# **RF Test Report**

Applicant	:	Superior Communications DBA PureGear
Product Type	:	PURECAM
Trade Name	:	PureGear
Model Number	:	07614PG
Test Specification	:	FCC 47 CFR PART 15 SUBPART C ANSI C63.10:2013
Receive Date	:	Jun. 27, 2018
Test Period	:	Jun. 29, ~ Jul. 30, 2018
Issue Date	:	Aug. 02, 2018

## Issue by

A Test Lab Techno Corp. No. 140-1, Changan Street, Bade District, Taoyuan City 33465, Taiwan (R.O.C) Tel : +886-3-2710188 / Fax : +886-3-2710190



<u>Taiwan Accreditation Foundation accreditation number</u>: 1330 Test Firm MRA designation number: TW0010

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## **Revision History**

Rev.	Issue Date	Revisions Revised By	
00	Aug. 02, 2018	Initial Issue	Janet Chao





# Verification of Compliance

Issued Date: Aug. 02, 2018

Applicant	:	Superior Communications DBA PureGear
Product Type	:	PURECAM
Trade Name	:	PureGear
Model Number	:	07614PG
FCC ID	:	2AIIF-07614PG
EUT Rated Voltage	:	DC 5V
Test Voltage	:	120 Vac / 60 Hz
Applicable Standard	:	FCC 47 CFR PART 15 SUBPART C ANSI C63.10:2013
Test Result	:	Complied
Performing Lab.	:	A Test Lab Techno Corp. No. 140-1, Changan Street, Bade District, Taoyuan City 33465, Taiwan (R.O.C) Tel : +886-3-2710188 / Fax : +886-3-2710190

A Test Lab Techno Corp. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by A Test Lab Techno Corp. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

: Jet Lu Reviewed By : Eric Ou lang (Jet Lu) (Testing Engineer) (Eric Ou Yang) Approved By (Manager)



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## **1** General Information

### 1.1 Summary of Test Result

Standard	Item	Result	Remark
15.207	AC Power Conducted Emission	PASS	
15.247(d)	Transmitter Radiated Emissions	PASS	
15.247(b)(3)	Max. Output Power	PASS	
15.247(a)(2)	6dB RF Bandwidth	N/A	Note
15.247(e)	Maximum Power Spectral Density	N/A	Note
15.247(d)	Out of Band Conducted Spurious Emission	N/A	Note
15.203	Antenna Requirement	PASS	

The test results of this report relate only to the tested sample(s) identified in this report. Manufacturer or whom it may concern should recognize the pass or fail of the test result.

Note: The product adds a heat sink and a car charger. The layout of module and the appearance of the product are partly changed. Besides, the location of the antenna and antenna gain for BT/LE/WLAN, the module of camera and the software version are changed to do Class II Permissive Change, so it is only needed to be tested for AC Power Line Conducted Emission Measurement, Maximum Conducted Output Power Measurement and Transmitter Radiated Emissions Measurement.

### **1.2 Measurement Uncertainty**

Test Item	Frequency Range	Uncertainty (dB)
Conducted Emission	9kHz ~ 150KHz	2.7
Conducted Emission	150kHz ~ 30MHz	2.7
	9kHz ~ 30MHz	1.7
	30MHz ~ 1000MHz	5.7
Radiated Emission	1000MHz ~ 18000MHz	5.5
	18000MHz ~ 26500MHz	4.8
	26500MHz ~ 40000MHz	4.8
Conducted Output Power	Conducted Output Power +0.27 dB / -0.	
RF Bandwidth	4.96%	
Power Spectral Density	+0.71 dB / -0.77 dB	



## 2 EUT Description

Applicant	Superior Communications DBA PureGear 5082 4th Street Irwindale California USA, Irwindale, California, 91706, United States			
Manufacturer	Shenzhen Auto Range Tech Co., Limited 5/F, Bldg. A1, Atomic Power Industrial Park, Fuming, Guanlan, Shenzhen, Guangdong. P. R. China.			
Product Type	PURECAM			
Trade Name	PureGear			
Model No.	07614PG			
FCC ID	2AIIF-07614PG			
Class II Permissive Change	<ol> <li>change the BT/LE/WLAN/GPS antenna's location</li> <li>change the BT//LE/WLAN/GPS antenna's gain to 2.3dBi (the original is 2dBi, and the antenna type remains the same)</li> <li>add a heat sink, and the appearance changes accordingly</li> <li>change the camera module and the module's layout partly changed</li> <li>add an accessory: car charger</li> <li>software version changes to V8.0_000_20180808.</li> </ol>			
IMEI No.	35316305670667			
Frequency Range	2402 ~ 2480 MHz			
Modulation Type	GFSK			
Operate Temp. Range	-10 ~ +70 ℃			
	Туре	Max. Gain (dBi)		
Antenna information	Internal Antenna	2.3		
RF Output Power	0.00067 W			

