# FCC/ISED Test Report

**FOR:**
Xirgo Technologies, LLC

**Model Name:**
XT4964

**Product Description:**
Sends reports of location and various sensor information periodically via the cellular network

**FCC ID:** GKM-XT4964
**IC ID:** 10281A-XT4964

**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_XIRGO-128-19001_FCC_22_24_27_ISED

**DATE:** 2019-11-08

**A2LA Accredited**

**IC recognized # 3462B-2**


***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 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.

| Company | Description | Model # |
|---|---|---|
| Xirgo Technologies, LLC | Sends reports of location and various sensor information periodically via the cellular network | XT4964 |

No deficiencies were ascertained.

**Responsible for Testing Laboratory:**

| Date | Section | Name | Signature |
|---|---|---|---|
| 2019-11-08 | Compliance | Cindy Li (Lab Manager) | Cindy Li Digitally signed by cindy.li@cetecom.com DN: CN=cindy.li@cetecom.com Reason: I am approving this document Location: Date: 2019-11-08 20:08:27 |

**Responsible for the Report:**

| Date | Section | Name | Signature |
|---|---|---|---|
| 2019-11-08 | Compliance | Chin Ming Lui (Associate EMC Engineer) | Chin Ming Lui Digitally signed by: Chin Ming Lui DN: CN = Chin Ming Lui email = ChinMing.Lui@cetecom.com C = US O = CETECOM Date: 2019.11.08 18:17:20 -08'00' |

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

| | |
|---|---|
| **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 |
| **Lab Manager:** | Cindy Li |
| **Responsible Project Leader:** | Rami Saman |

## 2.2 Identification of the Client

| | |
|---|---|
| **Client's Name:** | Xirgo Technologies, LLC |
| **Street Address:** | 188 Camino Ruiz |
| **City/Zip Code** | Camarillo, CA 93012 |
| **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

| | |
|---|---|
| **Hardware Version Identification Number (HVIN):** | XT4964 |
| **Product Marketing Name (PMN):** | XT4964 |
| **Antenna (Primary & Diversity) Information as declared:** | • Type: PCB Antenna<br>• Peak Gain:<br>  ○ LTE 2 / UMTS II / GSM 1900: 3.3 dBi<br>  ○ LTE 4 / UMTS IV: 3.1 dB<br>  ○ LTE 5 / UMTS V / GSM 850: 4.0 dBi<br>  ○ LTE 12: 2.4 dBi |
| **Other Radios included in the device:** | ❖ BTLE<br>• Module: Texas Instruments<br>• Model Number: CC2564BRVMR<br>• Modulation: BTLE<br>• Main Antenna:<br>  ▪ Type: Ceramic Chip<br>  ▪ Location: Internal<br>  ▪ Peak Gain: 0.5 dBi<br>  ▪ Operating Frequency: 2400 – 2483.5 MHz |
| **Power Supply/ Rated Operating Voltage Range:** | Battery / Low 8 VDC, Nominal 12 VDC, High 24 VDC |
| **Operating Temperature Range:** | Low -40º C, High 70º C |
| **Sample Revision** | ☐Prototype Unit; ■Production Unit; ☐Pre-Production |
| **EUT Dimensions:** | 12cm (W) x 21.5cm (L) 2.7cm (H) |
| **Weight:** | 680 grams |
| **EUT Diameter** | ■ < 60 cm ☐ Other _____ |

| Module Information | |
|---|---|
| **Module Name:** | Quectel |
| **Model Number:** | EG25-G(D) |
| **FCC/IC ID:** | FCC ID: XMR201903EG25G<br>IC ID: 10224A-201903EG25G |
| **Frequency Band of Operation:** | • FDD LTE Band 2: 1850 – 1910 MHz<br>• FDD LTE Band 4: 1710 – 1755 MHz<br>• FDD LTE Band 5: 824 – 849 MHz<br>• FDD LTE Band 12: 699 – 716 MHz<br>• WCDMA/UMTS FDD Band II: 1852.4 – 1907.6 MHz<br>• WCDMA/UMTS FDD Band IV: 1712.4 – 1752.6 MHz<br>• WCDMA/UMTS FDD Band V: 826.4 – 846.6 MHz<br>• GSM 850: 824.2 – 848.8 MHz<br>• GSM 1900: 1850.2 – 1909.8 MHz |
| **Main Antenna:** | • Type: PCB<br>• Location: Internal (The Antenna Company)<br>• Peak Gain:<br>o LTE 2 / UMTS II / GSM 1900: 3.3 dBi<br>o LTE 4 / UMTS IV: 3.1 dB<br>o LTE 5 / UMTS V / GSM 850: 4.0 dBi<br>o LTE 12: 2.4 dBi |

## 3.2 EUT Sample details

| EUT # | IMEI number | HW Version | SW Version | Notes/Comments |
|---|---|---|---|---|
| 1 | 861861040020029 | XT4964-001 | XT4964-01 | Radiated Measurement |

## 3.3 Support Equipment

| SE # | Type | Model | Manufacturer | Serial Number |
|---|---|---|---|---|
| 1 | DC Power Supply | 1672 | BK PRECISION | 1672002260611085 |

## 3.4 Test Sample Configuration

| EUT Set-up # | Combination of SE used for test set up | Comments |
|---|---|---|
| **1** | EUT#1 + SE#1 | Radiated RF measurements were performed with the EUT configured via customer provided SW and instructions |

## 3.5 Mode of Operation details

| Mode of Operation | Description of Operating modes | Additional Information |
|---|---|---|
| **Op. 1** | Cellular and BTLE Co-Transmission | Cellular was tested on Low, Mid, High Channels at the maximum power in a co-transmission mode<br><br>BTLE radio was configured to Mid channel using special commands through command window provided by the client that will not be available to the end user |

## 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 Mid 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:** GKM-XT4964 / **IC ID**: 10281A-XT4964.

The pre-certified module to be integrated (Quectel EG25-G(D)) 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.

## 4.1 Dates of Testing:

10/22/2019 – 10/25/2019

## 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%

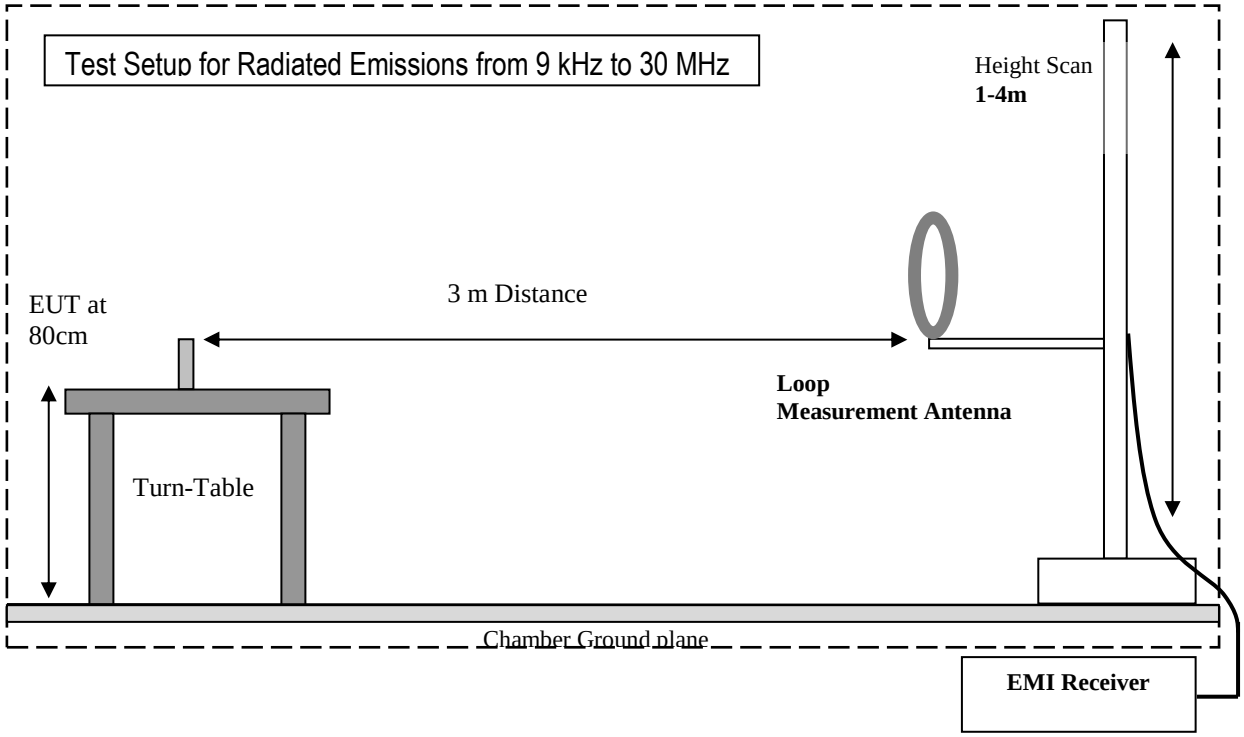
Deviating test conditions are indicated at individual test description where applicable.

