FCC / ISED & Test Report

For:
Xirgo Technologies LLC

Model Number:
LX45-NA

Product Description:
IoT GNSS tracking device

FCC ID: GKM-LX45
IC: 10281A-LX45

Applied Rules and Standards:
KDB 996369 D04 Module Integration Guide V02

REPORT #: EMC_XIRGG_001_24001_KDB996369_Rev1

DATE: 2024-11-15

A2LA Accredited

IC recognized #
3462B

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

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1 Assessment

The following device as further described in section 3 of this report was evaluated against the applicable criteria specified in KDB 996369 D04 Module Integration Guide V02

No deficiencies were ascertained.

Company Name	Product Description	Model No.
Xirgo Technologies LLC	IoT GNSS tracking device	LX45-NA

Responsible for the Report:

Date	Section	Name	Signature
2024-11-15	Compliance	Cheng Song (EMC Engineer)	Cheng Song CN = Cheng Song email = cheng.song@cetecom.com C = AD 2024.11.15 14:56:58 -08'00'

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
EMC Engineer:	Cheng Song
Responsible Project Leader:	Akanksha Baskaran

2.2 Identification of the Client

Applicant's Name:	Xirgo Technologies LLC.
Street Address:	1461 Lawrence Dr, Ste 1
City/Zip Code	Thousand Oaks, CA 91320
Country	USA

2.3 Identification of the Manufacturer

Manufacturer's Name:	Xirgo Technologies LLC.
Manufacturers Address:	1461 Lawrence Dr, Ste 1
City/Zip Code	Thousand Oaks, CA 91320
Country	USA

3 Equipment Under Test (EUT)

3.1 EUT Specifications

<table>
<tr><td>Product Description:</td><td>IoT GNSS tracking device</td></tr>
<tr><td>Model Number:</td><td>LX45-NA</td></tr>
<tr><td>Marketing Name:</td><td>LX41-NA, LT41-NA,
LX42-NA, LT42-NA,
LX43-NA, LT43-NA,
LX44-NA, LT44-NA,
LX45-NA, LT45-NA</td></tr>
<tr><td>HW Version:</td><td>LX45-NA-001</td></tr>
<tr><td>SW Version:</td><td>LX45-NA-001</td></tr>
<tr><td>FCC-ID:</td><td>GKM-LX45</td></tr>
<tr><td>IC:</td><td>10281A-LX45</td></tr>
<tr><td>Radio Information as declared:</td><td><u>Cellular:</u>
• Quectel LPWA BG95-M3
• LTE CAT M1, EGPRS
• LTE: B2, B4, B12, B13, B66 only (other bands will be disabled)
• GSM: 850MHz, 900MHz, 1800MHz, 1900MHz.
<u>Bluetooth:</u>
• Nordic nRF52832 (SoC)
• Bluetooth Low Energy.</td></tr>
<tr><td>Antenna Information as declared:</td><td>
<table>
<tr><td>Bands:</td><td>LTE 2 & GSM 1900</td><td>LTE 4</td><td>LTE 12</td><td>LTE 13</td><td>LTE 66</td><td>GSM 850</td><td>BLE</td></tr>
<tr><td>Max Gain (dBi):</td><td>2.02</td><td>1.21</td><td>-0.79</td><td>-2.98</td><td>2</td><td>-4,5</td><td>0.5</td></tr>
</table>
</td></tr>
<tr><td>Power Supply/ Rated Operating Voltage Range</td><td>Low: 9 VDC, Nom: 12VDC, High: 31VDC</td></tr>
<tr><td>Operating Temperature Range</td><td>Low: -40ºC Norm +25ºC High +85 ºC</td></tr>
<tr><td>Sample Revision</td><td>☐Production ☒ Pre-Production</td></tr>
<tr><td>EUT Dimensions</td><td>68mm x 90mm x 19mm</td></tr>
<tr><td>Weight</td><td>Tracker: 64 grams, Set: 160 grams</td></tr>
<tr><td>EUT Diameter</td><td>☒< 60 cm ☐ Other _____</td></tr>
<tr><td colspan="2">Note: All information provided by the client.</td></tr>
</table>

3.2 EUT Sample details

EUT #	Serial Number	HW Version	SW Version	Notes/Comments
1	86458 10652 01901	LX45-NA-001	LX45-NA-001	-

3.3 Accessory Equipment (AE) details

AE #	Type	Model	Manufacturer	Serial Number
1	-	-	-	-

3.4 Test Sample Configuration

EUT Set-up #	Combination of AE used for test set up	Comments
1	EUT#1	-

3.5 Mode of Operation details

Mode of Operation	Description of Operating modes	Additional Information
Op. 1	Cellular Radio simultaneous transmission with BLE 2 Mbps Channel 39	During testing, BLE was set to operate on the physical layer at 2 Mbps on channel 39. To represent the worst-case scenario, selected cellular bands were transmitting simultaneously with the BLE radio. The EUT was configured for continuous BLE transmission on the specified channel using the 'Direct Test Mode' in the 'nRF Connect for Desktop' application by Nordic Semiconductor. The cellular radio of the EUT was activated by connecting it to a base station simulator.

3.6 Justification for Mode of Operation

During testing, the EUT was configured with transmitters set to BLE at 2 Mbps on channel 39 at maximum power, operating simultaneously with the cellular radio to simulate the worst-case scenario. This setup was chosen based on the maximum average conducted output power from the reports for the supported radios.

For radiated measurements, the data in this report reflects the worst-case results between horizontal and vertical antenna polarizations across all orientations of the EUT.

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 section 1.

The variant model numbers include LX44-NA, LX43-NA, LX42-NA, LX41-NA, LT44-NA, LT43-NA, LT42-NA, and LT41-NA. For further details regarding the differences between these variant models, please refer to the Similarity Declaration issued by Xirgo Technologies LLC. The LX45-NA model was selected as the worst-case model for testing, based on the initial spot-check verification.

5 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)	150 kHz – 30 MHz	2.47 dB	N/A
Radiated emissions	9 kHz – 30 MHz	2.68 dB	2.53 dB
	30 – 100 MHz	4.39 dB	3.85 dB
	100 MHz – 1 GHz	5.65 dB	5.24 dB
	1 – 6 GHz	5.0 dB	4.88 dB
	6 – 18 GHz	4.76 dB	4.58 dB
	18 – 40 GHz	4.65 dB	4.61 dB

5.1 Environmental Conditions During Testing:

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

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

5.2 Dates of Testing:

9/9/2024 - 10/14/2024

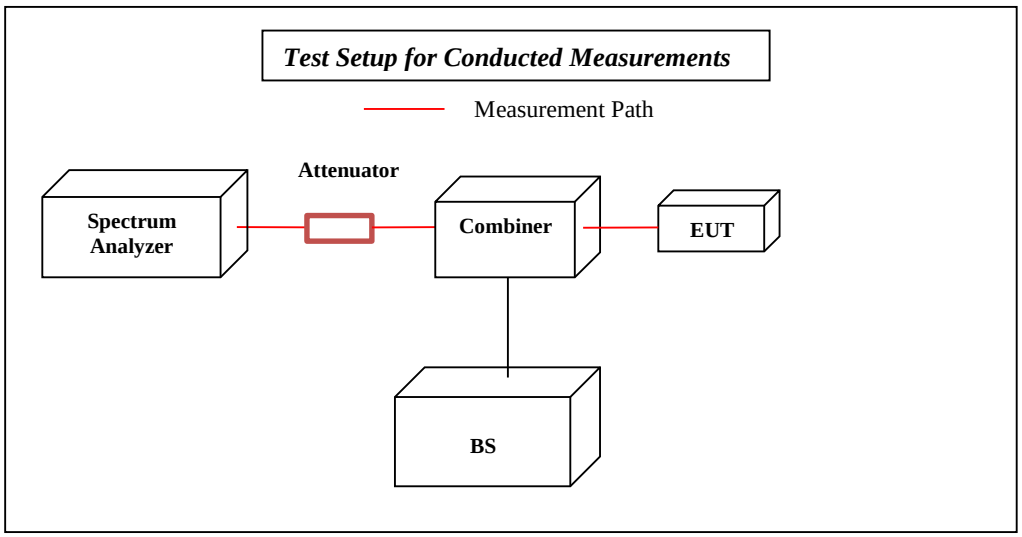
5.3 Decision Rule:

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.

6 Measurement Procedures

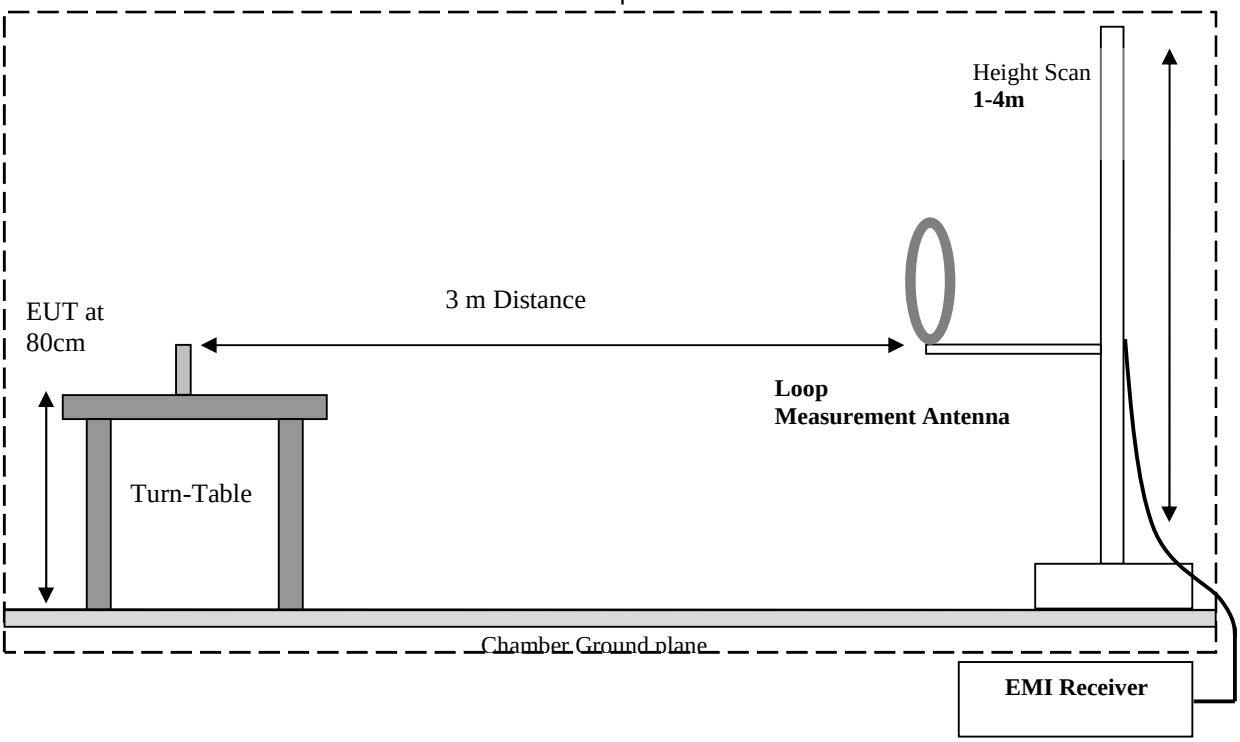
Testing is performed according to the guidelines provided in FCC publication (KDB) 971168 D01 v03r01 – "Measurement Guidance for Certification of Licensed Digital Transmitters" and according to relevant parts of ANSI/TIA-603-D-2010 as detailed below.



