

# Test Report

**Report No.:** MTi230615006-05E3

**Date of issue:** 2023-08-04

**Applicant:** Shenzhen Teneth Technology Co., Ltd

**Product:** Cutting Plotter

**Model(s):** MINI140 PRO, MINI140

**FCC ID:** 2A33R-MINI140

Shenzhen Microtest Co., Ltd.

<http://www.mtitest.com>

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| Test Result Certification  |                                                                                                 |
|----------------------------|-------------------------------------------------------------------------------------------------|
| <b>Applicant:</b>          | Shenzhen Teneth Technology Co., Ltd                                                             |
| <b>Address:</b>            | No.161, Pinghu street, Pinghu town, Longgang District, Shenzhen City, Guangdong Province, China |
| <b>Manufacturer:</b>       | Shenzhen Teneth Technology Co., Ltd                                                             |
| <b>Address:</b>            | No.161, Pinghu street, Pinghu town, Longgang District, Shenzhen City, Guangdong Province, China |
| <b>Product description</b> |                                                                                                 |
| <b>Product name:</b>       | Cutting Plotter                                                                                 |
| <b>Trademark:</b>          | TENETH                                                                                          |
| <b>Model name:</b>         | MINI140 PRO                                                                                     |
| <b>Series Model:</b>       | MINI140                                                                                         |
| <b>Standards:</b>          | 47 CFR Part 15.247                                                                              |
| <b>Test Method:</b>        | ANSI C63.10<br>KDB 558074 D01 D15.247 Meas Guidance v05r02                                      |
| <b>Date of Test</b>        |                                                                                                 |
| <b>Date of test:</b>       | 2023-07-19 to 2023-08-01                                                                        |
| <b>Test result:</b>        | Pass                                                                                            |

|                      |   |                   |
|----------------------|---|-------------------|
| <b>Test Engineer</b> | : | <i>Yanice Xie</i> |
|                      |   | (Yanice.Xie)      |
| <b>Reviewed By</b>   | : | <i>Leon Chen</i>  |
|                      |   | (Leon Chen)       |
| <b>Approved By</b>   | : | <i>Tom Xue</i>    |
|                      |   | (Tom Xue)         |

## 1 General Description

### 1.1 Description of the EUT

|                            |                                                                                                                                                                         |
|----------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Product name:              | Cutting Plotter                                                                                                                                                         |
| Model name:                | MINI140 PRO                                                                                                                                                             |
| Series Model:              | MINI140                                                                                                                                                                 |
| Model difference:          | All the models are the same circuit and module, except the model name, screen and RF function. MINI140 PRO is with screen and WIFI, MINI140 is without screen and WIFI. |
| Electrical rating:         | Input:DC24V 1.75A                                                                                                                                                       |
| Accessories:               | Adaptor: Model: GM42-240175-D<br>INPUT: AC 100-240V 50/60Hz 1.5A<br>OUTPUT: DC 24V 1.75A                                                                                |
| Hardware version:          | 3.0                                                                                                                                                                     |
| Software version:          | 2.6                                                                                                                                                                     |
| Test sample(s) number:     | MTi230615006-05S1001                                                                                                                                                    |
| <b>RF specification</b>    |                                                                                                                                                                         |
| Operating frequency range: | 802.11b/g/n20:2412~2462 MHz 802.11n40:2422~2452 MHz                                                                                                                     |
| Channel number:            | 11                                                                                                                                                                      |
| Modulation type:           | IEEE 802.11b : DSSS (DBPSK, DQPSK, CCK) IEEE 802.11g/n (HT20/HT40) : OFDM (64QAM, 16QAM, QPSK, BPSK)                                                                    |
| Antenna(s) type:           | FPC Antenna                                                                                                                                                             |
| Antenna(s) gain:           | 3.06dBi                                                                                                                                                                 |

### 1.2 Description of test modes

| No.   | Emission test modes                    |
|-------|----------------------------------------|
| Mode1 | TX -802.11b mode(CH01/CH06/CH11)       |
| Mode2 | TX -802.11g mode(CH01/CH06/CH11)       |
| Mode3 | TX -802.11n(HT20) mode(CH01/CH06/CH11) |
| Mode4 | TX -802.11n(HT40) mode(CH03/CH06/CH09) |

#### 1.2.1 Operation channel list

| Channel | Frequency (MHz) | Channel | Frequency (MHz) | Channel | Frequency (MHz) |
|---------|-----------------|---------|-----------------|---------|-----------------|
| 1       | 2412            | 5       | 2432            | 9       | 2452            |
| 2       | 2417            | 6       | 2437            | 10      | 2457            |
| 3       | 2422            | 7       | 2442            | 11      | 2462            |
| 4       | 2427            | 8       | 2447            | /       | /               |

Note: The test software provided by manufacturer is used to control EUT for working in engineering mode, that enables selectable channel, and capable of continuous transmitting mode.

**Test Software:**

For power setting, refer to below table.

|                       |               |                             |               |
|-----------------------|---------------|-----------------------------|---------------|
| Test Software:        |               | RF Engineering Setting Test |               |
| <b>802.11b</b>        |               | <b>802.11g</b>              |               |
| Channel               | Power setting | Channel                     | Power setting |
| 1                     | 44            | 1                           | 44            |
| 6                     | 44            | 6                           | 44            |
| 11                    | 44            | 11                          | 44            |
| <b>802.11n (HT20)</b> |               | <b>802.11n (HT40)</b>       |               |
| Channel               | Power setting | Channel                     | Power setting |
| 1                     | 44            | 3                           | 44            |
| 6                     | 44            | 6                           | 44            |
| 11                    | 44            | 9                           | 44            |

### 1.3 Environmental Conditions

During the measurement the environmental conditions were within the listed ranges:

|                       |                  |
|-----------------------|------------------|
| Temperature:          | 15°C ~ 35°C      |
| Humidity:             | 20% RH ~ 75% RH  |
| Atmospheric pressure: | 98 kPa ~ 101 kPa |

### 1.4 Description of support units

| Support equipment list |            |            |              |
|------------------------|------------|------------|--------------|
| Description            | Model      | Serial No. | Manufacturer |
| /                      | /          | /          | /            |
| Support cable list     |            |            |              |
| Description            | Length (m) | From       | To           |
| /                      | /          | /          | /            |

### 1.5 Measurement uncertainty

| Measurement                              | Uncertainty |
|------------------------------------------|-------------|
| Occupied channel bandwidth               | ±3 %        |
| RF output power, conducted               | ±1 dB       |
| Power Spectral Density, conducted        | ±1 dB       |
| Unwanted Emissions, conducted            | ±1 dB       |
| Radiated spurious emissions (1GHz~25GHz) | 5.3dB       |
| Radiated spurious emissions (9kHz~30MHz) | 4.3dB       |
| Radiated spurious emissions (30MHz~1GHz) | 4.7dB       |
| Temperature                              | ±1 °C       |
| Humidity                                 | ± 5 %       |

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

## 2 Summary of Test Result

| No. | Item                                                 | Standard           | Requirement         | Result |
|-----|------------------------------------------------------|--------------------|---------------------|--------|
| 1   | Antenna requirement                                  | 47 CFR Part 15.247 | 47 CFR 15.203       | Pass   |
| 2   | Conducted Emission at AC power line                  | 47 CFR Part 15.247 | 47 CFR 15.207(a)    | Init   |
| 3   | Occupied Bandwidth                                   | 47 CFR Part 15.247 | 47 CFR 15.247(a)(2) | Pass   |
| 4   | Maximum Conducted Output Power                       | 47 CFR Part 15.247 | 47 CFR 15.247(b)(3) | Pass   |
| 5   | Power Spectral Density                               | 47 CFR Part 15.247 | 47 CFR 15.247(e)    | Pass   |
| 6   | Emissions in non-restricted frequency bands          | 47 CFR Part 15.247 | 47 CFR 15.247(d)    | Pass   |
| 7   | Band edge emissions (Radiated)                       | 47 CFR Part 15.247 | 47 CFR 15.247(d)    | Pass   |
| 8   | Emissions in restricted frequency bands (below 1GHz) | 47 CFR Part 15.247 | 47 CFR 15.247(d)    | Pass   |
| 9   | Emissions in restricted frequency bands (above 1GHz) | 47 CFR Part 15.247 | 47 CFR 15.247(d)    | Pass   |



### 3 Test Facilities and accreditations

#### 3.1 Test laboratory

|                        |                                                                                                                                      |
|------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| Test laboratory:       | Shenzhen Microtest Co., Ltd.                                                                                                         |
| Test site location:    | 101, No.7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China |
| Telephone:             | (86-755)88850135                                                                                                                     |
| Fax:                   | (86-755)88850136                                                                                                                     |
| CNAS Registration No.: | CNAS L5868                                                                                                                           |
| FCC Registration No.:  | 448573                                                                                                                               |
| IC Registration No.:   | 21760                                                                                                                                |
| CABID:                 | CN0093                                                                                                                               |

## 4 List of test equipment

| No.                                 | Equipment                           | Manufacturer  | Model     | Serial No. | Cal. date  | Cal. Due   |
|-------------------------------------|-------------------------------------|---------------|-----------|------------|------------|------------|
| Conducted Emission at AC power line |                                     |               |           |            |            |            |
| 1                                   | EMI Test Receiver                   | Rohde&schwarz | ESCI3     | 101368     | 2023-04-26 | 2024-04-25 |
| 2                                   | Artificial mains network            | Schwarzbeck   | NSLK 8127 | 183        | 2023-05-05 | 2024-05-04 |
| 3                                   | Artificial Mains Network            | Schwarzbeck   | NSLK 8127 | 1001       | 2023-05-06 | 2024-05-05 |
| Occupied Bandwidth                  |                                     |               |           |            |            |            |
| 1                                   | Wideband Radio Communication Tester | Rohde&schwarz | CMW500    | 149155     | 2023-04-26 | 2024-04-25 |
| 2                                   | ESG Series Analog Ssignal Generator | Agilent       | E4421B    | GB40051240 | 2023-04-25 | 2024-04-24 |
| 3                                   | PXA Signal Analyzer                 | Agilent       | N9030A    | MY51350296 | 2023-04-25 | 2024-04-24 |
| 4                                   | Synthesized Sweeper                 | Agilent       | 83752A    | 3610A01957 | 2023-04-25 | 2024-04-24 |
| 5                                   | MXA Signal Analyzer                 | Agilent       | N9020A    | MY50143483 | 2023-04-26 | 2024-04-25 |
| 6                                   | RF Control Unit                     | Tonscend      | JS0806-1  | 19D8060152 | 2023-04-26 | 2024-04-25 |
| 7                                   | Band Reject Filter Group            | Tonscend      | JS0806-F  | 19D8060160 | 2023-05-05 | 2024-05-04 |
| 8                                   | ESG Vector Signal Generator         | Agilent       | N5182A    | MY50143762 | 2023-04-25 | 2024-04-24 |
| 9                                   | DC Power Supply                     | Agilent       | E3632A    | MY40027695 | 2023-05-05 | 2024-05-04 |
| Maximum Conducted Output Power      |                                     |               |           |            |            |            |
| 1                                   | Wideband Radio Communication Tester | Rohde&schwarz | CMW500    | 149155     | 2023-04-26 | 2024-04-25 |
| 2                                   | ESG Series Analog Ssignal Generator | Agilent       | E4421B    | GB40051240 | 2023-04-25 | 2024-04-24 |
| 3                                   | PXA Signal Analyzer                 | Agilent       | N9030A    | MY51350296 | 2023-04-25 | 2024-04-24 |
| 4                                   | Synthesized Sweeper                 | Agilent       | 83752A    | 3610A01957 | 2023-04-25 | 2024-04-24 |
| 5                                   | MXA Signal Analyzer                 | Agilent       | N9020A    | MY50143483 | 2023-04-26 | 2024-04-25 |
| 6                                   | RF Control Unit                     | Tonscend      | JS0806-1  | 19D8060152 | 2023-04-26 | 2024-04-25 |
| 7                                   | Band Reject Filter Group            | Tonscend      | JS0806-F  | 19D8060160 | 2023-05-05 | 2024-05-04 |
| 8                                   | ESG Vector Signal Generator         | Agilent       | N5182A    | MY50143762 | 2023-04-25 | 2024-04-24 |
| 9                                   | DC Power Supply                     | Agilent       | E3632A    | MY40027695 | 2023-05-05 | 2024-05-04 |
| Power Spectral Density              |                                     |               |           |            |            |            |
| 1                                   | Wideband Radio Communication Tester | Rohde&schwarz | CMW500    | 149155     | 2023-04-26 | 2024-04-25 |
| 2                                   | ESG Series Analog Ssignal Generator | Agilent       | E4421B    | GB40051240 | 2023-04-25 | 2024-04-24 |
| 3                                   | PXA Signal Analyzer                 | Agilent       | N9030A    | MY51350296 | 2023-04-25 | 2024-04-24 |
| 4                                   | Synthesized Sweeper                 | Agilent       | 83752A    | 3610A01957 | 2023-04-25 | 2024-04-24 |

