# Test Report

| | |
|---|---|
| Product Name | Mobile Computer |
| Model No. | RS36 |
| FCC ID | Q3N-RS36 |

| | |
|---|---|
| Applicant | CipherLab Co., Ltd. |
| Address | 12F, 333, Dunhua S.Rd., Sec.2, Taipei, Taiwan |

| | |
|---|---|
| Date of Receipt | Oct. 13, 2022 |
| Issued Date | Apr. 11, 2023 |
| Report No. | 22A0299R-RFUSOTHV03-A |
| Report Version | V1.0 |

Testing Laboratory
3023

The test results relate only to the samples tested.
The test results shown in the test report are traceable to the national/international standard through the calibration report of the equipment and evaluated measurement uncertainty herein.
This report must not be used to claim product endorsement by TAF or any agency of the government.
The test report shall not be reproduced without the written approval of DEKRA Testing and Certification Co., Ltd.
Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

# Test Report

| | |
|---|---|
| Product Name | Mobile Computer |
| Applicant | CipherLab Co., Ltd. |
| Address | 12F, 333, Dunhua S.Rd., Sec.2, Taipei, Taiwan |
| Manufacturer | CIPHERLAB CO. LTD. |
| Model No. | RS36 |
| FCC ID | Q3N-RS36 |
| EUT Rated Voltage | AC 100-240V, 50-60Hz (Power by Adapter) or DC 3.85V (Power by Battery) |
| EUT Test Voltage | AC 120V, 60Hz |
| Trade Name | CIPHERLAB |
| Applicable Standard | FCC CFR Title 47 Part 15 Subpart C<br>ANSI C63.4: 2014, ANSI C63.10: 2013 |
| Test Result | Complied |

Documented By : April Chen

(Senior Project Specialist / April Chen)

Tested By : Ivan Chuang

( Senior Engineer / Ivan Chuang )

Approved By : Jack Hsu

( Senior Engineer / Jack Hsu )

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# Revision History

| Report No. | Version | Description | Issued Date |
|---|---|---|---|
| 22A0299R-RFUSOTHV03-A | V1.0 | Initial issue of report. | Apr. 11, 2023 |

# 1. General Information

## 1.1. EUT Description

| | |
|---|---|
| Product Name | Mobile Computer |
| Trade Name | CIPHERLAB |
| Model No. | RS36 |
| FCC ID | Q3N-RS36 |
| Frequency Range | 13.56MHz |
| Modulation | ASK |
| Antenna Type | Loop |
| Power Cable (Optional) | Trade Name: CIPHERLAB, M/N: RS35 SNAP ON, Non-shielded, 1.5m |
| Adapter #1<br>(Optional) | Trade Name: Sunny, M/N: SYS1561-1005<br>Input: AC 100-240V~, 1.0A MAX, 50-60Hz<br>Output: +5.0V⎓2.0A |
| Adapter #2<br>(Optional) | Trade Name: CWT, M/N: 2AEA010BC3D<br>Input: AC 100-240V~ 50/60Hz 0.35A<br>Output: 5.0V⎓2.0A 10.0W |

Frequency of Each Channel:

| Channel | Frequency<br>(MHz) |
|---|---|
| 1 | 13.56 |

Note:

1. This device is a Mobile Computer with a built-in 13.56 MHz transceiver.
2. These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with Part 15 Subpart C Paragraph 15.225.
3. The radiation measurements are performed in X, Y, Z axis positioning. Only the worst case is shown in the report.

| | | |
|---|---|---|
| Test Mode | Mode 1 | Transmit |

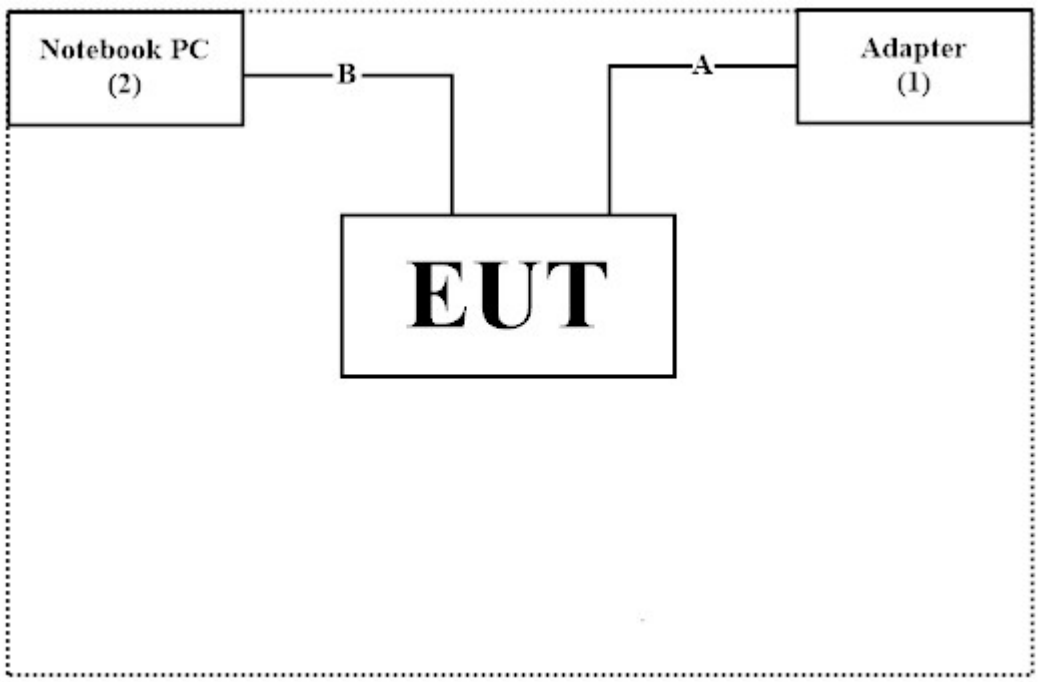
## 1.2. Tested System Datails

The types for all equipment, plus descriptions of all cables used in the tested system (including inserted cards) are:

| Product | | Manufacturer | Model No. | Serial No. | Power Cord |
|---|---|---|---|---|---|
| 1 | Adapter | Sunny | SYS1561-1005 | N/A | N/A |
| 2 | Notebook PC | DELL | Latitude E5440 | FS9TK32 | N/A |

| Cable Type | | Cable Description |
|---|---|---|
| A | Power Cable | Non-shielded, 1.5m |
| B | Type C Cable | Shielded, 1m |

