



TEST REPORT

No. I20D00005-SRD08

For

Client: Micronet

Production: Micronet SmartCam (ENH)

Model Name: Micronet SmartCam

Brand Name: TREQ

FCC ID: U80-A9

IC ID: 12186A-A9

Hardware Version: 1.01

Software Version: OS SW: ver_9.10.x

Issued date: 2020-07-29

NOTE

1. The test results in this test report relate only to the devices specified in this report.
2. This report shall not be reproduced except in full without the written approval of East China Institute of Telecommunications.
3. For the test results, the uncertainty of measurement is not taken into account when judging the compliance with specification, and the results of measurement or the average value of measurement results are taken as the criterion of the compliance with specification directly.

Test Laboratory:

East China Institute of Telecommunications

Add: Block No.4, No.766, Jingang Road, Pudong District, Shanghai, P. R. China

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Revision Version

| Report Number | Revision | Date | Memo |
|----------------------|-----------------|-------------|---------------------------------|
| I20D00005-SRD08 | 00 | 2020-07-29 | Initial creation of test report |

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1. Test Laboratory

1.1. Testing Location

| | |
|---------------------|--|
| Company Name | East China Institute of Telecommunications |
| Address | Block No.4, No.766, Jingang Road, Pudong District, Shanghai, P. R. China |
| Postal Code | 201206 |
| Telephone | +86 21 63843300 |
| FCC registration No | CN1177 |


1.2. Testing Environment

| | |
|--------------------|-----------|
| Normal Temperature | 15°C-35°C |
| Relative Humidity | 20%-75% |

1.3. Project Data

| | |
|--------------------|------------|
| Project Leader | Zhou Yan |
| Testing Start Date | 2020-03-22 |
| Testing End Date | 2020-03-25 |


1.4. Signature



Liu Yan
 (Prepared this test report)



Fan Songyan
 (Reviewed this test report)



Zheng Zhongbin
 (Approved this test report)

2. Client Information

2.1. Applicant Information

| | |
|--------------|--|
| Company Name | Micronet |
| Address | 1865 West 2100 South, Suite 2 Salt Lake City, Utah 84119 United States |
| Telephone | +1-801-990-8700 |
| Postcode | 84119 |

2.2. Manufacturer Information

| | |
|--------------|--|
| Company Name | Micronet |
| Address | 1865 West 2100 South, Suite 2 Salt Lake City, Utah 84119 United States |
| Telephone | +1-801-990-8700 |
| Postcode | 84119 |

3. Equipment Under Test (EUT) and Ancillary Equipment (AE)

3.1. About EUT

| | |
|-------------------------|----------------------------|
| Production | Micronet SmartCam (ENH) |
| Model name | Micronet SmartCam |
| WLAN(5G) | 802.11 a/n20/n40/ac20/ac40 |
| Frequency Range | ISM Bands: 5725MHz-5850MHz |
| WLAN type of modulation | OFDM |
| Extreme Temperature | -20/+70°C |
| Nominal Voltage | 12/24V |
| Extreme High Voltage | 32V |
| Extreme Low Voltage | 8V |
| Maximum of Antenna Gain | WIFI5.8GHz: 6dBi |

Note:

- Photographs of EUT are shown in ANNEX A of this test report.
- The value of the antenna gain is provided by the customer. For specific antenna information, please check the antenna specifications of the customer.

3.2. Internal Identification of EUT used during the test

| EUT ID* | SN or IMEI | HW Version | SW Version | Date of receipt |
|---------|------------|------------|-------------------|-----------------|
| N01 | / | 1.01 | OS SW: ver_9.10.x | 2020-01-08 |

*EUT ID: is used to identify the test sample in the lab internally.

3.3. Internal Identification of AE used during the test

| AE ID* | Description | Type | Manufacturer |
|--------|-------------|------|--------------|
| AE1 | RF cable | --- | AE1 |

*AE ID: is used to identify the test sample in the lab internally.

4. Reference Documents

4.1. Documents supplied by applicant

All technical documents are supplied by the client or manufacturer, which is the basis of testing.

4.2. Reference Documents for testing

The following documents listed in this section are referred for testing.

| Reference | Title | Version |
|------------|--|------------|
| FCC Part15 | FCC CFR 47, Part 15, Subpart C: 15.205 Restricted bands of operation; 15.209 Radiated emission limits, general requirements; Subpart E—Unlicensed National Information Infrastructure Devices | 2018-10-01 |
| ANSI 63.10 | Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9 kHz to 40 GHz | 2013 |
| KDB 789033 | Information Infrastructure (U-NII) Devices - Part 15, Subpart E | 2017 |
| KDB 905462 | COMPLIANCE MEASUREMENT PROCEDURES FOR UNLICENSED-NATIONAL INFORMATION INFRASTRUCTURE DEVICES OPERATING IN THE 5250-5350 MHz AND 5470-5725 MHz BANDS INCORPORATING DYNAMIC FREQUENCY SELECTION | 2016 |
| RSS-247 | Digital Transmission Systems (DTSs), Frequency Hopping Systems (FHSs) and Licence-Exempt Local Area Network (LE-LAN) Devices | 2017 |
| RSS-Gen | General Requirements for Compliance of Radio Apparatus | 2018 |

5. Test Results

5.1. Summary of Test Results

| Measurement Items | Sub-clause of Part15 | Sub-clause of IC | Verdict |
|--|----------------------|------------------|---------|
| Band edge compliance | 15.407 | RSS-247,6.2 | P |
| Transmitter Spurious Emission - Radiated | 15.407 | RSS-GEN,8.8 | P |

Note: Please refer to section 6 for detail; please refer to Annex A in this test report for the detailed test results.

The following terms are used in the above table.

| | |
|----|--|
| P | Pass, the EUT complies with the essential requirements in the standard. |
| NP | Not Perform, the test was not performed by ECIT. |
| NA | Not Applicable, the test was not applicable. |
| F | Fail, the EUT does not comply with the essential requirements in the standard. |

Test Conditions

| | |
|------|--------------------|
| Tnom | Normal Temperature |
| Tmin | Low Temperature |
| Tmax | High Temperature |
| Vnom | Normal Voltage |
| Vmin | Low Voltage |
| Vmax | High Voltage |
| Hnom | Norm Humidity |
| Anom | Norm Air Pressure |

For this report, all the test case listed above are tested under Normal Temperature and Normal Voltage, and also under norm humidity, the specific conditions as following:

| | | |
|--------------|------|---------|
| Temperature | Tnom | 25°C |
| Voltage | Vnom | 3.8V |
| Humidity | Hnom | 48% |
| Air Pressure | Anom | 1010hPa |

5.2. Statements

The Micronet SmartCam is a new product for testing.

ECIT only performed test cases which identified with P/NP/NA/F results in Annex A.

In this report, we only retest the radiation emission, and report the worst data at 12V. And the conduct test results please refer to report No: I19D00117-SRD08-5.8GWLAN, which was prepared by East China Institute of Telecommunications.

ECIT has verified that the compliance of the tested device specified in section 3 of this test report is successfully evaluated according to the procedure and test methods as defined in type certification requirement listed in section 4 of this test report.

6. Test Equipments Utilized

6.1. Radiated Emission Test System

| Item | Instrument Name | Type | SN | Manufacturer | Cal. Date | Cal. interval |
|------|--------------------------------------|----------|--------------|--------------|------------|---------------|
| 1 | Universal Radio Communication Tester | CMU200 | 123123 | R&S | 2019-05-10 | 1 year |
| 2 | EMI Test Receiver | ESU40 | 100307 | R&S | 2019-05-10 | 1 year |
| 3 | TRILOG Broadband Antenna | VULB9163 | VULB9163-515 | Schwarzbeck | 2020-02-28 | 2 years |
| 4 | Double- ridged Waveguide Antenna | ETS-3117 | 00135890 | ETS | 2020-02-28 | 2 years |
| 5 | 2-Line V-Network | ENV216 | 101380 | R&S | 2019-05-10 | 1 year |
| 6 | Loop Antenna | AL-130R | 121083 | COM-POWER | 2019-12-26 | 3 years |

Anechoic chamber

Fully anechoic chamber by ETS.

