



RF MEASUREMENT REPORT

FCC ID: HD5-EDA61K1
Applicant: Honeywell International Inc
Product: Mobile computer
Model No.: EDA61K-1
Brand Name: Honeywell
FCC Rule(s): Part 2, 24 (E) Section 24.232(c) & 24.238(a)
Result: Complies
Received Date: 2024-11-18
Test Date: 2024-11-21 ~ 2024-11-25

Reviewed By:

Ada Zhang

Approved By:

Robin Wu



The test results relate only to the samples tested.

This equipment has been shown to be capable of compliance with the applicable technical standards as indicated in the measurement report and was tested in accordance with the measurement procedures specified in ANSI C63.26-2015. Test results reported herein relate only to the item(s) tested.

The test report shall not be reproduced except in full without the written approval of MRT Technology (Suzhou) Co., Ltd.

Revision History

| Report No. | Version | Description | Issue Date | Note |
|---------------|---------|----------------|------------|-------|
| 2410RSU065-U6 | V01 | Initial Report | 2025-01-10 | Valid |
| | | | | |

Note: This report is based on the original MRT report (report No.: 2010RSU078-U6) to do the following modifications:

1. WCDMA BII duplexer in Pin-to-Pin change, Transmitter output power, Transmitter unwanted emissions (band-edge) and Radiated Spurious Emissions in the worst-case mode are evaluated.
2. Update applicant and manufacturer's name.

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1. General Information

1.1. Applicant

Honeywell International Inc

9680 Old Bailes Rd. Fort Mill, SC 29707 United States

1.2. Manufacturer

Honeywell International Inc

9680 Old Bailes Rd. Fort Mill, SC 29707 United States

1.3. Testing Facility

| | |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Test Site – MRT Suzhou Laboratory |
| | Laboratory Location (Suzhou - Wuzhong) D8 Building, No.2 Tian'edang Rd., Wuzhong Economic Development Zone, Suzhou, China |
| | Laboratory Location (Suzhou - SIP) 4b Building, Liando U Valley, No.200 Xingpu Rd., Shengpu Town, Suzhou Industrial Park, China |
| | Laboratory Location (Suzhou - Wujiang) Building 1, No.1 Xingdong Road, Wujiang, Suzhou, Jiangsu, People's Republic of China |
| | Laboratory Accreditations |
| | A2LA: 3628.01 FCC: CN1166 VCCI: <input type="checkbox"/> R-20025 <input type="checkbox"/> G-20034 <input type="checkbox"/> C-20020 <input type="checkbox"/> T-20020 <input type="checkbox"/> R-20141 <input type="checkbox"/> G-20134 <input type="checkbox"/> C-20103 <input type="checkbox"/> T-20104 |
| | CNAS: L10551 ISED: CN0001 |
| <input type="checkbox"/> | Test Site – MRT Shenzhen Laboratory |
| | Laboratory Location (Shenzhen) 1G, Building A, Junxiangda Building, Zhongshanyuan Road West, Nanshan District, Shenzhen, China |
| | Laboratory Accreditations |
| | A2LA: 3628.02 FCC: CN1284 |
| CNAS: L10551 ISED: CN0105 | |
| <input type="checkbox"/> | Test Site – MRT Taiwan Laboratory |
| | Laboratory Location (Taiwan) No. 38, Fuxing 2nd Rd., Guishan Dist., Taoyuan City 333, Taiwan (R.O.C.) |
| | Laboratory Accreditations |
| | TAF: 3261 FCC: 291082, TW3261 |
| ISED: TW3261 | |

1.4. Product Information

| | |
|---|--|
| Product Name | Mobile computer |
| Model No. | EDA61K-1 |
| Brand Name | Honeywell |
| IMEI | 990013864528661(Conducted) 990013864528703(Radiated) |
| Wi-Fi Specification | 802.11a/b/g/n/ac |
| Bluetooth Specification | v4.1 Dual mode |
| NFC | 13.56MHz |
| GNSS Specification | GPS/GLONASS/BDS |
| 3GPP Specification | GSM 900/1800 WCDMA Band II/IV/V CDMA200 Band BC0/BC1 LTE Band 2/4/5/7/12/13/17/25/38/41 |
| Antenna Specification | Refer to Section 1.6 |
| Accessory | |
| Rechargeable Li-ion Battery | Model No.: CK65-BTSC Nominal Capacity: 7000mAh/25.2Wh Nominal Voltage: 3.6V |
| <p>Remark:</p> <p>The information of EUT was provided by the manufacturer, and the accuracy of the information shall be the responsibility of the manufacturer.</p> | |

