RADIO TEST REPORT
MIC Public Notice 88

Test report
On Behalf of
JAPANGALS Co., Ltd.
For
スレンダーパッド２PRO（ボディ・ヒップ用）
Model No.: HA-SP02-PRBH

Prepared for :	**JAPANGALS Co., Ltd.** **Kaihatsu Bldg. 4F, 11-10 Marunouchi, Takamatsu-Shi, Kagawa, Japan 760-0033**
Prepared By :	**Shenzhen HUAK Testing Technology Co., Ltd.** **1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park,** **Heping Community, Fuhai Street, Bao'an District, Shenzhen, China**
Date of Test:	**Feb. 25, 2019 ~ Mar. 04, 2019**
Date of Report:	**Mar. 04, 2019**
Report Number:	**HK1903040360-E**

TEST RESULT CERTIFICATION

Applicant's name	:	JAPANGALS Co., Ltd.
Address	:	Kaihatsu Bldg. 4F, 11-10 Marunouchi, Takamatsu-Shi, Kagawa, Japan 760-0033
Manufacture's Name	:	Gymmax Technology (Shenzhen) Co., Ltd.
Address	:	Factory East 5F, A2 Bluding, Huimingsheng DingFeng Technology Park, Fuhai Street ,Fuyong Town, Baoan District, Shenzhen 518103, P.R. China

Product description

Trade Mark:		TBC
Product name	:	スレンダーパッド２PRO（ボディ・ヒップ用）
Model and/or type reference	:	HA-SP02-PRBH
Standards	:	MIC Public Notice 88:2004, annex 1 and annex 43 ARIB STD-T66 V3.7

Date of Test	:	
Date (s) of performance of tests	:	Feb. 25, 2019 ~ Mar. 04, 2019
Date of Issue	:	Mar. 04, 2019
Test Result	:	**Pass**

Prepared by: Gary Qian

Project Engineer

Reviewed by: Leo Zhang

Project Supervisor

Approved by: James Zhou

Technical Director

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1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

Part	Rule Section	Description of Test	Result
4.1	3.2	Frequency Error	Complies
4.3	3.2	Occupied Bandwidth (99%) and Spread-spectrum Bandwidth (90%)	Complies
4.4	3.2	Unwanted Emission Intensity	Complies
4.2	3.2	Antenna Power Error	Complies
4.5	3.2	Limitation of Collateral Emission of Receiver	Complies
4.6	3.2	Transmission Antenna Gain (EIRP Antenna Power)	N/A
4.7	3.2	Transmission Radiation Angle Width (3dB Beamwidth)	N/A
4.8	3.2	Radio Interference Prevention Capability	Complies
4.9	/	Carrier Sense Capability	N/A

NOTE:

(1)” N/A” denotes test is not applicable in this Test Report

(2) MIC Public Notice 88:2004, annex 1 and annex 43

(3) MIC Ordinance Regulating Radio Equipment Section 4.17 of Article 49.20

1.1 TEST FACILITY

Test Firm : Shenzhen HUAK Testing Technology Co., Ltd.

Address : 1F, B2 Building, Junfeng Zhongcheng Zhizao Innovation Park, Heping Community, Fuhai Street, Bao'an District, Shenzhen, China

1.2 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement **y ± U**，where expended uncertainty **U** is based on a standard uncertainty multiplied by a coverage factor of **k=2**，providing a level of confidence of approximately **95** %。

No.	Item	Uncertainty
1	Conducted Emission Test	±3.2dB
2	Radiated Emission Test	±4.7dB
3	RF power,conducted	±0.16dB
4	Spurious emissions,conducted	±0.21dB
5	All emissions,radiated(<1G)	±4.68dB
6	All emissions,radiated(>1G)	±5.0dB

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	スレンダーパッド 2 PRO（ボディ・ヒップ用）
Model Name	HA-SP02-PRBH
Serial No	N/A
Model Difference	N/A
Trade Mark	TBC
Antenna Type	Internal Antenna
Antenna Gain	0 dBi
Operation frequency	2402-2480MHz
Number of Channels	40CH
Modulation Type	GFSK
Power Source	DC3.7V From Battery or DC5V From Micro USB
Power Rating	DC3.7V From Battery or DC5V From Micro USB
Firmware Version	V1.0
Hardware Version	V1.0

Note:

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.

2.

Channel List							
Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
01	2402	11	2422	21	2442	31	2462
02	2404	12	2424	22	2444	32	2464
03	2406	13	2426	23	2446	33	2466
04	2408	14	2428	24	2448	34	2468
05	2410	15	2430	25	2450	35	2470
06	2412	16	2432	26	2452	36	2472
07	2414	17	2434	27	2454	37	2474
08	2416	18	2436	28	2456	38	2476
09	2418	19	2438	29	2458	39	2478
10	2420	20	2440	30	2460	40	2480

3.

Table for Filed Antenna

Ant.	Brand	Model Name	Antenna Type	Connector	Gain (dBi)	NOTE
1	N/A	N/A	Internal Antenna	N/A	0	

2.2 DESCRIPTION OF TEST MODES

To investigate the maximum EMI emission characteristics generates from EUT, the test system was pre-scanning tested base on the consideration of following EUT operation mode or test configuration mode which possible have effect on EMI emission level. Each of these EUT operation mode(s) or test configuration mode(s) mentioned above was evaluated respectively.

Pretest Mode	Description
Mode 1	CH01:2402MHz
Mode 2	CH20:2440MHz
Mode 3	CH40:2480MHz

2.3 TEST CONDITIONS

The 2.4G module was tested while in a continuous transmitter/receiver mode.
The EUT was tuned to a low, middle, and high channel for all tests. For all test case pre/scans were completed in all Modes to determine worst case levels.

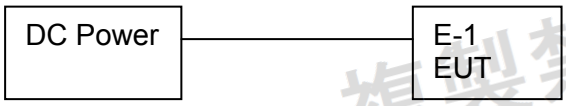
Power Supply Voltage Fluctuation Test

Voltage mode	Input Voltage	Radio Unit Voltage
DC Input	DC 4.50V	3.31V
	DC 5.00V	3.30V
	DC 5.50V	3.30V
Battery	DC 4.07V	3.31V
	DC 3.70V	3.30V
	DC 3.33V	3.30V
Note: 1 The radio unit Voltage with the module regulator IC regulator. 2 The radio unit less than 1%, so the test only rated voltage (Normal voltage) with the battery.		

During the input supply voltage to the EUT from the external power source is varied by +/- 10%, if output voltage had been confirmed that the fluctuation of power supply to the RF circuit of EUT (excluding power source) is equal to or less than +/-1%. Exempt extremely high and low supply voltage condition test, EUT only operated in normal voltage to test all regulations.

2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

Mode 1:



2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Trade Mark	Model/Type No.	Series No.	Note
E-1	スレンダーパッド 2 PRO(ボディ・ヒップ用)	TBC	HA-SP02-PRBH	N/A	EUT

Item	Shielded Type	Ferrite Core	Length	Note

Note:

(1) The support equipment was authorized by Declaration of Confirmation.

(2) For detachable type I/O cable should be specified the length in cm in『Length』column.

