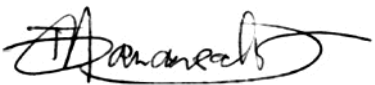


RF TEST REPORT



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 RSS 210 Issue8: 2010		
Test Method	ANCI C63.4:2009 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 did not comply with the specification	[]		
			
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



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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.



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/RRR, 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

CONTENTS

1	REPORT REVISION HISTORY	4
2	EXECUTIVE SUMMARY	5
3	CUSTOMER INFORMATION	5
4	TEST SITE INFORMATION	5
5	MODIFICATION	5
6	EUT INFORMATION.....	6
6.1	EUT Description	6
6.2	Radio Description	7
6.3	Output Power/PSD Evaluation with New Antenna	10
6.4	EUT test modes/configuration Description	10
6.5	EUT Photos - External	11
6.6	EUT Photos – Internal.....	14
6.7	EUT Test Setup Photos	17
7	SUPPORTING EQUIPMENT/SOFTWARE AND CABLING DESCRIPTION.....	18
7.1	Supporting Equipment	18
7.2	Test Software Description	18
8	TEST SUMMARY	19
9	MEASUREMENT UNCERTAINTY	20
10	MEASUREMENTS, EXAMINATION AND DERIVED RESULTS	21
10.1	Radiated Emissions below 1GHz.....	21
10.2	Radiated Spurious Emissions above 1GHz	25
ANNEX A. TEST INSTRUMENT.....		33
ANNEX B. USER MANUAL, BLOCK & CIRCUIT DIAGRAM		34
ANNEX C. SIEMIC ACCREDITATION		35

1 Report Revision History

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

2 Executive Summary

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

Company: 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
-	-	-	-

6 EUT Information

6.1 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	-

6.2 Radio Description

Spec 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)

Type	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:

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

$$\text{Array Gain} = 10 \log (N_{\text{ant}}/N_{\text{ss}}) \text{ dB}$$

For power measurements on IEEE 802.11 devices, 1,2

Array Gain = 0 dB (i.e., no array gain) for $N_{\text{ANT}} \leq 4$;

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

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

N_{ANT} = number of transmit antennas and N_{ss} = number of spatial streams.

Directional Gain = Antenna gain + Array Gain

- EUT has a $N_{\text{ss}} = 1$

Channel List

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

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

6.3 Output Power/PSD Evaluation with New Antenna

Output Power

Type	Freq (MHz)	Test mode	CH	Conducted Power (dBm)				Limit (dBm)	Result
				Port A	Port B	Port C	Combined		
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:

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

PSD

Type	Freq (MHz)	Test mode	CH	Conducted Power (dBm/MHz)				Limit (dBm/MHz)	Result
				Port A	Port B	Port C	Combined		
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:

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

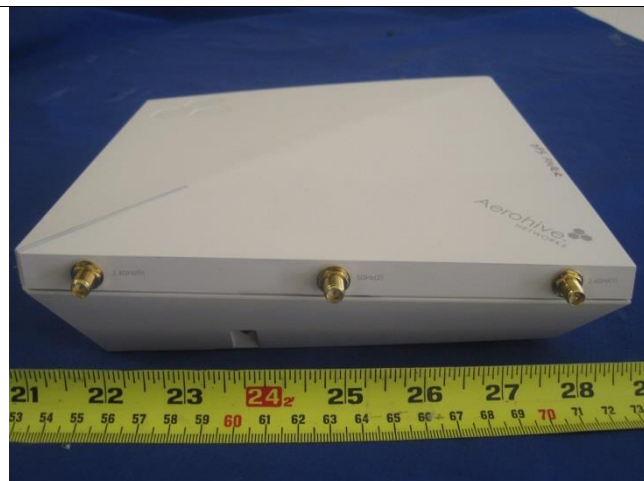
6.4 EUT test modes/configuration Description

Test mode

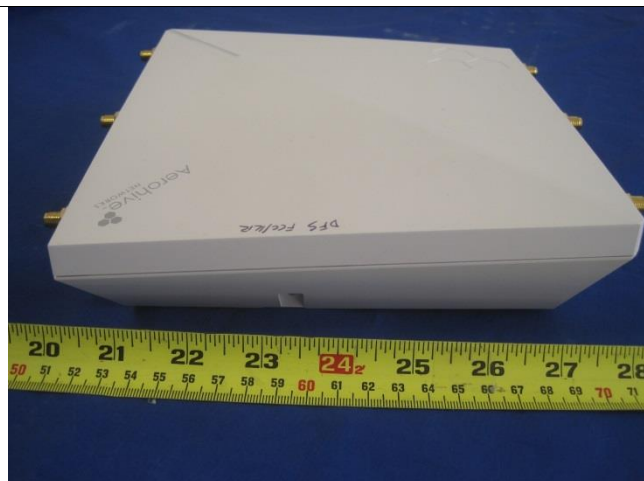
Final Test Mode		Note
Final_test_mode_1	WLAN 5.2GHz Cont TX at 802.11ac-20MHz (Channel:52)	Below 1GHz
Final_test_mode_2	WLAN 5.5GHz Cont TX at 802.11ac-20MHz (Channel:100)	Below 1GHz
Final_test_mode_3	WLAN 5.6GHz Cont TX at 802.11ac-20MHz (Channel:132)	Below 1GHz
Final_test_mode_4	WLAN 5.2GHz Cont TX 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

