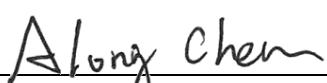


FCC Co-Location Test Report

FCC ID : XNAWBS09
Equipment : Withings Body Pro
Model No. : WBS09
Brand Name : Withings
Applicant : Withings SA
Address : 2 rue Maurice Hartmann
92130 Issy-Les-Moulineaux
France
Standard : 47 CFR FCC Part 15.247
47 CFR FCC Part 24 Subpart E
47 CFR FCC Part 27
Received Date : Feb. 04, 2021
Tested Date : Apr. 08, 2021

We, International Certification Corporation, would like to declare that the tested sample has been evaluated and in compliance with the requirement of the above standards. The test results contained in this report refer exclusively to the product. It may be duplicated completely for legal use with the approval of the applicant. It shall not be reproduced except in full without the written approval of our laboratory.

Reviewed by:



Along Chen / Assistant Manager

Approved by:



Gary Chang / Manager



Table of Contents

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Release Record

Report No.	Version	Description	Issued Date
FR132501CO	Rev. 01	Initial issue	Apr. 26, 2021

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.247(d) 15.209 2.1053 24.238(a) 27.53(g) 27.53(h)	Radiated Emissions	[dBuV/m at 3m]: 230.06MHz 41.29 (Margin -4.71dB) - PK	Pass

Declaration of Conformity:

The test results with all measurement uncertainty excluded are presented in accordance with the regulation limits or requirements declared by manufacturers.

Comments and Explanations:

The declared of product specification for EUT presented in the report are provided by the manufacturer, and the manufacturer takes all the responsibilities for the accuracy of product specification.

1 General Description

1.1 Information

1.1.1 Specification of the Equipment under Test (EUT)

WLAN	
Operating Frequency	802.11b/g/n: 2412 MHz ~ 2462 MHz
Modulation Type	802.11b: DSSS (DBPSK / DQPSK / CCK) 802.11g/n: OFDM (BPSK / QPSK / 16QAM / 64QAM)
BT	
Operating Frequency	2402 MHz ~ 2480 MHz
Modulaton Type	Bluetooth 4.1 LE: GFSK Bluetooth BR(1Mbps): GFSK Bluetooth EDR (2Mbps): π/4-DQPSK Bluetooth EDR (3Mbps): 8-DPSK

The device contains a certified WWAN module as below information

FCC ID	2AAGMGM02SA
Operating Frequency	Band 2: 1850 MHz ~ 1910 MHz Band 4: 1710 MHz ~ 1755 MHz Band 12: 699 MHz ~ 716 MHz
Modulation Type	QPSK, 16QAM
Category	M1
Release Version	13

1.1.2 Power Supply Type of Equipment under Test (EUT)

Power Supply Type	6Vdc (AAA battery x4)
--------------------------	-----------------------

1.1.3 Antenna Details of Specific platform

BT / Wi-Fi

Ant. No.	Brand	Model	Type	Connector	Gain (dBi)	Remarks
1	BROADCOM	BCM9Fractal	PCB	N/A	2.8	---

LTE

Ant. No.	Model	Type	LTE band	Gain (dBi)
1	Ethertronics 1004796	SMT	Band 2	3.1
	Ethertronics 1004796	SMT	Band 4	3.1
	Ethertronics 1004796	SMT	Band 12	1.6

1.1.4 Accessories of Specific platform

N/A

1.1.5 Test Sample Information

MAC Number of Test Sample	Radiated Emission: 00:24:E4:C7:25:77
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1.2 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber1 / (03CH01-WS)				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021
Receiver	R&S	ESR3	101658	Feb. 08, 2021	Feb. 07, 2022
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 10, 2020	Jul. 09, 2021
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 11, 2020	Dec. 10, 2021
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 06, 2020	Nov. 05, 2021
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 17, 2020	Nov. 16, 2021
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 06, 2020	Oct. 05, 2021
Preamplifier	EMC	EMC02325	980225	Jul. 03, 2020	Jul. 02, 2021
Preamplifier	Agilent	83017A	MY39501308	Sep. 26, 2020	Sep. 25, 2021
Preamplifier	EMC	EMC184045B	980192	Jul. 21, 2020	Jul. 20, 2021
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 06, 2020	Oct. 05, 2021
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 06, 2020	Oct. 05, 2021
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 06, 2020	Oct. 05, 2021
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	Oct. 06, 2020	Oct. 05, 2021
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 06, 2020	Oct. 05, 2021
LF cable 11M	EMC	EMCCFD400-NW-N W-11000	200801	Oct. 06, 2020	Oct. 05, 2021
Measurement Software	AUDIX	e3	6.120210g	NA	NA
Wideband Radio Communication Tester	R&S	CMW500	106070	Mar. 02, 2021	Mar. 01, 2022
Note: Calibration Interval of instruments listed above is one year.					

