

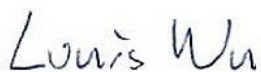


FCC RADIO TEST REPORT

FCC ID : B32V400M2
Equipment : Point of Sale Terminal
Brand Name : Verifone
Model Name : V400m-2
V400m Plus 4G WW2
Applicant : VeriFone, Inc.
1400 West Stanford Ranch Road
Suite 150 Rocklin CA 95765 USA
Manufacturer : VeriFone, Inc.
Standard : FCC Part 15 Subpart E §15.407

The product was received on Jul. 25, 2023 and testing was performed from Aug. 11, 2023 to Sep. 12, 2023. We, Sporton International Inc. Wensan Laboratory, would like to declare that the tested sample has been evaluated in accordance with the test procedures and has been in compliance with the applicable technical standards.

The test results in this partial report apply exclusively to the tested model / sample. Without written approval from Sporton International Inc. Wensan Laboratory, the test report shall not be reproduced except in full.



Approved by: Louis Wu

Sporton International Inc. Wensan Laboratory

No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.)



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History of this test report

| Report No. | Version | Description | Issue Date |
|------------|---------|---|---------------|
| FR372517F | 01 | Initial issue of report | Sep. 20, 2023 |
| FR372517F | 02 | Revise applicant and manufacturer information This report is an updated version, replacing the report issued on Sep. 20, 2023. | Sep. 26, 2023 |
| FR372517F | 03 | Revise model name, applicant and manufacturer information This report is an updated version, replacing the report issued on Sep. 26, 2023. | Oct. 11, 2023 |
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Summary of Test Result

| Report Clause | Ref Std. Clause | Test Items | Result (PASS/FAIL) | Remark |
|---------------|-----------------|--------------------------------|--------------------|---|
| 3.1 | 15.407(a) | Maximum Conducted Output Power | Pass | - |
| 3.2 | 15.407(b) | Unwanted Emissions | Pass | 9.50 dB under the limit at 11490.00 MHz |
| 3.3 | 15.203 | Antenna Requirement | Pass | - |

Conformity Assessment Condition:

1. The test results (PASS/FAIL) with all measurement uncertainty excluded are presented against the regulation limits or in accordance with the requirements stipulated by the applicant/manufacture who shall bear all the risks of non-compliance that may potentially occur if measurement uncertainty is taken into account.
2. The measurement uncertainty please refer to each test result in the section "Measurement Uncertainty".

Disclaimer:

1. The product specifications of the EUT presented in the test report that may affect the test assessments are declared by the manufacturer who shall take full responsibility for the authenticity.
2. The purpose of different model name is for marketing segmentation.

Reviewed by: Yun Huang
Report Producer: Ming Chen

1 General Description

1.1 Product Feature of Equipment Under Test

| Product Feature | | |
|---|-----------------|------|
| General Specs GSM/WCDMA/LTE, Bluetooth, Wi-Fi 2.4GHz 802.11b/g/n, Wi-Fi 5GHz 802.11a/n/ac and NFC. | | |
| Antenna Type WWAN: Fixed Internal Antenna WLAN: PCB Antenna Bluetooth: PCB Antenna NFC: Loop Antenna | | |
| Antenna information | | |
| 5725 MHz ~ 5850 MHz | Peak Gain (dBi) | 3.13 |

Remark: The EUT's information above is declared by manufacturer. Please refer to Disclaimer in report summary.

1.2 Modification of EUT

No modifications made to the EUT during the testing.

1.3 Testing Location

| | |
|---------------------------|--|
| Test Site | Sporton International Inc. Wensan Laboratory |
| Test Site Location | No.58, Aly. 75, Ln. 564, Wenhua 3rd, Rd., Guishan Dist., Taoyuan City 333010, Taiwan (R.O.C.) TEL: +886-3-327-0868 FAX: +886-3-327-0855 |
| Test Site No. | Sporton Site No. |
| | TH05-HY, 03CH22-HY |

Note: The test site complies with ANSI C63.4 2014 requirement.

FCC designation No.: TW3786



1.4 Applicable Standards

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

- ♦ FCC Part 15 Subpart E
- ♦ FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
- ♦ FCC KDB 414788 D01 Radiated Test Site v01r01.
- ♦ ANSI C63.10-2013

Remark:

1. All the test items were validated and recorded in accordance with the standards without any modification during the testing.
2. The TAF code is not including all the FCC KDB listed without accreditation.
3. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.



2 Test Configuration of Equipment Under Test

a. The EUT has been associated with peripherals and configuration operated in a manner tended to maximize its emission characteristics in a typical application. Frequency range investigated: radiation emission (9 kHz to the 10th harmonic of the highest fundamental frequency or to 40 GHz, whichever is lower).