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:		

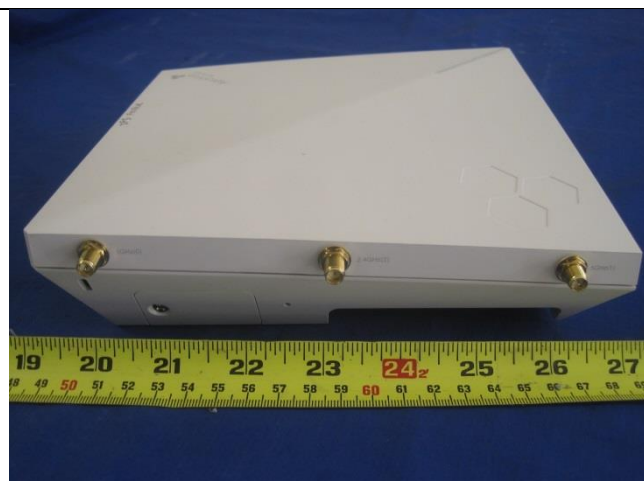
6.5 EUT Photos - External



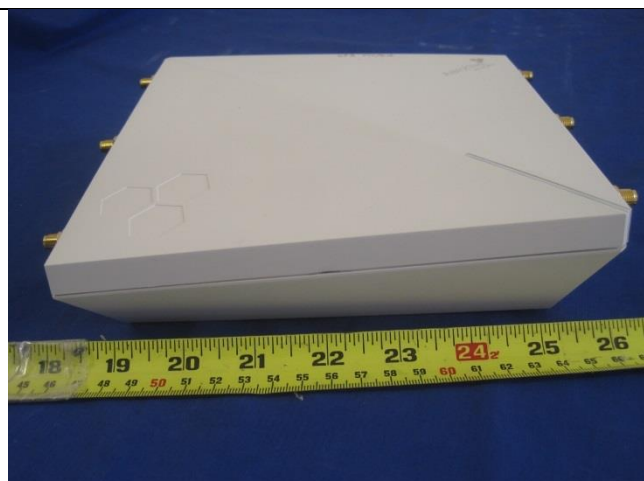
EUT – Front View



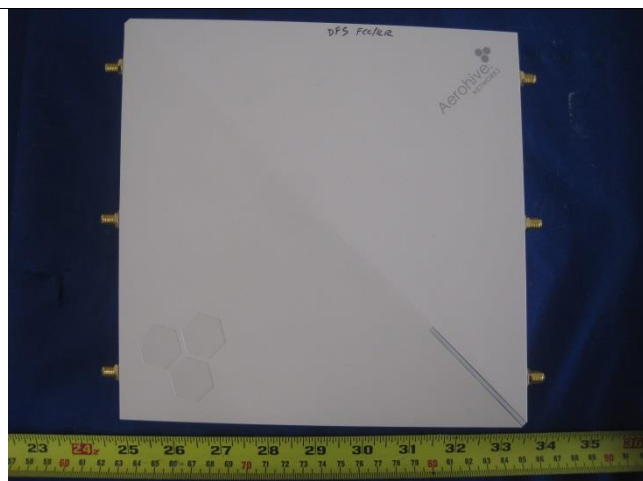
EUT – Rear View



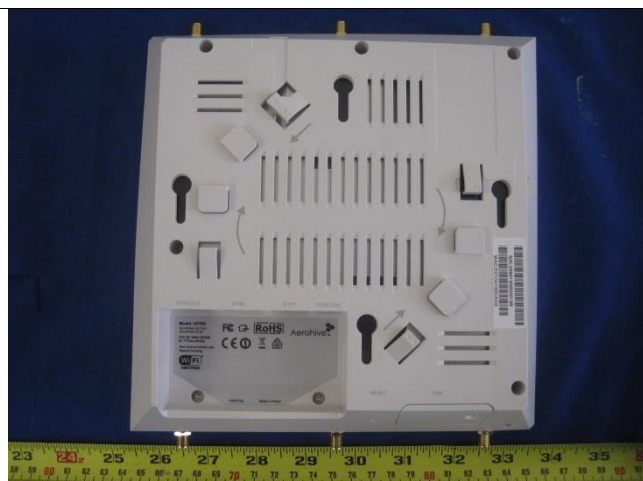
EUT – Left View



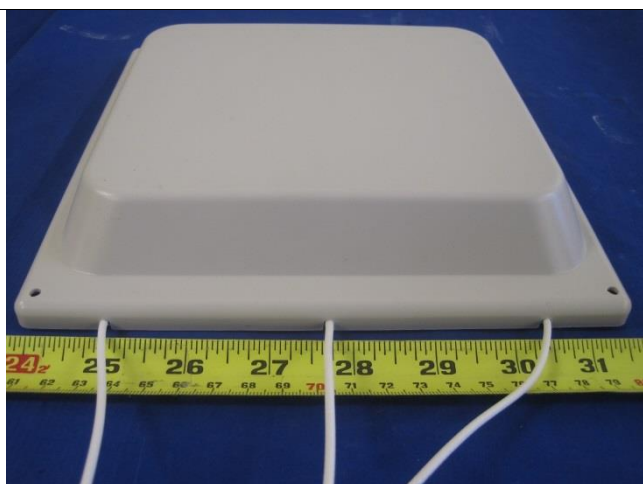
EUT – Right View



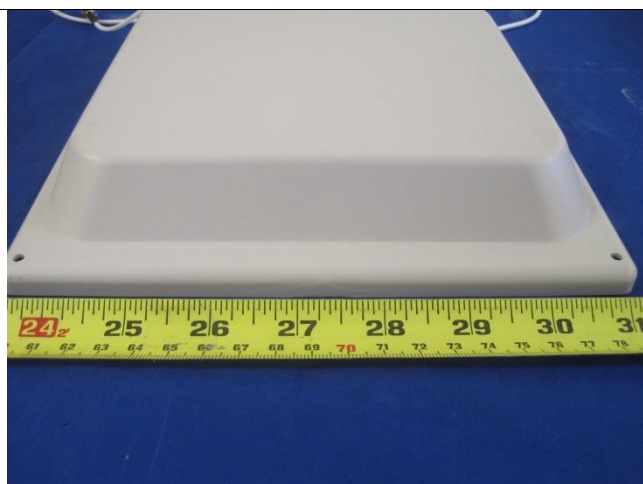
EUT - Top View



EUT - Bottom View



External Antenna- Front View



External Antenna- Rear View

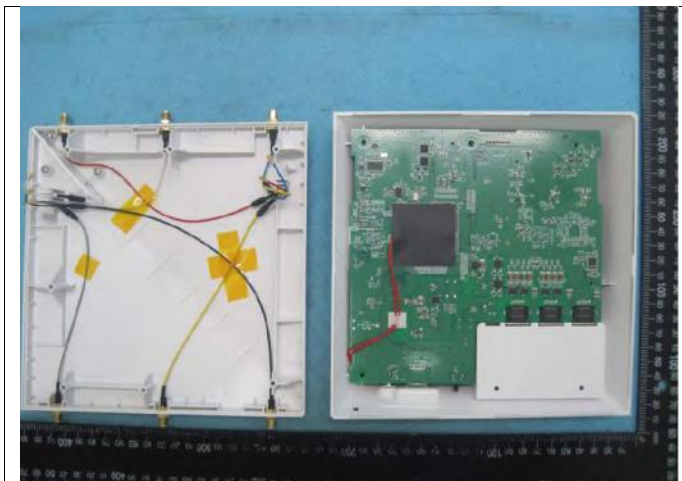


External Antenna- Top View