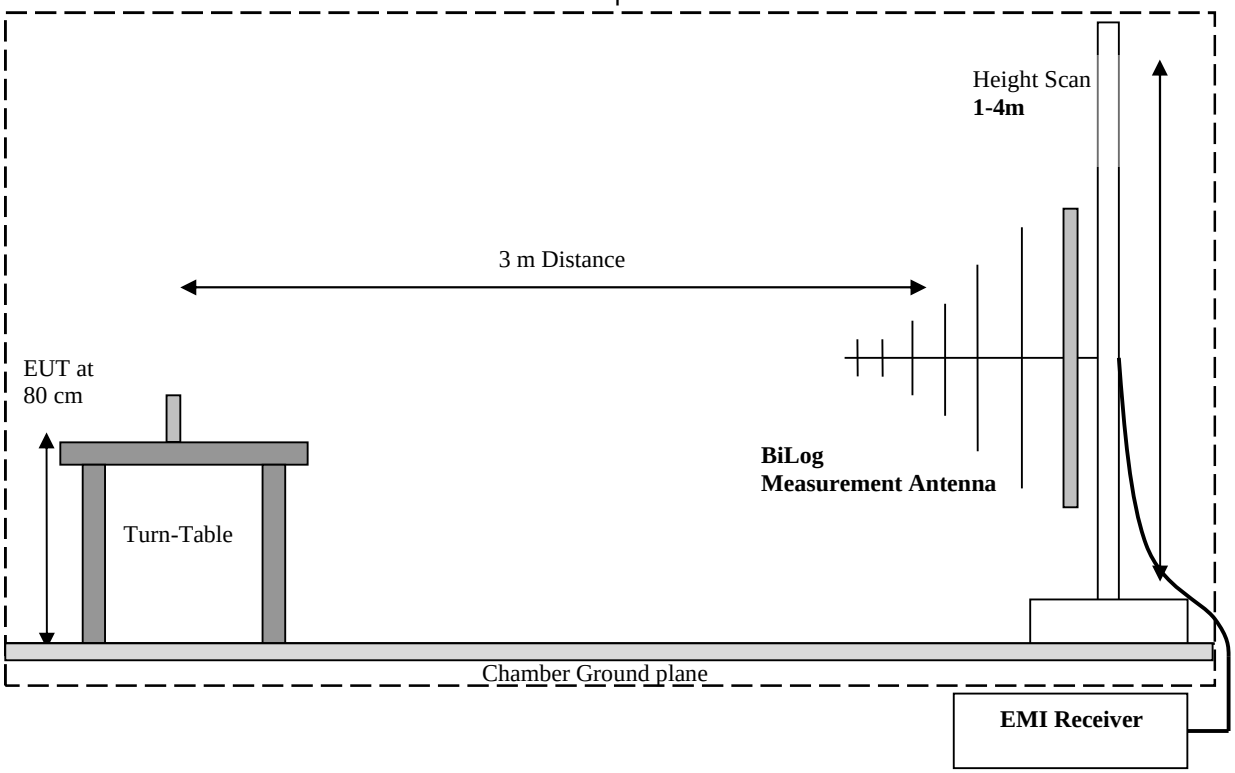
6.1 Radiated Measurement

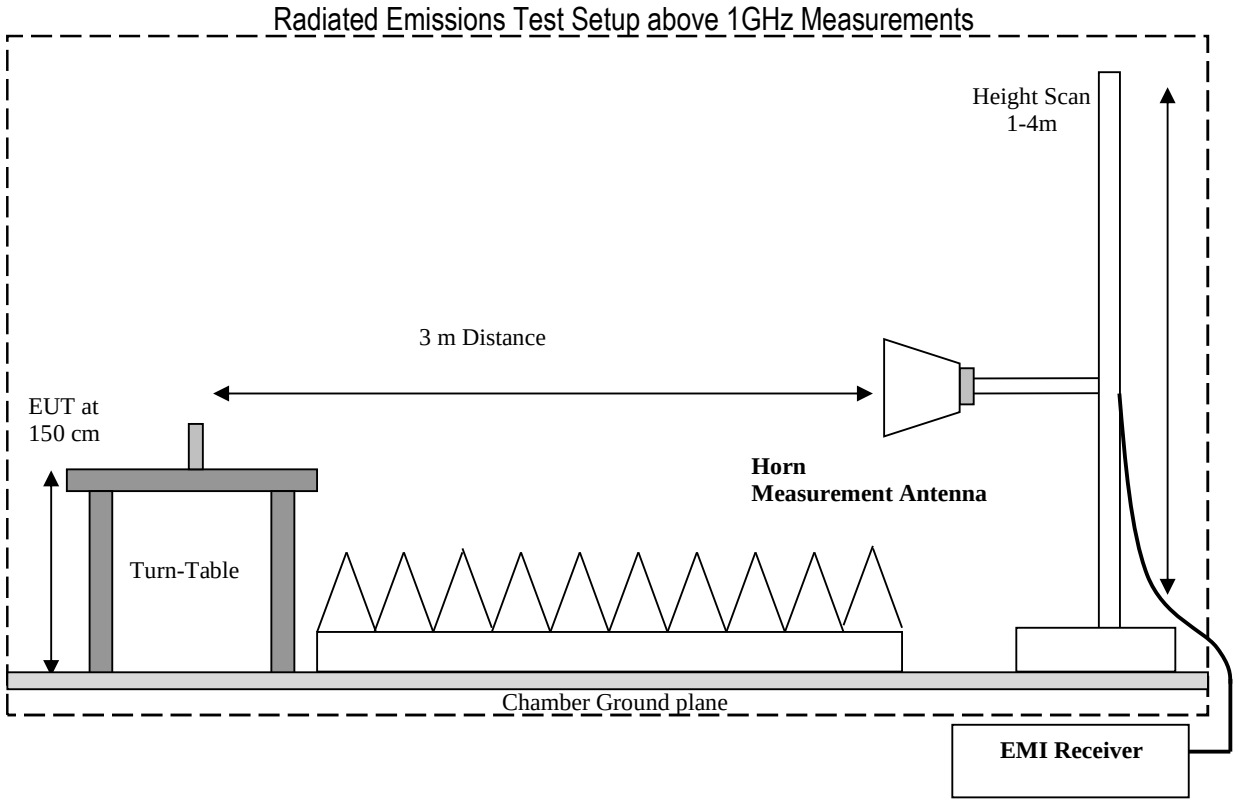
- The exploratory measurement is accomplished by running a matrix of 16 sweeps over the required frequency range with R&S Test-SW EMC32 for 4 positions of the turntable, two orthogonal positions of the EUT and both antenna polarizations. This procedure exceeds the requirement of the above standards to 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





6.2 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 dBµV
- 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 (dBµV/m) = Measured Value on SA (dBµV)+ Cable Loss (dB)+ Antenna Factor (dB/m)

Example:

Frequency (MHz)	Measured SA (dBµV)	Cable Loss (dB)	Antenna Factor Correction (dB)	Field Strength Result (dBµV/m)
1000	80.5	3.5	14	98.0

7 Measurement Results Summary

7.1 KDB 996369 D04 Module Integration Guide V02

Test Specification	Test Case	Temperature and Voltage Conditions	Mode	Pass	Fail	NA	NP	Result
KDB 996369 D04 Module Integration Guide V02	Radiated Spurious Emissions	Nominal	Op. 1	■	☐	☐	☐	Note 1 Note 2

Note 1: NA= Not Applicable; NP= Not Performed.
Note 2: The specific testing performed, including the chosen combination of radios for simultaneous transmissions, was based on the worst-case scenario during the operation of the host device with module integration. This judgment was made by reviewing the modular transmitter test reports.

8 Test Result Data

8.1 Radiated Spurious Emissions

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

Spectrum Analyzer Settings for FCC 22

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

Spectrum Analyzer Settings for FCC 24, 27, 90, and 96

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

8.1.2 Limits:

8.1.2.1 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.

For Band 7 & 41, the minimum permissible attenuation level of any spurious emission is at least 55 + log10 (P) [Watts]) on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth as defined in paragraph (m)(6) of this section.

8.1.2.2 RSS-130 Part 4.7, RSS-132 Part 5.5; RSS-133 Part 6.5; RSS-139 Part 5.6 Transmitter Unwanted Emissions

Mobile and base station equipment shall comply with the limits in (i) and (ii) below.

i.In the first 1.0 MHz band immediately outside and adjacent to each of the sub-bands specified in Section 5.1, the power of emissions per any 1% of the occupied bandwidth shall be attenuated (in dB) below the transmitter output power P (dBW) by at least 43 + 10 log10p (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 log10 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.

8.1.3 Test conditions and setup:

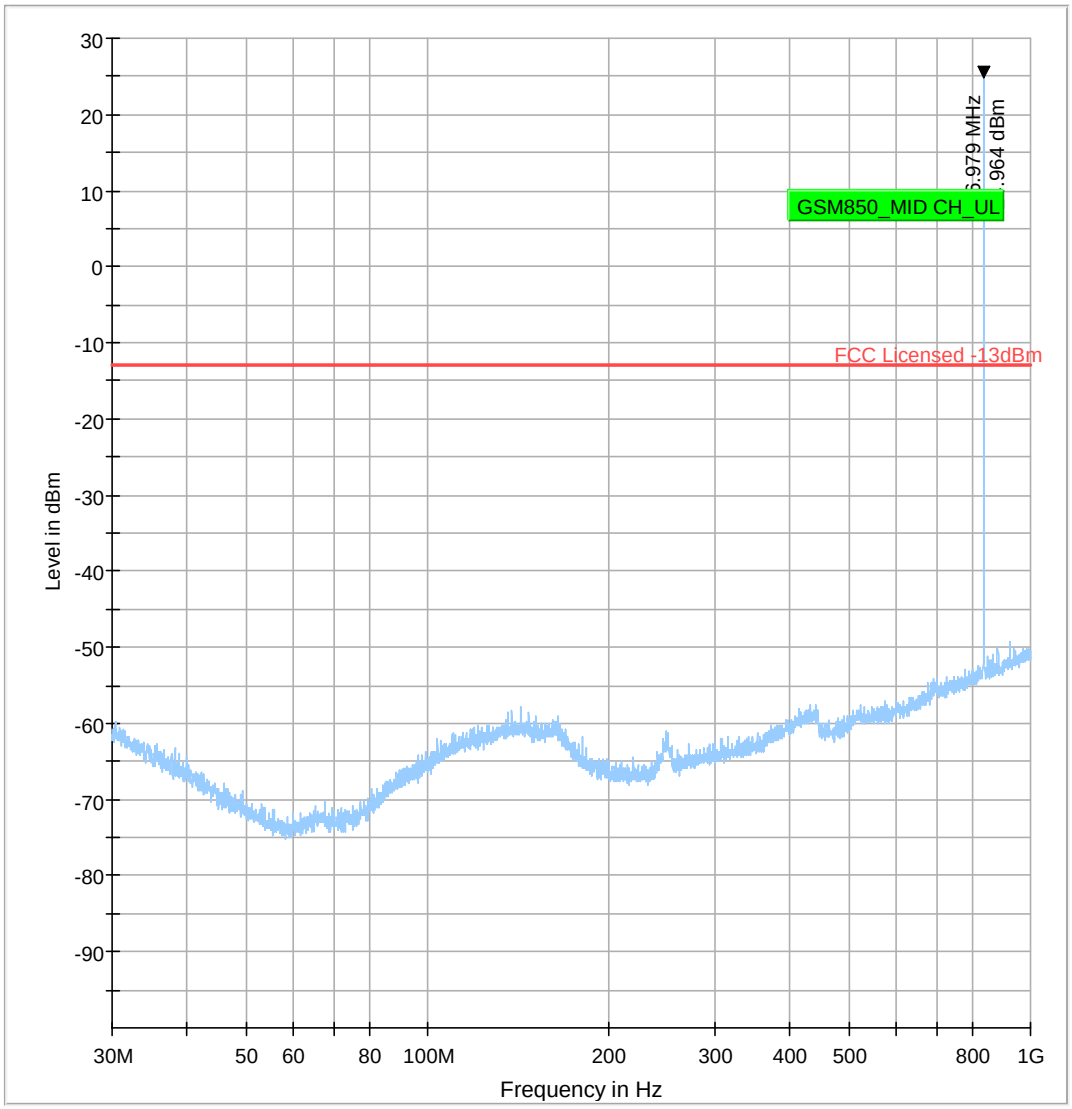
Ambient Temperature (°C)	EUT Set-Up #	EUT operating mode	Power Input
22.0	1	Op. 1	12 VDC

8.1.4 Measurement result:

Plot #	Channel	Cellular operating band	Scan Frequency	Limit (dBm)	Result
1-3	Mid	GSM 850	30 MHz – 18 GHz	-13	Pass
4-6	Mid	GSM 1900	30 MHz – 18 GHz	-13	Pass
7-9	Mid	LTE 2	30 MHz – 18 GHz	-13	Pass
10-12	Mid	LTE 4	30 MHz – 18 GHz	-13	Pass
13-15	Mid	LTE 12	30 MHz – 18 GHz	-13	Pass
16-18	Mid	LTE 13	30 MHz – 18 GHz	-13	Pass
19-21	Mid	LTE 66	30 MHz – 18 GHz	-13	Pass

8.1.5 Measurement Plots:

Plot # 1

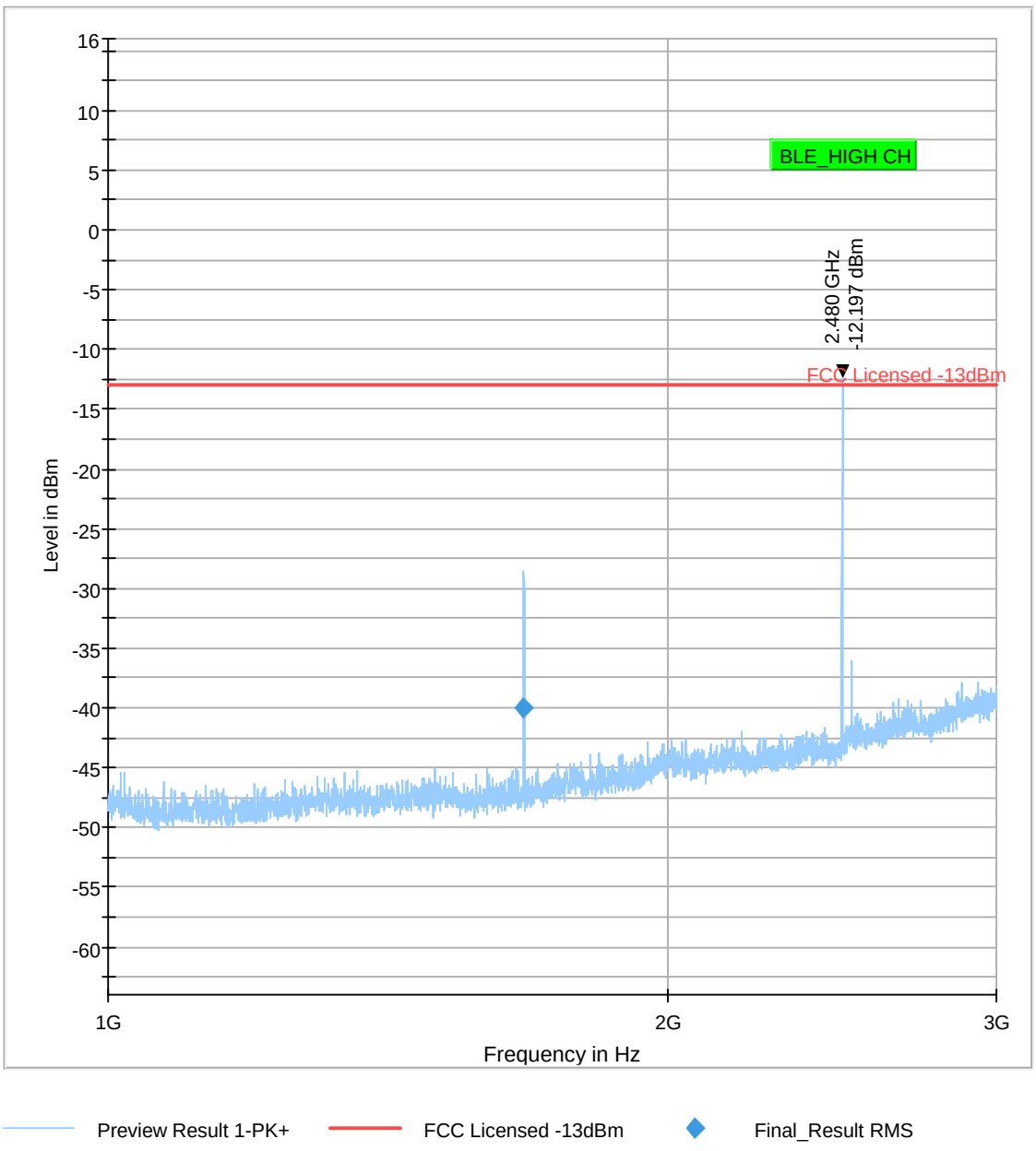


Plot # 2

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
1673.000	-40.000	-13.00	27.00	500.0	1000.000	100.0	H	140.0	-64.7	4.8	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
1673.000	-69.4	24.7

