



# FCC/ISED Test Report

**FOR:**

CalAmp Wireless Networks Corp.

**Model Name:**

VLU11B / VLU11

**Product Description:**

Lojack vehicle recovery system

**FCC ID:** APV-VLU11B / APV-VLU11

**IC ID:** 5483C-VLU11B / 5483C-VLU11

**Per:**

47 CFR: Part 22, Part 24, Part 27  
RSS-130; RSS-132 Issue 3; RSS-133 Issue 6; RSS-139 Issue 3

**REPORT #:** EMC\_CALAM\_085\_19001\_FCC\_22\_24\_27\_ISED

**DATE:** 2019-05-10



A2LA Accredited

IC recognized #  
3462B-2

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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 unlicensed radios according to criteria specified in the Code of Federal Regulations Title 47 parts 22, 24, 27 and Industry Canada Radio Standard Specifications RSS: 130, 132 Issue 3, 133 Issue 6 and 139 Issue3.

<b>Company</b>	<b>Description</b>	<b>Model #</b>
CalAmp Wireless Networks Corp.	Lojack vehicle recovery system	VLU11VMAB/ VLU11VMA

No deficiencies were ascertained.

**Responsible for Testing Laboratory:**

2019-05-10	Compliance	Cindy Li (Lab Manager)	
<b>Date</b>	<b>Section</b>	<b>Name</b>	<b>Signature</b>

**Responsible for the Report:**

2019-05-10	Compliance	Chin Ming Lui (Associate EMC Engineer)	
<b>Date</b>	<b>Section</b>	<b>Name</b>	<b>Signature</b>

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
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<b>Lab Manager:</b>	Cindy Li
<b>Responsible Project Leader:</b>	Cathy Palacios

### 2.2 Identification of the Client

<b>Applicant's Name:</b>	CalAmp Wireless Networks Corp.
<b>Street Address:</b>	2177 Salk Ave, Suite 200
<b>City/Zip Code</b>	Carlsbad, CA 92008
<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>Firmware Version Identification Number (FVIN):</b>	11.00.01
<b>Hardware Version Identification Number (HVIN):</b>	REV 1
<b>Product Marketing Name (PMN):</b>	VLU11B (for BTLE populated unit) VLU11 (for BTLE depopulated unit)
<b>Antenna (Primary &amp; Diversity) Information as declared:</b>	Primary
<b>Other Radios included in the device:</b>	<ul style="list-style-type: none"> <li>❖ <u>BTLE</u> <ul style="list-style-type: none"> <li>• Module: Designed by CalAmp Wireless Networks based on Texas Instruments Chip CC2640</li> <li>• Main Antenna:                             <ul style="list-style-type: none"> <li>▪ Type: Chip</li> <li>▪ Location: Internal</li> <li>▪ Gain: 5.36 dBi</li> <li>▪ Operating Frequency: 2402 – 2480 MHz</li> </ul> </li> </ul> </li> <li>❖ <u>GPS</u> <ul style="list-style-type: none"> <li>• Chip based, no module</li> <li>• Antenna location: Internal</li> </ul> </li> <li>❖ <u>VHF</u> <ul style="list-style-type: none"> <li>• Freq Proprietary Tech</li> <li>• Antenna: Unspecified</li> <li>• Operating Frequency: 173.075 MHz</li> <li>• Type(s) of Modulation: FSK</li> </ul> </li> </ul>
<b>Power Supply/ Rated Operating Voltage Range:</b>	Battery / Low 7 VDC, Nominal 12-24 VDC, High 32 VDC
<b>Operating Temperature Range:</b>	Low -20° C, High 60° C
<b>Sample Revision</b>	<input type="checkbox"/> Prototype Unit; <input type="checkbox"/> Production Unit; <input checked="" type="checkbox"/> Pre-Production
<b>EUT Dimensions(mm):</b>	159x56x28
<b>Weight(grams):</b>	320
<b>EUT Diameter</b>	<input checked="" type="checkbox"/> < 60 cm <input type="checkbox"/> Other _____

<b>Module Information</b>	
<b>Module Name:</b>	UBLOX - SARA R410M
<b>Model Number:</b>	SARA-R410M-52B
<b>FCC/IC ID:</b>	FCC ID: XPY2AGQN4NNN IC ID: 8595A-2AGQN4NNN
<b>Frequency Band of Operation:</b>	FDD LTE 2, 4, 5, 12, 13
<b>Main Antenna:</b>	Type: Custom Location: Internal Gain: 2.58 dBi

### 3.2 EUT Sample details

EUT #	IMEI number	HW Version	SW Version	Notes/Comments
1	357812093380480	REV 1	11.00.01	Radiated Measurement

### 3.3 Support Equipment

SE #	Type	Model	Manufacturer	Serial Number
1	DC Power Supply	E3634A	Agilent	MY53290018

### 3.4 Test Sample Configuration

EUT Set-up #	Combination of AE used for test set up	Comments
1	EUT# 1 + SE#1	Worst Case

### 3.5 Mode of Operation details

Mode of Operation	Description of Operating modes	Additional Information
Op. 1	Cellular and BTLE Co-Transmission	<p>Cellular was tested on Low, Mid, High Channels at the maximum power in a co-transmission mode.</p> <p>Special commands through command window used to configure BTLE radio to High channel provided by the client that will not be available to the end user</p> <p>For radiated measurements: The internal antenna was connected.</p>

### 3.6 Justification for Worst Case Mode of Operation

During the testing process the EUT was tested with transmitter sets on low, mid and high channels at the maximum power simultaneous transmission with BTLE radio High channel, which is the worst case of the radios supported, based on the maximum average conducted output power from the reports.

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 support a request for new equipment authorization under **FCC ID: APV-VLU11B / IC ID: 5483C-VLU11B** (for BTLE Populated Unit), and **FCC ID: APV-VLU11 / IC ID: 5483C-VLU11** (for BTLE Depopulated Unit).

The pre-certified module to be integrated (UBLOX SARA R410M) as described in Section 3, Radiated Spurious Emissions test was performed. Results have been checked to meet limits per Code of Federal Regulations Title 47 parts 22, 24, 27 and Industry Canada Radio Standard Specifications RSS: 130, 132 Issue 3, 133 Issue 6 and 139 Issue 3.

The conducted module test data that can be obtained under the **FCC Filing ID: XPY2AGQN4NNN** is applicable for the host described in section 3.

### 4.1 Dates of Testing:

03/04/2019 – 03/13/2019

### 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)

### 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.

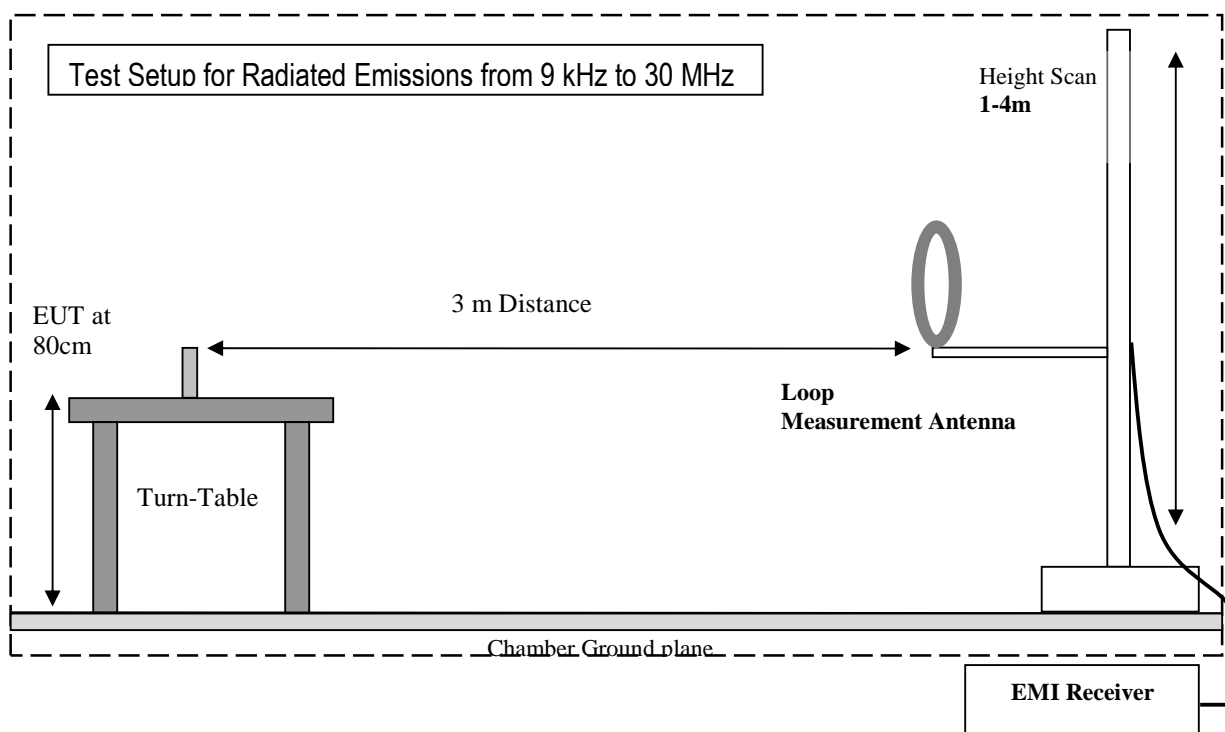


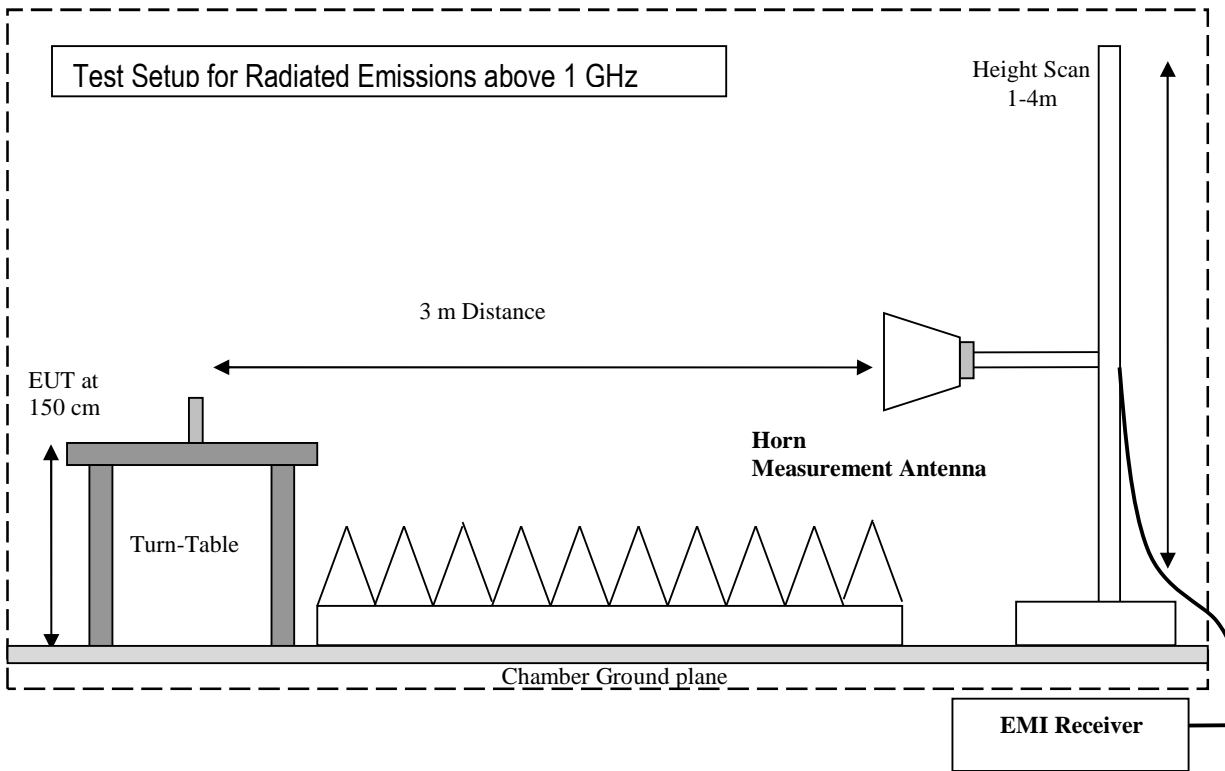
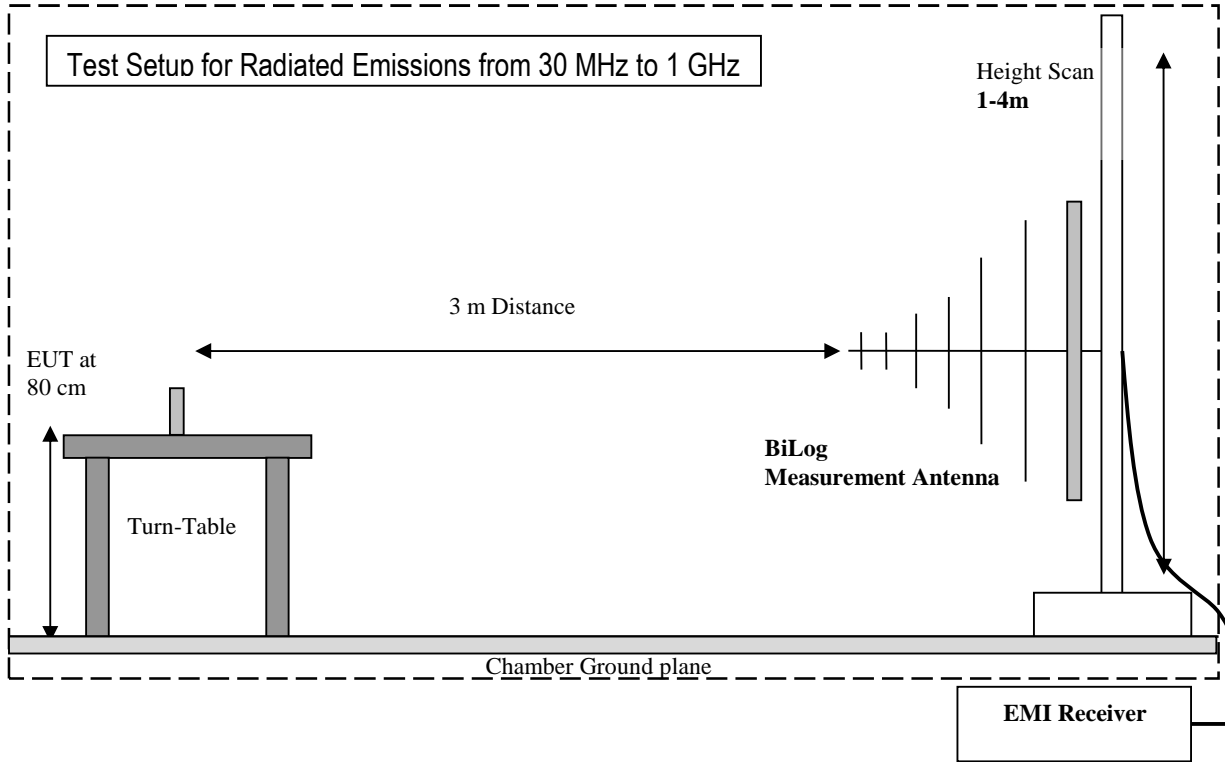
## 5 Measurement Procedures

Testing is performed according to the guidelines provided in FCC publication (KDB) 971168 D01 v03 – “Measurement Guidance for Certification of Licensed Digital Transmitters” and according to ANSI C63.26 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 FCC 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"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1055; §22.355	Frequency Stability	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1049; §22.917	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1051; §22.917	Band Edge Compliance	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1051; §22.917	Conducted Spurious Emissions	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1053; §22.917(a); RSS-132 Issue 3-5.5;	Radiated Spurious Emissions	Nominal	Op.1	<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 module certification FCC ID: XPY2AGQN4NNN

**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	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1055; §24.235	Frequency Stability	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1049; §24.238	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies 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"/>	Complies 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"/>	Complies Note 1 Note 2
§2.1053; §24.238(a); RSS-133 Issue 6-6.5.1;	Radiated Spurious Emissions	Nominal	Op.1	<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 module certification FCC ID: XPY2AGQN4NNN

**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"/>	Complies Note 1 Note 2
§2.1055; §27.54	Frequency Stability	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1049; §27.53	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies 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"/>	Complies 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"/>	Complies Note 1 Note 2
§2.1053; §27.53(g); §27.53(h); RSS-130 Issue 1-4.6; RSS-139 Issue 3-6.6;	Radiated Spurious Emissions	Nominal	Op.1	<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 module certification FCC ID: XPY2AGQN4NNN

## 7 Test Result Data

### 7.1 ERP/EIRP

FCC Rule Parts	Band	Frequency Range (MHz)	Power conducted (W)	Gain (dBi)	Gain Linear	EIRP (W)	ERP (W)	Frequency deviation (ppm)	Emission Designator	Limit EIRP (W)	Limit ERP (W)
24E	LTE 2	1850 – 1910	0.302	2.58	1.811	0.547	-	1.0	1M12G7D	2	-
27	LTE 4	1710 – 1755	0.245	2.58	1.811	0.445	-	1.0	1M24G7D	1	-
22H	LTE 5	824 – 849	0.316	2.58	1.811	-	0.349	1.0	1M11W7D	-	7
27	LTE 12	699 – 716	0.269	2.58	1.811	-	0.297	1.0	1M11W7D	-	3
27	LTE 13	777 – 787	0.275	2.58	1.811	-	0.304	1.0	1M21W7D	-	3

Note: ERP/EIRP are based on calculations for highest emissions from maximum conducted output power in grant of cellular module UBLOX SARA R410M (FCC ID: XPY2AGQN4NNN) by adding the declared maximum gain of the utilized cellular antenna per operational description.

### 7.2 Radiated Spurious Emissions

7.2.1 Measurement according to FCC: CFR 47 Part 2.1053; CFR Part 22.917; CFR Part 24.238, Part 27.53 utilizing KDB 971168 D01 Power Meas License Digital Systems v03, and according to ANSI C63.26 2017

#### Spectrum Analyzer Settings for FCC 22

Frequency Range	30 MHz – 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 and 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 22.917(a) and Part 24.238(a), Part 27.53 (g), and Part 27.53 (h)**
- **RSS-130-4.6, RSS-132 Issue 3 5.5, RSS-133 Issue 6 6.5.1, RSS-139 Issue 3 6.6**

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 = (-13dBm)

**7.2.3 Test conditions and setup:**

Ambient Temperature (C)	EUT operating mode	Power Input
24	Op. 1	12 VDC



**7.2.4 Measurement result:**

**BTLE Populated Unit**

Plot #	Cellular Channel	EUT operating mode	Scan Frequency	Critical Frequency [MHz]	Emission level [dBm]	Limit [dBm]	Result
1 – 3	Low	LTE 2	30 MHz – 18 GHz	1847.207	-31.70	-13	Pass
4 – 8	Mid	LTE 2	9 kHz – 26 GHz	1887.194	-40.53	-13	Pass
9 – 11	High	LTE 2	30 MHz – 18 GHz	1917.414	-46.53	-13	Pass
12 – 14	Low	LTE 4	30 MHz – 18 GHz	3422.249	-41.66	-13	Pass
15 – 18	Mid	LTE 4	9 kHz – 18 GHz	3473.146	-43.41	-13	Pass
19 – 21	High	LTE 4	30 MHz – 18 GHz	3508.794	-39.98	-13	Pass
22 – 24	Low	LTE 5	30 MHz – 9 GHz	659.355	-54.60	-13	Pass
25 – 28	Mid	LTE 5	9 kHz – 9 GHz	669.116	-47.76	-13	Pass
29 – 31	High	LTE 5	30 MHz – 9 GHz	678.633	-36.33	-13	Pass
32 – 34	Low	LTE 12	30 MHz – 9 GHz	108.007	-48.96	-13	Pass
35 – 38	Mid	LTE 12	9 kHz – 9 GHz	108.006	-51.82	-13	Pass
39 – 41	High	LTE 12	30 MHz – 9 GHz	107.987	-51.75	-13	Pass
42 – 45	Mid	LTE 13	9 kHz – 9 GHz	0.537	-42.93	-13	Pass

