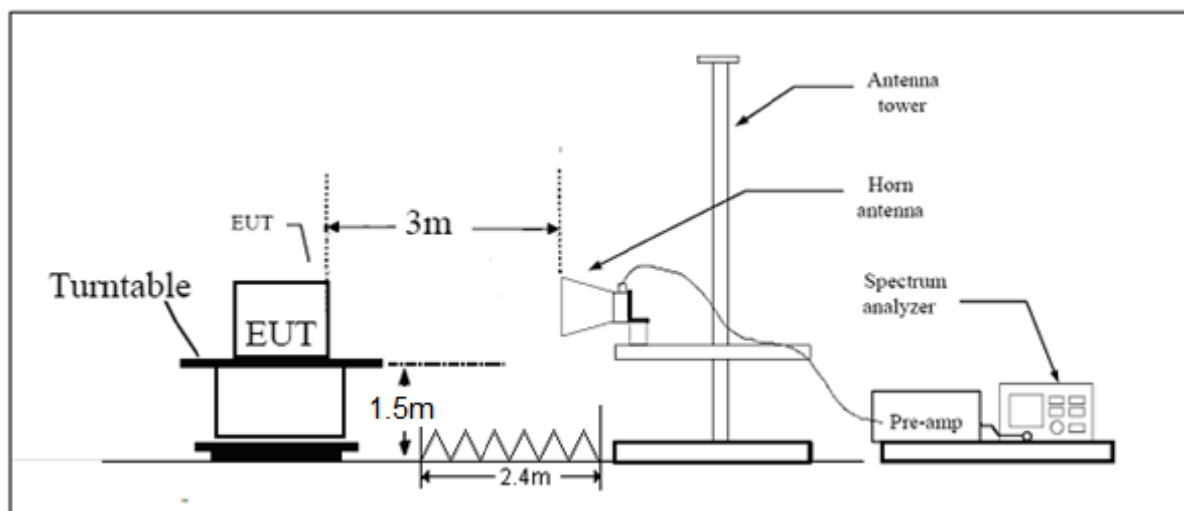
Set the spectrum analyzer in the following:

- 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

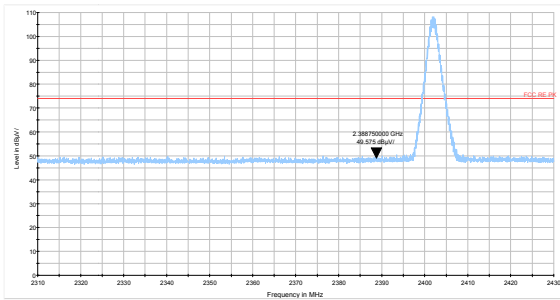
Measurement Uncertainty

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.

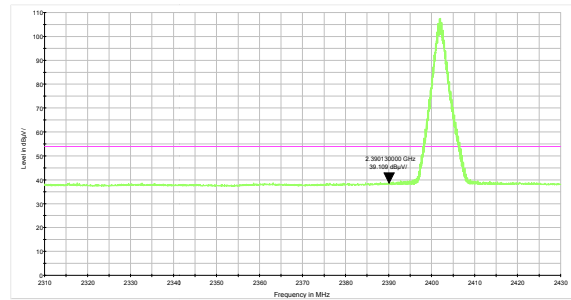


Test Results:

DH5- Channel 0

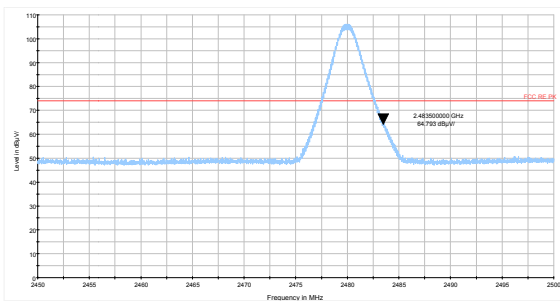


Lower band edge Peak-CH 0

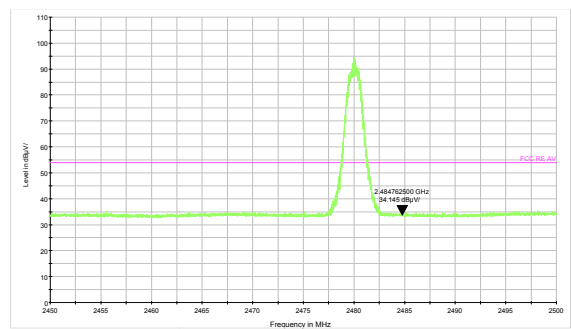


Lower band edge average-CH 0

DH5- Channel 78

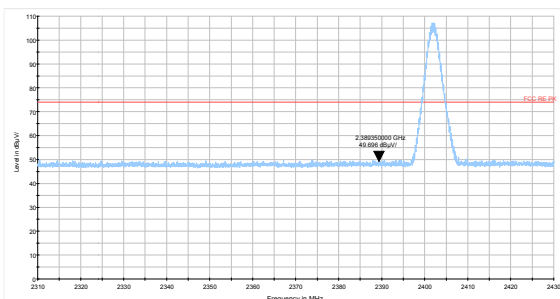


Higher band edge Peak-CH 78

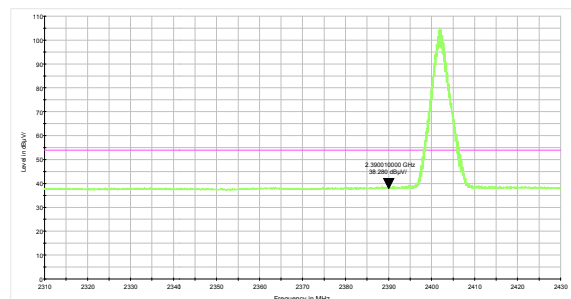


Higher band edge average-CH 78

3DH5- Channel 0

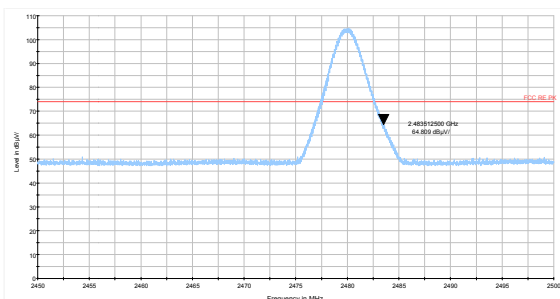


Lower band edge Peak-CH 0

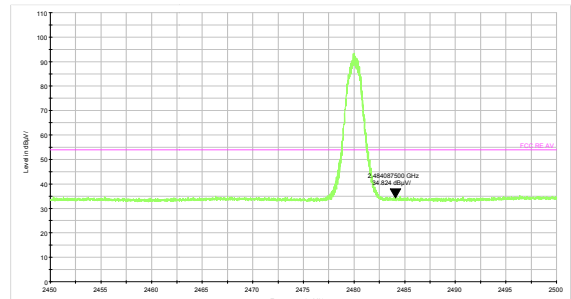


Lower band edge average-CH 0

3DH5- Channel 78



Higher band edge Peak-CH 78



Higher band edge average-CH 78

4.8 Number of hopping Frequency

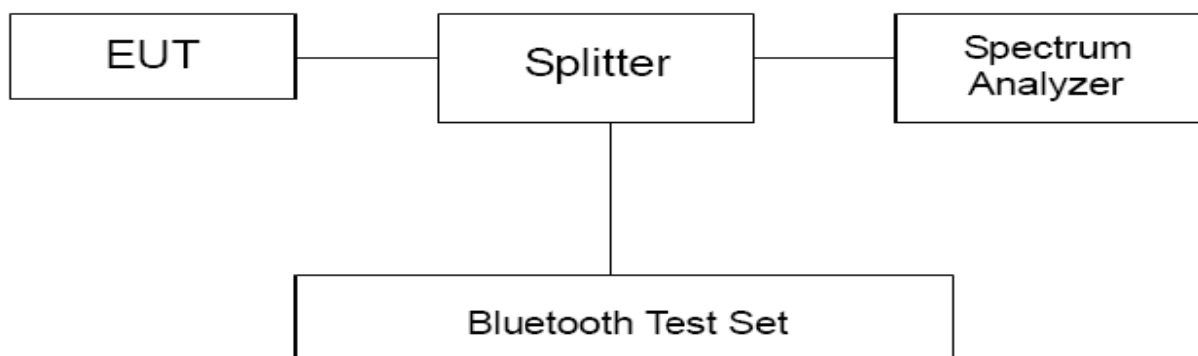
Ambient condition

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 1 MHz 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.”

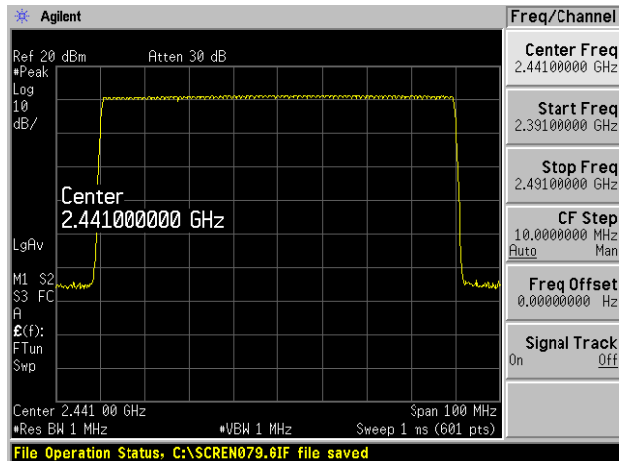
Limits	≥ 15 channels
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Test Results:

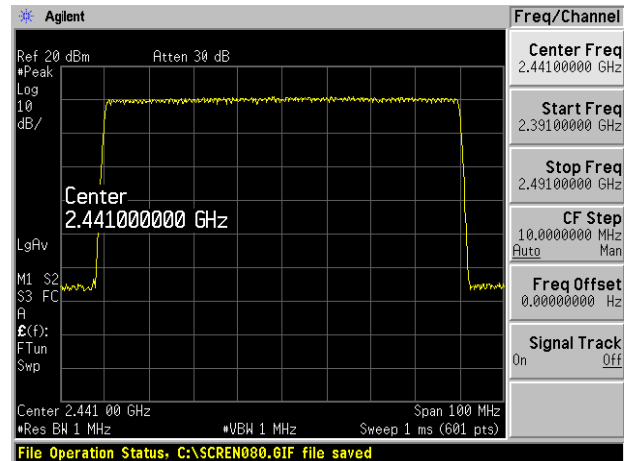
Packet type	Number of hopping channels	conclusion
DH5	79	PASS
2DH5	79	PASS
3DH5	79	PASS

DH5



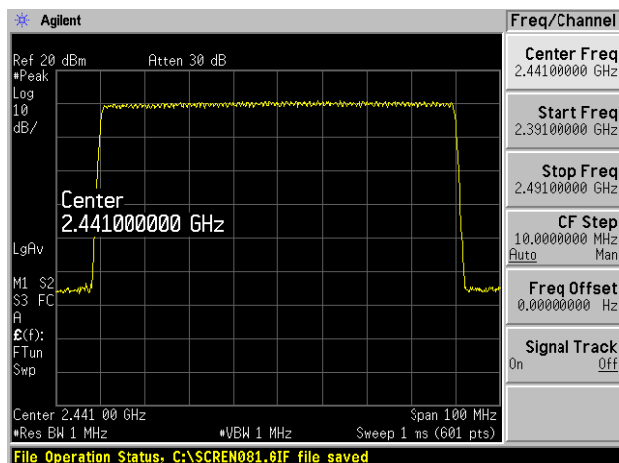
2400 MHz – 2483.5 MHz

2DH5



2400 MHz – 2483.5 MHz

3DH5



2400 MHz – 2483.5 MHz

4.9 Spurious RF Conducted Emissions

Ambient condition

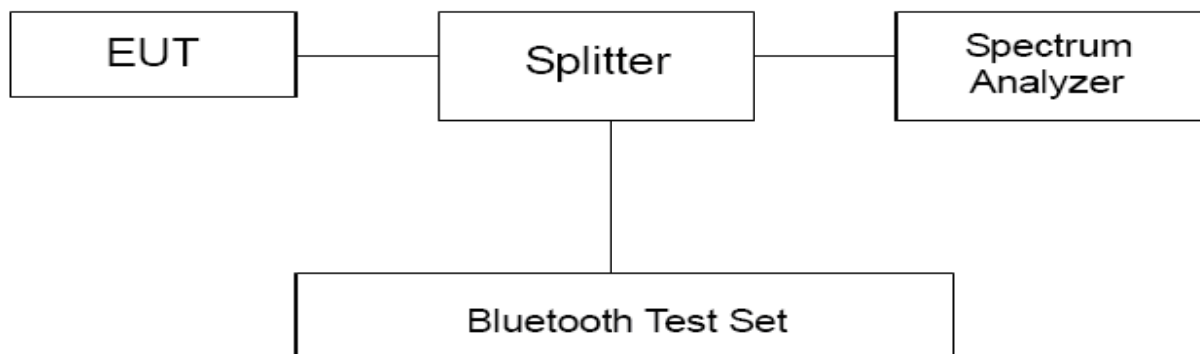
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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	-6.53	-26.53
	2441	-14.22	-34.22
	2480	-0.08	-20.08
EDR (3DH5)	2402	-2.13	-22.13
	2441	-4.94	-24.94
	2480	-17.95	-37.95

Measurement Uncertainty

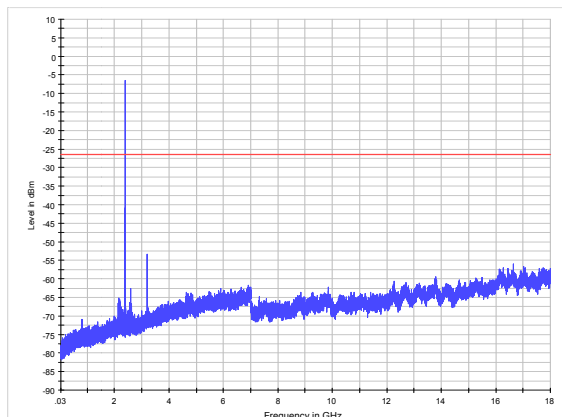
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$.

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

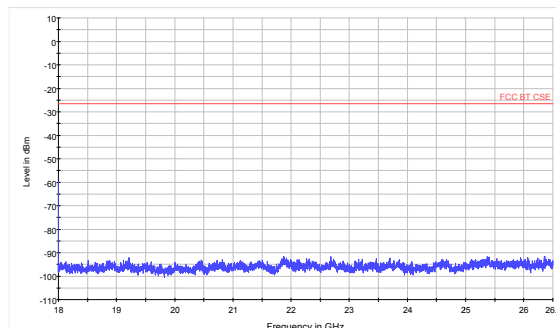
Test Results:

Note: The signal beyond the limit is carrier.

