



# FCC/ISED Test Report

**For:**  
Telular Corporation

**Brand:**  
SkyBitz

**Product Description:**  
Asset tracking

**FCC ID:** MTFSHB6500  
**IC:** 2175D-SHB6500

**Per:**  
Title 47 CFR: Part 24, Part 27  
RSS-130 Issue 2; RSS-133 Issue 7; RSS-139 Issue 4

**REPORT #:** EMC\_TELUL\_115\_23001\_FCC\_24\_27\_ISED\_REV1

**DATE:** 7/31/2025



A2LA Accredited

IC recognized #  
3462B

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## 1 Assessment

The following device as further described in section 3 of this report was evaluated for radiated spurious emissions in simultaneous transmission of cellular and Bluetooth LE radios according to criteria specified in the Code of Federal Regulations Title 47 CFR: Part 24, Part 27 and Industry Canada Radio Standard Specifications RSS-130 Issue 2; RSS-133 Issue 6; RSS-139 Issue 4.

No deficiencies were ascertained.

According to section 6 of this report, the overall result is PASS.

Company	Description	Model #
Telular Corporation	Asset tracking	SHB6500

### Responsible for the Report:

		Ghanma, Issa	
7/31/2025	Compliance	(Lab Manager)	
Date	Section	Name	Signature

The test results of this test report relate exclusively to the test item specified in Section 3.

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>Lab Manager:</b>	Ghanma, Issa
<b>Responsible Project Leader:</b>	Sivaraman, Sangeetha

### 2.2 Identification of the Client

<b>Applicant's Name:</b>	Telular Corporation
<b>Street Address:</b>	3225 Cumberland Blvd, Suite 300
<b>City/Zip Code</b>	Atlanta, GA 30339
<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>Brand:</b>	SkyBitz	
<b>Model No:</b>	SHB6500	
<b>Marketing name:</b>	Kinnect-M Tether	
<b>FCC ID:</b>	MTFSHB6500	
<b>IC:</b>	2175D-SHB6500	
<b>HW Version :</b>	A	
<b>SW Version :</b>	EM.00.03.1011,BM.00.01.0109	
<b>HVIN:</b>	SHB6500	
<b>HMN:</b>	SHB6500	
<b>Product Description:</b>	Asset tracking	
<b>Transceiver Technology / Type(s) of Modulation / Power class:</b>	❖ Cellular radio: Telit ME910G1-W1 <ul style="list-style-type: none"> <li>• FCC ID: RI7ME910G1W1</li> <li>• IC: 5131A-ME910G1W1</li> <li>• Technology; Modulation; Power class:                             <ul style="list-style-type: none"> <li>▪ CAT-M1; 20 dBm ± 2 dB; Power class 5</li> </ul> </li> </ul>	
<b>Frequency Range:</b>	<b>Band</b>	<b>MHz</b>
	LTE 2	1850 ~ 1910
	LTE 4	1710 ~ 1755
	LTE 12	699 ~ 716
<b>Power Supply/ Rated Operating Voltage Range:</b>	Low: 11 V; Nominal: 12 V; High 30 V;	
<b>Operating Temperature Range:</b>	T min: -40 °C / T Nom: 25 °C / T max: +70 °C	
<b>Other Radios included in the device:</b>	❖ Bluetooth LE: Larid BL654 <ul style="list-style-type: none"> <li>• FCC ID: SQGBL654</li> <li>• IC: 3147A-BL654</li> </ul> ❖ <u>GPS</u> : Quectel GNSS L86 (L86s-M3)	
<b>Sample Revision:</b>	<input checked="" type="checkbox"/> Production Unit; <input type="checkbox"/> Pre-Production;	
<b>EUT Diameter</b>	<input checked="" type="checkbox"/> < 60 cm; <input type="checkbox"/> Other: _____	

Antenna specifications as declared:	<ul style="list-style-type: none"> <li>❖ Cellular LTE antenna: ethertronics <ul style="list-style-type: none"> <li>• Type: Prestta Standard Octa-Band LTE Cellular Embedded antenna 700/750/850/900/1800/1900/2100/2700MHz</li> <li>• Peak Gain <ul style="list-style-type: none"> <li>▪ 700 – 746 MHz: 1.1 dBi</li> <li>▪ 746 – 787 MHz: 1.7 dBi</li> <li>▪ 824 – 869 MHz: 1.8 dBi</li> <li>▪ 880 – 960 MHz: 2.2 dBi</li> <li>▪ 1710 – 1800 MHz: 3.9 dBi</li> <li>▪ 1850 – 1990 MHz: 3.8 dBi</li> <li>▪ 1920 – 2170 MHz: 3.4 dBi</li> <li>▪ 2500 – 2700 MHz: 3.6 dBi</li> </ul> </li> </ul> </li> <li>❖ Bluetooth LE: Larid BL654 <ul style="list-style-type: none"> <li>• Type: PCB Trace</li> <li>• Peak Gain: 0 dBi</li> </ul> </li> </ul>
Note: The information of the EUT specifications in the table above is provided by the applicant.	

### 3.2 EUT Sample details

EUT #	S/N	IMEI	HW Version	SW Version	Notes/Comments
1	SHB81JBL232205340	353340351194272	A	EM.00.03.1011,BM.00.01.0109	Radiated measurement

### 3.3 Accessory Equipment (AE) details

AE #	Type	Model	Manufacturer	S/N	Notes/Comments
N/A	-	-	-	-	-

### 3.4 Test Sample Configuration

EUT Set-up #	Combination of AE used for test set up	Comments
1	EUT#1	The internal antenna was connected.

### 3.5 Mode of Operation details

Mode of Operation	Description of Operating modes	Additional Information
Op. 1	Cellular	Cellular was tested on Mid channel at the maximum power.
Op. 2	Cellular M1 & BT-LE Co-TX	<p>Cellular was tested on Low, Mid and High Channels at the maximum power, in simultaneous transmission mode with BT-LE 1M.</p> <p>❖ A USB adaptor provided by the client used to communicate with the device and send commands, that will not be available to the end-user to configure the Cellular and BT-LE radios to the worst case mode of operation</p>

### 3.6 Justification for Worst Case Mode of Operation

During the testing process the cellular radio was tested with transmitter sets to low, mid and high channel at the maximum power in simultaneous transmission mode with the highest output power of radios included in the device (BT-LE 1M), as it is described in section 3.5 of this document; representing the worst case mode of operation.

For radiated measurements, all data in this report shows the worst case between horizontal and vertical antenna polarizations and for all orientations of the EUT.

## 4 **Subject of Investigation**

The objective of the evaluation conducted by CETECOM Inc. is to perform and check radiated spurious emissions against the limits per Code of Federal Regulations Title 47 CFR: Part 24, Part 27 and Industry Canada Radio Standard Specifications RSS-130 Issue 2; RSS-133 Issue 6; RSS-139 Issue 4, in simultaneous transmission mode of Cellular (Telit ME910G1-W1 FCC/IC: RI7ME910G1W1/5131A-ME910G1W1) and BT-LE (Larid BL6542175D-SHB6500 FCC/IC: SQGBL654/3147A-BL654) Radios.

### 4.1 **Dates of Testing:**

7/7/2023 – 7/26/2023

### 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=2.

Measurement System	EMC 1	EMC 2
Conducted emissions (mains port)	1.12 dB	0.46 dB
Radiated emissions		
( < 30 MHz)	3.66 dB	3.88 dB
(30 MHz – 1GHz)	3.17 dB	3.34 dB
(1 GHz – 3 GHz)	5.01 dB	4.45 dB
(>3 GHz)	4.0 dB	4.79 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.

### 4.1 **Decision Rule:**

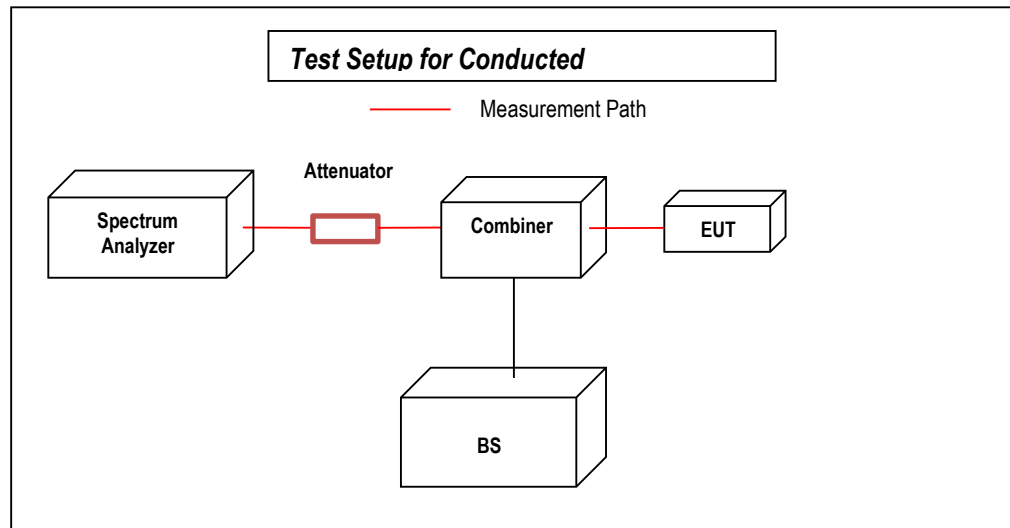
Cetecom advanced follows ILAC G8:2019 chapter 4.2.1 (Simple Acceptance Rule).

Only the measured values related to their corresponding limits will be used to decide whether the equipment under test meets the requirements of the test standards listed in chapter 3. The measurement uncertainty is mentioned in this test report, See chapter 9, but is not taken into account – neither to the limits nor to the measurement results. Measurement results with a smaller margin to the corresponding limits than the measurement uncertainty have a potential risk of more than 5% that the decision might be wrong.



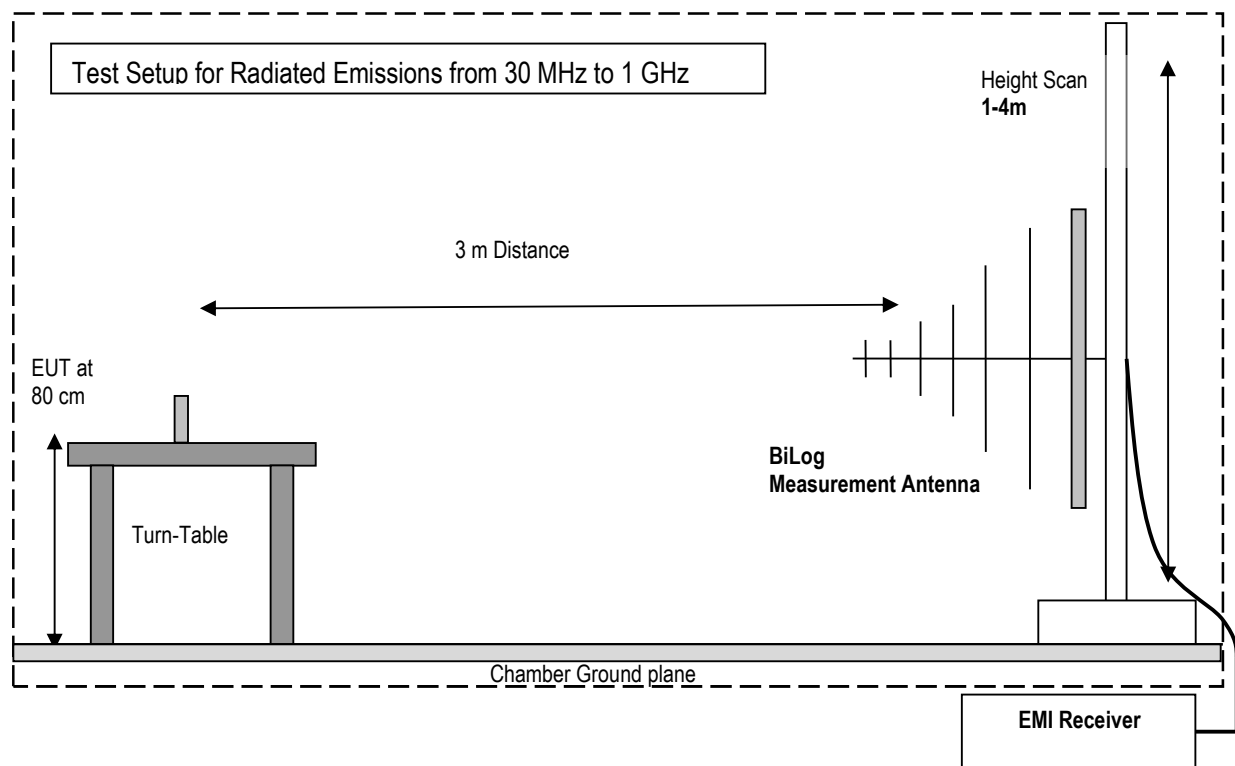
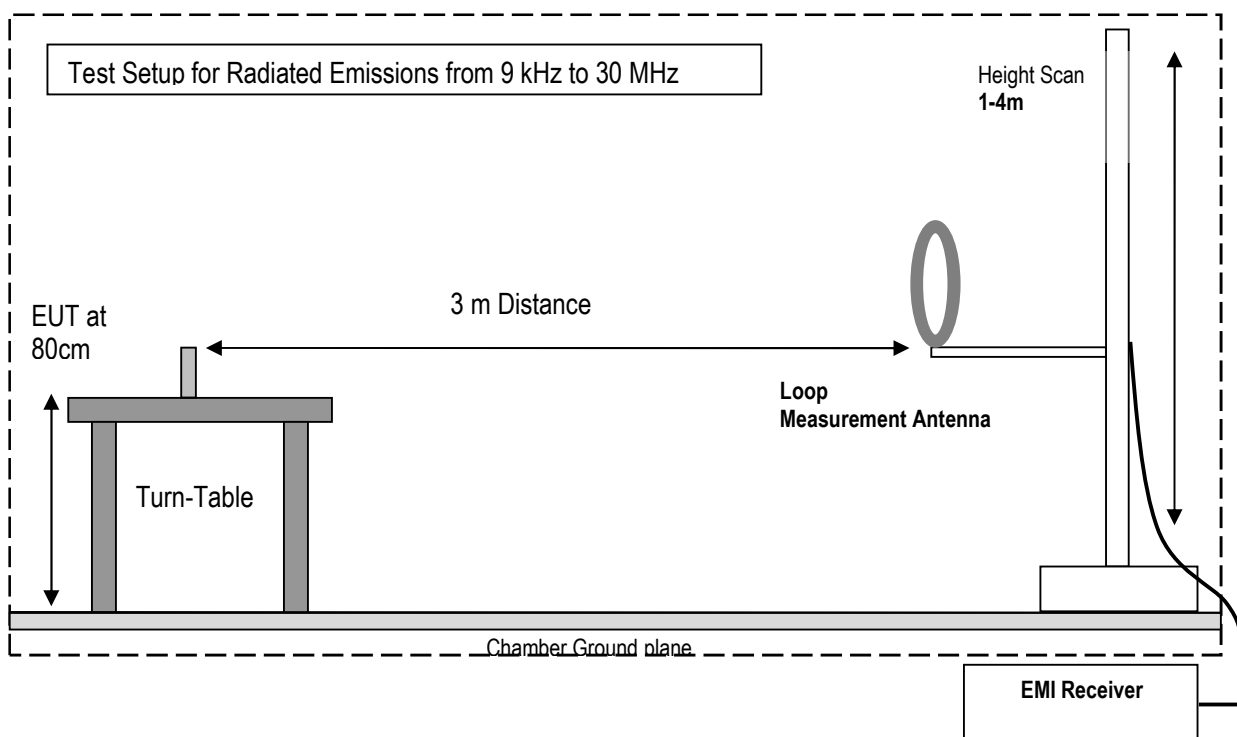
## 5 Measurement Procedures

