

**ELECTROMAGNETIC EMISSIONS  
COMPLIANCE REPORT**

**Applicant:** HP Inc.  
1501 Page Mill Road, Palo Alto CA 94304 USA  
**Manufacturer:** HP Inc.  
1501 Page Mill Road, Palo Alto CA 94304 USA  
**Product Name:** Notebook Computer  
**Brand Name:** HP  
**Model No.:** HSN-I46C  
**Model Difference:** N/A  
**Report Number:** TERF2212002647E2  
**FCC ID** B94HNI46CPA  
**Issue Date:** March 03, 2023  
**Date of Test:** December 22, 2022 ~ March 03, 2023  
**Date of EUT Received:** December 8, 2022

**Approved By****Arno Hsieh****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 C63.26-2015 and the energy emitted by the sample EUT comply with FCC rule part 2, 22H & 24E.

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

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## Revision History

| Report Number    | Revision | Description        | Issue Date        | Revised By  | Remark |
|------------------|----------|--------------------|-------------------|-------------|--------|
| TERF2212002647E2 | 00       | Original.          | February 20, 2023 | Tiffany Kao |        |
| TERF2212002647E2 | 01       | Add ERP/EIRP Power | March 03, 2023    | Tiffany Kao | *      |
|                  |          |                    |                   |             |        |
|                  |          |                    |                   |             |        |
|                  |          |                    |                   |             |        |
|                  |          |                    |                   |             |        |
|                  |          |                    |                   |             |        |

**Note:**

- 1、The remark "\*" indicates modification of the report upon requests from certification body.

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## 1 GENERAL PRODUCT INFORMATION

### 1.1 Product Description

|                              |                                          |
|------------------------------|------------------------------------------|
| Product Name:                | Notebook Computer                        |
| Brand Name:                  | HP                                       |
| Model No.:                   | HSN-I46C                                 |
| EUT Series No.:              | 0002770VAC                               |
| Power Supply:                | 11.58Vdc                                 |
| Integrated WWAN Module:      | Brand Name: Fibocom<br>Model Name: FB520 |
| Test Software (Name/Version) | Default (link 8820C)                     |

### 1.2 Operation Frequency Range

| Operating Frequency (MHz) |                 |
|---------------------------|-----------------|
| GSM/GPRS/EDGE 850         | 824.2 - 848.8   |
| GSM/GPRS/EDGE 1900        | 1850.2 - 1909.8 |

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## 1.3 Antenna Designation

| Antenna Type                                                                                      | Supplier | Antenna part no.               | Mode | Remark |
|---------------------------------------------------------------------------------------------------|----------|--------------------------------|------|--------|
| PIFA                                                                                              | Vendor 1 | 6036B0312701<br>(81ELA215.G10) | NB   | Ant5   |
|                                                                                                   |          |                                | TB   | Ant5   |
|                                                                                                   | Vendor 2 | 6036B0313201<br>(0-3302700850) | NB   | Ant5   |
|                                                                                                   |          |                                | TB   | Ant5   |
| Note: Transmission in frequencies in this test report are only available by the above antenna(s). |          |                                |      |        |

| Modulation         | Frequency<br>(MHz) |   |        | Peak Antenna Gain (dBi) |       |          |       |
|--------------------|--------------------|---|--------|-------------------------|-------|----------|-------|
|                    |                    |   |        | Vendor 1                |       | Vendor 2 |       |
|                    |                    |   |        | NB                      | TB    | NB       | TB    |
|                    |                    |   |        | Ant5                    | Ant5  | Ant5     | Ant5  |
| GSM/GPRS/EDGE 850  | 824.2              | - | 848.8  | -1.07                   | -0.76 | -1.34    | -2.78 |
| GSM/GPRS/EDGE 1900 | 1850.2             | - | 1909.8 | 0.63                    | 0.12  | -1       | -2.81 |

**Note:** Antenna information is provided by the applicant.

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#### 1.4 Test Methodology of Applied Standards

FCC 47 CFR Part 2, 22H, 24E

ANSI C63.26-2015

KDB412172 D01 Determining ERP and EIRP v01r01

TS 151 010-1 is used to set, and measure the output power.

#### 1.5 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 2          |                        |                   |
|                                                                                                                                                                              |                                                                                           | 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. |                                                                                           |                |                        |                   |

#### 1.6 Special Accessories

No special accessories were used during testing.

#### 1.7 Equipment Modifications

There was no modifications incorporated into the EUT.

#### 1.8 Radiated Emission Test Sites For Measurements From 9 kHz To 30 MHz

Radiated emission below 30MHz is measured in a 9m\*6m\*6m semi-anechoic chamber, the measurements correspond to those obtained at an open-field test site.

There is a comparison data of both open-field test site and semi-Anechoic chamber, and the result came out very similar.

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## 2 SYSTEM TEST CONFIGURATION

### 2.1 EUT Configuration

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

### 2.2 EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

### 2.3 Test Procedure

#### 2.3.1 Conducted Measurement at Antenna Port

The EUT is placed on a table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment

#### 2.3.2 Radiated Emissions (ERP/EIRP)

The EUT is placed on a turn table, for emission measurements below 1 GHz is 0.8 m above ground plane, 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 hand-held 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.

### 2.4 Measurement Results Explanation Example

#### For all conducted test items:

The offset level is set in the spectrum analyzer to compensate the RF cable loss and attenuation factor between EUT conducted port and spectrum analyzer. With the offset compensation, the spectrum analyzer reading level is exactly EUT RF output level.

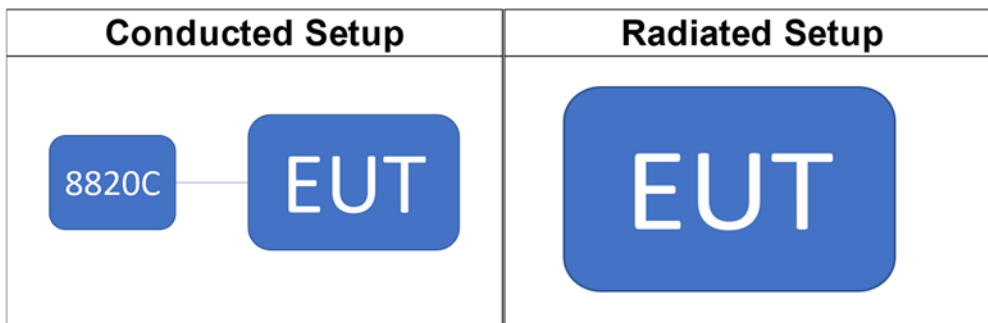
#### Note:

The spectrum analyzer offset is derived from RF cable loss and attenuator factor.

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### 3 TEST CONFIGURATION



**Note:** Radio Communication Analyzer is placed in remote side for radiated test.

#### 3.1 Control Unit(s)

| Equipment     | Mfr/Brand | Model/Type No. | Series No. |
|---------------|-----------|----------------|------------|
| Test Software | N/A       | N/A            | N/A        |

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## 4 SUMMARY OF TEST RESULTS

| FCC Rules                           | Description Of Test                        | Result    |
|-------------------------------------|--------------------------------------------|-----------|
| §2.1046(a)                          | RF Power Output                            | Compliant |
| §22.913(a)(5)<br>§24.232(c)         | ERP/ EIRP<br>measurement                   | Compliant |
| §2.1053<br>§22.917(a)<br>§24.238(a) | Field Strength<br>of<br>Spurious Radiation | Compliant |

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## 5 DESCRIPTION OF TEST MODES

### 5.1 The Worst Test Modes and Channel Details

1. The EUT has been tested under operating condition.
2. The field strength of radiated emission was measured as the EUT positioned in different orthogonal planes (E1/E2/H) based on actual usage of the EUT to pre-scan the emissions for determining the worst case scenario.

