

RF TEST REPORT



Report No.: FCC_IC_RF_SL18051603-SLX-039_SX-PCEAN2 Rev:2.0
 Supersede Report No.:

Applicant	:	Silex Technology, Inc.
Product Name	:	802.11 a/b/g/n Mini PCIe Radio Module
Model No.	:	SX-PCEAN2
Test Standard	:	FCC 15.247 RSS247 Issue 2, 2017
Test Method	:	FCC 15.247 ANSI C63.10 2013 RSS Gen Issue 5, April 2018
Dates of test	:	05/30/2018
Issue Date	:	05/30/2018
Test Result	:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Equipment complied with the specification		[X]
Equipment did not comply with the specification		[]

This Test Report is Issued Under the Authority of:	
Deon Dai	Chen Ge
RF Test Engineer	Engineer Reviewer
This test report may be reproduced in full only Test result presented in this test report is applicable to the tested sample only	

Issued By:
SIEMIC Laboratories
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Laboratory Introduction

SIEMIC, headquartered in the heart of Silicon Valley, with superior facilities in US and Asia, is one of the leading independent testing and certification facilities providing customers with one-stop shop services for Compliance Testing and Global Certifications.



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Accreditations for Conformity Assessment

Country/Region	Accreditation Body	Scope
USA	FCC, A2LA	EMC, RF/Wireless, Telecom
Canada	IC, A2LA, NIST	EMC, RF/Wireless, Telecom
Taiwan	BSMI, NCC, NIST	EMC, RF, Telecom, Safety
Hong Kong	OFTA, NIST	RF/Wireless, Telecom
Australia	NATA, NIST	EMC, RF, Telecom, Safety
Korea	KCC/RRA, NIST	EMI, EMS, RF, Telecom, Safety
Japan	VCCI, JATE, TELEC, RFT	EMI, RF/Wireless, Telecom
Mexico	NOM, COFETEL, Caniety	EMC, RF/Wireless, Telecom, Safety
Europe	A2LA, NIST	EMC, RF, Telecom, Safety
Israel	MOC, NIST	EMC, RF, Telecom, Safety

Accreditations for Product Certifications

Country	Accreditation Body	Scope
USA	FCC TCB, NIST	EMC, RF, Telecom
Canada	IC FCB, NIST	EMC, RF, Telecom
Singapore	iDA, NIST	EMC, RF, Telecom
EU	NB	EMC & RED Directive
Japan	MIC (RCB 208)	RF, Telecom
Hong Kong	OFTA (US002)	RF, Telecom

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_IC_RF_SL18051603-SLX-039_SX-PCEAN2	None	Original	05/30/2018
FCC_IC_RF_SL18051603-SLX-039_SX-PCEAN2 Rev 1.0	Rev 1.0	Add Antenna information	05/31/2018
FCC_IC_RF_SL18051603-SLX-039_SX-PCEAN2 Rev 2.0	Rev 2.0	Updated per reviewer	05/31/2018

2 Executive Summary

The purpose of this test program was to demonstrate compliance of following product

Company: Silex Technology, Inc.
Product: 802.11 a/b/g/n Mini PCIe Radio Module
Model: SX-PCEAN2

against the current Stipulated Standards. The specified model product stated above has demonstrated compliance with the Stipulated Standard listed on 1st page.

3 Customer information

Applicant Name	:	Silex Technology, Inc.
Applicant Address	:	2-3-1 Hikoridai, Seika-cho, Kyoto 619-0237, Japan
Manufacturer Name	:	Silex Technology, Inc.
Manufacturer Address	:	2-3-1 Hikoridai, Seika-cho, Kyoto 619-0237, Japan

4 Test site information

Lab performing tests	:	SIEMIC Laboratories
Lab Address	:	775 Montague Expressway, Milpitas, CA 95035
FCC Test Site No.	:	881796
IC Test Site No.	:	4842D-2
VCCI Test Site No.	:	A0133