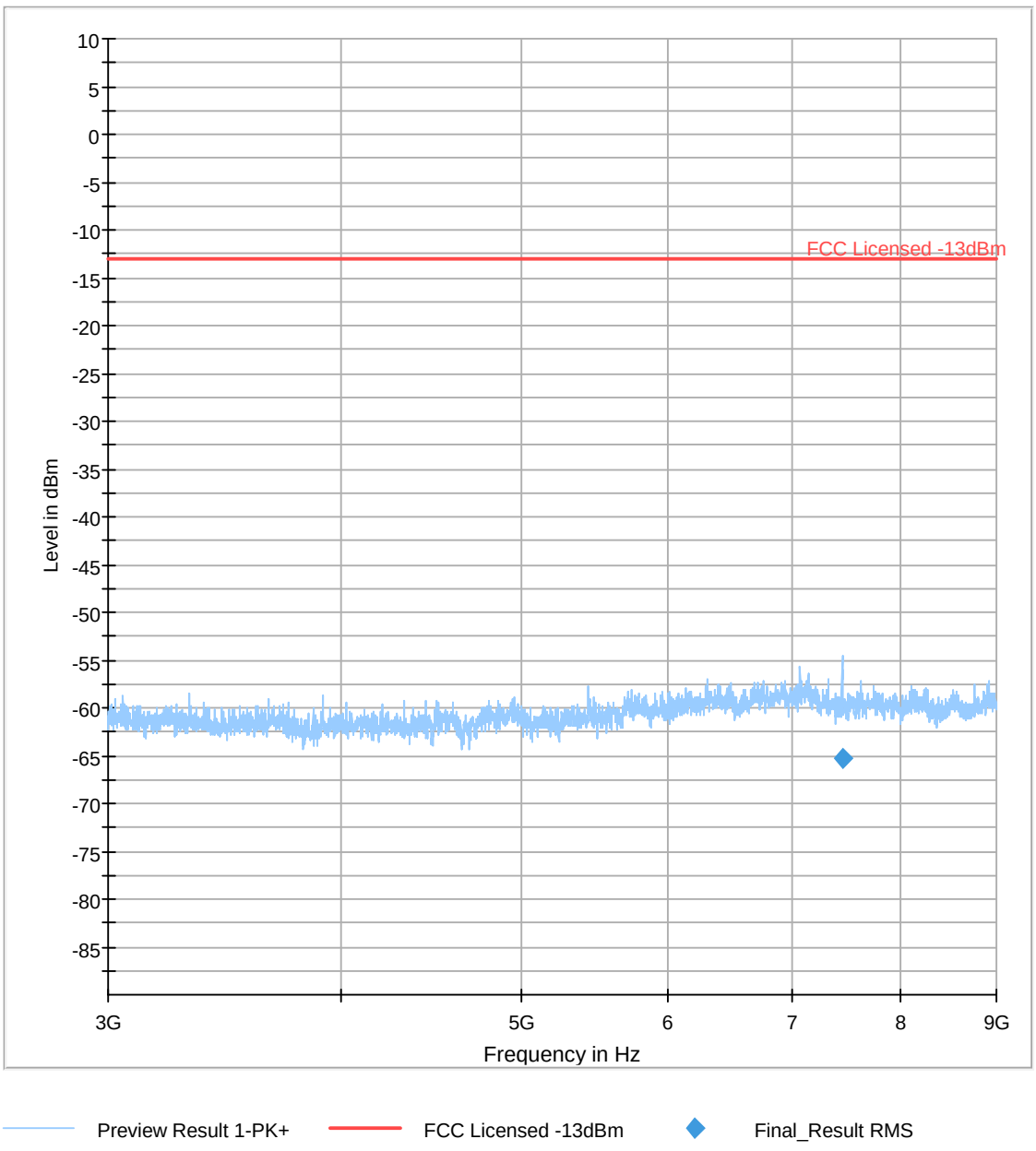


Plot # 3

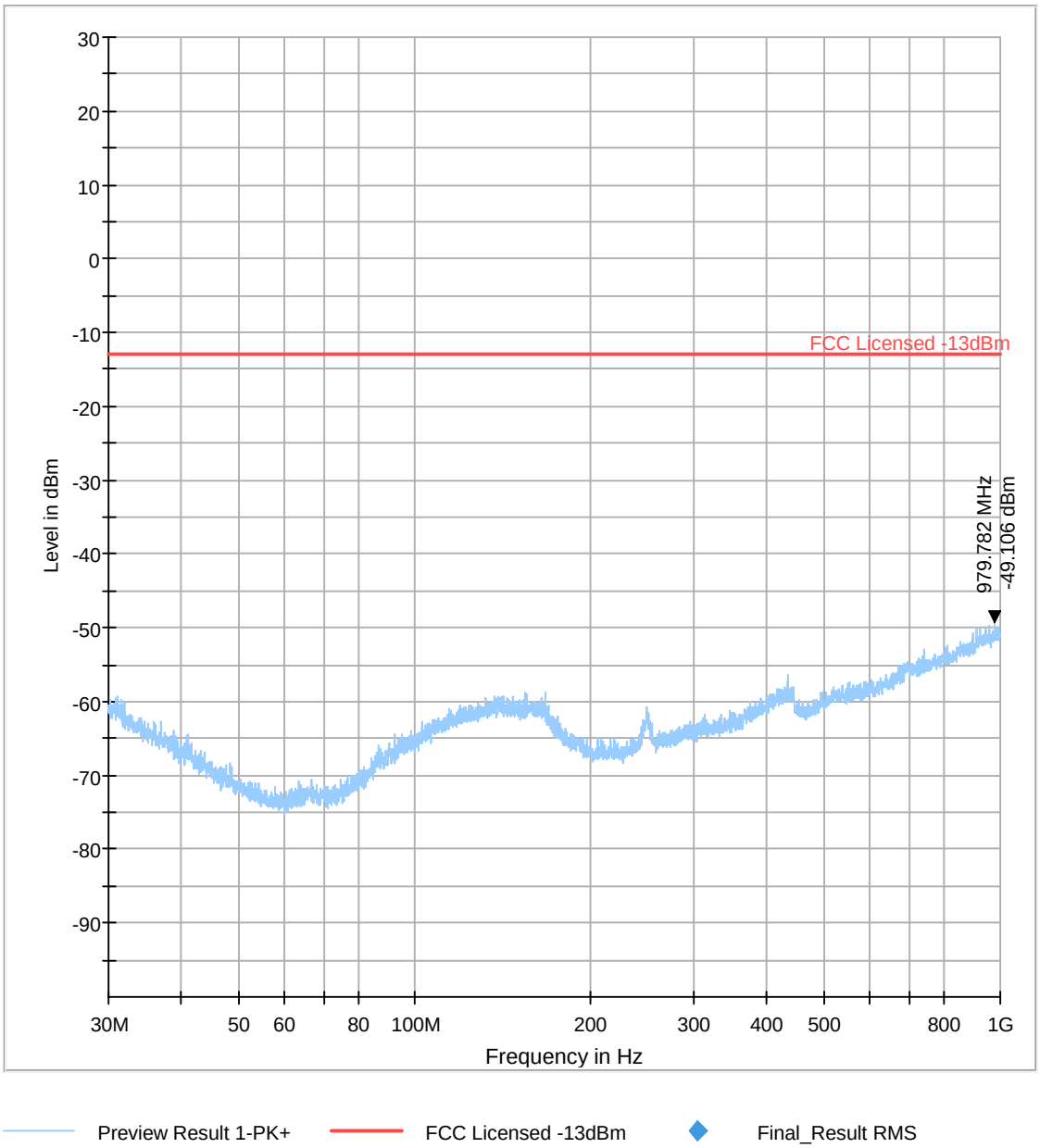
Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
7438.500	-65.194	-13.00	52.19	500.0	1000.000	159.0	H	52.0	-97.0	9.1	-46.7

(continuation of the "Final_Result" table from column 18 ...)

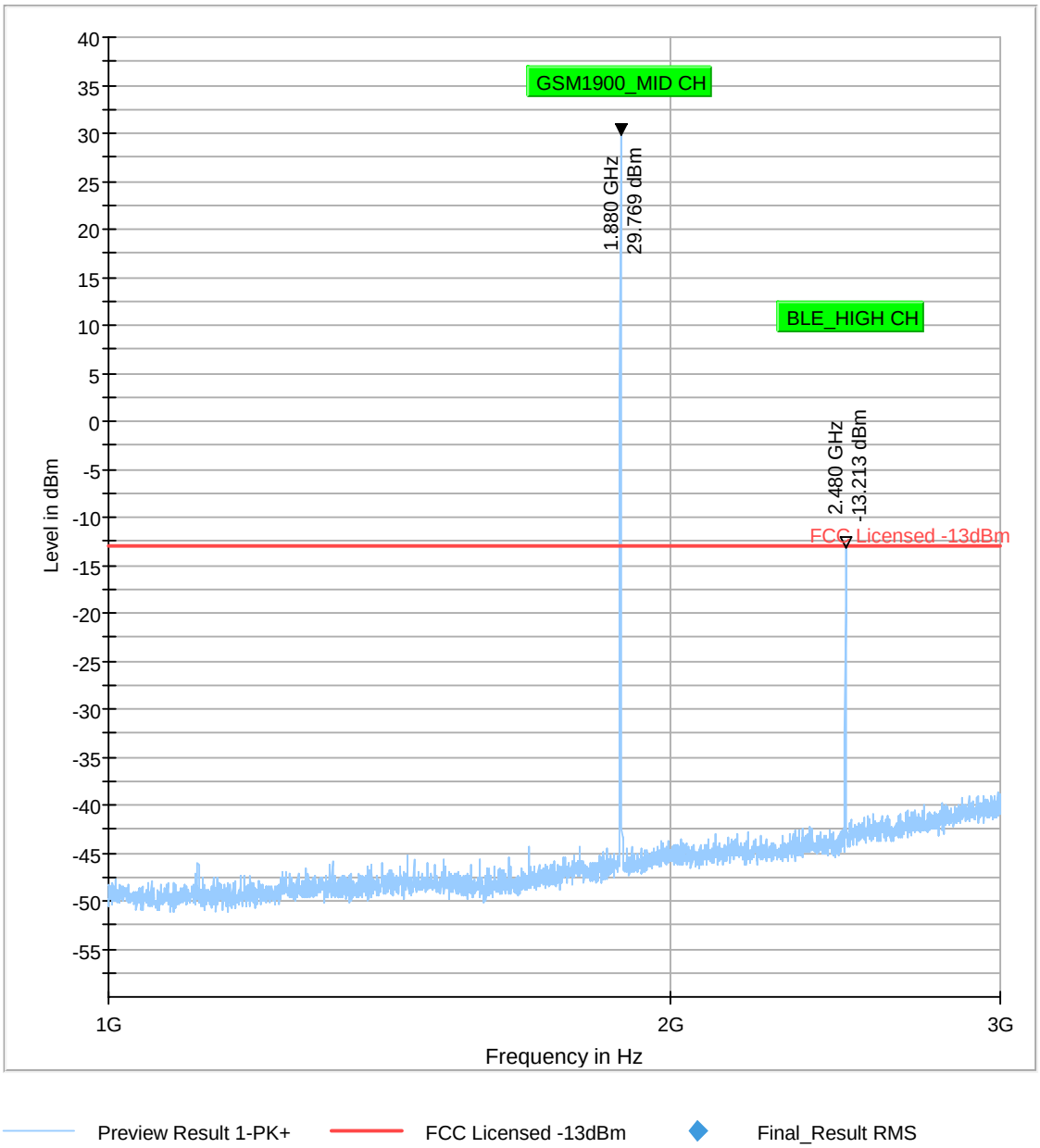
Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
7438.500	-59.4	31.8