### 5.2 Measurement Configuration

| RADIATED EMISSION | GSM Bands | Test Channel |   |   |
|-------------------|-----------|--------------|---|---|
|                   |           | L            | M | H |
| ERP               | 850       | v            | v | v |
| EIRP              | 1900      | v            | v | v |
| RADIATED EMISSION | 850       | v            | v | v |
|                   | 1900      | v            | v | v |

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## 6 MEASUREMENT UNCERTAINTY

| Test Items                                               | Uncertainty |
|----------------------------------------------------------|-------------|
| RF Power Output                                          | +/- 1 dB    |
| ERP/ EIRP measurement                                    | +/- 2.93 dB |
|                                                          | +/- 2.93 dB |
| Emission Bandwidth                                       | +/- 1.53 Hz |
| Out of Band Emissions at Antenna Terminals and Band Edge | +/- 1.68 dB |
| Peak to Average Ratio                                    | +/- 1 dB    |
| Frequency Stability vs. Temperature                      | +/- 1.53 Hz |
| Frequency Stability vs. Voltage                          | +/- 1.53 Hz |
| Temperature                                              | +/- 0.7 °C  |
| Humidity                                                 | +/- 3 %     |
| DC / AC Power Source                                     | +/- 1 %     |

| Radiated Spurious Emission Measurement Uncertainty |             |                 |
|----------------------------------------------------|-------------|-----------------|
| Polarization: Vertical                             | +/- 2.8 dB  | 9kHz~30MHz      |
|                                                    | +/- 4.82 dB | 30MHz - 1000MHz |
|                                                    | +/- 4.37 dB | 1GHz - 18GHz    |
|                                                    | +/- 4.21 dB | 18GHz - 40GHz   |
| Polarization: Horizontal                           | +/- 2.8 dB  | 9kHz~30MHz      |
|                                                    | +/- 4.54 dB | 30MHz - 1000MHz |
|                                                    | +/- 4.37 dB | 1GHz - 18GHz    |
|                                                    | +/- 4.21 dB | 18GHz - 40GHz   |

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

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## 7 MEASUREMENT EQUIPMENT USED

### 7.1 Conducted Measurement

| Conducted Emission Test Site: Conducted E |         |              |               |            |            |
|-------------------------------------------|---------|--------------|---------------|------------|------------|
| EQUIPMENT TYPE                            | MFR     | MODEL NUMBER | SERIAL NUMBER | LAST CAL.  | CAL DUE.   |
| Radio Communication Analyser              | Anritsu | MT8820C      | 6201465316    | 06/20/2022 | 06/19/2023 |

### 7.2 Radiated Measurement

| Radiated Emission Test Site: SAC D |                 |                   |                          |            |            |
|------------------------------------|-----------------|-------------------|--------------------------|------------|------------|
| EQUIPMENT TYPE                     | MFR             | MODEL NUMBER      | SERIAL NUMBER            | LAST CAL.  | CAL DUE.   |
| Broadband Antenna                  | SCHWARZBECK     | VULB 9168         | 9168-300                 | 11/11/2022 | 11/10/2023 |
| Broadband Antenna                  | SCHWARZBECK     | VULB 9168         | 9168-617                 | 12/19/2022 | 12/18/2023 |
| Horn Antenna                       | Schwarzbeck     | BBHA9170          | 184                      | 12/30/2022 | 12/29/2023 |
| Horn Antenna                       | Schwarzbeck     | BBHA9170          | 185                      | 08/22/2022 | 08/21/2023 |
| Horn Antenna                       | Schwarzbeck     | BBHA9120D         | 603                      | 05/16/2022 | 05/15/2023 |
| Horn Antenna                       | Schwarzbeck     | BBHA9120D         | 1341                     | 05/31/2022 | 05/30/2023 |
| 3m Site NSA                        | SGS             | 966 chamber D     | N/A                      | 04/30/2022 | 04/29/2023 |
| Spectrum Analyzer                  | KEYSIGHT        | N9010A            | MY57120200               | 03/24/2022 | 03/23/2023 |
| Radio Communication                | Anritsu         | MT8820C           | 6201107337               | 07/28/2022 | 07/27/2023 |
| Test Software                      | audix           | e3                | E3 20923 SGS Ver.9 ( C ) | N.C.R      | N.C.R      |
| Pre-Amplifier                      | EMC Instruments | EMC118A45SE       | 980789                   | 11/16/2022 | 11/15/2023 |
| Pre-Amplifier                      | EMC Instruments | EMC18405SEE       | 980881                   | 10/25/2022 | 10/24/2023 |
| Pre-Amplifier                      | EMC Instruments | EMC9135           | 980234                   | 11/16/2022 | 11/15/2023 |
| Coaxial Cable                      | Huber+Suhner    | RG 214/U          | W21.01                   | 11/16/2022 | 11/15/2023 |
| Coaxial Cable                      | Huber Suhner    | EMC106-SM-SM-7200 | 150703                   | 11/16/2022 | 11/15/2023 |
| Coaxial Cable                      | Huber Suhner    | SUCOFLEX 104      | MY17413/4                | 11/16/2022 | 11/15/2023 |

Note: N.C.R refers to Not Calibrated Required.

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## 8 MAXIMUM OUTPUT POWER

### 8.1 Standard Applicable

A base station simulator was used to establish communication with the EUT. Its parameters were set to transmit the maximum power on the EUT. The measured power in the radio frequency on the transmitter output terminals.

According to FCC §2.1046

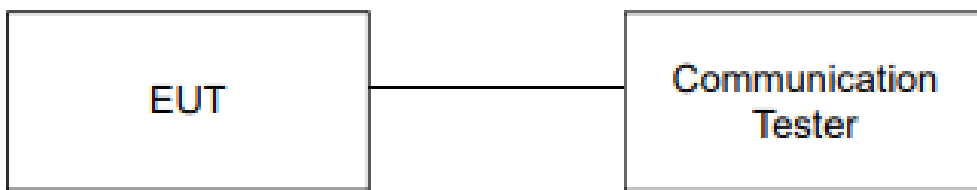
#### FCC 22.913(a)

(5) mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

#### FCC 24.232(c)

Mobile and portable stations are limited to 2 W EIRP.

### 8.2 Test Set-up



**Note:** Measurement setup for testing on Antenna connector

### 8.3 Output Power Measurement Applicable Guidance

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter.

Transmitter output was read off the power meter in dBm.

The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading.

TS 151 010-1 is reference to conduct the test measurement of output power.

KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results.

Conducted average power is obtained from the simulator telecommunication test set.

