

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT



## PARTIAL REPORT

OF

**Applicant:** Microsoft Corporation  
One Microsoft Way Redmond, WA 98052-6399, U.S.A  
**Product Name:** Portable Computing Device  
**Brand Name:** Microsoft  
**Model No.:** 2022  
**FCC ID:** C3K2022  
**Contains FCC ID:** C3K1956  
**IC:** 3048A-2022  
**Contains IC:** 3048A-1956  
**Report Number:** ER/2021/80088  
**FCC Rule Part:** §15.407, Cat: NII, §15.247, Cat: DSS, DTS  
2, 22H & 24E & 27C & 90S  
**IC Rule Part:** RSS-247 issue 2 Feb. 2017, RSS-130, 132, 133, 139, 140,  
195, 199  
**Issue Date:** October 13, 2021  
**Date of Test:** August 24, 2021 ~ September 6, 2021  
**Date of EUT Received:** August 24, 2021

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Central RF Lab. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.10:2013 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits.

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

Jet Lu

**Approved By:** \_\_\_\_\_

**Jet Lu**

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## Revision History

| Report Number | Revision | Description | Issue Date       | Revised By  |
|---------------|----------|-------------|------------------|-------------|
| ER/2021/80088 | 00       | Original.   | October 13, 2021 | Karen Huang |

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## 1 GENERAL INFORMATION

### 1.1 Product Description

General:

|                            |                                                                              |                                       |
|----------------------------|------------------------------------------------------------------------------|---------------------------------------|
| Product Name:              | Portable Computing Device                                                    |                                       |
| Brand Name:                | Microsoft                                                                    |                                       |
| Model No.:                 | 2022                                                                         |                                       |
| Radio Test Tool & Version: | DRTU_22.21070.0.0,<br>WIFI driver_22.70.0.6 , BT driver_22.70.2.1            |                                       |
| Normal Test Version:       | Driver_22.50.0.7                                                             |                                       |
| Power Supply:              | 7.66 Vdc from Rechargeable Li-polymer Battery<br>or 15Vdc from AC/DC Adapter |                                       |
|                            | Battery:                                                                     | Model No.: DYNU01, Supplier: DYNAPACK |
|                            | Adapter:                                                                     | Model No.: 1735, Supplier: Lite On    |

Note:

This report is for host model 2022 which contains the module FCC ID: C3K1956 and IC: 3048A-1956.

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## 1.2 Test Methodology of Applied Standards

FCC Part 15, Subpart C §15.225

FCC Part 15, Subpart E §15.407

FCC Part 15, Subpart C §15.247

FCC KDB 558074 D01 15.247 Meas Guidance v05r02

FCC KDB 662911 D01 Multiple Transmitter Output v02r01

FCC KDB 789033 D02 General UNII Test Procedures New Rules v02r01

ANSI C63.10:2013

FCC 47 CFR Part 2, 22H, 24E, 27C, Part 90S.

ANSI C63.26-2015

KDB971168 D01 Power Meas license Digital System v03r01

KDB941225 D01 SAR test for 3G devices v03r01 (SAR Measurement Procedures for 3G Devices, WCDMA / HSPA) was used for EUT and Base station setting.

RSS-210 issue 10 Annex B B.6 Dec. 2019

RSS-247 issue 2 Feb. 2017

RSS-Gen. issue 5, Amendment 2, February 2021

RSS-130 Issue 2 Feb. 2019, RSS-132 Issue 3 Jan. 2013, RSS-133 Issue 6, Amendment 1 Jan. 18, 2018, RSS-139 Issue 3 Jul. 2015, RSS-140 Issue 1 Apr. 2018, RSS-195 Issue 2 Apr. 2014, RSS-199 Issue 3 Dec. 2016

Note: All test items have been performed and record as per the above standards.

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### 1.3 Test Facility

| Laboratory                                                                                                                                                                   | Test Site Address                                                                         | Test Site Name | FCC Designation number | IC CAB identifier |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|----------------|------------------------|-------------------|
| SGS Taiwan Ltd.<br>Central RF Lab.<br>(TAF code 3702)                                                                                                                        | No.134, Wu Kung Road, New Taipei Industrial Park, Wuku District, New Taipei City, Taiwan. | SAC 1          | TW0027                 | TW3702            |
|                                                                                                                                                                              |                                                                                           | SAC 3          |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conduction 1   |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted 1    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted 2    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted 3    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted 4    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted 5    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted 6    |                        |                   |
|                                                                                                                                                                              | No.2, Keji 1st Rd., Guishan District, Taoyuan City, Taiwan 333                            | Conduction C   | TW0028                 |                   |
|                                                                                                                                                                              |                                                                                           | SAC C          |                        |                   |
|                                                                                                                                                                              |                                                                                           | SAC D          |                        |                   |
|                                                                                                                                                                              |                                                                                           | SAC G          |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted A    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted B    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted C    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted D    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted E    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted F    |                        |                   |
|                                                                                                                                                                              |                                                                                           | Conducted G    |                        |                   |
| <b>Note:</b> Test site name is remarked on the equipment list in each section of this report as an indication where measurements occurred in specific test site and address. |                                                                                           |                |                        |                   |

### 1.4 Special Accessories

AC Adapter is used while the test is conducted and there is no other accessory attached. This is the worst case condition.

### 1.5 Equipment Modifications

There was no modification incorporated into the EUT.

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## 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

The EUT is configured to operate in a continuous transmission mode. EUT placement and various angles were checked to find worst mode where the emission characteristics are maximized.

### 2.2 EUT Exercise

An engineering test mode (software/firmware) that applicant provided was utilized to manipulate the EUT into transmit, selection of the test channel, and modulation scheme.

### 2.3 Test Procedure

#### 2.3.1 Radiated Emissions (Simultaneous case)

The EUT was placed on a turn table. For emissions testing at or below 1 GHz, the table height shall be 0.8 m above the reference ground plan. For emission measurements above 1 GHz, the table height shall be 1.5 m. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. In order to find out the max. emission, the relative positions of this transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna.

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## 2.4 Configuration of Tested System

Fig. 2-1 Radiated Emission Configuration

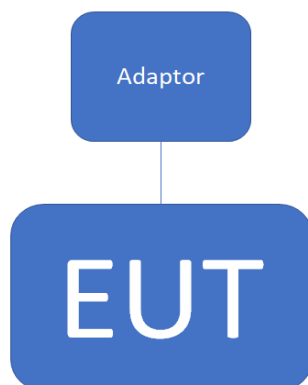


Table 2-1 Equipment Used in Tested System

| Radiated Emission Test Site: SAC 1 |           |              |               |           |          |
|------------------------------------|-----------|--------------|---------------|-----------|----------|
| EQUIPMENT TYPE                     | MFR       | MODEL NUMBER | SERIAL NUMBER | LAST CAL. | CAL DUE. |
| Adapter                            | Microsoft | 1735         | NA            | N/A       | N/A      |

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### 3 SUMMARY OF TEST RESULT

| FCC Rules                                                                                                                                                     | IC Rules                                                                                                                      | Description Of Test                  | Result    |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|-----------|
| §2.1053<br>§2.1057(a)(1)<br>§22.917(a)<br>§24.238(a) 27.53(a)<br>§27.53 (c)(f)<br>§27.53(g) §27.53(h)<br>§27.53(m)(2)<br>§90.543(e)(3)<br>§90.543 (f) §90.691 | RSS-GEN §6.13<br>RSS-130 §4.7<br>RSS-132 §5.5<br>RSS-133 §6.5<br>RSS-139 §6.6<br>RSS-140 §4.4<br>RSS-195 §5.6<br>RSS-199 §4.5 | Field Strength of Spurious Radiation | Compliant |
| §15.205<br>§15.209<br>§15.407(b)                                                                                                                              | RSS-247 §6.2.1~ 4 (2)                                                                                                         | Radiated Emissions                   | Compliant |
| §15.247(d)<br>§15.205<br>§15.209                                                                                                                              | RSS-247 §5.5<br>RSS-Gen §8.9<br>RSS-Gen §8.10<br>RSS-Gen §6.13                                                                | Radiated Emission                    | Compliant |
| §15.225 (a)-(d)                                                                                                                                               | RSS210 Annex B B.6                                                                                                            | Radiated Emission                    | Compliant |

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## 4 DESCRIPTION OF TEST MODES

### 4.1 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. Test program used to control the EUT for staying in continuous transmitting mode is programmed.
3. Investigation has been done on all the possible configurations for searching the worst case.
4. For 802.11n HT and VHT modes, the HT emission testing was considered as a worst case scenario and was performed at power levels, per transmit chain, greater than or equal to the maximum power in any HT mode.
5. For MIMO modes, the 2TX emission testing was considered as a worst case scenario and was performed at power levels, per transmit chain, greater than or equal to the maximum power in any 1TX mode.
6. The EUT is supporting NFC, LTE, BT, BLE, 802.11 a/b/g/n/ac/ax mode, pre-scanned on simultaneous radiated emission on above available combinations, the worst case was reported on this report.

The field strength of radiation emission was measured E2 Plane as the worst case.

### 4.2 Simultaneous Radiated Emission Test Mode:

**Mode 1: BT BR + WLAN 5G**

**Mode 2: BLE + WLAN 5G**

**Mode 3: NFC + WLAN 2.4G**

**Mode 4: NFC + WLAN 5G**

**Mode 5: LTE + WLAN 2.4G**

**Mode 6: LTE + WLAN 5G**

**Mode 7: LTE + WLAN 5G + NFC**

**Mode 8: LTE + BT**

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## 5 MEASUREMENT UNCERTAINTY

| Radiated Spurious Emission Measurement Uncertainty |     |         |                 |
|----------------------------------------------------|-----|---------|-----------------|
| Polarization                                       | +/- | 2.64 dB | 9kHz~30MHz      |
| Polarization: Vertical                             | +/- | 4.93 dB | 30MHz - 1000MHz |
|                                                    | +/- | 4.81 dB | 1GHz - 18GHz    |
|                                                    | +/- | 4.52 dB | 18GHz - 40GHz   |
|                                                    | +/- | 4.45 dB | 30MHz - 1000MHz |
| Polarization: Horizontal                           | +/- | 4.81 dB | 1GHz - 18GHz    |
|                                                    | +/- | 4.52 dB | 18GHz - 40GHz   |
|                                                    | +/- | 4.45 dB | 30MHz - 1000MHz |

### Note:

1. This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.
2. The conformity assessment statement in this report is based solely on the test results, measurement uncertainty is excluded.

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## 6 RADIATED EMISSION MEASUREMENT

### 6.1 Standard Applicable

#### For NII

The maximum emissions outside of the frequency bands of operation shall be attenuated in accordance with the following limits:

1. For transmitters operating in the 5.15-5.25 GHz band: All emissions outside of the 5.15-5.35 GHz band shall not exceed an e.i.r.p. of -27 dBm/MHz.
2. For transmitters operating in the 5.725-5.85 GHz band: 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.

| APPLICABLE TO                                                                                                                                                                                                                                                                                                                      | EIRP LIMIT                                                                              | FIELD STRENGTH AT 3m                                                                         |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|
| 15.407(b)(1)<br>RSS-247 §6.2.1.2                                                                                                                                                                                                                                                                                                   | PK: -27 (dBm/MHz)                                                                       | PK: 68.2 (dBμV/m)                                                                            |
| 15.407(b)(2)<br>RSS-247 §6.2.2.2                                                                                                                                                                                                                                                                                                   |                                                                                         |                                                                                              |
| 15.407(b)(3)<br>RSS-247 §6.2.3.2                                                                                                                                                                                                                                                                                                   |                                                                                         |                                                                                              |
| 15.407(b)(4)(i)<br>RSS-247 §6.2.4.2                                                                                                                                                                                                                                                                                                | PK:-27 (dBm/MHz) *1<br>PK:10 (dBm/MHz) *2<br>PK:15.6 (dBm/MHz) *3<br>PK:27 (dBm/MHz) *4 | PK: 68.2 (dBμV/m) *1<br>PK:105.2 (dBμV/m) *2<br>PK: 110.8(dBμV/m) *3<br>PK:122.2 (dBμV/m) *4 |
| *1 beyond 75 MHz or more above of the bandedge.<br>*2 below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above.<br>*3 below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above.<br>*4 from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge. |                                                                                         |                                                                                              |

$EIRP = (E \cdot d)^2 / 30$ , where  $E$  is the field in V/m,  $d$  is the measurement distance (3m),  $EIRP$  is the equivalent isotropically radiated power in Watts.

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Unwanted spurious emissions which fall in the restricted bands must comply with the radiated emission limits specified as below table:

| Frequency (MHz) | Field strength (microvolts/meter) | Distance (meters) |
|-----------------|-----------------------------------|-------------------|
| 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                 |

**Note:**

1. The lower limit shall apply at the transition frequencies.

**For DTS & DSS,**

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power, based on either an RF conducted or a radiated measurement, provided the transmitter demonstrates compliance with the peak conducted power limits. In addition, radiated emissions which fall in the restricted bands must also comply with the §15.209 and RSS-Gen §8.9 Table 5 and 6 limit as below.

And according to §15.33(a) (1) & RSS-Gen §6.13.2.a for an intentional radiator operates below 10GHz, the frequency range of measurements: to the tenth harmonic of the highest fundamental frequency or to 40GHz, whichever is lower.

| Frequency (MHz) | Field strength (microvolts/meter) | Distance (meters) |
|-----------------|-----------------------------------|-------------------|
| 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                 |

**Note:**

1. The lower limit shall apply at the transition frequencies.

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**For PCB,**

According to FCC §2.1053,

**FCC §22.917(a), §24.238(a), §27.53(h), §90.543(e)(3)**

**RSS-130 §4.7, RSS-132 §5.5, RSS-133 §6.5.1, RSS-139 §6.6, RSS-140 §4.4, RSS-195 §5.6, RSS-199 §4.5**

Out of band emissions. 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.

**FCC §27.53(a)**

For operations in the 2305-2320 MHz band and the 2345-2360 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power P (with averaging performed only during periods of transmission) within the licensed band(s) of operation, in watts, by the following amounts:

(4) For mobile and portable stations operating in the 2305-2315 MHz and 2350-2360 MHz bands:

(ii) By a factor of not less than  $70 + 10 \log(P)$  dB below 2288 MHz;

(iii) By a factor of not less than  $70 + 10 \log(P)$  dB above 2365 MHz.

**FCC §27.53(g)**

Compliance for operations in the 600 MHz, 698-746 MHz, 746-758 MHz and the 776-788 MHz band with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater. However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

(2) On any frequency outside the 776-788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least  $43 + 10 \log(P)$  dB;

(3) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $76 + 10 \log(P)$  dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763-775 MHz and 793-805 MHz, by a factor not less than  $65 + 10 \log(P)$  dB in a 6.25 kHz band segment, for mobile and portable stations;

**FCC §90.543 (f)**

For operations in the 758-775 MHz and 788-805 MHz bands, all emissions including harmonics in the band 1559-1610 MHz shall be limited to -70 dBW/MHz equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

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**RSS-130 §4.7.1**

Compliance for operations in the 617-652 MHz, 663-698 MHz, 698-756 MHz and the 777-787 MHz band, the unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least  $43 + 10 \log_{10} p$  (watts), dB. However, in the 100 kHz band immediately outside of the equipment's frequency block range, a resolution bandwidth of 30 kHz may be employed.

**RSS-130 §4.7.2**

In addition to the limit outlined in section 4.7.1 above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

the power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

$76 + 10 \log_{10} p$  (watts), dB, for base and fixed equipment and

$65 + 10 \log_{10} p$  (watts), dB, for mobile and portable equipment

the e.i.r.p. in the band 1559-1610 MHz shall not exceed  $-70$  dBW/MHz for wideband signal and  $-80$  dBW for discrete emission with bandwidth less than 700 Hz.

**FCC §27.53(h)(1)**

(h) *AWS emission limits*—(1) *General protection levels*. Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10} (P)$  dB.

**ISED RSS-132 §5.5**

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

- i. In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).
- ii. After the first 1.0 MHz immediately outside and adjacent to each of the sub-bands, the power of emissions in any 100 kHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the occupied bandwidth, power integration over 100 kHz is required.

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**ISED RSS-133 §6.5.1**

Equipment shall comply with the limits in (i) and (ii) below.

- i. In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p(\text{watts})$ .
- ii. After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p(\text{watts})$ . If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.

**RSS-139 §6.6**

In the first 1.0 MHz bands immediately outside and adjacent to the equipment's smallest operating frequency block, Footnote 2 which can contain the equipment's occupied bandwidth, the emission power per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least  $43 + 10 \log_{10} p(\text{watts})$  dB.

After the first 1.0 MHz outside the equipment's smallest operating frequency block, which can contain the equipment's occupied bandwidth, the emission power in any 1 MHz bandwidth shall be attenuated below the transmitter output power P (in dBW) by at least  $43 + 10 \log_{10} p(\text{watts})$  dB.

**ISED RSS-140 §4.4**

- a. For any frequency between 769-775 MHz and 799-806 MHz:
  - i.  $76 + 10 \log(p)$ , dB in a 6.25 kHz band for fixed and base station equipment
  - ii.  $65 + 10 \log(p)$ , dB in a 6.25 kHz band for mobile and portable/hand-held equipment
- b. For any frequency between 775-788 MHz, above 806 MHz, and below 758 MHz:  $43 + 10 \log(p)$ , dB in a bandwidth of 100 kHz or greater. However, in the 100 kHz bands immediately outside and adjacent to the frequency bands 758-768 MHz and 788-798 MHz, a resolution bandwidth of 30 kHz may be employed.