#### EUT Modify Description :

Modify Description:

- Class II Permissive change for FCC ID:2AIIF-07614PG, compare to the original EUT, the changes are as below:
- 1. change the BT/LE/WLAN/GPS antenna's location
- 2. change the BT//LE/WLAN/GPS antenna's gain to 2.3dBi (the original is 2dBi, and the antenna type remains the same)
- 3. add a heat sink, and the appearance changes accordingly
- 4. change the camera module and the module's layout partly changed
- 5. add an accessory: car charger
- 6. software version changes to V8.0\_000\_20180808.

Above changes do not affect the EUT's RF function.

Verify power is smaller than the original case power.

Therefore, the product is only needed to be tested for AC Power Line Conducted Emission Measurement,

Maximum Conducted Output Power Measurement and Transmitter Radiated Emissions Measurement

Original Report : 1801FR15

Modify: 1807FR13



## 3 Test Methodology

### 3.1. Mode of Operation

Decision of Test ATL has verified the construction and function in typical operation. All the test modes were carried out

with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode	
Mode 1: Transmit mo	ode
Mode 2: Bluetooth LE	E Continuous TX mode

Software used to control the EUT for staying in continuous transmitting mode was programmed.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious

emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in TX mode only.

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

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

### 3.2. EUT Exercise Software

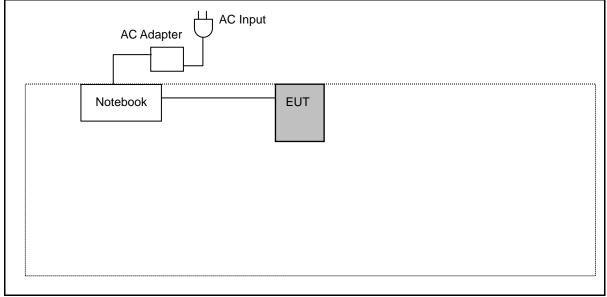
1	Setup the EUT shown on "Configuration of Test System Details."
2	Turn on the power of all equipment.
3	Turn on TX function
4	EUT run test program.

Meas	Measurement Software			
1	EZ-EMC Ver. ATL-03A1-1			
2	EZ-EMC Ver ATL-ITC-3A1-1			

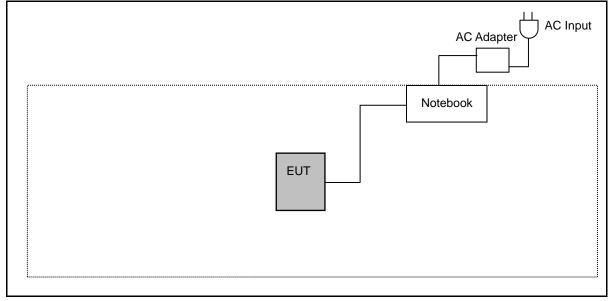


## 3.3. Configuration of Test System Details

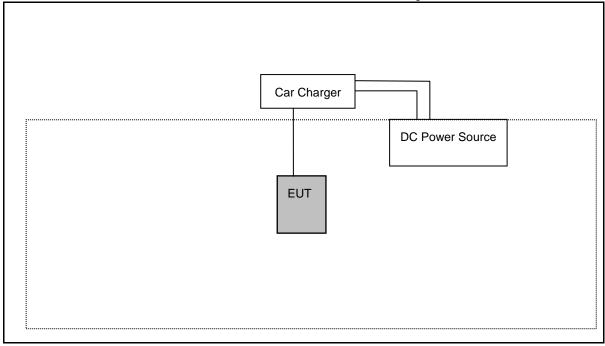
#### Conducted Emissions



Radiated Emission\_ EUT connects to the NB with USB cable







Radiated Emission\_ EUT connects to the DC Power Source with the car charger



## 3.4. Test Instruments

## For Conducted Emission

Test Period: Jun. 29, 2018

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
EMI Test Receiver	R&S	ESCI	101000	12/18/2017	1 year
LISN	R&S	ENV216	101040	04/11/2018	1 year
LISN	R&S	ENV216	101041	03/23/2018	1 year

