

RF TEST REPORT



Report No.: FCC_IC_RF_SL18011503-ZBR-001_UNII
Supersede Report No.: None

Applicant	:	Zebra Technologies Corporation
Host Product Name	:	Mobile Thermal Printer
Host Model No.	:	ZQ510 and ZQ520
Module Model No.	:	WYSBHVXGXG
Test Standard	:	47 CFR 15.247 RSS-247 Issue 2, February 2017
Test Method	:	ANSI C63.10: 2013 RSS-Gen Issue 4, Nov 2014 FCC Public Notice DA 00-705
FCC ID	:	I28MD-FXLAN11AC
IC ID	:	3798B-FXLAN11AC
Dates of test	:	01/29/2018 – 02/02/2018
Issue Date	:	02/08/2018
Test Result	:	☒ Pass ☐ Fail
Equipment complied with the specification ☒		
Equipment did not comply with the specification ☐		

This Test Report is Issued Under the Authority of:	
	
Rachana Khanduri	Chen Ge
Test Engineer	Engineer Reviewer
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Issued By:
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Laboratory Introduction

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



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Accreditations for Conformity Assessment

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

Accreditations for Product Certifications

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

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1 Report Revision History

Report No.	Report Version	Description	Issue Date
FCC_IC_RF_SL18011503-ZBR-001_UNII	None	Original	02/08/2018

2 Executive Summary

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

Company: Zebra Technologies Corporation
Host Product Name: Mobile Thermal Printer
Host Model No.: ZQ510 and ZQ520
Module Model No. WYSBHVXGX

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	Zebra Technologies Corp.
Applicant Address	3 Overlook Point, Lincolnshire, IL 60069
Manufacturer Name	Zebra Technologies Corp.
Manufacturer Address	3 Overlook Point, Lincolnshire, IL 60069

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

Host Product Name	Mobile Thermal Printer
Host Model No.	ZQ510 and ZQ520
Module Model No.	WYSBHVXG
Trade Name	Zebra
Serial No.	XXRBJ172300814
Input Power	100-240VAC,50/60Hz
Power Adapter Manu/Model	FSP025-DYAA3
Power Adapter SN	N/A
Product Hardware version	N/A
Product Software version	7620
Radio Hardware version	N/A
Radio Software version	15.68.07.p62
Date of EUT received	01/25/2018
Equipment Class/ Category	DTS, UNII
Port/Connectors	USB
Remark	NONE

6.2 Radio Description

Radio Type	802.11a	802.11n-20M	802.11n-40M	802.11ac-80M
Operating Frequency	5180-5240MHz 5260-5320MHz 5500-5700MHz 5745-5825MHz	5180-5240MHz 5260-5320MHz 5500-5700MHz 5745-5825MHz	5190-5230MHz 5270-5310MHz 5510-5670MHz 5755-5795MHz	5210MHz,5290MHz 5530MHz,5690MHz 5775MHz
Modulation	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM)	OFDM (BPSK, QPSK, 16QAM, 64QAM, 256QAM)
Channel Spacing	20MHz	20MHz	40MHz	80MHz
Number of Channels	24	24	11	5
Antenna Type	Patch Antenna			
Antenna Gain (Peak)	3.19dBi (5GHz)			
Antenna Connector Type	U.FL connector			
Note	2.4GHz and 5GHz Radio does not transmit simultaneously			

7 Supporting Equipment/Software and cabling Description

7.1 Supporting Equipment

Item	Supporting Equipment Description	Model	Serial Number	Manufacturer	Note
1	Laptop	ThinkPad T420s	N/A	Lenovo	-

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	Zebra Toolbox	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 C63.4 – 2014 789033 D02 General UNII Test Procedures New Rules v01r02	☒ Pass ☐ N/A
	IC	RSS 247 (2.2)	IC		
AC Conducted Emissions Voltage	FCC	15.207(a)	FCC	ANSI C63.4 – 2014	☒ Pass* ☐ N/A
	IC	RSS Gen 8.8	IC	RSS Gen Issue 4.0, Nov 2014 (8.8)	

Test Item	Test standard		Test Method/Procedure		Pass / Fail
99% Bandwidth	FCC	-	FCC	-	☒ Pass*
	IC	RSS 247 (A6.2)	IC	RSS Gen Issue 4.0, Nov 2014 (6.6)	☐ N/A
26 & 6 dB Emission Bandwidth	FCC	15.407 (a) (2)	FCC	789033 D02 General UNII Test Procedures New Rules v01r02	☒ Pass*
	IC	RSS 247 (A6.2)	IC		☐ N/A
Maximum conducted Output Power	FCC	15.407 (a) (2)	FCC	789033 D02 General UNII Test Procedures New Rules v01r02	☒ *Pass
	IC	RSS247 (5.4.4)	IC		☐ N/A
Power reduction (Antenna Gain > 6 dBi)	FCC	15.407 (a) (2)	FCC	-	☒ Pass*
	IC		IC		☐ N/A
Band Edge and Radiated Spurious Emissions	FCC	15.407(b)(2), 15.407(b)(6)	FCC	ANSI C63.4 – 2014 789033 D02 General UNII Test Procedures New Rules v01r02	☒ Pass
	IC	RSS 247(A6.3)	IC		☐ N/A
Power Spectral Density	FCC	15.407 (a) (2)	FCC	789033 D02 General UNII Test Procedures New Rules v01r02	☒ Pass*
	IC	RSS 247 (A6.2)	IC		☐ N/A
Remark	1. All measurement uncertainties are not taken into consideration for all presented test result. 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. 3. Pass* : Please refer to FCC ID: 128MD-FXLAN11AC test report.				

9 Measurement Uncertainty

9.1 Conducted Emissions

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

Some error sources that can contribute to the total uncertainty:

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

Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Receiver Reading	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Filter Insertion Loss	0.25	Normal	2	1	0.125
LISN Insertion Loss	0.40	Normal	2	1	0.20
Receiver CW accuracy	0.5	Rectangular	1.732	1	0.2886836
Pulse Amplitude Response	1.5	Rectangular	1.732	1	0.86605081
PRF Response	1.5	Rectangular	1.732	1	0.86605081
Mismatch LISN - Receiver	0.25	U-Shape	1.414	1	0.1768033
LISN Impedance	2.5	Triangular	2.449	1	1.0208248
Combined Standard Uncertainty					1.928133
Expanded Uncertainty (K=2)					3.856266

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

9.2 Radiated Emissions (30MHz to 1GHz)

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

Some error sources that can contribute to the total uncertainty:

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

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

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

9.3 Radiated Emissions (1GHz to 40GHz)

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

Some error sources that can contribute to the total uncertainty:

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

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

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

9.4 RF conducted measurement

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

Some error sources that can contribute to the total uncertainty:

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

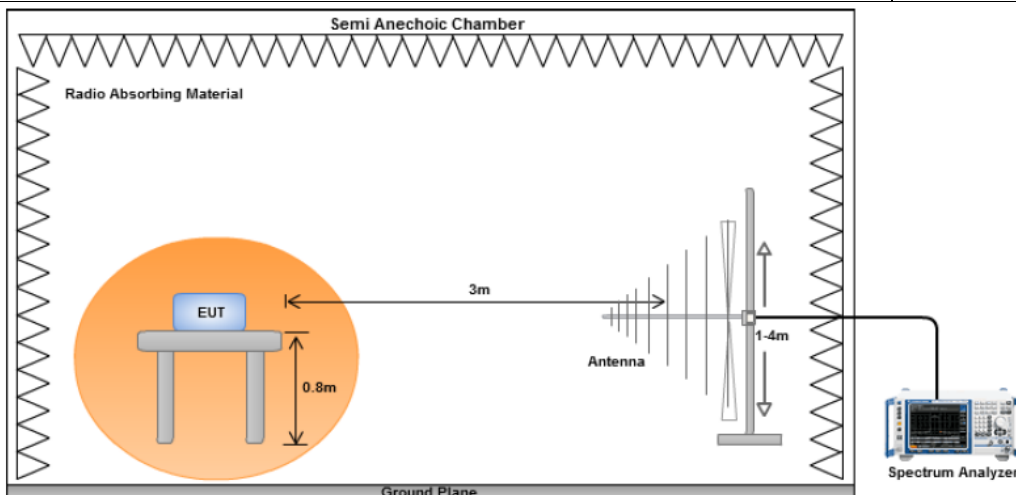
Source of Uncertainty	Value (dB)	Probability Distribution	Division	Sensitivity Coefficient	Expanded Uncertainty
Reference Level	0.12	Rectangular	1.732	1	0.069284
Cable Insertion Loss	0.21	Normal	2	1	0.105
Attenuator	0.25	Normal	2	1	0.125
Mismatch	0.25	U-Shape	1.414	1	0.1768033
Combined Standard Uncertainty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