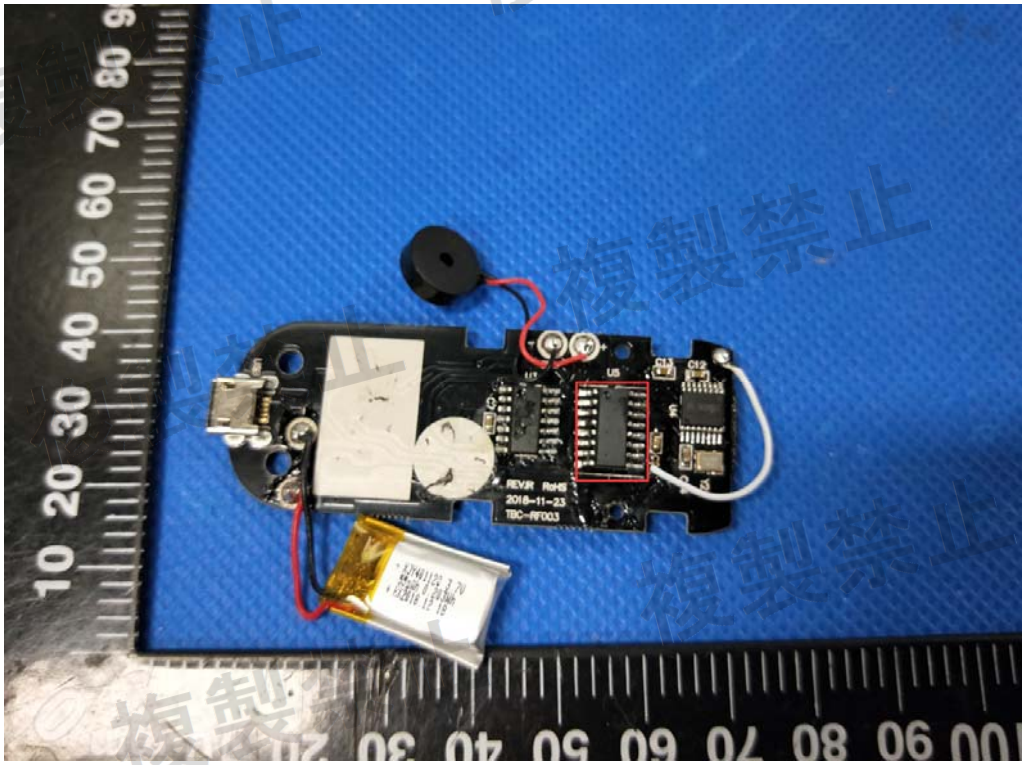
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 27, 2018	1 Year
2.	LISN	SchwarzBeck	NSLK 8126	8126377	Dec. 27, 2018	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Dec. 27, 2018	1 Year
4.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
5.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Dec. 27, 2018	1 Year
6.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Dec. 27, 2018	1 Year
7.	Pre-amplifier	Compliance Direction	PAP-0203	22008	Dec. 27, 2018	1 Year
8.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
9.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 27, 2018	1 Year
10.	LISN	SchwarzBeck	NSLK 8126	8126377	Dec. 27, 2018	1 Year
11.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Dec. 27, 2018	1 Year
12.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
13.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 27, 2018	1 Year
14.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Dec. 27, 2018	1 Year
15.	LISN	SchwarzBeck	NSLK 8126	8126377	Dec. 27, 2018	1 Year
16.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Dec. 27, 2018	1 Year
17.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
18.	Power Meter	R&S	NRVD	SEL0069	Dec. 27, 2018	1 Year
19.	Power Sensor	R&S	URV5-Z2	SEL0071	Dec. 27, 2018	1 Year
20.	Power Sensor	R&S	URV5-Z2	SEL0072	Dec. 27, 2018	1 Year
21.	Software EMC32	R&S	EMC32-S	SEL0082	N/A	N/A
22.	Log-periodic Antenna	Amplifier Reasearch	AIFS-IP780	SEL0073	N/A	N/A
23.	Antenna Tripod	Amplifier Reasearch	TP1000A	SEL0074	N/A	N/A
24.	High Gain Horn Antenna(0.8-5GHz)	Amplifier Reasearch	AT4002A	SEL0075	N/A	N/A
25.	Spectrum analyzer	Agilent	N9020A	MY49911048	Dec. 27, 2018	1 Year
26.	Spectrum analyzer	Agilent	E4407B	MY46184326	Dec. 27, 2018	1 Year
27.	DC power supply	Agilent	E3646A	N/A	Dec. 27, 2018	1 Year

3. RF SHIELDING METHOD

We apply the product for Japan RF certification. Number of terminals: 20,Terminal pitch: 1.0 mm. It is not easily removed. Please refer to following for photo for details. Red circle part of the RF module soldered on the Internal.



4. TEST RESULT

4.1 FREQUENCY ERROR

4.1.1 LIMIT

Item	Limits
Frequency Error	+/-50ppm

4.1.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	10KHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.1.3 TEST PROCEDURES

(1)In the case of unmodulated signal (continuous or continuous burst), measure the frequency directly by a frequency meter.

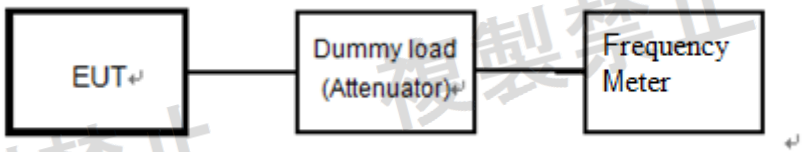
(2)In the case of burst waves, the measurement shall be done for enough time in order to obtain the enough measuring accuracy, and the average of the measured values becomes the final value.

(3)In the case of a test mode with a specific frequency spectrum, measure the frequency of the specific spectrum by a spectrum analyzer.

(4)In the cases above, if the frequency equivalent to the test frequency is not directly measured in principle, it shall be obtained by necessary calculation.

In the case of modulated signal, if there is no specific spectrum measurable by a spectrum analyzer but a specific dip is observed, it is allowed to measure the frequency with the signal generator (synthesized). That is, observe a signal of the signal generator concurrently (or alternately) with the tested signal using the spectrum analyzer while setting the frequency of the signal generator to the position of the dip on the screen of the spectrum analyzer, and determine the frequency of the signal generator at the time as a measured value.

4.1.4 TEST SETUP LAYOUT



4.1.5 EUT OPERATION DURING TEST

The EUT was placed on the test table and programmed in un-modulation function.

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4.1.6 TEST RESULT

EUT:	スレンダーパッド 2 PRO (ボディ・ヒップ用)	Test Date:	Mar.01, 2019
Temperature:	25^{0}C	Tested by:	Gary Qian
Humidity:	55 % RH	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage- Carrier Tx Mode		

Mode	CH	Measured	Tolerance	Result	Limit
		MHz	MHz	ppm	ppm
Carrier	CH01:2402MHz	2401.978	-0.022	-9.16	+/-50
	CH20:2440MHz	2439.974	-0.026	-10.66	+/-50
	CH40:2480MHz	2479.981	-0.019	-7.66	+/-50
Conclusion：PASS					

4.2. ANTENNA POWER

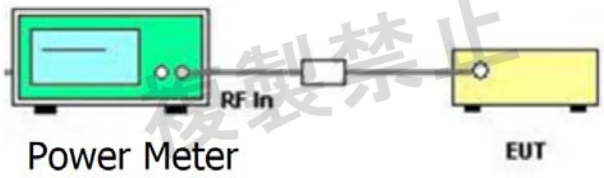
4.2.1 LIMIT

Item	Limits
Antenna Power Density	≦3mW/MHz (FH form 2427 - 2470.75 MHz) ≦10mW/MHz (OFDM,DS from2400~2483.5MHz) ≦10mW (Other from 2400~2483.5MHz)
Antenna Power Error	+20%, -80% (Base on manufacturer declare antenna power density)

4.2.2 MEASURING INSTRUMENTS AND SETTING

1. The EUT was placed on a table which is 0.8m above ground plane.
2. The EUT was directly connected to the Power meter.

4.2.3 TEST SETUP LAYOUT



4.2.4 EST DEVIATION

There is no deviation with the original standard.

4.2.5 TEST RESULT

EUT:	スレンダーパッド 2 PRO (ボディ・ヒップ用)	Test Date:	Mar.01, 2019
Temperature:	25^{0}C	Tested by:	Gary Qian
Humidity:	55 % RH	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage		

Test Frequency	Antenna Power (dBm)	Antenna Gain (dBi)	Result (mW)	Limit (mW)
2402MHz	0.78	0	1.20	10
2440MHz	0.55	0	1.14	10
2480MHz	0.53	0	1.13	10
Note: Result(EIRP) Antenna Power + Antenna Gain				

Test Frequency	Conducted RF output power density (mW)	Rated power density (mW)	Antenna Power Error (%)
2402MHz	1.20	2	-40.00%
2440MHz	1.14	2	-43.00%
2480MHz	1.13	2	-43.50%
Limit : +20%, -80% (Base on manufacturer declare antenna power density)			

4.3. OCCUPIED BANDWITH

4.3.1 LIMIT

Item	Limits
Occupied Band Width:	FH 83.5MHz; OFDM,DS ≦26MHz;Others≦26MHz
Spreading Bandwidth:	≧500 kHz (FH, DS)

4.3.2 MEASURING INSTRUMENTS AND SETTING

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	300kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.3.3 TEST PROCEDURES

1. Setting of SA is following as: RB: 300kHz / VB:300kHz / SPAN: 3MHz / AT: 30dB Ref: 20dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
2. EUT have transmitted the maximum modulation signal and fixed channelize (For DSSS or OFDM Device) or continuous maximum power of hopping mode(For FHSS Device). SA set to 99% of occupied bandwidth to measure occupied bandwidth. The limit is less than 26MHz(For DSSS or OFDM Device) or 83.5MHz(For FHSS Device).
3. SA set to 90% of occupied bandwidth to measure Spread Spectrum Bandwidth and must greater than 500kHz.
4. Spread Spectrum Factor = Spread Spectrum Bandwidth / modulation rate of EUT.
5. Spread Spectrum Factor limit is greater than 5

4.3.4 TEST SETUP LAYOUT

4.3.5 TEST DEVIATION

There is no deviation with the original standard.

