CFR 47 FCC PART 15 SUBPART C
ISED RSS-247 ISSUE 2

CERTIFICATION TEST REPORT

For

Kami Secure Home Hub

MODEL NUMBER: YNS.1018

PROJECT NUMBER: 4788825511

REPORT NUMBER: 4788825511-2

FCC ID: 2AFIB-YNS1018

IC: 20436-YNS1018

ISSUE DATE: Mar. 6, 2019

Prepared for

Shanghai Xiaoyi Technology Co., Ltd.

Prepared by

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Revision History

Rev.	Issue Date	Revisions	Revised By
V0	03/06/2019	Initial Issue	

Summary of Test Results			
Clause	**Test Items**	FCC/IC Rules	Test Results
1	6dB Bandwidth and 99% Occupied Bandwidth	FCC Part 15.247 (a) (2) RSS-247 Clause 5.2 (a) ISED RSS-Gen Clause 6.7	Pass
2	Peak Conducted Output Power	FCC Part 15.247 (b) (3) RSS-247 Clause 5.4 (d)	Pass
3	Power Spectral Density	FCC Part 15.247 (e) RSS-247 Clause 5.2 (b)	Pass
4	Conducted Bandedge and Spurious Emission	FCC Part 15.247 (d) RSS-247 Clause 5.5	Pass
5	Radiated Bandedge and Spurious Emission	FCC Part 15.247 (d) FCC Part 15.209 FCC Part 15.205 RSS-247 Clause 5.5 RSS-GEN Clause 8.9&8.10	Pass
6	Conducted Emission Test For AC Power Port	FCC Part 15.207 RSS-GEN Clause 8.8	Pass
7	Antenna Requirement	FCC Part 15.203 RSS-GEN Clause 6.8	Pass
Remark: 1) The measurement result for the sample received is <Pass> according to < CFR 47 FCC PART 15 SUBPART C, ISED RSS-GEN Issue 5 and ISED RSS-247 Issue 2> when <Accuracy Method> decision rule is applied.			

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1. ATTESTATION OF TEST RESULTS

Applicant Information

Company Name: Shanghai Xiaoyi Technology Co., Ltd.
Address: 6F, Building E, No. 2889, Jinke Road Shanghai, China

Manufacturer Information

Company Name: Shanghai Xiaoyi Technology Co., Ltd.
Address: 6F, Building E, No. 2889, Jinke Road Shanghai, China

EUT Description

EUT Name: Kami Secure Home Hub
Model: YNS.1018
Sample Number: 2008942
Sample Received Date: January 7, 2019
Date of Tested: Jan. 7~ Mar. 4, 2019

APPLICABLE STANDARDS	
STANDARD	**TEST RESULTS**
CFR 47 FCC PART 15 SUBPART C	PASS
ISED RSS-247 Issue 2	PASS
ISED RSS-GEN Issue 5	PASS

Tested By:

Kebo Zhang
Engineer Project Associate

Check By:

Shawn Wen
Laboratory Leader

Approved By:

Stephen Guo

Laboratory Manager

2. TEST METHODOLOGY

The tests documented in this report were performed in accordance with KDB 558074 D01 DTS Meas Guidance v05, KDB 414788 D01 Radiated Test Site v01r01, CFR 47 FCC Part 2, CFR 47 FCC Part 15, ANSI C63.10-2013, ISED RSS-247 Issue 2 and ISED RSS-GEN Issue 5.

3. FACILITIES AND ACCREDITATION

Test Location	UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch.
Address	Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
Accreditation Certificate	**A2LA (Certificate No.: 4102.01)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with A2LA. **FCC (FCC Designation No.: CN1187)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. Has been recognized to perform compliance testing on equipment subject to the Commission's Delcaration of Conformity (DoC) and Certification rules **IC(Company No.: 21320)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been registered and fully described in a report filed with Industry Canada. The Company Number is 21320. **VCCI (Registration No.: G-20019, R-20004, C-20012 and T-20011)** UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch. has been assessed and proved to be in compliance with VCCI, the Membership No. is 3793. Facility Name: Chamber D, the VCCI registration No. is G-20019 and R-20004 Shielding Room B , the VCCI registration No. is C-20012 and T-20011

Note:

1. All tests measurement facilities use to collect the measurement data are located at Building 10, Innovation Technology Park, Song Shan Lake Hi tech Development Zone, Dongguan, 523808, China
2. The test anechoic chamber in UL Verification Services (Guangzhou) Co., Ltd. Song Shan Lake Branch had been calibrated and compared to the open field sites and the test anechoic chamber is shown to be equivalent to or worst case from the open field site.
3. For below 30MHz, lab had performed measurements at test anechoic chamber and comparing to measurements obtained on an open field site. And these measurements below 30MHz had been correlated to measurements performed on an OATS.

4. CALIBRATION AND UNCERTAINTY

4.1. MEASURING INSTRUMENT CALIBRATION

The measuring equipment utilized to perform the tests documented in this report has been calibrated in accordance with the manufacturer's recommendations, and is traceable to recognize national standards.

4.2. MEASUREMENT UNCERTAINTY

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus:

Test Item	Uncertainty
Uncertainty for Conduction emission test	3.62dB
Uncertainty for Radiation Emission test(include Fundamental emission) (9KHz-30MHz)	2.2dB
Uncertainty for Radiation Emission test(include Fundamental emission) (30MHz-1GHz)	4.00dB
Uncertainty for Radiation Emission test (1GHz to 40GHz)(include Fundamental emission)	5.78dB(1-18GHz)
	5.23dB (18GHz-26Gz)
	5.64dB (26GHz-40Gz)
Note: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.	

5. EQUIPMENT UNDER TEST

5.1. DESCRIPTION OF EUT

Product Name:	Kami Secure Home Hub	
Model No.:	YNS.1018	
Product Description	Operation Frequency	2405 MHz ~ 2455 MHz
	Modulation Type	Data Rate
	Modulation Type	O-QPSK
Channels Step:	Channels with 5MHz step	
Sample Type:	Fixed production	
Test power grade:	10(manufacturer declare)	
Test software of EUT:	SecureCRT (manufacturer declare)	
Antenna Type:	Internal Antenna	
Antenna Gain:	2.0 dBi	
Power Supply	Adapter	Model: A8-501000 INPUT:100-240V~,50/60Hz, 0.2 Max OUTPUT:5V ⎓ 1A

5.2. MAXIMUM OUTPUT POWER

Antenna	Mode	Frequency (MHz)	Channel Number	Max PK Conducted Power (dBm)
1	Zigbee	2405-2455	11-21	4.73

5.3. CHANNEL LIST

Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
11	2405	12	2410	13	2415	14	2420
15	2425	16	2430	17	2435	18	2440
19	2445	20	2450	21	2455		

5.4. TEST CHANNEL CONFIGURATION

Test Mode	Test Channel	Frequency
Zigbee	CH 11, CH 16, CH 21	2405MHz, 2430MHz, 2455MHz

5.5. THE WORSE CASE POWER SETTING PARAMETER

The Worse Case Power Setting Parameter under 2400 ~ 2483.5MHz Band				
Test Software		SecureCRT		
Modulation Type	Transmit Antenna Number	Test Channel		
		LCH	MCH	HCH
O-QPSK	1	10	10	10

5.6. DESCRIPTION OF AVAILABLE ANTENNAS

Ant.	Frequency (MHz)	Antenna Type	Antenna Gain (dBi)
1	2405-2455	Internal Antenna	2.0

Test Mode	Transmit and Receive Mode	Description
Zigbee	1TX, 1RX	Chain 1 can be used as transmitting/receiving antenna.

5.7. TEST ENVIRONMENT

Environment Parameter	Selected Values During Tests	
Relative Humidity	50 ~ 60%	
Atmospheric Pressure:	1025Pa	
Temperature	TN	23 ~ 28°C
Voltage:	VL	N/A
	VN	DC 3.0V
	VH	N/A

Note: VL= Lower Extreme Test Voltage
VN= Nominal Voltage
VH= Upper Extreme Test Voltage
TN= Normal Temperature

5.8. DESCRIPTION OF TEST SETUP

SUPPORT EQUIPMENT

Item	Equipment	Brand Name	Model Name	P/N
1	Laptop	ThinkPad	E550c	N/A

I/O CABLES

Cable No	Port	Connector Type	Cable Type	Cable Length(m)	Remarks
1	USB to TTL	USB to TTL	USB	2.0 m	N/A

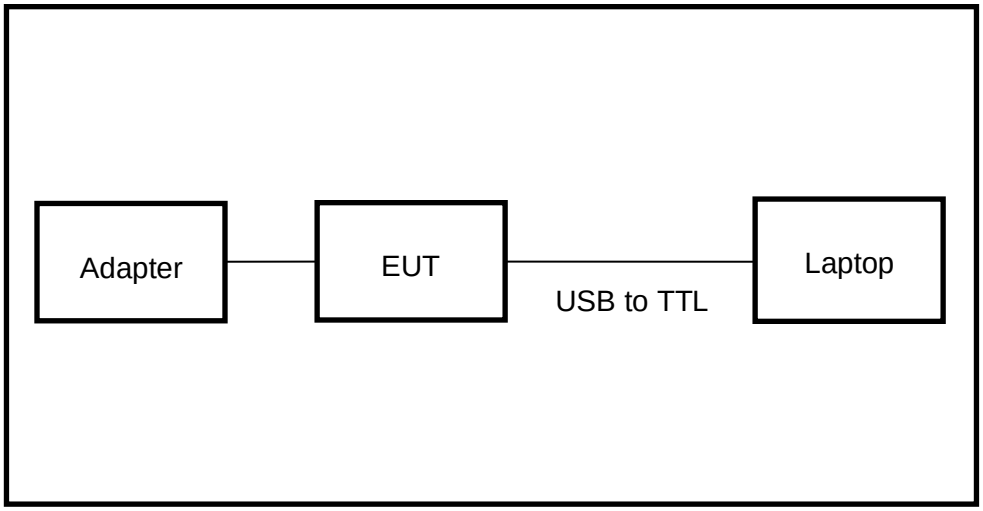
ACCESSORY

Item	Accessory	Brand Name	Model Name	Description
1	N/A	N/A	N/A	N/A

TEST SETUP

The EUT can work in engineer mode with a software through a PC.

SETUP DIAGRAM FOR TEST



6. MEASURING INSTRUMENT AND SOFTWARE USED

Conducted Emissions							
Used	Equipment	Manufactur	Model No.	Serial No.	Upper Cal.	Last Cal.	Next Cal.
☑	EMI Test Receiver	R&S	ESR3	101961	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019
☑	Two-Line V-Network	R&S	ENV216	101983	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019

Software					
Used	Description	Manufacturer	Name	Version	
☑	Test Software for Conducted disturbance	UL	Antenna port	Ver. 7.2	

Radiated Emissions							
Used	Equipment	Manufactur	Model No.	Serial No.	Upper Cal.	Last Cal.	Next Cal.
☑	MXE EMI Receiver	KESIGHT	N9038A	MY564000	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019
☑	Hybrid Log Periodic Antenna	TDK	HLP-3003C	130960	Jan.09, 2016	Sept. 17, 2018	Sept. 17, 2021
☑	Preamplifier	HP	8447D	2944A0909	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019
☑	EMI Measurement Receiver	R&S	ESR26	101377	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019
☑	Horn Antenna	TDK	HRN-0118	130939	Jan. 09, 2016	Sept. 17,2018	Sept. 17, 2021
☑	High Gain Horn	Schwarzbe	BBHA-9170	691	Jan.06, 2016	Aug. 11, 2018	Aug. 11, 2019
☑	Preamplifier	TDK	PA-02-0118	TRS-305-00066	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019
☑	Preamplifier	TDK	PA-02-2	TRS-307-00003	Dec.12,2017	Dec. 10, 2018	Dec. 10, 2019
☑	Loop antenna	Schwarzbe	1519B	00008	Mar. 26,	Mar. 26, 2016	Mar. 26, 2019

Software					
Used	Description	Manufacturer	Name	Version	
☑	Test Software for Radiated disturbance	Farad	EZ-EMC	Ver. UL-3A1	

Other instruments							
Used	Equipment	Manufacturer	Model No.	Serial No.	Upper Cal.	Last Cal.	Next Cal.
☑	Spectrum Analyzer	Keysight	N9030A	MY55410512	Dec.12,2017	Dec.10,2018	Dec.10,2019
☑	Power Sensor	Keysight	U2021XA	MY57030004	Dec.12,2017	Dec.10,2018	Dec.10,2019
☑	Power Meter	Keysight	N1911A	MY55416024	Dec.12,2017	Dec.11,2018	Dec.10,2019
☑	High Pass Filter	Wainwright	WHKX10-5850-6500-1800-40SS	4	Dec.12,2017	Dec.11,2018	Dec.10,2019
☑	Band Reject Filter	Wainwright	WRCJV20-5440-5470-5725-5755-60SS	1	Dec.12,2017	Dec.11,2018	Dec.10,2019

7. MEASUREMENT METHODS

No.	Test Item	KDB Name	Section
1	6 dB Bandwidth	KDB 558074 D01 DTS Meas Guidance v05	8.2
2	Peak Output Power	KDB 558074 D01 DTS Meas Guidance v05	8.3.1.3
3	Power Spectral Density	KDB 558074 D01 DTS Meas Guidance v05	8.4
4	Out-of-band emissions in non-restricted bands	KDB 558074 D01 DTS Meas Guidance v05	8.5
5	Out-of-band emissions in restricted bands	KDB 558074 D01 DTS Meas Guidance v05	8.6
6	Band-edge	KDB 558074 D01 DTS Meas Guidance v05	8.7
7	Conducted Emission Test For AC Power Port	ANSI C63.10-2013	6.2

8. ANTENNA PORT TEST RESULTS

8.1. ON TIME AND DUTY CYCLE

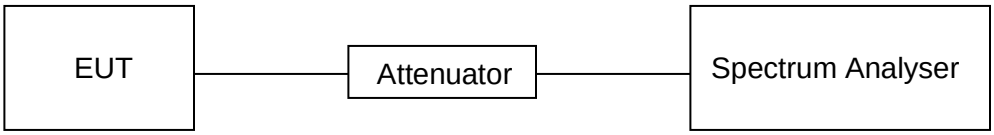
LIMITS

None; for reporting purposes only

PROCEDURE

KDB 558074 Zero-Span Spectrum Analyzer Method

TEST SETUP



TEST ENVIRONMENT

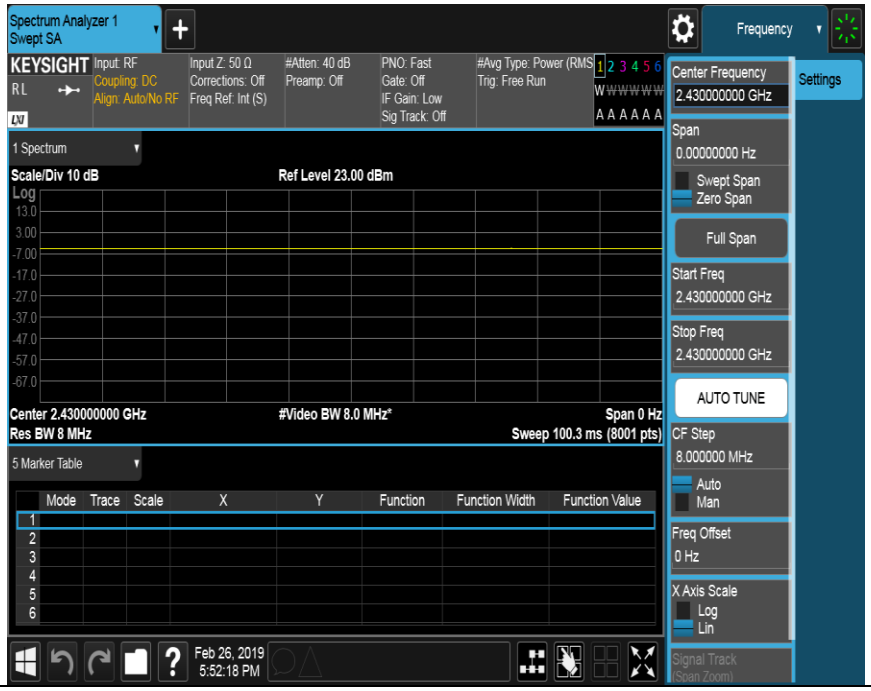
Temperature	25°C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.0 V

RESULTS

Mode	On Time (msec)	Period (msec)	Duty Cycle x (Linear)	Duty Cycle (%)	Duty Cycle Correction Factor (db)	1/T Minimum VBW (KHz)	Final setting For VBW (KHz)
Zigbee	100.3	100.3	1	100	0	100	0.01

Note:
Duty Cycle Correction Factor=10log(1/x).
Where: x is Duty Cycle (Linear)
Where: T is On Time (transmit duration)
If that calculated VBW is not available on the analyzer then the next higher value should be used.