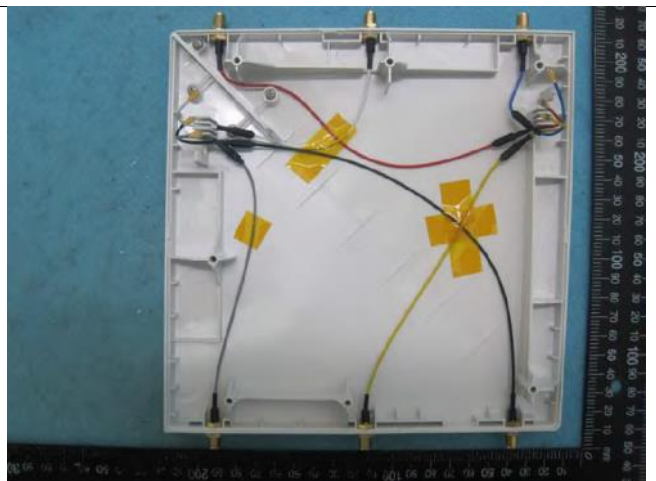


External Antenna- Bottom View

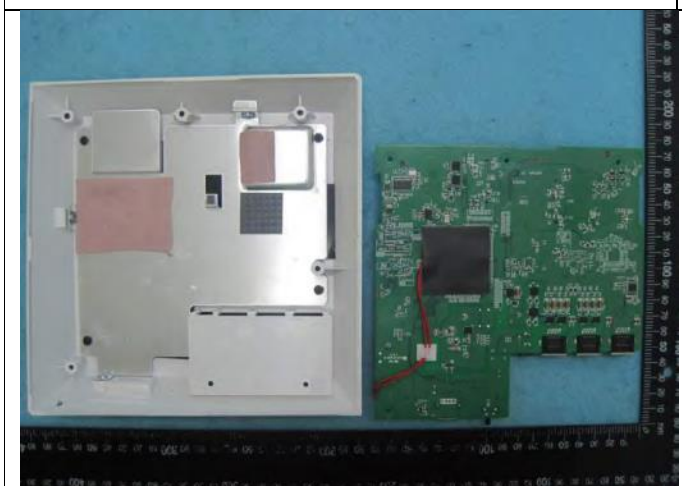
6.6 EUT Photos – Internal



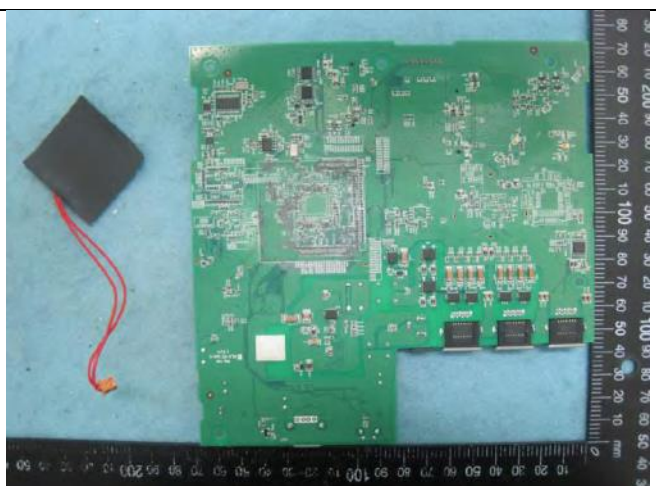
EUT Cover off-1



EUT Cover off-2



PCB 1 – Top view



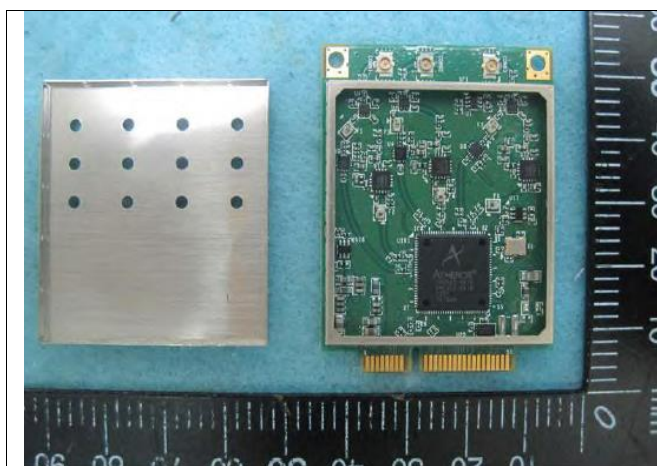
PCB 1 – Cover off view



PCB 2 – Top view



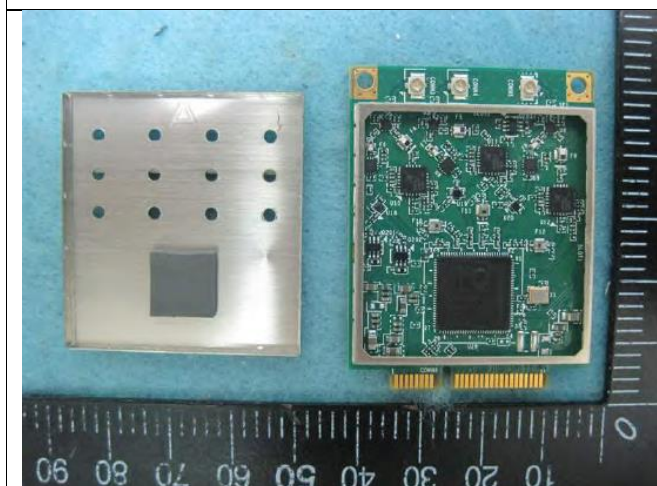
PCB 1 – Cover off view



PCB 3 – Top view



PCB 3 – Bottom view



PCB 4 – Top view

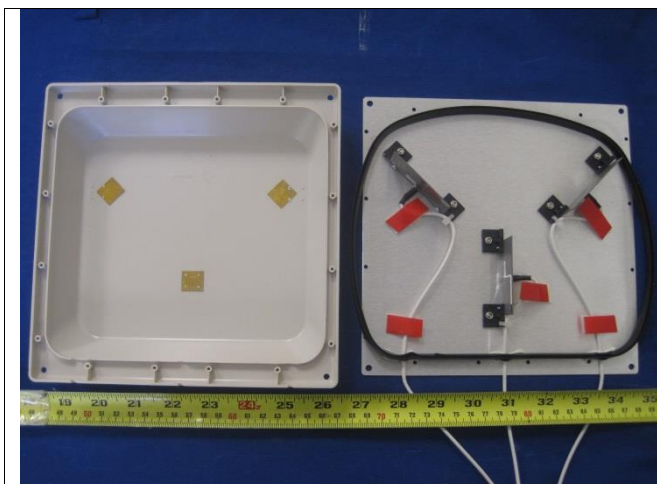


PCB 4 – Bottom view

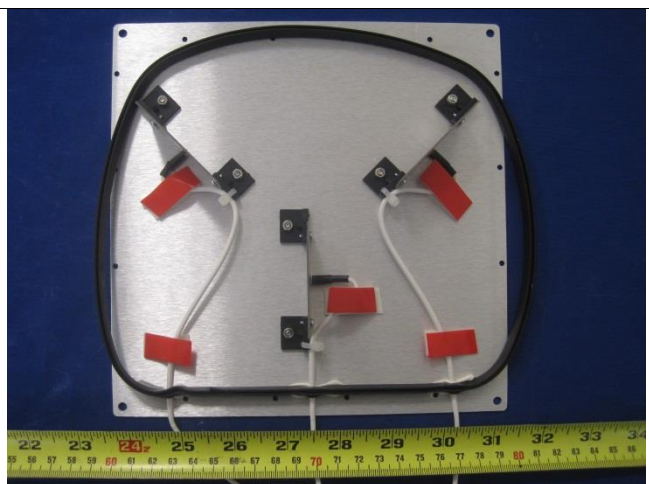


PCB 5 – Top view