7.2.5 Measurement Plots:

**BTLE Populated Unit**

**LTE Band 2**

Plot # 1 Radiated Emissions: 30 MHz - 1 GHz

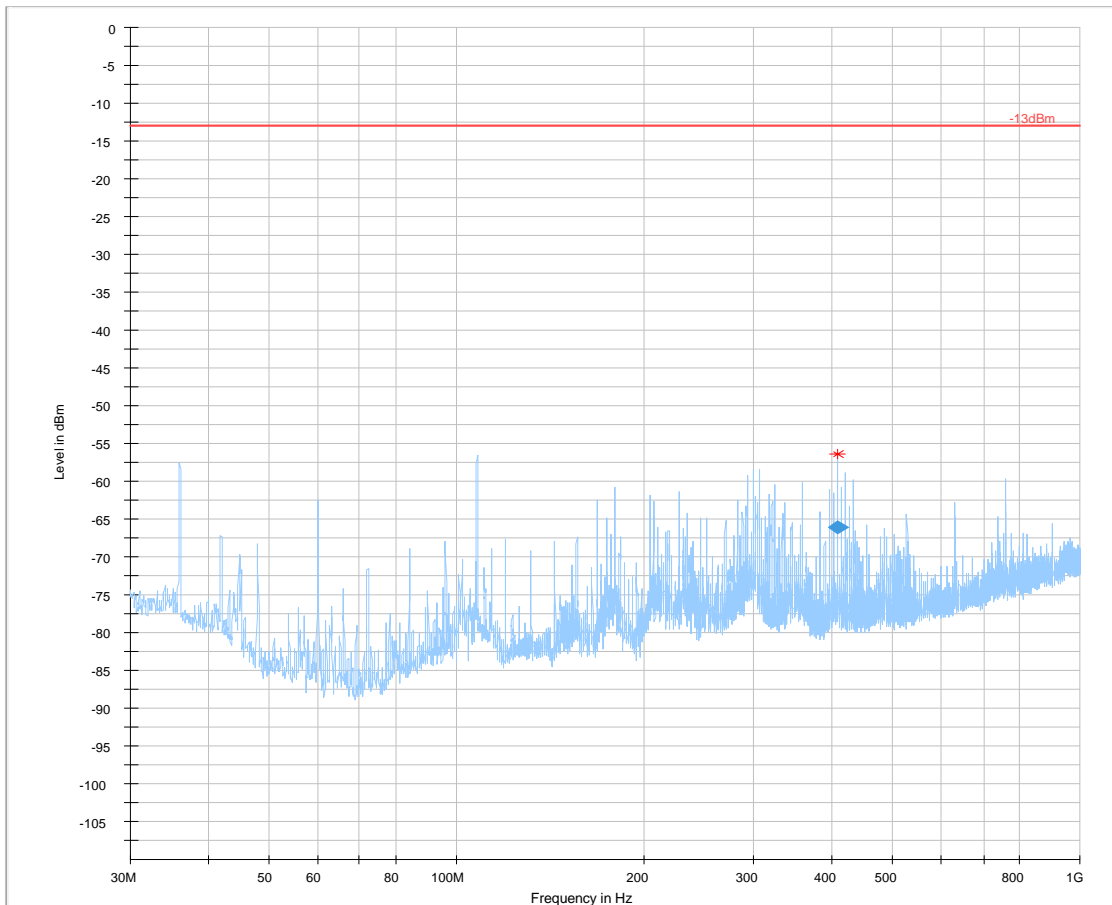
Channel: Low

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
407.978	-66.12	-13.00	53.12	200.0	100.0	206.0	H	34.0	-109

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
407.978	5:21:52 PM - 3/5/2019



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

Plot # 2 Radiated Emissions: 1 GHz - 3 GHz

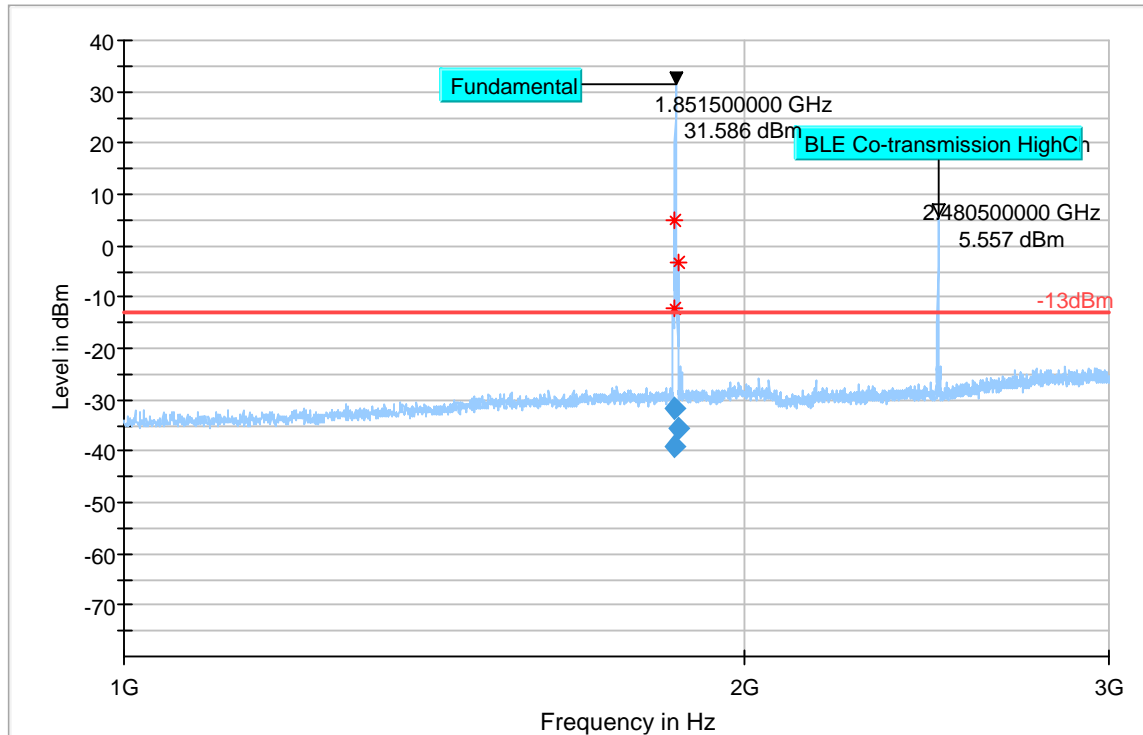
Channel: Low

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1845.897	-39.27	-13.00	26.27	500.0	1000.0	149.0	V	240.0	-87
1847.207	-31.70	-13.00	18.70	500.0	1000.0	215.0	H	5.0	-87
1855.107	-35.47	-13.00	22.47	500.0	1000.0	132.0	H	231.0	-87

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
1845.897	4:47:39 PM - 3/5/2019
1847.207	4:39:49 PM - 3/5/2019
1855.107	4:43:21 PM - 3/5/2019



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

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

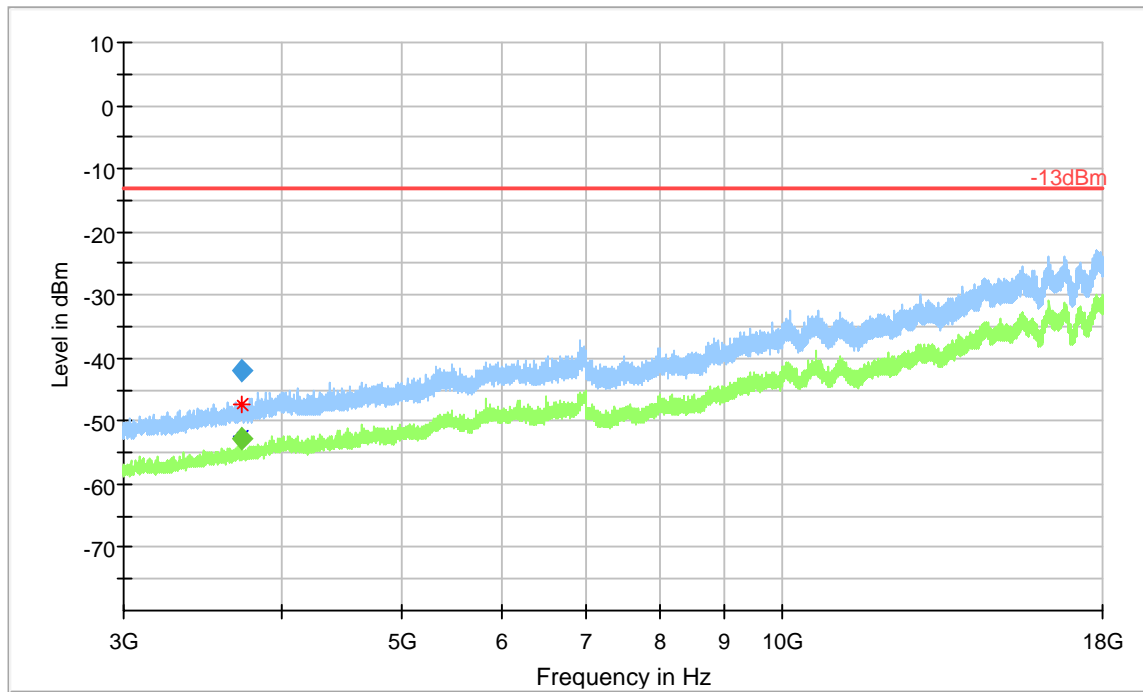
Channel: Low

**Final Result**

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
3718.353	---	-52.86	---	---	200.0	1000.0	120.0	H	54.0
3718.720	-42.09	---	-13.00	29.09	200.0	1000.0	120.0	H	55.0

(continuation of the "Final\_Result" table from column 15 ...)

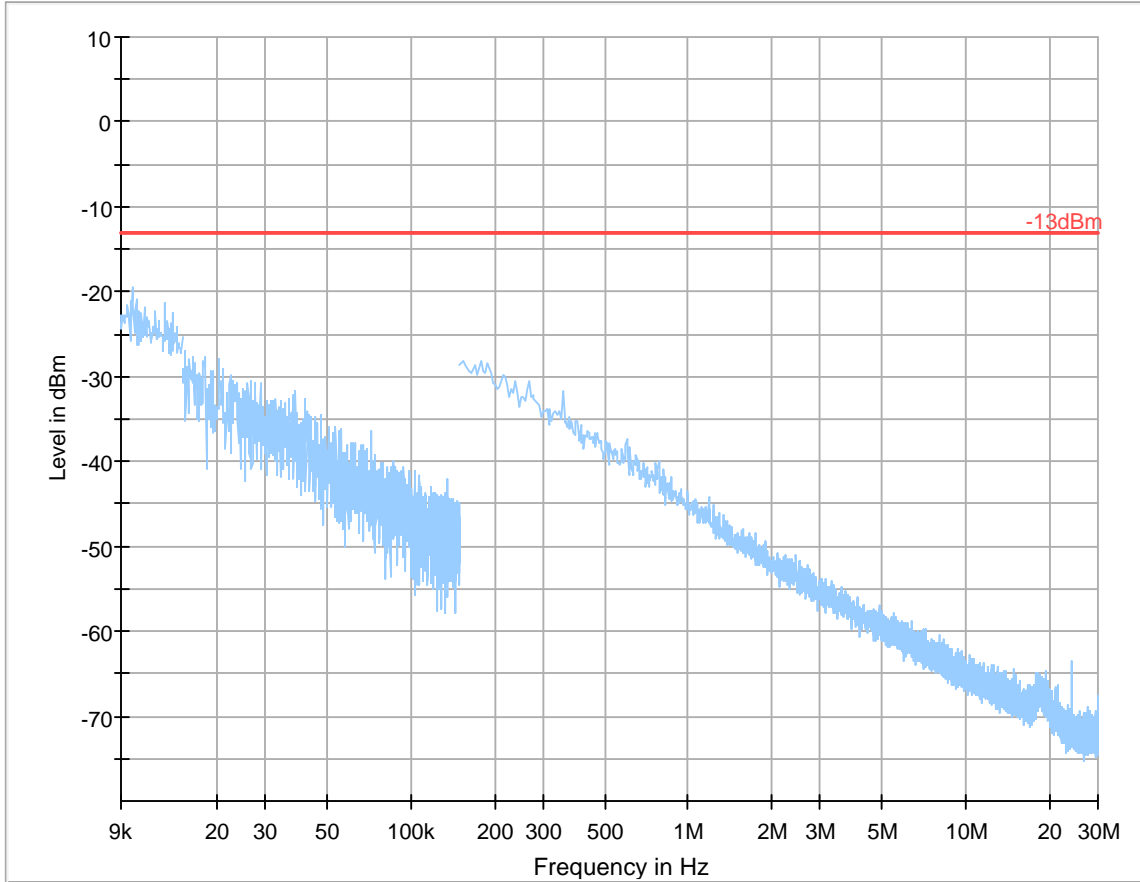
Frequency (MHz)	Corr. (dB)	Comment
3718.353	-104	4:22:02 PM - 3/4/2019
3718.720	-104	4:18:53 PM - 3/4/2019



- Preview Result 2-RMS
- Preview Result 1-PK+
- \* Critical\_Freqs PK+
- -13dBm
- ◆ Critical\_Freqs RMS
- ◆ Final\_Result RMS
- ◆ Final\_Result PK+

**Plot # 4 Radiated Emissions: 9 kHz - 30 MHz**

**Channel: Mid**



Plot # 5 Radiated Emissions: 30 MHz – 1GHz

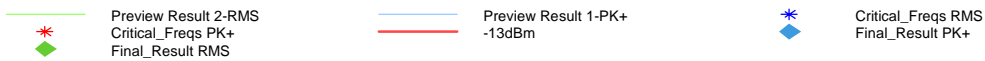
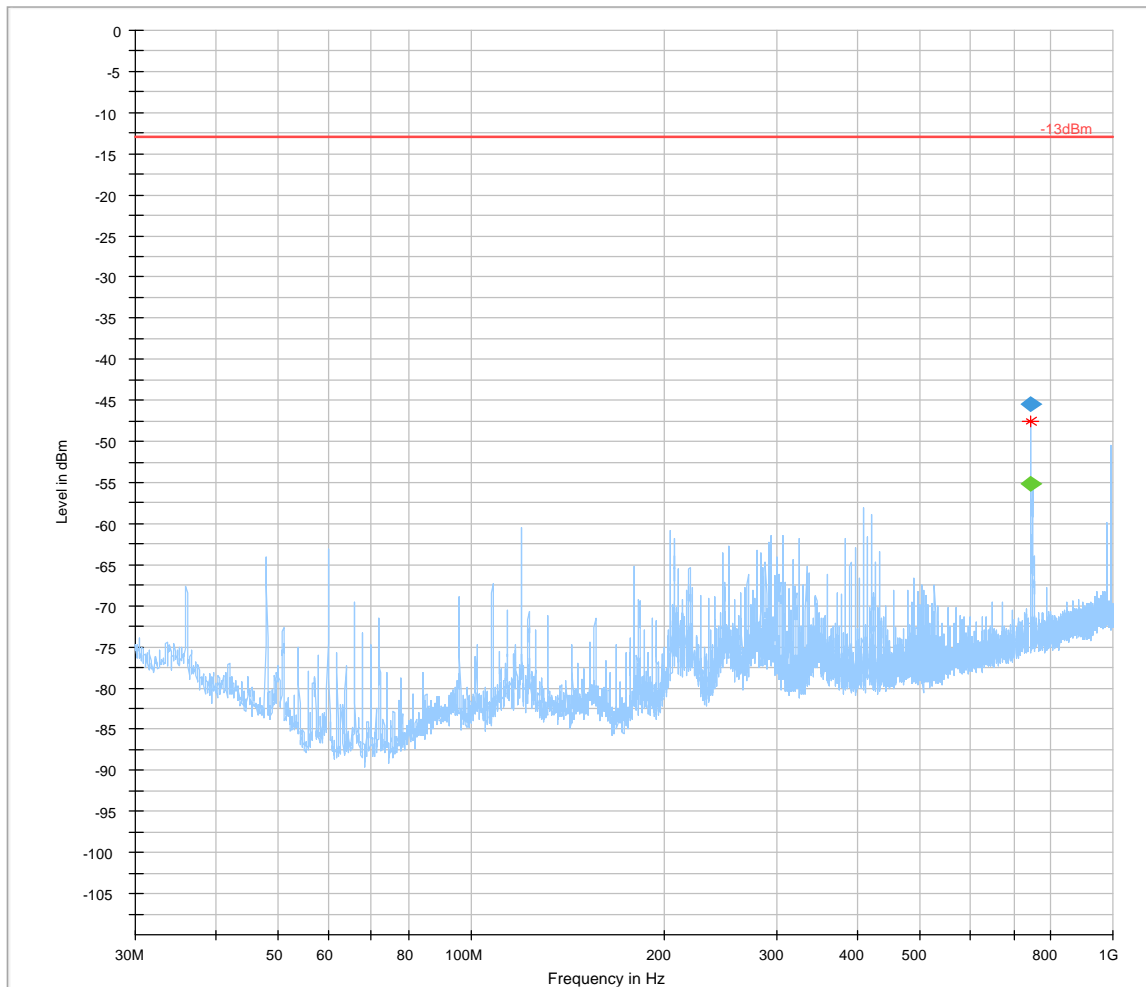
Channel: Mid

**Final Result**

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Poi	Azimuth (deg)
743.094	---	-55.19	-13.00	42.19	200.0	100.0	107.0	H	330.0
743.094	-45.51	---	-13.00	32.51	200.0	100.0	107.0	H	330.0

(continuation of the "Final\_Result" table from column 15 ...)

Frequency (MHz)	Corr. (dB)	Comment
743.094	-103	1:27:50 PM - 3/4/2019
743.094	-103	1:27:49 PM - 3/4/2019



Plot # 6 Radiated Emissions: 1 GHz - 3 GHz

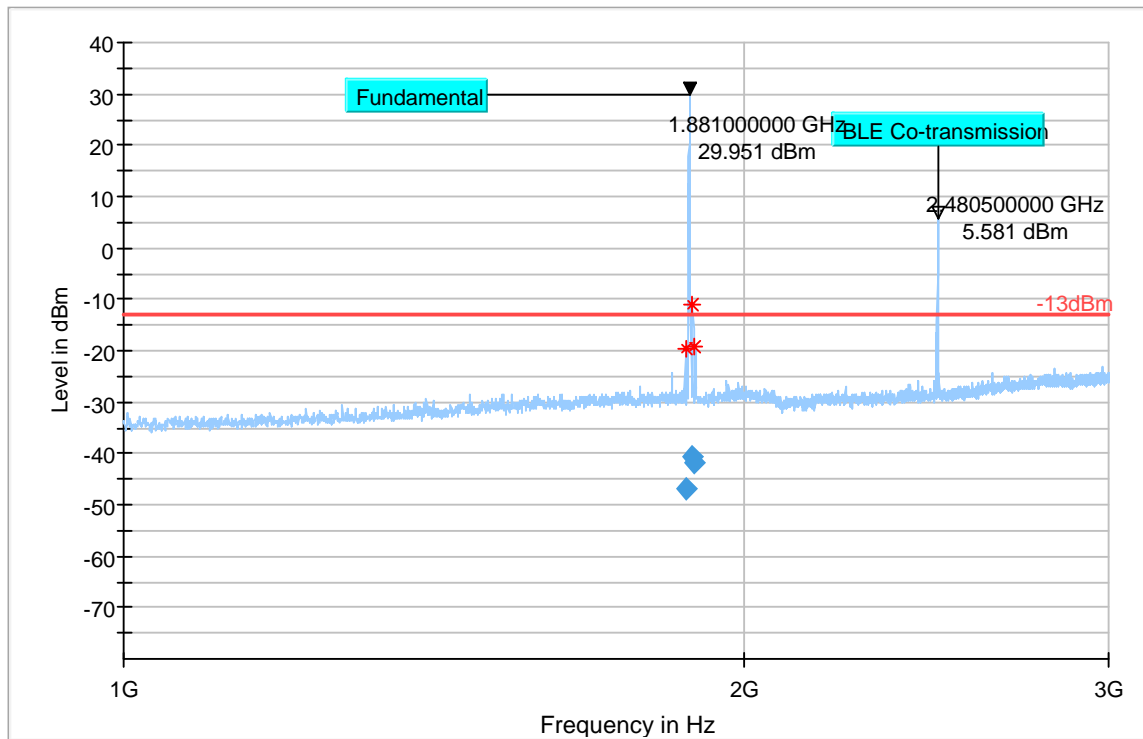
Channel: Mid

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1871.112	-46.94	-13.00	33.94	500.0	1000.0	173.0	V	105.0	-87
1887.194	-40.53	-13.00	27.53	500.0	1000.0	224.0	H	-29.0	-87
1891.626	-41.66	-13.00	28.66	500.0	1000.0	132.0	H	0.0	-87

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
1871.112	4:20:51 PM - 3/5/2019
1887.194	4:17:21 PM - 3/5/2019
1891.626	4:25:32 PM - 3/5/2019



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



**Plot # 7 Radiated Emissions: 3 GHz – 18 GHz**

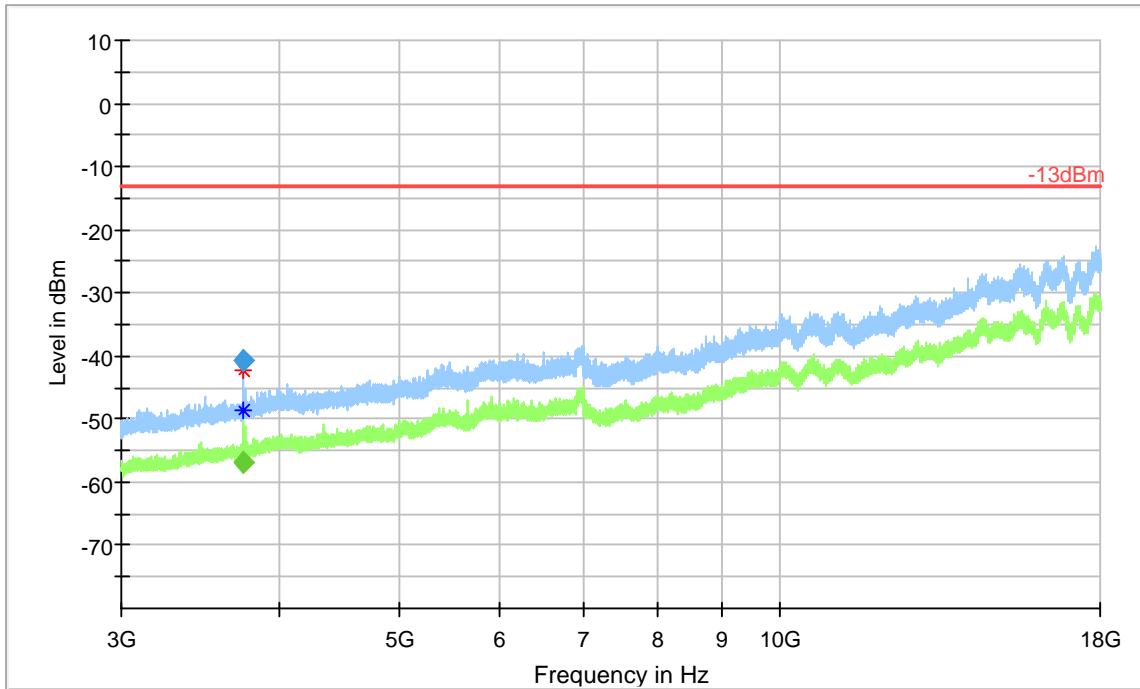
Channel: Mid

**Final Result**

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
3752.849	-40.56	---	-13.00	27.56	200.0	1000.0	209.0	V	233.0
3753.818	---	-56.95	---	---	200.0	1000.0	289.0	V	234.0

(continuation of the "Final\_Result" table from column 15 ...)

