

# RF TEST REPORT

<b>Applicant</b>	iRay Technology Co., Ltd.
<b>FCC ID</b>	2ACHK-01070189
<b>Product</b>	Wireless Digital Flat Panel Detector
<b>Brand</b>	iRayTechnology
<b>Model</b>	Mars1417XF-GSI; Mars1417XF-CSI
<b>Report No.</b>	R2311A1192-R2
<b>Issue Date</b>	January 15, 2024

TA Technology (Shanghai) Co., Ltd. tested the above equipment in accordance with the requirements in **FCC CFR47 Part 15E (2023)**. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

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## Summary of measurement results

Number	Test Case	Clause in FCC rules	Verdict
1	Unwanted Emissions	15.407(b)	PASS
2	Conducted Emissions	15.207	PASS
Date of Testing: November 15, 2023 ~ December 1, 2023			
Date of Sample Received: November 6, 2023			
<p>Note: PASS: The EUT complies with the essential requirements in the standard.</p> <p>FAIL: The EUT does not comply with the essential requirements in the standard.</p> <p>All indications of Pass/Fail in this report are opinions expressed by TA Technology (Shanghai) Co., Ltd. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only.</p>			

**Only Unwanted Emissions and Conducted Emissions is tested for Mars1417XF-GSI; Mars1417XF-CSI in this report. Other test items refer to the Module report (Report No.: SHEM180400246701, FCC ID: 2ACHK-01070189).**

## 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

#### **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.

#### **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.
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E-mail:	Kain.Xu@cpt.eurofinscn.com

## 2. General Description of Equipment under Test

### 2.1. Applicant and Manufacturer Information

<b>Applicant</b>	iRay Technology Co., Ltd.
<b>Applicant address</b>	RM 202, Building 7, No. 590, Ruiqing RD., Pudong, Shanghai, China
<b>Manufacturer</b>	iRay Technology Co., Ltd.
<b>Manufacturer address</b>	RM 202, Building 7, No. 590, Ruiqing RD., Pudong, Shanghai, China

### 2.2. General information

EUT Description	
Model	Mars1417XF-GSI; Mars1417XF-CSI
Lab internal SN	R2311A1192/S01
Hardware Version	V1
Software Version	V2
Power Supply	Battery / AC adapter
Antenna Type	Internal Antenna
Antenna Connector	A permanently attached antenna (meet with the standard FCC Part 15.203 requirement)
Antenna Gain	Antenna 1: 6.0 dBi Antenna 2: 6.0 dBi
Operating Frequency Range(s)	U-NII-1: 5150MHz-5250MHz U-NII-3: 5725MHz -5850MHz
Modulation Type	802.11a: OFDM 802.11n (HT20/HT40): OFDM 802.11ac (VHT20/VHT40): OFDM
Operating voltage range	100 V to 240 V
State DC voltage	24 V
EUT Accessory	
Switching Power Supply	Model: LXCP120-0240500 Input: 100-240V~, 50/60Hz, 2.5A Max. Output: 24.0VDC, 5.0A
Charger	Model: CHARGER-KX Input: 24VDC, 3.3A Output: 8.7VDC, 2A
Rechargeable Lithium Polymer Battery	Model: BATTERY-X Limiting charge voltage: 8.8VDC Output: 7.7VDC, 4700mAh

Cable	AC Cable 180mm for Adapter DC Cable 450mm for Adapter
<p>Note:</p> <ol style="list-style-type: none"><li>1. The EUT is sent from the applicant to TA and the information of the EUT is declared by the applicant.</li><li>2. This device support automatically discontinue transmission, while the device is not transmitting any information, the device can automatically discontinue transmission and become standby mode for power saving. The device can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission.</li><li>3. (a) Manufacturers implements security features in any digitally modulated devices capable of operating in any of the U-NII bands, so that third parties are not able to reprogram the device to operate outside the parameters for which the device was certified. The software prevents the user from operating the transmitter with operating frequencies, output power, modulation types or other radio frequency parameters outside those that were approved for the device. Manufacturers uses means including, but not limited to the use of a private network that allows only authenticated users to download software, electronic signatures in software or coding in hardware that is decoded by software to verify that new software can be legally loaded into a device to meet these requirements and must describe the methods in their application for equipment authorization.</li><li>4. The two models are the same in electrical characteristics only except the scintillator screen material which does not influence essential performance. Model Mars1417XF-GSI uses Gadolinium Sulfoxylate scintillator screen and model Mars1417XF-CSI uses Caesium Iodide scintillator screen. The scintillator screen is a kind of material which does not generate anyelectric and power consumption when it works.</li><li>5. This report only tests Mars1417XF-CSI.</li></ol>	

### 3. Applied Standards

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

**Test standards:**

**FCC CFR47 Part 15E (2023)** Unlicensed National Information Infrastructure Devices

**ANSI C63.10-2013**

**Reference standard:**

**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 stand-up position (Z 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.

Mode	Data Rate		
	Antenna 1	Antenna 2	MIMO
802.11a	6 Mbps	6 Mbps	/
802.11n HT20	MCS0	MCS0	MCS8
802.11n HT40	MCS0	MCS0	MCS8
802.11ac VHT20	MCS0	MCS0	MCS0
802.11ac VHT40	MCS0	MCS0	MCS0

The worst case Antenna mode for each of the following tests for Wi-Fi:

Test Cases	Antenna 1	Antenna 2	MIMO
Unwanted Emissions	--	802.11a	802.11n HT20/40
Conducted Emissions	--	802.11a	--



**Wireless Technology and Frequency Range**

Wireless Technology		Bandwidth	Channel	Frequency
Wi-Fi	U-NII-1	20 MHz	36	5180MHz
			40	5200MHz
			44	5220MHz
			48	5240MHz
		40 MHz	38	5190MHz
			46	5230MHz
	U-NII-3	20 MHz	149	5745MHz
			153	5765MHz
			157	5785MHz
			161	5805MHz
			165	5825MHz
		40 MHz	151	5755MHz
159			5795MHz	
Does this device support TPC Function? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No				

## 5. Test Case Results

### 5.1. Unwanted Emission

#### Ambient condition

Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

#### Method of Measurement

The test set-up was made in accordance to the general provisions of ANSI C63.10. 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:

9kHz~150 kHz

RBW=200Hz, VBW=1kHz/ Sweep=AUTO

150 kHz~30MHz

RBW=9KHz, VBW=30KHz,/ Sweep=AUTO

Below 1GHz

RBW=100kHz / VBW=300kHz / Sweep=AUTO

a) Peak emission levels are measured by setting the instrument as follows:

Above 1GHz

PEAK: RBW=1MHz VBW=3MHz/ Sweep=AUTO

b) Average emission levels are measured by setting the instrument as follows:

Above 1GHz

AVERAGE: RBW=1MHz / VBW=3MHz / Sweep=AUTO

c) Detector: The measurements employing a CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

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.

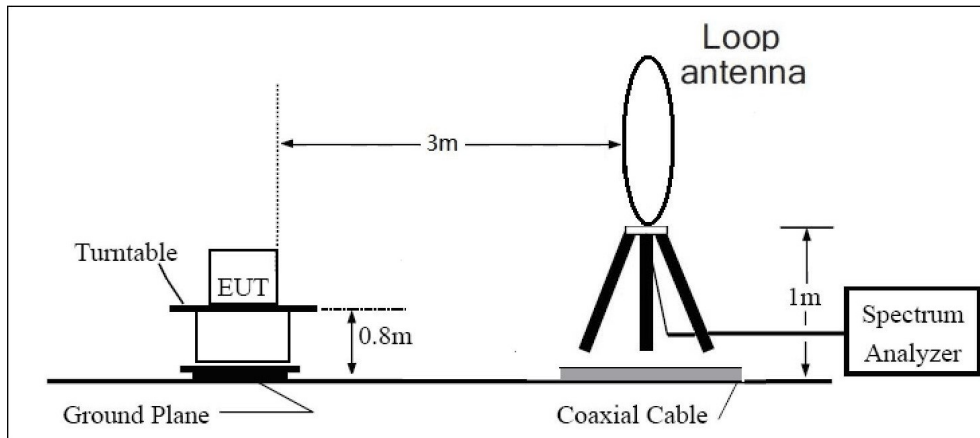
Reduce the video bandwidth until no significant variations in the displayed signal are observed in subsequent traces, provided the video bandwidth is no less than 1 Hz. For regulatory requirements that specify averaging only over the transmit duration (e.g., digital transmission system [DTS] and Unlicensed National Information Infrastructure [U-NII]), the video bandwidth shall be greater than  $[1 / (\text{minimum transmitter on time})]$  and no less than 1 Hz.

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 loop antenna is vertical, others antenna are vertical and horizontal.

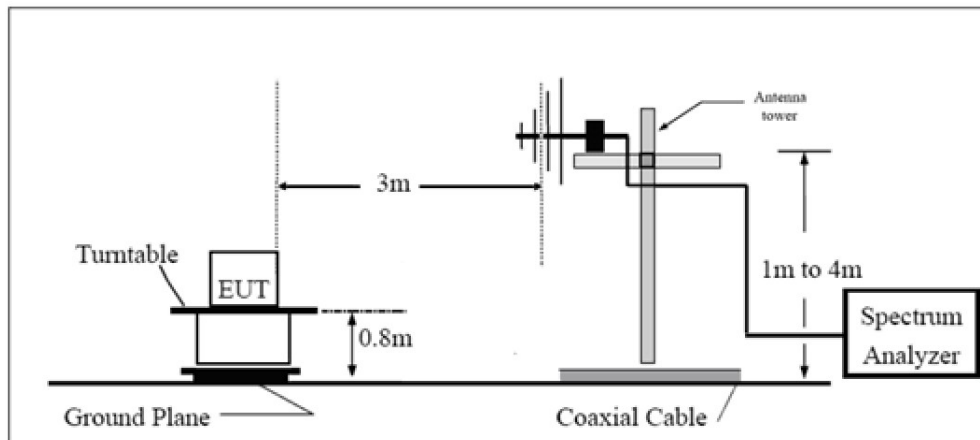
The test is in transmitting mode.

# Test setup

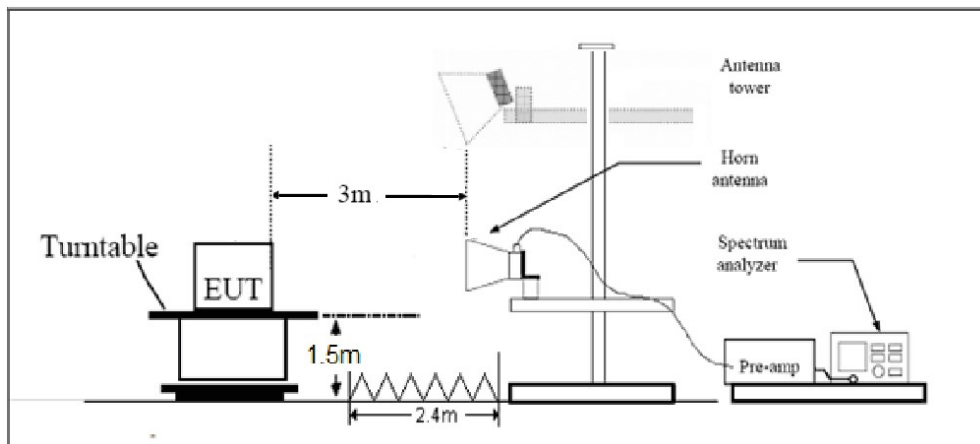
9KHz~ 30MHz



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).

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

§1、 $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] - 20 \log(d[\text{meters}]) + 104.77$ , where E = field strength and

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

§2、 $E[\text{dB}\mu\text{V/m}] = \text{EIRP}[\text{dBm}] + 95.2$ , for d = 3 meters

- (3) 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(μV/m)	Field strength(dBμV/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
<sup>1</sup> 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	( <sup>2</sup> )
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	4.17 dB
200MHz-1GHz	4.84 dB
1-18GHz	4.35 dB
18-26.5GHz	5.90 dB
26.5GHz~40GHz	5.92 dB

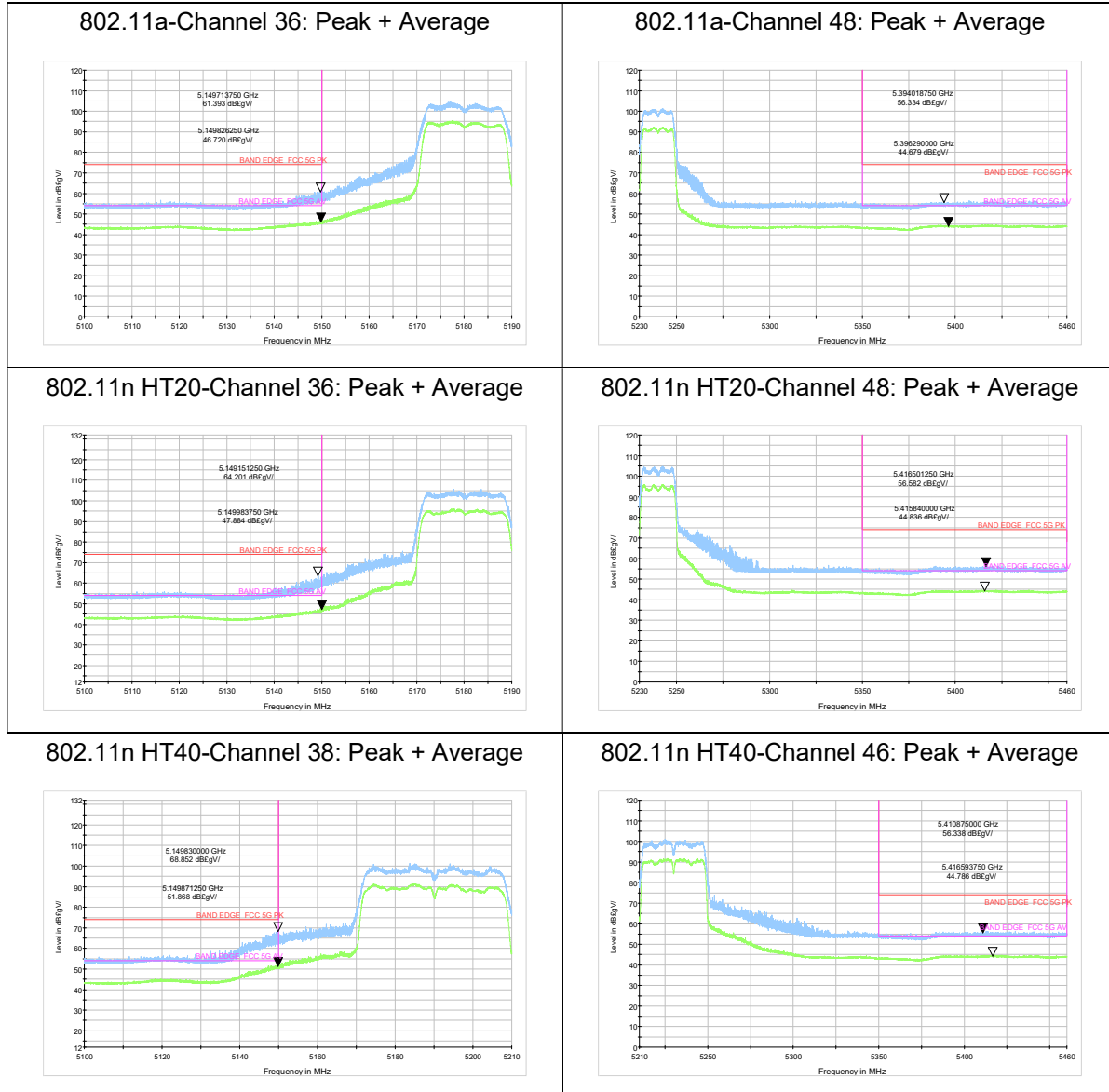
## Test Results:

The modulation and bandwidth are similar for 802.11n mode for 20MHz/40MHz and 802.11ac mode for V20MHz/V40MHz, therefore investigated worst case to representative mode in test report.