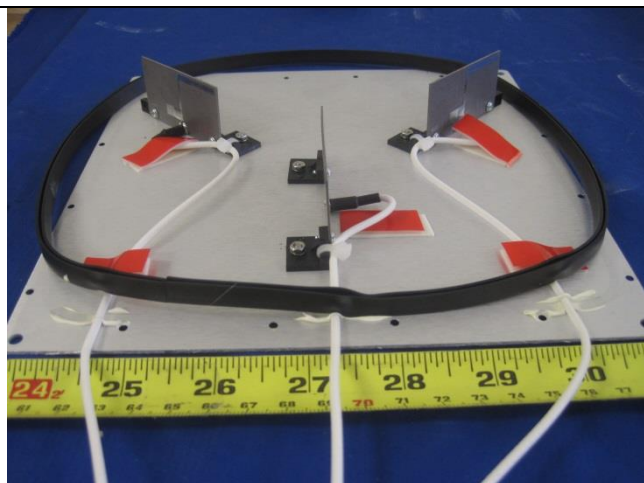




External Antenna- Cover off



External Antenna- Top View

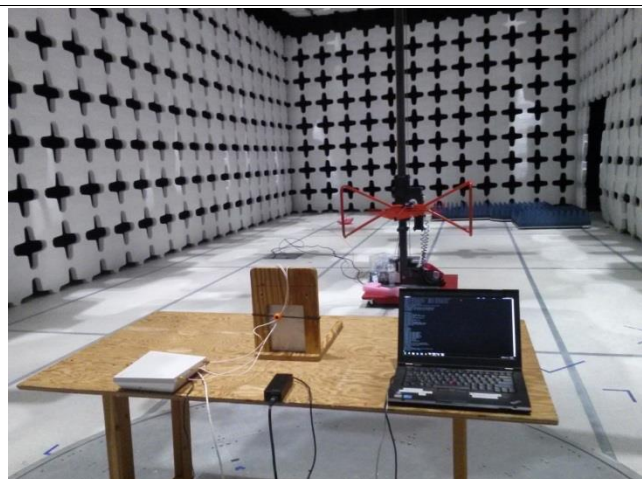


External Antenna- Side View

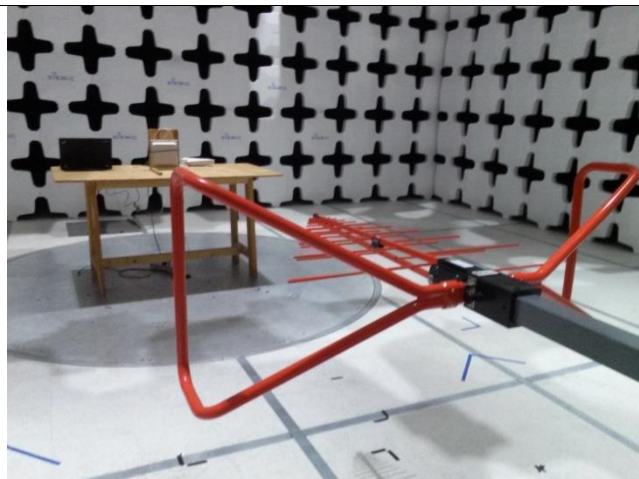


External Antenna-Main PCB

6.7 EUT Test Setup Photos



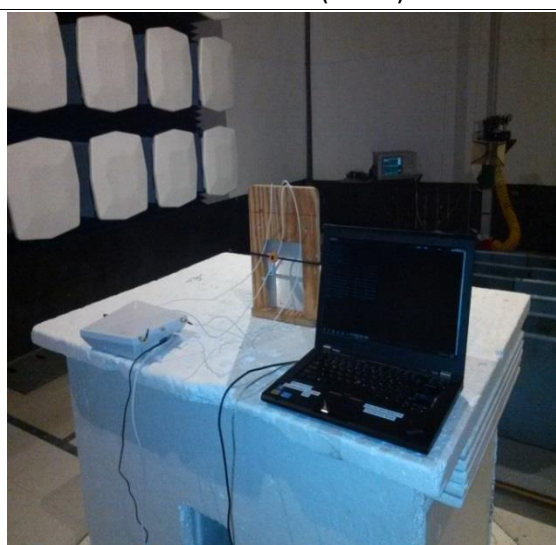
Radiated Emissions (<1GHz) – Front View



Radiated Emissions (<1GHz) – Rear View



Radiated Emissions (>1GHz) – Front View



Radiated Emissions (>1GHz) – Rear View



Radiated Emissions (>18 GHz) – Front View



Radiated Emissions (>18 GHz) – Rear View

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

