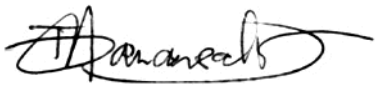
RF TEST REPORT

SIEMIC
GLOBAL TESTING & CERTIFICATIONS
YOUR CHOICE FOR- TCB FCB CB NB CAB RCB

Report No.: FCC_IC_RF_SL15041501-CPC-003_DTS
Supersede Report No.: None

Applicant	:	ChargePoint, Inc.
Product Name	:	Network PCB for Charging Station
Model No.	:	20001499
Test Standard	:	47 CFR 15.247 RSS-210 Issue 8.0, Dec 2010
Test Method	:	ANSI C63.10:2013 RSS-Gen Issue 4, Nov 2014 558074 D01 DTS Meas Guidance v03r02
FCC ID	:	W38-20001499
IC ID	:	8854A-20001499
Dates of test	:	05/04/2015 to 05/11/2015
Issue Date	:	06/04/2015
Test Result	:	☒ Pass ☐ Fail
Equipment complied with the specification [X] Equipment did not comply with the specification [ ]		

This Test Report is Issued Under the Authority of:	
	
Teody Manansala	**Nima Molaei**
Test Engineer	Engineer Reviewer

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

ilac-MRA
A2LA ACCREDITED
TESTING CERT # 2742-01

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

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_IC_RF_SL15041501-CPC-003_DTS	None	Original	06/04/2015

2 Executive Summary

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

Company: ChargePoint, Inc.
Product: Network PCB for Charging Station
Model: 20001499

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	ChargePoint, Inc.
Applicant Address	254 E. Hacienda Ave Campbell, CA 95148
Manufacturer Name	ChargePoint, Inc.
Manufacturer Address	254 E. Hacienda Ave Campbell, CA 95148

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	Network PCB for Charging Station
Model No.	20001499
Trade Name	ChargePoint, Inc.
Serial No.	N/A
Host Model No.	N/A
Input Power	100-240VDC, 50/60Hz
Power Adapter Manu/Model	Condor/HK-CH13-A05
Power Adapter SN	N/A
Product Hardware version	27-010077
Product Software version	4.0.0.41
Radio Hardware version	27-010077
Radio Software version	4.0.0.41
Test Software version	4.0.0.41
Date of EUT received	May 01, 2015
Equipment Class/ Category	DTS
Operating Frequencies	2412-2462MHz
Port/Connectors	N/A

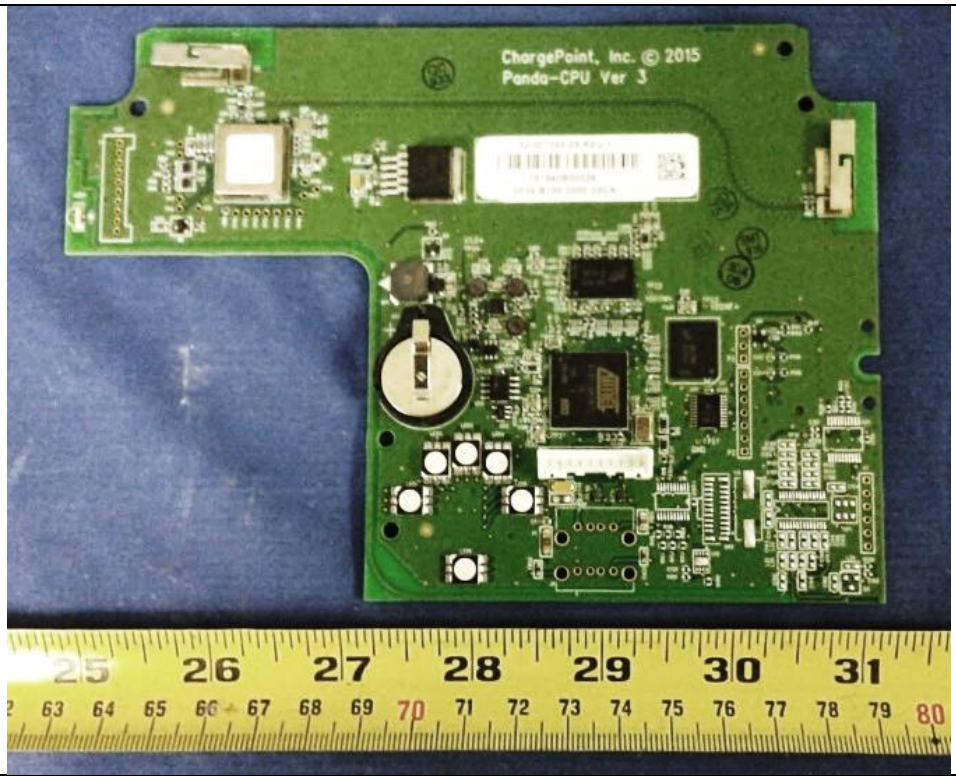
6.2 Radio Description

Radio Type	802.11b	802.11g	802.11n-20M
Operating Frequency	2412-2462MHz	2412-2462MHz	2412-2462MHz
Modulation	DSSS (CCK, DQPSK, DBPSK)	OFDM-CCK (BPSK, QPSK, 16QAM,64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)
Channel Spacing	5MHz	5MHz	5MHz(2.4GHz
Number of Channels	11	11	11(2.4GH)
Antenna Type	Prestta WLAN Embedded Antenna		
Antenna Gain (Peak)	2.5dBi (for 2.4GHz)		
Antenna Connector Type	On Board		

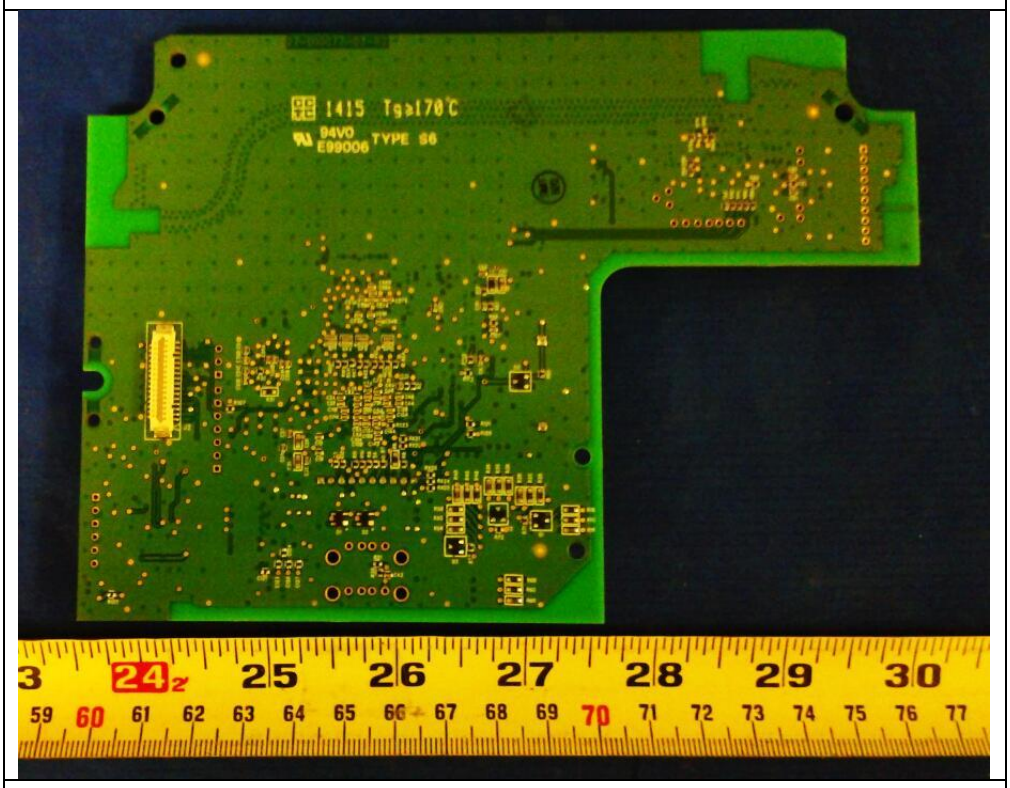
EUT Power level setting

Mode	Frequency (MHz)	Power setting
802.11-b	2412	20
802.11-b	2437	20
802.11-b	2462	20
802.11-g	2412	20
802.11-g	2437	20
802.11-g	2462	20
802.11-n-20	2412	20
802.11-n-20	2437	20
802.11-n-20	2462	20

