



Page: 1 / 41 Rev.: 04

FCC ID: M82-WP7610 Report No.: T200207D01-RP2

FCC 47 CFR PART 27 SUBPART L

TEST REPORT

For

Module

Model No.: WP7610

Trade Name: Advantech; Advantech Service-IoT

Issued to

Advantech Co., Ltd.
No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District, Taipei 114, Taiwan, R.O.C.

Issued by

Compliance Certification Services Inc.
Wugu Laboratory
No.11, Wugong 6th Rd., Wugu Dist.,
New Taipei City, Taiwan. (R.O.C.)
Issued Date: January 6, 2021

Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 90 days only. 除非另有說明,此報告結果僅對測試之樣品負責,同時此樣品僅保留90天。本報告未經本公司書面許可,不可部份複製。

This document is issued by the Company subject to its General Conditions of Service printed overleaf, available on request or accessible at http://www.sgs.com.tw/Terms-and-Conditions and, for electronic format documents, subject to Terms and Conditions for Electronic Documents at http://www.sgs.com.tw/Terms-and-Conditions. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein. Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of client's instruction, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. This document cannot be reproduced, except in full, without prior written approval of the Company. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.



Page: 2 / 41 Rev.: 04

Revision History

| Rev. | Issue Date | Revisions | Effect Page | Revised By |
|------|-------------------|---|-------------|-------------|
| 00 | August 12, 2020 | Initial Issue | ALL | Angel Cheng |
| 01 | November 12, 2020 | Revised temperature · humidity and test date. Added Host device information. | P.5, P.15 | Angel Cheng |
| 02 | December 22, 2020 | 1. Revised section 8.1. | P.15-16 | Angel Cheng |
| 03 | December 30, 2020 | 1. Revised section 8.1. | P.15-16 | Angel Cheng |
| 04 | January 6, 2021 | 1. Revised section 8.1. | P.16 | Angel Cheng |



Page: 3 / 41 Rev.: 04

TABLE OF CONTENTS

| 1] | TEST RESULT CERTIFICATION | 4 |
|----------------|--------------------------------------|-----|
| 2 I | EUT DESCRIPTION | 5 |
| 3 | TEST METHODOLOGY | 6 |
| 3. 3. | .1 EUT CONFIGURATION | 6 |
| 4 | TEST SUMMERY | 8 |
| 5 I | INSTRUMENT CALIBRATION | 9 |
| 5. 5. 5. | .2 MEASUREMENT EQUIPMENT USED | 10 |
| 6 I | FACILITIES AND ACCREDITATIONS | 12 |
| 6. 6. 6. | .2 EQUIPMENT | 12 |
| 7 \$ | SETUP OF EQUIPMENT UNDER TEST | 13 |
| 7. 7. | | |
| 8 I | FCC PART 27 REQUIREMENTS | 14 |
| 8. 8. | | |
| | APPENDIX A PHOTOGRAPHS OF TEST SETUP | A-1 |
| Λ DD | | |



Page: 4 / 41
Report No.: T200207D01-RP2
Rev.: 04

1 TEST RESULT CERTIFICATION

Applicant: Advantech Co., Ltd.

No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,

Taipei 114, Taiwan, R.O.C.

Manufacturer: Advantech Co.Ltd.

No.1, Alley 20, Lane 26, Rueiguang Road, Neihu District,

Taipei 114, Taiwan, R.O.C.

Equipment Under Test: Module

Trade Name: Advantech; Advantech Service-IoT

Model No.: WP7610

Date of Test: February 21 ~ July 16, 2020

| APPLICABLE STANDARDS | | | | |
|--|-------------------------|--|--|--|
| STANDARD | TEST RESULT | | | |
| FCC 47 CFR PART 27 SUBPART L | No non-compliance noted | | | |
| Statements of Conformity | | | | |
| Determination of compliance is based on the results of the compliance measurement, | | | | |
| not taking into account measurement instru | mentation uncertainty. | | | |

We hereby certify that:

The above equipment was tested by Compliance Certification Services Inc. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA-603-E and the energy emitted by the sample EUT tested as described in this report is in compliance with radiated emission limits of FCC Rule FCC PART 27 Subpart L.

The test results of this report relate only to the tested sample identified in this report.

Approved by:

Kevin Tsai

Deputy Manager

Komil Tson

Compliance Certification Services Inc.



