RF TEST REPORT



Report No.: SL13091001-AER-004A1-FCC-15.407

Supersede Report No.: None

Applicant	Aerohive Networks, Inc.	
Product Name	Digital Transmission System Access Point	
Model No.	AP390	
Test Standard	47CFR15.407	
rest Standard	RSS 210 Issue8: 2010	
	ANCI C63.4:2009	
Test Method	789033 D01 General UNII Test Procedures v01r03 RSS-Gen Issue 3: 2010	
FCC ID	WBV-AP3X0	
IC ID	7774A-AP3X0	
Date of test	30 April - 05 May 2014	
Issue Date	5/6/2014	
Test result	<u>Pass</u> Fail	
Equipment complied with the specification [x]		
The equipment di	The equipment did not comply with the specification []	

Dananach	N. malber G.
Teody Manansala	Nima Molaei
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
775 Montague Expressway, Milpitas, 95035 CA





Test report No.	SL13091001-AER-004-FCC-15.407
Page	2 of 36

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 ways 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

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 & R&TTE Directive
Japan	MIC (RCB 208)	RF , Telecom
Hong Kong	OFTA (US002)	RF, Telecom

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





Test report No.	SL13091001-AER-004-FCC-15.407
Page	3 of 36

CONTENTS

1	REPORT REVISION HISTORY4		
2		CUTIVE SUMMARY	
3		STOMER INFORMATION	
4		T SITE INFORMATION	
5	MOI	DIFICATION	5
6		INFORMATION	
6		EUT Description	
6		Radio Description	
6	6.3 (Output Power/PSD Evaluation with New Antenna	10
6	6.4 E	EUT test modes/configuration Description	10
6	6.5 E	EUT Photos - External	11
6	6.6 E	EUT Photos – Internal	14
6	6.7 E	EUT Test Setup Photos	17
7	SUP	PPORTING EQUIPMENT/SOFTWARE AND CABLING DESCRIPTION	18
7	'.1	Supporting Equipment	18
7	7.2	Test Software Description	18
8	TES	T SUMMARY	19
9	MEA	ASUREMENT UNCERTAINTY	20
10	ı	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	21
1	0.1	Radiated Emissions below 1GHz	21
1	0.2	Radiated Spurious Emissions above 1GHz	25
ANI	NEX A	A. TEST INSTRUMENT	33
ANI	NEX B	3. USER MANUAL, BLOCK & CIRCUIT DIAGRAM	34
ΛNI	NEY (S SIEMIC ACCREDITATION	35



Test report No.	SL13091001-AER-004-FCC-15.407
Page	4 of 36

Report Revision History

Report No.	Report Version	Description	Issue Date
SL13091001-AER-004A1-FCC-15.407	None	Original	5/6/2014





Test report No.	SL13091001-AER-004-FCC-15.407
Page	5 of 36

2 **Executive Summary**

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

<u>Company:</u> Aerohive Networks, Inc.

Product: Digital Transmission System Access Point

Model: AP390

against the current Stipulated Standards. The FCC certified product (FCC ID: WBV-AP3X0, IC ID: 7774A-AP3X0) with new type of antenna (antenna model: Dual Band MIMO Antenna) has demonstrated to comply with the Stipulated Standard listed on 1st page.

3 Customer information

Applicant Name	Aerohive Networks, Inc.
Applicant Address	330 Gibraltar Drive, Sunnyvale, CA 94089, USA
Manufacturer Name	Aerohive Networks, Inc.
Manufacturer Address	330 Gibraltar Drive, Sunnyvale, CA 94089, USA

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.	SL13091001-AER-004-FCC-15.407
Page	6 of 36

EUT Information

<u>6.1</u> **EUT Description**

Product Name	Digital Transmission System Access Point	
Model No.	AP390	
Trade Name	Aerohive	
Serial No.	510077-03	
Input Power	12VDC	
Power Adapter Manu/Model	N/A	
Power Adapter SN	-	
Hardware version	N/A	
Software version	N/A	
Date of EUT received	12/23/2013	
Equipment Class/ Category	DTS, UNII	
Clock Frequencies	N/A	
Port/Connectors	N/A	
Remark	-	





Test report No.	SL13091001-AER-004-FCC-15.407
Page	7 of 36

6.2 Radio Description

Spec for Radio -

opec for Radio -									
Radio Type	802.11b	802.11g	802.11a	802.11n-20M	802.11n-40M	802.11ac-80M			
Operating Frequency	2412-2462MHz	2412-2462MHz	5180-5240MHz 5260-5320MHz 5500-5700MHz 5745-5825MHz	2412-2462MHz 5180-5240MHz 5260-5320MHz 5500-5700MHz 5745-5825MHz	2422-2462MHz 5190-5230MHz 5270-5310MHz 5510-5670MHz 5755-5795MHz	5210MHz 5290MHz 5530MHz 5775MHz			
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)			
Channel Spacing	5MHz	5MHz	20MHz	5MHz(2.4GHz), 20MHz (5GHz)	40MHz	80MHz			
Number of Channels	11	11	17	11(2.4GH) 17 (5GHz)	7(2.4GH) 9(5GHz)	4			
Antenna Type		Dual Band Sector External Antenna							
Antenna Gain	3 X 5 dBi								
Antenna Connector Type		SMA							

Directional gain calculation (per KDB 662911 D01 Multiple Transmitter Output v02r01)

Туре	Freq	Main Ant Gain (dBi)	MIMO Ant1Gain (dBi)	MIMO Ant2Gain (dBi)	Directional Gain (dBi)
PSD	5GHz	5.0	5	5	9.77
Power	5GHz	5.0	5	5	5

Note:

1. EUT employs a Cyclic Delay Diversity technique, and all antennas in the same band has same antenna gain, so for power spectral density, the

Array Gain = 10 log (Nant/Nss) dB

For power measurements on IEEE 802.11 devices, 1,2

Array Gain = 0 dB (i.e., no array gain) for NANT ≤ 4 ;

Array Gain = 0 dB (i.e., no array gain) for channel widths ≥ 40 MHz for any N_{ANT};

Array Gain = $5 \log(N_{ANT}/N_{SS})$ dB or 3 dB, whichever is less, for 20-MHz channel widths with $N_{ANT} \ge 5$.

