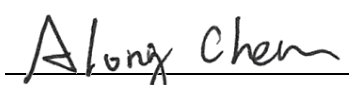
FCC Co-Location Test Report

FCC ID	:	**XNAWUP01**
Equipment	:	**Data Hub**
Model No.	:	**WUP01**
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 15.407**
Received Date	:	**Mar. 16, 2020**
Tested Date	:	**Apr. 23, 2020**

We, International Certification Corp., 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**

Testing Laboratory
2732

Table of Contents

Release Record

Report No.	Version	Description	Issued Date
FR9D2301-01CO	Rev. 01	Initial issue	May 15, 2020

Summary of Test Results

FCC Rules	Test Items	Measured	Result
15.247(d) 15.209 15.407(b) 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

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	**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 17: 704 MHz ~ 716 MHz Band 25: 1850 MHz ~ 1915 MHz Band 26: 814 MHz ~ 849 MHz Band 14: 788 MHz ~ 798 MHz Band 66: 1710 MHz ~ 1780 MHz
Modulation Type	QPSK, 16QAM
Category	M1 / NB1
Release Version	13

1.1.2 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	1.9
			Band 4	1.8
			Band 5	0.5
			Band 12	-5.8
			Band 13	-2.8
			Band 17	-5.8
			Band 25	1.9
			Band 26	0.5
			Band 14	-2.6
			Band 66	1.8

1.1.3 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

1.1.4 Test Sample Information

MAC of Test Sample	Radiated Emission: 00:24:E4:9E:A3:B4 Antenna Port Conducted: 43:43:A1:12:1F:AC
PCB version	5a

1.2 The Equipment List

Test Item	Radiated Emission				
Test Site	966 chamber 1 / (03CH01-WS)				
Tested Data	Apr. 23, 2020				
Instrument	**Manufacturer**	**Model No.**	**Serial No.**	**Calibration Date**	**Calibration Until**
Spectrum Analyzer	R&S	FSV40	101498	Dec. 17, 2019	Dec. 16, 2020
Receiver	R&S	ESR3	101657	Feb. 14, 2020	Feb. 13, 2021
Bilog Antenna	SCHWARZBECK	VULB9168	VULB9168-522	Jul. 12, 2019	Jul. 11, 2020
Horn Antenna 1G-18G	SCHWARZBECK	BBHA 9120 D	BBHA 9120 D 1096	Dec. 12, 2019	Dec. 11, 2020
Horn Antenna 18G-40G	SCHWARZBECK	BBHA 9170	BBHA 9170517	Nov. 15, 2019	Nov. 14, 2020
Loop Antenna	R&S	HFH2-Z2	100330	Nov. 13, 2019	Nov. 12, 2020
Loop Antenna Cable	KOAX KABEL	101354-BW	101354-BW	Oct. 07, 2019	Oct. 06, 2020
Preamplifier	EMC	EMC02325	980225	Jul. 09, 2019	Jul. 08, 2020
Preamplifier	Agilent	83017A	MY39501308	Oct. 08, 2019	Oct. 07, 2020
Preamplifier	EMC	EMC184045B	980192	Aug. 01, 2019	Jul. 31, 2020
RF Cable	EMC	EMC104-SM-SM-8000	181106	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16019/4	Oct. 07, 2019	Oct. 06, 2020
RF Cable	HUBER+SUHNER	SUCOFLEX104	MY16014/4	Oct. 07, 2019	Oct. 06, 2020
LF cable 1M	EMC	EMCCFD400-NM-NM-1000	160502	Oct. 07, 2019	Oct. 06, 2020
LF cable 3M	Woken	CFD400NL-LW	CFD400NL-001	Oct. 07, 2019	Oct. 06, 2020
LF cable 10M	Woken	CFD400NL-LW	CFD400NL-002	Oct. 07, 2019	Oct. 06, 2020
Measurement Software	AUDIX	e3	6.120210g	NA	NA
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 15.407
ANSI C63.4-2014
ANSI C63.10-2013
FCC KDB 558074 D01 15.247 Meas Guidance v05r02
FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

