



TEST REPORT

No. I20D00101-SRD22

For

**Client: NetEase Youdao Information Technology
(Beijing) Co., Ltd.**

Production: Youdao Dictionary Pen 2

Model Name: YDP021

Brand Name: youdao

FCC ID: 2AV6G-YDP021

Hardware Version: WM86-V4

Software Version: V1.3.6AD

Issued date: 2020-09-15

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

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Revision Version

| Report Number | Revision | Date | Memo |
|-----------------|----------|------------|-----------------------------------|
| I20D00101-SRD22 | 00 | 2020-09-02 | Initial creation of test report |
| I20D00101-SRD22 | 01 | 2020-09-15 | First modification 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℃-35℃ |
| Relative Humidity | 20%-75% |

1.3. Project Data

| | |
|--------------------|------------|
| Project Leader | Xu Yuting |
| Testing Start Date | 2020-07-20 |
| Testing End Date | 2020-07-29 |

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 | NetEase Youdao Information Technology (Beijing) Co., Ltd. |
| Address | No.7 Building,Zhongguancun Software Park West No.10 Xibeiwang East RD,Haidian |
| Telephone | +86 13810968741 |
| Postcode | 100193 |

2.2. Manufacturer Information

| | |
|--------------|--|
| Company Name | Mobiwire Mobiles(NingBo) Co.,LTD |
| Address | Building A,No.999 Dacheng East Road,Fenghua District,Ningbo City,Zhejiang Province,PRC |
| Telephone | 13586835362 |
| Postcode | / |

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

3.1. About EUT

| | |
|-------------------------|-------------------------|
| Production | Youdao Dictionary Pen 2 |
| Model name | YDP021 |
| BLE Frequency | 2402MHz-2480MHz |
| BLE Channel | Ch0-39 |
| BLE Modulation | GFSK |
| Extreme Temperature | -10/+50°C |
| Nominal Voltage | 3.85V |
| Extreme High Voltage | 4.40 V |
| Extreme Low Voltage | 3.50V |
| Maximum of Antenna Gain | Bluetooth: -0.52dBi |

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 | / | WM86-V4 | V1.3.6AD | 2020-07-14 |
| N02 | / | WM86-V4 | V1.3.6AD | 2020-07-14 |

*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; 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz. | 2018-10-01 |
| ANSI C63.10 | American National Standard of Procedures for Compliance Testing of Unlicensed Wireless Devices | 2013 |
| KDB558074 | Guidance for Performing Compliance Measurements on Digital Transmission Systems (DTS) Operating Under §15.247 | v05r02 |

5. Test Results

5.1. Summary of Test Results

| Measurement Items | Sub-clause of Part15C | Verdict |
|---|-----------------------|---------|
| Maximum Peak Output Power | 15.247(b) | P |
| Peak Power Spectral Density | 15.247(e) | P |
| 6dB Occupied Bandwidth | 15.247(a) | P |
| Band Edges Compliance | 15.247(d) | P |
| Transmitter Spurious Emission-Conducted | 15.247 | P |
| Transmitter Spurious Emission-Radiated | 15.247 | P |
| AC Powerline Conducted Emission | 15.107,15.207 | P |

Note: 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℃ |
| Voltage | Vnom | 3.85V |
| Humidity | Hnom | 48% |
| Air Pressure | Anom | 1010hPa |

5.2. Statements

The Youdao Dictionary Pen 2 is a parent model for testing.

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

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. Conducted Test System

| Item | Instrument Name | Type | SN | Manufacturer | Cal. Date | Cal. interval |
|------|------------------------|----------|----------------------|--------------|------------|---------------|
| 1 | Vector Signal Analyzer | FSQ26 | 101091 | R&S | 2020-05-10 | 1 year |
| 2 | DC Power Supply | ZUP60-14 | LOC-220Z0 06-0007 | TDL-Lambda | 2020-05-10 | 1 year |

6.2. Radiated Emission Test System

| Item | Instrument Name | Type | SN | Manufacturer | Cal. Date | Cal. interval |
|------|--------------------------------------|----------|--------------|--------------|------------|---------------|
| 1 | Universal Radio Communication Tester | CMU200 | 123123 | R&S | 2020-05-10 | 1 year |
| 2 | EMI Test Receiver | ESU40 | 100307 | R&S | 2020-05-10 | 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 | 2020-05-10 | 1 year |

Climate chamber

| No. | Equipment | Model | Serial Number | Manufacturer | Cal. Date | Cal. interval |
|-----|-----------------|----------|---------------|--------------|------------|---------------|
| 1 | Climate chamber | UT333 BT | C191995461 | UNI-T | 2020-05-10 | 1 years |

6.3. Software

| Name | Version |
|--------------------------------|---------|
| Eagle CE WLAN auto test system | V3.0 |
| EMC32 | V9.15 |

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 | 2402MHz-2480MHz | 95% | $\pm 0.544\text{dB}$ |
| Peak Power Spectral Density | 2402MHz-2480MHz | 95% | $\pm 0.544\text{dB}$ |
| 6dB Bandwidth | 2402MHz-2480MHz | 95% | $\pm 62.04\text{Hz}$ |
| Frequency Band Edges-Conducted | 2390MHz-2488.5MHz | 95% | $\pm 0.544\text{dB}$ |
| 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. Peak Output Power-Conducted

A.1.1 Measurement Limit

| Standard | Limit (dBm) |
|--------------------------|-------------|
| FCC 47 Part 15.247(b)(1) | < 30 |

A.1.2 Test Condition:

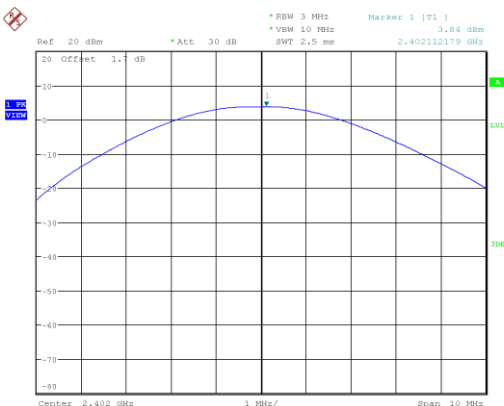
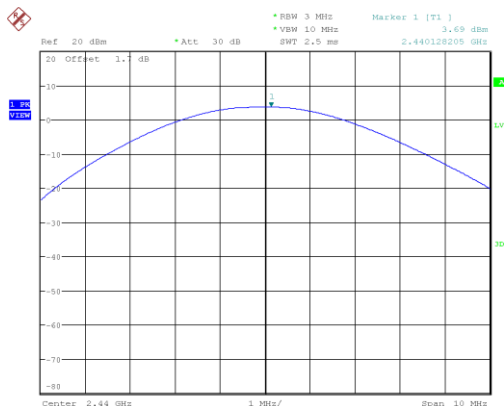
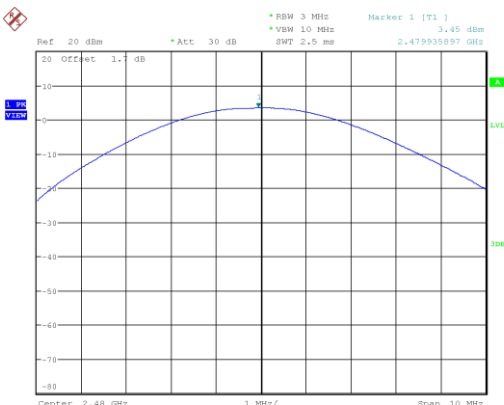
| DTS procedure | RBW | VBW | Span | Sweep time |
|---------------|------|-------|------|------------|
| BT-LE | 3MHz | 10MHz | 9MHz | Auto |

A.1.3 Test procedure

The measurement is according to ANSI C63.10 clause 11.9.1

- Set the RBW \geq DTS bandwidth.
- Set VBW \geq [3 \times RBW].
- Set span \geq [3 \times RBW].
- Sweep time = auto couple.
- Detector = peak.
- Trace mode = max hold.
- Allow trace to fully stabilize.
- Use peak marker function to determine the peak amplitude level.

Measurement Results:

| | | | |
|--|--------------|--|--------------|
| Peak Conducted Output Power CH0 (dBm) | 3.843 | Peak Conducted Output Power CH19 (dBm) | 3.683 |
|  <p>Ref: 20 dBm, Att: 30 dB, RBW: 3 MHz, VSW: 10 MHz, SWT: 2.5 ms, Marker 1 [T1]: 3.84 dBm, 2.402112179 GHz</p> <p>Center: 2.402 GHz, 1 MHz, Span: 10 MHz</p> <p>Date: 21.JUL.2020 12:21:11</p> | |  <p>Ref: 20 dBm, Att: 30 dB, RBW: 3 MHz, VSW: 10 MHz, SWT: 2.5 ms, Marker 1 [T1]: 3.69 dBm, 2.440128205 GHz</p> <p>Center: 2.44 GHz, 1 MHz, Span: 10 MHz</p> <p>Date: 21.JUL.2020 12:22:13</p> | |
| Peak Conducted Output Power CH39 (dBm) | 3.454 | / | |
|  <p>Ref: 20 dBm, Att: 30 dB, RBW: 3 MHz, VSW: 10 MHz, SWT: 2.5 ms, Marker 1 [T1]: 3.45 dBm, 2.479935997 GHz</p> <p>Center: 2.48 GHz, 1 MHz, Span: 10 MHz</p> <p>Date: 21.JUL.2020 12:23:17</p> | | / | |

ANNEX A.2. Peak Power Spectral Density

A.2.1 Measurement Limit:

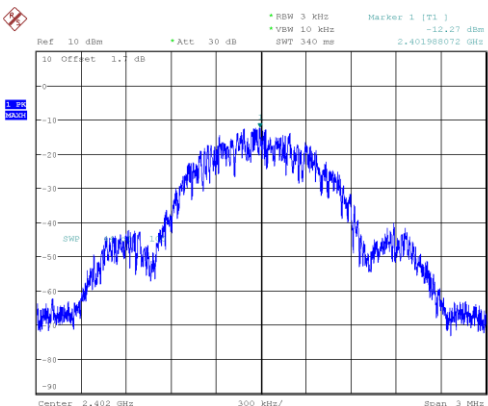
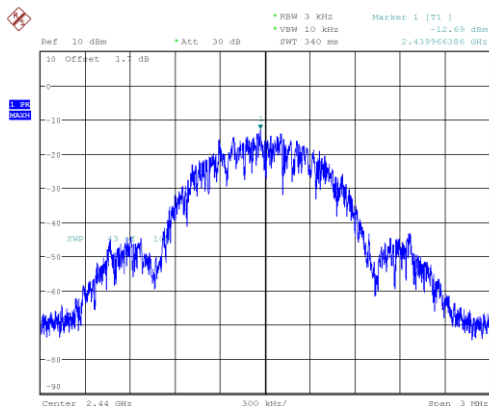
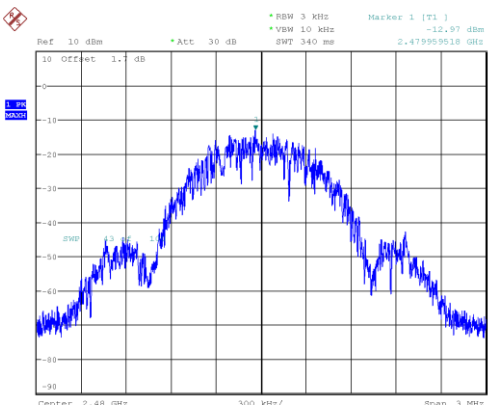
| Standard | Limit |
|-----------------------|--------------|
| FCC 47 Part 15.247(e) | < 8dBm/3 kHz |

A.2.2 Test procedures

The measurement is according to ANSI C63.10 clause 11.10.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set analyzer center frequency to DTS channel center frequency.
4. Set the span to 1.5 times the DTS bandwidth.
5. Set the RBW to $3 \text{ kHz} \leq \text{RBW} \leq 100 \text{ kHz}$.
6. Set the VBW $\geq [3 \times \text{RBW}]$.
7. Detector = peak.
8. Sweep time = auto couple.
9. Trace mode = max hold.
10. Allow trace to fully stabilize.
11. Use the peak marker function to determine the maximum amplitude level within the RBW.
12. If measured value exceeds requirement, then reduce RBW (but no less than 3 kHz) and repeat.