NANT = number of transmit antennas and NSS = number of spatial streams.

Directional Gain = Antenna gain + Array Gain

2. EUT has a Nss = 1





Test report No.	SL13091001-AER-004-FCC-15.407
Page	8 of 36

Channel List

Type		Channel No.	Frequency (MHz)	Available (Y/N)
		1	2412	Y
		2	2417	Y
		3	2422	Y
		4	2427	Y
		5	2432	Y
802.11b/g/n-HT20	2412-2462	6	2437	Y
		7	2442	Y
		8	2447	Y
		9	2452	Y
		10	2457	Y
		11	2462	Y
		36	5180	Y
802.11a/n-HT20	5450 5050MI	40	5200	Y
	5150-5250MHz	44	5220	Y
		48	5240	Y
		52	5260	Y
	5050 5050141	56	5280	Y
	5250-5350MHz	60	5300	Y
		64	5320	Y
		100	5500	Y
		104	5520	Y
		108	5540	Y
		112	5560	Y
802.11a/n-H120		116	5580	Y
	5470-5725MHz	120	5600	Y
		124	5620	Y
		128	5640	Y
		132	5660	Y
		136	5680	Y
		140	5700	Υ
		149	5745	Υ
		153	5765	Υ
	5725-5825MHz	157	5785	Y
		161	5805	Υ
		165	5825	Y





Test report No. SL13091001-AER-004-FCC-15.407 Page 9 of 36

		1	2412	N
		2	2417	N
		3	2422	Y
		4	2427	Y
		5	2432	Y
802.11n-HT40	2412-2462	6	2437	Y
		7	2442	Y
		8	2447	Y
		9	2452	Y
		10	2457	N
		11	2462	N
		36,40	5190	Y
802.11n-HT40	5150-5250MHz	40,44	5210	N
		44,48	5230	Y
	5250-5350MHz	52,56	5270	Y
		56,60	5290	N
		60,64	5310	Y
		100,104	5510	Y
		104,108	5530	Y
	5470-5725MHz	108,112	5550	N
		112,116	5570	N
		132,136	5670	Y
		149,153	5755	Y
	5725-5825MHz	153,157	5775	N
		157,161	5795	Y
	5150-5250MHz	38, 46	5210	Y
802.11ac-HT80	5250-5350MHz	54, 62	5290	Y
002.118C-H10U	5470-5725MHz	102, 110	5530	Y
	5725-5825MHz	151, 159	5775	Y





Test report No.	SL13091001-AER-004-FCC-15.407
Page	10 of 36

6.3 Output Power/PSD Evaluation with New Antenna

Output Power

Туре	Freq	Test mode	СН	C	onducted	Power (di	Bm)	Limit	Result
, ,	(MHz)	/IHZ)		Port A	Port B	Port C	Combined	(dBm)	
Output power	5210	802.11ac-80M	42	12.05	12.48	12.08	16.98	17	Pass
Output power	5270	802.11ac-40M	54	19.02	18.87	18.72	23.64	24	Pass
Output power	5550	802.11ac-40M	110	18.88	18.91	18.62	23.58	24	Pass

Note:

- 1. No reduction on the power limit since the directional gain is 5 dBi, which is less than 6 dBi.
- 2. Only the maximum power result is shown here as verification.

PSD

Type	Freq	Test mode	СН	Cor	nducted Po	wer (dBm	n/MHz)	Limit (dBm/	Result
, ,	(MHz)			Port A	Port B	Port C	Combined	MHz)	
Output power	5180	802.11n-20M	36	-6.64	-6.37	-6.63	-1.77	0.23	Pass
Output power	5260	802.11n-20M	52	2.39	2.36	2.33	7.13	7.23	Pass
Output power	5580	802.11a-20M	116	2.03	2.12	2.23	6.90	7.23	Pass

Note:

- 1. Reduction on the power limit is applied. Directional gain is 9.77 dBi.
- 2. Only the maximum PSD result is shown here as verification.

6.4 EUT test modes/configuration Description

Test mode

	Note	
Final_test_mode_1	WLAN 5.2GHz Cont TX at 802.11ac-20MHz (Channel:52)	Below 1GHz
Final_test_mode_2	WLAN 5.5GHz Cont TX at 802.11ac-20MHz (Channel:100)	Below 1GHz
Final_test_mode_3	WLAN 5.6GHz Cont TX at 802.11ac-20MHz (Channel:132)	Below 1GHz
Final_test_mode_4	WLAN 5.2GHz Cont TX at 802.11a (Channel:52)	Above 1GHz
Final_test_mode_5	WLAN 5.2GHz Cont TX at 802.11a (Channel:60)	Above 1GHz
Final_test_mode_6	WLAN 5.2GHz Cont TX at 802.11a (Channel:64)	Above 1GHz
Final_test_mode_7	WLAN 5.5GHz Cont TX at 802.11a (Channel:100)	Above 1GHz
Final_test_mode_8	WLAN 5.5GHz Cont TX at 802.11a (Channel:116)	Above 1GHz
Final_test_mode_9	WLAN 5.6GHz Cont TX at 802.11a (Channel:140)	Above 1GHz
Final_test_mode_10	WLAN 5.2GHz Cont TX at 802.11ac-20MHz (Channel:52)	Above 1GHz
Final_test_mode 11	WLAN 5.2GHz Cont TX at 802.11ac-20MHz (Channel:60)	Above 1GHz
Final_test_mode_12	WLAN 5.2GHz Cont TX at 802.11ac-20MHz (Channel:64)	Above 1GHz
Final_test_mode_13	WLAN 5.5GHz Cont TX at 802.11ac-20MHz (Channel:100)	Above 1GHz
Final_test_mode_14	WLAN 5.5GHz Cont TX at 802.11ac-20MHz (Channel:116)	Above 1GHz
Final_test_mode_15	WLAN 5.6GHz Cont TX at 802.11ac-20MHz (Channel:140)	Above 1GHz
Final_test_mode_16	WLAN 5.2GHz Cont TX at 802.11ac-40MHz (Channel:52)	Above 1GHz
Final_test_mode_17	WLAN 5.2GHz Cont TX at 802.11ac-40MHz (Channel:60)	Above 1GHz
Final_test_mode_18	WLAN 5.2GHz Cont TX at 802.11ac-40MHz (Channel:100)	Above 1GHz
Final_test_mode_19	WLAN 5.2GHz Cont TX at 802.11ac-40MHz (Channel:108)	Above 1GHz