1.4 Reference Standard and Guidance

47 CFR FCC Part 22 Subpart H
47 CFR FCC Part 24 Subpart E
47 CFR FCC Part 27
ANSI C63.26-2015
FCC KDB 412172 D01 Determining ERP and EIRP v01r01

1.5 Deviation from Test Standard and Measurement Procedure

None

1.6 Measurement Uncertainty

ISO/IEC 17025 requires that an estimate of the measurement uncertainties associated with the emissions test results be included in the report. 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 ≤ 1GHz	±3.41dB
Radiated emission > 1GHz	±4.59 dB

2 Test Configuration

2.1 Testing Condition

Test Item	Test Site	Ambient Condition	Tested By
Radiated Emissions	03CH01-WS	23°C / 66%	Akun Chung

- 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
	NB-IoT Band 12 CH23095 + 11b CH06
	NB-IoT Band 14 CH23301 + 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
	NB-IoT Band 12 CH23095 + BT EDR CH39
	NB-IoT Band 14 CH23301 + BT EDR CH39
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.	

3 Transmitter Test Results

3.1 Radiated Emissions

3.1.1 Limit

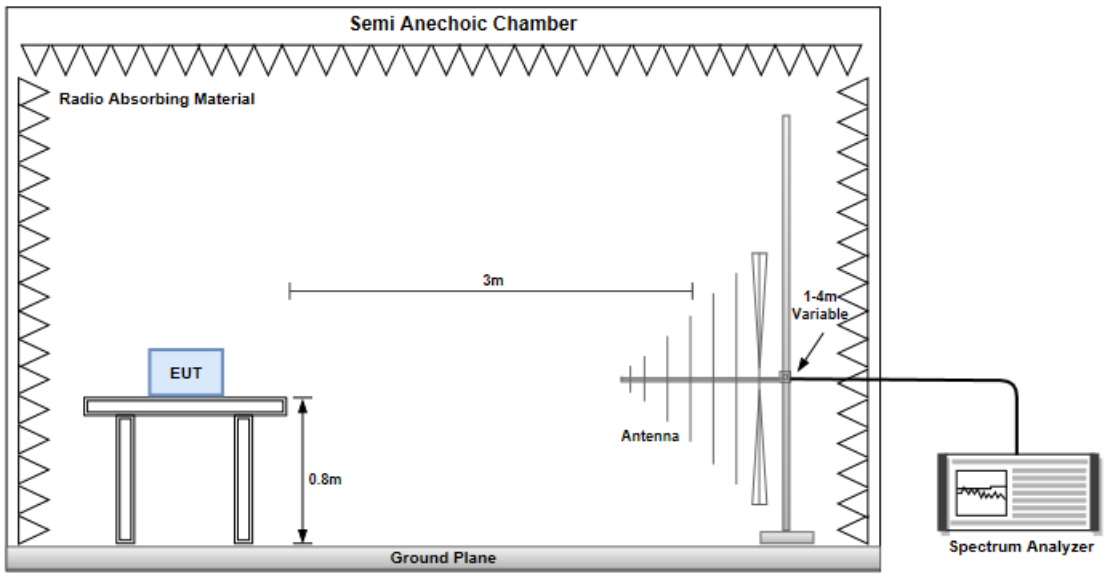
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10 log(P) dB equal to -13dBm.