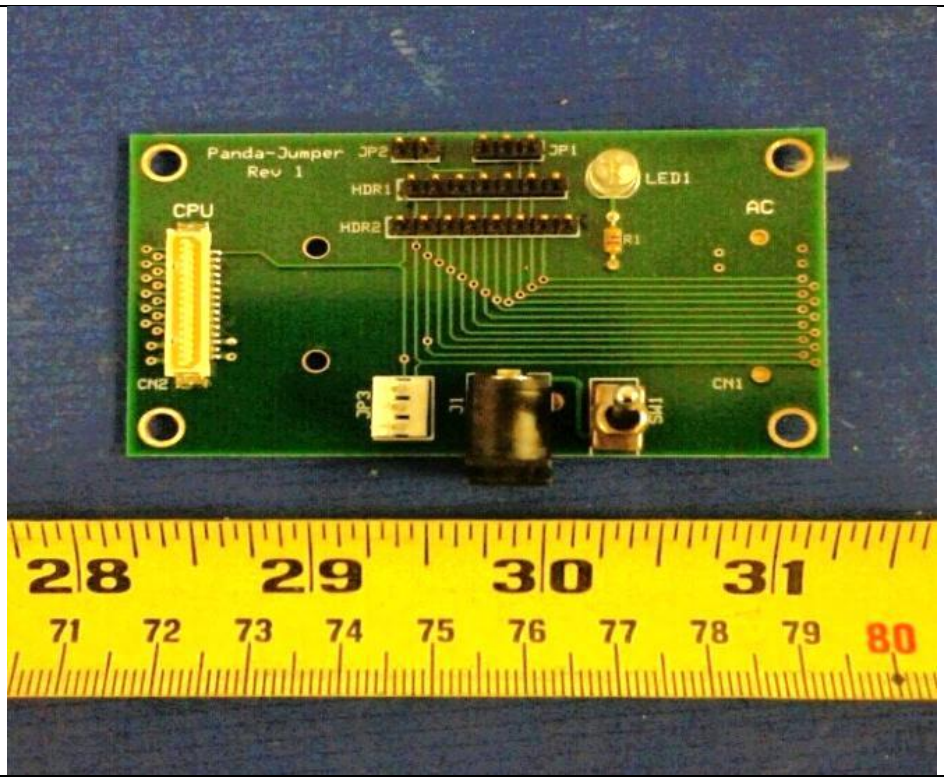
6.3 EUT Photos



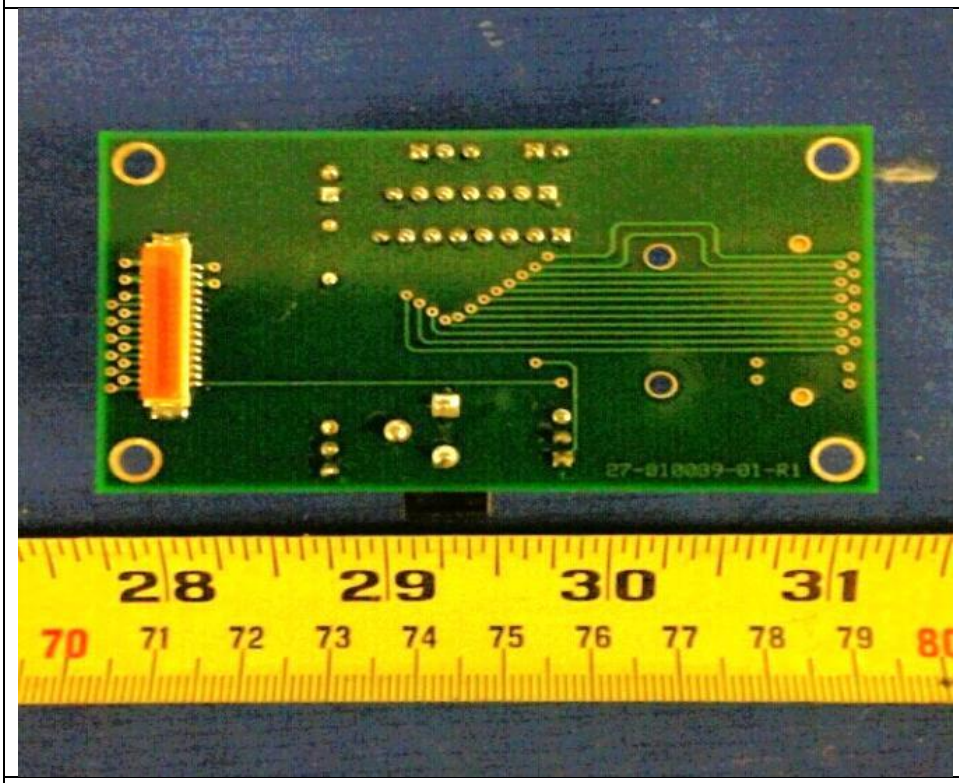
EUT Top View



EUT Bottom View

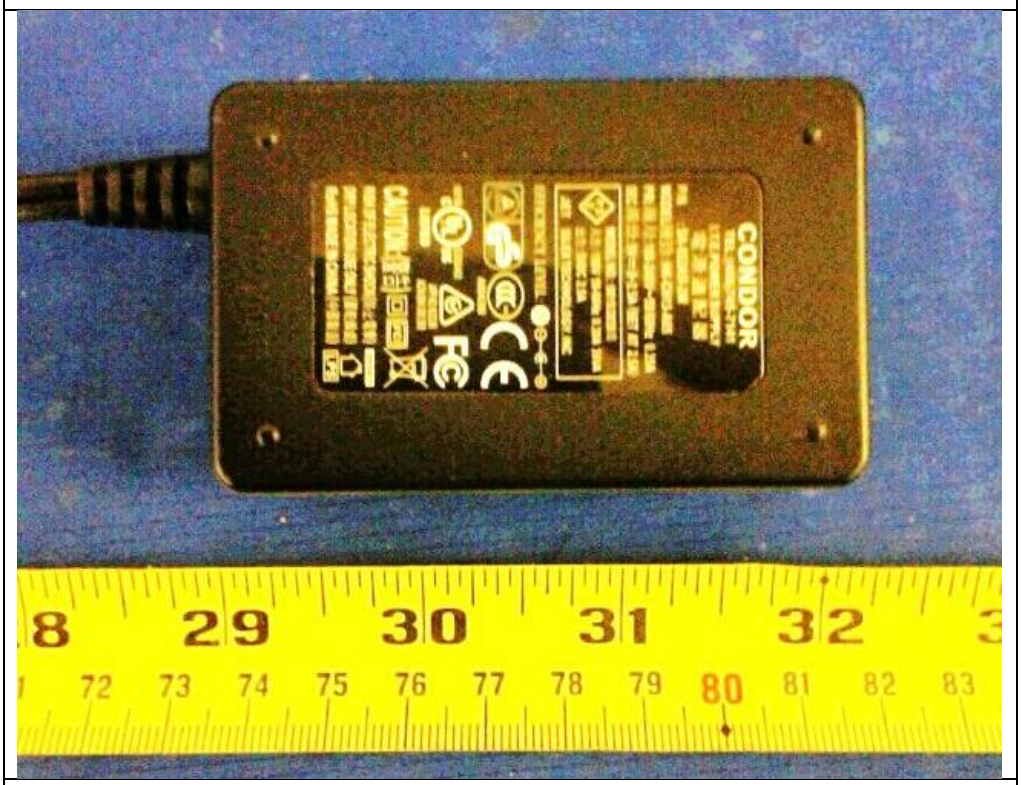


PCBA2 –Top View

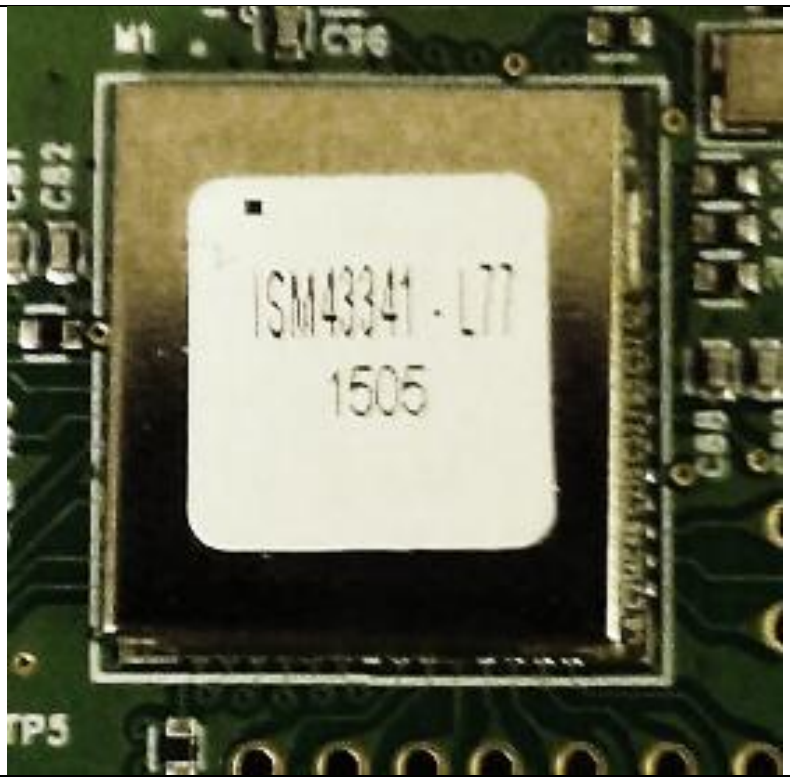


PCBA2 –Top View

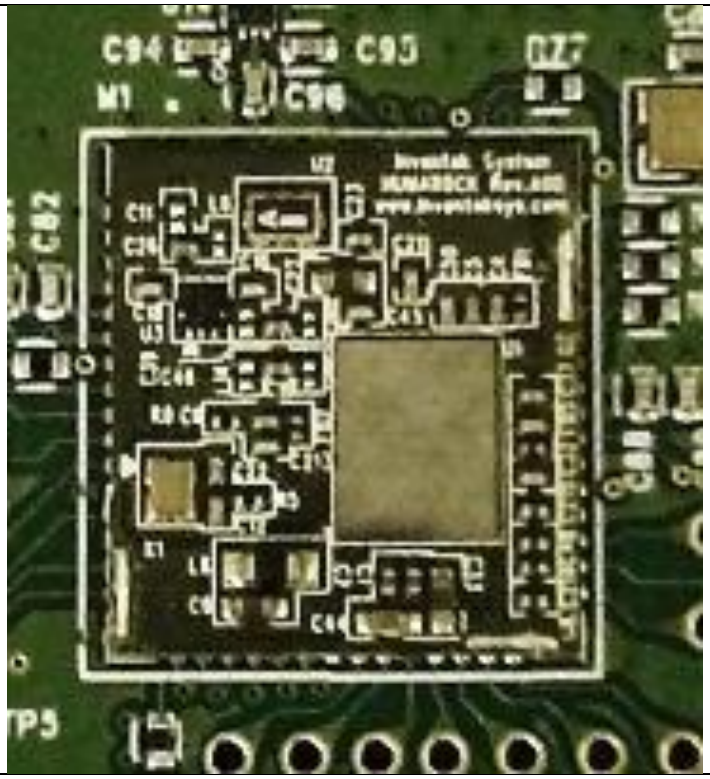
Power Supply – Top View



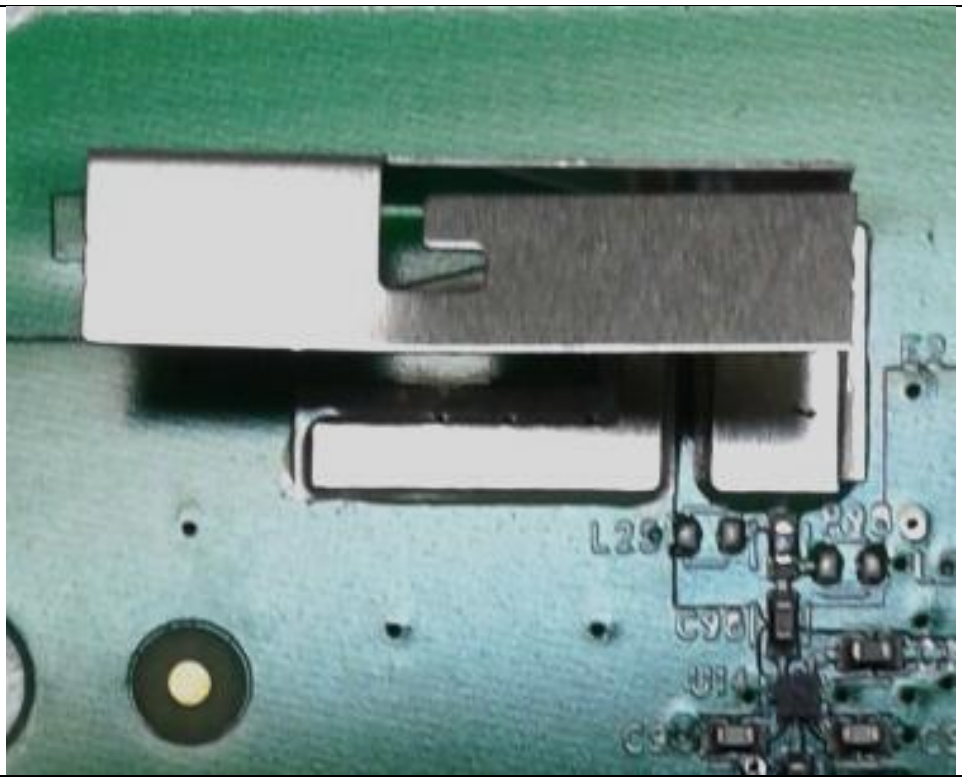
Power Supply – Bottom View



EUT Radio with shielding



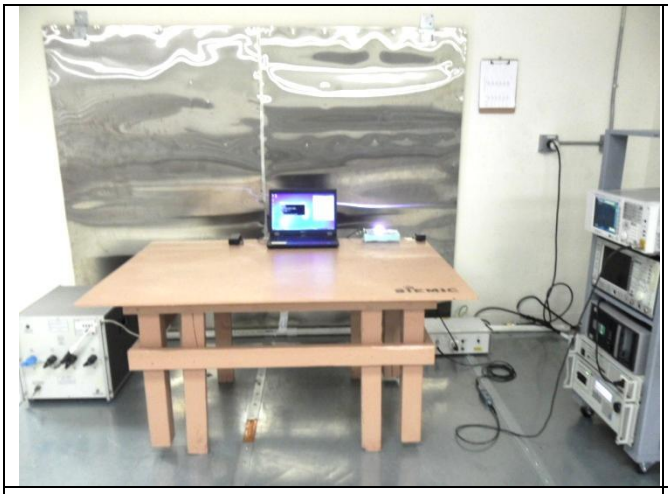
EUT Radio without shielding



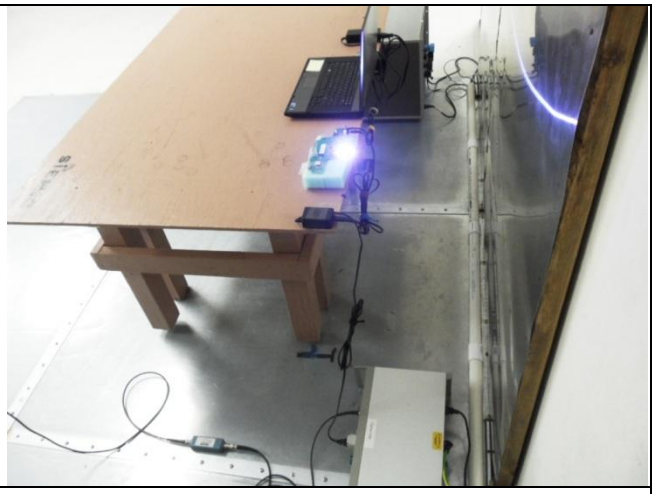
Antenna 1

Antenna 2

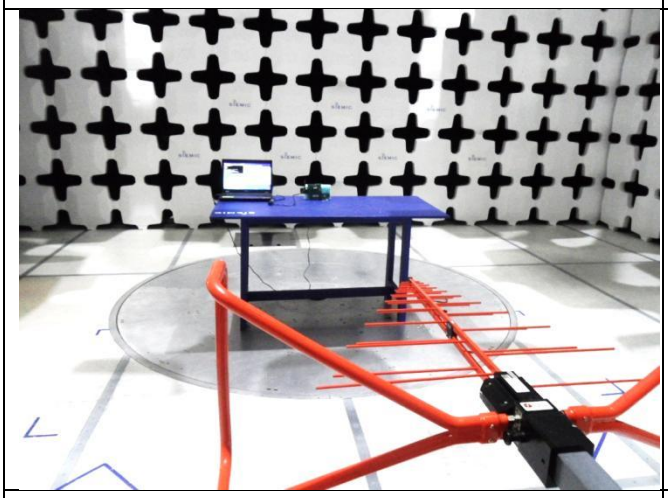
6.4 EUT Test Setup Photos



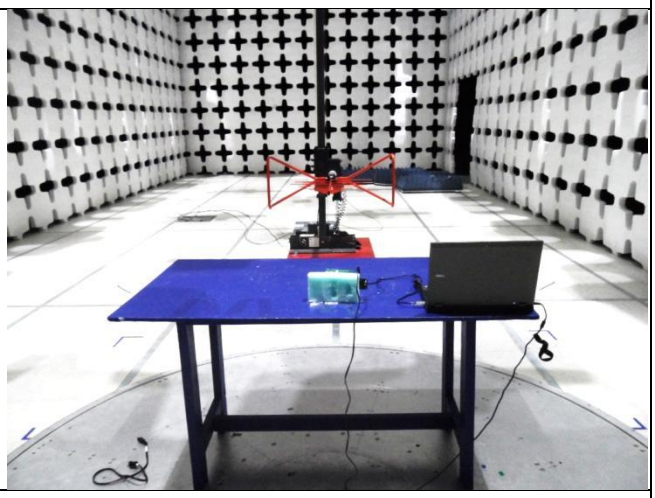
AC Line Conducted Emissions – Front View



