



# FCC / ISED & Test Report

**For:**  
Philips Respironics

**Model Name:**  
LAX410H15C, LAX420H15C,  
LAX520H15C, ARX410H15C,  
ARX420H15C, ARX520H15C

**Product Description:**  
CPAP machine with integral Cell modem and BT

**Applied Rules and Standards:**  
47 CFR Parts 22, 24  
RSS: 132 Issue 3, 133 Issue 6

**FCC ID:** TH01141623

**REPORT #:** EMC\_PHIL4\_089\_21001\_FCC\_22\_24\_Rev2

**DATE:** 2021-11-15



A2LA Accredited

IC recognized #  
3462B-1

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CETECOM Inc. is a Delaware Corporation with Corporation number: 2905571

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## 1 Assessment

The following device as further described in section 3 of this report was evaluated against the applicable criteria specified in the Code of Federal Regulations Title 47 parts 22 and 24, and Industry Canada Standards RSS-GEN issue 3, RSS-132 issue 3, RSS-133 issue 6.

No deficiencies were ascertained.

| Company Name        | Product Description                          | Model #                                                                          |
|---------------------|----------------------------------------------|----------------------------------------------------------------------------------|
| Philips Respironics | CPAP machine with integral Cell modem and BT | LAX410H15C<br>LAX420H15C<br>LAX520H15C<br>ARX410H15C<br>ARX420H15C<br>ARX520H15C |

### Responsible for Testing Laboratory:

| 2021-11-15 | Compliance | Kevin Wang<br>(EMC Lab Manager) | kevin.<br>wang@cete<br>com.com <div>             Digitally signed by: kevin.<br/>wang@cetecom.com<br/>DN: CN = kevin.<br/>wang@cetecom.com<br/>Date: 2021.11.15 15:47:<br/>12 -08'00'           </div> |
|------------|------------|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date       | Section    | Name                            | Signature                                                                                                                                                                                              |

### Responsible for the Report:

| 2021-11-15 | Compliance | Cheng Song<br>(EMC Engineer) | cheng.<br>song@c<br>etecom.<br>com <div>             Digitally signed by:<br/>cheng.<br/>song@cetecom.<br/>com<br/>DN: CN = cheng.<br/>song@cetecom.<br/>com<br/>Date: 2021.11.15<br/>15:08:12 -08'00'           </div> |
|------------|------------|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date       | Section    | Name                         | Signature                                                                                                                                                                                                               |

The test results of this test report relate exclusively to the test item specified in Section3.

CETECOM Inc. USA does not assume responsibility for any conclusions and generalizations drawn from the test results with regard to other specimens or samples of the type of the equipment represented by the test item. The test report may only be reproduced or published in full. Reproduction or publication of extracts from the report requires the prior written approval of CETECOM Inc. USA.

## **2    Administrative Data**

### **2.1    Identification of the Testing Laboratory Issuing the EMC Test Report**

|                                    |                        |
|------------------------------------|------------------------|
| <b>Company Name:</b>               | CETECOM Inc.           |
| <b>Department:</b>                 | Compliance             |
| <b>Street Address:</b>             | 411 Dixon Landing Road |
| <b>City/Zip Code</b>               | Milpitas, CA 95035     |
| <b>Country</b>                     | USA                    |
| <b>Telephone:</b>                  | +1 (408) 586 6200      |
| <b>Fax:</b>                        | +1 (408) 586 6299      |
| <b>EMC Lab Manager:</b>            | Kevin Wang             |
| <b>Responsible Project Leader:</b> | Cathy Palacios         |

### **2.2    Identification of the Client**

|                        |                      |
|------------------------|----------------------|
| <b>Client's Name:</b>  | Philips Respironics  |
| <b>Street Address:</b> | 6501 Living Place    |
| <b>City/Zip Code</b>   | Pittsburgh, PA 15206 |
| <b>Country</b>         | USA                  |

### **2.3    Identification of the Manufacturer**

|                               |                |
|-------------------------------|----------------|
| <b>Manufacturer's Name:</b>   | Same as Client |
| <b>Manufacturers Address:</b> |                |
| <b>City/Zip Code</b>          |                |
| <b>Country</b>                |                |

### 3 Equipment Under Test (EUT)

#### 3.1 EUT Specifications

|                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
|----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Model No</b>                                    | LAX410H15C<br>LAX420H15C<br>LAX520H15C<br>ARX410H15C<br>ARX420H15C<br>ARX520H15C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>HW Version</b>                                  | 01                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>SW Version</b>                                  | V1.0.0.3212                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <b>FCC-ID</b>                                      | THO1141623                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <b>Product Description</b>                         | CPAP machine with integral Cell modem and BT.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| <b>Radios included in the device</b>               | Satellite Radio:<br>Cellular: <ul style="list-style-type: none"> <li>• Model Name: u-blox</li> <li>• Model Number: SARA-U201</li> <li>• FCC ID: XPY1CGM5NNN</li> <li>• Frequency of Operation:                             <ul style="list-style-type: none"> <li>o GSM 850 / GSM 900 / GSM 1800 / GSM 1900</li> <li>o UMTS I / UMTS II / UMTS V / UMTS VIII</li> </ul> </li> </ul> Bluetooth: <ul style="list-style-type: none"> <li>• Bluetooth 5.0 Low Energy: Dialog DA14585</li> <li>• Nominal band: 2400 MHz – 2483.5 MHz;</li> <li>• Center to center: 2402 MHz (ch 0) – 2480 MHz (ch 39), 40 channels</li> </ul> |
| <b>Max. declared antenna gain</b>                  | Flexible Polymer Antenna, Internal, Peak Gain: 4 dBi                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| <b>Power Supply/ Rated Operating Voltage Range</b> | 10.8V (Low) / 12V (Nominal) / 13.2V (Max)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>Operating Temperature Range</b>                 | Tmin: 5 °C / Tmax: 35 °C / Tnom: 21 °C                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <b>Sample Revision</b>                             | <input type="checkbox"/> Prototype <input checked="" type="checkbox"/> Production <input type="checkbox"/> Pre-Production                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

### 3.2 EUT Sample details

| EUT # | Serial Number  | HW Version | SW Version  | Comments |
|-------|----------------|------------|-------------|----------|
| 1     | D1314413188FFF | 01         | V1.0.0.3212 |          |

### 3.3 Accessory Equipment (AE) details

| AE # | Type            | Model       | Manufacturer               | Serial Number |
|------|-----------------|-------------|----------------------------|---------------|
| 1    | AC / DC Adapter | MEA-080A12C | Delta Electronics,<br>Inc. | 70TW12H06ET   |

### 3.4 Test Sample Configuration

| Set-up # | EUT / AE used for set-up | Comments |
|----------|--------------------------|----------|
| 1        | EUT#1+AE#1               |          |

## **4    Subject of Investigation**

The objective of the measurements done by CETECOM Inc. was to evaluate the compliance of the EUT against the relevant requirements specified in the Code of Federal Regulations Title 47 parts 22, 24, 27 and ISSED Standards RSS-132 issue 3, RSS-133 issue 6.

### **4.1    Dates of Testing:**

07/01/2021 – 07/07/2021

### **4.2    Measurement Uncertainty**

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus, with 95% confidence interval (in dB delta to result), based on a coverage factor k=1.

Radiated measurement

|                    |                                 |
|--------------------|---------------------------------|
| 9 kHz to 30MHz     | ±2.5 dB (Magnetic Loop Antenna) |
| 30 MHz to 1000 MHz | ±2.0 dB (Biconilog Antenna)     |
| 1 GHz to 40 GHz    | ±2.3 dB (Horn Antenna)          |

Conducted measurement

|                   |                |
|-------------------|----------------|
| 150 kHz to 30 MHz | ±0.7 dB (LISN) |
|-------------------|----------------|

|                          |         |
|--------------------------|---------|
| RF conducted measurement | ±0.5 dB |
|--------------------------|---------|

### **4.3    Environmental Conditions during Testing:**

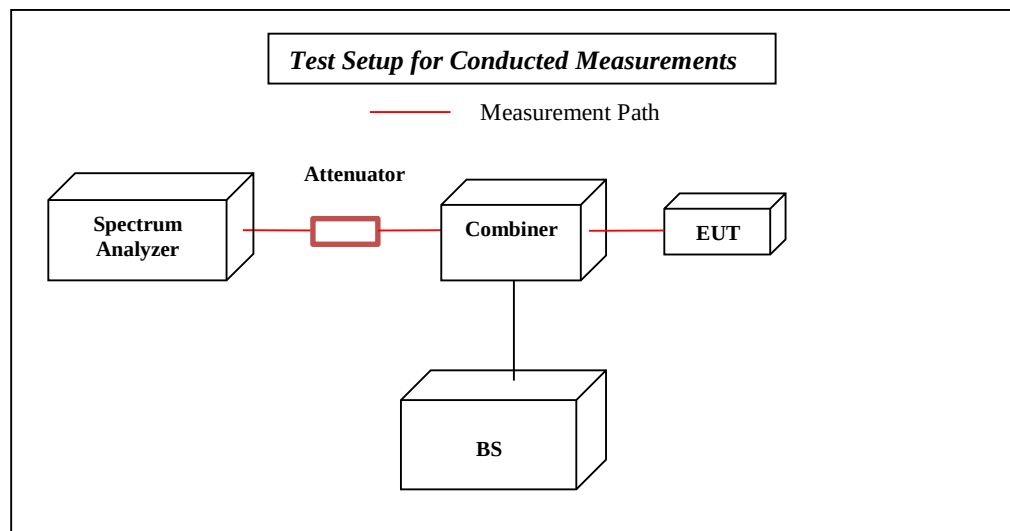
The following environmental conditions were maintained during the course of testing:

- Ambient Temperature: 20-25°C
- Relative humidity: 40-60%

Deviating test conditions are indicated at individual test description where applicable.

## 5 Measurement Procedures

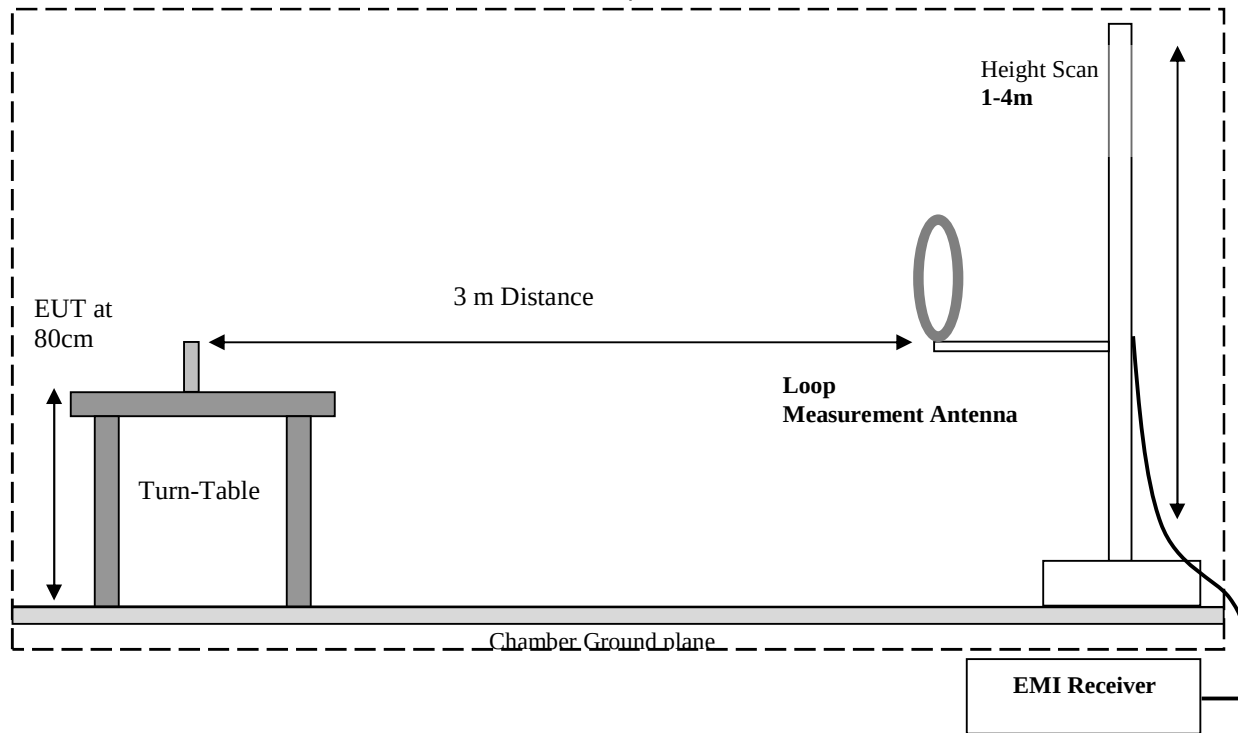
Testing is performed according to the guidelines provided in FCC publication (KDB) 971168 D01 v03r01 – “Measurement Guidance for Certification of Licensed Digital Transmitters” and according to relevant parts of ANSI/TIA-603-D-2010 as detailed below.



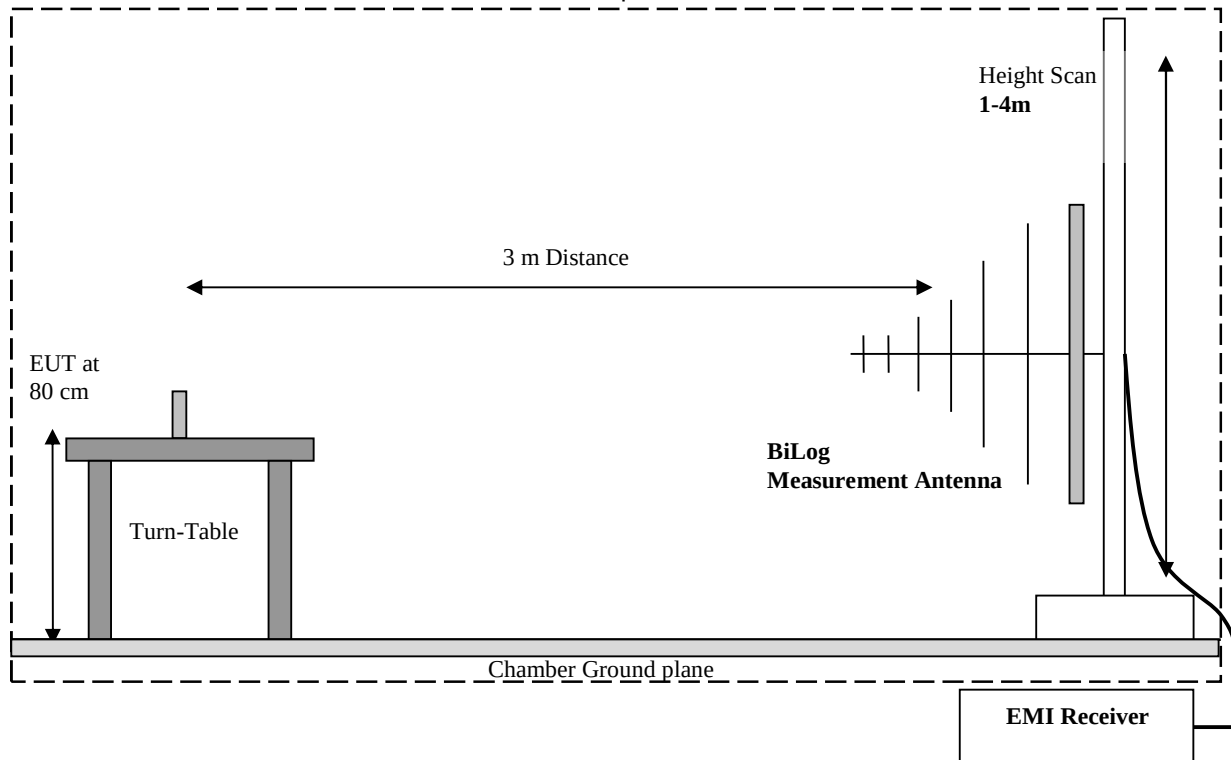
### 5.1 Radiated Measurement

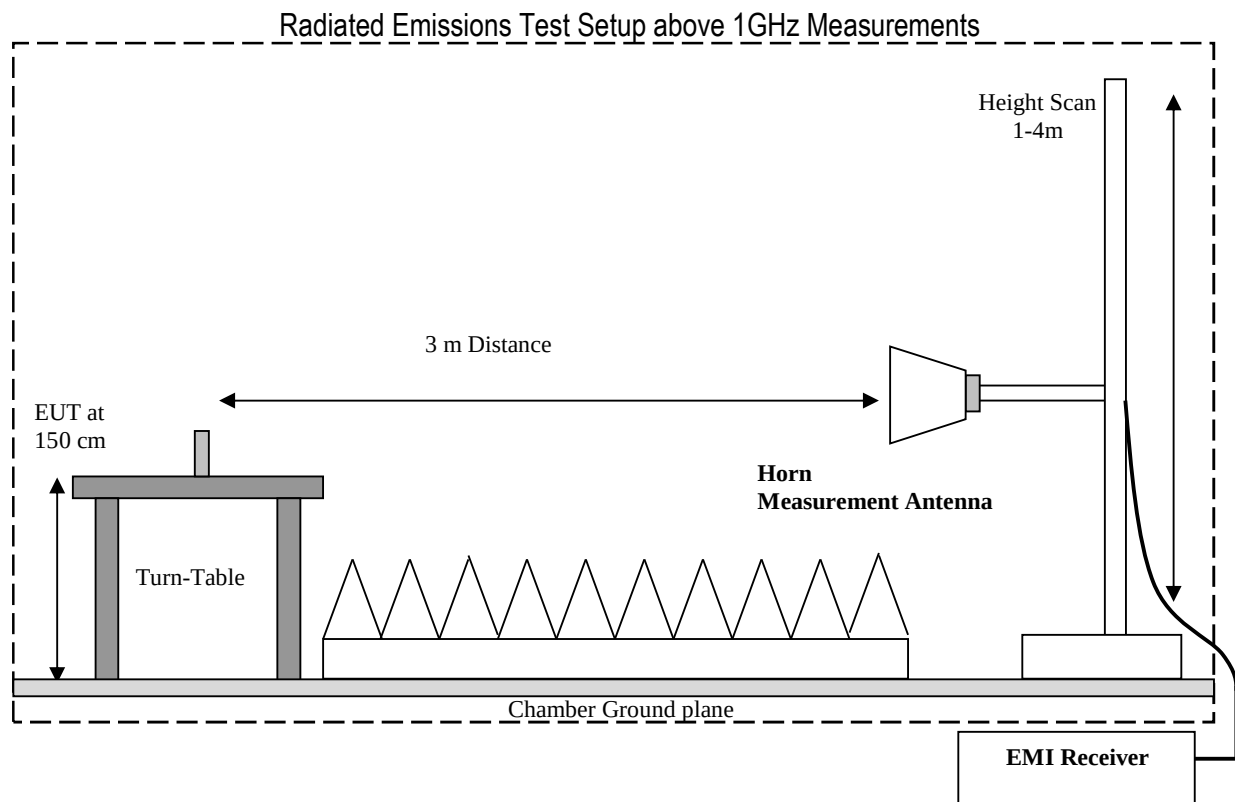
- The exploratory measurement is accomplished by running a matrix of 16 sweeps over the required frequency range with R&S Test-SW EMC32 for 4 positions of the turntable, two orthogonal positions of the EUT and both antenna polarizations. This procedure exceeds the requirement of the above standards to cover the 3 orthogonal axis of the EUT. A max peak detector is utilized during the exploratory measurement. The Test-SW creates an overall maximum trace for all 12 sweeps and saves the settings for each point of this trace. The maximum trace is part of the test report.
- The 10 highest emissions are selected with an automatic algorithm of EMC32 searching for peaks in the noise floor and ensuring that broadband signals are not selected multiple times.
- The maxima are then put through the final measurement and again maximized in a 90deg range of the turntable, fine search in frequency domain and height scan between 1m and 4m.
- The above procedure is repeated for all possible ways of power supply to EUT and for all supported modulations.
- In case there are no emissions above noise floor level only the maximum trace is reported as described above.
- The results are split up into up to 4 frequency ranges due to antenna bandwidth restrictions. A magnetic loop is used from 9 kHz to 30 MHz, a Biconilog antenna is used from 30 MHz to 1 GHz, and two different horn antennas are used to cover frequencies up to 40 GHz.

### Radiated Emissions Test Setup below 30MHz Measurements



### Radiated Emissions Test Setup 30MHz-1GHz Measurements





## 5.2 Sample Calculations for Field Strength Measurements

Field Strength is calculated from the Spectrum Analyzer/ Receiver readings, taking into account the following parameters:

- Measured reading in dB $\mu$ V
- Cable Loss between the receiving antenna and SA in dB and
- Antenna Factor in dB/m

All radiated measurement plots in this report are taken from a test SW that calculates the Field Strength based on the following equation:

$$FS \text{ (dB}\mu\text{V/m)} = \text{Measured Value on SA (dB}\mu\text{V)} + \text{Cable Loss (dB)} + \text{Antenna Factor (dB/m)}$$

Example:

| Frequency (MHz) | Measured SA (dB $\mu$ V) | Cable Loss (dB) | Antenna Factor Correction (dB) | Field Strength Result (dB $\mu$ V/m) |
|-----------------|--------------------------|-----------------|--------------------------------|--------------------------------------|
| 1000            | 80.5                     | 3.5             | 14                             | 98.0                                 |

## 6 Measurement Results Summary

### 6.1 Part 22 / RSS-132

| Test Specification   | Test Case                    | Temperature and Voltage Conditions | Mode           | Pass                     | Fail                     | NA                       | NP                       | Result   |
|----------------------|------------------------------|------------------------------------|----------------|--------------------------|--------------------------|--------------------------|--------------------------|----------|
| §2.1046; §22.913 (a) | RF Output Power              | Nominal                            |                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1055; §22.355     | Frequency Tolerance          | Extreme Temperature and Voltage    |                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1049; §22.917     | Occupied Bandwidth           | Nominal                            |                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1051; §22.917     | Band Edge Compliance         | Nominal                            |                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1051; §22.917     | Conducted Spurious Emissions | Nominal                            |                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1053; §22.917     | Radiated Spurious Emissions  | Nominal                            | GSM 850 UMTS V | ■                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Complies |

Note 1: NA= Not Applicable; NP= Not Performed.

Note 2: Leveraged from module certification report(s), Under FCC ID: XPY1CGM5NNN.

### 6.2 Part 24 / RSS-133

| Test Specification   | Test Case                    | Temperature and Voltage Conditions | Mode             | Pass                     | Fail                     | NA                       | NP                       | Result   |
|----------------------|------------------------------|------------------------------------|------------------|--------------------------|--------------------------|--------------------------|--------------------------|----------|
| §2.1046; §24.232 (a) | RF Output Power              | Nominal                            |                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1055; §24.235     | Frequency Stability          | Extreme Temperature and Voltage    |                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1049; §24.238     | Occupied Bandwidth           | Nominal                            |                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1051; §24.238     | Band Edge Compliance         | Nominal                            |                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1051; §24.238     | Conducted Spurious Emissions | Nominal                            |                  | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | ■                        | Note 2   |
| §2.1053; §24.238     | Radiated Spurious Emissions  | Nominal                            | GSM 1900 UMTS II | ■                        | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Complies |

Note 1: NA= Not Applicable; NP= Not Performed.

Note 2: Leveraged from module certification report(s), Under FCC ID: XPY1CGM5NNN.

### 6.3 §15.207(a)

| Test Specification | Test Case              | Temperature and Voltage Conditions | Mode                                                     | Pass | Fail                     | NA                       | NP                       | Result   |
|--------------------|------------------------|------------------------------------|----------------------------------------------------------|------|--------------------------|--------------------------|--------------------------|----------|
| §15.207(a)         | AC Conducted Emissions | Nominal                            | BLE+GSM 850<br>BLE+GSM 1900<br>BLE+UMTS II<br>BLE+UMTS V | ■    | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> | Complies |

## 7 Test Result Data

### 7.1 Radiated Spurious Emissions

#### 7.1.1 Measurement utilizing KDB 971168 D01 Power Meas License Digital Systems v03r01, and according to ANSI/TIA-603-D-2010

##### Spectrum Analyzer Settings for FCC 22

| Frequency Range      | 30MHz – 1 GHz | 1 – 1.58 GHz | 1.58 – 9 GHz |
|----------------------|---------------|--------------|--------------|
| Resolution Bandwidth | 100 kHz       | 1 MHz        | 1 MHz        |
| Video Bandwidth      | 100 kHz       | 1 MHz        | 1 MHz        |
| Detector             | Peak          | Peak         | Peak         |
| Trace Mode           | Max Hold      | Max Hold     | Max Hold     |
| Sweep Time           | Auto          | Auto         | Auto         |

##### Spectrum Analyzer Settings for FCC 24

| Frequency Range      | 30MHz – 1 GHz | 1 – 2.7 GHz | 2.7 – 18 GHz | 18 – 19.1 GHz |
|----------------------|---------------|-------------|--------------|---------------|
| Resolution Bandwidth | 100 kHz       | 1 MHz       | 1 MHz        | 1 MHz         |
| Video Bandwidth      | 100 kHz       | 1 MHz       | 1 MHz        | 1 MHz         |
| Detector             | Peak          | Peak        | Peak         | Peak          |
| Trace Mode           | Max Hold      | Max Hold    | Max Hold     | Max Hold      |
| Sweep Time           | Auto          | Auto        | Auto         | Auto          |

#### 7.1.2 Limits:

##### 7.1.2.1 FCC Part 22.917 (a); FCC Part 24.238 (a); FCC Part 27.53 (h)

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.