ON TIME AND DUTY CYCLE MID CH



8.2. 6 dB DTS BANDWIDTH AND 99% BANDWIDTH

LIMITS

CFR 47FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(a)(2) ISED RSS-247 5.2 (a)	6dB Bandwidth	>= 500KHz	2400-2483.5
ISED RSS-Gen Clause 6.7	99% Occupied Bandwidth	For reporting purposes only.	2400-2483.5

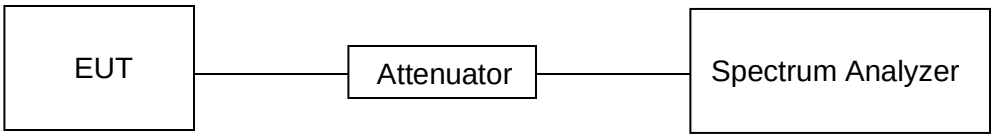
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	For 6 dB Bandwidth :100K For 99% Occupied Bandwidth :1% to 5% of the occupied bandwidth
VBW	For 6dB Bandwidth : ≥3 × RBW For 99% Occupied Bandwidth : approximately 3×RBW
Trace	Max hold
Sweep	Auto couple

Allow the trace to stabilize and measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB/99% relative to the maximum level measured in the fundamental emission.

TEST SETUP



TEST ENVIRONMENT

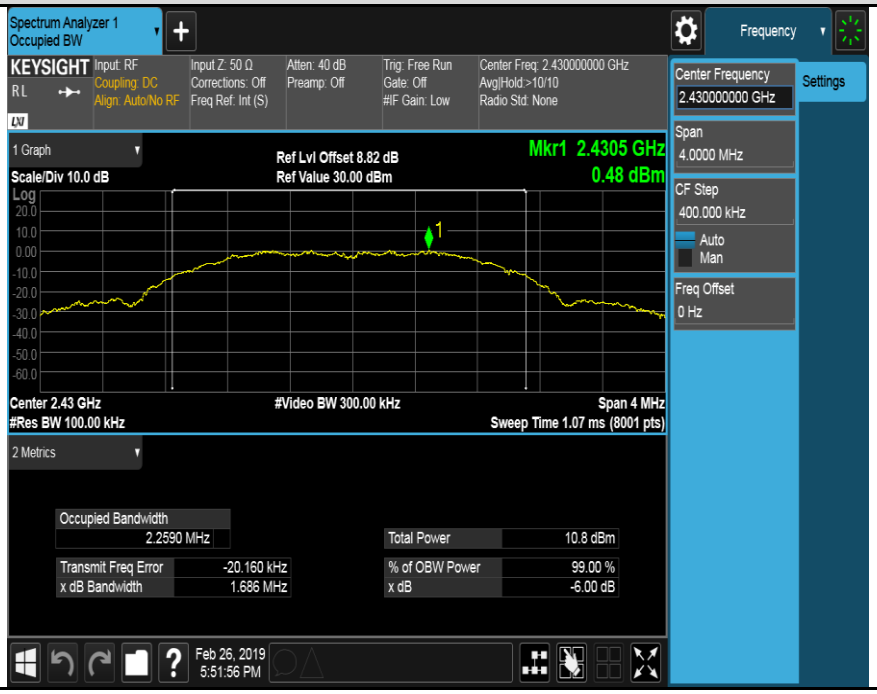
Temperature	25°C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 30 V

RESULTS

Channel	6dB bandwidth (MHz)	99% bandwidth (MHz)	Result
Low	1.660	2.2581	Pass
Middle	1.686	2.2590	Pass
High	1.646	2.2698	Pass

TEST GRAPHS

6dB AND 99% BANDWIDTH LOW CH

6dB AND 99% BANDWIDTH MID CH


6dB AND 99% BANDWIDTH HIG CH


8.3. PEAK CONDUCTED OUTPUT POWER

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC 15.247(b)(3) ISED RSS-247 5.4 (d)	Peak Output Power	1 watt or 30dBm	2400-2483.5

TEST PROCEDURE

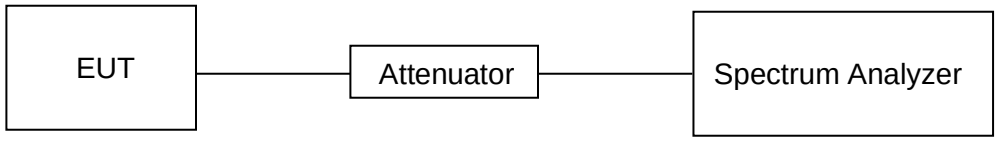
Connect the UUT to the spectrum analyzer and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	≥DTS bandwidth
VBW	≥3 × RBW
Span	3 x RBW
Trace	Max hold
Sweep time	Auto couple.

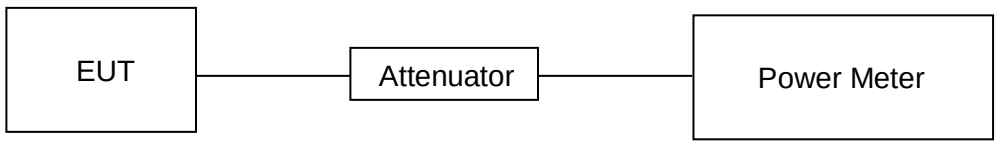
Allow trace to fully stabilize and use peak marker function to determine the peak amplitude level.

TEST SETUP

for peak power measurement:



for average power measurement:



TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.0 V

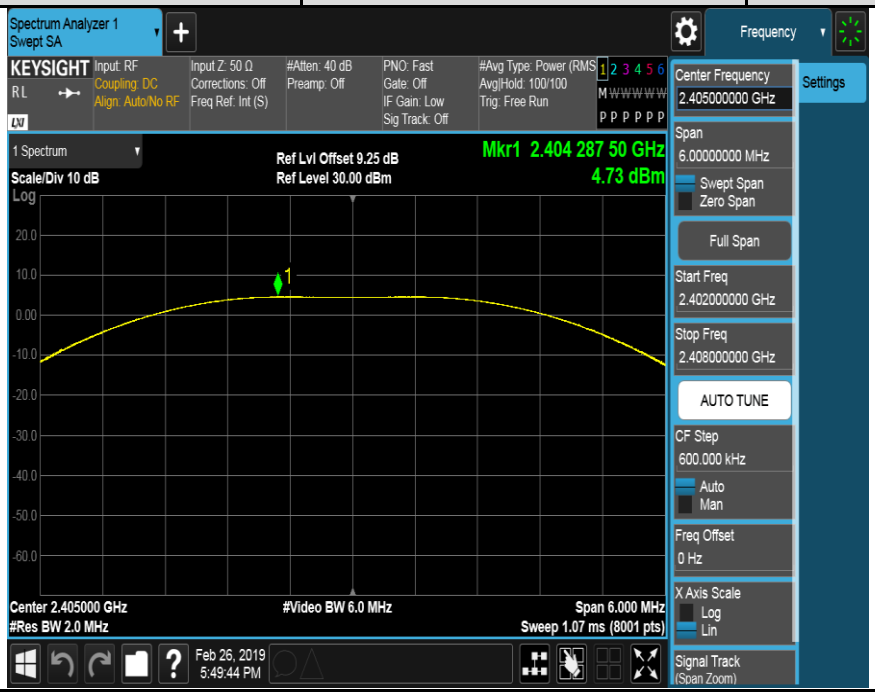
RESULTS

Test Channel	Maximum Conducted Output Power (PK) (dBm)	Result
Low	4.73	Pass
Middle	4.58	Pass
High	4.63	Pass

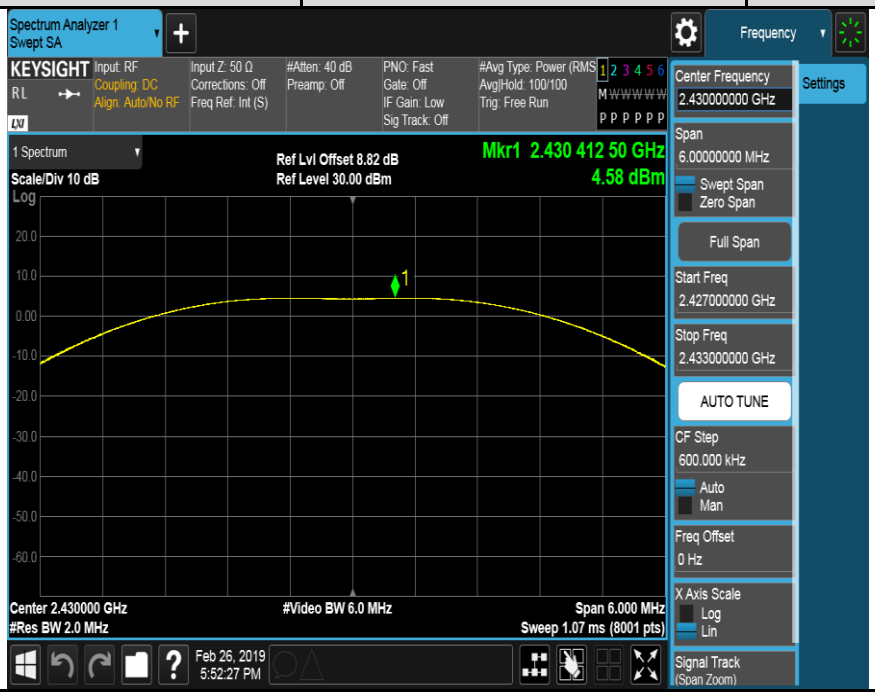
Test Channel	Maximum Conducted Output Power (AV) (dBm)	Result
Low	4.51	Pass
Middle	4.48	Pass
High	4.49	Pass

TEST GRAPHS

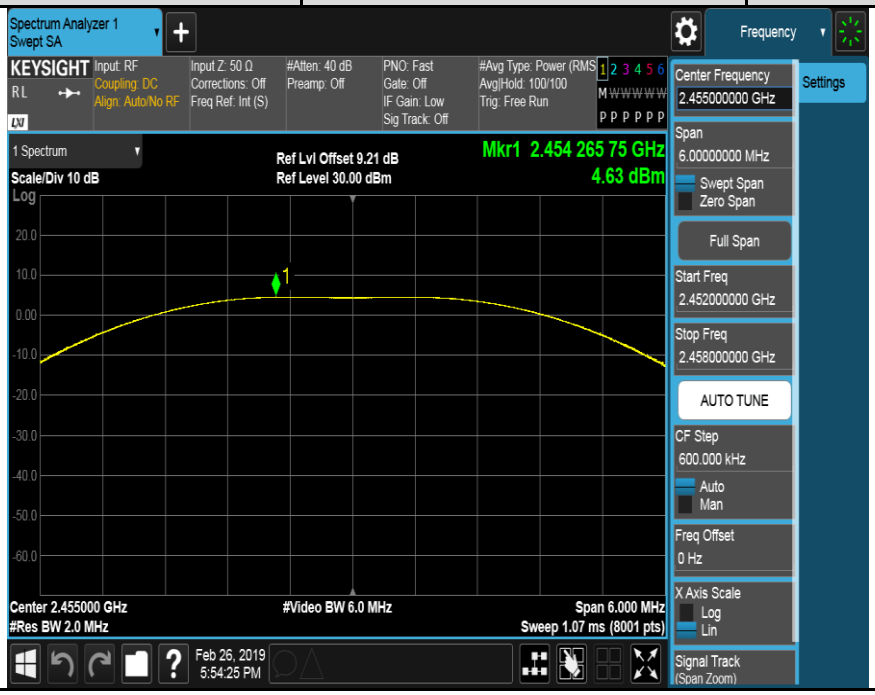
Test Mode	Test Channel	Verdict
11B SISO	LCH	PASS



Test Mode	Test Channel	Verdict
11B SISO	MCH	PASS



Test Mode	Test Channel	Verdict
11B SISO	HCH	PASS



8.4. POWER SPECTRAL DENSITY

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2			
Section	Test Item	Limit	Frequency Range (MHz)
CFR 47 FCC §15.247 (e) ISED RSS-247 5.2 (b)	Power Spectral Density	8 dBm in any 3 kHz band	2400-2483.5

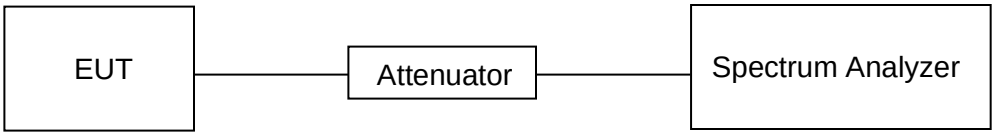
TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	3 kHz ≤ RBW ≤ 100 kHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Allow trace to fully stabilize and use the peak marker function to determine the maximum amplitude level within the RBW.
If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.

TEST SETUP



TEST ENVIRONMENT

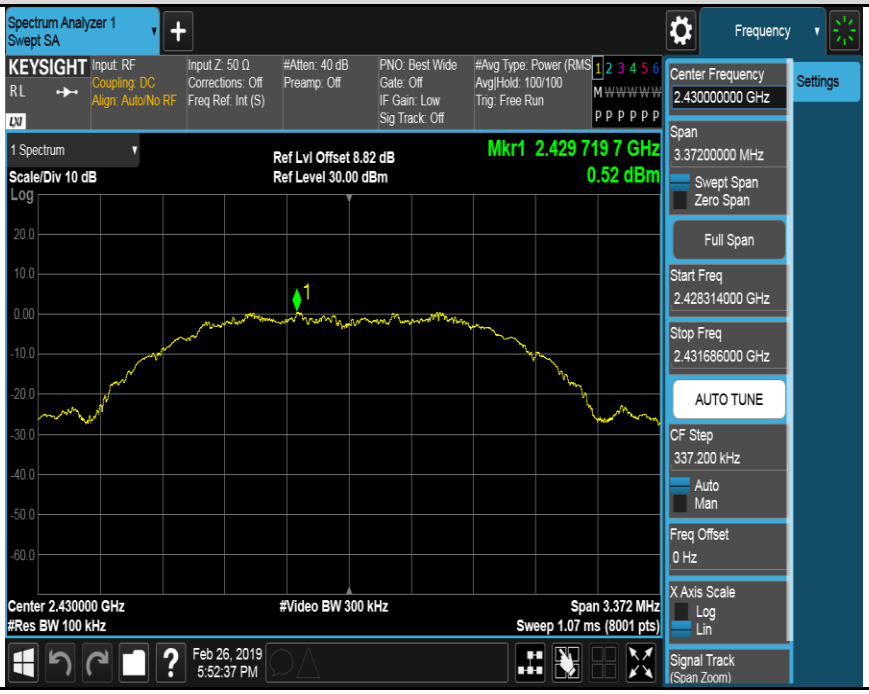
Temperature	25°C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.0 V

RESULTS TABLE

Test Channel	Power Spectral Density (dBm/100kHz)	Limit (dBm/3kHz)	Result
Low	0.57	8	PASS
Middle	0.52	8	PASS
High	0.50	8	PASS

TEST GRAPHS:

PSD LOW CH

PSD MID CH


PSD HIG CH


8.5. CONDUCTED BANDEDGE AND SPURIOUS EMISSIONS

LIMITS

CFR 47 FCC Part15 (15.247) Subpart C ISED RSS-247 ISSUE 2		
Section	Test Item	Limit
CFR 47 FCC §15.247 (d) ISED RSS-247 5.5	Conducted Bandedge and Spurious Emissions	at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power

TEST PROCEDURE

Connect the UUT to the spectrum analyser and use the following settings:

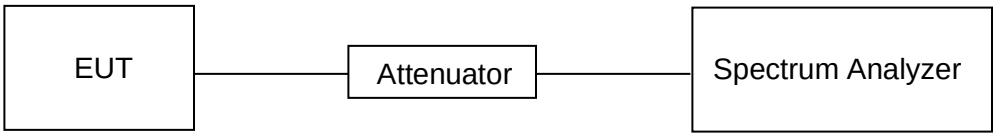
Center Frequency	The center frequency of the channel under test
Detector	Peak
RBW	100KHz
VBW	≥3 × RBW
Span	1.5 x DTS bandwidth
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum PSD level.