Plot # 4


30
20
10
0
-10
-20
-30
-40
-50
-60
-70
-80
-90
Level in dBm
FCC Licensed -13dBm
979.782 MHz
-49.106 dBm
30M
50
60
80
100M
200
300
400
500
800
1G
Frequency in Hz
Preview Result 1-PK+
FCC Licensed -13dBm
Final_Result RMS

Plot # 5

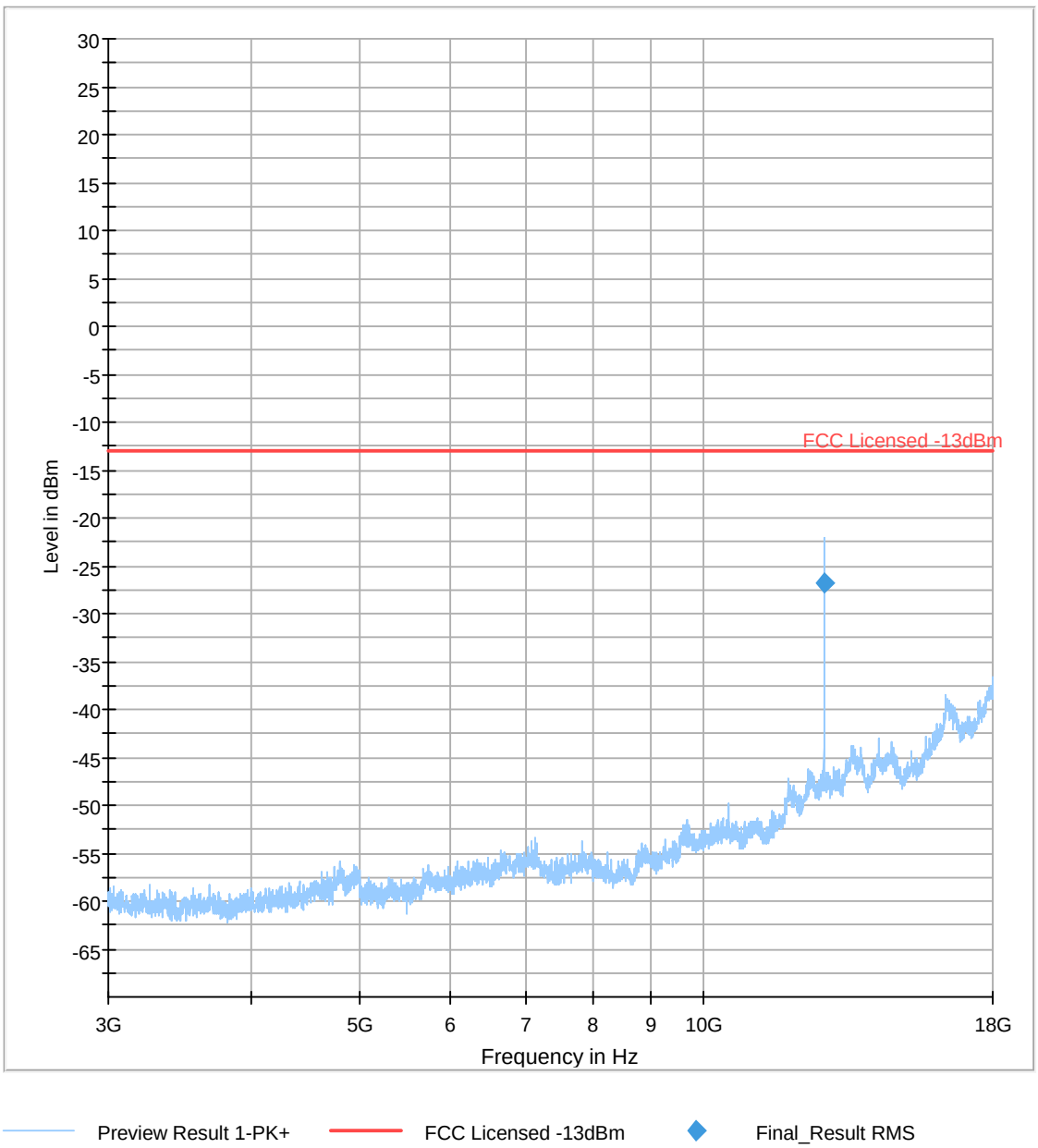

GSM1900_MID CH
1.880 GHz
29.769 dBm
BLE_HIGH CH
2.480 GHz
-13.213 dBm
FCC Licensed -13dBm
Level in dBm
40
35
30
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
-45
-50
-55
1G
2G
3G
Frequency in Hz
Preview Result 1-PK+
FCC Licensed -13dBm
Final_Result RMS

Plot # 6

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
12784.688	-26.820	-13.00	13.82	500.0	1000.000	100.0	V	319.0	-87.7	11.8	-43.3

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
12784.688	-56.2	60.9

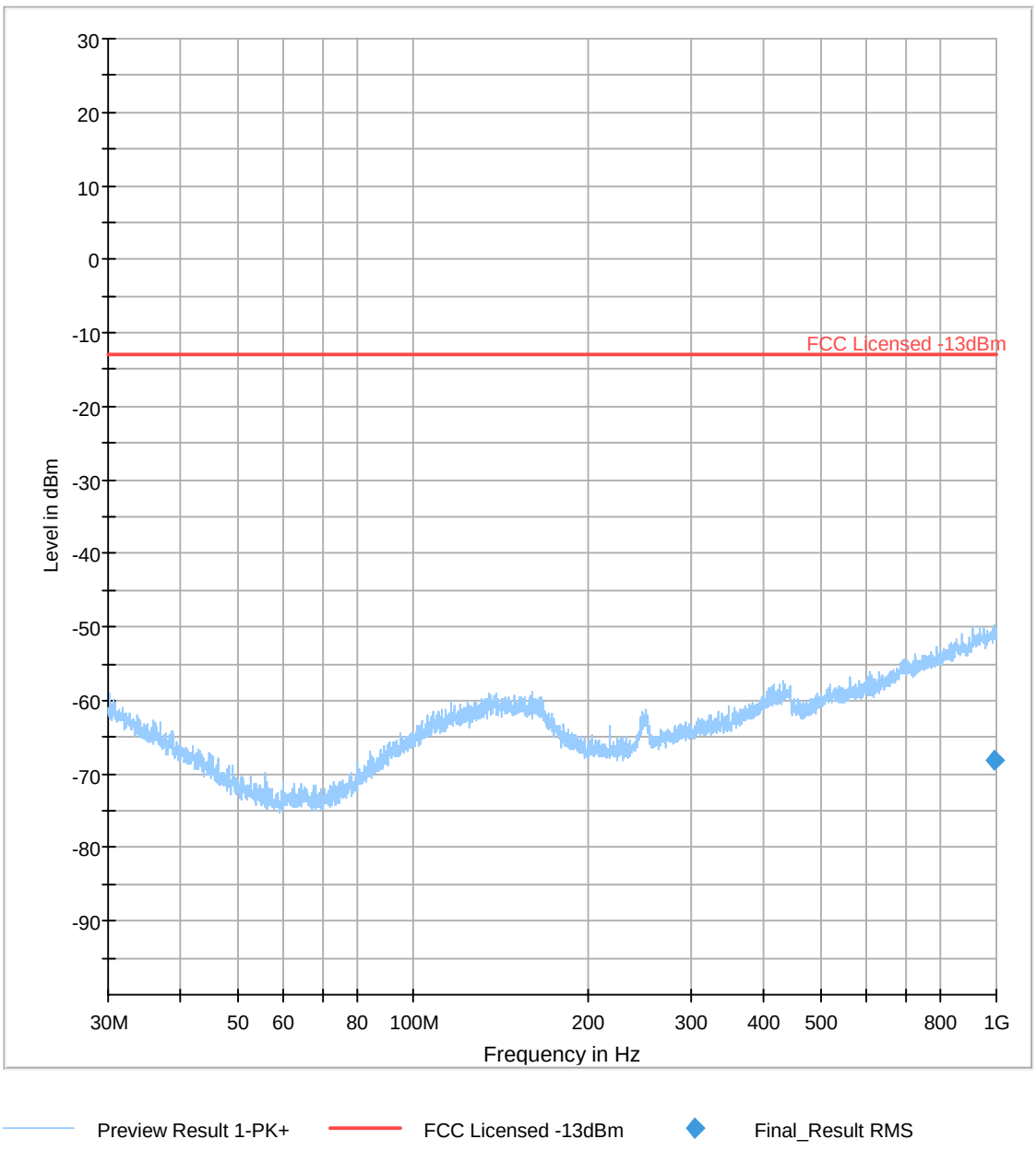


Plot # 7

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
992.301	-68.052	-13.00	55.05	500.0	120.000	392.0	H	220.0	-64.2	3.3	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
992.301	-67.5	-3.8

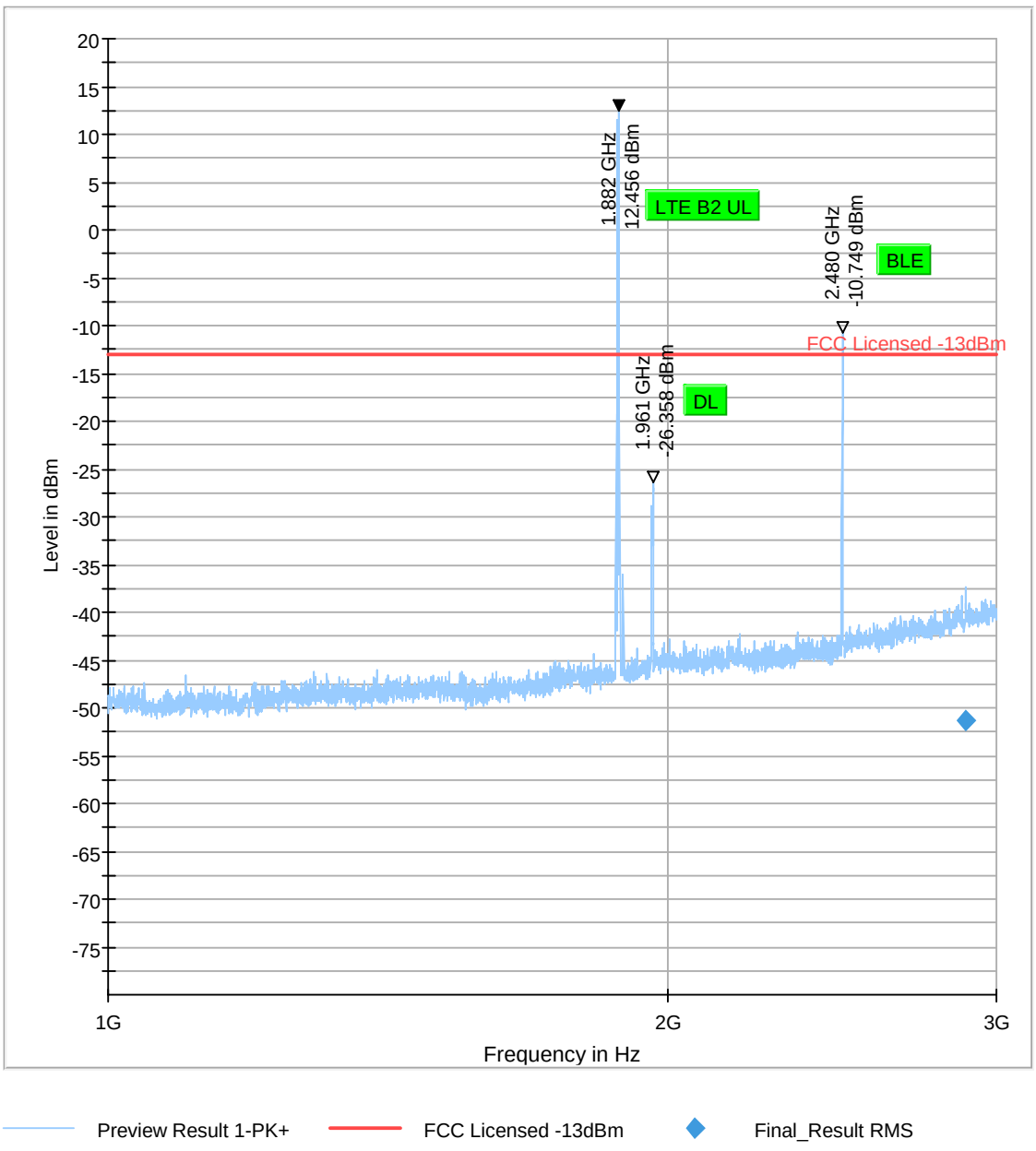


Plot # 8

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
2888.500	-51.305	-13.00	38.30	500.0	1000.000	208.0	H	300.0	-60.4	5.5	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
2888.500	-65.9	9.1

