



FCC / IC & Test Report

FOR:

Pratt & Whitney Engine Services, DPHM Solutions

Model:

FAST-A-010-3_RevG
FAST-A-010-4_RevG (Variant)

Product Description:

Flight Data acquisition, storage & transmission of data over Wi-Fi and Cellular to analytics center

FCC ID: 2AJ6A-FAST34G

IC: 22451-FAST34G

Applied Rules and Standards:

47 CFR Parts 22, 24, 27 and 90
RSS: 132 Issue 4, 133 Issue 6, 139 Issue 4, 199 Issue 4

REPORT #: EMC_PRATT_011_22001_FCC_22_24_27_90_Rev3

DATE: 2023-12-09



A2LA Accredited

IC recognized #
3462B-1

CETECOM Inc.

411 Dixon Landing Road ♦ Milpitas, CA 95035 ♦ U.S.A.

Phone: + 1 (408) 586 6200 ♦ Fax: + 1 (408) 586 6299 ♦ E-mail: contact@cetecom.com ♦ <http://www.cetecom.com>
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, 24, 27, 90, and Industry Canada Standards RSS-GEN issue 5, RSS-130 Issue 2, RSS-132 issue 4, RSS-133 issue 6, RSS-139 issue 4 and RSS-199 Issue 4.

No deficiencies were ascertained.

Company Name	Product Description	Model #
Pratt & Whitney Engine Services, DPHM Solutions	Flight Data acquisition, storage & transmission of data over Wi-Fi and Cellular to analytics center	FAST-A-010-3_RevG FAST-A-010-4_RevG (Variant)

Responsible for Testing Laboratory:

Arndt Stoecker			
2023-12-09	Compliance	(Director of Regulatory Services)	
Date	Section	Name	Signature

Responsible for the Report:

Cheng Song			
2023-12-09	Compliance	(EMC Engineer)	
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

Company Name:	CETECOM Inc.
Department:	Compliance
Street Address:	411 Dixon Landing Road
City/Zip Code	Milpitas, CA 95035
Country	USA
Telephone:	+1 (408) 586 6200
Fax:	+1 (408) 586 6299
Director of Regulatory Services:	Arndt Stoecker
Responsible Project Leader:	Cathy Palacios

2.2 Identification of the Client

Client's Name:	Pratt & Whitney Engine Services, DPHM Solutions
Street Address:	249 Vanderbilt Avenue
City/Zip Code	Norwood, MA 02062
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	Same as Client
Manufacturers Address:	
City/Zip Code	
Country	

3 Equipment Under Test (EUT)

3.1 EUT Specifications

Model:	FAST-A-010-3_RevG FAST-A-010-4_RevG (Variant)
Marketing Name:	Flight-data Acquisition Storage & Transmission
HW Version :	G
SW Version :	3.6
FCC-ID :	2AJ6A-FAST34G
IC:	22451-FAST34G
Product Description:	Flight Data acquisition, storage & transmission of data over Wi-Fi and Cellular to analytics center
Radio information:	<u>Cellular:</u> <ul style="list-style-type: none"> • Module: Gemalto PLS63-W, CAT-1 • FCC ID: 2AJ6A-FAST34G; IC: 22451-FAST34G • LTE; UMTS; GSM
Other Radios included in the device:	<u>WLAN</u> <ul style="list-style-type: none"> • Module: Ti-Wi • FCC ID: TFB-TIWI1-01; IC: 5969A-TIWI101 • 802.11 b/g/n (2.4 GHz)
Antenna Info:	<u>Cellular: *</u> <ul style="list-style-type: none"> • 698-960 MHz, Max Gain: 1.5 dBi • 1710-2170 MHz, Max Gain: 3.0 dBi • 2500-2700 MHz, Max Gain: 4.5 dBi <u>WLAN:</u> <ul style="list-style-type: none"> • 2400-2500 MHz, Max Gain: 1.5 dBi
Power Supply/ Rated Operating Voltage Range	Vmin: 22 VDC/ Vnom: 28 VDC / Vmax: 32.2 VDC
Operating Temperature Range	-40°C to 70 °C
Sample Revision	<input type="checkbox"/> Prototype Unit; <input type="checkbox"/> Production Unit; <input checked="" type="checkbox"/> Pre-Production
Dimensions	210mm x 68mm x 95mm
Weight	1.0 kg

* Accounting for cable loss of 10 ft as shown in the op description Figure 1. The net max antenna gain for bands 698-960 MHz, Max Gain: 0.4 dBi, 1710-2170 MHz, Max Gain: 1.7 dBi, 2500-2700 MHz, Max Gain: 2.3 dBi.

3.2 EUT Sample details

EUT #	Model Number	HW Version	SW Version	Comments
1	FAST-A-010-3_RevG	G	3.6	

3.3 Accessory Equipment (AE) details

AE #	Part Number	HW Version	SW Version	Comments
1	CFS69271-FSMAF	N/A	N/A	Laird Technologies Antenna

3.4 Test Sample Configuration

Set-up #	EUT / AE used for set-up	Comments
1	EUT#1 + AE#1	Radiated RF measurements were performed with EUT configured via customer provided scripts.

3.5 Mode of Operation details

Mode of Operation	Description of Operating modes	Additional Information
Op. 1	Cellular and Wi-Fi 802.11b Co-Transmission	Cellular was tested on Mid Channel at maximum power in a co-transmission mode Wi-Fi radio was configured to 802.11b Mid channel using special scripts provided by the client that will not be available to the end user

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, 90 and ISED Standards RSS-GEN issue 5, RSS-130 Issue 2, RSS-132 issue 4, RSS-133 issue 6, RSS-139 issue 4 and RSS-199 Issue 4.

4.1 Dates of Testing:

2/16/2023 - 2/27/2023

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.

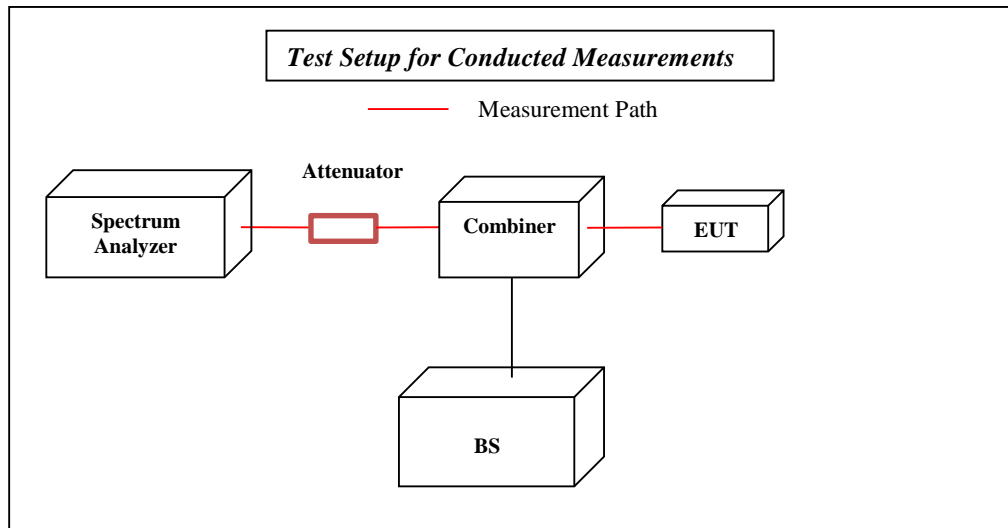
4.4 Decision Rule

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

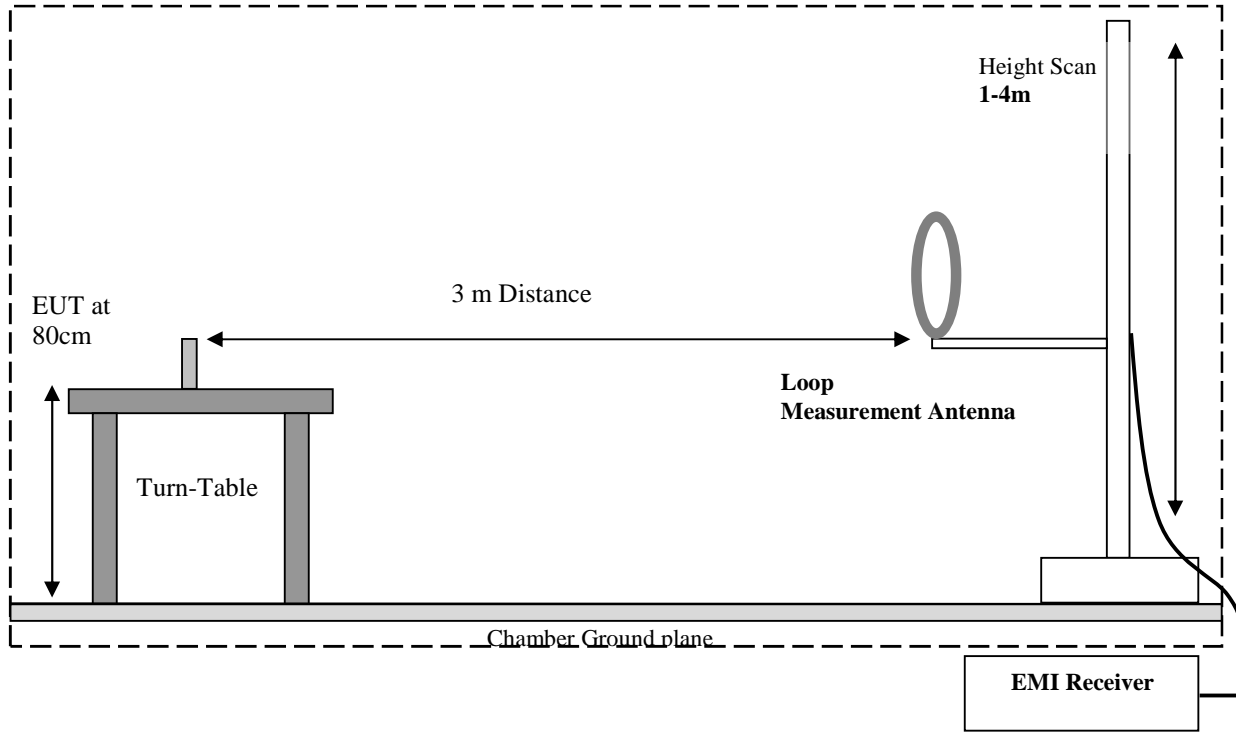
Testing is performed according to the guidelines provided in FCC publication (KDB) 971168 D01 v03r01 – “Measurement Guidance for Certification of Licensed Digital Transmitters” and according to relevant parts of ANSI/TIA-603-E (2016) as detailed below.



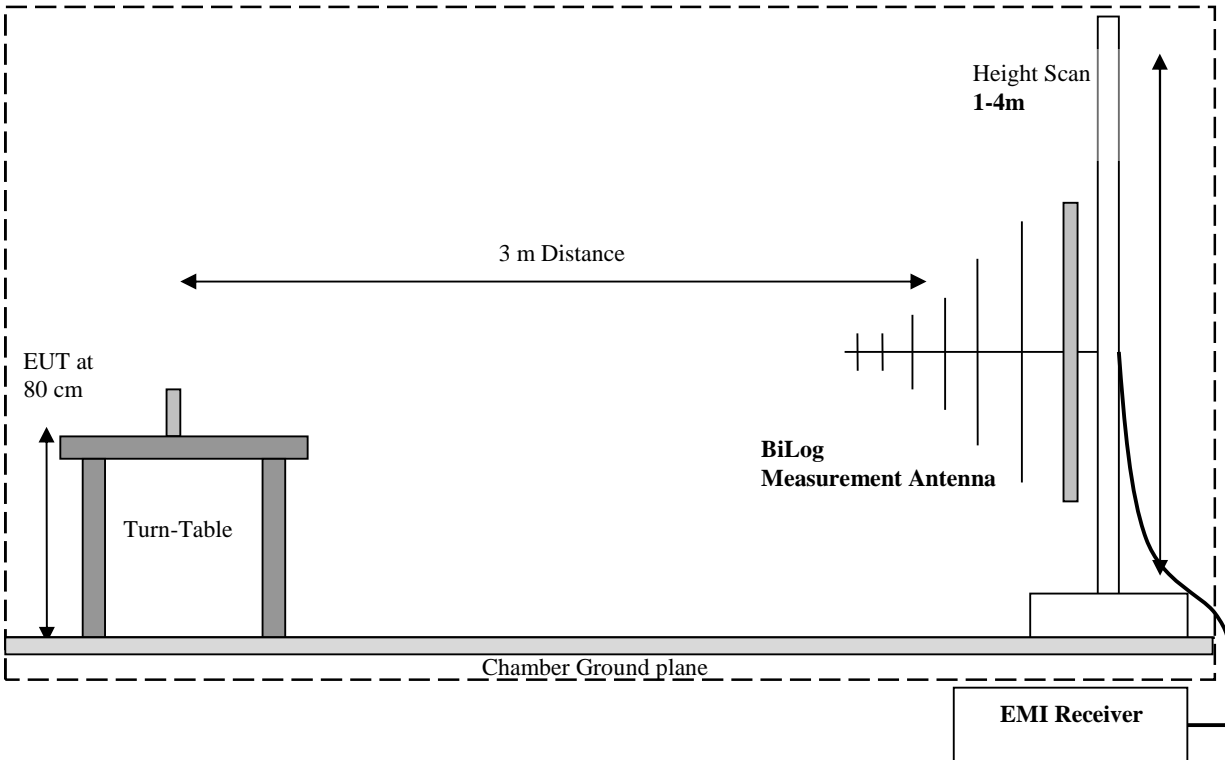
5.1 Radiated Measurement

- 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.

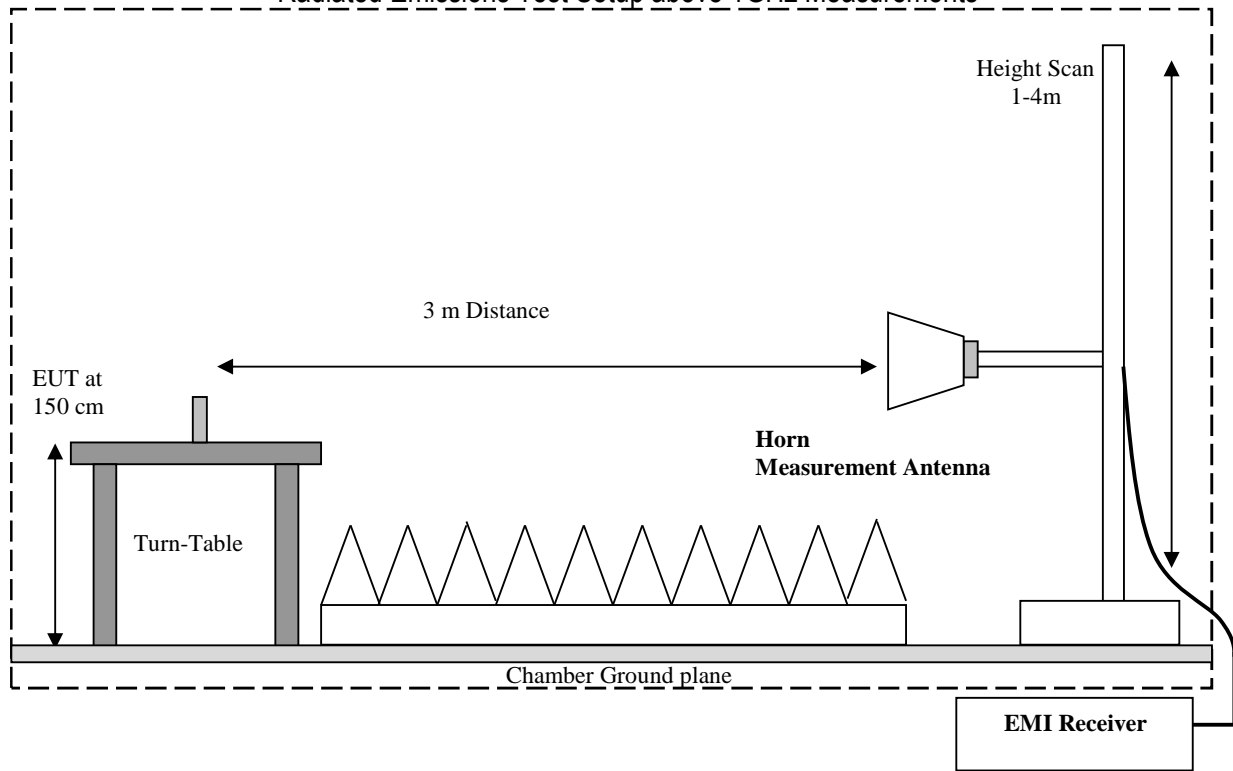
Radiated Emissions Test Setup below 30MHz Measurements



Radiated Emissions Test Setup 30MHz-1GHz Measurements



Radiated Emissions Test Setup above 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 μ 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 μ V)	Cable Loss (dB)	Antenna Factor Correction (dB)	Field Strength Result (dB μ 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"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1055; §22.355	Frequency Tolerance	Extreme Temperature and Voltage	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 3
§2.1049; §22.917	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 4
§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 5
§2.1051; §22.917	Conducted Spurious Emissions	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1
§2.1053; §22.917	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 report # 200722016RFM-1, under FCC ID: QIPPLS63-W;

Leveraged from module certification report # 200722016RFM-2, under FCC ID: QIPPLS63-W

Note 3: Leveraged from module certification report # 220730732RFM-2, section 5.9 under FCC ID: QIPPLS63-W;

Leveraged from module certification report # 220730732RFM-1, section 5.9 under FCC ID: QIPPLS63-W

Note 4: Leveraged from module certification report # 220730732RFM-2, section 5.5 under FCC ID: QIPPLS63-W;

Leveraged from module certification report # 220730732RFM-1, section 5.5 under FCC ID: QIPPLS63-W

Note 5: Leveraged from module certification report # 220730732RFM-2, section 5.6 under FCC ID: QIPPLS63-W;

Leveraged from module certification report # 220730732RFM-1, section 5.6 under FCC ID: QIPPLS63-W



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"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 2
§2.1055; §24.235	Frequency Stability	Extreme Temperature and Voltage	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 3
§2.1049; §24.238	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 4
§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 5
§2.1051; §24.238	Conducted Spurious Emissions	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1
§2.1053; §24.238	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 report # 200722016RFM-1, under FCC ID: QIPPLS63-W;
 Leveraged from module certification report # 200722016RFM-2, under FCC ID: QIPPLS63-W

Note 3: Leveraged from module certification report # 220730732RFM-2, section 5.9 under FCC ID: QIPPLS63-W;
 Leveraged from module certification report # 220730732RFM-1, section 5.9 under FCC ID: QIPPLS63-W

Note 4: Leveraged from module certification report # 220730732RFM-2, section 5.5 under FCC ID: QIPPLS63-W;
 Leveraged from module certification report # 220730732RFM-1, section 5.5 under FCC ID: QIPPLS63-W

Note 5: Leveraged from module certification report # 220730732RFM-2, section 5.6 under FCC ID: QIPPLS63-W;
 Leveraged from module certification report # 220730732RFM-1, section 5.6 under FCC ID: QIPPLS63-W



6.3 FCC 27, 90 / RSS-130, RSS-139, RSS-199

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
§2.1046; §27.50	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	Extreme Temperature and Voltage	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 3
§2.1049; §27.53	Occupied Bandwidth	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1 Note 4
§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 5
§2.1051; §27.53	Conducted Spurious Emissions	Nominal	-	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Complies Note 1
§2.1053; §27.53	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 report # 200722016RFM-1, under FCC ID: QIPPLS63-W;
 Leveraged from module certification report # 200722016RFM-2, under FCC ID: QIPPLS63-W

Note 3: Leveraged from module certification report # 220730732RFM-2, section 5.9 under FCC ID: QIPPLS63-W

Note 4: Leveraged from module certification report # 220730732RFM-2, section 5.5 under FCC ID: QIPPLS63-W

Note 5: Leveraged from module certification report # 220730732RFM-2, section 5.6 under FCC ID: QIPPLS63-W



6.4 Module Summary

FCC Rule Parts	Frequency Range (MHz)	Output (W)	Frequency Tolerance	Emission Designator
22H	824.2 - 848.8	1.38676	0.0251 PM	245KGXW
22H	824.2 - 848.8	0.34995	0.0251 PM	243KG7W
24E	1850.2 - 1909.8	1.1885	0.0101 PM	244KGXW
24E	1850.2 - 1909.8	0.43351	0.0101 PM	246KG7W
24E	1852.4 - 1907.6	0.28314	0.0101 PM	4M14F9W
27	1712.4 - 1752.6	0.26002	0.0104 PM	4M14F9W
22H	826.4 - 846.6	0.17298	0.0108 PM	4M15F9W
24E	1860.0 - 1900.0	0.23281	0.0037 PM	17M9G7D
24E	1860.0 - 1900.0	0.23121	0.0037 PM	18M0W7D
27	1710.7 - 1754.3	0.20701	0.0052 PM	1M11G7D
27	1720.0 - 1745.0	0.19999	0.0052 PM	18M0G7D
27	1720.0 - 1745.0	0.17298	0.0052 PM	17M9W7D
22H	829.0 - 844.0	0.139	0.0084 PM	9M00G7D
22H	829.0 - 844.0	0.11885	0.0084 PM	9M00W7D
27	2510.0 - 2560.0	0.19953	0.0036 PM	18M0G7D
27	2502.5 - 2567.5	0.20654	0.0036 PM	4M53W7D
27	2510.0 - 2560.0	0.18535	0.0036 PM	17M9W7D
27	699.7 - 715.3	0.15066	0.0226 PM	1M10G7D
27	704.0 - 711.0	0.14723	0.0226 PM	9M01G7D
27	699.7 - 715.3	0.139	0.0226 PM	1M10W7D
27	704.0 - 711.0	0.13772	0.0226 PM	8M98W7D
22H	782.0 - 782.0	0.13305	0.0166 PM	8M94G7D
22H	782.0 - 782.0	0.12474	0.0166 PM	8M96W7D
22H	831.5 - 841.5	0.13002	0.0227 PM	13M5G7D
22H	831.5 - 841.5	0.13459	0.0227 PM	13M5W7D
90	814.7 - 823.3	0.20941	0.022 PM	1M11G7D
90	819.0 - 819.0	0.19679	0.022 PM	8M95G7D
90	815.5 - 822.5	0.21878	0.022 PM	2M69W7D
90	819.0 - 819.0	0.1977	0.022 PM	8M96W7D
27	2580.0 - 2610.0	0.19724	0.0046 PM	18M0G7D
27	2580.0 - 2610.0	0.20845	0.0046 PM	18M0W7D
27	2545.0 - 2645.0	0.22699	0.0039 PM	18M0G7D
27	2545.0 - 2645.0	0.20989	0.0039 PM	18M0W7D
27	1715.0 - 1775.0	0.23227	0.008 PM	8M99G7D
27	1720.0 - 1770.0	0.20184	0.008 PM	17M9G7D
27	1712.5 - 1777.5	0.22803	0.008 PM	4M54W7D
27	1720.0 - 1770.0	0.19011	0.008 PM	17M9W7D

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-E (2016)

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 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

7.1.2 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-130 Part 4.7, RSS-132 Part 5.5; RSS-133 Part 6.5; RSS-139 Part 6.6, RSS-199 Part 4.5 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
22.0	1	Op. 1	28 VDC

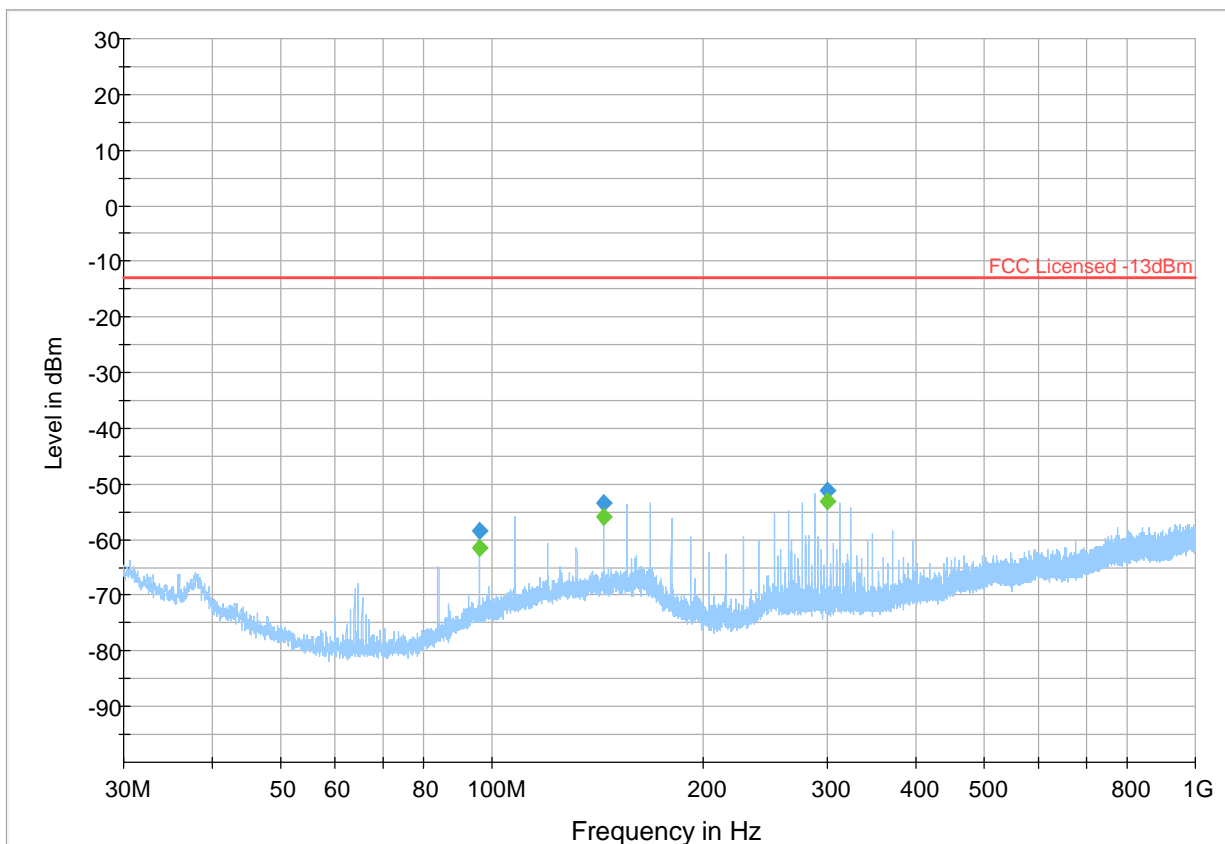
7.1.4 Measurement result:

Plot #	EUT Set-Up #	EUT operating mode	Scan Frequency	Limit (dBm)	Result
1-4	1	LTE 2	30MHz – 30GHz	-13	Pass
5-7	1	LTE 4	30MHz – 18GHz	-13	Pass
8-10	1	LTE 5	30MHz – 9GHz	-13	Pass
11-14	1	LTE 7	30MHz – 30GHz	-13	Pass
15-17	1	LTE 8	30MHz – 18GHz	-13	Pass
18-20	1	LTE 12	30MHz – 18GHz	-13	Pass
21-23	1	LTE 13	30MHz – 18GHz	-13	Pass
24-26	1	LTE 26	30MHz – 18GHz	-13	Pass
27-30	1	LTE 38	30MHz – 22GHz	-13	Pass
31-34	1	LTE 41	30MHz – 22GHz	-13	Pass
35-38	1	LTE 66	30MHz – 22GHz	-13	Pass
39-42	1	UMTS II	30MHz – 22GHz	-13	Pass
43-46	1	UMTS IV	30MHz – 22GHz	-13	Pass
47-49	1	UMTS V	30MHz – 9GHz	-13	Pass
50-53	1	GSM 1900	30MHz – 22GHz	-13	Pass
54-56	1	GSM 850	30MHz – 9GHz	-13	Pass