#### For Radiated Emissions

Test Period: Jul. 01 ~ Jul. 30, 2018

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period			
Spectrum Analyzer (10Hz~44GHz)	Keysight	N9010A	MY52221312	01/15/2018	1 year			
Pre Amplifier (1~26.5GHz)	Agilent	8449B	3008A02237	10/16/2017	1 year			
Pre Amplifier (100KHz~1.3GHz)	Agilent	8447D	2944A11119	01/10/2018	1 year			
Broadband Antenna	Schwarzbeck	VULB9168	416	10/26/2017	1 year			
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/22/2018	1 year			
Horn Antenna (18~40GHz)	ETS	3116	86467	09/19/2017	1 year			
Loop Antenna	COM-POWER CORPORATION	AL-130	121014	03/13/2018	1 year			
RF Cable	EMCI	EMC104-N-N-6000	TE01-1	02/20/2018	1 year			
Microwave Cable	EMCI	EMC104-SM-SM-1 3000	170814	10/31/2017	1 year			
Microwave Cable	EMCI	EMC102-KM-KM-1 4000	151001	02/20/2018	1 year			

For Conducted

Test Period: Jul. 04, 2018

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Cal. Period
Power Sensor	Agilent	N1921A	MY45241957	12/07/2017	1 year
Power Meter	Agilent	N1911A	MY45101619	12/07/2017	1 year
Microwave Cable	EMCI	EMC102-SM-SM1500	001	11/22/2017	1 year



## 3.5. Test Site Environment

Items	Required (IEC 60068-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950



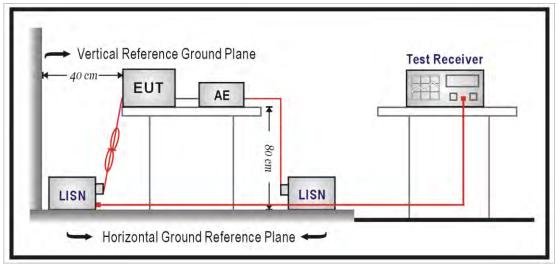
## 4 Measurement Procedure

## 4.1. AC Power Line Conducted Emission Measurement

Limit	

Frequency (MHz)	Quasi-peak	Average
0.15 - 0.5	66 to 56	56 to 46
0.50 - 5.0	56	46
5.0 - 30.0	60	50

Test Setup





#### Test Procedure

The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a  $50\Omega$  // 50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a  $50\Omega$  // 50uH coupling impedance with 50ohm termination.

Tabletop device shall be placed on a non-conducting platform, of nominal size 1 m by 1.5 m, raised 80 cm above the reference ground plane. The wall of screened room shall be located 40cm to the rear of the EUT. Other surfaces of tabletop or floor standing EUT shall be at least 80cm from any other ground conducting surface including one or more LISNs. For floor-standing device shall be placed under the EUT with a 12mm insulating material.

Conducted emissions were investigated over the frequency range from 0.15 MHz to 30 MHz using a resolution bandwidth of 9 kHz. The equipment under test (EUT) shall be meet the limits in section 4.1, as applicable, including the average limit and the quasi-peak limit when using respectively, an average detector and quasi-peak detector measured in accordance with the methods described of related standard. When all of peak value were complied with quasi-peak and average limit from 150kHz to 30MHz then quasi-peak and average measurement was unnecessary.

The AMN shall be placed 0,8 m from the boundary of the unit under test and bonded to a ground reference plane for AMNs mounted on top of the ground reference plane. This distance is between the closest points of the AMN and the EUT. All other units of the EUT and associated equipment shall be at least 0,8 m from the AMN. If the mains power cable is longer than 1m then the cable shall be folded back and forth at the centre of the lead to form a bundle no longer than 0.4m. All of interconnecting cables that hang closer than 40cm to the ground plane shall be folded back and forth in the center forming a bundle 30 cm to 40 cm long. All of EUT and AE shall be separate place more than 0.1m. All 50  $\Omega$  ports of the LISN shall be resistively terminated into 50  $\Omega$  loads when not connected to the measuring instrument.

If the reading of the measuring receiver shows fluctuations close to the limit, the reading shall be observed for at least 15 s at each measurement frequency; the higher reading shall be recorded with the exception of any brief isolated high reading which shall be ignored.