5 Modification

Index	Item	Description	Note
-	-	-	-
-	-	-	-

6 EUT Information

6.1 EUT Description

Product Name	802.11 a/b/g/n Mini PCIe Radio Module
Model No.	SX-PCEAN2
Trade Name	Silex
Serial No.	N/A
Input Power	3.3 Vdc
Power Adapter Manu/Model	N/A
Power Adapter SN	N/A
Date of EUT received	5/24/2018
Equipment Class/ Category	DTS
Clock Frequencies	40MHz
Port/Connectors	Mini-PCIe

6.2 Radio Description

Specifications for Radio:

Specs for WLAN

Radio Type	802.11b	802.11g	802.11n-20M	802.11n-40M
Operating Frequency	2412-2462MHz	2412-2462MHz	2412-2462MHz	2422-2462MHz
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (BPSK, QPSK, 16QAM,64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing	5MHz	5MHz	5MHz	40MHz
Number of Channels	11	11	11	7
Antenna Type	Linear			
Antenna Gain (Peak)	0 dBi @ 2.4GHz			
Antenna Connector Type	U.FL			
Remarks	855724 Inwave WLAN-Kazaar 03019			

EUT test modes/configuration Description

Mode	Note
RF test	EUT is set to continuously transmit
Note: None	

Test Item	Operating mode	Tested antenna port
Antenna Requirement	N/A	-
Conducted Emissions Voltage	N/A	-
Radiated Spurious Emission	Continuous Transmit	-
Frequency Stability	N/A	-
Occupied Bandwidth	N/A	-
Note: -		

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Index	Supporting Equipment Description	Model	Serial No	Manu	Note
1	Laptop	E56510	00180833283910	Dell	-

7.2 Cabling Description

Name	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
-	-	-	-	-	-	-	-

7.3 Test Software Description

Test Item	Software	Description
RF Testing	ART2-GUI	Set the EUT to transmit continuously
-	-	-

8 Test Summary

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Radiated Spurious Emission	FCC	15.209,15.247(d)	FCC	ANSI C63.10-2013	<input checked="" type="checkbox"/> Pass
	IC	RSS247(A8.5)	IC	RSS Gen Issue 5, April 2018	<input type="checkbox"/> N/A
Remark	<ol style="list-style-type: none"> All measurement uncertainties are not taken into consideration for all presented test result. The applicant shall ensure frequency stability by showing that an emission is maintained within the band of operation under all normal operating conditions as specified in the user's manual. Only Radiated Spurious Emission has been tested for this report, and the other test item please refer to Report No.:10604551H-A-R2(FCC ID:N6C-SXPCEAN2) & 10604551H-D(IC ID:4908A-SXPCEAN2) 				

9 Measurement Uncertainty

9.1 Radiated Emissions (30MHz to 1GHz)

The test is to measure the radiated emissions of the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- NSA Calibration
- Etc., details see the below table

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
Antenna Factor	0.65	Normal	2	1	0.325
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.86605081
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch Filter - Receiver	0.25	U-Shape	1.414	1	0.1768033
NSA Calibration	4.0	U-Shape	1.414	1	2.8288543
Combined Standard Uncertainty					3.0059131
Expanded Uncertainty (K=2)					6.0118262

The total derived measurement uncertainty is +/- 6.00 dB.

9.2 Radiated Emissions (1GHz to 40GHz)

The test is to measure the radiated emissions of the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the antenna
- Uncertainty of cables
- Uncertainty due to the mismatches
- VSWR Calibration
- Etc., details see the below table

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.0692840
Cable Insertion Loss	0.21	Normal	2	1	0.1050000
Filter Insertion Loss	0.25	Normal	2	1	0.1250000
Antenna Factor	0.65	Normal	2	1	0.3250000
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.8660508
PRF Response	1.5	Rectangular	1.732	1	0.8660508
Mismatch Filter - Receiver	0.25	U-Shape	1.414	1	0.1768033
VSWR Calibration	2.0	U-Shape	1.414	1	1.4144272
Combined Standard Uncertainty					4.2363
Expanded Uncertainty (K=2)					8.4726

The total derived measurement uncertainty is +/- 8.47 dB.

