# TEST REPORT

## CERTIFICATE OF CONFORMITY

| | |
|---|---|
| **Standard:** | **47 CFR FCC Part 96**<br>**47 CFR FCC Part 2** |
| **Report No.:** | RFCDVB-WTW-P22080669A-1 |
| **FCC ID:** | QYLEM9190K |
| **Product:** | Wireless Module |
| **Brand:** | Getac |
| **Model No.:** | EM9190 |
| **Received Date:** | 2023/8/8 |
| **Test Date:** | 2023/8/23 |
| **Issued Date:** | 2023/9/6 |
| **Applicant:** | Getac Technology Corporation. |
| **Address:** | 5F., Building A, No. 209, Sec.1, Nangang Rd., Nangang Dist., Taipei City 11568, Taiwan, R.O.C. |
| **Issued By:** | Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch<br>Lin Kou Laboratories |
| **Lab Address:** | No. 47-2, 14th Ling, Chia Pau Vil., Lin Kou Dist., New Taipei City, Taiwan |
| **Test Location:** | No. 19, Hwa Ya 2nd Rd., Wen Hwa Vil., Kwei Shan Dist., Taoyuan City 33383, TAIWAN |
| **FCC Registration / Designation Number:** | 788550 / TW0003 |

**Approved by:** Jeremy . Lin , **Date:** 2023/9/6

Jeremy Lin / Project Engineer

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Prepared by : Polly Chien / Specialist

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# Release Control Record

| Issue No. | Description | Date Issued |
|---|---|---|
| RFCDVB-WTW-P22080669A-1 | Original Release | 2023/9/6 |

# 1 Certificate

| | |
|---|---|
| **Product:** | Wireless Module |
| **Brand:** | Getac |
| **Test Model:** | EM9190 |
| **Sample Status:** | Identical Prototype |
| **Applicant:** | Getac Technology Corporation. |
| **Test Date:** | 2023/8/23 |
| **Standard:** | 47 CFR FCC Part 96<br>47 CFR FCC Part 2 |
| **Measurement procedure:** | ANSI/TIA/EIA-603-E 2016<br>ANSI C63.26-2015<br>KDB 971168 D01 Power Meas License Digital Systems v03r01<br>KDB 940660 D01 Part 96 CBRS Eqpt v03 |

The above equipment has been tested by **Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch**, and found compliance with the requirement of the above standards. The test record, data evaluation & Equipment Under Test (EUT) configurations represented herein are true and accurate accounts of the measurements of the sample's RF characteristics under the conditions specified in this report.

# 2 Summary of Test Results

| 47 CFR FCC Part 96 & Part 2 | | | |
|---|---|---|---|
| Standard / Clause | Test Item | Result | Remark |
| FCC 47 CFR Part 2.1046<br>FCC 47 CFR Part 96.41(b) | Maximum EIRP | Pass | Meet the requirement of limit. |
| FCC 47 CFR Part 2.1047 | Modulation Characteristics | N/A | Refer to Note |
| FCC 47 CFR Part 96.41(g) | Peak to Average Ratio | N/A | Refer to Note |
| FCC 47 CFR Part 2.1049 | Bandwidth | N/A | Refer to Note |
| FCC 47 CFR Part 2.1051<br>FCC 47 CFR Part 96.41(e) | Conducted Spurious Emissions | N/A | Refer to Note |
| FCC 47 CFR Part 2.1053<br>FCC 47 CFR Part 96.41(e) | Radiated Spurious Emissions below 1GHz | Pass | Minimum passing margin is -1.66 dB at 445.16 MHz |
| FCC 47 CFR Part 2.1053<br>FCC 47 CFR Part 96.41(e) | Radiated Spurious Emissions above 1GHz | Pass | Minimum passing margin is -3.04 dB at 73.89.96 MHz |
| FCC 47 CFR Part 2.1055 | Frequency Stability | N/A | Refer to Note |

Note:

1. Only test item of Radiated Spurious Emissions tests and EIRP Power were performed for this report. Other testing data please refer to Sporton International (Shenzhen) Inc. report no.: FG1N1001-01_Rev. 01 for module (Brand: Airprime, Model: EM9190). The end-product K120 has enabled the 5GNR n48 by software.
2. Determining compliance based on the results of the compliance measurement, not taking into account measurement instrumentation uncertainty.

## 2.1 Measurement Uncertainty

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2:

| Measurement | Specification | Expanded Uncertainty (k=2) (±) |
|---|---|---|
| Radiated Spurious Emissions below 1GHz | 9 kHz ~ 30 MHz | 2.44 dB |
| | 30 MHz ~ 1 GHz | 2.95 dB |
| Radiated Spurious Emissions above 1GHz | 1 GHz ~ 18 GHz | 2.26 dB |
| | 18 GHz ~ 40 GHz | 1.94 dB |

The other instruments specified are routine verified to remain within the calibrated levels, no measurement uncertainty is required to be calculated.

## 2.2 Supplementary Information

There is not any deviation from the test standards for the test method, and no modifications required for compliance.

# 3 General Information

## 3.1 General Description of EUT

| | |
|---|---|
| Product | Wireless Module |
| Brand | Getac |
| Test Model | EM9190 |
| Status of EUT | Identical Prototype |
| Power Supply Rating | 3.3 Vdc (Host equipment) |

Note:

1. The EUT supports the following configuration.

| 5GNR | FCC 5G FR1 | | |
|---|---|---|---|
| | Band | SCS | Bandwidth (MHz) |
| | n48 | 30kHz | 10/20/40 |

* This EUT support SA mode and NSA mode, after verification, SA mode was the worst case and chosen for final test.

