

FCC Co-Location Test Report

FCC ID : XNAWUP01
Equipment : Data Hub
Model No. : WUP01
Brand Name : Withings
Applicant : Withings
Address : 2 rue Maurice Hartmann
92130 Issy-Les-Moulineaux
France
Standard : 47 CFR FCC Part 15.247
47 CFR FCC Part 22 Subpart H
47 CFR FCC Part 24 Subpart E
47 CFR FCC Part 27
Received Date : Apr. 30, 2021
Tested Date : May 10 ~ May 11, 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:

Approved by:



Along Chen / Assistant Manager



Gary Chang / Manager



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Release Record

Report No.	Version	Description	Issued Date
FR143001CO	Rev. 01	Initial issue	Jul. 16, 2021

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.247(d) 15.209 2.1053 22.917(a) 24.238(a) 27.53(g)	Radiated Emissions	Meet the requirement of limit	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

This report is issued as a Class II Permissive Change.

This report is issued as a supplementary report to original ICC report no. FR9D2301-01CO. The modification is only concerned with adding 2nd LTE antenna, conductive foam on shielding case of embed certified LTE module and changing applicant.

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
Modulation Type	Bluetooth 4.1 LE: GFSK Bluetooth BR(1Mbps): GFSK Bluetooth EDR (2Mbps): $\pi/4$ -DQPSK Bluetooth EDR (3Mbps): 8-DPSK

The device contains a certified WWAN module as below information

FCC ID	N7NHL78
Operating Frequency	Band 2: 1850 MHz ~ 1910 MHz Band 4: 1710 MHz ~ 1755 MHz Band 5: 824 MHz ~ 849 MHz Band 12: 699 MHz ~ 716 MHz Band 13: 777 MHz ~ 787 MHz Band 25: 1850 MHz ~ 1915 MHz Band 26: 814 MHz ~ 849 MHz Band 66: 1710 MHz ~ 1780 MHz
Modulation Type	QPSK, 16QAM
Category	M1 / NB1
Release Version	13

1.1.2 Test Sample Information

MAC of Test Sample	00:24:E4:B1:04:B6
PCB version	6a
FW version	v521

1.1.3 Antenna Details of Specific platform

BT / Wi-Fi

Ant. No.	Brand	Model	Type	Connector	Gain (dBi)
1	BROADCOM	BCM9Fractal	PCB	NA	2.8

LTE

Ant. No.	Type	Connector	LTE band	Gain (dBi)
1	PCB Antenna	U.FL	Band 2	3
			Band 4	3.2
			Band 5	1.4
			Band 12	1.4
			Band 13	1.4
			Band 25	3
			Band 26	1.4
			Band 66	3.2

1.1.4 Accessories

Accessories		
No.	Equipment	Description
1	AC Adapter	Brand: PowerEric Model: SAW06D-050-1000UD Power Rating: I/P: 100-240Vac, 50/60Hz, 0.3A Max O/P: 5Vdc, 1000mA Power Line: 2m shielded without core

1.2 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber 1 / (03CH01-WS)				
Tested Data	May 10 ~ May 11, 2021				
Instrument	Brand	Model No.	Serial No.	Calibration Date	Calibration Until
Receiver	R&S	ESR3	101657	Mar. 12, 2021	Mar. 11, 2022
Spectrum Analyzer	R&S	FSV40	101498	Dec. 04, 2020	Dec. 03, 2021
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 17, 2020	Nov. 16, 2021
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
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
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	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
LF cable 1M	EMC	EMCCFD400-NM-N M-1000	160502	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
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

According to the specification of EUT, the EUT must comply with following standards and KDB documents.

47 CFR FCC Part 15.247

47 CFR FCC Part 22 Subpart H

47 CFR FCC Part 24 Subpart E

47 CFR FCC Part 27

ANSI C63.10-2013

ANSI C63.26-2015

1.4 Reference Standard and Guidance

FCC KDB 412172 D01 Determining ERP and EIRP v01r01

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 Condition

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
Radiated Emissions	LTE-M1 Band 4 CH19957 + 11b CH06
	LTE-M1 Band 25 CH26365 + 11b CH06
	LTE -M1 LTE Band 5 CH20407 + 11b CH06
	LTE -M1 LTE Band 13 CH23230 + 11b CH06
	NB-IoT Band 12 CH23095 + 11b CH06
	LTE-M1 Band 4 CH19957 + BT EDR CH39
	LTE-M1 Band 25 CH26365 + BT EDR CH39
	LTE -M1 LTE Band 5 CH20407 + BT EDR CH39
	LTE -M1 LTE Band 13 CH23230 + BT EDR CH39
	NB-IoT Band 12 CH23095 + BT EDR CH39
<p>NOTE: The EUT was pretested with 3 orientations placed on the table for the radiated emission measurement – X, Y, and Z-plane. The X-plane result was found as the worst case and was shown in this report.</p>	