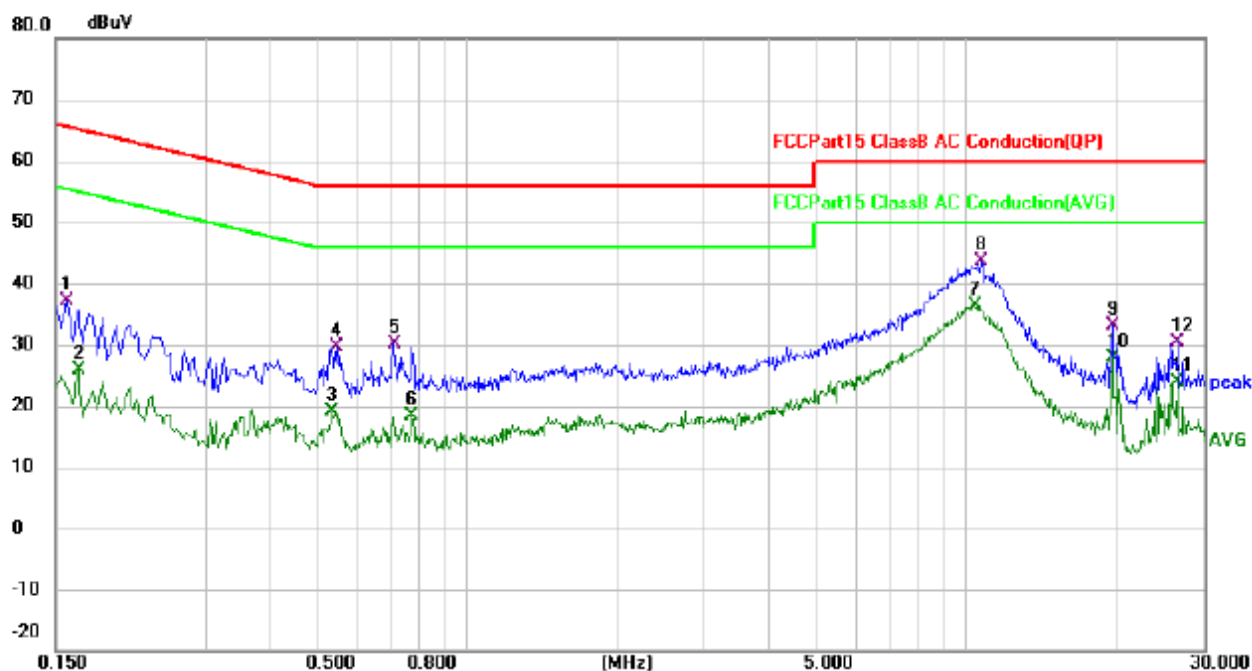
| No.                                                  | Equipment                            | Manufacturer    | Model       | Serial No. | Cal. date  | Cal. Due   |
|------------------------------------------------------|--------------------------------------|-----------------|-------------|------------|------------|------------|
| 5                                                    | MXA Signal Analyzer                  | Agilent         | N9020A      | MY50143483 | 2023-04-26 | 2024-04-25 |
| 6                                                    | RF Control Unit                      | Tonscend        | JS0806-1    | 19D8060152 | 2023-04-26 | 2024-04-25 |
| 7                                                    | Band Reject Filter Group             | Tonscend        | JS0806-F    | 19D8060160 | 2023-05-05 | 2024-05-04 |
| 8                                                    | ESG Vector Signal Generator          | Agilent         | N5182A      | MY50143762 | 2023-04-25 | 2024-04-24 |
| 9                                                    | DC Power Supply                      | Agilent         | E3632A      | MY40027695 | 2023-05-05 | 2024-05-04 |
| Emissions in non-restricted frequency bands          |                                      |                 |             |            |            |            |
| 1                                                    | Wideband Radio Communication Tester  | Rohde&schwarz   | CMW500      | 149155     | 2023-04-26 | 2024-04-25 |
| 2                                                    | ESG Series Analog Ssignal Generator  | Agilent         | E4421B      | GB40051240 | 2023-04-25 | 2024-04-24 |
| 3                                                    | PXA Signal Analyzer                  | Agilent         | N9030A      | MY51350296 | 2023-04-25 | 2024-04-24 |
| 4                                                    | Synthesized Sweeper                  | Agilent         | 83752A      | 3610A01957 | 2023-04-25 | 2024-04-24 |
| 5                                                    | MXA Signal Analyzer                  | Agilent         | N9020A      | MY50143483 | 2023-04-26 | 2024-04-25 |
| 6                                                    | RF Control Unit                      | Tonscend        | JS0806-1    | 19D8060152 | 2023-04-26 | 2024-04-25 |
| 7                                                    | Band Reject Filter Group             | Tonscend        | JS0806-F    | 19D8060160 | 2023-05-05 | 2024-05-04 |
| 8                                                    | ESG Vector Signal Generator          | Agilent         | N5182A      | MY50143762 | 2023-04-25 | 2024-04-24 |
| 9                                                    | DC Power Supply                      | Agilent         | E3632A      | MY40027695 | 2023-05-05 | 2024-05-04 |
| Band edge emissions (Radiated)                       |                                      |                 |             |            |            |            |
| 1                                                    | EMI Test Receiver                    | Rohde&schwarz   | ESCI7       | 101166     | 2023-04-26 | 2024-04-25 |
| 2                                                    | Double Ridged Broadband Horn Antenna | schwarabeck     | BBHA 9120 D | 2278       | 2023-05-26 | 2024-05-25 |
| 3                                                    | Amplifier                            | Agilent         | 8449B       | 3008A01120 | 2023-05-26 | 2024-05-25 |
| 4                                                    | Multi-device Controller              | TuoPu           | TPMDC       | /          | 2023-05-04 | 2024-05-03 |
| 5                                                    | MXA signal analyzer                  | Agilent         | N9020A      | MY54440859 | 2023-05-05 | 2024-05-04 |
| Emissions in restricted frequency bands (below 1GHz) |                                      |                 |             |            |            |            |
| 1                                                    | EMI Test Receiver                    | Rohde&schwarz   | ESCI7       | 101166     | 2023-04-26 | 2024-04-25 |
| 2                                                    | TRILOG Broadband Antenna             | schwarabeck     | VULB 9163   | 9163-1338  | 2023-06-11 | 2025-06-10 |
| 3                                                    | Amplifier                            | Hewlett-Packard | 8447F       | 3113A06184 | 2023-04-26 | 2024-04-25 |
| 4                                                    | Multi-device Controller              | TuoPu           | TPMDC       | /          | 2023-05-04 | 2024-05-03 |
| Emissions in restricted frequency bands (above 1GHz) |                                      |                 |             |            |            |            |
| 1                                                    | EMI Test Receiver                    | Rohde&schwarz   | ESCI7       | 101166     | 2023-04-26 | 2024-04-25 |
| 2                                                    | Double Ridged Broadband Horn Antenna | schwarabeck     | BBHA 9120 D | 2278       | 2023-05-26 | 2024-05-25 |
| 3                                                    | Amplifier                            | Agilent         | 8449B       | 3008A01120 | 2023-05-26 | 2024-05-25 |

| No. | Equipment               | Manufacturer | Model  | Serial No. | Cal. date  | Cal. Due   |
|-----|-------------------------|--------------|--------|------------|------------|------------|
| 4   | Multi-device Controller | TuoPu        | TPMDC  | /          | 2023-05-04 | 2024-05-03 |
| 5   | MXA signal analyzer     | Agilent      | N9020A | MY54440859 | 2023-05-05 | 2024-05-04 |



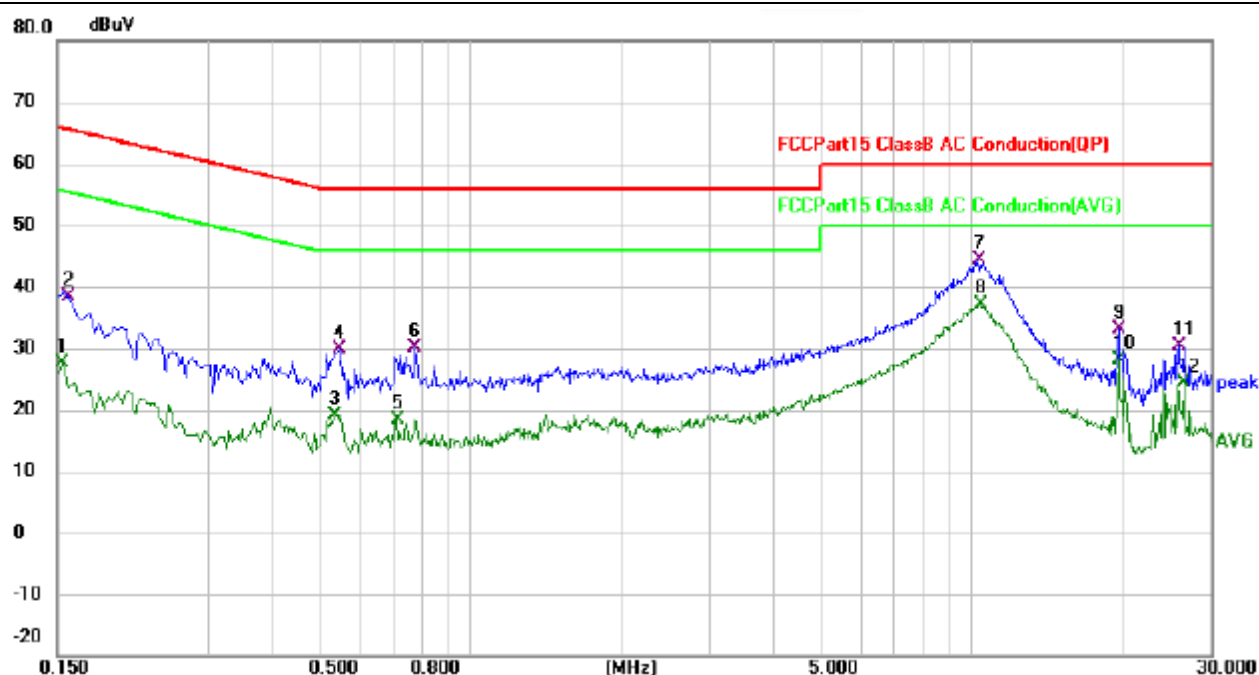
### 6.1.3 Test Data:

Mode1(AC120V/60Hz) / Line: Line / Band: 2.4G / BW: 20 / CH11



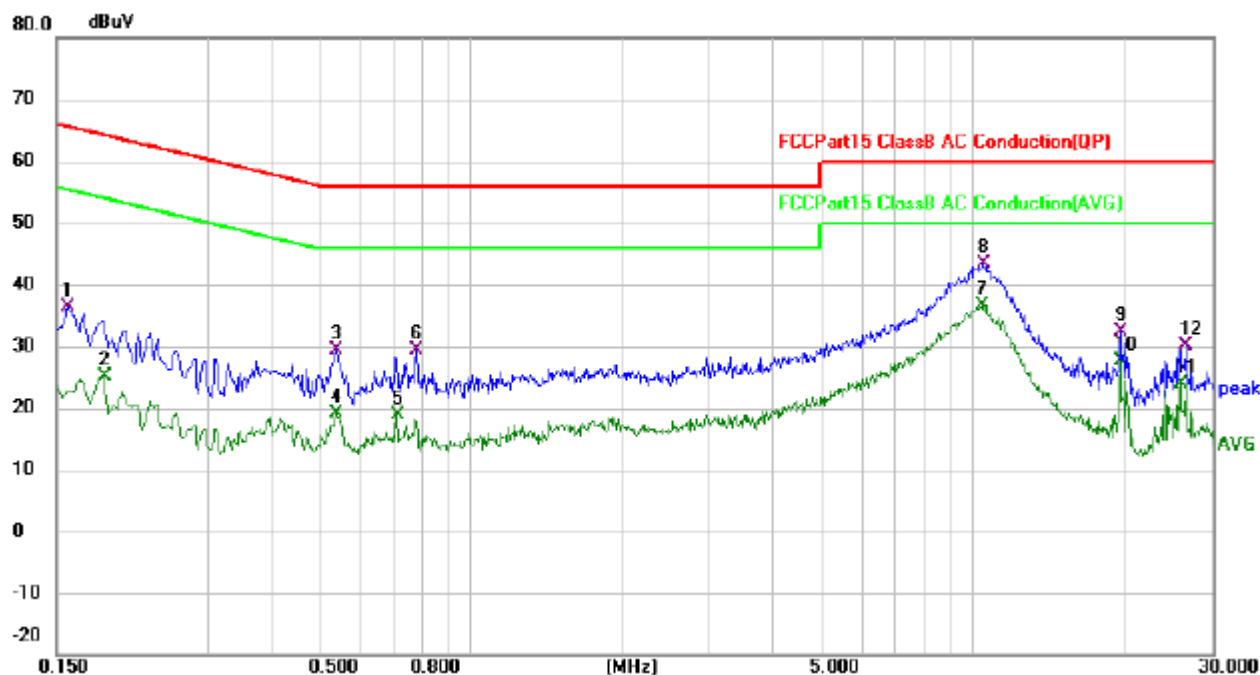
| No. | Mk. | Freq.   | Reading | Correct | Measure- | Limit | Over   |          |         |
|-----|-----|---------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz     | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |         | dBuV    | dB      | dBuV     | dBuV  | dB     |          |         |
| 1   |     | 0.1580  | 26.94   | 10.18   | 37.12    | 65.57 | -28.45 | QP       |         |
| 2   |     | 0.1660  | 15.78   | 10.18   | 25.96    | 55.16 | -29.20 | AVG      |         |
| 3   |     | 0.5340  | 8.82    | 10.23   | 19.05    | 46.00 | -26.95 | AVG      |         |
| 4   |     | 0.5460  | 19.48   | 10.23   | 29.71    | 56.00 | -26.29 | QP       |         |
| 5   |     | 0.7140  | 19.97   | 10.16   | 30.13    | 56.00 | -25.87 | QP       |         |
| 6   |     | 0.7780  | 8.36    | 10.14   | 18.50    | 46.00 | -27.50 | AVG      |         |
| 7   | *   | 10.3820 | 25.63   | 10.75   | 36.38    | 50.00 | -13.62 | AVG      |         |
| 8   |     | 10.7500 | 32.94   | 10.74   | 43.68    | 60.00 | -16.32 | QP       |         |
| 9   |     | 19.7099 | 22.50   | 10.59   | 33.09    | 60.00 | -26.91 | QP       |         |
| 10  |     | 19.7099 | 17.25   | 10.59   | 27.84    | 50.00 | -22.16 | AVG      |         |
| 11  |     | 26.4860 | 13.13   | 10.71   | 23.84    | 50.00 | -26.16 | AVG      |         |
| 12  |     | 26.6100 | 19.60   | 10.71   | 30.31    | 60.00 | -29.69 | QP       |         |