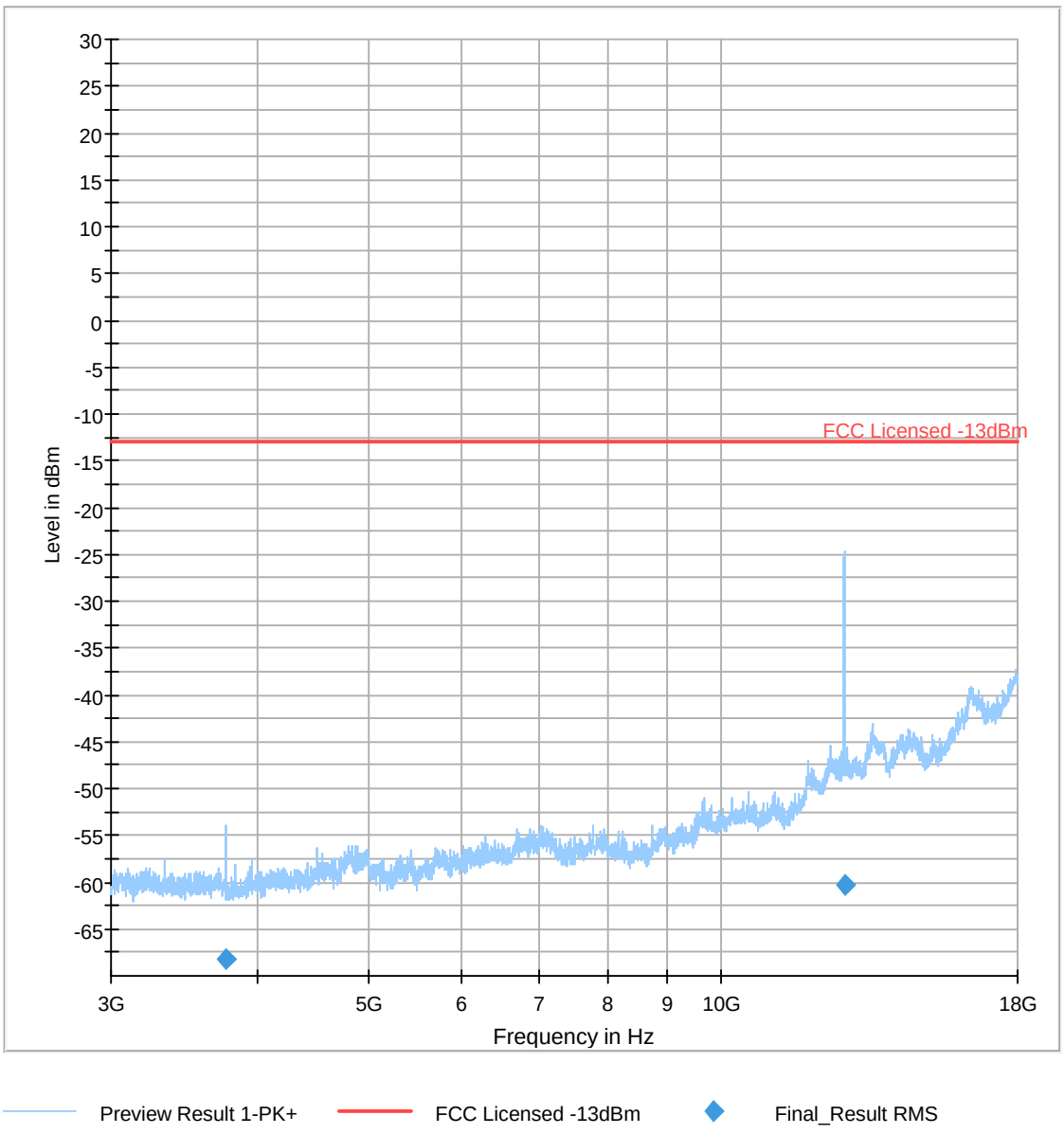


Plot # 9

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
3764.063	-68.252	-13.00	55.25	500.0	1000.000	200.0	H	265.0	-101.7	6.2	-45.8
12779.531	-60.351	-13.00	47.35	500.0	1000.000	116.0	V	326.0	-87.7	11.8	-43.2

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
3764.063	-62.2	33.5
12779.531	-56.3	27.3

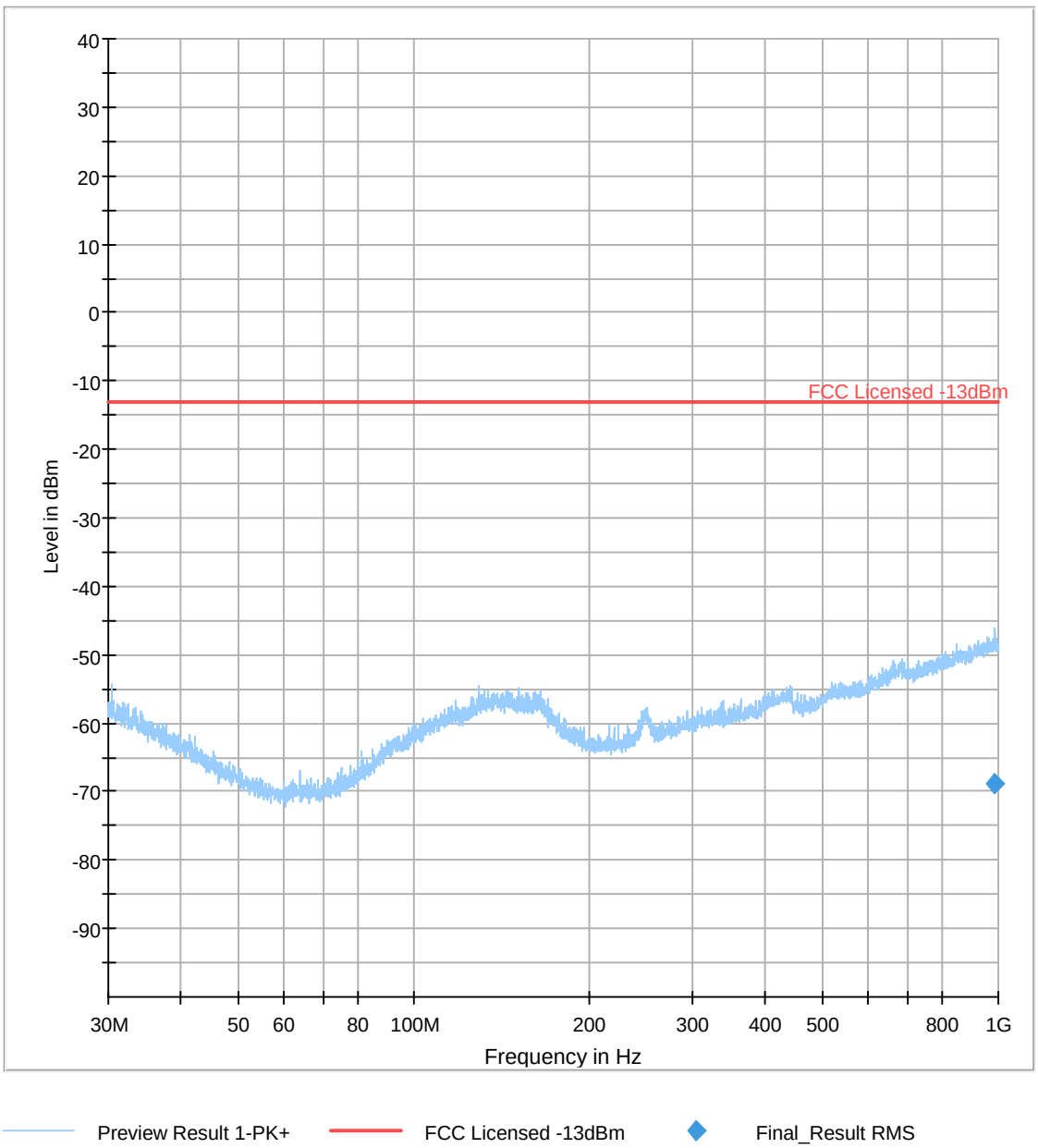


Plot # 10

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
989.306	-68.835	-13.00	55.83	500.0	100.000	140.0	H	28.0	-64.2	3.3	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
989.306	-67.5	-4.7

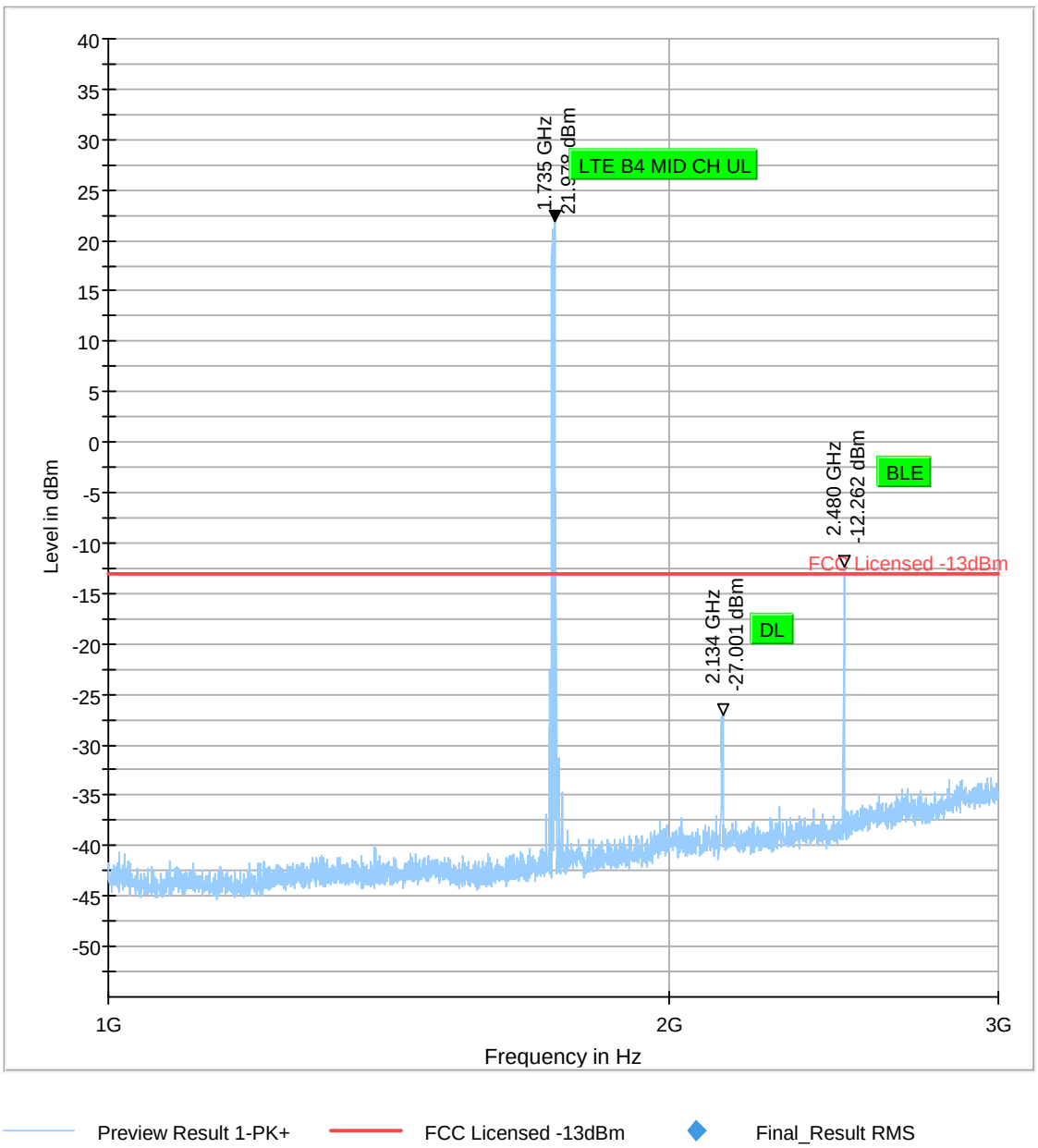


Plot # 11

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
1745.250	-57.704	-13.00	44.70	500.0	1000.000	100.0	H	66.0	-64.0	5.0	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
1745.250	-69.0	6.3