2. The EUT is authorized for use in specific End-product. The model of the K120 was chosen for final test.

| Product | Brand | Model | Description |
|---|---|---|---|
| Tablet | Getac | K120 | For marketing purpose |
| | | K120G2 | |
| | | K120Y (Y= 10, Y can be 0-9, a-z, A-Z, "-", "_" or blank for marketing purpose) | |
| | | K120G2-R | |

3. The End-product contains following accessory devices.

| Product | Brand | Model | Description |
|---|---|---|---|
| Adapter 1 | Getac | MTA190474W4 | I/P: 100-240Vac, 1.6A, 50-60Hz<br>O/P: 19.0Vdc, 4.74A (90.0W) |
| Adapter 2 | Chicony | A15-090P1A | I/P: 100-240Vac, 1.2A, 50-60Hz<br>O/P: 19.0Vdc, 4.74A (90.0W) |
| Battery 1 | Getac | BP3S1P2100S-01 | 11.1Vdc, 2040mAh, 24Wh |
| Battery 2 | Getac | BP4S1P3450P-01 | 14.4Vdc, 3300mAh, 48Wh |
| Touch Pen | Getac | 340142000064 | - |
| Dock | Getac | K120 Keyboard Dock | - |

4. EUT Overview

| Band / Bandwidth | TX Frequency Range (MHz) | Max. EIRP Power | | | | |
|---|---|---|---|---|---|---|
| | | PI/2 BPSK | QPSK | 16QAM | 64QAM | 256QAM |
| n48<br>(Channel Bandwidth 10MHz) | 3555.00-3694.98 | - | 139.637mW<br>(21.45dBm/<br>channel bandwidth) | 121.899mW<br>(20.86dBm/<br>channel bandwidth) | - | - |
| n48<br>(Channel Bandwidth 20MHz) | 3560.01-3690.00 | - | 150.661mW<br>(21.78dBm/<br>channel bandwidth) | 133.660mW<br>(21.26dBm/<br>channel bandwidth) | - | - |
| n48<br>(Channel Bandwidth 40MHz) | 3570.00-3679.98 | 188.365mW<br>(22.75dBm/<br>channel bandwidth) | 183.654mW<br>(22.64dBm/<br>channel bandwidth) | 152.757mW<br>(21.84dBm/<br>channel bandwidth) | 114.551mW<br>(20.59dBm/<br>channel bandwidth) | 123.310mW<br>(20.91dBm/<br>channel bandwidth) |

5. For modulation of CP-OFDM and DFT-s-OFDM, the maximum power of CP-OFDM is lower than DFT-s-OFDM modulation, therefore, we chose higher power(DFT-s-OFDM modulation )to perform test and show in the report.
6. The above EUT information is declared by manufacturer and for more detailed features description, please refers to the manufacturer's specifications or user's manual.

### 3.2 Antenna Description of EUT

1. The antenna information is listed as below.

| Antenna Type | | PIFA | |
|---|---|---|---|
| Antenna Connector | | Ipex(MHF) | |
| Item | Band | Ant | Gain (dBi) |
| 5G NR FR1 | n48 | Man | 2.48 |
| | | AUX | 3.57 |
| | n77 (3450MHz-3550MHz) | Man | 4.49 |
| | | AUX | 4.25 |
| | n77 (3700MHz-3980MHz) | Man | 4.49 |
| | | AUX | 4.25 |

* Detail antenna specification please refer to antenna datasheet or an antenna gain measurement report.

### 3.3 Test Mode Applicability and Tested Channel Detail

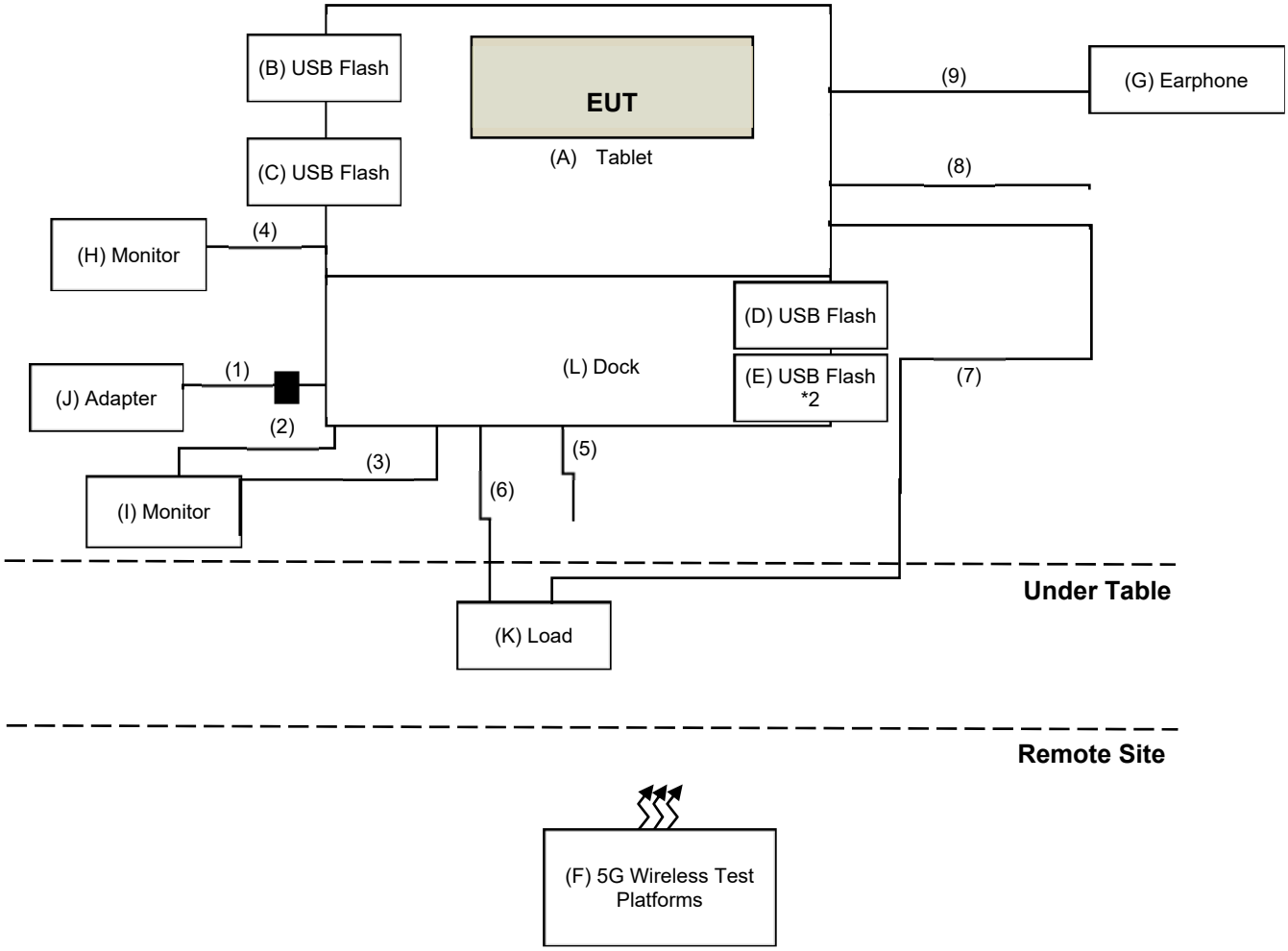
| | |
|---|---|
| Pre-Scan: | EUT can be used in the following ways: X-axis/ Y-axis/ Z-axis for tablet mode, and NB mode. Pre-scan these ways and find the worst case as a representative test condition. |
| Worst Case: | NB mode |