GFSK-CH0

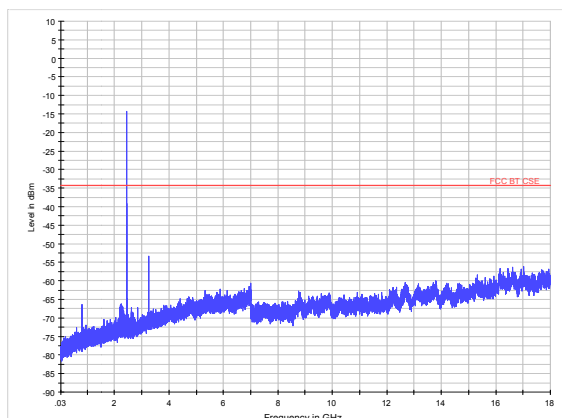


Spurious RF conducted emissions from 30MHz to 18GHz

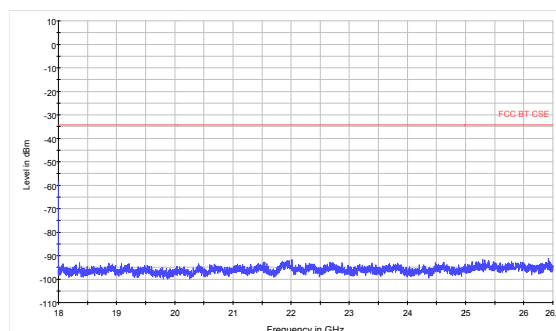


Spurious RF conducted emissions from 18GHz to 26.5GHz

GFSK-CH39

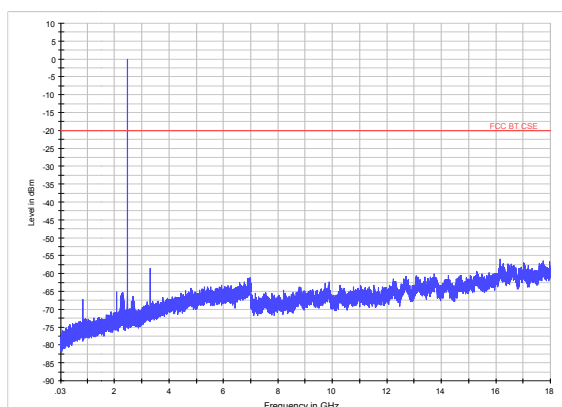


Spurious RF conducted emissions from 30MHz to 18GHz

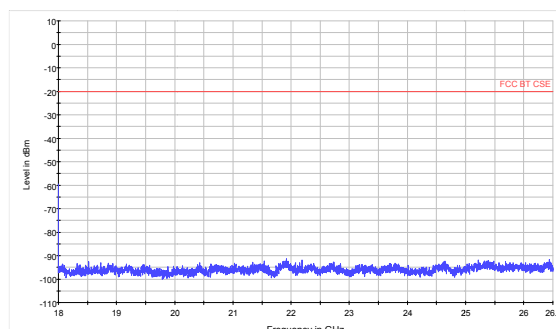


Spurious RF conducted emissions from 18GHz to 26.5GHz

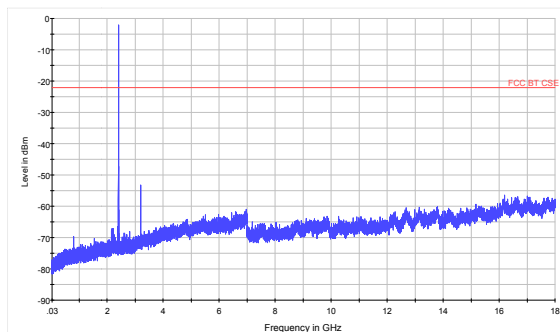
GFSK-CH78



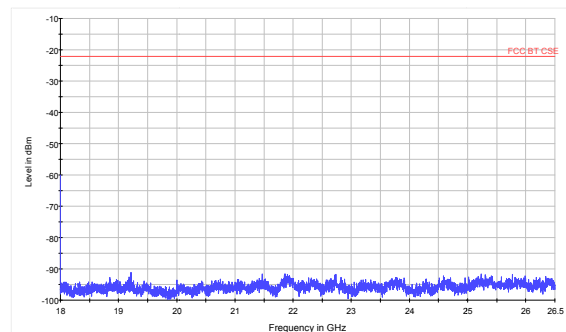
Spurious RF conducted emissions from 30MHz to 18GHz



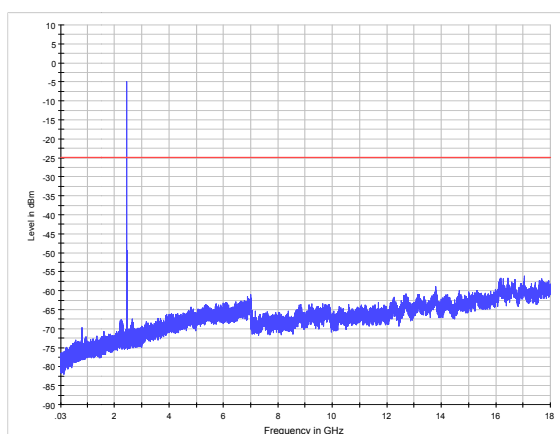
Spurious RF conducted emissions from 18GHz to 26.5GHz

**EDR-CH0**

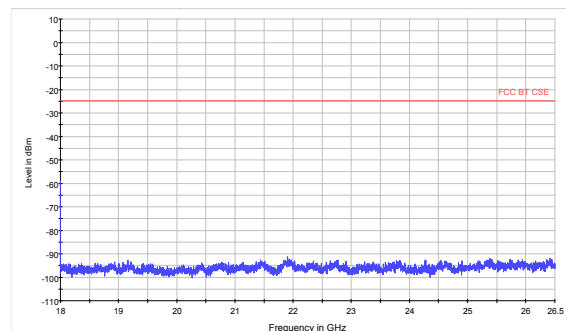
Spurious RF conducted emissions from 30MHz to 18GHz



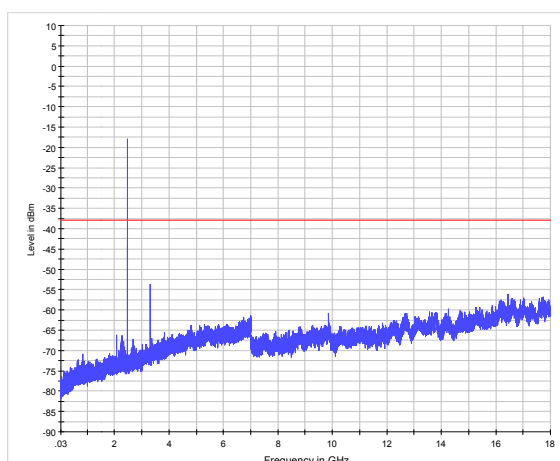
Spurious RF conducted emissions from 18GHz to 26.5GHz

EDR -CH39

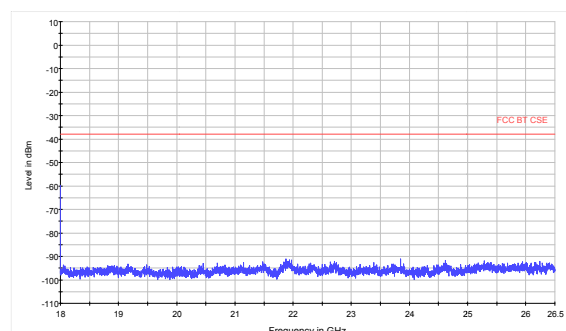
Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 18GHz to 26.5GHz

EDR -CH78

Spurious RF conducted emissions from 30MHz to 18GHz



Spurious RF conducted emissions from 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

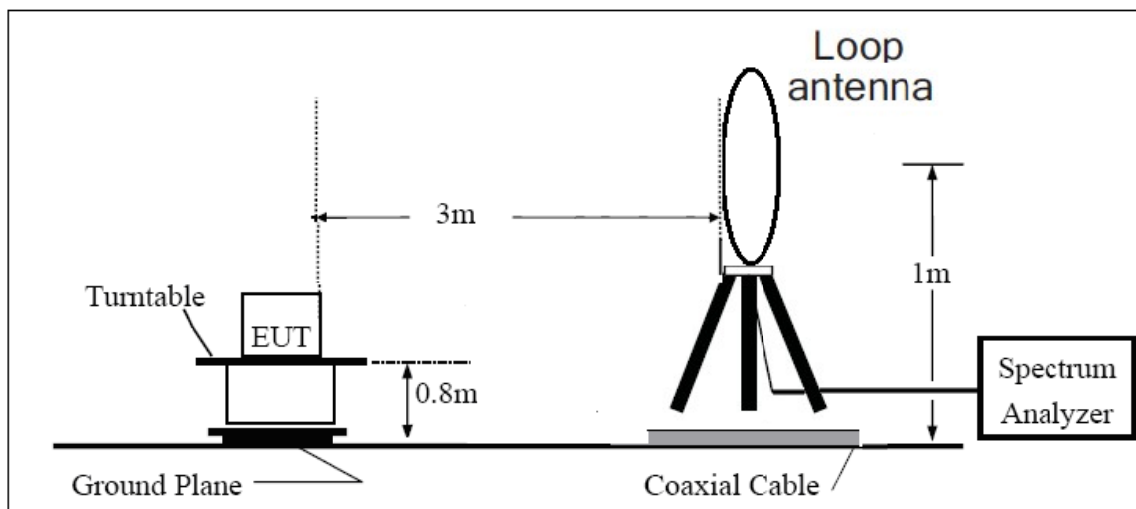
(b) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=AUTO

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.

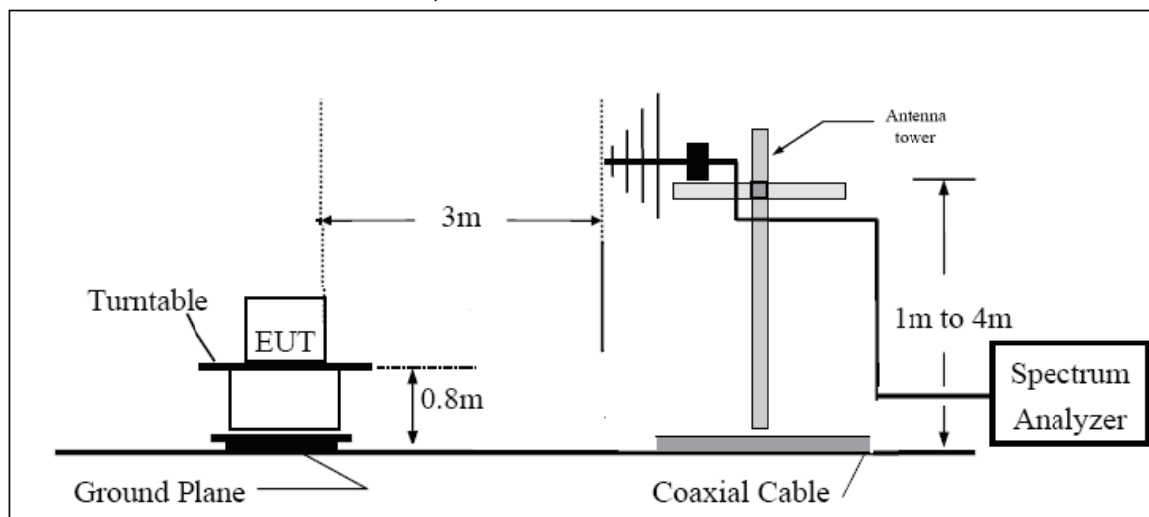
The test is in transmitting mode.

Test setup

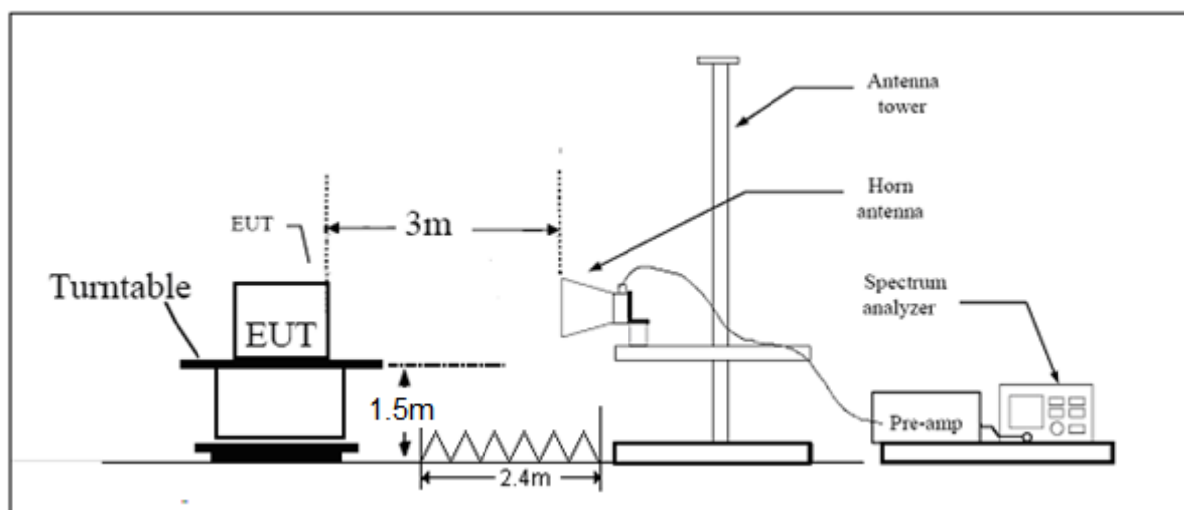
9KHz~~~ 30MHz



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

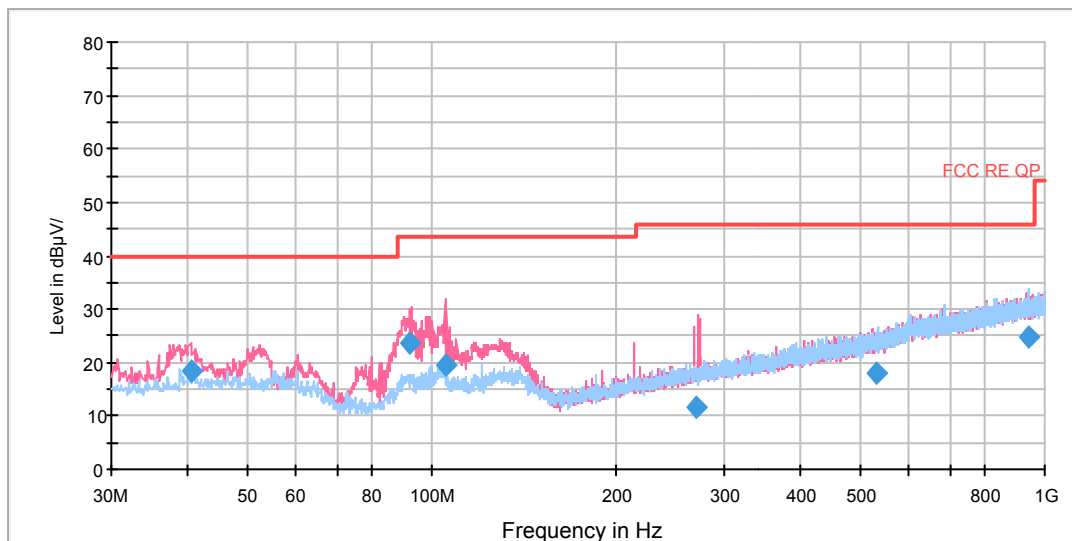
Sweep from 9 kHz to 30MHz, and the emissions more than 20 dB below the permissible value are not reported.