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

7.2 Test Software Description

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

8 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 ☐ Fail
	RSS210 (A8.5)	RSS-Gen Issue 3: 2010	
Restricted Band of Operation	15.205	ANSI C63.4 – 2009 789033 D01 General UNII Test Procedures v01r03	☒ Pass ☐ Fail
	RSS 210 (2.2)	RSS-Gen Issue 3: 2010	

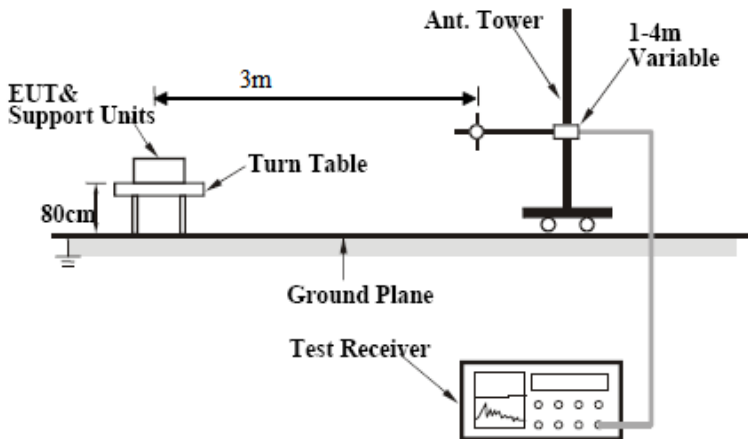
9 Measurement Uncertainty

Emissions			
Test Item	Frequency Range	Description	Uncertainty
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