A symbol ( $\text{dB } \mu\text{V}$ ) in the test plot below means ( $\text{dB}\mu\text{V/m}$ )

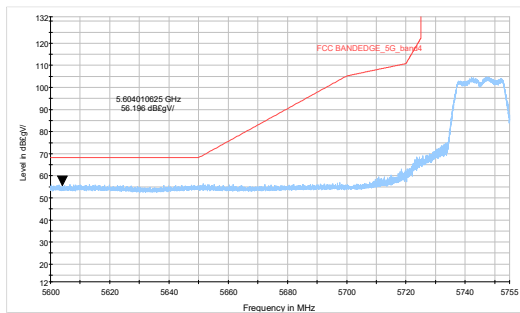
**The signal beyond the limit is carrier.**

### U-NII-1

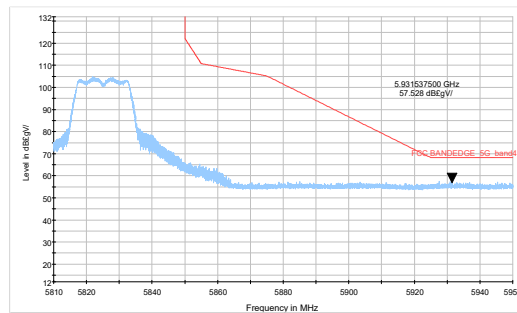


U-NII-3

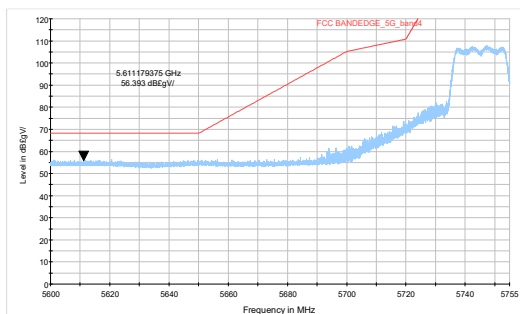
802.11a-Channel 149: Peak



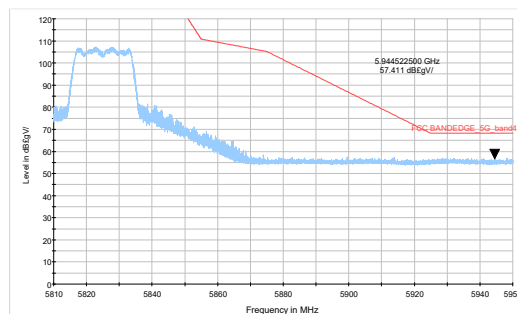
802.11a-Channel 165: Peak



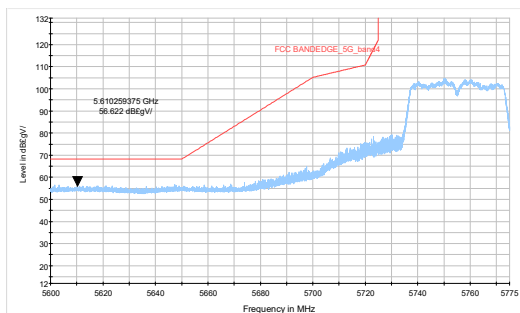
802.11n HT20-Channel 149: Peak



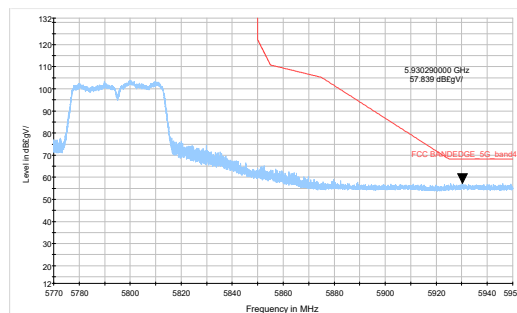
802.11n HT20-Channel 165: Peak



802.11n HT40-Channel 151: Peak



802.11n HT40-Channel 159: Peak





## Result of RE

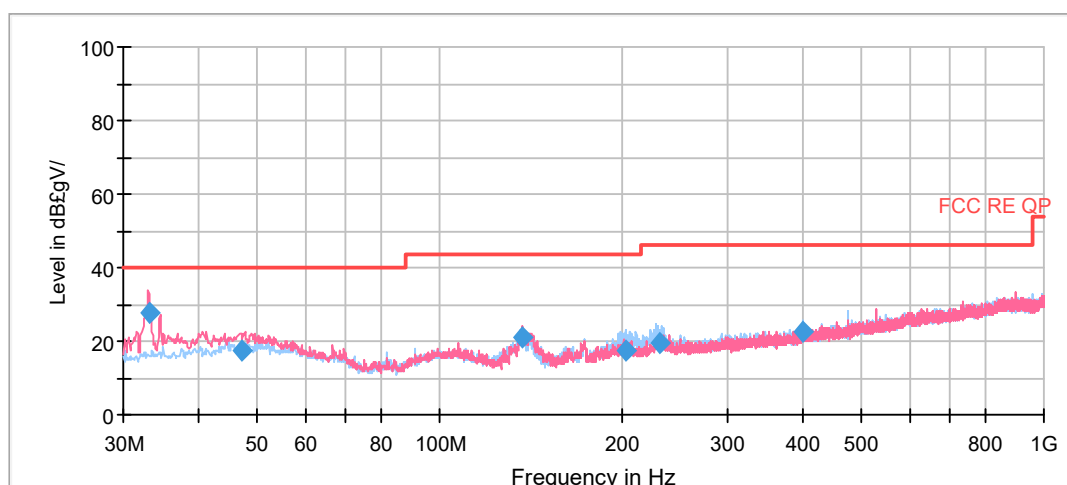
### Test result

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 are more than 20dB below the limit are not reported.

A symbol ( $\text{dB } \mu\text{V/m}$ ) in the test plot below means ( $\text{dB}\mu\text{V/m}$ )

During the test, the Radiates Emission from 30MHz to 1GHz was performed in all modes with all channels, 802.11a, Channel 36 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.

### Continuous TX mode:

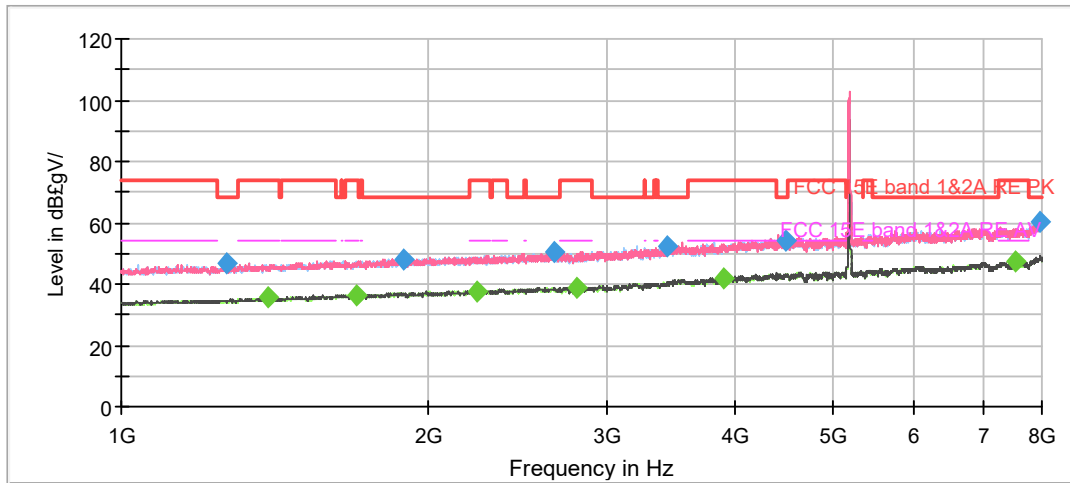


Radiates Emission from 30MHz to 1GHz

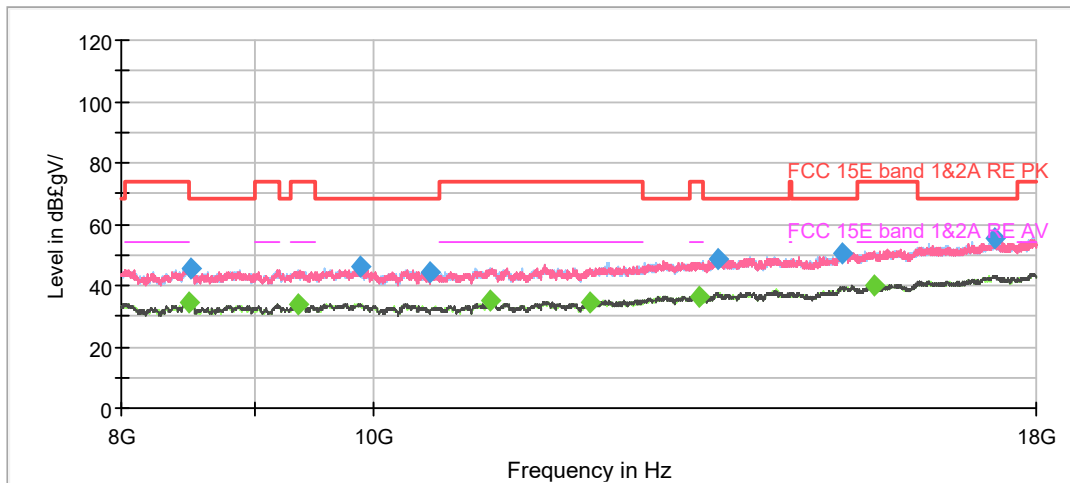
Frequency (MHz)	Quasi-Peak ( $\text{dB}\mu\text{V/m}$ )	Limit ( $\text{dB}\mu\text{V/m}$ )	Margin (dB)	Height (cm)	Polarization	Azimuth (deg)	Correct Factor (dB)
33.111250	27.82	40.00	12.18	100.0	V	269.0	17.7
47.142500	17.32	40.00	22.68	110.0	V	314.0	21.0
137.10375	20.98	43.50	22.52	100.0	V	196.0	15.5
203.50250	17.18	43.50	26.32	184.0	H	223.0	18.5
232.21000	19.53	46.00	26.47	125.0	H	236.0	19.5
399.97375	22.38	46.00	23.62	100.0	H	0.0	23.4

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

2. Margin = Limit – Quasi-Peak



Radiates Emission from 1GHz to 8GHz



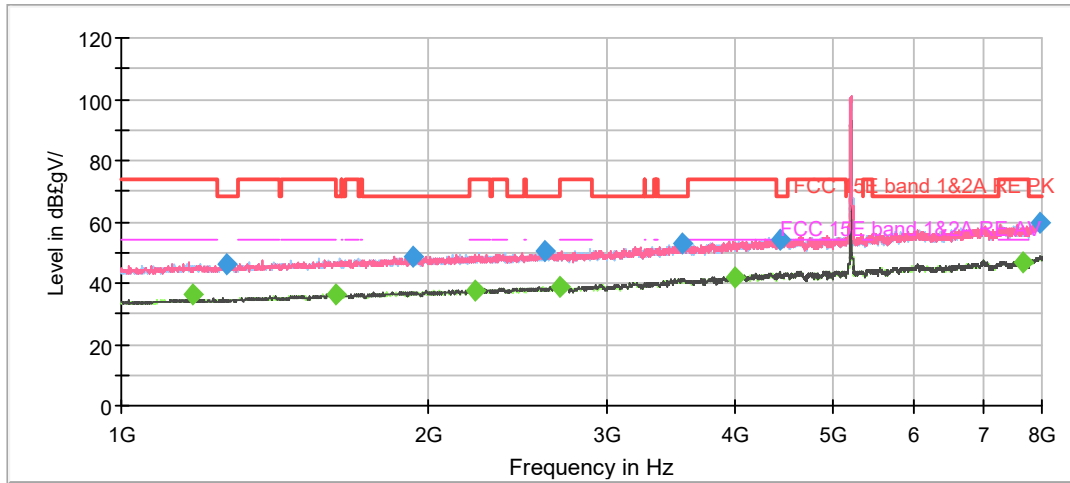
Note: The signal beyond the limit is carrier.  
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1270.37500	47.04	---	68.20	21.16	500.0	100.0	V	127.0	5.0
1395.50000	---	35.48	54.00	18.52	500.0	200.0	H	228.0	5.6
1699.12500	---	36.57	54.00	17.43	500.0	100.0	V	269.0	7.4
1893.37500	48.26	---	68.20	19.94	500.0	100.0	H	297.0	8.2
2236.37500	---	37.53	54.00	16.47	500.0	100.0	V	0.0	9.5
2653.75000	50.51	---	68.20	17.69	500.0	100.0	H	218.0	10.9
2801.62500	---	38.75	54.00	15.25	500.0	200.0	V	134.0	11.0
3434.25000	52.19	---	68.20	16.01	500.0	100.0	H	163.0	13.1
3903.25000	---	42.11	54.00	11.89	500.0	100.0	V	206.0	14.3
4480.75000	54.13	---	68.20	14.07	500.0	100.0	H	339.0	15.8
7545.00000	---	47.44	54.00	6.56	500.0	100.0	V	314.0	21.5
7976.37500	60.11	---	68.20	8.09	500.0	100.0	V	187.0	23.6