## 4.2. Transmitter Radiated Emissions Measurement

#### Limit

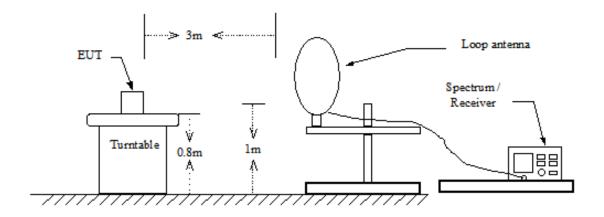
According to §15.209(a), except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency	Field Strength	Measurement Distance
(MHz)	(µV/m at meter)	(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
Above 960	500	3

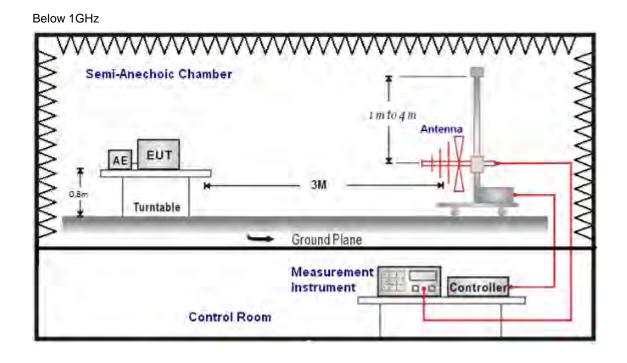
\*\* Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this Section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this Part, e.g., Sections 15.231 and 15.241.

#### Setup

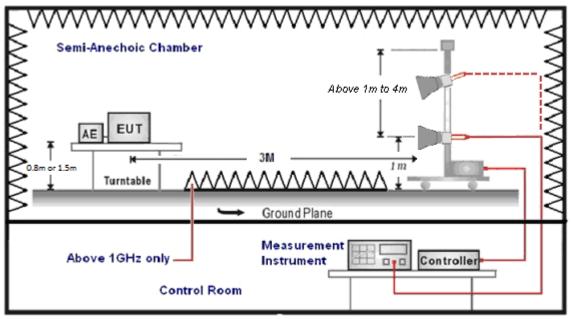
9kHz ~ 30MHz







Above 1GHz





#### Test Procedure

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 or 1.5 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 9 kHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements when Duty cycle >98% / 1/T for average measurements when Duty cycle <98%. A nonconductive material surrounded the EUT to supporting the EUT for standing on tree orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts pre meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro colts per meter (dBuV/m).



The actual field is intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

- (1) Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)
  - FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

- Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)
   The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:
  - (a) For fundamental frequency : Transmitter Output < +30dBm
  - (b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

Data of measurement within this frequency range without mark in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

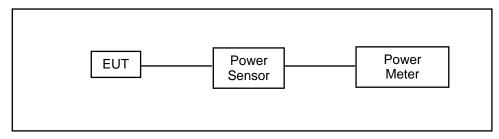


## 4.3. Maximum Conducted Output Power Measurement

#### Limit

For systems using digital modulation in the 2400-2483.5MHz, the limit for peak output power is 30dBm.

#### Test Setup



#### Test Procedure

The testing follows the Measurement Procedure of ANSI C63.10-2013 section 11.9.2.3 Method AVGPM.

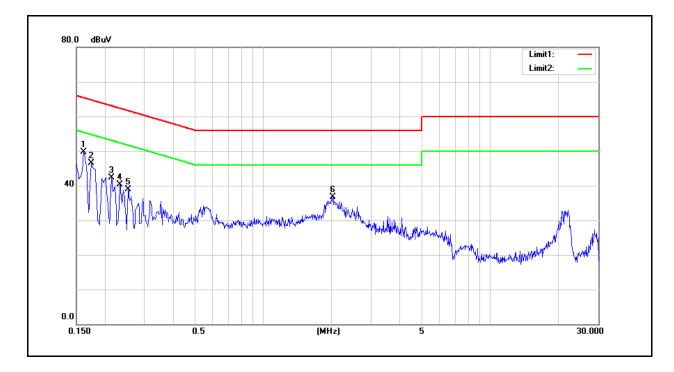
The tests below are run with the EUT's transmitter set at high power in TX mode. The EUT is needed to force selection of output power level and channel number. While testing, EUT was set to transmit continuously. Remove the Subjective device's antenna and connect the RF output port to power sensor.