Mode1(AC120V/60Hz) / Line: Neutral / Band: 2.4G / BW: 20 / CH11



| No. | Mk. | Freq.   | Reading | Correct | Measure- | Limit | Over   |          |         |
|-----|-----|---------|---------|---------|----------|-------|--------|----------|---------|
|     |     | MHz     | Level   | Factor  | ment     |       |        | Detector | Comment |
|     |     |         | dBuV    | dB      | dBuV     | dBuV  | dB     |          |         |
| 1   |     | 0.1539  | 17.37   | 10.14   | 27.51    | 55.79 | -28.28 | AVG      |         |
| 2   |     | 0.1580  | 28.19   | 10.13   | 38.32    | 65.57 | -27.25 | QP       |         |
| 3   |     | 0.5380  | 9.17    | 10.07   | 19.24    | 46.00 | -26.76 | AVG      |         |
| 4   |     | 0.5460  | 19.74   | 10.07   | 29.81    | 56.00 | -26.19 | QP       |         |
| 5   |     | 0.7140  | 8.23    | 10.13   | 18.36    | 46.00 | -27.64 | AVG      |         |
| 6   |     | 0.7780  | 19.94   | 10.11   | 30.05    | 56.00 | -25.95 | QP       |         |
| 7   |     | 10.3340 | 33.65   | 10.72   | 44.37    | 60.00 | -15.63 | QP       |         |
| 8   | *   | 10.3940 | 26.41   | 10.72   | 37.13    | 50.00 | -12.87 | AVG      |         |
| 9   |     | 19.7099 | 22.48   | 10.58   | 33.06    | 60.00 | -26.94 | QP       |         |
| 10  |     | 19.7099 | 17.54   | 10.58   | 28.12    | 50.00 | -21.88 | AVG      |         |
| 11  |     | 25.8779 | 19.73   | 10.68   | 30.41    | 60.00 | -29.59 | QP       |         |
| 12  |     | 26.4860 | 13.80   | 10.69   | 24.49    | 50.00 | -25.51 | AVG      |         |

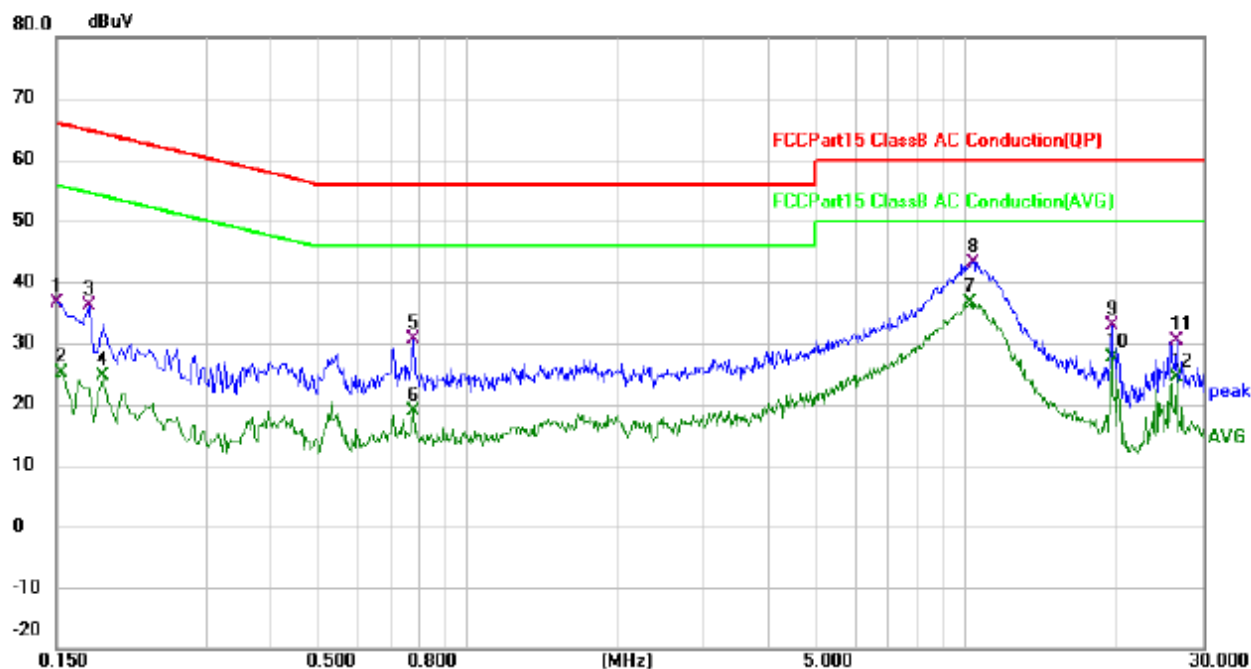
Mode1(AC240V/60Hz) / Line: Line / Band: 2.4G / BW: 20 / CH11



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV | Limit<br>dBuV | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|--------------------------|---------------|------------|----------|---------|
| 1   |     | 0.1580       | 26.09                    | 10.18                   | 36.27                    | 65.57         | -29.30     | QP       |         |
| 2   |     | 0.1860       | 14.98                    | 10.17                   | 25.15                    | 54.21         | -29.06     | AVG      |         |
| 3   |     | 0.5420       | 19.08                    | 10.23                   | 29.31                    | 56.00         | -26.69     | QP       |         |
| 4   |     | 0.5420       | 8.99                     | 10.23                   | 19.22                    | 46.00         | -26.78     | AVG      |         |
| 5   |     | 0.7140       | 8.83                     | 10.16                   | 18.99                    | 46.00         | -27.01     | AVG      |         |
| 6   |     | 0.7820       | 19.32                    | 10.14                   | 29.46                    | 56.00         | -26.54     | QP       |         |
| 7   | *   | 10.4180      | 25.83                    | 10.75                   | 36.58                    | 50.00         | -13.42     | AVG      |         |
| 8   |     | 10.4980      | 32.70                    | 10.75                   | 43.45                    | 60.00         | -16.55     | QP       |         |
| 9   |     | 19.7099      | 21.79                    | 10.59                   | 32.38                    | 60.00         | -27.62     | QP       |         |
| 10  |     | 19.7099      | 17.08                    | 10.59                   | 27.67                    | 50.00         | -22.33     | AVG      |         |
| 11  |     | 25.8779      | 13.17                    | 10.70                   | 23.87                    | 50.00         | -26.13     | AVG      |         |
| 12  |     | 26.6100      | 19.52                    | 10.71                   | 30.23                    | 60.00         | -29.77     | QP       |         |



Mode1(AC240V/60Hz) / Line: Neutral / Band: 2.4G / BW: 20 / CH11



| No. | Mk. | Freq.   | Reading Level | Correct Factor | Measurement | Limit | Over   |          |         |
|-----|-----|---------|---------------|----------------|-------------|-------|--------|----------|---------|
|     |     | MHz     | dBuV          | dB             | dBuV        | dBuV  | dB     | Detector | Comment |
| 1   |     | 0.1500  | 26.58         | 10.14          | 36.72       | 66.00 | -29.28 | QP       |         |
| 2   |     | 0.1539  | 14.98         | 10.14          | 25.12       | 55.79 | -30.67 | AVG      |         |
| 3   |     | 0.1740  | 25.91         | 10.11          | 36.02       | 64.77 | -28.75 | QP       |         |
| 4   |     | 0.1860  | 14.45         | 10.10          | 24.55       | 54.21 | -29.66 | AVG      |         |
| 5   |     | 0.7820  | 20.45         | 10.11          | 30.56       | 56.00 | -25.44 | QP       |         |
| 6   |     | 0.7820  | 8.69          | 10.11          | 18.80       | 46.00 | -27.20 | AVG      |         |
| 7   | *   | 10.2220 | 25.92         | 10.72          | 36.64       | 50.00 | -13.36 | AVG      |         |
| 8   |     | 10.3180 | 32.53         | 10.72          | 43.25       | 60.00 | -16.75 | QP       |         |
| 9   |     | 19.7099 | 22.36         | 10.58          | 32.94       | 60.00 | -27.06 | QP       |         |
| 10  |     | 19.7099 | 17.12         | 10.58          | 27.70       | 50.00 | -22.30 | AVG      |         |
| 11  |     | 26.4860 | 19.66         | 10.70          | 30.36       | 60.00 | -29.64 | QP       |         |
| 12  |     | 26.4860 | 13.80         | 10.70          | 24.50       | 50.00 | -25.50 | AVG      |         |

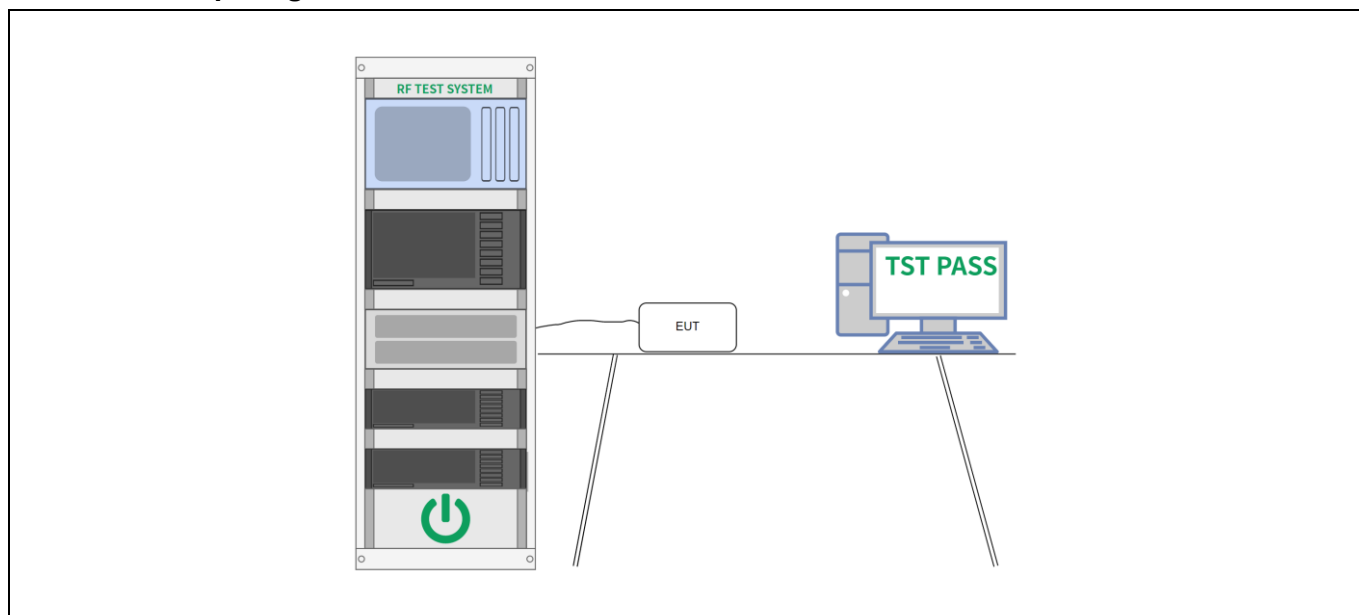
## 6.2 Occupied Bandwidth

|                   |                                                                                                                                                                                            |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(a)(2)                                                                                                                                                                        |
| Test Limit:       | Refer to 47 CFR 15.247(a)(2), Systems using digital modulation techniques may operate in the 902-928 MHz, and 2400-2483.5 MHz bands. The minimum 6 dB bandwidth shall be at least 500 kHz. |
| Test Method:      | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                 |

### 6.2.1 E.U.T. Operation:

|                        |                            |           |        |                       |         |
|------------------------|----------------------------|-----------|--------|-----------------------|---------|
| Operating Environment: |                            |           |        |                       |         |
| Temperature:           | 21.9 °C                    | Humidity: | 61.9 % | Atmospheric Pressure: | 100 kPa |
| Test mode:             | Mode1, Mode2, Mode3, Mode4 |           |        |                       |         |

### 6.2.2 Test Setup Diagram:



### 6.2.3 Test Data:

Please Refer to Appendix for Details.

