

Report No: JYTSZB-R12-2100019

FCC REPORT

| INFINIX MOBILITY LIMITED |
|--|
| FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31- 35 SHAN MEI STREET FOTAN NT |
| :UT) |
| Mobile Phone |
| X693 |
| Infinix |
| 2AIZN-X693 |
| FCC CFR Title 47 Part 15 Subpart C Section 15.247 |
| 08 Jan., 2021 |
| 09 Jan., to 20 Jan., 2021 |
| 21 Jan., 2021 |
| 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.

This report may only be reproduced and distributed in full. If the product in this report is used in any configuration other than that detailed in the report, the manufacturer must ensure the new system complies with all relevant standards.

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Version 2

| Version No. | Date | Description |
|-------------|---------------|-------------|
| 00 | 21 Jan., 2021 | Original |
| | | |
| | | |
| | | |
| | | |

Tested by:

Janet Wei Test Engineer

Date: 21 Jan., 2021

Reviewed by:

Winner Thang

Project Engineer

21 Jan., 2021 Date:



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Test Summary 4

| Test Items | Section in CFR 47 | Test Data | Result |
|--|--------------------------------|--|--------|
| Antenna requirement | 15.203 & 15.247 (b) | See Section 6.1 | Pass |
| AC Power Line Conducted Emission | 15.207 | See Section 6.2 | Pass |
| Conducted Peak Output Power | 15.247 (b)(3) | Appendix A – BLE-1M Appendix A – BLE-2M | Pass |
| 6dB Emission Bandwidth 99% Occupied Bandwidth | 15.247 (a)(2) | Appendix A – BLE-1M Appendix A – BLE-2M | Pass |
| Power Spectral Density | 15.247 (e) | Appendix A – BLE-1M Appendix A – BLE-2M | Pass |
| Conducted Band Edge | 15.247 (d) | Appendix A – BLE-1M Appendix A – BLE-2M | Pass |
| Radiated Band Edge | | See Section 6.6.2 | Pass |
| Conducted Spurious Emission | 15.205 & 15.209 | Appendix A – BLE-1M Appendix A – BLE-2M | Pass |
| Radiated Spurious Emission | | See Section 6.7.2 | Pass |
| Remark: 1. Pass: The EUT complies with the essen 2. N/A: Not Applicable. | tial requirements in the stand | ard. | |

2. N/A: Not Applicable.

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

ANSI C63.10-2013 Test Method:

KDB 558074 D01 15.247 Meas Guidance v05r02



5 General Information

5.1 Client Information

| Applicant: | INFINIX MOBILITY LIMITED |
|---------------|--|
| Address: | FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT |
| Manufacturer: | INFINIX MOBILITY LIMITED |
| Address: | FLAT 39 8/F BLOCK D WAH LOK INDUSTRIAL CENTRE 31-35 SHAN MEI STREET FOTAN NT |
| Factory: | SHENZHEN TECNO TECHNOLOGY CO.,LTD. |
| Address: | 101, Building 24, Waijing Industrial Park, Fumin Community, Fucheng Street, Longhua District, Shenzhen City, P.R.China |

5.2 General Description of E.U.T.

| Product Name: | Mobile Phone |
|------------------------|---|
| Model No.: | X693 |
| Operation Frequency: | 2402-2480 MHz |
| Channel numbers: | 40 |
| Channel separation: | 1M&2 MHz |
| Modulation technology: | GFSK |
| Data speed : | 1Mbps |
| Antenna Type: | Internal Antenna |
| Antenna gain: | 1.2 dBi |
| Power supply: | Rechargeable Li-ion polymer Battery DC3.85V-4900mAh |
| AC adapter: | Model: CQ-18LX |
| | Input: AC100-240V, 50/60Hz, 0.6A |
| | Output: DC 5.0V - 9.0V - 2.0A, 9.0V - 12.0V - 1.5A |
| Test Sample Condition: | The test samples were provided in good working order with no visible defects. |

| Operation Frequency each of channel | | | | | | | |
|-------------------------------------|-----------|---------|-----------|---------|-----------|---------|-----------|
| Channel | Frequency | Channel | Frequency | Channel | Frequency | Channel | Frequency |
| 0 | 2402MHz | 10 | 2422MHz | 20 | 2442MHz | 30 | 2462MHz |
| 1 | 2404MHz | 11 | 2424MHz | 21 | 2444MHz | 31 | 2464MHz |
| 2 | 2406MHz | 12 | 2426MHz | 22 | 2446MHz | 32 | 2466MHz |
| 3 | 2408MHz | 13 | 2428MHz | 23 | 2448MHz | 33 | 2468MHz |
| 4 | 2410MHz | 14 | 2430MHz | 24 | 2450MHz | 34 | 2470MHz |
| 5 | 2412MHz | 15 | 2432MHz | 25 | 2452MHz | 35 | 2472MHz |
| 6 | 2414MHz | 16 | 2434MHz | 26 | 2454MHz | 36 | 2474MHz |
| 7 | 2416MHz | 17 | 2436MHz | 27 | 2456MHz | 37 | 2476MHz |
| 8 | 2418MHz | 18 | 2438MHz | 28 | 2458MHz | 38 | 2478MHz |
| 9 | 2420MHz | 19 | 2440MHz | 29 | 2460MHz | 39 | 2480MHz |

Note:

In section 15.31(*m*), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test. Channel No. 0, 20 & 39 were selected as Lowest, Middle and Highest channel.



5.3 Test environment and mode, and test samples plans

Operating Environment:

| oporating Environment. | |
|------------------------|---|
| Temperature: | 24.0 °C |
| Humidity: | 54 % RH |
| Atmospheric Pressure: | 1010 mbar |
| Test mode: | |
| Transmitting mode | Keep the EUT in continuous transmitting with modulation |

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. Duty cycle setting during the transmission is 100% with maximum power setting for all modulations.

| Test Samples Plans | S: | | | |
|---|------------------------------------|--|--|--|
| Samples Number | Used for Test Items | | | |
| 1# | Conducted measurements test method | | | |
| 1# | Radiated measurements test method | | | |
| 1# | EUT constructional details | | | |
| Remark: JianYan Testing Group Shenzhen Co., Ltd. is only responsible for the test project data of the above samples, | | | | |

and will keep the above samples for a month.

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 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: https://portal.a2la.org/scopepdf/4346-01.pdf

5.7 Laboratory Location

JianYan Testing Group Shenzhen Co., Ltd.

Address: No.101, Building 8, Innovation Wisdom Port, No.155 Hongtian Road, Huangpu Community, Xinqiao Street, Bao'an District, Shenzhen, Guangdong, People's Republic of China. Tel: +86-755-23118282, Fax: +86-755-23116366

Email: info@ccis-cb.com, Website: http://www.ccis-cb.com



5.8 Test Instruments list

| Radiated Emission: | | | | | | | |
|--------------------|-----------------|---------------|------------------|-------------------------|-----------------------------|--|--|
| Test Equipment | Manufacturer | Model No. | Serial No. | Cal. Date (mm-dd-yy) | Cal. Due date (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 | 11-18-2020 | 11-17-2021 | | |
| EMI Test Software | AUDIX | E3 | ١ | 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 | 11-18-2020 | 11-17-2021 | | |
| 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 (mm-dd-yy) | Cal. Due date (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 | | | | |

| Conducted method: | | | | | | | | | | |
|-------------------------|-----------------|------------|-------------|-------------------------|-----------------------------|--|--|--|--|--|
| Test Equipment | Manufacturer | Model No. | Serial No. | Cal. Date (mm-dd-yy) | Cal. Due date (mm-dd-yy) | | | | | |
| Spectrum Analyzer | Keysight | N9010B | MY60240202 | 11-27-2020 | 11-26-2021 | | | | | |
| Vector Signal Generator | Keysight | N5182B | MY59101009 | 11-27-2020 | 11-26-2021 | | | | | |
| Analog Signal Generator | Keysight | N5173B | MY59100765 | 11-27-2020 | 11-26-2021 | | | | | |
| Power Detector Box | MWRF-test | MW100-PSB | MW201020JYT | 11-27-2020 | 11-26-2021 | | | | | |
| Simulated Station | Rohde & Schwarz | CMW270 | 102335 | 11-27-2020 | 11-26-2021 | | | | | |
| RF Control Box | MWRF-test | MW100-RFCB | MW200927JYT | N/A | N/A | | | | | |
| PDU | MWRF-test | XY-G10 | N/A | N/A | N/A | | | | | |
| Test Software | MWRF-tes | MTS 8310 | , | Version: 2.0.0.0 | | | | | | |
| DC Power Supply | Keysight | E3642A | MY60296194 | 11-27-2020 | 11-26-2021 | | | | | |



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 antenna that uses a unique | be designed to ensure that no antenna other than that furnished by the sed with the device. The use of a permanently attached antenna or of an coupling to the intentional radiator, the manufacturer may design the unit n be replaced by the user, but the use of a standard antenna jack or bited. |
| (4) The conducted output po antennas with directional ga section, if transmitting anten power from the intentional rate | ower limit specified in paragraph (b) of this section is based on the use of ins that do not exceed 6 dBi. Except as shown in paragraph (c) of this nas of directional gain greater than 6 dBi are used, the conducted output adiator shall be reduced below the stated values in paragraphs (b)(1), ion, as appropriate, by the amount in dB that the directional gain of the |

E.U.T Antenna:

The BLE antenna is an Internal antenna which cannot replace by end-user, the best-case gain of the antenna is 1.2 dBi.