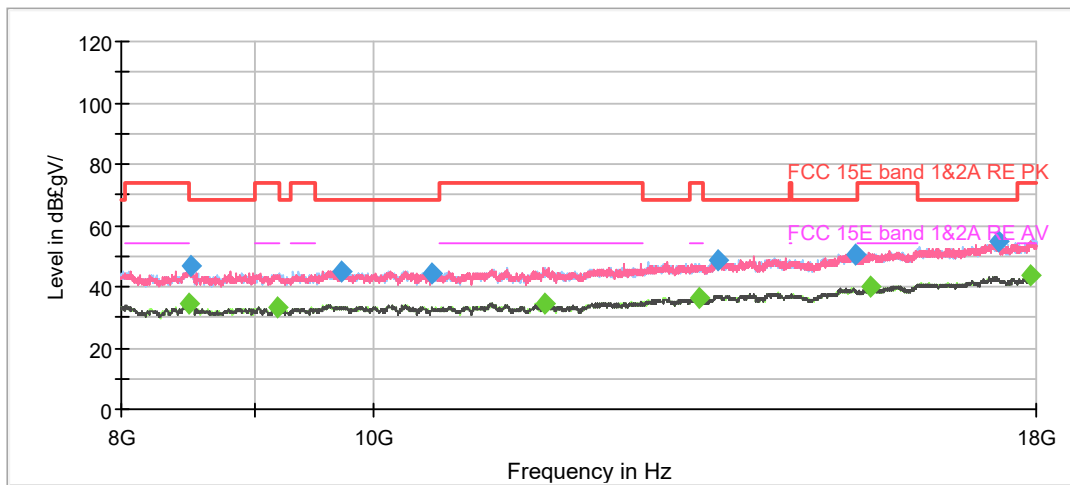
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11a CH40



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

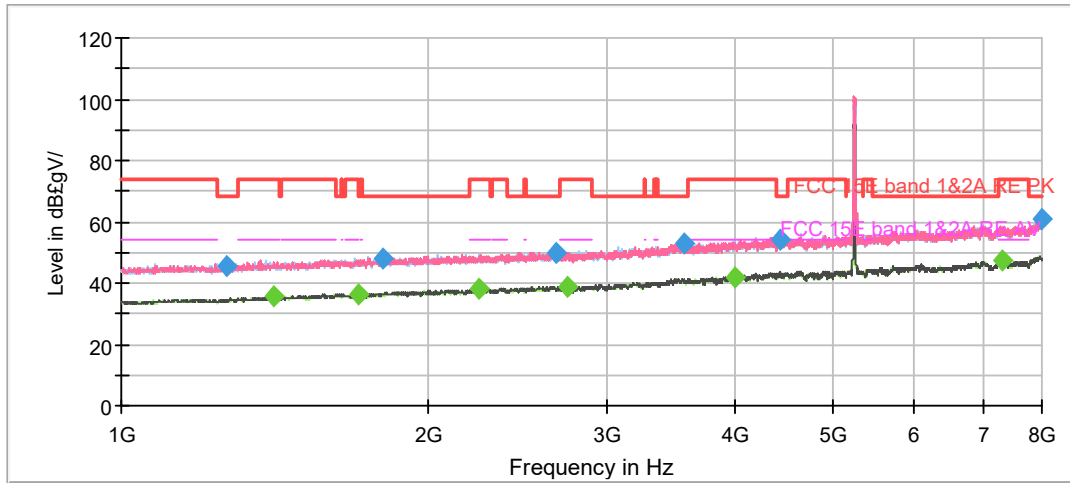
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1173.250000	---	36.05	54.00	17.95	500.0	200.0	V	192.0	4.3
1267.750000	45.86	---	68.20	22.34	500.0	200.0	H	65.0	5.0
1623.000000	---	36.56	54.00	17.44	500.0	100.0	H	0.0	6.8
1937.125000	48.48	---	68.20	19.72	500.0	200.0	V	342.0	8.3
2221.500000	---	37.83	54.00	16.17	500.0	100.0	H	186.0	9.3
2608.250000	50.49	---	68.20	17.71	500.0	100.0	H	0.0	10.7
2692.250000	---	38.72	54.00	15.28	500.0	200.0	H	310.0	10.8
3553.250000	53.04	---	68.20	15.16	500.0	200.0	V	216.0	14.0
3996.000000	---	42.09	54.00	11.91	500.0	100.0	V	239.0	14.5
4424.750000	54.07	---	68.20	14.13	500.0	100.0	H	0.0	16.0
7670.125000	---	46.86	54.00	7.14	500.0	100.0	H	346.0	22.0
7972.875000	59.97	---	68.20	8.23	500.0	100.0	H	346.0	23.6

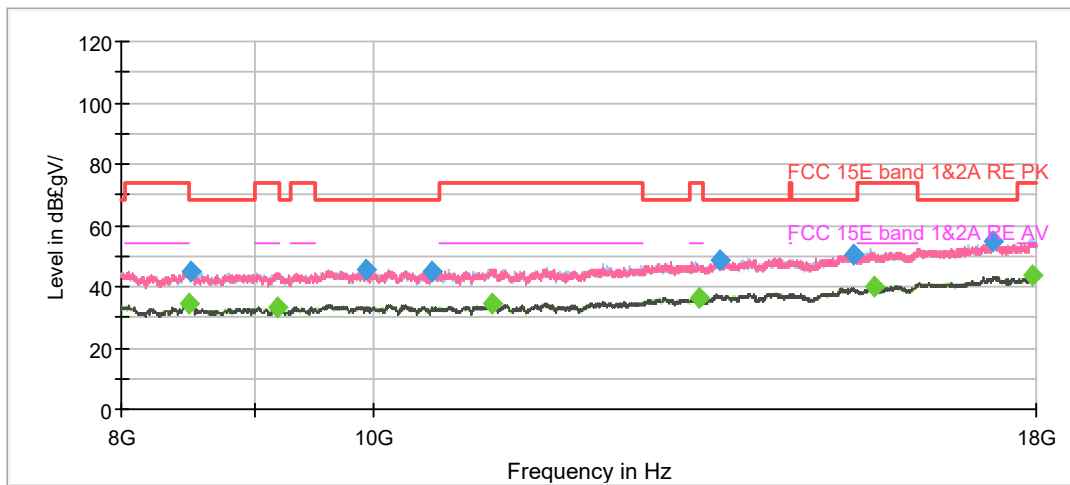
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11a CH48



Radiates Emission from 1GHz to 8GHz



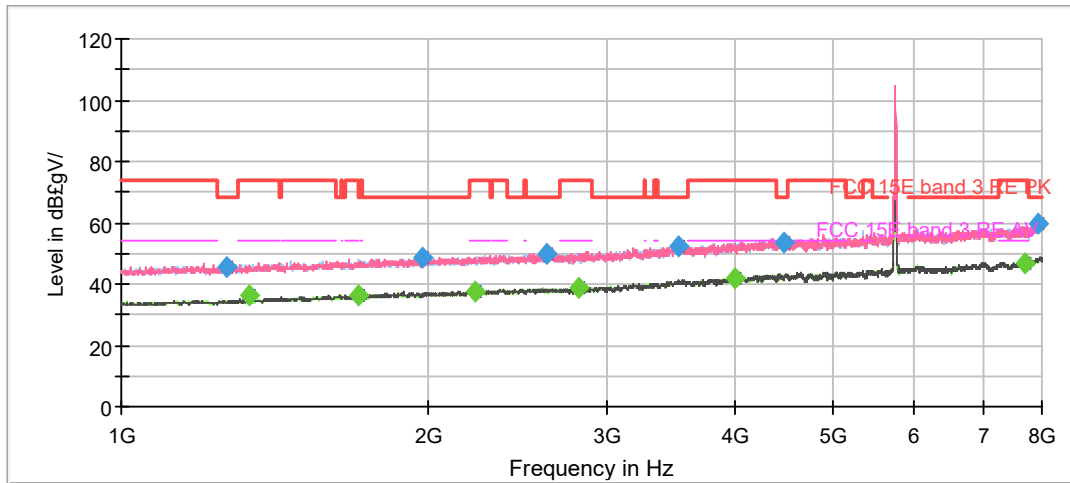
Note: The signal beyond the limit is carrier.

Radiates Emission from 8GHz to 18GHz

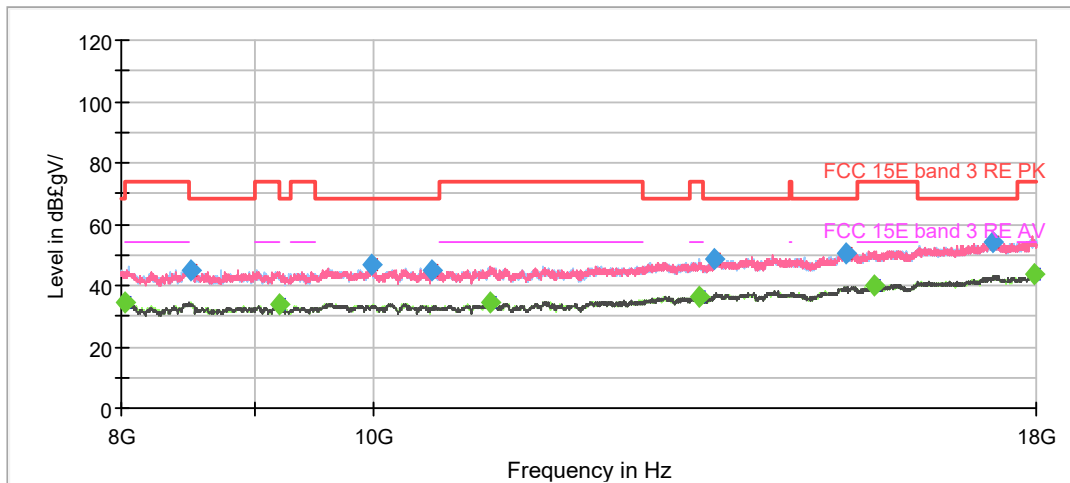
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1268.625000	45.78	---	68.20	22.42	500.0	200.0	V	6.0	5.0
1412.125000	---	35.54	54.00	18.46	500.0	200.0	V	248.0	5.8
1709.625000	---	36.46	54.00	17.54	500.0	200.0	H	177.0	7.5
1807.625000	47.88	---	68.20	20.32	500.0	100.0	V	65.0	7.7
2239.875000	---	37.86	54.00	16.14	500.0	100.0	V	160.0	9.6
2665.125000	50.04	---	68.20	18.16	500.0	200.0	H	6.0	10.8
2743.875000	---	38.90	54.00	15.10	500.0	200.0	V	81.0	10.9
3562.875000	52.84	---	68.20	15.36	500.0	100.0	V	229.0	13.9
3997.750000	---	41.99	54.00	12.01	500.0	100.0	V	308.0	14.5
4428.250000	54.35	---	68.20	13.85	500.0	100.0	H	351.0	15.9
7314.875000	---	47.10	54.00	6.90	500.0	100.0	V	135.0	21.3
7993.875000	60.65	---	68.20	7.55	500.0	100.0	V	302.0	23.6

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

**2. Margin = Limit –MAX Peak/ Average**



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.  
Radiates Emission from 8GHz to 18GHz

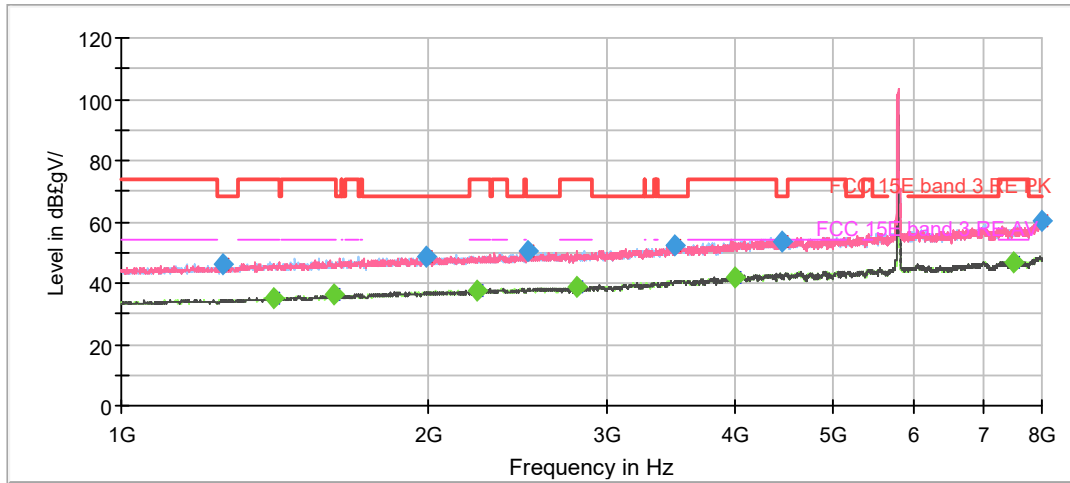


Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1268.625000	45.55	---	68.20	22.65	500.0	200.0	V	30.0	5.0
1333.375000	---	36.57	54.00	17.43	500.0	200.0	V	270.0	5.4
1706.125000	---	36.31	54.00	17.69	500.0	100.0	V	283.0	7.4
1976.500000	48.74	---	68.20	19.46	500.0	200.0	H	243.0	8.6
2223.250000	---	37.34	54.00	16.66	500.0	100.0	H	125.0	9.4
2616.125000	50.00	---	68.20	18.20	500.0	100.0	V	252.0	10.6
2807.750000	---	38.58	54.00	15.42	500.0	100.0	V	104.0	11.1
3515.625000	52.44	---	68.20	15.76	500.0	200.0	V	0.0	14.0
3998.625000	---	41.96	54.00	12.04	500.0	100.0	H	272.0	14.5
4476.375000	53.79	---	68.20	14.41	500.0	200.0	H	186.0	15.8
7704.250000	---	46.84	54.00	7.16	500.0	100.0	V	262.0	22.2
7944.875000	59.86	---	68.20	8.34	500.0	200.0	H	335.0	23.5

