



# **RADIO TEST REPORT**

## **ETSI EN 300 440 V2.2.1 (2018-07)**

**Product :** Smartphone

**Trade Mark :** CUBOT

**Model Name :** KINGKONG 9

**Family Model :** N/A

**Report No. :** S23041403210005

### **Prepared for**

Shenzhen Huafurui Technology Co., Ltd

Unit 1401 & 1402, 14/F, Jinqi Zhigu Mansion (No. 4 Building of Chongwen Garden), Crossing of the Liuxian Street and Tangling Road, Taoyuan Street, Nanshan District, Shenzhen, P.R. China

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**TEST RESULT CERTIFICATION**

**Applicant's name** ..... : Shenzhen Huafurui Technology Co., Ltd  
**Address**..... : Unit 1401 &1402, 14/F, Jinqi Zhigu Mansion (No. 4 Building of Chongwen Garden), Crossing of the Liuxian Street and Tangling Road, Taoyuan Street, Nanshan District, Shenzhen,P.R. China  
**Manufacturer's Name** ..... : Shenzhen Huafurui Technology Co., Ltd  
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**Product description**

**Product name**..... : Smartphone  
**Trademark** ..... : CUBOT  
**Model and/or type reference** : KINGKONG 9  
**Family Model** ..... : N/A

**Standards** ..... : ETSI EN 300 440 V2.2.1 (2018-07)

This device described above has been tested by NTEK, and the test results show that the equipment under test (EUT) is in compliance with the of article 3.2 of the Directive 2014/53/EU requirements. And it is applicable only to the tested sample identified in the report.

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**Test Sample Number** ..... : S230414032008

**Date of Test** .....

**Date (s) of performance of tests** ..... : Apr 17, 2023 ~ May 09, 2023

**Date of Issue**..... : May 10, 2023

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

**Testing Engineer** :



(Allen Liu)

**Authorized Signatory** :



(Alex Li)

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## 1. SUMMARY OF TEST RESULTS

Test procedures according to the technical standards:

ETSI EN 300 440 V2.2.1 (2018-07)

| Clause                 | Description of Test Item                                 | Remarks   | Results |
|------------------------|--|-----------|---------|
| Transmitter Parameters |  |           |         |
| 4.2.2                  | -6 dB channel bandwidth                                  | Conducted | Pass    |
| 4.2.2                  | Effective isotropic radiated power                       | Conducted | Pass    |
| 4.2.3                  | Permitted range of operation frequencies                 | Conducted | Pass    |
| 4.2.4                  | Unwanted emissions in the spurious domain                | Radiated  | Pass    |
| 4.2.5                  | Duty cycle   | Conducted | Pass    |
| 4.2.6                  | Additional requirements for FHSS equipment               | Conducted | N/A     |
| Receiver Parameters    |  |           |         |
| 4.3.3                  | Adjacent channel selectivity(For Receiver category 1)    | Conducted | N/A     |
| 4.3.4                  | Blocking or desensitization(For Receiver category 1,2,3) | Conducted | Pass    |
| 4.3.5                  | Spurious emissions(For Receiver category 1,2,3)          | Radiated  | Pass    |

Note: The antenna gain provided by customer is used to calculate the EIRP result. NTEK is not responsible for the accuracy of antenna gain parameter

## 1.1 TEST FACILITY

Shenzhen NTEK Testing Technology Co., Ltd.

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FCC Registered No.: 463705 IC Registered No.:9270A-1

CNAS Registration No.:L5516

## 1.2 MEASUREMENT UNCERTAINTY

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

| No. | Item  | Uncertainty             |
|-----|---|-------------------------|
| 1   | Radio frequency   | $\pm 1 \times 10^{-7}$  |
| 2   | RF power (conducted)  | $\pm 2,5$ dB            |
| 3   | Radiated emission of transmitter, valid to 26,5 GHz                 | $\pm 6$ dB              |
| 4   | Radiated emission of transmitter, valid between 26,5 GHz and 66 GHz | $\pm 8$ dB              |
| 5   | Radiated emission of receiver, valid to 26,5 GHz                    | $\pm 6$ dB              |
| 6   | Radiated emission of receiver, valid between 26,5 GHz and 66 GHz    | $\pm 8$ dB              |
| 7   | Temperature   | $\pm 1^{\circ}\text{C}$ |
| 8   | Humidity  | $\pm 5$ %               |
| 9   | Voltage (DC)  | $\pm 1$ %               |
| 10  | Voltage (AC, < 10 kHz)  | $\pm 2$ %               |

NOTE: For radiated emissions above 26,5 GHz it may not be possible to achieve measurement uncertainties complying with the levels specified in this table. In these cases alone it is acceptable to employ the alternative interpretation procedure specified in EN 300440 V2.2.1 clause 5.9.1.



**2. GENERAL INFORMATION****2.1 GENERAL DESCRIPTION OF EUT**

|                     |   |  |
|---------------------|---|--|
| Equipment           | Smartphone  |  |
| Trade Mark          | CUBOT   |  |
| Model Name          | KINGKONG 9  |  |
| Family Model        | N/A   |  |
| Model Difference    | N/A   |  |
| Product Description | Operation Frequency:  | 5745-5825 MHz for 802.11a/n20/ac20;<br>5755-5795 MHz for 802.11n40/ac40;<br>5775MHz for 802.11 ac80;   |
|                     | Data Rate:  | 802.11a: 6,9,12,18,24,36,48,54Mbps;<br>802.11n(HT20/HT40):MCS0-MCS7;<br>802.11ac(VHT20/ VHT40/VHT80): NSS1,<br>MCS0-MCS9, NSS2   |
|                     | Modulation  | OFDM with<br>BPSK/QPSK/16QAM/64QAM/256QAM  |
|                     | Channel No.:  | 5 channels for 802.11a/n20/ac20 in the<br>5745-5825MHz band ;<br>2 channels for 802.11 n40/ac40 in the<br>5755-5795MHz band ;<br>1 channels for 802.11 ac80 in the 5775MHz<br>band ; |
|                     | Antenna Designation:  | PIFA Antenna   |
|                     | Antenna Gain(Peak)  | -0.57 dBi  |
| Receiver category   | <input type="checkbox"/> Category 1: Highly reliable SRD communication media;<br>e.g. serving human life inherent systems (may result in a<br>physical risk to a person).<br><input type="checkbox"/> Category 2: Medium reliable SRD communication media<br>e.g. causing inconvenience to persons, which cannot simply<br>be overcome by other means.<br><input checked="" type="checkbox"/> Category 3: Standard reliable SRD communication media<br>e.g. Inconvenience to persons, which can simply be<br>overcome by other means (e.g. manual). |  |
| Channel List        | Refer to below  |  |
| Adapter             | Model: HJ-PD33W-EU<br>Input: 100-240V~50/60Hz 0.8A<br>Output: 5.0V---3.0A 15.0W OR 9.0V---3.0A 27.0W<br>OR 12.0V---2.75A 33.0W MAX  |  |
| Battery             | DC 3.87V, 10600mAh  |  |
| Rating              | DC 3.87V from battery or DC 5V from adapter   |  |
| Hardware Version    | M129-MUB-V2   |  |
| Software Version    | CUBOT_KINGKONG_9_V06  |  |

**Note:**

1. For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.
2. Channel list:

Frequency and Channel list for 802.11a/n/ac(20 MHz) band IV (5745-5825MHz):

| 802.11a/n/ac( 20 MHz) Carrier Frequency Channel |                        |         |                        |         |                        |         |                        |
|---|------------------------|---------|------------------------|---------|------------------------|---------|------------------------|
| Channel   | Frequen<br>cy<br>(MHz) | Channel | Frequen<br>cy<br>(MHz) | Channel | Frequen<br>cy<br>(MHz) | Channel | Frequen<br>cy<br>(MHz) |
| 149   | 5745                   | 153     | 5765                   | 157     | 5785                   | 161     | 5805                   |
| 165   | 5825                   | -       | -                      | -       | -                      | -       | -                      |

Frequency and Channel list for 802.11n/ac(40MHz) band IV (5755-5795MHz):

| 802.11n/ac 40MHz Carrier Frequency Channel |                    |         |                    |         |                    |
|--|--------------------|---------|--------------------|---------|--------------------|
| Channel                                    | Frequency<br>(MHz) | Channel | Frequency<br>(MHz) | Channel | Frequency<br>(MHz) |
| 151  | 5755               | 159     | 5795               | -       | -                  |

Frequency and Channel list for 802.11ac(80MHz) band IV (5775MHz):

| 802.11ac 80MHz Carrier Frequency Channel |                    |
|--|--------------------|
| Channel                                  | Frequency<br>(MHz) |
| 155                                      | 5775               |

## 2.2 TEST CONDITIONS

|                   | Normal Test Conditions | Extreme Test Conditions              |
|-------------------|------------------------|--------------------------------------|
| Temperature       | 15°C - 35°C            | -10°C ~ 40°C <small>Note1</small>    |
| Relative Humidity | 20% - 75%              | N/A                                  |
| Power Rating      | DC 3.87V               | N/A                                  |
| Test voltage      | DC 3.87V               | DC 4.2V-DC 3.4V <small>Note2</small> |

**Note:**

- (1) The temperature range as declared by the manufacturer; or one of the following specified temperature ranges:
  - Temperature category I (General): -20 °C to +55 °C;
  - Temperature category II (Portable): -10 °C to +55 °C;
  - Temperature category III (Equipment for normal indoor use): 5 °C to +35 °C.
- (2) The High Voltage 4.2V and Low Voltage 3.4V was declared by manufacturer.

### 2.3 DESCRIPTION OF TEST CONDITIONS

| For Conducted Test |  |
|--------------------|--|
| Pretest Mode       | Description                            |
| Mode 1             | 802.11a /n/ ac 20 CH149/ CH157/ CH 165 |
| Mode 2             | 802.11n/ ac40 CH 151 / CH 159          |
| Mode 3             | 802.11 ac80 CH 155                     |

| For Radiated Test |  |
|-------------------|--|
| Final Test Mode   | Description                            |
| Mode 1            | 802.11a /n/ ac 20 CH149/ CH157/ CH 165 |
| Mode 2            | 802.11n/ ac40 CH 151 / CH 159          |
| Mode 3            | 802.11 ac80 CH 155                     |

## 2.4 BLOCK DIGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED

E-1  
EUT

**2.5 DESCRIPTION OF SUPPORT UNITS(CONDUCTED MODE)**

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

| Item | Equipment  | Model/Type No. | Series No. | Note |
|------|------------|----------------|------------|------|
| E-1  | Smartphone | KINGKONG 9     | N/A        | EUT  |
|      |            |                |            |      |
|      |            |                |            |      |
|      |            |                |            |      |
|      |            |                |            |      |

| Item | Shielded Type | Ferrite Core | Length | Note |
|------|---------------|--------------|--------|------|
|      |               |              |        |      |
|      |               |              |        |      |
|      |               |              |        |      |
|      |               |              |        |      |
|      |               |              |        |      |

Note:

- (1) The support equipment was authorized by Declaration of Confirmation.
- (2) For detachable type I/O cable should be specified the length in cm in 『Length』 column.
- (3) “YES” means “shielded” or “with ferrite core”; “NO” means “unshielded” or “without ferrite core”

**2.6 EQUIPMENTS LIST FOR ALL TEST ITEMS**

| EQUIPMENT TYPE   | Manufacturer          | Type No.          | Serial No.        | Last calibration | Calibrated until | Calibration period |
|--|-----------------------|-------------------|-------------------|------------------|------------------|--------------------|
| EMI Test Receiver  | R&S                   | ESPI7             | 101318            | 2023.03.27       | 2024.03.26       | 1 year             |
| Bilog Antenna  | TESEQ                 | CBL6111D          | 31216             | 2023.03.27       | 2024.03.26       | 1 year             |
| Turn Table   | EM                    | SC100_1           | 60531             | N/A              | N/A              | N/A                |
| Antnna Mast  | EM                    | SC100             | N/A               | N/A              | N/A              | N/A                |
| Horn Antenna   | EM                    | EM-AH-10180       | 2011071402        | 2023.03.27       | 2024.03.26       | 1 year             |
| Horn Ant   | Schwarzbeck           | BBHA 9170         | 9170-181          | 2023.03.27       | 2024.03.26       | 1 year             |
| Test Cable<br>(30MHz-1GHz)                               | N/A                   | R-01              | N/A               | 2022.06.17       | 2025.06.16       | 3 year             |
| Test Cable<br>(1-18GHz)                                  | N/A                   | R-02              | N/A               | 2022.06.17       | 2025.06.16       | 3 year             |
| 50Ω Coaxial Switch                                       | Anritsu               | MP59B             | 6200983705        | 2020.05.11       | 2023.05.10       | 3 year             |
| Pre-Amplifier  | EMC                   | EMC051835SE       | 980246            | 2022.06.17       | 2023.06.16       | 1 year             |
| Spectrum Analyzer  | Agilent               | E4407B            | MY45108040        | 2023.03.27       | 2024.03.26       | 1 year             |
| Filter   | TRILTHIC              | 2400MHz           | 29                | 2023.03.27       | 2024.03.26       | 3 year             |
| Attenuator   | Weinschel             | 33-10-33          | AR4010            | 2023.03.27       | 2024.03.26       | 3 year             |
| Attenuator   | Weinschel             | 24-20-34          | BP4485            | 2023.03.27       | 2024.03.26       | 3 year             |
| MXA Signal Analyzer                                      | Agilent               | N9020A            | MY49100060        | 2022.06.17       | 2023.06.16       | 1 year             |
| ESG VETCTOR<br>SIGNAL<br>GENERAROR                       | Agilent               | E4438C            | MY45093347        | 2023.03.27       | 2024.03.26       | 1 year             |
| Power Splitter   | Mini-Circuits/<br>USA | ZN2PD-63-S+       | SF025101428       | 2023.03.27       | 2024.03.26       | 3 year             |
| Coupler  | Mini-Circuits         | ZADC-10-63-S<br>+ | SF794101410       | 2023.03.27       | 2024.03.26       | 3 year             |
| Directional Coupler                                      | MCLI/USA              | CB11-20           | 0D2L51502         | 2020.07.17       | 2023.07.16       | 3 year             |
| Attenuator   | Agilent               | 8495B             | MY42147029        | 2023.03.27       | 2024.03.26       | 3 year             |
| Power Meter  | DARE                  | RPR3006W          | 15I00041SNO<br>84 | 2022.06.17       | 2023.06.16       | 1 year             |
| MXG Vector Signal<br>Generator                           | Agilent               | N5182A            | MY47070317        | 2022.06.16       | 2023.06.15       | 1 year             |
| Wideband Radio<br>Communication<br>Tester Specifications | R&S                   | CMW500            | 148500            | 2022.06.16       | 2023.06.15       | 1 year             |
| temporary antenna<br>connector<br>(Note)                 | NTS                   | R001              | N/A               | N/A              | N/A              | N/A                |



### 3. EQUIVALENT ISOTROPICALLY RADIATED POWER (E.I.R.P.)

#### 3.1 APPLICABILITY

The equivalent isotropically radiated power requirement shall apply to all transmitters.

#### 3.2 LIMITS

Table 2: Maximum radiated peak power (e.i.r.p.)

| Frequency Bands            | Power           | Application  | Notes                        |
|----------------------------|-----------------|--|------------------------------|
| 2 400 MHz to 2 483,5 MHz   | 10 mW e.i.r.p.  | Non-specific short range devices                                 |                              |
| 2 400 MHz to 2 483,5 MHz   | 25 mW e.i.r.p.  | Radio determination devices                                      |                              |
| (a) 2 446 MHz to 2 454 MHz | 500 mW e.i.r.p. | Radio Frequency Identification (RFID) devices                    | See also table 4 and annex D |
| (b) 2 446 MHz to 2 454 MHz | 4 W e.i.r.p.    | Radio Frequency Identification (RFID) devices                    | See also table 4 and annex D |
| 5 725 MHz to 5 875 MHz     | 25 mW e.i.r.p.  | Non-specific short range devices                                 |                              |
| 9 200 MHz to 9 500 MHz     | 25 mW e.i.r.p.  | Radio determination devices                                      |                              |
| 9 500 MHz to 9 975 MHz     | 25 mW e.i.r.p.  | Radio determination devices                                      |                              |
| 10,5 GHz to 10,6 GHz       | 500 mW e.i.r.p. | Radio determination devices                                      |                              |
| 13,4 GHz to 14,0 GHz       | 25 mW e.i.r.p.  | Radio determination devices                                      |                              |
| 17,1 GHz to 17,3 GHz       | 400 mW e.i.r.p. | Radio determination devices                                      | See annex F                  |
| 24,00 GHz to 24,25 GHz     | 100 mW e.i.r.p. | Non-specific short range devices and Radio determination devices |                              |

#### 3.3 GENERAL REQUIREMENTS

- To measure e.i.r.p. it is first necessary to determine the appropriate method of measurement: see EN 300440 V2.2.1 clauses 4.2.2.3.1 and 4.2.2.3.2. The -6 dB transmitter bandwidth shall be determined using a 100 kHz measuring bandwidth in order to establish which measurement method is applicable:

| Condition  |   | Method of measurement  |
|--|---|------------------------|
| <input type="checkbox"/> Non spread spectrum transmitters with a -6 dB bandwidth of up to 20 MHz and spread spectrum transmitters with channel bandwidth of up to 1 MHz; | <input type="checkbox"/> Non spread spectrum equipment with a -6 dB bandwidth of 20 MHz or less and a duty cycle above 50 %;<br><input type="checkbox"/> Spread spectrum equipment with a -6 dB channel bandwidth of 1 MHz or less. | Refer to section 3.4.1 |
| <input checked="" type="checkbox"/> for all other transmitter bandwidths.  | <input type="checkbox"/> equipment with a -6 dB bandwidth greater than 20 MHz, and equipment with a duty cycle below 50 %;;<br><input checked="" type="checkbox"/> spread spectrum equipment with a channel bandwidth above 1 MHz.. | Refer to section 3.4.2 |

- Measurements shall be performed at normal test conditions.

#### 3.4 TEST PROCEDURES

##### 3.4.1 FOR NON SPREAD SPECTRUM TRANSMITTERS

The measurement shall be repeated at the lowest, the middle, and the highest frequency of the stated frequency range. These frequencies shall be recorded.

**Equipment measured as constant envelope modulation equipment**

For practical reasons, measurements shall be performed only at the highest power level at which the transmitter is intended to operate. The measurement arrangement in figure 2 shall be used. The measurement shall be performed preferably in the absence of modulation. When it is not possible to measure it in the absence of modulation, this fact shall be stated in test reports.

The transmitter shall be set in continuous transmission mode. If this is not possible, the measurements shall be carried out in a period shorter than the duration of the transmitted burst. It may be necessary to extend the duration of the burst.

The transmitter shall be connected to an artificial antenna (see clause 5.8.2) and the power delivered to this artificial antenna shall be measured.

The equivalent isotropically radiated power is then calculated from the measured value, the known antenna gain, relative to an isotropic antenna, and if applicable, any losses due to cables and connectors in the measurement system.

#### **Equipment measured as non-constant envelope modulation equipment**

The measurement shall be performed with test signals D-M2 or D-M3 as appropriate.

The transmitter shall be preferably set in continuous transmission mode. If this is not possible, the measurement can be performed in discontinuous mode.

The transmitter shall be connected to an artificial antenna (see clause 5.8.2) and the power delivered to this artificial antenna shall be measured. The measuring instrument shall have a measurement bandwidth not less than sixteen times the channel bandwidth.

The equivalent isotropically radiated power is then calculated from the measured value, the known antenna gain, relative to an isotropic antenna, and if applicable, any losses due to cables and connectors in the measurement system.

### **3.4.2 FOR ALL OTHER TRANSMITTER BANDWIDTHS**

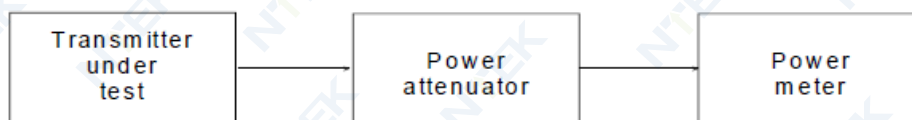
#### **Step 1:**

- using a suitable means, the output of the transmitter shall be coupled to a matched diode detector;
- the output of the diode detector shall be connected to the vertical channel of an oscilloscope;
- the combination of the diode detector and the oscilloscope shall be capable of faithfully reproducing the envelope peaks and the duty cycle of the transmitter output signal;
- the observed duty cycle of the transmitter (Tx on/(Tx on + Tx off)) shall be noted as x, ( $0 < x < 1$ ) And recorded.

#### **Step 2:**

- the average output power of the transmitter shall be determined using a wideband, calibrated RF power meter with a matched thermocouple detector or an equivalent thereof and, where applicable, with an integration period that exceeds the repetition period of the transmitter by a factor 5 or more. The observed value shall be recorded as "A" (in dBm);
- the e.i.r.p. shall be calculated from the above measured power output A, the observed duty cycle x, and the applicable antenna assembly gain "G" in dBi, according to the formula:
  - $P = A + G + 10 \log (1/x)$ ;
  - P should be EIRP POWER.

### **3.5 TEST SETUP LAYOUT**



### **3.6 EUT OPERATION DURING TEST**

Where possible, the equipment shall be able to operate in a continuous transmit mode for testing purposes.



**3.7 TEST RESULT FOR -6 DB BANDWIDTH**

|               |            |                     |                   |
|---------------|------------|---------------------|-------------------|
| EUT :         | Smartphone | Model Name :        | KINGKONG 9        |
| Temperature : | 26°C       | Relative Humidity : | 60 %              |
| Pressure :    | 1012 hPa   | Test Voltage :      | DC 3.87V (NORMAL) |
| Test Mode :   | Mode 1/2/3 |                     |                   |

Test data reference attachment

**3.8 TEST RESULT FOR E.I.R.P**

|               |            |                     |                   |
|---------------|------------|---------------------|-------------------|
| EUT :         | Smartphone | Model Name :        | KINGKONG 9        |
| Temperature : | 26°C       | Relative Humidity : | 60 %              |
| Pressure :    | 1012 hPa   | Test Voltage :      | DC 3.87V (NORMAL) |
| Test Mode :   | Mode 1/2/3 |                     |                   |

Test data reference attachment

## 4. PERMITTED RANGE OF OPERATING FREQUENCIES

### 4.1 APPLIED PROCEDURES / LIMIT

The Permitted range of operating frequencies shall apply to all transmitters.

Limits: The width of the power spectrum envelope is  $f_H - f_L$  for a given operating frequency. In equipment that allows adjustment or selection of different operating frequencies, the power envelope takes up different positions in the allowed band. The frequency range is determined by the lowest value of  $f_L$  and the highest value of  $f_H$  resulting from the adjustment of the equipment to the lowest and highest operating frequencies.

The occupied bandwidth (i.e. the bandwidth in which 99 % of the wanted emission is contained) of the transmitter shall fall within the assigned frequency band.

For all equipment the frequency range shall lie within the frequency band given by section 3.2, table 2. For non-harmonized frequency bands the available frequency range may differ between national administrations.

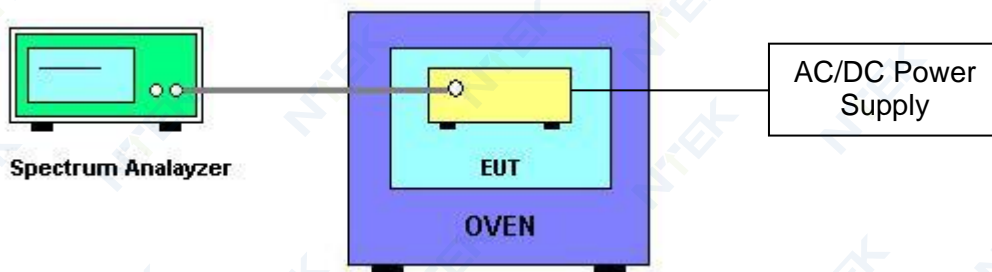
### 4.2 TEST PROCEDURES

These measurements shall be performed under both normal and extreme operating conditions except for the occupied bandwidth assessment for which measurement at normal operating conditions is sufficient.

The measurement procedure shall be as follows:

- put the spectrum analyser in video averaging mode with a minimum of 50 sweeps selected;
- select the lowest operating frequency of the equipment under test and activate the transmitter with modulation applied. The RF emission of the equipment shall be displayed on the spectrum analyser;
- using the marker of the spectrum analyser, find the lowest frequency below the operating frequency at which the spectral power density drops below the level given in clause 4.2.3. This frequency shall be recorded in the test report;
- select the highest operating frequency of the equipment under test and find the highest frequency at which the spectral power density drops below the value given in clause 4.2.3. This frequency shall be recorded in the test report;
- the difference between the frequencies measured in steps c) and d) is the operating frequency range. It shall be recorded in the test report.

### 4.3 TEST SETUP LAYOUT



### 4.4 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

#### 4.5 TEST RESULTS

|               |            |                     |                   |
|---------------|------------|---------------------|-------------------|
| EUT :         | Smartphone | Model Name :        | KINGKONG 9        |
| Temperature : | 26°C       | Relative Humidity : | 60 %              |
| Pressure :    | 1012 hPa   | Test Voltage :      | DC 3.87V (NORMAL) |
| Test Mode :   | TX         |                     |                   |

##### 802.11a

| Extreme condition                                    |     |           |      | Frequency range ( MHz )        |                                |
|--|-----|-----------|------|--------------------------------|--------------------------------|
|  |     |           |      | F <sub>L</sub> CH149           | F <sub>H</sub> CH165           |
| T nom (°C)   | 20  | V nom (V) | 3.87 | 5736.639                       | 5833.088                       |
| T min (°C)   | -10 | V max (V) | 4.2  | 5736.65                        | 5833.096                       |
|  |     | V nom (V) | 3.87 | 5736.661                       | 5833.104                       |
|  |     | V min (V) | 3.4  | 5736.672                       | 5833.112                       |
| T max (°C)   | 40  | V max (V) | 4.2  | 5736.683                       | 5833.12                        |
|  |     | V nom (V) | 3.87 | 5736.694                       | 5833.128                       |
|  |     | V min (V) | 3.4  | 5736.705                       | 5833.136                       |
| Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges |     |           |      | 5736.639                       | 5833.136                       |
| Indoor Use Limits                                    |     |           |      | F <sub>L</sub> > 5725.0<br>MHz | F <sub>L</sub> < 5875.0<br>MHz |
| Result   |     |           |      | Complies                       |                                |

##### 802.11n20

| Extreme condition                                    |     |           |      | Frequency range ( MHz )        |                                |
|--|-----|-----------|------|--------------------------------|--------------------------------|
|  |     |           |      | F <sub>L</sub> CH149           | F <sub>H</sub> CH165           |
| T nom (°C)   | 20  | V nom (V) | 3.87 | 5736.319                       | 5833.939                       |
| T min (°C)   | -10 | V max (V) | 4.2  | 5736.33                        | 5833.947                       |
|  |     | V nom (V) | 3.87 | 5736.341                       | 5833.955                       |
|  |     | V min (V) | 3.4  | 5736.352                       | 5833.963                       |
| T max (°C)   | 40  | V max (V) | 4.2  | 5736.363                       | 5833.971                       |
|  |     | V nom (V) | 3.87 | 5736.374                       | 5833.979                       |
|  |     | V min (V) | 3.4  | 5736.385                       | 5833.987                       |
| Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges |     |           |      | 5736.319                       | 5833.987                       |
| Indoor Use Limits                                    |     |           |      | F <sub>L</sub> > 5725.0<br>MHz | F <sub>L</sub> < 5875.0<br>MHz |
| Result   |     |           |      | Complies                       |                                |

## 802.11n40

| Extreme condition                                    |     |           |      | Frequency range ( MHz )     |                             |
|--|-----|-----------|------|-----------------------------|-----------------------------|
|  |     |           |      | F <sub>L</sub> CH151        | F <sub>H</sub> CH159        |
| T nom (°C)   | 20  | V nom (V) | 3.87 | 5737.046                    | 5813.18                     |
| T min (°C)   | -10 | V max (V) | 4.2  | 5737.057                    | 5813.188                    |
|  |     | V nom (V) | 3.87 | 5737.068                    | 5813.196                    |
|  |     | V min (V) | 3.4  | 5737.079                    | 5813.204                    |
| T max (°C)   | 40  | V max (V) | 4.2  | 5737.09                     | 5813.212                    |
|  |     | V nom (V) | 3.87 | 5737.101                    | 5813.22                     |
|  |     | V min (V) | 3.4  | 5737.112                    | 5813.228                    |
| Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges |     |           |      | 5737.046                    | 5813.228                    |
| Indoor Use Limits                                    |     |           |      | F <sub>L</sub> > 5725.0 MHz | F <sub>L</sub> < 5875.0 MHz |
| Result   |     |           |      | Complies                    |                             |