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## 8.4 Determining ERP and/or EIRP from conducted RF output power measurements

According to KDB 412172 D01 Power Approach,

$$EIRP = P_T + G_T - L_C,$$

$$ERP = EIRP - 2.15,$$

Where:

ERP or EIRP = effective radiated power or equivalent isotropically radiated power (expressed in the same units as  $P_T$ , typically dBW, dBm, or power spectral density (PSD)<sup>2</sup>), relative to either a dipole antenna (ERP) or an isotropic antenna (EIRP);

$P_T$  = transmitter output power, expressed in dBW, dBm, or PSD;

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

$L_C$  = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

## 8.5 Measurement Results

### 8.5.1 GSM

GSM/GPRS/EDGE (GMSK; 8-PSK) Result:

| EUT Mode  | Freq. (MHz) | CH  | Conducted Avg. Power (dBm) | Antenna Gain (dBi) | ERP (dBm) | EIRP (dBm) | Limit (dBm) | Margin (dB) |
|-----------|-------------|-----|----------------------------|--------------------|-----------|------------|-------------|-------------|
| GPRS 850  | 824.2       | 128 | 29.87                      | -0.76              | 26.96     | 29.11      | 38.50       | -9.39       |
|           | 836.6       | 190 | 29.70                      | -0.76              | 26.79     | 28.94      | 38.50       | -9.56       |
|           | 848.8       | 251 | 29.66                      | -0.76              | 26.75     | 28.90      | 38.50       | -9.60       |
| GPRS 1900 | 1850.2      | 512 | 25.43                      | 0.63               | 23.91     | 26.06      | 33.00       | -6.94       |
|           | 1880.0      | 661 | 25.41                      | 0.63               | 23.89     | 26.04      | 33.00       | -6.96       |
|           | 1909.8      | 810 | 25.29                      | 0.63               | 23.77     | 25.92      | 33.00       | -7.08       |
| EDGE 850  | 824.2       | 128 | 20.84                      | -0.76              | 17.93     | 20.08      | 38.50       | -18.42      |
|           | 836.6       | 190 | 20.67                      | -0.76              | 17.76     | 19.91      | 38.50       | -18.59      |
|           | 848.8       | 251 | 20.63                      | -0.76              | 17.72     | 19.87      | 38.50       | -18.63      |
| EDGE 1900 | 1850.2      | 512 | 21.38                      | 0.63               | 19.86     | 22.01      | 33.00       | -10.99      |
|           | 1880.0      | 661 | 21.32                      | 0.63               | 19.80     | 21.95      | 33.00       | -11.05      |
|           | 1909.8      | 810 | 21.27                      | 0.63               | 19.75     | 21.90      | 33.00       | -11.10      |

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## 9 FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

### 9.1 Standard Applicable

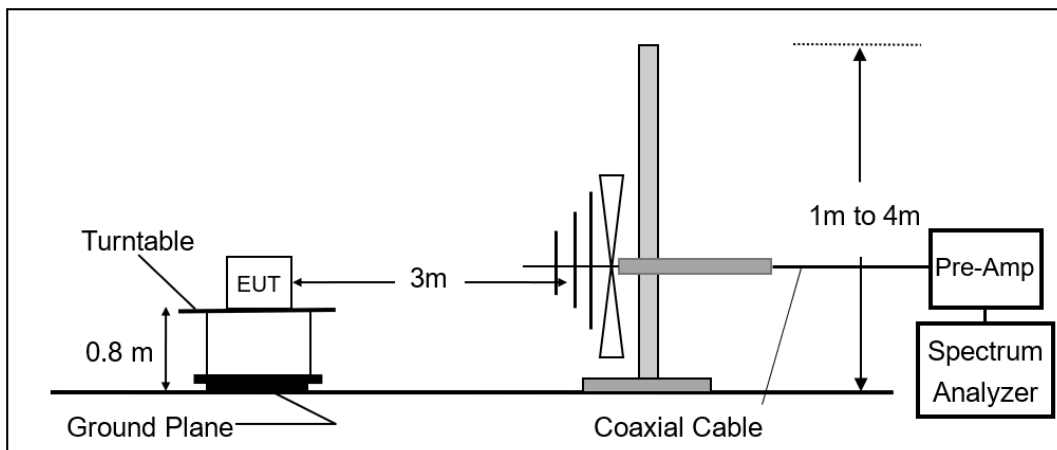
According to FCC §2.1053,

**FCC §22.917(a), §24.238(a)**

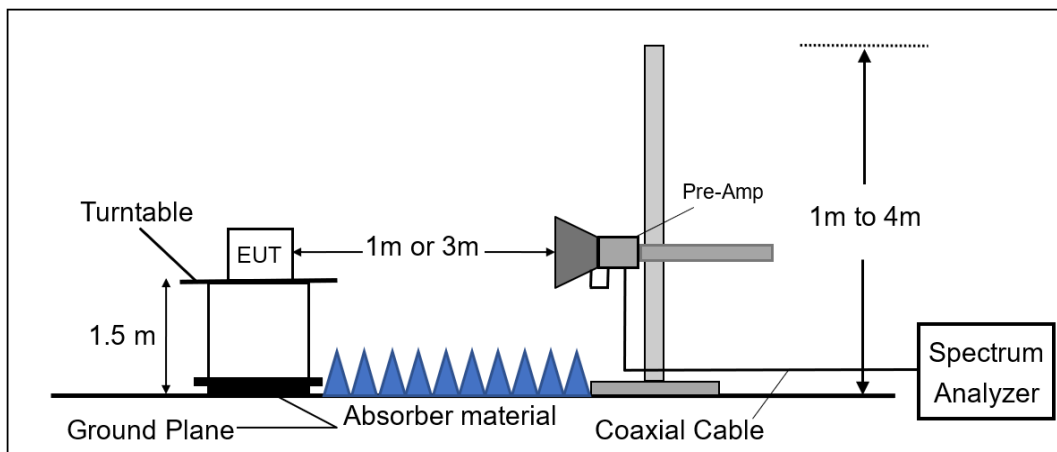
Out of band emissions. The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least  $43 + 10 \log(P)$  dB.

### 9.2 EUT Setup

Radiated Emission Test Set-Up, Frequency From 30MHz to 1000MHz.



Radiated Emission Test Set-Up, Frequency Above 1GHz.



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### 9.3 Measurement Procedure:

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

$$\text{ERP (dBm)} = \text{SG Level(dBm)} + \text{Antenna Gain(dBd)} + \text{Cable Loss(dB)}$$

$$\text{EIRP (dBm)} = \text{SG Level(dBm)} + \text{Antenna Gain(dBi)} + \text{Cable Loss(dB)}$$

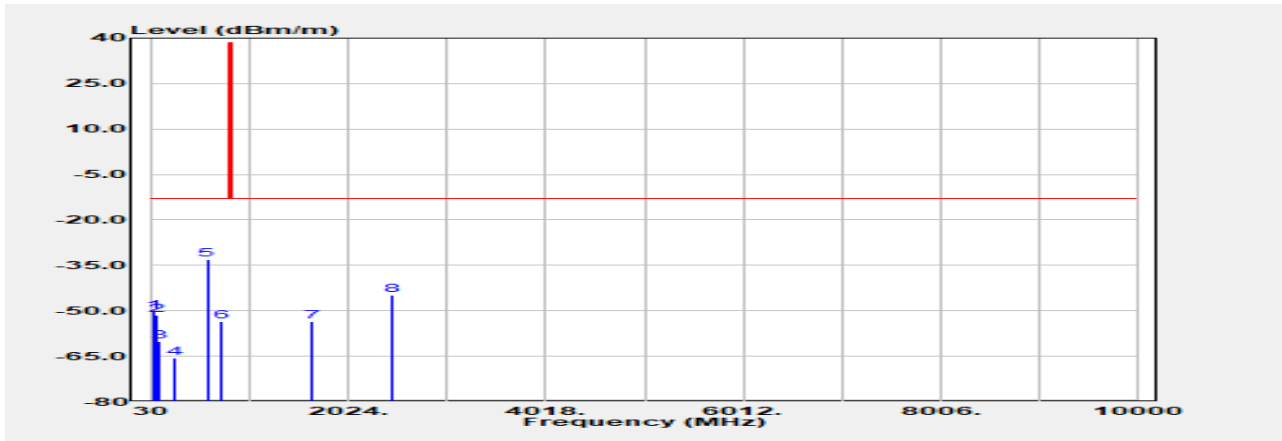
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9.4 Measurement Result:

|                |                   |              |               |
|----------------|-------------------|--------------|---------------|
| Report Number  | :TERF2212002647E2 | Test Site    | :SAC D        |
| Operation Mode | :GSM 850          | Test Date    | :2023-01-07   |
| Test Mode      | :Tx               | Temp./Humi.  | :22.8/44      |
| EUT Pol        | :E2 Plane         | Antenna Pol. | :Vertical     |
| Test Frequency | :824.2 MHz        | Engineer     | :Howard Huang |

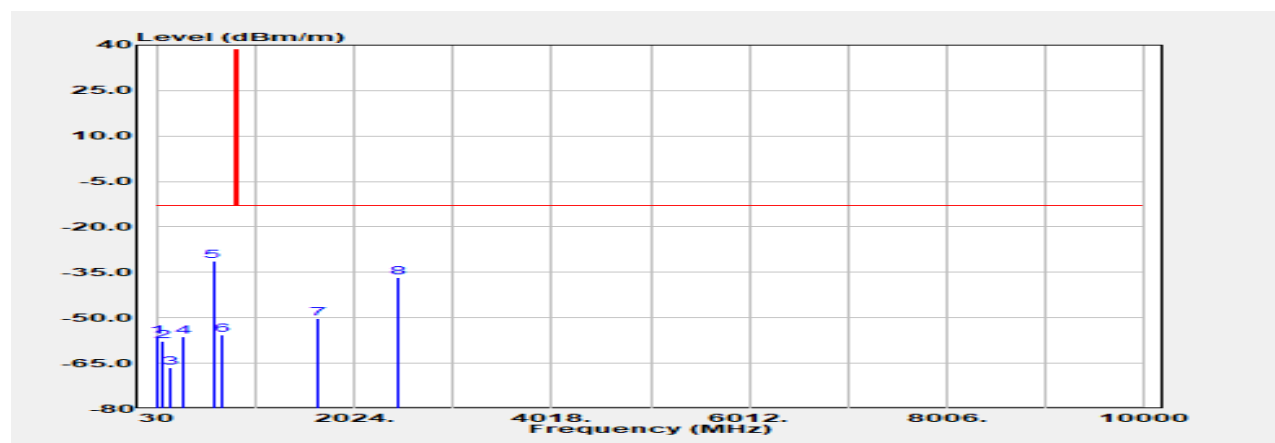


| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 58.130       | -50.24          | -41.82                    | -7.99                      | -0.43               | -13.00       | -37.24       |
| 80.440       | -51.30          | -50.41                    | -0.36                      | -0.53               | -13.00       | -38.30       |
| 121.180      | -60.02          | -60.33                    | 0.95                       | -0.64               | -13.00       | -47.02       |
| 276.380      | -65.49          | -70.47                    | 5.99                       | -1.01               | -13.00       | -52.49       |
| 601.330      | -33.02          | -37.47                    | 6.06                       | -1.61               | -13.00       | -20.02       |
| 738.100      | -53.62          | -58.09                    | 5.98                       | -1.51               | -13.00       | -40.62       |
| 1648.400     | -53.64          | -58.40                    | 7.14                       | -2.38               | -13.00       | -40.64       |
| 2472.600     | -44.76          | -50.12                    | 8.34                       | -2.98               | -13.00       | -31.76       |



Report Number :TERF2212002647E2  
Operation Mode :GSM 850  
Test Mode :Tx  
EUT Pol :E2 Plane  
Test Frequency :824.2 MHz

Test Site :SAC D  
Test Date :2023-01-07  
Temp./Humi. :22.8/44  
Antenna Pol. :Horizontal  
Engineer :Howard Huang



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 36.790       | -56.18          | -45.11                    | -10.72                     | -0.35               | -13.00       | -43.18       |
| 80.440       | -57.79          | -56.90                    | -0.36                      | -0.53               | -13.00       | -44.79       |
| 169.680      | -66.51          | -67.78                    | 2.07                       | -0.80               | -13.00       | -53.51       |
| 296.750      | -56.35          | -61.41                    | 6.12                       | -1.06               | -13.00       | -43.35       |
| 601.330      | -31.26          | -35.71                    | 6.06                       | -1.61               | -13.00       | -18.26       |
| 691.540      | -55.52          | -60.12                    | 6.18                       | -1.58               | -13.00       | -42.52       |
| 1648.400     | -50.10          | -54.86                    | 7.14                       | -2.38               | -13.00       | -37.10       |
| 2472.600     | -36.79          | -42.15                    | 8.34                       | -2.98               | -13.00       | -23.79       |

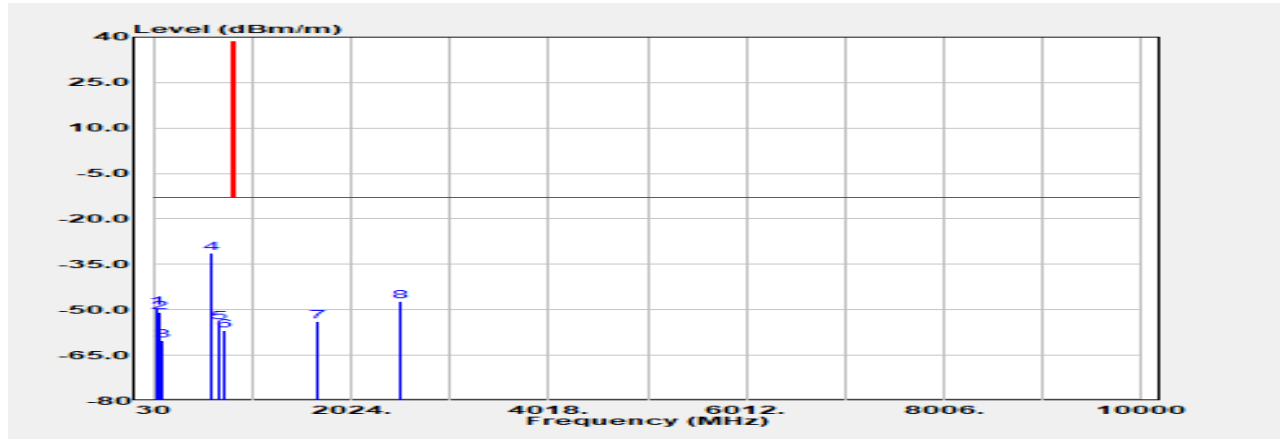
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Report Number :TERF2212002647E2  
Operation Mode :GSM 850  
Test Mode :Tx  
EUT Pol :E2 Plane  
Test Frequency :836.6 MHz

Test Site :SAC D  
Test Date :2023-01-07  
Temp./Humi. :22.8/44  
Antenna Pol. :Vertical  
Engineer :Howard Huang