Measurement Results:

| | | | |
|--|----------------|--|----------------|
| Power spectral density: CH0 (dBm/3kHz) | -12.270 | Power spectral density: CH19 (dBm/3kHz) | -12.690 |
|  <p>Date: 21.JUL.2020 12:28:03</p> | |  <p>Date: 21.JUL.2020 12:31:14</p> | |
| Power spectral density: CH39 (dBm/3kHz) | -12.975 | / | |
|  <p>Date: 21.JUL.2020 12:32:24</p> | | / | |

ANNEX A.3. 6dB Bandwidth

A.3.1 Measurement Limit:

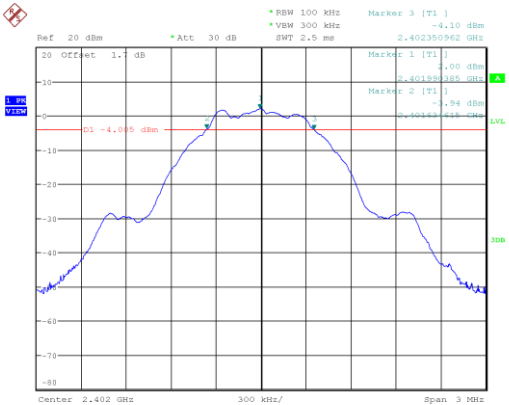
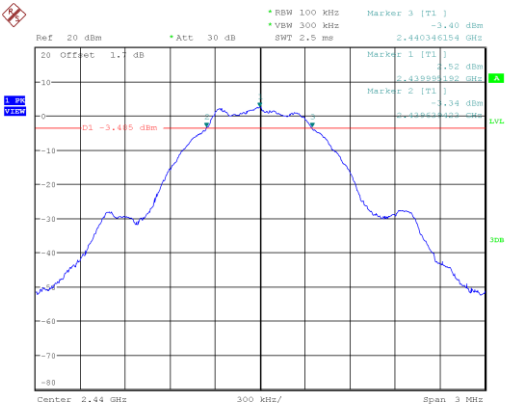
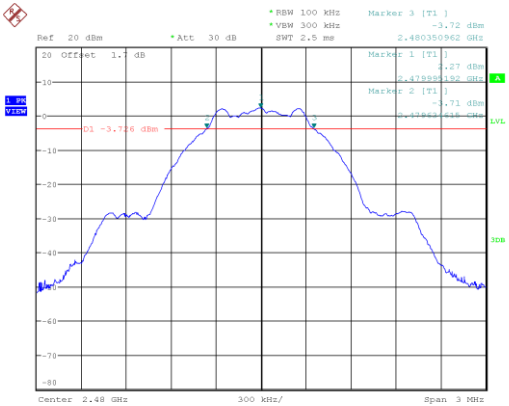
| Standard | Limit |
|----------------------------|--------------------|
| FCC 47 Part 15.247 (a) (1) | $\geq 500\text{k}$ |

A.3.2 Test procedures

The measurement is according to ANSI C63.10 clause 11.8.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.
3. Set RBW = 100 kHz.
4. Set the VBW $\geq [3 \times \text{RBW}]$.
5. Detector = peak.
6. Trace mode = max hold.
7. Sweep = auto couple.
8. Allow the trace to stabilize.
9. 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.

Measurement Result:

| 6dB Bandwidth: Ch0(kHz) | 716 | 6dB Bandwidth: Ch19(kHz) | 707 |
|---|-----|---|-----|
|  <p>Ref 20 dBm Offset 1.7 dB Att 30 dB RBW 100 KHz VBW 300 kHz SWF 2.5 ms</p> <p>Marker 3 [T1] 2.40235962 GHz -4.10 dBm</p> <p>Marker 1 [T1] 2.40182385 GHz -3.00 dBm</p> <p>Marker 2 [T1] 2.40182385 GHz -3.94 dBm</p> <p>Marker 3 [T1] 2.40235962 GHz -4.10 dBm</p> <p>Center 2.402 GHz Span 3 MHz</p> <p>Date: 21.JUL.2020 12:34:35</p> | |  <p>Ref 20 dBm Offset 1.7 dB Att 30 dB RBW 100 KHz VBW 300 kHz SWF 2.5 ms</p> <p>Marker 3 [T1] 2.440346154 GHz -3.40 dBm</p> <p>Marker 1 [T1] 2.43982152 GHz -2.52 dBm</p> <p>Marker 2 [T1] 2.43982152 GHz -3.34 dBm</p> <p>Marker 3 [T1] 2.440346154 GHz -3.40 dBm</p> <p>Center 2.44 GHz Span 3 MHz</p> <p>Date: 21.JUL.2020 12:35:46</p> | |
| 6dB Bandwidth: Ch39(kHz) | 716 | / | |
|  <p>Ref 20 dBm Offset 1.7 dB Att 30 dB RBW 100 KHz VBW 300 kHz SWF 2.5 ms</p> <p>Marker 3 [T1] 2.480380962 GHz -3.72 dBm</p> <p>Marker 1 [T1] 2.479856152 GHz -2.27 dBm</p> <p>Marker 2 [T1] 2.479856152 GHz -3.71 dBm</p> <p>Marker 3 [T1] 2.480380962 GHz -3.72 dBm</p> <p>Center 2.48 GHz Span 3 MHz</p> <p>Date: 21.JUL.2020 12:38:52</p> | | / | |