3 Transmitter Test Results

3.1 Radiated Emissions

3.1.1 Limit

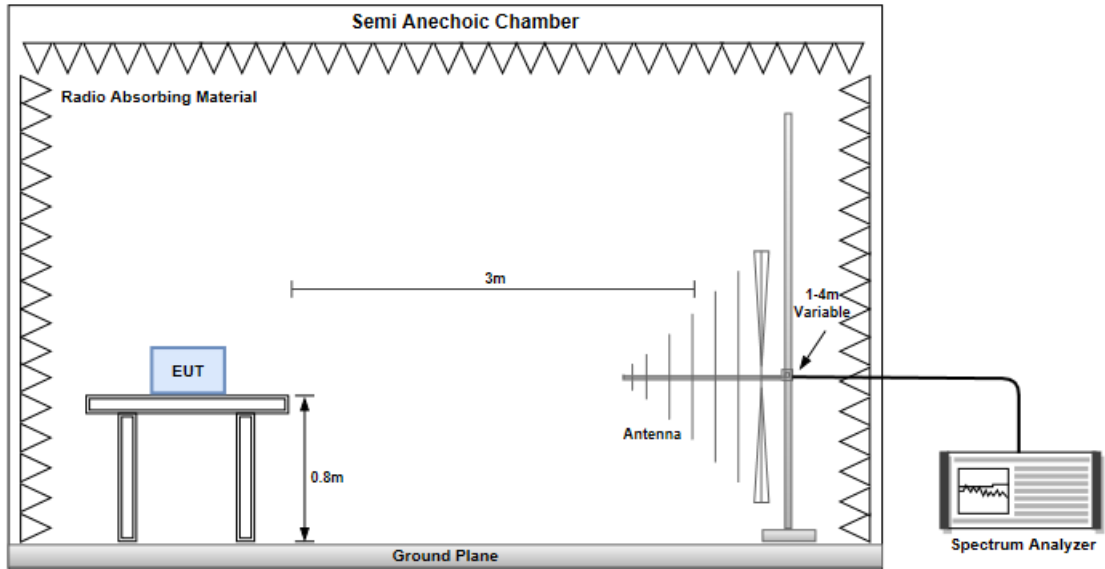
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB equal to -13dBm.

3.1.2 Test Procedures

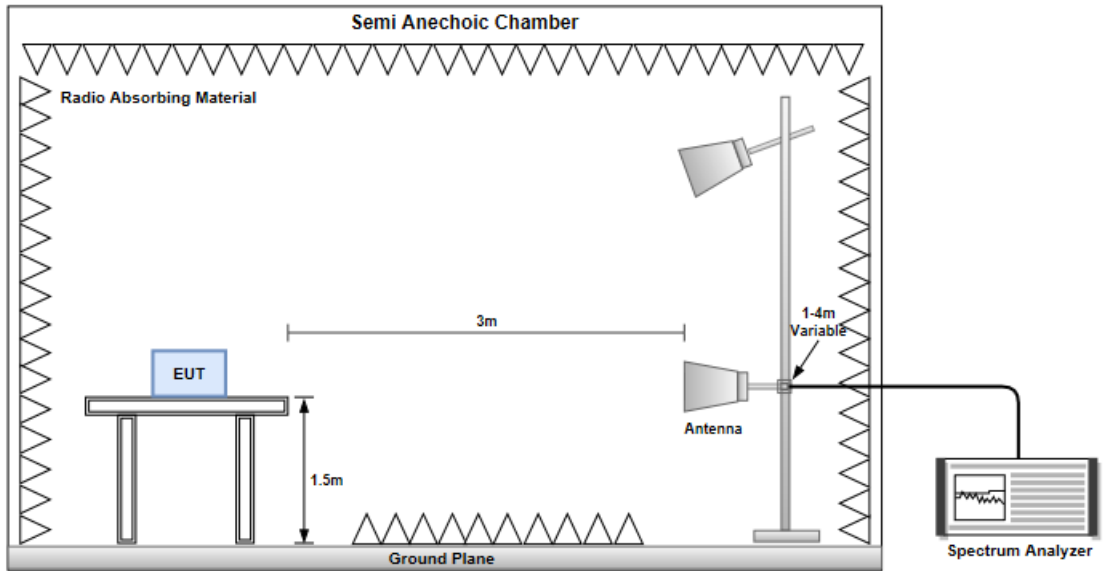
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission frequency. 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.
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. ERP can be calculated by below formula:
 $E.R.P = E.I.R.P - 2.15dB$.