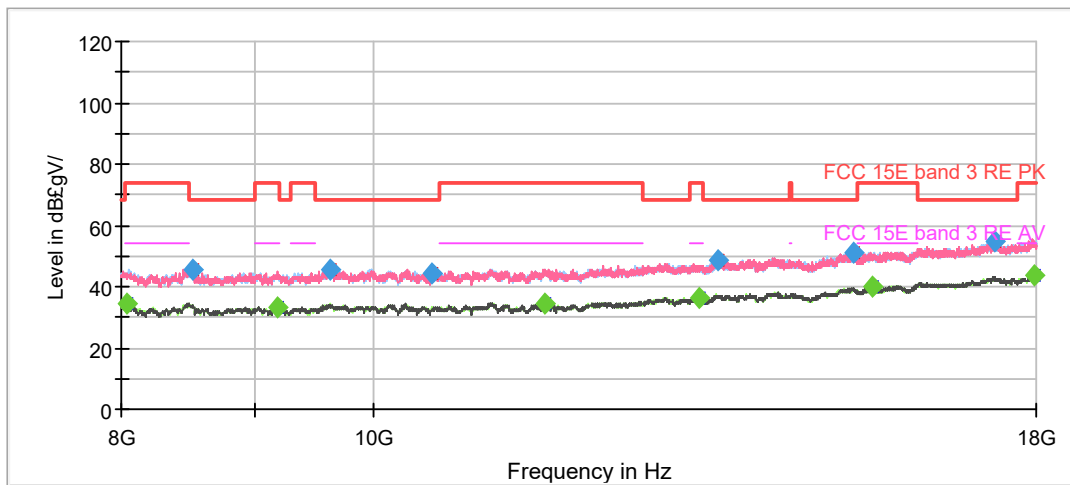
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11a CH157



Radiates Emission from 1GHz to 8GHz



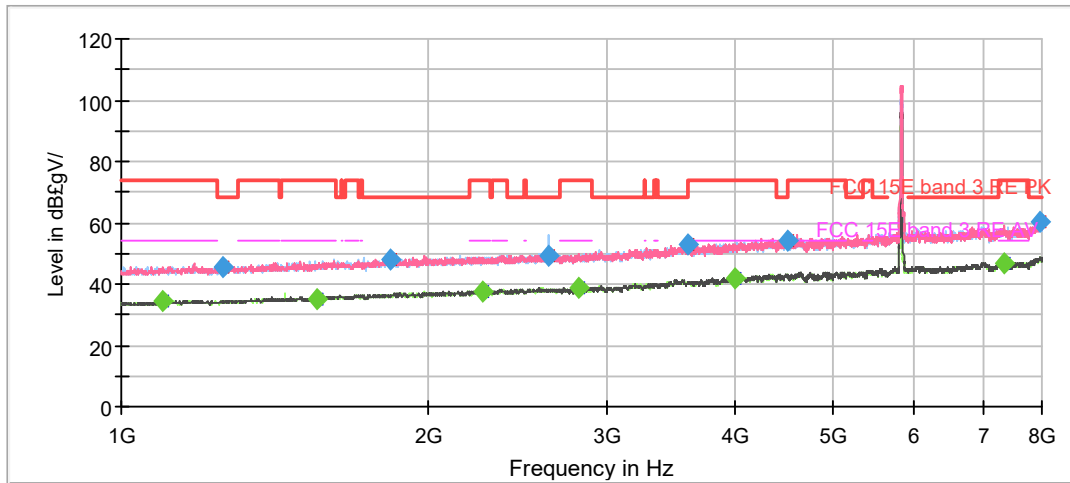
Note: The signal beyond the limit is carrier.

Radiates Emission from 8GHz to 18GHz

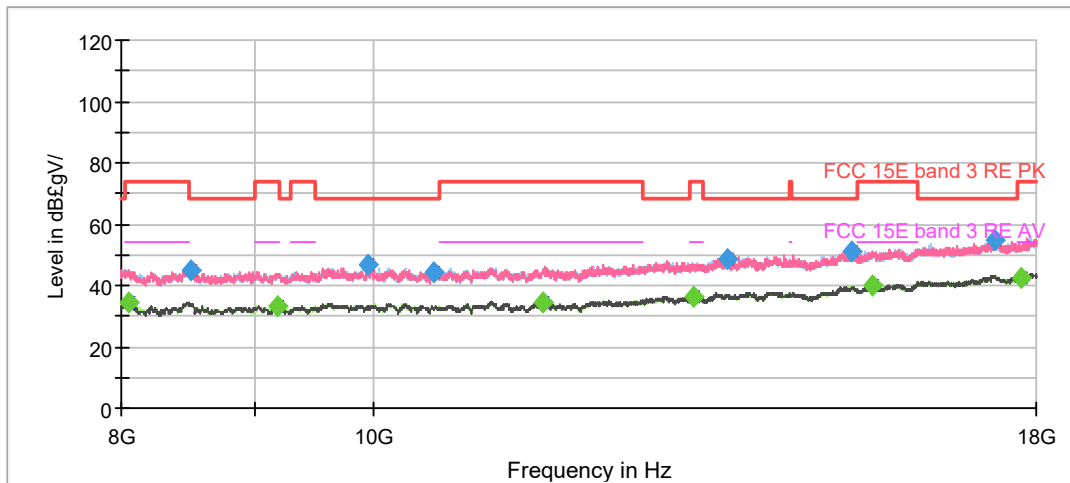
Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1259.875000	46.04	---	68.20	22.16	500.0	100.0	H	50.0	4.9
1411.250000	---	35.16	54.00	18.84	500.0	200.0	H	330.0	5.8
1619.500000	---	36.32	54.00	17.68	500.0	200.0	V	115.0	6.8
1995.750000	48.74	---	68.20	19.46	500.0	100.0	V	233.0	8.6
2235.500000	---	37.33	54.00	16.67	500.0	100.0	H	193.0	9.5
2504.125000	50.66	---	68.20	17.54	500.0	200.0	V	78.0	10.4
2802.500000	---	38.68	54.00	15.32	500.0	100.0	H	118.0	11.0
3491.125000	52.60	---	68.20	15.60	500.0	100.0	V	117.0	13.8
3997.750000	---	41.81	54.00	12.19	500.0	100.0	H	84.0	14.5
4451.000000	53.72	---	68.20	14.48	500.0	200.0	H	170.0	15.7
7521.375000	---	46.96	54.00	7.04	500.0	100.0	H	75.0	21.4
7993.000000	60.23	---	68.20	7.97	500.0	100.0	V	304.0	23.6

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

**2. Margin = Limit –MAX Peak/ Average**



Radiates Emission from 1GHz to 8GHz



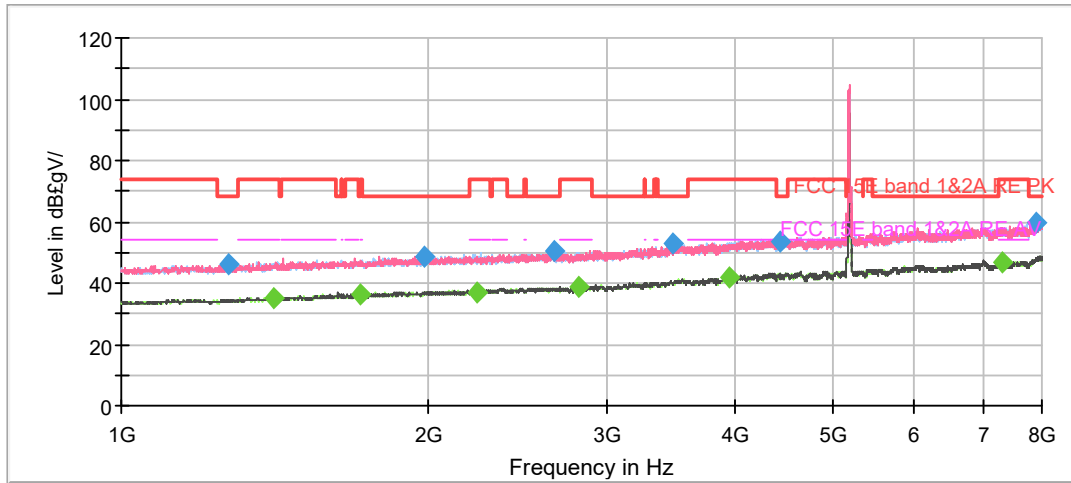
Note: The signal beyond the limit is carrier.  
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1099.750000	---	34.39	54.00	19.61	500.0	200.0	H	177.0	3.9
1258.125000	45.49	---	68.20	22.71	500.0	200.0	H	12.0	4.9
1555.625000	---	35.07	54.00	18.93	500.0	200.0	H	289.0	6.5
1840.000000	47.82	---	68.20	20.38	500.0	100.0	V	228.0	7.8
2258.250000	---	37.28	54.00	16.72	500.0	100.0	H	108.0	9.5
2621.375000	49.13	---	68.20	19.07	500.0	100.0	V	304.0	10.6
2806.875000	---	38.62	54.00	15.38	500.0	200.0	H	357.0	11.1
3593.500000	52.84	---	68.20	15.36	500.0	100.0	V	113.0	13.8
3997.750000	---	42.06	54.00	11.94	500.0	100.0	V	96.0	14.5
4496.500000	54.38	---	68.20	13.82	500.0	100.0	V	49.0	15.9
7342.000000	---	46.92	54.00	7.08	500.0	200.0	V	69.0	21.2
7971.125000	60.44	---	68.20	7.76	500.0	100.0	H	247.0	23.6

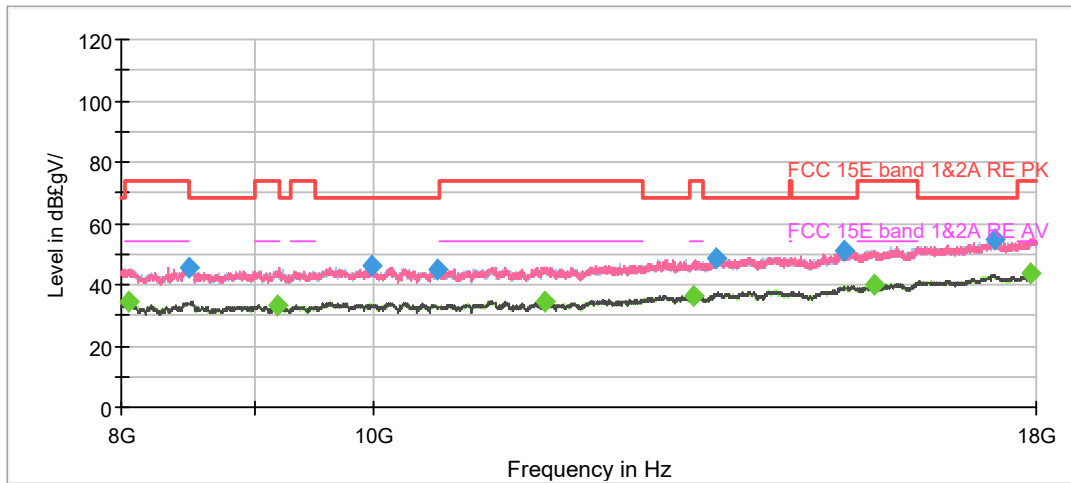
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

802.11n (HT20) CH36



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

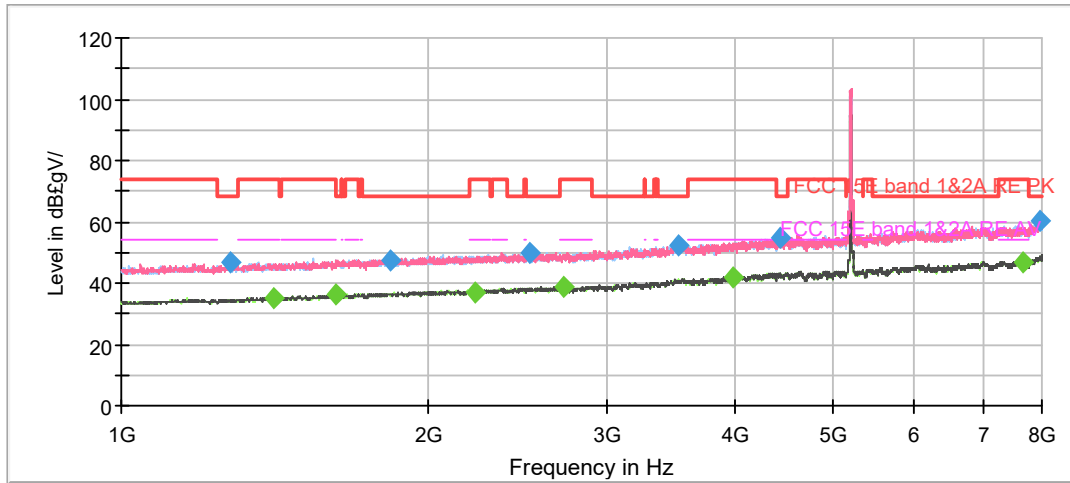
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1276.500000	46.14	---	68.20	22.06	500.0	100.0	V	290.0	5.0
1412.125000	---	35.29	54.00	18.71	500.0	100.0	H	238.0	5.8
1719.250000	---	36.43	54.00	17.57	500.0	100.0	V	159.0	7.4
1980.875000	48.63	---	68.20	19.57	500.0	200.0	V	42.0	8.6
2236.375000	---	37.20	54.00	16.80	500.0	200.0	H	138.0	9.5
2664.250000	50.32	---	68.20	17.88	500.0	100.0	H	58.0	10.8
2812.125000	---	38.96	54.00	15.04	500.0	200.0	V	42.0	11.1
3469.250000	52.84	---	68.20	15.36	500.0	100.0	H	86.0	13.7
3955.750000	---	41.79	54.00	12.21	500.0	100.0	H	195.0	14.4
4428.250000	53.77	---	68.20	14.43	500.0	100.0	H	91.0	15.9
7324.500000	---	46.96	54.00	7.04	500.0	100.0	V	339.0	21.3
7911.625000	59.92	---	68.20	8.28	500.0	100.0	V	159.0	23.5