##### 7.1.2.2 RSS-132 Part 5.5; RSS-133 Part 6.5; RSS-139 Part 6.6 Transmitter Unwanted Emissions

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.

Note: The limit calculation result is a constant of -13 dBm.

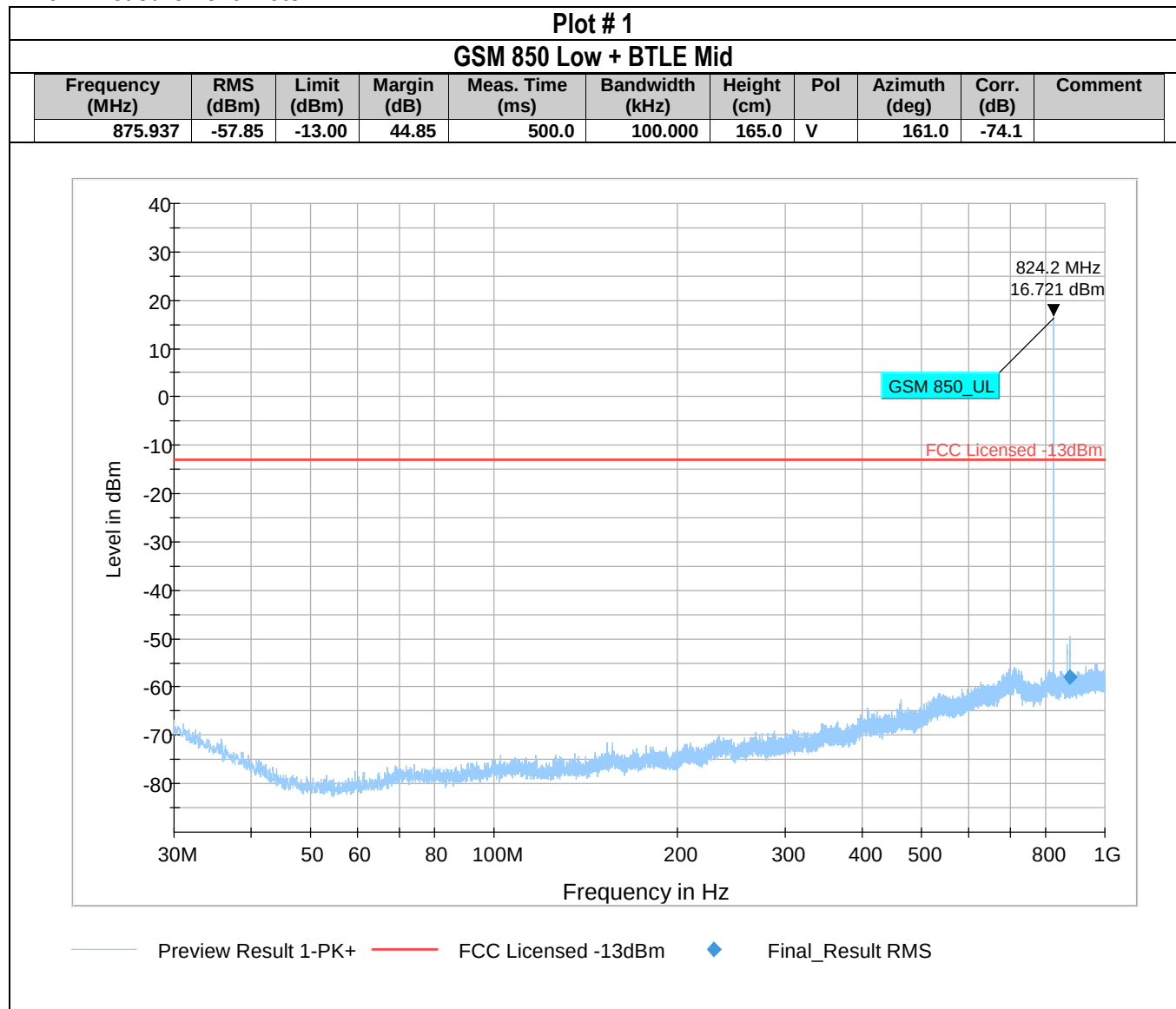
### 7.1.3 Test conditions and setup:

| Ambient Temperature (C) | EUT Set-Up # | EUT operating mode                             | Power Input |
|-------------------------|--------------|------------------------------------------------|-------------|
| 24                      | 1            | GSM 850 / 1900<br>FDD II / FDD V<br>Co-Tx BTLE | 120 VAC     |

### 7.1.4 Measurement result:

| Plot # | EUT operating mode       | Scan Frequency  | Limit (dBm) | Result |
|--------|--------------------------|-----------------|-------------|--------|
| 1-3    | GSM 850 Low + BTLE Mid   | 30 MHz – 18 GHz | -13         | Pass   |
| 4-7    | GSM 850 Mid + BTLE Mid   | 9 kHz – 18 GHz  | -13         | Pass   |
| 8-10   | GSM 850 High + BTLE Mid  | 30 MHz – 18 GHz | -13         | Pass   |
| 11-13  | UMTS V Low + BTLE Mid    | 30 MHz – 18 GHz | -13         | Pass   |
| 14-17  | UMTS V Mid + BTLE Mid    | 9 kHz – 18 GHz  | -13         | Pass   |
| 18-20  | UMTS V High + BTLE Mid   | 30 MHz – 18 GHz | -13         | Pass   |
| 21-23  | GSM 1900 Low + BTLE Mid  | 30 MHz – 18 GHz | -13         | Pass   |
| 24-28  | GSM 1900 Mid + BTLE Mid  | 9 kHz – 26 GHz  | -13         | Pass   |
| 29-31  | GSM 1900 High + BTLE Mid | 30 MHz – 18 GHz | -13         | Pass   |
| 32-34  | UMTS II Low + BTLE Mid   | 30 MHz – 18 GHz | -13         | Pass   |
| 35-39  | UMTS II Mid + BTLE Mid   | 9 kHz – 26 GHz  | -13         | Pass   |
| 40-42  | UMTS II High + BTLE Mid  | 30 MHz – 18 GHz | -13         | Pass   |

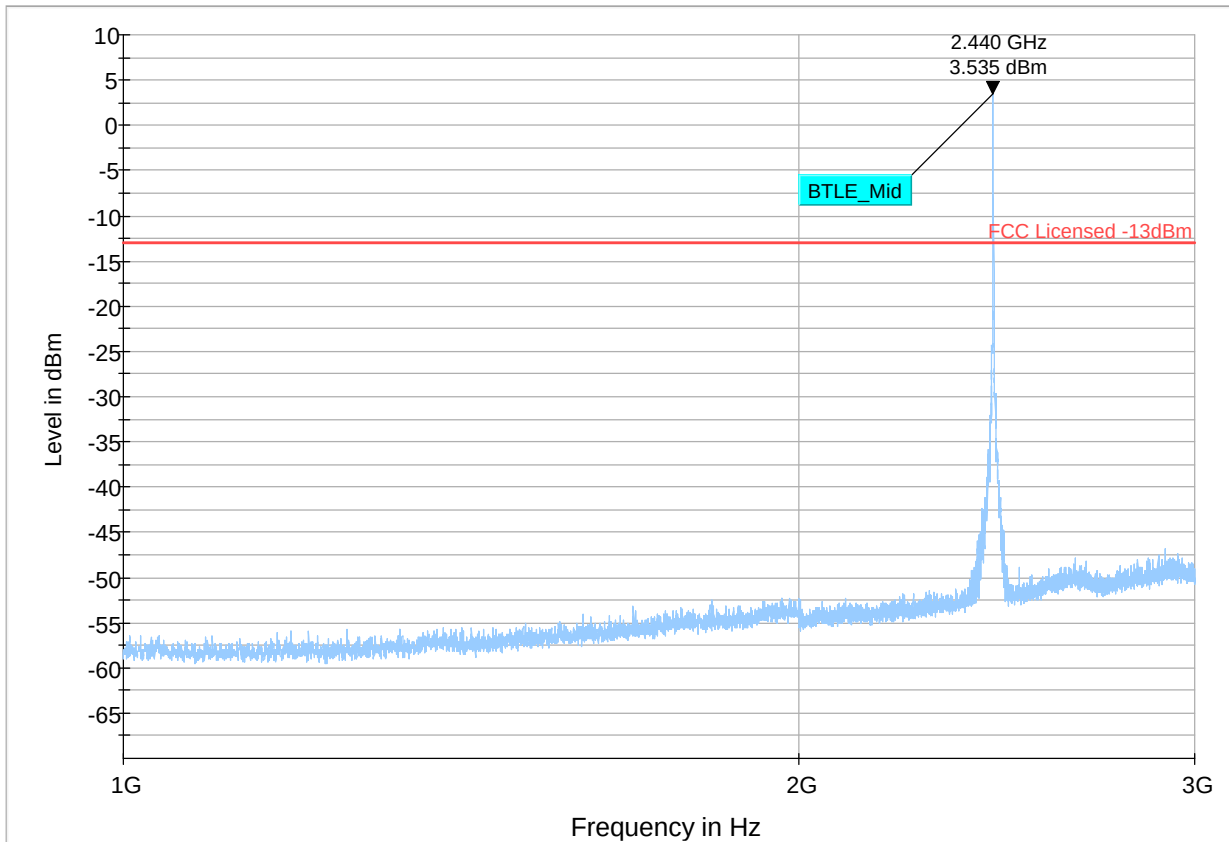
### 7.1.5 Measurement Plots:



**Plot # 2**

**GSM 850 Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

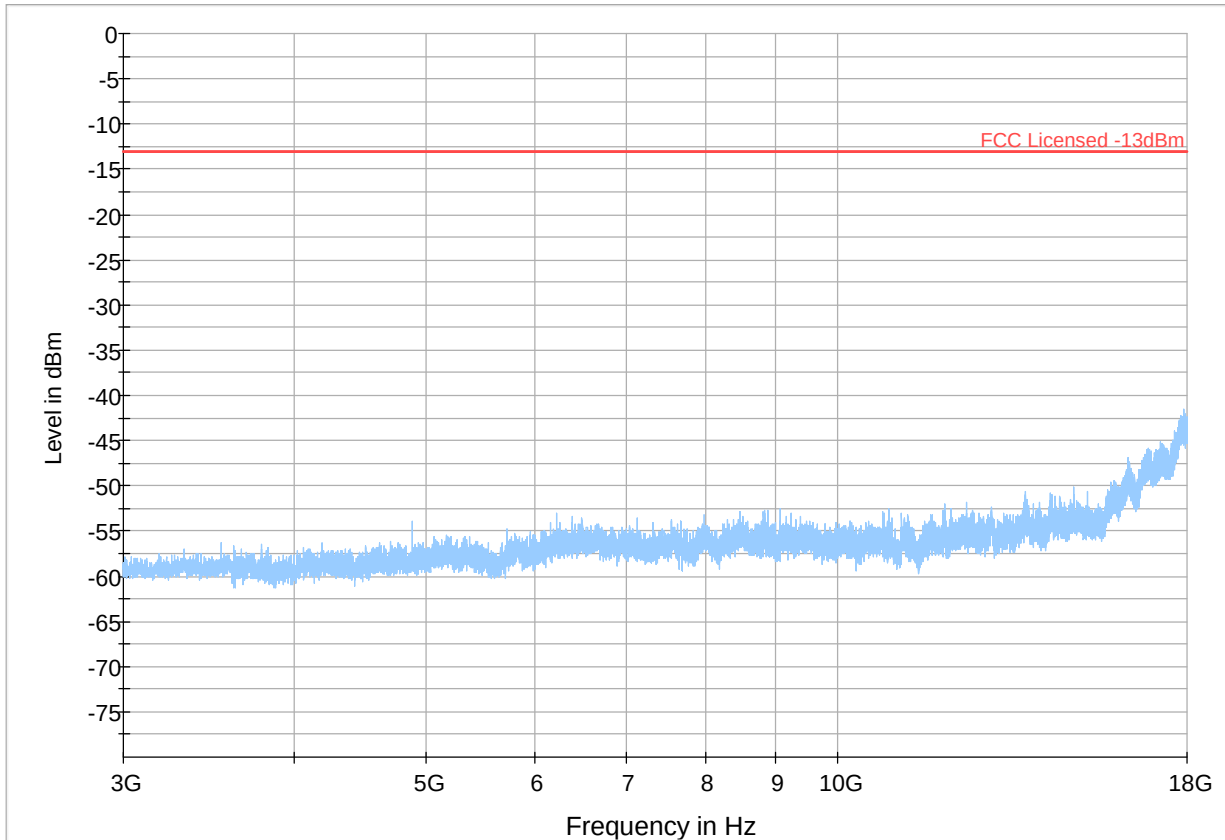


— Preview Result 1-PK+   
 \* Critical\_Freqs PK+   
 — FCC Licensed -13dBm   
 ◆ Final\_Result RM

**Plot # 3**

**GSM 850 Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

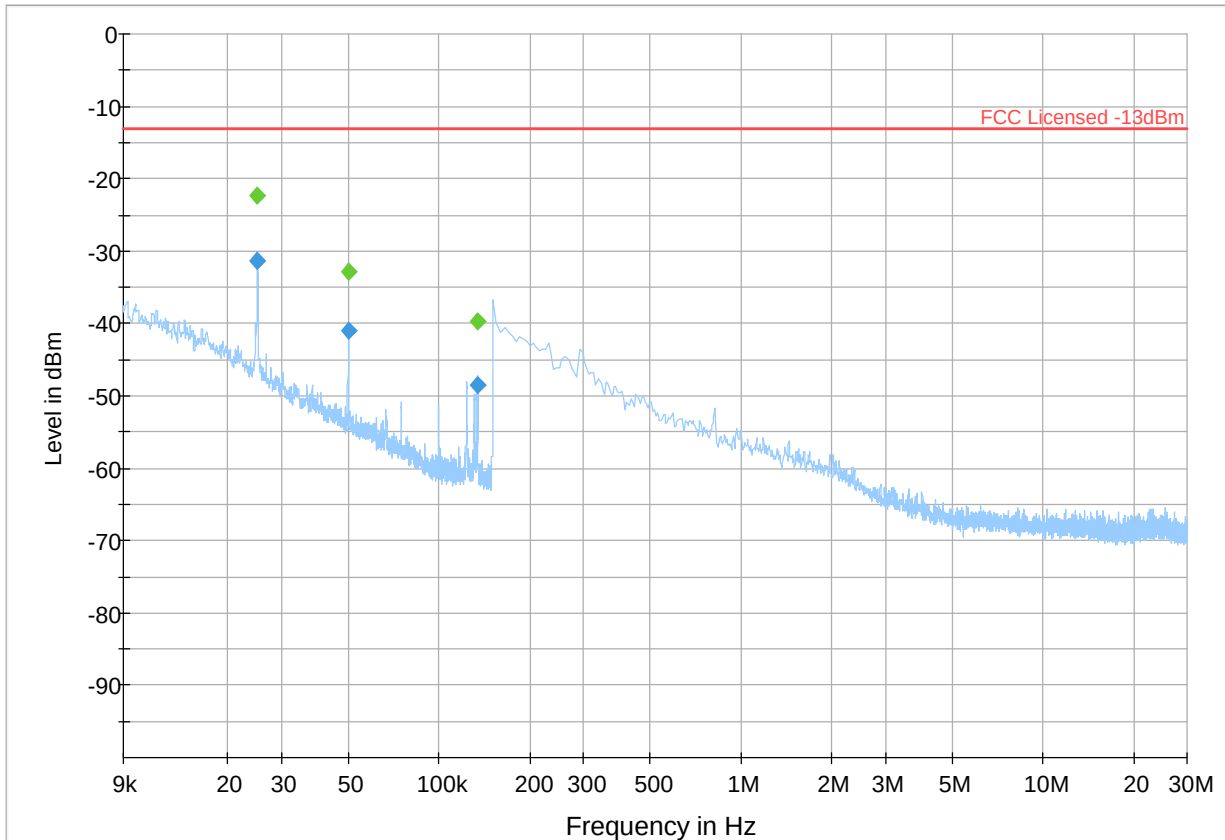


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

Plot # 4

GSM 850 Mid + BTLE Mid

| Frequency (MHz) | RMS (dBm) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|---------------|-------------|-------------|------------|-----------------|-------------|-----|---------------|------------|---------|
| 0.025           | ---       | -22.33        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 80.0          | -17.9      |         |
| 0.025           | -31.41    | ---           | -13.00      | 18.41       | 500.0      | 1.000           | 100.0       | V   | 80.0          | -17.9      |         |
| 0.050           | ---       | -32.92        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 252.0         | -24.6      |         |
| 0.050           | -40.94    | ---           | -13.00      | 27.94       | 500.0      | 1.000           | 100.0       | V   | 252.0         | -24.6      |         |
| 0.134           | ---       | -39.78        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 244.0         | -32.2      |         |
| 0.134           | -48.54    | ---           | -13.00      | 35.54       | 500.0      | 1.000           | 100.0       | V   | 244.0         | -32.2      |         |

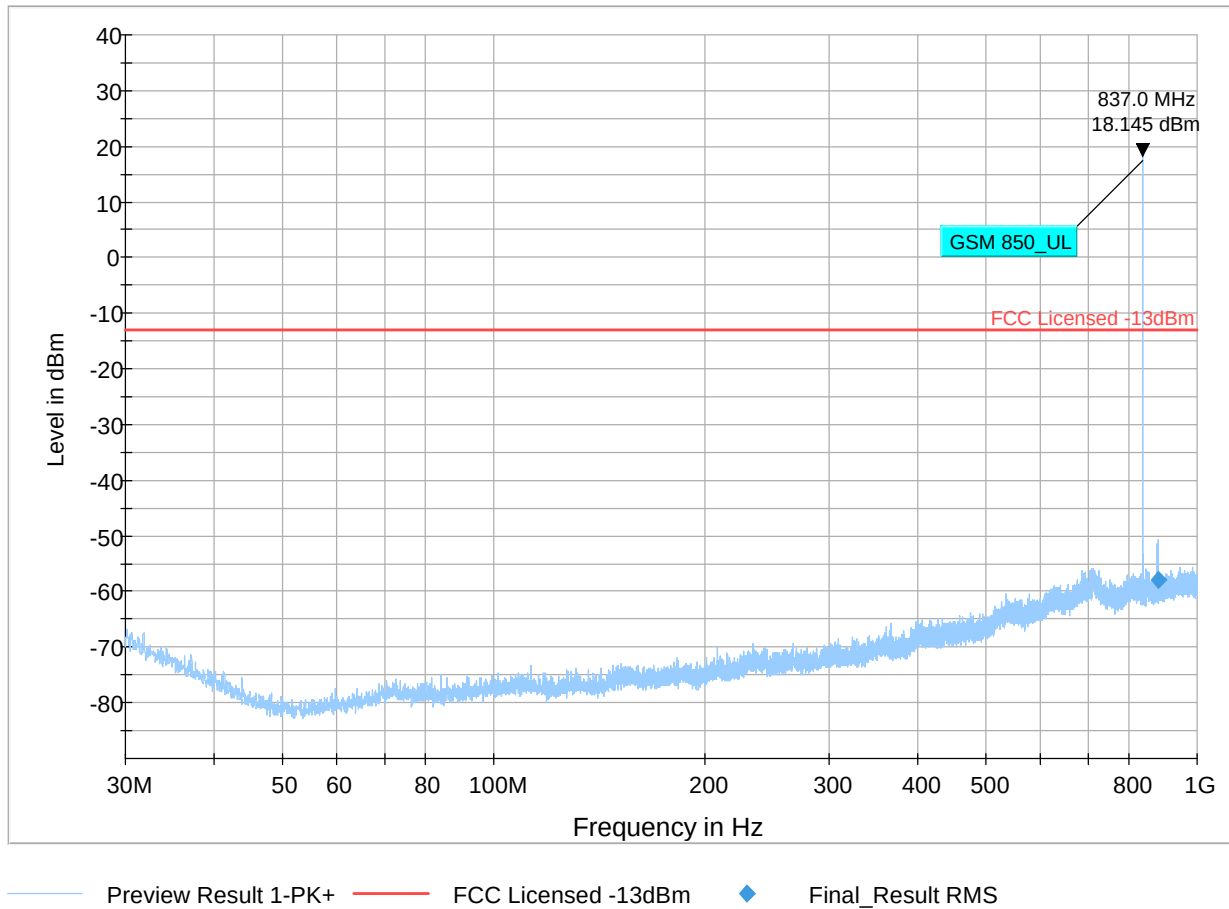


Preview Result 1-PK+ FCC Licensed -13dBm Final\_Result RMS Final\_Result PK

**Plot # 5**

**GSM 850 Mid + BTLE Mid**

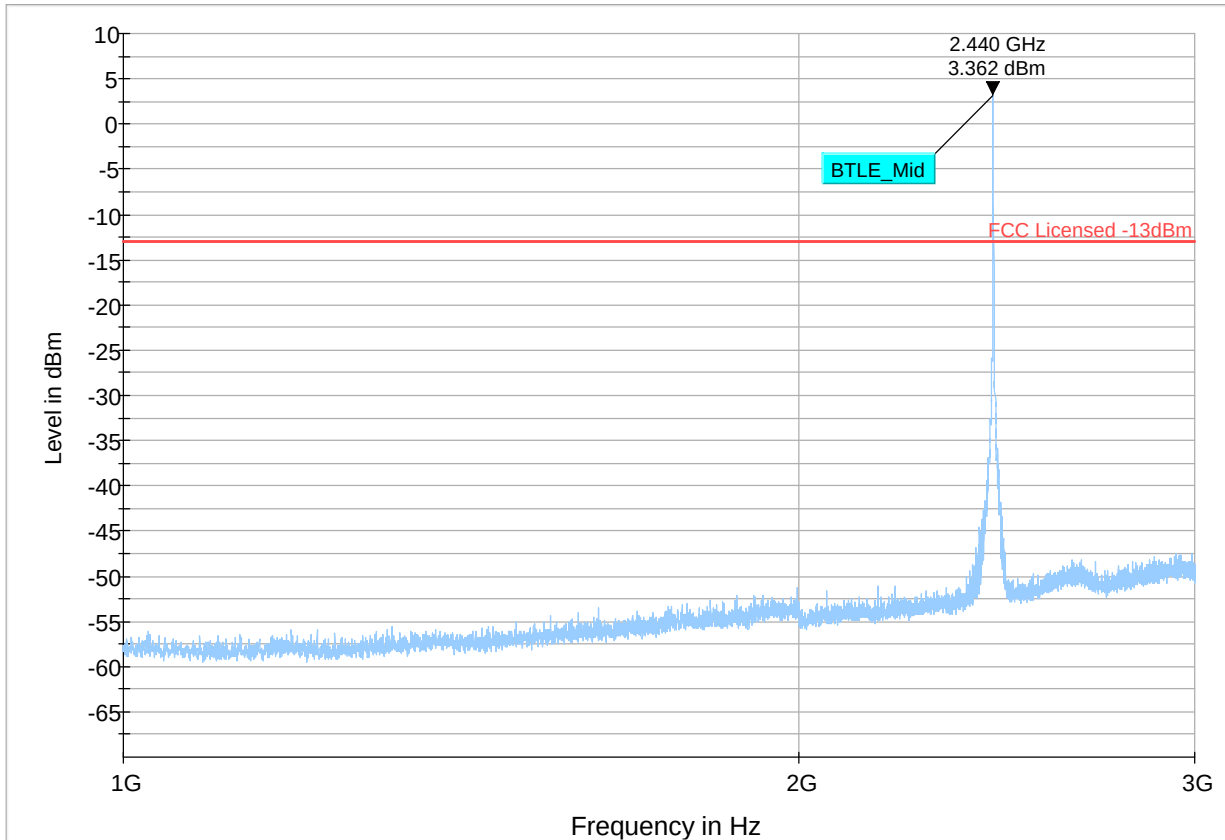
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 882.080         | -58.05    | -13.00      | 45.05       | 500.0           | 100.000         | 155.0       | V   | 179.0         | -74.0      |         |