Test Setup

Radiated Emissions below 1 GHz



Radiated Emissions above 1 GHz



3.1.3 Transmitter Radiated Unwanted Emissions (Below 1GHz)

Ambient Condition	24-25°C / 66-67%	Tested By	Brad Wu, Akun Chung
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Test mode		LTE-M1 B4 CH19957 + 11b CH06					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
30	H	-69.91	-13	-56.91	-74.48	-50.43	-19.48
90.14	H	-70.82	-13	-57.82	-65.77	-65.89	-4.93
140.58	H	-74.17	-13	-61.17	-73.22	-67.26	-6.91
256.01	H	-70.9	-13	-57.9	-70.06	-69.56	-1.34
725.49	H	-60.38	-13	-47.38	-67.58	-58.32	-2.06
869.05	H	-55.62	-13	-42.62	-65.33	-53.33	-2.29
45.52	V	-68.64	-13	-55.64	-67.83	-51.74	-16.9
90.14	V	-63.32	-13	-50.32	-63.35	-58.39	-4.93
139.61	V	-65.93	-13	-52.93	-69.62	-59.02	-6.91
260.86	V	-72.35	-13	-59.35	-71.83	-71.02	-1.33
439.34	V	-69.14	-13	-56.14	-73.55	-67.67	-1.47
724.52	V	-64.19	-13	-51.19	-73.25	-62.13	-2.06

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE-M1 B25 CH26365 + 11b CH06					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
30	H	-69.66	-13	-56.66	-74.23	-50.18	-19.48
90.14	H	-68.72	-13	-55.72	-63.67	-63.79	-4.93
105.66	H	-71.73	-13	-58.73	-67.27	-66.35	-5.38
140.58	H	-73.29	-13	-60.29	-72.34	-66.38	-6.91
224	H	-74.41	-13	-61.41	-71.8	-72.2	-2.21
252.13	H	-71.32	-13	-58.32	-70.47	-69.98	-1.34
33.88	V	-68.31	-13	-55.31	-66.59	-49.75	-18.56
90.14	V	-62.33	-13	-49.33	-62.36	-57.4	-4.93
110.51	V	-65.62	-13	-52.62	-66.79	-59.97	-5.65
139.61	V	-66.49	-13	-53.49	-70.18	-59.58	-6.91
261.83	V	-72.34	-13	-59.34	-71.85	-71.01	-1.33
439.34	V	-68.61	-13	-55.61	-73.02	-67.14	-1.47

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE-M1 B5 CH20407 + 11b Ch06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
412.18	H	-51.54	-13	-38.54	-50.69	-47.95	-1.44
652.74	H	-53.26	-13	-40.26	-57.15	-49.28	-1.83
687.66	H	-44.35	-13	-31.35	-48.92	-40.34	-1.86
709.97	H	-40.62	-13	-27.62	-45.53	-36.52	-1.95
745.86	H	-51.45	-13	-38.45	-56.7	-47.08	-2.22
802.12	H	-46.72	-13	-33.72	-52.99	-42.49	-2.08
412.18	V	-49.66	-13	-36.66	-51.07	-46.07	-1.44
687.66	V	-51.78	-13	-38.78	-57.95	-47.77	-1.86
709.97	V	-48.14	-13	-35.14	-54.71	-44.04	-1.95
745.86	V	-52.51	-13	-39.51	-59.91	-48.14	-2.22
802.12	V	-53.93	-13	-40.93	-62.33	-49.7	-2.08
869.05	V	-48.24	-13	-35.24	-57.07	-43.8	-2.29