ANNEX A.4. Frequency Band Edges-Conducted

A.4.1 Measurement Limit:

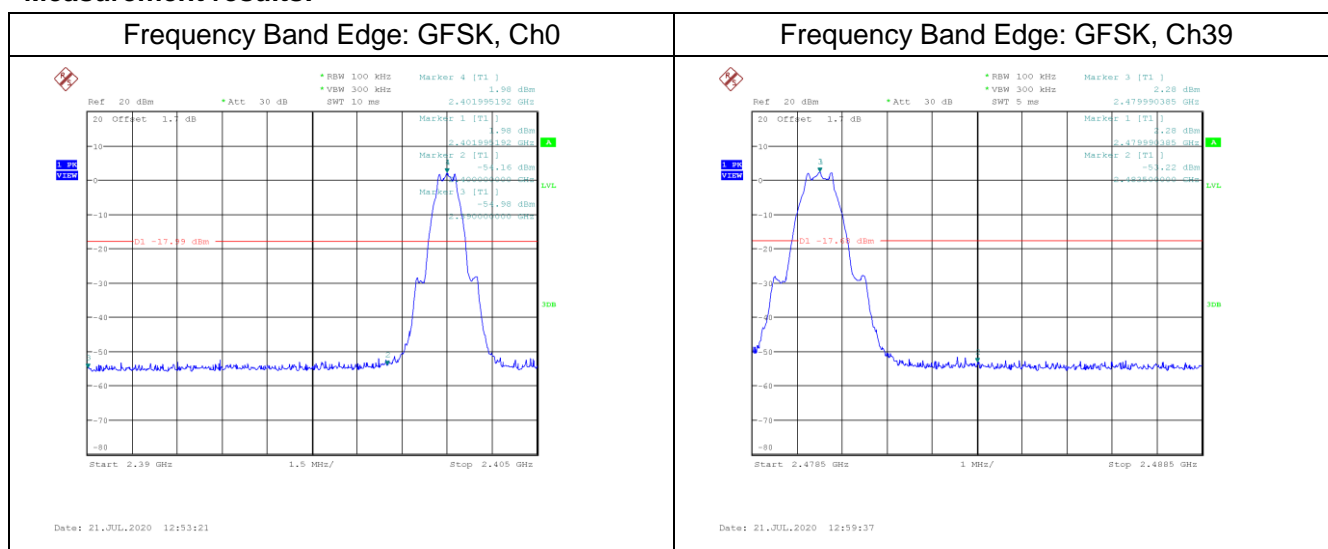
| Standard | Limited(dBc) |
|-----------------------|--------------|
| FCC 47 Part 15.247(d) | >20 |

A.4.2 Test procedure

The measurement is according to ANSI C63.10 clause 11.13.2

- 1) Span: Wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products that fall outside of the authorized band of operation.
- 2) Reference level: As required to keep the signal from exceeding the maximum instrument input mixer level for linear operation. In general, the peak of the spectral envelope shall be more than $[10 \log (\text{OBW}/\text{RBW})]$ below the reference level. Specific guidance is given in 4.1.5.2.
- 3) Attenuation: Auto (at least 10 dB preferred).
- 4) Sweep time: Coupled.
- 5) Resolution bandwidth: 100 kHz.6) Video bandwidth: 300 kHz.7) Detector: Peak.8) Trace: Max hold.

Measurement results:



ANNEX A.5. Conducted Emission**A.5.1 Measurement Limit:**

| Standard | Limit |
|-----------------------|--|
| FCC 47 Part15.247 (d) | 20dB below peak output power in 100KHz bandwidth |

A.5.2 Test procedures

This measurement is according to ANSI C63.10 clause 11.11.

1. The output power of EUT was connected to the spectrum analyzer. The path loss was compensated to the results for each measurement.
2. Enable EUT transmitter maximum power continuously.

Reference level measurement

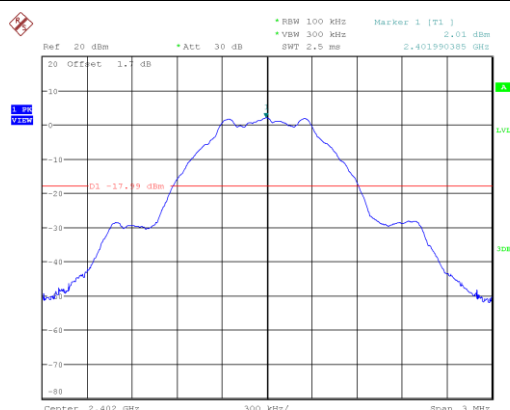
3. Set instrument center frequency to DTS channel center frequency.
4. Set the span to ≥ 1.5 times the DTS bandwidth.
5. Set the RBW = 100 kHz.
6. Set the VBW $\geq [3 \times \text{RBW}]$.
7. Detector = peak.
8. Sweep time = auto couple.
9. Trace mode = max hold.
10. Allow trace to fully stabilize.
11. Use the peak marker function to determine the maximum PSD level.

Emission level measurement

12. Set the center frequency and span to encompass frequency range to be measured.
13. Set the RBW = 100 kHz.
14. Set the VBW $\geq [3 \times \text{RBW}]$.
15. Detector = peak.
16. Sweep time = auto couple.
17. Trace mode = max hold.
18. Allow trace to fully stabilize.
19. Use the peak marker function to determine the maximum amplitude level.