**Plot # 6**

**GSM 850 Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

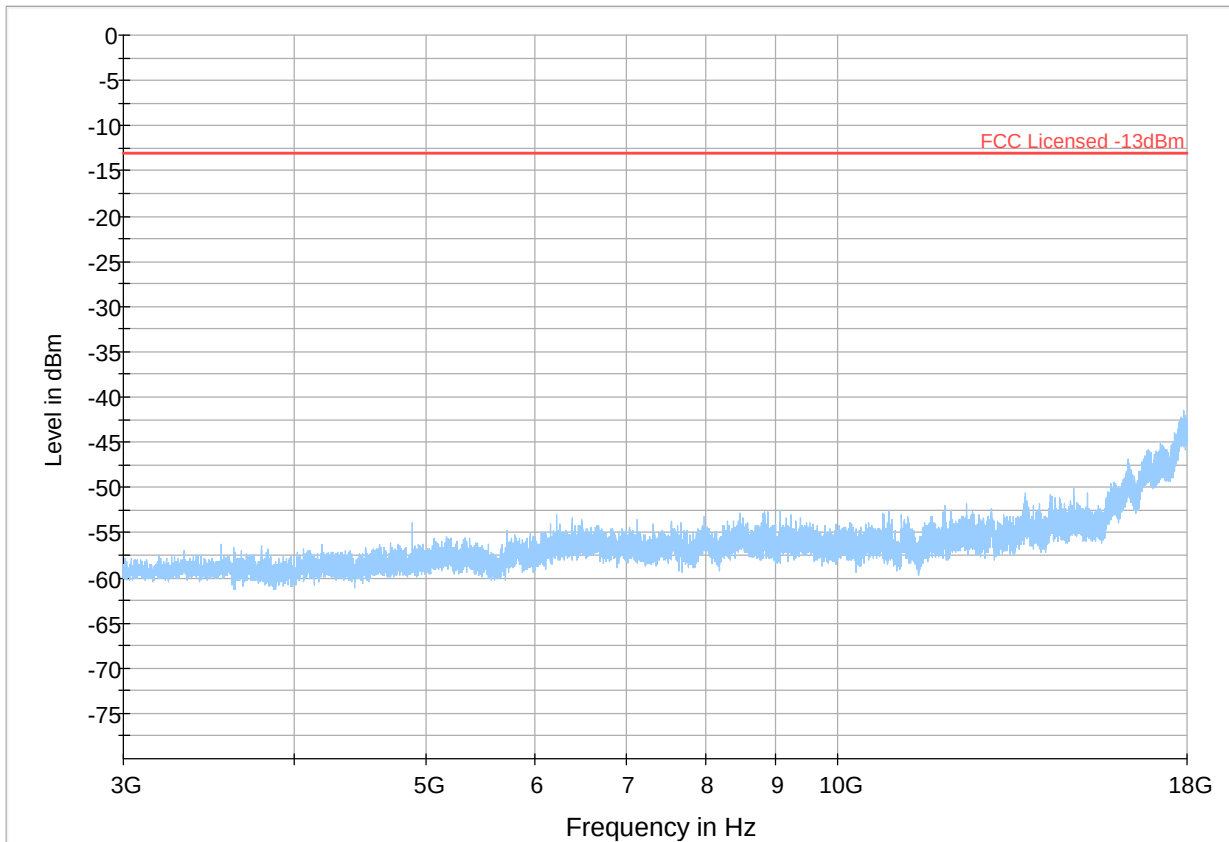


— Preview Result 1-PK+   
 \* Critical\_Freqs PK+   
 — FCC Licensed -13dBm   
 ◆ Final\_Result RM

**Plot # 7**

**GSM 850 Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

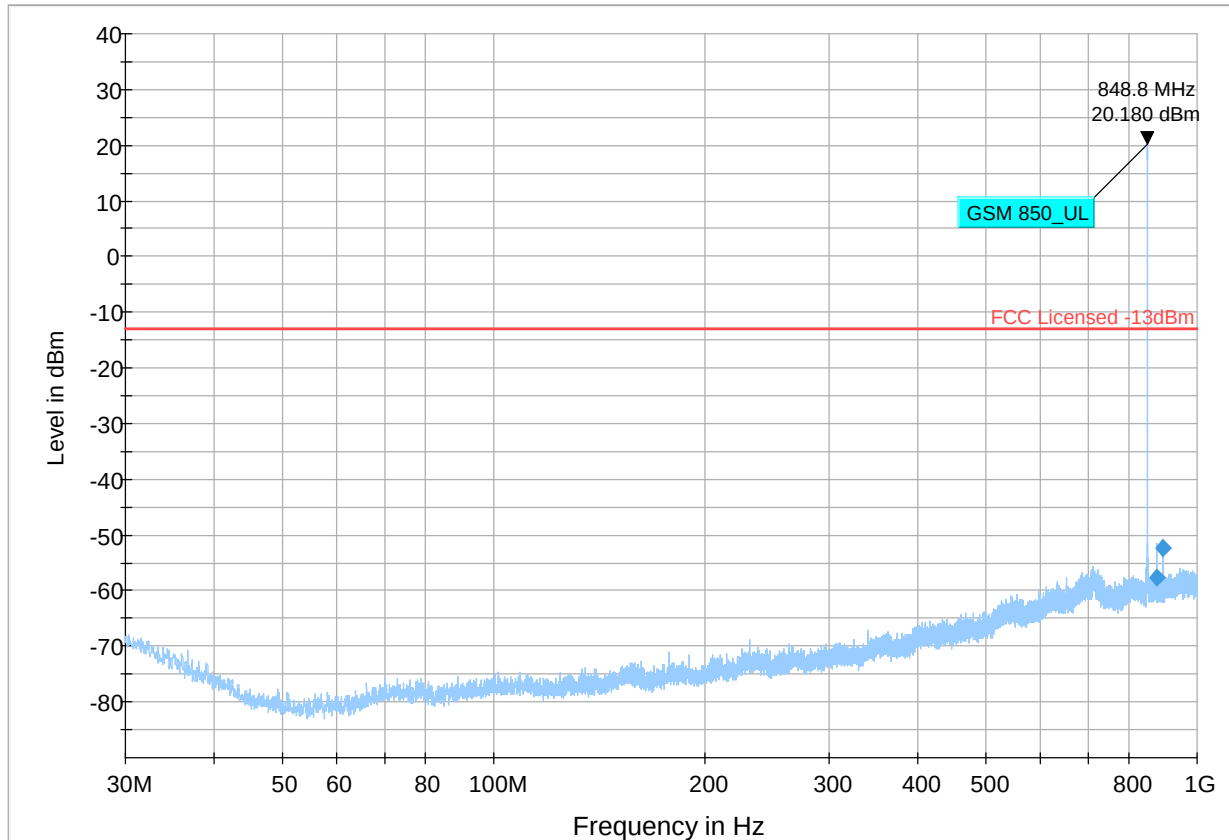


Preview Result 1-PK+    \*    Critical\_Freqs PK+    FCC Licensed -13dBm    ◆    Final\_Result RM

**Plot # 8**

**GSM 850 High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 875.969         | -57.56    | -13.00      | 44.56       | 500.0           | 100.000         | 153.0       | V   | 157.0         | -74.1      |         |
| 893.817         | -52.33    | -13.00      | 39.33       | 500.0           | 100.000         | 155.0       | V   | 158.0         | -73.7      |         |

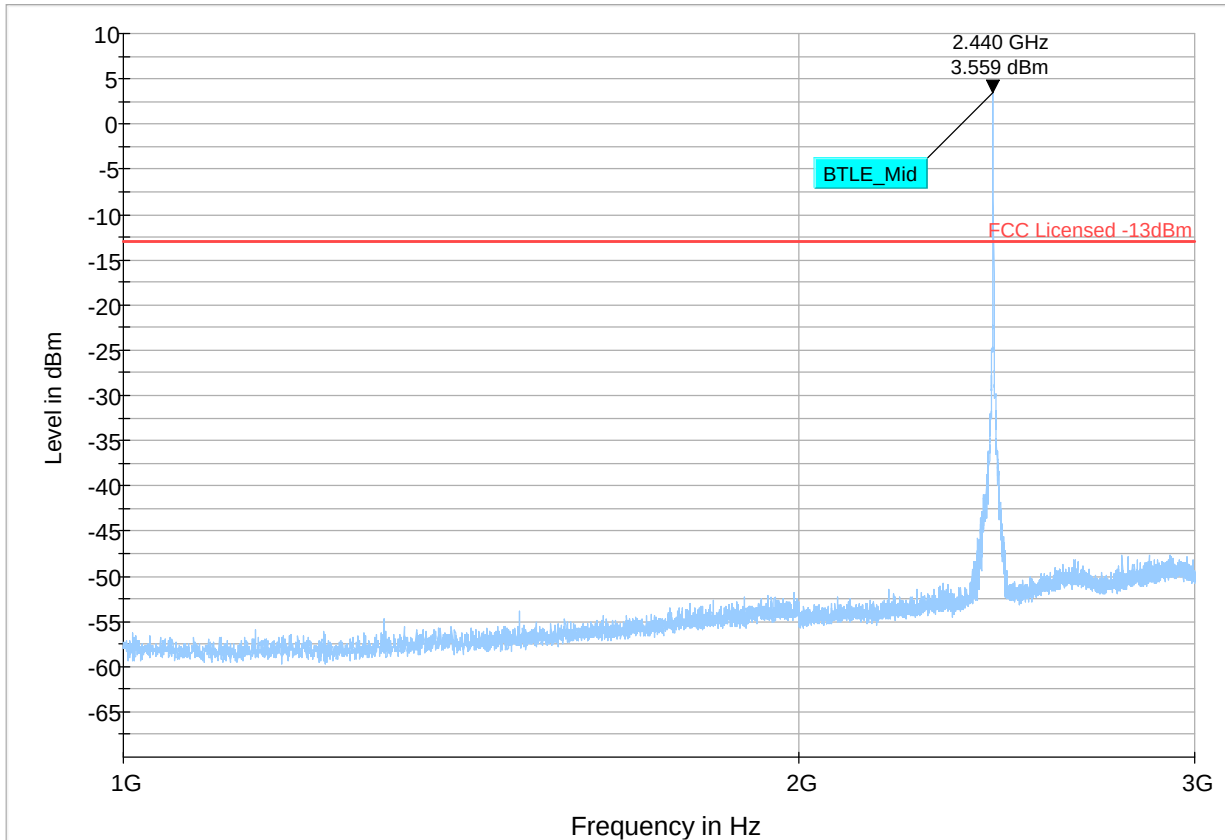


Preview Result 1-PK+      FCC Licensed -13dBm      Final\_Result RMS

**Plot # 9**

**GSM 850 High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

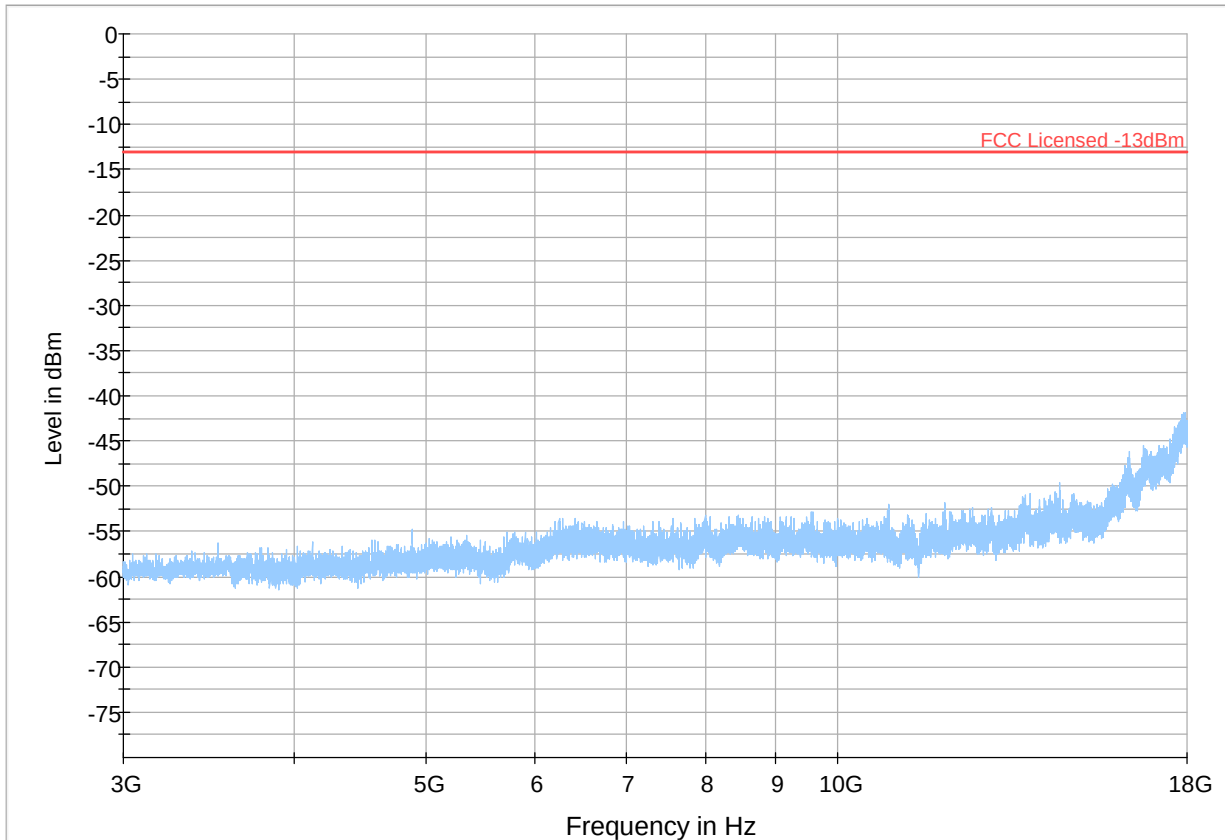


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 10**

**GSM 850 High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

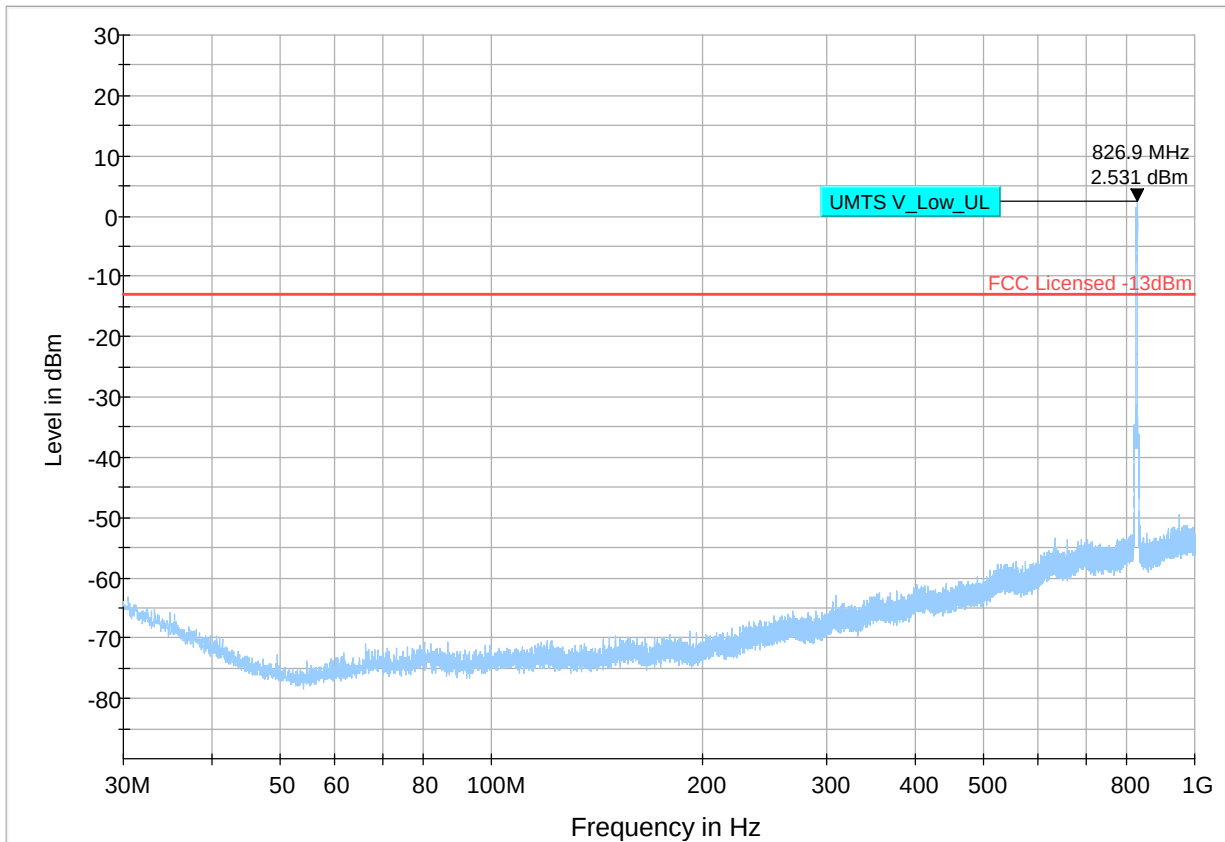


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 11**

**UMTS V Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

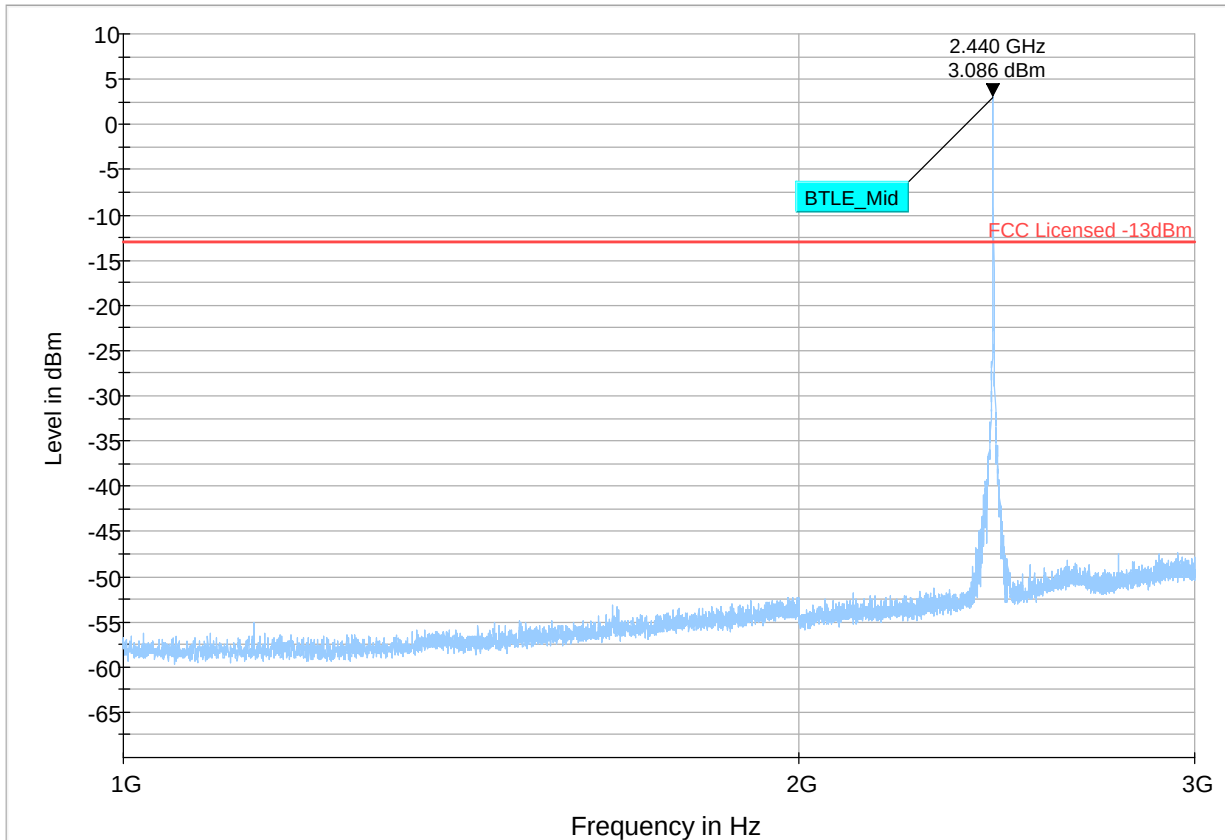


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 12**

**UMTS V Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

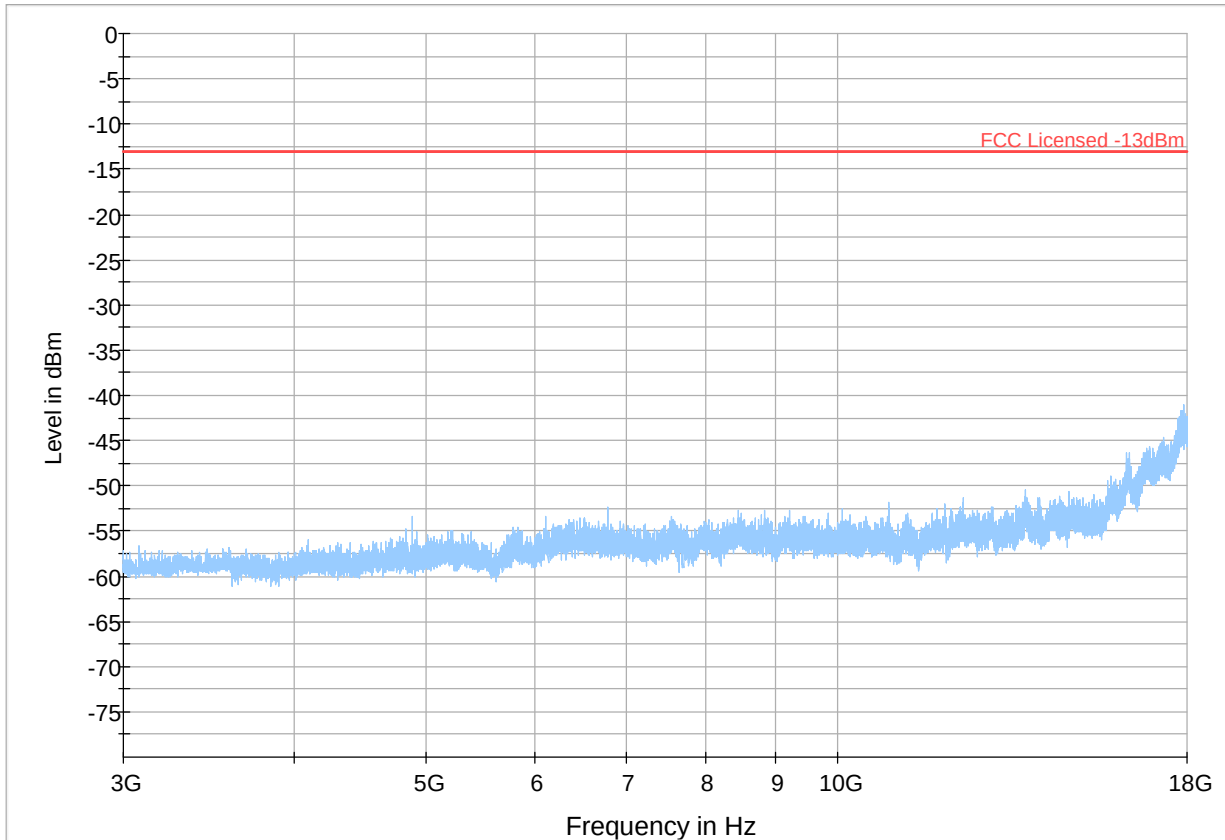


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 13**

**UMTS V Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

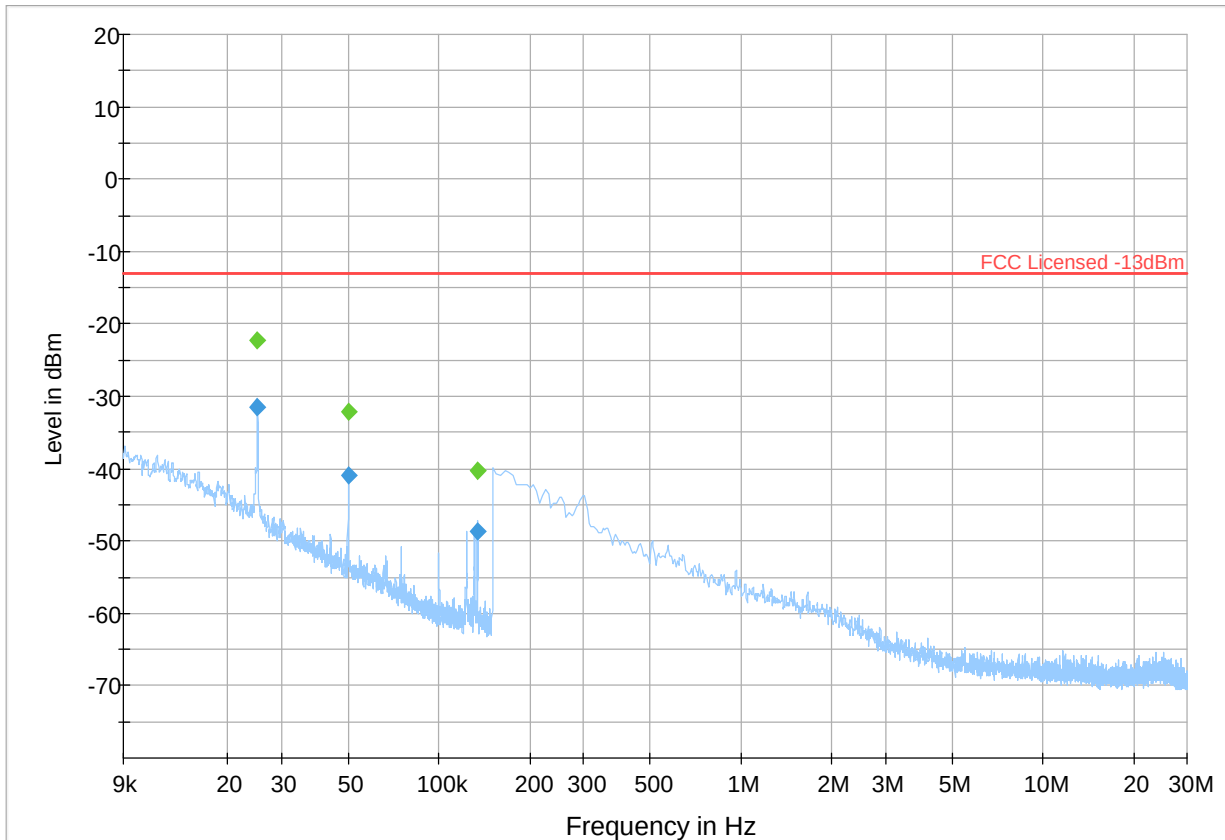


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

Plot # 14

UMTS V Mid + BTLE Mid

| Frequency (MHz) | RMS (dBm) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|---------------|-------------|-------------|------------|-----------------|-------------|-----|---------------|------------|---------|
| 0.025           | -31.40    | ---           | -13.00      | 18.40       | 500.0      | 1.000           | 100.0       | V   | 188.0         | -17.9      |         |
| 0.025           | ---       | -22.29        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 188.0         | -17.9      |         |
| 0.050           | ---       | -32.11        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | -2.0          | -24.6      |         |
| 0.050           | -40.98    | ---           | -13.00      | 27.98       | 500.0      | 1.000           | 100.0       | V   | -2.0          | -24.6      |         |
| 0.134           | -48.61    | ---           | -13.00      | 35.61       | 500.0      | 1.000           | 100.0       | H   | 227.0         | -32.2      |         |
| 0.134           | ---       | -40.30        | ---         | ---         | 500.0      | 1.000           | 100.0       | H   | 227.0         | -32.2      |         |