3.1.2 Test Procedures

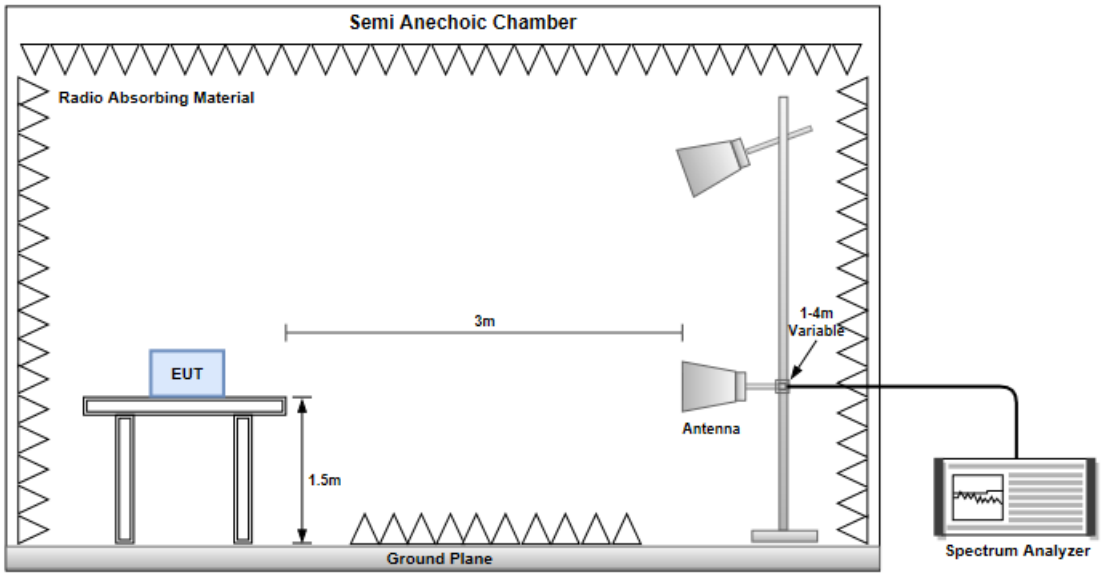
1. Measurement is made at a semi-anechoic chamber that incorporates a turntable allowing a EUT rotation of 360°. A continuously-rotating, remotely-controlled turntable is installed at the test site to support the EUT and facilitate determination of the direction of maximum radiation for each EUT emission 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)

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)
48.43	H	-58.72	-13	-45.72	-45.72	-42.36	-16.36
98.87	H	-61.28	-13	-48.28	-48.28	-56.27	-5.01
142.52	H	-60.69	-13	-47.69	-47.69	-53.99	-6.7
249.22	H	-62.24	-13	-49.24	-49.24	-60.95	-1.29
726.3	H	-56.26	-13	-43.26	-43.26	-54.35	-1.91
984.4	H	-50.61	-13	-37.61	-37.61	-47.95	-2.66
43.58	V	-60.04	-13	-47.04	-56.88	-42.93	-17.11
90.14	V	-62.17	-13	-49.17	-59.85	-57.26	-4.91
143.49	V	-58.68	-13	-45.68	-60.33	-52.01	-6.67
249.22	V	-62.42	-13	-49.42	-64.42	-61.13	-1.29
726.3	V	-59.34	-13	-46.34	-68.82	-57.43	-1.91
984.4	V	-53.73	-13	-40.73	-66.76	-51.07	-2.66

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)
48.43	H	-58.8	-13	-45.8	-63.94	-42.44	-16.36
98.87	H	-60.67	-13	-47.67	-58.93	-55.66	-5.01
143.49	H	-60.65	-13	-47.65	-59.97	-53.98	-6.67
239.52	H	-63.15	-13	-50.15	-59.5	-61.54	-1.61
554.5	H	-68.04	-13	-55.04	-72.29	-66.71	-1.33
668.26	H	-61.12	-13	-48.12	-67.31	-59.42	-1.7
30	V	-54.08	-13	-41.08	-49.04	-34.63	-19.45
43.58	V	-52.07	-13	-39.07	-48.91	-34.96	-17.11
90.14	V	-661.74	-13	-648.74	-59.42	-656.83	-4.91
142.52	V	-61.16	-13	-48.16	-62.77	-54.46	-6.7
398.6	V	-64.4	-13	-51.4	-67.15	-63.17	-1.23
451.95	V	-65.1	-13	-52.1	-68.74	-63.78	-1.32