## 5 Test Results

### Annex A. AC Power Line Conducted Emission

Standard:	FCC Part 15.247	Line:	L1
Test Mode:	Mode 1	Power:	AC 120V/60Hz
		Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Description:			

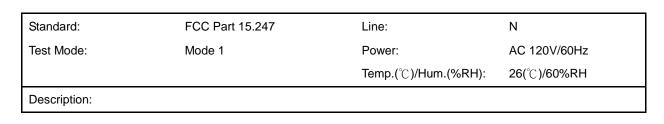


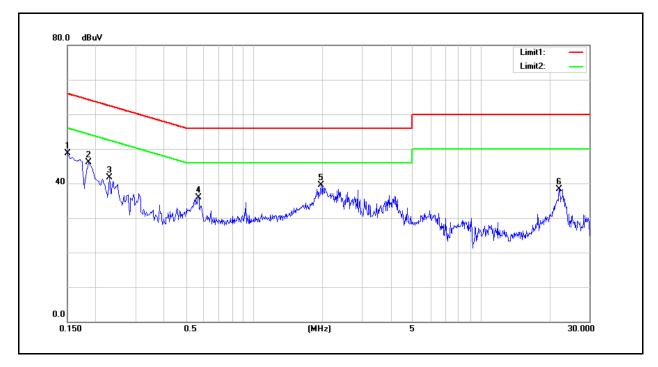
No.	Frequency	QP reading	AVG reading	Correction factor	QP result	AVG result	QP limit	AVG limit	QP margin	AVG margin	Remark
	(MHz)	(dBuV)	(dBuV)	(dB)	(dBuV)	(dBuV)	(dBuV)	(dBuV)	(dB)	(dB)	
1	0.1620	35.71	18.60	9.67	45.38	28.27	65.36	55.36	-19.98	-27.09	Pass
2	0.1740	33.39	16.40	9.67	43.06	26.07	64.77	54.77	-21.71	-28.70	Pass
3	0.2140	27.34	12.90	9.68	37.02	22.58	63.05	53.05	-26.03	-30.47	Pass
4	0.2340	25.50	13.37	9.68	35.18	23.05	62.31	52.31	-27.13	-29.26	Pass
5	0.2540	22.72	10.36	9.69	32.41	20.05	61.63	51.63	-29.22	-31.58	Pass
6	2.0260	22.87	15.00	9.74	32.61	24.74	56.00	46.00	-23.39	-21.26	Pass

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).







No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
		()	,		· /	. ,	,	· · · /	,	,	_
1	0.1500	37.17	15.97	9.68	46.85	25.65	66.00	56.00	-19.15	-30.35	Pass
2	0.1860	31.24	14.13	9.69	40.93	23.82	64.21	54.21	-23.28	-30.39	Pass
3	0.2300	25.55	12.21	9.69	35.24	21.90	62.45	52.45	-27.21	-30.55	Pass
4	0.5700	22.48	12.73	9.70	32.18	22.43	56.00	46.00	-23.82	-23.57	Pass
5	1.9780	24.61	18.06	9.77	34.38	27.83	56.00	46.00	-21.62	-18.17	Pass
6	22.1420	19.59	10.36	10.62	30.21	20.98	60.00	50.00	-29.79	-29.02	Pass

2. Correction factor (dB) = Cable loss (dB) + L.I.S.N. factor (dB).



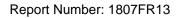
#### Below 1GHz

Standard:	FCC	Part 15.247	Test Dist	ance:	3m			
Test item:	Harm	nonic		Power:		AC 120V/	AC 120V/60Hz	
Test Mode:	Mode	e 1		Temp.(°C	)/Hum.(%RH)	<b>26(°</b> ℃)/60	%RH	
Description:	EUT	connects to NB with	th the USB ca	ble				
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V	
176.4700	42.97	-10.92	32.05	43.50	-11.45	peak	Н	
201.6900	47.52	-13.24	34.28	43.50	-9.22	peak	Н	
268.6200	43.21	-11.29	31.92	46.00	-14.08	peak	Н	
481.0500	39.24	-5.17	34.07	46.00	-11.93	peak	Н	
715.7900	30.58	-1.51	29.07	46.00	-16.93	peak	Н	
854.5000	30.66	0.76	31.42	46.00	-14.58	peak	Н	
172.5900	43.67	-10.59	33.08	43.50	-10.42	peak	V	
201.6900	42.62	-13.24	29.38	43.50	-14.12	peak	V	
478.1400	36.92	-5.31	31.61	46.00	-14.39	peak	V	
687.6600	38.29	-2.04	36.25	46.00	-9.75	peak	V	
783.6900	34.71	0.17	34.88	46.00	-11.12	peak	V	
924.3400	28.97	2.12	31.09	46.00	-14.91	peak	V	

Note: 1. Result (dBuV) = Correction factor (dB) + Reading(dBuV).