| Test Item | Tested Channel | Channel Bandwidth | Modulation | Mode |
|---|---|---|---|---|
| EIRP | 637000 (3555.00 MHz)<br>641666 (3624.99 MHz)<br>646332 (3694.98 MHz) | 10 MHz | QPSK / 16QAM | 1 RB<br>Half RB<br>Full RB |
| | 637334 (3560.01 MHz)<br>641666 (3624.99 MHz)<br>646000 (3690.00 MHz) | 20 MHz | QPSK / 16QAM | 1 RB<br>Half RB<br>Full RB |
| | 638000 (3570.00 MHz)<br>641666 (3624.99 MHz)<br>645332 (3679.98 MHz) | 40 MHz | PI/2 BPSK / QPSK / 16QAM / 64QAM / 256QAM | 1 RB<br>Half RB<br>Full RB |
| RE Below 1GHz | 646332 (3694.98 MHz) | 10 MHz | QPSK | 1 RB |
| RE Above 1GHz | 637000 (3555.00 MHz)<br>641666 (3624.99 MHz)<br>646332 (3694.98 MHz) | 10 MHz | QPSK | 1 RB |
| | 637334 (3560.01 MHz)<br>641666 (3624.99 MHz)<br>646000 (3690.00 MHz) | 20 MHz | QPSK | 1 RB |
| | 638000 (3570.00 MHz)<br>641666 (3624.99 MHz)<br>645332 (3679.98 MHz) | 40 MHz | QPSK | 1 RB |

### 3.4 Test Program Used and Operation Descriptions

There is no need to controlling software during the test, and the EUT can be paired with the 5G Wireless Test Platforms to test the connection when it is powered on.

### 3.5 Connection Diagram of EUT and Peripheral Devices



### 3.6 Configuration of Peripheral Devices and Cable Connections

| ID | Product | Brand | Model No. | Serial No. | FCC ID | Remarks |
|---|---|---|---|---|---|---|
| A | Tablet | Getac | K120 | N/A | N/A | Provided by applicant |
| B | USB Flash | SanDisk | SDDDC3-032G | N/A | N/A | Provided by Lab |
| C | USB Flash | SanDisk | SDDDC3-032G | N/A | N/A | Provided by Lab |
| D | USB Flash | SanDisk | SDDDC3-032G | N/A | N/A | Provided by Lab |
| E | USB Flash *2 | Transcend | USB 2.0 16GB | N/A | N/A | Provided by Lab |
| F | 5G Wireless Test Platforms | Keysight | E7515B | MY60102114 | N/A | Provided by Lab |
| G | Earphone | APPLE | MB77PFEB | N/A | N/A | Provided by Lab |
| H | Monitor | DELL | A14S2421HSXmTW | CN-01KWFW-WSL00-24C-711B | N/A | Provided by Lab |
| I | Monitor | DELL | A14S2421HSXmTW | CN-01KWFW-WSL00-24C-714B | N/A | Provided by Lab |
| J | Load | N/A | N/A | N/A | N/A | Provided by Lab |
| K | Adapter | Getac | MTA190474W4 | N/A | N/A | Provided by applicant |
| L | Dock | Getac | K120 Keyboard Dock | N/A | N/A | Provided by applicant |

| ID | Cable Descriptions | Qty. | Length (m) | Shielding (Yes/No) | Cores (Qty.) | Remarks |
|---|---|---|---|---|---|---|
| 1 | Power cable | 1 | 1.8 | N | 1 | Provided by applicant Attached on adapter |
| 2 | Display cable | 1 | 1.8 | Y | 0 | Provided by Lab |
| 3 | HDMI cable | 1 | 1.8 | Y | 0 | Provided by Lab |
| 4 | HDMI cable | 1 | 1.8 | Y | 0 | Provided by Lab |
| 5 | RS232 cable | 1 | 1.5 | N | 0 | Provided by Lab |
| 6 | RJ45 cable | 1 | 1.8 | N | 0 | Provided by Lab |
| 7 | RJ45 cable | 1 | 1.8 | N | 0 | Provided by Lab |
| 8 | RS232 cable | 1 | 1.5 | N | 0 | Provided by Lab |
| 9 | Audio cable | 1 | 1.5 | N | 0 | Provided by Lab |

# 4 Test Instruments

The calibration interval of the all test instruments are 12 months and the calibrations are traceable to NML/ROC and NIST/USA.

## 4.1 Maximum EIRP

| Description<br>Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|---|---|---|---|
| PXA Signal Analyzer<br>KEYSIGHT | N9030B | MY57140488 | 2023/3/6 | 2024/3/5 |
| 5G Wireless Test Platforms<br>Keysight | E7515B | MY60102114 | 2023/5/18 | 2024/5/17 |
| Software<br>BV | ADT_RF Test Software<br>V6.6.5.4 | N/A | N/A | N/A |

Notes:

1. The test was performed in Oven room.
2. Tested Date: 2023/8/23

## 4.2 Radiated Spurious Emissions below 1GHz

| Description<br>Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|---|---|---|---|
| Antenna Tower &Turn<br>Max-Full | MFA-440H | AT93021705 | N/A | N/A |
| Bi_Log Antenna<br>Schwarzbeck | VULB9168 | 9168-472 | 2022/10/21 | 2023/10/20 |
| Loop Antenna<br>EMCI | EM-6879 | 269 | 2022/9/19 | 2023/9/18 |
| Loop Antenna<br>TESEQ | HLA 6121 | 45745 | 2023/8/8 | 2024/8/7 |
| Pre-Ammlifier<br>EMCI | EMC 330H | 980112 | 2022/10/1 | 2023/9/30 |
| Pre-amplifier<br>EMCI | EMC001340 | 980201 | 2022/9/23 | 2023/9/22 |
| RF Coaxial Cable<br>EMCI | 5D-NM-BM | 140903+140902 | 2023/1/7 | 2024/1/6 |
| RF Coaxial Cable<br>WORKEN | 8D-FB | Cable-Ch10-01 | 2022/10/1 | 2023/9/30 |
| Signal Analyzer<br>Agilent | N9010A | MY52220207 | 2023/1/3 | 2024/1/2 |
| Software<br>BV ADT | ADT_Radiated_<br>V7.6.15.9.5 | N/A | N/A | N/A |
| Test Receiver<br>KEYSIGHT | N9038A | MY55420137 | 2023/5/3 | 2024/5/2 |
| Turn Table<br>Max-Full | MFT-201SS | N/A | N/A | N/A |
| Turn Table Controller<br>Max-Full | MG-7802 | N/A | N/A | N/A |
| 5G Wireless Test Platforms<br>Keysight | E7515B | MY59321376 | 2023/03/13 | 2024/03/12 |