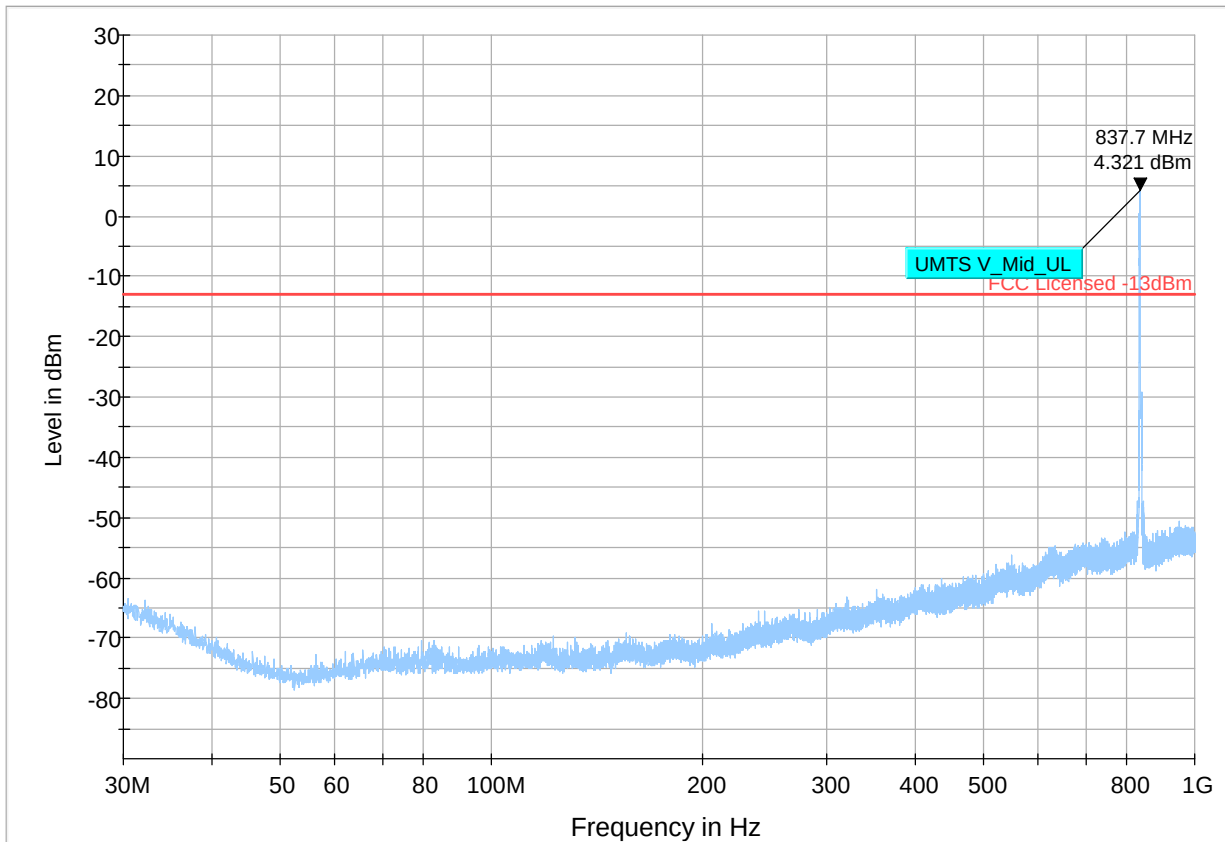


— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final\_Result RMS ◆ Final\_Result PK

**Plot # 15**

**UMTS V Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

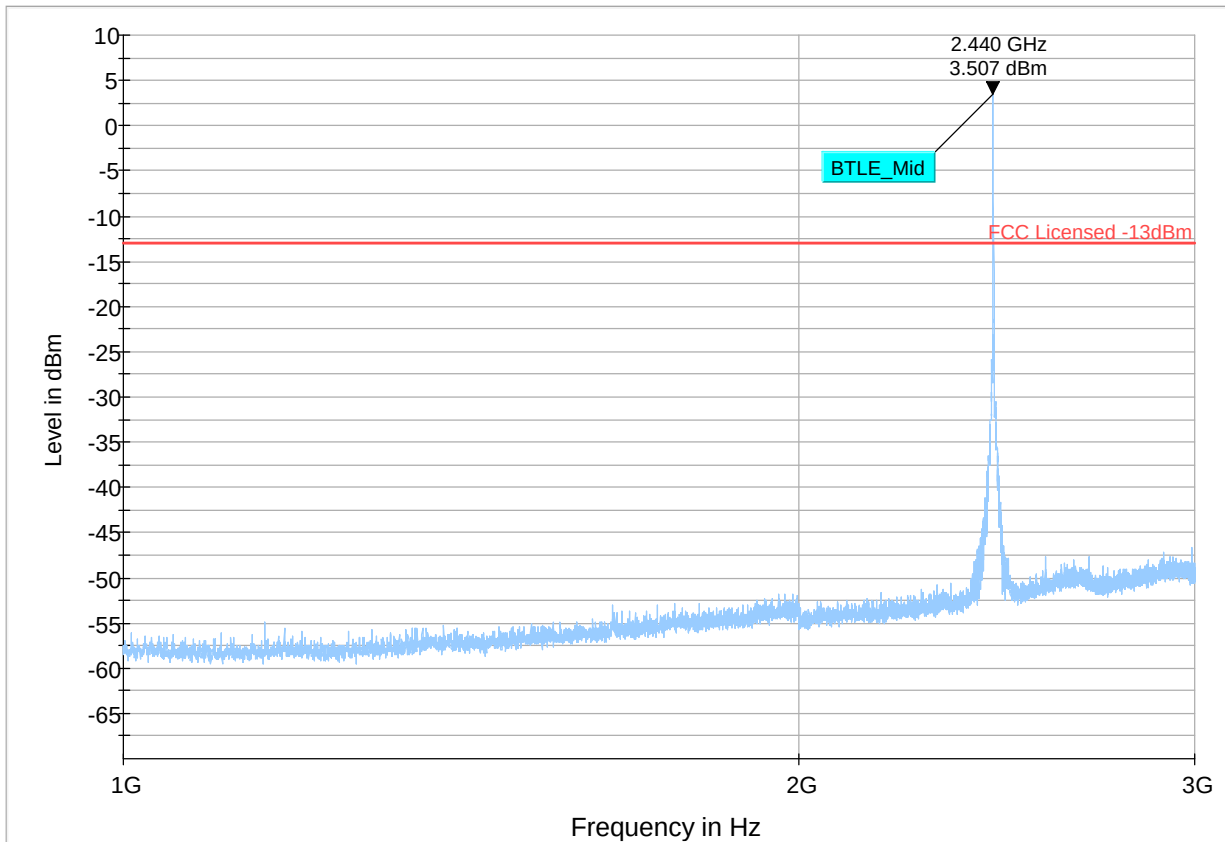


Preview Result 1-PK+    \*    Critical\_Freqs PK+    FCC Licensed -13dBm    ♦    Final\_Result RM

**Plot # 16**

**UMTS V Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

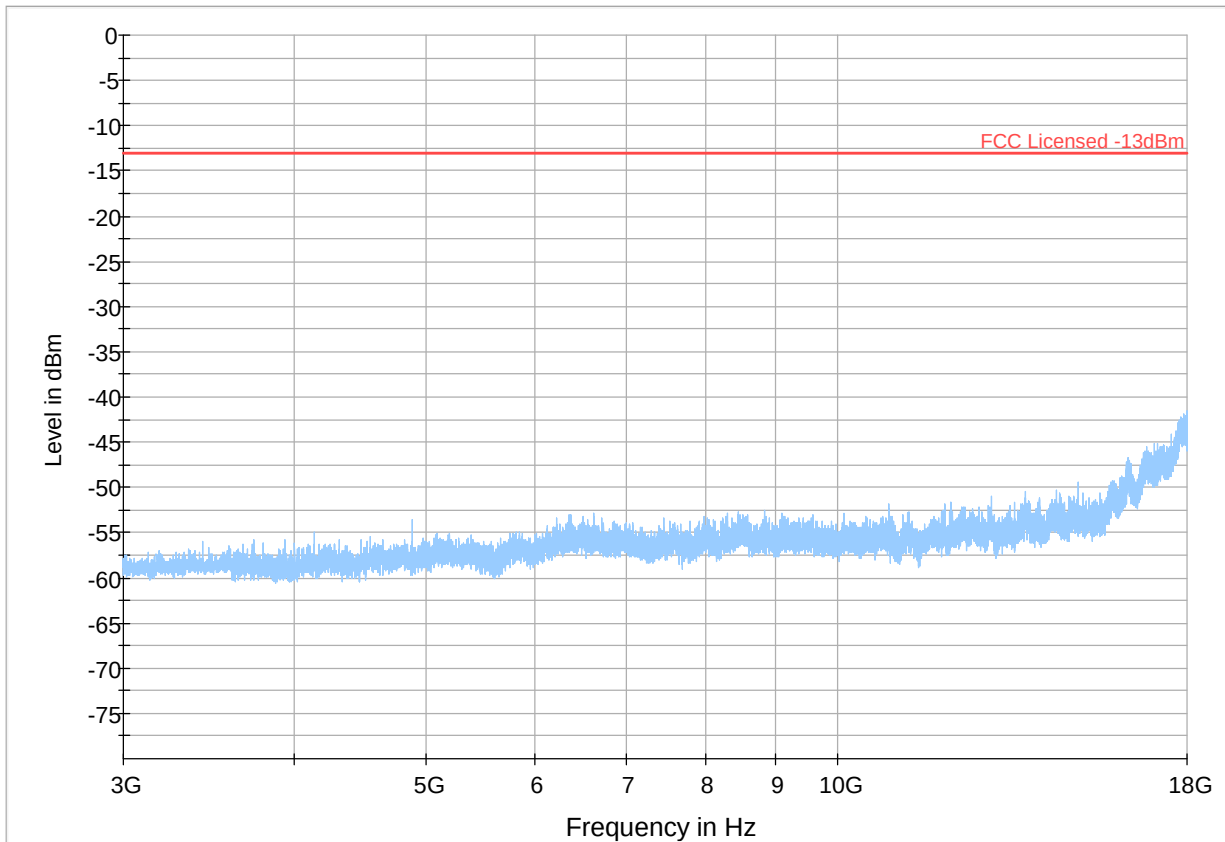


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 17**

**UMTS V Mid + BTLE Mid**

| Frequency<br>(MHz) | RMS<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB) | Comment |
|--------------------|--------------|----------------|----------------|--------------------|--------------------|----------------|-----|------------------|---------------|---------|
| ---                | ---          | ---            | ---            | ---                | ---                | ---            |     | ---              | ---           |         |

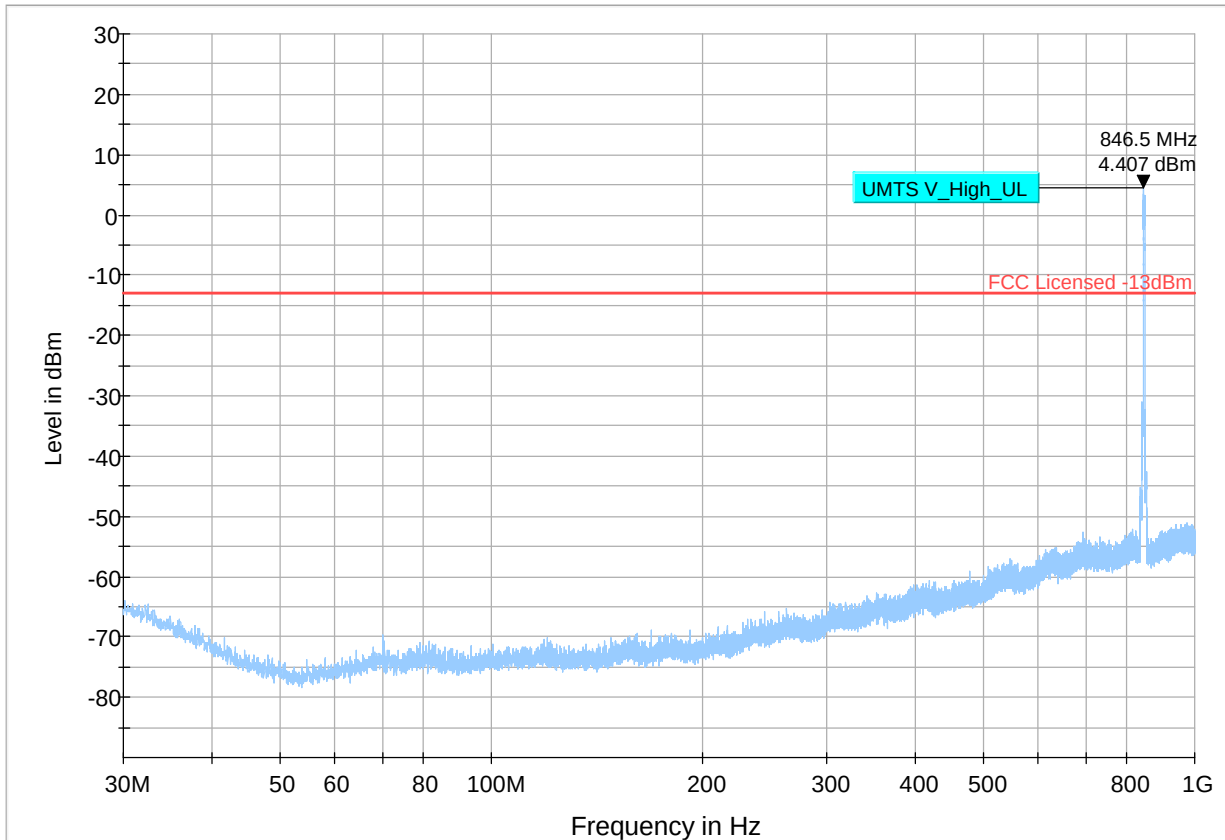


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 18**

**UMTS V High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

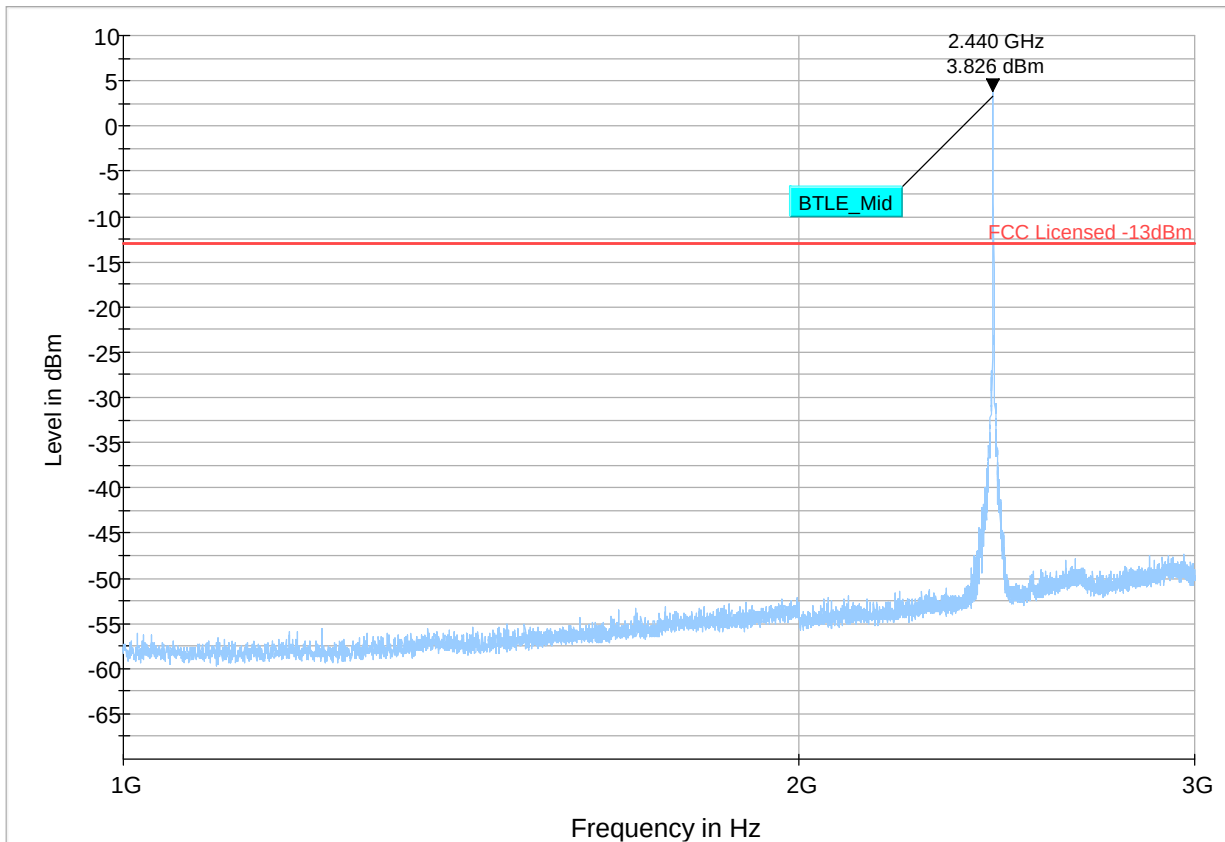


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

Plot # 19

UMTS V High + BTLE Mid

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

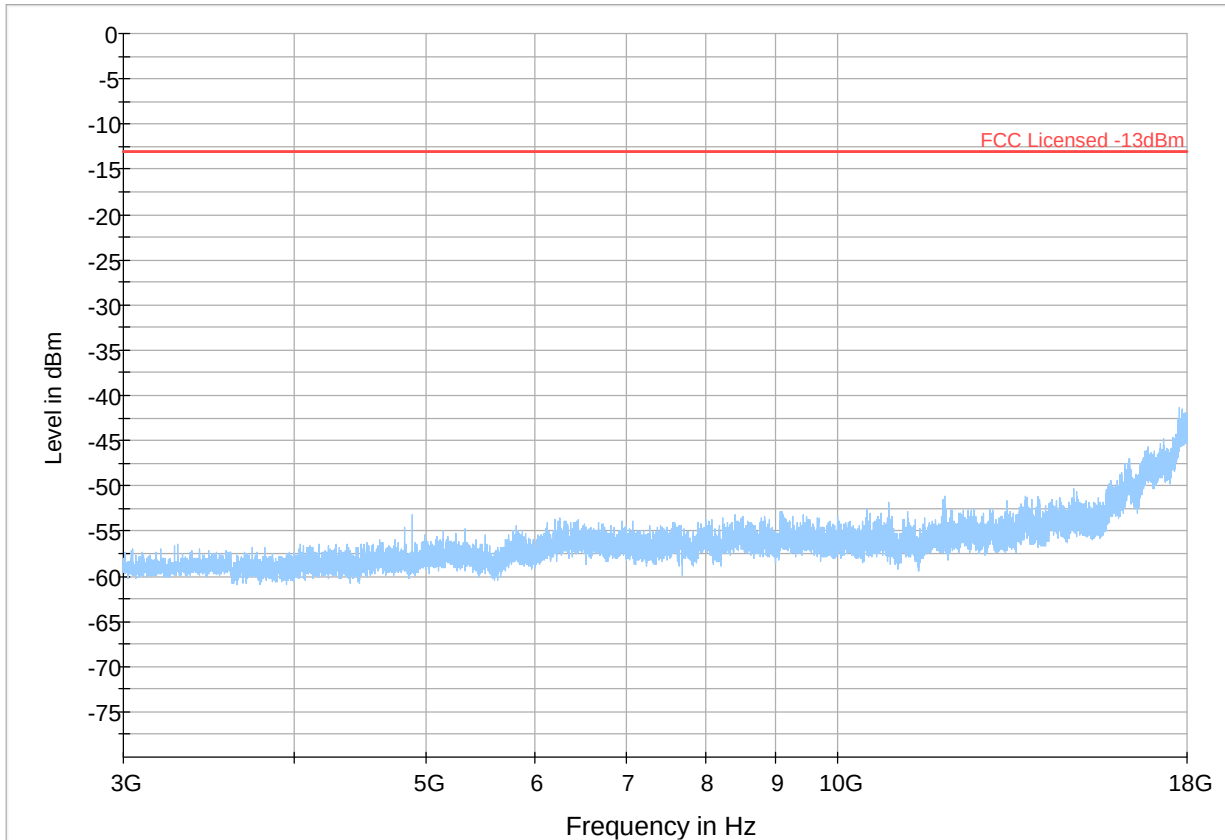


Preview Result 1-PK+    \*    Critical\_Freqs PK+    FCC Licensed -13dBm    ♦    Final\_Result RM