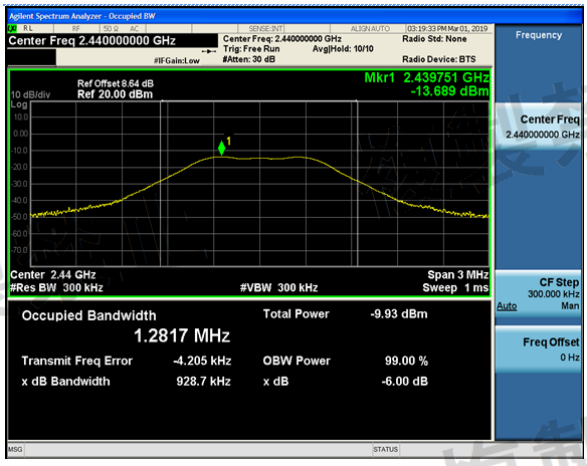
4.3.6 EUT OPERATION DURING TEST

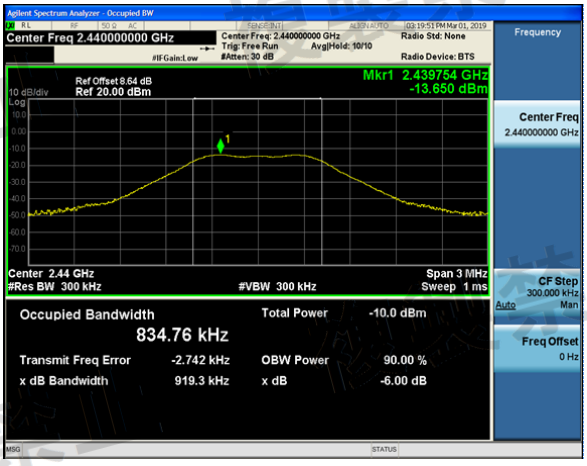
The EUT was programmed to be in continuously transmitting mode.

4.3.7 TEST RESULT

EUT:	スレンダーパッド 2 PRO (ボディ・ヒップ用)	Test Date:	Mar.01, 2019
Temperature:	25°C	Tested by:	Gary Qian
Humidity:	55 % RH	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage		

Test Voltage	Test Frequency (MHz)	Occupied Bandwidth (MHz)	Spread Bandwidth (MHz)
Normal Voltage	2402	1.2797	0.83789
	2440	1.2817	0.83476
	2480	1.2899	0.83758






Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 8.64 dB
10 dB/div
Ref 20.00 dBm
Mkr1 2.479763 GHz
-15.309 dBm
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 300 kHz
#VBW 300 kHz
Span 3 MHz
Sweep 1 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
1.2899 MHz
Total Power
-11.5 dBm
Transmit Freq Error
-905 Hz
OBW Power
99.00 %
x dB Bandwidth
927.1 kHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS


Agilent Spectrum Analyzer - Occupied BW
Center Freq 2.480000000 GHz
Center Freq: 2.480000000 GHz
Trig: Free Run
Avg|Hold: 10/10
#Atten: 30 dB
Radio Std: None
Radio Device: BTS
Frequency
Ref Offset 8.64 dB
10 dB/div
Ref 20.00 dBm
Mkr1 2.479739 GHz
-15.281 dBm
Center Freq
2.480000000 GHz
Center 2.48 GHz
#Res BW 300 kHz
#VBW 300 kHz
Span 3 MHz
Sweep 1 ms
CF Step
300.000 kHz
Auto
Man
Occupied Bandwidth
837.58 kHz
Total Power
-11.5 dBm
Transmit Freq Error
-1.956 kHz
OBW Power
90.00 %
x dB Bandwidth
935.3 kHz
x dB
-6.00 dB
Freq Offset
0 Hz
MSG
STATUS

4.4. UNWANTED EMISSION INTENSITY MEASUREMENT

4.4.1 LIMIT

Item	Limits
TX Spurious Emission	≦2.5 μW (30MHz≦f≦1000MHz)
	≦2.5 μW (1000MHz<f≦2387MHz)
	≦25 μW (2387MHz<f≦2400MHz)
	≦25 μW (2483.5MHz≦f<2496.5MHz)
	≦2.5 μW (2496.5MHz≦f<12500MHz)

4.4.2. MEASURING INSTRUMENTS AND SETTING

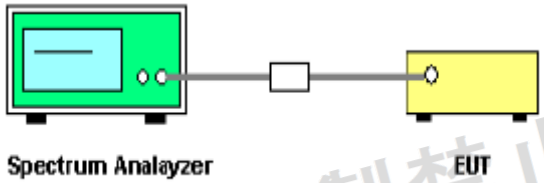
Please refer to section 5 in this report. The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB / VB	1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.4.3. TEST PROCEDURES

1. EUT have transmitted the maximum modulation signal and fixed channelize.
2. Setting of SA is following as: Below 1GHz RB:100KHz / VB:100KHz
   Above 1GHz RB:1MHz / VB:1MHz / AT: 10dB Ref: 0dBm / Sweep time: Auto
   Sweep Mode: Continuous sweep / Detect mode: Positive peak
   Trace mode: Max hold
3. Setting of SA is following as 30MHz and stop frequency 1000MHz Then to mark peak reading value + cable loss shall be less than 0.25μW.
4. Setting of SA is following as 1000MHz and stop frequency 2387MHz Then to mark peak reading value + cable loss shall be less than 2.5μW.
5. SA adjusted to start frequency 2387MHz and stop frequency 2400MHz. Then to mark peak reading value + cable loss shall be less than 25μW.
6. SA adjusted to start frequency 2483.5MHz and stop frequency 2496.5MHz Then to mark peak reading value + cable loss shall be less than 25μW
7. SA adjusted to start frequency 2496.5MHz and stop frequency 12500MHz Then to mark peak reading value + cable loss shall be less than 2.5μW
8. Measure side band spurious as follows: For 2.4GHz band: 2374MHz~2400MHz and 2483.5MHz~2509.5MHz RBW = VBW = 30kHz, Result_Value = Meaured_ Value + 15.2 [dBm]
9. If the Result_Value is over the requirement, take total sum of 1MHz band centered at the spur frequency like ACLP measurement as Result_Value.

4.4.4. TEST SETUP LAYOUT



4.4.5. TEST DEVIATION

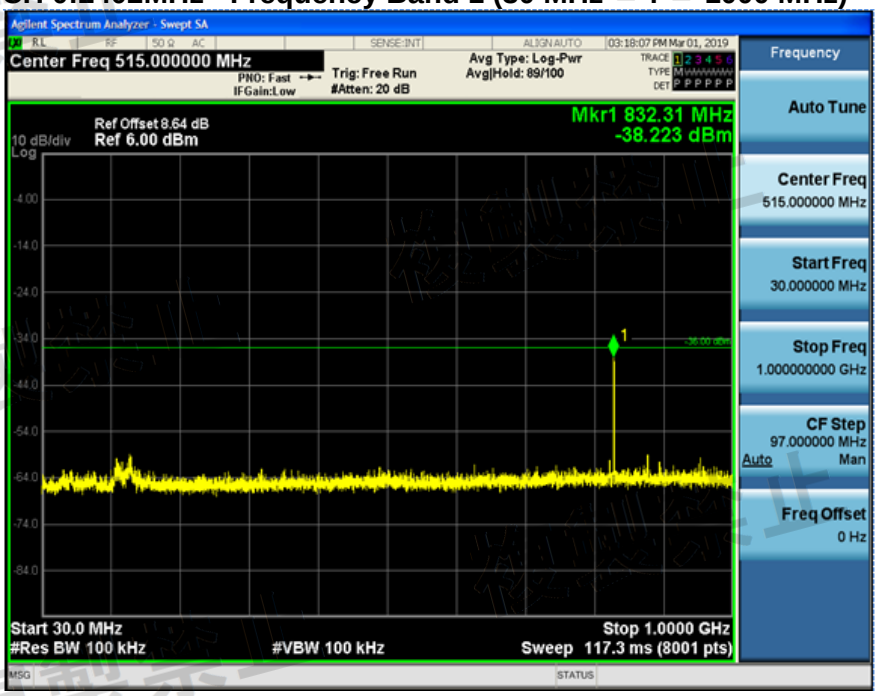
There is no deviation with the original standard.