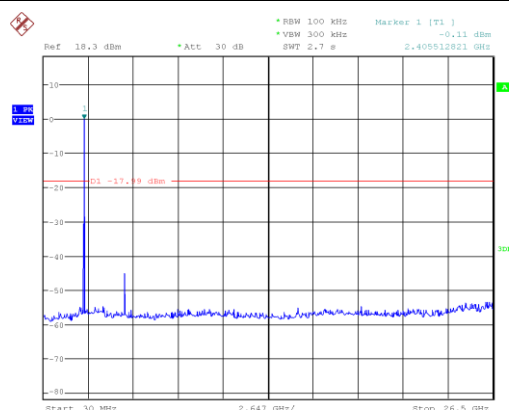
Measurement Results:

Conducted spurious emission: Ch0, 2402MHz



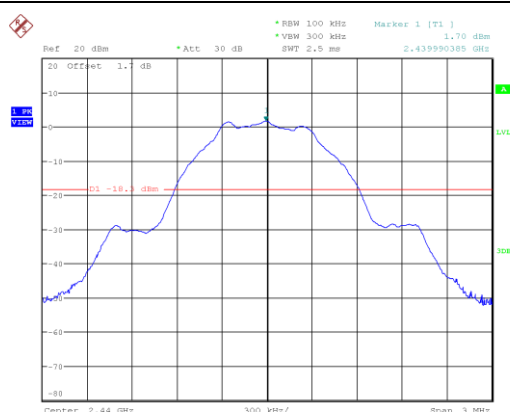
Date: 21.JUL.2020 12:52:46

Conducted spurious emission: Ch0, 30MHz~26GHz



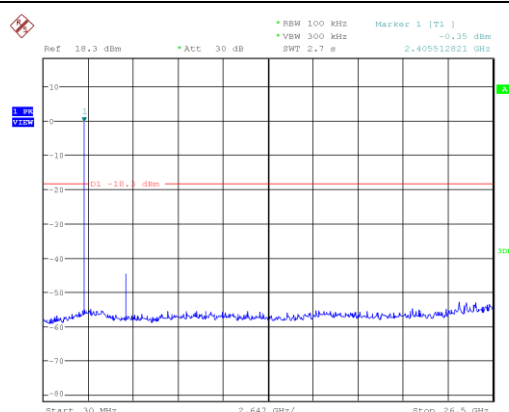
Date: 21.JUL.2020 12:53:55

Conducted spurious emission: Ch19, 2441MHz



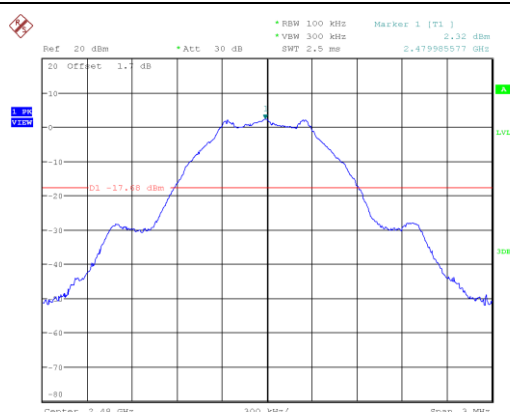
Date: 21.JUL.2020 12:54:58

Conducted spurious emission: Ch19, 30MHz~26GHz



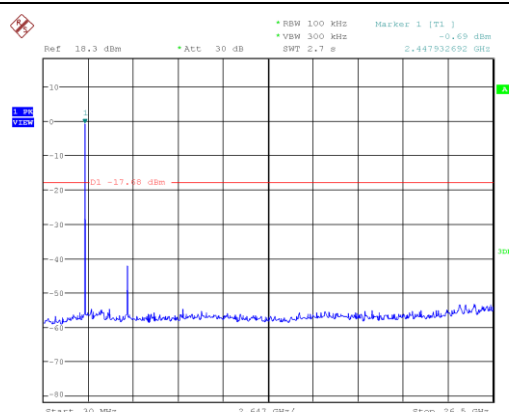
Date: 21.JUL.2020 12:56:12

Conducted spurious emission: Ch39, 2480MHz



Date: 21.JUL.2020 12:59:01

Conducted spurious emission: Ch39, 30MHz~26GHz



Date: 21.JUL.2020 13:00:11

ANNEX A.6. Radiated Emission

A.6.1 Measurement Limit:

| Standard | Limit |
|----------------------------------|------------------------------|
| FCC 47 Part 15.205,15.209,15.247 | 20dB below peak output power |

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)).

Limit in restricted band:

| Frequency of emission (MHz) | Field strength (uV/m) | Field strength (dBuV/m) |
|-----------------------------|-----------------------|-------------------------|
| 30~88 | 100 | 40 |
| 88~216 | 150 | 43.5 |
| 216~960 | 200 | 46 |
| Above 960 | 500 | 54 |

A.6.2 Test Method

Portable, small, lightweight, or modular devices that may be handheld, worn on the body, or placed on a table during operation shall be positioned on a non-conducting platform, the top of which is 80 cm above the reference ground plane. The preferred area occupied by the EUT arrangement is 1 m by 1.5 m, but it may be larger or smaller to accommodate various sized EUTs. For testing purposes, ceiling- and wall-mounted devices also shall be positioned on a tabletop (see also ANSI C63.10-2013 section 6.3.4 and 6.3.5). In making any tests involving handheld, body-worn, or ceiling-mounted equipment, it is essential to recognize that the measured levels may be dependent on the orientation (attitude) of the three orthogonal axes of the EUT. Thus, exploratory tests as specified in 8.3.1 shall be carried out for various axes orientations to determine the attitude having maximum or near-maximum emission level. The EUT was placed on a non-conductive table. The measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

| Frequency of emission (MHz) | RBW/VBW | Sweep Time (s) |
|-----------------------------|---------------|----------------|
| 30~1000 | 100KHz/300KHz | 5 |
| 1000~4000 | 1MHz/3MHz | 15 |
| 4000~18000 | 1MHz/3MHz | 40 |
| 18000~26500 | 1MHz/3MHz | 20 |

A.6.3 Measurement Results:

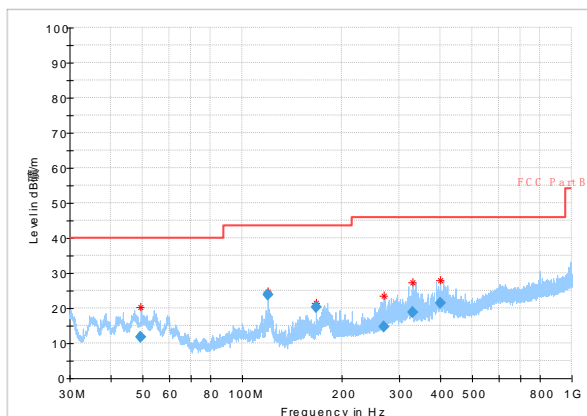
A “reference path loss” is established and A_{Rpi} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss.

