

Report No: JYTSZE201003702

# FCC REPORT (Bluetooth)

| Applicant:              | Swagtek   |  |  |
|-------------------------|---|--|--|
| Address of Applicant:   | 10205 NW 19th St. Suite 101, Miami, FL, 33172     |  |  |
| Equipment Under Test (E | UT)   |  |  |
| Product Name:           | 5.7 inch 3G Smart Phone                           |  |  |
| Model No.:              | X57A, NEO, W57A                                   |  |  |
| Trade mark:             | LOGIC, iSWAG, UNONU                               |  |  |
| FCC ID:                 | O55573120   |  |  |
| Applicable standards:   | FCC CFR Title 47 Part 15 Subpart C Section 15.247 |  |  |
| Date of sample receipt: | 16 Oct., 2020                                     |  |  |
| Date of Test:           | 17 Oct., to 05 Nov., 2020                         |  |  |
| Date of report issued:  | 06 Nov., 2020                                     |  |  |
| Test Result:            | PASS *  |  |  |

\* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



#### Bruce Zhang Laboratory Manager

This report details the results of the testing carried out on one sample. The results contained in this test report do not relate to other samples of the same product and does not permit the use of the JYT product certification mark. The manufacturer should ensure that all products in series production are in conformity with the product sample detailed in this report.

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# 2 Version

| Version No. | Date          | Description |
|-------------|---------------|-------------|
| 00          | 06 Nov., 2020 | Original    |
|             |               |             |
|             |               |             |
|             |               |             |
|             |               |             |

Mike.OU Test Engineer Winner Mang

Date: 06 Nov., 2020

Tested by:

Date:

Reviewed by:

Project Engineer

06 Nov., 2020



# **3** Contents

|   | Page |
|---|------|
| 1 COVER PAGE  | 1    |
| 2 VERSION   | 2    |
| 3 CONTENTS  | 3    |
| 4 TEST SUMMARY  |      |
| 5 GENERAL INFORMATION                                       |      |
| 5.1 CLIENT INFORMATION                                      | -    |
| 5.1 CLIENT INFORMATION                                      |      |
| 5.3 TEST ENVIRONMENT AND MODE                               | -    |
| 5.4 DESCRIPTION OF SUPPORT UNITS                            |      |
| 5.5 MEASUREMENT UNCERTAINTY                                 | 6    |
| 5.6 Additions to, deviations, or exclusions from the method |      |
| 5.7 LABORATORY FACILITY                                     |      |
| 5.8 LABORATORY LOCATION                                     |      |
| 5.9 TEST INSTRUMENTS LIST                                   |      |
| 6 TEST RESULTS AND MEASUREMENT DATA                         | 8    |
| 6.1 ANTENNA REQUIREMENT                                     | 8    |
| 6.2 CONDUCTED EMISSIONS                                     |      |
| 6.3 Conducted Output Power                                  |      |
| 6.4 20DB OCCUPY BANDWIDTH                                   |      |
| 6.5 CARRIER FREQUENCIES SEPARATION                          |      |
| 6.6 HOPPING CHANNEL NUMBER<br>6.7 DWELL TIME                | -    |
| 6.8 PSEUDORANDOM FREQUENCY HOPPING SEQUENCE                 |      |
| 6.9 BAND EDGE   |      |
| 6.9.1 Conducted Emission Method                             |      |
| 6.9.2 Radiated Emission Method                              |      |
| 6.10 Spurious Emission                                      | _    |
| 6.10.1 Conducted Emission Method                            | _    |
| 6.10.2 Radiated Emission Method                             |      |
| 7 TEST SETUP PHOTO  |      |
| 8 EUT CONSTRUCTIONAL DETAILS                                |      |
| APPENDIX A - BT   |      |
|   |      |



### **4** Test Summary

| Test Items   | Section in CFR 47   | Result |  |  |  |
|--|---------------------|--------|--|--|--|
| Antenna Requirement  | 15.203 & 15.247 (b) | Pass   |  |  |  |
| AC Power Line Conducted Emission   | 15.207              | Pass   |  |  |  |
| Conducted Peak Output Power  | 15.247 (b)(1)       | Pass   |  |  |  |
| 20dB Occupied Bandwidth  | 15.247 (a)(1)       | Pass   |  |  |  |
| Carrier Frequencies Separation   | 15.247 (a)(1)       | Pass   |  |  |  |
| Hopping Channel Number   | 15.247 (a)(1)       | Pass   |  |  |  |
| Dwell Time   | 15.247 (a)(1)       | Pass   |  |  |  |
| Spurious Emission  | 15.205 & 15.209     | Pass   |  |  |  |
| Band Edge  | 15.247(d)           | Pass   |  |  |  |
| <i>Remark:</i><br>1. Pass: The EUT complies with the essential requirements in the standard. |                     |        |  |  |  |

2. N/A: Not Applicable.

The cable insertion loss used by "RF Output Power" and other conduction measurement items is 0.5dB (provided by the customer).

| Test Method: | ANSI C63.10-2013                           |
|--------------|--|
| rest methou. | KDB 558074 D01 15.247 Meas Guidance v05r02 |



# **5** General Information

# **5.1 Client Information**

| Applicant:    | Swagtek                                       |  |
|---------------|---|--|
| Address:      | 10205 NW 19th St. Suite 101, Miami, FL, 33172 |  |
| Manufacturer: | Swagtek                                       |  |
| Address:      | 10205 NW 19th St. Suite 101, Miami, FL, 33172 |  |
| Factory:      | Swagtek                                       |  |
| Address:      | 10205 NW 19th St. Suite 101, Miami, FL, 33172 |  |

# 5.2 General Description of E.U.T.

| Product Name:          | 5.7 inch 3G Smart Phone   |  |  |  |
|------------------------|---|--|--|--|
|                        |   |  |  |  |
| Model No.:             | X57A, NEO, W57A   |  |  |  |
| Operation Frequency:   | 2402MHz~2480MHz   |  |  |  |
| Transfer rate:         | 1/2/3 Mbits/s   |  |  |  |
| Number of channel:     | 79  |  |  |  |
| Modulation type:       | GFSK, π/4-DQPSK, 8DPSK  |  |  |  |
| Modulation technology: | FHSS  |  |  |  |
| Antenna Type:          | Internal Antenna  |  |  |  |
| Antenna gain:          | -2.5 dBi  |  |  |  |
| Power supply:          | Rechargeable Li-ion Battery DC3.8V-2350mAh                                    |  |  |  |
| AC adapter:            | Model: A31A-050100U-US1   |  |  |  |
|                        | Input: AC100-240V, 50/60Hz, 0.2A  |  |  |  |
|                        | Output: DC 5.0V, 1000mA   |  |  |  |
| Remark:                | Model No.: X57A, NEO, W57A, were identical inside, the electrical circuit     |  |  |  |
|                        | design, layout, components used and internal wiring.                          |  |  |  |
|                        | LOGIC model corresponds to the trademark X57A.                                |  |  |  |
|                        | iSWAG model correspond to the trademark NEO.                                  |  |  |  |
|                        | UNONU model corresponds to the trademark W57A.                                |  |  |  |
| Test Sample Condition: | The test samples were provided in good working order with no visible defects. |  |  |  |

| Operation   | Operation Frequency each of channel for GFSK, $\pi$ /4-DQPSK, 8DPSK |         |           |         |           |         |           |
|-------------|---|---------|-----------|---------|-----------|---------|-----------|
| Channel     | Frequency   | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 0           | 2402MHz   | 20      | 2422MHz   | 40      | 2442MHz   | 60      | 2462MHz   |
| 1           | 2403MHz   | 21      | 2423MHz   | 41      | 2443MHz   | 61      | 2463MHz   |
| 2           | 2404MHz   | 22      | 2424MHz   | 42      | 2444MHz   | 62      | 2464MHz   |
| 3           | 2405MHz   | 23      | 2425MHz   | 43      | 2445MHz   | 63      | 2465MHz   |
| 4           | 2406MHz   | 24      | 2426MHz   | 44      | 2446MHz   | 64      | 2466MHz   |
| 5           | 2407MHz   | 25      | 2427MHz   | 45      | 2447MHz   | 65      | 2467MHz   |
|             |   |         |           |         |           |         |           |
| 15          | 2417MHz   | 35      | 2437MHz   | 55      | 2457MHz   | 75      | 2477MHz   |
| 16          | 2418MHz   | 36      | 2438MHz   | 56      | 2458MHz   | 76      | 2478MHz   |
| 17          | 2419MHz   | 37      | 2439MHz   | 57      | 2459MHz   | 77      | 2479MHz   |
| 18          | 2420MHz   | 38      | 2440MHz   | 58      | 2460MHz   | 78      | 2480MHz   |
| 19          | 19 2421MHz 39 2441MHz 59 2461MHz                                    |         |           |         |           |         |           |
| Remark: Cha | Remark: Channel 0, 39 &78 selected for GFSK, π/4-DQPSK and 8DPSK.   |         |           |         |           |         |           |



## 5.3 Test environment and mode

| Operating Environment:  |   |  |  |  |
|---|---|--|--|--|
| Temperature:  | 24.0 °C   |  |  |  |
| Humidity:   | 54 % RH   |  |  |  |
| Atmospheric Pressure:   | 1010 mbar   |  |  |  |
| Test Modes:   |   |  |  |  |
| Non-hopping mode:   | Keep the EUT in continuous transmitting mode with worst case data rate. |  |  |  |
| Hopping mode:   | Keep the EUT in hopping mode.   |  |  |  |
| Remark  | GFSK (1 Mbps) is the worst case mode.                                   |  |  |  |
| Radiated Emission: The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane |   |  |  |  |

Radiated Emission: The sample was placed 0.8m (below 1GHz)/1.5m (above 1GHz) above the ground plane of 3m chamber\*. Measurements in both horizontal and vertical polarities were performed. During the test, each emission was maximized by: having the EUT continuously working, investigated all operating modes, rotated about all 3 axis (X, Y & Z) and considered typical configuration to obtain worst position, manipulating interconnecting cables, rotating the turntable, varying antenna height from 1m to 4m in both horizontal and vertical polarizations. The emissions worst-case are shown in Test Results of the following pages.

# **5.4 Description of Support Units**

The EUT has been tested as an independent unit.

### 5.5 Measurement Uncertainty

| Parameters                          | Expanded Uncertainty |
|-------------------------------------|----------------------|
| Conducted Emission (9kHz ~ 30MHz)   | ±1.60 dB (k=2)       |
| Radiated Emission (9kHz ~ 30MHz)    | ±3.12 dB (k=2)       |
| Radiated Emission (30MHz ~ 1000MHz) | ±4.32 dB (k=2)       |
| Radiated Emission (1GHz ~ 18GHz)    | ±5.16 dB (k=2)       |
| Radiated Emission (18GHz ~ 40GHz)   | ±3.20 dB (k=2)       |

# 5.6 Additions to, deviations, or exclusions from the method

No

### 5.7 Laboratory Facility

The test facility is recognized, certified, or accredited by the following organizations:

### • FCC - Designation No.: CN1211

JianYan Testing Group Shenzhen Co., Ltd. has been accredited as a testing laboratory by FCC(Federal Communications Commission). The test firm Registration No. is 727551.

#### • ISED – CAB identifier.: CN0021

The 3m Semi-anechoic chamber of JianYan Testing Group Shenzhen Co., Ltd. has been Registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 10106A-1.

### • A2LA - Registration No.: 4346.01

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005 General requirements for the competence of testing and calibration laboratories. The test scope can be found as below link: <u>https://portal.a2la.org/scopepdf/4346-01.pdf</u>

### **5.8 Laboratory Location**

JianYan Testing Group Shenzhen Co., Ltd. Address: No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Tel: +86-755-23118282, Fax: +86-755-23116366 Email: info@ccis-cb.com, Website: <u>http://www.ccis-cb.com</u>



# **5.9 Test Instruments list**

| Radiated Emission: |                 |               |                    |                         |                             |  |
|--------------------|-----------------|---------------|--------------------|-------------------------|-----------------------------|--|
| Test Equipment     | Manufacturer    | Model No.     | Serial No.         | Cal. Date<br>(mm-dd-yy) | Cal. Due date<br>(mm-dd-yy) |  |
| 3m SAC             | SAEMC           | 9m*6m*6m      | 966                | 07-21-2020              | 07-20-2021                  |  |
| Loop Antenna       | SCHWARZBECK     | FMZB1519B     | 044                | 03-07-2020              | 03-06-2021                  |  |
| BiConiLog Antenna  | SCHWARZBECK     | VULB9163      | 497                | 03-07-2020              | 03-06-2021                  |  |
| Horn Antenna       | SCHWARZBECK     | BBHA9120D     | 916                | 03-07-2020              | 03-06-2021                  |  |
| Horn Antenna       | SCHWARZBECK     | BBHA9120D     | 1805               | 06-20-2020              | 06-19-2021                  |  |
| Horn Antenna       | SCHWARZBECK     | BBHA 9170     | BBHA9170582        | 11-18-2019              | 11-17-2020                  |  |
| EMI Test Software  | AUDIX           | E3            | Version: 6.110919b |                         | )                           |  |
| Pre-amplifier      | HP              | 8447D         | 2944A09358         | 03-07-2020              | 03-06-2021                  |  |
| Pre-amplifier      | CD              | PAP-1G18      | 11804              | 03-07-2020              | 03-06-2021                  |  |
| Spectrum analyzer  | Rohde & Schwarz | FSP30         | 101454             | 03-05-2020              | 03-04-2021                  |  |
| Spectrum analyzer  | Rohde & Schwarz | FSP40         | 100363             | 11-18-2019              | 11-17-2020                  |  |
| EMI Test Receiver  | Rohde & Schwarz | ESRP7         | 101070             | 03-05-2020              | 03-04-2021                  |  |
| Cable              | ZDECL           | Z108-NJ-NJ-81 | 1608458            | 03-07-2020              | 03-06-2021                  |  |
| Cable              | MICRO-COAX      | MFR64639      | K10742-5           | 03-07-2020              | 03-06-2021                  |  |
| Cable              | SUHNER          | SUCOFLEX100   | 58193/4PE          | 03-07-2020              | 03-06-2021                  |  |
| RF Switch Unit     | MWRFTEST        | MW200         | N/A                | N/A                     | N/A                         |  |
| Test Software      | MWRFTEST        | MTS8200       | Version: 2.0.0.0   |                         |                             |  |

| Conducted Emission: |                 |            |                    |                         |                             |
|---------------------|-----------------|------------|--------------------|-------------------------|-----------------------------|
| Test Equipment      | Manufacturer    | Model No.  | Serial No.         | Cal. Date<br>(mm-dd-yy) | Cal. Due date<br>(mm-dd-yy) |
| EMI Test Receiver   | Rohde & Schwarz | ESCI       | 101189             | 03-05-2020              | 03-04-2021                  |
| Pulse Limiter       | SCHWARZBECK     | OSRAM 2306 | 9731               | 03-05-2020              | 03-04-2021                  |
| LISN                | CHASE           | MN2050D    | 1447               | 03-05-2020              | 03-04-2021                  |
| LISN                | Rohde & Schwarz | ESH3-Z5    | 8438621/010        | 06-18-2020              | 07-17-2021                  |
| Cable               | HP              | 10503A     | N/A                | 03-05-2020              | 03-04-2021                  |
| EMI Test Software   | AUDIX           | E3         | Version: 6.110919b |                         |                             |



# 6 Test results and measurement data

# 6.1 Antenna Requirement

| Standard requirement:  | FCC Part 15 C Section 15.203 & 247(b)   |
|--|---|
| responsible party shall be us<br>antenna that uses a unique<br>so that a broken antenna ca<br>electrical connector is prohil<br>15.247(b) (4) requirement:<br>(4) The conducted output po<br>antennas with directional ga<br>section, if transmitting anter<br>power from the intentional ra | be designed to ensure that no antenna other than that furnished by the<br>sed with the device. The use of a permanently attached antenna or of an<br>coupling to the intentional radiator, the manufacturer may design the unit<br>in be replaced by the user, but the use of a standard antenna jack or<br>bited.<br>wer limit specified in paragraph (b) of this section is based on the use of<br>ins that do not exceed 6 dBi. Except as shown in paragraph (c) of this<br>inas of directional gain greater than 6 dBi are used, the conducted output<br>adiator shall be reduced below the stated values in paragraphs (b)(1),<br>tion, as appropriate, by the amount in dB that the directional gain of the |
| E.U.T Antenna:   |   |
| The Bluetooth antenna is an the antenna is -2.5 dBi.   | Internal antenna which permanently attached, and the best case gain of  |



### **6.2 Conducted Emissions**

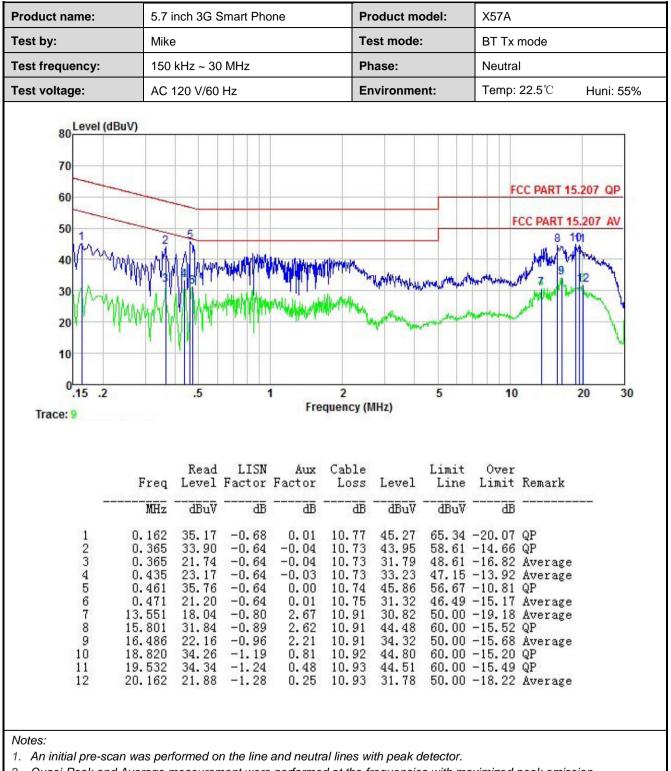
| Test Requirement:     | FCC Part 15 C Section 15.   | 207                                  |   |
|-----------------------|---|--------------------------------------|---|
| Test Frequency Range: | 150 kHz to 30 MHz   |                                      |   |
| Class / Severity:     | Class B   |                                      |   |
| Receiver setup:       | RBW=9 kHz, VBW=30 kHz   | z, Sweep time=auto                   |   |
| Limit:                | Frequency range (MHz)   | Limit (                              | dBuV)   |
|                       |   | Quasi-peak                           | Average   |
|                       | 0.15-0.5  | 66 to 56*                            | 56 to 46*   |
|                       | 0.5-5   | 56                                   | 46  |
|                       | 5-30<br>* Decreases with the logari   | 60<br>thm of the frequency           | 50  |
| Test setup:           | Reference Pl  |                                      |   |
|                       | AUX         Equipment         Test table/Insulation plane         Remarkc         E.U.T.         E.U.T.         E.U.T.         Insulation plane         Remarkc         E.U.T.         E.U.T.         E.U.T.         Insulation plane         Remarkc         E.U.T.         E.U.T.         E.U.T.         Test table height=0.8m |                                      |   |
| Test procedure:       | <ol> <li>50ohm/50uH coupling in</li> <li>The peripheral devices a LISN that provides a 500 termination. (Please reference)</li> <li>Both sides of A.C. line interference. In order to positions of equipment</li> </ol>   | tion network (L.I.S.N.). The neasuri | nis provides a<br>ng equipment.<br>main power through a<br>dance with 50ohm<br>the test setup and<br>m conducted<br>sion, the relative<br>ables must be changed |
| Test Instruments:     | Refer to section 5.9 for det  | ails                                 |   |
| Test mode:            | Hopping mode  |                                      |   |
| Test results:         | Pass  |                                      |   |



#### **Measurement Data:**

| Product name:  | 5.7 in | 5.7 inch 3G Smart Phone |   |                       |                            |            | odel:                 | X57A          |              |           |  |  |
|--|--------|-------------------------|---|-----------------------|----------------------------|------------|-----------------------|---------------|--------------|-----------|--|--|
| Test by:   | Mike   |                         |   |                       | Те                         | Test mode: |                       |               | BT Tx mode   |           |  |  |
| Test frequency:  | 150 k  | Hz ~ 30                 | MHz   |                       | Ph                         | ase:       |                       | Line          |              |           |  |  |
| Test voltage:  | AC 12  | 20 V/60 I               | Hz  |                       | En                         | vironme    | nt:                   | Temp:         | <b>22.5℃</b> | Huni: 55% |  |  |
| 80 Level (dBi<br>70<br>60<br>50<br>13<br>40<br>2<br>30 |        | R. Aller                | n un la | "mengalimitin         | wer pringly alg            | ywr ordend |                       |               | CC PART 15.  | 207 AV    |  |  |
| 20<br>10<br>0.15 .2<br>Trace: 11                       |        | .5                      | 1   |                       | 2<br>quency (M             | Hz)        | 5                     | 10            |              | 20 30     |  |  |
| 10<br>0.15 .2  |        | Read<br>Level           | LISN<br>Factor                              | Free<br>Aux<br>Factor | Quency (M<br>Cable<br>Loss | Level      | Limit<br>Line         | Over<br>Limit | Remark       | 20 30     |  |  |
| 10<br>0.15 .2  | MHz    | Read                    | LISN<br>Factor<br>dB                        | Free                  | quency (M<br>Cable         |            | Limit<br>Line<br>dBuV | Over          | Remark       | 20 30     |  |  |