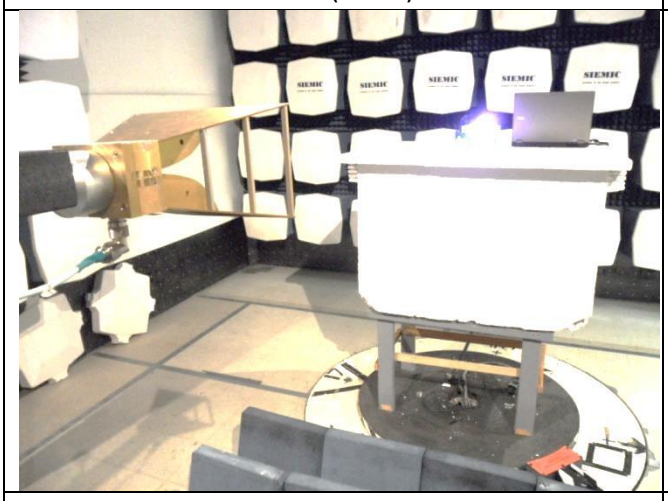
AC Line Conducted Emissions – Rear View



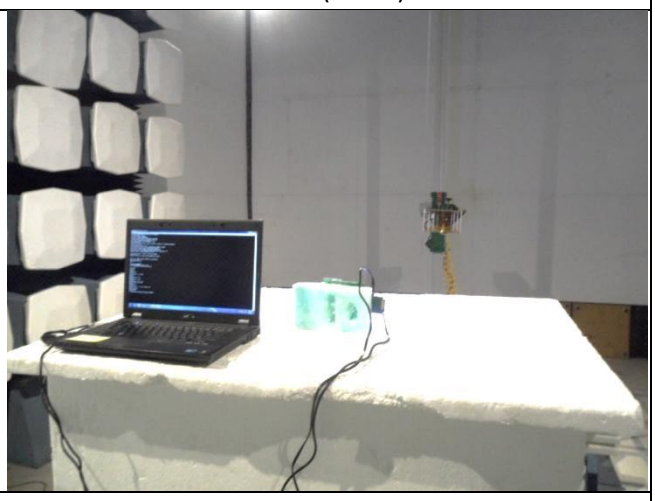
Radiated Emissions (<1GHz) – Front View



Radiated Emissions (<1GHz) – Rear View



Radiated Emissions (>1GHz) – Front View



Radiated Emissions (>1GHz) – Rear View

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	Laptop	P05F Latitude E5510	N/A	Dell	-

7.2 Cabling Description

Name	Connection Start		Connection Stop		Length / shielding Info		Note
	From	I/O Port	To	I/O Port	Length (m)	Shielding	
USB	EUT	I/O Port	Laptop	USB	2	Unshielded	-

7.3 Test Software Description

Test Item	Software	Description
RF Testing	Tera Term	Set the EUT to transmit continuously in diferent test mode

8 Test Summary

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Restricted Band of Operation	FCC	15.205	FCC	ANSI C63.10:2013 558074 D01 DTS Meas Guidance v03r02	☒ Pass ☐ N/A
	IC	RSS 210 (2.2)	IC		
AC Conducted Emissions	FCC	15.207(a)	FCC	ANSI C63.10:2013	☒ Pass ☐ N/A
	IC	RSS 210 (2.2)	IC	RSS Gen Issue 4: 2014	

DTS Band Requirement

Test Item	Test standard		Test Method/Procedure		Pass / Fail
Channel Separation	FCC	15.247 (a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210 (A8.1)	IC	-	
99% Occupied Bandwidth	FCC	15.247(a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.1)	IC	-	
6db Bandwidth	FCC	15.247(a)(2)	FCC	558074 D01 DTS Meas Guidance v03r01	☒ Pass ☐ N/A
	IC	RSS210 (A8.2)	IC		
Number of Hopping Channels	FCC	15.247(a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.1)	IC	-	
Band Edge and Radiated Spurious Emissions	FCC	15.247(d)	FCC	ANSI C63.10:2013 558074 D01 DTS Meas Guidance v03r02	☒ Pass ☐ N/A
	IC	RSS210(A8.5)	IC		
Time of Occupancy	FCC	15.247(a)(1)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.1)	IC	-	
Output Power	FCC	15.247(b)	FCC	558074 D01 DTS Meas Guidance v03r02	☒ Pass ☐ N/A
	IC	RSS210 (A8.4)	IC		
Receiver Spurious Emissions	IC	RSS Gen (4.8)	IC	-	☐ Pass ☒ N/A
Antenna Gain > 6 dBi	FCC	15.247(e)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.4)	IC	-	
Power Spectral Density	FCC	15.247(e)	FCC	558074 D01 DTS Meas Guidance v03r02	☒ Pass ☐ N/A
	IC	RSS210(A8.3)	IC		
Hybrid System Requirement	FCC	15.247(f)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.3)	IC	-	
Hopping Capability	FCC	15.247(g)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.1)	IC	-	
Hopping Coordination Requirement	FCC	15.247(h)	FCC	-	☐ Pass ☒ N/A
	IC	RSS210(A8.1)	IC	-	
RF Exposure requirement	FCC	15.247(i)	FCC	-	☐ Pass ☒ N/A
	IC	RSS Gen(5.5)	IC	-	
Remark	1. All measurement uncertainties do not take into consideration for all presented test results. 2. 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.				

9 Measurement Uncertainty

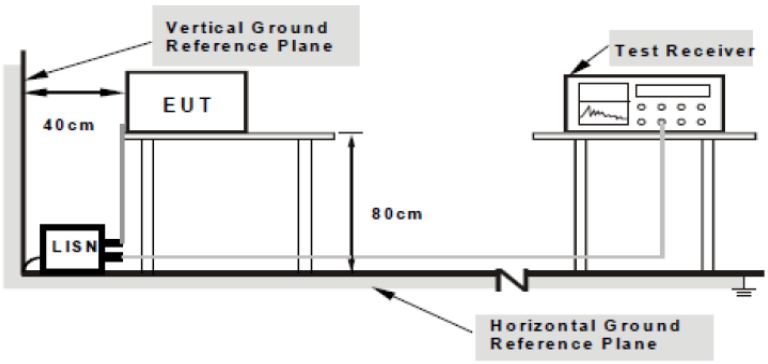
Emissions			
Test Item	**Frequency Range**	**Description**	**Uncertainty**
Band Edge and Radiated Spurious Emissions	30MHz – 1GHz	Confidence level of approximately 95% (in the case where distributions are normal), with a coverage factor of 2 (for EUTs < 0.5m X 0.5m X 0.5m)	+5.6dB/-4.5dB
Band Edge and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

Conducted Emission Limit

Frequency ranges (MHz)	Limit (dBuV)	
	QP	Average
0.15 ~ 0.5	66 – 56	56 – 46
0.5 ~ 5	56	46
5 ~ 30	60	50

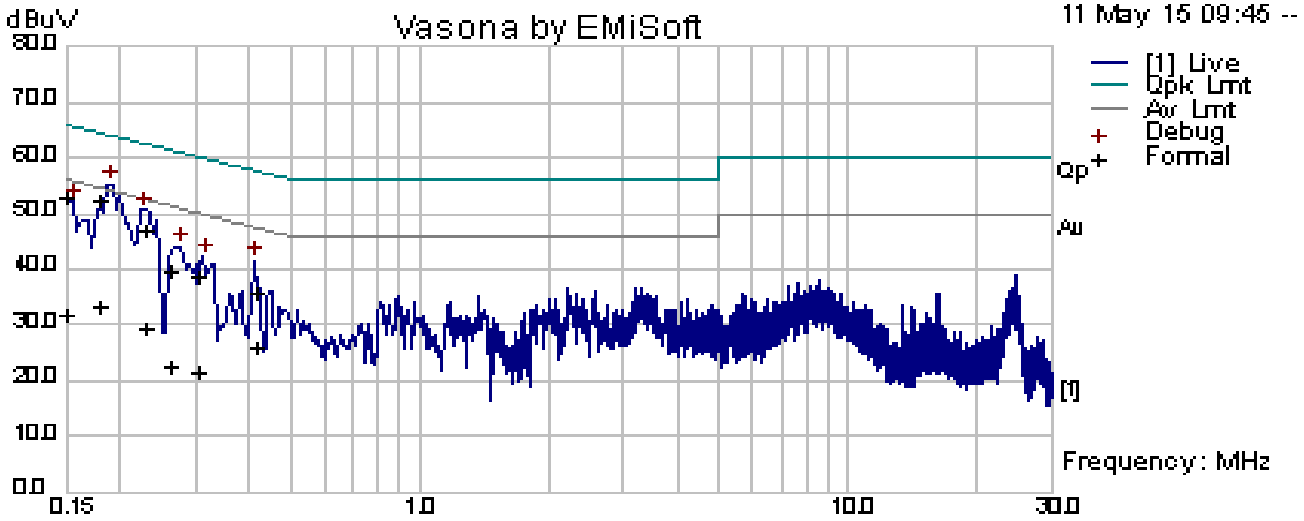
Spec	Item	Requirement	Applicable
§ 15.205 RSS Gen Issue 4: 2014 (8.8)	a)	For Low-power radio-frequency devices that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table, as measured using a 50 µH/50 ohms line impedance stabilization network (LISN). The lower limit applies at the boundary between the frequency ranges.	☒
Test Setup	 Note: 1.Support units were connected to second LISN. 2.Both of LISNs (AMN) are 80cm from EUT and at least 80cm from other units and other metal planes support units.		
Procedure	- The EUT and supporting equipment were set up in accordance with the requirements of the standard on top of a 1.5m x 1m x 0.8m high, non-metallic table, as shown in Annex B. - The power supply for the EUT was fed through a 50Ω/50µH EUT LISN, connected to filtered mains. - The RF OUT of the EUT LISN was connected to the EMI test receiver via a low-loss coaxial cable. - All other supporting equipment was powered separately from another main supply.		
Remark	EUT tested with AC 120V 60Hz		
Result	☒ Pass ☐ Fail		

Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Conducted Emission Test Results

Test specification:	Conducted Emissions			
Environmental Conditions:	Temp(°C):	21	Result:	☒ Pass ☐ Fail
	Humidity (%):	42		
	Atmospheric(mbar):	1021		
Mains Power:	120Vac, 60Hz			
Tested by:	Teody Manansala			
Test Date:	05/11/2015			
Remarks	AC Line @ Line			

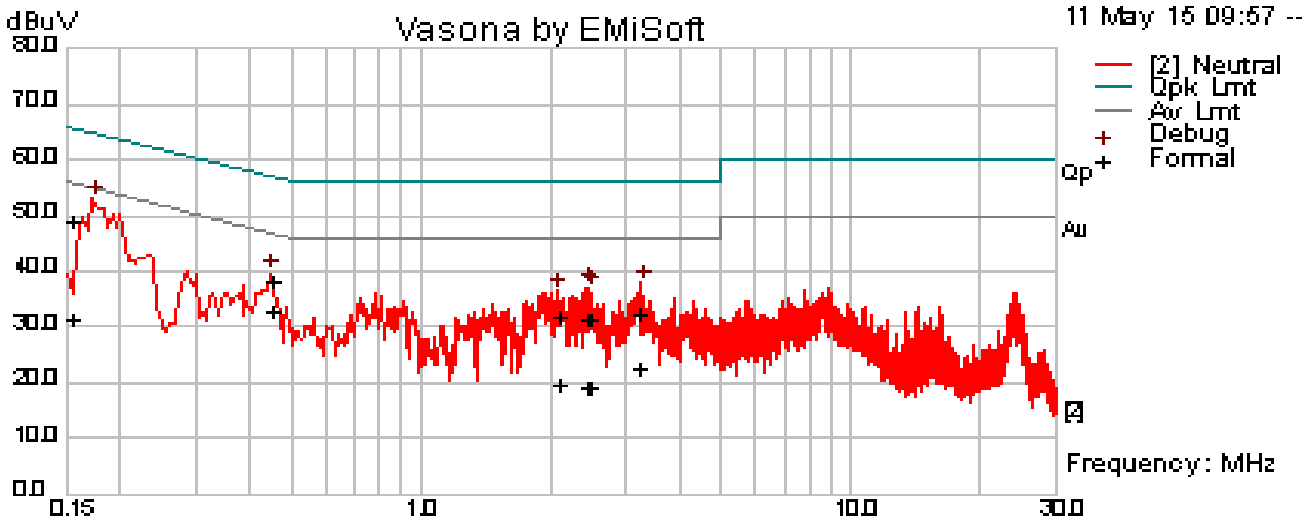


Line Plot at 120Vac, 60Hz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	Factors (dB)	Level (dBuV)	Measurement Type	Line	Limit (dBuV)	Margin (dB)	Pass /Fail
0.18	41.55	10.00	0.75	52.30	Quasi Peak	Line	64.50	-12.21	Pass
0.23	36.17	10.00	0.73	46.91	Quasi Peak	Line	62.41	-15.51	Pass
0.15	42.41	10.00	0.76	53.17	Quasi Peak	Line	66.00	-12.83	Pass
0.42	25.21	10.01	0.73	35.95	Quasi Peak	Line	57.47	-21.52	Pass
0.26	28.79	10.00	0.72	39.52	Quasi Peak	Line	61.30	-21.78	Pass
0.30	28.03	10.00	0.71	38.74	Quasi Peak	Line	60.15	-21.41	Pass
0.18	22.49	10.00	0.75	33.24	Average	Line	54.50	-21.27	Pass
0.23	18.80	10.00	0.73	29.54	Average	Line	52.41	-22.88	Pass
0.15	21.20	10.00	0.76	31.96	Average	Line	56.00	-24.04	Pass
0.42	15.26	10.01	0.73	26.00	Average	Line	47.47	-21.47	Pass
0.26	11.76	10.00	0.72	22.49	Average	Line	51.30	-28.81	Pass
0.30	11.04	10.00	0.71	21.75	Average	Line	50.15	-28.40	Pass