Page: 5 / 41 Rev.: 04

2 EUT DESCRIPTION

| Product | Module |
|--------------------------|---|
| Model No. | WP7610 |
| Model Discrepancy | N/A |
| Trade | Advantech; Advantech Service-IoT |
| Received Date | February 7, 2020 |
| Power Supply | Powered from host device. |
| Frequency Range | WCDMA / HSDPA / HSUPA / HSPA+ Band IV: 1712.4-1752.6 MHz |
| Antenna Specification | Part No.: MA231.LBC.002 PIFA Antenna Antenna gain: 1.37 dBi |
| Host device information | Product : Computer Trade name: ADVANTECH Model: TREK-572 |

Remark: 1. The sample selected for test was engineering sample that approximated to production product and was provided by manufacturer.

- 2. For test mode WCDMA, HSUPA, HSDPA and HSPA+ were pretest. The worst case was WCDMA in this test report
- 3. Disclaimer

Antenna information is provided by the applicant, test results of this report are applicable to the sample EUT received.



Page: 6 / 41
Report No.: T200207D01-RP2
Rev.: 04

3 TEST METHODOLOGY

Both conducted and radiated testing were performed according to the procedures document on TIA-603-E and FCC CFR 47, Part 27 Subpart L.

Both conducted and radiated testing were performed according to the procedures document on ANSI C63.26: 2015.

3.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner that intends to maximize its emission characteristics in a continuous normal application.



Page: 7 / 41
Report No.: T200207D01-RP2
Rev.: 04

3.2 DESCRIPTION OF TEST MODES

The EUT (model: WP7610) had been tested under operating condition.

The EUT be set in maximum power transmission via call box during testing.

3.2.1 The worst mode of measurement

| Radiated Emission Measurement Above 1G | | | |
|--|--|--|--|
| Test Condition | Radiated Emission Above 1G | | |
| Power supply Mode | Mode 1: EUT power by Adapter | | |
| Worst Mode | | | |
| Worst Position | ☐ Placed in fixed position. ☐ Placed in fixed position at X-Plane (E2-Plane) ☐ Placed in fixed position at Y-Plane (E1-Plane) ☐ Placed in fixed position at Z-Plane (H-Plane) | | |
| _ | | | |

| Radiated Emission Measurement Below 1G | | | | |
|--|------------------------------|--|--|--|
| Test Condition | Radiated Emission Below 1G | | | |
| Power supply Mode | Mode 1: EUT power by Adapter | | | |
| Worst Mode | | | | |

Remark:

- 1. The worst mode was record in this test report.
- 2. EUT pre-scanned in three axis ,X,Y, Z and two polarity, for radiated measurement. The worst case(X-Plane) were recorded in this report



Page: 8 / 41
Report No.: T200207D01-RP2
Rev.: 04

4 TEST SUMMERY

| FCC Standard Section | Report Section | Test Item | Result |
|----------------------|-------------------|--------------------------------|--------|
| - | 2 | Antenna Requirement | Pass |
| 27.50(d) | 8.1 | EIRP Measurement | Pass |
| 27.53(h) | 8.2 | Spurious Radiation Measurement | Pass |



Page: 9 / 41
Report No.: T200207D01-RP2

Rev.: 04

5 INSTRUMENT CALIBRATION

5.1 FACILITIES AND TEST LOCATION

All measurement facilities used to collect the measurement data are located at No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.)

| Test site | Test Engineer | Remark |
|--------------|---------------|--------|
| Radiation | Jerry Chang | - |
| RF Conducted | Jane Wang | - |

Remark: The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22.



Page: 10 / 41 Rev.: 04

5.2 MEASUREMENT EQUIPMENT USED

Equipment Used for Emissions Measurement

Remark: Each piece of equipment is scheduled for calibration

| Conducted Emissions Test Site | | | | | |
|--|-----------------------|------------|---------------|-------------------------|------------------------|
| Name of Equipment | Manufacturer | Model | Serial Number | Calibration Date | Calibration Due |
| Coaxial Cable | Woken | WC12 | CC003 | 06/29/2020 | 06/28/2021 |
| Coaxial Cable | Woken | WC12 | CC001 | 06/29/2020 | 06/28/2021 |
| Power Divider | Solvang Technology | STI08-0015 | 008 | 08/06/2019 | 08/05/2020 |
| Signal Analyzer | R&S | FSV 40 | 101073 | 09/25/2019 | 09/24/2020 |
| Wideband Radio Communication Tester | R&S | CMW 500 | 116875 | 07/29/2019 | 07/28/2020 |
| Software | | | N/A | | _ |

