RF TEST REPORT

Applicant	Datalogic S.r.l.
FCC ID	U4GDL35US
Product	Smartphone
Brand	Datalogic
Model	MEMOR 10
Report No.	R1807A0326-R7V2
Issue Date	October 31, 2018

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2018)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Peng Tao

Performed by: Peng Tao

Kai Xu

Approved by: Kai Xu

TA Technology (Shanghai) Co., Ltd.

No.145, Jintang Rd, Tangzhen Industry Park, Pudong Shanghai, China

TEL: +86-021-50791141/2/3

FAX: +86-021-50791141/2/3-8000

TABLE OF CONTENT

Summary of measurement results

Number	Summary of measurements of results	Clause in FCC rules	Verdict
1	Average conducted output power	15.407(a)	PASS
2	Occupied bandwidth	15.407(e)	PASS
3	Frequency stability	15.407(g)	PASS
4	Maximum power spectral density	15.407(a)	PASS
5	Unwanted Emissions	15.407(b)	PASS
6	Conducted Emissions	15.207	PASS
Date of Testing: September 28, 2018~ October 29, 2018			

1. Test Laboratory

1.1. Notes of the test report

This report shall not be reproduced in full or partial, without the written approval of **TA technology (shanghai) co., Ltd.** The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein. Measurement Uncertainties were not taken into account and are published for informational purposes only. This report is written to support regulatory compliance of the applicable standards stated above.

1.2. Test facility

CNAS (accreditation number: L2264)

TA Technology (Shanghai) Co., Ltd. has obtained the accreditation of China National Accreditation Service for Conformity Assessment (CNAS).

FCC (Designation number: CN1179, Test Firm Registration Number: 446626)

TA Technology (Shanghai) Co., Ltd. has been listed on the US Federal Communications Commission list of test facilities recognized to perform electromagnetic emissions measurements.

IC (recognition number is 8510A)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Canada to perform electromagnetic emission measurement.

VCCI (recognition number is C-4595, T-2154, R-4113, G-10766)

TA Technology (Shanghai) Co., Ltd. has been listed by industry Japan to perform electromagnetic emission measurement.

A2LA (Certificate Number: 3857.01)

TA Technology (Shanghai) Co., Ltd. has been listed by American Association for Laboratory Accreditation to perform electromagnetic emission measurement.

1.3. Testing Location

Company:	TA Technology (Shanghai) Co., Ltd.
Address:	No.145, Jintang Rd, Tangzhen Industry Park, Pudong
City:	Shanghai
Post code:	201201
Country:	P. R. China
Contact:	Xu Kai
Telephone:	+86-021-50791141/2/3
Fax:	+86-021-50791141/2/3-8000
Website:	http://www.ta-shanghai.com
E-mail:	xukai@ta-shanghai.com

2. General Description of Equipment under Test

Client Information

Applicant	Datalogic S.r.l.
Applicant address	Via San Vitalino no. 13, Calderara di Reno – 40012 (BO) - Italy
Manufacturer	Datalogic S.r.l.
Manufacturer address	Via San Vitalino no. 13, Calderara di Reno – 40012 (BO) - Italy

General information

EUT Description	
Model	MEMOR 10
IMEI	359761090202384
Hardware Version	V00 (EU)
Software Version	0.02.06D.20180716_302_userdebug
Power Supply	Battery/AC adapter
Antenna Type	Internal Antenna
Antenna Gain	2.6 dBi
additional beamforming gain	NA
Test Mode(s)	U-NII-1(5150MHz-5250MHz) U-NII-2A(5250MHz-5350MHz) U-NII-2C(5470MHz-5725MHz with 5600MHz -5650MHz) U-NII-3(5725MHz-5850MHz)
Modulation Type	802.11ac (VHT80): OFDM
Max. Conducted Power	15.22 dBm
Operating Frequency Range(s)	U-NII-1: 5150-5250MHz U-NII-2A:5250-5350MHz U-NII-2C:5470-5725MHz (with 5600MHz -5650MHz) U-NII-3: 5725-5850MHz
Operating temperature range:	-30 ° C to 50° C
Operating voltage range:	3.6 V to 4.35 V
State AC voltage:	3.8V
EUT Accessory	
Adapter	Manufacturer: Ten Pao Model: S008ACM0500200
Battery	Manufacturer: SCUD (Fujian) Electronics Co., LTD. Model: BTDL35

USB Cable	Manufacturer: JUWEI ELECTRONICS CO., LTD USB2.0 A/M T0 TYPE C/M CABLE 1.2M
Note: The information of the EUT is declared by the manufacturer.	

3. Applied Standards

According to the specifications of the manufacturer, it must comply with the requirements of the following standards:

FCC CFR47 Part 15E (2018) Unlicensed National Information Infrastructure Devices

ANSI C63.10 (2013)

KDB 789033 D02 General UNII Test Procedures New Rules v02r01

KDB 662911 D01 Multiple Transmitter Output v02r01

4. Test Configuration

Test Mode

The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application.

The radiated emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in lie-down position (X axis) and the worst case was recorded.

In order to find the worst case condition, Pre-tests are needed at the presence of different data rate. Preliminary tests have been done on all the configuration for confirming worst case. Data rate below means worst-case rate of each test item.

Worst-case data rates are shown as following table.

Band	**Data Rate**
802.11ac VHT80	MCS0

Wireless Technology and Frequency Range

Wireless Technology		**Bandwidth**	**Channel**	**Frequency**
Wi-Fi	U-NII-1	80 MHz	42	5210MHz
	U-NII-2A	80 MHz	58	5290MHz
	U-NII-2C	80 MHz	106	5530MHz
			122	5610MHz
			138	5690MHz
	U-NII-3	80 MHz	155	5775MHz
Does this device support TPC Function? ☒Yes ☐No				
Does this device support TDWR Band? ☒Yes ☐No				

5. Test Case Results

5.1. Occupied Bandwidth

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

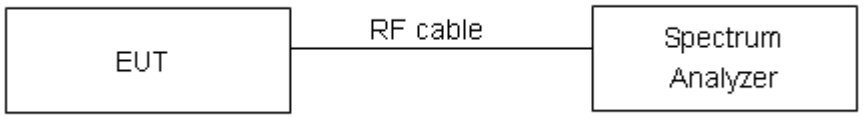
For U-NII-1/U-NII-2A/U-NII-2C, set RBW ≈1% OCB kHz, VBW ≥ 3 × RBW, measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower frequencies) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

For U-NII-3, Set RBW = 100 kHz, VBW ≥ 3 × RBW, 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.

Note: The automatic bandwidth measurement capability of a spectrum analyzer or EMI receiver may be employed if it implements the functionality described above.

Use the 99 % power bandwidth function of the instrument

Test Setup



Limits

Rule FCC Part §15.407(e)

Within the 5.725-5.85 GHz band, the minimum 6 dB bandwidth of U-NII devices shall be at least 500 kHz.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936 Hz.

Test Results:

U-NII-1

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11ac VHT80	5210	75.154	80.800	PASS

U-NII-2A

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11ac VHT80	5290	75.438	80.700	PASS

U-NII-2C

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 26 dB bandwidth (MHz)	Conclusion
802.11ac VHT80	5530	75.296	81.060	PASS

U-NII-3

Network Standards	Carrier frequency (MHz)	99% bandwidth (MHz)	Minimum 6 dB bandwidth (MHz)	Limit (kHz)	Conclusion
802.11ac VHT80	5775	75.186	75.210	500	PASS

U-NII-1, 802.11ac VHT80

Carrier frequency (MHz): 5210

U-NII-2A, 802.11ac VHT80

Carrier frequency (MHz): 5290

U-NII-2C, 802.11ac VHT80

Carrier frequency (MHz): 5530

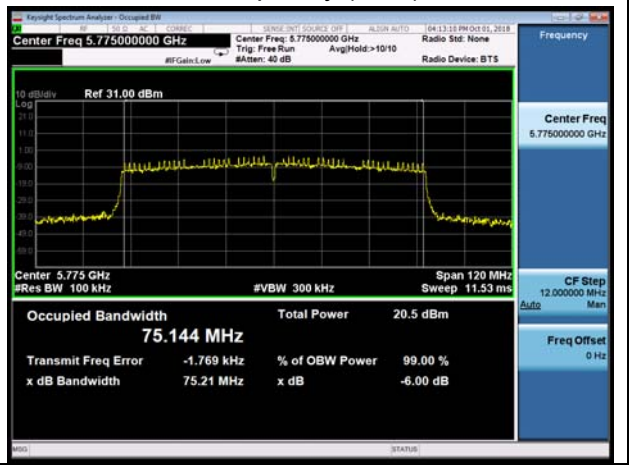
99% bandwidth	Minimum 6 dB bandwidth

U-NII-3, 802.11ac VHT80

Carrier frequency (MHz): 5775

U-NII-3, 802.11ac VHT80

Carrier frequency (MHz): 5775



5.2. Average Power Output –Conducted

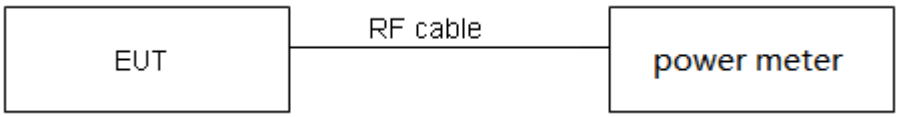
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

During the process of the testing, The EUT was connected to the average power meter through an external attenuator and a known loss cable. The EUT is max power transmission with proper modulation. We use Maximum average Conducted Output Power Level Method in KDB789033 for this test

Test Setup



Limits

Rule FCC Part 15.407(a)(1)(2)(3)
(1) For the band 5.15-5.25 GHz.
(i) For an outdoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi. The maximum e.i.r.p. at any elevation angle above 30 degrees as measured from the horizon must not exceed 125 mW (21 dBm).
(ii) For an indoor access point operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(iii) For fixed point-to-point access points operating in the band 5.15-5.25 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. Fixed point-to-point U-NII devices may employ antennas with directional gain up to 23 dBi without any corresponding reduction in the maximum conducted output power or maximum power spectral density. For fixed point-to-point transmitters that employ a directional antenna gain greater than 23 dBi, a 1 dB reduction in maximum conducted output power and maximum power spectral density is required for each 1 dB of antenna gain in excess of 23 dBi. Fixed, point-to-point operations exclude

the use of point-to-multipoint systems, omnidirectional applications, and multiple collocated transmitters transmitting the same information. The operator of the U-NII device, or if the equipment is professionally installed, the installer, is responsible for ensuring that systems employing high gain directional antennas are used exclusively for fixed, point-to-point operations.