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

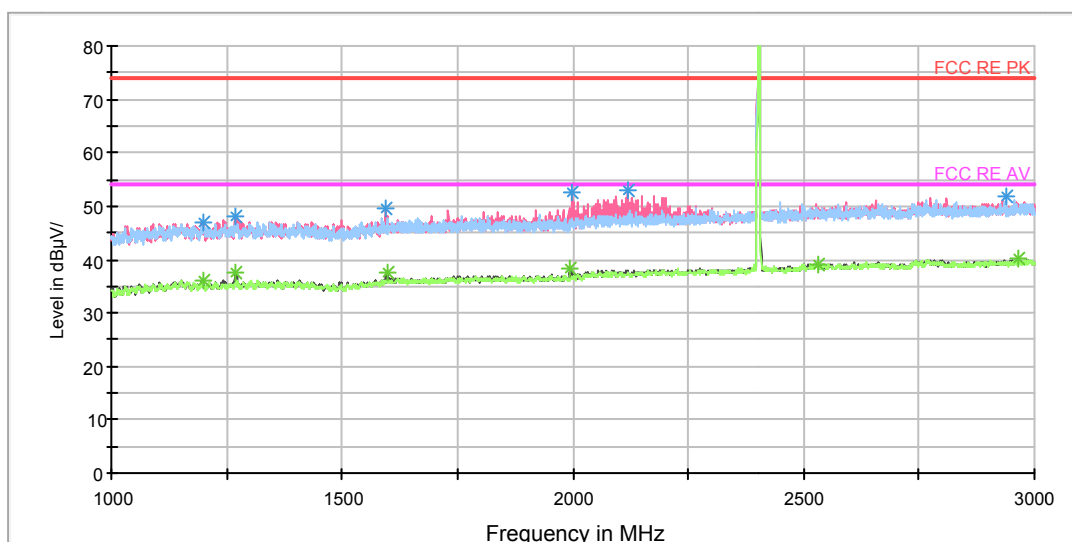
RE 0.03-1GHz QP Class B



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)
40.388750	18.3	100.0	V	316.0	31.5	13.2	21.7	40.0
92.163750	23.5	125.0	V	350.0	35.7	12.2	20.0	43.5
105.053750	19.7	114.0	V	0.0	32.5	12.8	23.8	43.5
270.566250	11.8	100.0	V	22.0	26.5	14.7	34.2	46.0
533.151250	18.0	125.0	H	24.0	38.7	20.7	28.0	46.0
939.450000	24.9	100.0	H	0.0	50.8	25.9	21.1	46.0



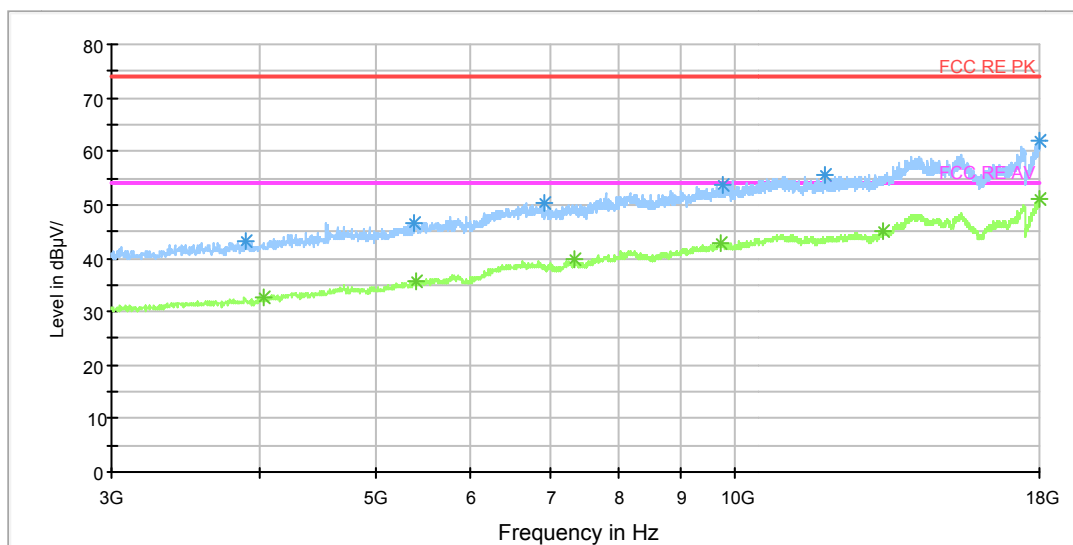
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1198.000000	47.0	100.0	V	192.0	47.7	-0.7	27.0	74
1267.000000	48.1	100.0	V	185.0	48.4	-0.3	25.9	74
1596.000000	49.6	100.0	V	337.0	50.6	1.0	24.4	74
1999.500000	52.7	100.0	V	108.0	54.9	2.2	21.3	74
2117.500000	52.9	100.0	V	331.0	55.9	3.0	21.1	74
2937.500000	51.7	100.0	H	7.0	57.6	5.9	22.3	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1199.500000	36.2	100.0	V	207.0	36.9	-0.7	17.8	54
1270.000000	37.4	100.0	V	170.0	37.7	-0.3	16.6	54
1598.000000	37.7	100.0	V	346.0	38.7	1.0	16.3	54
1995.500000	38.1	100.0	V	108.0	40.3	2.2	15.9	54
2532.500000	39.1	100.0	H	0.0	44.2	5.1	14.9	54
2964.500000	40.0	100.0	H	4.0	45.9	5.9	14.0	54

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

RE 3G-18GHz PK+AV Class B



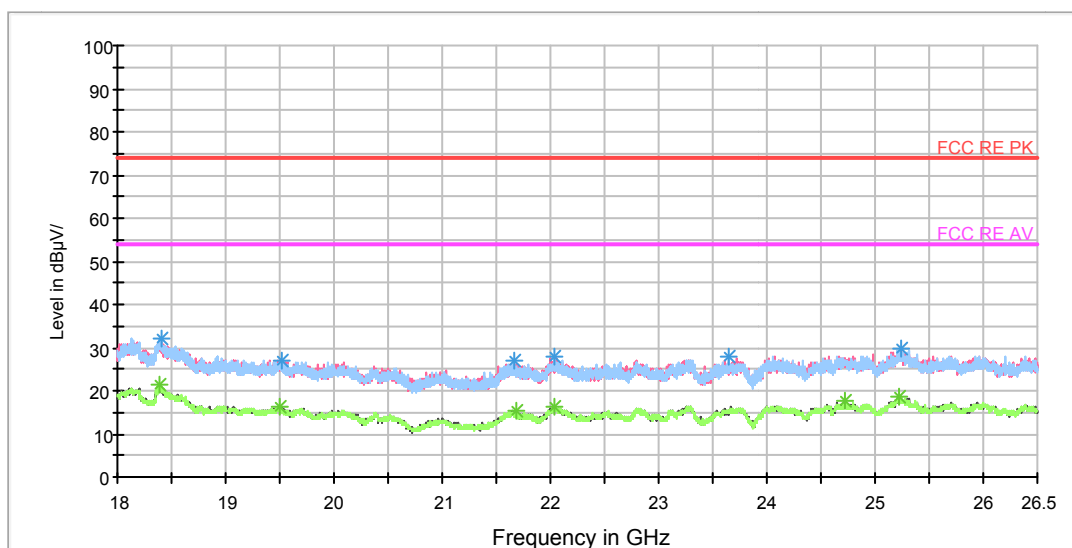
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3882.000000	43.4	100.0	V	173.0	45.6	-2.2	30.6	74
5385.000000	46.7	100.0	H	24.0	47.6	0.9	27.3	74
6915.000000	50.3	100.0	V	0.0	55.2	4.9	23.7	74
9783.000000	53.7	100.0	V	231.0	64.7	11.0	20.3	74
11904.000000	55.6	100.0	H	0.0	70.1	14.5	18.4	74
17994.000000	62.0	100.0	H	52.0	87.8	25.8	12.0	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4023.000000	32.6	100.0	H	110.0	34.6	-2.0	21.4	54
5409.000000	35.7	100.0	H	285.0	36.8	1.1	18.3	54
7326.000000	40.0	100.0	V	349.0	45.6	5.6	14.0	54
9714.000000	42.9	100.0	H	168.0	54.0	11.1	11.1	54
13326.000000	45.0	100.0	V	359.0	62.7	17.7	9.0	54
17988.000000	51.1	100.0	V	173.0	76.8	25.7	2.9	54

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

RE 18-26.5GHz PK+AV



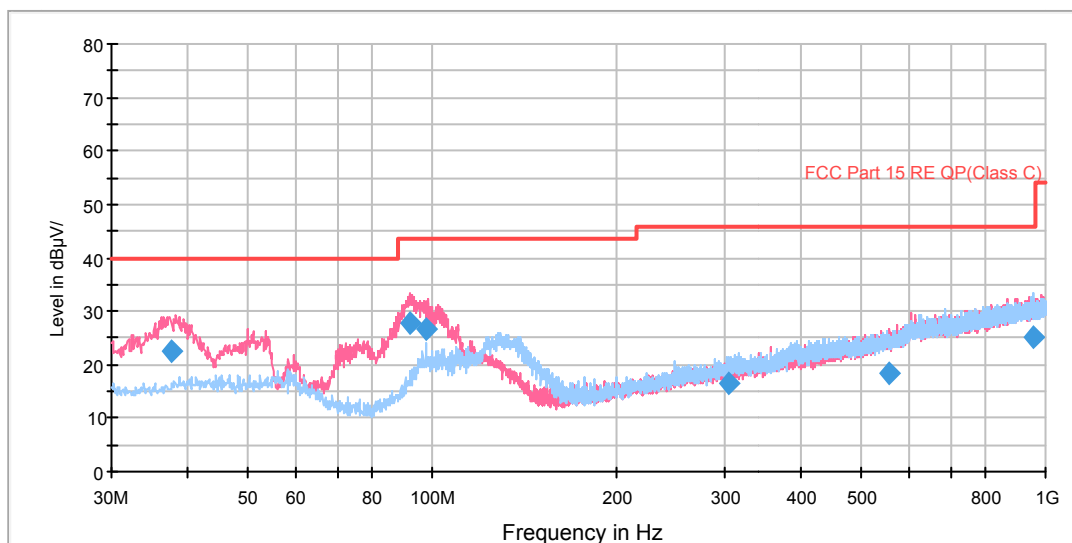
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18402.687500	32.2	V	180.0	37.1	-4.9	41.8	74
19519.375000	27.1	H	40.0	34.5	-7.4	46.9	74
21662.437500	26.8	V	168.0	36.1	-9.3	47.2	74
22039.625000	27.9	V	91.0	35.9	-8.0	46.1	74
23647.187500	28.0	H	25.0	36.6	-8.6	46.0	74
25248.375000	29.6	V	84.0	36.2	-6.6	44.4	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18385.687500	21.3	V	138.0	26.1	-4.8	32.7	54
19506.625000	16.3	V	180.0	23.8	-7.5	37.7	54
21680.500000	15.5	H	56.0	24.9	-9.4	38.5	54
22027.937500	16.5	V	50.0	24.4	-7.9	37.5	54
24725.625000	17.7	H	9.0	23.9	-6.2	36.3	54
25230.312500	18.7	H	9.0	24.6	-5.9	35.3	54

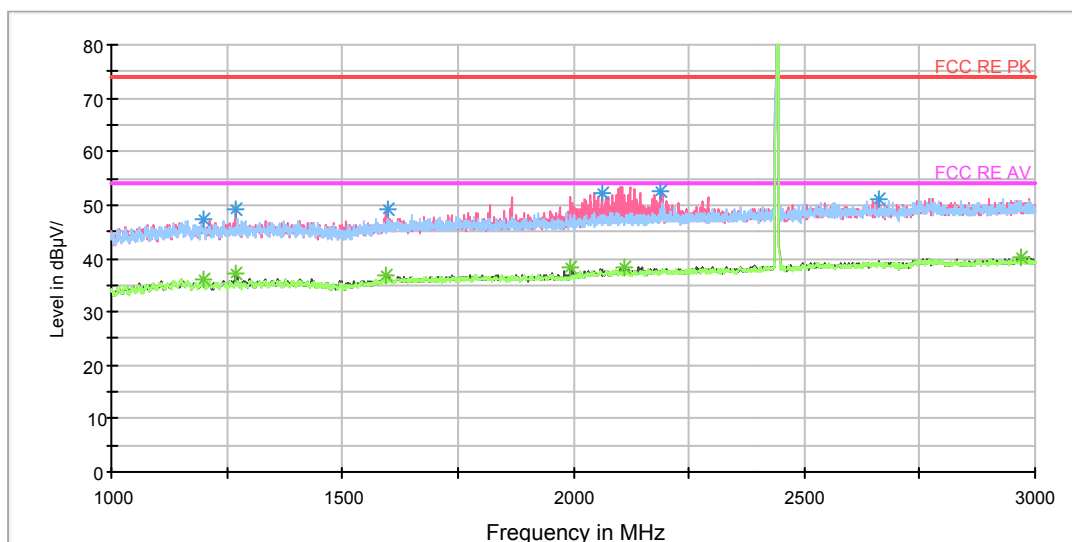
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

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)
37.685000	22.6	100.0	V	248.0	35.2	12.6	17.4	40.0
92.076250	27.9	114.0	V	340.0	40.1	12.2	15.6	43.5
97.785000	26.7	125.0	V	306.0	39.6	12.9	16.8	43.5
304.835000	16.6	100.0	H	93.0	32.1	15.5	29.4	46.0
556.100000	18.6	100.0	V	344.0	39.8	21.2	27.4	46.0
958.376250	25.1	114.0	H	275.0	51.3	26.2	20.9	46.0



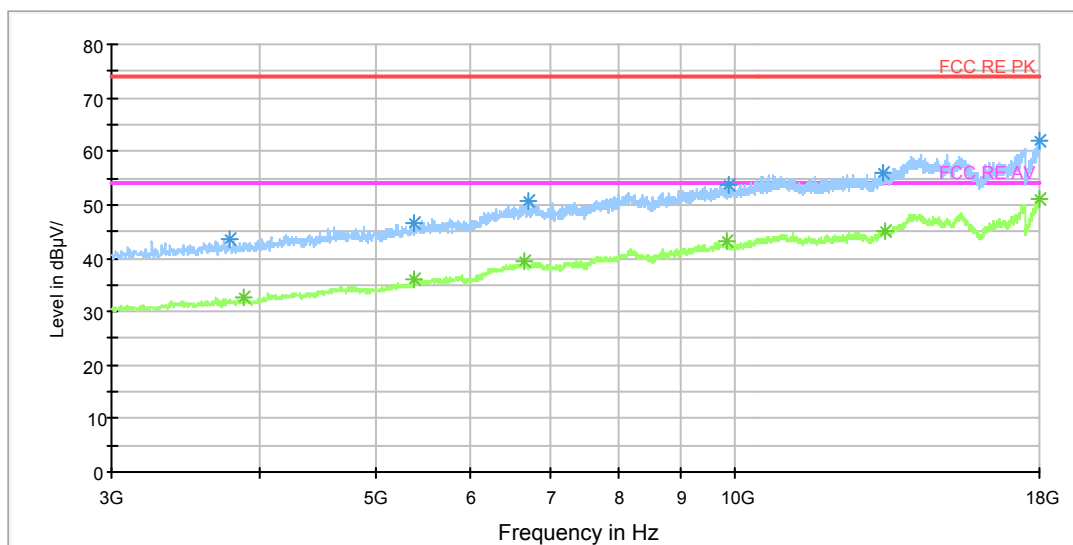
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1200.500000	46.3	100.0	V	292.0	47.0	-0.7	27.7	74
1270.500000	46.9	100.0	V	177.0	47.2	-0.3	27.1	74
1596.500000	47.9	100.0	V	292.0	48.9	1.0	26.1	74
1994.000000	49.8	100.0	V	105.0	52.0	2.2	24.2	74
2112.000000	47.8	100.0	V	97.0	50.8	3.0	26.2	74
2968.000000	48.5	100.0	V	309.0	54.4	5.9	25.5	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1200.500000	36.2	100.0	V	292.0	36.9	-0.7	17.8	54
1270.500000	37.2	100.0	V	177.0	37.5	-0.3	16.8	54
1596.500000	36.9	100.0	V	292.0	37.9	1.0	17.1	54
1994.000000	38.4	100.0	V	105.0	40.6	2.2	15.6	54
2112.000000	38.4	100.0	V	97.0	41.4	3.0	15.6	54
2968.000000	40.1	100.0	V	309.0	46.0	5.9	13.9	54