Span	Set the center frequency and span to encompass frequency range to be measured
Detector	Peak
RBW	100KHz
VBW	≥3 × RBW
measurement points	≥span/RBW
Trace	Max hold
Sweep time	Auto couple.

Use the peak marker function to determine the maximum amplitude level.

TEST SETUP



TEST ENVIRONMENT

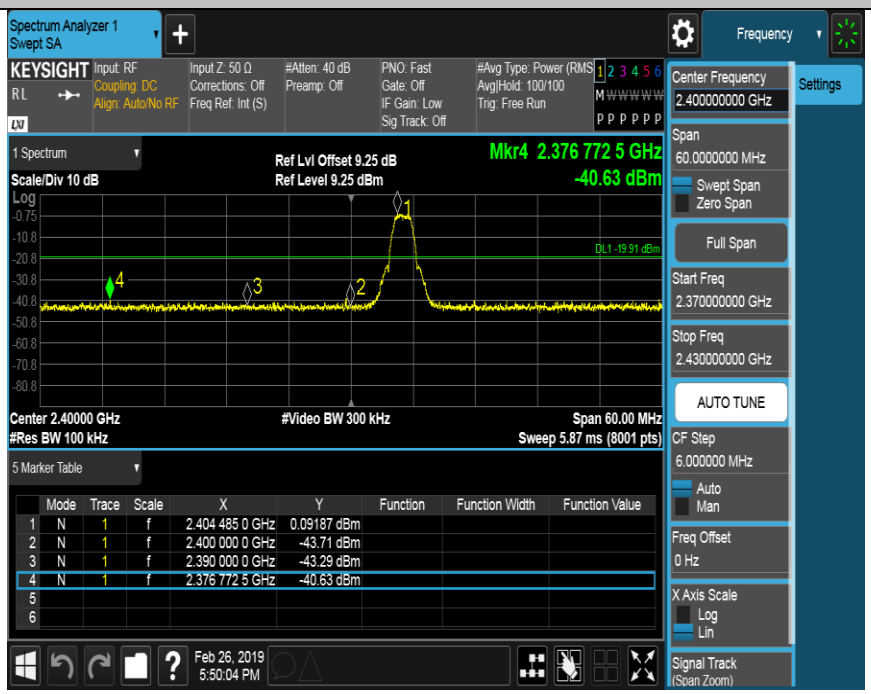
Temperature	25°C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.0 V

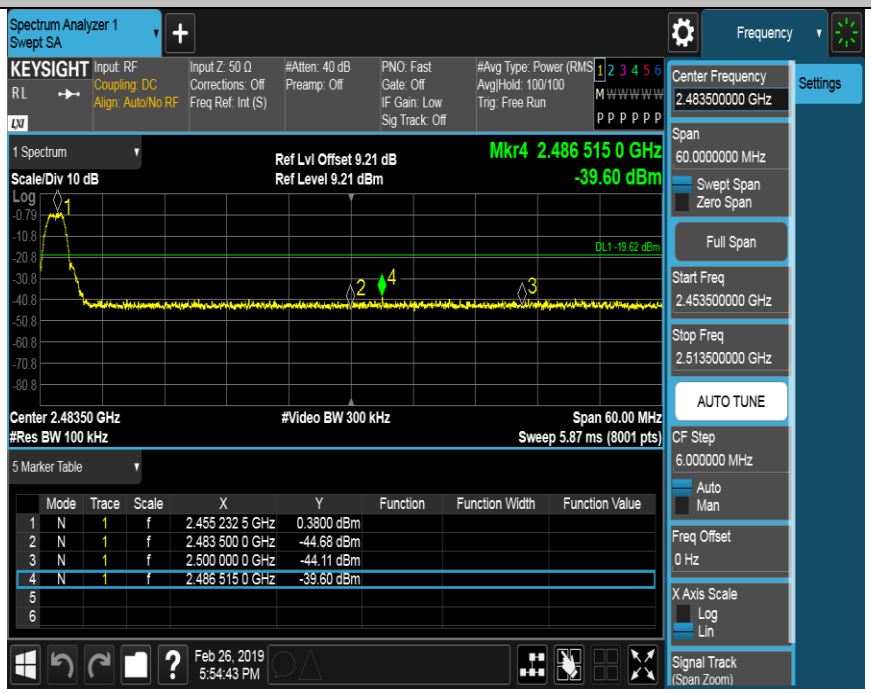
Part I: CONDUCTED BANDEDGE

RESULTS TABLE

Test Mode	Test Channel	Carrier Power[dBm]	Max. Spurious Level [dBm]	Limit [dBm]	Verdict
Zigbee	LCH	0.092	-40.633	-19.91	PASS
	HCH	0.380	-39.604	-19.62	PASS

TEST GRAPHS

LOW CH BANDEDGE


HIGH CH BANDEDGE


Part II: CONDUCTED SPURIOUS EMISSIONS

RESULTS TABLE

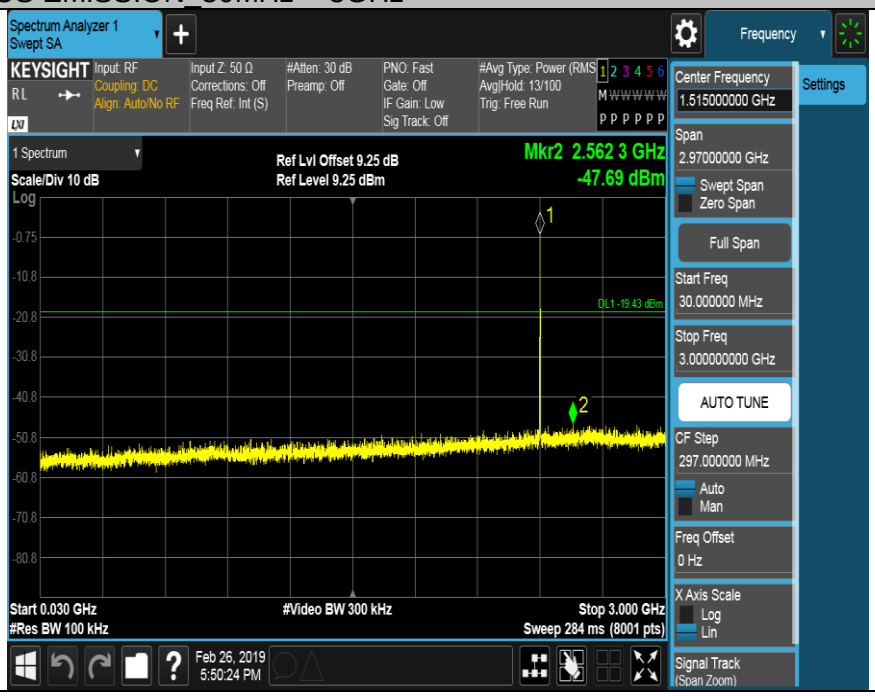
Test Mode	Channel	Pref(dBm)	Puw(dBm)	Verdict
Zigbee	LCH	0.57	<Limit	PASS
	MCH	0.50	<Limit	PASS
	HCH	0.41	<Limit	PASS