Frequency (MHz)	Corr. (dB)	Comment
3752.849	-104	3:13:23 PM - 3/4/2019
3753.818	-104	3:16:20 PM - 3/4/2019

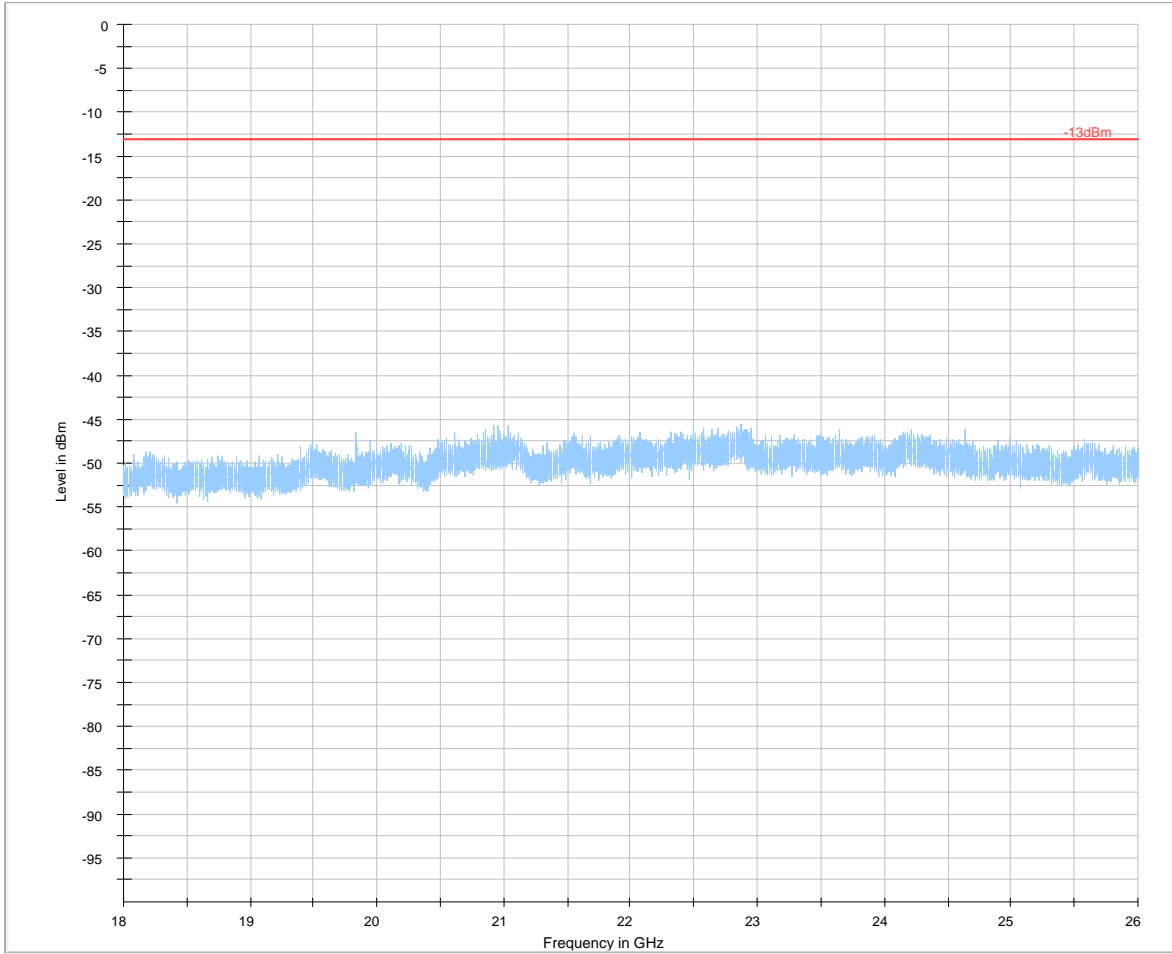


- Preview Result 2-RMS
- Preview Result 1-PK+
- -13dBm
- \* Critical\_Freqs PK+
- \* Critical\_Freqs RMS
- ◆ Final\_Result RMS
- ◆ Final\_Result PK+



Plot # 8 Radiated Emissions: 18 GHz – 26 GHz

Channel: Mid



Preview Result 1-RMS      \* Critical\_Freqs RMS      -13dBm      Final\_Result RMS

**Plot # 9 Radiated Emissions: 30 MHz - 1 GHz**

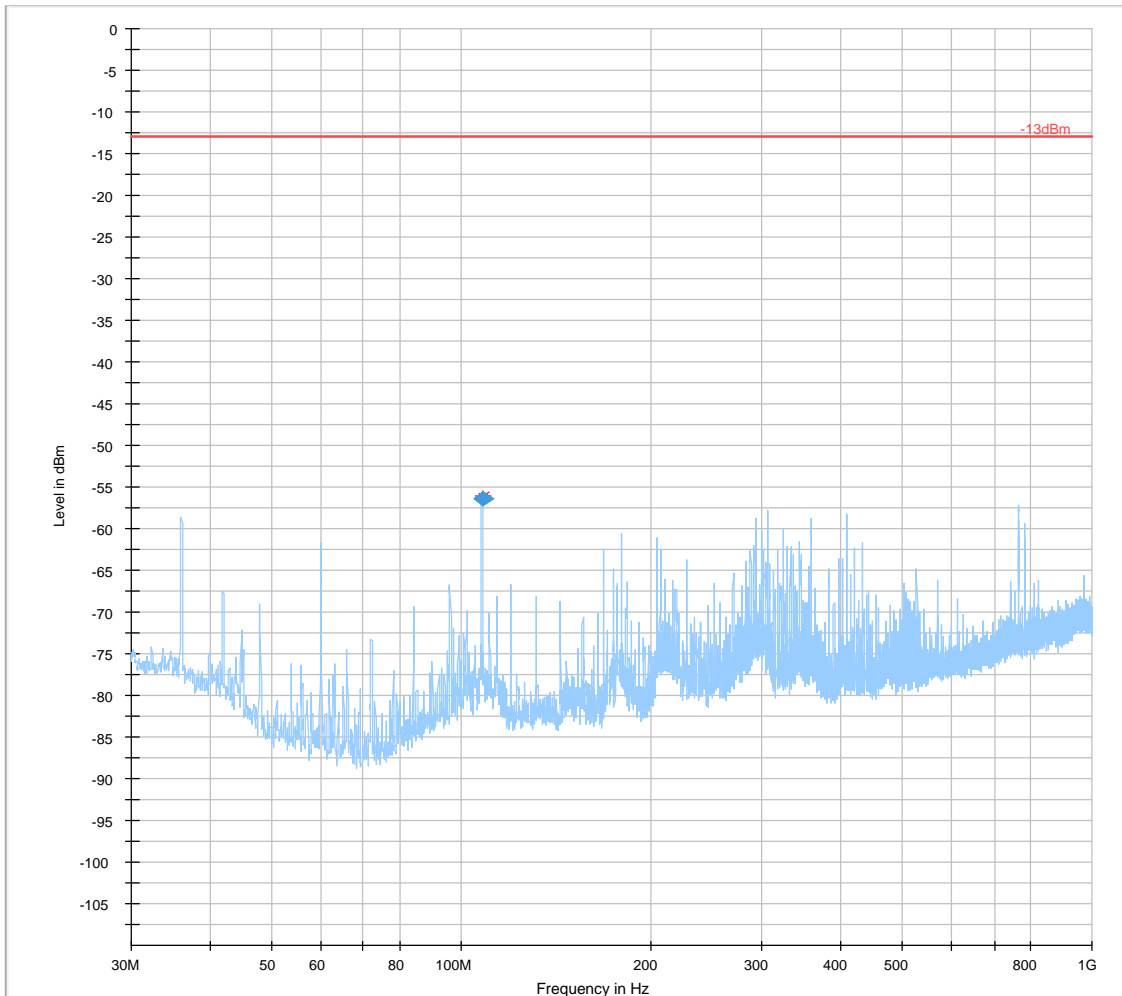
Channel: High

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
108.008	-56.39	-13.00	43.39	200.0	100.0	100.0	V	181.0	-116

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
108.008	5:33:57 PM - 3/5/2019



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

**Plot # 10 Radiated Emissions: 1 GHz - 3 GHz**

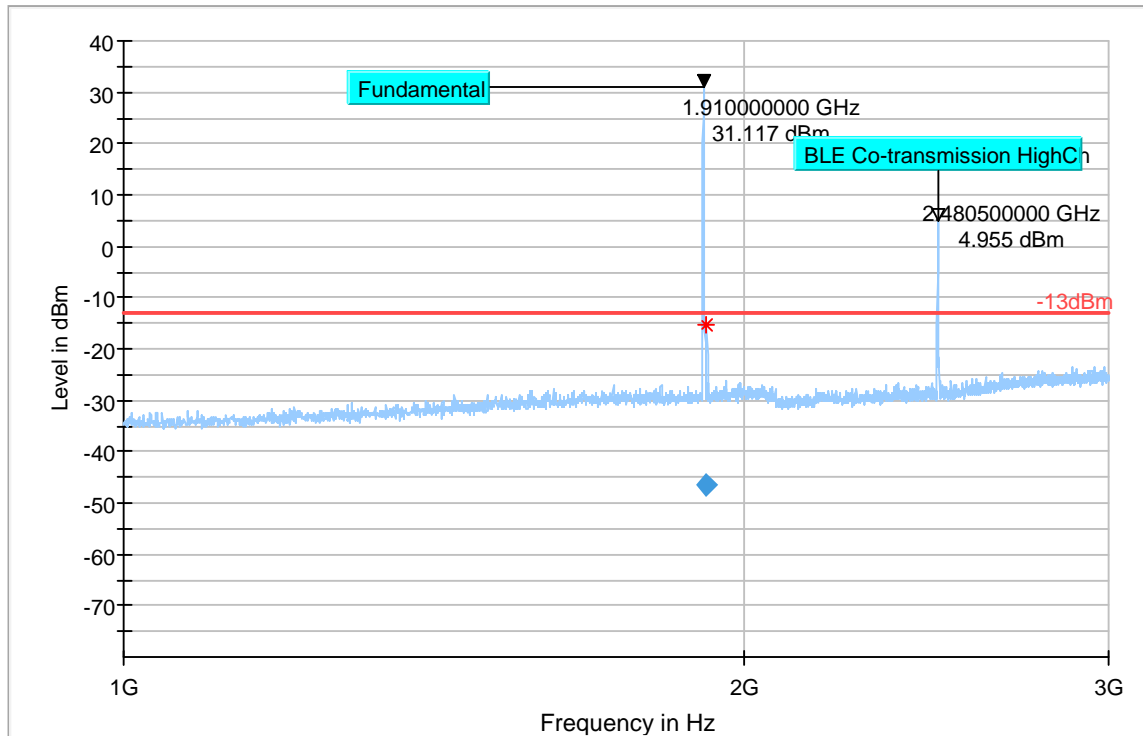
Channel: High

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1917.141	-46.53	-13.00	33.53	500.0	1000.0	302.0	V	43.0	-87

(continuation of the "Final\_Result" table from column 16 ...)

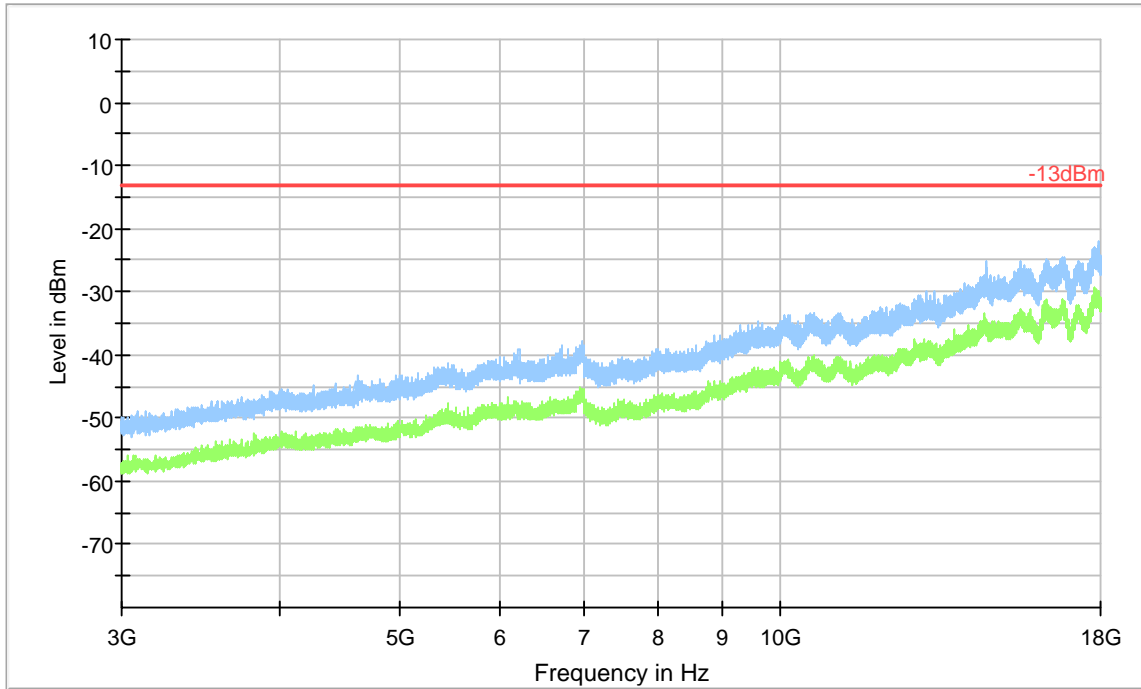
Frequency (MHz)	Comment
1917.141	3:43:38 PM - 3/5/2019



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

Plot # 11 Radiated Emissions: 3 GHz - 18 GHz

Channel: High



- Preview Result 2-RMS
- Preview Result 1-PK+
- Critical\_Freqs RMS
- \* Critical\_Freqs PK+
- 13dBm
- Final\_Result PK+
- ◆ Final\_Result RMS

### LTE Band 4

Plot # 12 Radiated Emissions: 30 MHz - 1 GHz

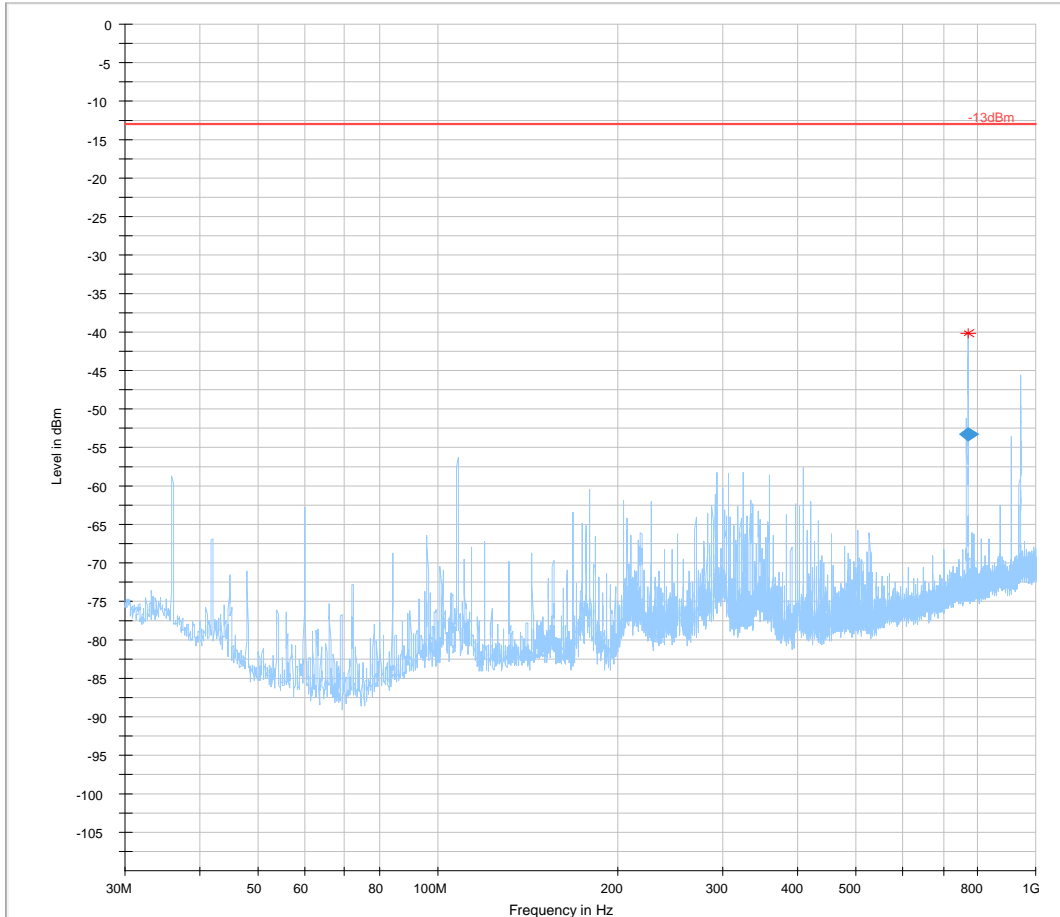
Channel: Low

## Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
769.261	-53.30	-13.00	40.30	200.0	100.0	119.0	H	133.0	-103

(continuation of the "Final\_Result" table from column 16 ...)