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

10 Measurements, Examination and Derived Results

10.1 Radiated Emissions below 1GHz

Requirement(s):

Spec	Requirement	Applicable										
47CFR§ 15.407(b) 15.209 (a) RSS Gen	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><thead><tr><th>Frequency range (MHz)</th><th>Field Strength (uV/m)</th></tr></thead><tbody><tr><td>30 – 88</td><td>100</td></tr><tr><td>88 – 216</td><td>150</td></tr><tr><td>216 960</td><td>200</td></tr><tr><td>Above 960</td><td>500</td></tr></tbody></table>	Frequency range (MHz)	Field Strength (uV/m)	30 – 88	100	88 – 216	150	216 960	200	Above 960	500	☒
Frequency range (MHz)	Field Strength (uV/m)											
30 – 88	100											
88 – 216	150											
216 960	200											
Above 960	500											
Test Setup												
Procedure	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.											
Remark	The EUT was scanned up to 1GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.											
Result	☒ Pass ☐ Fail											

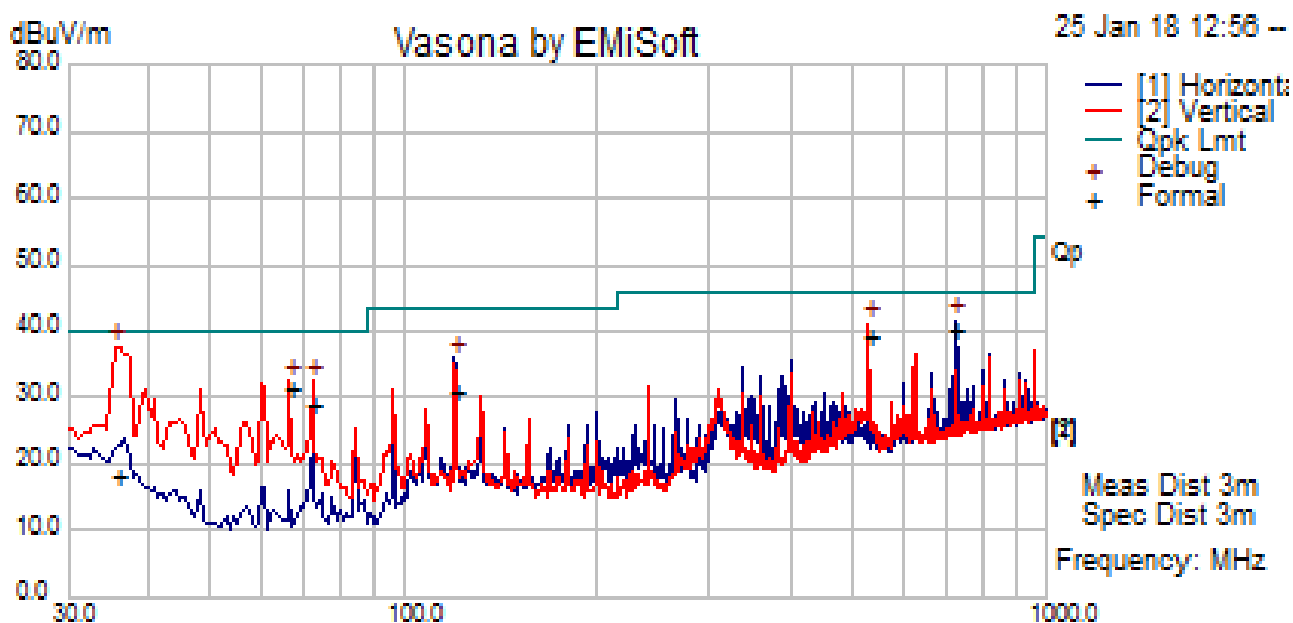
Test Data ☒ Yes (See below) ☐ N/A

Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at 10m chamber.

Radiated Emission Test Results (Below 1GHz)

Test specification	Below 1GHz			
Environmental Conditions:	Temp (°C):	23	Result	Pass
	Humidity (%)	46		
	Atmospheric (mbar):	1017		
Mains Power:	120VAC, 60Hz			
Tested by:	Rachana Khanduri			
Test Date:	01/25/2018			
Remarks:	802.11ac-5210			



Quasi Max Measurement

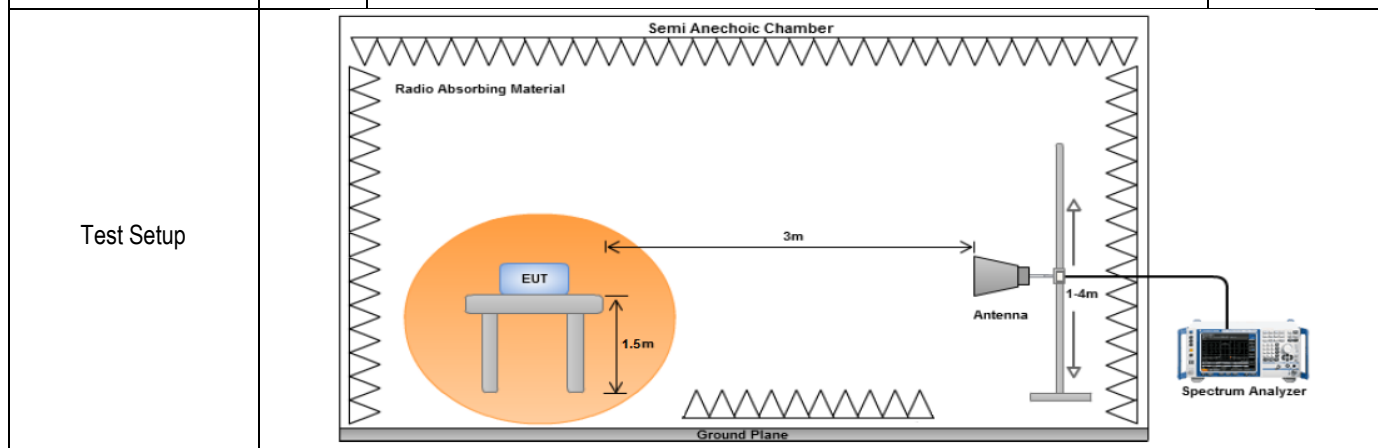
Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
35.73	24.96	11.38	-17.97	18.37	Quasi Max	V	139.00	14.00	40.00	-21.63	Pass
66.50	47.35	11.69	-27.62	31.42	Quasi Max	V	108.00	141.00	40.00	-8.58	Pass
72.00	45.09	11.72	-27.69	29.12	Quasi Max	V	152.00	356.00	40.00	-10.88	Pass
120.02	41.42	12.25	-22.87	30.80	Quasi Max	V	237.00	312.00	43.50	-12.70	Pass
528.02	42.66	14.81	-18.08	39.39	Quasi Max	V	108.00	291.00	46.00	-6.61	Pass
719.99	39.85	15.82	-15.26	40.42	Quasi Max	H	102.00	8.00	46.00	-5.58	Pass

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

10.2 Radiated Spurious Emissions above 1GHz

Requirement(s):

Spec	Item	Requirement	Applicable
47CFR§ 15.407(b)(2), 15.407(b)(6) RSS 247 Issue 2, 2017	(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 generate 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.	☒
	(5)	Restricted band, emission must also comply with the radiated emission limits specified in 15.209	☒