4.4.6. TEST RESULT

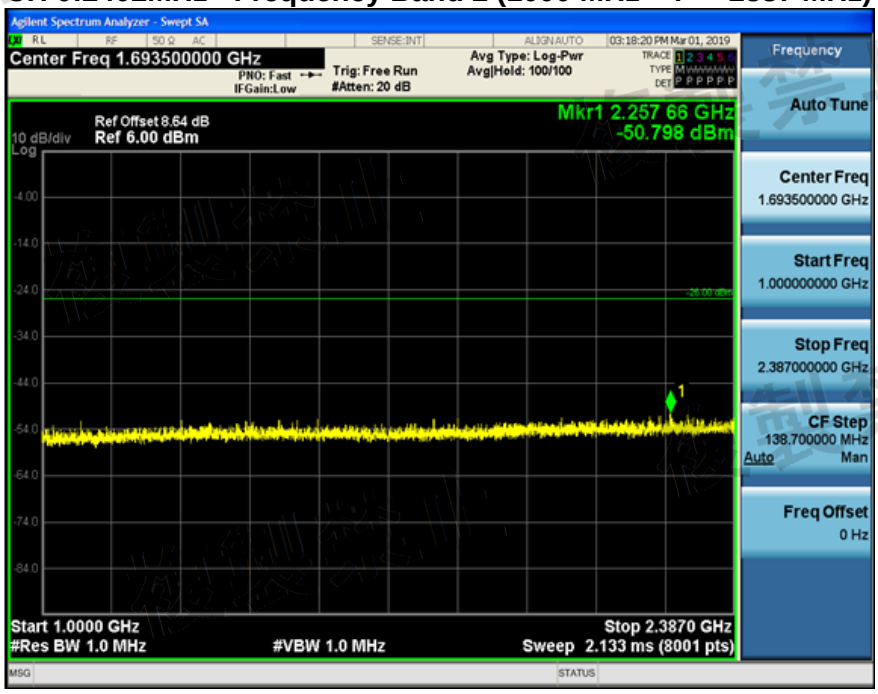
EUT:	スレンダーパッド 2 PRO (ボディ・ヒップ用)	Test Date:	Mar.01, 2019
Temperature:	25^{0}C	Tested by:	Gary Qian
Humidity:	55 % RH	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage		

Test Channel	StartFre[MHz]	StopFre[MHz]	Max.Fre[MHz]	Max.Level[μW]	Limit[μW]	Verdict
2402	30	1000	832.311	0.1506	<2.5	PASS
2402	1000	2387	2257.662	0.0083	<2.5	PASS
2402	2387	2400	2399.984	0.0754	<25	PASS
2402	2483.5	2496.5	2489.935	0.0090	<25	PASS
2402	2496.5	13000	12910.716	0.0175	<2.5	PASS
2480	30	1000	900.575	0.0023	<2.5	PASS
2480	1000	2387	2088.448	0.0093	<2.5	PASS
2480	2387	2400	2389.553	0.0079	<25	PASS
2480	2483.5	2496.5	2483.518	0.0110	<25	PASS
2480	2496.5	13000	12655.993	0.0252	<2.5	PASS

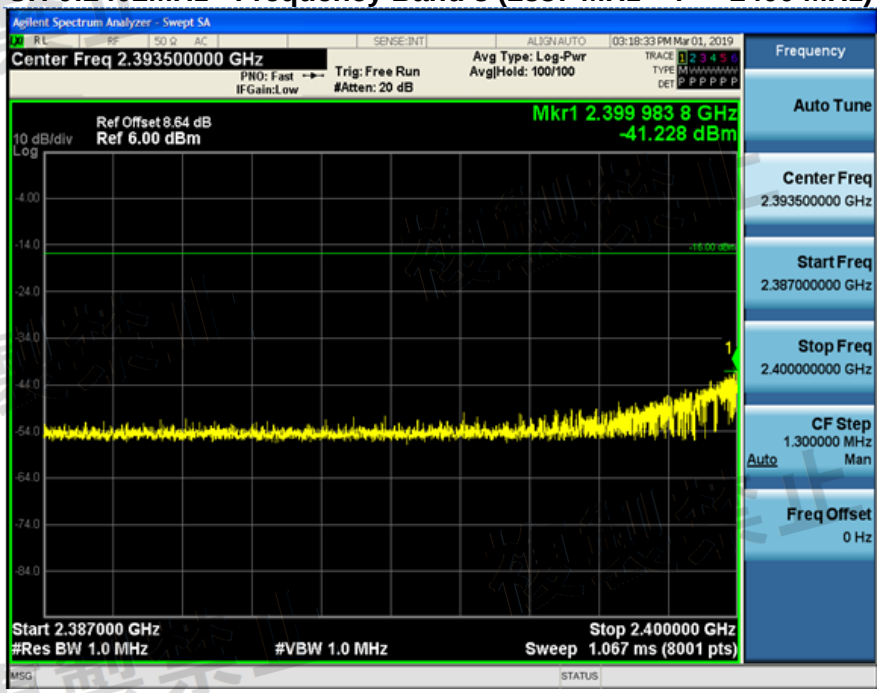
CH 0:2402MHz - Frequency Band 1 (30 MHz ≦ f ≦ 1000 MHz)



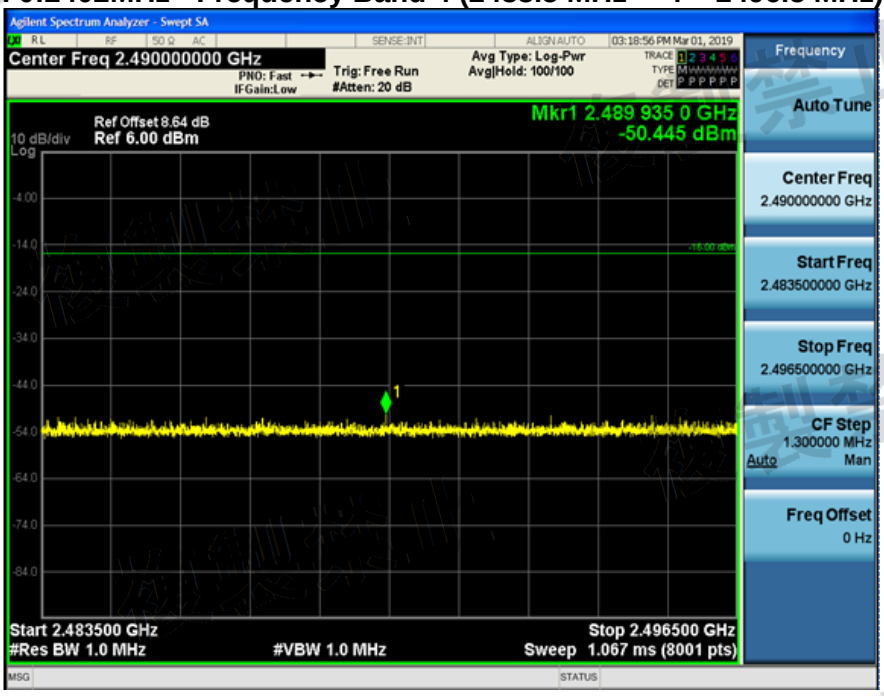
CH 0:2402MHz - Frequency Band 2 (1000 MHz < f ≦ 2387 MHz)



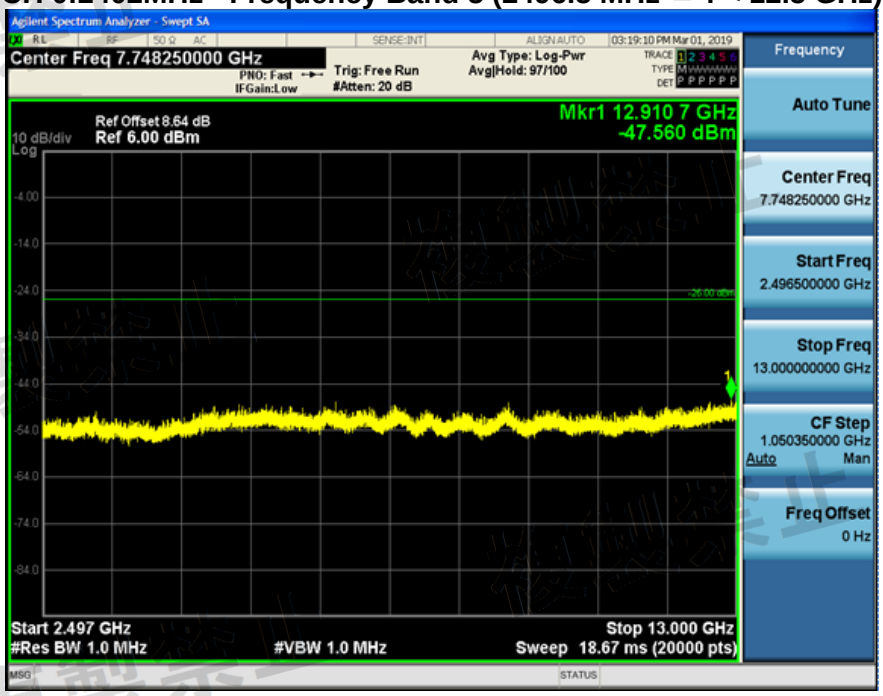
CH 0:2402MHz - Frequency Band 3 (2387 MHz < f ≦ 2400 MHz)