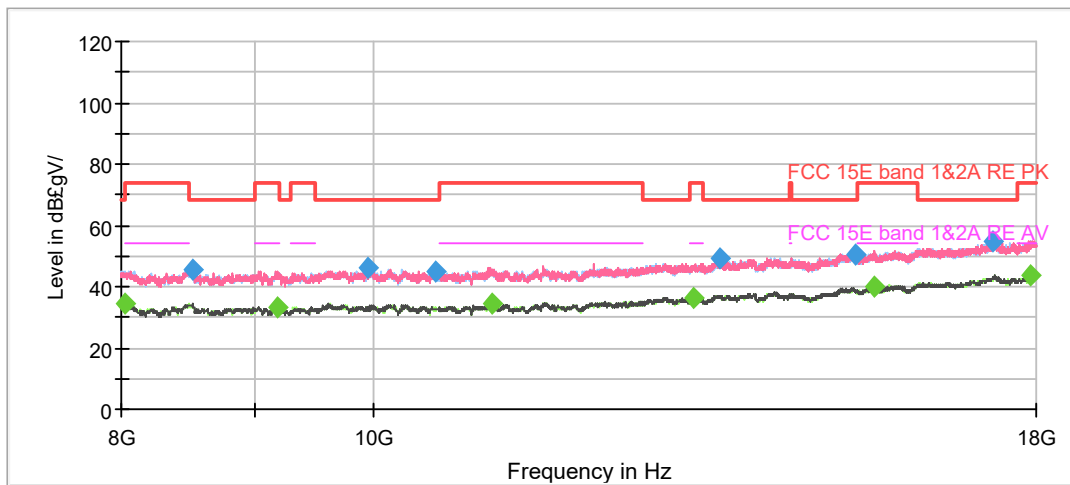
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

### 802.11n (HT20) CH40



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

Radiates Emission from 8GHz to 18GHz

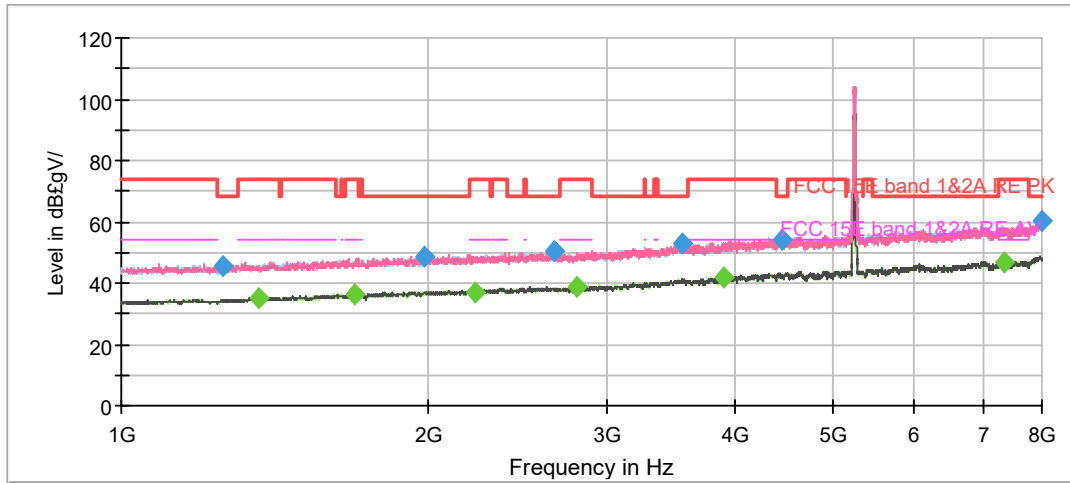


Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1280.875000	46.60	---	68.20	21.60	500.0	200.0	H	284.0	5.0
1412.125000	---	35.25	54.00	18.75	500.0	100.0	H	205.0	5.8
1626.500000	---	36.57	54.00	17.43	500.0	200.0	H	301.0	6.9
1838.250000	47.65	---	68.20	20.55	500.0	200.0	V	0.0	7.8
2223.250000	---	37.13	54.00	16.87	500.0	100.0	H	0.0	9.4
2515.500000	49.99	---	68.20	18.21	500.0	100.0	V	229.0	10.4
2719.375000	---	38.62	54.00	15.38	500.0	100.0	V	318.0	10.8
3516.500000	52.40	---	68.20	15.80	500.0	100.0	V	0.0	14.0
3982.875000	---	42.15	54.00	11.85	500.0	100.0	H	335.0	14.5
4423.000000	54.75	---	68.20	13.45	500.0	200.0	H	324.0	16.0
7667.500000	---	47.02	54.00	6.98	500.0	100.0	H	316.0	22.0
7955.375000	60.55	---	68.20	7.65	500.0	200.0	V	61.0	23.6

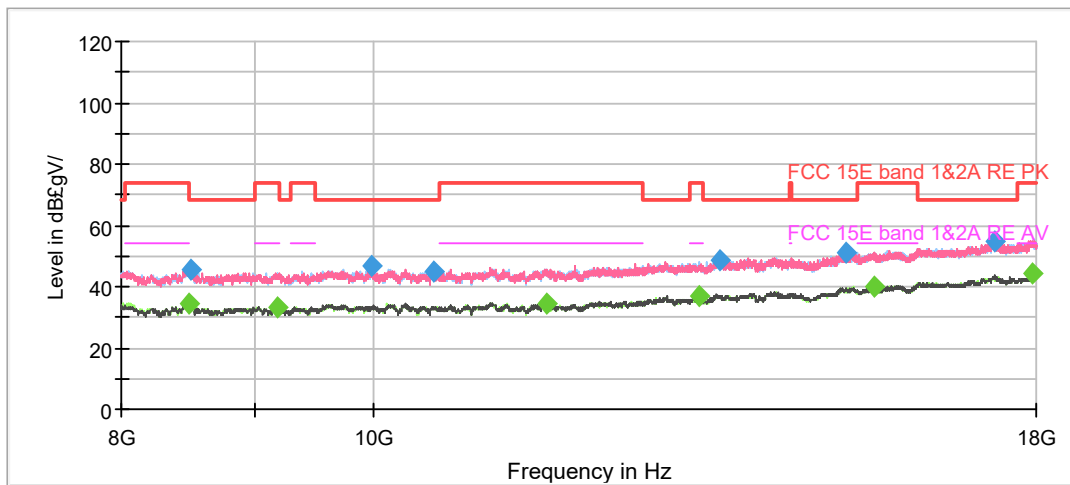
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11n (HT20) CH48



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

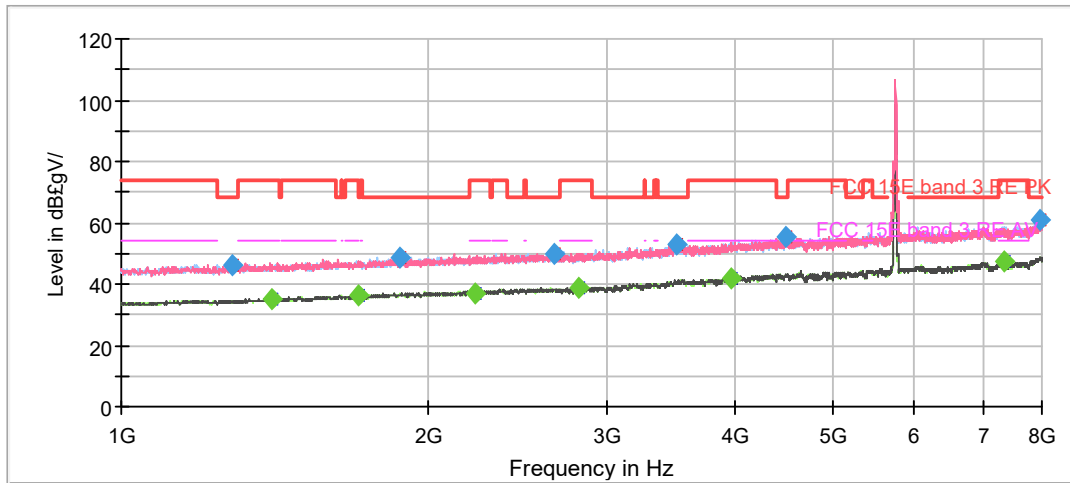
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1255.500000	45.65	---	68.20	22.55	500.0	200.0	H	131.0	4.9
1365.750000	---	35.19	54.00	18.81	500.0	100.0	V	32.0	5.5
1696.500000	---	36.50	54.00	17.50	500.0	100.0	V	169.0	7.4
1986.125000	48.57	---	68.20	19.63	500.0	100.0	V	175.0	8.7
2219.750000	---	37.19	54.00	16.81	500.0	100.0	H	238.0	9.3
2654.625000	50.31	---	68.20	17.89	500.0	200.0	V	316.0	10.9
2803.375000	---	38.57	54.00	15.43	500.0	100.0	V	193.0	11.1
3547.125000	52.68	---	68.20	15.52	500.0	200.0	H	7.0	14.0
3906.750000	---	41.85	54.00	12.15	500.0	200.0	H	26.0	14.3
4446.625000	54.38	---	68.20	13.82	500.0	100.0	V	217.0	15.7
7336.750000	---	47.04	54.00	6.96	500.0	100.0	V	328.0	21.2
7990.375000	60.36	---	68.20	7.84	500.0	200.0	H	347.0	23.6

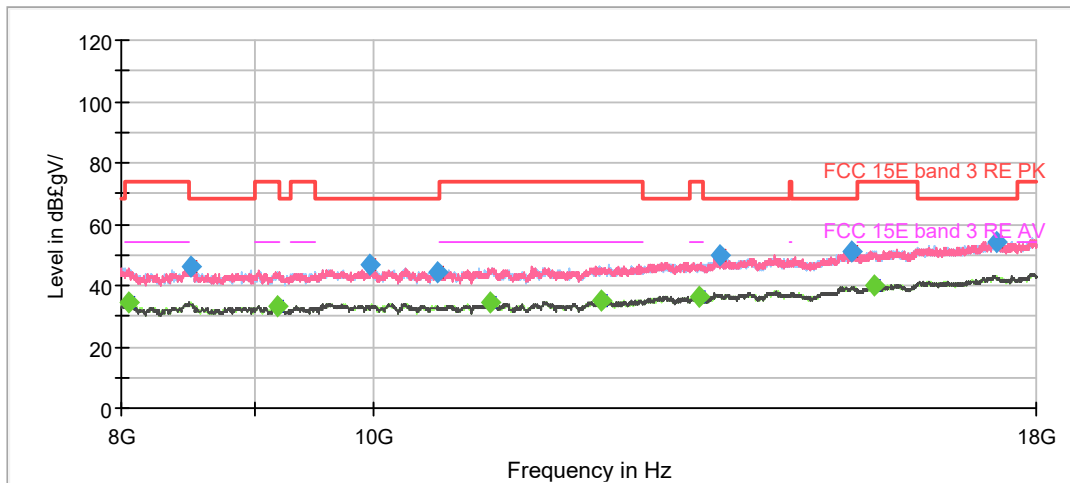
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

802.11n (HT20) CH149



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

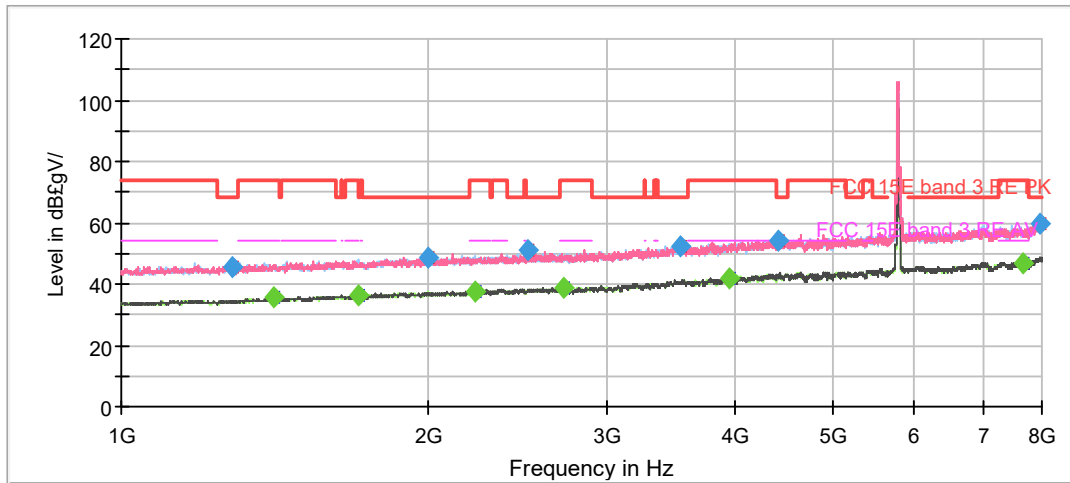
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1283.500000	46.06	---	68.20	22.14	500.0	200.0	V	79.0	5.0
1406.000000	---	35.23	54.00	18.77	500.0	200.0	H	167.0	5.7
1705.250000	---	36.19	54.00	17.81	500.0	100.0	H	255.0	7.4
1873.250000	48.64	---	68.20	19.56	500.0	200.0	V	19.0	8.1
2223.250000	---	37.14	54.00	16.86	500.0	200.0	H	239.0	9.4
2659.000000	50.05	---	68.20	18.15	500.0	100.0	V	23.0	10.8
2811.250000	---	38.62	54.00	15.38	500.0	100.0	V	129.0	11.1
3500.750000	52.87	---	68.20	15.33	500.0	100.0	H	320.0	13.8
3963.625000	---	41.85	54.00	12.15	500.0	100.0	H	294.0	14.4
4484.250000	55.09	---	68.20	13.11	500.0	200.0	H	337.0	15.9
7335.000000	---	47.35	54.00	6.65	500.0	200.0	H	210.0	21.2
7951.875000	60.83	---	68.20	7.37	500.0	200.0	V	283.0	23.5