Conducted Emission Test Results

Test specification:	Conducted Emissions			
Environmental Conditions:	Temp(°C):	21	Result:	☒ Pass ☐ Fail
	Humidity (%):	42		
	Atmospheric(mbar):	1021		
Mains Power:	120Vac, 60Hz			
Tested by:	Teody Manansala			
Test Date:	05/11/2015			
Remarks	AC Line @ Neutral			



Neutral Plot at 120Vac, 60Hz

Frequency (MHz)	Raw (dBuV)	Cable Loss (dB)	Factors (dB)	Level (dBuV)	Measurement Type	Line	Limit (dBuV)	Margin (dB)	Pass /Fail
0.16	38.16	10.00	0.75	48.92	Quasi Peak	Neutral	65.69	-16.77	Pass
0.45	27.49	10.01	0.73	38.23	Quasi Peak	Neutral	56.86	-18.64	Pass
3.25	21.23	10.03	1.00	32.26	Quasi Peak	Neutral	56.00	-23.74	Pass
2.45	20.56	10.03	0.96	31.55	Quasi Peak	Neutral	56.00	-24.46	Pass
2.48	20.36	10.03	0.96	31.35	Quasi Peak	Neutral	56.00	-24.66	Pass
2.08	21.13	10.02	0.95	32.11	Quasi Peak	Neutral	56.00	-23.89	Pass
0.16	20.60	10.00	0.75	31.36	Average	Neutral	55.69	-24.33	Pass
0.45	21.91	10.01	0.73	32.65	Average	Neutral	46.86	-14.22	Pass
3.25	11.62	10.03	1.00	22.65	Average	Neutral	46.00	-23.35	Pass
2.45	8.09	10.03	0.96	19.08	Average	Neutral	46.00	-26.92	Pass
2.48	8.09	10.03	0.96	19.08	Average	Neutral	46.00	-26.92	Pass
2.08	8.63	10.02	0.95	19.60	Average	Neutral	46.00	-26.40	Pass

Note: The results above show only the worst case.

10.2 6dB Bandwidth

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS210 (A8.2)	a)(2)	6dB BW≥500KHz;	☒

Test Setup				
Test Procedure	558074 D01 DTS Meas Guidance v03r02, 8.1 DTS bandwidth 6dB Emission bandwidth measurement procedure - Set RBW = 100 kHz. - Set the video bandwidth (VBW) ⩾ 3 x RBW. - Detector = Peak. - Trace mode = max hold. - Sweep = auto couple. - Allow the trace to stabilize. - Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 6 dB relative to the maximum level measured in the fundamental emission.			
Test Date	05/04/2015	Environmental condition	Temperature Relative Humidity Atmospheric Pressure	23ºC 42% 1021mbar
Remark	N/A			
Result	☒ Pass ☐ Fail			

Equipment Setting

TEST	RBW	VBW	SPAN	Detector	SWEEP	Trace	NOTES
6 dB DTS Bandwidth	100KHz	3 x RBW	>EBW	PK	Auto	Max hold	-

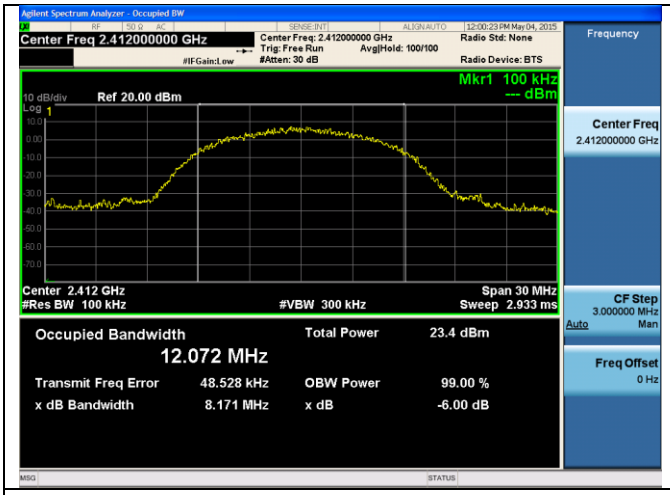
Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes ☐ N/A

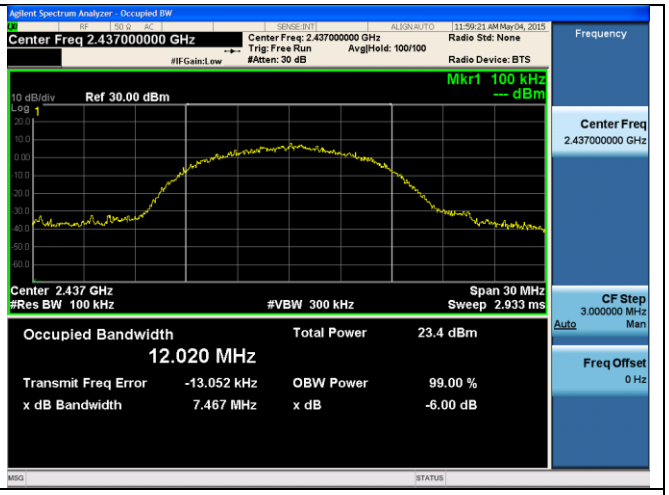
6dB Bandwidth measurement result for 2.4GHz

Type	Test mode	Freq (MHz)	CH	Result (MHz)	Limit (MHz)	Result
6dB BW	802.11b	2412	Low	8.17	≥0.5	Pass
6dB BW	802.11b	2437	Mid	7.46	≥0.5	Pass
6dB BW	802.11b	2462	High	8.03	≥0.5	Pass
6dB BW	802.11g	2412	Low	15.10	≥0.5	Pass
6dB BW	802.11g	2437	Mid	15.12	≥0.5	Pass
6dB BW	802.11g	2462	High	15.10	≥0.5	Pass
6dB BW	802.11n-20M	2412	Low	16.62	≥0.5	Pass
6dB BW	802.11n-20M	2437	Mid	16.08	≥0.5	Pass
6dB BW	802.11n-20M	2462	High	16.57	≥0.5	Pass