1.3 Test Standards

47 CFR FCC Part 15.247
47 CFR FCC Part 24 Subpart E
47 CFR FCC Part 27
ANSI C63.10-2013
ANSI C63.4-2014

1.4 Reference Guidance

FCC KDB 558074 D01 15.247 Meas Guidance v05r02
FCC KDB 412172 D01 Determining ERP and EIRP v01r01
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

1.5 Deviation from Test Standard and Measurement Procedure

None

1.6 Measurement Uncertainty

The measurement uncertainties given below are based on a 95% confidence level (based on a coverage factor (k=2)).

Measurement Uncertainty	
Parameters	Uncertainty
Radiated emission \leq 1GHz	± 3.41 dB
Radiated emission $>$ 1GHz	± 4.59 dB

2 Test Configuration

2.1 Testing Facility

Test Laboratory	International Certification Corporation
Test Site	03CH01-WS
Address of Test Site	No.3-1, Lane 6, Wen San 3rd St., Kwei Shan Dist., Tao Yuan City 33381, Taiwan (R.O.C.)

- FCC Designation No.: TW2732
- FCC site registration No.: 181692
- ISED#: 10807A
- CAB identifier: TW2732

2.2 The Worst Test Modes and Channel Details

Test item	Test Mode	Test Configuration
Radiated Emissions	LTE-M1 Band 2 CH18700 + LE CH2480 MHz	---
	LTE-M1 Band 4 CH20500 + LE CH2480 MHz	
	LTE-M1 Band 12 CH23155 + LE CH2480 MHz	

Note: The selected channel is the maximum power channel of LTE and Bluetooth function.

3 Transmitter Test Results

3.1 Unwanted Emissions into Restricted Frequency Bands

3.1.1 Limit of Unwanted Emissions into Restricted Frequency Bands

Table 1: Restricted Band Emissions Limit

Frequency Range (MHz)	Field Strength (uV/m)	Field Strength (dBuV/m)	Measure Distance (m)
0.009~0.490	2400/F(kHz)	48.5 - 13.8	300
0.490~1.705	24000/F(kHz)	33.8 - 23	30
1.705~30.0	30	29	30
30~88	100	40	3
88~216	150	43.5	3
216~960	200	46	3
Above 960	500	54	3

Note 1:

Quasi-Peak value is measured for frequency below 1GHz except for 9–90 kHz, 110–490 kHz frequency band. Peak and average value are measured for frequency above 1GHz. The limit on average radio frequency emission is as above table. The limit on peak radio frequency emissions is 20 dB above the maximum permitted average emission limit

Note 2:

Measurements may be performed at a distance other than what is specified provided. When performing measurements at a distance other than that specified, the results shall be extrapolated to the specified distance using an extrapolation factor as below, Frequency at or above 30 MHz: 20 dB/decade Frequency below 30 MHz: 40 dB/decade.

The device shall meet below limit

1. Table 1 limit
2. -13 dBm for spurious emission is caused by the simultaneous operation(BT +WWAN)
(The limit is the highest level allowed by either rule part)

3.1.2 Test Procedures

Measurement for limit of Table 1

1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. The EUT is placed at test table. For emissions testing at or below 1 GHz, the table height is 80 cm above the reference ground plane. For emission measurements above 1 GHz, the table height is 1.5 m
2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.

Note:

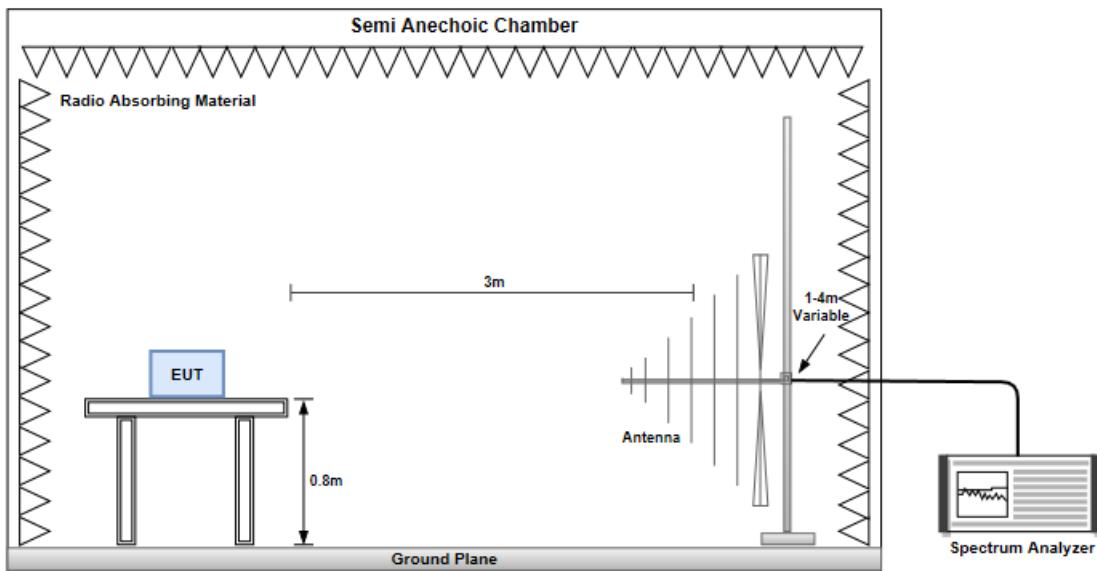
1. 120kHz measurement bandwidth of test receiver and Quasi-peak detector is for radiated emission below 1GHz.
2. RBW=1MHz, VBW=3MHz and Peak detector is for peak measured value of radiated emission above 1GHz.
3. RBW=1MHz, VBW=1/T and Peak detector is for average measured value of radiated emission above 1GHz.

Measurement for -13 dBm limit

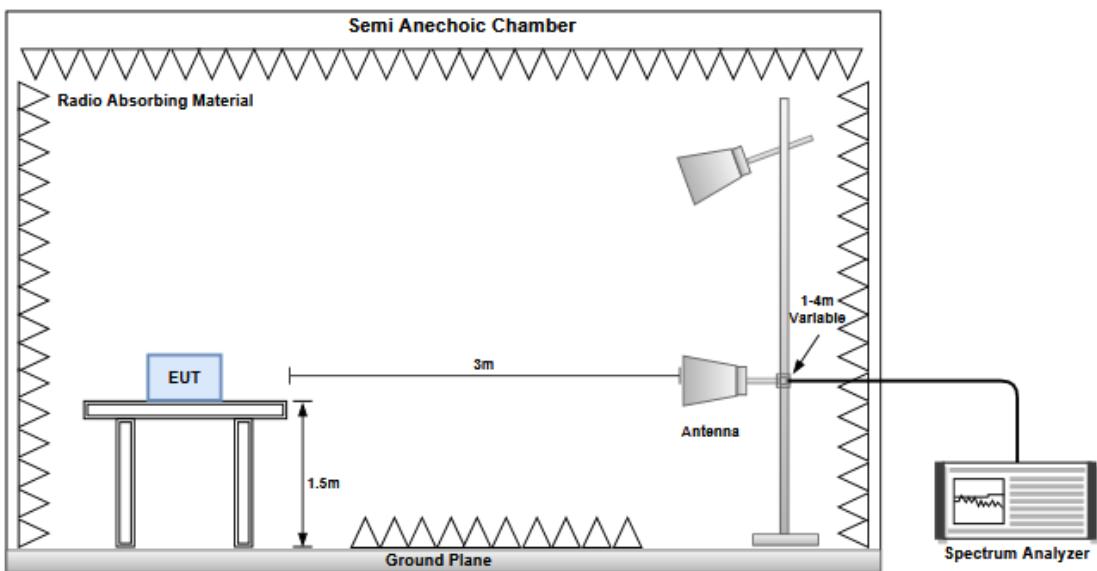
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2. Measurement is made with the antenna positioned in both the horizontal and vertical planes of polarization. The measurement antenna is varied in height (1m ~ 4m) above the reference ground plane to obtain the maximum signal strength. Distance between EUT and antenna is 3 m.
3. This investigation is performed with the EUT rotated 360°, the antenna height scanned between 1 m and 4 m, and the antenna rotated to repeat the measurements for both the horizontal and vertical antenna polarizations.
4. After finding the max radiated emission, substitution method will be used for getting effective radiated power. EUT will be removed and substitution antenna will be placed at same position. Signal generator will output CW signal to substitution antenna through a RF cable. Rotate turntable and move antenna to find maximum radiated emission. Adjust output power of signal generator to let the maximum radiated emission is same as step 3. Record the output power level.
5. E.I.R.P = output power of step 4 + gain of substitution antenna – cable loss of RF cable.