7.1.5 Measurement Plots:

Plot # 1										
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
95.96	-58.50	---	-13.00	45.50	500.0	120.0	100.0	V	75.0	-75.5
95.96	---	-61.39	---	---	500.0	120.0	100.0	V	75.0	-75.5
143.98	-53.30	---	-13.00	40.30	500.0	120.0	133.0	V	23.0	-69.9
143.98	---	-55.89	---	---	500.0	120.0	133.0	V	23.0	-69.9
299.98	---	-53.12	---	---	500.0	120.0	107.0	H	53.0	-74.0
299.98	-51.25	---	-13.00	38.25	500.0	120.0	107.0	H	53.0	-74.0

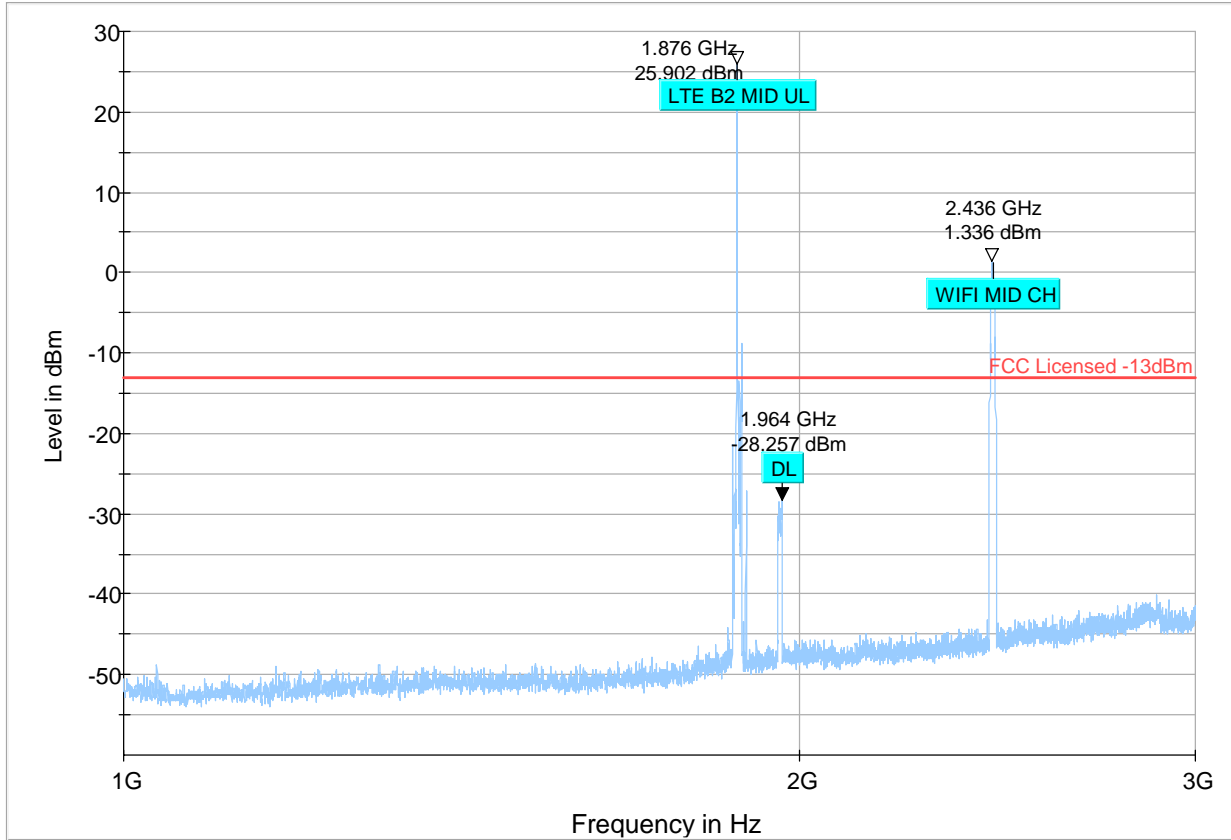


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 2

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

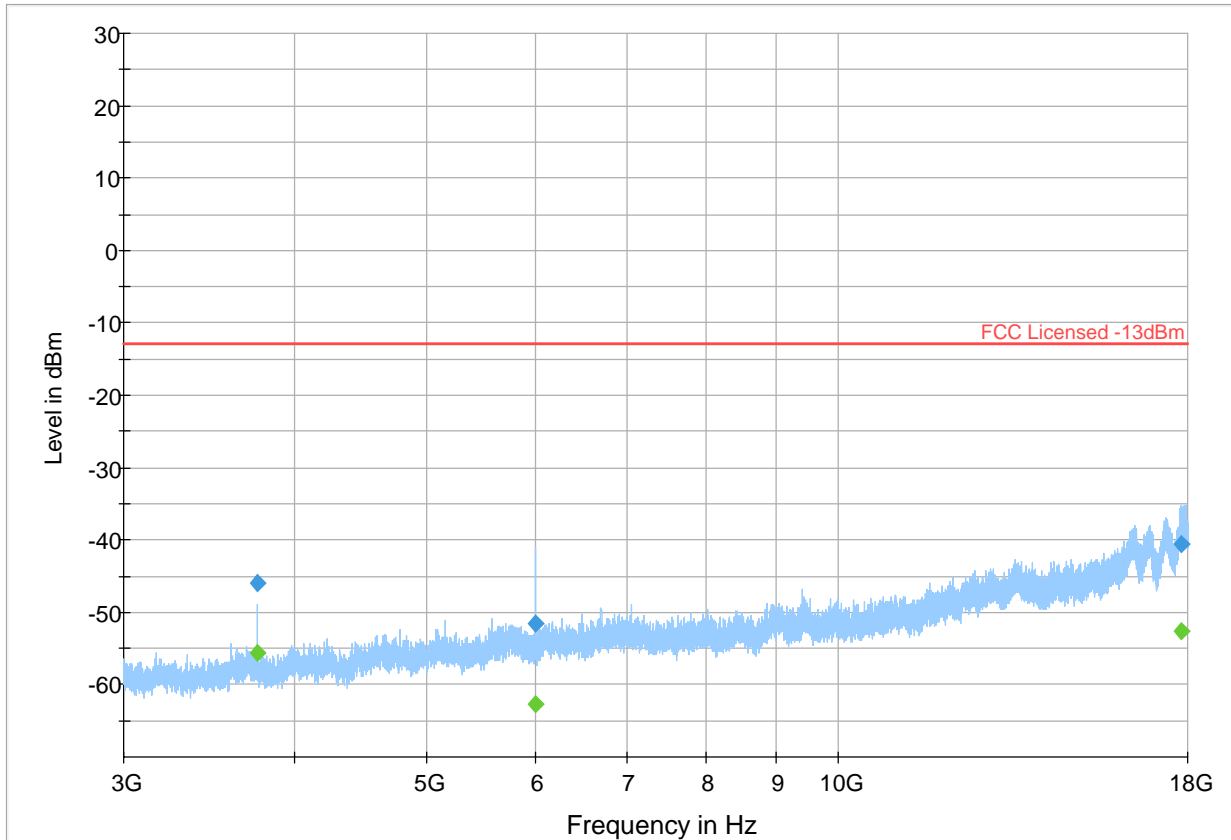


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 3

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3759.25	---	-55.66	---	---	500.0	1000.0	142.0	V	98.0	-100.9
3759.25	-46.02	---	-13.00	33.02	500.0	1000.0	142.0	V	98.0	-100.9
6000.00	---	-62.67	---	---	500.0	1000.0	238.0	V	-39.0	-97.1
6000.00	-51.49	---	-13.00	38.49	500.0	1000.0	238.0	V	-39.0	-97.1
17810.25	---	-52.69	---	---	500.0	1000.0	202.0	H	355.0	-77.4
17810.25	-40.54	---	-13.00	27.54	500.0	1000.0	202.0	H	355.0	-77.4

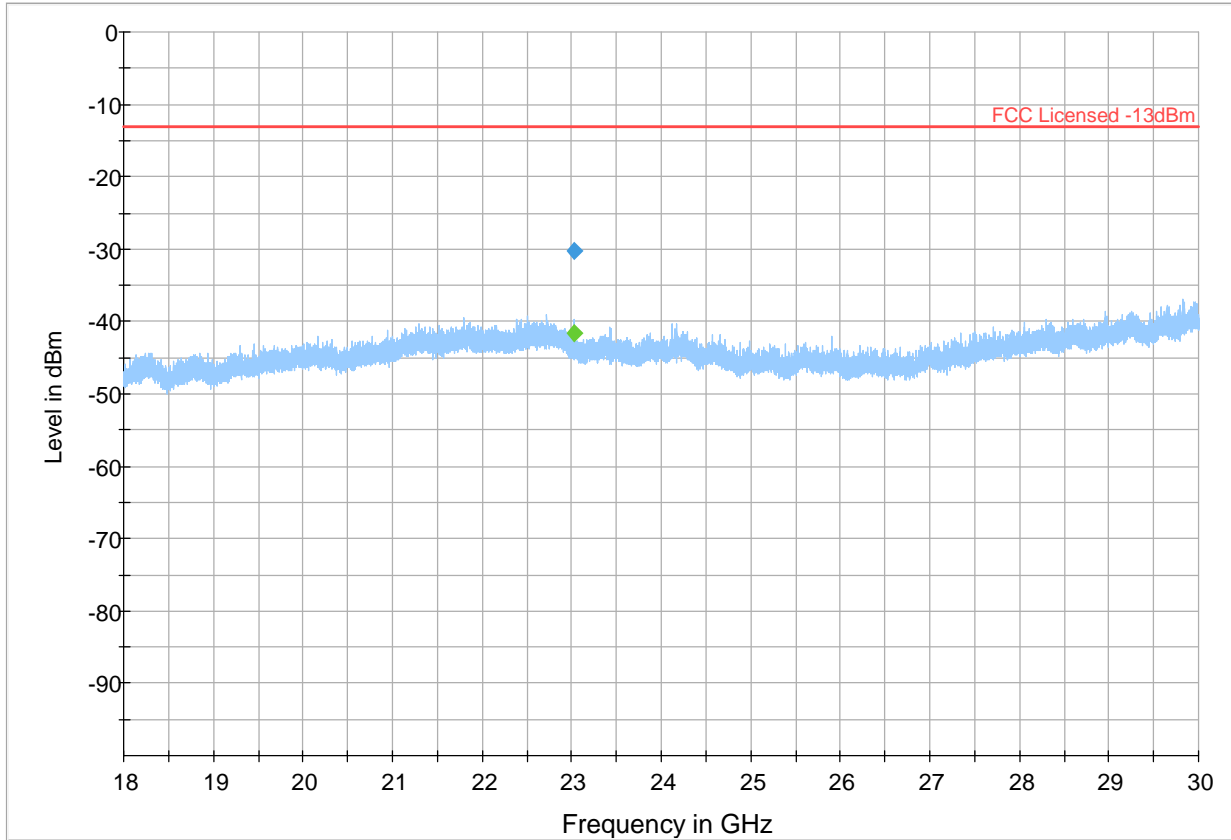


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 4

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
23023.50	---	-41.67	---	---	500.0	1000.0	100.0	V	96.0	-76.1
23023.50	-30.18	---	-13.00	17.18	500.0	1000.0	100.0	V	96.0	-76.1

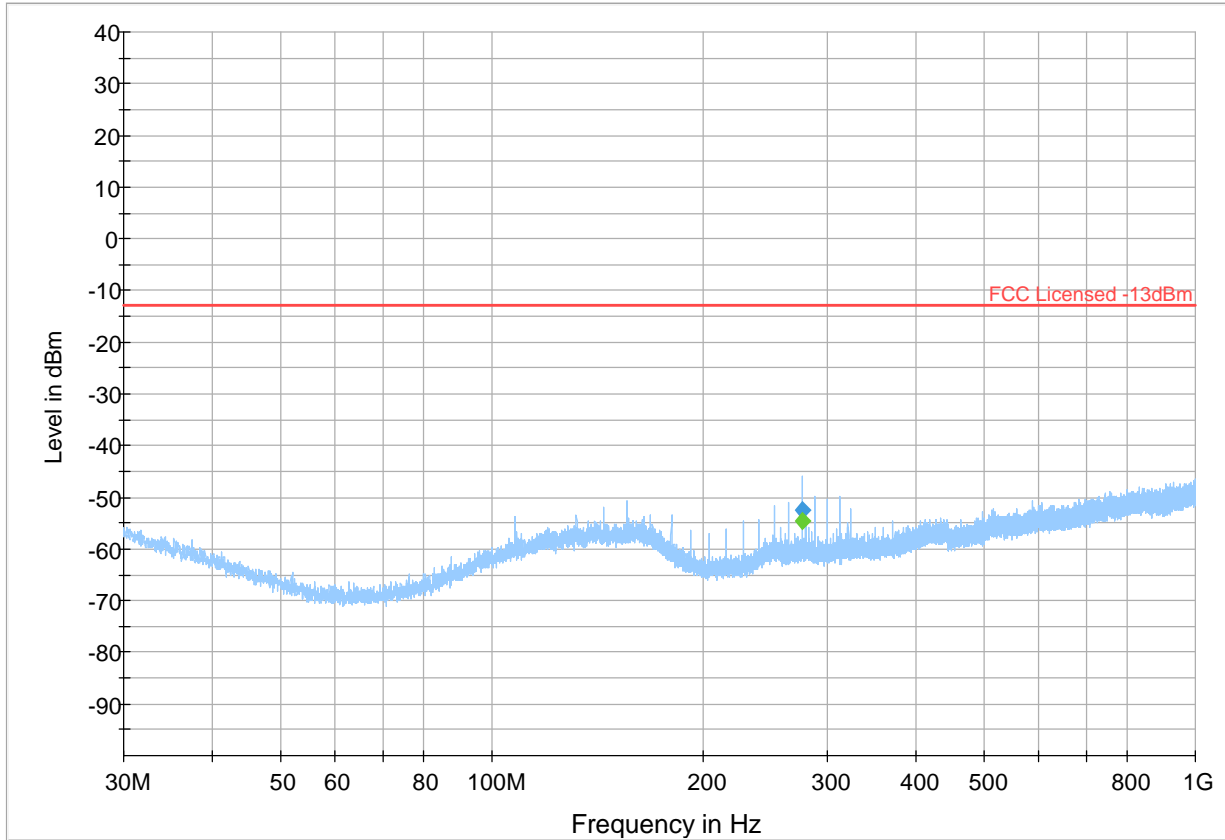


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 5

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-54.55	---	---	500.0	100.0	125.0	V	145.0	-74.2
275.97	-52.58	---	-13.00	39.58	500.0	100.0	125.0	V	145.0	-74.2

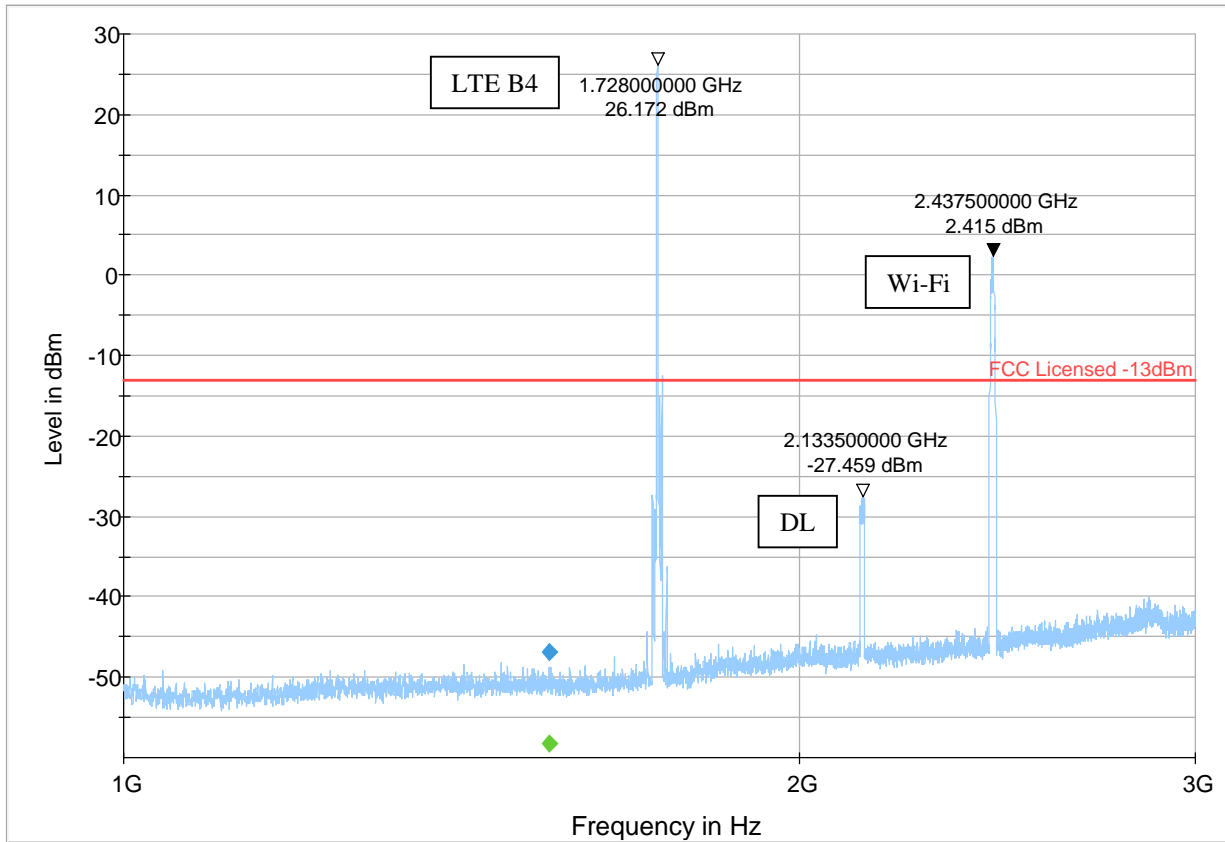


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 6

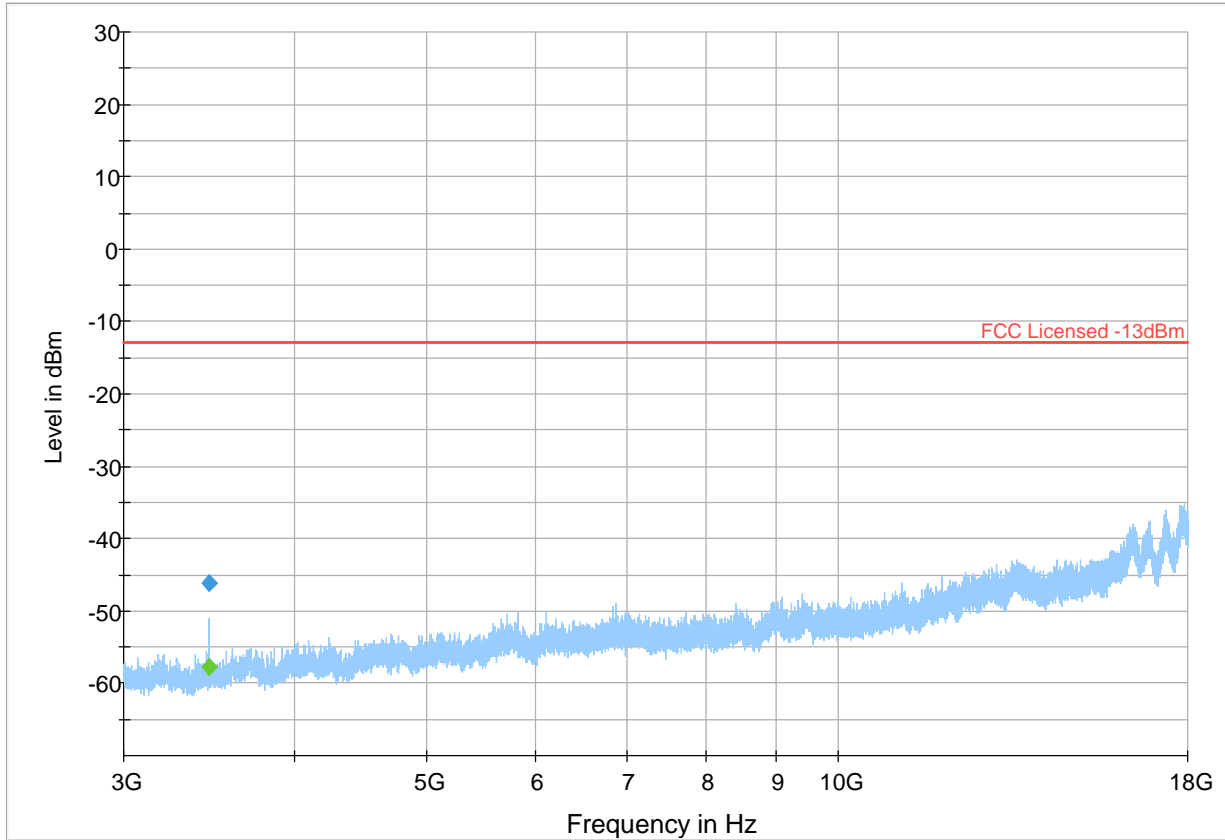
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1546.25	---	-58.24	---	---	500.0	1000.0	166.0	H	19.0	-65.9
1546.25	-46.79	---	-13.00	33.79	500.0	1000.0	166.0	H	19.0	-65.9



— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS

Plot # 7

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3466.50	---	-57.69	---	---	500.0	1000.0	217.0	V	132.0	-102.2
3466.50	-46.21	---	-13.00	33.21	500.0	1000.0	217.0	V	132.0	-102.2

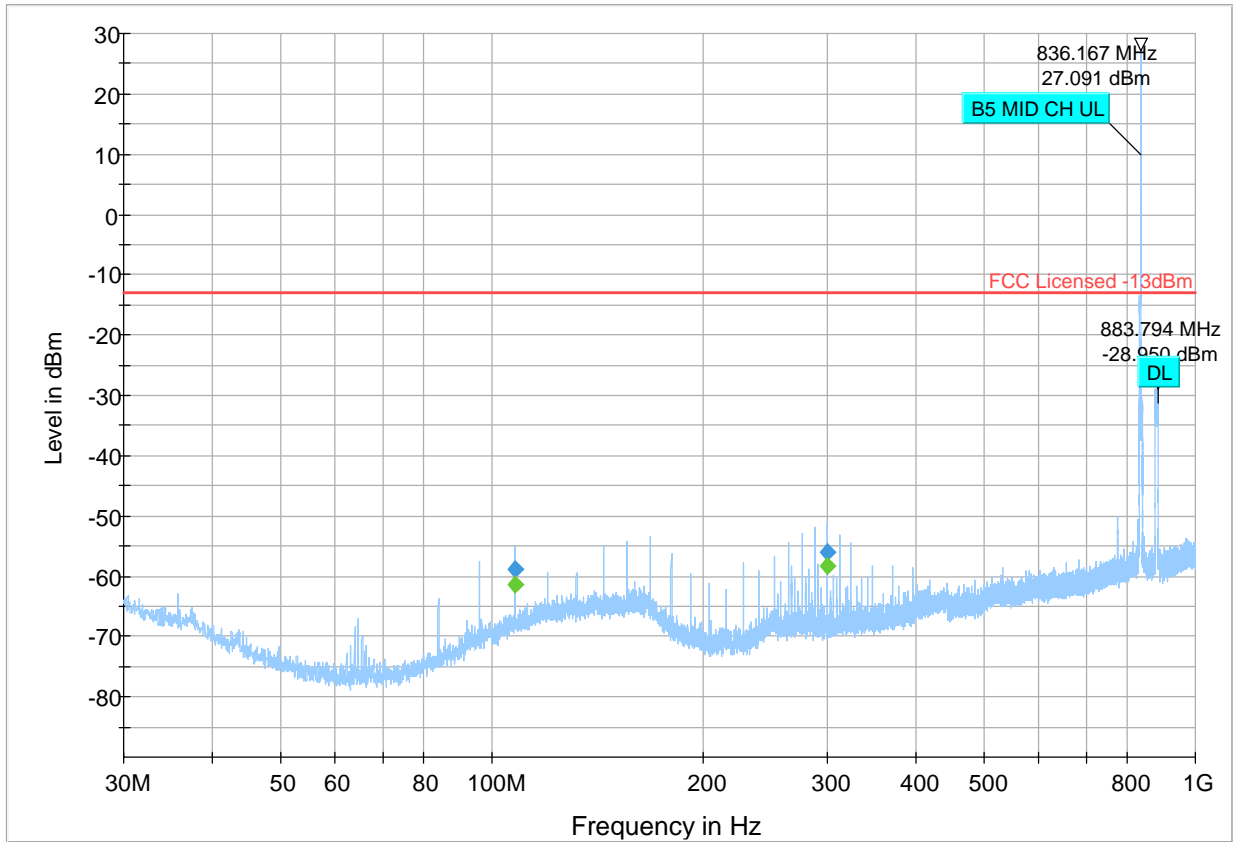


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 8

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
107.96	-58.93	---	-13.00	45.93	500.0	100.0	117.0	V	305.0	-73.0
107.96	---	-61.35	---	---	500.0	100.0	117.0	V	305.0	-73.0
299.98	-56.11	---	-13.00	43.11	500.0	100.0	270.0	V	155.0	-73.9
299.98	---	-58.25	---	---	500.0	100.0	270.0	V	155.0	-73.9

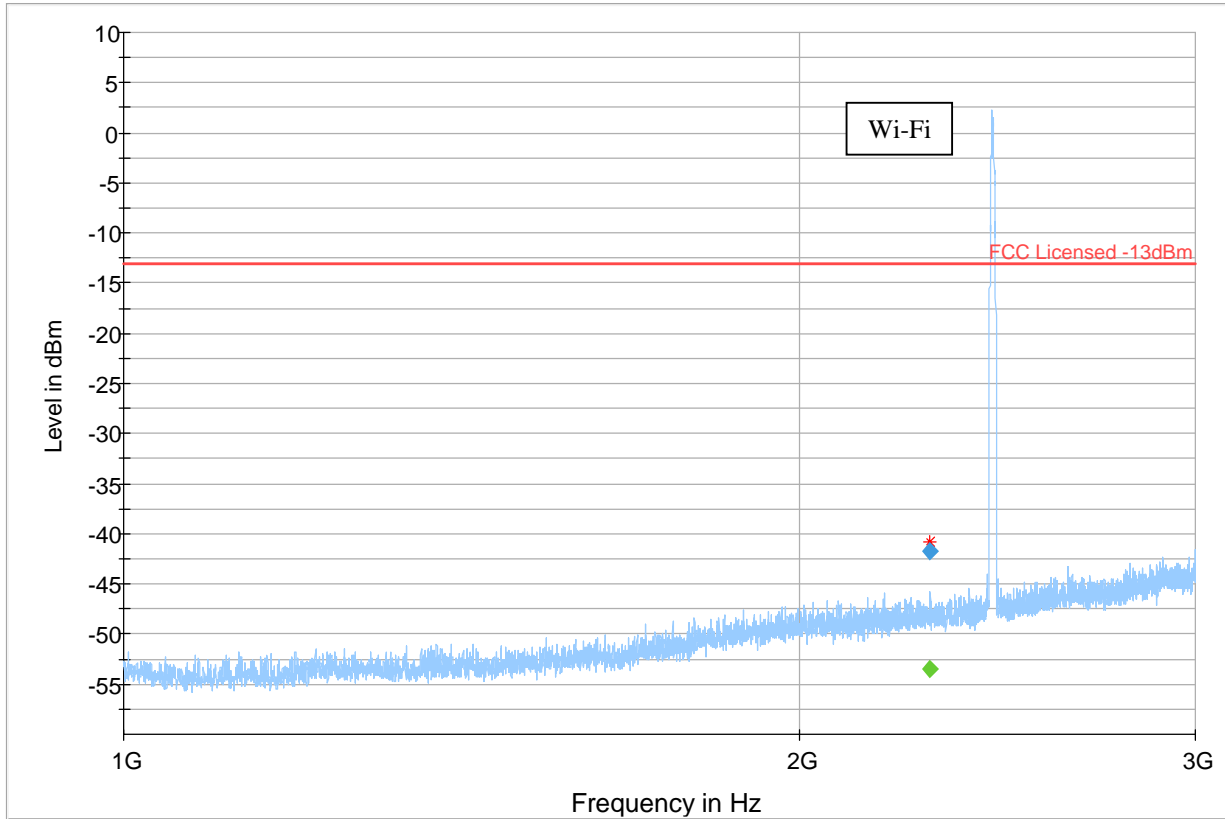


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 9

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2286.75	---	-53.49	---	---	500.0	1000.0	168.0	H	182.0	-62.1
2286.75	-41.74	---	-13.00	28.74	500.0	1000.0	168.0	H	182.0	-62.1