2. Quasi-Peak and Average measurement were performed at the frequencies with maximized peak emission.

3. Final Level =Receiver Read level + LISN Factor + Aux Factor + Cable Loss.



| Test Requirement: | FCC Part 15 C Section 15.247 (b)(1)   |
|-------------------|---|
| Receiver setup:   | RBW=1MHz, VBW=3MHz, Detector=Peak (If 20dB BW ≤1 MHz)<br>RBW=2MHz, VBW=6MHz, Detector=Peak (If 20dB BW > 1 MHz and < 3MHz)  |
| Limit:            | For frequency hopping systems operating in the 2400-2483.5 MHz band<br>employing at least 75 non-overlapping hopping channels: 1 watt. For all other<br>frequency hopping systems in the 2400-2483.5 MHz band: 0.125 watts. |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane   |
| Test Instruments: | Refer to section 5.9 for details  |
| Test mode:        | Non-hopping mode  |
| Test results:     | Pass  |

## 6.3 Conducted Output Power



## 6.4 20dB Occupy Bandwidth

| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1)   |
|-------------------|---|
| Receiver setup:   | DH1: RBW=15 kHz, VBW=47 kHz, detector=Peak<br>2DH1&3DH: RBW=20 kHz, VBW=62 kHz, detector=Peak |
| Limit:            | N/A   |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane                   |
| Test Instruments: | Refer to section 5.9 for details  |
| Test mode:        | Non-hopping mode  |
| Test results:     | Pass  |



# 6.5 Carrier Frequencies Separation

| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1)   |
|-------------------|---|
| Receiver setup:   | RBW=300 kHz, VBW=1 MHz, detector=Peak   |
| Limit:            | <ul><li>a) 0.025MHz or the 20dB bandwidth (whichever is greater)</li><li>b) 0.025MHz or two-thirds of the 20dB bandwidth (whichever is greater)</li></ul> |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane   |
| Test Instruments: | Refer to section 5.9 for details  |
| Test mode:        | Hopping mode  |
| Test results:     | Pass  |



### 6.6 Hopping Channel Number

| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1)  |
|-------------------|--|
| Receiver setup:   | RBW=100 kHz, VBW=300 kHz, Center Frequency=2441MHz,<br>Span= 100MHz, Detector=Peak |
| Limit:            | 15 channels  |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane        |
| Test Instruments: | Refer to section 5.9 for details   |
| Test mode:        | Hopping mode   |
| Test results:     | Pass   |



### 6.7 Dwell Time

| Test Requirement: | FCC Part 15 C Section 15.247 (a)(1)   |
|-------------------|---|
| Receiver setup:   | RBW=1 MHz, VBW=1 MHz, Span=0 Hz, Detector=Peak                              |
| Limit:            | 0.4 Second  |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane |
| Test Instruments: | Refer to section 5.9 for details  |
| Test mode:        | Hopping mode  |
| Test results:     | Pass  |



### 6.8 Pseudorandom Frequency Hopping Sequence

| Test Requirement:  | FCC Part 15 C Section 15.247 (a)(1) requirement:   |
|--|--|
|  | shall have hopping channel carrier frequencies separated by a minimum of dth of the hopping channel, whichever is greater.   |
| channel carrier frequencies the<br>hopping channel, whichever<br>than 125 mW. The system s<br>rate from a Pseudorandom con<br>on the average by each trans | pping systems operating in the 2400-2483.5 MHz band may have hopping<br>that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the<br>is greater, provided the systems operate with an output power no greater<br>hall hop to channel frequencies that are selected at the system hopping<br>ordered list of hopping frequencies. Each frequency must be used equally<br>smitter. The system receivers shall have input bandwidths that match the<br>s of their corresponding transmitters and shall shift frequencies in<br>asmitted signals. |
| EUT Pseudorandom Frequ   | ency Hopping Sequence  |
| outputs are added in a modu  | sequence: 2 <sup>9</sup> -1 = 511 bits   |
|  |  |
| Linear Feedback Sl   | hift Register for Generation of the PRBS sequence  |
|  | m Frequency Hopping Sequence as follow:  |
|  | 62 64 78 1 73 75 77  |
| The system receivers have i  | y on the average by each transmitter.<br>nput bandwidths that match the hopping channel bandwidths of their<br>and shift frequencies in synchronization with the transmitted signals.  |



# 6.9 Band Edge

### 6.9.1 Conducted Emission Method

| Test Requirement: | FCC Part 15 C Section 15.247 (d)  |
|-------------------|---|
| Receiver setup:   | RBW=100 kHz, VBW=300 kHz, Detector=Peak   |
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane   |
| Test Instruments: | Refer to section 5.9 for details  |
| Test mode:        | Non-hopping mode and hopping mode   |
| Test results:     | Pass  |



#### 6.9.2 Radiated Emission Method

| Test Requirement:     | FCC Part 15 C   | Section 15.20   | )9 ai  | nd 15.205   |  |   |  |  |
|-----------------------|---|---|--|---|--|---|--|--|
| Test Frequency Range: | 2310 MHz to 23  | 390 MHz and   | 248  | 3.5 MHz to 2  | 500 M  | Hz  |  |  |
| Test Distance:        | 3m  |   |  |   |  |   |  |  |
| Receiver setup:       | Frequency   | Detector  |  | RBW   | VBW  |   | Remark   |  |
|                       | Above 1GHz  | Peak  |  | 1MHz  | 31   | ИНz   | Peak Value   |  |
|                       | Above IGHZ  | RMS   |  | 1MHz  | 31   | ИНz   | Average Value  |  |
| Limit:                | Frequence   | cy L  | _imit  | t (dBuV/m @3  | 3m)  |   | Remark   |  |
|                       | Above 1G  | H7  | 54.00  |   | Average Value  |   |  |  |
|                       | 7,6070 10   |   | 74.00  |   |  | I   | Peak Value   |  |
| Test setup:           |   | EUT<br>Itable)<br>Ground<br>Test Receiver   | 3m<br>Reference  |   | enna Towe  |   |  |  |
| Test Procedure:       | <ul> <li>determine the</li> <li>2. The EUT was<br/>antenna, whi<br/>tower.</li> <li>3. The antenna<br/>ground to de<br/>horizontal an<br/>measuremen</li> <li>4. For each sus<br/>and then the<br/>the rota table<br/>maximum rea</li> <li>5. The test-rece<br/>Bandwidth w</li> <li>6. If the emission<br/>limit specified<br/>EUT would b<br/>margin would</li> </ul> | a meter camb<br>e position of t<br>s set 3 meters<br>ich was moun<br>height is vari<br>termine the m<br>id vertical pola<br>t.<br>spected emiss<br>antenna was<br>a was turned f<br>ading.<br>eiver system w<br>ith Maximum<br>on level of the<br>d, then testing<br>be reported. O<br>d be re-tested | er. 1<br>he h<br>s aw<br>ited<br>ed f<br>naxir<br>ariza<br>sion,<br>ton<br>from<br>was<br>EU<br>g cou<br>ther<br>l one | The table was<br>highest radiative<br>vay from the in<br>on the top of<br>from one meter<br>mum value of<br>ations of the a<br>, the EUT was<br>ed to heights<br>n 0 degrees to<br>set to Peak E<br>d Mode.<br>IT in peak mo<br>uld be stoppe | rotation.<br>Interfe<br>a vari<br>er to fo<br>the fi<br>antenr<br>s arran<br>from<br>0 360 o<br>Detect<br>de wa<br>d and<br>ssions<br>g peal | ed 360<br>rence-re<br>able-he<br>our met<br>eld stre<br>ha are s<br>nged to<br>1 meter<br>degrees<br>Functions<br>10dB<br>the pea<br>s that dia<br>k, quasi | degrees to<br>eceiving<br>ight antenna<br>ers above the<br>ngth. Both<br>et to make the<br>its worst case<br>to 4 meters and<br>to find the<br>on and Specified<br>lower than the<br>ak values of the<br>d not have 10dB<br>-peak or |  |
| Test Instruments:     | Refer to section  | 5.9 for detail  | S  |   |  |   |  |  |
| Test mode:            | Non-hopping m   | ode   |  |   |  |   |  |  |
| Test results:         | Passed  |   | _  |   |  |   |  |  |



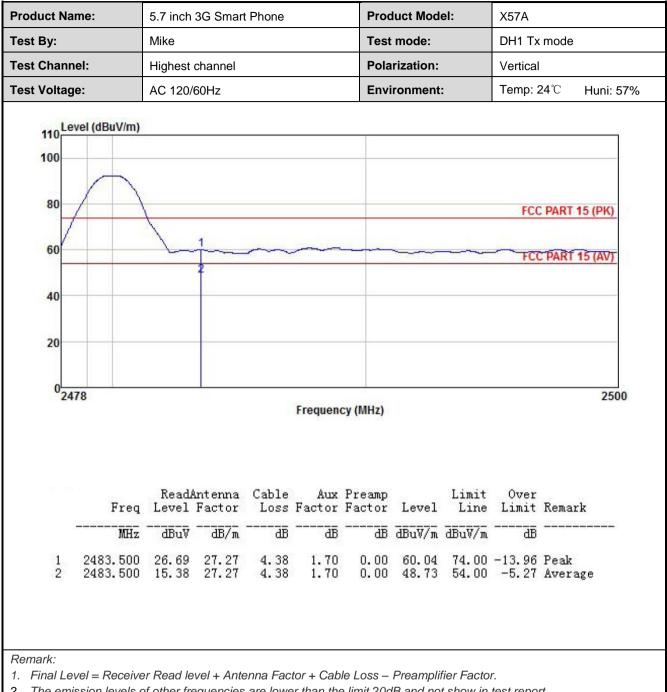
#### **GFSK Mode:**

| roduct Name:   | 5.7 inc                            | 5.7 inch 3G Smart Phone<br>Mike<br>Lowest channel |                    |                      |                      |                                 | lel:                    | X57A<br>DH1 Tx mode<br>Vertical |                      |      |
|----------------|------------------------------------|---|--------------------|----------------------|----------------------|---------------------------------|-------------------------|---------------------------------|----------------------|------|
| est By:        | Mike                               |   |                    |                      |                      |                                 |                         |                                 |                      |      |
| Fest Channel:  | Lowes                              |   |                    |                      |                      |                                 |                         |                                 |                      |      |
| Test Voltage:  | AC 12                              | 0/60Hz  |                    |                      | Env                  | Environment:                    |                         |                                 | Temp: 24°C Huni: 579 |      |
|                | 14-1                               |   |                    | N                    |                      |                                 |                         | ·                               |                      |      |
| 110 Level (dBu | JV/m)                              |   |                    |                      |                      |                                 |                         |                                 |                      |      |
| 100            |                                    |   |                    |                      |                      |                                 |                         |                                 |                      | _    |
|                |                                    |   |                    |                      |                      |                                 |                         |                                 |                      | A    |
| 80             |                                    |   |                    |                      |                      |                                 |                         | FCO                             | C PART 15 (          | PK)  |
|                |                                    | 200   |                    |                      |                      |                                 |                         |                                 |                      |      |
| 60             |                                    | m   | ~~~~~              | m                    | mm                   | m                               | m                       | mp                              | CPART 15             | AV)  |
| 40             |                                    |   |                    |                      |                      |                                 |                         | -                               |                      |      |
| 40             |                                    |   |                    |                      |                      |                                 |                         |                                 |                      |      |
| 20             |                                    |   |                    |                      |                      |                                 |                         |                                 |                      |      |
|                |                                    |   |                    |                      |                      |                                 |                         |                                 |                      |      |
| 02310 2        | 2320                               |   |                    | 2350                 |                      |                                 |                         |                                 |                      | 2404 |
| 2310 2         | .520                               |   | 4                  |                      | cy (MHz)             |                                 |                         |                                 |                      | 2404 |
|                |                                    |   |                    |                      |                      |                                 |                         |                                 |                      |      |
|                |                                    |   |                    |                      |                      |                                 |                         |                                 |                      |      |
|                |                                    |   |                    |                      |                      |                                 |                         |                                 |                      |      |
| 1              | Rea<br>Freq Leve                   | dAntenna<br>1 Factor                              | Cable<br>Loss      | Aux<br>Factor        | Preamp<br>Factor     | Level                           | Limit<br>Line           | Over<br>Limit                   | Remark               |      |
|                | Read<br>Freq Level<br>MHz dBu      | l Factor  | Loss               | Factor               | Factor               | Level<br>dBuV/m                 | Line                    | Limit                           | Remark               |      |
| 1 2390         | Freq Level                         | 1 Factor<br>V                                     | Loss               | Factor<br>dB<br>1.68 | Factor<br>dB<br>0.00 | Level<br><u>dBuV/m</u><br>58.86 | Line<br>dBuV/m<br>74.00 | Limit<br>                       |                      |      |
| 1 2390         | Freq Level<br>MHz dBu<br>.000 25.8 | 1 Factor<br>V                                     | Loss<br>dB<br>4.28 | Factor<br>dB<br>1.68 | Factor<br>dB<br>0.00 | Level<br><u>dBuV/m</u><br>58.86 | Line<br>dBuV/m<br>74.00 | Limit<br>                       |                      |      |











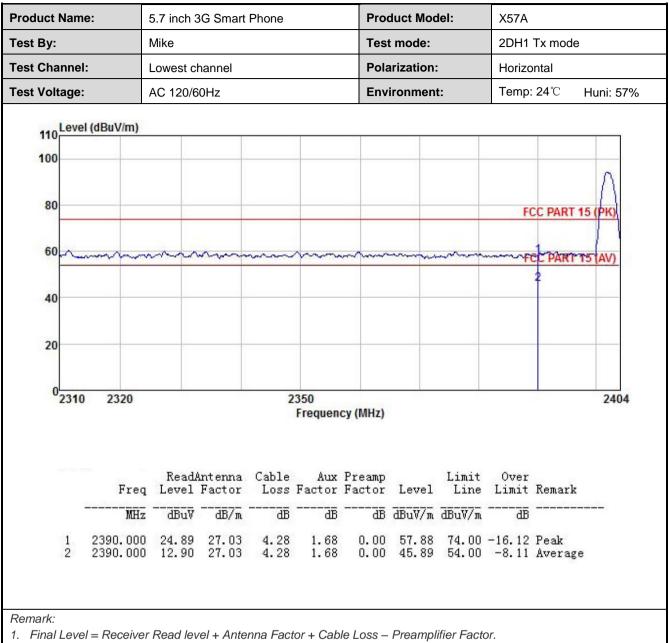
| duct Na  | me:                  | 5.7 inch       | 3G Sma           | rt Phone      |               | Pro              | duct Mod       | lel:           | X57A            |                |           |
|----------|----------------------|----------------|------------------|---------------|---------------|------------------|----------------|----------------|-----------------|----------------|-----------|
| st By:   |                      | Mike           |                  |               |               | Tes              | t mode:        |                | DH1 T           | x mode         |           |
| t Chann  | el:                  | Highest        | channel          |               |               | Pol              | arization      |                | Horizo          | ntal           |           |
| t Voltag | e:                   | AC 120         | /60Hz            |               |               | Env              | rironmen       | t:             | Temp:           | <b>24</b> ℃    | Huni: 57% |
| 110      | vel (dBuV/m)         |                |                  |               |               |                  |                |                |                 |                |           |
| 80       | $\bigcap$            | 1              |                  |               |               |                  |                |                | FC              | C PART 1       | 5 (PK)    |
| 60       |                      | h              | 1                |               | ~~~           |                  |                |                | FC              | C PART 1       | 5 (AV)    |
| 40       |                      |                |                  |               |               |                  |                |                |                 |                |           |
| 20       |                      |                |                  |               |               |                  |                |                |                 |                |           |
| 024      | 78                   |                |                  |               | Frequer       | ncy (MHz)        |                |                |                 |                | 2500      |
|          | Freq                 |                | ntenna<br>Factor | Cable<br>Loss | Aux<br>Factor | Preamp<br>Factor | Level          | Limit<br>Line  | Over<br>Limit   |                |           |
| -        | MHz                  | dBu∛           |                  | dB            | <u>d</u> B    | <u>dB</u>        | dBuV/m         | dBuV/m         |                 |                |           |
| 1<br>2   | 2483.500<br>2483.500 | 25.37<br>14.79 | 27.27<br>27.27   | 4.38<br>4.38  | 1.70<br>1.70  | 0.00<br>0.00     | 58.72<br>48.14 | 74.00<br>54.00 | -15.28<br>-5.86 | Peak<br>Averag | e         |
| nark:    |                      |                |                  |               |               |                  |                |                |                 |                |           |



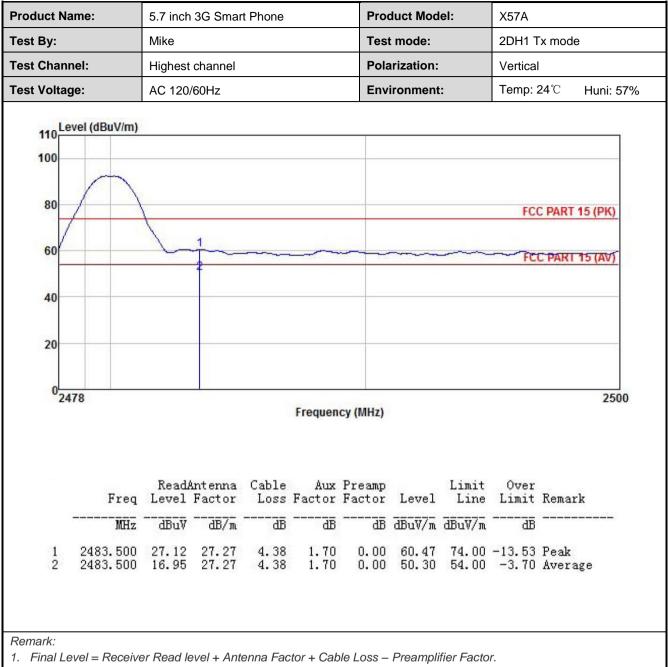
#### $\pi/4$ -DQPSK mode

| ie:      | 5.7 inch                               | 3G Smart   | Phone  |  | Pro  | duct Mod  | del:  | X57A  |   |   |  |
|----------|--|--|--|--|--|---|---|---|---|---|--|
|          | Mike                                   |  |  |  | Tes  | Test mode:  |   |   | 2DH1 Tx mode  |   |  |
| I:       | _owest channel                         |  |  |  | Pola   | Polarization:   |   | Vertica   | Vertical  |   |  |
| :        | AC 120/                                | 60Hz   |  |  | Env  | ironmen   | t:  | Temp  | : <b>24</b> ℃   | Huni: 57%   |  |
| (dBuV/m) |  |  |  |  |  |   |   |   |   |   |  |
|          |  |  |  |  |  |   |   |   |   |   |  |
|          |  |  |  |  |  |   |   |   |   | 0   |  |
|          |  |  |  | _  |  |   |   |   | C DADT 4  | E (DIC)   |  |
|          |  |  |  |  |  |   |   | r.  | C PART I  | 5 (PN)  |  |
|          | m                                      | mhr  | m  | h  | mon  | mm  | -   | mmp   | 1<br>CC PART 1  | 5 (AV)  |  |
|          |  |  |  |  |  |   |   | 1   | 2   |   |  |
|          |  |  |  |  |  |   |   |   |   |   |  |
|          |  |  |  |  |  |   |   |   |   |   |  |
|          |  |  |  |  |  |   |   |   |   |   |  |
| 2320     |  |  |  | 350  |  |   |   |   |   | 2404  |  |
| 2520     |  |  | 1  |  | cy (MHz)   |   |   |   |   | 2404  |  |
|          |  |  |  |  |  |   |   |   |   |   |  |
| Freq     | Read/<br>Level                         | Antenna<br>Factor  | Cable<br>Loss  | Aux<br>Factor  | Preamp<br>Factor   | Level   | Limit<br>Line   |   |   |   |  |
| MHz      | ₫BuV                                   | <u></u>  | dB   | <u>ab</u>  | āB   | dBuV/m  | dBuV/m  |   |   |   |  |
|          | 25.56<br>14.84                         | 27.03<br>27.03   | 4.28<br>4.28   | $1.68 \\ 1.68$   | 0.00<br>0.00   | 58.55<br>47.83  | 74.00<br>54.00  | -15.45<br>-6.17   | Peak<br>Average   | 9   |  |
|          |  |  |  |  |  |   |   |   |   |   |  |
|          | :::::::::::::::::::::::::::::::::::::: | Mike         Mike         Lowest of         AC 120/0         I(dBuV/m)         I(dBuV/m)         Z320         Read/         Freq       Level         MHz       dBuV         2390.000       25.56 | Mike         Mike         Lowest channel         AC 120/60Hz         I(dBuV/m)         I(dBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV/m)         IdBuV         IdBuV         IdBuV         IdBuV         IdBuV         IdBuV         IdBuV         IdBuV         IdBuV | Mike         I:       Lowest channel         AC 120/60Hz         I(dBuV/m)         I(dBuV/m)         IdBuV/m)         IdBuV         IdBuV | Mike         :       Lowest channel         AC 120/60Hz         I(dBuV/m)         I(dBuV/m)         2320         2320         2320         2320         ReadAntenna         Cable         Aux         Freq         Level       Factor         Loss       Factor         MHz       dBuV       dB/m         2390.000       25.56       27.03       4.28       1.68 | Mike       Tes         Lowest channel       Pola         AC 120/60Hz       Env         I(dBuV/m)       Image: Constraint of the second se | Mike       Test mode:         Lowest channel       Polarization         AC 120/60Hz       Environmen         I(dBuV/m)       Image: Control of the second seco | Mike       Test mode:         Lowest channel       Polarization:         AC 120/60Hz       Environment:         I(dBuV/m) | Mike       Test mode:       2DH1         Lowest channel       Polarization:       Vertic         AC 120/60Hz       Environment:       Temp         I(dBuV/m)       Image: state | Mike       Test mode:       2DH1 Tx mode         Lowest channel       Polarization:       Vertical         AC 120/60Hz       Environment:       Temp: 24°C         I(dBuV/m)       FCC PART 1         IdBuV/m)       IdBuV         IdBuV/m)       IdBuV         IdBuV       IdBuV         IdBuV       IdBuV         IdBuV       IdBuV         IdBuV       IdBuV         IdBuV       IdB         IdB       IdB         IdB       IdB         IdB       IdB         IdB       IdB         IdB       IdB |  |