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/8/23

### 4.3 Radiated Spurious Emissions above 1GHz

| Description<br>Manufacturer | Model No. | Serial No. | Calibrated Date | Calibrated Until |
|---|---|---|---|---|
| Antenna Tower &Turn<br>Max-Full | MFA-440H | AT93021705 | N/A | N/A |
| Boresight antenna tower fixture<br>BV | BAF-02 | 7 | N/A | N/A |
| Horn Antenna<br>Schwarzbeck | BBHA 9120D | 9120D-969 | 2022/11/13 | 2023/11/12 |
| | BBHA 9170 | 148 | 2022/11/13 | 2023/11/12 |
| Pre-Ammlifier<br>EMCI | EMC 184045 | 980116 | 2022/10/1 | 2023/9/30 |
| Pre-Amplifier<br>EMCI | EMC 012645 | 980115 | 2022/10/1 | 2023/9/30 |
| RF Coaxial Cable<br>EMCI | EMC102-KM-KM-600 | 150928 | 2023/7/8 | 2024/7/7 |
| | EMC102-KM-KM-3000 | 150929 | 2023/7/8 | 2024/7/7 |
| | EMC104-SM-SM-8000+3000 | 171005 | 2022/10/1 | 2023/9/30 |
| RF Coaxial Cable<br>HUBER SUHNER | SUCOFLEX 104 | EMC104-SM-SM-1000(140807) | 2022/10/1 | 2023/9/30 |
| RF FLITER<br>MICRO-TRONICS | BRM17690 | 004 | 2023/1/11 | 2024/1/10 |
| | BRM50716 | 060 | 2023/1/11 | 2024/1/10 |
| Signal Analyzer<br>Agilent | N9010A | MY52220207 | 2023/1/3 | 2024/1/2 |
| Software<br>BV ADT | ADT_Radiated_<br>V7.6.15.9.5 | N/A | N/A | N/A |
| Test Receiver<br>KEYSIGHT | ESR | 101451 | 2023/3/27 | 2024/3/26 |
| Turn Table<br>Max-Full | MFT-201SS | N/A | N/A | N/A |
| Turn Table Controller<br>Max-Full | MG-7802 | N/A | N/A | N/A |
| 5G Wireless Test Platforms<br>Keysight | E7515B | MY59321376 | 2023/03/13 | 2024/03/12 |

Notes:

1. The test was performed in HY - 966 chamber 5.
2. Tested Date: 2023/8/23

# 5 Limits of Test Items

## 5.1 Maximum EIRP

| Device | | Maximum EIRP (dBm/10 MHz) |
|---|---|---|
| ☒ | End User Device | 23 |
| ☐ | Category A CBSD | 30 |
| ☐ | Category B CBSD | 47 |

## 5.2 Radiated Spurious Emissions below 1GHz

| Power of any emissions outside the Fundamental | Limit |
|---|---|
| Within 0-10MHz above the Assigned Channel | -13 dBm/MHz |
| Within 0-10MHz below the Assigned Channel | |
| Greater than 10MHz above the Assigned Channel | -25 dBm/MHz |
| Greater than 10MHz below the Assigned Channel | |
| Power of any emission below 3530MHz | -40 dBm/MHz |
| Power of any emission above 3720MHz | |

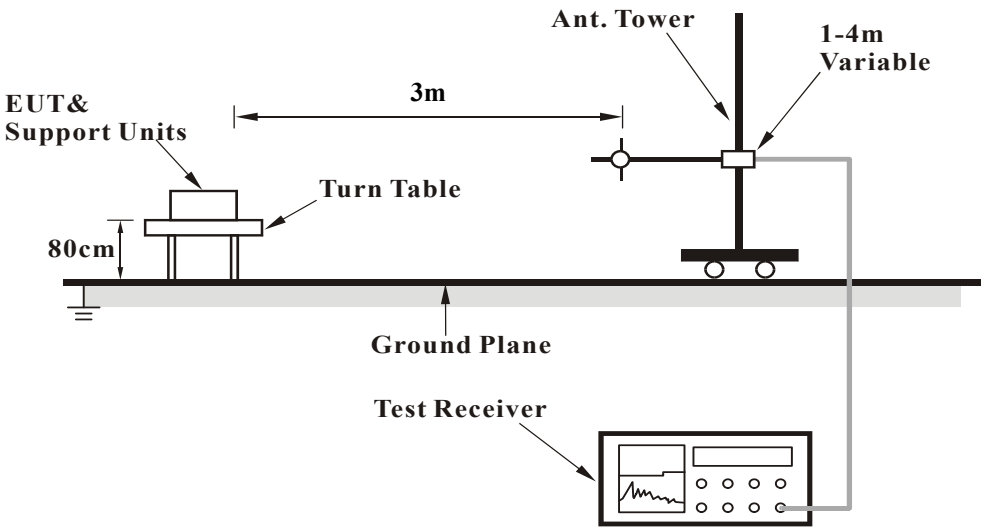
## 5.3 Radiated Spurious Emissions above 1GHz

| Power of any emissions outside the Fundamental | Limit |
|---|---|
| Within 0-10MHz above the Assigned Channel | -13 dBm/MHz |
| Within 0-10MHz below the Assigned Channel | |
| Greater than 10MHz above the Assigned Channel | -25 dBm/MHz |
| Greater than 10MHz below the Assigned Channel | |
| Power of any emission below 3530MHz | -40 dBm/MHz |
| Power of any emission above 3720MHz | |