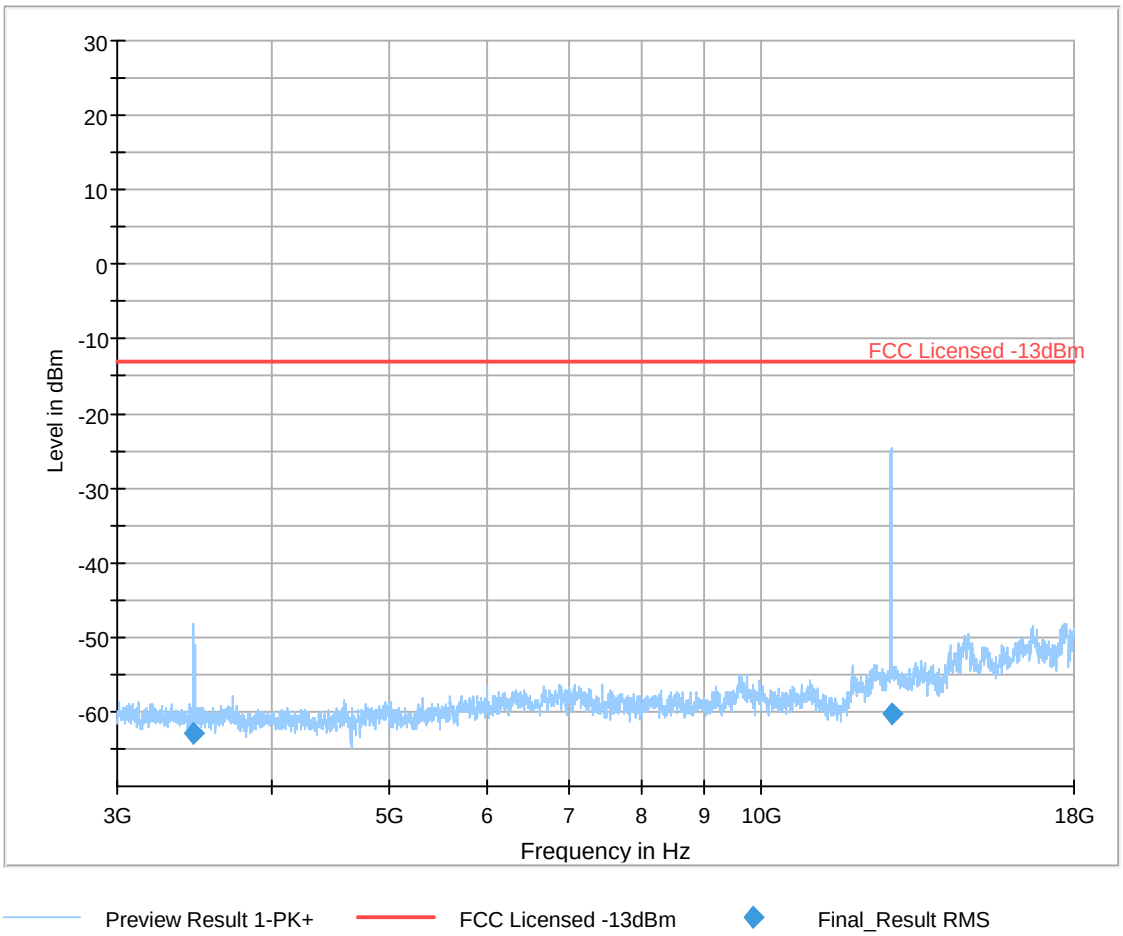


Plot # 12

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
3460.781	-62.882	-13.00	49.88	500.0	1000.000	225.0	H	131.0	-102.7	5.9	-46.1
12779.063	-60.405	-13.00	47.40	500.0	1000.000	235.0	V	329.0	-87.7	11.8	-43.2

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
3460.781	-62.5	39.8
12779.063	-56.3	27.3

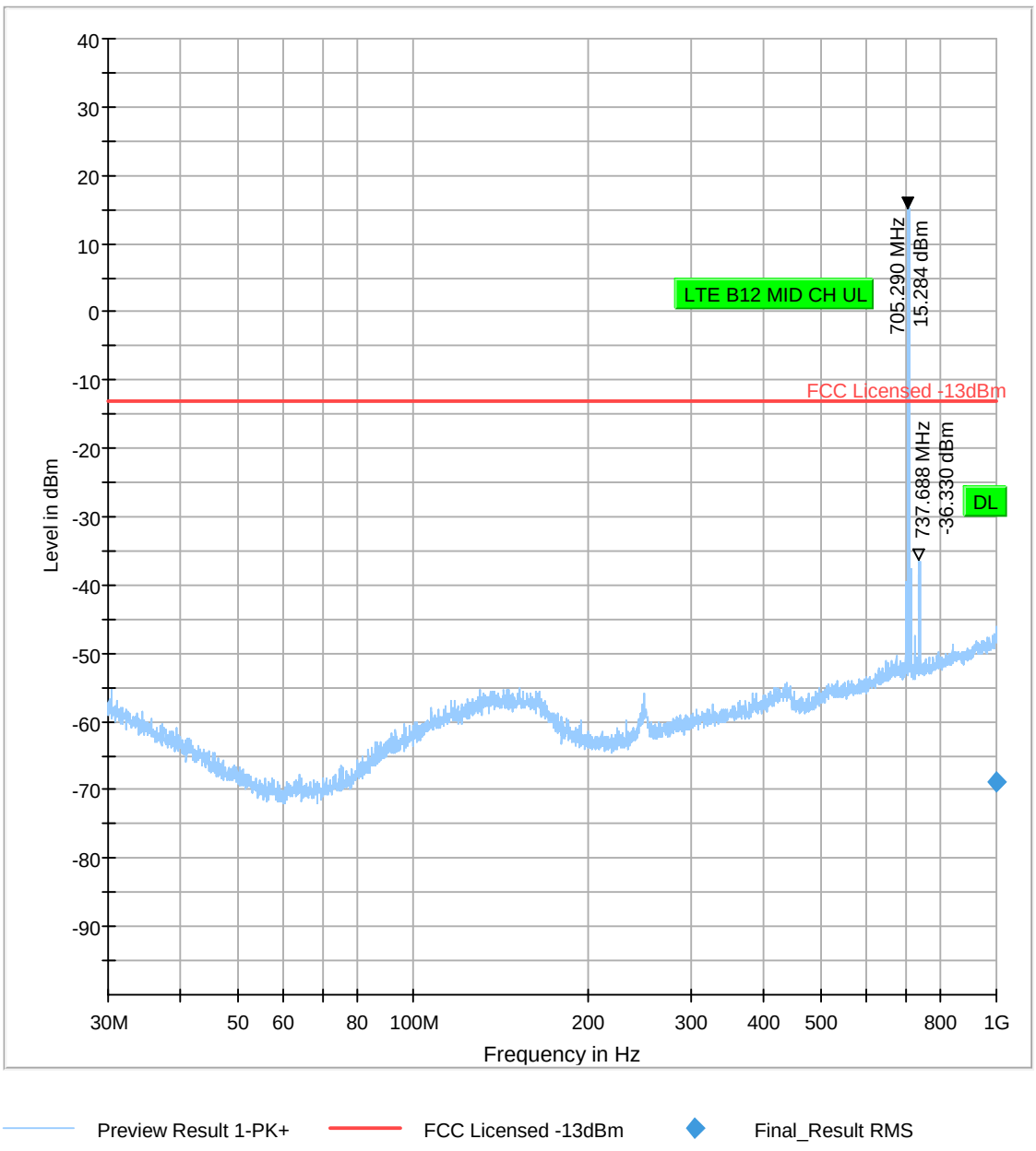


Plot # 13

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
998.230	-68.714	-13.00	55.71	500.0	100.000	321.0	H	287.0	-64.3	3.3	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
998.230	-67.5	-4.5

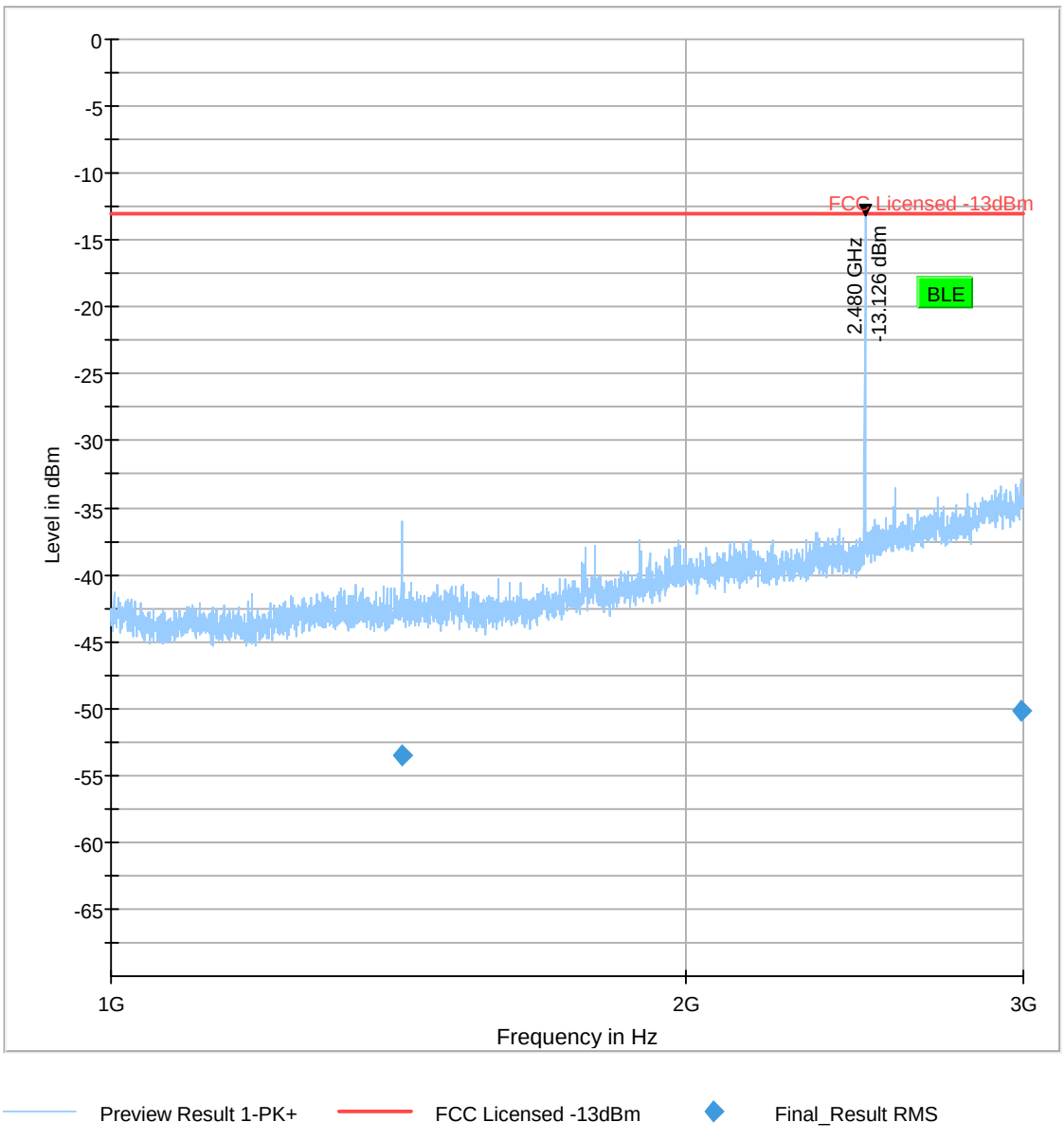


Plot # 14

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
1419.000	-53.559	-13.00	40.56	500.0	1000.000	100.0	H	212.0	-65.5	4.5	0.0
2995.000	-50.138	-13.00	37.14	500.0	1000.000	292.0	H	297.0	-59.2	6.1	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
1419.000	-70.0	11.9
2995.000	-65.3	9.1

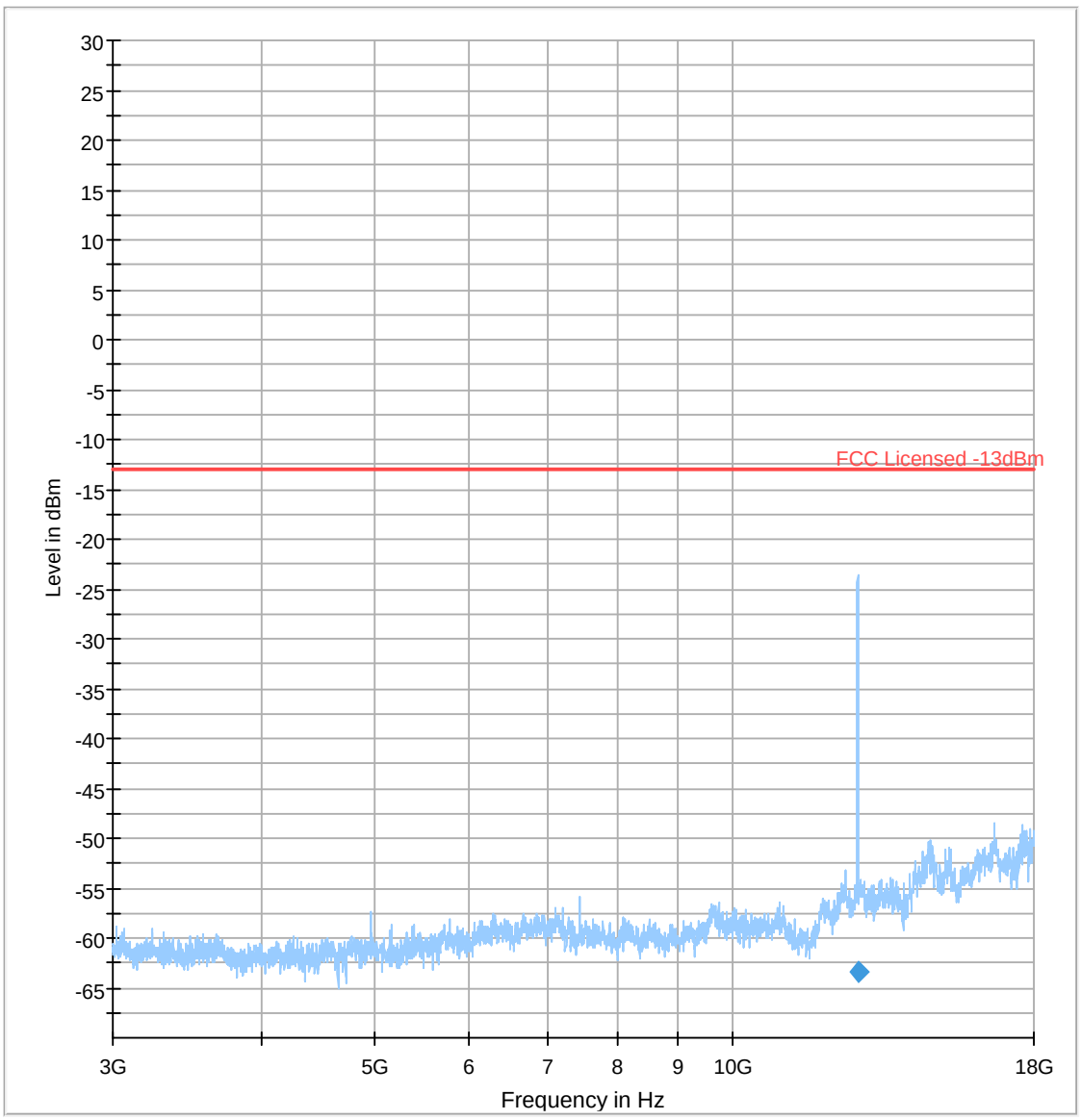


Plot # 15

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
12780.000	-63.468	-13.00	50.47	500.0	1000.000	116.0	V	357.0	-87.7	11.8	-43.2