| Wugu 966 Chamber A | | | | | |
|--|-------------------|--------------------|---------------|-------------------------|------------------------|
| Name of Equipment | Manufacturer | Model | Serial Number | Calibration Date | Calibration Due |
| Band Reject Filters | MICRO TRONICS | BRM 50702 | 120 | 02/26/2019 | 02/25/2020 |
| Bilog Antenna | Sunol Sciences | JB3 | A030105 | 07/26/2019 | 07/25/2020 |
| Coaxial Cable | HUBER SUHNER | SUCOFLEX 104PEA | 20995 | 02/26/2019 | 02/25/2020 |
| Coaxial Cable | EMCI | EMC105 | 190914+25111 | 09/20/2019 | 09/19/2020 |
| Digital Thermo-Hygro Meter | WISEWIND | 1206 | D07 | 01/15/2020 | 01/14/2021 |
| double Ridged Guide Horn Antenna | ETC | MCTD 1209 | DRH13M02003 | 10/04/2019 | 10/03/2020 |
| Loop Ant | COM-POWER | AL-130 | 121051 | 03/22/2019 | 03/21/2020 |
| Pre-Amplifier | EMEC | EM330 | 060609 | 02/26/2019 | 02/25/2020 |
| Pre-Amplifier | HP | 8449B | 3008A00965 | 02/26/2019 | 02/25/2020 |
| Wideband Radio Communication Tester | R&S | CMW 500 | 116875 | 07/29/2019 | 07/28/2020 |
| PSA Series Spectrum Analyzer | Agilent | E4446A | MY46180323 | 05/29/2019 | 05/28/2020 |
| Antenna Tower | CCS | CC-A-1F | N/A | N.C.R | N.C.R |
| Controller | CCS | CC-C-1F | N/A | N.C.R | N.C.R |
| Turn Table | CCS | CC-T-1F | N/A | N.C.R | N.C.R |
| Software | | | e3 6.11-20180 | 413 | |



Report No.: T200207D01-RP2 Page: 11 / 41 Rev.: 04

5.3 MEASUREMENT UNCERTAINTY

| PARAMETER | UNCERTAINTY |
|---------------------------------------|-------------|
| AC Powerline Conducted Emission | +/- 1.2575 |
| Emission bandwidth, 20dB bandwidth | +/- 0.0014 |
| RF output power, conducted | +/- 1.14 |
| Power density, conducted | +/- 1.40 |
| 3M Semi Anechoic Chamber / 30M~200M | +/- 4.12 |
| 3M Semi Anechoic Chamber / 200M~1000M | +/- 4.68 |
| 3M Semi Anechoic Chamber / 1G~8G | +/- 5.18 |
| 3M Semi Anechoic Chamber / 8G~18G | +/- 5.47 |
| 3M Semi Anechoic Chamber / 18G~26G | +/- 3.81 |
| 3M Semi Anechoic Chamber / 26G~40G | +/- 3.87 |

Remark: This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.



Report No.: T200207D01-RP2 Page: 12 / 41 Rev.: 04

6 FACILITIES AND ACCREDITATIONS

6.1 FACILITIES

| All measurement facilities used to collect the measurement data are located at |
|---|
| No.199, Chunghsen Road, Hsintien City, Taipei Hsien, Taiwan, R.O.C.Tel: 886-2-2217-0894 / Fax: 886-2-2217-1029 |
| No.11, Wugong 6th Rd., Wugu Dist., New Taipei City 24891, Taiwan. (R.O.C.) Tel: 886-2-2299-9720 / Fax: 886-2-2298-4045 |
| No.81-1, Lane 210, Bade 2nd Rd., Luchu Hsiang, Taoyuan Hsien 338, TaiwanTel: 886-3-324-0332 / Fax: 886-3-324-5235 |
| The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI |

6.2 EQUIPMENT

C63.10: 2013 and CISPR Publication 22.