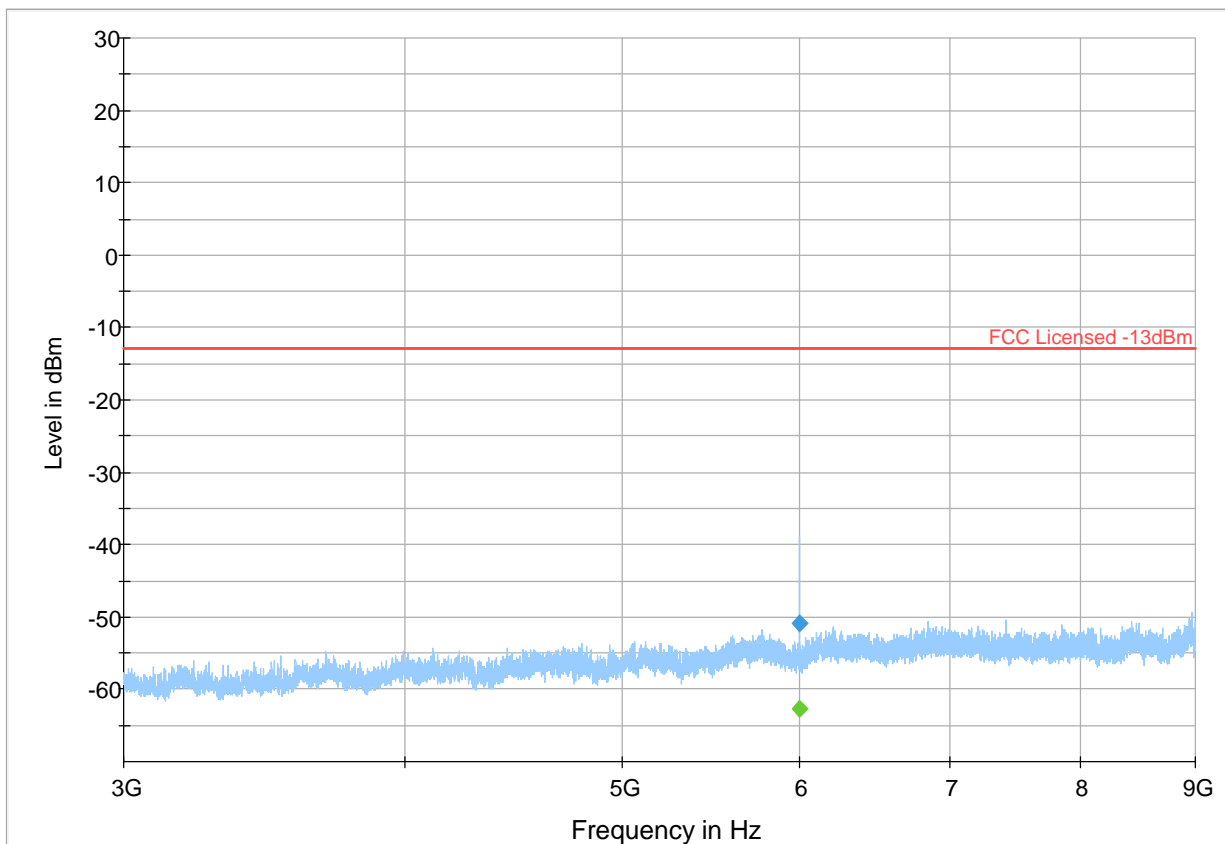


- ◆ Preview Result 1-PK+
- * Critical_Freqs PK+
- FCC Licensed -13dBm
- ◆ Final_Result PK+
- ◆ Final_Result RMS



Plot # 10

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5999.75	---	-62.77	---	---	500.0	1000.0	107.0	V	163.0	-97.1
5999.75	-50.92	---	-13.00	37.92	500.0	1000.0	107.0	V	163.0	-97.1

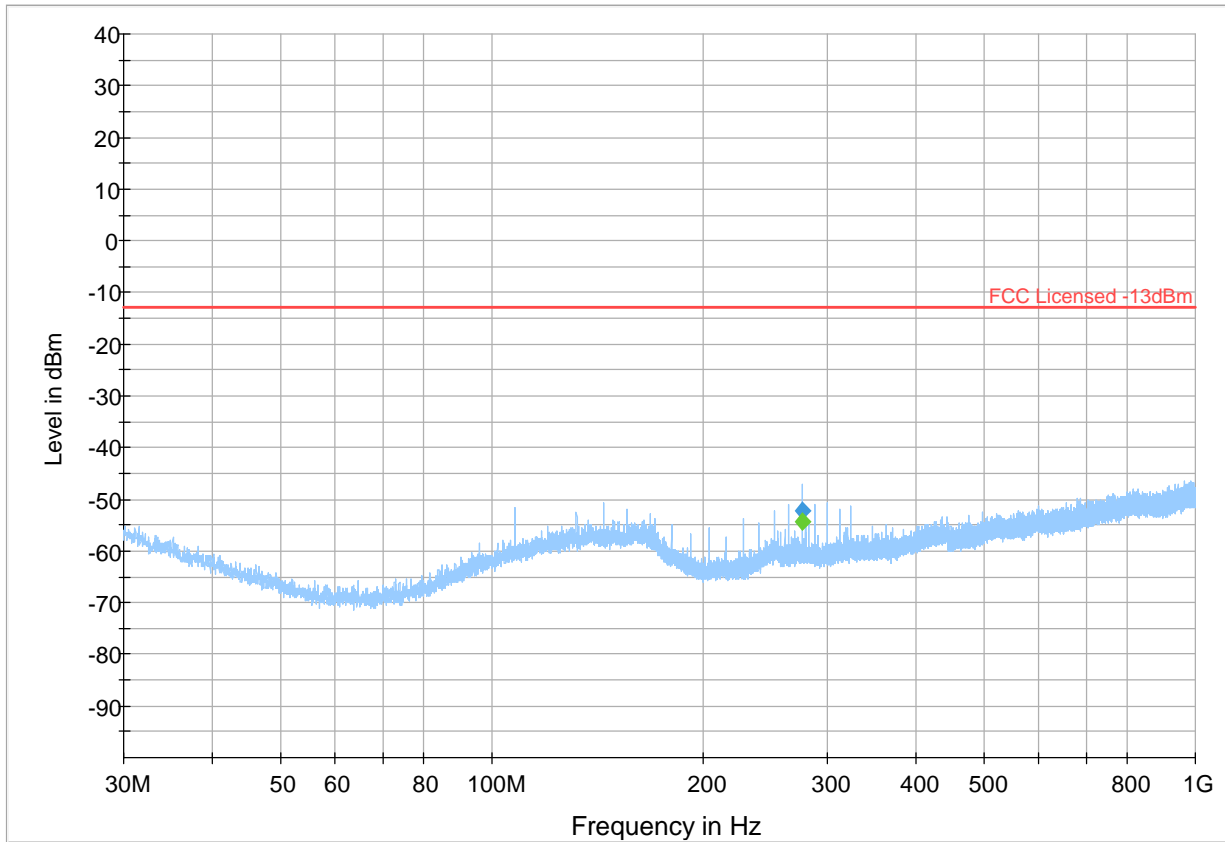


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 11

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-54.21	---	---	500.0	100.0	184.0	V	144.0	-74.2
275.97	-52.16	---	-13.00	39.16	500.0	100.0	184.0	V	144.0	-74.2

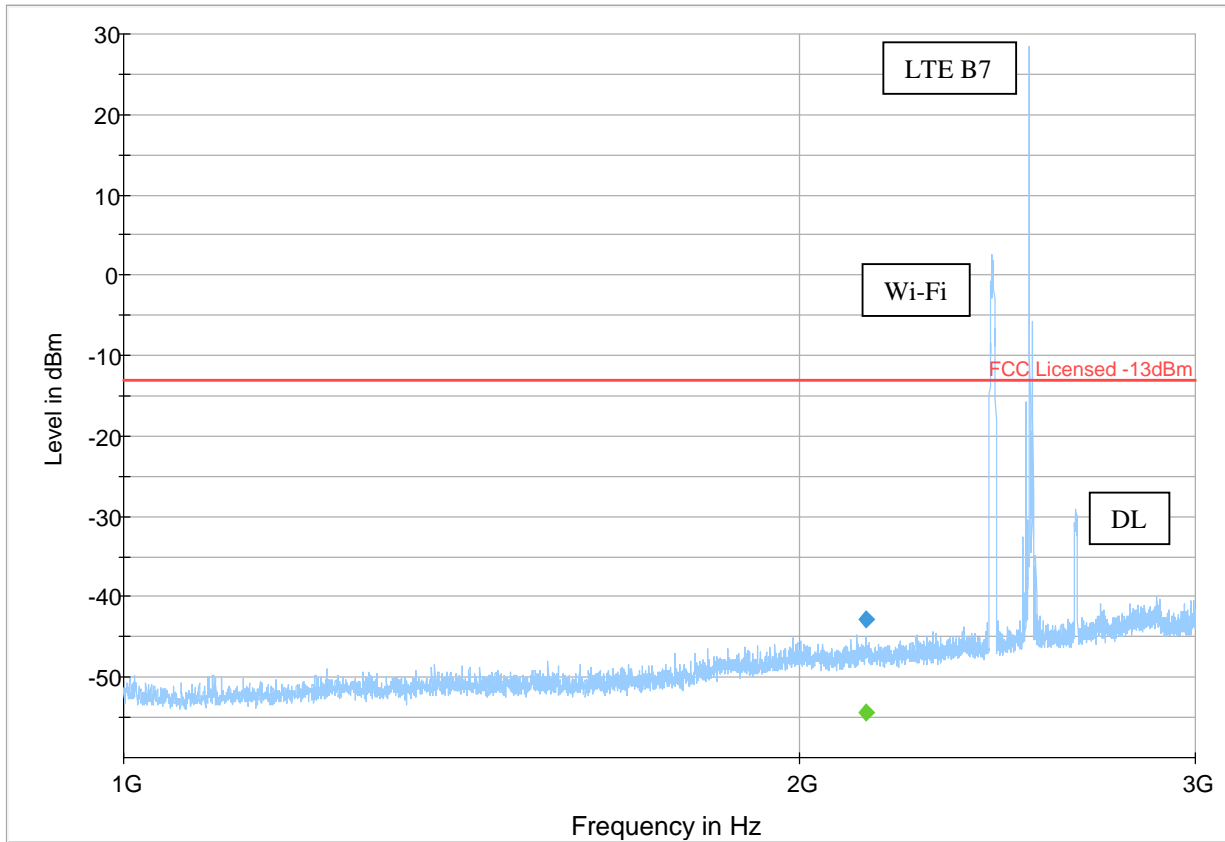


— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final_Result PK+ ◆ Final_Result RMS



Plot # 12

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2140.75	---	-54.38	---	---	500.0	1000.0	241.0	V	223.0	-63.4
2140.75	-42.84	---	-13.00	29.84	500.0	1000.0	241.0	V	223.0	-63.4

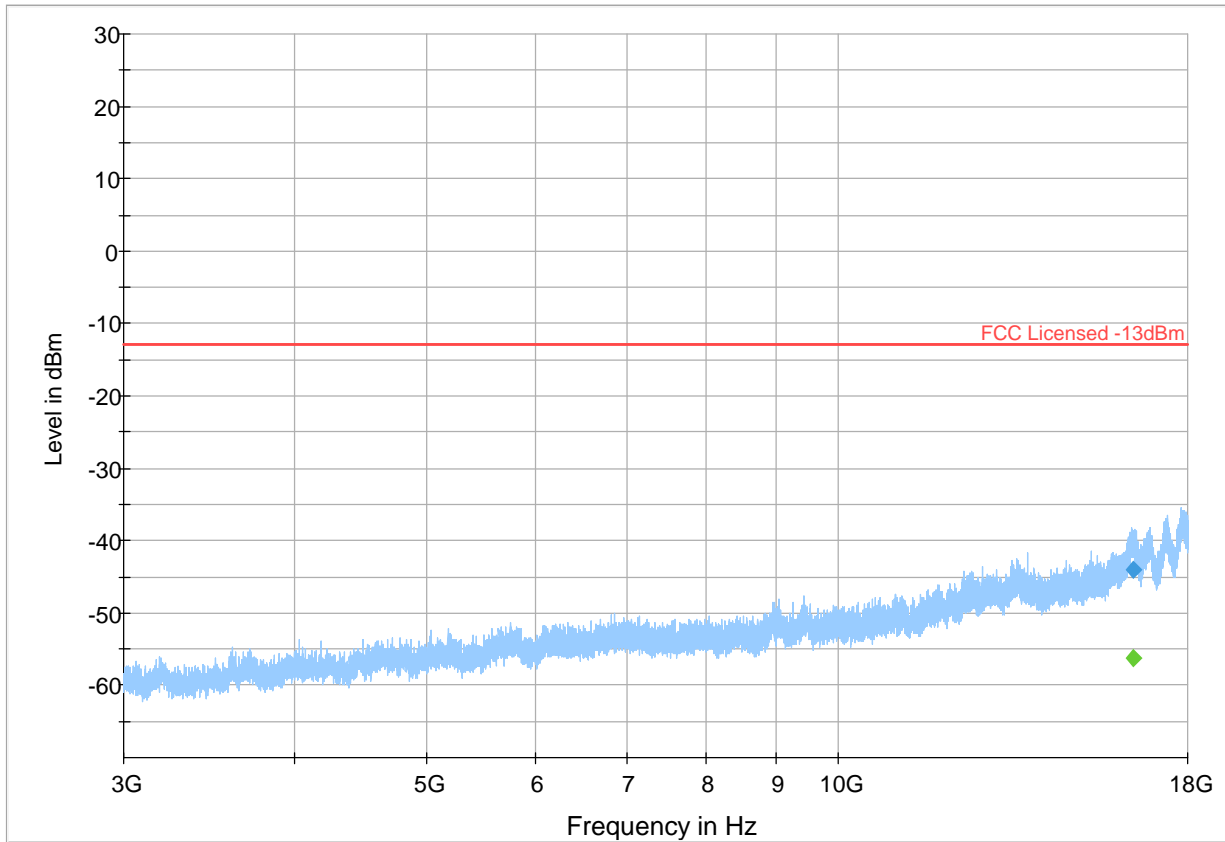


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 13

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
16432.00	---	-56.37	---	---	500.0	1000.0	210.0	V	1.0	-81.5
16432.00	-44.05	---	-13.00	31.05	500.0	1000.0	210.0	V	1.0	-81.5

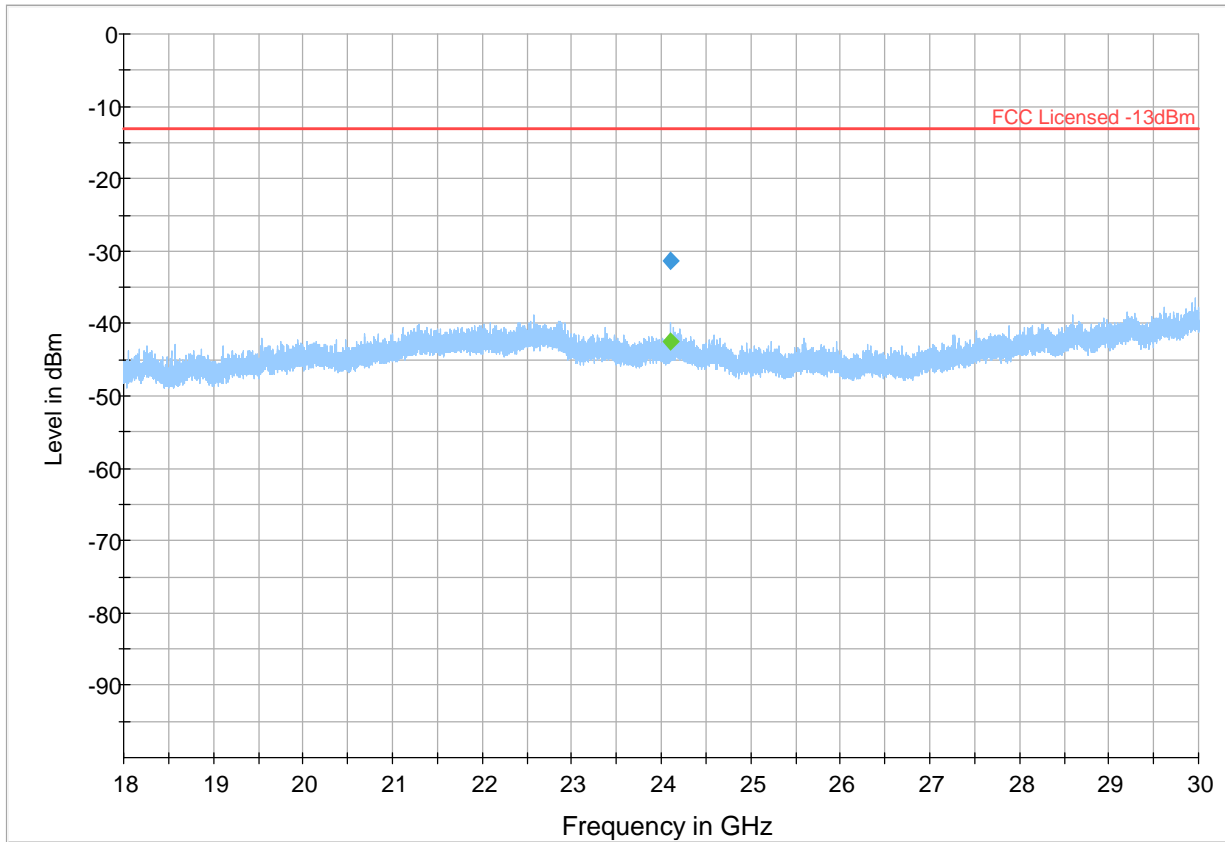


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 14

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
24101.63	---	-42.59	---	---	500.0	1000.0	295.0	V	0.0	-76.9
24101.63	-31.42	---	-13.00	18.42	500.0	1000.0	295.0	V	0.0	-76.9

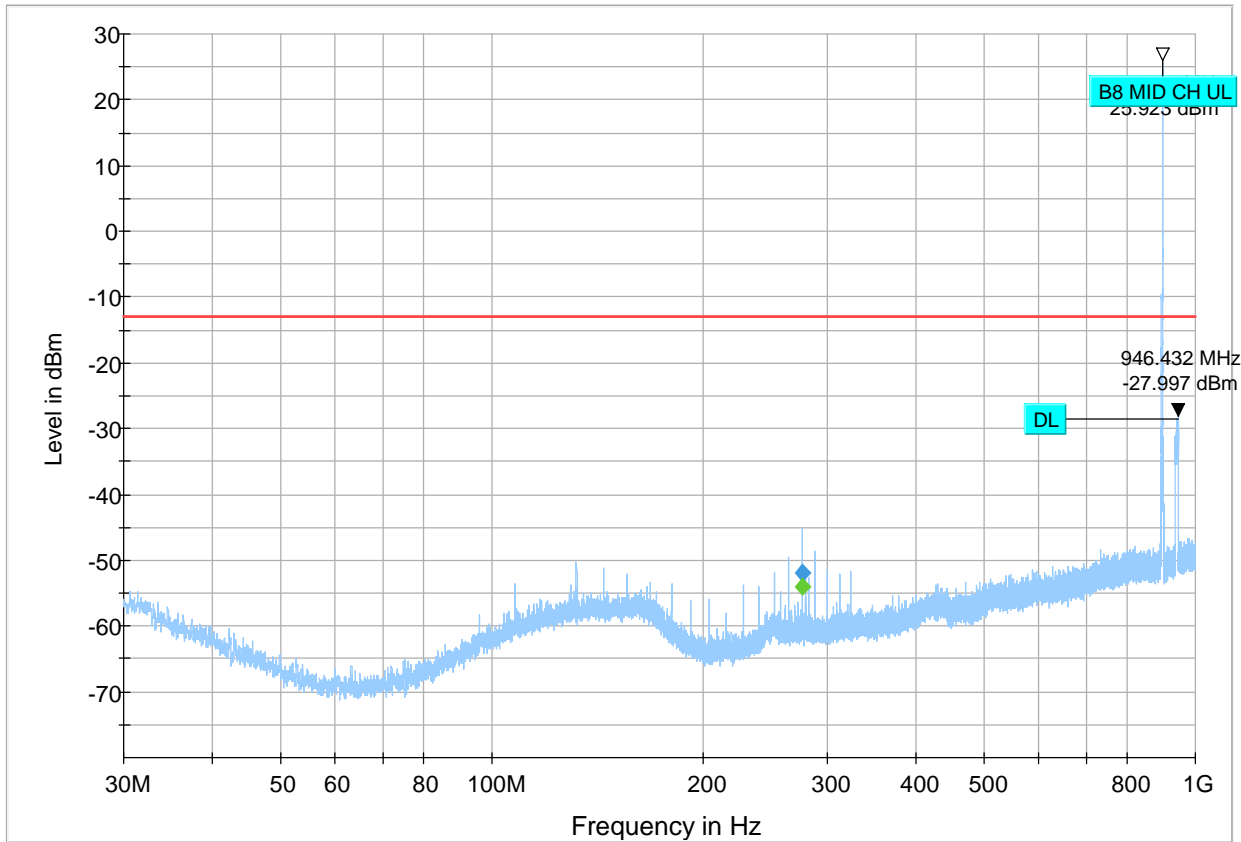


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 15

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-53.94	---	---	500.0	100.0	175.0	V	162.0	-74.2
275.97	-51.84	---	-13.00	38.84	500.0	100.0	175.0	V	162.0	-74.2

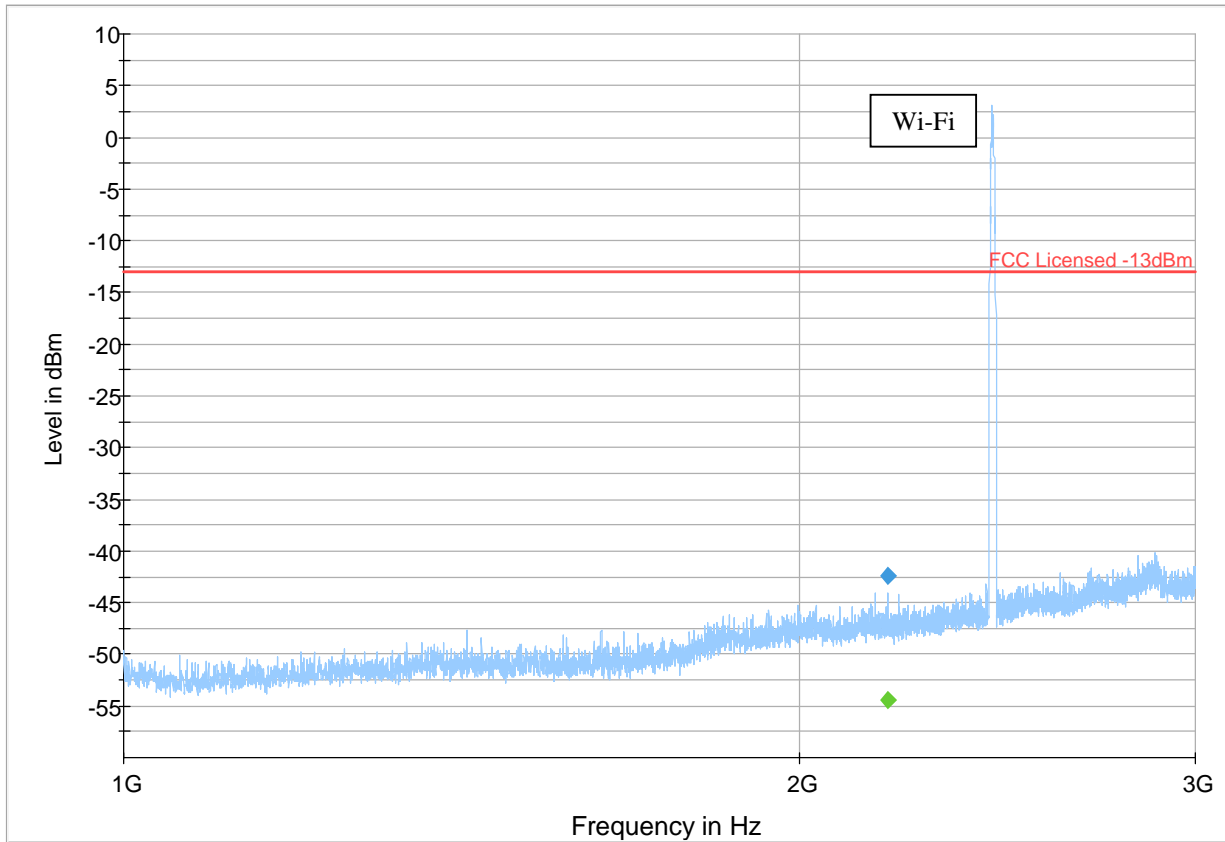


Preview Result 1-PK+ FCC Licensed -13dBm Final_Result PK+ Final_Result RMS



Plot # 16

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2187.50	---	-54.47	---	---	500.0	1000.0	294.0	V	136.0	-63.2
2187.50	-42.45	---	-13.00	29.45	500.0	1000.0	294.0	V	136.0	-63.2