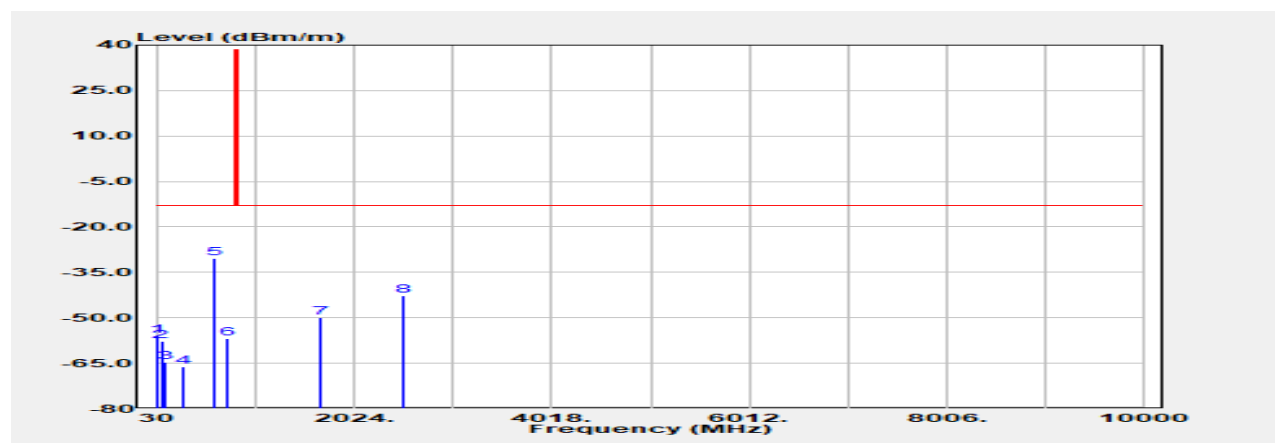
| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 58.130       | -49.41          | -40.99                    | -7.99                      | -0.43               | -13.00       | -36.41       |
| 80.440       | -50.93          | -50.04                    | -0.36                      | -0.53               | -13.00       | -37.93       |
| 123.120      | -60.07          | -60.25                    | 0.83                       | -0.65               | -13.00       | -47.07       |
| 613.940      | -31.41          | -35.86                    | 6.00                       | -1.55               | -13.00       | -18.41       |
| 691.540      | -54.28          | -58.88                    | 6.18                       | -1.58               | -13.00       | -41.28       |
| 736.160      | -56.85          | -61.39                    | 6.08                       | -1.54               | -13.00       | -43.85       |
| 1673.200     | -53.82          | -58.74                    | 7.34                       | -2.42               | -13.00       | -40.82       |
| 2509.800     | -47.24          | -52.70                    | 8.45                       | -2.99               | -13.00       | -34.24       |

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Report Number :TERF2212002647E2  
 Operation Mode :GSM 850  
 Test Mode :Tx  
 EUT Pol :E2 Plane  
 Test Frequency :836.6 MHz

Test Site :SAC D  
 Test Date :2023-01-07  
 Temp./Humi. :22.8/44  
 Antenna Pol. :Horizontal  
 Engineer :Howard Huang



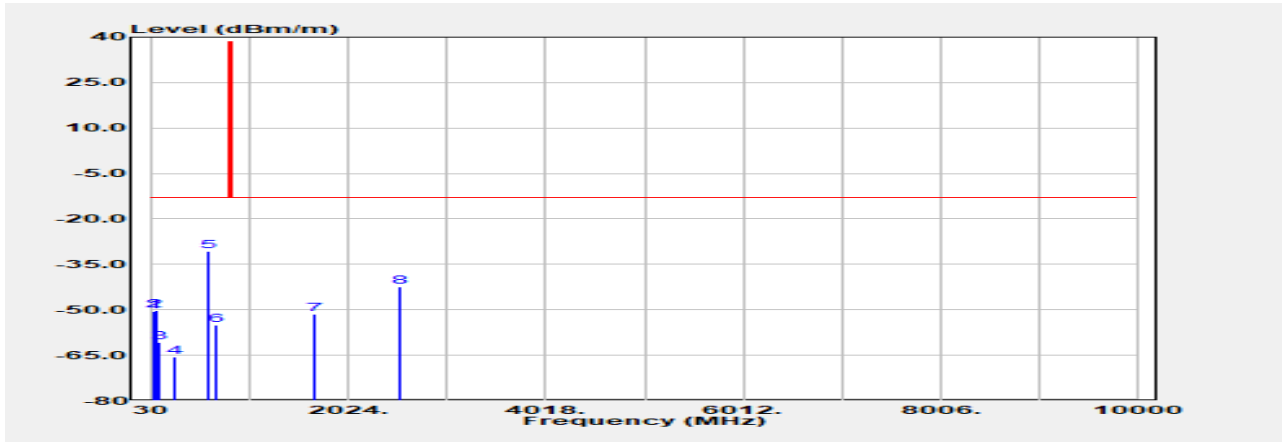
| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 36.790       | -55.96          | -44.89                    | -10.72                     | -0.35               | -13.00       | -42.96       |
| 79.470       | -57.80          | -56.43                    | -0.85                      | -0.52               | -13.00       | -44.80       |
| 124.090      | -64.54          | -64.86                    | 0.97                       | -0.65               | -13.00       | -51.54       |
| 299.660      | -66.07          | -71.13                    | 6.15                       | -1.09               | -13.00       | -53.07       |
| 613.940      | -30.47          | -34.92                    | 6.00                       | -1.55               | -13.00       | -17.47       |
| 739.070      | -56.74          | -61.18                    | 5.94                       | -1.50               | -13.00       | -43.74       |
| 1673.200     | -50.03          | -54.95                    | 7.34                       | -2.42               | -13.00       | -37.03       |
| 2509.800     | -42.75          | -48.21                    | 8.45                       | -2.99               | -13.00       | -29.75       |

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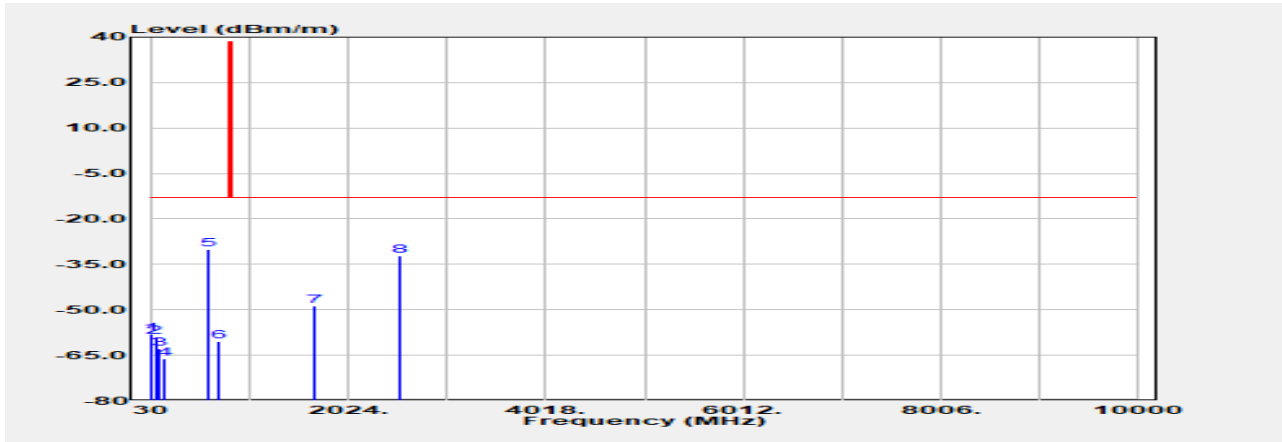
|                |                   |              |               |
|----------------|-------------------|--------------|---------------|
| Report Number  | :TERF2212002647E2 | Test Site    | :SAC D        |
| Operation Mode | :GSM 850          | Test Date    | :2023-01-07   |
| Test Mode      | :Tx               | Temp./Humi.  | :22.8/44      |
| EUT Pol        | :E2 Plane         | Antenna Pol. | :Vertical     |
| Test Frequency | :848.8 MHz        | Engineer     | :Howard Huang |