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

RE 3G-18GHz PK+AV Class B



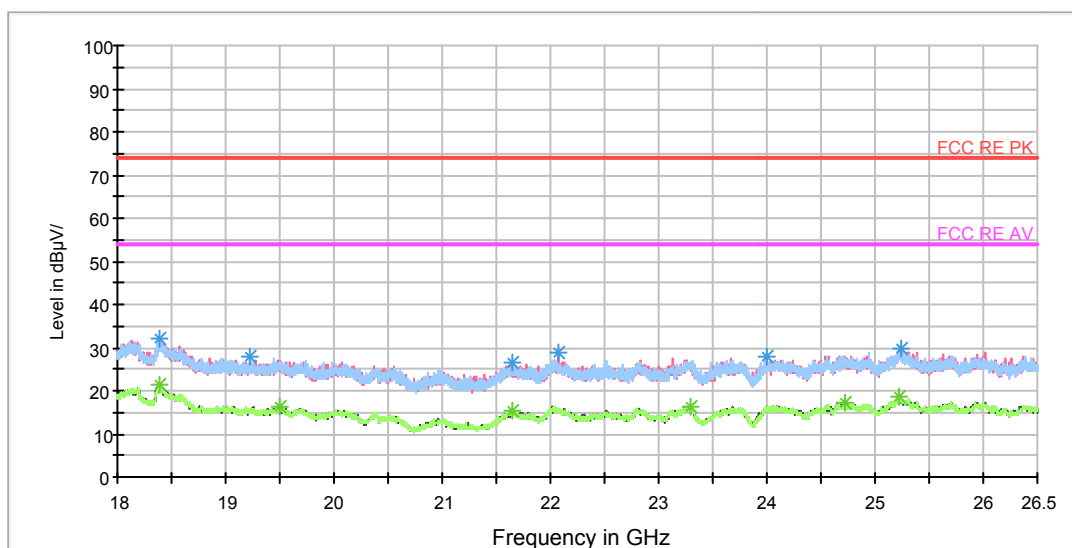
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3765.000000	43.6	100.0	V	341.0	46.0	-2.4	30.4	74
5391.000000	46.6	100.0	V	341.0	47.6	1.0	27.4	74
6708.000000	50.6	100.0	V	298.0	55.6	5.0	23.4	74
9876.000000	53.7	100.0	V	357.0	65.0	11.3	20.3	74
13329.000000	55.9	100.0	H	129.0	73.6	17.7	18.1	74
17967.000000	62.0	100.0	V	347.0	87.4	25.4	12.0	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3870.000000	32.7	100.0	V	354.0	34.9	-2.2	21.3	54
5376.000000	35.9	100.0	H	207.0	36.8	0.9	18.1	54
6648.000000	39.3	100.0	V	104.0	44.4	5.1	14.7	54
9834.000000	43.1	100.0	V	240.0	54.3	11.2	10.9	54
13347.000000	44.9	100.0	H	0.0	62.7	17.8	9.1	54
18000.000000	51.2	100.0	V	335.0	77.1	25.9	2.8	54

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

RE 18-26.5GHz PK+AV



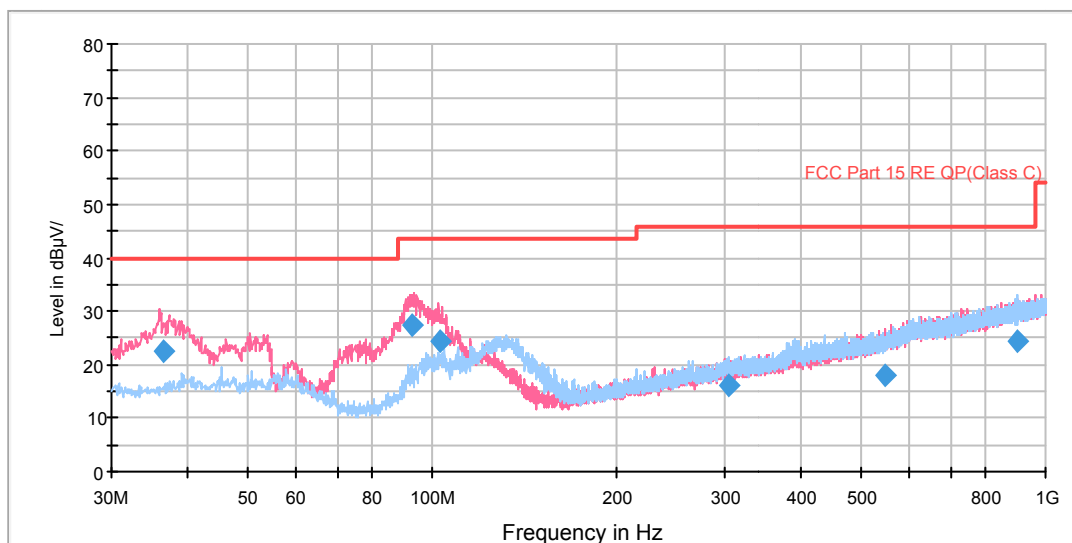
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18387.812500	31.9	H	0.0	36.8	-4.9	42.1	74
19231.437500	27.7	H	0.0	34.5	-6.8	46.3	74
21650.750000	26.3	V	180.0	35.5	-9.2	47.7	74
22071.500000	28.7	V	119.0	36.8	-8.1	45.3	74
24005.250000	28.1	H	44.0	35.4	-7.3	45.9	74
25234.562500	29.9	V	135.0	35.9	-6.0	44.1	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18383.562500	21.3	H	0.0	26.1	-4.8	32.7	54
19498.125000	16.3	V	179.0	23.8	-7.5	37.7	54
21640.125000	15.2	V	73.0	24.3	-9.1	38.8	54
23289.125000	16.4	V	180.0	23.5	-7.1	37.6	54
24724.562500	17.3	V	180.0	23.5	-6.2	36.7	54
25230.312500	18.7	H	0.0	24.6	-5.9	35.3	54

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

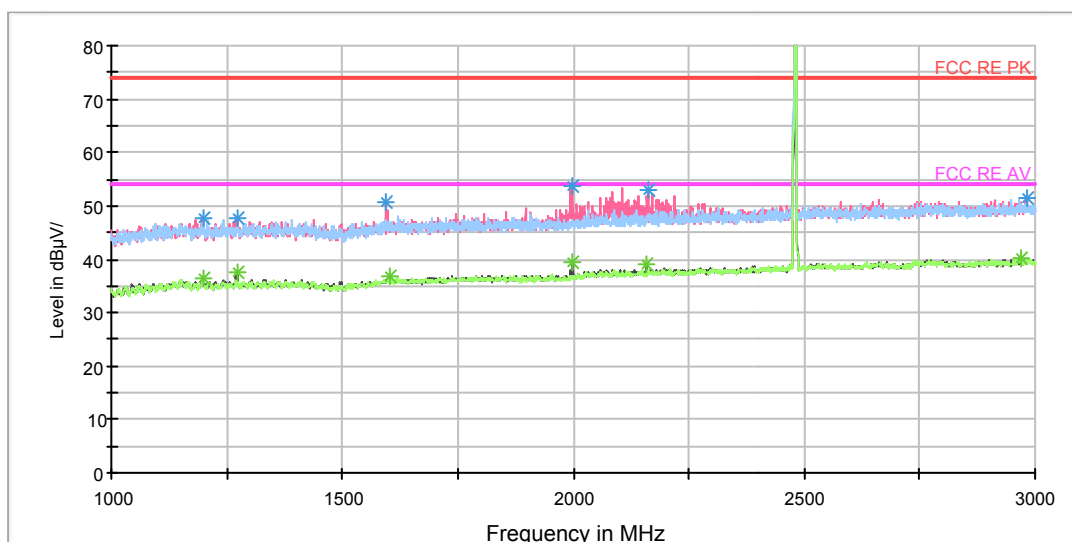
FCC RE 0.03-1GHz QP Class C



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)
36.541250	22.5	100.0	V	331.0	34.8	12.3	17.5	40.0
92.935000	27.5	100.0	V	334.0	39.8	12.3	16.0	43.5
103.228750	24.4	100.0	V	278.0	37.3	12.9	19.1	43.5
304.710000	16.3	100.0	H	99.0	31.8	15.5	29.7	46.0
546.523750	18.2	100.0	V	33.0	39.1	20.9	27.8	46.0
899.561250	24.4	100.0	H	202.0	50.0	25.6	21.6	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



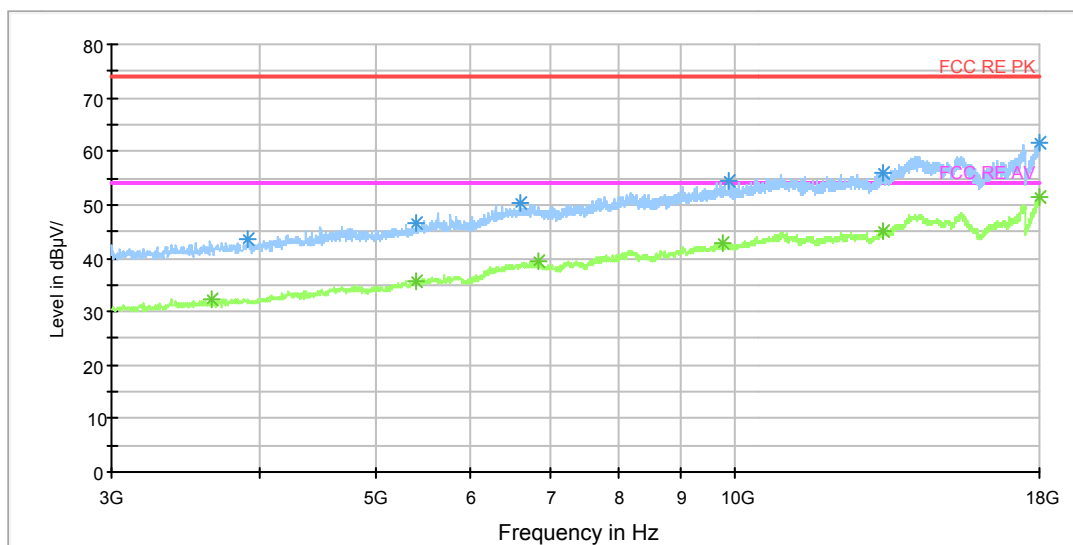
Radiates Emission from 1GHz to 3GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1198.500000	47.9	100.0	V	330.0	48.6	-0.7	26.1	74
1271.500000	47.8	100.0	V	176.0	48.1	-0.3	26.2	74
1593.000000	50.6	100.0	V	231.0	51.5	0.9	23.4	74
1998.500000	53.9	100.0	V	104.0	56.1	2.2	20.1	74
2162.500000	52.9	100.0	V	104.0	56.1	3.2	21.1	74
2984.000000	51.5	100.0	V	192.0	57.5	6.0	22.5	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1198.500000	36.5	100.0	V	330.0	37.2	-0.7	17.5	54
1271.500000	37.5	100.0	V	176.0	37.8	-0.3	16.5	54
1602.000000	36.7	100.0	V	192.0	37.7	1.0	17.3	54
1998.500000	39.6	100.0	V	104.0	41.8	2.2	14.4	54
2160.000000	39.1	100.0	V	269.0	42.3	3.2	14.9	54
2968.000000	40.1	100.0	V	356.0	46.0	5.9	13.9	54

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

RE 3G-18GHz PK+AV Class B



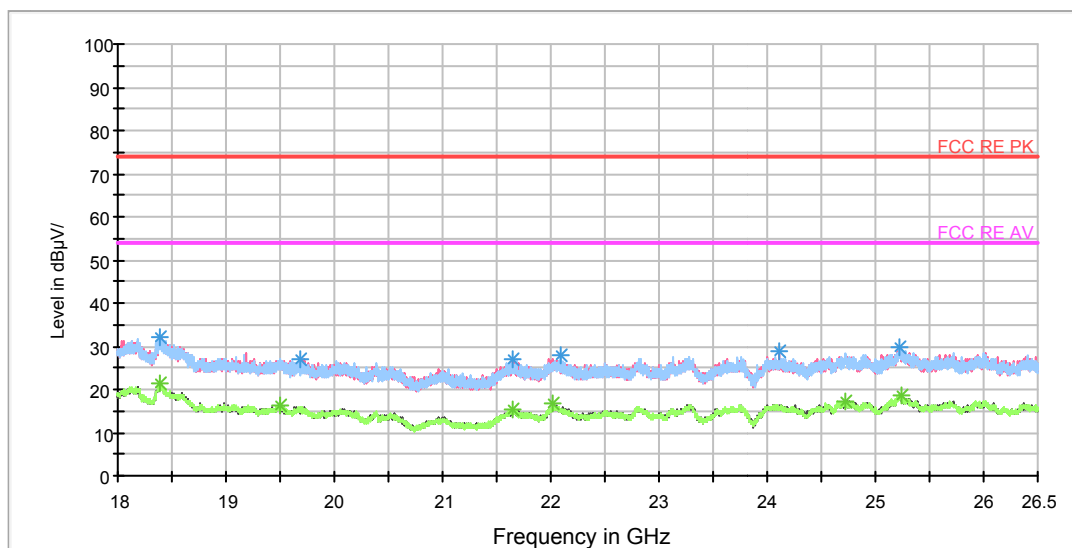
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3906.000000	43.6	100.0	V	0.0	45.8	-2.2	30.4	74
5409.000000	46.4	100.0	V	356.0	47.5	1.1	27.6	74
6594.000000	50.3	100.0	V	344.0	55.5	5.2	23.7	74
9885.000000	54.4	100.0	H	158.0	65.8	11.4	19.6	74
13308.000000	56.1	100.0	H	24.0	73.8	17.7	17.9	74
17976.000000	61.6	100.0	V	359.0	87.1	25.5	12.4	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3645.000000	32.4	100.0	V	359.0	35.0	-2.6	21.6	54
5406.000000	35.7	100.0	V	186.0	36.8	1.1	18.3	54
6837.000000	39.5	100.0	H	100.0	44.5	5.0	14.5	54
9765.000000	42.8	100.0	V	322.0	53.8	11.0	11.2	54
13326.000000	45.0	100.0	H	0.0	62.7	17.7	9.0	54
17988.000000	51.4	100.0	H	100.0	77.1	25.7	2.6	54

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

RE 18-26.5GHz PK+AV



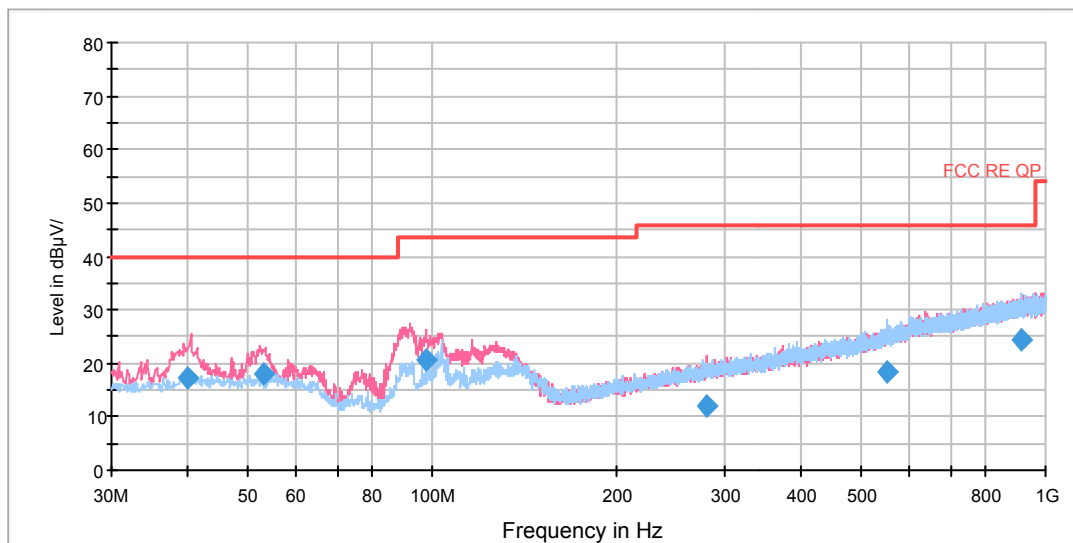
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18385.687500	32.0	V	134.0	36.8	-4.8	42.0	74
19687.250000	26.9	V	175.0	34.6	-7.7	47.1	74
21642.250000	27.2	V	180.0	36.3	-9.1	46.8	74
22090.625000	27.7	H	28.0	36.1	-8.4	46.3	74
24109.375000	28.8	V	33.0	36.6	-7.8	45.2	74
25217.562500	29.9	H	156.0	36.0	-6.1	44.1	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18381.437500	21.2	V	175.0	26.0	-4.8	32.8	54
19500.250000	16.4	V	141.0	23.9	-7.5	37.6	54
21648.625000	15.2	H	0.0	24.4	-9.2	38.8	54
22023.687500	16.6	H	21.0	24.6	-8.0	37.4	54
24727.750000	17.4	H	82.0	23.6	-6.2	36.6	54
25232.437500	18.8	V	175.0	24.7	-5.9	35.2	54