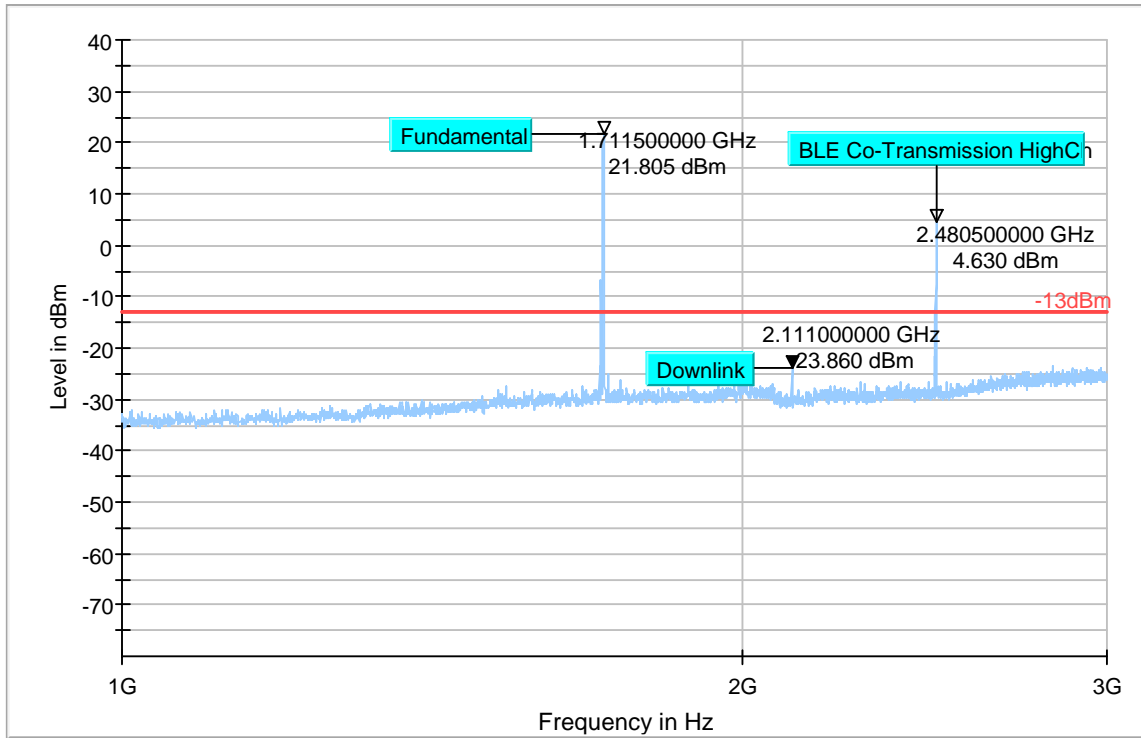
Frequency (MHz)	Comment
769.261	5:44:10 PM - 3/5/2019



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

**Plot # 13 Radiated Emissions: 1 GHz - 3 GHz**

**Channel: Low**



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



Plot # 14 Radiated Emissions: 3 GHz - 18 GHz

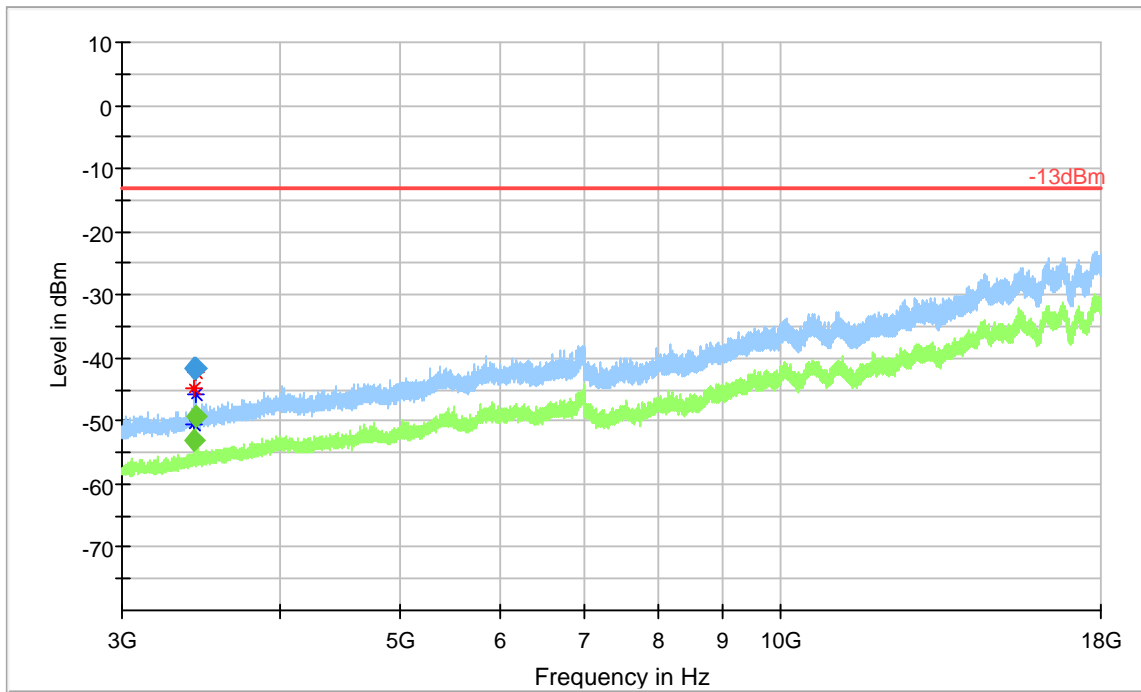
Channel: Low

**Final Result**

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
3422.249	-41.66	---	-13.00	28.66	200.0	1000.0	149.0	H	273.0
3422.990	---	-52.93	---	---	200.0	1000.0	215.0	H	272.0
3438.404	---	-49.14	---	---	200.0	1000.0	297.0	H	-35.0
3439.420	-41.68	---	-13.00	28.68	200.0	1000.0	293.0	H	-38.0

(continuation of the "Final\_Result" table from column 15 ...)

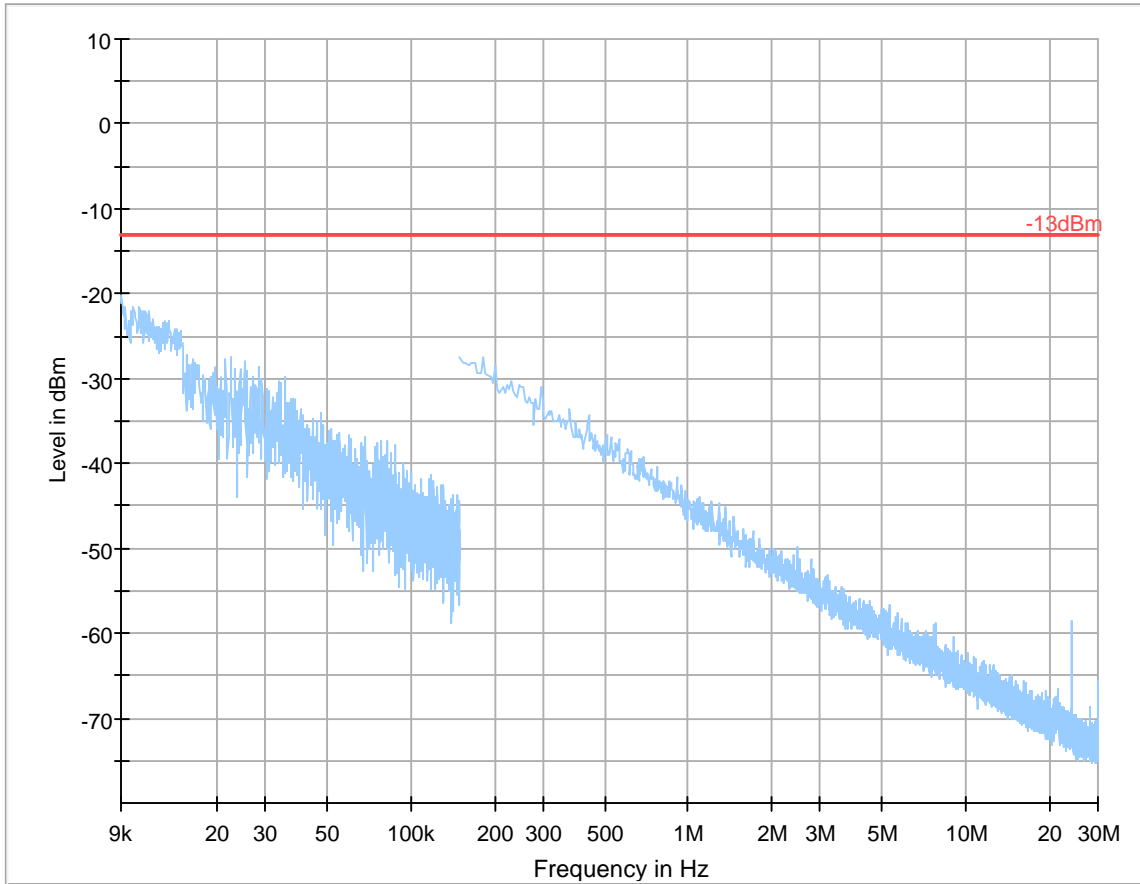
Frequency (MHz)	Corr. (dB)	Comment
3422.249	-105	5:04:44 PM - 3/4/2019
3422.990	-105	5:11:38 PM - 3/4/2019
3438.404	-105	5:08:03 PM - 3/4/2019
3439.420	-105	5:01:06 PM - 3/4/2019



- Preview Result 2-RMS
- Preview Result 1-PK+
- -13dBm
- ◆ Critical\_Freqs RMS
- \* Critical\_Freqs PK+
- ◆ Final\_Result RMS
- ◆ Final\_Result PK+

**Plot # 15 Radiated Emissions: 9 kHz - 30 MHz**

**Channel: Mid**







**Plot # 16 Radiated Emissions: 30 MHz – 1 GHz**

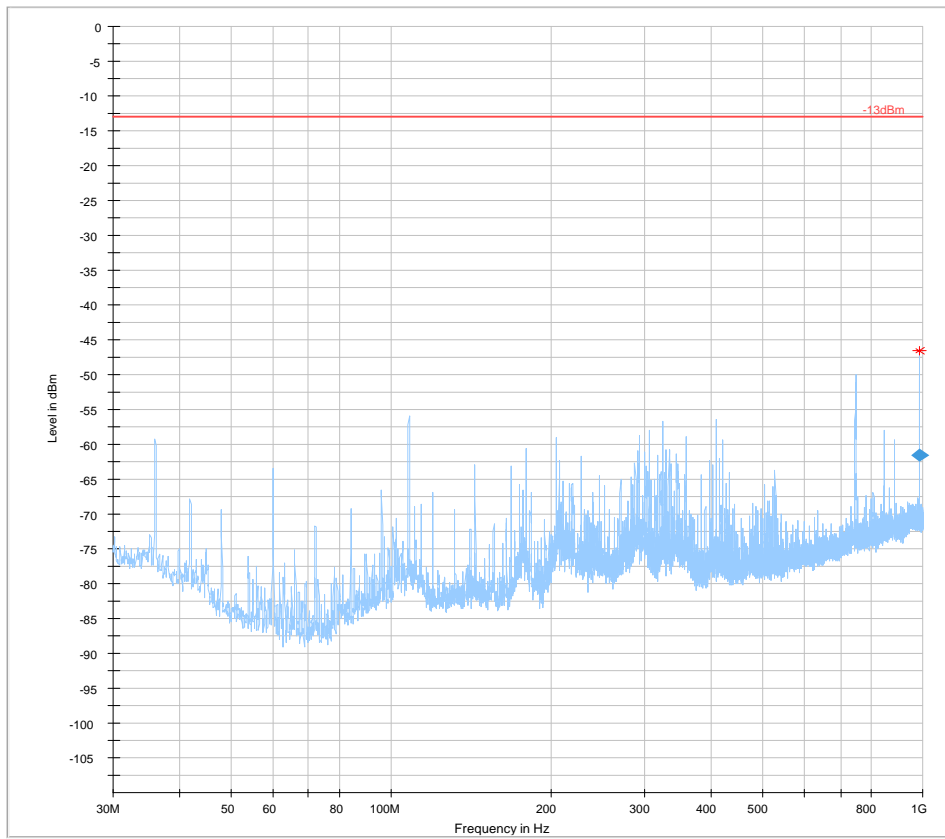
Channel: Mid

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
986.168	-61.56	-13.00	48.56	200.0	100.0	100.0	H	141.0	-100

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
986.168	5:56:50 PM - 3/5/2019



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

**Plot # 17 Radiated Emissions: 1 GHz - 3 GHz**

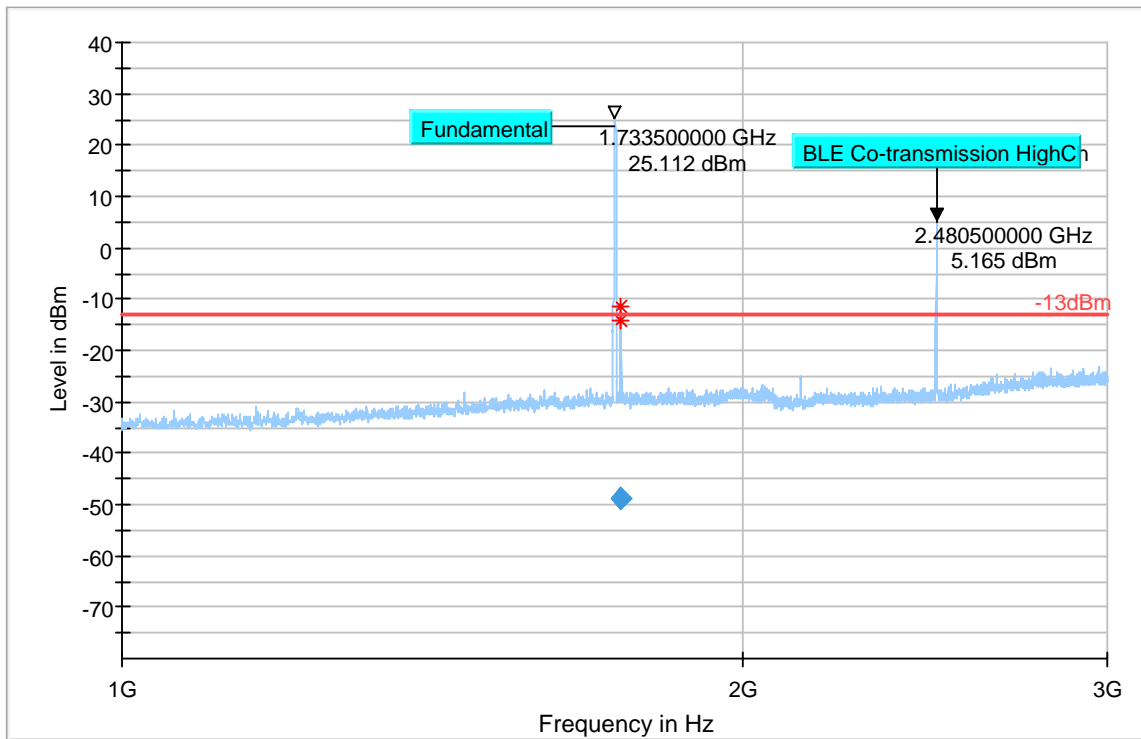
Channel: Mid

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1743.402	-48.73	-13.00	35.73	500.0	1000.0	201.0	H	0.0	-87
1745.203	-48.81	-13.00	35.81	500.0	1000.0	205.0	H	0.0	-87

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
1743.402	2:56:46 PM - 3/5/2019
1745.203	2:52:05 PM - 3/5/2019



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

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

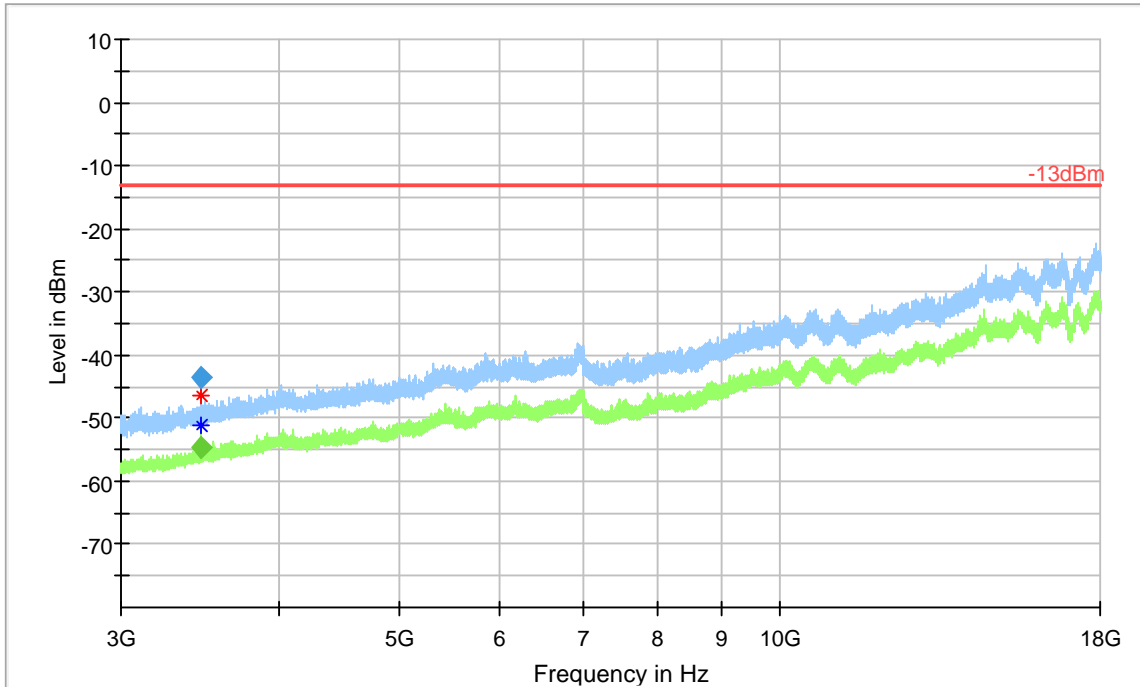
Channel: Mid

**Final Result**

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
3473.146	-43.41	---	-13.00	30.41	200.0	1000.0	233.0	V	-72.0
3474.292	---	-54.63	---	---	200.0	1000.0	236.0	V	-9.0

(continuation of the "Final\_Result" table from column 15 ...)

Frequency (MHz)	Corr. (dB)	Comment
3473.146	-105	4:44:27 PM - 3/4/2019
3474.292	-105	4:47:39 PM - 3/4/2019



- Preview Result 2-RMS
- Preview Result 1-PK+
- \* Critical\_Freqs PK+
- -13dBm
- \* Critical\_Freqs RMS
- ◆ Final\_Result RMS
- ◆ Final\_Result PK+

**Plot # 19 Radiated Emissions: 30 MHz - 1 GHz**

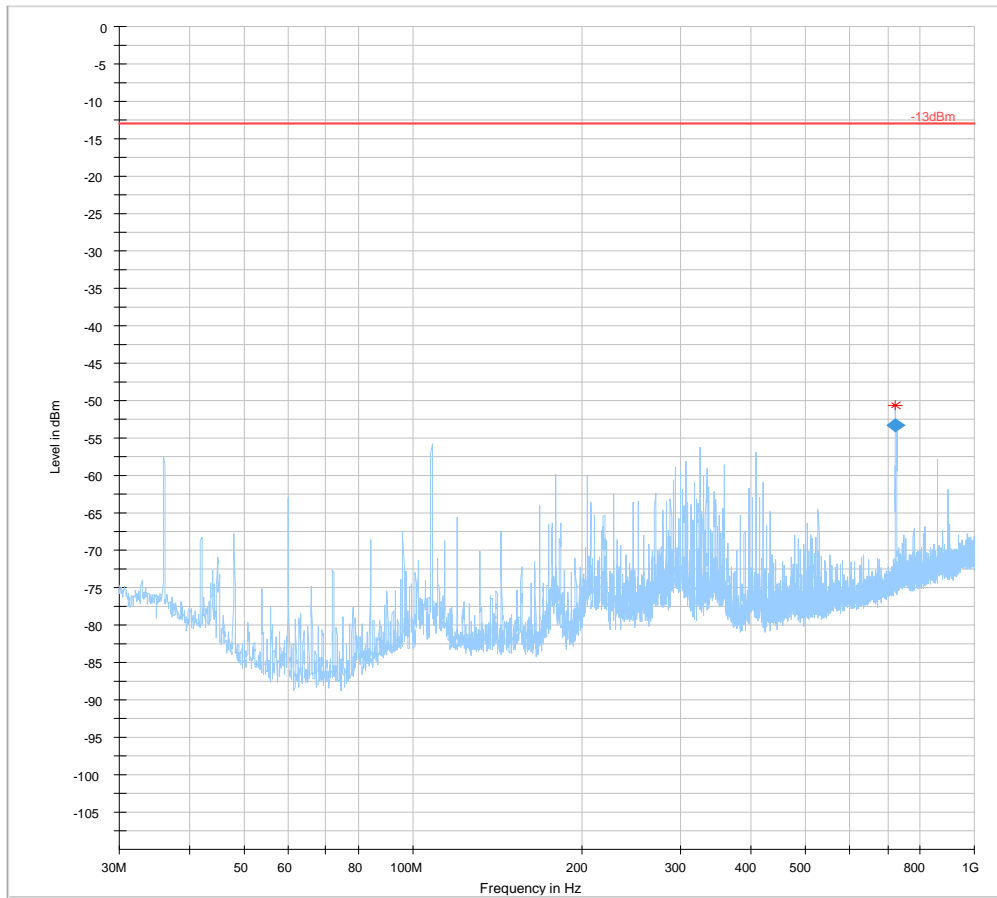
**Channel: High**

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
725.195	-53.22	-13.00	40.22	200.0	100.0	123.0	H	318.0	-104

(continuation of the "Final\_Result" table from column 16 ...)