1.5. Radio Specification under Testing

| | |
|---------------------|-------------------------------|
| UMTS Specification | |
| TX Frequency Range: | WCDMA Band II: 1850 ~ 1910MHz |
| RX Frequency Range: | WCDMA Band II: 1930 ~ 1990MHz |
| Support Power Class | PC3 |
| Modulation | BPSK, QPSK |

1.6. Description of Available Antennas

| Technology | Frequency Range (MHz) | Antenna Type | Max Peak Gain (dBi) |
|---|-----------------------|--------------|---------------------|
| WCDMA Band II | 1850 ~ 1910 | FPC | -0.59 |
| Note 1: All antenna information (Antenna type and Peak Gain) is provided by the manufacturer. | | | |
| Note 2: The typical antenna used to calculate the ERP (EIRP). | | | |

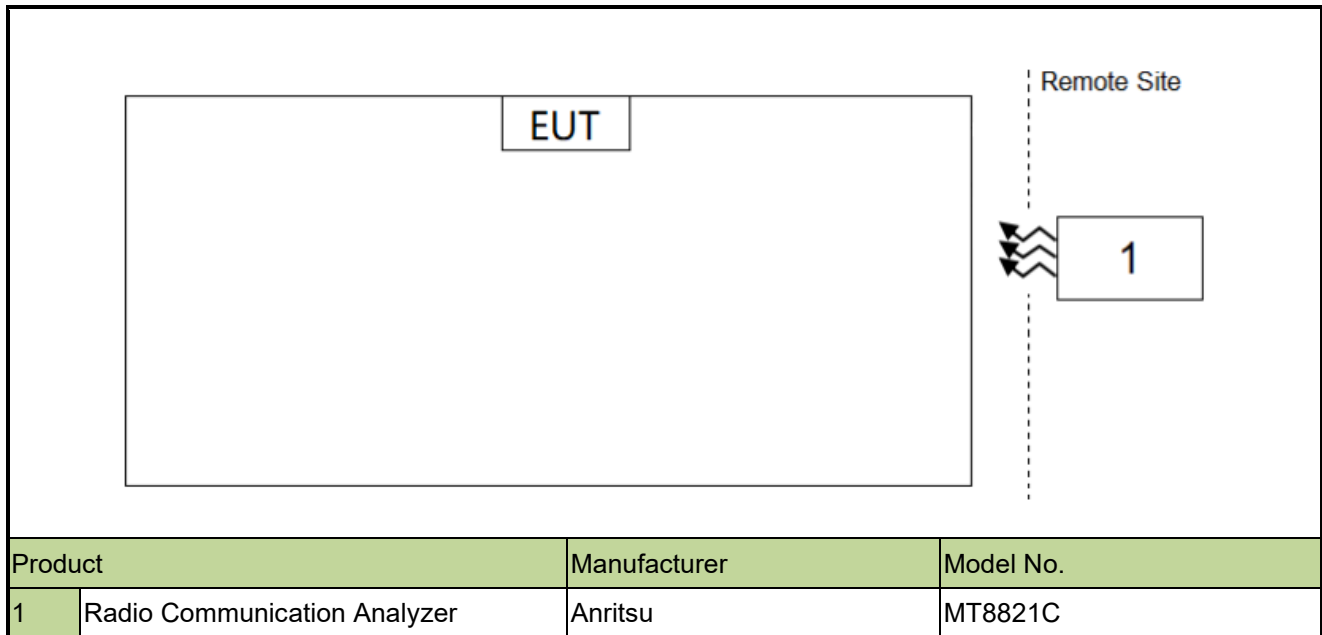
1.7. Test Methodology

According to the specifications of the manufacturer, the EUT must comply with the requirements of the following standards:

- ANSI C63.26:2015
- FCC CFR 47 Part 2, Part 24
- FCC KDB 971168 D01 v03r01: Power Meas License Digital Systems
- FCC KDB 971168 D02 v02r01: Misc Rev Approv License Devices
- FCC KDB 412172 D01 v01r01: Determining ERP and EIRP

2. Test Configuration

2.1. Test System Connection Diagram



2.2. Test Environment Condition

| | |
|---------------------|-------------|
| Ambient Temperature | 15 ~ 35°C |
| Relative Humidity | 20% ~ 75%RH |

3. Measuring Instrument

| Instrument | Manufacturer | Model No. | Asset No. | Cali. Interval | Cali. Due Date | Test Site |
|------------------------------|--------------|----------------|-------------|----------------|----------------|-----------|
| TRILOG Antenna | Schwarzbeck | VULB 9162 | MRTSUE06022 | 1 year | 2025-04-17 | WZ-AC2 |
| EMI Test Receiver | Agilent | N9038A | MRTSUE06125 | 1 year | 2025-05-08 | WZ-AC2 |
| Horn Antenna | Schwarzbeck | BBHA 9120D | MRTSUE06171 | 1 year | 2025-09-23 | WZ-AC2 |
| Preamplifier | Schwarzbeck | BBV 9718 | MRTSUE06176 | 1 year | 2025-05-06 | WZ-AC2 |
| Anechoic Chamber | RIKEN | WZ-AC2 | MRTSUE06213 | 1 year | 2025-04-18 | WZ-AC2 |
| Thermohygrometer | testo | 608-H1 | MRTSUE11263 | 1 year | 2025-10-16 | WZ-AC2 |
| Horn Antenna | Schwarzbeck | BBHA 9170 | MRTSUE06597 | 1 year | 2025-11-03 | WZ-AC2 |
| Preamplifier | EMCI | EMC184045SE | MRTSUE06640 | 1 year | 2025-01-11 | WZ-AC2 |
| Preamplifier | EMCI | EMC051845SE | MRTSUE06987 | 1 year | 2025-09-06 | WZ-AC2 |
| Active Loop Antenna | Schwarzbeck | FMZB 1519-60 D | MRTSUE07076 | 1 year | 2024-12-04 | WZ-AC2 |
| Radio Communication Analyzer | Anritsu | MT8821C | MRTSUE06960 | 1 year | 2025-06-18 | WZ-AC2 |
| Thermohygrometer | testo | 608-H1 | MRTSUE06362 | 1 year | 2025-02-04 | WZ-SR6 |
| Shielding Room | HUAMING | WZ-SR6 | MRTSUE06443 | N/A | N/A | WZ-SR6 |
| Radio Communication Analyzer | Anritsu | MT8821C | MRTSUE06960 | 1 year | 2025-06-18 | WZ-SR6 |
| Signal Analyzer | Keysight | N9010B | MRTSUE06607 | 1 year | 2025-10-13 | WZ-SR6 |
| Directional Coupler | narda | 4226-10 | MRTSUE06562 | 1 year | 2025-10-24 | WZ-SR6 |
| Attenuator | MVE | MVE2213 | MRTSUE11093 | 1 year | 2025-06-05 | WZ-SR6 |
| USB Power Sensor | Keysight | U2021XA | MRTSUE06446 | 1 year | 2025-05-08 | WZ-SR6 |

| Software | Version | Function |
|--------------------|---------------|------------------------|
| e3 | 230711 | RE & CE |
| Controller_MF 7802 | 1.02 | RE Antenna & Turntable |
| UCTS | V 6.24.0705.0 | license 3G & 4G & 5G |

4. Decision Rules and Measurement Uncertainty

4.1. Decision Rules

The Decision Rule is based on Simple Acceptance in accordance with ISO Guide 98-4: 2012 Clause 8.2.
(Measurement uncertainty is not taken into account when stating conformity with a specified requirement.)