2.1 Carrier Frequency and Channel

| Frequency Band | Channel | Freq. (MHz) | Channel | Freq. (MHz) |
|--------------------------------------|------------------|----------------|---------|----------------|
| 5725-5850 MHz Band 4 (U-NII-3) | 149 | 5745 | 157 | 5785 |
| | 151* | 5755 | 159* | 5795 |
| | 153 | 5765 | 161 | 5805 |
| | 155 [#] | 5775 | 165 | 5825 |

2.2 Test Mode

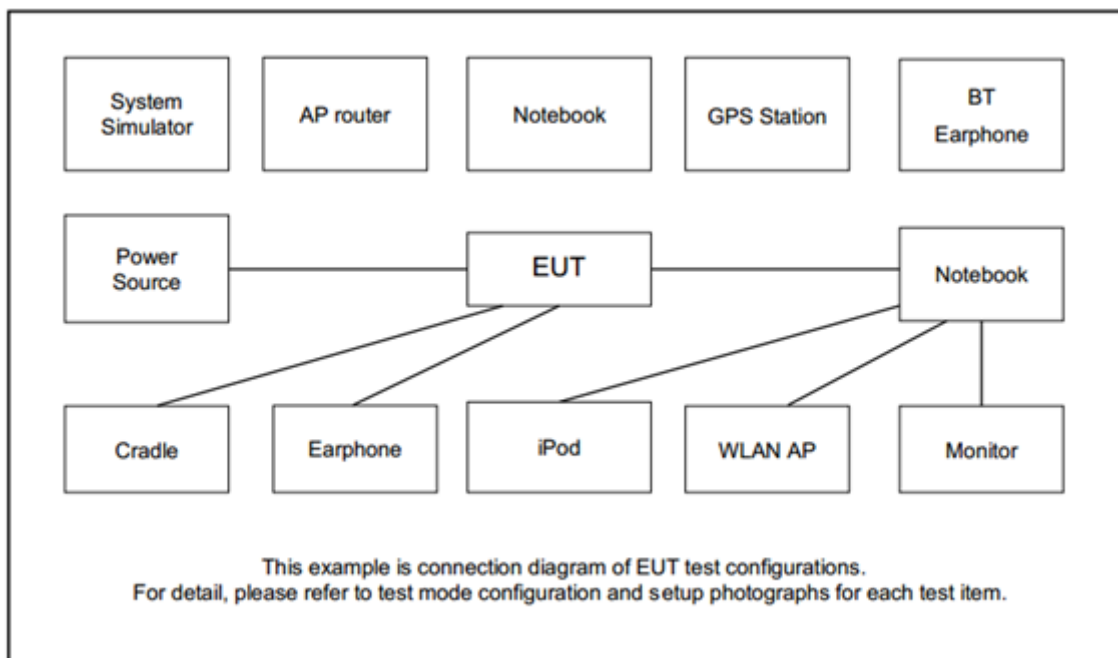
The final test modes include the worst data rates for each modulation shown in the table below.

| Modulation | Data Rate |
|--------------|-----------|
| 802.11a | 6 Mbps |
| 802.11n HT20 | MCS0 |

| Ch. # | | Band IV : 5725-5850 MHz |
|-------|--------|-------------------------|
| | | 802.11n HT20 |
| L | Low | 149 |
| M | Middle | - |
| H | High | - |

Remark: For Radiated Test Cases, the tests were performed with AC Adapter.

2.3 Connection Diagram of Test System





2.4 Support Unit used in test configuration and system

| Item | Equipment | Brand Name | Model Name | FCC ID | Data Cable | Power Cord |
|------|-----------|------------|------------|---------|------------|--|
| 1. | Notebook | Lenovo | MP2CWYZ | FCC DoC | N/A | AC I/P: Unshielded, 1.2 m DC O/P: Shielded, 1.8 m |

2.5 EUT Operation Test Setup

The RF test items, utility "Tera Term 4.105" was installed in Notebook which was programmed in order to make the EUT get into the engineering modes to provide channel selection, power level, data rate and the application type and for continuous transmitting signals.

3 Test Result

3.1 Maximum Conducted Output Power Measurement

3.1.1 Limit of Maximum Conducted Output Power

For the band 5.725–5.85 GHz, the maximum conducted output power over the frequency band of operation shall not exceed 1 W.

If transmitting antennas of directional gain greater than 6 dBi are used, the peak output power shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

3.1.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

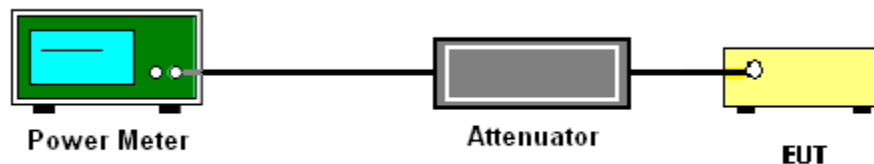
3.1.3 Test Procedures

The testing follows Method PM-G of FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.

Method PM-G (Measurement using a gated RF average power meter):

1. Measurement is performed using a wideband RF power meter.
2. The EUT is configured to transmit at its maximum power control level.
3. Measure the average power of the transmitter.
4. Since the measurement is made only during the ON time of the transmitter, no duty cycle correction factor is required.

3.1.4 Test Setup



3.1.5 Test Result of Maximum Conducted Output Power

Please refer to Appendix A.

3.2 Unwanted Emissions Measurement

This section is to measure unwanted emissions through radiated measurement for band edge spurious emissions and out of band emissions measurement.

3.2.1 Limit of Unwanted Emissions

- (1) For transmitters operating in the 5.725-5.85 GHz band:

15.407(b)(4)(i) All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.