The measurement results are obtained as described below:

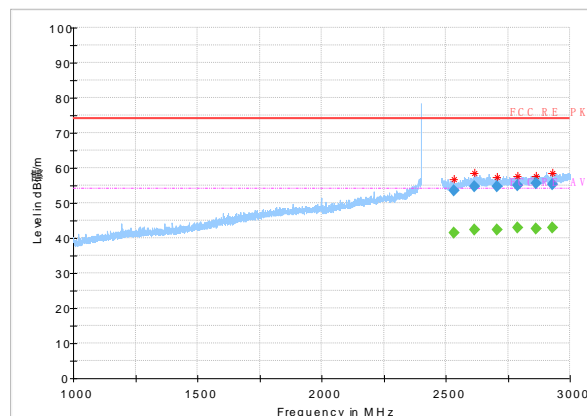
$$A_{Rpi} = \text{Cable loss} + \text{Antenna Gain} - \text{Preamplifier gain}$$

$$\text{Result} = P_{\text{Mea}} + A_{Rpi}$$

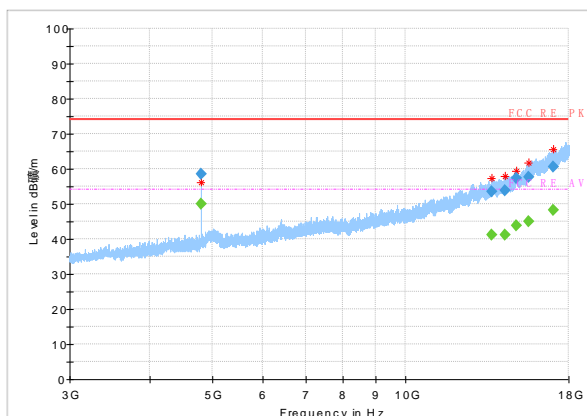
Radiated emission:Ch0, 30MHz~1GHz



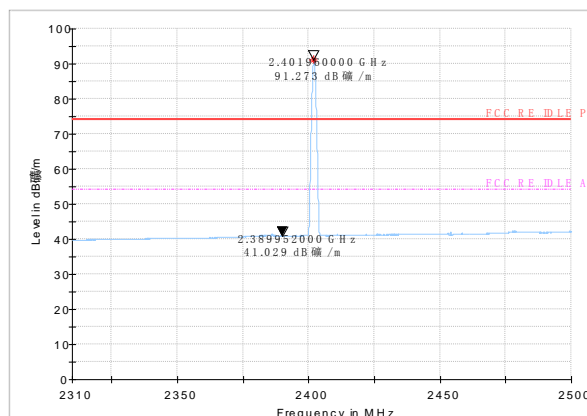
Radiated emission: Ch0, 1GHz~3GHz



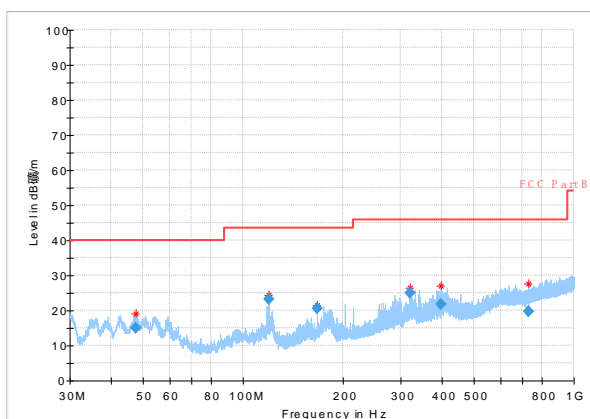
Radiated emission:Ch0, 3GHz~18GHz



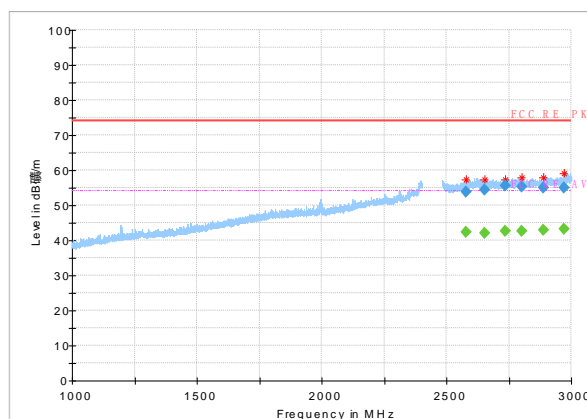
Bandedge:Ch0



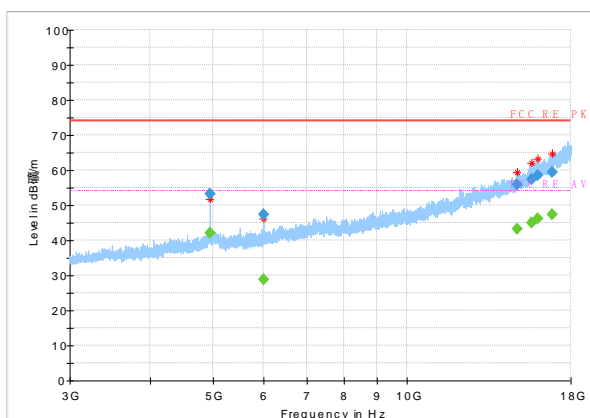
Radiated emission:Ch39, 30MHz~1GHz



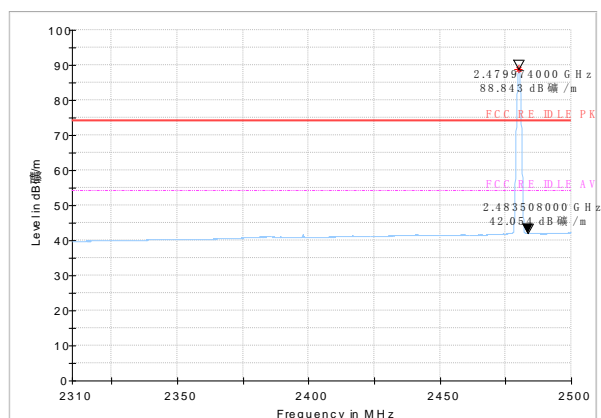
Radiated emission: Ch39, 1GHz~3GHz



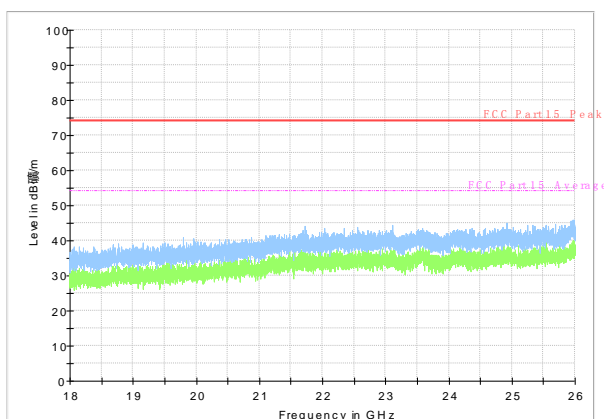
Radiated emission: Ch39, 3GHz~18GHz



Bandedge:Ch39



ALL Channel 18GHz~26GHz



/

/

Ch0 30MHz-1GHz (Peak)

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|-----------|--------------|----------|
| 49.3 | 11.85 | -15.6 | 27.45 | V |
| 120.0 | 23.77 | -16.6 | 40.37 | H |
| 168.0 | 20.15 | -16.3 | 36.45 | H |
| 269.9 | 14.81 | -12 | 26.81 | V |
| 328.8 | 18.82 | -10.2 | 29.02 | H |
| 398.9 | 21.42 | -8.5 | 29.92 | V |

Ch0 1GHz-3GHz (Peak)

| Frequency(MHz) | Result(dBuV/m) | ARpl (dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|-----------|--------------|----------|
| 2534.0 | 53.65 | 16.6 | 37.05 | V |
| 2614.6 | 54.82 | 17.8 | 37.02 | V |
| 2707.8 | 54.68 | 17.8 | 36.88 | V |
| 2790.0 | 54.87 | 18.2 | 36.67 | H |
| 2864.1 | 55.49 | 18.5 | 36.99 | V |
| 2931.5 | 55.44 | 18.8 | 36.64 | V |

Ch0 1GHz-3GHz (Average)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 2614.6 | 42.38 | 17.8 | 24.58 | V |
| 2707.8 | 42.36 | 17.8 | 24.56 | V |
| 2790.0 | 42.87 | 18.2 | 24.67 | H |
| 2864.1 | 42.7 | 18.5 | 24.2 | V |