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**ISED RSS-195 §5.6**

The power of any emission outside the frequency range(s) in which the equipment operates shall be attenuated below the transmitter power, P(dBW), by the amount indicated in Table 2, where p is the transmitter output power measured in watts.

| <b>Table 2 — Unwanted Emissions for Mobile, Portable and Low-Power Fixed Subscriber Equipment</b>                                                                                                                                                              |                                        |                        |                                        |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|------------------------|----------------------------------------|
| <b>Frequency (MHz)</b>                                                                                                                                                                                                                                         | <b>Attenuation (dB)</b>                | <b>Frequency (MHz)</b> | <b>Attenuation (dB)</b>                |
| <2200                                                                                                                                                                                                                                                          | $43 + 10 \log_{10}(p)$                 | 2324 - 2328            | $61 + 10 \log_{10}(p)$                 |
| 2200 - 2288                                                                                                                                                                                                                                                    | $70 + 10 \log_{10}(p)$                 | 2328 - 2337            | $67 + 10 \log_{10}(p)$                 |
| 2288 - 2292                                                                                                                                                                                                                                                    | $67 + 10 \log_{10}(p)$                 | 2337 - 2341            | $61 + 10 \log_{10}(p)$                 |
| 2292 - 2296                                                                                                                                                                                                                                                    | $61 + 10 \log_{10}(p)$                 | 2341 - 2345            | $55 + 10 \log_{10}(p)$                 |
| 2296 - 2300                                                                                                                                                                                                                                                    | $55 + 10 \log_{10}(p)$                 | 2345 - 2360            | $43 + 10 \log_{10}(p)$<br>FootnoteNote |
| 2300 - 2305                                                                                                                                                                                                                                                    | $43 + 10 \log_{10}(p)$                 | 2360 - 2365            | $43 + 10 \log_{10}(p)$                 |
| 2305 - 2320                                                                                                                                                                                                                                                    | $43 + 10 \log_{10}(p)$<br>FootnoteNote | 2365 - 2395            | $70 + 10 \log_{10}(p)$                 |
| 2320 - 2324                                                                                                                                                                                                                                                    | $55 + 10 \log_{10}(p)$                 | >2395                  | $43 + 10 \log_{10}(p)$                 |
| <b>Note</b> -- Mobile and portable equipment are prohibited from transmitting in the bands 2315-2320 MHz and 2345-2350 MHz. In addition, mobile and portable equipment employing FDD technology shall be restricted to transmitting in the band 2305-2315 MHz. |                                        |                        |                                        |

**FCC §27.53(m) (4) (6)**

For mobile digital stations, the attenuation factor shall be not less than  $40 + 10 \log (P)$  dB on all frequencies between the channel edge and 5 megahertz from the channel edge,  $43 + 10 \log (P)$  dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and  $55 + 10 \log (P)$  dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section. In addition, the attenuation factor shall not be less than  $43 + 10 \log (P)$  dB on all frequencies between 2490.5 MHz and 2496 MHz and  $55 + 10 \log (P)$  dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

Measurement procedure. Compliance with these rules is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed; for mobile digital stations, in the 1 megahertz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least two percent may be employed, except when the 1 megahertz band is 2495-2496 MHz, in which case a resolution bandwidth of at least one percent may be employed. A narrower resolution bandwidth is permitted in all cases to improve measurement accuracy provided the measured power is integrated over the full required measurement bandwidth (i.e. 1 megahertz or 1 percent of emission bandwidth, as specified;

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or 1 megahertz or 2 percent for mobile digital stations, except in the band 2495-2496 MHz). The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power. With respect to television operations, measurements must be made of the separate visual and aural operating powers at sufficiently frequent intervals to ensure compliance with the rules.

#### **RSS-199 §4.5**

In the 1 MHz band immediately outside and adjacent to the channel edge, the unwanted emission power shall be measured with a resolution bandwidth of at least 1% of the occupied bandwidth for base station and fixed subscriber equipment, and 2% for mobile subscriber equipment. Beyond the 1 MHz band, a resolution bandwidth of 1 MHz shall be used. A narrower resolution bandwidth can be used, provided that the measured power is integrated over the full required measurement bandwidth of 1 MHz, or 1% or 2% of the occupied bandwidth, as applicable.

Equipment shall comply with the following unwanted emission limits:

for base station and fixed subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power,  $P$  (dBW), by at least  $43 + 10 \log_{10} p$  for mobile subscriber equipment, the power of any unwanted emissions measured as above shall be attenuated (in dB) below the transmitter power,  $P$  (dBW), by at least:

$40 + 10 \log_{10} p$  from the channel edges to 5 MHz away

$43 + 10 \log_{10} p$  between 5 MHz and  $X$  MHz from the channel edges, and

$55 + 10 \log_{10} p$  at  $X$  MHz and beyond from the channel edges

In addition, the attenuation shall not be less than  $43 + 10 \log_{10} p$  on all frequencies between 2490.5 MHz and 2496 MHz, and  $55 + 10 \log_{10} p$  at or below 2490.5 MHz.

In (a) and (b),  $p$  is the transmitter power measured in watts and  $X$  is 6 MHz or the equipment occupied bandwidth, whichever is greater.

#### **§90.691 Emission mask requirements for EA-based systems**

(a) Out-of-band emission requirement shall apply only to the “outer” channels included in an EA license and to spectrum adjacent to interior channels used by incumbent licensees. The emission limits are as follows:

(1) For any frequency removed from the EA licensee's frequency block by up to and including 37.5 kHz, the power of any emission shall be attenuated below the transmitter power ( $P$ ) in watts by at least  $116 \log_{10}(f/6.1)$  decibels or  $50 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where  $f$  is the frequency removed from the center of the outer channel in the block in kilohertz and where  $f$  is greater than 12.5 kHz.

(2) For any frequency removed from the EA licensee's frequency block greater than 37.5 kHz, the power of any emission shall be attenuated below the transmitter power ( $P$ ) in watts by at least  $43 + 10 \log_{10}(P)$  decibels or 80 decibels, whichever is the lesser attenuation, where  $f$  is the frequency removed from the center of the outer channel in the block in kilohertz and where  $f$  is greater than 37.5 kHz.

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## 6.2 Measurement Equipment Used

| Radiated Emission Test Site: SAC 1 |                 |                    |                  |            |            |
|------------------------------------|-----------------|--------------------|------------------|------------|------------|
| EQUIPMENT TYPE                     | MFR             | MODEL NUMBER       | SERIAL NUMBER    | LAST CAL.  | CAL DUE.   |
| Horn Antenna                       | SCHWARZBECK     | BBHA9170           | 184              | 12/11/2020 | 12/10/2021 |
| Horn Antenna                       | SCHWARZBECK     | BBHA9120D          | D803             | 12/17/2020 | 12/16/2021 |
| Bi-log Antenna                     | TESEO           | CBL 6112D          | 35242 & AT-N0555 | 01/13/2021 | 01/12/2022 |
| Loop Antenna                       | ETS.LINDGREN    | 6502               | 148045           | 10/19/2020 | 10/18/2021 |
| Spectrum Analyzer                  | Agilent         | E4446A             | MY51100003       | 10/29/2020 | 10/28/2021 |
| Test Software                      | Audix           | e3                 | Ver. 9.210322    | N.C.R      | N.C.R      |
| EMI Test Receiver                  | R&S             | ESCI 7             | 100759           | 08/26/2021 | 08/25/2022 |
| Site Cal                           | SGS             | SAC 1              | N/A              | 01/01/2021 | 12/31/2021 |
| Pre-Amplifier                      | EMC Instruments | EMC184045B         | 980135           | 10/27/2020 | 10/26/2021 |
| Pre-Amplifier                      | HP              | 8449B              | 3008A01973       | 12/16/2020 | 12/15/2021 |
| Pre-Amplifier                      | HP              | 8447D              | 2944A09469       | 12/16/2020 | 12/15/2021 |
| Coaxial Cable                      | Huber Suhner    | succoflex 102      | MY2622/2         | 12/16/2020 | 12/15/2021 |
| Coaxial Cable                      | Huber Suhner    | succoflex 104A     | 800086/4a        | 12/16/2020 | 12/15/2021 |
| Coaxial Cable                      | Huber Suhner    | EMC 104-SM-SM-2000 | 160123           | 12/16/2020 | 12/15/2021 |
| Coaxial Cable                      | Huber Suhner    | SUCOFLEX 102       | MY2630/2         | 12/16/2020 | 12/15/2021 |
| Coaxial Cable                      | Huber Suhner    | SUCOFLEX 102       | MY22962/2        | 12/16/2020 | 12/15/2021 |
| Bandreject Filter 2400-2483.5      | EWT             | EWT-14-0166        | M1               | 12/16/2020 | 12/15/2021 |
| Bandreject Filter 5150-5350        | Micro-Tronics   | BRM50703           | 1                | 12/16/2020 | 12/15/2021 |
| 3.2GHz High Pass Filter            | WI              | WHKX10-2624-80SS   | 4                | 04/20/2021 | 04/19/2022 |
| 7GHz High Pass Filter              | WI              | WHKX10-6090-80SS   | 3                | 04/20/2021 | 04/19/2022 |

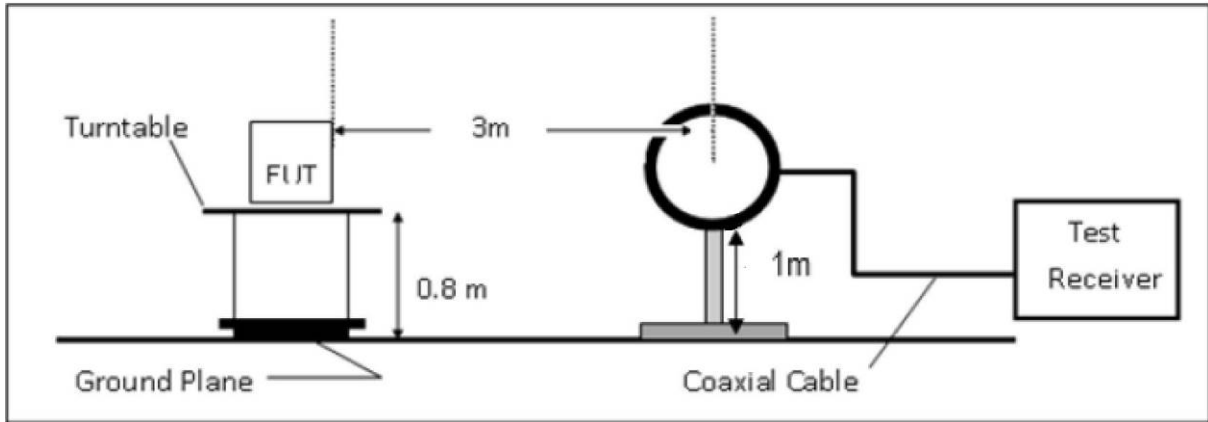
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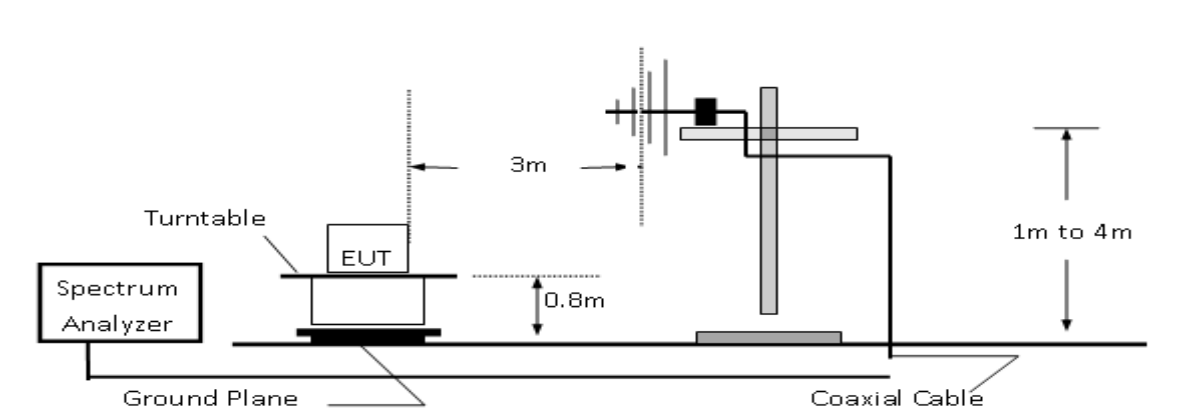
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## 6.3 Test SET-UP

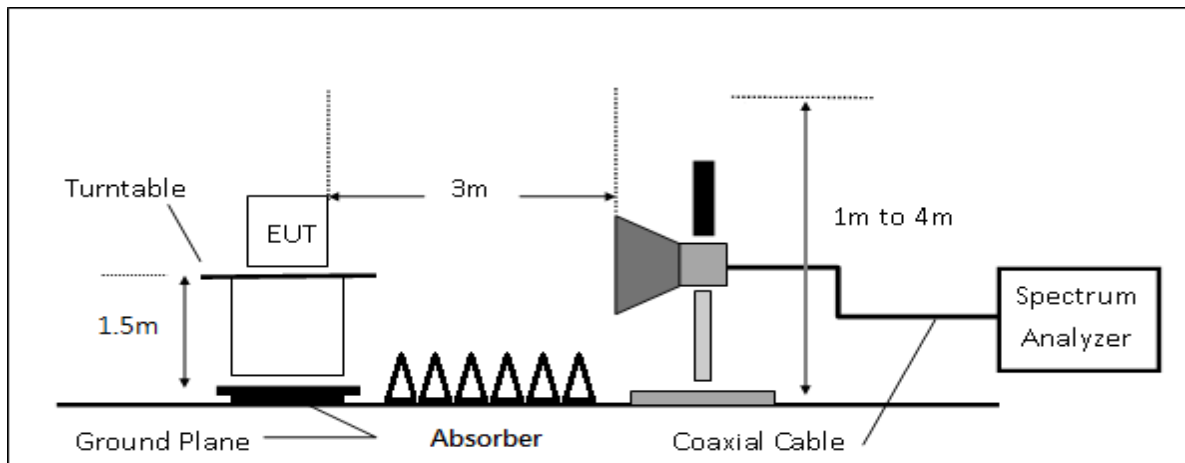
(A) Radiated Emission Test Set-UP Frequency Below 30MHz.



(B) Radiated Emission Test Set-Up, Frequency form 30MHz to 1000MHz



(C) Radiated Emission Test Set-UP Frequency Over 1 GHz



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#### 6.4 Measurement Procedure (Simultaneous case)

1. The testing follows the Measurement Procedure of ANSI C63.10:2013.
2. The EUT was placed on a turn table with 0.8m for frequency < 1GHz and 1.5m for frequency > 1GHz above ground plan.
3. The turn table shall rotate 360 degrees to determine the position of maximum emission level.
4. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emissions.
5. Set the spectrum analyzer as RBW=120 kHz and VBW=300 kHz for Peak Detector (PK) and Quasi-peak (QP) at frequency below 1 GHz.
6. Set the spectrum analyzer as RBW=1 MHz, VBW=3 MHz for Peak Detector at frequency above 1 GHz.
7. Set the spectrum analyzer as RBW=1 MHz, VBW=10 Hz (Duty cycle > 98%) or VBW ≥ 1/T (Duty cycle < 98%) for Average Detector at frequency above 1 GHz.
8. When measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made “while keeping the antenna in the ‘cone of radiation’ from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response.” is still within the 3dB illumination BW of the measurement antenna.
9. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
10. And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical. On spectrum, change spectrum mode in linear display mode, and reduce VBW = 10Hz if average reading is measured.
11. Repeat above procedures until all default test channel measured were complete.

#### 6.5 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor (if any) from the measured reading. The basic equation with a sample calculation is as follows:

$$FS = RA + AF + CL - AG$$

**Where** *FS* = Field Strength

*CL* = Cable Attenuation Factor (Cable Loss)

*RA* = Reading Amplitude

*AG* = Amplifier Gain

*AF* = Antenna Factor

*The limit of the emission level is expressed in dBuV/m, which converts 20\*log(uV/m)*

*Actual FS(dBuV/m) = SPA. Reading level(dBuV) + Factor(dB)*

*Factor(dB) = Antenna Factor(dBuV/m) + Cable Loss(dB) – Pre\_Amplifier Gain(dB)*

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## 6.6 Test Results of Radiated Spurious Emissions form 9 kHz to 30 MHz

The low frequency, which started from 9 kHz to 30MHz, was pre-scanned and the result which was 20dB lower than the limit per 15.31(o) & RSS-GEN §6.13.2 was not reported.

## 6.7 Measurement Result

Note: Refer to next page spectrum analyzer data chart and tabular data sheets.

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## Radiated Spurious Emission Measurement Result

## 6.7.1 Mode 1

Report Number :ER/2021/80088

Test Site :SAC 1

Operation Mode :802.11a\_BR(1M)