TEST GRAPHS

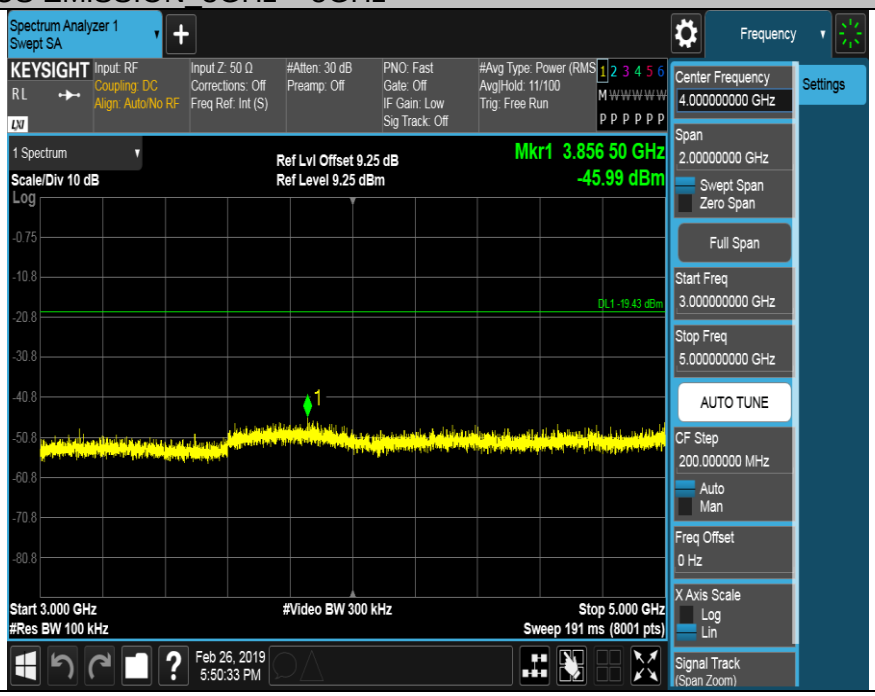
Pref test Plot

LCH SPURIOUS EMISSION

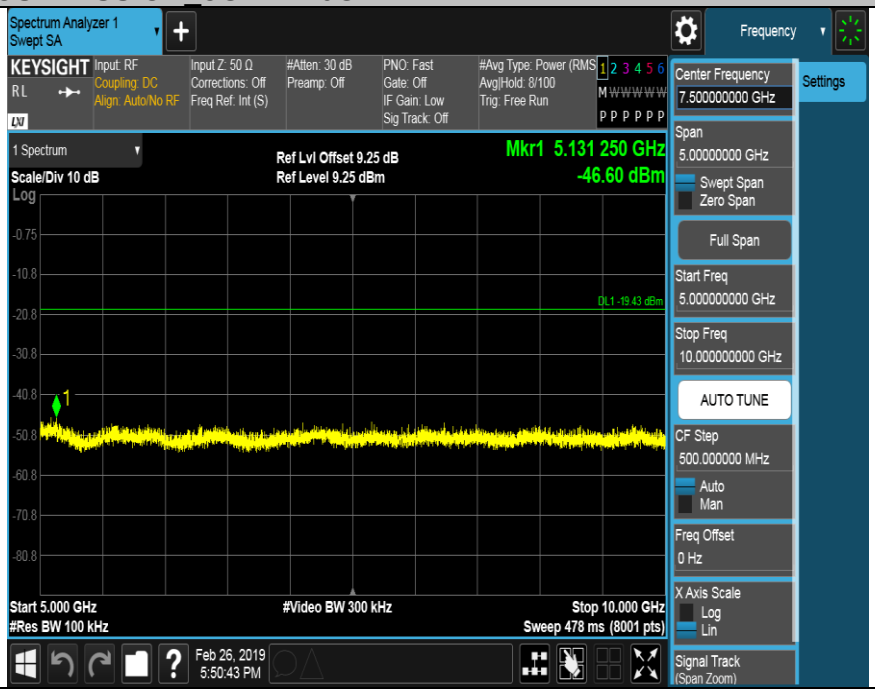

Puw test Plot

LCH SPURIOUS EMISSION_30MHz ~ 3GHz


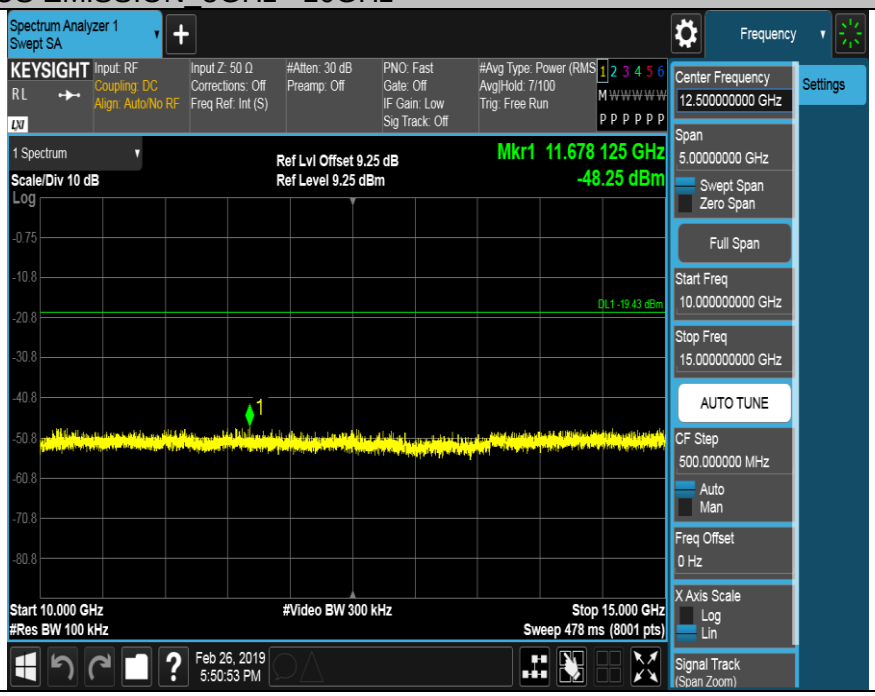
LCH SPURIOUS EMISSION_3GHz ~ 5GHz



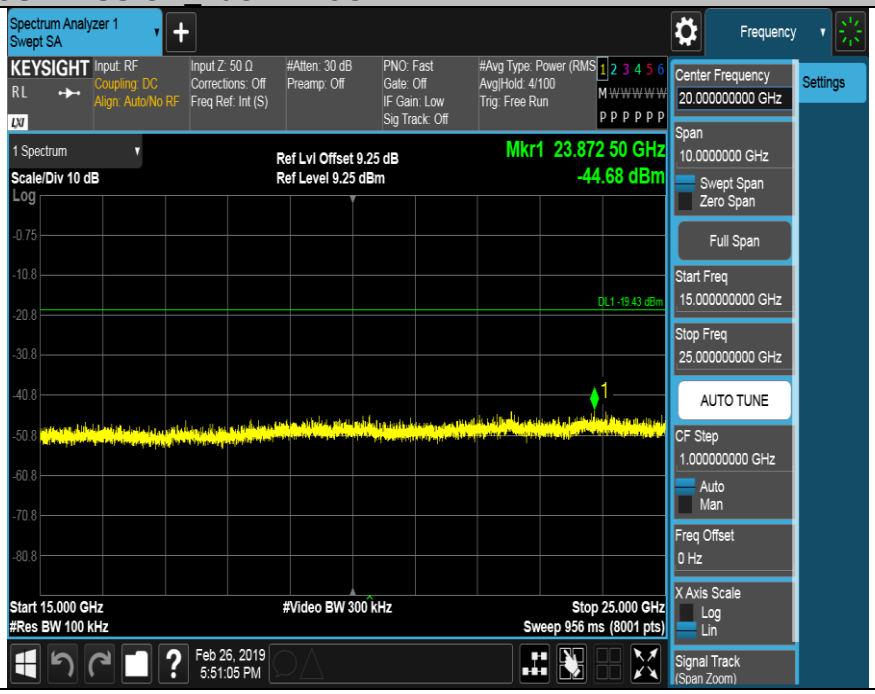
LCH SPURIOUS EMISSION_5GHz ~10GHz



LCH SPURIOUS EMISSION_5GHz ~10GHz



LCH SPURIOUS EMISSION_10GHz~25GHz

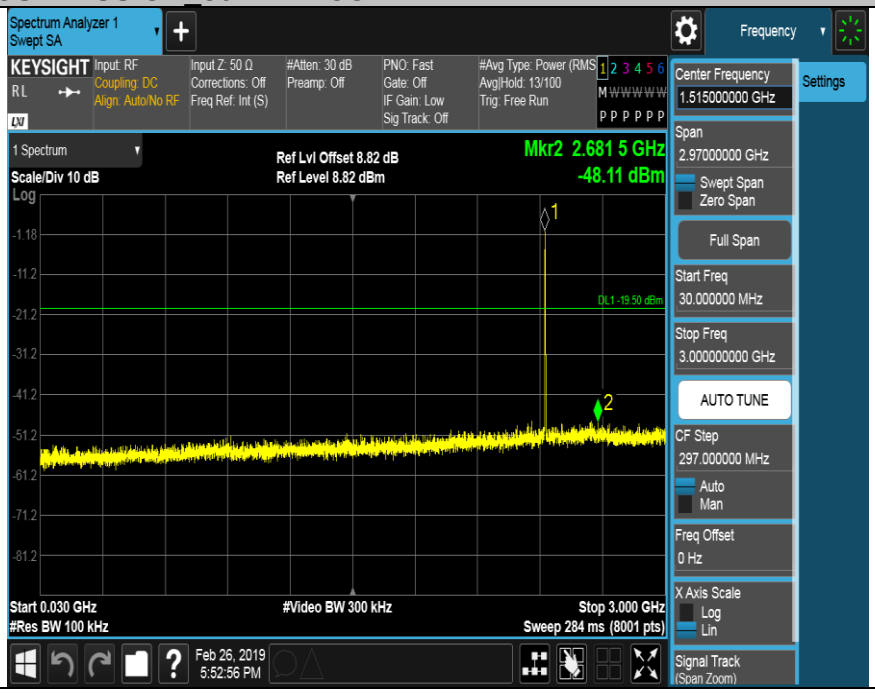


Pref test Plot

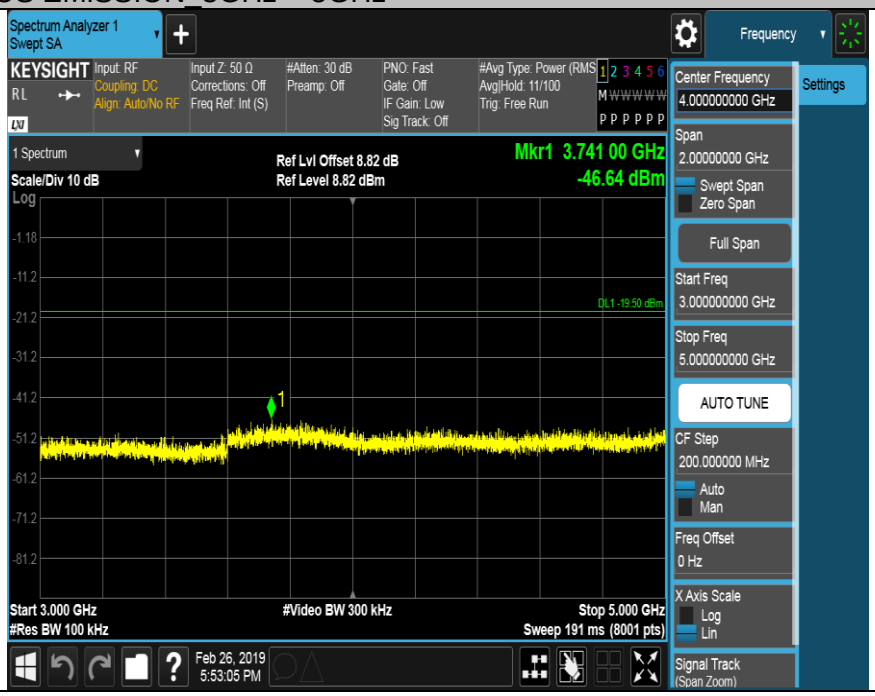
MCH SPURIOUS EMISSION

Puw test Plot

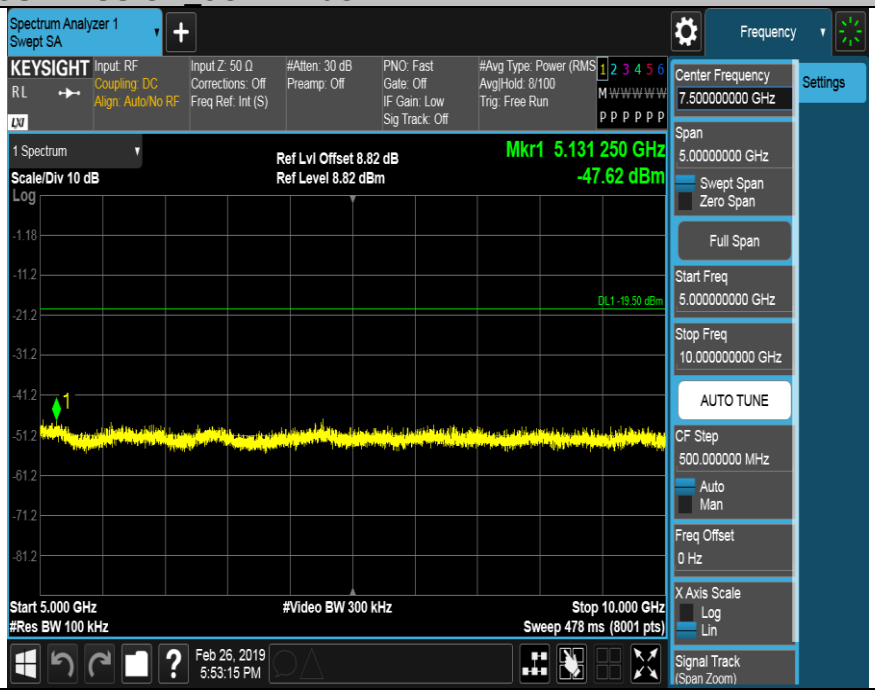
LCH SPURIOUS EMISSION_30MHz ~ 3GHz



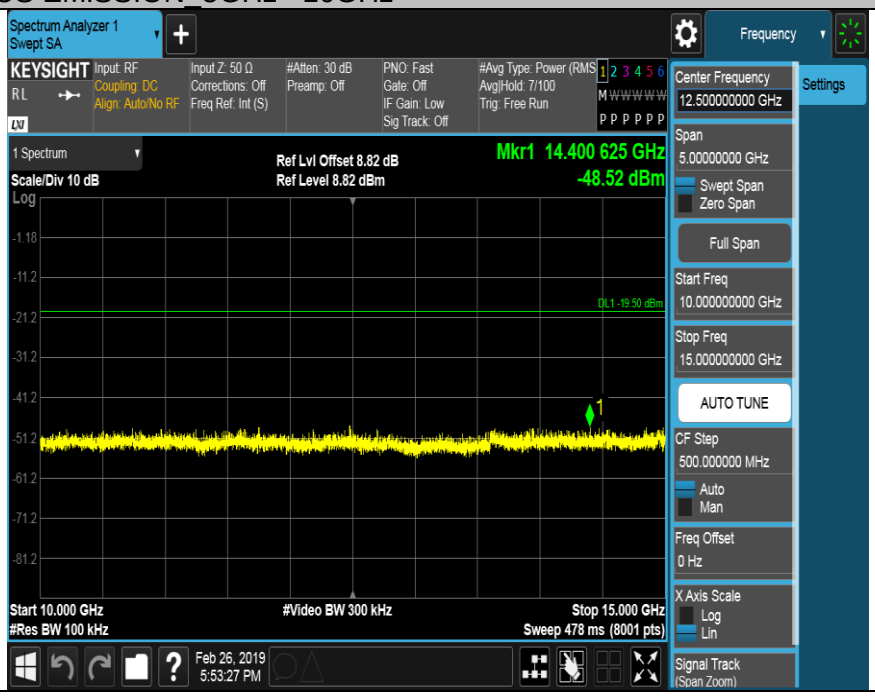
LCH SPURIOUS EMISSION_3GHz ~ 5GHz



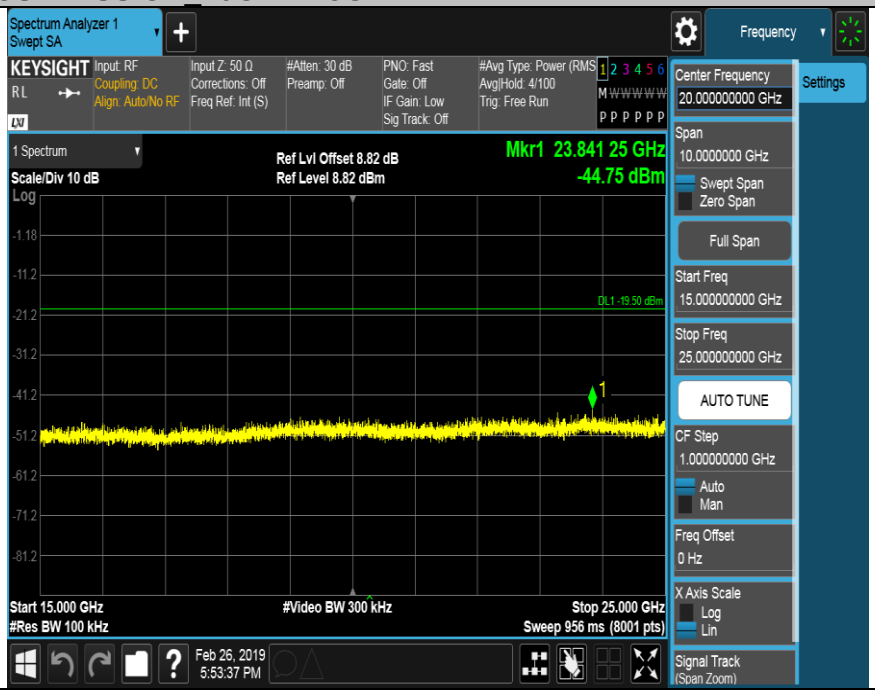
LCH SPURIOUS EMISSION_5GHz ~10GHz



LCH SPURIOUS EMISSION_5GHz ~10GHz



LCH SPURIOUS EMISSION_10GHz~25GHz

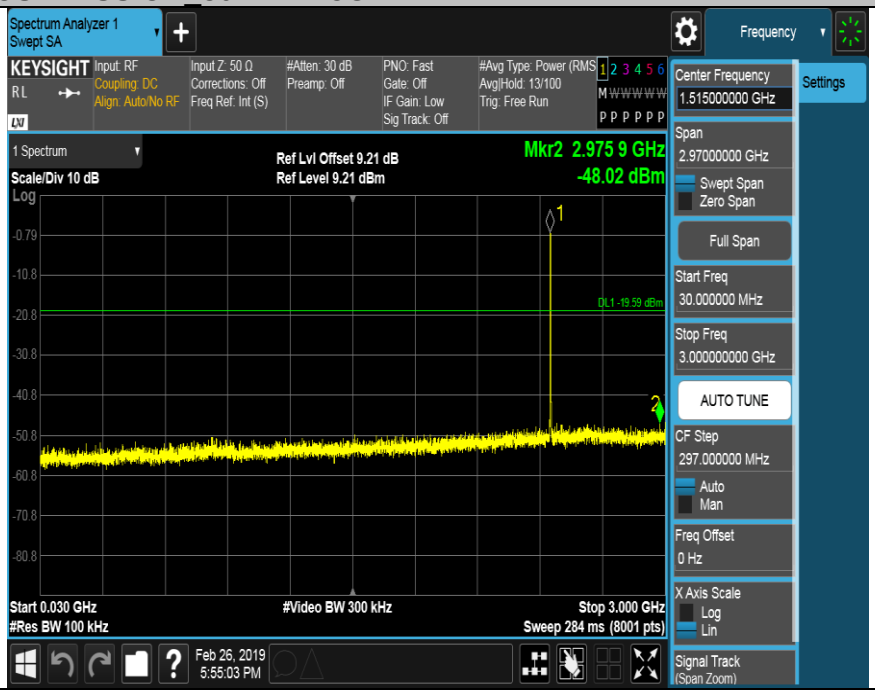


Pref test Plot

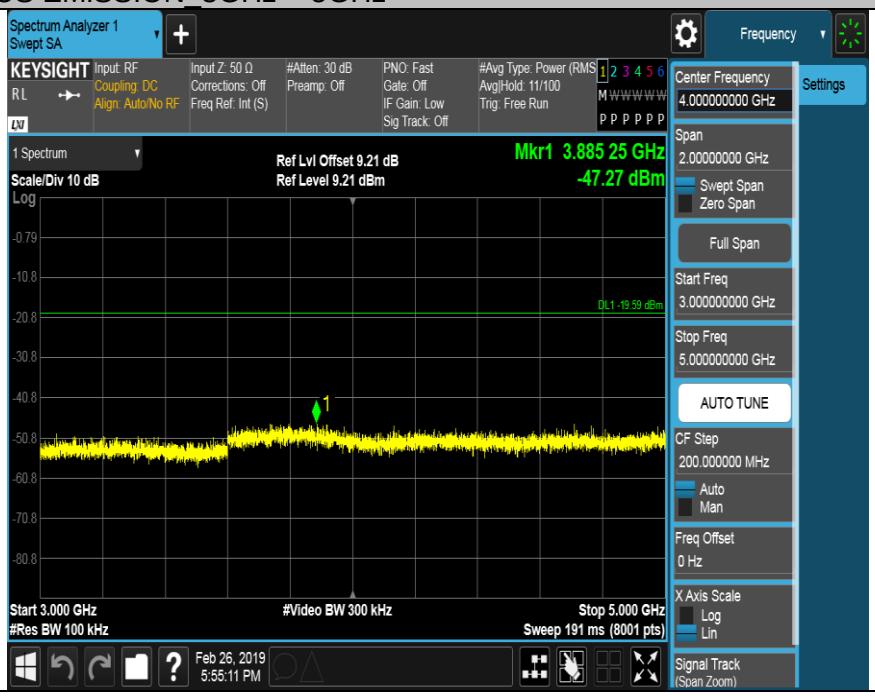
HCH SPURIOUS EMISSION

Puw test Plot

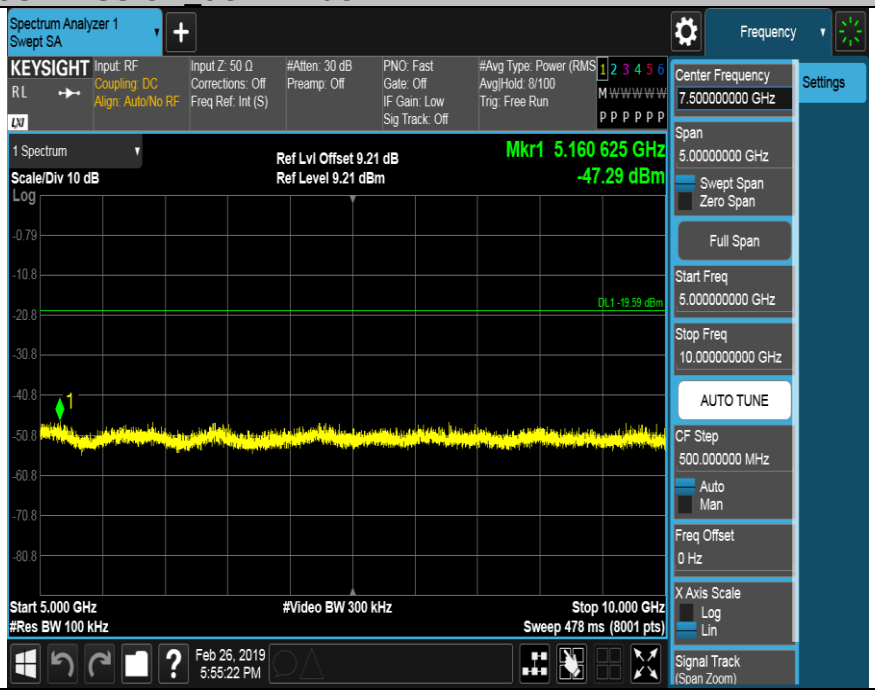
LCH SPURIOUS EMISSION_30MHz ~ 3GHz



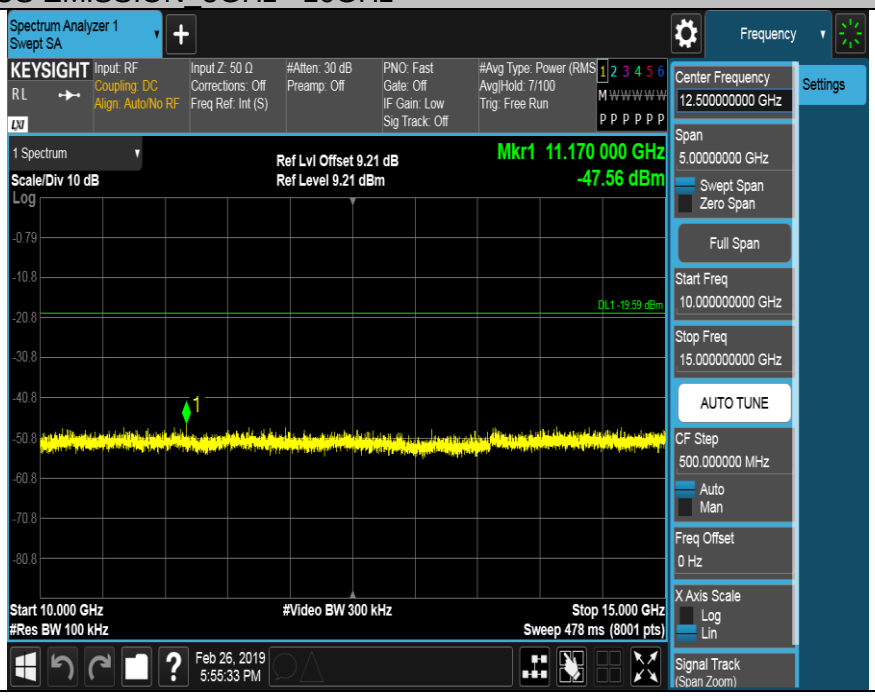
LCH SPURIOUS EMISSION_3GHz ~ 5GHz



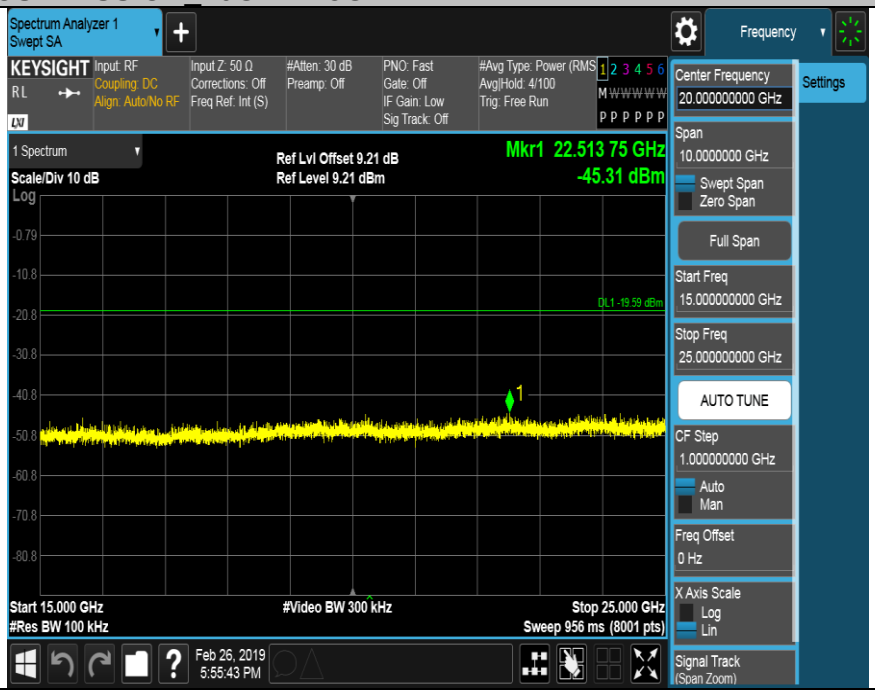
LCH SPURIOUS EMISSION_5GHz ~10GHz



LCH SPURIOUS EMISSION_5GHz ~10GHz



LCH SPURIOUS EMISSION_10GHz~25GHz



9. RADIATED TEST RESULTS

LIMITS

Please refer to CFR 47 FCC §15.205 and §15.209

Please refer to ISED RSS-GEN Clause 8.9 and Clause 8.10

Radiation Disturbance Test Limit for FCC (Class B)(9KHz-1GHz)

Frequency (MHz)	Field Strength (microvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
960~1000	500	3

Note: 1) At frequencies at or above 30 MHz, measurements may be performed at a distance other than what is specified provided: measurements are not made in the near field except where it can be shown that near field measurements are appropriate due to the characteristics of the device; and it can be demonstrated that the signal levels needed to be measured at the distance employed can be detected by the measurement equipment. Measurements shall not be performed at a distance greater than 30 meters unless it can be further demonstrated that measurements at a distance of 30 meters or less are impractical. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade (inverse linear-distance for field strength measurements; inverse-linear-distance-squared for power density measurements).

(2) At frequencies below 30 MHz, measurements may be performed at a distance closer than that specified in the regulations; however, an attempt should be made to avoid making measurements in the near field. Pending the development of an appropriate measurement procedure for measurements performed below 30 MHz, when performing measurements at a closer distance than specified, the results shall be extrapolated to the specified distance by either making measurements at a minimum of two distances on at least one radial to determine the proper extrapolation factor or by using the square of an inverse linear distance extrapolation factor (40 dB/decade). This paragraph (f) shall not apply to Access BPL devices operating below 30 MHz.

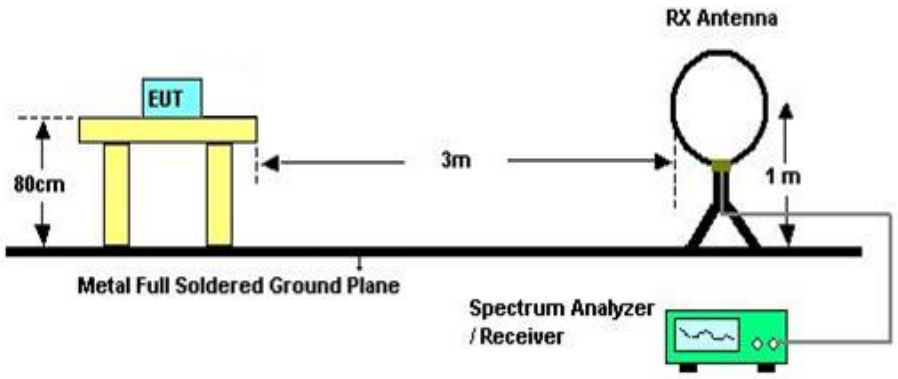
Radiation Disturbance Test Limit for FCC (Above 1G)

Frequency (MHz)	dB(uV/m) (at 3 meters)	
	Peak	Average
Above 1000	74	54

About Restricted bands of operation please refer to RSS-Gen section 8.10 and FCC §15.205 (a)

TEST SETUP AND PROCEDURE

Below 30MHz