| 2931.5 | 42.94 | 18.8 | 24.14 | V |

Ch0 3GHz-18GHz (Peak)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 4803.6 | 58.39 | 1.3 | 57.09 | H |
| 13670.5 | 53.5 | 18.3 | 35.2 | H |
| 14344.9 | 53.86 | 19.4 | 34.46 | H |
| 14892.9 | 57.45 | 22.2 | 35.25 | H |
| 15587.5 | 57.65 | 24.5 | 33.15 | H |
| 17036.1 | 60.53 | 27.9 | 32.63 | H |

Ch0 3GHz-18GHz (Average)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 4803.6 | 49.93 | 1.3 | 48.63 | H |
| 14892.9 | 43.76 | 22.2 | 21.56 | H |
| 15587.5 | 45 | 24.5 | 20.5 | H |
| 17036.1 | 48.22 | 27.9 | 20.32 | H |

Ch39 30MHz-1GHz (Peak)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 47.3 | 15.1 | -15.7 | 30.8 | V |
| 120.0 | 23.2 | -16.6 | 39.8 | H |
| 168.0 | 20.58 | -16.2 | 36.78 | H |
| 318.7 | 25.09 | -10.6 | 35.69 | H |
| 397.6 | 21.83 | -8.5 | 30.33 | H |
| 731.7 | 19.72 | -3 | 22.72 | H |

Ch39 1GHz-3GHz (Peak)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 2577.9 | 53.96 | 17.4 | 36.56 | H |
| 2653.9 | 54.37 | 17.8 | 36.57 | H |
| 2735.2 | 55.51 | 17.9 | 37.61 | H |
| 2803.1 | 55.27 | 18.2 | 37.07 | V |
| 2887.0 | 54.96 | 18.6 | 36.36 | H |
| 2969.0 | 55.1 | 19.1 | 36 | H |

Ch39 1GHz-3GHz (Average)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 2653.9 | 42.14 | 17.8 | 24.34 | H |
| 2735.2 | 42.59 | 17.9 | 24.69 | H |
| 2803.1 | 42.75 | 18.2 | 24.55 | V |
| 2887.0 | 42.89 | 18.6 | 24.29 | H |
| 2969.0 | 43.17 | 19.1 | 24.07 | H |

Ch39 3GHz-18GHz (Peak)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 4960.5 | 53.1 | 3.7 | 49.4 | H |
| 5995.0 | 47.25 | 3 | 44.25 | V |
| 14874.5 | 55.78 | 21.8 | 33.98 | H |
| 15633.5 | 57.47 | 24.2 | 33.27 | H |
| 16013.3 | 58.41 | 25.2 | 33.21 | H |
| 16874.6 | 59.4 | 27.1 | 32.3 | H |