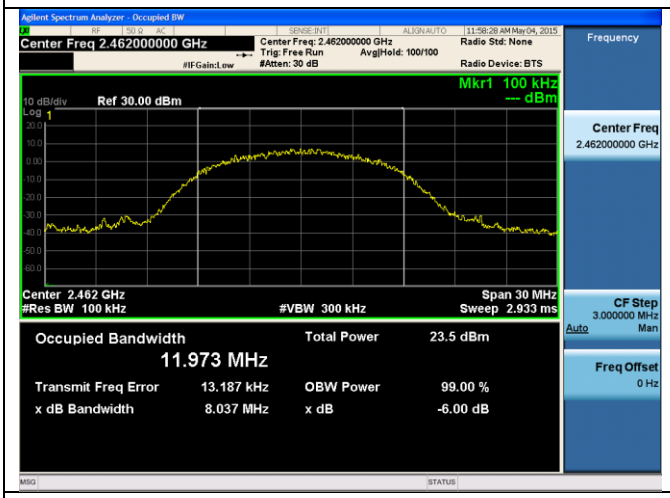
Test Plots



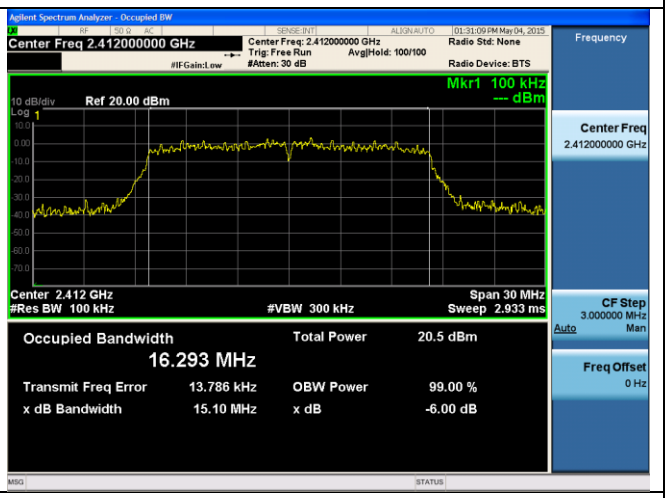
6dB BW -2.4G 802.11b 2412MHz



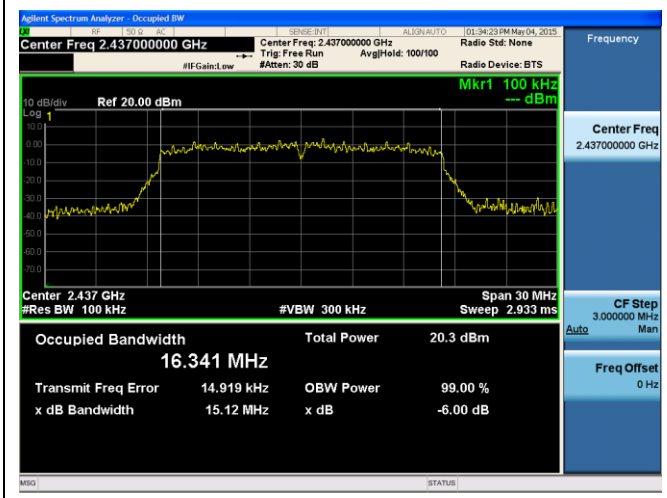
6dB BW -2.4G 802.11b 2437MHz



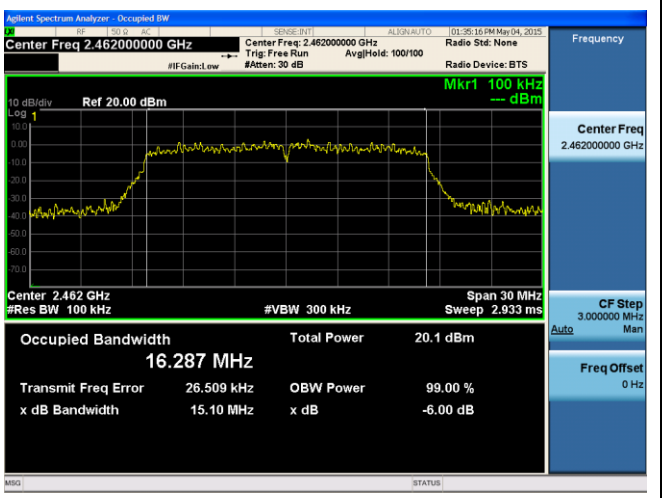
6dB BW -2.4G 802.11b 2462MHz



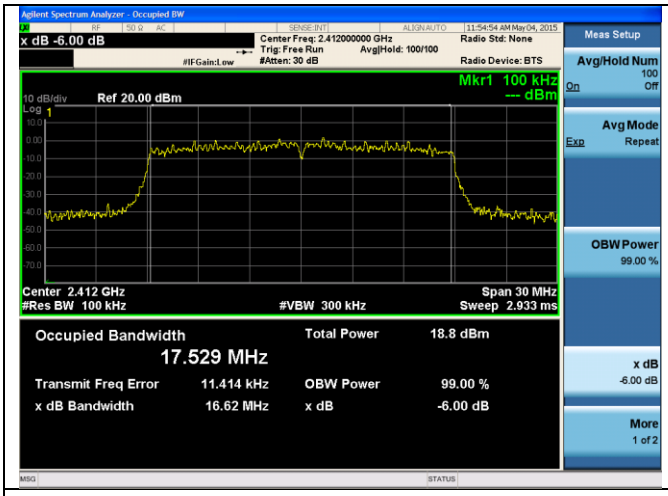
6dB BW -2.4G 802.11g 2412MHz



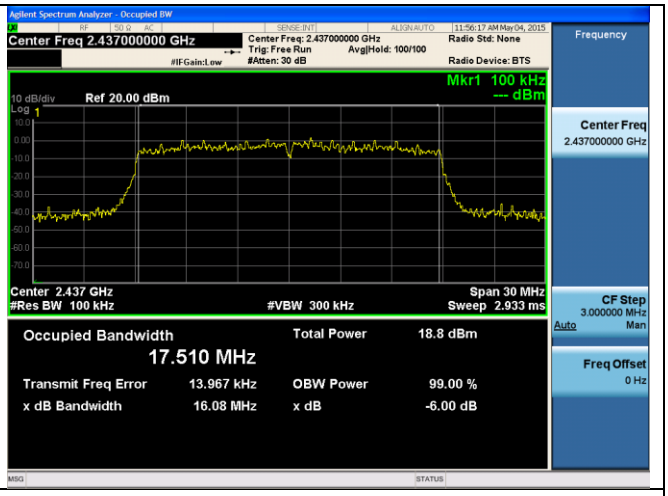
6dB BW -2.4G 802.11g 2437MHz



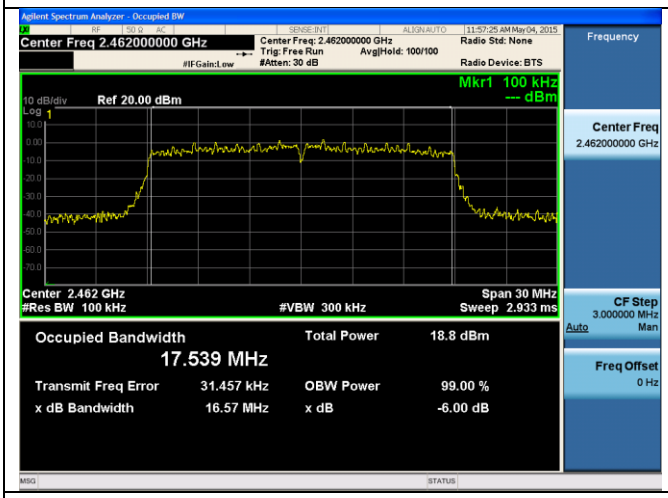
6dB BW -2.4G 802.11g 2462MHz



6dB BW -2.4G 802.11n-20M 2412MHz



6dB BW -2.4G 802.11n-20M 2437MHz



6dB BW -2.4G 802.11n-20M 2462MHz

10.3 Peak Output Power

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS210 (A8.4)	a)	FHSS in 2400-2483.5MHz with ≥ 75 channels: ≤1 Watt	☐
	b)	FHSS in 5725-5850MHz: ≤1 Watt	☐
	c)	For all other FHSS in the 2400-2483.5MHz band: ≤0.125 Watt.	☐
	d)	FHSS in 902-928MHz with ≥ 50 channels: ≤1 Watt	☐
	e)	FHSS in 902-928MHz with ≥ 25 & <50 channels: ≤0.25 Watt	☐
	f)	DSSS in 902-928MHz, 2400-2483.5MHz, 5725-5850MHz: ≤1 Watt	☒

Test Setup				
Test Procedure	558074 D01 DTS Meas Guidance v03r02, 9.2.2.2 Measurement using a Power Meter (PM) Measurements may be performed using a wideband gated RF power meter provided that the gate parameters are adjusted such that the power is measured only when the EUT is transmitting at its maximum power control level. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required. - Connect EUT's RF output power to power meter - Set EUT to be continuous transmission mode - Measurement the average output power using power meter and record the result Repeat above steps for different test channel and other modulation type.			
Test Date	05/04/2015	Environmental condition	Temperature Relative Humidity Atmospheric Pressure	23°C 44% 1021mbar
Remark				
Result	☒ Pass ☐ Fail			

Test Data ☒ Yes ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Output Power measurement result

Type	Test mode	Freq (MHz)	CH	Output Power (dBm)	Limit (dBm)	Result
Output power	802.11b	2412	Low	15.74	30	Pass
Output power	802.11b	2437	Mid	15.61	30	Pass
Output power	802.11b	2462	High	15.14	30	Pass
Output power	802.11g	2412	Low	12.44	30	Pass
Output power	802.11g	2437	Mid	12.35	30	Pass
Output power	802.11g	2462	High	12.30	30	Pass
Output power	802.11n-20M	2412	Low	11.23	30	Pass
Output power	802.11n-20M	2437	Mid	11.28	30	Pass
Output power	802.11n-20M	2462	High	11.01	30	Pass

10.4 Band Edge

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247 RSS210(A8.5)	d)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209 (a) is not required ☐ 20 dB down ☒ 30 dB down	☒
Test Setup			
Test Procedure	558074 D01 DTS Meas Guidance v03r02 Band Edge measurement procedure 1. Set the EUT to maximum power setting and enable the EUT transmit continuously. 2. Band edge emissions must be at least 30 dB down from the highest emission level within the authorized band as a measured. The attunation shall be be 30 dB instead of 20 dB when RMS conducted output power procedure is used. 3. Change modulation and channel bandwidth then repeat step 1 to 2. 4. Measured and record the results in the test report.		
Test Date	05/04/2015	Environmental condition	Temperature 22°C Relative Humidity 46% Atmospheric Pressure 1020mbar
Remark	-		
Result	☒ Pass ☐ Fail		

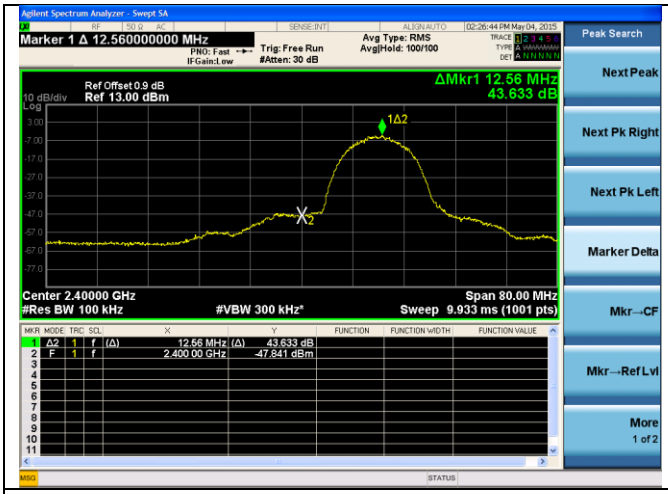
Equipment Setting

TEST	RBW	VBW	Detector	SWEEP	Trace	NOTES
Band Edge	100KHz	≥3 x RBW	RMS	Auto	Trace average	-

Test Data ☐ Yes ☒ N/A

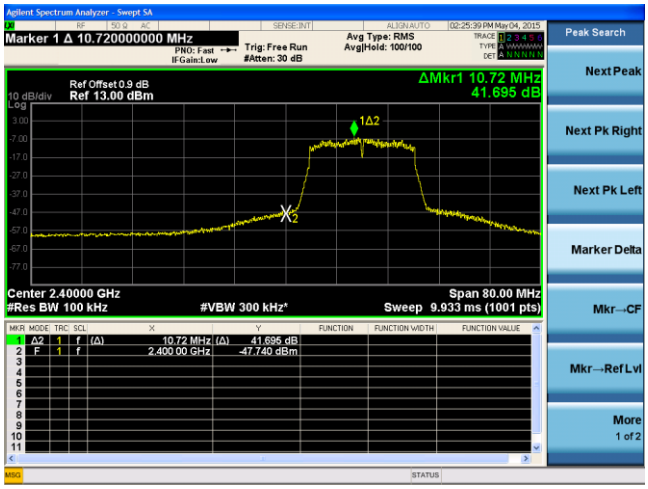
Test Plot ☒ Yes (See below) ☐ N/A

Test Plots

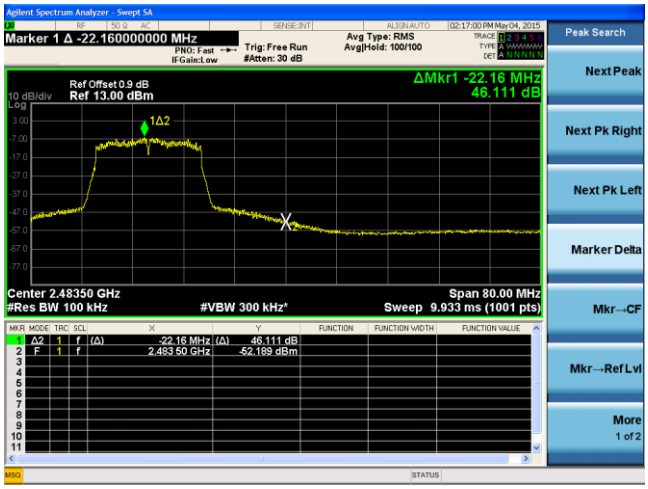


Band Edge-2.4G-802.11b Low

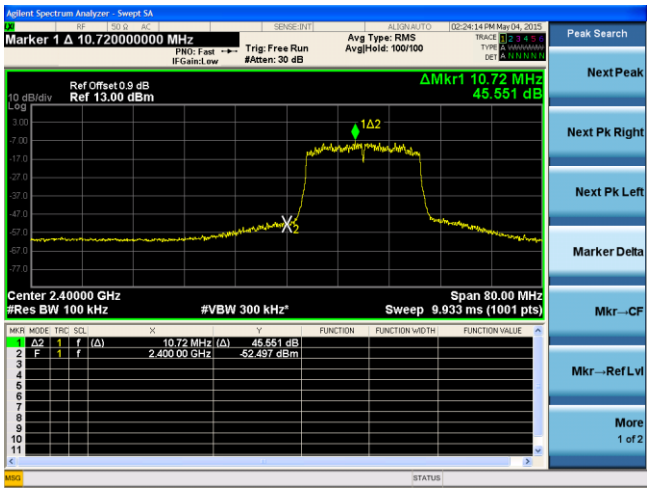
Band Edge-2.4G-802.11b High



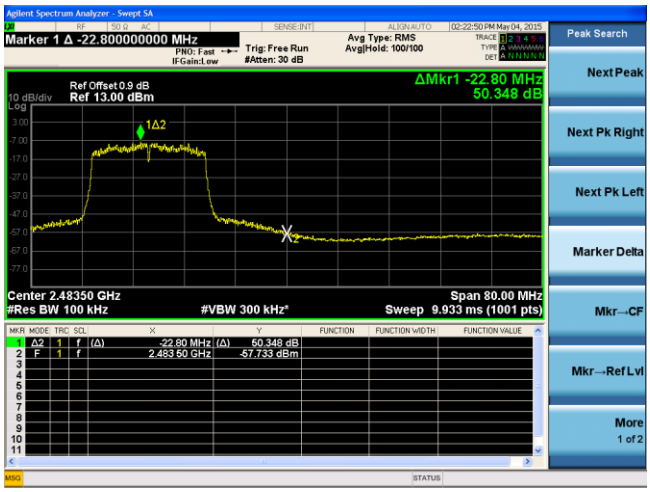
Band Edge-2.4G-802.11g Low



Band Edge-2.4G-802.11g High



Band Edge-2.4G-802.11n20 Low



Band Edge-2.4G-802.11n20 High

10.5 Peak Spectral Density

Requirement(s):

Spec	Item	Requirement	Applicable
§ 15.247(e) RSS210 (A8.2)	e)	DSSS: ≤8dBm/3KHz	☒
	f)	DSSS in hybrid sys with FH turned off: ≤8dBm/3KHz	☐
Test Setup			
Test Procedure	558074 D01 DTS Meas Guidance v03r02, 10.3 Method AVGPSD-1 Peak spectral density measurement procedure - Set analyzer center frequency to DTS channel center frequency. - Set the span to 1.5 times the DTS bandwidth. - Set the RBW to: 3 kHz ≤ RBW ≤ 100 kHz. - Set the VBW ≥ 3 x RBW. - Detector = RMS - Sweep time = auto couple. - Trace mode = Trace average over 100 traces - Allow trace to fully stabilize. - Use the peak marker function to determine the maximum amplitude level within the RBW. - If measured value exceeds limit, reduce RBW (no less than 3 kHz) and repeat.		
Test Date	05/04/2015	Environmental condition	Temperature 22°C Relative Humidity 46% Atmospheric Pressure 1020mbar
Remark	-		
Result	☒ Pass ☐ Fail		

Equipment Setting

TEST	RBW	VBW	SPAN	Detector	SWEEP	Trace	NOTES
PSD	100KHz	≥3x RBW	1.5x DTS BW	RMS	Auto	Trace average	-

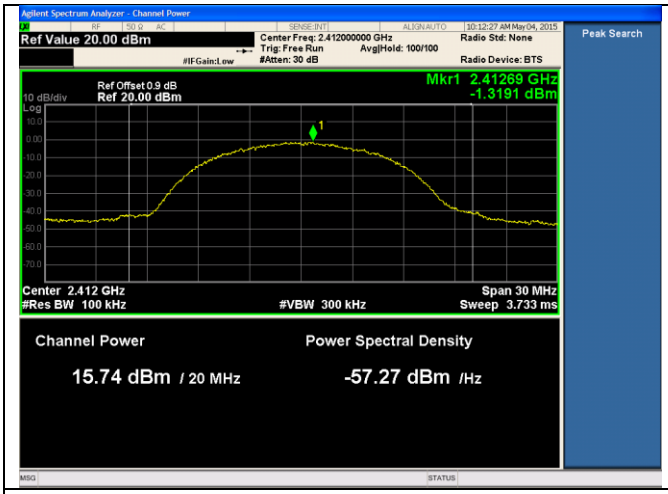
Test Data ☒ Yes ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