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)
48.43	H	-62.28	-13	-47.13	-63.12	-43.77	-16.36
98.87	H	-65.53	-13	-50.38	-59.49	-58.37	-5.01
515	H	-53.23	-13	-38.08	-52.72	-49.81	-1.27
687.66	H	-52.46	-13	-37.31	-54.81	-48.62	-1.69
709.97	H	-51.42	-13	-36.27	-54.43	-47.5	-1.77
939.86	H	-55.62	-13	-40.47	-62.29	-50.91	-2.56
43.58	V	-65.01	-13	-49.86	-57.55	-22.42	-40.44
142.52	V	-61.83	-13	-46.68	-59.14	-7.24	-52.44
537.31	V	-56.83	-13	-41.68	-58.86	2.9	-57.58
687.66	V	-54.53	-13	-39.38	-58.96	4.89	-57.27
709.97	V	-52.43	-13	-37.28	-57.23	5.18	-55.46
939.86	V	-58.60	-13	-43.45	-67.21	8.2	-64.65

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)
458.74	H	-59.55	-13	-46.55	-60.57	-56.09	-1.31
478.14	H	-57.28	-13	-44.28	-58.51	-53.84	-1.29
515	H	-50.82	-13	-37.82	-52.46	-47.4	-1.27
536.34	H	-52.53	-13	-39.53	-54.41	-49.1	-1.28
687.66	H	-55.95	-13	-42.95	-60.45	-52.11	-1.69
802.12	H	-56.11	-13	-43.11	-63.53	-52.08	-1.88
143.49	V	-61.78	-13	-48.78	-61.28	-52.96	-6.67
458.74	V	-61.23	-13	-48.23	-62.87	-57.77	-1.31
515	V	-54.36	-13	-41.36	-57.55	-50.94	-1.27
536.34	V	-57.4	-13	-44.4	-61.53	-53.97	-1.28
687.66	V	-52.03	-13	-39.03	-58.61	-48.19	-1.69
802.12	V	-52.19	-13	-39.19	-59.6	-48.16	-1.88

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

Test mode		NB-IoT LTE B14 CH23301 + 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)
48.43	H	-55.34	-13	-42.34	-58.33	-36.83	-16.36
154.16	H	-51.77	-13	-38.77	-48.87	-43.21	-6.41
547.01	H	-54.23	-13	-41.23	-56.23	-50.79	-1.29
608.12	H	-53.58	-13	-40.58	-56.48	-49.65	-1.78
668.26	H	-50.74	-13	-37.74	-54.78	-46.89	-1.7
728.4	H	-43.42	-13	-30.42	-49.27	-39.34	-1.93
33.88	V	-63.71	-13	-50.71	-56.83	-43.06	-18.5
232.73	V	-62.77	-13	-49.77	-61.77	-58.79	-1.83
547.01	V	-60.5	-13	-47.5	-65.1	-57.06	-1.29
608.12	V	-61.7	-13	-48.7	-67.9	-57.77	-1.78
728.4	V	-51.07	-13	-38.07	-58.46	-46.99	-1.93
911.73	V	-58.81	-13	-45.81	-69.45	-54.4	-2.26

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)
98.87	H	-60.94	-13	-47.94	-59.2	-55.93	-5.01
142.52	H	-60.84	-13	-47.84	-60.17	-54.14	-6.7
239.52	H	-66.1	-13	-53.1	-62.45	-64.49	-1.61
263.77	H	-63.37	-13	-50.37	-60.82	-62.11	-1.26
730.3	H	-58.51	-13	-45.51	-66.57	-56.57	-1.94
980.4	H	-58.4	-13	-45.4	-69.71	-55.74	-2.66
98.87	V	-64.43	-13	-51.43	-62.34	-59.42	-5.01
143.49	V	-59.5	-13	-46.5	-61.15	-52.83	-6.67
166.77	V	-63.34	-13	-50.34	-65.52	-57.58	-5.76
232.73	V	-65.1	-13	-52.1	-66.25	-63.27	-1.83
730.3	V	-62.09	-13	-49.09	-71.67	-60.15	-1.94
980.4	V	-59.63	-13	-46.63	-72.66	-56.97	-2.66