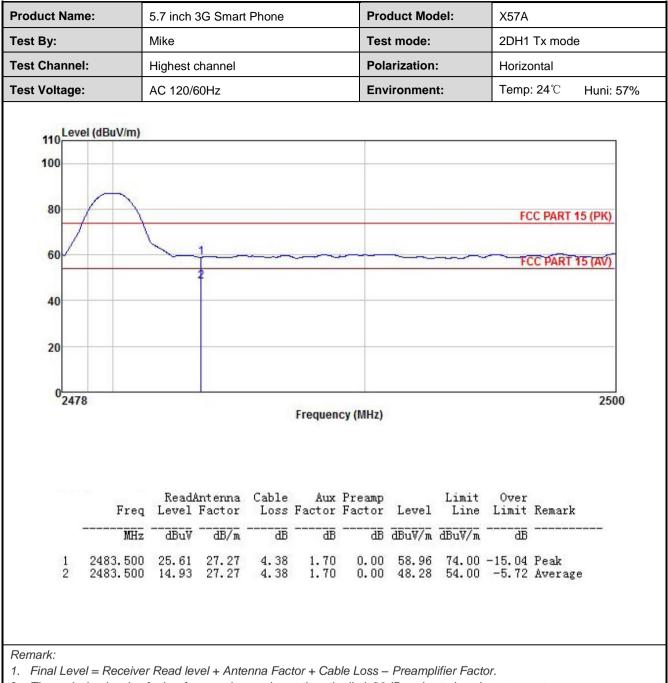










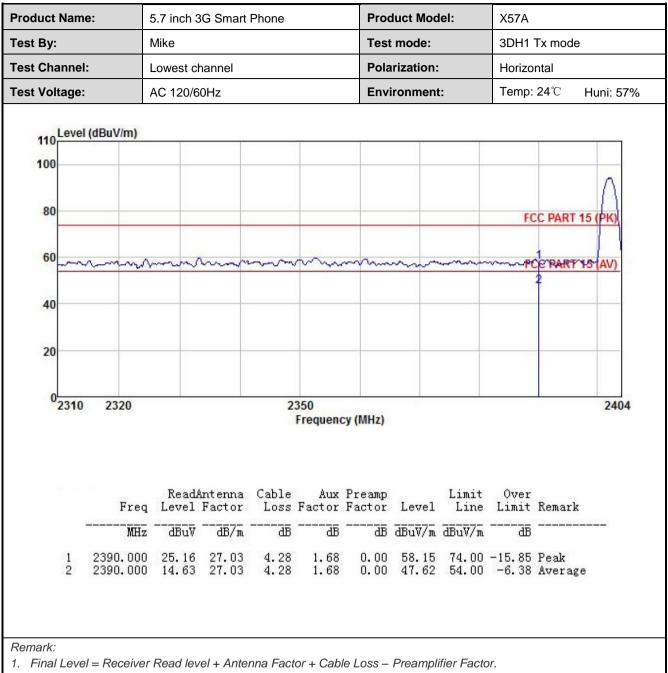




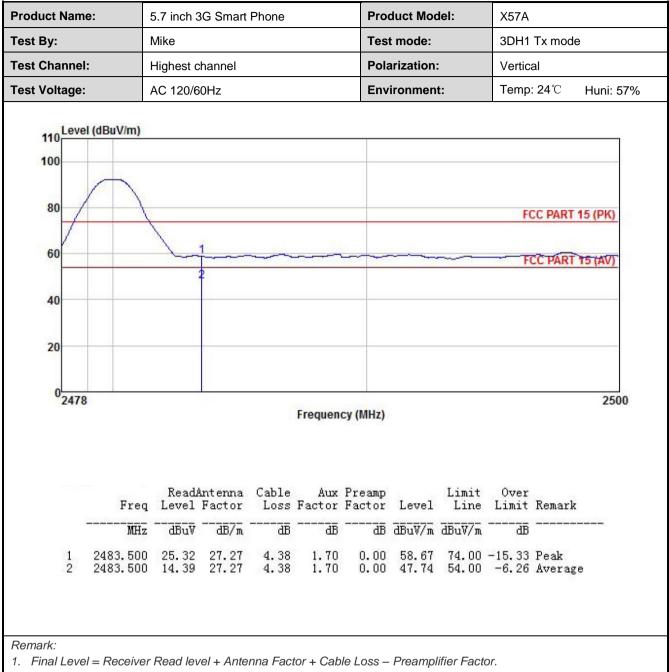
#### 8DPSK mode

| oduct Nar    | ne:                           | 5.7 inch | 3G Smar | t Phone |                 | Pro      | duct Mo   | del:   | X57A   |               |           |  |  |
|--------------|-------------------------------|----------|---------|---------|-----------------|----------|-----------|--------|--------|---------------|-----------|--|--|
| est By:      |                               | Mike     |         |         |                 | Tes      | t mode:   |        | 3DH1   | Tx mode       |           |  |  |
| est Channe   | el:                           | Lowest   | channel |         |                 | Pol      | arization | :      | Vertic | al            |           |  |  |
| est Voltage  | <b>:</b>                      | AC 120   | /60Hz   |         |                 | Env      | vironmen  | it:    | Temp   | : <b>24</b> ℃ | Huni: 57% |  |  |
| 2003         |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
| 110 Lev      | el (dBuV/m)                   |          |         |         |                 |          |           |        |        |               |           |  |  |
| 100          |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
|              |                               |          |         |         |                 |          |           |        |        |               | Δ         |  |  |
| 80           |                               |          |         |         |                 |          |           |        | FC     | C PART 1      | 5 (PK)    |  |  |
|              |                               |          |         | _       | _               |          |           |        |        |               |           |  |  |
| 60~~~        | ·····                         | mm       | mm      |         | mm              | when     | mmrd      | him    | m      | PART 1        | 5 (AV)    |  |  |
| -            |                               |          |         |         |                 |          |           |        |        | 2             |           |  |  |
| 40           |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
|              |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
| 20           |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
|              |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
| 231          | 0 2320                        |          |         |         | 2350<br>Frequen | cy (MHz) |           |        |        |               | 2404      |  |  |
|              |                               |          |         |         |                 | -, (     |           |        |        |               |           |  |  |
|              |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
|              |                               | Read     | Antenna | Cabla   | Å               | Dreem    |           | Limit  | Over   |               |           |  |  |
|              | Freq                          | Level    | Factor  | Loss    | Factor          | Factor   | Level     | Line   | Limit  |               |           |  |  |
| -            | MHz                           | <br>dBu∛ | <br>    | dB      | ā               | āB       | dBuV/m    | dBuV/m | ā      |               |           |  |  |
| 1            | 2390.000                      | 24.81    | 27.03   | 4.28    | 1.68            | 0.00     | 57.80     | 74.00  | -16.20 | Peak          |           |  |  |
| 2            | 2390.000                      | 12.05    | 27.03   | 4.28    | 1.68            | 0.00     | 45.04     | 54.00  | -8.96  | Average       | 9         |  |  |
|              |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
|              |                               |          |         |         |                 |          |           |        |        |               |           |  |  |
| Remark:      |                               |          | , .     | _       |                 |          | 2         |        |        |               |           |  |  |
| 1. Final Lev | el = Receive<br>sion levels d |          |         |         |                 |          |           |        |        |               |           |  |  |











|   | ne:         | 5.7 inch           | 3G Smart         | Phone               |               | Pro              | duct Mod        | lel:          | X57A          |              |           |
|---|-------------|--------------------|------------------|---------------------|---------------|------------------|-----------------|---------------|---------------|--------------|-----------|
| Test By:                                |             | Mike               |                  |                     |               | Tes              | t mode:         |               | 3DH1          | Tx mode      |           |
| Test Channe                             | el:         | Highest of         | channel          |                     |               | Pola             | arization       |               | Horizo        | ontal        |           |
| Test Voltage                            | :           | AC 120/6           | 60Hz             |                     |               | Env              | rironmen        | t:            | Temp:         | <b>24</b> °C | Huni: 57% |
| 110 Leve<br>100<br>80<br>60<br>40<br>20 | el (dBuV/m) |                    | 2                |                     |               |                  |                 |               |               | CC PART 1    |           |
| 0247                                    | 8           |                    |                  |                     | -             | icy (MHz)        |                 |               |               |              | 2500      |
| 241                                     |             |                    |                  |                     |               |                  |                 |               |               |              |           |
| 241                                     | Freq        | ReadA<br>Level     | ntenna<br>Factor | Cable<br>Loss       | Aux<br>Factor | Preamp<br>Factor | Level           | Limit<br>Line | Over<br>Limit | Remark       |           |
|   | Freq<br>MHz | ReadA<br>Level<br> | Factor           | Cable<br>Loss<br>dB | Factor        | Factor           | Level<br>dBuV/m | Line          | Limit         | Remark       |           |



# 6.10 Spurious Emission

# 6.10.1 Conducted Emission Method

| Test Requirement: | FCC Part 15 C Section 15.247 (d)  |
|-------------------|---|
| Limit:            | In any 100 kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement. |
| Test setup:       | Spectrum Analyzer<br>E.U.T<br>Non-Conducted Table<br>Ground Reference Plane   |
| Test Instruments: | Refer to section 5.9 for details  |
| Test mode:        | Non-hopping mode  |
| Test results:     | Pass  |



### 6.10.2 Radiated Emission Method

| Test Requirement:     | FCC Part 15 C S                               | Section 15.                           | 209                               |  |   |                        |  |  |  |
|-----------------------|---|---------------------------------------|-----------------------------------|--|---|------------------------|--|--|--|
| Test Frequency Range: | 9 kHz to 25 GHz                               |                                       |                                   |  |   |                        |  |  |  |
| Test Distance:        | 3m  |                                       |                                   |  |   |                        |  |  |  |
| Receiver setup:       | Frequency                                     | Detecto                               | or                                | RBW                                    | VBW   | /                      | Remark   |  |  |
|                       | 30MHz-1GHz                                    | Quasi-pe                              | eak                               | 120kHz                                 | 300kH   | łz                     | Quasi-peak Value                                   |  |  |
|                       |   | Peak                                  |                                   | 1MHz                                   | 3MH:  | z                      | Peak Value   |  |  |
|                       | Above 1GHz RM                                 |                                       | 5 1MHz 3MHz                       |  | z   | Average Value          |  |  |  |
| Limit:                | Frequenc                                      | ÿ                                     | Lin                               | nit (dBuV/m                            | @3m)  |                        | Remark   |  |  |
|                       | 30MHz-88N                                     | /Hz                                   |                                   | 40.0                                   |   | (                      | Quasi-peak Value                                   |  |  |
|                       | 88MHz-216                                     | MHz                                   |                                   | 43.5                                   |   | (                      | Quasi-peak Value                                   |  |  |
|                       | 216MHz-960                                    | MHz                                   |                                   | 46.0                                   |   | (                      | Quasi-peak Value                                   |  |  |
|                       | 960MHz-10                                     | GHz                                   |                                   | 54.0                                   |   | (                      | Quasi-peak Value                                   |  |  |
|                       | 41  |                                       |                                   | 54.0                                   |   |                        | Average Value                                      |  |  |
|                       | Above 1G                                      | HZ -                                  |                                   | 74.0                                   |   |                        | Peak Value   |  |  |
| Test setup:           | Ta  | Jum 0.8m<br>A<br>ble A<br>d Plane     | 4m                                | ·///////////////////////////////////// |   | RF T<br>Rece:          | iver   |  |  |
| Test Procedure:       | was rotated 3<br>radiation.<br>2. The EUT was | 1GHz) abo<br>60 degrees<br>set 3 mete | Test R<br>the<br>ove th<br>s to o | Ground Reference Plane<br>ecceiver     | Angular Control<br>Angular Contro | e 0.8<br>er ch<br>n of | Bm(below 1GHz)<br>hamber. The table<br>the highest |  |  |

Project No.: JYTSZE2010037



|                   | <ul><li>tower.</li><li>3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.</li></ul>   |
|-------------------|--|
|                   | 4. For each suspected emission, the EUT was arranged to its worst case<br>and then the antenna was tuned to heights from 1 meter to 4 meters and<br>the rota table was turned from 0 degrees to 360 degrees to find the<br>maximum reading.  |
|                   | 5. The test-receiver system was set to Peak Detect Function and Specified<br>Bandwidth with Maximum Hold Mode.   |
|                   | 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. |
| Test Instruments: | Refer to section 5.9 for details   |
| Test mode:        | Non-hopping mode   |
| Test results:     | Pass   |
| Remark:           | <ol> <li>Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found<br/>the Y-axis is the worst case.</li> <li>9 kHz to 30 MHz is noise floor and lower than the limit 20dB, so only<br/>shows the data of above 30MHz in this report.</li> </ol>   |



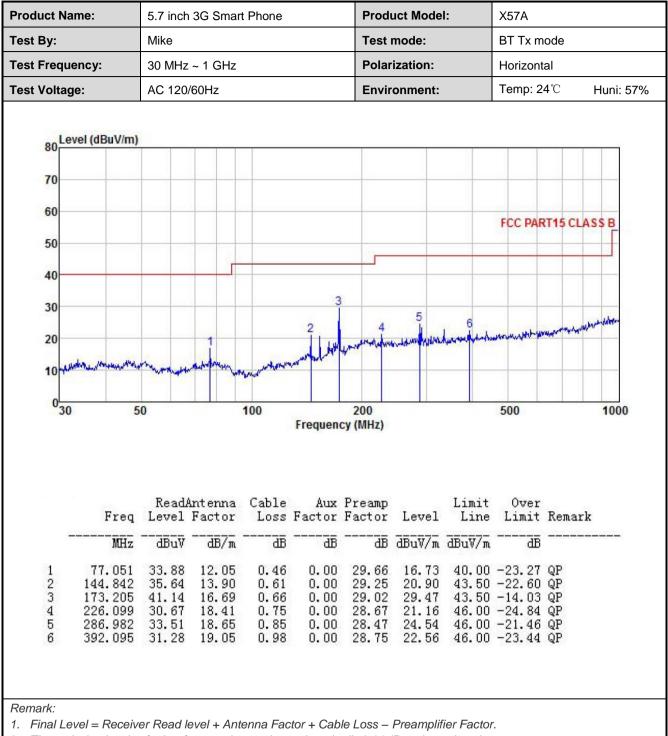
#### Measurement Data (worst case):

#### Below 1GHz:

| . o a a o t i t a i        | ne:            | 5.7 inch            | 3G Smar           | rt Phone             |                                 | Prod                               | uct Mode         | el:                     | X57A                 |            |           |
|----------------------------|----------------|---------------------|-------------------|----------------------|---------------------------------|------------------------------------|------------------|-------------------------|----------------------|------------|-----------|
| est By:                    |                | Mike                |                   |                      |                                 | Test                               | mode:            |                         | BT Tx m              | node       |           |
| est Freque                 | ncy:           | 30 MHz              | ~ 1 GHz           |                      |                                 | Polar                              | rization:        |                         | Vertical             |            |           |
| est Voltage                | :              | AC 120/             | /60Hz             |                      |                                 | Envir                              | ronment:         |                         | Temp: 2              | <b>4</b> ℃ | Huni: 57% |
| 70<br>60<br>50<br>40<br>30 | el (dBuV/m)    |                     |                   |                      | 21 <sup>4</sup> 5               |                                    |                  | 6<br>uudenmar           | FCC PAR              |            |           |
| 20                         |                |                     |                   |                      |                                 |                                    |                  |                         |                      |            |           |
| 20                         | whenter        | and the same        | Mun               | mul                  |                                 | holdenening                        | Althound and     |                         |                      |            |           |
| 10                         | whether        |                     |                   | W. The               |                                 | holdson                            | affet an afferra |                         |                      |            |           |
|                            | www.uhuma<br>5 |                     |                   | 100                  | Frequen                         | 200<br>cy (MHz)                    | Althouse devices |                         | 500                  |            | 1000      |
| 10                         | 5<br>Freq      | 0<br>ReadA<br>Level | intenna<br>Factor | 100<br>Cable<br>Loss | Frequen<br>Aux<br>Factor        | cy (MHz)<br>Preamp<br>Factor       | Level            | Limit<br>Line           | 500<br>Over<br>Limit |            | 1000      |
| 10                         | 5              | 0<br>ReadA          | Intenna           | 100<br>Cable         | Frequent<br>Aux<br>Factor<br>dB | cy (MHz)<br>Preamp<br>Factor<br>dB |                  | Limit<br>Line<br>dBuV/m | 500<br>Over<br>Limit | Rema       | 1000      |

3. The Aux Factor is a not<u>ch filter switch box loss</u>, this item is not used.





3. The Aux Factor is a notch filter switch box loss, this item is not used.



#### Above 1GHz:

|                         |                         |                             | Te                    |                       | el: Lowest c             |                   |                           |                       |              |  |
|-------------------------|-------------------------|-----------------------------|-----------------------|-----------------------|--------------------------|-------------------|---------------------------|-----------------------|--------------|--|
|                         | I                       |                             |                       | Detecto               | or: Peak Val             | Je                |                           | -                     |              |  |
| Frequency<br>(MHz)      | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Aux<br>Factor<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |  |
| 4804.00                 | 48.67                   | 30.78                       | 6.80                  | 2.44                  | 41.81                    | 46.88             | 74.00                     | -27.12                | Vertical     |  |
| 4804.00                 | 48.66                   | 30.78                       | 6.80                  | 2.44                  | 41.81                    | 46.87             | 74.00                     | -27.13                | Horizontal   |  |
| Detector: Average Value |                         |                             |                       |                       |                          |                   |                           |                       |              |  |
| Frequency<br>(MHz)      | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Aux<br>Factor<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |  |
| 4804.00                 | 40.56                   | 30.78                       | 6.80                  | 2.44                  | 41.81                    | 38.77             | 54.00                     | -15.23                | Vertical     |  |
| 4804.00                 | 40.09                   | 30.78                       | 6.80                  | 2.44                  | 41.81                    | 38.30             | 54.00                     | -15.70                | Horizontal   |  |
|                         |                         |                             |                       |                       |                          |                   |                           |                       |              |  |
|                         |                         |                             |                       |                       | el: Middle ch            |                   |                           |                       |              |  |
|                         | Deal                    | <b>A</b> . <b>1</b>         | 0.11.                 | 1                     | or: Peak Val             | ue                | 1.1                       |                       | [            |  |
| Frequency<br>(MHz)      | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Aux<br>Factor<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |  |
| 4882.00                 | 48.27                   | 30.96                       | 6.86                  | 2.47                  | 41.84                    | 46.72             | 74.00                     | -27.28                | Vertical     |  |
| 4882.00                 | 48.42                   | 30.96                       | 6.86                  | 2.47                  | 41.84                    | 46.87             | 74.00                     | -27.13                | Horizontal   |  |
|                         |                         |                             |                       | Detector:             | Average Va               | alue              |                           |                       |              |  |
| Frequency<br>(MHz)      | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Aux<br>Factor<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |  |
| 4882.00                 | 40.84                   | 30.96                       | 6.86                  | 2.47                  | 41.84                    | 39.29             | 54.00                     | -14.71                | Vertical     |  |
| 4882.00                 | 40.49                   | 30.96                       | 6.86                  | 2.47                  | 41.84                    | 38.94             | 54.00                     | -15.06                | Horizontal   |  |
|                         |                         |                             | Te                    |                       | el: Highest c            |                   |                           |                       |              |  |
|                         |                         |                             | 0.11                  |                       | or: Peak Val             | ue                | 1                         | <u> </u>              |              |  |
| Frequency<br>(MHz)      | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Aux<br>Factor<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |  |
| 4960.00                 | 48.12                   | 31.11                       | 6.91                  | 2.49                  | 41.87                    | 46.76             | 74.00                     | -27.24                | Vertical     |  |
| 4960.00                 | 48.84                   | 31.11                       | 6.91                  | 2.49                  | 41.87                    | 47.48             | 74.00                     | -26.52                | Horizontal   |  |
|                         |                         |                             |                       | Detector:             | Average Va               | alue              |                           |                       |              |  |
| Frequency<br>(MHz)      | Read<br>Level<br>(dBuV) | Antenna<br>Factor<br>(dB/m) | Cable<br>Loss<br>(dB) | Aux<br>Factor<br>(dB) | Preamp<br>Factor<br>(dB) | Level<br>(dBuV/m) | Limit<br>Line<br>(dBuV/m) | Over<br>Limit<br>(dB) | Polarization |  |
| 4960.00                 | 40.96                   | 31.11                       | 6.91                  | 2.49                  | 41.87                    | 39.60             | 54.00                     | -14.40                | Vertical     |  |
| 4960.00                 | 40.64                   | 31.11                       | 6.91                  | 2.49                  | 41.87                    | 39.28             | 54.00                     | -14.72                | Horizontal   |  |
|                         |                         |                             |                       |                       |                          | + Aux Factor      | – Preamplifie             |                       |              |  |

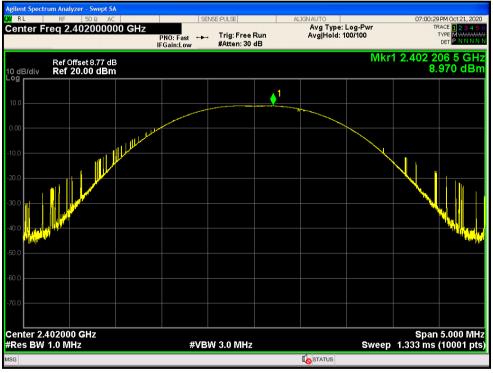
2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.