4.2. Measurement Uncertainty

Where relevant, the following test uncertainty levels have been estimated for tests performed on the EUT as specified in CISPR 16-4-2. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k = 2$.

| Radiated Spurious Emissions | |
|---|----------------------|
| Measurement Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): | |
| Coaxial: | 9kHz~30MHz: 2.35dB |
| Coplanar: | 9kHz~30MHz: 2.37dB |
| Horizontal: | 30MHz~200MHz: 3.46dB |
| | 200MHz~1GHz: 3.78dB |
| | 1GHz~40GHz: 4.97dB |
| Vertical: | 30MHz~200MHz: 4.07dB |
| | 200MHz~1GHz: 5.28dB |
| | 1GHz~40GHz: 4.78dB |
| Transmitter Output Power | |
| Measuring Uncertainty for a Level of Confidence of 95% ($U=2U_c(y)$): | |
| 0.66dB | |

5. Test Result

5.1. Summary

| FCC Part Section(s) | Test Description | Test Condition | Test Result |
|---------------------|--|----------------|-------------|
| 24.232(c) | Transmitter Output Power | Conducted | Pass |
| 2.1051, 24.238(a) | Transmitter unwanted emissions (band-edge) | | Pass |
| 2.1053, 24.238(a) | Transmitter Spurious Emissions | Radiated | Pass |

Notes:

- 1) The analyzer plots shown in this section were all taken with a correction table loaded into the analyzer. The correction table was used to account for the losses of the cables and attenuators used as part of the system to connect the EUT to the analyzer at all frequencies of interest.
- 2) All supported modulation types were evaluated. The worst-case emission of modulation was selected. The power of HSDPA/HSUPA is lower than that of WCDMA. Therefore, the Transmitter unwanted emissions (band-edge), Transmitter Spurious Emissions were presented worst-case in the test report.
- 3) For radiated emission tests, every axis (X, Y, Z) was also verified. The test results shown in the following sections represent the worst-case emissions.

5.2. Transmitter Output Power Measurement

5.2.1. Test Limit

WCDMA Band II:

Mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

5.2.2. Test Procedure

ANSI C63.26-2015 - Section 5.2.4.2

5.2.3. Test Setting

Average power measurements were performed only when the EUT was transmitting at its maximum power control level using a broadband power meter with a pulse sensor. The power meter implemented triggering and gating capabilities which were set up such that power measurements were recorded only during the ON time of the transmitter.

The relevant equation for determining the maximum ERP or EIRP from the measured RF output power is given in Equation (1) as follows:

$$\text{ERP or EIRP} = P_{\text{Meas}} + G_T$$

where

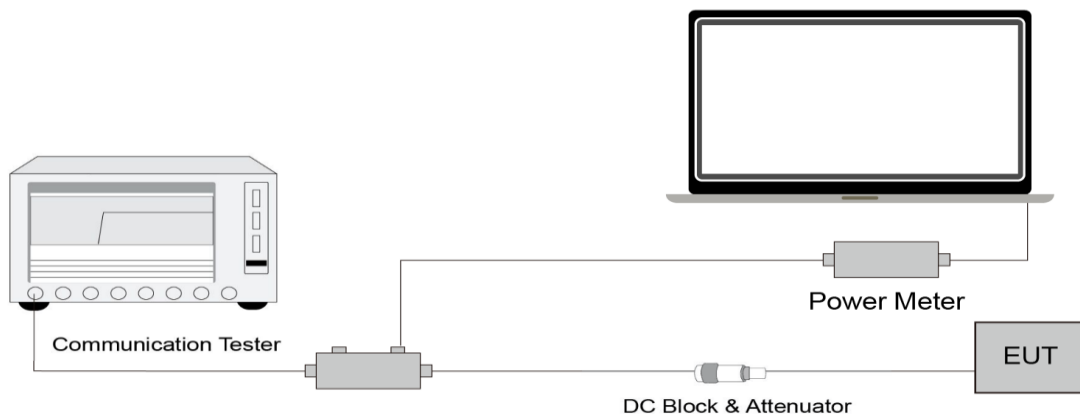
ERP or EIRP effective radiated power or equivalent isotropically radiated power, respectively (expressed in the same units as P_{Meas} , e.g., dBm or dBW)

P_{Meas} measured transmitter output power or PSD, in dBm or dBW

G_T gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP)

$$\text{ERP} = \text{EIRP} - 2.15$$

5.2.4. Test Setup



5.2.5. Test Result

Refer to Appendix A.1.