(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(2) For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum conducted output power over the frequency bands of operation shall not exceed the lesser of 250 mW or 11 dBm + 10 log B, where B is the 26 dB emission bandwidth in megahertz. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

(3)For the band 5.725-5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W. In addition, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.44 dB.

Test Results

Band	T_{on} (ms)	$T_{(on+off)}$ (ms)	Duty cycle	Duty cycle correction Factor(dB)
802.11ac VHT80	0.32	0.36	0.90	0.46
Note: when Duty cycle>0.98, Duty cycle correction Factor not required.				

Single Antenna Power Index				
Packet Type	CH42	CH58	CH106	CH155
802.11ac VHT80	16	16	16	16

Network Standards		Channel /Frequency (MHz)	B=26 dB bandwidth (MHz)	Limit 11 dBm + 10 log B (dBm)	Final Limit (dBm)
U-NII-2A	802.11ac VHT80	58/5290	80.70	30.07>24	24
U-NII-2C	802.11ac VHT80	106/5530	81.06	30.09>24	24
Note: 250mW=24dBm					

U-NII-1

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11ac VHT80	42/5210	13.88	14.34	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2A

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11ac VHT80	58/5290	14.76	15.22	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-2C

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11ac VHT80	106/5530	14.11	14.57	24.00	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

U-NII-3

Network Standards	Channel/ Frequency (MHz)	Average Power Measured (dBm)	Average Power with duty factor (dBm)	Limit (dBm)	Conclusion
802.11ac VHT80	155/5775	13.19	13.65	30	PASS
Note: Average Power with duty factor = Average Power Measured +Duty cycle correction factor					

5.3. Frequency Stability

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

1. Frequency stability with respect to ambient temperature

a) Supply the EUT with a nominal ac voltage or install a new or fully charged battery in the EUT. If possible, a dummy load shall be connected to the EUT because an antenna near the metallic walls of an environmental test chamber could affect the output frequency of the EUT. If the EUT is equipped with a permanently attached, adjustable-length antenna, then the EUT shall be placed in the center of the chamber with the antenna adjusted to the shortest length possible. Turn ON the EUT and tune it to one of the number of frequencies shown in 5.6.

b) Couple the unlicensed wireless device output to the measuring instrument by connecting an antenna to the measuring instrument with a suitable length of coaxial cable and placing the measuring antenna near the EUT (e.g., 15 cm away), or by connecting a dummy load to the measuring instrument, through an attenuator if necessary.

c) Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).

d) Turn the EUT OFF and place it inside the environmental temperature chamber. For devices that have oscillator heaters, energize only the heater circuit.

e) Set the temperature control on the chamber to the highest specified in the regulatory requirements for the type of device and allow the oscillator heater and the chamber temperature to stabilize.

f) While maintaining a constant temperature inside the environmental chamber, turn the EUT ON and record the operating frequency at startup, and at 2 minutes, 5 minutes, and 10 minutes after the EUT is energized. Four measurements in total are made.

g) Measure the frequency at each of frequencies specified in 5.6.

h) Switch OFF the EUT but do not switch OFF the oscillator heater.

i) Lower the chamber temperature by not more that 10 C, and allow the temperature inside the chamber to stabilize.

j) Repeat step f) through step i) down to the lowest specified temperature.

2. Frequency stability when varying supply voltage

Unless otherwise specified, these tests shall be made at ambient room temperature (+15 C to +25 C). An antenna shall be connected to the antenna output terminals of the EUT if possible. If the EUT is equipped with or uses an adjustable-length antenna, then it shall be fully extended.

a) Supply the EUT with nominal voltage or install a new or fully charged battery in the EUT. Turn ON the EUT and couple its output to a frequency counter or other frequency-measuring instrument.

b) Tune the EUT to one of the number of frequencies required in 5.6. Adjust the location of the measurement antenna and the controls on the measurement instrument to obtain a suitable signal level (i.e., a level that will not overload the measurement instrument but is strong enough to allow measurement of the operating or fundamental frequency of the EUT).
c) Measure the frequency at each of the frequencies specified in 5.6.
d) Repeat the above procedure at 85% and 115% of the nominal supply voltage.

Limit

Manufacturers of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the users manual.

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 936Hz

Test Results

Voltage (V)	Temperature (°C)	U-NII-1 Test Results			
		5210MHz			
		1min	2min	5min	10min
3.8	-20	5209.999861	5209.992196	5209.984982	5209.983678
3.8	-10	5209.994896	5209.986917	5209.984452	5209.983262
3.8	0	5209.986700	5209.985475	5209.975446	5209.974161
3.8	10	5209.981945	5209.981320	5209.973663	5209.972208
3.8	20	5209.976425	5209.973802	5209.966568	5209.969457
3.8	30	5209.972074	5209.964026	5209.966494	5209.964586
3.8	40	5209.967052	5209.957328	5209.963913	5209.960074
3.8	50	5209.964206	5209.951974	5209.958684	5209.950175
3.6	20	5209.958066	5209.949512	5209.958449	5209.949174
4.35	20	5209.953322	5209.949473	5209.955637	5209.942108
MHz		-0.046678	-0.050527	-0.044363	-0.057892
PPM		-8.959283	-9.697991	-8.514935	-11.111786

Voltage (V)	Temperature (°C)	U-NII-2A Test Results			
		5290MHz			
		1min	2min	5min	10min
3.8	-20	5289.992146	5289.987456	5289.980721	5289.972792
3.8	-10	5289.985056	5289.978150	5289.975807	5289.968827
3.8	0	5289.982852	5289.973067	5289.969129	5289.965439
3.8	10	5289.976725	5289.972876	5289.968140	5289.963167
3.8	20	5289.973598	5289.970003	5289.960788	5289.961330
3.8	30	5289.973588	5289.967382	5289.956552	5289.956631
3.8	40	5289.971872	5289.959380	5289.949047	5289.954937
3.8	50	5289.967648	5289.949738	5289.945619	5289.948034
3.6	20	5289.961364	5289.943154	5289.935672	5289.941573
4.35	20	5289.956450	5289.937380	5289.926894	5289.935930
MHz		-0.043550	-0.062620	-0.073106	-0.064070
PPM		-8.232483	-11.837466	-13.819572	-12.111514

Voltage (V)	Temperature (°C)	U-NII-2C Test Results			
		5530MHz			
		1min	2min	5min	10min
3.8	-20	5529.993544	5529.988181	5529.982121	5529.979535
3.8	-10	5529.984857	5529.978825	5529.981509	5529.971653
3.8	0	5529.983846	5529.970520	5529.976574	5529.967556
3.8	10	5529.981289	5529.968472	5529.972400	5529.964413
3.8	20	5529.979268	5529.959110	5529.968427	5529.958015
3.8	30	5529.977636	5529.951111	5529.967082	5529.953748
3.8	40	5529.975617	5529.941134	5529.957941	5529.948157
3.8	50	5529.972983	5529.938160	5529.955965	5529.940328
3.6	20	5529.964762	5529.931841	5529.953180	5529.939191
4.35	20	5529.959251	5529.929029	5529.951030	5529.938042
MHz		-0.040749	-0.070971	-0.048970	-0.061958
PPM		-7.368791	-12.833807	-8.855260	-11.204065

Voltage (V)	Temperature (°C)	U-NII-3 Test Results			
		5775MHz			
		1min	2min	5min	10min
3.8	-20	5774.997020	5774.996226	5774.992843	5774.983280
3.8	-10	5774.988332	5774.994222	5774.992067	5774.980295
3.8	0	5774.980607	5774.984368	5774.990694	5774.978150
3.8	10	5774.973162	5774.975002	5774.984867	5774.973190
3.8	20	5774.963730	5774.973823	5774.979475	5774.971889
3.8	30	5774.957931	5774.972161	5774.973013	5774.965919
3.8	40	5774.951513	5774.966465	5774.972744	5774.959177
3.8	50	5774.947058	5774.958201	5774.965473	5774.957198
3.6	20	5774.938814	5774.952306	5774.958413	5774.948864
4.35	20	5774.935072	5774.945543	5774.954845	5774.947663
MHz		-0.064928	-0.054457	-0.045155	-0.052337
PPM		-11.243016	-9.429848	-7.819016	-9.062758

5.4. Power Spectral Density

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

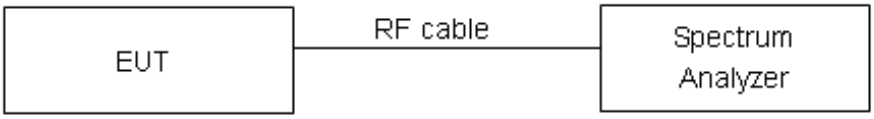
The EUT was connected to the spectrum analyzer through an external attenuator (20dB) and a known loss cable.

Set RBW = 500 kHz, VBW =1.5MHz for the band 5.725-5.85 GHz

Set RBW = 1 MHz, VBW =3MHz for the band 5.150-5.250 GHz

The conducted PSD is measured at each antenna port. The measured results at the various antenna ports are then summed mathematically.

Test setup



Limits

Rule FCC Part 15.407(a)(1)/ Part 15.407(a)(2) / Part 15.407(a)(3)
For an indoor access point operating in the band 5.15-5.25 GHz, the maximum power spectral density shall not exceed 17 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
(iv) For client devices in the 5.15-5.25 GHz band, the maximum conducted output power over the frequency band of operation shall not exceed 250 mW provided the maximum antenna gain does not exceed 6 dBi. In addition, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the 5.25-5.35 GHz and 5.47-5.725 GHz bands, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.
For the band 5.725-5.85 GHz, the maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmittingantennas of directional gain greater than 6 dBi are used, both the maximum conducted output power and the maximum power spectral density shall be reduced by the

amount in dB that the directional gain of the antenna exceeds 6 dBi.

Frequency Bands/MHz	Limits
5150-5250	11dBm/MHz
5.25-5.35 GHz and 5.47-5.725 GHz	11dBm/MHz
5725-5850	30dBm/500kHz

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 2, U= 0.75dB.