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

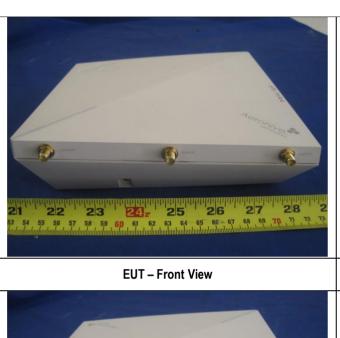




Test report No.	SL13091001-AER-004-FCC-15.407
Page	11 of 36

Final_test_mode_20	WLAN 5.2GHz Cont TX at 802.11ac-40MHz (Channel:132)	Above 1GHz
Final_test_mode_21	WLAN 5.2GHz Cont TX at 802.11ac-80MHz (Channel:36)	Above 1GHz
Final_test_mode_22	WLAN 5.5GHz Cont TX at 802.11ac-80MHz (Channel:100)	Above 1GHz
Remarks:		

6.5 **EUT Photos - External**





EUT - Rear View



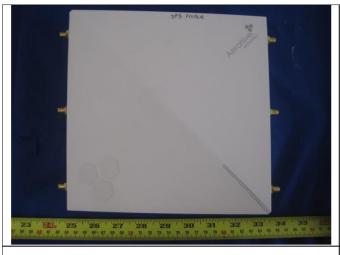


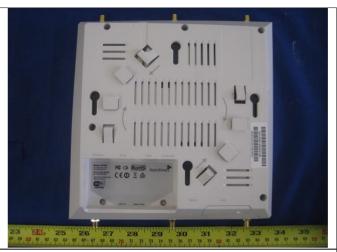
EUT - Left View

EUT - Right View



Test report No. SL13091001-AER-004-FCC-15.407
Page 12 of 36





EUT – Top View

EUT – Bottom View





External Antenna- Front View

External Antenna- Rear View





External Antenna- Top View

External Antenna- Bottom View



Test report No.	SL13091001-AER-004-FCC-15.407
Page	13 of 36

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

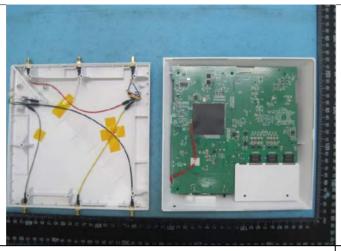
Visit us at: www.siemic.com: Follow us at:

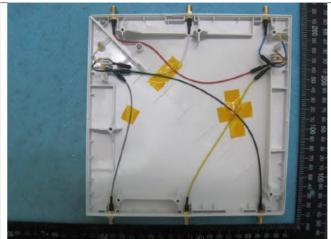




Test report No.	SL13091001-AER-004-FCC-15.407
Page	14 of 36

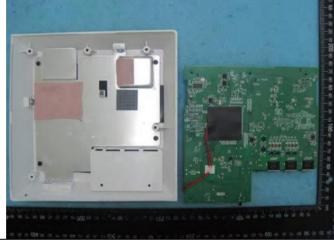
EUT Photos – Internal <u>6.6</u>





EUT Cover off-1

EUT Cover off-2







PCB 1 – Top view

PCB 1 - Cover off view





PCB 2 - Top view

PCB 1 - Cover off view



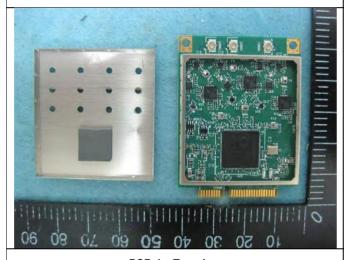
Test report No. SL13091001-AER-004-FCC-15.407
Page 15 of 36



NIZAH1018001E 1.01 N1 0 20 10 mm

PCB 3 - Top view

PCB 3 - Bottom view





PCB 4 - Top view

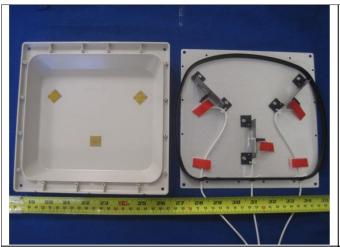
PCB 4 - Bottom view



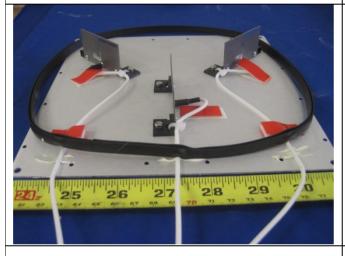
PCB 5 - Top view



Test report No.	SL13091001-AER-004-FCC-15.407
Page	16 of 36



External Antenna- Cover off External Antenna- Top View





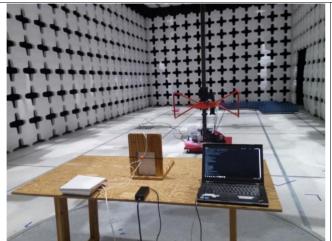


External Antenna-Main PCB

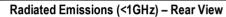


Test report No.	SL13091001-AER-004-FCC-15.407
Page	17 of 36

6.7 EUT Test Setup Photos



Radiated Emissions (<1GHz) - Front View







Radiated Emissions (>1GHz) - Front View

Radiated Emissions (>1GHz) - Rear View





Radiated Emissions (>18 GHz) - Front View

Radiated Emissions (>18 GHz) - Rear View



Test report No.	SL13091001-AER-004-FCC-15.407
Page	18 of 36

Supporting Equipment/Software and cabling Description

Supporting Equipment 7.1

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	Laptop	Vostro 1310	07267	DELL	-

Test Software Description 7.2

Test Item	Software	Description
Spurious Emission	Putty	Enable RF Test mode for WLAN

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.	SL13091001-AER-004-FCC-15.407
Page	19 of 36