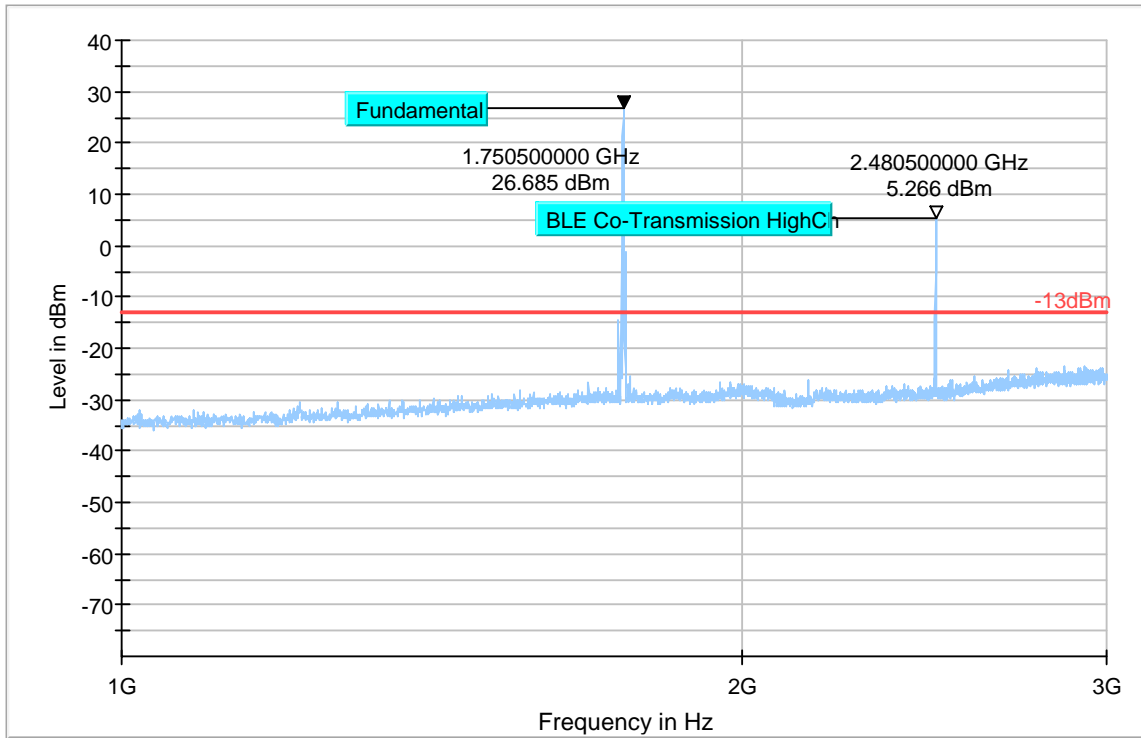
Frequency (MHz)	Comment
725.195	6:13:30 PM - 3/5/2019



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

**Plot # 20 Radiated Emissions: 1 GHz - 3 GHz**

**Channel: High**



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

**Plot # 21 Radiated Emissions: 3 GHz - 18 GHz**

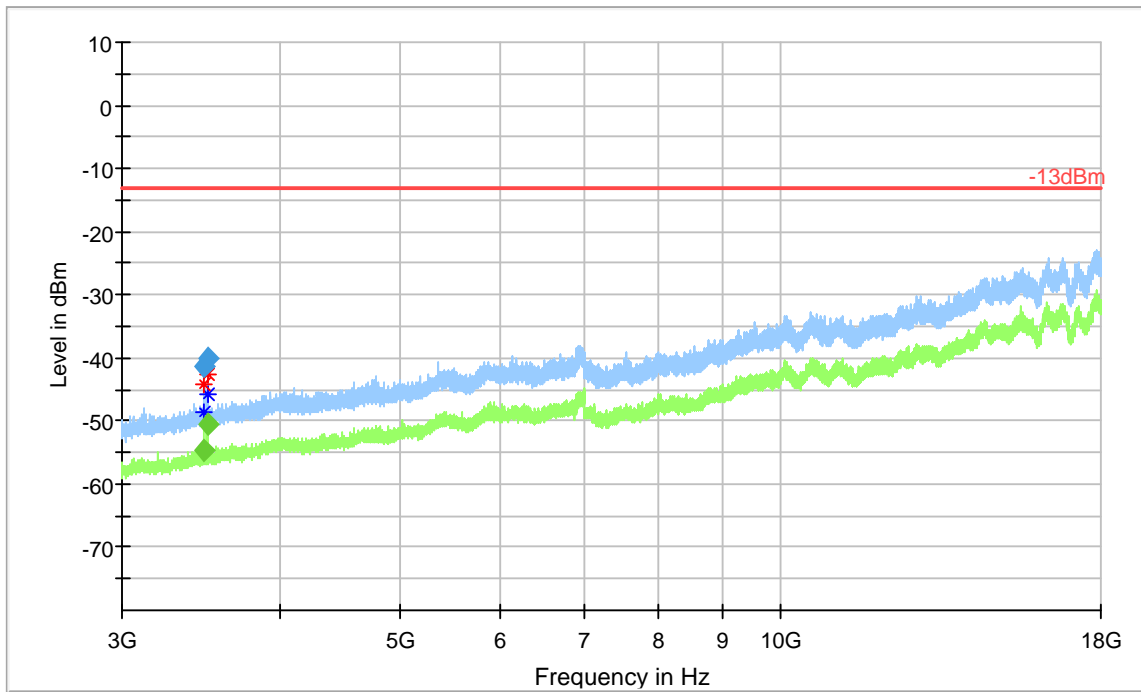
Channel: High

**Final Result**

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
3491.565	---	-54.71	---	---	200.0	1000.0	150.0	V	251.0
3492.529	-41.27	---	-13.00	28.27	200.0	1000.0	149.0	V	251.0
3508.431	---	-50.44	---	---	200.0	1000.0	145.0	H	-2.0
3508.794	-39.98	---	-13.00	26.98	200.0	1000.0	148.0	H	1.0

(continuation of the "Final\_Result" table from column 15 ...)

Frequency (MHz)	Corr. (dB)	Comment
3491.565	-104	5:40:59 PM - 3/4/2019
3492.529	-104	5:34:00 PM - 3/4/2019
3508.431	-104	5:37:30 PM - 3/4/2019
3508.794	-104	5:30:30 PM - 3/4/2019



- Preview Result 2-RMS
- Preview Result 1-PK+
- \* Critical\_Freqs PK+
- -13dBm
- ◆ Critical\_Freqs RMS
- ◆ Final\_Result RMS

### LTE Band 5

**Plot # 22 Radiated Emissions: 30 MHz - 1 GHz**

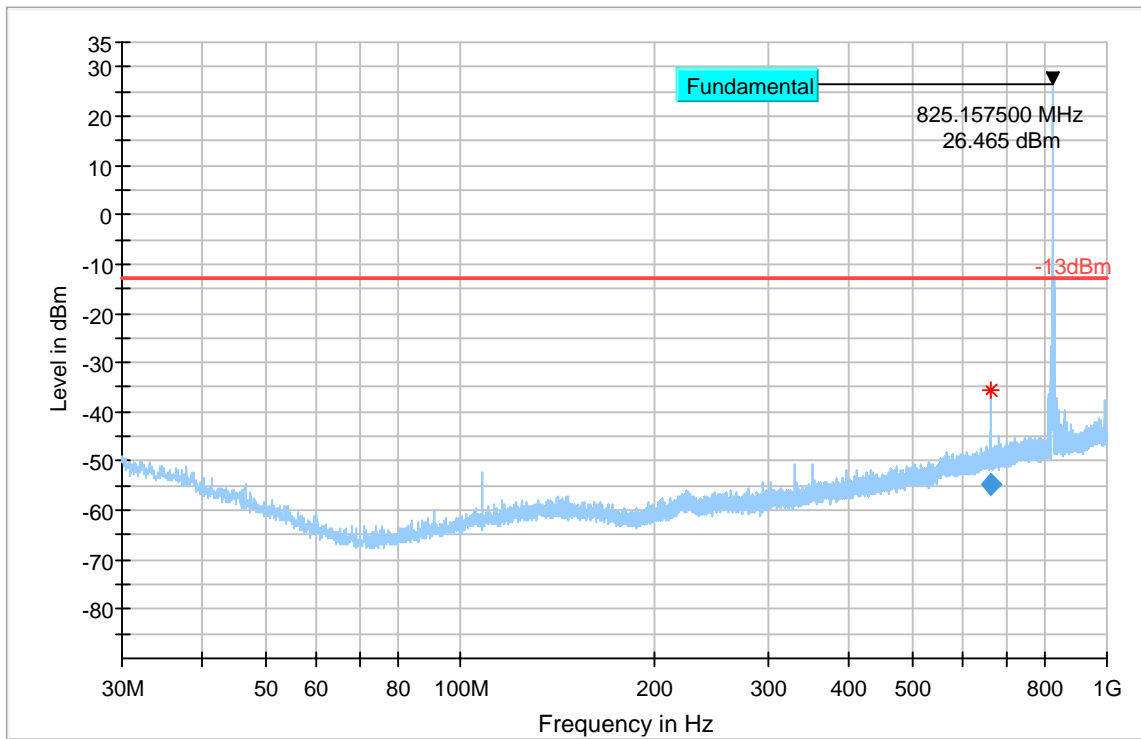
Channel: Low

#### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
659.355	-54.60	-13.00	41.60	500.0	100.0	149.0	H	208.0	-72

(continuation of the "Final\_Result" table from column 16 ...)

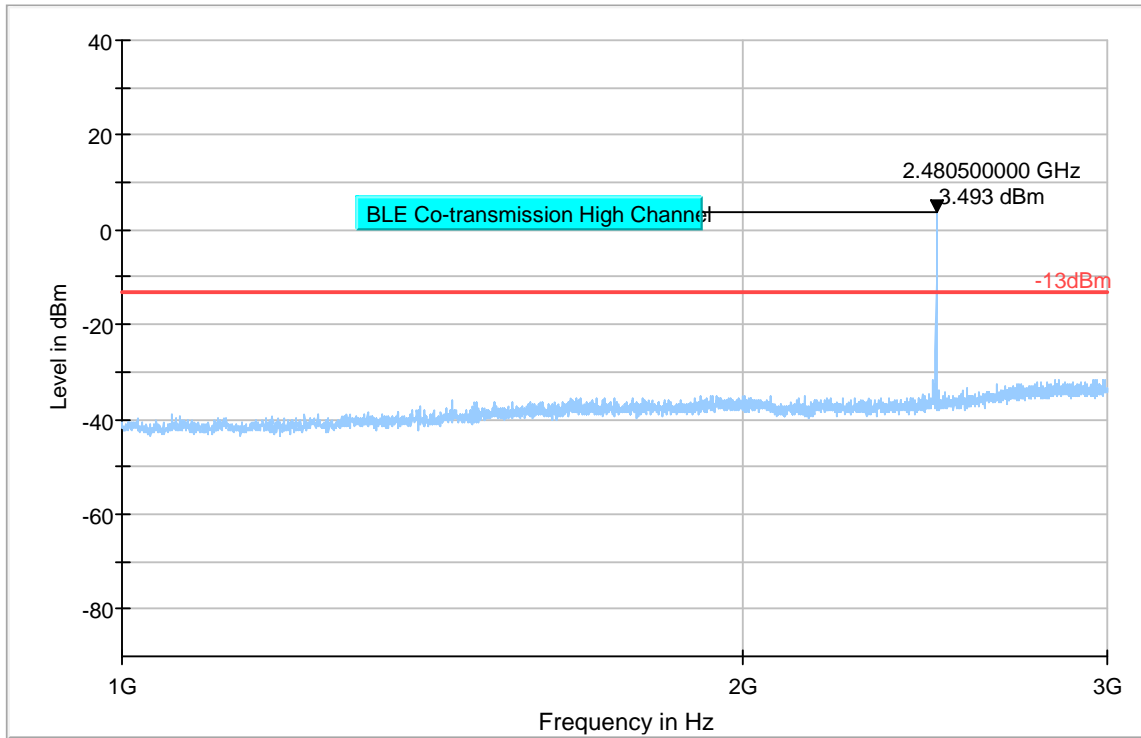
Frequency (MHz)	Comment
659.355	5:21:24 PM - 3/6/2019



— Preview Result 1-RMS   
 \* Critical\_Freqs RMS   
 — -13dBm   
 ◆ Final\_Result RV

Plot # 23 Radiated Emissions: 1 GHz - 3 GHz

Channel: Low



Preview Result 1-RMS    \*    Critical\_Freqs RMS    -13dBm    ◆    Final\_Result RM



**Plot # 24 Radiated Emissions: 3 GHz - 9 GHz**

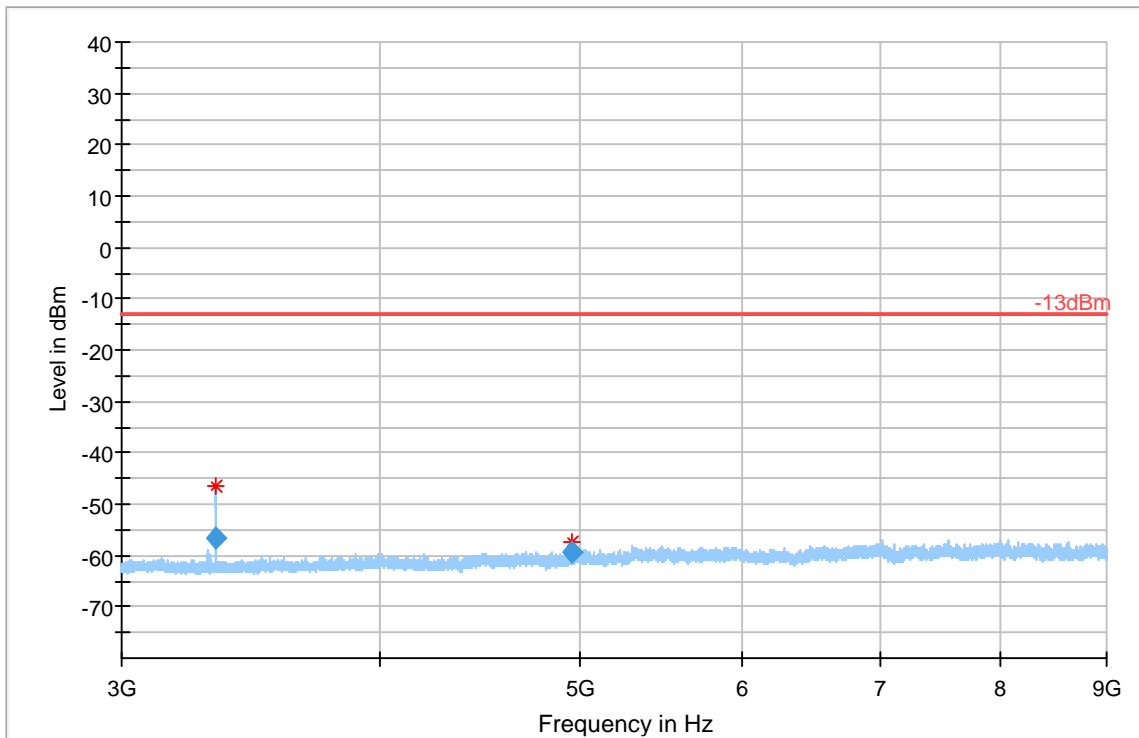
Channel: Low

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3334.146	-56.46	-13.00	43.46	500.0	1000.0	278.0	H	88.0	-132
4959.973	-59.27	-13.00	46.27	500.0	1000.0	296.0	V	263.0	-128

(continuation of the "Final\_Result" table from column 16 ...)

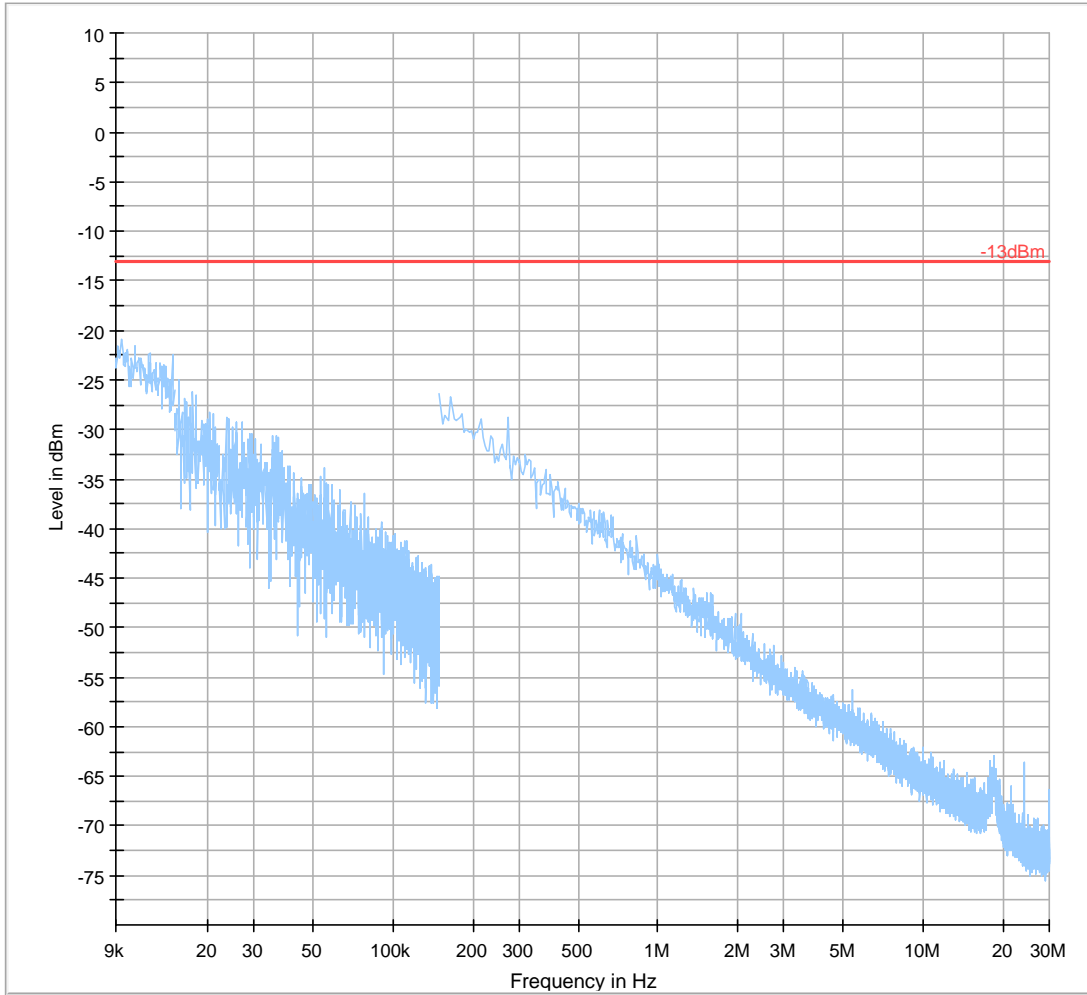
Frequency (MHz)	Comment
3334.146	11:01:09 AM - 3/5/2019
4959.973	11:04:35 AM - 3/5/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RM

**Plot # 25 Radiated Emissions: 9 kHz - 30 MHz**

**Channel: Mid**



Plot # 26 Radiated Emissions: 30 MHz – 1 GHz

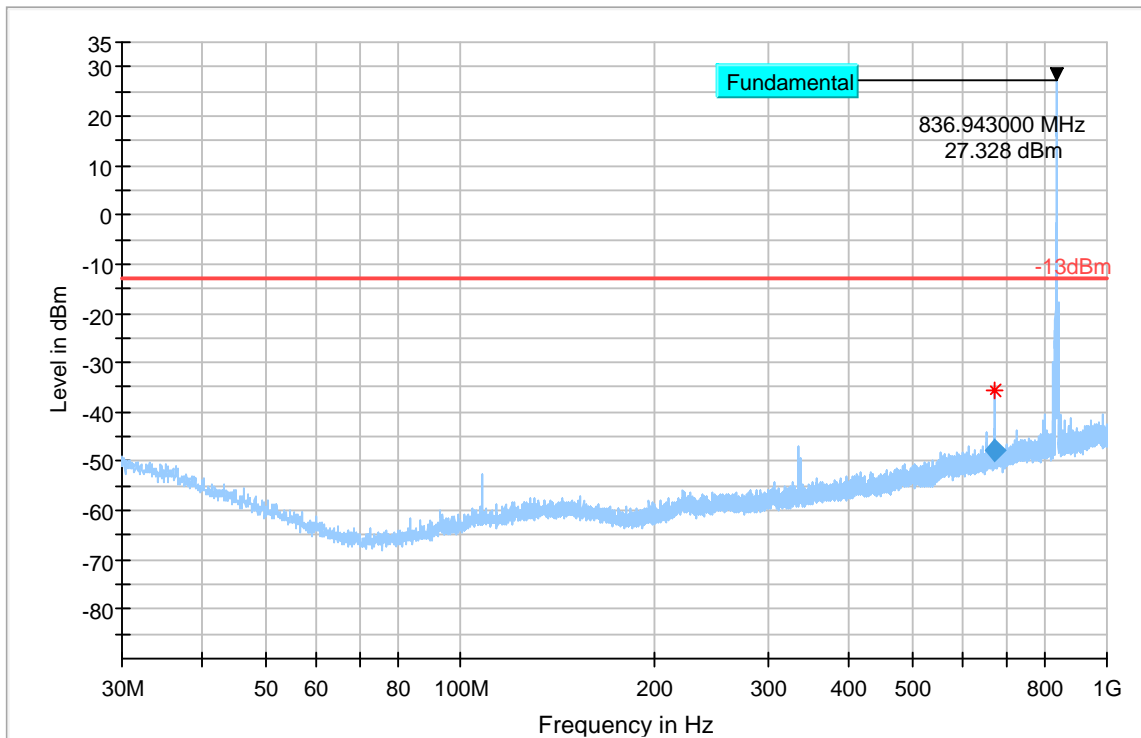
Channel: Mid

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
669.116	-47.76	-13.00	34.76	500.0	100.0	150.0	H	224.0	-72

(continuation of the "Final\_Result" table from column 16 ...)