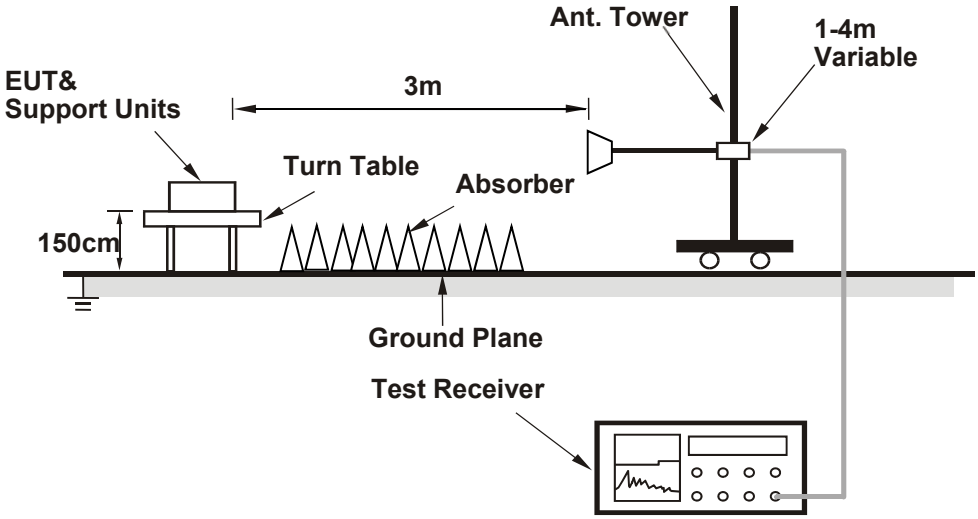
# 6 Test Arrangements

## 6.1 Maximum EIRP

### 6.1.1 Test Setup




**For radiated emission above 1GHz**




For the actual test configuration, please refer to the attached file (Test Setup Photo).

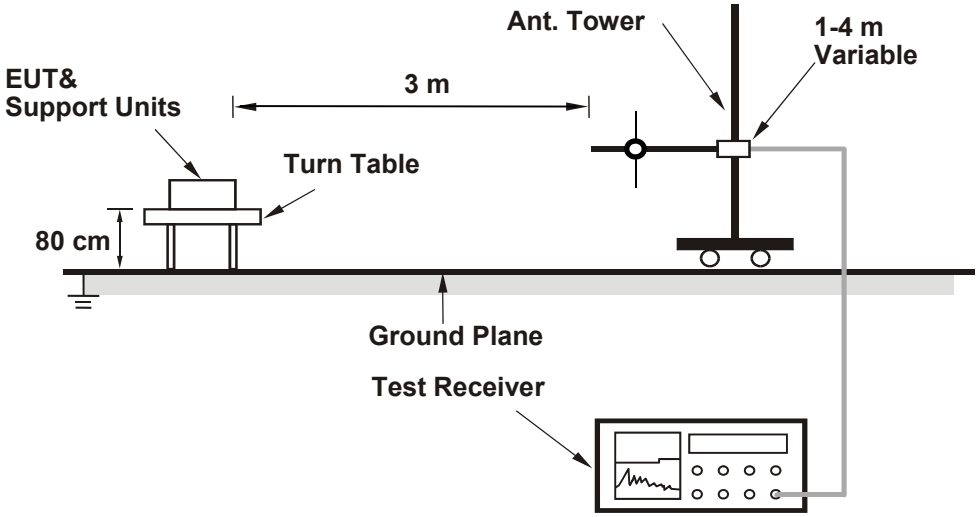
### 6.1.2 Test Procedure

a. Set span to at least 1.5 times the OBW.
b. Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
c. Set VBW ≥ 3 × RBW.
d. Set number of points in sweep ≥ 2 × span / RBW.
e. Sweep time = auto-couple.
f. Detector = RMS (power averaging).
g. If the EUT can be configured to transmit continuously (i.e., burst duty cycle ≥ 98%), then set the trigger to free run.
h. If the EUT cannot be configured to transmit continuously (i.e., burst duty cycle < 98 %), then use a sweep trigger with the level set to enable triggering only on full power bursts and configure the EUT to transmit at full power for the entire duration of each sweep. Ensure that the sweep time is less than or equal to the transmission burst duration.
i. Trace average at least 100 traces in power averaging (i.e., RMS) mode.
j. Compute the power by integrating the spectrum across the OBW of the signal using the instrument's band or channel power measurement function, with the band/channel limits set equal to the OBW band edges. If the instrument does not have a band or channel power function, then sum the spectrum levels (in linear power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
k. For per 10MHz method, channel power integrating bandwidth 10MHz is used for bandwidth 10M, 20M and 40M. For full power method, channel power integrating bandwidth 10MHz is used for bandwidth 10M, integrating bandwidth 20MHz is used for bandwidth 20M, integrating bandwidth 40MHz is used for bandwidth 40M.
l. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
m. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB. Correction Factor (includes EIRP and ERP unit conversion factor) = Antenna gain of substitution horn. – Tx cable loss.
n. Measurement method refers to ANSI C63.26 section 5.2.7 & 5.2.4.

## 6.2 Radiated Spurious Emissions below 1GHz

### 6.2.1 Test Setup

**For radiated emission 30 MHz to 1 GHz**




For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 6.2.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

b. The height of antenna 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.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

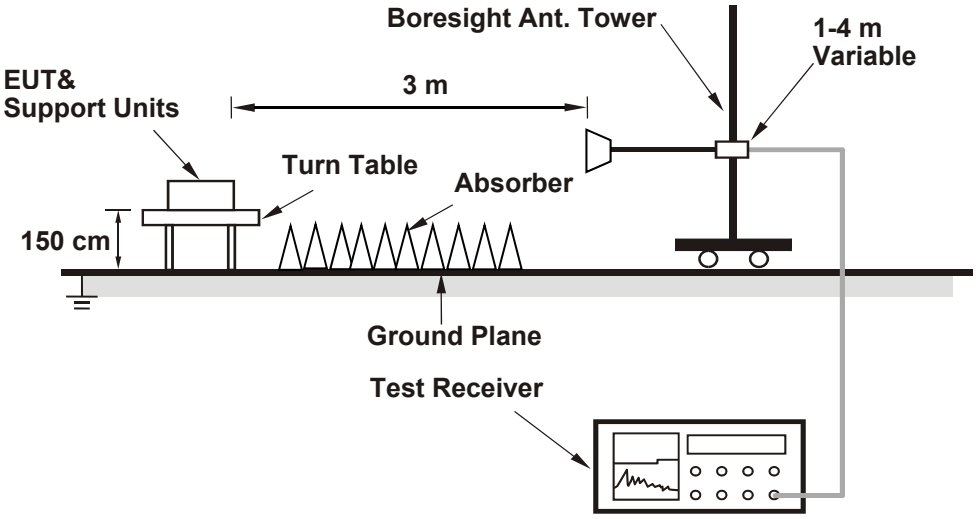
Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.
2. The emission levels were against the limit of frequency range 9 kHz ~ 30 MHz:
   The amplitude of spurious emissions attenuated more than 20 dB below the permissible value is not required to be report.