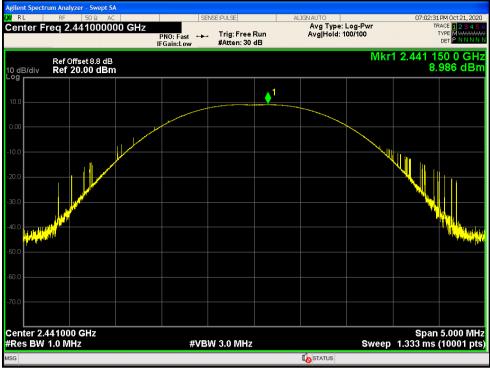
# Appendix A - BT Test Data

| Maximum   | Conducte | ed Output Pov      | ver     |                          |                        |                         |                |         |
|-----------|----------|--------------------|---------|--------------------------|------------------------|-------------------------|----------------|---------|
| Condition | Mode     | Frequency<br>(MHz) | Antenna | Conducted<br>Power (dBm) | Duty<br>Factor<br>(dB) | Total<br>Power<br>(dBm) | Limit<br>(dBm) | Verdict |
| NVNT      | 1-DH1    | 2402               | Ant1    | 8.97                     | 0                      | 8.97                    | 21             | Pass    |
| NVNT      | 1-DH1    | 2441               | Ant1    | 8.986                    | 0                      | 8.986                   | 21             | Pass    |
| NVNT      | 1-DH1    | 2480               | Ant1    | 8.503                    | 0                      | 8.503                   | 21             | Pass    |
| NVNT      | 2-DH1    | 2402               | Ant1    | 6.435                    | 0                      | 6.435                   | 21             | Pass    |
| NVNT      | 2-DH1    | 2441               | Ant1    | 6.745                    | 0                      | 6.745                   | 21             | Pass    |
| NVNT      | 2-DH1    | 2480               | Ant1    | 6.409                    | 0                      | 6.409                   | 21             | Pass    |
| NVNT      | 3-DH1    | 2402               | Ant1    | 7.101                    | 0                      | 7.101                   | 21             | Pass    |
| NVNT      | 3-DH1    | 2441               | Ant1    | 7.426                    | 0                      | 7.426                   | 21             | Pass    |
| NVNT      | 3-DH1    | 2480               | Ant1    | 7.078                    | 0                      | 7.078                   | 21             | Pass    |

### Power NVNT 1-DH1 2402MHz Ant1





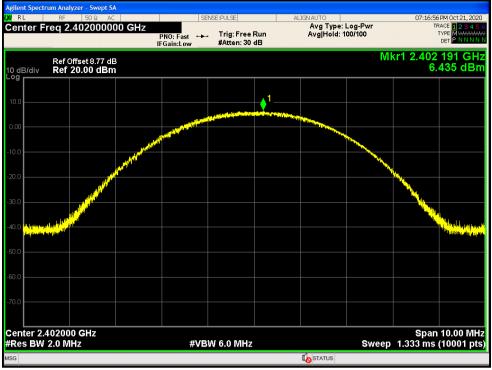


### Power NVNT 1-DH1 2441MHz Ant1

#### Power NVNT 1-DH1 2480MHz Ant1

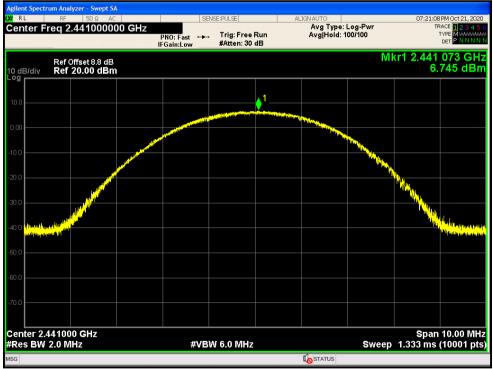




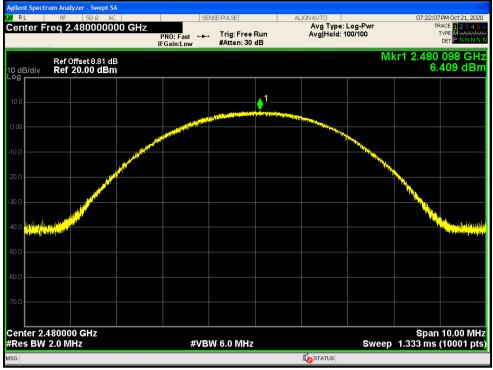


### Power NVNT 2-DH1 2402MHz Ant1

#### Power NVNT 2-DH1 2441MHz Ant1

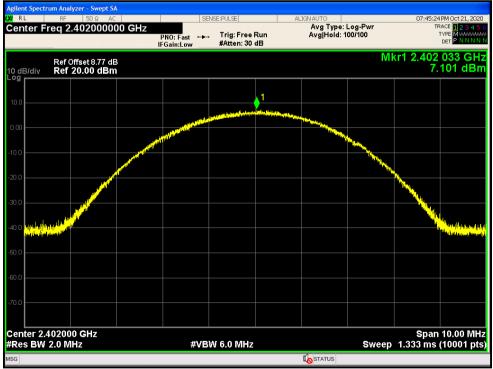




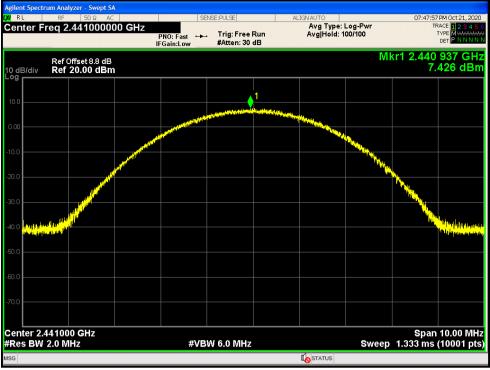


### Power NVNT 2-DH1 2480MHz Ant1

### Power NVNT 3-DH1 2402MHz Ant1

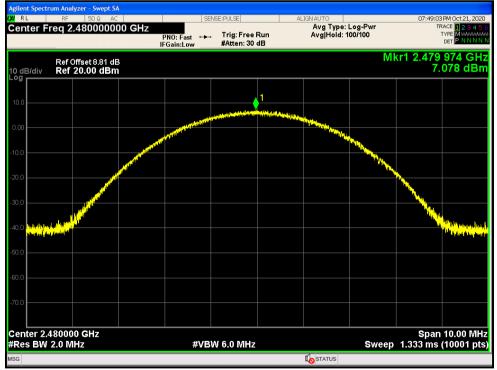






#### Power NVNT 3-DH1 2441MHz Ant1

#### Power NVNT 3-DH1 2480MHz Ant1



#### -20dB Bandwidth

| LUGB Bull |       |                    |         |                           |                                 |         |
|-----------|-------|--------------------|---------|---------------------------|---------------------------------|---------|
| Condition | Mode  | Frequency<br>(MHz) | Antenna | -20 dB Bandwidth<br>(MHz) | Limit -20 dB Bandwidth<br>(MHz) | Verdict |
| NVNT      | 1-DH1 | 2402               | Ant1    | 0.919                     | N/A                             | Pass    |
| NVNT      | 1-DH1 | 2441               | Ant1    | 0.919                     | N/A                             | Pass    |
| NVNT      | 1-DH1 | 2480               | Ant1    | 0.876                     | N/A                             | Pass    |
| NVNT      | 2-DH1 | 2402               | Ant1    | 1.275                     | N/A                             | Pass    |
| NVNT      | 2-DH1 | 2441               | Ant1    | 1.253                     | N/A                             | Pass    |

JianYan Testing Group Shenzhen Co., Ltd. No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366 Project No.: JYTSZE2010037



### Report No: JYTSZE201003702

| NVNT | 2-DH1 | 2480 | Ant1 | 1.257 | N/A | Pass |
|------|-------|------|------|-------|-----|------|
| NVNT | 3-DH1 | 2402 | Ant1 | 1.224 | N/A | Pass |
| NVNT | 3-DH1 | 2441 | Ant1 | 1.225 | N/A | Pass |
| NVNT | 3-DH1 | 2480 | Ant1 | 1.222 | N/A | Pass |

#### -20dB Bandwidth NVNT 1-DH1 2402MHz Ant1



|  |             |   | 1 244 11011 12    |   |
|--|-------------|---|-------------------|---|
| gilent Spectrum Analyzer - Occupied BW           RL         RF         50 Ω         AC           Center Freq 2.441000000         4         4         4 | SE          | ENSE: PULSE<br>Center Freg: 2.441000  |                   | 07:02:39 PM Oct 21, 2020<br>Radio Std: None |
|  | #IFGain:Low | , Trig: Free Run<br>#Atten: 30 dB   | Avg Hold: 100/100 | Radio Device: BTS                           |
| Ref Offset 8.8 dB<br>0 dB/div Ref 28.80 dBm  |             |   |                   | Mkr3 2.441466 GHz<br>-15.361 dBm            |
| 8.8  |             |   |                   |   |
| 20   | m           | hanna han | hand              |   |
| .2   | mon         |   | how               |   |
| 2 Arman M  | <b>V</b>    |   |                   | - Vinny                                     |
| 2 www.d  |             |   |                   |   |
| 2  |             |   |                   |   |
| 2  |             |   |                   |   |
| enter 2.441 GHz<br>s BW 15 kHz   |             | #VBW 47 kH  | Z                 | Span 1.5 MH<br>Sweep   6.667 m              |
| Occupied Bandwidth   | 1           | Total Power   | 14.9 dBm          |   |
| 80   | )3.20 kHz   |   |                   |   |
| Transmit Freq Error  | 6.468 kHz   | OBW Power   | 99.00 %           |   |
| x dB Bandwidth   | 918.6 kHz   | x dB  | -20.00 dB         |   |
|  |             |   |                   |   |
|  |             |   |                   |   |
|  |             |   | <b>STATUS</b>     |   |

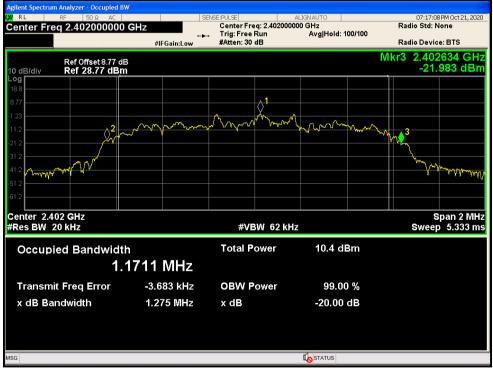
#### -20dB Bandwidth NVNT 1-DH1 2441MHz Ant1





### -20dB Bandwidth NVNT 1-DH1 2480MHz Ant1

#### -20dB Bandwidth NVNT 2-DH1 2402MHz Ant1







#### -20dB Bandwidth NVNT 2-DH1 2441MHz Ant1

#### -20dB Bandwidth NVNT 2-DH1 2480MHz Ant1







#### -20dB Bandwidth NVNT 3-DH1 2402MHz Ant1

#### -20dB Bandwidth NVNT 3-DH1 2441MHz Ant1







### -20dB Bandwidth NVNT 3-DH1 2480MHz Ant1

#### **Carrier Frequencies Separation**

| Carrierine |       |         |               |               |       |       |         |
|------------|-------|---------|---------------|---------------|-------|-------|---------|
| Condition  | Mode  | Antenna | Hopping Freq1 | Hopping Freq2 | HFS   | Limit | Verdict |
|            |       |         | (MHz)         | (MHz)         | (MHz) | (MHz) |         |
| NVNT       | 1-DH1 | Ant1    | 2401.834      | 2402.836      | 1.002 | 0.919 | Pass    |
| NVNT       | 1-DH1 | Ant1    | 2440.842      | 2441.828      | 0.986 | 0.919 | Pass    |
| NVNT       | 1-DH1 | Ant1    | 2478.83       | 2479.838      | 1.008 | 0.876 | Pass    |
| NVNT       | 2-DH1 | Ant1    | 2401.834      | 2402.834      | 1     | 0.85  | Pass    |
| NVNT       | 2-DH1 | Ant1    | 2440.832      | 2441.838      | 1.006 | 0.835 | Pass    |
| NVNT       | 2-DH1 | Ant1    | 2478.838      | 2479.834      | 0.996 | 0.838 | Pass    |
| NVNT       | 3-DH1 | Ant1    | 2401.838      | 2402.846      | 1.008 | 0.816 | Pass    |
| NVNT       | 3-DH1 | Ant1    | 2441.172      | 2442.166      | 0.994 | 0.817 | Pass    |
| NVNT       | 3-DH1 | Ant1    | 2478.832      | 2479.834      | 1.002 | 0.815 | Pass    |



# CFS NVNT 1-DH1 2402MHz Ant1

| rilent Spectrum Analyzer - Sw<br>RL RF 50 G |                    | SENSE:PUL      | SE                        | ALIGN AUTO            |       | 07:07:01 PM Oc             | t 21, 202            |
|---|--------------------|----------------|---------------------------|-----------------------|-------|----------------------------|----------------------|
| enter Freq 2.4025                           | PNC                |                | g: Free Run<br>ten: 30 dB | Avg Type<br>Avg Hold> |       | TRACE 1<br>TYPE M<br>DET P | 2345<br>WMMM<br>NNNN |
| Ref Offset 8<br>0 dB/div Ref 20.00          |                    |                |                           |                       | Mk    | r1 2.401 834<br>8.997      | l GH<br>dBr          |
| og<br>10.0                                  | <b>≬</b> 1         |                |                           | 2                     |       |                            |                      |
| 0.00 mm                                     |                    |                | - All and                 |                       |       |                            |                      |
| 0.0   |                    |                |                           |                       |       |                            |                      |
| 80.0  |                    |                |                           |                       |       |                            |                      |
| 0.0   |                    |                |                           |                       |       |                            |                      |
| 0.0   |                    |                |                           |                       |       |                            |                      |
| 0.0   |                    |                |                           |                       |       |                            |                      |
| enter 2.402500 GHz<br>Res BW 300 kHz        |                    | #VBW 1.0       | MHz                       |                       | Sweep | Span 2.00<br>1.000 ms (10  | 00 MH<br>01 pt       |
| KR MODE TRC SCL                             | ×<br>2.401 834 GHz | ۲<br>8.997 dBm | FUNCTION                  | FUNCTION WIDTH        | FU    | NCTION VALUE               |                      |
| 2 N 1 f                                     | 2.402 836 GHz      | 9.002 dBm      |                           |                       |       |                            |                      |
| 4 5   |                    |                |                           |                       |       |                            |                      |
| 6   |                    |                |                           |                       |       |                            |                      |
|   |                    |                |                           |                       |       |                            |                      |
| 9   |                    |                |                           |                       |       |                            |                      |
| 8<br>9<br>0<br>1                            |                    |                | - 1111                    |                       |       |                            |                      |

### CFS NVNT 1-DH1 2441MHz Ant1

| Agilent Spectrum Analyzer - Swept SA<br>R RL RF 50 Q AC<br>Center Freq 2.441500000 GHz   | PNO: Fast Trig.<br>IFGain:Low #Atto | ≅<br>∷Free Run<br>en: 30 dB | ALIGNAUTO<br>Avg Type: Log<br>Avg Hold>100 | I-Pwr TRAG                 | 4 Oct 21, 2020<br>EE 1 2 3 4 5 6<br>PE M M M M M<br>ET P N N N N N |
|--|-------------------------------------|-----------------------------|--|----------------------------|--|
| Ref Offset 8.8 dB<br>Ref 20.00 dBm<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10.0<br>10 |                                     | WWW                         | <u>}2</u>                                  | Mkr1 2.440 8<br>9.0        | 42 GHz<br>17 dBm   |
|  | #VBW 1.0                            | MHz                         |  | Span 2<br>Sweep 1.000 ms ( | .000 MHz<br>1001 pts)  |
| MKR         MODE         TRC         SCL         X           1         N         1         f         2.440         842         G           2         N         1         f         2.441         828         G           3         1         f         2.441         828         G           4         5         6         6         6         6         7         8         9         9         9         9         9         9         10         11         11         11         14         14         14         14         14         14         14         14         15         16 <td< td=""><td></td><td>FUNCTION FL</td><td></td><td>FUNCTION VALUE</td><td>~</td></td<>   |                                     | FUNCTION FL                 |  | FUNCTION VALUE             | ~  |



# CFS NVNT 1-DH1 2480MHz Ant1

|   |                       | - Swept SA             |                  |  |                                    |                         |  |
|---|-----------------------|------------------------|------------------|--|------------------------------------|-------------------------|--|
| enter Fr  |                       | 50 Ω AC<br>9500000 GHz |                  | POLSE<br>Trig: Free Run<br>#Atten: 30 dB | ALIGN AUTO<br>Avg Type<br>Avg Hold | e: Log-Pwr<br>:>100/100 | 07:15:25 PM Oct 21, 202<br>TRACE 1 2 3 4 5<br>TYPE MWWW<br>DET P N N N |
| l0 dB/div   | Ref Offse<br>Ref 20.0 |                        |                  |  |                                    | Mk                      | r1 2.478 830 GH<br>8.528 dBr   |
| 10.0  |                       | <u> </u>               |                  |  | \$ <sup>2</sup>                    |                         |  |
| 0.00 <b></b>  |                       |                        |                  |  |                                    |                         |  |
| 0.0   |                       |                        |                  |  |                                    |                         |  |
| 8.0   |                       |                        |                  |  |                                    |                         |  |
| 0.0   |                       |                        |                  |  |                                    |                         |  |
| 0.0   |                       |                        |                  |  |                                    |                         |  |
|   |                       |                        |                  |  |                                    |                         |  |
|   |                       |                        |                  |  |                                    |                         |  |
| 0.0   |                       |                        |                  |  |                                    |                         |  |
| 0.0<br>enter 2.4  | 479500 G<br>300 kHz   | iHz                    | #VBW             | 1.0 MHz                                  |                                    | Sweep                   | Span 2.000 Mi<br>1.000 ms (1001 pt                                     |
| 0.0<br>enter 2.4<br>Res BW  | 300 kHz               | ×                      | Y                | FUNCTION                                 | FUNCTION WIDTH                     |                         | Span 2.000 Mł<br>1.000 ms (1001 pt<br>NCTION VALUE                     |
| 2.0<br>enter 2.4<br>Res BW<br>R MODE TR<br>1 N 1<br>2 N 1   | 300 kHz<br>RC SCL     |                        | Y<br>1z 8.528 dB | FUNCTION                                 | FUNCTION WIDTH                     |                         | 1.000 ms (1001 pt  |
| C.0<br>enter 2.2<br>Res BW<br>(R) MODE TF<br>1 N 1<br>2 N 1<br>3<br>4                                 | 300 kHz<br>RC SCL     | ×<br>2.478 830 GH      | Y<br>1z 8.528 dB | FUNCTION                                 | FUNCTION WIDTH                     |                         | 1.000 ms (1001 pt  |
| enter 2.4<br>Res BW   | 300 kHz<br>RC SCL     | ×<br>2.478 830 GH      | Y<br>1z 8.528 dB | FUNCTION                                 | FUNCTION WIDTH                     |                         | 1.000 ms (1001 pt  |
| enter 2.4<br>Res BW<br>KR MODE TF<br>1 N 1<br>2 N 1<br>3<br>4<br>5<br>5<br>5<br>6<br>7<br>8<br>8<br>9 | 300 kHz<br>RC SCL     | ×<br>2.478 830 GH      | Y<br>1z 8.528 dB | FUNCTION                                 |                                    |                         | 1.000 ms (1001 pt  |
| 0.0<br>enter 2.4<br>Res BW  | 300 kHz<br>RC SCL     | ×<br>2.478 830 GH      | Y<br>1z 8.528 dB | FUNCTION                                 | FUNCTION WIDTH                     |                         | Span 2.000 MH<br>1.000 ms (1001 pt<br>NCTION VALUE                     |

### CFS NVNT 2-DH1 2402MHz Ant1

| Agilent Spectrum Analyzer - Swept SA   | SENSE:PUL                    | œ                         | ALIGN AUTO                              |       | 07:32:37 PM Oct 21, 2020  |
|--|------------------------------|---------------------------|---|-------|---|
| Center Freq 2.402500000 GHz  | PNO: East 🕠 Tri              | g: Free Run<br>ten: 30 dB | ALIGNAUTO<br>Avg Type: L<br>Avg Hold:>1 |       | 07:32:37 PM 00021,2020<br>TRACE 1 2 3 4 5 6<br>TYPE MWWWWW<br>DET P N N N N |
| Ref Offset 8.77 dB<br>10 dB/div Ref 20.00 dBm  |                              |                           |   | Mkı   | 1 2.401 834 GHz<br>4.636 dBm  |
|  |                              | ~~~~~                     | 2<br>mm m                               |       |   |
| -10.0  |                              |                           |   |       |   |
| -20.0  |                              |                           |   |       |   |
| -40.0  |                              |                           |   |       |   |
| -60.0  |                              |                           |   |       |   |
| Center 2.402500 GHz<br>#Res BW 300 kHz   | #VBW 1.0                     | ) MHz                     |   | Sweep | Span 2.000 MHz<br>1.000 ms (1001 pts)                                       |
| MKR         MODE         TRC         SCI         X           1         N         1         f         2.401834 GI           2         N         1         f         2.402834 GI | Hz 4.636 dBm<br>Hz 4.645 dBm | FUNCTION                  | FUNCTION WIDTH                          | FUN   | ICTION VALUE  |
| 2 N 1 1 2.402 834 G  | 4.043 0811                   |                           |   |       |   |
| 6  |                              |                           |   |       |   |
| 9<br>10<br>11  |                              |                           |   |       | ~   |
| KSG ST   |                              |                           | STATUS                                  |       | >   |