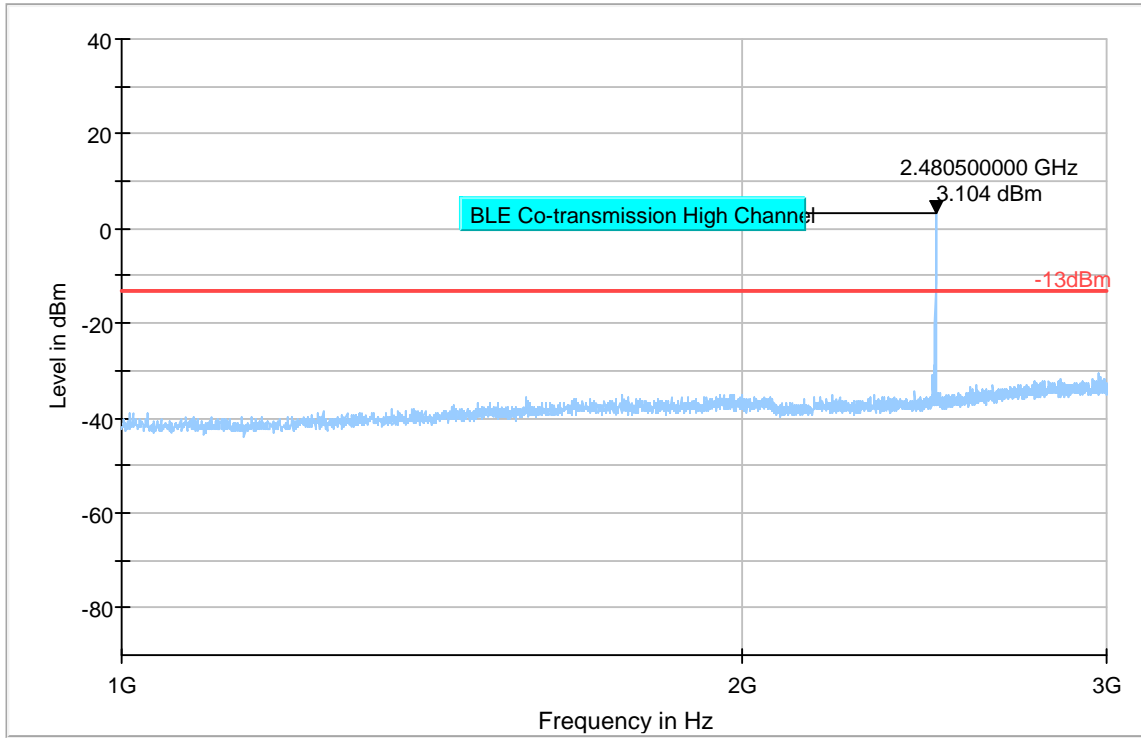
Frequency (MHz)	Comment
669.116	5:33:06 PM - 3/6/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RV

Plot # 27 Radiated Emissions: 1 GHz - 3 GHz

Channel: Mid



— Preview Result 1-RMS    \* Critical\_Freqs RMS    — -13dBm    ◆ Final\_Result RV

**Plot # 28 Radiated Emissions: 3 GHz – 9 GHz**

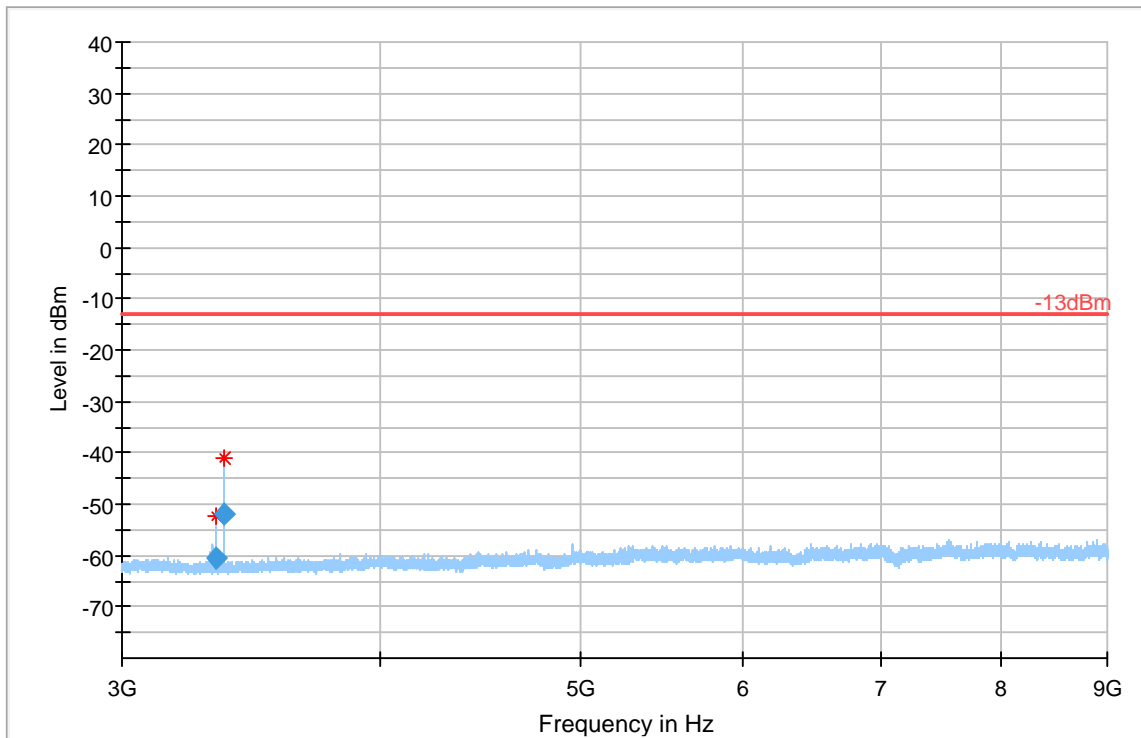
**Channel: Mid**

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3331.759	-60.47	-13.00	47.47	500.0	1000.0	149.0	H	109.0	-132
3364.024	-51.92	-13.00	38.92	500.0	1000.0	149.0	H	114.0	-132

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
3331.759	10:43:56 AM - 3/5/2019
3364.024	10:46:56 AM - 3/5/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RM

Plot # 29 Radiated Emissions: 30 MHz - 1 GHz

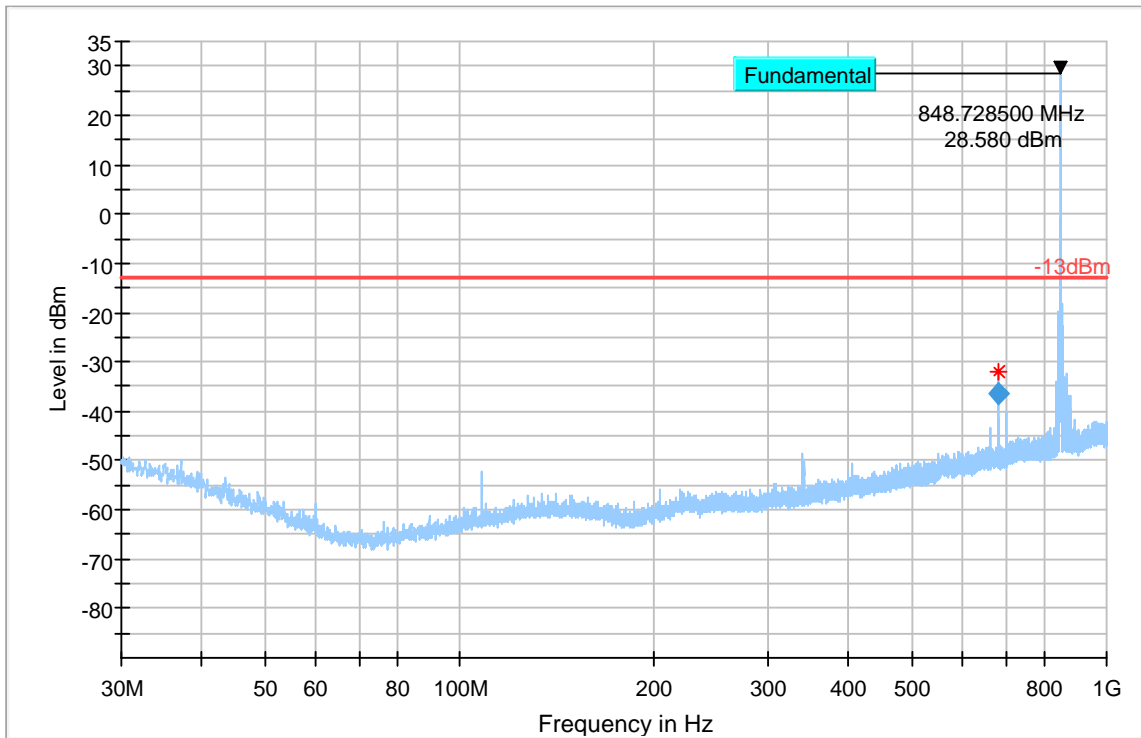
Channel: High

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
678.633	-36.33	-13.00	23.33	500.0	100.0	153.0	H	224.0	-71

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
678.633	5:45:32 PM - 3/6/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RM

Plot # 30 Radiated Emissions: 1 GHz - 3 GHz

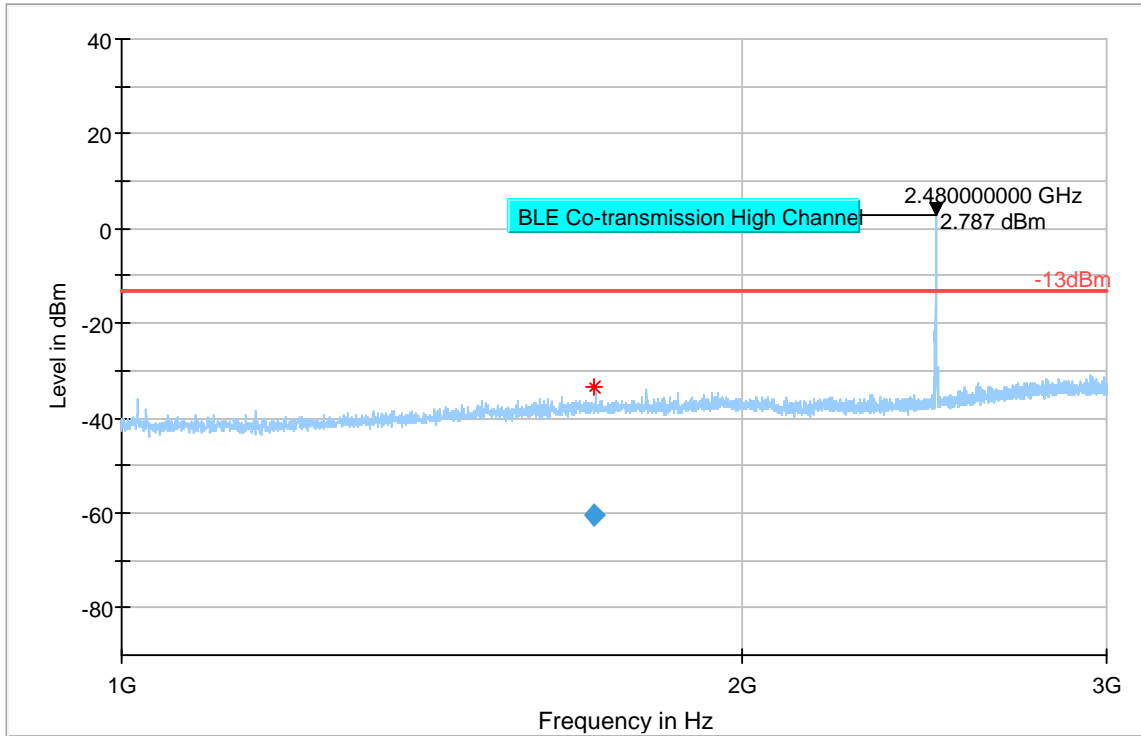
Channel: High

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1692.580	-60.52	-13.00	47.52	500.0	1000.0	232.0	H	241.0	-87

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
1692.580	11:48:17 AM - 3/5/2019



— Preview Result 1-RMS      \* Critical\_Freqs RMS      — -13dBm      ◆ Final\_Result RV

**Plot # 31 Radiated Emissions: 3 GHz - 9 GHz**

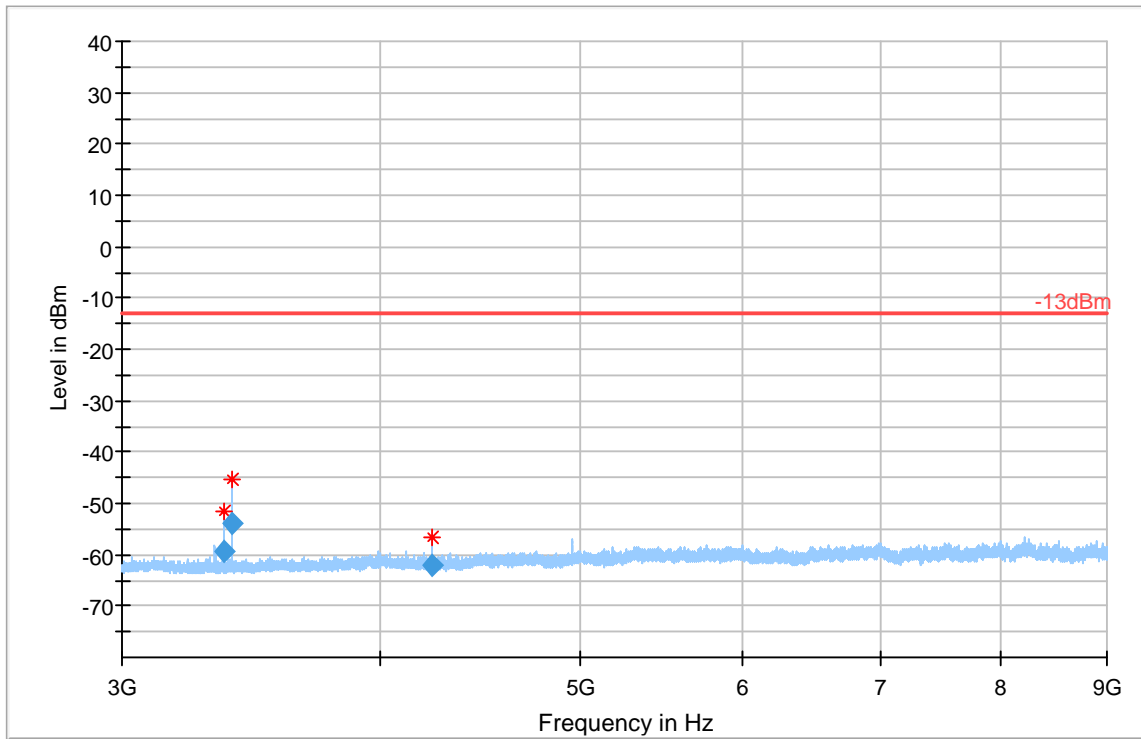
Channel: High

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3360.371	-59.24	-13.00	46.24	500.0	1000.0	328.0	H	98.0	-132
3393.894	-53.88	-13.00	40.88	500.0	1000.0	186.0	H	119.0	-132
4241.676	-62.18	-13.00	49.18	500.0	1000.0	157.0	H	90.0	-130

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
3360.371	11:19:42 AM - 3/5/2019
3393.894	11:22:52 AM - 3/5/2019
4241.676	11:16:49 AM - 3/5/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RV



### LTE Band 12

Plot # 32 Radiated Emissions: 30 MHz – 1GHz

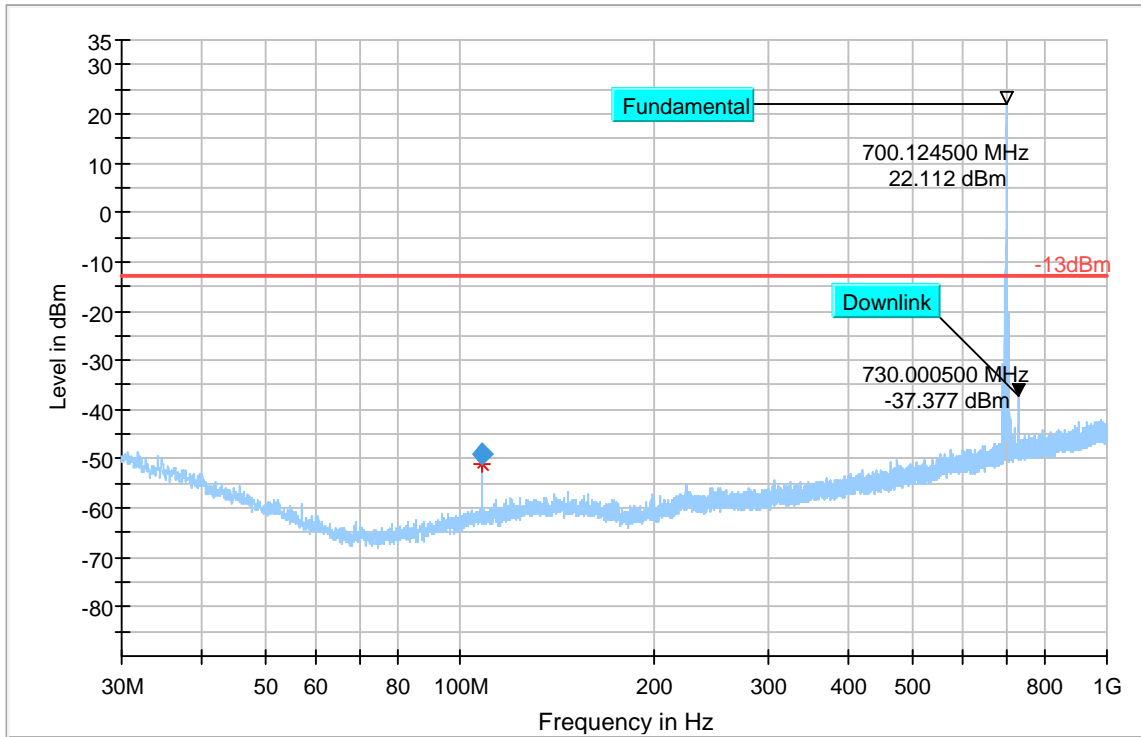
Channel: Low

## Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
108.007	-48.96	-13.00	35.96	500.0	100.0	300.0	H	119.0	-83

(continuation of the "Final\_Result" table from column 16 ...)

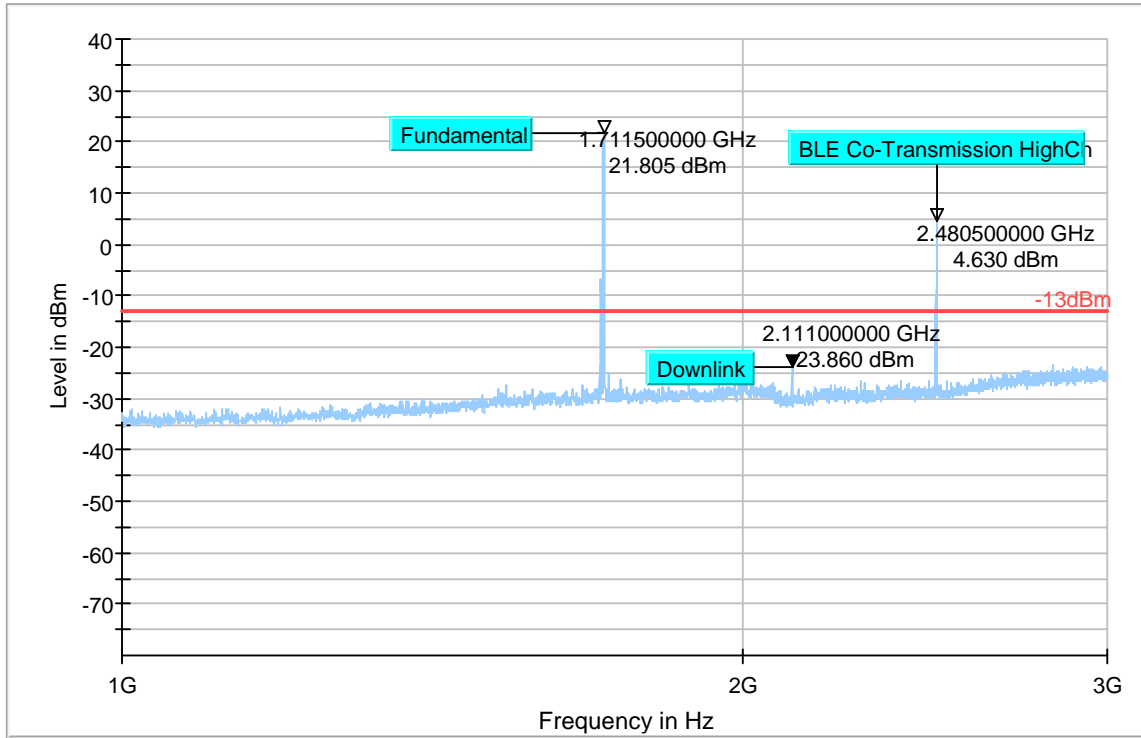
Frequency (MHz)	Comment
108.007	3:52:18 PM - 3/6/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RV

Plot # 33 Radiated Emissions: 1 GHz - 3 GHz

Channel: Low



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

**Plot # 34 Radiated Emissions: 3 GHz – 9 GHz**

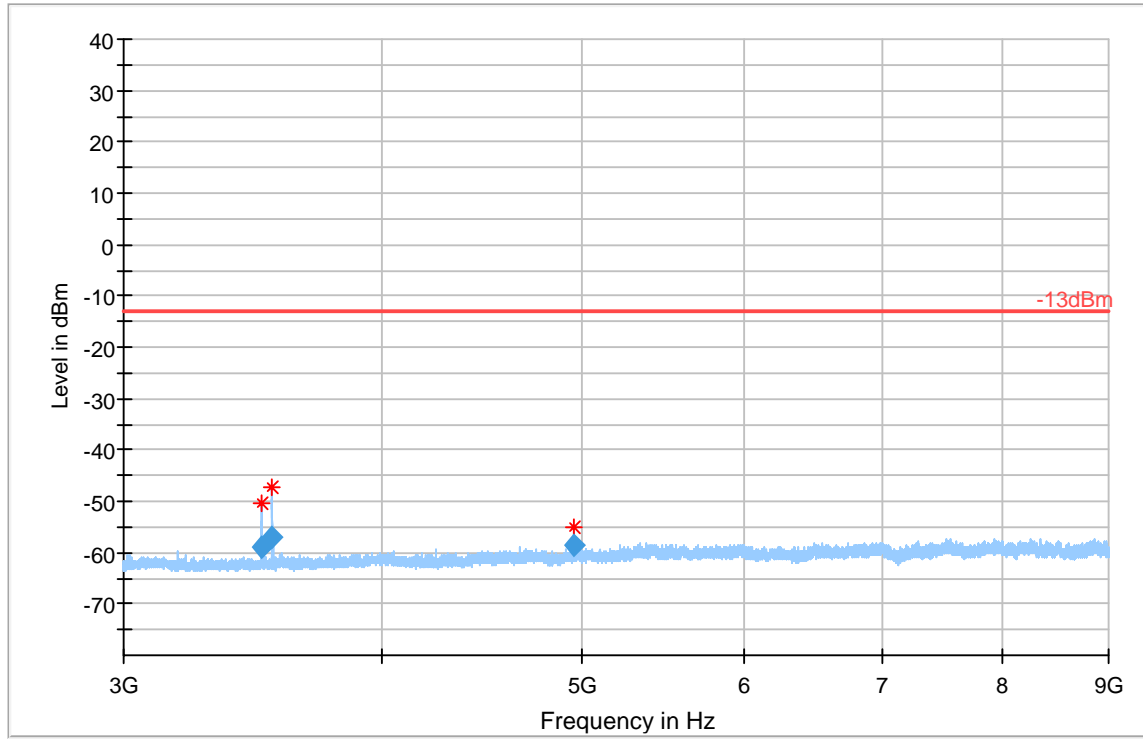
Channel: Low

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3501.003	-59.13	-13.00	46.13	500.0	1000.0	196.0	H	87.0	-131
3542.605	-56.84	-13.00	43.84	500.0	1000.0	126.0	H	75.0	-131
4960.061	-58.61	-13.00	45.61	500.0	1000.0	167.0	V	264.0	-128

(continuation of the "Final\_Result" table from column 16 ...)

