

# Test Report

**Product:** Skywork note

**Trade Mark:** Skywork

**Model Number:** SWN100

**FCC ID:** 2BUX9-SWN100

**Prepared for**

SKYWORK AI PTE.LTD.

2 Science Park Drive, #01-08, Ascent, Singapore 118222

**Prepared by**

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## TEST RESULT CERTIFICATION

**Applicant's Name**..... : SKYWORK AI PTE.LTD.

**Address** ..... : 2 Science Park Drive, #01-08, Ascent, Singapore 118222

**Manufacturer's Name** ..... : SKYWORK AI PTE.LTD.

**Address** ..... : 2 Science Park Drive, #01-08, Ascent, Singapore 118222

### Product description

**Product name** ..... : Skywork note

**Model Number** ..... : SWN100

**Standards** ..... : FCC Part 15.407

**Test procedure**..... : IEEE/ANSI C63.10-2020

789033 D02 General UNII Test Procedures New Rules v02r01

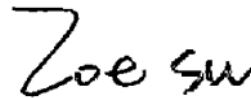
This device described above has been tested by Shenzhen HongBiao Certification& Testing Co., Ltd and the test results show that the equipment under test (EUT) is in compliance with the EMC requirements. And it is applicable only to the tested sample identified in the report.

### Date of Test

**Date (s) of performance of tests**..... : Feb. 28, 2026~Mar. 06, 2026

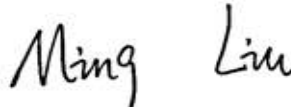
**Test Result**..... : **Pass**

**Testing Engineer** :



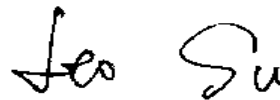
( Z o e S u )

**Technical Manager** :



( M i n g L i u )

**Authorized Signatory** :



( L e o S u )

[illegible]

# 1 General Description

## 1.1 Description of EUT

|                            |                                                                     |
|----------------------------|---------------------------------------------------------------------|
| Product name:              | Skywork note                                                        |
| Model name:                | SWN100                                                              |
| Series Model:              | N/A                                                                 |
| Different of series model: | N/A                                                                 |
| Frequency range:           | U-NII-1: 5180 MHz to 5240 MHz<br>U-NII-3: 5745 MHz to 5825 MHz      |
| Modulation type:           | 802.11a/n: OFDM(BPSK,QPSK,16QAM,64QAM, 256QAM)                      |
| Transfer rate:             | 802.11a: 6,9,12,18,24,36,48,54Mbps<br>802.11n(HT20/HT40): MCS0-MCS7 |
| Channel bandwidth:         | 802.11a: 20 MHz<br>802.11n: 20 MHz, 40 MHz                          |
| Antenna type:              | Multilayer Antenna                                                  |
| Antenna gain:              | 2.3dBi                                                              |
| Max. output power:         | U-NII-1: 17.59dBm<br>U-NII-3: 19.79dBm                              |
| Hardware version:          | V1.0                                                                |
| Software version:          | V1.0                                                                |
| Battery:                   | DC 3.87V, 130mAh, 0.51Wh                                            |
| Power supply:              | Input: DC 5V/0.5A                                                   |
| Adapter information:       | N/A                                                                 |

## 1.2 Test Mode

For 802.11a/n (HT20)

| U-NII-1 (5150 - 5250 MHz) |         |                 | U-NII-3(5725 - 5850 MHz) |         |                 |
|---------------------------|---------|-----------------|--------------------------|---------|-----------------|
| Channel Number            | Channel | Frequency (MHz) | Channel Number           | Channel | Frequency (MHz) |
| 36                        | Low     | 5180            | 149                      | Low     | 5745            |
| 40                        | Mid     | 5200            | 157                      | Mid     | 5785            |
| 48                        | High    | 5240            | 165                      | High    | 5825            |

For 802.11n (HT40)

| U-NII-1 (5150 - 5250 MHz) |         |           | U-NII-3(5725 - 5850 MHz) |         |           |
|---------------------------|---------|-----------|--------------------------|---------|-----------|
| Channel                   | Channel | Frequency | Channel                  | Channel | Frequency |

| Number |      | (MHz) | Number |      | (MHz) |
|--------|------|-------|--------|------|-------|
| 38     | Low  | 5190  | 151    | Low  | 5755  |
| 46     | High | 5230  | 159    | High | 5795  |

### 1.3 Operation Channel List

For U-NII-1:

| 20 MHz         |                 | 40 MHz         |                 | 80 MHz         |                 |
|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| Channel Number | Frequency (MHz) | Channel Number | Frequency (MHz) | Channel Number | Frequency (MHz) |
| 36             | 5180            | 38             | 5190            | --             | --              |
| 40             | 5200            | 46             | 5230            | --             | --              |
| 44             | 5220            | --             | --              | --             | --              |
| 48             | 5240            | --             | --              | --             | --              |

For U-NII-3:

| 20 MHz         |                 | 40 MHz         |                 | 80 MHz         |                 |
|----------------|-----------------|----------------|-----------------|----------------|-----------------|
| Channel Number | Frequency (MHz) | Channel Number | Frequency (MHz) | Channel Number | Frequency (MHz) |
| 149            | 5745            | 151            | 5755            | --             | --              |
| 153            | 5765            | 159            | 5795            | --             | --              |
| 157            | 5785            | --             | --              | --             | --              |
| 161            | 5805            | --             | --              | --             | --              |
| 165            | 5825            | --             | --              | --             | --              |

### 1.4 Test Setup

See photographs of the test setup in the report for the actual setup and connections between EUT and support equipment.

### 1.5 Power setting configuration parameters

During testing, Channel and Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

| Test Items         | Mode             | Data Rate | TX/RX |
|--------------------|------------------|-----------|-------|
| Radiated Emissions | 802.11a(HT20)    | 6 Mbps    | TX    |
|                    | 802.11n(HT20/40) | MCS0      | TX    |
| Duty Cycle         | 802.11a(HT20)    | 6 Mbps    | TX    |
|                    | 802.11n(HT20/40) | MCS0      | TX    |
| Band Edge          | 802.11a (HT20)   | 6 Mbps    | TX    |
|                    | 802.11n(HT20/40) | MCS0      | TX    |
| 6dB Bandwidth      | 802.11a (HT20)   | 6 Mbps    | TX    |
|                    | 802.11n(HT20/40) | MCS0      | TX    |

|                                           |                  |        |    |
|-------------------------------------------|------------------|--------|----|
| 26dB Bandwidth and 99% Occupied Bandwidth | 802.11a (HT20)   | 6 Mbps | TX |
|                                           | 802.11n(HT20/40) | MCS0   | TX |
| Conducted Output Power                    | 802.11a(HT20)    | 6 Mbps | TX |
|                                           | 802.11n(HT20/40) | MCS0   | TX |
| Power Spectral Density                    | 802.11a(HT20)    | 6 Mbps | TX |
|                                           | 802.11n(HT20/40) | MCS0   | TX |
| Frequency Stability                       | Un-modulation    | /      | TX |

## 1.6 Ancillary Equipment

| Equipment       | Model   | S/N                  | Manufacturer                            |
|-----------------|---------|----------------------|-----------------------------------------|
| Notebook        | BDR-WDH | A3RQPM242<br>0002411 | Honor Terminal Co., Ltd.                |
| Adapter         | CD289   | 35810                | Ugreen Group Limited                    |
| Wireless Charge | /       | /                    | /                                       |
| Phone           | LE2120  | 8602840564<br>41073  | Shenzhen Oneplus<br>Technology Co., Ltd |
|                 |         |                      |                                         |

Note: The notebook is used to assist the RF test. In order to prevent the notebook from causing unnecessary impact on the test, the notebook will be removed from the test environment after the EUT successfully transmits at a fixed frequency using the notebook.

## 2 Summary of Test Result

| No. | Standard Section    | Test Item                                      | Result | Remark |
|-----|---------------------|------------------------------------------------|--------|--------|
| 1   | 15.203/15.407       | Antenna Requirement                            | Pass   |        |
| 2   | 15.207              | Power Line Conducted Emission                  | Pass   |        |
| 3   | 15.407(b)<br>15.209 | Radiation Spurious Emission                    | Pass   |        |
| 4   | 15.407(a)           | RF Output Power                                | Pass   |        |
| 5   | 15.407(a)           | Power Spectral Density                         | Pass   |        |
| 6   | 15.407(a)           | 26dB Emission Bandwidth and Occupied bandwidth | Pass   |        |
| 7   | 15.407(e)           | 6 dB bandwidth                                 | Pass   |        |
| 8   | 15.407(b)           | Out Of Band Emission                           | Pass   |        |
| 9   | 15.407(b)           | Spurious RF Conducted Emissions                | Pass   |        |
| 10  | 15.407(g)           | Frequency Stability                            | Pass   |        |
| 11  | /                   | Duty Cycle                                     | Pass   |        |

### 3 Test Facilities and Accreditations

#### 3.1 Test Laboratory

|                       |                                                                                                                                                   |
|-----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------|
| Test Site             | Shenzhen HongBiao Certification& Testing Co., Ltd                                                                                                 |
| Test Site Location    | Room 102, 201, Building 2, Yuanwanggu RFID Industrial Park, Tongguan Road, Tianliao Community, Yutang Street, Guangming District, Shenzhen, China |
| Telephone:            | (86-755) 2998 9321                                                                                                                                |
| Fax:                  | (86-755) 2998 5110                                                                                                                                |
| FCC Registration No.: | CN1341                                                                                                                                            |
| A2LA Certificate No.: | 6765.01                                                                                                                                           |

#### 3.2 Environmental Conditions

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

|                    |              |
|--------------------|--------------|
| Temperature:       | 15°C~35°C    |
| Relative Humidity: | 20%~75%      |
| Air Pressure:      | 98kPa~101kPa |

#### 3.3 Measurement Uncertainty

The reported uncertainty of measurement  $y \pm U$ , where expended uncertainty  $U$  is based on a standard uncertainty multiplied by a coverage factor of  $k=2$ , providing a level of confidence of approximately 95 %.

The data and results quoted in this document are true and accurate values, and uncertainties are not involved in the calculations.

In addition, components and mass production processes that are similar to testing equipment may introduce additional deviations, and the manufacturer is solely responsible for the continued compliance of the equipment.

| Measurement Frequency Range      | U, (dB)            | Note |
|----------------------------------|--------------------|------|
| RF frequency                     | $2 \times 10^{-5}$ |      |
| RF power, conducted              | $\pm 0.57$ dB      |      |
| Conducted emission(150kHz~30MHz) | $\pm 2.5$ dB       |      |
| Radiated emission(9kHz-30MHz)    | $\pm 2.5$ dB       |      |
| Radiated emission(30MHz~1GHz)    | $\pm 4.2$ dB       |      |
| Radiated emission (above 1GHz)   | $\pm 4.7$ dB       |      |
| Occupied Bandwidth               | $\pm 3\%$          |      |
| Temperature                      | $\pm 1$ degree     |      |

|          |       |  |
|----------|-------|--|
| Humidity | ± 5 % |  |
|----------|-------|--|

### 3.4 Test Software

| Software name                    | Manufacturer | Model    | Version           |
|----------------------------------|--------------|----------|-------------------|
| Conducted Emission test Software | Farad        | EZ-EMC   | EMC-CON<br>3A1.1+ |
| Radiated Emission test Software  | Farad        | EZ-EMC   | FA-03A2           |
| RF Test System                   | MWRF         | MTS 8310 | 2.0.0.0           |

## 4 List of Test Equipment

| Radiation emission  |               |                                          |                 |             |              |                  |            |
|---------------------|---------------|------------------------------------------|-----------------|-------------|--------------|------------------|------------|
| Item                | Equipment No. | Equipment name                           | Manufacturer    | Model       | Serial No.   | Calibration date | Due date   |
| 1                   | HB-E001       | Horn Antenna                             | Schwarzbeck     | BBHA 9120D  | 02592        | 2024-05-18       | 2026-05-17 |
| 2                   | HB-E002       | Biconical log-periodic composite antenna | Schwarzbeck     | VULB 9168   | 01340        | 2024-05-18       | 2026-05-17 |
| 3                   | HB-E003       | SHF-EHF Horn                             | Schwarzbeck     | BBHA 9170   | 01193        | 2024-05-18       | 2026-05-17 |
| 4                   | HB-E005       | Preamplifier                             | Noyetec         | LAN-0118    | NYCM1420102  | 2025-05-07       | 2026-05-06 |
| 5                   | HB-E006       | Preamplifier                             | Noyetec         | LAN-1840    | NYCM1420103  | 2025-05-07       | 2026-05-06 |
| 6                   | HB-E007       | EMI TEST RECEIVER                        | R&S             | ESR7        | 102520       | 2025-05-07       | 2026-05-06 |
| 7                   | HB-E009       | POSITINAL COTROLLE R                     | Noyetec         | N/A         | N/A          | /                | /          |
| 8                   | HB-E013       | RF switch                                | Noyetec         | NY-RF4      | NY0CM1420204 | /                | /          |
| 9                   | HB-E066       | Illuminance Tester                       | TASI            | TA8121      | N/A          | 2025-05-13       | 2026-05-12 |
| 10                  | HB-E075       | Active loop antenna                      | Schwarzbeck     | FMZB 1519B  | 1519B-245    | 2024-05-18       | 2026-05-17 |
| 11                  | HB-E076       | Preamplifier                             | Hewlett Packard | 8447D       | 1937A02278   | 2025-05-07       | 2026-05-06 |
| Conduction emission |               |                                          |                 |             |              |                  |            |
| Item                | Equipment No. | Equipment name                           | Manufacturer    | Model       | Serial No.   | Calibration date | Due date   |
| 1                   | HB-E014       | 4 Path V-LISN                            | Schwarzbeck     | NNLK 8121   | 00770        | 2025-05-07       | 2026-05-06 |
| 2                   | HB-E015       | Pulse Limiter                            | Schwarzbeck     | VTSD 9561-F | 00949        | 2025-05-07       | 2026-05-06 |
| 3                   | HB-E016       | Absorb clamp                             | ZHINAN          | ZN23201     | N/A          | 2025-05-10       | 2026-05-09 |
| 4                   | HB-E059       | Attenuator                               | Xianghua        | TS2-6-1     | 220215166    | 2025-05-10       | 2026-05-09 |
| 5                   | HB-E069       | EMI TEST RECEIVER                        | R&S             | ESCI        | N/A          | 2025-05-07       | 2026-05-06 |
| RF                  |               |                                          |                 |             |              |                  |            |
| Item                | Equipment No. | Equipment name                           | Manufacturer    | Model       | Serial No.   | Calibration date | Due date   |
| 1                   | HB-E041       | MXG AnaioG Signal Generator              | Agilent         | N5181A      | MY47070421   | 2025-05-07       | 2026-05-06 |

|   |         |                                               |         |                |            |            |            |
|---|---------|-----------------------------------------------|---------|----------------|------------|------------|------------|
| 2 | HB-E042 | WIDEBAND<br>RADIO<br>COMMUNICA<br>TION TESTER | R&S     | CMW500         | 132108     | 2025-05-08 | 2026-05-07 |
| 3 | HB-E043 | MXG Anaio<br>Signal<br>Generator              | Agilent | N5182A         | US46240335 | 2025-05-08 | 2026-05-07 |
| 4 | HB-E044 | Signal&<br>spectrum<br>Analyzer               | R&S     | FSV3044        | 101264     | 2025-05-07 | 2026-05-06 |
| 5 | HB-E045 | RF Control<br>Box                             | Noyetec | NY100-R<br>FCB | N/A        | 2025-05-08 | 2026-05-07 |
| 6 | HB-E058 | Thermometer<br>Clock Humidity<br>Monitor      | N/A     | HTC-1S         | N/A        | 2025-05-09 | 2026-05-08 |

Note: the calibration interval of the above test instruments is 12&24 months and the calibrations are traceable to international system unit (SI).

## **5 Test Item And Results**

### **5.1 Antenna Requirement**

#### **5.1.1 Standard Requirement**

15.203 requirement: For intentional device, according to 15.203: an intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

#### **5.1.2 Test Result**

The antenna is Multilayer Antenna, which was permanently affixed to the device and un-replaced, complies with 15.203. In addition, the maximum antenna gain is 2.3dBi.

## 5.2 Power Line Conducted Emission

### 5.2.1 Limits

| Limits – Class B                                                                                                                                                                      |              |           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------|
| Frequency (MHz)                                                                                                                                                                       | Limit (dBμV) |           |
|                                                                                                                                                                                       | Quasi-Peak   | Average   |
| 0.15 to 0.5                                                                                                                                                                           | 66 to 56*    | 56 to 46* |
| 0.5 to 5                                                                                                                                                                              | 56           | 46        |
| 5 to 30                                                                                                                                                                               | 60           | 50        |
| Note:<br>1. the tighter limit applies at the band edges.<br>2. the limit of "*" marked band means the limitation decreases linearly with the logarithm of the frequency in the range. |              |           |

### 5.2.2 Test Procedures

#### a) EUT Operating Conditions

The EUT was configured for testing in a typical fashion (as a customer would normally use it). The EUT has been programmed to continuously transmit during test. This operating condition was tested and used to collect the included data.

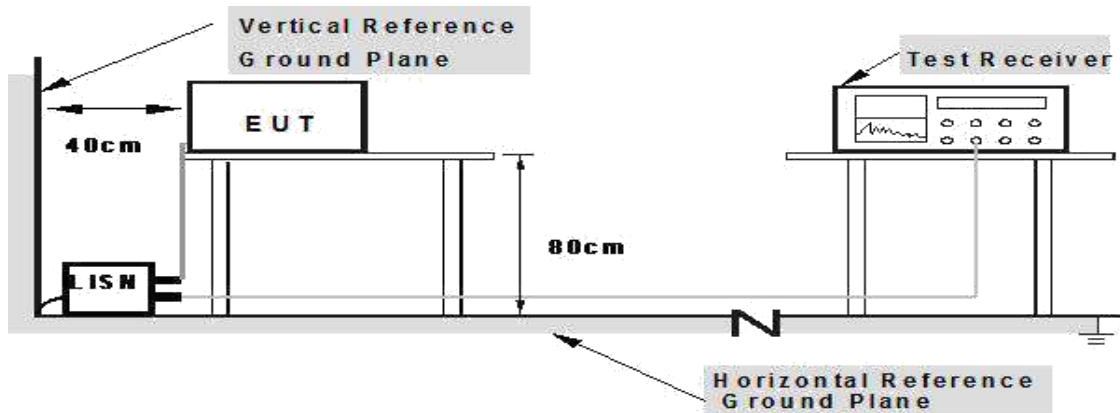
#### b) The following table is the setting of the receiver

| Receiver Parameters | Setting  |
|---------------------|----------|
| Attenuation         | 10 dB    |
| Start Frequency     | 0.15 MHz |
| Stop Frequency      | 30 MHz   |
| IF Bandwidth        | 9 kHz    |

- c) The EUT was placed 0.8 meters from the horizontal ground plane with EUT being connected to the power mains through a line impedance stabilization network (LISN). All other support equipment powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
- d) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.
- e) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
- f) LISN is at least 80 cm from nearest part of EUT chassis.
- g) For the actual test configuration, please refer to the related Item – photographs of the test

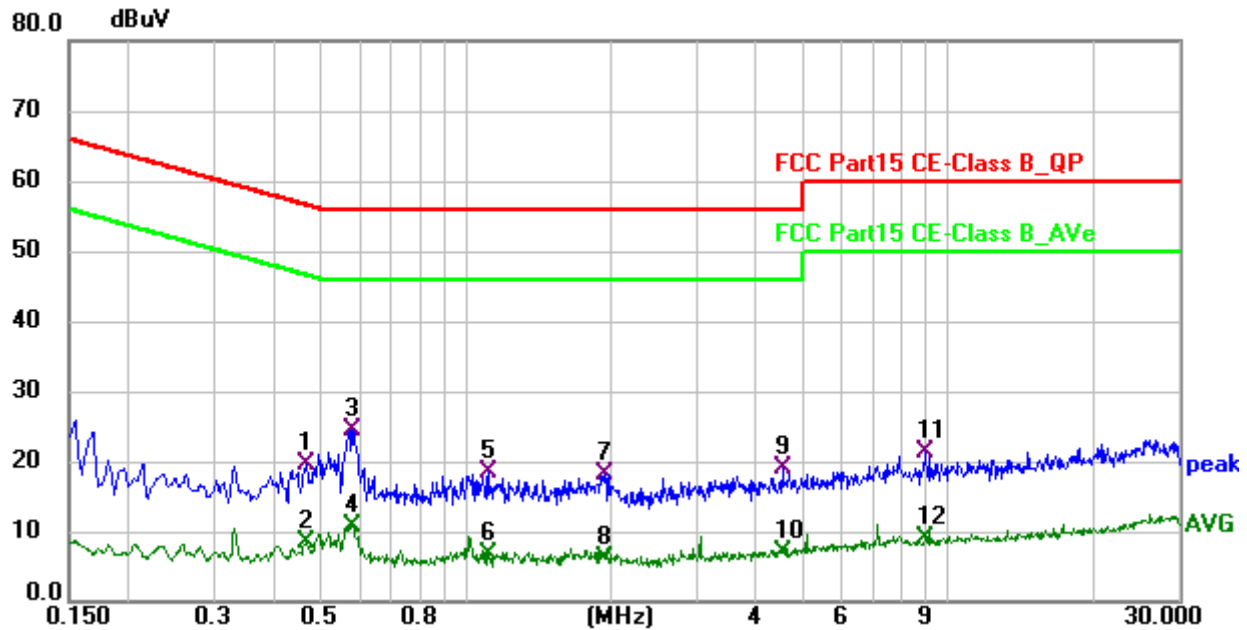
setup.

### 5.2.3 Test Setup



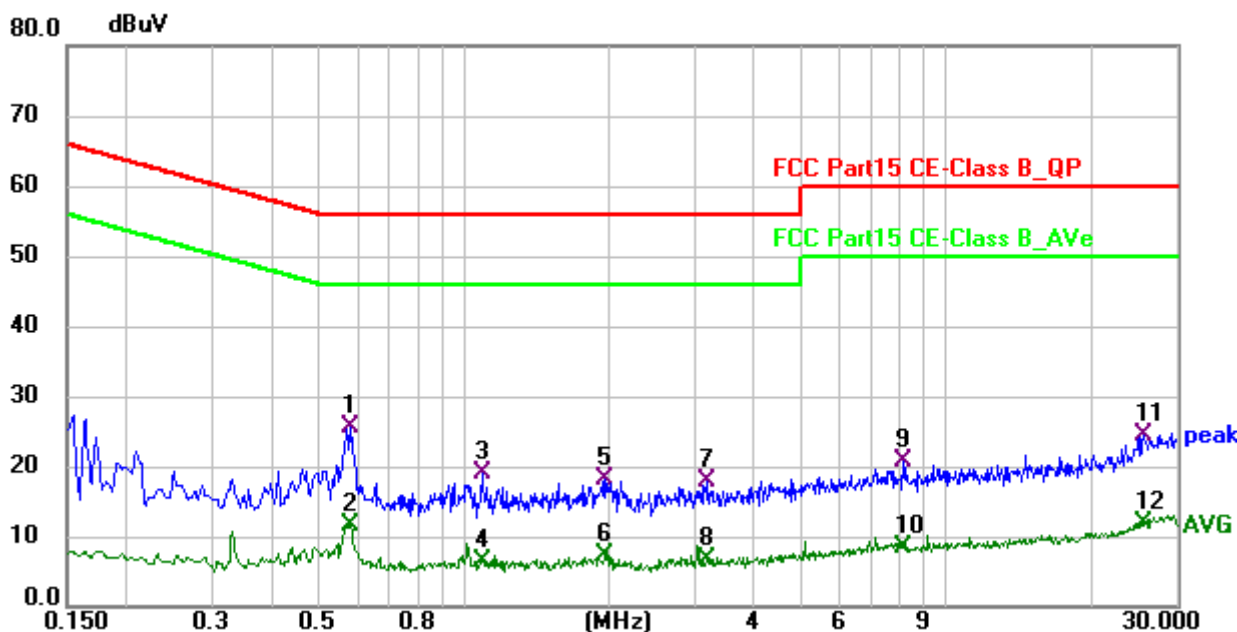
### 5.2.4 Test Result

|               |                            |             |        |
|---------------|----------------------------|-------------|--------|
| EUT:          | Skywork note               | Model Name: | SWN100 |
| Test Mode:    | Charging + TX              | Phase:      | L      |
| Test Voltage: | DC 5V from wireless charge |             |        |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1   | 0.465           | 9.59           | 10.10       | 19.69        | 56.60        | -36.91      | QP       |
| 2   | 0.465           | -1.78          | 10.10       | 8.32         | 46.60        | -38.28      | AVG      |
| 3 * | 0.582           | 14.23          | 10.11       | 24.34        | 56.00        | -31.66      | QP       |
| 4   | 0.582           | 0.57           | 10.11       | 10.68        | 46.00        | -35.32      | AVG      |
| 5   | 1.113           | 8.22           | 10.16       | 18.38        | 56.00        | -37.62      | QP       |
| 6   | 1.113           | -3.37          | 10.16       | 6.79         | 46.00        | -39.21      | AVG      |
| 7   | 1.932           | 7.81           | 10.33       | 18.14        | 56.00        | -37.86      | QP       |
| 8   | 1.932           | -4.18          | 10.33       | 6.15         | 46.00        | -39.85      | AVG      |
| 9   | 4.546           | 7.74           | 11.18       | 18.92        | 56.00        | -37.08      | QP       |
| 10  | 4.546           | -4.09          | 11.18       | 7.09         | 46.00        | -38.91      | AVG      |
| 11  | 8.925           | 8.22           | 13.11       | 21.33        | 60.00        | -38.67      | QP       |
| 12  | 8.925           | -4.22          | 13.11       | 8.89         | 50.00        | -41.11      | AVG      |

|               |                            |             |        |
|---------------|----------------------------|-------------|--------|
| EUT:          | Skywork note               | Model Name: | SWN100 |
| Test Mode:    | Charging + TX              | Phase:      | N      |
| Test Voltage: | DC 5V from wireless charge |             |        |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB) | Level (dBuV) | Limit (dBuV) | Margin (dB) | Detector |
|-----|-----------------|----------------|-------------|--------------|--------------|-------------|----------|
| 1 * | 0.582           | 15.47          | 10.12       | 25.59        | 56.00        | -30.41      | QP       |
| 2   | 0.582           | 1.38           | 10.12       | 11.50        | 46.00        | -34.50      | AVG      |
| 3   | 1.091           | 8.75           | 10.15       | 18.90        | 56.00        | -37.10      | QP       |
| 4   | 1.091           | -3.74          | 10.15       | 6.41         | 46.00        | -39.59      | AVG      |
| 5   | 1.968           | 7.67           | 10.34       | 18.01        | 56.00        | -37.99      | QP       |
| 6   | 1.968           | -3.10          | 10.34       | 7.24         | 46.00        | -38.76      | AVG      |
| 7   | 3.179           | 7.22           | 10.69       | 17.91        | 56.00        | -38.09      | QP       |
| 8   | 3.179           | -4.02          | 10.69       | 6.67         | 46.00        | -39.33      | AVG      |
| 9   | 8.115           | 8.00           | 12.79       | 20.79        | 60.00        | -39.21      | QP       |
| 10  | 8.115           | -4.24          | 12.79       | 8.55         | 50.00        | -41.45      | AVG      |
| 11  | 25.759          | 8.86           | 15.46       | 24.32        | 60.00        | -35.68      | QP       |
| 12  | 25.759          | -3.70          | 15.46       | 11.76        | 50.00        | -38.24      | AVG      |

### 5.3 Radiated Emission

#### 5.3.1 Limits

1. For transmitters operating in the 5.15-5.25 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

2. For transmitters operating in the 5.25-5.35 GHz band:

All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

3. For transmitters operating in the 5.47-5.725 GHz band:

All emissions outside of the 5.47-5.725 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.