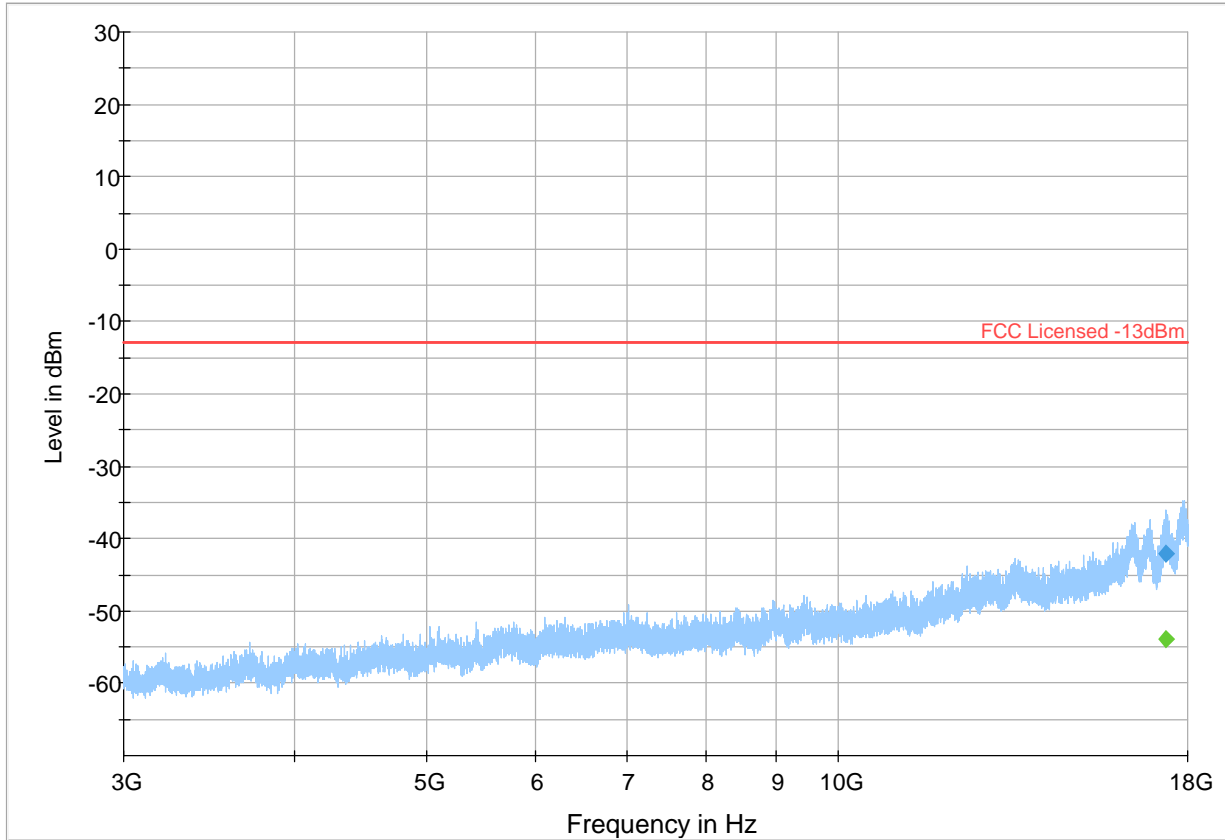


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 17

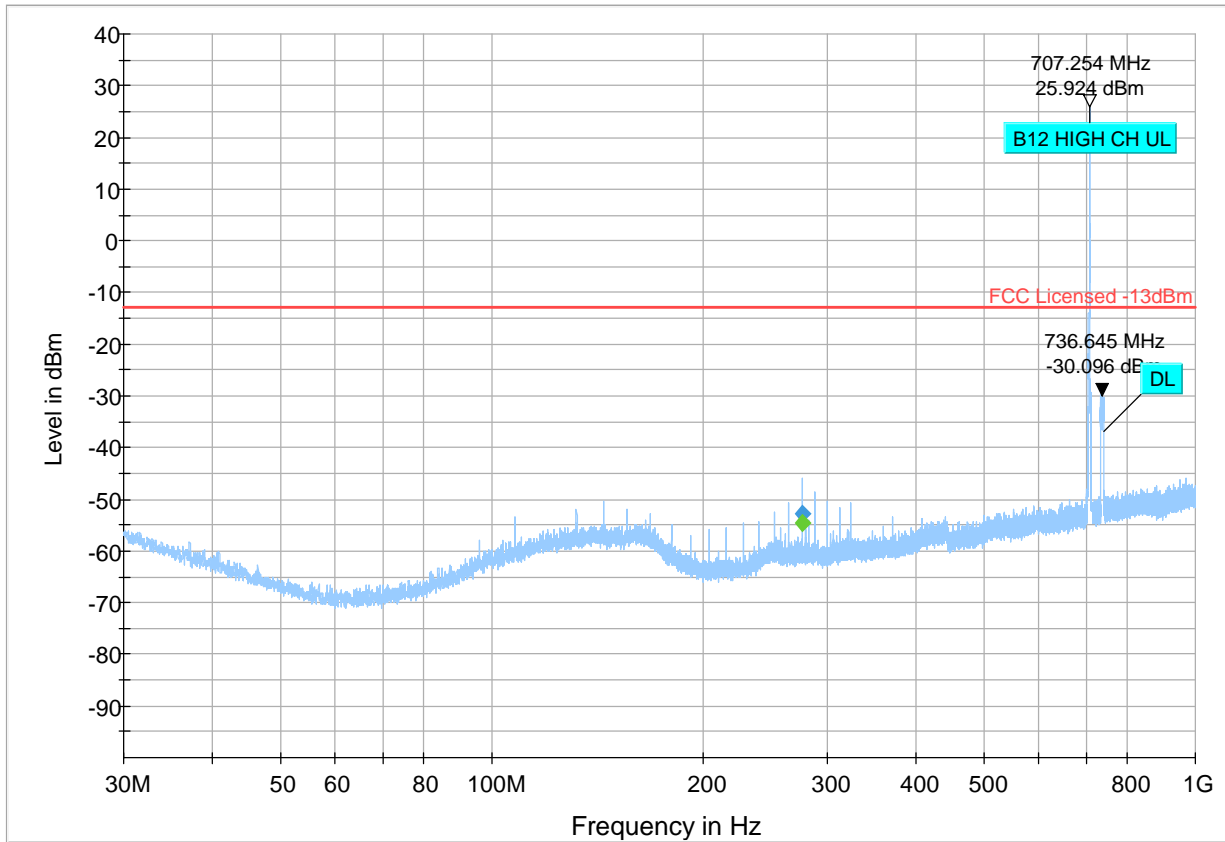
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
17330.75	---	-53.97	---	---	500.0	1000.0	266.0	V	-32.0	-79.5
17330.75	-42.07	---	-13.00	29.07	500.0	1000.0	266.0	V	-32.0	-79.5



— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS

Plot # 18

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-54.61	---	---	500.0	100.0	211.0	V	151.0	-74.2
275.97	-52.71	---	-13.00	39.71	500.0	100.0	211.0	V	151.0	-74.2

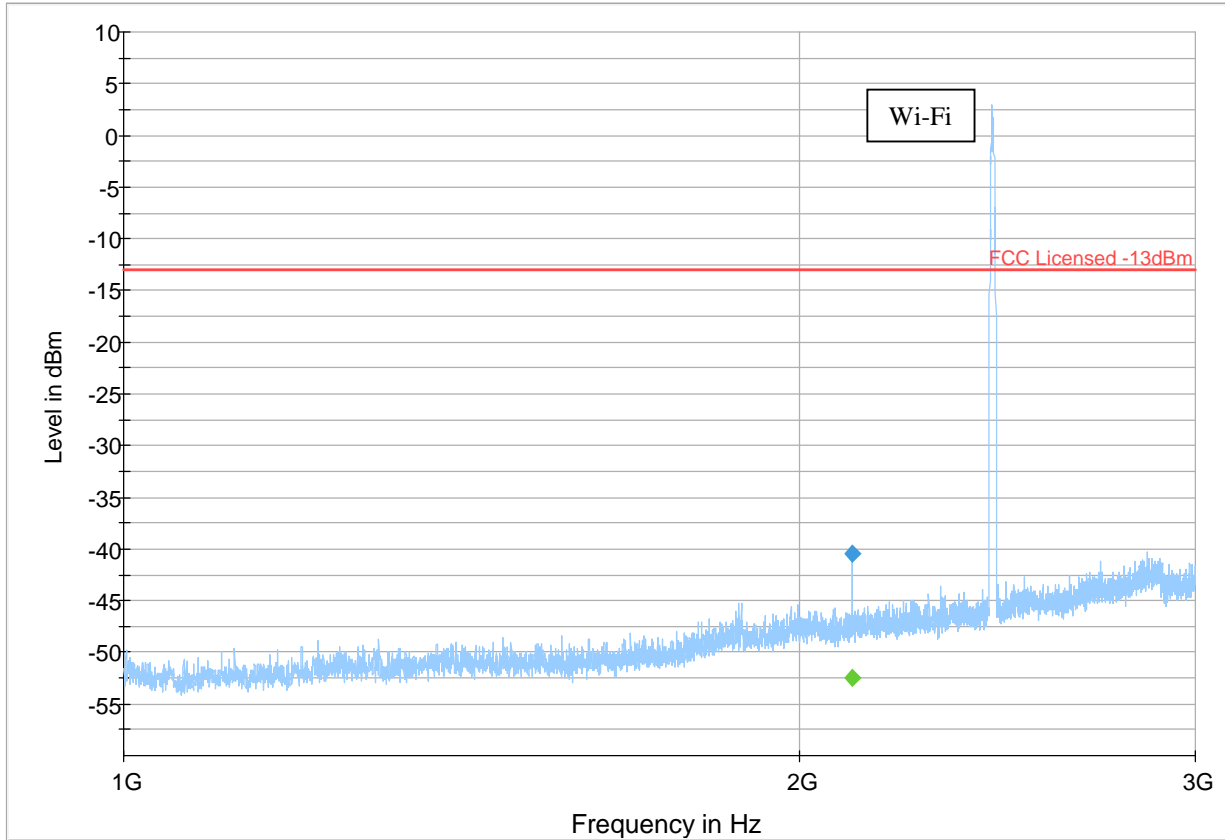


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 19

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2109.25	---	-52.42	---	---	500.0	1000.0	107.0	V	116.0	-63.5
2109.25	-40.52	---	-13.00	27.52	500.0	1000.0	107.0	V	116.0	-63.5

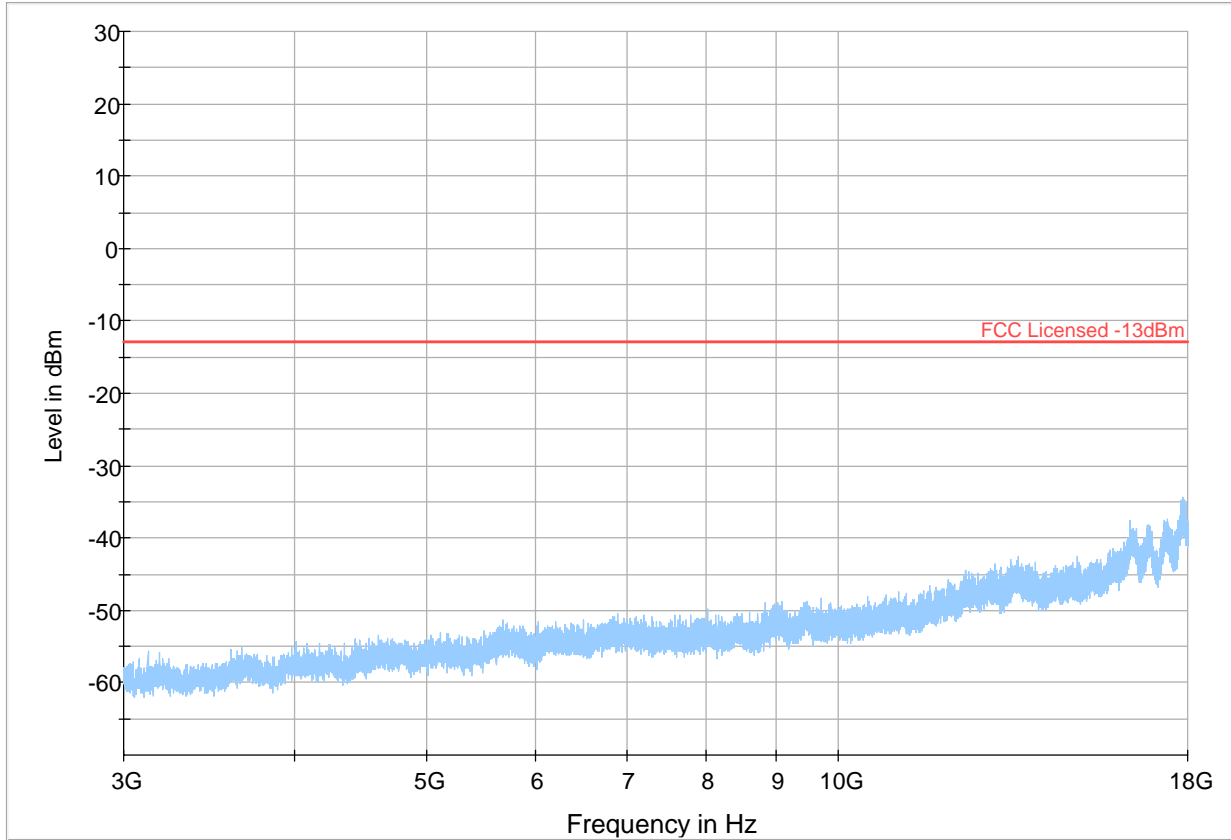


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 20

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

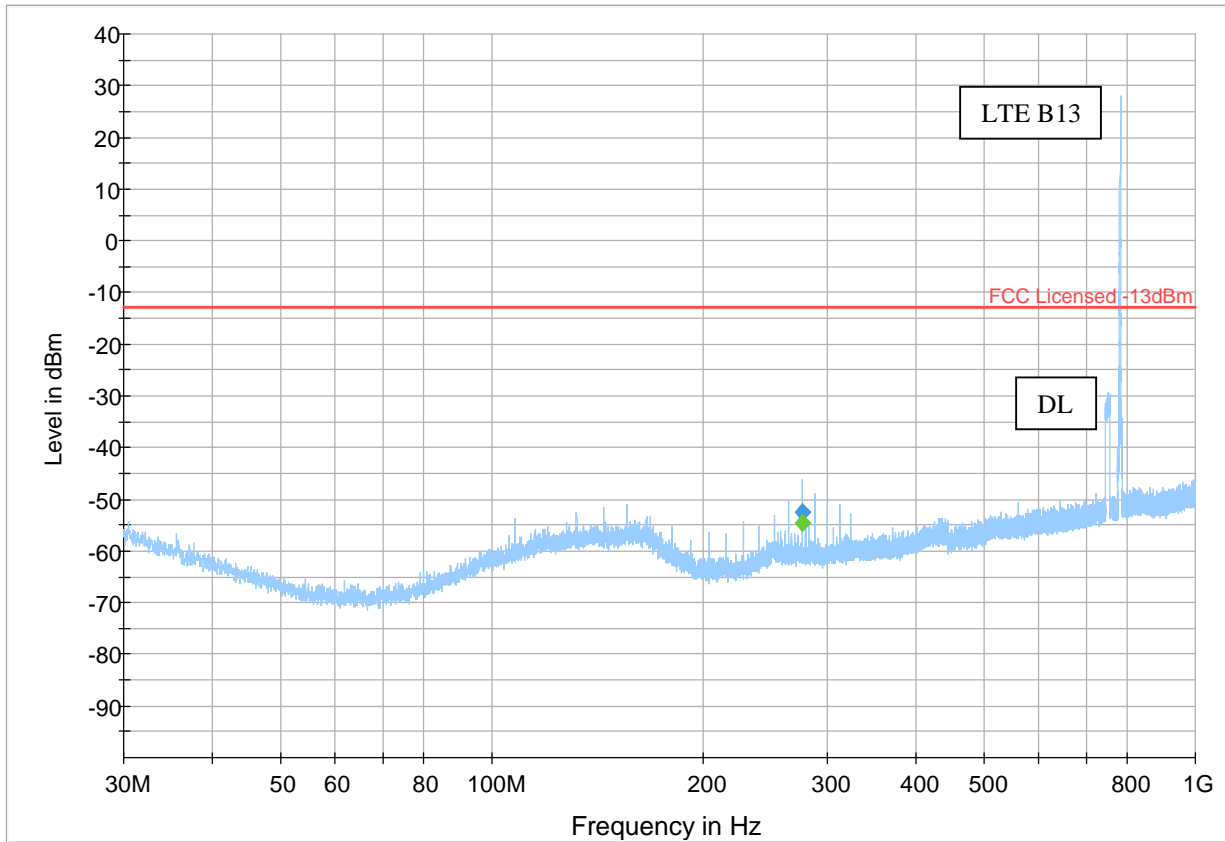


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 21

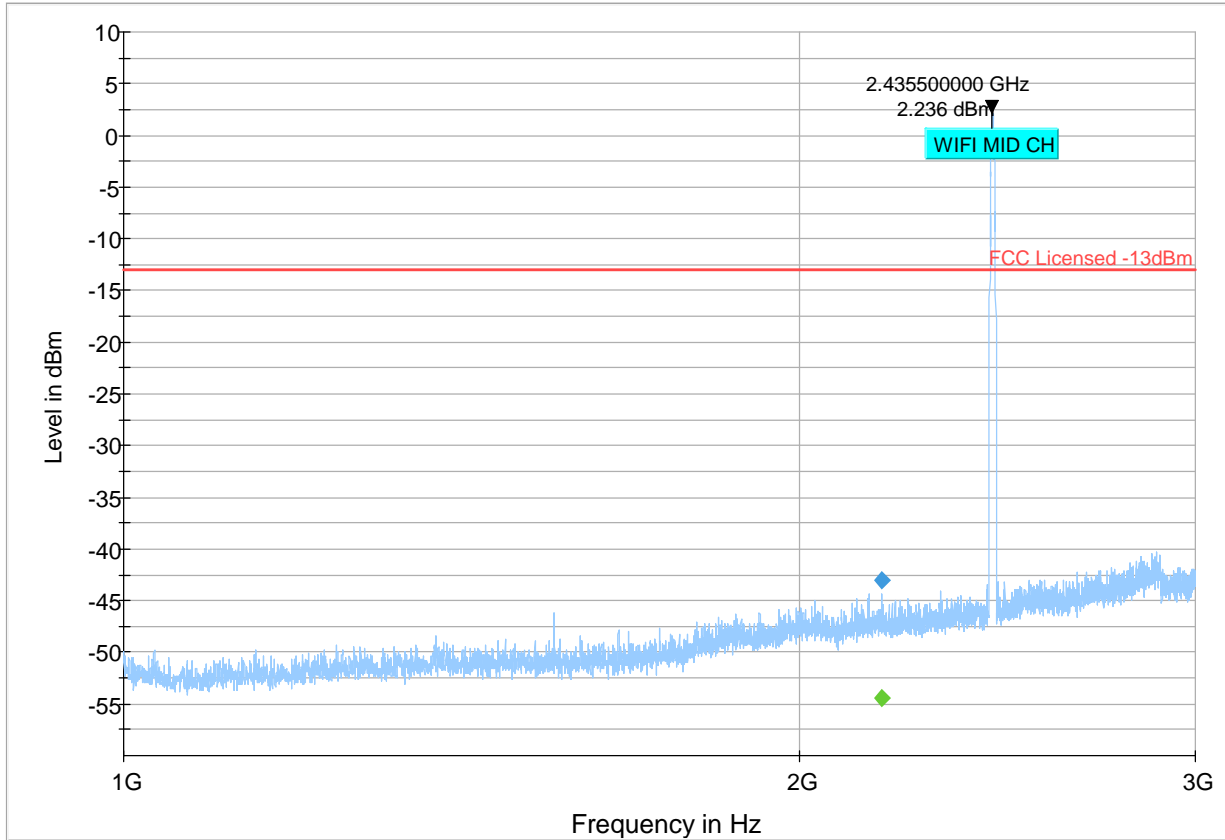
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-54.50	---	---	500.0	100.0	201.0	V	145.0	-74.2
275.97	-52.43	---	-13.00	39.43	500.0	100.0	201.0	V	145.0	-74.2



Preview Result 1-PK+ FCC Licensed -13dBm Final_Result PK+ Final_Result RMS

Plot # 22

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
2174.00	---	-54.46	---	---	500.0	1000.0	258.0	V	-45.0	-63.3
2174.00	-43.04	---	-13.00	30.04	500.0	1000.0	258.0	V	-45.0	-63.3

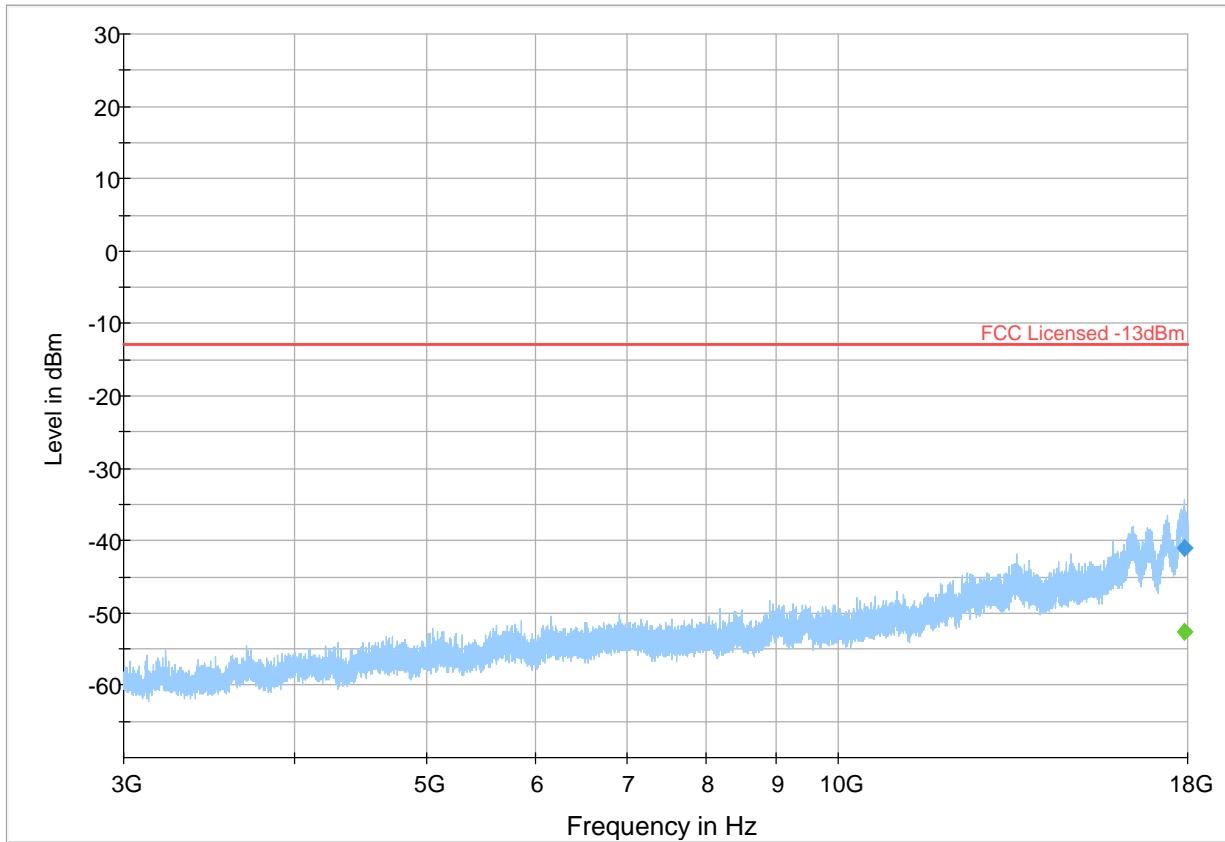


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 23

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
17890.75	---	-52.62	---	---	500.0	1000.0	285.0	H	33.0	-76.9
17890.75	-40.96	---	-13.00	27.96	500.0	1000.0	285.0	H	33.0	-76.9

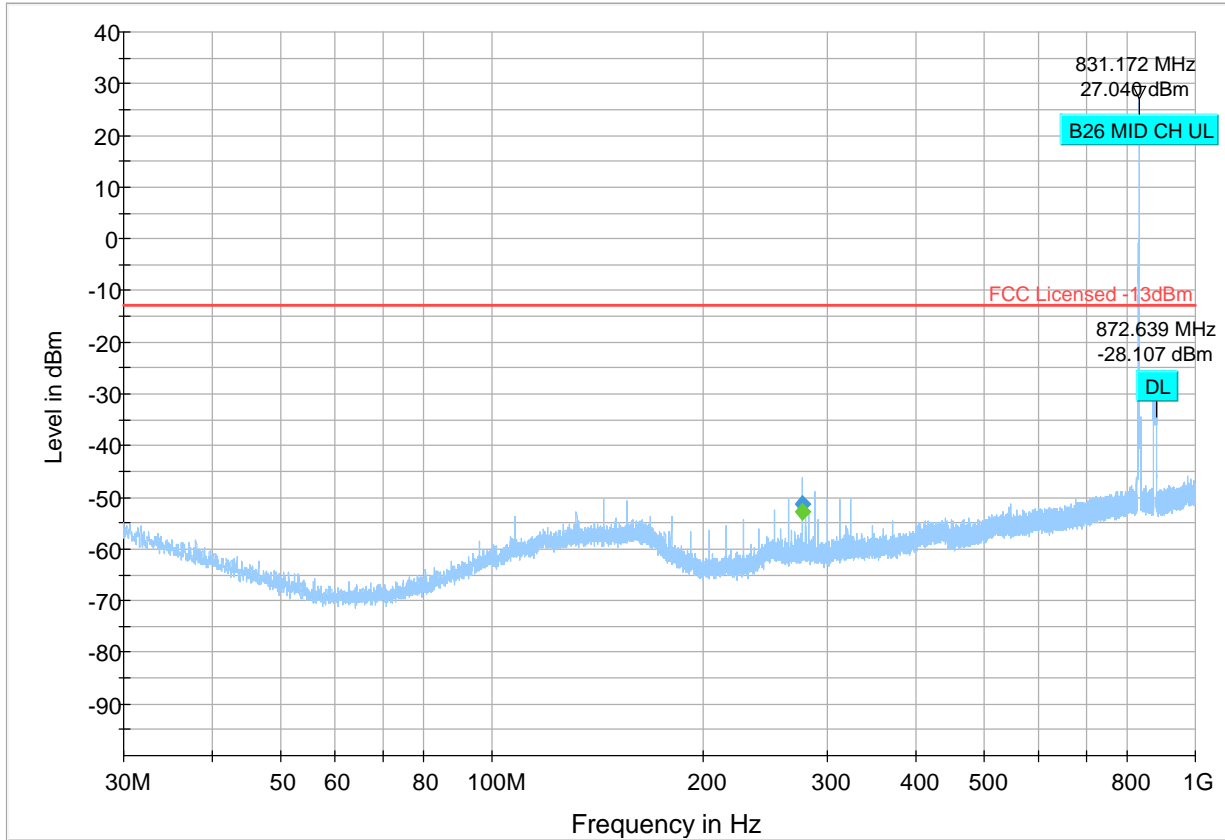


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 24

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-52.93	---	---	500.0	100.0	167.0	V	153.0	-74.2
275.97	-51.20	---	-13.00	38.20	500.0	100.0	167.0	V	153.0	-74.2

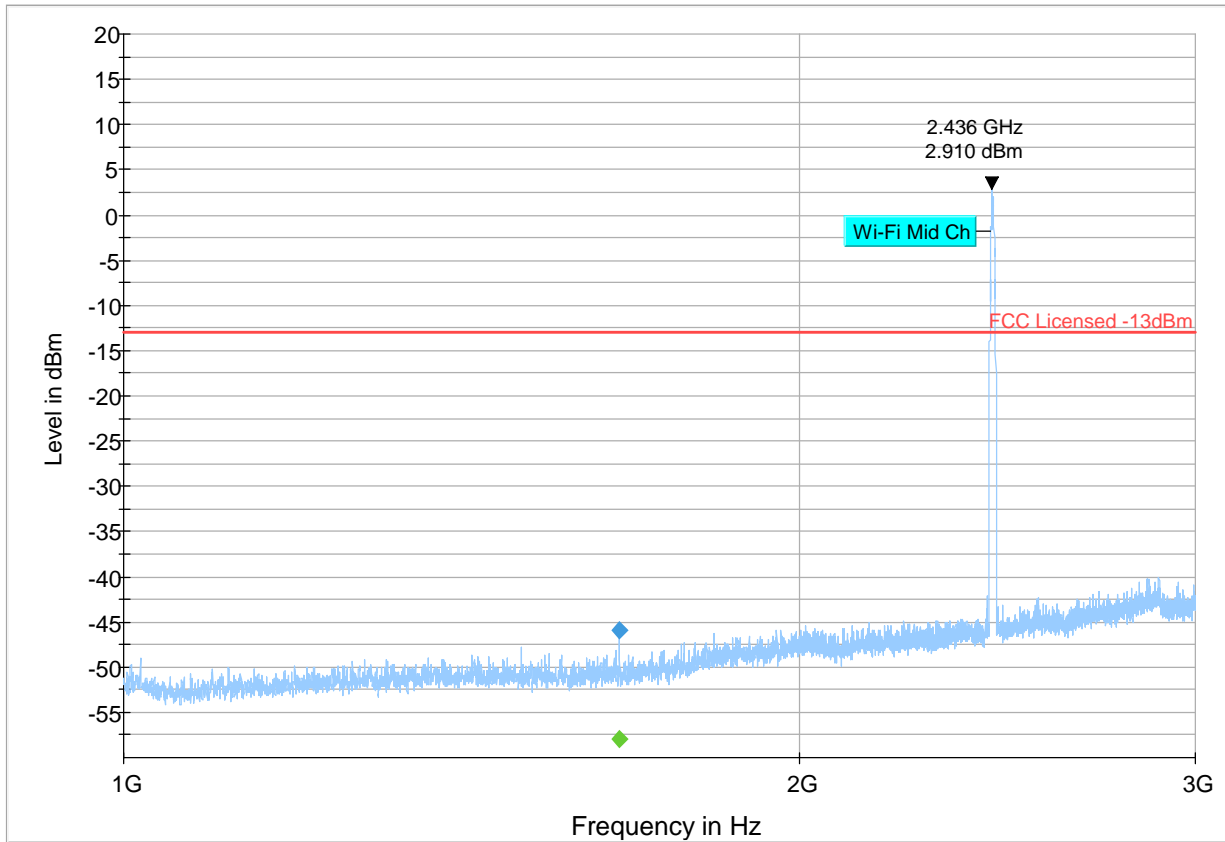


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 25

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1662.50	---	-57.90	---	---	500.0	1000.0	192.0	H	298.0	-65.6
1662.50	-45.88	---	-13.00	32.88	500.0	1000.0	192.0	H	298.0	-65.6