# CFS NVNT 2-DH1 2441MHz Ant1

|              | rum Analyzer - Swep  |                    |               |   |                                 |                          |                          |  |
|--------------|--|--------------------|---------------|---|---------------------------------|--------------------------|--------------------------|--|
| Center F     | RF 50 Ω<br>req 2.441500  | 0000 GHz           |               | :PULSE<br>Trig: Free Run<br>#Atten: 30 dB | ALIGNAUTO<br>Avg Typ<br>Avg Hol | pe:Log-Pwr<br>d:>100/100 | TYPE                     | Et 21, 2020<br>2 3 4 5 6<br>M M M M M<br>P N N N N N |
| 10 dB/div    | Ref Offset 8.8<br>Ref 20.00 dl   |                    |               |   |                                 | Mk                       | r1 2.440 83:<br>4.942    | 2 GHz<br>2 dBm                                       |
| 10.0         |  | 1                  |               |   |                                 | 2                        |                          |  |
| -10.0        | wwith the second se |                    |               |   |                                 |                          |                          |  |
| -20.0        |  |                    |               |   |                                 |                          |                          |  |
| -40.0        |  |                    |               |   |                                 |                          |                          |  |
| -50.0        |  |                    |               |   |                                 |                          |                          |  |
| 70.0         |  |                    |               |   |                                 |                          |                          |  |
|              | 441500 GHz<br>300 kHz  |                    | #VBW          | 1.0 MHz                                   |                                 | Sweep                    | Span 2.0<br>1.000 ms (10 | 00 MH:<br>01 pts                                     |
| MKR MODE T   | f  | ×<br>2.440 832 GHz | ץ<br>4.942 d⊟ | FUNCTION                                  | FUNCTION WIDTH                  | FU                       | NCTION VALUE             | 2  |
| 2 N /        | f  | 2.441 838 GHz      | 4.965 dE      | m   |                                 |                          |                          |  |
| 5 6 7        |  |                    |               |   |                                 |                          |                          |  |
| 8<br>9<br>10 |  |                    |               |   |                                 |                          |                          |  |
|              |  |                    |               |   |                                 |                          |                          | >  |
| SG           |  |                    |               |   | <b>K</b> STATUS                 |                          |                          |  |

### CFS NVNT 2-DH1 2480MHz Ant1

| URL R                                     |                                   | SENSE:PU                       | .SE                       | ALIGNAUTO               | _     | 07:42:23 PM Oct 21, 202              |
|---|-----------------------------------|--------------------------------|---------------------------|-------------------------|-------|--------------------------------------|
| Center Freq                               | 2.479500000 GH                    | PNO: East 🕠 Tri                | g: Free Run<br>ten: 30 dB | Avg Type:<br>Avg Hold:> |       | TRACE 12345<br>TYPE MWWW<br>DET PNNN |
| 10 dB/div Re                              | ef Offset 8.81 dB<br>ef 20.00 dBm |                                |                           |                         | Mk    | r1 2.478 838 GH<br>4.571 dBr         |
| .og<br>10.0                               | 1                                 |                                | 10.П <sup>22</sup> А А    | 2<br>2                  |       |                                      |
| 0.00                                      |                                   |                                |                           | The management          |       |                                      |
| 0.0                                       |                                   |                                |                           |                         |       |                                      |
| io.o                                      |                                   |                                |                           |                         |       |                                      |
| io.o                                      |                                   |                                |                           |                         |       |                                      |
| enter 2.479                               | 500 GHz                           |                                |                           |                         |       | Span 2.000 MH                        |
| Res BW 300                                |                                   | #VBW 1.0                       | ) MHz                     |                         | Sweep | 1.000 ms (1001 pt                    |
| KR MODE TRC SC<br>1 N 1 f<br>2 N 1 f<br>3 | 2.478 838                         | GHz 4.571 dBm<br>GHz 4.563 dBm | FUNCTION                  | FUNCTION WIDTH          | FUł   | ICTION VALUE                         |
| 4<br>5<br>6<br>7                          |                                   |                                |                           |                         |       |                                      |
| 8<br>9<br>0<br>1                          |                                   |                                |                           |                         |       |                                      |
| G   |                                   |                                |                           | <b>I</b> STATUS         |       | >                                    |

# CFS NVNT 3-DH1 2402MHz Ant1

|                                    | um Analyzer - Swept             |                                     |                       |  |  |                                     |                 |   |
|------------------------------------|---------------------------------|-------------------------------------|-----------------------|--|--|-------------------------------------|-----------------|---|
| Center Fr                          | req 2.402500                    | 000 GHz                             | PNO: Fast<br>Gain:Low | E:PULSE<br>Trig: Free Run<br>#Atten: 30 dB | ALIGN AUTO<br>Avg<br>Avg               | ⊃<br>Type: Log-Pwr<br>Hold:>100/100 | TF              | PM Oct 21, 2020<br>ACE 1 2 3 4 5 6<br>TYPE M M A A A A A<br>DET P N N N N N |
| 10 dB/div                          | Ref Offset 8.77<br>Ref 20.00 dE |                                     |                       |  |  | М                                   | kr1 2.401<br>4. | 838 GHz<br>630 dBm  |
| 10.0                               | •••••••••••                     | 1                                   |                       |  | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | 2<br>2                              |                 | ᡊ᠕ᡘ᠋᠁ᡔ᠕ᡐᢏ᠇ᡙᠾᢛ   |
| -10.0                              |                                 |                                     |                       |  |  |                                     |                 |   |
| -20.0                              |                                 |                                     |                       |  |  |                                     |                 |   |
| -40.0                              |                                 |                                     |                       |  |  |                                     |                 |   |
| -60.0                              |                                 |                                     |                       |  |  |                                     |                 |   |
| -70.0                              | 402500 GHz                      |                                     |                       |  |  |                                     | Span            | 2.000 MHz   |
| #Res BW                            |                                 |                                     | #VBW                  | 1.0 MHz                                    |  | Swee                                | p 1.000 ms      | (1001 pts)  |
| MKR MODE TF<br>1 N 1<br>2 N 1<br>3 | f                               | ×<br>2.401 838 GHz<br>2.402 846 GHz | 4.630 df<br>4.620 df  | FUNCTION<br>3m<br>3m                       | N FUNCTION WID                         | TH                                  | FUNCTION VALUE  | ^   |
| 4 5 6 7                            |                                 |                                     |                       |  |  |                                     |                 |   |
| 8<br>9<br>10<br>11                 |                                 |                                     |                       |  |  |                                     |                 |   |
| <<br>/SG                           |                                 |                                     |                       |  | STA                                    | TUS                                 |                 | >   |

### CFS NVNT 3-DH1 2441MHz Ant1

| Agilent Spectrum Analyzer - Swept SA<br>(WRL RF 50 & AC<br>Center Freq 2.441500000 GHz   |  | SE<br>g: Free Run<br>ten: 30 dB | ALIGNAUTO<br>Avg Type<br>Avg Hold: |       | TRA<br>T           | M Oct 21, 2020<br>ACE <b>1</b> 2 3 4 5 6<br>APE M WWWWWW<br>DET P N N N N N |
|--|--|---------------------------------|------------------------------------|-------|--------------------|---|
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm   | IFGain:Low #At                         | len. So de                      |                                    | Mk    | r1 2.441<br>4.9    | 172 GHz<br>32 dBm   |
| 10.0   | 1<br>                                  |                                 |                                    | ····· | <b>2</b>           |   |
| -10.0  |  |                                 |                                    |       |                    |   |
| -30.0  |  |                                 |                                    |       |                    |   |
| -60.0  |  |                                 |                                    |       |                    |   |
| Center 2.441500 GHz<br>#Res BW 300 kHz   | #VBW 1.0                               | MHz                             |                                    | Sweep | Span 2<br>1.000 ms | 2.000 MHz<br>(1001 pts)   |
| MKR         MODE         TRC         SCL         X           1         N         1         f         2.441         172         GH           2         N         1         f         2.442         166         GH | y<br>z <u>4.932 dBm</u><br>z 4.941 dBm | FUNCTION                        | FUNCTION WIDTH                     | FU    | NCTION VALUE       | ^   |
| 3<br>4<br>5  | 2 4.341 UDIII                          |                                 |                                    |       |                    |   |
| 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7  |  |                                 |                                    |       |                    |   |
| 10 11 11 11 11 11 11 11 11 11 11 11 11 1   |  |                                 | STATUS                             |       |                    | <b>&gt;</b>   |



| Agilent Spectrum Analyzer - Swept SA  |                                    |                           |                       |       |  |            |
|---|------------------------------------|---------------------------|-----------------------|-------|--|------------|
| LXU RL RF 50Ω AC  | SENSE:PUL                          | SE                        | ALIGN AUTO            |       | 07:56:12 PM Oct 2                      |            |
| Center Freq 2.479500000 GHz   | PNO: Fast 😱 Trig<br>IFGain:Low #At | g: Free Run<br>ten: 30 dB | Avg Type<br>Avg Hold: |       | TRACE 1 2<br>TYPE M<br>DET P           |            |
| Ref Offset 8.81 dB<br>10 dB/div Ref 20.00 dBm   |                                    |                           |                       | Mł    | (r1 2.478 832<br>4.593                 | GHz<br>dBm |
|   |                                    |                           |                       |       | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ |            |
| -10.0   |                                    |                           |                       |       |  |            |
| -20.0   |                                    |                           |                       |       |  |            |
| -40.0   |                                    |                           |                       |       |  |            |
| -60.0   |                                    |                           |                       |       |  |            |
| -70.0 Center 2.479500 GHz   |                                    |                           |                       |       | Snop 2 000                             | Dalla      |
| #Res BW 300 kHz   | #VBW 1.0                           | MHz                       |                       | Sweep | Span 2.000<br>1.000 ms (100            | 1 pts)     |
| MKR         MODE         TRC         Scl.         X           1         N         1         f         2.478 832 GH           2         N         1         f         2.479 834 GH           3 |                                    | FUNCTION                  | FUNCTION WIDTH        | FL    | UNCTION VALUE                          |            |
| 6<br>7<br>8<br>9<br>10  |                                    |                           |                       |       |  |            |
| MSG   |                                    |                           | <b>I</b> ostatus      |       |  | >          |

### CFS NVNT 3-DH1 2480MHz Ant1

#### Band Edge

| Balla Eag | -     |                 |         |              |                 |             |         |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
| NVNT      | 1-DH1 | 2402            | Ant1    | No-Hopping   | -58.64          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | No-Hopping   | -58.22          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | No-Hopping   | -54.94          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | No-Hopping   | -53.92          | -20         | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | No-Hopping   | -54.75          | -20         | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | No-Hopping   | -53.85          | -20         | Pass    |





# Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Ref

Band Edge NVNT 1-DH1 2402MHz Ant1 No-Hopping Emission

| Agilent Spectr          | um Ana<br>RE | lyzer - Swept SA                    |  | SE                                     | NSE:PULSE                |             | ALIGN AUTO     |                          | 07:01:0             | 7 PM Oct 21, 2020                        |
|-------------------------|--------------|-------------------------------------|--|--|--------------------------|-------------|----------------|--------------------------|---------------------|--|
|                         |              | .35600000                           | )0 GHz   | PNO: Fast ↔→<br>Gain:Low               | Trig: Free<br>#Atten: 30 |             | Avg Typ        | e: Log-Pwr<br>d: 500/500 |                     | RACE 12345 C<br>TYPE MWWWWW<br>DET PNNNN |
| 10 dB/div               |              | Offset 8.77 dE<br><b>20.00 dB</b> m |  |  |                          |             |                |                          |                     | 01 8 GHz<br>903 dBm                      |
| 10.0                    |              |                                     |  |  |                          |             |                |                          |                     |  |
| -10.0                   |              |                                     |  |  |                          |             |                |                          |                     | -11.08 dBm                               |
| -30.0                   |              |                                     |  |  |                          |             |                |                          |                     |  |
|                         | mulm         | ᡏ᠇ᠰᢂᡧᡣᠬᡘᠬ᠇ᢌᡄᡫᢩᢘᢛᢇ                   | mberman  | when when an end                       | ↓ <sup>4</sup>           | ومرمانييهان | makrantania    | Anna Marala Ana          | versent within      | marrow h                                 |
| -60.0<br>-70.0          |              |                                     |  |  |                          |             |                |                          |                     |  |
| Start 2.30<br>#Res BW   |              |                                     |  | #VB                                    | W 300 kHz                | z           |                | Swee                     | Stop 2<br>p 9.600 m | 40600 GHz<br>s (1001 pts)                |
| MKR MODE TF             | RC  SCL      | >                                   | K  | Y                                      |                          | NCTION      | FUNCTION WIDTH |                          | FUNCTION VALUE      | ^  |
| 1 N 1<br>2 N 1<br>3 N 1 | f<br>f<br>f  |                                     | 2.401 8 GHz<br>2.400 0 GHz<br>2.390 0 GHz<br>2.347 4 GHz | 8.903<br>-48.563<br>-52.788<br>-49.729 | dBm<br>dBm               |             |                |                          |                     |  |
| 4 N 1<br>5<br>6<br>7    |              |                                     | 2.347 4 GHZ  | -49.729                                |                          |             |                |                          |                     | 3  |
| 8<br>9<br>10            |              |                                     |  |  |                          |             |                |                          |                     |  |
|                         |              |                                     |  |  |                          |             |                |                          |                     | ~  |
| 11 <u> </u>             |              |                                     |  |  |                          |             |                |                          |                     | >  |





# Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Ref

Band Edge NVNT 1-DH1 2480MHz Ant1 No-Hopping Emission

| Agilent Spectrum Analyzer - Swept SA  |  |                                      |  |
|---|--|--------------------------------------|--|
| 02 RL RF 50 Q AC<br>Center Freq 2.526000000 GHz   | PNO: Fast Trig: Fr<br>IFGain:Low #Atten: | ree Run Avg Hol                      | 07:04:00 PM Oct21, 2020<br>De: Log-Pwr TRACE 1 2:34 55<br>d: 300/300 Type M<br>DET 2 11111 |
| Ref Offset 8.81 dB  |  |                                      | Mkr1 2.479 8 GHz<br>8.444 dBm  |
|   |  |                                      |  |
| -10.0   |  |                                      | -11.59 dBm   |
| -20.0   |  |                                      |  |
|   |  |                                      |  |
| -60.0   | veron and all more all of the masses and | / Pilosenthinketerorikepunthinaarine | her for an Hayan Harabara an an an an an an An Anna  |
| -70.0 Start 2.47600 GHz   |  |                                      | Stop 2.57600 GHz   |
| #Res BW 100 kHz   | #VBW 300 k                               | Hz                                   | Sweep 9.600 ms (1001 pts)  |
| MKR MODE TRC SCL X  |  | FUNCTION FUNCTION WIDTH              | FUNCTION VALUE   |
| 1         N         1         f         2.479 8 GI           2         N         1         f         2.483 5 GI           3         N         1         f         2.500 0 GI  | lz -51.181 dBm                           |                                      |  |
| 4 N 1 f 2.492 8 G   |  |                                      |  |
| 6 7 |  |                                      |  |
| 9   |  |                                      |  |
| 11<br><   |  |                                      | ×  |
| MSG   |  | <b>I</b> STATUS                      |  |





# Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Ref

Band Edge NVNT 2-DH1 2402MHz Ant1 No-Hopping Emission

| <b>XI</b> RL                                    | RF                   | lyzer - Swept SA<br>50 Ω AC<br>.35600000 | 00 GHz   | NO: Fast ↔                             |               | ree Run<br>: 30 dB |                              | pe: Log-Pwr<br>d: 100/100               |                           | 8PM Oct 21, 2020<br>RACE <b>1 2</b> 3 4 5<br>TYPE MWWWW<br>DET P N N N N |
|---|----------------------|--|--|--|---------------|--------------------|------------------------------|---|---------------------------|--|
| 10 dB/div                                       |                      | Offset 8.77 dE<br><b>20.00 dBm</b>       | }  | Gain:Low                               | #Atter        | . 30 08            |                              |   | Mkr1 2.4<br>4.            |  |
| 10.0 0.00                                       |                      |  |  |  |               |                    |                              |   |                           |  |
| -10.0   |                      |  |  |  |               |                    |                              |   |                           | -15.63 dBm   |
| -40.0   |                      | harped, tyle raide and                   | ra har man   | mhunalarrayaat                         | hallay have a | 4                  | ger landelige and the second | ๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛ | 3<br>mirver down Malartal | 2 h  |
| -60.0   |                      |  |  |  |               |                    |                              |   |                           |  |
| Start 2.30<br>#Res BW                           |                      |  |  | #VB                                    | W 300 I       | (Hz                |                              | Swee                                    | Stop 2.<br>p 9.600 m      | 40600 GH<br>s (1001 pts  |
| MKR MODE TF<br>1 N 1<br>2 N 1<br>3 N 1<br>4 N 1 | C SCL<br>f<br>f<br>f |  | 2.402 0 GHz<br>2.400 0 GHz<br>2.390 0 GHz<br>2.355 9 GHz | 4.471<br>-50.479<br>-53.036<br>-50.579 | dBm<br>dBm    | FUNCTION           | FUNCTION WIDTH               | ł                                       | FUNCTION VALUE            |  |
| 4<br>5<br>6<br>7<br>8                           |                      |  | 2.555 9 GHZ  |  |               |                    |                              |   |                           |  |
| 9<br>10<br>11                                   |                      |  |  |  |               |                    |                              |   |                           |  |
| SG  |                      |  |  |  |               |                    | <b>I</b> STATUS              |   |                           |  |





# Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Ref

Band Edge NVNT 2-DH1 2480MHz Ant1 No-Hopping Emission

| Agilent Spectrur                 | n Analyzer - Swept SA               |  | CENC   | E:PULSE                  |                      | ALIGN AUTO           |                         | 07,00,0                      | 0PM Oct 21, 2020                          |
|----------------------------------|-------------------------------------|--|--|--------------------------|----------------------|----------------------|-------------------------|------------------------------|---|
|                                  | eq 2.5260000                        | 00 GHz   | IO: Fast ↔→<br>Sain:Low                            | Trig: Free<br>#Atten: 30 |                      |                      | e: Log-Pwr<br>: 300/300 | TI                           | RACE 123456<br>TYPE MWWWWW<br>DET PINNNNN |
| 10 dB/div                        | Ref Offset 8.81 di<br>Ref 20.00 dBn |  |  |                          |                      |                      |                         | Mkr1 2.4<br>4.               | 80 0 GHz<br>345 dBm                       |
|                                  |                                     |  |  |                          |                      |                      |                         |                              |   |
| -10.0                            |                                     |  |  |                          |                      |                      |                         |                              | -15.84 dBm                                |
| -20.0                            |                                     |  |  |                          |                      |                      |                         |                              |   |
| -40.0                            | Anne-latron house                   | -  | ๛๚๎๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛๛            | Nullianasation           | and the second state | 1-ruhder Mathematics | holumbaryanon           | r-strle-apt,1/learnin/pdf=/h | r:lonally                                 |
| -60.0<br>-70.0                   |                                     |  |  |                          |                      |                      |                         |                              |   |
| Start 2.476<br>#Res BW 1         |                                     |  | #VBW   | 300 kHz                  |                      |                      | Swee                    | Stop 2.<br>p 9.600 ms        | 57600 GHz<br>5 (1001 pts)                 |
| MKR MODE TRC                     | SCL                                 | x  | Y  |                          | CTION                | FUNCTION WIDTH       | F                       | UNCTION VALUE                | ^   |
| 1 N 1<br>2 N 1<br>3 N 1<br>4 N 1 | f<br>f<br>f                         | 2.480 0 GHz<br>2.483 5 GHz<br>2.500 0 GHz<br>2.484 1 GHz | 4.345 dl<br>-51.905 dl<br>-52.147 dl<br>-49.766 dl | 3m<br>3m                 |                      |                      |                         |                              |   |
| 5<br>6<br>7                      |                                     |  |  |                          |                      |                      |                         |                              |   |
| 8<br>9<br>10                     |                                     |  |  |                          |                      |                      |                         |                              |   |
| 11<br><                          |                                     |  |  |                          |                      |                      |                         |                              | ×   |
| MSG                              |                                     |  |  |                          |                      |                      |                         |                              |   |





# Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Ref

Band Edge NVNT 3-DH1 2402MHz Ant1 No-Hopping Emission

| Agilent Spectr           | <mark>um Ana</mark><br>RE | lyzer - Swept SA<br>50 Ω AC |  | SEL                                    | NSE:PULSE                                |            | ALIGN AUTO        |                          | 07:45:4                 | 16 PM Oct 21, 2020                       |
|--------------------------|---------------------------|-----------------------------|--|--|--|------------|-------------------|--------------------------|-------------------------|--|
| Center F                 | req 2                     | .35600000                   | 00 GHz   | PNO: Fast ↔↔<br>Gain:Low               | Trig: Free<br>#Atten: 30                 |            | Avg Typ           | e: Log-Pwr<br>d: 300/300 |                         | IRACE 123456<br>TYPE MWWWW<br>DET PNNNNN |
| 10 dB/div                |                           | Offset 8.77 dE<br>20.00 dBm |  |  |  |            |                   |                          | Mkr1 2.4<br>4           | 01 9 GHz<br>.504 dBm                     |
| 10.0                     |                           |                             |  |  |  |            |                   |                          |                         | <b>1</b>                                 |
| -10.0                    |                           |                             |  |  |  |            |                   |                          |                         | -15.50 dBm                               |
| -20.0<br>-30.0           |                           |                             |  |  |  |            |                   |                          |                         |  |
| -40.0<br>-50.0           | -l.m.m                    | gragenall-transformed area  | n Martin and Martin                                      | www.comerce.com                        | ann an ann an | algorana . | ghauddhhain-thana | -                        | ran manual and a second | num 4                                    |
| -60.0<br>-70.0           |                           |                             |  |  |  |            |                   |                          |                         |  |
| Start 2.30<br>#Res BW    |                           |                             |  | #VBI                                   | N 300 kHz                                |            |                   | Swe                      | Stop 2<br>ep 9.600 m    | .40600 GHz<br>s (1001 pts)               |
| MKR MODE T               | RC SCL                    | >                           | X  | Y                                      |  | ICTION     | FUNCTION WIDTH    |                          | FUNCTION VALUE          |  |
| 1 N<br>2 N<br>3 N<br>4 N | f<br>f<br>f               |                             | 2.401 9 GHz<br>2.400 0 GHz<br>2.390 0 GHz<br>2.377 0 GHz | 4.504<br>-48.306<br>-53.087<br>-50.254 | dBm<br>dBm                               |            |                   |                          |                         |  |
| 5 6 7                    |                           |                             |  |  |  |            |                   |                          |                         | 3  |
| 8<br>9<br>10             |                           |                             |  |  |  |            |                   |                          |                         |  |
|                          |                           |                             |  |  |  |            |                   |                          |                         | ~  |
| 11                       |                           |                             |  |  |  |            |                   |                          |                         |  |





# Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Ref

Band Edge NVNT 3-DH1 2480MHz Ant1 No-Hopping Emission

| Agilent Spectrum Analyzer - Swept SA           |   |  |   |                    |
|--|---|--|---|--------------------|
| M RL RF 50 Ω AC<br>Center Freq 2.526000000 GHz | SENSE:PULSE                                   | ALIGN AUTO   |   | Oct 21, 2020       |
|  | PNO: Fast ↔ Trig: Fre<br>IFGain:Low #Atten: 3 | e Run Avg Hold   | 300/300 TYP   |                    |
| Ref Offset 8.81 dB<br>10 dB/div Ref 20.00 dBm  |   |  | Mkr1 2.480<br>3.92  | 2 GHz<br>2 dBm     |
| Log<br>10.0 1                                  |   |  |   |                    |
| 0.00   |   |  |   |                    |
| -10.0  |   |  |   | -15.61 dBm         |
| -20.0  |   |  |   |                    |
| -30.0  |   |  |   |                    |
| -40.0 2 43<br>-50.0                            | สหารไปไฟนี้-สำนักให้เป็นหาวิทยาล              |  | whether a second state of the test process of the second state of | Jan Merk Saular, 1 |
| -60.0  |   | Particular and the site from the site of the second s |   |                    |
| -70.0  |   |  |   |                    |
| Start 2.47600 GHz<br>#Res BW 100 kHz           | #VBW 300 kH                                   |  | Stop 2.57<br>Sweep 9.600 ms (1  |                    |
| MKRI MODEL TRCI SCLI X                         |   | JNCTION FUNCTION WIDTH   | FUNCTION VALUE  |                    |
| 1 N 1 f 2.480 2 G                              |   |  |   |                    |
| 3 N 1 f 2.500 0 G<br>4 N 1 f 2.499 2 G         | Hz -52.251 dBm                                |  |   |                    |
| 5  |   |  |   | =                  |
| 7 8  |   |  |   |                    |
| 9  |   |  |   |                    |
| 11   |   |  |   | >                  |
| MSG  |   |  |   |                    |

#### Band Edge(Hopping)

| Condition | Mode  | Frequency (MHz) | Antenna | Hopping Mode | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|--------------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | Hopping      | -57.95          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | Hopping      | -57.04          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | Hopping      | -54.13          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | Hopping      | -53.67          | -20         | Pass    |
| NVNT      | 3-DH1 | 2402            | Ant1    | Hopping      | -54             | -20         | Pass    |
| NVNT      | 3-DH1 | 2480            | Ant1    | Hopping      | -53.35          | -20         | Pass    |

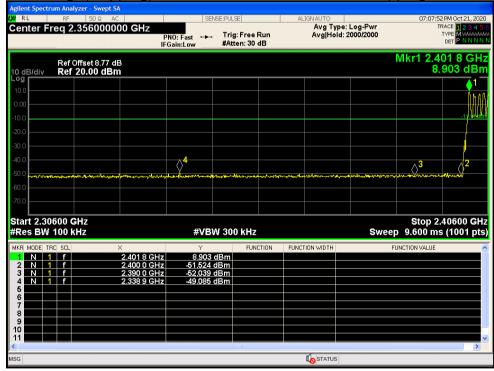
JianYan Testing Group Shenzhen Co., Ltd. No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366 Project No.: JYTSZE2010037





# Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 1-DH1 2402MHz Ant1 Hopping Emission







## Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 1-DH1 2480MHz Ant1 Hopping Emission

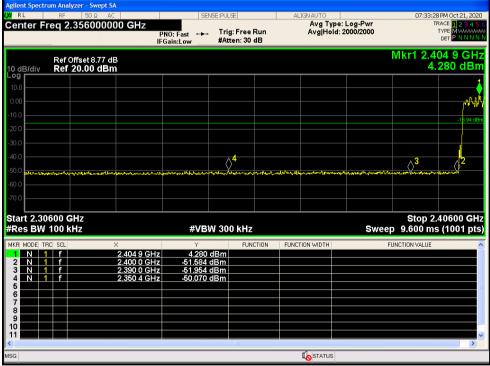
| Agilent Spectru       |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
|-----------------------|--------------|--------------------------|----------------------------|------------------------|-----------------|------------------------|-----------|---------------|----------------------------------|--|----------------------|---|
| Center Fr             | RF<br>eq 2.5 | 50 Ω AC<br>52600000      | 0 GHz                      | NO: Fast ↔<br>Gain:Low |                 | E<br>:Freef<br>en:30 ( |           | ALI           | GN AUTO<br>Avg Type<br>Avg Hold: | : Log-Pwr<br>2000/2000                     |                      | BOPM Oct 21, 2020<br>TRACE 1 2 3 4 5 6<br>TYPE M WWWWW<br>DET P N N N N   |
| 10 dB/div             |              | fset 8.81 dB<br>0.00 dBm |                            |                        |                 |                        |           |               |                                  |  | Mkr1 2.4<br>8        | 179 2 GHz<br>.441 dBm   |
|                       |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
| -10.0                 |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      | -11.92 dBm  |
| -20.0                 |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
| -40.0                 | . <b>∆</b> 2 |                          | 3                          |                        |                 |                        |           |               |                                  |  |                      |   |
| -50.0                 | La Venna an  | mensionalisati           | manikowatu                 | and Alman meder        | yn Autor Angela | ale stations           | สมสัประมา | مهمول بهمور م | and descention of the            | alaya ya afa a a a a a a a a a a a a a a a | mound                | and and the second s |
| -70.0                 |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
| Start 2.47<br>#Res BW |              |                          |                            | #VB                    | W 300           | ) kHz                  |           |               |                                  | Swe  | Stop 2<br>ep 9.600 m | 2.57600 GHz<br>s (1001 pts)   |
| MKR MODE TR           | C SCL        | >                        | <                          | Y                      |                 | FUNC                   | CTION     | FUNCT         | ION WIDTH                        |  | FUNCTION VALUE       |   |
| 1 N 1<br>2 N 1        | f            |                          | 2.479 2 GHz<br>2.483 5 GHz | 8.441                  | dBm             |                        |           |               |                                  |  |                      |   |
| 3 N 1                 | f            |                          | 2.500 0 GHz                | -51.396                | dBm             |                        |           |               |                                  |  |                      |   |
| 4 N 1<br>5            | f            |                          | 2.493 1 GHz                | -48.955                | dBm             |                        |           |               |                                  |  |                      |   |
| 6                     |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
| 8                     |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
| 9                     |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      |   |
| 11                    |              |                          |                            |                        |                 |                        |           |               |                                  |  |                      | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~  |
| MSG                   |              |                          |                            |                        |                 |                        |           |               | STATUS                           |  |                      |   |





# Band Edge(Hopping) NVNT 2-DH1 2402MHz Ant1 Hopping Ref









# Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 2-DH1 2480MHz Ant1 Hopping Emission

| Agilent Spectrum Analyzer - Swept SA                  |  |   |   |  |
|---|--|---|---|--|
| RL RF 50Ω AC<br>Center Freq 2.526000000               | PN0 East ↔   | PULSE<br>Frig: Free Run<br>KAtten: 30 dB          | ALIGNAUTO<br>Avg Type: Log-Pwr<br>Avg Hold: 2000/2000 | 07:36:26 PM Oct 21, 2020<br>TRACE 1 2 3 4 5<br>TYPE MWWWW<br>DET P N N N N |
| Ref Offset 8.81 dB<br>10 dB/div Ref 20.00 dBm         |  |   |   | Mkr1 2.476 9 GHz<br>4.426 dBm  |
|   |  |   |   |  |
| -10.0   |  |   |   | -15.71 dBn   |
| -20.0   |  |   |   |  |
| -40.0<br>-50.0  | 4 3  | and and a second state of the second state of the |   | 1947apatrimeters   |
| -60.0   |  |   |   |  |
| Start 2.47600 GHz<br>#Res BW 100 kHz                  | #VBW :   | 300 kHz   | Swe   | Stop 2.57600 GH<br>ep   9.600 ms (1001 pts                                 |
| 2 N 1 f 2.4   | 476 9 GHz 4.426 dB<br>483 5 GHz -51.474 dB<br>500 0 GHz -51.627 dB | m n   | ICTION WIDTH  | FUNCTION VALUE   |
| 4 N 1 f 2.<br>5 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | 498 1 GHz -49.384 dBi  | m   |   |  |
| 7<br>8<br>9   |  |   |   |  |
| 10<br>11<br><   |  | mu  |   | 8  |
| ISG   |  |   | STATUS  |  |





# Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 3-DH1 2402MHz Ant1 Hopping Emission

| g <mark>ilent Spectr</mark><br>RL | um Analyzer - S                              | Swept SA   | SENSE         |   | ALIGN AUTO                             |                            | 07:52:2             | 5 PM Oct 21, 2020        |
|-----------------------------------|--|--|---------------|---|--|----------------------------|---------------------|--------------------------|
|                                   |  | 000000 GHz   | PNO: Fast ↔   | Trig: Free Run<br>#Atten: 30 dB   | Avg Typ                                | e: Log-Pwr<br>I: 2000/2000 | Т                   | RACE 1 2 3 4 5<br>TYPE M |
| 0 dB/div                          | Ref Offset<br>Ref 20.0                       |  |               |   |  |                            | Mkr1 2.4<br>4.      | 03 8 GH:<br>509 dBn      |
| . <b>og</b><br>10.0<br>0.00       |  |  |               |   |  |                            |                     |                          |
| 20.0                              |  |  |               |   |  |                            |                     | -1\$.60 dt               |
| 10.0<br>10.0                      |  |  |               | <b>♦</b> <sup>4</sup>   |  |                            | <b>3</b>            |                          |
|                                   | ₩ <b>₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩₩</b> | มไรเรียญให้<br>  |               | ant)(Andrew Andrew A | ~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~ | ah ( ( n - 1))<br>         |                     |                          |
|                                   | 600 GHz<br>100 kHz                           |  | #VBW          | 300 kHz   |  | Sweep                      | Stop 2.<br>9.600 ms | 40600 GH<br>s (1001 pt   |
| KR MODE TR                        | RC SCL                                       | ×<br>2.403 8 GHz   | ۲<br>4.509 dB | FUNCTION  | FUNCTION WIDTH                         | FL                         | JNCTION VALUE       |                          |
| 2 N 1<br>3 N 1<br>4 N 1           | f<br>f<br>f                                  | 2.403 8 GHz<br>2.400 0 GHz<br>2.390 0 GHz<br>2.350 0 GHz |               | m<br>m  |  |                            |                     |                          |
| 5<br>6<br>7<br>8                  |  |  |               |   |  |                            |                     |                          |
| 9                                 |  |  |               |   |  |                            |                     | >                        |
| G                                 |  |  |               |   | <b>I</b> STATUS                        |                            |                     |                          |





# Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Ref

Band Edge(Hopping) NVNT 3-DH1 2480MHz Ant1 Hopping Emission

| Agilent Spectrum Analyz   |   |  |   |                        |   |                  |                                |  |
|---|---|--|---|------------------------|---|------------------|--------------------------------|--|
| Center Freq 2.5   | 50 Ω AC<br>526000000 GHz                              | PNO: Fast<br>IFGain:Low                    | SE:PULSE<br>Trig: Free Rui<br>#Atten: 30 dB |                        | Avg Type: I<br>Avg Type: I<br>Avg Hold: 2 |                  | TF                             | ACE 1 2 3 4 5 6<br>TYPE MWWWWW<br>DET PNNNNN |
| 10 dB/div Ref 2   | fset 8.81 dB<br>0.00 dBm                              |  |   |                        |   | 1                |                                | 76 9 GHz<br>458 dBm                          |
| 10.0 1  |   |  |   |                        |   |                  |                                |  |
| -10.0   |   |  |   |                        |   |                  |                                | -15.57 dBm                                   |
| -20.0   |   |  |   |                        |   |                  |                                |  |
| -40.0<br>-50.0  | 4 3   | guestalities and a college                 | ananananan da                               | previgter of the state |   | .talionnenaumeno | lan <sup>a ma</sup> tangkalara | an stade and a stade of the                  |
| -60.0   |   |  |   |                        |   |                  |                                |  |
| Start 2.47600 G   |   |  |   |                        |   |                  | Stop 2.                        | 57600 GHz                                    |
| #Res BW 100 kH  |   | #VBV                                       | V 300 kHz                                   | U. FUNCTION            | LV-4D-TU                                  |                  | 9.600 ms                       | (1001 pts)                                   |
| I         N         1         f           2         N         1         f           3         N         1         f           4         N         1         f           5 | ×<br>2.476 9 G<br>2.483 5 G<br>2.500 0 G<br>2.493 4 G | Hz 4.458 d<br>Hz -50.962 d<br>Hz -50.615 d | IBm<br>IBm<br>IBm                           |                        |   | FU               | INCTION VALUE                  |  |
| 6<br>7<br>8<br>9  |   |  |   |                        |   |                  |                                |  |
| 10<br>11  |   |  |   |                        |   |                  |                                | <b>~</b>                                     |
| MSG   |   |  |   | ų.                     | STATUS                                    |                  |                                |  |

#### Conducted RF Spurious Emission

| Condition | Mode  | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|-------|-----------------|---------|-----------------|-------------|---------|
| NVNT      | 1-DH1 | 2402            | Ant1    | -56.06          | -20         | Pass    |
| NVNT      | 1-DH1 | 2441            | Ant1    | -56.01          | -20         | Pass    |
| NVNT      | 1-DH1 | 2480            | Ant1    | -55.22          | -20         | Pass    |
| NVNT      | 2-DH1 | 2402            | Ant1    | -51.07          | -20         | Pass    |
| NVNT      | 2-DH1 | 2441            | Ant1    | -52.15          | -20         | Pass    |
| NVNT      | 2-DH1 | 2480            | Ant1    | -51.58          | -20         | Pass    |

JianYan Testing Group Shenzhen Co., Ltd. No.110~116, Building B, Jinyuan Business Building, Xixiang Road, Bao'an District, Shenzhen, Guangdong, China Telephone: +86 (0) 755 23118282 Fax: +86 (0) 755 23116366 Project No.: JYTSZE2010037

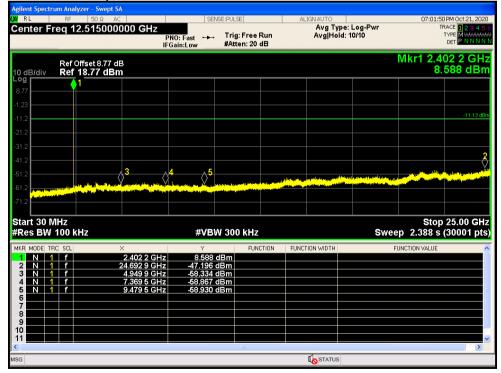


| NVNT | 3-DH1 | 2402 | Ant1 | -51.48 | -20 | Pass |
|------|-------|------|------|--------|-----|------|
| NVNT | 3-DH1 | 2441 | Ant1 | -51.5  | -20 | Pass |
| NVNT | 3-DH1 | 2480 | Ant1 | -51.54 | -20 | Pass |

| XIRL                          | um Analyzer - Swept S<br>RF 50 Ω AC<br>Ceq 2.4020000 | 00 GHz           |                       | NSE:PULSE   |  | IGN AUTO<br>Avg Type:<br>Avg Hold: 3 |                 | Т  | 5PM Oct 21, 2020<br>RACE 12345 (             |
|-------------------------------|--|------------------|-----------------------|---|--|--------------------------------------|-----------------|--|--|
|                               | Ref Offset 8.77 dl                                   | I                | NO:Wide ↔<br>Gain:Low | #Atten: 20  | dB   | Avginoid: 3                          |                 | 2.401 83   |  |
| 10 dB/div<br><sup>Log</sup> r | Ref 18.77 dBm  | n                |                       |   |  |                                      |                 | 8.   | .871 dBm                                     |
| 8.77                          |  |                  |                       | 1   |  |                                      |                 |  |  |
|                               |  |                  |                       | A CONTRACT OF A | and an | and the second second                |                 |  |  |
| 1.23                          |  | f. Summer Summer | equal to              |   |  |                                      | Contratement of | Warman -   |  |
| -11.2                         | Warrant Warrant Martin I                             |                  |                       |   |  |                                      |                 | What was a series of the serie | Mary and |
| 31.2                          |  |                  |                       |   |  |                                      |                 |  | Re Charles Withol                            |
| 41.2                          |  |                  |                       |   |  |                                      |                 |  |  |
|                               |  |                  |                       |   |  |                                      |                 |  |  |
| 51.2                          |  |                  |                       |   |  |                                      |                 |  |  |
| 51.2                          |  |                  |                       |   |  |                                      |                 |  |  |
| 71.2                          |  |                  |                       |   |  |                                      |                 |  |  |
| enter 2.4<br>Res BW           | 020000 GHz   |                  | #VB                   | W 300 kHz   |  |                                      | Sween           | Span<br>2.000 ms   | │<br>1.500 MH<br>(30001 pt                   |
| ISG                           |  |                  |                       |   |  |                                      | -onrecp         | 2.000 1115   | (e o c o r pr                                |

#### Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Ref

#### Tx. Spurious NVNT 1-DH1 2402MHz Ant1 Emission







# Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Ref

#### Tx. Spurious NVNT 1-DH1 2441MHz Ant1 Emission

| gilent Spectru          |                          |   |               |                       |                  |                |                           |                |   |
|-------------------------|--------------------------|---|---------------|-----------------------|------------------|----------------|---------------------------|----------------|---|
| enter Fre               | <sup>RF</sup><br>€q 12.5 | 50 Ω AC<br>515000000 GHz                | PNO: Fast     | • Trig: Fi<br>#Atten: | ree Run<br>20 dB |                | /pe: Log-Pwr<br>Id: 10/10 |                | 1 PM Oct 21, 202<br>RACE 1 2 3 4 5<br>TYPE MWWWW<br>DET P N N N |
| 0 dB/div                |                          | set 8.8 dB<br>2.80 dBm                  |               |                       |                  |                |                           | Mkr1 2.4<br>7. | 41 3 GH<br>938 dBr  |
| . <b>og</b><br>8.80     | <b>1</b>                 |   |               |                       |                  |                |                           |                |   |
| 1.20                    |                          |   |               |                       |                  |                |                           |                | -11.10 di   |
| 1.2                     |                          |   |               |                       |                  |                |                           |                |   |
| i1.2                    |                          | <u>3</u>                                | 4             | 5                     |                  |                |                           |                | ula Las kastali   |
| 1.2                     |                          |   |               | i dina ali sabia      |                  |                |                           |                |   |
| 1.2                     |                          |   |               |                       |                  |                |                           | Cton           | 25.00 GH  |
| Res BW 1                |                          | 2                                       | #VB           | W 300 k               | Hz               |                | Swe                       | eep 2.388 s    | (30001 pt   |
| KR MODE TRO             | SCL<br>f                 | ×<br>2.441 3 GH                         | Y<br>1z 7.938 | dBm                   | FUNCTION         | FUNCTION WIDTH |                           | FUNCTION VALUE |   |
| 2 N 1<br>3 N 1<br>4 N 1 | f<br>f                   | 24.932 6 GH<br>4.776 0 GH<br>7.153 1 GH | iz -58.145    | dBm                   |                  |                |                           |                |   |
| 5 N 1<br>6 7            | f                        | 9.947 3 GF                              |               |                       |                  |                |                           |                |   |
| 8<br>9<br>0             |                          |   |               |                       |                  |                |                           |                |   |
| 1                       |                          |   |               |                       |                  |                |                           |                | >   |
| G                       |                          |   |               |                       |                  | 🚺 STATU:       | 5                         |                |   |





# Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Ref

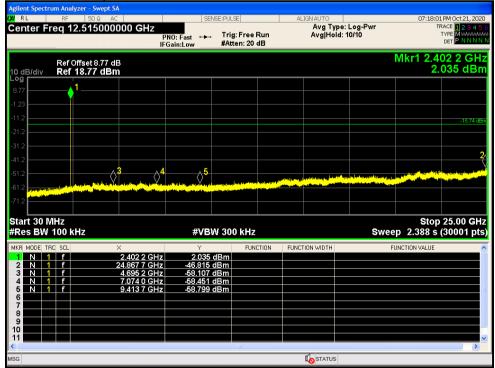
#### Tx. Spurious NVNT 1-DH1 2480MHz Ant1 Emission

| ilent Spectr        | r <mark>um Ana</mark><br>RF | lyzer - Swept SA<br>50 Ω AC |                              | SENSE:PULSE             |                    | ALIGN AUTO   |   | 07:04:4            | 4 PM Oct 21, 202      |
|---------------------|-----------------------------|-----------------------------|------------------------------|-------------------------|--------------------|--|---|--------------------|-----------------------|
|                     |                             | 2.515000000 G               |                              | 🛏 Trig: F               | ree Run<br>: 20 dB | Avg Ty   | pe:Log-Pwr<br>ld:10/10  |                    | TYPE MWWW<br>DET PNNN |
| ) dB/div            |                             | Offset 8.81 dB<br>18.81 dBm |                              |                         |                    |  |   | Mkr1 2.4<br>8      | 79 6 GH<br>175 dBr    |
| og<br>1.81          |                             | 1                           |                              |                         |                    |  |   |                    |                       |
| .19                 |                             |                             |                              |                         |                    |  |   |                    | -11.63 d              |
| 1.2                 |                             |                             |                              |                         |                    |  |   |                    |                       |
| 1.2                 |                             |                             |                              |                         |                    |  |   |                    |                       |
| 1.2                 |                             | 3                           | 4                            | <b>∮</b> <sup>5</sup> . |                    |  | den de ante ante de la contra cont |                    |                       |
| 1.2<br>1.2          |                             |                             |                              |                         |                    | hiter a first and a second |   |                    |                       |
| tart 30 N<br>Res BW |                             | ۲۲<br>۲                     | #VI                          | BW 300 I                | (Hz                |  | Swe   | Stop<br>ep 2.388 s | 25.00 GH<br>(30001 pt |
| KR MODE TF          | RC SCL                      | ×<br>2.479 6                | Y<br>6 GHz 8.17              | ′5 dBm                  | FUNCTION           | FUNCTION WIDTH   |   | FUNCTION VALUE     |                       |
| 2 N 1<br>3 N 1      | f<br>f                      | 24.980 (<br>4.760 2         | 0 GHz -46.85<br>2 GHz -58.62 | 1 dBm<br>0 dBm          |                    |  |   |                    |                       |
| 4 N 1<br>5 N 1<br>6 | f                           | 7.479 4<br>9.978 9          |                              | 5 dBm<br>0 dBm          |                    |  |   |                    |                       |
| 7<br>B              |                             |                             |                              |                         |                    |  |   |                    |                       |
| -                   |                             |                             |                              |                         |                    |  |   |                    |                       |
| 0                   |                             |                             |                              |                         |                    |  |   |                    | >                     |



# Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Ref

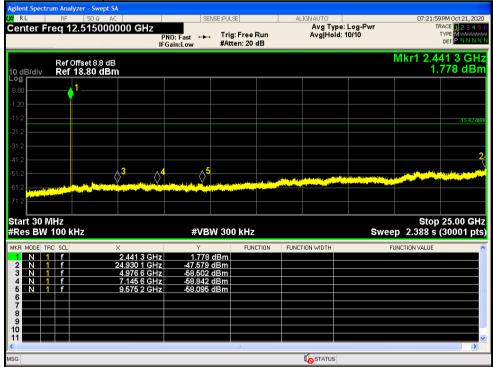
#### Tx. Spurious NVNT 2-DH1 2402MHz Ant1 Emission





# Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Ref

#### Tx. Spurious NVNT 2-DH1 2441MHz Ant1 Emission







### Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Ref

#### Tx. Spurious NVNT 2-DH1 2480MHz Ant1 Emission

| RL           | RF          | Ilyzer - Swept SA<br>50 Q AC  <br>2.515000000 GHz | SE                         | INSE:PULSE |                      | ALIGN AUTO     | pe: Log-Pwr           |                 | DPM Oct 21, 2020    |
|--------------|-------------|---|----------------------------|------------|----------------------|----------------|-----------------------|-----------------|---------------------|
| senter 1     |             | 2.5 15000000 GHZ                                  | PNO: Fast ++<br>IFGain:Low |            | Free Run<br>n: 20 dB |                | id: 10/10             |                 | DET PNNN            |
| 0 dB/div     | Ref<br>Ref  | Offset 8.81 dB<br>18.81 dBm                       |                            |            |                      |                |                       | Mkr1 2.4<br>-2. | 79 6 GH:<br>626 dBn |
| 8.81<br>1.19 | (           | 1   |                            |            |                      |                |                       |                 |                     |
| 11.2         |             |   |                            |            |                      |                |                       |                 | -15.87 dB           |
| 21.2<br>31.2 |             |   |                            |            |                      |                |                       |                 |                     |
| 41.2<br>51.2 |             | 3   | 4/                         | 5          |                      |                | alle, ala en ter stat |                 |                     |
| 61.2<br>71.2 | un da de se |   | n a thul day sauth day     |            |                      |                |                       |                 |                     |
| start 30 M   |             |   |                            |            |                      |                |                       | Stop            | 25.00 GH            |
| Res BW       |             | kHz   | #VB                        | W 300      | kHz                  |                |                       | ep 2.388 s      | (30001 pt           |
| KR MODE T    | RC SCL      | ×<br>2.479 6 GH                                   | y<br>-2.626                | dBm        | FUNCTION             | FUNCTION WIDTH |                       | FUNCTION VALUE  |                     |
| 2 N 1        | f           | 24.949 2 GH                                       | z -47.444                  | dBm        |                      |                |                       |                 |                     |
| 3 N 1        | f<br>F      | 4.866 7 GH<br>7.520 2 GH                          |                            |            |                      |                |                       |                 |                     |
| 5 N 1        | f           | 9.874 0 GH  |                            |            |                      |                |                       |                 |                     |
| 6            |             |   |                            |            |                      |                |                       |                 |                     |
| 8            |             |   |                            |            |                      |                |                       |                 |                     |
| 9            |             |   |                            |            |                      |                |                       |                 |                     |
| 1            |             |   |                            |            |                      |                |                       |                 | 3                   |
| ļ.,          |             |   |                            |            |                      |                |                       |                 | >                   |
| G            |             |   |                            |            |                      |                |                       |                 |                     |



# Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Ref

#### Tx. Spurious NVNT 3-DH1 2402MHz Ant1 Emission

| RL                               | ctru                 | <mark>m Ana</mark><br>RF | lyzer - Swept SA<br>50 Ω AC |              | ENSE:PULS |                       |                                  |                         |   |
|----------------------------------|----------------------|--------------------------|-----------------------------|--------------|-----------|-----------------------|----------------------------------|-------------------------|---|
|                                  | Fre                  |                          | 2.515000000 GH              |              |           | ∷Free Run<br>en:20 dB | ALIGN AUTO<br>Avg Tyj<br>Avg Hol | pe: Log-Pwr<br>d: 10/10 | 07:46:30 PM Oct 21, 20<br>TRACE 1234<br>TYPE MWWA<br>DET PNNN |
| ) dB/div                         | ,                    |                          | Offset 8.77 dB<br>18.77 dBm |              |           |                       |                                  | Ν                       | /kr1 2.402 2 GF<br>4.112 dB                                   |
| .77                              |                      | _                        | 1                           |              |           |                       |                                  |                         |   |
| 23                               |                      |                          |                             |              |           |                       |                                  |                         |   |
| 1.2<br>1.2                       |                      |                          |                             |              |           |                       |                                  |                         | -15.54  |
| 1.2                              |                      |                          |                             |              |           |                       |                                  |                         |   |
| 1.2 —                            |                      |                          | A 3                         | ۸ <b>4</b> ۸ | 5         |                       |                                  |                         | المعريف من بعد المانية الم                                    |
| 1.2                              | <mark>د رتغند</mark> | and a fill               |                             |              |           | an ann a su dae       |                                  |                         |   |
| 1.2 <mark> </mark>               | <del>يىلى يەر</del>  | and the second second    |                             |              |           |                       |                                  |                         |   |
| art 30<br>Res B                  |                      |                          | ٢Hz                         | #VI          | 3W 300    | ) kHz                 |                                  | Sweep                   | Stop 25.00 G<br>2.388 s (30001 p                              |
|                                  | TRO                  | SCL                      | ×<br>2.402.2 G              | Y            | 2 dBm     | FUNCTION              | FUNCTION WIDTH                   | FUł                     | ICTION VALUE  |
|                                  | 1                    | f                        | 24.958 4 G                  | Hz -47.02    | 9 dBm     |                       |                                  |                         |   |
|                                  |                      | f                        | 4.606 2 0                   | HZ -58.20    | 0 dBm     |                       |                                  |                         |   |
|                                  | 1                    | f                        | 7.011 6 0                   |              |           |                       |                                  |                         |   |
| 3 N<br>4 N<br>5 N                | 1                    | f<br>f                   | 9.583 5 0                   |              | 9 dBm     |                       |                                  |                         |   |
| 3 N<br>4 N<br>5 N<br>6           | 1                    | f                        |                             |              |           |                       |                                  |                         |   |
| 3 N<br>4 N<br>5 N<br>6<br>7<br>8 |                      | f                        |                             |              |           |                       |                                  |                         |   |
| 4 N                              |                      | f                        |                             |              |           |                       |                                  |                         |   |
|                                  |                      | f                        |                             |              |           |                       | STATUS                           | í                       | 3   |



# Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Ref

#### Tx. Spurious NVNT 3-DH1 2441MHz Ant1 Emission

|   | Rf    | = 50Ω A                        | ic  | S                                      | ENSE:PUL                         | .SE                      |   | ALIGN AUTO         |   | 07:48   | :50 PM Oct 21, 20                    |
|---|-------|--------------------------------|---|--|----------------------------------|--------------------------|---|--------------------|---|---|--------------------------------------|
| enter   | Freq  | 12.515000                      | I   | PNO: Fast ↔<br>FGain:Low               |                                  | g: Free Ru<br>ten: 20 dE |   | Avg Typ<br>Avg Hol | e: Log-Pwr<br>d: 10/10  |   | TRACE 1234<br>TYPE MMMMM<br>DET PNNN |
| ) dB/div  |       | f Offset 8.8 dE<br>f 18.80 dBi |   |  |                                  |                          |   |                    |   | Mkr1 2.4  | 440 4 GH<br>1.600 dB                 |
| 2 <sup>g</sup>  |       | <u> </u> 1                     |   |  |                                  |                          |   |                    |   |   |                                      |
| 20  |       |                                |   |  |                                  |                          |   |                    |   |   |                                      |
| 1.2   |       |                                |   |  |                                  |                          |   |                    |   |   | -15.24 c                             |
| .2  |       |                                |   |  |                                  |                          |   |                    |   |   |                                      |
| .2  |       |                                |   |  |                                  |                          |   |                    |   |   |                                      |
| .2  |       |                                | 3   |  | 1                                |                          |   |                    |   |   |                                      |
| .2  |       | Links Musletter                | $\diamond$  | 4                                      |                                  | ومعر والاعتماد ويري      |   | dia .              | in a state of the | and the state of the |                                      |
| 1.2<br>1.2  |       |                                |   |  |                                  |                          | In a life bit of the life bit |                    |   |   |                                      |
|   |       |                                |   |  |                                  |                          |   |                    |   |   |                                      |
|   | ) MHz |                                |   |  |                                  |                          |   |                    |   | Sto   | p 25.00 GI                           |
|   | W 100 | kHz                            |   | #VE                                    | SW 30                            | 0 kHz                    |   |                    | Sw  | eep 2.388 s   | s (30001 pi                          |
| Res B   | W 100 |                                | ×   | Y                                      |                                  | O KHZ<br>FUNCTI          | ION FU  | NCTION WIDTH       | Sw  | FUNCTION VALUE  |                                      |
| Res B   | W 100 |                                | 2.440 4 GHz<br>24.958 4 GHz                               | 4.600<br>-46.749                       | 0 dBm<br>9 dBm                   |                          | ION FU  | NCTION WIDTH       | Sw  |   |                                      |
| Res B   | W 100 |                                | 2.440 4 GHz<br>24.958 4 GHz<br>4.985 7 GHz<br>7.444 4 GHz | 4.600<br>-46.749<br>-58.218<br>-58.509 | 0 dBm<br>9 dBm<br>8 dBm<br>5 dBm |                          | ION FU  | NCTION WIDTH       | Sw  |   |                                      |
| Res B   | W 100 |                                | 2.440 4 GHz<br>24.958 4 GHz<br>4.985 7 GHz                | 4.600<br>-46.749<br>-58.218<br>-58.509 | 0 dBm<br>9 dBm<br>8 dBm<br>5 dBm |                          | ION FU  | NCTION WIDTH       | Sw  |   |                                      |
| Res B<br>R MODE<br>N<br>2 N<br>3 N<br>4 N<br>5 N<br>6<br>7      | W 100 |                                | 2.440 4 GHz<br>24.958 4 GHz<br>4.985 7 GHz<br>7.444 4 GHz | 4.600<br>-46.749<br>-58.218<br>-58.509 | 0 dBm<br>9 dBm<br>8 dBm<br>5 dBm |                          | ION FU  | NCTION WIDTH       | Sw  |   |                                      |
| Res B<br>R MODE<br>N<br>2 N<br>3 N<br>4 N<br>5 N<br>6<br>7<br>7 | W 100 |                                | 2.440 4 GHz<br>24.958 4 GHz<br>4.985 7 GHz<br>7.444 4 GHz | 4.600<br>-46.749<br>-58.218<br>-58.509 | 0 dBm<br>9 dBm<br>8 dBm<br>5 dBm |                          | ION FU  | NCTION WIDTH       | Sw  |   |                                      |
| Res B<br>R MODE<br>N<br>2 N<br>3 N<br>4 N<br>5 N<br>6           | W 100 |                                | 2.440 4 GHz<br>24.958 4 GHz<br>4.985 7 GHz<br>7.444 4 GHz | 4.600<br>-46.749<br>-58.218<br>-58.509 | 0 dBm<br>9 dBm<br>8 dBm<br>5 dBm |                          | ION FU  | NCTION WIDTH       | Sw  |   |                                      |



# Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Ref

### Tx. Spurious NVNT 3-DH1 2480MHz Ant1 Emission

| RL  |          | RF    | <mark>yzer - Swept S/</mark><br>50 Ω AC |  |                                 | SENSE:PUL   | .SE                              | ALIO         | GN AUTO                | 07:5   | 0:10 PM Oct 21, 202                  |
|---|----------|-------|---|--|---------------------------------|---|----------------------------------|--------------|------------------------|--|--------------------------------------|
| enter   | Fre      | eq 1: | 2.515000                                |  | PNO: Fast<br>FGain:Low          |   | g: Free Run<br>ten: 20 dB        |              | Avg Type:<br>Avg Hold: |  | TRACE 12345<br>TYPE MWWW<br>DET PNNN |
| 0 dB/div  |          |       | )<br>ffset 8.81 dl<br>18.81 dBn         |  |                                 |   |                                  |              |                        |  | .480 4 GH<br>0.580 dBi               |
| og<br>3.81  |          | -     | 1                                       |  |                                 |   |                                  |              |                        |  |                                      |
| .19<br>1.2  |          |       |   |  |                                 |   |                                  |              |                        |  | -15.76 di                            |
| 1.2   |          |       |   |  |                                 |   |                                  |              |                        |  |                                      |
| 1.2   |          |       |   | 3  |                                 |   |                                  |              |                        |  |                                      |
| 1.2   |          |       | al and Medanica                         |  |                                 |   | and the strength of the strength | . de site de |                        | and the second |                                      |
| 1.2 June  | o di com |       | and the second second second            | and the second | and the second second           | and the second secon | Contraction of the second        |              |                        |  |                                      |
| 1.2   |          |       | an an barran an                         |  |                                 |   |                                  |              |                        |  |                                      |
| 1.2   |          |       | Hz                                      |  | #\                              | /BW 30  | 0 kHz                            |              |                        | Sto<br>eep 2.388   | op 25.00 Gl<br>s (30001 pi           |
| 1.2<br>tart 30<br>Res B1  | W 1      | 00 k  |   | ×  | Y                               | ,   | 0 KHz                            |              | ON WIDTH               | Sto<br>eep 2.388<br>FUNCTION VALU  | s (30001 pi                          |
| 1.2<br>tart 30<br>Res Bl<br>R MODE  | W 1      | 00 k  |   | 2.480 4 GHz  | ۲<br>-0.5                       | 80 dBm  |                                  |              |                        | eep 2.388  | s (30001 pi                          |
| 1.2<br>tart 30<br>Res Bl<br>R MODE  | W 1      | 00 k  |   | 2.480 4 GHz<br>24.662 9 GHz  | -0.5<br>-47.3                   | 80 dBm<br>802 dBm   |                                  |              |                        | eep 2.388  | s (30001 pi                          |
| 1.2<br>tart 30<br>Res Bl<br>(R MODE<br>1 N<br>2 N<br>3 N<br>4 N   | W 1      | 00 k  |   | 2.480 4 GHz<br>24.662 9 GHz<br>4.979 1 GHz<br>7.542 6 GHz  | -0.5<br>-47.3<br>-58.4<br>-58.2 | 80 dBm<br>802 dBm<br>835 dBm<br>274 dBm   |                                  |              |                        | eep 2.388  | s (30001 pi                          |
| 1.2<br>tart 30<br>Res Bl<br>Res Bl<br>1 N<br>2 N<br>3 N<br>4 N<br>5 N<br>6<br>6<br>7                        | W 1      | 00 k  |   | 2.480 4 GHz<br>24.662 9 GHz<br>4.979 1 GHz   | -0.5<br>-47.3<br>-58.4<br>-58.2 | 80 dBm<br>02 dBm<br>135 dBm   |                                  |              |                        | eep 2.388  | op 25.00 GH<br>s (30001 pt<br>je     |
| 1.2<br>tart 30<br>Res B/<br>Res B/<br>1 N<br>3 N<br>4 N<br>5 N<br>6<br>6<br>7<br>7<br>7<br>8<br>8<br>9<br>0 | W 1      | 00 k  |   | 2.480 4 GHz<br>24.662 9 GHz<br>4.979 1 GHz<br>7.542 6 GHz  | -0.5<br>-47.3<br>-58.4<br>-58.2 | 80 dBm<br>802 dBm<br>835 dBm<br>274 dBm   |                                  |              |                        | eep 2.388  | s (30001 pi                          |
| 1.2<br>tart 30<br>Res B/<br>Res B/<br>1 N<br>3 N<br>4 N<br>5 N<br>6<br>6<br>7<br>7<br>7<br>8<br>8           | W 1      | 00 k  |   | 2.480 4 GHz<br>24.662 9 GHz<br>4.979 1 GHz<br>7.542 6 GHz  | -0.5<br>-47.3<br>-58.4<br>-58.2 | 80 dBm<br>802 dBm<br>835 dBm<br>274 dBm   |                                  |              |                        | eep 2.388  | s (30001 pt                          |

#### Number of Hopping Channel

| Condition | Mode  | Antenna | Hopping Number | Limit | Verdict |
|-----------|-------|---------|----------------|-------|---------|
| NVNT      | 1-DH1 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 2-DH1 | Ant1    | 79             | 15    | Pass    |
| NVNT      | 3-DH1 | Ant1    | 79             | 15    | Pass    |



| Agilent Spectrum Analyzer - Swept SA             |                            |                                 |                |           |   |
|--|----------------------------|---------------------------------|----------------|-----------|---|
| X RL RF 50Ω AC<br>Center Freq 2.441750000 GHz    | SENS                       | E:PULSE                         |                | : Log-Pwr | 07:09:26 PM Oct 21, 2020<br>TRACE 1 2 3 4 5 6 |
|  | PNO: Fast ↔↔<br>IFGain:Low | Trig: Free Run<br>#Atten: 30 dB | Avg Hold       | 5000/5000 | TYPE MWWWWW<br>DET P N N N N N                |
|  | Ir Galil.200               |                                 |                | Mkr       | 1 2.401 837 0 GHz                             |
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm     |                            |                                 |                |           | 8.905 dBm                                     |
|  |                            |                                 |                |           |   |
|  |                            | WWWW                            | VARAAAAAAAA    |           | MMMMMMÅ                                       |
| -20.0  |                            |                                 |                |           |   |
| -30.0  |                            |                                 |                |           |   |
| -40.0  |                            |                                 |                |           | \   |
| -50.0  |                            |                                 |                |           |   |
| -60.0  |                            |                                 |                |           |   |
| -70.0  |                            |                                 |                |           |   |
|  |                            |                                 |                |           |   |
| Start 2.40000 GHz<br>#Res BW 100 kHz             | #VBW                       | 300 kHz                         |                | Sweep     | Stop 2.48350 GHz<br>8.000 ms (1001 pts)       |
| MKR MODE TRC SCL X                               | Y                          | FUNCTION                        | FUNCTION WIDTH | Fl        | JNCTION VALUE                                 |
| 1 N 1 f 2.401 837 0 GH<br>2 N 1 f 2.479 993 0 GH |                            |                                 |                |           |   |
| 3  |                            |                                 |                |           |   |
| 5  |                            |                                 |                |           | 3   |
| 7  |                            |                                 |                |           |   |
| 8  |                            |                                 |                |           |   |
| 10   |                            |                                 |                |           | ~   |
| <u>&lt;</u>                                      |                            |                                 | 2              |           | >   |
| MSG  |                            |                                 | Ko status      |           |   |

# Hopping No. NVNT 1-DH1 2441MHz Ant1

### Hopping No. NVNT 2-DH1 2441MHz Ant1

| Agilent Spectrum Analyzer - Swept SA  |               |                           |   |                         |  |
|---|---------------|---------------------------|---|-------------------------|--|
| XIRL RF 50Ω AC  | SENSE:PUL     | 9E                        | ALIGN AUTO                              |                         | 23PM Oct 21, 2020                      |
| Center Freq 2.441750000 GHz   |               | g: Free Run<br>ten: 30 dB | Avg Type: Lo<br>Avg Hold: 500           |                         | TRACE 12345<br>TYPE MWWWW<br>DET PNNNN |
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm                                    |               |                           |   | Mkr1 2.402              | 087 5 GH:<br>3.559 dBn                 |
| Log<br>10.0<br>0.00<br>-/44////////////////////////////////                     | Muraajanaanna |                           | MAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAAA |                         |  |
| -30.0   |               |                           |   |                         |  |
| 70.0<br>Start 2.40000 GHz<br>#Res BW 100 kHz                                    | #VBW 300      | 0 kHz                     |   | Stop :<br>Sweep 8.000 n | 2.48350 GH<br>ns (1001 pts             |
| MKR MODE TRC SCL X<br>1 N 1 F 2.402 087 5 GH<br>2 N 1 F 2.480 327 0 GH<br>3 4 5 |               | FUNCTION                  | FUNCTION WIDTH                          | FUNCTION VALUE          |  |
| 6<br>7<br>8<br>9<br>0<br>1  |               |                           |   |                         |  |
| SG SG   |               |                           | STATUS                                  |                         | <u>&gt;</u>                            |



| Agilent Spectrum Analyzer - Swept SA           Q4         RL         RF         50 ♀         AC           Center Freq 2.441750000 GHz   | SENSE:PUL     | _SE         | ALIGN AUTO<br>Avg Type: Lo<br>Avg Hold: 500 | og-Pwr              | 17:53:51 PM Oct 21, 2020<br>TRACE 1 2 3 4 5 6<br>TYPE MWWWWW<br>DET P N N N N |
|---|---------------|-------------|---|---------------------|---|
| Ref Offset 8.8 dB   | FGain:Low #At | ten: 30 dB  |   | Mkr1 2.40           | 01 586 5 GHz<br>-0.850 dBm  |
|   | Manghadan ba  | vyyyyyyyyyy | un and the second                           | ֈԱՀս֊֊֏Ղկելի ՆՀԻՆԱԴ |   |
| -20.0<br>-30.0<br>-40.0   |               |             |   |                     |   |
| -50.0<br>-60.0<br>-70.0   |               |             |   |                     | \   |
| Start 2.40000 GHz<br>#Res BW 100 kHz  | #VBW 30       | 0 kHz       |   | Steep 8.00          | op 2.48350 GHz<br>0 ms (1001 pts)   |
| MKR         MODE         TRC         SCL         X           1         N         1         f         2.401         586         5         GH;           2         N         1         f         2.480         076         5         GH;           3         4         5         5         5         6         7         7         8         9         9         10 |               | FUNCTION    | FUNCTION WIDTH                              | FUNCTION V          | ALUE  |
| MSG   |               |             | STATUS                                      |                     |   |