## 802.11ac20

| Extreme condition                                    |     |           |      | Frequency range ( MHz )     |                             |
|--|-----|-----------|------|-----------------------------|-----------------------------|
|  |     |           |      | F <sub>L</sub> CH149        | F <sub>H</sub> CH165        |
| T nom (°C)   | 20  | V nom (V) | 3.87 | 5736.052                    | 5833.678                    |
| T min (°C)   | -10 | V max (V) | 4.2  | 5736.063                    | 5833.686                    |
|  |     | V nom (V) | 3.87 | 5736.074                    | 5833.694                    |
|  |     | V min (V) | 3.4  | 5736.085                    | 5833.702                    |
| T max (°C)   | 40  | V max (V) | 4.2  | 5736.096                    | 5833.71                     |
|  |     | V nom (V) | 3.87 | 5736.107                    | 5833.718                    |
|  |     | V min (V) | 3.4  | 5736.118                    | 5833.726                    |
| Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges |     |           |      | 5736.052                    | 5833.726                    |
| Indoor Use Limits                                    |     |           |      | F <sub>L</sub> > 5725.0 MHz | F <sub>L</sub> < 5875.0 MHz |
| Result   |     |           |      | Complies                    |                             |

## 802.11ac40

| Extreme condition                                    |     |           |      | Frequency range ( MHz )        |                                |
|--|-----|-----------|------|--------------------------------|--------------------------------|
|  |     |           |      | F <sub>L</sub> CH151           | F <sub>H</sub> CH159           |
| T nom (°C)   | 20  | V nom (V) | 3.87 | 5737.764                       | 5813.945                       |
| T min (°C)   | -10 | V max (V) | 4.2  | 5737.775                       | 5813.953                       |
|  |     | V nom (V) | 3.87 | 5737.786                       | 5813.961                       |
|  |     | V min (V) | 3.4  | 5737.797                       | 5813.969                       |
| T max (°C)   | 40  | V max (V) | 4.2  | 5737.808                       | 5813.977                       |
|  |     | V nom (V) | 3.87 | 5737.819                       | 5813.985                       |
|  |     | V min (V) | 3.4  | 5737.83                        | 5813.993                       |
| Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges |     |           |      | 5737.764                       | 5813.993                       |
| Indoor Use Limits                                    |     |           |      | F <sub>L</sub> > 5725.0<br>MHz | F <sub>L</sub> < 5875.0<br>MHz |
| Result   |     |           |      | Complies                       |                                |

## 802.11ac80

| Extreme condition                                    |     |           |      | Frequency range ( MHz )        |                                |
|--|-----|-----------|------|--------------------------------|--------------------------------|
|  |     |           |      | F <sub>L</sub> CH155           | F <sub>H</sub> CH155           |
| T nom (°C)   | 20  | V nom (V) | 3.87 | 5737.483                       | 5812.728                       |
| T min (°C)   | -10 | V max (V) | 4.2  | 5737.494                       | 5812.736                       |
|  |     | V nom (V) | 3.87 | 5737.505                       | 5812.744                       |
|  |     | V min (V) | 3.4  | 5737.516                       | 5812.752                       |
| T max (°C)   | 40  | V max (V) | 4.2  | 5737.527                       | 5812.76                        |
|  |     | V nom (V) | 3.87 | 5737.538                       | 5812.768                       |
|  |     | V min (V) | 3.4  | 5737.549                       | 5812.776                       |
| Min. f <sub>L</sub> / Max. f <sub>H</sub> Band Edges |     |           |      | 5737.483                       | 5812.776                       |
| Indoor Use Limits                                    |     |           |      | F <sub>L</sub> > 5725.0<br>MHz | F <sub>L</sub> < 5875.0<br>MHz |
| Result   |     |           |      | Complies                       |                                |



## 5. UNWANTED EMISSIONS IN THE SPURIOUS DOMAIN

### 5.1 APPLIED PROCEDURES / LIMIT

The unwanted emissions in the spurious domain requirement shall apply to all transmitters.

| State     | 47 MHz to 74 MHz<br>87.5 MHz to 118 MHz<br>174 MHz to 230 MHz<br>470 MHz to 862 MHz | Other frequencies<br>≤ 1 000 MHz | Frequencies<br>> 1 000 MHz |
|-----------|---|----------------------------------|----------------------------|
| Operating | 4 nW /-54dBm  | 250 nW/-36dBm                    | 1 μW /-30dBm               |
| Standby   | 2 nW /-57dBm  | 2 nW /-57dBm                     | 20 nW /-47dBm              |

### 5.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of the Spectrum Analyzer.

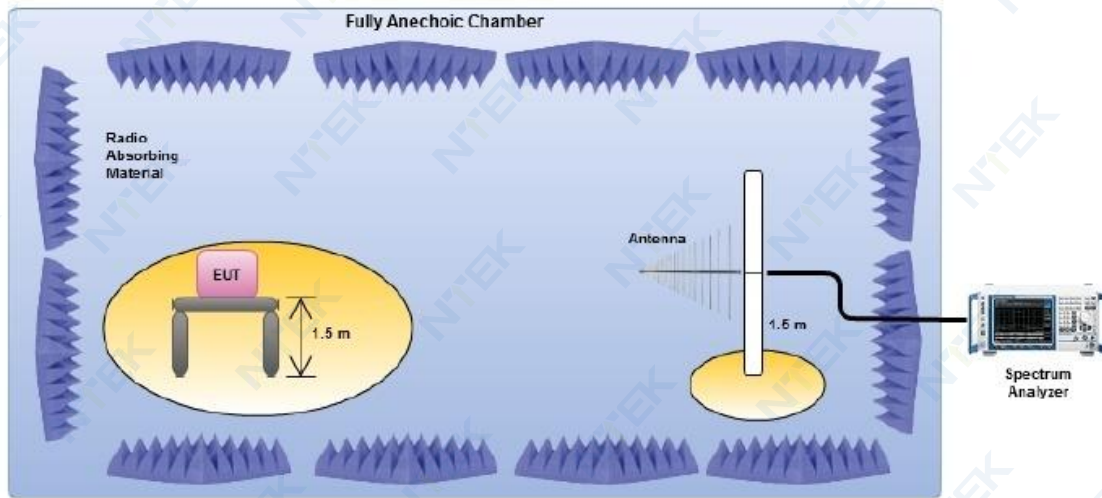
| Spectrum Analyzer | Setting   |
|-------------------|---|
| Attenuation       | Auto  |
| Start Frequency   | 30 MHz  |
| Stop Frequency    | 40GHz   |
| Detector          | Positive Peak   |
| Sweep Time        | Auto  |
| RB                | For frequency 30MHz~1G:100 kHz~120 kHz<br>For frequency above 1G:1MHz |

### 5.3 TEST PROCEDURES

- The EUT was placed on the top of the turntable in open test site area.
- The test shall be made in the transmitting mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- This measurement shall be repeated with the transmitter in standby mode where applicable.
- For 30~1000MHz spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable. For above 1G, using Horn antenna .
- The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level (Raw).
- Replace the EUT by standard antenna and feed the RF port by signal generator.
- Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.
- Adjust the power level of the signal generator to reach the same reading with Read Level (Raw).
- The level of the spurious emission is the power level of (8) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.
- If the level calculated in (9) is higher than limit by more than 6dB, then lower the RBW of the spectrum analyzer to 30KHz. If the level of this emission does not change by more than 2dB, then it is taken as narrowband emission, otherwise, wideband emission.
- The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.

## 5.4 TEST SETUP LAYOUT

### Radiated Emission Test Set-Up



## 5.5 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously transmitting mode.

## 5.6 RESULTS OF STANDBY MODE SPURIOUS EMISSIONS

For the initial investigation on standby mode and receiving mode, no significant differences in spurious emissions were observed between these 2 modes. So test data for standby mode was omitted in this section.



## 5.7 TEST RESULTS

|               |                 |                     |                   |
|---------------|-----------------|---------------------|-------------------|
| EUT :         | Smartphone      | Model Name :        | KINGKONG 9        |
| Temperature : | 24 °C           | Relative Humidity : | 54%               |
| Pressure :    | 1010 hPa        | Test Power :        | DC 3.87V (NORMAL) |
| Test Mode :   | TX-802.11a mode |                     |                   |

Below 1G :

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits | Margin | Detector<br>Type |
|----------------|-----------|------------------|--------|-------------------|--------|--------|------------------|
|                | (MHz)     | (dBm)            | (dB)   | (dBm)             | (dBm)  | (dB)   |                  |
| V              | 47.034    | -74.91           | 14.47  | -60.44            | -36    | -24.44 | peak             |
| V              | 94.898    | -80.23           | 7.22   | -73.01            | -54    | -19.01 | peak             |
| V              | 164.809   | -71.63           | 12.25  | -59.38            | -36    | -23.38 | peak             |
| V              | 176.772   | -84.19           | 13.31  | -70.88            | -54    | -16.88 | peak             |
| V              | 247.622   | -75.96           | 15.91  | -60.05            | -36    | -24.05 | peak             |
| V              | 646.165   | -82.69           | 21.65  | -61.04            | -54    | -7.04  | peak             |
| H              | 39.695    | -77.66           | 18.31  | -59.35            | -36    | -23.35 | peak             |
| H              | 114.053   | -82.84           | 6.20   | -76.64            | -54    | -22.64 | peak             |
| H              | 155.187   | -68.3            | 10.27  | -58.03            | -36    | -22.03 | peak             |
| H              | 175.074   | -82.99           | 12.05  | -70.94            | -54    | -16.94 | peak             |
| H              | 444.169   | -71.78           | 12.93  | -58.85            | -36    | -22.85 | peak             |
| H              | 497.036   | -87.49           | 17.58  | -69.91            | -54    | -15.91 | peak             |

**Remark:**

Emission Level= Meter Reading+ Factor, Margin= Emission Level- Limit

Above 1G :

| Polar  | Frequency | Meter Reading | Factor | Emission Level | Limits | Margin | Detector Type |
|--|-----------|---------------|--------|----------------|--------|--------|---------------|
| (H/V)  | (MHz)     | (dBm)         | (dB)   | (dBm)          | (dBm)  | (dB)   |               |
| operation frequency:5745 MHz   |           |               |        |                |        |        |               |
| V  | 2239.321  | -76.14        | 2.61   | -73.53         | -30    | -43.53 | peak          |
| V  | 3113.156  | -70           | 3.32   | -66.68         | -30    | -36.68 | peak          |
| V  | 2844.686  | -70.87        | 8.34   | -62.53         | -30    | -32.53 | peak          |
| V  | 3503.853  | -73.05        | 8.72   | -64.33         | -30    | -34.33 | peak          |
| H  | 2448.974  | -73.57        | 3.12   | -70.45         | -30    | -40.45 | peak          |
| H  | 3229.978  | -71.87        | 8.53   | -63.34         | -30    | -33.34 | peak          |
| H  | 2604.778  | -72.04        | 9.58   | -62.46         | -30    | -32.46 | peak          |
| H  | 3328.16   | -73.45        | 14.73  | -58.72         | -30    | -28.72 | peak          |
| operation frequency:5785 MHz   |           |               |        |                |        |        |               |
| V  | 2624.688  | -76.04        | 2.61   | -73.43         | -30    | -43.43 | peak          |
| V  | 3339.952  | -68.27        | 3.32   | -64.95         | -30    | -34.95 | peak          |
| V  | 2555.782  | -70.88        | 8.34   | -62.54         | -30    | -32.54 | peak          |
| V  | 4051.01   | -75.96        | 8.72   | -67.24         | -30    | -37.24 | peak          |
| V  | 2033.21   | -77.27        | 3.12   | -74.15         | -30    | -44.15 | peak          |
| H  | 5936.051  | -73.07        | 8.53   | -64.54         | -30    | -34.54 | peak          |
| H  | 2821.261  | -69.07        | 9.58   | -59.49         | -30    | -29.49 | peak          |
| H  | 3834.216  | -68.21        | 14.73  | -53.48         | -30    | -23.48 | peak          |
| H  | 3914.483  | -73.47        | 14.73  | -58.74         | -30    | -28.74 | peak          |
| operation frequency:5825 MHz   |           |               |        |                |        |        |               |
| V  | 2768.935  | -77.6         | 2.61   | -74.99         | -30    | -44.99 | peak          |
| V  | 5564.462  | -72.08        | 3.32   | -68.76         | -30    | -38.76 | peak          |
| V  | 2230.938  | -70.6         | 8.34   | -62.26         | -30    | -32.26 | peak          |
| V  | 3726.13   | -74.17        | 8.72   | -65.45         | -30    | -35.45 | peak          |
| V  | 2848.354  | -77.7         | 3.12   | -74.58         | -30    | -44.58 | peak          |
| H  | 4230.556  | -69.88        | 8.53   | -61.35         | -30    | -31.35 | peak          |
| H  | 2749.328  | -70.26        | 9.58   | -60.68         | -30    | -30.68 | peak          |
| H  | 5820.983  | -77.9         | 14.73  | -63.17         | -30    | -33.17 | peak          |
| H  | 4644.454  | -68.51        | 14.73  | -53.78         | -30    | -23.78 | peak          |
| Remark:  |           |               |        |                |        |        |               |
| Emission Level= Meter Reading+ Factor, Margin= Emission Level- Limit |           |               |        |                |        |        |               |

Note: Only the worst case 802.11a mode recorded in the report.

## 6. DUTY CYCLE

### 6.1 APPLICABILITY AND DESCRIPTION

Duty Cycle (DC) shall apply to all transmitting equipment except those which utilize Listen Before Talk (LBT) clause 4.4.2, or Detect And Avoid (DAA), clause 4.4.3. RFID transmitters operating in the 2 446 MHz to 2 454 MHz frequency band that transmit at a maximum radiated peak power level of less than 500 mW e.i.r.p. are also excluded.

Duty cycle is the ratio expressed as a percentage, of the cumulative duration of transmissions  $T_{on\_curr}$  within an observation interval  $T_{obs}$ .

$$DC = \left( \frac{T_{on\_cum}}{T_{obs}} \right) F_{obs} \text{ on an observation bandwidth } F_{obs}.$$

Unless otherwise specified,  $T_{obs}$  is 1 hour and the observation bandwidth  $F_{obs}$  is the operational frequency band

Each transmission consists of an RF emission, or sequence of RF emissions separated by intervals  $< T_{Dis}$ .

### 6.2 LIMITS

Table 4 defines the maximum duty cycle within a 1 hour period.

**Table 4: Duty cycle limits**

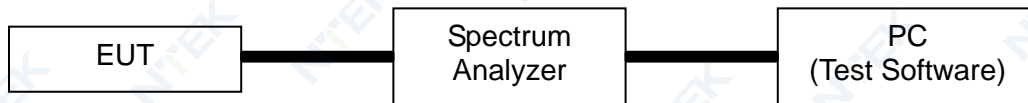
| Frequency Band             | Duty cycle                   | Application   | Notes                               |
|----------------------------|------------------------------|---|-------------------------------------|
| 2 400 MHz to 2 483,5 MHz   | No Restriction               | Generic use   |                                     |
| 2 400 MHz to 2 483,5 MHz   | No Restriction               | Detection, movement and alert applications  |                                     |
| (a) 2 446 MHz to 2 454 MHz | No Restriction               | RFID  | Limits shown in annex D shall apply |
| (b) 2 446 MHz to 2 454 MHz | $\leq 15 \%$                 | RFID  | Limits shown in annex D shall apply |
| 5 725 MHz to 5 875 MHz     | No Restriction               | Generic use   |                                     |
| 9 200 MHz to 9 500 MHz     | No Restriction               | Radiodetermination: radar, detection, movement and alert applications                     |                                     |
| 9 500 MHz to 9 975 MHz     | No Restriction               | Radiodetermination: radar, detection, movement and alert applications                     |                                     |
| 10,5 GHz to 10,6 GHz       | No Restriction               | Radiodetermination: radar, detection, movement and alert applications                     |                                     |
| 13,4 GHz to 14,0 GHz       | No Restriction               | Radiodetermination: radar, detection, movement and alert applications                     |                                     |
| 17,1 GHz to 17,3 GHz       | DAA or equivalent techniques | Radiodetermination: GBSAR detecting and movement and alert applications                   | Limits shown in annex F shall apply |
| 24,00 GHz to 24,25 GHz     | No Restriction               | Generic use and for Radiodetermination: radar, detection, movement and alert applications |                                     |

For devices with a 100 % duty cycle transmitting an unmodulated carrier most of the time, a time-out shut-off facility shall be implemented in order to improve the efficient use of spectrum. The method of implementation shall be declared by the manufacturer.

### 6.4 METHOD OF MEASUREMENT

Please refer to EN 300440 V2.2.1 Clause 4.2.5.3.

## 6.5 TEST SETUP



## 6.6 TEST RESULTS

|              |            |                    |                   |
|--------------|------------|--------------------|-------------------|
| EUT:         | Smartphone | Model Name:        | KINGKONG 9        |
| Temperature: | 26°C       | Relative Humidity: | 53 %              |
| Pressure:    | 1012 hPa   | Test Voltage:      | DC 3.87V (NORMAL) |
| Test Mode:   | Mode 1/2/3 |                    |                   |

Test data reference attachment

## 7. SPURIOUS EMISSIONS – RX

### 7.1 APPLIED PROCEDURES / LIMIT

| Clause  | Test Item          | Frequency(MHz) | Limit  |
|---------|--------------------|----------------|--------|
| 4.3.5.4 | Spurious emissions | 30-1000        | -57dBm |
|         | (radiated)         | Above 1000     | -47dBm |

### 7.2 MEASURING INSTRUMENTS AND SETTING

The following table is the setting of the Spectrum Analyzer.

| Spectrum Analyzer | Setting   |
|-------------------|---|
| Attenuation       | Auto  |
| Start Frequency   | 30 MHz  |
| Stop Frequency    | 40GHz   |
| Detector          | Positive Peak   |
| Sweep Time        | Auto  |
| RB                | For frequency 30MHz~1G:100 kHz~120 kHz<br>For frequency above 1G:1MHz |

### 7.3 TEST PROCEDURES

- The EUT was placed on the top of the turntable in open test site area.
- The test shall be made in the receiving mode. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
- For 30~1000MHz spurious emissions measurement, the broad band bi-log receiving antenna was placed 3 meters far away from the turntable. For above 1G, using Horn antenna .
- The broadband receiving antenna was fixed on the same height with the EUT to find each suspected emissions of both horizontal and vertical polarization. Each recorded suspected value is indicated as Read Level (Raw).
- Replace the EUT by standard antenna and feed the RF port by signal generator.
- Adjust the frequency of the signal generator to the suspected emission and slightly rotate the turntable to locate the position with maximum reading.
- Adjust the power level of the signal generator to reach the same reading with Read Level (Raw).
- The level of the spurious emission is the power level of (7) plus the gain of the standard antenna in dBi and minus the loss of the cable used between the signal generator and the standard antenna.
- The measurement shall be repeated at the lowest and the highest channel of the stated frequency range.

### 7.5 TEST SETUP LAYOUT

This test setup layout is the same as that shown in section 5.4.

### 7.6 EUT OPERATION DURING TEST

The EUT was programmed to be in continuously receiving mode.



## 7.7 TEST RESULTS

|               |                 |                     |                   |
|---------------|-----------------|---------------------|-------------------|
| EUT :         | Smartphone      | Model Name :        | KINGKONG 9        |
| Temperature : | 26°C            | Relative Humidity : | 53 %              |
| Pressure :    | 1012 hPa        | Test Power :        | DC 3.87V (NORMAL) |
| Test Mode :   | RX-802.11a mode |                     |                   |

Below 1G :

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits | Margin | Detector<br>Type |
|----------------|-----------|------------------|--------|-------------------|--------|--------|------------------|
|                | (MHz)     | (dBm)            | (dB)   | (dBm)             | (dBm)  | (dB)   |                  |
| V              | 35.122    | -81.89           | 18.82  | -63.07            | -57    | -6.07  | peak             |
| V              | 98.513    | -81.76           | 11.11  | -70.65            | -57    | -13.65 | peak             |
| V              | 207.741   | -79.49           | 11.41  | -68.08            | -57    | -11.08 | peak             |
| V              | 419.318   | -78.33           | 12.72  | -65.61            | -57    | -8.61  | peak             |
| V              | 653.288   | -78.29           | 12.66  | -65.63            | -57    | -8.63  | peak             |
| V              | 549.59    | -80.67           | 12.62  | -68.05            | -57    | -11.05 | peak             |
| H              | 39.277    | -83.61           | 19.94  | -63.67            | -57    | -6.67  | peak             |
| H              | 102.972   | -83.61           | 10.96  | -72.65            | -57    | -15.65 | peak             |
| H              | 184.468   | -80.43           | 9.42   | -71.01            | -57    | -14.01 | peak             |
| H              | 453.518   | -81.35           | 12.65  | -68.70            | -57    | -11.70 | peak             |
| H              | 558.715   | -77.74           | 11.78  | -65.96            | -57    | -8.96  | peak             |
| H              | 684.83    | -84.91           | 15.38  | -69.53            | -57    | -12.53 | peak             |

**Remark:**

Emission Level= Meter Reading+ Factor, Margin= Emission Level- Limit

Above 1G :

| Polar<br>(H/V) | Frequency | Meter<br>Reading | Factor | Emission<br>Level | Limits | Margin | Detector<br>Type |
|----------------|-----------|------------------|--------|-------------------|--------|--------|------------------|
|                | (MHz)     | (dBm)            | (dB)   | (dBm)             | (dBm)  | (dB)   |                  |
| V              | 2709.235  | -79.29           | 11.33  | -67.96            | -47    | -20.96 | peak             |
| V              | 4314.884  | -82.74           | 10.97  | -71.77            | -47    | -24.77 | peak             |
| V              | 2109.575  | -81.09           | 10.14  | -70.95            | -47    | -23.95 | peak             |
| V              | 4215.326  | -78.72           | 16.83  | -61.89            | -47    | -14.89 | peak             |
| V              | 2188.53   | -77.42           | 10.52  | -66.90            | -47    | -19.90 | peak             |
| H              | 4339.922  | -84.16           | 11.70  | -72.46            | -47    | -25.46 | peak             |
| H              | 2697.148  | -81.28           | 6.62   | -74.66            | -47    | -27.66 | peak             |
| H              | 5130.501  | -78.97           | 14.99  | -63.98            | -47    | -16.98 | peak             |
| H              | 3977.254  | -69.67           | 8.25   | -61.42            | -47    | -14.42 | peak             |
| H              | 4952.814  | -83.57           | 14.99  | -68.58            | -47    | -21.58 | peak             |

**Remark:**

Emission Level= Meter Reading+ Factor, Margin= Emission Level- Limit

## **8. ADJACENT CHANNEL SELECTIVITY**

### **8.1 APPLICABILITY**

This requirement applies to channelized Category 1 receivers..

### **8.2 LIMITS**

The adjacent channel selectivity of the equipment under specified conditions shall not be less than  $-30 \text{ dBm} + k$ .

The correction factor,  $k$ , is as follows:

$$k = -20\log f - 10\log BW$$

Where:

- $f$  is the frequency in GHz;
- $BW$  is the channel bandwidth in MHz.

The factor  $k$  is limited within the following:

- $-40 \text{ dB} < k < 0 \text{ dB}$ .

### **8.3 METHODS OF MEASUREMENT**

This measurement shall be conducted under normal conditions.

Two signal generators A and B shall be connected to the receiver via a combining network to the receiver, either:

- a) via a test fixture or a test antenna to the receiver integrated, dedicated or test antenna; or
- b) directly to the receiver permanent or temporary antenna connector.

The method of coupling to the receiver shall be stated in the test report.

Signal generator A shall be at the nominal frequency of the receiver, with normal modulation of the wanted signal.

Signal generator B shall be unmodulated and shall be adjusted to the adjacent channel centre frequency immediately above that of the wanted signal.

Initially signal generator B shall be switched off and using signal generator A the level that still gives sufficient

response shall be established. The output level of generator A shall then be increased by 3 dB.

Signal generator B is then switched on and adjusted until the wanted criteria are met. This level shall be recorded.

The measurements shall be repeated with signal generator B unmodulated and adjusted to the adjacent channel centre immediately below the wanted signal.

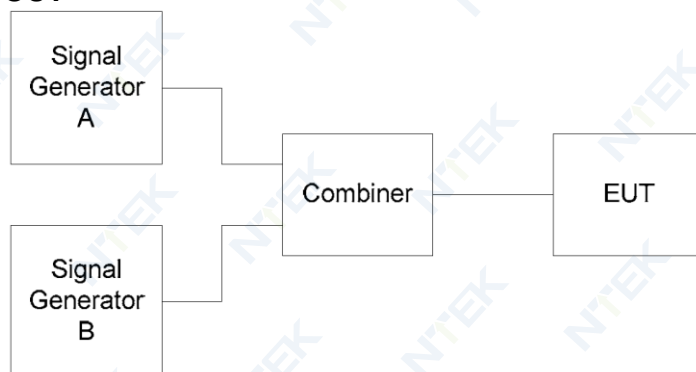
The adjacent channel selectivity shall be recorded for the upper and lower adjacent channels as the level in dBm of the unwanted signal.

For tagging systems (e.g. RF identification, anti-theft, access control, location and similar systems) signal generator A may be replaced by a physical tag positioned at 70 % of the measured system range in metres.

In this case, the adjacent selectivity shall be recorded as the level in dBm of lowest level of the unwanted signal

(generator B) resulting in a non-read of the tag.

#### 8.4 TEST SETUP LAYOUT



#### 8.5 TEST RESULTS

|               |            |                     |            |
|---------------|------------|---------------------|------------|
| EUT :         | Smartphone | Model Name :        | KINGKONG 9 |
| Temperature : | 24 °C      | Relative Humidity : | 54%        |
| Pressure :    | 1010 hPa   | Test Voltage :      | N/A        |
| Test Mode :   | N/A        |                     |            |

Not applicable.



## 9. BLOCKING OR DESENSITIZATION

### 9.1 APPLICABILITY

This requirement applies to all Category 1, 2, and 3 SRD communication media receivers.

### 9.2 LIMITS

The blocking level, for any frequency within the specified ranges, shall not be less than the values given in table 6, except at frequencies on which spurious responses are found.

Table 6: Limits for blocking or desensitization

| Receiver category | Limit       |
|-------------------|-------------|
| 1                 | -30 dBm + k |
| 2                 | -45 dBm + k |
| 3                 | -60 dBm + k |

The correction factor, k, is as follows:

$$k = \square -20\log f -10\log BW$$

Where:

- f is the frequency in GHz;
- BW is the channel bandwidth in MHz.

The factor k is limited within the following:

- -40 dB < k < 0 dB.

### 9.3 TEST PROCEDURES

This measurement shall be conducted under normal conditions.

Two signal generators A and B shall be connected to the receiver via a combining network to the receiver, either:

- a) via a test fixture or a test antenna to the receiver integrated, dedicated or test antenna; or
- b) directly to the receiver permanent or temporary antenna connector.

The method of coupling to the receiver shall be stated in the test report.

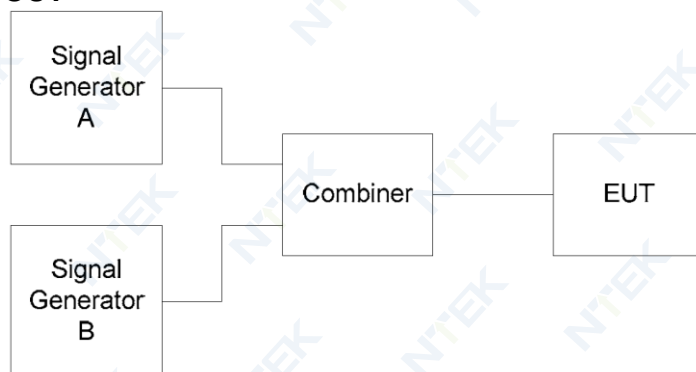
Signal generator A shall be at the nominal frequency of the receiver, with normal modulation of the wanted signal. Signal generator B shall be unmodulated and shall be adjusted to a test frequency at approximately 10 times, 20 times and 50 times of the occupied bandwidth above upper band edge of occupied bandwidth. Initially signal generator B shall be switched off and using signal generator A the level which still gives sufficient response shall be established. The output level of generator A shall then be increased by 3 dB. Signal generator B is then switched on and adjusted until the wanted criteria are met. This level shall be recorded.

The measurement shall be repeated with the test frequency for signal generator B at 10 times, 20 times and 50 times of the occupied bandwidth below the lower band edge of the occupied bandwidth.

The blocking or desensitization shall be recorded as the level in dBm of lowest level of the unwanted signal(generator B).

For tagging systems (e.g. RF identification, anti-theft, access control, location and similar systems) signal generator A may be replaced by a physical tag positioned at 70 % of the measured system range in metres. In this case, the blocking or desensitization shall be recorded as the ratio in dB of lowest level of the unwanted signal (generator B) resulting in a non-read of the tag. to the declared sensitivity of the receiver +3 dB.

#### 8.4 TEST SETUP LAYOUT



## 9.4 TEST RESULTS

|               |            |                     |                   |
|---------------|------------|---------------------|-------------------|
| EUT :         | Smartphone | Model Name :        | KINGKONG 9        |
| Temperature : | 24 °C      | Relative Humidity : | 54%               |
| Pressure :    | 1010 hPa   | Test Voltage :      | DC 3.87V (NORMAL) |
| Test Mode :   | RX         |                     |                   |

### 802.11a

5745 MHz

Flow= 5736.74483MHz; Fhigh= 5753.21118MHz, occupied bandwidth=16.46635MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5745 MHz   | 5745                 | -64.69                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 5572.08133           | -                                   | -29.98                              | -87.35(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 5407.41783           | -                                   | -35.56                              | -87.35                     |
|                   | 50 times lower band edge of the occupied bandwidth | 4913.42733           | -                                   | -35.88                              | -87.35                     |
|                   | 10 times upper band edge of the occupied bandwidth | 5917.87468           | -                                   | -30.30                              | -87.35                     |
|                   | 20 times upper band edge of the occupied bandwidth | 6082.53818           | -                                   | -35.52                              | -87.35                     |
|                   | 50 times upper band edge of the occupied bandwidth | 6576.52868           | -                                   | -31.97                              | -87.35                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -27.35$$

Where:

- f is the frequency in GHz;

- BW is the occupied bandwidth in MHz.