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		LTE-M1 B13 CH23230 + 11b CH06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
669.23	H	-46.51	-13	-33.51	-50.72	-42.51	-1.85
687.66	H	-42.39	-13	-29.39	-46.96	-38.38	-1.86
753.62	H	-43.25	-13	-30.25	-48.62	-38.86	-2.24
802.12	H	-43.14	-13	-30.14	-49.41	-38.91	-2.08
859.35	H	-44.66	-13	-31.66	-52.14	-40.26	-2.25
899.12	H	-48.59	-13	-35.59	-56.38	-44.04	-2.4
669.23	V	-52.16	-13	-39.16	-58.09	-48.16	-1.85
687.66	V	-48.85	-13	-35.85	-55.02	-44.84	-1.86
753.62	V	-47.3	-13	-34.3	-54.87	-42.91	-2.24
802.12	V	-53.33	-13	-40.33	-61.73	-49.1	-2.08
842.86	V	-54.4	-13	-41.4	-62.87	-50.05	-2.2
859.35	V	-50.84	-13	-37.84	-59.49	-46.44	-2.25

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		NB-IoT LTE B12 CH23095 + 11b Ch06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
687.66	H	-43.49	-13	-30.49	-48.06	-39.48	-1.86
745.86	H	-47.11	-13	-34.11	-52.36	-42.74	-2.22
765.26	H	-53.39	-13	-40.39	-58.97	-49.04	-2.2
822.49	H	-48.12	-13	-35.12	-54.88	-43.83	-2.14
859.35	H	-46.71	-13	-33.71	-54.19	-42.31	-2.25
878.75	H	-44.07	-13	-31.07	-51.7	-39.6	-2.32
592.6	V	-56.63	-13	-43.63	-61.59	-52.62	-1.86
687.66	V	-57.3	-13	-44.3	-63.47	-53.29	-1.86
745.86	V	-56.52	-13	-43.52	-63.92	-52.15	-2.22
802.12	V	-53.25	-13	-40.25	-61.65	-49.02	-2.08
822.49	V	-43.32	-13	-30.32	-51.75	-39.03	-2.14
878.75	V	-53.51	-13	-40.51	-62.51	-49.04	-2.32

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		LTE -M1 B4 CH19957 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
30	H	-71.32	-13	-58.32	-75.89	-51.84	-19.48
90.14	H	-73.67	-13	-60.67	-68.62	-68.74	-4.93
138.64	H	-75.16	-13	-62.16	-74.06	-68.29	-6.87
258.92	H	-72.6	-13	-59.6	-71.77	-71.27	-1.33
725.49	H	-61.52	-13	-48.52	-68.72	-59.46	-2.06
869.05	H	-56.76	-13	-43.76	-66.47	-54.47	-2.29
45.52	V	-68.6	-13	-55.6	-67.79	-51.7	-16.9
62.01	V	-68.79	-13	-55.79	-67.18	-55.44	-13.35
90.14	V	-62.96	-13	-49.96	-62.99	-58.03	-4.93
140.58	V	-67.01	-13	-54.01	-70.72	-60.1	-6.91
256.01	V	-73.83	-13	-60.83	-73.17	-72.49	-1.34
725.49	V	-64.14	-13	-51.14	-73.22	-62.08	-2.06

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE -M1 B25 CH26365 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
30.16	H	-69.45	-13	-56.45	-74.01	-50.01	-19.44
90.24	H	-68.91	-13	-55.91	-63.88	-63.98	-4.93
105.44	H	-71.58	-13	-58.58	-67.1	-66.21	-5.37
140.25	H	-73.44	-13	-60.44	-72.51	-66.53	-6.91
223.95	H	-74.14	-13	-61.14	-71.52	-71.92	-2.22
252.46	H	-71.42	-13	-58.42	-70.57	-70.08	-1.34
33.91	V	-68.45	-13	-55.45	-66.73	-49.9	-18.55
90.25	V	-62.11	-13	-49.11	-62.14	-57.18	-4.93
110.46	V	-65.98	-13	-52.98	-67.15	-60.33	-5.65
139.54	V	-66.29	-13	-53.29	-69.97	-59.39	-6.9
262.16	V	-72.46	-13	-59.46	-71.98	-71.13	-1.33
439.68	V	-68.54	-13	-55.54	-72.96	-67.07	-1.47