9.3 **RF conducted measurement**

The test is to measure the RF output power from the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the Reference Level Uncertainty
- Uncertainty of variable attenuators
- Uncertainty of cables
- Uncertainty due to the mismatches

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Reference Level	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Attenuator	0.25	Normal	2	1	0.125
Mismatch	0.25	U-Shape	1.414	1	0.1768033
Combined Standard Uncertainty					0.476087
Expanded Uncertainty (K=2)					0.952174

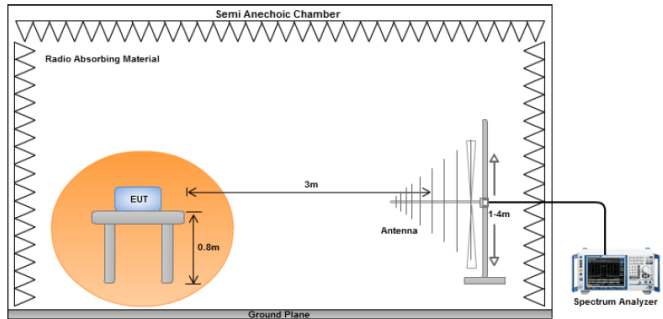
The total derived measurement uncertainty is +/- 0.95 dB.

10 Measurements, examination and derived results

10.1 Radiated Measurements

10.1.1 Radiated Measurements 30MHz to 1GHz

Requirement(s):

Spec	Requirement	Applicable										
47 CFR 15.247(d) RSS-247	<p>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges</p> <table border="1"> <thead> <tr> <th>Frequency range (MHz)</th> <th>Field Strength (uV/m)</th> </tr> </thead> <tbody> <tr> <td>30 – 88</td> <td>100</td> </tr> <tr> <td>88 – 216</td> <td>150</td> </tr> <tr> <td>216 960</td> <td>200</td> </tr> <tr> <td>Above 960</td> <td>500</td> </tr> </tbody> </table>	Frequency range (MHz)	Field Strength (uV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500	☒
Frequency range (MHz)	Field Strength (uV/m)											
30 – 88	100											
88 – 216	150											
216 960	200											
Above 960	500											
Test Setup												
Procedure	<ol style="list-style-type: none"> The EUT was switched on and allowed to warm up to its normal operating condition. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. The EUT was then rotated to the direction that gave the maximum emission. Finally, the antenna height was adjusted to the height that gave the maximum emission. A Quasi-peak measurement was then made for that frequency point. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured. 											
Test Date	05/30/2018	<table border="1"> <tr> <td>Environmental conditions</td> <td>Temperature</td> <td>20.1°C</td> </tr> <tr> <td></td> <td>Relative Humidity</td> <td>36%</td> </tr> <tr> <td></td> <td>Atmospheric Pressure</td> <td>1026mbar</td> </tr> </table>	Environmental conditions	Temperature	20.1°C		Relative Humidity	36%		Atmospheric Pressure	1026mbar	
Environmental conditions	Temperature	20.1°C										
	Relative Humidity	36%										
	Atmospheric Pressure	1026mbar										
Remark	-											
Result	☒ Pass ☐ Fail											