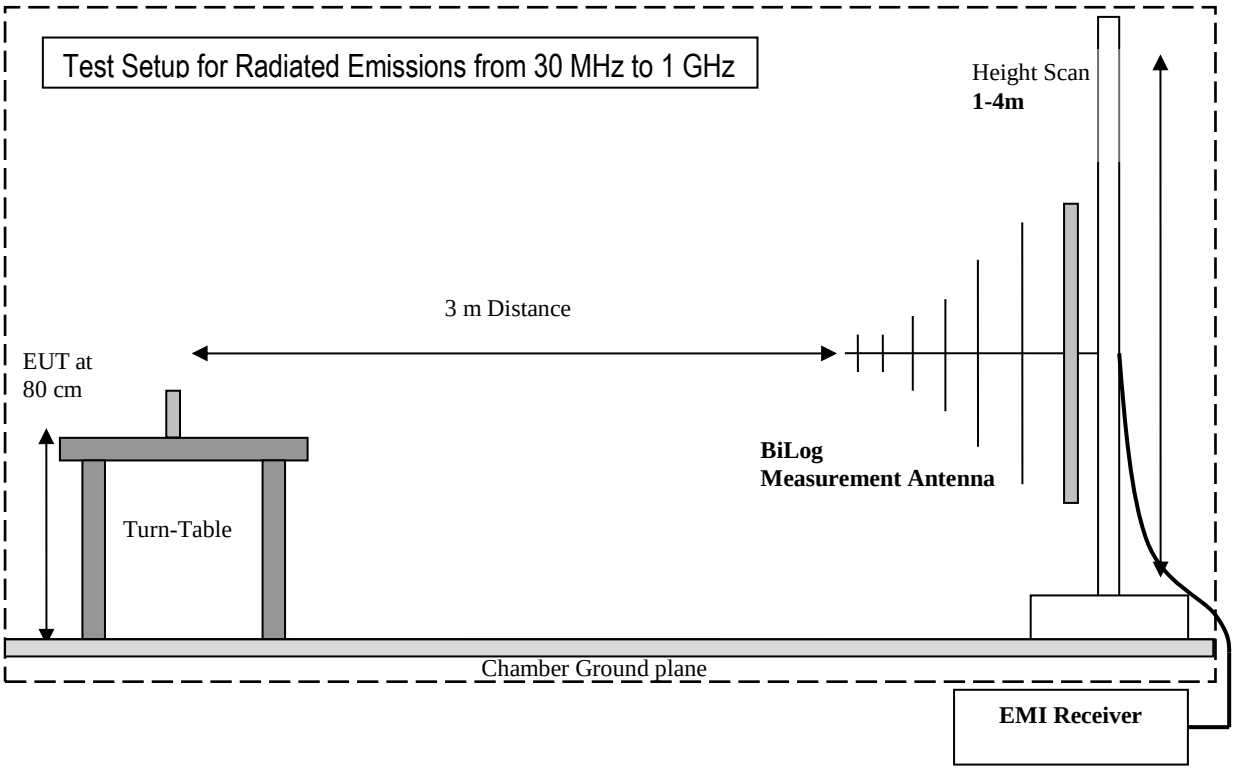
# 5 Measurement Procedures

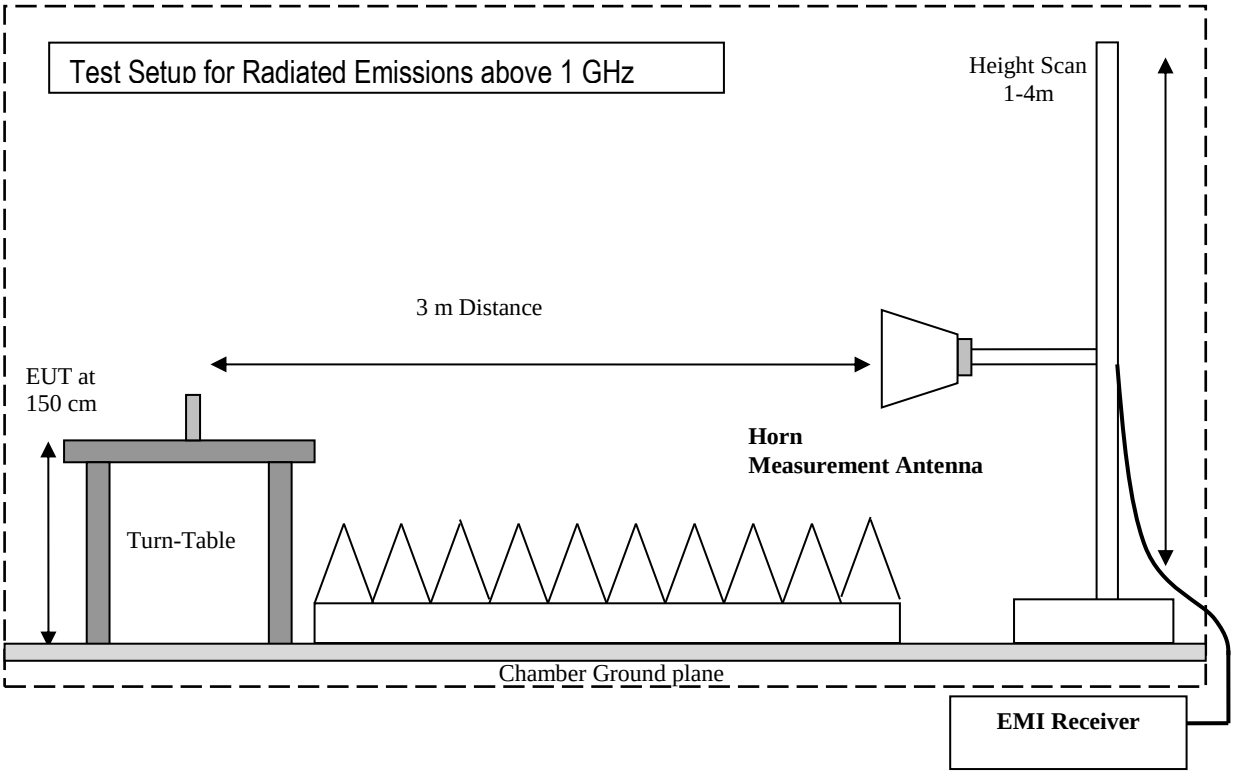
Testing is performed according to the guidelines provided in FCC publication (KDB) 971168 D01 v03 – "Measurement Guidance for Certification of Licensed Digital Transmitters" and according to ANSI C63.26 as detailed below.

## 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.




Test Setup for Radiated Emissions from 30 MHz to 1 GHz
Height Scan
1-4m
3 m Distance
EUT at
80 cm
BiLog
Measurement Antenna
Turn-Table
Chamber Ground plane
EMI Receiver


Test Setup for Radiated Emissions above 1 GHz
Height Scan
1-4m
3 m Distance
EUT at
150 cm
Horn
Measurement Antenna
Turn-Table
Chamber Ground plane
EMI Receiver

## 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 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 |

# 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 | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1055; §22.355 | Frequency Stability | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1049; §22.917 | Occupied Bandwidth | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1051; §22.917 | Band Edge Compliance | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1051; §22.917 | Conducted Spurious Emissions | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1053; §22.917(a); RSS-132 Issue 3-5.5; | Radiated Spurious Emissions | Nominal | Op.1 | ■ | ☐ | ☐ | ☐ | Complies |

Note 1: NA= Not Applicable; NP= Not Performed.
Note 2: Leveraged from module certification Quectel EG25-G(D) (FCC ID: XMR201903EG25G, IC ID: 10224A-201903EG25G)

## 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 | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1055; §24.235 | Frequency Stability | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1049; §24.238 | Occupied Bandwidth | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1051; §24.238 | Band Edge Compliance | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1051; §24.238 | Conducted Spurious Emissions | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1053; §24.238(a); RSS-133 Issue 6-6.5.1; | Radiated Spurious Emissions | Nominal | Op.1 | ■ | ☐ | ☐ | ☐ | Complies |

Note 1: NA= Not Applicable; NP= Not Performed.
Note 2: Leveraged from module certification Quectel EG25-G(D) (FCC ID: XMR201903EG25G, IC ID: 10224A-201903EG25G)

## 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 | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1055; §27.54 | Frequency Stability | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1049; §27.53 | Occupied Bandwidth | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1051; §27.53 | Band Edge Compliance | Nominal | - | ☐ | ☐ | ☐ | ■ | Complies Note 1 Note 2 |
| §2.1051; §27.53 | Conducted Spurious Emissions | Nominal | - | ☐ | ☐ | ☐ | ■ | 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 | ■ | ☐ | ☐ | ☐ | Complies |

Note 1: NA= Not Applicable; NP= Not Performed.
Note 2: Leveraged from module certification Quectel EG25-G(D) (FCC ID: XMR201903EG25G, IC ID: 10224A-201903EG25G)

# 7 Test Result Data

## 7.1 ERP/EIRP

| FCC Rule Parts | Band | Frequency Range (MHz) | Power Conducted (dBm) Note 1 | Power Conducted (W) | Gain (dBi) | Gain Linear | EIRP (W) Note 2 | ERP (W) Note 2 | Limit EIRP (W) | Limit ERP (W) |
|---|---|---|---|---|---|---|---|---|---|---|
| 22H | LTE 5 | 824 – 849 | 23.54 | 0.2259 | 4.0 | 2.512 | - | 0.3459 | - | 7 |
| 22H | UMTS V | 826.4 – 846.6 | 23.86 | 0.2432 | 4.0 | 2.512 | - | 0.3724 | - | 7 |
| 22H | GSM 850 | 824.2 – 848.8 | 32.53 | 1.7906 | 4.0 | 2.512 | - | 2.7416 | - | 7 |
| 24E | LTE 2 | 1850 – 1910 | 24.64 | 0.2911 | 3.3 | 2.138 | 0.6223 | - | 2 | - |
| 24E | UMTS II | 1852.4 – 1907.6 | 23.88 | 0.2443 | 3.3 | 2.138 | 0.5224 | - | 2 | - |
| 24E | GSM 1900 | 1850.2 – 1909.8 | 29.66 | 0.9247 | 3.3 | 2.138 | 1.9770 | - | 2 | - |
| 27 | LTE 4 | 1710 – 1755 | 24.89 | 0.3083 | 3.1 | 2.042 | 0.6295 | - | 1 | - |
| 27 | UMTS IV | 1712.4 – 1752.6 | 23.82 | 0.2410 | 3.1 | 2.042 | 0.4920 | - | 1 | - |
| 27 | LTE 12 | 699 – 716 | 24.30 | 0.2692 | 2.4 | 1.738 | - | 0.2851 | - | 3 |

**Note 1:** Power Conducted (dBm) leveraged from test report "HR/2019/1001601" prepared by SGS-CSTC Standards Technical Services Co., Ltd. Shenzhen Branch of cellular module Quectel EG25-G(D) (FCC ID: XMR201903EG25G, IC ID: 10224A-201903EG25G).

**Note 2:** ERP/EIRP are based on calculations from Power Conducted 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 |
|---|---|---|
| 23.1 | Op. 1 | 12 VDC |

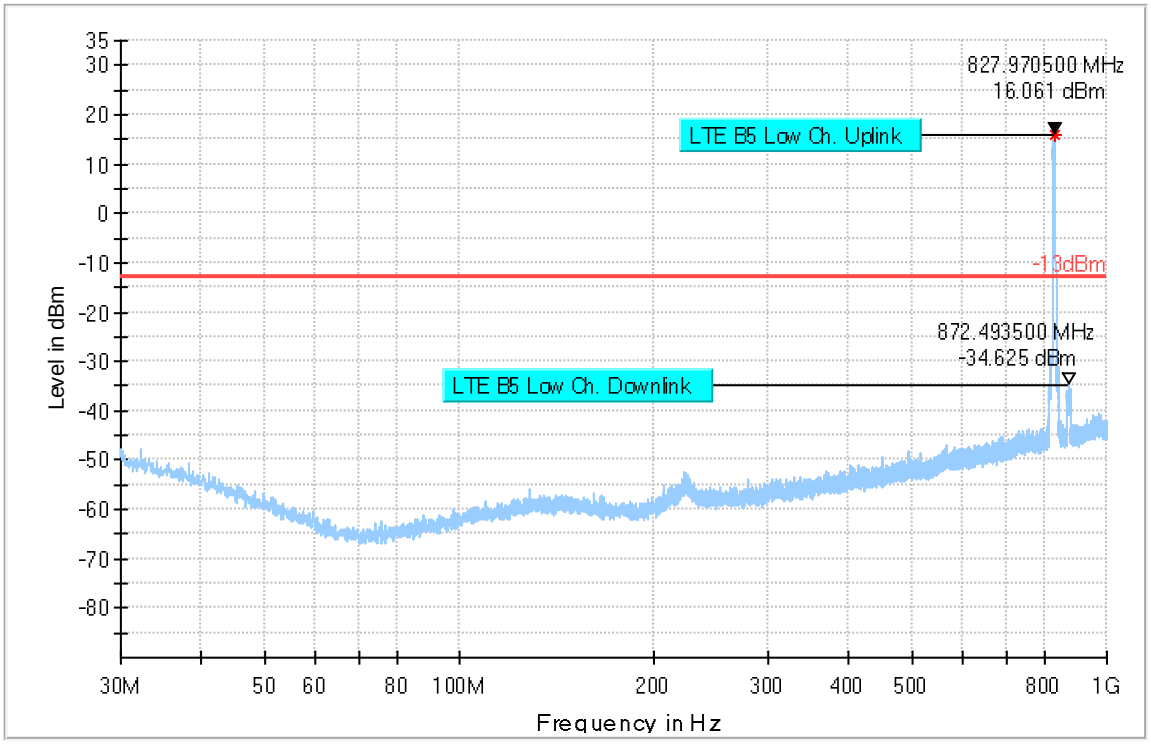
### 7.2.4 Measurement result:

| FCC Rule Part | Plot # | EUT operating mode | Cellular Channel | Scan Frequency | Critical Frequency [MHz] | Emission level [dBm] | Limit [dBm] | Result |
|---|---|---|---|---|---|---|---|---|
| 22 | 1 – 3 | LTE 5 | Low | 30 MHz – 9 GHz | 7320.689 | -27.942 | -13 | Pass |
| | 4 – 7 | | Mid | 9 kHz – 9 GHz | 7320.776 | -28.153 | -13 | Pass |
| | 8 – 10 | | High | 30 MHz – 9 GHz | 7320.776 | -28.153 | -13 | Pass |
| | 11 – 13 | UMTS V | Low | 30 MHz – 9 GHz | 4880.535 | -31.534 | -13 | Pass |
| | 14 – 17 | | Mid | 9 kHz – 9 GHz | 4880.261 | -30.304 | -13 | Pass |
| | 18 – 20 | | High | 30 MHz – 9 GHz | 4880.524 | -31.398 | -13 | Pass |
| | 21 – 23 | GSM 850 | Low | 30 MHz – 9 GHz | 4880.617 | -31.975 | -13 | Pass |
| | 24 – 27 | | Mid | 9 kHz – 9 GHz | 4880.497 | -32.050 | -13 | Pass |
| | 28 – 30 | | High | 30 MHz – 9 GHz | 7320.701 | -30.878 | -13 | Pass |
| 24 | 31 – 33 | LTE 2 | Low | 30 MHz – 18 GHz | 7320.718 | -28.364 | -13 | Pass |
| | 34 – 38 | | Mid | 9 kHz – 26 GHz | 7320.775 | -28.298 | -13 | Pass |
| | 39 – 41 | | High | 30 MHz – 18 GHz | 7320.739 | -28.266 | -13 | Pass |
| | 42 – 44 | UMTS II | Low | 30 MHz – 18 GHz | 7320.685 | -28.216 | -13 | Pass |
| | 45 – 49 | | Mid | 9 kHz – 26 GHz | 7320.735 | -28.231 | -13 | Pass |
| | 50 – 52 | | High | 30 MHz – 18 GHz | 7320.858 | -29.679 | -13 | Pass |
| | 53 – 55 | GSM 1900 | Low | 30 MHz – 18 GHz | 7320.495 | -30.113 | -13 | Pass |
| | 56 – 60 | | Mid | 9 kHz – 26 GHz | 7320.839 | -30.189 | -13 | Pass |
| | 61 – 63 | | High | 30 MHz – 18 GHz | 7320.832 | -30.601 | -13 | Pass |
| 27 | 64 – 66 | LTE 4 | Low | 30 MHz – 9 GHz | 7320.733 | -28.286 | -13 | Pass |
| | 67 – 70 | | Mid | 9 kHz – 9 GHz | 7320.729 | -28.320 | -13 | Pass |
| | 71 – 73 | | High | 30 MHz – 9 GHz | 7320.671 | -28.130 | -13 | Pass |
| | 74 – 76 | UMTS IV | Low | 30 MHz – 9 GHz | 7320.800 | -29.179 | -13 | Pass |
| | 77 – 80 | | Mid | 9 kHz – 9 GHz | 7320.828 | -29.222 | -13 | Pass |
| | 81 – 83 | | High | 30 MHz – 9 GHz | 7320.801 | -29.391 | -13 | Pass |
| | 84 – 86 | LTE 12 | Low | 30 MHz – 9 GHz | 7320.710 | -28.554 | -13 | Pass |
| | 87 – 90 | | Mid | 9 kHz – 9 GHz | 7320.853 | -27.929 | -13 | Pass |
| | 91 – 93 | | High | 30 MHz – 9 GHz | 7320.812 | -27.987 | -13 | Pass |

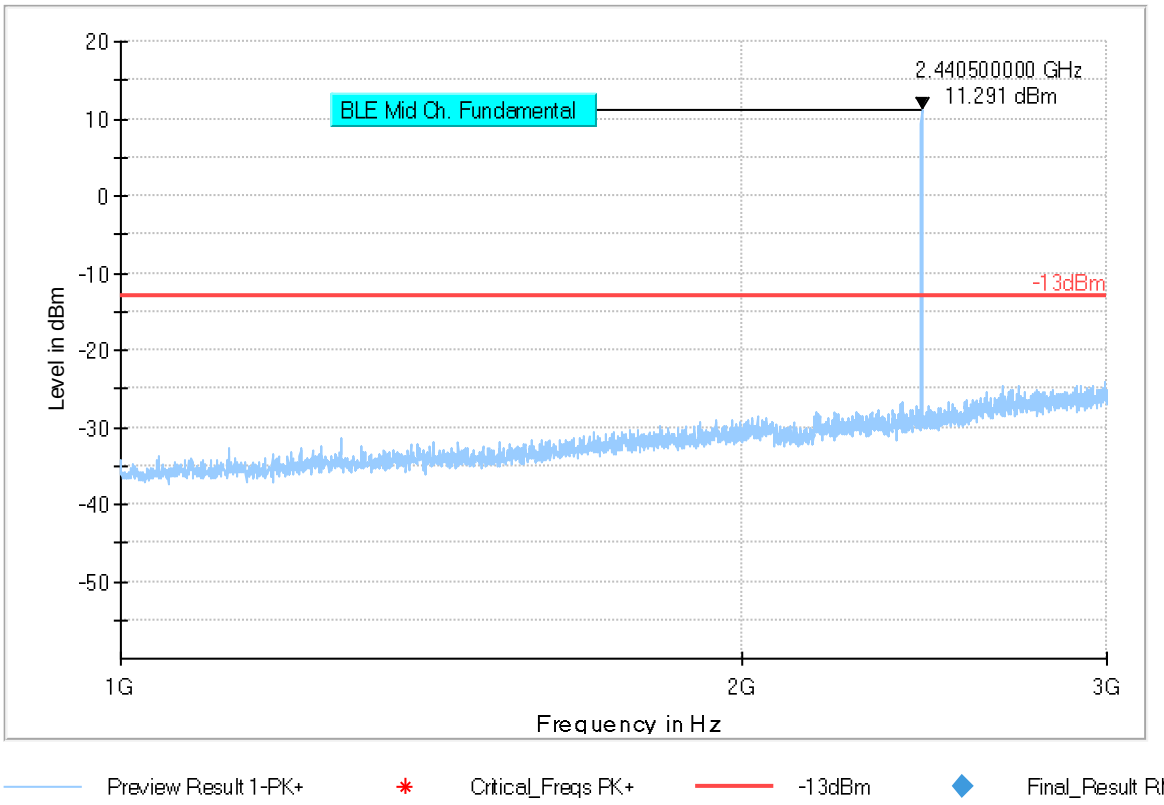
### 7.2.5 Measurement Plots:

**LTE Band 5**

| Plot # 1 Radiated Emissions: 30 MHz – 1 GHz |
|---|
| Channel: Low |



| Plot # 2 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: Low |

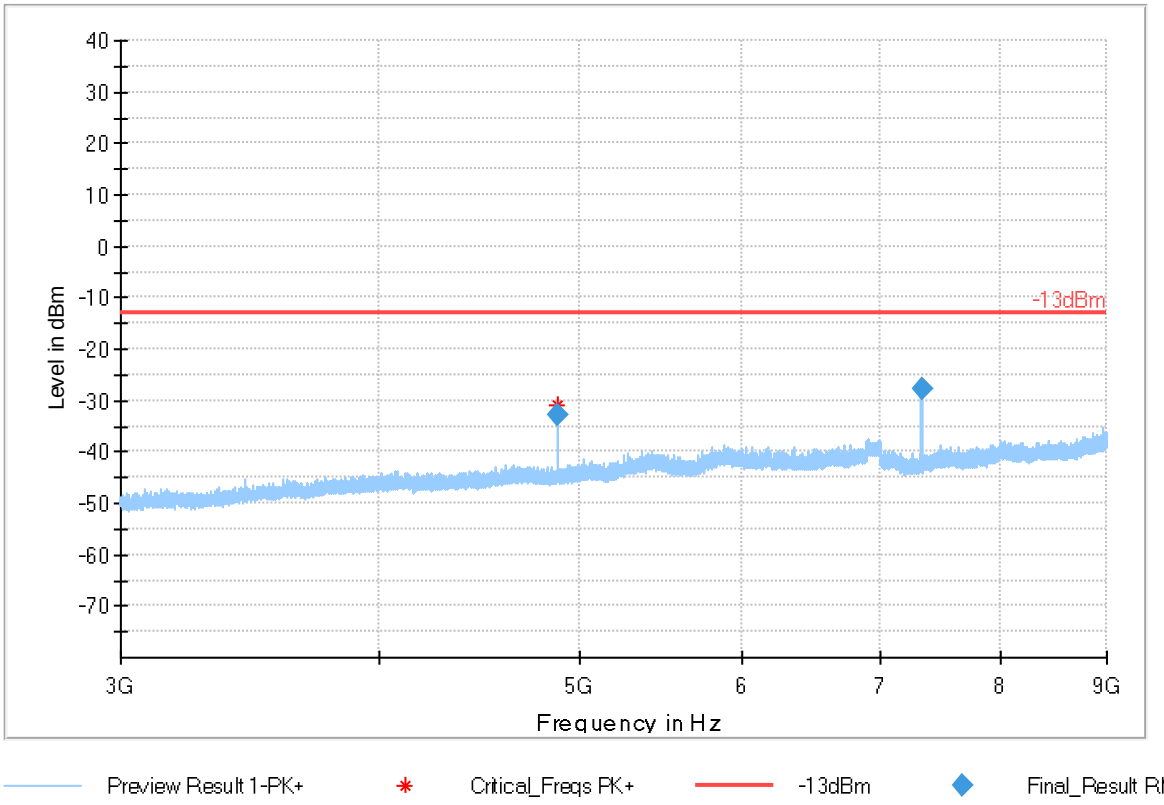


**Plot # 3 Radiated Emissions: 3 GHz – 9 GHz**

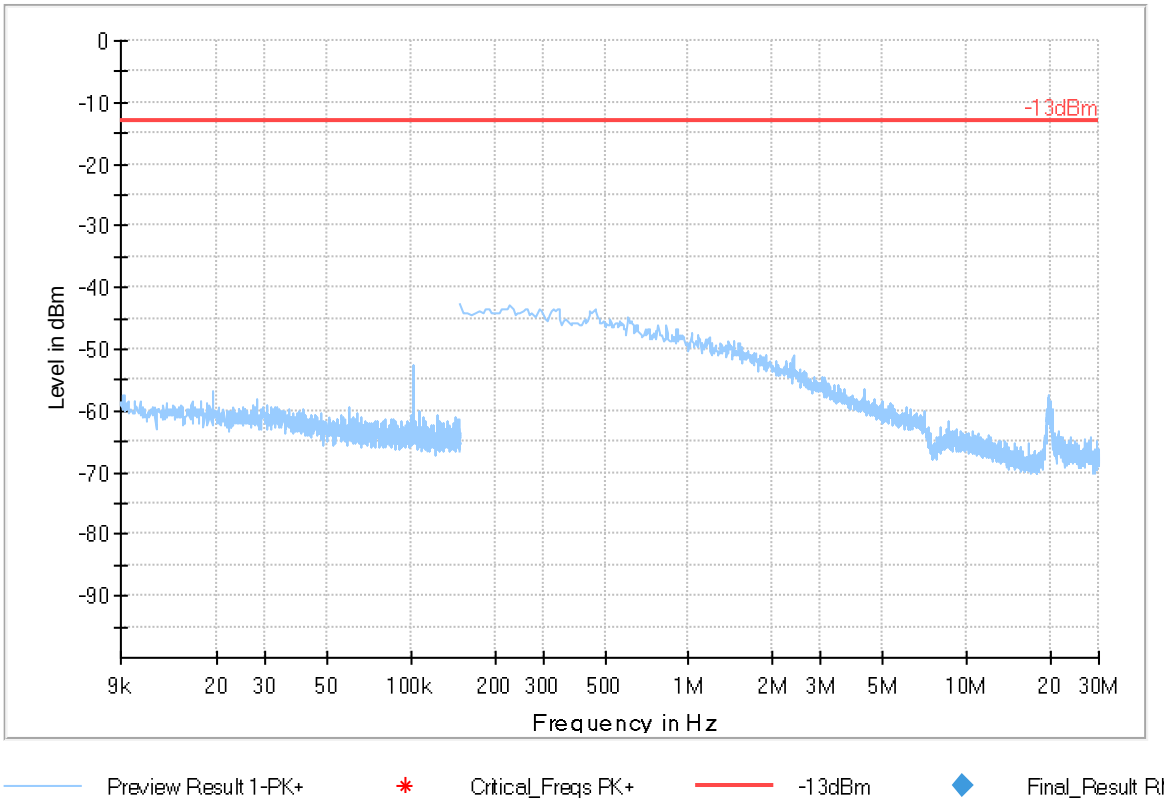
**Channel: Low**

## Final_Result

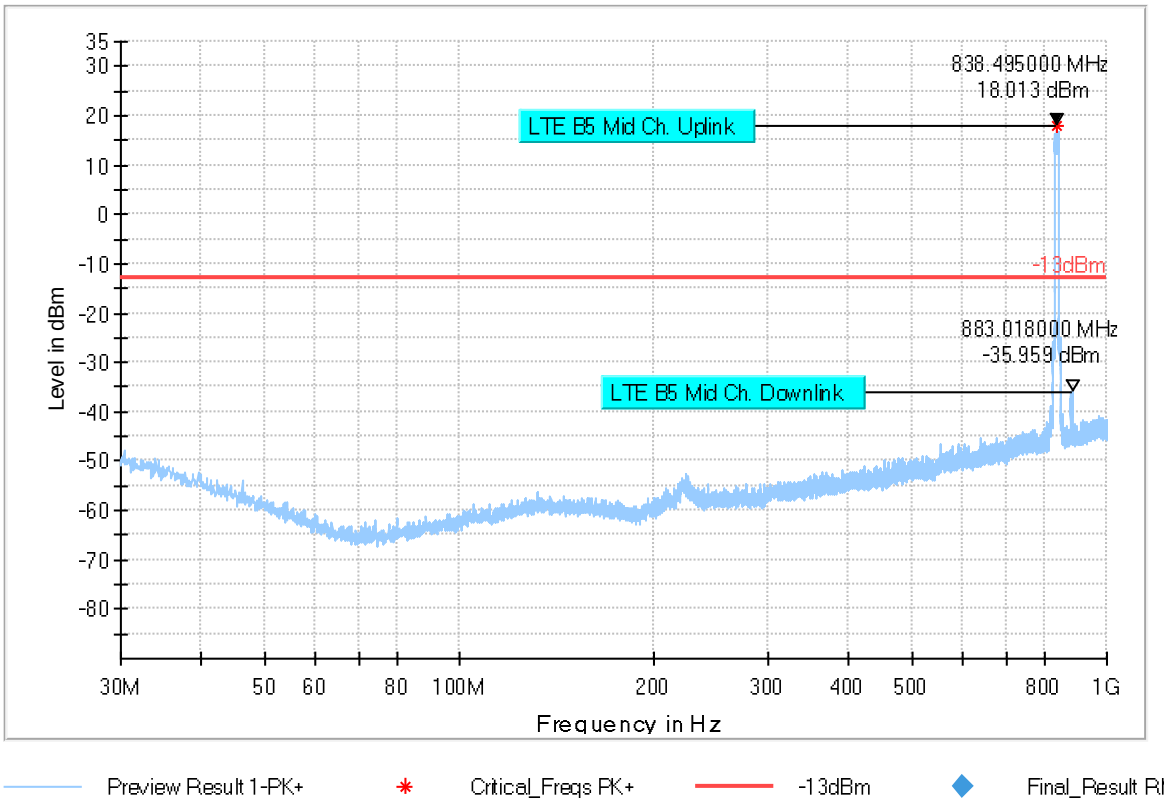
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.517 | -33.004 | -13.00 | 20.00 | 500.0 | 1000.000 | 116.0 | H | 177.0 | -100.9 | 3:59:33 PM - 10/23/2019 |
| 7320.689 | -27.942 | -13.00 | 14.94 | 500.0 | 1000.000 | 134.0 | H | 78.0 | -97.9 | 3:56:03 PM - 10/23/2019 |



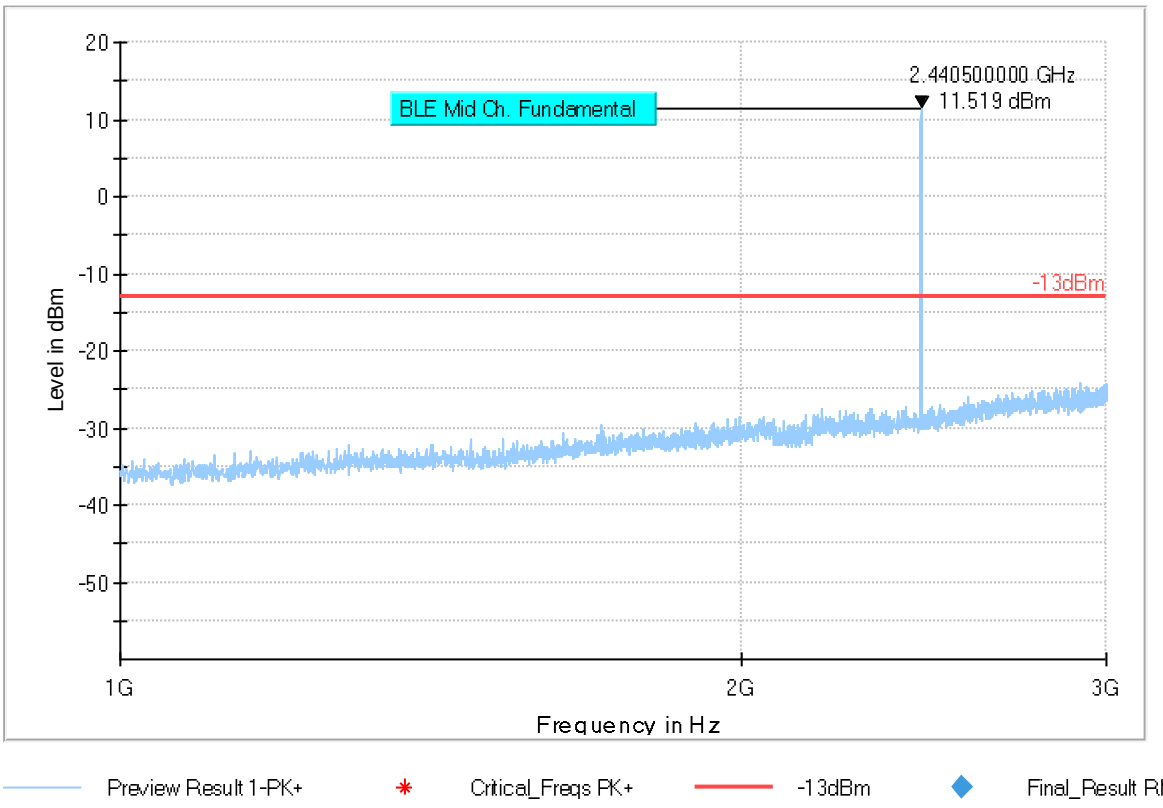
| Plot # 4 Radiated Emissions: 9 kHz – 30 MHz |
|---|
| Channel: Mid |