Test Date :2021-09-06

Test Frequency :5220 MHz\_2480 MHz

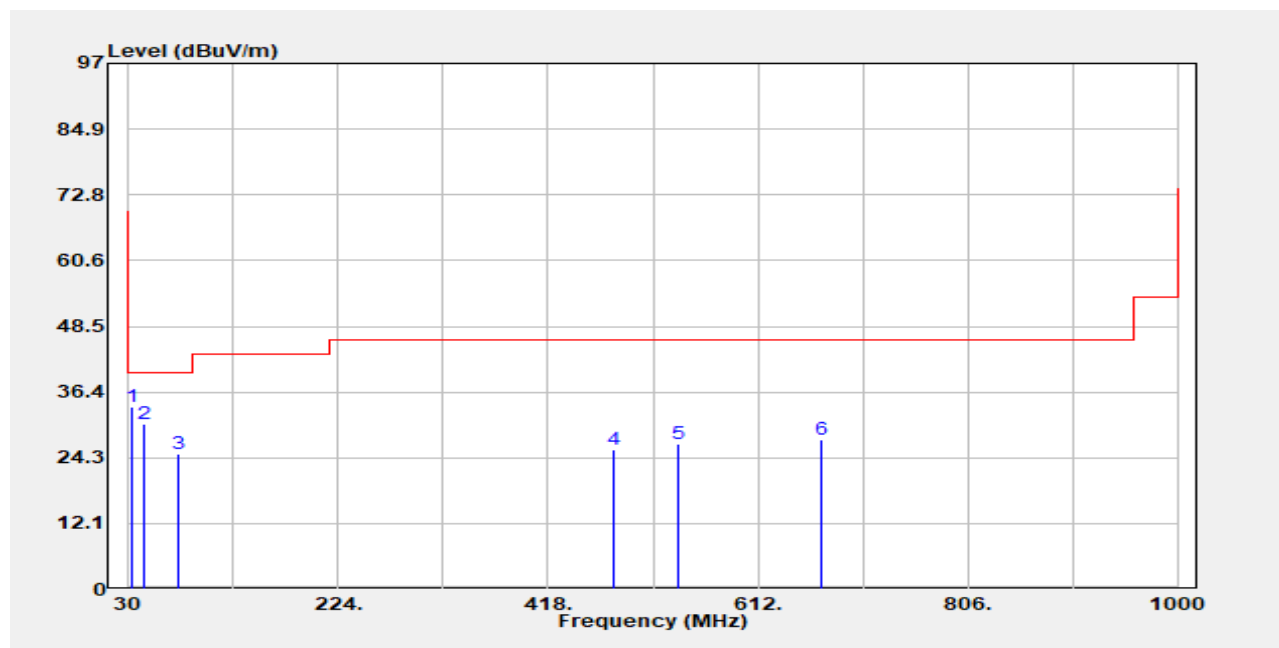
Temp./Humi. :27.1/63

Test Mode :Tx CH Mid\_High

Antenna Pol. :VERTICAL

EUT Pol :E2 Plane

Engineer :GN Lin



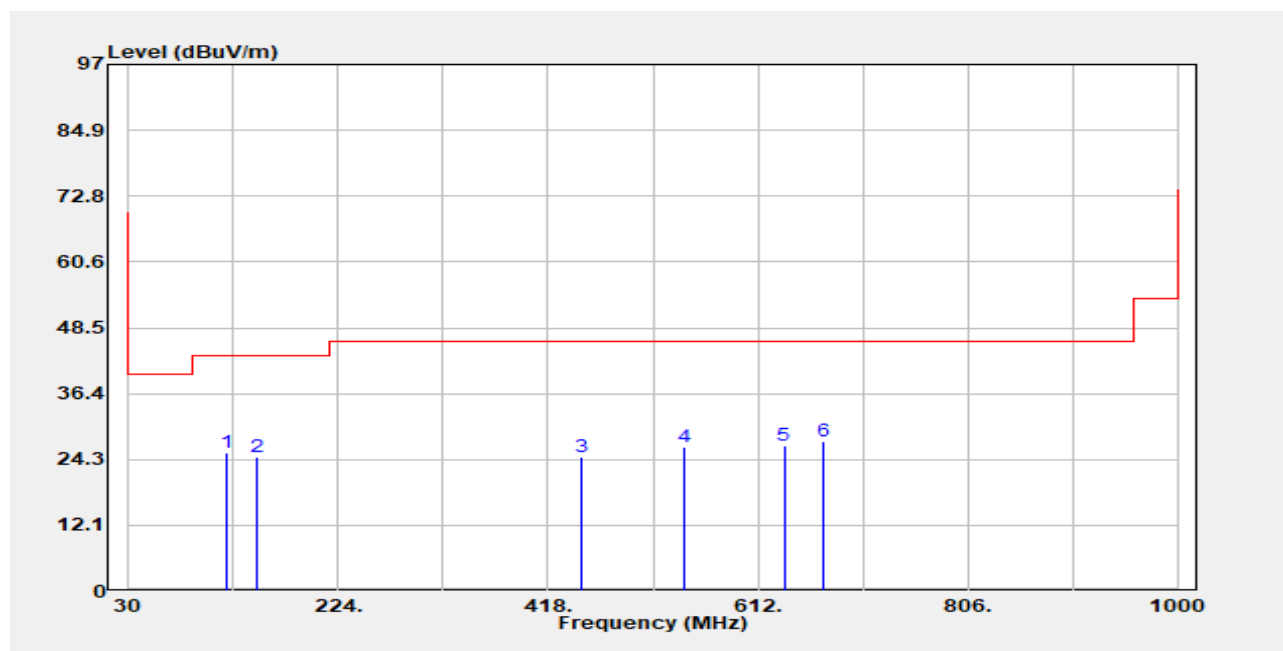
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 33.233       | Peak                         | 40.17                             | -6.64        | 33.53                  | 40.00                  | -6.47        |
| 44.550       | Peak                         | 43.31                             | -12.84       | 30.47                  | 40.00                  | -9.53        |
| 75.267       | Peak                         | 42.31                             | -17.26       | 25.06                  | 40.00                  | -14.94       |
| 479.433      | Peak                         | 31.80                             | -5.95        | 25.85                  | 46.00                  | -20.15       |
| 537.633      | Peak                         | 30.69                             | -4.00        | 26.69                  | 46.00                  | -19.31       |
| 670.200      | Peak                         | 30.95                             | -3.29        | 27.66                  | 46.00                  | -18.34       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_BR(1M)    | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_2480 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_High    | Antenna Pol. | :Horizontal |
| EUT Pol        | :E2 Plane          | Engineer     | :GN Lin     |



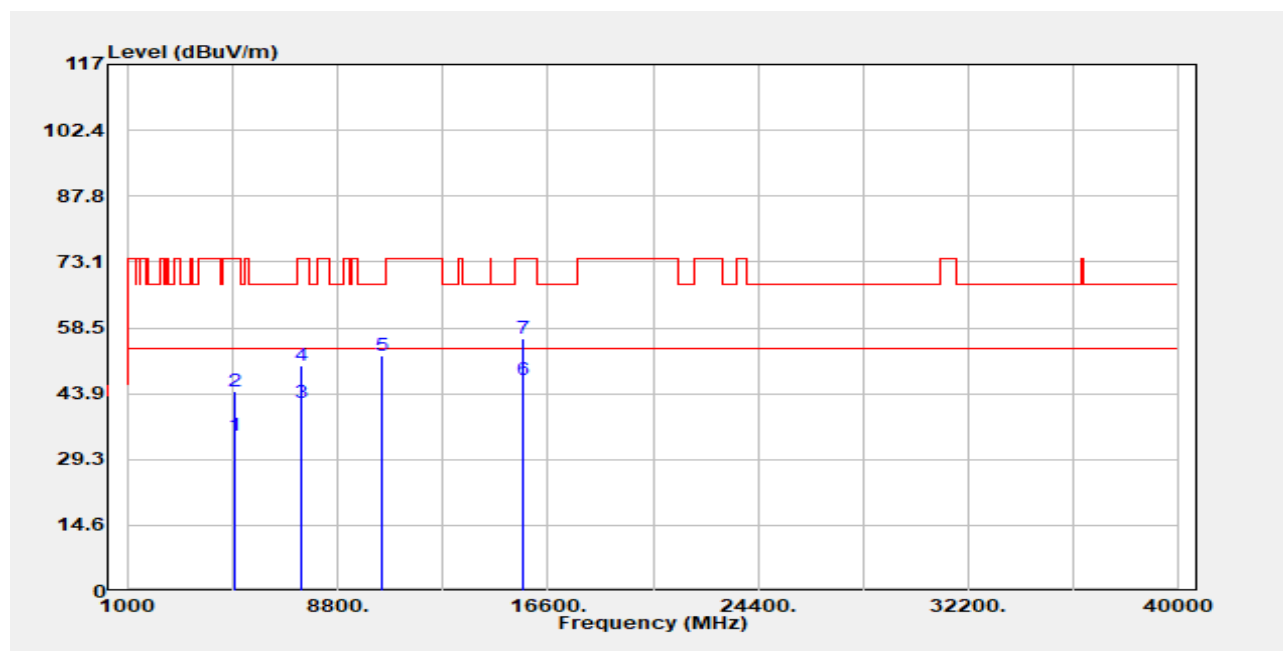
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 120.533      | Peak                         | 37.20                             | -11.79       | 25.41                  | 43.50                  | -18.09       |
| 148.017      | Peak                         | 37.38                             | -12.63       | 24.74                  | 43.50                  | -18.76       |
| 448.717      | Peak                         | 30.95                             | -6.16        | 24.80                  | 46.00                  | -21.20       |
| 544.100      | Peak                         | 30.06                             | -3.62        | 26.45                  | 46.00                  | -19.55       |
| 636.250      | Peak                         | 30.21                             | -3.33        | 26.88                  | 46.00                  | -19.12       |
| 671.817      | Peak                         | 30.80                             | -3.24        | 27.56                  | 46.00                  | -18.44       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_BR(1M)    | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_2480 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_High    | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane          | Engineer     | :Neo Tsai   |



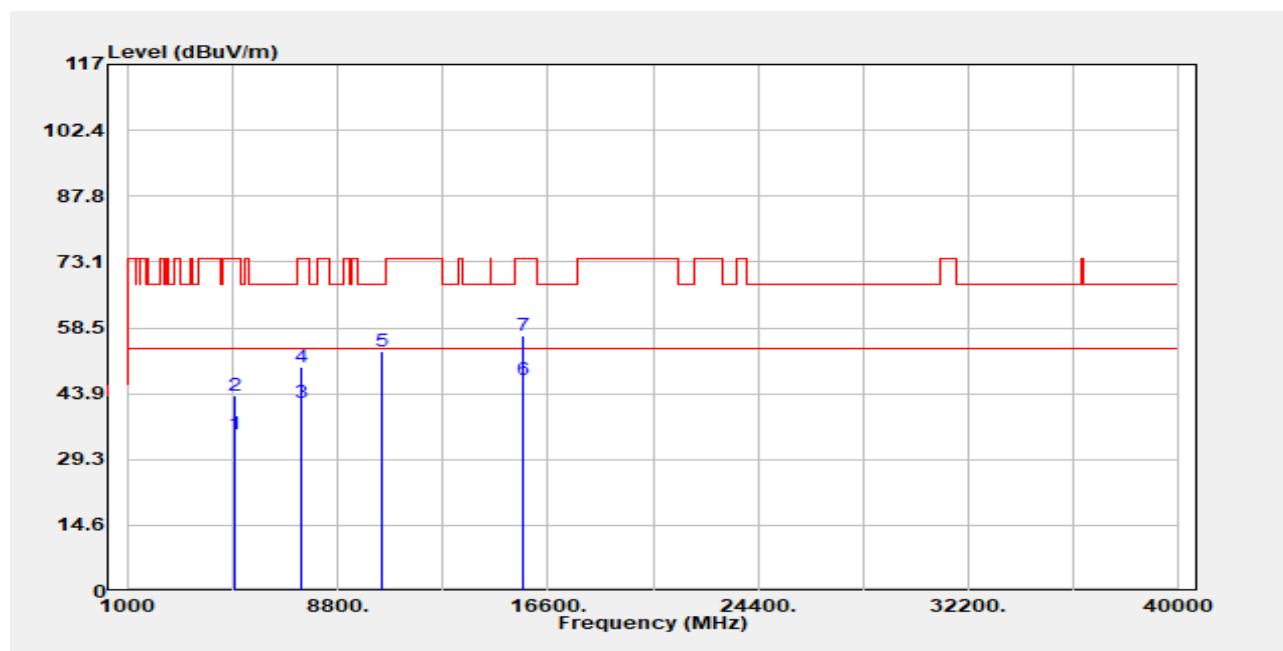
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4960.000     | Average                      | 27.15                             | 7.56         | 34.71                  | 54.00                  | -19.29       |
| 4960.000     | Peak                         | 36.88                             | 7.56         | 44.44                  | 74.00                  | -29.56       |
| 7440.000     | Average                      | 27.09                             | 14.62        | 41.71                  | 54.00                  | -12.29       |
| 7440.000     | Peak                         | 35.51                             | 14.62        | 50.13                  | 74.00                  | -23.87       |
| 10440.000    | Peak                         | 33.04                             | 19.25        | 52.29                  | 68.20                  | -15.91       |
| 15660.000    | Average                      | 25.12                             | 21.82        | 46.94                  | 54.00                  | -7.06        |
| 15660.000    | Peak                         | 34.29                             | 21.82        | 56.11                  | 74.00                  | -17.89       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_BR(1M)    | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_2480 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_High    | Antenna Pol. | :HORIZONTAL |
| EUT Pol        | :E2 Plane          | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4960.000     | Average                      | 27.22                             | 7.56         | 34.78                  | 54.00                  | -19.22       |
| 4960.000     | Peak                         | 35.90                             | 7.56         | 43.46                  | 74.00                  | -30.54       |
| 7440.000     | Average                      | 27.30                             | 14.62        | 41.92                  | 54.00                  | -12.08       |
| 7440.000     | Peak                         | 35.04                             | 14.62        | 49.66                  | 74.00                  | -24.34       |
| 10440.000    | Peak                         | 34.08                             | 19.25        | 53.34                  | 68.20                  | -14.86       |
| 15660.000    | Average                      | 25.13                             | 21.82        | 46.95                  | 54.00                  | -7.05        |
| 15660.000    | Peak                         | 34.97                             | 21.82        | 56.79                  | 74.00                  | -17.21       |

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## 6.7.2 Mode 2

Report Number :ER/2021/80088

Test Site :SAC 1

Operation Mode :802.11a\_BLE

Test Date :2021-09-06

Test Frequency :5220 MHz\_2442 MHz

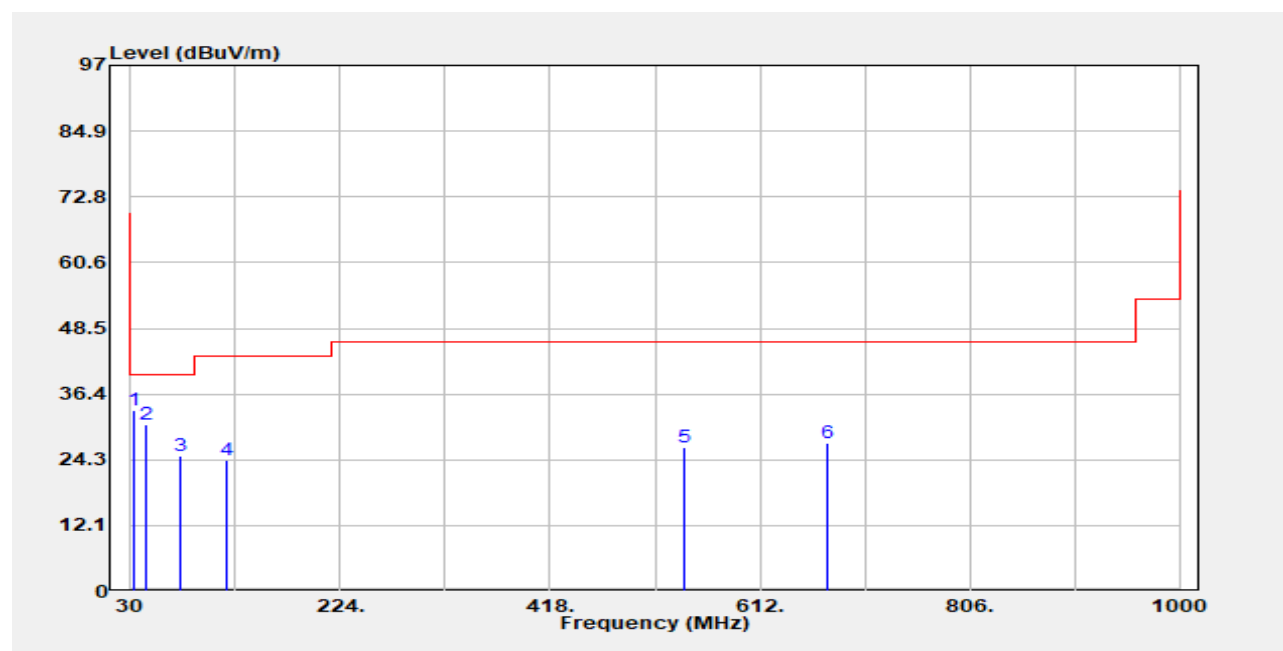
Temp./Humi. :27.1/63

Test Mode :Tx CH Mid\_Mid

Antenna Pol. :VERTICAL

EUT Pol :E2 Plane

Engineer :GN Lin



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dB $\mu$ V | Factor<br>dB | Actual<br>FS<br>dB $\mu$ V/m | Limit<br>@3m<br>dB $\mu$ V/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------------|--------------|------------------------------|------------------------------|--------------|
| 33.233       | Peak                         | 40.04                                   | -6.64        | 33.40                        | 40.00                        | -6.60        |
| 44.550       | Peak                         | 43.56                                   | -12.84       | 30.72                        | 40.00                        | -9.28        |
| 75.267       | Peak                         | 42.21                                   | -17.26       | 24.96                        | 40.00                        | -15.04       |
| 118.917      | Peak                         | 35.92                                   | -11.70       | 24.21                        | 43.50                        | -19.29       |
| 542.483      | Peak                         | 30.10                                   | -3.66        | 26.44                        | 46.00                        | -19.56       |
| 675.050      | Peak                         | 30.36                                   | -3.14        | 27.21                        | 46.00                        | -18.79       |

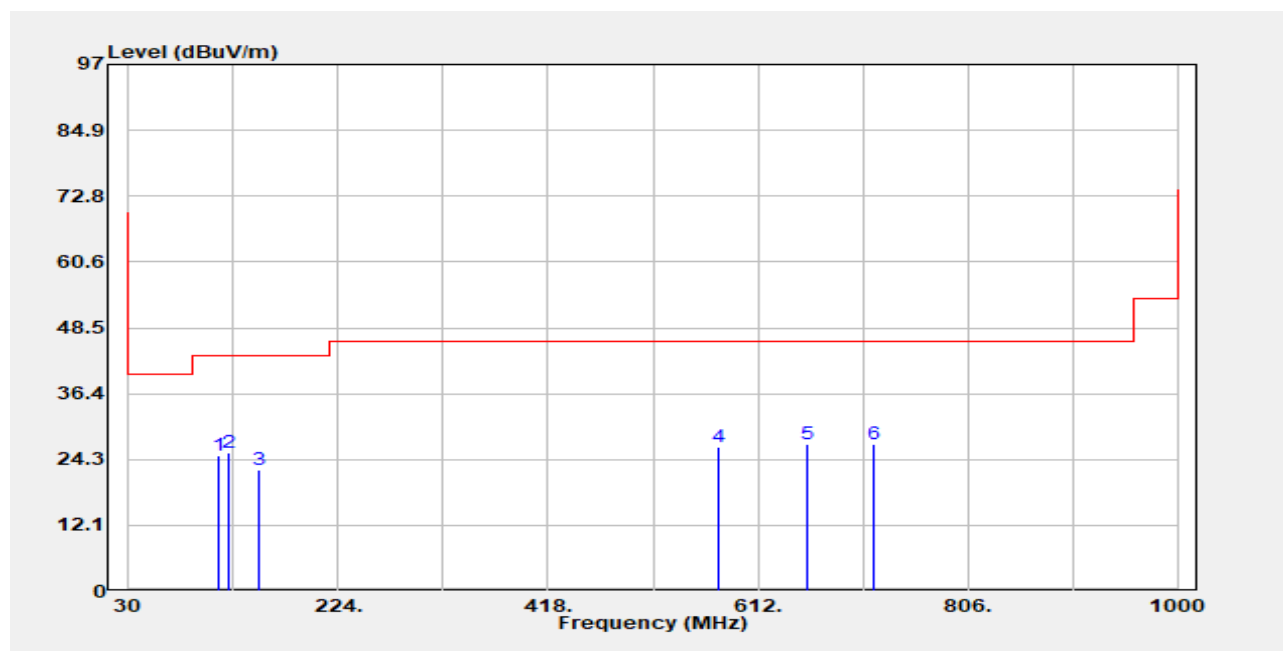
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Report Number :ER/2021/80088  
Operation Mode :802.11a\_BLE  
Test Frequency :5220 MHz\_2442 MHz  
Test Mode :Tx CH Mid\_Mid  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :Horizontal  
Engineer :GN Lin



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 112.450      | Peak                         | 36.93                             | -12.04       | 24.88                  | 43.50                  | -18.62       |
| 122.150      | Peak                         | 37.24                             | -11.68       | 25.55                  | 43.50                  | -17.95       |
| 151.250      | Peak                         | 35.03                             | -12.77       | 22.26                  | 43.50                  | -21.24       |
| 574.817      | Peak                         | 31.47                             | -4.87        | 26.60                  | 46.00                  | -19.40       |
| 657.267      | Peak                         | 30.48                             | -3.50        | 26.99                  | 46.00                  | -19.01       |
| 718.700      | Peak                         | 30.74                             | -3.68        | 27.06                  | 46.00                  | -18.94       |