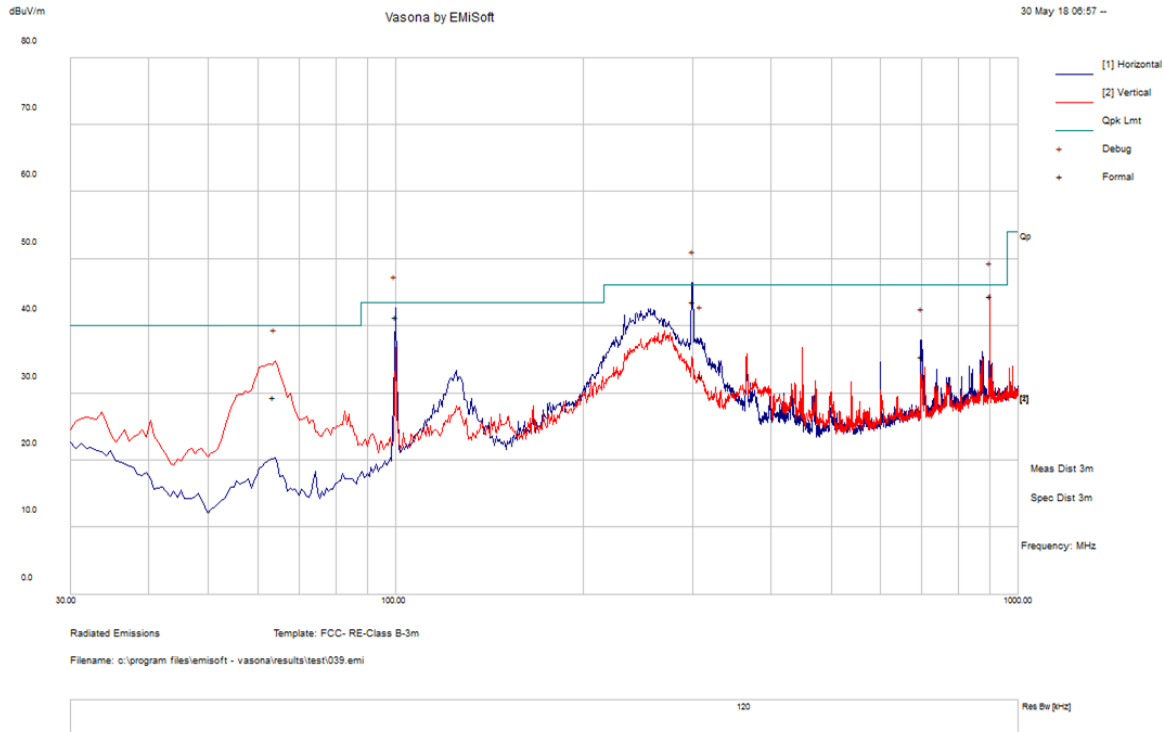
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Deon Dai at 10-meter chamber.

Test specification:	Radiated Emissions		
Mains Power:	120VAC, 60Hz		Result: <input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Tested by:	Deon Dai		
Test Date:	05/30/2018		
Remarks:	WLAN Continue transmit mode		