- (2) Unwanted spurious emissions falls in restricted bands shall comply with the general field strength limits as below table,

| Frequency (MHz) | Field Strength (microvolts/meter) | Measurement Distance (meters) |
|-----------------|-----------------------------------|-------------------------------|
| 0.009 – 0.490 | 2400/F(kHz) | 300 |
| 0.490 – 1.705 | 24000/F(kHz) | 30 |
| 1.705 – 30.0 | 30 | 30 |
| 30 – 88 | 100 | 3 |
| 88 – 216 | 150 | 3 |
| 216 - 960 | 200 | 3 |
| Above 960 | 500 | 3 |

Note: The following formula is used to convert the EIRP to field strength.

$$E = \frac{1000000\sqrt{30P}}{3} \text{ } \mu\text{V/m, where P is the eirp (Watts)}$$

| EIRP (dBm) | Field Strength at 3m (dBμV/m) |
|------------|-------------------------------|
| - 27 | 68.3 |

- (3) KDB789033 D02 v02r01 G)2)c)

(i) Sections 15.407(b)(1-3) specifies the unwanted emissions limit for the U-NII-1 and U-NII-2 bands. As specified, emissions above 1000 MHz that are outside of the restricted bands are subject to a peak emission limit of -27 dBm/MHz.

(ii) Section 15.407(b)(4) specifies the unwanted emissions limit for the U-NII-3 band. A band emissions mask is specified in Section 15.407(b)(4)(i). The emission limits are based on the use of a peak detector.



3.2.2 Measuring Instruments

Please refer to the measuring equipment list in this test report.

3.2.3 Test Procedures

1. The testing follows FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01.
Section G) Unwanted emissions measurement.
(1) Procedure for Unwanted Emissions Measurements Below 1000 MHz
 - RBW = 120 kHz
 - VBW = 300 kHz
 - Detector = Peak
 - Trace mode = max hold
(2) Procedure for Peak Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW \geq 3 MHz
 - Detector = Peak
 - Sweep time = auto
 - Trace mode = max hold
(3) Procedures for Average Unwanted Emissions Measurements Above 1000 MHz
 - RBW = 1 MHz
 - VBW = 10 Hz, when duty cycle is no less than 98 percent.
 - VBW \geq 1/T, when duty cycle is less than 98 percent where T is the minimum transmission duration over which the transmitter is on and is transmitting at its maximum power control level for the tested mode of operation.
2. The EUT is placed on a turntable with 0.8 meter for frequency below 1 GHz and 1.5 meter for frequency above 1 GHz respectively above ground.
3. The EUT is set 3 meters away from the receiving antenna which is mounted on the top of a variable height antenna tower.
4. The antenna is a broadband antenna and its height is adjusted between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
5. For each suspected emission, the EUT is arranged to its worst case and then adjust the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
6. Radiated testing below 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading.
When there is no suspected emission found and the emission level is with at least 6 dB margin

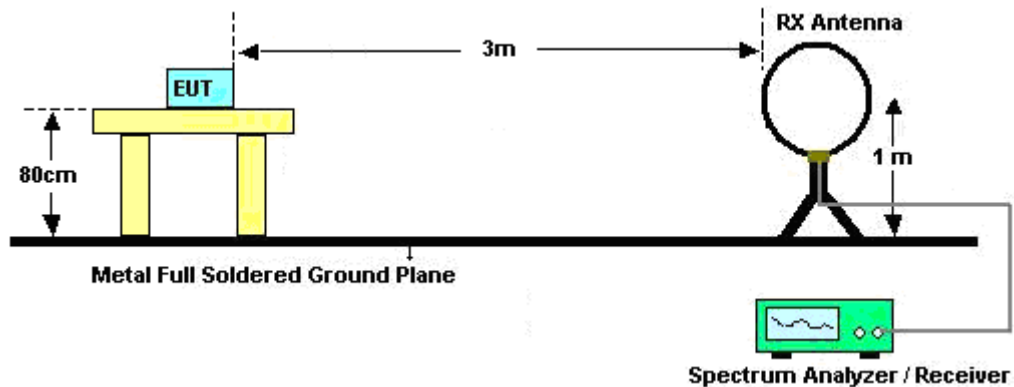
against QP limit line, the position is marked as “-”.

7. Radiated testing above 1 GHz is performed by adjusting the antenna tower from 1 m to 4 m and by rotating the turn table from 0 degree to 360 degrees to find the peak maximum hold reading for scanning all frequencies.

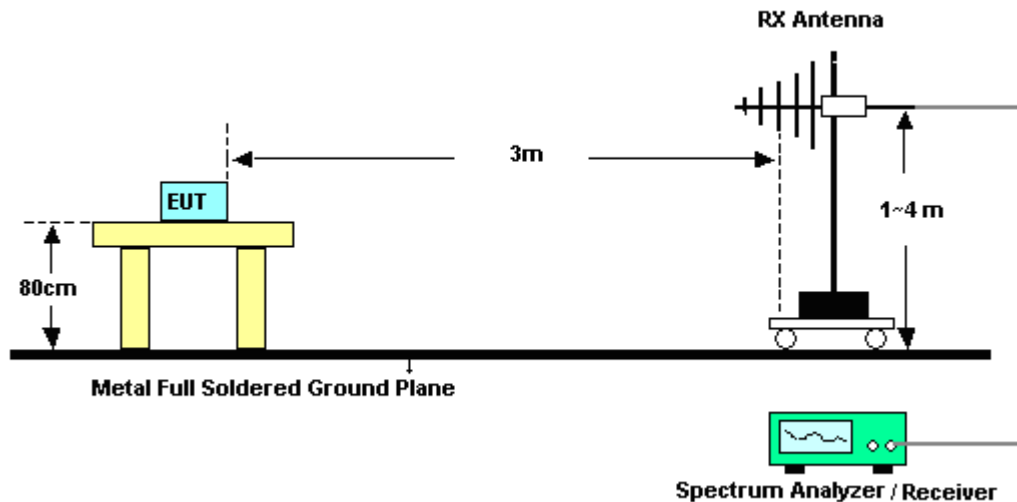
When there is no suspected emission found and the harmonic emission level is with at least 6 dB margin against average limit line, the position is marked as “-”.