The setting of the spectrum analyser

RBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
VBW	200Hz (From 9kHz to 0.15MHz)/ 9KHz (From 0.15MHz to 30MHz)
Sweep	Auto
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013

2. The EUT was arranged to its worst case and then turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

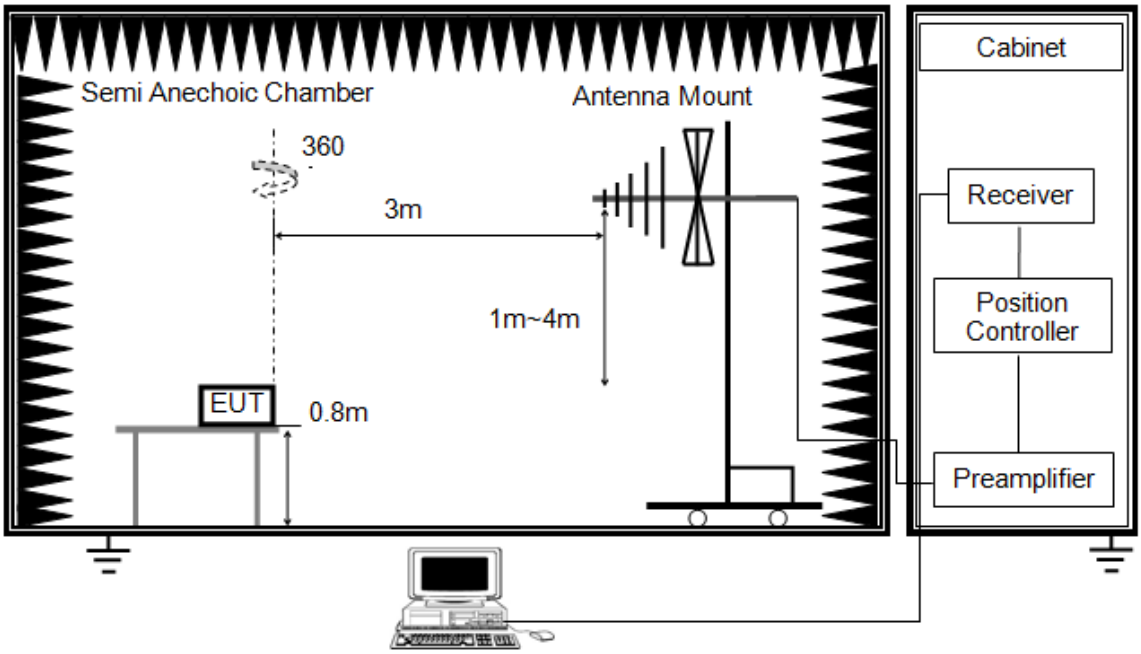
4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. The radiated emission limits are based on measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

6. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak and average detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak and average detector and reported.

7. Although these tests were performed other than open area test site, adequate comparison measurements were confirmed against 30m open are test site. Therefore sufficient tests were made to demonstrate that the alternative site produces results that correlate with the ones of tests made in an open field based on KDB 414788.

Below 1G and above 30MHz



The setting of the spectrum analyser

RBW	120K
VBW	300K
Sweep	Auto
Detector	Peak/QP
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

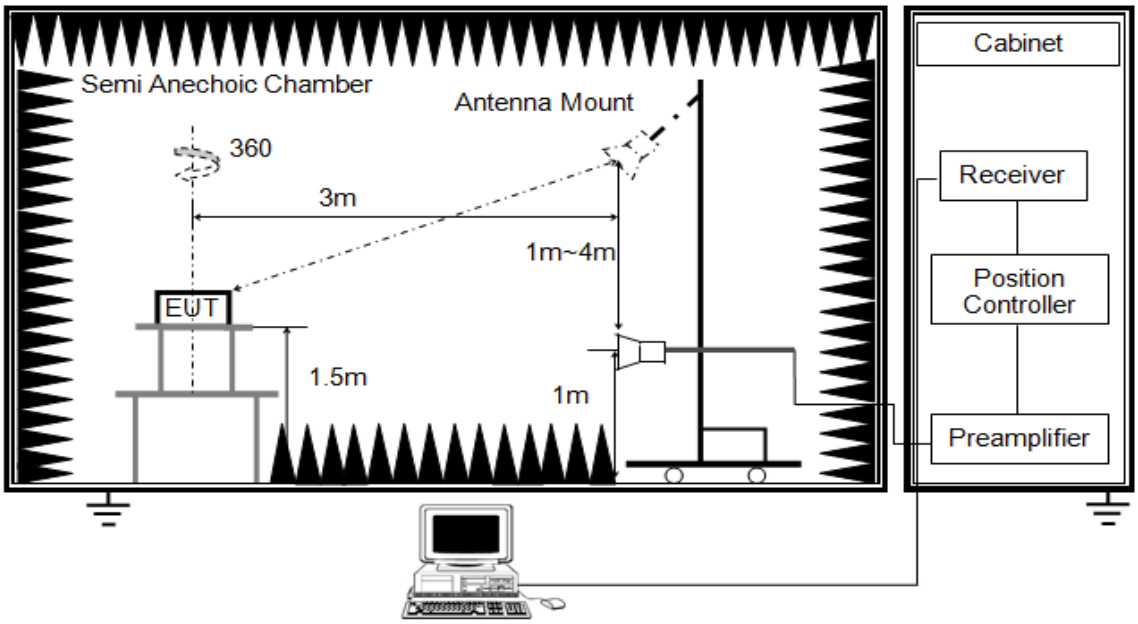
2. The EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

3. The EUT was placed on a turntable with 80cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement below 1GHz, the initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured. If the emission level of the EUT measured by the peak detector is 3 dB lower than the applicable limit, the peak emission level will be reported. Otherwise, the emission measurement will be repeated using the quasi-peak detector and reported.

Above 1G



The setting of the spectrum analyser

RBW	1M
VBW	PEAK: 3M AVG: see note 6
Sweep	Auto
Detector	Peak
Trace	Max hold

1. The testing follows the guidelines in ANSI C63.10-2013.

2. The EUT was arranged to its worst case and then tune the antenna tower (1.5 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading. A pre-amp and a high pass filter are used for the test in order to get better signal level. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

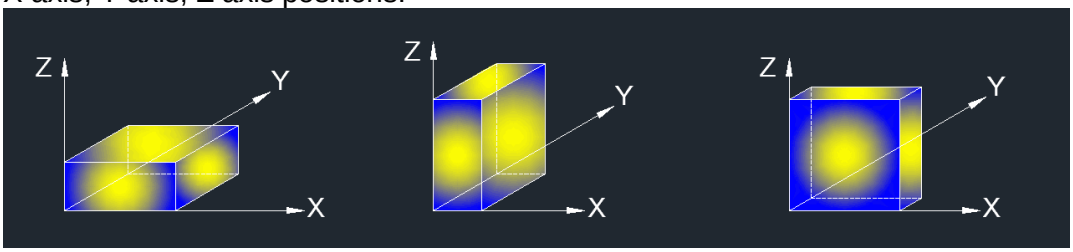
3. The EUT was placed on a turntable with 80cm above ground.

4. The EUT was set 3 meters from the interference receiving antenna, which was mounted on the top of a variable height antenna tower.

5. For measurement above 1GHz, the emission measurement will be measured by the peak detector. This peak level, once corrected, must comply with the limit specified in Section 15.209.

6. For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, then the video bandwidth is set to 3 MHz for peak measurements and 1 MHz resolution bandwidth with 1/T video bandwidth with peak detector. For the Duty Cycle and Correction Factor please refer to clause 8.1. ON TIME AND DUTY CYCLE.

X axis, Y axis, Z axis positions:



Note 1: For all radiated test, EUT in each of three orthogonal axis emissions had been tested, but only the worst case (X axis) data recorded in the report.

Note 2: The EUT was fully exercised with external accessories during the test. In the case of multiple accessory external ports, an external accessory shall be connected to one of each type of port.

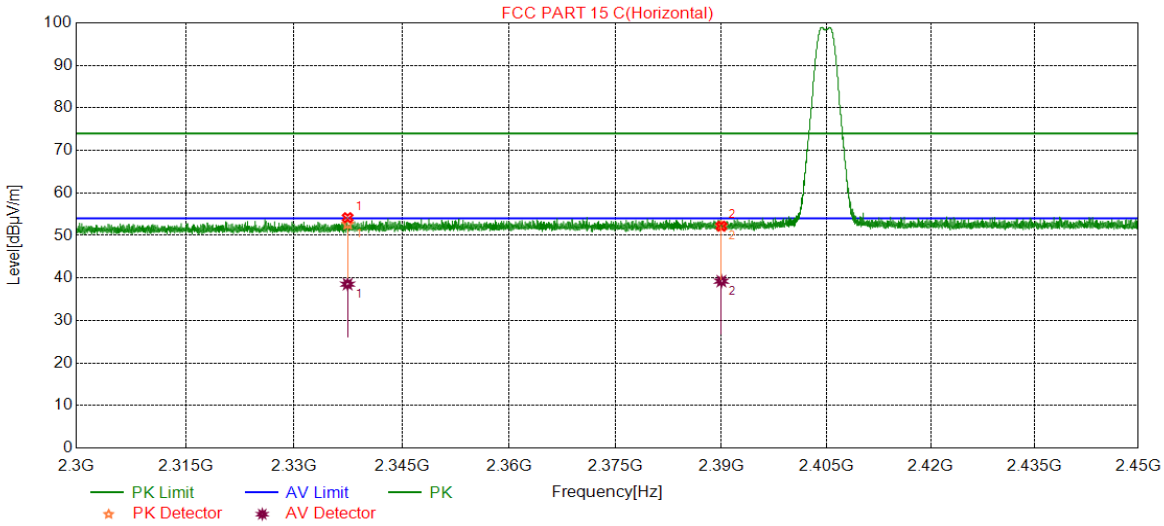
TEST ENVIRONMENT

Temperature	25°C	Relative Humidity	58 %
Atmosphere Pressure	101 kPa	Test Voltage	DC 3.0 V