7. Measurement Uncertainty

Measurement uncertainty for all the testing in this report are within the limit specified in ECIT documents . The detailed measurement uncertainty is defined in ECIT documents.

| Measurement Items | Range | Confidence Level | Calculated Uncertainty |
|--|--------------------|------------------|------------------------|
| Peak Output Power-Conducted | 5100MHz-5850MHz | 95% | $\pm 1.024\text{dB}$ |
| Peak Power Spectral Density | 5100MHz-5850MHz | 95% | $\pm 1.024\text{dB}$ |
| Occupied 6dB Bandwidth | 5100MHz-5850MHz | 95% | $\pm 62.04\text{Hz}$ |
| Frequency Band Edges-Conducted | 5100MHz-5850MHz | 95% | $\pm 1.024\text{dB}$ |
| Conducted Emission | 30MHz-2GHz | 95% | $\pm 0.90\text{dB}$ |
| Conducted Emission | 2GHz-3.6GHz | 95% | $\pm 0.88\text{dB}$ |
| Conducted Emission | 3.6GHz-8GHz | 95% | $\pm 0.96\text{dB}$ |
| Conducted Emission | 8GHz-20GHz | 95% | $\pm 0.94\text{dB}$ |
| Conducted Emission | 20GHz-22GHz | 95% | $\pm 0.88\text{dB}$ |
| Conducted Emission | 22GHz-26GHz | 95% | $\pm 0.86\text{dB}$ |
| Transmitter Spurious Emission-Radiated | 9KHz-30MHz | 95% | $\pm 5.66\text{dB}$ |
| Transmitter Spurious Emission-Radiated | 30MHz-1000MHz | 95% | $\pm 4.98\text{dB}$ |
| Transmitter Spurious Emission-Radiated | 1000MHz -18000MHz | 95% | $\pm 5.06\text{dB}$ |
| Transmitter Spurious Emission-Radiated | 18000MHz -40000MHz | 95% | $\pm 5.20\text{dB}$ |
| AC Power line Conducted Emission | 0.15MHz-30MHz | 95% | $\pm 3.66\text{ dB}$ |

8. Test Environment

Shielding Room1 (6.0 meters×3.0 meters×2.7 meters) did not exceed following limits along the conducted RF performance testing:

| | |
|--------------------------|----------------------------|
| Temperature | Min. = 15 °C, Max. = 35 °C |
| Relative humidity | Min. = 20 %, Max. = 75 % |
| Shielding effectiveness | > 100 dB |
| Ground system resistance | < 0.5 Ω |

Control room did not exceed following limits along the EMC testing:

| | |
|--------------------------|----------------------------|
| Temperature | Min. = 15 °C, Max. = 35 °C |
| Relative humidity | Min. =30 %, Max. = 60 % |
| Shielding effectiveness | > 100 dB |
| Electrical insulation | > 10 kΩ |
| Ground system resistance | < 0.5 Ω |

Fully-anechoic chamber1 (6.9 meters×10.9 meters×5.4 meters) did not exceed following limits along the EMC testing:

| | |
|------------------------------|--|
| Temperature | Min. = 15 °C, Max. = 35 °C |
| Relative humidity | Min. = 25 %, Max. = 75 % |
| Shielding effectiveness | > 100 dB |
| Electrical insulation | > 10 kΩ |
| Ground system resistance | < 0.5 Ω |
| VSWR | Between 0 and 6 dB, from 1GHz to 18GHz |
| Site Attenuation Deviation | Between -4 and 4 dB,30MHz to 1GHz |
| Uniformity of field strength | Between 0 and 6 dB, from 80MHz to 3000 MHz |

ANNEX A. Detailed Test Results

ANNEX A.1. Transmitter Spurious Emission

Measurement Limit:

| Standard | Frequency (MHz) | Limit (dBm/MHz) |
|------------------------|-----------------|-----------------|
| FCC 47 CFR Part 15.407 | 5725MHz~5850MHz | < -27 |

The measurement is made according to ANSI C63.10 .

In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

| 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 | 30 | / |
| 30-88 | 100 | 40 |
| 88-216 | 150 | 43.5 |
| 216-960 | 200 | 46 |
| Above 960 | 500 | 54 |

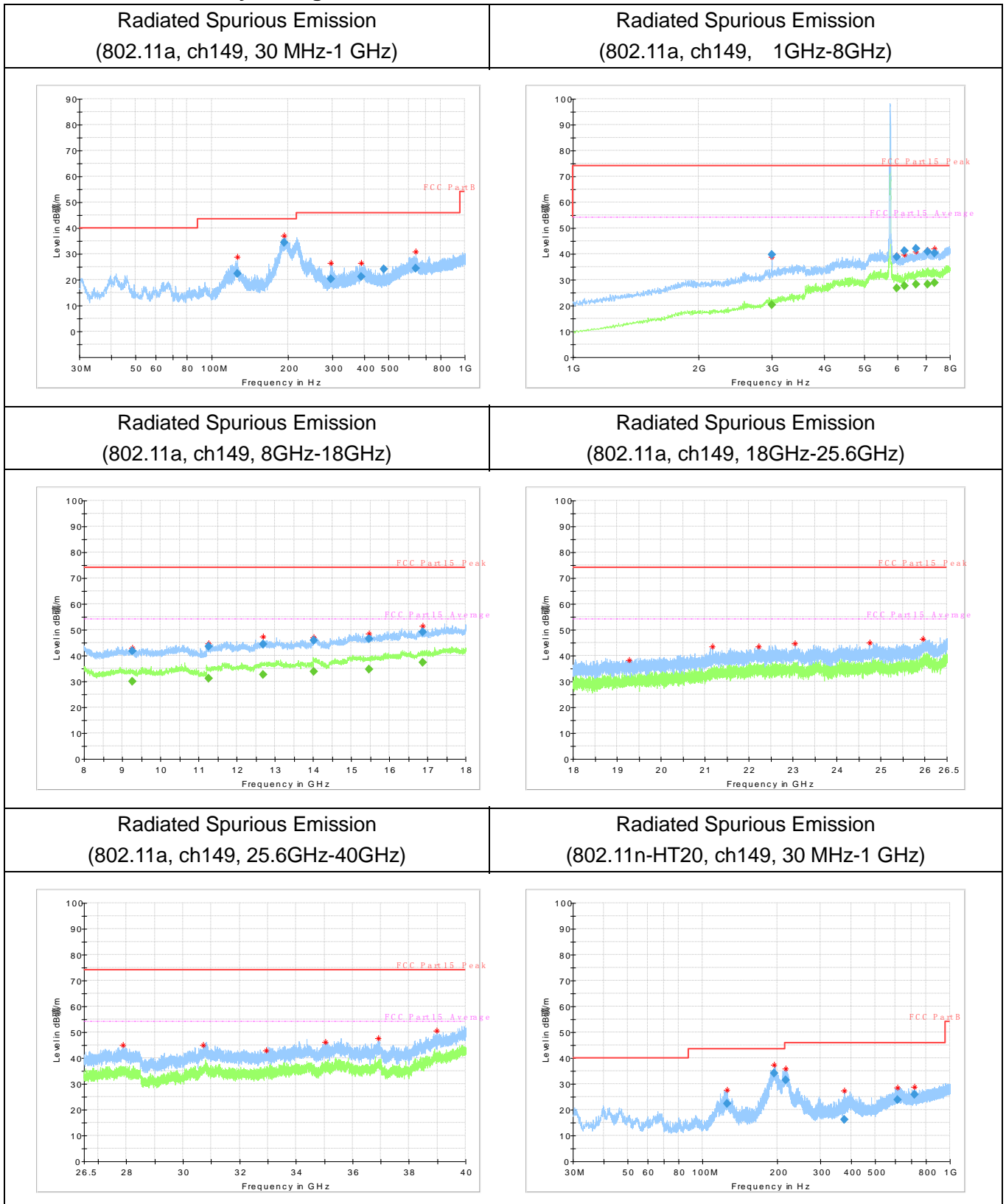
A.1.1 Transmitter Spurious Emission - Radiated

Modulation type and data rate tested (Only worst case result is given below):