3.2.4 Test Setup

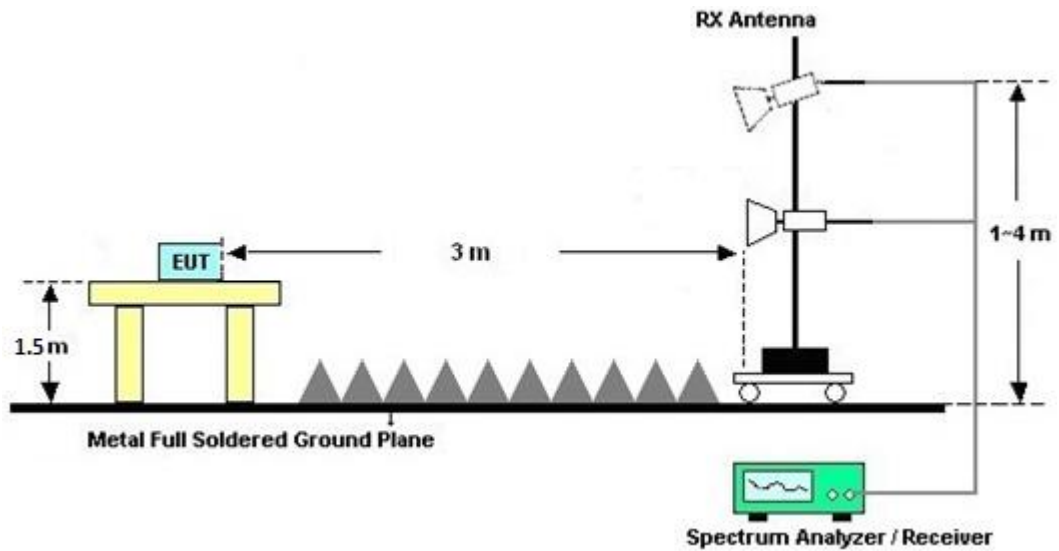
For radiated emissions below 30MHz



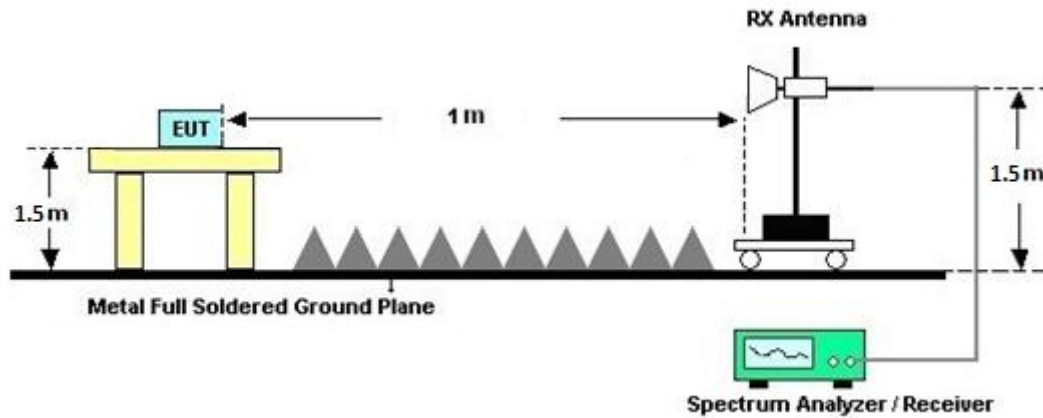
For radiated emissions from 30MHz to 1GHz



For radiated test from 1GHz to 18GHz



For radiated test above 18GHz





3.2.5 Test Results of Radiated Emissions (9 kHz ~ 30 MHz)

The low frequency, which starts from 9 kHz to 30 MHz, is pre-scanned and the result which is 20 dB lower than the limit line is not reported.

There is adequate comparison measurement of both open-field test site and alternative test site - semi-Anechoic chamber according to 414788 D01 Radiated Test Site v01r01, and the result came out very similar.

3.2.6 Test Result of Radiated Band Edges

Please refer to Appendix B and C.

3.2.7 Duty Cycle

Please refer to Appendix D.

3.2.8 Test Result of Unwanted Radiated Emission (30MHz ~ 10th Harmonic)

Please refer to Appendix B and C.



3.3 Antenna Requirements

3.3.1 Standard Applicable

The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the rule.

3.3.2 Antenna Anti-Replacement Construction

An embedded-in antenna design is used.