RESULTS

9.1. RESTRICTED BANDEDGE

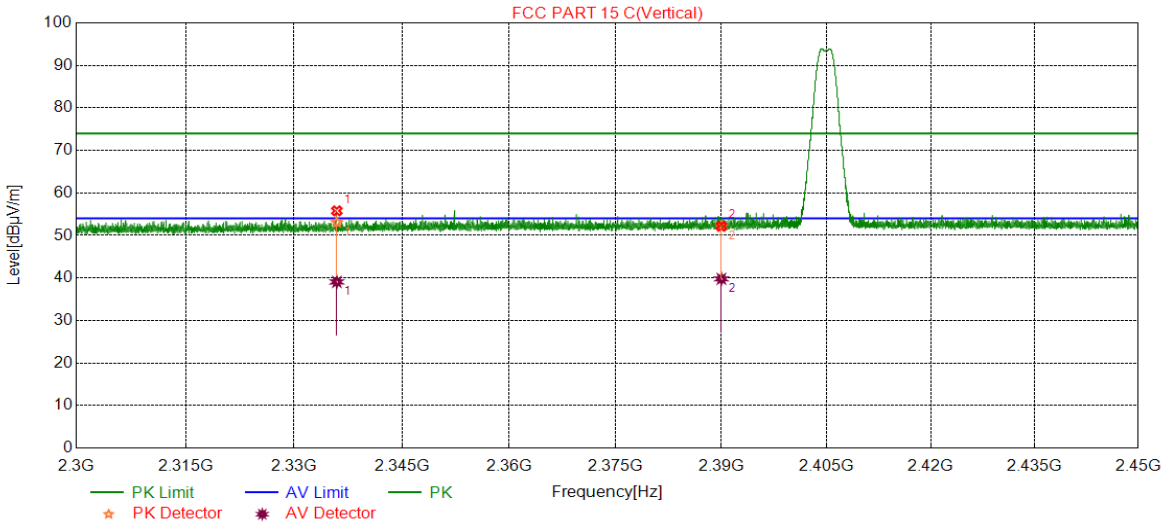
RESTRICTED BANDEDGE (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2337.4287	52.63	74.00	-21.37	Peak
		38.53	54.00	-15.47	Average
2	2390.0000	52.11	74.00	-21.89	Peak
		39.25	54.00	-14.75	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10 Hz.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

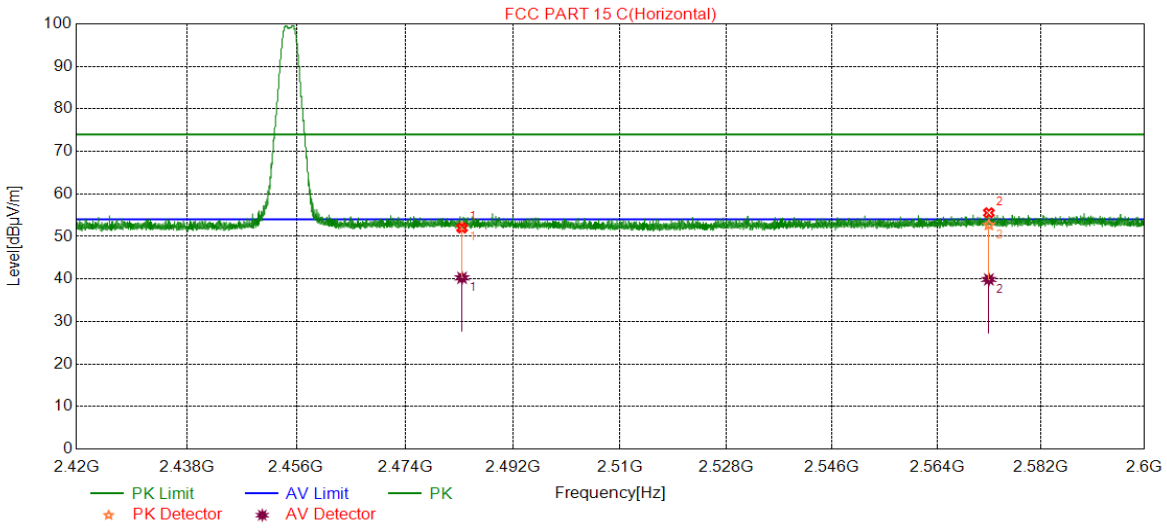
RESTRICTED BANDEDGE (LOW CHANNEL, VERTICAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2335.9286	53.07	74.00	-20.93	Peak
		39.07	54.00	-14.93	Average
2	2390.0000	52.11	74.00	-21.89	Peak
		39.79	54.00	-14.21	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10 Hz.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

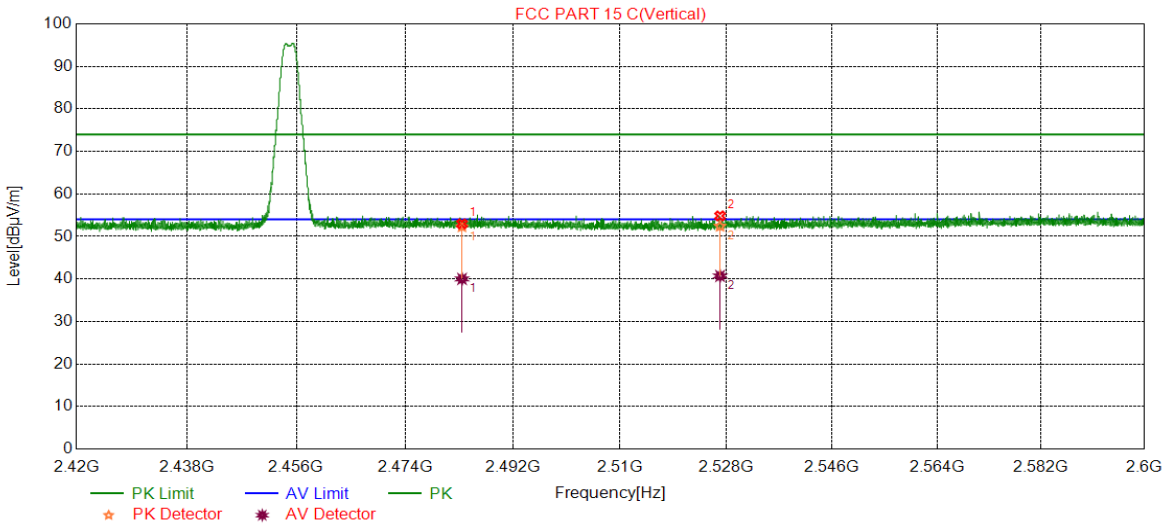
RESTRICTED BANDEDGE (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	52.14	74.00	-21.86	Peak
		40.26	54.00	-13.74	Average
2	2572.9433	52.70	74.00	-21.30	Peak
		39.89	54.00	-14.11	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10 Hz.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

RESTRICTED BANDEDGE (HIGH CHANNEL, VERTICAL)

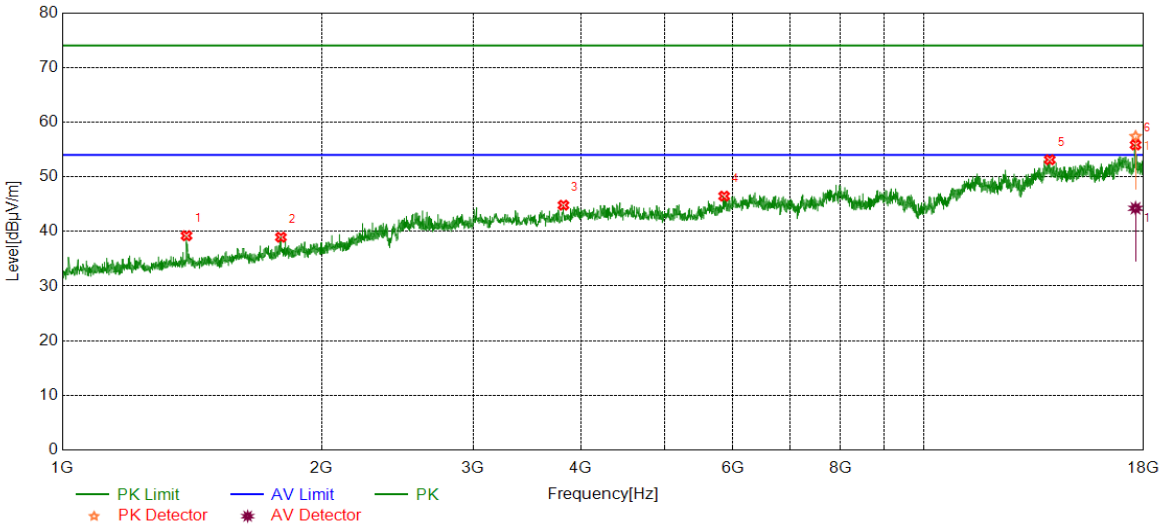


No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	2483.5000	52.28	74.00	-21.72	Peak
		40.01	54.00	-13.99	Average
2	2526.9127	52.39	74.00	-21.61	Peak
		40.70	54.00	-13.30	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10 Hz.
4. Only the worst case emission was recorded, if it complies with the limit, the other emissions deemed to comply with the limit.

9.2. SPURIOUS EMISSIONS (1~18GHz)

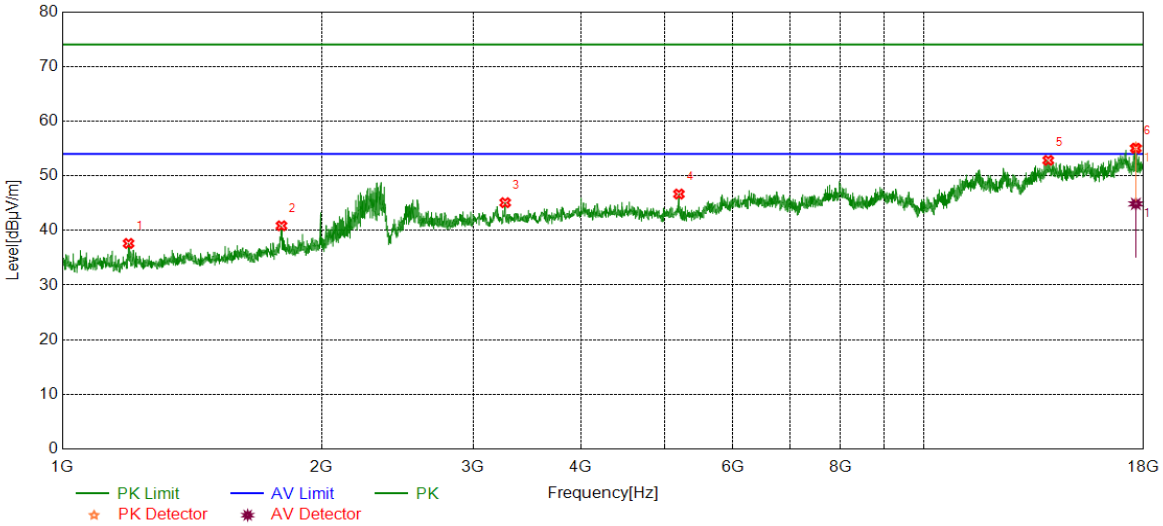
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1394.1314	39.21	74.00	-34.79	--	--	Peak
2	1794.2648	38.94	74.00	-35.06	--	--	Peak
3	3817.6363	44.80	74.00	-29.20	--	--	Peak
4	5865.4776	46.46	74.00	-27.54	--	--	Peak
5	14006.8345	53.12	74.00	-20.88	--	--	Peak
6	17617.4362	57.39	74.00	-16.61	--	--	Peak
		44.24	--	--	54.00	-9.76	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10Hz.
4. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

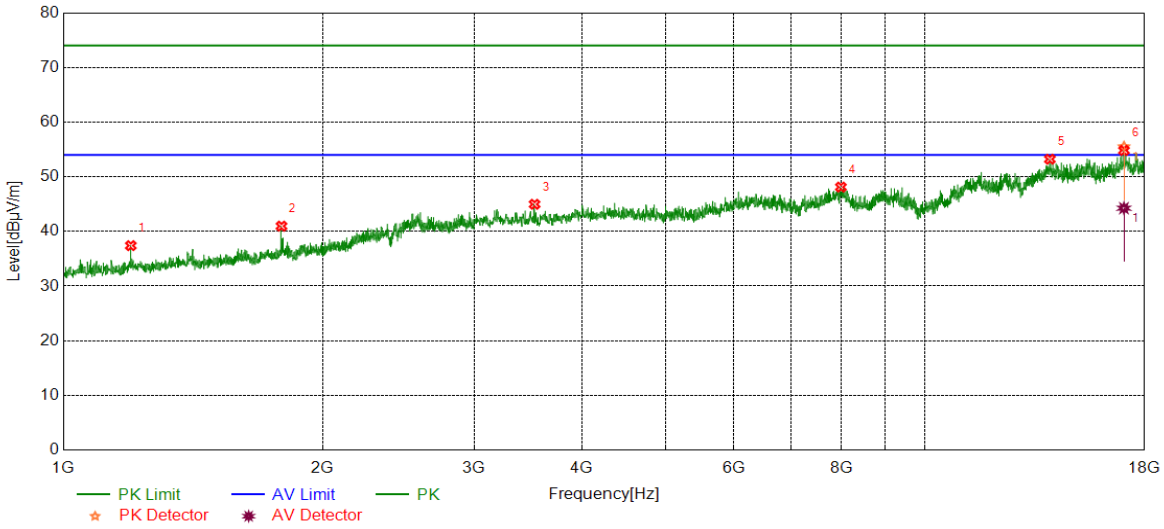
HARMONICS AND SPURIOUS EMISSIONS (LOW CHANNEL, VERTICAL)



No.	Frequency	Result	Limit (Peak)	Margin (Peak)	Limit (Ave)	Margin (Ave)	Remark
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV/m)	(dB)	
1	1194.0647	37.62	74.00	-36.38	--	--	Peak
2	1796.9323	40.85	74.00	-33.15	--	--	Peak
3	3267.5446	45.08	74.00	-28.92	--	--	Peak
4	5197.8663	46.66	74.00	-27.34	--	--	Peak
5	13949.3249	52.82	74.00	-21.18	--	--	Peak
6	17629.9383	55.10	74.00	-18.90	--	--	Peak
		44.86	--	--	54.00	-9.14	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10Hz.
4. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

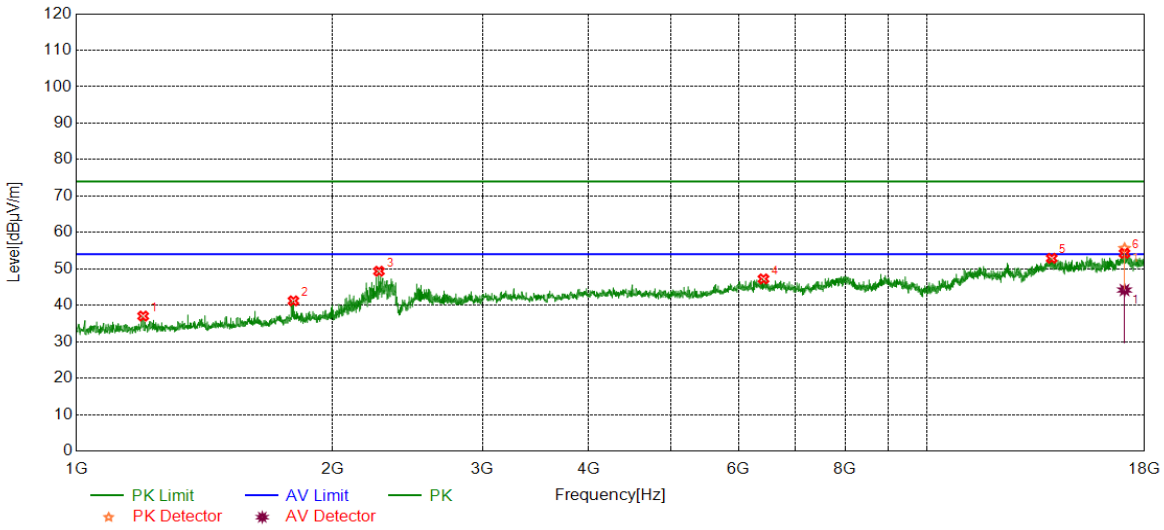
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1198.0660	37.40	74.00	-36.60	--	--	Peak
2	1792.2641	40.97	74.00	-33.03	--	--	Peak
3	3525.0875	44.97	74.00	-29.03	--	--	Peak
4	7993.3322	48.12	74.00	-25.88	--	--	Peak
5	13974.3291	53.22	74.00	-20.78	--	--	Peak
6	17032.3387	55.48	74.00	-18.52	--	--	Peak
		44.25	--	--	54.00	-9.75	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10Hz.
4. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