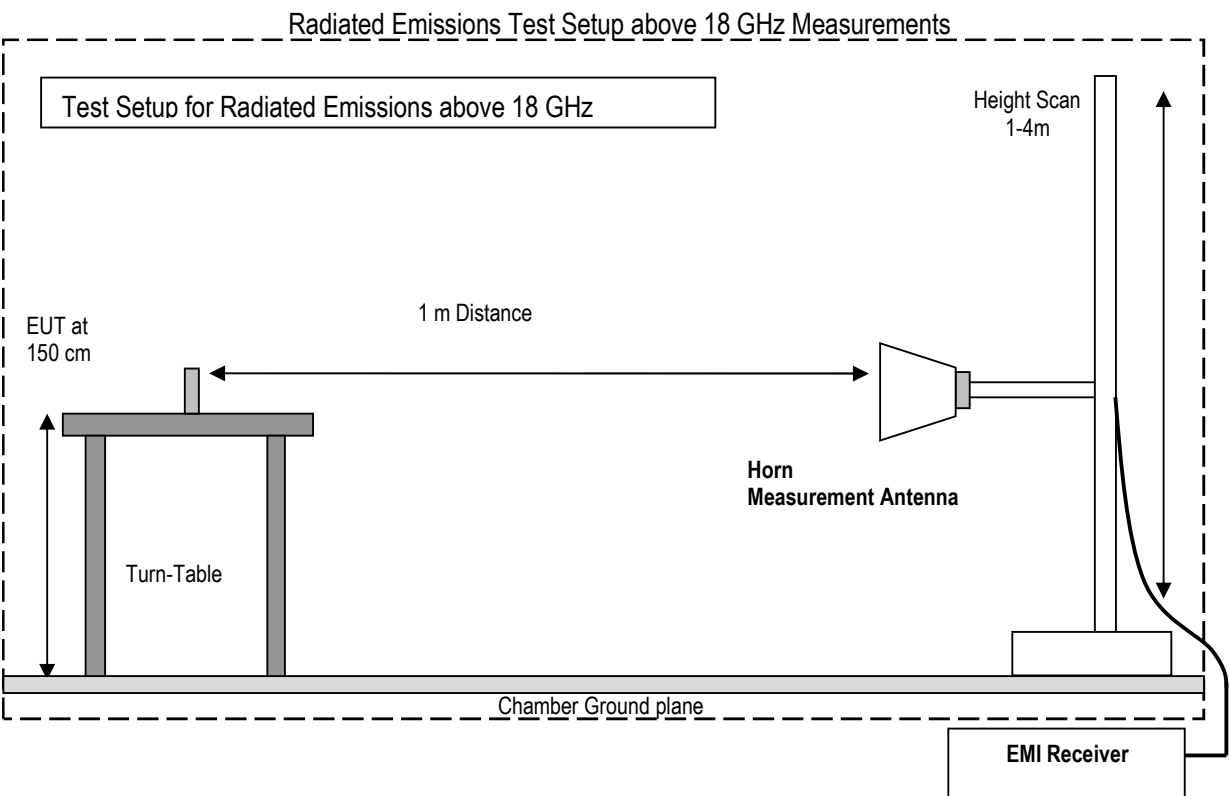
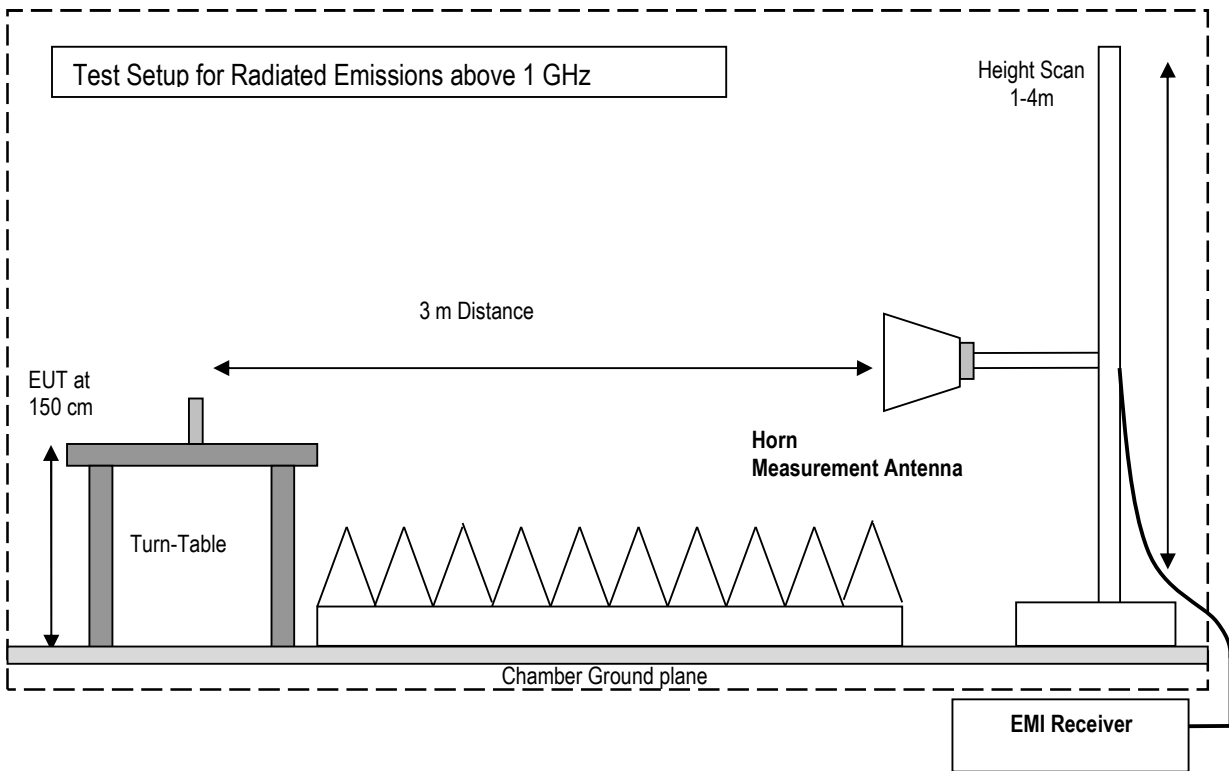
Testing is performed according to the guidelines provided in FCC publication (KDB) 971168 D01 v03r01 – “Measurement Guidance for Certification of Licensed Digital Transmitters” and according to relevant parts of ANSI/TIA-603-D-2010 as detailed below.



### 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.





## 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 ISED Leveraged reports

The leveraged reports generated more 1 year (09/20/2019) of this report date were evaluated against the latest RSS issue if different from the leveraged reports as follows:

- RSS-130 Issue 2: No update.
- RSS-133 Issue 6: No update.
- RSS-139 Issue 4 Update from Issue 3: Amendment (October 2022) Correction to the unwanted emission limits in Table 6 to align with the measurement methods of section 5.1
  - Band 4 Spurious emissions and Band edge test was performed against the limit of <-13 dBm / 1% OBW in the report: 50289118 002 specified under section 5.1.5.

### 6.2 FCC 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	Op.1 LTE 2	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 2 Note 3
§2.1055; §24.235	Frequency Stability	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1049; §24.238	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1051; §24.238	Band Edge Compliance	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1051; §24.238	Conducted Spurious Emissions	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1053; §24.238(a); RSS-133 Issue 6-6.5.1;	Radiated Spurious Emissions	Nominal	Op.2 LTE 2	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Complies

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

Note 2: Leveraged from Telit ME910G1-W1 module certification FCC report(s) #: 50289118 002 under FCC ID: RI7ME910G1W1/ IC ID: 5131A-ME910G1W1;

Note 3: Limited power verification measurement (Radiated) was performed before the radiated spurious emission testing.

### 6.3 FCC 27, RSS-130, RSS-139:

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046; §27.50 (d)	RF Output Power	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1055; §27.54	Frequency Stability	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1049; §27.53	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1051; §27.53	Band Edge Compliance	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1051; §27.53	Conducted Spurious Emissions	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Note 1 Note 2
§2.1053; §27.53(g); §27.53(h); RSS-130 Issue 2-4.7; RSS-139 Issue 4-5.6;	Radiated Spurious Emissions	Nominal	Op.2 LTE 4, 12	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	Complies

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

Note 2: Leveraged from Telit ME910G1-W1 module certification FCC report(s) #: 50289118 002 under FCC ID: RI7ME910G1W1/ IC ID: 5131A-ME910G1W1;

## 7 Test Result Data

### 7.1 RF output power verification

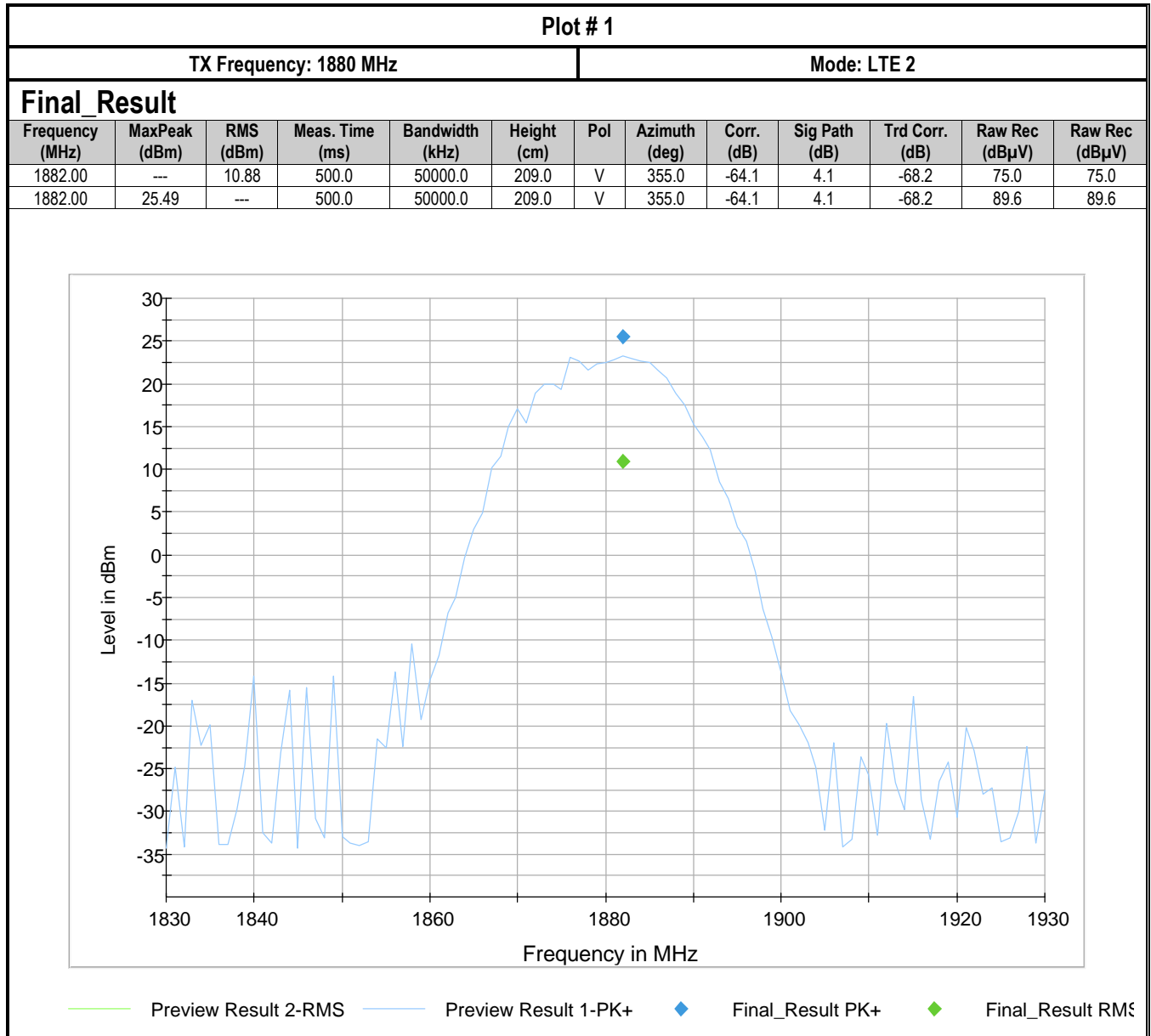
#### Spectrum Analyzer settings:

- $RBW \geq DTS$  bandwidth.
- $VBW \geq 3 \times RBW$
- $Span \geq [3 \times RBW]$
- Sweep = Auto couple
- Detector function = Peak
- Trace = Max-hold
- Use peak marker function to determine the peak amplitude level.

#### 7.1.1 Test conditions and setup:

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input	Antenna Gain
23.0°C	1	Op.1	12V DC	1850 - 1990 MHz: 3.8 dBi

### 7.1.2 Measurement results:





## 7.2 Radiated Spurious Emissions

### 7.2.1 Measurement according to FCC: CFR 47 Part 2.1053; CFR Part 24.238, Part 27.53 utilizing KDB 971168 D01 Power Meas License Digital Systems v03r01, and according to ANSI C63.26 2015

#### Spectrum Analyzer Settings for FCC 24, 27

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

### 7.2.2 Limits:

- FCC Part 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.
- FCC Part 27.53 (g): For operations in the 600 MHz band and the 698–746 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least  $43 + 10 \log(P)$  dB.
- FCC Part 27.53 (h) (1): General protection levels. Except as otherwise specified below, for operations in the 1695–1710 MHz, 1710–1755 MHz, 1755–1780 MHz, 1915–1920 MHz, 1995–2000 MHz, 2000–2020 MHz, 2110–2155 MHz, 2155–2180 MHz, and 2180–2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least  $43 + 10 \log_{10}(P)$  dB.
- RSS-130 Part 4.7: The unwanted emissions in any 100 kHz bandwidth on any frequency outside the low frequency edge and the high frequency edge of each frequency block range(s), shall be attenuated below the transmitter power, P (dBW), by at least  $43 + 10 \log_{10} p$  (watts), dB.
- RSS-133 Part 6.5:  
Equipment shall comply with the limits in (i) and (ii) below.
  - In the 1.0 MHz bands immediately outside and adjacent to the equipment's operating frequency block, the emission power per any 1% of the emission bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts).
  - After the first 1.0 MHz, the emission power in any 1 MHz bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least  $43 + 10 \log_{10} p$  (watts). If the measurement is performed using 1% of the emission bandwidth, power integration over 1.0 MHz is required.
- RSS-139 Part 5.6:  
Unwanted emissions shall be measured in terms of average values.  
For all equipment, the TRP or total conducted power (sum of conducted power across all antenna connectors) of the unwanted emissions outside the frequency block or frequency block group shall not exceed the limits shown in table 6.

Table 6: Unwanted emission limits	
Offset from the edge of the frequency block or frequency block group	Unwanted emission limits
1 MHz	-13 dBm/(1% of OB*)
>1 MHz	-13 dBm/MHz

**7.2.3 Test conditions and setup:**

Ambient Temperature	EUT Set-Up #	EUT operating mode	Power Input
23.0°C	1	Op.2	12V DC

**7.2.4 Measurement result:**

Plot #	Channel	EUT operating mode	Scan Frequency	Lowest margin emission [dBm]	Limit [dBm]	Result
2 – 4	Low	LTE Band 2	30 MHz – 18 GHz	-26.49	-13	Pass
5 – 9	Mid		9 kHz – 22 GHz	-20.72	-13	Pass
10 – 12	High		30 MHz – 18 GHz	-21.21	-13	Pass
13 – 15	Low	LTE Band 4	30 MHz – 18 GHz	-29.68	-13	Pass
16 – 19	Mid		9 kHz – 18 GHz	-21.04	-13	Pass
20 – 22	High		30 MHz – 18 GHz	-29.56	-13	Pass
23 – 25	Low	LTE Band 12	30 MHz – 18 GHz	-34.12	-13	Pass
26 – 29	Mid		9 kHz – 18 GHz	-19.26	-13	Pass
30 – 32	High		30 MHz – 18 GHz	-35.01	-13	Pass

## 7.2.5 Measurement plots:

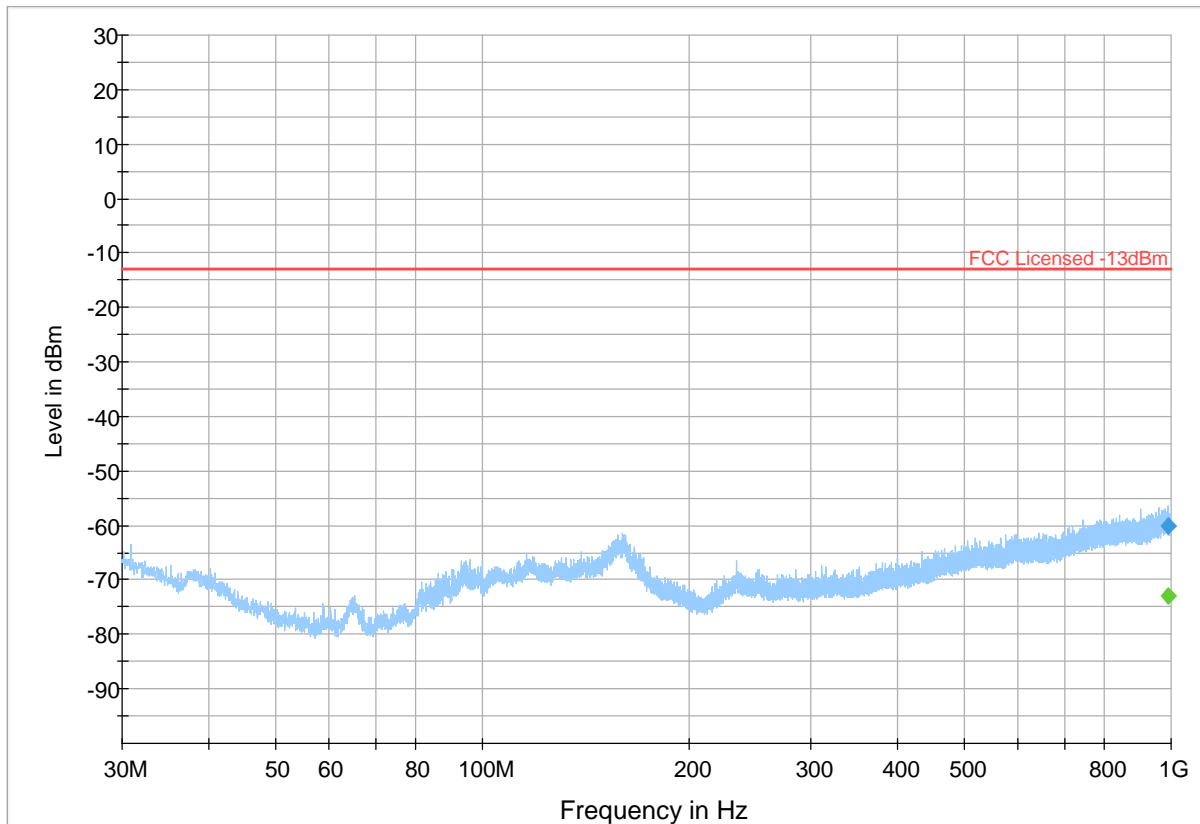
### LTE 2

#### Plot # 2 Radiated Emissions: 30 MHz – 1GHz

Channel: Low

#### Final\_Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
991.90	---	-72.80	---	---	500.0	120.0	107.0	V	106.0	-62.9
991.90	-59.97	---	-13.00	46.97	500.0	120.0	107.0	V	106.0	-62.9