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE -M1 B5 CH20407 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
412.18	H	-48.2	-13	-35.2	-47.35	-44.61	-1.44
687.66	H	-44.11	-13	-31.11	-48.68	-40.1	-1.86
709.97	H	-44.97	-13	-31.97	-49.88	-40.87	-1.95
802.12	H	-45.39	-13	-32.39	-51.66	-41.16	-2.08
859.35	H	-49.64	-13	-36.64	-57.12	-45.24	-2.25
870.99	H	-47.01	-13	-34.01	-54.58	-42.56	-2.3
412.18	V	-51.61	-13	-38.61	-53.02	-48.02	-1.44
652.74	V	-54.87	-13	-41.87	-60.58	-50.89	-1.83
687.66	V	-49.73	-13	-36.73	-55.9	-45.72	-1.86
709.97	V	-47.72	-13	-34.72	-54.29	-43.62	-1.95
802.12	V	-50.3	-13	-37.3	-58.7	-46.07	-2.08
869.05	V	-50.5	-13	-37.5	-59.33	-46.06	-2.29

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		LTE -M1 B13 CH23230 + 11b Ch06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
669.45	H	-46.61	-13	-33.61	-50.83	-42.61	-1.85
687.55	H	-42.77	-13	-29.77	-47.34	-38.76	-1.86
753.38	H	-43.73	-13	-30.73	-49.08	-39.34	-2.24
802.35	H	-43.44	-13	-30.44	-49.72	-39.21	-2.08
859.31	H	-44.43	-13	-31.43	-51.91	-40.03	-2.25
899.26	H	-49.06	-13	-36.06	-56.85	-44.51	-2.4
669.48	V	-52.4	-13	-39.4	-58.33	-48.4	-1.85
687.45	V	-48.67	-13	-35.67	-54.83	-44.66	-1.86
753.91	V	-48.13	-13	-35.13	-55.71	-43.74	-2.24
802.41	V	-53.37	-13	-40.37	-61.77	-49.14	-2.08
842.91	V	-54.19	-13	-41.19	-62.66	-49.84	-2.2
859.48	V	-50.7	-13	-37.7	-59.35	-46.3	-2.25

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		NB-IoT LTE B12 CH23095 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
687.52	H	-43.73	-13	-30.73	-48.3	-39.72	-1.86
745.91	H	-46.99	-13	-33.99	-52.24	-42.62	-2.22
765.41	H	-53.47	-13	-40.47	-59.05	-49.13	-2.19
822.56	H	-48.31	-13	-35.31	-55.07	-44.02	-2.14
859.42	H	-46.83	-13	-33.83	-54.32	-42.43	-2.25
878.69	H	-44.02	-13	-31.02	-51.65	-39.55	-2.32
592.42	V	-57.06	-13	-44.06	-62.02	-53.05	-1.86
687.52	V	-57.58	-13	-44.58	-63.75	-53.57	-1.86
745.92	V	-56.76	-13	-43.76	-64.17	-52.39	-2.22
802.24	V	-53.01	-13	-40.01	-61.41	-48.78	-2.08
822.49	V	-43.6	-13	-30.6	-52.03	-39.31	-2.14
878.86	V	-53.64	-13	-40.64	-62.65	-49.17	-2.32

Note: ERP = S.G Power value + Correction factor - 2.15

3.1.4 Transmitter Radiated Unwanted Emissions (Above 1GHz)

Ambient Condition	24-25°C / 66-67%	Tested By	Brad Wu, Akun Chung
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Test mode		LTE-M1 B4 CH19957 + 11b CH06					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
4147.25	H	-45.49	-13	-32.49	-58.59	-51.52	6.03
5857.5	H	-45.26	-13	-32.26	-62.15	-50.95	5.69
4147.25	V	-50.61	-13	-37.61	-63.55	-56.64	6.03
5857.5	V	-47.63	-13	-34.63	-64.28	-53.32	5.69