3.1.3 Test Setup

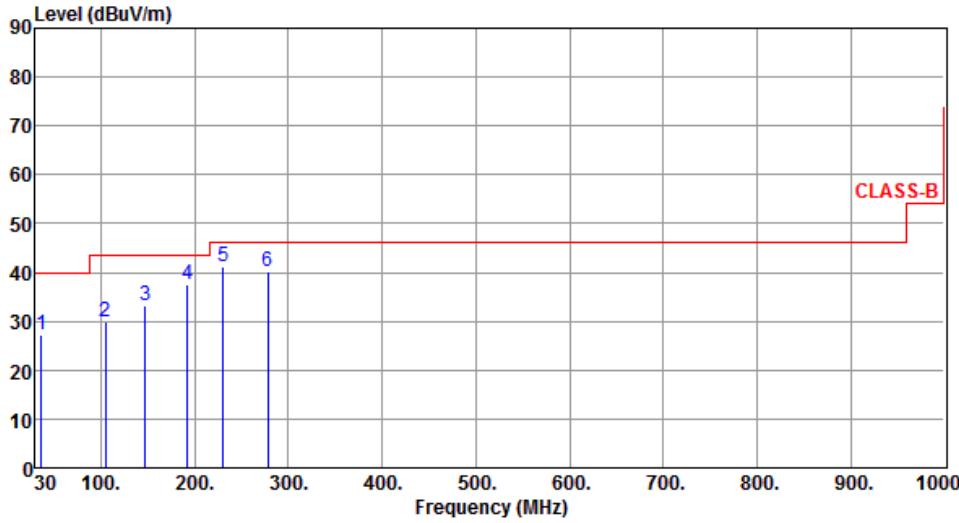
Radiated Emissions below 1 GHz

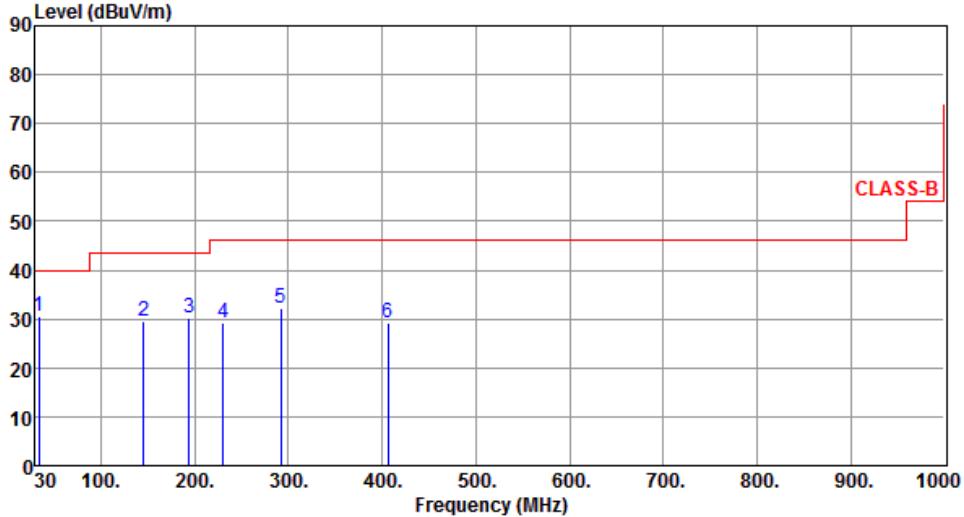


Radiated Emissions above 1 GHz



3.1.4 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Test Mode	LTE-M1 Band 2 CH18700 + LE CH2480 MHz																																																																													
Polarization	Horizontal																																																																													
Test By	: Roger Lu		Temperature(°C):25			Humidity(%):65																																																																								
																																																																														