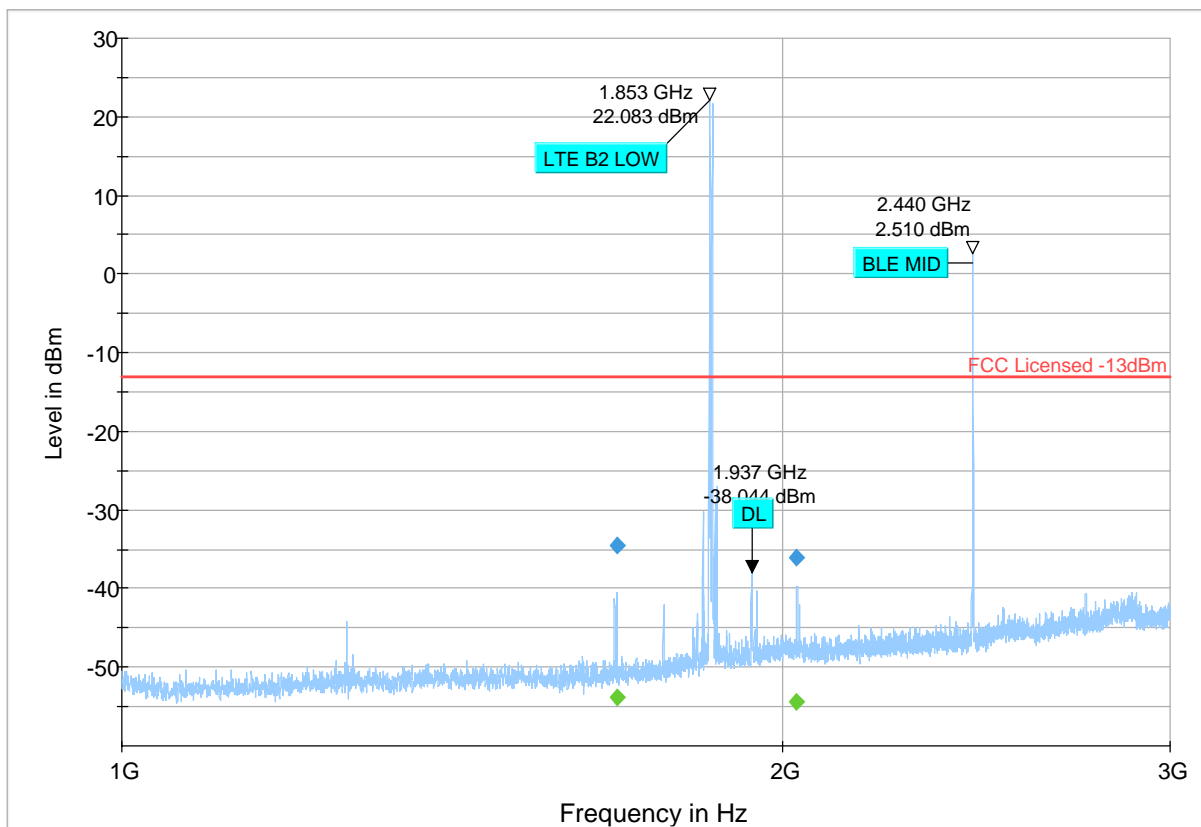
— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final\_Result PK+ ◆ Final\_Result RMS

### Plot # 3 Radiated Emissions: 1 GHz - 3 GHz

Channel: Low

#### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1680.25	---	-53.77	---	---	500.0	1000.0	167.0	H	246.0	-65.4
1680.25	-34.44	---	-13.00	21.44	500.0	1000.0	167.0	H	246.0	-65.4
2029.25	---	-54.34	---	---	500.0	1000.0	218.0	H	242.0	-63.6
2029.25	-36.03	---	-13.00	23.03	500.0	1000.0	218.0	H	242.0	-63.6



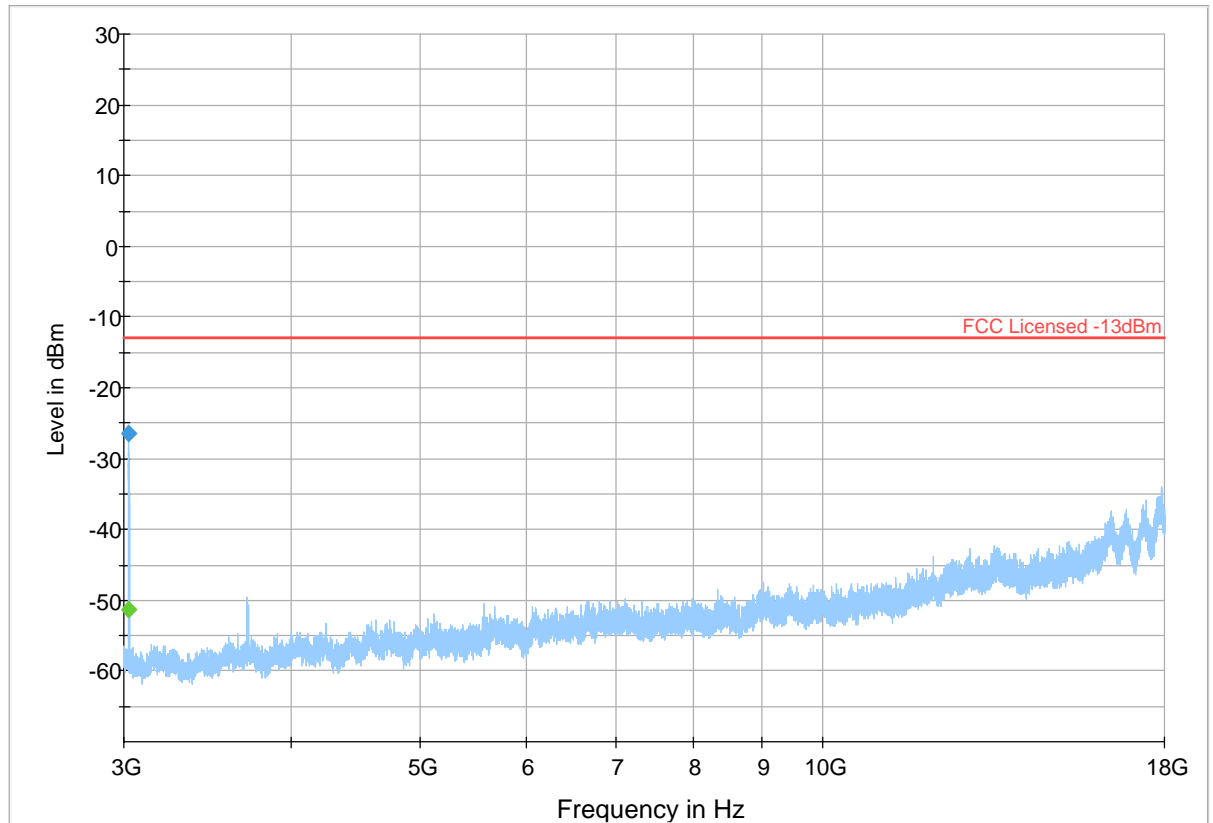
Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMS

## Plot # 4 Radiated Emissions: 3 GHz – 18 GHz

Channel: Low

## Final Result

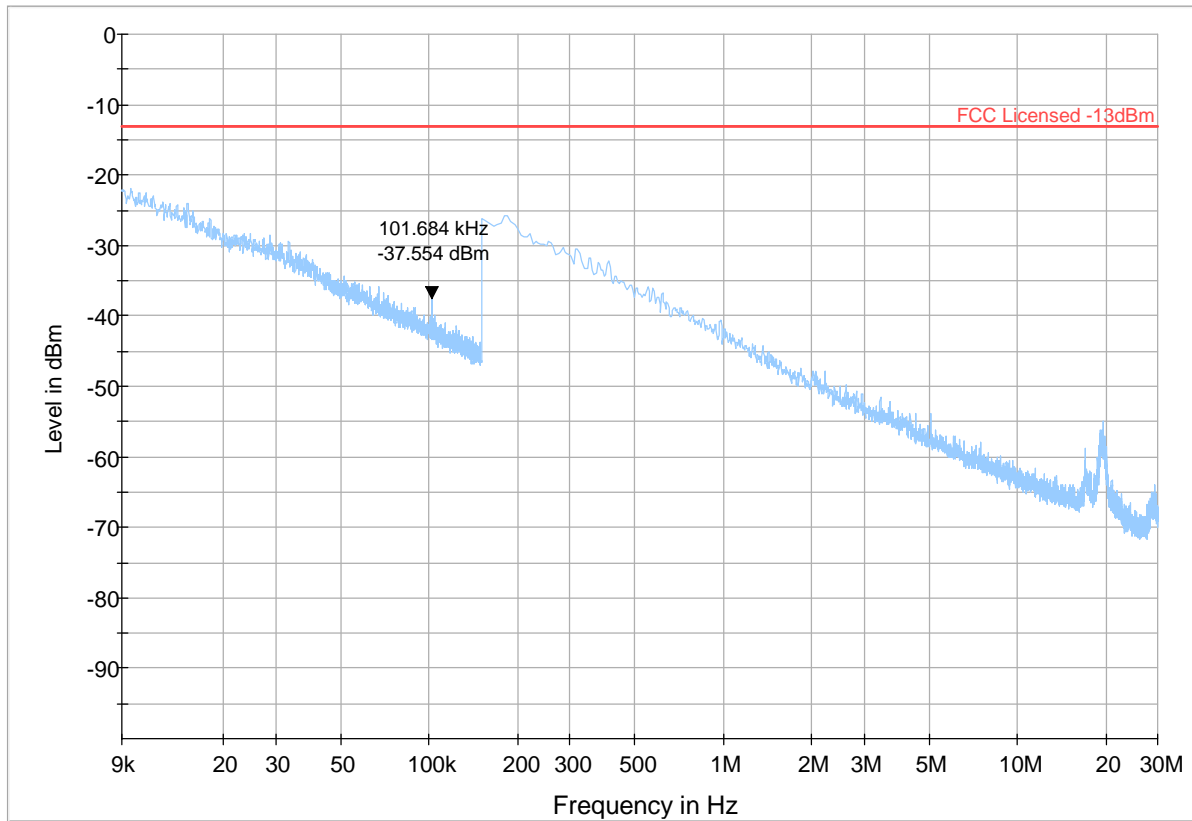
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3026.25	---	-51.23	---	---	500.0	1000.0	215.0	V	95.0	-103.1
3026.25	-26.49	---	-13.00	13.49	500.0	1000.0	215.0	V	95.0	-103.1



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

**Plot # 5 Radiated Emissions: 9 kHz - 30 MHz**

**Channel: Mid**



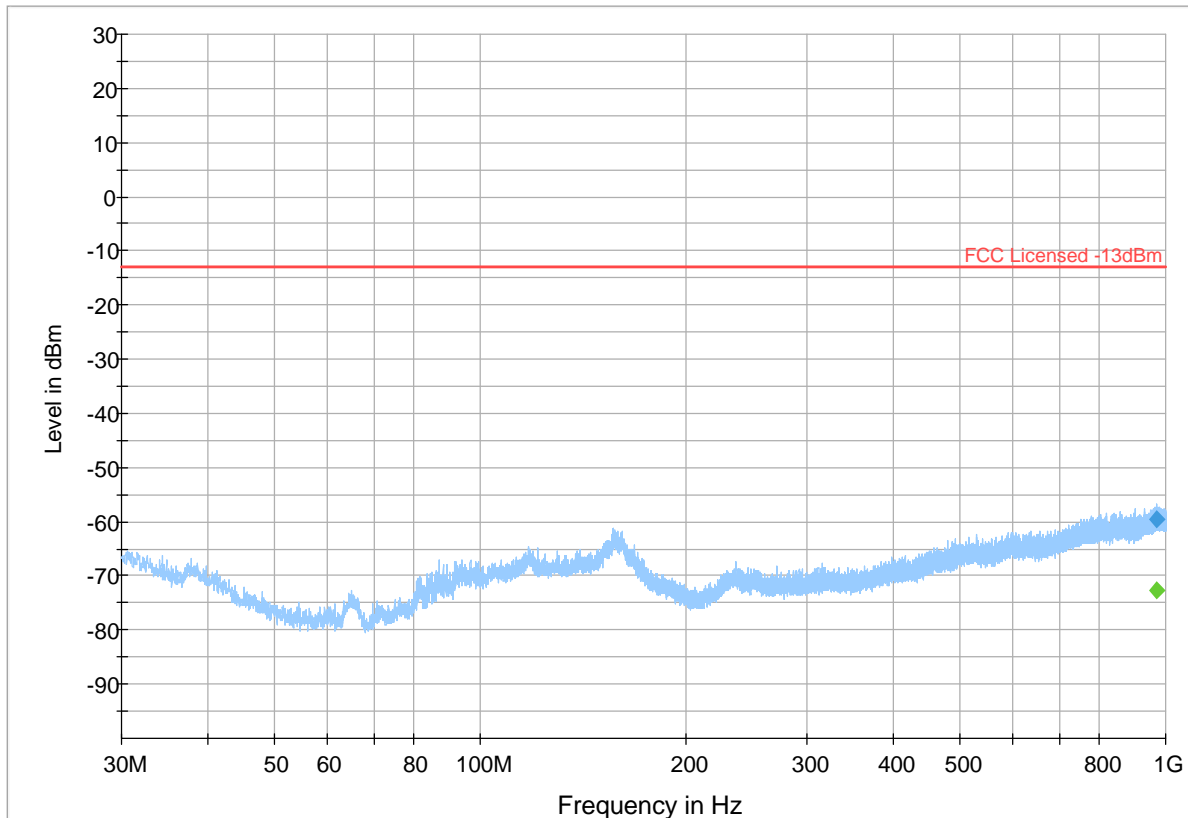
— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final\_Result PK+ ◆ Final\_Result RMSE

## Plot # 6 Radiated Emissions: 30 MHz – 1GHz

Channel: Mid

## Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
970.00	---	-72.66	---	---	500.0	120.0	258.0	V	17.0	-62.4
970.00	-59.68	---	-13.00	46.68	500.0	120.0	258.0	V	17.0	-62.4



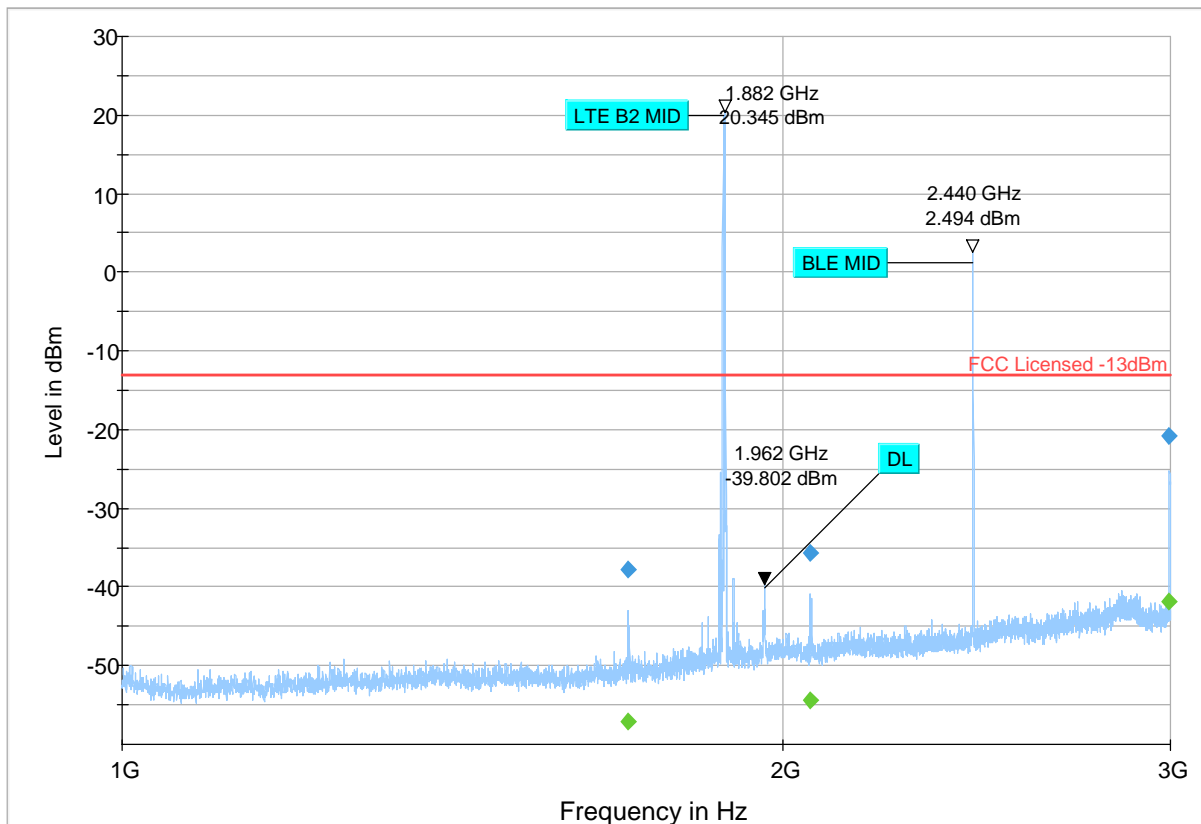
Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMS

## Plot # 7 Radiated Emissions: 1 GHz - 3 GHz

Channel: Mid

### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1698.75	---	-57.07	---	---	500.0	1000.0	183.0	H	241.0	-65.3
1698.75	-37.77	---	-13.00	24.77	500.0	1000.0	183.0	H	241.0	-65.3
2057.00	---	-54.41	---	---	500.0	1000.0	204.0	H	251.0	-63.6
2057.00	-35.62	---	-13.00	22.62	500.0	1000.0	204.0	H	251.0	-63.6
2997.50	---	-41.91	---	---	500.0	1000.0	134.0	V	93.0	-59.4
2997.50	-20.72	---	-13.00	7.72	500.0	1000.0	134.0	V	93.0	-59.4