f=30MHz – 1000MHz plot and 3-meter distance

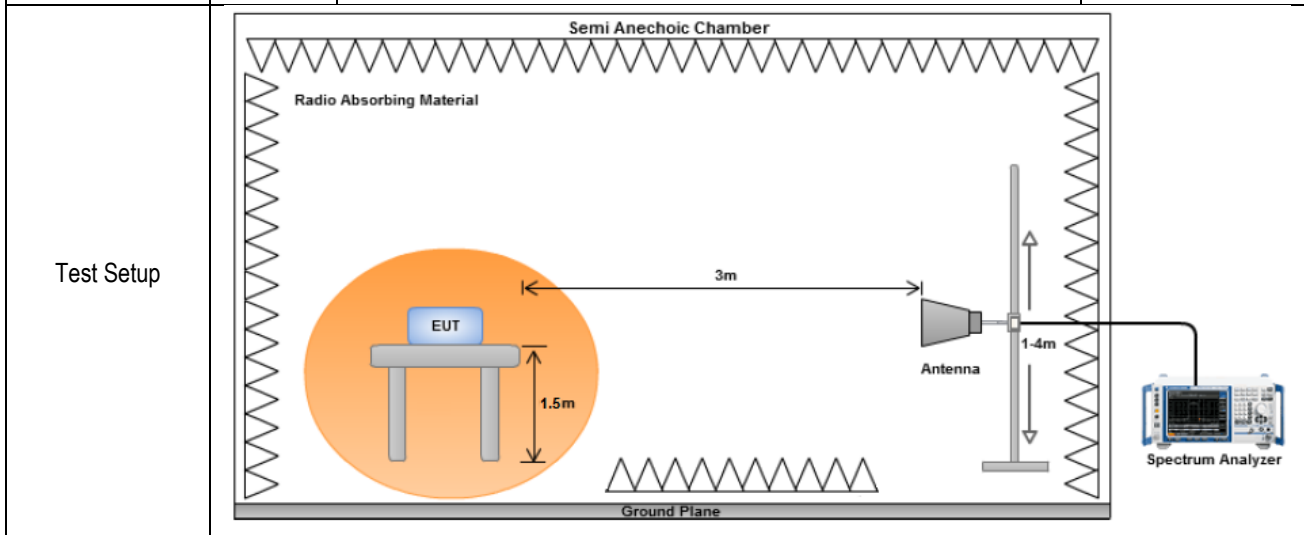


Frequency MHz	Raw dBµV/m	Cable Loss	AF dB	Level dBµV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBµV/m	Margin dB	Pass /Fail
299.75	53.17	13.24	-22.82	43.59	Quasi Max	H	101	164	46	-2.41	Pass
99.91	54.97	11.88	-25.49	41.36	Quasi Max	H	179	177	43.5	-2.14	Pass
900.03	42.15	15.95	-13.64	44.46	Quasi Max	V	130	295	46	-1.54	Pass
63.71	45.51	11.53	-27.67	29.37	Quasi Max	V	101	7	40	-10.63	Pass
308.65	42.08	13.27	-22.78	32.58	Quasi Max	H	100	149	46	-13.42	Pass
699.51	35.89	15.13	-15.58	35.44	Quasi Max	H	104	178	46	-10.56	Pass

10.1.2 Radiated Spurious Emissions between 1GHz-25GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d) RSS-247	a)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required <input type="checkbox"/> 20 dB down <input checked="" type="checkbox"/> 30 dB down	<input checked="" type="checkbox"/>
	b)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	<input type="checkbox"/>



Procedure	<ol style="list-style-type: none"> The EUT was switched on and allowed to warm up to its normal operating condition. The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and adjusting the antenna height in the following manner: <ol style="list-style-type: none"> Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen. The EUT was then rotated to the direction that gave the maximum emission. Finally, the antenna height was adjusted to the height that gave the maximum emission. An average measurement was then made for that frequency point. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.
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Remark	The EUT was scanned up to 40GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.
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Result	<input checked="" type="checkbox"/> Pass
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Test Data Yes (See below) N/A

Test Plot Yes (See below) N/A

Test was done by Deon Dai at 10-meter chamber.

Test specification:	Radiated Emissions		
Mains Power:	120VAC, 60Hz	Result:	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Fail
Tested by:	Deon Dai		
Test Date:	05/30/2018		
Remarks:	WLAN transmit Mode		

Above 1GHz-25GHz – 802.11b – 2412MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
4823.95	44.42	4.17	-2.06	46.53	Peak Max	V	149	154	74	-27.47	Pass
7235.25	34.76	5.32	0.97	41.05	Peak Max	V	233	327	74	-32.95	Pass
4823.95	36.18	4.17	-2.06	38.29	Average Max	V	332	26	54	-15.71	Pass
7235.25	22.44	5.32	0.97	28.73	Average Max	V	233	327	54	-25.27	Pass

Above 1GHz-25GHz- 802.11b - 2437MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7310.3	35.51	5.35	0.94	41.8	Peak Max	V	101	164	74	-32.2	Pass
4875.15	40.6	4.2	-2.15	42.65	Peak Max	V	179	177	74	-31.35	Pass
7310.3	23.22	5.35	0.94	29.51	Average Max	V	130	295	54	-24.49	Pass
4875.15	34.08	4.2	-2.15	36.13	Average Max	V	101	7	54	-17.87	Pass

Above 1GHz-25GHz- 802.11b - 2462MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7385.82	35.42	5.38	0.54	41.34	Peak Max	H	100	149	74	-32.66	Pass
4922.65	42.1	4.22	-2.18	44.14	Peak Max	V	104	178	74	-29.86	Pass
7385.82	23.72	5.38	0.54	29.64	Average Max	H	233	214	54	-24.36	Pass
4922.65	36.77	4.22	-2.18	38.81	Average Max	V	120	298	54	-15.19	Pass

Above 1GHz-25GHz – 802.11g – 2412MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7235.3	36.38	5.32	0.97	42.67	Peak Max	H	244	102	74	-31.33	Pass
4823.35	35.62	4.17	-2.06	37.73	Peak Max	H	215	210	74	-36.27	Pass
7235.3	21.55	5.32	0.97	27.84	Average Max	H	126	100	54	-26.16	Pass
4823.35	23.48	4.17	-2.06	25.59	Average Max	H	249	211	54	-28.41	Pass