4. For transmitters operating in the 5.725-5.85 GHz band:

(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

(ii) Devices certified before March 2, 2017 with antenna gain greater than 10 dBi may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease by March 2, 2018. Devices certified before March 2, 2018 with antenna gain of 10 dBi or less may demonstrate compliance with the emission limits in §15.247(d), but manufacturing, marketing and importing of devices certified under this alternative must cease before March 2, 2020.

| Frequencies (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                             |

| Frequency Range | RBW                                 | VBW                   | Measurement |
|-----------------|-------------------------------------|-----------------------|-------------|
| 30MHz-1GHz      | 1MHz                                | 3MHz                  | Peak        |
| Above 1GHz      | 1MHz                                | 10Hz <sup>Note1</sup> | Average     |
|                 | 1MHz                                | >1/T <sup>Note2</sup> | Average     |
| Note1           | When duty cycle is no less than 98% |                       |             |
| Note2           | When duty cycle is less than 98%    |                       |             |

| Receiver Parameter | Setting |
|--------------------|---------|
|--------------------|---------|

| Attenuation            | Auto                             |
|------------------------|----------------------------------|
| Start ~ Stop Frequency | 9kHz~150kHz / RB 200Hz for QP    |
| Start ~ Stop Frequency | 150kHz~30MHz / RB 9kHz for QP    |
| Start ~ Stop Frequency | 30MHz~1000MHz / RB 120kHz for QP |

### 5.3.2 Test Procedures

The measuring distance of at 3 m shall be used for measurements at frequency up to 1GHz. For frequencies above 1GHz, any suitable measuring distance may be used.

The EUT was placed on the top of a rotating table 0.8 meters above the ground at a 3 meter open area test site. The table was rotated 360 degrees to determine the position of the highest radiation.

The height of the equipment or of the substitution antenna shall be 0.8 m; the height of the test antenna shall vary between 1 m to 4 m. Both horizontal and vertical polarizations of the antenna are set to make the measurement.

For emission measurements above 1 GHz, the EUT shall be placed at a height of 1.5 m above the floor on a support that is RF transparent for the frequencies of interest. Final measurements for the EUT require a measurement antenna height scan of 1 m to 4 m.

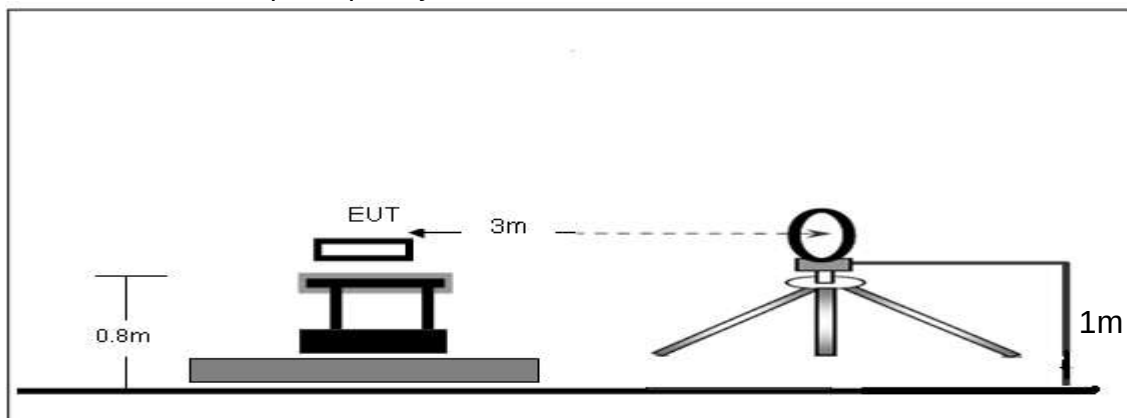
The initial step in collecting conducted emission data is a spectrum analyzer peak detector mode pre-scanning the measurement frequency range. Significant peaks are then marked and then Quasi Peak detector mode re-measured.

If the Peak Mode measured value compliance with and lower than Quasi Peak Mode Limit, the EUT shall be deemed to meet QP Limits and then no additional QP Mode measurement performed. For the actual test configuration, please refer to the related Item –EUT Test Photos.

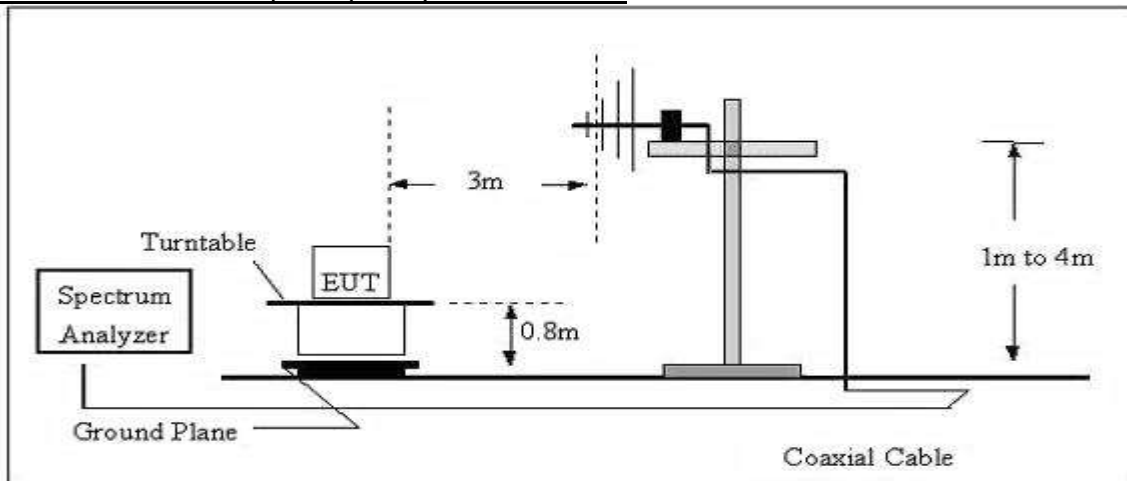
Note: Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported

### 5.3.3 Test Setup

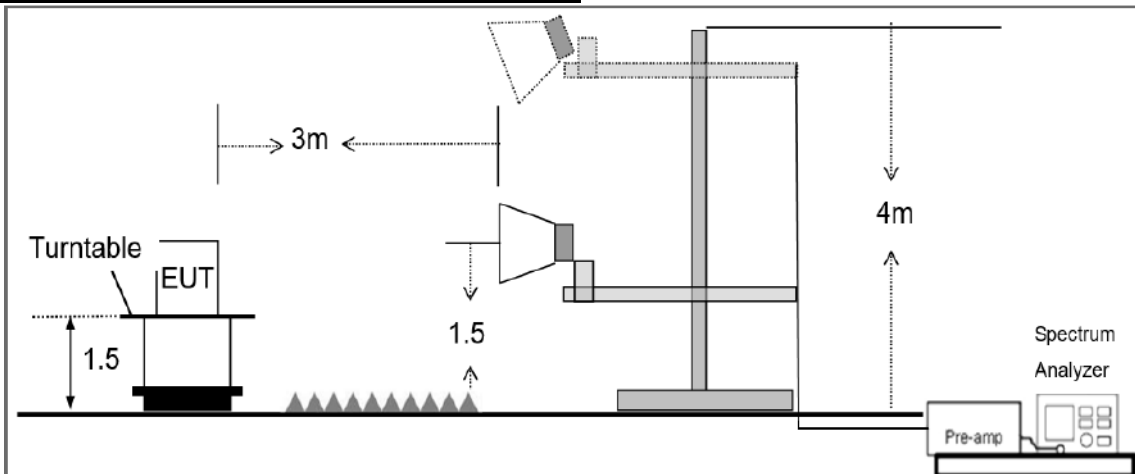
### Radiated Emission Test-Up Frequency Below 30MHz



### Radiated Emission Test-Up Frequency 30MHz~1GHz



### Radiated emission test-up frequency above 1GHz



## 5.3.4 Test Result

Below 30MHz

|            |              |               |                       |
|------------|--------------|---------------|-----------------------|
| EUT:       | Skywork note | Model Name:   | SWN100                |
| Pressure:  | 1010 hPa     | Test Voltage: | DC 3.87V from battery |
| Test Mode: | TX           | Polarization: | --                    |

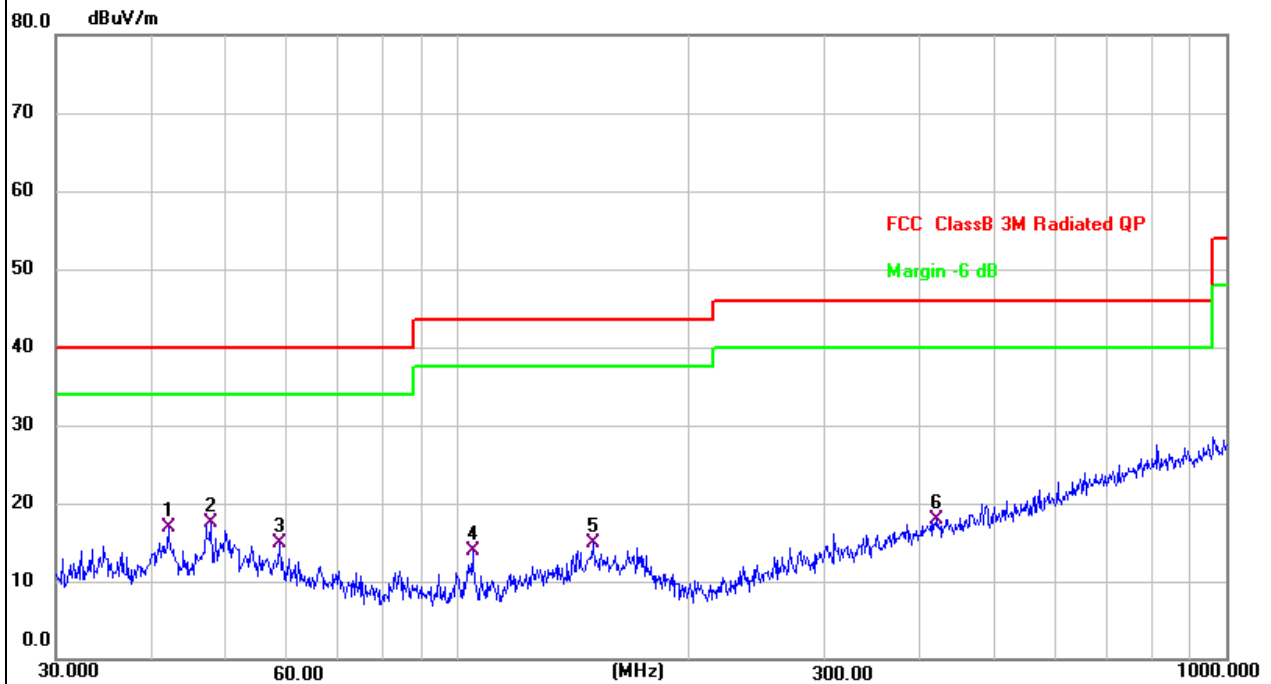
| Freq. | Reading  | Limit    | Margin | State |
|-------|----------|----------|--------|-------|
| (MHz) | (dBuV/m) | (dBuV/m) | (dB)   | P/F   |
| --    | --       | --       | --     | Pass  |
| --    | --       | --       | --     | Pass  |

Note:

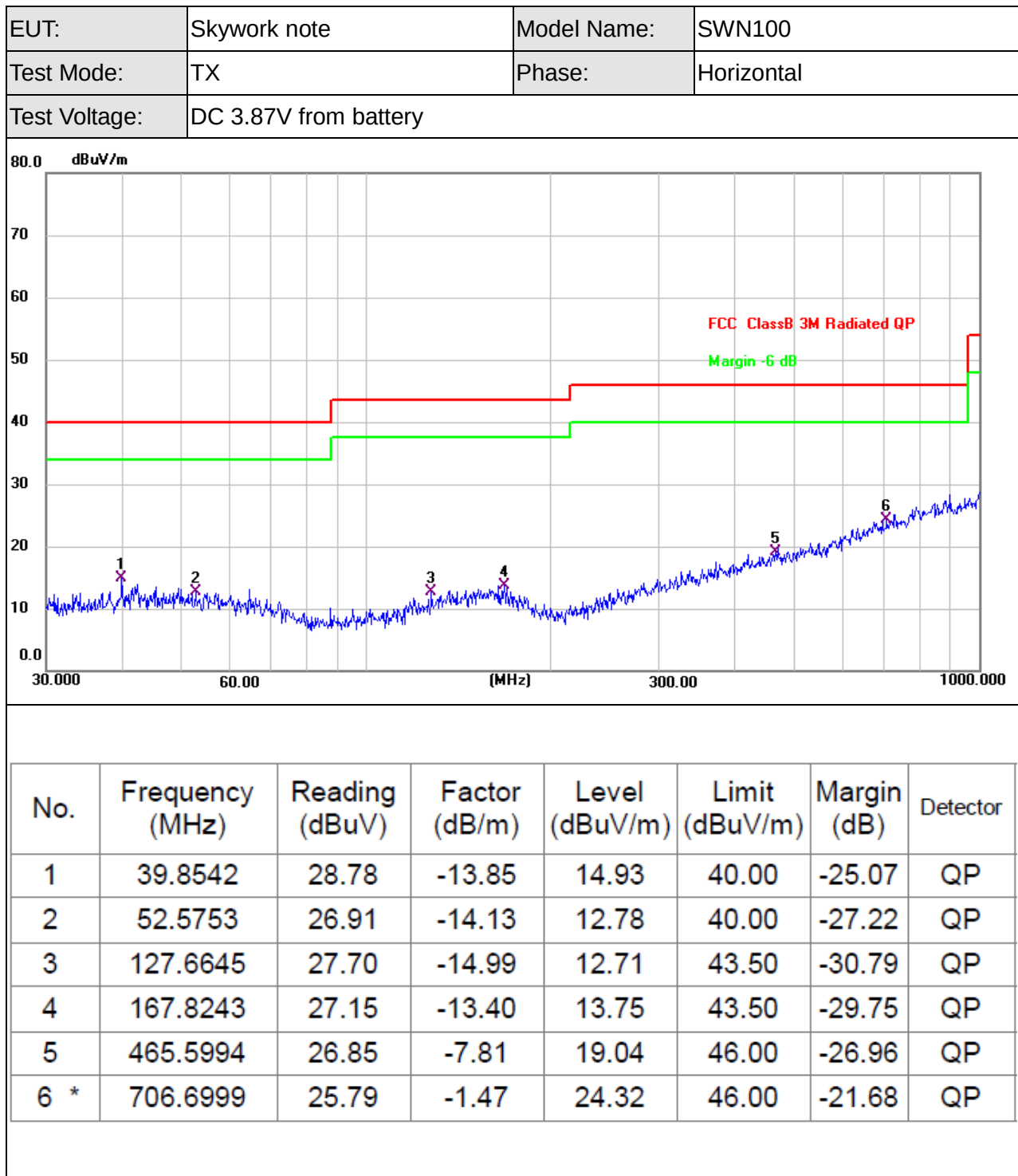
1. Distance extrapolation factor =  $40 \log (\text{specific distance}/\text{test distance})(\text{dB})$ ;
2. Limit line = specific limits (dBuV) + distance extrapolation factor.

Frequency range (30MHz – 1GHz)

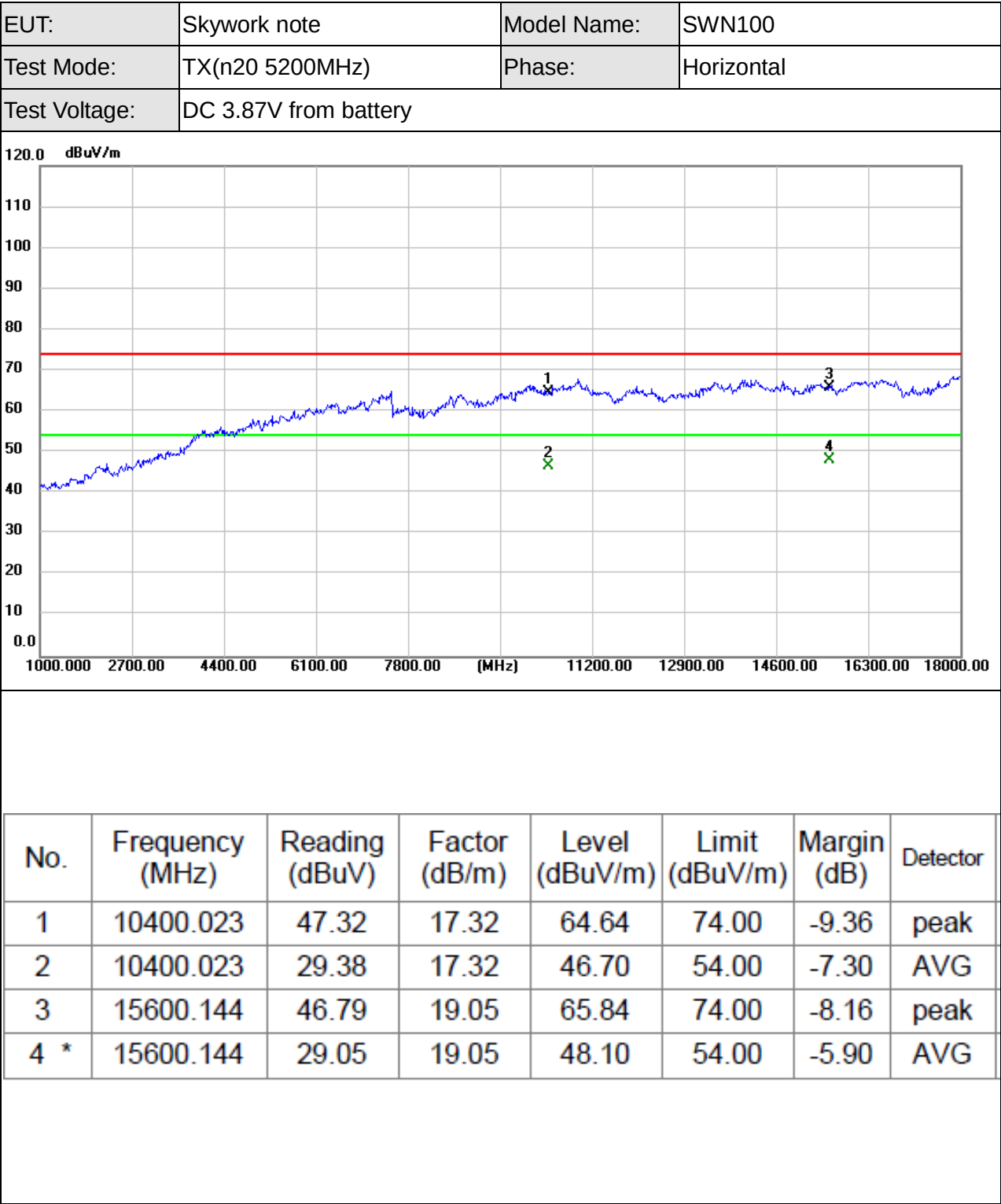
|               |                       |             |          |
|---------------|-----------------------|-------------|----------|
| EUT:          | Skywork note          | Model Name: | SWN100   |
| Test Mode:    | TX                    | Phase:      | Vertical |
| Test Voltage: | DC 3.87V from battery |             |          |



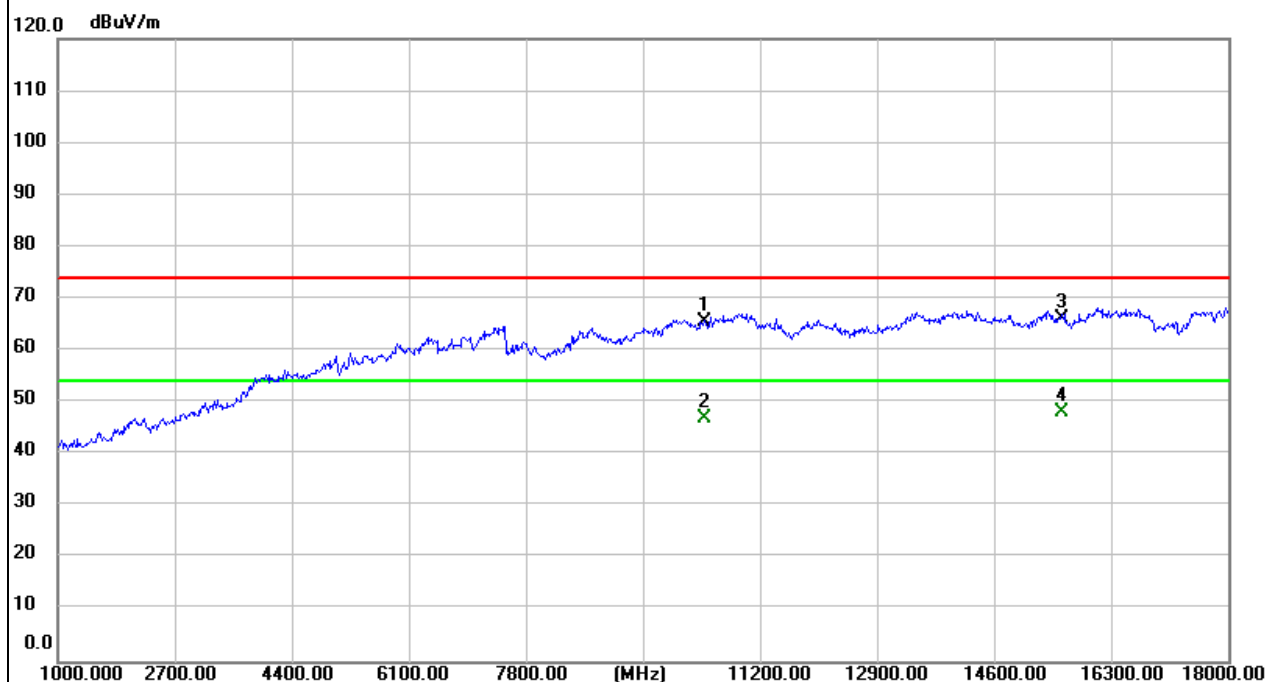
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 42.0066         | 30.69          | -13.88        | 16.81          | 40.00          | -23.19      | QP       |
| 2 * | 47.6586         | 31.56          | -14.01        | 17.55          | 40.00          | -22.45      | QP       |
| 3   | 58.6126         | 29.46          | -14.58        | 14.88          | 40.00          | -25.12      | QP       |
| 4   | 104.5361        | 31.23          | -17.30        | 13.93          | 43.50          | -29.57      | QP       |
| 5   | 150.0108        | 28.42          | -13.43        | 14.99          | 43.50          | -28.51      | QP       |
| 6   | 420.5803        | 26.74          | -8.74         | 18.00          | 46.00          | -28.00      | QP       |



U-NII-1:

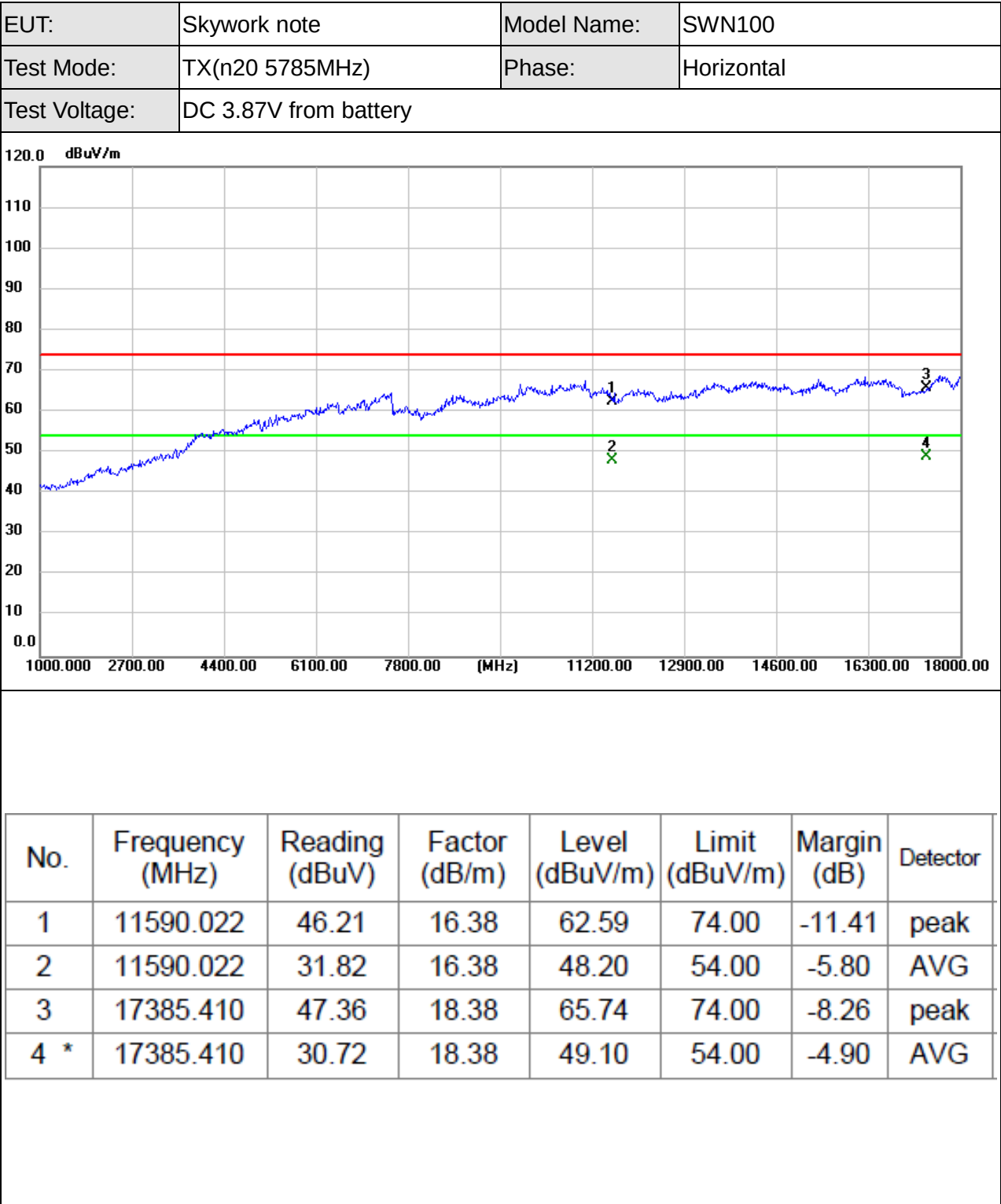


|               |                       |             |          |
|---------------|-----------------------|-------------|----------|
| EUT:          | Skywork note          | Model Name: | SWN100   |
| Test Mode:    | TX(n20 5200MHz)       | Phase:      | Vertical |
| Test Voltage: | DC 3.87V from battery |             |          |