| Plot # 5 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



| Plot # 6 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: Mid |

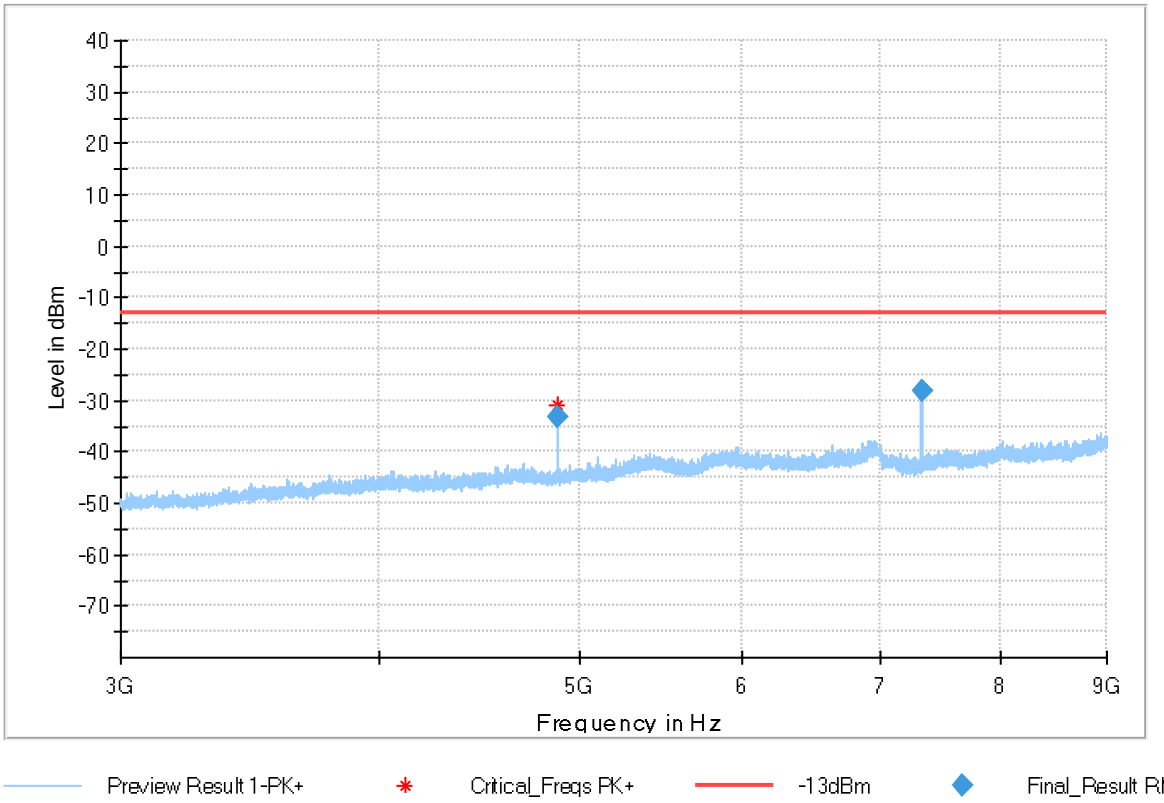


**Plot # 7 Radiated Emissions: 3 GHz – 9 GHz**

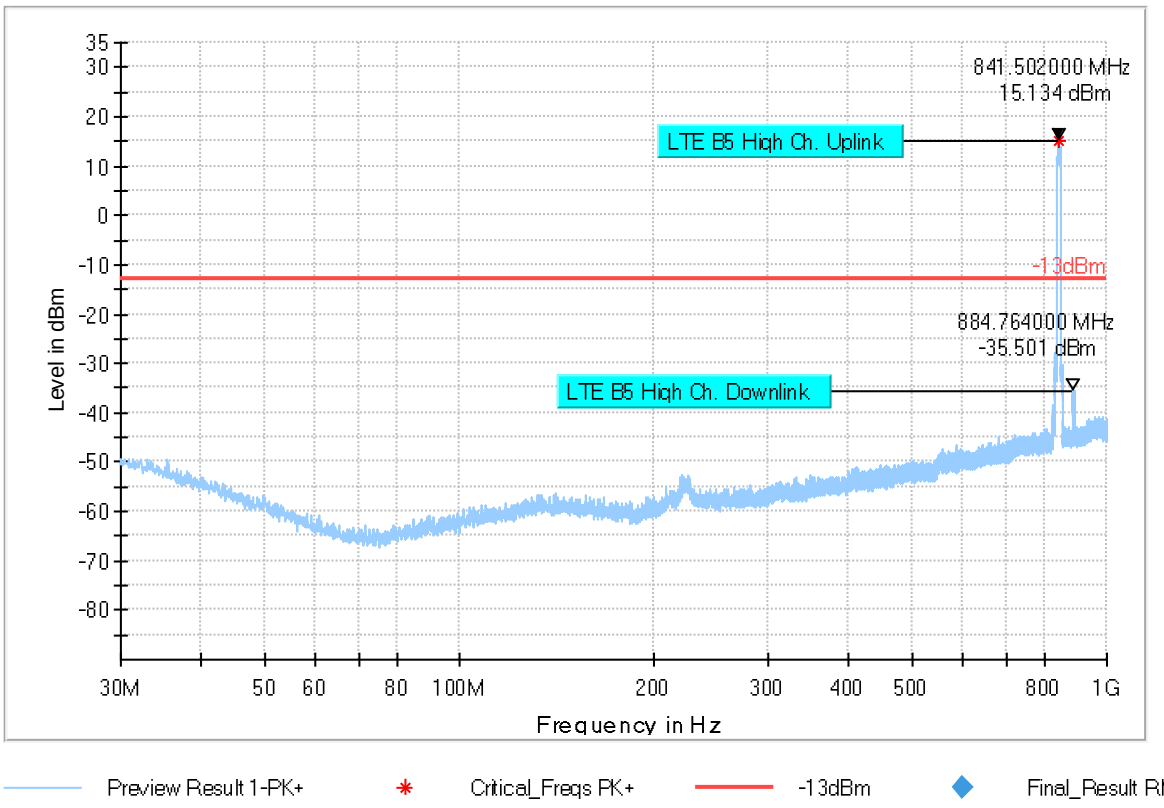
**Channel: Mid**

## Final_Result

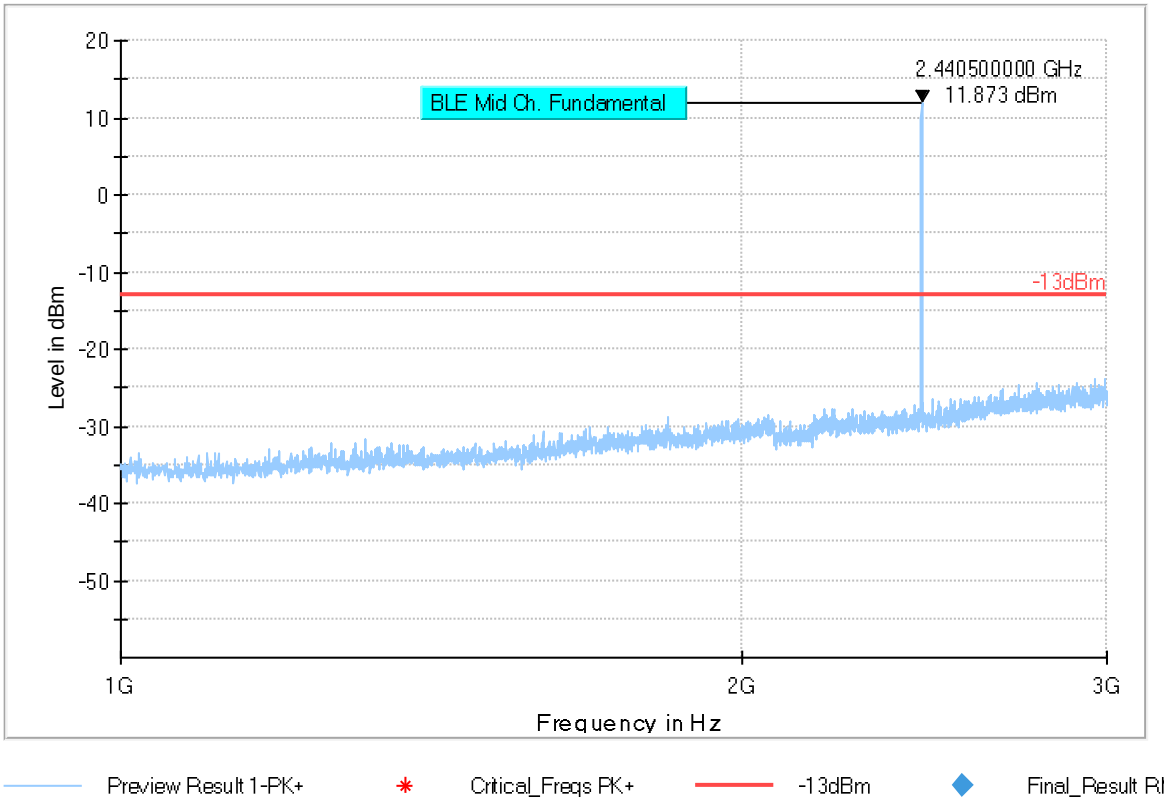
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.448 | -33.234 | -13.00 | 20.23 | 500.0 | 1000.000 | 116.0 | H | 176.0 | -100.9 | 3:38:24 PM - 10/23/2019 |
| 7320.776 | -28.153 | -13.00 | 15.15 | 500.0 | 1000.000 | 125.0 | H | 76.0 | -97.9 | 3:34:58 PM - 10/23/2019 |



| Plot # 8 Radiated Emissions: 30 MHz – 1 GHz |
|---|
| Channel: High |



| Plot # 9 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: High |

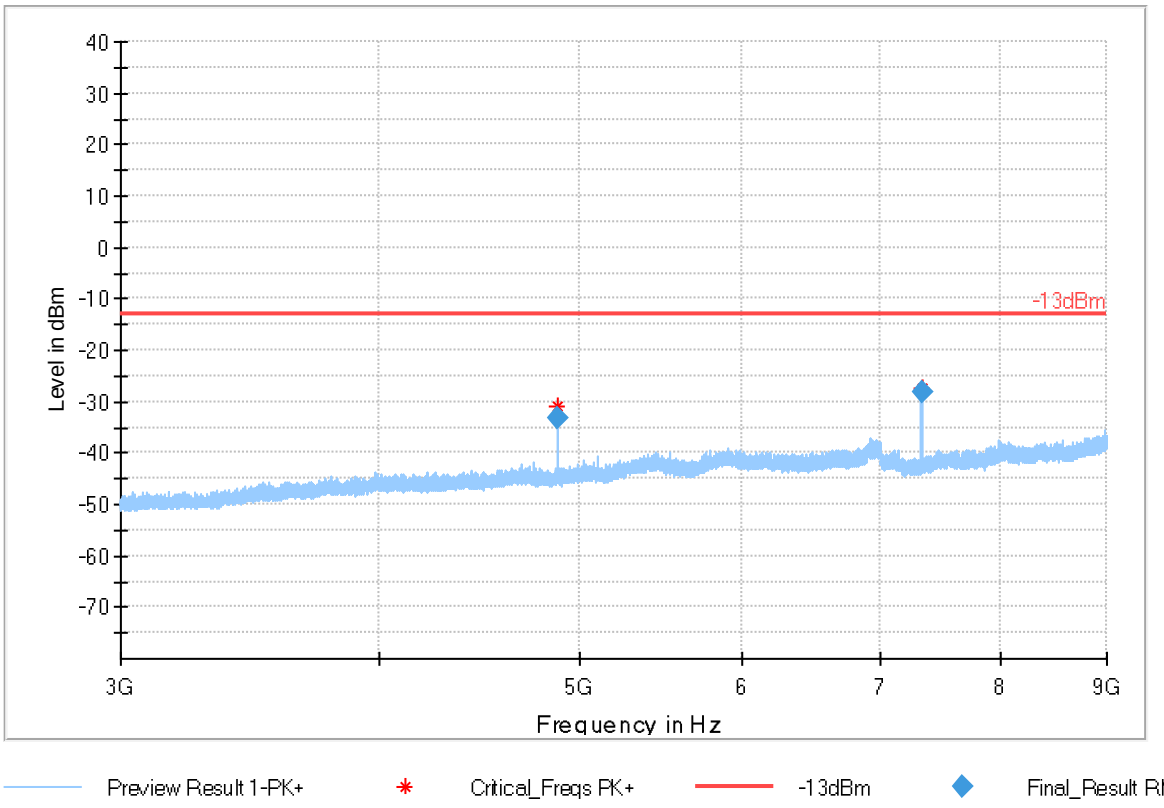


**Plot # 10 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: High**

## Final_Result

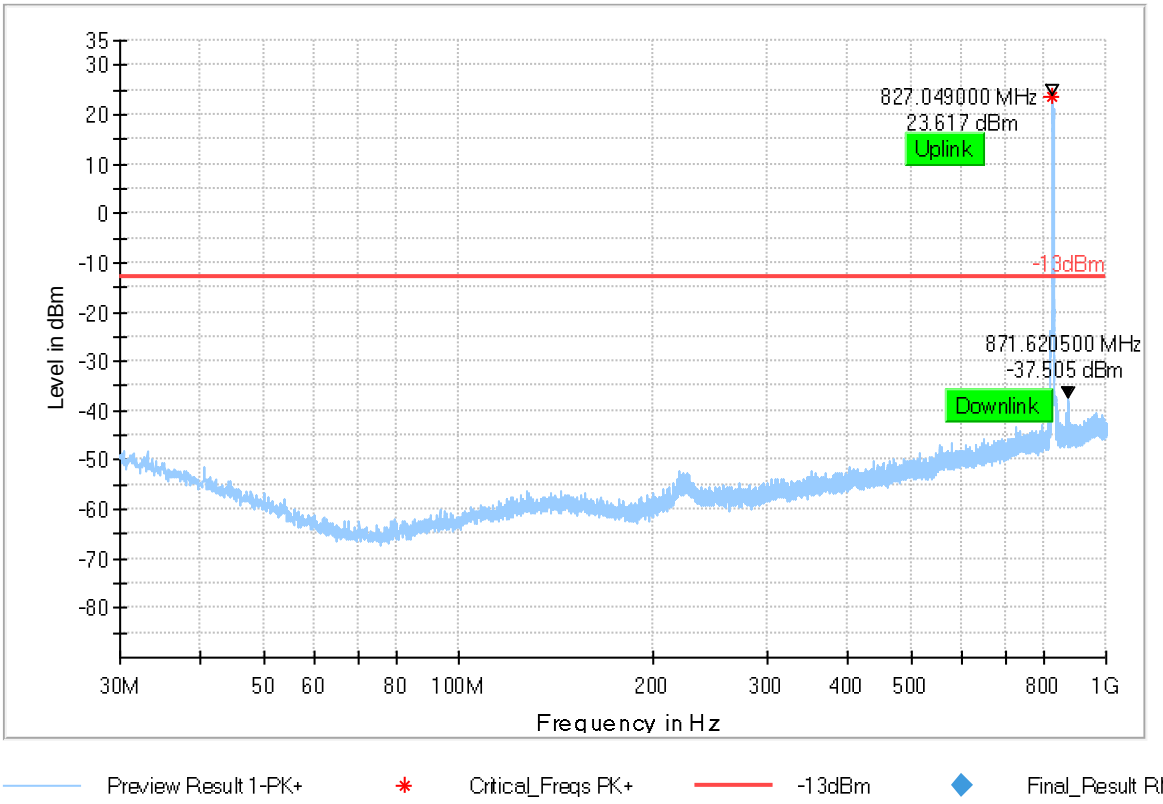
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.448 | -33.234 | -13.00 | 20.23 | 500.0 | 1000.000 | 116.0 | H | 176.0 | -100.9 | 3:38:24 PM - 10/23/2019 |
| 7320.776 | -28.153 | -13.00 | 15.15 | 500.0 | 1000.000 | 125.0 | H | 76.0 | -97.9 | 3:34:58 PM - 10/23/2019 |