Radiated emissions are measured with one or more of the following types of linearly polarized antennas: tuned dipole, biconical, log periodic, bi-log, and/or ridged waveguide, horn. Spectrum analyzers with pre-selectors and quasi-peak detectors are used to perform radiated measurements.

Conducted emissions are measured with Line Impedance Stabilization Networks and EMI Test Receivers.

Calibrated wideband preamplifiers, coaxial cables, and coaxial attenuators are also used for making measurements.

All receiving equipment conforms to CISPR Publication 16-1, "Radio Interference Measuring Apparatus and Measurement Methods."

6.3 LABORATORY ACCREDITATIONS AND LISTING

The test facilities used to perform radiated and conducted emissions tests are accredited by American Association for Laboratory Accreditation Program for the specific scope accreditation under Lab Code: 0824-01 to perform Electromagnetic Interference tests according to FCC Part 15 and CISPR 22 requirements. In addition, the test facilities are listed with Industry Canada, Certification and Engineering Bureau, ISED#: 2324G.



Page: 13 / 41
Report No.: T200207D01-RP2

Rev.: 04

7 SETUP OF EQUIPMENT UNDER TEST

7.1 SETUP CONFIGURATION OF EUT

See test photographs attached in Appendix II for the actual connections between EUT and support equipment.

7.2 SUPPORT EQUIPMENT

| No. | Equipment | Brand | Model | Series No. | FCC ID | IC ID |
|-----|-----------|---------|---------------|------------|----------|-------------|
| 1 | NB(J) | TOSHIBA | PT345T-00L002 | N/A | PD97260H | 1000M-7260H |

Remark:

- 1. All the equipment/cables were placed in the worst-case configuration to maximize the emission during the test.
- 2. Grounding was established in accordance with the manufacturer's requirements and conditions for the intended use.



Page: 14 / 41 Rev.: 04

8 FCC PART 27 REQUIREMENTS

8.1 EIRP MEASUREMENT

LIMIT

FCC Part 27.50(d)(4)

Fixed, mobile, and portable (handheld) stations operating in the 1710-1755 MHz band and mobile and portable stations operating in the 1695-1710MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

TEST PROCEDURES

CONDUCTED POWER MEASUREMENT:

- 1. The transmitter output power was connected to the call box.
- 2. Set EUT at maximum output power via call box.
- 3. Set Call box at lowest, middle and highest channels for each band and modulation.

TEST RESULTS

No non-compliance noted.

Remark: The value of factor includes both the loss of cable and external attenuator



Page: 15 / 41 Rev.: 04

Temperature: 24°C Test Date: July 16, 2020

Humidity: 50 % RH Tested by: Jane Wang

WCDMA 12.2K RMC

| Band | Data Rate or Sub-test | UL/DL Channel No. | Frequency (MHz) | Average power (dBm) | EIRP (dBm) |
|-----------------|-----------------------------|----------------------|--------------------|---------------------------|---------------|
| WCDMA Band 4 | | 1312/1537 | 1712.4 | 23.0 | 24.4 |
| | RMC 12.2Kbps | 1413/1638 | 1732.6 | 21.7 | 23.1 |
| | | 1513/1738 | 1752.6 | 21.2 | 22.6 |



Page: 16 / 41 Rev.: 04

HSDPA

| Band | Data Rate or Sub-test | UL/DL Channel No. | Frequency (MHz) | Average power (dBm) | EIRP (dBm) |
|----------|-----------------------------|----------------------|--------------------|---------------------------|---------------|
| | | 1312/1537 | 1712.4 | 23.0 | 24.4 |
| | 1 | 1413/1638 | 1732.6 | 21.8 | 23.2 |
| | | 1513/1738 | 1752.6 | 21.3 | 22.7 |
| | | 1312/1537 | 1712.4 | 23.0 | 24.4 |
| | 2 | 1413/1638 | 1732.6 | 21.7 | 23.1 |
| HSDPA IV | | 1513/1738 | 1752.6 | 21.2 | 22.6 |
| HSDPA IV | 3 | 1312/1537 | 1712.4 | 22.9 | 24.3 |
| | | 1413/1638 | 1732.6 | 21.7 | 23.1 |
| | | 1513/1738 | 1752.6 | 21.2 | 22.6 |
| | | 1312/1537 | 1712.4 | 23.0 | 24.4 |
| | 4 | 1413/1638 | 1732.6 | 21.8 | 23.2 |
| | | 1513/1738 | 1752.6 | 21.2 | 22.6 |