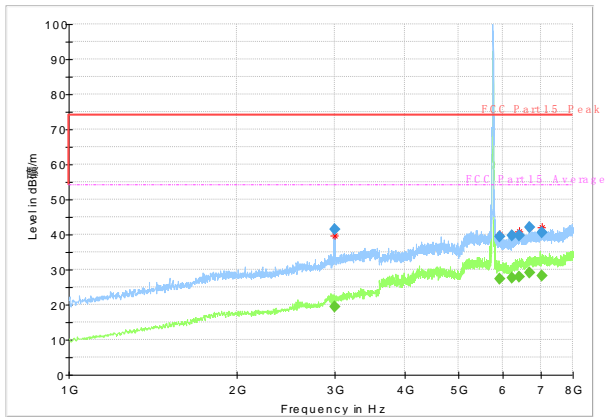
| Mode | Data rate | Channel |
|----------------|-----------|--------------|
| 802.11a | 6Mbps | 165(5825MHz) |
| 802.11n-HT20 | MCS0 | 157(5785MHz) |
| 802.11n-HT40 | MCS0 | 151(5755MHz) |
| 802.11ac-VHT20 | MCS0 | 165(5825MHz) |
| 802.11ac-VHT40 | MCS0 | 151(5755MHz) |

Measurement Uncertainty:

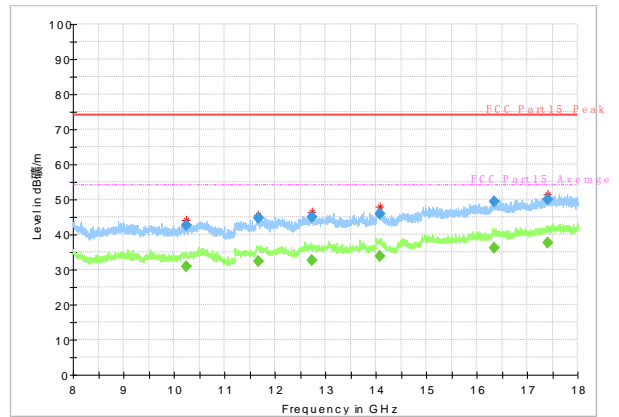
| Frequency Range | Uncertainty(dB) |
|----------------------|-----------------|
| $f \leq 1\text{GHz}$ | 3.9 |
| $f > 1\text{GHz}$ | 4.3 |

Measurement Results:
This data is obtained by testing at 12V


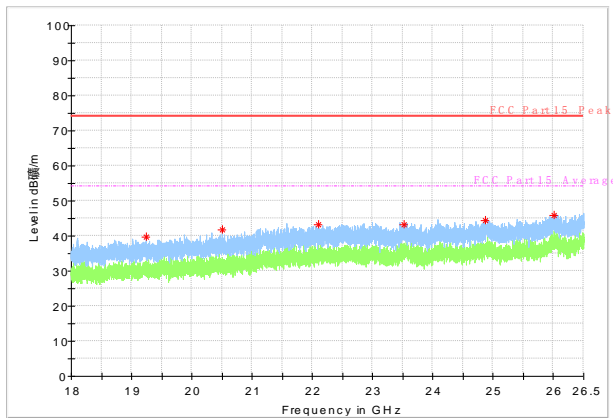
Radiated Spurious Emission
(802.11n-HT20, ch149, 1GHz-8GHz)



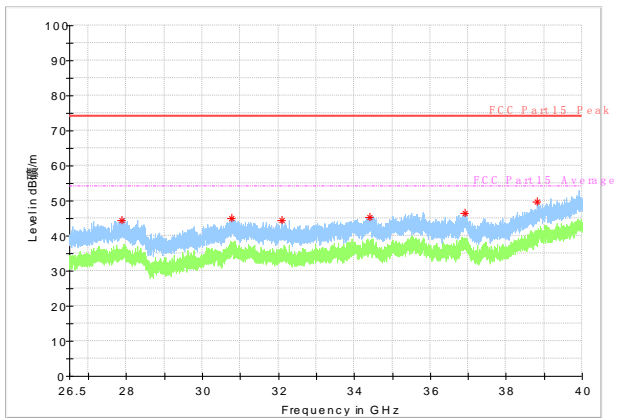
Radiated Spurious Emission
(802.11n-HT20, ch149, 8GHz-18GHz)



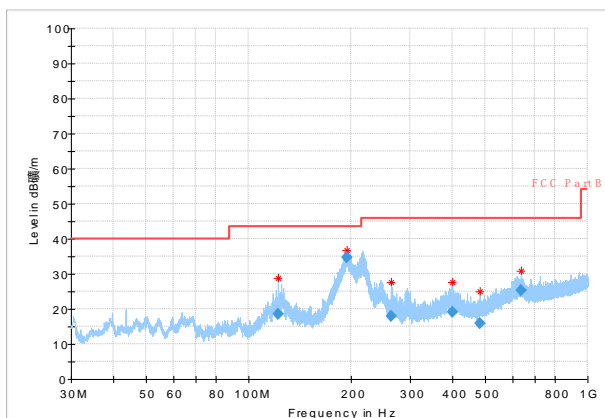
Radiated Spurious Emission
(802.11n-HT20, ch149, 18GHz-25.6GHz)



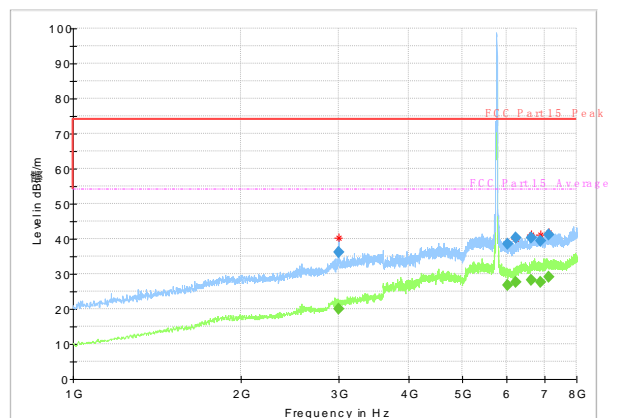
Radiated Spurious Emission
(802.11n-HT20, ch149, 25.6GHz-40GHz)



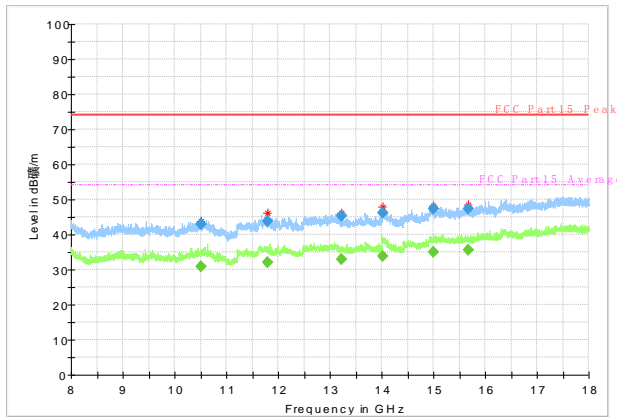
Radiated Spurious Emission
(802.11ac-VHT20, ch149, 30 MHz-1 GHz)



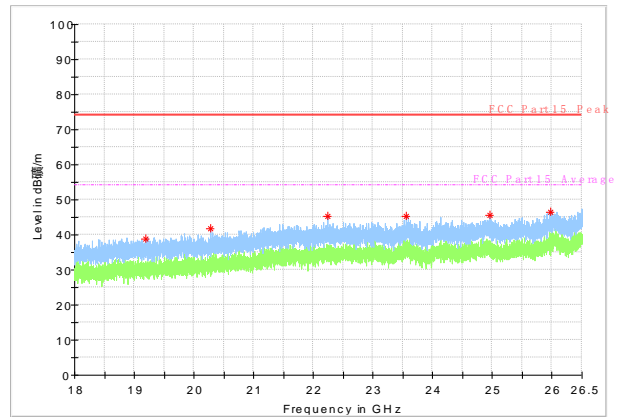
Radiated Spurious Emission
(802.11ac-VHT20, ch149, 1GHz-8GHz)



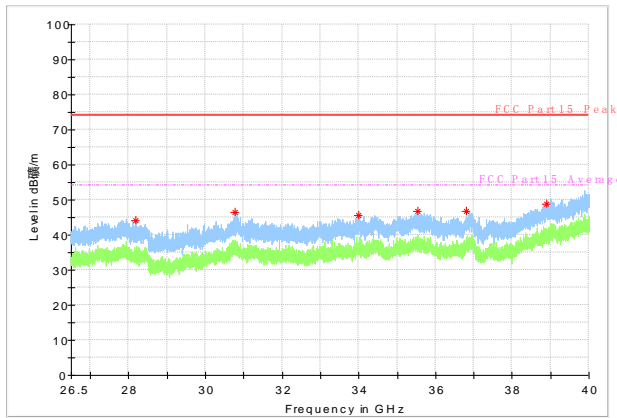
Radiated Spurious Emission
(802.11ac-VHT20, ch149, 8GHz-18GHz)