## 1.3. Configuration of tested System




## 1.4. EUT Exercise Software

1. Setup the EUT as shown in Section 1.3.
2. Execute software ” HF RFID Configuration v11.0.17” on the Notebook PC.
3. Configure the test mode, the test channel.
4. Press “OK” to start the continuous transmit.
5. Verify that the EUT works properly.

## 1.5. Test Facility

Ambient conditions in the laboratory:

| Performed Item | Items | Required | Actual |
|---|---|---|---|
| Conducted Emission | Temperature (°C) | 10~40 ℃ | 23.4 ℃ |
| | Humidity (%RH) | 10~90 % | 55.2 % |
| Radiated Emission | Temperature (°C) | 10~40 ℃ | 24.2 ℃ |
| | Humidity (%RH) | 10~90 % | 62.5 % |
| Conductive | Temperature (°C) | 10~40 ℃ | 25.1 ℃ |
| | Humidity (%RH) | 10~90 % | 60.0 % |

USA : FCC Registration Number: TW0033

Canada : CAB Identifier Number: TW3023 / Company Number: 26930

Site Description : Accredited by TAF
Accredited Number: 3023

Test Laboratory : DEKRA Testing and Certification Co., Ltd
Address : No. 5-22, Ruishukeng Linkou District, New Taipei City, 24451, Taiwan
Performed Location : No. 26, Huaya 1st Rd., Guishan Dist.,Taoyuan City 333411, Taiwan, R.O.C.
Phone Number : +886-3-275-7255
Fax Number : +886-3-327-8031
Email Address : info.tw@dekra.com
Website : http://www.dekra.com.tw

## 1.6. List of Test Equipment

**For Conduction Measurements /HY-SR01**

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|---|---|---|---|---|---|
| V | EMI Test Receiver | R&S | ESR7 | 101601 | 2022/06/23 | 2023/06/22 |
| V | Two-Line V-Network | R&S | ENV216 | 101306 | 2022/05/23 | 2023/05/22 |
| V | Two-Line V-Network | R&S | ENV216 | 101307 | 2022/07/04 | 2023/07/03 |
| V | Coaxial Cable | SUHNER | RG400_BNC | RF001 | 2022/05/24 | 2023/05/23 |

Note:

1. All equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: E3 210616 dekra V9.

**For Radiated Measurements /HY-CB01**

| | Equipment | Manufacturer | Model No. | Serial No. | Cal. Date | Due Date |
|---|---|---|---|---|---|---|
| V | Loop Antenna | AMETEK | HLA6121 | 56736 | 2022/05/14 | 2023/05/13 |
| V | Bi-Log Antenna | SCHWARZBECK | VULB9168 | 9168-675 | 2021/08/11 | 2023/08/10 |
| | Horn Antenna | ETS-Lindgren | 3117 | 00203761 | 2021/11/25 | 2022/11/24 |
| | Horn Antenna | Com-Power | AH-840 | 101087 | 2022/06/16 | 2023/06/15 |
| V | Pre-Amplifier | SGH | SGH0301 | 20211007-7 | 2022/02/22 | 2023/02/21 |
| | Pre-Amplifier | EMCI | EMC051835SE | 980312 | 2022/02/22 | 2023/02/21 |
| | Pre-Amplifier | EMCI | EMC05820SE | 980362 | 2022/07/28 | 2023/07/27 |
| | Pre-Amplifier | EMCI | EMC184045SE | 980369 | 2022/05/12 | 2023/05/11 |
| | Coaxial Cable | EMCI | EMC102-KM-KM-600 | 1160314 | | |
| | Coaxial Cable | EMCI | EMC102-KM-KM-7000 | 170242 | | |
| | Filter | MICRO TRONICS | BRM50702 | G251 | 2022/07/27 | 2023/07/26 |
| | Filter | MICRO TRONICS | BRM50716 | G188 | 2022/07/27 | 2023/07/26 |
| V | EMI Test Receiver | R&S | ESR3 | 102792 | 2021/12/15 | 2022/12/14 |
| V | Spectrum Analyzer | R&S | FSV3044 | 101113 | 2022/01/25 | 2023/02/24 |
| V | Coaxial Cable | SUHNER | SUCOFLEX 106 | 25450/6 | 2022/03/22 | 2023/03/21 |
| | Coaxial Cable | SGH | HA800 | GD20110222-8 | | |
| | Coaxial Cable | SGH | SGH18 | 2021003-8 | | |
| | Coaxial Cable | EMCI | EMC106 | 151113 | | |

Note:

1. Bi-Log Antenna is calibrated every two years, the other equipments are calibrated every one year.
2. The test instruments marked with "V" are used to measure the final test results.
3. Test Software Version: E3 210616 dekra V9.

## 1.7. Uncertainty

Uncertainties have been calculated according to the DEKRA internal document, and is described in each test chapter of this report.