4 List of Measuring Equipment

| Instrument | Brand Name | Model No. | Serial No. | Characteristics | Calibration Date | Test Date | Due Date | Remark |
|----------------------------|-----------------|---------------------------|------------------------------------|-------------------------------|------------------|---------------------------------|---------------|-----------------------|
| Bilog Antenna with 6dB pad | TESEQ & WOKEN | CBL 6111D & 00802N1D-06 | 63304 & 002 | N/A | Oct. 04, 2022 | Aug. 22, 2023~ Aug. 24, 2023 | Oct. 03, 2023 | Radiation (03CH22-HY) |
| Amplifier | SONOMA | 310N | 421581 | N/A | Jul. 15, 2023 | Aug. 22, 2023~ Aug. 24, 2023 | Jul. 14, 2024 | Radiation (03CH22-HY) |
| Horn Antenna | RFSPIN | DRH18-E | LE2C04A18E N | 1GHz~18GHz | Jul. 12, 2023 | Aug. 22, 2023~ Aug. 24, 2023 | Jul. 11, 2024 | Radiation (03CH22-HY) |
| SHF-EHF Horn Antenna | SCHWARZBECK | BBHA 9170 | 1224 | 18GHz-40GHz | Jul. 10, 2023 | Aug. 22, 2023~ Aug. 24, 2023 | Jul. 09, 2024 | Radiation (03CH22-HY) |
| Amplifier | EMEC | EM01G18GA | 060877 | N/A | Sep. 29, 2022 | Aug. 22, 2023~ Aug. 24, 2023 | Sep. 28, 2023 | Radiation (03CH22-HY) |
| Preamplifier | EMEC | EM18G40G | 060872 | 18-40GHz | Sep. 28, 2022 | Aug. 22, 2023~ Aug. 24, 2023 | Sep. 27, 2023 | Radiation (03CH22-HY) |
| Signal Analyzer | Keysight | N9010B | MY62170278 | 10Hz~44GHz | Aug. 31, 2023 | Aug. 22, 2023~ Aug. 24, 2023 | Aug. 30, 2024 | Radiation (03CH22-HY) |
| Hygrometer | TECPEL | DTM-303A | TP211469 | N/A | Jan. 06, 2023 | Aug. 22, 2023~ Aug. 24, 2023 | Jan. 05, 2024 | Radiation (03CH22-HY) |
| Controller | EMEC | EM1000 | N/A | Control Turn table & Ant Mast | N/A | Aug. 22, 2023~ Aug. 24, 2023 | N/A | Radiation (03CH22-HY) |
| Antenna Mast | ChainTek | MBS-520-1 | N/A | 1m~4m | N/A | Aug. 22, 2023~ Aug. 24, 2023 | N/A | Radiation (03CH22-HY) |
| Turn Table | ChainTek | T-200-S-1 | N/A | 0~360 Degree | N/A | Aug. 22, 2023~ Aug. 24, 2023 | N/A | Radiation (03CH22-HY) |
| Software | Audix | E3 6.09824_2019 122 | RK-002347 | N/A | N/A | Aug. 22, 2023~ Aug. 24, 2023 | N/A | Radiation (03CH22-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 102 | 803951/2 | 9kHz~30MHz | Mar. 07, 2023 | Aug. 22, 2023~ Aug. 24, 2023 | Mar. 06, 2024 | Radiation (03CH22-HY) |
| RF Cable | HUBER + SUHNER | SUCOFLEX 102 | 804390/2,804 611/2,804615/ 2 | N/A | Oct. 25, 2022 | Aug. 22, 2023~ Aug. 24, 2023 | Oct. 24, 2023 | Radiation (03CH22-HY) |
| Hygrometer | TECPEL | DTM-303A | TP201996 | N/A | Nov. 17, 2022 | Sep. 11, 2023~ Sep. 12, 2023 | Nov. 16, 2023 | Conducted (TH05-HY) |
| Power Sensor | DARE | RPR3006W | 16I00054SNO 12 (NO:113) | 10MHz~6GHz | Dec. 13, 2022 | Sep. 11, 2023~ Sep. 12, 2023 | Dec. 12, 2023 | Conducted (TH05-HY) |
| Signal Analyzer | Rohde & Schwarz | FSV40 | 101565 | 10Hz ~ 40GHz | Dec. 26, 2022 | Sep. 11, 2023~ Sep. 12, 2023 | Dec. 25, 2023 | Conducted (TH05-HY) |



5 Measurement Uncertainty

Uncertainty of Radiated Emission Measurement (30 MHz ~ 1000 MHz)

| | |
|---|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$) | 5.92 dB |
|---|---------|

Uncertainty of Radiated Emission Measurement (1000 MHz ~ 6000 MHz)

| | |
|---|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$) | 4.42 dB |
|---|---------|

Uncertainty of Radiated Emission Measurement (6000 MHz ~ 18000 MHz)

| | |
|---|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$) | 4.40 dB |
|---|---------|

Uncertainty of Radiated Emission Measurement (18000 MHz ~ 40000 MHz)

| | |
|---|---------|
| Measuring Uncertainty for a Level of Confidence of 95% ($U = 2U_c(y)$) | 5.38 dB |
|---|---------|

Appendix A. Test Result of Conducted Test Items

| | | | | |
|----------------|---------------------|--------------------|-------|----|
| Test Engineer: | Shiming Liu | Temperature: | 21~25 | °C |
| Test Date: | 2023/9/11~2023/9/12 | Relative Humidity: | 51~54 | % |