### 802.11a

5825 MHz

Flow= 5816.77282MHz; Fhigh= 5833.19918MHz, occupied bandwidth=16.42636MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5825 MHz   | 5825                 | -65.36                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 5652.50922           | -                                   | -30.73                              | -87.46(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 5488.24562           | -                                   | -34.81                              | -87.46                     |
|                   | 50 times lower band edge of the occupied bandwidth | 4995.45482           | -                                   | -35.68                              | -87.46                     |
|                   | 10 times upper band edge of the occupied bandwidth | 5997.46278           | -                                   | -31.01                              | -87.46                     |
|                   | 20 times upper band edge of the occupied bandwidth | 6161.72638           | -                                   | -34.72                              | -87.46                     |
|                   | 50 times upper band edge of the occupied bandwidth | 6654.51718           | -                                   | -31.96                              | -87.46                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -27.46$$

Where:

- f is the frequency in GHz;

- BW is the occupied bandwidth in MHz.

**802.11n20**

5745 MHz

Flow= 5736.14889MHz; Fhigh= 5753.80712MHz, occupied bandwidth=17.65823MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5745 MHz   | 5745                 | -65.82                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 5559.56659           | -                                   | -28.52                              | -87.66(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 5382.98429           | -                                   | -33.65                              | -87.66                     |
|                   | 50 times lower band edge of the occupied bandwidth | 4853.23739           | -                                   | -34.31                              | -87.66                     |
|                   | 10 times upper band edge of the occupied bandwidth | 5930.38942           | -                                   | -29.61                              | -87.66                     |
|                   | 20 times upper band edge of the occupied bandwidth | 6106.97172           | -                                   | -35.42                              | -87.66                     |
|                   | 50 times upper band edge of the occupied bandwidth | 6636.71862           | -                                   | -31.11                              | -87.66                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -27.66$$

Where:

- f is the frequency in GHz;

- BW is the occupied bandwidth in MHz.

**802.11n20**

5825 MHz

Flow= 5816.18488MHz; Fhigh= 5833.79512MHz, occupied bandwidth=17.61024MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5825 MHz   | 5825                 | -64.60                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 5640.08248           | -                                   | -28.34                              | -87.76(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 5463.98008           | -                                   | -34.07                              | -87.76                     |
|                   | 50 times lower band edge of the occupied bandwidth | 4935.67288           | -                                   | -35.07                              | -87.76                     |
|                   | 10 times upper band edge of the occupied bandwidth | 6009.89752           | -                                   | -29.13                              | -87.76                     |
|                   | 20 times upper band edge of the occupied bandwidth | 6185.99992           | -                                   | -35.39                              | -87.76                     |
|                   | 50 times upper band edge of the occupied bandwidth | 6714.30712           | -                                   | -30.40                              | -87.76                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -27.76$$

Where:

- f is the frequency in GHz;

- BW is the occupied bandwidth in MHz.

**802.11n40**

5755 MHz

Flow= 5736.9778MHz; Fhigh= 5772.9822MHz, occupied bandwidth=36.0044MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5755 MHz   | 5755                 | -65.33                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 5376.9338            | -                                   | -29.83                              | -90.76(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 5016.8898            | -                                   | -35.57                              | -90.76                     |
|                   | 50 times lower band edge of the occupied bandwidth | 3936.7578            | -                                   | -35.05                              | -90.76                     |
|                   | 10 times upper band edge of the occupied bandwidth | 6133.0262            | -                                   | -29.91                              | -90.76                     |
|                   | 20 times upper band edge of the occupied bandwidth | 6493.0702            | -                                   | -35.37                              | -90.76                     |
|                   | 50 times upper band edge of the occupied bandwidth | 7573.2022            | -                                   | -32.61                              | -90.76                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -30.76$$

Where:

- f is the frequency in GHz;

- BW is the occupied bandwidth in MHz.



**802.11n40**

5795 MHz

Flow= 5777.0178MHz; Fhigh= 5813.05419MHz, occupied bandwidth=36.03639MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5795 MHz   | 5795                 | -64.91                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 5416.6539            | -                                   | -30.01                              | -90.83(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 5056.29              | -                                   | -33.82                              | -90.83                     |
|                   | 50 times lower band edge of the occupied bandwidth | 3975.1983            | -                                   | -35.56                              | -90.83                     |
|                   | 10 times upper band edge of the occupied bandwidth | 6173.41809           | -                                   | -29.72                              | -90.83                     |
|                   | 20 times upper band edge of the occupied bandwidth | 6533.78199           | -                                   | -35.10                              | -90.83                     |
|                   | 50 times upper band edge of the occupied bandwidth | 7614.87369           | -                                   | -30.60                              | -90.83                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -30.83$$

Where:

- f is the frequency in GHz;

- BW is the occupied bandwidth in MHz.



**802.11ac80**

5775 MHz

Flow= 5737.2918MHz; Fhigh= 5812.8522MHz, occupied bandwidth=75.5604MHz

| Receiver category | Frequency offset                                   | Test Frequency (MHz) | Measurement Vause(dB) (Generator A) | Measurement Vause(dB) (Generator B) | ≥Limit(dB)                 |
|-------------------|--|----------------------|-------------------------------------|-------------------------------------|----------------------------|
| 3                 | 5795 MHz   | 5775                 | -65.30                              | -                                   | -                          |
|                   | 10 times lower band edge of the occupied bandwidth | 4981.688             | -                                   | -29.52                              | -94.01(Note <sup>1</sup> ) |
|                   | 20 times lower band edge of the occupied bandwidth | 4226.084             | -                                   | -34.83                              | -94.01                     |
|                   | 50 times lower band edge of the occupied bandwidth | 1959.272             | -                                   | -35.01                              | -94.01                     |
|                   | 10 times upper band edge of the occupied bandwidth | 6568.456             | -                                   | -30.79                              | -94.01                     |
|                   | 20 times upper band edge of the occupied bandwidth | 7324.060             | -                                   | -35.22                              | -94.01                     |
|                   | 50 times upper band edge of the occupied bandwidth | 9590.872             | -                                   | -30.62                              | -94.01                     |

Note1 :

The limit :

-60 dBm + k

The correction factor, k, is as follows:

$$k = -20\log f - 10\log BW$$

$$k = -34.01$$

Where:

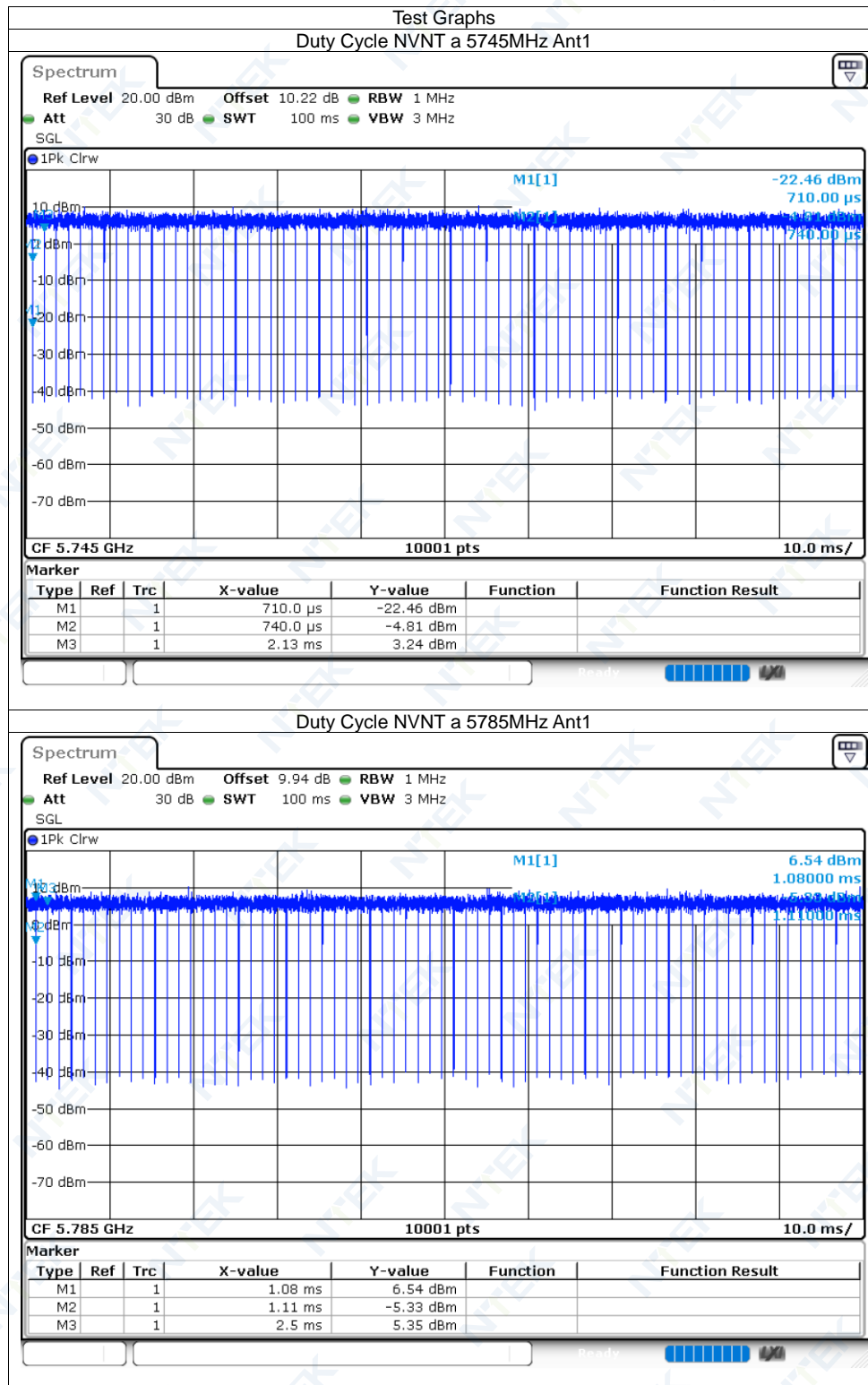
- f is the frequency in GHz;

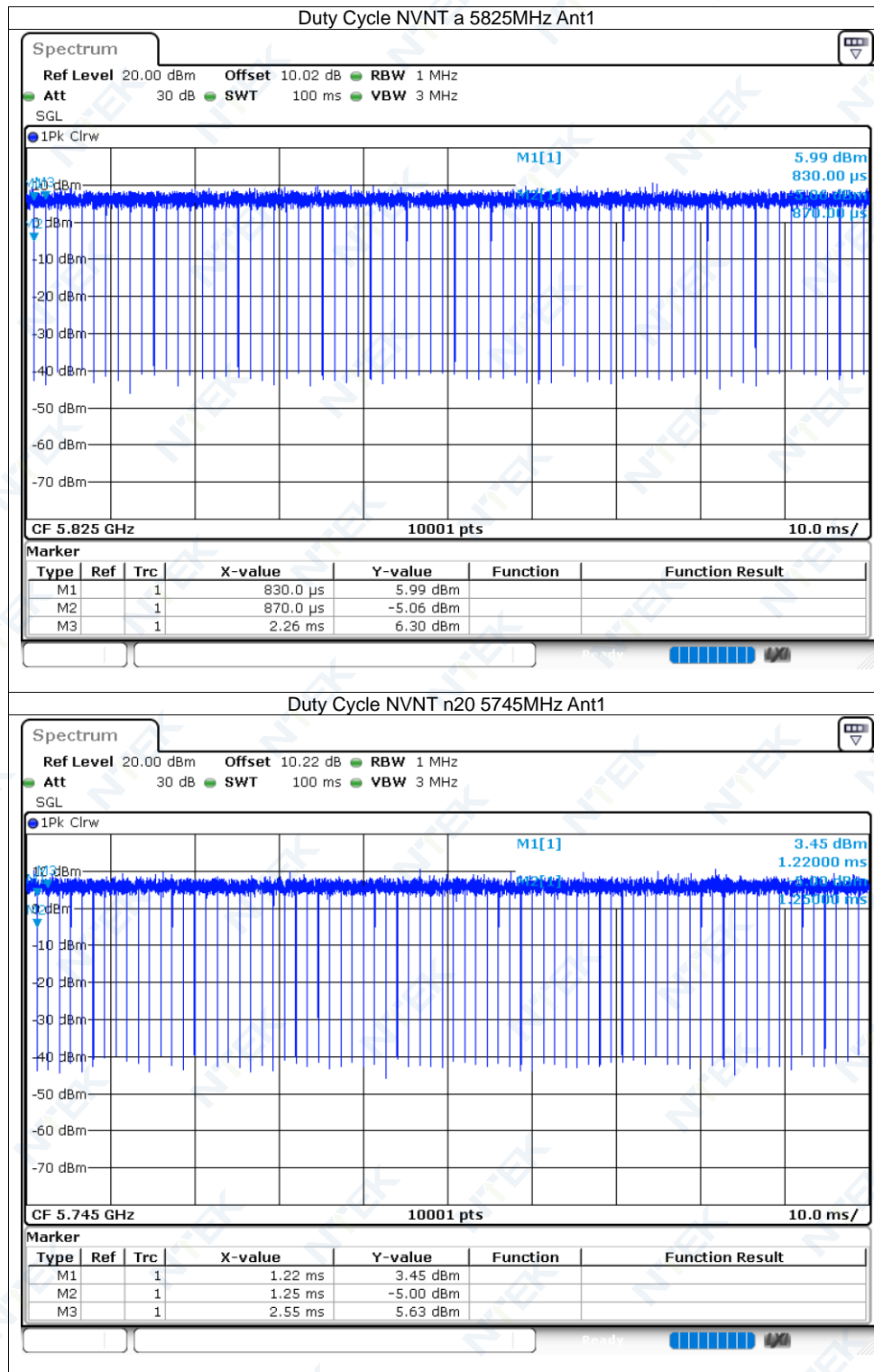
- BW is the occupied bandwidth in MHz.

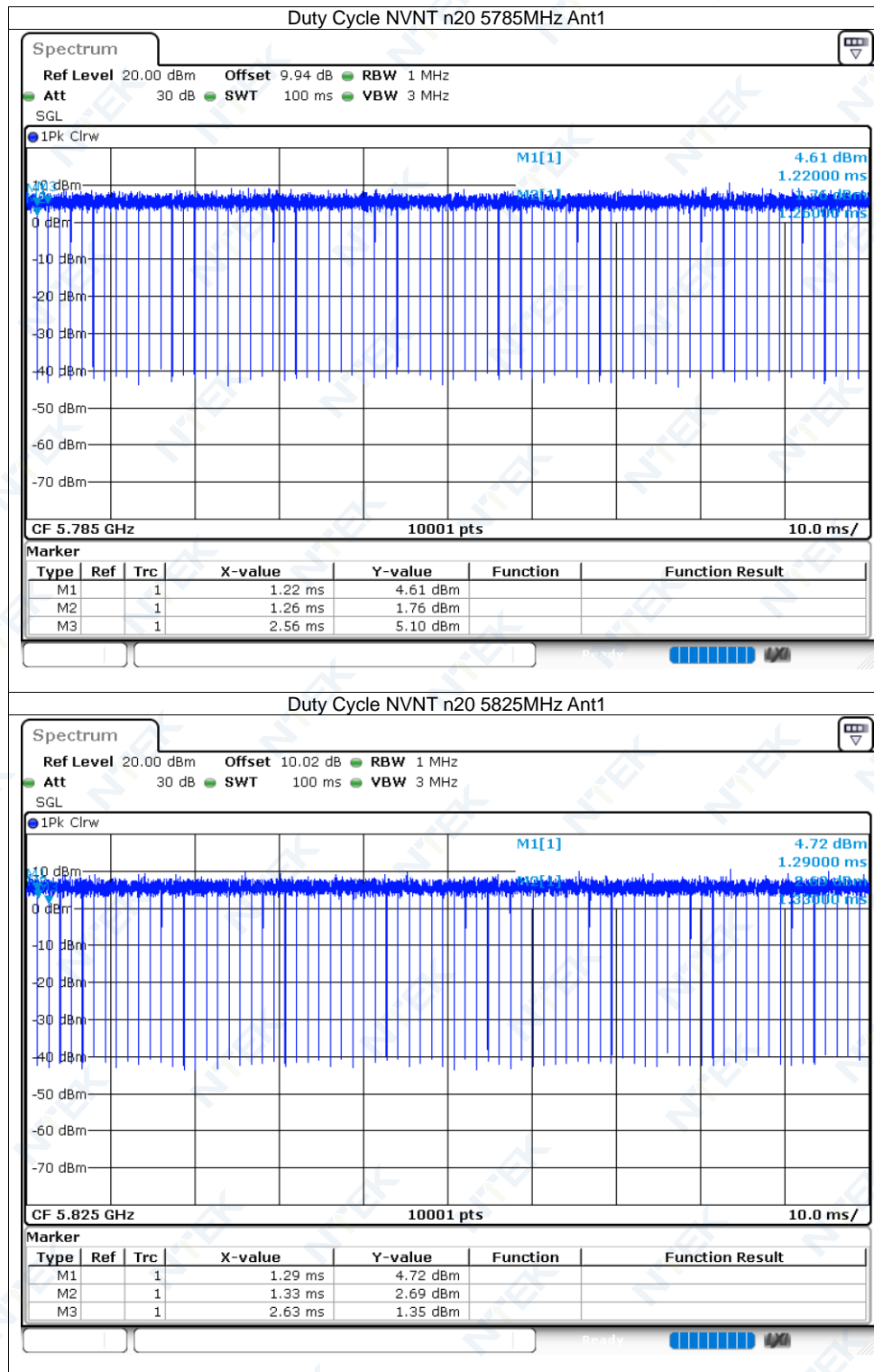
## 10. TEST RESULTS

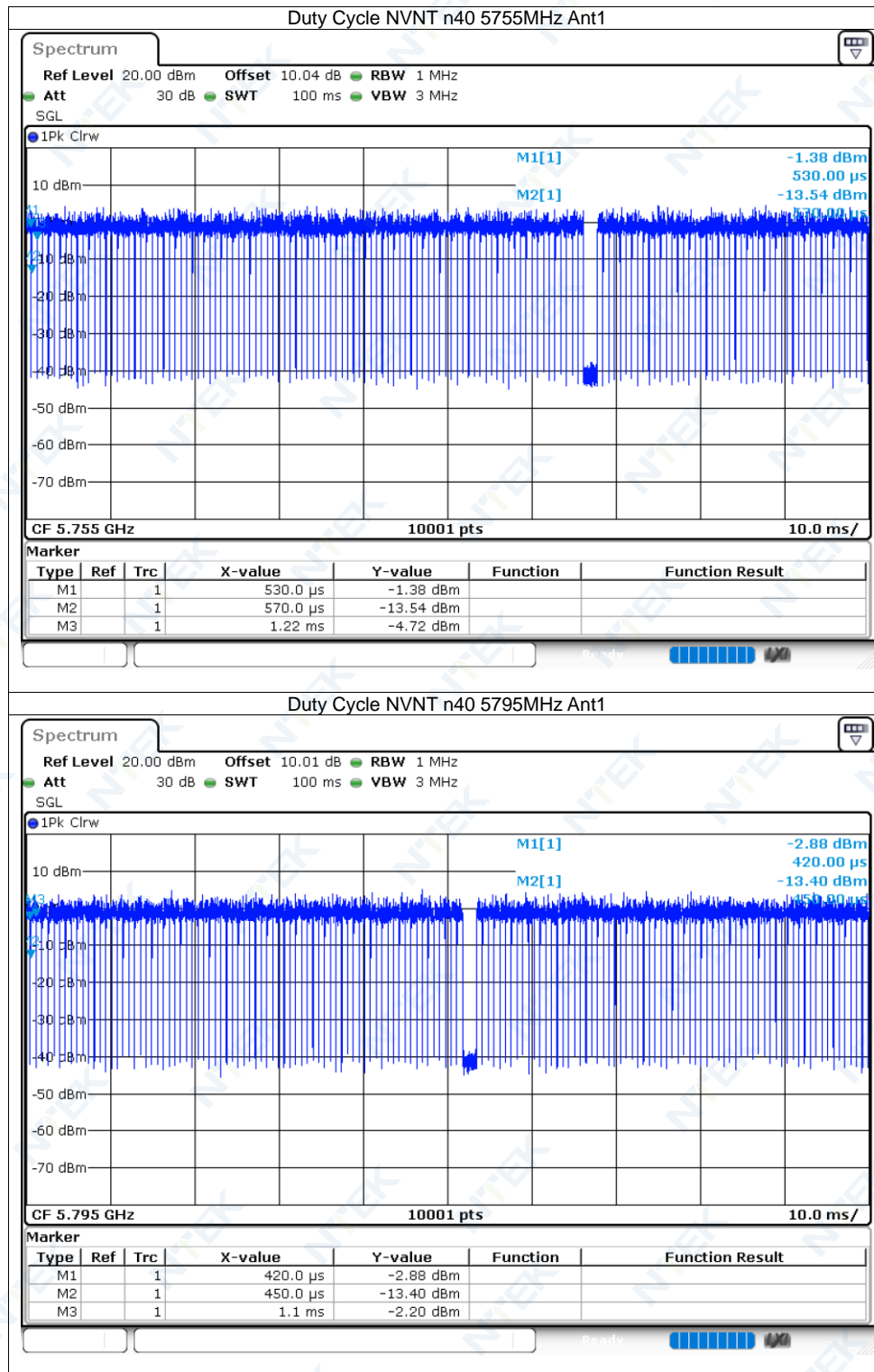
### 10.1 DUTY CYCLE

| Condition | Mode | Frequency (MHz) | Antenna | Duty Cycle (%) | Correction Factor (dB) | 1/T (kHz) |
|-----------|------|-----------------|---------|----------------|------------------------|-----------|
| NVNT      | a    | 5745            | Ant1    | 98.27          | 0.08                   | 0.72      |
| NVNT      | a    | 5785            | Ant1    | 98.25          | 0.08                   | 0.72      |
| NVNT      | a    | 5825            | Ant1    | 98.26          | 0.08                   | 0.72      |
| NVNT      | n20  | 5745            | Ant1    | 98.11          | 0.08                   | 0.77      |
| NVNT      | n20  | 5785            | Ant1    | 98.11          | 0.08                   | 0.77      |
| NVNT      | n20  | 5825            | Ant1    | 98.12          | 0.08                   | 0.77      |
| NVNT      | n40  | 5755            | Ant1    | 94.92          | 0.23                   | 1.54      |
| NVNT      | n40  | 5795            | Ant1    | 94.67          | 0.24                   | 1.54      |
| NVNT      | ac20 | 5745            | Ant1    | 98.15          | 0.08                   | 0.76      |
| NVNT      | ac20 | 5785            | Ant1    | 98.12          | 0.08                   | 0.76      |
| NVNT      | ac20 | 5825            | Ant1    | 98.15          | 0.08                   | 0.76      |
| NVNT      | ac40 | 5755            | Ant1    | 95.71          | 0.19                   | 1.52      |
| NVNT      | ac40 | 5795            | Ant1    | 95.52          | 0.2                    | 1.54      |
| NVNT      | ac80 | 5775            | Ant1    | 89.78          | 0.47                   | 3.12      |