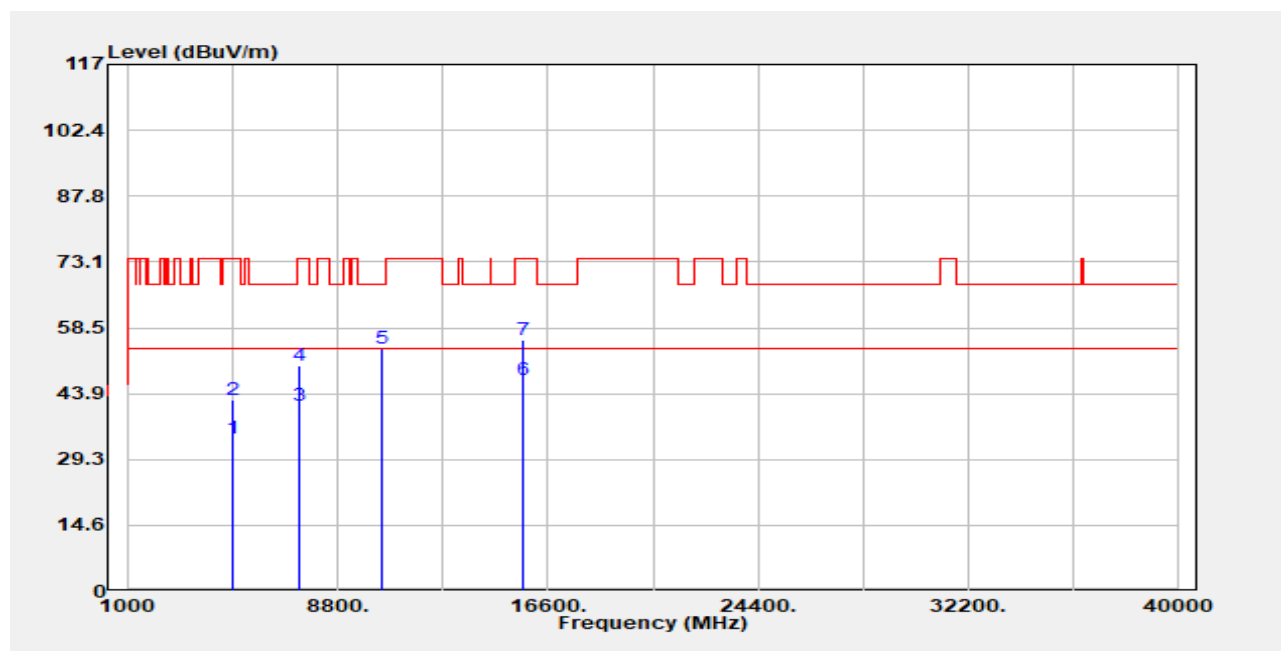
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Report Number :ER/2021/80088  
Operation Mode :802.11a\_BLE  
Test Frequency :5220 MHz\_2442 MHz  
Test Mode :Tx CH Mid\_Mid  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :VERTICAL  
Engineer :Neo Tsai



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4884.000     | Average                      | 27.08                             | 6.93         | 34.01                  | 54.00                  | -19.99       |
| 4884.000     | Peak                         | 35.57                             | 6.93         | 42.50                  | 74.00                  | -31.50       |
| 7326.000     | Average                      | 26.53                             | 14.76        | 41.29                  | 54.00                  | -12.71       |
| 7326.000     | Peak                         | 35.26                             | 14.76        | 50.02                  | 74.00                  | -23.98       |
| 10440.000    | Peak                         | 34.68                             | 19.25        | 53.94                  | 68.20                  | -14.26       |
| 15660.000    | Average                      | 25.09                             | 21.82        | 46.91                  | 54.00                  | -7.09        |
| 15660.000    | Peak                         | 34.12                             | 21.82        | 55.94                  | 74.00                  | -18.06       |

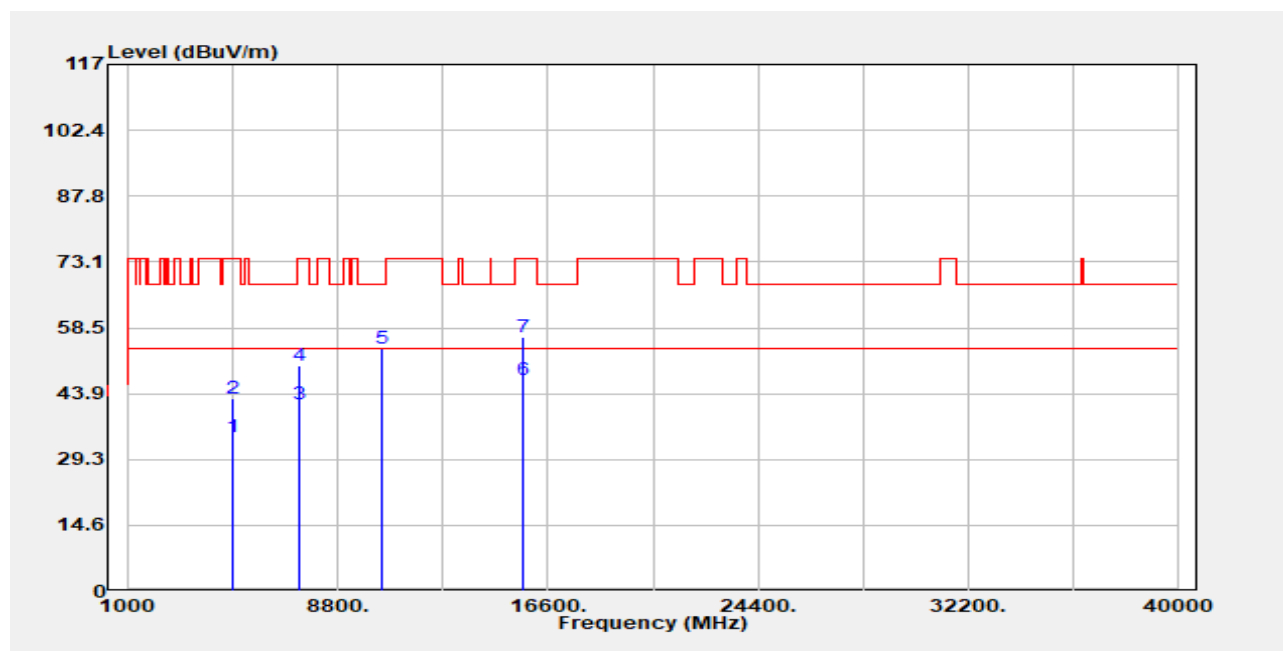
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Report Number :ER/2021/80088  
Operation Mode :802.11a\_BLE  
Test Frequency :5220 MHz\_2442 MHz  
Test Mode :Tx CH Mid\_Mid  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :HORIZONTAL  
Engineer :Neo Tsai



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4884.000     | Average                      | 27.23                             | 6.93         | 34.16                  | 54.00                  | -19.84       |
| 4884.000     | Peak                         | 35.86                             | 6.93         | 42.80                  | 74.00                  | -31.20       |
| 7326.000     | Average                      | 26.87                             | 14.76        | 41.63                  | 54.00                  | -12.37       |
| 7326.000     | Peak                         | 35.28                             | 14.76        | 50.04                  | 74.00                  | -23.96       |
| 10440.000    | Peak                         | 34.63                             | 19.25        | 53.88                  | 68.20                  | -14.32       |
| 15660.000    | Average                      | 25.11                             | 21.82        | 46.93                  | 54.00                  | -7.07        |
| 15660.000    | Peak                         | 34.66                             | 21.82        | 56.48                  | 74.00                  | -17.52       |

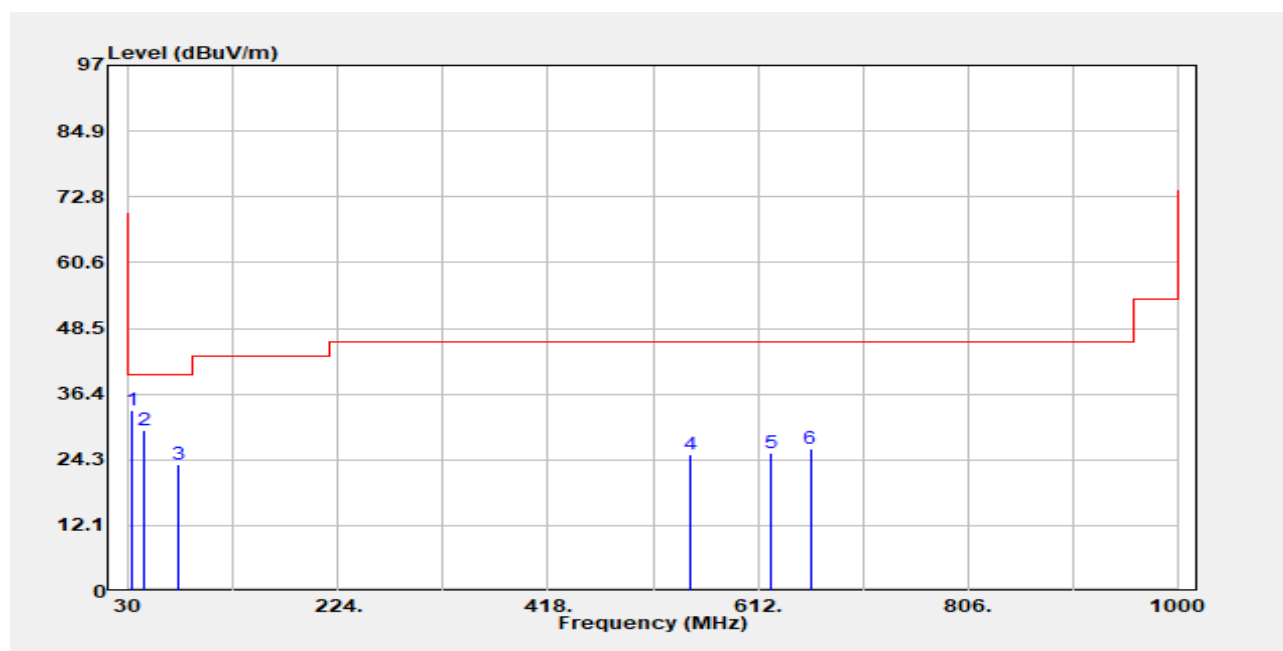
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### 6.7.3 Mode 3

|                |                     |              |             |
|----------------|---------------------|--------------|-------------|
| Report Number  | :ER/2021/80088      | Test Site    | :SAC 1      |
| Operation Mode | :802.11b_NFC        | Test Date    | :2021-09-06 |
| Test Frequency | :2412 MHz_13.56 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low          | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane           | Engineer     | :GN Lin     |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dB $\mu$ V | Factor<br>dB | Actual<br>FS<br>dB $\mu$ V/m | Limit<br>@3m<br>dB $\mu$ V/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------------|--------------|------------------------------|------------------------------|--------------|
| 33.233       | Peak                         | 39.97                                   | -6.64        | 33.34                        | 40.00                        | -6.66        |
| 44.550       | Peak                         | 42.49                                   | -12.84       | 29.65                        | 40.00                        | -10.35       |
| 75.267       | Peak                         | 40.78                                   | -17.26       | 23.52                        | 40.00                        | -16.48       |
| 548.950      | Peak                         | 28.84                                   | -3.65        | 25.19                        | 46.00                        | -20.81       |
| 624.933      | Peak                         | 29.09                                   | -3.53        | 25.56                        | 46.00                        | -20.44       |
| 660.500      | Peak                         | 29.72                                   | -3.52        | 26.20                        | 46.00                        | -19.80       |

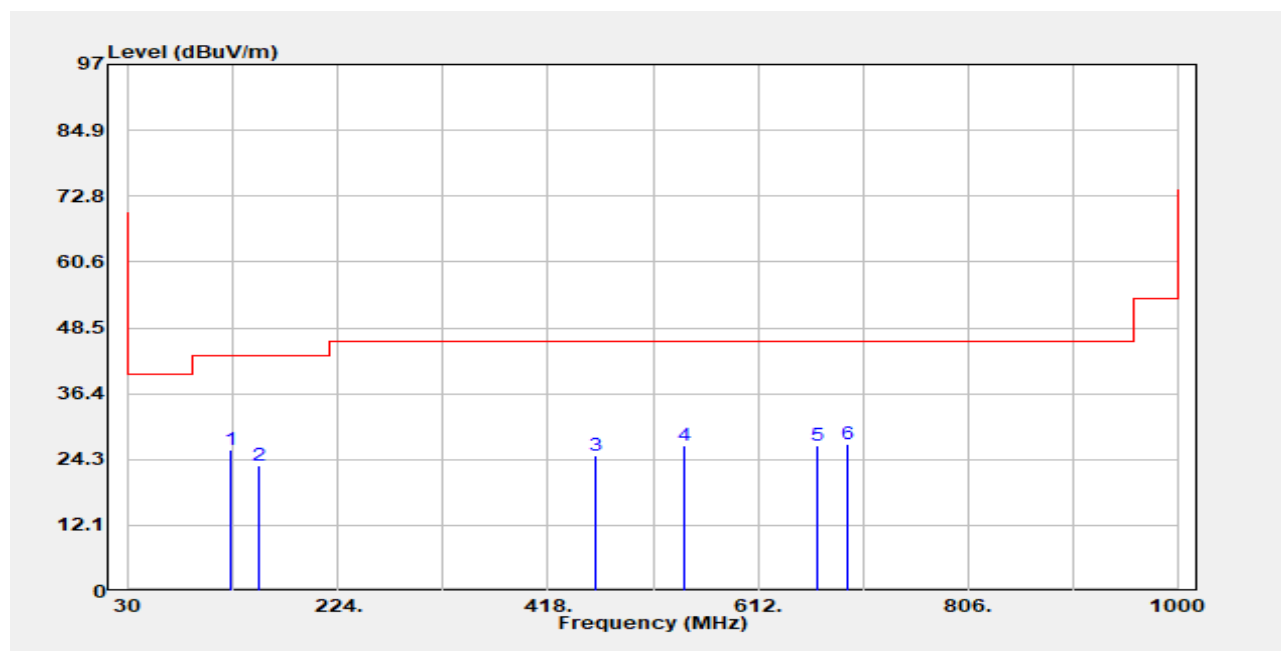
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Report Number :ER/2021/80088  
Operation Mode :802.11b\_NFC  
Test Frequency :2412 MHz\_13.56 MHz  
Test Mode :Tx CH Low  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :Horizontal  
Engineer :GN Lin



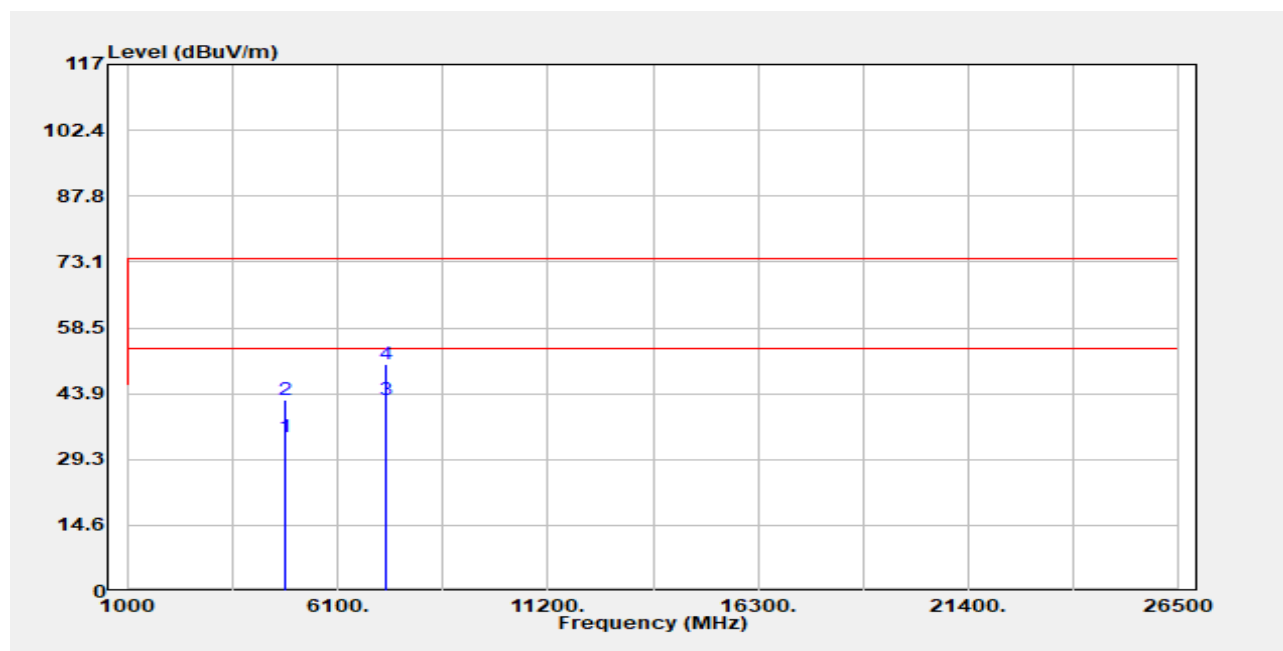
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 123.767      | Peak                         | 37.61                             | -11.67       | 25.93                  | 43.50                  | -17.57       |
| 151.250      | Peak                         | 36.03                             | -12.77       | 23.26                  | 43.50                  | -20.24       |
| 461.650      | Peak                         | 31.15                             | -6.07        | 25.08                  | 46.00                  | -20.92       |
| 544.100      | Peak                         | 30.45                             | -3.62        | 26.83                  | 46.00                  | -19.17       |
| 666.967      | Peak                         | 30.20                             | -3.34        | 26.86                  | 46.00                  | -19.14       |
| 694.450      | Peak                         | 30.42                             | -3.36        | 27.06                  | 46.00                  | -18.94       |

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|                |                     |              |             |
|----------------|---------------------|--------------|-------------|
| Report Number  | :ER/2021/80088      | Test Site    | :SAC 1      |
| Operation Mode | :802.11b_NFC        | Test Date    | :2021-09-06 |
| Test Frequency | :2412 MHz_13.56 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low          | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane           | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4824.000     | Average                      | 27.35                             | 6.82         | 34.17                  | 54.00                  | -19.83       |
| 4824.000     | Peak                         | 35.77                             | 6.82         | 42.59                  | 74.00                  | -31.41       |
| 7236.000     | Average                      | 26.75                             | 15.66        | 42.41                  | 54.00                  | -11.59       |
| 7236.000     | Peak                         | 34.65                             | 15.66        | 50.31                  | 74.00                  | -23.69       |