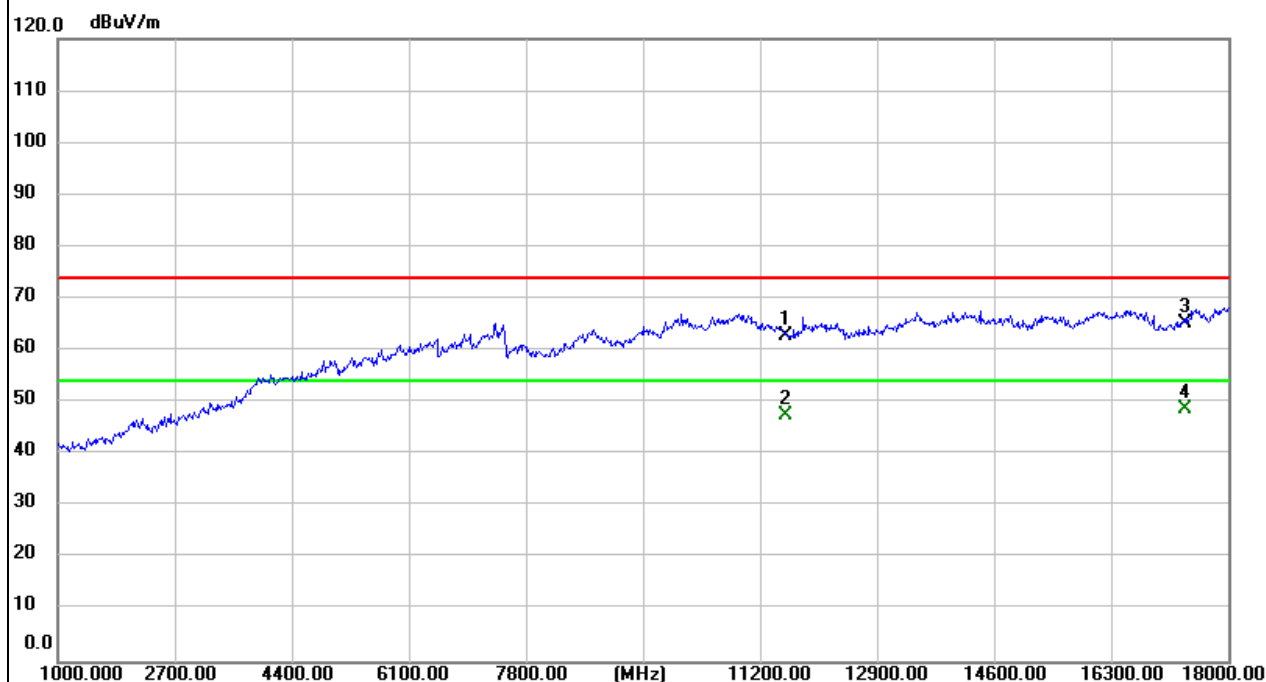


| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 10400.351       | 48.20          | 17.32         | 65.52          | 74.00          | -8.48       | peak     |
| 2   | 10400.351       | 29.78          | 17.32         | 47.10          | 54.00          | -6.90       | AVG      |
| 3   | 15600.117       | 47.09          | 19.05         | 66.14          | 74.00          | -7.86       | peak     |
| 4 * | 15600.117       | 29.25          | 19.05         | 48.30          | 54.00          | -5.70       | AVG      |

U-NII-3:



|               |                       |             |          |
|---------------|-----------------------|-------------|----------|
| EUT:          | Skywork note          | Model Name: | SWN100   |
| Test Mode:    | TX(n20 5785MHz)       | Phase:      | Vertical |
| Test Voltage: | DC 3.87V from battery |             |          |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 11590.022       | 46.55          | 16.38         | 62.93          | 74.00          | -11.07      | peak     |
| 2   | 11590.022       | 31.12          | 16.38         | 47.50          | 54.00          | -6.50       | AVG      |
| 3   | 17385.310       | 46.98          | 18.38         | 65.36          | 74.00          | -8.64       | peak     |
| 4 * | 17385.310       | 30.52          | 18.38         | 48.90          | 54.00          | -5.10       | AVG      |

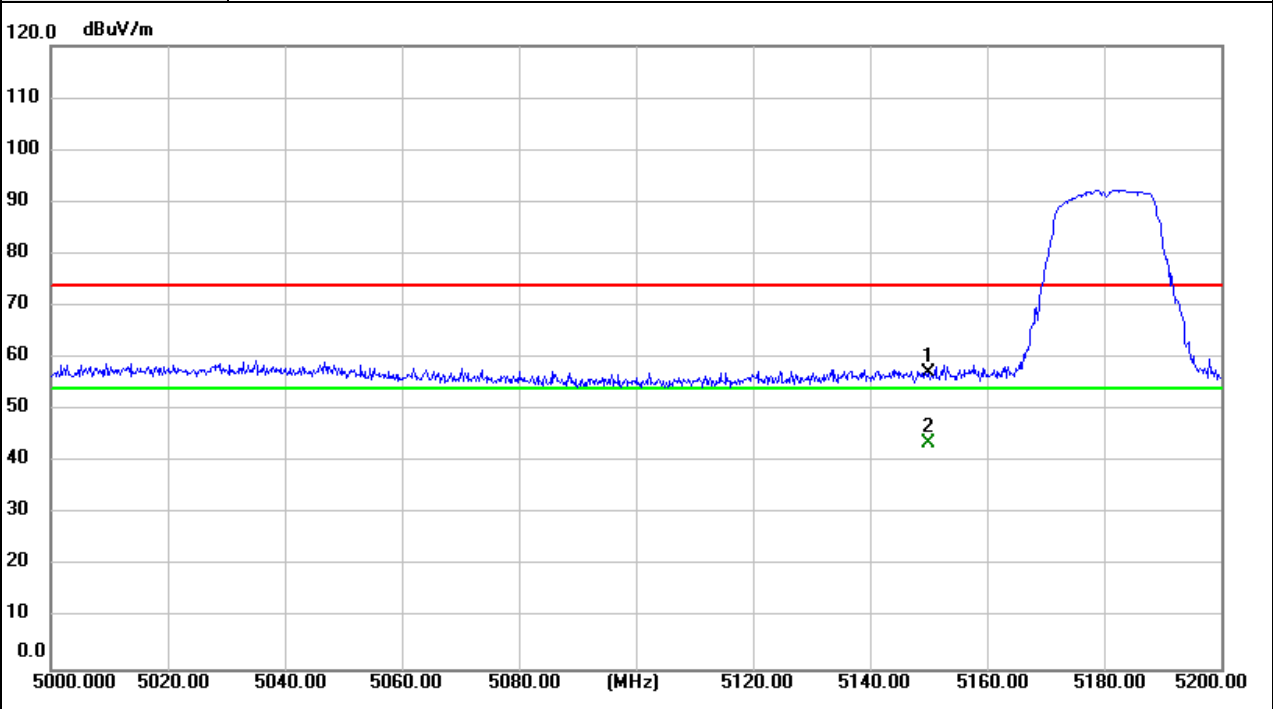
**Note:**

- (1) All Readings are Peak Value (VBW=3MHz) and AV Value (VBW=10Hz).
- (2) Emission Level= Antenna Factor + Cable Loss + Read Level - Preamp Factor
- (3) All other emissions more than 20dB below the limit.
- (4) All the modulation modes have been tested, and only the worst results are reflected in the report.
- (5) For 18G-40G, the amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

5.3.5 Radiated Band Edge

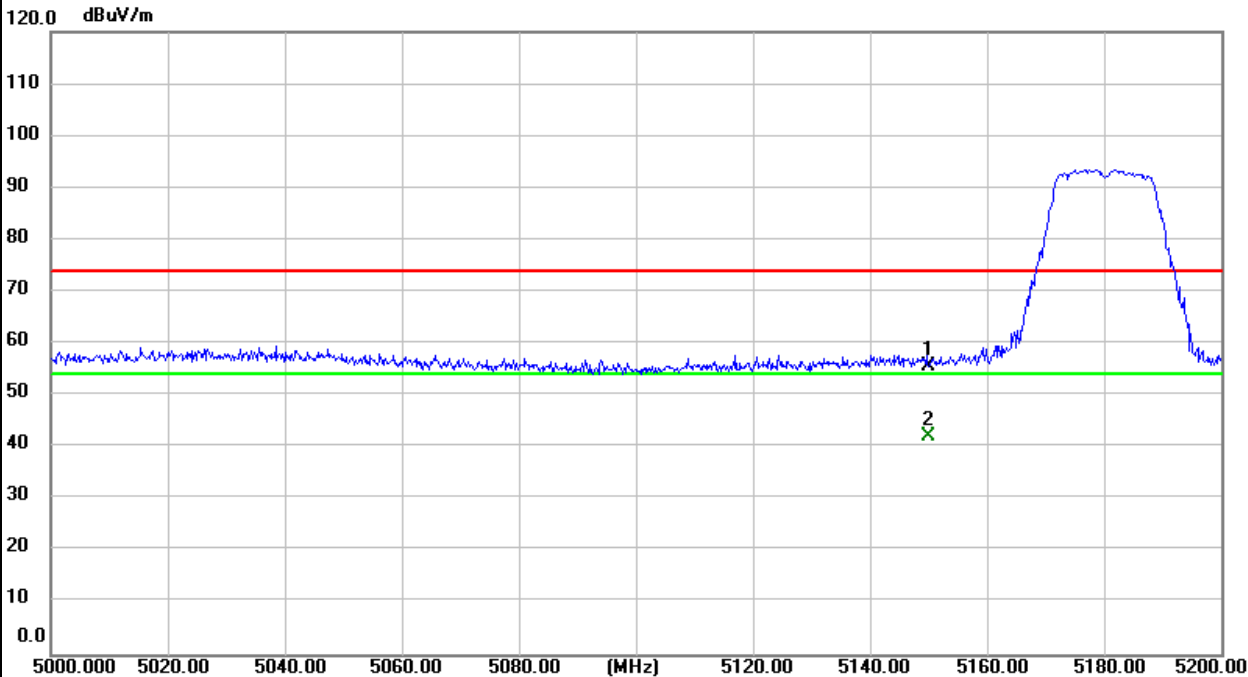
U-NII-1:

|               |                       |             |            |
|---------------|-----------------------|-------------|------------|
| EUT:          | Skywork note          | Model Name: | SWN100     |
| Test Mode:    | TX(n20 5200MHz)       | Phase:      | Horizontal |
| Test Voltage: | DC 3.87V from battery |             |            |



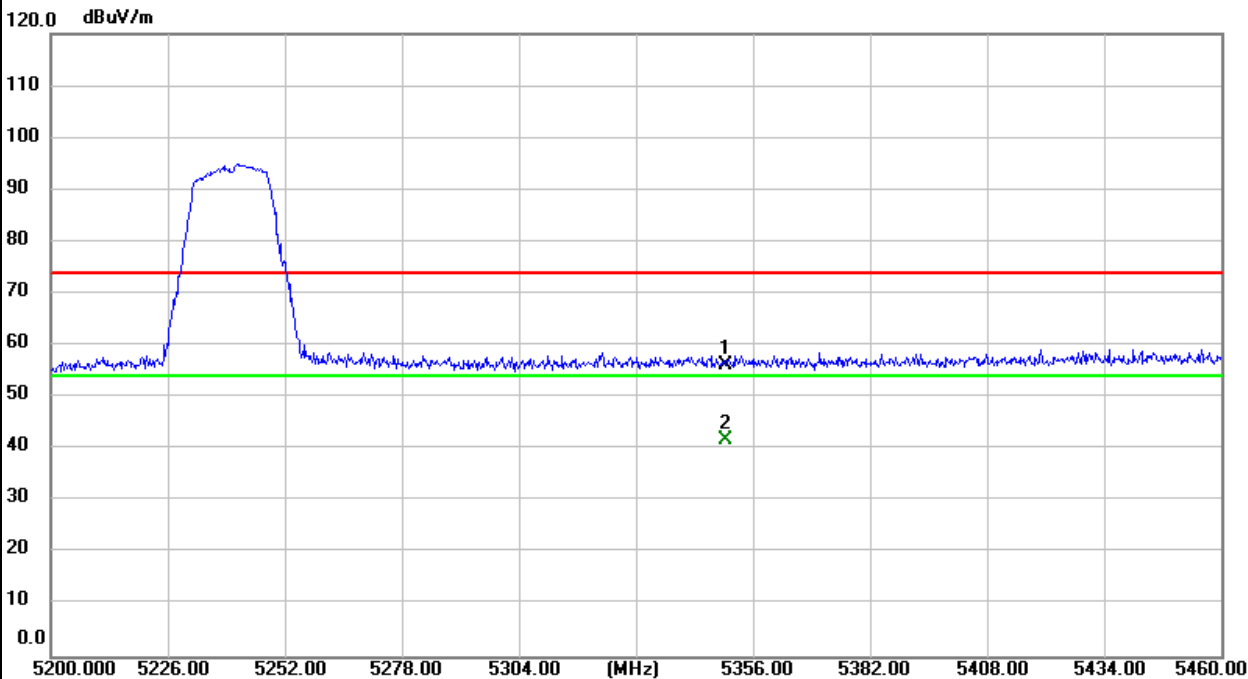
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 5150.000        | 48.24          | 8.86          | 57.10          | 74.00          | -16.90      | peak     |
| 2 * | 5150.000        | 34.94          | 8.86          | 43.80          | 54.00          | -10.20      | AVG      |

|               |                       |             |          |
|---------------|-----------------------|-------------|----------|
| EUT:          | Skywork note          | Model Name: | SWN100   |
| Test Mode:    | TX(n20 5200MHz)       | Phase:      | Vertical |
| Test Voltage: | DC 3.87V from battery |             |          |



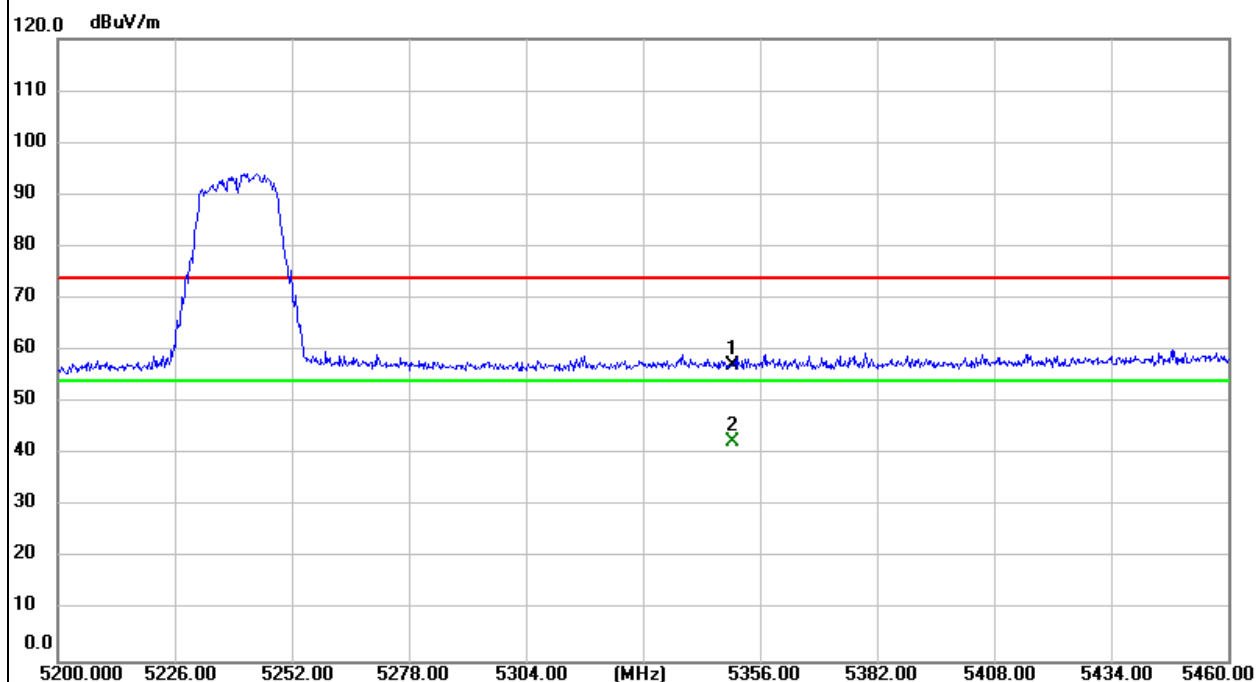
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 5150.000        | 46.66          | 8.86          | 55.52          | 74.00          | -18.48      | peak     |
| 2 * | 5150.000        | 33.33          | 8.86          | 42.19          | 54.00          | -11.81      | AVG      |

|               |                       |             |            |
|---------------|-----------------------|-------------|------------|
| EUT:          | Skywork note          | Model Name: | SWN100     |
| Test Mode:    | TX(n20 5320MHz)       | Phase:      | Horizontal |
| Test Voltage: | DC 3.87V from battery |             |            |



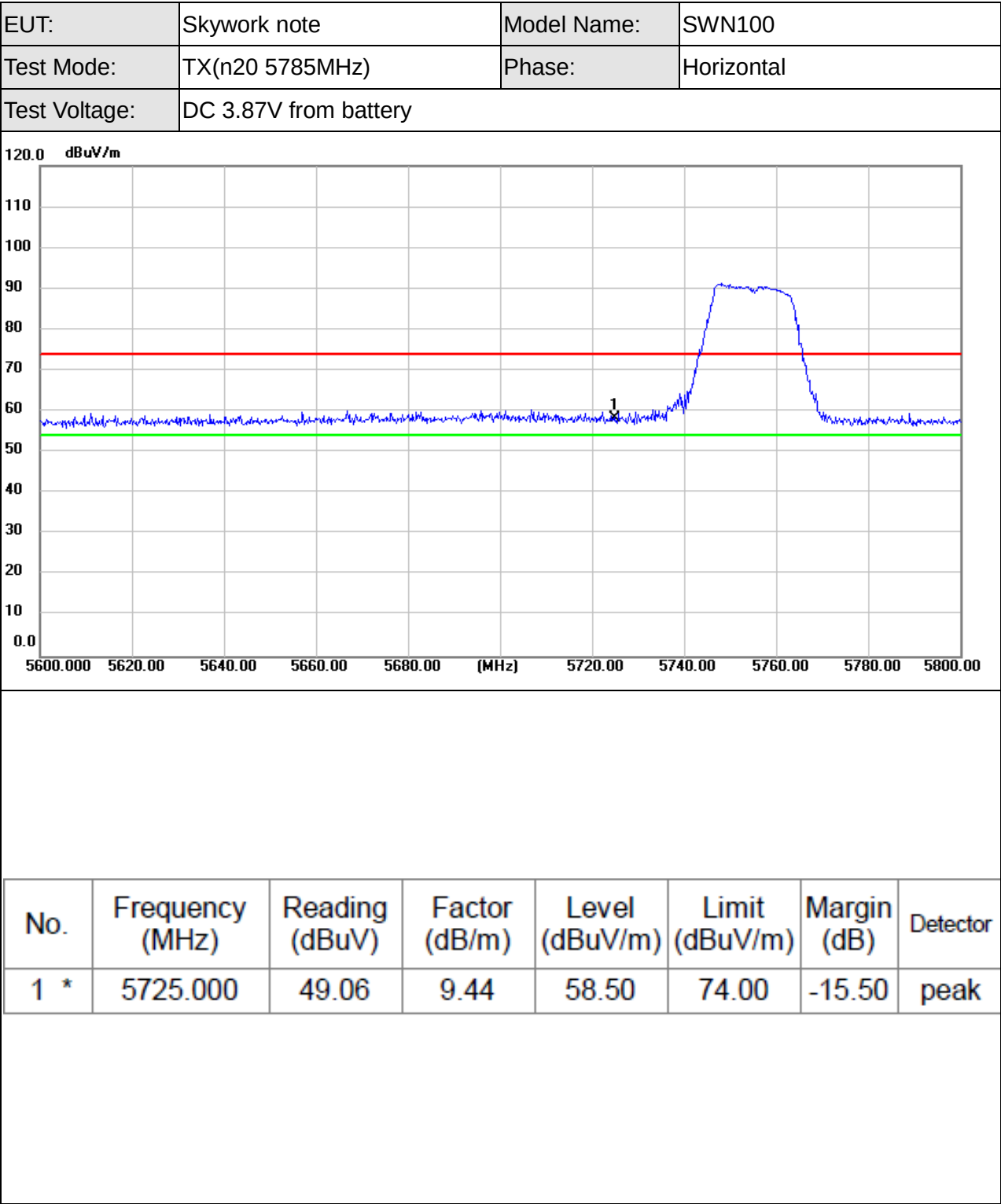
| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 5350.000        | 48.01          | 8.26          | 56.27          | 74.00          | -17.73      | peak     |
| 2 * | 5350.000        | 33.64          | 8.26          | 41.90          | 54.00          | -12.10      | AVG      |

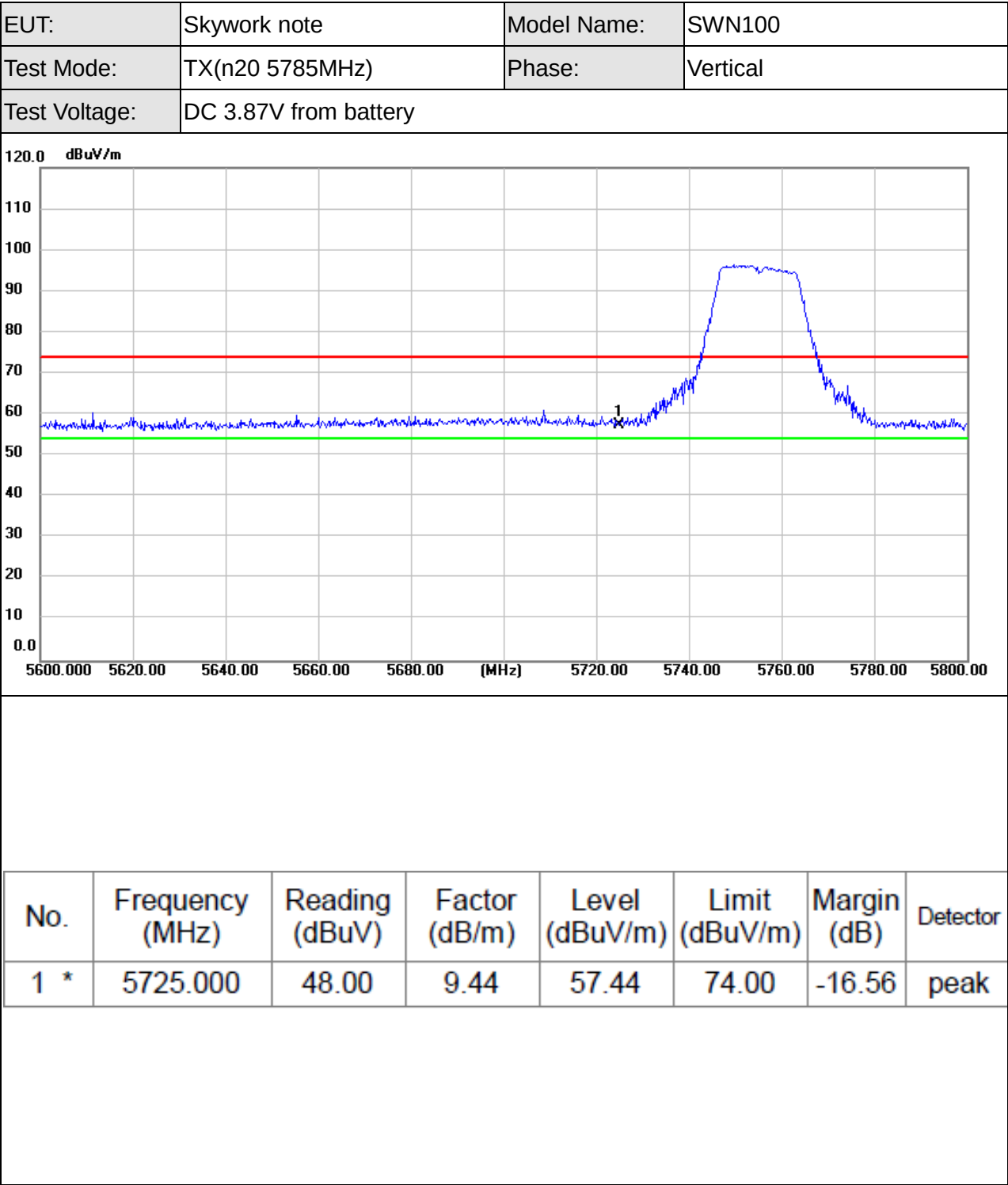
|               |                       |             |          |
|---------------|-----------------------|-------------|----------|
| EUT:          | Skywork note          | Model Name: | SWN100   |
| Test Mode:    | TX(n20 5320MHz)       | Phase:      | Vertical |
| Test Voltage: | DC 3.87V from battery |             |          |