5.3. Transmitter unwanted emissions (band-edge) Measurement

5.3.1. Test Limit

24.238 (a)

For operations in the 1850 ~ 1910 MHz, the FCC limit is $43 + 10\log_{10}(P_{\text{[Watts]}})$ dB below the transmitter power $P(\text{Watts})$ in a 1 MHz bandwidth. However, in the 1MHz bands immediately outside and adjacent to the licensee's frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

5.3.2. Test Procedure

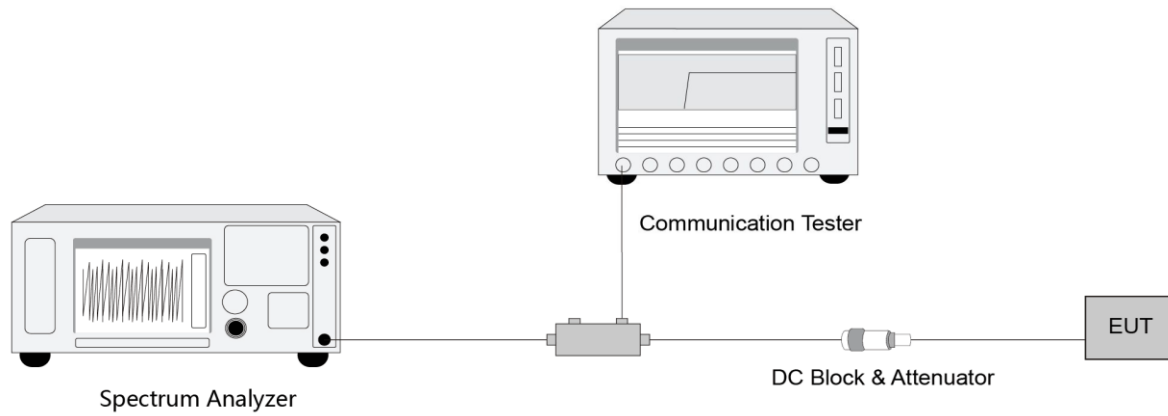
ANSI C63.26-2015 - Section 5.7

5.3.3. Test Setting

1. Set the analyzer frequency to Low or High channel
2. RBW = specified resolution bandwidth, for improvement of the accuracy in the measurement of the average power of a noise-like emission, a RBW narrower than the specified reference bandwidth can be used (generally limited to no less than 1% of the frequency block group, provided that a subsequent integration is performed over the full required measurement bandwidth. This integration should be performed using the spectrum analyzer's band power functions.
3. $VBW \geq 3 \cdot RBW$
4. Sweep time = auto
5. Detector = power averaging (rms)
6. If the EUT can be configured to transmit continuously, then set the trigger to free run
7. If the EUT cannot be configured to transmit continuously, 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. Verify that the sweep time is less than or equal to the transmission burst duration. Time gating can also be used under similar constraints
8. Trace average at least 100 traces in power averaging (rms) mode if sweep is set to auto-couple. To accurately determine the average power over the on and off time of the transmitter, it can be necessary to increase the number of traces to be averaged above 100, or if using a manually configured sweep time, increase the sweep time.
9. Compute the power by integrating the spectrum across the specified resolution bandwidth using the instrument's band or channel power measurement function, with the band/channel limits set equal to the

specified resolution bandwidth, when using a measurement bandwidth smaller than the specified bandwidth. Otherwise, Use the peak marker function to determine the maximum amplitude level.

5.3.4. Test Setup



5.3.5. Test Result

Refer to Appendix A.2.

5.4. Radiated Spurious Emissions Measurement

5.4.1. Test Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

$E \text{ (dB}\mu\text{V/m)} = \text{EIRP (dBm)} - 20 \log D + 104.8$; where D is the measurement distance in meters. The emission limit equal to 82.3dB μ V/m.