Test Results:

Note: Power Spectral Density =Read Value+Duty cycle correction factor

U-NII-1

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11ac VHT80	42	-2.81	-2.35	11	PASS

U-NII-2A

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11ac VHT80	58	-1.56	-1.10	11	PASS

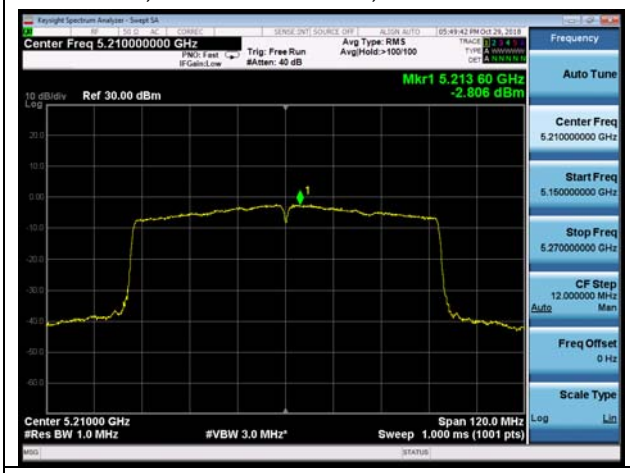
U-NII-2C

Network Standards	Channel Number	Read Value (dBm /MHz)	Power Spectral Density (dBm /MHz)	Limit (dBm /MHz)	Conclusion
802.11ac VHT80	106	-2.52	-2.07	11	PASS

U-NII-3

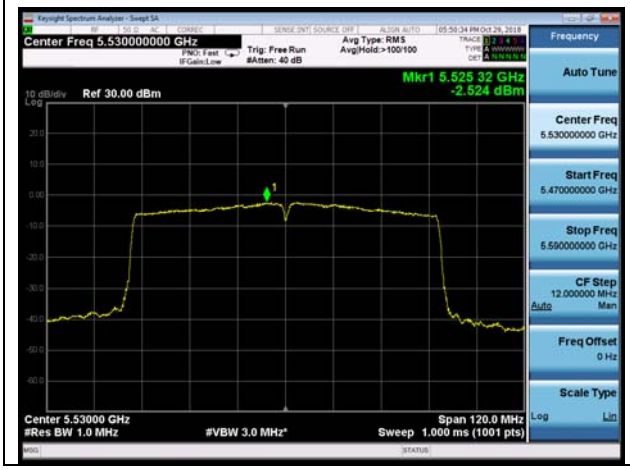
Network Standards	Channel Number	Read Value (dBm/500kHz)	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Conclusion
802.11ac VHT80	155	-5.82	-5.36	30	PASS

U-NII-1, 802.11ac VHT80, Channel No.: 42



U-NII-2A, 802.11ac VHT80, Channel No.: 58

U-NII-2C, 802.11ac VHT80, Channel No.: 106



U-NII-3, 802.11ac VHT80, Channel No.: 155

5.5. Unwanted Emission

Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10-2013. The Equipment Under Test (EUT) was set up on a non-conductive table in the semi-anechoic chamber. The test was performed at the distance of 3 m between the EUT and the receiving antenna. The radiated emissions measurements were made in a typical installation configuration.
Sweep the whole frequency band range from 9kHz to the 10th harmonic of the carrier, and the emissions less than 20 dB below the permissible value are reported.

During the test, the height of receive antenna shall be moved from 1 to 4 meters, and the antenna shall be performed under horizontal and vertical polarization. The turntable shall be rotated from 0 to 360 degrees for detecting the maximum of radiated spurious signal level. The measurements shall be repeated with orthogonal polarization of the test antenna. The data of cable loss and antenna factor has been calibrated in full testing frequency range before the testing.
Set the spectrum analyzer in the following:
Below 1GHz (detector: Peak and Quasi-Peak)
RBW=100kHz / VBW=300kHz / Sweep=AUTO
Above 1GHz (detector: Peak):
I) Peak emission levels are measured by setting the instrument as follows:
1) RBW = 1 MHz.
2) VBW ≥ [3 × RBW]
3) Detector = peak.
4) Sweep time = auto.
5) Trace mode = max hold.
6) Allow sweeps to continue until the trace stabilizes. Note that if the transmission is not continuous, then the time required for the trace to stabilize will increase by a factor of approximately 1 / D, where D is the duty cycle.

II) Average emission levels are measured by setting the instrument as follows:
a) RBW = 1 MHz.
b) VBW ≥ [3 × RBW].
c) Detector = RMS (power averaging), if [span / (# of points in sweep)] ≤ RBW / 2. Satisfying this condition can require increasing the number of points in the sweep or reducing the span. If the condition is not satisfied, then the detector mode shall be set to peak.
d) Averaging type = power (i.e., rms) (As an alternative, the detector and averaging type may be set for linear voltage averaging. Some instruments require linear display mode to use linear voltage averaging. Log or dB averaging shall not be used.)
e) Sweep time = auto.

f) Perform a trace average of at least 100 traces if the transmission is continuous. If the transmission is not continuous, then the number of traces shall be increased by a factor of 1 / D, where D is the duty cycle. For example, with 50% duty cycle, at least 200 traces shall be averaged. (If a specific emission is demonstrated to be continuous—i.e., 100% duty cycle—then rather than turning ON and OFF with the transmit cycle, at least 100 traces shall be averaged.)

g) If tests are performed with the EUT transmitting at a duty cycle less than 98%, then a correction factor shall be added to the measurement results prior to comparing with the emission limit, to compute the emission level that would have been measured had the test been performed at 100% duty cycle. The correction factor is computed as follows:

1) If power averaging (rms) mode was used in the preceding step e), then the correction factor is [10 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 3 dB shall be added to the measured emission levels.

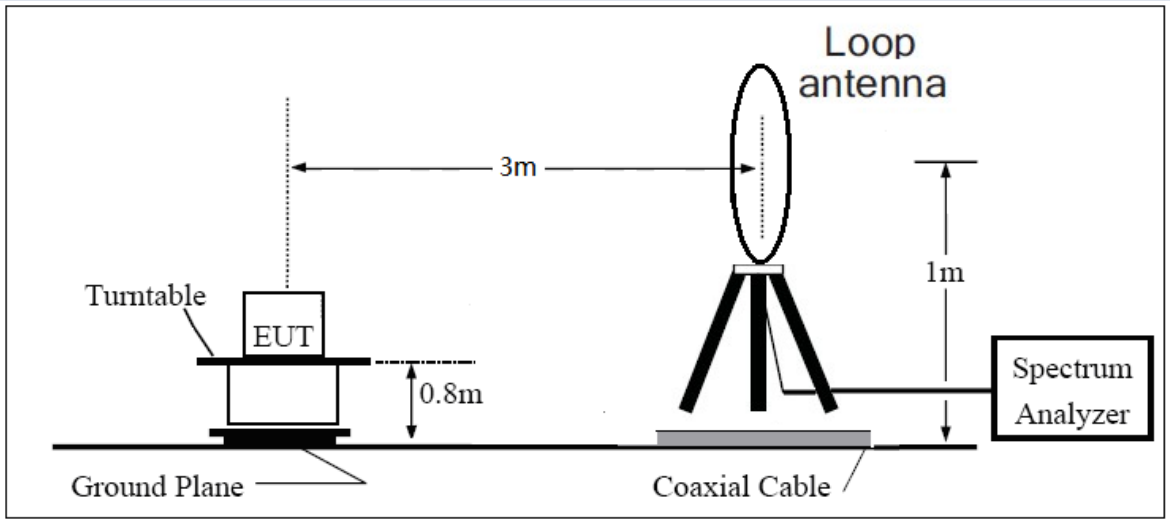
2) If linear voltage averaging mode was used in the preceding step e), then the correction factor is [20 log (1 / D)], where D is the duty cycle. For example, if the transmit duty cycle was 50%, then 6 dB shall be added to the measured emission levels.

3) If a specific emission is demonstrated to be continuous (100% duty cycle) rather than turning ON and OFF with the transmit cycle, then no duty cycle correction is required for that emission.

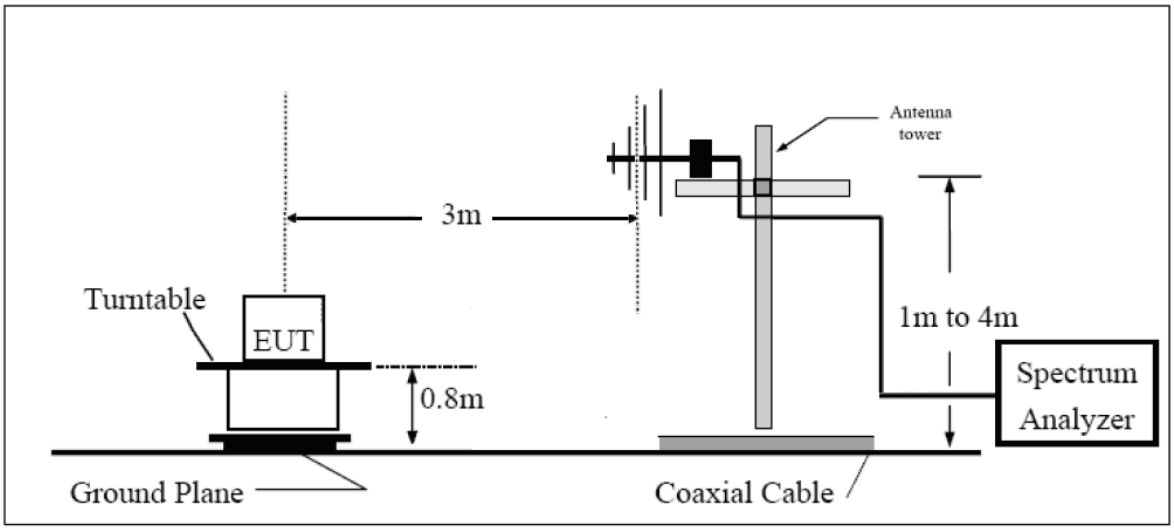
The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in stand-up position (Z axis) and the antenna is vertical.

The test is in transmitting mode.