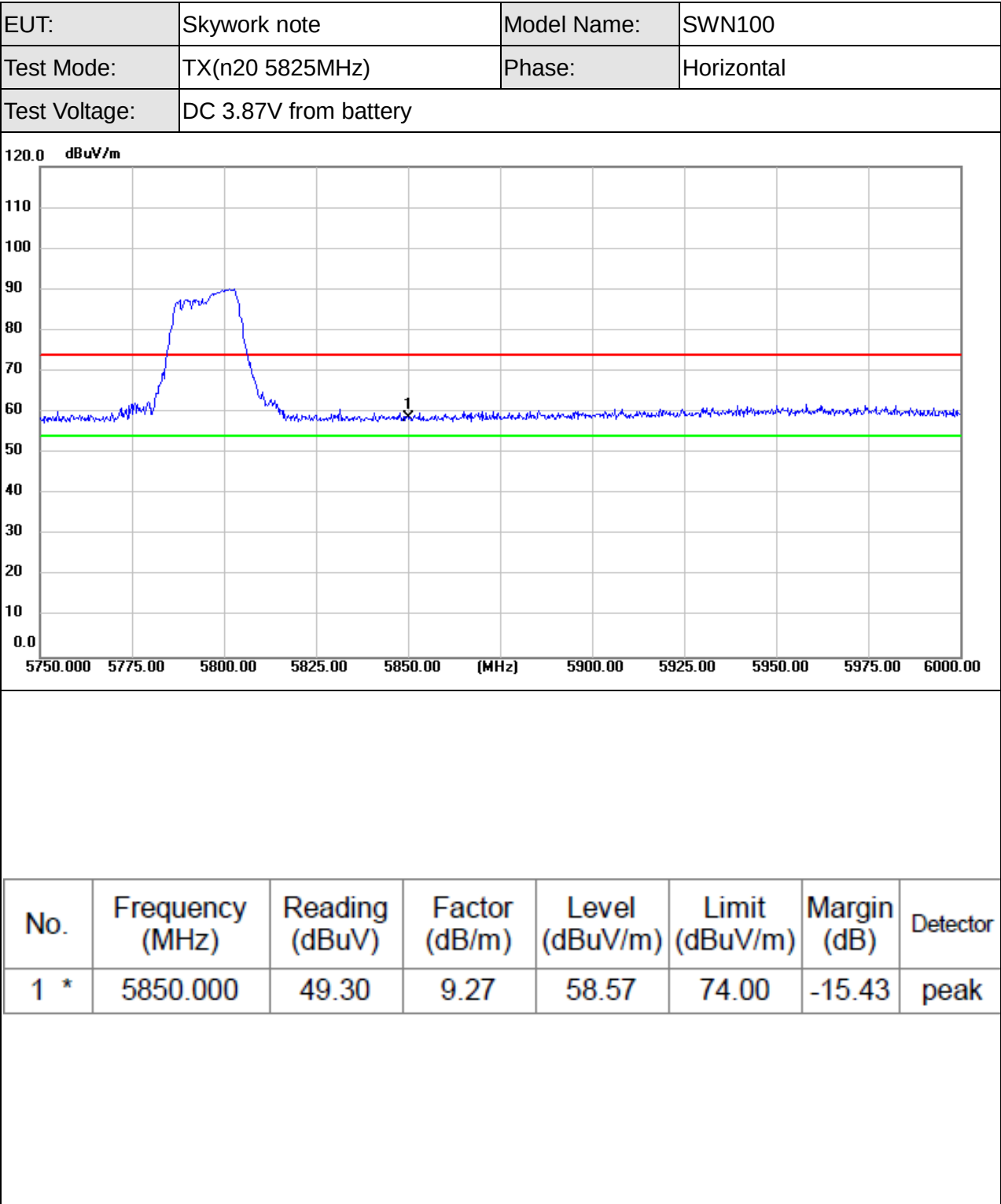


| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1   | 5350.000        | 48.85          | 8.26          | 57.11          | 74.00          | -16.89      | peak     |
| 2 * | 5350.000        | 34.24          | 8.26          | 42.50          | 54.00          | -11.50      | AVG      |

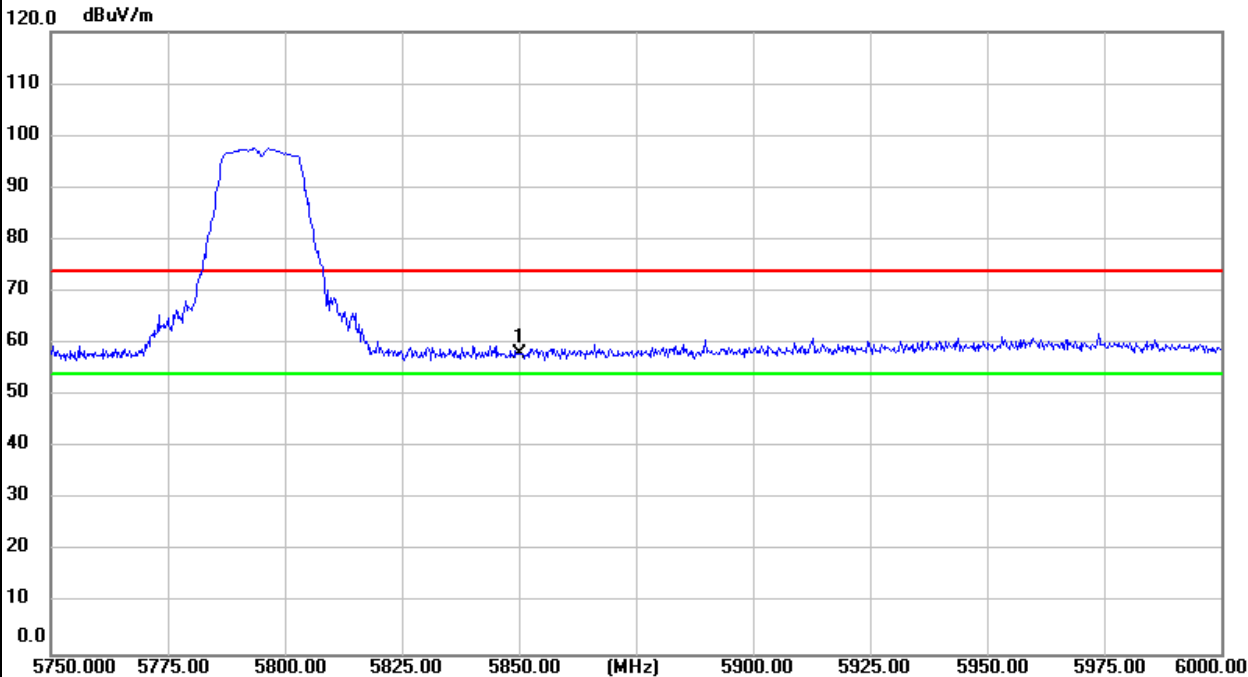
U-NII-3:







|               |                       |             |          |
|---------------|-----------------------|-------------|----------|
| EUT:          | Skywork note          | Model Name: | SWN100   |
| Test Mode:    | TX(n20 5825MHz)       | Phase:      | Vertical |
| Test Voltage: | DC 3.87V from battery |             |          |



| No. | Frequency (MHz) | Reading (dBuV) | Factor (dB/m) | Level (dBuV/m) | Limit (dBuV/m) | Margin (dB) | Detector |
|-----|-----------------|----------------|---------------|----------------|----------------|-------------|----------|
| 1 * | 5850.000        | 48.89          | 9.27          | 58.16          | 74.00          | -15.84      | peak     |

Note: All modes have been tested, and only the worst mode is reported in the report.

## 5.4 Average Output Power

### 5.4.1 Limit

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

#### For the 5.25-5.35 GHz and 5.47-5.725 GHz band

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

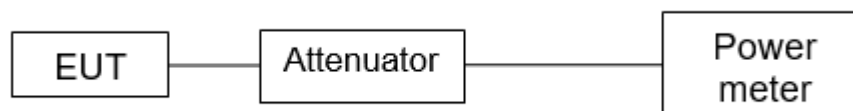
#### For the band 5.725-5.85 GHz

The maximum conducted output power over the frequency band of operation shall not exceed 1 W. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum conducted output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 5.4.2 Test Procedure

The maximum average conducted output power may be measured using a broadband average RF power meter. The power meter shall have a video bandwidth that is greater than or equal to the emission bandwidth and utilize a fast-responding diode detector.

### 5.4.3 Test Setup



### 5.4.4 Test Results

|            |              |               |                       |
|------------|--------------|---------------|-----------------------|
| EUT:       | Skywork note | Model Name:   | SWN100                |
| Test Mode: | TX Mode      | Test Voltage: | DC 3.87V from battery |

For U-NII-1

| Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Duty Factor (dB) | Total Power (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|-----------------------|------------------|-------------------|-------------|---------|
| a    | 5180            | Ant1    | 14.11                 | 1.75             | 15.86             | 24          | Pass    |
| a    | 5200            | Ant1    | 14.33                 | 1.75             | 16.08             | 24          | Pass    |
| a    | 5240            | Ant1    | 14.8                  | 1.75             | 16.55             | 24          | Pass    |
| n20  | 5180            | Ant1    | 15.56                 | 1.85             | 17.41             | 24          | Pass    |
| n20  | 5200            | Ant1    | 15.74                 | 1.85             | 17.59             | 24          | Pass    |
| n20  | 5240            | Ant1    | 15                    | 1.85             | 16.85             | 24          | Pass    |
| n40  | 5190            | Ant1    | 11.17                 | 3.18             | 14.35             | 24          | Pass    |
| n40  | 5230            | Ant1    | 12.67                 | 3.17             | 15.84             | 24          | Pass    |

For U-NII-3

| Mode | Frequency (MHz) | Antenna | Conducted Power (dBm) | Duty Factor (dB) | Total Power (dBm) | Limit (dBm) | Verdict |
|------|-----------------|---------|-----------------------|------------------|-------------------|-------------|---------|
| a    | 5745            | Ant1    | 16.35                 | 1.75             | 18.1              | 30          | Pass    |
| a    | 5785            | Ant1    | 16.19                 | 1.75             | 17.94             | 30          | Pass    |
| a    | 5825            | Ant1    | 16.56                 | 1.75             | 18.31             | 30          | Pass    |
| n20  | 5745            | Ant1    | 16.57                 | 1.85             | 18.42             | 30          | Pass    |
| n20  | 5785            | Ant1    | 16.79                 | 1.85             | 18.64             | 30          | Pass    |
| n20  | 5825            | Ant1    | 16.01                 | 1.85             | 17.86             | 30          | Pass    |
| n40  | 5755            | Ant1    | 16.56                 | 3.18             | 19.74             | 30          | Pass    |
| n40  | 5795            | Ant1    | 16.61                 | 3.18             | 19.79             | 30          | Pass    |

## 5.5 Power Spectral Density

### 5.5.1 Limit

For the band 5.15-5.25 GHz

For client devices in the 5.15-5.25 GHz band, the maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.25-5.35 GHz and 5.47-5.725 GHz

The maximum power spectral density shall not exceed 11 dBm in any 1 megahertz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

For the band 5.725-5.85 GHz

The maximum power spectral density shall not exceed 30 dBm in any 500-kHz band. If transmitting antennas of directional gain greater than 6 dBi are used, the maximum power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

### 5.5.2 Test Procedure

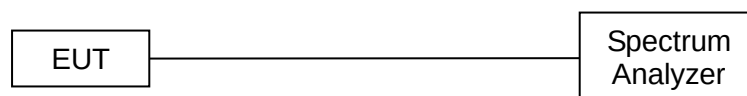
For U-NII-1

1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW  $\geq$  1MHz.
3. Set the VBW  $\geq$  3 x RBW.
4. Detector = Avgpwr.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

For U-NII-3

1. Set analyzer center frequency to NII channel center frequency.
2. Set the RBW  $\geq$  500kHz.
3. Set the VBW  $\geq$  3 x RBW.
4. Detector = Avgpwr.
5. Sweep time = auto couple.
6. Trace mode = max hold.
7. Allow trace to fully stabilize.
8. Use the peak marker function to determine the maximum amplitude level.

### 5.5.3 Test Setup



#### 5.5.4 Test Results

##### For U-NII-1

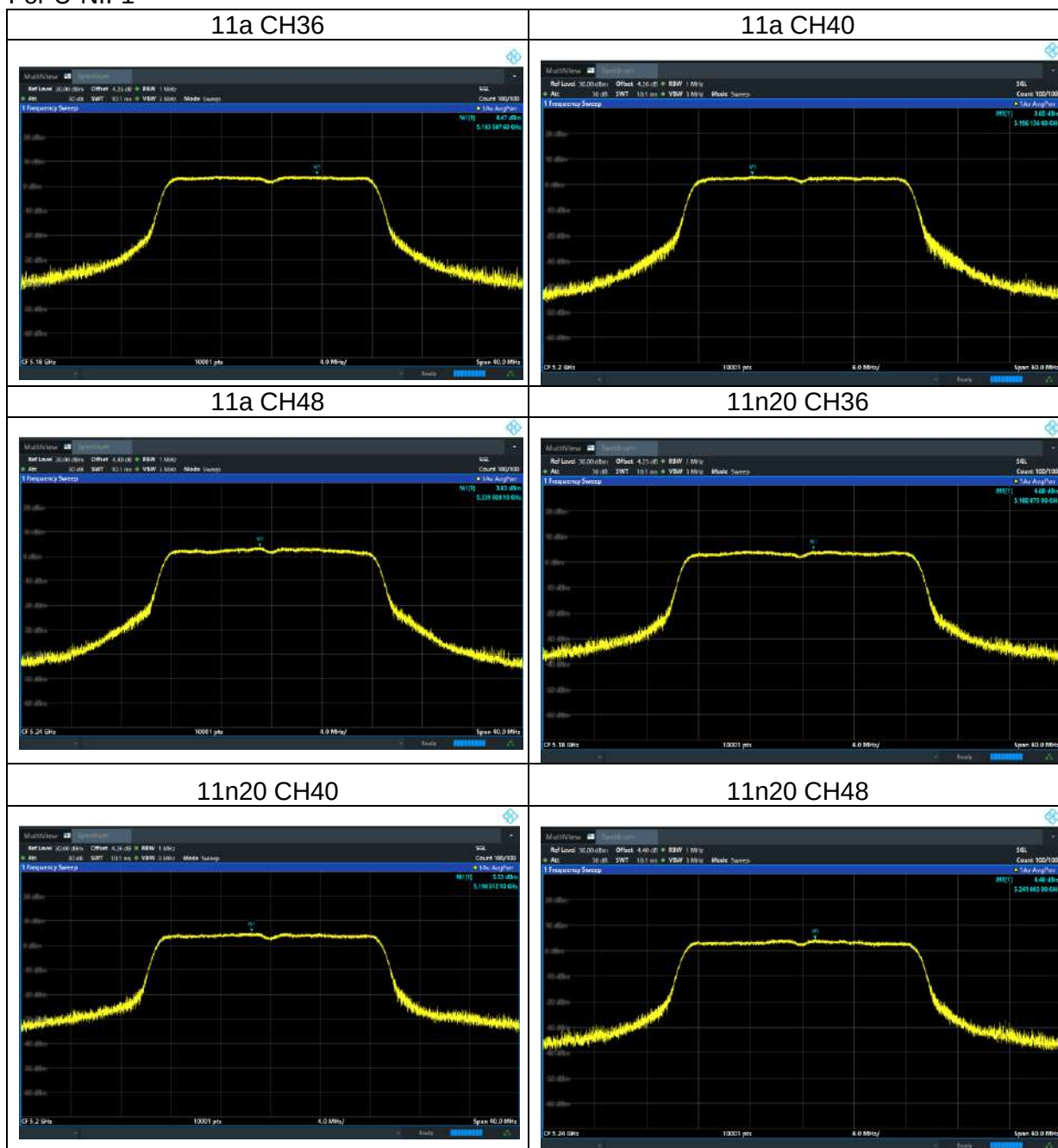
| Mode      | Channel | Frequency (MHz) | Conducted PSD (dBm/MHz) | Duty Factor (dB) | Total PSD (dBm/MHz) | Limit (dBm/MHz) | Result |
|-----------|---------|-----------------|-------------------------|------------------|---------------------|-----------------|--------|
| 11a       | CH36    | 5180            | 4.47                    | 1.75             | 6.22                | 11              | Pass   |
| 11a       | CH40    | 5200            | 3.65                    | 1.75             | 5.4                 | 11              | Pass   |
| 11a       | CH48    | 5240            | 3.83                    | 1.75             | 5.58                | 11              | Pass   |
| 11n(HT20) | CH36    | 5180            | 4.68                    | 1.85             | 6.53                | 11              | Pass   |
| 11n(HT20) | CH40    | 5200            | 5.33                    | 1.85             | 7.18                | 11              | Pass   |
| 11n(HT20) | CH48    | 5240            | 4.46                    | 1.85             | 6.31                | 11              | Pass   |
| 11n(HT40) | CH38    | 5190            | -1.45                   | 3.18             | 1.73                | 11              | Pass   |
| 11n(HT40) | CH46    | 5230            | -0.59                   | 3.17             | 2.58                | 11              | Pass   |

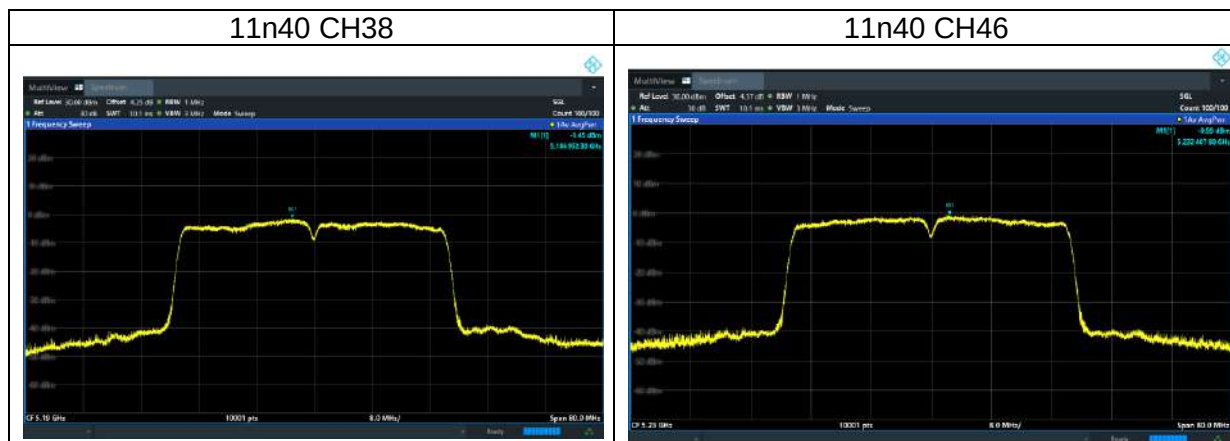
##### For U-NII-3

| Mode      | Channel | Frequency (MHz) | Conducted PSD (dBm/500kHz) | Duty Factor (dB) | Total PSD (dBm/500kHz) | Limit (dBm/500kHz) | Result |
|-----------|---------|-----------------|----------------------------|------------------|------------------------|--------------------|--------|
| 11a       | CH149   | 5745            | 3.58                       | 1.75             | 5.33                   | 30                 | Pass   |
| 11a       | CH157   | 5785            | 4.35                       | 1.75             | 6.1                    | 30                 | Pass   |
| 11a       | CH165   | 5825            | 3.99                       | 1.75             | 5.74                   | 30                 | Pass   |
| 11n(HT20) | CH149   | 5745            | 3.46                       | 1.85             | 5.31                   | 30                 | Pass   |
| 11n(HT20) | CH157   | 5785            | 3.57                       | 1.85             | 5.42                   | 30                 | Pass   |
| 11n(HT20) | CH165   | 5825            | 3.06                       | 1.85             | 4.91                   | 30                 | Pass   |
| 11n(HT40) | CH151   | 5755            | 0.94                       | 3.18             | 4.12                   | 30                 | Pass   |
| 11n(HT40) | CH159   | 5795            | 0.94                       | 3.18             | 4.12                   | 30                 | Pass   |

Test plots

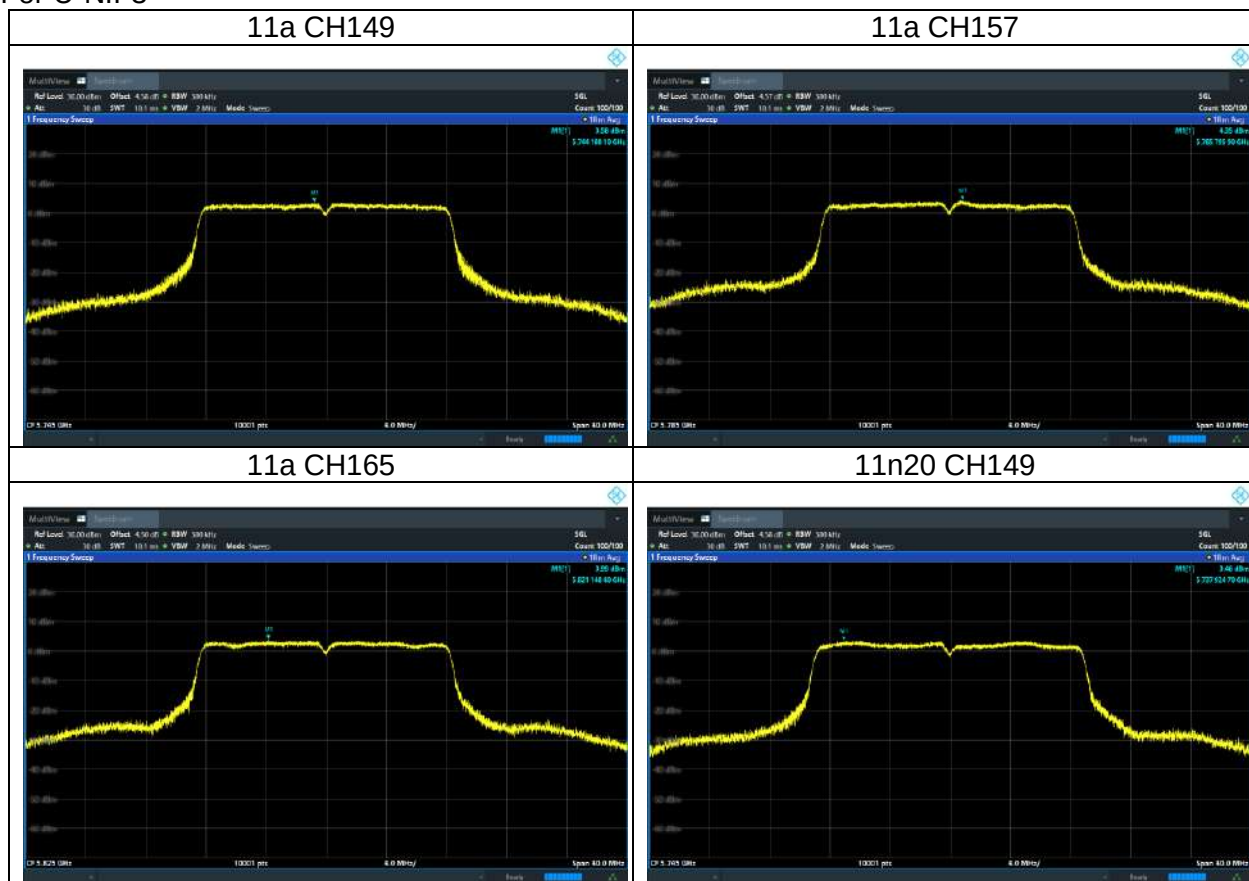
For U-NII-1

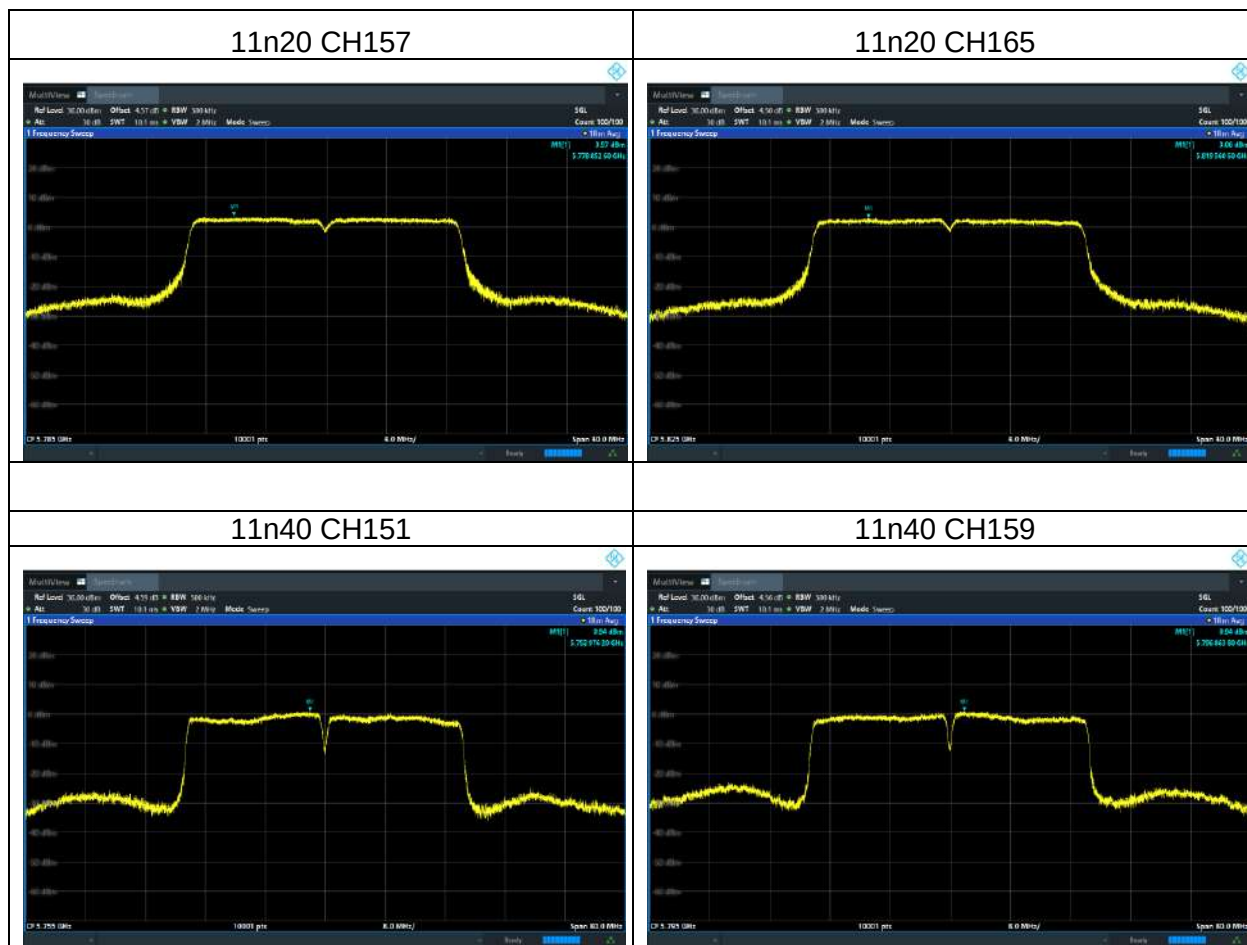




### Test plots

For U-NII-3





## 5.6 26dB Emission Bandwidth and Occupied bandwidth

### 5.6.1 Limit

For purposes of this subpart the emission bandwidth shall be determined by measuring the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, that are 26 dB down relative to the maximum level of the modulated carrier

### 5.6.2 Test Procedure

26dB Emission bandwidth

Set RBW = approximately 1% of the emission bandwidth.

Set VBW  $\geq 3 \times \text{RBW}$

Detector = Peak.

Trace mode = Max hold.

Measure the maximum width of the emission that is 26 dB down from the peak of the emission.

Occupied Bandwidth

Set Span = 1.5 times to 5.0 times the OBW

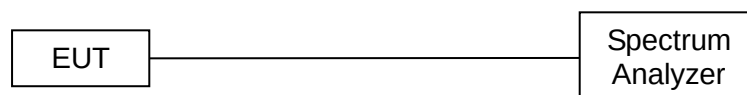
Set RBW = 1% to 5% of the OBW.