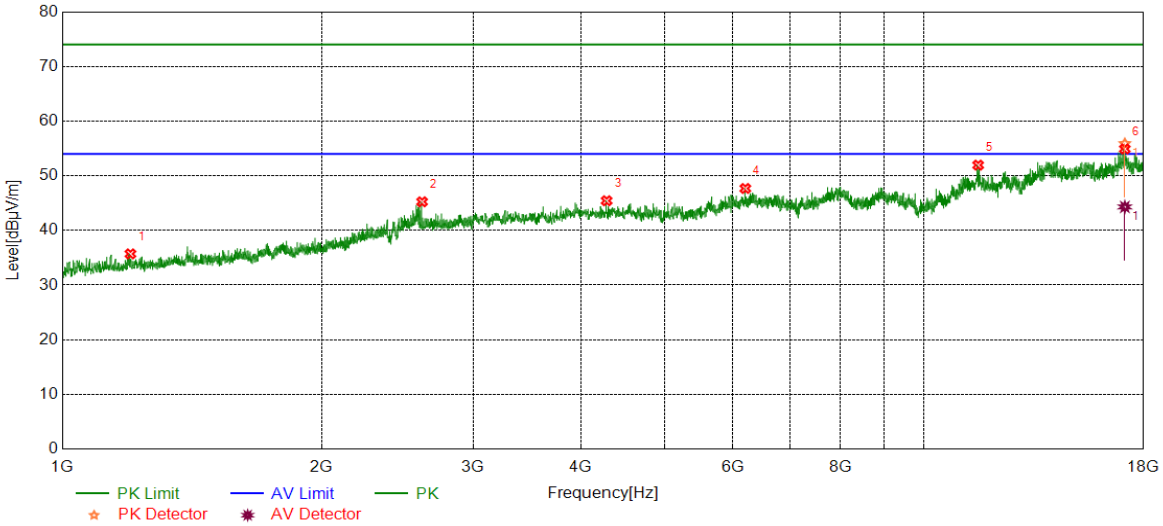
HARMONICS AND SPURIOUS EMISSIONS (MID CHANNEL, VERTICAL)



No.	Frequency	Result	Limit (Peak)	Margin (Peak)	Limit (Ave)	Margin (Ave)	Remark
	(MHz)	(dBuV/m)	(dBuV/m)	(dB)	(dBuV/m)	(dB)	
1	1198.0660	37.04	74.00	-36.96	--	--	Peak
2	1798.9330	41.22	74.00	-32.78	--	--	Peak
3	2267.7559	49.35	74.00	-24.65	--	--	Peak
4	6418.0697	47.24	74.00	-26.76	--	--	Peak
5	13999.3332	52.90	74.00	-21.10	--	--	Peak
6	17047.3412	55.62	74.00	-18.38	--	--	Peak
		44.19	--	--	54.00	-9.81	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10Hz.
4. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

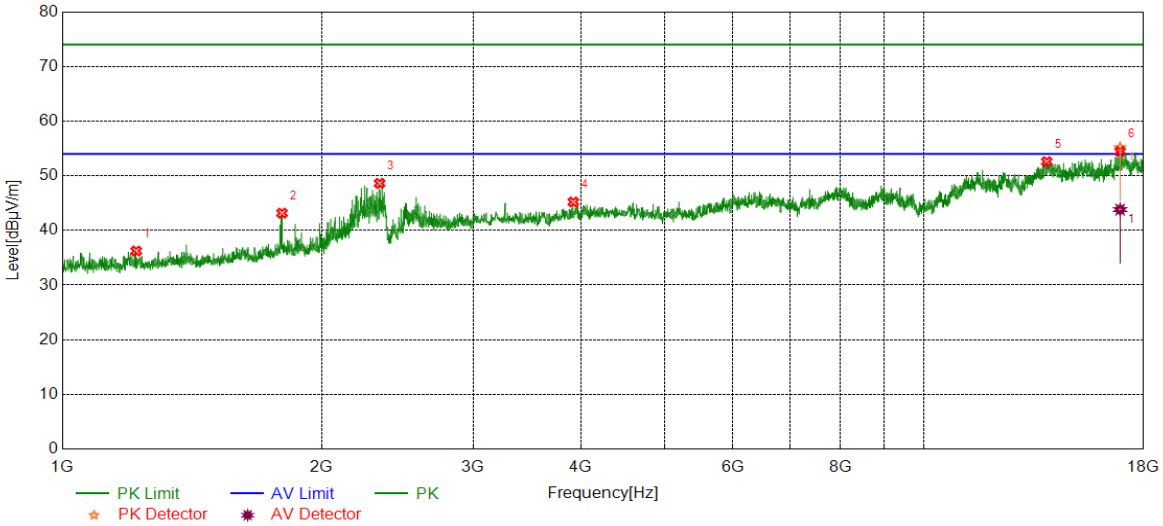
HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1200.0667	35.71	74.00	-38.29	--	--	Peak
2	2616.5388	45.24	74.00	-28.76	--	--	Peak
3	4285.2142	45.43	74.00	-28.57	--	--	Peak
4	6208.0347	47.68	74.00	-26.32	--	--	Peak
5	11566.4277	51.95	74.00	-22.05	--	--	Peak
6	17117.3529	55.88	74.00	-18.12	--	--	Peak
		44.30	--	--	54.00	-9.70	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10Hz.
4. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

HARMONICS AND SPURIOUS EMISSIONS (HIGH CHANNEL, VERTICAL)

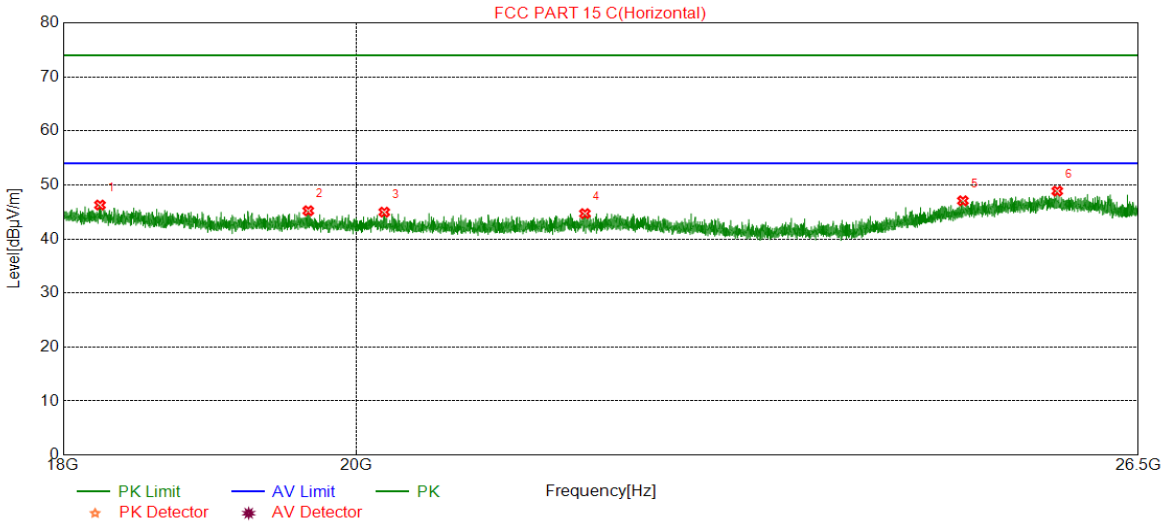


No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	1218.7396	36.23	74.00	-37.77	--	--	Peak
2	1799.5999	43.16	74.00	-30.84	--	--	Peak
3	2335.7786	48.62	74.00	-25.38	--	--	Peak
4	3920.1534	45.20	74.00	-28.80	--	--	Peak
5	13894.3157	52.59	74.00	-21.41	--	--	Peak
6	16902.3171	55.14	74.00	-18.86	--	--	Peak
		43.81	--	--	54.00	-10.19	Average

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. AVG: VBW=10Hz.
4. Filter losses were only considered in then spurious frequency bands and the authorized Band was not corrected for BRF losses.
5. Proper operation of the transmitter prior to adding the filter to the measurement chain.

9.4. SPURIOUS EMISSIONS 18G ~ 26GHz

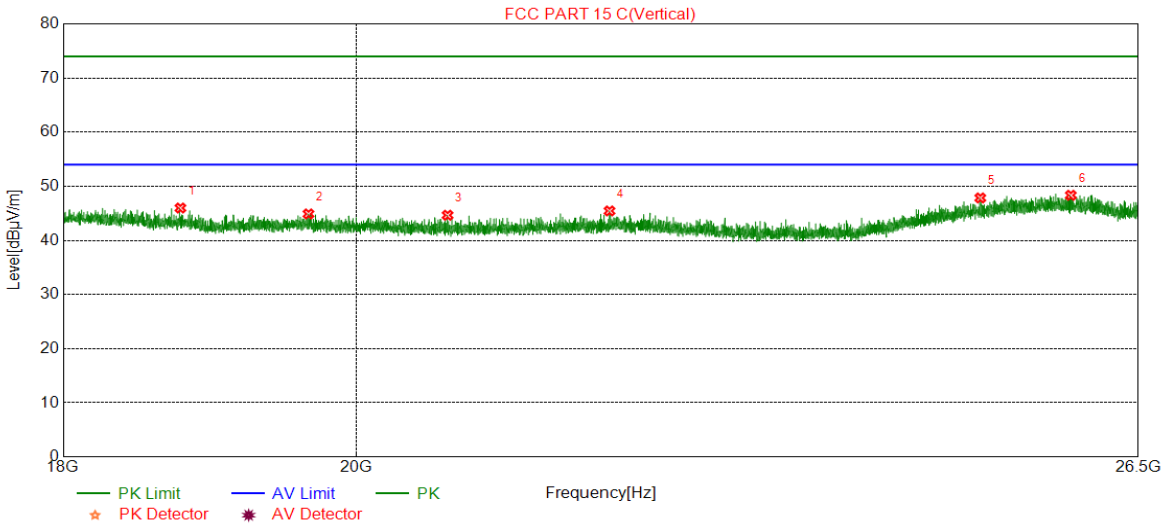
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	18239.7240	46.27	74.00	-27.73	54.00	-7.73	peak
2	19659.3659	45.21	74.00	-28.79	54.00	-8.79	peak
3	20204.2704	44.96	74.00	-29.04	54.00	-9.04	peak
4	21717.4217	44.69	74.00	-29.31	54.00	-9.31	peak
5	24881.4381	47.06	74.00	-26.94	54.00	-6.94	peak
6	25740.8741	48.86	74.00	-25.14	54.00	-5.14	peak

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Peak: Peak detector.
4. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



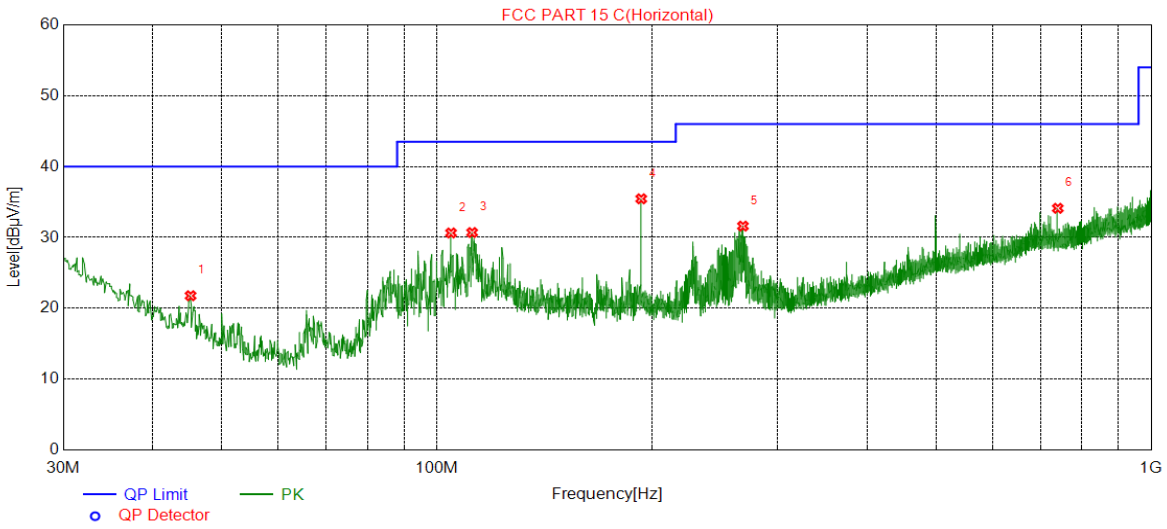
No.	Frequency (MHz)	Result (dBuV/m)	Limit (Peak) (dBuV/m)	Margin (Peak) (dB)	Limit (Ave) (dBuV/m)	Margin (Ave) (dB)	Remark
1	18775.2775	45.98	74.00	-28.02	54.00	-8.02	peak
2	19661.0661	44.89	74.00	-29.11	54.00	-9.11	peak
3	20670.1170	44.65	74.00	-29.35	54.00	-9.35	peak
4	21910.3910	45.44	74.00	-28.56	54.00	-8.56	peak
5	25037.8538	47.84	74.00	-26.16	54.00	-6.16	peak
6	25866.6867	48.33	74.00	-25.67	54.00	-5.67	peak

Note: 1. If Peak Result complies with AV limit, AV Result is deemed to comply with AV limit.
2. Test setup: RBW: 1 MHz, VBW: 3 MHz, Sweep time: auto.
3. Peak: Peak detector.
4. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Note: All test mode has been tested, only the worst data record in the report

9.5. SPURIOUS EMISSIONS 30M ~ 1 GHz

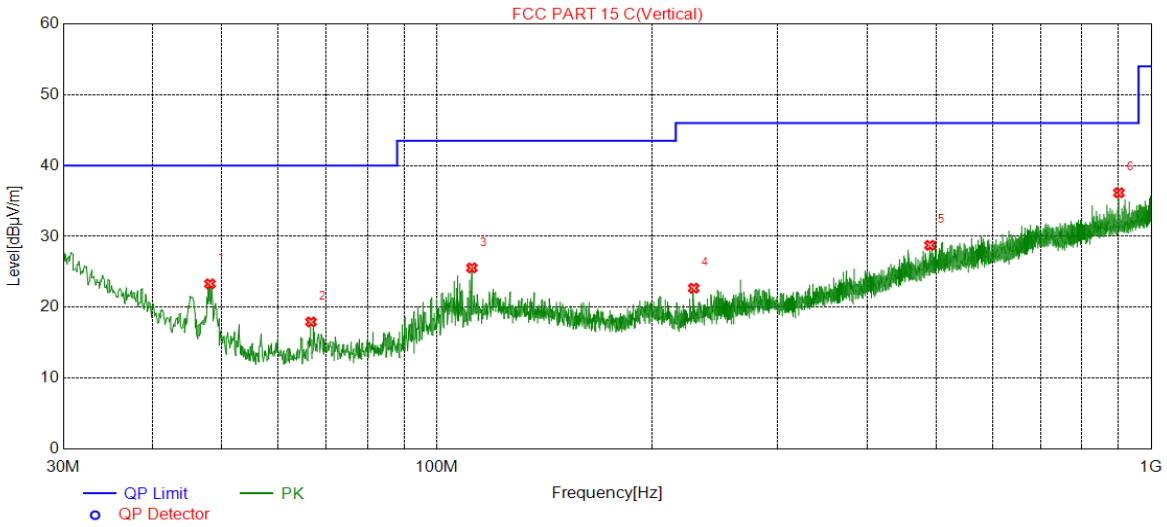
SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, HORIZONTAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	45.2305	22.26	40.00	-17.74	QP
2	104.6975	30.23	43.50	-13.27	QP
3	193.2673	33.47	43.50	-10.03	QP
4	228.8699	30.34	46.00	-15.66	QP
5	264.8605	31.27	46.00	-14.73	QP
6	920.0640	37.09	46.00	-8.91	QP

Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION, VERTICAL)



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	48.1408	23.31	40.00	-16.69	QP
2	66.6697	17.93	40.00	-22.07	QP
3	111.9732	25.56	43.50	-17.94	QP
4	228.8699	22.70	46.00	-23.30	QP
5	490.2140	28.75	46.00	-17.25	QP
6	901.1471	36.16	46.00	-9.84	QP