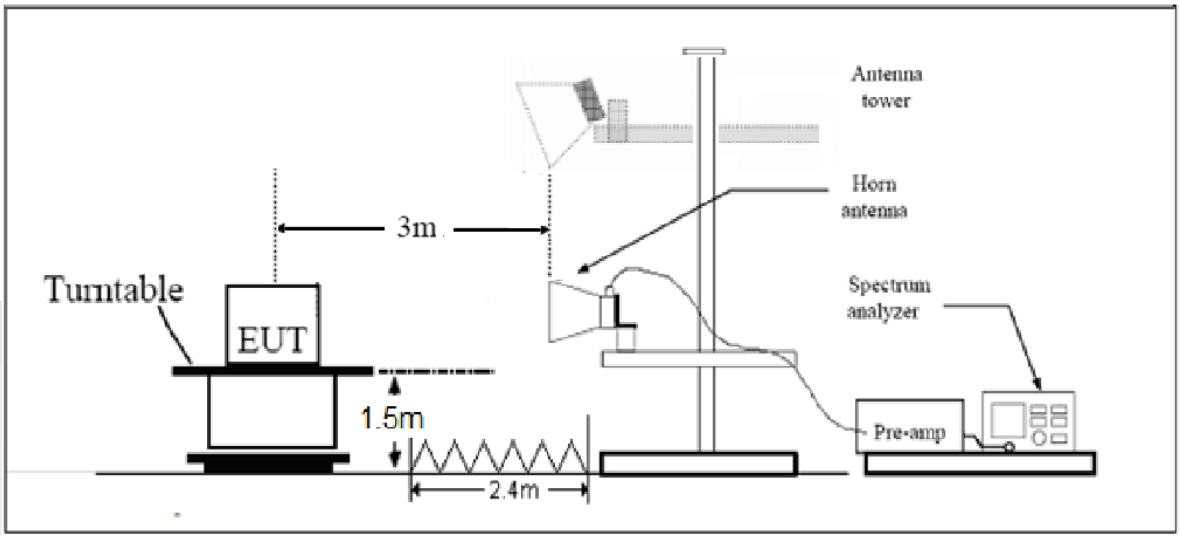
9KHz~~~30MHz



30MHz~~~ 1GHz



Above 1GHz



Note: Area side:2.4mX3.6m

Limits

(1) For transmitters operating in the 5725-5850 MHz band: All emissions shall be limited to a level of −27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(2) 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 e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

(3) 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 e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

(4) 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 e.i.r.p. of −27 dBm/MHz(68.2dBμV/m).

Note: the following formula is used to convert the EIRP to field strength

§1、E[dBμV/m] = EIRP[dBm] - 20 log(d[meters]) + 104.77, where E = field strength and

d = distance at which field strength limit is specified in the rules;

§2、E[dBμV/m] = EIRP[dBm] + 95.2, for d = 3 meters

(5) Unwanted spurious emissions fallen in restricted bands per FCC Part15.205 shall comply with the general field strength limits set forth in § 15.209 as below table.

Frequency of emission (MHz)	Field strength(uV/m)	Field strength(dBuV/m)
0.009–0.490	2400/F(kHz)	/
0.490–1.705	24000/F(kHz)	/
1.705–30.0	30	/
30-88	100	40
88-216	150	43.5
216-960	200	46
Above960	500	54

MHz	MHz	MHz	GHz
0.090 - 0.110	16.42 - 16.423	399.9 - 410	4.5 - 5.15
[1]0.495 - 0.505	16.69475 - 16.69525	608 - 614	5.35 - 5.46
2.1735 - 2.1905	16.80425 - 16.80475	960 - 1240	7.25 - 7.75
4.125 - 4.128	25.5 - 25.67	1300 - 1427	8.025 - 8.5
4.17725 - 4.17775	37.5 - 38.25	1435 - 1626.5	9.0 - 9.2
4.20725 - 4.20775	73 - 74.6	1645.5 - 1646.5	9.3 - 9.5
6.215 - 6.218	74.8 - 75.2	1660 - 1710	10.6 - 12.7
6.26775 - 6.26825	108 - 121.94	1718.8 - 1722.2	13.25 - 13.4
6.31175 - 6.31225	123 - 138	2200 - 2300	14.47 - 14.5
8.291 - 8.294	149.9 - 150.05	2310 - 2390	15.35 - 16.2
8.362 - 8.366	156.52475 - 156.52525	2483.5 - 2500	17.7 - 21.4
8.37625 - 8.38675	156.7 - 156.9	2690 - 2900	22.01 - 23.12
8.41425 - 8.41475	162.0125 - 167.17	3260 - 3267	23.6 - 24.0
12.29 - 12.293	167.72 - 173.2	3332 - 3339	31.2 - 31.8
12.51975 - 12.52025	240 - 285	3345.8 - 3358	36.43 - 36.5
12.57675 - 12.57725	322 - 335.4	3600 - 4400	([2])
13.36 - 13.41			

Measurement Uncertainty

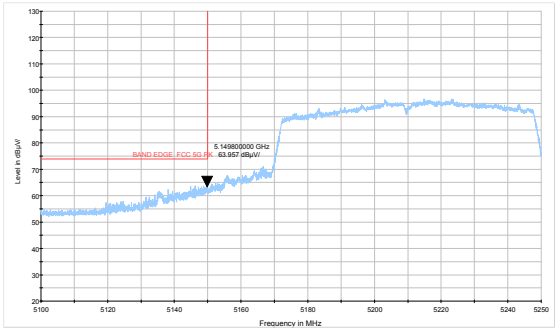
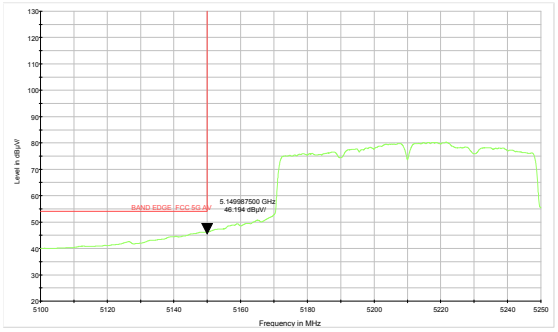
The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor *k* = 1.96.

Frequency	Uncertainty
9KHz-30MHz	3.55 dB
30MHz-200MHz	4.19 dB
200MHz-1GHz	3.63 dB
1GHz-26.5G	3.68 dB
26.5G-40GHz	4.76dB

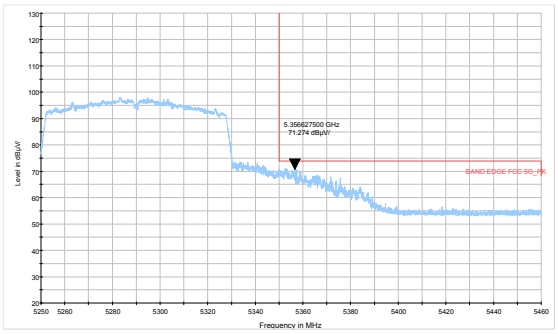
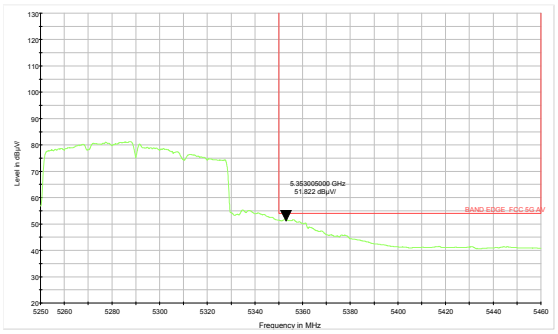
Test Results:

The signal beyond the limit is carrier.

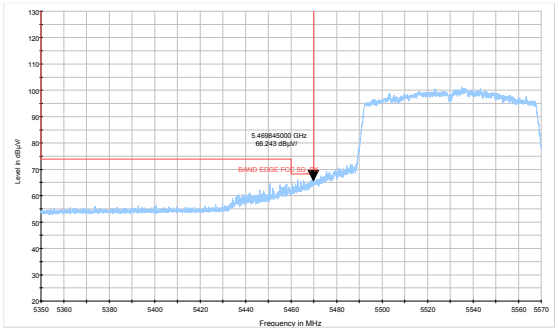
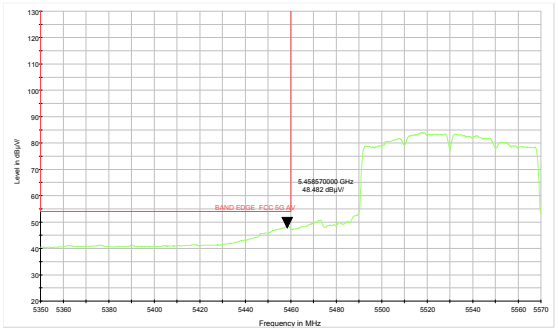
U-NII-1

802.11ac VHT80 –Channel 42: Peak	802.11ac VHT80- Channel 42: Average
	

U-NII-2A

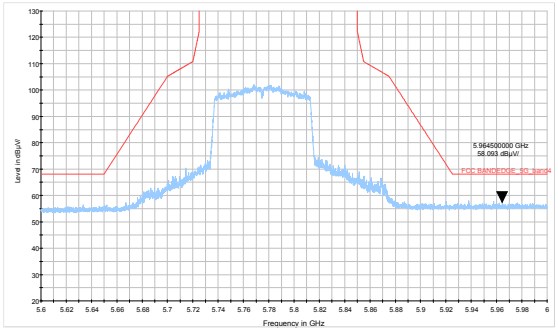
802.11ac VHT80 –Channel 58: Peak	802.11ac VHT80- Channel 58: Average
	

U-NII-2C

802.11ac VHT80 –Channel 106: Peak	802.11ac VHT80- Channel 106: Average
	

U-NII-3

802.11ac VHT80- Channel 155: Peak



Result of RE

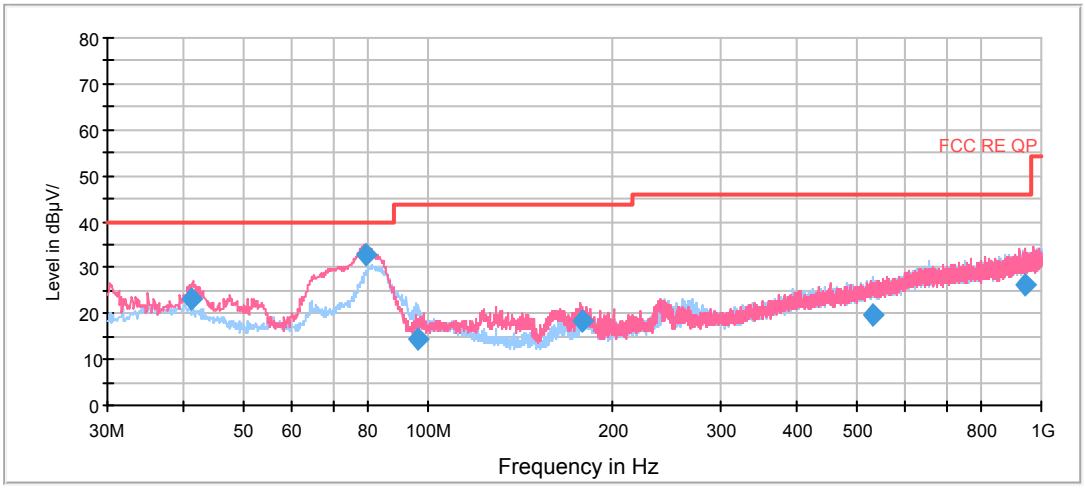
Test result

Sweep the whole frequency band through the range from 9kHz to the 10th harmonic of the carrier, the Emissions in the frequency band 9kHz-30MHz and 26.5GHz-40GHz are more than 20dB below the limit are not reported.