5.4.2. Test Procedure

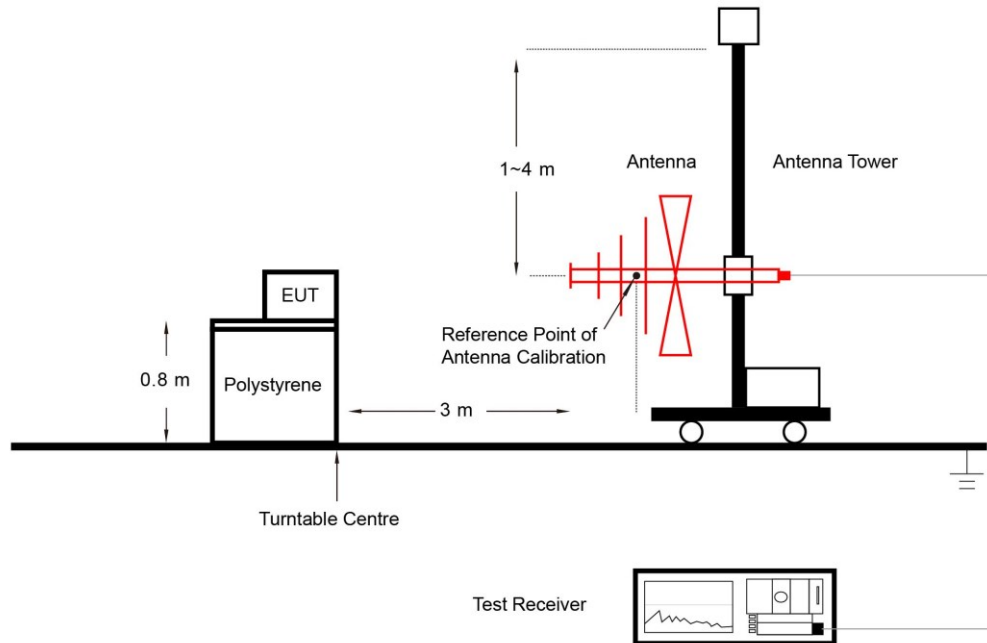
ANSI C63.26-2015 - Section 5.2.7 & 5.5

5.4.3. Test Setting

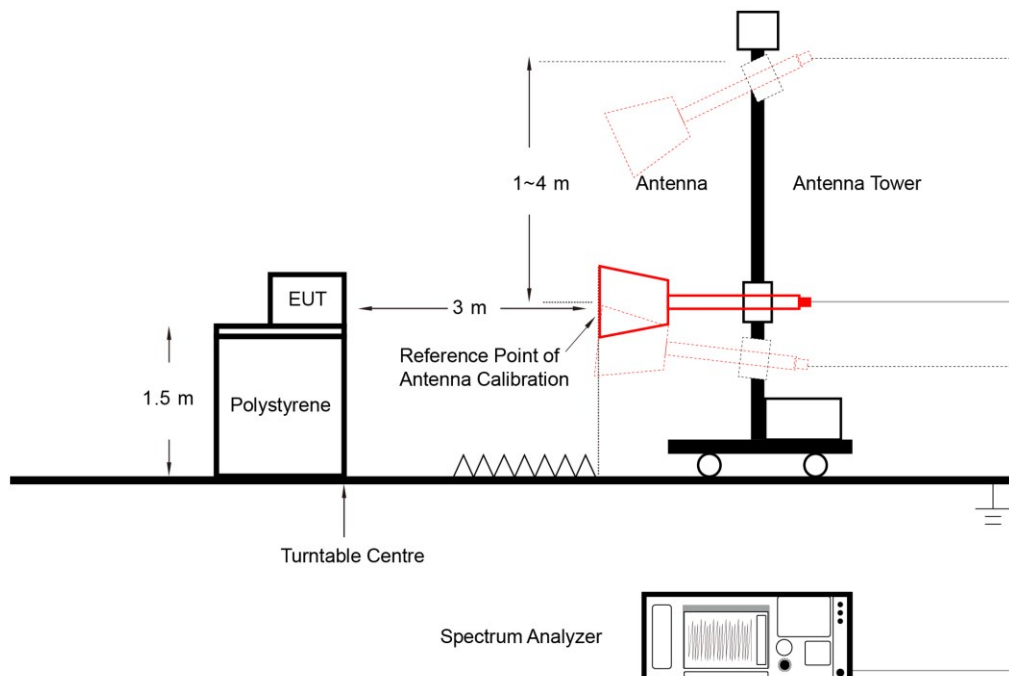
1. RBW = 120kHz or 1MHz
2. VBW $\geq 3 \times \text{RBW}$
3. Sweep time $\geq 10 \times (\text{number of points in sweep}) \times (\text{transmission symbol period})$
4. Detector = CISPR quasi-peak / average detector (Below 1 GHz, compliance with the limits shall be demonstrated using a CISPR quasi-peak detector and the related measurement bandwidth. Above 1 GHz, compliance with the limits shall be demonstrated using a linear average detector with a minimum resolution bandwidth of 1 MHz.)
5. The trace was allowed to stabilize