Set VBW  $\geq 3 \times \text{RBW}$ , Detector = Peak.

Trace mode = Max hold.

Use the 99% power bandwidth function of the instrument.

### 5.6.3 Test Setup

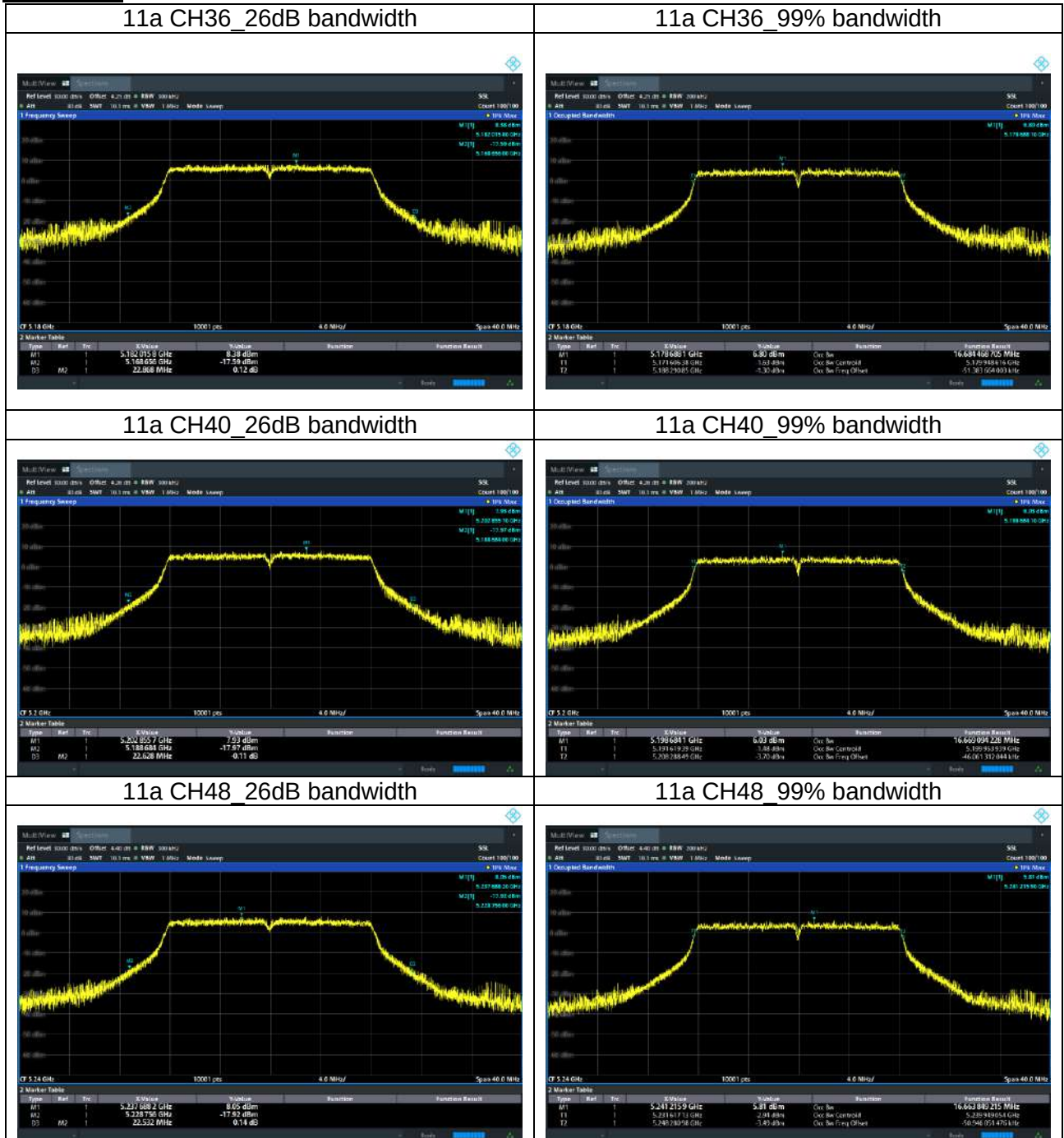


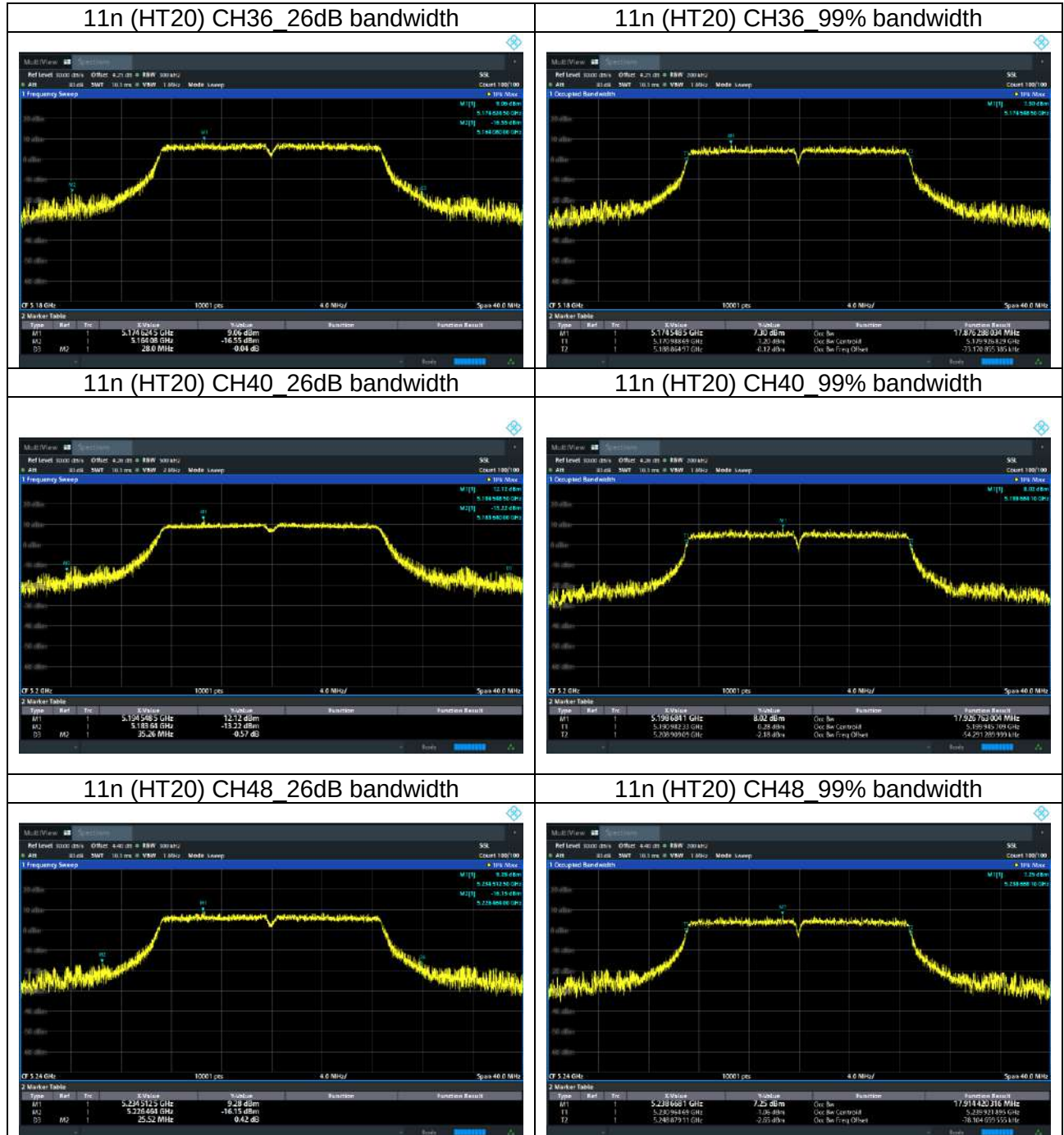
### 5.6.4 Test Results

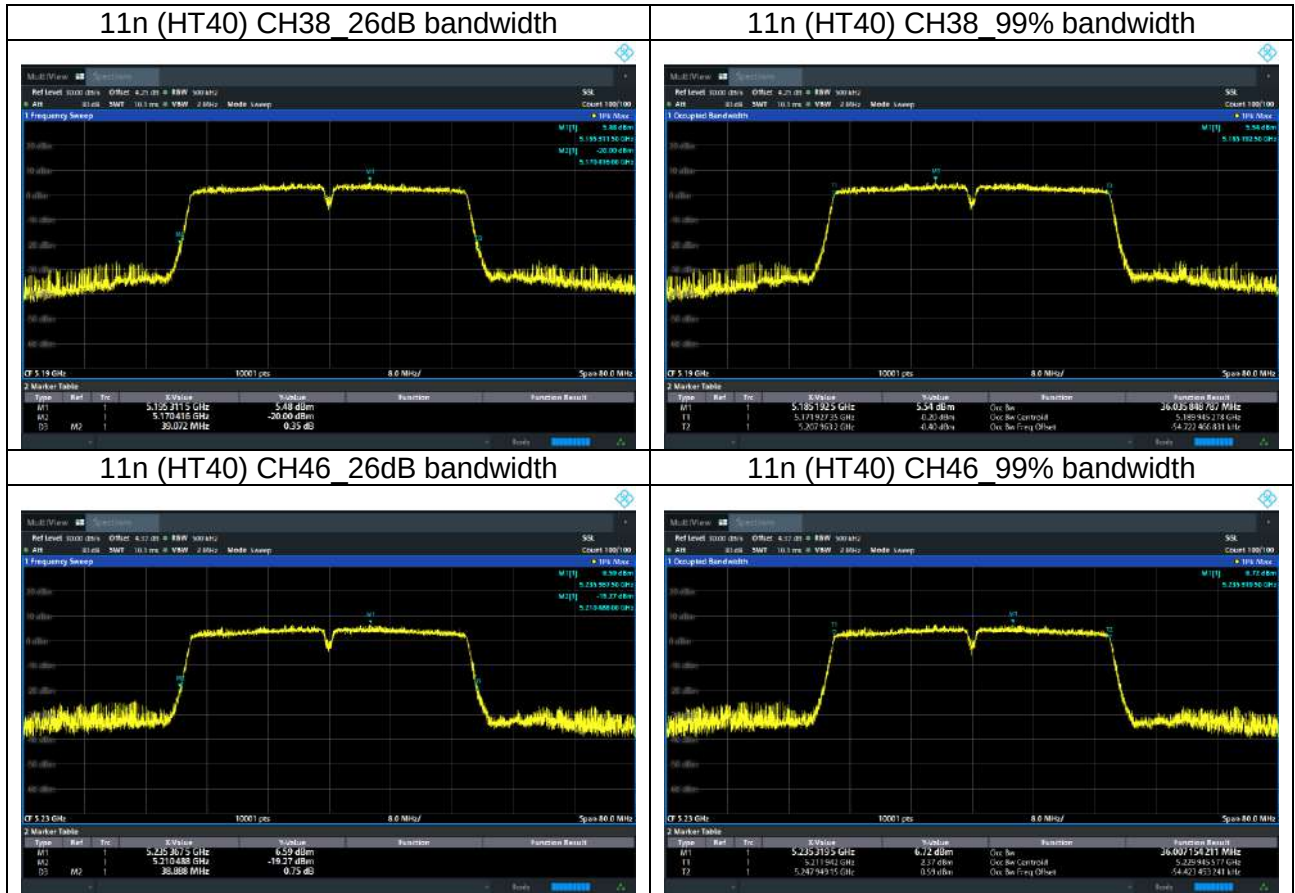
For U-NII-1

| Channel    | Test Channel | Frequency (MHz) | 26dB bandwidth (MHz) | 99% bandwidth (MHz) | Limit (kHz) | Result |
|------------|--------------|-----------------|----------------------|---------------------|-------------|--------|
| 11a        | CH36         | 5180            | 22.868               | 16.684              | /           | Pass   |
| 11a        | CH40         | 5200            | 22.628               | 16.669              | /           | Pass   |
| 11a        | CH48         | 5240            | 22.532               | 16.664              | /           | Pass   |
| 11n (HT20) | CH36         | 5180            | 28                   | 17.876              | /           | Pass   |
| 11n (HT20) | CH40         | 5200            | 35.26                | 17.927              | /           | Pass   |
| 11n (HT20) | CH48         | 5240            | 25.52                | 17.914              | /           | Pass   |
| 11n (HT40) | CH38         | 5190            | 39.072               | 36.036              | /           | Pass   |
| 11n (HT40) | CH46         | 5230            | 38.888               | 36.007              | /           | Pass   |

Test plots:  
For U-NII-1







## 5.7 6 dB Bandwidth

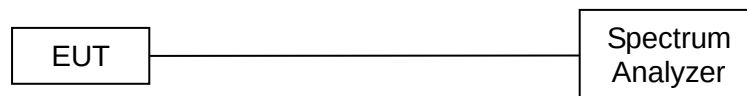
### 5.7.1 Limit

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

### 5.7.2 Test Procedure

1. Set RBW= 100 kHz.
2. Set the video bandwidth (VBW)  $\geq 3 \times$  RBW.
3. Detector = Peak.
4. Trace mode = max hold.
5. Sweep = auto couple.
6. Allow the trace to stabilize.
7. Measure the maximum width of the emission that is constrained by the frequencies associated with the two outermost amplitude points (upper and lower) that are attenuated by 26 dB relative to the maximum level measured in the fundamental emission.

### 5.7.3 Test Setup



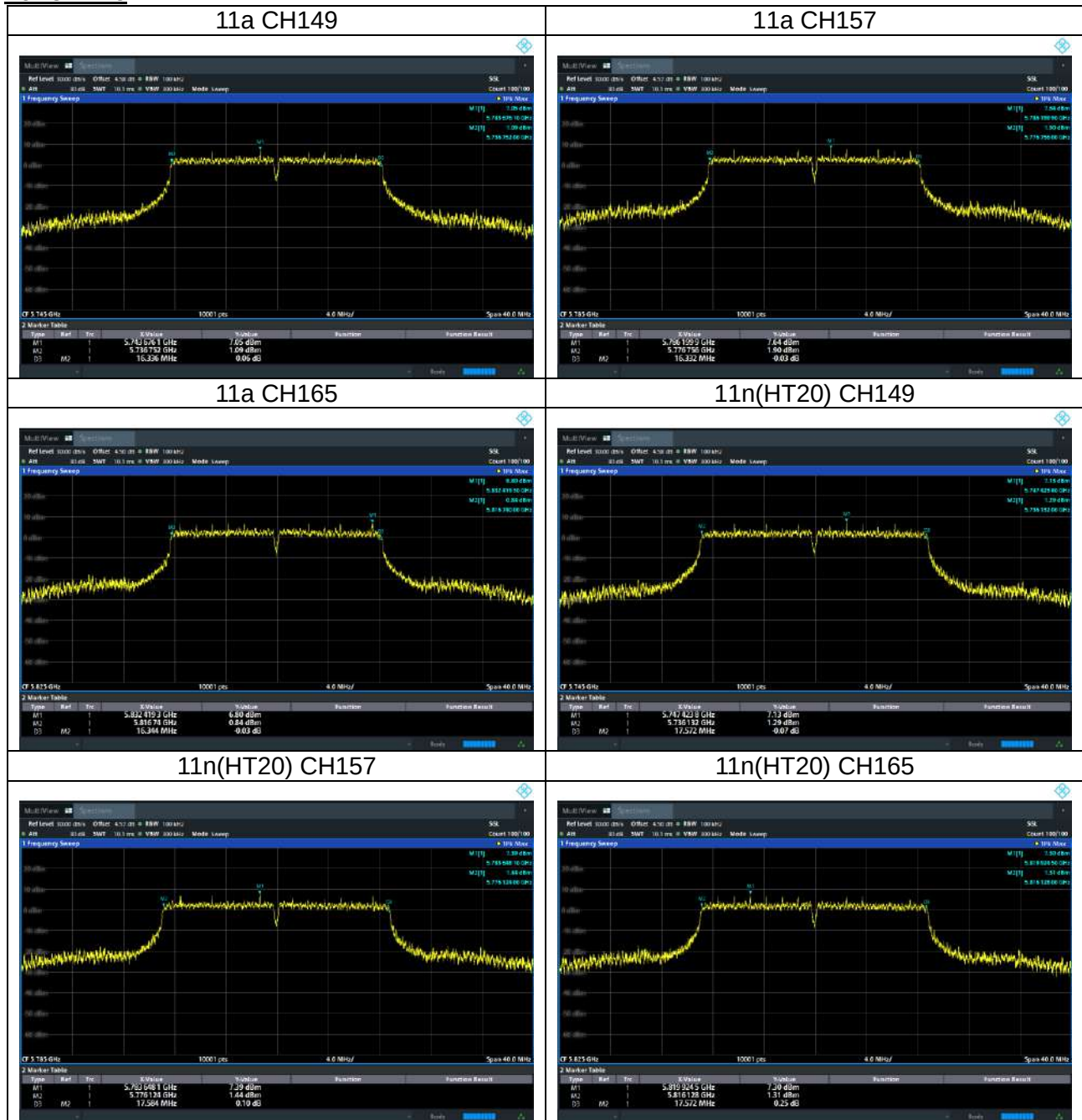
### 5.7.4 Test Results

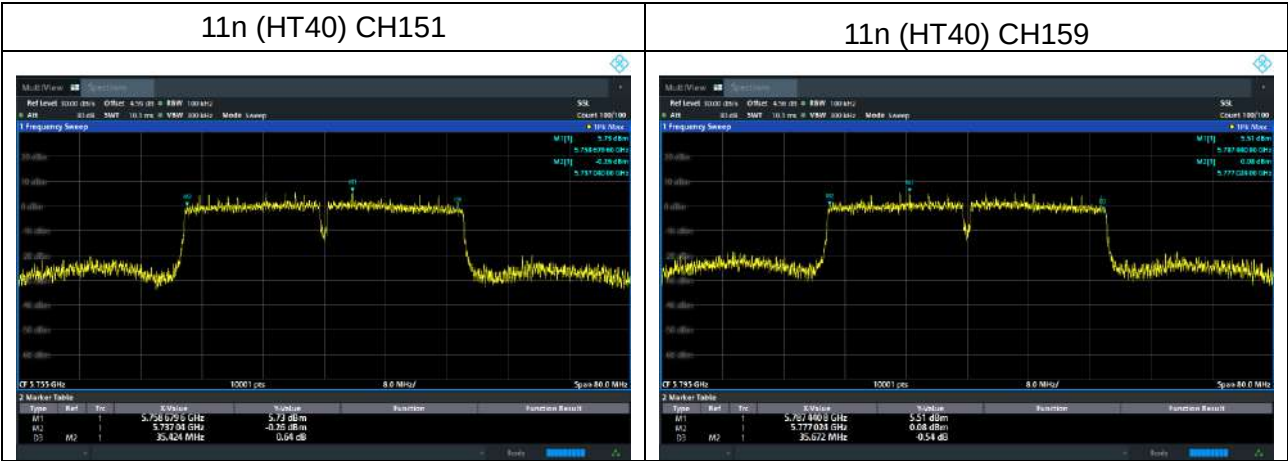
|            |              |               |                       |
|------------|--------------|---------------|-----------------------|
| EUT:       | Skywork note | Model Name:   | SWN100                |
| Test Mode: | TX Mode      | Test Voltage: | DC 3.87V from battery |

For U-NII-3

| Channel    | Test Channel | Frequency (MHz) | 6dB bandwidth (MHz) | Limit (kHz) | Result |
|------------|--------------|-----------------|---------------------|-------------|--------|
| 11a        | CH149        | 5745            | 16.336              | 500         | Pass   |
| 11a        | CH157        | 5785            | 16.332              | 500         | Pass   |
| 11a        | CH165        | 5825            | 16.344              | 500         | Pass   |
| 11n (HT20) | CH149        | 5745            | 17.572              | 500         | Pass   |
| 11n (HT20) | CH157        | 5785            | 17.584              | 500         | Pass   |
| 11n (HT20) | CH165        | 5825            | 17.572              | 500         | Pass   |
| 11n (HT40) | CH151        | 5755            | 35.424              | 500         | Pass   |
| 11n (HT40) | CH159        | 5795            | 35.672              | 500         | Pass   |

Test plots:  
For U-NII-3





## 5.8 Duty Cycle

### 5.8.1 Limit

N/A

### 5.8.2 Test Procedure

The zero-span mode on a spectrum analyzer or EMI receiver if the response time and spacing between bins on the sweep are sufficient to permit accurate measurements of the on and off times of the transmitted signal. Set the center frequency of the instrument to the center frequency of the transmission. Set  $RBW \geq OBW$  if possible; otherwise, set RBW to the largest available value. Set  $VBW \geq RBW$ . Set detector = peak or average. The zero-span measurement method shall not be used unless both RBW and VBW are  $> 50/T$  and the number of sweep points across duration T exceeds 100. (For example, if VBW and/or RBW are limited to 3 MHz, then the zero-span method of measuring duty cycle shall not be used if  $T \leq 16.7$  microseconds.)

The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.

The path loss was compensated to the results for each measurement.

Set to the maximum power setting and enable the EUT transmit continuously.

The EUT was operating in controlled its channel.

Use the following spectrum analyzer settings:

Span = Zero Span

RBW = 10MHz (the largest available value)

VBW = 10MHz ( $\geq$  RBW)

Number of points in Sweep  $> 100$

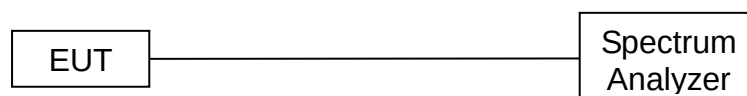
Detector function = peak

Trace = Clear write

Measure Total and Ton

Calculate Duty Cycle =  $Ton / Total$

### 5.8.3 Test Setup



### 5.8.4 Test Results

|           |              |               |                       |
|-----------|--------------|---------------|-----------------------|
| EUT:      | Skywork note | Model Name:   | SWN100                |
| Pressure: | 1012 hPa     | Test Voltage: | DC 3.87V from battery |

U-NII-1:

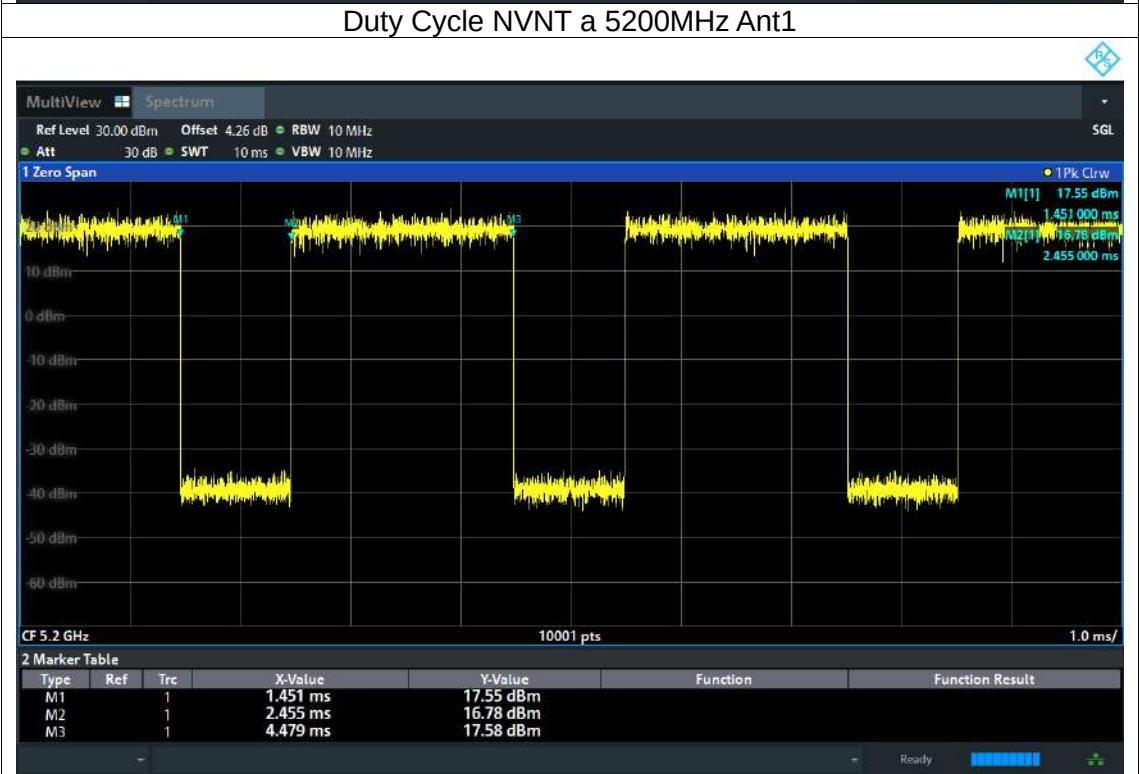
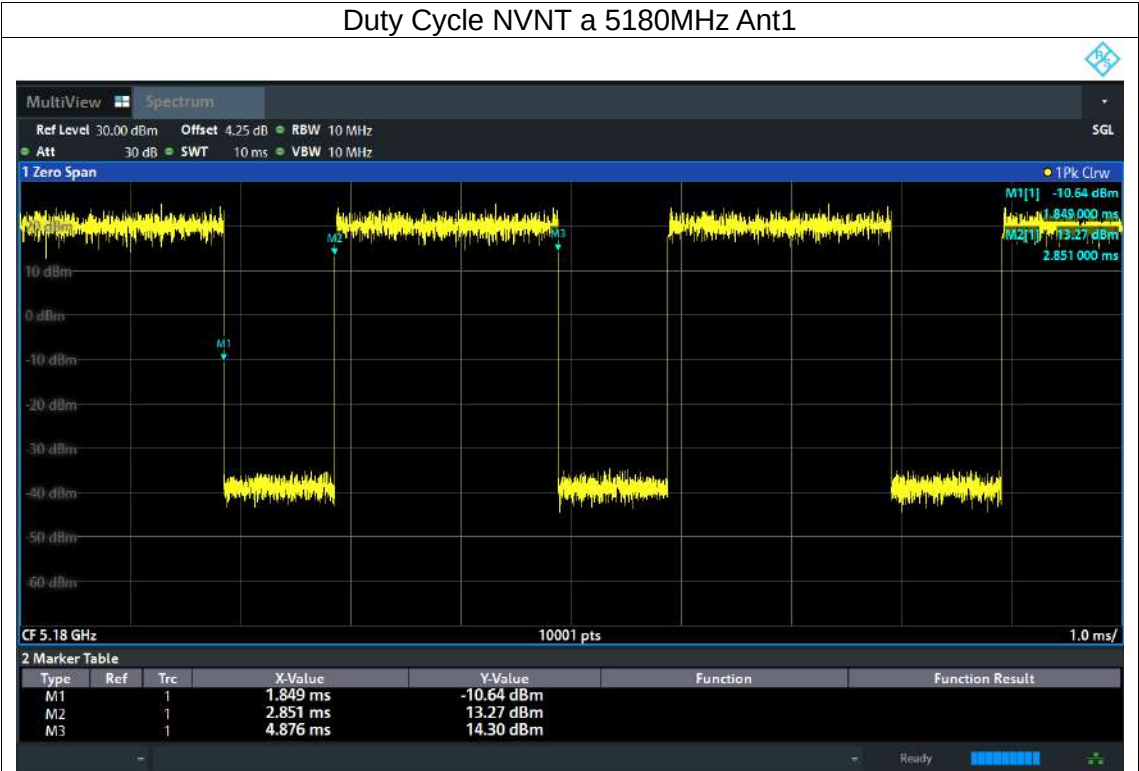
| Mode | Frequency (MHz) | T <sub>on</sub> (ms) | T <sub>total</sub> (ms) | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|------|-----------------|----------------------|-------------------------|----------------|------------------------|-----------|
| a    | 5180            | 2.025                | 3.027                   | 66.90          | 1.75                   | 0.49      |
| a    | 5200            | 2.024                | 3.028                   | 66.84          | 1.75                   | 0.49      |
| a    | 5240            | 2.024                | 3.027                   | 66.86          | 1.75                   | 0.49      |
| n20  | 5180            | 1.888                | 2.891                   | 65.31          | 1.85                   | 0.53      |
| n20  | 5200            | 1.888                | 2.891                   | 65.31          | 1.85                   | 0.53      |
| n20  | 5240            | 1.888                | 2.891                   | 65.31          | 1.85                   | 0.53      |
| n40  | 5190            | 0.928                | 1.931                   | 48.06          | 3.18                   | 1.08      |
| n40  | 5230            | 0.930                | 1.932                   | 48.14          | 3.18                   | 1.08      |