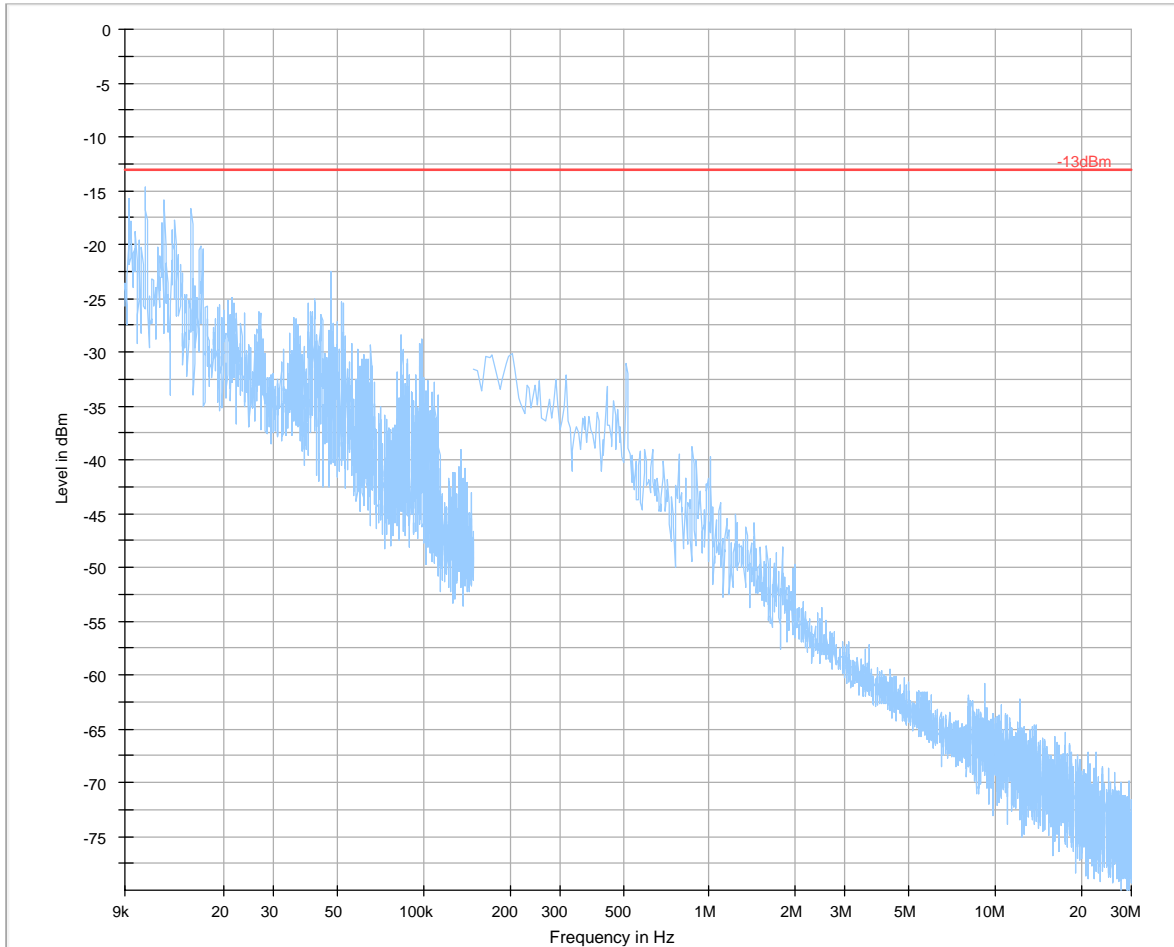
Frequency (MHz)	Comment
3501.003	6:33:36 PM - 3/4/2019
3542.605	6:30:34 PM - 3/4/2019
4960.061	6:37:02 PM - 3/4/2019



— Preview Result 1-RMS    \* Critical\_Freqs RMS    — -13dBm    ◆ Final\_Result RV

**Plot # 35 Radiated Emissions: 9 kHz - 30 MHz**

**Channel: Mid**



**Plot # 36 Radiated Emissions: 30 MHz – 1GHz**

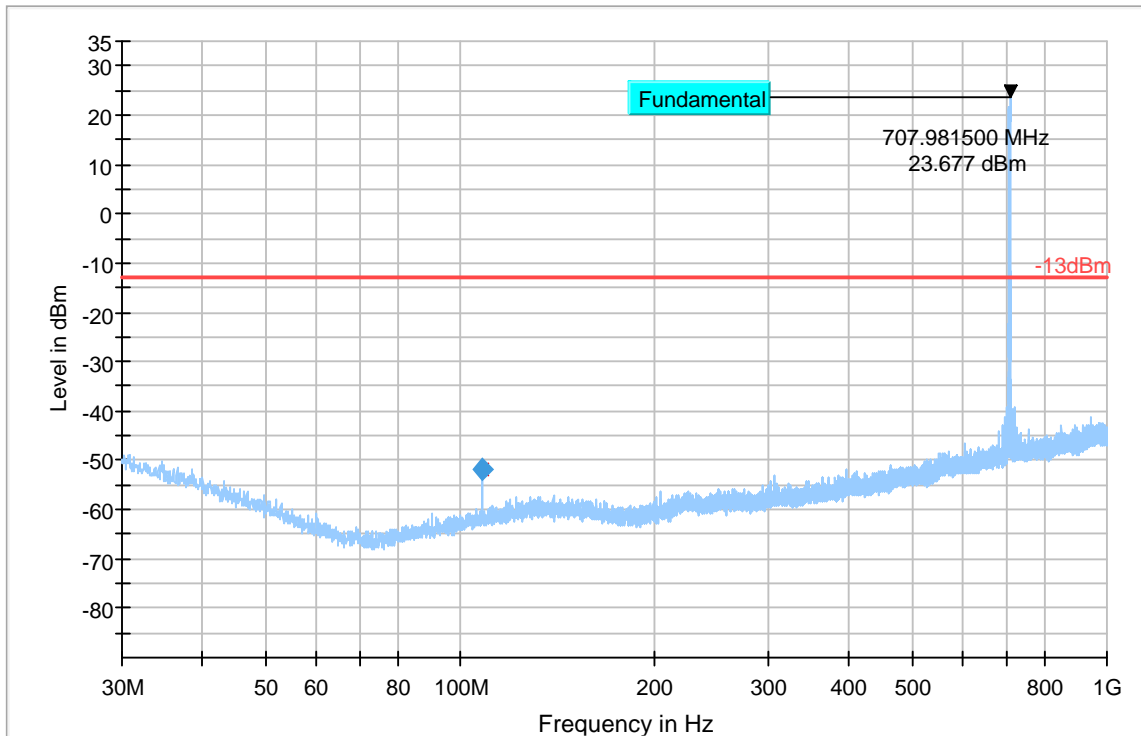
Channel: Mid

**Final Result**

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
108.006	-51.82	-13.00	38.82	500.0	100.0	300.0	V	224.0	-83

(continuation of the "Final\_Result" table from column 16 ...)

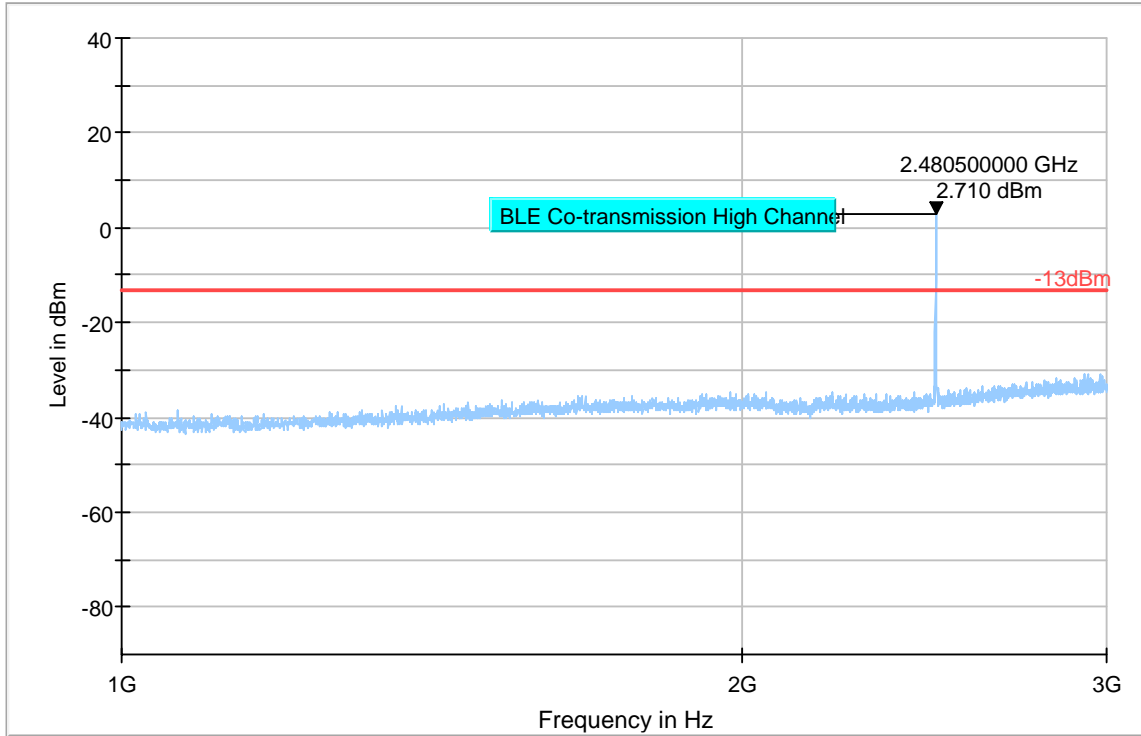
Frequency (MHz)	Comment
108.006	4:43:59 PM - 3/6/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RM

Plot # 37 Radiated Emissions: 1 GHz - 3 GHz

Channel: Mid



— Preview Result 1-RMS    \* Critical\_Freqs RMS    — -13dBm    ◆ Final\_Result RM

**Plot # 38 Radiated Emissions: 3 GHz – 9 GHz**

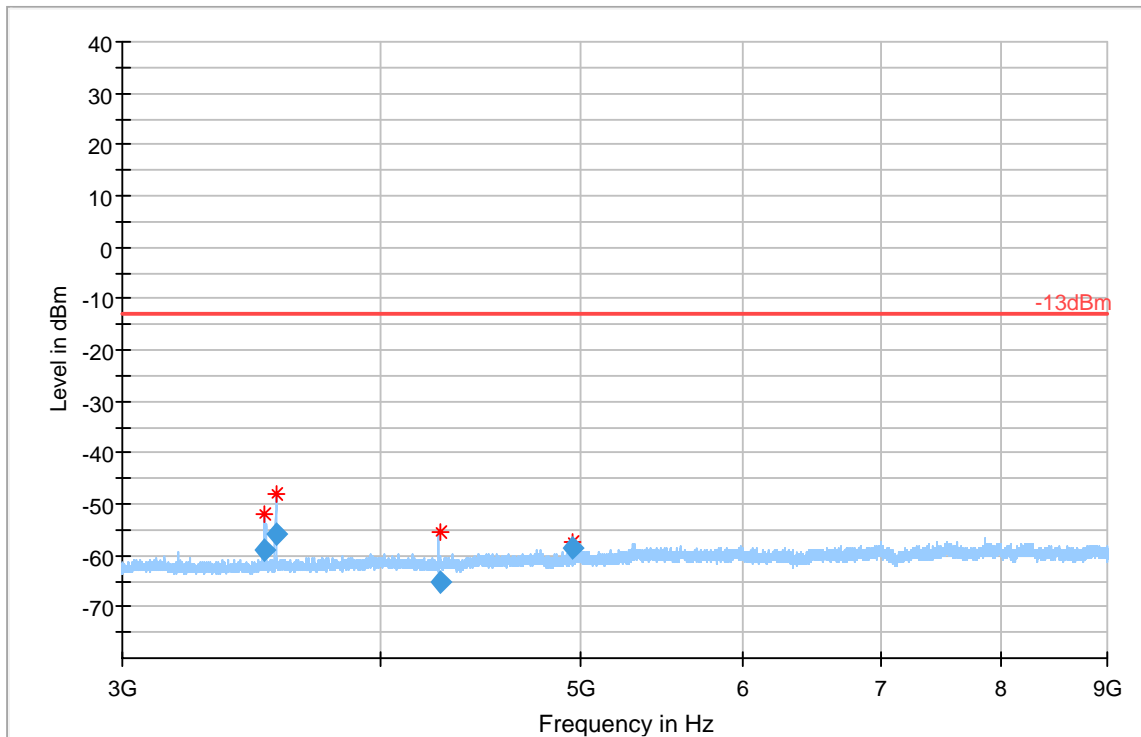
Channel: Mid

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3518.395	-58.89	-13.00	45.89	500.0	1000.0	141.0	H	98.0	-131
3559.516	-55.70	-13.00	42.70	500.0	1000.0	100.0	V	85.0	-131
4276.523	-65.14	-13.00	52.14	500.0	1000.0	241.0	V	32.0	-130
4959.723	-58.69	-13.00	45.69	500.0	1000.0	233.0	V	316.0	-128

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
3518.395	6:04:39 PM - 3/4/2019
3559.516	6:01:24 PM - 3/4/2019
4276.523	6:07:50 PM - 3/4/2019
4959.723	6:11:10 PM - 3/4/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RM

Plot # 39 Radiated Emissions: 30 MHz – 1GHz

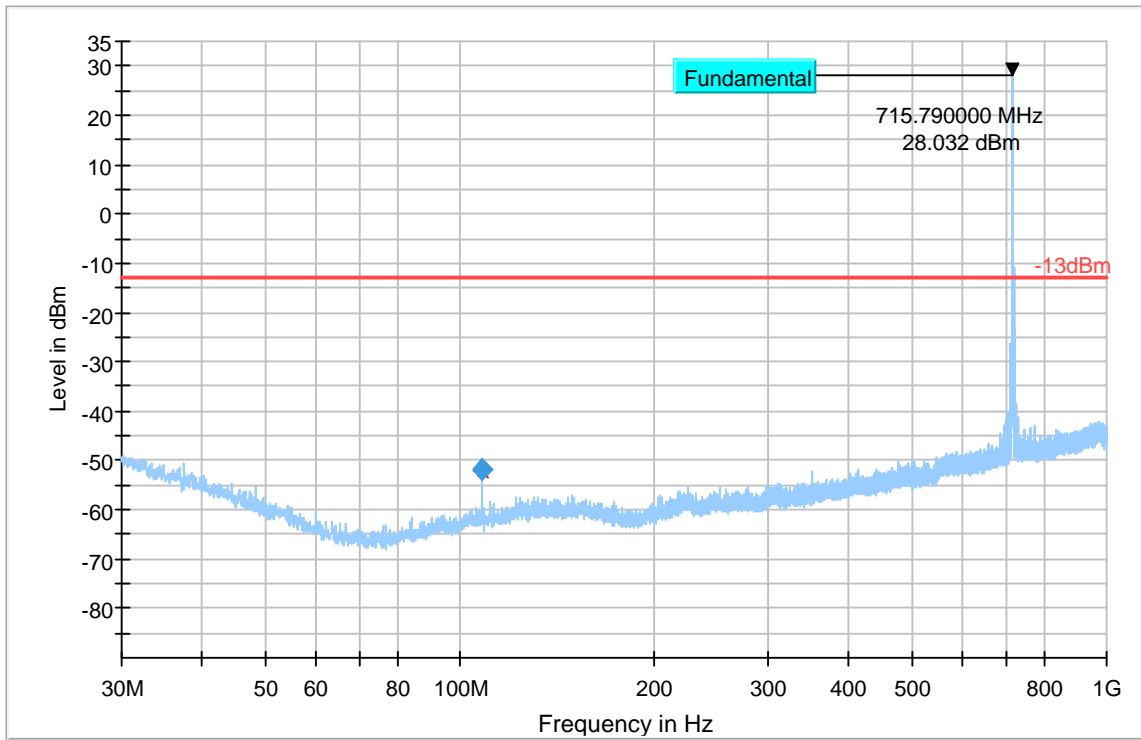
Channel: High

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
107.987	-51.75	-13.00	38.75	500.0	100.0	300.0	V	208.0	-83

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
107.987	5:00:25 PM - 3/6/2019

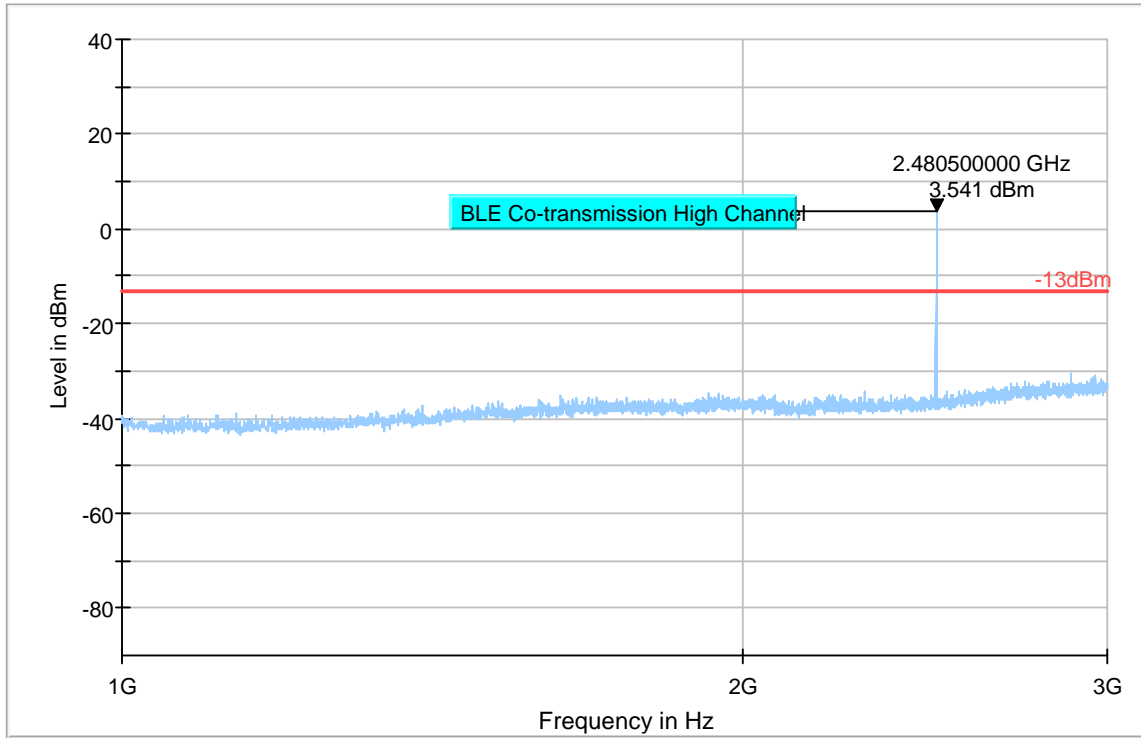


— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RV



Plot # 40 Radiated Emissions: 1 GHz - 3 GHz

Channel: High



— Preview Result 1-RMS    \* Critical\_Freqs RMS    — -13dBm    ◆ Final\_Result RM