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 58.130       | -50.45          | -42.03                    | -7.99                      | -0.43               | -13.00       | -37.45       |
| 79.470       | -50.30          | -48.93                    | -0.85                      | -0.52               | -13.00       | -37.30       |
| 123.120      | -60.78          | -60.96                    | 0.83                       | -0.65               | -13.00       | -47.78       |
| 269.590      | -65.63          | -70.82                    | 6.16                       | -0.97               | -13.00       | -52.63       |
| 625.580      | -30.60          | -35.01                    | 6.01                       | -1.60               | -13.00       | -17.60       |
| 691.540      | -55.06          | -59.66                    | 6.18                       | -1.58               | -13.00       | -42.06       |
| 1697.600     | -51.57          | -56.65                    | 7.53                       | -2.45               | -13.00       | -38.57       |
| 2546.400     | -42.48          | -47.89                    | 8.45                       | -3.04               | -13.00       | -29.48       |



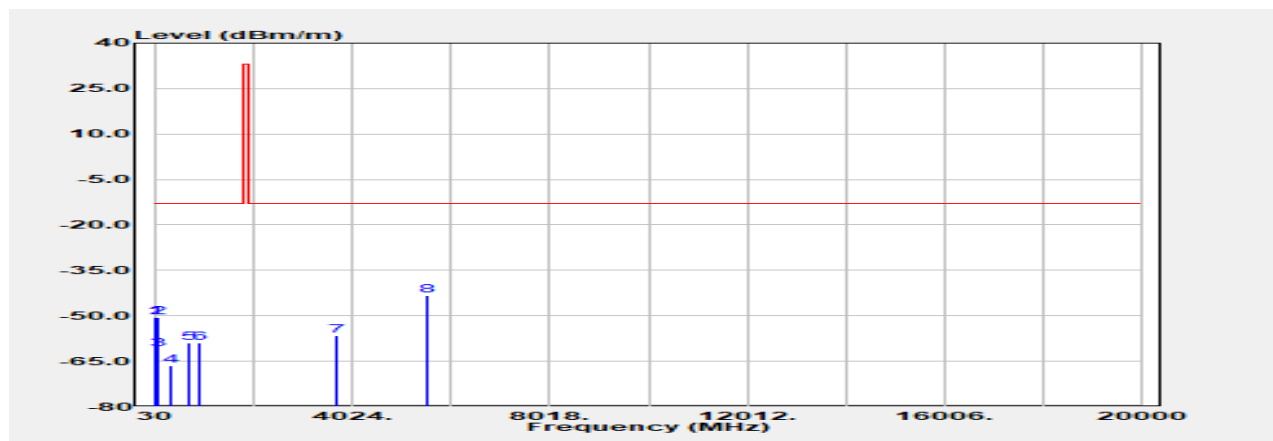
|                |                   |              |               |
|----------------|-------------------|--------------|---------------|
| Report Number  | :TERF2212002647E2 | Test Site    | :SAC D        |
| Operation Mode | :GSM 850          | Test Date    | :2023-01-07   |
| Test Mode      | :Tx               | Temp./Humi.  | :22.8/44      |
| EUT Pol        | :E2 Plane         | Antenna Pol. | :Horizontal   |
| Test Frequency | :848.8 MHz        | Engineer     | :Howard Huang |



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 36.790       | -57.91          | -46.84                    | -10.72                     | -0.35               | -13.00       | -44.91       |
| 79.470       | -58.85          | -57.48                    | -0.85                      | -0.52               | -13.00       | -45.85       |
| 125.060      | -62.85          | -63.04                    | 0.85                       | -0.66               | -13.00       | -49.85       |
| 169.680      | -66.07          | -67.34                    | 2.07                       | -0.80               | -13.00       | -53.07       |
| 625.580      | -30.18          | -34.59                    | 6.01                       | -1.60               | -13.00       | -17.18       |
| 730.340      | -60.58          | -64.98                    | 5.90                       | -1.50               | -13.00       | -47.58       |
| 1697.600     | -48.82          | -53.90                    | 7.53                       | -2.45               | -13.00       | -35.82       |
| 2546.400     | -32.09          | -37.50                    | 8.45                       | -3.04               | -13.00       | -19.09       |

Report Number :TERF2212002647E2  
 Operation Mode :PCS 1900  
 Test Mode :Tx  
 EUT Pol :NB Plane  
 Test Frequency :1850.2 MHz

Test Site :SAC D  
 Test Date :2023-01-07  
 Temp./Humi. :22.8/44  
 Antenna Pol. :Vertical  
 Engineer :Howard Huang



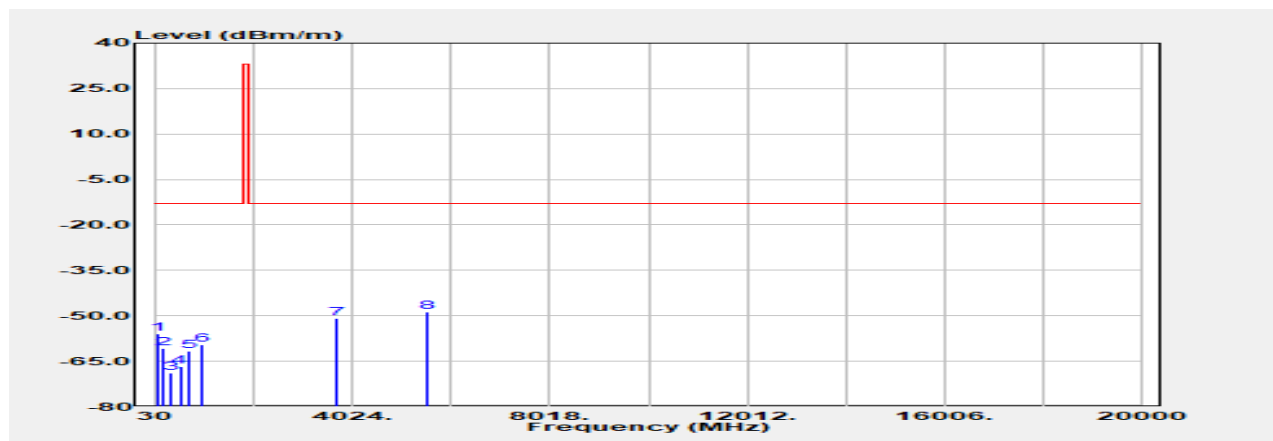
| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 59.100       | -50.62          | -42.41                    | -7.77                      | -0.44               | -13.00       | -37.62       |
| 80.440       | -50.65          | -49.76                    | -0.36                      | -0.53               | -13.00       | -37.65       |
| 126.030      | -61.15          | -61.31                    | 0.82                       | -0.66               | -13.00       | -48.15       |
| 349.130      | -66.56          | -71.94                    | 6.59                       | -1.21               | -13.00       | -53.56       |
| 733.250      | -59.05          | -63.57                    | 6.05                       | -1.53               | -13.00       | -46.05       |
| 914.640      | -58.84          | -63.19                    | 6.13                       | -1.78               | -13.00       | -45.84       |
| 3700.400     | -56.68          | -63.20                    | 10.25                      | -3.73               | -13.00       | -43.68       |
| 5550.600     | -43.28          | -49.43                    | 10.75                      | -4.60               | -13.00       | -30.28       |