## 6.3 Radiated Spurious Emissions above 1GHz

### 6.3.1 Test Setup

**For radiated emission above 1 GHz**




For the actual test configuration, please refer to the attached file (Test Setup Photo).

### 6.3.2 Test Procedure

The EUT is configured by emulator to set data modulation and maximum power using WWAN technology.

a. In the semi-anechoic chamber, EUT placed on the 1.5 m height of turn table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The “Read Value” is the spectrum reading the maximum power value.

b. The height of antenna 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.

c. Perform a field strength measurement and record the worse read value, is the field strength value via a spectrum reading obtained corrected for antenna factor, cable loss and pre-amplifier factor and then mathematically convert the measured field strength level to EIRP/ERP level.

d. Following C63.26 section 5.5 and 5.2.7

e. EIRP (dBm) = E (dBμV/m) + 20log(D) - 104.8; where D is the measurement distance (in the far field region) in m.

f. ERP (dBm) = E (dBμV/m) + 20log(D) - 104.8 - 2.15; where D is the measurement distance (in the far field region) in m.

Note:

1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

# 7 Test Results of Test Item

## 7.1 Maximum EIRP

| Input Power: | 3.3Vdc | Environmental Conditions: | 21°C, 70% RH | Tested By: | Vincent Chen |
|---|---|---|---|---|---|

### 7.1.1 NR n48 SCS 30 kHz

**Modulation Type: $\pi/2$ BPSK**

NR Band 48, Channel Bandwidth 40MHz

| Mode | | TX channel 638000, 641666, 645332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 22.61 | 23.00 | -0.39 | 1.63 H | 286 | 81.72 | -59.11 |
| 2 | 3624.99 | 22.75 | 23.00 | -0.25 | 1.52 H | 277 | 81.83 | -59.08 |
| 3 | 3679.98 | 22.70 | 23.00 | -0.30 | 1.56 H | 267 | 81.64 | -58.94 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 21.56 | 23.00 | -1.44 | 2.52 V | 163 | 80.67 | -59.11 |
| 2 | 3624.99 | 21.67 | 23.00 | -1.33 | 2.23 V | 174 | 80.75 | -59.08 |
| 3 | 3679.98 | 21.63 | 23.00 | -1.37 | 2.35 V | 142 | 80.57 | -58.94 |

Remarks:

1. EIRP(dBm/40MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

**Modulation Type: QPSK**

NR Band 48, Channel Bandwidth 10MHz

| Mode | | TX channel 637000, 641666, 646332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/10MHz) | Limit (dBm/10MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3555.00 | 21.12 | 23.00 | -1.88 | 1.59 H | 73 | 80.20 | -59.08 |
| 2 | 3624.99 | 21.35 | 23.00 | -1.65 | 1.52 H | 67 | 80.43 | -59.08 |
| 3 | 3694.98 | 21.45 | 23.00 | -1.55 | 1.46 H | 95 | 80.37 | -58.92 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/10MHz) | Limit (dBm/10MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3555.00 | 20.09 | 23.00 | -2.91 | 1.29 V | 3 | 79.17 | -59.08 |
| 2 | 3624.99 | 20.57 | 23.00 | -2.43 | 1.35 V | 23 | 79.65 | -59.08 |
| 3 | 3694.98 | 20.49 | 23.00 | -2.51 | 1.30 V | 41 | 79.41 | -58.92 |

Remarks:

1. EIRP(dBm/10MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

NR Band 48, Channel Bandwidth 20MHz

| Mode | | TX channel 637334, 641666, 646000 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/20MHz) | Limit (dBm/20MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3560.01 | 21.52 | 23.00 | -1.48 | 1.63 H | 245 | 80.62 | -59.10 |
| 2 | 3624.99 | 21.78 | 23.00 | -1.22 | 1.52 H | 234 | 80.86 | -59.08 |
| 3 | 3690.00 | 21.77 | 23.00 | -1.23 | 1.38 H | 116 | 80.70 | -58.93 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/20MHz) | Limit (dBm/20MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3560.01 | 20.62 | 23.00 | -2.38 | 2.32 V | 157 | 79.72 | -59.10 |
| 2 | 3624.99 | 20.74 | 23.00 | -2.26 | 2.74 V | 114 | 79.82 | -59.08 |
| 3 | 3690.00 | 20.68 | 23.00 | -2.32 | 2.58 V | 103 | 79.61 | -58.93 |

Remarks:

1. EIRP(dBm/20MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

NR Band 48, Channel Bandwidth 40MHz

| Mode | | TX channel 638000, 641666, 645332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 22.41 | 23.00 | -0.59 | 1.52 H | 274 | 81.52 | -59.11 |
| 2 | 3624.99 | 22.64 | 23.00 | -0.36 | 1.35 H | 360 | 81.72 | -59.08 |
| 3 | 3679.98 | 22.48 | 23.00 | -0.52 | 1.15 H | 230 | 81.42 | -58.94 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 21.41 | 23.00 | -1.59 | 2.42 V | 178 | 80.52 | -59.11 |
| 2 | 3624.99 | 21.57 | 23.00 | -1.43 | 2.41 V | 163 | 80.65 | -59.08 |
| 3 | 3679.98 | 21.48 | 23.00 | -1.52 | 1.38 V | 204 | 80.42 | -58.94 |

Remarks:

1. EIRP(dBm/40MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

**Modulation Type: 16QAM**

NR Band 48, Channel Bandwidth 10MHz

| Mode | | TX channel 637000, 641666, 646332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/10MHz) | Limit (dBm/10MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3555.00 | 20.59 | 23.00 | -2.41 | 1.65 H | 103 | 79.67 | -59.08 |
| 2 | 3624.99 | 20.81 | 23.00 | -2.19 | 1.74 H | 100 | 79.89 | -59.08 |
| 3 | 3694.98 | 20.86 | 23.00 | -2.14 | 1.35 H | 105 | 79.78 | -58.92 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/10MHz) | Limit (dBm/10MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3555.00 | 19.27 | 23.00 | -3.73 | 1.35 V | 23 | 78.35 | -59.08 |
| 2 | 3624.99 | 19.48 | 23.00 | -3.52 | 1.23 V | 13 | 78.56 | -59.08 |
| 3 | 3694.98 | 19.50 | 23.00 | -3.50 | 1.11 V | 25 | 78.42 | -58.92 |

Remarks:

1. EIRP(dBm/10MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

NR Band 48, Channel Bandwidth 20MHz

| Mode | | TX channel 637334, 641666, 646000 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/20MHz) | Limit (dBm/20MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3560.01 | 21.13 | 23.00 | -1.87 | 1.54 H | 223 | 80.23 | -59.10 |
| 2 | 3624.99 | 21.26 | 23.00 | -1.74 | 1.67 H | 253 | 80.34 | -59.08 |
| 3 | 3690.00 | 21.09 | 23.00 | -1.91 | 1.14 H | 236 | 80.02 | -58.93 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/20MHz) | Limit (dBm/20MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3560.01 | 20.13 | 23.00 | -2.87 | 1.87 V | 223 | 79.23 | -59.10 |
| 2 | 3624.99 | 20.24 | 23.00 | -2.76 | 2.46 V | 123 | 79.32 | -59.08 |
| 3 | 3690.00 | 20.20 | 23.00 | -2.80 | 2.25 V | 174 | 79.13 | -58.93 |

Remarks:

1. EIRP(dBm/20MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

NR Band 48, Channel Bandwidth 40MHz

| Mode | | TX channel 638000, 641666, 645332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 21.67 | 23.00 | -1.33 | 1.42 H | 223 | 80.78 | -59.11 |
| 2 | 3624.99 | 21.84 | 23.00 | -1.16 | 1.48 H | 220 | 80.92 | -59.08 |
| 3 | 3679.98 | 21.67 | 23.00 | -1.33 | 1.52 H | 269 | 80.61 | -58.94 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 21.02 | 23.00 | -1.98 | 2.32 V | 164 | 80.13 | -59.11 |
| 2 | 3624.99 | 21.18 | 23.00 | -1.82 | 1.65 V | 227 | 80.26 | -59.08 |
| 3 | 3679.98 | 21.16 | 23.00 | -1.84 | 1.78 V | 203 | 80.10 | -58.94 |

Remarks:

1. EIRP(dBm/40MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

## Modulation Type: 64QAM

NR Band 48, Channel Bandwidth 40MHz

| Mode | | TX channel 638000, 641666, 645332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 20.30 | 23.00 | -2.70 | 1.35 H | 265 | 79.41 | -59.11 |
| 2 | 3624.99 | 20.59 | 23.00 | -2.41 | 1.27 H | 225 | 79.67 | -59.08 |
| 3 | 3679.98 | 20.38 | 23.00 | -2.62 | 1.12 H | 268 | 79.32 | -58.94 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 19.74 | 23.00 | -3.26 | 2.35 V | 152 | 78.85 | -59.11 |
| 2 | 3624.99 | 19.85 | 23.00 | -3.15 | 2.41 V | 163 | 78.93 | -59.08 |
| 3 | 3679.98 | 19.73 | 23.00 | -3.27 | 2.87 V | 325 | 78.67 | -58.94 |

Remarks:

1. EIRP(dBm/40MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

## Modulation Type: 256QAM

NR Band 48, Channel Bandwidth 40MHz

| Mode | | TX channel 638000, 641666, 645332 | | | | | | |
|---|---|---|---|---|---|---|---|---|
| Antenna Polarity & Test Distance: Horizontal at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 20.84 | 23.00 | -2.16 | 1.23 H | 225 | 79.95 | -59.11 |
| 2 | 3624.99 | 20.91 | 23.00 | -2.09 | 1.65 H | 238 | 79.99 | -59.08 |
| 3 | 3679.98 | 20.78 | 23.00 | -2.22 | 1.53 H | 222 | 79.72 | -58.94 |
| Antenna Polarity & Test Distance: Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm/40MHz) | Limit (dBm/40MHz) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 3570.00 | 19.42 | 23.00 | -3.58 | 2.53 V | 174 | 78.53 | -59.11 |
| 2 | 3624.99 | 19.57 | 23.00 | -3.43 | 2.87 V | 196 | 78.65 | -59.08 |
| 3 | 3679.98 | 19.52 | 23.00 | -3.48 | 2.38 V | 105 | 78.46 | -58.94 |

Remarks:

1. EIRP(dBm/40MHz) = Raw Value(dBuV) + Correction Factor(dB/m).
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value.

## 7.2 Radiated Spurious Emissions below 1GHz

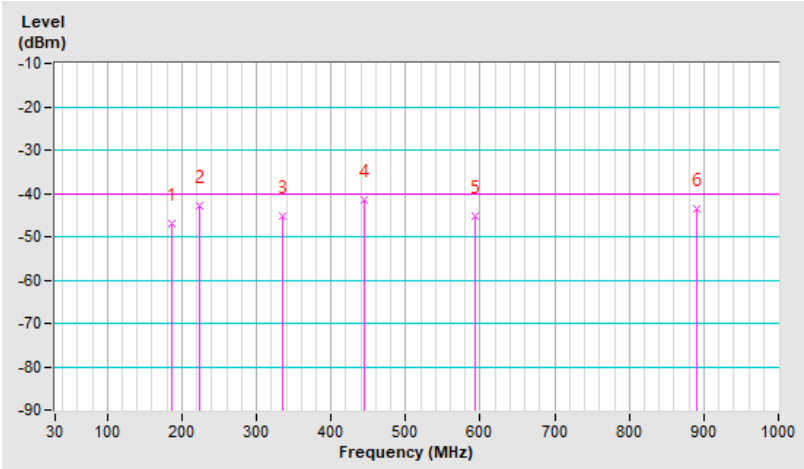
### 7.2.1 NR n48 SCS 30 kHz

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 10MHz | Channel | CH 646332：3694.98 MHz |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Vincent Chen | Environmental Conditions | 21°C, 70% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 186.17 | -47.10 | -40.00 | -7.10 | 2.00 H | 161 | 62.87 | -109.97 |
| 2 | 224.00 | -42.88 | -40.00 | -2.88 | 1.00 H | 150 | 68.29 | -111.17 |
| 3 | 334.58 | -45.30 | -40.00 | -5.30 | 1.50 H | 174 | 60.93 | -106.23 |
| **4** | **445.16** | **-41.66** | **-40.00** | **-1.66** | **1.00 H** | **178** | **61.78** | **-103.44** |
| 5 | 593.57 | -45.10 | -40.00 | -5.10 | 2.00 H | 132 | 55.66 | -100.76 |
| 6 | 891.36 | -43.70 | -40.00 | -3.70 | 2.00 H | 215 | 52.67 | -96.37 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9kHz~30MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.