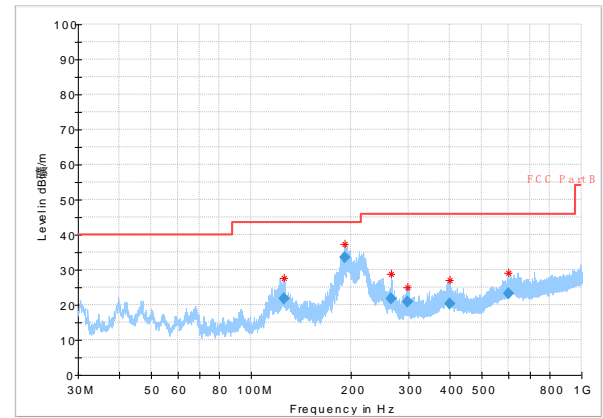
Radiated Spurious Emission
(802.11ac-VHT20, ch149, 18GHz-25.6GHz)



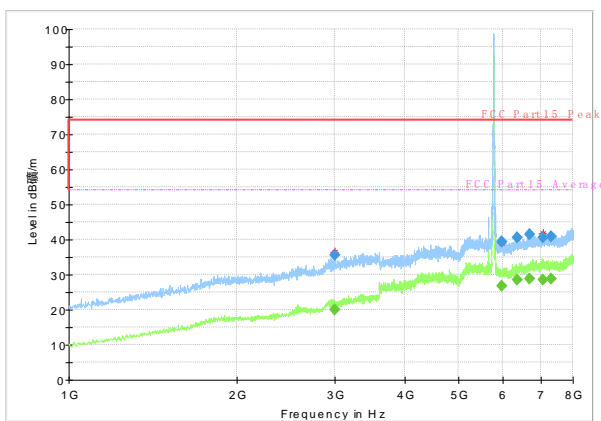
Radiated Spurious Emission
(802.11ac-VHT20, ch149, 25.6GHz-40GHz)



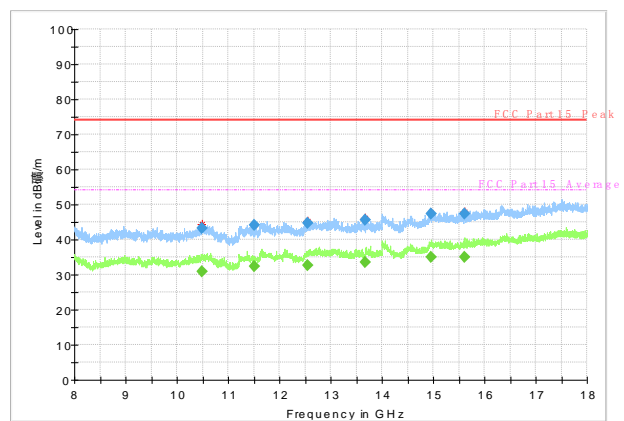
Radiated Spurious Emission
(802.11n-HT40, ch151, 30 MHz-1 GHz)



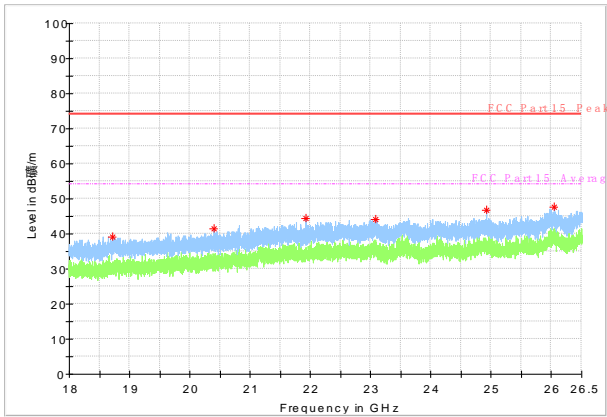
Radiated Spurious Emission
(802.11n-HT40, ch151, 1GHz-8GHz)



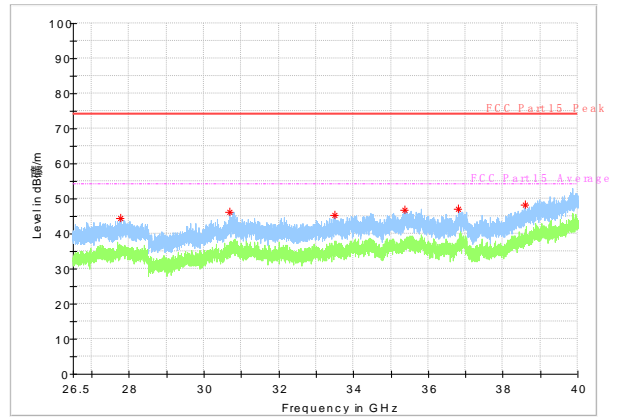
Radiated Spurious Emission
(802.11n-HT40, ch151, 8GHz-18GHz)



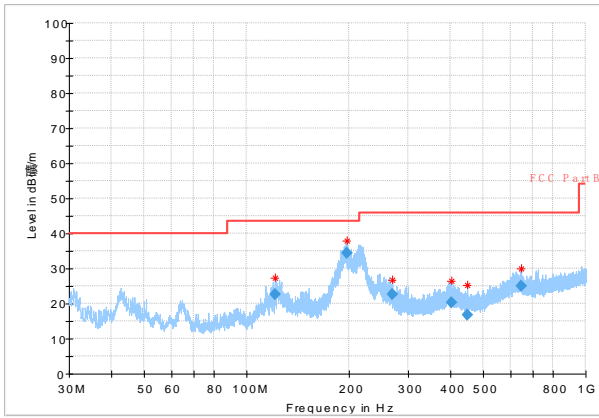
Radiated Spurious Emission
(802.11n-HT40, ch151, 18GHz-25.6GHz)



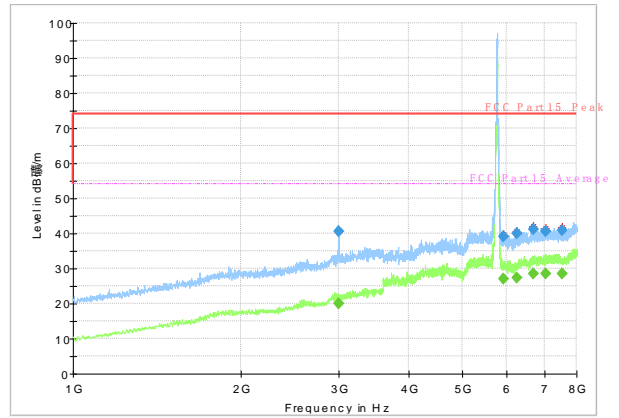
Radiated Spurious Emission
(802.11n-HT40, ch151, 25.6GHz-40GHz)



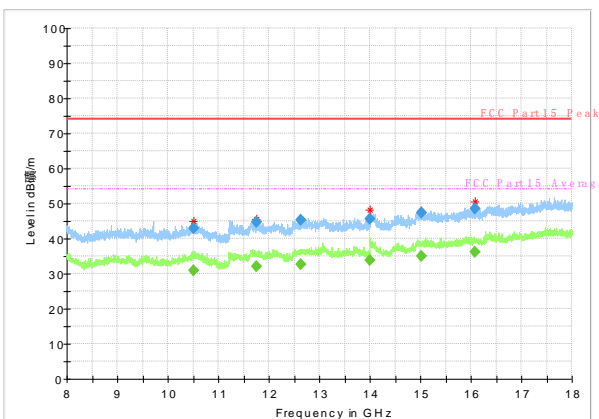
Radiated Spurious Emission
(802.11ac-VHT40, ch151, 30 MHz-1 GHz)



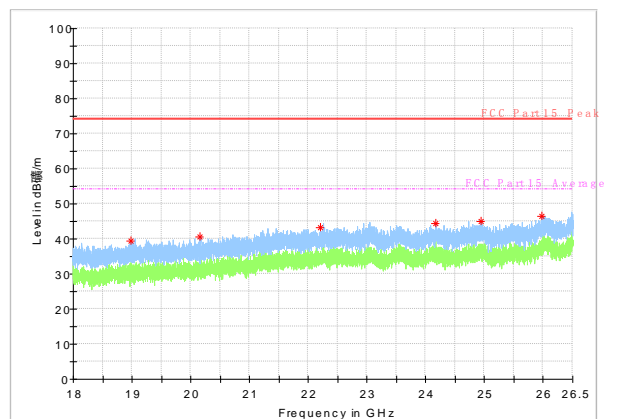
Radiated Spurious Emission
(802.11ac-VHT40, ch151, 1GHz-8GHz)