Test Summary

Emissions			
Test Item Test standard		Test Method/Procedure	Pass / Fail
Radiated Spurious Emissions	FCC 15.247 (d)	ANSI C63.4 – 2009 789033 D01 General UNII Test Procedures v01r03	⊠ Pass
	RSS210 (A8.5)	RSS-Gen Issue 3: 2010	☐ Fail
Restricted Band of	15.205	ANSI C63.4 – 2009 789033 D01 General UNII Test Procedures v01r03	⊠ Pass
Operation	RSS 210 (2.2)	RSS-Gen Issue 3: 2010	☐ Fail





Test report No.	SL13091001-AER-004-FCC-15.407
Page	20 of 36

Measurement Uncertainty 9

Emissions									
Test Item Frequency Range Description									
Band Edge and Radiated Spurious Emissions	30MHz – 1GHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/- 4.5dB						
Band Edge and Radiated Spurious Emissions	1GHz – 40GHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+4.3dB/- 4.1dB						







Test report No.	SL13091001-AER-004-FCC-15.407
Page	21 of 36

10 Measurements, Examination and Derived Results

10.1 Radiated Emissions below 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§ 15.407(b)(2), 15.407(b)(6), RSS210(A9.3)(1)	a)	Unwanted emissions below 1 GHz must comply with the general field strength limits set forth in §15.209. Further, any U-NII devices using an AC power line are required to comply also with the conducted limits set forth in §15.207.	\boxtimes
Test Setup		Ant. Tower 1-4m Variable Support Units Ground Plane Test Receiver	
Procedure	1. 2. 3. 4.	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 charact Maximization of the emissions, was carried out by rotating the EUT, changing the antenna and adjusting the antenna height in the following manner: a. Vertical or horizontal polarisation (whichever gave the higher emission level ov 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 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 po measured.	er a full emission.
Remark		fferent RF configuration has been evaluated, but not much difference was found. The data the worst case data with EUT under 802.11ac –HT20-5200MHz mode.	a presented
Result	⊠ Pa	ss 🗆 Fail	

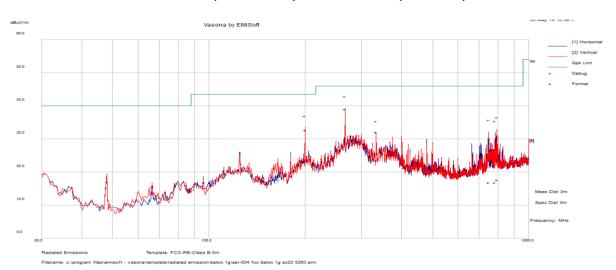
Test Data ⊠ Yes (See below) □ N/A

Test Plot ⊠ Yes (See below) □ N/A



Test report No.	SL13091001-AER-004-FCC-15.407
Page	22 of 36

Radiated Emission Test Results (Below 1GHz) at 802.1ac-20M (5260 MHz)



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
266.67	63.61	2.85	-27.55	38.92	Quasi Max	Н	101.00	225.00	46.00	-7.08	Pass
199.99	58.07	2.50	-27.93	32.63	Quasi Max	V	132.00	180.00	43.50	-10.87	Pass
795.67	31.32	4.83	-18.48	17.67	Quasi Max	V	377.00	108.00	46.00	-28.33	Pass
748.63	31.64	4.67	-19.53	16.79	Quasi Max	V	361.00	114.00	46.00	-29.21	Pass
783.72	31.36	4.79	-19.31	16.84	Quasi Max	Н	356.00	351.00	46.00	-29.16	Pass
333.32	55.27	3.12	-26.37	32.02	Quasi Max	Н	101.00	184.00	46.00	-13.98	Pass



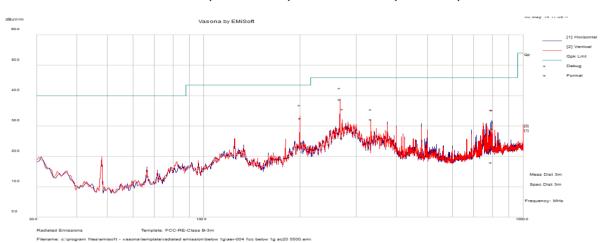






Test report No.	SL13091001-AER-004-FCC-15.407
Page	23 of 36

Radiated Emission Test Results (Below 1GHz) at 802.1ac-20M (5500 MHz)

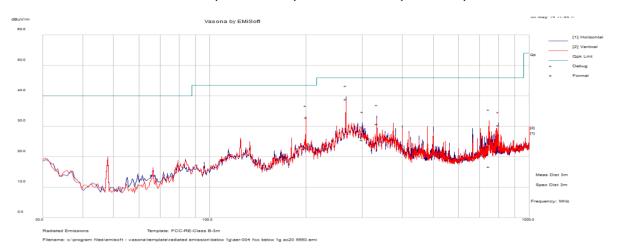


Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
266.68	63.44	2.85	-27.55	38.75	Quasi Max	Н	110	216	46	-7.25	Pass
200.00	57.92	2.5	-27.93	32.49	Quasi Max	٧	122	172	43.5	-11.01	Pass
270.98	50.56	2.87	-27.33	26.1	Quasi Max	٧	127	224	46	-19.9	Pass
333.35	55.4	3.12	-26.37	32.15	Quasi Max	٧	104	186	46	-13.85	Pass
792.95	31.76	4.82	-18.63	17.95	Quasi Max	Н	100	130	46	-28.05	Pass
799.98	42.84	4.84	-18.56	29.13	Quasi Max	Н	100	219	46	-16.87	Pass



Test report No.	SL13091001-AER-004-FCC-15.407
Page	24 of 36

Radiated Emission Test Results (Below 1GHz) at 802.1ac-20M (5660 MHz)



Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
266.67	63.5	2.85	-27.55	38.8	Quasi Max	Н	130	218	46	-7.2	Pass
200.00	58.26	2.5	-27.93	32.83	Quasi Max	V	122	166	43.5	-10.67	Pass
333.31	53.95	3.12	-26.37	30.7	Quasi Max	Н	101	192	46	-15.3	Pass
747.23	31.61	4.67	-19.61	16.66	Quasi Max	V	395	113	46	-29.34	Pass
299.57	49.51	3	-27.07	25.44	Quasi Max	Н	103	233	46	-20.56	Pass
800.01	44.04	4.84	-18.56	30.32	Quasi Max	Н	100	198	46	-15.68	Pass