TEST RESULTS DATA
Average Power Table

| U-NII-3 single antenna | | | | | | | | | | | | |
|------------------------|-----------|-----|-----|-------------|-------------------------------|-------|-----|---------------------------------|-------|----------|-------|-----------|
| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Average Conducted Power (dBm) | | | FCC Conducted Power Limit (dBm) | | DG (dBi) | | Pass/Fail |
| | | | | | Ant 1 | Ant 2 | SUM | Ant 1 | Ant 2 | Ant 1 | Ant 2 | |
| 11a | 6Mbps | 1 | 149 | 5745 | 11.90 | - | | 30.00 | - | 3.13 | - | Pass |
| 11a | 6Mbps | 1 | 157 | 5785 | 11.80 | - | | 30.00 | - | 3.13 | - | Pass |
| 11a | 6Mbps | 1 | 165 | 5825 | 11.70 | - | | 30.00 | - | 3.13 | - | Pass |
| HT20 | MCS0 | 1 | 149 | 5745 | 11.60 | - | | 30.00 | - | 3.13 | - | Pass |
| HT20 | MCS0 | 1 | 157 | 5785 | 11.80 | - | | 30.00 | - | 3.13 | - | Pass |
| HT20 | MCS0 | 1 | 165 | 5825 | 11.60 | - | | 30.00 | - | 3.13 | - | Pass |
| HT40 | MCS0 | 1 | 151 | 5755 | 11.50 | - | | 30.00 | - | 3.13 | - | Pass |
| HT40 | MCS0 | 1 | 159 | 5795 | 11.90 | - | | 30.00 | - | 3.13 | - | Pass |
| VHT80 | MCS0 | 1 | 155 | 5775 | 9.00 | - | | 30.00 | - | 3.13 | - | Pass |

TEST RESULTS DATA
Power Spectral Density

| Band IV single antenna | | | | | | | | | | | | |
|------------------------|-----------|-----|-----|-------------|----------------------------------|-------|-----|------------------------------|-------|----------|-------|------------|
| Mod. | Data Rate | NTX | CH. | Freq. (MHz) | Average Power Density (dBm/3kHz) | | | Average PSD Limit (dBm/3kHz) | | DG (dBi) | | Pass /Fail |
| | | | | | Ant 1 | Ant 2 | SUM | Ant 1 | Ant 2 | Ant 1 | Ant 2 | |
| 11a | 6Mbps | 1 | 149 | 5745 | -13.65 | - | | 14.00 | - | 3.13 | - | Pass |
| 11a | 6Mbps | 1 | 157 | 5785 | -13.58 | - | | 14.00 | - | 3.13 | - | Pass |
| 11a | 6Mbps | 1 | 165 | 5825 | -13.57 | - | | 14.00 | - | 3.13 | - | Pass |
| HT20 | MCS0 | 1 | 149 | 5745 | -13.65 | - | | 14.00 | - | 3.13 | - | Pass |
| HT20 | MCS0 | 1 | 157 | 5785 | -13.50 | - | | 14.00 | - | 3.13 | - | Pass |
| HT20 | MCS0 | 1 | 165 | 5825 | -13.15 | - | | 14.00 | - | 3.13 | - | Pass |
| HT40 | MCS0 | 1 | 151 | 5755 | -16.81 | - | | 14.00 | - | 3.13 | - | Pass |
| HT40 | MCS0 | 1 | 159 | 5795 | -16.40 | - | | 14.00 | - | 3.13 | - | Pass |
| VHT80 | MCS0 | 1 | 155 | 5775 | -21.94 | - | | 14.00 | - | 3.13 | - | Pass |



Appendix B. Radiated Spurious Emission

| | | | |
|-----------------|-------------------------|---------------------|-------------|
| Test Engineer : | Bank Lin and Lu Wen Kai | Temperature : | 20.1~23.1°C |
| | | Relative Humidity : | 55~65% |

Band 4 5725~5850MHz

WIFI 802.11n HT20 (Band Edge @ 3m)

| WIFI Ant. 1 | Note | Frequency (MHz) | Level (dBμV/m) | Margin (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) |
|--------------------------------------|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-------------------------|-----------------|
| 802.11n HT20 CH 149 5745MHz | | 5649.5 | 52.54 | -15.66 | 68.2 | 39.2 | 33.5 | 14.32 | 34.48 | 100 | 61 | P | H |
| | | 5699 | 60.56 | -43.9 | 104.46 | 47.04 | 33.7 | 14.36 | 34.54 | 100 | 61 | P | H |
| | | 5718.8 | 75.19 | -35.27 | 110.46 | 61.57 | 33.81 | 14.37 | 34.56 | 100 | 61 | P | H |
| | | 5723.975 | 78.57 | -41.29 | 119.86 | 64.92 | 33.84 | 14.38 | 34.57 | 100 | 61 | P | H |
| | * | 5745 | 111.13 | - | - | 97.36 | 33.97 | 14.39 | 34.59 | 100 | 61 | P | H |
| | * | 5745 | 104.18 | - | - | 90.41 | 33.97 | 14.39 | 34.59 | 100 | 61 | A | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | 5627.675 | 52.07 | -16.13 | 68.2 | 38.85 | 33.37 | 14.31 | 34.46 | 100 | 355 | P | V |
| | | 5699.9 | 58.47 | -46.66 | 105.13 | 44.95 | 33.7 | 14.36 | 34.54 | 100 | 355 | P | V |
| | | 5717.9 | 71.04 | -39.17 | 110.21 | 57.42 | 33.81 | 14.37 | 34.56 | 100 | 355 | P | V |
| | | 5724.875 | 75.09 | -46.83 | 121.92 | 61.43 | 33.85 | 14.38 | 34.57 | 100 | 355 | P | V |
| | * | 5745 | 108.69 | - | - | 94.92 | 33.97 | 14.39 | 34.59 | 100 | 355 | P | V |
| | * | 5745 | 101.79 | - | - | 88.02 | 33.97 | 14.39 | 34.59 | 100 | 355 | A | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |

**Band 4 5725~5850MHz****WIFI 802.11n HT20 (Harmonic @ 3m)**

| WIFI Ant. 1 | Note | Frequency (MHz) | Level (dBμV/m) | Margin (dB) | Limit Line (dBμV/m) | Read Level (dBμV) | Antenna Factor (dB/m) | Path Loss (dB) | Preamp Factor (dB) | Ant Pos (cm) | Table Pos (deg) | Peak Avg. (P/A) | Pol. (H/V) |
|--|------|----------------------|---------------------|------------------|-----------------------------|---------------------------|-------------------------------|------------------------|----------------------------|----------------------|-------------------------|-----------------------|---------------|
| 802.11n HT20 CH 149 5745MHz | | 11490 | 55.27 | -18.73 | 74 | 35.63 | 38.98 | 20.13 | 40.14 | 100 | 61 | P | H |
| | | 11490 | 44.5 | -9.5 | 54 | 24.86 | 38.98 | 20.13 | 40.14 | 100 | 61 | A | H |
| | | 17235 | 55.06 | -13.14 | 68.2 | 35.2 | 40.57 | 25.09 | 46.25 | - | - | P | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | | | | | | | | | | | | H |
| | | 11490 | 55.66 | -18.34 | 74 | 36.02 | 38.98 | 20.13 | 40.14 | 100 | 205 | P | V |
| | | 11490 | 43.75 | -10.25 | 54 | 24.11 | 38.98 | 20.13 | 40.14 | 100 | 205 | A | V |
| | | 17235 | 55.87 | -12.33 | 68.2 | 36.01 | 40.57 | 25.09 | 46.25 | - | - | P | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |
| | | | | | | | | | | | | | V |



Note symbol

| | |
|-----|--|
| * | Fundamental Frequency which can be ignored. However, the level of any unwanted emissions shall not exceed the level of the fundamental frequency. |
| ! | Test result is Margin line. |
| P/A | Peak or Average |
| H/V | Horizontal or Vertical |



A calculation example for radiated spurious emission is shown as below:

| WIFI | Note | Frequency | Level | Margin | Limit | Read | Antenna | Path | Preamp | Ant | Table | Peak | Pol. |
|------------------------------|------|-----------|------------|--------|------------|----------|----------|--------|--------|--------|---------|---------|---------|
| Ant. | | | | | Line | Level | Factor | Loss | Factor | Pos | Pos | Avg. | |
| 1 | | (MHz) | (dBμV/m) | (dB) | (dBμV/m) | (dBμV) | (dB/m) | (dB) | (dB) | (cm) | (deg) | (P/A) | (H/V) |
| 802.11a CH 149 5745MHz | | 5650 | 55.45 | -12.75 | 68.2 | 54.51 | 32.22 | 4.58 | 35.86 | 103 | 308 | P | H |

1. Path Loss(dB) = Cable loss(dB) + Filter loss(dB) + Attenuator loss(dB)
2. Level(dBμV/m) = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
3. Margin (dB) = Level(dBμV/m) – Limit Line(dBμV/m)

For Peak Limit @ 5650MHz:

1. Level(dBμV/m)
 = Antenna Factor(dB/m) + Path Loss(dB) + Read Level(dBμV) - Preamp Factor(dB)
 = 32.22(dB/m) + 4.58(dB) + 54.51(dBμV) – 35.86 (dB)
 = 55.45 (dBμV/m)
2. Margin(dB)
 = Level(dBμV/m) – Limit Line(dBμV/m)
 = 55.45(dBμV/m) – 68.2(dBμV/m)
 = -12.75 (dB)

Both peak and average measured complies with the limit line, so test result is “PASS”.



Appendix B. Radiated Spurious Emission Plots

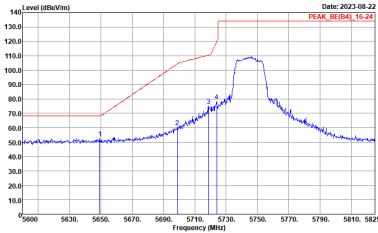
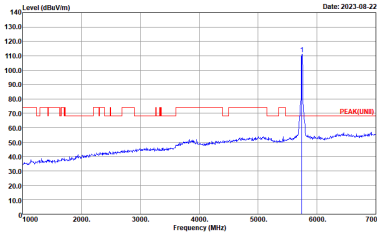
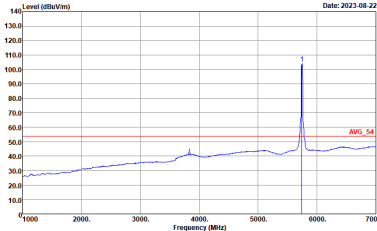
| | | | |
|------------------------|-------------------------|----------------------------|-------------|
| Test Engineer : | Bank Lin and Lu Wen Kai | Temperature : | 20.1~23.1°C |
| | | Relative Humidity : | 55~65% |