HSUPA

| Band | Data Rate or Sub-test | UL/DL Channel No. | Frequency (MHz) | Average power (dBm) | EIRP (dBm) |
|----------|-----------------------------|----------------------|--------------------|---------------------------|---------------|
| | | 1312/1537 | 1712.4 | 22.6 | 24.0 |
| | 1 | 1413/1638 | 1732.6 | 21.4 | 22.8 |
| | | 1513/1738 | 1752.6 | 21.0 | 22.4 |
| | | 1312/1537 | 1712.4 | 22.6 | 24.0 |
| | 3 | 1413/1638 | 1732.6 | 21.3 | 22.7 |
| HSUPA IV | | 1513/1738 | 1752.6 | 20.9 | 22.3 |
| HSUPATV | | 1312/1537 | 1712.4 | 22.6 | 24.0 |
| | | 1413/1638 | 1732.6 | 21.3 | 22.7 |
| | | 1513/1738 | 1752.6 | 21.0 | 22.4 |
| | | 1312/1537 | 1712.4 | 22.6 | 24.0 |
| | 4 | 1413/1638 | 1732.6 | 21.4 | 22.8 |
| | | 1513/1738 | 1752.6 | 20.9 | 22.3 |



Page: 17 / 41
Report No.: T200207D01-RP2
Rev.: 04

8.2 SPURIOUS RADIATION MEASUREMENT

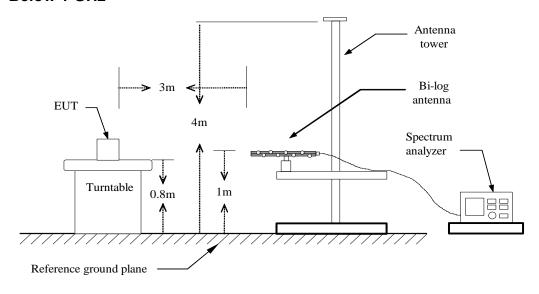
LIMIT

FCC §27.53 (h)

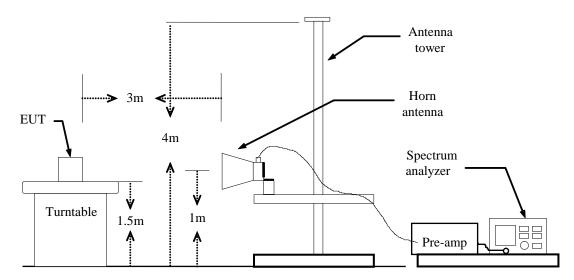
The power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least 43 + 10 log10 (P) dB.

Test Configuration

Below 1 GHz



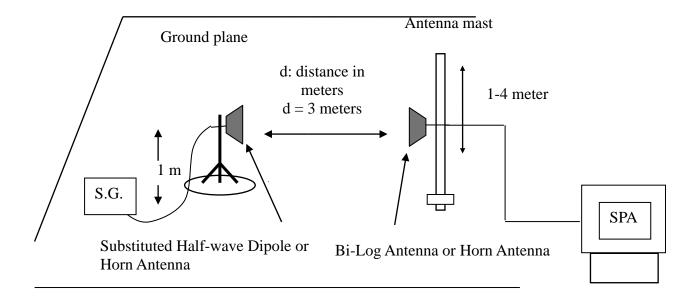
Above 1 GHz





Page: 18 / 41 Rev.: 04

Substituted Method Test Set-up



TEST PROCEDURE

- 1. According to KDB 971168 D01 Power Meas License Digital System and TIA-603-E Section 2.2.12.
- 2. The EUT was placed on a turntable
 - (1) Below 1G: 0.8m
 - (2) Above 1G: 1.5m
 - (3) EUT set 3m from the receiving antenna
 - (4) The table was rotated 360 degrees of the highest spurious emission to determine the position.
- 3. Set the spectrum analyzer, RBW=1MHz, VBW=3MHz.
- 4. A horn antenna was driven by a signal generator.
- 5. Tune the output power of signal generator to the same emission level with EUT maximum spurious emission

ERP = S.G. output (dBm) + Antenna Gain (dBi) - Cable (dB)-2.15

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB)

TEST RESULTS

Refer to the attached tabular data sheets.