**Plot # 20**

**UMTS V High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

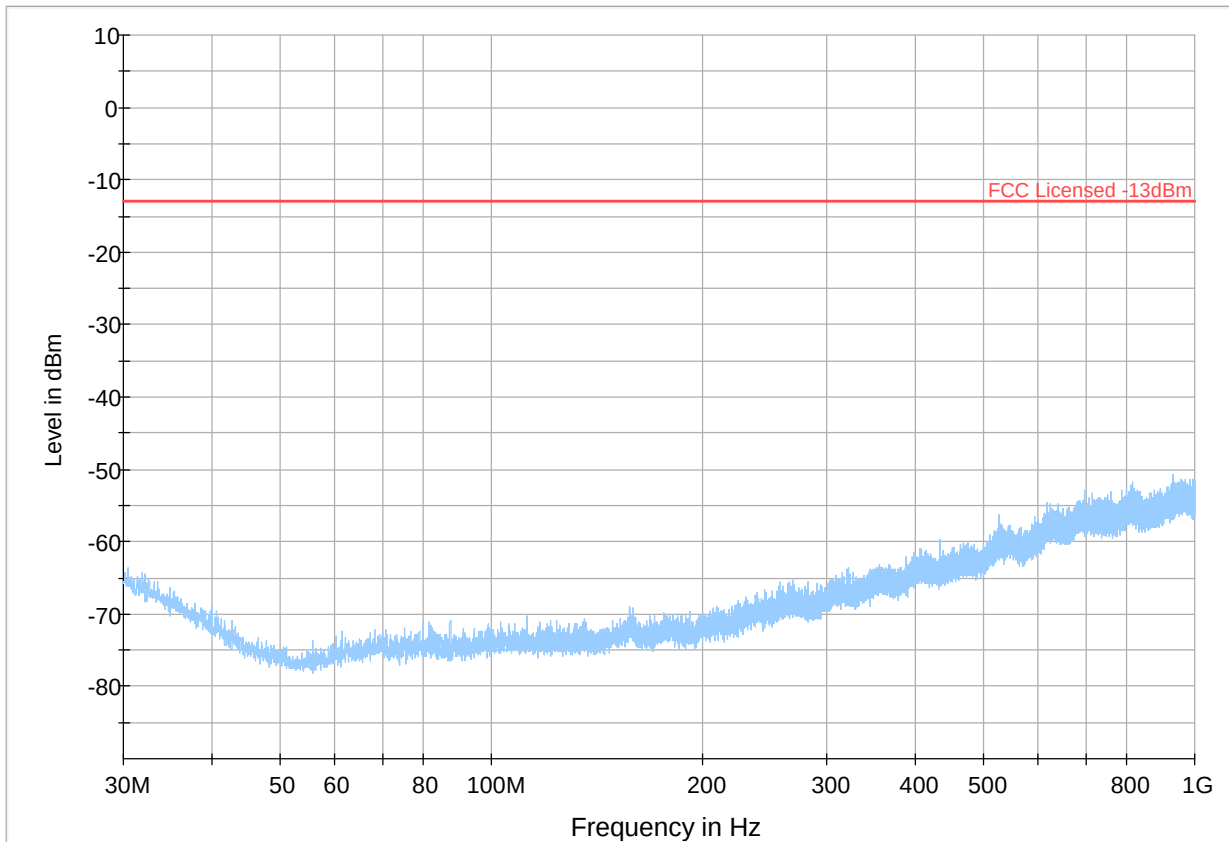


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 21**

**GSM 1900 Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

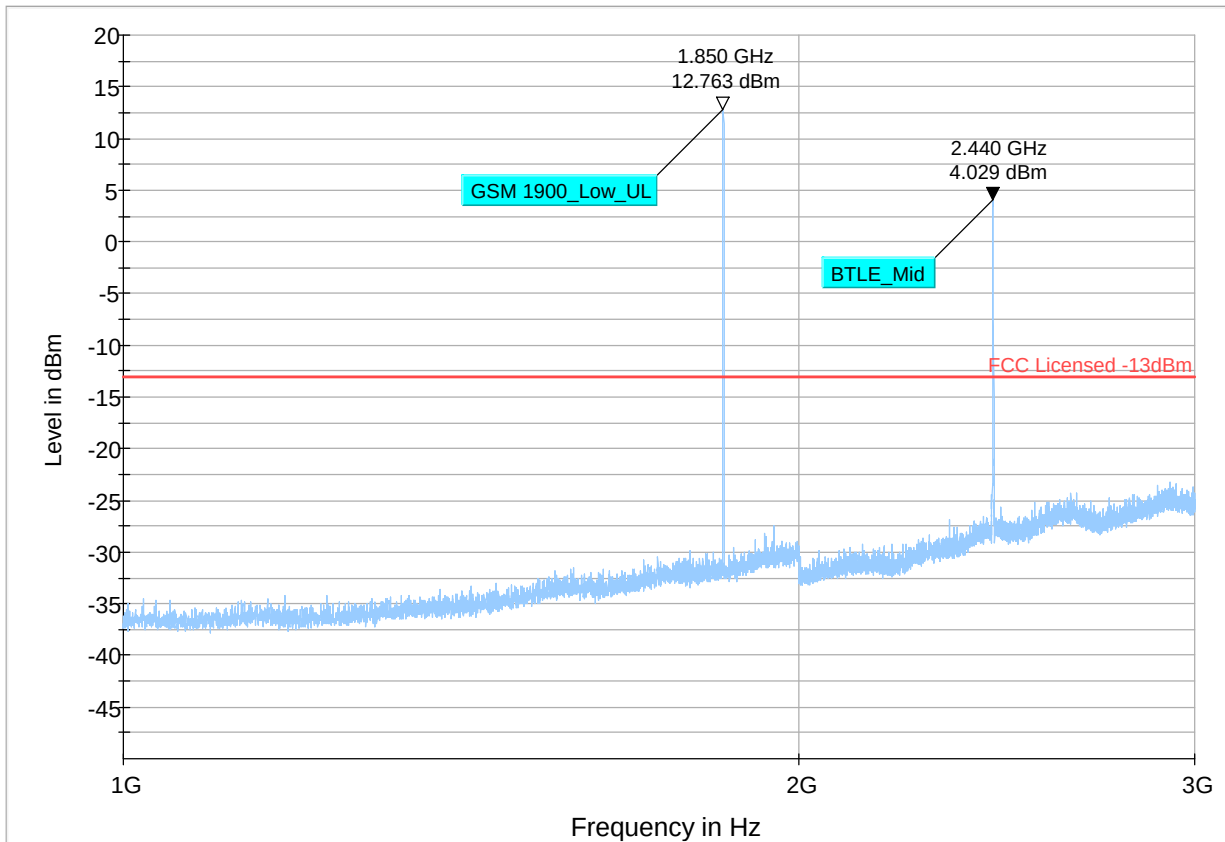


— Preview Result 1-PK+    \* Critical\_Freqs PK+    — FCC Licensed -13dBm    ◆ Final\_Result RM

**Plot # 22**

**GSM 1900 Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

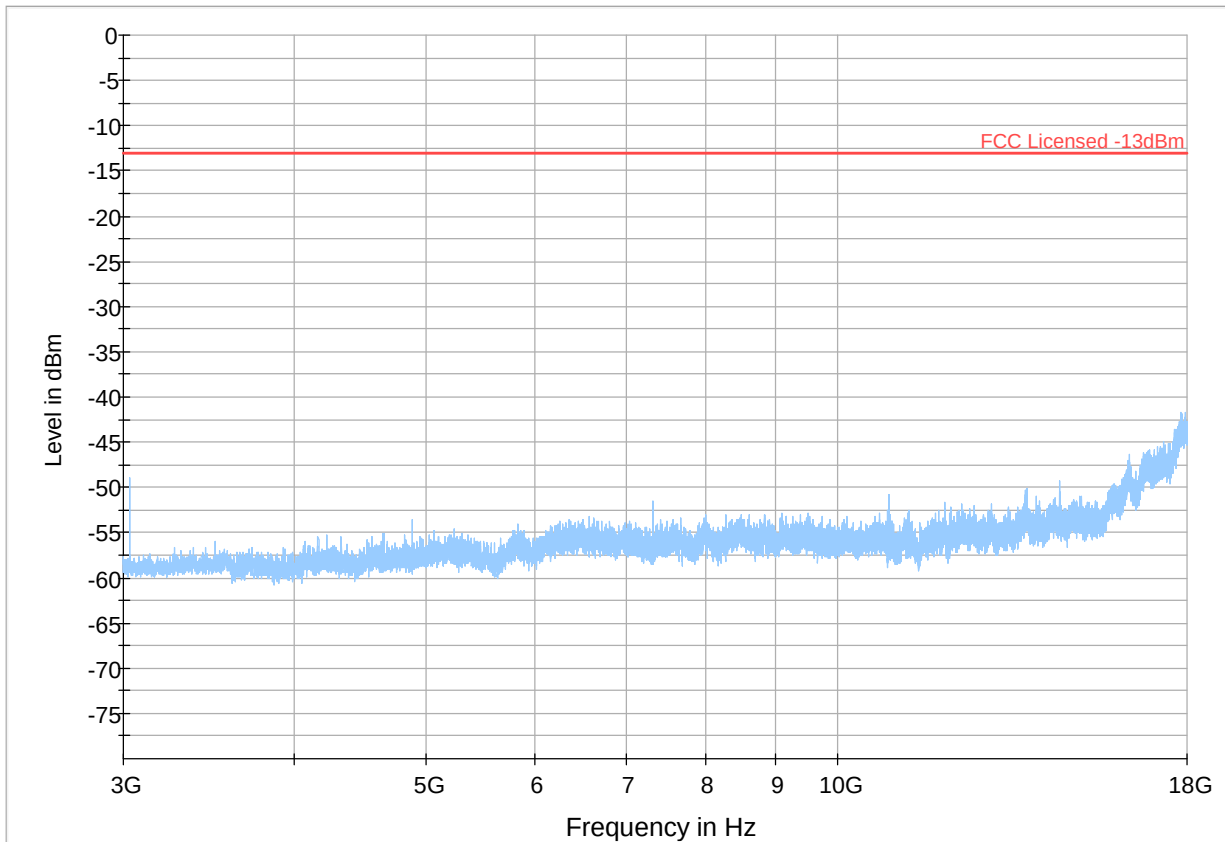


— Preview Result 1-PK+   
 \* Critical\_Freqs PK+   
 — FCC Licensed -13dBm   
 ◆ Final\_Result RM

**Plot # 23**

**GSM 1900 Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

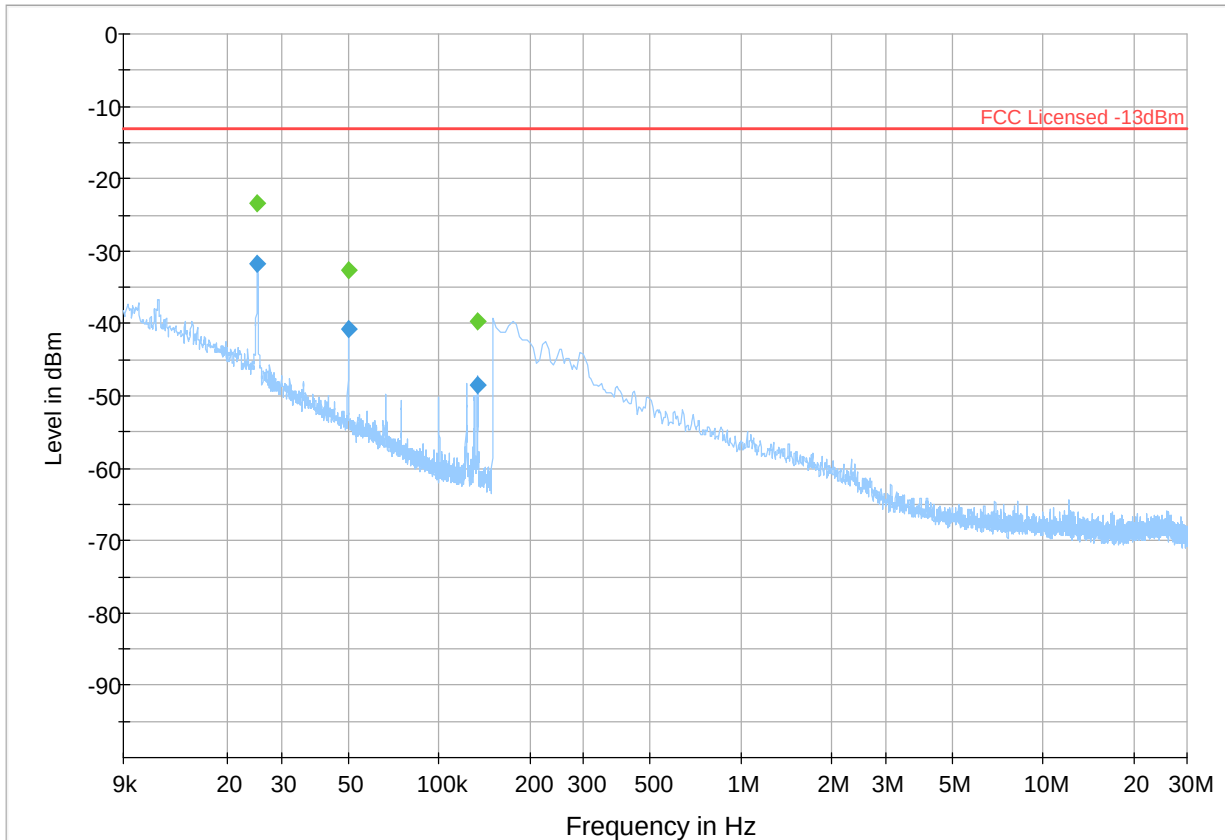


— Preview Result 1-PK+   
 \* Critical\_Freqs PK+   
 — FCC Licensed -13dBm   
 ◆ Final\_Result RM

## Plot # 24

## GSM 1900 Mid + BTLE Mid

| Frequency (MHz) | RMS (dBm) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|---------------|-------------|-------------|------------|-----------------|-------------|-----|---------------|------------|---------|
| 0.025           | -31.80    | ---           | -13.00      | 18.80       | 500.0      | 1.000           | 100.0       | V   | 0.0           | -17.9      |         |
| 0.025           | ---       | -23.30        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 0.0           | -17.9      |         |
| 0.050           | ---       | -32.69        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 90.0          | -24.6      |         |
| 0.050           | -40.72    | ---           | -13.00      | 27.72       | 500.0      | 1.000           | 100.0       | V   | 90.0          | -24.6      |         |
| 0.134           | -48.44    | ---           | -13.00      | 35.44       | 500.0      | 1.000           | 100.0       | H   | 39.0          | -32.2      |         |
| 0.134           | ---       | -39.60        | ---         | ---         | 500.0      | 1.000           | 100.0       | H   | 39.0          | -32.2      |         |

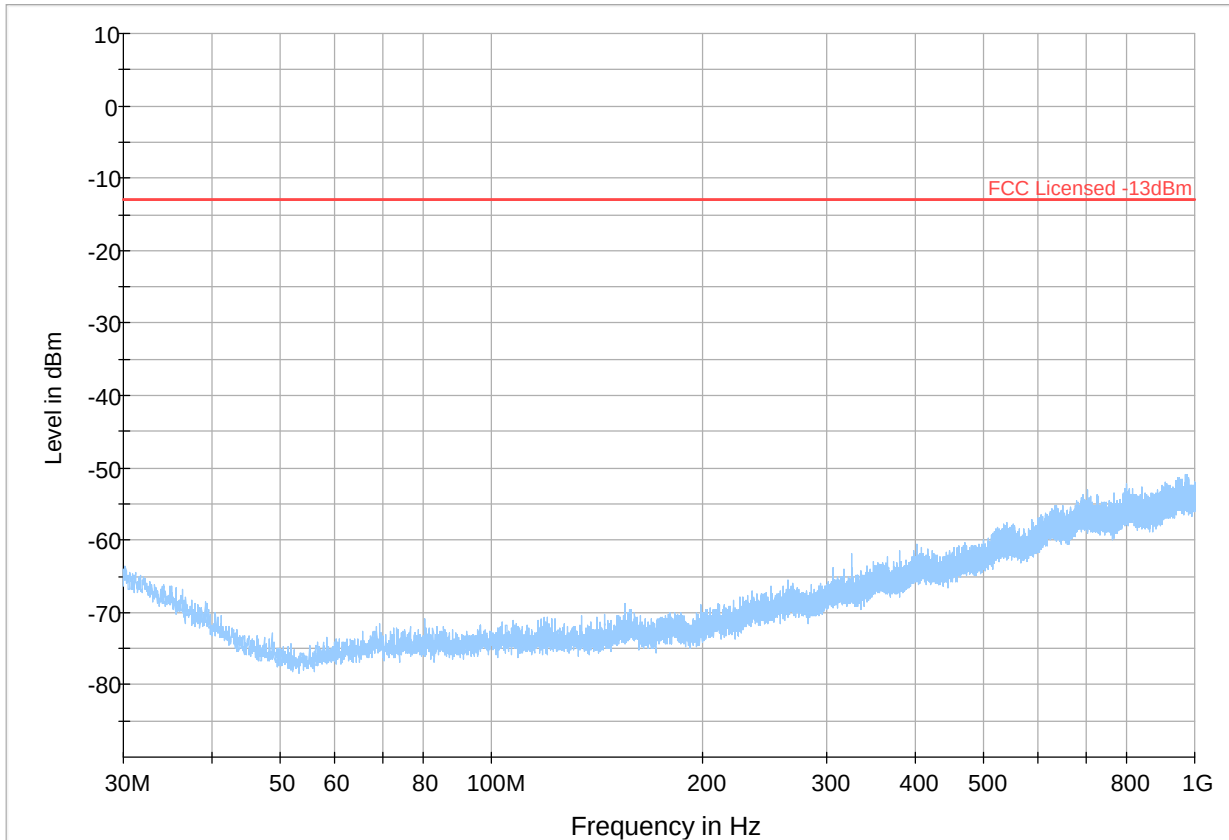


Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result RMS    Final\_Result PK

**Plot # 25**

**GSM 1900 Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

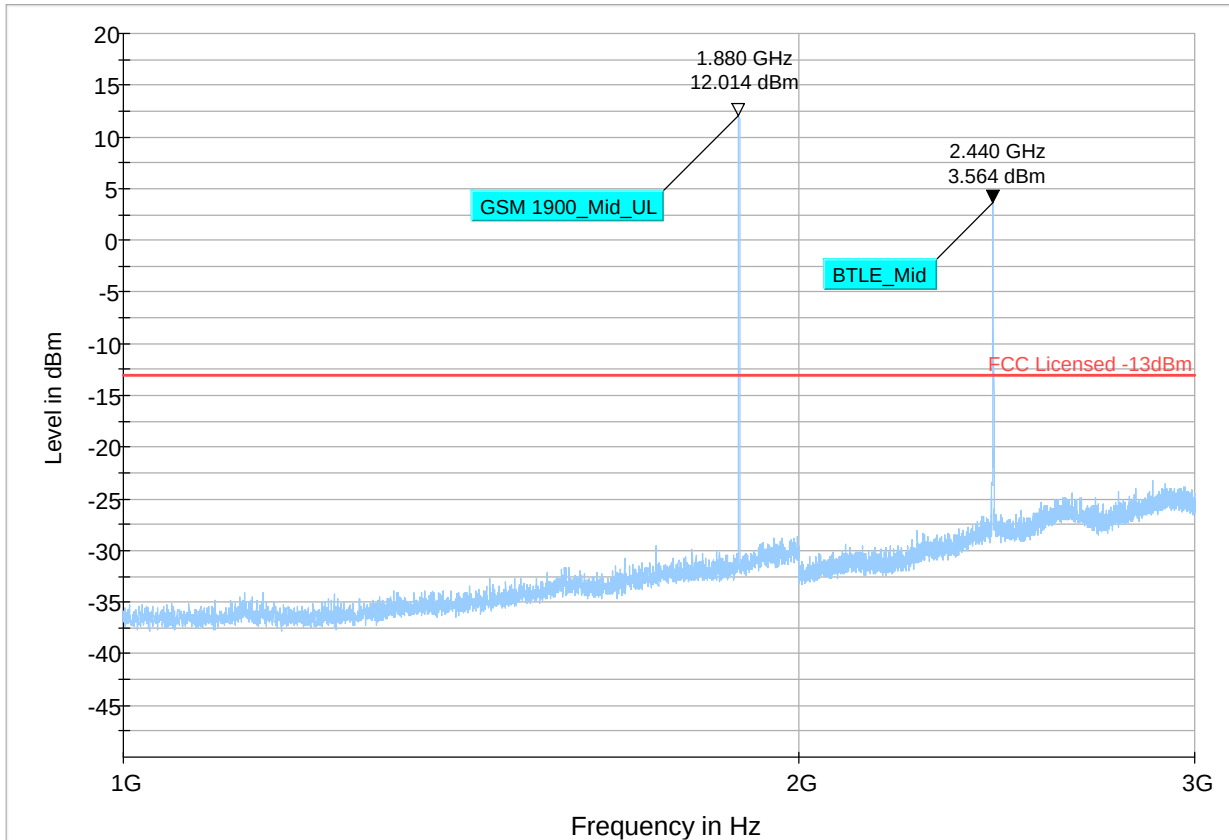


— Preview Result 1-PK+    \* Critical\_Freqs PK+    — FCC Licensed -13dBm    ◆ Final\_Result RM

**Plot # 26**

**GSM 1900 Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

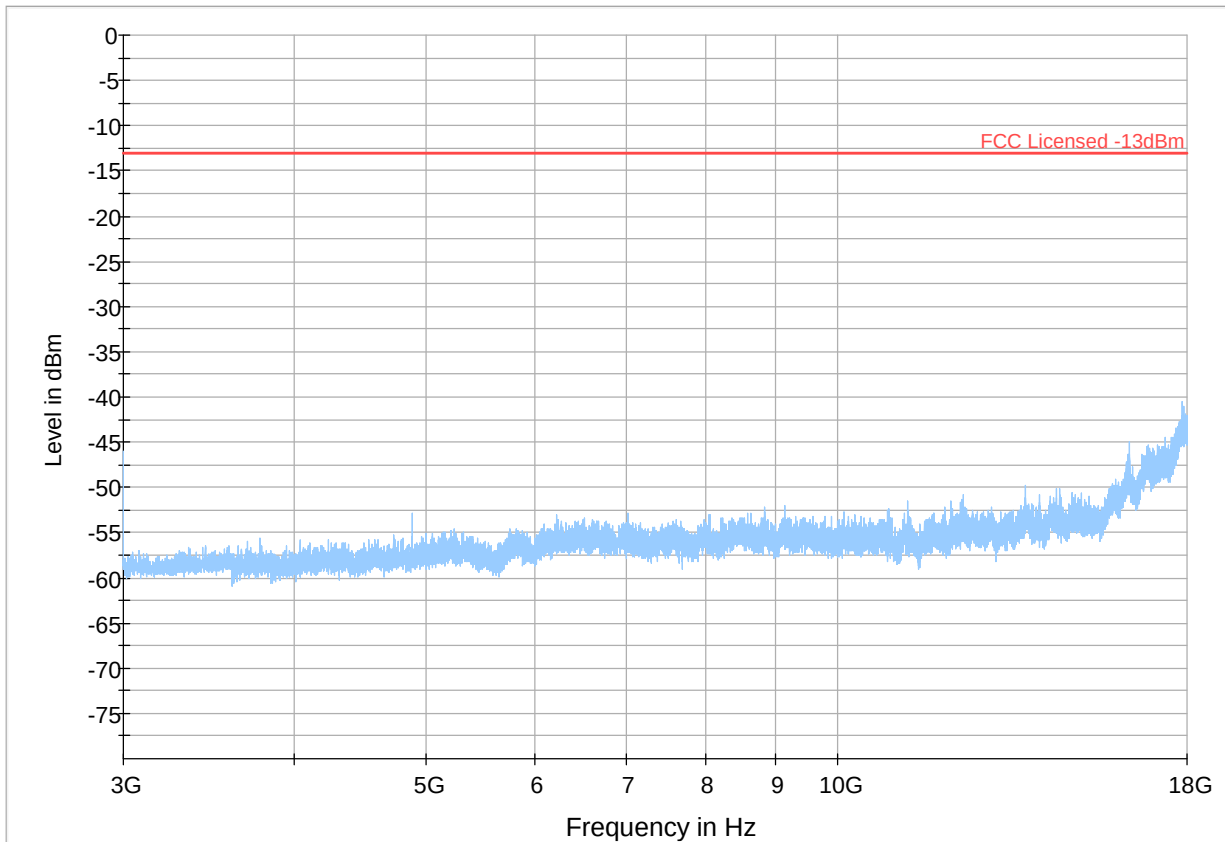


— Preview Result 1-PK+   
 \* Critical\_Freqs PK+   
 — FCC Licensed -13dBm   
 ◆ Final\_Result RM