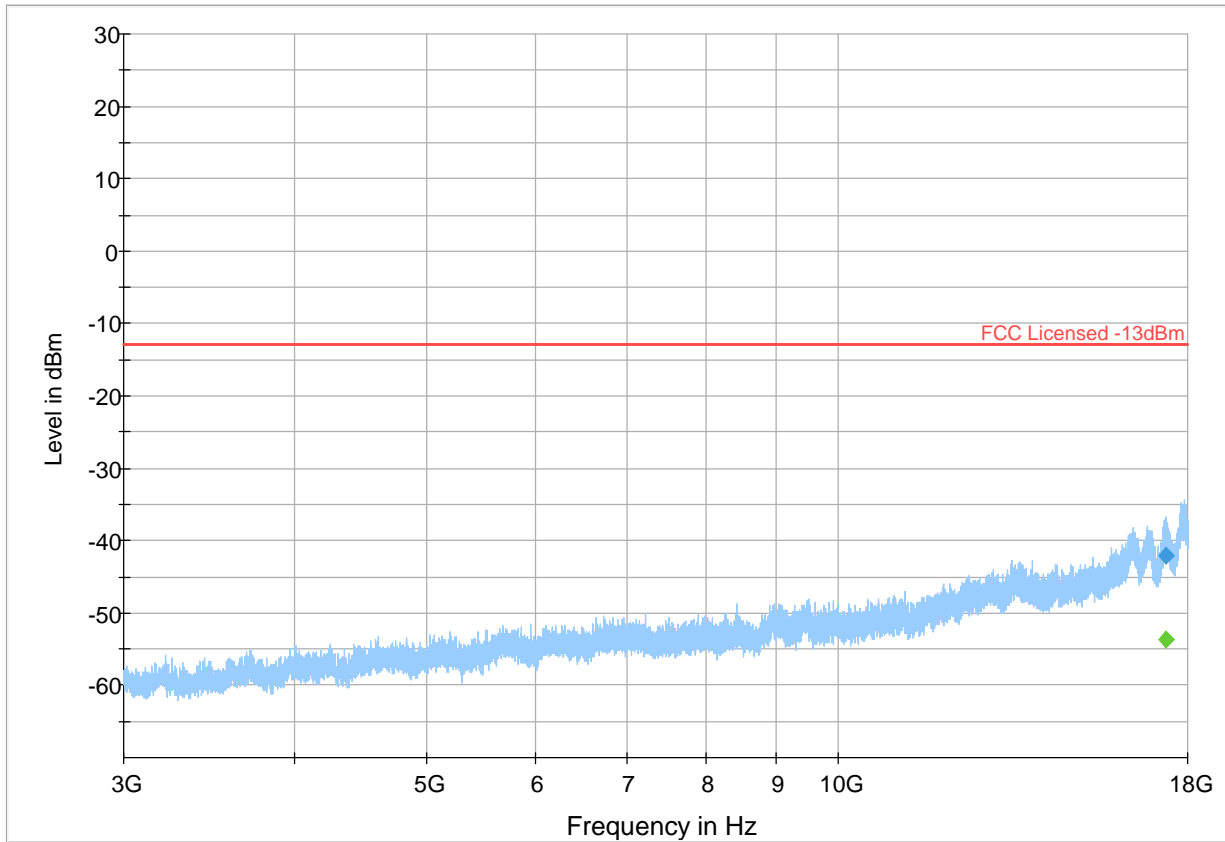


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 26

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
17333.50	---	-53.79	---	---	500.0	1000.0	237.0	H	201.0	-79.4
17333.50	-42.09	---	-13.00	29.09	500.0	1000.0	237.0	H	201.0	-79.4

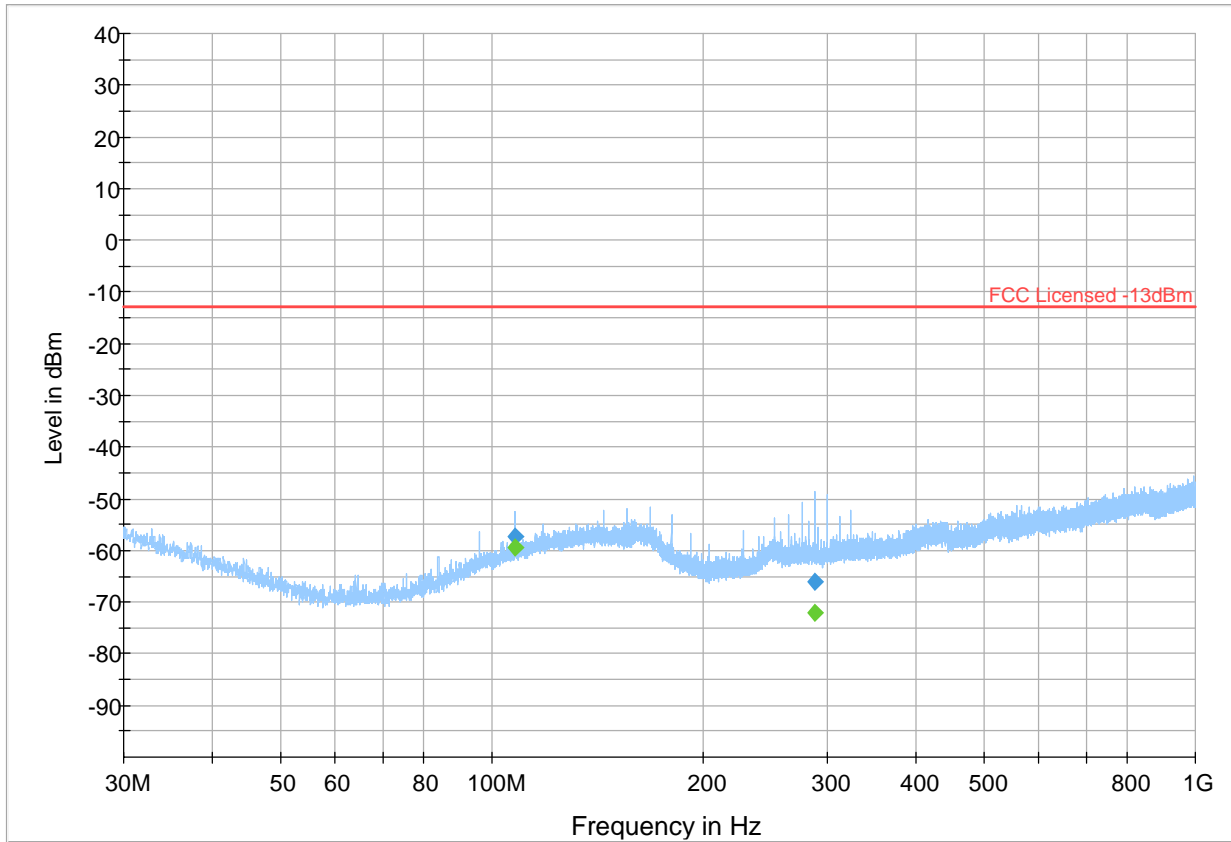


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 27

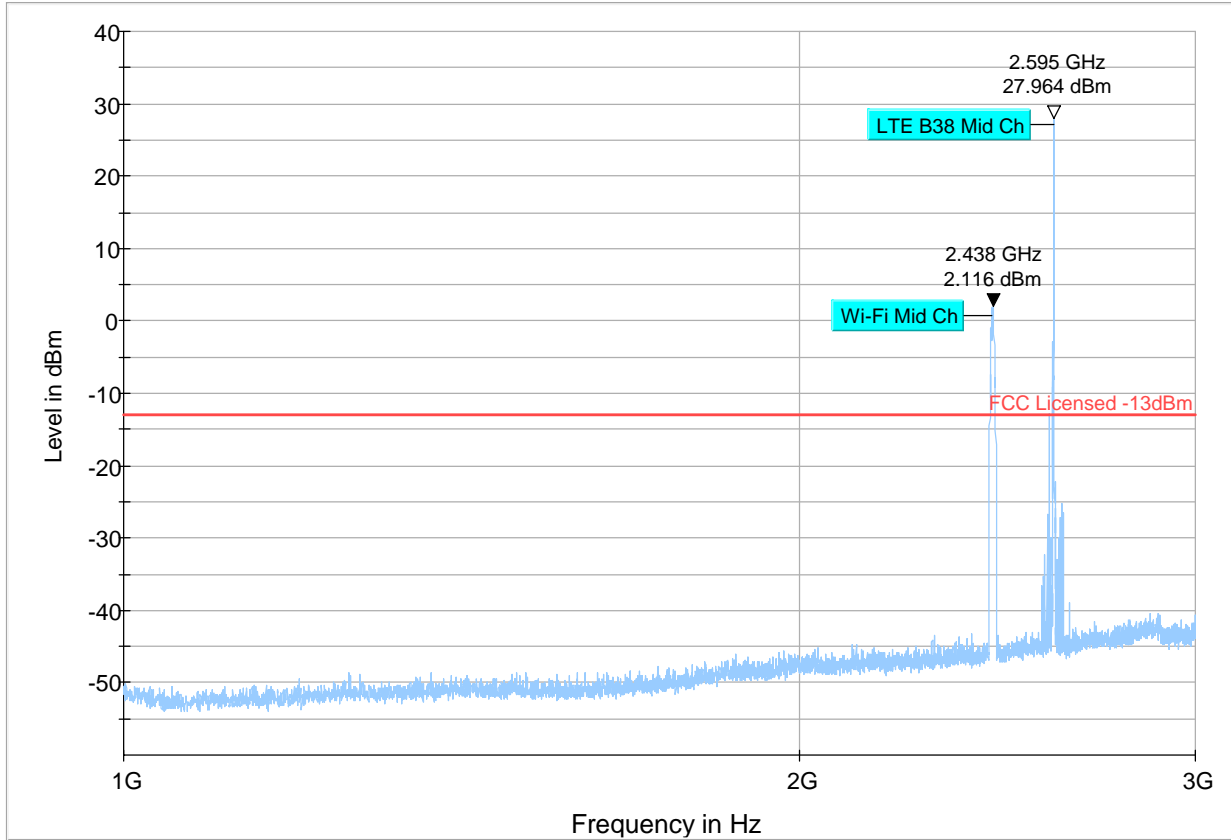
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
107.96	-57.44	---	-13.00	44.44	500.0	100.0	100.0	V	269.0	-73.0
107.96	---	-59.52	---	---	500.0	100.0	100.0	V	269.0	-73.0
287.97	-66.18	---	-13.00	53.18	500.0	100.0	275.0	H	196.0	-74.1
287.97	---	-72.01	---	---	500.0	100.0	275.0	H	196.0	-74.1



— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final_Result PK+ ◆ Final_Result RMS

Plot # 28

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

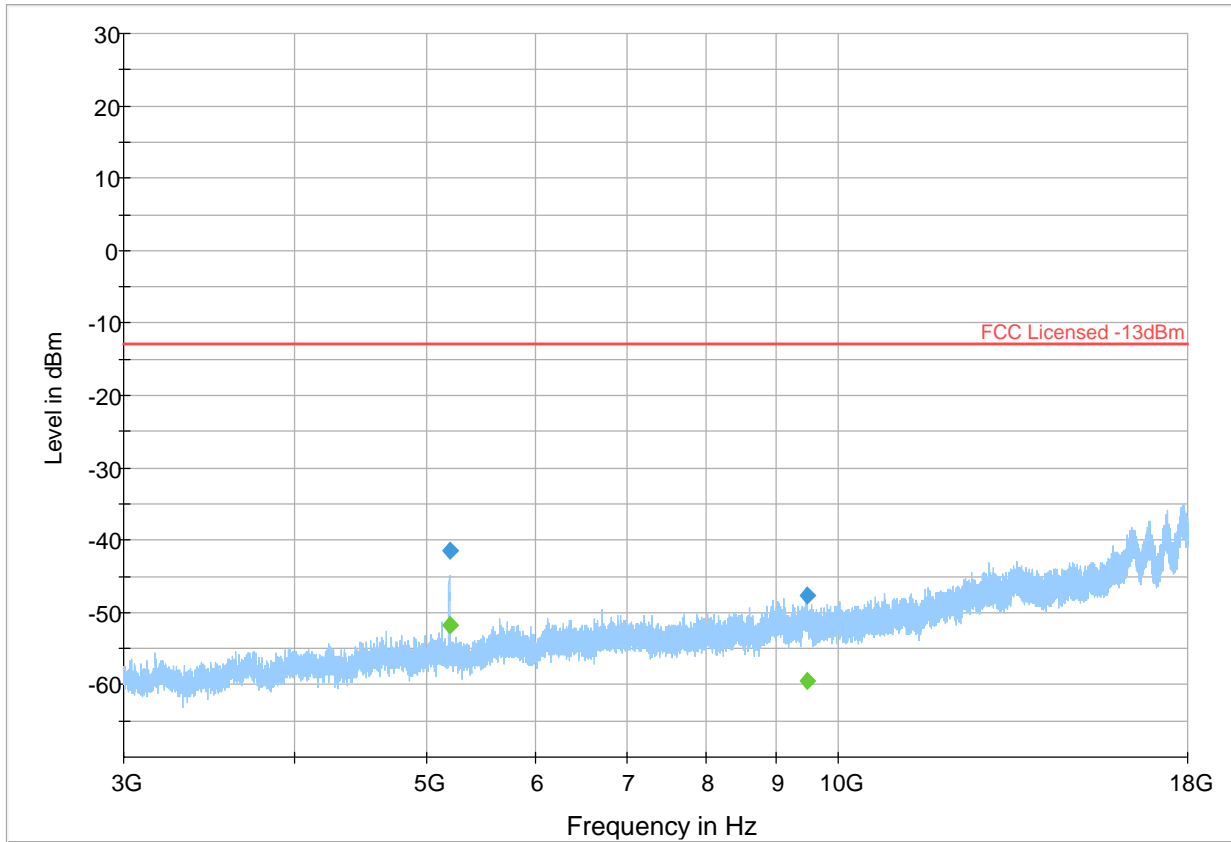


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 29

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5189.50	---	-51.85	---	---	500.0	1000.0	182.0	V	176.0	-97.9
5189.50	-41.47	---	-13.00	28.47	500.0	1000.0	182.0	V	176.0	-97.9
9483.75	---	-59.46	---	---	500.0	1000.0	196.0	V	215.0	-92.6
9483.75	-47.76	---	-13.00	34.76	500.0	1000.0	196.0	V	215.0	-92.6

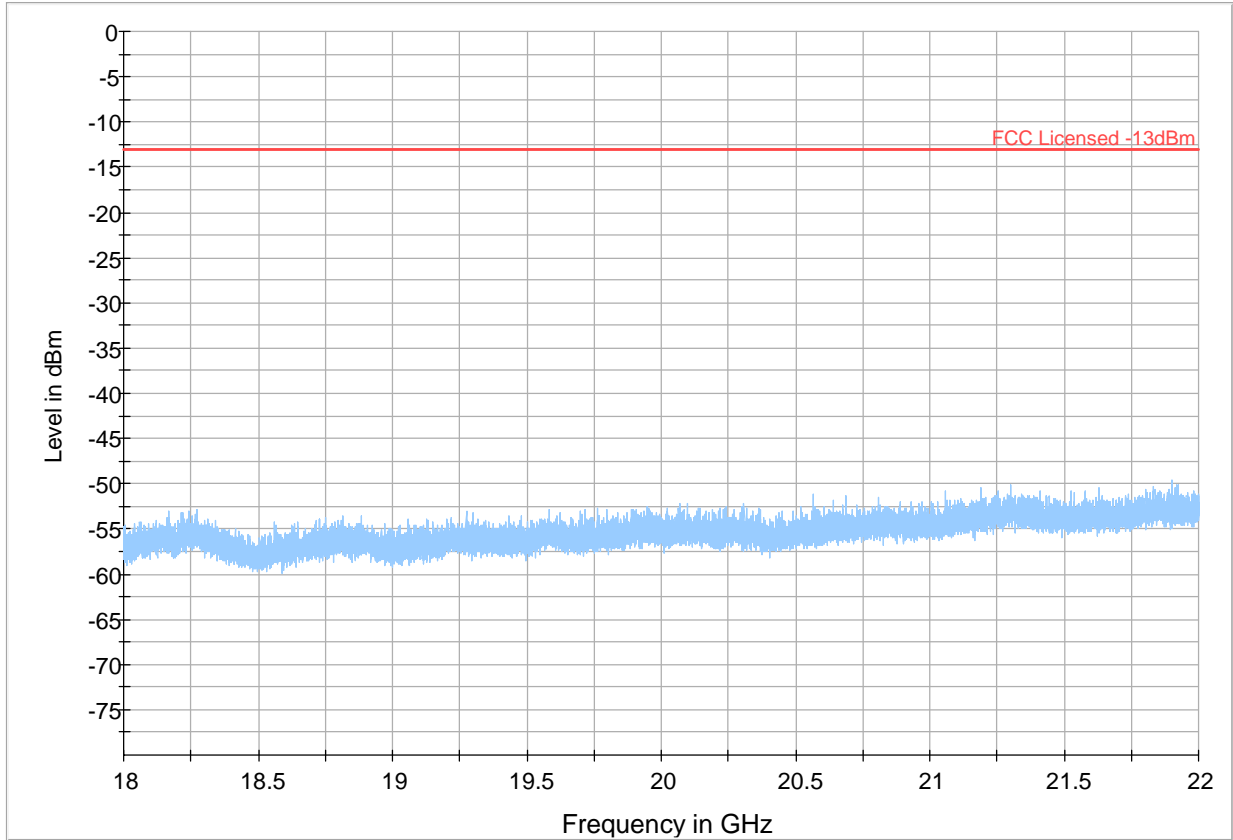


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 30

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

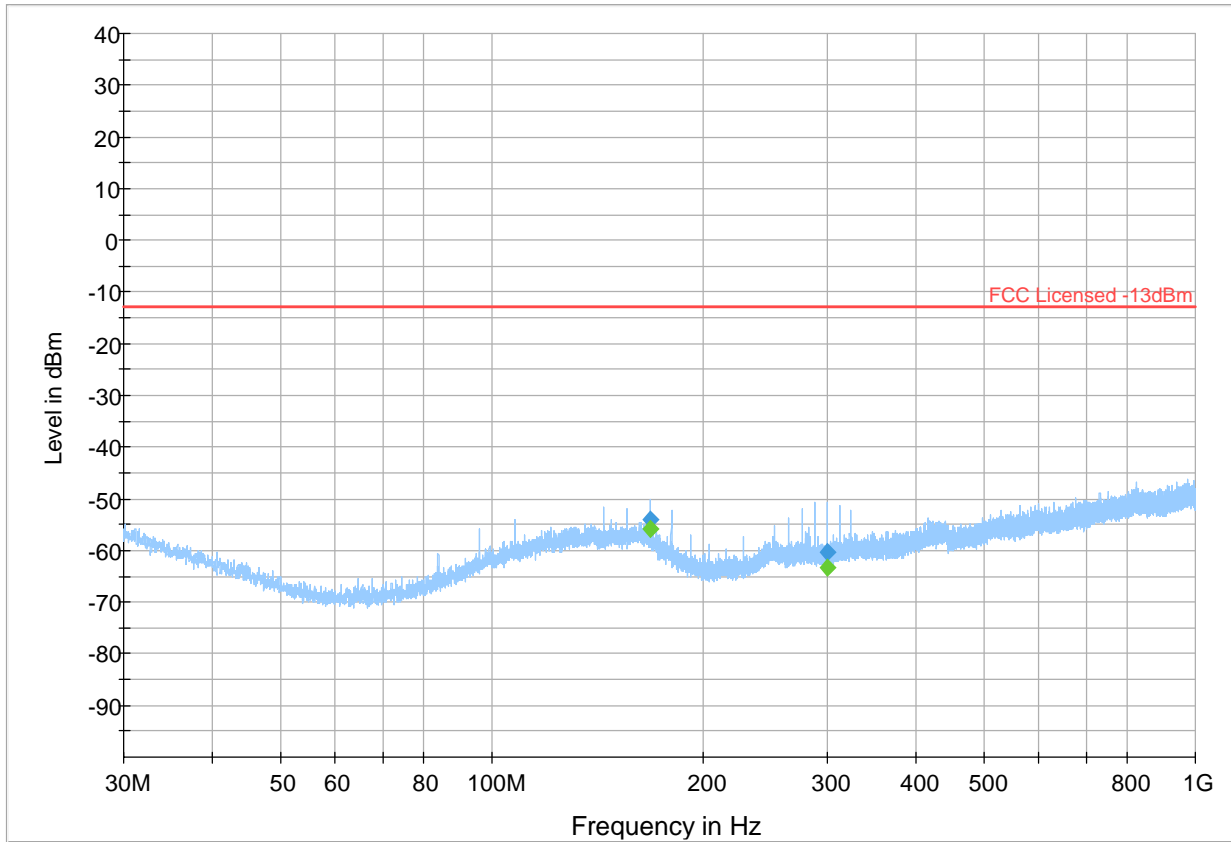


— Preview Result 1-PK+
 * Critical_Freqs PK+
 — FCC Licensed -13dBm
 ◆ Final_Result RM



Plot # 31

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
167.98	-54.03	---	-13.00	41.03	500.0	100.0	100.0	V	211.0	-69.7
167.98	---	-55.98	---	---	500.0	100.0	100.0	V	211.0	-69.7
299.98	-60.23	---	-13.00	47.23	500.0	100.0	100.0	H	-26.0	-74.0
299.98	---	-63.44	---	---	500.0	100.0	100.0	H	-26.0	-74.0

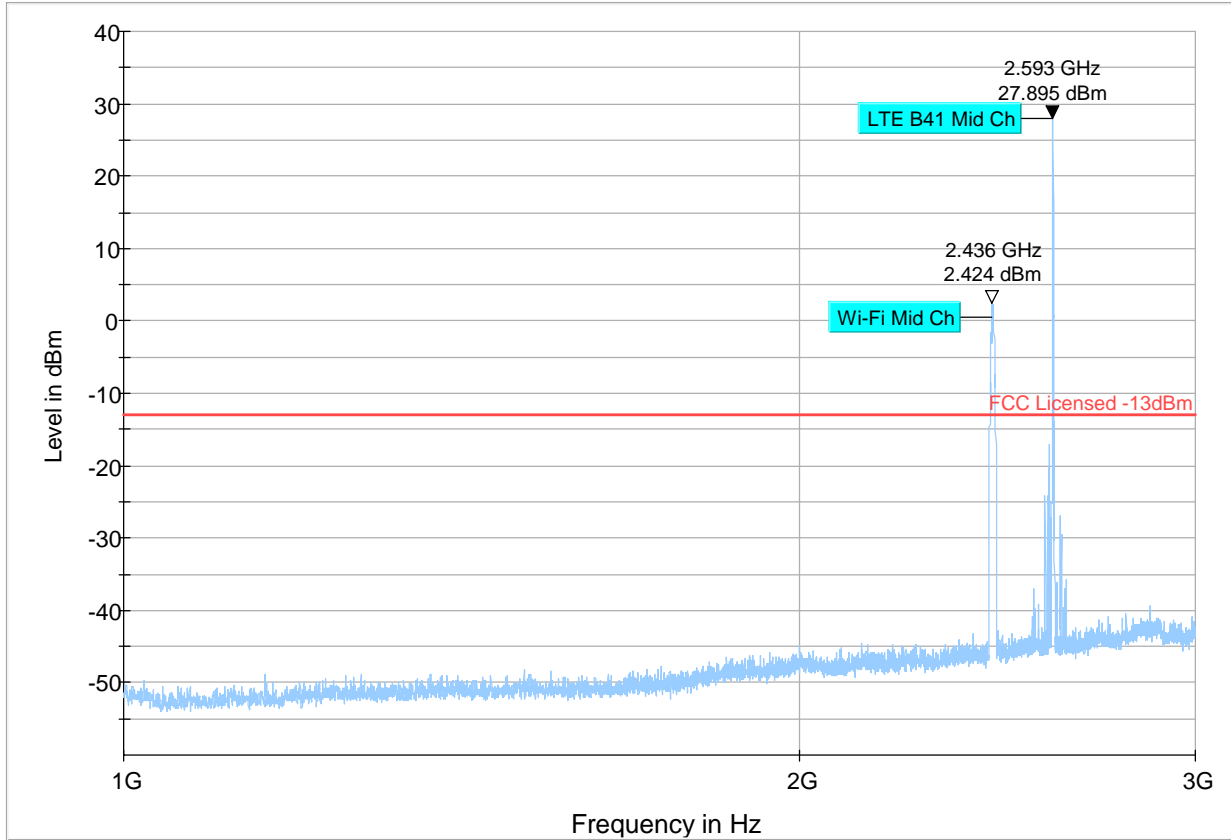


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 32

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

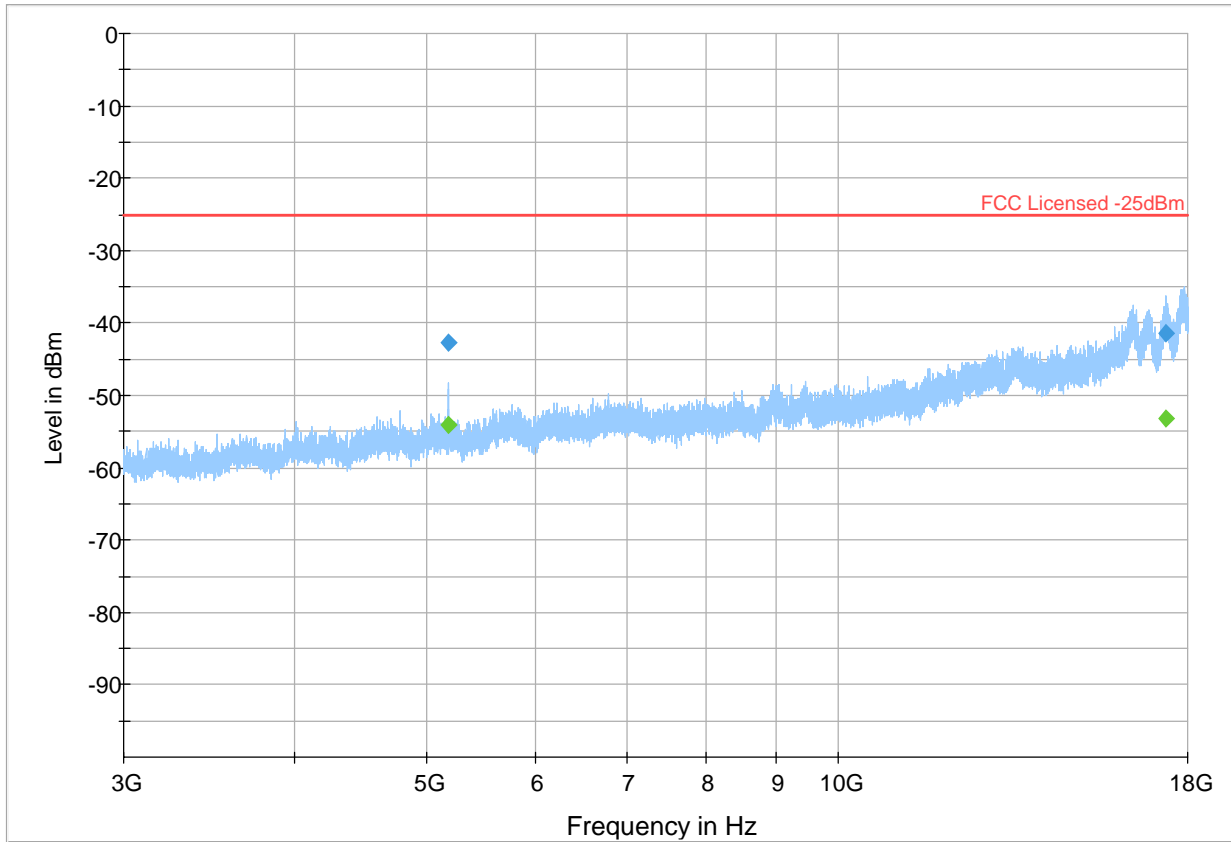


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 33

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
5185.75	-42.80	---	-25.00	17.80	500.0	1000.0	177.0	V	171.0	-97.9
5185.75	---	-54.12	---	---	500.0	1000.0	177.0	V	171.0	-97.9
17346.25	-41.40	---	-25.00	16.40	500.0	1000.0	134.0	H	201.0	-79.4
17346.25	---	-53.16	---	---	500.0	1000.0	134.0	H	201.0	-79.4