Page: 19 / 41
Report No.: T200207D01-RP2

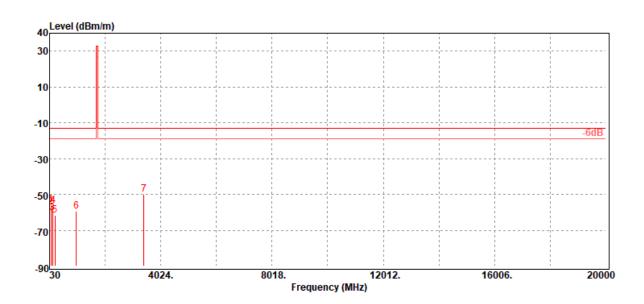
Rev.: 04

Radiated Spurious Emission Measurement Result

Operation Mode: WCDMA 12.2k RMC Band IV / TX / Low CH Test Date: February 21, 2020

Temperature: 21.4°C **Tested by:** Jerry Chang

Humidity: 51 % RH **Polarity:** Ver.



| Freq. | ERP/EIRP | SG | Antenna | Cable | Limit | Margin | Antenna |
|---------|----------|--------------|-----------|-------|--------|--------|--------------|
| | | Output Level | Gain | Loss | | | Polarization |
| (MHz) | (dBm) | (dBm) | (dBd/dBi) | (dB) | (dBm) | (dB) | (V/H) |
| 73.65 | -55.65 | -45.85 | -9.10 | -0.70 | -13.00 | -42.65 | V |
| 80.44 | -56.94 | -47.75 | -8.46 | -0.73 | -13.00 | -43.94 | V |
| 134.76 | -60.44 | -50.14 | -9.35 | -0.95 | -13.00 | -47.44 | V |
| 153.19 | -56.43 | -48.69 | -6.72 | -1.02 | -13.00 | -43.43 | V |
| 225.94 | -61.70 | -58.53 | -1.94 | -1.23 | -13.00 | -48.70 | V |
| 995.15 | -59.21 | -55.14 | -1.40 | -2.67 | -13.00 | -46.21 | V |
| 3424.80 | -50.08 | -57.33 | 12.75 | -5.50 | -13.00 | -37.08 | V |

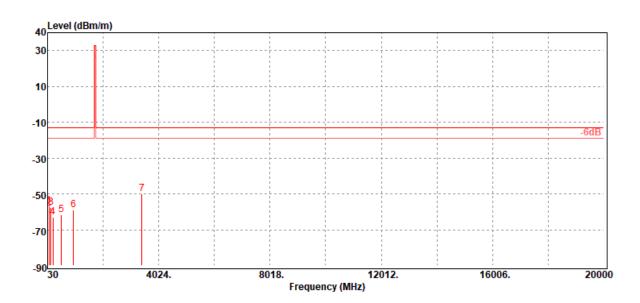


Page: 20 / 41 Rev.: 04

Operation Mode: WCDMA 12.2k RMC Band IV / TX / Low CH Test Date: February 21, 2020

Temperature: 21.4°C **Tested by:** Jerry Chang

Humidity: 51 % RH Polarity: Hor.



| Freq. | ERP/EIRP | SG Output Level | Antenna Gain | Cable Loss | Limit | Margin | Antenna Polarization |
|---------|----------|--------------------|-----------------|---------------|--------|--------|-------------------------|
| (MHz) | (dBm) | (dBm) | (dBd/dBi) | (dB) | (dBm) | (dB) | (V/H) |
| 73.65 | -56.90 | -47.1 | -9.10 | -0.70 | -13.00 | -43.90 | Н |
| 80.44 | -57.86 | -48.67 | -8.46 | -0.73 | -13.00 | -44.86 | Н |
| 151.25 | -57.76 | -49.7 | -7.05 | -1.01 | -13.00 | -44.76 | Н |
| 225.94 | -62.85 | -59.68 | -1.94 | -1.23 | -13.00 | -49.85 | Н |
| 527.61 | -61.70 | -58.48 | -1.30 | -1.92 | -13.00 | -48.70 | Н |
| 956.35 | -59.17 | -55.32 | -1.23 | -2.62 | -13.00 | -46.17 | Н |
| 3424.80 | -50.05 | -57.3 | 12.75 | -5.50 | -13.00 | -37.05 | Н |