6.2 Conducted Emission

| Test Requirement: | FCC Part 15 C Section 15.207 | 7 | | | | | | |
|-----------------------|---|--|---|--|--|--|--|--|
| Test Frequency Range: | 150 kHz to 30 MHz | | | | | | | |
| Class / Severity: | Class B | | | | | | | |
| Receiver setup: | RBW=9kHz, VBW=30kHz | | | | | | | |
| Limit: | Frequency range (MHz) | | | | | | | |
| | | Quasi-peak | Average | | | | | |
| | 0.15-0.5 | 66 to 56* | 56 to 46* | | | | | |
| | 0.5-5 | 56 | 46 | | | | | |
| | 5-30 | <u>60</u> | 50 | | | | | |
| | * Decreases with the logarithm | | | | | | | |
| Test procedure: | The E.U.T and simulators line impedance stabilizati 50ohm/50uH coupling im The peripheral devices ar LISN that provides a 50ol termination. (Please refer photographs). Both sides of A.C. line ard interference. In order to fi positions of equipment ar according to ANSI C63.10 | on network (L.I.S.N.), wh pedance for the measuring re also connected to the hm/50uH coupling imped to the block diagram of the checked for maximum and the maximum emission and all of the interface cab | ich provides a ng equipment. main power through a lance with 50ohm the test setup and conducted on, the relative les must be changed | | | | | |
| Test setup: | Reference | 80cm Filter EMI Receiver | – AC power | | | | | |
| Test Instruments: | Refer to section 5.9 for details | | | | | | | |
| Test mode: | Refer to section 5.3 for details | i | | | | | | |
| Test results: | Passed | | | | | | | |



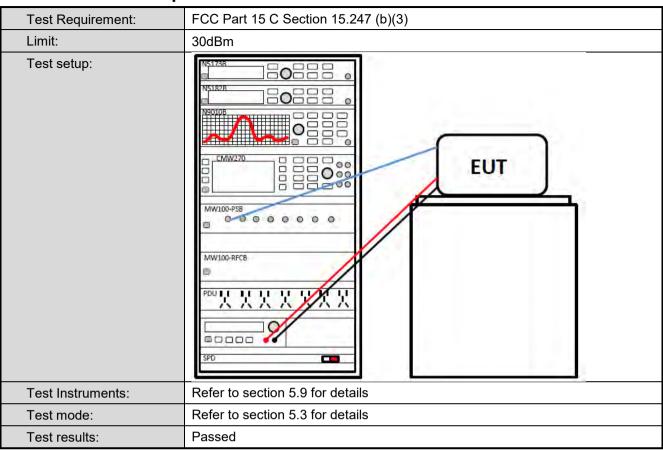
Measurement Data:

| | | Mobile Pl | | | FIO | duct mo | del: | X65 | X693 | | |
|---|-----------------|-----------|----------|----------------------|-------------------------|-----------------------|-----------------|---------------|-------------------|--------|---------|
| est by: | J | anet | | | Tes | t mode: | | BLE | E Tx mode | | |
| est frequency: | 1 | 50 kHz ~ | - 30 MHz | | Pha | se: | | Lin | e | | |
| fest voltage: | А | C 120 V | /60 Hz | | Env | ironmen | nt: | Ter | np: 22.5 ℃ | Hur | ni: 55% |
| 80 Level (dBuV) 70 60 50 40 30 20 | 22 Martin | 3 67 | | wayayawa wayayawa | nhhhhmm | llym.the | (ppp/spikes.htm | gen http://wh | FCC PART | 15.207 | |
| 10 0.15 .2 | | .5 | 1 | Fre | 2 quency () | MHz) | 5 | | 10 | 20 | 30 |
| 10 0.15 .2 | Read Level 1 | LISN | Aux | | 2 quency (l Level | MHz) Limit Line | Over | Remark | 10 | 20 | 30 |
| 10 0.15 .2 | | LISN | Aux | Cable | quency (I | Limit | Over | | 10 | 20 | 30 |



| Product name: | Mobile Pl | none | e Product model: | | | | | X693 | | | |
|---|--|---|--|---|--|---|---|---|--|--|--|
| ſest by: | Janet | | | Test r | node: | | BLE Tx mode | | | | |
| est frequency: | 150 kHz ~ | 150 kHz ~ 30 MHz | | | | | Neutral | | | | |
| Fest voltage: | voltage: AC 120 V/60 | | | Envir | onment: | | Temp: 22.5 | ℃ Huni: 55% | | | |
| 80 20 40 40 40 40 40 40 40 40 40 4 | 2 45 1 2 45 1 2 45 1 45 1 45 1 45 1 5 | 8 | AMAN AMANA AMANANA Erroru | 2 uency (Mł | harmen | J | FCC PAR | RT 15.207 QP RT 15.207 AV 10 12 14 14 14 14 14 14 14 14 14 14 14 14 14 | | | |
| MHz 1 0. 246 2 0. 431 3 0. 489 4 0. 611 5 0. 641 6 0. 641 7 0. 712 8 0. 727 | Read LISI Level Factor dBuV dl 19.71 -0.6 33.01 -0.6 20.34 -0.6 36.63 -0.6 36.79 -0.6 24.60 -0.6 23.30 -0.6 38.78 -0.6 | $\begin{array}{c} Factor\\ \hline & \\ \hline \hline & \\ \hline \\ \hline$ | Loss dB 10.75 10.73 10.76 10.77 10.77 10.77 10.78 10.78 | Level dBuV 29.80 43.07 30.47 46.80 46.96 34.77 33.48 48.96 | dBuV 51.91 57.24 46.19 56.00 56.00 46.00 46.00 56.00 | dB -22.11 -14.17 -15.72 -9.20 -9.04 -11.23 -12.52 -7.04 | Average QP QP Average Average QP | | | | |
| 9 1.511 10 15.388 11 15.388 12 17.944 otes: An initial pre-scan Quasi-Peak and A Final Level = Reco | lverage measure | 5 2.87 5 2.87 1 1.30 on the line a ment were | performed | d at the fr | 60.00 50.00 60.00 th peak de | -14.46 -18.64 -14.58 etector. s with ma | Average QP | mission. | | | |

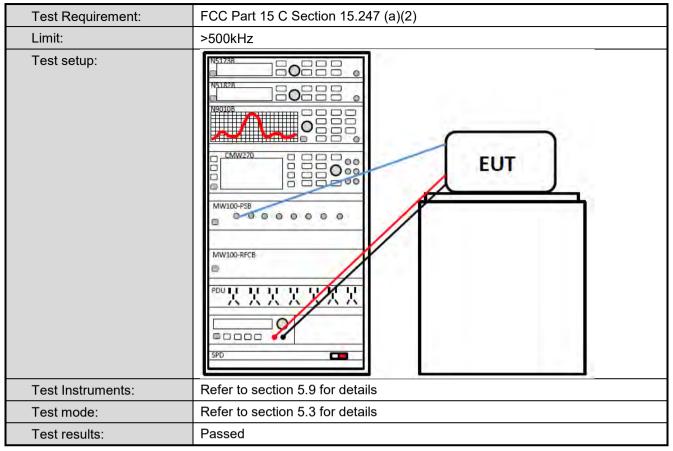




6.3 Conducted Output Power

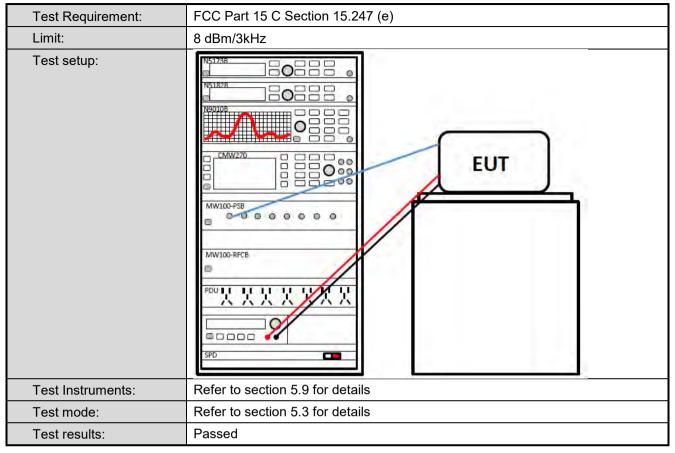


6.4 Occupy Bandwidth





6.5 Power Spectral Density





6.6 Band Edge

6.6.1 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: | |
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |

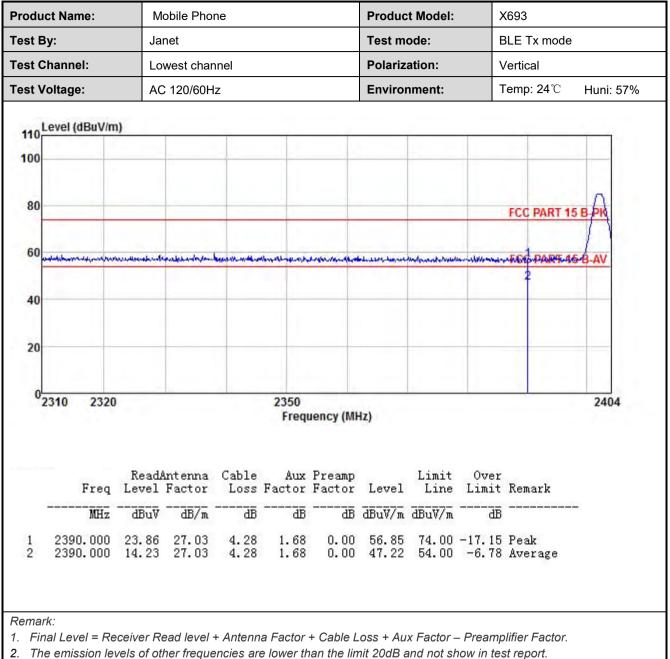


6.6.2 Radiated Emission Method

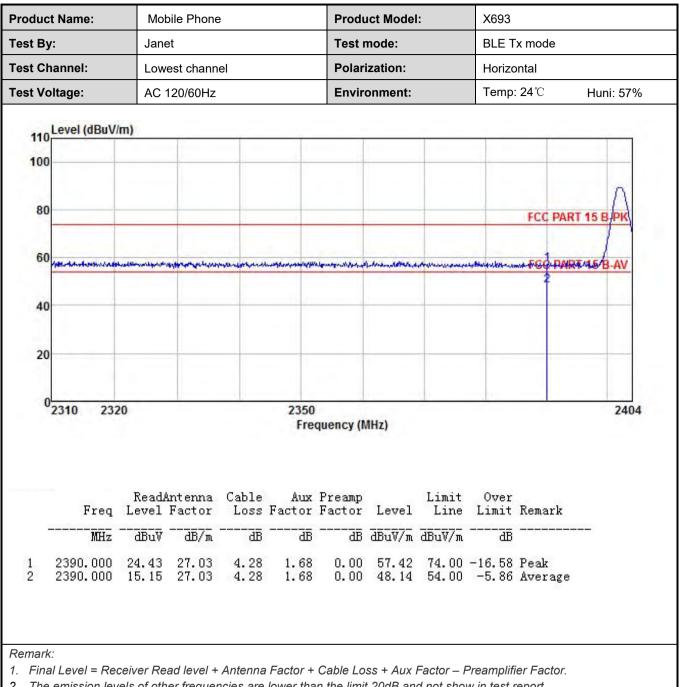
| Test Requirement: | FCC Part 15 C | FCC Part 15 C Section 15.205 and 15.209 | | | | | | |
|-----------------------|---|--|---|---|---|--|--|--|
| Test Frequency Range: | 2310 MHz to 2 | 2390 MHz ar | nd 2483.5M⊦ | Iz to 2500 | MHz | | | |
| Test Distance: | 3m | | | | | | | |
| Receiver setup: | Frequency | Detector | | | VBW | Remark | | |
| | Above 1GHz | Peak | 1MH | | <u>BMHz</u> | Peak Value | | |
| | Fraguan | RMS | 1MH | | <u>BMHz</u> | Average Value Remark | | |
| Limit: | Frequen | icy | / <u>Limit (dBuV</u> 54.0 | | Δ | verage Value | | |
| | Above 10 | GHz – | 74.0 | | 1 | Peak Value | | |
| Test Procedure: | the groun to determ 2. The EUT antenna, tower. 3. The anter the groun Both horiz make the 4. For each case and meters ar to find the 5. The test-r Specified 6. If the emist the limit s of the EU have 10 c | ad at a 3 meta ine the posit was set 3 m which was m and height is ad to determine zontal and ver measureme suspected e then the ant ad the rota ta e maximum m receiver syste Bandwidth v ssion level o specified, the T would be m dB margin wo | er camber. T ion of the hig eters away f nounted on t varied from ne the maxin ertical polari: ent. mission, the enna was turn eading. em was set with Maximu f the EUT in n testing con eported. Oth puld be re-te | The table weighest radia from the in the top of a one mete mum value zations of EUT was ned to heighed to Peak D m Hold Mo peak moo uld be stop nerwise the sted one l | vas rotat ation. terferen a variable r to four e of the f the ante arrange ghts fror degrees etect Fu ode. le was 1 oped and e emissi oy one u | e-height antenna meters above ield strength. nna are set to d to its worst m 1 meter to 4 s to 360 degrees | | |
| Test setup: | | urntable) | Hern A | | Tower | | | |
| Test Instruments: | Refer to section | on 5.9 for det | ails | | | | | |
| Test mode: | Refer to section | on 5.3 for det | ails | | | | | |
| Test results: | Passed | | | | | | | |



1M PHY

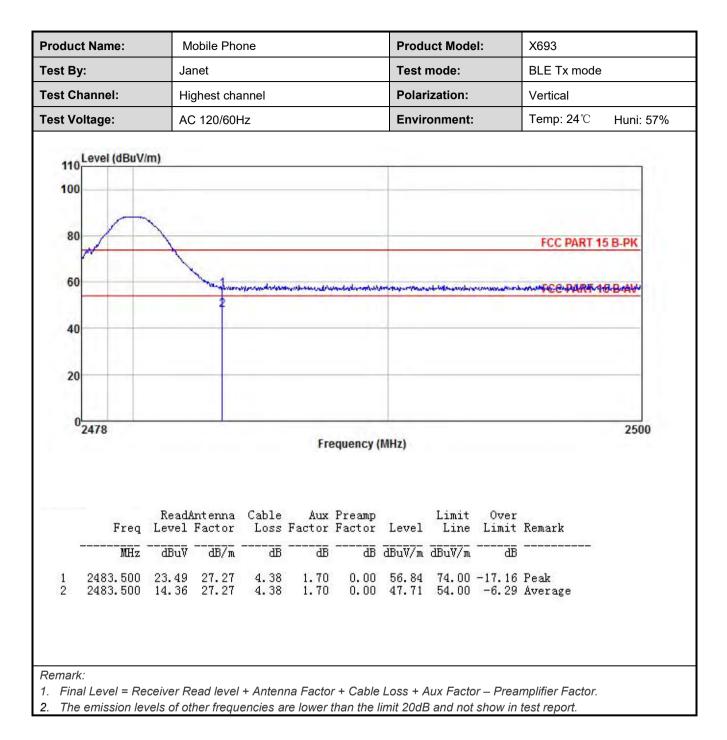




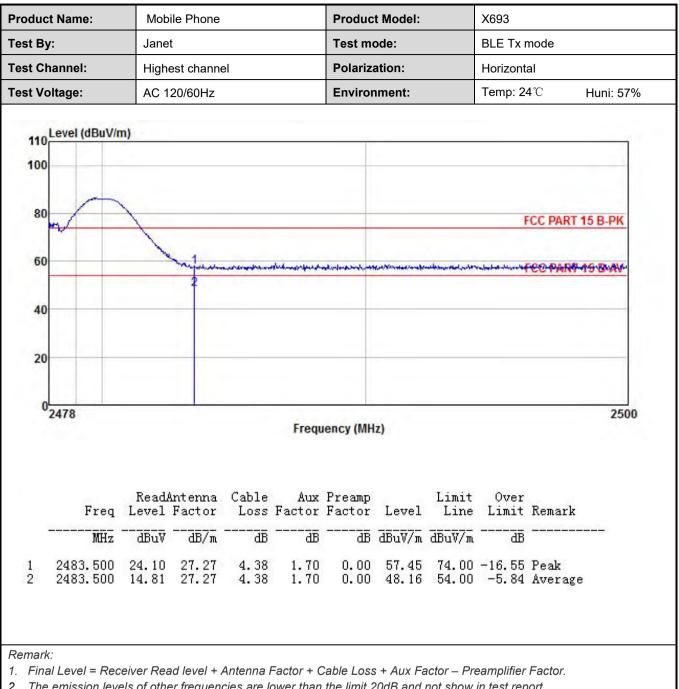


2. The emission levels of other frequencies are lower than the limit 20dB and not show in test report.





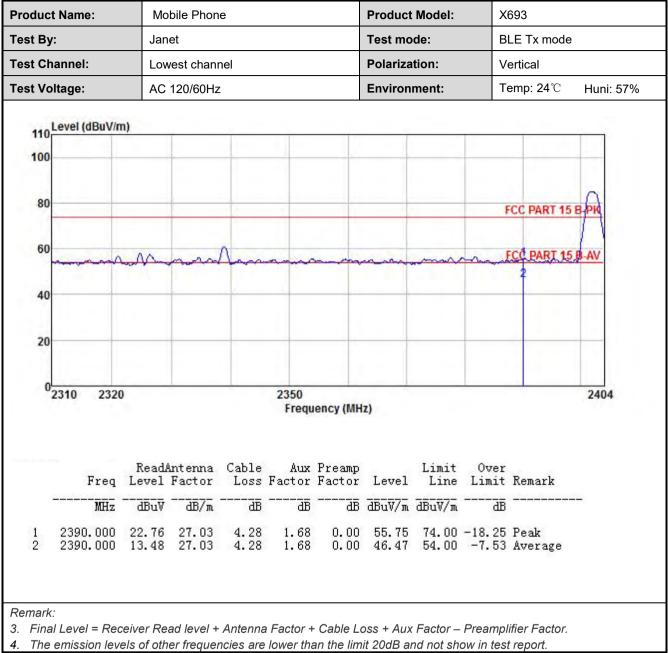




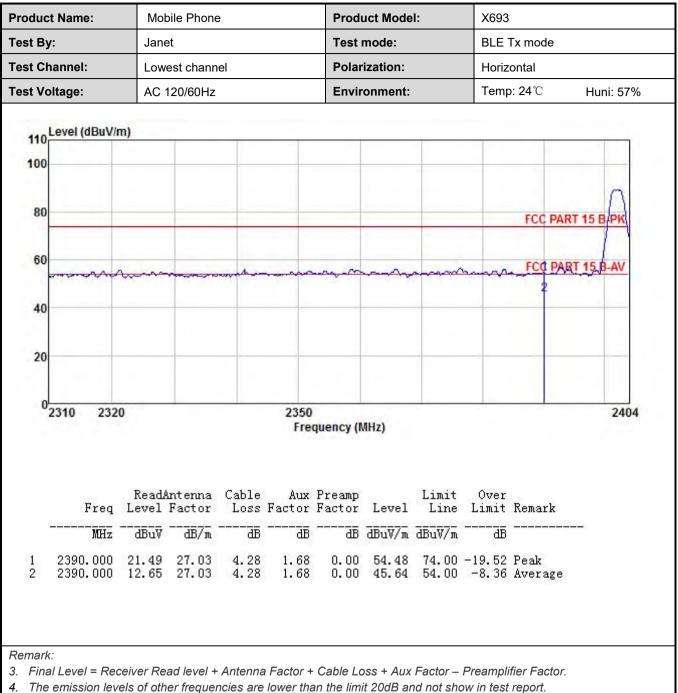
The emission levels of other frequencies are lower than the limit 20dB and not show in test report.