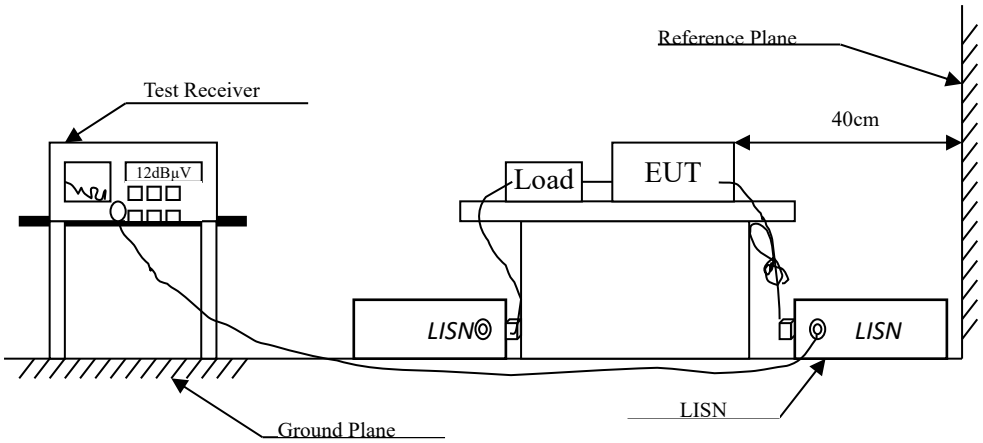
The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95%.

Measurement uncertainties evaluated for each testing system and associated connections are given here to provide the system information for reference. Compliance determinations do not take into account measurement uncertainties for each testing system, but are based on the results of the compliance measurement.

| **Test item** | **Uncertainty** | |
|---|---|---|
| Conducted Emission | ±3.42 dB | |
| Radiated Emission | Under 1 GHz<br>±4.06 dB | Above 1 GHz<br>±3.73 dB |
| Band Edge | Under 1 GHz<br>±4.06 dB | Above 1 GHz<br>±3.73 dB |
| Frequency Tolerance | ±682.83 Hz | |

## 2. Conducted Emission

### 2.1. Test Setup




### 2.2. Limits

| FCC Part 15 Subpart C Paragraph 15.207 (dBuV) Limit | | |
|---|---|---|
| Frequency MHz | Limits | |
| | QP | AV |
| 0.15 - 0.50 | 66-56(註) | 56-46(註) |
| 0.50-5.0 | 56 | 46 |
| 5.0 - 30 | 60 | 50 |

## 2.3. Test Procedure

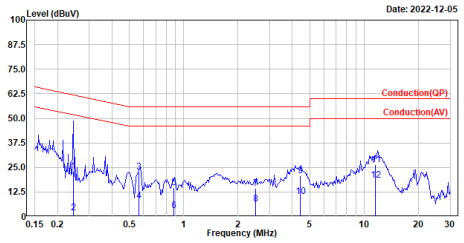
The EUT and simulators are connected to the main power through a line impedance stabilization network (L.I.S.N.). This provides a 50 ohm /50uH coupling impedance for the measuring equipment. The peripheral devices are also connected to the main power through a LISN that provides a 50ohm /50uH coupling impedance with 50ohm termination. (Please refers to the block diagram of the test setup and photographs.)

Both sides of A.C. line are checked for maximum conducted interference. In order to find the maximum emission, the relative positions of equipment and all of the interface cables must be changed according to ANSI C63.4: 2014 on conducted measurement.

Conducted emissions were invested over the frequency range from 0.15 MHz to 30 MHz using a receiver bandwidth of 9 kHz.

## 2.4. Test Result of Conducted Emission

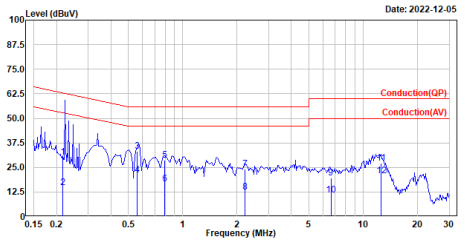
Site :HY-SR01
Condition :Line
Mode :13.56MHz_TX
test by :Shane




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 0.245 | 23.13 | 61.94 | -38.81 | 13.45 | 9.68 | QP |
| 2 | 0.245 | 1.94 | 51.94 | -50.00 | -7.74 | 9.68 | Average |
| 3 | 0.567 | 22.82 | 56.00 | -33.18 | 13.14 | 9.68 | QP |
| 4 | 0.567 | 7.79 | 46.00 | -38.21 | -1.89 | 9.68 | Average |
| 5 | 0.885 | 14.77 | 56.00 | -41.23 | 5.06 | 9.71 | QP |
| 6 | 0.885 | 2.85 | 46.00 | -43.15 | -6.86 | 9.71 | Average |
| 7 | 2.494 | 14.33 | 56.00 | -41.67 | 4.35 | 9.98 | QP |
| 8 | 2.494 | 6.23 | 46.00 | -39.77 | -3.75 | 9.98 | Average |
| 9 | 4.410 | 20.79 | 56.00 | -35.21 | 10.16 | 10.63 | QP |
| 10 | 4.410 | 10.28 | 46.00 | -35.72 | -0.35 | 10.63 | Average |
| 11 | 11.549 | 26.33 | 60.00 | -33.67 | 15.53 | 10.80 | QP |
| 12 | 11.549 | 18.43 | 50.00 | -31.57 | 7.63 | 10.80 | Average |