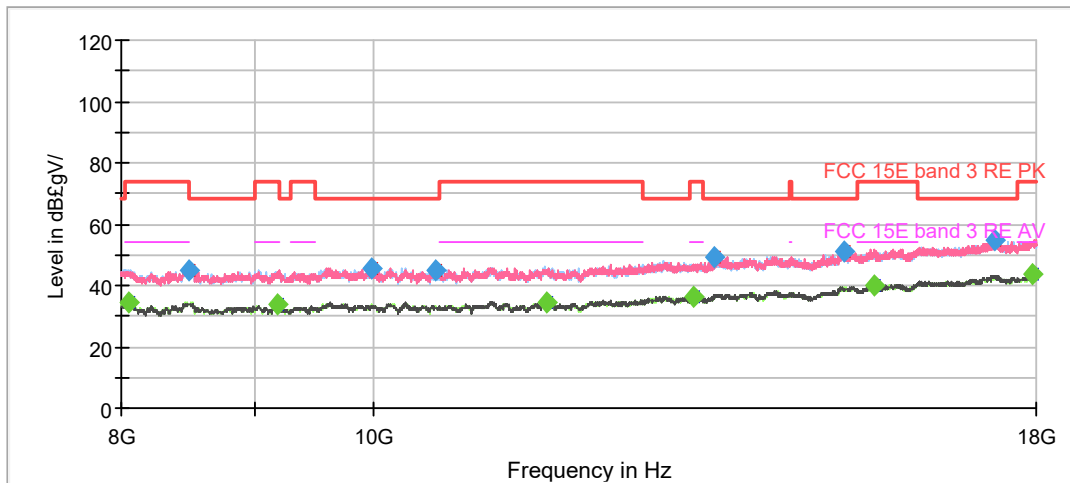
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

802.11n (HT20) CH157



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

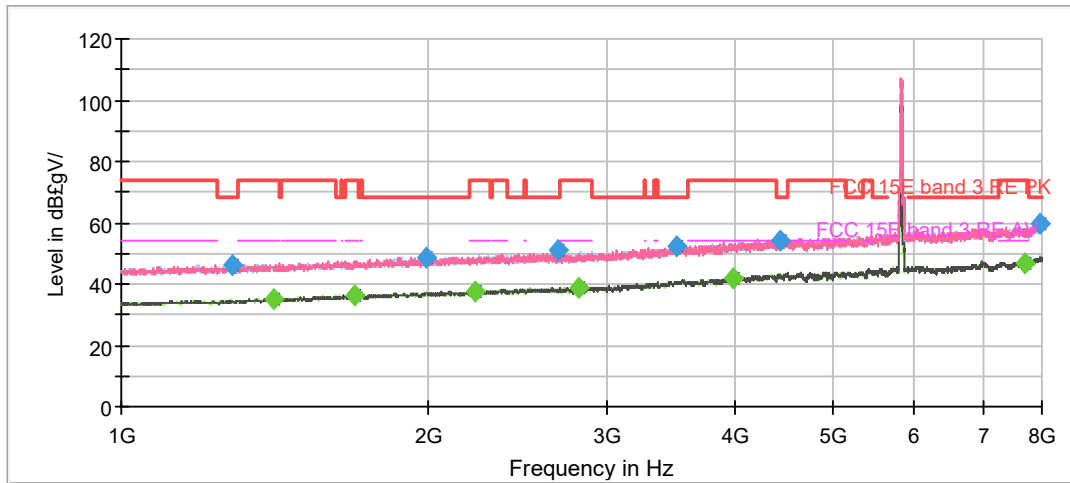
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1286.125000	45.77	---	68.20	22.43	500.0	100.0	V	180.0	5.0
1410.375000	---	35.54	54.00	18.46	500.0	200.0	H	259.0	5.8
1707.000000	---	36.12	54.00	17.88	500.0	200.0	H	189.0	7.4
1998.375000	48.52	---	68.20	19.68	500.0	200.0	V	92.0	8.6
2224.125000	---	37.41	54.00	16.59	500.0	200.0	H	11.0	9.4
2508.500000	50.81	---	68.20	17.39	500.0	200.0	H	75.0	10.4
2715.875000	---	38.96	54.00	15.04	500.0	100.0	V	359.0	10.8
3534.000000	52.61	---	68.20	15.59	500.0	100.0	H	45.0	14.1
3947.000000	---	42.05	54.00	11.95	500.0	100.0	V	230.0	14.4
4417.750000	54.37	---	68.20	13.83	500.0	200.0	H	100.0	16.0
7677.125000	---	46.90	54.00	7.10	500.0	100.0	H	185.0	22.1
7955.375000	59.47	---	68.20	8.73	500.0	100.0	H	189.0	23.6

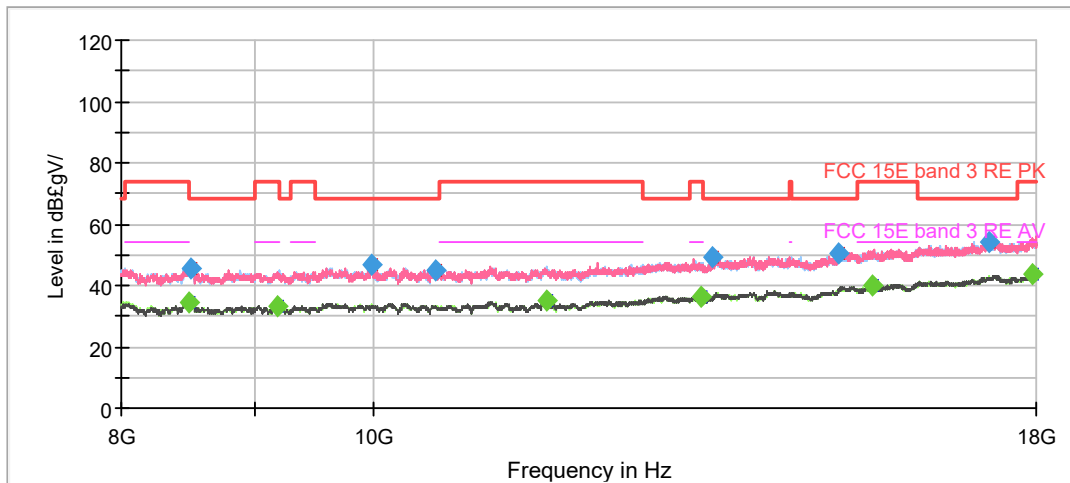
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

802.11n (HT20) CH165



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

Radiates Emission from 8GHz to 18GHz

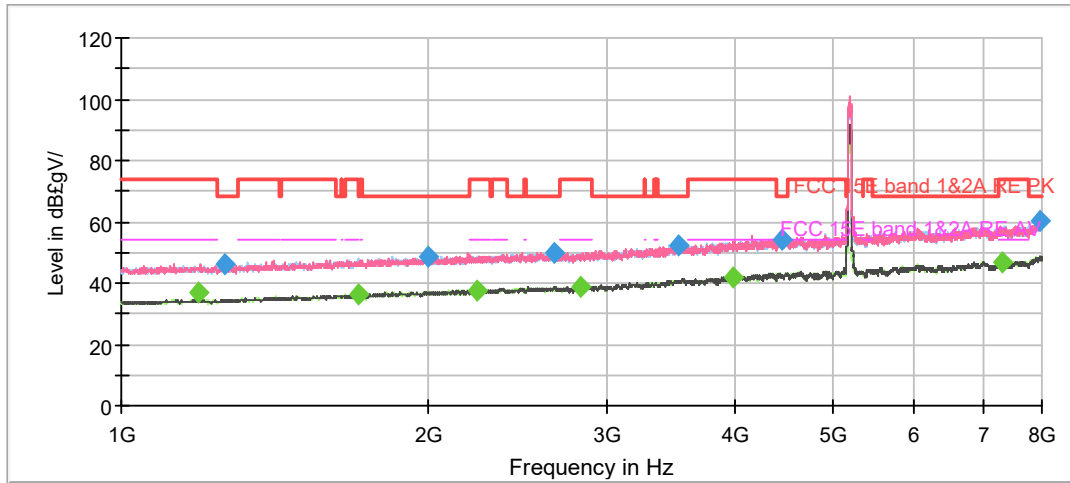


Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1283.500000	45.91	---	68.20	22.29	500.0	200.0	H	175.0	5.0
1413.875000	---	35.28	54.00	18.72	500.0	200.0	H	220.0	5.9
1693.875000	---	36.25	54.00	17.75	500.0	100.0	V	54.0	7.4
1989.625000	48.74	---	68.20	19.46	500.0	100.0	H	0.0	8.7
2223.250000	---	37.25	54.00	16.75	500.0	100.0	H	125.0	9.4
2681.750000	50.89	---	68.20	17.31	500.0	200.0	H	272.0	10.8
2809.500000	---	38.95	54.00	15.05	500.0	100.0	V	190.0	11.1
3511.250000	52.40	---	68.20	15.80	500.0	200.0	H	258.0	13.9
3978.500000	---	42.02	54.00	11.98	500.0	100.0	V	90.0	14.5
4427.375000	53.85	---	68.20	14.35	500.0	100.0	H	68.0	15.9
7706.875000	---	47.07	54.00	6.93	500.0	200.0	V	78.0	22.2
7957.125000	59.79	---	68.20	8.41	500.0	200.0	H	99.0	23.6

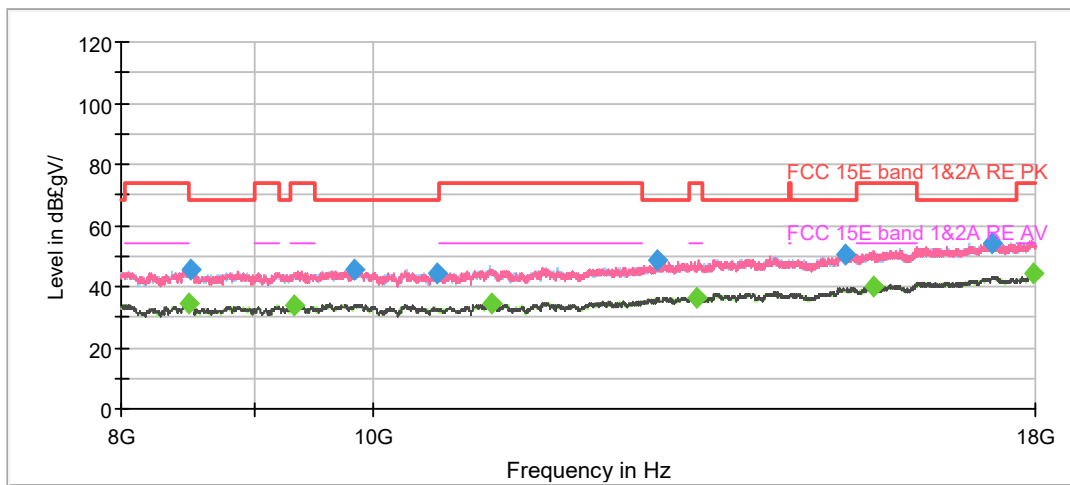
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11n (HT40) CH38



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

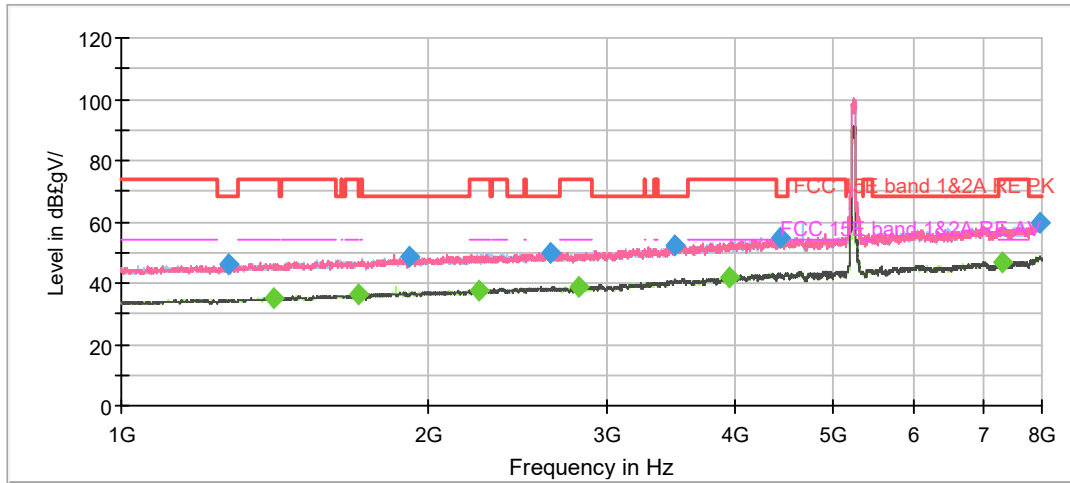
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1192.500000	---	36.68	54.00	17.32	500.0	200.0	V	359.0	4.5
1261.625000	45.86	---	68.20	22.34	500.0	200.0	H	254.0	4.9
1705.250000	---	36.19	54.00	17.81	500.0	100.0	H	257.0	7.4
1997.500000	48.65	---	68.20	19.55	500.0	200.0	V	226.0	8.6
2238.125000	---	37.59	54.00	16.41	500.0	100.0	H	294.0	9.6
2653.750000	50.10	---	68.20	18.10	500.0	200.0	V	0.0	10.9
2818.250000	---	38.57	54.00	15.43	500.0	200.0	H	20.0	11.1
3514.750000	52.47	---	68.20	15.73	500.0	100.0	V	346.0	13.9
3975.000000	---	41.75	54.00	12.25	500.0	100.0	H	0.0	14.5
4446.625000	54.39	---	68.20	13.81	500.0	100.0	H	233.0	15.7
7314.000000	---	46.97	54.00	7.03	500.0	100.0	V	315.0	21.3
7951.875000	60.51	---	68.20	7.69	500.0	100.0	V	279.0	23.5