10 Measurements, Examination and Derived Results

10.1 Radiated Emissions below 1GHz

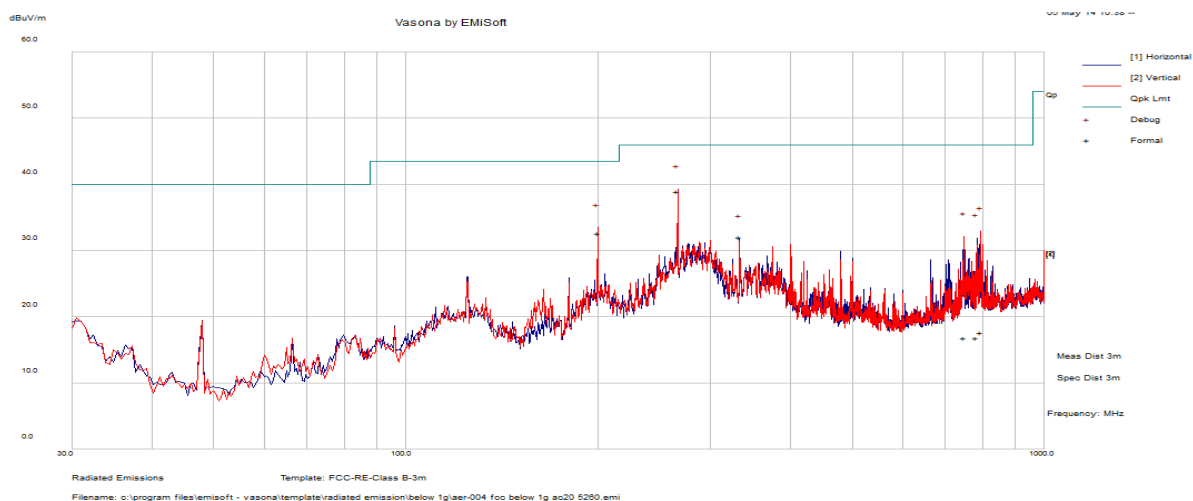
Requirement(s):

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.	☒
Test Setup			
Procedure	- 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: - 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.		
Remark	The different RF configuration has been evaluated, but not much difference was found. The data presented here is the worst case data with EUT under 802.11ac -HT20-5200MHz mode.		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