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









Test report No.	SL13091001-AER-004-FCC-15.407
Page	25 of 36

10.2 Radiated Spurious Emissions above 1GHz

Requirement(s):

Spec	Item	Requirement			Applicable
	(1)		n the 5.15-5.25 GHz band: all emission ot exceed an EIRP of -27 dBm/MHz.		\boxtimes
47CFR§ 15.407(b)(2),	(2)	5.15-5.35 GHz band shall n operating in the 5.25-5.35 (GHz band must meet all ap 5.15-5.25 GHz band (includ	n the 5.25-5.35 GHz band: all emission texceed an EIRP of -27 dBm/MHz. GHz band that generates emissions in plicable technical requirements for opting indoor use) or alternatively meet dBm/MHz in the 5.15-5.25 GHz band	Devices In the 5.15-5.25 In the factor in the an out-of-band	×
15.407(b)(6), RSS210(A9.3)(1)	(3)	For transmitters operating in	n the 5.47-5.725 GHz band: all emiss hall not exceed an EIRP of −27 dBm	sions outside of	
	(4)	frequency range from the b shall not exceed an EIRP o	n the 5.725-5.825 GHz band: all emis and edge to 10 MHz above or below f -17 dBm/MHz; for frequencies 10 M dge, emissions shall not exceed an E	the band edge IHz or greater	
Test Setup		EUT& Support Units	Ant. Tower 3m Turn Table Ground Plane Test Receiver	l-4m Variable	
Procedure	1. 2. 3. 4.	The test was carried out a Maximization of the emiss polarization, and adjusting a. Vertical or horiz rotation of the E b. The EUT was th c. Finally, the ante An average measurement	n and allowed to warm up to its normal the selected frequency points obtainions, was carried out by rotating the Eithe antenna height in the following montal polarisation (whichever gave the UT) was chosen. The rotated to the direction that gave the na height was adjusted to the height was then made for that frequency poted for the next frequency point, until a	ed from the EUT cha UT, changing the and anner: higher emission leve ne maximum emissio that gave the maxim int.	tenna el over a full n. um emission.
Test Date	04/30/2	2014-05/2/2014	Environmental condition	Temperature 24°C Relative Humidity 4 Atmospheric Press	
Remark	Both h	orizontal and vertical polariza	ation had been verified for all the diffe	rent mode measure	ments.
Result	⊠ Pas	ss 🗆 Fail			

Test Data		□ N/A
Test Plot	☐ Yes (See below)	⊠ N/A



Test report No.	SL13091001-AER-004-FCC-15.407
Page	26 of 36

Radiated Emission Test Results (Above 1GHz)

WLAN (802.11a): Low channel (5260 MHz)

TVEAR (OUZ. 114). LOW GRAING (UZOO HITZ)											
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1132.66	42.46	0.86	-6.91	36.42	Peak Max	V	211.00	320.00	68.30	-31.88	Pass
1328.62	60.11	1.02	-6.55	54.58	Peak Max	V	99.00	290.00	68.30	-13.72	Pass
2836.66	39.89	1.78	-2.42	39.25	Peak Max	V	281.00	55.00	68.30	-29.05	Pass
1537.70	39.58	1.17	-6.13	34.62	Peak Max	V	296.00	60.00	68.30	-33.68	Pass
10528.15	48.25	3.83	5.68	57.76	Peak Max	V	128.00	12.00	68.30	-10.54	Pass
1132.66	30.64	0.86	-6.91	24.59	Average Max	V	211.00	320.00	54.00	-29.41	Pass
1328.62	30.76	1.02	-6.55	25.23	Average Max	V	99.00	290.00	54.00	-28.77	Pass
2836.66	28.16	1.78	-2.42	27.52	Average Max	V	281.00	55.00	54.00	-26.49	Pass
1537.70	28.00	1.17	-6.13	23.05	Average Max	V	296.00	60.00	54.00	-30.96	Pass

WLAN (802.11a): Mid channel (5300 MHz)

77 - 27 117 (00	TEAN (002.114). Into onamici (0000 intiz)												
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail		
1723.02	40.47	1.33	-5.44	36.36	Peak Max	Н	237.00	261.00	68.30	-31.94	Pass		
1329.35	57.58	1.02	-6.55	52.05	Peak Max	Н	147.00	288.00	68.30	-16.25	Pass		
1160.92	50.15	0.89	-6.86	44.19	Peak Max	Н	161.00	145.00	68.30	-24.12	Pass		
1167.66	48.50	0.89	-6.84	42.55	Peak Max	V	163.00	242.00	68.30	-25.75	Pass		
10598.12	43.63	3.86	5.65	53.14	Peak Max	V	124.00	4.00	68.30	-15.16	Pass		
1329.35	29.08	1.02	-6.55	23.55	Average Max	Н	147.00	288.00	54.00	-30.45	Pass		
1160.92	29.83	0.89	-6.86	23.86	Average Max	Н	161.00	145.00	54.00	-30.14	Pass		
1167.66	30.11	0.89	-6.84	24.16	Average Max	V	163.00	242.00	54.00	-29.84	Pass		

WLAN (802.11a): High channel (5320 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1329.36	41.40	1.02	-6.55	35.87	Peak Max	Н	124.00	110.00	68.30	-32.43	Pass
10650.42	46.55	3.87	5.63	56.05	Peak Max	Н	110.00	2.00	68.30	-12.25	Pass
1160.92	41.25	0.89	-6.86	35.28	Peak Max	Н	250.00	360.00	68.30	-33.02	Pass
1128.27	42.28	0.86	-6.92	36.22	Peak Max	Н	172.00	129.00	68.30	-32.08	Pass
1329.36	28.83	1.02	-6.55	23.30	Average Max	Н	124.00	110.00	54.00	-30.70	Pass
10650.42	32.74	3.87	5.63	42.24	Average Max	Н	110.00	2.00	54.00	-11.76	Pass
1160.92	29.66	0.89	-6.86	23.69	Average Max	Н	250.00	360.00	54.00	-30.31	Pass
1128.27	30.83	0.86	-6.92	24.77	Average Max	Н	172.00	129.00	54.00	-29.23	Pass