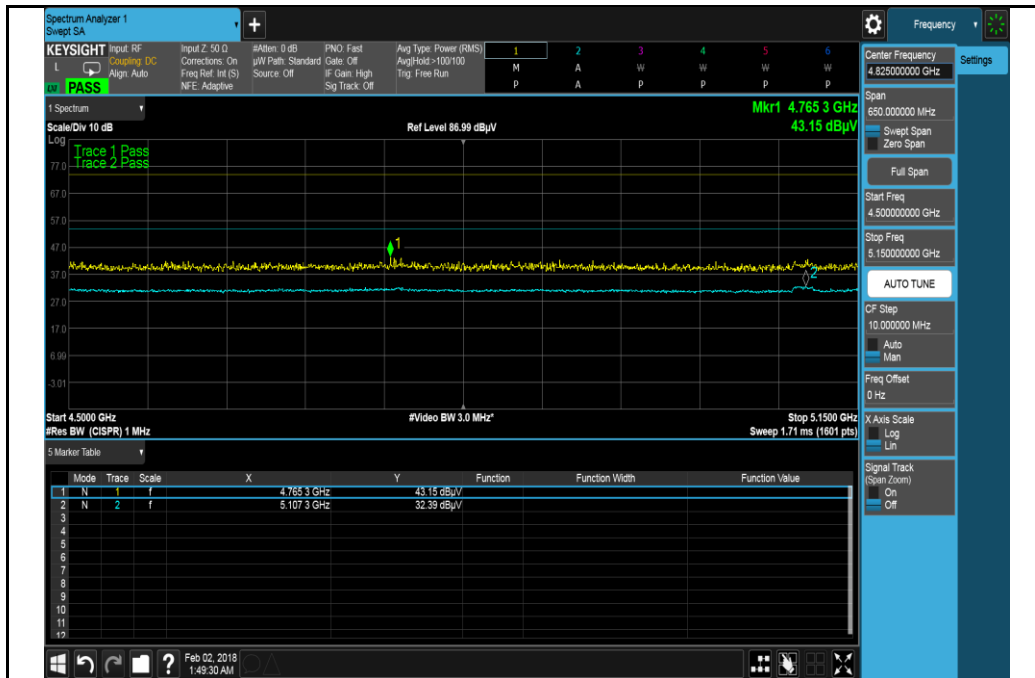
Procedure	- The EUT was switched on and allowed to warm up to its normal operating condition. - The test was carried out at the selected frequency points obtained from the EUT characterisation. Maximization of the emissions, was carried out by rotating the EUT, changing the antenna polarization, and 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.
Remark	The EUT was scanned up to 40GHz. Both horizontal and vertical polarities were investigated. The results show only the worst case.
Result	☒ Pass ☐ Fail

Test Data ☐ Yes (See below) ☒ N/A

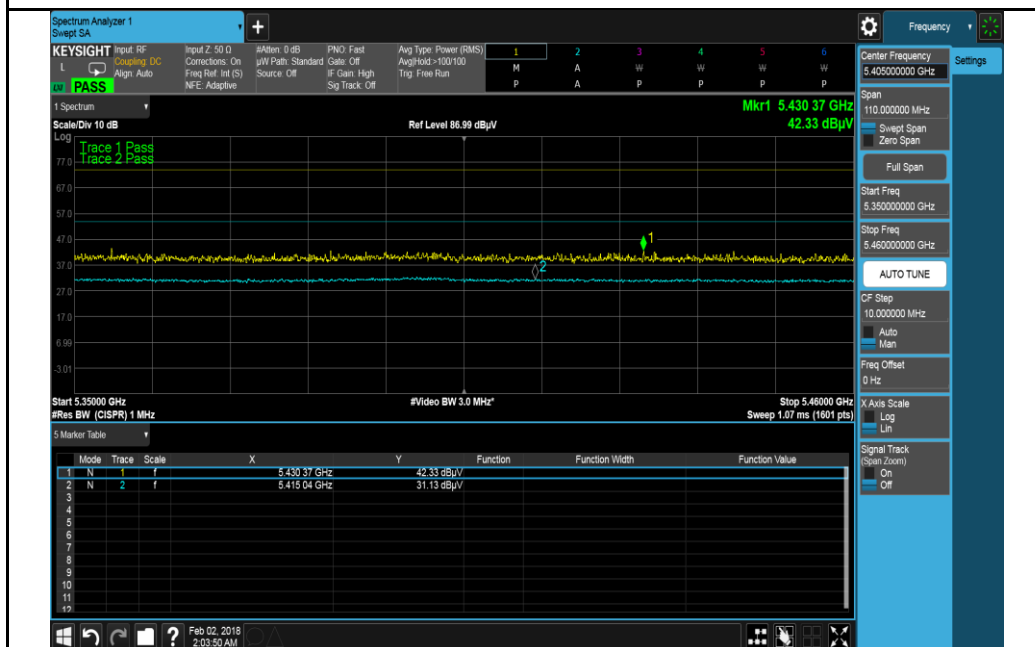
Test Plot ☒ Yes (See below) ☐ N/A

Test was done by Rachana Khanduri at 10m chamber.

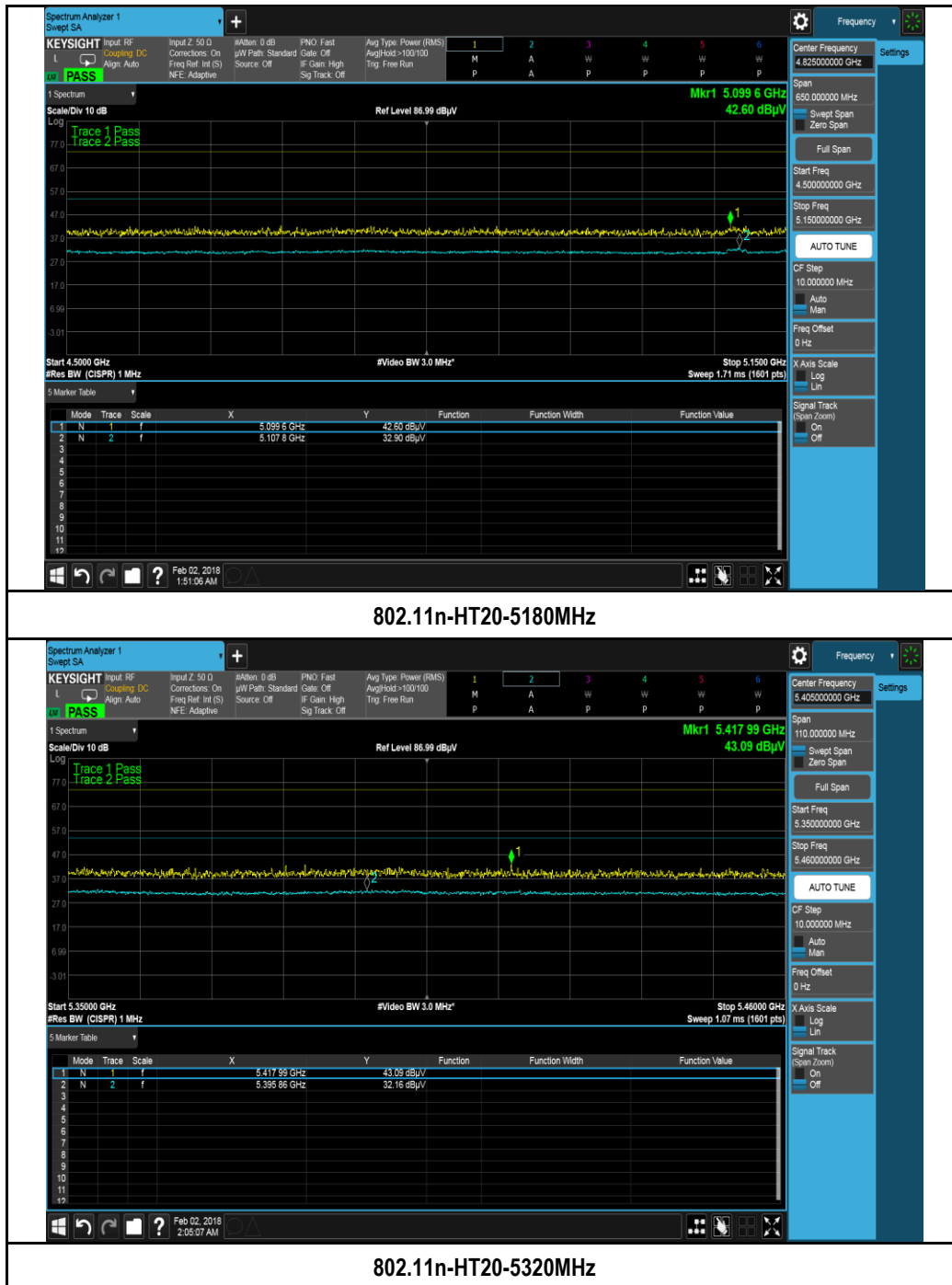
Restricted Band Measurement Plots:

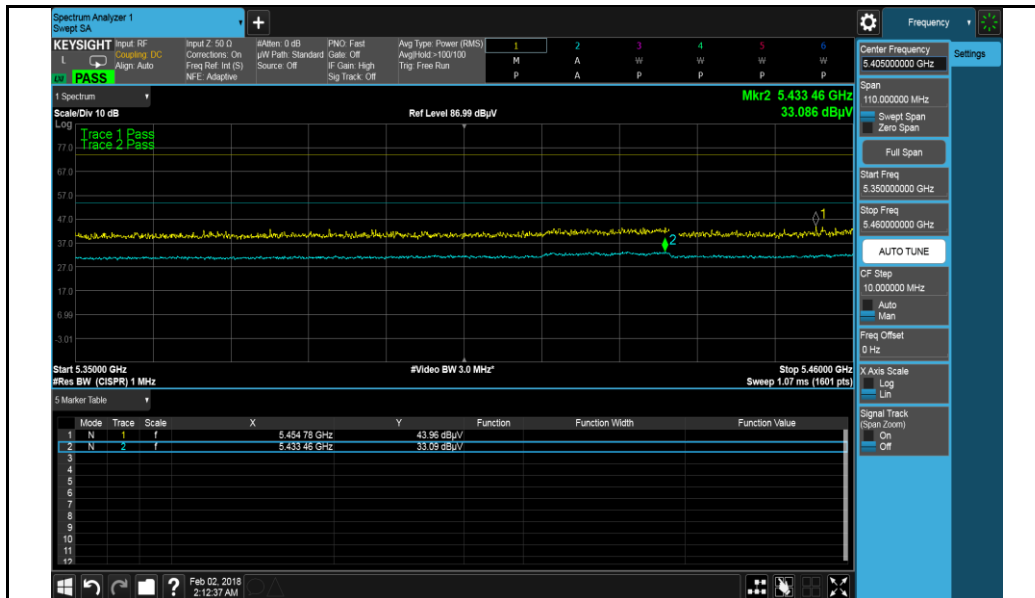


802.11a-5180MHz

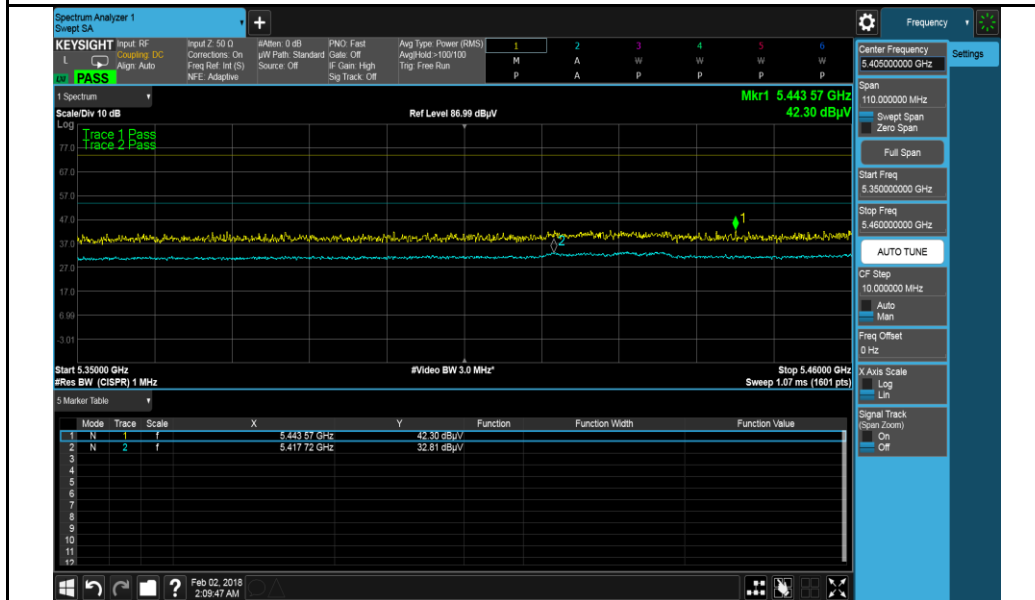


802.11a-5320MHz

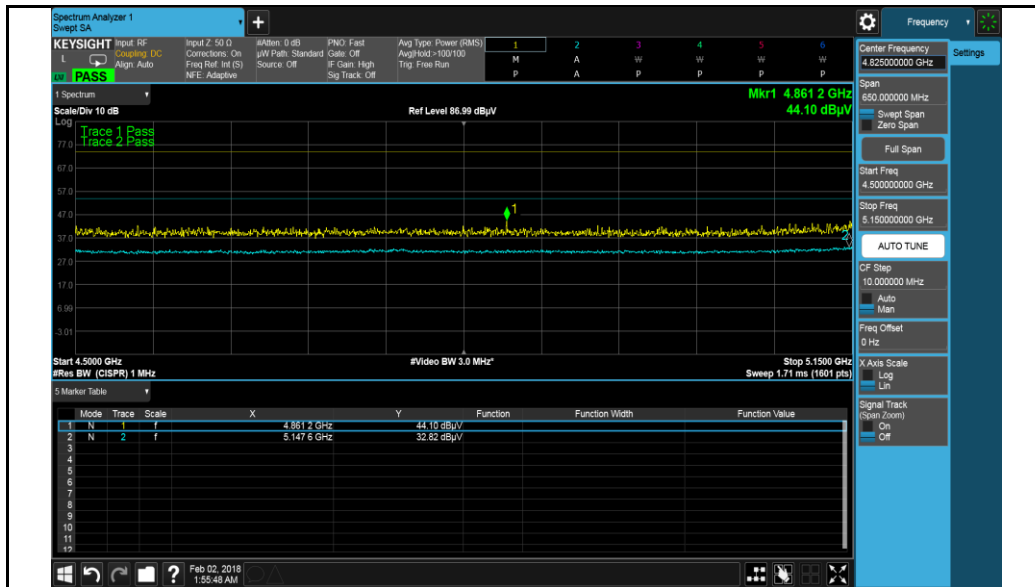




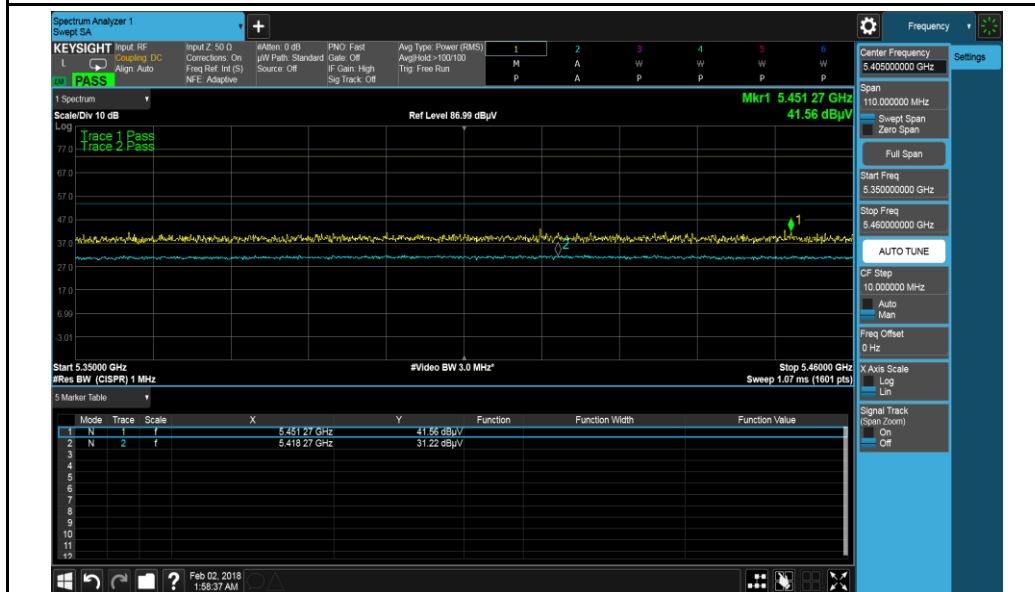
802.11a-5500MHz



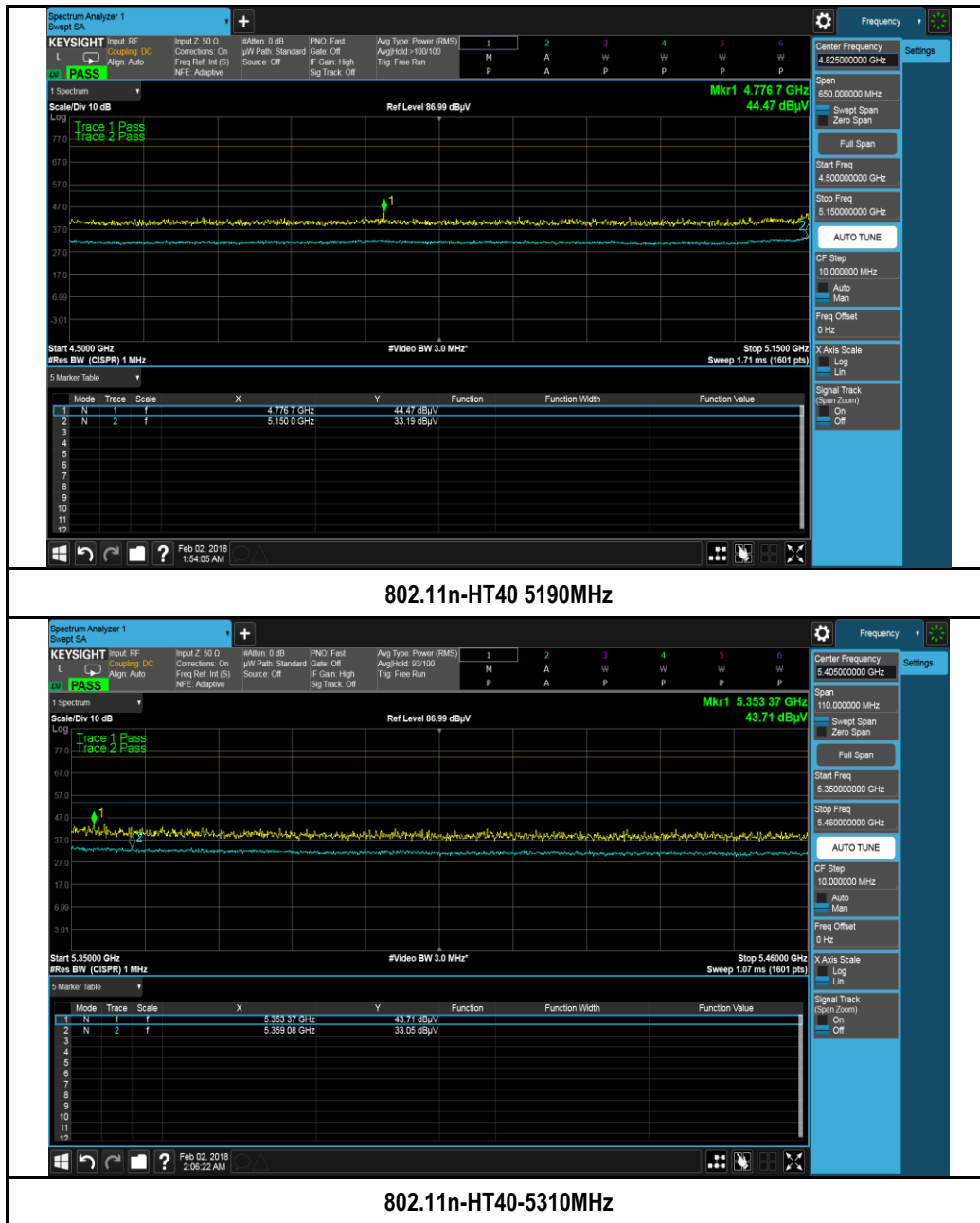
802.11n-HT20 5500MHz

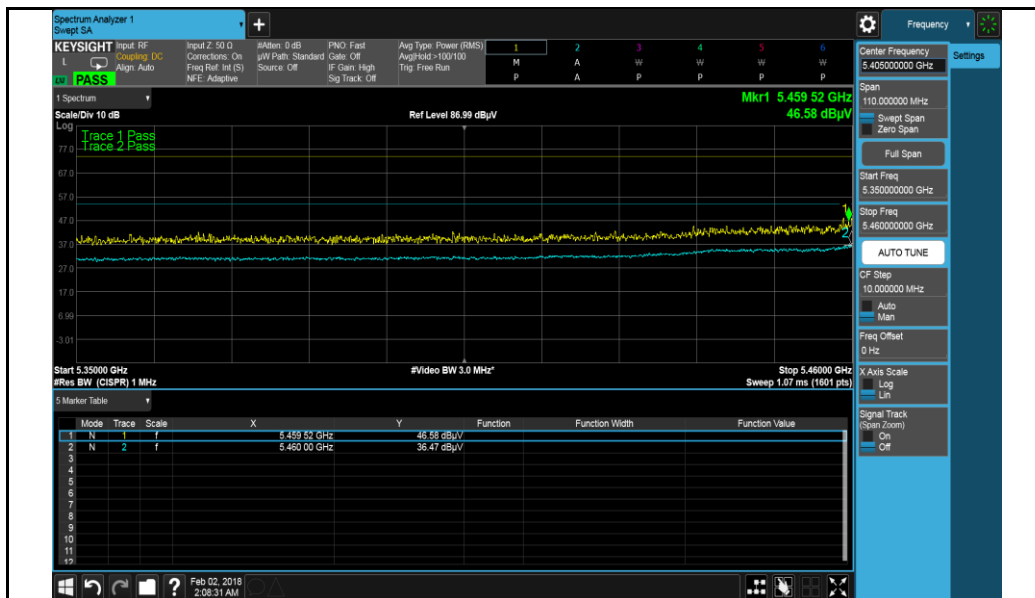


802.11ac-VHT80-5210MHz

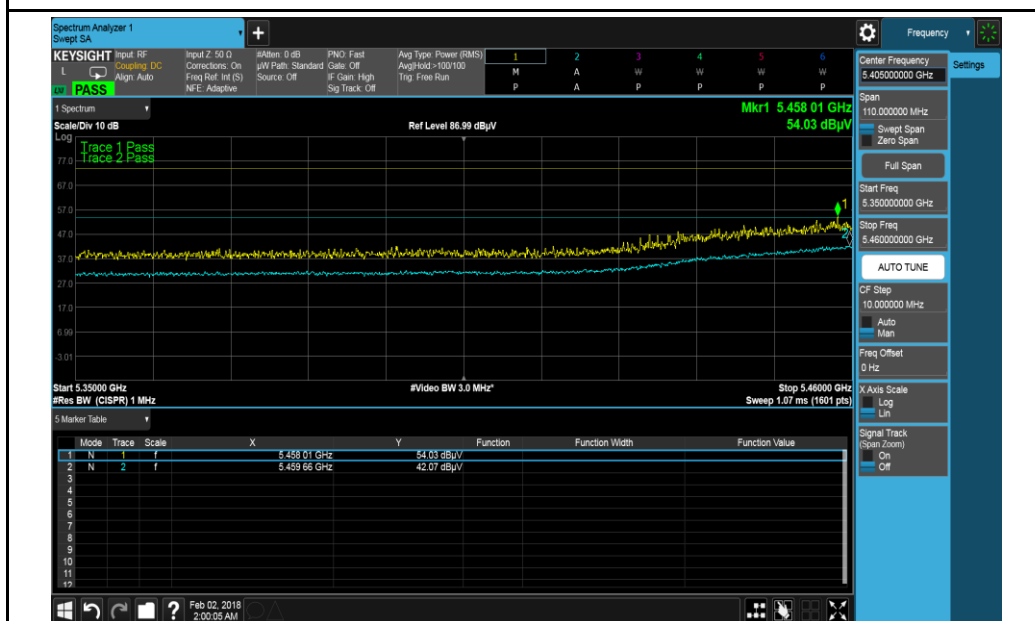


802.11ac-VHT80-5290MHz





802.11n-HT40-5510MHz



802.11ac-VHT80-5530MHz

Radiated Emission Test Results (Above 1GHz)

1GHz-40GHz – 802.11a – 5180MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4742.28	41.12	4.06	-0.76	44.41	Peak Max	V	200	228	74	-29.59	Pass
10378.59	39.11	6.01	1.55	46.67	Peak Max	V	181	57	74	-27.33	Pass
16768.98	39.02	8.06	7.83	54.91	Peak Max	V	119	156	74	-19.09	Pass
4742.28	28.34	4.06	-0.76	31.64	Average Max	V	200	228	54	-22.36	Pass
10378.59	26.55	6.01	1.55	34.12	Average Max	V	181	57	54	-19.88	Pass
16768.98	26.46	8.06	7.83	42.35	Average Max	V	119	156	54	-11.65	Pass