Note:
1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

Site :HY-SR01
Condition :Neutral
Mode :13.56MHz_TX
test by :Shane



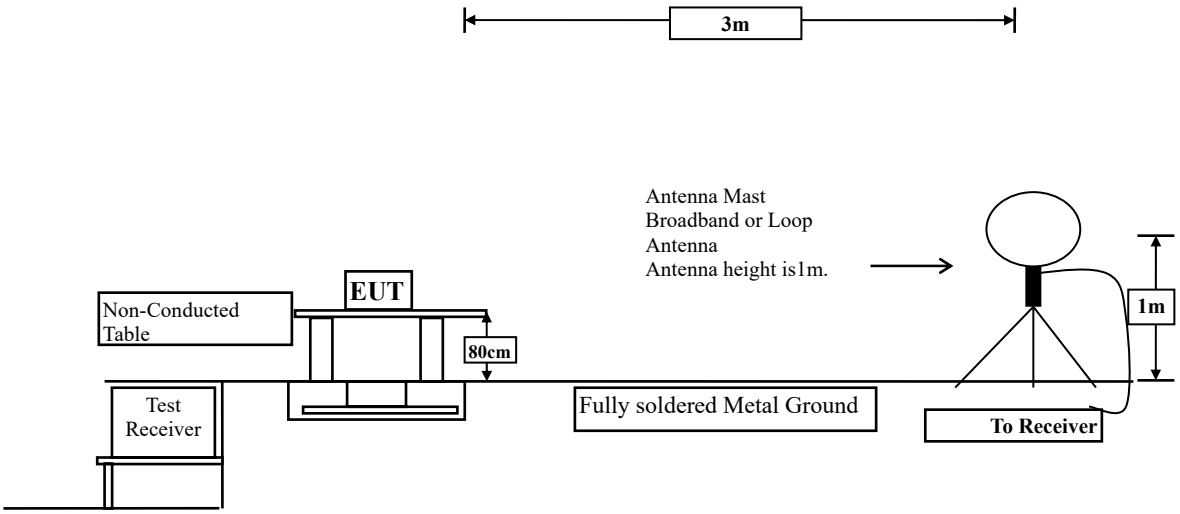

| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 0.217 | 30.02 | 62.92 | -32.90 | 20.36 | 9.66 | QP |
| 2 | 0.217 | 14.53 | 52.92 | -38.39 | 4.87 | 9.66 | Average |
| 3 | 0.559 | 33.08 | 56.00 | -22.92 | 23.42 | 9.66 | QP |
| 4 | 0.559 | 21.09 | 46.00 | -24.91 | 11.43 | 9.66 | Average |
| 5 | 0.797 | 28.63 | 56.00 | -27.37 | 18.94 | 9.69 | QP |
| 6 | 0.797 | 16.65 | 46.00 | -29.35 | 6.96 | 9.69 | Average |
| 7 | 2.220 | 24.13 | 56.00 | -31.87 | 14.26 | 9.87 | QP |
| 8 | 2.220 | 12.38 | 46.00 | -33.62 | 2.51 | 9.87 | Average |
| 9 | 6.622 | 19.77 | 60.00 | -40.23 | 8.95 | 10.82 | QP |
| 10 | 6.622 | 11.01 | 50.00 | -38.99 | 0.19 | 10.82 | Average |
| 11 | 12.523 | 27.27 | 60.00 | -32.73 | 16.45 | 10.82 | QP |
| 12 | 12.523 | 20.87 | 50.00 | -29.13 | 10.05 | 10.82 | Average |

Note:
1. Level = Read Level + Factor
2. Factor = LISN insertion loss + Cable loss
3. Over Limit = Level - Limit Line

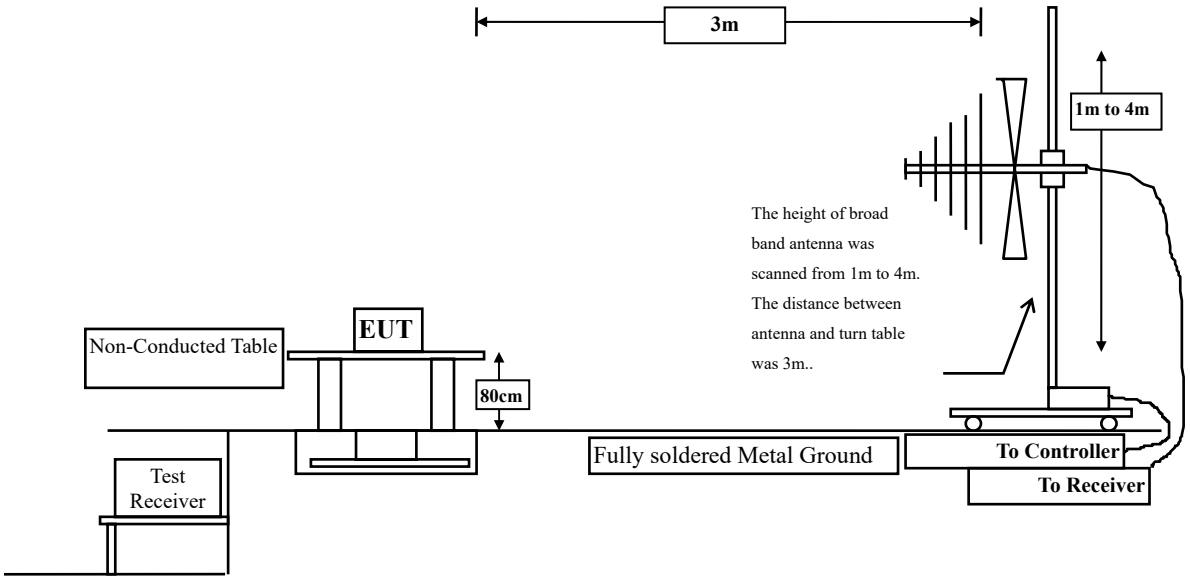
## 3. Radiated Emission

### 3.1. Test Setup

Radiated Emission Under 30 MHz




Radiated Emission Below 1 GHz



## 3.2. Limits

➢ Fundamental electric field strength Limit

| Fundamental Frequency MHz | Field strength of fundamental | | | |
|---|---|---|---|---|
| | uV/m | Distance (meter) | dBμV/m | Distance (meter) |
| 13.553 – 13.567 | 15848 | 30 | 124 | 3 |
| 13.410 – 13.553 and 13.567 – 13.710 | 334 | 30 | 90.47 | 3 |
| 13.110 – 13.410 and 13.710 – 14.010 | 106 | 30 | 80.50 | 3 |
| Outside of the 13.110 – 14.010 | See 15.209 Limits | | | |

Remarks :

1. RF Voltage (dBμV) = 20 log RF Voltage (uV)
2. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.
3. The emission limit in this paragraph is based on measurement instrumentation employing an quasi-peak detector.