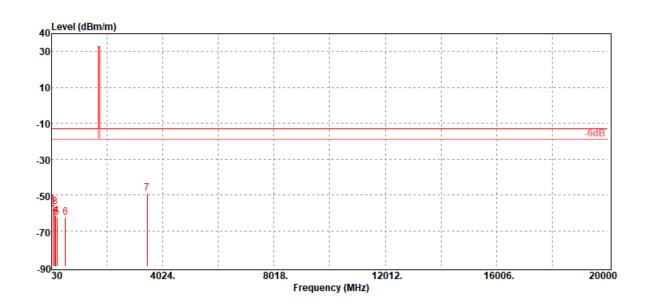
Page: 21 / 41 Rev.: 04

Operation Mode: WCDMA 12.2k RMC

Band IV / TX / Mid CH Test Date: February 21, 2020

Temperature: 21.4°C **Tested by:** Jerry Chang

Humidity: 51 % RH Polarity: Ver.



| Freq. | ERP/EIRP | SG | Antenna | Cable | Limit | Margin | Antenna |
|---------|----------|--------------|-----------|-------|--------|--------|--------------|
| | | Output Level | Gain | Loss | | | Polarization |
| (MHz) | (dBm) | (dBm) | (dBd/dBi) | (dB) | (dBm) | (dB) | (V/H) |
| 73.65 | -55.51 | -45.71 | -9.10 | -0.70 | -13.00 | -42.51 | V |
| 80.44 | -57.69 | -48.5 | -8.46 | -0.73 | -13.00 | -44.69 | V |
| 153.19 | -56.84 | -49.1 | -6.72 | -1.02 | -13.00 | -43.84 | V |
| 188.11 | -61.86 | -56.83 | -3.90 | -1.13 | -13.00 | -48.86 | V |
| 224.00 | -62.36 | -59.21 | -1.92 | -1.23 | -13.00 | -49.36 | V |
| 532.46 | -62.46 | -59.24 | -1.30 | -1.92 | -13.00 | -49.46 | V |
| 3465.20 | -49.15 | -56.26 | 12.64 | -5.53 | -13.00 | -36.15 | V |



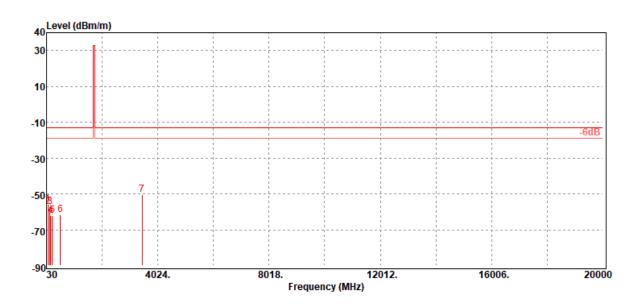
Page: 22 / 41 Rev.: 04

WCDMA 12.2k RMC **Operation Mode:** Test Date:

February 21, 2020 Band IV / TX / Mid CH

Jerry Chang Temperature: Tested by: 21.4°C

Humidity: Polarity: 51 % RH Hor.



| Freq. | ERP/EIRP | SG Output Level | Antenna Gain | Cable Loss | Limit | Margin | Antenna Polarization |
|---------|----------|--------------------|-----------------|---------------|--------|--------|-------------------------|
| (MHz) | (dBm) | (dBm) | (dBd/dBi) | (dB) | (dBm) | (dB) | (V/H) |
| 73.65 | -55.75 | -45.95 | -9.10 | -0.70 | -13.00 | -42.75 | Н |
| 81.41 | -57.05 | -47.91 | -8.40 | -0.74 | -13.00 | -44.05 | Н |
| 151.25 | -57.23 | -49.17 | -7.05 | -1.01 | -13.00 | -44.23 | Н |
| 178.41 | -61.93 | -56.27 | -4.56 | -1.10 | -13.00 | -48.93 | Н |
| 243.40 | -62.05 | -58.81 | -1.96 | -1.28 | -13.00 | -49.05 | Н |
| 527.61 | -61.68 | -58.46 | -1.30 | -1.92 | -13.00 | -48.68 | Н |
| 3465.20 | -50.31 | -57.42 | 12.64 | -5.53 | -13.00 | -37.31 | Н |