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

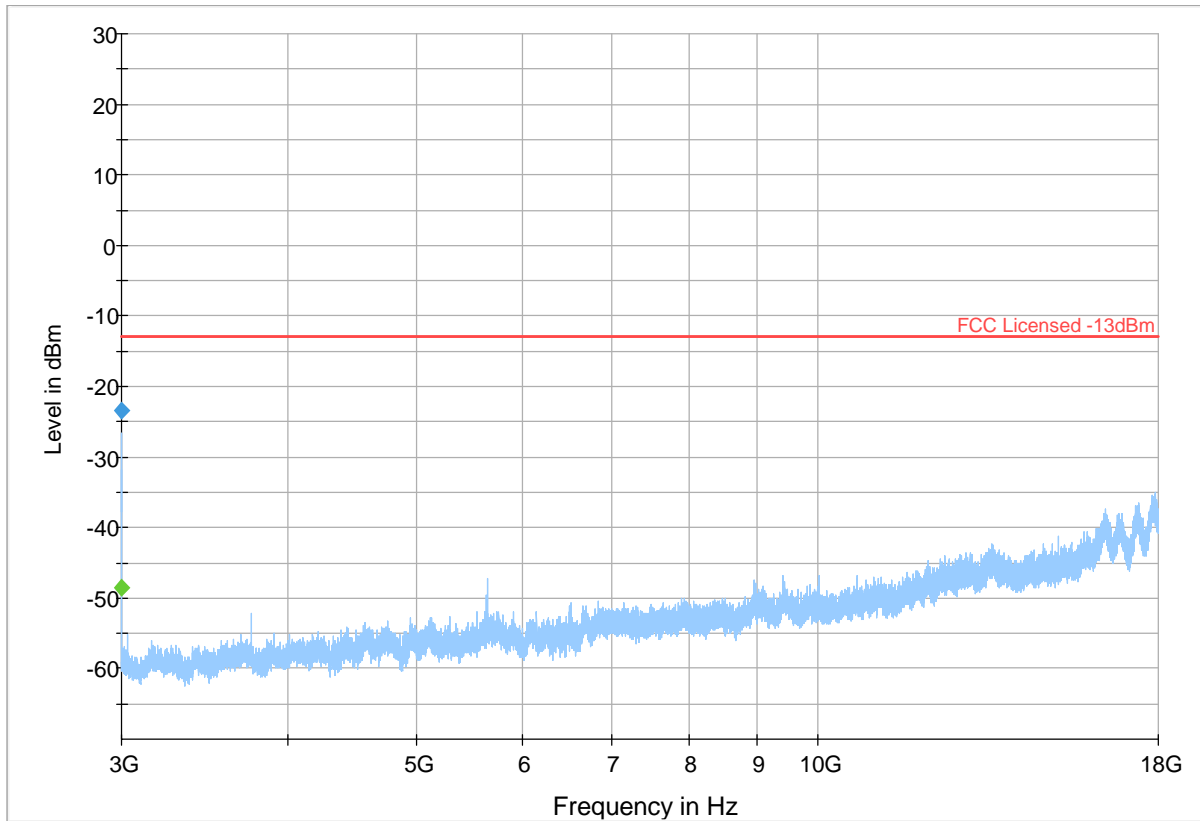


## Plot # 8 Radiated Emissions: 3 GHz – 18 GHz

Channel: Mid

## Final Result

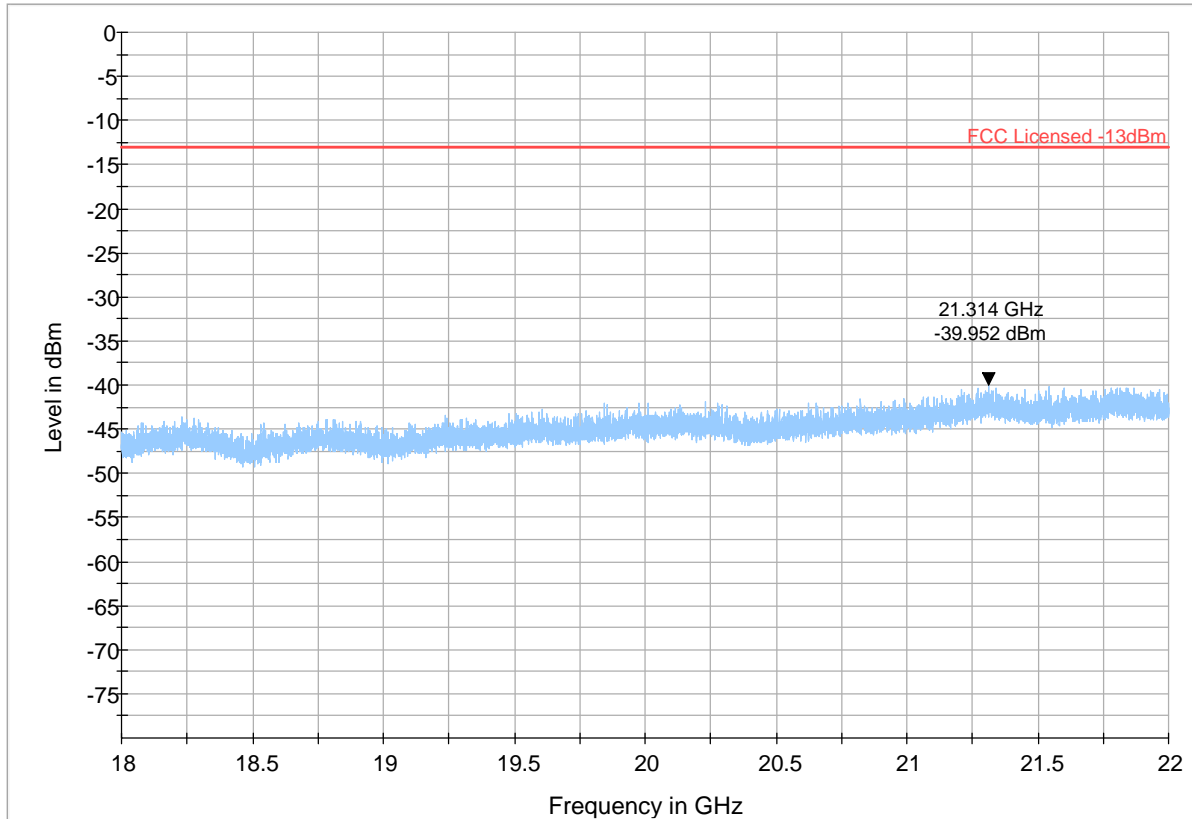
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3001.25	---	-48.65	---	---	500.0	1000.0	165.0	V	93.0	-102.9
3001.25	-23.33	---	-13.00	10.33	500.0	1000.0	165.0	V	93.0	-102.9



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

**Plot # 9 Radiated Emissions: 18 GHz – 22 GHz**

**Channel: Mid**



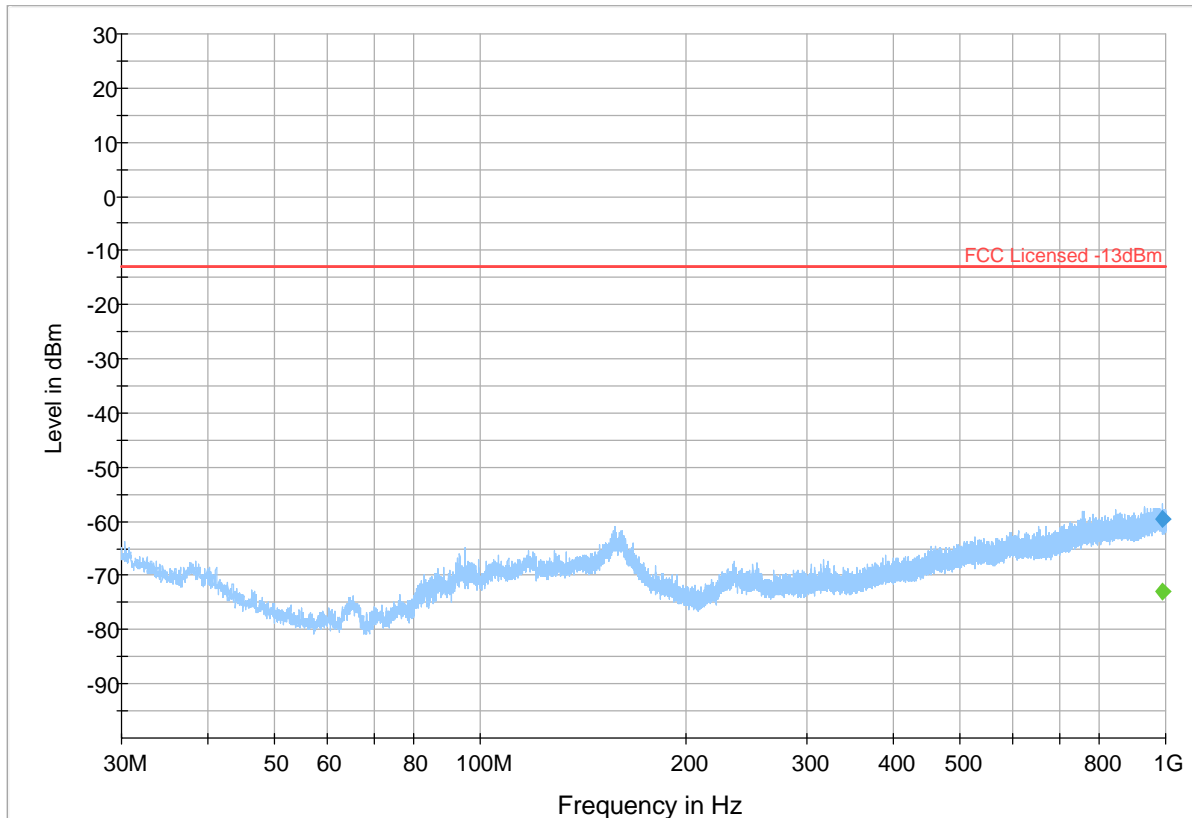
— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final\_Result PK+ ◆ Final\_Result RMS

## Plot # 10 Radiated Emissions: 30 MHz – 1GHz

Channel: High

## Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
989.91	---	-72.81	---	---	500.0	120.0	200.0	H	77.0	-62.8
989.91	-59.68	---	-13.00	46.68	500.0	120.0	200.0	H	77.0	-62.8



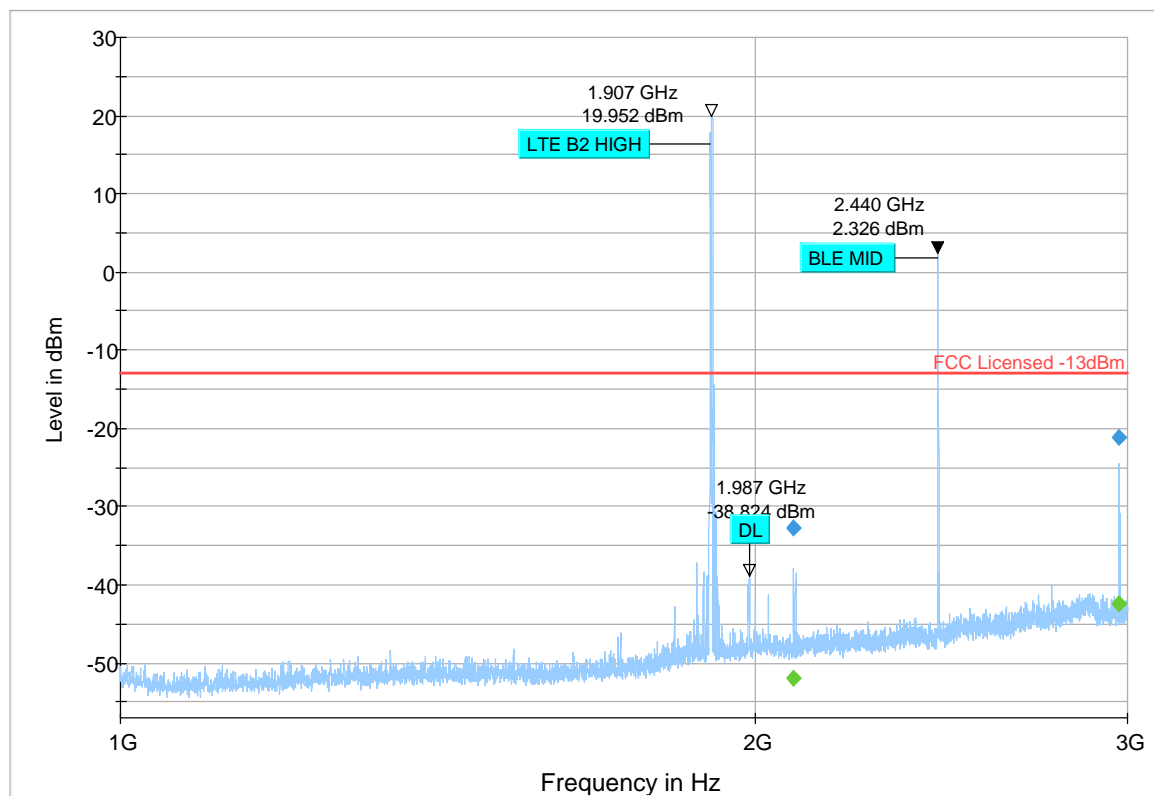
Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMS

## Plot # 11 Radiated Emissions: 1 GHz - 3 GHz

Channel: High

### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2084.25	---	-51.93	---	---	500.0	1000.0	162.0	H	247.0	-63.6
2084.25	-32.67	---	-13.00	19.67	500.0	1000.0	162.0	H	247.0	-63.6
2972.50	---	-42.44	---	---	500.0	1000.0	121.0	V	80.0	-60.2
2972.50	-21.21	---	-13.00	8.21	500.0	1000.0	121.0	V	80.0	-60.2



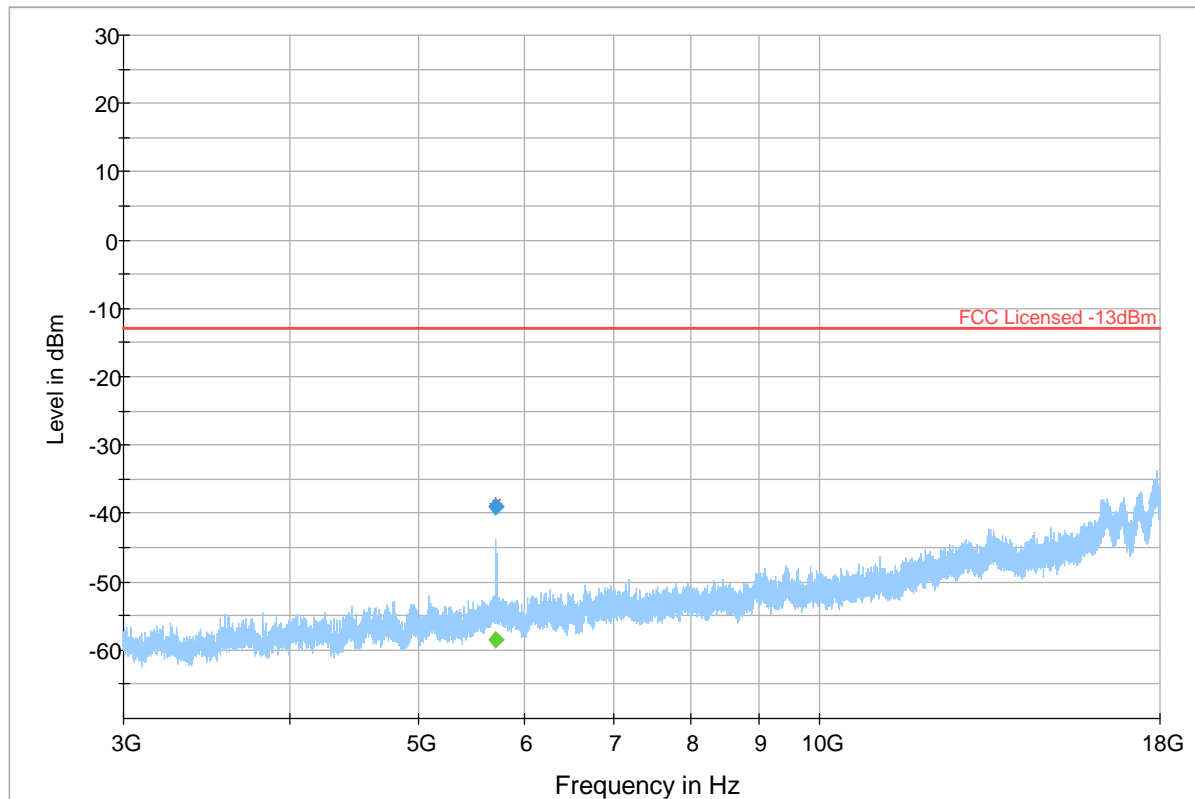
— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final\_Result PK+ ◆ Final\_Result RMS

## Plot # 12 Radiated Emissions: 3 GHz – 18 GHz

Channel: High

## Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5708.50	---	-58.46	---	---	500.0	1000.0	150.0	V	75.0	-96.0
5708.50	-39.13	---	-13.00	26.13	500.0	1000.0	150.0	V	75.0	-96.0