➢ Spurious electric field strength Limit

| **FCC Part 15 Subpart C Paragraph 15.209 Limits** | | |
|---|---|---|
| Frequency MHz | Field strength (microvolts/meter) | *Measurement distance (meter)* |
| 0.009-0.490 | 2400/F(kHz) | 300 |
| 0.490-1.705 | 24000/F(kHz) | 30 |
| 1.705-30 | 30 | 30 |
| 30-88 | 100 | 3 |
| 88-216 | 150 | 3 |
| 216-960 | 200 | 3 |
| Above 960 | 500 | 3 |

Remarks :

1. RF Voltage (dBμV) = 20 log RF Voltage (uV)
2. In the Above Table, the tighter limit applies at the band edges.
3. Distance refers to the distance in meters between the measuring instrument antenna and the closed point of any part of the device or system.

## 3.3. Test Procedure

Fundamental electric field strength:

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum electric field strength. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

The antenna which is 1 meter above ground. All X-axis, Y-axis and Z-axis polarization of the antenna are set on measurement.

Spurious electric field strength:

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.

The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.

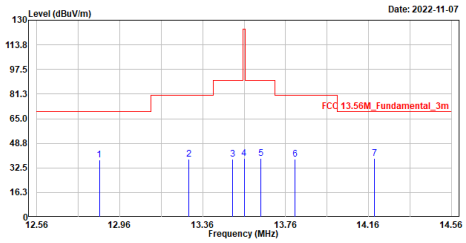
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.

The bandwidth below 30 MHz setting on the field strength meter is 9 kHz and above 30 MHz is 120 kHz.

The frequency range from 9 kHz to 10th harmonics is checked.

## 3.4. Test Result of Radiated Emission

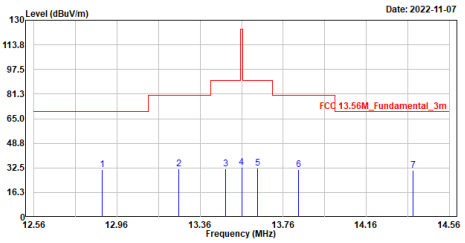
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_Fundamental_X
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 12.862 | 37.94 | 69.50 | -31.56 | 15.98 | 21.96 | QP |
| 2 | 13.294 | 38.17 | 80.50 | -42.33 | 16.20 | 21.97 | QP |
| 3 | 13.506 | 38.07 | 90.47 | -52.40 | 16.10 | 21.97 | QP |
| 4 | 13.560 | 38.97 | 124.00 | -85.03 | 17.00 | 21.97 | QP |
| 5 | 13.640 | 38.55 | 90.47 | -51.92 | 16.58 | 21.97 | QP |
| 6 | 13.804 | 38.10 | 80.50 | -42.40 | 16.12 | 21.98 | QP |
| 7 | 14.188 | 38.68 | 69.50 | -30.82 | 16.70 | 21.98 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

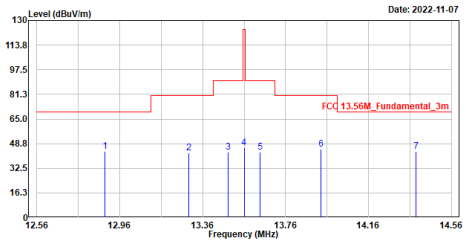
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_Fundamental_X
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 12.888 | 31.46 | 69.50 | -38.04 | 9.50 | 21.96 | QP |
| 2 | 13.256 | 31.67 | 80.50 | -48.83 | 9.70 | 21.97 | QP |
| 3 | 13.484 | 32.07 | 90.47 | -58.40 | 10.10 | 21.97 | QP |
| 4 | 13.560 | 32.67 | 124.00 | -91.33 | 10.70 | 21.97 | QP |
| 5 | 13.638 | 32.27 | 90.47 | -58.20 | 10.30 | 21.97 | QP |
| 6 | 13.834 | 31.28 | 80.50 | -49.22 | 9.30 | 21.98 | QP |
| 7 | 14.386 | 31.09 | 69.50 | -38.41 | 9.10 | 21.99 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

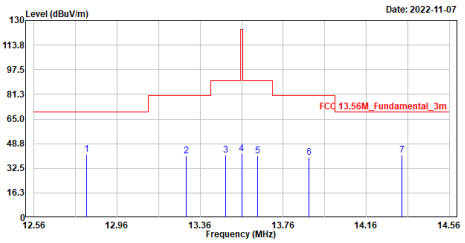
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_Fundamental_Y
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 12.888 | 43.80 | 69.50 | -25.70 | 21.84 | 21.96 | QP |
| 2 | 13.294 | 42.71 | 80.50 | -37.79 | 20.74 | 21.97 | QP |
| 3 | 13.484 | 43.19 | 90.47 | -47.28 | 21.22 | 21.97 | QP |
| 4 | 13.560 | 46.27 | 124.00 | -77.73 | 24.30 | 21.97 | QP |
| 5 | 13.638 | 42.95 | 90.47 | -47.52 | 20.98 | 21.97 | QP |
| 6 | 13.930 | 44.92 | 80.50 | -35.58 | 22.94 | 21.98 | QP |
| 7 | 14.388 | 43.47 | 69.50 | -26.03 | 21.48 | 21.99 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