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)
30.97	H	-57.89	-13	-44.89	-65.83	-38.68	-19.21
98.87	H	-64.23	-13	-51.23	-62.49	-59.22	-5.01
143.49	H	-62.5	-13	-49.5	-61.82	-55.83	-6.67
249.22	H	-63.84	-13	-50.84	-60.75	-62.55	-1.29
558.5	H	-70.79	-13	-57.79	-75.1	-69.41	-1.38
668.26	H	-65.16	-13	-52.16	-71.35	-63.46	-1.7
168.71	V	-62.62	-13	-49.62	-64.74	-57	-5.62
249.22	V	-61.86	-13	-48.86	-63.86	-60.57	-1.29
465.53	V	-65.6	-13	-52.6	-69.53	-64.3	-1.3
558.5	V	-67.03	-13	-54.03	-74.17	-65.65	-1.38
676.99	V	-63.25	-13	-50.25	-71.87	-61.55	-1.7
797.27	V	-60.25	-13	-47.25	-69.81	-58.36	-1.89

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)
98.87	H	-64.04	-13	-48.89	-58	-56.88	-5.01
142.52	H	-64.90	-13	-49.75	-59.93	-56.05	-6.7
537.31	H	-56.14	-13	-40.99	-55.88	-52.71	-1.28
687.66	H	-56.94	-13	-41.79	-59.29	-53.1	-1.69
709.97	H	-54.19	-13	-39.04	-57.2	-50.27	-1.77
939.86	H	-54.41	-13	-39.26	-61.08	-49.7	-2.56
143.49	V	-63.51	-13	-48.36	-60.86	-54.69	-6.67
166.77	V	-68.41	-13	-53.26	-66.29	-60.5	-5.76
515	V	-60.88	-13	-45.73	-61.92	-57.46	-1.27
537.31	V	-55.23	-13	-40.08	-57.26	-51.8	-1.28
687.66	V	-54.72	-13	-39.57	-59.15	-50.88	-1.69
709.97	V	-55.99	-13	-40.84	-60.79	-52.07	-1.77

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)
143.49	H	-63.53	-13	-50.53	-60.7	-54.71	-6.67
458.74	H	-61.37	-13	-48.37	-62.39	-57.91	-1.31
478.14	H	-52.49	-13	-39.49	-53.72	-49.05	-1.29
536.34	H	-59.6	-13	-46.6	-61.48	-56.17	-1.28
592.6	H	-61.92	-13	-48.92	-64.58	-58.05	-1.72
802.12	H	-52.38	-13	-39.38	-59.8	-48.35	-1.88
98.87	V	-66.9	-13	-53.9	-62.66	-59.74	-5.01
143.49	V	-61.92	-13	-48.92	-61.42	-53.1	-6.67
166.77	V	-66.43	-13	-53.43	-66.46	-58.52	-5.76
478.14	V	-50.99	-13	-37.99	-53.04	-47.55	-1.29
515	V	-51.83	-13	-38.83	-55.02	-48.41	-1.27
536.34	V	-51.38	-13	-38.38	-55.51	-47.95	-1.28

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

Test mode		NB-IoT LTE B14 CH23301 + 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)
48.43	H	-55.89	-13	-42.89	-58.88	-37.38	-16.36
424.79	H	-59.21	-13	-46.21	-59.81	-55.79	-1.27
486.87	H	-59.3	-13	-46.3	-60.62	-55.87	-1.28
547.01	H	-55.74	-13	-42.74	-57.74	-52.3	-1.29
668.26	H	-51.82	-13	-38.82	-55.86	-47.97	-1.7
911.73	H	-48.36	-13	-35.36	-57.06	-43.95	-2.26
142.52	V	-61.63	-13	-48.63	-61.09	-52.78	-6.7
485.9	V	-57.92	-13	-44.92	-60.14	-54.49	-1.28
547.01	V	-53.63	-13	-40.63	-58.23	-50.19	-1.29
608.12	V	-58.75	-13	-45.75	-64.95	-54.82	-1.78
668.26	V	-56.45	-13	-43.45	-41.3	-52.6	-1.7
911.73	V	-53.1	-13	-40.1	-37.95	-48.69	-2.26