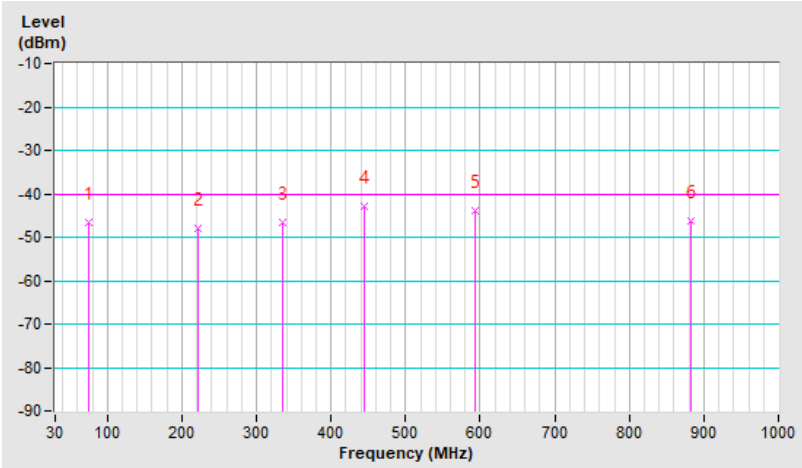


| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 10MHz | Channel | CH 646332：3694.98 MHz |
| Frequency Range | 30 MHz ~ 1 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Vincent Chen | Environmental Conditions | 21°C, 70% RH |

| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 74.62 | -46.70 | -40.00 | -6.70 | 1.50 V | 246 | 63.87 | -110.57 |
| 2 | 221.09 | -47.86 | -40.00 | -7.86 | 1.00 V | 191 | 63.25 | -111.11 |
| 3 | 335.55 | -46.50 | -40.00 | -6.50 | 2.00 V | 224 | 59.72 | -106.22 |
| 4 | 445.16 | -42.82 | -40.00 | -2.82 | 1.00 V | 202 | 60.62 | -103.44 |
| 5 | 593.57 | -43.80 | -40.00 | -3.80 | 1.50 V | 189 | 56.96 | -100.76 |
| 6 | 882.63 | -46.40 | -40.00 | -6.40 | 2.00 V | 234 | 50.09 | -96.49 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit of frequency range 30 MHz ~ 1 GHz.
5. The frequency range 9kHz~30MHz: all emissions are more than 20 dB below the limit, therefore do not be recorded in this report.



## 7.3 Radiated Spurious Emissions above 1GHz

### 7.3.1 NR n48 SCS 30 kHz

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 10MHz | Channel | CH 637000：3555 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7110.00 | -43.89 | -40.00 | -3.89 | 1.58 H | 297 | 54.36 | -98.25 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7110.00 | -44.83 | -40.00 | -4.83 | 1.66 V | 262 | 53.42 | -98.25 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 10MHz | Channel | CH 641666：3624.99 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7249.98 | -43.46 | -40.00 | -3.46 | 1.41 H | 108 | 54.60 | -98.06 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7249.98 | -44.80 | -40.00 | -4.80 | 2.71 V | 55 | 53.26 | -98.06 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 10MHz | Channel | CH 646332：3694.98 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| **1** | **7389.96** | **-43.04** | **-40.00** | **-3.04** | **1.91 H** | **287** | **54.72** | **-97.76** |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7389.96 | -44.24 | -40.00 | -4.24 | 2.21 V | 88 | 53.52 | -97.76 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 20MHz | Channel | CH 637334：3560.01 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7120.02 | -43.79 | -40.00 | -3.79 | 1.58 H | 146 | 54.45 | -98.24 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7120.02 | -44.36 | -40.00 | -4.36 | 1.14 V | 51 | 53.88 | -98.24 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 20MHz | Channel | CH 640000：3624.99 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7249.98 | -43.29 | -40.00 | -3.29 | 1.52 H | 77 | 54.77 | -98.06 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7249.98 | -44.64 | -40.00 | -4.64 | 2.63 V | 308 | 53.42 | -98.06 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 20MHz | Channel | CH 642666：3690 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7380.00 | -43.43 | -40.00 | -3.43 | 2.25 H | 113 | 54.33 | -97.76 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7380.00 | -44.47 | -40.00 | -4.47 | 2.57 V | 354 | 53.29 | -97.76 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 40MHz | Channel | CH 638000：3570 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7140.00 | -43.58 | -40.00 | -3.58 | 1.87 H | 232 | 54.67 | -98.25 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7140.00 | -44.57 | -40.00 | -4.57 | 2.16 V | 194 | 53.68 | -98.25 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 40MHz | Channel | CH 640000：3624.99 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7249.98 | -43.25 | -40.00 | -3.25 | 2.09 H | 55 | 54.81 | -98.06 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7249.98 | -44.49 | -40.00 | -4.49 | 1.12 V | 189 | 53.57 | -98.06 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

| | | | |
|---|---|---|---|
| RF Mode | NR n48<br>Channel Bandwidth: 40MHz | Channel | CH 642000：3679.98 MHz |
| Frequency Range | 1 GHz ~ 40 GHz | Detector Function & Bandwidth | 1 MHz/3 MHz (RMS) |
| Tested By | Thomas Cheng | Environmental Conditions | 21°C, 71% RH |

| Antenna Polarity & Test Distance : Horizontal at 3 m | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7359.96 | -43.15 | -40.00 | -3.15 | 1.52 H | 171 | 54.62 | -97.77 |
| Antenna Polarity & Test Distance : Vertical at 3 m | | | | | | | | |
| No | Frequency (MHz) | EIRP (dBm) | Limit (dBm) | Margin (dB) | Antenna Height (m) | Table Angle (Degree) | Raw Value (dBuV) | Correction Factor (dB/m) |
| 1 | 7359.96 | -44.03 | -40.00 | -4.03 | 1.96 V | 245 | 53.74 | -97.77 |

Remarks:

1. EIRP(dBm) = Raw Value(dBuV) + Correction Factor(dB/m)
2. Correction Factor(dB/m) = Antenna Factor(dB/m) + Cable Factor(dB) – Pre-Amplifier Factor(dB) + 20log(D) – 104.8
3. Margin value = EIRP – Limit value
4. The other EIRP levels were very low against the limit.

# 8 Pictures of Test Arrangements

Please refer to the attached file (Test Setup Photo)

# 9 Information of the Testing Laboratories

We, Bureau Veritas Consumer Products Services (H.K.) Ltd., Taoyuan Branch, were founded in 1988 to provide our best service in EMC, Radio, Telecom and Safety consultation. Our laboratories are FCC recognized accredited test firms and accredited according to ISO/IEC 17025.

If you have any comments, please feel free to contact us at the following: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The address and road map of all our labs can be found in our web site also.

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