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. No emission found between lowest internal used/generated frequencies to 30MHz (9 kHz~30MHz).



Standard:	FCC	Part 15.247		Test Distar	nce:	3m	
Test item:	Harmonic			Power:		AC 120V/	60Hz
Test Mode:	Mode	e 1		Temp.(℃)/	Hum.(%RH):	26(°C)/60⁰	%RH
Description:	EUT	connects to DC Pc	ower Source v	vith the car ch	arger		
Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
647.8900	35.80	-2.38	33.42	46.00	-12.58	peak	Н
696.3900	37.09	-1.99	35.10	46.00	-10.90	peak	Н
743.9200	37.72	-0.98	36.74	46.00	-9.26	peak	Н
792.4200	35.35	0.19	35.54	46.00	-10.46	peak	Н
839.9500	35.67	0.67	36.34	46.00	-9.66	peak	Н
935.9800	30.47	2.58	33.05	46.00	-12.95	peak	Н
30.9700	47.37	-11.62	35.75	40.00	-4.25	peak	V
81.4100	44.82	-14.77	30.05	40.00	-9.95	peak	V
110.5100	44.70	-14.35	30.35	43.50	-13.15	peak	V
792.4200	37.85	0.19	38.04	46.00	-7.96	peak	V
839.9500	35.09	0.67	35.76	46.00	-10.24	peak	V
935.9800	34.30	2.58	36.88	46.00	-9.12	peak	V

2. Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).

3. No emission found between lowest internal used/generated frequencies to 30MHz (9 kHz~30MHz).



#### Above 1GHz

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2402MHz	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		



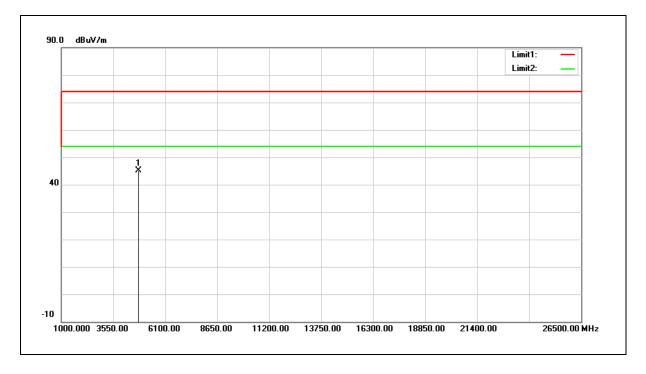
No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4804.000	48.92	-4.35	44.57	74.00	-29.43	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) - Pre-Amplifier gain (dB).



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2402MHz	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		

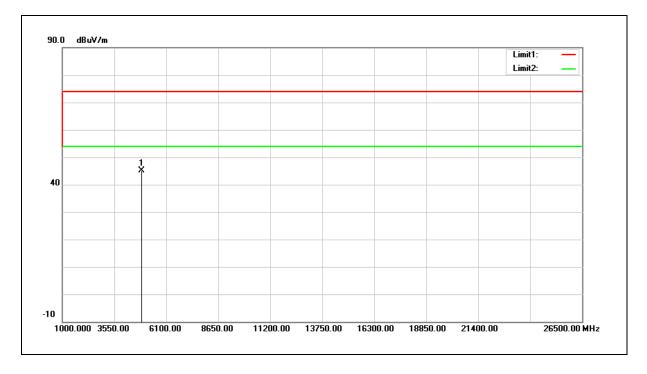


No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4804.000	49.53	-4.35	45.18	74.00	-28.82	peak

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2440MHz	Temp.(°C)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		

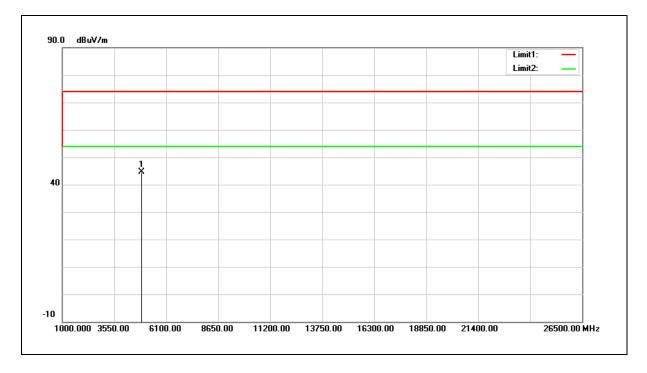


No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4880.000	49.42	-4.37	45.05	74.00	-28.95	peak