Above 1GHz-25GHz- 802.11g - 2437MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7323.55	35.94	5.35	0.93	42.22	Peak Max	H	214	221	74	-31.78	Pass
4865.65	47.01	4.19	-2.13	49.07	Peak Max	V	146	100	74	-24.93	Pass
7323.55	23.89	5.35	0.93	30.17	Average Max	H	158	221	54	-23.83	Pass
4865.65	32.65	4.19	-2.13	34.71	Average Max	V	214	211	54	-19.29	Pass

Above 1GHz-25GHz- 802.11g - 2462MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7386.65	36.01	5.38	0.55	41.94	Peak Max	H	214	325	74	-32.06	Pass
4925.33	40.45	4.23	-2.18	42.5	Peak Max	V	100	180	74	-31.5	Pass
7386.65	23.99	5.38	0.55	29.92	Average Max	H	129	254	54	-24.08	Pass
4925.33	27.21	4.23	-2.18	29.26	Average Max	V	100	2	54	-24.74	Pass

Above 1GHz-25GHz – 802.11n HT20 – 2412MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
4823.65	41.43	4.17	-2.06	43.54	Peak Max	H	100	258	74	-30.46	Pass
7235.25	36.37	5.32	0.97	42.66	Peak Max	V	120	26	74	-31.34	Pass
4823.65	23.37	4.17	-2.06	25.48	Average Max	H	121	241	54	-28.52	Pass
7235.25	23.92	5.32	0.97	30.21	Average Max	V	215	21	54	-23.79	Pass

Above 1GHz-25GHz- 802.11n HT20 - 2437MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
4873.21	39.36	4.2	-2.14	41.42	Peak Max	H	203	356	74	-32.58	Pass
7312.55	37.43	5.35	0.92	43.7	Peak Max	V	102	311	74	-30.3	Pass
4873.21	24.93	4.2	-2.14	26.99	Average Max	H	198	254	54	-27.01	Pass
7312.55	24.81	5.35	0.92	31.08	Average Max	V	212	214	54	-22.92	Pass

Above 1GHz-25GHz- 802.11n HT20 - 2462MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7385.15	36.22	5.38	0.55	42.15	Peak Max	V	215	254	74	-31.85	Pass
4925.65	39.46	4.23	-2.18	41.51	Peak Max	V	125	124	74	-32.49	Pass
7385.15	24.98	5.38	0.55	30.91	Average Max	V	123	360	54	-23.09	Pass
4925.65	26.23	4.23	-2.18	28.28	Average Max	V	211	149	54	-25.72	Pass

Above 1GHz-25GHz – 802.11n HT40 – 2422MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
4845.65	38.34	4.18	-2.1	40.42	Peak Max	H	200	241	74	-33.58	Pass
7265.35	35.12	5.33	0.98	41.43	Peak Max	V	214	198	74	-32.57	Pass
4845.65	26.25	4.18	-2.1	28.33	Average Max	H	254	24	54	-25.67	Pass
7265.35	22.27	5.33	0.98	28.58	Average Max	V	115	355	54	-25.42	Pass

Above 1GHz-25GHz- 802.11n HT40 - 2437MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7312.25	36.34	5.35	0.92	42.61	Peak Max	V	102	249	74	-31.39	Pass
4872.65	42.43	4.2	-2.14	44.49	Peak Max	H	213	298	74	-29.51	Pass
7312.25	23.51	5.35	0.92	29.78	Average Max	V	125	24	54	-24.22	Pass
4872.65	29.93	4.2	-2.14	31.99	Average Max	H	100	164	54	-22.01	Pass

















Above 1GHz-25GHz- 802.11n HT40 - 2452MHz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	AF (dB)	Level (dBuV/m)	Measurement Type	Pol (V/H)	Hgt (cm)	Azt (Deg)	Limit (dBuV/m)	Margin (dB)	Pass /Fail
7357.65	36.81	5.37	0.7	42.88	Peak Max	H	255	244	74	-31.12	Pass
4903.5	42.51	4.21	-2.18	44.54	Peak Max	H	114	295	74	-29.46	Pass
7357.65	24.44	5.37	0.7	30.51	Average Max	H	214	26	54	-23.49	Pass
4903.5	30.55	4.21	-2.18	32.58	Average Max	H	122	187	54	-21.42	Pass