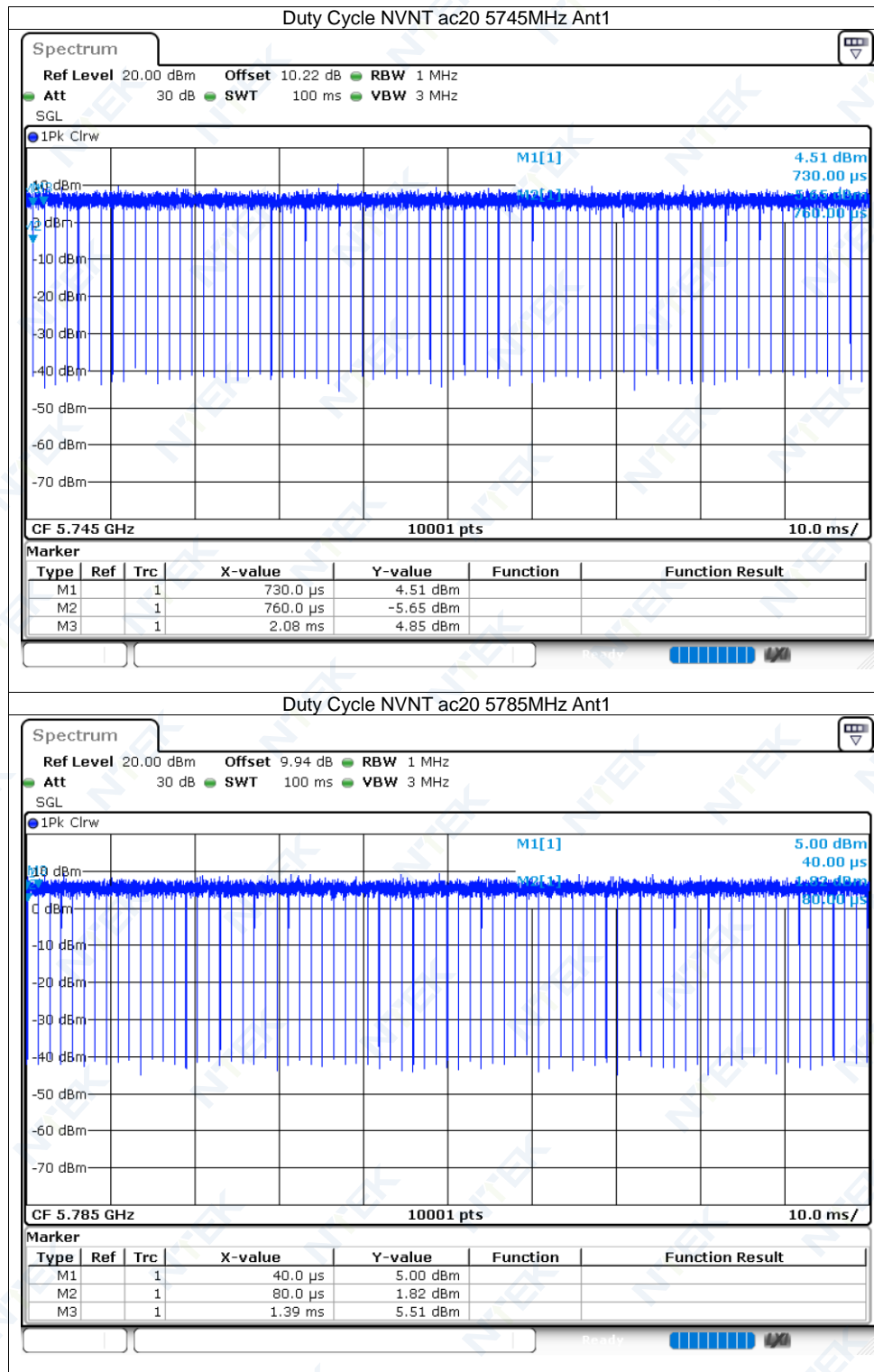


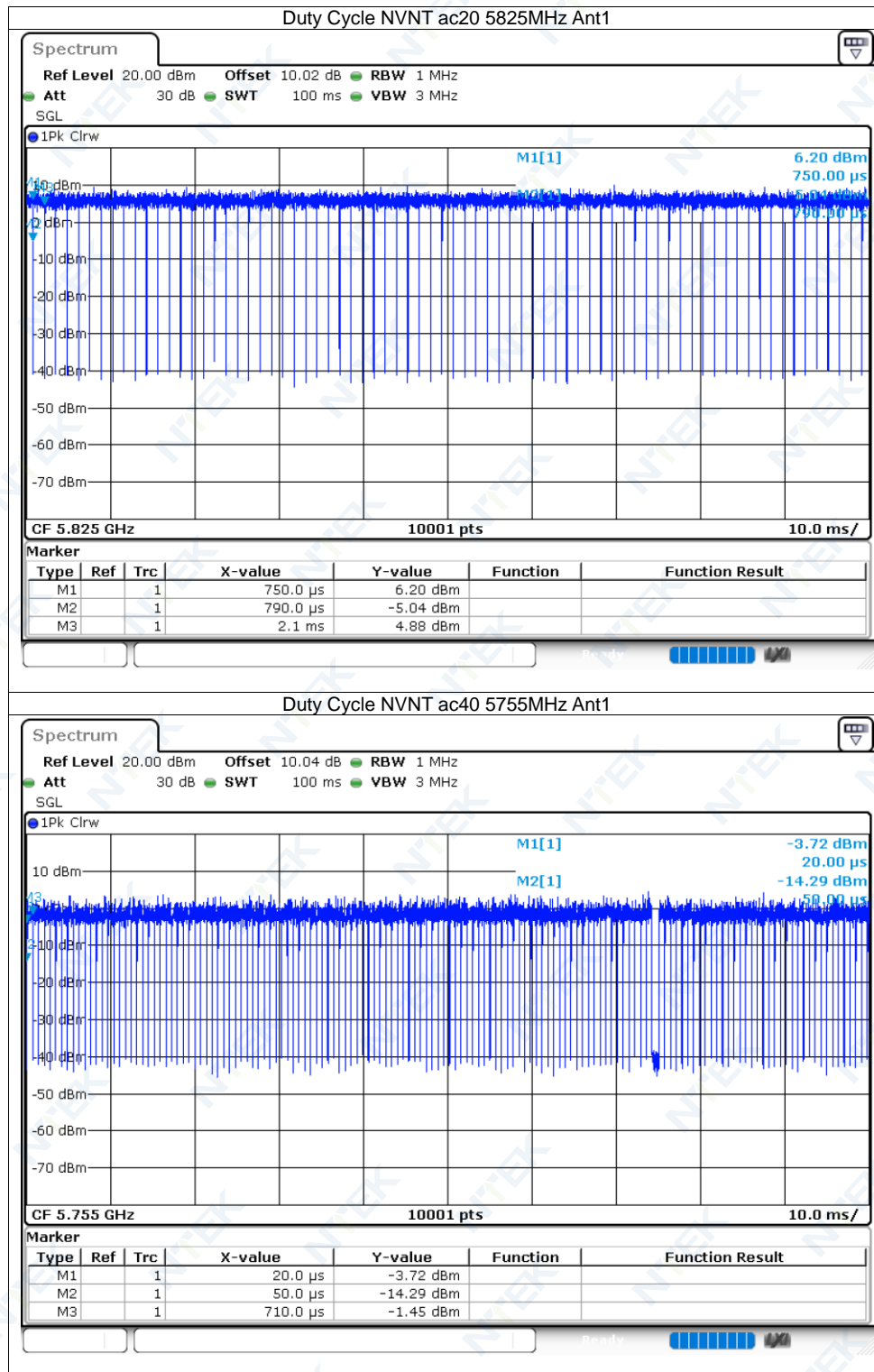


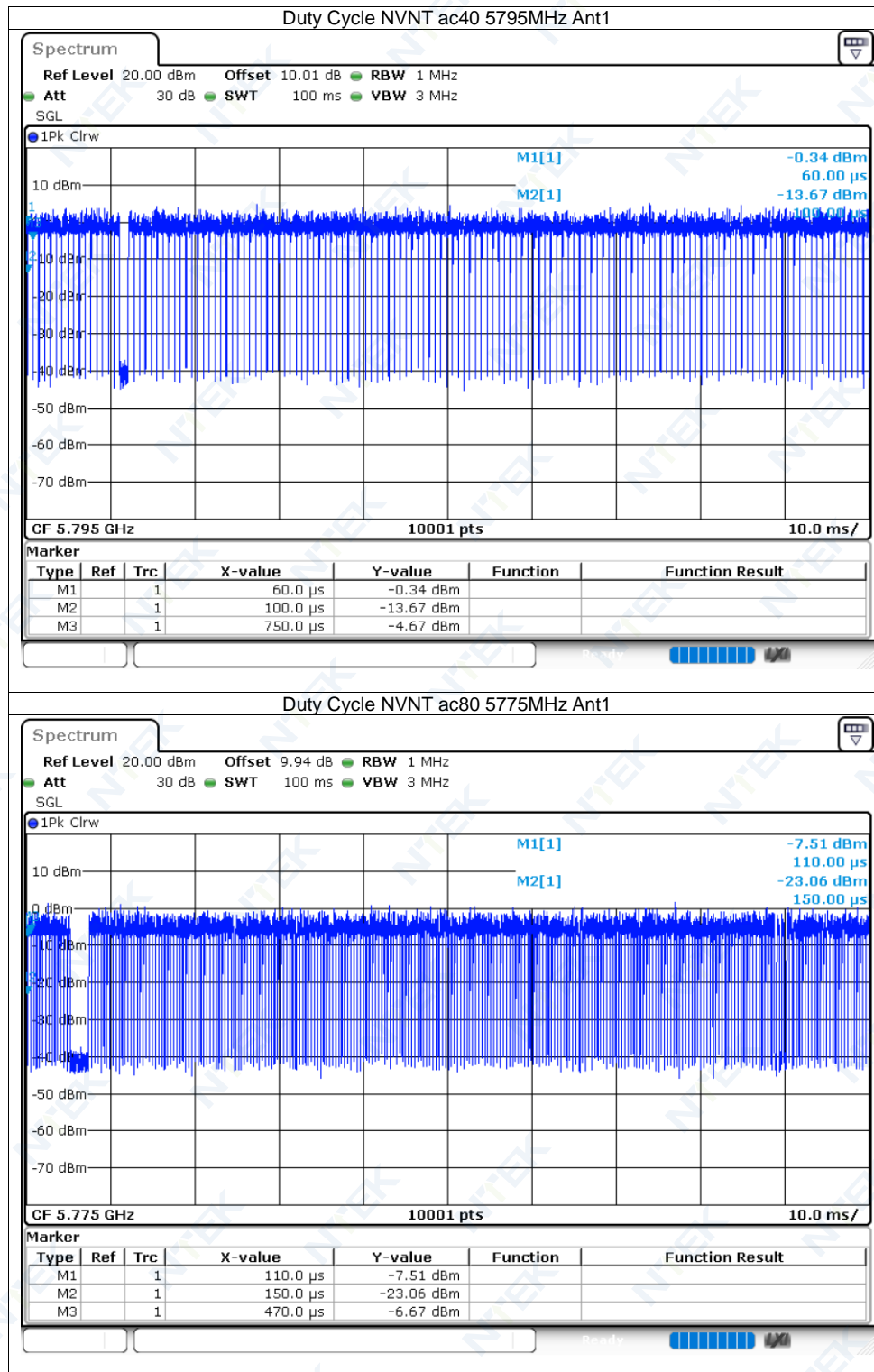






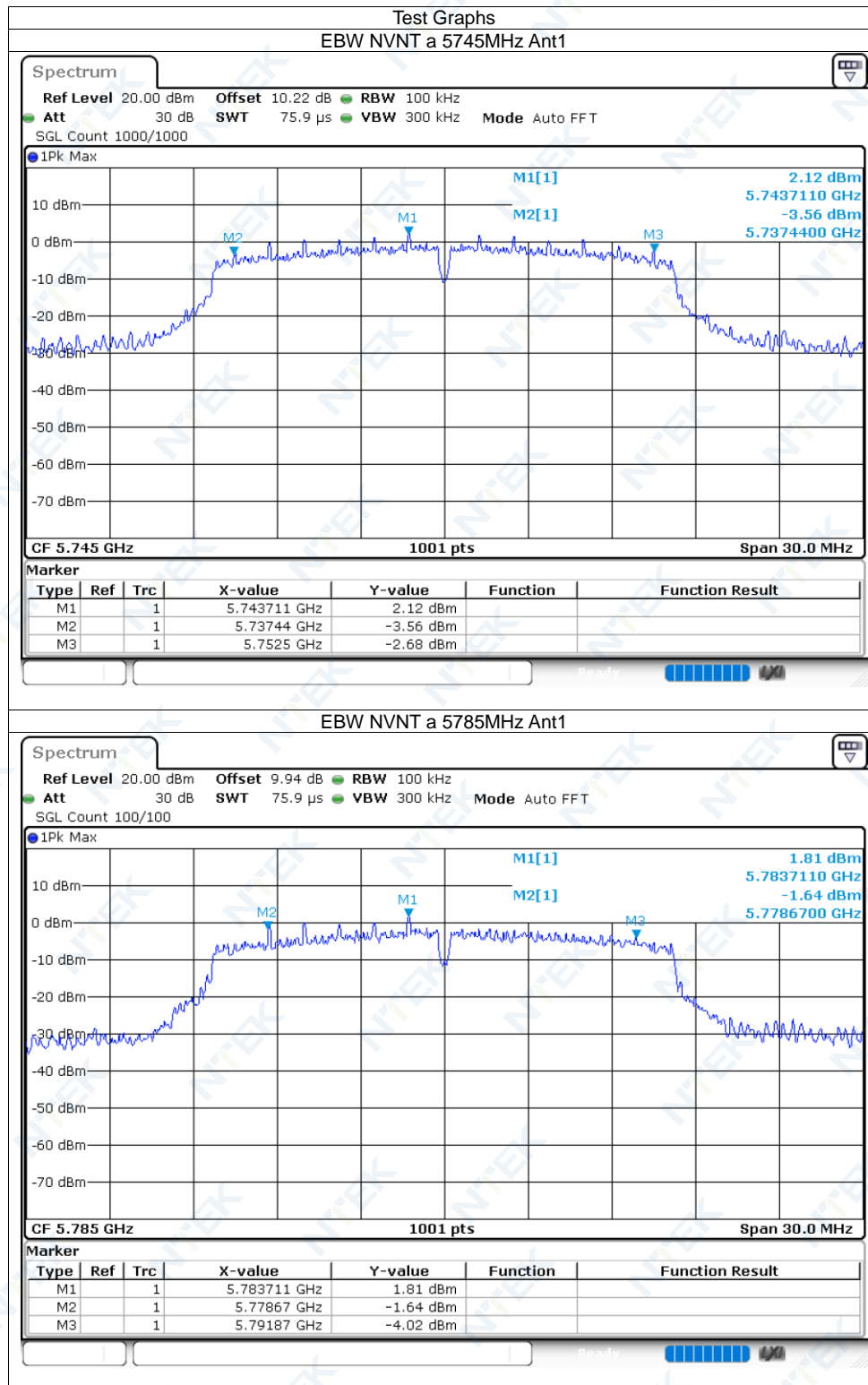


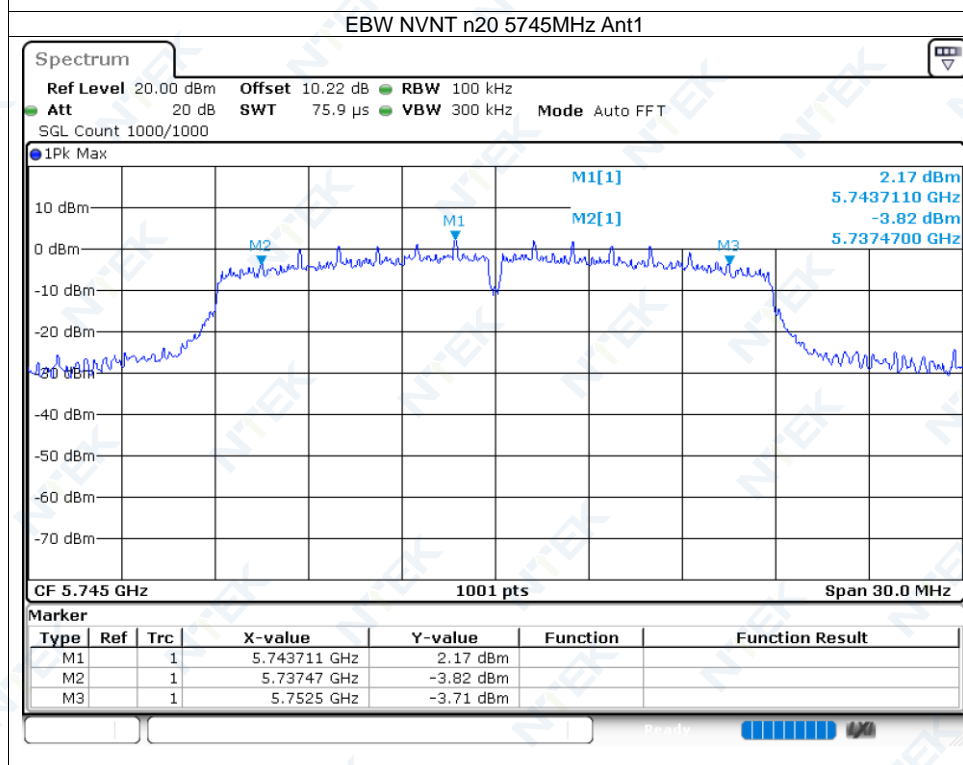
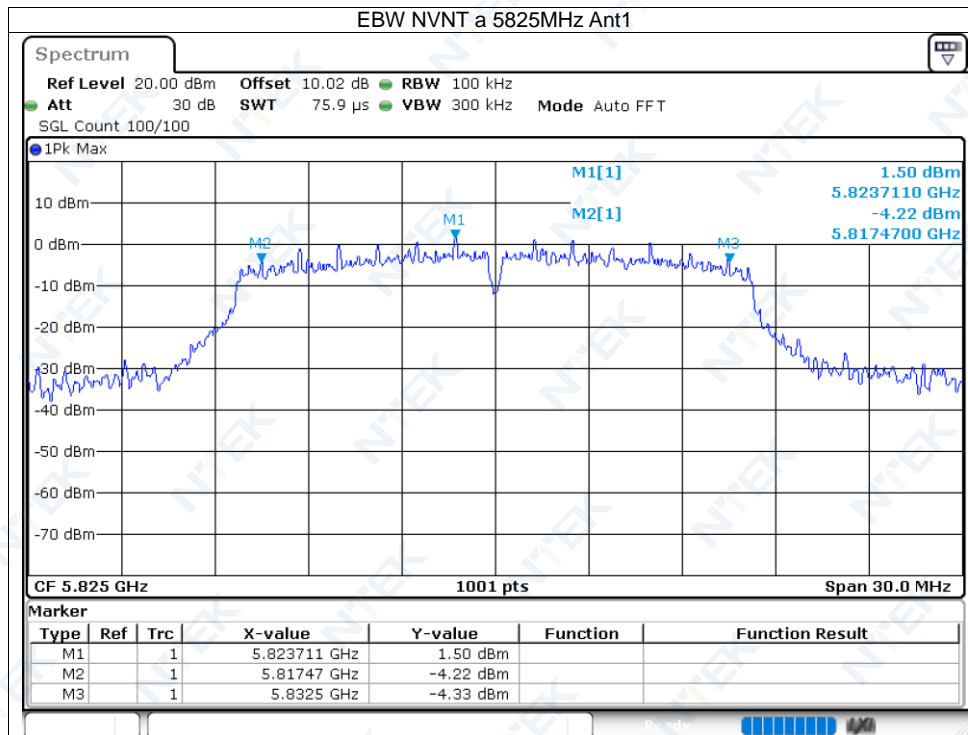




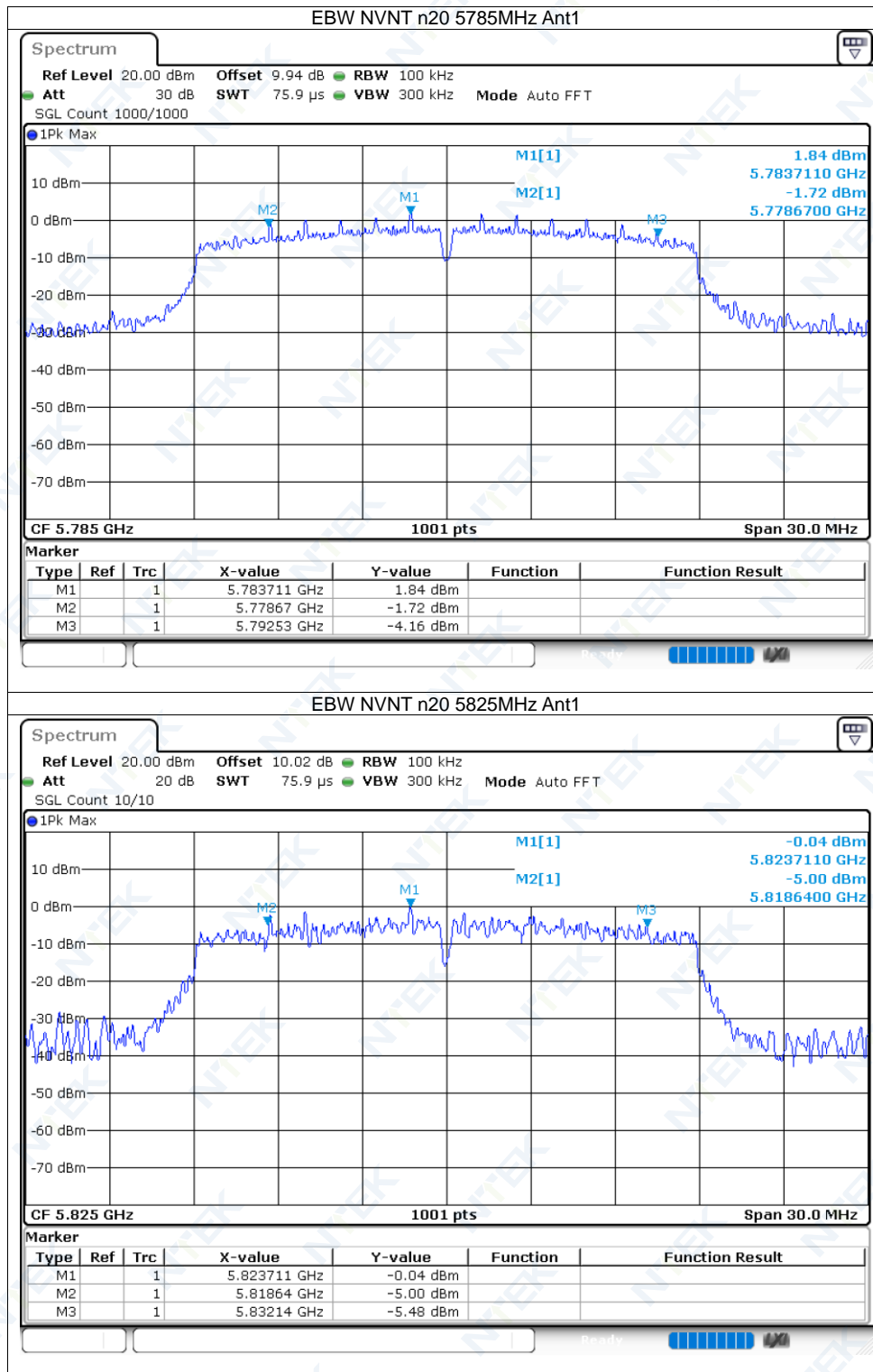
## 10.2 -6DB EMISSION BANDWIDTH

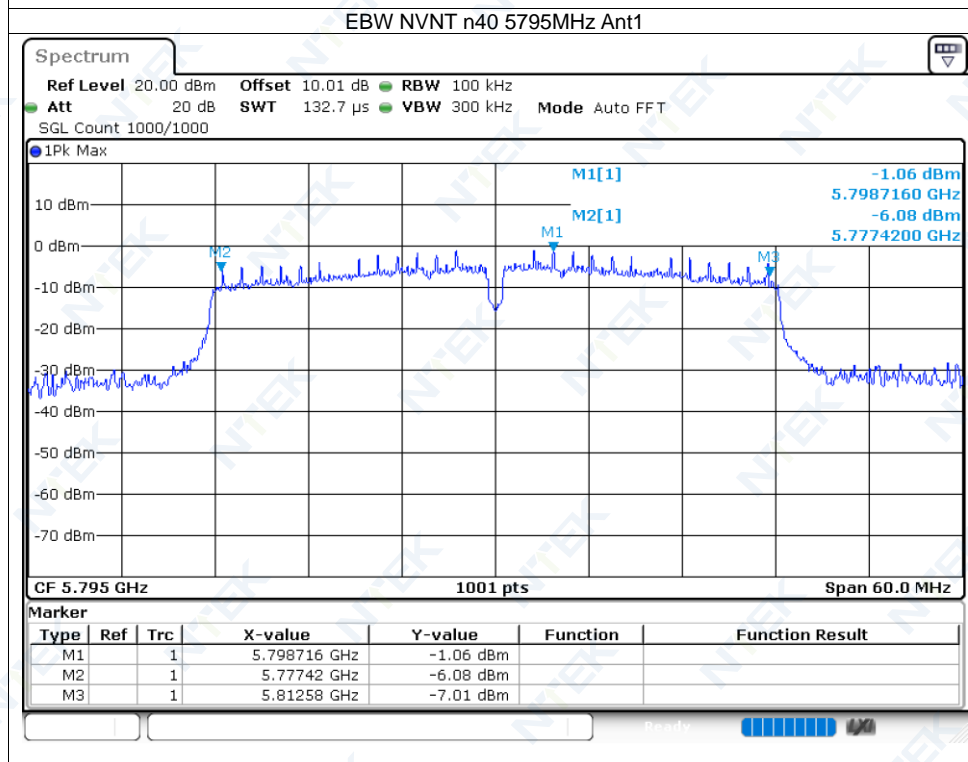
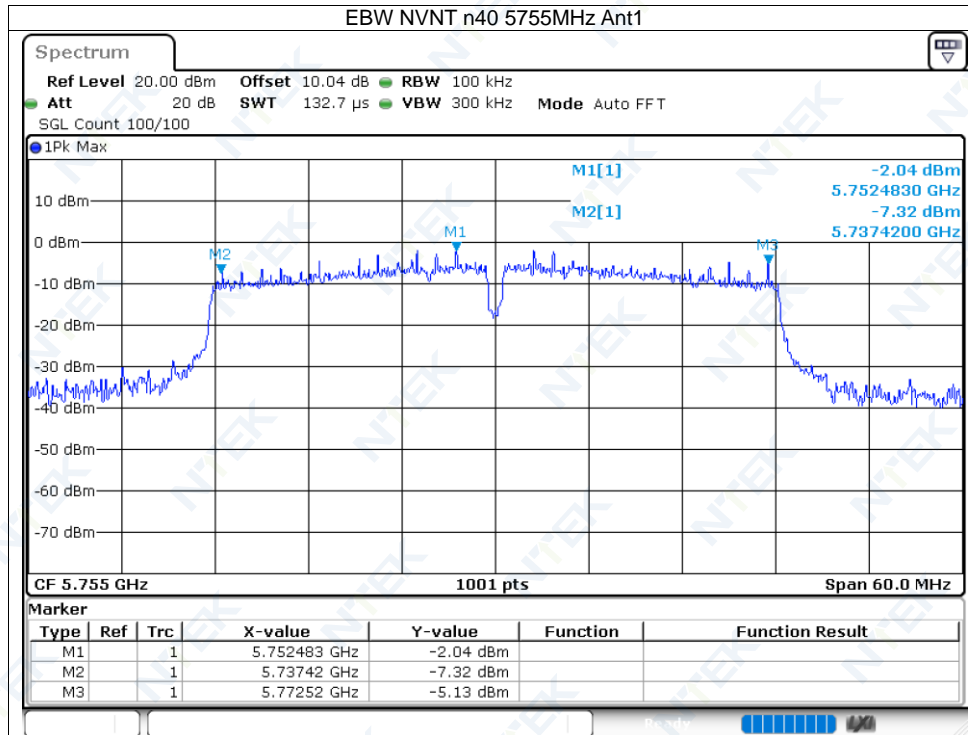
| Condition | Mode | Frequency (MHz) | Antenna | -6 dB Bandwidth (MHz) | Limit -6 dB Bandwidth (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-----------------------------|---------|
| NVNT      | a    | 5745            | Ant1    | 15.06                 | 0.5                         | Pass    |
| NVNT      | a    | 5785            | Ant1    | 13.2                  | 0.5                         | Pass    |
| NVNT      | a    | 5825            | Ant1    | 15.03                 | 0.5                         | Pass    |
| NVNT      | n20  | 5745            | Ant1    | 15.03                 | 0.5                         | Pass    |
| NVNT      | n20  | 5785            | Ant1    | 13.86                 | 0.5                         | Pass    |
| NVNT      | n20  | 5825            | Ant1    | 13.5                  | 0.5                         | Pass    |
| NVNT      | n40  | 5755            | Ant1    | 35.1                  | 0.5                         | Pass    |
| NVNT      | n40  | 5795            | Ant1    | 35.16                 | 0.5                         | Pass    |
| NVNT      | ac20 | 5745            | Ant1    | 15.06                 | 0.5                         | Pass    |
| NVNT      | ac20 | 5785            | Ant1    | 17.55                 | 0.5                         | Pass    |
| NVNT      | ac20 | 5825            | Ant1    | 17.58                 | 0.5                         | Pass    |
| NVNT      | ac40 | 5755            | Ant1    | 35.1                  | 0.5                         | Pass    |
| NVNT      | ac40 | 5795            | Ant1    | 30.18                 | 0.5                         | Pass    |
| NVNT      | ac80 | 5775            | Ant1    | 75.12                 | 0.5                         | Pass    |

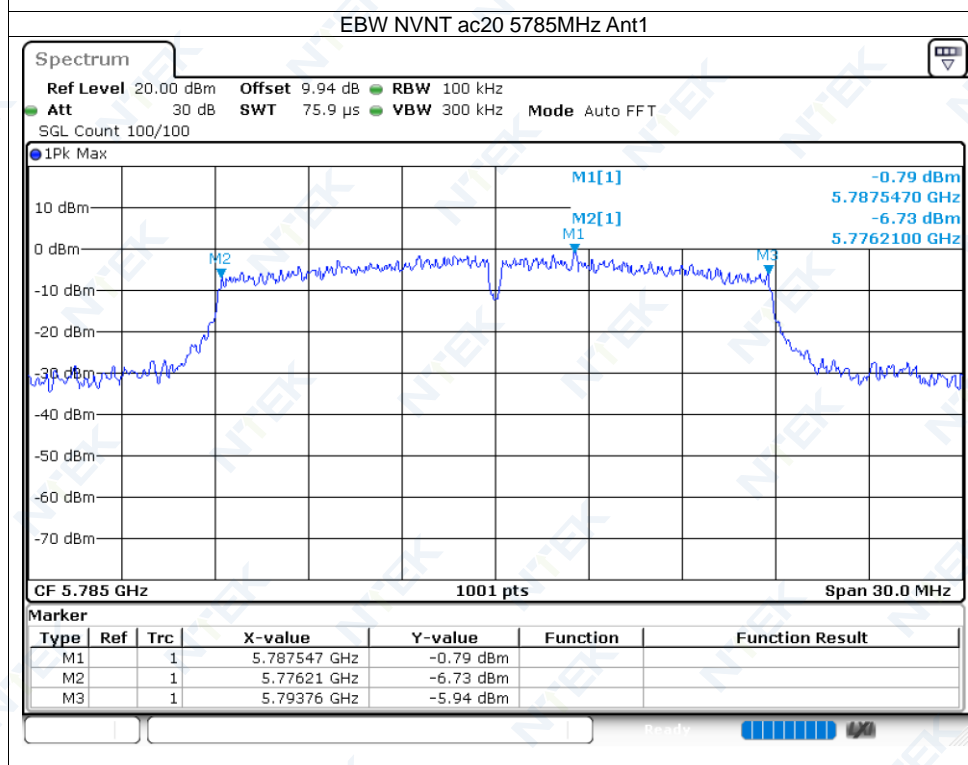
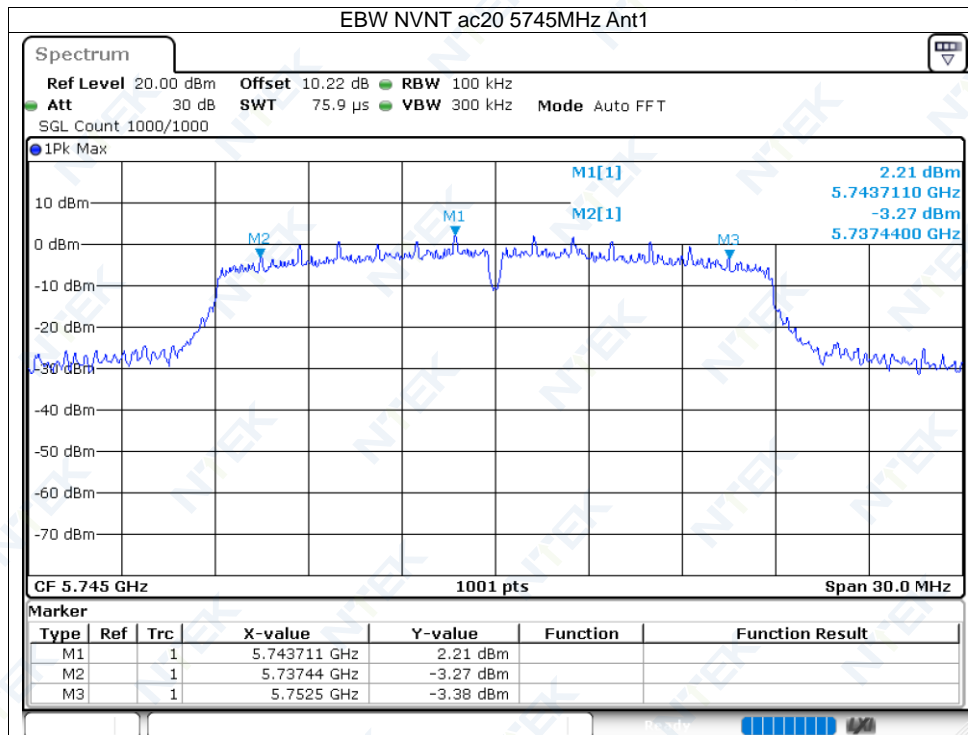