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2440MHz	Temp.(°C)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		

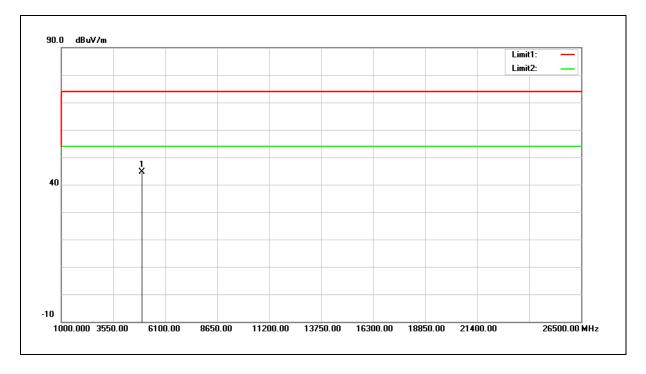


No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4880.000	48.94	-4.37	44.57	74.00	-29.43	peak

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2480MHz	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2		
Ant.Polar.:	Horizontal		

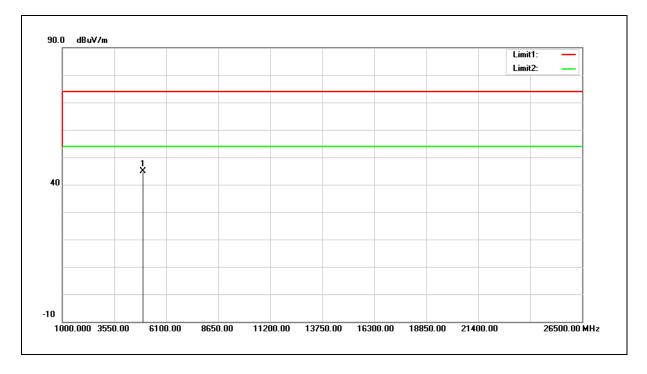


No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4960.000	49.01	-4.39	44.62	74.00	-29.38	peak

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Frequency:	2480MHz	Temp.(°C)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2		
Ant.Polar.:	Vertical		



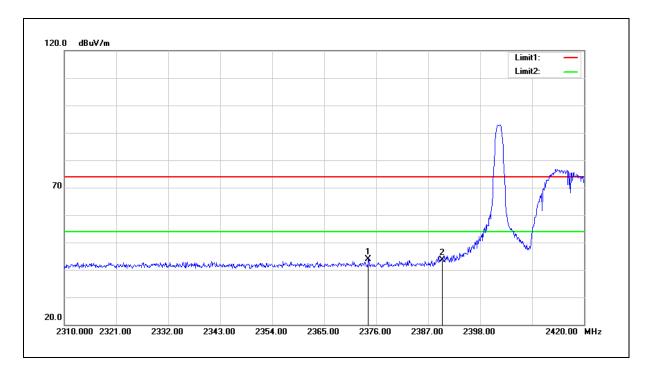
No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	4960.000	49.16	-4.39	44.77	74.00	-29.23	peak

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).



#### Band Edge

Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Mode:	Mode 2	Temp.(℃)/Hum.(%RH):	26(°C)/60%RH
Ant.Polar.:	Horizontal		
Description:			



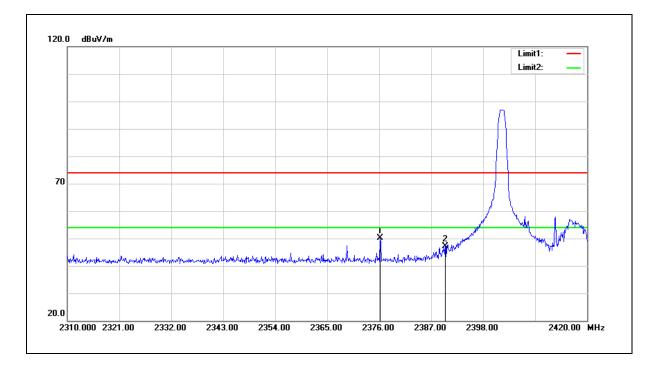
No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2374.350	53.65	-9.71	43.94	74.00	-30.06	peak
2	2390.000	53.14	-9.62	43.52	74.00	-30.48	peak

Note:1.Result (dBuV/m) = Correct Factor (dB/m) + Reading(dBuV).