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
12780.000	-56.3	24.2

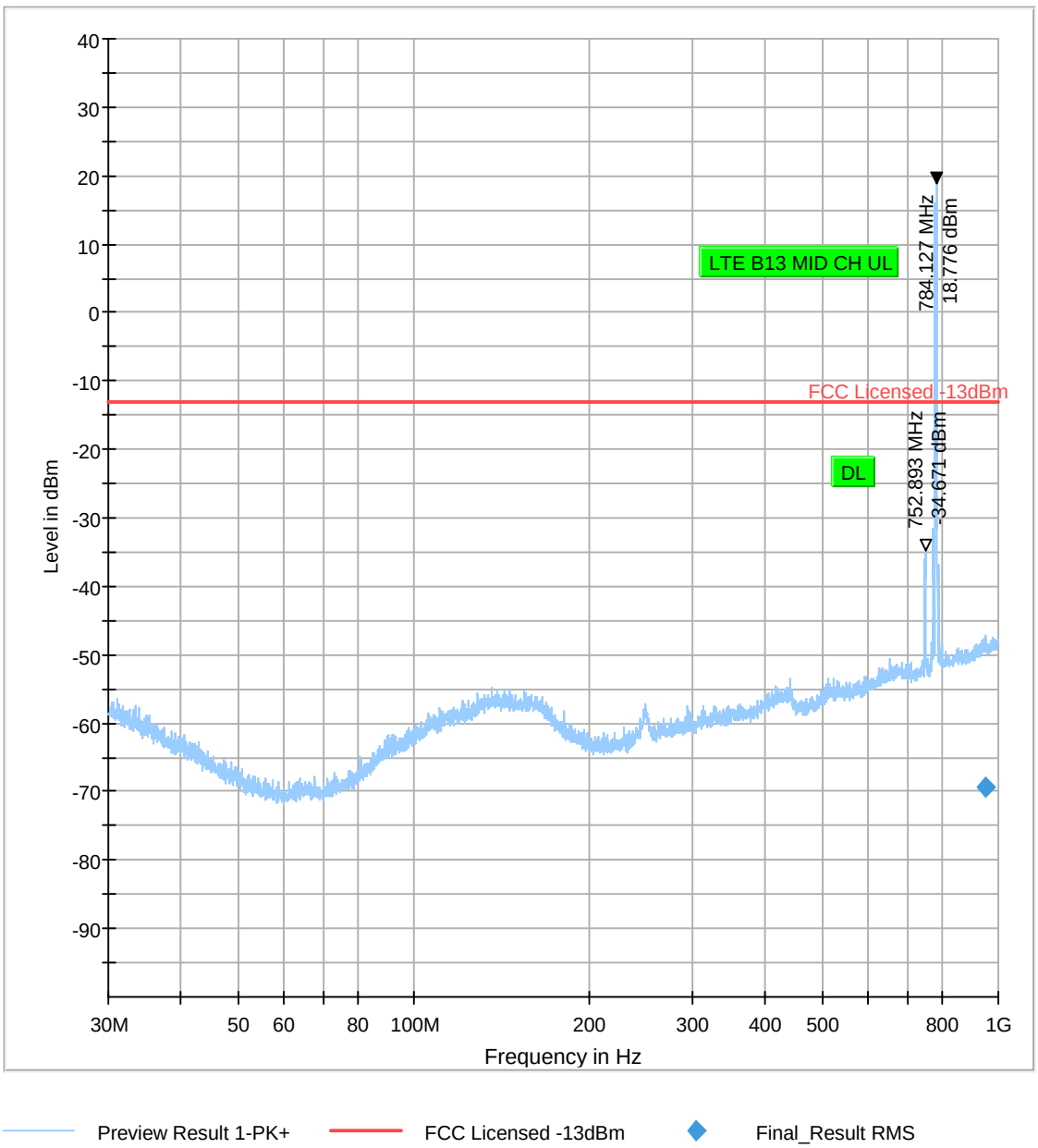


Plot # 16

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
952.931	-69.390	-13.00	56.39	500.0	100.000	264.0	V	130.0	-64.7	3.3	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
952.931	-68.0	-4.7

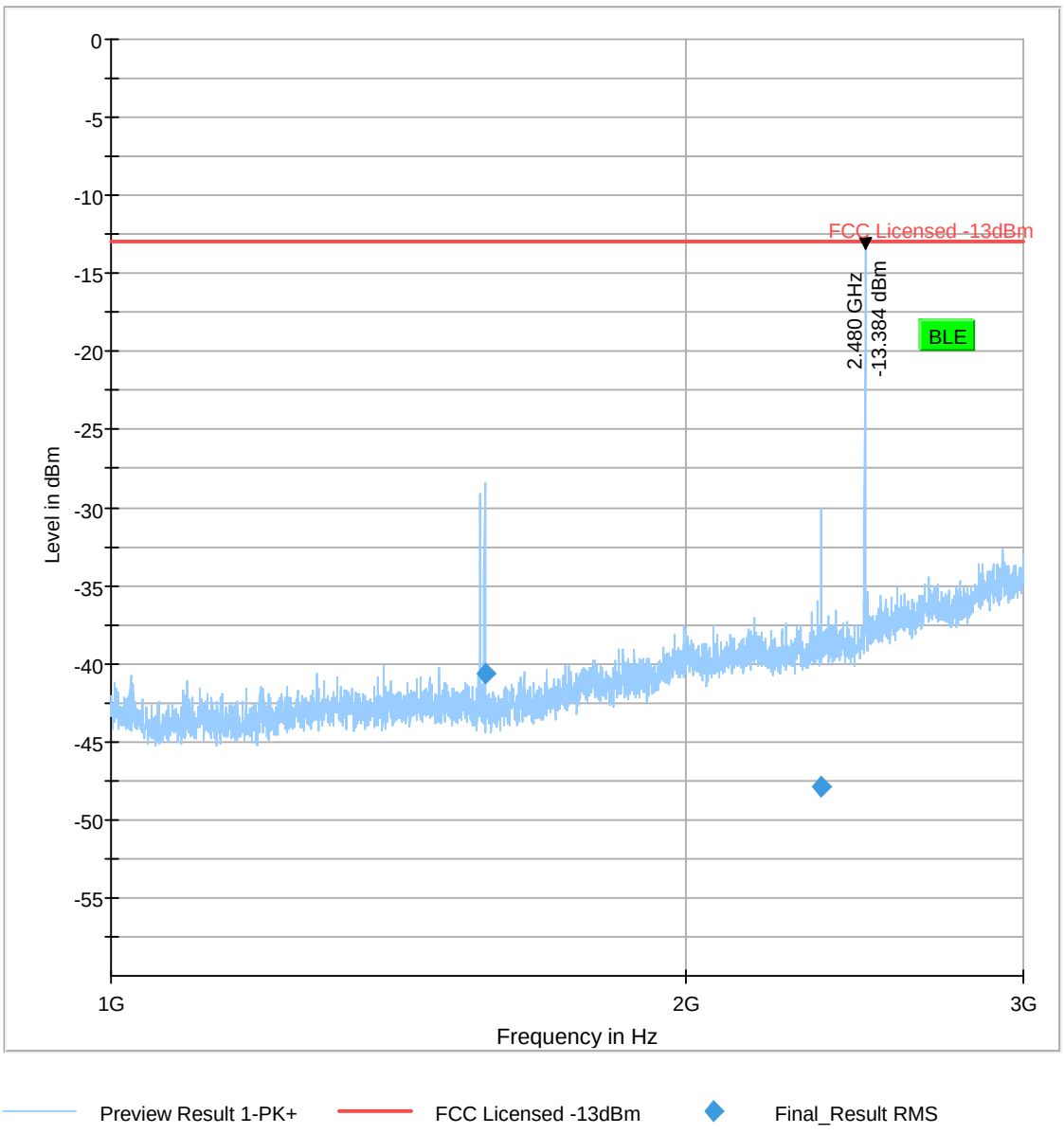


Plot # 17

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
1568.250	-40.673	-13.00	27.67	500.0	1000.000	100.0	H	241.0	-65.2	4.8	0.0
2352.500	-47.846	-13.00	34.85	500.0	1000.000	209.0	H	352.0	-62.0	5.3	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
1568.250	-69.9	24.5
2352.500	-67.3	14.1

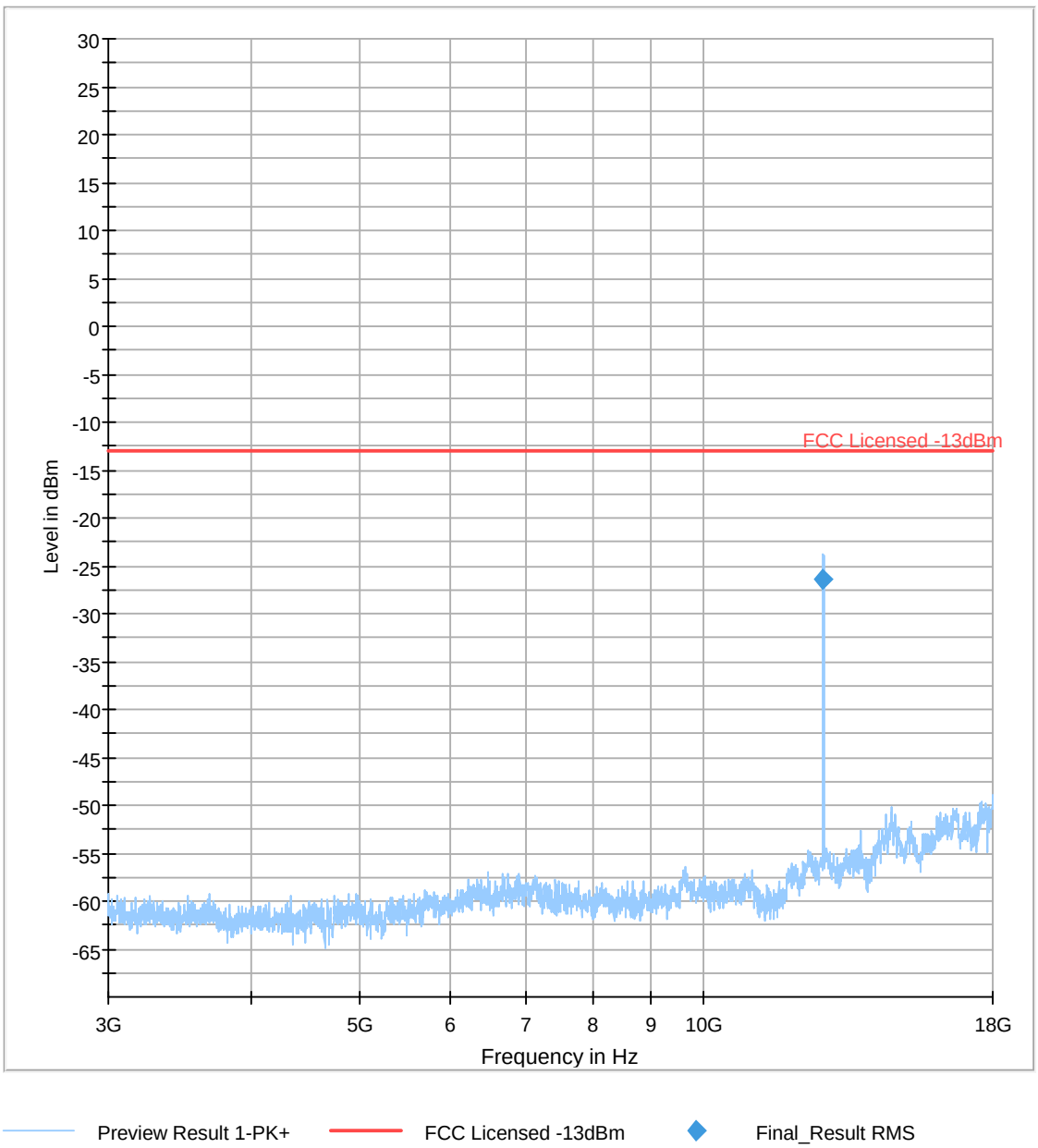


Plot # 18

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
12777.656	-26.477	-13.00	13.48	500.0	1000.000	107.0	V	318.0	-87.7	11.8	-43.2