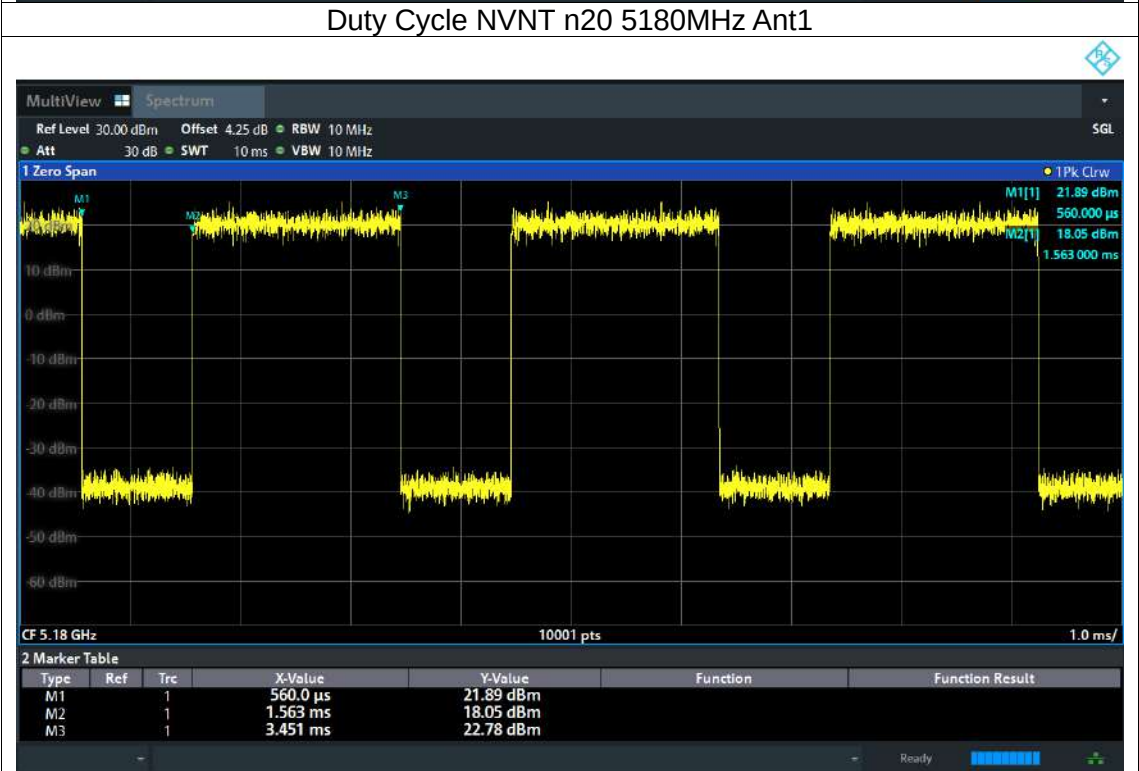
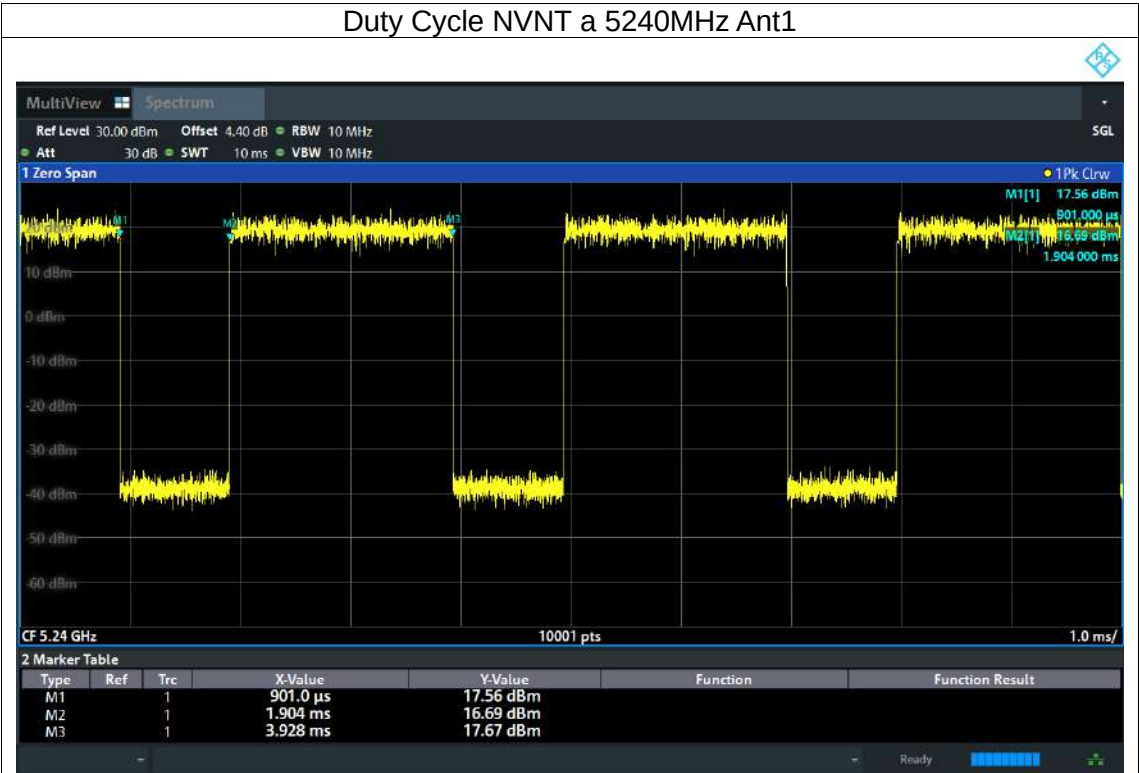
Note:

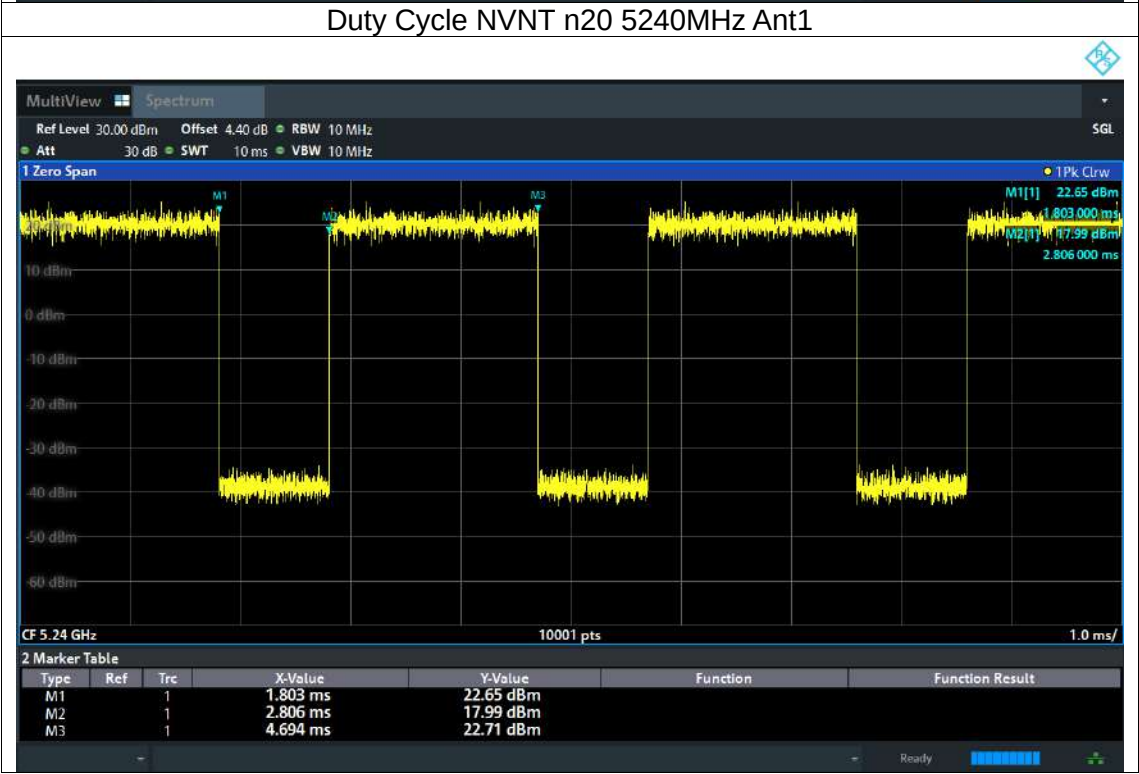
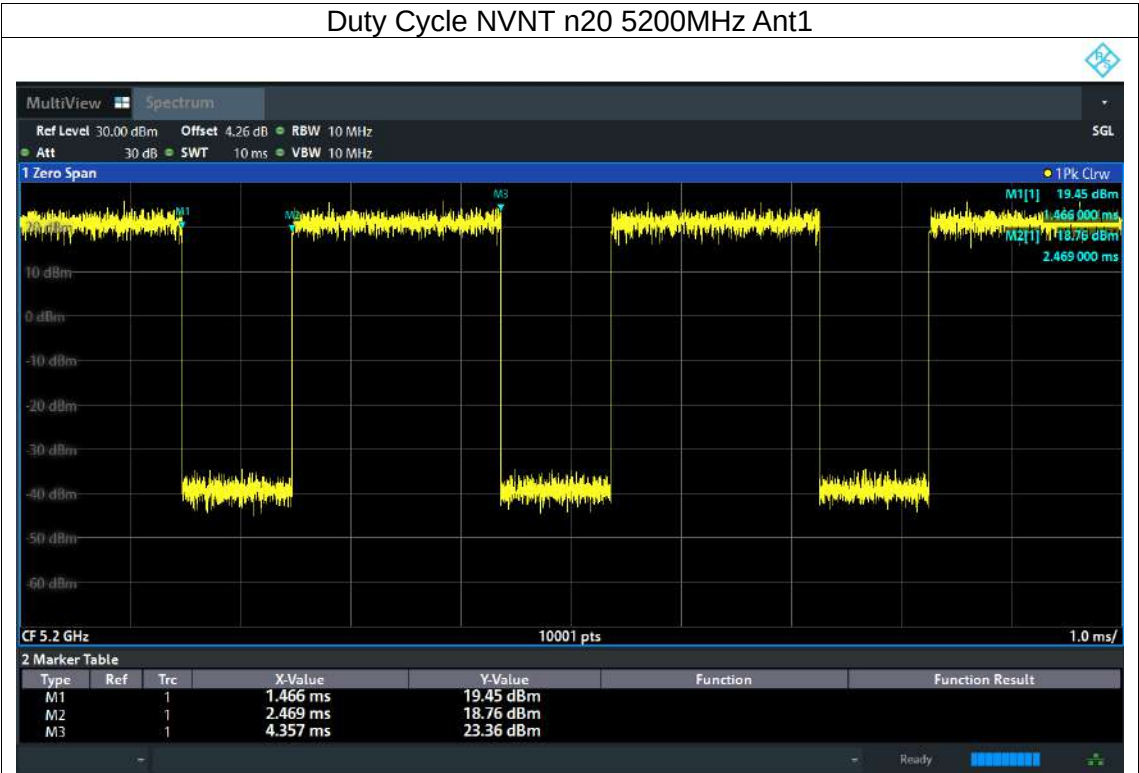
1. Duty Cycle =  $T_{on} / T_{total}$

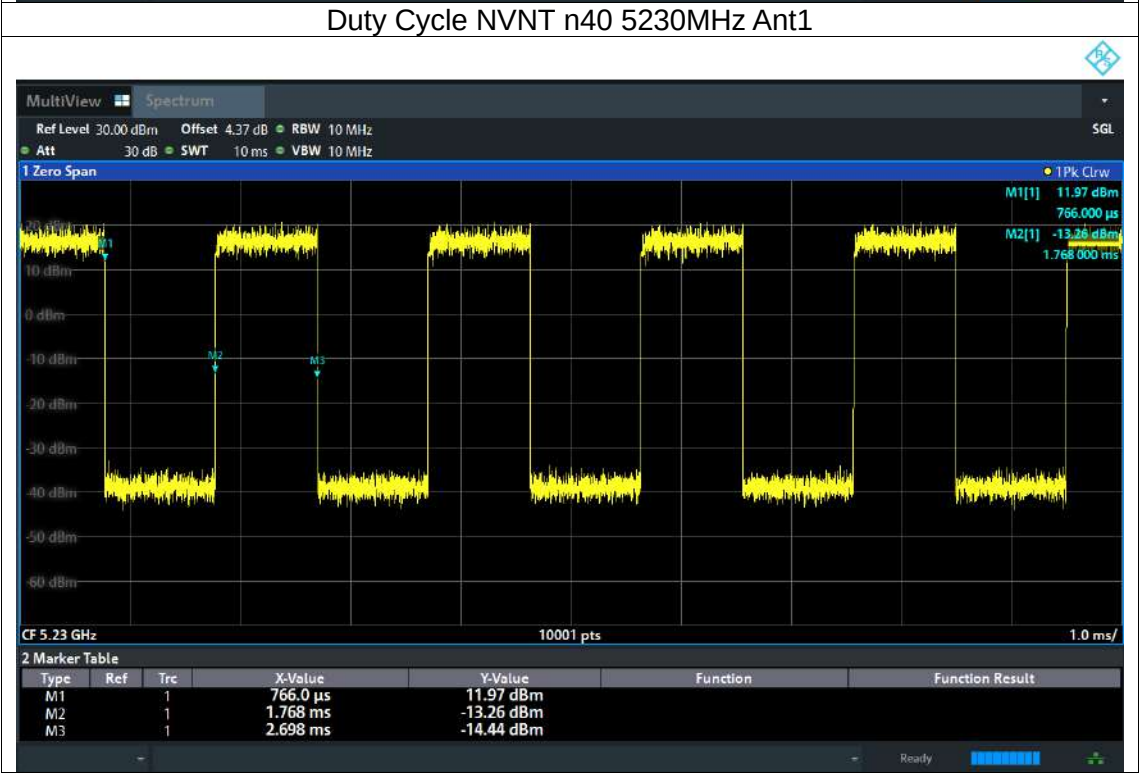
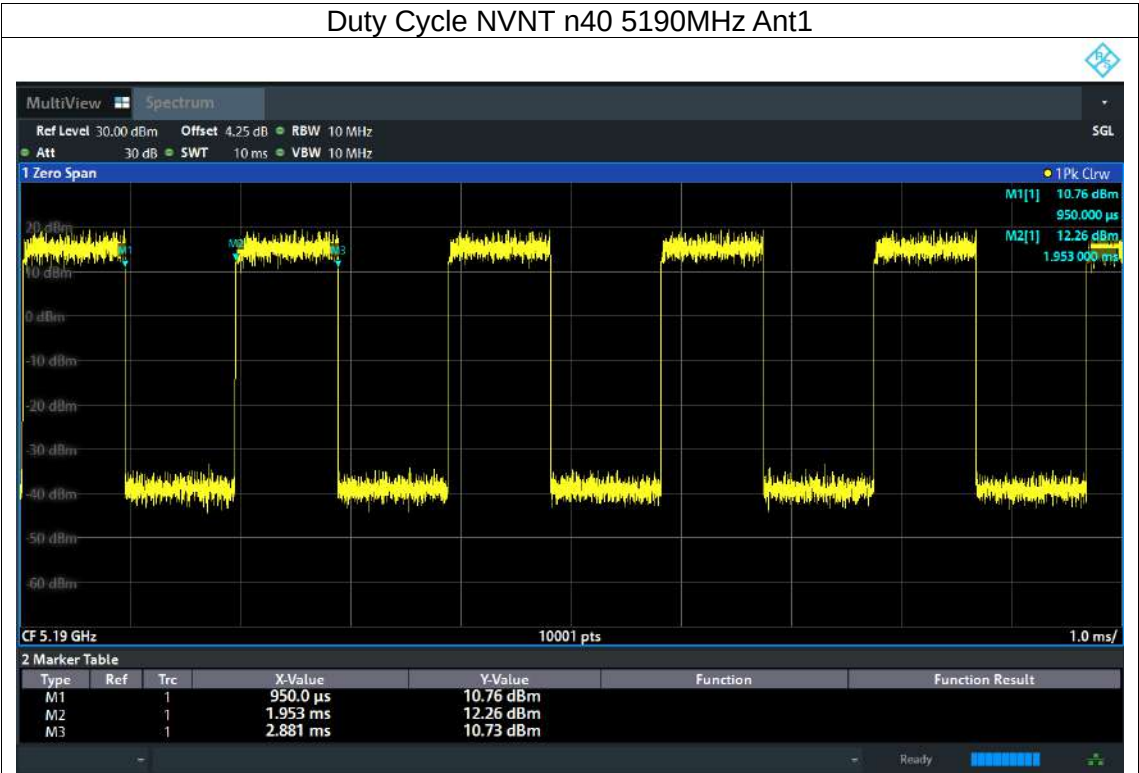
2. Correction Factor =  $10 \log (1 / \text{Duty Cycle})$

3.  $1 / T = 1 / T_{on}$









U-NII-3:

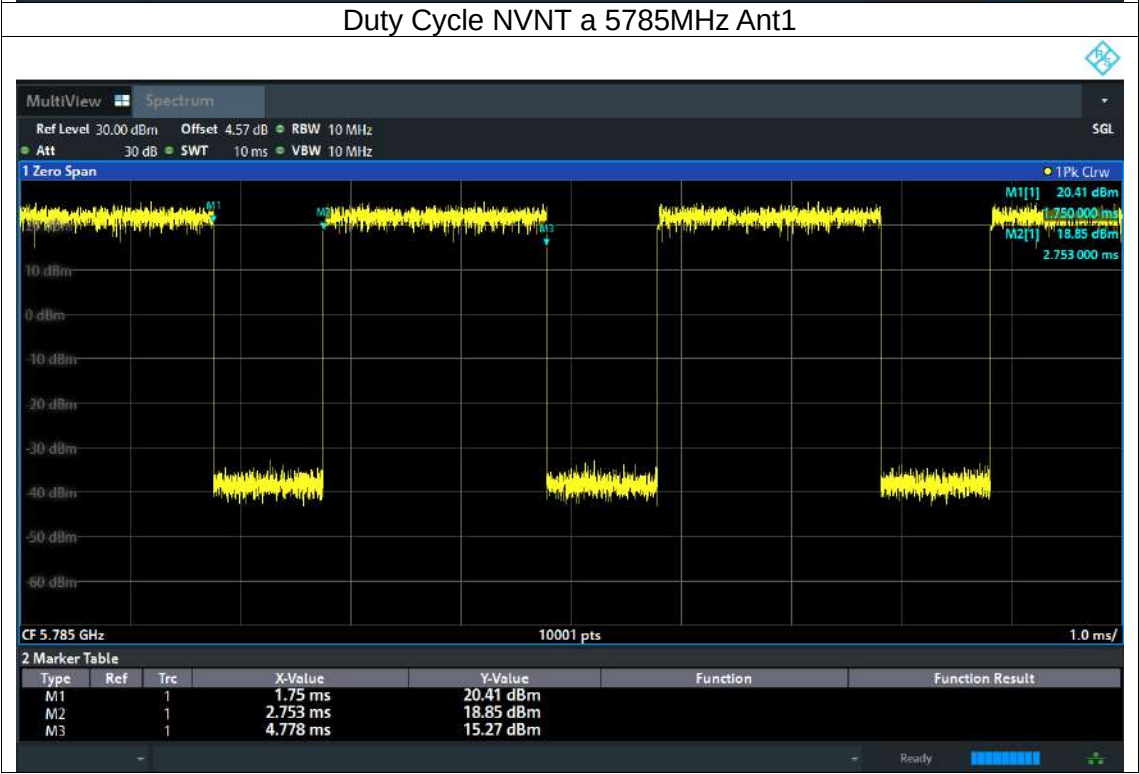
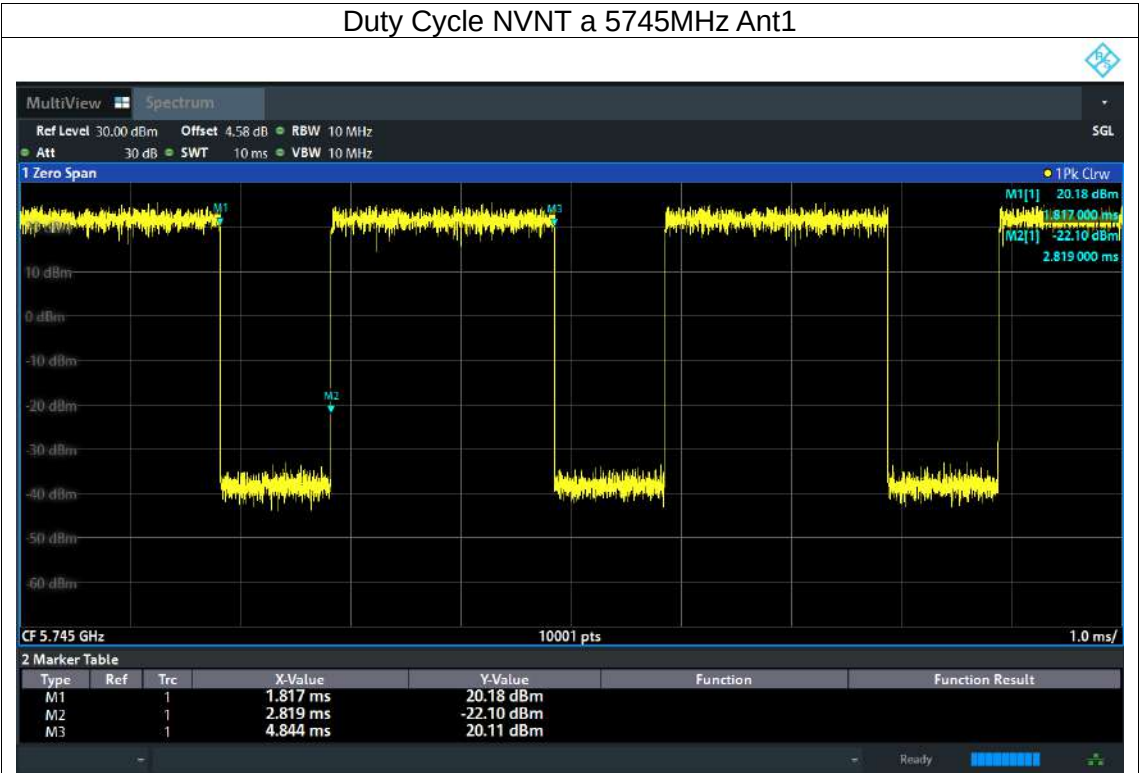
| Mode | Frequency (MHz) | T <sub>on</sub> (ms) | T <sub>total</sub> (ms) | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|------|-----------------|----------------------|-------------------------|----------------|------------------------|-----------|
| a    | 5745            | 2.025                | 3.027                   | 66.90          | 1.75                   | 0.49      |
| a    | 5785            | 2.025                | 3.028                   | 66.88          | 1.75                   | 0.49      |
| a    | 5825            | 2.026                | 3.028                   | 66.91          | 1.75                   | 0.49      |
| n20  | 5745            | 1.890                | 2.891                   | 65.38          | 1.85                   | 0.53      |
| n20  | 5785            | 1.890                | 2.891                   | 65.38          | 1.85                   | 0.53      |
| n20  | 5825            | 1.709                | 2.891                   | 59.11          | 2.28                   | 0.59      |
| n40  | 5755            | 0.929                | 1.931                   | 48.11          | 3.18                   | 1.08      |
| n40  | 5795            | 0.929                | 1.931                   | 48.11          | 3.18                   | 1.08      |