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.	SL13091001-AER-004-FCC-15.407
Page	27 of 36

WLAN (802.11a): Low channel (5500 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
11000.835	48.96	3.98	5.5	58.45	Peak Max	Н	132	10	68.3	-9.85	Pass
1330.2875	63.02	1.02	-6.55	57.49	Peak Max	Н	112	212	68.3	-10.81	Pass
1078.1975	41.83	0.81	-7.02	35.62	Peak Max	V	277	208	68.3	-32.68	Pass
1139.325	42.27	0.87	-6.9	36.24	Peak Max	Н	249	239	68.3	-32.06	Pass
11000.835	35.85	3.98	5.5	45.34	Average Max	Н	132	10	54	-8.66	Pass
1330.2875	31.16	1.02	-6.55	25.64	Average Max	Н	112	212	54	-28.36	Pass
1078.1975	30.3	0.81	-7.02	24.09	Average Max	V	277	208	54	-29.91	Pass
1139.325	30.11	0.87	-6.9	24.08	Average Max	Н	249	239	54	-29.92	Pass

WLAN (802.11a): Mid channel (5580 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1330.40	64.93	1.02	-6.55	59.40	Peak Max	Н	145.00	301.00	68.30	-8.90	Pass
11160.41	42.93	4.03	5.61	52.56	Peak Max	V	119.00	0.00	68.30	-15.74	Pass
1078.84	52.11	0.81	-7.02	45.91	Peak Max	V	102.00	280.00	68.30	-22.39	Pass
1163.87	42.94	0.89	-6.85	36.98	Peak Max	V	118.00	259.00	68.30	-31.32	Pass
1330.40	32.15	1.02	-6.55	26.63	Average Max	Н	145.00	301.00	54.00	-27.38	Pass
11160.41	31.14	4.03	5.61	40.78	Average Max	V	119.00	0.00	54.00	-13.22	Pass
1078.84	30.21	0.81	-7.02	24.01	Average Max	V	102.00	280.00	54.00	-29.99	Pass
1163.87	30.07	0.89	-6.85	24.12	Average Max	V	118.00	259.00	54.00	-29.89	Pass

WLAN (802.11a): High channel (5700MHz)

\											
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1329.40	50.19	1.02	-6.55	44.66	Peak Max	V	163.00	10.00	68.30	-23.64	Pass
11401.36	36.83	4.10	5.76	46.69	Peak Max	V	151.00	75.00	68.30	-21.61	Pass
1084.37	41.61	0.82	-7.01	35.43	Peak Max	V	167.00	81.00	68.30	-32.87	Pass
2490.70	42.21	1.73	-3.30	40.64	Peak Max	V	267.00	108.00	68.30	-27.66	Pass
1124.89	46.32	0.86	-6.93	40.25	Peak Max	V	106.00	212.00	68.30	-28.05	Pass
1329.40	29.11	1.02	-6.55	23.58	Average Max	V	163.00	10.00	54.00	-30.42	Pass
11401.36	25.73	4.10	5.76	35.60	Average Max	V	151.00	75.00	54.00	-18.40	Pass
1084.37	29.69	0.82	-7.01	23.50	Average Max	V	167.00	81.00	54.00	-30.50	Pass
2490.70	29.85	1.73	-3.30	28.28	Average Max	V	267.00	108.00	54.00	-25.72	Pass
1124.89	38.15	0.86	-6.93	32.08	Average Max	V	106.00	212.00	54.00	-21.92	Pass

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









Test report No.	SL13091001-AER-004-FCC-15.407
Page	28 of 36

WLAN (802.11ac-20M): Low channel (5260 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1330.3625	53.95	1.02	-6.55	48.42	Peak Max	Η	177	277	68.3	-19.88	Pass
10520	55.93	3.83	5.68	65.44	Peak Max	V	146	12	68.3	-2.86	Pass
1163	49.4	0.89	-6.85	43.43	Peak Max	V	104	186	68.3	-24.87	Pass
1030.1075	41.75	0.77	-7.12	35.39	Peak Max	٧	267	146	68.3	-32.91	Pass
1120.7675	42.29	0.85	-6.93	36.21	Peak Max	٧	152	221	68.3	-32.09	Pass
1330.3625	28.79	1.02	-6.55	23.26	Average Max	Н	177	277	54	-30.74	Pass
1163	30.13	0.89	-6.85	24.17	Average Max	٧	104	186	54	-29.83	Pass
1030.1075	30.54	0.77	-7.12	24.18	Average Max	٧	267	146	54	-29.82	Pass
1120.7675	31.03	0.85	-6.93	24.95	Average Max	٧	152	221	54	-29.05	Pass

WLAN (802.11ac-20M): Mid channel (5300 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
5375.91	56.75	2.71	0.78	60.24	Peak Max	V	122.00	352.00	68.30	-8.06	Pass
1330.68	61.16	1.02	-6.55	55.63	Peak Max	Н	159.00	213.00	68.30	-12.67	Pass
10599.86	57.50	3.86	5.65	67.00	Peak Max	V	99.00	0.00	68.30	-1.30	Pass
1162.19	41.19	0.89	-6.85	35.22	Peak Max	Н	147.00	11.00	68.30	-33.08	Pass
5375.91	37.48	2.71	0.78	40.97	Average Max	V	122.00	352.00	54.00	-13.03	Pass
1330.68	29.96	1.02	-6.55	24.44	Average Max	Н	159.00	213.00	54.00	-29.56	Pass
1162.19	29.82	0.89	-6.85	23.85	Average Max	Н	147.00	11.00	54.00	-30.15	Pass

WLAN (802.11ac-20M): High channel (5320 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
10638.18	58.11	3.87	5.64	67.61	Peak Max	V	100	14	68.3	-0.69	Pass
1328.62	65.27	1.02	-6.55	59.74	Peak Max	V	125	251	68.3	-8.56	Pass
5350.855	51.91	2.7	0.76	55.37	Peak Max	V	101	341	68.3	-12.93	Pass
1557.934	40.07	1.19	-6.05	35.21	Peak Max	V	197	71	68.3	-33.09	Pass
10638.18	44.06	3.87	5.64	53.56	Average Max	V	100	14	54	-0.44	Pass
1328.62	31.93	1.02	-6.55	26.4	Average Max	V	125	251	54	-27.6	Pass
5350.855	36.62	2.7	0.76	40.07	Average Max	V	101	341	54	-13.93	Pass
1557.934	28.47	1.19	-6.05	23.61	Average Max	V	197	71	54	-30.39	Pass