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11ac VHT80, Channel 58 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

Continuous TX mode:

RE 0.03-1GHz QP Class B



Radiates Emission from 30MHz to 1GHz

Frequency (MHz)	Quasi-Peak (dBuV/m)	Reading value (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
41.037500	23.2	6.7	100.0	V	25.0	16.5	16.8	40.0
79.222500	32.8	22.3	100.0	V	46.0	10.5	7.2	40.0
95.966250	14.5	1.5	200.0	H	10.0	13.0	29.0	43.5
177.841250	18.3	7.4	100.0	V	195.0	10.9	25.2	43.5
530.962500	19.6	-2.0	200.0	H	327.0	21.6	26.4	46.0
939.866250	26.4	-0.5	100.0	V	25.0	26.9	19.6	46.0

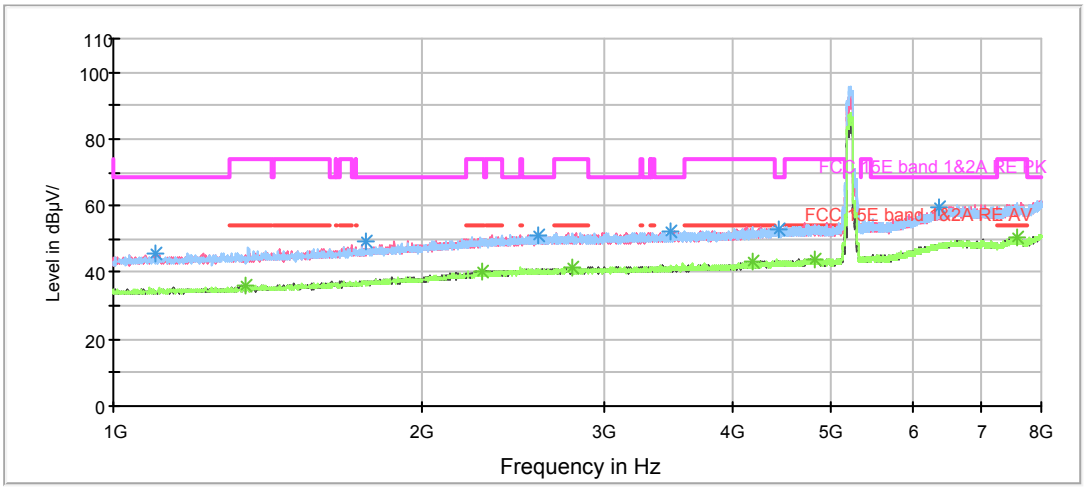
Remark: 1. Quasi-Peak = Reading value + Correction factor

2. Correction Factor = Antenna factor+ Insertion loss(cable loss+amplifier gain)

3. Margin = Limit – Quasi-Peak

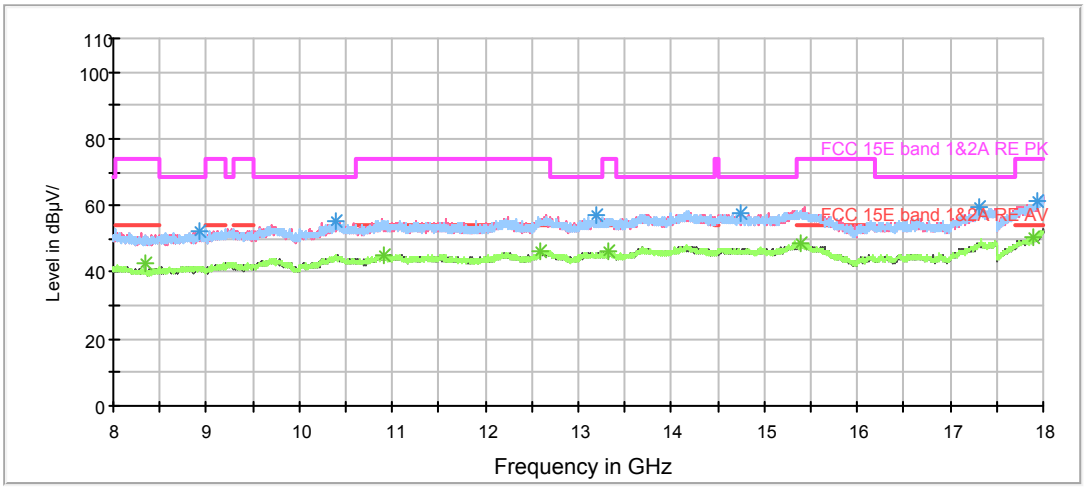
802.11ac (HT80) CH42

FCC RE 1G-18GHz PK+AV Class B



Note: The signal beyond the limit is carrier.
Radiates Emission from 1GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1097.125000	45.9	100.0	V	354.0	47.1	-1.2	22.4	68.3
1760.375000	49.2	100.0	V	234.0	47.2	2.0	19.1	68.3
2595.125000	51.0	100.0	V	356.0	45.1	5.9	17.3	68.3
3488.500000	52.1	200.0	H	300.0	45.1	7.0	16.2	68.3
4444.875000	53.0	200.0	H	359.0	43.9	9.1	15.3	68.3
6349.750000	59.8	200.0	H	359.0	45.0	14.8	8.5	68.3

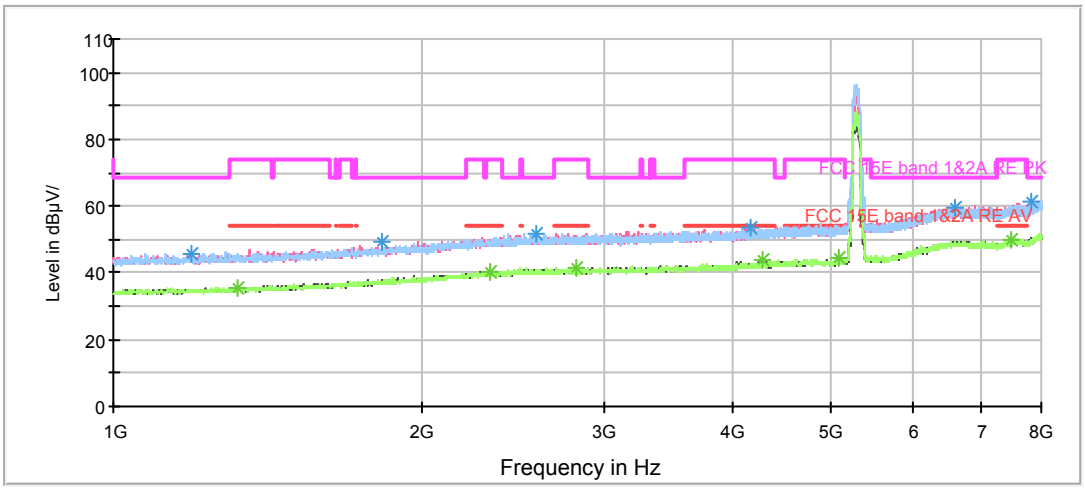
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1344.750000	36.1	200.0	V	125.0	36.4	-0.3	17.9	54
2281.000000	40.5	200.0	V	44.0	35.6	4.9	13.5	54
2799.000000	41.6	200.0	V	30.0	35.4	6.2	12.4	54
4188.500000	43.3	200.0	V	0.0	34.9	8.4	10.7	54
4825.500000	43.9	200.0	V	152.0	34.3	9.6	10.1	54
7594.875000	50.6	200.0	V	282.0	34.5	16.1	3.4	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH58

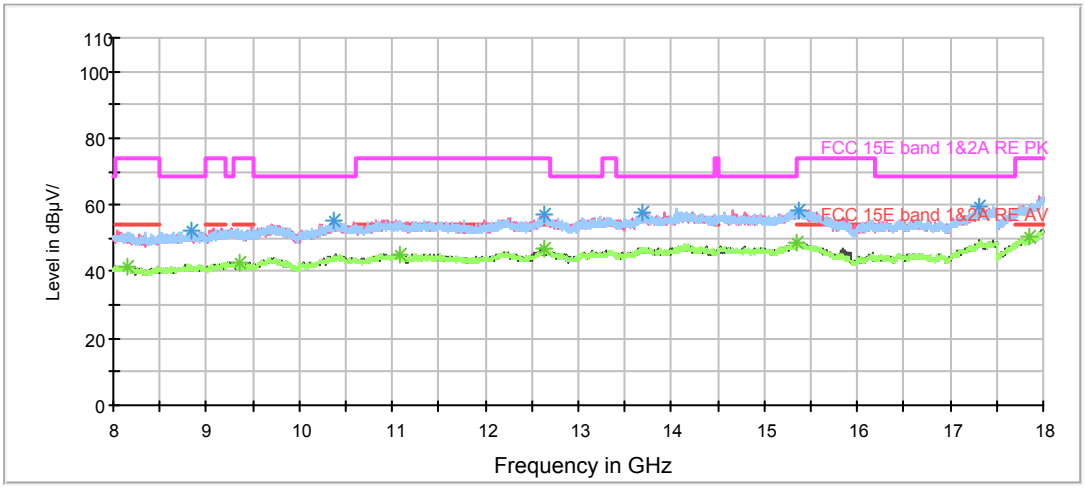
FCC RE 1G-18GHz PK+AV Class B



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1189.000000	45.9	200.0	V	44.0	46.9	-1.0	22.4	68.3
1826.875000	49.5	100.0	H	117.0	47.1	2.4	18.8	68.3
2584.625000	51.9	100.0	V	359.0	46.0	5.9	16.4	68.3
4175.375000	53.7	200.0	H	196.0	45.3	8.4	20.3	74
6609.625000	59.6	200.0	H	252.0	44.1	15.5	8.7	68.3
7837.250000	61.1	200.0	H	320.0	44.1	17.0	7.2	68.3