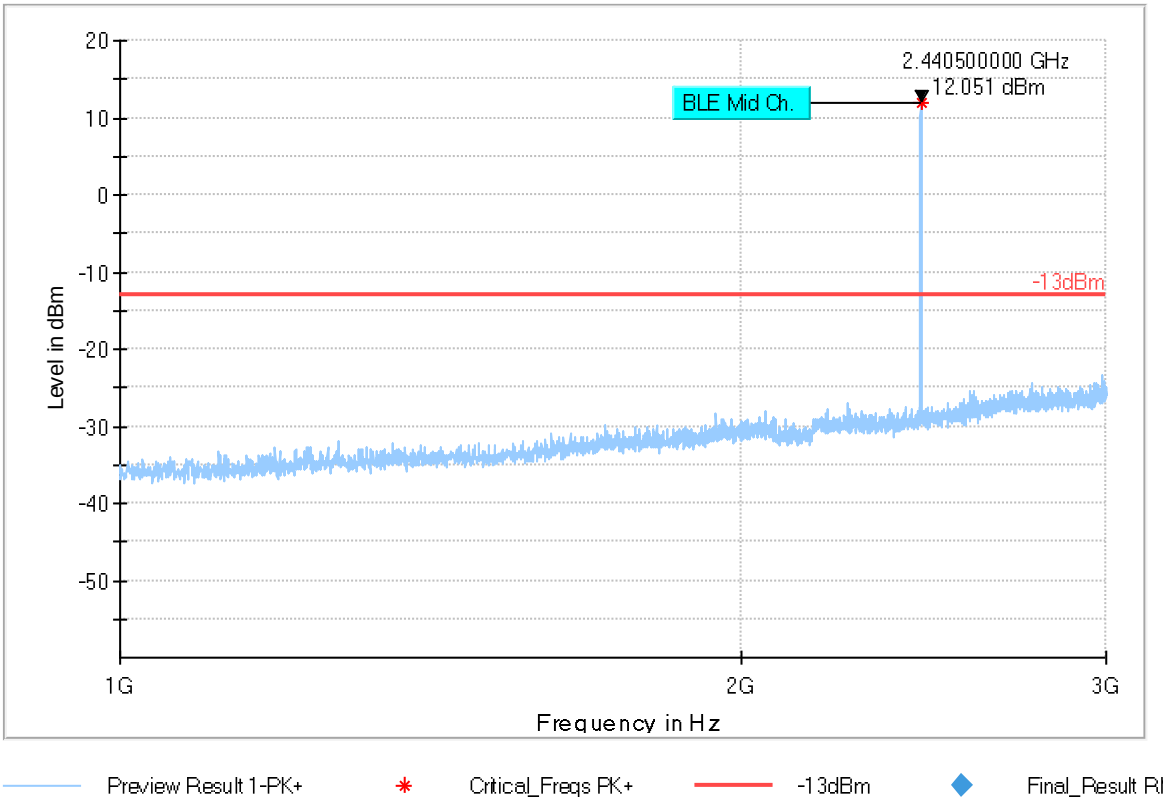
## UMTS V

**Plot # 11 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: Low**



| Plot # 12 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: Low |

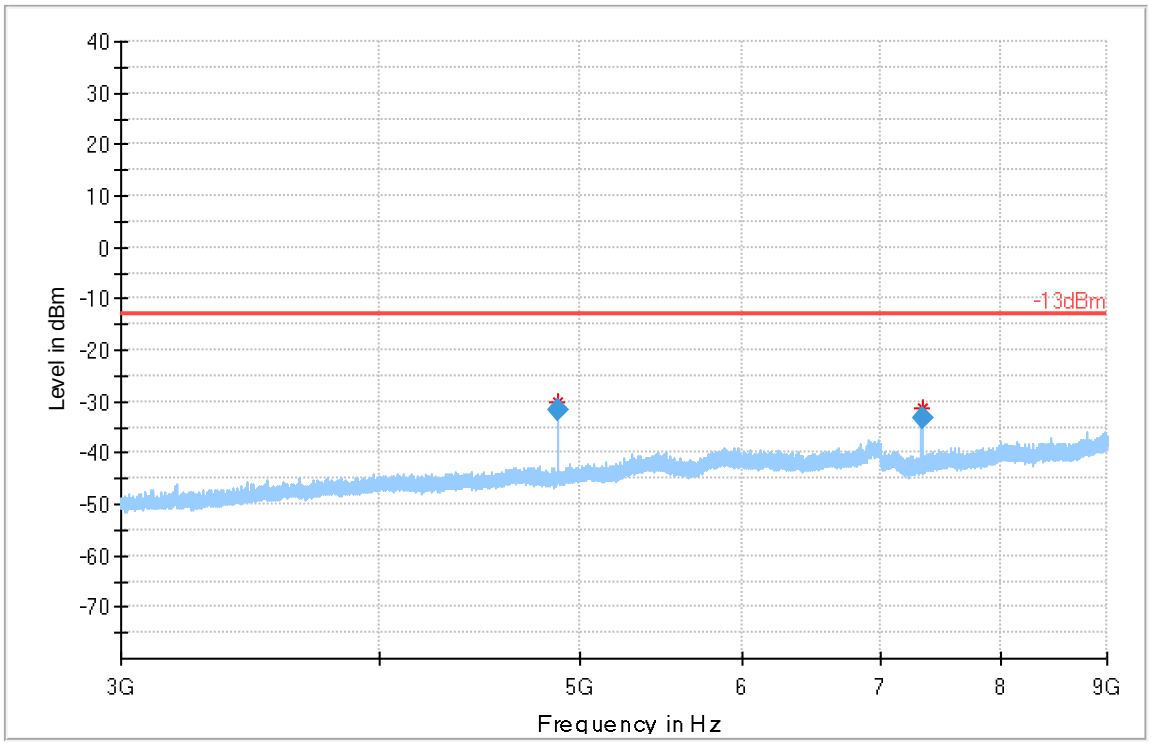


**Plot # 13 Radiated Emissions: 3 GHz – 9 GHz**

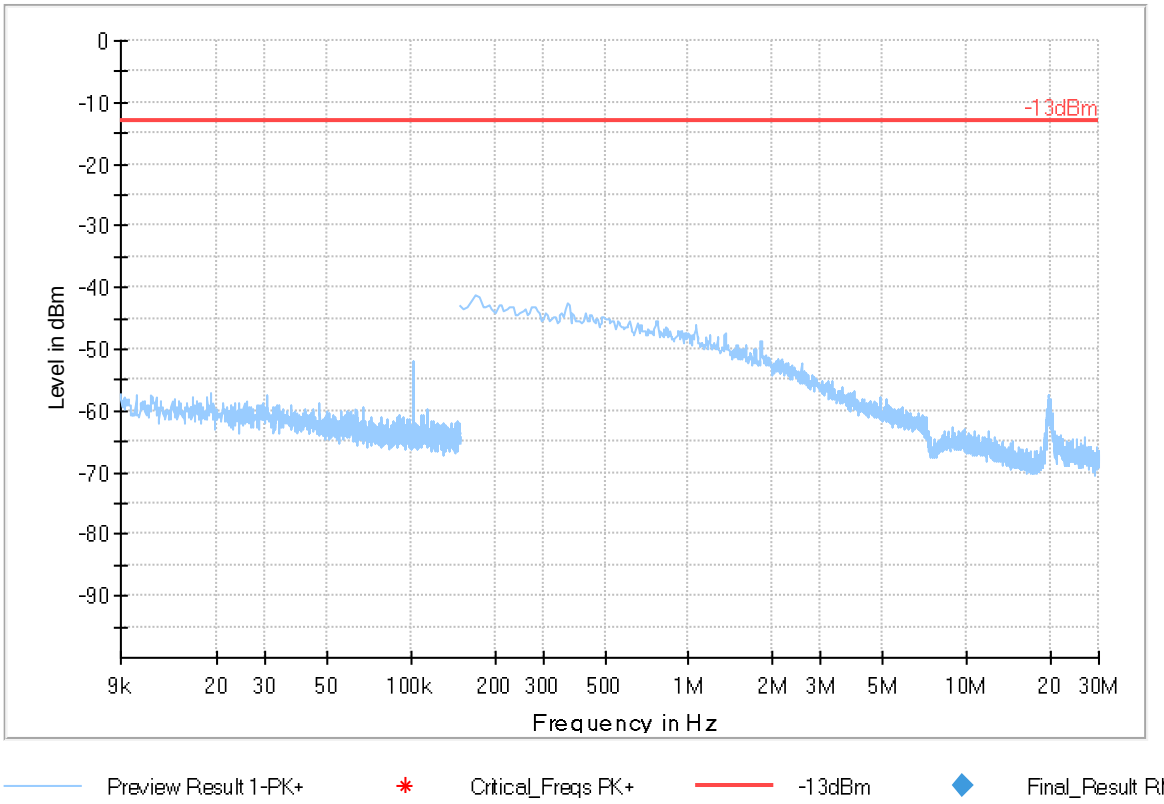
**Channel: Low**

## Final_Result

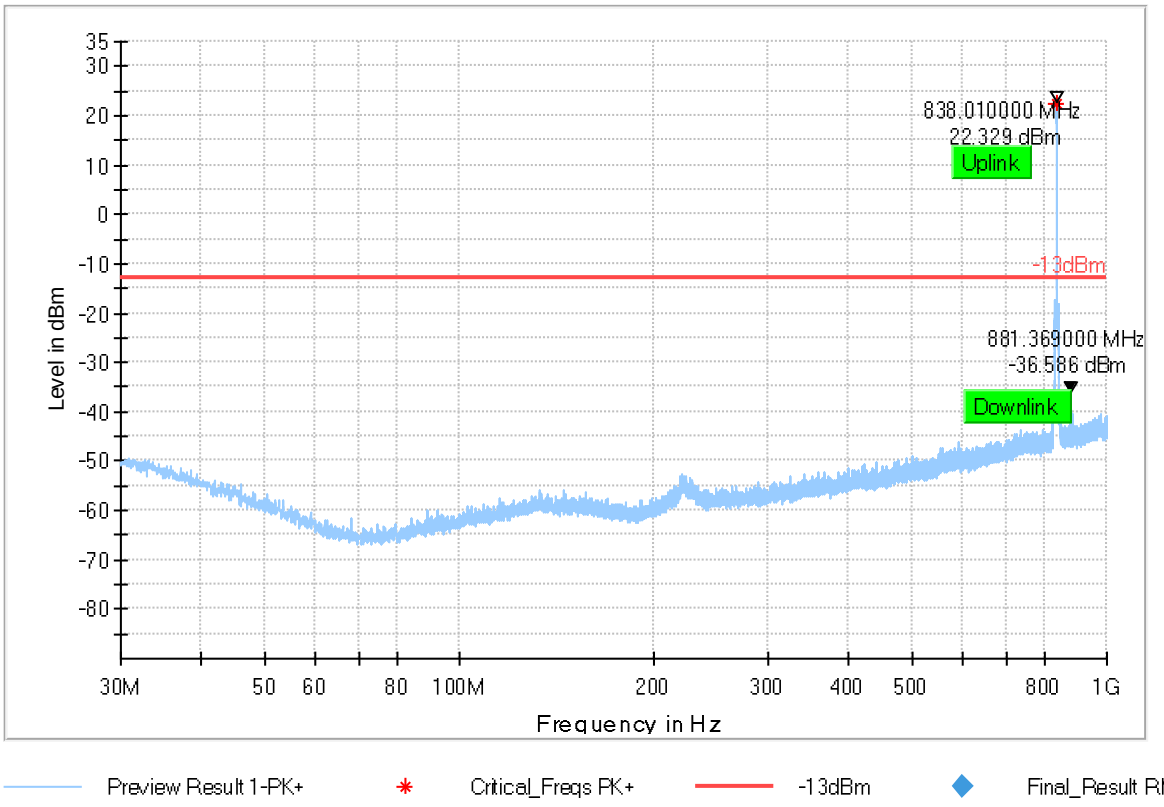
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.535 | -31.534 | -13.00 | 18.53 | 500.0 | 1000.000 | 191.0 | H | 230.0 | -100.9 | 6:42:35 PM - 10/25/2019 |
| 7320.628 | -33.189 | -13.00 | 20.19 | 500.0 | 1000.000 | 258.0 | V | 232.0 | -97.9 | 6:45:57 PM - 10/25/2019 |