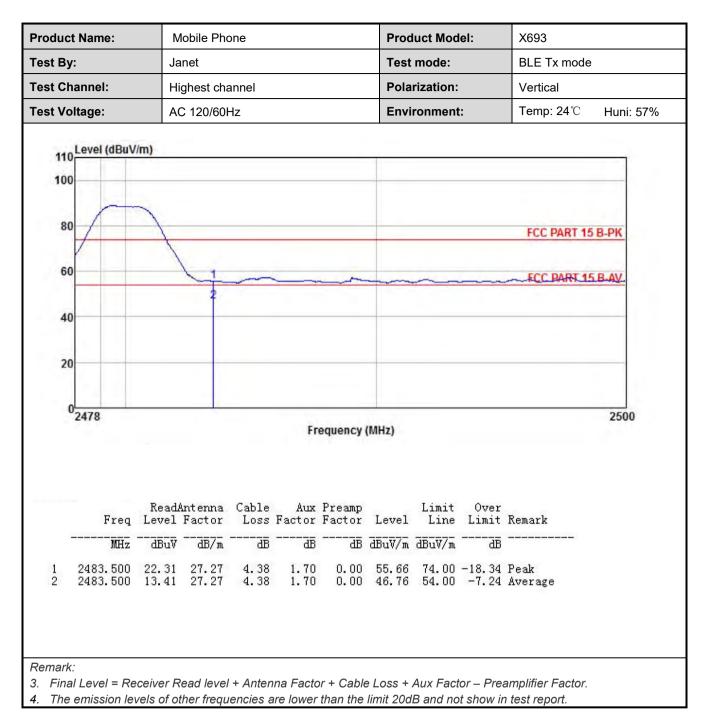
2M PHY



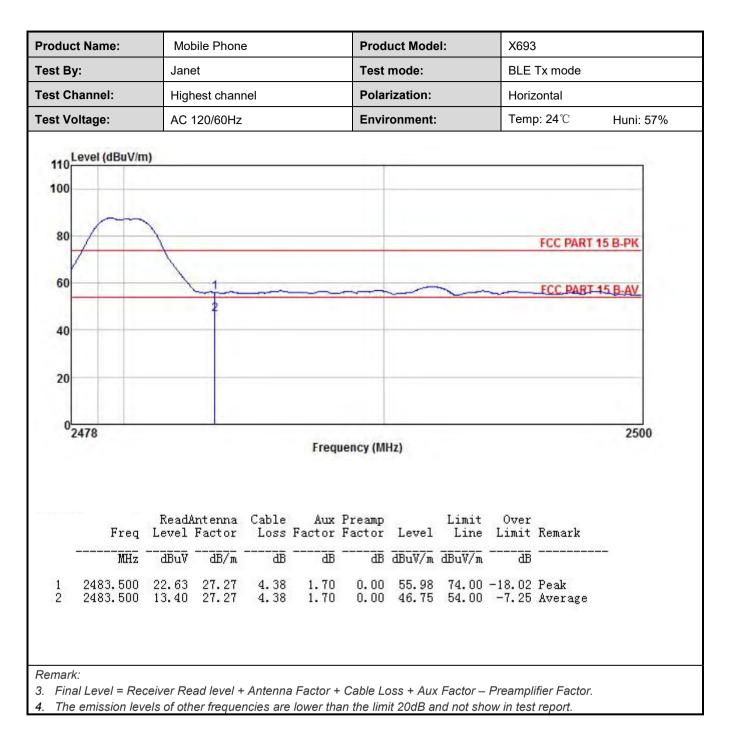














6.7 Spurious Emission

6.7.1 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: | |
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |



6.7.2 Radiated Emission Method

| Test Requirement: | FCC Part 15 C Section 15.205 and 15.209 | | | | | | | |
|-----------------------|--|---|---|---|---|--|--|--|
| Test Frequency Range: | 9kHz to 25GHz | | | | | | | |
| Test Distance: | 3m | | | | | | | |
| Receiver setup: | Frequency | Detecto | or | RBW | VB | W | Remark | |
| ' | 30MHz-1GHz | Quasi-pe | eak | 120KHz | 300 | KHz | Quasi-peak Value | |
| | Above 1GHz | Peak | | 1MHz | 3M | Hz | Peak Value | |
| | ADOVE IGHZ | RMS | | 1MHz | 3M | Hz | Average Value | |
| Limit: | Frequency Limit (dBuV/m @3m) Remark | | | | | | | |
| | 30MHz-88M | Hz | | 40.0 | | G | Quasi-peak Value | |
| | 88MHz-216N | /Hz | | 43.5 | | G | uasi-peak Value | |
| | 216MHz-960I | | | 46.0 | | | Quasi-peak Value | |
| | 960MHz-1G | Hz | | 54.0 | | | Quasi-peak Value | |
| | Above 1GF | 17 | | 54.0 | | | Average Value | |
| | | | | 74.0 | | | Peak Value table 0.8m(below | |
| | The table of highest rad The EUT antenna, we tower. The antenna the ground Both horized make the n For each so case and the meters and to find the n The test-rest specified E If the emission the limit sp of the EUT have 10 dE | was rotate liation. was set 3 which was na height to detern ontal and neasureme suspected then the a d the rota maximum eceiver sy Bandwidth sion level ecified, the would be B margin w | ed 36 3 m ⁴ mou is va mine vert ent. I em table reac yster with of th en te e rep vould | 60 degrees t eters away inted on the t aried from o the maxim ical polarizat ission, the E ina was turned ing. m was set Maximum H be EUT in pe esting could b ported. Other d be re-tested | o deter from the top of a ne met um valitions of EUT was do he from 0 to Pea lold Mo ak moo pe stop wise the d one b | rmine ne inten varial er to f ue of f the a as arra eights degre k Def de. de was ped ar ie emis y one | a 3 meter camber. the position of the erference-receiving ble-height antenna four meters above the field strength. antenna are set to anged to its worst from 1 meter to 4 set to 360 degrees tect Function and a 10 dB lower than nd the peak values ssions that did not using peak, quasi- reported in a data | |
| Test setup: | | 3m < 4m | | | | Antenna Search Antenn Test eiver – | | |



| | Horn Anienna Tower Horn Anienna Tower U U U U U U U U U U U U U U U U U U U |
|-------------------|---|
| Test Instruments: | Refer to section 5.9 for details |
| Test mode: | Refer to section 5.3 for details |
| Test results: | Passed |
| Remark: | Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis is the worst case. 9 kHz to 30MHz is lower than the limit 20dB, so only shows the data of above 30MHz in this report. |

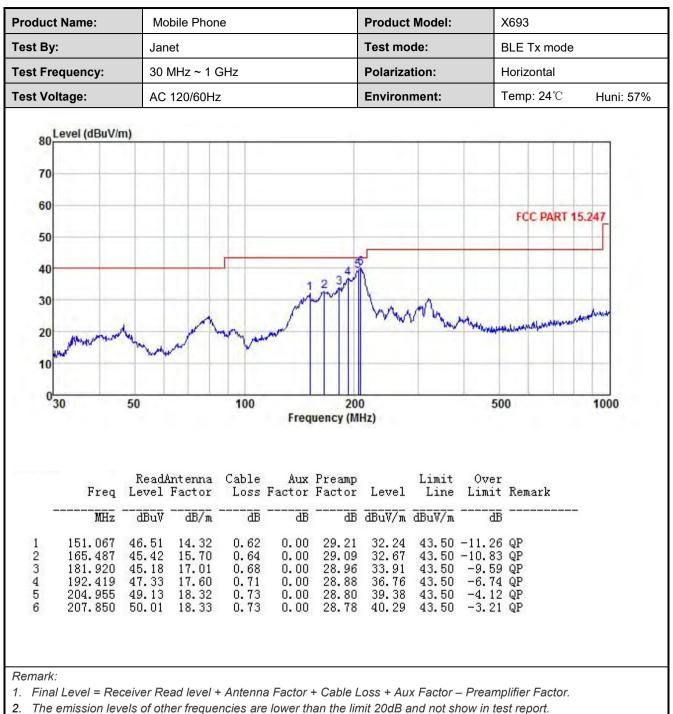


Measurement Data (worst case):