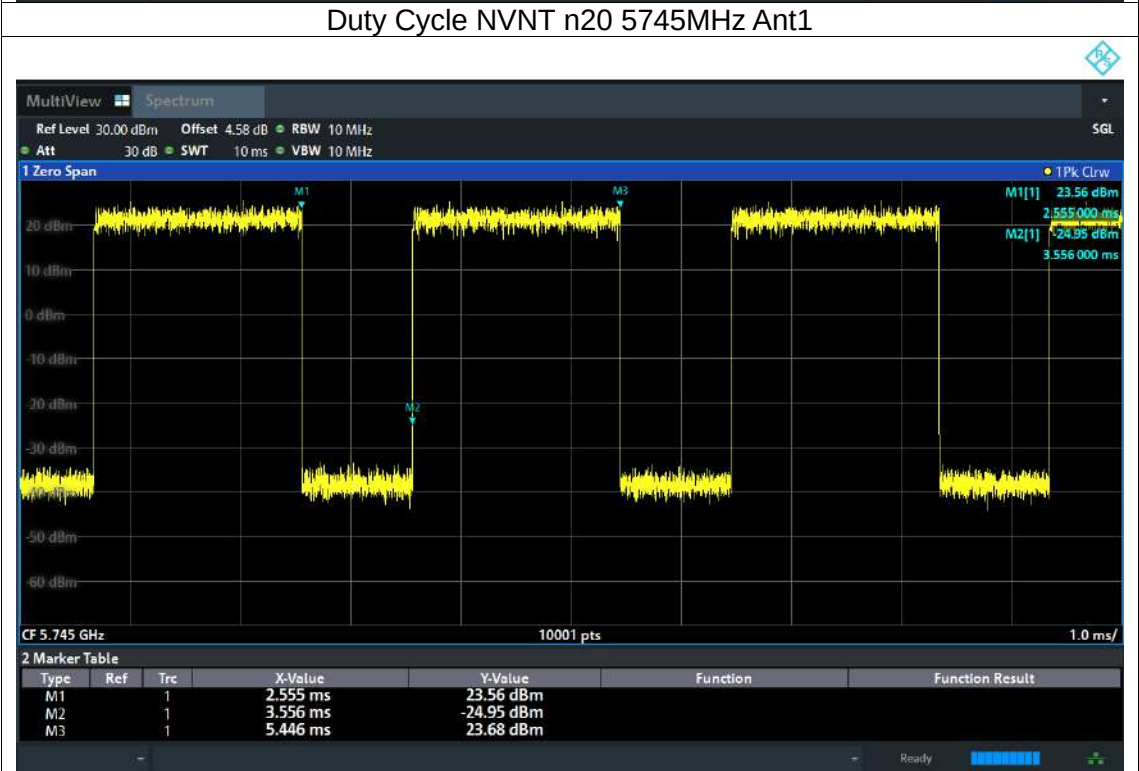
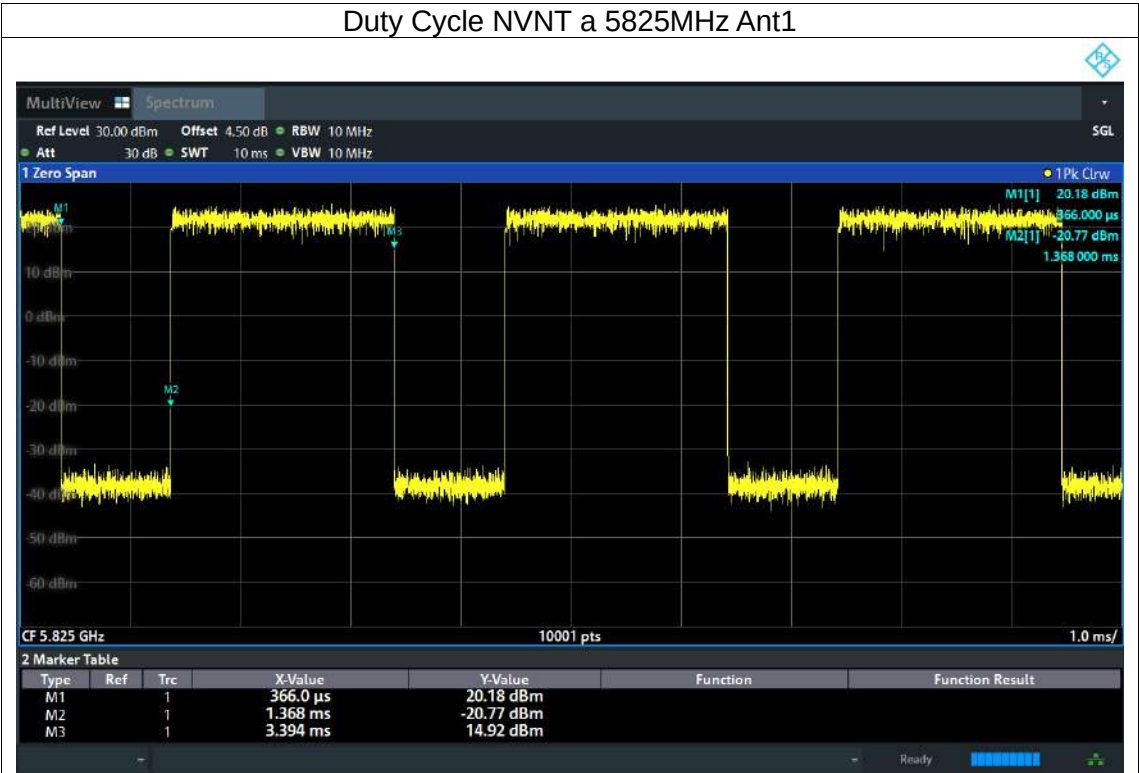
Note:

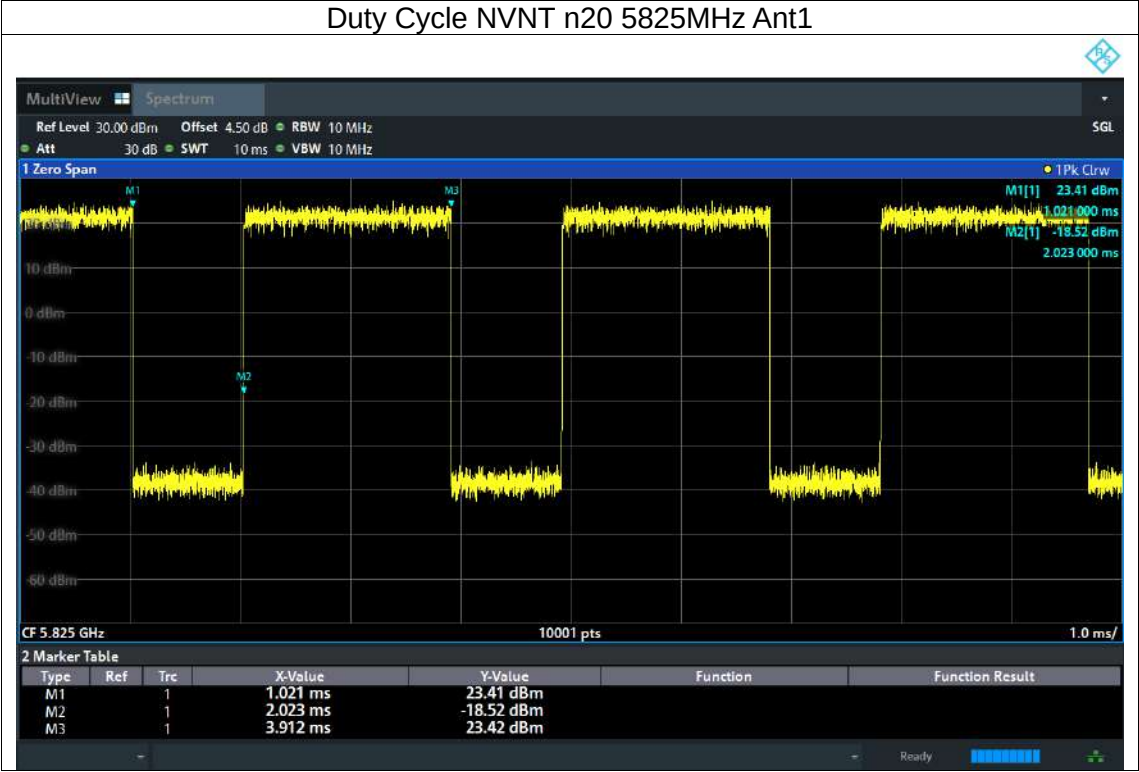
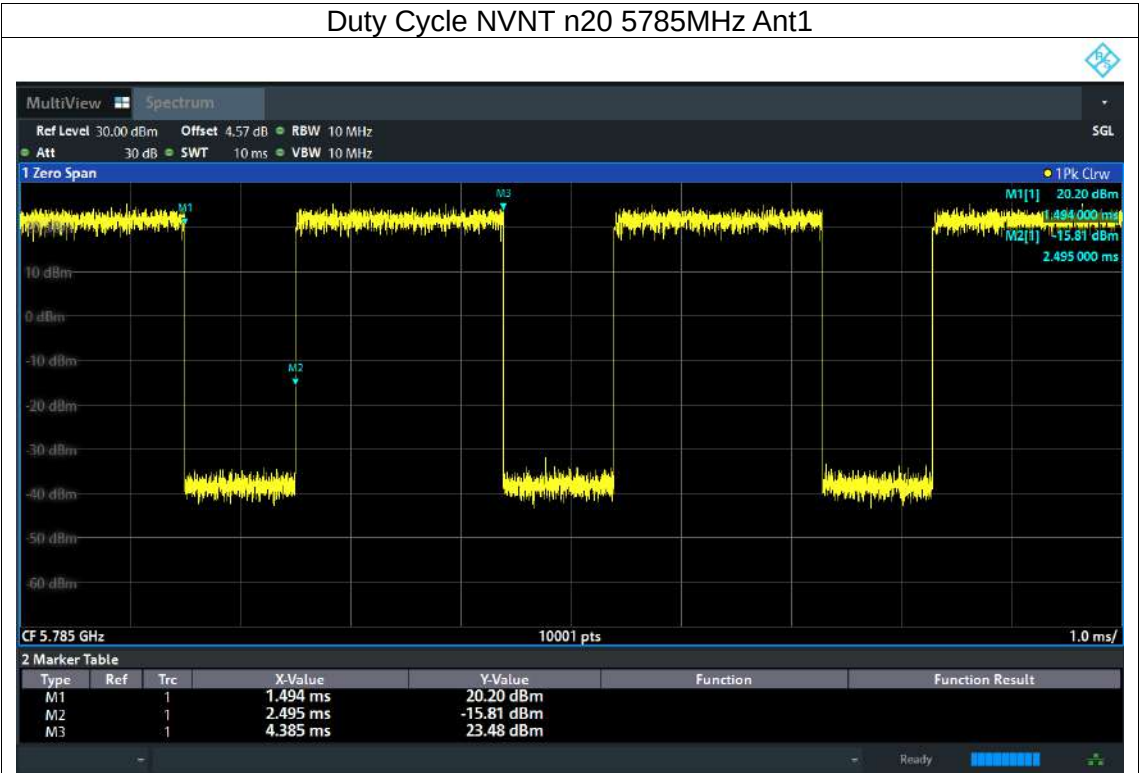
1. Duty Cycle =  $T_{on} / T_{total}$

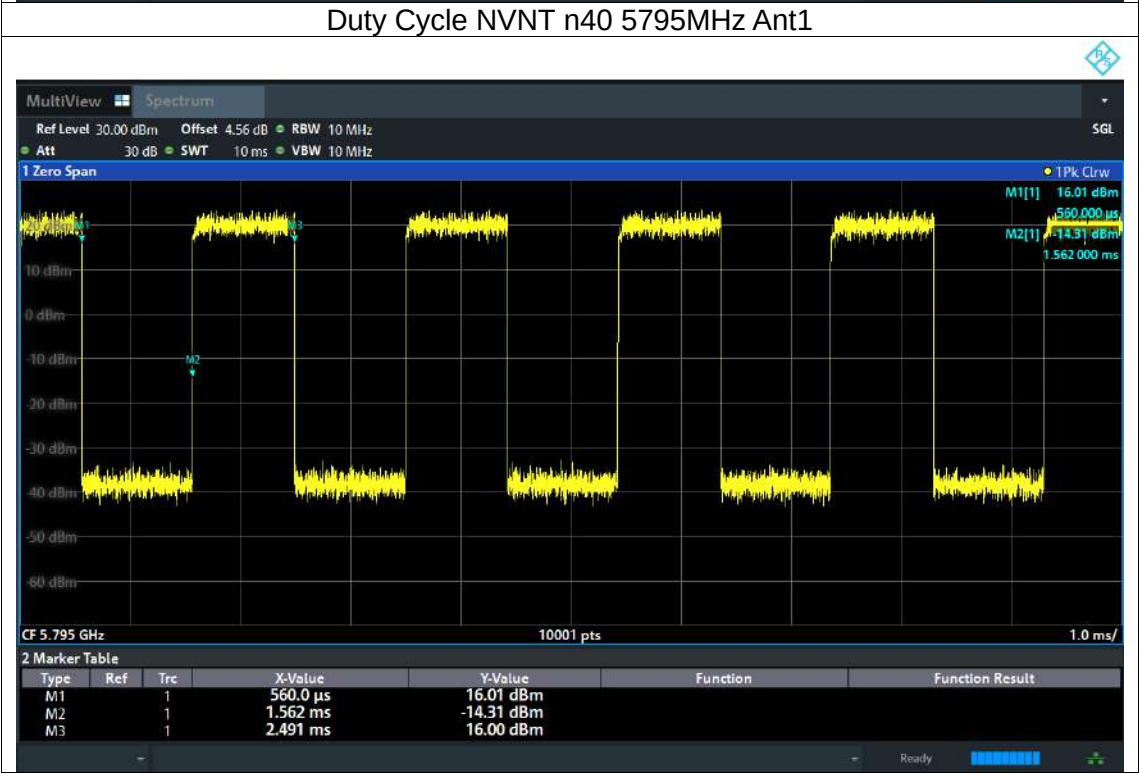
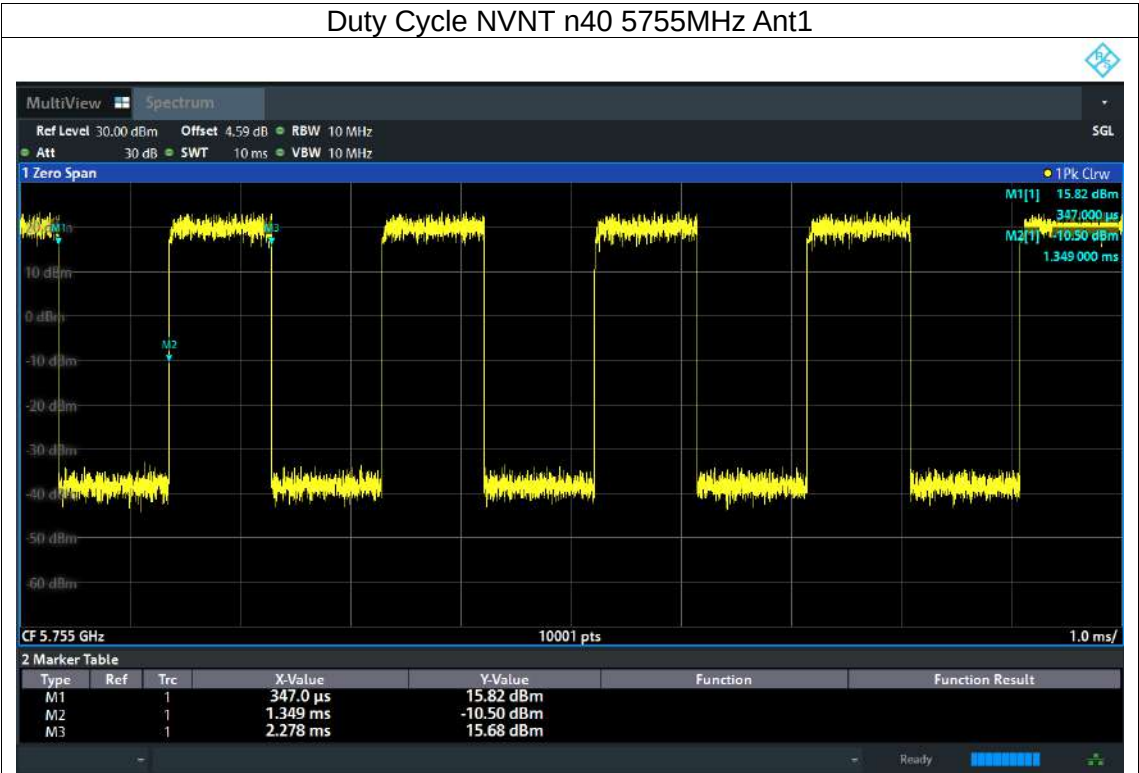
2. Correction Factor =  $10 \log (1 / \text{Duty Cycle})$

3.  $1 / T = 1 / T_{on}$









## **5.9 Out Of Band Emission**

### **5.9.1 Limit**

According to FCC §15.407(b).

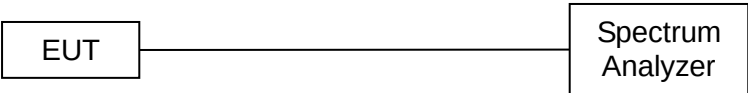
Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15–5.25 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of –27 dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of –27 dBm/MHz.
- (3) For transmitters operating in the 5.47–5.725 GHz band: All emissions outside of the 5.47–5.725 GHz band shall not exceed an e.i.r.p. of –27 dBm/MHz.
- (4) For transmitters operating solely in the 5.725–5.850 GHz band:
  - (i) All emissions shall be limited to a level of –27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

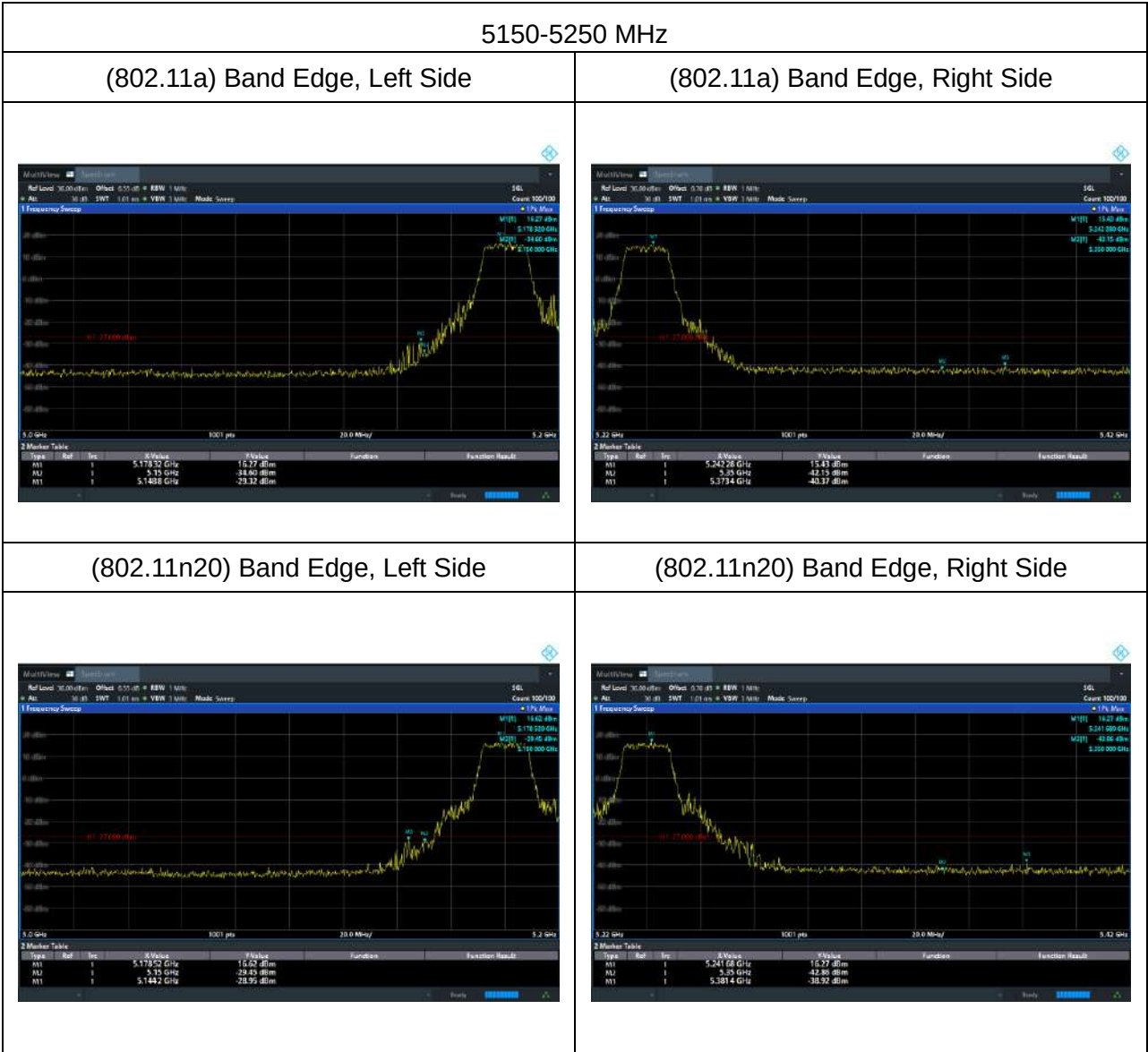
### **5.9.2 Test Procedure**

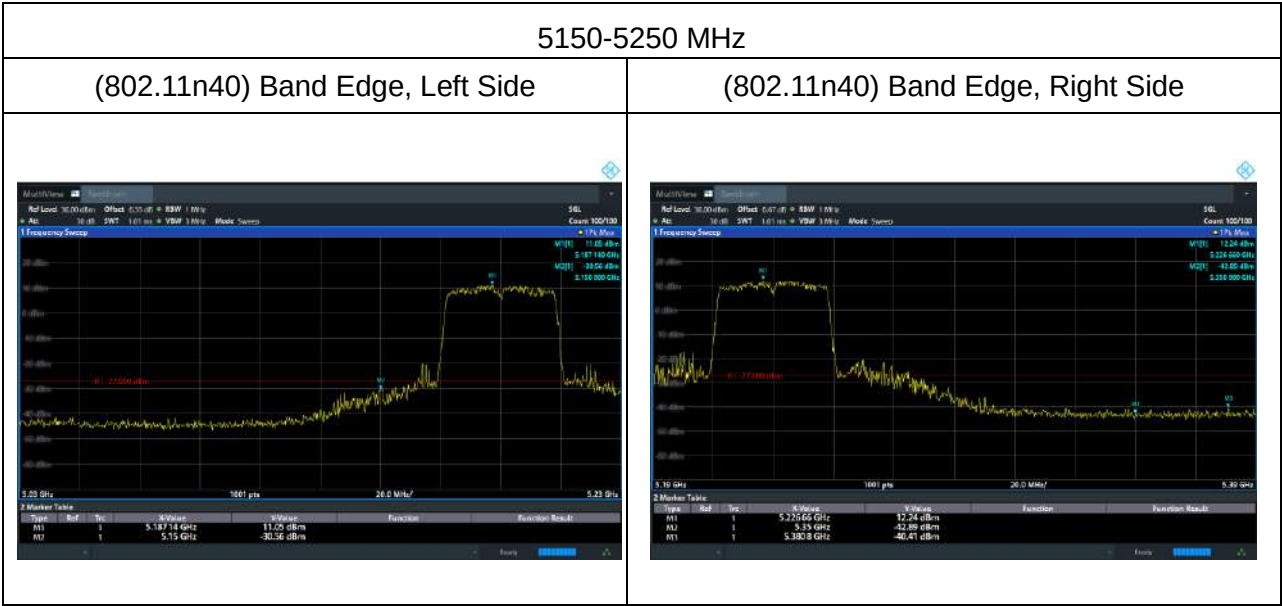
- a. Check the calibration of the measuring instrument using either an internal calibrator or a known signal from an external generator.
- b. Position the EUT without connection to measurement instrument. Turn on the EUT and connect its antenna terminal to measurement instrument via a low loss cable. Then set it to any one measured frequency within its operating range, and make sure the instrument is operated in its linear range.
- c. Set RBW of spectrum analyzer to 1 MHz with a convenient frequency span.
- d. Measure the highest amplitude appearing on spectral display and set it as a reference level. Plot the graph with marking the highest point and edge frequency.
- e. Repeat above procedures until all measured frequencies were complete.

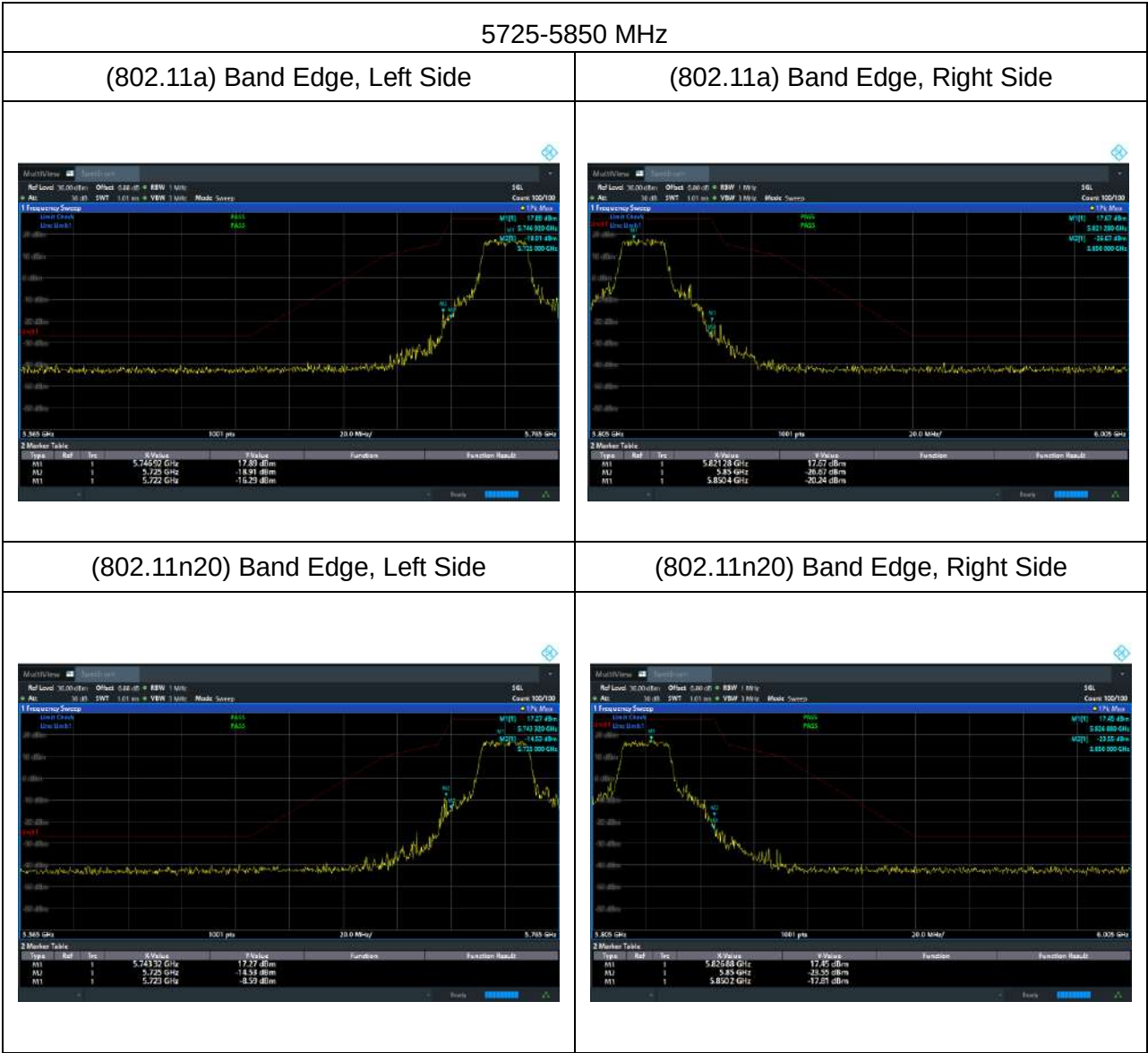
### **5.9.3 Test Setup**

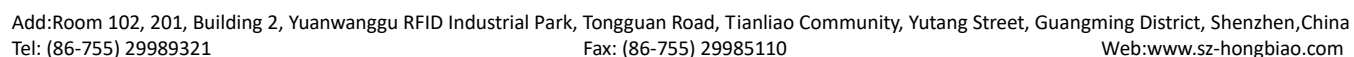


5.9.4 Test Results









## 5.10 Spurious RF Conducted Emissions

### 5.10.1 Limit

According to FCC §15.407(b).