1GHz-40GHz – 802.11a – 5200MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
7966.55	38.86	5.40	-0.33	43.94	Peak Max	V	264	58	74	-30.06	Pass
10401.68	38.51	6.05	2.20	46.76	Peak Max	V	251	100	74	-27.24	Pass
16504.21	38.85	8.11	6.94	53.90	Peak Max	V	106	19	74	-20.10	Pass
7966.55	26.72	5.40	-0.33	31.80	Average Max	V	264	58	54	-22.21	Pass
10401.68	26.46	6.05	2.20	34.71	Average Max	V	251	100	54	-19.29	Pass
16504.21	26.62	8.11	6.94	41.67	Average Max	V	106	19	54	-12.33	Pass

1GHz-40GHz – 802.11a – 5240MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6304.88	38.66	4.69	0.04	43.39	Peak Max	V	138	187	74	-30.61	Pass
10480.43	39.13	6.10	1.91	47.15	Peak Max	V	147	165	74	-26.85	Pass
14700.91	38.00	7.34	5.46	50.81	Peak Max	V	299	136	74	-23.19	Pass
6304.88	26.42	4.69	0.04	31.16	Average Max	V	138	187	54	-22.84	Pass
10480.43	26.80	6.10	1.91	34.82	Average Max	V	147	165	54	-19.18	Pass
14700.91	26.29	7.34	5.46	39.10	Average Max	V	299	136	54	-14.91	Pass