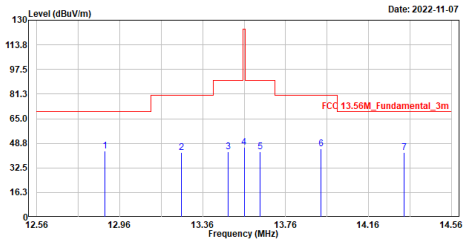
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_Fundamental_Y
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 12.814 | 41.53 | 69.50 | -27.97 | 19.57 | 21.96 | QP |
| 2 | 13.294 | 40.53 | 80.50 | -39.97 | 18.56 | 21.97 | QP |
| 3 | 13.484 | 41.09 | 90.47 | -49.38 | 19.12 | 21.97 | QP |
| 4 | 13.560 | 41.97 | 124.00 | -82.03 | 20.00 | 21.97 | QP |
| 5 | 13.638 | 40.95 | 90.47 | -49.52 | 18.98 | 21.97 | QP |
| 6 | 13.884 | 39.77 | 80.50 | -40.73 | 17.79 | 21.98 | QP |
| 7 | 14.332 | 41.10 | 69.50 | -28.40 | 19.11 | 21.99 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

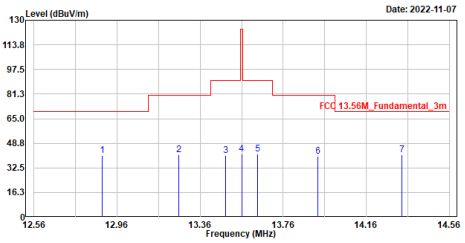
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_Fundamental_Z
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 12.888 | 43.80 | 69.50 | -25.70 | 21.84 | 21.96 | QP |
| 2 | 13.256 | 42.88 | 80.50 | -37.62 | 20.91 | 21.97 | QP |
| 3 | 13.484 | 43.19 | 90.47 | -47.28 | 21.22 | 21.97 | QP |
| 4 | 13.560 | 46.07 | 124.00 | -77.93 | 24.10 | 21.97 | QP |
| 5 | 13.638 | 42.95 | 90.47 | -47.52 | 20.98 | 21.97 | QP |
| 6 | 13.930 | 44.92 | 80.50 | -35.58 | 22.94 | 21.98 | QP |
| 7 | 14.332 | 42.79 | 69.50 | -26.71 | 20.80 | 21.99 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

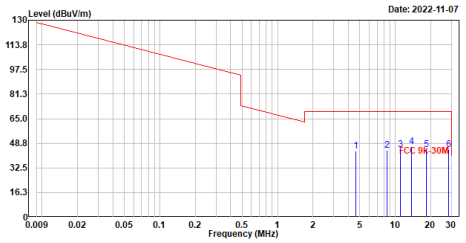
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_Fundamental_Z
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 12.888 | 40.94 | 69.50 | -28.56 | 18.98 | 21.96 | QP |
| 2 | 13.258 | 40.98 | 80.50 | -39.52 | 19.01 | 21.97 | QP |
| 3 | 13.484 | 40.54 | 90.47 | -49.93 | 18.57 | 21.97 | QP |
| 4 | 13.560 | 41.77 | 124.00 | -82.23 | 19.80 | 21.97 | QP |
| 5 | 13.638 | 41.52 | 90.47 | -48.95 | 19.55 | 21.97 | QP |
| 6 | 13.926 | 40.39 | 80.50 | -40.11 | 18.41 | 21.98 | QP |
| 7 | 14.332 | 41.24 | 69.50 | -28.26 | 19.25 | 21.99 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

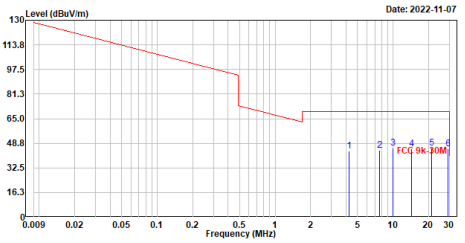
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_9k-30M
TEST BY :Sam




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 4.644 | 43.59 | 69.50 | -25.91 | 23.26 | 20.33 | QP |
| 2 | 8.464 | 43.98 | 69.50 | -25.52 | 22.54 | 21.44 | QP |
| 3 | 10.972 | 44.73 | 69.50 | -24.77 | 22.81 | 21.92 | QP |
| 4 | 13.658 | 46.44 | 69.50 | -23.06 | 24.47 | 21.97 | QP |
| 5 | 18.439 | 44.73 | 69.50 | -24.77 | 22.66 | 22.07 | QP |
| 6 | 28.575 | 44.72 | 69.50 | -24.78 | 22.53 | 22.19 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

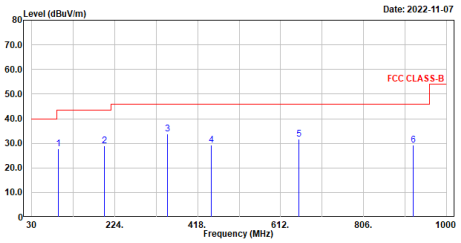
Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_9k-30M
TEST BY :Sam




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 4.213 | 43.63 | 69.50 | -25.87 | 23.39 | 20.24 | QP |
| 2 | 7.679 | 43.99 | 69.50 | -25.51 | 22.79 | 21.20 | QP |
| 3 | 10.035 | 45.65 | 69.50 | -23.85 | 23.75 | 21.90 | QP |
| 4 | 14.340 | 44.98 | 69.50 | -24.52 | 22.99 | 21.99 | QP |
| 5 | 21.338 | 45.40 | 69.50 | -24.10 | 23.29 | 22.11 | QP |
| 6 | 29.042 | 45.01 | 69.50 | -24.49 | 22.82 | 22.19 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