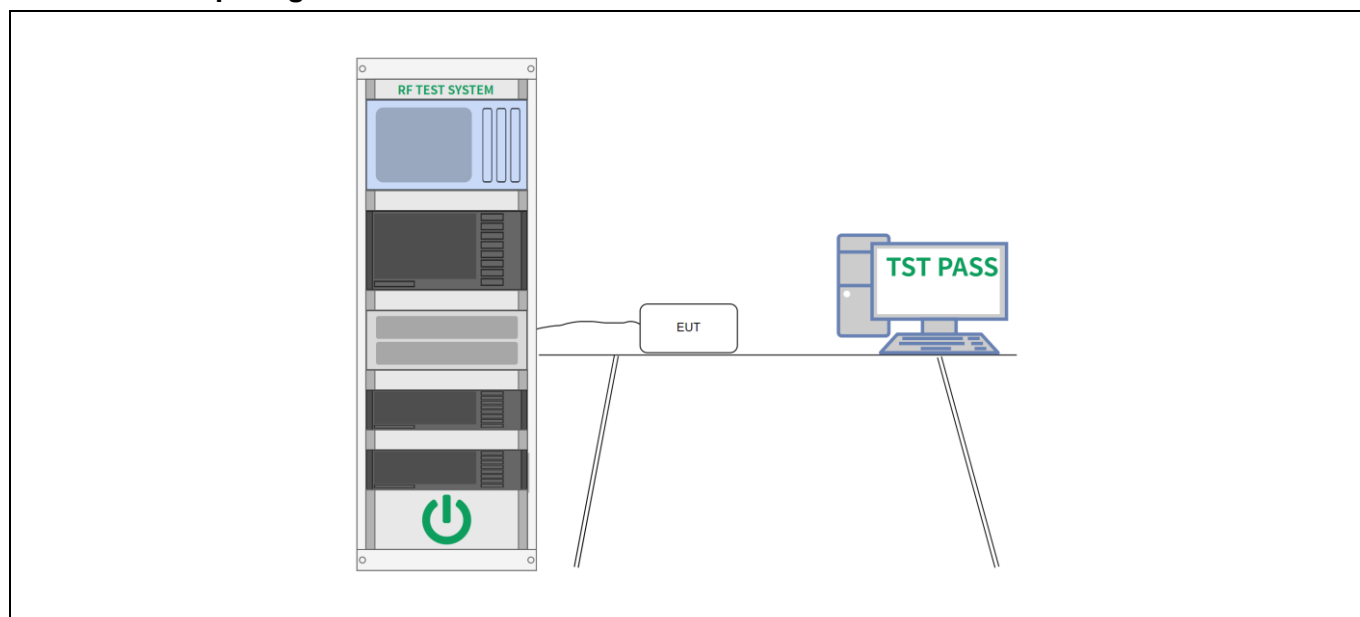
### 6.3 Maximum Conducted Output Power

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(b)(3)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Test Limit:       | Refer to 47 CFR 15.247(b)(3), For systems using digital modulation in the 902-928 MHz, 2400-2483.5 MHz, and 5725-5850 MHz bands: 1 Watt. As an alternative to a peak power measurement, compliance with the one Watt limit can be based on a measurement of the maximum conducted output power. Maximum Conducted Output Power is defined as the total transmit power delivered to all antennas and antenna elements averaged across all symbols in the signaling alphabet when the transmitter is operating at its maximum power control level. Power must be summed across all antennas and antenna elements. The average must not include any time intervals during which the transmitter is off or is transmitting at a reduced power level. If multiple modes of operation are possible (e.g., alternative modulation methods), the maximum conducted output power is the highest total transmit power occurring in any mode. |
| Test Method:      | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |

#### 6.3.1 E.U.T. Operation:

|                        |                            |           |        |                       |         |
|------------------------|----------------------------|-----------|--------|-----------------------|---------|
| Operating Environment: |                            |           |        |                       |         |
| Temperature:           | 21.9 °C                    | Humidity: | 61.9 % | Atmospheric Pressure: | 100 kPa |
| Test mode:             | Mode1, Mode2, Mode3, Mode4 |           |        |                       |         |

#### 6.3.2 Test Setup Diagram:



#### 6.3.3 Test Data:

Please Refer to Appendix for Details.

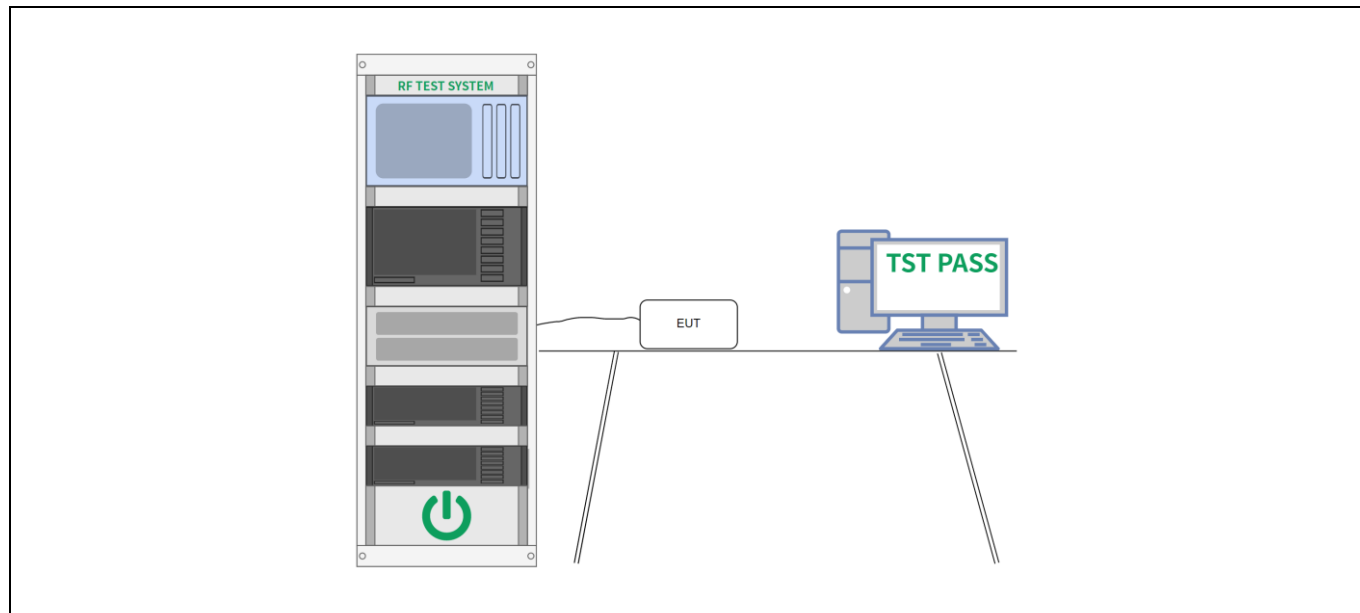
## 6.4 Power Spectral Density

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(e)                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| Test Limit:       | Refer to 47 CFR 15.247(e), For digitally modulated systems, the power spectral density conducted from the intentional radiator to the antenna shall not be greater than 8 dBm in any 3 kHz band during any time interval of continuous transmission. This power spectral density shall be determined in accordance with the provisions of paragraph (b) of this section. The same method of determining the conducted output power shall be used to determine the power spectral density. |
| Test Method:      | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                |

### 6.4.1 E.U.T. Operation:

|                        |         |                            |        |                       |         |
|------------------------|---------|----------------------------|--------|-----------------------|---------|
| Operating Environment: |         |                            |        |                       |         |
| Temperature:           | 21.9 °C | Humidity:                  | 61.9 % | Atmospheric Pressure: | 100 kPa |
| Test mode:             |         | Mode1, Mode2, Mode3, Mode4 |        |                       |         |

### 6.4.2 Test Setup Diagram:



### 6.4.3 Test Data:

Please Refer to Appendix for Details.

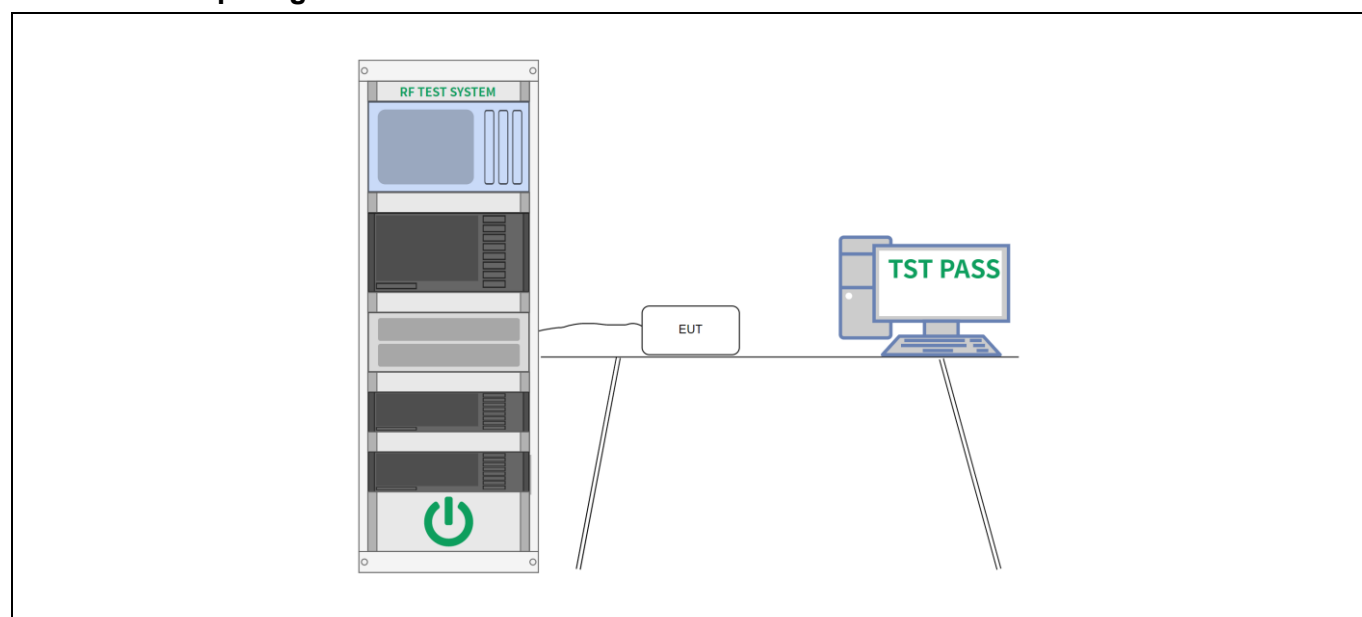
## 6.5 Emissions in non-restricted frequency bands

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Requirement: | 47 CFR 15.247(d)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Test Limit:       | Refer to 47 CFR 15.247(d), In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. If the transmitter complies with the conducted power limits based on the use of RMS averaging over a time interval, as permitted under paragraph (b)(3) of this section, the attenuation required under this paragraph shall be 30 dB instead of 20 dB. Attenuation below the general limits specified in § 15.209(a) is not required. |
| Test Method:      | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |

### 6.5.1 E.U.T. Operation:

|                        |                            |           |        |                       |         |
|------------------------|----------------------------|-----------|--------|-----------------------|---------|
| Operating Environment: |                            |           |        |                       |         |
| Temperature:           | 21.9 °C                    | Humidity: | 61.9 % | Atmospheric Pressure: | 100 kPa |
| Test mode:             | Mode1, Mode2, Mode3, Mode4 |           |        |                       |         |

### 6.5.2 Test Setup Diagram:



### 6.5.3 Test Data:

Please Refer to Appendix for Details.