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

3.1.4 Transmitter Radiated Unwanted Emissions (Above 1GHz)

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)
4874	H	-46.55	-13	-33.55	-63.26	-53.01	6.46
7311	H	-40.57	-13	-27.57	-59.62	-43.86	3.29
4874	V	-44.13	-13	-31.13	-60.71	-50.59	6.46
7311	V	-38.91	-13	-25.91	-58.88	-42.2	3.29

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)
1328	H	-34.75	-13	-21.75	-40.72	-38.52	3.77
4874	H	-42.65	-13	-29.65	-59.36	-49.11	6.46
7311	H	-41.94	-13	-28.94	-60.99	-45.23	3.29
1328	V	-40.91	-13	-27.91	-46.41	-44.68	3.77
4874	V	-41.25	-13	-28.25	-57.83	-47.71	6.46
7311	V	-39.35	-13	-26.35	-59.32	-42.64	3.29

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)
1612.3	H	-50.04	-13	-34.89	-51.85	-53.51	5.62
3261.7	H	-53.99	-13	-38.84	-62.58	-58.6	6.76
1612.3	V	-50.01	-13	-34.86	-51.99	-53.48	5.62
3261.7	V	-54.30	-13	-39.15	-62.88	-58.91	6.76

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)
1729.5	H	-47.33	-13	-34.33	-51.88	-51.31	6.13
3144.5	H	-49.99	-13	-36.99	-60.39	-54.35	6.51
1729.5	V	-48.46	-13	-35.46	-52.93	-52.44	6.13
3144.5	V	-52.61	-13	-39.61	-62.88	-56.97	6.51

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

Test mode		NB-IoT LTE B14 CH23301 + 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)
1646.9	H	-47.76	-13	-34.76	-51.9	-51.38	5.77
3227.1	H	-49.97	-13	-36.97	-60.63	-54.43	6.61
1646.9	V	-48.4	-13	-35.4	-52.63	-52.02	5.77
3227.1	V	-51.23	-13	-38.23	-61.86	-55.69	6.61

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	-50.21	-13	-37.21	-62.85	-56.72	6.51
4151.5	H	-49.46	-13	-36.46	-63.85	-56.31	6.85
3171.5	V	-49.65	-13	-36.65	-62.21	-56.16	6.51
4151.5	V	-49.84	-13	-36.84	-64.22	-56.69	6.85

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	-32.94	-13	-19.94	-38.87	-36.7	3.76
4323.5	H	-47.53	-13	-34.53	-62.33	-54.2	6.67
1324	V	-39.39	-13	-26.39	-44.84	-43.15	3.76
4323.5	V	-47.73	-13	-34.73	-62.52	-54.4	6.67

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	-50.28	-13	-35.13	-52.11	-53.77	5.64
3265.7	H	-52.84	-13	-37.69	-61.45	-57.47	6.78
1616.3	V	-50.37	-13	-35.22	-52.36	-53.86	5.64
3265.7	V	-53.25	-13	-38.1	-61.85	-57.88	6.78

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	-47.31	-13	-34.31	-51.88	-51.31	6.15
3148.5	H	-51.48	-13	-38.48	-61.89	-55.84	6.51
1733.5	V	-47.1	-13	-34.1	-51.59	-51.1	6.15
3148.5	V	-51.29	-13	-38.29	-61.58	-55.65	6.51

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

Test mode		NB-IoT LTE B14 CH23301 + 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)
1650.9	H	-47.67	-13	-34.67	-51.82	-39.73	-5.79
3231.1	H	-49.2	-13	-36.2	-59.87	-53.68	6.63
1650.9	V	-47.69	-13	-34.69	-51.93	-39.75	-5.79
3231.1	V	-50.59	-13	-37.59	-61.23	-55.07	6.63

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 Corp (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.

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

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