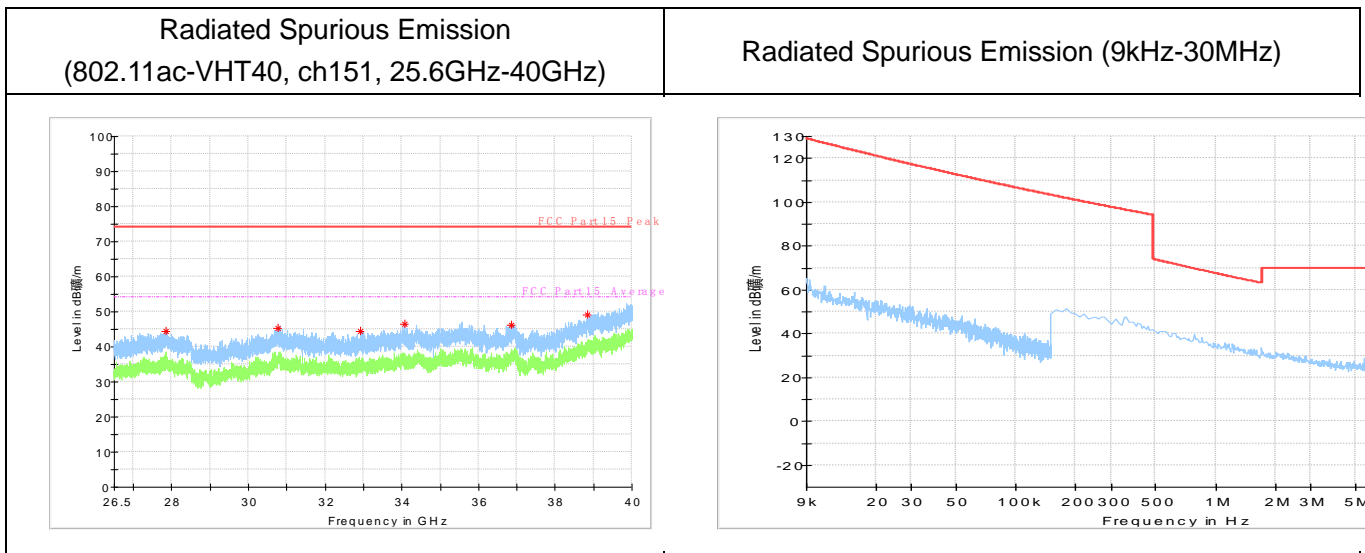


Radiated Spurious Emission
(802.11ac-VHT40, ch151, 8GHz-18GHz)



Radiated Spurious Emission
(802.11ac-VHT40, ch151, 18GHz-25.6GHz)




Note:

A "reference path loss" is established and the AR_{pl} is the attenuation of "reference path loss", and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

P_{Mea} is the field strength recorded from the instrument.

802.11a

Channel 149 (30MHz ~ 1GHz)

| Frequency (MHz) | Result (dBμV/m) | ARpl (dB) | PMea (dBμV/m) | Polarity |
|-----------------|-----------------|-----------|---------------|----------|
| 126.2 | 22.34 | -17.2 | 39.54 | H |
| 193.1 | 34.4 | -15.6 | 50 | H |
| 296.3 | 20.38 | -11.6 | 31.98 | H |
| 388.8 | 21.18 | -8.9 | 30.08 | H |
| 480.0 | 24.03 | -7.8 | 31.83 | V |
| 637.8 | 24.43 | -3.4 | 27.83 | H |

Channel 149 (1GHz ~ 8GHz)

| Frequency (MHz) | Result (dBμV/m) | ARpl (dB) | PMea (dBμV/m) | Polarity |
|-----------------|-----------------|-----------|---------------|----------|
| 2999.4 | 39.59 | -4.4 | 43.99 | H |
| 5965.2 | 38.88 | 0.9 | 37.98 | H |
| 6226.8 | 41.07 | 1.7 | 39.37 | H |
| 6637.8 | 42.09 | 2.7 | 39.39 | H |
| 7063.0 | 40.79 | 3 | 37.79 | H |
| 7338.6 | 40.35 | 3.4 | 36.95 | H |

Channel 149 (8GHz ~ 18GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 9269.0 | 41.76 | 4.9 | 36.86 | H |
| 11265.0 | 43.66 | 7.4 | 36.26 | H |
| 12699.0 | 44.5 | 10.1 | 34.4 | H |
| 14013.0 | 46.01 | 12 | 34.01 | H |
| 15469.6 | 46.39 | 14.2 | 32.19 | H |
| 16872.8 | 49.2 | 16.9 | 32.3 | H |

Channel 149 (18GHz ~ 26.5GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 19279.2 | 38.12 | -5.8 | 43.92 | H |
| 21172.2 | 43.52 | -4 | 47.52 | V |
| 22222.0 | 43.64 | -3 | 46.64 | V |
| 23052.4 | 44.81 | -3 | 47.81 | V |
| 24748.2 | 44.87 | -2.2 | 47.07 | V |
| 25957.7 | 46.57 | -2 | 48.57 | H |

Channel 149 (26.5GHz ~ 40GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 27866.2 | 45.13 | -0.4 | 45.53 | H |
| 30710.6 | 45.13 | 0 | 45.13 | H |
| 32950.3 | 43.08 | 1 | 42.08 | V |
| 35042.8 | 46.24 | -0.2 | 46.44 | V |
| 36919.3 | 47.57 | 1.8 | 45.77 | V |
| 38980.8 | 50.46 | 4 | 46.46 | V |

802.11n-HT20

Channel 149 (30MHz ~ 1GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 126.1 | 22.27 | -17.2 | 39.47 | H |
| 194.7 | 34.21 | -15.6 | 49.81 | H |
| 217.7 | 31.36 | -14 | 45.36 | H |
| 374.9 | 16.23 | -9.1 | 25.33 | V |
| 613.1 | 23.7 | -2.7 | 26.4 | H |
| 720.6 | 25.78 | -3.1 | 28.88 | H |

Channel 149 (1GHz ~ 8GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 2993.2 | 41.6 | -4.4 | 46 | H |
| 5908.8 | 39.33 | 0.9 | 38.43 | H |
| 6232.6 | 39.73 | 1.7 | 38.03 | H |
| 6414.2 | 39.71 | 2 | 37.71 | H |
| 6688.0 | 42.01 | 2.8 | 39.21 | H |
| 7041.4 | 40.58 | 3 | 37.58 | H |

Channel 149 (8GHz ~ 18GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 10246.8 | 42.63 | 6.2 | 36.43 | H |
| 11677.4 | 44.61 | 8.6 | 36.01 | H |
| 12725.6 | 44.91 | 10.2 | 34.71 | H |
| 14073.6 | 45.81 | 12.1 | 33.71 | H |
| 16349.0 | 49.46 | 16.2 | 33.26 | H |
| 17405.2 | 50.14 | 17.7 | 32.44 | H |

Channel 149 (18GHz ~ 26.5GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 19245.2 | 39.61 | -5.7 | 45.31 | V |
| 20502.4 | 41.8 | -4.3 | 46.1 | H |
| 22093.6 | 43.33 | -3.1 | 46.43 | V |
| 23519.0 | 43.3 | -2.8 | 46.1 | V |
| 24863.8 | 44.35 | -2.3 | 46.65 | V |
| 26003.6 | 45.84 | -2 | 47.84 | H |

Channel 149 (26.5GHz ~ 40GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 27873.0 | 44.46 | -0.4 | 44.86 | H |
| 30779.5 | 44.94 | 0.2 | 44.74 | V |
| 32095.8 | 44.54 | 0.4 | 44.14 | H |
| 34415.0 | 45.32 | 1.3 | 44.02 | H |
| 36912.6 | 46.42 | 1.8 | 44.62 | V |
| 38820.1 | 49.8 | 3.5 | 46.3 | H |