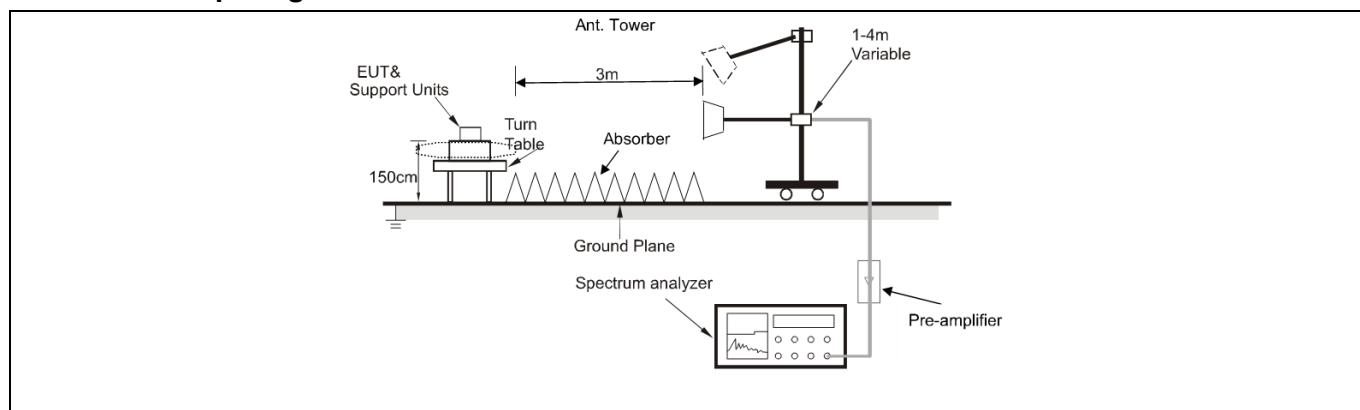
## 6.6 Band edge emissions (Radiated)

|                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                          |                                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Test Requirement:                                                                                                                                                                                                                                                                                                                               | Refer to 47 CFR 15.247(d), 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)).` |                                   |                               |
| Test Limit:                                                                                                                                                                                                                                                                                                                                     | 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                             |
| ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. |                                                                                                                                                                                                                          |                                   |                               |
| Test Method:                                                                                                                                                                                                                                                                                                                                    | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                               |                                   |                               |

### 6.6.1 E.U.T. Operation:

|                        |                                                                                                                |                       |         |
|------------------------|----------------------------------------------------------------------------------------------------------------|-----------------------|---------|
| Operating Environment: |                                                                                                                |                       |         |
| Temperature:           | 21.9 °C                                                                                                        | Humidity:             | 61.9 %  |
|                        |                                                                                                                | Atmospheric Pressure: | 100 kPa |
| Pre test mode:         | Mode1, Mode2, Mode3, Mode4                                                                                     |                       |         |
| Final test mode:       | All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report |                       |         |
| Note:                  | All other emissions are attenuated 20dB below the limit, so does not recorded.                                 |                       |         |

### 6.6.2 Test Setup Diagram:



**6.6.3 Test Data:**

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH01

| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit  | Over   |          |
|-----|-----|----------|---------------|----------------|-------------|--------|--------|----------|
|     |     | MHz      | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | Detector |
| 1   |     | 2310.000 | 47.21         | -8.08          | 39.13       | 74.00  | -34.87 | peak     |
| 2   |     | 2310.000 | 38.25         | -8.08          | 30.17       | 54.00  | -23.83 | AVG      |
| 3   |     | 2390.000 | 54.51         | -7.71          | 46.80       | 74.00  | -27.20 | peak     |
| 4   | *   | 2390.000 | 46.09         | -7.71          | 38.38       | 54.00  | -15.62 | AVG      |

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH01

| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measurement | Limit  | Over   |          |
|-----|-----|----------|---------------|----------------|-------------|--------|--------|----------|
|     |     | MHz      | dBuV          | dB             | dBuV/m      | dBuV/m | dB     | Detector |
| 1   |     | 2310.000 | 42.77         | -8.08          | 34.69       | 74.00  | -39.31 | peak     |
| 2   |     | 2310.000 | 33.01         | -8.08          | 24.93       | 54.00  | -29.07 | AVG      |
| 3   |     | 2390.000 | 44.32         | -7.71          | 36.61       | 74.00  | -37.39 | peak     |
| 4   | *   | 2390.000 | 35.52         | -7.71          | 27.81       | 54.00  | -26.19 | AVG      |

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH11

| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measure-ment | Limit  | Over   |          |
|-----|-----|----------|---------------|----------------|--------------|--------|--------|----------|
|     |     | MHz      | dBuV          | dB             | dBuV/m       | dBuV/m | dB     | Detector |
| 1   |     | 2483.500 | 54.09         | -7.24          | 46.85        | 74.00  | -27.15 | peak     |
| 2   | *   | 2483.500 | 44.73         | -7.24          | 37.49        | 54.00  | -16.51 | AVG      |
| 3   |     | 2500.000 | 49.53         | -7.17          | 42.36        | 74.00  | -31.64 | peak     |
| 4   |     | 2500.000 | 40.91         | -7.17          | 33.74        | 54.00  | -20.26 | AVG      |

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH11

| No. | Mk. | Freq.    | Reading Level | Correct Factor | Measure-ment | Limit  | Over   |          |
|-----|-----|----------|---------------|----------------|--------------|--------|--------|----------|
|     |     | MHz      | dBuV          | dB             | dBuV/m       | dBuV/m | dB     | Detector |
| 1   |     | 2483.500 | 48.79         | -7.24          | 41.55        | 74.00  | -32.45 | peak     |
| 2   | *   | 2483.500 | 39.29         | -7.24          | 32.05        | 54.00  | -21.95 | AVG      |
| 3   |     | 2500.000 | 48.27         | -7.17          | 41.10        | 74.00  | -32.90 | peak     |
| 4   |     | 2500.000 | 38.45         | -7.17          | 31.28        | 54.00  | -22.72 | AVG      |



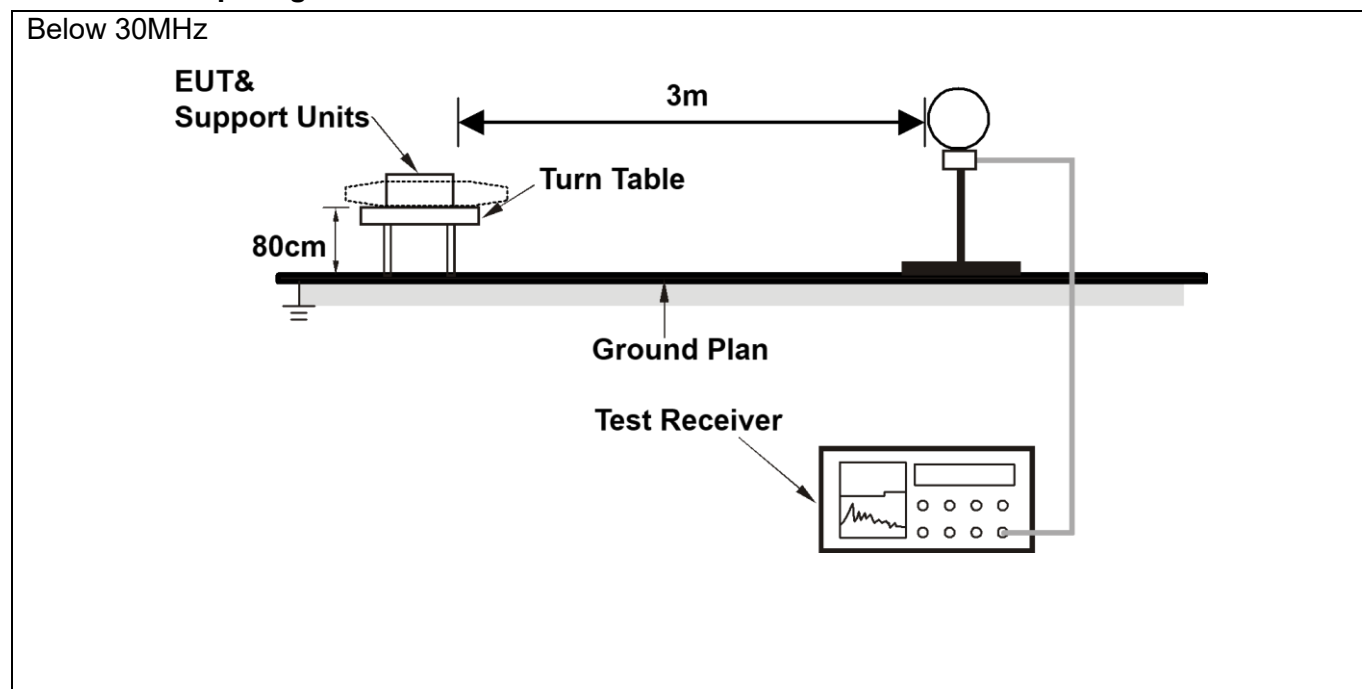
## 6.7 Emissions in restricted frequency bands (below 1GHz)

|                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                          |                                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Test Requirement:                                                                                                                                                                                                                                                                                                                               | Refer to 47 CFR 15.247(d), 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)).` |                                   |                               |
| Test Limit:                                                                                                                                                                                                                                                                                                                                     | 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                             |
| ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. |                                                                                                                                                                                                                          |                                   |                               |
| Test Method:                                                                                                                                                                                                                                                                                                                                    | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                                               |                                   |                               |

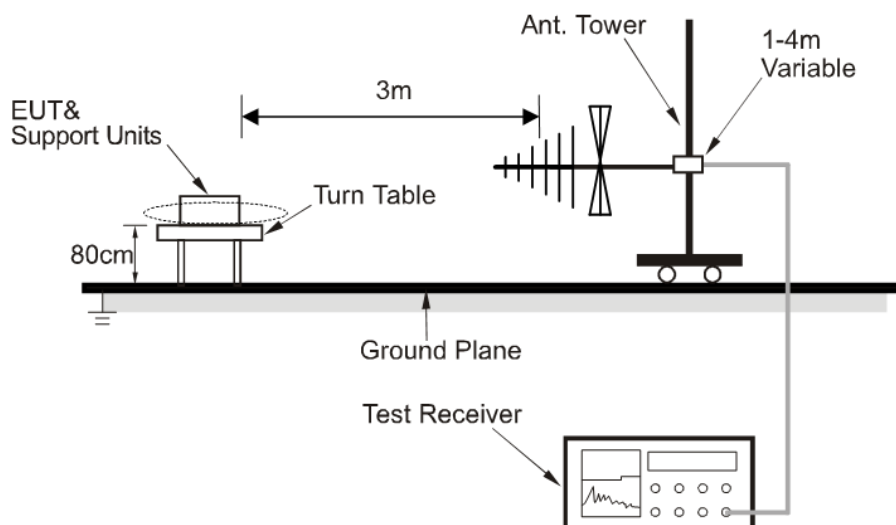
### 6.7.1 E.U.T. Operation:

|                                                                                                                                                                                                                                                                                                   |                                                                                                                |           |        |                       |         |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------|--------|-----------------------|---------|
| Operating Environment:                                                                                                                                                                                                                                                                            |                                                                                                                |           |        |                       |         |
| Temperature:                                                                                                                                                                                                                                                                                      | 21.9 °C                                                                                                        | Humidity: | 61.9 % | Atmospheric Pressure: | 100 kPa |
| Pre test mode:                                                                                                                                                                                                                                                                                    | Mode1, Mode2, Mode3, Mode4                                                                                     |           |        |                       |         |
| Final test mode:                                                                                                                                                                                                                                                                                  | All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report |           |        |                       |         |
| Note:<br>The amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.<br>All modes of operation of the EUT were investigated, and only the worst-case results are reported.<br>There were no emissions found below 30MHz within 20dB of the limit. |                                                                                                                |           |        |                       |         |

### 6.7.2 Test Setup Diagram:

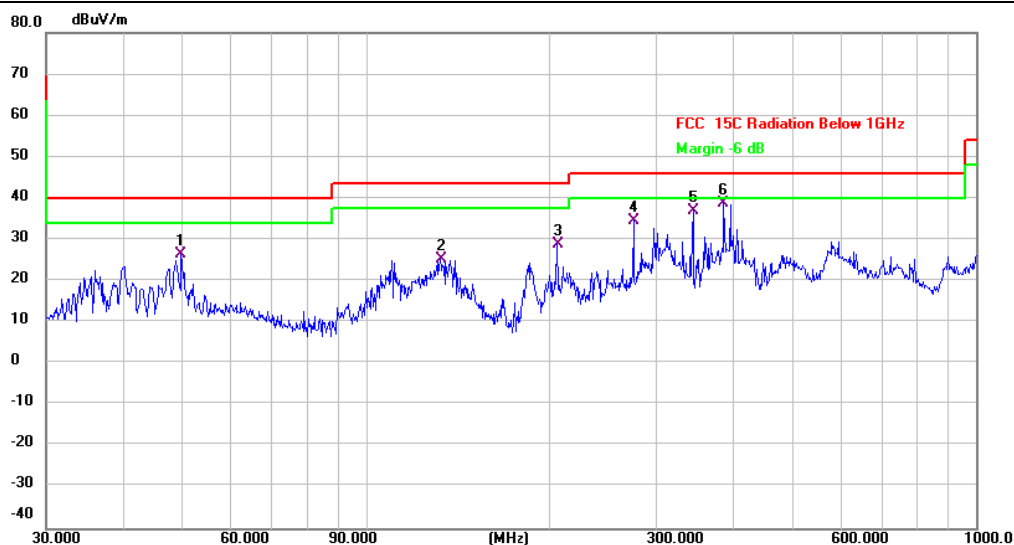


30MHz~1GHz



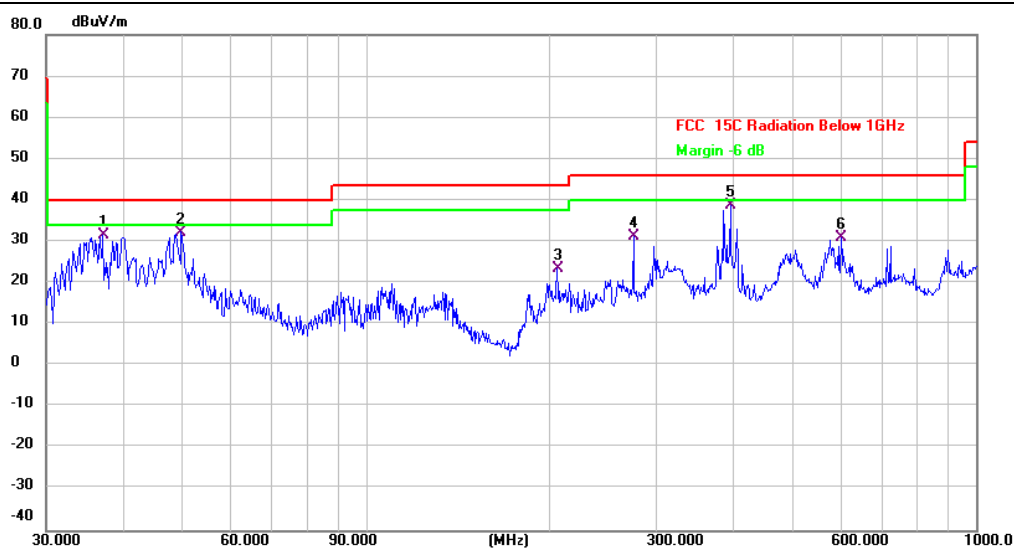
### 6.7.3 Test Data:

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH11



| No. Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Detector | Comment |
|---------|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|----------|---------|
| 1       | 49.8814      | 39.72                    | -13.28                  | 26.44                      | 40.00           | -13.56     | QP       |         |
| 2       | 132.2206     | 41.10                    | -15.99                  | 25.11                      | 43.50           | -18.39     | QP       |         |
| 3       | 206.3976     | 47.37                    | -18.61                  | 28.76                      | 43.50           | -14.74     | QP       |         |
| 4       | 275.1570     | 49.17                    | -14.69                  | 34.48                      | 46.00           | -11.52     | QP       |         |
| 5       | 344.3855     | 50.79                    | -13.73                  | 37.06                      | 46.00           | -8.94      | QP       |         |
| 6 *     | 386.6338     | 51.95                    | -13.05                  | 38.90                      | 46.00           | -7.10      | QP       |         |

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH11



| No. | Mk. | Freq.<br>MHz | Reading<br>Level<br>dBuV | Correct<br>Factor<br>dB | Measure-<br>ment<br>dBuV/m | Limit<br>dBuV/m | Over<br>dB | Detector | Comment |
|-----|-----|--------------|--------------------------|-------------------------|----------------------------|-----------------|------------|----------|---------|
| 1   |     | 37.1550      | 44.64                    | -12.96                  | 31.68                      | 40.00           | -8.32      | QP       |         |
| 2   |     | 49.8814      | 45.58                    | -13.28                  | 32.30                      | 40.00           | -7.70      | QP       |         |
| 3   |     | 206.3976     | 42.06                    | -18.61                  | 23.45                      | 43.50           | -20.05     | QP       |         |
| 4   |     | 275.1570     | 46.04                    | -14.69                  | 31.35                      | 46.00           | -14.65     | QP       |         |
| 5   | *   | 396.2415     | 50.52                    | -11.84                  | 38.68                      | 46.00           | -7.32      | QP       |         |
| 6   |     | 601.4265     | 36.81                    | -5.84                   | 30.97                      | 46.00           | -15.03     | QP       |         |

Note: MINI140 is not equipped with the appropriate hardware and does not support the WIFI features.

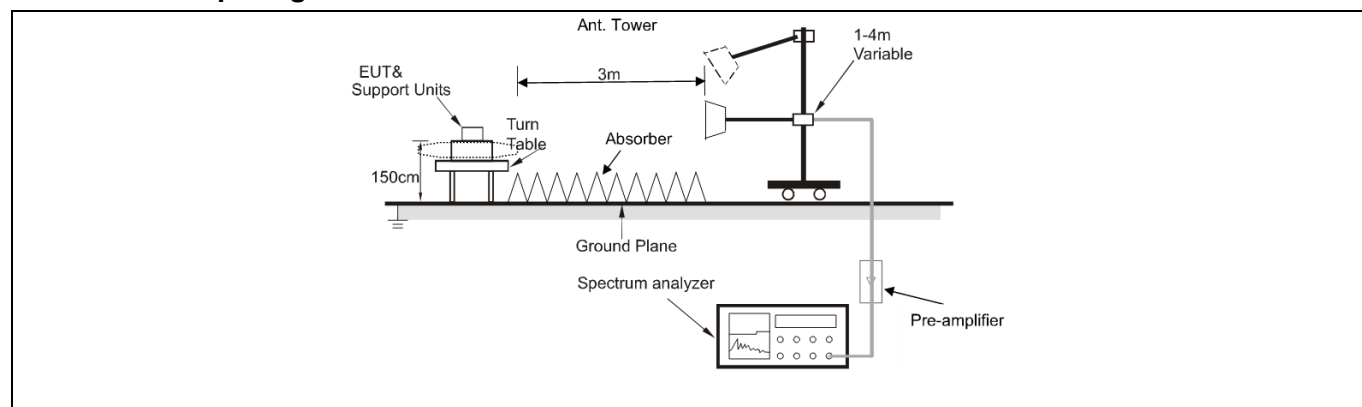
## 6.8 Emissions in restricted frequency bands (above 1GHz)

|                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                               |                                   |                               |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------|-------------------------------|
| Test Requirement:                                                                                                                                                                                                                                                                                                                               | 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)).` |                                   |                               |
| Test Limit:                                                                                                                                                                                                                                                                                                                                     | 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                             |
| ** Except as provided in paragraph (g), fundamental emissions from intentional radiators operating under this section shall not be located in the frequency bands 54-72 MHz, 76-88 MHz, 174-216 MHz or 470-806 MHz. However, operation within these frequency bands is permitted under other sections of this part, e.g., §§ 15.231 and 15.241. |                                                                                                                                                                                               |                                   |                               |
| Test Method:                                                                                                                                                                                                                                                                                                                                    | KDB 558074 D01 15.247 Meas Guidance v05r02                                                                                                                                                    |                                   |                               |

### 6.8.1 E.U.T. Operation:

|                                                                                                                                                                                                                                                                |                                                                                                                |           |        |                       |         |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------|-----------|--------|-----------------------|---------|
| Operating Environment:                                                                                                                                                                                                                                         |                                                                                                                |           |        |                       |         |
| Temperature:                                                                                                                                                                                                                                                   | 21.9 °C                                                                                                        | Humidity: | 61.9 % | Atmospheric Pressure: | 100 kPa |
| Pre test mode:                                                                                                                                                                                                                                                 | Mode1, Mode2, Mode3, Mode4                                                                                     |           |        |                       |         |
| Final test mode:                                                                                                                                                                                                                                               | All of the listed pre-test mode were tested, only the data of the worst mode (Mode1) is recorded in the report |           |        |                       |         |
| Note: Test frequency are from 1GHz to 25GHz, the amplitude of spurious emissions which are attenuated more than 20 dB below the limits are not reported.<br>All modes of operation of the EUT were investigated, and only the worst-case results are reported. |                                                                                                                |           |        |                       |         |

### 6.8.2 Test Setup Diagram:



**6.8.3 Test Data:**

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH01

| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBuV             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 4824.000 | 52.27            | 0.82              | 53.09            | 74.00  | -20.91 | peak     |
| 2   | *   | 4824.000 | 49.44            | 0.82              | 50.26            | 54.00  | -3.74  | AVG      |
| 3   |     | 7236.000 | 42.15            | 6.00              | 48.15            | 74.00  | -25.85 | peak     |
| 4   |     | 7236.000 | 36.11            | 6.00              | 42.11            | 54.00  | -11.89 | AVG      |
| 5   |     | 9648.000 | 40.93            | 6.17              | 47.10            | 74.00  | -26.90 | peak     |
| 6   |     | 9648.000 | 34.89            | 6.17              | 41.06            | 54.00  | -12.94 | AVG      |

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH01

| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBuV             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 4824.000 | 46.52            | 0.82              | 47.34            | 74.00  | -26.66 | peak     |
| 2   | *   | 4824.000 | 44.38            | 0.82              | 45.20            | 54.00  | -8.80  | AVG      |
| 3   |     | 7236.000 | 40.24            | 6.00              | 46.24            | 74.00  | -27.76 | peak     |
| 4   |     | 7236.000 | 34.18            | 6.00              | 40.18            | 54.00  | -13.82 | AVG      |
| 5   |     | 9648.000 | 43.78            | 6.17              | 49.95            | 74.00  | -24.05 | peak     |
| 6   |     | 9648.000 | 37.22            | 6.17              | 43.39            | 54.00  | -10.61 | AVG      |

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH06

| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBuV             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 4874.000 | 50.30            | 1.01              | 51.31            | 74.00  | -22.69 | peak     |
| 2   | *   | 4874.000 | 48.14            | 1.01              | 49.15            | 54.00  | -4.85  | AVG      |
| 3   |     | 7311.000 | 39.61            | 5.94              | 45.55            | 74.00  | -28.45 | peak     |
| 4   |     | 7311.000 | 33.29            | 5.94              | 39.23            | 54.00  | -14.77 | AVG      |
| 5   |     | 9748.000 | 42.76            | 6.54              | 49.30            | 74.00  | -24.70 | peak     |
| 6   |     | 9748.000 | 37.58            | 6.54              | 44.12            | 54.00  | -9.88  | AVG      |



Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH06

| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBuV             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 4874.000 | 43.50            | 1.01              | 44.51            | 74.00  | -29.49 | peak     |
| 2   |     | 4874.000 | 41.22            | 1.01              | 42.23            | 54.00  | -11.77 | AVG      |
| 3   |     | 7311.000 | 40.32            | 5.94              | 46.26            | 74.00  | -27.74 | peak     |
| 4   |     | 7311.000 | 34.21            | 5.94              | 40.15            | 54.00  | -13.85 | AVG      |
| 5   |     | 9748.000 | 44.25            | 6.54              | 50.79            | 74.00  | -23.21 | peak     |
| 6   | *   | 9748.000 | 38.75            | 6.54              | 45.29            | 54.00  | -8.71  | AVG      |

Mode1 / Polarization: Horizontal / Band: 2.4G / BW: 20 / CH11

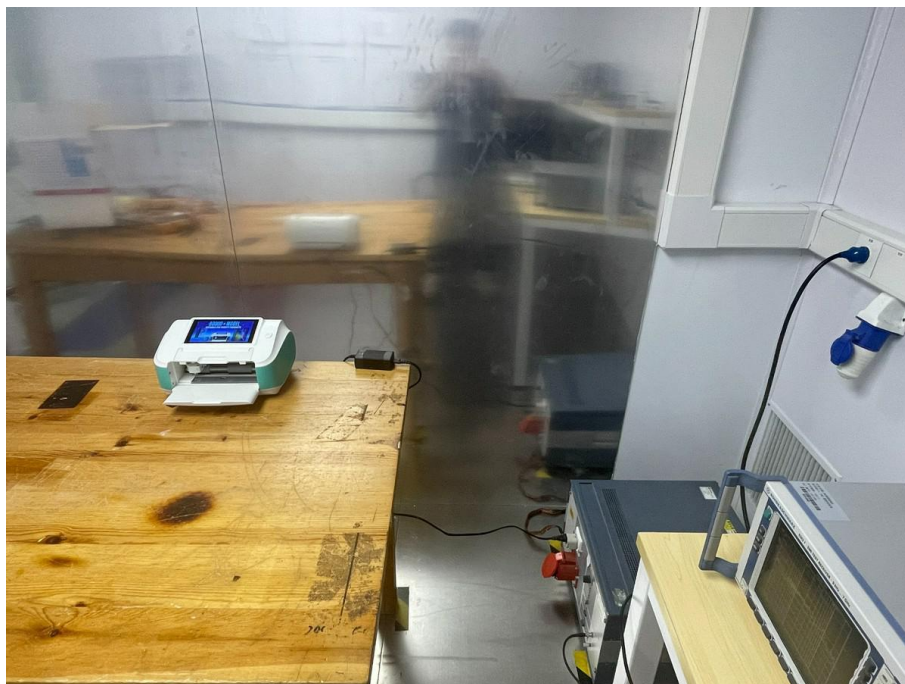
| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBuV             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 4924.000 | 50.45            | 1.27              | 51.72            | 74.00  | -22.28 | peak     |
| 2   | *   | 4924.000 | 47.94            | 1.27              | 49.21            | 54.00  | -4.79  | AVG      |
| 3   |     | 7386.000 | 42.94            | 5.86              | 48.80            | 74.00  | -25.20 | peak     |
| 4   |     | 7386.000 | 36.39            | 5.86              | 42.25            | 54.00  | -11.75 | AVG      |
| 5   |     | 9848.000 | 40.92            | 6.31              | 47.23            | 74.00  | -26.77 | peak     |
| 6   |     | 9848.000 | 34.81            | 6.31              | 41.12            | 54.00  | -12.88 | AVG      |