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
12777.656	-56.3	61.2

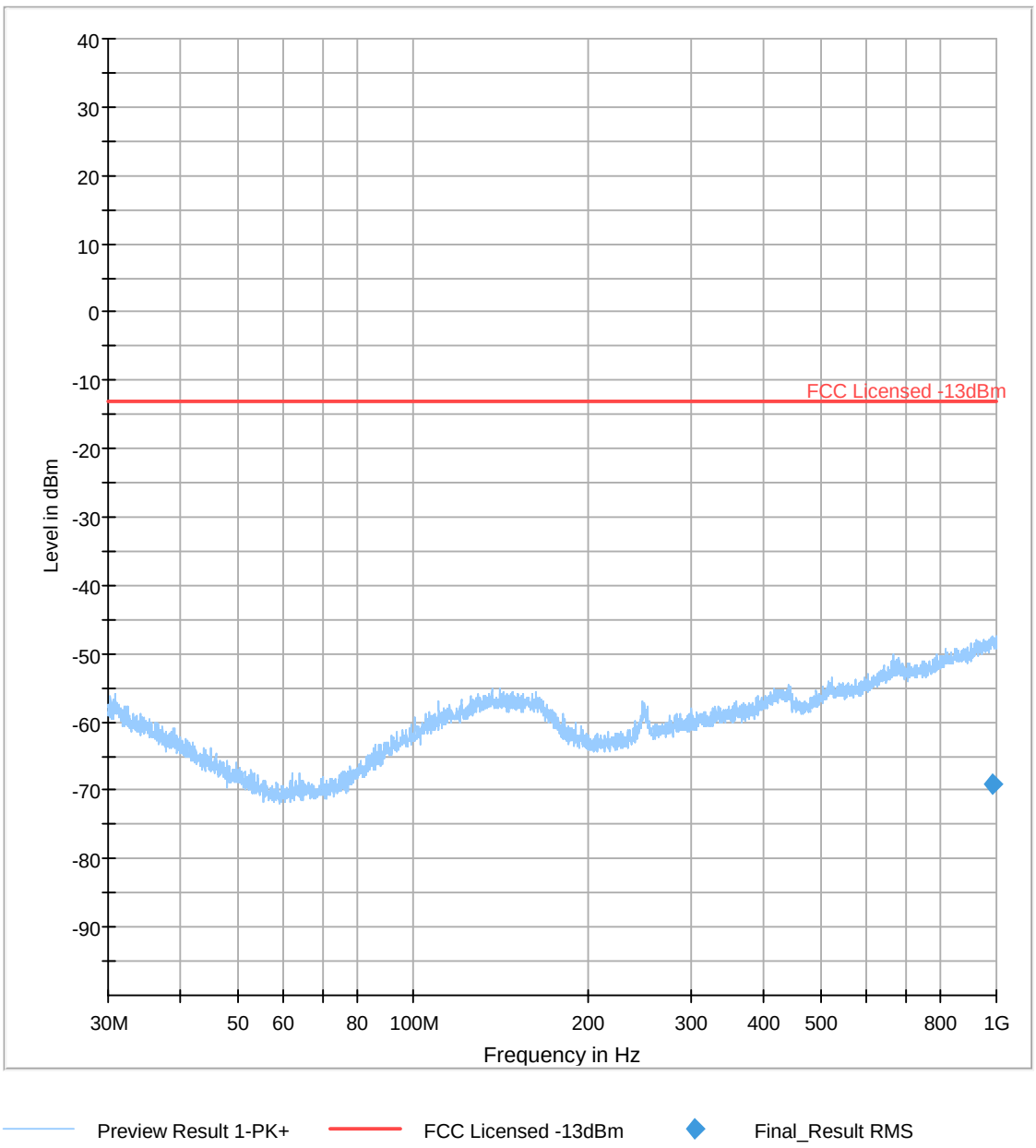


Plot # 19

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
982.516	-68.984	-13.00	55.98	500.0	100.000	400.0	V	92.0	-64.5	3.4	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
982.516	-67.8	-4.5

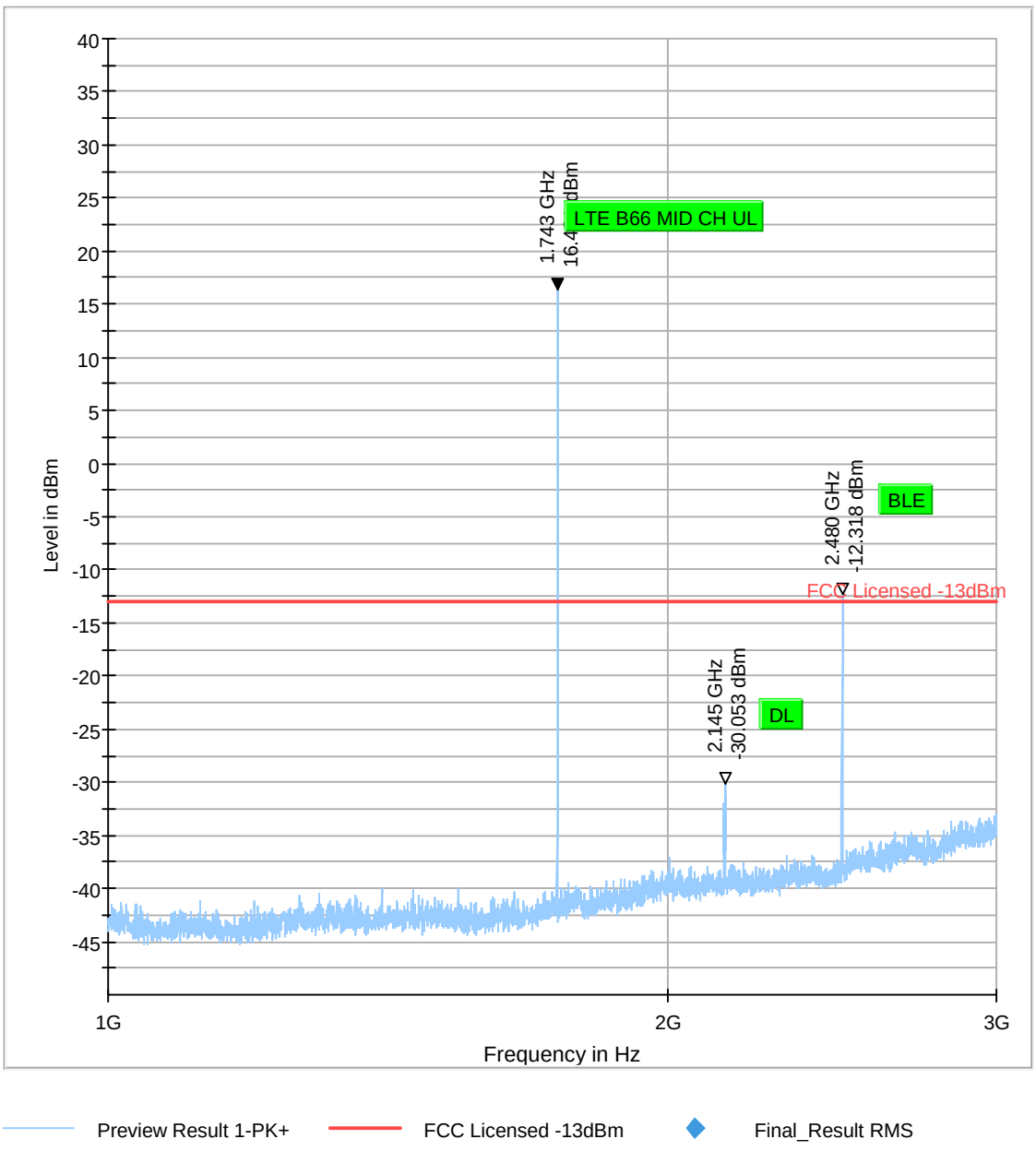


Plot # 20

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
2940.500	-50.629	-13.00	37.63	500.0	1000.000	116.0	H	64.0	-59.6	6.1	0.0

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
2940.500	-65.6	8.9

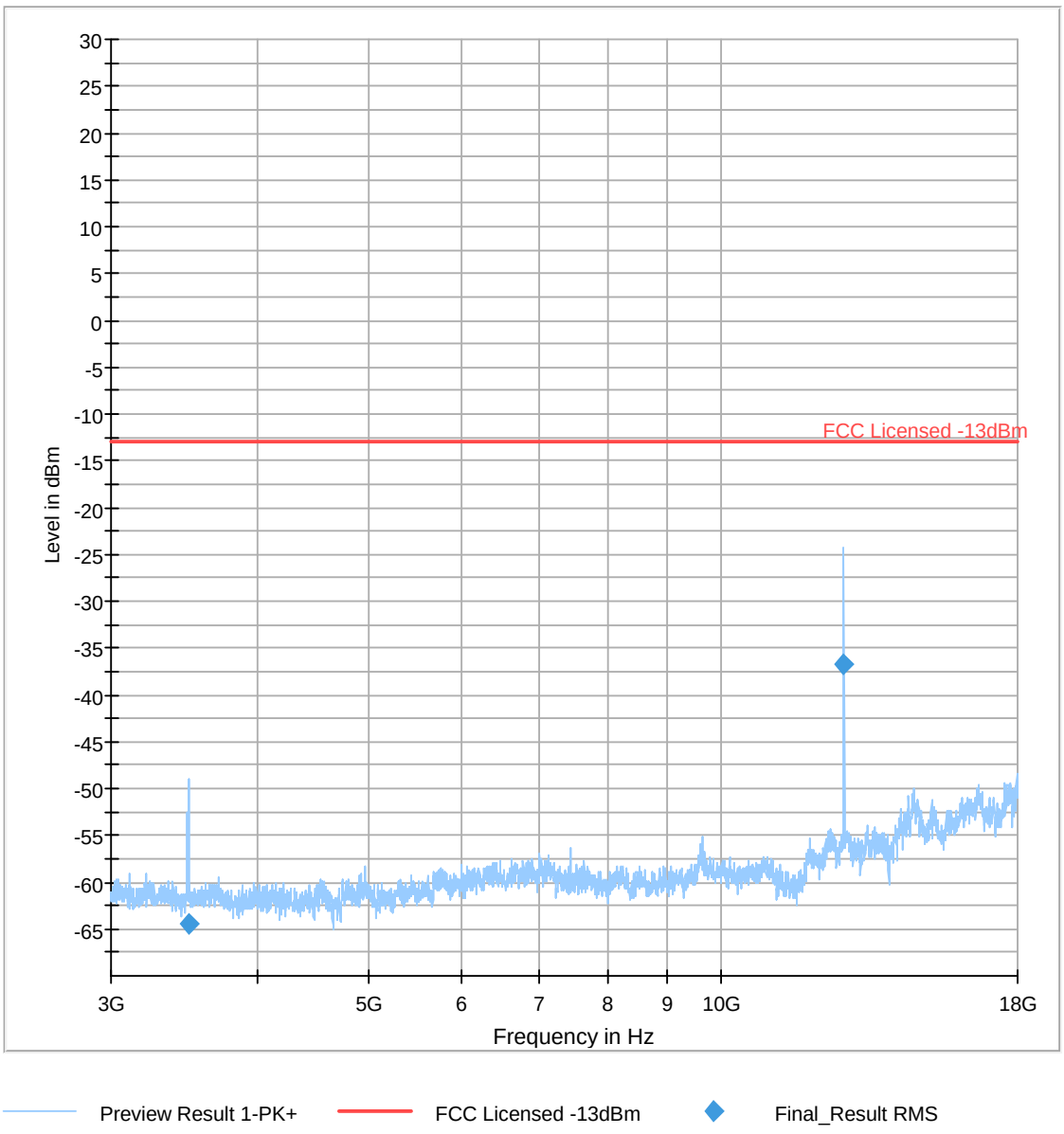


Plot # 21

Frequency (MHz)	RMS (dBm)	Limit (dBm)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB)	Sig Path (dB)	Preamp (dB)
3494.063	-64.510	-13.00	51.51	500.0	1000.000	199.0	H	114.0	-102.3	6.2	-46.0
12777.656	-36.676	-13.00	23.68	500.0	1000.000	100.0	V	321.0	-87.7	11.8	-43.2

(continuation of the "Final_Result" table from column 18 ...)

Frequency (MHz)	Trd Corr. (dB)	Raw Rec (dBµV)
3494.063	-62.4	37.8
12777.656	-56.3	51.0



9 Test setup photos

Setup photos are included in supporting file name: "EMC_XIRGG_001_24001_KDB996369_Setup_Photos"

10 Test Equipment And Ancillaries Used For Testing

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
HORN ANTENNA	ETS.LINDGREN	3117	00215984	3 Years	10/26/2023
TEST RECEIVER	R&S	ESW44	103143	2 Years	09/12/2024
DIGITAL THERMOMETER	CONTROL COMPANY	4410,90080-03	230713059	3 Years	10/18/2023
Multimeter	Fluke	115	56090717MV	3 Years	09/26/2023
Software	EMC32	Version 11.40.00	-	-	-

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.

Equipment Type	Manufacturer	Model	Serial #	Calibration Cycle	Last Calibration Date
BILOG ANTENNA	A.H. SYSTEMS	BiLA2G	569	3 Years	10/30/2023
HORN ANTENNA	EMCO	3115	00035111	3 Years	10/26/2023
ESW.EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW44	101715	3 Years	10/24/2023
DIGITAL THERMOMETER	Control Company	4410,90080-03	230712972	3 Years	10/18/2023
Multimeter	Fluke	115	56090717MV	3 Years	09/26/2023
Software	EMC32	Version 10.50.40	-	-	-

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.

11 Revision History

Date	Report Name	Changes to report	Prepared by
11/13/2024	EMC_XIRGG_001_24001_KDB996369	Initial Version	Cheng Song
11/15/2024	EMC_XIRGG_001_24001_KDB996369_Rev1	Updated the calibration record for test equipment in Section 10.	Cheng Song

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