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Channel 151 (30MHz ~ 1GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 125.8 | 21.76 | -17.1 | 38.86 | H |
| 192.4 | 33.63 | -15.6 | 49.23 | H |
| 266.2 | 21.64 | -12.2 | 33.84 | H |
| 298.2 | 20.81 | -11.5 | 32.31 | H |
| 399.8 | 20.39 | -8.4 | 28.79 | V |
| 599.0 | 23.29 | -3.1 | 26.39 | H |

Channel 151 (1GHz ~ 8GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 2997.8 | 35.53 | -4.4 | 39.93 | H |
| 5966.4 | 39.33 | 0.9 | 38.43 | H |
| 6357.4 | 40.52 | 1.9 | 38.62 | H |
| 6690.2 | 41.52 | 2.8 | 38.72 | H |
| 7075.2 | 40.63 | 3 | 37.63 | H |
| 7301.8 | 40.81 | 3.4 | 37.41 | H |

Channel 151 (8GHz ~ 18GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 10499.4 | 43.22 | 6.9 | 36.32 | H |
| 11520.2 | 44.09 | 8.4 | 35.69 | H |
| 12556.4 | 44.81 | 9.7 | 35.11 | H |
| 13678.6 | 45.63 | 10.6 | 35.03 | H |
| 14958.2 | 47.45 | 13.6 | 33.85 | H |
| 15602.8 | 47.28 | 14.3 | 32.98 | H |

Channel 151 (18GHz ~ 26.5GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 18720.0 | 39.19 | -5.6 | 44.79 | H |
| 20403.0 | 41.48 | -4.5 | 45.98 | H |
| 21925.3 | 44.33 | -3.4 | 47.73 | V |
| 23079.6 | 44.25 | -3.1 | 47.35 | H |
| 24920.7 | 46.88 | -2.4 | 49.28 | V |
| 26052.9 | 47.62 | -2 | 49.62 | V |

Channel 151 (26.5GHz ~ 40GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 27760.9 | 44.36 | -0.5 | 44.86 | H |
| 30679.6 | 46.12 | 0 | 46.12 | H |
| 33510.6 | 45.31 | 1.3 | 44.01 | H |
| 35366.8 | 46.78 | 1.6 | 45.18 | H |
| 36816.7 | 47.13 | 2.3 | 44.83 | V |
| 38608.2 | 48.32 | 2.9 | 45.42 | H |

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Channel 149 (30MHz ~ 1GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 122.3 | 18.61 | -16.8 | 35.41 | H |
| 194.3 | 34.83 | -15.6 | 50.43 | H |
| 263.4 | 17.88 | -12.4 | 30.28 | H |
| 398.7 | 19.12 | -8.5 | 27.62 | H |
| 479.9 | 15.92 | -7.8 | 23.72 | H |
| 635.9 | 25.32 | -3.3 | 28.62 | H |

Channel 149 (1GHz ~ 8GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 2998.6 | 36.09 | -4.4 | 40.49 | H |
| 6008.6 | 38.4 | 0.9 | 37.5 | H |
| 6220.2 | 40.36 | 1.7 | 38.66 | H |
| 6637.4 | 40.15 | 2.7 | 37.45 | H |
| 6903.4 | 39.42 | 3 | 36.42 | H |
| 7146.8 | 41.1 | 3.1 | 38 | H |

Channel 149 (8GHz ~ 18GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 10504.4 | 43.02 | 6.9 | 36.12 | H |
| 11789.8 | 43.97 | 8.8 | 35.17 | H |
| 13230.0 | 45.25 | 10.4 | 34.85 | H |
| 14030.2 | 46.28 | 12 | 34.28 | H |
| 14991.8 | 47.22 | 13.7 | 33.52 | H |
| 15682.4 | 47.4 | 14.6 | 32.8 | H |

Channel 149 (18GHz ~ 26.5GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 19190.8 | 38.76 | -5.6 | 44.36 | H |
| 20286.5 | 41.71 | -4.8 | 46.51 | V |
| 22246.6 | 45.26 | -3 | 48.26 | H |
| 23550.5 | 45.24 | -2.8 | 48.04 | H |
| 24963.2 | 45.62 | -2.4 | 48.02 | V |
| 25977.2 | 46.57 | -2 | 48.57 | H |

Channel 149 (26.5GHz ~ 40GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 28191.6 | 44.21 | -0.4 | 44.61 | V |
| 30760.6 | 46.5 | 0.1 | 46.4 | H |
| 33989.8 | 45.48 | 1.5 | 43.98 | V |
| 35523.4 | 46.78 | 1.5 | 45.28 | H |
| 36793.8 | 46.78 | 2.3 | 44.48 | H |
| 38889.0 | 48.85 | 3.7 | 45.15 | H |

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Channel 151 (30MHz ~ 1GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 121.7 | 22.72 | -16.8 | 39.52 | H |
| 197.8 | 34.29 | -15.5 | 49.79 | H |
| 269.8 | 22.79 | -12 | 34.79 | H |
| 402.1 | 20.44 | -8.4 | 28.84 | H |
| 449.4 | 16.87 | -8.3 | 25.17 | V |
| 643.9 | 25.08 | -3.5 | 28.58 | H |

Channel 151 (1GHz ~ 8GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 2998.8 | 40.57 | -4.4 | 44.97 | H |
| 5903.8 | 39.16 | 0.9 | 38.26 | H |
| 6250.8 | 40.09 | 1.8 | 38.29 | H |
| 6701.2 | 41.14 | 2.8 | 38.34 | H |
| 7051.6 | 40.48 | 3 | 37.48 | H |
| 7544.2 | 40.92 | 3 | 37.92 | H |

Channel 151 (8GHz ~ 18GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 10506.6 | 42.89 | 6.9 | 35.99 | H |
| 11752.2 | 44.65 | 8.7 | 35.95 | H |
| 12637.0 | 45.31 | 9.9 | 35.41 | H |
| 14001.0 | 45.69 | 12 | 33.69 | H |
| 15027.0 | 47.47 | 13.6 | 33.87 | H |
| 16089.0 | 48.59 | 15.3 | 33.29 | H |

Channel 151 (18GHz ~ 26.5GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 18989.4 | 39.36 | -5.4 | 44.76 | H |
| 20149.6 | 40.61 | -4.8 | 45.41 | H |
| 22209.2 | 43.24 | -3 | 46.24 | V |
| 24167.6 | 44.27 | -2.8 | 47.07 | H |
| 24938.6 | 45.11 | -2.4 | 47.51 | H |
| 25980.6 | 46.33 | -2 | 48.33 | V |

Channel 151 (26.5GHz ~ 40GHz)

| Frequency (MHz) | Result (dB μ V/m) | ARpl (dB) | PMea (dB μ V/m) | Polarity |
|-----------------|-----------------------|-----------|---------------------|----------|
| 27836.5 | 44.52 | -0.4 | 44.92 | V |
| 30760.6 | 45.37 | 0.1 | 45.27 | H |
| 32930.0 | 44.3 | 1 | 43.3 | V |
| 34064.0 | 46.53 | 1.5 | 45.03 | H |
| 36872.0 | 46.05 | 2 | 44.05 | V |
| 38844.4 | 49.01 | 3.6 | 45.41 | V |

ANNEX A.2. Band Edges Compliance

Band Edges - Radiated

Measurement Limit:

- (1) 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.
- (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.
- (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.
- (5) In addition, radiated emissions which fall in the restricted bands, as defined in § 15.205(a), must also comply with the radiated emission limits specified in § 15.209(a) (see § 15.205(c)).

| Frequency (MHz) | Field strength (microvolts/meter) | Measurement distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30.0 | 30 | 30 |
| 30-88 | 100** | 3 |
| 88-216 | 150** | 3 |
| 216-960 | 200** | 3 |
| Above 960 | 500 | 3 |