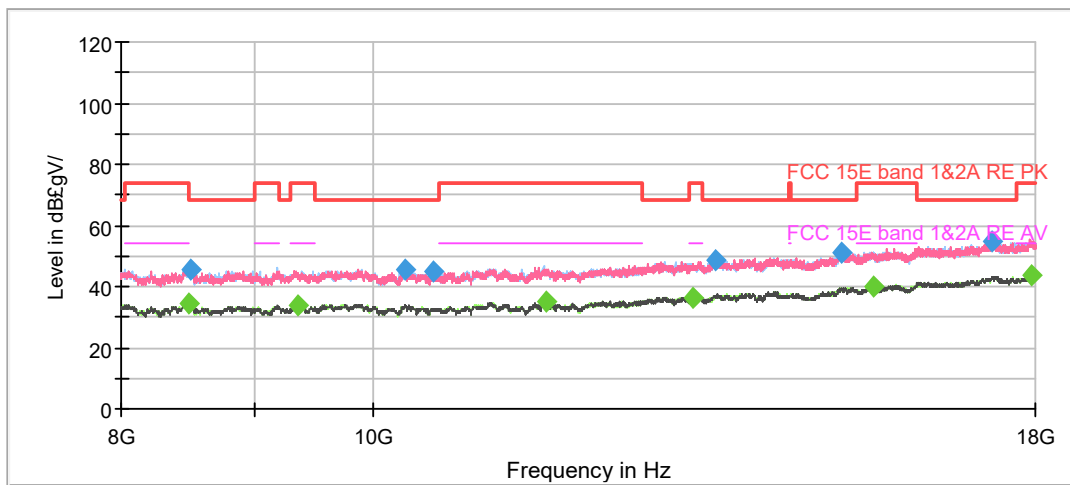
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

802.11n (HT40) CH46



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

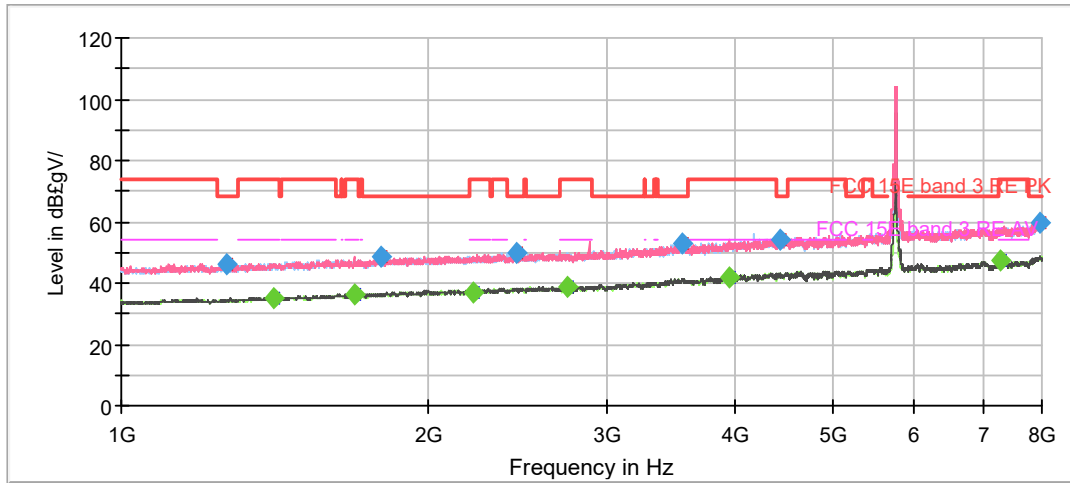
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1275.625000	46.01	---	68.20	22.19	500.0	200.0	V	7.0	5.0
1410.375000	---	35.14	54.00	18.86	500.0	100.0	V	221.0	5.8
1707.875000	---	36.23	54.00	17.77	500.0	200.0	V	88.0	7.5
1917.875000	48.35	---	68.20	19.85	500.0	100.0	H	198.0	8.1
2246.875000	---	37.62	54.00	16.38	500.0	100.0	V	0.0	9.5
2641.500000	49.75	---	68.20	18.45	500.0	200.0	V	171.0	10.8
2805.125000	---	38.72	54.00	15.28	500.0	200.0	V	100.0	11.1
3492.000000	52.46	---	68.20	15.74	500.0	100.0	V	197.0	13.8
3954.875000	---	42.15	54.00	11.85	500.0	100.0	V	273.0	14.4
4424.750000	54.85	---	68.20	13.35	500.0	200.0	H	296.0	16.0
7304.375000	---	46.77	54.00	7.23	500.0	200.0	V	60.0	21.2
7972.875000	59.93	---	68.20	8.27	500.0	200.0	V	0.0	23.6

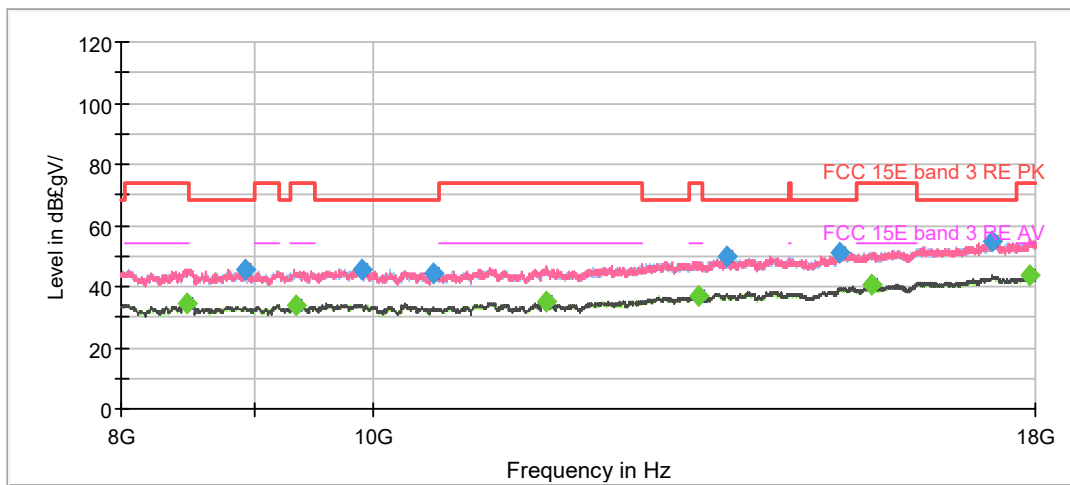
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11n (HT40) CH151



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

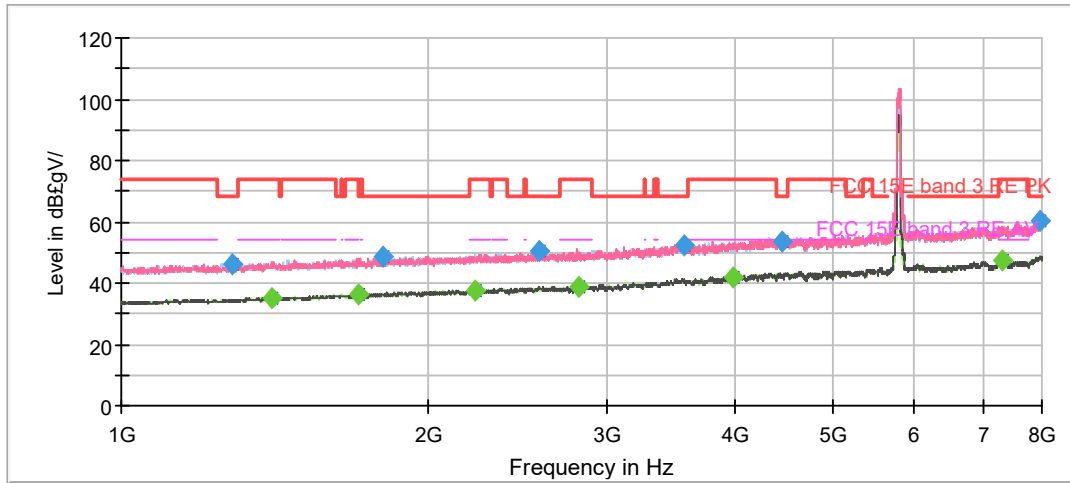
Radiates Emission from 8GHz to 18GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1267.750000	46.30	---	68.20	21.90	500.0	100.0	V	167.0	5.0
1413.000000	---	35.34	54.00	18.66	500.0	200.0	H	272.0	5.9
1694.750000	---	36.48	54.00	17.52	500.0	200.0	H	187.0	7.4
1799.750000	48.60	---	68.20	19.60	500.0	200.0	V	202.0	7.6
2216.250000	---	37.14	54.00	16.86	500.0	200.0	H	0.0	9.3
2446.375000	50.03	---	68.20	18.17	500.0	200.0	V	17.0	10.2
2739.500000	---	38.73	54.00	15.27	500.0	100.0	V	88.0	10.9
3543.625000	53.11	---	68.20	15.09	500.0	100.0	H	226.0	14.1
3953.125000	---	42.07	54.00	11.93	500.0	100.0	V	320.0	14.4
4428.250000	54.45	---	68.20	13.75	500.0	200.0	V	87.0	15.9
7300.000000	---	47.11	54.00	6.89	500.0	100.0	V	206.0	21.2
7954.500000	59.73	---	68.20	8.47	500.0	100.0	V	285.0	23.6

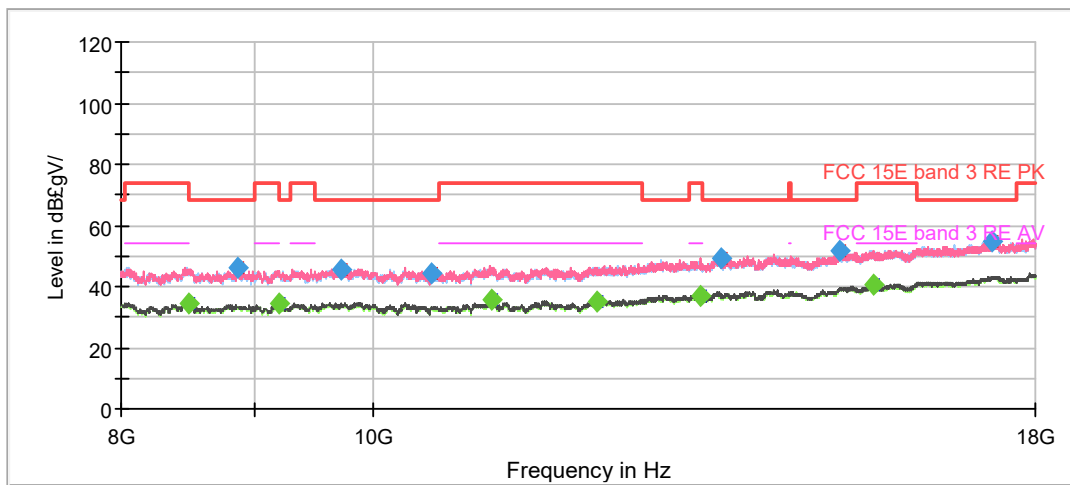
**Remark: 1. Correction Factor = Antenna factor + Insertion loss (cable loss + amplifier gain)**

**2. Margin = Limit –MAX Peak/ Average**

## 802.11n (HT40) CH159



Radiates Emission from 1GHz to 8GHz



Note: The signal beyond the limit is carrier.

Radiates Emission from 8GHz to 18GHz

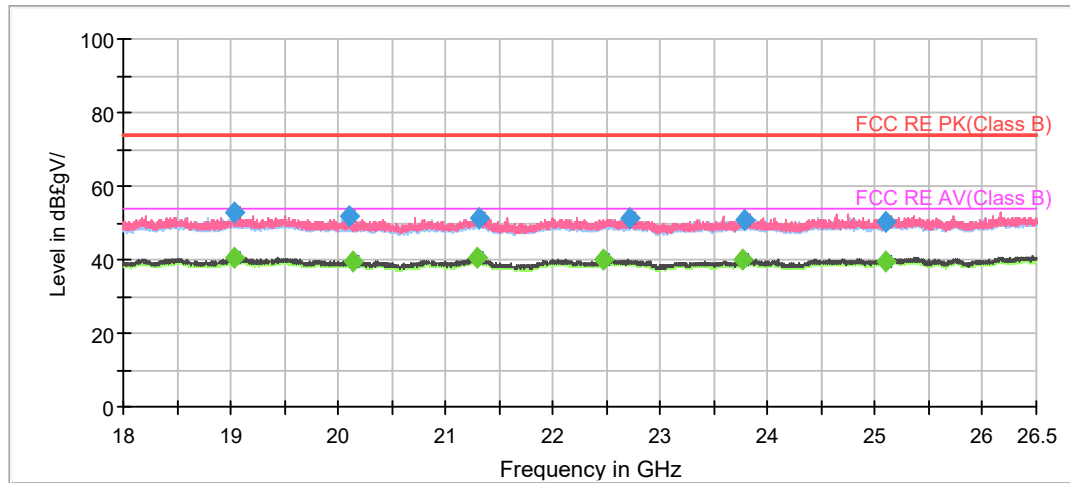


Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
1286.125000	46.26	---	68.20	21.94	500.0	100.0	V	111.0	5.0
1403.375000	---	35.27	54.00	18.73	500.0	200.0	H	159.0	5.7
1706.125000	---	36.46	54.00	17.54	500.0	200.0	H	144.0	7.4
1809.375000	48.56	---	68.20	19.64	500.0	200.0	V	221.0	7.7
2224.125000	---	37.40	54.00	16.60	500.0	200.0	H	95.0	9.4
2568.000000	50.52	---	68.20	17.68	500.0	100.0	H	265.0	10.7
2811.250000	---	38.99	54.00	15.01	500.0	100.0	H	61.0	11.1
3562.875000	52.52	---	68.20	15.68	500.0	200.0	H	140.0	13.9
3976.750000	---	42.07	54.00	11.93	500.0	100.0	V	106.0	14.5
4451.000000	53.83	---	68.20	14.37	500.0	100.0	H	274.0	15.7
7315.750000	---	47.34	54.00	6.66	500.0	100.0	V	354.0	21.3
7977.250000	60.54	---	68.20	7.66	500.0	200.0	V	50.0	23.6