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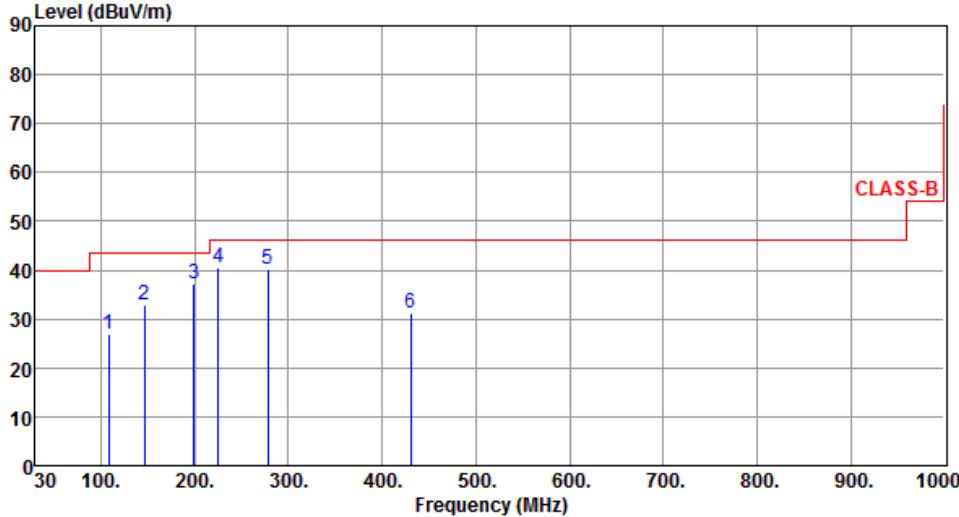
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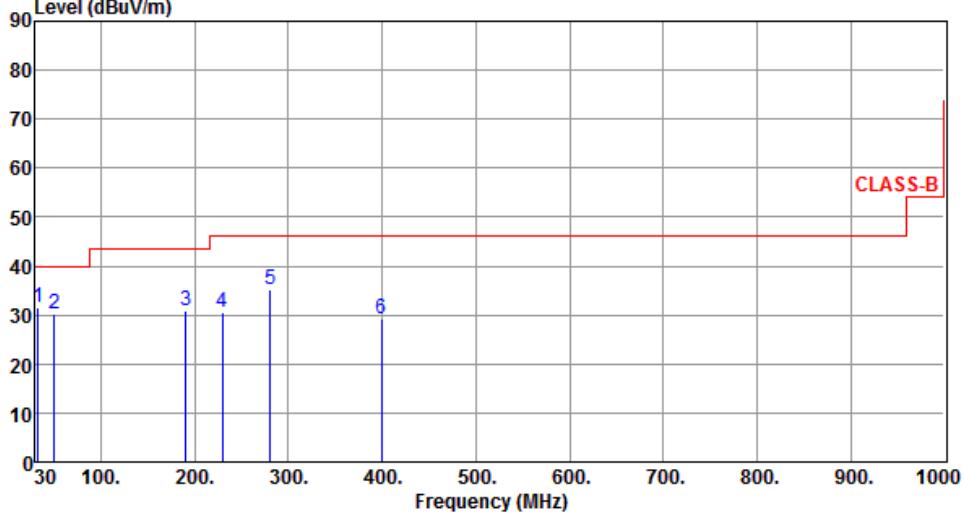
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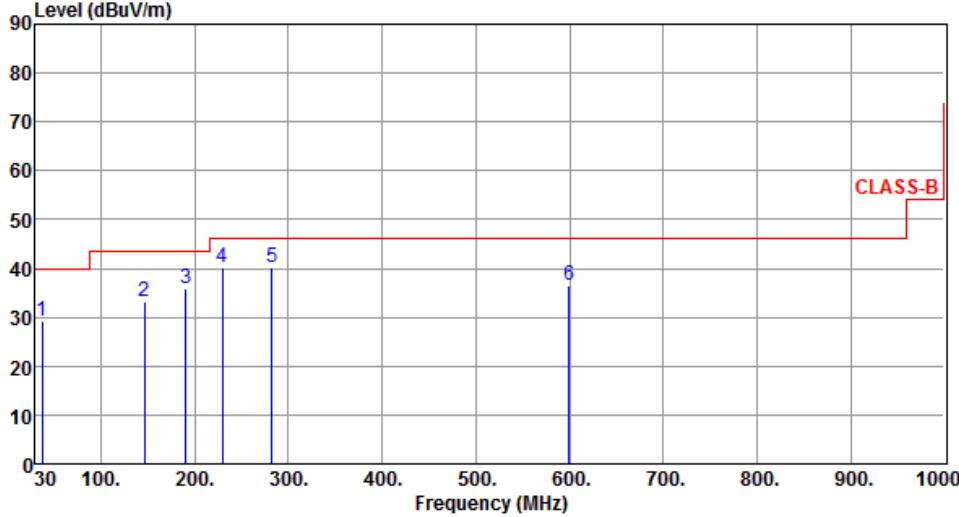
*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

Test Mode	LTE-M1 Band 4 CH20500 + LE CH2480 MHz																																																																															
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Test By	:Roger Lu			Temperature(°C):25			Humidity(%):65																																																																									
																																																																																