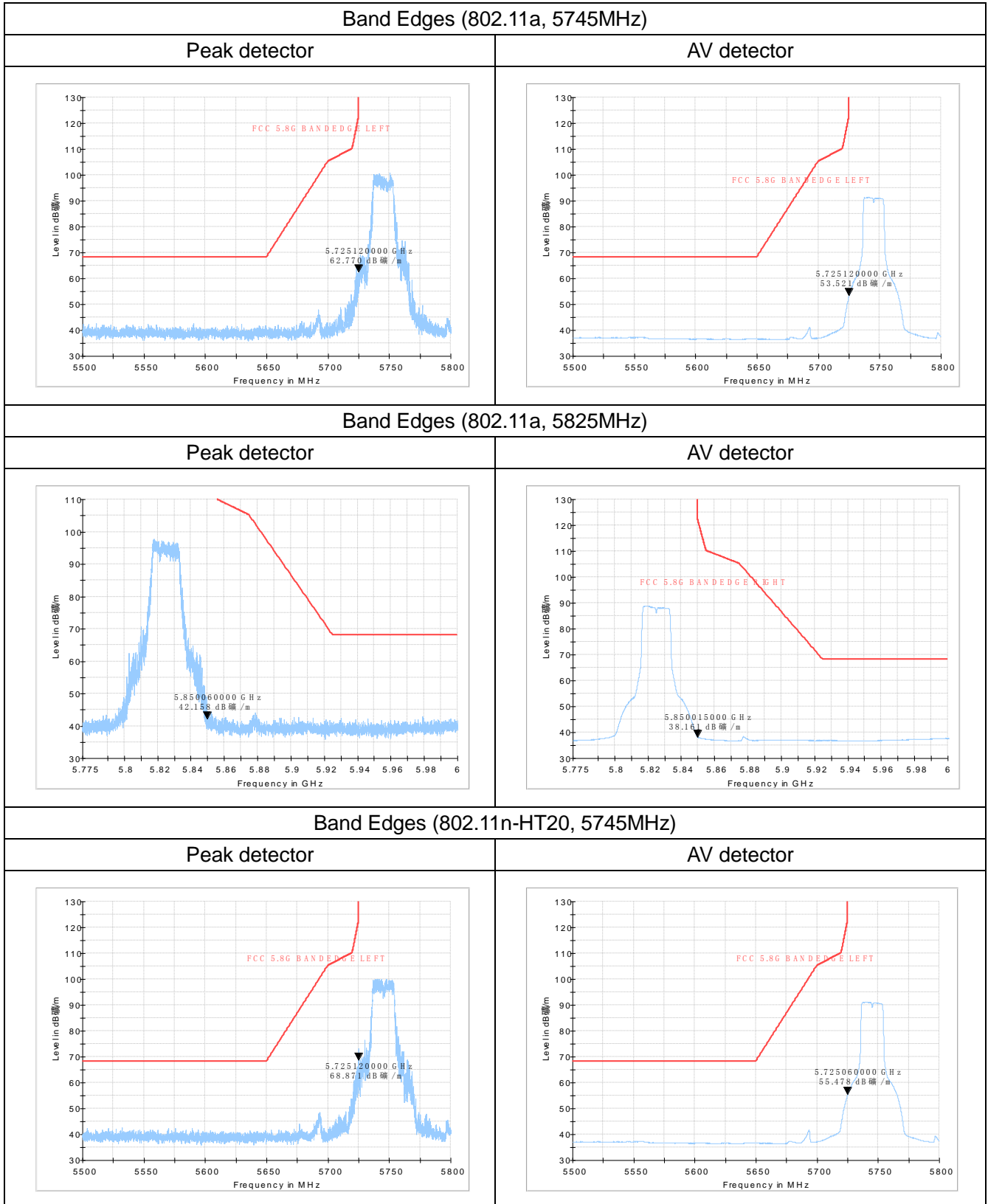
| MHz | MHz | MHz | GHz |
|-------------------|---------------------|---------------|-------------|
| 0.090-0.110 | 16.42-16.423 | 399.9-410 | 4.5-5.15 |
| 0.495-0.505 | 16.69475-16.69525 | 608-614 | 5.35-5.46 |
| 2.1735-2.1905 | 16.80425-16.80475 | 960-1240 | 7.25-7.75 |
| 4.125-4.128 | 25.5-25.67 | 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 | | | |

Set the spectrum analyzer in the following:

- (a) Sweep mode :SweepAnalyzer6db.
- (b) PEAK: RBW=1MHz / VBW=3MHz / Sweep=2.5ms, Sweep point;5001
- (c) AVERAGE: RBW=1MHz / VBW=10Hz / Sweep=2.5ms, Sweep point;5001

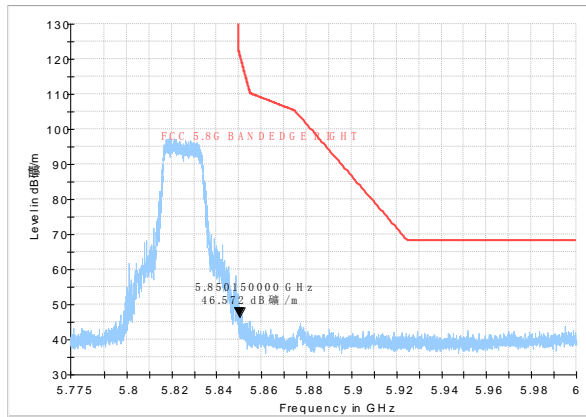
Measurement Result:

This data is obtained by testing at 12V

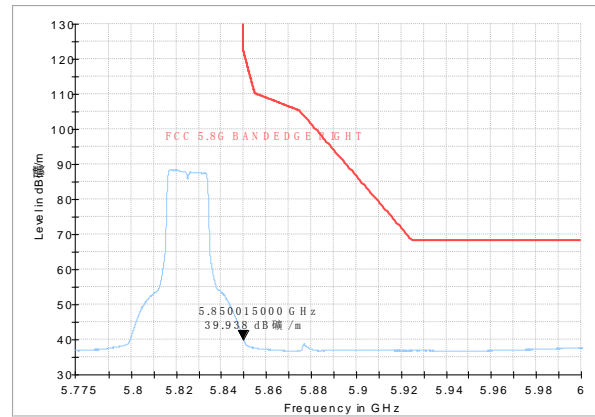


Band Edges (802.11n-HT20, 5825MHz)

Peak detector

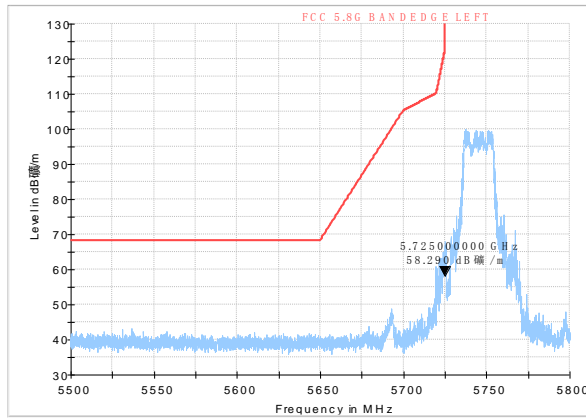


AV detector

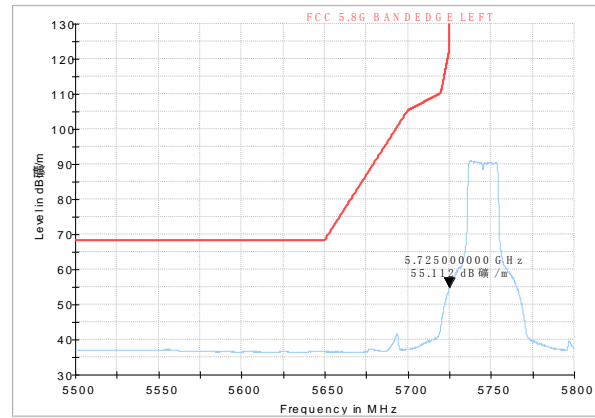


Band Edges (802.11ac-VHT20, 5745MHz)