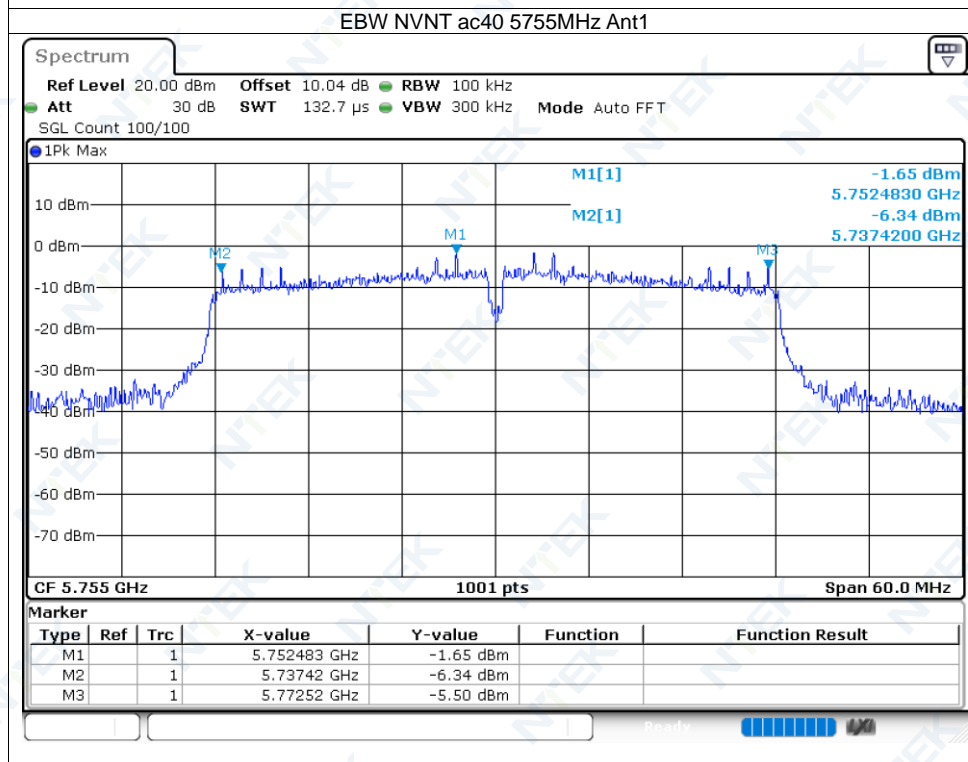
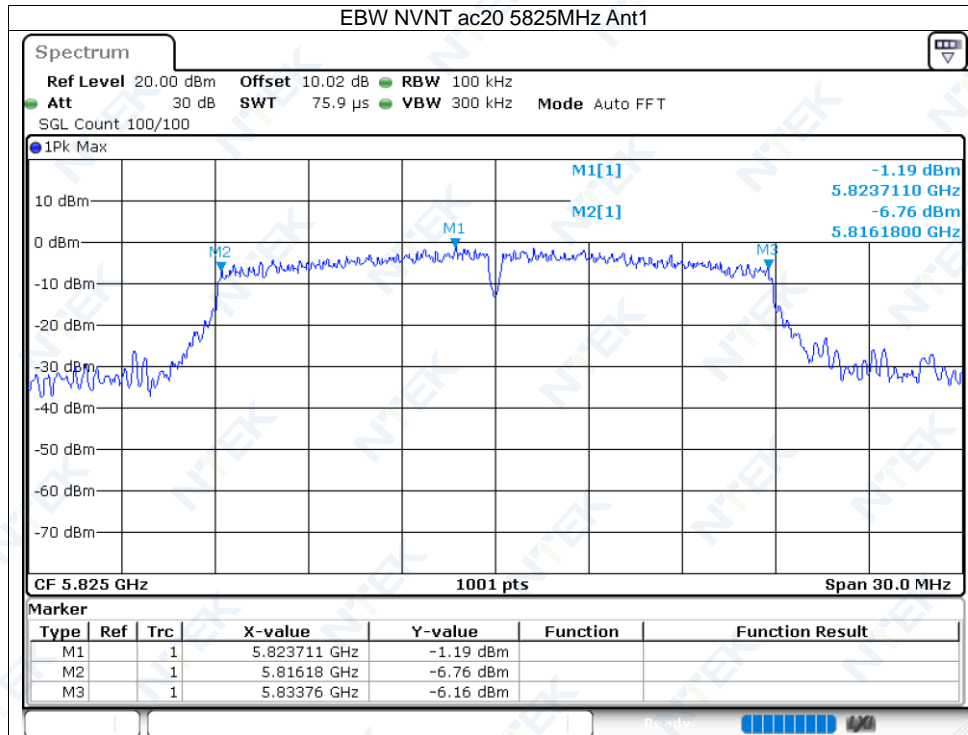


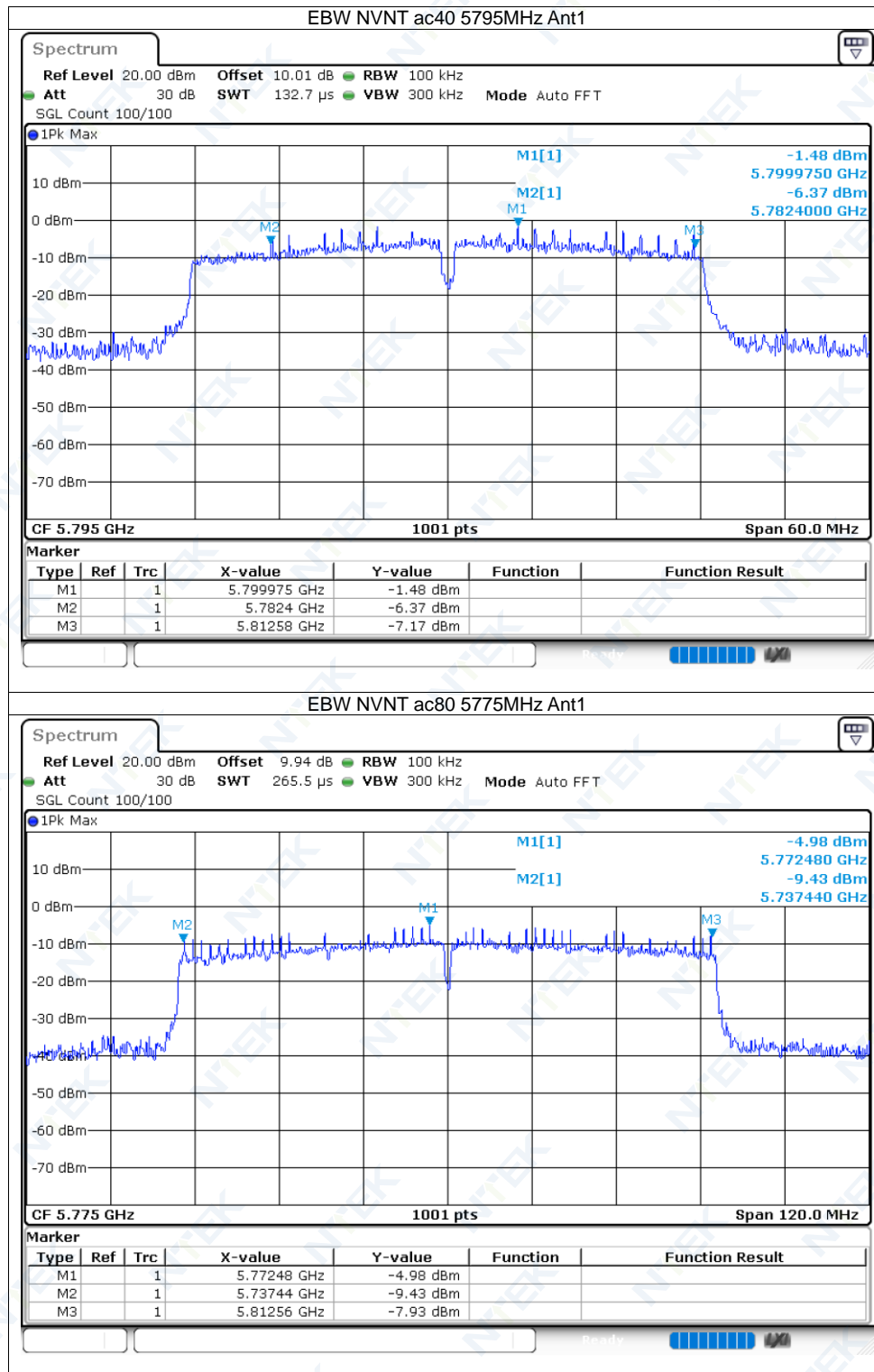








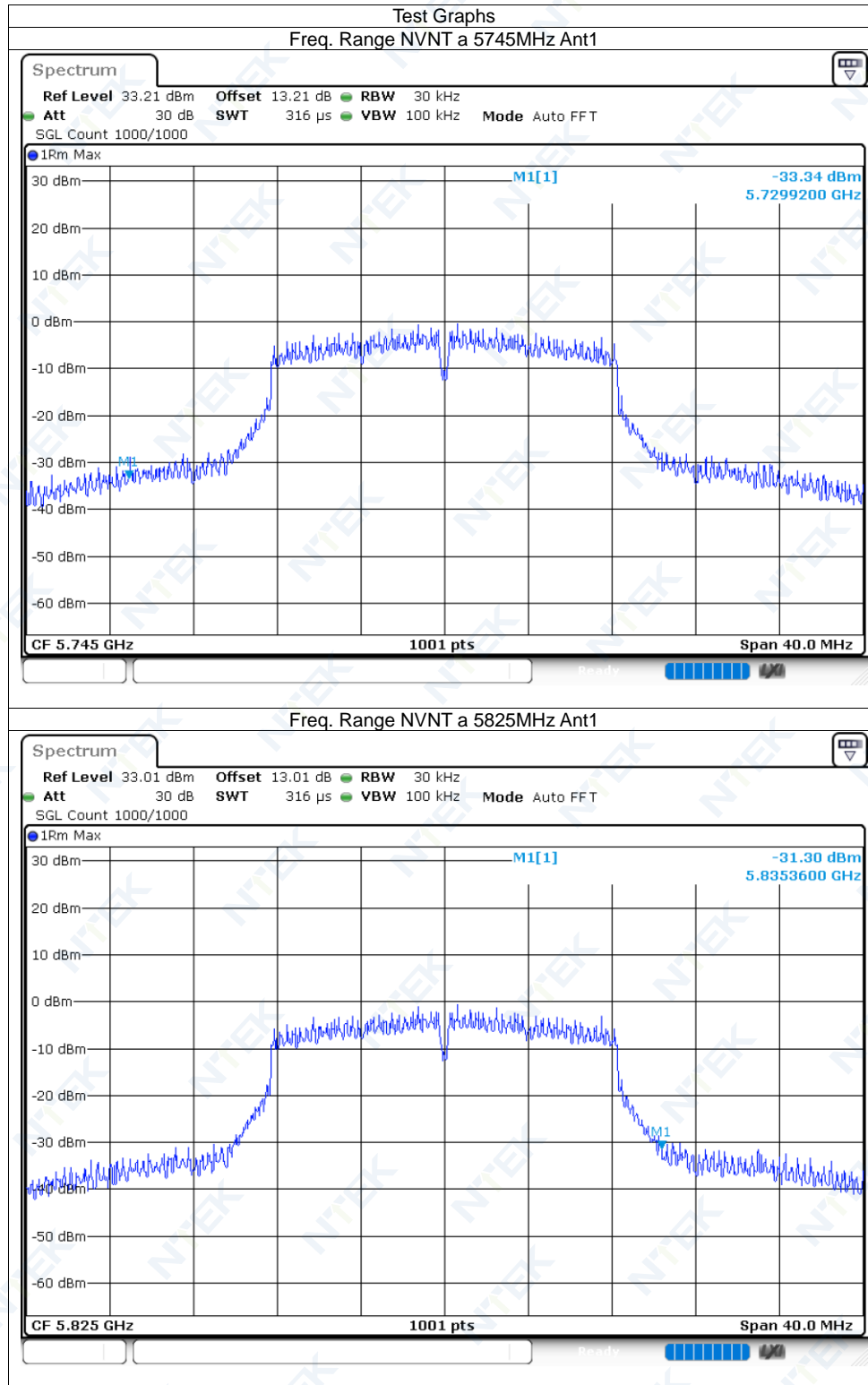


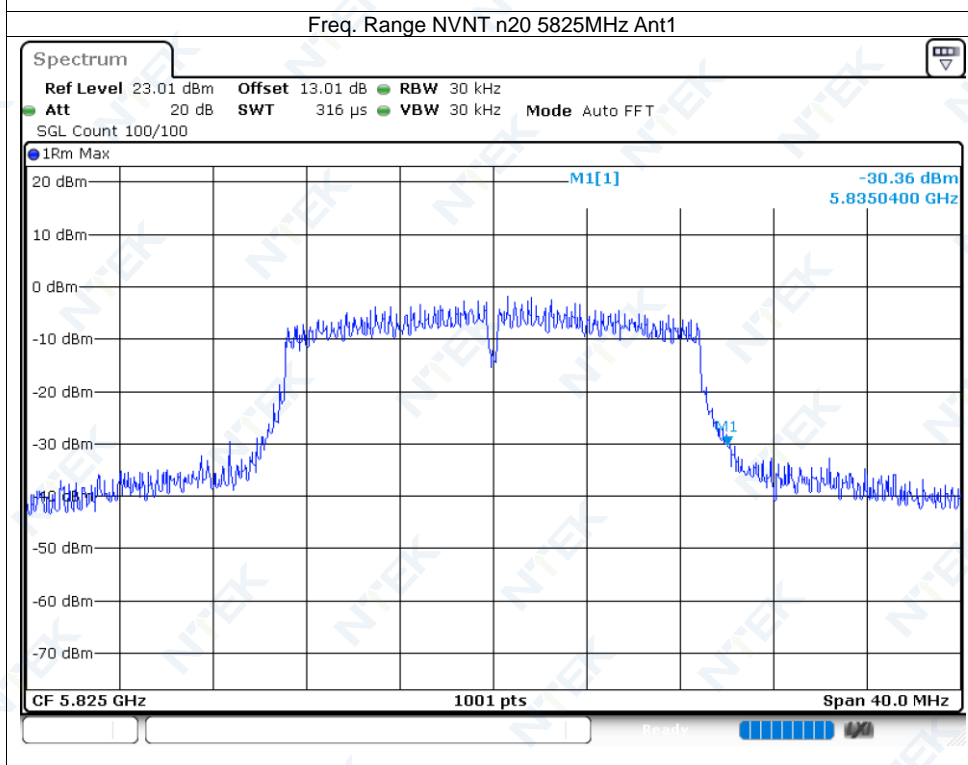
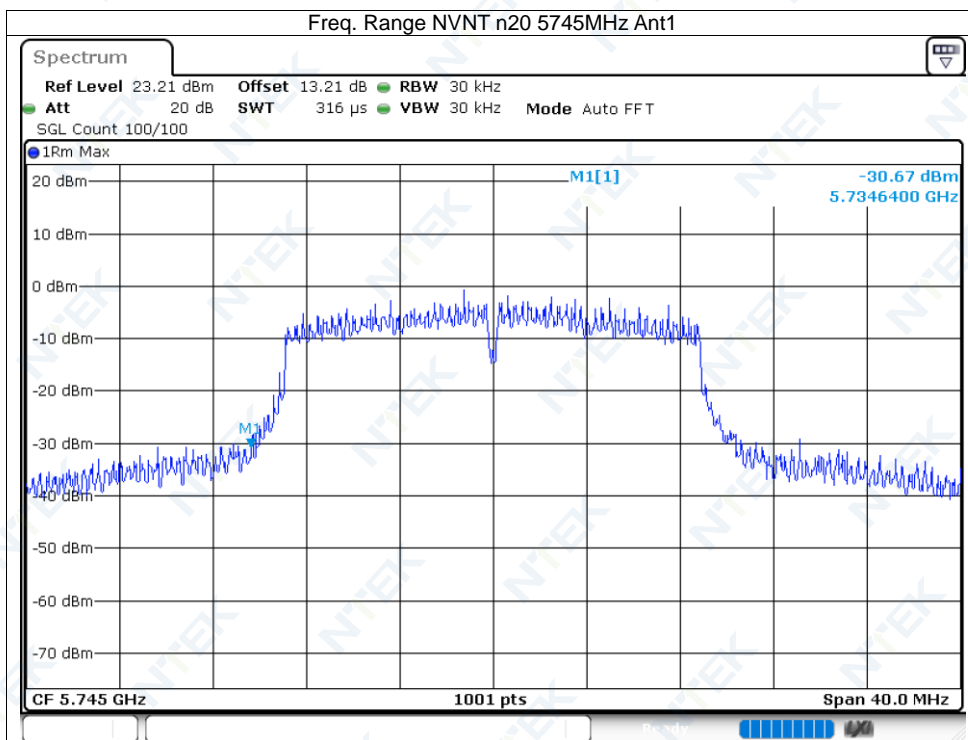


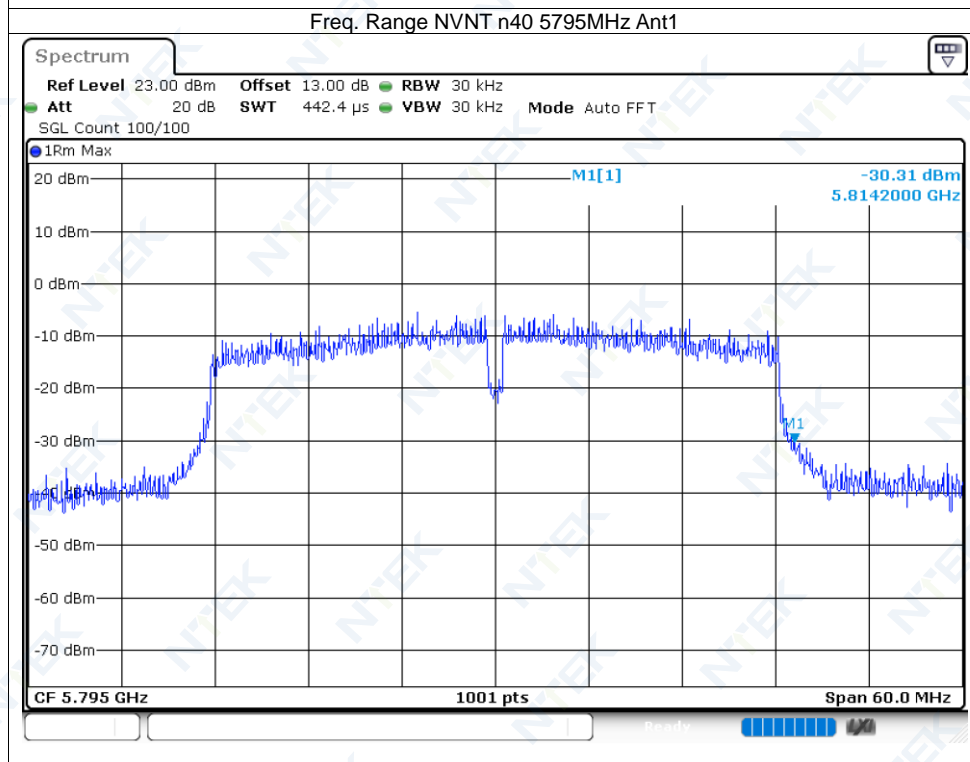
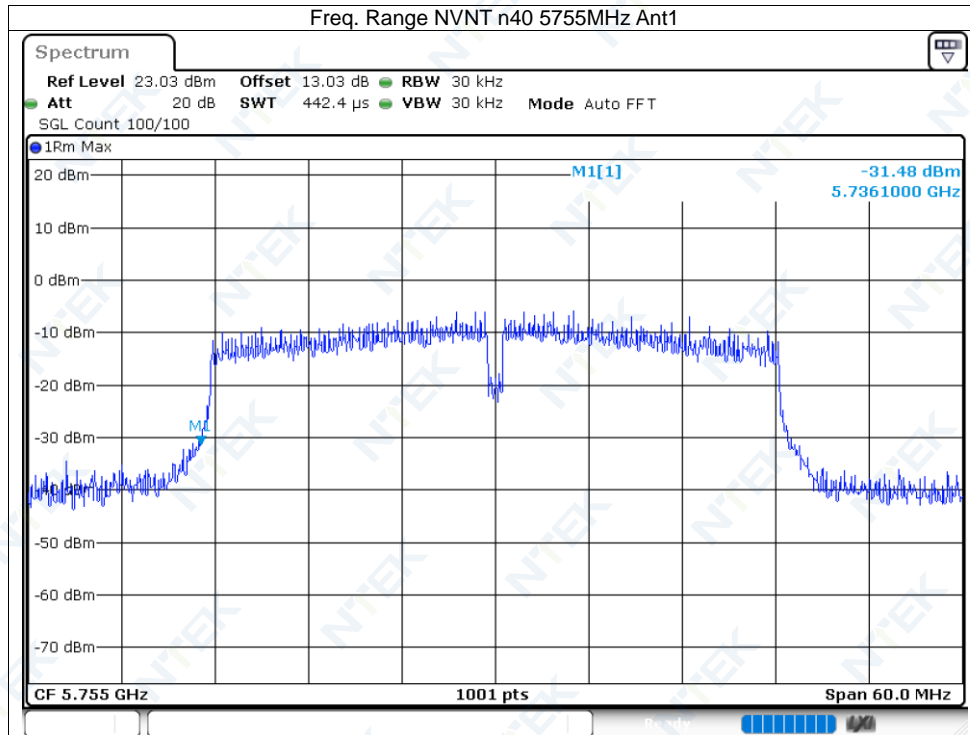
## 10.3 FREQUENCY RANGE

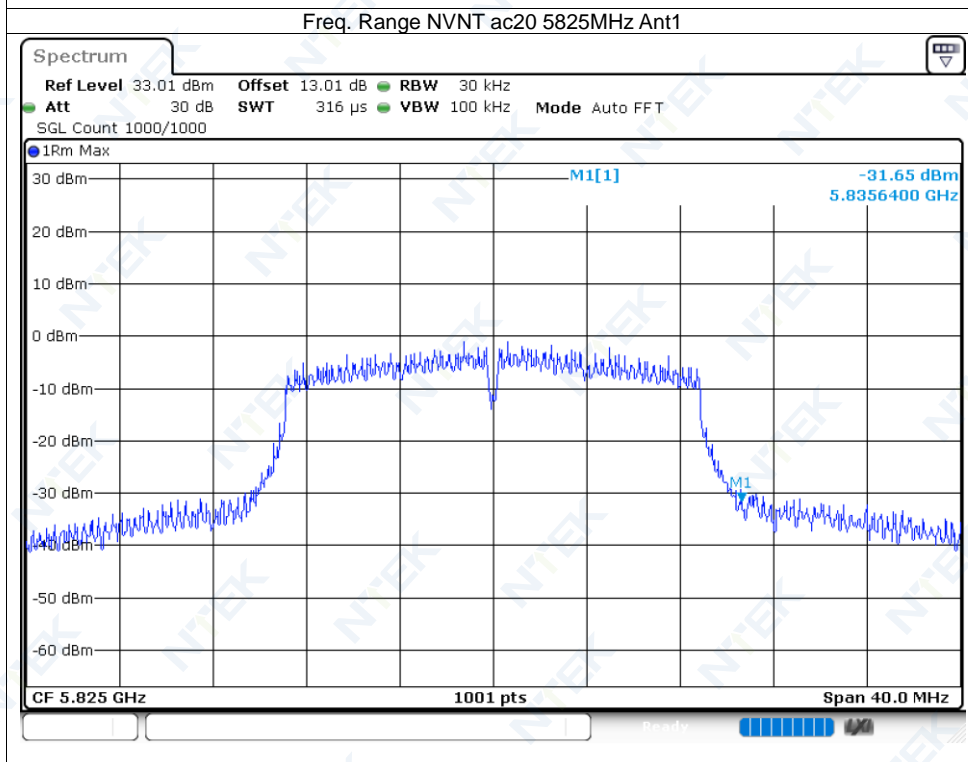
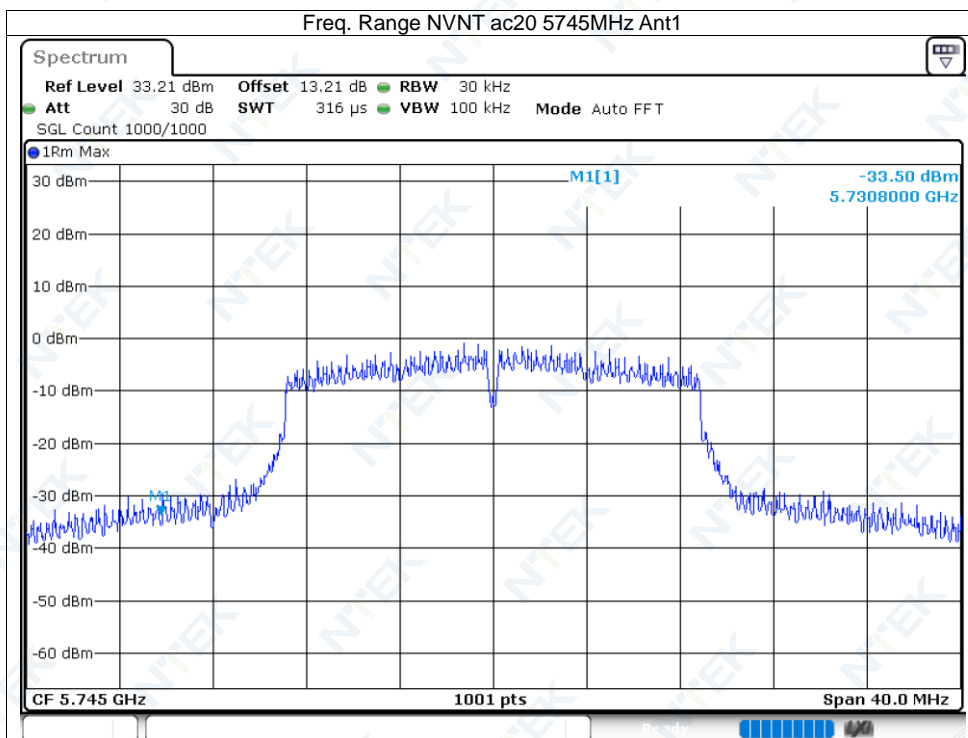
| Condition | Mode | Frequency (MHz) | Antenna | Frequency Range (MHz) | Limit (MHz) | Verdict |
|-----------|------|-----------------|---------|-----------------------|-------------|---------|
| NVNT      | a    | 5745            | Ant1    | 5729.92               | $\geq 5725$ | Pass    |
| NVNT      | a    | 5825            | Ant1    | 5835.36               | $\leq 5875$ | Pass    |
| NVNT      | n20  | 5745            | Ant1    | 5734.64               | $\geq 5725$ | Pass    |
| NVNT      | n20  | 5825            | Ant1    | 5835.04               | $\leq 5875$ | Pass    |
| NVNT      | n40  | 5755            | Ant1    | 5736.1                | $\geq 5725$ | Pass    |
| NVNT      | n40  | 5795            | Ant1    | 5814.2                | $\leq 5875$ | Pass    |
| NVNT      | ac20 | 5745            | Ant1    | 5730.8                | $\geq 5725$ | Pass    |
| NVNT      | ac20 | 5825            | Ant1    | 5835.64               | $\leq 5875$ | Pass    |
| NVNT      | ac40 | 5755            | Ant1    | 5736.04               | $\geq 5725$ | Pass    |
| NVNT      | ac40 | 5795            | Ant1    | 5814.26               | $\leq 5875$ | Pass    |
| NVNT      | ac80 | 5775            | Ant1    | 5736.48               | $\geq 5725$ | Pass    |