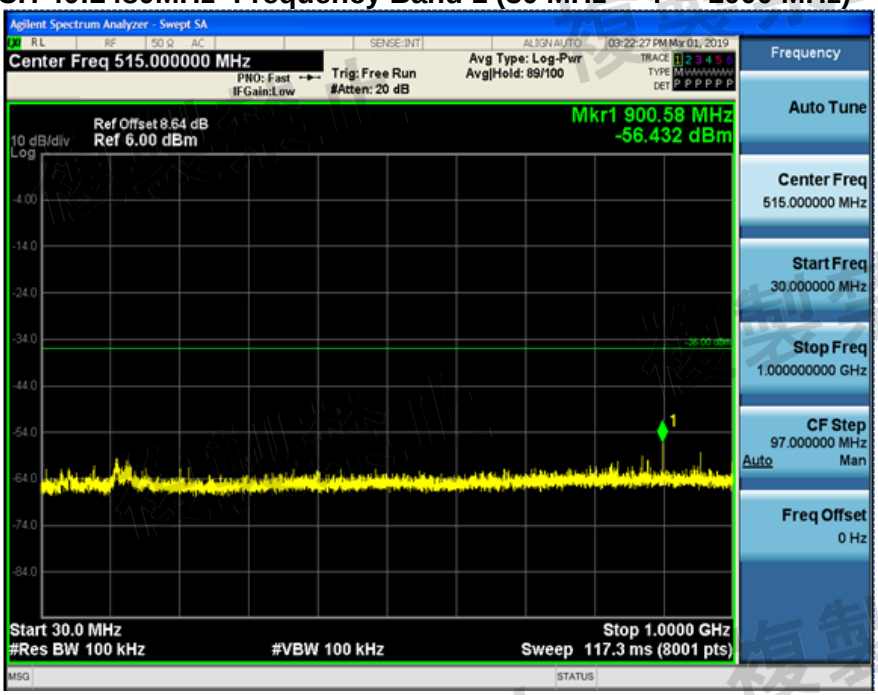
CH 0:2402MHz - Frequency Band 4 (2483.5 MHz ≦ f < 2496.5 MHz)



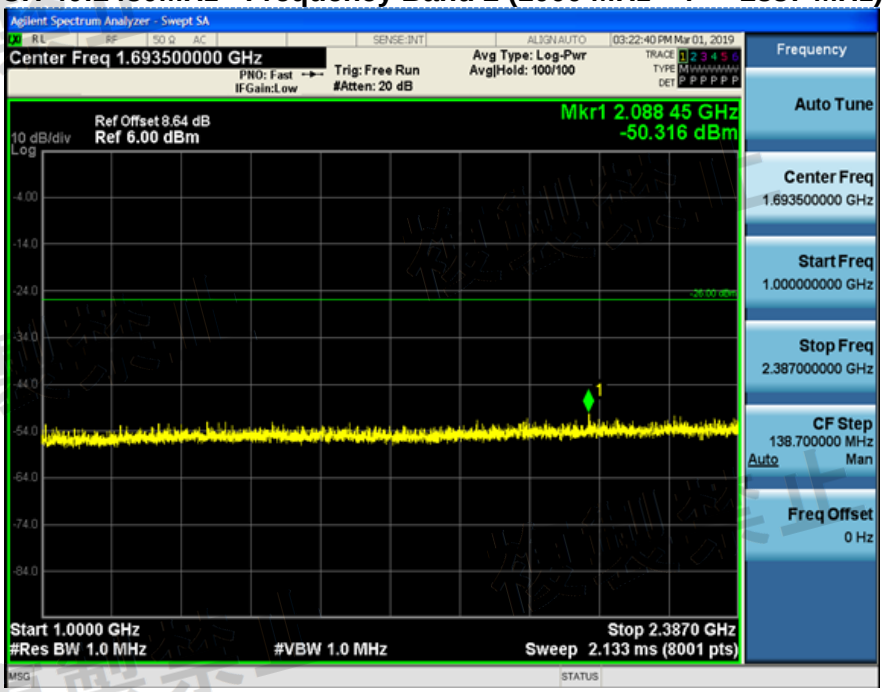
CH 0:2402MHz - Frequency Band 5 (2496.5 MHz ≦ f < 12.5 GHz)



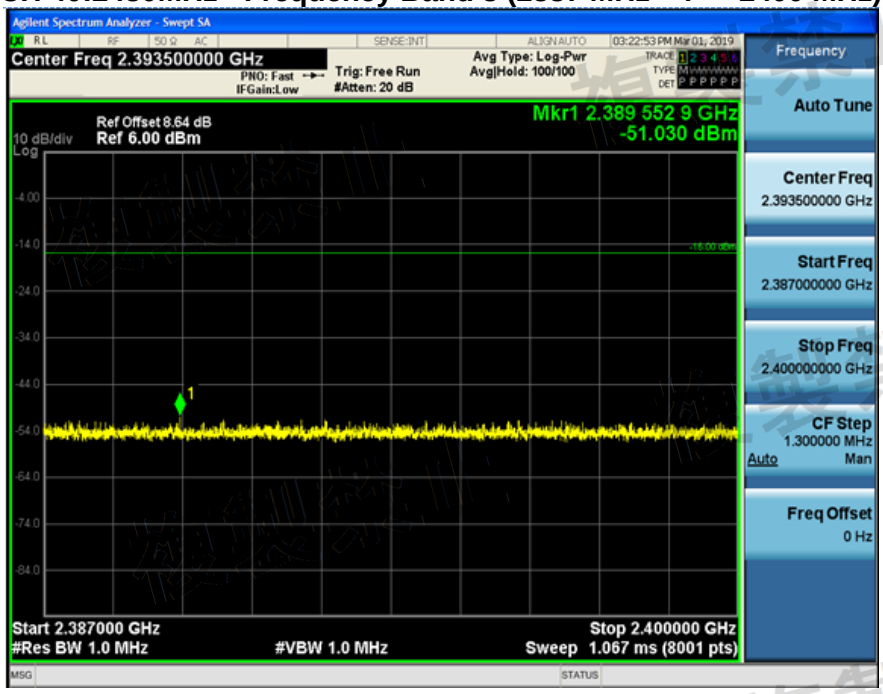
CH 40:2480MHz- Frequency Band 1 (30 MHz ≦ f ≦ 1000 MHz)



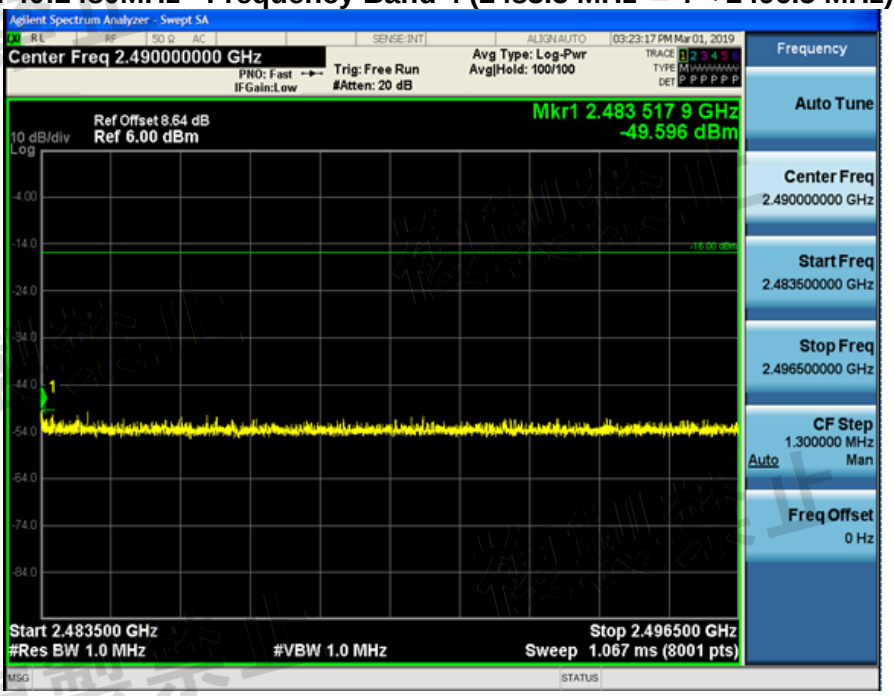
CH 40:2480MHz - Frequency Band 2 (1000 MHz < f ≦ 2387 MHz)



