# RF TEST REPORT



Report No.: FCC\_RF\_SL18071903-SPC-006-LTE

Supersede Report No.:

Applicant	SpiderCloud Wireless, Inc.		
Product Name	SpiderCloud RadioNode		
Model No.	SCRN-320-0246-EQ		
Test Standard	47CFR Part27		
Test Method	TIA-603-E: 2016		
FCC ID	Y47RN320B246		
Date of test	08/24/2018		
Issue Date	08/27/2018		
Test Result	<u>Pass</u> Fail		
Equipment comp	lied with the specification	[x]	
Equipment did no	Equipment did not comply with the specification [ ]		
	Radana		
	Rachana Khanduri	Chen Ge	
	Test Engineer	Engineering Reviewer	
		may be reproduced in full only st report is applicable to the tested sample only	

Issued By:
SIEMIC Laboratories
775 Montague Expressway, Milpitas, 95035 CA





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	2 of 18

## **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.



In addition to testing and certification, SIEMIC provides initial design reviews and compliance management throughout a project. Our extensive experience with China, Asia Pacific, North America, European, and International compliance requirements, assures the fastest, most cost effective way to attain regulatory compliance for the global markets.

**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	Safety, EMC, RF/Wireless, Telecom
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 & Radio Equipment Directive (RED)
Japan	MIC (RCB 208)	RF, Telecom
HongKong	OFTA (US002)	RF, Telecom

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	3 of 18

#### **CONTENTS**

1	RE	EPORT REVISION HISTORY	4
2	EX	KECUTIVE SUMMARY	5
3	Cl	USTOMER INFORMATION	5
4		EST SITE INFORMATION	
5		ODIFICATION	
6		JT INFORMATION	
	6.1	EUT Description	6
	6.2	Radio Description	
	6.3	EUT test modes/configuration Description	7
7	SL	JPPORTING EQUIPMENT/SOFTWARE AND CABLING DESCRIPTION	8
	7.1	Supporting Equipment	8
	7.2	Cabling Description	8
	7.3	Test Software Description	8
8	TE	EST SUMMARY	9
9	ME	EASUREMENT UNCERTAINTY	10
	9.1	Conducted Emissions	10
	9.2	Radiated Emissions (30MHz to 1GHz)	10
	9.3	Radiated Emissions (1GHz to 40GHz)	11
	9.4	RF conducted measurement	11
10	)	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	
	10.1	Radiated Spurious Emission below 1GHz	
	10.2	Radiated Spurious Emissions above 1GHz	
ΑI	NNEX	A. TEST INSTRUMENT	16
ΔΙ	NNFX	B SIEMIC ACCREDITATION	17



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	4 of 18

## **Report Revision History**

Report No.	Report Version	Description	Issue Date
FCC_RF_SL18071903-SPC-006-LTE	None	Original	08/27/2018



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	5 of 18

#### 2 **Executive Summary**

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

Company:SpiderCloud Wireless, Inc.Product:SpiderCloud RadioNodeModel:SCRN-320-0246-EQ

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	SpiderCloud Wireless
Applicant Address	475 Sycamore Dr, Milpitas, CA, 95035, USA
Manufacturer Name	Sanmina-SCI Systems de Mexico SA de CV
	Carretera Chapala-Guadalajara
Manufacturer Address	45640 Tlajomulco de Zuniga, Jalisco, Mexico

#### 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
-	-	-	-

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	6 of 18

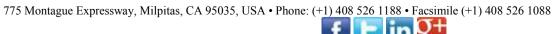
### 6 **EUT Information**

### 6.1 **EUT Description**

Product Name	SpiderCloud RadioNode
Model No.	SCRN-320-0246-EQ
Trade Name	SpiderCloud
Serial No.	18169S03643
Input Power	56VDC (PoE)
Power Adapter Manu/Model	POE36U-1AT-R (PoE)
Power Adapter SN	N/A
Date of EUT received	08/14/2018
Equipment Class/ Category	PCB, TNB
Operating Frequencies	LTE: TX (1930 MHz to 1995 MHz), RX (1850 MHz to 1915 MHz)
Port/Connectors	PoE, Ethernet
Remark	NONE

### 6.2 Radio Description

Item	LTE		
Operating Band /Radio Type	LTE Band 2		
Bandwidth	5MHz, 10MHz, 15MHz, 20MHz		
Modulation	QPSK/16QAM/64QAM		
Antenna Type	External Dipole antenna		
Antenna Gain	4 dBi		
Frequency TX(MHz)	TX: 1930 MHz to 1990 MHz RX: 1850 MHz to 1910 MHz		





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	7 of 18

### 6.3 EUT test modes/configuration Description

#### Test mode

	Final Test Mode	Note
Final_test_mode_1	Continuous transmission, 20MHz, QPSK, Low CH	LTE
Final_test_mode_2	Continuous transmission, 20MHz, QPSK, Mid CH	LTE
Final_test_mode_3	Continuous transmission, 20MHz, QPSK, High CH	LTE
Remark: N/A.		