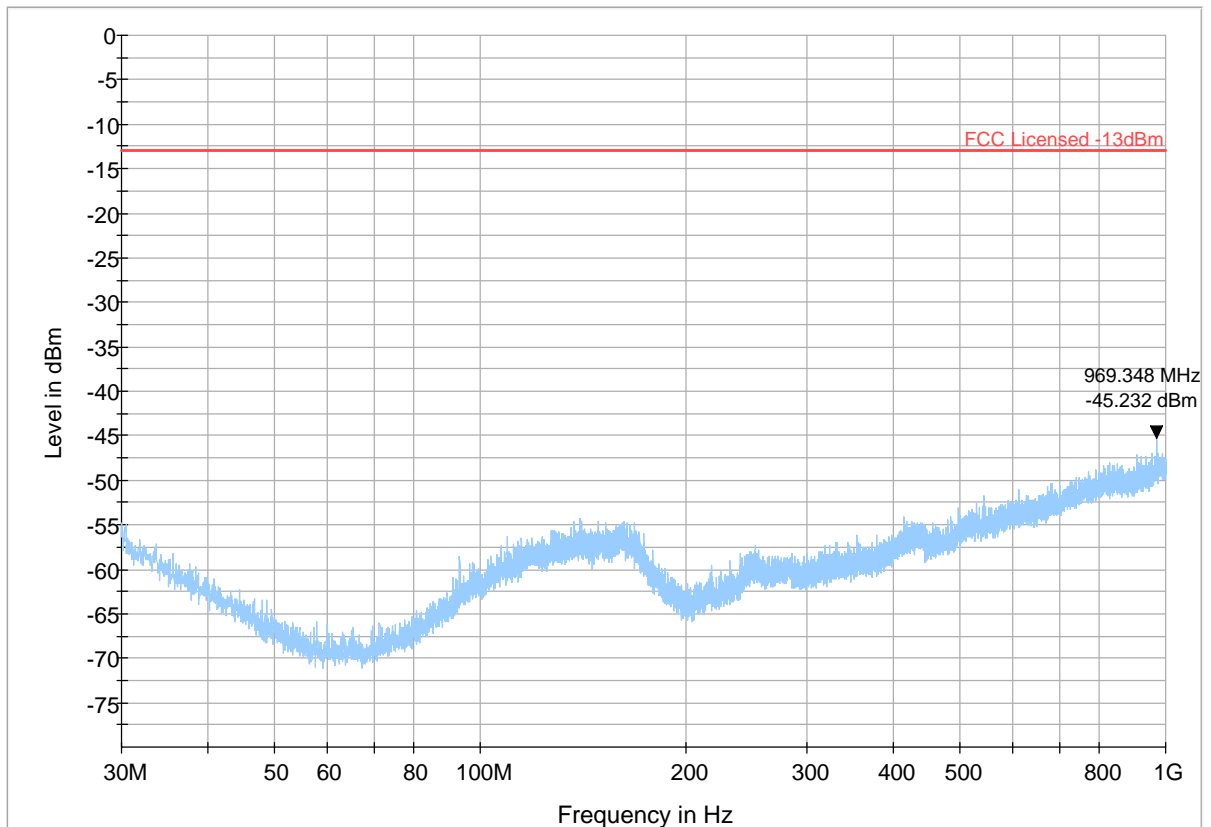
Preview Result 1-PK+ \* PK+  
Final\_Result PK+ ◆ Final\_Result RMS

FCC Licensed -13dBm

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**Plot # 13 Radiated Emissions: 30 MHz – 1GHz**

Channel: Low



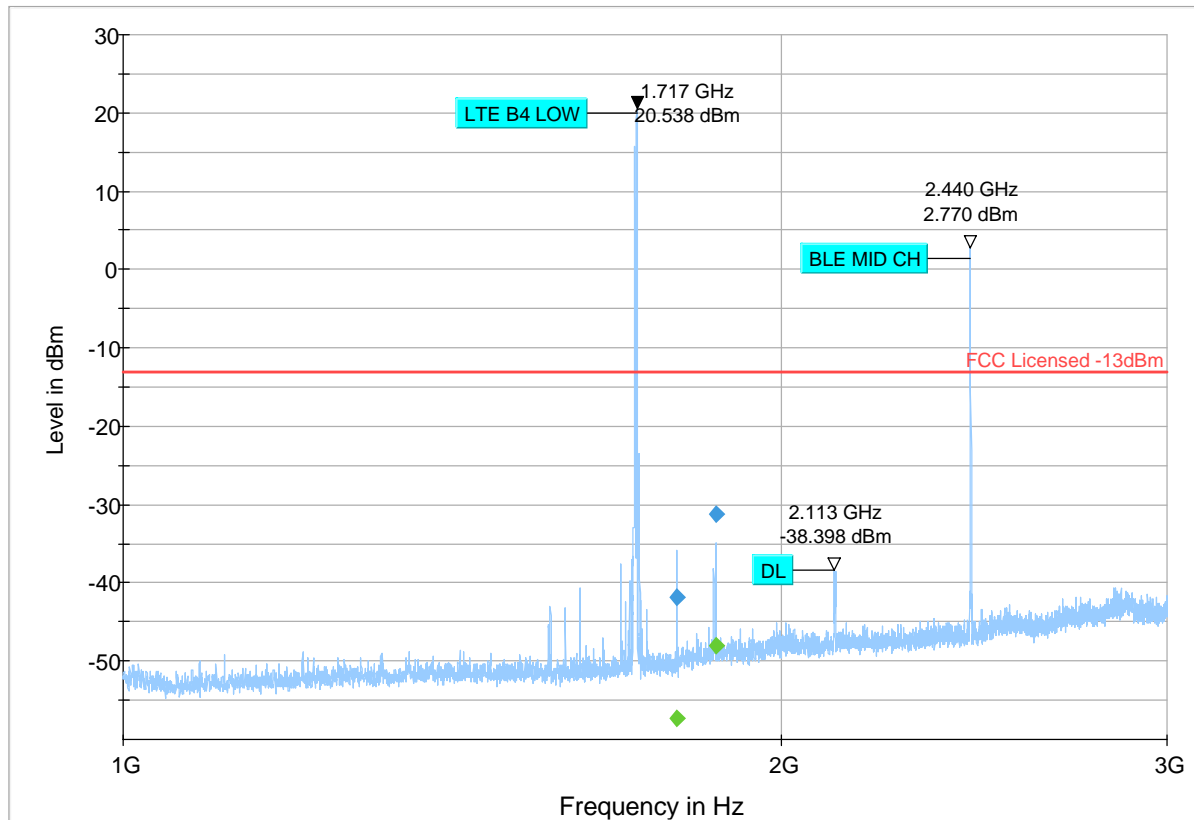
Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMSE

## Plot # 14 Radiated Emissions: 1 GHz - 3 GHz

Channel: Low

### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
1791.50	---	-57.23	---	---	500.0	1000.0	350.0	V	29.0	-64.9	3.7	-68.6	7.7
1791.50	-41.86	---	-13.00	28.86	500.0	1000.0	350.0	V	29.0	-64.9	3.7	-68.6	23.1
1866.25	---	-48.10	---	---	500.0	1000.0	107.0	V	276.0	-64.1	4.1	-68.3	16.1
1866.25	-31.29	---	-13.00	18.29	500.0	1000.0	107.0	V	276.0	-64.1	4.1	-68.3	32.9



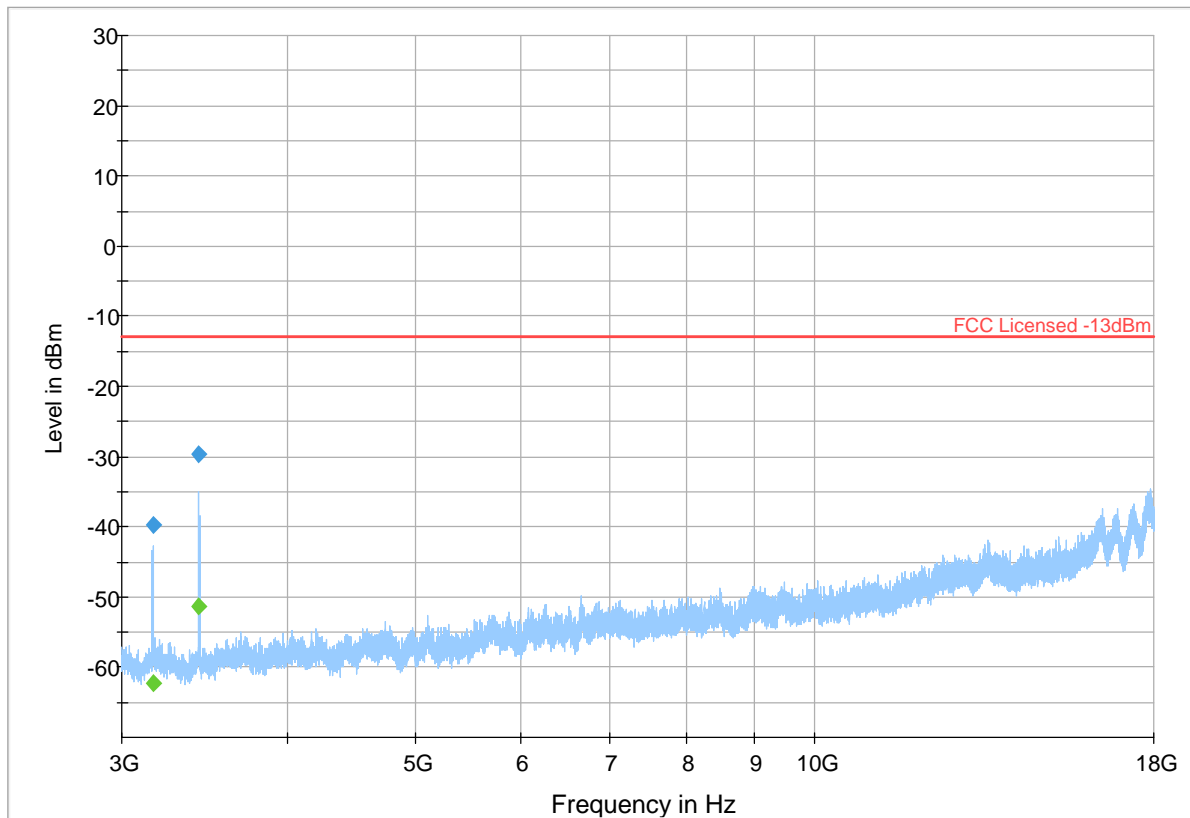
— Preview Result 1-PK+ 
 — FCC Licensed -13dBm 
 ◆ Final\_Result PK+ 
 ◆ Final\_Result RMS

### Plot # 15 Radiated Emissions: 3 GHz – 18 GHz

Channel: Low

#### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
3166.50	---	-62.26	-13.00	49.26	500.0	1000.0	124.0	H	116.0	-102.8	6.1	-108.9	40.5
3166.50	-39.66	---	-13.00	26.66	500.0	1000.0	124.0	H	116.0	-102.8	6.1	-108.9	63.1
3425.75	---	-51.37	-13.00	38.37	500.0	1000.0	159.0	V	81.0	-102.3	6.8	-109.1	51.0
3425.75	-29.68	---	-13.00	16.68	500.0	1000.0	159.0	V	81.0	-102.3	6.8	-109.1	72.7



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

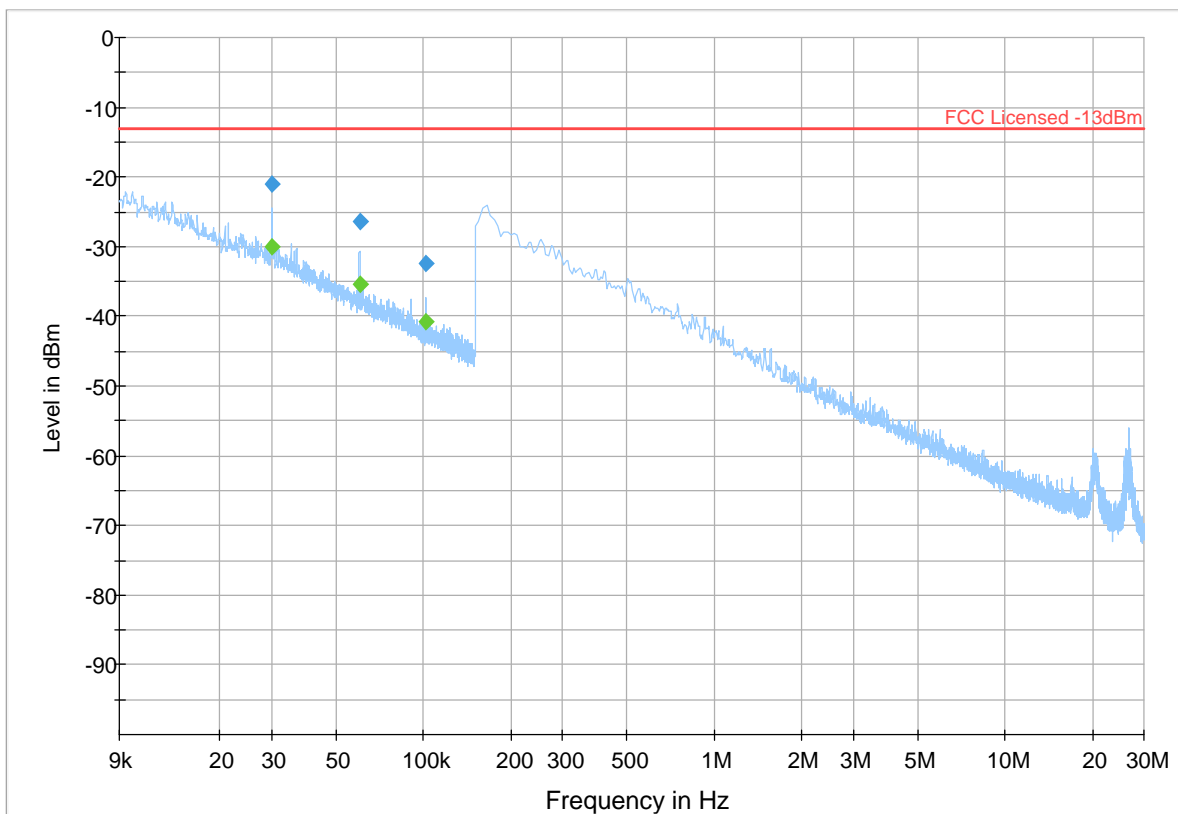


## Plot # 16 Radiated Emissions: 9 kHz - 30 MHz

Channel: Mid

## Final Result

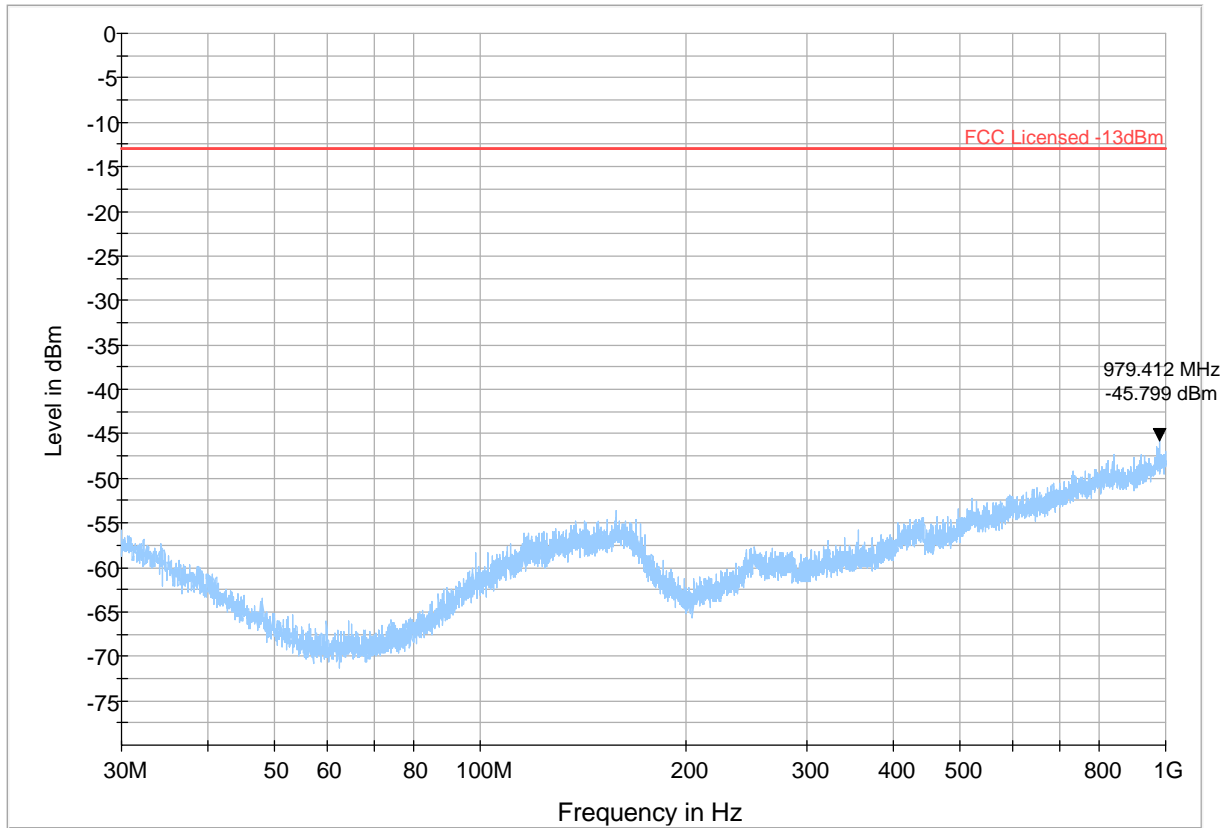
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
0.03	-21.04	---	-13.00	8.04	500.0	1.0	173.0	V	114.0	-73.2	0.0	-73.3	52.2
0.03	---	-30.11	-13.00	17.11	500.0	1.0	173.0	V	114.0	-73.2	0.0	-73.3	43.1
0.06	-26.38	---	-13.00	13.38	500.0	1.0	151.0	V	255.0	-76.2	0.0	-76.2	49.8
0.06	---	-35.44	-13.00	22.44	500.0	1.0	151.0	V	255.0	-76.2	0.0	-76.2	40.7
0.10	---	-40.74	-13.00	27.74	500.0	1.0	200.0	H	338.0	-76.9	0.1	-76.9	36.1
0.10	-32.33	---	-13.00	19.33	500.0	1.0	200.0	H	338.0	-76.9	0.1	-76.9	44.5