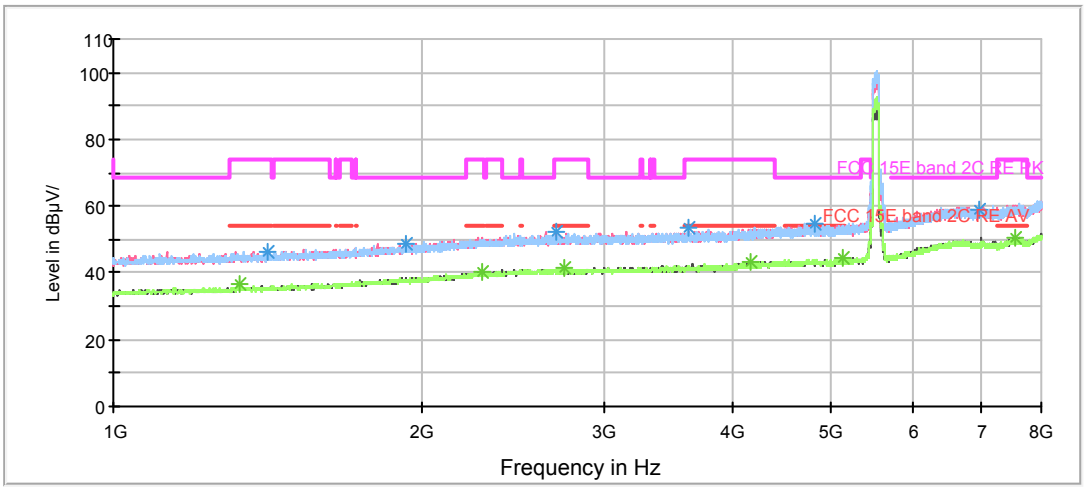
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1319.375000	35.7	200.0	V	21.0	36.1	-0.4	18.3	54
2827.875000	41.3	200.0	V	210.0	35.0	6.3	12.7	54
4278.625000	43.7	200.0	V	57.0	35.0	8.7	10.3	54
5080.125000	44.4	100.0	H	24.0	34.6	9.8	9.6	54
2328.250000	40.3	100.0	V	136.0	35.2	5.1	13.7	54
7488.125000	50.1	200.0	V	7.0	34.3	15.8	3.9	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH106

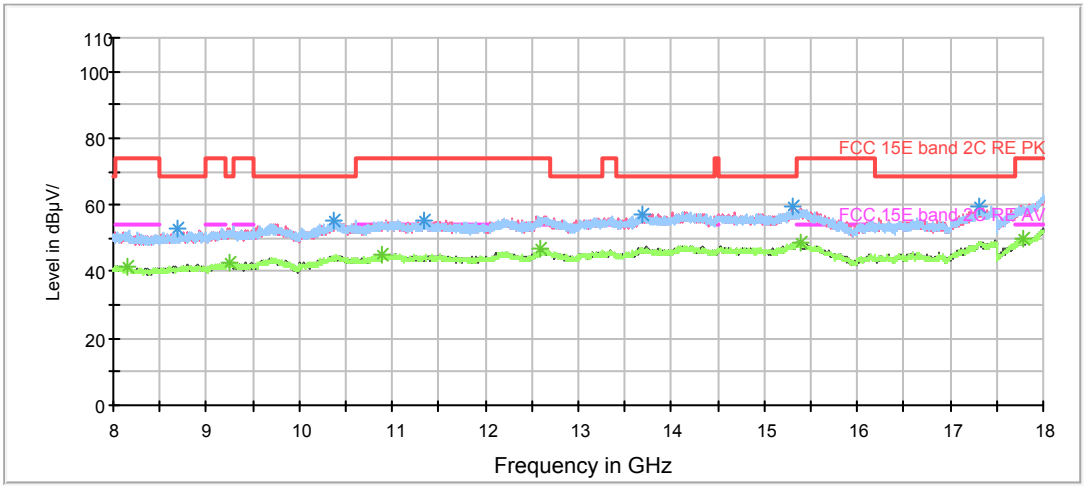
FCC RE 1G-18GHz PK+AV Class B



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1410.375000	46.4	100.0	V	296.0	46.4	0.0	27.6	74
1924.875000	48.9	200.0	V	23.0	46.1	2.8	19.4	68.3
2693.125000	52.2	100.0	V	214.0	46.1	6.1	21.8	74
3621.500000	53.3	200.0	H	225.0	46.0	7.3	20.7	74
4810.625000	54.6	200.0	H	247.0	45.1	9.5	13.7	68.3
6949.125000	59.2	200.0	H	288.0	44.1	15.1	9.1	68.3

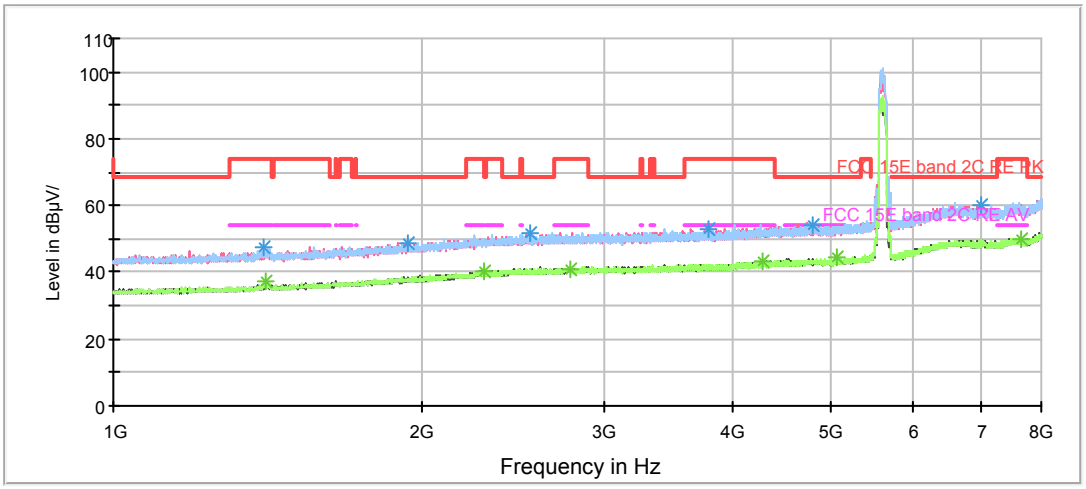
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1324.625000	36.8	100.0	H	8.0	37.2	-0.4	17.2	54
2283.625000	40.5	100.0	V	158.0	35.6	4.9	13.5	54
2743.000000	41.3	100.0	V	344.0	35.2	6.1	12.7	54
4174.500000	43.1	200.0	H	358.0	34.7	8.4	10.9	54
5120.375000	44.6	200.0	H	247.0	34.6	10.0	9.4	54
7552.875000	50.3	200.0	V	156.0	34.4	15.9	3.7	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH122

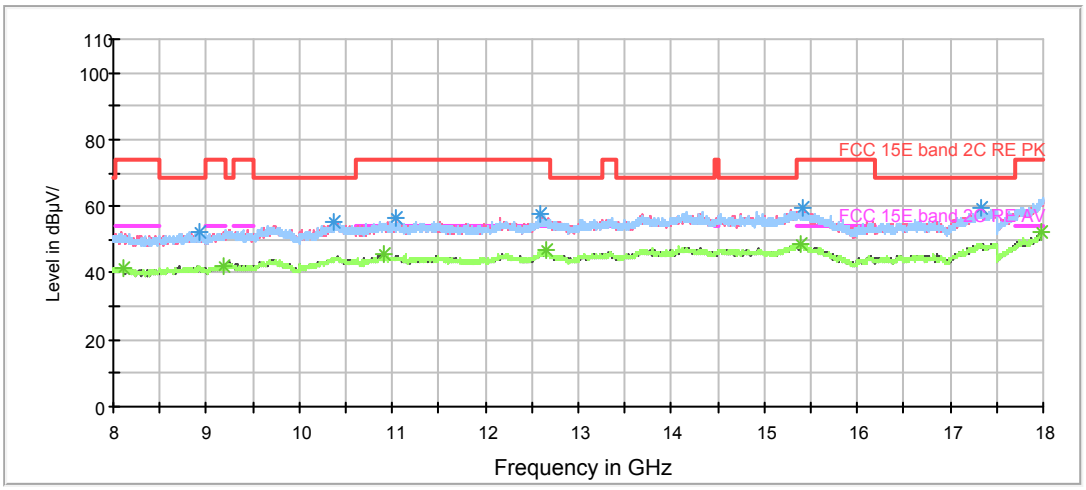
FCC RE 1G-18GHz PK+AV Class B



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1403.375000	47.2	100.0	H	195.0	47.2	0.0	26.8	74
1932.750000	48.6	100.0	V	354.0	45.8	2.8	19.7	68.3
2549.625000	51.8	100.0	V	76.0	46.0	5.8	16.5	68.3
3799.125000	53.2	200.0	V	19.0	45.6	7.6	20.8	74
4785.250000	54.1	200.0	V	179.0	44.6	9.5	14.2	68.3
7006.000000	59.9	200.0	H	0.0	44.8	15.1	8.4	68.3