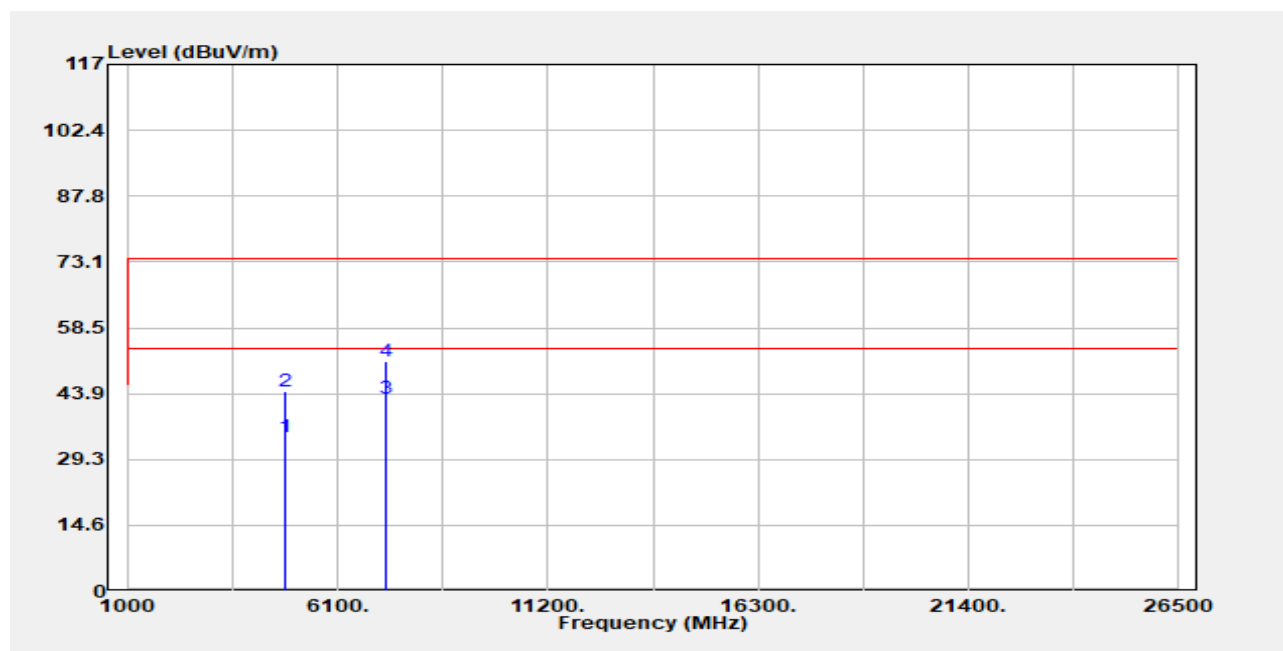
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Report Number :ER/2021/80088  
Operation Mode :802.11b\_NFC  
Test Frequency :2412 MHz\_13.56 MHz  
Test Mode :Tx CH Low  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :HORIZONTAL  
Engineer :Neo Tsai



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4824.000     | Average                      | 27.51                             | 6.82         | 34.33                  | 54.00                  | -19.67       |
| 4824.000     | Peak                         | 37.41                             | 6.82         | 44.23                  | 74.00                  | -29.77       |
| 7236.000     | Average                      | 27.08                             | 15.66        | 42.74                  | 54.00                  | -11.26       |
| 7236.000     | Peak                         | 35.36                             | 15.66        | 51.01                  | 74.00                  | -22.99       |

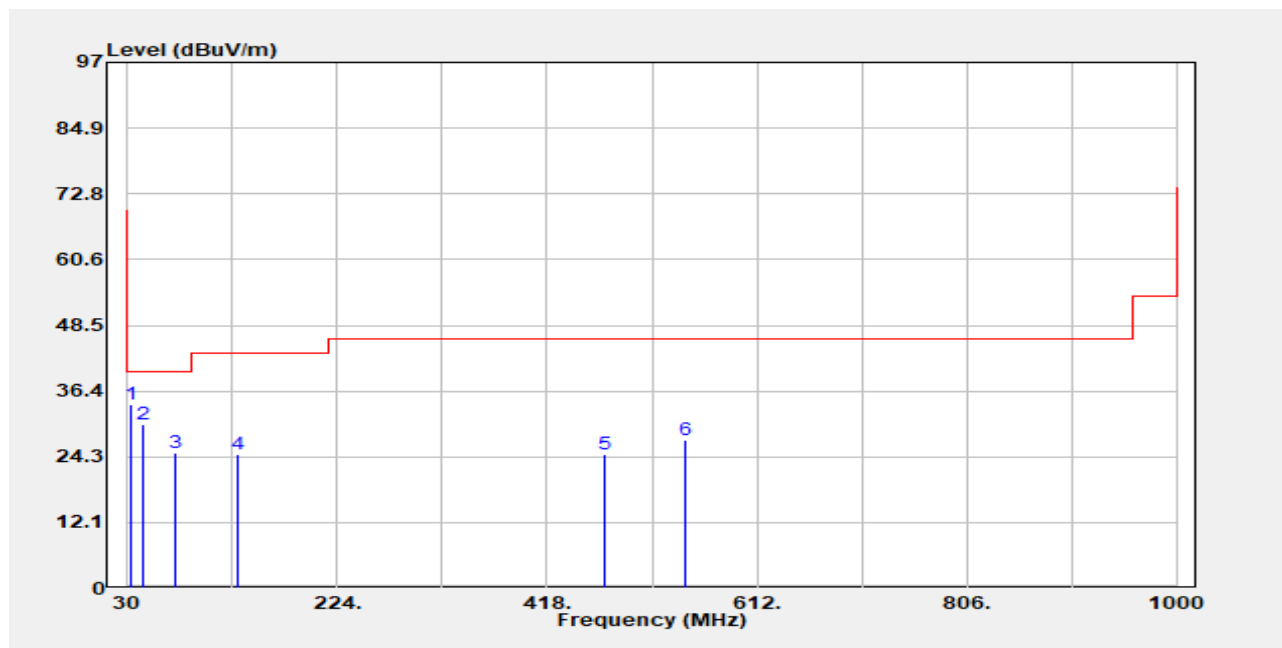
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### 6.7.4 Mode 4

|                |                     |              |             |
|----------------|---------------------|--------------|-------------|
| Report Number  | :ER/2021/80088      | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_NFC        | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_13.56 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH MID          | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane           | Engineer     | :GN Lin     |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dB $\mu$ V | Factor<br>dB | Actual<br>FS<br>dB $\mu$ V/m | Limit<br>@3m<br>dB $\mu$ V/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------------|--------------|------------------------------|------------------------------|--------------|
| 33.233       | Peak                         | 40.44                                   | -6.64        | 33.80                        | 40.00                        | -6.20        |
| 44.550       | Peak                         | 42.96                                   | -12.84       | 30.12                        | 40.00                        | -9.88        |
| 73.650       | Peak                         | 42.48                                   | -17.60       | 24.88                        | 40.00                        | -15.12       |
| 131.850      | Peak                         | 36.53                                   | -11.86       | 24.67                        | 43.50                        | -18.83       |
| 471.350      | Peak                         | 30.76                                   | -6.09        | 24.67                        | 46.00                        | -21.33       |
| 545.717      | Peak                         | 31.01                                   | -3.61        | 27.40                        | 46.00                        | -18.60       |

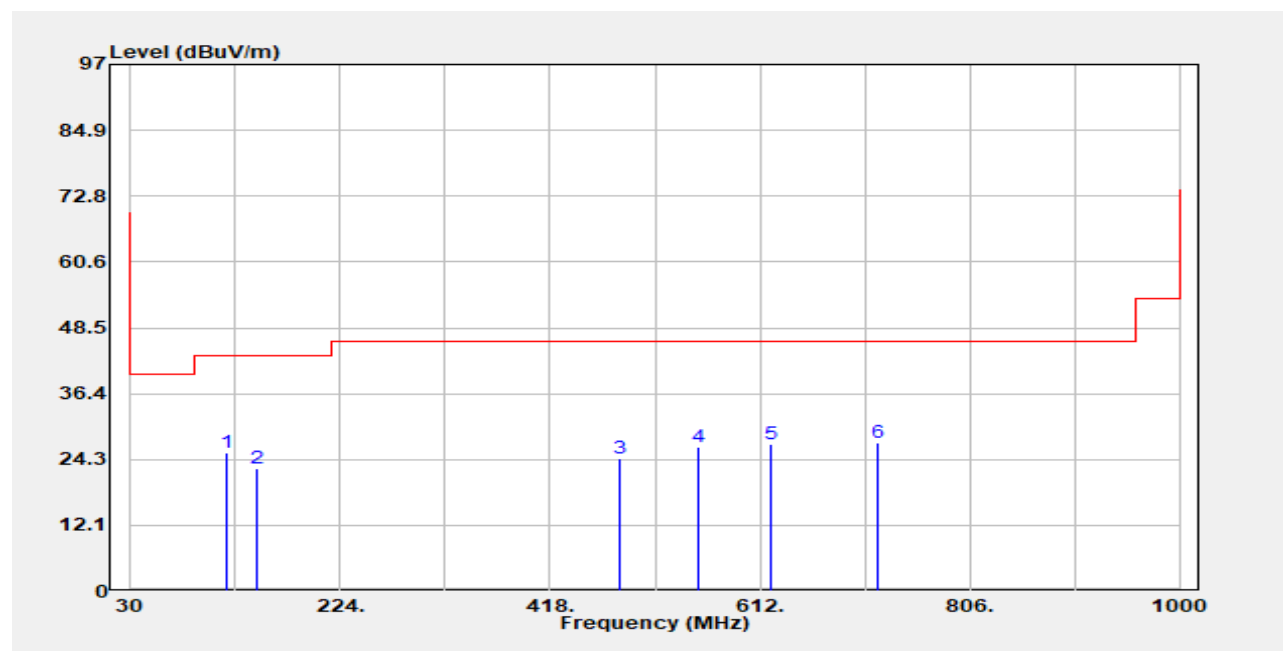
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Report Number :ER/2021/80088  
Operation Mode :802.11a\_NFC  
Test Frequency :5220 MHz\_13.56 MHz  
Test Mode :Tx CH MID  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :Horizontal  
Engineer :GN Lin



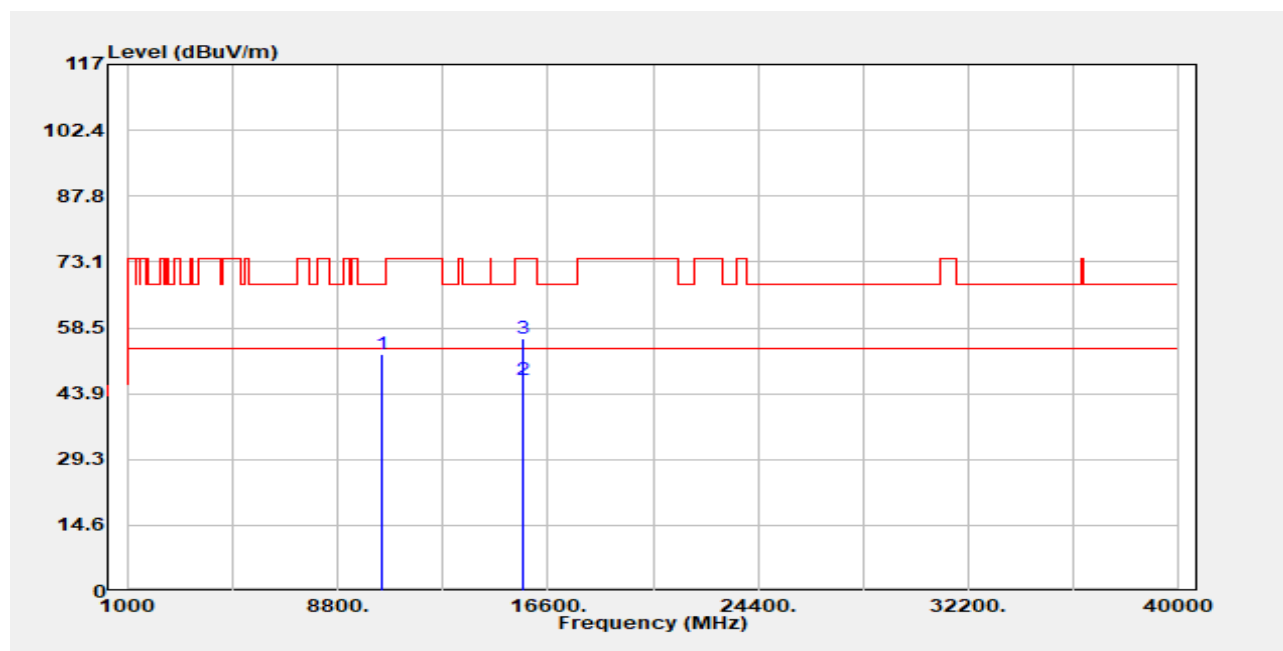
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 118.917      | Peak                         | 37.32                             | -11.70       | 25.61                  | 43.50                  | -17.89       |
| 146.400      | Peak                         | 35.18                             | -12.57       | 22.61                  | 43.50                  | -20.89       |
| 482.667      | Peak                         | 30.46                             | -5.93        | 24.53                  | 46.00                  | -21.47       |
| 555.417      | Peak                         | 30.41                             | -3.94        | 26.47                  | 46.00                  | -19.53       |
| 621.700      | Peak                         | 30.87                             | -3.69        | 27.19                  | 46.00                  | -18.81       |
| 721.933      | Peak                         | 30.82                             | -3.59        | 27.23                  | 46.00                  | -18.77       |

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|                |                     |              |             |
|----------------|---------------------|--------------|-------------|
| Report Number  | :ER/2021/80088      | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_NFC        | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_13.56 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH MID          | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane           | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 10440.000    | Peak                         | 33.53                             | 19.25        | 52.78                  | 68.20                  | -15.42       |
| 15660.000    | Average                      | 25.19                             | 21.82        | 47.01                  | 54.00                  | -6.99        |
| 15660.000    | Peak                         | 34.44                             | 21.82        | 56.26                  | 74.00                  | -17.74       |

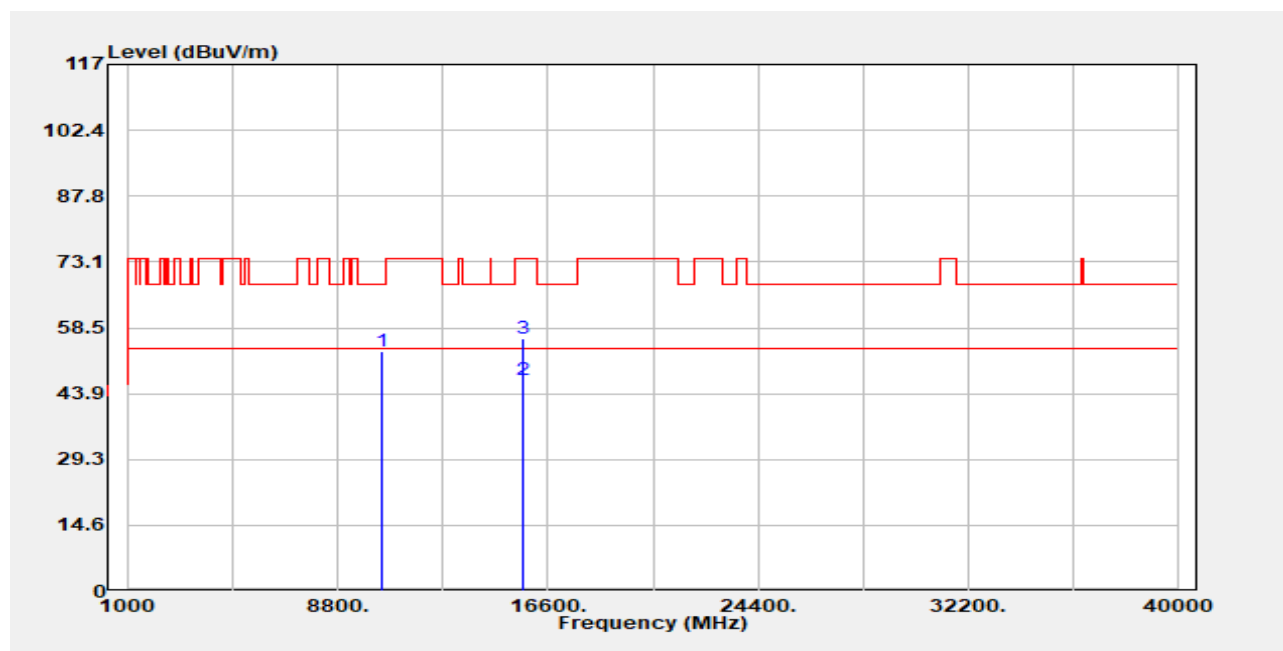
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Report Number :ER/2021/80088  
Operation Mode :802.11a\_NFC  
Test Frequency :5220 MHz\_13.56 MHz  
Test Mode :Tx CH MID  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :HORIZONTAL  
Engineer :Neo Tsai



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 10440.000    | Peak                         | 34.02                             | 19.25        | 53.28                  | 68.20                  | -14.92       |
| 15660.000    | Average                      | 25.09                             | 21.82        | 46.91                  | 54.00                  | -7.09        |
| 15660.000    | Peak                         | 34.18                             | 21.82        | 56.00                  | 74.00                  | -18.00       |