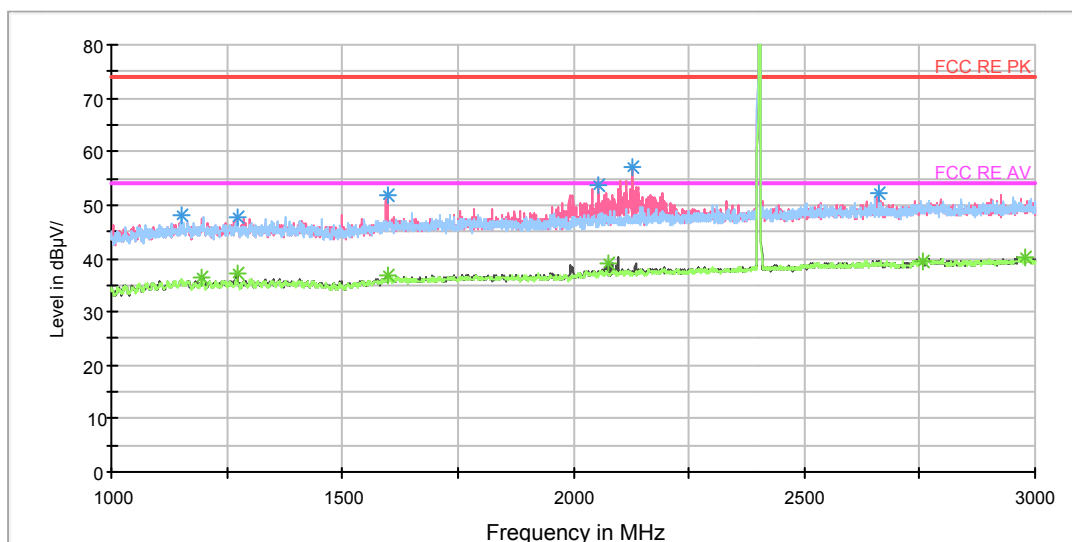
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 0.03-1GHz QP Class B



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)
40.027500	17.2	114.0	V	283.0	30.4	13.2	22.8	40.0
52.991250	18.1	100.0	V	256.0	30.9	12.8	21.9	40.0
97.578750	20.5	100.0	V	13.0	33.4	12.9	23.0	43.5
281.185000	12.1	175.0	V	44.0	27.0	14.9	33.9	46.0
552.266250	18.4	200.0	H	300.0	39.5	21.1	27.6	46.0
913.826250	24.5	225.0	H	0.0	50.3	25.8	21.5	46.0



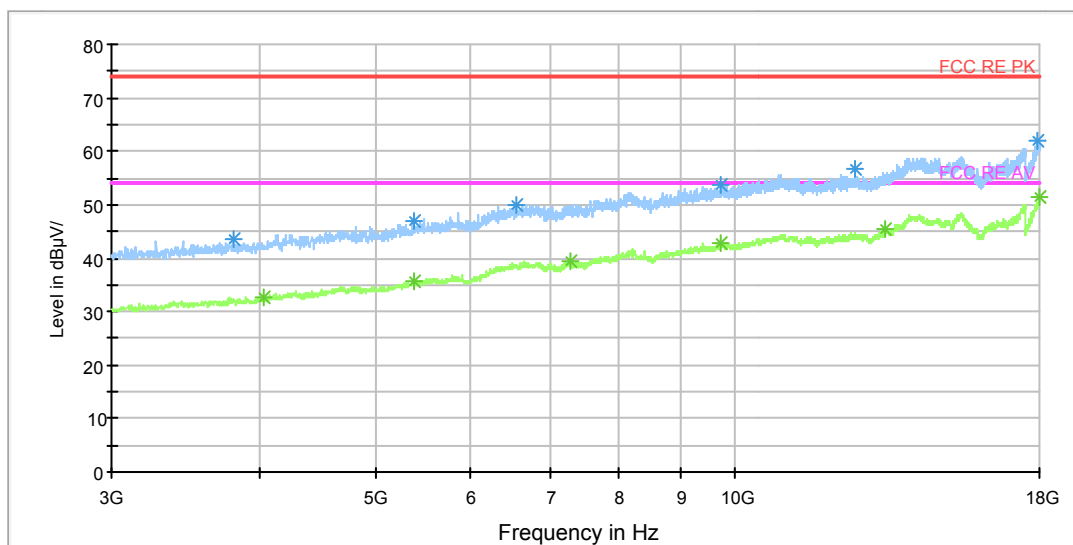
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1152.000000	48.1	100.0	H	0.0	48.9	-0.8	25.9	74
1272.000000	47.6	100.0	V	286.0	47.9	-0.3	26.4	74
1598.500000	51.7	100.0	V	355.0	52.7	1.0	22.3	74
2055.500000	53.8	100.0	V	104.0	56.4	2.6	20.2	74
2127.500000	57.0	100.0	V	104.0	60.0	3.0	17.0	74
2661.000000	52.4	100.0	V	0.0	57.8	5.4	21.6	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1197.000000	36.3	100.0	V	175.0	37.0	-0.7	17.7	54
1271.500000	37.3	100.0	V	183.0	37.6	-0.3	16.7	54
1597.500000	36.7	100.0	V	342.0	37.7	1.0	17.3	54
2075.000000	39.0	100.0	V	104.0	41.7	2.7	15.0	54
2756.000000	39.5	100.0	V	324.0	45.2	5.7	14.5	54
2979.000000	40.1	100.0	V	286.0	46.1	6.0	13.9	54

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

RE 3G-18GHz PK+AV Class B



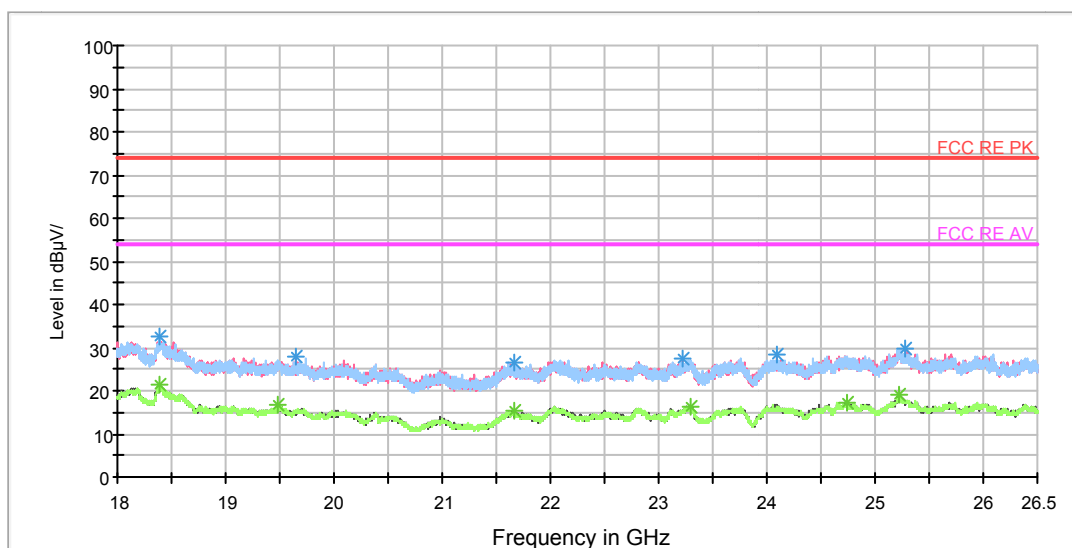
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3792.000000	43.7	100.0	V	356.0	46.1	-2.4	30.3	74
5373.000000	47.1	100.0	V	13.0	48.0	0.9	26.9	74
6552.000000	50.0	100.0	V	335.0	55.3	5.3	24.0	74
9732.000000	53.5	100.0	H	33.0	64.6	11.1	20.5	74
12594.000000	56.6	100.0	H	81.0	72.6	16.0	17.4	74
17934.000000	62.1	100.0	H	71.0	87.1	25.0	11.9	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
4023.000000	32.8	100.0	H	276.0	34.8	-2.0	21.2	54
5382.000000	35.6	100.0	V	342.0	36.5	0.9	18.4	54
7278.000000	39.4	100.0	V	308.0	45.0	5.6	14.6	54
9741.000000	43.0	100.0	H	168.0	54.1	11.1	11.0	54
13350.000000	45.3	100.0	H	110.0	63.1	17.8	8.7	54
17991.000000	51.4	100.0	V	94.0	77.1	25.7	2.6	54

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

RE 18-26.5GHz PK+AV



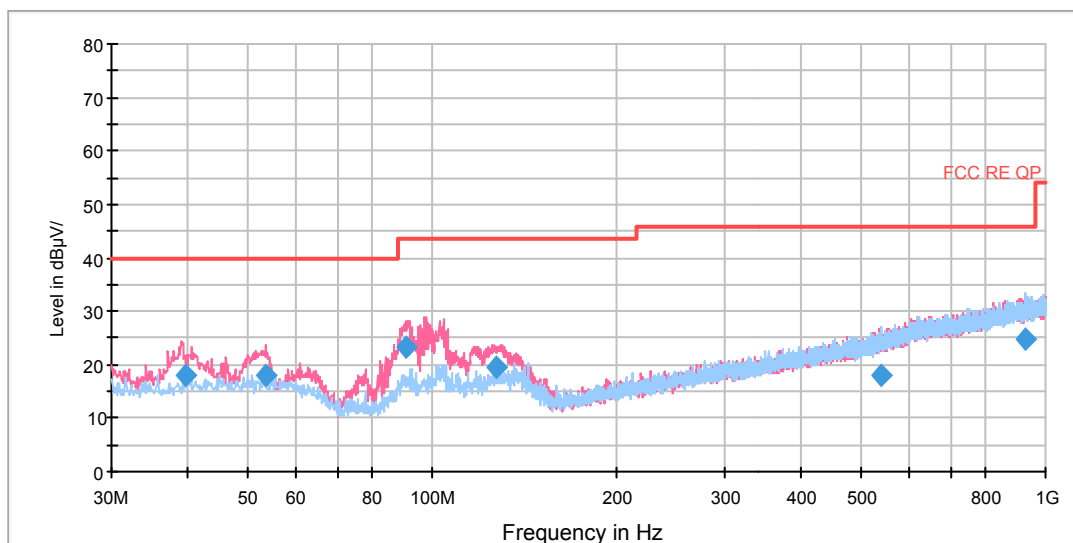
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18385.687500	32.4	H	0.0	37.2	-4.8	41.6	74
19645.812500	27.9	V	170.0	35.5	-7.6	46.1	74
21661.375000	26.6	H	12.0	35.8	-9.2	47.4	74
23229.625000	27.2	V	162.0	35.3	-8.1	46.8	74
24091.312500	28.4	V	170.0	36.2	-7.8	45.6	74
25282.375000	29.6	H	0.0	36.4	-6.8	44.4	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18388.875000	21.6	V	33.0	26.5	-4.9	32.4	54
19479.000000	16.5	V	180.0	24.3	-7.8	37.5	54
21661.375000	15.3	V	180.0	24.5	-9.2	38.7	54
23292.312500	16.4	H	164.0	23.4	-7.0	37.6	54
24733.062500	17.3	V	180.0	23.6	-6.3	36.7	54
25228.187500	19.0	H	0.0	24.9	-5.9	35.0	54

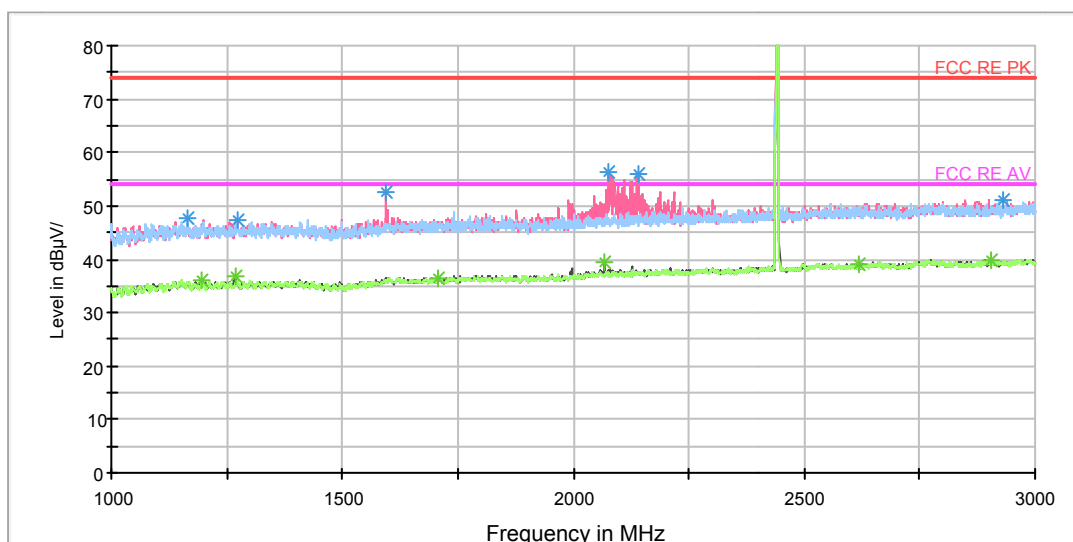
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 0.03-1GHz QP Class B



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)
39.572500	18.1	100.0	V	10.0	31.2	13.1	21.9	40.0
53.442500	17.9	100.0	V	230.0	30.7	12.8	22.1	40.0
90.743750	23.3	100.0	V	26.0	35.3	12.0	20.2	43.5
127.116250	19.6	100.0	V	0.0	29.3	9.7	23.9	43.5
538.565000	18.1	100.0	H	154.0	38.9	20.8	27.9	46.0
930.166250	24.8	100.0	H	22.0	50.7	25.9	21.2	46.0