Plot # 41 Radiated Emissions: 3 GHz – 9 GHz

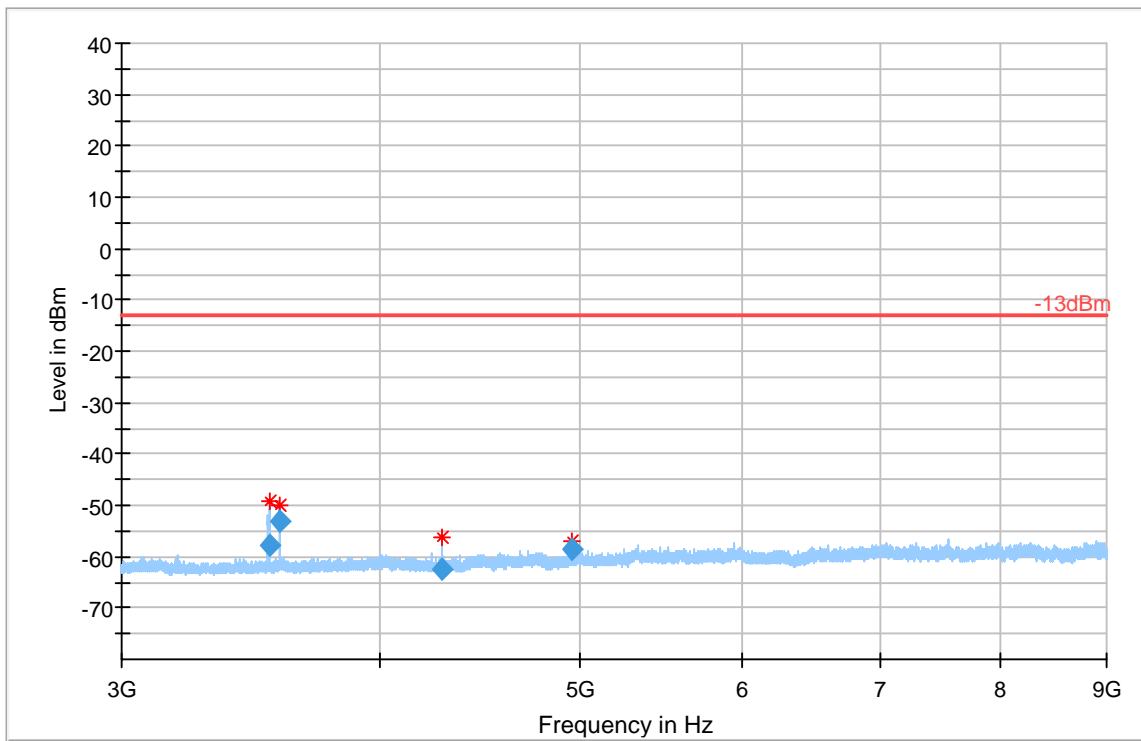
Channel: High

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3536.532	-57.60	-13.00	44.60	500.0	1000.0	201.0	H	81.0	-131
3577.379	-52.92	-13.00	39.92	500.0	1000.0	267.0	H	72.0	-131
4292.345	-62.37	-13.00	49.37	500.0	1000.0	125.0	V	103.0	-130
4959.986	-58.41	-13.00	45.41	500.0	1000.0	235.0	V	270.0	-128

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
3536.532	10:06:54 AM - 3/5/2019
3577.379	10:00:30 AM - 3/5/2019
4292.345	10:03:44 AM - 3/5/2019
4959.986	10:10:20 AM - 3/5/2019



— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RV

### LTE Band 13

Plot # 42 Radiated Emissions: 9 KHz – 30 MHz

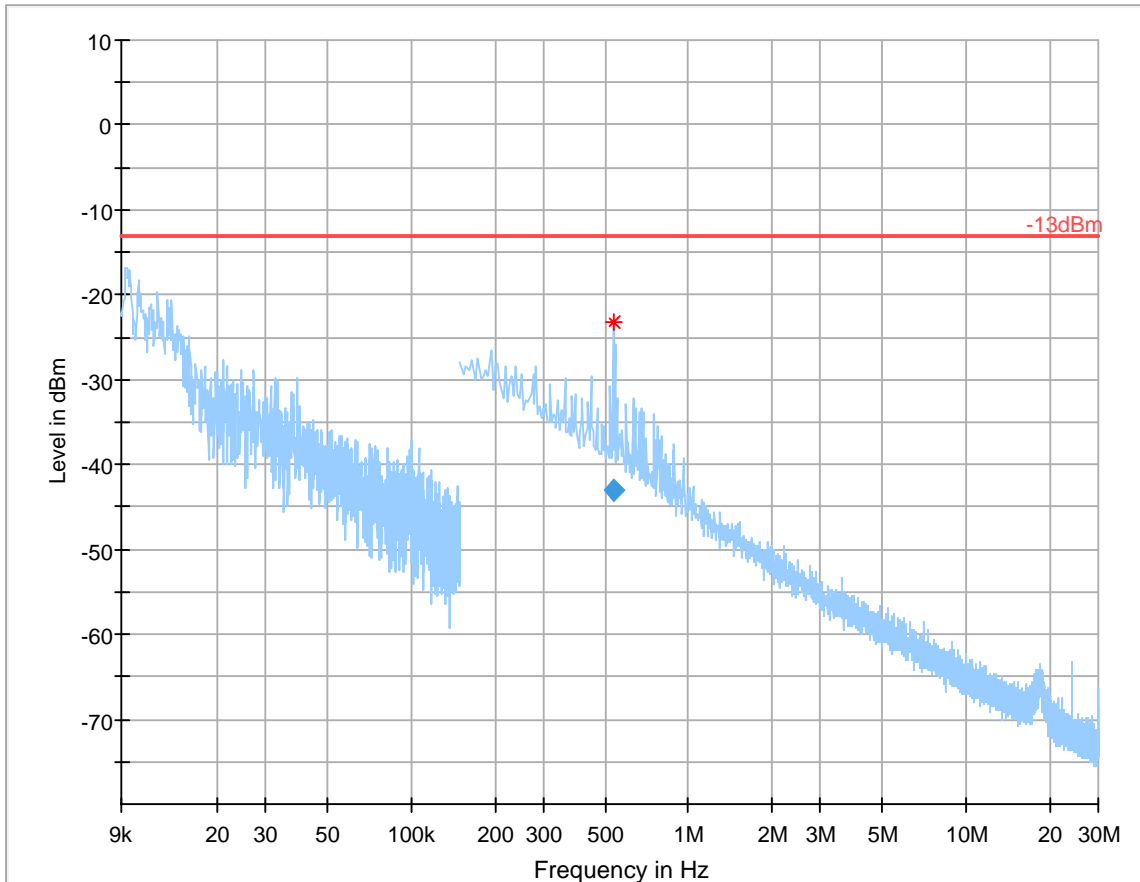
Channel: Mid

## Final Result

Frequency (MHz)	MaxPeak (dBm)	QuasiPeak (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)
0.537000	-42.93	---	-13.00	29.93	2.0	9.000	140.0	V	26.0

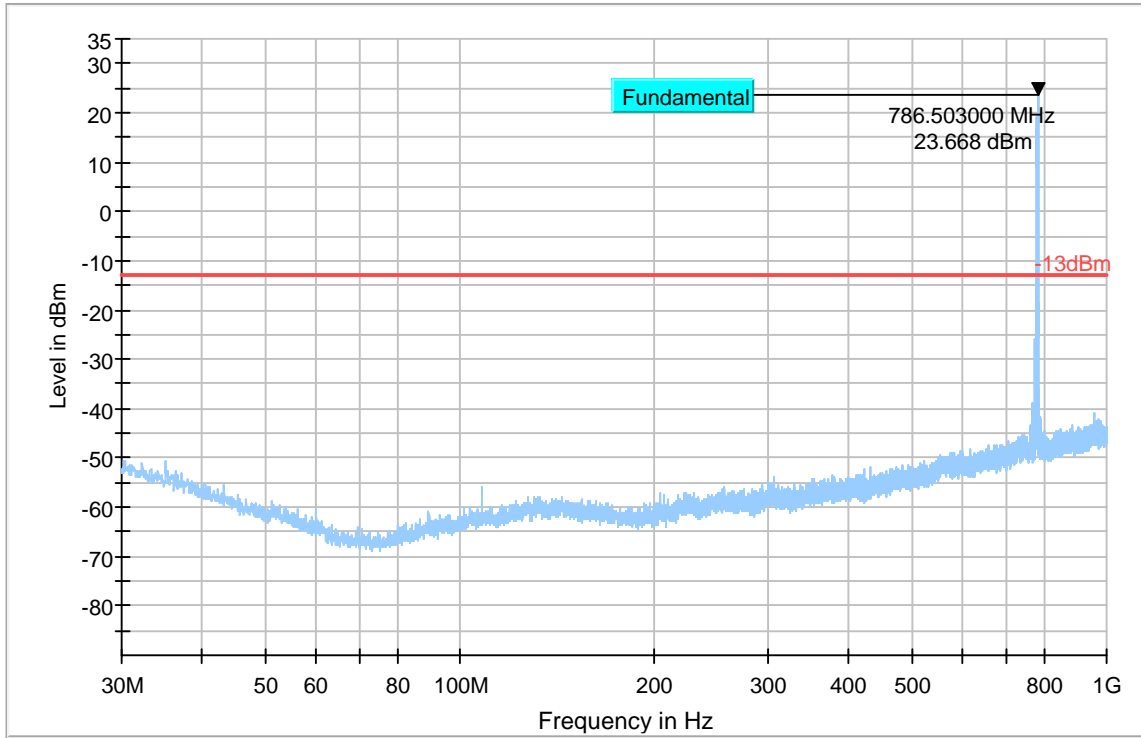
(continuation of the "Final\_Result" table from column 15 ...)

Frequency (MHz)	Corr. (dB)	Comment
0.537000	-76.6	4:43:03 PM - 3/8/2019



Plot # 43 Radiated Emissions: 30 MHz – 1 GHz

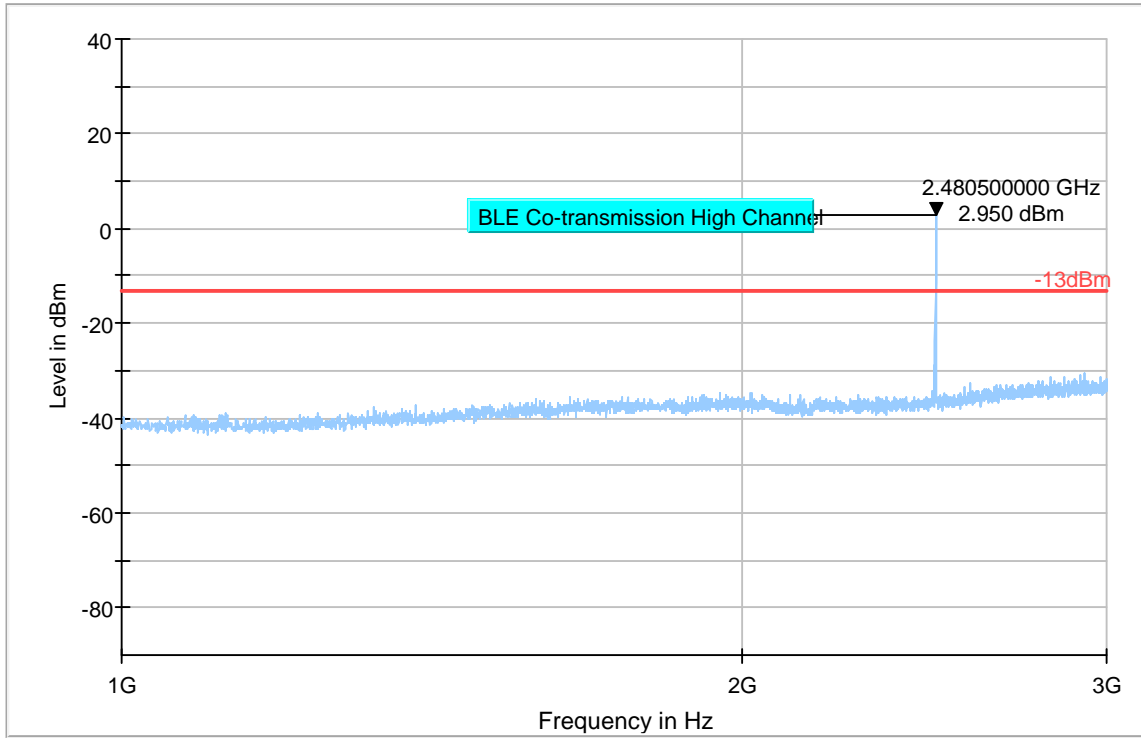
Channel: Mid



Preview Result 1-RMS    \*    Critical\_Freqs RMS    -13dBm    ◆    Final\_Result RV

Plot # 44 Radiated Emissions: 1 – 3 GHz

Channel: Mid



Preview Result 1-RMS    \*    Critical\_Freqs RMS    -13dBm    ◆    Final\_Result RM

**Plot # 45 Radiated Emissions: 3 GHz – 9 GHz**

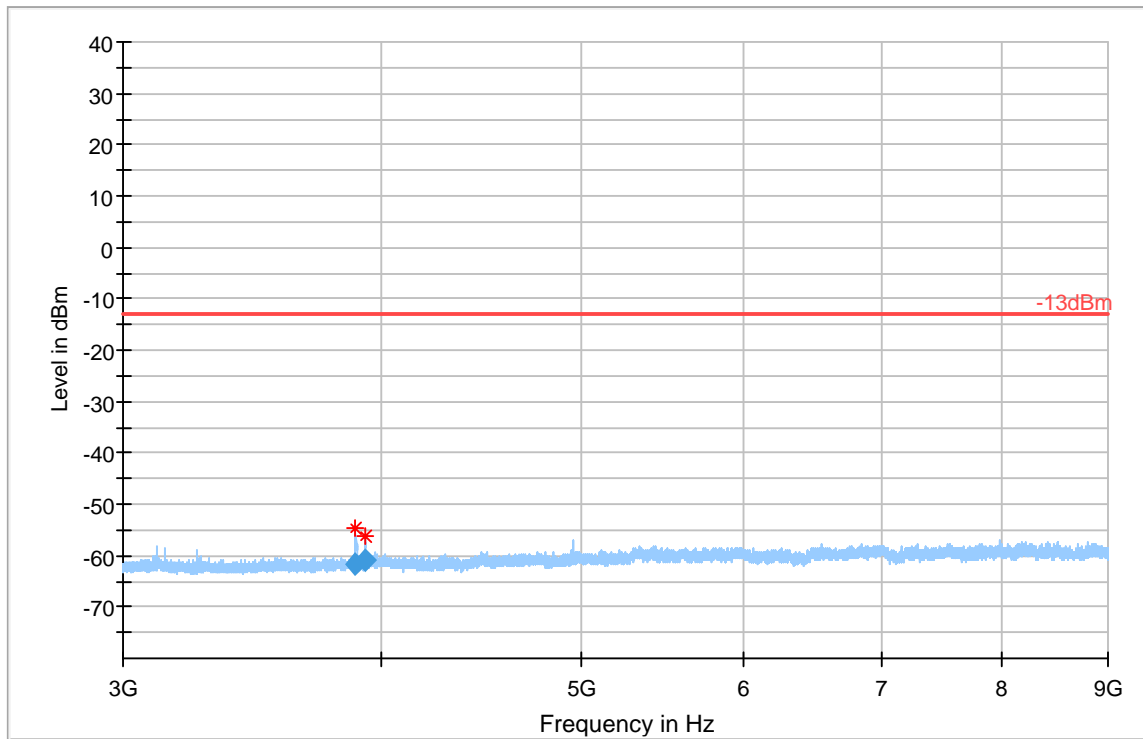
Channel: Mid

### Final Result

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3890.392	-61.50	-13.00	48.50	500.0	1000.0	283.0	H	192.0	-130
3932.467	-61.05	-13.00	48.05	500.0	1000.0	100.0	H	12.0	-130

(continuation of the "Final\_Result" table from column 16 ...)

Frequency (MHz)	Comment
3890.392	10:27:36 AM - 3/5/2019
3932.467	10:24:19 AM - 3/5/2019

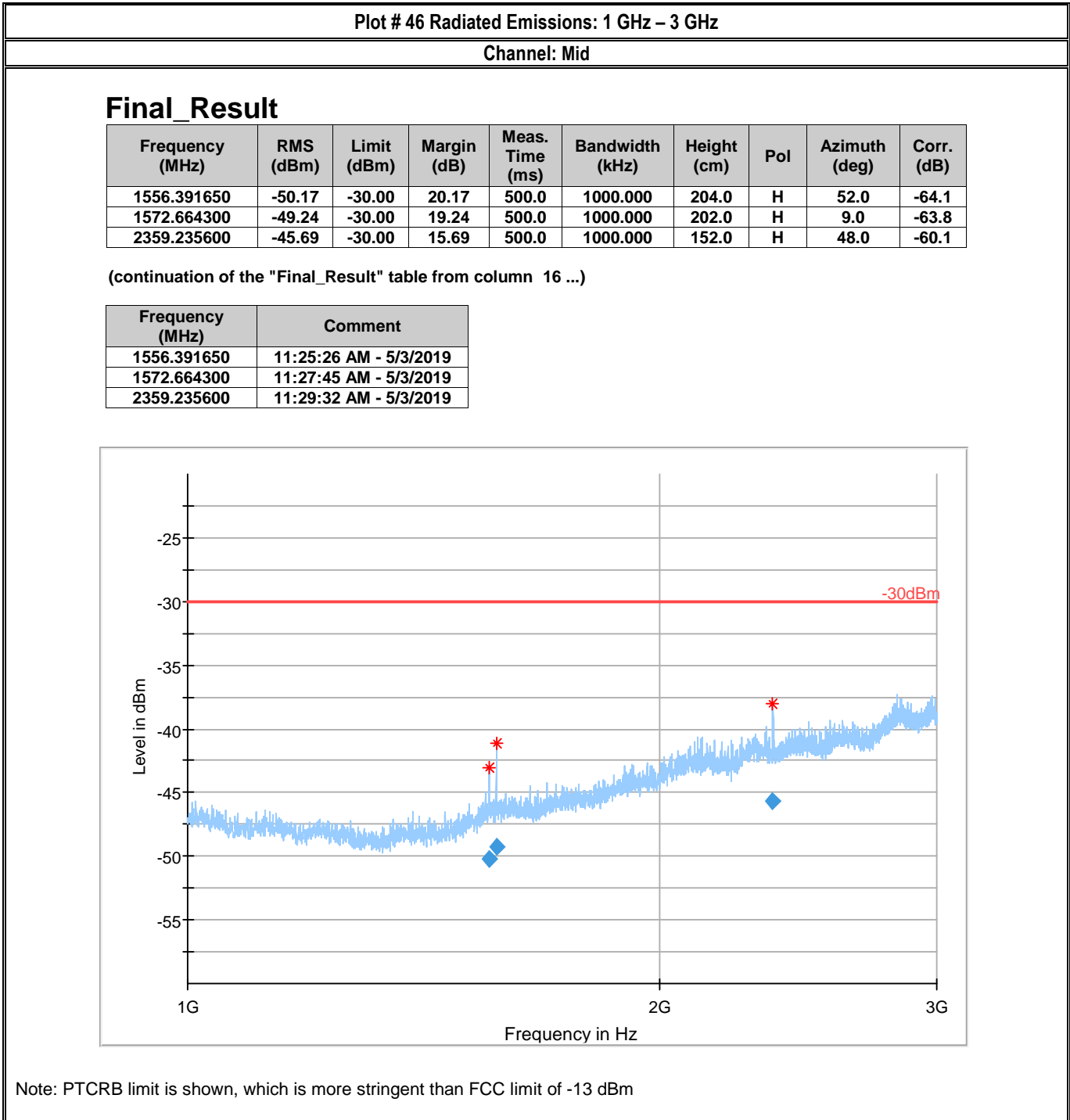


— Preview Result 1-RMS     
 \* Critical\_Freqs RMS     
 — -13dBm     
 ◆ Final\_Result RM

**LTE Spotcheck for BTLE Depopulated Unit:**

A spotcheck for cellular radiated spurious emissions was performed on the BTLE depopulated unit (FCC ID: APV-VLU11 / IC ID: 5483C-VLU11) for LTE bands 2, 4, 5, 12, and 13. The results were found compliant to the RSE limit. The worst case measurement is provided:

**LTE Band 13**



## 8 Test setup photos

Setup photos are included in supporting file name: "EMC\_CALAM\_085\_19001\_FCC\_22\_24\_27\_ISED\_Setup\_Photos.pdf"

## 9 Test Equipment And Ancillaries Used For Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
PASSIVE LOOP ANTENNA	ETS LINDGREN	6512	00164698	3 YEARS	08/08/2017
BILOG ANTENNA	TESEO	CBL 6141B	41106	3 YEARS	11/01/2017
HORN ANTENNA	EMCO	3115	00035114	3 YEARS	07/31/2017
HORN ANTENNA	ETS LINDGREN	3117	00167061	3 YEARS	08/08/2017
HORN ANTENNA	ETS LINDGREN	3116C	00166821	3 YEARS	09/24/2017
UNIVERSAL RADIO COMMUNICATION TESTER	R&S	CMU 200	101821	2 YEARS	07/06/2017
WIDEBAND RADIO COMMUNICATION	R&S	CMW500	127068	2 YEARS	07/01/2017
SIGNAL ANALYZER	R&S	FSV 40	101022	2 YEARS	07/05/2017
DIGITAL BAROMETER	VWR	35519-055	91119547	2 YEARS	06/20/2017
THERMOMETER HUMIDITY MONITOR	CONTROL COMPANY	36934-164	191871994	2 YEARS	01/10/2019
DC POWER SUPPLY	AGILENT	E3634A	MY53290018	N/A	N/A

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
2019-05-10	EMC_CALAM_085_19001_FCC_22_24_27_ISED	Initial version	Chin Ming Lui