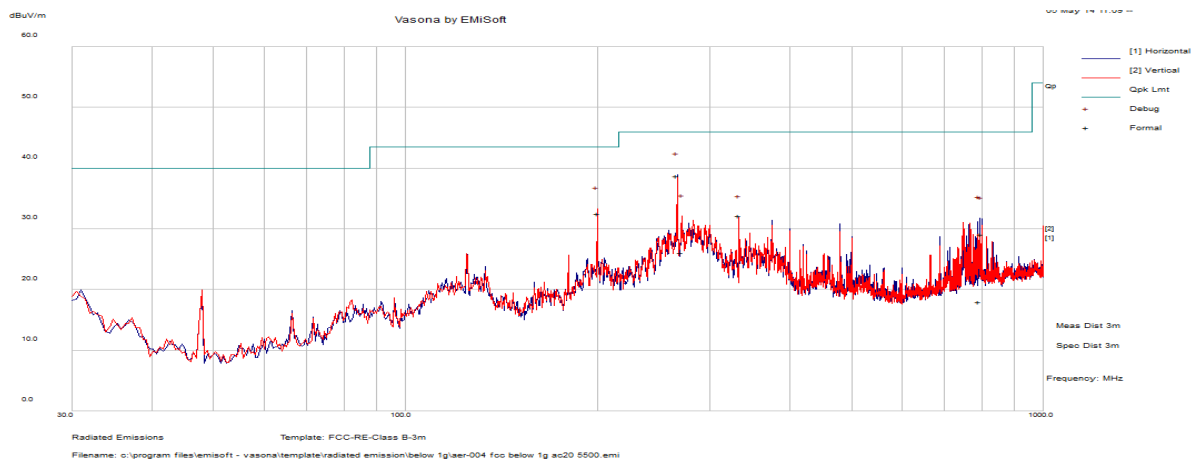
Test Plot ☒ Yes (See below) ☐ N/A

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



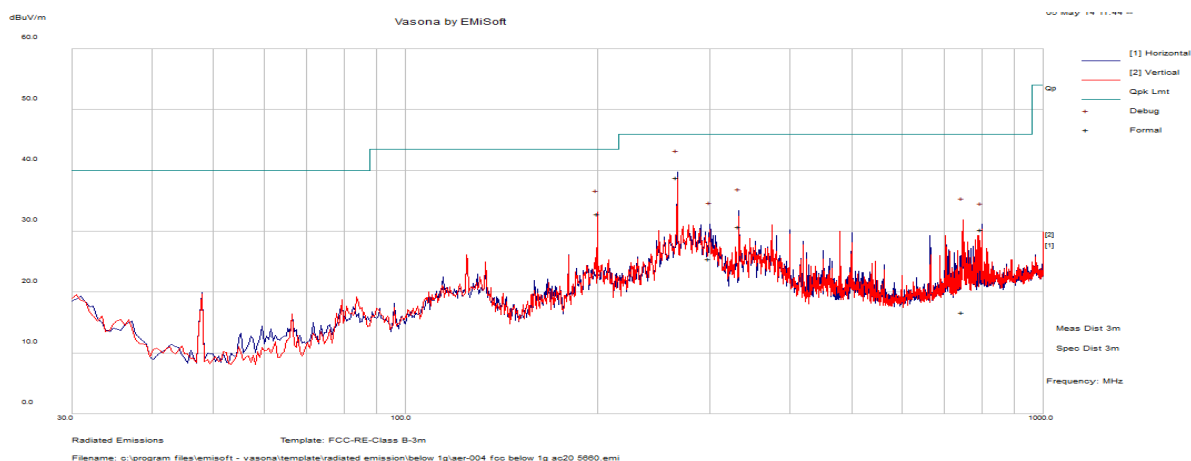
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
266.67	63.61	2.85	-27.55	38.92	Quasi Max	H	101.00	225.00	46.00	-7.08	Pass
199.99	58.07	2.50	-27.93	32.63	Quasi Max	V	132.00	180.00	43.50	-10.87	Pass
795.67	31.32	4.83	-18.48	17.67	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	H	356.00	351.00	46.00	-29.16	Pass
333.32	55.27	3.12	-26.37	32.02	Quasi Max	H	101.00	184.00	46.00	-13.98	Pass

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	H	110	216	46	-7.25	Pass
200.00	57.92	2.5	-27.93	32.49	Quasi Max	V	122	172	43.5	-11.01	Pass
270.98	50.56	2.87	-27.33	26.1	Quasi Max	V	127	224	46	-19.9	Pass
333.35	55.4	3.12	-26.37	32.15	Quasi Max	V	104	186	46	-13.85	Pass
792.95	31.76	4.82	-18.63	17.95	Quasi Max	H	100	130	46	-28.05	Pass
799.98	42.84	4.84	-18.56	29.13	Quasi Max	H	100	219	46	-16.87	Pass

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



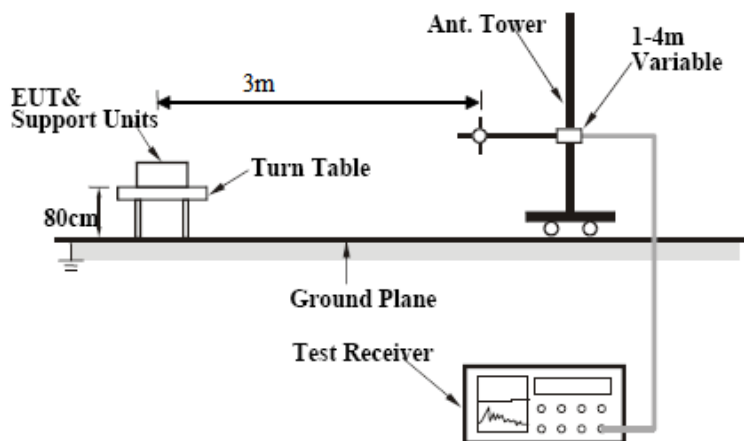
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
266.67	63.5	2.85	-27.55	38.8	Quasi Max	H	130	218	46	-7.2	Pass
200.00	58.26	2.5	-27.93	32.83	Quasi Max	V	122	166	43.5	-10.67	Pass
333.31	53.95	3.12	-26.37	30.7	Quasi Max	H	101	192	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	H	103	233	46	-20.56	Pass
800.01	44.04	4.84	-18.56	30.32	Quasi Max	H	100	198	46	-15.68	Pass

10.2 Radiated Spurious Emissions above 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§ 15.407(b)(2), 15.407(b)(6), RSS210(A9.3)(1)	(1)	For transmitters operating in the 5.15-5.25 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz.	☒
	(2)	For transmitters operating in the 5.25-5.35 GHz band: all emissions outside of the 5.15-5.35 GHz band shall not exceed an EIRP of -27 dBm/MHz. Devices operating in the 5.25-5.35 GHz band that generates emissions in the 5.15-5.25 GHz band must meet all applicable technical requirements for operation in the 5.15-5.25 GHz band (including indoor use) or alternatively meet an out-of-band emission EIRP limit of -27 dBm/MHz in the 5.15-5.25 GHz band.	☒
	(3)	For transmitters operating in the 5.47-5.725 GHz band: all emissions outside of the 5.47-5.725 GHz band shall not exceed an EIRP of -27 dBm/MHz.	☒
	(4)	For transmitters operating in the 5.725-5.825 GHz band: all emissions within the frequency range from the band edge to 10 MHz above or below the band edge shall not exceed an EIRP of -17 dBm/MHz; for frequencies 10 MHz or greater above or below the band edge, emissions shall not exceed an EIRP of -27 dBm/MHz.	☐

Test Setup



Procedure

- 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:
 - 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.