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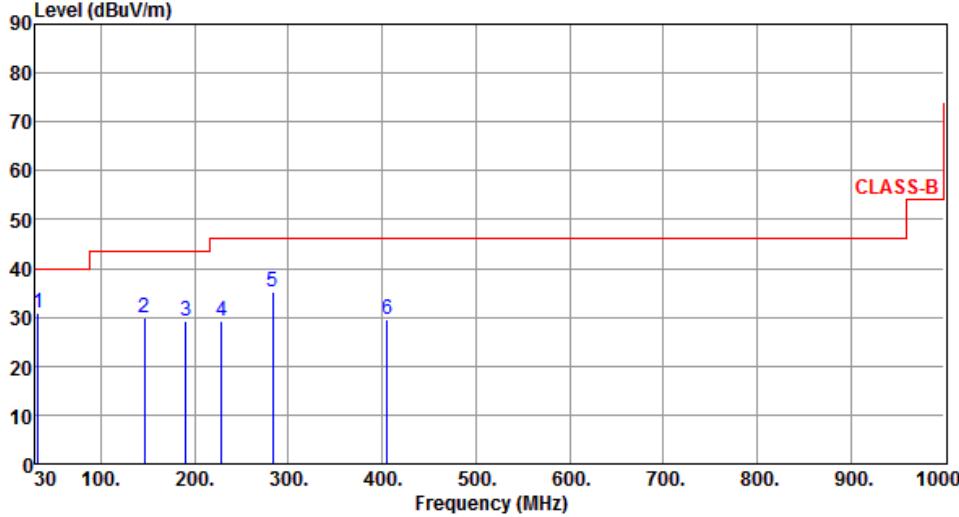
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Polarization	Vertical																																																																																						
Test By	:Roger Lu			Temperature(°C):25			Humidity(%):65																																																																																
																																																																																							
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Note 1: Emission Level (dBuV/m) = SA Reading (dBuV) + Factor* (dB/m)

*Factor includes antenna factor , cable loss and amplifier gain

Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Note 3: All spurious emissions below 30MHz are more than 20 dB below the limit.

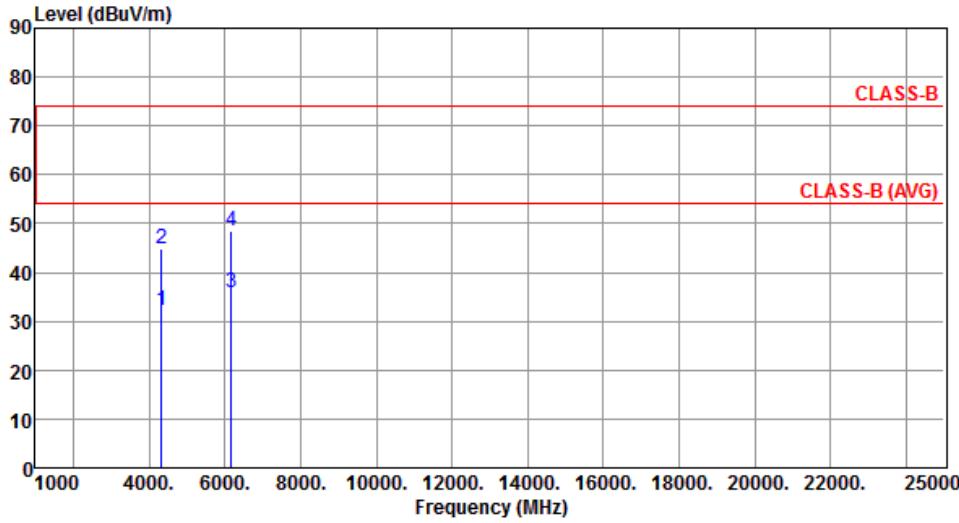
Ambient Condition	25°C / 65%	Tested By	Roger Lu
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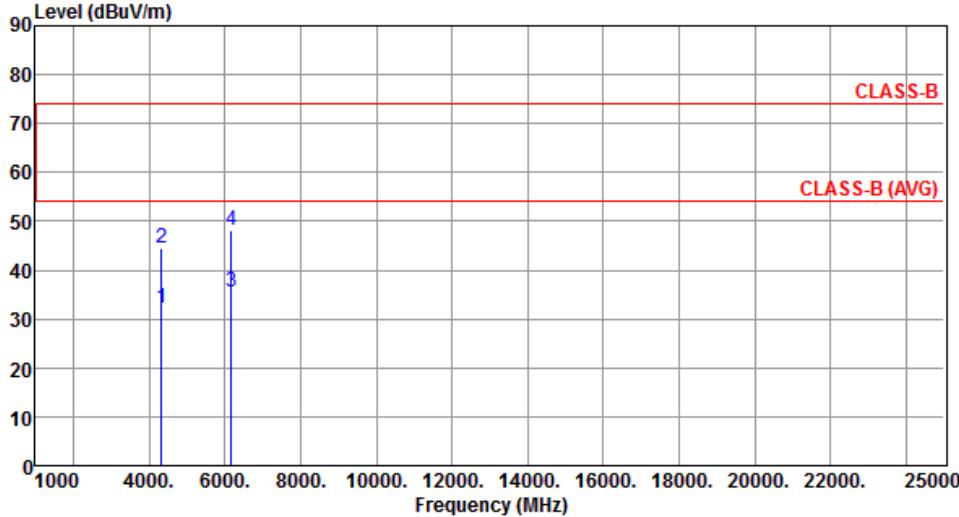
Mode	Band 2, BW:20MHz, QPSK, CH18700 + BLE 2480MHz						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
628.55	H	-46.48	-13	-33.48	-51.85	-44.74	-1.74
628.55	V	-55.2	-13	-42.2	-63.52	-53.46	-1.74