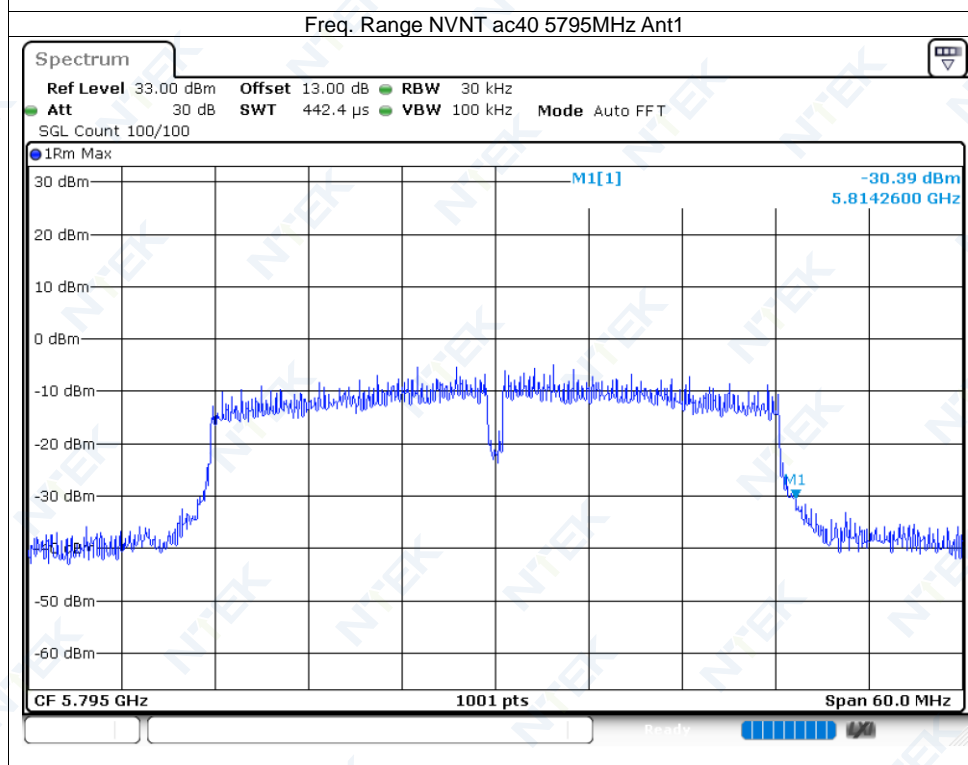
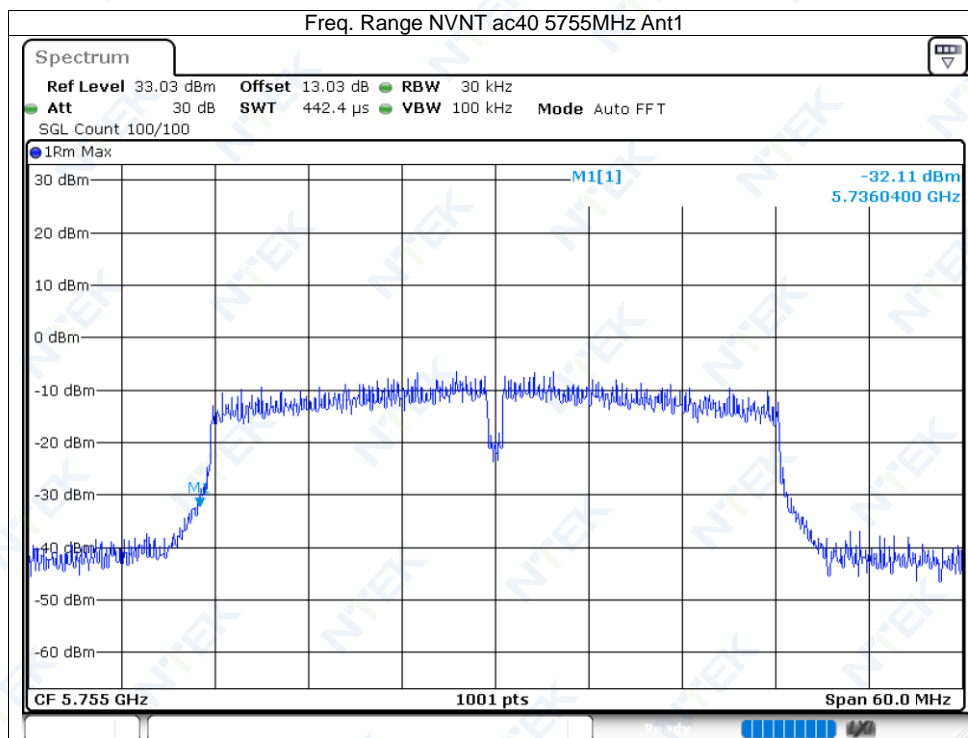


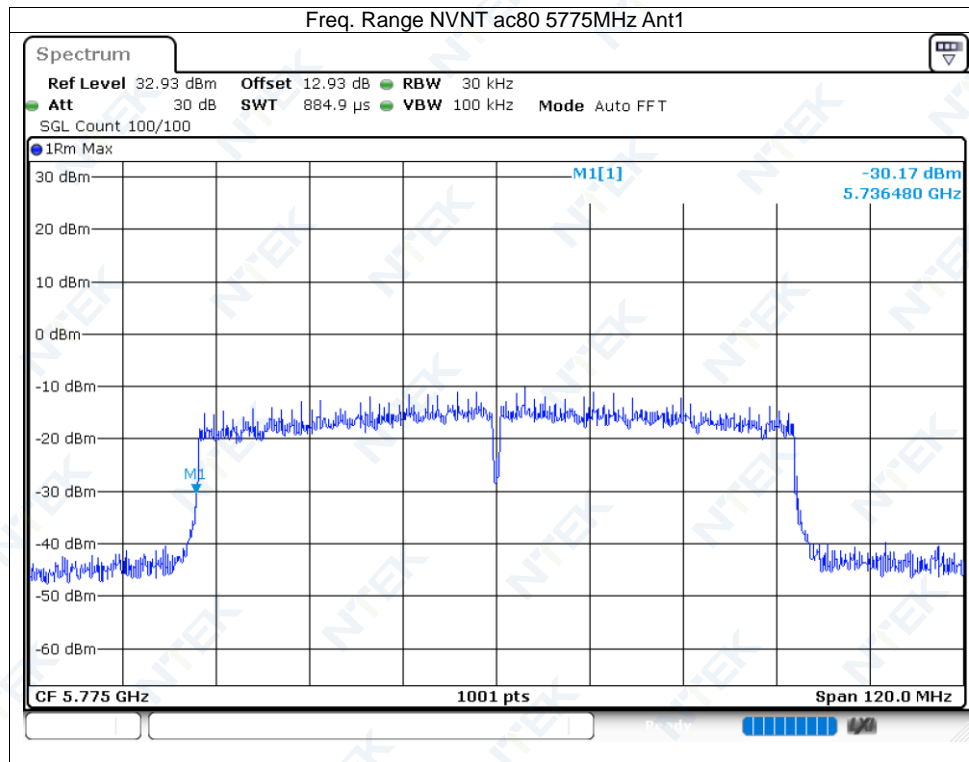








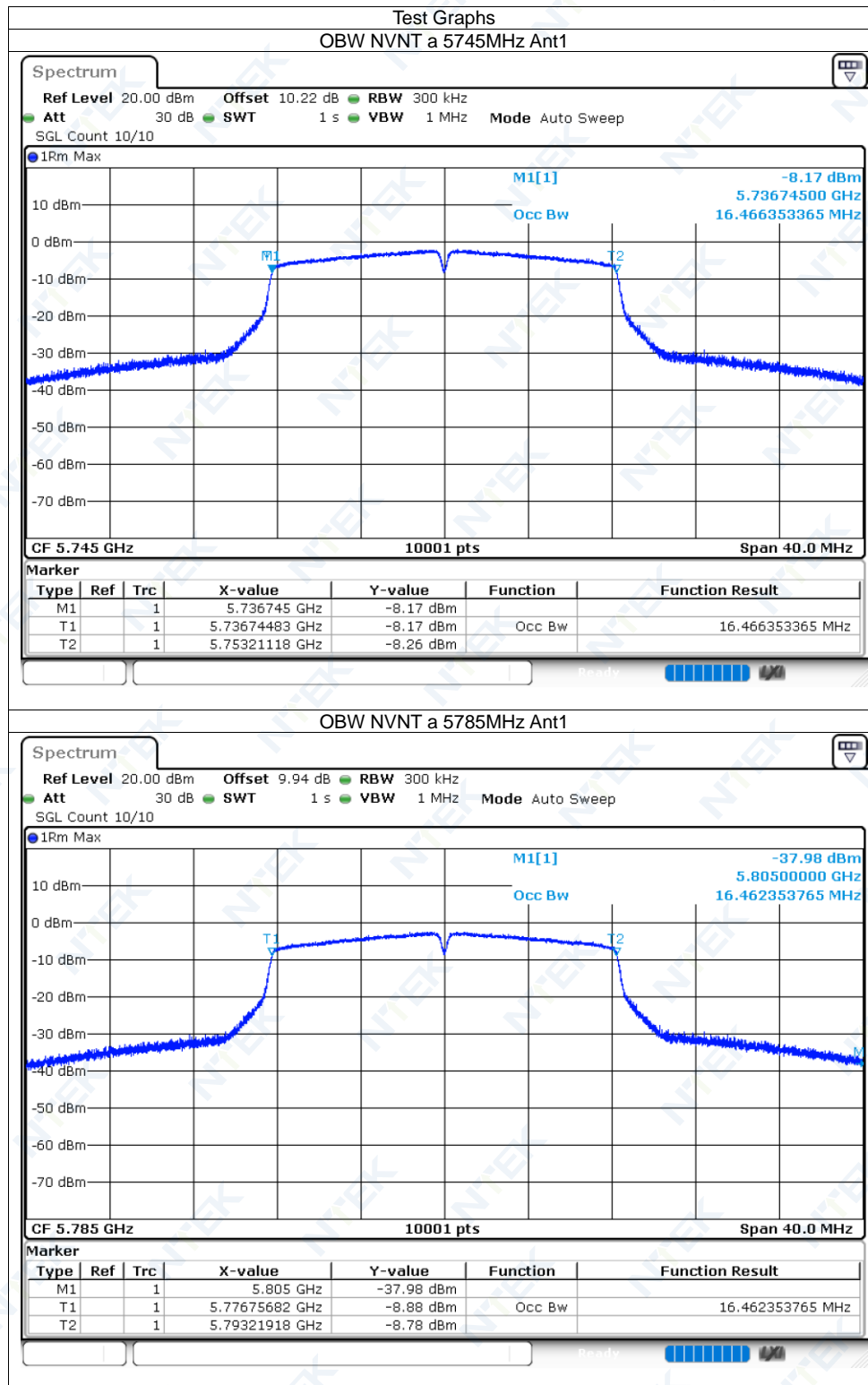


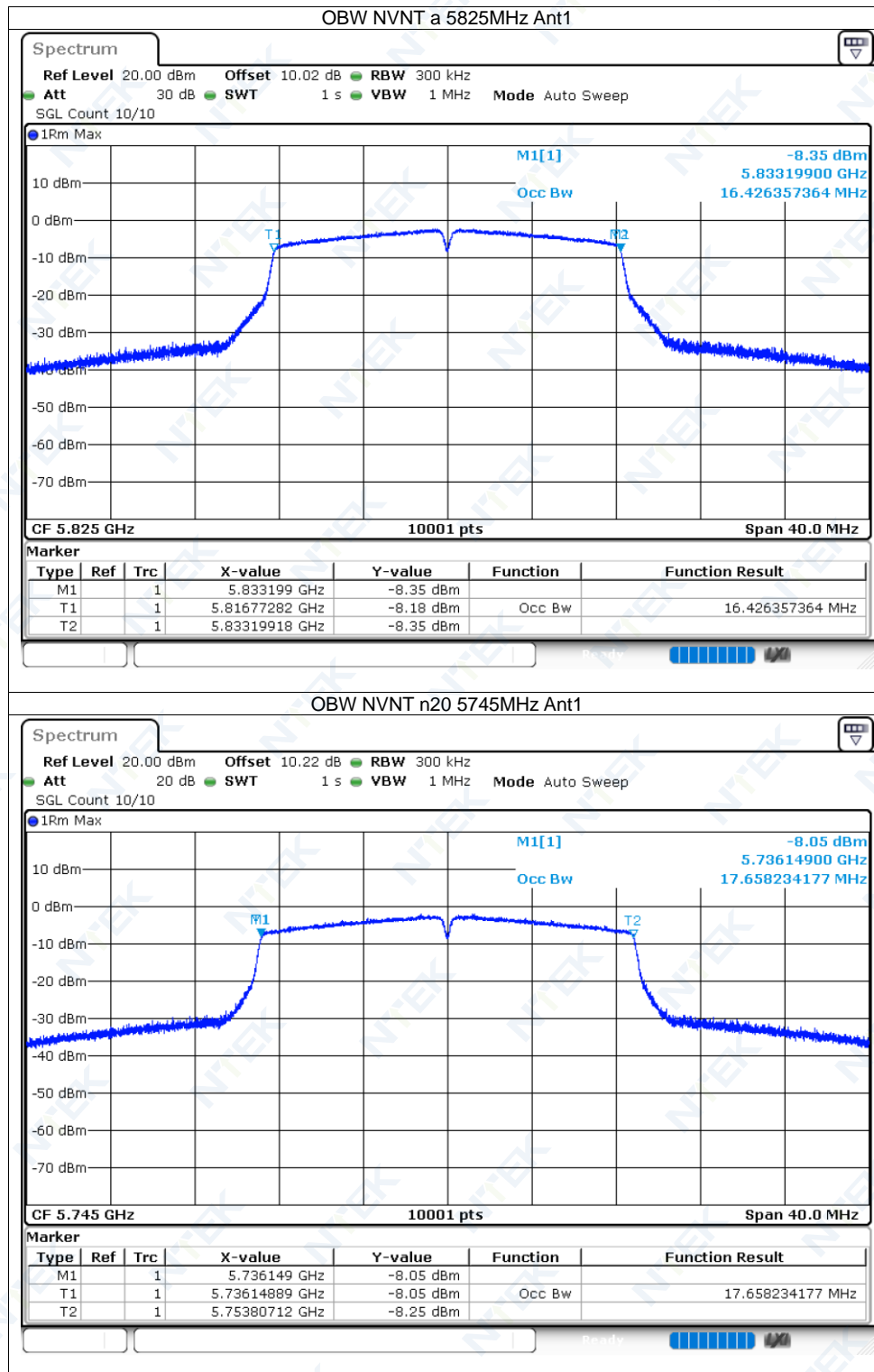


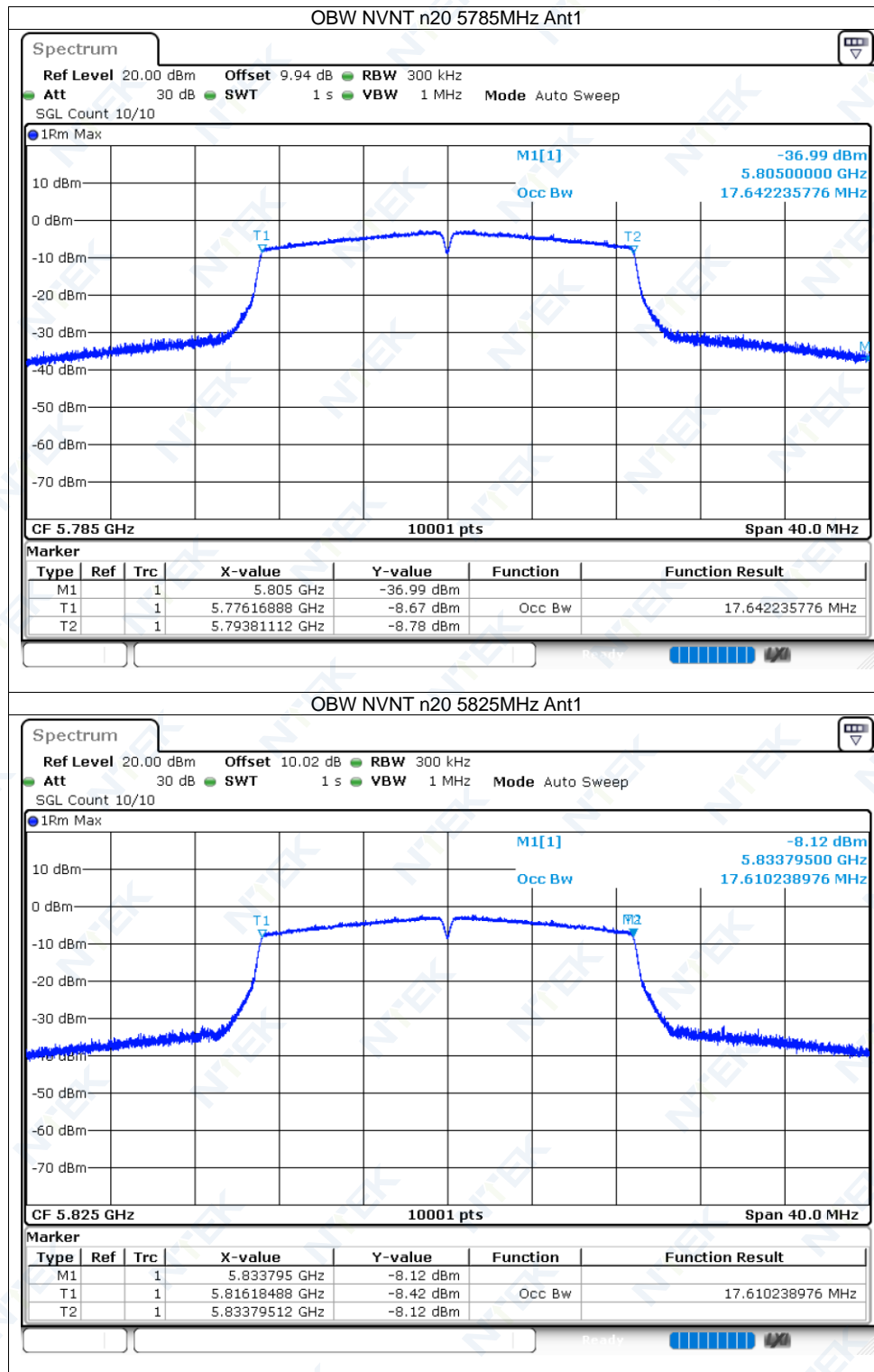


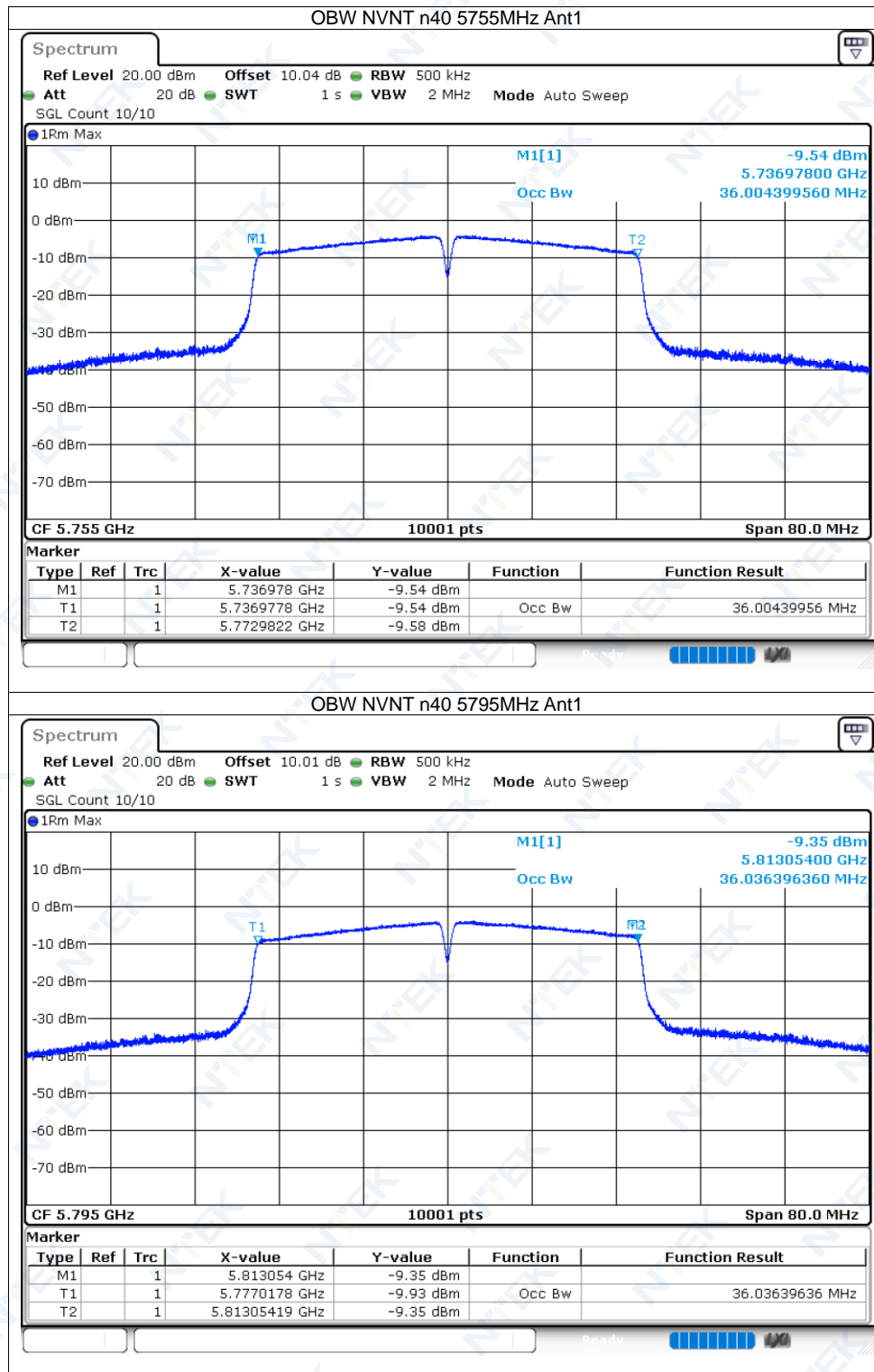
## 10.4 OCCUPIED CHANNEL BANDWIDTH

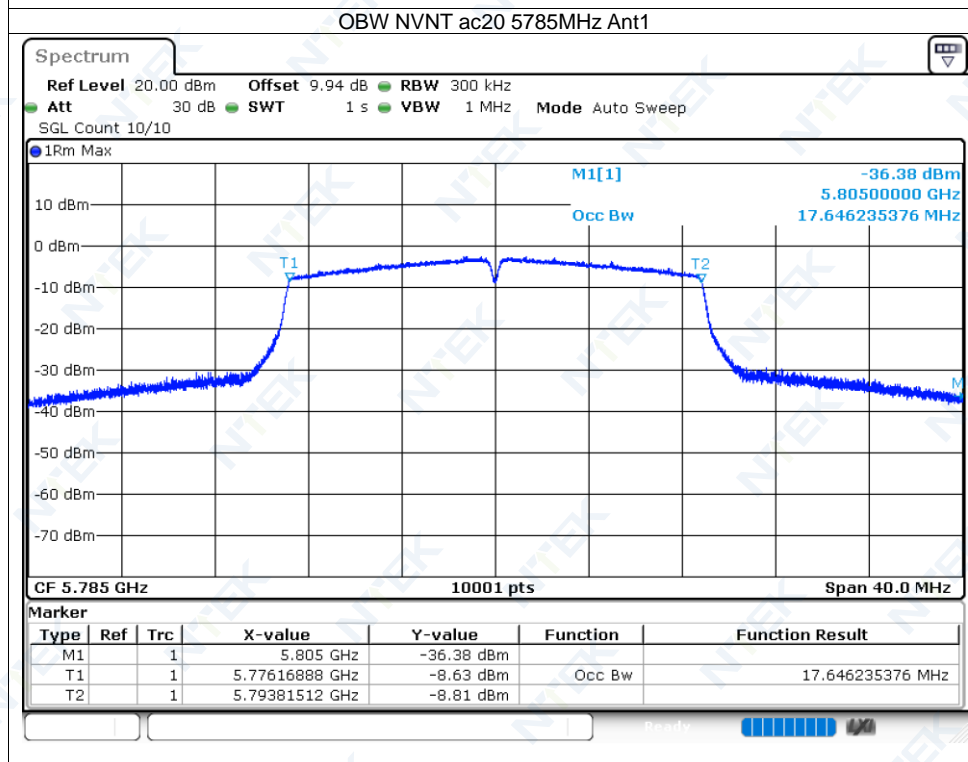
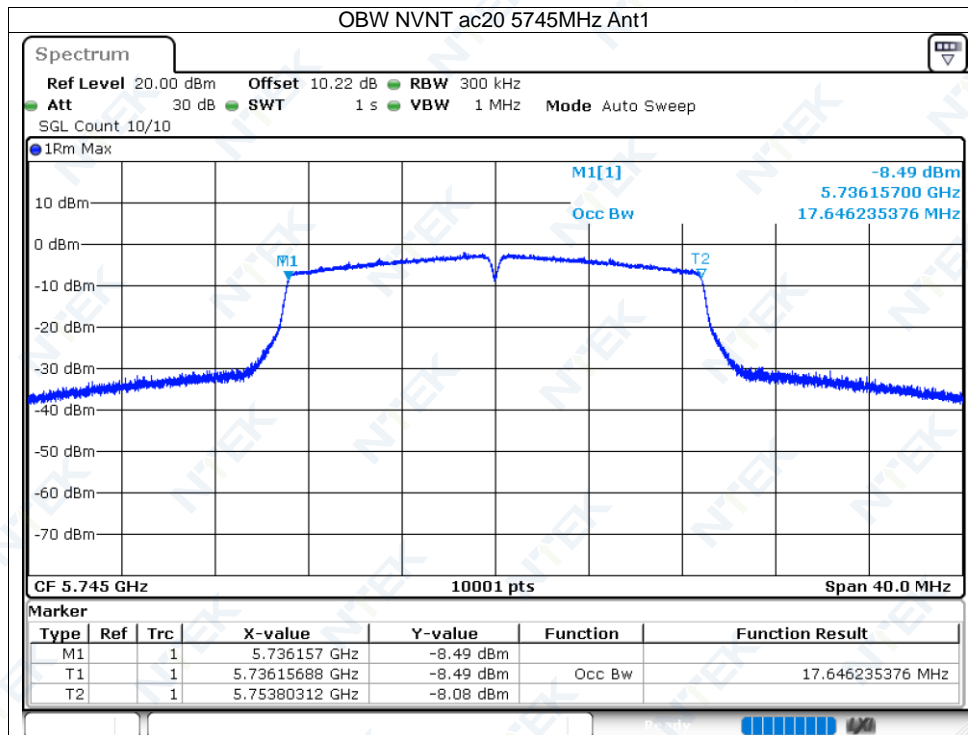
| Condition | Mode | Frequency (MHz) | Antenna | Center Frequency (MHz) | OBW (MHz) | Verdict |
|-----------|------|-----------------|---------|------------------------|-----------|---------|
| NVNT      | a    | 5745            | Ant1    | 5744.978               | 16.466    | Pass    |
| NVNT      | a    | 5785            | Ant1    | 5784.988               | 16.462    | Pass    |
| NVNT      | a    | 5825            | Ant1    | 5824.986               | 16.426    | Pass    |
| NVNT      | n20  | 5745            | Ant1    | 5744.978               | 17.658    | Pass    |
| NVNT      | n20  | 5785            | Ant1    | 5784.99                | 17.642    | Pass    |
| NVNT      | n20  | 5825            | Ant1    | 5824.99                | 17.61     | Pass    |
| NVNT      | n40  | 5755            | Ant1    | 5754.98                | 36.004    | Pass    |
| NVNT      | n40  | 5795            | Ant1    | 5795.036               | 36.036    | Pass    |
| NVNT      | ac20 | 5745            | Ant1    | 5744.98                | 17.646    | Pass    |
| NVNT      | ac20 | 5785            | Ant1    | 5784.992               | 17.646    | Pass    |
| NVNT      | ac20 | 5825            | Ant1    | 5824.988               | 17.614    | Pass    |
| NVNT      | ac40 | 5755            | Ant1    | 5754.976               | 35.98     | Pass    |
| NVNT      | ac40 | 5795            | Ant1    | 5795.032               | 36.028    | Pass    |
| NVNT      | ac80 | 5775            | Ant1    | 5775.072               | 75.56     | Pass    |