Ch39 3GHz-18GHz (Average)

| Frequency(MHz) | Result(dBuV/m) | ARpl(dB) | PMea(dBuV/m) | Polarity |
|----------------|----------------|----------|--------------|----------|
| 14874.5 | 43.31 | 21.8 | 21.51 | H |
| 15633.5 | 45.05 | 24.2 | 20.85 | H |
| 16013.3 | 46.12 | 25.2 | 20.92 | H |
| 16874.6 | 47.29 | 27.1 | 20.19 | H |

ANNEX A.7. AC Powerline Conducted Emission

Method of Measurement: ANSI C63.10-2013-clause 6.2

- 1 The one EUT cable configuration and arrangement and mode of operation that produced the emission with the highest amplitude relative to the limit is selected for the final measurement, while applying the appropriate modulating signal to the EUT.
- 2 If the EUT is relocated from an exploratory test site to a final test site, the highest emissions shall be remaximized at the final test location before final ac power-line conducted emission measurements are performed.
- 3 The final test on all current-carrying conductors of all of the power cords to the equipment that comprises the EUT (but not the cords associated with other non-EUT equipment in the system) is then performed for the full frequency range for which the EUT is being tested for compliance without further variation of the EUT arrangement, cable positions, or EUT mode of operation.
- 4 If the EUT is comprised of equipment units that have their own separate ac power connections, e.g., floor-standing equipment with independent power cords for each shelf that are able to connect directly to the ac power network, each current-carrying conductor of one unit is measured while the other units are connected to a second (or more) LISN(s). All units shall be separately measured. If a power strip is provided by the manufacturer, to supply all of the units making up the EUT, only the conductors in the power cord of the power strip shall be measured.

If the EUT uses a detachable antenna, these measurements shall be made with a suitable dummy load connected to the antenna output terminals; otherwise, the tests shall be made with the antenna connected and, if adjustable, fully extended. When measuring the ac conducted emissions from a device that operates between 150 kHz and 30 MHz a non-detachable antenna may be replaced with a dummy load for the measurements within the fundamental emission band of the transmitter, but only for those measurements.³⁶ Record the six highest EUT emissions relative to the limit of each of the current-carrying conductors of the power cords of the equipment that comprises the EUT over the frequency range specified by the procuring or regulatory agency. Diagram or photograph the test setup that was used. See Clause 8 for full reporting requirements.

Test Condition:

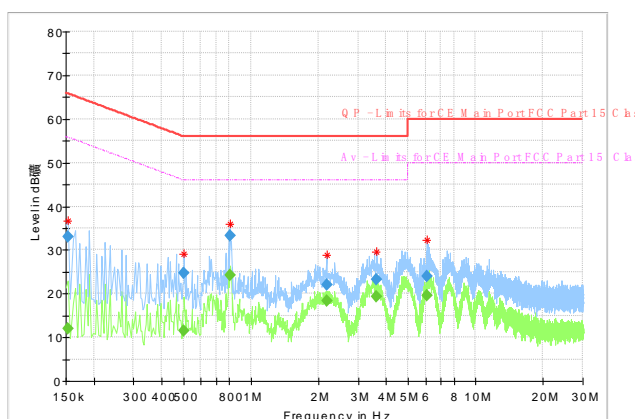
| Voltage (V) | Frequency (Hz) |
|-------------|----------------|
| 120 | 60 |

Measurement Result and limit:

(Quasi-peak-average Limit)

| Frequency range (MHz) | Quasi-peak Limit (dB μ V) | Average Limit (dB μ V) | Conclusion |
|--------------------------|----------------------------------|-------------------------------|------------|
| | | | |
| 0.15 to 0.5 | 66 to 56 | 56 to 46 | P |
| 0.5 to 5 | 56 | 46 | |
| 5 to 30 | 60 | 50 | |

NOTE: The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.5 MHz.



| Frequency (MHz) | QuasiPeak (dB μ V) | Average (dB μ V) | Limit (dB μ V) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Line | Filter | Corr. (dB) |
|--------------------|---------------------------|-------------------------|-----------------------|----------------|---------------|--------------------|------|--------|---------------|
| 0.153731 | --- | 12.02 | 55.80 | 43.78 | 15000. | 9.000 | L1 | ON | 9.6 |
| 0.153731 | 32.99 | --- | 65.80 | 32.81 | 15000. | 9.000 | L1 | ON | 9.6 |
| 0.504469 | --- | 11.57 | 46.00 | 34.43 | 15000. | 9.000 | N | ON | 9.8 |
| 0.504469 | 24.72 | --- | 56.00 | 31.28 | 15000. | 9.000 | N | ON | 9.8 |
| 0.806700 | 33.34 | --- | 56.00 | 22.66 | 15000. | 9.000 | L1 | ON | 9.6 |
| 0.806700 | --- | 24.30 | 46.00 | 21.70 | 15000. | 9.000 | L1 | ON | 9.6 |
| 2.168606 | --- | 18.33 | 46.00 | 27.67 | 15000. | 9.000 | L1 | ON | 9.7 |
| 2.168606 | 22.00 | --- | 56.00 | 34.00 | 15000. | 9.000 | L1 | ON | 9.7 |
| 3.634988 | 23.20 | --- | 56.00 | 32.80 | 15000. | 9.000 | L1 | ON | 9.7 |
| 3.634988 | --- | 19.27 | 46.00 | 26.73 | 15000. | 9.000 | L1 | ON | 9.7 |
| 6.090150 | --- | 19.51 | 50.00 | 30.49 | 15000. | 9.000 | N | ON | 9.9 |
| 6.090150 | 23.91 | --- | 60.00 | 36.09 | 15000. | 9.000 | N | ON | 9.9 |

ANNEX B. Accreditation Certificate



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