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE-M1 B25 CH26365 + 11b CH06					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
4319.05	H	-46.65	-13	-33.65	-60.23	-52.49	5.84
6201.1	H	-45.13	-13	-32.13	-62.55	-50.61	5.48
4319.05	V	-49.42	-13	-36.42	-62.39	-55.26	5.84
6201.1	V	-45.31	-13	-32.31	-62.87	-50.79	5.48

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE-M1 B5 CH20407 + 11b Ch06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
3261.25	H	-42.58	-13	-29.58	-51.45	-46.36	5.93
4085.5	H	-43.67	-13	-30.67	-54.56	-47.61	6.09
3261.25	V	-51.02	-13	-38.02	-59.78	-54.8	5.93
4085.5	V	-48.53	-13	-35.53	-59.35	-52.47	6.09

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		LTE -M1 B13 CH23230 + 11b Ch06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
3221.12	H	-44.75	-13	-31.75	-53.66	-48.36	5.76
4005.24	H	-41.26	-13	-28.26	-52.08	-45.28	6.17
3221.12	V	-47.06	-13	-34.06	-55.83	-50.67	5.76
4005.24	V	-45.52	-13	-32.52	-56.39	-49.54	6.17

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		NB-IoT LTE B12 CH23095 + 11b Ch06					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
3144.5	H	-42.17	-13	-29.17	-50.8	-45.68	5.66
3852	H	-40.06	-13	-27.06	-50.34	-43.99	6.08
4166.5	H	-46.73	-13	-33.73	-57.68	-50.59	6.01
5581.5	H	-46.82	-13	-33.82	-60.86	-50.43	5.76
3144.5	V	-45.38	-13	-32.38	-53.99	-48.89	5.66
3852	V	-48.21	-13	-35.21	-58.61	-52.14	6.08
4166.5	V	-49.1	-13	-36.1	-59.87	-52.96	6.01
5581.5	V	-46.13	-13	-33.13	-60.35	-49.74	5.76

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		LTE -M1 B4 CH19957 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
3171.5	H	-52.14	-13	-39.14	-63.06	-57.81	5.67
4151.5	H	-49.86	-13	-36.86	-62.96	-55.89	6.03
3171.5	V	-51.7	-13	-38.7	-62.54	-57.37	5.67
4151.5	V	-50.14	-13	-37.14	-63.08	-56.17	6.03

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE -M1 B25 CH26365 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.I.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
1324	H	-36.04	-13	-23.04	-40.44	-39.16	3.12
4323.5	H	-47.75	-13	-34.75	-61.35	-53.58	5.83
1324	V	-45.12	-13	-32.12	-49.48	-48.24	3.12
4323.5	V	-50.58	-13	-37.58	-63.55	-56.41	5.83

Note: EIRP = S.G Power value + Correction factor

Test mode		LTE -M1 B5 CH20407 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
1616.3	H	-47.91	-13	-34.91	-50.22	-50.79	5.03
32658.7	H	-52.35	-13	-39.35	-61.22	-56.15	5.95
1616.3	V	-47.52	-13	-34.52	-50.08	-50.4	5.03
32658.7	V	-54.1	-13	-41.1	-62.86	-57.9	5.95

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		LTE -M1 B13 CH23230 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
1659	H	-47.43	-13	-34.43	-49.97	-50.4	5.12
3223	H	-56.91	-13	-43.91	-65.81	-60.53	5.77
1659	V	-47.8	-13	-34.8	-50.5	-50.77	5.12
3223	V	-56.44	-13	-43.44	-65.21	-60.06	5.77

Note: ERP = S.G Power value + Correction factor - 2.15

Test mode		NB-IoT LTE B12 CH23095 + BT EDR CH39					
Frequency (MHz)	Antenna Polarity	E.R.P (dBm)	Limit (dBm)	Margin (dB)	S.A Reading (dBm)	S.G Power Vaule (dBm)	Correction Factor (dB)
1733.5	H	-47.47	-13	-34.47	-50.42	-50.6	5.28
3148.5	H	-55.59	-13	-42.59	-64.24	-59.1	5.66
1733.5	V	-47.82	-13	-34.82	-50.77	-50.95	5.28
3148.5	V	-54.62	-13	-41.62	-63.24	-58.13	5.66

Note: ERP = S.G Power value + Correction factor - 2.15

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

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Kwei Shan

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

No.2-1, 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

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