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.	SL13091001-AER-004-FCC-15.407
Page	29 of 36

WLAN (802.11ac-20M): Low channel (5500 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
10998.293	37.69	3.98	5.5	47.17	Peak Max	V	238	90	68.3	-21.13	Pass
2710	41.85	1.76	-2.73	40.88	Peak Max	V	168	234	68.3	-27.42	Pass
1353.975	42.95	1.04	-6.51	37.48	Peak Max	V	284	208	68.3	-30.82	Pass
10998.293	25.59	3.98	5.5	35.07	Average Max	V	238	90	54	-18.93	Pass
2710	29.99	1.76	-2.73	29.02	Average Max	V	168	234	54	-24.99	Pass
1353.975	31.18	1.04	-6.51	25.71	Average Max	V	284	208	54	-28.29	Pass

WLAN (802.11ac-20M): Mid channel (5580 MHz)

TET II (002.1140 20III)! III a dilainidi (0000 IIII 2)											
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
11159.06	56.22	4.03	5.61	65.86	Peak Max	V	132	0	68.3	-2.44	Pass
1330.35	59.01	1.02	-6.55	53.49	Peak Max	Н	129	129	68.3	-14.81	Pass
1236.5125	40.79	0.95	-6.71	35.03	Peak Max	V	287	361	68.3	-33.28	Pass
1161.7975	45.47	0.89	-6.85	39.51	Peak Max	Н	228	30	68.3	-28.79	Pass
11159.06	42.6	4.03	5.61	52.24	Average Max	V	132	0	54	-1.76	Pass
1330.35	30.86	1.02	-6.55	25.33	Average Max	Н	129	129	54	-28.67	Pass
1236.5125	29.59	0.95	-6.71	23.83	Average Max	V	287	361	54	-30.17	Pass
1161.7975	29.59	0.89	-6.85	23.63	Average Max	Н	228	30	54	-30.37	Pass

WLAN (802.11ac-20M): High channel (5700MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1330.2825	53.07	1.02	-6.55	47.54	Peak Max	V	209	344	68.3	-20.76	Pass
5397.4	48.65	2.71	0.81	52.17	Peak Max	V	128	354	68.3	-16.13	Pass
11400.743	37.02	4.1	5.76	46.88	Peak Max	V	225	141	68.3	-21.42	Pass
1160.4625	44.87	0.89	-6.86	38.9	Peak Max	Н	203	244	68.3	-29.4	Pass
1330.2825	30.18	1.02	-6.55	24.65	Average Max	V	209	344	54	-29.35	Pass
5397.4	36.85	2.71	0.81	40.37	Average Max	V	128	354	54	-13.63	Pass
11400.743	25.76	4.1	5.76	35.62	Average Max	V	225	141	54	-18.38	Pass
1160.4625	29.46	0.89	-6.86	23.49	Average Max	Н	203	244	54	-30.51	Pass

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.	SL13091001-AER-004-FCC-15.407
Page	30 of 36

WLAN (802.11ac-40M): Low channel (5260 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
2694.04	41.54	1.76	-2.77	40.53	Peak Max	Н	235	185	68.3	-27.77	Pass
1300.5025	42.64	1	-6.6	37.04	Peak Max	V	169	72	68.3	-31.26	Pass
10521.505	38.55	3.83	5.68	48.06	Peak Max	V	113	104	68.3	-20.24	Pass
2694.04	30.12	1.76	-2.77	29.11	Average Max	Н	235	185	54	-24.89	Pass
1300.5025	31.56	1	-6.6	25.96	Average Max	V	169	72	54	-28.04	Pass

WLAN (802.11ac-40M): Mid channel (5300 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
2716.915	41.42	1.76	-2.71	40.47	Peak Max	V	213	256	68.3	-27.83	Pass
1351.27	42.49	1.04	-6.51	37.01	Peak Max	V	132	341	68.3	-31.29	Pass
10598.995	38.06	3.86	5.65	47.57	Peak Max	V	257	238	68.3	-20.74	Pass
2716.915	29.96	1.76	-2.71	29	Average Max	V	213	256	54	-25	Pass
1351.27	31.24	1.04	-6.51	25.77	Average Max	V	132	341	54	-28.23	Pass

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.	SL13091001-AER-004-FCC-15.407
Page	31 of 36

WLAN (802.11ac-40M): Low channel (5500 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
10998.493	37.47	3.98	5.5	46.96	Peak Max	Н	276	213	68.3	-21.34	Pass
1328.6475	54.49	1.02	-6.55	48.96	Peak Max	Н	234	307	68.3	-19.34	Pass
1721.6125	40.7	1.33	-5.45	36.58	Peak Max	Н	162	279	68.3	-31.72	Pass
1166.5175	46.17	0.89	-6.84	40.22	Peak Max	Н	241	134	68.3	-28.09	Pass
10998.493	26.01	3.98	5.5	35.5	Average Max	Н	276	213	54	-18.5	Pass
1328.6475	30.05	1.02	-6.55	24.52	Average Max	Н	234	307	54	-29.48	Pass
1721.6125	28.86	1.33	-5.45	24.74	Average Max	Н	162	279	54	-29.26	Pass
1166.5175	29.96	0.89	-6.84	24.01	Average Max	Н	241	134	54	-29.99	Pass

WLAN (802.11ac-40M): Mid channel (5540 MHz)

112 III (442-11144 1011) IIII 4114 1114 1114 1114 1114 1114 1											
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1327.595	54.06	1.02	-6.55	48.52	Peak Max	V	165	278	68.3	-19.78	Pass
11080.023	39.18	4	5.56	48.74	Peak Max	V	99	1	68.3	-19.56	Pass
1722.6725	40.03	1.33	-5.44	35.92	Peak Max	Н	238	259	68.3	-32.38	Pass
1161.0225	41.21	0.89	-6.85	35.24	Peak Max	Н	99	13	68.3	-33.06	Pass
1327.595	29.69	1.02	-6.55	24.15	Average Max	V	165	278	54	-29.85	Pass
11080.023	27.13	4	5.56	36.69	Average Max	V	99	1	54	-17.31	Pass
1161.0225	29.57	0.89	-6.85	23.6	Average Max	Н	99	13	54	-30.4	Pass