**Plot # 27**

**GSM 1900 Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

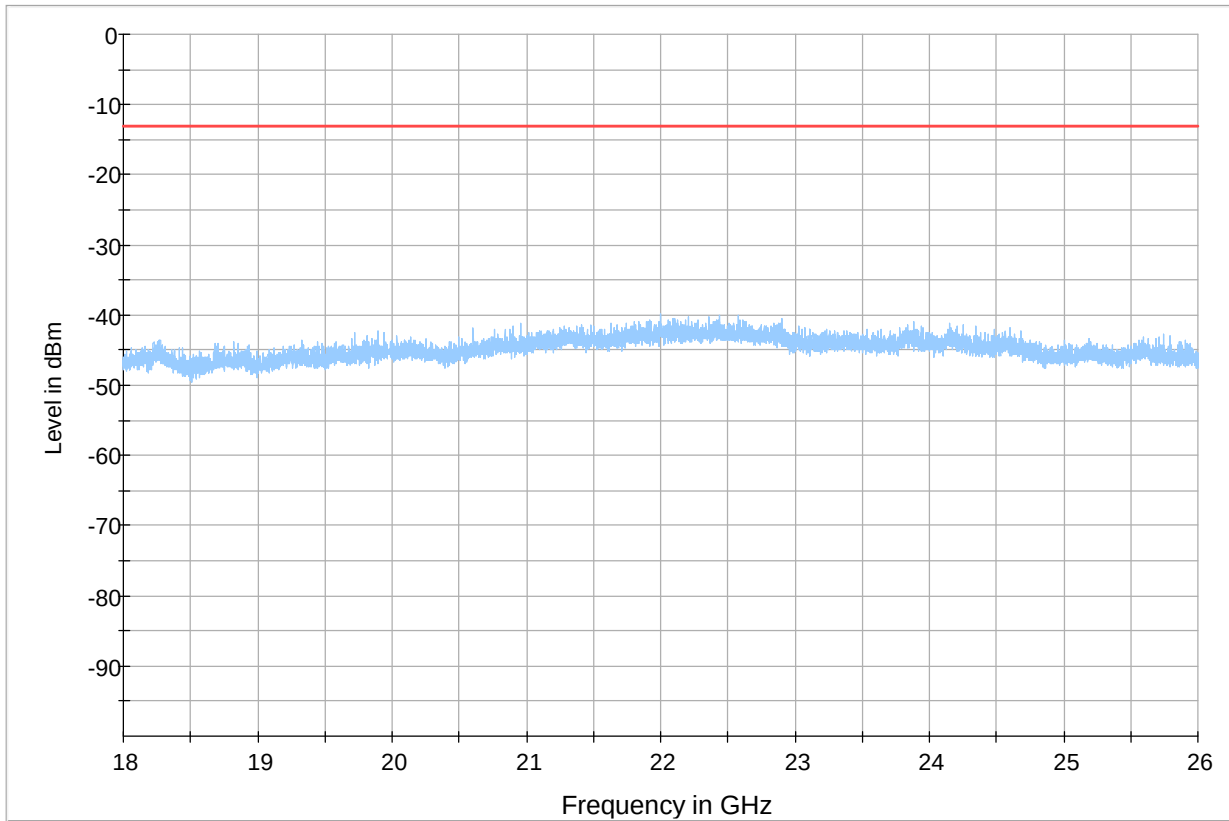


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 28**

**GSM 1900 Mid + BTLE Mid**

| Frequency<br>(MHz) | RMS<br>(dBm) | MaxPeak<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB) |
|--------------------|--------------|------------------|----------------|----------------|--------------------|--------------------|----------------|-----|------------------|---------------|
| ---                | ---          | ---              | ---            | ---            | ---                | ---                | ---            |     | ---              | ---           |

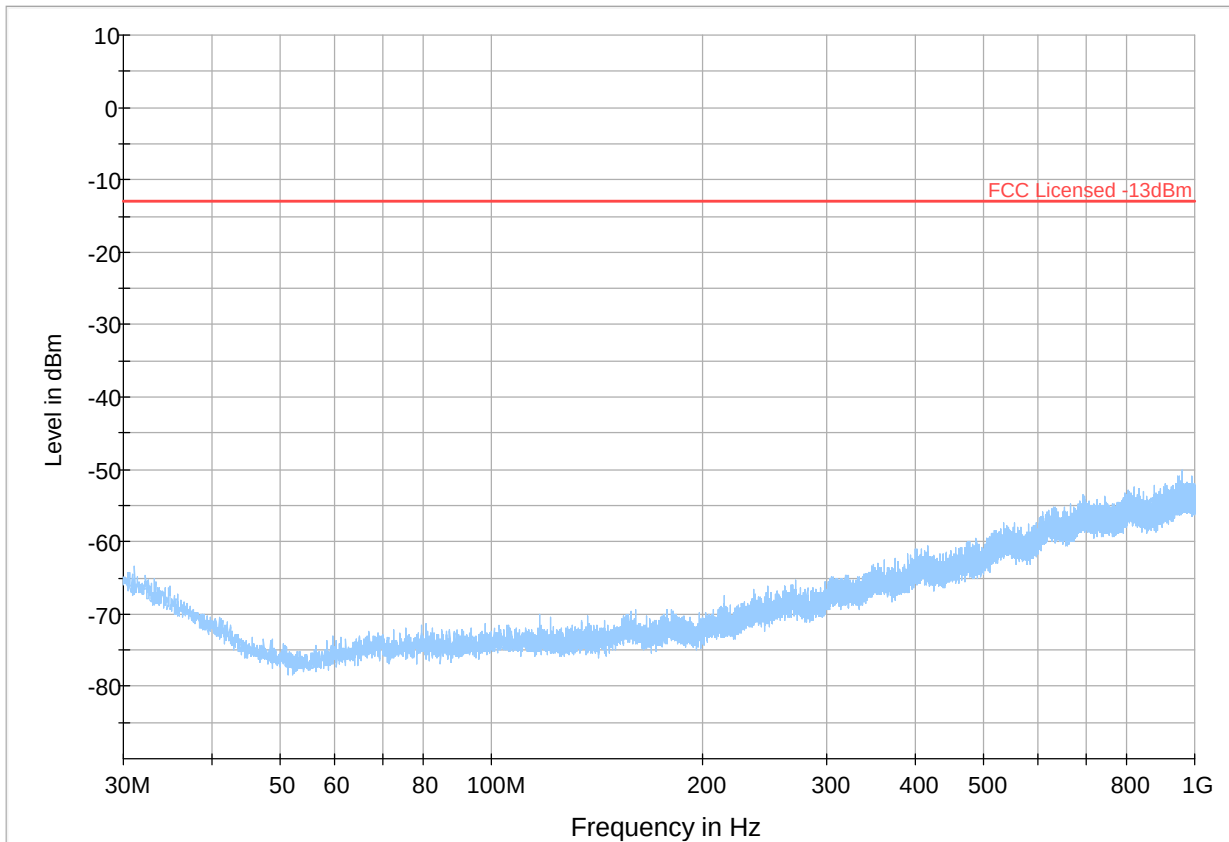


—◆— Preview Result 1-PK+ Final\_Result RMS     
 ◆ Critical\_Freqs PK+ Final\_Result PK+     
 — FCC Licensed -13dBm

**Plot # 29**

**GSM 1900 High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

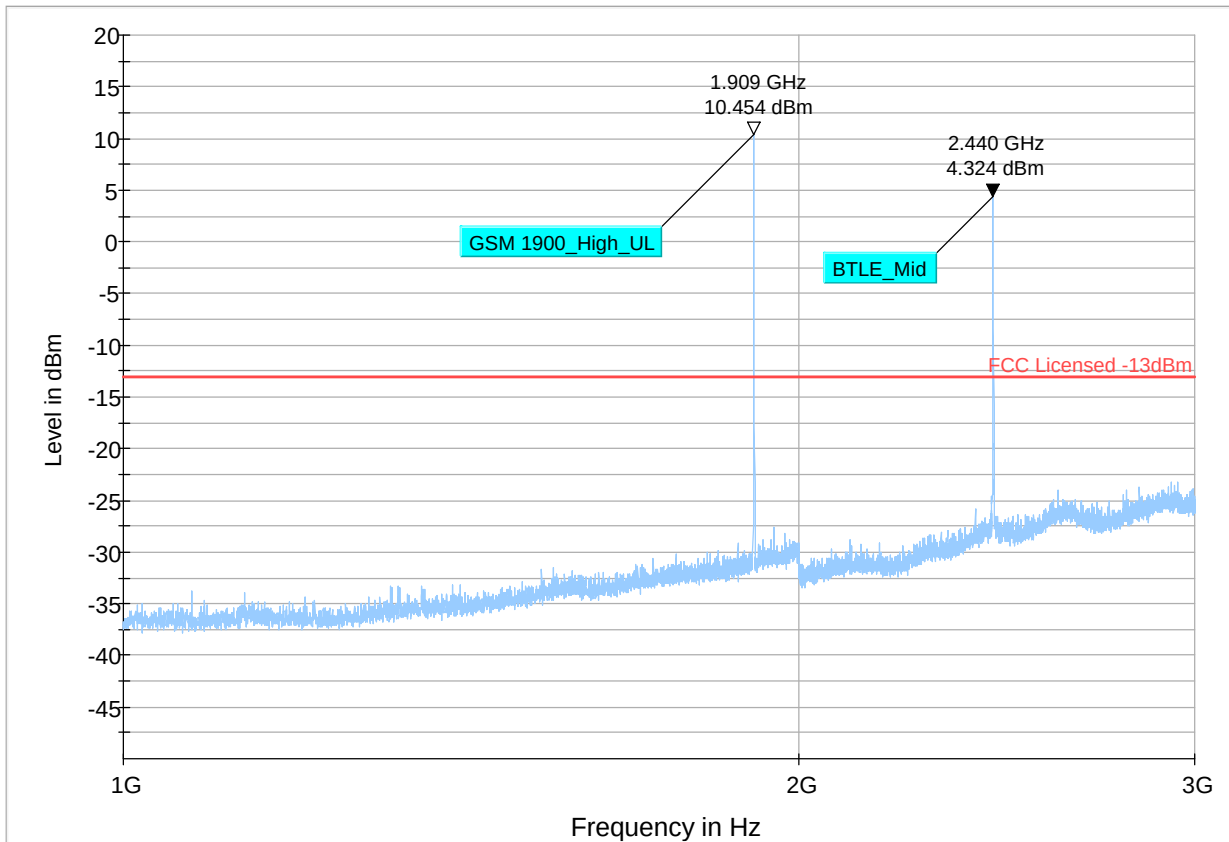


— Preview Result 1-PK+    \* Critical\_Freqs PK+    — FCC Licensed -13dBm    ◆ Final\_Result RM

Plot # 30

GSM 1900 High + BTLE Mid

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

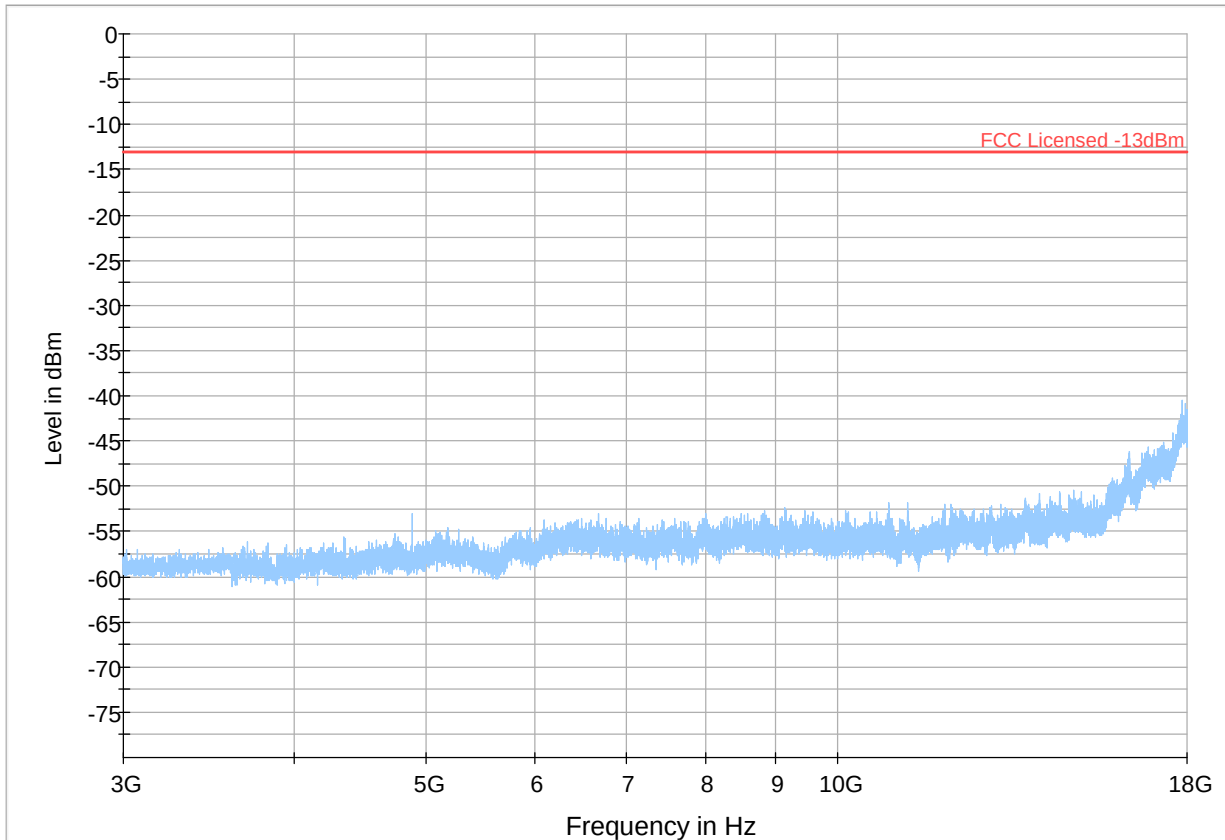


Preview Result 1-PK+ \* Critical\_Freqs PK+ FCC Licensed -13dBm Final\_Result RM

**Plot # 31**

**GSM 1900 High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

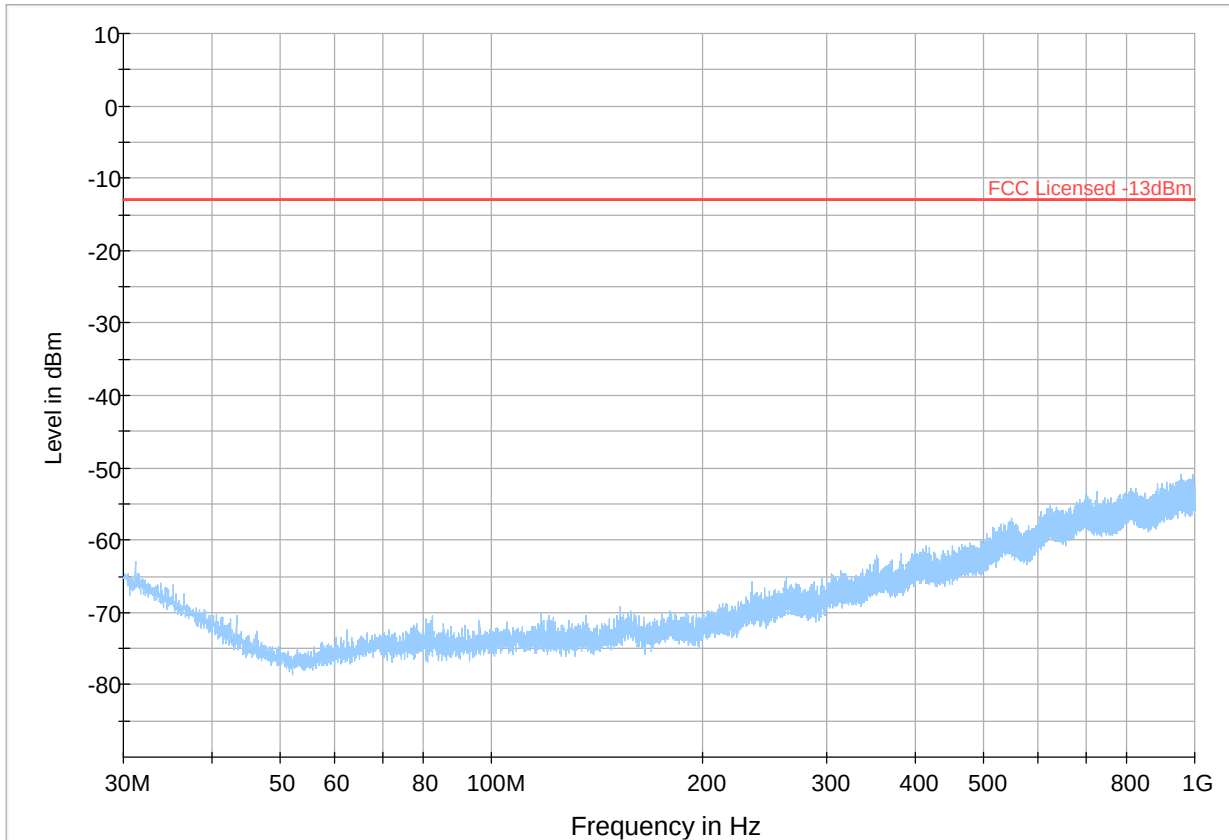


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 32**

**UMTS II Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

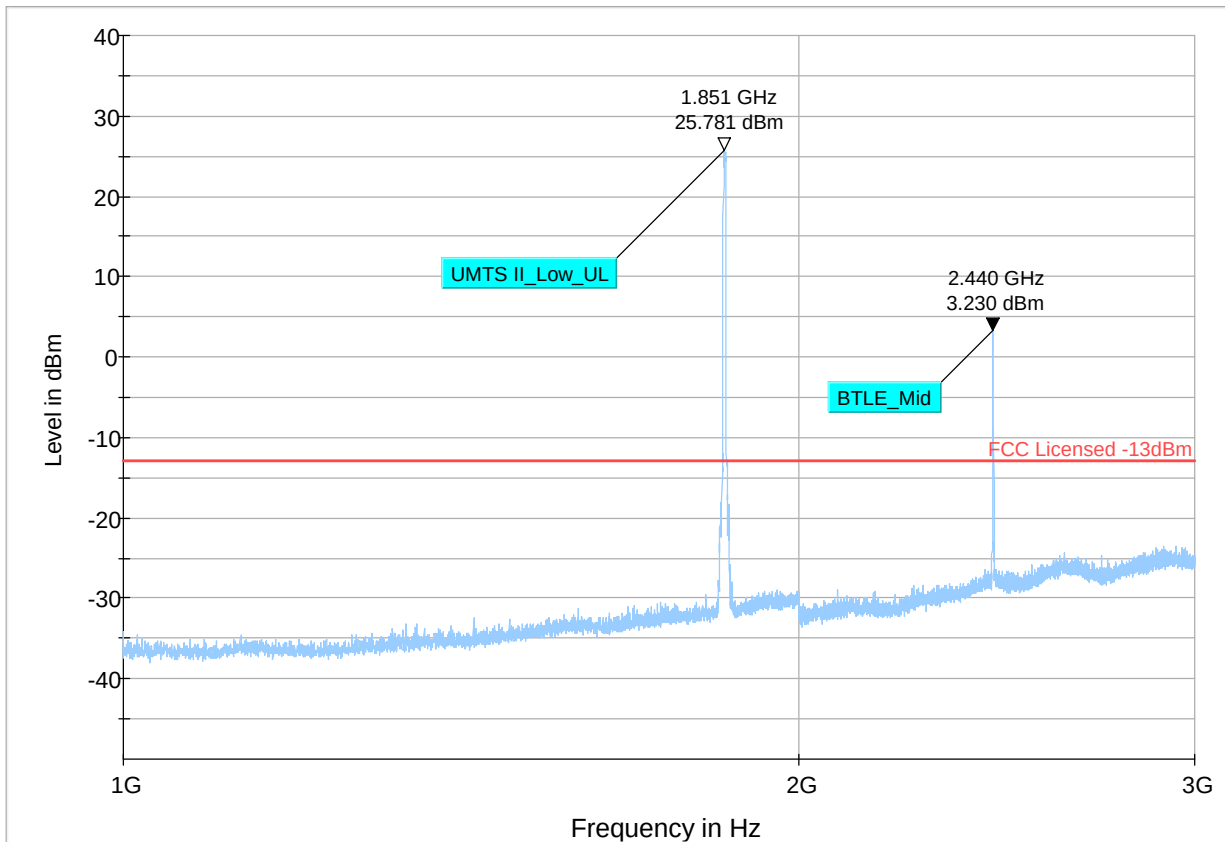


— Preview Result 1-PK+    \* Critical\_Freqs PK+    — FCC Licensed -13dBm    ◆ Final\_Result RM

**Plot # 33**

**UMTS II Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

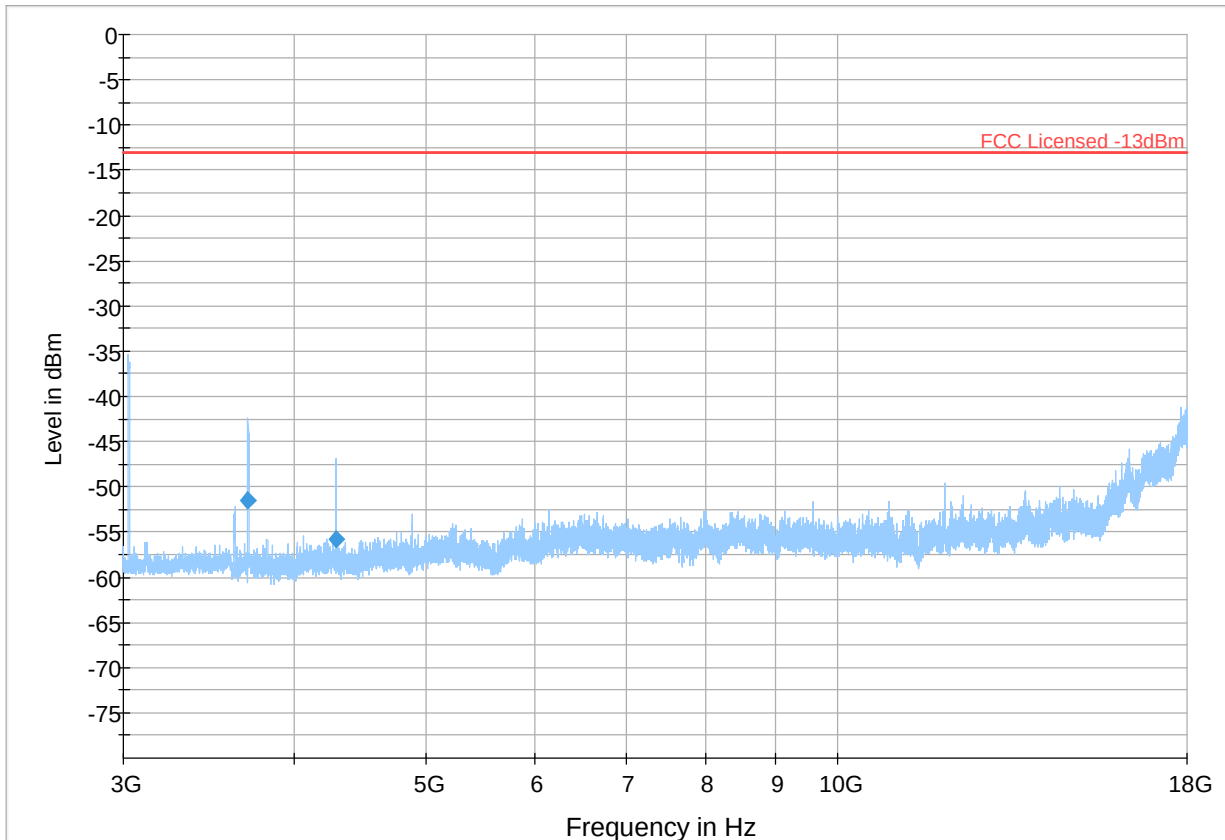


— Preview Result 1-PK+   
 \* Critical\_Freqs PK+   
 — FCC Licensed -13dBm   
 ◆ Final\_Result RM

**Plot # 34**

**UMTS II Low + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 3703.000        | -51.45    | -13.00      | 38.45       | 500.0           | 1000.000        | 140.0       | H   | 238.0         | -101.7     |         |
| 4293.500        | -55.77    | -13.00      | 42.77       | 500.0           | 1000.000        | 140.0       | H   | 263.0         | -100.4     |         |