Below 1GHz:

| Product Name: | ame: Mobile Phon | | | Mobile Phone | | | Product Model: | | | X693 | | | | |
|--|------------------|----------------|--------------|--------------|-----------------|----------------|----------------|----------------|--------------------|----------|----------|-----------------|--|--|
| est By: | Jan | et | | | | Test m | ode: | | BLE Tx m | node | | | | |
| est Frequency: | 30 | MHz ~ 1 G | Hz | | | Polariza | ation: | n: Vertical | | | | | | |
| est Voltage: | AC | 120/60Hz | | | | Environment: | | | Temp: 24°C Huni: 5 | | | Temp: 24℃ Huni: | | |
| 80 Level (dBu | V/m) | | | | | | | | | | | | | |
| 80 | | | | | | | | | | | | | | |
| 70 | | | | | | | | | | | | | | |
| 60 | | | | | | | _ | | FCC | DART | 15.247 | | | |
| 50 | | | | | | | | | i uc i | | 5.24 | | | |
| 40 13 | - | | | | | | | | | | | | | |
| Im | m | Å | | - | m | Ň | | | | | | | | |
| 30 | h | mer a | 7 | p | Var | Mary | marin | | | | and they | | | |
| 20 | | | Loug | V | | | A. M | - March | wathymputer | ANDALATA | | | | |
| 10 | - | | | YM. | | - | | _ | | - | | | | |
| 0 | | | | | | | | | | | | | | |
| 030 | 50 | | 100 | Free | 20 quency (f | 00 MHz) | | | 500 | | 1000 | | | |
| | | | | | | | | | | | | | | |
| | Read | Intenna | Cable | Å1192 | Presmo | | Limit | Over | | | | | | |
| Fre | eq Level | | Loss 1 | Factor | Factor | Level | | | Remark | | | | | |
| m | Hz dBuV | | dB | ₫₿ | dB | dBuV/m | dBuV/m | dB | | | | | | |
| 1 33.60 2 34.76 | | 12.40 12.56 | 0.36 0.34 | 0.00 0.00 | 29.96 29.95 | 38.34 37.94 | 40.00 40.00 | -1.66 -2.06 | | | | | | |
| 2 34.7(3 35.2) 4 46.6(5 79.5) | 51 54.36 | 12.61 13.00 | 0.34 0.38 | 0.00 | 29.95 | 37.36 37.18 | 40.00 | -2.64 -2.82 | QP | | | | | |
| | | 12.66 | 0.47 0.73 | 0.00 | 29.64 | 35.59 | 40.00 43.50 | -4.41 | QP | | | | | |
| | | | | | | | | | | | | | | |
| | | | | | | | | | | | | | | |
| emark: | | | | | | | | | | | | | | |
| . Final Level = I . The emission | | | | | | | | | | tor. | | | | |
| The Aux Facto | | | | | | | | - | 1 | | | | | |





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



Above 1GHz

1M PHY

| | | | Te | est channe | el: Lowest cl | nannel | | | |
|--------------------|-------------------------|-----------------------------|-----------------------|-----------------------|--------------------------|---------------------------------|---------------------------|-----------------------|--------------|
| | | | | Detecto | or: Peak Valu | le | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00 | 48.20 | 30.78 | 6.80 | 2.44 | 41.81 | 46.41 | 74.00 | -27.59 | Vertical |
| 4804.00 | 49.03 | 30.78 | 6.80 | 2.44 | 41.81 | 47.24 | 74.00 | -26.76 | Horizontal |
| | | | | Detector: | Average Va | alue | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00 | 41.48 | 30.78 | 6.80 | 2.44 | 41.81 | 39.69 | 54.00 | -14.31 | Vertical |
| 4804.00 | 42.42 | 30.78 | 6.80 | 2.44 | 41.81 | 40.63 | 54.00 | -13.37 | Horizontal |
| | | | | | | | | | |
| | | | Т | est chann | el: Middle ch | nannel | | | |
| | Γ | | | Detecto | or: Peak Val | Je | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4884.00 | 48.71 | 30.96 | 6.86 | 2.47 | 41.84 | 47.16 | 74.00 | -26.84 | Vertical |
| 4884.00 | 49.16 | 30.96 | 6.86 | 2.47 | 41.84 | 47.61 | 74.00 | -26.39 | Horizontal |
| | | | | Detector: | Average Va | alue | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4884.00 | 41.36 | 30.96 | 6.86 | 2.47 | 41.84 | 39.81 | 54.00 | -14.19 | Vertical |
| 4884.00 | 42.13 | 30.96 | 6.86 | 2.47 | 41.84 | 40.58 | 54.00 | -13.42 | Horizontal |
| | | | Te | oct channe | el: Highest c | hannol | | | |
| | | | | | or: Peak Val | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00 | 48.97 | 31.11 | 6.91 | 2.49 | 41.87 | 47.61 | 74.00 | -26.39 | Vertical |
| 4960.00 | 49.85 | 31.11 | 6.91 | 2.49 | 41.87 | 48.49 | 74.00 | -25.51 | Horizontal |
| | | | | Detector: | Average Va | alue | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00 | 41.13 | 31.11 | 6.91 | 2.49 | 41.87 | 39.77 | 54.00 | -14.23 | Vertical |
| 4960.00 | 42.69 | 31.11 | 6.91 | 2.49 | 41.87 | 41.33 | 54.00 | -12.67 | Horizontal |
| | | | | | | + Aux Factor - 0dB and not s | | | |

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2M PHY

| Test channel: Lowest channel | | | | | | | | | |
|------------------------------|-------------------------|-----------------------------|-----------------------|-----------------------|--------------------------|-------------------|---------------------------|-----------------------|--------------|
| Detector: Peak Value | | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00 | 49.24 | 30.78 | 6.80 | 2.44 | 41.81 | 47.45 | 74.00 | -26.55 | Vertical |
| 4804.00 | 49.85 | 30.78 | 6.80 | 2.44 | 41.81 | 48.06 | 74.00 | -25.94 | Horizontal |
| | | | | Detector: | Average Va | alue | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4804.00 | 42.16 | 30.78 | 6.80 | 2.44 | 41.81 | 40.37 | 54.00 | -13.63 | Vertical |
| 4804.00 | 42.44 | 30.78 | 6.80 | 2.44 | 41.81 | 40.65 | 54.00 | -13.35 | Horizontal |
| Test channel: Middle channel | | | | | | | | | |
| | | | | | or: Peak Valu | | | | |
| | Read | Antenna | Cable | Aux | Preamp | | Limit | Over | |
| Frequency (MHz) | Level (dBuV) | Factor (dB/m) | Loss (dB) | Factor (dB) | Factor (dB) | Level (dBuV/m) | Line (dBuV/m) | Limit (dB) | Polarization |
| 4884.00 | 49.40 | 30.96 | 6.86 | 2.47 | 41.84 | 47.85 | 74.00 | -26.15 | Vertical |
| 4884.00 | 48.24 | 30.96 | 6.86 | 2.47 | 41.84 | 46.69 | 74.00 | -27.31 | Horizontal |
| | | | | Detector: | Average Va | alue | r | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4884.00 | 42.16 | 30.96 | 6.86 | 2.47 | 41.84 | 40.61 | 54.00 | -13.39 | Vertical |
| 4884.00 | 43.56 | 30.96 | 6.86 | 2.47 | 41.84 | 42.01 | 54.00 | -11.99 | Horizontal |
| | | | | | | | | | |
| | | | Te | est channe | el: Highest c | hannel | | | |
| Detector: Peak Value | | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| 4960.00 | 49.24 | 31.11 | 6.91 | 2.49 | 41.87 | 47.88 | 74.00 | -26.12 | Vertical |
| 4960.00 | 49.18 | 31.11 | 6.91 | 2.49 | 41.87 | 47.82 | 74.00 | -26.18 | Horizontal |
| Detector: Average Value | | | | | | | | | |
| Frequency (MHz) | Read Level (dBuV) | Antenna Factor (dB/m) | Cable Loss (dB) | Aux Factor (dB) | Preamp Factor (dB) | Level (dBuV/m) | Limit Line (dBuV/m) | Over Limit (dB) | Polarization |
| | 42.38 | 31.11 | 6.91 | 2.49 | 41.87 | 41.02 | 54.00 | -12.98 | Vertical |
| 4960.00 | 42.71 | 31.11 | | | | | | | |

3. Final Level =Receiver Read level + Antenna Factor + Cable Loss + Aux Factor – Preamplifier Factor.

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



Appendix A – BLE – 1M Test Data

Maximum Conducted Output Power

| Condition | Mode | Frequency | Antenna | Conducted | Duty | Total | Limit | Verdict |
|-----------|------|-----------|---------|-----------|--------|--------|-------|---------|
| | | (MHz) | | Power | Factor | Power | (dBm) | |
| | | | | (dBm) | (dB) | (dBm) | | |
| NVNT | BLE | 2402 | Ant1 | -3.98 | 0 | -3.98 | 30 | Pass |
| NVNT | BLE | 2442 | Ant1 | -3.037 | 0 | -3.037 | 30 | Pass |
| NVNT | BLE | 2480 | Ant1 | -4.917 | 0 | -4.917 | 30 | Pass |

Power NVNT BLE 2402MHz Ant1





Power NVNT BLE 2442MHz Ant1



Power NVNT BLE 2480MHz Ant1



-6dB Bandwidth

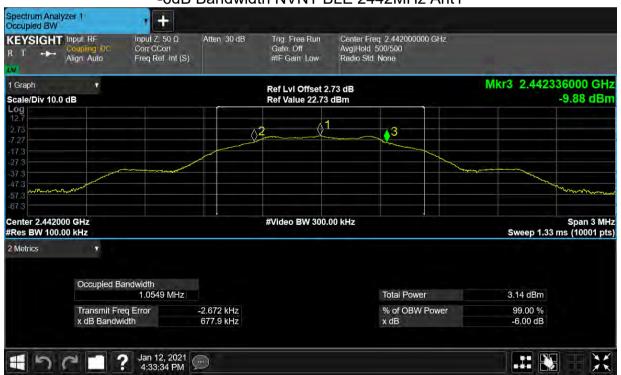
| Condition | Mode | Frequency | Antenna | -6 dB Bandwidth | Limit -6 dB | Verdict |
|-----------|------|-----------|---------|-----------------|-----------------|---------|
| | | (MHz) | | (MHz) | Bandwidth (MHz) | |
| NVNT | BLE | 2402 | Ant1 | 0.68 | 0.5 | Pass |
| NVNT | BLE | 2442 | Ant1 | 0.678 | 0.5 | Pass |
| NVNT | BLE | 2480 | Ant1 | 0.679 | 0.5 | Pass |