WLAN (802.11ac-40M): Low channel (5660 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1328.685	55.52	1.02	-6.55	49.99	Peak Max	Н	169	5	68.3	-18.32	Pass
11320.62	37.49	4.08	5.71	47.28	Peak Max	V	163	169	68.3	-21.02	Pass
1171.4325	41.9	0.9	-6.83	35.97	Peak Max	Н	241	342	68.3	-32.33	Pass
1122.145	43.93	0.85	-6.93	37.85	Peak Max	Н	157	45	68.3	-30.45	Pass
1328.685	29.26	1.02	-6.55	23.73	Average Max	Н	169	5	54	-30.27	Pass
11320.62	26.3	4.08	5.71	36.09	Average Max	V	163	169	54	-17.91	Pass
1171.4325	29.93	0.9	-6.83	23.99	Average Max	Н	241	342	54	-30.01	Pass
1122.145	30.75	0.85	-6.93	24.67	Average Max	Н	157	45	54	-29.33	Pass

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.	SL13091001-AER-004-FCC-15.407
Page	32 of 36

WLAN (802.11ac-80M): Low channel (5260 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
2697.37	41.78	1.76	-2.76	40.77	Peak Max	Н	238	262	68.3	-27.53	Pass
1347.355	42.19	1.03	-6.52	36.71	Peak Max	V	140	106	68.3	-31.59	Pass
10519.383	38.09	3.83	5.68	47.6	Peak Max	V	189	99	68.3	-20.7	Pass
2697.37	30.13	1.76	-2.76	29.12	Average Max	Н	238	262	54	-24.88	Pass
1347.355	31.27	1.03	-6.52	25.78	Average Max	V	140	106	54	-28.22	Pass

WLAN (802.11ac-80M): Low channel (5500 MHz)

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
11000.073	38.09	3.98	5.5	47.57	Peak Max	V	296	196	68.3	-20.73	Pass
4032.173	41.22	2.32	-0.19	43.36	Peak Max	V	148	27	68.3	-24.94	Pass
1326.19	42.93	1.02	-6.56	37.39	Peak Max	V	165	49	68.3	-30.91	Pass
11000.073	25.79	3.98	5.5	35.27	Average Max	V	296	196	54	-18.73	Pass
4032.173	29.24	2.32	-0.19	31.37	Average Max	V	148	27	54	-22.63	Pass
1326.19	31.29	1.02	-6.56	25.75	Average Max	V	165	49	54	-28.25	Pass









Test report No.	SL13091001-AER-004-FCC-15.407
Page	33 of 36

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions			1			
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	
R&S LISN	ESH2-Z5	861741/013	05/18/2013	1 Year	05/18/2014	
CHASE LISN	MN2050B	1018	07/24/2013	1 Year	07/24/2014	
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2013	1 Year	05/25/2014	
Radiated Emissions		1	1	1	1	1
R & S Receiver	ESL6	100178	03/01/2014	1 Year	03/01/2015	~
R & S Receiver	ESIB 40	100179	04/20/2014	1 Year	04/20/2015	~
ETS-Lingren Loop Antenna	6512	00049120	05/13/2013	1 Year	05/13/2014	
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	02/09/2014	1 Year	02/09/2015	~
Horn Antenna (1-26.5GHz)	3115	10SL0059	04/26/2014	1 Year	04/26/2015	~
Horn Antenna (18-40 GHz)	AH-840	101013	04/23/2014	1 Year	04/23/2015	~
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	05/30/2013	1 Year	05/30/2014	~
Microwave Preamplifier (18-40 GHz)	PA-840	181251	05/30/2013	1 Year	05/30/2014	V
3 Meters SAC	3M	N/A	10/13/2013	1 Year	10/13/2014	~
10 Meters SAC	10M	N/A	06/05/2013	1 Year	06/05/2014	~
Sekonic Hygro Hermograph	ST-50	HE01-000092	05/25/2013	1 Year	05/25/2014	~
RF Conducted Measurement						
Spectrum Analyzer	N9010A	MY50210206	05/30/2013	1 Year	05/30/2014	
Spectrum Analyzer	E4407B	US88441016	05/31/2013	1 Year	05/31/2014	
R & S Receiver	ESIB 40	100179	04/20/2013	1 Year	04/20/2014	





Test report No.	SL13091001-AER-004-FCC-15.407
Page	34 of 36

Annex B. USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

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.	SL13091001-AER-004-FCC-15.407
Page	35 of 36

Annex C. SIEMIC Accreditation

Accreditations	Document	Scope / Remark
ISO 17025 (A2LA)	7	Please see the documents for the detailed scope
ISO Guide 65 (A2LA)	7	Please see the documents for the detailed scope
TCB Designation		A1, A2, A3, A4, B1, B2, B3, B4, C
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
ELLND	1	Radio & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025
EU NB	2	Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)	22	Phase I, Phase II
Vietnam MIC CAB Accreditation	B	Please see the document for the detailed scope
	72	(Phase II) OFCA Foreign Certification Body for Radio and Telecom
HongKong OFCA	7	(Phase I) Conformity Assessment Body for Radio and Telecom
	7	Radio: Scope A – All Radio Standard Specification in Category I
Industry Canada CAB	7	Telecom: CS-03 Part I, II, V, VI, VII, VIII





Test report No. SL13091001-AER-004-FCC-15.407 Page 36 of 36

Japan Recognized Certification Body Designation	12	Radio: A1. Terminal equipment for purpose of calling Telecom: B1. Specified radio equipment specified in Article 38-2, Paragraph 1, Item
Dody Designation		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
		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
Taiwan NCC CAB Recognition	7	LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition	<u>~</u>	CNS 13438
Japan VCCI		R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measuremet
		EMC: 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	1	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
		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
Australia NATA Recognition	B	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