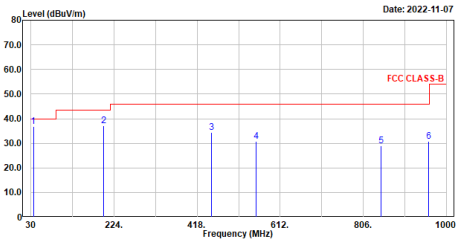
Site :HY-CB01
Condition :3m ,HORIZONTAL
Mode :TX_30M~1G
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 93.050 | 27.64 | 43.50 | -15.86 | 57.55 | -29.91 | QP |
| 2 | 199.750 | 29.02 | 43.50 | -14.48 | 56.11 | -27.09 | QP |
| 3 | 347.190 | 33.90 | 46.00 | -12.10 | 56.20 | -22.30 | QP |
| 4 | 450.010 | 29.41 | 46.00 | -16.59 | 48.77 | -19.36 | QP |
| 5 | 654.680 | 31.56 | 46.00 | -14.44 | 46.84 | -15.28 | QP |
| 6 | 921.430 | 29.18 | 46.00 | -16.82 | 41.15 | -11.97 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

Site :HY-CB01
Condition :3m ,VERTICAL
Mode :TX_30M~1G
TEST BY :Caster



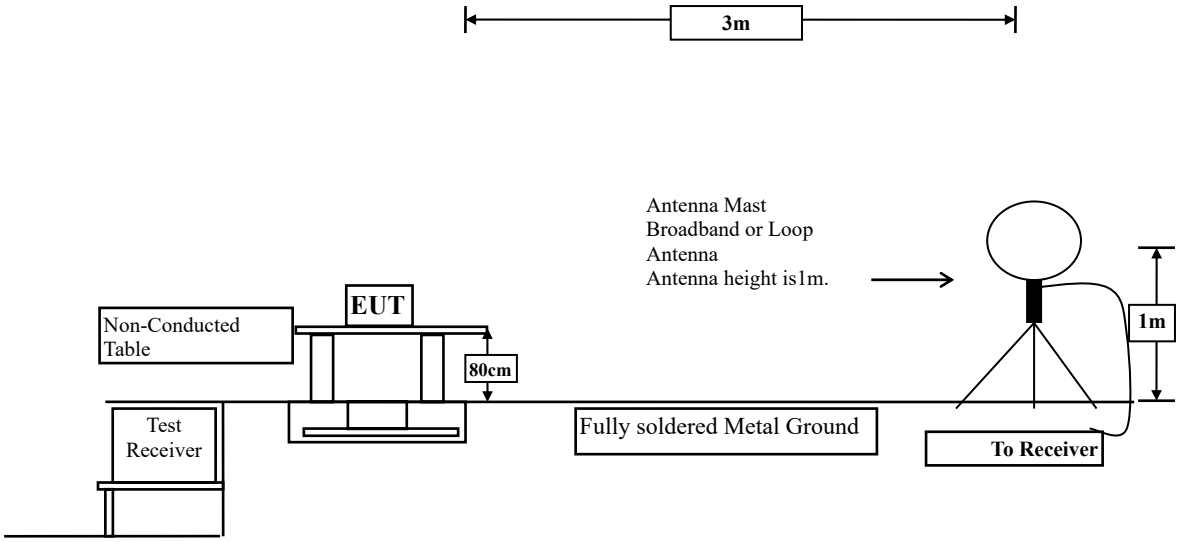

| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 35.820 | 36.95 | 40.00 | -3.05 | 61.79 | -24.84 | QP |
| 2 | 199.750 | 37.01 | 43.50 | -6.49 | 64.10 | -27.09 | QP |
| 3 | 451.950 | 34.30 | 46.00 | -11.70 | 53.62 | -19.32 | QP |
| 4 | 555.740 | 30.90 | 46.00 | -15.10 | 48.51 | -17.61 | QP |
| 5 | 846.740 | 28.90 | 46.00 | -17.10 | 41.83 | -12.93 | QP |
| 6 | 958.290 | 30.93 | 46.00 | -15.07 | 42.48 | -11.55 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

## 4. Band Edge

### 4.1. Test Setup

Radiated Emission Under 30 MHz




### 4.2. Limits

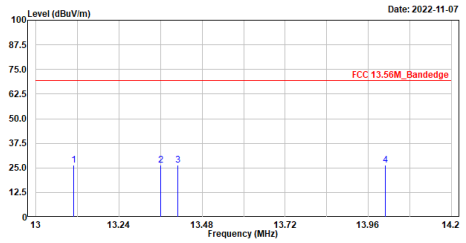
The field strength of any emissions appearing outside of the 13.110-14.010 MHz band shall not exceed the general radiated emission limits in Section 15.209. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205, must also comply with the radiated emission limits specified in Section 15.209

## 4.3. Test Procedure

The EUT and its simulators are placed on a turn table which is 0.8 meter above ground. The turn table can rotate 360 degrees to determine the position of the maximum emission level.
The antenna can move up and down between 1 meter and 4 meters to find out the maximum emission level. The EUT was positioned such that the distance from antenna to the EUT was 3 meters.
Both horizontal and vertical polarization of the antenna are set on measurement. In order to find the maximum emission, all of the interface cables must be manipulated according to ANSI C63.10: 2013 on radiated measurement.
The bandwidth below 30 MHz setting on the field strength meter is 9 kHz and above 30 MHz is 120 kHz.

## 4.4. Test Result of Band Edge

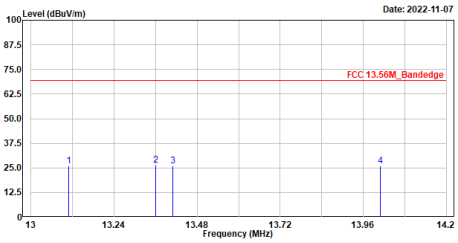
Site :HY-CB01
Condition :3m ,Horizontal
Mode :TX_13.56Mhz
TEST BY :Caster




| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 13.110 | 26.36 | 69.54 | -43.18 | 4.40 | 21.96 | QP |
| 2 | 13.360 | 26.57 | 69.54 | -42.97 | 4.60 | 21.97 | QP |
| 3 | 13.410 | 26.47 | 69.54 | -43.07 | 4.50 | 21.97 | QP |
| 4 | 14.010 | 26.28 | 69.54 | -43.26 | 4.30 | 21.98 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