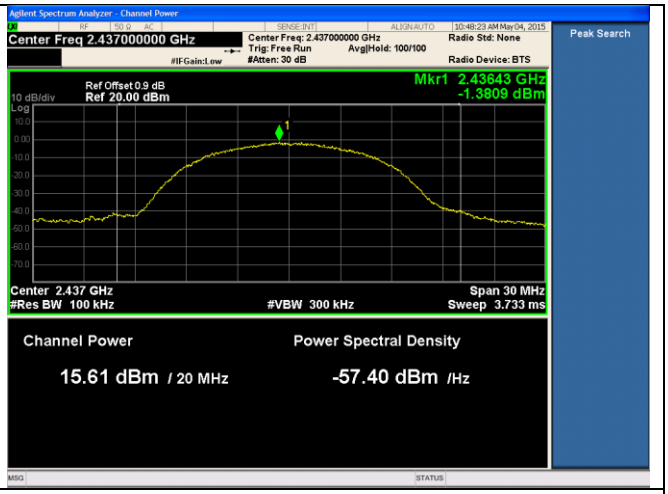
PSD measurement results

Type	Test mode	Freq (MHz)	CH	Conducted PSD (dBm/100KHz)	Limit (dBm/100KHz)	Result
PSD	802.11b	2412	Low	-1.3191	≤8	Pass
PSD	802.11b	2437	Mid	-1.3809	≤8	Pass
PSD	802.11b	2462	High	-1.8524	≤8	Pass
PSD	802.11g	2412	Low	-5.8526	≤8	Pass
PSD	802.11g	2437	Mid	-5.9151	≤8	Pass
PSD	802.11g	2462	High	-5.7865	≤8	Pass
PSD	802.11n-20M	2412	Low	-6.6245	≤8	Pass
PSD	802.11n-20M	2437	Mid	-6.9930	≤8	Pass
PSD	802.11n-20M	2462	High	-6.7718	≤8	Pass

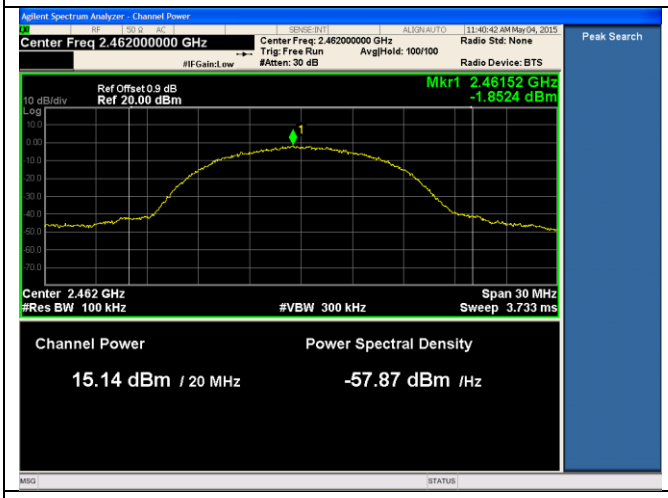
Test Plots



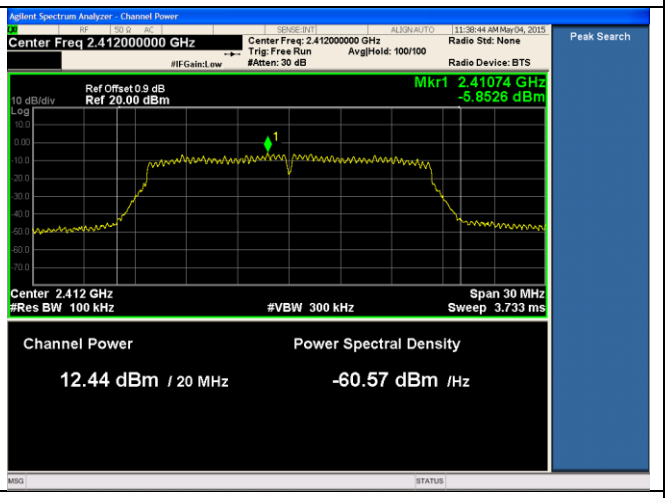
PSD-2.4G-802.11b Low



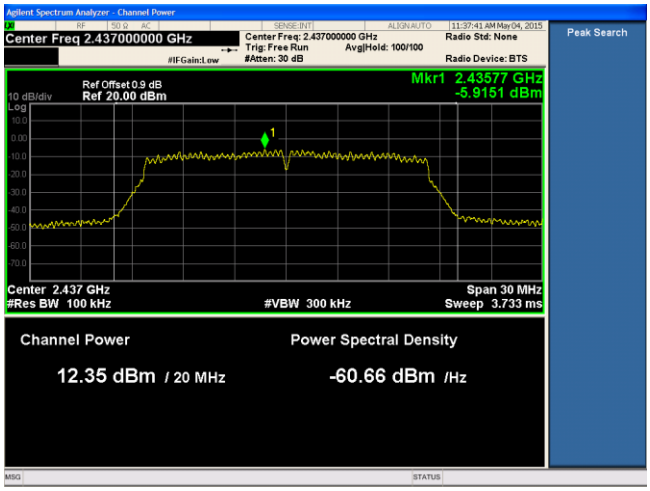
PSD-2.4G-802.11b Mid



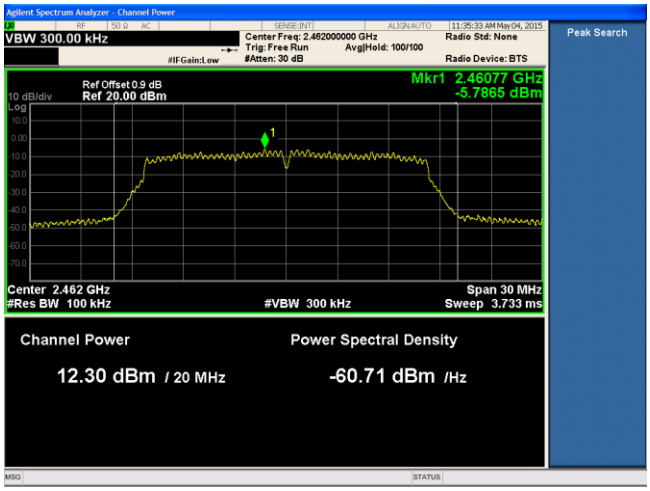
PSD-2.4G-802.11b High



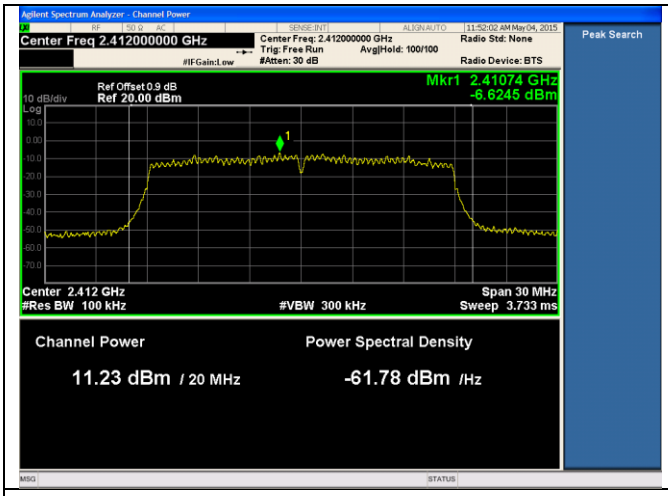
PSD-2.4G-802.11g Low



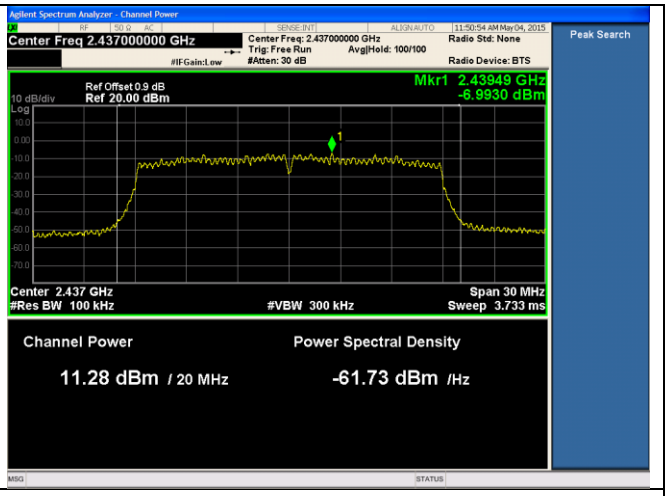
PSD-2.4G-802.11g Mid



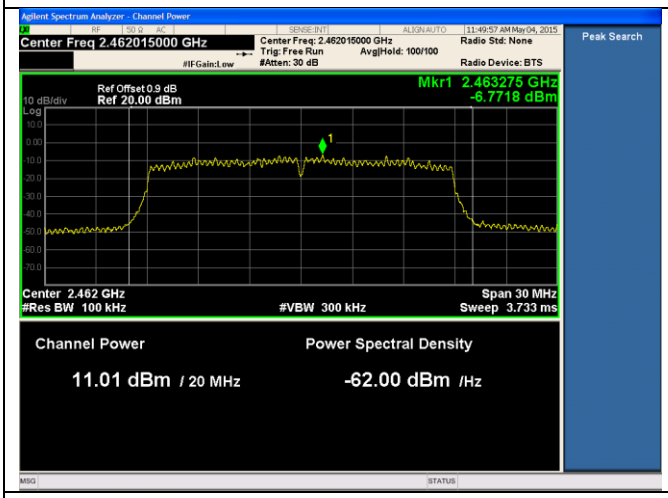
PSD-2.4G-802.11g High



PSD-2.4G-802.11n20 Low



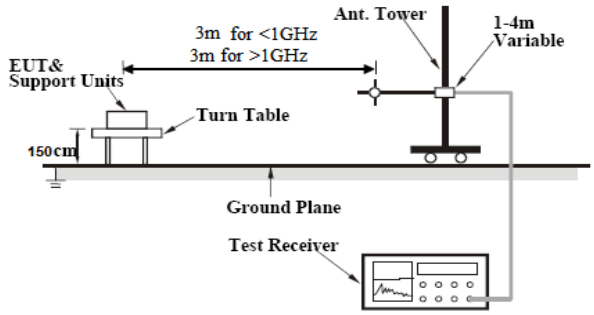
PSD-2.4G-802.11n20 Mid



PSD-2.4G-802.11n20 High

10.6 Radiated Spurious Emissions in restricted band

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS 210 (2.2)	a)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required ☐ 20 dB down ☒ 30 dB down	☒
	b)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒
Test Setup			
Procedure	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. An average measurement was then made for that frequency point. 4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.		
Remark	The EUT was scanned up to 25GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case. Radiated measurement was measured with antenna port terminated, there isn't outstanding emission found at the edge of restricted frequency, within x dB margin		
Result	☒ Pass ☐ Fail		

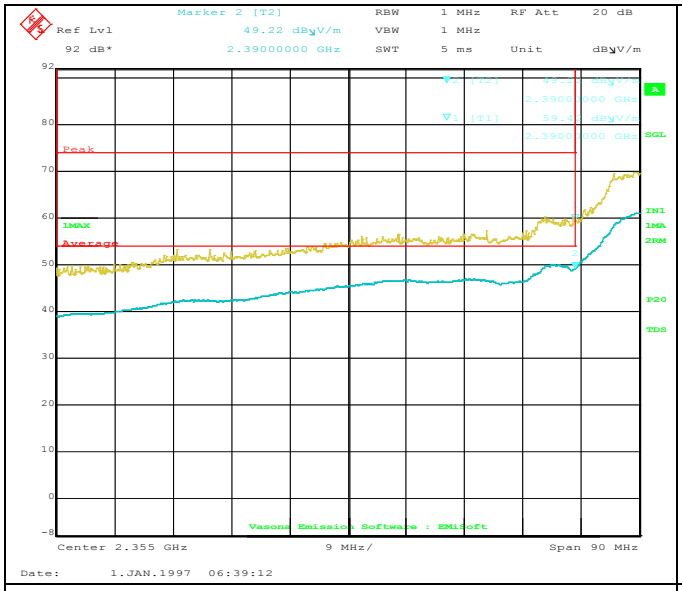
Equipment Setting

TEST	RBW	VBW	SPAN	Detector	SWEEP	Trace	NOTES
Radiated Spurious Emission	1MHz	1MHz	1GHz - 25 GHz	Peak	Auto	Max hold	PK Measurement
Radiated Spurious Emission	1MHz	1MHz	1GHz - 25 GHz	RMS	Auto	Trace Average (100)	Ave Measurement