Mode1 / Polarization: Vertical / Band: 2.4G / BW: 20 / CH11

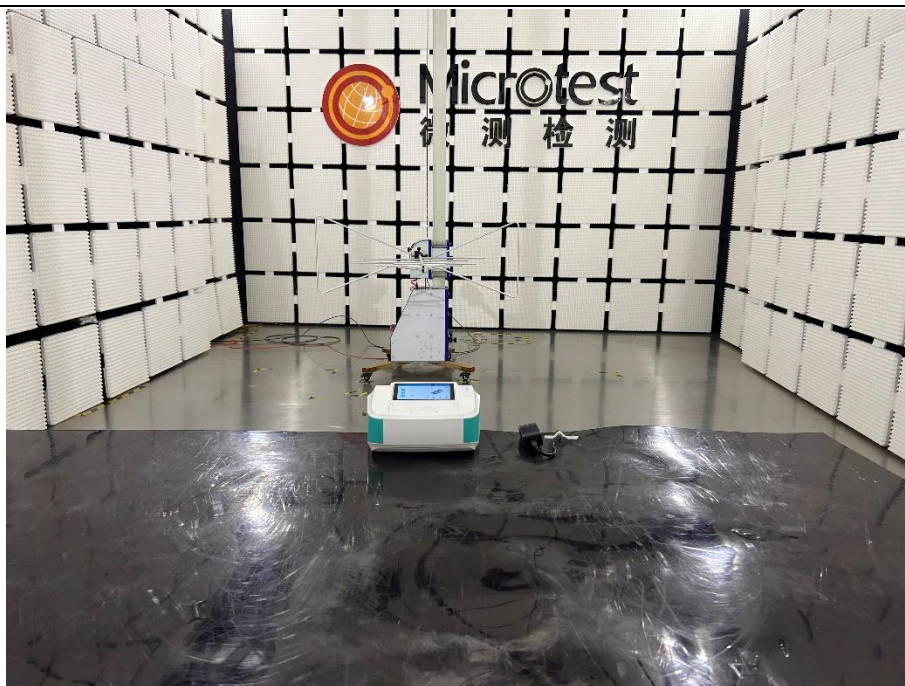
| No. | Mk. | Freq.    | Reading<br>Level | Correct<br>Factor | Measure-<br>ment | Limit  | Over   |          |
|-----|-----|----------|------------------|-------------------|------------------|--------|--------|----------|
|     |     | MHz      | dBuV             | dB                | dBuV/m           | dBuV/m | dB     | Detector |
| 1   |     | 4924.000 | 47.07            | 1.27              | 48.34            | 74.00  | -25.66 | peak     |
| 2   | *   | 4924.000 | 44.96            | 1.27              | 46.23            | 54.00  | -7.77  | AVG      |
| 3   |     | 7386.000 | 44.44            | 5.86              | 50.30            | 74.00  | -23.70 | peak     |
| 4   |     | 7386.000 | 39.29            | 5.86              | 45.15            | 54.00  | -8.85  | AVG      |
| 5   |     | 9848.000 | 45.63            | 6.31              | 51.94            | 74.00  | -22.06 | peak     |
| 6   |     | 9848.000 | 39.89            | 6.31              | 46.20            | 54.00  | -7.80  | AVG      |

## Photographs of the test setup

Conducted Emission at AC power line



Receiver spurious emissions (30MHz to 1GHz)



Receiver spurious emissions (above 1GHz)



## Photographs of the EUT

Refer to Appendix - EUT Photos

# Appendix

## Appendix A: DTS Bandwidth

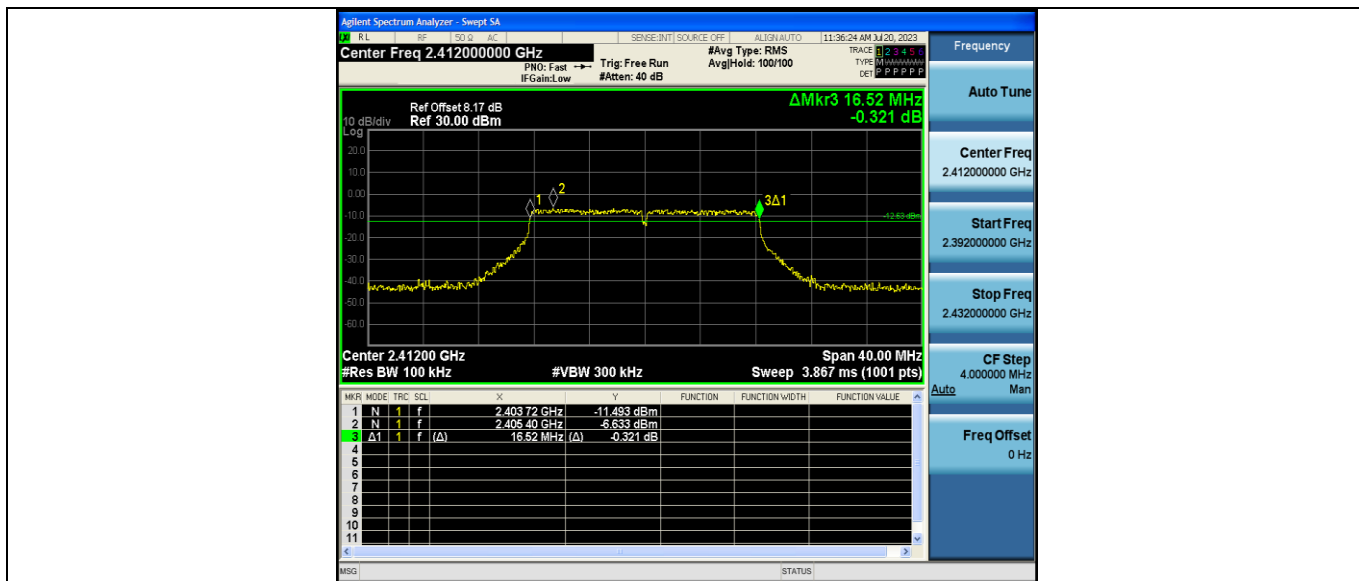
### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | DTS BW<br>[MHz] | Limit<br>[MHz] | Verdict |
|-----------|---------|--------------------|-----------------|----------------|---------|
| 11B       | Ant1    | 2412               | 9.000           | 0.5            | PASS    |
|           |         | 2437               | 8.600           | 0.5            | PASS    |
|           |         | 2462               | 8.560           | 0.5            | PASS    |
| 11G       | Ant1    | 2412               | 16.520          | 0.5            | PASS    |
|           |         | 2437               | 16.600          | 0.5            | PASS    |
|           |         | 2462               | 16.520          | 0.5            | PASS    |
| 11N20SISO | Ant1    | 2412               | 17.800          | 0.5            | PASS    |
|           |         | 2437               | 17.800          | 0.5            | PASS    |
|           |         | 2462               | 17.720          | 0.5            | PASS    |
| 11N40SISO | Ant1    | 2422               | 36.400          | 0.5            | PASS    |
|           |         | 2437               | 36.480          | 0.5            | PASS    |
|           |         | 2452               | 36.400          | 0.5            | PASS    |