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## 6.7.5 Mode 5

Report Number :ER/2021/80088

Test Site :SAC 1

Operation Mode :802.11b\_LTE B30

Test Date :2021-09-06

Test Frequency :2412 MHz\_2310 MHz

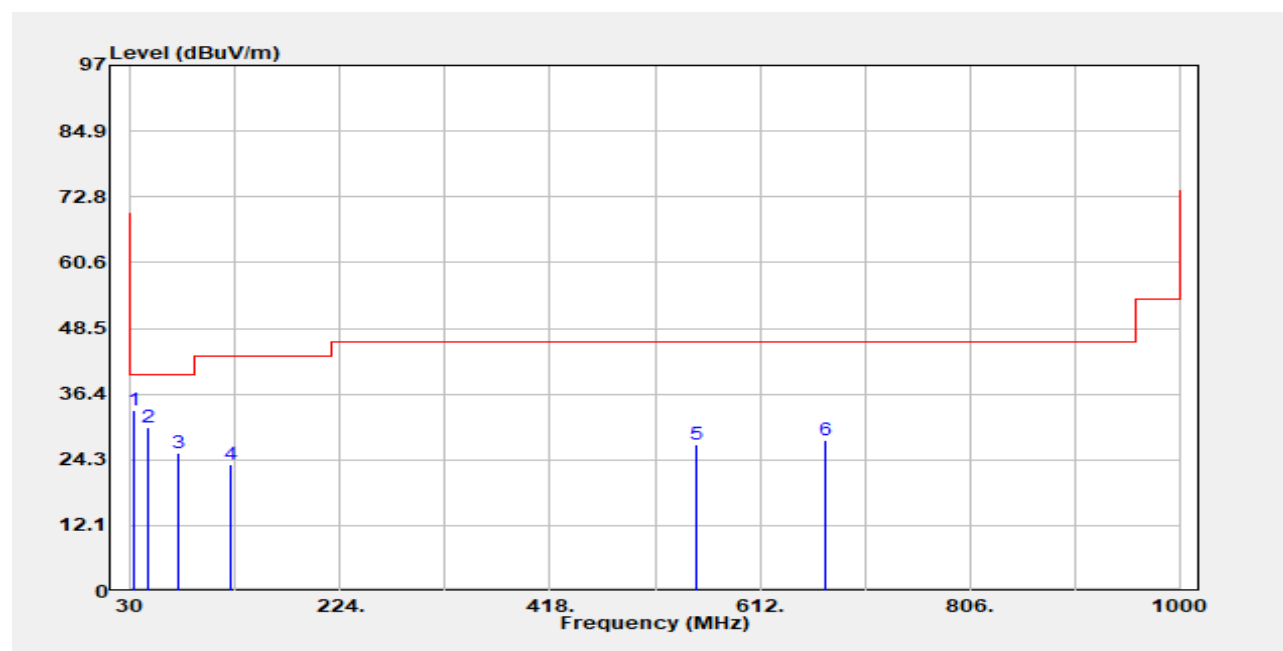
Temp./Humi. :27.1/63

Test Mode :Tx CH Low\_Mid

Antenna Pol. :VERTICAL

EUT Pol :E2 Plane

Engineer :GN Lin



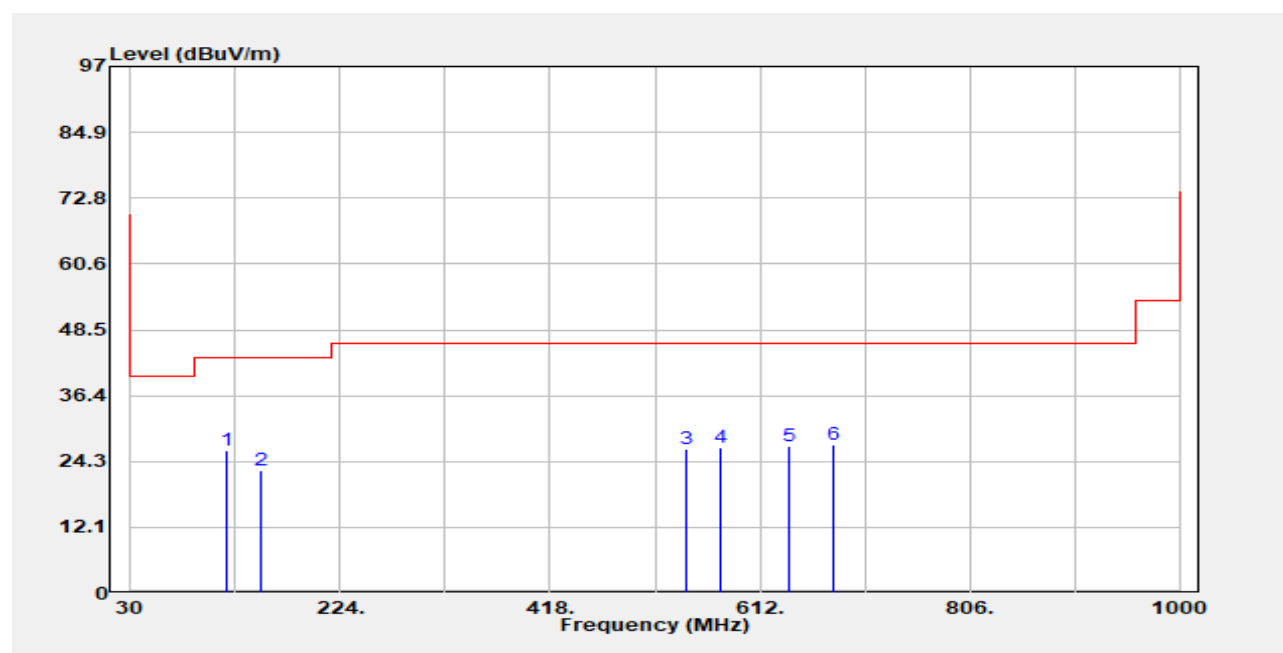
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBUV | Factor<br>dB | Actual<br>FS<br>dBUV/m | Limit<br>@3m<br>dBUV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 33.233       | Peak                         | 40.05                             | -6.64        | 33.41                  | 40.00                  | -6.59        |
| 46.167       | Peak                         | 43.98                             | -13.74       | 30.24                  | 40.00                  | -9.76        |
| 73.650       | Peak                         | 43.02                             | -17.60       | 25.43                  | 40.00                  | -14.57       |
| 122.150      | Peak                         | 35.11                             | -11.68       | 23.43                  | 43.50                  | -20.07       |
| 553.800      | Peak                         | 30.80                             | -3.85        | 26.95                  | 46.00                  | -19.05       |
| 671.817      | Peak                         | 31.15                             | -3.24        | 27.90                  | 46.00                  | -18.10       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11b_LTE B30   | Test Date    | :2021-09-06 |
| Test Frequency | :2412 MHz_2310 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low_Mid     | Antenna Pol. | :Horizontal |
| EUT Pol        | :E2 Plane          | Engineer     | :GN Lin     |



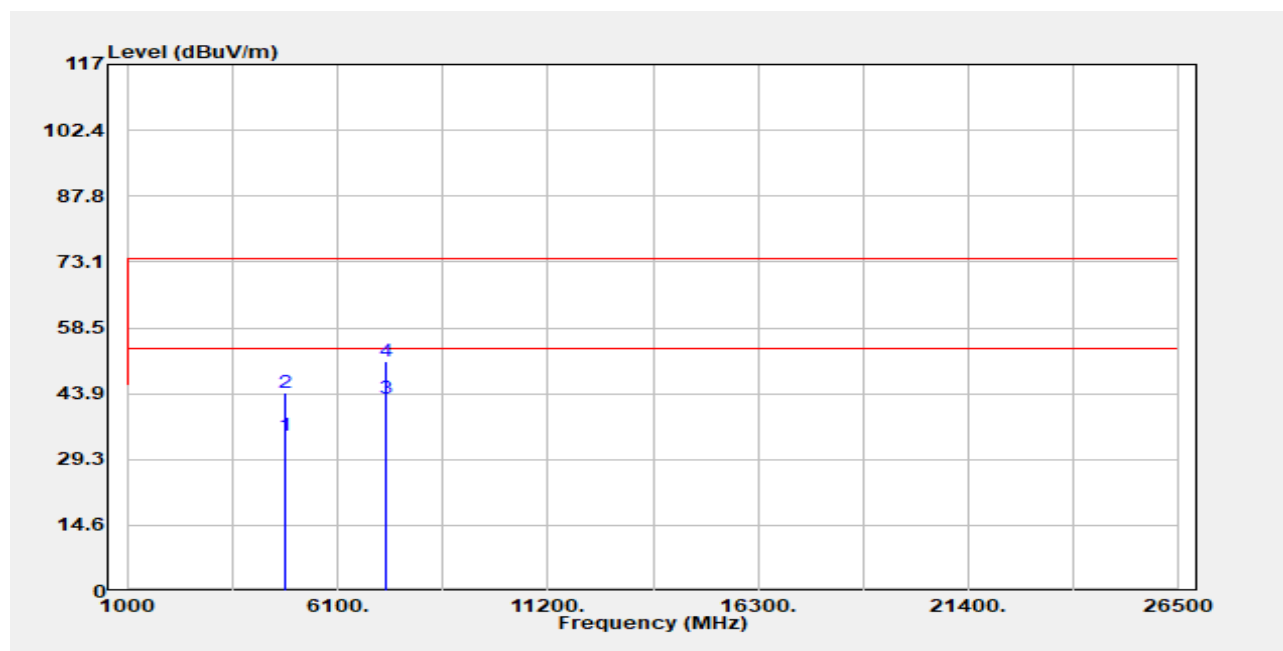
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 118.917      | Peak                         | 37.96                             | -11.70       | 26.26                  | 43.50                  | -17.24       |
| 151.250      | Peak                         | 35.44                             | -12.77       | 22.67                  | 43.50                  | -20.83       |
| 544.100      | Peak                         | 30.11                             | -3.62        | 26.50                  | 46.00                  | -19.50       |
| 574.817      | Peak                         | 31.55                             | -4.87        | 26.68                  | 46.00                  | -19.32       |
| 639.483      | Peak                         | 30.47                             | -3.41        | 27.06                  | 46.00                  | -18.94       |
| 679.900      | Peak                         | 30.58                             | -3.18        | 27.39                  | 46.00                  | -18.61       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11b_LTE B30   | Test Date    | :2021-09-06 |
| Test Frequency | :2412 MHz_2310 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low_Mid     | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane          | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4824.000     | Average                      | 27.59                             | 6.82         | 34.41                  | 54.00                  | -19.59       |
| 4824.000     | Peak                         | 37.18                             | 6.82         | 44.00                  | 74.00                  | -30.00       |
| 7236.000     | Average                      | 27.02                             | 15.66        | 42.68                  | 54.00                  | -11.32       |
| 7236.000     | Peak                         | 35.53                             | 15.66        | 51.19                  | 74.00                  | -22.81       |

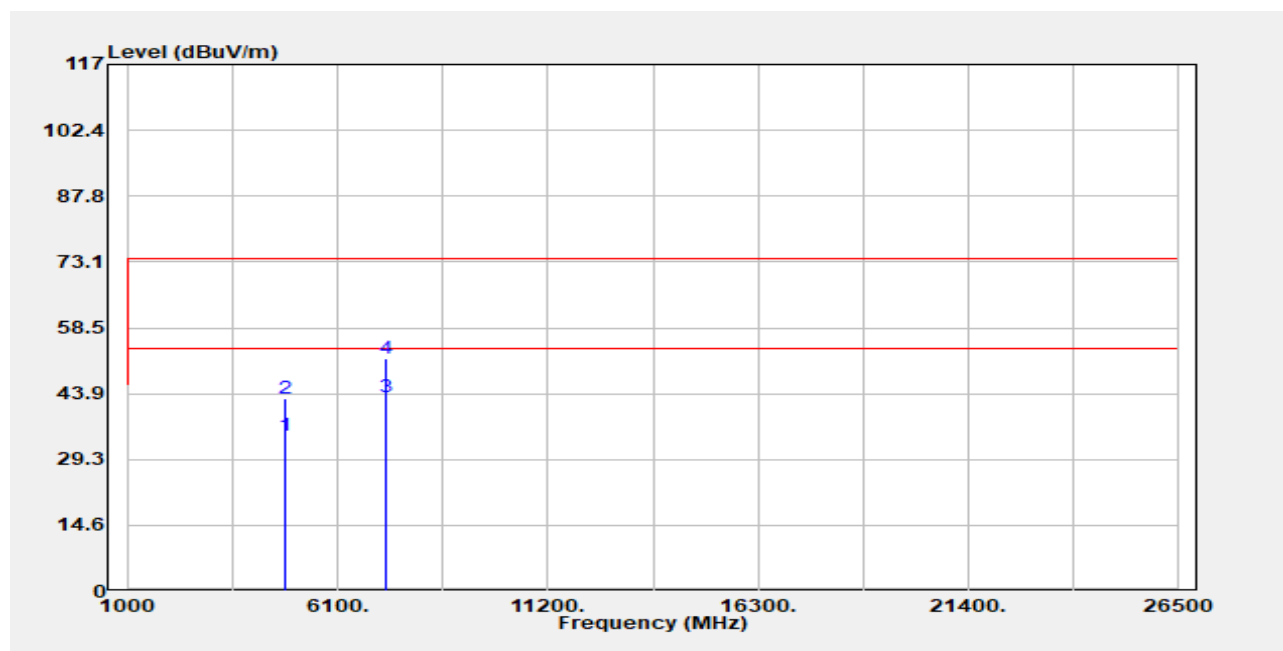
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Report Number :ER/2021/80088  
Operation Mode :802.11b\_LTE B30  
Test Frequency :2412 MHz\_2310 MHz  
Test Mode :Tx CH Low\_Mid  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :HORIZONTAL  
Engineer :Neo Tsai



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4824.000     | Average                      | 27.70                             | 6.82         | 34.52                  | 54.00                  | -19.48       |
| 4824.000     | Peak                         | 36.04                             | 6.82         | 42.86                  | 74.00                  | -31.14       |
| 7236.000     | Average                      | 27.41                             | 15.66        | 43.07                  | 54.00                  | -10.93       |
| 7236.000     | Peak                         | 35.98                             | 15.66        | 51.63                  | 74.00                  | -22.37       |

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## 6.7.6 Mode 6

Report Number :ER/2021/80088

Test Site :SAC 1

Operation Mode :802.11a\_LTE B30

Test Date :2021-09-06

Test Frequency :5220 MHz\_2310 MHz

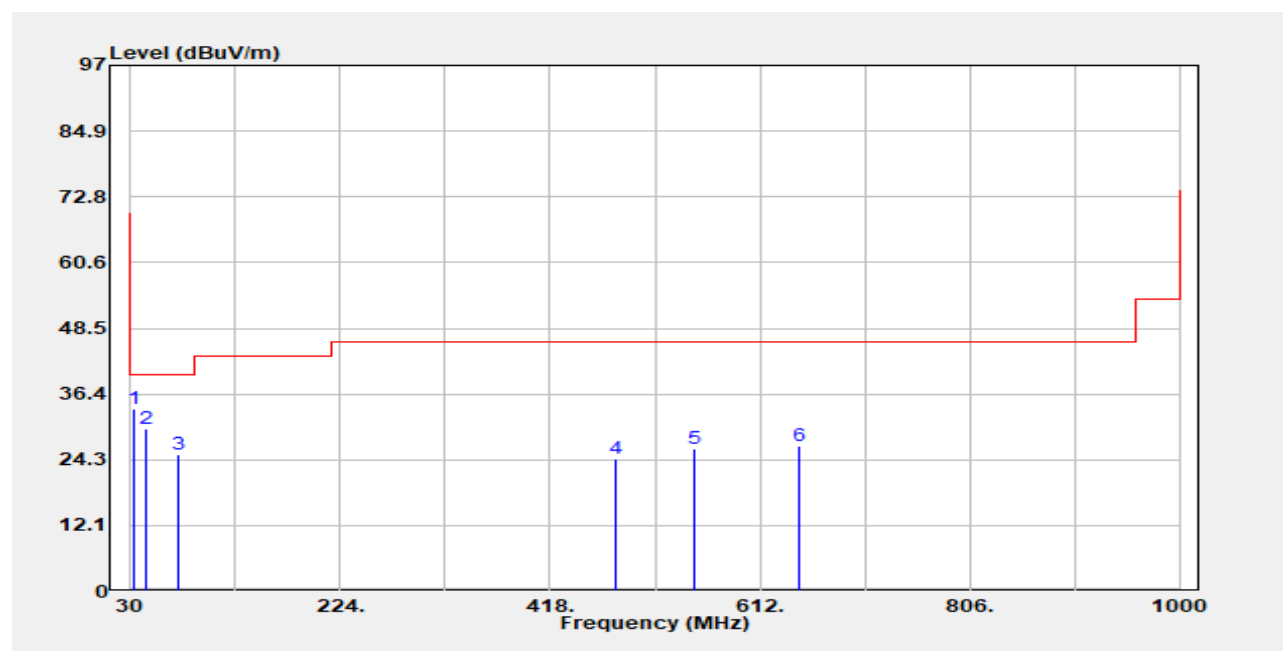
Temp./Humi. :27.1/63

Test Mode :Tx CH Mid\_Mid

Antenna Pol. :VERTICAL

EUT Pol :E2 Plane

Engineer :GN Lin



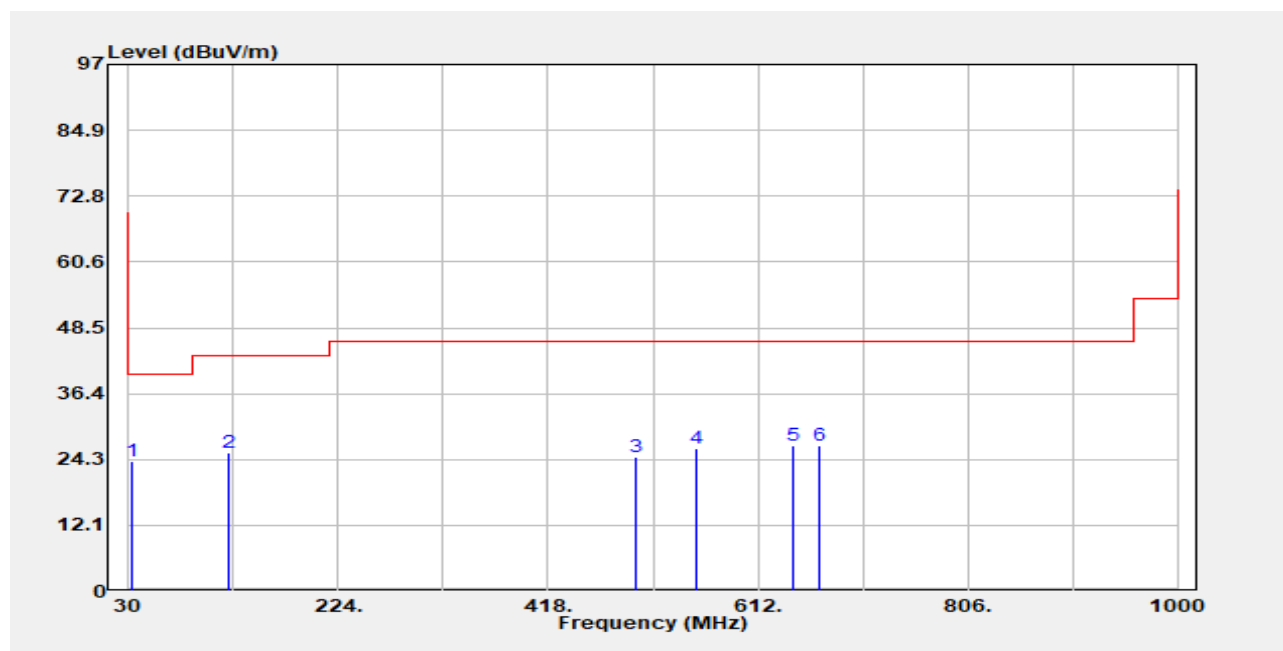
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dB $\mu$ V | Factor<br>dB | Actual<br>FS<br>dB $\mu$ V/m | Limit<br>@3m<br>dB $\mu$ V/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------------|--------------|------------------------------|------------------------------|--------------|
| 33.233       | Peak                         | 40.36                                   | -6.64        | 33.72                        | 40.00                        | -6.28        |
| 44.550       | Peak                         | 42.68                                   | -12.84       | 29.84                        | 40.00                        | -10.16       |
| 73.650       | Peak                         | 42.80                                   | -17.60       | 25.21                        | 40.00                        | -14.79       |
| 479.433      | Peak                         | 30.30                                   | -5.95        | 24.35                        | 46.00                        | -21.65       |
| 550.567      | Peak                         | 30.00                                   | -3.70        | 26.30                        | 46.00                        | -19.70       |
| 647.567      | Peak                         | 30.40                                   | -3.46        | 26.94                        | 46.00                        | -19.06       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_LTE B30   | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_2310 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_Mid     | Antenna Pol. | :Horizontal |
| EUT Pol        | :E2 Plane          | Engineer     | :GN Lin     |