 $\label{eq:2.2} 2. Correction factor (dB/m) = Antenna \ Factor (dB/m) + Cable \ loss (dB) - Pre-Amplifier \ gain \ (dB).$ 



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Mode:	Mode 2	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Ant.Polar.:	Vertical		
Description:			

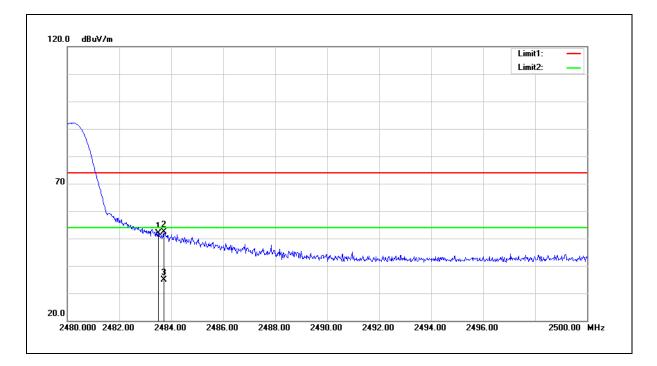


No	. Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2376.220	59.73	-9.70	50.03	74.00	-23.97	peak
2	2390.000	56.79	-9.62	47.17	74.00	-26.83	peak

 $\label{eq:2.2} 2. Correction \ factor \ (dB/m) = Antenna \ Factor \ (dB/m) + Cable \ loss \ (dB) - Pre-Amplifier \ gain \ (dB).$ 



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Mode:	Mode 2	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Ant.Polar.:	Horizontal		
Description:			

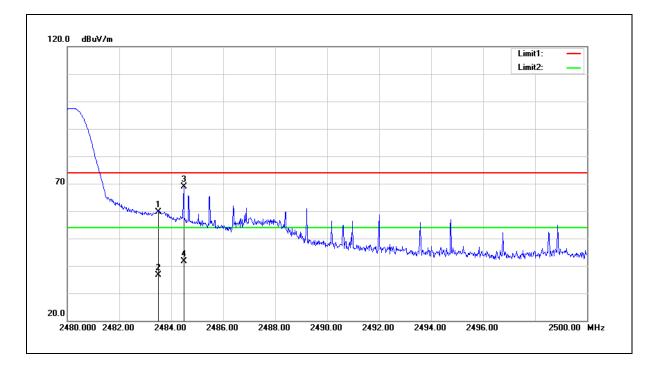


No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	61.07	-9.20	51.87	74.00	-22.13	peak
2	2483.720	61.56	-9.20	52.36	74.00	-21.64	peak
3	2483.720	44.04	-9.20	34.84	54.00	-19.16	AVG

2.Correction factor (dB/m) = Antenna Factor (dB/m) + Cable loss (dB) – Pre-Amplifier gain (dB).



Standard:	FCC Part 15.247	Test Distance:	3m
Test item:	Harmonic	Power:	AC 120V/60Hz
Mode:	Mode 2	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Ant.Polar.:	Vertical		
Description:			



No.	Frequency	Reading	Correct Factor	Result	Limit	Margin	Remark
	(MHz)	(dBuV)	(dB/m)	(dBuV/m)	(dBuV/m)	(dB)	
1	2483.500	68.93	-9.20	59.73	74.00	-14.27	peak
2	2483.500	45.95	-9.20	36.75	54.00	-17.25	AVG
3	2484.480	78.06	-9.20	68.86	74.00	-5.14	peak
4	2484.480	50.94	-9.20	41.74	54.00	-12.26	AVG

 $\label{eq:2.2} 2. Correction \ factor \ (dB/m) = Antenna \ Factor \ (dB/m) + Cable \ loss \ (dB) - Pre-Amplifier \ gain \ (dB).$ 



## Annex C. Conducted Test Results

#### **Maximum Conducted Output Power Measurement**

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Frequency (MHz)	Orig	ginal	Ve	Limit (dBm)	
(101112)	(dBm)	(VV)	(dBm)	(W)	(ubm)
2402	-1.73	0.00067	-3.97	0.00040	< 30
2440	-2.28	0.00059	-3.81	0.00042	< 30
2480	-3.13	0.00049	-3.76	0.00042	< 30

Note: The relevant measured result has the offset with cable loss already.