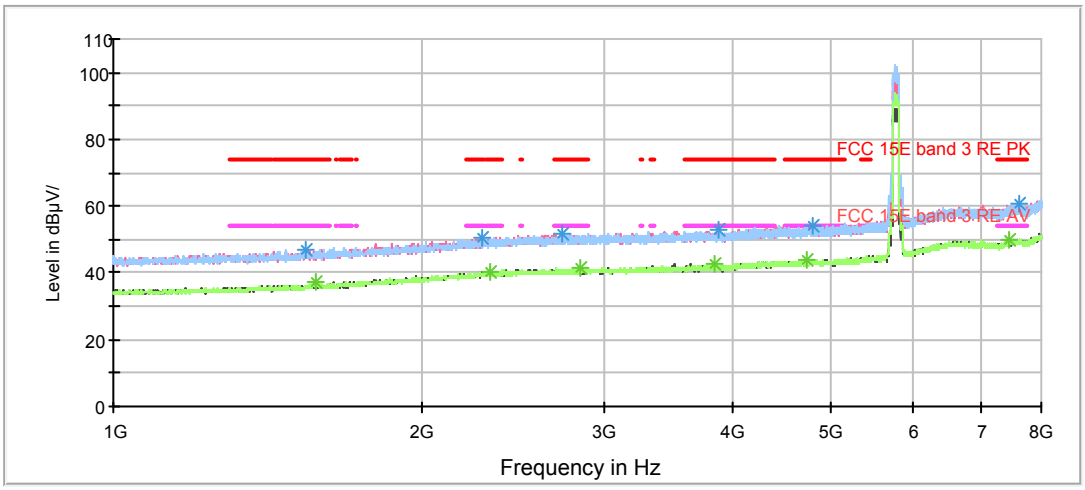
Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1406.875000	37.3	200.0	V	19.0	37.3	0.0	16.7	54
2294.125000	40.3	200.0	V	69.0	35.4	4.9	13.7	54
2788.500000	41.1	100.0	H	125.0	34.9	6.2	12.9	54
4284.750000	43.5	100.0	V	358.0	34.8	8.7	10.5	54
5066.125000	44.3	100.0	H	8.0	34.5	9.8	9.7	54
7641.250000	50.1	200.0	V	0.0	33.9	16.2	3.9	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

802.11ac (HT80) CH155

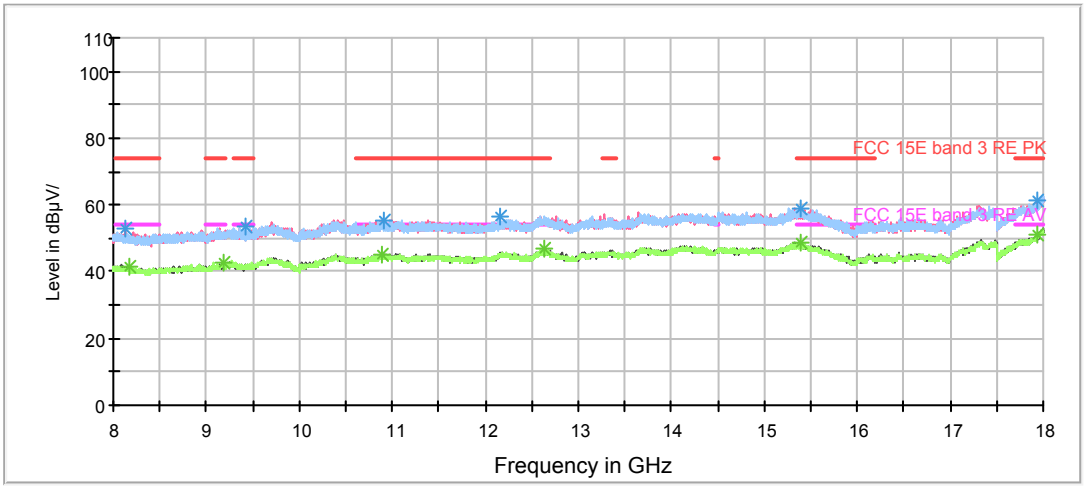
FCC RE 1G-18GHz PK+AV Class B



Note: The signal beyond the limit is carrier.

Radiates Emission from 1GHz to 8GHz

FCC RE 1G-18GHz PK+AV Class B



Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	Peak (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1537.250000	47.2	200.0	V	2.0	46.5	0.7	26.8	74
2288.000000	50.5	100.0	V	208.0	45.6	4.9	23.5	74
2729.875000	51.6	200.0	V	20.0	45.5	6.1	22.4	74
3877.000000	52.9	100.0	V	353.0	45.2	7.7	21.1	74
4789.625000	54.2	200.0	V	138.0	44.7	9.5	19.8	74
7616.750000	60.6	200.0	V	0.0	44.5	16.1	13.4	74

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

Frequency (MHz)	Average (dBuV/m)	Height (cm)	Polarization	Azimuth (deg)	Reading value (dBuV/m)	Correct Factor (dB)	Margin (dB)	Limit (dBuV/m)
1574.000000	37.5	100.0	H	232.0	36.6	0.9	16.5	54
2323.000000	40.4	200.0	V	30.0	35.3	5.1	13.6	54
2843.625000	41.3	200.0	V	288.0	35.0	6.3	12.7	54
3855.125000	42.7	100.0	V	235.0	35.1	7.6	11.3	54
4734.500000	44.0	100.0	H	4.0	34.5	9.5	10.0	54
7461.000000	50.1	200.0	V	4.0	34.4	15.7	3.9	54

Remark: 1. Correction Factor = Antenna factor+ Insertion loss (cable loss + amplifier gain)

5.6. Conducted Emission

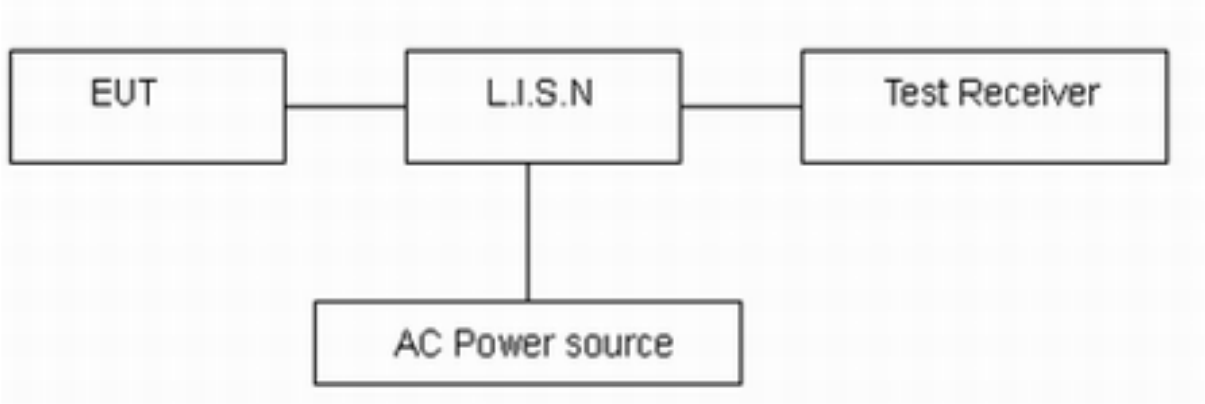
Ambient condition

Temperature	Relative humidity	Pressure
23°C ~25°C	45%~50%	101.5kPa

Methods of Measurement

The EUT IS placed on a non-metallic table of 80cm height above the horizontal metal reference ground plane. During the test, the EUT was operating in its typical mode. The test method is according to ANSI C63.10-2013.Connect the AC power line of the EUT to the LISN Use EMI receiver to detect the average and Quasi-peak value. RBW is set to 9kHz, VBW is set to 30kHz The measurement result should include both L line and N line.
The test is in transmitting mode.

Test Setup



Note: AC Power source is used to change the voltage 110V/60Hz.

Limits

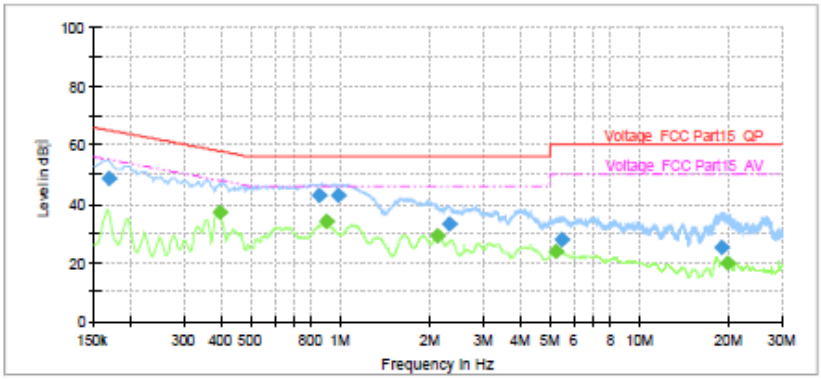
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

Measurement Uncertainty

The assessed measurement uncertainty to ensure 95% confidence level for the normal distribution is with the coverage factor k = 1.96, U= 2.69 dB.

Test Results:

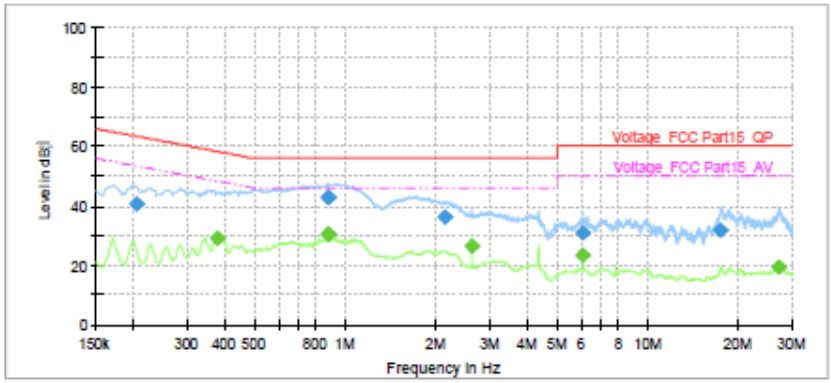
Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, 802.11ac-VHT80, Channel 58 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.168000	48.88	---	65.06	16.18	1000.0	9.000	L1	ON	19.1
0.393000	---	37.24	48.00	10.76	1000.0	9.000	L1	ON	19.2
0.845250	42.87	---	56.00	13.13	1000.0	9.000	L1	ON	19.2
0.901500	---	34.04	46.00	11.96	1000.0	9.000	L1	ON	19.2
0.987000	42.81	---	56.00	13.19	1000.0	9.000	L1	ON	19.2
2.112000	---	29.37	46.00	16.63	1000.0	9.000	L1	ON	19.1
2.298750	33.40	---	56.00	22.60	1000.0	9.000	L1	ON	19.0
5.235000	---	23.71	50.00	26.29	1000.0	9.000	L1	ON	19.1
5.471250	27.68	---	60.00	32.32	1000.0	9.000	L1	ON	19.1
18.894750	25.15	---	60.00	34.85	1000.0	9.000	L1	ON	19.6
19.664250	---	19.99	50.00	30.01	1000.0	9.000	L1	ON	19.7