| Plot # 14 Radiated Emissions: 9 kHz – 30 MHz |
|---|
| Channel: Mid |

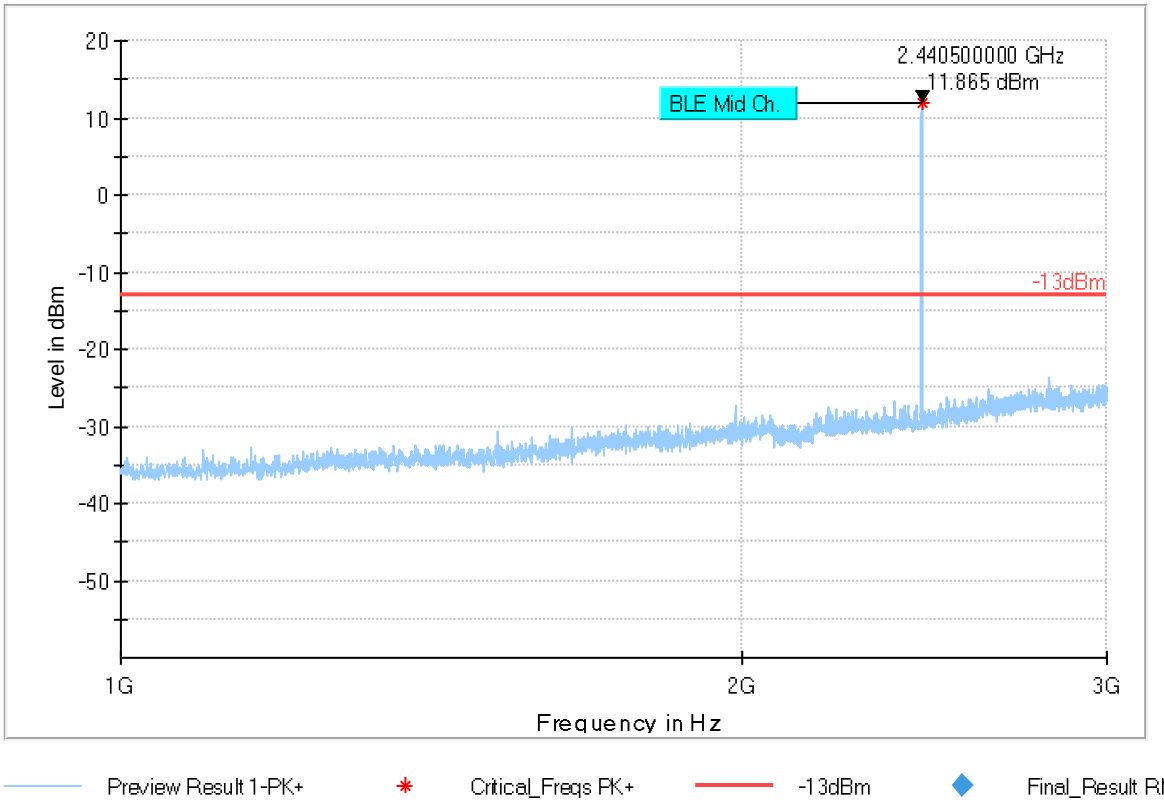


| Plot # 15 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



**Plot # 16 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: Mid**

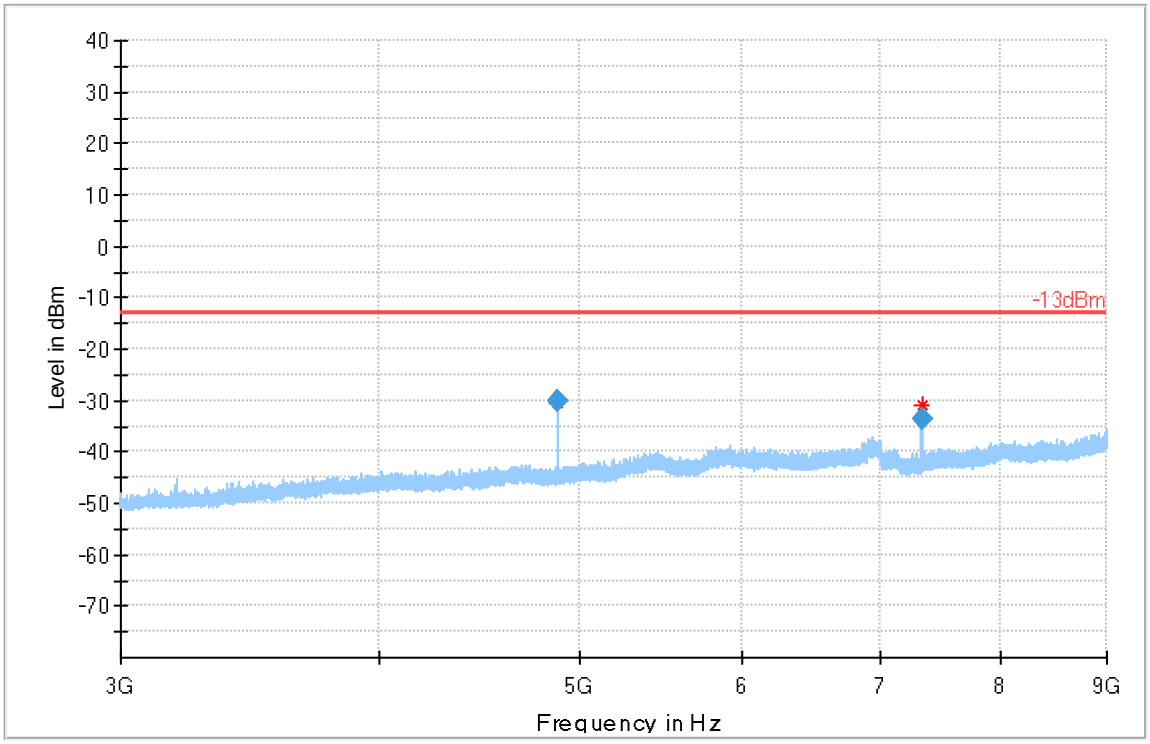


**Plot # 17 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: Mid**

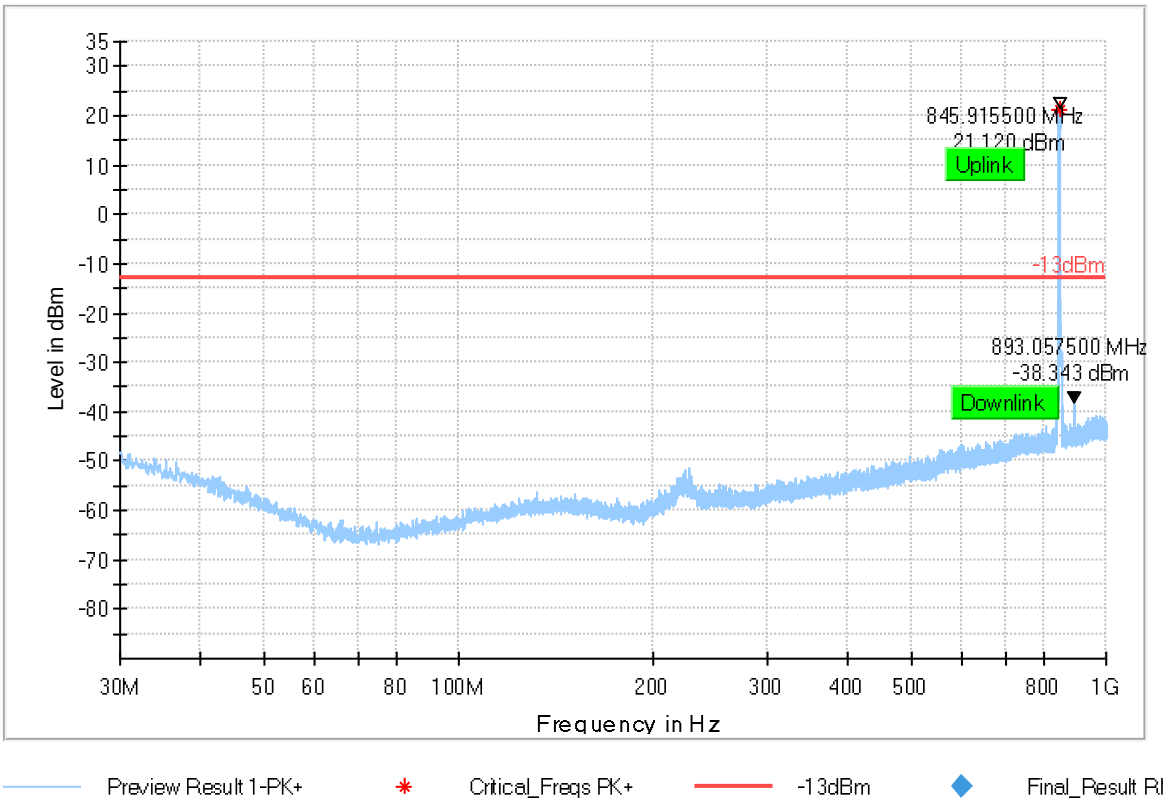
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.261 | -30.304 | -13.00 | 17.30 | 500.0 | 1000.000 | 195.0 | H | 229.0 | -100.9 | 6:27:19 PM - 10/25/2019 |
| 7320.619 | -33.643 | -13.00 | 20.64 | 500.0 | 1000.000 | 257.0 | V | 232.0 | -97.9 | 6:30:41 PM - 10/25/2019 |