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Report Number :TERF2212002647E2  
 Operation Mode :PCS 1900  
 Test Mode :Tx  
 EUT Pol :NB Plane  
 Test Frequency :1850.2 MHz

Test Site :SAC D  
 Test Date :2023-01-07  
 Temp./Humi. :22.8/44  
 Antenna Pol. :Horizontal  
 Engineer :Howard Huang



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 79.470       | -56.05          | -54.68                    | -0.85                      | -0.52               | -13.00       | -43.05       |
| 194.900      | -60.66          | -65.45                    | 5.61                       | -0.82               | -13.00       | -47.66       |
| 385.990      | -68.83          | -73.85                    | 6.22                       | -1.20               | -13.00       | -55.83       |
| 547.010      | -66.80          | -72.09                    | 6.67                       | -1.38               | -13.00       | -53.80       |
| 736.160      | -61.71          | -66.25                    | 6.08                       | -1.54               | -13.00       | -48.71       |
| 997.090      | -59.64          | -63.93                    | 6.14                       | -1.85               | -13.00       | -46.64       |
| 3700.400     | -50.85          | -57.37                    | 10.25                      | -3.73               | -13.00       | -37.85       |
| 5550.600     | -48.57          | -54.72                    | 10.75                      | -4.60               | -13.00       | -35.57       |

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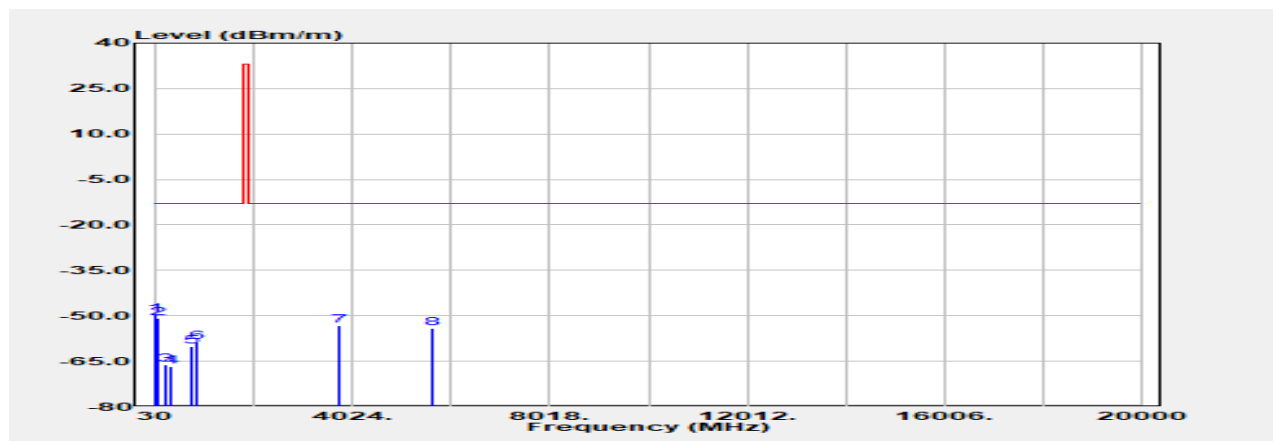
f (886-2) 2298-0488

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Report Number :TERF2212002647E2  
Operation Mode :PCS 1900  
Test Mode :Tx  
EUT Pol :NB Plane  
Test Frequency :1880 MHz

Test Site :SAC D  
Test Date :2023-01-07  
Temp./Humi. :22.8/44  
Antenna Pol. :Vertical  
Engineer :Howard Huang



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 58.130       | -49.66          | -41.24                    | -7.99                      | -0.43               | -13.00       | -36.66       |
| 80.440       | -50.78          | -49.89                    | -0.36                      | -0.53               | -13.00       | -37.78       |
| 284.140      | -66.28          | -71.25                    | 6.00                       | -1.03               | -13.00       | -53.28       |
| 381.140      | -66.74          | -71.83                    | 6.29                       | -1.20               | -13.00       | -53.74       |
| 787.570      | -60.11          | -64.35                    | 5.88                       | -1.64               | -13.00       | -47.11       |
| 907.850      | -58.76          | -62.97                    | 6.05                       | -1.84               | -13.00       | -45.76       |
| 3760.000     | -53.29          | -59.80                    | 10.21                      | -3.70               | -13.00       | -40.29       |
| 5640.000     | -54.02          | -60.44                    | 11.03                      | -4.61               | -13.00       | -41.02       |

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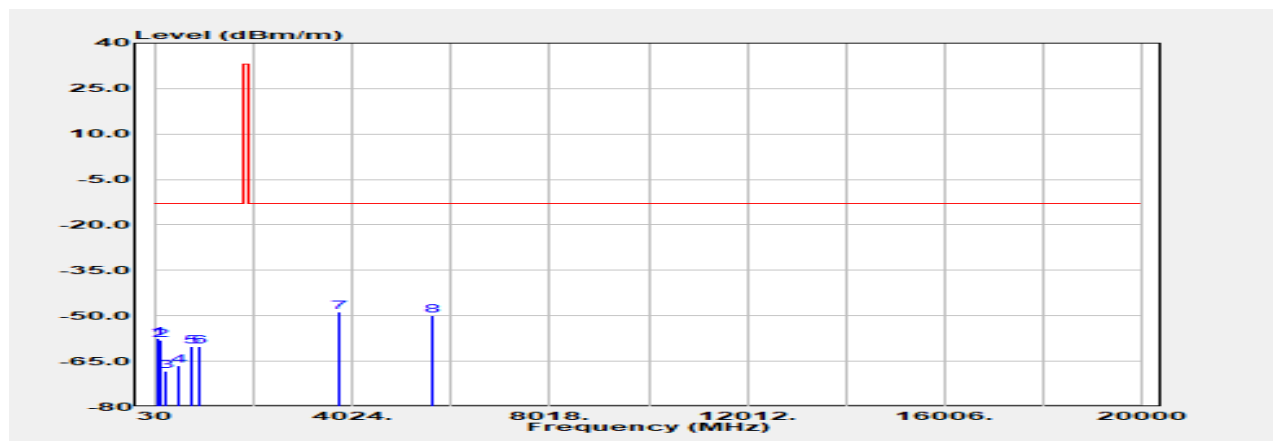
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Report Number :TERF2212002647E2  
 Operation Mode :PCS 1900  
 Test Mode :Tx  
 EUT Pol :NB Plane  
 Test Frequency :1880 MHz

Test Site :SAC D  
 Test Date :2023-01-07  
 Temp./Humi. :22.8/44  
 Antenna Pol. :Horizontal  
 Engineer :Howard Huang