1GHz-40GHz – 802.11a – 5260MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6845.58	38.93	5.04	-0.12	43.84	Peak Max	V	279	143	74	-30.16	Pass
10378.22	38.96	6.01	1.55	46.52	Peak Max	V	182	10	74	-27.48	Pass
17892.11	38.66	7.98	7.86	54.50	Peak Max	V	175	290	74	-19.50	Pass
6845.58	26.32	5.04	-0.12	31.24	Average Max	V	279	143	54	-22.76	Pass
10378.22	26.53	6.01	1.55	34.10	Average Max	V	182	10	54	-19.90	Pass
17892.11	26.61	7.98	7.86	42.46	Average Max	V	175	290	54	-11.55	Pass

1GHz-40GHz – 802.11a – 5280MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4695.68	39.60	4.09	-0.74	42.95	Peak Max	V	262	166	74	-31.05	Pass
10350.11	38.78	6.00	1.48	46.25	Peak Max	V	272	287	74	-27.75	Pass
17036.36	38.38	8.13	7.89	54.40	Peak Max	V	263	347	74	-19.60	Pass
4695.68	26.34	4.09	-0.74	29.69	Average Max	V	262	166	54	-24.32	Pass
10350.11	26.60	6.00	1.48	34.08	Average Max	V	272	287	54	-19.92	Pass
17036.36	26.20	8.13	7.89	42.22	Average Max	V	263	347	54	-11.78	Pass

1GHz-40GHz – 802.11a – 5320MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4695.77	39.12	4.09	-0.74	42.47	Peak Max	V	286	292	74	-31.53	Pass
8105.51	39.12	5.40	-0.35	44.17	Peak Max	V	148	230	74	-29.83	Pass
16768.11	38.17	8.06	7.83	54.06	Peak Max	V	141	178	74	-19.95	Pass
4695.77	26.37	4.09	-0.74	29.72	Average Max	V	286	292	54	-24.28	Pass
8105.51	26.76	5.40	-0.35	31.81	Average Max	V	148	230	54	-22.20	Pass
16768.11	26.38	8.06	7.83	42.27	Average Max	V	141	178	54	-11.73	Pass

1GHz-40GHz – 802.11a – 5500MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
8980.93	39.21	5.62	-0.45	44.38	Peak Max	V	100	142	74	-29.62	Pass
12417.03	38.83	6.54	4.57	49.94	Peak Max	V	296	311	74	-24.06	Pass
17868.32	38.80	8.01	7.82	54.63	Peak Max	V	172	196	74	-19.37	Pass
8980.93	26.41	5.62	-0.45	31.58	Average Max	V	100	142	54	-22.42	Pass
12417.03	26.25	6.54	4.57	37.35	Average Max	V	296	311	54	-16.65	Pass
17868.32	26.55	8.01	7.82	42.38	Average Max	V	172	196	54	-11.62	Pass

1GHz-40GHz – 802.11a – 5580MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
8945.00	38.38	5.62	-0.49	43.52	Peak Max	V	114	305	74	-30.48	Pass
12543.31	38.09	6.56	4.72	49.37	Peak Max	V	155	77	74	-24.63	Pass
17159.97	38.78	8.10	7.71	54.58	Peak Max	V	290	208	74	-19.42	Pass
8945.00	26.45	5.62	-0.49	31.58	Average Max	V	114	305	54	-22.42	Pass
12543.31	26.03	6.56	4.72	37.31	Average Max	V	155	77	54	-16.69	Pass
17159.97	26.42	8.10	7.71	42.22	Average Max	V	290	208	54	-11.78	Pass

1GHz-40GHz – 802.11a – 5700MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6775.38	38.32	5.02	-0.06	43.28	Peak Max	V	118	201	74	-30.72	Pass
10620.20	39.25	6.13	1.92	47.30	Peak Max	V	242	102	74	-26.70	Pass
16432.53	38.61	8.13	6.67	53.40	Peak Max	V	276	87	74	-20.60	Pass
6775.38	26.15	5.02	-0.06	31.11	Average Max	V	118	201	54	-22.90	Pass
10620.20	26.79	6.13	1.92	34.84	Average Max	V	242	102	54	-19.16	Pass
16432.53	26.57	8.13	6.67	41.36	Average Max	V	276	87	54	-12.64	Pass

1GHz-40GHz – 802.11a – 5745MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4742.97	40.45	4.06	-0.76	43.74	Peak Max	V	103	81	74	-30.26	Pass
11631.05	38.44	6.18	2.88	47.50	Peak Max	V	132	301	74	-26.50	Pass
17414.23	38.97	8.20	7.55	54.73	Peak Max	H	104	3	74	-19.28	Pass
4742.97	28.15	4.06	-0.76	31.44	Average Max	V	103	81	54	-22.56	Pass
11631.05	26.51	6.18	2.88	35.57	Average Max	V	132	301	54	-18.43	Pass
17414.23	26.62	8.20	7.55	42.37	Average Max	H	104	3	54	-11.63	Pass

1GHz-40GHz – 802.11a – 5785MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4751.84	40.53	4.05	-0.77	43.82	Peak Max	V	292	178	74	-30.18	Pass
12579.77	38.29	6.58	4.72	49.59	Peak Max	V	281	137	74	-24.42	Pass
17533.57	38.88	8.25	7.58	54.71	Peak Max	V	204	101	74	-19.29	Pass
4751.84	28.18	4.05	-0.77	31.46	Average Max	V	292	178	54	-22.54	Pass
12579.77	25.89	6.58	4.72	37.19	Average Max	V	281	137	54	-16.82	Pass
17533.57	26.57	8.25	7.58	42.40	Average Max	V	204	101	54	-11.60	Pass

1GHz-40GHz – 802.11a – 5825MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4952.76	40.47	4.25	-0.97	43.74	Peak Max	V	134	138	74	-30.26	Pass
7294.46	38.97	5.15	-0.35	43.78	Peak Max	V	257	117	74	-30.22	Pass
12414.26	38.77	6.54	4.56	49.87	Peak Max	V	241	71	74	-24.13	Pass
4952.76	27.22	4.25	-0.97	30.49	Average Max	V	134	138	54	-23.51	Pass
7294.46	26.09	5.15	-0.35	30.90	Average Max	V	257	117	54	-23.10	Pass
12414.26	26.28	6.54	4.56	37.38	Average Max	V	241	71	54	-16.62	Pass

1GHz-40GHz – 802.11n-20M – 5180MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4378.02	39.84	4.10	-1.22	42.71	Peak Max	V	184	73	74	-31.29	Pass
10360.39	39.36	6.16	1.89	47.40	Peak Max	V	229	19	74	-26.60	Pass
16785.15	38.34	8.06	7.87	54.27	Peak Max	H	115	327	74	-19.73	Pass
4378.02	26.89	4.10	-1.22	29.76	Average Max	V	184	73	54	-24.24	Pass
10360.39	26.52	6.16	1.89	34.57	Average Max	V	229	19	54	-19.44	Pass
16785.15	26.46	8.06	7.87	42.39	Average Max	H	115	327	54	-11.61	Pass

1GHz-40GHz – 802.11n-20M – 5200MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6385.53	38.59	4.75	0.11	43.45	Peak Max	V	126	97	74	-30.55	Pass
10402.81	39.55	6.16	1.89	47.60	Peak Max	V	224	294	74	-26.40	Pass
16990.66	38.32	8.14	7.95	54.41	Peak Max	V	138	329	74	-19.59	Pass
6385.53	26.30	4.75	0.11	31.17	Average Max	V	126	97	54	-22.83	Pass
10402.81	26.52	6.16	1.89	34.57	Average Max	V	224	294	54	-19.43	Pass
16990.66	26.17	8.14	7.95	42.26	Average Max	V	138	329	54	-11.74	Pass

1GHz-40GHz – 802.11n-20M – 5240MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4776.01	39.68	4.08	-0.78	42.97	Peak Max	V	290	284	74	-31.03	Pass
10697.97	39.21	6.16	1.89	47.26	Peak Max	V	157	357	74	-26.74	Pass
15288.07	39.67	7.57	4.87	52.11	Peak Max	V	296	134	74	-21.89	Pass
4776.01	27.40	4.08	-0.78	30.70	Average Max	V	290	284	54	-23.31	Pass
10697.97	26.55	6.16	1.89	34.60	Average Max	V	157	357	54	-19.40	Pass
15288.07	26.64	7.57	4.87	39.08	Average Max	V	296	134	54	-14.92	Pass