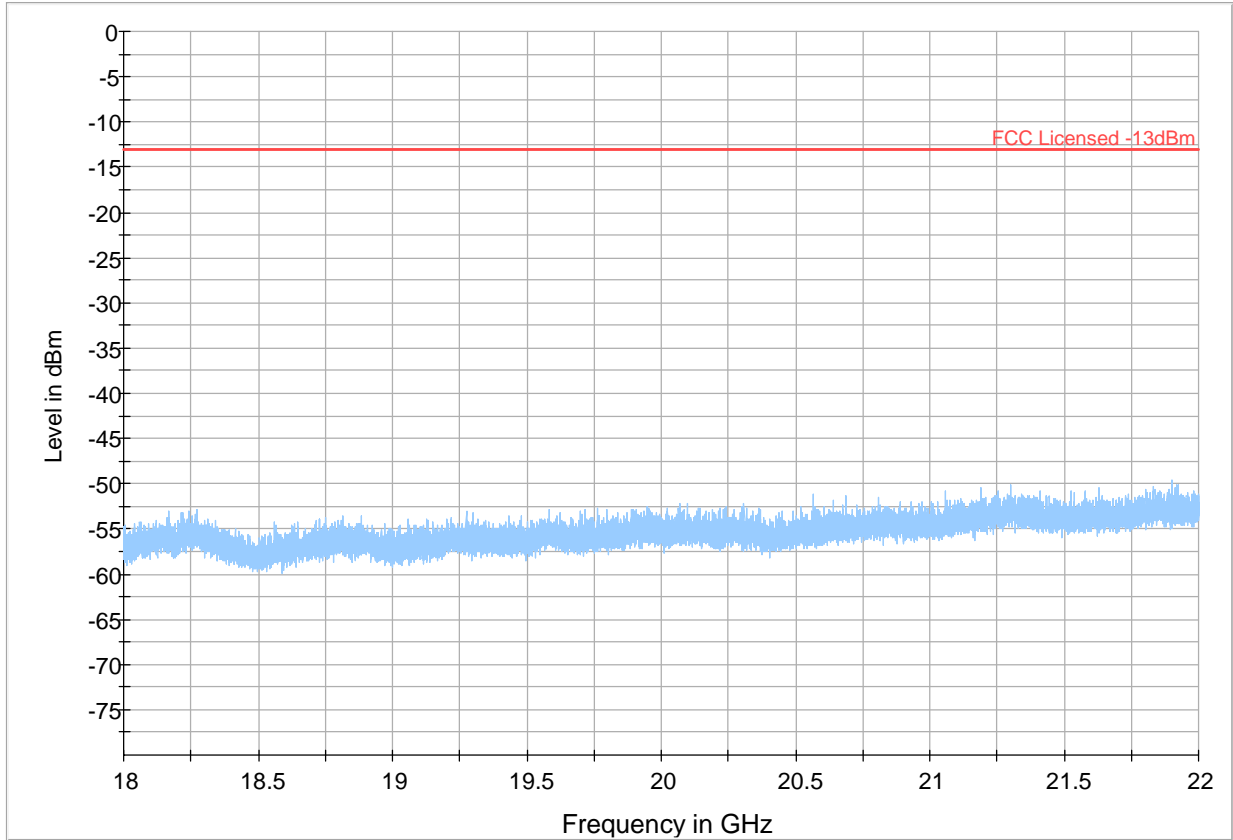


— Preview Result 1-PK+
 — FCC Licensed -25dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 34

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

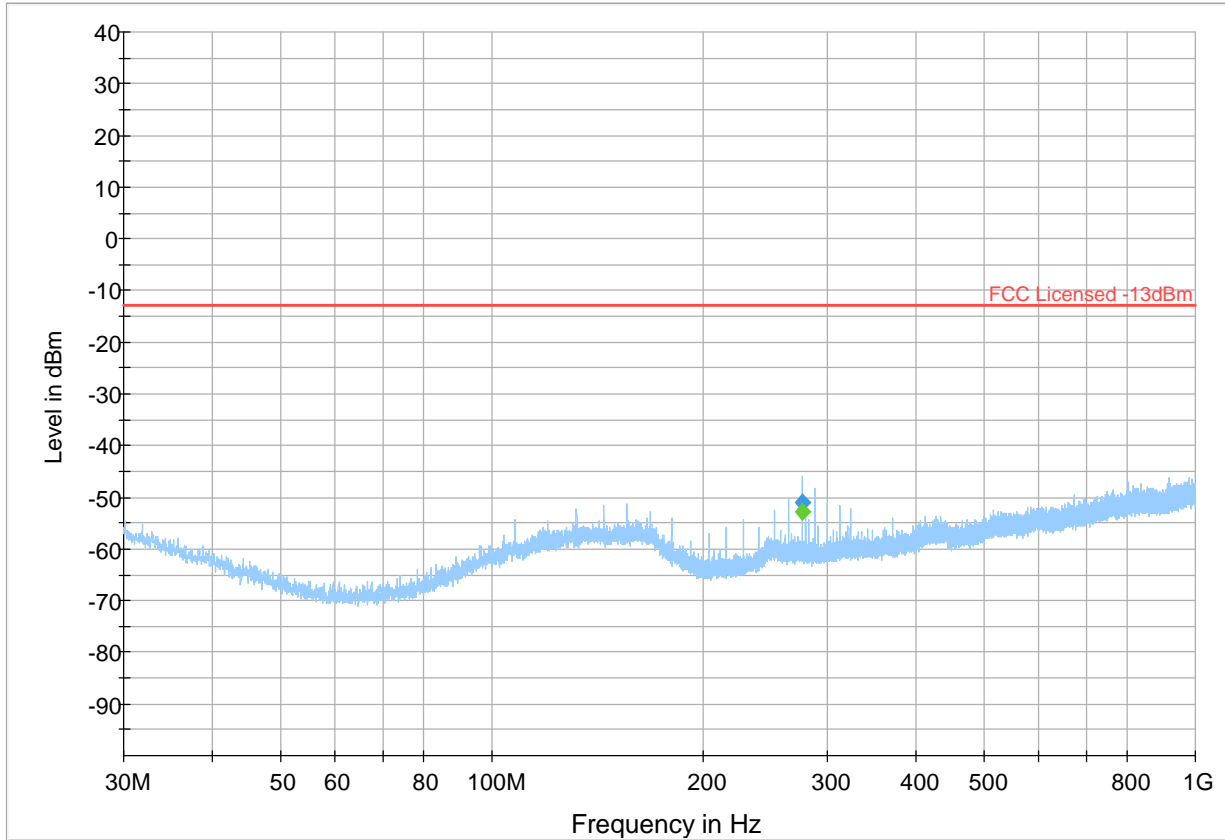


— Preview Result 1-PK+
 * Critical_Freqs PK+
 — FCC Licensed -13dBm
 ◆ Final_Result RM



Plot # 35

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-52.92	---	---	500.0	100.0	142.0	V	164.0	-74.2
275.97	-50.93	---	-13.00	37.93	500.0	100.0	142.0	V	164.0	-74.2

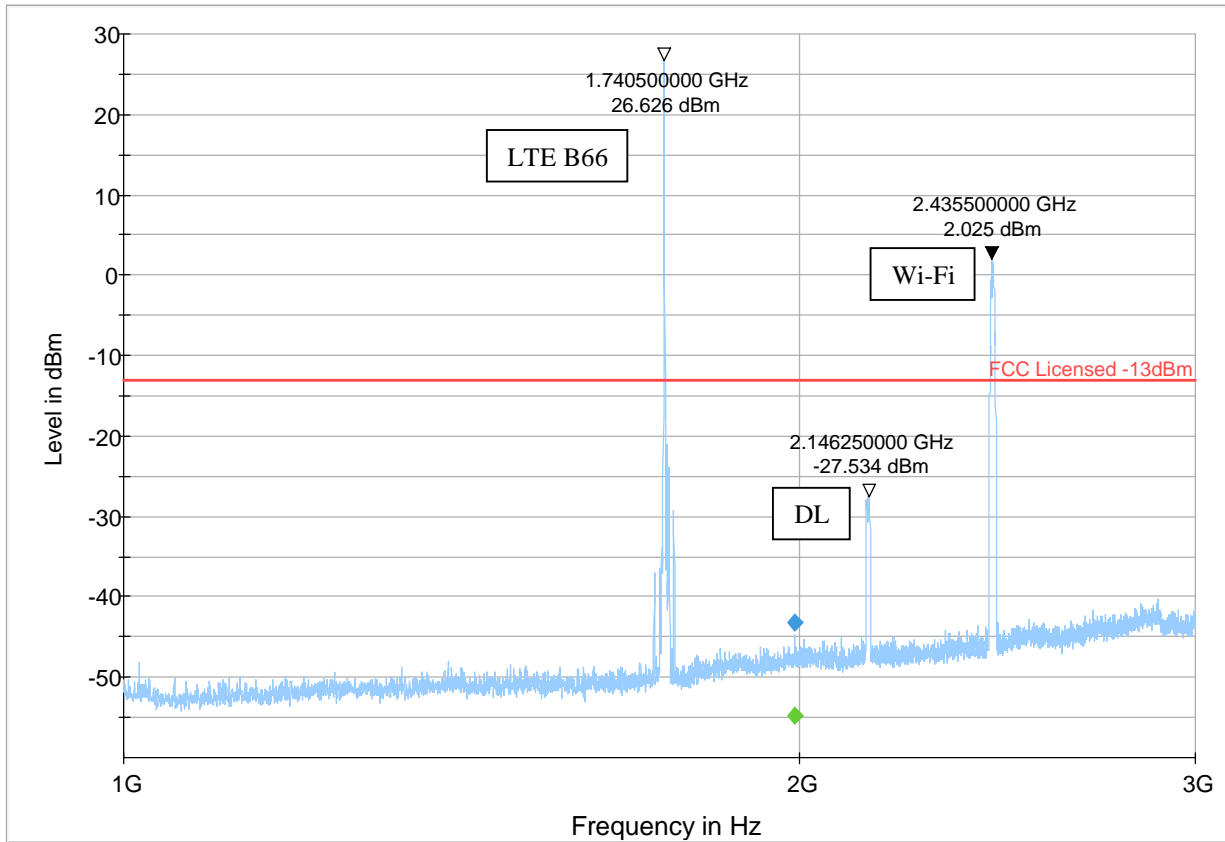


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 36

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
1989.25	---	-54.86	---	---	500.0	1000.0	325.0	H	220.0	-63.8
1989.25	-43.18	---	-13.00	30.18	500.0	1000.0	325.0	H	220.0	-63.8

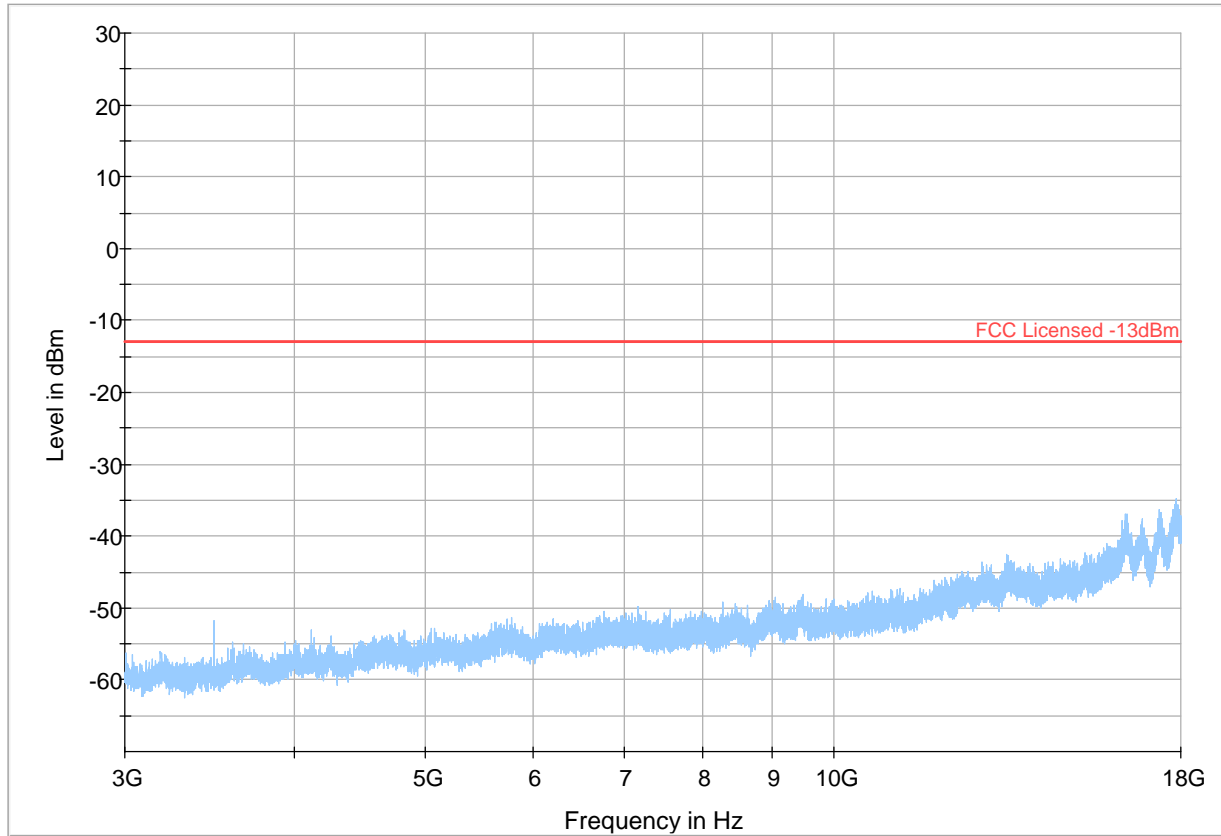


Preview Result 1-PK+ FCC Licensed -13dBm Final_Result PK+ Final_Result RMS



Plot # 37

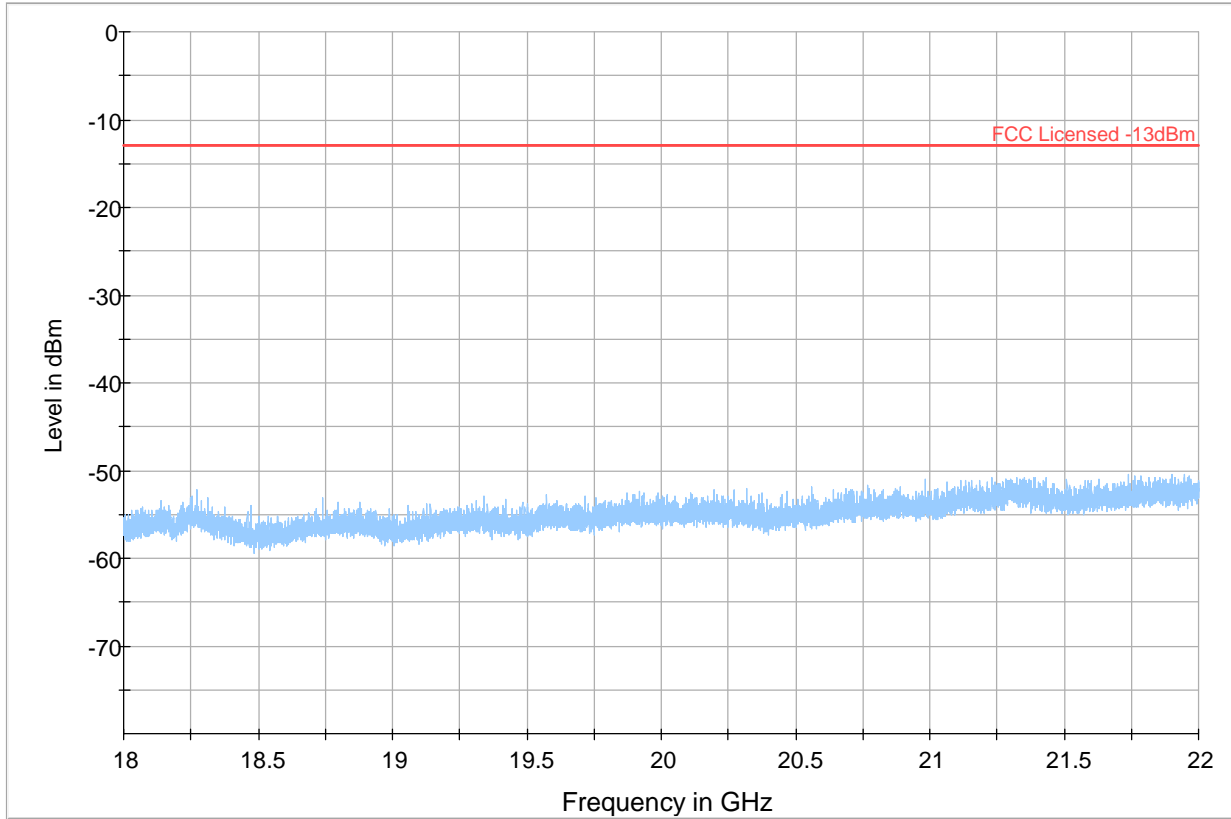
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---	---	---	---		---	---



Preview Result 1-PK+ FCC Licensed -13dBm Final_Result PK+ Final_Result RMS

Plot # 38

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

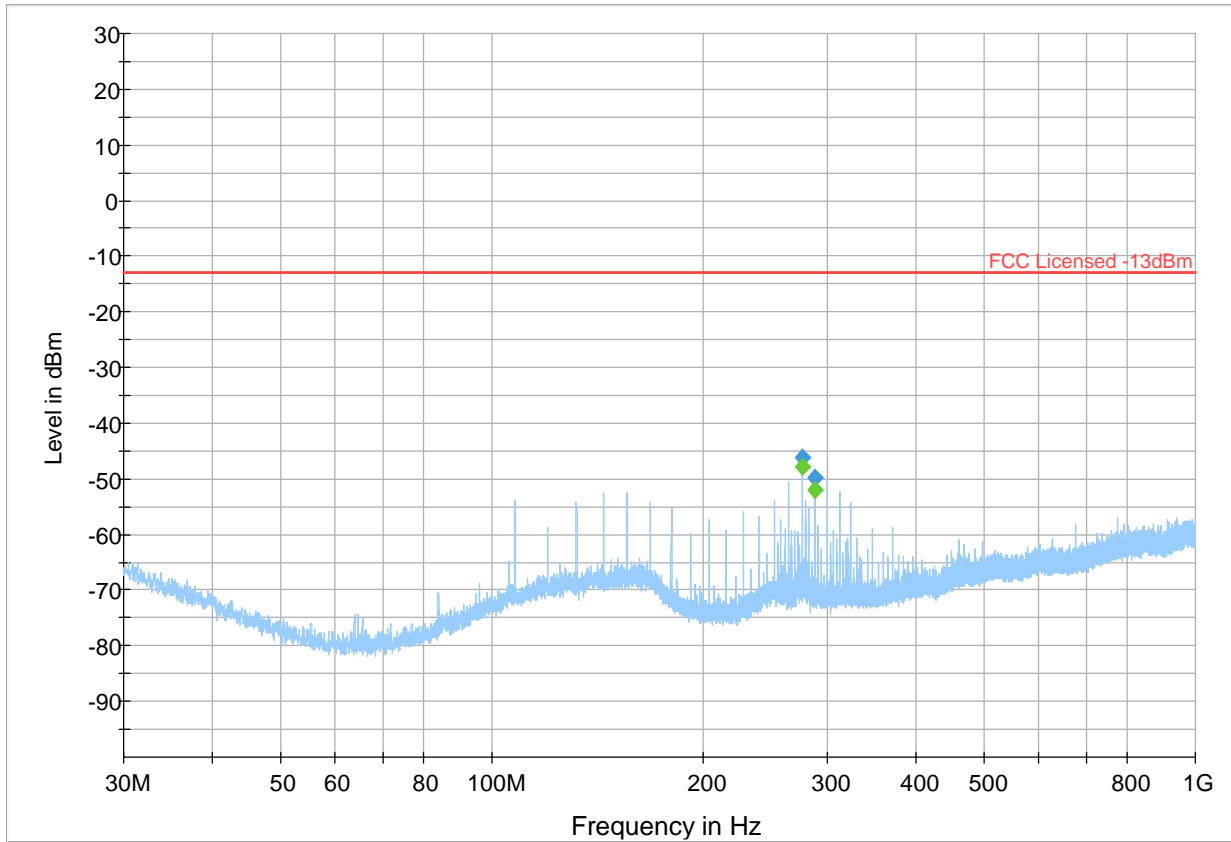


◆ Preview Result 1-PK+ Final_Result RMS
 * Critical_Freqs PK+ Final_Result PK+
 — FCC Licensed -13dBm



Plot # 39

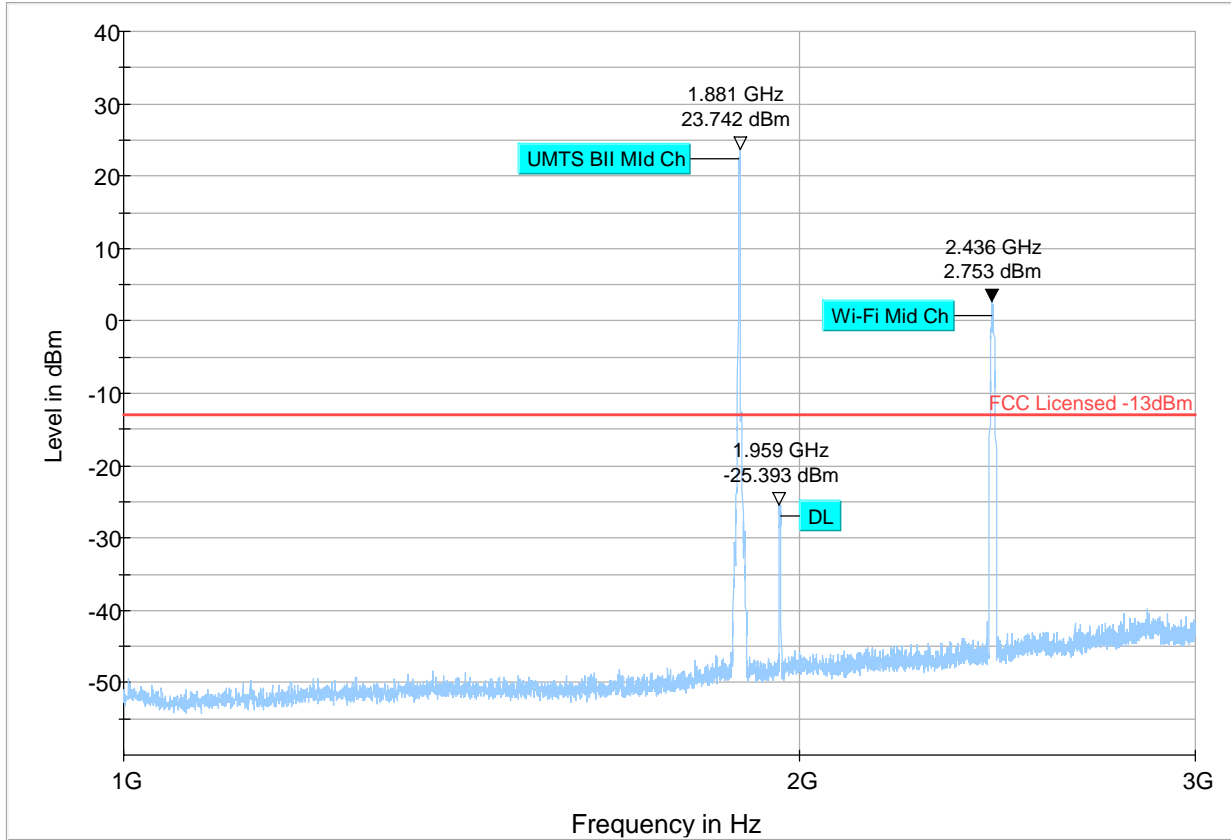
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	-46.12	---	-13.00	33.12	500.0	120.0	100.0	V	258.0	-74.2
275.97	---	-47.89	---	---	500.0	120.0	100.0	V	258.0	-74.2
287.97	-49.90	---	-13.00	36.90	500.0	120.0	100.0	V	276.0	-74.2
287.97	---	-52.06	---	---	500.0	120.0	100.0	V	276.0	-74.2



— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS

Plot # 40

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

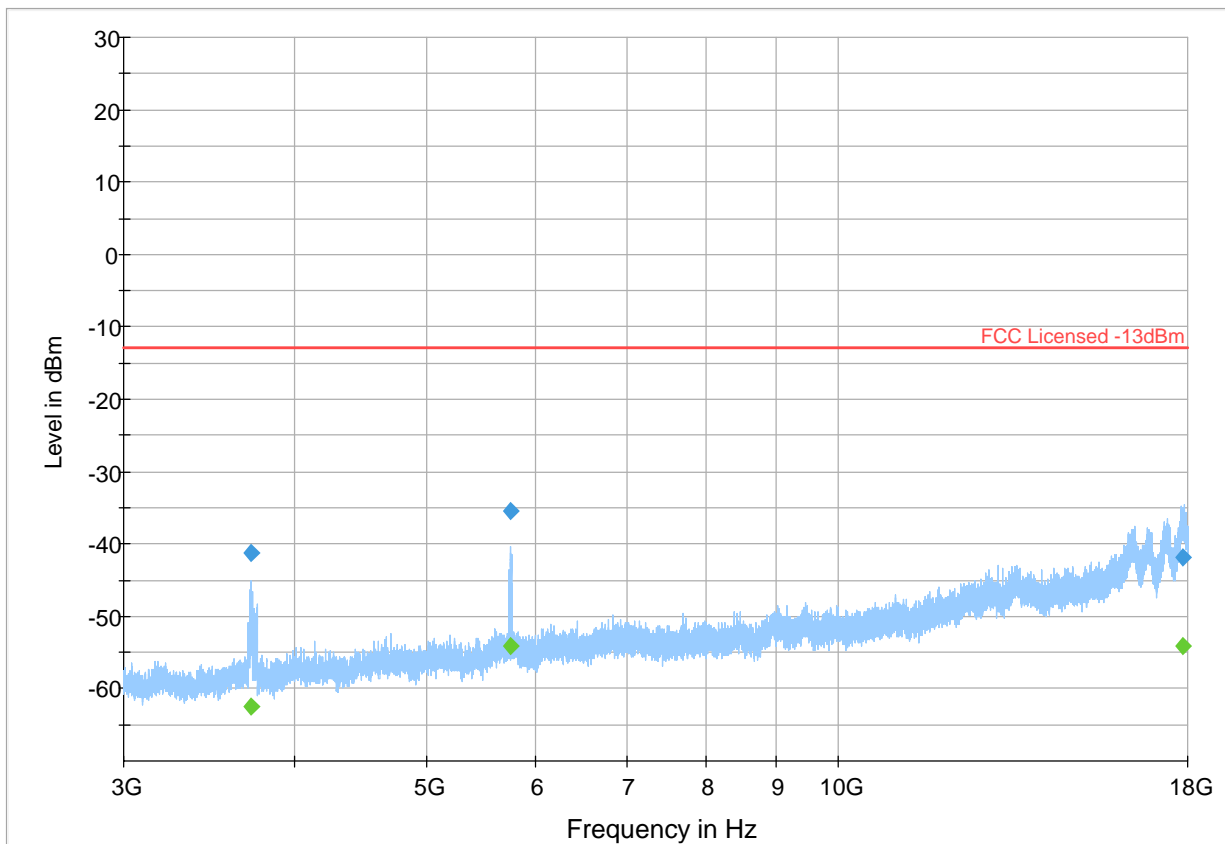


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 41

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3720.50	---	-62.42	---	---	500.0	1000.0	309.0	V	202.0	-100.8
3720.50	-41.30	---	-13.00	28.30	500.0	1000.0	309.0	V	202.0	-100.8
5749.75	---	-54.20	---	---	500.0	1000.0	142.0	V	40.0	-95.8
5749.75	-35.48	---	-13.00	22.48	500.0	1000.0	142.0	V	40.0	-95.8
17854.50	---	-54.11	---	---	500.0	1000.0	134.0	H	282.0	-77.1
17854.50	-41.97	---	-13.00	28.97	500.0	1000.0	134.0	H	282.0	-77.1