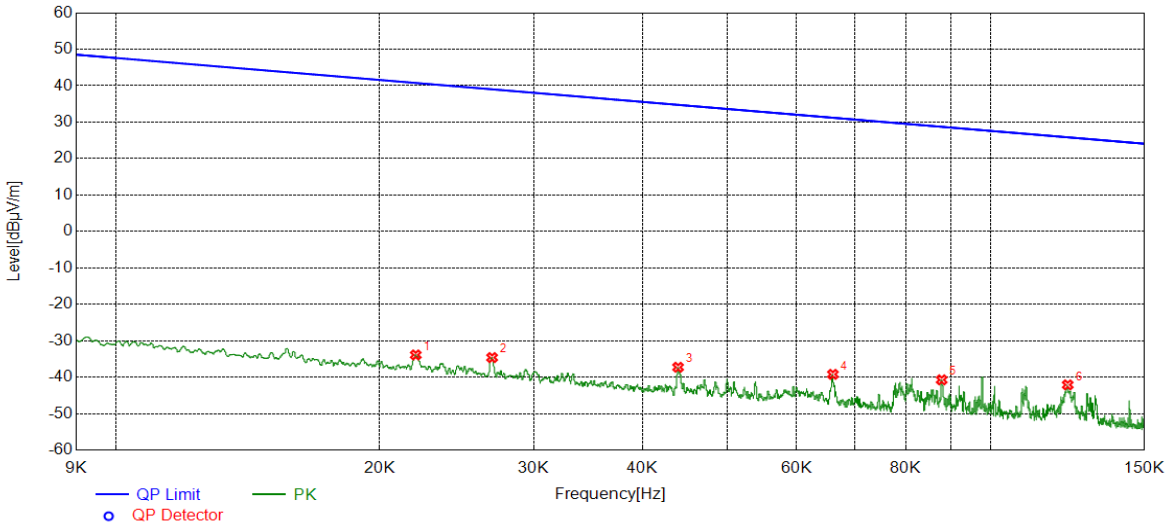
Note: 1. If Peak Result complies with QP limit, QP Result is deemed to comply with QP limit.
2. Test setup: RBW: 120 kHz, VBW: 300 kHz, Sweep time: auto.
3. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Note: All test mode has been tested, only the worst data record in the report

9.6. SPURIOUS EMISSIONS BELOW 30M

SPURIOUS EMISSIONS (MID CHANNEL, WORST-CASE CONFIGURATION)

Channel	Frequency Range	Verdict
MCH	9KHz~150KHz	PASS

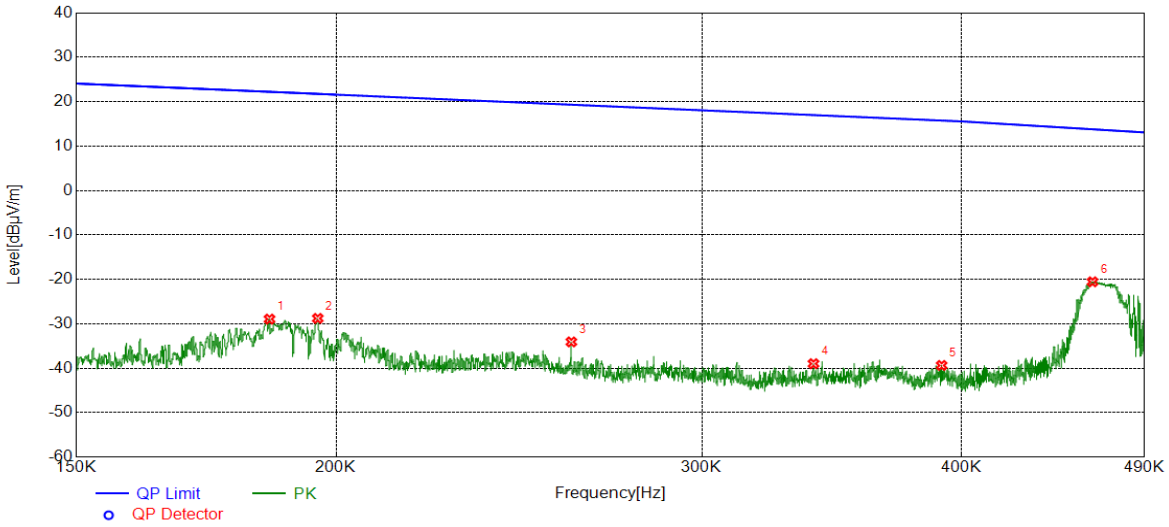


No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.0220	-33.90	40.75	-74.65	Peak
2	0.0269	-34.62	39.00	-73.62	Peak
3	0.0439	-37.28	34.75	-72.03	Peak
4	0.0660	-39.23	31.21	-70.44	Peak
5	0.0879	-40.73	28.72	-69.45	Peak
6	0.1225	-42.11	25.84	-67.95	Peak

Note:

1. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
2. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

Channel	Frequency Range	Verdict
MCH	150KHz~490KHz	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.1858	-28.94	22.22	-51.16	Peak
2	0.1960	-28.78	21.76	-50.54	Peak
3	0.2596	-34.07	19.31	-53.38	Peak
4	0.3395	-38.98	16.98	-55.96	Peak
5	0.3913	-39.37	15.75	-55.12	Peak
6	0.4625	-20.55	13.79	-34.34	Peak

Note:

1. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
2. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

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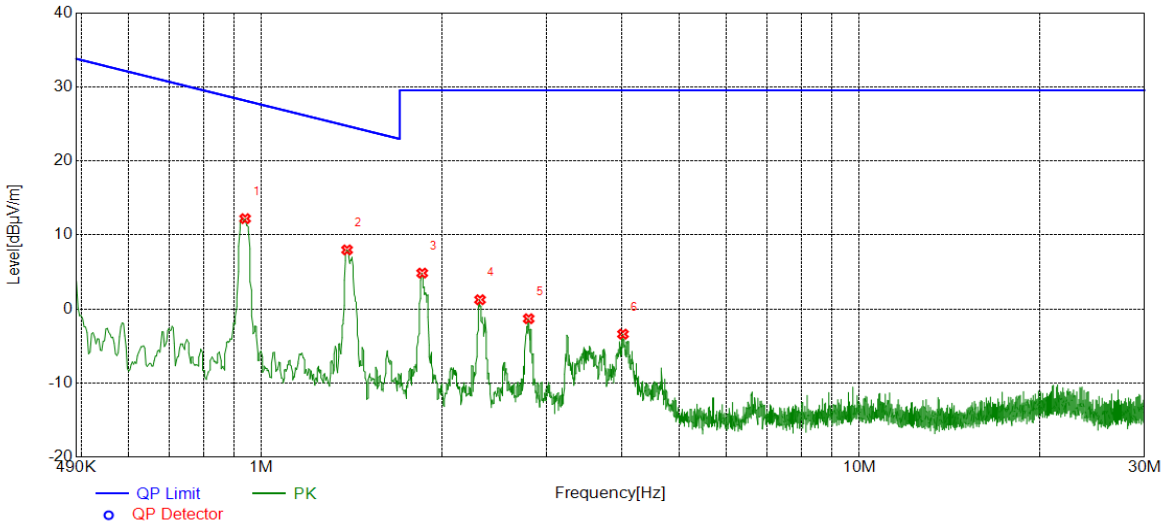
Channel	Frequency Range	Verdict
MCH	490KHz~30MHz	PASS



No.	Frequency (MHz)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark
1	0.9386	12.20	28.15	-15.95	Peak
2	1.3901	7.98	24.74	-16.76	Peak
3	1.8565	4.85	29.54	-24.69	Peak
4	2.3198	1.25	29.54	-28.29	Peak
5	2.7979	-1.31	29.54	-30.85	Peak
6	4.0227	-3.39	29.54	-32.93	Peak

Note:

1. If Peak Result complies with AV and QP limit, AV and QP Result are deemed to comply with AV limit.
2. Pre-testing all test modes and all test channels, but only data of the worst case is shown in this test report.

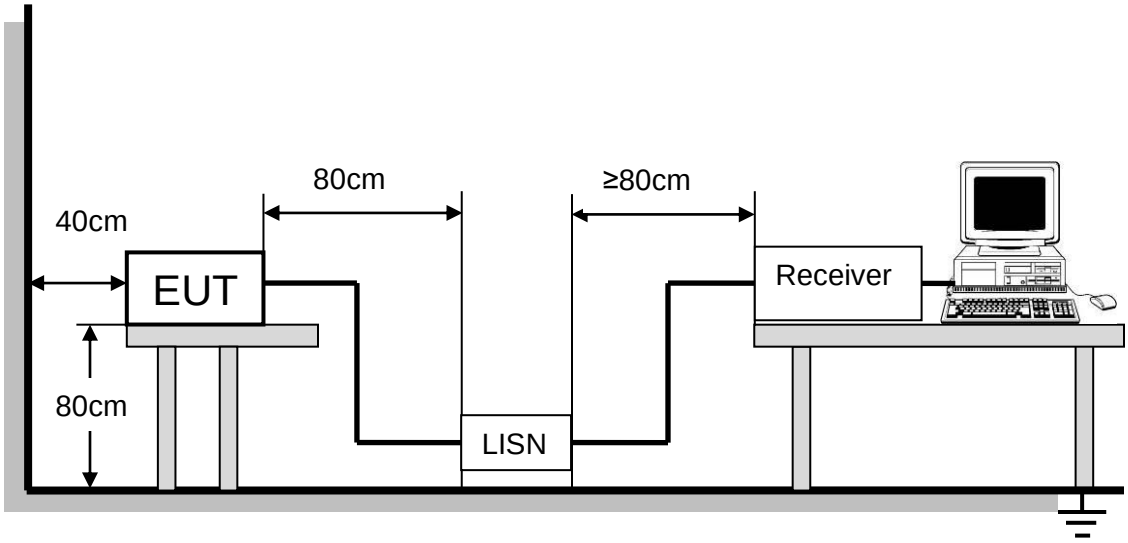
10. AC POWER LINE CONDUCTED EMISSIONS

LIMITS

Please refer to CFR 47 FCC §15.207 (a) and ISED RSS-Gen Clause 8.8

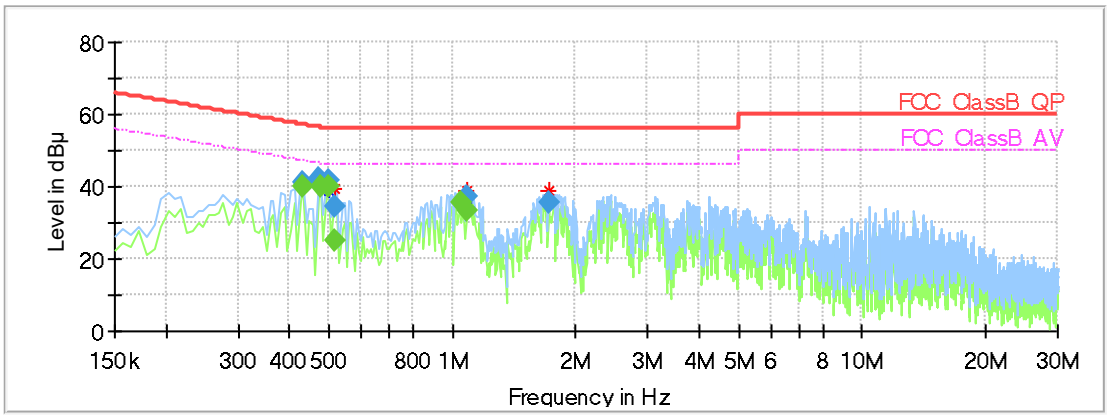
FREQUENCY (MHz)	Class B (dBuV)	
	Quasi-peak	Average
0.15 -0.5	66 - 56 *	56 - 46 *
0.50 -5.0	56.00	46.00
5.0 -30.0	60.00	50.00

TEST SETUP AND PROCEDURE



The EUT is put on a table of non-conducting material that is 80cm high. The vertical conducting wall of shielding is located 40cm to the rear of the EUT. The power line of the EUT is connected to the AC mains through a Artificial Mains Network (A.M.N.). A EMI Measurement Receiver (R&S Test Receiver ESR3) is used to test the emissions from both sides of AC line. According to the requirements in Section 6.2 of ANSI C63.10-2003.Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and average detector mode. The bandwidth of EMI test receiver is set at 9kHz.
The arrangement of the equipment is installed to meet the standards and operating in a manner, which tends to maximize its emission characteristics in a normal application.

LINE N TEST RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



Final_Result

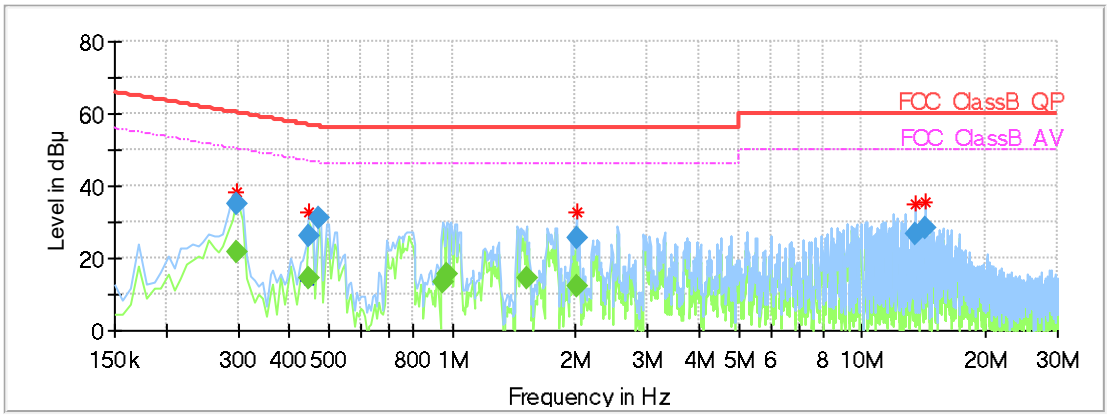
Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.433575	---	39.73	47.18	7.45	1000.0	9.000	N	OFF	9.6
0.433575	41.32	---	57.18	15.87	1000.0	9.000	N	OFF	9.6
0.470888	42.35	---	56.50	14.15	1000.0	9.000	N	OFF	9.6
0.478350	---	40.12	46.37	6.24	1000.0	9.000	N	OFF	9.6
0.500738	---	39.87	46.00	6.13	1000.0	9.000	N	OFF	9.6
0.500738	41.78	---	56.00	14.22	1000.0	9.000	N	OFF	9.6
0.515663	34.35	---	56.00	21.65	1000.0	9.000	N	OFF	9.6
0.515663	---	25.20	46.00	20.80	1000.0	9.000	N	OFF	9.6
1.045500	---	35.46	46.00	10.54	1000.0	9.000	N	OFF	9.6
1.090275	37.45	---	56.00	18.55	1000.0	9.000	N	OFF	9.6
1.090275	---	33.48	46.00	12.52	1000.0	9.000	N	OFF	9.6
1.724588	35.58	---	56.00	20.42	1000.0	9.000	N	OFF	9.7

(continuation of the "Final_Result" table from column 15 ...)

TEST RESULTS (WORST-CASE CONFIGURATION)

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

LINE L TEST RESULTS (MID CHANNEL, WORST-CASE CONFIGURATION)



Final_Result

Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.299250	---	21.52	50.26	28.74	1000.0	9.000	L1	OFF	9.6
0.299250	34.83	---	60.26	25.43	1000.0	9.000	L1	OFF	9.6
0.448500	---	14.43	46.90	32.47	1000.0	9.000	L1	OFF	9.6
0.448500	26.25	---	56.90	30.65	1000.0	9.000	L1	OFF	9.6
0.470888	31.32	---	56.50	25.18	1000.0	9.000	L1	OFF	9.6
0.948488	---	13.61	46.00	32.39	1000.0	9.000	L1	OFF	9.6
0.970875	---	15.45	46.00	30.55	1000.0	9.000	L1	OFF	9.6
1.515638	---	14.49	46.00	31.51	1000.0	9.000	L1	OFF	9.7
2.008163	25.49	---	56.00	30.51	1000.0	9.000	L1	OFF	9.7
2.008163	---	12.10	46.00	33.90	1000.0	9.000	L1	OFF	9.7
13.485488	26.73	---	60.00	33.27	1000.0	9.000	L1	OFF	9.9
14.231738	28.41	---	60.00	31.59	1000.0	9.000	L1	OFF	9.9

(continuation of the "Final_Result" table from column 15 ...)

Note: 1. Result = Reading +Correct Factor.
2. If QP Result complies with AV limit, AV Result is deemed to comply with AV limit.
3. Test setup: RBW: 200 Hz (9 kHz—150 kHz), 9 kHz (150 kHz—30 MHz).
4. Step size: 80Hz (0.009MHz-0.15MHz), 4 kHz (0.15MHz-30MHz), Scan time: auto.

Note: All test mode has been tested, only the worst data record in the report

11. ANTENNA REQUIREMENTS

Applicable requirements

Please refer to FCC §15.203
An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section. The manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.

Please refer to FCC §15.247(b)(4)
The conducted output power limit specified in paragraph (b) of this section is based on the use of antennas with directional gains that do not exceed 6 dBi. Except as shown in paragraph (c) of this section, if transmitting antennas of directional gain greater than 6 dBi are used, the conducted output power from the intentional radiator shall be reduced below the stated values in paragraphs (b)(1), (b)(2), and (b)(3) of this section, as appropriate, by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

RESULTS

Complies

END OF REPORT