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

### Plot # 17 Radiated Emissions: 30 MHz – 1GHz

Channel: Mid



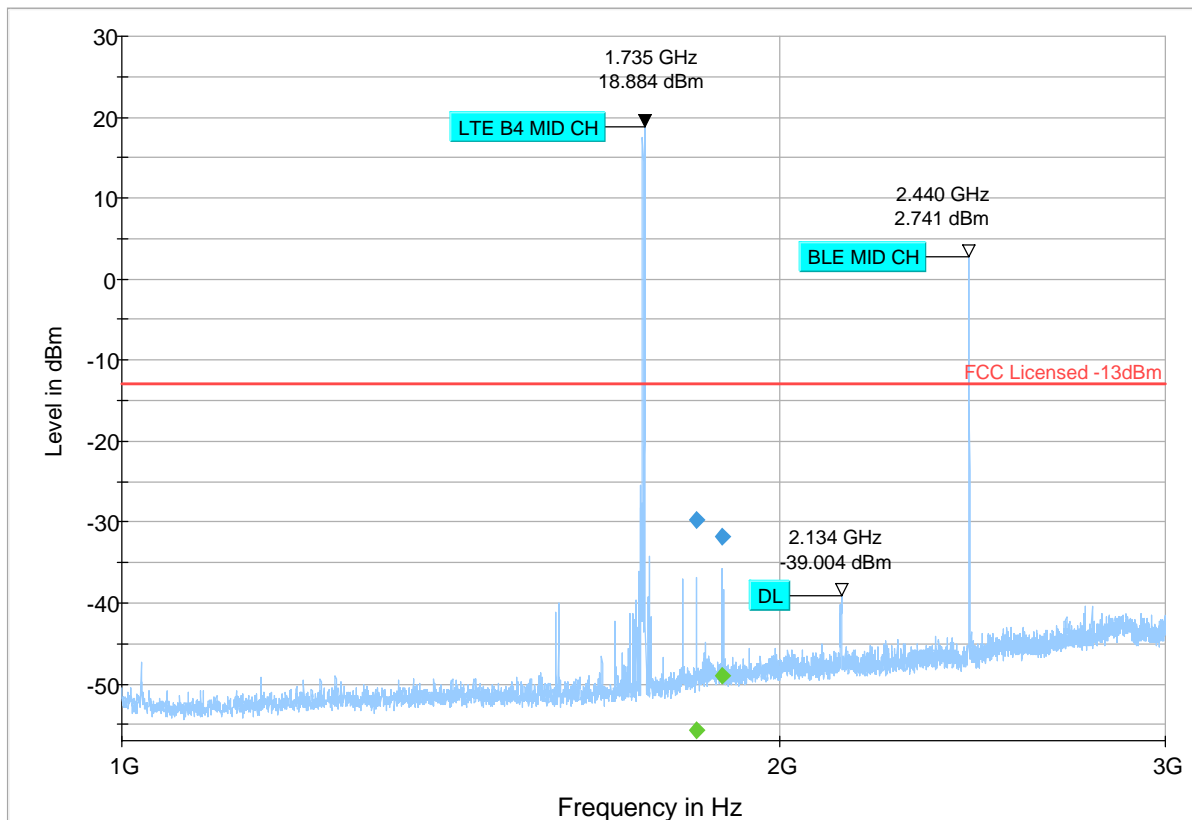
Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMSE

## Plot # 18 Radiated Emissions: 1 GHz - 3 GHz

Channel: Mid

## Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
1830.50	---	-55.73	-13.00	42.73	500.0	1000.0	149.0	V	268.0	-64.5	4.0	-68.5	8.7
1830.50	-29.82	---	-13.00	16.82	500.0	1000.0	149.0	V	268.0	-64.5	4.0	-68.5	34.7
1880.75	---	-48.93	-13.00	35.93	500.0	1000.0	100.0	V	268.0	-64.1	4.1	-68.2	15.2
1880.75	-31.84	---	-13.00	18.84	500.0	1000.0	100.0	V	268.0	-64.1	4.1	-68.2	32.3



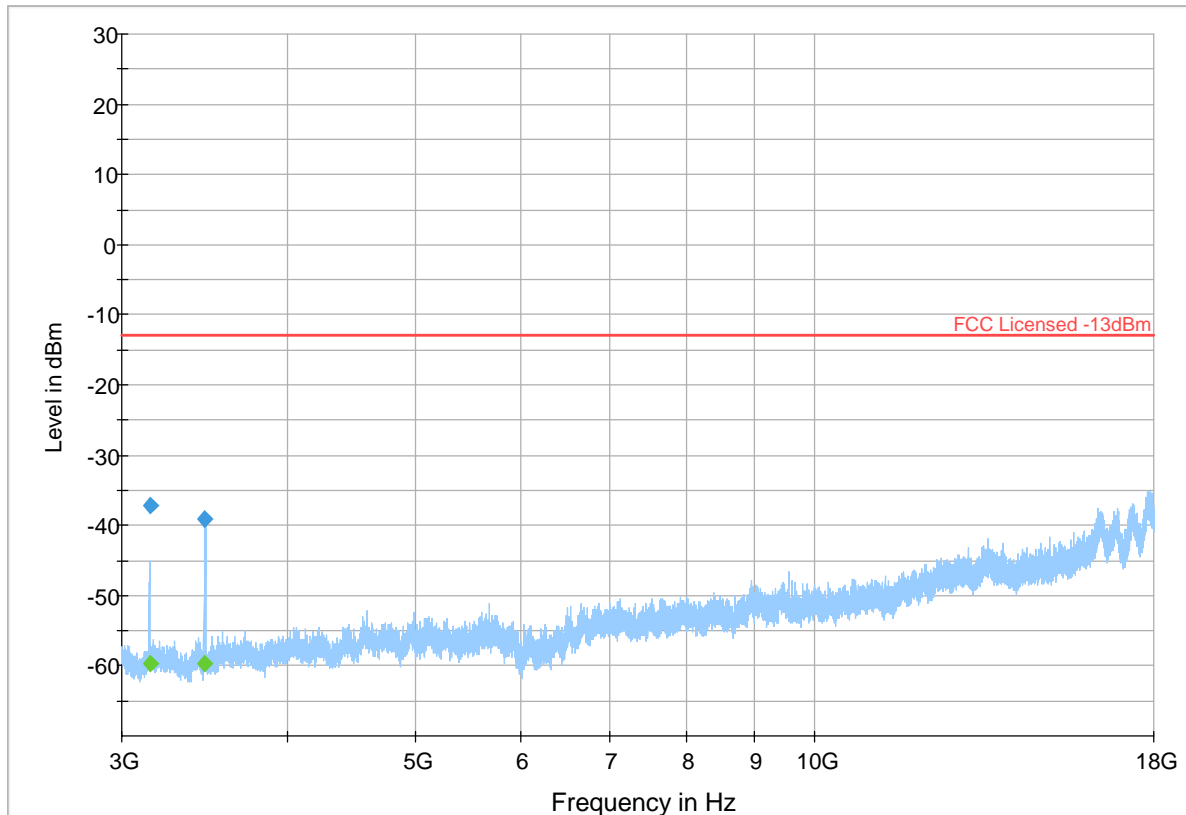
— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final\_Result PK+ ◆ Final\_Result RMS

### Plot # 19 Radiated Emissions: 3 GHz – 18 GHz

Channel: Mid

#### Final Result

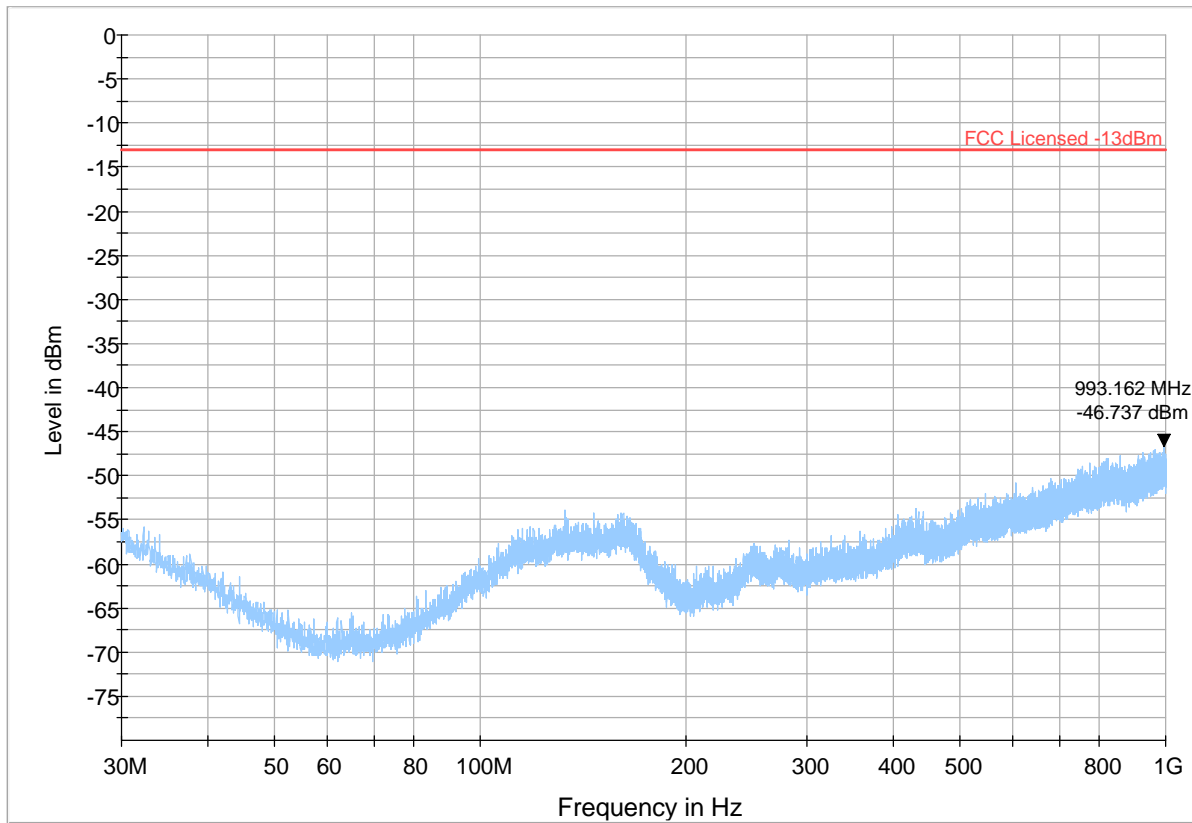
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
3149.25	---	-59.79	-13.00	46.79	500.0	1000.0	100.0	H	20.0	-103.0	6.1	-109.1	43.2
3149.25	-37.17	---	-13.00	24.17	500.0	1000.0	100.0	H	20.0	-103.0	6.1	-109.1	65.8
3460.25	---	-59.69	-13.00	46.69	500.0	1000.0	151.0	V	81.0	-102.2	6.6	-108.8	42.5
3460.25	-39.09	---	-13.00	26.09	500.0	1000.0	151.0	V	81.0	-102.2	6.6	-108.8	63.1



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

### Plot # 20 Radiated Emissions: 30 MHz – 1GHz

Channel: High



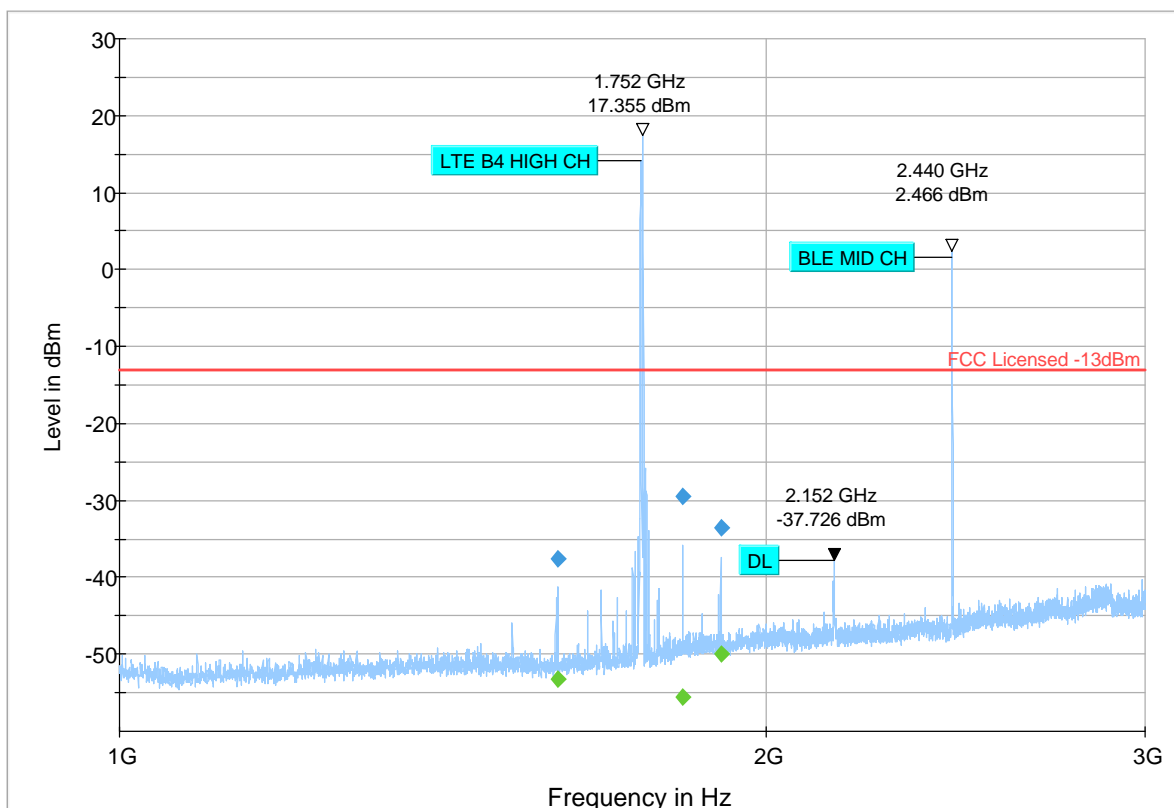
Preview Result 1-PK+ FCC Licensed -13dBm Final\_Result PK+ Final\_Result RMS

## Plot # 21 Radiated Emissions: 1 GHz - 3 GHz

Channel: High

### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
1599.75	---	-53.19	-13.00	40.19	500.0	1000.0	192.0	H	255.0	-65.8	3.6	-69.4	12.6
1599.75	-37.58	---	-13.00	24.58	500.0	1000.0	192.0	H	255.0	-65.8	3.6	-69.4	28.2
1828.25	---	-55.49	-13.00	42.49	500.0	1000.0	340.0	V	82.0	-64.5	4.0	-68.5	9.0
1828.25	-29.56	---	-13.00	16.56	500.0	1000.0	340.0	V	82.0	-64.5	4.0	-68.5	34.9
1904.50	---	-50.03	-13.00	37.03	500.0	1000.0	125.0	V	285.0	-64.0	4.0	-68.1	14.0
1904.50	-33.63	---	-13.00	20.63	500.0	1000.0	125.0	V	285.0	-64.0	4.0	-68.1	30.4



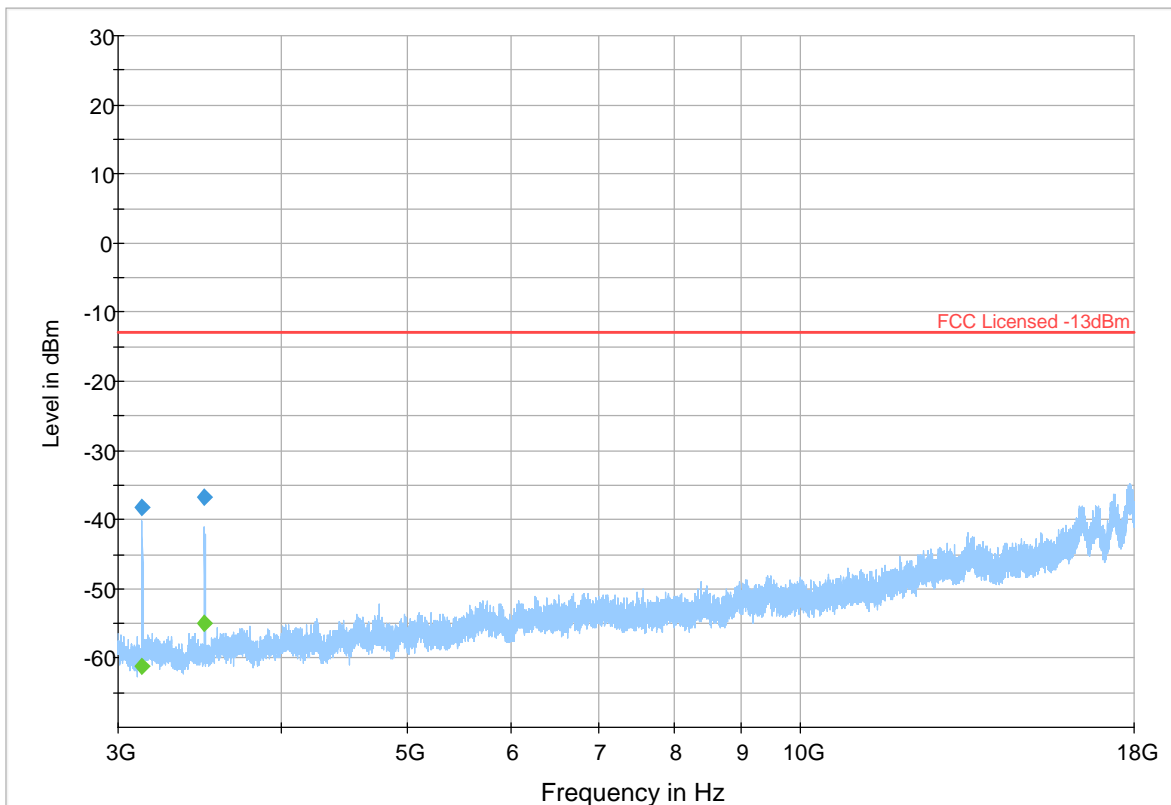
Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMS

## Plot # 22 Radiated Emissions: 3 GHz – 18 GHz

Channel: High

### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)	Raw Rec (dBμV)
3131.75	---	-61.12	-13.00	48.12	500.0	1000.0	148.0	H	227.0	-103.2	6.1	-109.3	42.1
3131.75	-38.22	---	-13.00	25.22	500.0	1000.0	148.0	H	227.0	-103.2	6.1	-109.3	65.0
3495.75	---	-55.02	-13.00	42.02	500.0	1000.0	143.0	V	84.0	-102.2	6.6	-108.9	47.2
3495.75	-36.63	---	-13.00	23.63	500.0	1000.0	143.0	V	84.0	-102.2	6.6	-108.9	65.6

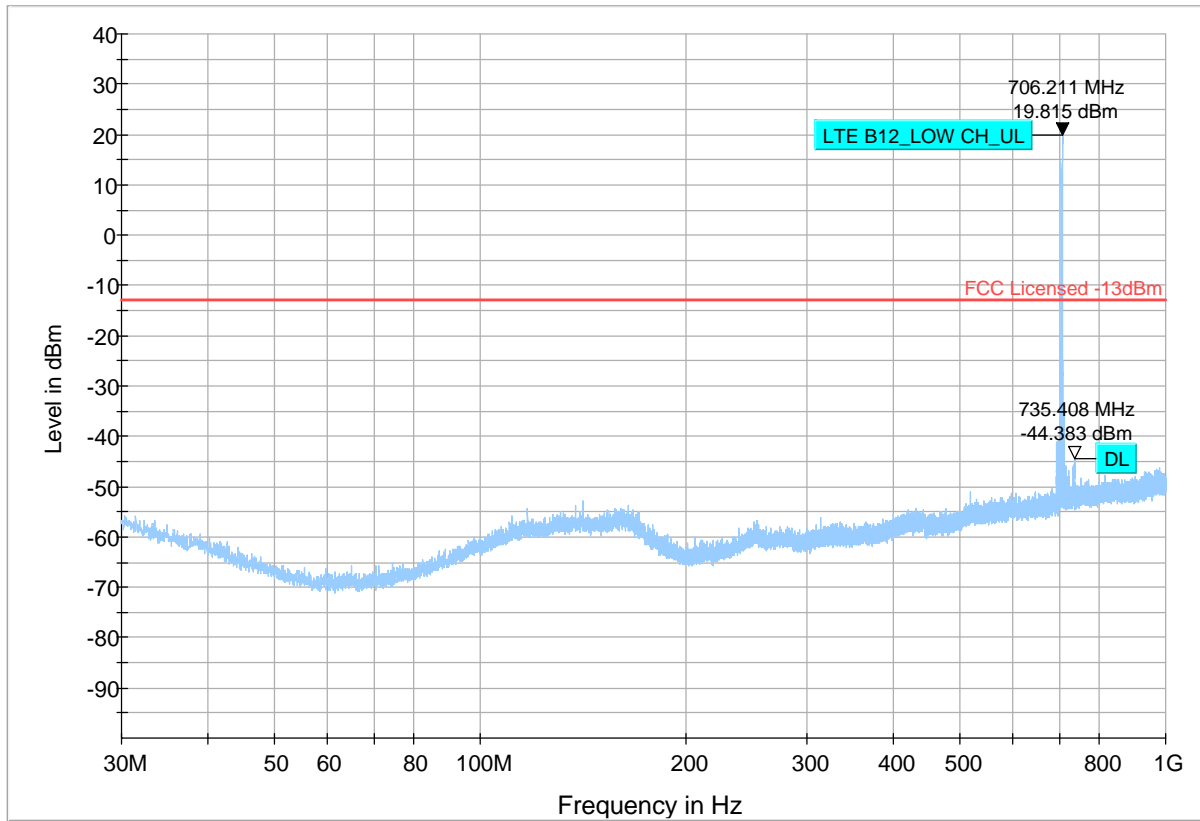


Preview Result 1-PK+ FCC Licensed -13dBm Final\_Result PK+ Final\_Result RMS

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**Plot # 23 Radiated Emissions: 30 MHz – 1GHz**

Channel: Low

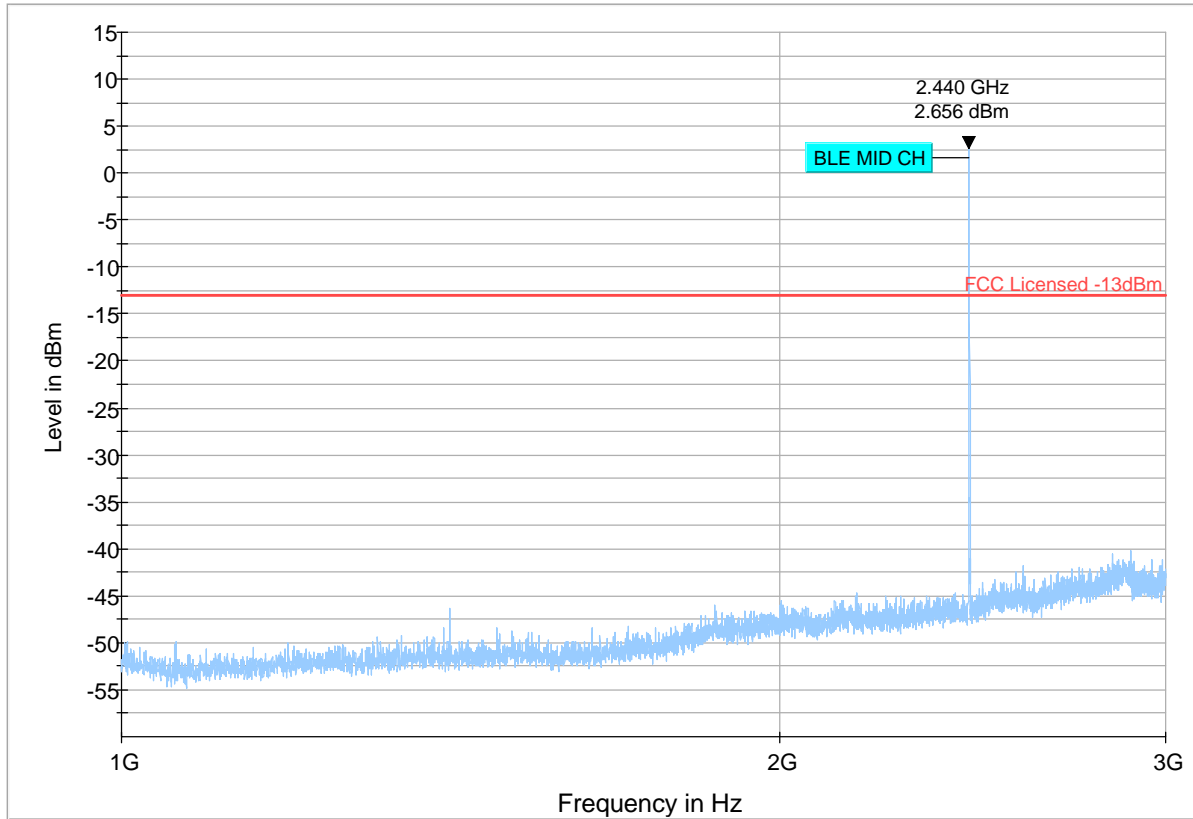


Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMSE



**Plot # 24 Radiated Emissions: 1 GHz - 3 GHz**

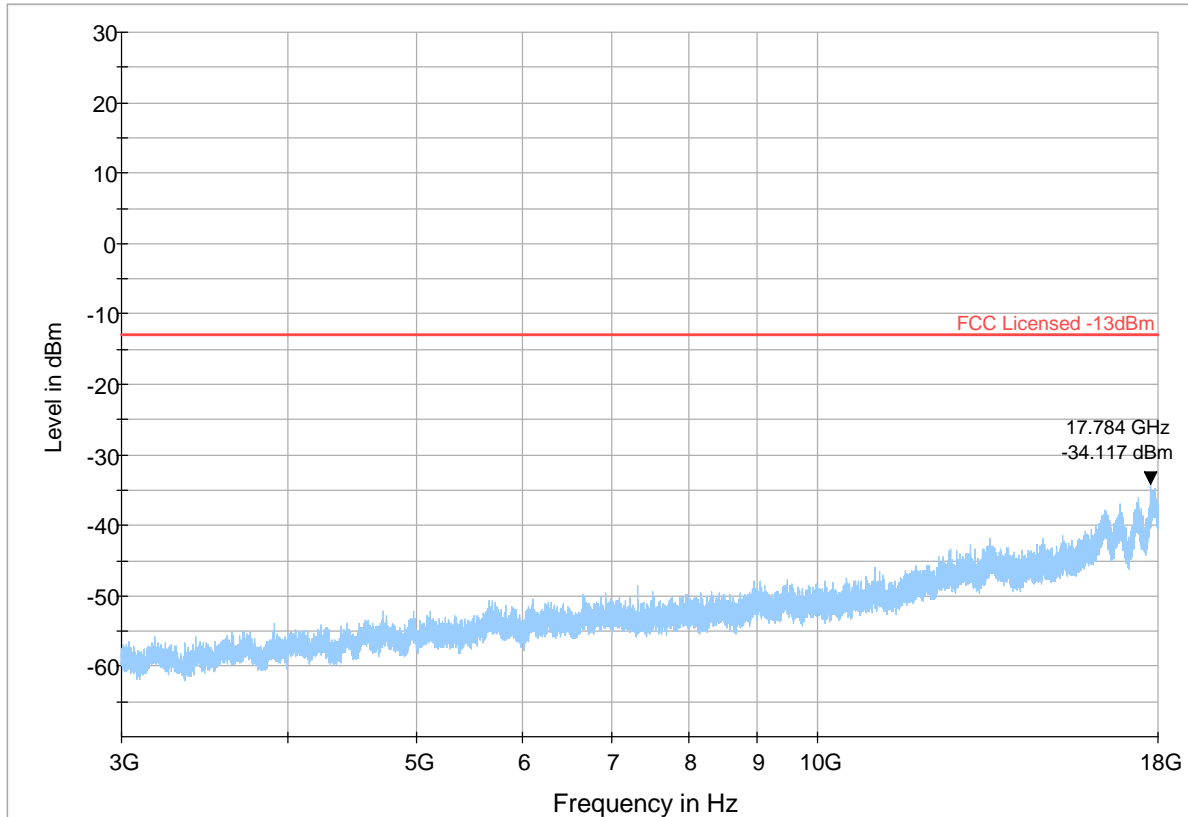
**Channel: Low**



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

Plot # 25 Radiated Emissions: 3 GHz – 18 GHz

Channel: Low



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

## Plot # 26 Radiated Emissions: 9 kHz - 30 MHz

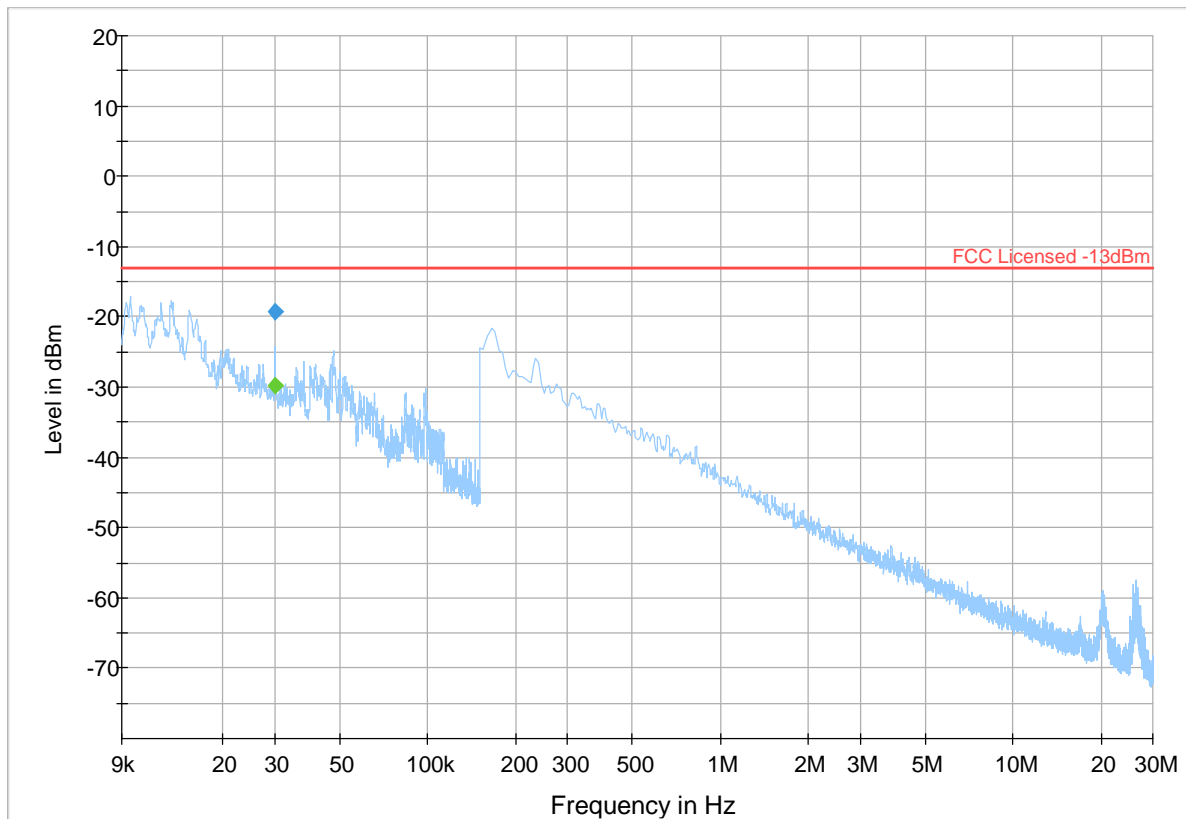
Channel: Mid

### Final Result

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Trd Corr. (dB)
0.03	---	-29.73	-13.00	16.73	500.0	1.0	169.0	V	90.0	-73.3	0.0	-73.3
0.03	-19.26	---	-13.00	6.26	500.0	1.0	169.0	V	90.0	-73.3	0.0	-73.3

(continuation of the "Final\_Result" table from column 19 ...)

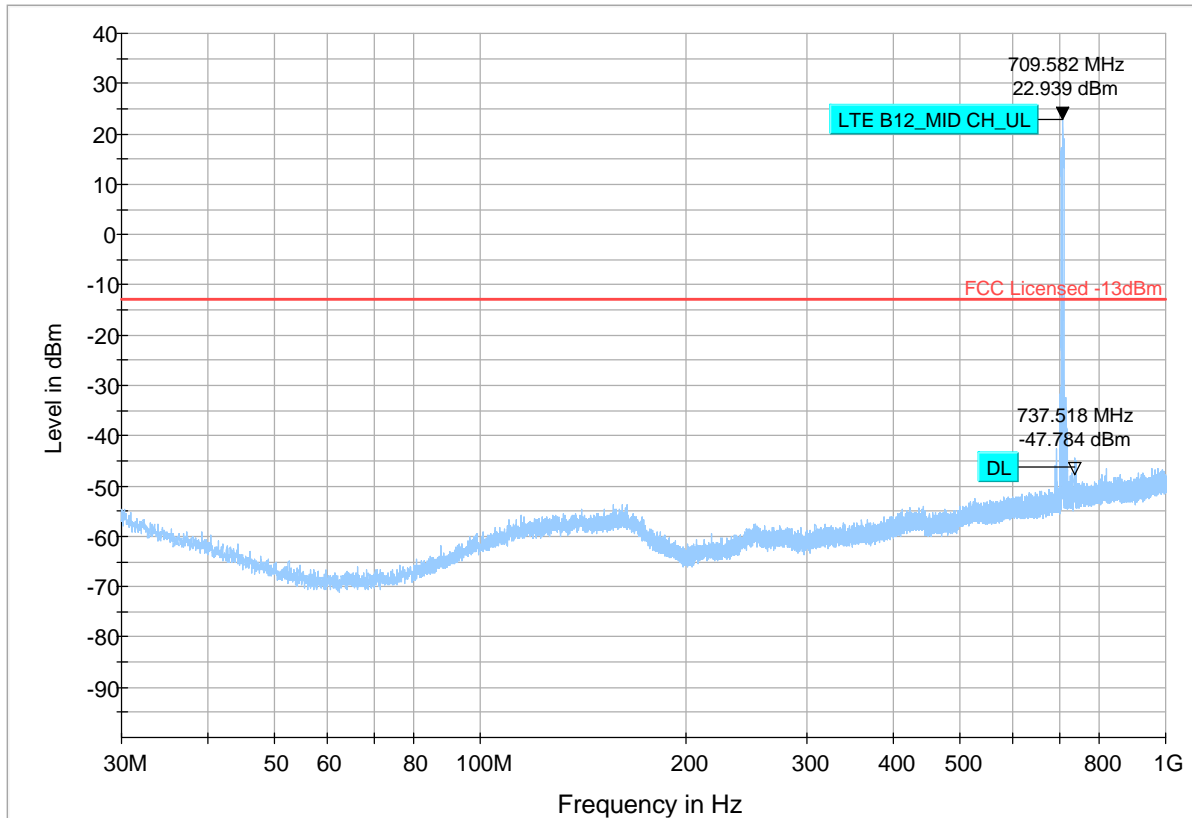
Frequency (MHz)	Raw Rec (dBμV)
0.03	43.5
0.03	54.0