L line

Conducted Emission from 150 KHz to 30 MHz



Frequency (MHz)	QuasiPeak (dBµV)	Average (dBµV)	Limit (dBµV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.203998	40.71	---	63.45	22.74	1000.0	9.000	N	ON	19.2
0.377250	---	29.22	48.34	19.12	1000.0	9.000	N	ON	19.2
0.872246	42.87	---	56.00	13.13	1000.0	9.000	N	ON	19.2
0.872248	---	30.49	46.00	15.51	1000.0	9.000	N	ON	19.2
0.872248	42.93	---	56.00	13.07	1000.0	9.000	N	ON	19.2
0.872250	---	30.41	46.00	15.59	1000.0	9.000	N	ON	19.2
2.127741	36.37	---	56.00	19.63	1000.0	9.000	N	ON	19.1
2.613739	---	26.33	46.00	19.67	1000.0	9.000	N	ON	19.0
6.096737	---	23.43	50.00	26.57	1000.0	9.000	N	ON	19.1
6.096750	30.97	---	60.00	29.03	1000.0	9.000	N	ON	19.1
17.456977	31.80	---	60.00	28.20	1000.0	9.000	N	ON	19.5
27.115850	---	19.52	50.00	30.48	1000.0	9.000	N	ON	19.9

N line

Conducted Emission from 150 KHz to 30 MHz

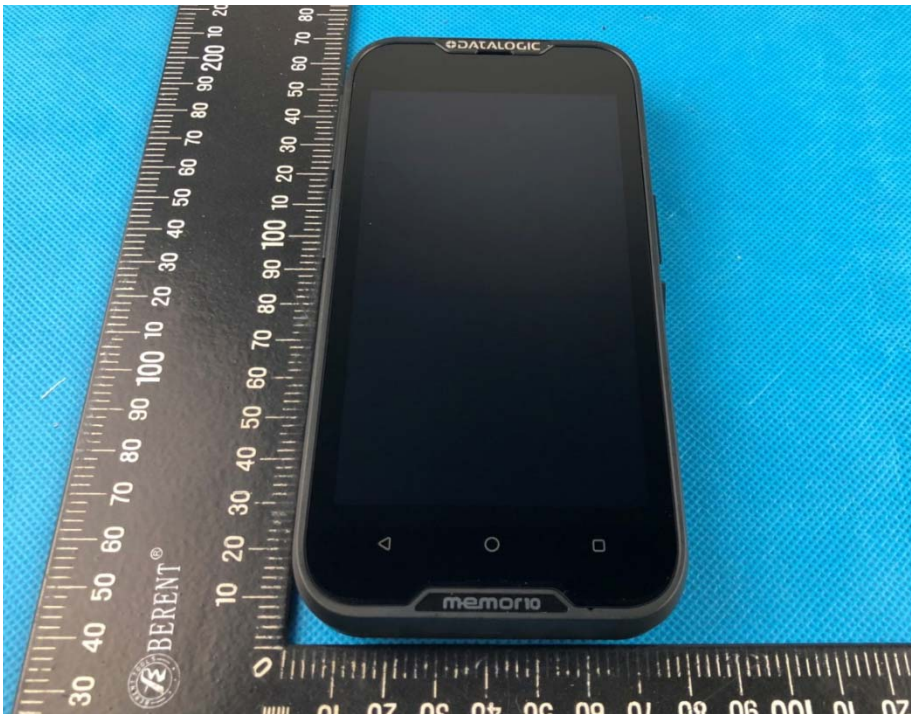
6. Main Test Instruments

Name	Manufacturer	Type	Serial Number	Calibration Date	Expiration Date
Spectrum Analyzer	R&S	FSV40	15195-01-00	2018-05-20	2019-05-19
EMI Test Receiver	R&S	ESCI	100948	2018-05-20	2019-05-19
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2017-09-26	2019-09-25
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	9163-201	2017-11-18	2019-11-17
Double Ridged Waveguide Horn Antenna	R&S	HF907	100126	2018-07-07	2020-07-06
Standard Gain Horn	ETS-Lindgren	3160-09	00102643	2018-06-20	2020-06-19
Standard Gain Horn	STEATITE	QSH-SL-26-40 -K-15	16779	2017-07-20	2019-07-19
Broadband Horn Antenna	SCHWARZBECK	BBHA 9120D	430	2018-07-07	2020-07-06
EMI Test Receiver	R&S	ESR	101667	2018-05-20	2019-05-19
LISN	R&S	ENV216	101171	2016-12-16	2019-12-15
Spectrum Analyzer	KEYSIGHT	N9020A	MY54420163	2017-12-17	2018-12-16
RF Cable	Agilent	SMA 15cm	0001	/	/
TEMPERATURE CHAMBER	WEISS	VT4002	582261194500 10	2017-12-17	2018-12-16
AV Power Meter	R&S	NRP	104306	2018-05-20	2019-05-19
Power Probe	R&S	NRP-Z21	104799	2018-05-20	2019-05-19
DC Power Supply	GWINSTEK	GPS-3030D	GEP882653	2018-05-20	2020-05-19
Software	R&S	EMC32	9.26.0	/	/

*******END OF REPORT *******

ANNEX A: EUT Appearance and Test Setup

A.1 EUT Appearance



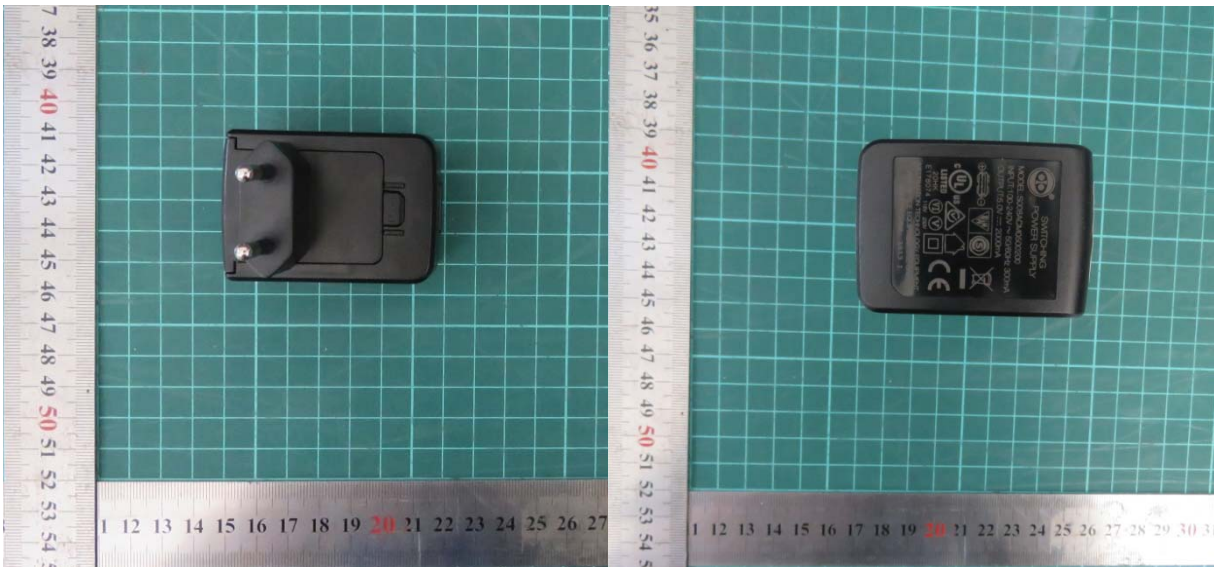
Front Side

Back Side

Front Side

Back Side

a: EUT



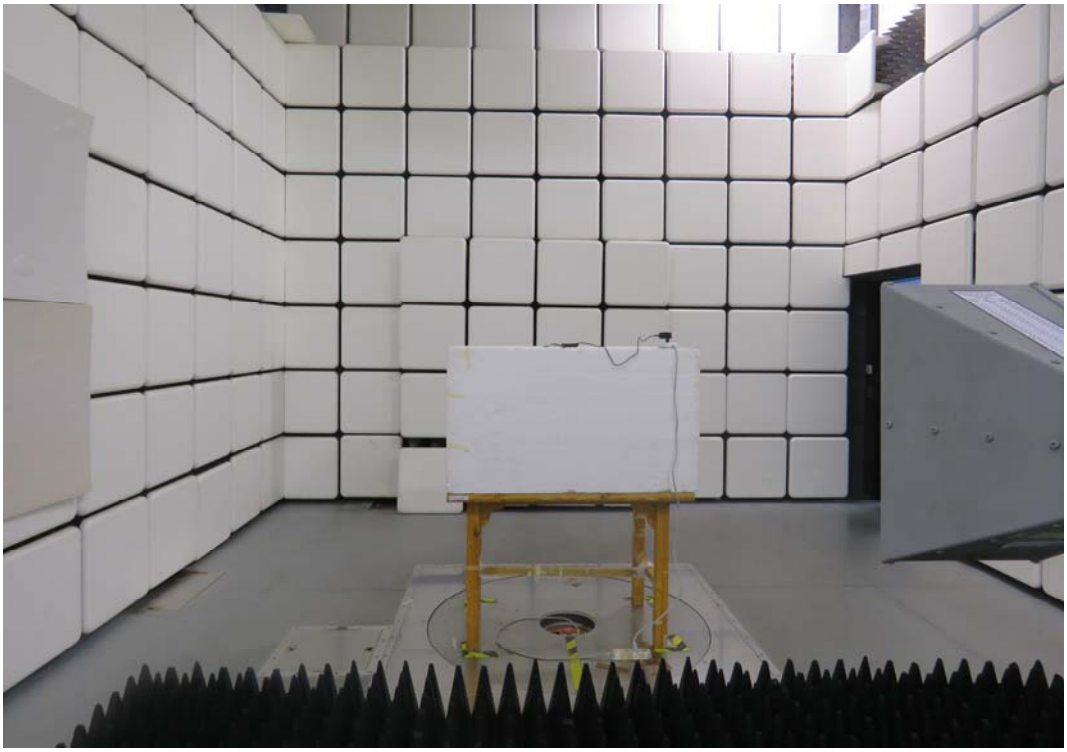
b: Adapter

c: USB Cable

Picture 1 EUT and Accessory

A.2 Test Setup

30MHz-1GHz



Above 1GHz

Picture 2 Radiated Emission Test Setup

Picture 3 Conducted Emission Test Setup