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

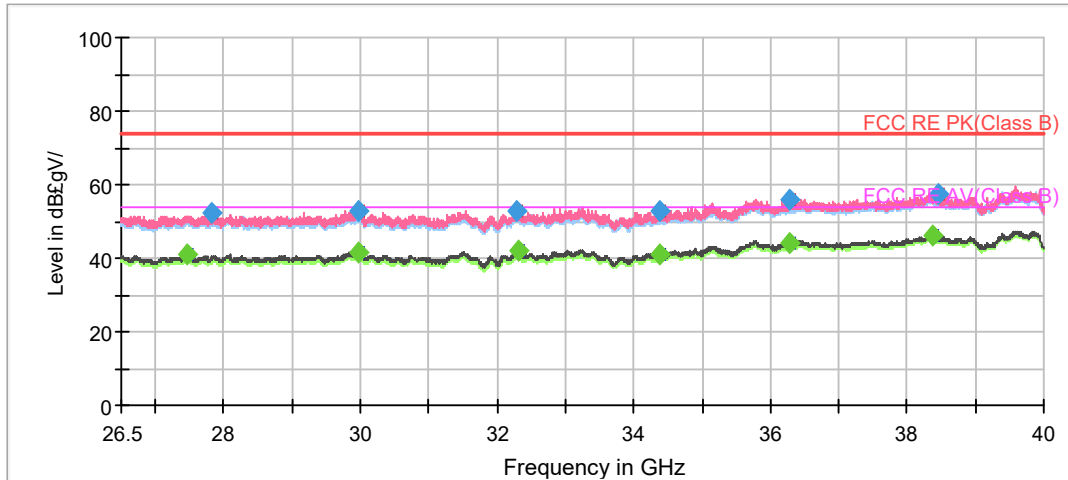
**2. Margin = Limit –MAX Peak/ Average**

During the test, the Radiates Emission from 18GHz to 40GHz was performed in all modes with all channels, 802.11a, Channel 36 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Radiates Emission from 18GHz to 26.5GHz

Frequency (MHz)	MaxPeak (dB $\mu$ V/m)	Average (dB $\mu$ V/m)	Limit (dB $\mu$ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
19034.87500	---	40.57	54.00	13.43	500.0	200.0	V	43.0	-3.0
19040.18750	52.83	---	74.00	21.17	500.0	200.0	V	22.0	-3.0
20095.25000	52.00	---	74.00	22.00	500.0	200.0	V	27.0	-3.0
20139.87500	---	39.33	54.00	14.68	500.0	200.0	V	214.0	-3.0
21298.00000	---	40.27	54.00	13.73	500.0	200.0	V	0.0	-1.9
21304.37500	51.51	---	74.00	22.49	500.0	200.0	V	0.0	-1.8
22473.12500	---	40.11	54.00	13.89	500.0	200.0	V	32.0	-1.9
22712.18750	51.42	---	74.00	22.58	500.0	200.0	V	75.0	-1.7
23770.43750	---	39.83	54.00	14.17	500.0	200.0	V	43.0	-1.0
23789.56250	50.77	---	74.00	23.23	500.0	100.0	H	62.0	-1.0
25095.37500	---	39.32	54.00	14.68	500.0	200.0	V	7.0	-0.5
25100.68750	50.24	---	74.00	23.76	500.0	200.0	V	121.0	-0.5



Radiates Emission from 26.5GHz to 40GHz

Frequency (MHz)	MaxPeak (dB µ V/m)	Average (dB µ V/m)	Limit (dB µ V/m)	Margin (dB)	Meas. Time (ms)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
27468.62500	---	41.13	54.00	12.87	500.0	200.0	V	128.0	0.4
27833.12500	52.24	---	74.00	21.76	500.0	200.0	V	31.0	0.7
29962.75000	---	41.62	54.00	12.38	500.0	200.0	V	10.0	1.4
29981.31250	52.87	---	74.00	21.13	500.0	200.0	V	0.0	1.4
32274.62500	52.68	---	74.00	21.32	500.0	200.0	H	174.0	-0.3
32306.68750	---	42.11	54.00	11.89	500.0	200.0	V	123.0	-0.2
34367.12500	52.64	---	74.00	21.36	500.0	200.0	V	76.0	1.4
34373.87500	---	40.87	54.00	13.13	500.0	200.0	V	197.0	1.5
36279.06250	55.76	---	74.00	18.24	500.0	200.0	V	163.0	5.1
36280.75000	---	44.03	54.00	9.97	500.0	200.0	V	20.0	5.1
38383.37500	---	46.15	54.00	7.85	500.0	200.0	V	193.0	7.3
38447.50000	57.45	---	74.00	16.55	500.0	200.0	H	310.0	7.2

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

2. Margin = Limit-MAX Peak/ Average

## 5.2. Conducted Emission

### Ambient condition

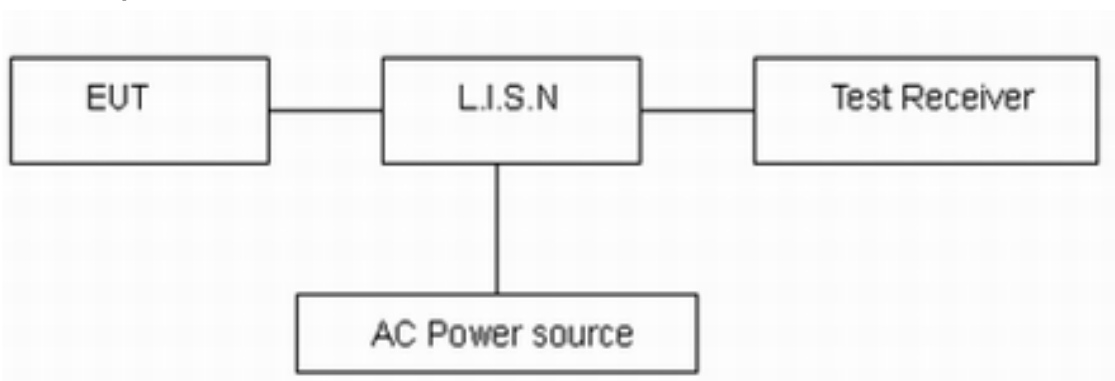
Temperature	Relative humidity	Pressure
15°C ~ 35°C	20% ~ 80%	86 kPa ~ 106 kPa

### 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. 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 120V/60Hz.

### Limits

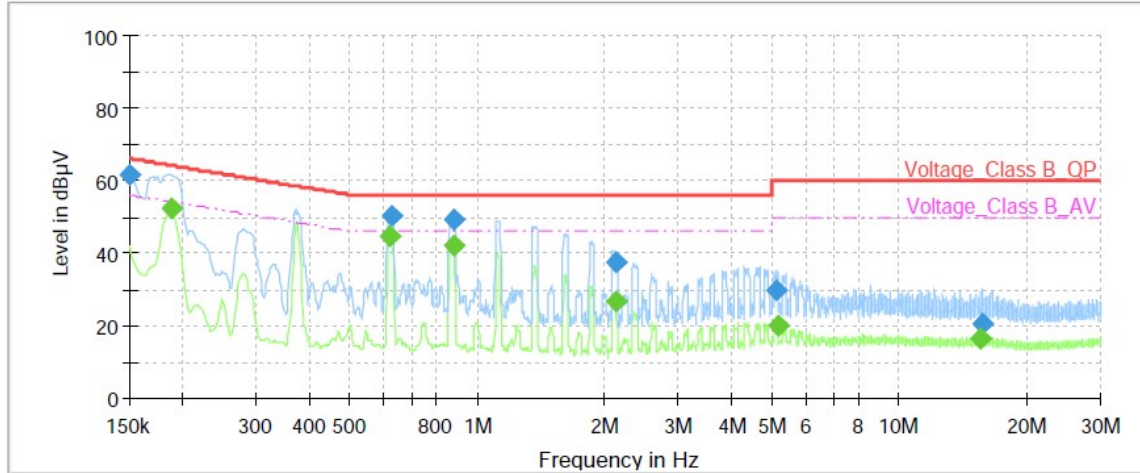
Frequency (MHz)	Conducted Limits(dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56 *	56 to 46*
0.5 - 5	56	46
5 - 30	60	50
*: Decreases with the logarithm of the frequency.		

### 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:

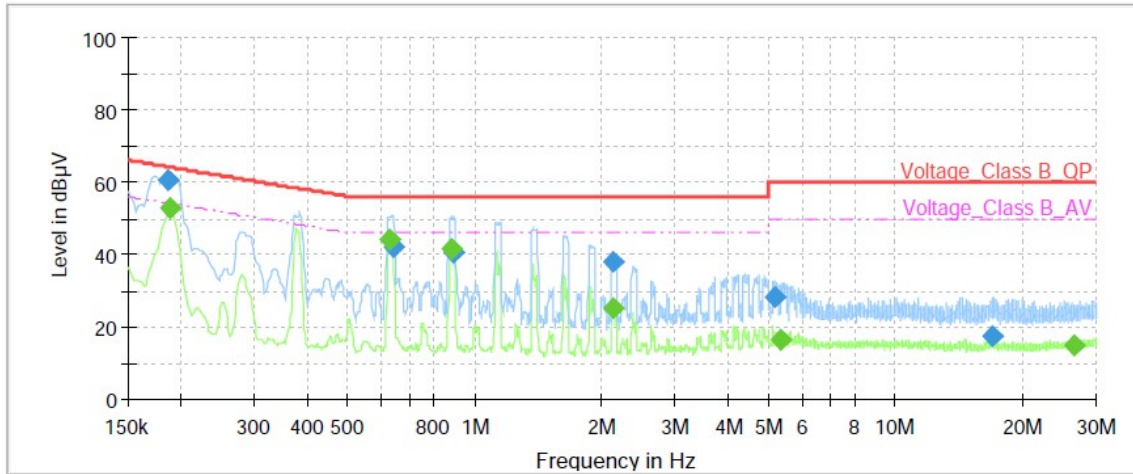
Following plots, Blue trace uses the peak detection and Green trace uses the average detection. During the test, the Conducted Emission was performed in all modes with all channels, 802.11a, Channel 36 are selected as the worst condition. The test data of the worst-case condition was recorded in this report.



Frequency (MHz)	QuasiPeak (dBμV)	Average (dBμV)	Limit (dBμV)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Line	Filter	Corr. (dB)
0.15	61.44	---	66.00	4.56	1000.0	9.000	L1	ON	21.0
0.19	---	52.56	54.11	1.55	1000.0	9.000	L1	ON	21.1
0.62	---	44.79	46.00	1.21	1000.0	9.000	L1	ON	20.7
0.63	50.08	---	56.00	5.92	1000.0	9.000	L1	ON	20.7
0.88	---	41.81	46.00	4.19	1000.0	9.000	L1	ON	20.3
0.88	49.36	---	56.00	6.64	1000.0	9.000	L1	ON	20.3
2.12	37.64	---	56.00	18.36	1000.0	9.000	L1	ON	19.7
2.14	---	26.89	46.00	19.11	1000.0	9.000	L1	ON	19.7
5.13	29.93	---	60.00	30.07	1000.0	9.000	L1	ON	19.5
5.16	---	19.91	50.00	30.09	1000.0	9.000	L1	ON	19.5
15.62	---	16.27	50.00	33.73	1000.0	9.000	L1	ON	19.6
15.72	20.28	---	60.00	39.72	1000.0	9.000	L1	ON	19.6

**Remark: Correct factor=cable loss + LISN factor**

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)
0.19	60.50	---	64.21	3.71	1000.0	9.000	N	ON	21.1
0.19	---	52.69	54.11	1.42	1000.0	9.000	N	ON	21.1
0.63	---	44.32	46.00	1.68	1000.0	9.000	N	ON	20.7
0.64	42.08	---	56.00	13.92	1000.0	9.000	N	ON	20.7
0.88	---	41.55	46.00	4.45	1000.0	9.000	N	ON	20.3
0.89	40.72	---	56.00	15.28	1000.0	9.000	N	ON	20.3
2.12	37.94	---	56.00	18.06	1000.0	9.000	N	ON	19.7
2.13	---	25.25	46.00	20.75	1000.0	9.000	N	ON	19.7
5.16	28.12	---	60.00	31.88	1000.0	9.000	N	ON	19.5
5.36	---	16.58	50.00	33.42	1000.0	9.000	N	ON	19.5
16.93	17.34	---	60.00	42.66	1000.0	9.000	N	ON	19.7
26.62	---	14.91	50.00	35.09	1000.0	9.000	N	ON	19.8

Remark: Correct factor=cable loss + LISN factor

N line Conducted Emission from 150 KHz to 30 MHz

## 6. Main Test Instruments

Name of Equipment	Manufacturer	Type/Model	Serial Number	Calibration Date	Expiration Time
Radiated Emission					
EMI Test Receiver	R&S	ESR	102389	2023-05-12	2024-05-11
Signal Analyzer	R&S	FSV40	101186	2023-05-12	2024-05-11
Loop Antenna	SCHWARZBECK	FMZB1519	1519-047	2023-04-16	2026-04-15
TRILOG Broadband Antenna	SCHWARZBECK	VULB 9163	1023	2023-07-14	2026-07-13
Horn Antenna	R&S	HF907	102723	2021-07-24	2024-07-23
Amplifier	R&S	SCU18	10034	2023-05-12	2024-05-11
Horn Antenna	ETS-Lindgren	3160-09	00102643	2021-10-10	2024-10-09
Horn Antenna	STEATITE	QSH-SL-26-40-K-15	16779	2023-01-17	2026-01-16
Software	R&S	EMC32	9.26.01	/	/
Conducted Emission					
Artificial main network	R&S	ENV216	102191	2022-12-10	2024-12-09
EMI Test Receiver	R&S	ESR	101667	2023-05-12	2024-05-11
Software	R&S	EMC32	10.35.10	/	/

## ANNEX A: The EUT Appearance

The EUT Appearance are submitted separately.



## ANNEX B: Test Setup Photos

The Test Setup Photos are submitted separately.

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