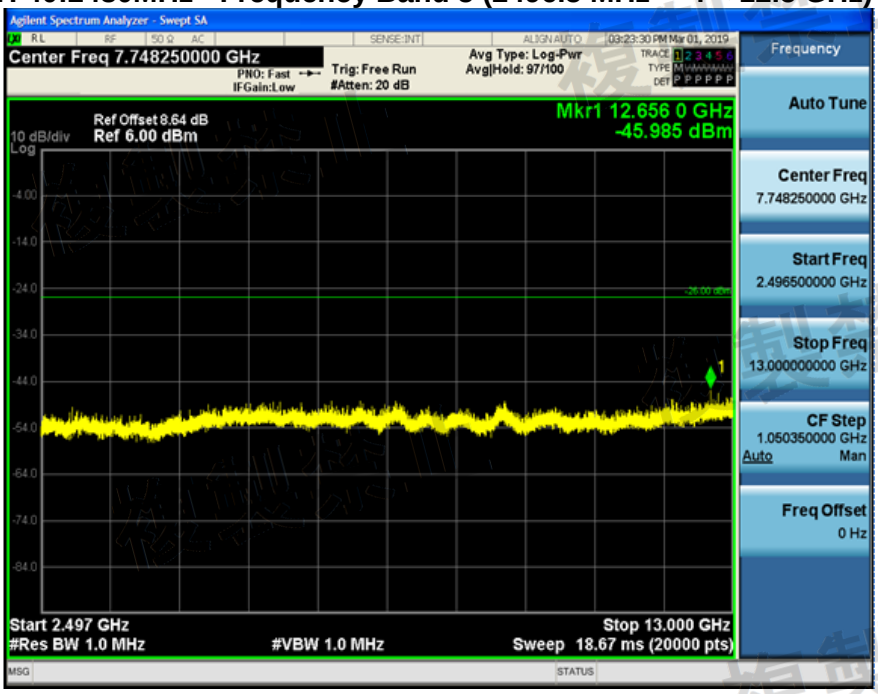
CH 40:2480MHz - Frequency Band 3 (2387 MHz < f ≦ 2400 MHz)



CH 40:2480MHz - Frequency Band 4 (2483.5 MHz ≦ f < 2496.5 MHz)



CH 40:2480MHz - Frequency Band 5 (2496.5 MHz ≦ f < 12.5 GHz)



4.5. IMITATION OF COLLATERAL EMISSION OF RECEIVER MEASUREMENT

4.5.1 LIMIT

Item	Limits
RX Spurious Emission:	≦4nW (f<1GHz)
	≦20nW (1GHz≦f)

4.5.2 MEASURING INSTRUMENTS AND SETTING

Please refer to section 5 in this report. The following table is the setting of Spectrum Analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
RB	100 kHz (below 1GHz emissions) 1 MHz (above 1GHz emissions)
VB	100 kHz (below 1GHz emissions) 1 MHz (above 1GHz emissions)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.5.3 TEST PROCEDURES

1. EUT have the continuous reception mode and fixed only one channelize.
2. Setting of SA is following as RB / VB: 100 kHz (below 1GHz emissions) / 1 MHz (above 1GHz emissions) /
   AT: 10dB / Ref: 0dBm / Sweep time: Auto / Sweep Mode: Continuous sweep / Detect mode: Positive peak / Trace mode: Max hold
3. SA set RB: 100kHz and VB: 100kHz. Then adjust to start frequency 30MHz and stop frequency 1000MHz. Search to mark peak reading value + cable loss shall be less than 4nW
4. SA set RB: 1MHz and VB: 1MHz. Then adjust to start frequency 1000MHz and stop frequency 12500MHz. Search to mark peak reading value + cable loss shall be less than 20nW
5. If power level of lower emissions are more than 1/10 of limit (.0.4nW for f < 1GHz, 2nW for f >= 1GHz), all those are to be indicated in the 2nd and 3rd lines. If others are 1/10 or less more of the limit, no necessary to be indicated.

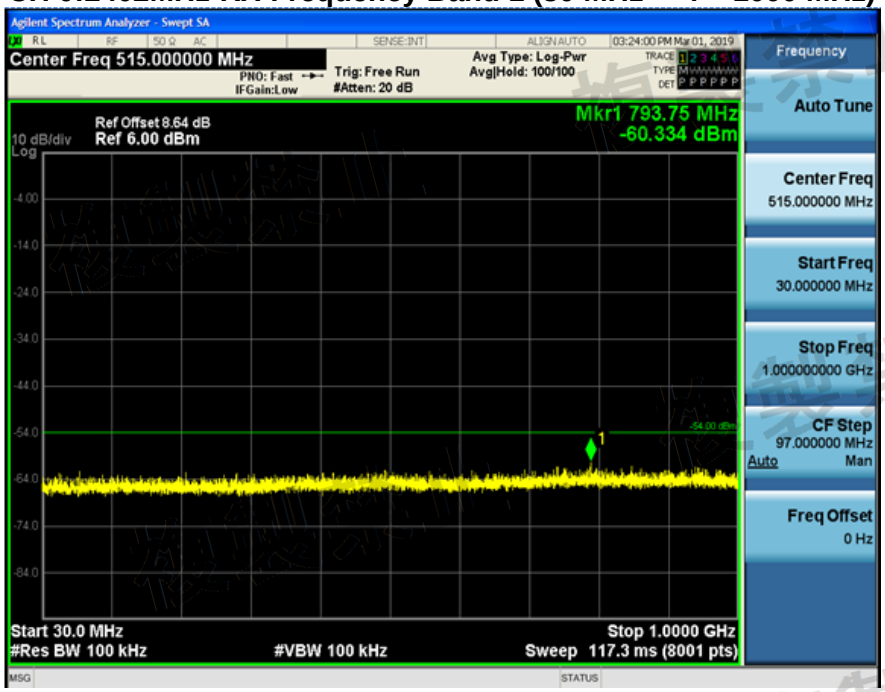
4.5.4 TEST RESULT

EUT:	スレンダーパッド２PRO（ボディ・ヒップ用）	Test Date:	Mar.01, 2019
Temperature:	25°C	Tested by:	Gary Qian
Humidity:	55 % RH	Test Voltage	Normal Voltage
Operation Mode:	Normal Voltage		

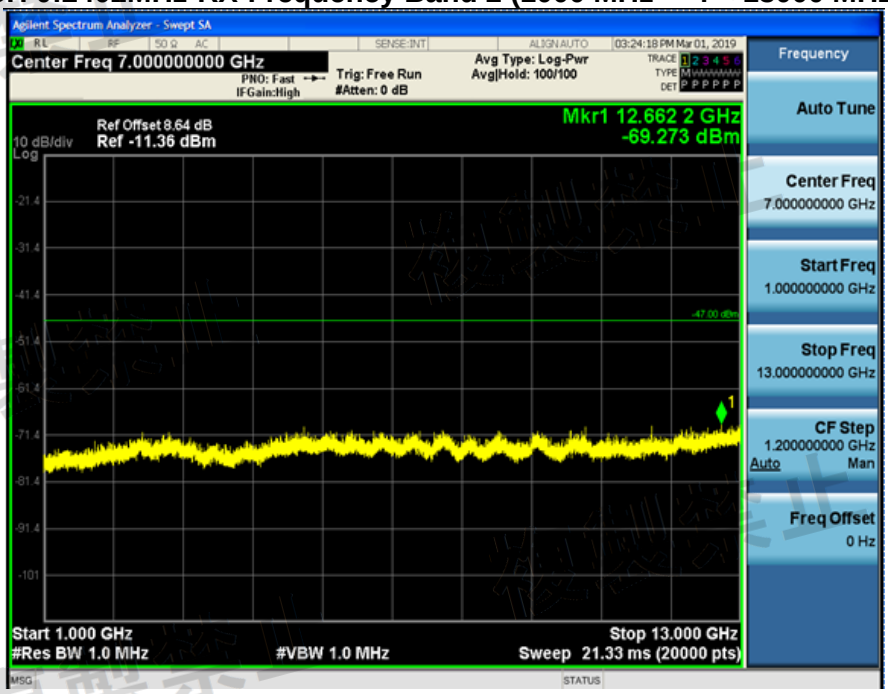
The worst test channel of all channels was showed as the follow:

Test Channel	StartFre[MHz]	StopFre[MHz]	Max.Fre[MHz]	Max.Level[nW]	Limit[nW]	Verdict
2402	30	1000	793.754	0.926	<4	PASS
2402	1000	13000	12662.183	0.118	<20	PASS
2480	30	1000	950.288	0.857	<4	PASS
2480	1000	13000	12719.786	0.112	<20	PASS

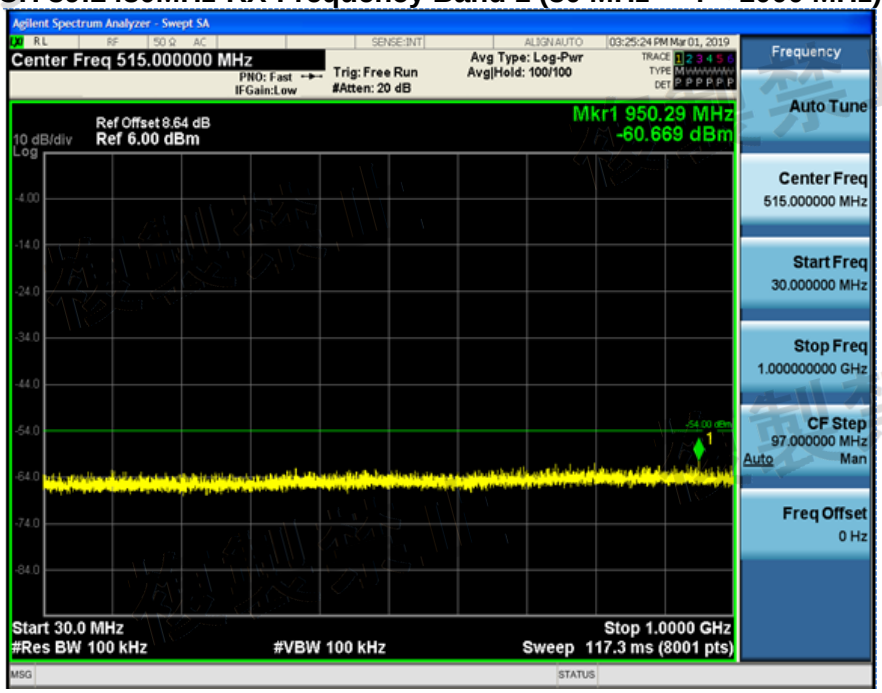
CH 0:2402MHz-RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



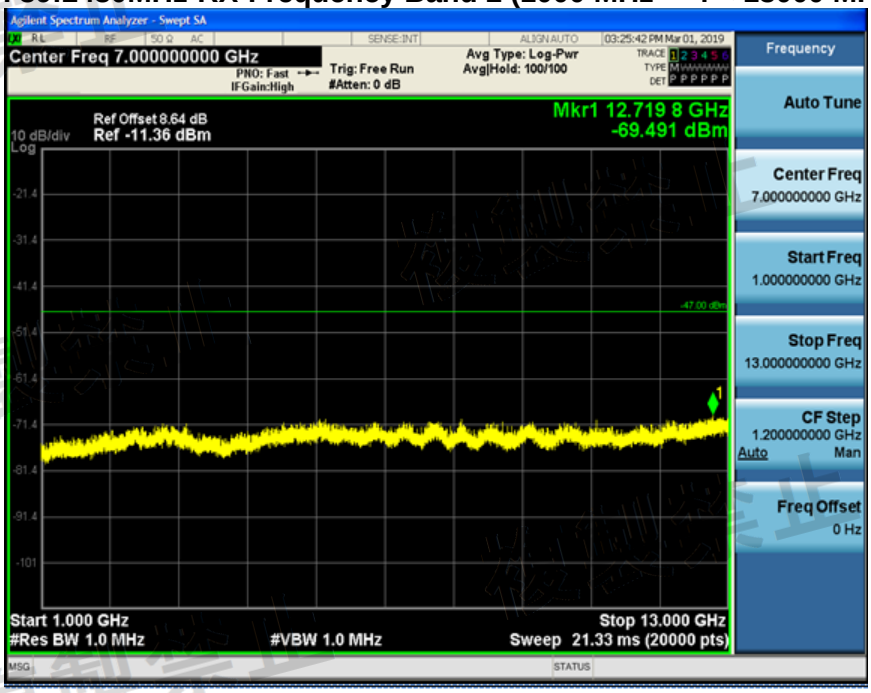
CH 0:2402MHz-RX-Frequency Band 2 (1000 MHz ≦ f < 13000 MHz)



CH 39:2480MHz-RX-Frequency Band 1 (30 MHz ≦ f < 1000 MHz)



CH 39:2480MHz-RX-Frequency Band 2 (1000 MHz ≦ f < 13000 MHz)



4.6. TRANSMISSION ANTENNA GAIN (EIRP ANTENNA POWER) MEASUREMENT

4.6.1 LIMIT

Item	Limits
EIRP Power Density	≦16.91dBm/MHz (FH form 2427 - 2470.75 MHz) ≦22.14dBm/MHz (OFDM,DS from 2400~2483.5MHz) ≦22.14dBm (Other from 2400~2483.5MHz)
Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less	

4.6.2 MEASURING INSTRUMENTS AND SETTING

Please refer to section 5 in this report. The following table is the setting of spectrum analyzer.

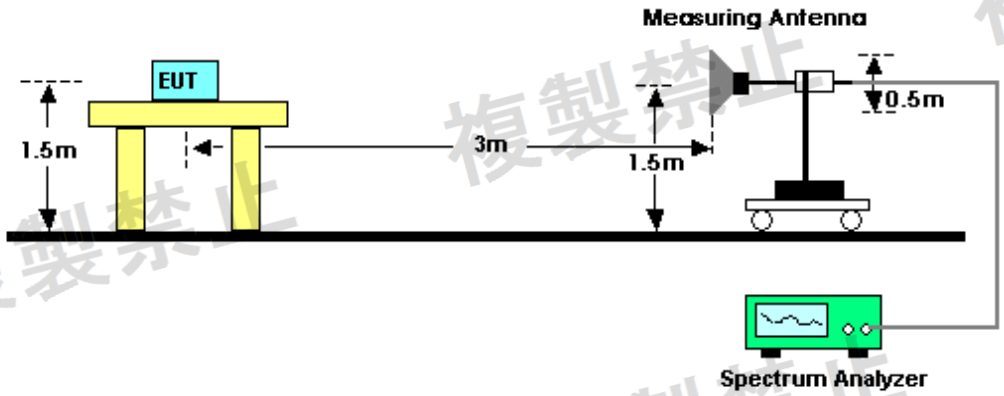
Spectrum Parameter	Setting
Attenuation	Auto
RB/VB	1 MHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.6.3 TEST PROCEDURES

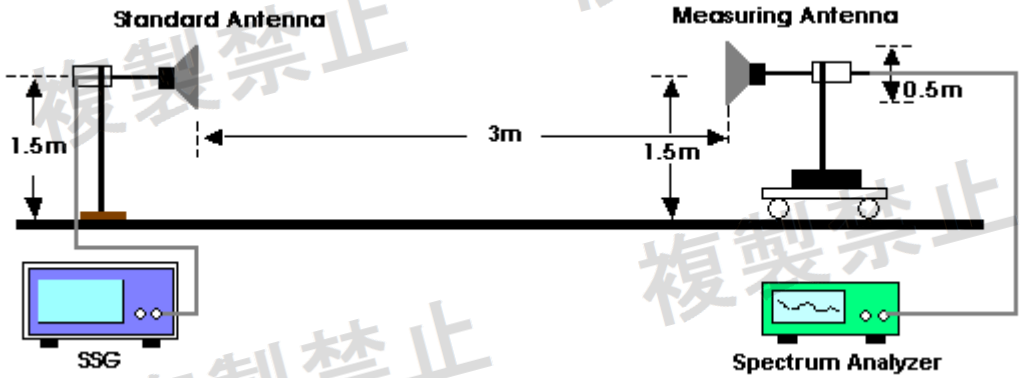
1. Set EUT ad measuring antenna at the same height and roughly facing each other.
2. Move the measuring antenna height up and down within ± 50cm of EUT height and swing it to find the maximum output of the measuring antenna. The output level at the spectrum analyzer is read sa “E“.
3. Remove the EUT from the turn table and put the replacing antenna facing to measuring antenna at same height. Set the standard signal generator (SSG) at same frequency and transmit on then receive the signal
4. Swing the replacing antenna give a maximum receiving level.
5. Move the measuring antenna height up and down within ± 50cm of replacing antenna height and swing it to find the maximum receiving level.
6. Set SSG output power at Pt to give the equivalent output level of “E” or caluate Pt with SSG output which gives the nearest of “E” and difference (± 1dB). Record the Pt.
7. Calculate EIRP by the formula below EIRP = Gt – L + Pt.
   Gt: gain of replacing antenna (dBi)
   L: feeder loss between SSG and replacing antenna
   Pt: Output power of the SSG
8. If the antenna for the EUT has circular polarization, sum of V-field and H-field will be result if measuring antenna is linear polarization.