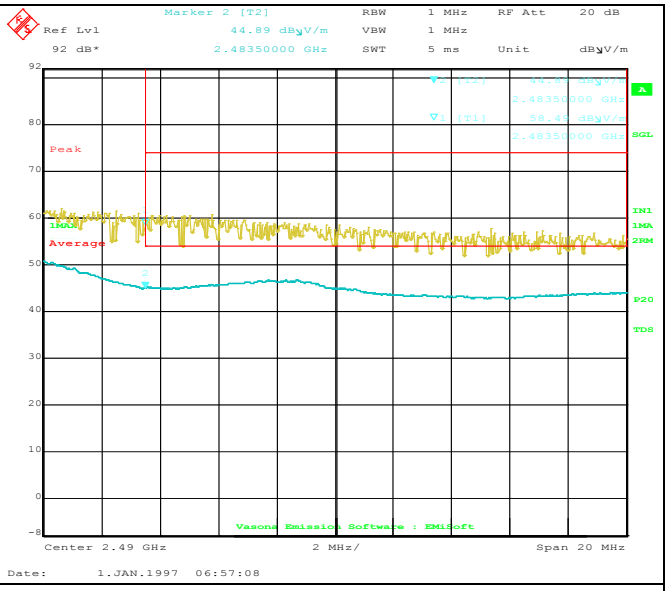
Test Data ☐ Yes (See below) ☒ N/A

Test Plot ☒ Yes (See below) ☐ N/A

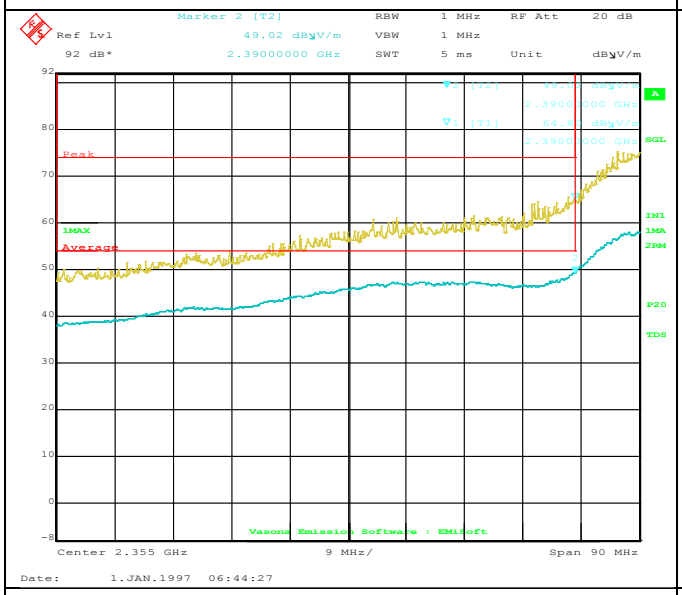
Restricted Band Measurement Plots:



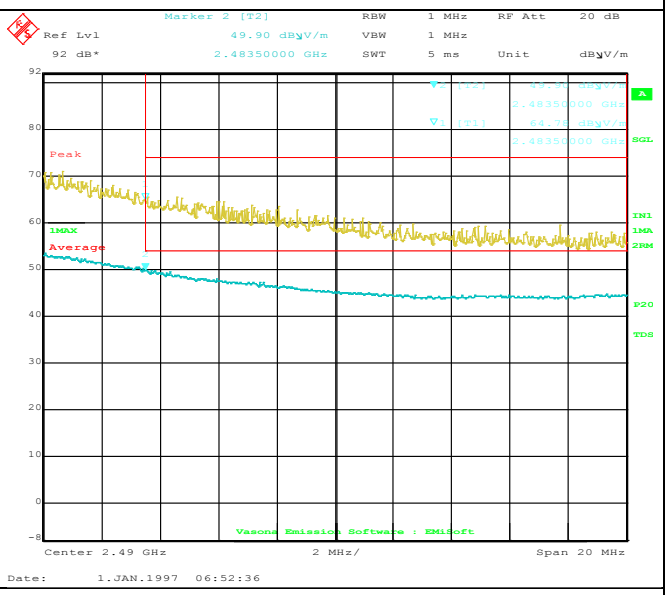
802.11b 2412M-Restriced Band 2310-2390MHz



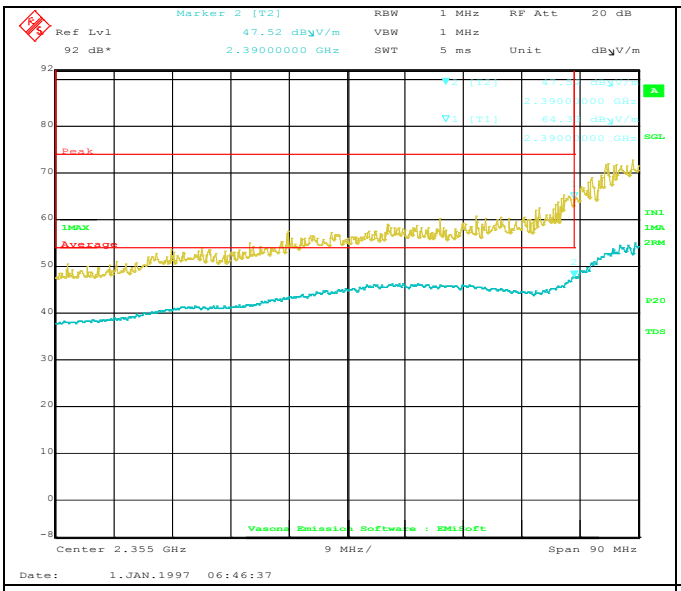
802.11b 2462M-Restriced Band 2483.5-2500MHz



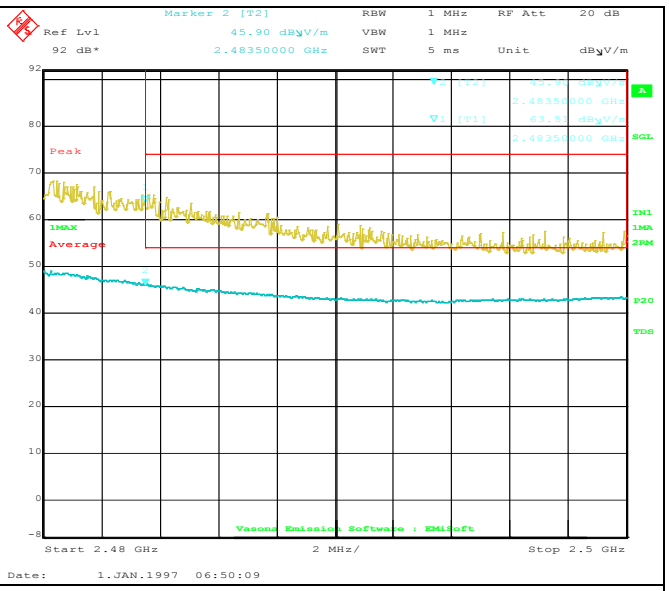
802.11g 2412M-Restriced Band 2310-2390MHz



802.11g 2462M-Restriced Band 2483.5-2500MHz



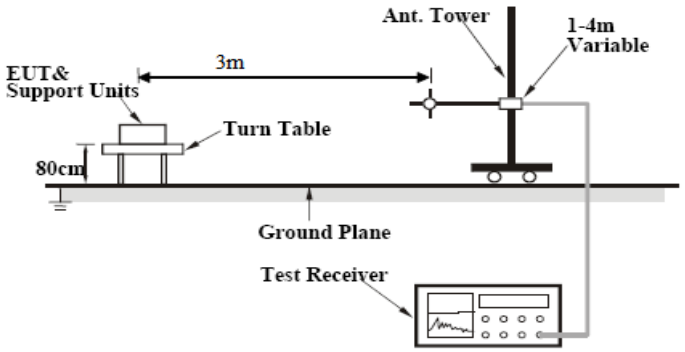
802.11n20 2412M-Restriced Band 2310-2390MHz



802.11n20 2462M-Restriced Band 2483.5-2500MHz

10.7 Radiated Spurious Emissions below 1GHz

Requirement(s):

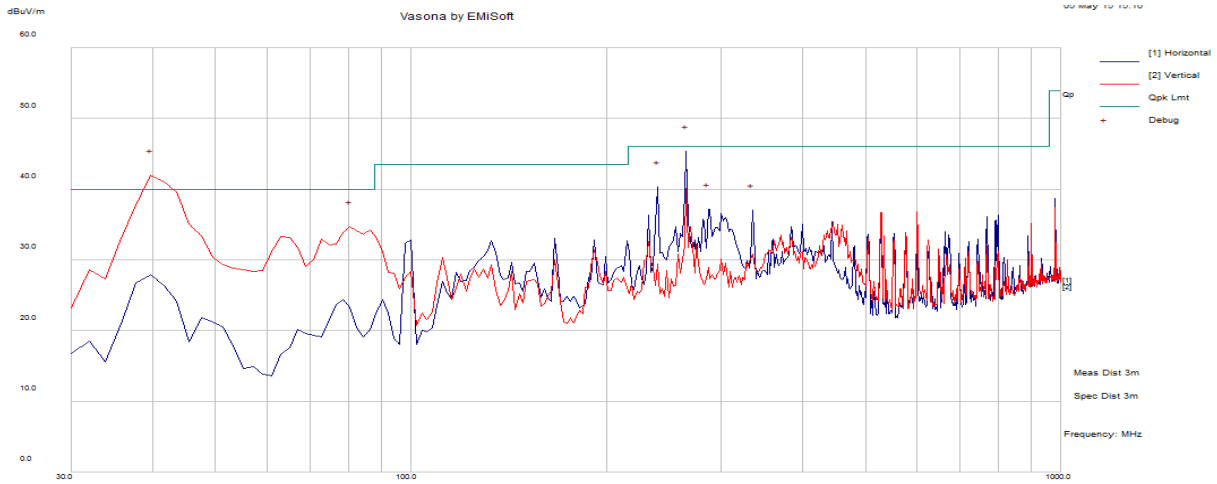
<table>
<tr><th>Spec</th><th>Item</th><th>Requirement</th><th>Applicable</th></tr>
<tr><td>47CFR§15.247(d)
RSS210(A8.5)</td><td>a)</td><td>Except higher limit as specified elsewhere in other section, the emissions from the low-power radio-frequency devices shall not exceed the field strength levels specified in the following table and the level of any unwanted emissions shall not exceed the level of the fundamental emission. The tighter limit applies at the band edges
<table>
<tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr>
<tr><td>30 – 88</td><td>100</td></tr>
<tr><td>88 – 216</td><td>150</td></tr>
<tr><td>216 960</td><td>200</td></tr>
<tr><td>Above 960</td><td>500</td></tr>
</table></td><td>☒</td></tr>
<tr><td>Test Setup</td><td colspan="3"> 
</td></tr>
<tr><td>Procedure</td><td colspan="3">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. A Quasi-peak measurement was then made for that frequency point.
4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.</td></tr>
<tr><td>Remark</td><td colspan="3">The EUT was scanned up to 1GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.</td></tr>
<tr><td>Result</td><td colspan="3">☒ Pass ☐ Fail</td></tr>
</table>

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Radiated Emission Test Results (Below 1GHz)

Test specification	Below 1GHz			
Environmental Conditions:	Temp (°C):	26.1	Result	Pass
	Humidity (%)	47.5		
	Atmospheric (mbar):	1020		
Mains Power:	120VAC, 60Hz			
Tested by:	Ricky Wang			
Test Date:	05/05/2015			
Remarks:	802.11b 2412MHz			

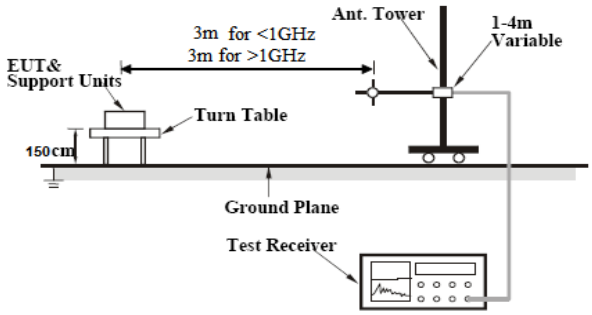


Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
39.86	60.02	1.07	-24.82	36.27	Quasi Max	V	101.00	273.00	40.00	-3.73	Pass
265.12	51.35	2.83	-25.76	28.42	Quasi Max	H	138.00	296.00	46.02	-17.60	Pass
80.43	59.28	1.58	-30.60	30.26	Quasi Max	V	171.00	261.00	40.00	-9.74	Pass
240.01	64.11	2.72	-26.97	39.86	Quasi Max	H	105.00	254.00	46.02	-6.16	Pass
286.83	50.70	2.91	-25.43	28.18	Quasi Max	H	101.00	304.00	46.02	-17.84	Pass
335.33	48.59	3.22	-24.47	27.34	Quasi Max	H	335.00	40.00	46.02	-18.68	Pass

Note: Both horizontal and vertical polarities were investigated. The results above show only the worst case.