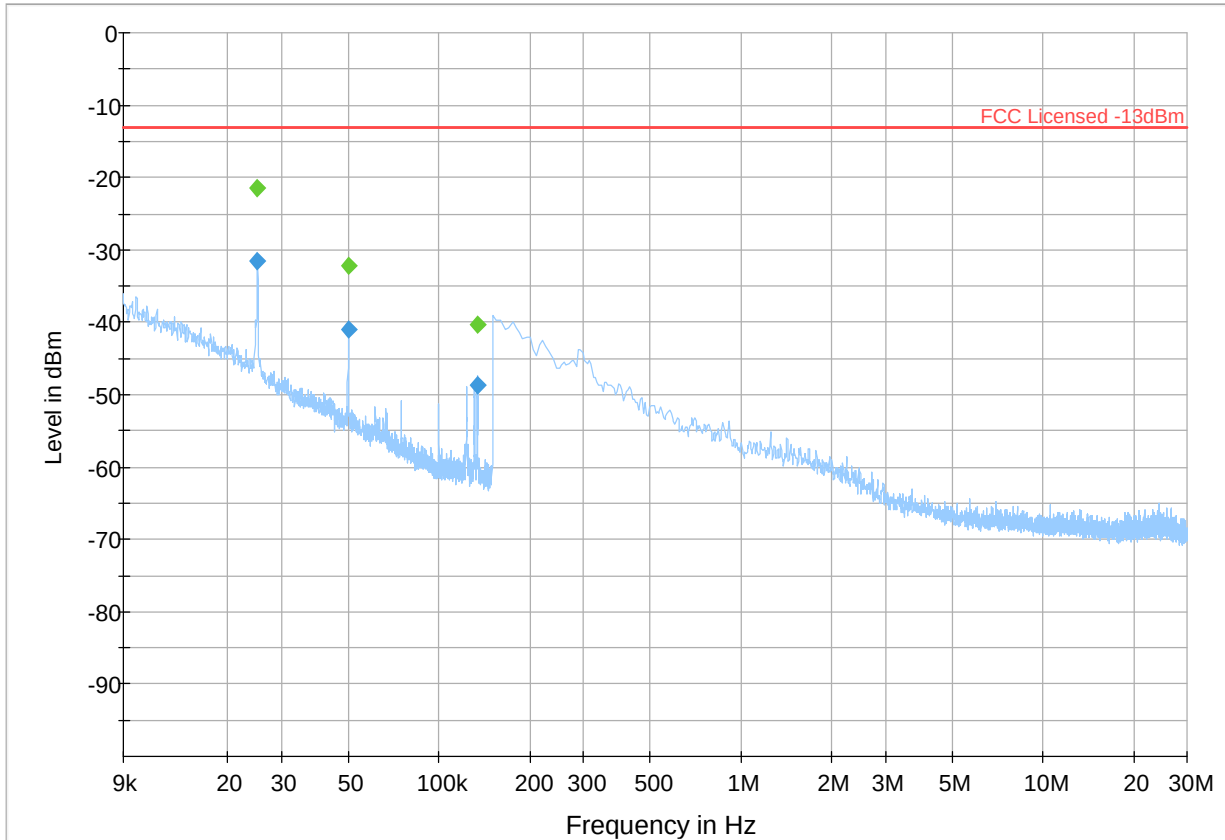


— Preview Result 1-PK+    — FCC Licensed -13dBm    ◆ Final\_Result RMS

Plot # 35

UMTS II Mid + BTLE Mid

| Frequency (MHz) | RMS (dBm) | MaxPeak (dBm) | Limit (dBm) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|---------------|-------------|-------------|------------|-----------------|-------------|-----|---------------|------------|---------|
| 0.025           | ---       | -21.56        | ---         | ---         | 500.0      | 1.000           | 100.0       | H   | 42.0          | -17.9      |         |
| 0.025           | -31.45    | ---           | -13.00      | 18.45       | 500.0      | 1.000           | 100.0       | H   | 42.0          | -17.9      |         |
| 0.050           | -40.91    | ---           | -13.00      | 27.91       | 500.0      | 1.000           | 100.0       | V   | 185.0         | -24.6      |         |
| 0.050           | ---       | -32.22        | ---         | ---         | 500.0      | 1.000           | 100.0       | V   | 185.0         | -24.6      |         |
| 0.134           | -48.61    | ---           | -13.00      | 35.61       | 500.0      | 1.000           | 100.0       | H   | 130.0         | -32.2      |         |
| 0.134           | ---       | -40.25        | ---         | ---         | 500.0      | 1.000           | 100.0       | H   | 130.0         | -32.2      |         |

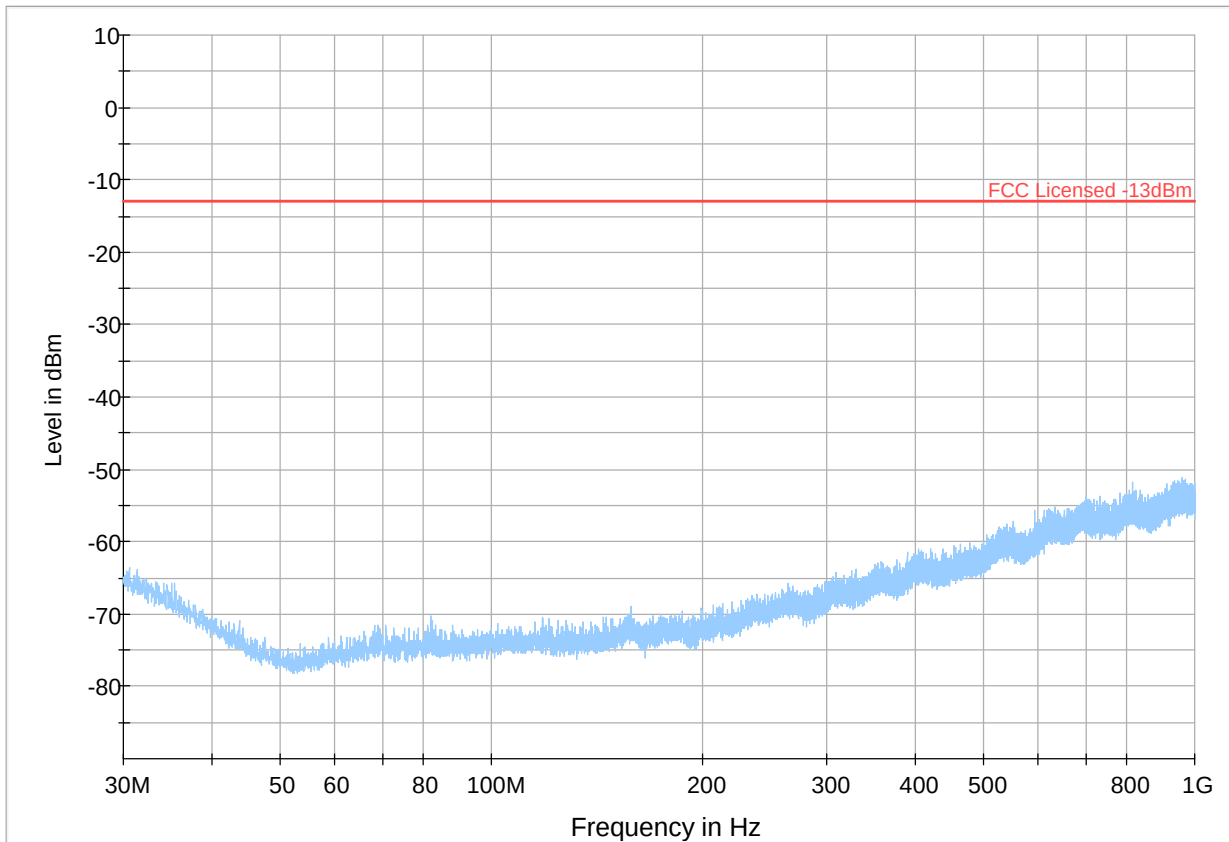


Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result RMS    Final\_Result PK

**Plot # 36**

**UMTS II Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

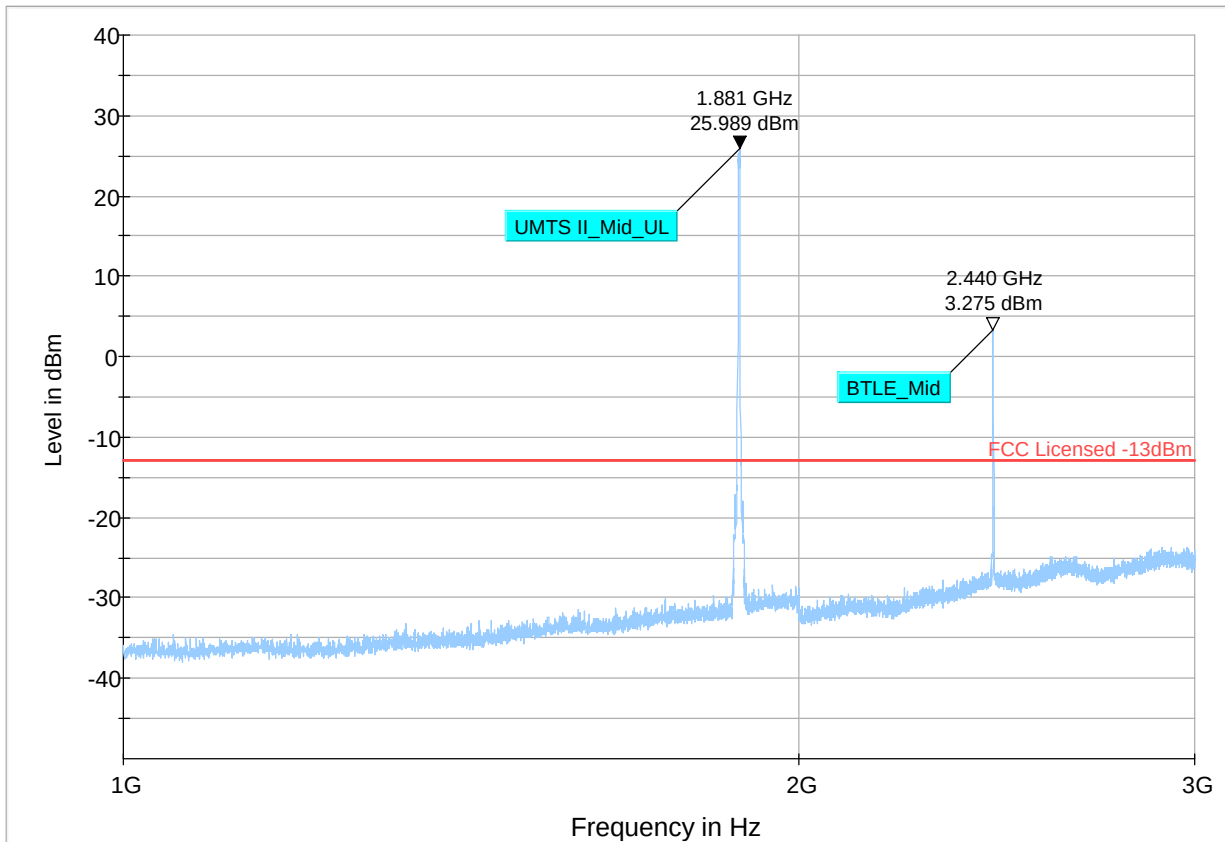


— Preview Result 1-PK+    \* Critical\_Freqs PK+    — FCC Licensed -13dBm    ◆ Final\_Result RM

**Plot # 37**

**UMTS II Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

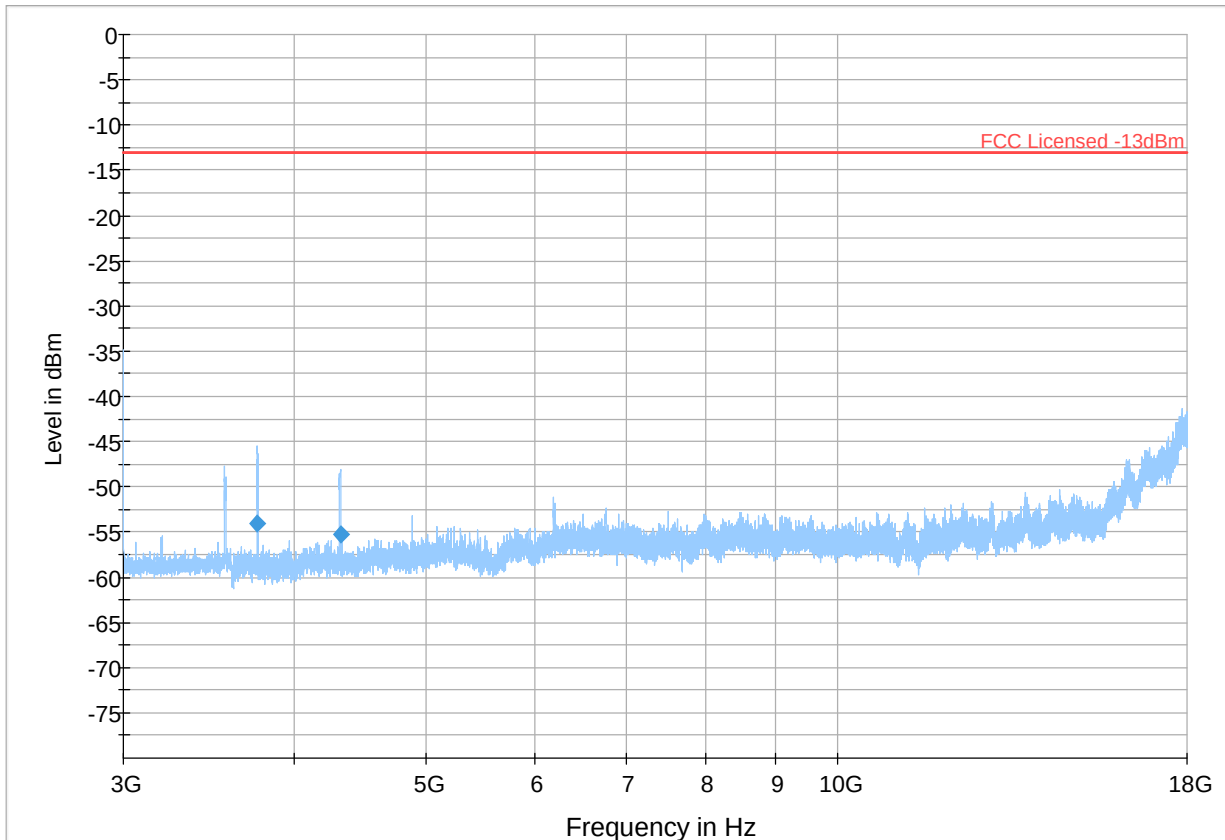


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 38**

**UMTS II Mid + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 3761.000        | -54.13    | -13.00      | 41.13       | 500.0           | 1000.000        | 140.0       | H   | 235.0         | -101.8     |         |
| 4321.500        | -55.35    | -13.00      | 42.35       | 500.0           | 1000.000        | 140.0       | H   | 255.0         | -100.4     |         |

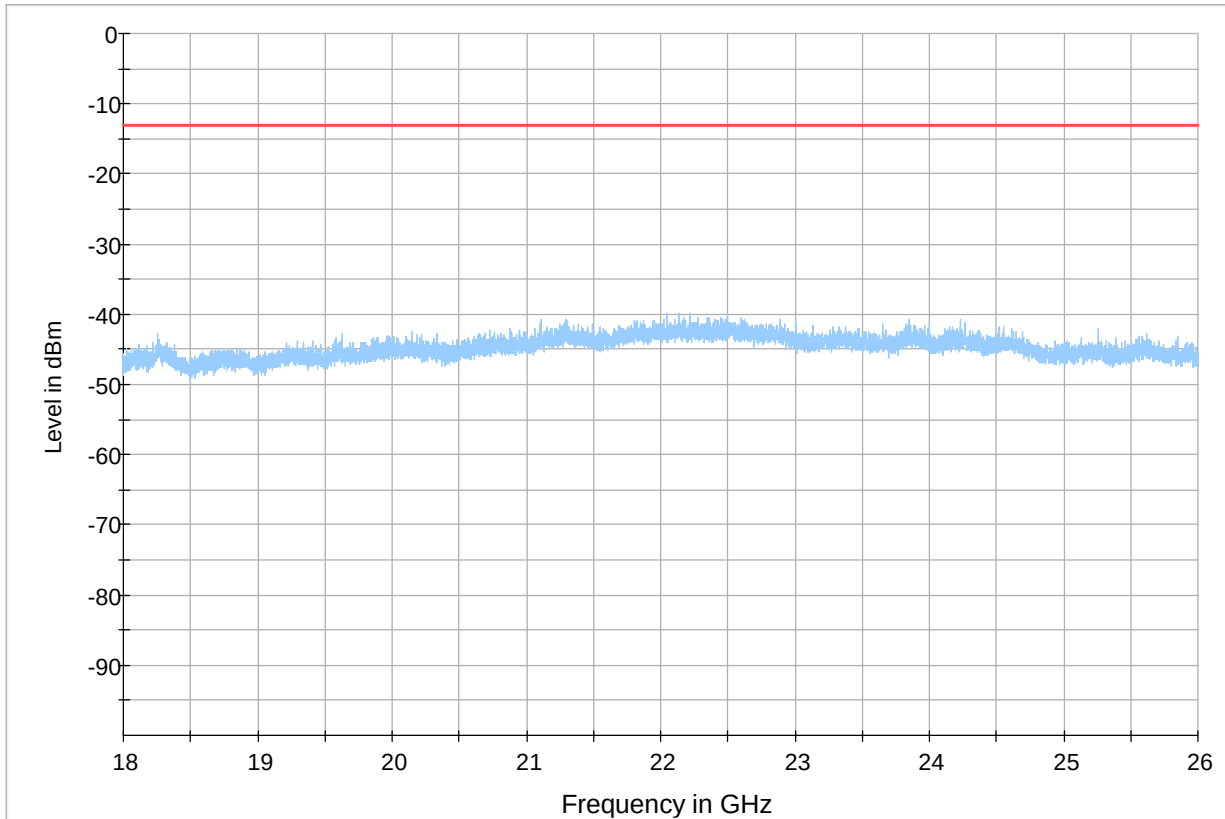


— Preview Result 1-PK+      — FCC Licensed -13dBm      ◆ Final\_Result RMS

**Plot # 39**

**UMTS II Mid + BTLE Mid**

| Frequency<br>(MHz) | RMS<br>(dBm) | MaxPeak<br>(dBm) | Limit<br>(dBm) | Margin<br>(dB) | Meas. Time<br>(ms) | Bandwidth<br>(kHz) | Height<br>(cm) | Pol | Azimuth<br>(deg) | Corr.<br>(dB) |
|--------------------|--------------|------------------|----------------|----------------|--------------------|--------------------|----------------|-----|------------------|---------------|
| ---                | ---          | ---              | ---            | ---            | ---                | ---                | ---            | --- | ---              | ---           |

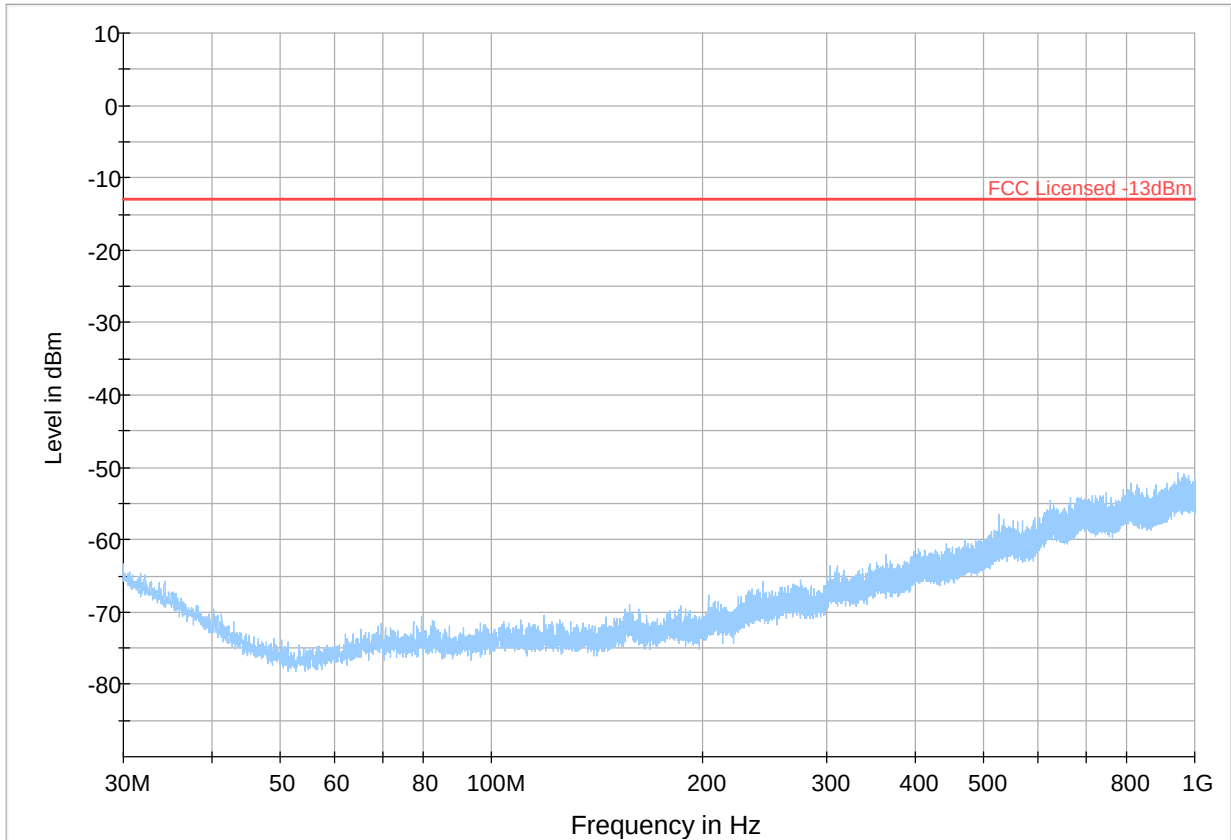


◆ Preview Result 1-PK+      \* Critical\_Freqs PK+      — FCC Licensed -13dBm  
◆ Final\_Result RMS      ◆ Final\_Result PK+

**Plot # 40**

**UMTS II High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

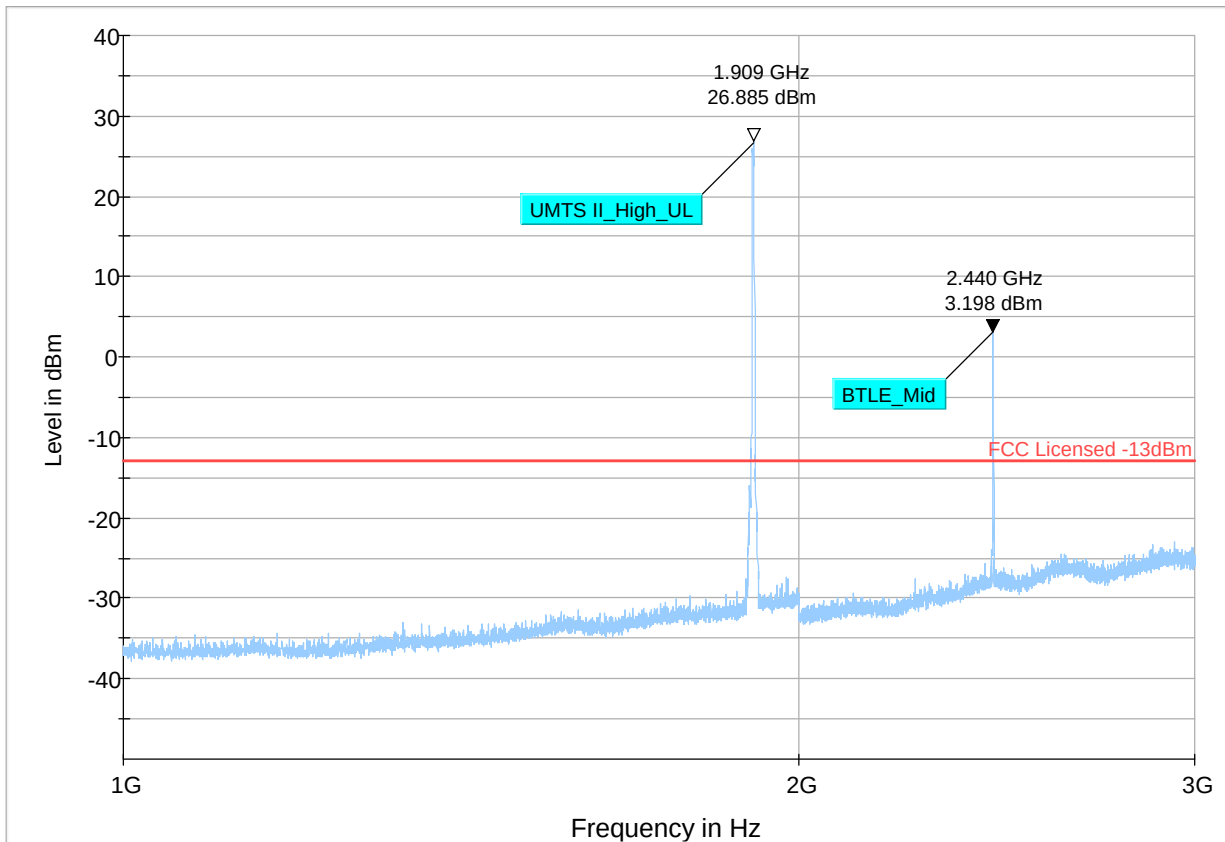


— Preview Result 1-PK+     
 \* Critical\_Freqs PK+     
 — FCC Licensed -13dBm     
 ◆ Final\_Result RM