Mode	Band 4, BW:20MHz, QPSK, CH20500 + BLE 2480MHz						
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Value (dBm)	Correction Factor (dB)
768.55	H	-29.53	-13	-16.53	-38.52	-27.51	-2.02
942.9	H	-22.38	-13	-9.38	-33.34	-19.79	-2.59
768.55	V	-37.82	-13	-24.82	-47.59	-35.8	-2.02
942.9	V	-27.21	-13	-14.21	-40.11	-24.62	-2.59

Note: EIRP = S.G power value + Correction Factor.

3.1.5 Transmitter Radiated Unwanted Emissions (Above 1GHz)

Test Mode	LTE-M1 Band 2 CH18700 + LE CH2480 MHz																																																																											
Polarization	Horizontal																																																																											
Test By	: Roger Lu			Temperature(°C):25			Humidity(%):65																																																																					
																																																																												
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Polarization	Vertical																																																											
Test By	:Roger Lu			Temperature(°C):25			Humidity(%):65																																																					
																																																												
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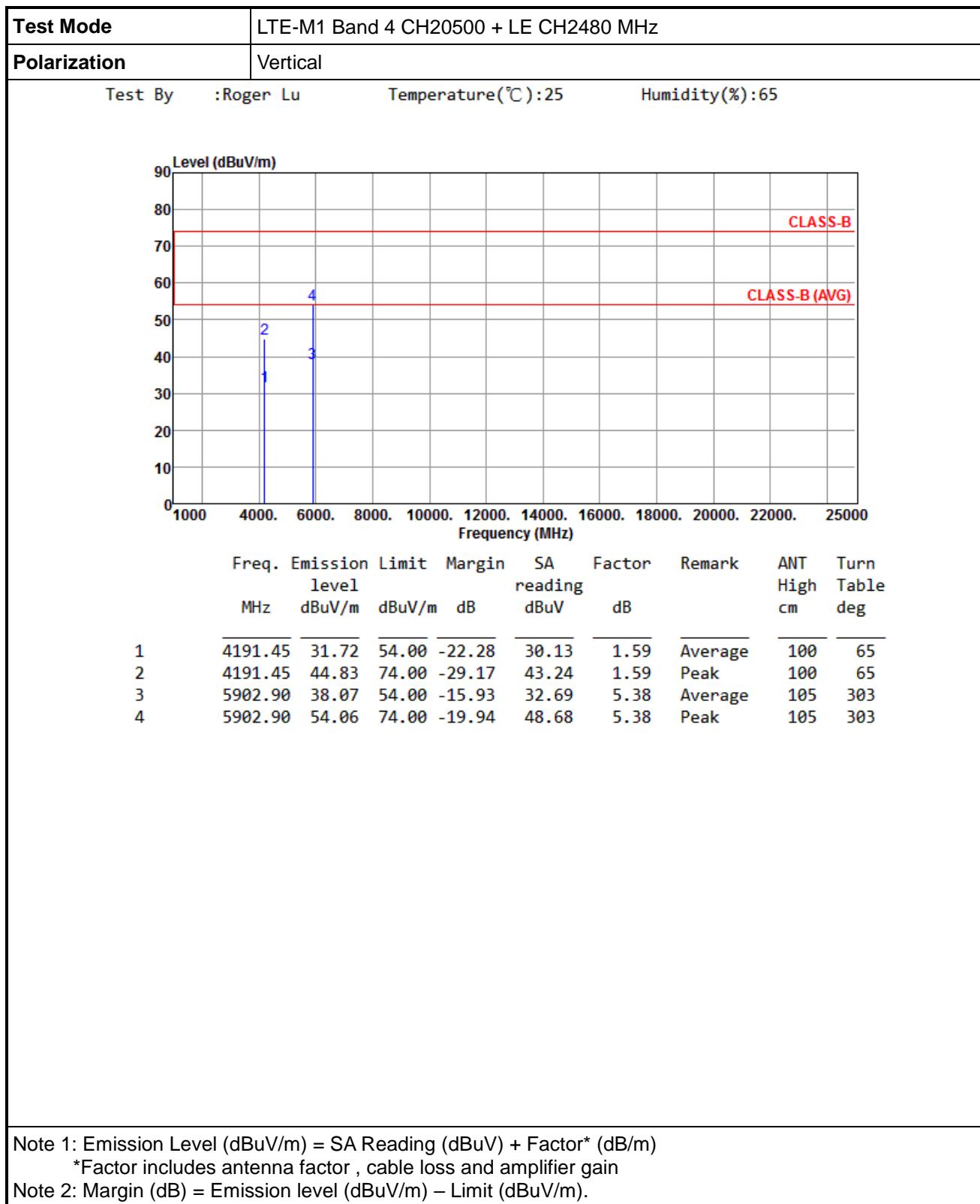
Note 2: Margin (dB) = Emission level (dBuV/m) – Limit (dBuV/m).