10.8 Radiated Spurious Emissions between 1GHz – 25GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§15.247(d), RSS210(A8.5)	a)	For non-restricted band, In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB or 30dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, determined by the measurement method on output power to be used. Attenuation below the general limits specified in § 15.209(a) is not required ☐ 20 dB down ☒ 30 dB down	☒
	b)	or restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒
Test Setup			
Procedure		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. An average measurement was then made for that frequency point. 4. Steps 2 and 3 were repeated for the next frequency point, until all selected frequency points were measured.	
Remark		The EUT was scanned up to 25GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case. There isn't outstanding emission found at the edge of restricted frequency.	
Result		☒ Pass ☐ Fail	

Equipment Setting

TEST	RBW	VBW	SPAN	Detector	SWEEP	Trace	NOTES
Radiated Spurious Emission	1MHz	3MHz	1GHz - 25 GHz	Peak	Auto	Max hold	PK Measurement
Radiated Spurious Emission	1MHz	10Hz	1GHz - 25 GHz	Peak	Auto	Max hold	Ave Measurement

Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☐ Yes (See below) ☒ N/A

Radiated Emission Test Results (Above 1GHz)

Above 1GHz-25GHz – 802.11b – 2412MHz

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
17967.41	46.29	13.00	10.88	70.17	Peak Max	V	249.00	76.00	74.00	-3.83	Pass
14601.49	48.40	13.28	8.15	69.83	Peak Max	H	275.00	166.00	74.00	-4.17	Pass
1017.28	46.23	2.45	9.65	58.33	Peak Max	V	257.00	94.00	74.00	-15.67	Pass
4175.41	42.40	5.98	11.46	59.84	Peak Max	V	158.00	241.00	74.00	-14.16	Pass
2429.30	41.08	4.87	10.21	56.16	Peak Max	V	296.00	230.00	74.00	-17.84	Pass
17967.41	9.12	13.00	10.88	33.00	Average Max	V	249.00	76.00	54.00	-21.00	Pass
14601.49	13.73	13.28	8.15	35.16	Average Max	H	275.00	166.00	54.00	-18.84	Pass
1017.28	20.90	2.45	9.65	33.00	Average Max	V	257.00	94.00	54.00	-21.00	Pass
4175.41	11.57	5.98	11.46	29.01	Average Max	V	158.00	241.00	54.00	-24.99	Pass
2429.30	12.75	4.87	10.21	27.83	Average Max	V	296.00	230.00	54.00	-26.17	Pass

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

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
17810.01	46.28	13.00	10.72	70.00	Peak Max	H	173.00	248.00	74.00	-4.00	Pass
14424.07	47.87	13.04	8.26	69.17	Peak Max	V	184.00	241.00	74.00	-4.83	Pass
4847.23	41.25	6.24	9.67	57.16	Peak Max	V	176.00	22.00	74.00	-16.84	Pass
4888.25	42.31	6.24	9.62	58.17	Peak Max	V	125.00	329.00	74.00	-15.83	Pass
1020.85	46.08	2.45	9.64	58.18	Peak Max	H	163.00	195.00	74.00	-15.82	Pass
17810.01	9.28	13.00	10.72	33.00	Average Max	H	173.00	248.00	54.00	-21.00	Pass
14424.07	13.37	13.04	8.26	34.67	Average Max	V	184.00	241.00	54.00	-19.33	Pass
4847.23	11.93	6.24	9.67	27.84	Average Max	V	176.00	22.00	54.00	-26.16	Pass
4888.25	12.47	6.24	9.62	28.33	Average Max	V	125.00	329.00	54.00	-25.67	Pass
1020.85	20.74	2.45	9.64	32.84	Average Max	H	163.00	195.00	54.00	-21.16	Pass

Above 1GHz-25GHz – 802.11b – 2462MHz

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
17956.52	46.15	13.00	10.86	70.01	Peak Max	V	152.00	359.00	74.00	-3.99	Pass
14633.65	48.10	13.34	8.06	69.50	Peak Max	H	194.00	70.00	74.00	-4.50	Pass
1011.69	46.89	2.45	9.66	59.00	Peak Max	V	100.00	1.00	74.00	-15.00	Pass
3980.75	42.52	5.82	12.16	60.50	Peak Max	V	203.00	5.00	74.00	-13.50	Pass
2881.80	42.06	5.41	10.03	57.50	Peak Max	V	220.00	64.00	74.00	-16.50	Pass
17956.52	8.81	13.00	10.86	32.67	Average Max	V	152.00	359.00	54.00	-21.33	Pass
14633.65	13.77	13.34	8.06	35.17	Average Max	H	194.00	70.00	54.00	-18.83	Pass
1011.69	21.05	2.45	9.66	33.16	Average Max	V	100.00	1.00	54.00	-20.84	Pass
3980.75	11.18	5.82	12.16	29.16	Average Max	V	203.00	5.00	54.00	-24.84	Pass
2881.80	13.23	5.41	10.03	28.67	Average Max	V	220.00	64.00	54.00	-25.33	Pass

Above 1GHz-25GHz- 802.11g - 2412MHz

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
17882.98	46.04	13.00	10.79	69.83	Peak Max	V	226.00	290.00	74.00	-4.17	Pass
14666.53	49.31	13.40	7.97	70.68	Peak Max	H	205.00	91.00	74.00	-3.32	Pass
1007.24	47.06	2.44	9.67	59.17	Peak Max	H	130.00	133.00	74.00	-14.83	Pass
2900.00	43.23	5.43	10.03	58.68	Peak Max	V	251.00	307.00	74.00	-15.32	Pass
17882.98	9.21	13.00	10.79	33.00	Average Max	V	226.00	290.00	54.00	-21.00	Pass
14666.53	13.96	13.40	7.97	35.33	Average Max	H	205.00	91.00	54.00	-18.67	Pass
1007.24	21.05	2.44	9.67	33.16	Average Max	H	130.00	133.00	54.00	-20.84	Pass
2900.00	13.55	5.43	10.03	29.00	Average Max	V	251.00	307.00	54.00	-25.00	Pass

Above 1GHz-25GHz – 802.11g – 2437MHz

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
17807.16	46.46	13.00	10.71	70.17	Peak Max	H	269.00	120.00	74.00	-3.83	Pass
14658.79	49.13	13.38	7.99	70.51	Peak Max	V	253.00	292.00	74.00	-3.49	Pass
1068.00	45.45	2.48	9.57	57.50	Peak Max	V	157.00	341.00	74.00	-16.50	Pass
2888.51	42.39	5.42	10.03	57.83	Peak Max	V	222.00	61.00	74.00	-16.17	Pass
17807.16	9.45	13.00	10.71	33.16	Average Max	H	269.00	120.00	54.00	-20.84	Pass
14658.79	13.96	13.38	7.99	35.34	Average Max	V	253.00	292.00	54.00	-18.66	Pass
1068.00	20.12	2.48	9.57	32.17	Average Max	V	157.00	341.00	54.00	-21.83	Pass
2888.51	13.40	5.42	10.03	28.84	Average Max	V	222.00	61.00	54.00	-25.16	Pass

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

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
14473.15	48.06	13.08	8.36	69.50	Peak Max	V	257.00	155.00	74.00	-4.50	Pass
17898.82	46.53	13.00	10.81	70.34	Peak Max	H	178.00	244.00	74.00	-3.66	Pass
1009.04	46.72	2.45	9.66	58.83	Peak Max	V	121.00	127.00	74.00	-15.17	Pass
4257.97	42.18	6.05	11.11	59.34	Peak Max	H	256.00	316.00	74.00	-14.66	Pass
2894.81	42.39	5.42	10.03	57.84	Peak Max	H	280.00	96.00	74.00	-16.16	Pass
14473.15	13.39	13.08	8.36	34.83	Average Max	V	257.00	155.00	54.00	-19.17	Pass
17898.82	9.35	13.00	10.81	33.16	Average Max	H	178.00	244.00	54.00	-20.84	Pass
1009.04	20.88	2.45	9.66	32.99	Average Max	V	121.00	127.00	54.00	-21.01	Pass
4257.97	11.51	6.05	11.11	28.67	Average Max	H	256.00	316.00	54.00	-25.33	Pass
2894.81	13.55	5.42	10.03	29.00	Average Max	H	280.00	96.00	54.00	-25.00	Pass

Above 1GHz-25GHz- 802.11n20 - 2412MHz

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
17825.05	46.10	13.00	10.73	69.83	Peak Max	V	161.00	76.00	74.00	-4.17	Pass
14566.23	48.38	13.22	8.24	69.84	Peak Max	H	159.00	88.00	74.00	-4.16	Pass
1022.11	46.23	2.45	9.64	58.33	Peak Max	H	120.00	233.00	74.00	-15.67	Pass
4205.23	42.50	6.00	11.34	59.84	Peak Max	H	130.00	166.00	74.00	-14.16	Pass
2841.25	42.09	5.38	10.03	57.50	Peak Max	H	128.00	53.00	74.00	-16.50	Pass
17825.05	9.27	13.00	10.73	33.00	Average Max	V	161.00	76.00	54.00	-21.00	Pass
14566.23	13.54	13.22	8.24	35.00	Average Max	H	159.00	88.00	54.00	-19.00	Pass
1022.11	20.90	2.45	9.64	33.00	Average Max	H	120.00	233.00	54.00	-21.00	Pass
4205.23	11.33	6.00	11.34	28.67	Average Max	H	130.00	166.00	54.00	-25.33	Pass
2841.25	12.92	5.38	10.03	28.33	Average Max	H	128.00	53.00	54.00	-25.67	Pass

Above 1GHz-25GHz – 802.11n20 – 2437MHz

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
17848.00	46.59	13.00	10.75	70.34	Peak Max	H	168.00	39.00	74.00	-3.66	Pass
14609.43	48.92	13.30	8.13	70.34	Peak Max	V	223.00	43.00	74.00	-3.66	Pass
1006.67	47.22	2.44	9.67	59.33	Peak Max	H	272.00	166.00	74.00	-14.67	Pass
4169.43	42.87	5.97	11.49	60.33	Peak Max	V	270.00	145.00	74.00	-13.67	Pass
2823.69	41.95	5.37	10.03	57.34	Peak Max	H	192.00	342.00	74.00	-16.66	Pass
17848.00	9.25	13.00	10.75	33.00	Average Max	H	168.00	39.00	54.00	-21.00	Pass
14609.43	13.58	13.30	8.13	35.00	Average Max	V	223.00	43.00	54.00	-19.00	Pass
1006.67	20.89	2.44	9.67	33.00	Average Max	H	272.00	166.00	54.00	-21.00	Pass
4169.43	11.55	5.97	11.49	29.01	Average Max	V	270.00	145.00	54.00	-24.99	Pass
2823.69	12.95	5.37	10.03	28.34	Average Max	H	192.00	342.00	54.00	-25.66	Pass

Above 1GHz-25GHz- 802.11n20 - 2462MHz

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
17884.01	46.06	13.00	10.79	69.85	Peak Max	V	193.00	342.00	74.00	-4.15	Pass
14717.35	48.01	13.49	7.84	69.34	Peak Max	H	110.00	180.00	74.00	-4.66	Pass
1016.17	46.74	2.45	9.65	58.84	Peak Max	V	131.00	107.00	74.00	-15.16	Pass
3983.20	42.51	5.82	12.17	60.50	Peak Max	H	201.00	0.00	74.00	-13.50	Pass
2900.00	43.22	5.43	10.03	58.67	Peak Max	H	185.00	109.00	74.00	-15.33	Pass
17884.01	9.21	13.00	10.79	33.00	Average Max	V	193.00	342.00	54.00	-21.00	Pass
14717.35	13.34	13.49	7.84	34.67	Average Max	H	110.00	180.00	54.00	-19.33	Pass
1016.17	20.90	2.45	9.65	33.00	Average Max	V	131.00	107.00	54.00	-21.00	Pass
3983.20	11.18	5.82	12.17	29.17	Average Max	H	201.00	0.00	54.00	-24.83	Pass
2900.00	13.39	5.43	10.03	28.84	Average Max	H	185.00	109.00	54.00	-25.16	Pass

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Conducted Emissions						
Spectrum Analyzer	N9010A	MY50210206	08/13/2014	1 Year	08/13/2015	☑
V-LISN (150 kHz – 30 MHz)	NNLK 8129	8129-190	08/11/2014	1 Year	08/11/2015	☑
LISN (9 kHz – 30 MHz)	MN2050B	1018	07/31/2014	1 Year	07/31/2015	☑
TLISN	ISN T800	30814	08/08/2014	1 Year	08/08/2015	☑
Radiated Emissions						
Bi-Log antenna (30MHz~2GHz)	JB1	A030702	08/12/2014	1 Year	08/12/2015	
Horn Antenna (1-18GHz)	3115	10SL0059	08/11/2014	1 Year	08/11/2015	☑
Horn Antenna (18-40 GHz)	AH-840	101013	08/11/2014	1 Year	08/11/2015	☑
Pre-Amplifier	LPA-6-30	11140711	02/19/2015	1 Year	02/19/2016	☑
Microwave Preamplifier (18-40 GHz)	PA-840	181251	02/19/2015	1 Year	02/19/2016	☑
3 Meters SAC	3M	N/A	08/29/2014	1 Year	08/29/2015	☑
10 Meters SAC	10M	N/A	09/05/2014	1 Year	09/05/2015	☑
EMI Test Receiver (9 kHz – 6 GHz)	ESL6	100178	05/27/2015	1 Year	05/27/2016	☑
RF Conducted Measurement						
Power Sensor	EMPower7002-006	00159859	08/01/2014	1 Year	08/01/2015	☑
Spectrum Analyzer	N9010A	MY50210206	08/13/2014	1 Year	08/13/2015	☑

Annex B. 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
Hong Kong OFCA		**(Phase II)** OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		**Radio:** Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		**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
		Radio communications: 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