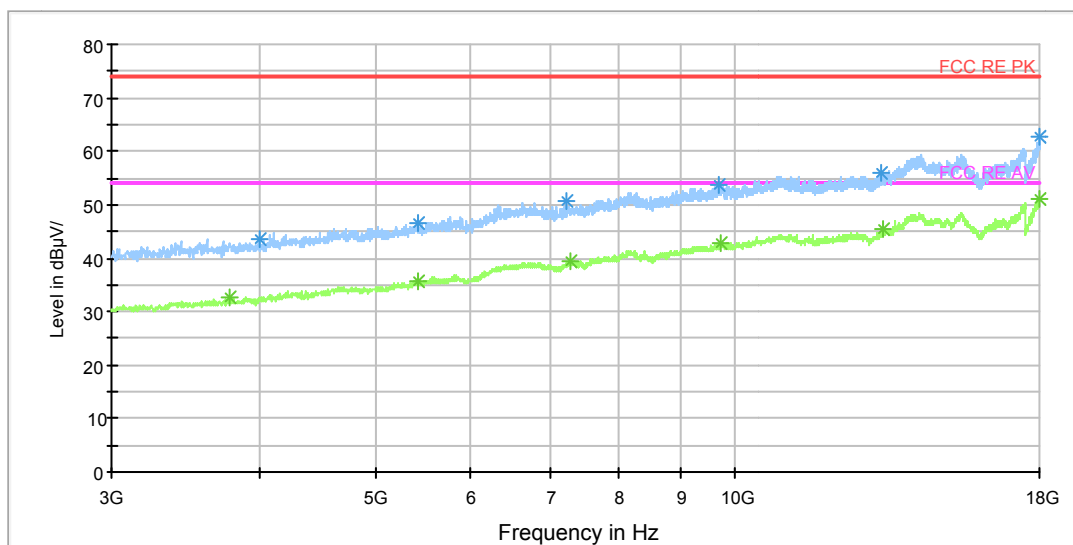
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1165.500000	47.6	100.0	H	4.0	48.4	-0.8	26.4	74
1274.500000	47.4	100.0	V	190.0	47.7	-0.3	26.6	74
1593.000000	52.4	100.0	V	344.0	53.3	0.9	21.6	74
2076.500000	56.3	100.0	V	358.0	59.0	2.7	17.7	74
2139.000000	55.8	100.0	V	359.0	58.9	3.1	18.2	74
2930.500000	51.2	100.0	H	27.0	57.1	5.9	22.8	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1197.000000	36.2	100.0	H	302.0	36.9	-0.7	17.8	54
1271.000000	36.9	100.0	V	174.0	37.2	-0.3	17.1	54
1706.500000	36.5	100.0	H	145.0	37.8	1.3	17.5	54
2068.500000	39.3	100.0	V	105.0	42.0	2.7	14.7	54
2617.500000	38.9	100.0	H	16.0	44.3	5.4	15.1	54
2905.000000	39.9	100.0	H	2.0	45.7	5.8	14.1	54

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

RE 3G-18GHz PK+AV Class B



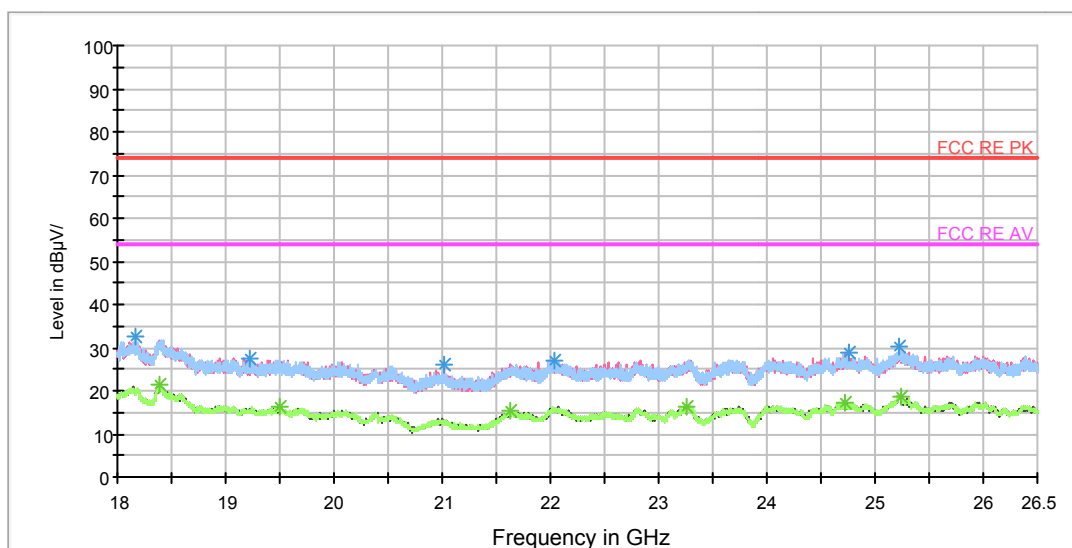
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3990.000000	43.4	100.0	H	0.0	45.5	-2.1	30.6	74
5430.000000	46.5	100.0	H	138.0	47.7	1.2	27.5	74
7209.000000	50.6	100.0	V	0.0	56.1	5.5	23.4	74
9681.000000	53.7	100.0	V	353.0	64.7	11.0	20.3	74
13281.000000	55.8	100.0	H	187.0	73.5	17.7	18.2	74
17970.000000	62.8	100.0	V	349.0	88.3	25.5	11.2	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3765.000000	32.7	100.0	V	168.0	35.1	-2.4	21.3	54
5427.000000	35.8	100.0	V	197.0	36.9	1.1	18.2	54
7284.000000	39.4	100.0	H	80.0	45.0	5.6	14.6	54
9744.000000	42.9	100.0	H	41.0	54.0	11.1	11.1	54
13287.000000	45.3	100.0	V	312.0	63.0	17.7	8.7	54
17967.000000	51.2	100.0	H	90.0	76.6	25.4	2.8	54

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

RE 18-26.5GHz PK+AV



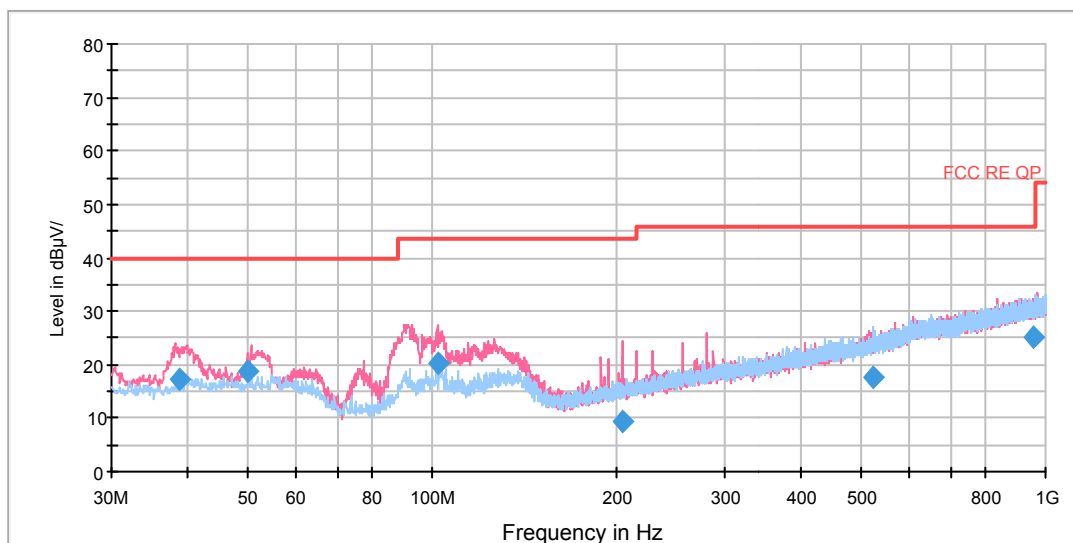
Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	Peak (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18171.062500	32.3	H	0.0	37.4	-5.1	41.7	74
19226.125000	27.2	V	180.0	34.0	-6.8	46.8	74
21026.000000	26.0	V	147.0	34.3	-8.3	48.0	74
22038.562500	27.2	V	147.0	35.2	-8.0	46.8	74
24764.937500	28.9	H	6.0	35.6	-6.7	45.1	74
25217.562500	30.3	H	0.0	36.4	-6.1	43.7	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18385.687500	21.4	H	6.0	26.2	-4.8	32.6	54
19506.625000	16.5	V	180.0	24.0	-7.5	37.5	54
21630.562500	15.2	H	0.0	24.3	-9.1	38.8	54
23263.625000	16.5	V	180.0	23.8	-7.3	37.5	54
24726.687500	17.2	V	169.0	23.4	-6.2	36.8	54
25233.500000	18.8	H	99.0	24.7	-5.9	35.2	54

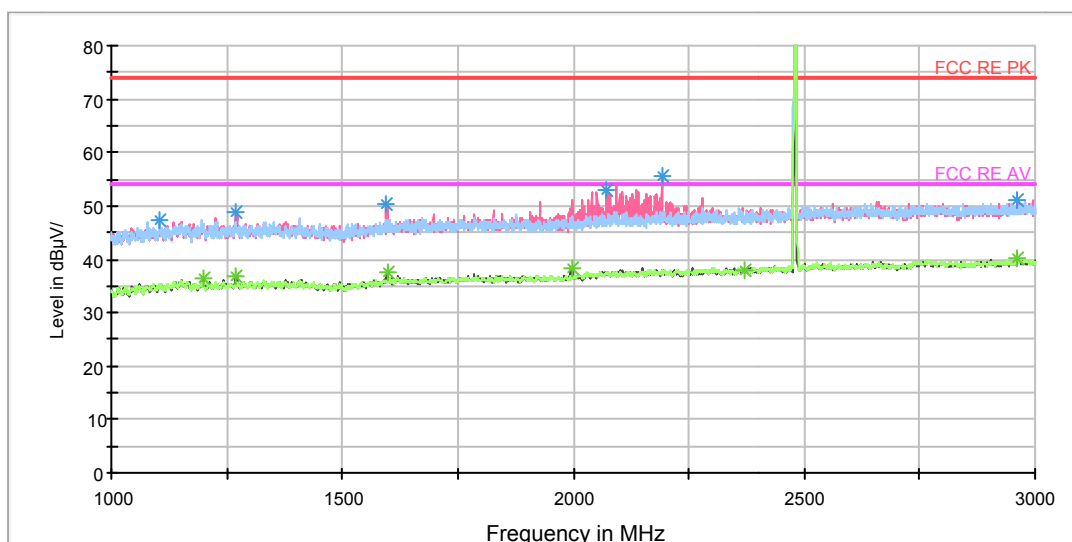
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

RE 0.03-1GHz QP Class B



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)
38.723750	17.4	100.0	V	26.0	30.3	12.9	22.6	40.0
50.012500	18.9	100.0	V	320.0	31.9	13.0	21.1	40.0
102.301250	20.2	100.0	V	68.0	33.2	13.0	23.3	43.5
204.720000	9.3	125.0	V	162.0	21.5	12.2	34.2	43.5
525.421250	17.8	100.0	H	189.0	38.3	20.5	28.2	46.0
959.266250	25.0	100.0	H	260.0	51.2	26.2	21.0	46.0



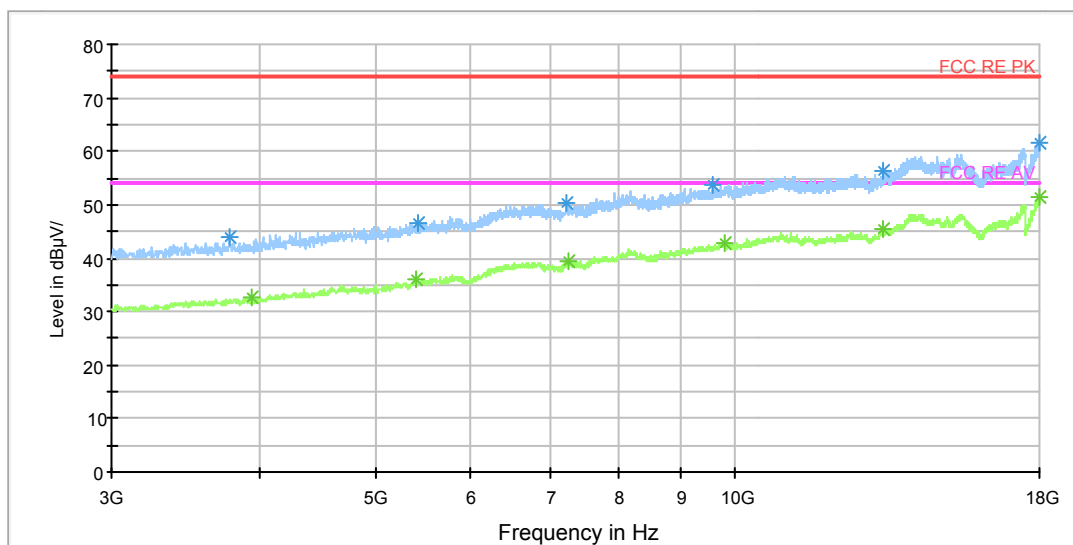
Radiates Emission from 1GHz to 3GHz
Note: The signal beyond the limit is carrier.

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1105.000000	47.5	100.0	H	3.0	48.5	-1.0	26.5	74
1268.000000	49.0	100.0	V	175.0	49.3	-0.3	25.0	74
1595.500000	50.3	100.0	V	113.0	51.3	1.0	23.7	74
2072.000000	53.1	100.0	V	0.0	55.8	2.7	20.9	74
2191.500000	55.6	100.0	V	136.0	59.0	3.4	18.4	74
2960.500000	51.2	100.0	H	3.0	57.1	5.9	22.8	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1197.500000	36.3	100.0	V	284.0	37.0	-0.7	17.7	54
1270.000000	36.8	100.0	V	168.0	37.1	-0.3	17.2	54
1597.000000	37.7	100.0	V	347.0	38.7	1.0	16.3	54
1997.000000	38.5	100.0	V	97.0	40.7	2.2	15.5	54
2372.000000	37.9	100.0	H	153.0	42.1	4.2	16.1	54
2961.000000	40.0	100.0	H	17.0	45.9	5.9	14.0	54

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

RE 3G-18GHz PK+AV Class B



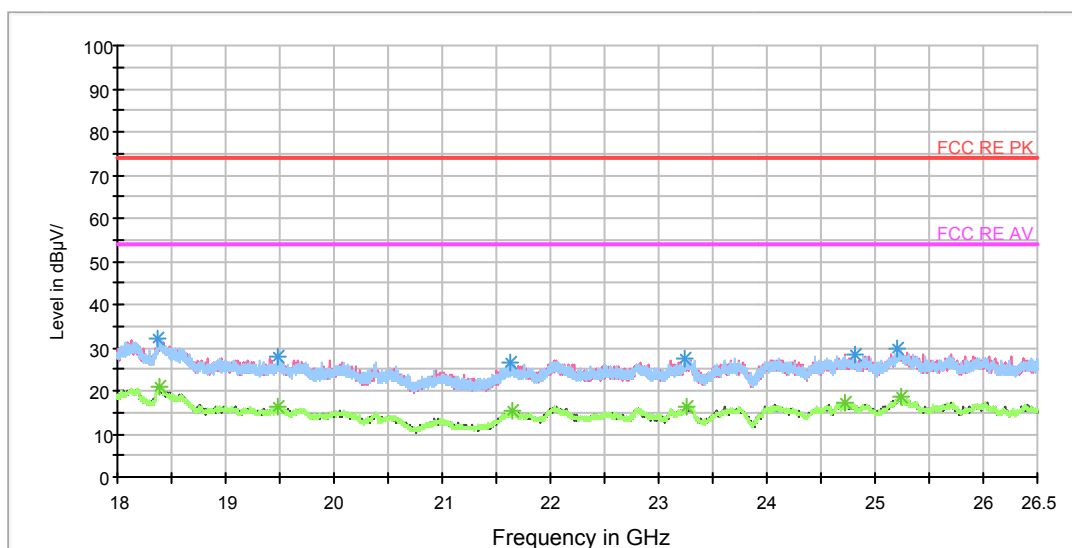
Radiates Emission from 3GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3768.000000	43.8	100.0	V	278.0	46.2	-2.4	30.2	74
5433.000000	46.7	100.0	V	182.0	47.9	1.2	27.3	74
7218.000000	50.4	100.0	H	24.0	55.9	5.5	23.6	74
9594.000000	53.7	100.0	H	33.0	64.4	10.7	20.3	74
13290.000000	56.2	100.0	H	1.0	73.9	17.7	17.8	74
17994.000000	61.7	100.0	H	61.0	87.5	25.8	12.3	74