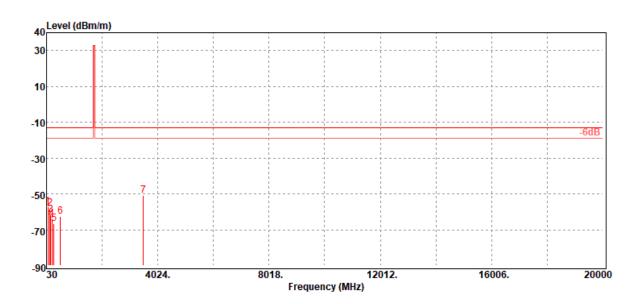


Page: 23 / 41 Rev.: 04

Operation Mode: WCDMA 12.2k RMC Band IV / TX / High CH Test Date: February 21, 2020

Temperature: 21.4°C **Tested by:** Jerry Chang

Humidity: 51 % RH Polarity: Ver.



| Freq. | ERP/EIRP | SG Output Level | Antenna Gain | Cable Loss | Limit | Margin | Antenna Polarization |
|---------|----------|--------------------|-----------------|---------------|--------|--------|-------------------------|
| (MHz) | (dBm) | (dBm) | (dBd/dBi) | (dB) | (dBm) | (dB) | (V/H) |
| 80.44 | -57.22 | -48.03 | -8.46 | -0.73 | -13.00 | -44.22 | V |
| 150.28 | -57.85 | -49.74 | -7.10 | -1.01 | -13.00 | -44.85 | V |
| 178.41 | -61.81 | -56.15 | -4.56 | -1.10 | -13.00 | -48.81 | V |
| 225.94 | -63.79 | -60.62 | -1.94 | -1.23 | -13.00 | -50.79 | V |
| 303.54 | -66.74 | -63.37 | -1.93 | -1.44 | -13.00 | -53.74 | V |
| 532.46 | -62.70 | -59.48 | -1.30 | -1.92 | -13.00 | -49.70 | V |
| 3505.20 | -50.80 | -57.73 | 12.49 | -5.56 | -13.00 | -37.80 | V |



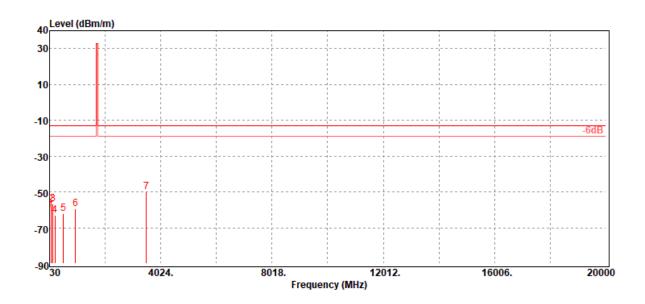
Page: 24 / 41
Report No.: T200207D01-RP2

Rev.: 04

Operation Mode: WCDMA 12.2k RMC Band IV / TX / High CH Test Date: February 21, 2020

Temperature: 21.4°C **Tested by:** Jerry Chang

Humidity: 51 % RH Polarity: Hor.



| Freq. | ERP/EIRP | SG | Antenna | Cable | Limit | Margin | Antenna |
|---------|----------|--------------|-----------|-------|--------|--------|--------------|
| | | Output Level | Gain | Loss | | | Polarization |
| (MHz) | (dBm) | (dBm) | (dBd/dBi) | (dB) | (dBm) | (dB) | (V/H) |
| 73.65 | -60.15 | -50.35 | -9.10 | -0.70 | -13.00 | -47.15 | Н |
| 80.44 | -57.25 | -48.06 | -8.46 | -0.73 | -13.00 | -44.25 | Н |
| 154.16 | -56.87 | -49.07 | -6.78 | -1.02 | -13.00 | -43.87 | Н |
| 224.00 | -62.87 | -59.72 | -1.92 | -1.23 | -13.00 | -49.87 | Н |
| 534.40 | -62.12 | -58.89 | -1.30 | -1.93 | -13.00 | -49.12 | Н |
| 961.20 | -59.23 | -55.3 | -1.30 | -2.63 | -13.00 | -46.23 | Н |
| 3505.20 | -49.92 | -56.85 | 12.49 | -5.56 | -13.00 | -36.92 | Н |

- End of Test Report -