Test Date	04/30/2014-05/2/2014	Environmental condition	Temperature 24°C Relative Humidity 49% Atmospheric Pressure 1019mbar
Remark	Both horizontal and vertical polarization had been verified for all the different mode measurements.		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Radiated Emission Test Results (Above 1GHz)

WLAN (802.11a): 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
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)

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	H	237.00	261.00	68.30	-31.94	Pass
1329.35	57.58	1.02	-6.55	52.05	Peak Max	H	147.00	288.00	68.30	-16.25	Pass
1160.92	50.15	0.89	-6.86	44.19	Peak Max	H	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	H	147.00	288.00	54.00	-30.45	Pass
1160.92	29.83	0.89	-6.86	23.86	Average Max	H	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	H	124.00	110.00	68.30	-32.43	Pass
10650.42	46.55	3.87	5.63	56.05	Peak Max	H	110.00	2.00	68.30	-12.25	Pass
1160.92	41.25	0.89	-6.86	35.28	Peak Max	H	250.00	360.00	68.30	-33.02	Pass
1128.27	42.28	0.86	-6.92	36.22	Peak Max	H	172.00	129.00	68.30	-32.08	Pass
1329.36	28.83	1.02	-6.55	23.30	Average Max	H	124.00	110.00	54.00	-30.70	Pass
10650.42	32.74	3.87	5.63	42.24	Average Max	H	110.00	2.00	54.00	-11.76	Pass
1160.92	29.66	0.89	-6.86	23.69	Average Max	H	250.00	360.00	54.00	-30.31	Pass
1128.27	30.83	0.86	-6.92	24.77	Average Max	H	172.00	129.00	54.00	-29.23	Pass

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	H	132	10	68.3	-9.85	Pass
1330.2875	63.02	1.02	-6.55	57.49	Peak Max	H	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	H	249	239	68.3	-32.06	Pass
11000.835	35.85	3.98	5.5	45.34	Average Max	H	132	10	54	-8.66	Pass
1330.2875	31.16	1.02	-6.55	25.64	Average Max	H	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	H	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	H	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	H	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

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	H	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	V	267	146	68.3	-32.91	Pass
1120.7675	42.29	0.85	-6.93	36.21	Peak Max	V	152	221	68.3	-32.09	Pass
1330.3625	28.79	1.02	-6.55	23.26	Average Max	H	177	277	54	-30.74	Pass
1163	30.13	0.89	-6.85	24.17	Average Max	V	104	186	54	-29.83	Pass
1030.1075	30.54	0.77	-7.12	24.18	Average Max	V	267	146	54	-29.82	Pass
1120.7675	31.03	0.85	-6.93	24.95	Average Max	V	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	H	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	H	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	H	159.00	213.00	54.00	-29.56	Pass
1162.19	29.82	0.89	-6.85	23.85	Average Max	H	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

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)

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	H	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	H	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	H	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	H	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	H	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	H	203	244	54	-30.51	Pass

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	H	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	H	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

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	H	276	213	68.3	-21.34	Pass
1328.6475	54.49	1.02	-6.55	48.96	Peak Max	H	234	307	68.3	-19.34	Pass
1721.6125	40.7	1.33	-5.45	36.58	Peak Max	H	162	279	68.3	-31.72	Pass
1166.5175	46.17	0.89	-6.84	40.22	Peak Max	H	241	134	68.3	-28.09	Pass
10998.493	26.01	3.98	5.5	35.5	Average Max	H	276	213	54	-18.5	Pass
1328.6475	30.05	1.02	-6.55	24.52	Average Max	H	234	307	54	-29.48	Pass
1721.6125	28.86	1.33	-5.45	24.74	Average Max	H	162	279	54	-29.26	Pass
1166.5175	29.96	0.89	-6.84	24.01	Average Max	H	241	134	54	-29.99	Pass

WLAN (802.11ac-40M): Mid channel (5540 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
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	H	238	259	68.3	-32.38	Pass
1161.0225	41.21	0.89	-6.85	35.24	Peak Max	H	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	H	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	H	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	H	241	342	68.3	-32.33	Pass
1122.145	43.93	0.85	-6.93	37.85	Peak Max	H	157	45	68.3	-30.45	Pass
1328.685	29.26	1.02	-6.55	23.73	Average Max	H	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	H	241	342	54	-30.01	Pass
1122.145	30.75	0.85	-6.93	24.67	Average Max	H	157	45	54	-29.33	Pass

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	H	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	H	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

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
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						
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	☒
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	☐

Annex B. USER MANUAL, BLOCK & CIRCUIT DIAGRAM

Please see attachment

Annex C. 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 & Telecommunications Terminal Equipment: EN45001 – EN ISO/IEC 17025
		Electromagnetic Compatibility: EN45001 – EN ISO/IEC 17025
Singapore iDA CB(Certification Body)	 	Phase I , Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
HongKong 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		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
Korea CAB Accreditation		EMI: KCC Notice 2008-39, RRL Notice 2008-3: CA Procedures for EMI KN22: Test Method for EMI 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 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		LP0002, PSTN01, ADSL01, ID0002, IS6100, CNS14336, PLMN07, PLMN01, PLMN08
Taiwan BSMI CAB Recognition		CNS 13438
Japan VCCI		R-3083: Radiation 3 meter site C-3421: Main Ports Conducted Interference Measurement T-1597: Telecommunication Ports Conducted Interference Measurement
Australia CAB Recognition		EMC: AS/NZS CISPR 11, AS/NZS CISPR 14.1, AS/NZS CISPR22, AS/NZS 61000.6.3, AS/NZS 61000.6.4 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		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