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
3927.000000	32.6	100.0	V	351.0	34.7	-2.1	21.4	54
5400.000000	36.0	100.0	H	346.0	37.0	1.0	18.0	54
7263.000000	39.6	100.0	V	341.0	45.1	5.5	14.4	54
9795.000000	43.0	100.0	H	61.0	54.0	11.0	11.0	54
13308.000000	45.3	100.0	V	0.0	63.0	17.7	8.7	54
17973.000000	51.5	100.0	H	81.0	77.0	25.5	2.5	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)
18377.187500	32.0	V	129.0	36.8	-4.8	42.0	74
19490.687500	27.7	H	7.0	35.3	-7.6	46.3	74
21628.437500	26.6	V	180.0	35.7	-9.1	47.4	74
23247.687500	27.4	H	84.0	35.0	-7.6	46.6	74
24814.875000	28.4	V	160.0	35.3	-6.9	45.6	74
25210.125000	29.8	H	0.0	36.1	-6.3	44.2	74

Frequency (MHz)	Average (dBuV/m)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
18397.375000	21.1	V	129.0	26.0	-4.9	32.9	54
19482.187500	16.3	H	131.0	24.0	-7.7	37.7	54
21648.625000	15.3	V	98.0	24.5	-9.2	38.7	54
23267.875000	16.2	V	129.0	23.5	-7.3	37.8	54
24729.875000	17.1	H	53.0	23.3	-6.2	36.9	54
25235.625000	18.7	H	100.0	24.7	-6.0	35.3	54

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

4.11 Conducted Emission

Ambient condition

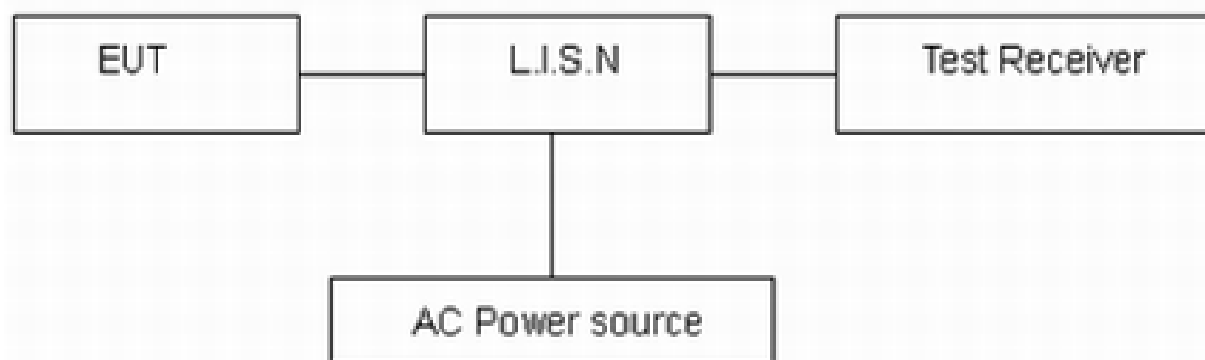
Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

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

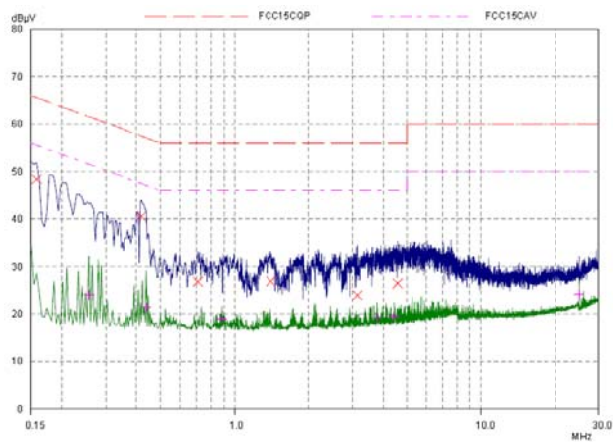
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor $k = 1.96$, $U=2.69$ dB.

Test Results:

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

Basic Rate-CH0

L Line

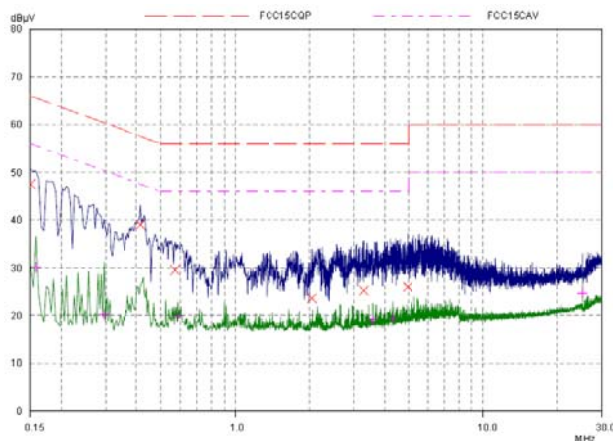


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15781	48.39	65.58	17.19	L1	gnd
0.41953	40.58	57.46	16.88	L1	gnd
0.70859	26.80	56.00	29.20	L1	gnd
1.4	26.87	56.00	29.13	L1	gnd
3.14218	23.92	56.00	32.08	L1	gnd
4.56406	26.42	56.00	29.58	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.25546	23.98	51.58	27.60	L1	gnd
0.43906	21.39	47.08	25.69	L1	gnd
0.88437	18.93	46.00	27.07	L1	gnd
3.76328	19.28	46.00	26.72	L1	gnd
4.41953	19.45	46.00	26.55	L1	gnd
25.22812	24.10	50.00	25.90	L1	gnd

N Line



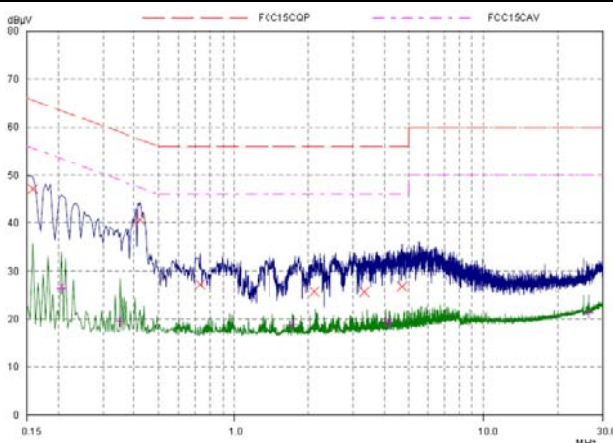
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	47.50	66.00	18.50	N	gnd
0.41562	39.05	57.54	18.49	N	gnd
0.57187	29.57	56.00	26.43	N	gnd
2.04062	23.63	56.00	32.37	N	gnd
3.29062	25.25	56.00	30.75	N	gnd
4.95078	26.01	56.00	29.99	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.15781	30.15	55.58	25.43	N	gnd
0.29453	20.21	50.40	30.19	N	gnd
0.5875	19.96	46.00	26.04	N	gnd
3.57578	19.16	46.00	26.84	N	gnd
4.30234	19.45	46.00	26.55	N	gnd
25.23203	24.74	50.00	25.26	N	gnd

Basic Rate-CH39

L Line



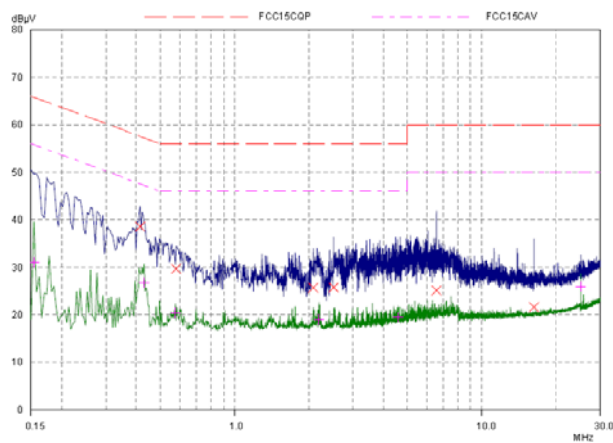
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15781	47.11	65.58	18.47	L1	gnd
0.42343	40.63	57.38	16.75	L1	gnd
0.73203	27.24	56.00	28.76	L1	gnd
2.11093	25.72	56.00	30.28	L1	gnd
3.32968	25.63	56.00	30.37	L1	gnd
4.68515	26.78	56.00	29.22	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.20468	26.37	53.42	27.05	L1	gnd
0.34921	19.46	48.98	29.52	L1	gnd
1.72812	18.87	46.00	27.13	L1	gnd
4.05625	19.30	46.00	26.70	L1	gnd
4.17734	19.37	46.00	26.63	L1	gnd
26.50156	21.19	50.00	28.81	L1	gnd



N Line



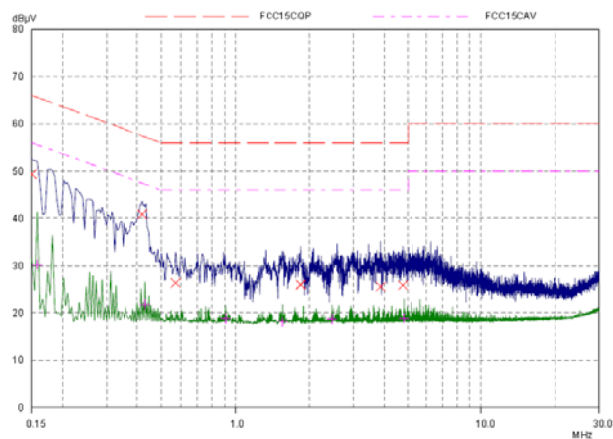
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.41562	38.55	57.54	18.99	N	gnd
0.57969	29.67	56.00	26.33	N	gnd
2.07969	25.70	56.00	30.30	N	gnd
2.51329	25.75	56.00	30.25	N	gnd
6.57187	25.12	60.00	34.88	N	gnd
16.21249	21.61	60.00	38.39	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.1539	31.05	55.79	24.74	N	gnd
0.43125	26.71	47.23	20.52	N	gnd
0.57578	20.41	46.00	25.59	N	gnd
2.19296	19.02	46.00	26.98	N	gnd
4.57578	19.46	46.00	26.54	N	gnd
25.22812	25.95	50.00	24.05	N	gnd

Basic Rate-CH78

L Line

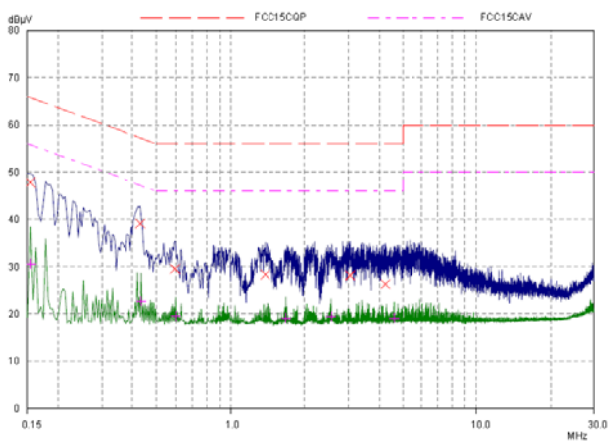


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	49.34	66.00	16.66	L1	gnd
0.41953	40.87	57.46	16.59	L1	gnd
0.57187	26.36	56.00	29.64	L1	gnd
1.84531	25.99	56.00	30.01	L1	gnd
3.86093	25.54	56.00	30.46	L1	gnd
4.75156	25.86	56.00	30.14	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.15781	30.23	55.58	25.35	L1	gnd
0.43125	21.81	47.23	25.42	L1	gnd
0.90781	18.84	46.00	27.16	L1	gnd
1.56015	18.14	46.00	27.86	L1	gnd
2.4625	18.70	46.00	27.30	L1	gnd
4.80234	18.91	46.00	27.09	L1	gnd

N Line



Final Measurement Results

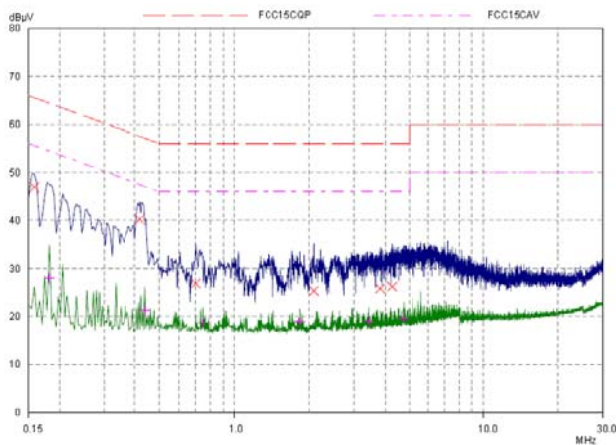
Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.1539	47.82	65.79	17.97	N	gnd
0.43125	39.11	57.23	18.12	N	gnd
0.59531	29.50	56.00	26.50	N	gnd
1.37656	28.29	56.00	27.71	N	gnd
3.04843	28.12	56.00	27.88	N	gnd
4.22031	26.26	56.00	29.74	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.1539	30.55	55.79	25.24	N	gnd
0.43515	22.72	47.15	24.43	N	gnd
0.59921	19.57	46.00	26.43	N	gnd
1.68125	19.13	46.00	26.87	N	gnd
2.55234	19.44	46.00	26.56	N	gnd
4.58359	19.12	46.00	26.88	N	gnd



EDR-CH0

L Line

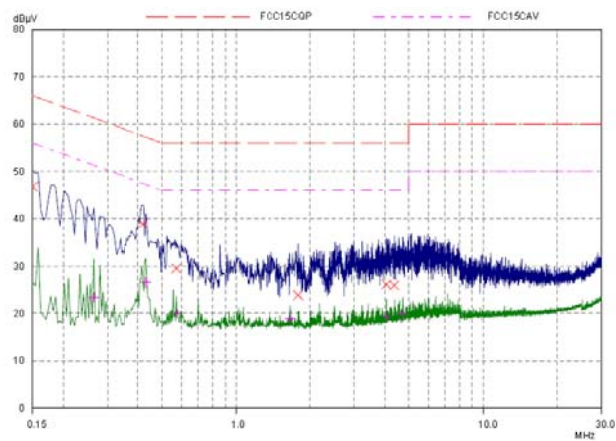


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15781	46.95	65.58	18.63	L1	gnd
0.41953	40.22	57.46	17.24	L1	gnd
0.70078	26.86	56.00	29.14	L1	gnd
2.0875	25.31	56.00	30.69	L1	gnd
3.81015	25.83	56.00	30.17	L1	gnd
4.24765	26.18	56.00	29.82	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.18125	27.96	54.43	26.47	L1	gnd
0.43906	21.28	47.08	25.80	L1	gnd
0.74765	18.66	46.00	27.34	L1	gnd
1.8375	18.88	46.00	27.12	L1	gnd
3.43125	19.05	46.00	26.95	L1	gnd
4.72812	19.62	46.00	26.38	L1	gnd