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Radiated Emissions						
Keysight EXA 44GHz Spectrum Analyzer	N9030B(PXA)	MY57140374	09/06/2017	1 Year	09/06/2018	<input checked="" type="checkbox"/>
Bi-Log antenna (30MHz~1GHz)	JB1	A030702	03/09/2018	2 Year	03/09/2020	<input checked="" type="checkbox"/>
Horn Antenna (1GHz~18GHz)	3115	100059	11/09/2017	1 Year	11/09/2018	<input checked="" type="checkbox"/>
Horn Antenna (18GHz~40GHz)	PA-840	181251	06/23/2017	1 Year	06/23/2018	<input checked="" type="checkbox"/>
Preamplifier (100KHz-7GHz)	LPA-6-30	11170602	05/09/2018	1 Year	05/09/2019	<input checked="" type="checkbox"/>
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	08/16/2017	1 Year	08/16/2018	<input checked="" type="checkbox"/>

Annex A. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)		Please see the documents for the detailed scope
ISO Guide 65 (A2LA)		Please see the documents for the detailed scope
TCB Designation		A1 , A2 , A3 , A4 , B1 , B2 , B3 , B4 , C
FCC DoC Accreditation		FCC Declaration of Conformity Accreditation
FCC Site Registration		3 meter site
FCC Site Registration		10 meter site
IC Site Registration		3 meter site
IC Site Registration		10 meter site
EU NB		Radio Equipment: EN45011: EN ISO/IEC 17065
		Electromagnetic Compatibility: EN45011 – EN ISO/IEC 17065
Singapore iDA CB(Certification Body)	 	Phase I , Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
Hong Kong OFCA		(Phase II) OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		Radio: Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		<p>Radio: A1. Terminal equipment for purpose of calling</p> <p>Telecom: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item 1 of the Radio Law</p>
Korea CAB Accreditation		<p>EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI</p> <p>EMS: KCC Notice 2008-38, RRL Notice 2008-4: CA Procedures for EMS KN24, KN61000-4-2, -4-3, -4-4, -4-5, -4-6, -4-8, -4-11: Test Method for EMS</p>
		<p>Radio: RRL Notice 2008-26, RRL Notice 2008-2, RRL Notice 2008-10, RRL Notice 2007-49, RRL Notice 2007-20, RRL Notice 2007-21, RRL Notice 2007-80, RRL Notice 2004-68</p> <p>Telecom: President Notice 20664, RRL Notice 2007-30, RRL Notice 2008-7 with attachments 1, 3, 5, 6; President Notice 20664, RRL Notice 2008-7 with attachment 4</p>
Taiwan NCC CAB Recognition		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		<p>R-3083: Radiation 3 meter site</p> <p>C-3421: Main Ports Conducted Interference Measurement</p> <p>T-1597: Telecommunication Ports Conducted Interference Measurement</p>
Australia CAB Recognition		<p>EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4</p>
		<p>Radiocommunications: AS/NZS 4281, AS/NZS 4268, AS/NZS 4280.1, AS/NZS 4280.2, AS/NZS 4295, AS/NZS 4582, AS/NZS 4583, AS/NZS 4769.1, AS/NZS 4769.2, AS/NZS 4770, AS/NZS 4771</p>
		<p>Telecommunications: AS/ACIF S002:05, AS/ACIF S003:06, AS/ACIF S004:06 AS/ACIF S006:01, AS/ACIF S016:01, AS/ACIF S031:01, AS/ACIF S038:01, AS/ACIF S040:01, AS/ACIF S041:05, AS/ACIF S043.2:06, AS/ACIF S60950.1</p>
Australia NATA Recognition		AS/ACIF S002, AS/ACIF S003, AS/ACIF S004, AS/ACIF S006, AS/ACIF S016, AS/ACIF S031, AS/ACIF S038, AS/ACIF S040, AS/ACIF S041, AS/ACIF S043.2