**Plot # 41**

**UMTS II High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| ---             | ---       | ---         | ---         | ---             | ---             | ---         |     | ---           | ---        |         |

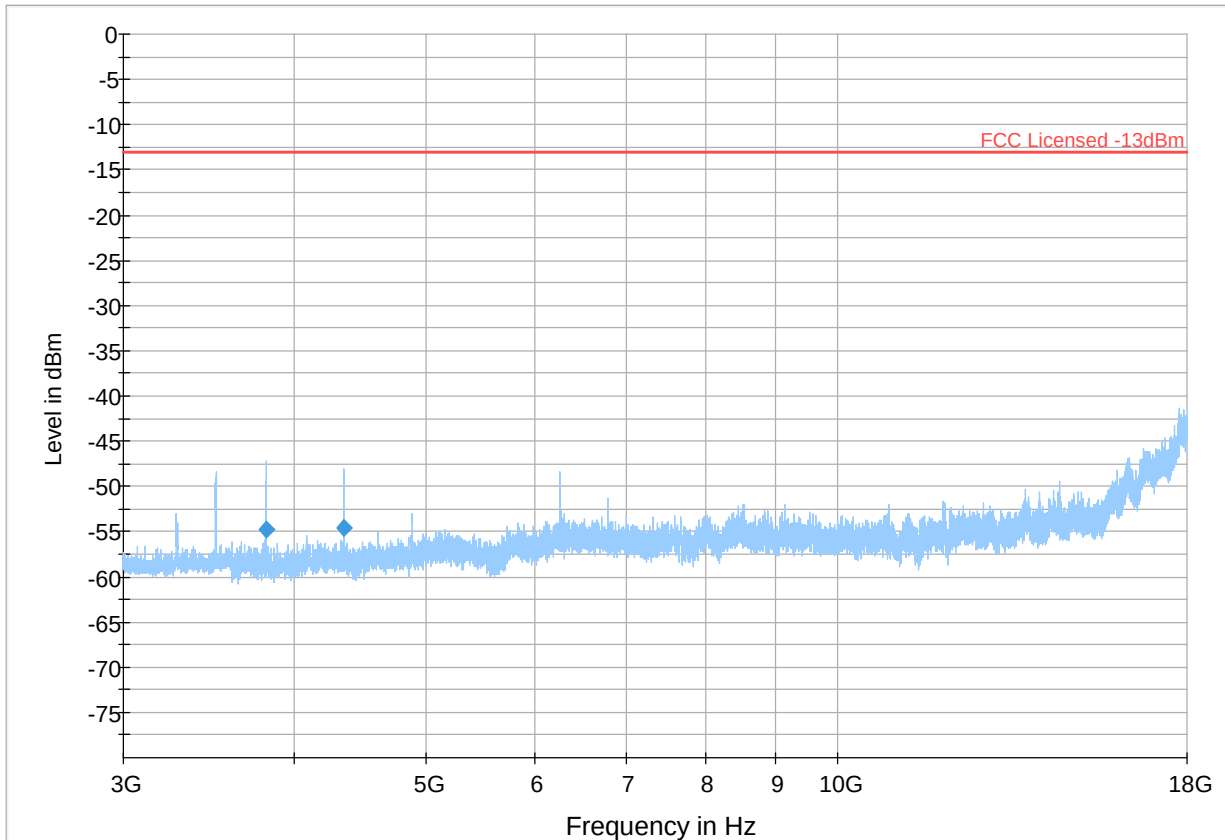


— Preview Result 1-PK+    \* Critical\_Freqs PK+    — FCC Licensed -13dBm    ◆ Final\_Result RM

**Plot # 42**

**UMTS II High + BTLE Mid**

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|-----------------|-----------|-------------|-------------|-----------------|-----------------|-------------|-----|---------------|------------|---------|
| 3813.500        | -54.81    | -13.00      | 41.81       | 500.0           | 1000.000        | 195.0       | H   | 243.0         | -101.6     |         |
| 4348.500        | -54.51    | -13.00      | 41.51       | 500.0           | 1000.000        | 140.0       | H   | 256.0         | -100.5     |         |



— Preview Result 1-PK+    — FCC Licensed -13dBm    ◆ Final\_Result RMS

## 7.2 AC Power Line Conducted Emissions

### 7.2.1 Measurement according to ANSI C63.4

#### Analyzer Settings:

- RBW = 9 KHz (CISPR Bandwidth)
- Detector: Peak / Average for Pre-scan
- Quasi-Peak/Average for Final Measurements

### 7.2.2 Limits: §15.207 & RSS-Gen 8.8

#### FCC §15.207(a) & RSS-Gen 8.8

- Except as shown in paragraphs (b) and (c) of this section of the CFR, for an intentional radiator that is designed to be connected to the public utility (AC) power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies, within the band 150 kHz to 30 MHz, shall not exceed the limits in the following table (1), as measured using a 50  $\mu$ H/50 ohms line impedance stabilization network (LISN). Compliance with the provisions of this paragraph shall be based on the measurement of the radio frequency voltage between each power line and ground at the power terminal. The lower limit applies at the boundary between frequency ranges.

| Frequency of emission (MHz) | Conducted limit (dB $\mu$ V) |           |
|-----------------------------|------------------------------|-----------|
|                             | Quasi-peak                   | Average   |
| 0.15–0.5                    | 66 to 56*                    | 56 to 46* |
| 0.5–5                       | 56                           | 46        |
| 5–30                        | 60                           | 50        |

\*Decreases with the logarithm of the frequency.

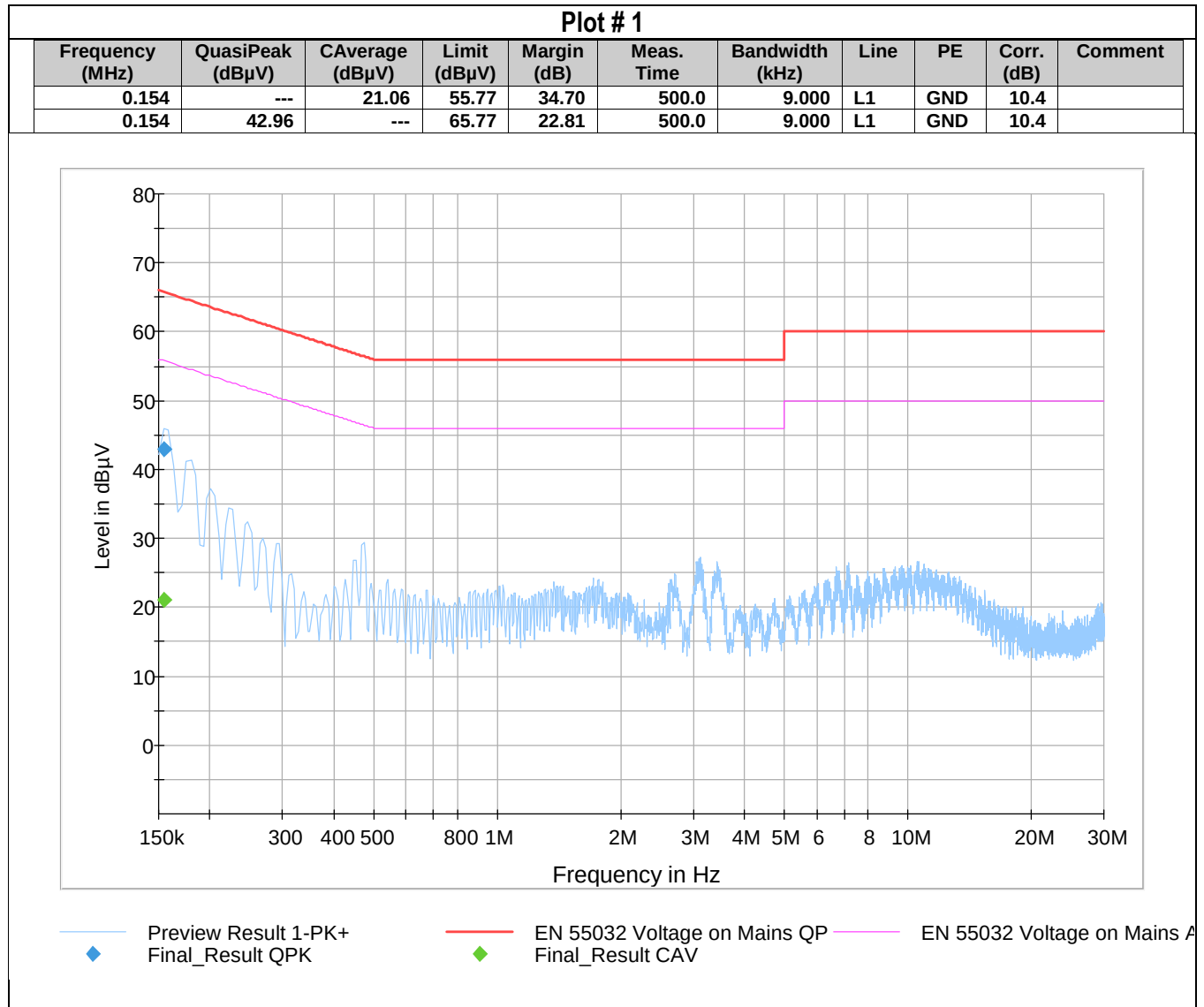
### 7.2.3 Test conditions and setup:

| Ambient Temperature $^{\circ}$ C | EUT Set-Up # | Power line<br>(L1, L2, L3, N) | Power Input |
|----------------------------------|--------------|-------------------------------|-------------|
| 22 $^{\circ}$ C                  | 1            | Line & Neutral                | 120V / 60Hz |

#### 7.2.4 Measurement Result:

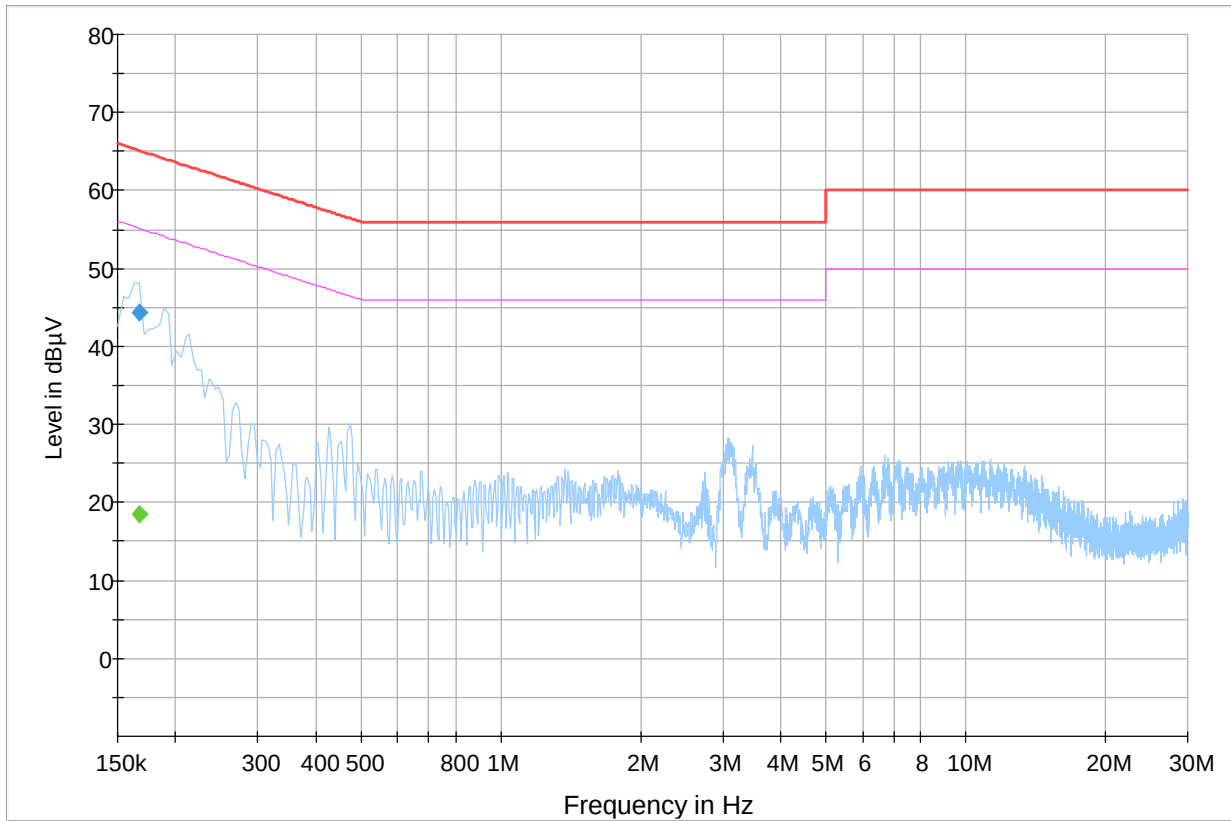
| Plot # | Port            | EUT Set-Up #: | EUT operating mode | Scan Frequency   | Result |
|--------|-----------------|---------------|--------------------|------------------|--------|
| 1      | AC / DC Adapter | 1             | BLE + GSM 850      | 150 kHz – 30 MHz | Pass   |
| 2      | AC / DC Adapter | 1             | BLE + GSM 1900     | 150 kHz – 30 MHz | Pass   |
| 3      | AC / DC Adapter | 1             | BLE + UMTS II      | 150 kHz – 30 MHz | Pass   |
| 4      | AC / DC Adapter | 1             | BLE + UMTS V       | 150 kHz – 30 MHz | Pass   |

## 7.2.5 Measurement Plots:



**Plot # 2**

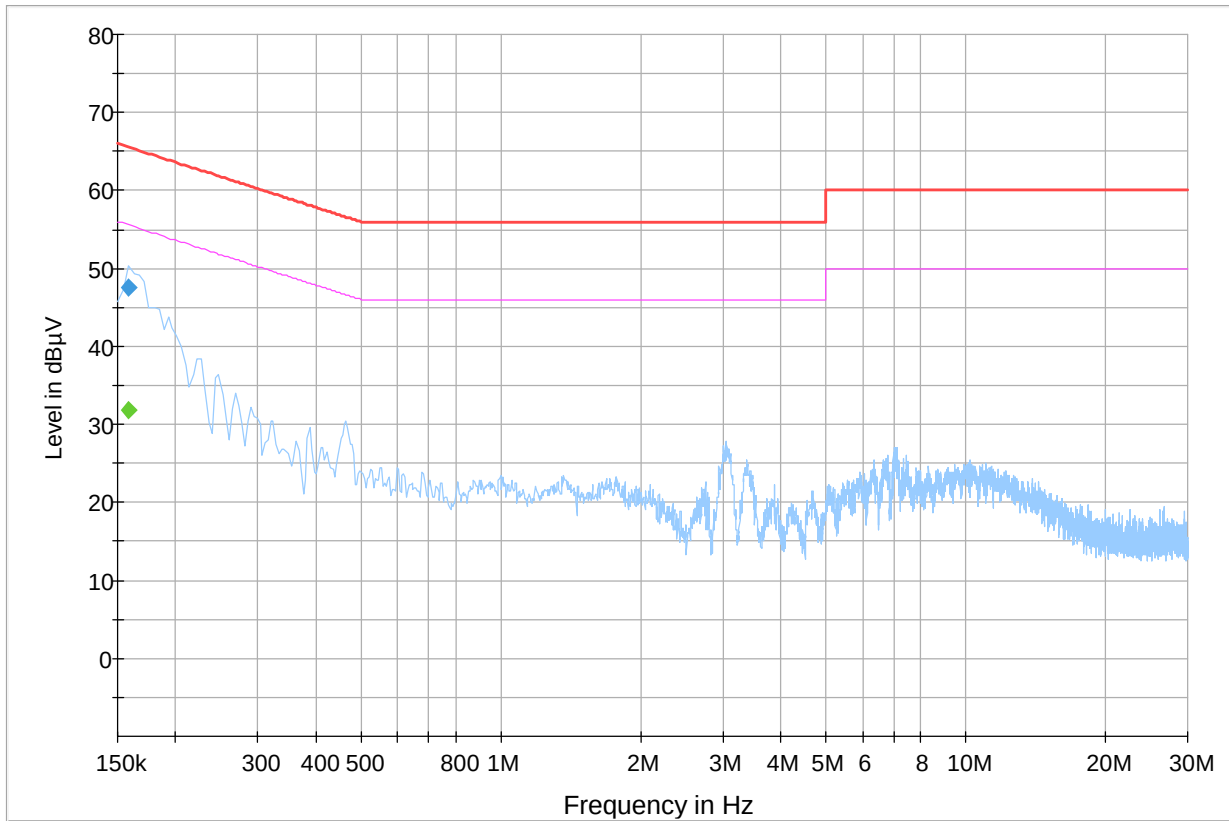
| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Line | PE  | Corr. (dB) | Comment |
|-----------------|------------------|-----------------|--------------|-------------|------------|-----------------|------|-----|------------|---------|
| 0.167           | ---              | 18.48           | 55.11        | 36.63       | 500.0      | 9.000           | L1   | GND | 10.6       |         |
| 0.167           | 44.33            | ---             | 65.11        | 20.77       | 500.0      | 9.000           | L1   | GND | 10.6       |         |



— Preview Result 1-PK+ Final\_Result QPK     
 — EN 55032 Voltage on Mains QP     
 — EN 55032 Voltage on Mains A  
◆      ◆

**Plot # 3**

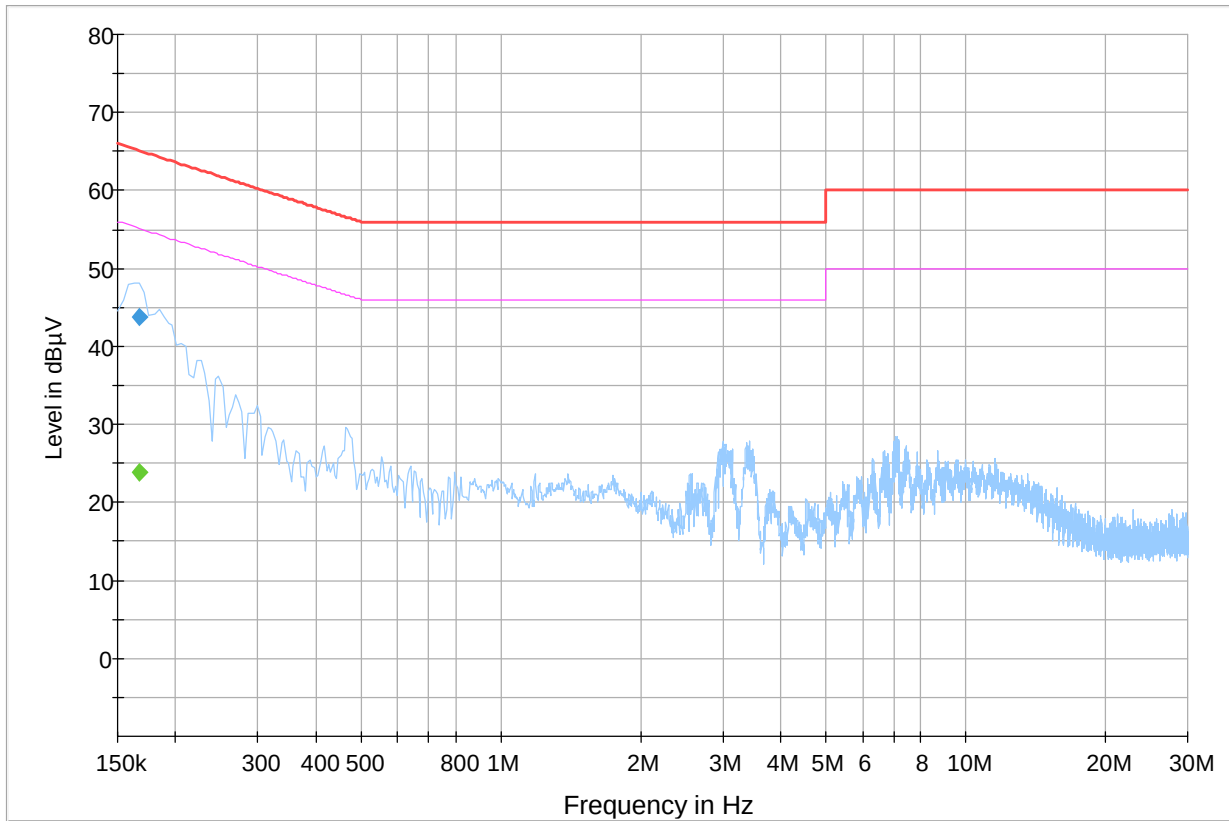
| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Line | PE  | Corr. (dB) | Comment |
|-----------------|------------------|-----------------|--------------|-------------|------------|-----------------|------|-----|------------|---------|
| 0.159           | ---              | 31.82           | 55.54        | 23.72       | 500.0      | 9.000           | N    | GND | 10.4       |         |
| 0.159           | 47.58            | ---             | 65.54        | 17.96       | 500.0      | 9.000           | N    | GND | 10.4       |         |



— Preview Result 1-PK+ Final\_Result QPK     
 — EN 55032 Voltage on Mains QP     
 — EN 55032 Voltage on Mains A  
◆      ◆

**Plot # 4**

| Frequency (MHz) | QuasiPeak (dBμV) | CAverage (dBμV) | Limit (dBμV) | Margin (dB) | Meas. Time | Bandwidth (kHz) | Line | PE  | Corr. (dB) | Comment |
|-----------------|------------------|-----------------|--------------|-------------|------------|-----------------|------|-----|------------|---------|
| 0.167           | ---              | 23.78           | 55.11        | 31.32       | 500.0      | 9.000           | N    | GND | 10.3       |         |
| 0.167           | 43.82            | ---             | 65.11        | 21.29       | 500.0      | 9.000           | N    | GND | 10.3       |         |



— Preview Result 1-PK+ Final\_Result QPK     
 — EN 55032 Voltage on Mains QP     
 — EN 55032 Voltage on Mains A  
◆      ◆

## 8 Test Equipment And Ancillaries Used For Testing

| Equipment Name/Type                  | Manufacturer | Model   | Serial # | Calibration Cycle | Last Calibration Date |
|--------------------------------------|--------------|---------|----------|-------------------|-----------------------|
| Biconilog Antenna                    | ETS Lindgren | 3142E   | 166067   | 3 years           | 03/20/2020            |
| Horn Antenna                         | ETS Lindgren | 3115    | 35114    | 3 years           | 10/10/2020            |
| Horn Antenna                         | ETS Lindgren | 3117-PA | 215984   | 3 years           | 08/08/2020            |
| Active Loop Antenna                  | ETS Lindgren | 6507    | 161344   | 3 years           | 10/30/2020            |
| Horn Antenna                         | ETS Lindgren | 3116C   | 70497    | 3 years           | 11/23/2020            |
| Spectrum Analyzer                    | R&S          | ESU40   | 100251   | 3 years           | 07/16/2019            |
| Spectrum Analyzer                    | R&S          | FSU26   | 200065   | 3 years           | 07/03/2020            |
| Universal Radio Communication Tester | R&S          | CMU 200 | 121673   | 3 years           | 12/20/2019            |
| Thermometer Humidity Monitor         | Dickson      | TM320   | 5280063  | 3 years           | 11/02/2020            |

**Note:** Equipment used meets the measurement uncertainty requirements as required per applicable standards for 95% confidence levels. Calibration due dates, unless defined specifically, falls on the last day of the month. Items indicated "N/A" for cal status either do not specifically require calibration or is internally characterized before use.

## 9 Revision History

| Date       | Template Revision                  | Changes to report                                                                                                    | Prepared by |
|------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------|-------------|
| 2021-07-09 | EMC_PHIL4_089_21001_FCC_22_24      | Initial Version                                                                                                      | Cheng Song  |
| 2021-11-12 | EMC_PHIL4_089_21001_FCC_22_24_Rev1 | Updated Section 7.1<br>Radiated Spurious<br>Emissions<br>Updated Section 7.2 AC<br>Power Line Conducted<br>Emissions | Cheng Song  |
| 2021-11-15 | EMC_PHIL4_089_21001_FCC_22_24_Rev2 | Removed Test Setup Photos<br>and EUT Photos section                                                                  | Cheng Song  |

<<< The End >>>