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-6dB Bandwidth NVNT BLE 2442MHz Ant1



-6dB Bandwidth NVNT BLE 2480MHz Ant1



Occupied Channel Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|------|-----------------|---------|---------------|
| NVNT | BLE | 2402 | Ant1 | 1.042337649 |
| NVNT | BLE | 2442 | Ant1 | 1.040431462 |
| NVNT | BLE | 2480 | Ant1 | 1.03805987 |



OBW NVNT BLE 2402MHz Ant1





OBW NVNT BLE 2480MHz Ant1



Maximum Power Spectral Density Level

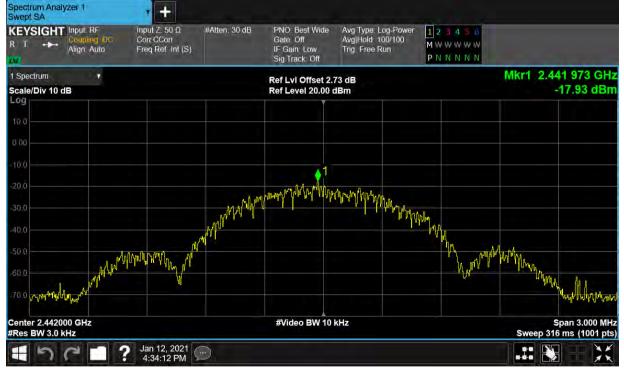
| Condition | Mode | Frequency (MHz) | Antenna | Max PSD (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------|-------------|---------|
| NVNT | BLE | 2402 | Ant1 | -18.844 | 8 | Pass |
| NVNT | BLE | 2442 | Ant1 | -17.925 | 8 | Pass |
| NVNT | BLE | 2480 | Ant1 | -19.8 | 8 | Pass |



PSD NVNT BLE 2402MHz Ant1



PSD NVNT BLE 2442MHz Ant1





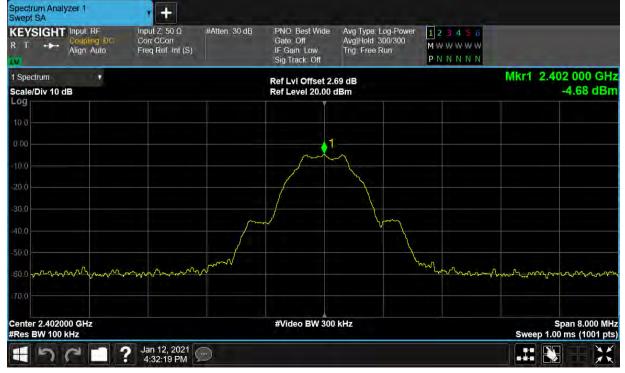
PSD NVNT BLE 2480MHz Ant1



Band Edge

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE | 2402 | Ant1 | -51.32 | -20 | Pass |
| NVNT | BLE | 2480 | Ant1 | -50.65 | -20 | Pass |

Band Edge NVNT BLE 2402MHz Ant1 Ref

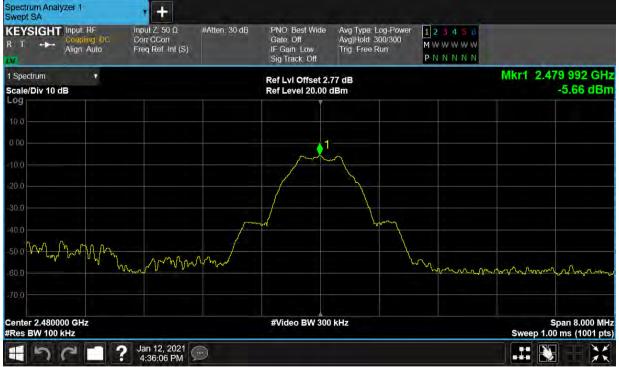




Band Edge NVNT BLE 2402MHz Ant1 Emission



Band Edge NVNT BLE 2480MHz Ant1 Ref





Band Edge NVNT BLE 2480MHz Ant1 Emission

| EYSIGHT | Input RF Coupling DC Align Auto | Input Ζ: 50 Ω Corr CCorr Freq Ref. Int (S) | #Atten: 30 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg Hold 300/300 Trig: Free Run | 123456 MWWWWW PNNNNN | | |
|--|---|--|-------------------------------------|--|---|---|--|--|
| Spectrum ale/Div 10 o | , dB | | | Ref Lvi Offset 2 Ref Level 20.00 | | | Mkr1 2.44 -5 | 80 0 GH 5.60 dB |
| 00 1 | | | | | | | | |
| | | | | | | | | DL1-25.66 d |
| 0.0 1 | | | | | | | | |
| 0.0 | \$ ² ⁴ | m.m.m.m.de.m | Loopan Maralian Loopan Ka | en hann hannar tallen war | <u>~Maranarahitennitanarahitana</u> | Anang Maalum magang mangana | <u>المراجع معرفة المراجع معرفة المراجع ا</u> | on and and the second |
| 2.0 2.0 art 2.47600 res BW 100 | GHz | <u></u> 3 | j namanina kaka wangin | #Video BW 300 |) kHz | Jung ang Mandhan pangkan apan apan apan a | Stop 2 Sweep 9.60 m | 2.57600 G ns (1001 p |
| art 2.47600 | GHz | <u>~~~</u> 3 | jengengengendenska en geografie | #Video BW 30(|) kHz | Ange Halter teneration | | |
| Ant 2.47600 es BW 100 Marker Table Mode | GHz kHz | X | | Ŷ | | Function Width | | ns (1001) |
| Art 2.47600 es BW 100 Marker Table Mode | GHz kHz Trace Scale 1 f | × 2. | 480 0 GHz | Y -5.599 dBm | | | Sweep 9.60 m | ns (1001) |
| Art 2.47600 es BW 100 Marker Table | GHz kHz | X 2. 2. | 480 0 GHz 483 5 GHz 500 0 GHz | Ŷ | | | Sweep 9.60 m | ns (1001 |
| And the second s | GHz kHz Trace Scale 1 f 1 f | X 2. 2. | 483 5 GHz | Y -5.599 dBm -59.37 dBm | | | Sweep 9.60 m | ns (1001) |

Conducted RF Spurious Emission

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE | 2402 | Ant1 | -31.92 | -20 | Pass |
| NVNT | BLE | 2442 | Ant1 | -37.23 | -20 | Pass |
| NVNT | BLE | 2480 | Ant1 | -33.14 | -20 | Pass |



Tx. Spurious NVNT BLE 2402MHz Ant1 Ref



Tx. Spurious NVNT BLE 2402MHz Ant1 Emission

| EYSIGH | Cound | ing: DC | Input Z. 50 Ω Corr CCorr Freq Ref. Int (S) | #Atten: 30 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Pow Avg Hold 10/10 Trig: Free Run | er 123456 MWWWWW PNNNNN | | |
|--|------------------------|-----------------|--|-------------------------------------|---|---|--|--|-------------------------------|
| Spectrum cale/Div 10 | dB | 1¥ | | | Ref Lvi Offset 2 Ref Level 20.00 | | | Mkr1 | 2.402 GH -6.21 dB |
| 0.0 0.0 | | 1 | | | | | | | |
| 0.0 | _∧2 | | | | | | | | DL1 -24.70 df |
| 0.0 | | a star atta | 3 | <u> </u> | 5 | hanna the total and a second | | ما مواند و المراجع الم | malizeration |
| 0.0 American | ماه سراله میداند. ا | | and the second s | | | hours to be a second to be a second | Aleson produces and a second second second | | |
| 0.0 art 30 MHz | | | | | #Video BW 30 | | | | |
| 0.0 art 30 MHz tes BW 100 Marker Table |) kHz | | | | | | | | Stop 25.00 G .49 s (1001 p |
| art 30 MHz es BW 100 |) kHz | | × | | #Video BW 30 | | Function Width | | .49 s (1001 p |
| 0.0 art 30 MHz es BW 100 Marker Table Mode 1 N |) kHz Trace | Scale | 100 | 2.402 GHz | #Video BW 30 Y -6.209 dBm | 0 kHz | | Sweep ~2 | .49 s (1001 p |
| art 30 MHz es BW 100 Marker Table Mode 1 N 2 N |) kHz Trace | Scale f | | 2.402 GHz 1.953 GHz | #Video BW 30 Y -6.209 dBm -36.63 dBm | 0 kHz | | Sweep ~2 | .49 s (1001 p |
| 0.0 art 30 MHz tes BW 100 Marker Table Mode 1 N 2 N 3 N |) kHz Trace | Scale f f | | 2.402 GHz 1.953 GHz 4.949 GHz | #Video BW 30 Υ -6.209 dBm -36.63 dBm -53.52 dBm | 0 kHz | | Sweep ~2 | .49 s (1001 p |
| art 30 MHz es BW 100 Marker Table Mode 1 N 2 N |) kHz Trace | Scale f | | 2.402 GHz 1.953 GHz | #Video BW 30 Y -6.209 dBm -36.63 dBm | 0 kHz | | Sweep ~2 | .49 s (1001 p |