# Hopping No. NVNT 3-DH1 2441MHz Ant1

#### **Dwell Time**

| Dweil Tim | e     |           |         |            |             |             |       |         |
|-----------|-------|-----------|---------|------------|-------------|-------------|-------|---------|
| Condition | Mode  | Frequency | Antenna | Pulse Time | Total Dwell | Period Time | Limit | Verdict |
|           |       | (MHz)     |         | (ms)       | Time (ms)   | (ms)        | (ms)  |         |
| NVNT      | 1-DH1 | 2441      | Ant1    | 0.392      | 125.44      | 31600       | 400   | Pass    |
| NVNT      | 1-DH3 | 2441      | Ant1    | 1.648      | 263.68      | 31600       | 400   | Pass    |
| NVNT      | 1-DH5 | 2441      | Ant1    | 2.896      | 308.907     | 31600       | 400   | Pass    |
| NVNT      | 2-DH1 | 2441      | Ant1    | 0.384      | 122.88      | 31600       | 400   | Pass    |
| NVNT      | 2-DH3 | 2441      | Ant1    | 1.636      | 261.76      | 31600       | 400   | Pass    |
| NVNT      | 2-DH5 | 2441      | Ant1    | 2.884      | 307.627     | 31600       | 400   | Pass    |
| NVNT      | 3-DH1 | 2441      | Ant1    | 0.382      | 122.24      | 31600       | 400   | Pass    |
| NVNT      | 3-DH3 | 2441      | Ant1    | 1.636      | 261.76      | 31600       | 400   | Pass    |
| NVNT      | 3-DH5 | 2441      | Ant1    | 2.883      | 307.52      | 31600       | 400   | Pass    |



# Dwell NVNT 1-DH1 2441MHz Ant1

| Agilent Spect         | rum Analyze<br>RF   | r - Swept SA<br>50 Ω AC |   | l cr      | NSE:PULSE                              |  | ALIGN AUTO   |                                       | 07:10:25  | PM Oct 21, 2020                               |
|-----------------------|---------------------|-------------------------|---|-----------|--|--|--|---------------------------------------|---|---|
| Center F              |                     |                         | F   | PNO: Fast | Trig Delay<br>Trig: Vide<br>#Atten: 30 | -1.000 ms  |  | : Log-Pwr                             | TR  | ACE 123456<br>YPE WWWWWWWW<br>DET P N N N N N |
| 10 dB/div<br>Log      |                     | et 8.8 dB<br>.00 dBm    |   |           |  |  |  |                                       | ΔMkr1   | 392.0 µs<br>-5.87 dB                          |
| 10.0<br>0.00          | X <sub>2</sub>      | • <mark>•</mark> 1∆2 —  |   |           |  |  |  |                                       |   |   |
| -10.0<br>-20.0        |                     |                         |   |           |  |  |  |                                       |   |   |
| -30.0                 | deced of a          |                         |   |           | restant. <b>B</b> adintat              | an an tatul sa a du  | . a . al a manda au  | المرابع والمعار ومراجع المعر والمراجع | ر من تشكر العدامانيين.<br>من تشكر العدامانيين بل  | . d. alia di di di adali di                   |
| -50.0                 | dppp <sup>a</sup> p |                         | <mark>a la se la</mark> |           |  | the second s | and the second sec | les adait déniel                      | The second se | <mark>ayan Anti Atsabilikal</mark>            |
| -70.0<br>Center 2.    |                     | 00 GHz                  |   |           |  |  |  |                                       |   | Span 0 Hz                                     |
| Res BW                |                     |                         |   |           | W 1.0 MHz                              |  |  |                                       | 10.00 ms (  | 10001 pts)                                    |
| 2 F /                 | t (Δ)               | ;                       | <<br>392.0 μs<br>998.0 μs   |           | FUN<br>37 dB<br>dBm                    | CTION FU   | NCTION WIDTH   | F                                     | UNCTION VALUE   |   |
| 5<br>6<br>7<br>8<br>9 |                     |                         |   |           |  |  |  |                                       |   |   |
|                       |                     |                         |   |           |  |  |  |                                       |   |   |
| 10<br>11<br><         |                     |                         |   |           |  |  | STATUS   |                                       |   | ×   |

#### Dwell NVNT 1-DH3 2441MHz Ant1

| gilent Spectrum Analyzer - Swept SA<br>( RL RF 50 Q AC<br>Center Freq 2.44100000 | 0 GHz<br>PNO: Fast<br>IFGain:Low | SENSE:PULSE<br>Trig Delay-<br>Trig: Video<br>#Atten: 30 d |                | TO<br>g Type: Log-Pwr   | 07:59:17 PM Oct 21, 20<br>TRACE 1 2 3 4<br>TYPE WAMMAN<br>DET P. N.N.N |
|--|----------------------------------|---|----------------|---|--|
| Ref Offset 8.8 dB<br>I0 dB/div Ref 20.00 dBm                                     |                                  |   |                |   | ∆Mkr1 1.648 m<br>-1.71 d   |
| -og<br>10.0 X2   | 1Δ2                              |   |                |   | TRIG L'  |
| 20.0   |                                  |   |                |   |  |
| 60.0 400 400 400 400 400 400 400 400 400   |                                  |   |                | na shekara na shekara<br>Manifal ya fi tarya kata kata da<br>Manifal ya fi tarya kata kata da |  |
| Center 2.441000000 GHz<br>Res BW 1.0 MHz   | #                                | VBW 1.0 MHz   |                | Sweep   | Span 0 H<br>10.00 ms (10001 pt   |
| MKR MODE TRC SCL X   | 1.648 ms (Δ)                     | -1.71 dB<br>.60 dBm                                       | FUNCTION W     |   | FUNCTION VALUE   |
| SG   |                                  |   | <b>1</b> 00 ST | ATUS  |  |



| Agilent Spectrum Analyzer - Swept SA   |                   |   |  |  |   |
|--|-------------------|---|--|--|---|
| LXI RL RF 50Ω AC   | SENSE:PUL         |   | ALIGNAUTO  |  | 07:59:34 PM Oct 21, 2020                  |
| Center Freq 2.441000000 GHz  | PNO: East +++ Tri | ig Delay-1.000 ms<br>ig: Video<br>tten: 30 dB | Avg Type: Lo   | •g-Pwr                                   | TRACE 123456<br>TYPE WWWWWW<br>DET PNNNNN |
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm   |                   |   |  | ΔΜ                                       | lkr1 2.896 ms<br>6.85 dB                  |
| Log  | ∆2                |   |  |  |   |
| 0.00 X2  |                   |   |  |  | TRIG LVL                                  |
| -10.0  |                   |   |  |  |   |
| -30.0  |                   |   |  |  |   |
| -40.0  | North Andrea      | <mark>heidere Aberleette deptitelse p</mark>  | part leader source for the leader of a leader of the le  | an a | un en mar de la presente de la devel      |
| -60.0 10111111111111111111111111111111111  | 1000 peliter<br>  | <mark>hali dha a shu da</mark> aliya aha da   | Alphon provide the first state of the second s | longlot japitek (han dilimi              | kinatiki shada yila pasiran basi          |
| Center 2.441000000 GHz<br>Res BW 1.0 MHz   | #VBW 1.0          | 0 MHz   |  | Sweep 10.0                               | Span 0 Hz<br>0 ms (10001 pts)             |
| MKRI MODEL TRCI SCL X  | Y                 | FUNCTION FU                                   | INCTION WIDTH  | FUNCTION                                 |   |
|  |                   |   |  | FONCTION                                 |   |
| $\begin{array}{c ccccccccccccccccccccccccccccccccccc$  | is (Δ) 6.85 dB    |   |  | FUNCTION                                 |   |
| 1         Δ2         1         t         (Δ)         2.896 m           2         F         1         t         997.0 μ           3   | is (Δ) 6.85 dB    |   |  | TORCHOR                                  |   |
| 1         Δ2         1         t         (Δ)         2.896 m           2         F         1         t         997.0 μ           3         4         5         6         6           6         7         8         9         9   | is (Δ) 6.85 dB    |   |  | FORCHOR                                  |   |
| 1         Δ2         1         t         (Δ)         2.896 m           2         F         1         t         997.0 μ           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           8         -         -         - | is (Δ) 6.85 dB    |   |  | ronenow                                  |   |

### Dwell NVNT 1-DH5 2441MHz Ant1

### Dwell NVNT 2-DH1 2441MHz Ant1

| Agilent Spectrum Analyzer - Swept SA  |   |                |   |
|---|---|----------------|---|
| RL RF 500 AC<br>Center Freq 2.441000000 GHz   | SENSE:PULSE<br>Trig Delay-1.000<br>PNO: Fast ↔ Trig: Video<br>IFGain:Low #Atten: 30 dB  | ALIGNAUTO      | 07:35:28 PM Oct 21, 2020<br>TRACE 1 2 3 4 5 6<br>TYPE WWWWWW<br>DET P N N N N |
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm  |   |                | ΔMkr1 384.0 μs<br>0.42 dB   |
| 10.0<br>0.00 X2 <sup>1Δ2</sup>  |   |                | TRIG LVL  |
| -10.0   |   |                |   |
| -30.0   |   |                |   |
| so o distante public di tata patri di tata di si di | na je po dravnih u štarovala konstrati po po zaslada po bola po po<br><mark>Da stala plana staroval konstrativnih stala (gradovala plana konsti<br/>Da stala plana staroval konstrativnih stala st</mark> |                |   |
| Center 2.441000000 GHz<br>Res BW 1.0 MHz  | #VBW 1.0 MHz  | Swee           | Span 0 Hz<br>p 10.00 ms (10001 pts  |
| MKR MODE TRC SCL X<br>1 Δ2 1 t (Δ) 334,0 μ<br>2 F 1 t 997,0 μ<br>3 4 5 6 6                                      |   | FUNCTION WIDTH | FUNCTION VALUE  |
| 7<br>8<br>9<br>10   |   |                | ×   |
|   |   |                |   |



# Dwell NVNT 2-DH3 2441MHz Ant1

| gilent Spectrum Analyzer - Swept S   |                      |   |  |   |  |   |  |
|--|----------------------|---|--|---|--|---|--|
| RL RF 50 Ω A<br>enter Freq 2.4410000   | 000 GHz              | l0:East ⊶⊶ Tri  | g Delay-1.000 m<br>g: Video<br>ten: 30 dB  | ALIGN AUTO<br>IS Avg Type   | : Log-Pwr  | TR  | PM Oct 21, 2020<br>ACE 12345<br>YPE W 00000000000000000000000000000000000                                      |
| Ref Offset 8.8 dE<br>0 dB/div Ref 20.00 dBr  |                      |   |  |   |  | ΔMkr1 ′   | 1.636 m<br>2.88 dE   |
| •g   | 1Δ2                  |   |  |   |  |   |  |
| 10.0   |                      |   |  |   |  |   | TRIG LY  |
| 0.0  |                      |   |  |   |  |   |  |
| 0.0  |                      |   | i hata ininita dialamba  | pline tember lideration) (s. ch   | فمأرفار والمالا والارد والحار رمار               | All a san a bhaile an bhaile an bh  | والاردادية أرادية  |
| D.D. National Annual Control of the  |                      |   |  |   |  | labalan wasalah 👘 Taranga   | the carlet to  |
|  |                      | laçadığı, jehensi <sup>k</sup> aşıtlı firkatır  |  |   |  | <mark>Helensel and a second second</mark> | ant and a second se |
| enter 2.441000000 GHz  |                      |   | aliperation (the pain of the state   |   | <mark>yk, d<sup>ha</sup>la, dah jalar</mark> , 1 | 10.00 ms (  | Span 0 H   |
| enter 2.441000000 GHz<br>es BW 1.0 MHz   | 2<br>X               | #VBW 1.0  | aliperation (the pain of the state   |   | Sweep  | 10.00 ms (  | Span 0 H<br>10001 pt   |
| $[model = 1 \\ model = 1 \\ mod$ | 2                    | <mark>4ры ((, ))) ла (, ))) ла (, )) ла (, </mark> | omention of a state of the stat | in the second | Sweep  | 10.00 ms (  | Span 0 H<br>10001 p  |
| μ          μ         μ         μ   | 2<br>2<br>1.636 ms ( | ини () () () () () () () () () () () () ()  | omention of a state of the stat | in the second | Sweep  | 10.00 ms (  | Span 0 H   |
| 0.0         1  | 2<br>2<br>1.636 ms ( | ини () () () () () () () () () () () () ()  | omention of a state of the stat | in the second | Sweep  | 10.00 ms (  | Span 0 F<br>10001 pt   |

### Dwell NVNT 2-DH5 2441MHz Ant1

| Agilent Spectrum Analyzer - Swept SA<br>K RL RF 50.0 AC<br>Center Freq 2.441000000 GHz  | SENSE:PULSE<br>Trig Delay-1.000 m<br>PNO: Fast →→ Trig: Video<br>IFGain:Low #Atten: 30 dB  | ALIGNAUTO<br>Is Avg Type: Log-Pwr   | 07:58:38PM Oct 21, 2020<br>TRACE 1 2 3 4 5 6<br>TYPE WANNAN<br>DET P N N N N N |
|---|--|---|--|
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm  |  |   | ΔMkr1 2.884 ms<br>1.64 dB  |
| 10.0<br>0.00 X2   |  |   |  |
| -10.0   |  |   |  |
| -40.0<br>-50.0 404 ml/ml/sty<br>-50.0 104 ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/ml/m  | no da farin de anticipada e a companya da companya d<br>Companya da companya da comp | n an a bha a' an an thir da an ann a' bha an ann a' bha ann<br>Maraing 11 agus a chuilte an tha a' an tha an an ann an tha ann an a | alle fallen en fer anvere en               |
| -60.0   |  |   |  |
| Res BW 1.0 MHz  | #VBW 1.0 MHz   | Sweep   | Span 0 Hz<br>10.00 ms (10001 pts)  |
| MKR         MODE         TRC         SCL         X           1         Δ2         1         t         (Δ)         2.884 m           2         F         1         t         366.0 μ           3         -         -         -           4         -         -         -           5         -         -         -           6         -         -         -           7         -         -         -           8         -         -         - |  | FUNCTION WIDTH  | FUNCTION VALUE   |
| 9<br>10<br>11<br>11<br>MSG  | rat  | <b>L</b> ostatus  | ~  |



# Dwell NVNT 3-DH1 2441MHz Ant1

|  |                           | er - Swept SA                  |                             |                         |          |           |                        |  |  |   |
|--|---------------------------|--------------------------------|-----------------------------|-------------------------|----------|-----------|------------------------|--|--|---|
| XI RL<br>Center Fi   | <sub>R</sub> ,<br>req 2.4 | 50 Ω AC<br>4100000             | F                           | PNO: Fast ↔<br>Gain:Low |          |           | ALIGNAUTO<br>ns Avg Ty | /pe: Log-Pwr   | 07:54:01 PM Oct 21<br>TRACE 1 2 3<br>TYPE WWW<br>DET P N N | 345<br>//////////////////////////////////// |
| 10 dB/div<br>Log   |                           | fset 8.8 dB<br><b>0.00 dBm</b> |                             |                         |          |           |                        |  | ΔMkr1 382.0<br>-1.19                                       | ) µs<br>dB                                  |
| 10.0<br>0.00   | X <sub>2</sub>            | <mark>,</mark> <sup>1∆2</sup>  |                             |                         |          |           |                        |  |  | RIG LVL                                     |
| -10.0<br>-20.0   |                           |                                |                             |                         |          |           |                        |  |  |   |
| -30.0  | -                         |                                | t la sanarak                | ul utila astor          |          | n. v. htt |                        | listory Atological and a low bod                       |  | attless                                     |
| -50.0 <mark>-50.0 -50.0</mark> | n i knjiji                |                                | 1                           |                         |          |           |                        | anne e chanaire caraire<br>Anne (anne 11 ann 11 ann 11 |  | winth                                       |
|  |                           |                                |                             |                         |          |           |                        |  |  |   |
| -70.0<br>Center 2.4  | 441000                    | 000 GHz                        |                             |                         |          |           |                        |  | Span   | 0 Hz  |
|  |                           |                                |                             | #VI                     | BW 1.0 M | Hz        |                        | Sweep  | Span (<br>5 10.00 ms (10001                                | 0 Hz<br>pts                                 |
| Center 2.4<br>Res BW 1<br>MKR MODE TR<br>1 A2 1<br>2 F 1<br>3 4  | I.O MHZ<br>RC SCL         | ×                              | <u>382.0 µs</u><br>866.0 µs | Υ<br>(Δ) -1             |          | HZ        | FUNCTION WIDTH         |  | Span (<br>5 10.00 ms (10001<br>FUNCTION VALUE              | 0 Hz<br>pts                                 |
| Center 2.4<br>Res BW 1<br>MKR MODE TR<br>1 A2 1<br>2 F 1<br>3  | I.O MHZ<br>RC SCL         | ×                              | 382.0 µs                    | Υ<br>(Δ) -1             | .19 dB   |           | FUNCTION WIDTH         |  | o 10.00 ms (10001  | 0 Hz<br>pts                                 |
| Center 2.<br>Res BW 1<br>MKR MODE TF<br>1 Δ2 1<br>2 F 1<br>3<br>4<br>5<br>6<br>7<br>8  | I.O MHZ<br>RC SCL         | ×                              | 382.0 µs                    | Υ<br>(Δ) -1             | .19 dB   |           |                        |  | o 10.00 ms (10001  | 0 Hz<br>pts                                 |

### Dwell NVNT 3-DH3 2441MHz Ant1

| Agilent Spectrum Analyzer - Swept SA<br>(X) RL RF 50Ω AC<br>Center Freq 2.441000000   | ) GHz<br>PNO: Fast<br>IFGain:Low    | SENSE:PULSE<br>Trig Delay<br>Trig: Video<br>#Atten: 30 |   | o<br>Type: Log-Pwr   | 12:38:29 AMOct 24, 20<br>TRACE 1 2 3 4 3<br>TYPE WWWW<br>DET P.N.N.I   |  |
|---|-------------------------------------|--|---|--|--|--|
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm  |                                     |  |   |  | ∆Mkr1 1.636 m<br>3.32 d  |  |
| 10.0  | 1Δ2                                 |  |   |  |  |  |
| .10.00 X2   |                                     |  |   |  | TRIG L'  |  |
| -20.0   |                                     |  |   |  |  |  |
| -40.0   |                                     |  | and and presenting dama weather         |  |  |  |
| -60.0<br>-70.0  | d <mark>a k</mark> ang kuna ja baba | idean a dina majori t                                  | <mark>nantare Malanda di Pananan</mark> | ki kalini di pilipatanji pilipatan pilipatan pilipatan pilipatan pilipatan pilipatan pilipatan pilipatan pilip | t Letric Linear and the second se |  |
| Center 2.441000000 GHz Span 0 I<br>Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (10001 p  |                                     |  |   |  |  |  |
| MKR         MODE         TRC         SCL         ×           1         Δ2         1         t         (Δ)           2         F         1         t         (Δ)           3         4         4         4         4 | 1.636 ms (Δ)                        | Y FUNG<br>3.32 dB<br>3.15 dBm                          | CTION FUNCTION WID                      | TH F   | UNCTION VALUE  |  |
| 5<br>6<br>7<br>8<br>9   |                                     |  |   |  |  |  |
| 10<br>11<br><   |                                     |  |   |  | >  |  |
| MSG   |                                     |  | Ko sta                                  | TUS  |  |  |



| Agilent Spectrum Analyzer - Swept SA   | SENSE:PULSE      | ALIGN AUTO  | 07:   | 58:24 PM Oct 21, 2020  |  |  |  |  |
|--|------------------|---|---|--|--|--|--|--|
| Center Freq 2.441000000 GHz  |                  | lay-1.000 ms Avg Ty<br>deo                              | pe:Log-Pwr  | TRACE 123456<br>TYPE WWWWWW<br>DET PNNNNN  |  |  |  |  |
| Ref Offset 8.8 dB<br>10 dB/div Ref 20.00 dBm   |                  |   | ΔMk   | r1 2.883 ms<br>3.11 dB   |  |  |  |  |
| 10.0   | 1 <u>Δ2</u>      |   |   |  |  |  |  |  |
|  |                  |   |   | TRIG LVL   |  |  |  |  |
| -30.0  | Landikallana men | , market from a first sector for a first sector for the | ando an dilante tantan da dia materi  | town durated ers, with debt.   |  |  |  |  |
| -60.0  |                  | eak alabela jakan pananan manala aranda                 | the second se | and a state of the |  |  |  |  |
| Center 2.441000000 GHz   |                  |   |   | Span 0 Hz  |  |  |  |  |
| Res BW 1.0 MHz #VBW 1.0 MHz Sweep 10.00 ms (10001 pts)   |                  |   |   |  |  |  |  |  |
| MKR         MODE         TRC         SCL         ×           1         Δ2         1         t         Δ2         3.883 m           2         F         1         t         863.0 μ           3         4         5         5         5 | s (Δ) 3.11 dB    | FUNCTION FUNCTION WIDTH                                 | FUNCTION VAL  |  |  |  |  |  |
| 6<br>7<br>8<br>9   |                  |   |   |  |  |  |  |  |
| 10<br>11<br>   |                  | In status   |   | >  |  |  |  |  |

## Dwell NVNT 3-DH5 2441MHz Ant1

-----End of report-----