Note symbol

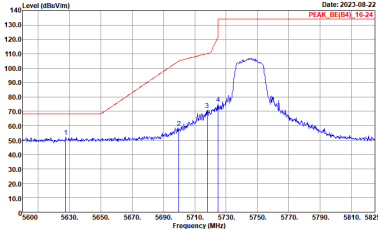
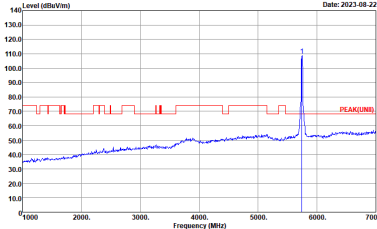
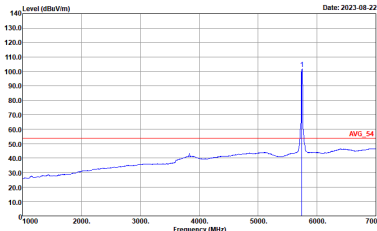
| | |
|----|-----------------------|
| -L | Low channel location |
| -R | High channel location |



Band 4 5725~5850MHz
WIFI 802.11n HT20 (Band Edge @ 3m)

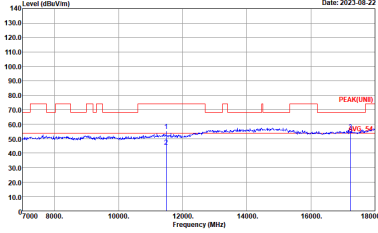
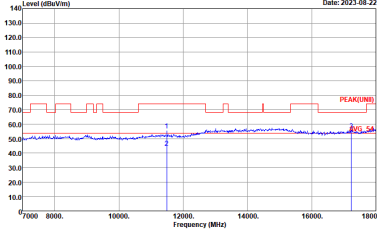
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|------|---|---|
| ANT | 802.11n HT20 CH149 5745MHz | |
| 1 | Horizontal | Fundamental |
| Peak |  <p>Site : 03CH22-I-HY Condition : PEAK_BE(84)_16-24 3m LE2004A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH22-I-HY Condition : PEAK(UNII) 3m LE2004A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg | Left blank |  <p>Site : 03CH22-I-HY Condition : AVG_54 3m LE2004A18EN_230712 HORIZONTAL : RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p> |



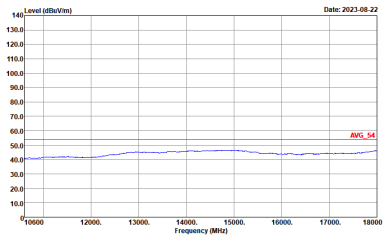
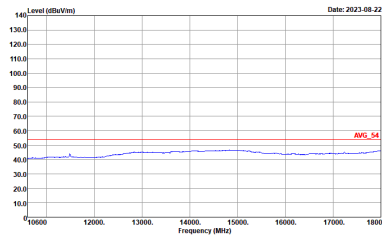
| WIFI | Band 4 5725~5850MHz Band Edge @ 3m | |
|------|---|---|
| ANT | 802.11n HT20 CH149 5745MHz | |
| 1 | Vertical | Fundamental |
| Peak |  <p>Site : 03CH22-HY Condition : PEAK_BE(B4)_16-24 3m LE2C04A18EN_230712 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |  <p>Site : 03CH22-HY Condition : PEAK(FUND) 3m LE2C04A18EN_230712 VERTICAL RBW:1000.000KHz VBW:3000.000KHz SWT:Auto</p> |
| Avg | Left blank |  <p>Site : 03CH22-HY Condition : AVG_54 3m LE2C04A18EN_230712 VERTICAL RBW:1000.000KHz VBW:0.010KHz SWT:Auto</p> |



Band 4 - 5725~5850MHz
WIFI 802.11n HT20 (Harmonic @ 3m)

| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
|--------------|---|--|
| ANT | 802.11n HT20 CH149 5745MHz | |
| 1 | Horizontal | Vertical |
| Peak Avg. |  <p>Site : 03CH22-HY Condition : PEAK(UM) 3m LE2C04A18EN_230712 HORIZONTAL</p> |  <p>Site : 03CH22-HY Condition : PEAK(UM) 3m LE2C04A18EN_230712 VERTICAL</p> |



| | | |
|-----------------------|---|--|
| WIFI | Band 4 5725~5850MHz Harmonic @ 3m | |
| ANT | 802.11n HT20 CH149 5745MHz | |
| 1 | Horizontal | Vertical |
| 10.6G ~18G Avg. | <div><p>Level (dBuV/m)</p><p>Date: 2023-08-22</p><p>Site : 03CH22-HY Condition : AVG_54 3m LE2004A18EN_230712 HORIZONTAL :</p></div> | <div><p>Level (dBuV/m)</p><p>Date: 2023-08-22</p><p>Site : 03CH22-HY Condition : AVG_54 3m LE2004A18EN_230712 VERTICAL :</p></div> |

Appendix C. Duty Cycle Plots

| Antenna | Band | Duty Cycle(%) | T(us) | 1/T(kHz) | VBW Setting |
|---------|-------------------|---------------|-------|----------|-------------|
| 1 | 5GHz 802.11n HT20 | 98.16 | - | - | 10Hz |