Tx. Spurious NVNT BLE 2442MHz Ant1 Ref



Tx. Spurious NVNT BLE 2442MHz Ant1 Emission

| 000 ↓ 1 000 ↓ 1 000 ↓ 0 | | | Input F Couplin Align: / | ig DC | Input Z: 50 Ω Corr CCorr Freq Ref: Int (| #Atten: 30 dB S) | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Pov Avg Hold 10/10 Trig: Free Run | wer 123456 M ** ** ** ** P N N N N N | | |
|---|--------|----------|--------------------------------|---------------------------------------|--|---------------------|--|---|---|---|--|
| 000 1 0 | cale/ | | dB | 1 | | | | | | Mkr1 | 2.452 GH -3.83 dB |
| 000 000 <th>0.0</th> <th></th> <th></th> <th>1</th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> <th></th> | 0.0 | | | 1 | | | | | | | |
| Mode Trace Scale X Y Function Function Width Function Value 1 N 1 f 2.452 GHz -3.832 dBm | 0.0 | | | | | | | | | | DL1-23-76-dl |
| Mode Trace Scale X Y Function Function Width Function Value 1 N 1 f 2.452 GHz -3.832 dBm | 0.0 | | | | | | . 5 | | | | |
| Art 30 MHz. #Video BW 300 kHz Stop 25.00 C es BW 100 kHz * Sweep ~2.49 s (1001 f Warker Table * Mode Trace Scale X Y Function 1 1 f 2 N 1 1 f 5.174 GHz 3 N 1 4 N 1 5 N 1 5 N 1 | 0.0 | Landhan | wand | مىرىكى مەركىرىيە مەركىيە مەركىرىيە | munsturian | | | matter | wanted and the second and the second | An poulante de la contra de la co | and a contraction of the second s |
| Mode Trace Scale X Y Function Function Width Function Value 1 N 1 f 2.452 GHz -3.832 dBm | art 3 | | kHz | | | | #Video BW 3 | 00 kHz | | | |
| I N 1 f 2.452 GHz -3.832 dBm 2 N 1 f 5.174 GHz -40.98 dBm 3 N 1 f 5.174 GHz -52.30 dBm 4 N 1 f 7.246 GHz -54.19 dBm 5 N 1 f 9.918 GHz -54.37 dBm | /lark | er Table | | | | | | | | | |
| 2 N 1 f 5.174 GHz -40.98 dBm 3 N 1 f 4.999 GHz -52.00 dBm 4 N 1 f 7.246 GHz -54.19 dBm 5 N 1 f 9.918 GHz -54.37 dBm | | Mode | Trace | Scale | X | | | | Function Width | Function | n Value |
| 3 N 1 f 4.999 GHz -52.30 dBm 4 N 1 f 7.246 GHz -54.19 dBm 5 N 1 f 9.918 GHz -54.37 dBm | | | 1 | f | | | | | | | |
| 4 N 1 f 7.246 GHz -54.19 dBm 5 N 1 f 9.918 GHz -54.37 dBm | 1 | | | | | | | | | | |
| 5 N 1 f 9.918 GHz -54.37 dBm | | | 1 | | | | | | | | |
| | 3 | N | | | | | | | | | |
| | 3 4 | N N | 1 | | | | | | | | |



Tx. Spurious NVNT BLE 2480MHz Ant1 Ref



Tx. Spurious NVNT BLE 2480MHz Ant1 Emission

| EYSIGHT | Input RF Coupling: DC Align: Auto | Input Z: 50 Ω Corr CCorr Freq Ref. Int (S) | #Atten: 30 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg Hold 10/10 Trig: Free Run | 123456 MWWWWW PNNNNN | | |
|-----------------------------------|---|--|------------------------|--|---|--|----------|-------------------------------|
| Spectrum ale/Div 10 d | v B | | | Ref LvI Offset 2 Ref Level 20.00 | | | Mkr1 | 2.477 GH -6.28 dBr |
| 00 0.0 .00 | 1 | | | | | | | |
| 0.0 | | ^2 | | | | | | DL1 -25.64 dB |
| 0.0 | a marten martine | 3 | <u>4</u> | 5 marine | t _{illege del} tation (1996) | - Jane of the and the state of the | M | a lante wash |
| 0.0 art 30 MHz Res BW 100 M | Hz | | | #Video BW 30 | 0 kHz | | | Stop 25.00 G .49 s (1001 p |
| Marker Table | | | | | | | | |
| | Trace Scale | X | | Y | Function | Function Width | Function | n Value |
| 1 N 2 N | 1 f | | 2.477 GHz 5.174 GHz | -6.285 dBm -38.78 dBm | | | | |
| 2 N 3 N | 1 I 1 f | | 5.049 GHz | -38.78 dBm -53.21 dBm | | | | |
| 4 N | 1 f | | 7.246 GHz | -54.72 dBm | | | | |
| 5 N | 1. f | | 0.118 GHz | -53.47 dBm | | | | |
| 0 | | | | | | | | |



Appendix A – BLE – 2M Test Data

Maximum Conducted Output Power

| Condition | Mode | Frequency | Antenna | Conducted | Duty | Total | Limit | Verdict |
|-----------|------|-----------|---------|-----------|--------|--------|-------|---------|
| | | (MHz) | | Power | Factor | Power | (dBm) | |
| | | | | (dBm) | (dB) | (dBm) | | |
| NVNT | BLE | 2402 | Ant1 | -4.117 | 0 | -4.117 | 30 | Pass |
| NVNT | BLE | 2442 | Ant1 | -3.178 | 0 | -3.178 | 30 | Pass |
| NVNT | BLE | 2480 | Ant1 | -4.975 | 0 | -4.975 | 30 | Pass |

Power NVNT BLE 2402MHz Ant1





Power NVNT BLE 2442MHz Ant1



Power NVNT BLE 2480MHz Ant1



-6dB Bandwidth

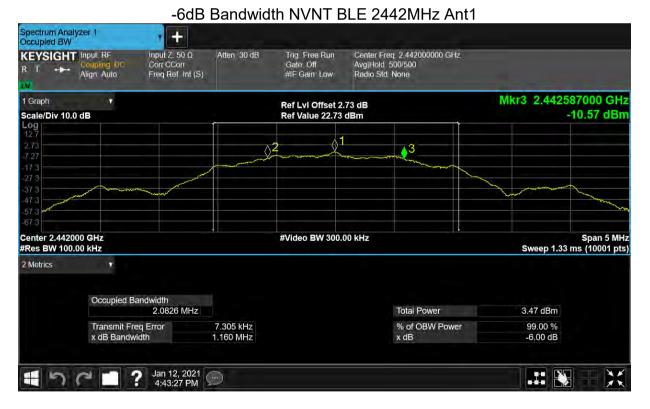
| Condition | Mode | Frequency | Antenna | -6 dB Bandwidth | Limit -6 dB | Verdict |
|-----------|------|-----------|---------|-----------------|-----------------|---------|
| | | (MHz) | | (MHz) | Bandwidth (MHz) | |
| NVNT | BLE | 2402 | Ant1 | 1.159 | 0.5 | Pass |
| NVNT | BLE | 2442 | Ant1 | 1.16 | 0.5 | Pass |
| NVNT | BLE | 2480 | Ant1 | 1.166 | 0.5 | Pass |

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-6dB Bandwidth NVNT BLE 2480MHz Ant1



Occupied Channel Bandwidth

| Condition | Mode | Frequency (MHz) | Antenna | 99% OBW (MHz) |
|-----------|------|-----------------|---------|---------------|
| NVNT | BLE | 2402 | Ant1 | 2.07556749 |
| NVNT | BLE | 2442 | Ant1 | 2.073579961 |
| NVNT | BLE | 2480 | Ant1 | 2.077783729 |



OBW NVNT BLE 2402MHz Ant1





OBW NVNT BLE 2480MHz Ant1

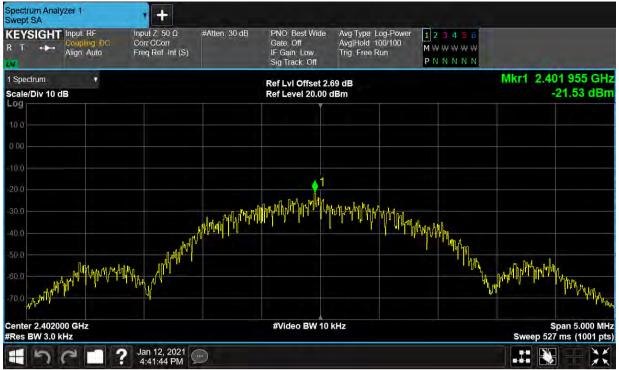


Maximum Power Spectral Density Level

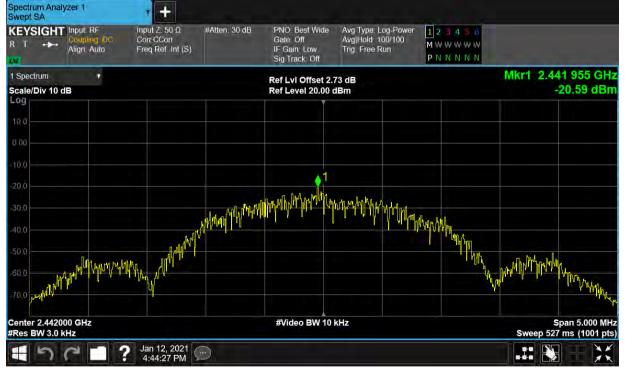
| Condition | Mode | Frequency (MHz) | Antenna | Max PSD (dBm) | Limit (dBm) | Verdict |
|-----------|------|-----------------|---------|---------------|-------------|---------|
| NVNT | BLE | 2402 | Ant1 | -21.528 | 8 | Pass |
| NVNT | BLE | 2442 | Ant1 | -20.585 | 8 | Pass |
| NVNT | BLE | 2480 | Ant1 | -22.429 | 8 | Pass |