5.4.4. Test Setup

Below 1GHz Test Setup:



Above 1GHz Test Setup:



5.4.5. Test Result

Refer to Appendix A.3.

Appendix A - Test Result

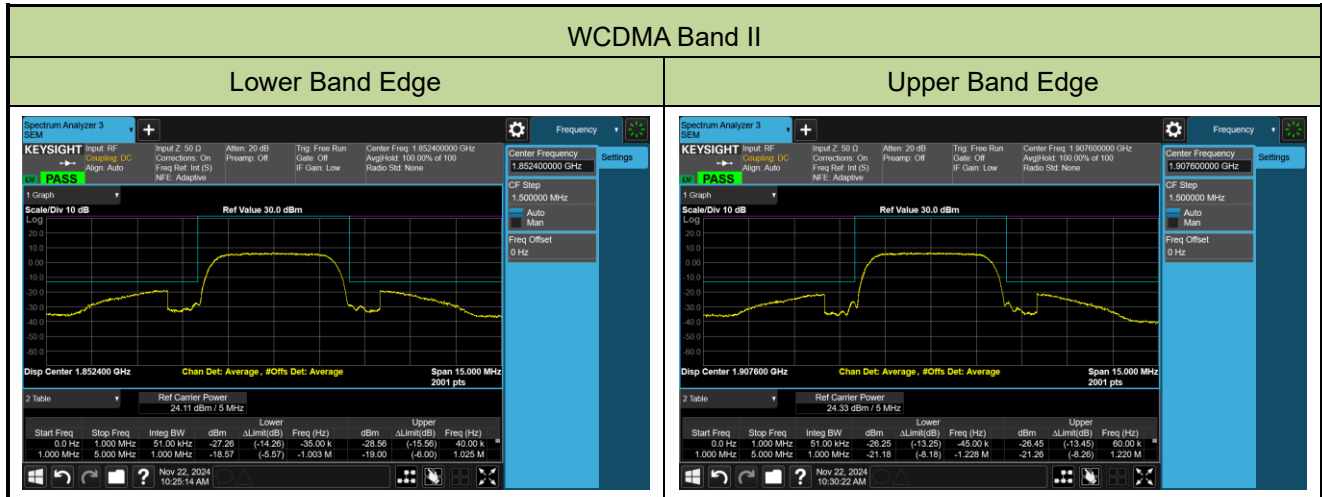
A.1 Transmitter Output Power Test Result

| | | | |
|-----------|------------|---------------|---------------|
| Test Site | WZ-SR6 | Test Engineer | Edith Yu |
| Test Date | 2024-11-21 | Test Band | WCDMA Band II |