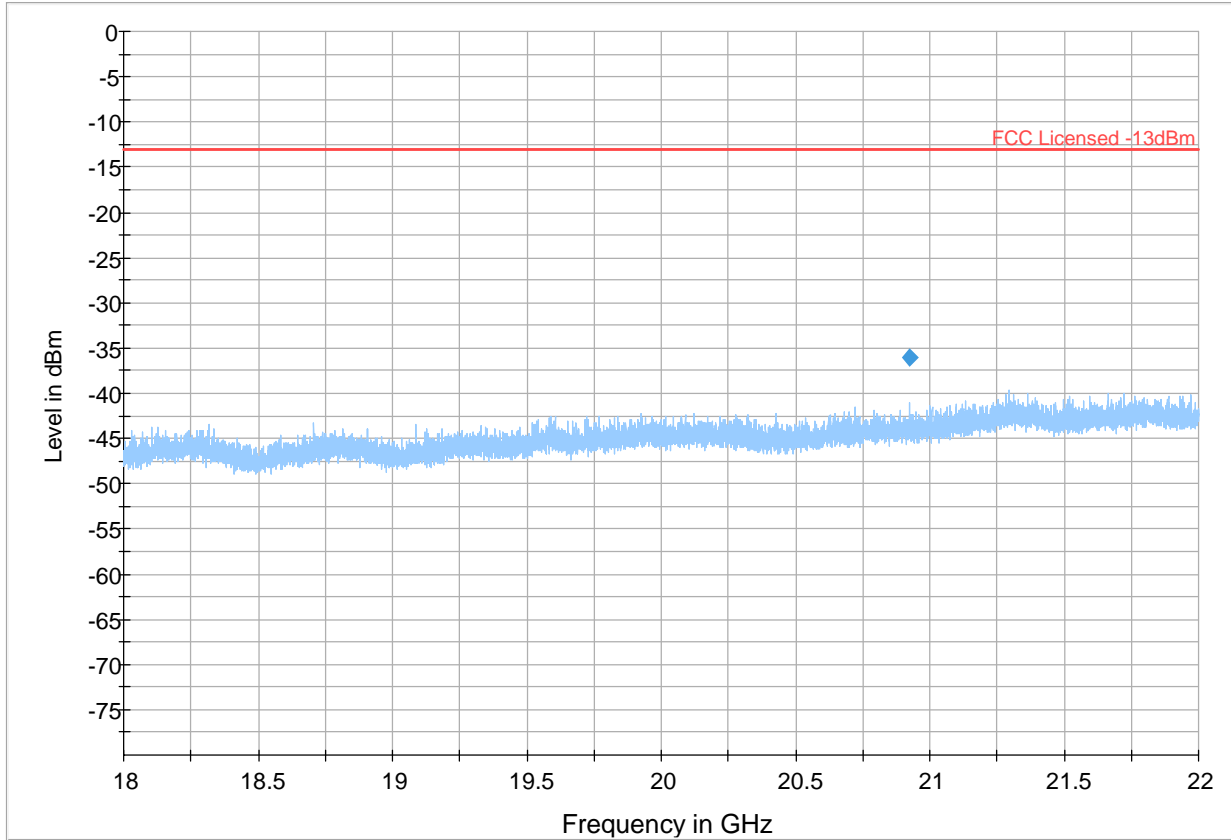


— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final_Result PK+ ◆ Final_Result RMS



Plot # 42

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
20925.75	-36.12	---	-13.00	23.12	500.0	1000.0	100.0	V	334.0	-77.5

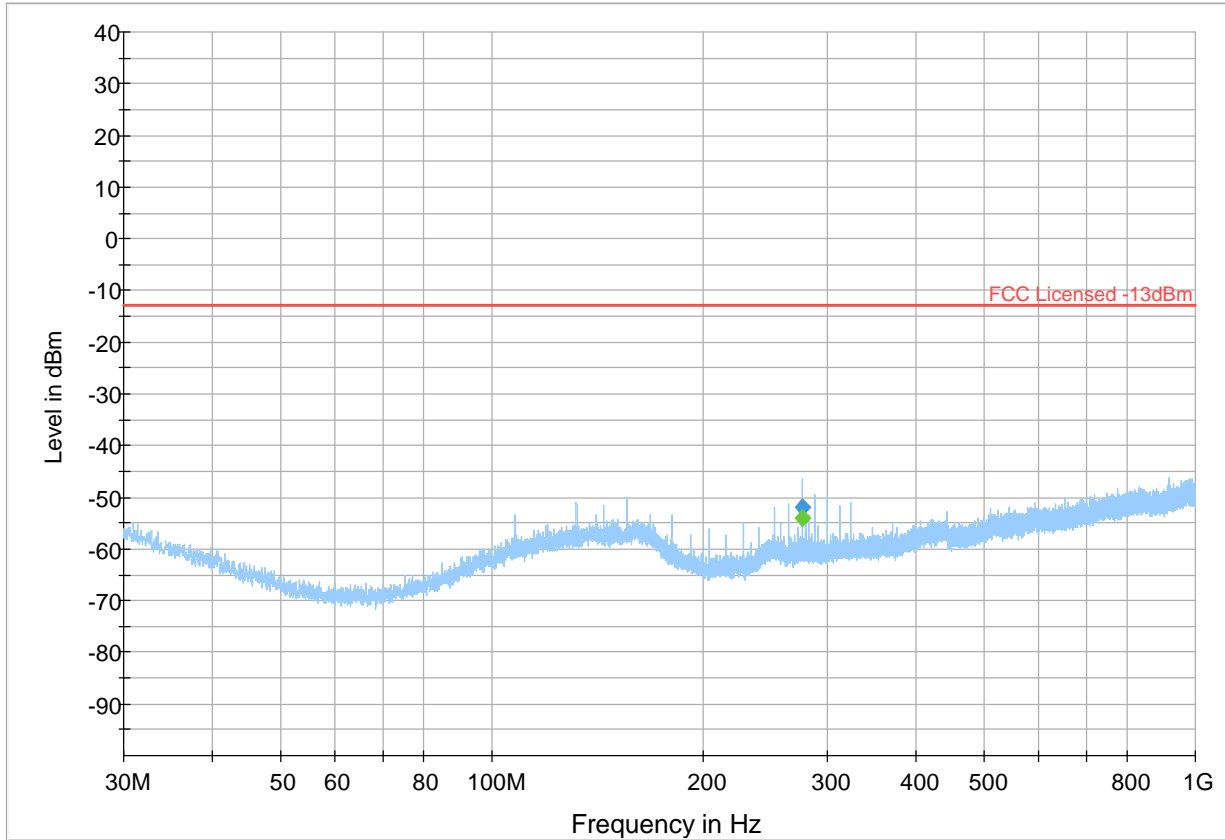


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 43

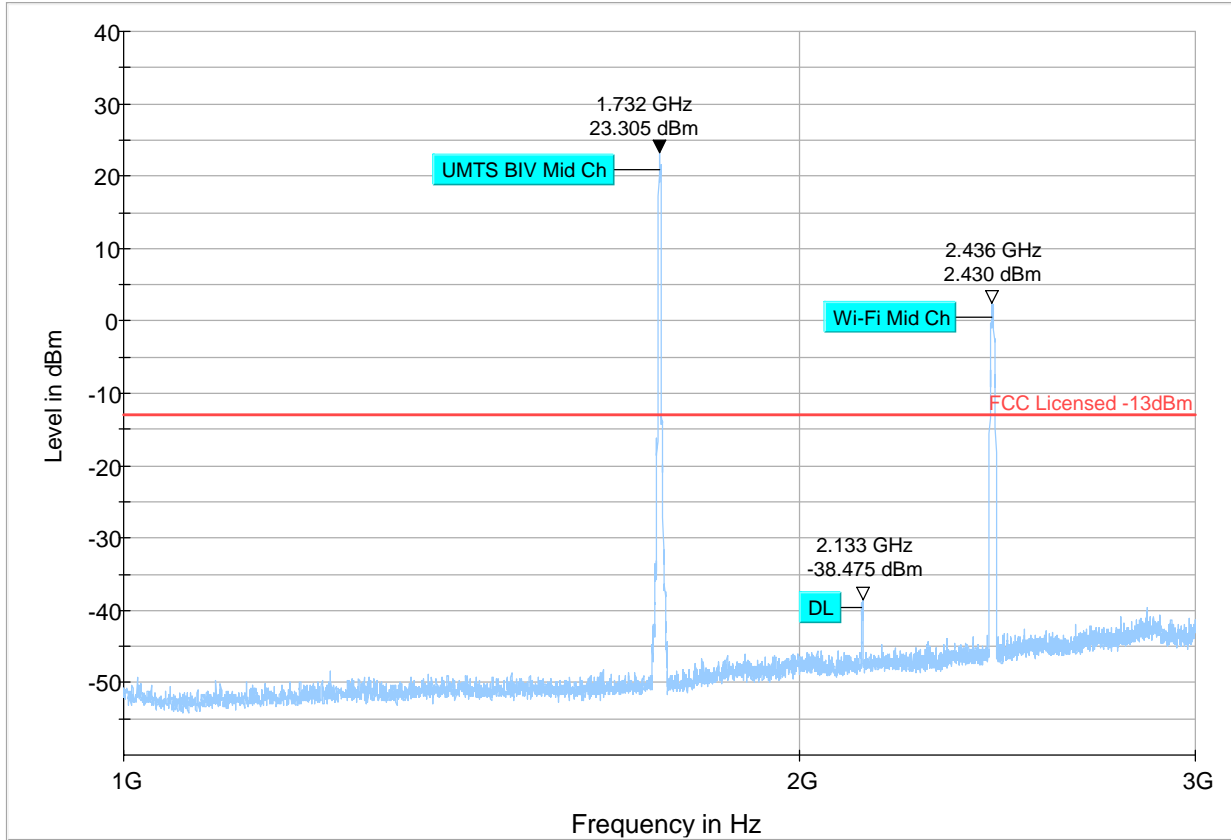
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
275.97	---	-54.04	---	---	500.0	100.0	107.0	V	166.0	-74.2
275.97	-52.03	---	-13.00	39.03	500.0	100.0	107.0	V	166.0	-74.2



— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final_Result PK+ ◆ Final_Result RMS

Plot # 44

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

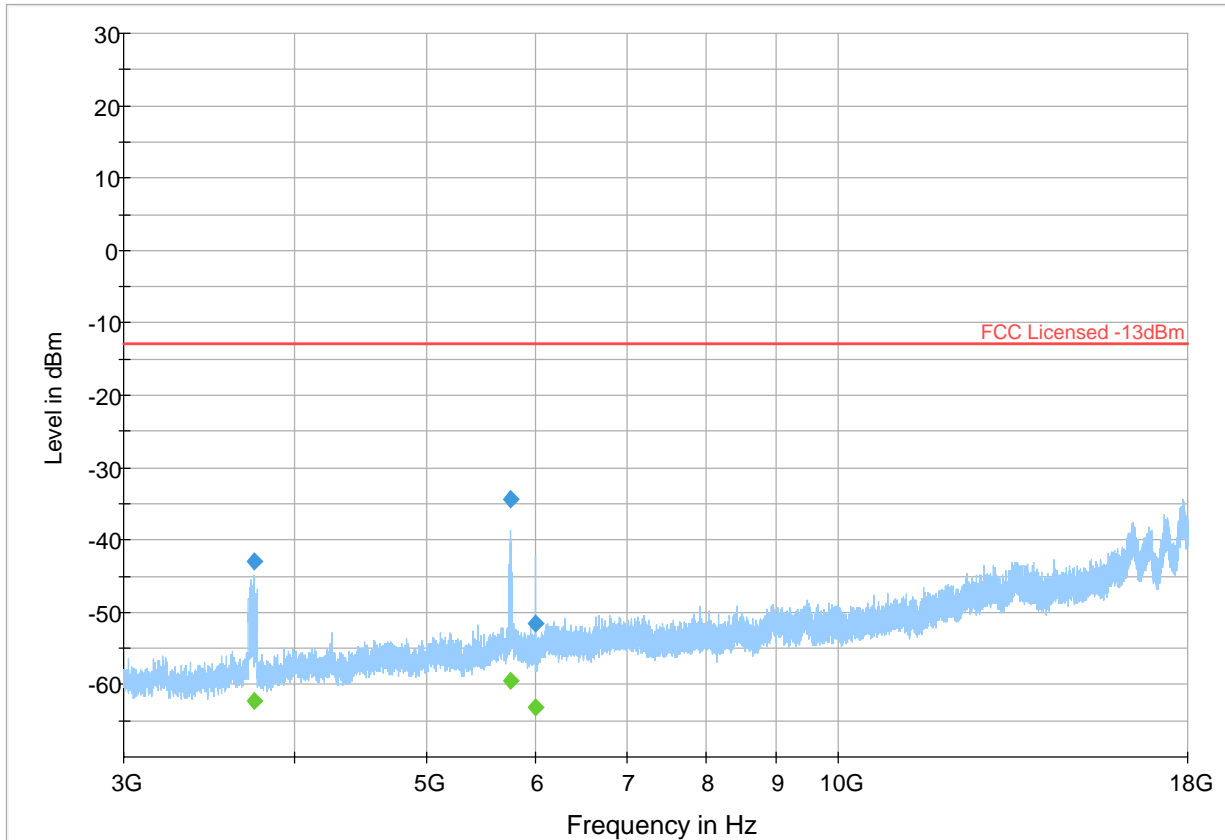


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 45

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3739.50	---	-62.23	---	---	500.0	1000.0	149.0	V	193.0	-101.0
3739.50	-42.99	---	-13.00	29.99	500.0	1000.0	149.0	V	193.0	-101.0
5749.25	---	-59.38	---	---	500.0	1000.0	142.0	V	302.0	-95.8
5749.25	-34.35	---	-13.00	21.35	500.0	1000.0	142.0	V	302.0	-95.8
6000.00	---	-63.04	---	---	500.0	1000.0	195.0	V	318.0	-97.1
6000.00	-51.57	---	-13.00	38.57	500.0	1000.0	195.0	V	318.0	-97.1

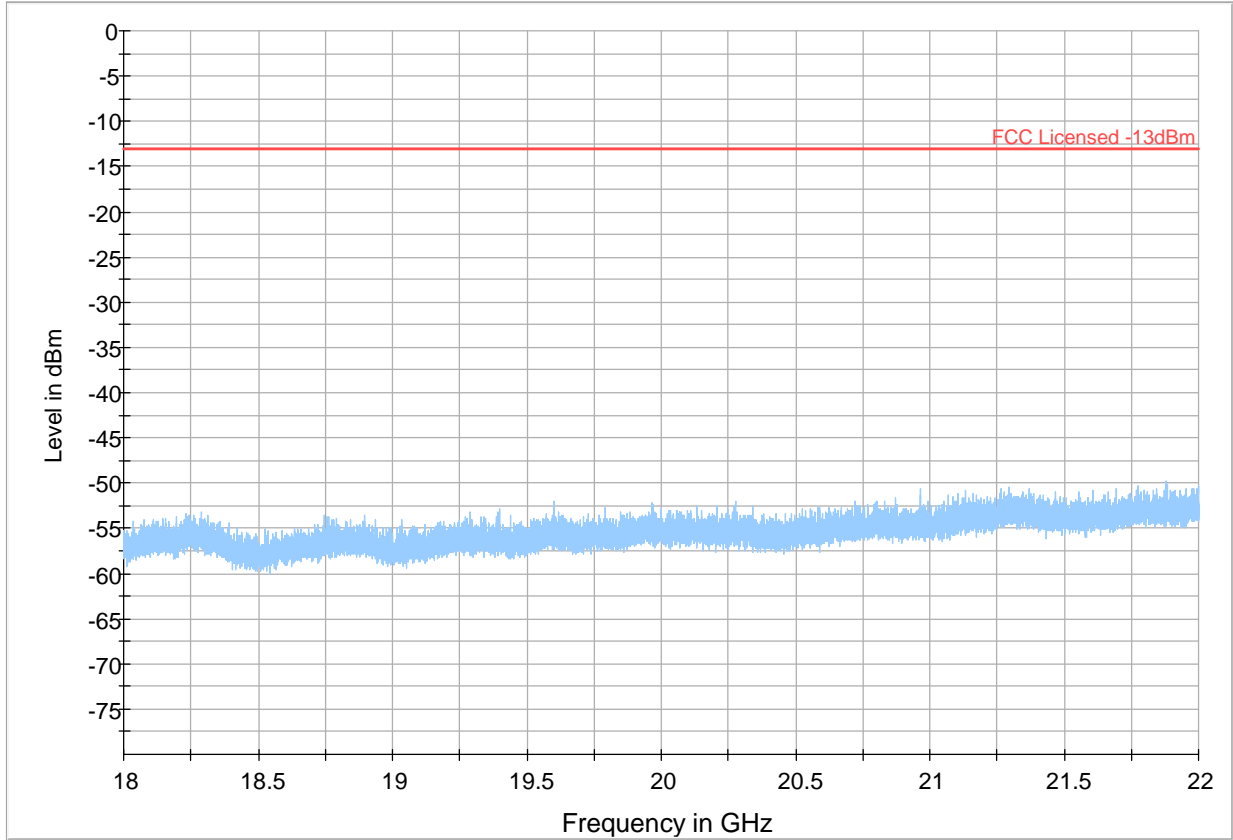


Preview Result 1-PK+ FCC Licensed -13dBm Final_Result PK+ Final_Result RMS



Plot # 46

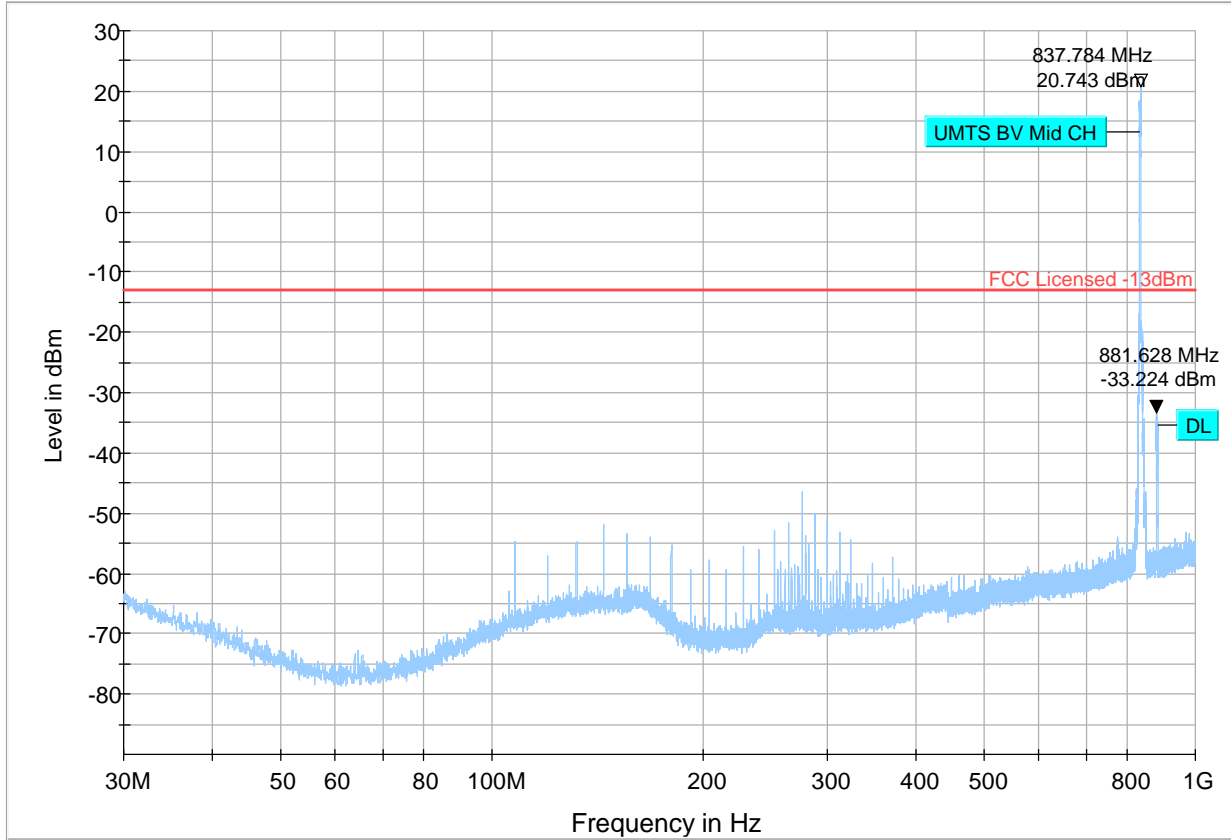
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Comment
---	---	---	---	---	---	---		---	---	



— Preview Result 1-PK+
 * Critical_Freqs PK+
 — FCC Licensed -13dBm
 ◆ Final_Result RM

Plot # 47

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

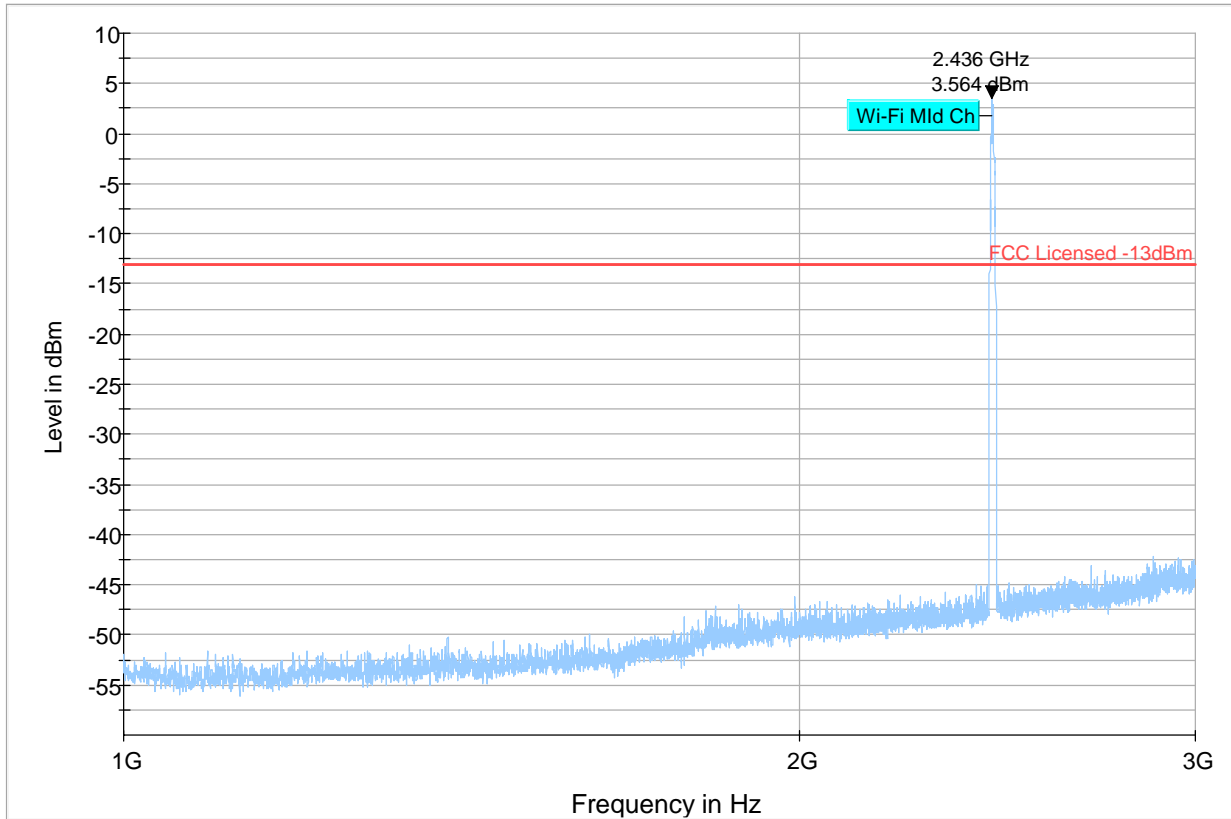


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 38

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

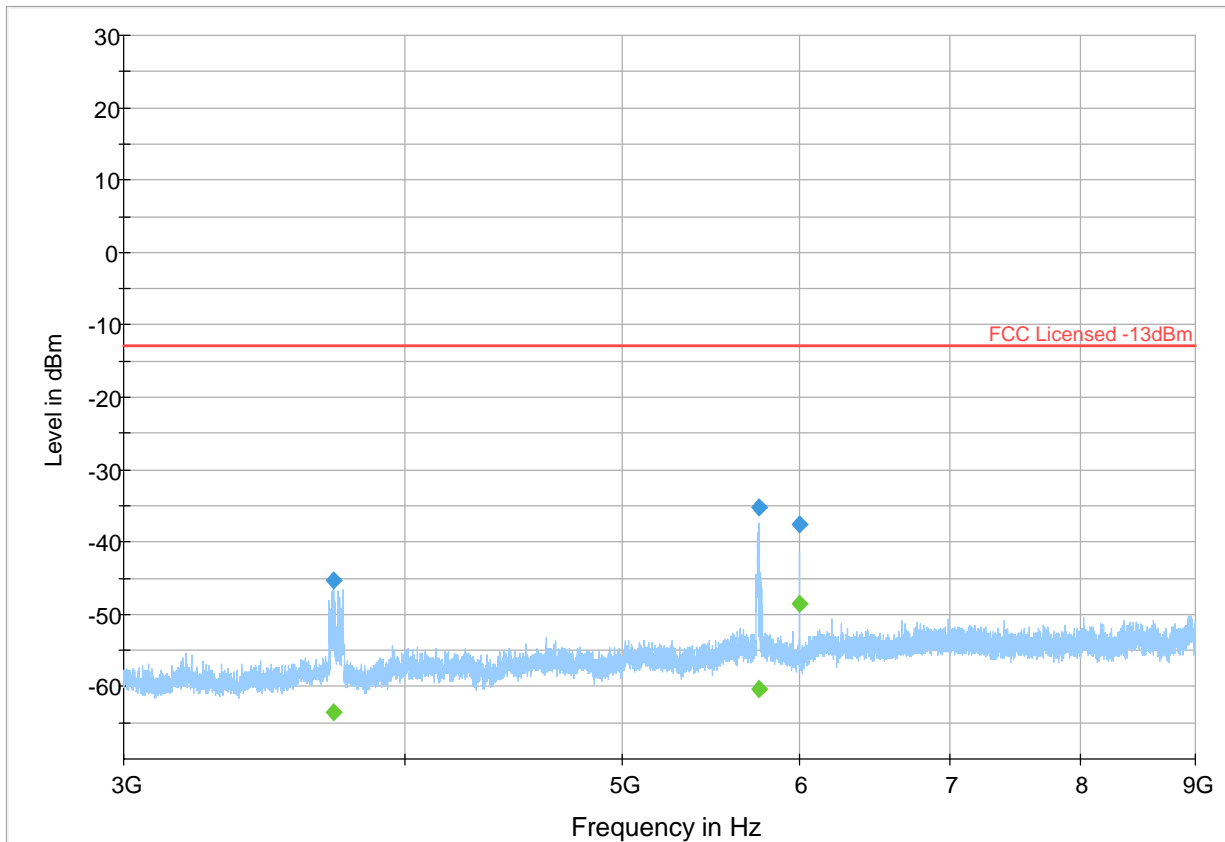


- ◆ Preview Result 1-PK+ * Critical_Freqs PK+
- ◆ Final_Result PK+ ◆ Final_Result RMS
- FCC Licensed -13dBm