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	8 of 18

### 7 Supporting Equipment/Software and cabling Description

#### 7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	10MHz Clock	OX200-SC	140851586710	Metric Test	-
2	POE	POE36U-1AT-R	N/A	PHIHONG	-

### 7.2 Cabling Description

Name Connection Start		Connection Stop		Length / shielding Info		Note	
Name	From	I/O Port	То	I/O Port	Length (m)	Shielding	Note
RJ45	EUT	RJ45	POE	RJ45	2	Unshielded	-
RJ45	POE	RJ45	Laptop	RJ45	3	Unshielded	-

#### 7.3 Test Software Description

Test Item	Software	Description
RF testing	TMciDvtClient	Enable EUT continuous TX mode and change to different channel

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088







Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	9 of 18

#### **Test Summary** 8

Test Item	Test standard			Test Method/Procedure	Pass / Fail
E.R.P/ E.I.R.P	FCC	47CFR27.50	FCC	TIA-603-E: 2016	⊠ Pass* □ N/A
Occupied Bandwidth	FCC	47CFR27.53	FCC	TIA-603-E: 2016	⊠ Pass* □ N/A
Peak-Average Ratio	FCC	FCC 47CFR27.50		TIA-603-E: 2016	⊠ Pass* □ N/A
Spurious and harmonic Emission at antenna port	FCC	FCC 47CFR2.1051, 47CFR27.53		TIA-603-E: 2016	⊠ Pass* □ N/A
Band Edge	FCC	47CFR2.1053, 47CFR27.53	FCC	TIA-603-E: 2016	⊠ Pass* □ N/A
Radiated spurious and harmonic emission	FCC	47CFR2.1053, 47CFR27.53	FCC	TIA-603-E: 2016	⊠ Pass □ N/A
Frequency stability	FCC 47CFR2.1053, 47CFR27.53		FCC	TIA-603-E: 2016	⊠ Pass* □ N/A

Remark

- All measurement uncertainties do not take into consideration for all presented test results.
- 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.

  Pass\*: Please refer to FCC report FCC\_RF\_SL18040301-SPC-002\_Rev1.0.





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	10 of 18

#### 9 Measurement Uncertainty

#### 9.1 Conducted Emissions

The test is to measure the conducted emissions to the mains port of the EUT.

Some error sources that can contribute to the total uncertainty:

- Uncertainty of the receiver
- Uncertainty of the LISN
- Uncertainty of cables
- Uncertainty due to the mismatches
- Etc, see the below table for details

Source of Uncertainty	Value	Probability	Division	Sensitivity	Expanded
·	(dB)	Distribution		Coefficient	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
LISN Insertion Loss	0.40	Normal	2	1	0.20
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 LISN - Receiver	0.25	U-Shape	1.414	1	0.1768033
LISN Impedance	2.5	Triangular	2.449	1	1.0208248
Combined Standard Uncertainty		•	•		1.928133
Expanded Uncertainty (K=2)					3.856266

The total derived measurement uncertainty is +/- 3.86 dB.

#### 9.2 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	Probability	Division	Sensitivity	Expanded
Source of Officertainty	Uncertainty (dB) Distribution		Coefficient	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.

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	11 of 18

#### 9.3 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

Course of Uncertainty	Value	Probability	Division	Sensitivity	Expanded	
Source of Uncertainty	(dB)	Distribution	DIVISION	Coefficient	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 Uncertain	4.2363					
Expanded Uncertainty (K=2)	Expanded Uncertainty (K=2)					

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

#### 9.4 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

	Value	Probability	Division	Sensitivity	Expanded	
Source of Uncertainty	(dB)	Distribution		Coefficient	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 Unce	Combined Standard Uncertainty 0.476087					
Expanded Uncertainty (	0.952174					