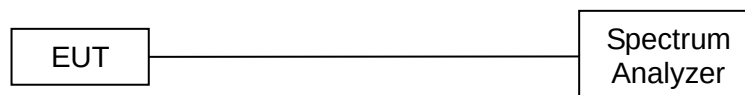
Undesirable emission limits. Except as shown in paragraph (b)(7) of this section, the maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

- (1) For transmitters operating in the 5.15–5.25 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of  $-27$  dBm/MHz.
- (2) For transmitters operating in the 5.25–5.35 GHz band: All emissions outside of the 5.15–5.35 GHz band shall not exceed an e.i.r.p. of  $-27$  dBm/MHz.
- (3) For transmitters operating in the 5.47–5.725 GHz band: All emissions outside of the 5.47–5.725 GHz band shall not exceed an e.i.r.p. of  $-27$  dBm/MHz.
- (4) For transmitters operating solely in the 5.725–5.850 GHz band:
  - (i) All emissions shall be limited to a level of  $-27$  dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

### 5.10.2 Test Procedure

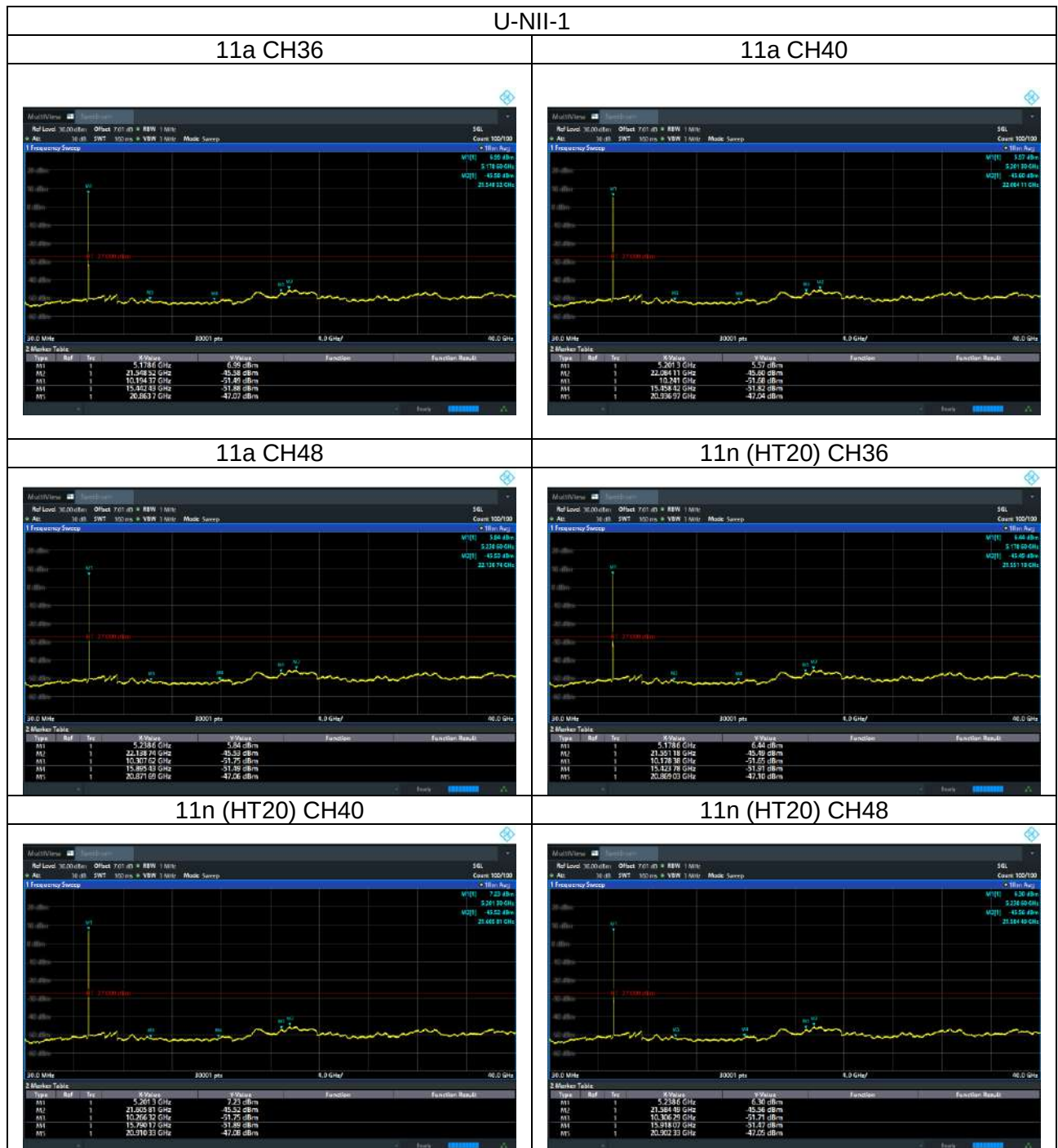
The Spurious RF conducted emissions compliance of RF radiated emission should be measured by following the guidance in ANSI C63.10-2020 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization etc. Set RBW=100kHz and VBW=300kHz to measure the avg field strength, and measure frequency range from 9kHz to 26.5GHz.

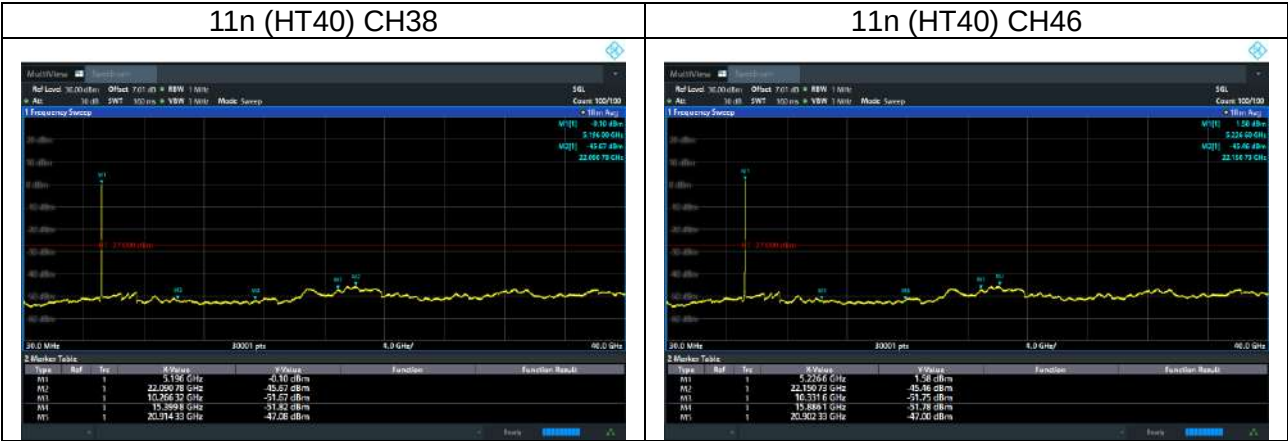
### 5.10.3 Test Setup



### 5.10.4 Test Results

Note: The measurement frequency range is from 9kHz to the 10th harmonic of the fundamental frequency; The lowest, middle and highest channels are tested to verify the spurious emissions and band edge measurement data.





## U-NII-3

### 11a CH149



### 11a CH157



### 11a CH165



### 11n(HT20) CH149

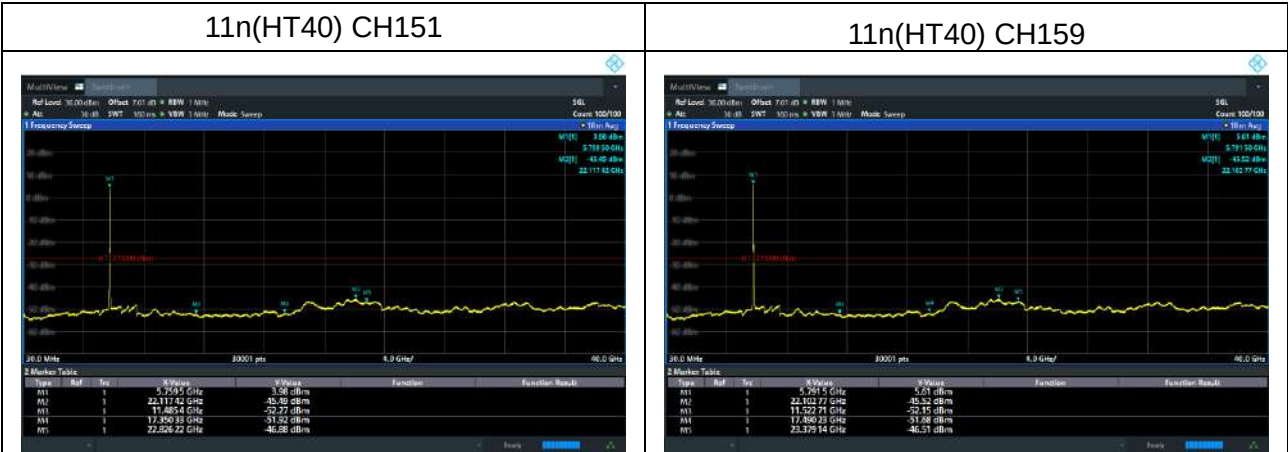


### 11n(HT20) CH157



### 11n(HT20) CH165





## 5.11 Frequency Stability

### 5.11.1 Limit

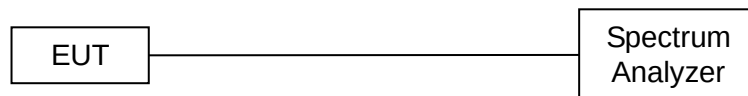
Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified in the user's manual.

The transmitter center frequency tolerance shall be  $\pm 20$  ppm maximum for the 5 GHz band (IEEE 802.11n specification).

### 5.11.2 Test Procedure

1. The transmitter output (antenna port) was connected to the spectrum analyzer.
2. EUT have transmitted absence of modulation signal and fixed channelize.
3. Set the spectrum analyzer span to view the entire absence of modulation emissions bandwidth.
4. Set RBW = 10 kHz, VBW = 10 kHz with peak detector and maxhold settings.
5.  $f_c$  is declaring of channel frequency. Then the frequency error formula is  $(f_c - f)/f_c \times 10^6$  ppm and the limit is less than  $\pm 20$  ppm (IEEE 802.11n specification).
6. The test extreme voltage is to change the primary supply voltage from 85 to 115 percent of the nominal value
7. Extreme temperature is  $-20^{\circ}\text{C} \sim 70^{\circ}\text{C}$ .

### 5.11.3 Test Setup



### 5.11.4 Test Results

|            |                       |               |                       |
|------------|-----------------------|---------------|-----------------------|
| EUT:       | Skywork note          | Model Name:   | SWN100                |
| Test Mode: | TX Mode(5150-5250MHz) | Test Voltage: | DC 3.87V from battery |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5180MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5180.035                     | 5180 | 0.035                | 6.76                 |
|                 |    | V max (V) | 4.26 | 5180.038                     | 5180 | 0.038                | 7.31                 |
|                 |    | V min (V) | 3.48 | 5180.044                     | 5180 | 0.044                | 8.57                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5180MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5180.030                     | 5180 | 0.030                | 5.85                 |
|                 |   | T (°C) | -10 | 5180.001                     | 5180 | 0.001                | 0.28                 |
|                 |   | T (°C) | 0   | 5180.010                     | 5180 | 0.010                | 1.93                 |
|                 |   | T (°C) | 10  | 5180.040                     | 5180 | 0.040                | 7.68                 |
|                 |   | T (°C) | 20  | 5180.039                     | 5180 | 0.039                | 7.61                 |
|                 |   | T (°C) | 30  | 5180.049                     | 5180 | 0.049                | 9.41                 |
|                 |   | T (°C) | 40  | 5180.022                     | 5180 | 0.022                | 4.30                 |
|                 |   | T (°C) | 50  | 5180.022                     | 5180 | 0.022                | 4.21                 |
|                 |   | T (°C) | 60  | 5180.040                     | 5180 | 0.040                | 7.68                 |
|                 |   | T (°C) | 70  | 5180.015                     | 5180 | 0.015                | 2.95                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5200MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5200.011                     | 5200 | 0.011                | 2.10                 |
|                 |    | V max (V) | 4.26 | 5200.039                     | 5200 | 0.039                | 7.50                 |
|                 |    | V min (V) | 3.48 | 5200.021                     | 5200 | 0.021                | 3.98                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5200MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5200.045                     | 5200 | 0.045                | 8.56                 |
|                 |   | T (°C) | -10 | 5200.013                     | 5200 | 0.013                | 2.60                 |
|                 |   | T (°C) | 0   | 5200.050                     | 5200 | 0.050                | 9.56                 |
|                 |   | T (°C) | 10  | 5200.037                     | 5200 | 0.037                | 7.17                 |
|                 |   | T (°C) | 20  | 5200.002                     | 5200 | 0.002                | 0.32                 |
|                 |   | T (°C) | 30  | 5200.036                     | 5200 | 0.036                | 6.97                 |
|                 |   | T (°C) | 40  | 5200.001                     | 5200 | 0.001                | 0.27                 |
|                 |   | T (°C) | 50  | 5200.036                     | 5200 | 0.036                | 6.95                 |
|                 |   | T (°C) | 60  | 5200.012                     | 5200 | 0.012                | 2.34                 |
|                 |   | T (°C) | 70  | 5200.014                     | 5200 | 0.014                | 2.66                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5240MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5240.038                     | 5240 | 0.038                | 7.27                 |
|                 |    | V max (V) | 4.26 | 5240.033                     | 5240 | 0.033                | 6.28                 |
|                 |    | V min (V) | 3.48 | 5240.001                     | 5240 | 0.001                | 0.18                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5240MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5240.014                     | 5240 | 0.014                | 2.60                 |
|                 |   | T (°C) | -10 | 5240.020                     | 5240 | 0.020                | 3.72                 |
|                 |   | T (°C) | 0   | 5240.037                     | 5240 | 0.037                | 7.12                 |
|                 |   | T (°C) | 10  | 5240.018                     | 5240 | 0.018                | 3.52                 |
|                 |   | T (°C) | 20  | 5240.028                     | 5240 | 0.028                | 5.28                 |
|                 |   | T (°C) | 30  | 5240.042                     | 5240 | 0.042                | 8.04                 |
|                 |   | T (°C) | 40  | 5240.011                     | 5240 | 0.011                | 2.10                 |
|                 |   | T (°C) | 50  | 5240.042                     | 5240 | 0.042                | 8.03                 |
|                 |   | T (°C) | 60  | 5240.028                     | 5240 | 0.028                | 5.34                 |
|                 |   | T (°C) | 70  | 5240.042                     | 5240 | 0.042                | 8.07                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5190MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5190.044                     | 5190 | 0.044                | 8.46                 |
|                 |    | V max (V) | 4.26 | 5190.047                     | 5190 | 0.047                | 9.14                 |
|                 |    | V min (V) | 3.48 | 5190.002                     | 5190 | 0.002                | 0.31                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5190MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5190.009                     | 5190 | 0.009                | 1.72                 |
|                 |   | T (°C) | -10 | 5190.014                     | 5190 | 0.014                | 2.64                 |
|                 |   | T (°C) | 0   | 5190.020                     | 5190 | 0.020                | 3.92                 |
|                 |   | T (°C) | 10  | 5190.028                     | 5190 | 0.028                | 5.36                 |
|                 |   | T (°C) | 20  | 5190.015                     | 5190 | 0.015                | 2.85                 |
|                 |   | T (°C) | 30  | 5190.039                     | 5190 | 0.039                | 7.49                 |
|                 |   | T (°C) | 40  | 5190.008                     | 5190 | 0.008                | 1.58                 |
|                 |   | T (°C) | 50  | 5190.024                     | 5190 | 0.024                | 4.65                 |
|                 |   | T (°C) | 60  | 5190.008                     | 5190 | 0.008                | 1.60                 |
|                 |   | T (°C) | 70  | 5190.038                     | 5190 | 0.038                | 7.23                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5230MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5230.012                     | 5230 | 0.012                | 2.23                 |
|                 |    | V max (V) | 4.26 | 5230.044                     | 5230 | 0.044                | 8.47                 |
|                 |    | V min (V) | 3.48 | 5230.027                     | 5230 | 0.027                | 5.08                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5230MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5230.039                     | 5230 | 0.039                | 7.49                 |
|                 |   | T (°C) | -10 | 5230.001                     | 5230 | 0.001                | 0.18                 |
|                 |   | T (°C) | 0   | 5230.001                     | 5230 | 0.001                | 0.19                 |
|                 |   | T (°C) | 10  | 5230.013                     | 5230 | 0.013                | 2.51                 |
|                 |   | T (°C) | 20  | 5230.035                     | 5230 | 0.035                | 6.71                 |
|                 |   | T (°C) | 30  | 5230.029                     | 5230 | 0.029                | 5.45                 |
|                 |   | T (°C) | 40  | 5230.006                     | 5230 | 0.006                | 1.07                 |
|                 |   | T (°C) | 50  | 5230.015                     | 5230 | 0.015                | 2.91                 |
|                 |   | T (°C) | 60  | 5230.036                     | 5230 | 0.036                | 6.92                 |
|                 |   | T (°C) | 70  | 5230.004                     | 5230 | 0.004                | 0.84                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5745MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5745.017                     | 5745 | 0.017                | 2.91                 |
|                 |    | V max (V) | 4.26 | 5745.011                     | 5745 | 0.011                | 1.96                 |
|                 |    | V min (V) | 3.48 | 5745.017                     | 5745 | 0.017                | 2.99                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5745MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5745.000                     | 5745 | 0.000                | 0.01                 |
|                 |   | T (°C) | -10 | 5745.030                     | 5745 | 0.030                | 5.22                 |
|                 |   | T (°C) | 0   | 5745.015                     | 5745 | 0.015                | 2.63                 |
|                 |   | T (°C) | 10  | 5745.016                     | 5745 | 0.016                | 2.77                 |
|                 |   | T (°C) | 20  | 5745.027                     | 5745 | 0.027                | 4.70                 |
|                 |   | T (°C) | 30  | 5745.033                     | 5745 | 0.033                | 5.74                 |
|                 |   | T (°C) | 40  | 5745.015                     | 5745 | 0.015                | 2.66                 |
|                 |   | T (°C) | 50  | 5745.021                     | 5745 | 0.021                | 3.72                 |
|                 |   | T (°C) | 60  | 5745.025                     | 5745 | 0.025                | 4.36                 |
|                 |   | T (°C) | 70  | 5745.049                     | 5745 | 0.049                | 8.58                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5785MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5785.036                     | 5785 | 0.036                | 6.23                 |
|                 |    | V max (V) | 4.26 | 5785.041                     | 5785 | 0.041                | 7.01                 |
|                 |    | V min (V) | 3.48 | 5785.038                     | 5785 | 0.038                | 6.54                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5785MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5785.006                     | 5785 | 0.006                | 1.02                 |
|                 |   | T (°C) | -10 | 5785.005                     | 5785 | 0.005                | 0.85                 |
|                 |   | T (°C) | 0   | 5785.004                     | 5785 | 0.004                | 0.64                 |
|                 |   | T (°C) | 10  | 5785.033                     | 5785 | 0.033                | 5.65                 |
|                 |   | T (°C) | 20  | 5785.030                     | 5785 | 0.030                | 5.13                 |
|                 |   | T (°C) | 30  | 5785.030                     | 5785 | 0.030                | 5.25                 |
|                 |   | T (°C) | 40  | 5785.023                     | 5785 | 0.023                | 3.98                 |
|                 |   | T (°C) | 50  | 5785.005                     | 5785 | 0.005                | 0.86                 |
|                 |   | T (°C) | 60  | 5785.014                     | 5785 | 0.014                | 2.44                 |
|                 |   | T (°C) | 70  | 5785.050                     | 5785 | 0.050                | 8.56                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5825MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5825.024                     | 5825 | 0.024                | 4.18                 |
|                 |    | V max (V) | 4.26 | 5825.034                     | 5825 | 0.034                | 5.84                 |
|                 |    | V min (V) | 3.48 | 5825.022                     | 5825 | 0.022                | 3.74                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5825MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5825.028                     | 5825 | 0.028                | 4.84                 |
|                 |   | T (°C) | -10 | 5825.029                     | 5825 | 0.029                | 4.95                 |
|                 |   | T (°C) | 0   | 5825.033                     | 5825 | 0.033                | 5.71                 |
|                 |   | T (°C) | 10  | 5825.026                     | 5825 | 0.026                | 4.46                 |
|                 |   | T (°C) | 20  | 5825.043                     | 5825 | 0.043                | 7.44                 |
|                 |   | T (°C) | 30  | 5825.019                     | 5825 | 0.019                | 3.18                 |
|                 |   | T (°C) | 40  | 5825.049                     | 5825 | 0.049                | 8.39                 |
|                 |   | T (°C) | 50  | 5825.041                     | 5825 | 0.041                | 7.11                 |
|                 |   | T (°C) | 60  | 5825.007                     | 5825 | 0.007                | 1.25                 |
|                 |   | T (°C) | 70  | 5825.000                     | 5825 | 0.000                | 0.06                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5755MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5755.039                     | 5755 | 0.039                | 6.76                 |
|                 |    | V max (V) | 4.26 | 5755.031                     | 5755 | 0.031                | 5.47                 |
|                 |    | V min (V) | 3.48 | 5755.048                     | 5755 | 0.048                | 8.42                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5755MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5755.048                     | 5755 | 0.048                | 8.37                 |
|                 |   | T (°C) | -10 | 5755.019                     | 5755 | 0.019                | 3.28                 |
|                 |   | T (°C) | 0   | 5755.025                     | 5755 | 0.025                | 4.35                 |
|                 |   | T (°C) | 10  | 5755.018                     | 5755 | 0.018                | 3.06                 |
|                 |   | T (°C) | 20  | 5755.011                     | 5755 | 0.011                | 1.95                 |
|                 |   | T (°C) | 30  | 5755.042                     | 5755 | 0.042                | 7.27                 |
|                 |   | T (°C) | 40  | 5755.011                     | 5755 | 0.011                | 1.94                 |
|                 |   | T (°C) | 50  | 5755.000                     | 5755 | 0.000                | 0.01                 |
|                 |   | T (°C) | 60  | 5755.035                     | 5755 | 0.035                | 6.04                 |
|                 |   | T (°C) | 70  | 5755.032                     | 5755 | 0.032                | 5.62                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

Voltage vs. Frequency Stability

| TEST CONDITIONS |    |           |      | Reference Frequency: 5795MHz |      |                      |                      |
|-----------------|----|-----------|------|------------------------------|------|----------------------|----------------------|
|                 |    |           |      | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| T nom (°C)      | 20 | V nom (V) | 3.87 | 5795.035                     | 5795 | 0.035                | 6.05                 |
|                 |    | V max (V) | 4.26 | 5795.032                     | 5795 | 0.032                | 5.49                 |
|                 |    | V min (V) | 3.48 | 5795.050                     | 5795 | 0.050                | 8.61                 |
| Limits          |    |           |      | ± 20 ppm                     |      |                      |                      |
| Result          |    |           |      | Complies                     |      |                      |                      |

Temperature vs. Frequency Stability

| TEST CONDITIONS |   |        |     | Reference Frequency: 5795MHz |      |                      |                      |
|-----------------|---|--------|-----|------------------------------|------|----------------------|----------------------|
|                 |   |        |     | f                            | fc   | Max. Deviation (MHz) | Max. Deviation (ppm) |
| V nom (V)       | 5 | T (°C) | -20 | 5795.045                     | 5795 | 0.045                | 7.82                 |
|                 |   | T (°C) | -10 | 5795.040                     | 5795 | 0.040                | 6.83                 |
|                 |   | T (°C) | 0   | 5795.033                     | 5795 | 0.033                | 5.73                 |
|                 |   | T (°C) | 10  | 5795.025                     | 5795 | 0.025                | 4.29                 |
|                 |   | T (°C) | 20  | 5795.017                     | 5795 | 0.017                | 2.88                 |
|                 |   | T (°C) | 30  | 5795.017                     | 5795 | 0.017                | 2.97                 |
|                 |   | T (°C) | 40  | 5795.028                     | 5795 | 0.028                | 4.77                 |
|                 |   | T (°C) | 50  | 5795.040                     | 5795 | 0.040                | 6.98                 |
|                 |   | T (°C) | 60  | 5795.021                     | 5795 | 0.021                | 3.63                 |
|                 |   | T (°C) | 70  | 5795.009                     | 5795 | 0.009                | 1.58                 |
| Limits          |   |        |     | ± 20 ppm                     |      |                      |                      |
| Result          |   |        |     | Complies                     |      |                      |                      |

## 6 Photographs of the Test Setup

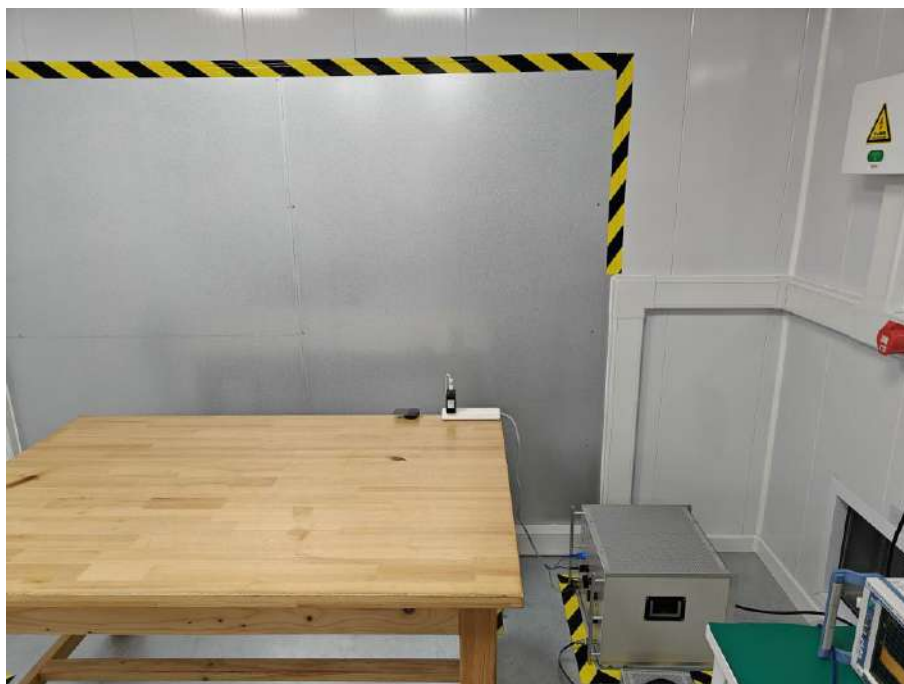
Radiated Emission Below 1GHz



Radiated Emission Above 1GHz



Conducted Emission



## 7 Photographs of the EUT

Please refer to report HB20260227008E-01 for product photos.

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