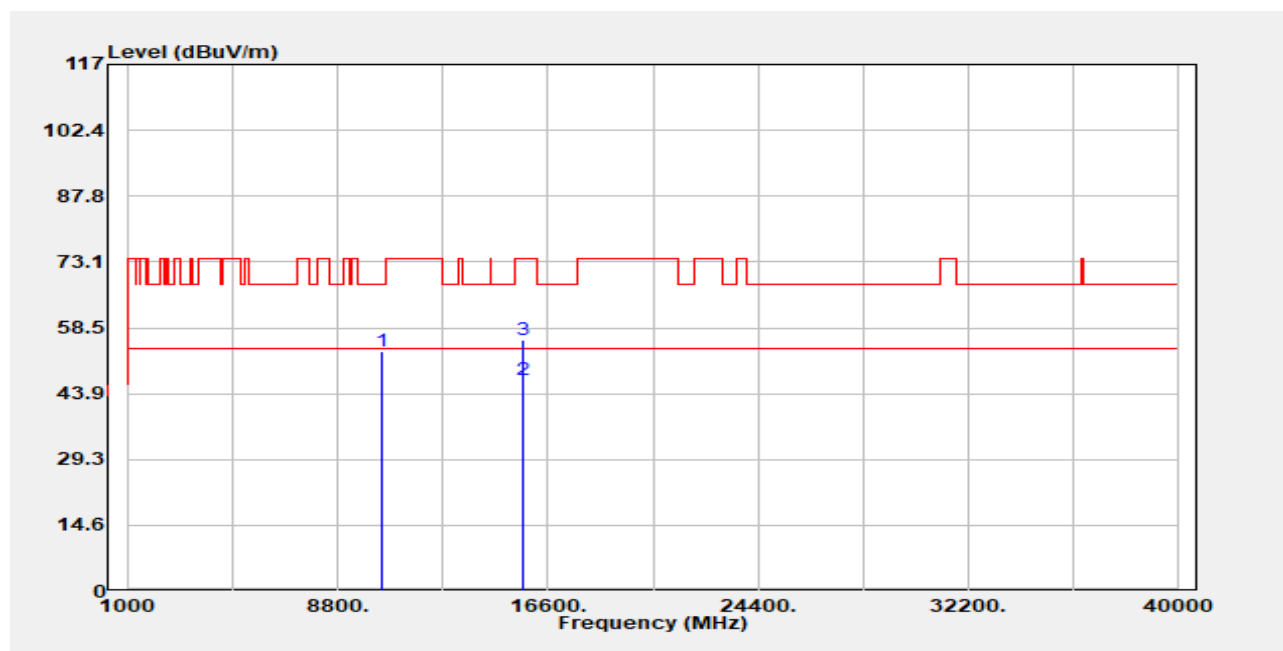
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 33.233       | Peak                         | 30.55                             | -6.64        | 23.91                  | 40.00                  | -16.09       |
| 122.150      | Peak                         | 37.19                             | -11.68       | 25.51                  | 43.50                  | -17.99       |
| 498.833      | Peak                         | 30.43                             | -5.84        | 24.59                  | 46.00                  | -21.41       |
| 555.417      | Peak                         | 30.32                             | -3.94        | 26.38                  | 46.00                  | -19.62       |
| 644.333      | Peak                         | 30.13                             | -3.44        | 26.68                  | 46.00                  | -19.32       |
| 668.583      | Peak                         | 30.09                             | -3.32        | 26.77                  | 46.00                  | -19.23       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_LTE B30   | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_2310 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_Mid     | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane          | Engineer     | :Neo Tsai   |



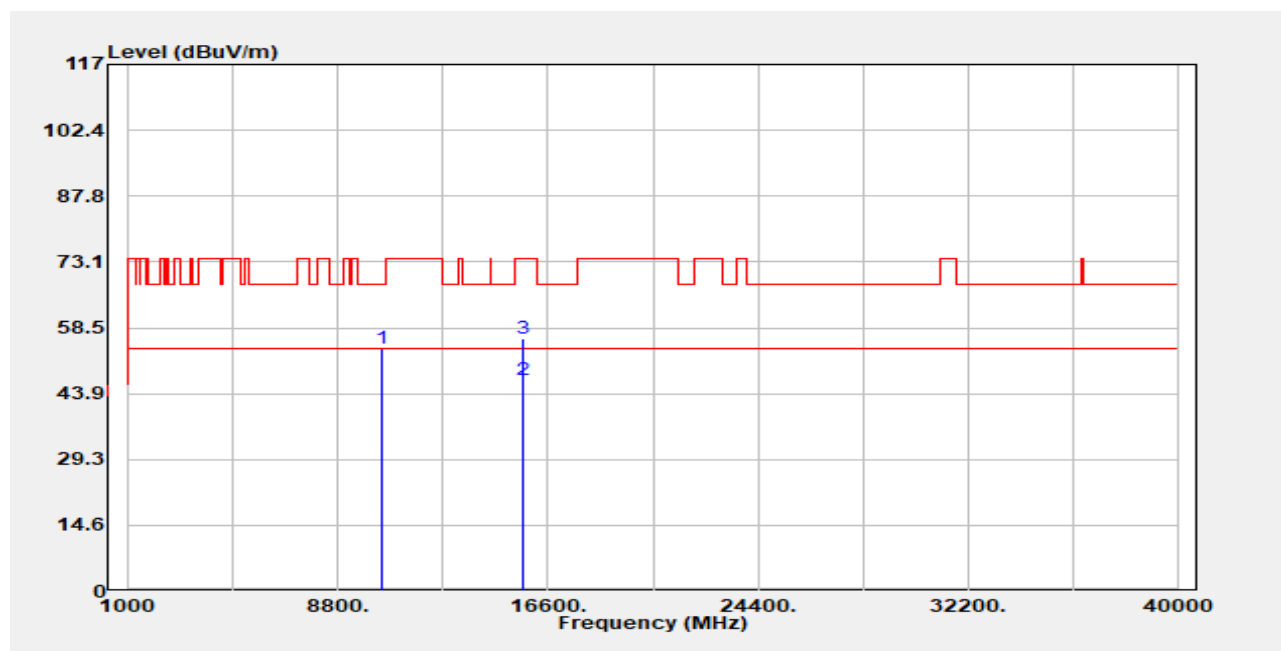
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 10440.000    | Peak                         | 34.14                             | 19.25        | 53.39                  | 68.20                  | -14.81       |
| 15660.000    | Average                      | 24.96                             | 21.82        | 46.78                  | 54.00                  | -7.22        |
| 15660.000    | Peak                         | 33.88                             | 21.82        | 55.70                  | 74.00                  | -18.30       |

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|                |                    |              |             |
|----------------|--------------------|--------------|-------------|
| Report Number  | :ER/2021/80088     | Test Site    | :SAC 1      |
| Operation Mode | :802.11a_LTE B30   | Test Date    | :2021-09-06 |
| Test Frequency | :5220 MHz_2310 MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_Mid     | Antenna Pol. | :HORIZONTAL |
| EUT Pol        | :E2 Plane          | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 10440.000    | Peak                         | 34.54                             | 19.25        | 53.80                  | 68.20                  | -14.40       |
| 15660.000    | Average                      | 25.01                             | 21.82        | 46.83                  | 54.00                  | -7.17        |
| 15660.000    | Peak                         | 34.44                             | 21.82        | 56.26                  | 74.00                  | -17.74       |

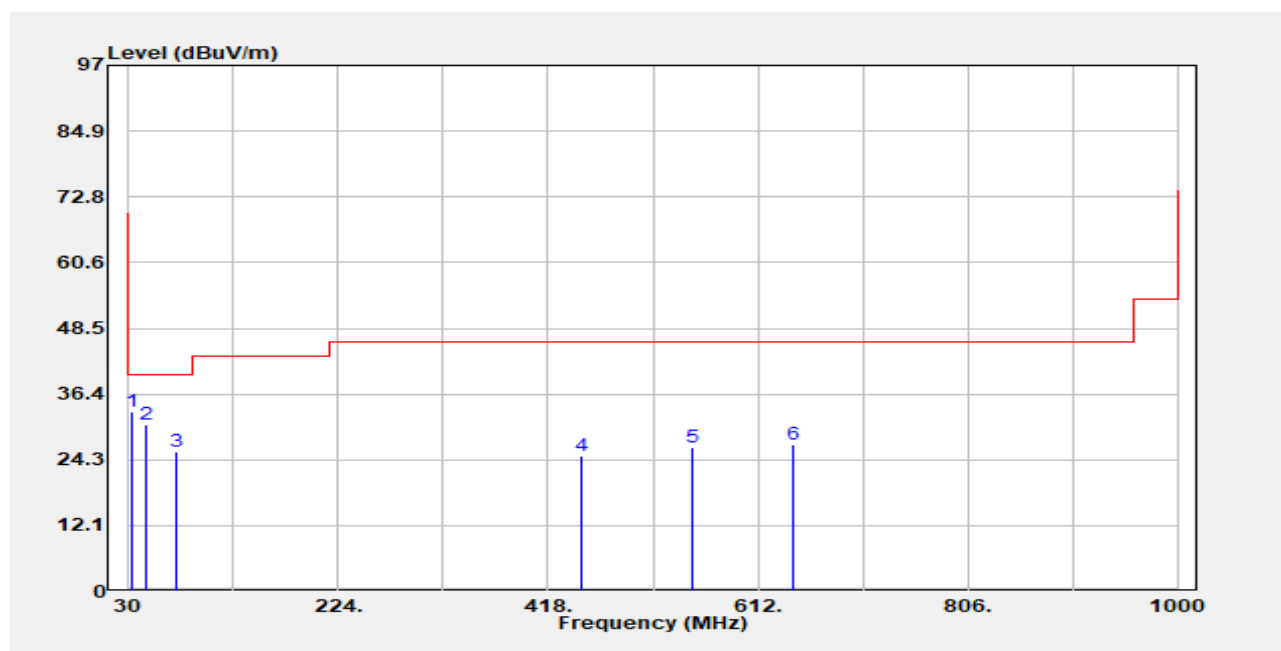
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### 6.7.7 Mode 7

|                |                             |              |             |
|----------------|-----------------------------|--------------|-------------|
| Report Number  | :ER/2021/80088              | Test Site    | :SAC 1      |
| Operation Mode | :802.11n20_LTE B30_NFC      | Test Date    | :2021-09-06 |
| Test Frequency | :5180 MHz_2310 MHz_13.56MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low_Mid              | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane                   | Engineer     | :GN Lin     |



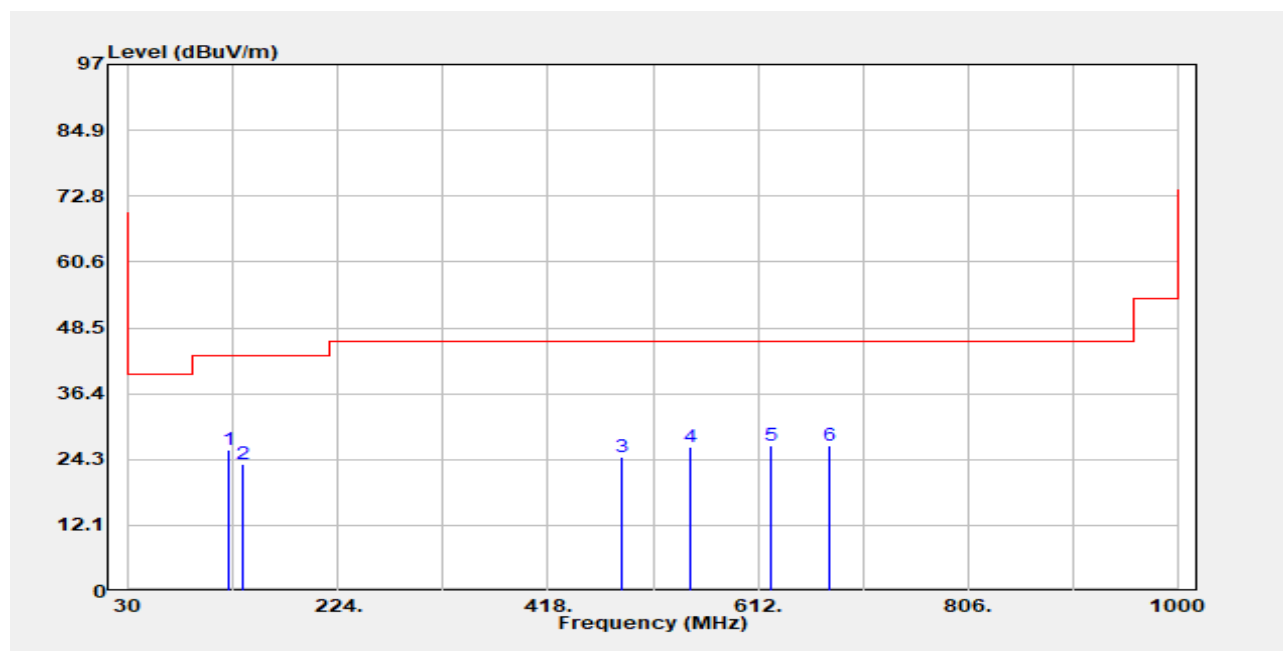
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 33.233       | Peak                         | 39.81                             | -6.64        | 33.18                  | 40.00                  | -6.82        |
| 46.167       | Peak                         | 44.60                             | -13.74       | 30.87                  | 40.00                  | -9.13        |
| 73.650       | Peak                         | 43.41                             | -17.60       | 25.82                  | 40.00                  | -14.18       |
| 448.717      | Peak                         | 31.13                             | -6.16        | 24.97                  | 46.00                  | -21.03       |
| 552.183      | Peak                         | 30.45                             | -3.78        | 26.68                  | 46.00                  | -19.32       |
| 644.333      | Peak                         | 30.58                             | -3.44        | 27.14                  | 46.00                  | -18.86       |

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|                |                             |              |             |
|----------------|-----------------------------|--------------|-------------|
| Report Number  | :ER/2021/80088              | Test Site    | :SAC 1      |
| Operation Mode | :802.11n20_LTE B30_NFC      | Test Date    | :2021-09-06 |
| Test Frequency | :5180 MHz_2310 MHz_13.56MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low_Mid              | Antenna Pol. | :Horizontal |
| EUT Pol        | :E2 Plane                   | Engineer     | :GN Lin     |



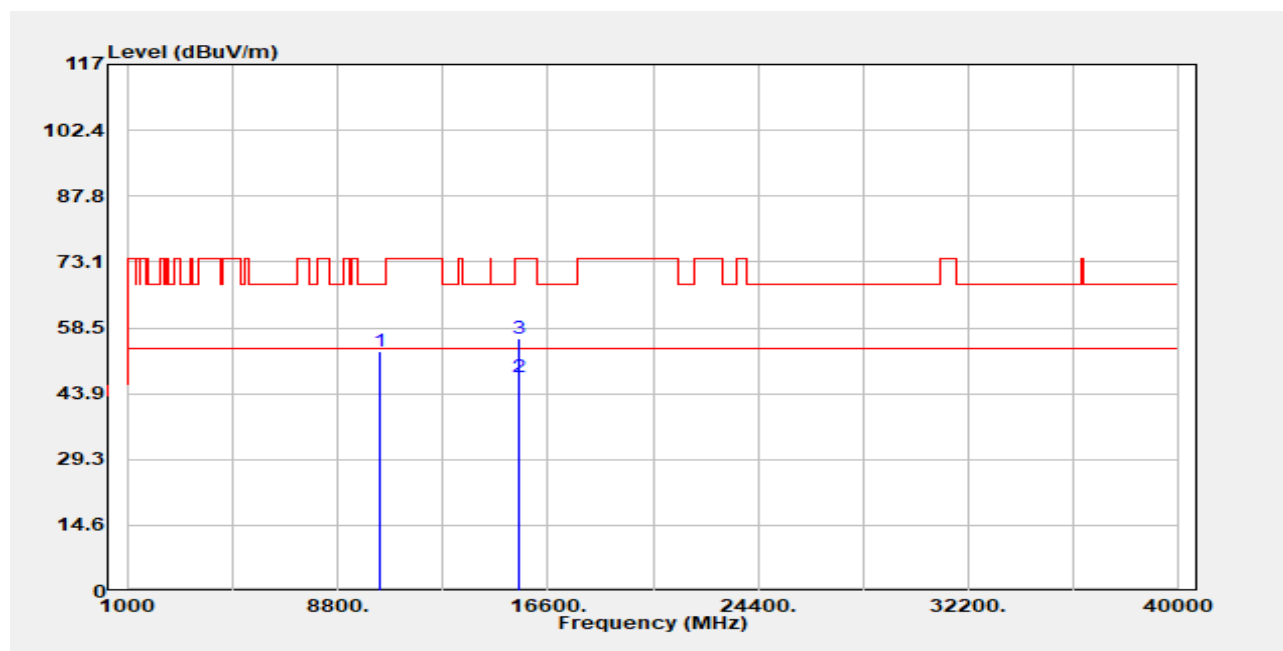
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 122.150      | Peak                         | 37.80                             | -11.68       | 26.12                  | 43.50                  | -17.38       |
| 135.083      | Peak                         | 35.25                             | -11.92       | 23.32                  | 43.50                  | -20.18       |
| 485.900      | Peak                         | 30.59                             | -5.91        | 24.69                  | 46.00                  | -21.31       |
| 548.950      | Peak                         | 30.11                             | -3.65        | 26.46                  | 46.00                  | -19.54       |
| 624.933      | Peak                         | 30.42                             | -3.53        | 26.90                  | 46.00                  | -19.10       |
| 678.283      | Peak                         | 30.11                             | -3.17        | 26.94                  | 46.00                  | -19.06       |

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|                |                             |              |             |
|----------------|-----------------------------|--------------|-------------|
| Report Number  | :ER/2021/80088              | Test Site    | :SAC 1      |
| Operation Mode | :802.11n20_LTE B30_NFC      | Test Date    | :2021-09-06 |
| Test Frequency | :5180 MHz_2310 MHz_13.56MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low_Mid              | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane                   | Engineer     | :Neo Tsai   |