Site :HY-CB01
Condition :3m ,Vertical
Mode :TX_13.56Mhz
TEST BY :Caster

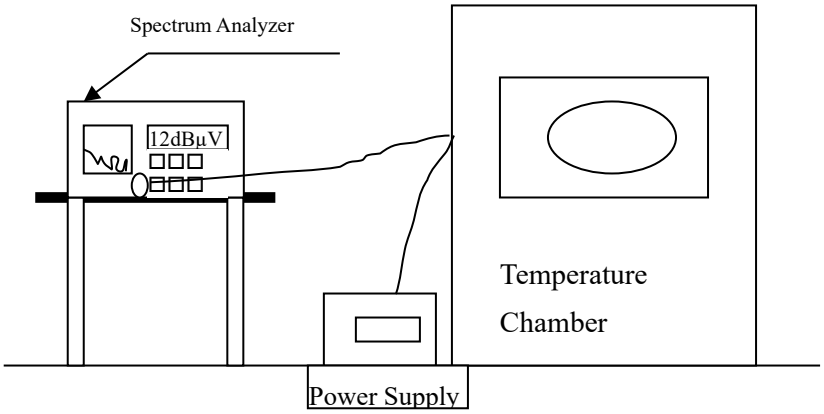



| No. | Frequency | Level | Limit Line | Over Limit | Read Level | Factor | Remark |
|---|---|---|---|---|---|---|---|
| | MHz | dBuV/m | dBuV/m | dB | dBuV | dB | |
| 1 | 13.110 | 26.06 | 69.54 | -43.48 | 4.10 | 21.96 | QP |
| 2 | 13.360 | 26.27 | 69.54 | -43.27 | 4.30 | 21.97 | QP |
| 3 | 13.410 | 25.97 | 69.54 | -43.57 | 4.00 | 21.97 | QP |
| 4 | 14.010 | 26.18 | 69.54 | -43.36 | 4.20 | 21.98 | QP |

Note:
1. Level = Read Level + Factor
2. Factor = Antenna Factor + Cable Loss - Preamp Factor
3. Over Limit = Level - Limit Line
4. The emission under 30MHz was not included since the emission levels are very low against the limit.

## 5. Frequency Tolerance

### 5.1. Test Setup




### 5.2. Limits

The frequency tolerance of the carrier signal shall be maintained within ±0.01％ of the operating frequency.

### 5.3. Test Procedure

The frequency tolerance of the carrier signal shall be maintained within ±0.01% of the operating frequency over a temperature variation of −20 degrees to + 50 degrees C at normal supply voltage, and for a variation in the primary supply voltage from 85% to 115% of the rated supply voltage at a temperature of 20 degrees C. For battery operated equipment, the equipment tests shall be performed using a new battery.

## 5.4. Test Result of Frequency Stability

Product : Mobile Computer
Test Item : Frequency Tolerance
Test Mode : Transmit
Test date : 2022/11/09

| Temperature (°C) | Voltage (V) | Observe Time | Declared Frequency (MHz) | Read Frequency (MHz) | Tolerance (%) | Limit (%) |
|---|---|---|---|---|---|---|
| 20 | 3.85 | start | 13.56 | 13.559826 | -0.001283 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559830 | -0.001254 | |
| | | 5mins | 13.56 | 13.559830 | -0.001254 | |
| | | 10mins | 13.56 | 13.559830 | -0.001254 | |
| 20 | 4.4 | start | 13.56 | 13.559826 | -0.001283 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559826 | -0.001283 | |
| | | 5mins | 13.56 | 13.559826 | -0.001283 | |
| | | 10mins | 13.56 | 13.559826 | -0.001283 | |
| 20 | 3.2 | start | 13.56 | 13.559826 | -0.001283 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559855 | -0.001069 | |
| | | 5mins | 13.56 | 13.559855 | -0.001069 | |
| | | 10mins | 13.56 | 13.559855 | -0.001069 | |
| 50 | 3.85 | start | 13.56 | 13.559834 | -0.001227 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559834 | -0.001227 | |
| | | 5mins | 13.56 | 13.559834 | -0.001227 | |
| | | 10mins | 13.56 | 13.559834 | -0.001227 | |
| 40 | 3.85 | start | 13.56 | 13.559841 | -0.001174 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559841 | -0.001174 | |
| | | 5mins | 13.56 | 13.559841 | -0.001174 | |
| | | 10mins | 13.56 | 13.559841 | -0.001174 | |
| 30 | 3.85 | start | 13.56 | 13.559855 | -0.001067 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559855 | -0.001067 | |
| | | 5mins | 13.56 | 13.559855 | -0.001067 | |
| | | 10mins | 13.56 | 13.559855 | -0.001067 | |

| | | | | | | |
|---|---|---|---|---|---|---|
| 10 | 3.85 | start | 13.56 | 13.559841 | -0.001173 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559841 | -0.001173 | |
| | | 5mins | 13.56 | 13.559841 | -0.001173 | |
| | | 10mins | 13.56 | 13.559840 | -0.001180 | |
| 0 | 3.85 | start | 13.56 | 13.559894 | -0.000782 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559883 | -0.000863 | |
| | | 5mins | 13.56 | 13.559883 | -0.000863 | |
| | | 10mins | 13.56 | 13.559883 | -0.000863 | |
| -10 | 3.85 | start | 13.56 | 13.559894 | -0.000782 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559883 | -0.000863 | |
| | | 5mins | 13.56 | 13.559883 | -0.000863 | |
| | | 10mins | 13.56 | 13.559883 | -0.000863 | |
| -20 | 3.85 | start | 13.56 | 13.559884 | -0.000855 | ± 0.01 % |
| | | 2mins | 13.56 | 13.559442 | -0.004115 | |
| | | 5mins | 13.56 | 13.559913 | -0.000642 | |
| | | 10mins | 13.56 | 13.559913 | -0.000642 | |