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

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	12 of 18

### 10 Measurements, Examination and Derived Results

#### 10.1 Radiated Spurious Emission below 1GHz

#### Requirement(s):

Spec	Item	Requirement			Applicable
47CFR27.53	-	operating frequency ra	is. The power of any emission outs ranges must be attenuated below the east 43 + 10 log(P) dB.		
Test Setup	\$\text{\tin}\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\tin\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tin}\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}\tint{\text{\text{\texi}\tint{\text{\texit{\text{\texi}\tinz{\text{\text{\texi}\tint{\text{\texi}\tint{\text{\texi}\tint{\texint{\texit{\text{\texi{\text{\texi}\tint{\texit{\texi{\texi{\texi}	adio Absorbing Material	Semi Anechoic Chamber  3m  Ant  Ground Plane	1-4m	Spectrum Analyzer
Test Procedure	Substitution method:  1. The EUT was switched on and allowed to warm up to its normal operating condition.  2. 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:  a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.  b. The EUT was then rotated to the direction that gave the maximum emission.  c. Finally, the antenna height was adjusted to the height that gave the maximum emission.  3. Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter.  4. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained.				
Test Date	5. S 08/24/201		he next frequency point, until all selecte Environmental condition	Temperature Relative Humidity Atmospheric Pressure	21°C 44%
Remark	The EUT was scanned up to 25GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.  Limit calculation:  Emission limit = PdBm – [ 43+ 10 log (PW)] = 10log(1000 x PW) - 43 - 10log(PW) = 30 dBm - 43 = -13 dBm  All different modulation and bandwidth configuration has been verified and only the test data of worst case with QPSK modulation and greatest bandwidth was presented in this report.				
Result	⊠ Pass	☐ Fail		1	

Test Data  $\boxtimes$  Yes (See below)  $\square$  N/A
Test Plot  $\boxtimes$  Yes (See below)  $\square$  N/A

Test was done by Chen Ge at 10m chamber.

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	13 of 18

#### Radiated Emission Test Results for LTE band 2

Frequency MHz	SG Level dBm	Cable Loss dB	Antenn a Gain dBd	Substituted Level dBm	Measuremen t Type	Pol	Hgt cm	Azt Deg	Limit dBm	Margin dB	Pass /Fail
244.65	-47.94	0.17	0	-48.11	RMS Max	Н	146	215	-13	-35.11	Pass
388.4	-53.78	0.18	0	-53.96	RMS Max	V	100	360	-13	-40.96	Pass
448.48	-52.79	0.2	0	-52.99	RMS Max	Н	244	99	-13	-39.99	Pass
413.25	-52.48	0.2	0	-52.68	RMS Max	V	110	185	-13	-39.68	Pass
534.1	-54.7	0.21	0	-54.91	RMS Max	V	100	184	-13	-41.91	Pass
765.58	-48.67	0.28	0	-48.95	RMS Max	V	142	244	-13	-35.95	Pass

Note: Dipole antenna was used for substitution method.





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	14 of 18

#### 10.2 Radiated Spurious Emissions above 1GHz

#### Requirement(s):

Spec	Item Requirement	Applicable			
47CFR27.53	Out of band emissions. 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.	$\boxtimes$			
Test Setup	Semi Anechoic Chamber  Radio Absorbing Material  The semi Antenna and th	Spectrum Analyzer			
Test Procedure	Substitution method:  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:  a. Vertical or horizontal polarisation (whichever gave the higher emission level over a full rotation of the EUT) was chosen.  b. The EUT was then rotated to the direction that gave the maximum emission.  c. Finally, the antenna height was adjusted to the height that gave the maximum emission.  Remove the transmitter and replace it with a substitution antenna (the antenna should be half-wavelength for each frequency involved). The center of the substitution antenna should be approximately at the same location as the center of the transmitter.  4. Feed the substitution antenna at the transmitter end with a signal generator connected to the antenna by means of a nonradiating cable. With the antennas at both ends horizontally polarized, and with the signal generator tuned to a particular spurious frequency, raise and lower the test antenna to obtain a maximum reading at the spectrum analyzer. Adjust the level of the signal generator output until the previously recorded maximum reading for this set of conditions is obtained.				
Test Date	5. Steps 4 were repeated for the next frequency point, until all selected frequency points were mea  08/24/2018 Environmental condition Relative Humidity  Atmospheric Pressure	21°C 44% 1011mbar			
Remark	The EUT was scanned up to 25GHz. Both horizontal and vertical polarities were investigated. The resultions case.  Limit calculation:  Emission limit = PdBm – [ 43+ 10 log (PW)] = 10log(1000 x PW) - 43 - 10log(PW) = 30 dBm - 43 = -13  All different modulation and bandwidth configuration has been verified and only the test data with QPSK modulation and greatest bandwidth was presented in this report.	dBm			
Result	⊠ Pass □ Fail				
Test Data ⊠ Yes	(See below)				

Test Data  $\boxtimes$  Yes (See below)  $\square$  N/A
Test Plot  $\square$  Yes (See below)  $\boxtimes$  N/A

Test was done by Rachana Khanduri at 10*m chamber*.



Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	15 of 18

#### Radiated Emission Test Results (Above 1GHz)

LTE band 2 Low Channel, 20MHz BW, QPSK

Frequency MHz	SG Level dBm	Cable Loss dB	Antenna Gain dBd	Substituted Level dBm	Measuremen t Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBm	Margin dB	Pass /Fail
3880.37	-50.33	1.34	10.77	-40.9	Average Max	٧	150	154	-13	-27.9	Pass
5819.89	-51.58	2.12	12.35	-41.35	Average Max	V	154	321	-13	-28.35	Pass
7758.99	-55.16	3.28	11.23	-47.21	Average Max	Н	155	249	-13	-34.21	Pass

#### LTE band 2 Mid Channel, 20MHz BW, QPSK

Frequency MHz	SG Level dBm	Cable Loss dB	Antenna Gain dBd	Substituted Level dBm	Measuremen t Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBm	Margin dB	Pass /Fail
3920.07	-51.35	1.35	10.78	-41.92	Average Max	٧	150	254	-13	-28.92	Pass
5881.11	-52.49	2.12	11.83	-42.78	Average Max	V	165	244	-13	-29.78	Pass
7838.86	-50.25	3.42	10.92	-42.75	Average Max	V	149	198	-13	-29.75	Pass

#### LTE band 2 High Channel, 20MHz BW, QPSK

Frequency MHz	SG Level dBm	Cable Loss dB	Antenna Gain dBd	Substituted Level dBm	Measuremen t Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBm	Margin dB	Pass /Fail
3961.35	-53.15	1.35	10.04	-44.46	Average Max	V	155	149	-13	-31.46	Pass
5928.79	-48.46	2.14	11.81	-38.79	Average Max	V	149	249	-13	-25.79	Pass
7920.43	-47.45	3.43	11.04	-39.84	Average Max	٧	166	114	-13	-26.84	Pass

Note: Only worst case was tested, which is 20MHz.



Test report No.	FCC_RF_SL18071903-SPC-006-LTE				
Page	16 of 18				

### 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	<u>&lt;</u>
Keysight Signal Generator	MXG N5182A	MY47071065	07/12/2018	1 Year	07/12/2019	<
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	08/16/2018	1 Year	08/16/2019	<b>₹</b>
RF Preamplifier (100KHz-7GHz)	LPA-6-30	11170602	05/09/2018	1 Year	05/09/2019	<
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	03/09/2018	2 Year	03/09/2020	<
Horn Antenna (1GHz~26GHz)	3115	100059	11/09/2017	1 Year	11/09/2018	<
Horn Antenna (700MHz-18GHz)	SAS-571	411	05/13/2018	1 Year	05/13/2019	<
Tuned Dipole Antenna 30 - 1000 MHz (4pcs set)	AD-100	40133	10/02/2017	1 Year	10/02/2018	>





Test report No.	FCC_RF_SL18071903-SPC-006-LTE
Page	17 of 18

### **Annex B. SIEMIC Accreditation**

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)	7	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, <b>C</b>
FCC DoC Accreditation	7	FCC Declaration of Conformity Accreditation
FCC Site Registration	7	3 meter site
FCC Site Registration	7	10 meter site
IC Site Registration	7	3 meter site
IC Site Registration	7	10 meter site
		Radio & Telecommunications Terminal Equipment:  EN45001 – EN ISO/IEC 17025
EU NB		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)	12	Phase I, Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
		(Phase II) OFCA Foreign Certification Body for Radio and Telecom
HongKong OFCA		(Phase I) Conformity Assessment Body for Radio and Telecom
		Radio: Scope A – All Radio Standard Specification in Category I
Industry Canada CAB		Telecom: CS-03 Part I, II, V, VI, VII, VIII

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088

Visit us at: www.siemic.com: Follow us at:





Test report No. FCC\_RF\_SL18071903-SPC-006-LTE 18 of 18 Page

Japan Recognized Certification Body Designation		Radio: A1. Terminal equipment for purpose of calling  Telecom: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item  1 of the Radio Law
		EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMIEMS: 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
Korea CAB Accreditation	₺	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
		<b>Telecom:</b> 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
Taiwan NCC CAB Recognition	7	LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition	7	CNS 13438
Japan VCCI	₺	R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measuremet
		<b>EMC:</b> AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4
Australia CAB Regocnition	₽	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
		<b>Telecommunications:</b> 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
Australia NATA Recognition	Ē	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

775 Montague Expressway, Milpitas, CA 95035, USA • Phone: (+1) 408 526 1188 • Facsimile (+1) 408 526 1088