Plot # 49

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3721.00	-45.31	---	-13.00	32.31	500.0	1000.0	142.0	V	260.0	-100.8
3721.00	---	-63.55	---	---	500.0	1000.0	142.0	V	260.0	-100.8
5751.50	-35.27	---	-13.00	22.27	500.0	1000.0	145.0	V	140.0	-95.8
5751.50	---	-60.30	---	---	500.0	1000.0	145.0	V	140.0	-95.8
5999.75	---	-48.64	---	---	500.0	1000.0	202.0	V	345.0	-97.1
5999.75	-37.66	---	-13.00	24.66	500.0	1000.0	202.0	V	345.0	-97.1

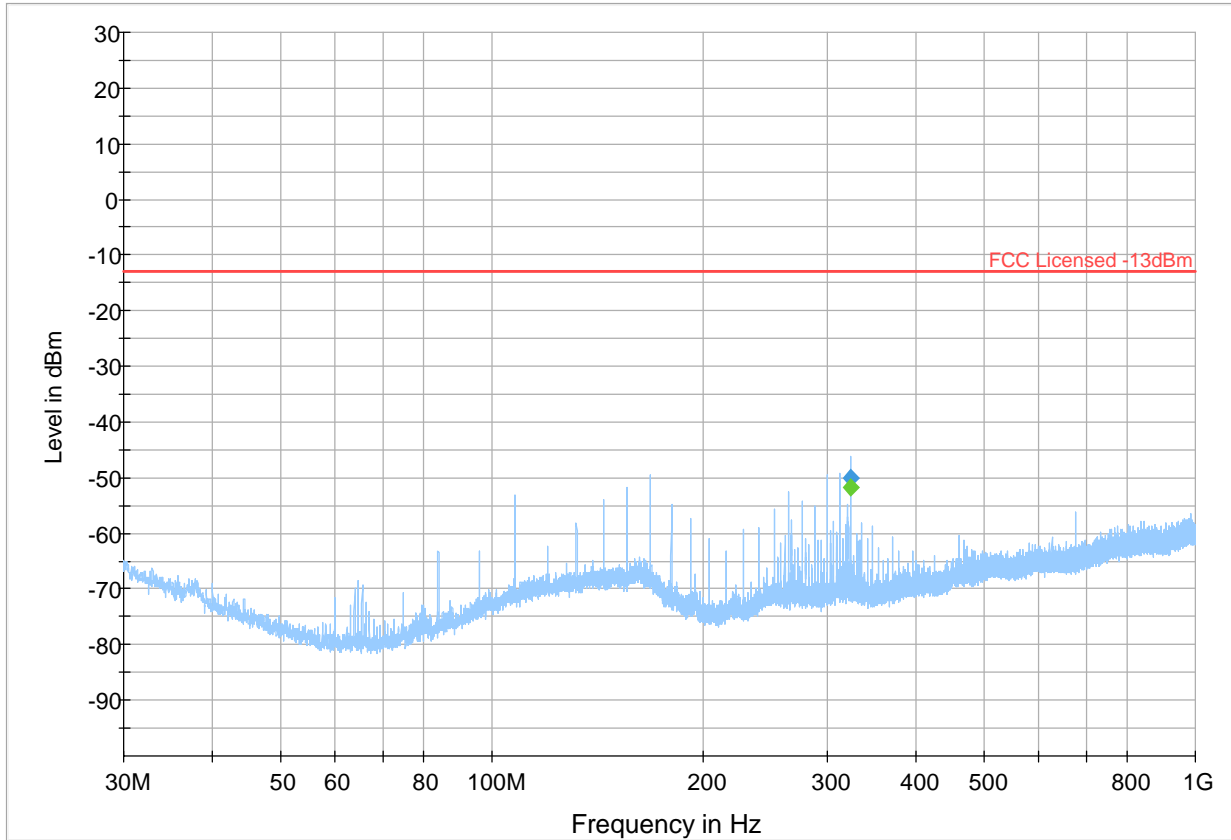


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 50

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
323.96	---	-51.73	---	---	500.0	120.0	141.0	H	60.0	-73.4
323.96	-50.09	---	-13.00	37.09	500.0	120.0	141.0	H	60.0	-73.4

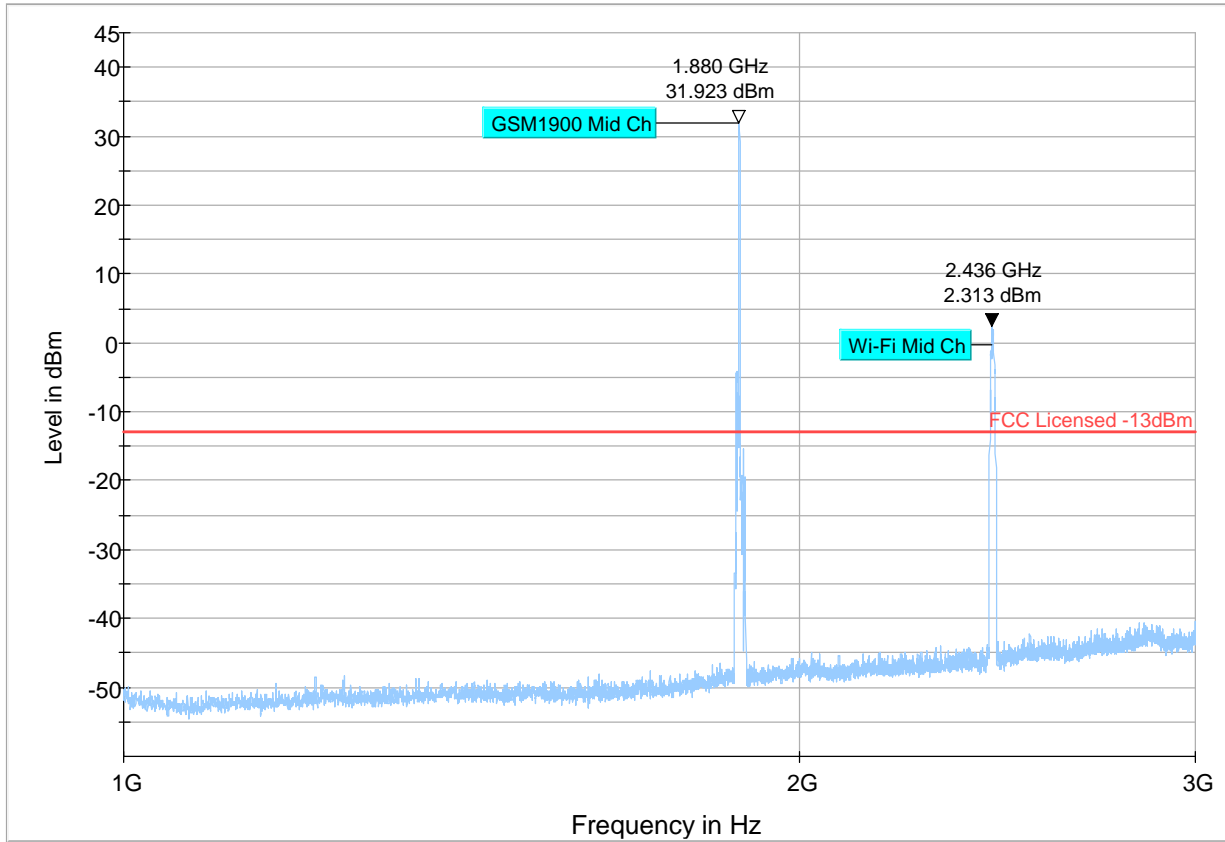


— Preview Result 1-PK+ — FCC Licensed -13dBm ◆ Final_Result PK+ ◆ Final_Result RMS



Plot # 51

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

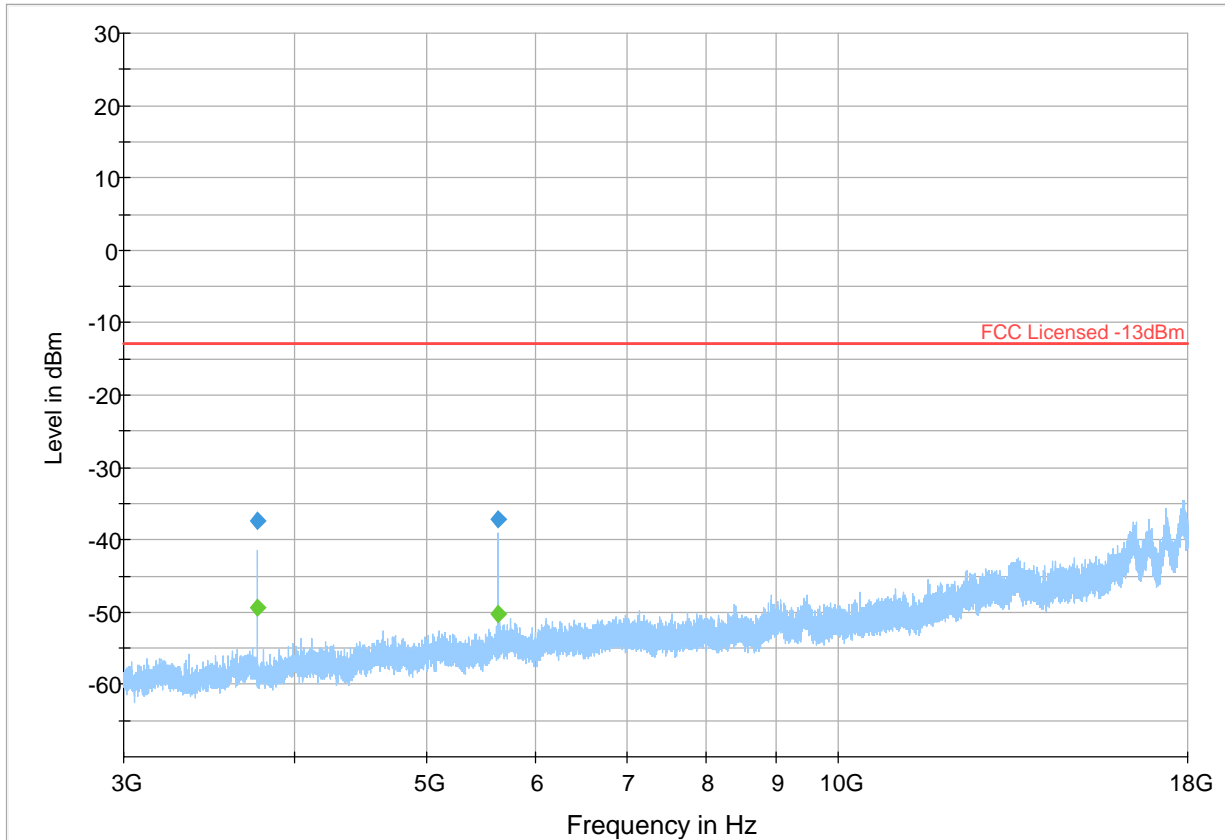


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 52

Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
3759.75	---	-49.36	---	---	500.0	1000.0	235.0	H	161.0	-100.9
3759.75	-37.34	---	-13.00	24.34	500.0	1000.0	235.0	H	161.0	-100.9
5639.75	---	-50.20	---	---	500.0	1000.0	117.0	H	136.0	-96.3
5639.75	-37.24	---	-13.00	24.24	500.0	1000.0	117.0	H	136.0	-96.3

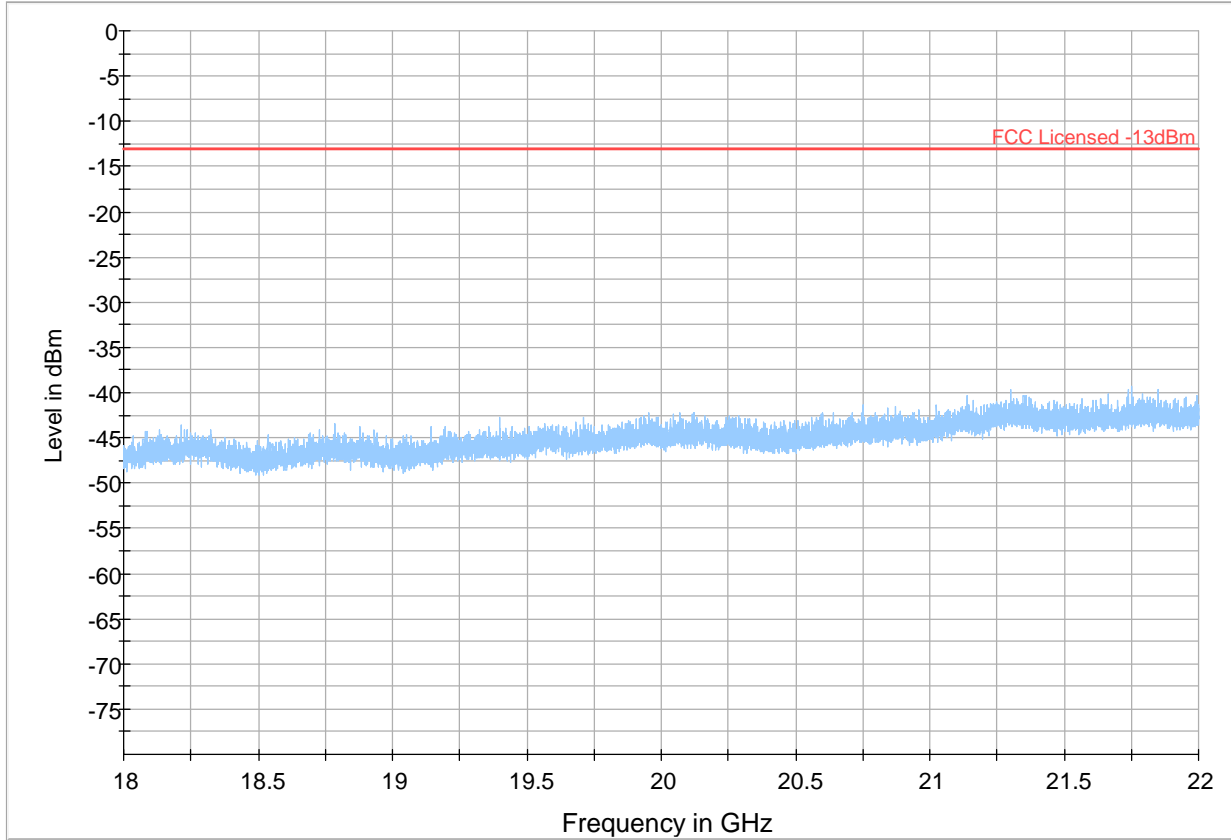


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS



Plot # 53

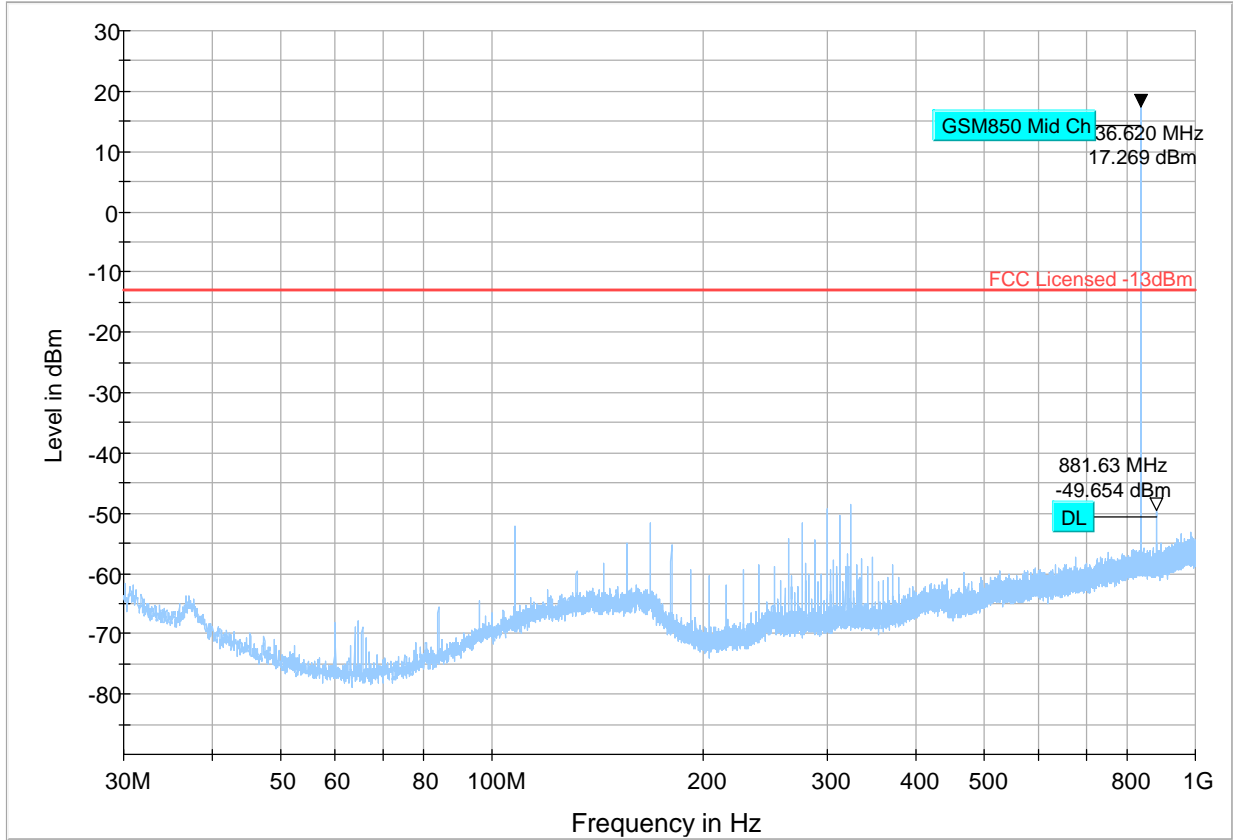
Frequency (MHz)	MaxPeak (dBm)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)
---	---	---	---	---	---	---	---		---	---



— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RMS

Plot # 54

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

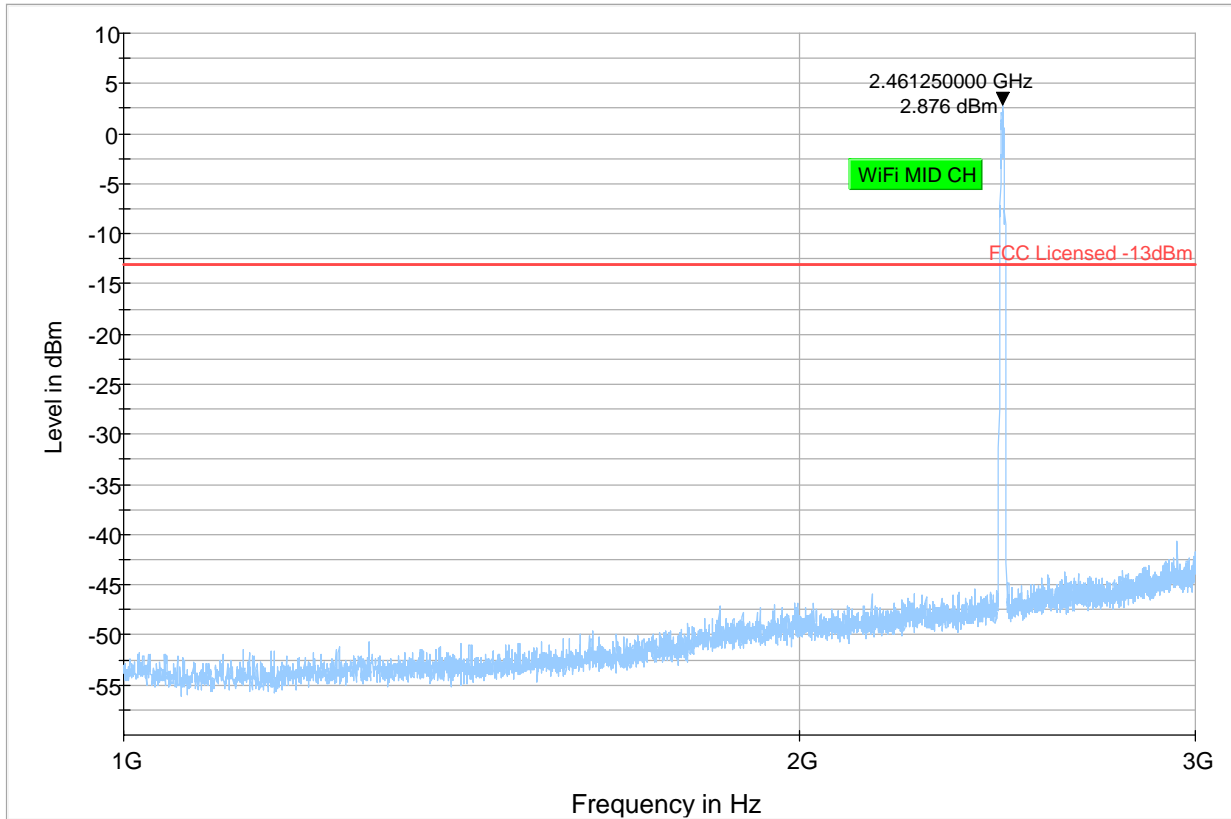


— Preview Result 1-PK+
 — FCC Licensed -13dBm
 ◆ Final_Result PK+
 ◆ Final_Result RM



Plot # 55

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

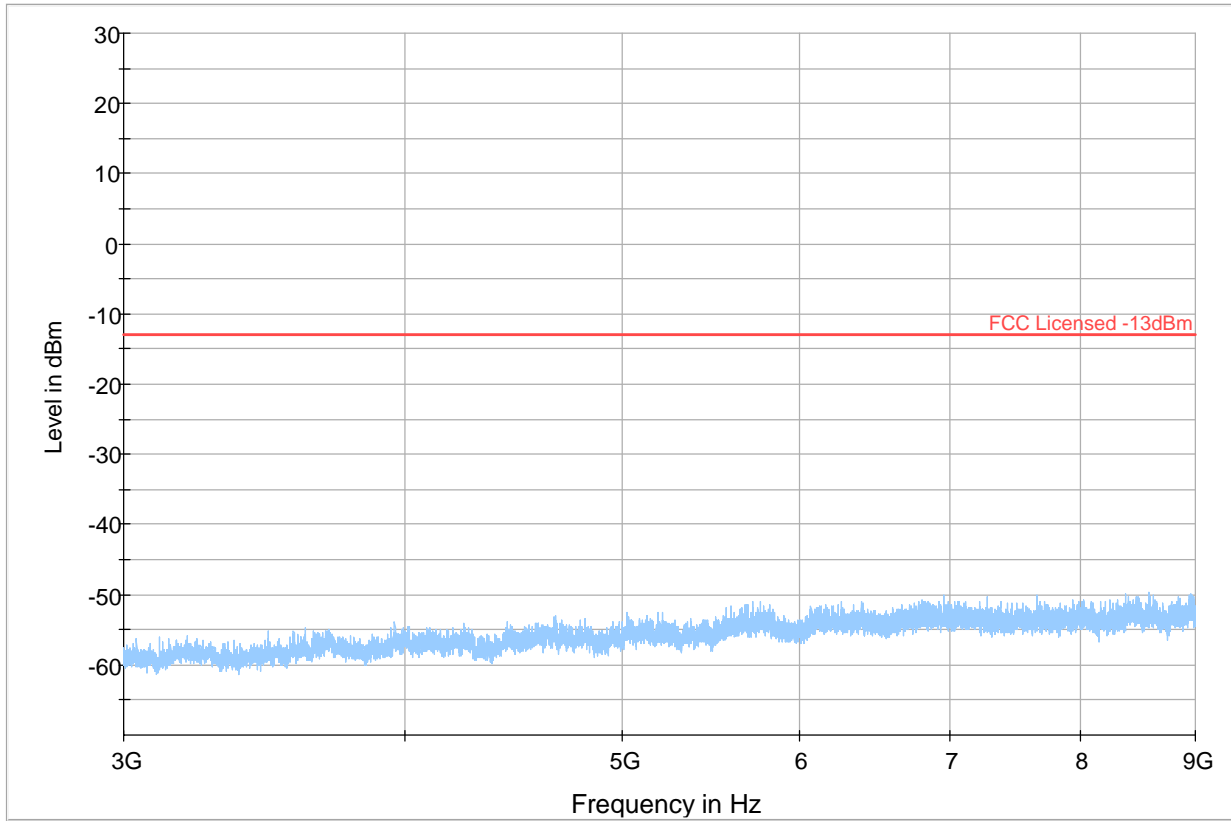


- ◆ Preview Result 1-PK+ * Critical_Freqs PK+
- ◆ Final_Result PK+ ◆ Final_Result RMS
- FCC Licensed -13dBm



Plot # 56

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



- ◆ Preview Result 1-PK+ * Critical_Freqs PK+
- ◆ Final_Result PK+ ◆ Final_Result RMS
- FCC Licensed -13dBm

7.2 Power Verification

Cellular output power was verified using R & S CMW 500 on antenna terminal

Conducted Measurements	dBm
LTE B2	23.29
LTE B12	24.21
LTE B5	24.09
LTE B7	23.61
UMTS B2	22.24
UMTS B5	23.29

8 Test setup photos

Setup photos are included in supporting file name: "EMC_PRATT_011_22001_FCC_Setup_Photos_Rev1.pdf"

9 Test Equipment And Ancillaries Used For Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
BILOG ANTENNA	ETS.LINDGREN	3142E	00166067	3 YEARS	10/21/2021
HORN ANTENNA	EMCO	3115	00035111	3 YEARS	09/30/2021
HORN ANTENNA	ETS.LINDGREN	3117	00215984	3 YEARS	01/31/2021
HORN ANTENNA	ETS.LINDGREN	3116	00070497	3 YEARS	11/23/2020
TEST RECEIVER	R&S	ESU40	100251	3 YEARS	09/13/2021
PULSE LIMITER	R&S	20db Pulse Limiter	102473	3 YEARS	8/25/2020
DIGITAL THRMOMETER	CONTROL COMPANY	36934-164	181230565	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
2023-07-18	EMC_PRATT_011_22001_FCC_22_24_27_90	Initial Version	Cheng Song
2023-07-27	EMC_PRATT_011_22001_FCC_22_24_27_90_Rev1	Updated model number	Cheng Song
2023-10-27	EMC_PRATT_011_22001_FCC_22_24_27_90_Rev2	Updated section 7.1	Cheng Song
2023-12-09	EMC_PRATT_011_22001_FCC_22_24_27_90_Rev3	Updated section 6.1-6.3	Cheng Song

<<< The End >>>