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

### Plot # 27 Radiated Emissions: 30 MHz – 1GHz

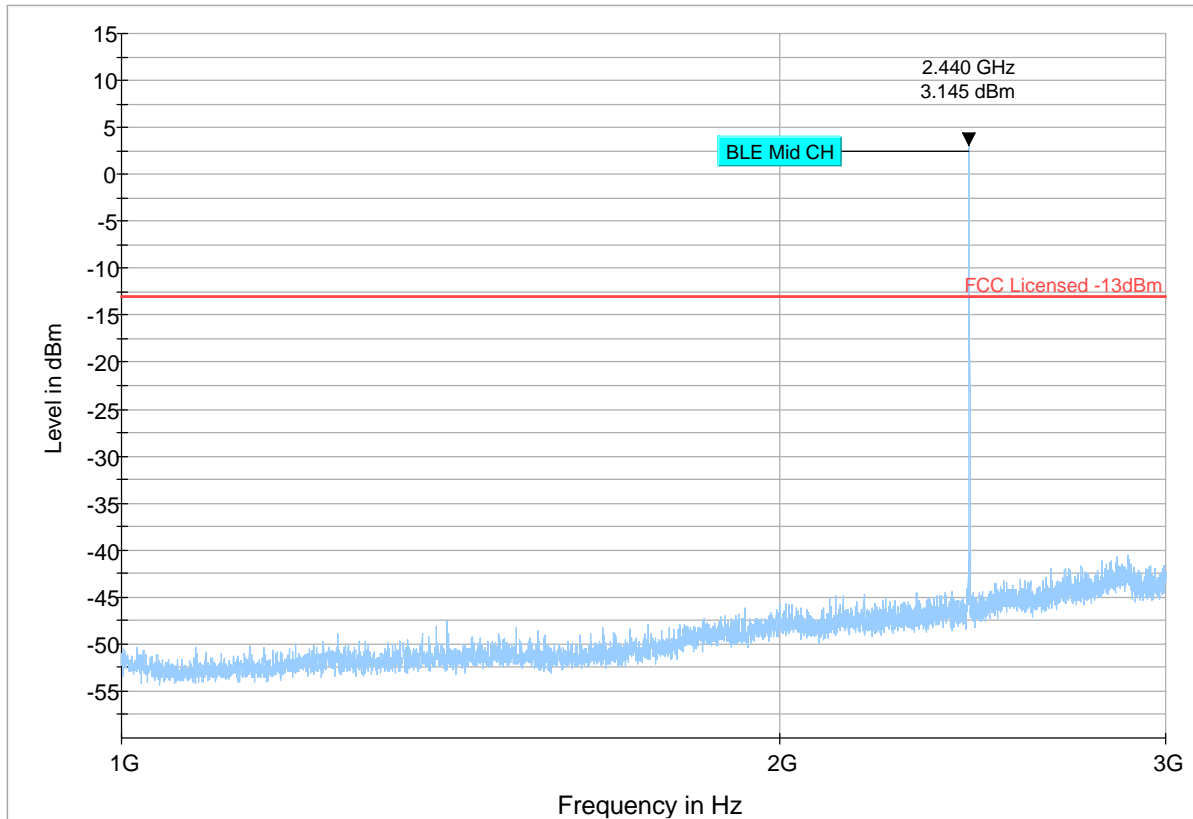
Channel: Mid



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

Plot # 28 Radiated Emissions: 1 GHz - 3 GHz

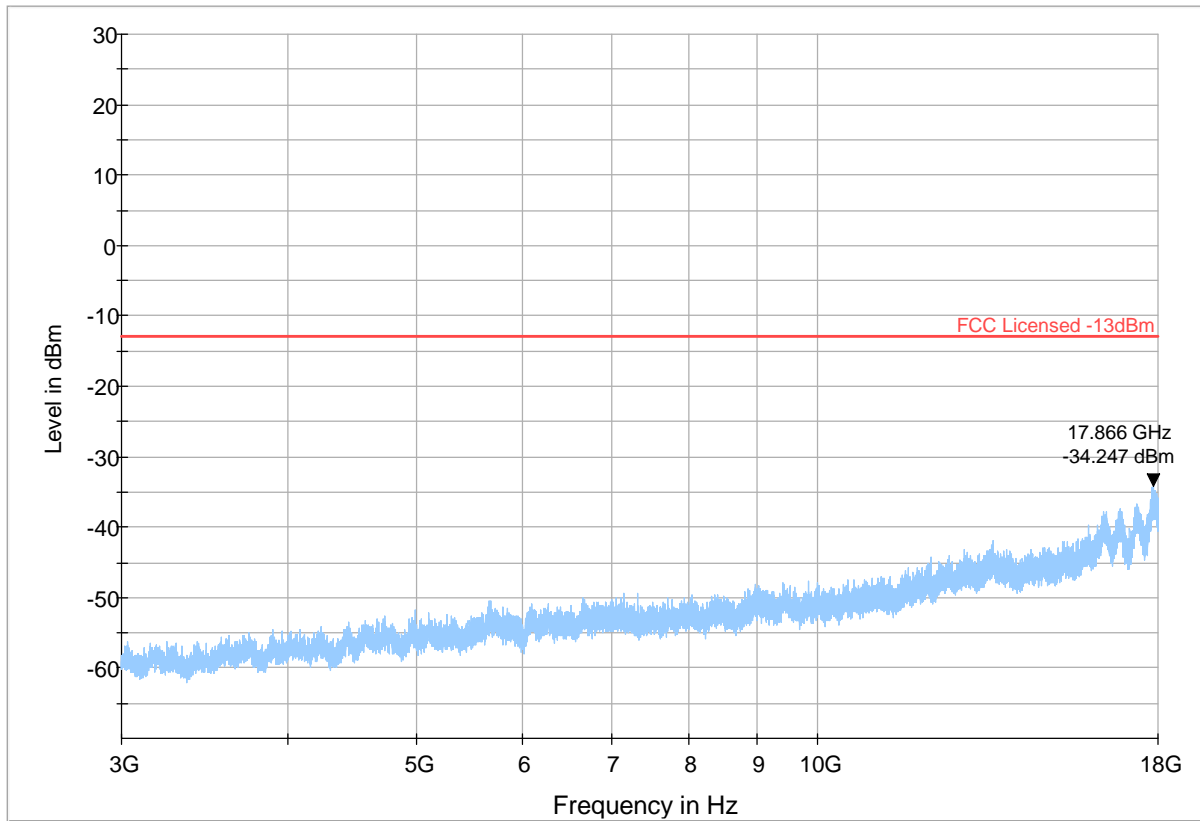
Channel: Mid



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

Plot # 29 Radiated Emissions: 3 GHz – 18 GHz

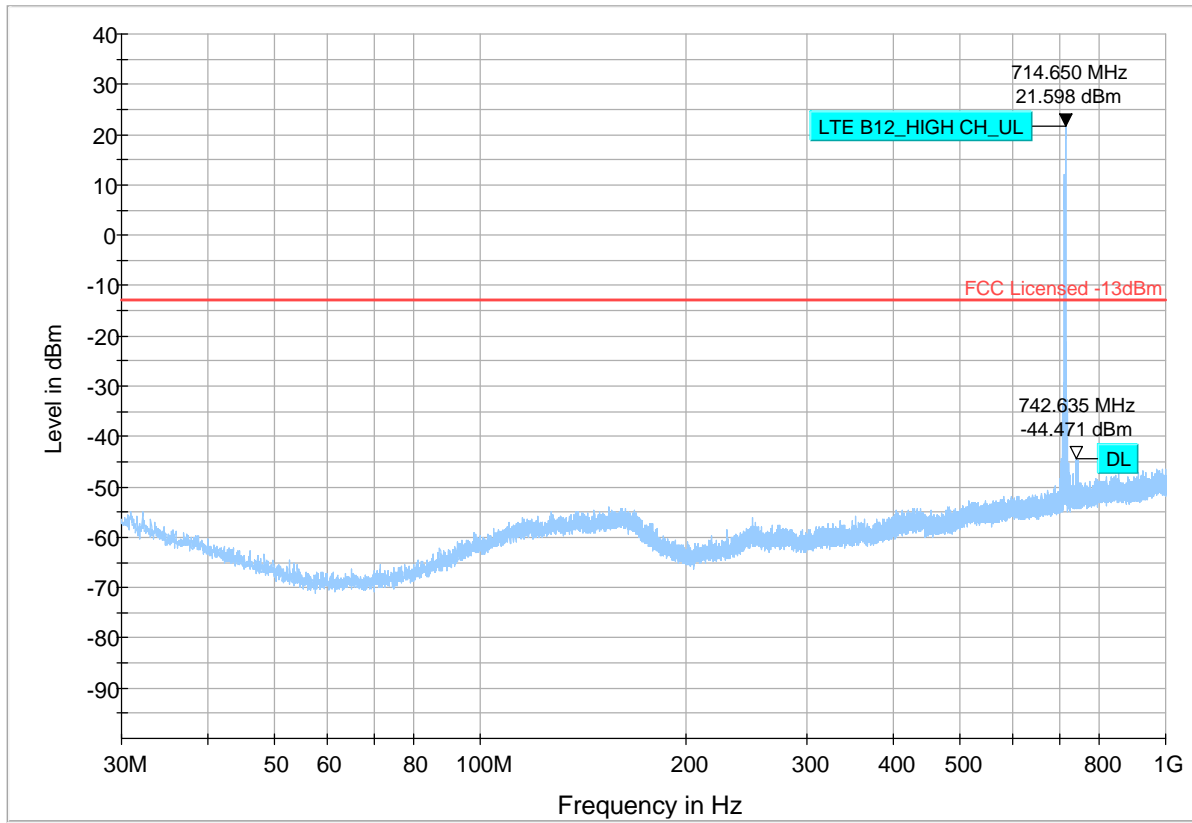
Channel: Mid



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

### Plot # 30 Radiated Emissions: 30 MHz – 1GHz

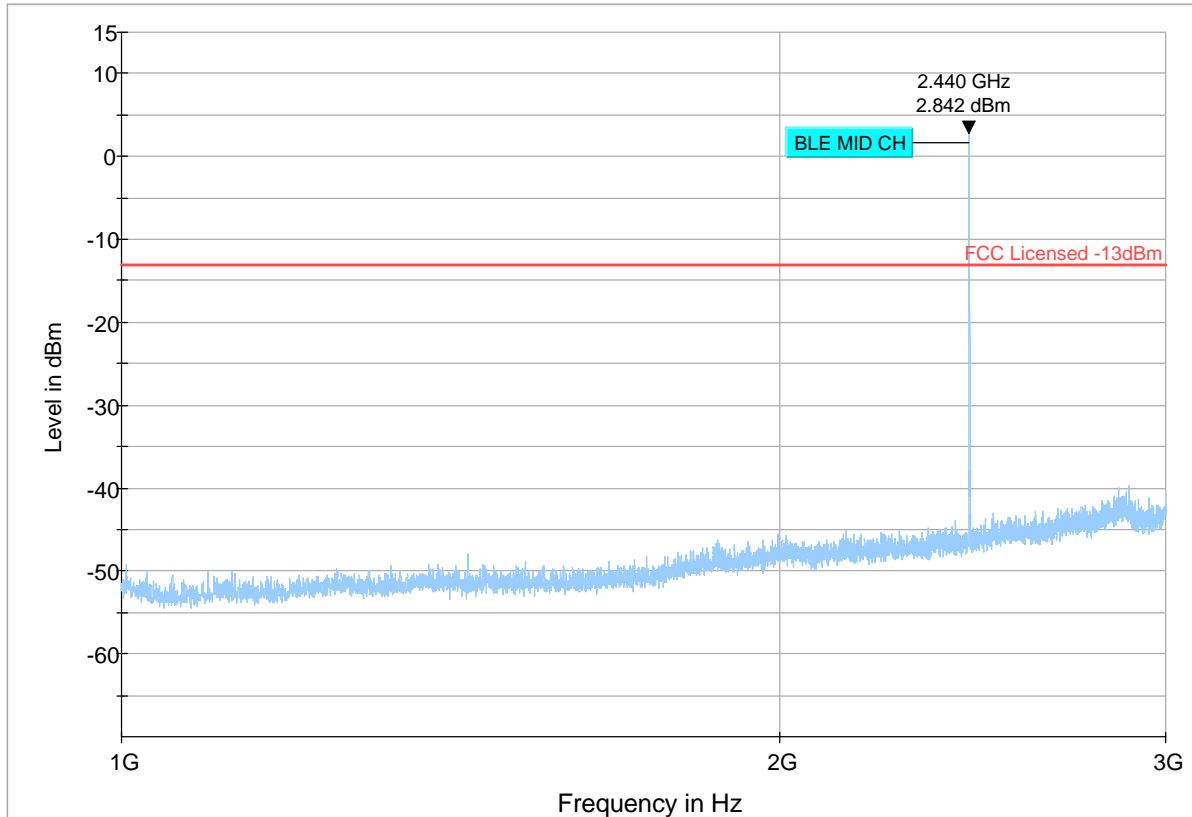
Channel: High



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

Plot # 31 Radiated Emissions: 1 GHz - 3 GHz

Channel: High

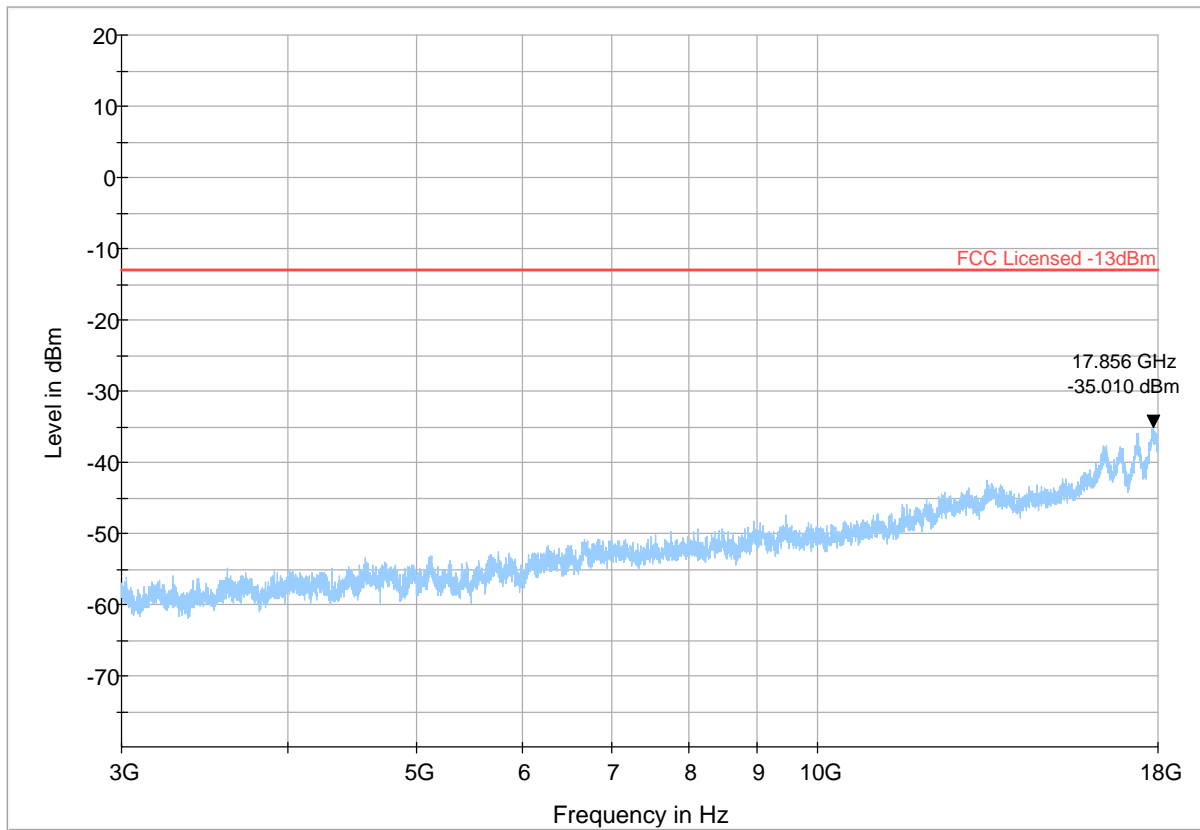


Preview Result 1-PK+    FCC Licensed -13dBm    Final\_Result PK+    Final\_Result RMSE



Plot # 32 Radiated Emissions: 3 GHz – 18 GHz

Channel: High



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

## 8 Test setup photos

Setup photos are included in supporting file name: "EMC\_TELUL\_115\_23001\_FCC\_ISED\_Setup\_Photos\_Rev1.pdf"

## 9 Test Equipment And Ancillaries Used For Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
ACTIVE LOOP ANTENNA	ETS LINDGREN	6507	00161344	3 YEARS	10/30/2020
BICONILOG ANTENNA	AH-Systems	SAS-521-2	569	3 YEARS	11/16/2021
HORN ANTENNA	ETS LINDGREN	3115	00035111	3 YEARS	9/30/2021
HORN ANTENNA	ETS LINDGREN	3117-PA	166067	3 YEARS	6/8/2022
HORN ANTENNA	ETS LINDGREN	3116C-PA	00169535	3 YEARS	9/23/2020
EMI RECEIVER	R&S	ESW44	101715	3 YEARS	4/12/2021
DIGITAL THERMOMETER	CONTROL COMPANY	36934-164	191871986	3 YEARS	10/20/2021

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.

## 10 Revision History

Date	Report Name	Changes to report	Report prepared by
5/16/2024	EMC_TELUL_115_23001_FCC_24_27_ISED	Initial Version	Ghanma, Issa
7/31/2025	EMC_TELUL_115_23001_FCC_24_27_ISED_Rev1	Cover page: Update RSS-133 Issue 6 to Issue 7. The measurement results complies with the unwanted emission limits in issue 7 section 5.6 Section 8: Update the setup photos file name.	Ghanma, Issa

<<< The End >>>

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