| Mode | 3GPP Subtest | Conducted Power (dBm) | | | Antenna Gain (dBi) | EIRP (dBm) | | |
|--|--------------|-----------------------|--------|-------|--------------------|------------|--------|-------|
| | | Channel | | | | Channel | | |
| | | Low | Middle | High | | Low | Middle | High |
| WCDMA R99 | 1 | 23.98 | 24.16 | 24.08 | -0.59 | 23.39 | 23.57 | 23.49 |
| HSDPA | 1 | 23.02 | 23.19 | 23.15 | -0.59 | 22.43 | 22.60 | 22.56 |
| | 2 | 23.14 | 23.33 | 23.28 | -0.59 | 22.55 | 22.74 | 22.69 |
| | 3 | 22.58 | 22.80 | 22.78 | -0.59 | 21.99 | 22.21 | 22.19 |
| | 4 | 22.58 | 22.81 | 22.79 | -0.59 | 21.99 | 22.22 | 22.20 |
| HSUPA | 1 | 23.02 | 23.29 | 23.09 | -0.59 | 22.43 | 22.70 | 22.50 |
| | 2 | 21.09 | 21.34 | 21.28 | -0.59 | 20.50 | 20.75 | 20.69 |
| | 3 | 22.08 | 22.34 | 22.27 | -0.59 | 21.49 | 21.75 | 21.68 |
| | 4 | 21.18 | 21.42 | 21.25 | -0.59 | 20.59 | 20.83 | 20.66 |
| | 5 | 23.04 | 23.26 | 23.18 | -0.59 | 22.45 | 22.67 | 22.59 |
| Limit | 33.01dBm | | | | | | | |
| Note: The EIRP (dBm) = Output Power (dBm) + Antenna Gain (dBi) | | | | | | | | |

A.2 Transmitter unwanted emissions (band-edge) Test Result

| | | | |
|-----------|------------|---------------|---------------|
| Test Site | WZ-SR6 | Test Engineer | Edith Yu |
| Test Date | 2024-11-22 | Test Band | WCDMA Band II |



A.3 Radiated Spurious Emissions Test Result

| | | | |
|-----------|------------|---------------|---------------|
| Test Site | WZ-AC2 | Test Engineer | Lucas Wang |
| Test Date | 2024-11-25 | Test Band | WCDMA Band II |

| Frequency (MHz) | Reading Level (dBμV) | Factor (dB/m) | Measure Level (dBμV/m) | Limit (dBμV/m) | Margin (dB) | Detector | Polarization |
|--------------------|-------------------------|------------------|---------------------------|-------------------|----------------|------------|--------------|
| 46.878 | 1.1 | 20.4 | 21.5 | 82.3 | -60.8 | Quasi-Peak | Horizontal |
| 624.028 | -6.4 | 27.4 | 21.0 | 82.3 | -61.3 | Quasi-Peak | Horizontal |
| 48.624 | 10.7 | 20.5 | 31.2 | 82.3 | -51.1 | Quasi-Peak | Vertical |
| 114.681 | 14.6 | 17.6 | 32.2 | 82.3 | -50.1 | Quasi-Peak | Vertical |
| 3759.100 | 51.8 | -0.9 | 50.9 | 82.3 | -31.4 | Peak | Horizontal |
| 5642.700 | 45.7 | 3.7 | 49.4 | 82.3 | -32.9 | Peak | Horizontal |
| 3762.500 | 50.1 | -0.9 | 49.2 | 82.3 | -33.1 | Peak | Vertical |
| 5642.700 | 39.5 | 3.7 | 43.2 | 82.3 | -39.1 | Peak | Vertical |

Note1: Measure Level (dBμV/m) = Reading Level (dBμV) + Factor (dB/m)

Factor (dB/m) = Cable Loss (dB) + Antenna Factor (dB/m).

Note2: The peak-detection value will always be equal to or greater than average-detection value. In a result, the peak-detection value measured by spectrum analyzer shall represent the worst-case results.

Note 3: The amplitude of Radiated transmitter spurious emissions (Frequency range from 9kHz to 30MHz) is that proximity to ambient noise, which also are attenuated more than 20 dB below the permissible value.

Therefore, the data is not presented in the report.

Appendix B - Test Setup Photograph

Refer to “2410RSU065-UT” file.

Appendix C - EUT Photograph

Refer to “2410RSU065-UE” file.