1GHz-40GHz – 802.11n-20M – 5260MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
7219.38	38.28	5.15	-0.32	43.11	Peak Max	V	281	302	74	-30.90	Pass
12485.75	38.98	6.55	4.69	50.23	Peak Max	V	289	139	74	-23.78	Pass
17303.61	39.01	8.11	7.50	54.62	Peak Max	H	165	169	74	-19.38	Pass
7219.38	26.31	5.15	-0.32	31.14	Average Max	V	281	302	54	-22.86	Pass
12485.75	26.33	6.55	4.69	37.57	Average Max	V	289	139	54	-16.43	Pass
17303.61	26.61	8.11	7.50	42.22	Average Max	H	165	169	54	-11.78	Pass

1GHz-40GHz – 802.11n-20M – 5280MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4104.04	40.69	3.89	-1.23	43.35	Peak Max	V	106	351	74	-30.66	Pass
9980.66	40.17	5.90	0.50	46.56	Peak Max	V	132	241	74	-27.44	Pass
17161.36	39.93	8.09	7.71	55.73	Peak Max	V	167	56	74	-18.27	Pass
4104.04	26.73	3.89	-1.23	29.39	Average Max	V	106	351	54	-24.61	Pass
9980.66	27.19	5.90	0.50	33.59	Average Max	V	132	241	54	-20.41	Pass
17161.36	26.44	8.09	7.71	42.24	Average Max	V	167	56	54	-11.76	Pass

1GHz-40GHz – 802.11n-20M – 5320MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4073.82	39.10	3.88	-1.21	41.76	Peak Max	V	300	126	74	-32.24	Pass
7685.49	39.21	5.20	-0.32	44.09	Peak Max	V	278	240	74	-29.91	Pass
12489.38	38.73	6.55	4.70	49.98	Peak Max	V	283	337	74	-24.02	Pass
4073.82	26.72	3.88	-1.21	29.39	Average Max	V	300	126	54	-24.61	Pass
7685.49	26.59	5.20	-0.32	31.47	Average Max	V	278	240	54	-22.53	Pass
12489.38	26.30	6.55	4.70	37.55	Average Max	V	283	337	54	-16.45	Pass

1GHz-40GHz – 802.11n-20M – 5500MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4761.44	40.97	4.06	-0.77	44.26	Peak Max	V	106	292	74	-29.74	Pass
7945.14	39.09	5.38	-0.33	44.14	Peak Max	V	134	4	74	-29.86	Pass
17547.46	38.87	8.25	7.58	54.69	Peak Max	V	240	261	74	-19.31	Pass
4761.44	27.98	4.06	-0.77	31.26	Average Max	V	106	292	54	-22.74	Pass
7945.14	26.61	5.38	-0.33	31.67	Average Max	V	134	4	54	-22.33	Pass
17547.46	26.59	8.25	7.58	42.42	Average Max	V	240	261	54	-11.58	Pass

1GHz-40GHz – 802.11n-20M – 5580MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4256.71	39.75	3.95	-1.31	42.38	Peak Max	V	275	161	74	-31.62	Pass
7411.29	38.73	5.14	-0.38	43.49	Peak Max	V	100	6	74	-30.51	Pass
14597.47	38.04	7.34	5.34	50.73	Peak Max	V	241	31	74	-23.27	Pass
4256.71	26.72	3.95	-1.31	29.36	Average Max	V	275	161	54	-24.64	Pass
7411.29	26.50	5.14	-0.38	31.26	Average Max	V	100	6	54	-22.74	Pass
14597.47	26.24	7.34	5.34	38.92	Average Max	V	241	31	54	-15.08	Pass

1GHz-40GHz – 802.11n-20M – 5700MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4791.93	38.36	4.09	-0.79	41.66	Peak Max	V	123	39	74	-32.34	Pass
12132.16	38.23	6.45	3.88	48.56	Peak Max	V	290	204	74	-25.44	Pass
17612.59	38.16	8.22	7.56	53.93	Peak Max	V	140	250	74	-20.07	Pass
4791.93	25.66	4.09	-0.79	28.96	Average Max	V	123	39	54	-25.04	Pass
12132.16	26.21	6.45	3.88	36.54	Average Max	V	290	204	54	-17.46	Pass
17612.59	26.62	8.22	7.56	42.39	Average Max	V	140	250	54	-11.61	Pass

1GHz-40GHz – 802.11n-20M – 5745MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4742.49	40.42	4.06	-0.76	43.71	Peak Max	V	160	332	74	-30.29	Pass
10454.58	39.32	6.05	1.76	47.13	Peak Max	V	213	44	74	-26.87	Pass
17385.57	38.96	8.18	7.54	54.68	Peak Max	V	247	133	74	-19.32	Pass
4742.49	28.16	4.06	-0.76	31.45	Average Max	V	160	332	54	-22.55	Pass
10454.58	26.79	6.05	1.76	34.60	Average Max	V	213	44	54	-19.40	Pass
17385.57	26.58	8.18	7.54	42.30	Average Max	V	247	133	54	-11.70	Pass

1GHz-40GHz – 802.11n-20M – 5785MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6142.21	38.63	4.74	-0.03	43.34	Peak Max	V	300	131	74	-30.66	Pass
12010.40	38.18	6.39	3.62	48.19	Peak Max	V	116	218	74	-25.81	Pass
16719.39	38.13	8.06	7.72	53.91	Peak Max	V	267	47	74	-20.09	Pass
6142.21	26.40	4.74	-0.03	31.10	Average Max	V	300	131	54	-22.90	Pass
12010.40	26.31	6.39	3.62	36.31	Average Max	V	116	218	54	-17.69	Pass
16719.39	26.32	8.06	7.72	42.10	Average Max	V	267	47	54	-11.90	Pass

1GHz-40GHz – 802.11n-20M – 5825MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6893.50	38.62	5.05	-0.16	43.51	Peak Max	V	291	325	74	-30.49	Pass
12009.19	38.28	6.38	3.62	48.29	Peak Max	V	284	41	74	-25.72	Pass
16816.64	38.35	8.07	7.91	54.33	Peak Max	V	232	46	74	-19.67	Pass
6893.50	26.40	5.05	-0.16	31.29	Average Max	V	291	325	54	-22.71	Pass
12009.19	26.32	6.38	3.62	36.32	Average Max	V	284	41	54	-17.68	Pass
16816.64	26.33	8.07	7.91	42.31	Average Max	V	232	46	54	-11.69	Pass

1GHz-40GHz – 802.11n-40M – 5190MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
6259.23	39.66	4.66	0.04	44.36	Peak Max	V	186	283	74	-29.65	Pass
10384.92	39.68	5.93	0.75	46.37	Peak Max	V	111	215	74	-27.63	Pass
17576.04	38.97	8.23	7.57	54.77	Peak Max	H	241	242	74	-19.23	Pass
6259.23	26.70	4.66	0.04	31.40	Average Max	V	186	283	54	-22.60	Pass
10384.92	27.03	5.93	0.75	33.72	Average Max	V	111	215	54	-20.28	Pass
17576.04	26.69	8.23	7.57	42.49	Average Max	H	241	242	54	-11.51	Pass

1GHz-40GHz – 802.11n-40M – 5230MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4766.12	41.19	4.07	-0.78	44.48	Peak Max	V	156	200	74	-29.52	Pass
10460.10	39.21	6.05	2.20	47.45	Peak Max	V	159	77	74	-26.55	Pass
16649.35	38.16	8.07	7.51	53.75	Peak Max	V	131	63	74	-20.25	Pass
4766.12	28.09	4.07	-0.78	31.38	Average Max	V	156	200	54	-22.62	Pass
10460.10	26.50	6.05	2.20	34.75	Average Max	V	159	77	54	-19.25	Pass
16649.35	26.28	8.07	7.51	41.86	Average Max	V	131	63	54	-12.14	Pass

1GHz-40GHz – 802.11n-40M – 5270MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4763.38	39.94	4.06	-0.77	43.22	Peak Max	V	188	240	74	-30.78	Pass
10619.56	38.55	6.13	1.92	46.60	Peak Max	V	114	94	74	-27.40	Pass
17334.41	38.78	8.14	7.51	54.43	Peak Max	V	289	92	74	-19.57	Pass
4763.38	27.83	4.06	-0.77	31.12	Average Max	V	188	240	54	-22.88	Pass
10619.56	26.84	6.13	1.92	34.90	Average Max	V	114	94	54	-19.10	Pass
17334.41	26.55	8.14	7.51	42.20	Average Max	V	289	92	54	-11.80	Pass