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 79.470       | -57.32          | -55.95                    | -0.85                      | -0.52               | -13.00       | -44.32       |
| 147.370      | -58.18          | -57.59                    | 0.22                       | -0.81               | -13.00       | -45.18       |
| 284.140      | -68.29          | -73.26                    | 6.00                       | -1.03               | -13.00       | -55.29       |
| 527.610      | -66.57          | -71.74                    | 6.45                       | -1.28               | -13.00       | -53.57       |
| 786.600      | -60.27          | -64.60                    | 5.89                       | -1.56               | -13.00       | -47.27       |
| 961.200      | -60.02          | -64.30                    | 6.17                       | -1.89               | -13.00       | -47.02       |
| 3760.000     | -48.71          | -55.22                    | 10.21                      | -3.70               | -13.00       | -35.71       |
| 5640.000     | -49.87          | -56.29                    | 11.03                      | -4.61               | -13.00       | -36.87       |

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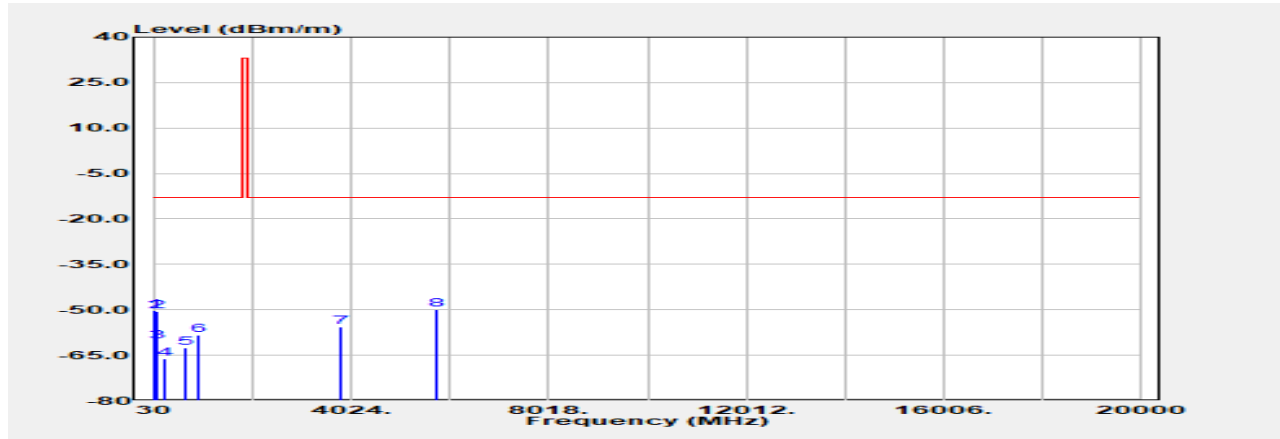
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Report Number :TERF2212002647E2  
 Operation Mode :PCS 1900  
 Test Mode :Tx  
 EUT Pol :NB Plane  
 Test Frequency :1909.8 MHz

Test Site :SAC D  
 Test Date :2023-01-07  
 Temp./Humi. :22.8/44  
 Antenna Pol. :Vertical  
 Engineer :Howard Huang



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 58.130       | -50.14          | -41.72                    | -7.99                      | -0.43               | -13.00       | -37.14       |
| 80.440       | -50.59          | -49.70                    | -0.36                      | -0.53               | -13.00       | -37.59       |
| 121.180      | -60.37          | -60.68                    | 0.95                       | -0.64               | -13.00       | -47.37       |
| 273.470      | -66.11          | -71.16                    | 6.04                       | -0.99               | -13.00       | -53.11       |
| 658.560      | -62.45          | -66.84                    | 6.05                       | -1.66               | -13.00       | -49.45       |
| 914.640      | -58.43          | -62.78                    | 6.13                       | -1.78               | -13.00       | -45.43       |
| 3819.600     | -55.79          | -62.10                    | 10.09                      | -3.78               | -13.00       | -42.79       |
| 5729.400     | -49.87          | -55.94                    | 10.79                      | -4.72               | -13.00       | -36.87       |

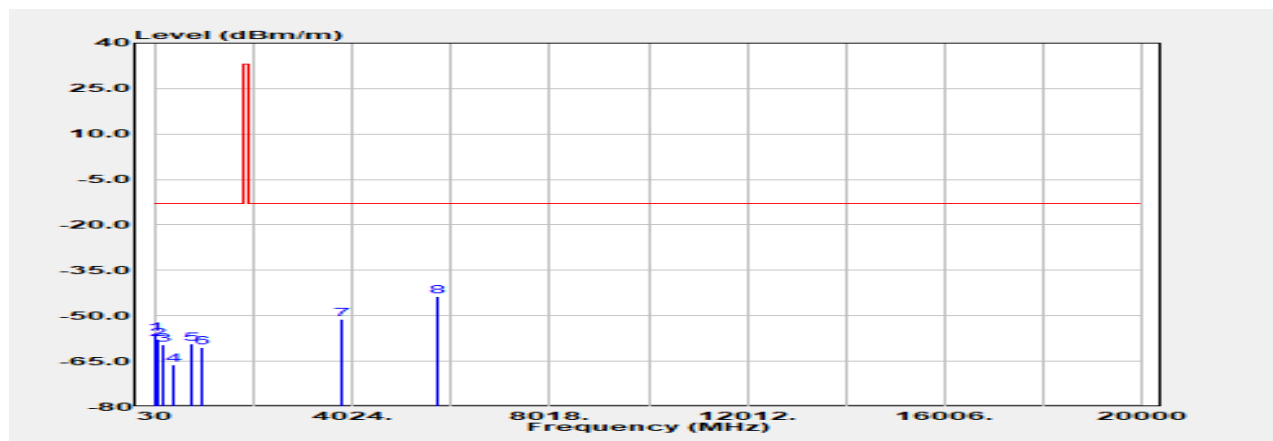
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Report Number :TERF2212002647E2  
 Operation Mode :PCS 1900  
 Test Mode :Tx  
 EUT Pol :NB Plane  
 Test Frequency :1909.8 MHz

Test Site :SAC D  
 Test Date :2023-01-07  
 Temp./Humi. :22.8/44  
 Antenna Pol. :Horizontal  
 Engineer :Howard Huang



| Freq.<br>MHz | EIRP/ERP<br>dBm | SG<br>Output Level<br>dBm | Antenna<br>Gain<br>dBi/dBd | Cable<br>Loss<br>dB | Limit<br>dBm | Margin<br>dB |
|--------------|-----------------|---------------------------|----------------------------|---------------------|--------------|--------------|
| 35.820       | -56.08          | -45.00                    | -10.74                     | -0.34               | -13.00       | -43.08       |
| 79.470       | -57.74          | -56.37                    | -0.85                      | -0.52               | -13.00       | -44.74       |
| 200.720      | -59.42          | -64.76                    | 6.18                       | -0.84               | -13.00       | -46.42       |
| 428.670      | -66.12          | -71.00                    | 6.28                       | -1.40               | -13.00       | -53.12       |
| 787.570      | -59.33          | -63.57                    | 5.88                       | -1.64               | -13.00       | -46.33       |
| 993.210      | -60.46          | -64.82                    | 6.19                       | -1.83               | -13.00       | -47.46       |
| 3819.600     | -50.99          | -57.30                    | 10.09                      | -3.78               | -13.00       | -37.99       |
| 5729.400     | -43.70          | -49.77                    | 10.79                      | -4.72               | -13.00       | -30.70       |

~ End of Report ~

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