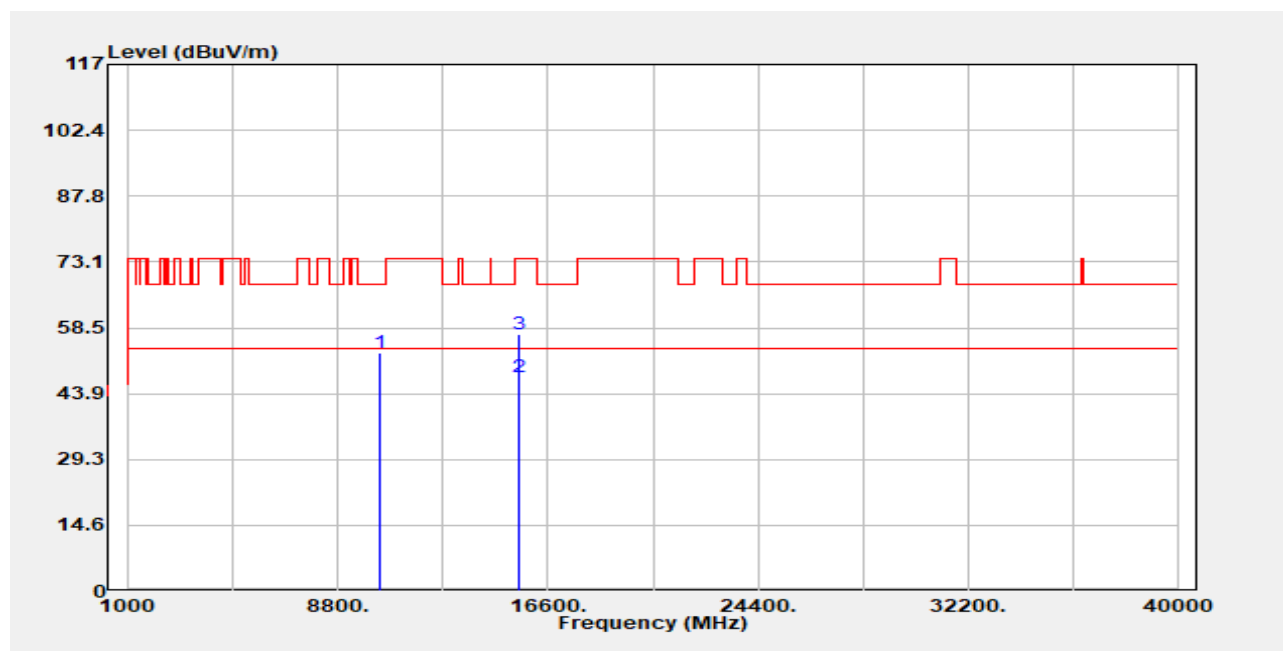
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 10360.000    | Peak                         | 33.77                             | 19.42        | 53.18                  | 68.20                  | -15.02       |
| 15540.000    | Average                      | 25.12                             | 22.50        | 47.62                  | 54.00                  | -6.38        |
| 15540.000    | Peak                         | 33.50                             | 22.50        | 56.00                  | 74.00                  | -18.00       |

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|                |                             |              |             |
|----------------|-----------------------------|--------------|-------------|
| Report Number  | :ER/2021/80088              | Test Site    | :SAC 1      |
| Operation Mode | :802.11n20_LTE B30_NFC      | Test Date    | :2021-09-06 |
| Test Frequency | :5180 MHz_2310 MHz_13.56MHz | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Low_Mid              | Antenna Pol. | :HORIZONTAL |
| EUT Pol        | :E2 Plane                   | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 10360.000    | Peak                         | 33.50                             | 19.42        | 52.91                  | 68.20                  | -15.29       |
| 15540.000    | Average                      | 24.91                             | 22.50        | 47.41                  | 54.00                  | -6.59        |
| 15540.000    | Peak                         | 34.45                             | 22.50        | 56.95                  | 74.00                  | -17.05       |

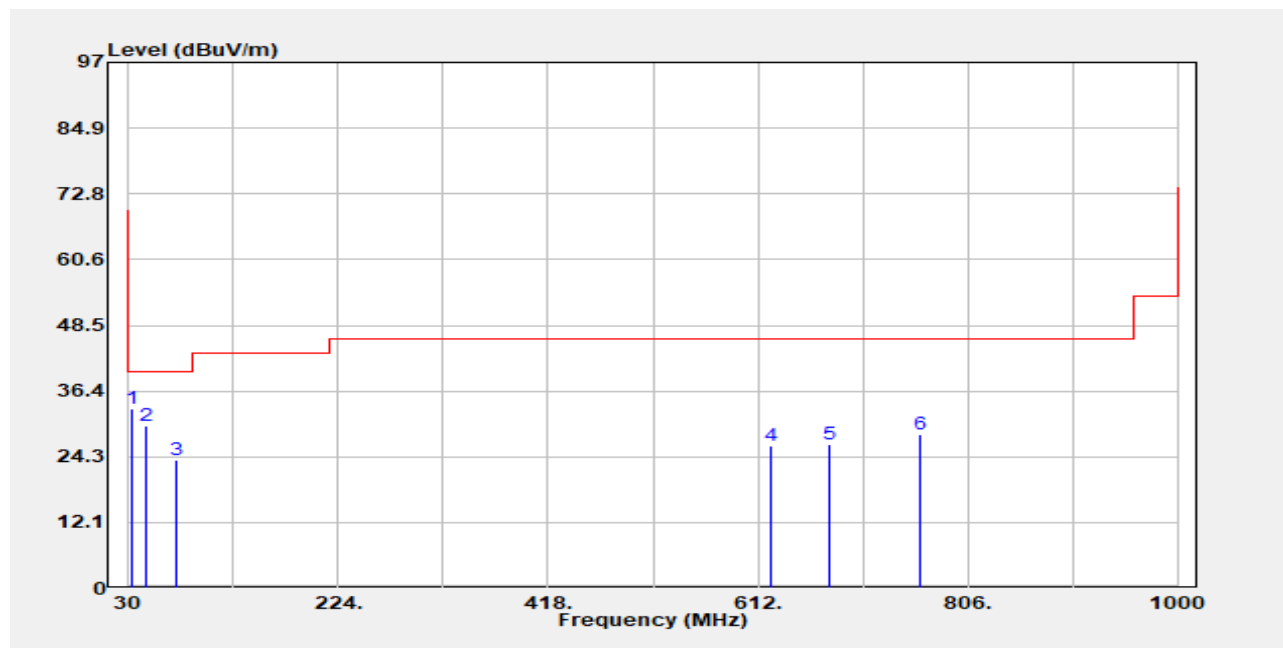
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### 6.7.8 Mode 8

|                |                       |              |             |
|----------------|-----------------------|--------------|-------------|
| Report Number  | :ER/2021/80088        | Test Site    | :SAC 1      |
| Operation Mode | :802.11LTE B30_BR(1M) | Test Date    | :2021-09-06 |
| Test Frequency | :2310 MHz_2441 MHz    | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_Mid        | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane             | Engineer     | :GN Lin     |



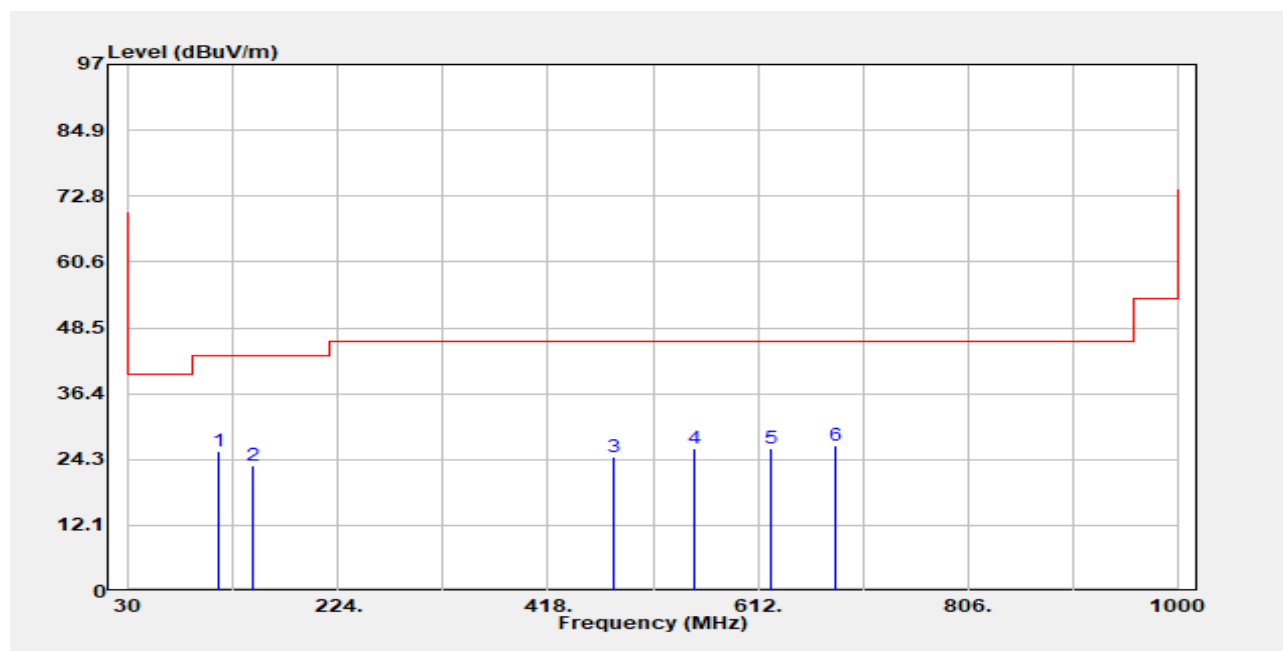
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBUV | Factor<br>dB | Actual<br>FS<br>dBUV/m | Limit<br>@3m<br>dBUV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 33.233       | Peak                         | 39.78                             | -6.64        | 33.15                  | 40.00                  | -6.85        |
| 46.167       | Peak                         | 43.76                             | -13.74       | 30.02                  | 40.00                  | -9.98        |
| 73.650       | Peak                         | 41.19                             | -17.60       | 23.59                  | 40.00                  | -16.41       |
| 623.317      | Peak                         | 29.89                             | -3.61        | 26.28                  | 46.00                  | -19.72       |
| 678.283      | Peak                         | 29.74                             | -3.17        | 26.57                  | 46.00                  | -19.43       |
| 762.350      | Peak                         | 30.46                             | -2.11        | 28.35                  | 46.00                  | -17.65       |

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|                |                       |              |             |
|----------------|-----------------------|--------------|-------------|
| Report Number  | :ER/2021/80088        | Test Site    | :SAC 1      |
| Operation Mode | :802.11LTE B30_BR(1M) | Test Date    | :2021-09-06 |
| Test Frequency | :2310 MHz_2441 MHz    | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_Mid        | Antenna Pol. | :Horizontal |
| EUT Pol        | :E2 Plane             | Engineer     | :GN Lin     |



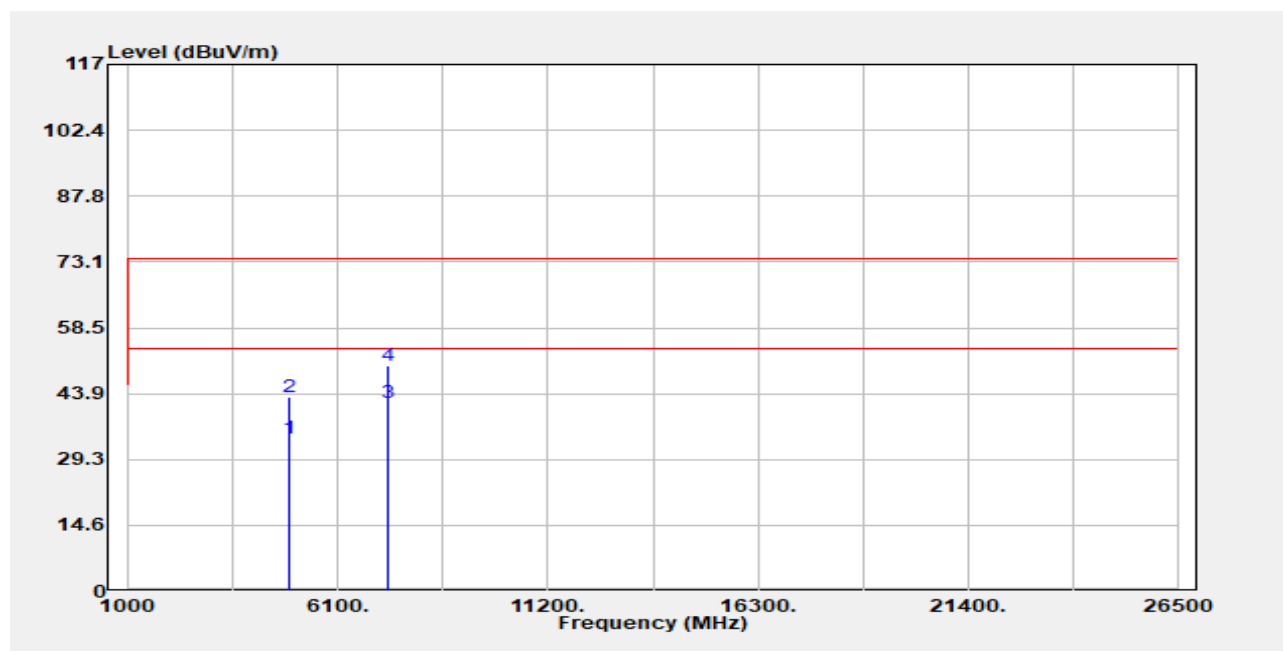
| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 114.067      | Peak                         | 37.72                             | -11.92       | 25.79                  | 43.50                  | -17.71       |
| 144.783      | Peak                         | 35.65                             | -12.49       | 23.16                  | 43.50                  | -20.34       |
| 477.817      | Peak                         | 30.57                             | -5.98        | 24.59                  | 46.00                  | -21.41       |
| 553.800      | Peak                         | 30.15                             | -3.85        | 26.30                  | 46.00                  | -19.70       |
| 624.933      | Peak                         | 29.93                             | -3.53        | 26.40                  | 46.00                  | -19.60       |
| 683.133      | Peak                         | 30.15                             | -3.21        | 26.94                  | 46.00                  | -19.06       |

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|                |                       |              |             |
|----------------|-----------------------|--------------|-------------|
| Report Number  | :ER/2021/80088        | Test Site    | :SAC 1      |
| Operation Mode | :802.11LTE B30_BR(1M) | Test Date    | :2021-09-06 |
| Test Frequency | :2310 MHz_2441 MHz    | Temp./Humi.  | :27.1/63    |
| Test Mode      | :Tx CH Mid_Mid        | Antenna Pol. | :VERTICAL   |
| EUT Pol        | :E2 Plane             | Engineer     | :Neo Tsai   |



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBμV | Factor<br>dB | Actual<br>FS<br>dBμV/m | Limit<br>@3m<br>dBμV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4882.000     | Average                      | 27.15                             | 6.90         | 34.05                  | 54.00                  | -19.95       |
| 4882.000     | Peak                         | 36.29                             | 6.90         | 43.19                  | 74.00                  | -30.81       |
| 7323.000     | Average                      | 26.90                             | 14.82        | 41.72                  | 54.00                  | -12.28       |
| 7323.000     | Peak                         | 35.16                             | 14.82        | 49.98                  | 74.00                  | -24.02       |

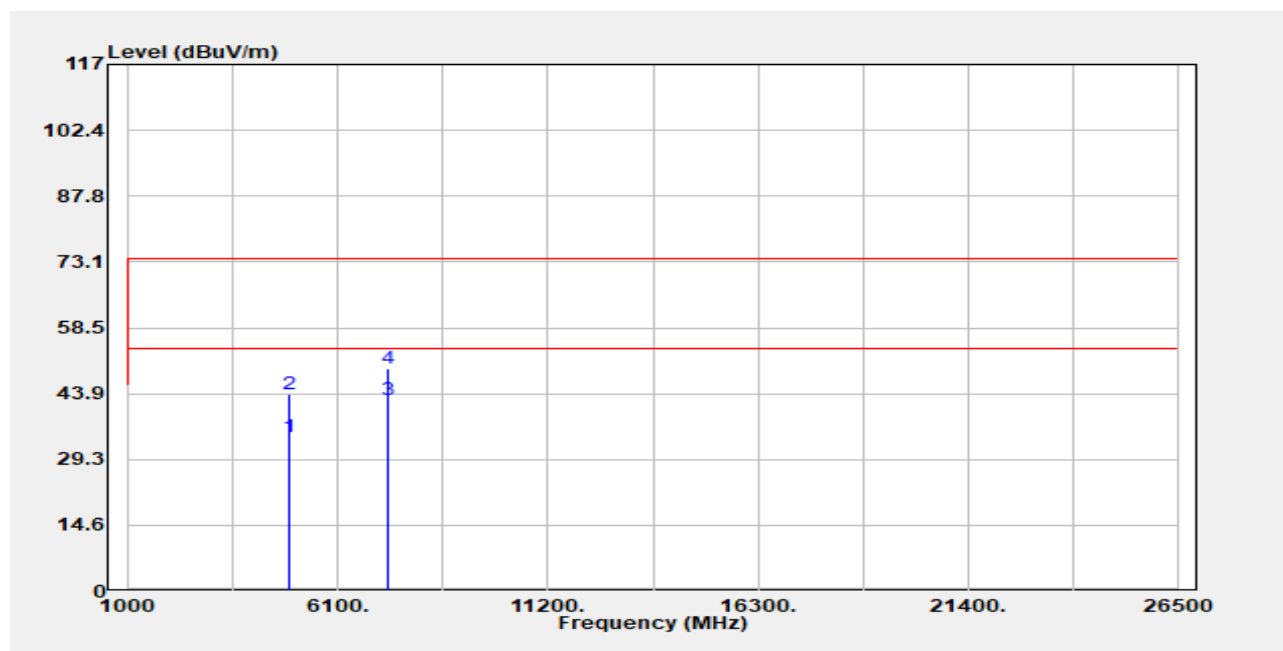
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Report Number :ER/2021/80088  
Operation Mode :802.11LTE B30\_BR(1M)  
Test Frequency :2310 MHz\_2441 MHz  
Test Mode :Tx CH Mid\_Mid  
EUT Pol :E2 Plane

Test Site :SAC 1  
Test Date :2021-09-06  
Temp./Humi. :27.1/63  
Antenna Pol. :HORIZONTAL  
Engineer :Neo Tsai



| Freq.<br>MHz | Detector<br>Mode<br>PK/QP/AV | Spectrum<br>Reading Level<br>dBuV | Factor<br>dB | Actual<br>FS<br>dBuV/m | Limit<br>@3m<br>dBuV/m | Margin<br>dB |
|--------------|------------------------------|-----------------------------------|--------------|------------------------|------------------------|--------------|
| 4882.000     | Average                      | 27.29                             | 6.90         | 34.19                  | 54.00                  | -19.81       |
| 4882.000     | Peak                         | 37.01                             | 6.90         | 43.91                  | 74.00                  | -30.09       |
| 7323.000     | Average                      | 27.52                             | 14.82        | 42.34                  | 54.00                  | -11.66       |
| 7323.000     | Peak                         | 34.53                             | 14.82        | 49.35                  | 74.00                  | -24.65       |

~ End of Report ~

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