Peak detector

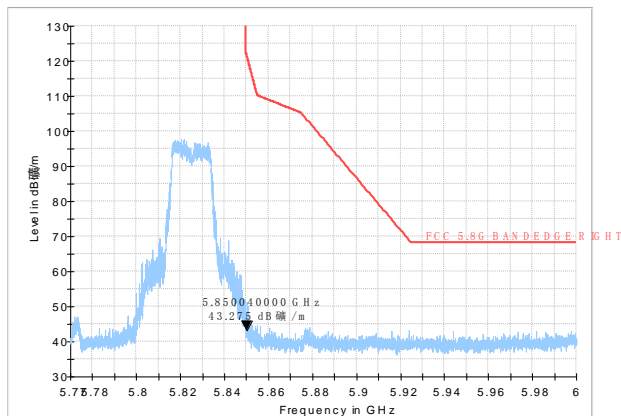


AV detector

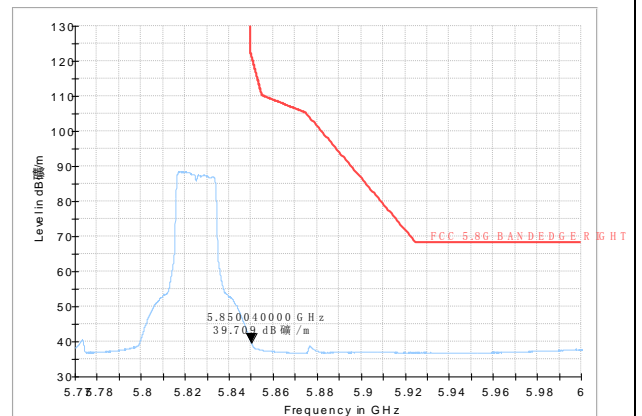


Band Edges (802.11ac-VHT20, 5825MHz)

Peak detector

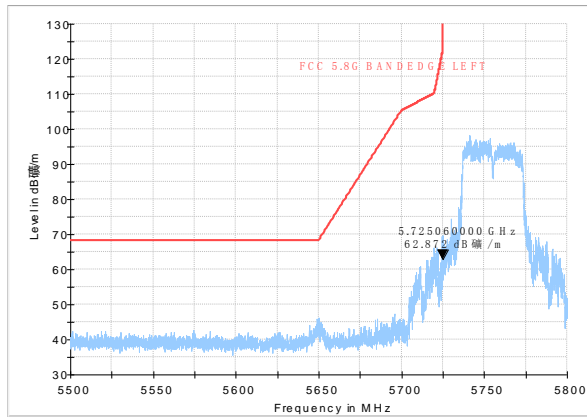


AV detector

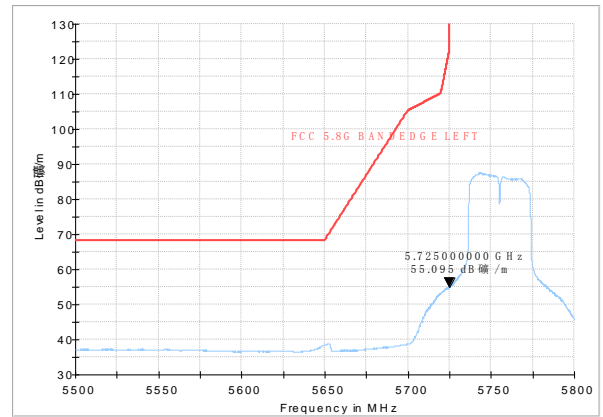


Band Edges (802.11n-HT40, 5755MHz)

Peak detector

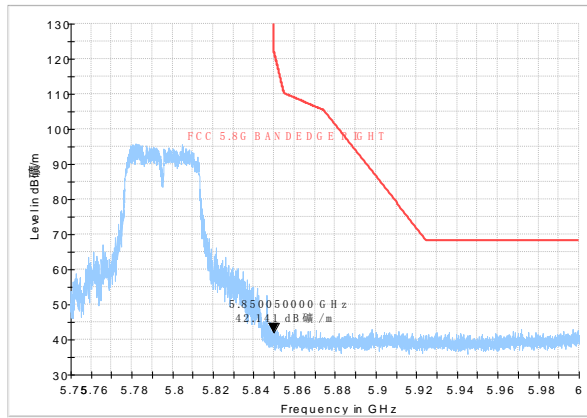


AV detector

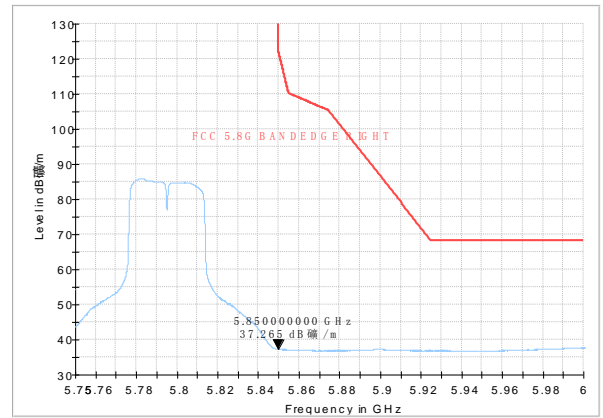


Band Edges (802.11n-HT40, 5795MHz)

Peak detector

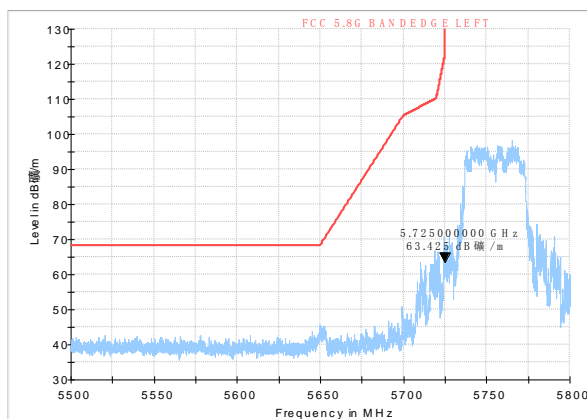


AV detector

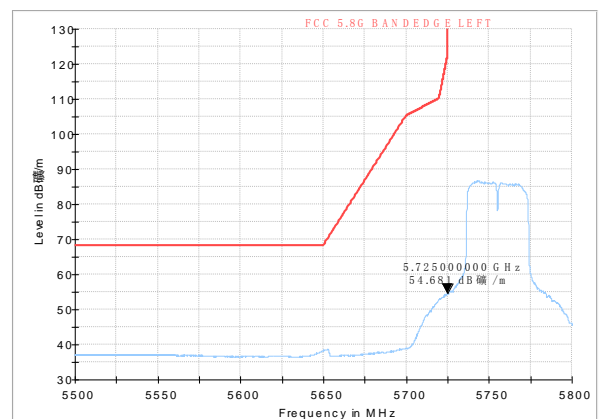


Band Edges (802.11ac-VHT40, 5755MHz)

Peak detector

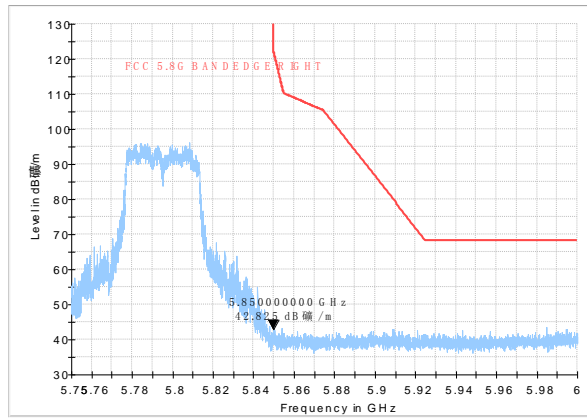


AV detector

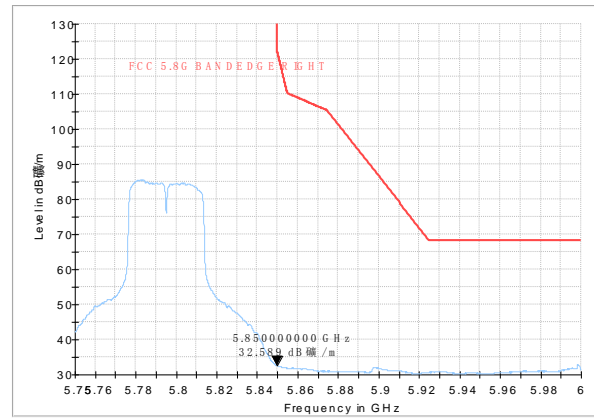


Band Edges (802.11ac-VHT40, 5795MHz)

Peak detector



AV detector



ANNEX B. Accreditation Certificate



Accredited Laboratory

A2LA has accredited

EAST CHINA INSTITUTE OF TELECOMMUNICATIONS
Shanghai, People's Republic of China

for technical competence in the field of
Electrical Testing

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2017 General requirements for the competence of testing and calibration laboratories. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated April 2017).



Presented this 6th day of May 2019.



Vice President, Accreditation Services
For the Accreditation Council
Certificate Number 3682.01
Valid to February 28, 2021

For the tests to which this accreditation applies, please refer to the laboratory's Electrical Scope of Accreditation.

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