4.6.4 TEST SETUP LAYOUT

For EUT radiation measurement



For standard antenna measurement



4.6.5 TEST DEVIATION

There is no deviation with the original standard.

4.6.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

4.6.7 RESULTS OF TRANSMISSION ANTENNA GAIN

Note: This test item will not be applied to the transmission antenna which has a gain of 2.14 dBi or less

4.7. TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH) MEASUREMENT

4.7.1 LIMIT

Item	Limits
3dB antenna beam width	360/A (If A<1; then A=1) A = {EIRP Power [mW] / 16.36 for DS, OFDM} or A = {EIRP Power [mW] / 4.9 for FH}
Note: This test item is not applied for radio equipment with equivalent isotropic radiation power lower than 12.14dBm/MHz, but Antenna Power(Conducted) limit is 10 mW/MHz (10 dBm/MHz), So the test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less	

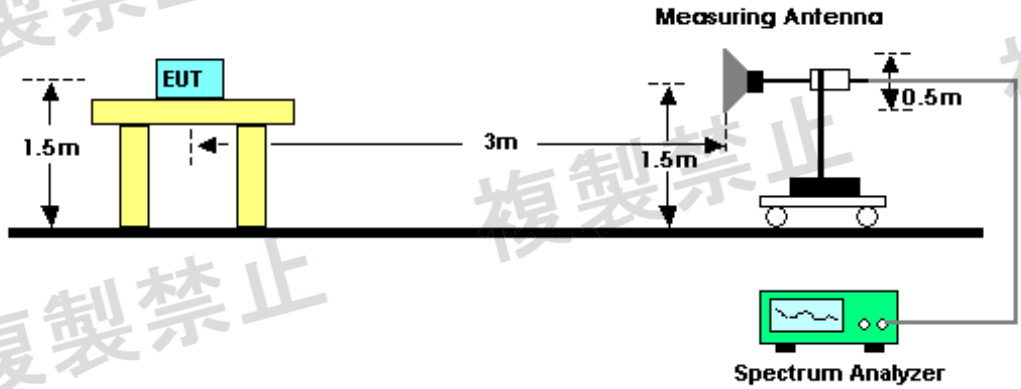
4.7.2 MEASURING INSTRUMENTS AND SETTING

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	0 MHz
RB	1 MHz
VB	1 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

4.7.3 TEST PROCEDURES

1. Set EUT and measuring antenna at the same height and roughly facing each other.
2. Set spectrum analyzer with condition in section 4.7.2 and tune reference level to observe receving signal position.
3. Rotate directions of the EUT horizontally and ertically to find the maximum receiving power.
4. Move the measuring antenna height up and down within ± 50cm of EUT height and swing it to find the maximum output of measuing antenna. The output level at the spectrum analyzer is read as “E”
5. Caluate permitted radiation angle in horizontal and vertical using EIRP measured in another test method.
6. Calculate 3dB antenna beam width by the formula below 360/A (If A<1; then A=1).
   A = {EIRP Power [mW] / 16.36 for DS, OFDM} or
   A = {EIRP Power [mW] / 4.9 for FH}

4.7.4 TEST SETUP LAYOUT



4.7.5 TEST DEVIATION

There is no deviation with the original standard.

4.7.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

4.7.7 TEST RESULT OF TRANSMISSION RADIATION ANGLE WIDTH (3DB BEAMWIDTH)

The test item will not be applied to the transmission antenna which has a gain of 2.14dBi or less

4.8. RADIO INTERFERENCE PREVENTION CAPABILITY MEASUREMENT

4.8.1 LIMIT

Item	Limits
Identification code	≧48 bits

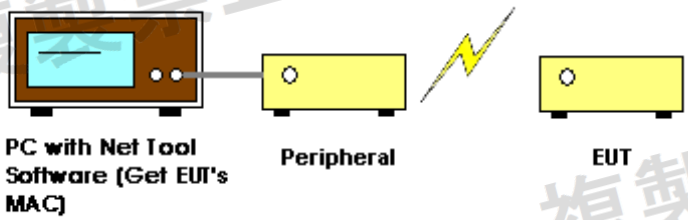
4.8.2 MEASURING ID CODE SOFTWARE

Item	Limits
MAC IP List	MAC Scan

4.8.3 TEST PROCEDURES

1. In the case that the EUT has the function of automatically transmitting the identification code: a. Transmit the predetermined identification codes form EUT. b. Check the transmitted identification codes with the demodulator.
2. In the case of receiving the identification ocde: a. Transmit the predetermined identification codes form the counterpart. b . Check if communication is normal. c. Transmit the signals other than predetermined ID codes form the counterpart. d. check if the EUT stops the transmission, or if it displays that idnetification codes are different from the predetermined ones.

4.8.4 TEST SETUP LAYOUT



4.8.5 TEST DEVIATION

There is no deviation with the original standard.

4.8.6 EUT OPERATION DURING TEST

The EUT was programmed to be in normal transmitting mode.

4.8.7 TEST RESULT OF RADIO INTERFERENCE PREVENTION CAPABILIT

EUT:	スレンダーパッド 2 PRO (ボディ・ヒップ用)	Test Date:	Mar.01, 2019
Temperature:	25^{0}C	Tested by:	Gary Qian
Humidity:	55 % RH		
Test result:	CONFORM		

4.9. CARRIER SENSING FUNCTION

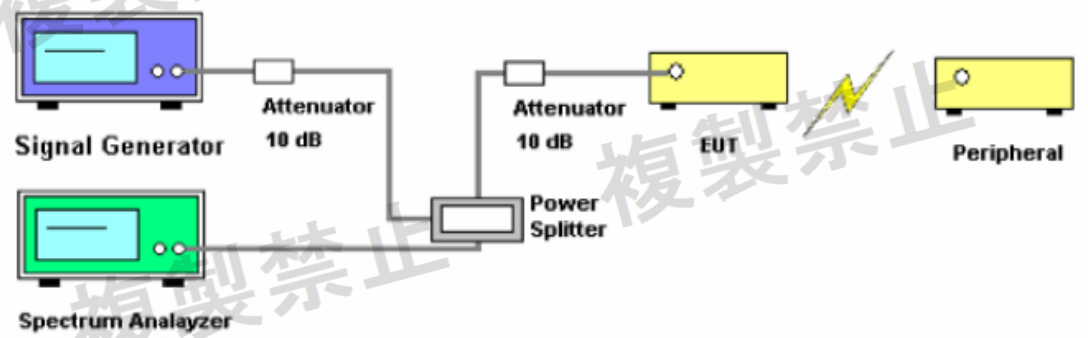
4.9.1 TEST REQUIREMENT

MIC Notice No.88 Appendix No.43

Article 2, Paragraph 1, Item 19 Rules Section 10

4.9.2 BLOCK DIAGRAM OF TEST SETUP

❖ Measurement System Diagram



❖ Conditions of Application Equipment (EUT)

- The EUT state shall be "normal mode link with wireless router".

4.9.3 TEST PRECEDURE

1 SG adjusted the frequency as same as the EUT transmitted signal and emitted the absence of modulation from SG and power level is (on 22.79+G-20*log(f)dBm)(G is the antenna gain,f is the test frequency).

2. turn off the RF signal of the SG.

3. EUT have transmitted the maximum modulation signal and fixed channelize.

4. Setting of SA :RBW/VBW=1MHz/1MHz,Span=50MHz,Sweep time=auto,Sweep mode=continuous, Detect mode=positive peak

5. SG RF signal on.

6. EUT shall be stop the transmitted any signal and SG RF signal off, the EUT will be continuous

4.9.4 TEST RESULT

Not applicable.

5. EUT TEST PHOTO

Measurement Photos