N Line



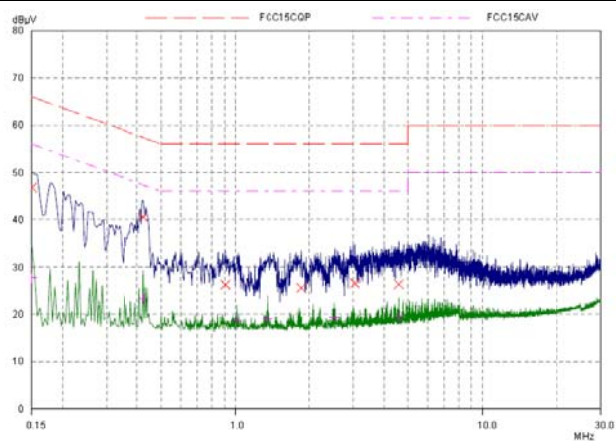
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	46.77	66.00	19.23	N	gnd
0.41953	38.87	57.46	18.59	N	gnd
0.57187	29.51	56.00	26.49	N	gnd
1.79062	23.86	56.00	32.14	N	gnd
4.05234	26.10	56.00	29.90	N	gnd
4.36093	25.92	56.00	30.08	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.26328	23.36	51.33	27.97	N	gnd
0.43125	26.53	47.23	20.70	N	gnd
0.57187	19.96	46.00	26.04	N	gnd
1.66171	18.93	46.00	27.07	N	gnd
4.05234	19.30	46.00	26.70	N	gnd
4.72031	19.89	46.00	26.11	N	gnd

EDR-CH39

L Line



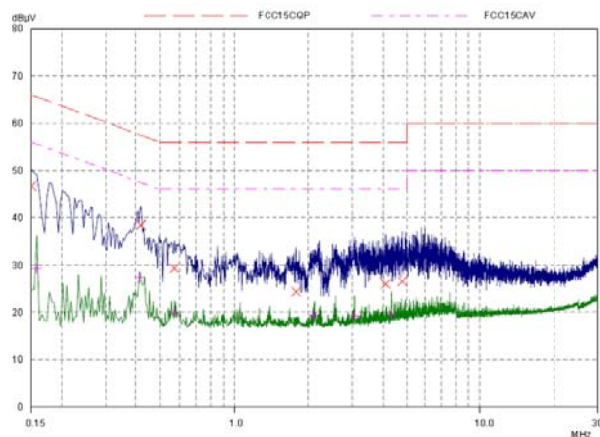
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	46.79	66.00	19.21	L1	gnd
0.42343	40.59	57.38	16.79	L1	gnd
0.90781	26.28	56.00	29.72	L1	gnd
1.85703	25.61	56.00	30.39	L1	gnd
3.04843	26.55	56.00	29.45	L1	gnd
4.57968	26.34	56.00	29.66	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.15	27.71	56.00	28.29	L1	gnd
0.42343	23.34	47.38	24.04	L1	gnd
1.00937	18.79	46.00	27.21	L1	gnd
1.34531	19.09	46.00	26.91	L1	gnd
2.51718	19.42	46.00	26.58	L1	gnd
4.57968	19.46	46.00	26.54	L1	gnd



N Line



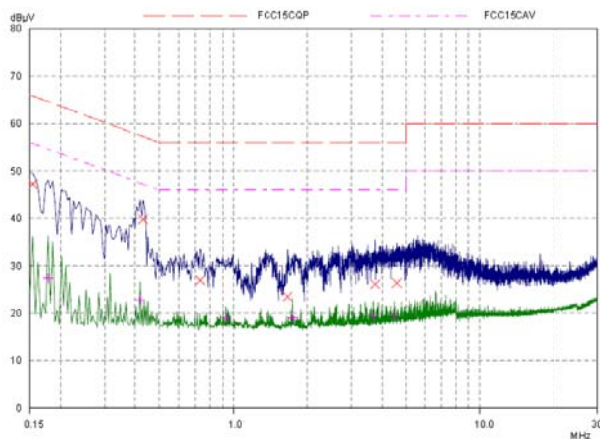
Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	46.71	66.00	19.29	N	gnd
0.41953	38.47	57.46	18.99	N	gnd
0.57187	29.33	56.00	26.67	N	gnd
1.78671	24.39	56.00	31.61	N	gnd
4.0875	26.01	56.00	29.99	N	gnd
4.77109	26.59	56.00	29.41	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.15781	29.34	55.58	26.24	N	gnd
0.41562	27.44	47.54	20.10	N	gnd
0.57187	20.02	46.00	25.98	N	gnd
2.10703	19.36	46.00	26.64	N	gnd
3.06796	19.14	46.00	26.86	N	gnd
4.31406	19.59	46.00	26.41	N	gnd

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L Line

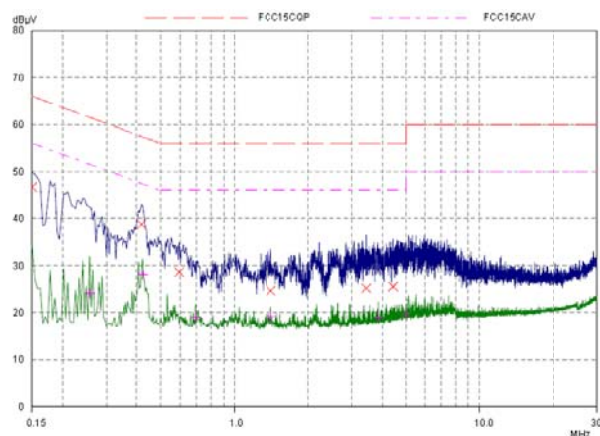


Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.1539	47.21	65.79	18.58	L1	gnd
0.43125	39.81	57.23	17.42	L1	gnd
0.73203	26.96	56.00	29.04	L1	gnd
1.66562	23.45	56.00	32.55	L1	gnd
3.73984	26.12	56.00	29.88	L1	gnd
4.57187	26.38	56.00	29.62	L1	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.17734	27.39	54.61	27.22	L1	gnd
0.41953	22.88	47.46	24.58	L1	gnd
0.92734	19.05	46.00	26.95	L1	gnd
1.73984	19.02	46.00	26.98	L1	gnd
3.67734	19.30	46.00	26.70	L1	gnd
4.47031	19.47	46.00	26.53	L1	gnd

N Line



Final Measurement Results

Frequency MHz	QP Level dBμV	QP Limit dBμV	QP Delta dB	Phase -	PE -
0.15	46.71	66.00	19.29	N	gnd
0.41953	38.75	57.46	18.71	N	gnd
0.59531	28.60	56.00	27.40	N	gnd
1.40781	24.66	56.00	31.34	N	gnd
3.43906	25.18	56.00	30.82	N	gnd
4.41562	25.56	56.00	30.44	N	gnd

Frequency MHz	AV Level dBμV	AV Limit dBμV	AV Delta dB	Phase -	PE -
0.25546	24.14	51.58	27.44	N	gnd
0.42343	28.05	47.38	19.33	N	gnd
0.69296	19.05	46.00	26.95	N	gnd
1.40781	19.17	46.00	26.83	N	gnd
3.84531	19.09	46.00	26.91	N	gnd
4.98593	19.77	46.00	26.23	N	gnd

5 Main Test Instruments

Name	Type	Manufacturer	Serial Number	Calibration Date	Expiration Time
BT Base Station Simulator	CBT	R&S	100271	2015-05-25	2016-05-24
Loop Antenna	FMZB1519	SCHWARZBECK	1519-047	2014-02-29	2017-02-28
EMI Test Receiver	ESCS30	R&S	100138	2015-12-17	2016-12-16
LISN	ENV216	R&S	101171	2015-12-17	2016-12-16
EMI Test Receiver	ESCI	R&S	100948	2015-05-25	2016-05-24
TRILOG Broadband Antenna	VULB 9163	Schwarzbeck	9163-201	2013-11-25	2016-11-24
Double Ridged Waveguide Horn Antenna	HF907	R&S	100126	2015-07-01	2018-06-30
Power Splitter	SHX-GF2-2-13	Hua Xiang	10120101	NA	NA
Spectrum Analyzer	FSV30	R&S	100815	2015-12-17	2016-12-16
Spectrum Analyzer	N9010A	Agilent	MY47191109	2015-05-22	2016-05-21
Standard Gain Horn	3160-09	ETS-Lindgren	00102644	2015-05-19	2018-05-18
RF Cable	SMA 15cm	Agilent	0001	2016-04-07	2016-07-06

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

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



Front Side

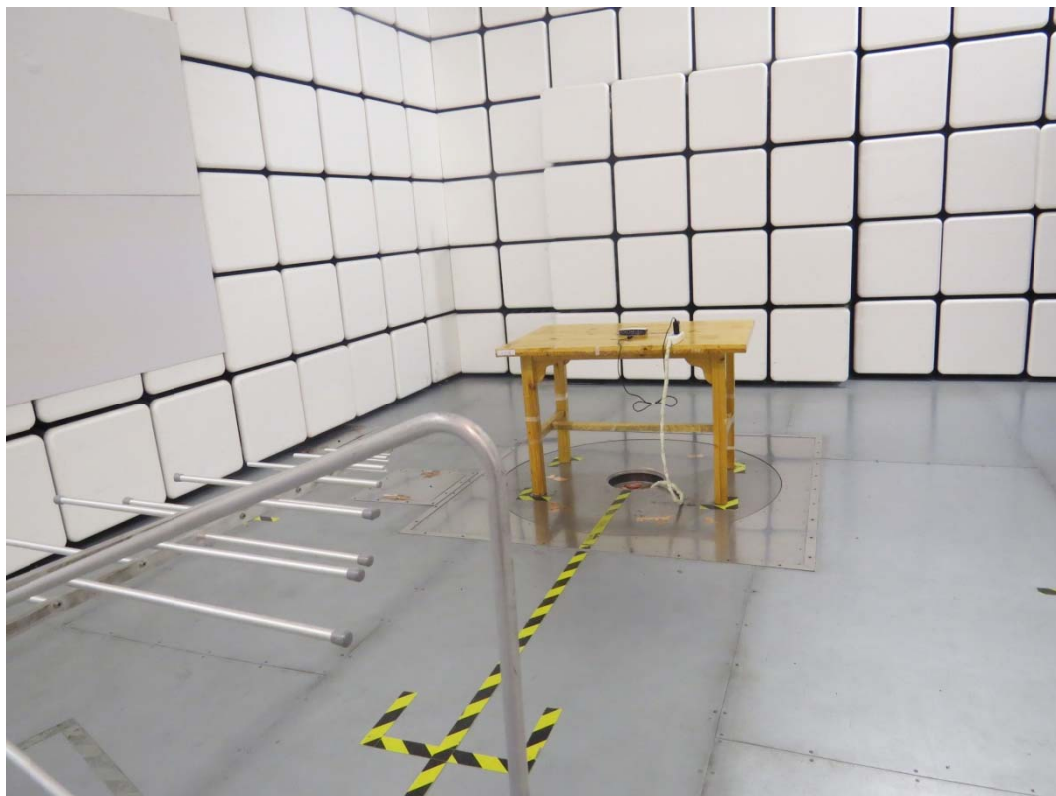


Back Side

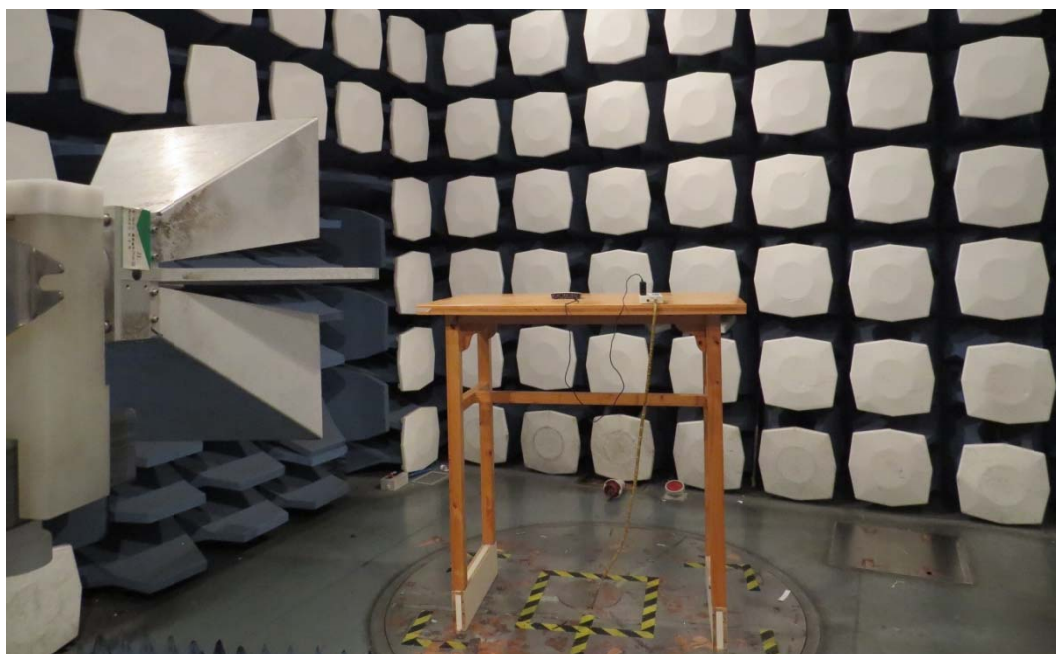
a: EUT

Picture 1 EUT

A.2 Test Setup

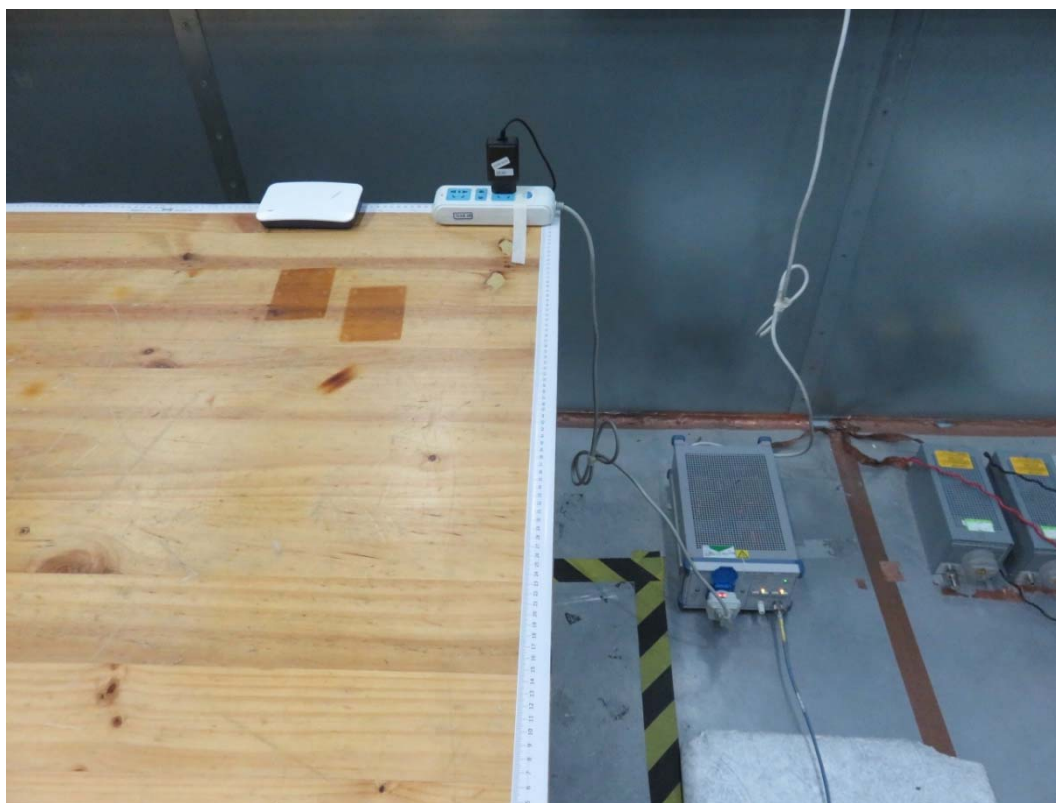


Below 1GHz



Above 1GHz

Picture 2 Radiated Emission Test Setup



Picture 3 Conducted Emission Test Setup