Test Mode	LTE-M1 Band 4 CH20500 + LE CH2480 MHz																																																																																						
Polarization	Horizontal																																																																																						
Test By	:Roger Lu			Temperature(°C):25			Humidity(%):65																																																																																
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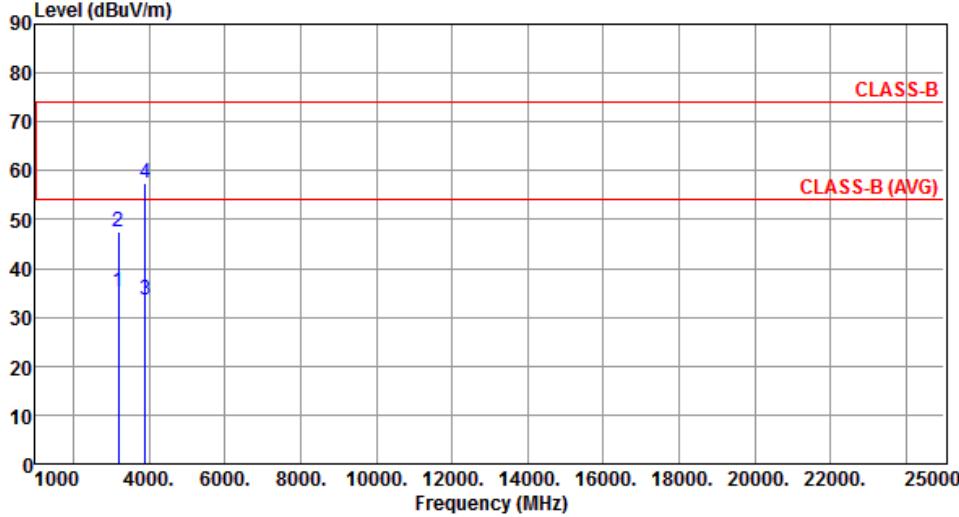


Test Mode	LTE-M1 Band 12 CH23155 + LE CH2480 MHz																																																											
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Test By	:Roger Lu			Temperature(°C):25			Humidity(%):65																																																					
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4 Test laboratory information

Established in 2012, ICC provides foremost EMC & RF Testing and advisory consultation services by our skilled engineers and technicians. Our services employ a wide variety of advanced edge test equipment and one of the widest certification extents in the business.

International Certification Corporation (EMC and Wireless Communication Laboratory), it is our definitive objective is to institute long term, trust-based associations with our clients. The expectation we set up with our clients is based on outstanding service, practical expertise and devotion to a certified value structure. Our passion is to grant our clients with best EMC / RF services by oriented knowledgeable and accommodating staff.

Our Test sites are located at Linkou District and Kwei Shan District. Location map can be found on our website <http://www.icertifi.com.tw>.

Linkou

Tel: 886-2-2601-1640
No.30-2, Ding Fwu Tsuen, Lin Kou
District, New Taipei City, Taiwan
(R.O.C.)

Kwei Shan

Tel: 886-3-271-8666
No.3-1, Lane 6, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 33381, Taiwan (R.O.C.)

Kwei Shan Site II

Tel: 886-3-271-8640
No.14-1, Lane 19, Wen San 3rd
St., Kwei Shan Dist., Tao Yuan
City 333, Taiwan (R.O.C.)

If you have any suggestion, please feel free to contact us as below information

Tel: 886-3-271-8666
Fax: 886-3-318-0155
Email: ICC_Service@icertifi.com.tw

—END—