1GHz-40GHz – 802.11n-40M – 5310MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4085.62	39.43	3.88	-1.22	42.10	Peak Max	V	243	302	74	-31.90	Pass
7097.31	38.66	5.11	-0.28	43.49	Peak Max	V	143	300	74	-30.51	Pass
12540.56	38.87	6.56	4.72	50.15	Peak Max	V	193	266	74	-23.85	Pass
4085.62	26.62	3.88	-1.22	29.28	Average Max	V	243	302	54	-24.72	Pass
7097.31	26.41	5.11	-0.28	31.24	Average Max	V	143	300	54	-22.76	Pass
12540.56	26.07	6.56	4.72	37.35	Average Max	V	193	266	54	-16.65	Pass

1GHz-40GHz – 802.11n-40M – 5510MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4761.64	40.58	4.06	-0.77	43.87	Peak Max	V	290	31	74	-30.13	Pass
9584.70	39.41	5.62	0.29	45.32	Peak Max	V	195	261	74	-28.68	Pass
17255.99	38.43	8.07	7.56	54.06	Peak Max	V	161	197	74	-19.94	Pass
4761.64	28.20	4.06	-0.77	31.48	Average Max	V	290	31	54	-22.52	Pass
9584.70	26.82	5.62	0.29	32.73	Average Max	V	195	261	54	-21.27	Pass
17255.99	26.67	8.07	7.56	42.31	Average Max	V	161	197	54	-11.69	Pass

1GHz-40GHz – 802.11n-40M – 5550MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4761.20	42.28	4.06	-0.77	45.57	Peak Max	V	209	116	74	-28.43	Pass
10950.45	38.43	6.14	1.92	46.49	Peak Max	V	103	34	74	-27.51	Pass
17513.08	39.09	8.26	7.59	54.94	Peak Max	V	239	302	74	-19.06	Pass
4761.20	28.14	4.06	-0.77	31.43	Average Max	V	209	116	54	-22.58	Pass
10950.45	26.35	6.14	1.92	34.41	Average Max	V	103	34	54	-19.59	Pass
17513.08	26.54	8.26	7.59	42.39	Average Max	V	239	302	54	-11.61	Pass

1GHz-40GHz – 802.11n-40M – 5670MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4728.97	40.84	4.07	-0.76	44.15	Peak Max	V	274	78	74	-29.85	Pass
7262.31	38.31	5.16	-0.34	43.13	Peak Max	V	267	16	74	-30.87	Pass
17510.77	38.36	8.26	7.59	54.21	Peak Max	V	265	99	74	-19.79	Pass
4728.97	27.32	4.07	-0.76	30.63	Average Max	V	274	78	54	-23.37	Pass
7262.31	26.10	5.16	-0.34	30.93	Average Max	V	267	16	54	-23.07	Pass
17510.77	26.58	8.26	7.59	42.43	Average Max	V	265	99	54	-11.57	Pass

1GHz-40GHz – 802.11n-40M – 5755MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4775.85	39.86	4.08	-0.78	43.16	Peak Max	V	134	125	74	-30.84	Pass
12129.87	38.22	6.45	3.87	48.54	Peak Max	V	157	320	74	-25.46	Pass
17974.91	38.83	7.89	7.85	54.56	Peak Max	H	182	291	74	-19.44	Pass
4775.85	27.31	4.08	-0.78	30.61	Average Max	V	134	125	54	-23.39	Pass
12129.87	26.30	6.45	3.87	36.63	Average Max	V	157	320	54	-17.38	Pass
17974.91	26.76	7.89	7.85	42.49	Average Max	H	182	291	54	-11.51	Pass

1GHz-40GHz – 802.11n-40M – 5795MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4938.78	40.71	4.23	-0.96	43.98	Peak Max	V	221	201	74	-30.02	Pass
10621.23	39.48	6.13	1.92	47.54	Peak Max	V	298	346	74	-26.46	Pass
16938.82	37.59	8.12	7.94	53.65	Peak Max	V	126	71	74	-20.35	Pass
4938.78	27.63	4.23	-0.96	30.90	Average Max	V	221	201	54	-23.10	Pass
10621.23	26.83	6.13	1.92	34.88	Average Max	V	298	346	54	-19.12	Pass
16938.82	26.03	8.12	7.94	42.09	Average Max	V	126	71	54	-11.91	Pass

1GHz-40GHz – 802.11ac-80M – 5210MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1744.32	40.19	2.57	-4.42	38.35	Peak Max	V	216	346	74	-35.65	Pass
10419.97	39.38	6.04	1.67	47.08	Peak Max	V	123	282	74	-26.92	Pass
16795.52	38.58	8.07	7.89	54.54	Peak Max	V	252	131	74	-19.46	Pass
1744.32	27.66	2.57	-4.42	25.82	Average Max	V	216	346	54	-28.19	Pass
10419.97	26.62	6.04	1.67	34.32	Average Max	V	123	282	54	-19.68	Pass
16795.52	26.39	8.07	7.89	42.35	Average Max	V	252	131	54	-11.65	Pass

1GHz-40GHz – 802.11ac-80M – 5530MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4775.60	39.93	4.08	-0.78	43.22	Peak Max	V	158	59	74	-30.78	Pass
12577.90	38.09	6.58	4.72	49.38	Peak Max	V	272	299	74	-24.62	Pass
14639.67	38.63	7.34	5.39	51.36	Peak Max	V	119	292	74	-22.64	Pass
4775.60	27.22	4.08	-0.78	30.51	Average Max	V	158	59	54	-23.49	Pass
12577.90	25.89	6.58	4.72	37.19	Average Max	V	272	299	54	-16.81	Pass
14639.67	26.35	7.34	5.39	39.08	Average Max	V	119	292	54	-14.92	Pass

1GHz-40GHz – 802.11ac-80M – 5610MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
4774.84	39.69	4.07	-0.78	42.98	Peak Max	V	156	357	74	-31.02	Pass
9502.36	38.92	5.69	0.37	44.98	Peak Max	V	118	119	74	-29.02	Pass
17517.46	38.98	8.26	7.58	54.83	Peak Max	V	157	168	74	-19.17	Pass
4774.84	27.35	4.07	-0.78	30.64	Average Max	V	156	357	54	-23.36	Pass
9502.36	26.91	5.69	0.37	32.97	Average Max	V	118	119	54	-21.03	Pass
17517.46	26.63	8.26	7.58	42.47	Average Max	V	157	168	54	-11.53	Pass

1GHz-40GHz – 802.11ac-80M – 5775MHz

Frequency MHz	Raw dBuV	Cable Loss	AF dB	Level dBuV/m	Measurement Type	Pol (V/H)	Hgt cm	Azt Deg	Limit dBuV/m	Margin dB	Pass /Fail
1883.98	40.84	2.67	-2.90	40.61	Peak Max	V	237	283	74	-33.39	Pass
6534.30	38.77	4.86	0.15	43.78	Peak Max	V	188	162	74	-30.22	Pass
12292.35	38.94	6.52	4.24	49.70	Peak Max	V	103	151	74	-24.30	Pass
1883.98	27.80	2.67	-2.90	27.57	Average Max	V	237	283	54	-26.43	Pass
6534.30	26.35	4.86	0.15	31.36	Average Max	V	188	162	54	-22.64	Pass
12292.35	26.64	6.52	4.24	37.40	Average Max	V	103	151	54	-16.60	Pass

Annex A. TEST INSTRUMENT

Instrument	Model	Serial #	Cal Date	Cal Cycle	Cal Due	In use
Radiated Emissions						
Keysight EXA 44GHz Spectrum Analyzer	N9030B(PXA)	MY57140374	09/06/2017	1 Year	09/06/2018	☒
Bi-Log antenna (30MHz~2GHz)	JB6	A030702	01/13/2017	1 Year	01/13/2018	☒
Horn Antenna (1GHz~26GHz)	3115	100059	11/09/2017	1 Year	11/09/2018	☒
Horn Antenna (18GHz~40GHz)	PA-840	181251	06/23/2017	1 Year	06/23/2018	☒
Preamplifier (100KHz~7GHz)	LPA-6-30	11170602	02/09/2017	1 Year	02/09/2018	☒
Pre-Amplifier (1-26.5GHz)	8449B	3008A00715	08/16/2017	1 Year	8/16/2018	☒

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 Equipment: EN45011: EN ISO/IEC 17065
		Electromagnetic Compatibility: EN45011 – EN ISO/IEC 17065
Singapore iDA CB(Certification Body)		Phase I , Phase II
Vietnam MIC CAB Accreditation		Please see the document for the detailed scope
Hong Kong OFCA		(Phase II) OFCA Foreign Certification Body for Radio and Telecom
		(Phase I) Conformity Assessment Body for Radio and Telecom
Industry Canada CAB		Radio: Scope A – All Radio Standard Specification in Category I
		Telecom: CS-03 Part I, II, V, VI, VII, VIII

Japan Recognized Certification Body Designation		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