PSD NVNT BLE 2402MHz Ant1



PSD NVNT BLE 2442MHz Ant1





PSD NVNT BLE 2480MHz Ant1



Band Edge

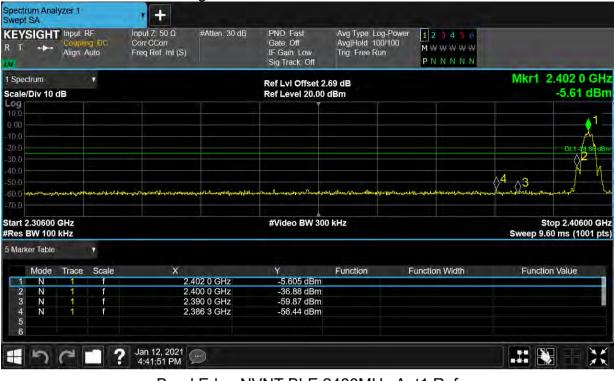
| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE | 2402 | Ant1 | -51.57 | -20 | Pass |
| NVNT | BLE | 2480 | Ant1 | -51.34 | -20 | Pass |

Band Edge NVNT BLE 2402MHz Ant1 Ref





Band Edge NVNT BLE 2402MHz Ant1 Emission



Band Edge NVNT BLE 2480MHz Ant1 Ref





Band Edge NVNT BLE 2480MHz Ant1 Emission

| EYS | IGHT | Input F Couplin Align: A | ig: DC | Input Z, 50 Ω Corr CCorr Freq Ref. Int (S) | #Atten: 30 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log-Power Avg Hold 100/100 Trig: Free Run | 123456 MWWWWW PNNNNN | | |
|------------------------------------|-----------------|--------------------------------|-------------|--|----------------------------|--|---|----------------------------|---------------------|------------------------------|
| | rum Div 10 c | B | | | | Ref LvI Offset 2 Ref Level 20.00 | | | Mkr1 2 | .480 0 GH -5.57 dBr |
| 0.0 | 1 | | | | | | | | | |
| 0.0 | A | | | | | | | | | D£1 -25.70 dB |
| 0.0 50.0 <mark>M</mark> 50.0 | | 1 22 | ممرض المعود | wellenson weiter sinnen | u-prs-stjategiaetsaegan | لموسي المستعمل المستعم و | uttay to by a superior and the states of the | - | -wardy March Parton | Lucybalvotbaau |
| | 47600 W 100 | | | | 4 | #Video BW 30 | 0 kHz | | | op 2.57600 G 0 ms (1001 p |
| | r Table | | T. | | | | | | | |
| | Mode | Trace | Scale | × | | Y S S S S S S S S S S S S S S S S S S S | Function | Function Width | Function | n Value |
| 2 | N | 1 | f | | 2.480 0 GHz 2.483 5 GHz | | -5.568 dBm -57.04 dBm | | | |
| 3 | N | 1 | f | | 500 0 GHz | -58.59 dBm | | | | |
| 4 5 6 | N | 1 | t | 2.4 | 183 5 GHz | -57.04 dBm | | | | |
| | | | | | | | | | | |

Conducted RF Spurious Emission

| Condition | Mode | Frequency (MHz) | Antenna | Max Value (dBc) | Limit (dBc) | Verdict |
|-----------|------|-----------------|---------|-----------------|-------------|---------|
| NVNT | BLE | 2402 | Ant1 | -36.19 | -20 | Pass |
| NVNT | BLE | 2442 | Ant1 | -36.76 | -20 | Pass |
| NVNT | BLE | 2480 | Ant1 | -37.13 | -20 | Pass |







Tx. Spurious NVNT BLE 2402MHz Ant1 Emission

| | | ut RF Ipling DC m Auto | Corr C | Z: 50 Ω Corr Ref: Int (S) | #Atten: 30 dB | PNO: Fast Gate: Off IF Gain: Low Sig Track: Off | Avg Type. Log-Powe Avg Hold 10/10 Trig. Free Run | 1 2 3 4 5 6 M W W W W W P N N N N N | | |
|-----------------------------|--------|------------------------------|--------|---------------------------------|------------------------|--|--|---|--|---|
| Spectrum cale/Div | | | | | | Ref Lvi Offsei Ref Level 20. | | | Mkr1 | 2.412 GH -7.56 dBr |
| 0.0 | | <u>1</u> | | | | | | | | |
| 0.0 | | | | | | | | | | DL1 -24.75 dB |
| 0.0 0.0 0.0 | 2 | harman | 3 | | 4 5 | and margin and a stranger and the stranger | and product and starting the start of the | allingen fall particular after attack | Langer of the state of the stat | ىيەر بەر بىرى مەرىيى مەرىيى مەرىيى بىرىيى بىرىي مەرىيى بىرىيى |
| 0.0 art 30 M Res BW 1 | | | | | | #Video BW 3 | 300 kHz | | | Stop 26.50 G .57 s (1001 p |
| Marker Ta | ble | | | | | | | | | |
| Mo | de Tra | ce Scale | | х | | Y | Function | Function Width | Function | n Value |
| 1 N | | f | | 2 | 2.412 GHz | -7.565 dBr | | | | |
| 2 N | | f | | | 904 MHz | -40.95 dBr | | | | |
| 3 N | | f | | | 1.900 GHz | -53.69 dBr | | | | |
| | | f | | | 7.336 GHz 9.744 GHz | -54.34 dBr -53.93 dBr | | | | |
| 4 N 5 N | 1 | | | | | -00,800 (D) | | | | |







Tx. Spurious NVNT BLE 2442MHz Ant1 Emission

| | Alig | pling: DC n: Auto | | CCorr Ref. Int (S) | | Gate: Off IF Gain: Low Sig Track: Off | Avg Type: Log Avg Hold 10/ Trig: Free Rur | | | |
|----------------------|---------------|----------------------|-----|-----------------------|------------------------|---|---|---|----------------|--------------------------------|
| Spectrum ale/Div | | | | | | Ref Lvi Offsei Ref Level 20. | | | Mkr1 | 2.439 GH -7.24 dB |
| 0.0 00 | | 1 | | | | | | | | |
| 0.0 | | | | | | | | | | DL1-23.97 d |
|).0).0 | ^2 | | _∆3 | | 45 | | | | | |
| 0.0 0.0 Lund | Lowensel with | homen | mon | munu | in marine marker | and the station of the state | Marine and a second and | MJInday Tophelon April provide and a first by a work of the sys | and the second | Jan Basern Januar Janaman |
| art 30 Mi es BW 1 | Hz 100 kHz | | | | | #Video BW 3 | 300 kHz | | Sweep ~: | Stop 26.50 C 2.57 s (1001 p |
| /larker Ta | ble | | | | | | | | | |
| Mod | de Trad | e Scal | e | х | | Ý | Function | Function Width | Functio | on Value |
| 1 N | | f | | | 2.439 GHz | -7.241 dBr | | | | |
| 2 N | | f | | | 1.936 GHz | -40.73 dBr | | | | |
| 3 N 4 N | | f | | | 4.821 GHz 7.283 GHz | -53.57 dBr -53.54 dBr | | | | |
| 5 N | | f | | | 9.665 GHz | -54.14 dBr | | | | |







Tx. Spurious NVNT BLE 2480MHz Ant1 Emission

| T | | Input F Couplin Align: / | ng: DC | Input Z: 5 Corr CCo Freq Ref | | #Atten: 30 dB | PNO Fast Gate Off IF Gain: Low Sig Track: Off | Avg Type: Log Avg Hold 10/1 Trig: Free Run | 10 1 | 123456 M₩₩₩₩₩₩ PNNNNN | | |
|-------------------|------------------|--|-------------------|------------------------------------|---|---|--|--|---------------|--|--------------------|---|
| ale/ | trum Div 10 (| dB | 1 | | | | Ref Lvi Offset Ref Level 20.0 | | | | Mkr1 | 2.492 GH -8.91 dB |
| og 0.0 .00 | | - | I— | | | | | | | | | |
| 0.0 0.0 0.0 | | | | | | | | | | | | DL1 -25.84 d |
| 0.0 0.0 0.0 | 2 | and the second sec | aluman and alutha | and 3 | 4 | from the marked of the second s | ۹۹۰۴۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰۰ | ىيە _{يىدى} مەرنىدەمەرسىملار | warrander and | ىرىلىكىرىمىيە ^{رىر} ىمىيە يەرىمىيە يەرىمىيە يەرىپىرىن | an transformer and | ang ta an |
| | 0 MHz 3W 100 | kHz | | | | | #Video BW 3 | 300 kHz | | | Sweep ~2 | Stop 26.50 G 2.57 s (1001 p |
| Mark | er Table | | | | | | | | | | | |
| | Mode | Trace | Scale | | х | | Y | Function | Fur | nction Width | Functio | n Value |
| 1 | N | 1 | f | | | .492 GHz | -8.912 dBr | | | | | |
| 2 | N | 1 | f | | | 904 MHz | -42.97 dBr | | | | | |
| 3 | N | 1 | f | | | .033 GHz | -53.89 dBr | | | | | |
| 4 5 | N | 1 | f | | | .283 GHz | -53.79 dBr | | | | | |
| | N | 1 | | | 9 | .771 GHz | -53.99 dBr | 1 | | | | |

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