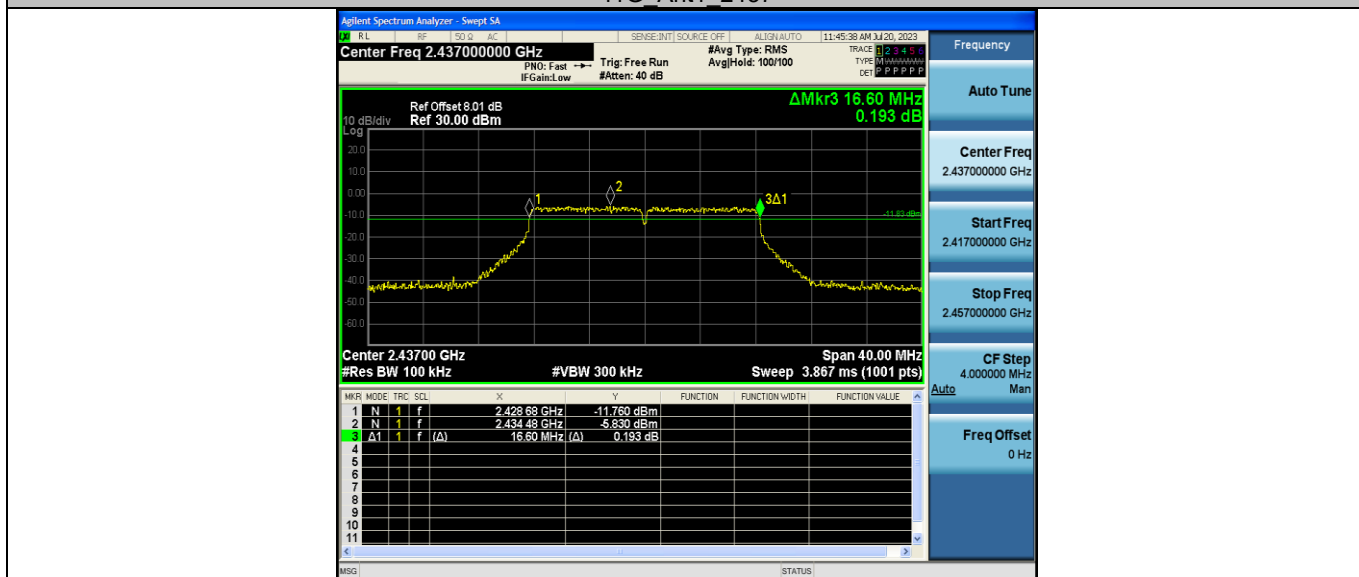


## Test Graphs

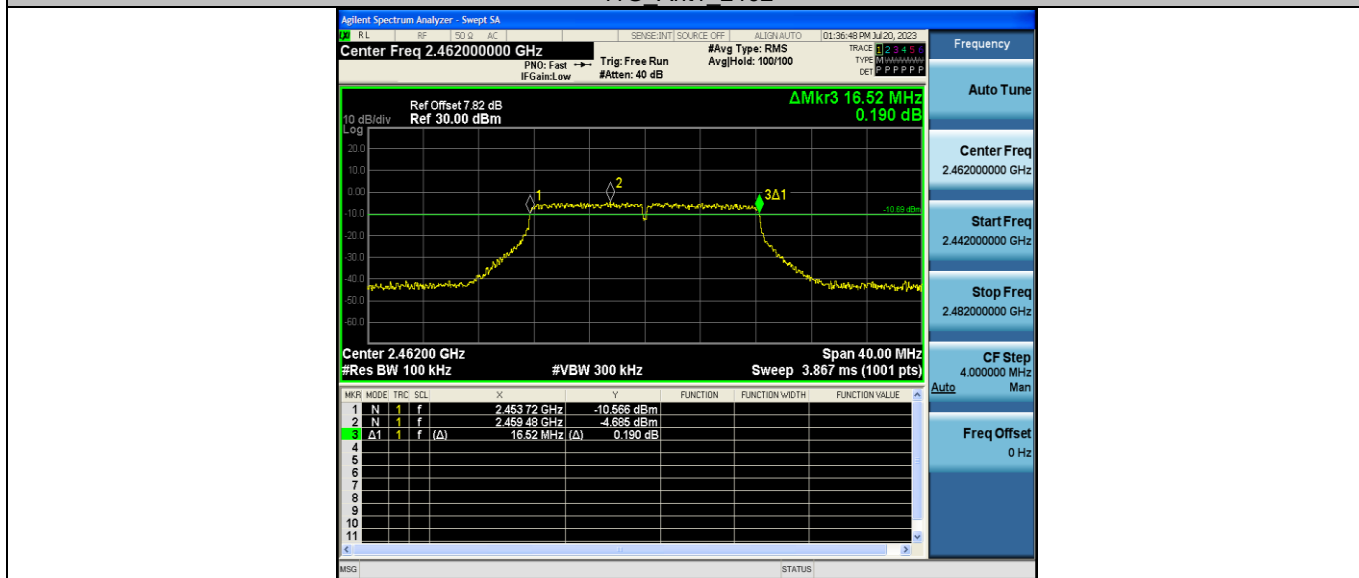




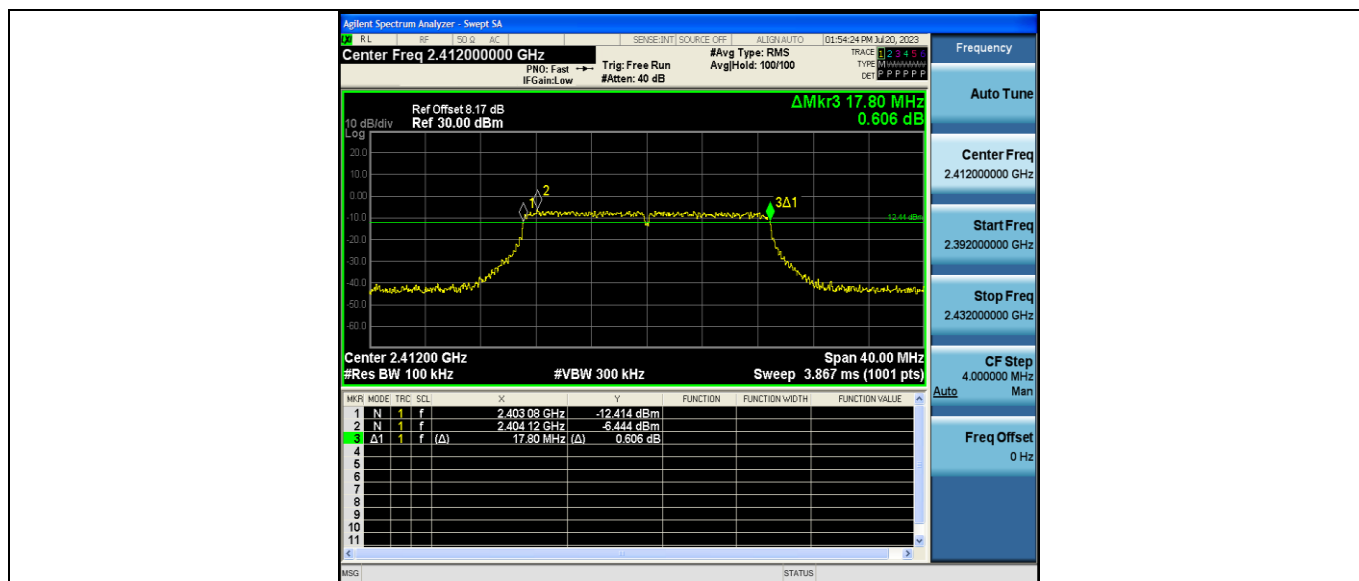
11G Ant1 2437



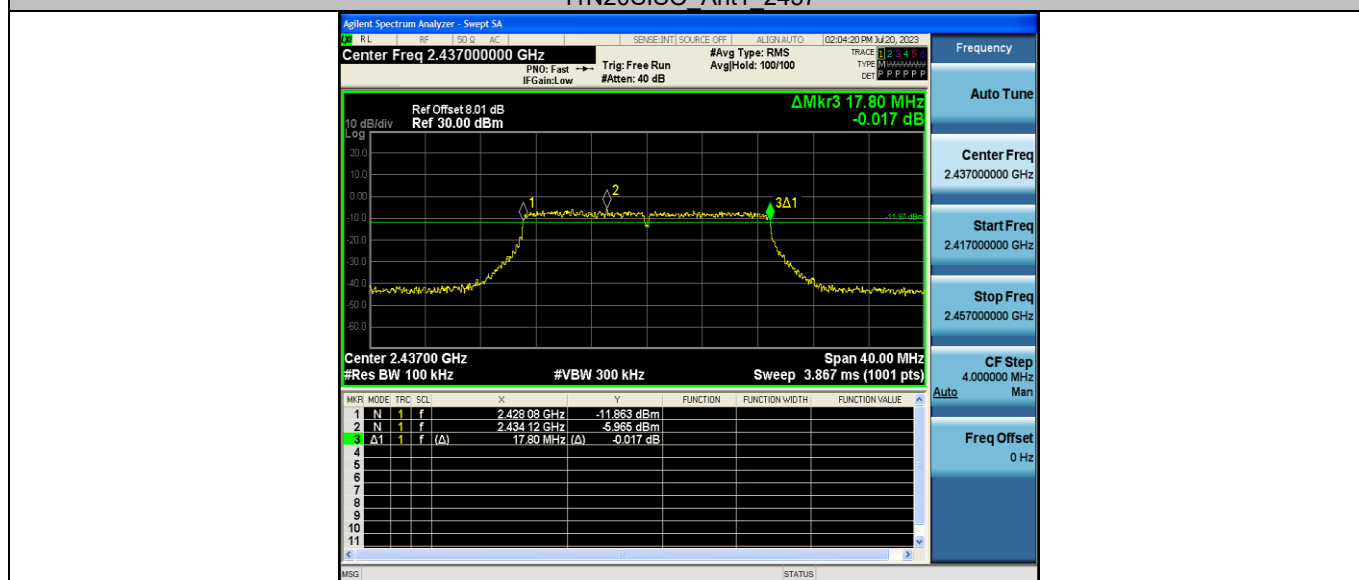
11G Ant1 2462



11N20SISO Ant1 2412



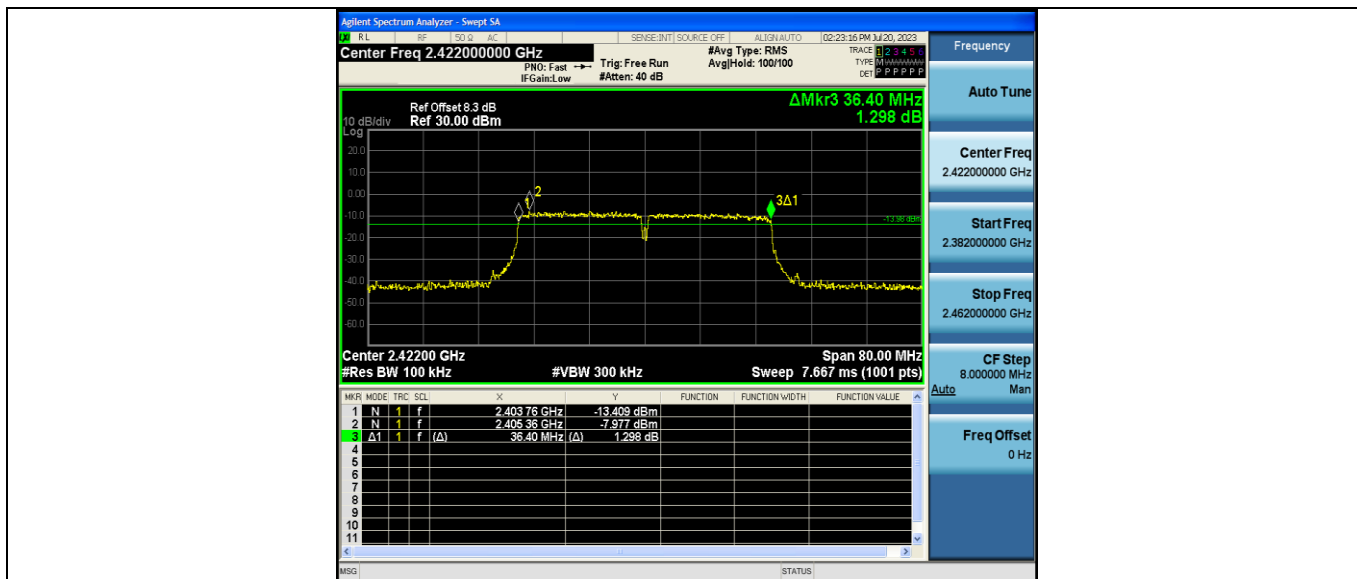
11N20SISO\_Ant1\_2437



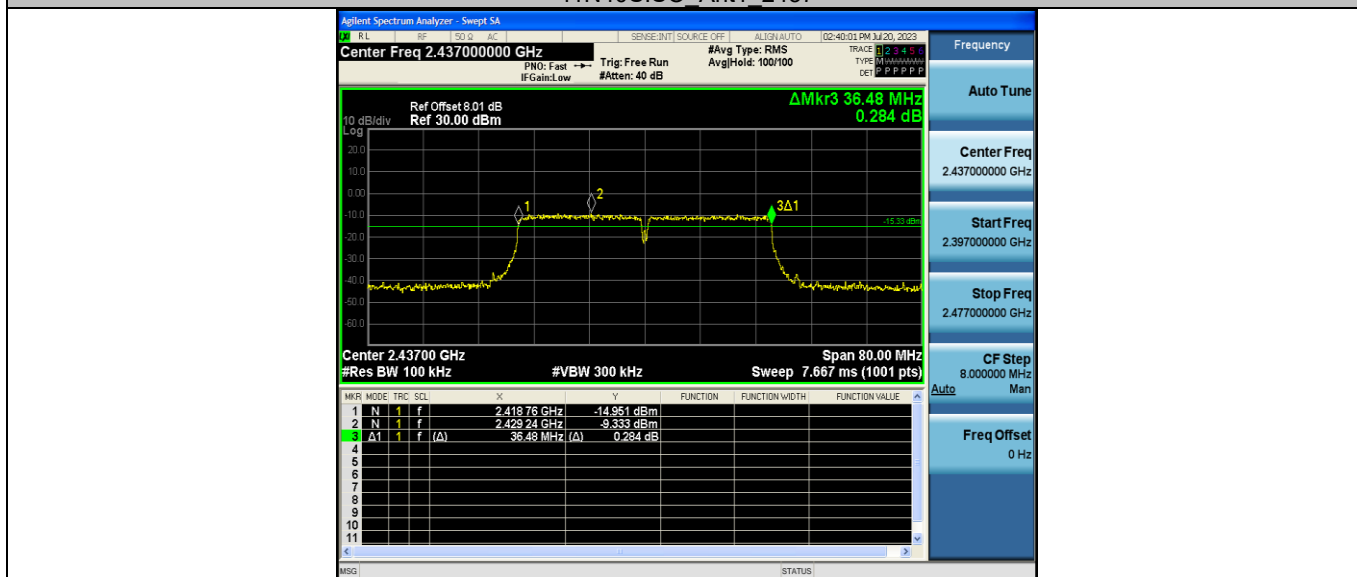
11N20SISO\_Ant1\_2462



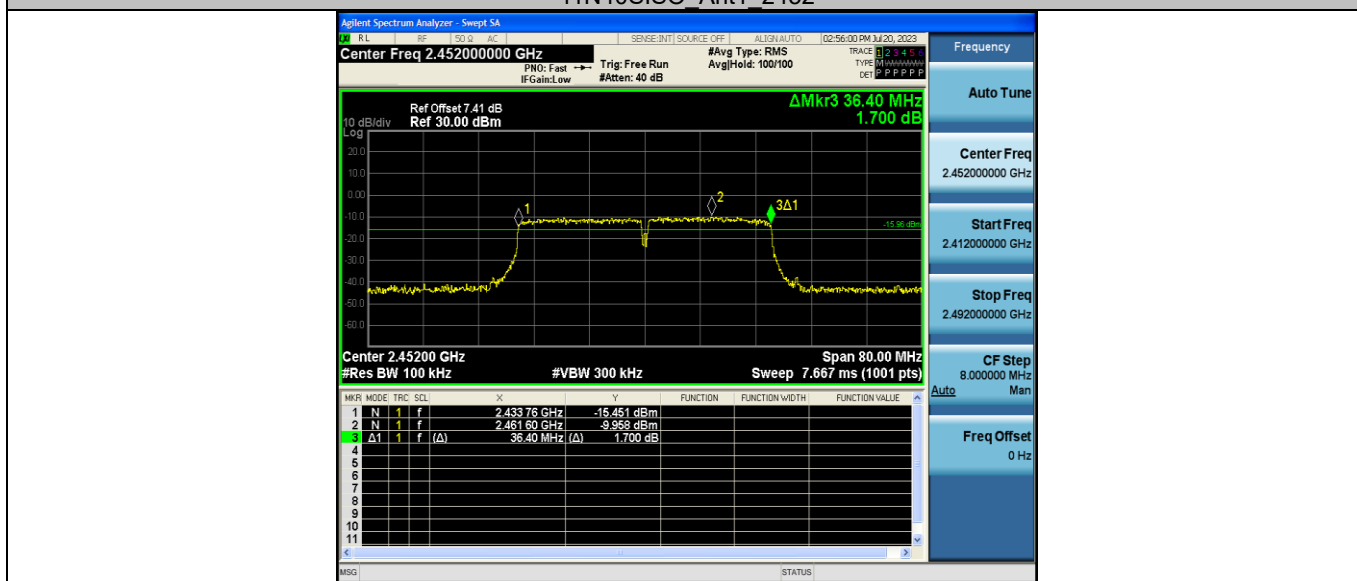
11N40SISO\_Ant1\_2422



11N40SISO Ant1\_2437



11N40SISO Ant1\_2452



## Appendix B: Maximum conducted output power

### Test Result Peak

| Test Mode | Antenna | Frequency [MHz] | Peak Power [dBm] | Conducted Limit [dBm] | Verdict |
|-----------|---------|-----------------|------------------|-----------------------|---------|
| 11B       | Ant1    | 2412            | 16.04            | ≤30.00                | PASS    |
|           |         | 2437            | 16.25            | ≤30.00                | PASS    |
|           |         | 2462            | 16.53            | ≤30.00                | PASS    |
| 11G       | Ant1    | 2412            | 14.74            | ≤30.00                | PASS    |
|           |         | 2437            | 15.53            | ≤30.00                | PASS    |
|           |         | 2462            | 15.63            | ≤30.00                | PASS    |
| 11N20SISO | Ant1    | 2412            | 15.30            | ≤30.00                | PASS    |
|           |         | 2437            | 15.36            | ≤30.00                | PASS    |
|           |         | 2462            | 15.06            | ≤30.00                | PASS    |
| 11N40SISO | Ant1    | 2422            | 15.75            | ≤30.00                | PASS    |
|           |         | 2437            | 15.10            | ≤30.00                | PASS    |
|           |         | 2452            | 14.47            | ≤30.00                | PASS    |

## Appendix C: Maximum power spectral density

### Test Result

| Test Mode | Antenna | Frequency<br>[MHz] | Result<br>[dBm/3-100kHz] | Limit<br>[dBm/3kHz] | Verdict |
|-----------|---------|--------------------|--------------------------|---------------------|---------|
| 11B       | Ant1    | 2412               | -16.02                   | ≤8.00               | PASS    |
|           |         | 2437               | -15.76                   | ≤8.00               | PASS    |
|           |         | 2462               | -15.37                   | ≤8.00               | PASS    |
| 11G       | Ant1    | 2412               | -18.55                   | ≤8.00               | PASS    |
|           |         | 2437               | -19.77                   | ≤8.00               | PASS    |
|           |         | 2462               | -18.92                   | ≤8.00               | PASS    |
| 11N20SISO | Ant1    | 2412               | -18.41                   | ≤8.00               | PASS    |
|           |         | 2437               | -19.34                   | ≤8.00               | PASS    |
|           |         | 2462               | -19.36                   | ≤8.00               | PASS    |
| 11N40SISO | Ant1    | 2422               | -18.73                   | ≤8.00               | PASS    |
|           |         | 2437               | -19.69                   | ≤8.00               | PASS    |
|           |         | 2452               | -20.15                   | ≤8.00               | PASS    |

## Test Graphs