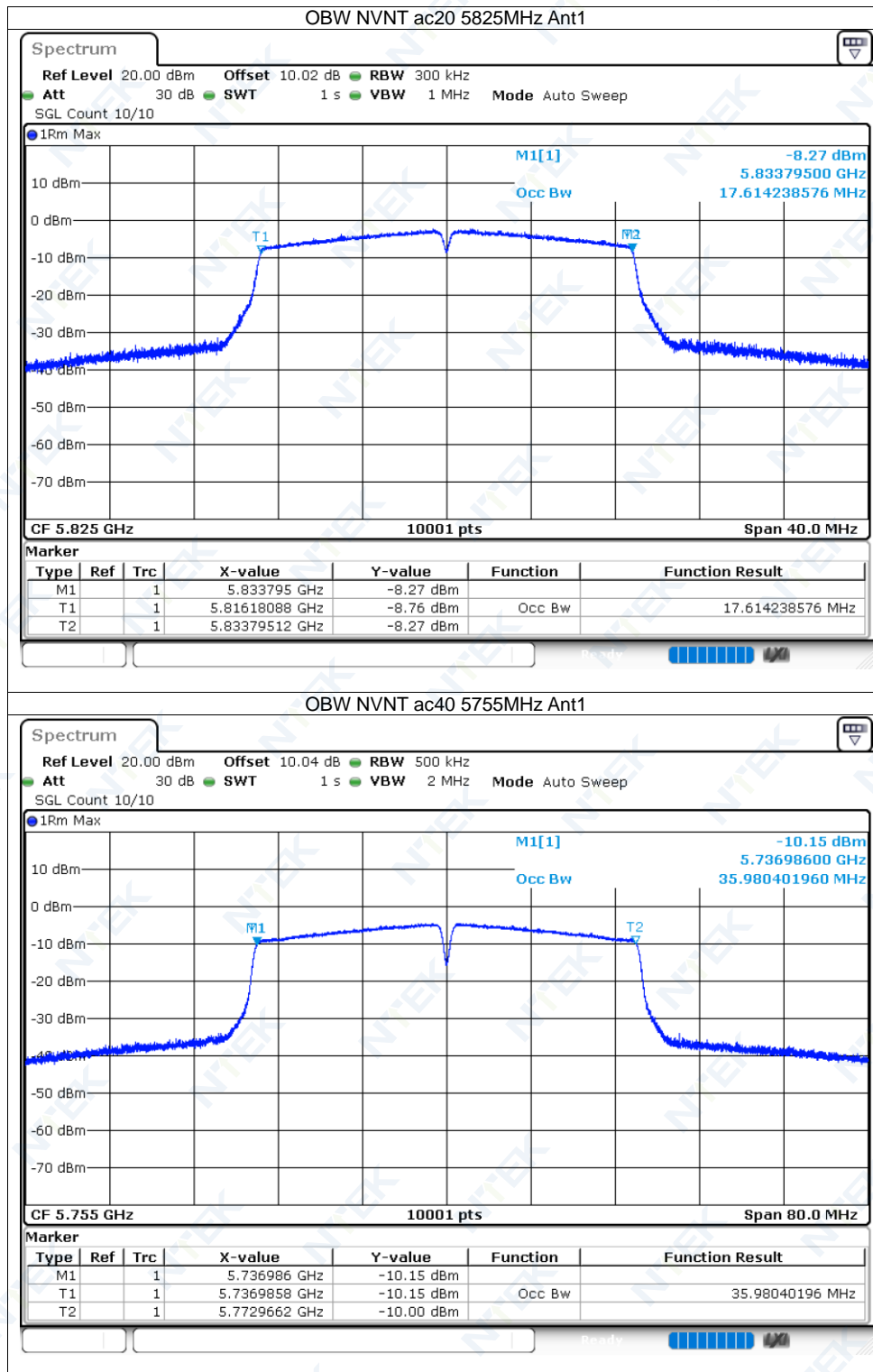




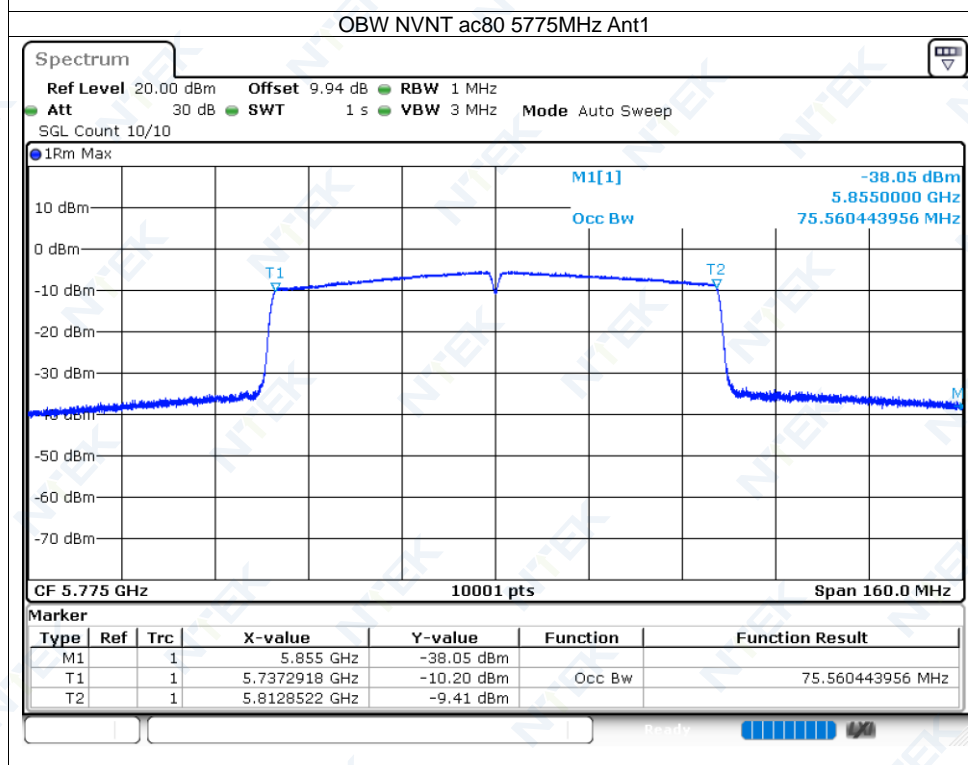
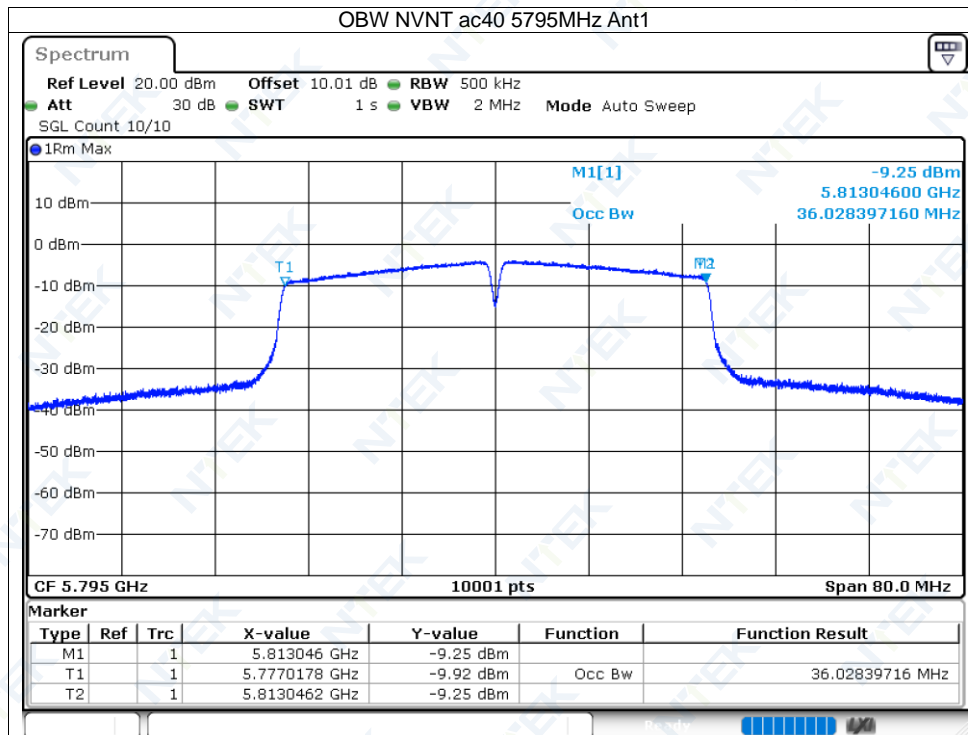










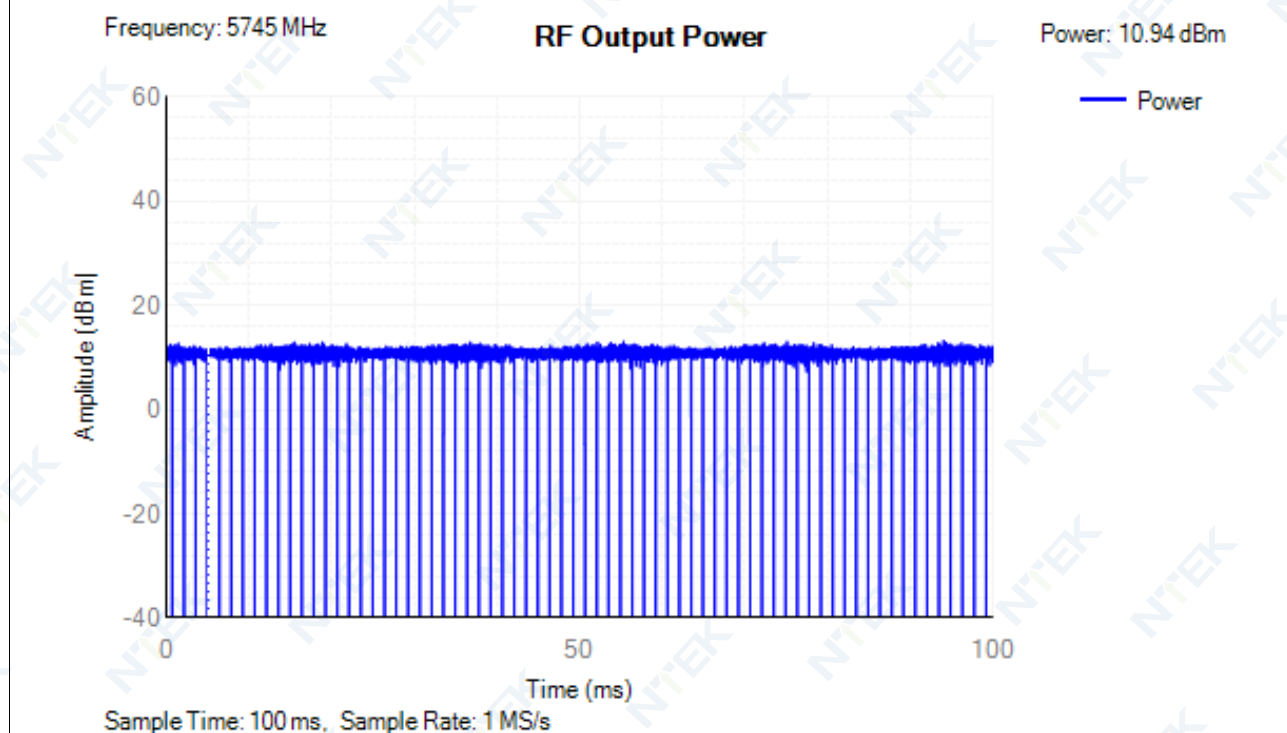


## 10.5 RF OUTPUT POWER

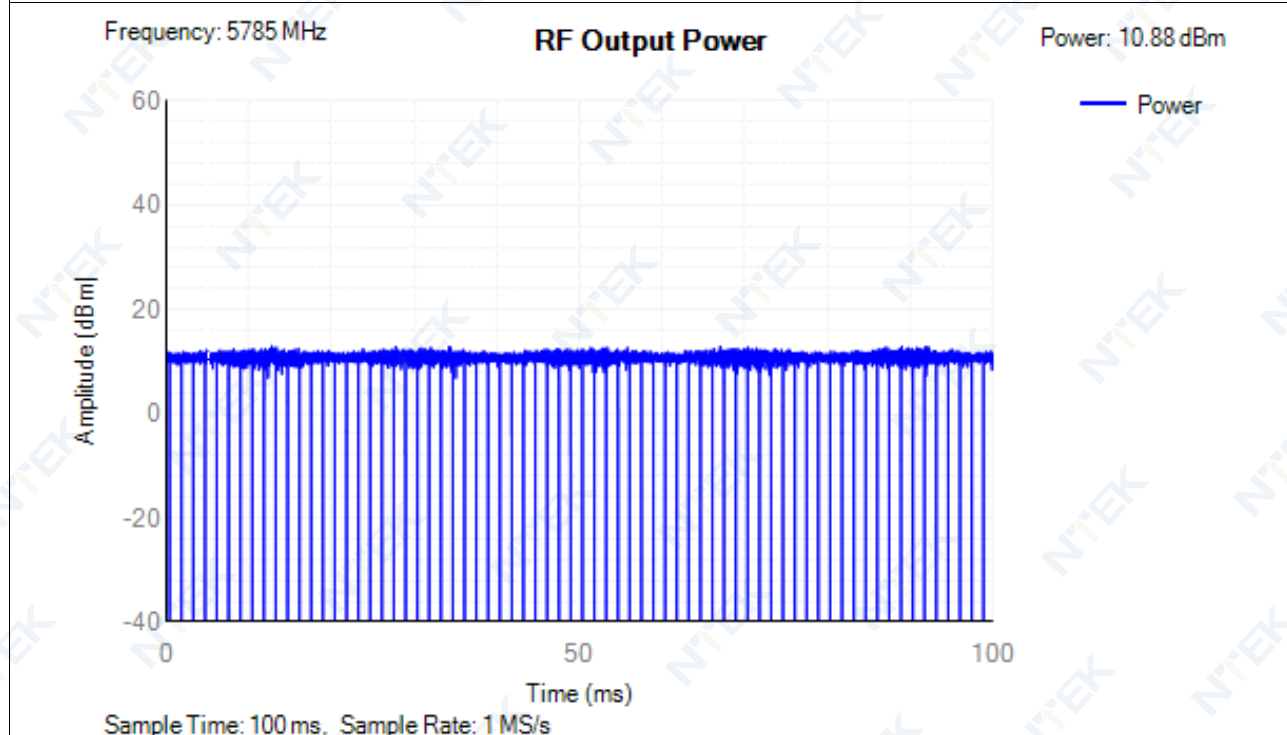
| Condition | Mode | Frequency (MHz) | Max Burst RMS Power (dBm) | Burst Number | Max EIRP (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------------------------|--------------|----------------|-------------|---------|
| NVNT      | a    | 5745            | 10.94                     | 71           | 10.37          | 13.98       | Pass    |
| NVNT      | a    | 5785            | 10.88                     | 71           | 10.31          | 13.98       | Pass    |
| NVNT      | a    | 5825            | 11.2                      | 71           | 10.63          | 13.98       | Pass    |
| NVNT      | n20  | 5745            | 10.81                     | 76           | 10.24          | 13.98       | Pass    |
| NVNT      | n20  | 5785            | 10.84                     | 76           | 10.27          | 13.98       | Pass    |
| NVNT      | n20  | 5825            | 10.96                     | 76           | 10.39          | 13.98       | Pass    |
| NVNT      | n40  | 5755            | 11.06                     | 146          | 10.49          | 13.98       | Pass    |
| NVNT      | n40  | 5795            | 10.64                     | 146          | 10.07          | 13.98       | Pass    |
| NVNT      | ac20 | 5745            | 10.85                     | 76           | 10.28          | 13.98       | Pass    |
| NVNT      | ac20 | 5785            | 10.85                     | 75           | 10.28          | 13.98       | Pass    |
| NVNT      | ac20 | 5825            | 11.11                     | 75           | 10.54          | 13.98       | Pass    |
| NVNT      | ac40 | 5755            | 10.76                     | 144          | 10.19          | 13.98       | Pass    |
| NVNT      | ac40 | 5795            | 10.68                     | 143          | 10.11          | 13.98       | Pass    |
| NVNT      | ac80 | 5775            | 10.38                     | 269          | 9.81           | 13.98       | Pass    |
| HVLT      | a    | 5745            | 10.27                     | 43           | 9.7            | 13.98       | Pass    |
| HVLT      | a    | 5785            | 10.30                     | 43           | 9.73           | 13.98       | Pass    |
| HVLT      | a    | 5825            | 10.27                     | 43           | 9.7            | 13.98       | Pass    |
| HVLT      | n20  | 5745            | 10.22                     | 45           | 9.65           | 13.98       | Pass    |
| HVLT      | n20  | 5785            | 8.17                      | 44           | 7.6            | 13.98       | Pass    |
| HVLT      | n20  | 5825            | 8.20                      | 44           | 7.63           | 13.98       | Pass    |
| HVLT      | n40  | 5755            | 8.17                      | 61           | 7.6            | 13.98       | Pass    |
| HVLT      | n40  | 5795            | 8.12                      | 62           | 7.55           | 13.98       | Pass    |
| HVLT      | ac20 | 5745            | 8.09                      | 76           | 7.52           | 13.98       | Pass    |
| HVLT      | ac20 | 5785            | 8.04                      | 44           | 7.47           | 13.98       | Pass    |
| HVLT      | ac20 | 5825            | 8.01                      | 44           | 7.44           | 13.98       | Pass    |
| HVLT      | ac40 | 5755            | 7.96                      | 45           | 7.39           | 13.98       | Pass    |
| HVLT      | ac40 | 5795            | 7.93                      | 62           | 7.36           | 13.98       | Pass    |
| HVLT      | ac80 | 5775            | 7.90                      | 62           | 7.33           | 13.98       | Pass    |
| LVHT      | a    | 5745            | 7.79                      | 43           | 7.22           | 13.98       | Pass    |
| LVHT      | a    | 5785            | 7.82                      | 43           | 7.25           | 13.98       | Pass    |
| LVHT      | a    | 5825            | 7.79                      | 43           | 7.22           | 13.98       | Pass    |
| LVHT      | n20  | 5745            | 7.74                      | 45           | 7.17           | 13.98       | Pass    |
| LVHT      | n20  | 5785            | 8.17                      | 44           | 7.6            | 13.98       | Pass    |
| LVHT      | n20  | 5825            | 8.20                      |              | 7.63           | 13.98       | Pass    |

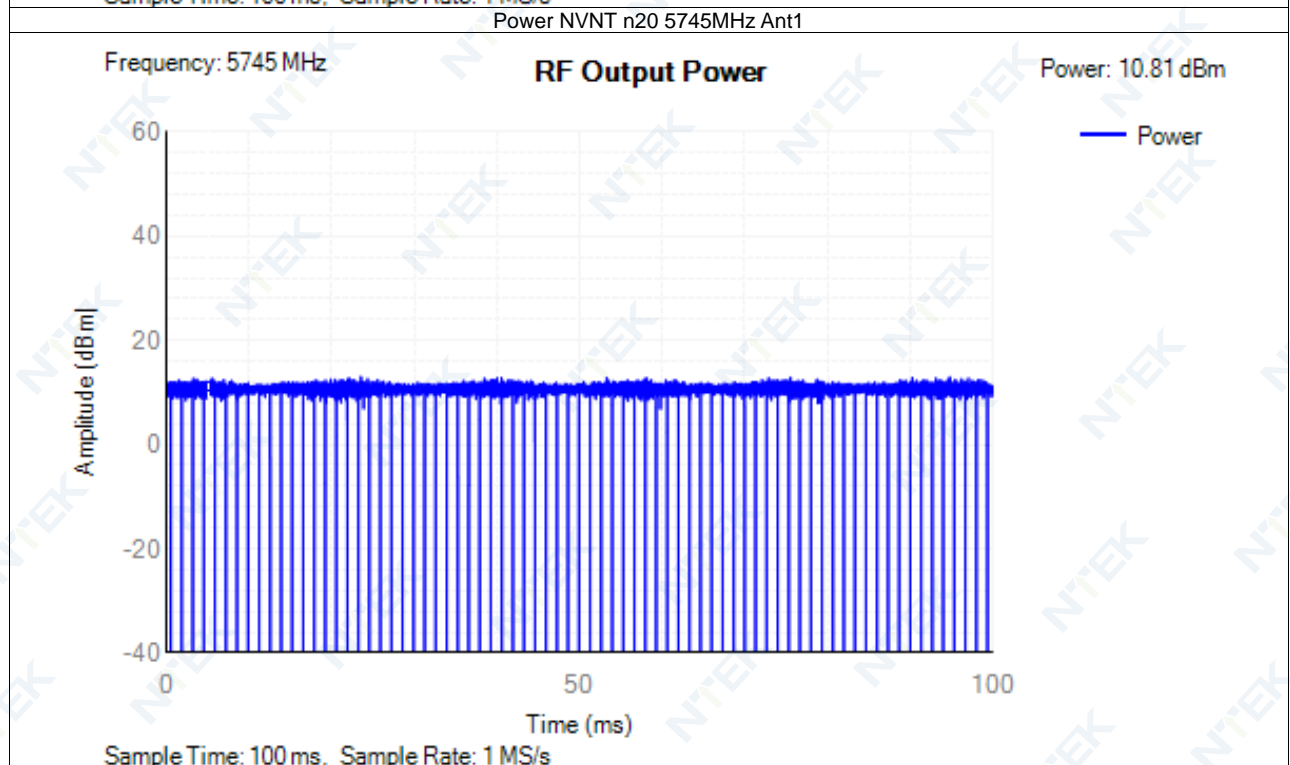
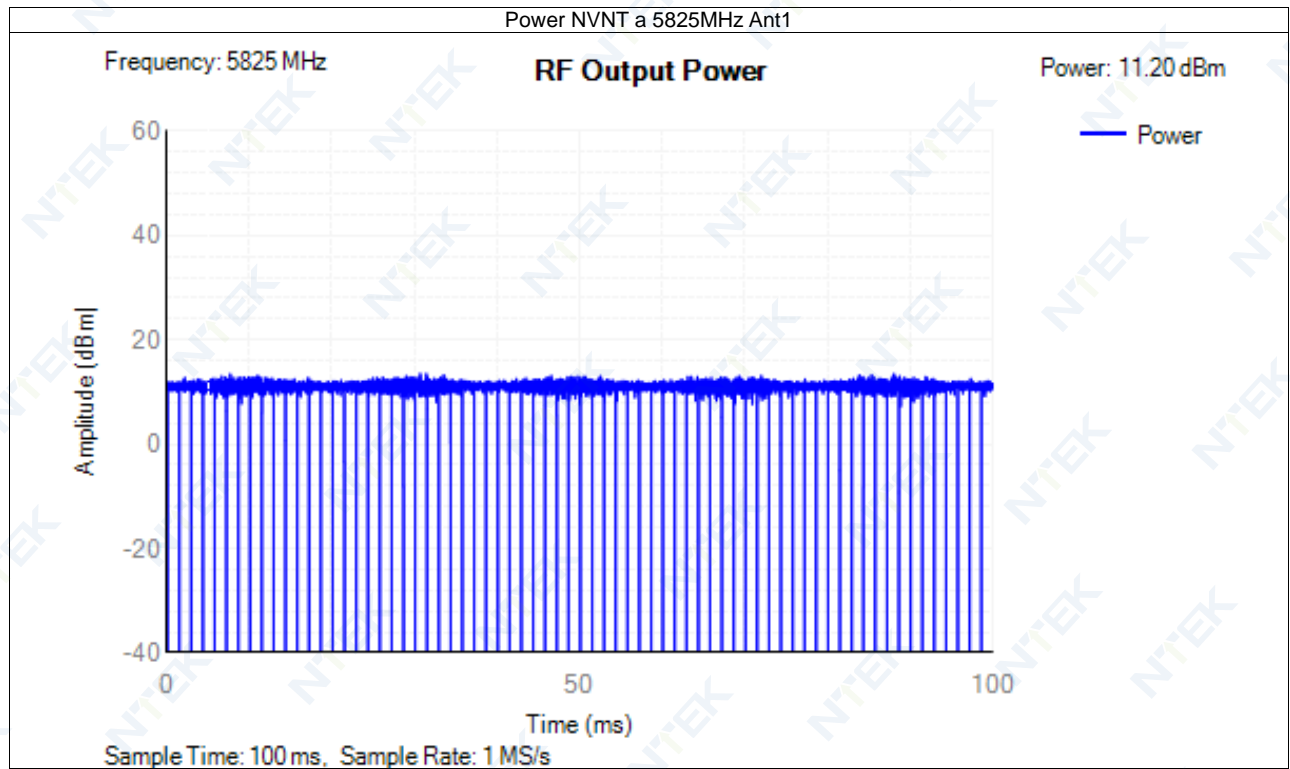
|      |      |      |      |    |      |       |      |
|------|------|------|------|----|------|-------|------|
| LVHT | n40  | 5755 | 8.17 | 61 | 7.6  | 13.98 | Pass |
| LVHT | n40  | 5795 | 8.12 | 62 | 7.55 | 13.98 | Pass |
| LVHT | ac20 | 5745 | 8.09 | 76 | 7.52 | 13.98 | Pass |
| LVHT | ac20 | 5785 | 8.04 | 44 | 7.47 | 13.98 | Pass |
| LVHT | ac20 | 5825 | 8.01 | 44 | 7.44 | 13.98 | Pass |
| LVHT | ac40 | 5755 | 7.96 | 45 | 7.39 | 13.98 | Pass |
| LVHT | ac40 | 5795 | 7.93 | 62 | 7.36 | 13.98 | Pass |
| LVHT | ac80 | 5775 | 7.90 | 62 | 7.33 | 13.98 | Pass |
| HVHT | a    | 5745 | 7.79 | 43 | 7.22 | 13.98 | Pass |
| HVHT | a    | 5785 | 7.82 | 43 | 7.25 | 13.98 | Pass |
| HVHT | a    | 5825 | 7.79 | 43 | 7.22 | 13.98 | Pass |
| HVHT | n20  | 5745 | 7.74 | 45 | 7.17 | 13.98 | Pass |
| HVHT | n20  | 5785 | 8.17 | 44 | 7.6  | 13.98 | Pass |
| HVHT | n20  | 5825 | 8.20 |    | 7.63 | 13.98 | Pass |
| HVHT | n40  | 5755 | 8.17 | 61 | 7.6  | 13.98 | Pass |
| HVHT | n40  | 5795 | 8.12 | 62 | 7.55 | 13.98 | Pass |
| HVHT | ac20 | 5745 | 8.09 | 76 | 7.52 | 13.98 | Pass |
| HVHT | ac20 | 5785 | 8.04 | 44 | 7.47 | 13.98 | Pass |
| HVHT | ac20 | 5825 | 8.01 | 44 | 7.44 | 13.98 | Pass |
| HVHT | ac40 | 5755 | 7.96 | 45 | 7.39 | 13.98 | Pass |
| HVHT | ac40 | 5795 | 7.93 | 62 | 7.36 | 13.98 | Pass |
| HVHT | ac80 | 5775 | 7.90 | 62 | 7.33 | 13.98 | Pass |
| LVL  | a    | 5745 | 7.79 | 43 | 7.22 | 13.98 | Pass |
| LVHT | a    | 5785 | 7.82 | 43 | 7.25 | 13.98 | Pass |
| LVHT | a    | 5825 | 7.79 | 43 | 7.22 | 13.98 | Pass |
| LVHT | n20  | 5745 | 7.74 | 45 | 7.17 | 13.98 | Pass |
| LVHT | n20  | 5785 | 8.17 | 44 | 7.6  | 13.98 | Pass |
| LVHT | n20  | 5825 | 8.20 |    | 7.63 | 13.98 | Pass |
| LVHT | n40  | 5755 | 8.17 | 61 | 7.6  | 13.98 | Pass |
| LVHT | n40  | 5795 | 8.12 | 62 | 7.55 | 13.98 | Pass |
| LVHT | ac20 | 5745 | 8.09 | 76 | 7.52 | 13.98 | Pass |
| LVHT | ac20 | 5785 | 8.04 | 44 | 7.47 | 13.98 | Pass |
| LVHT | ac20 | 5825 | 8.01 | 44 | 7.44 | 13.98 | Pass |
| LVHT | ac40 | 5755 | 7.96 | 45 | 7.39 | 13.98 | Pass |
| LVHT | ac40 | 5795 | 7.93 | 62 | 7.36 | 13.98 | Pass |
| LVHT | ac80 | 5775 | 7.92 | 62 | 7.35 | 13.98 | Pass |

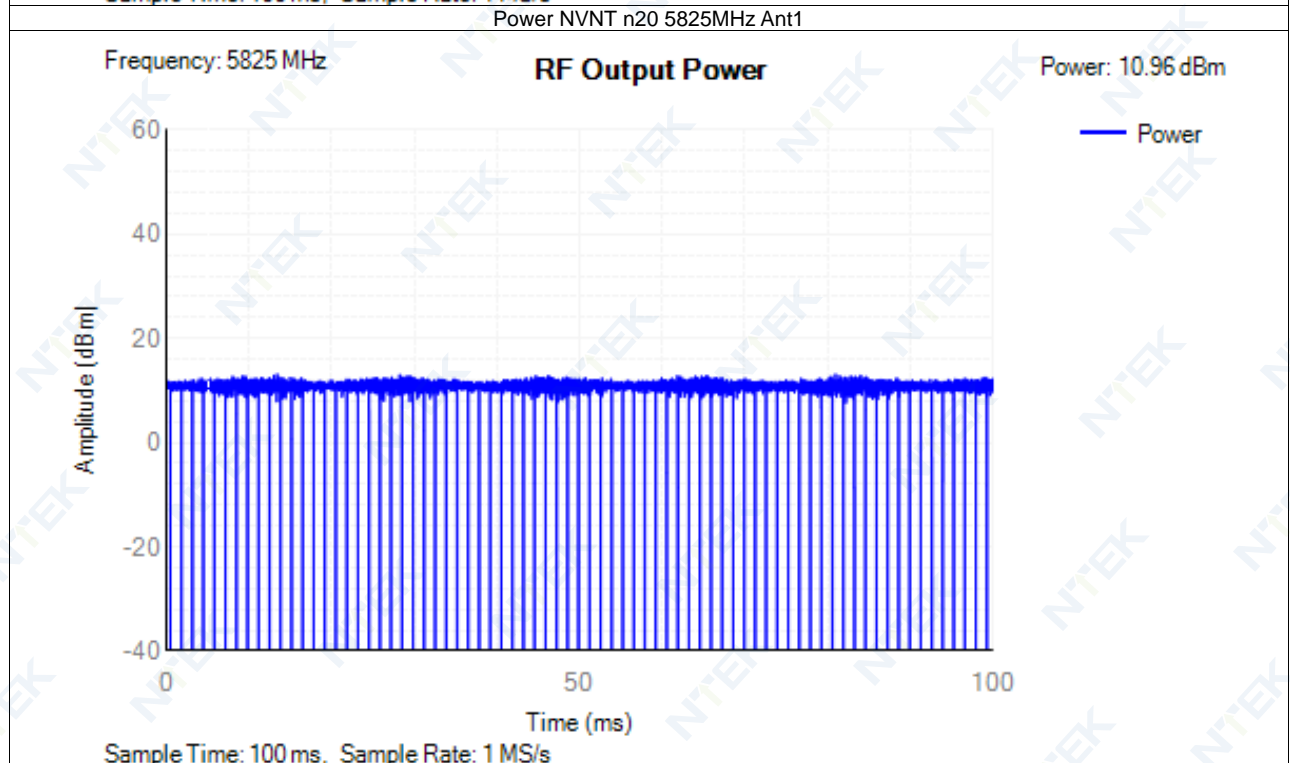
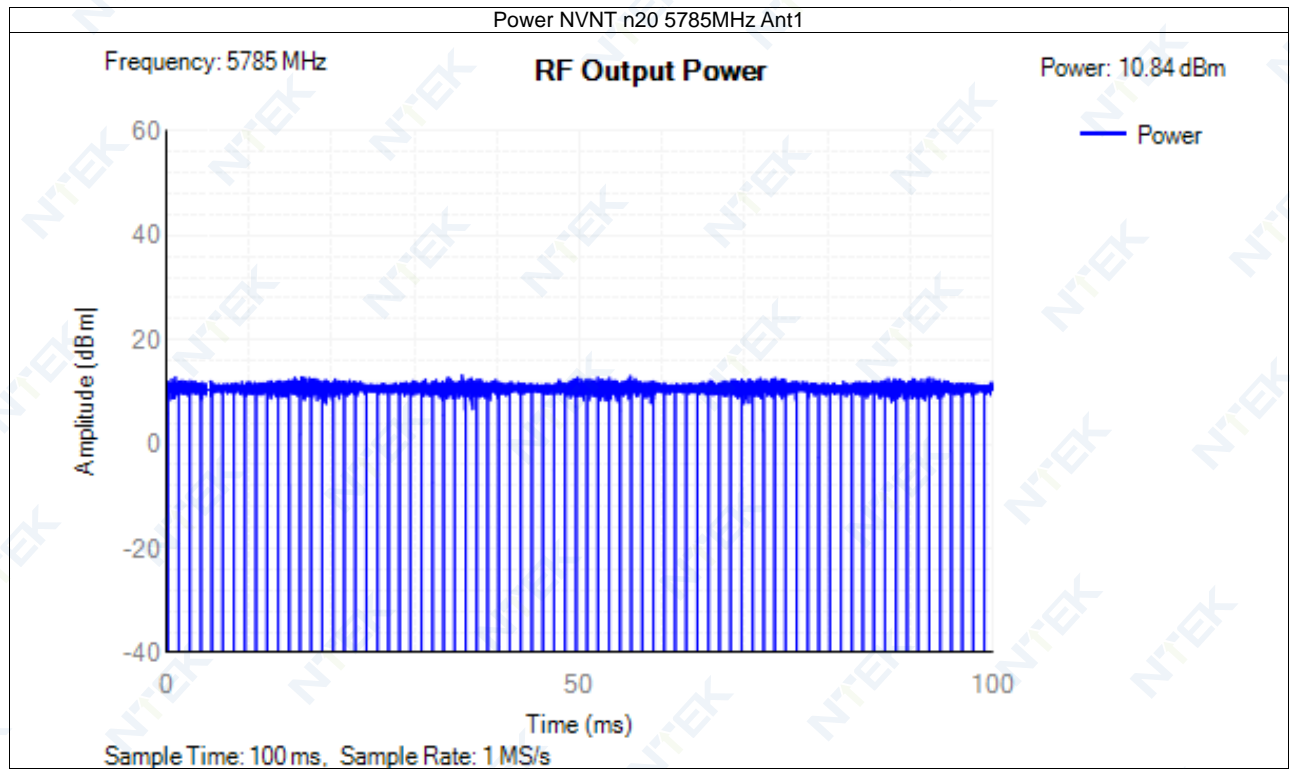
Test Graphs  
Power NVNT a 5745MHz Ant1

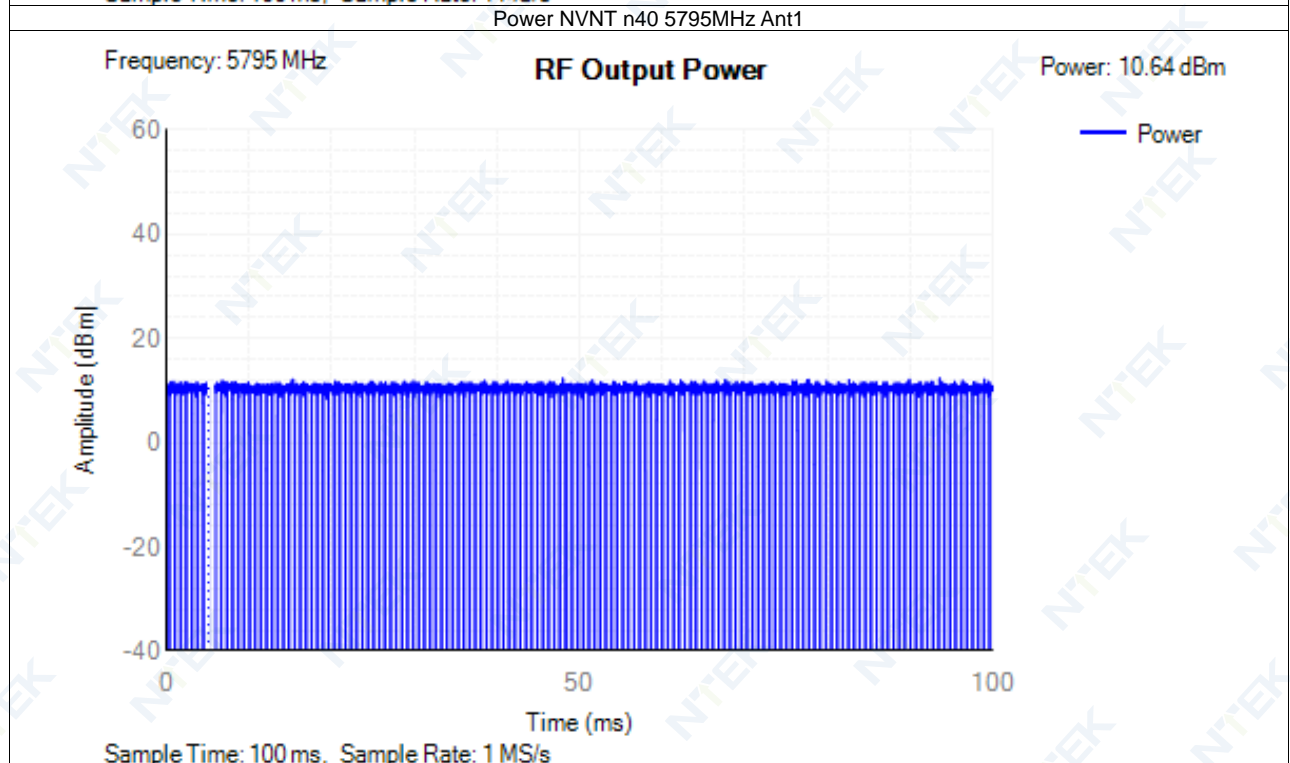
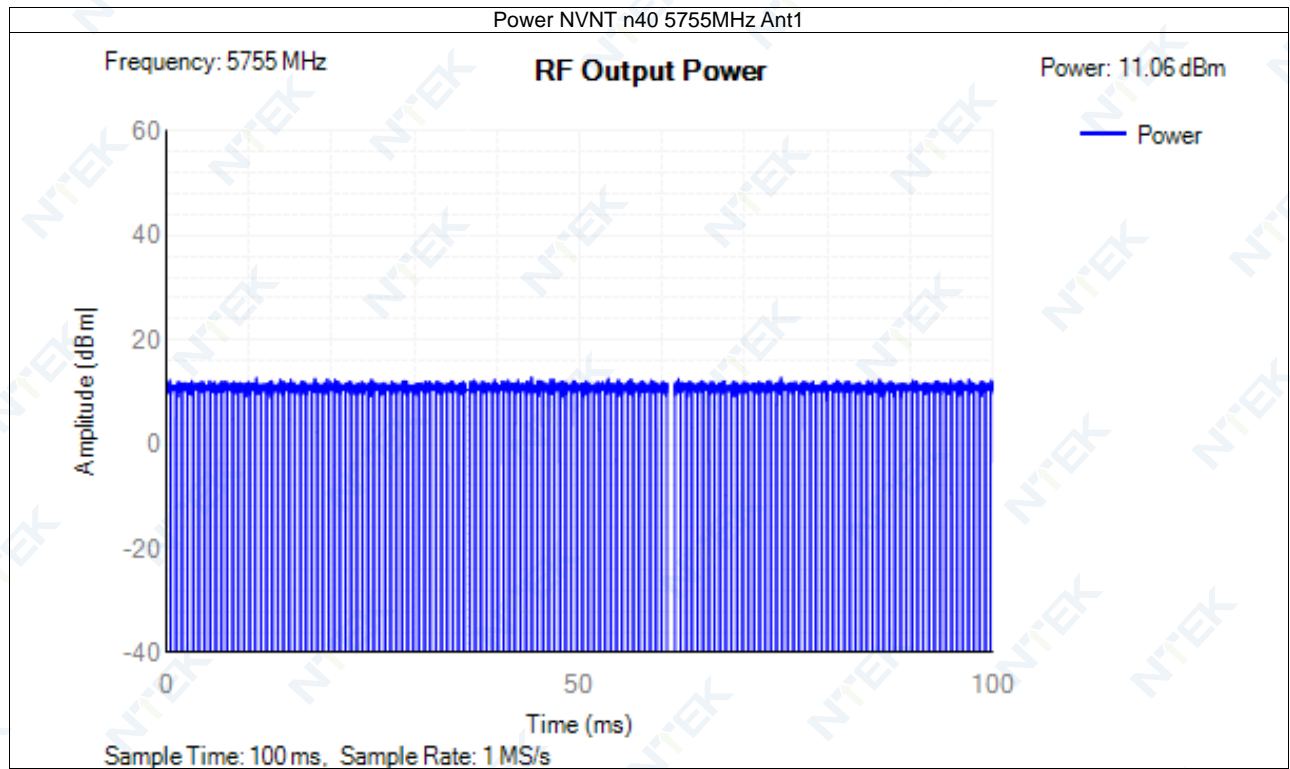


Power NVNT a 5785MHz Ant1

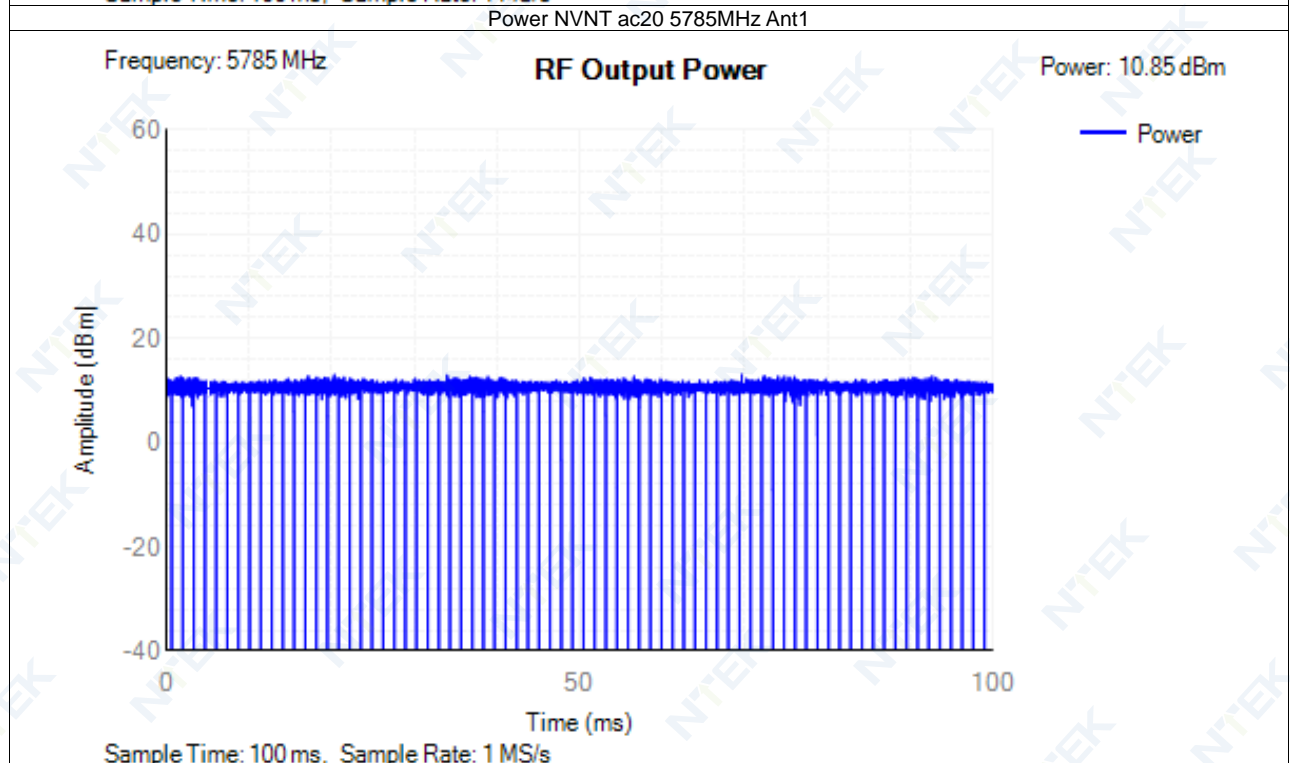
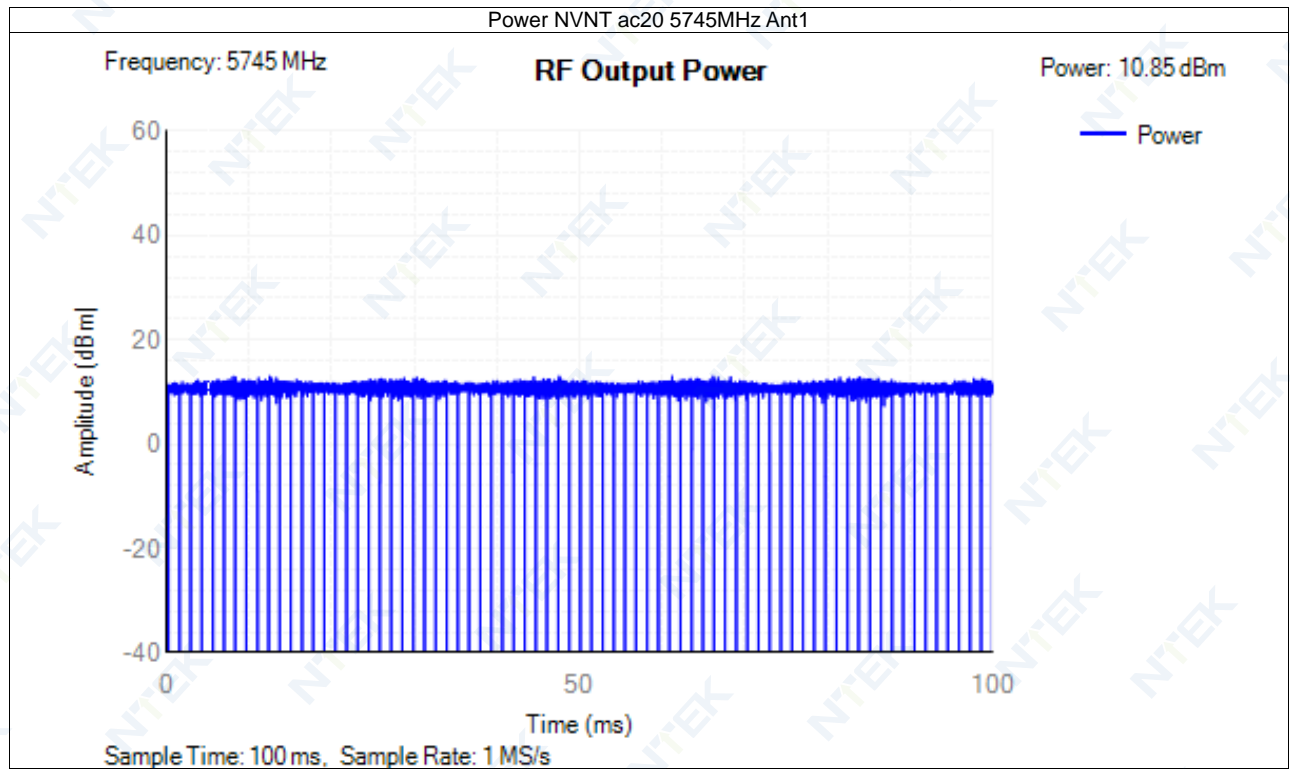


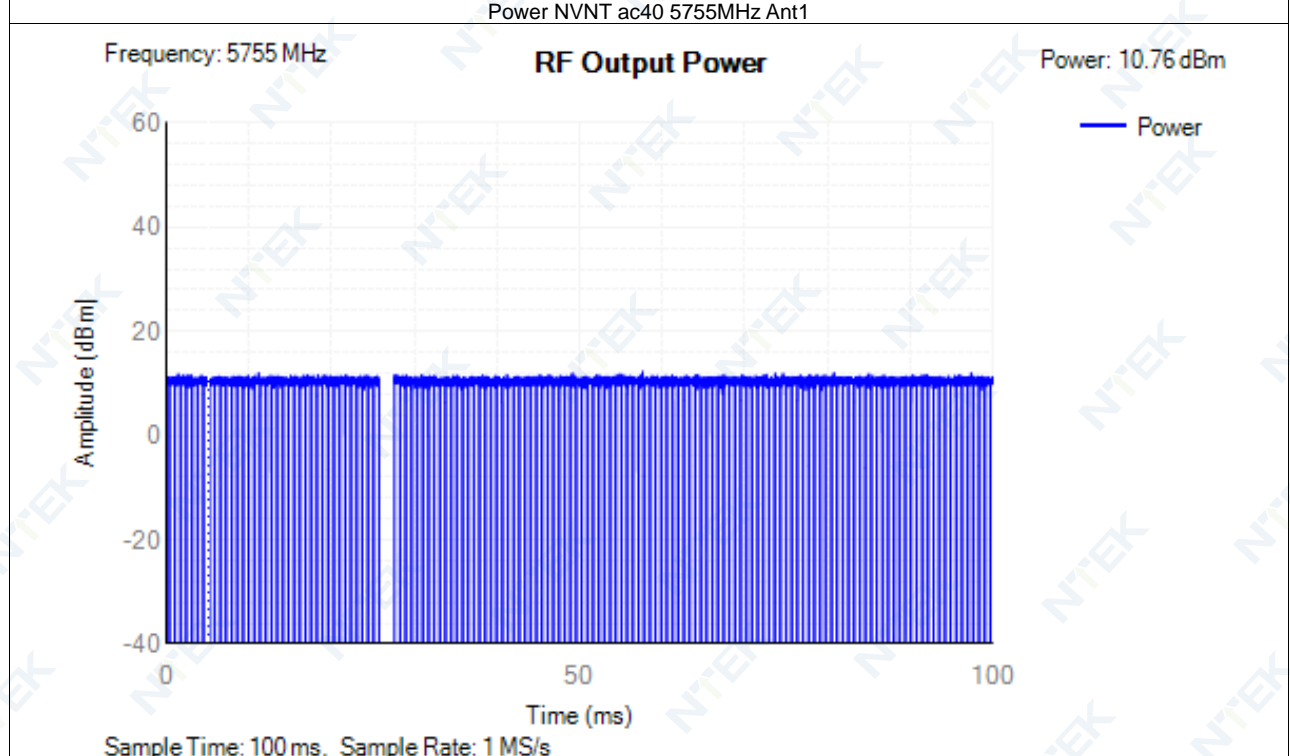
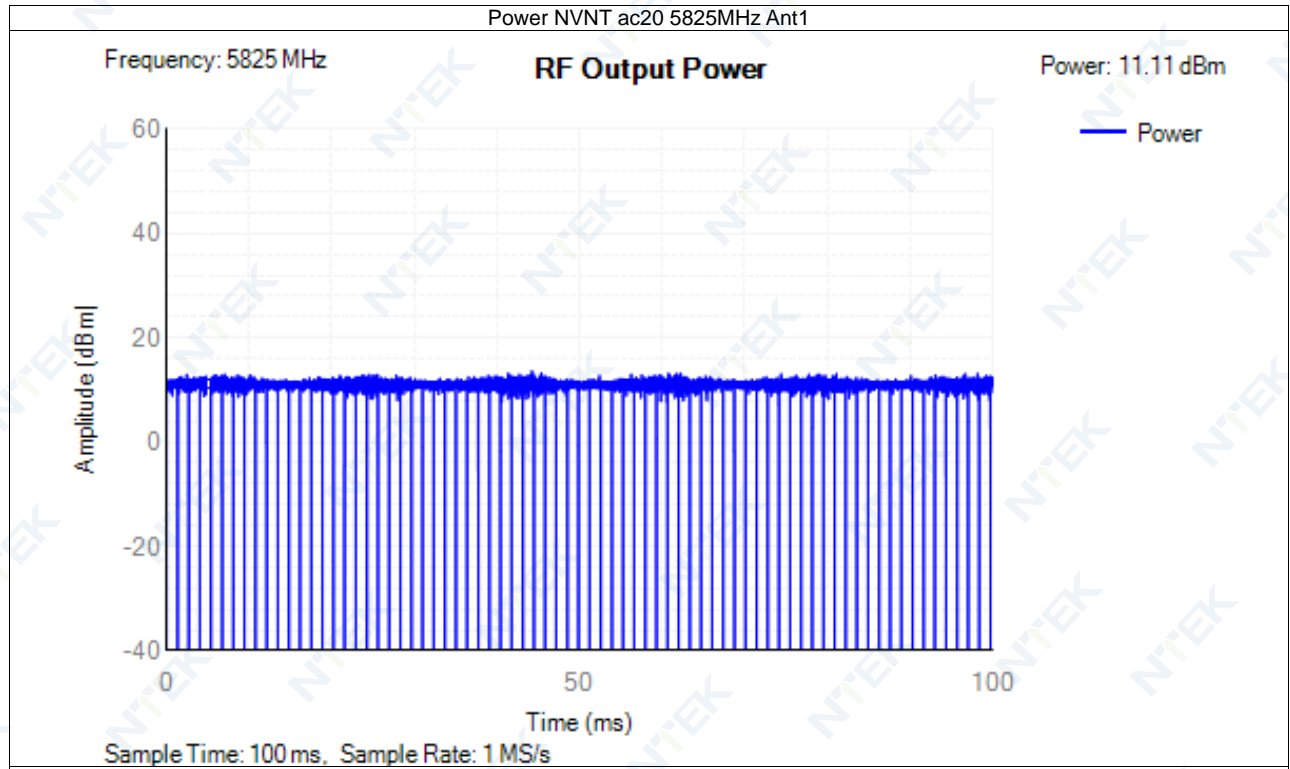


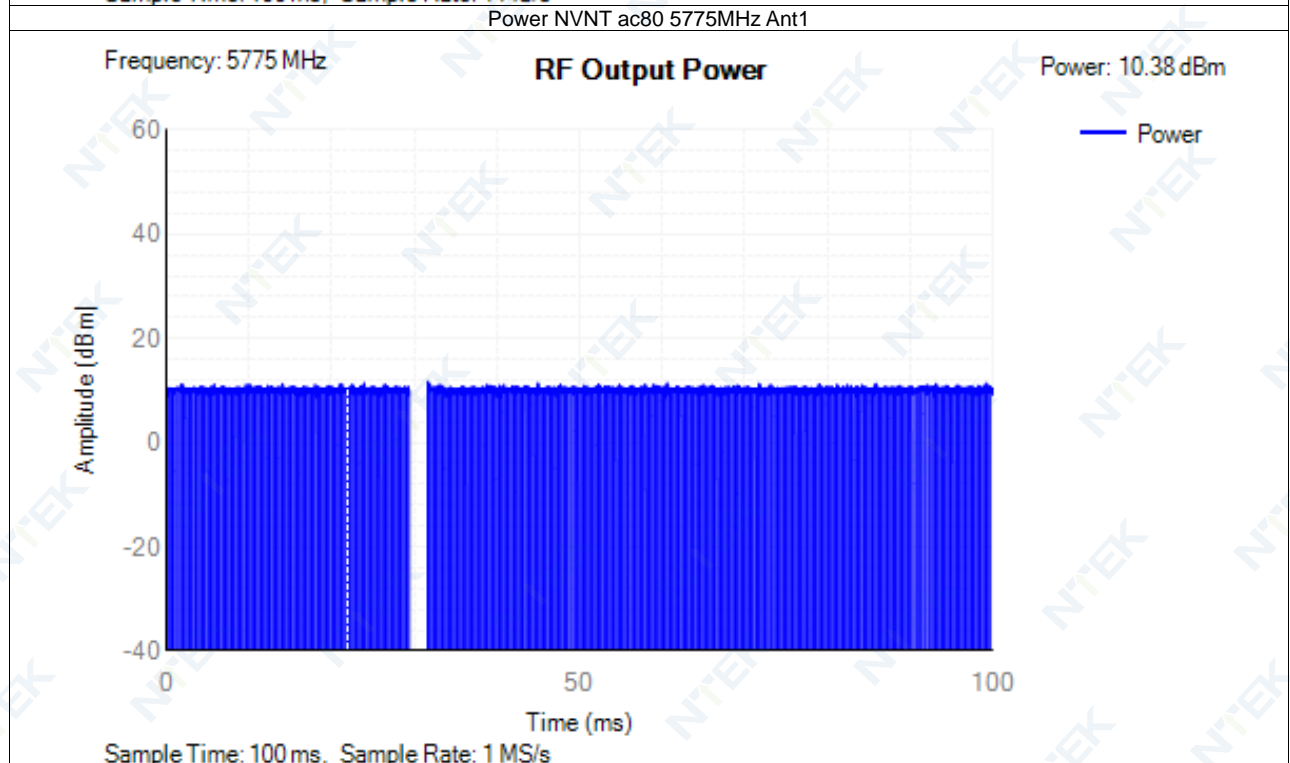
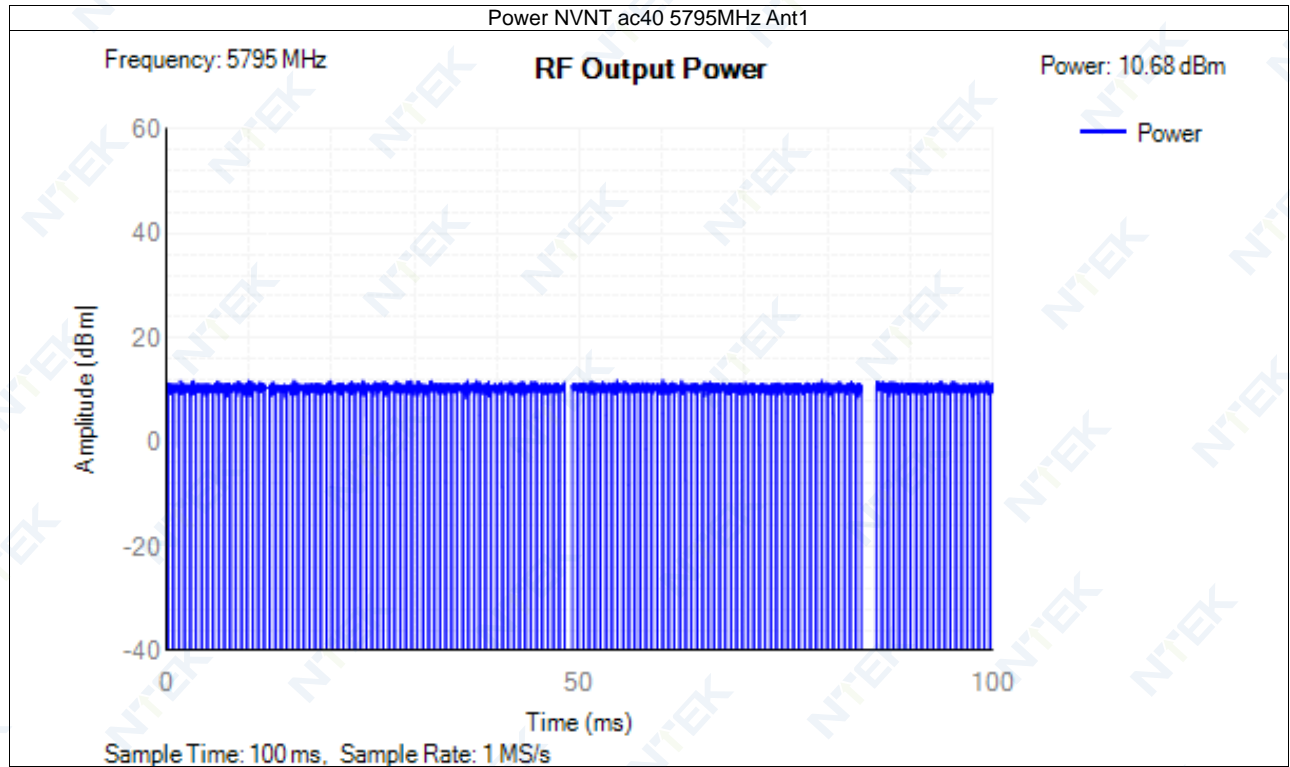












**11. EUT TEST PHOTO****SPURIOUS EMISSIONS MEASUREMENT PHOTOS****END OF REPORT**