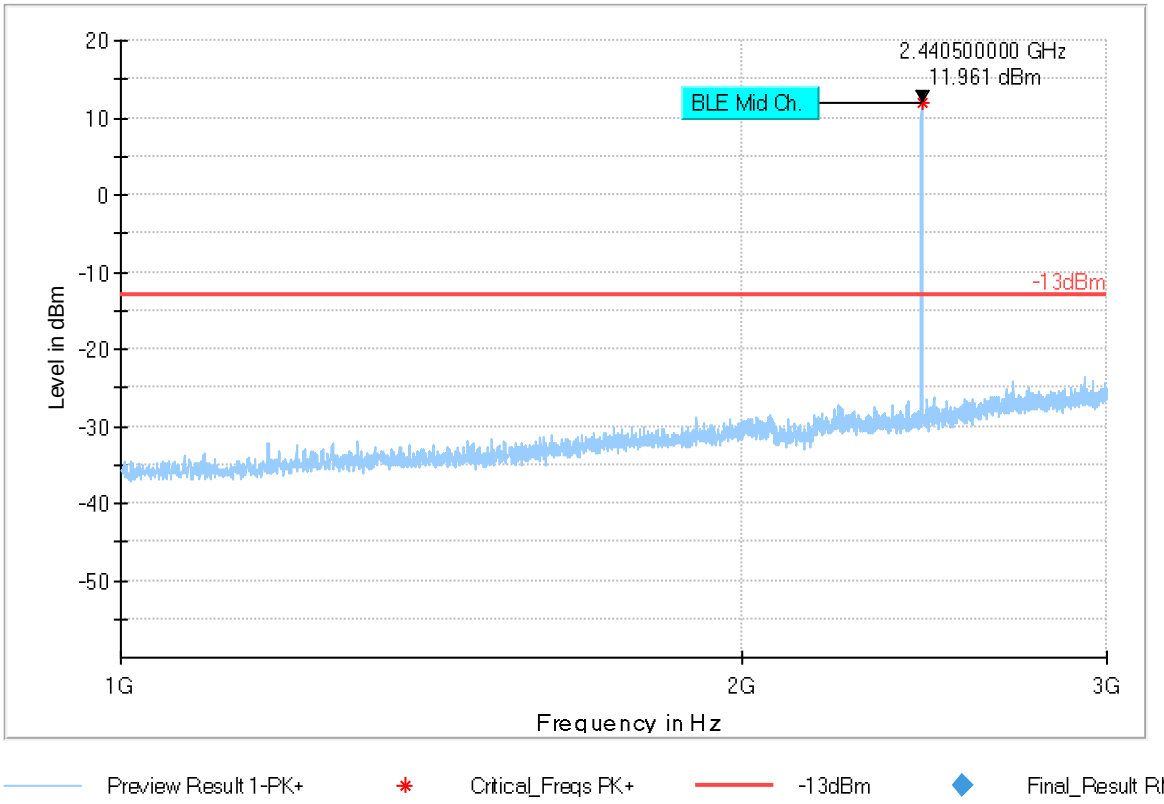


**Plot # 18 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: High**



| Plot # 19 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: High |

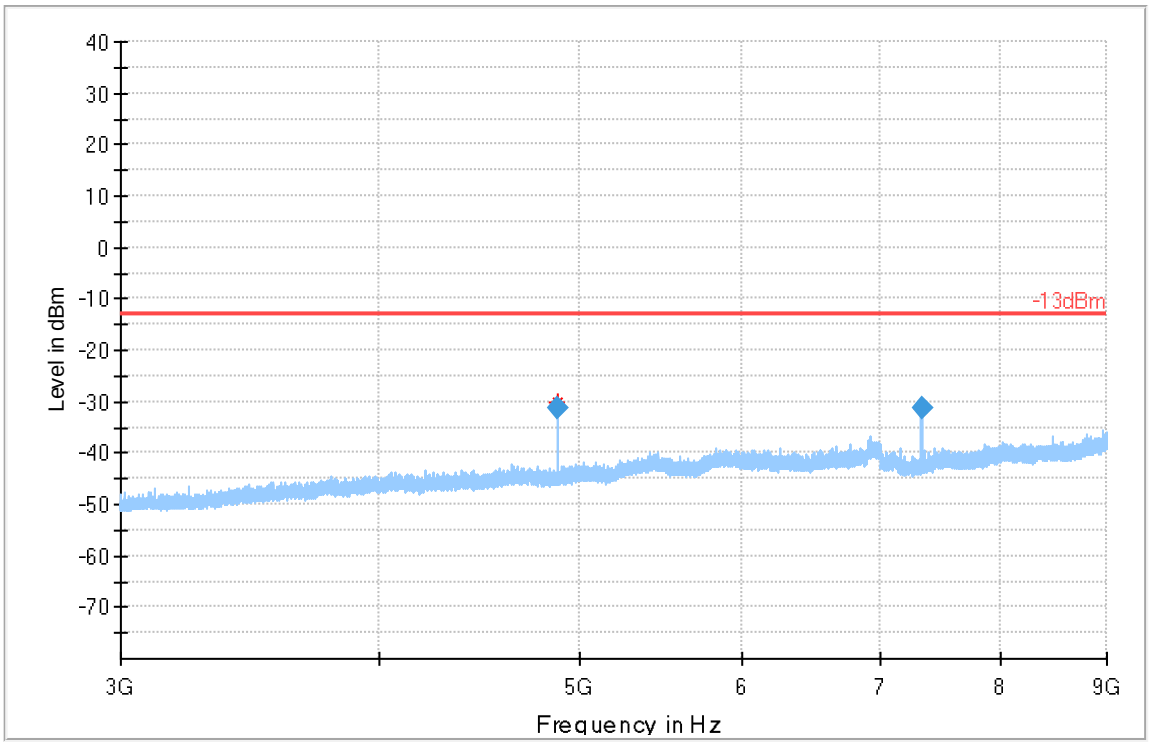


**Plot # 20 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: High**

## Final_Result

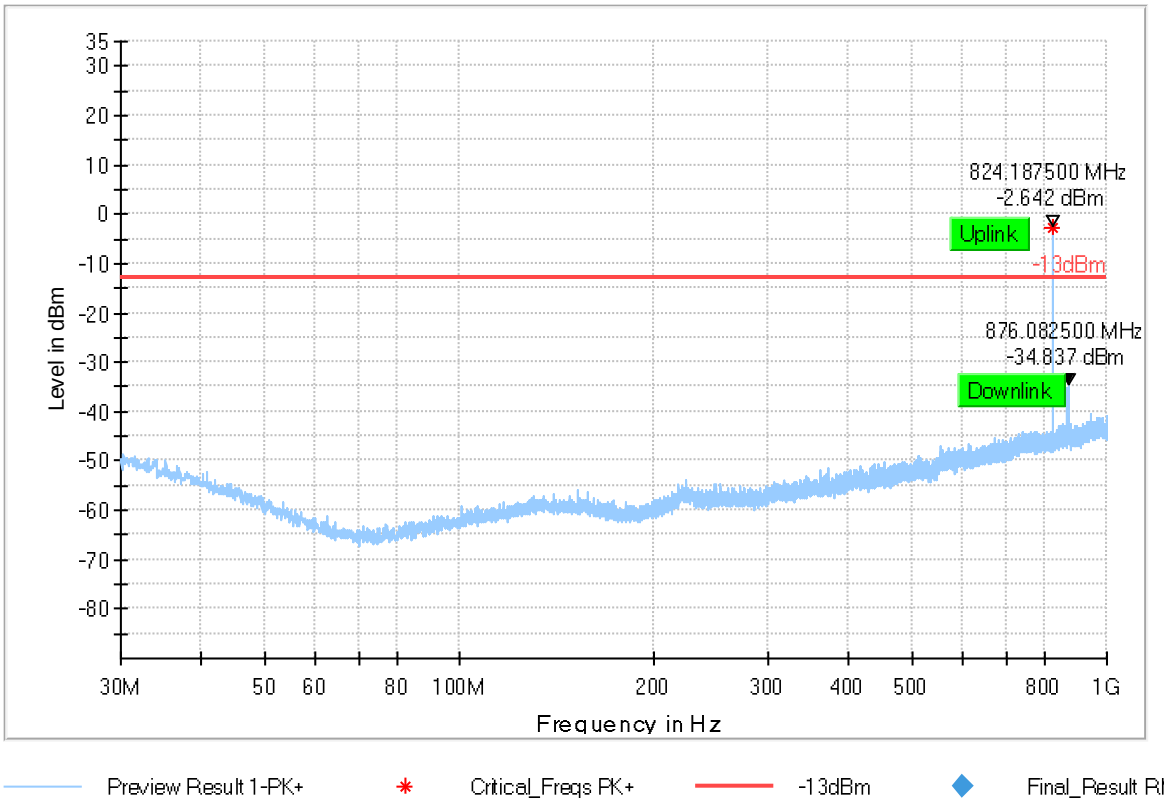
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.524 | -31.398 | -13.00 | 18.40 | 500.0 | 1000.000 | 191.0 | H | 230.0 | -100.9 | 6:57:12 PM - 10/25/2019 |
| 7320.647 | -31.463 | -13.00 | 18.46 | 500.0 | 1000.000 | 142.0 | V | 234.0 | -97.9 | 7:00:40 PM - 10/25/2019 |



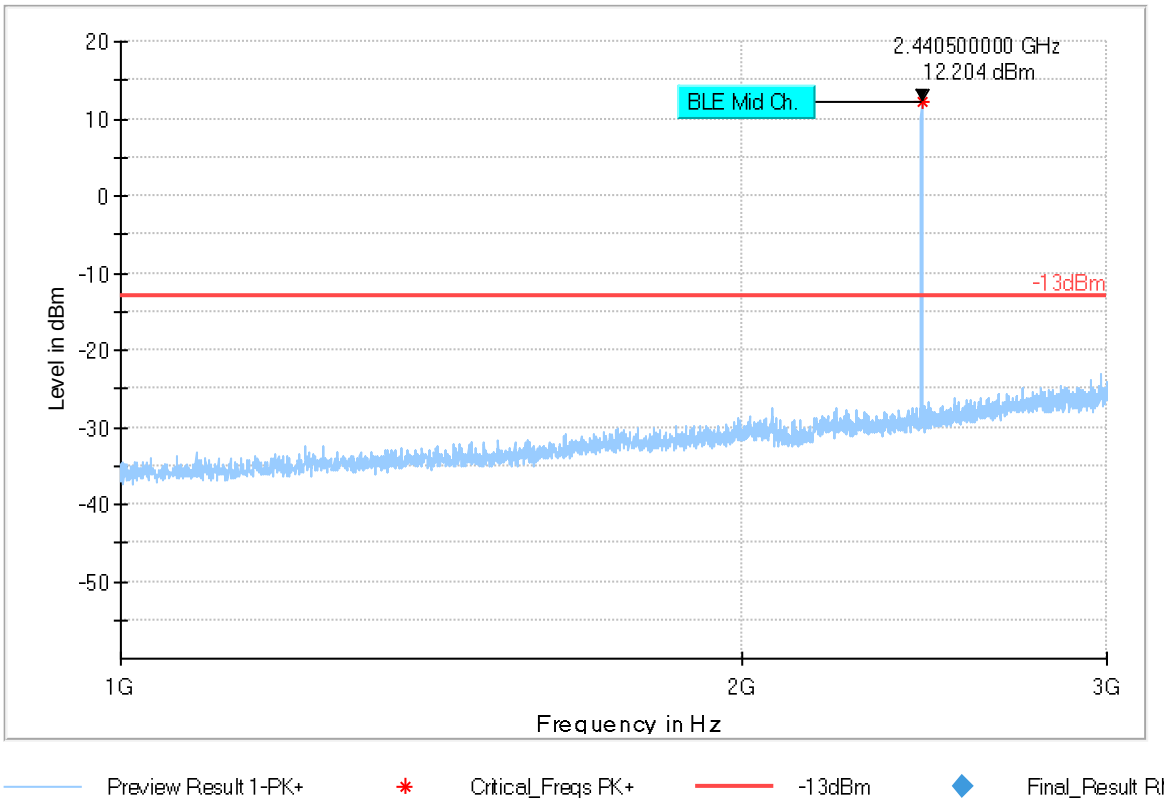
## GSM 850

**Plot # 21 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: Low**



| Plot # 22 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: Low |

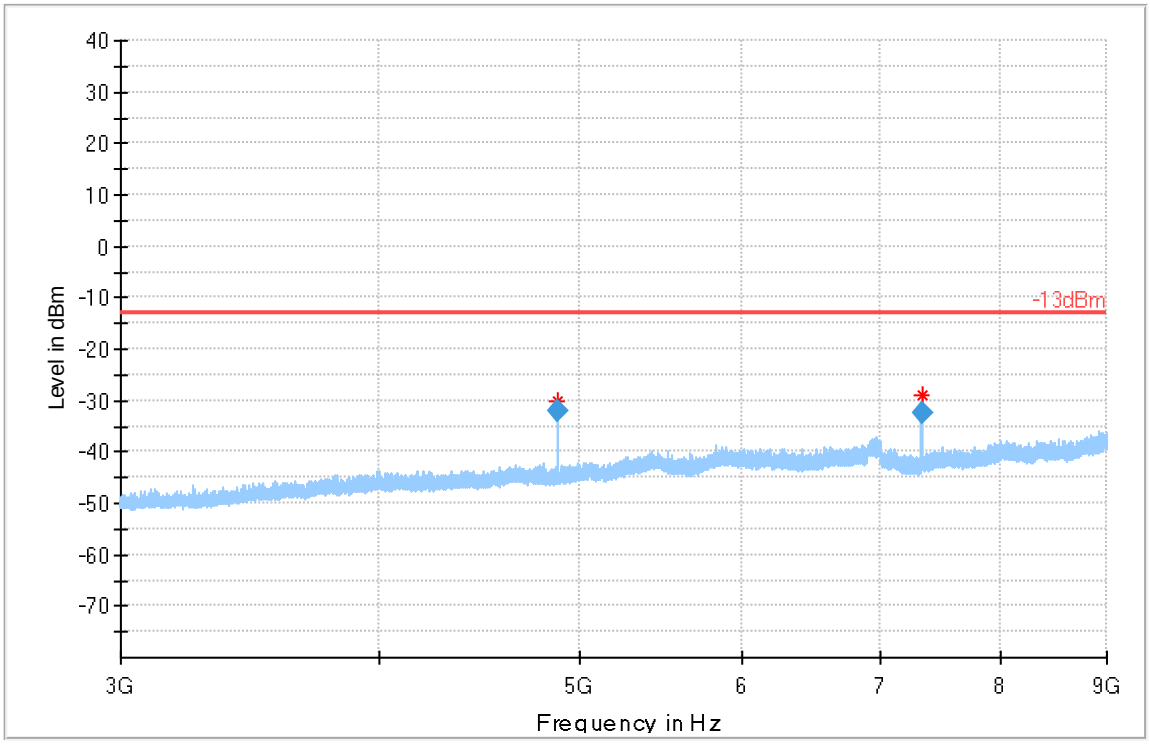


**Plot # 23 Radiated Emissions: 3 GHz – 9 GHz**

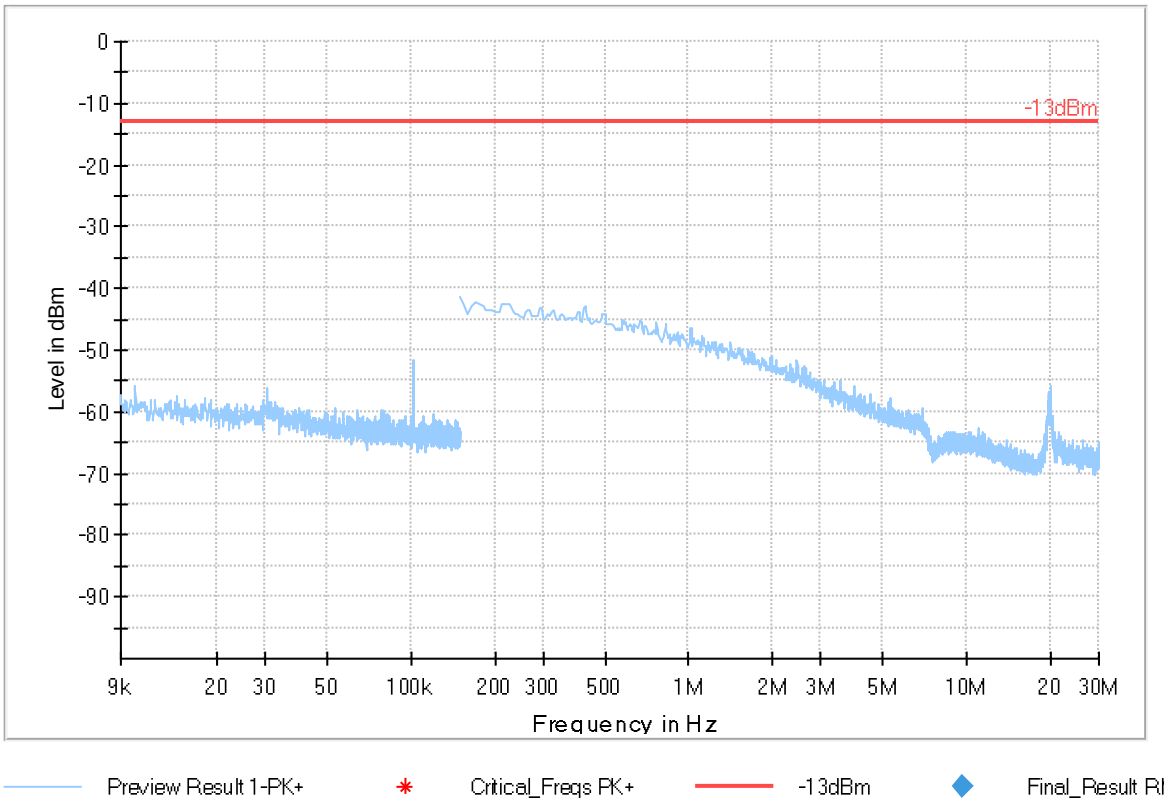
**Channel: Low**

## Final_Result

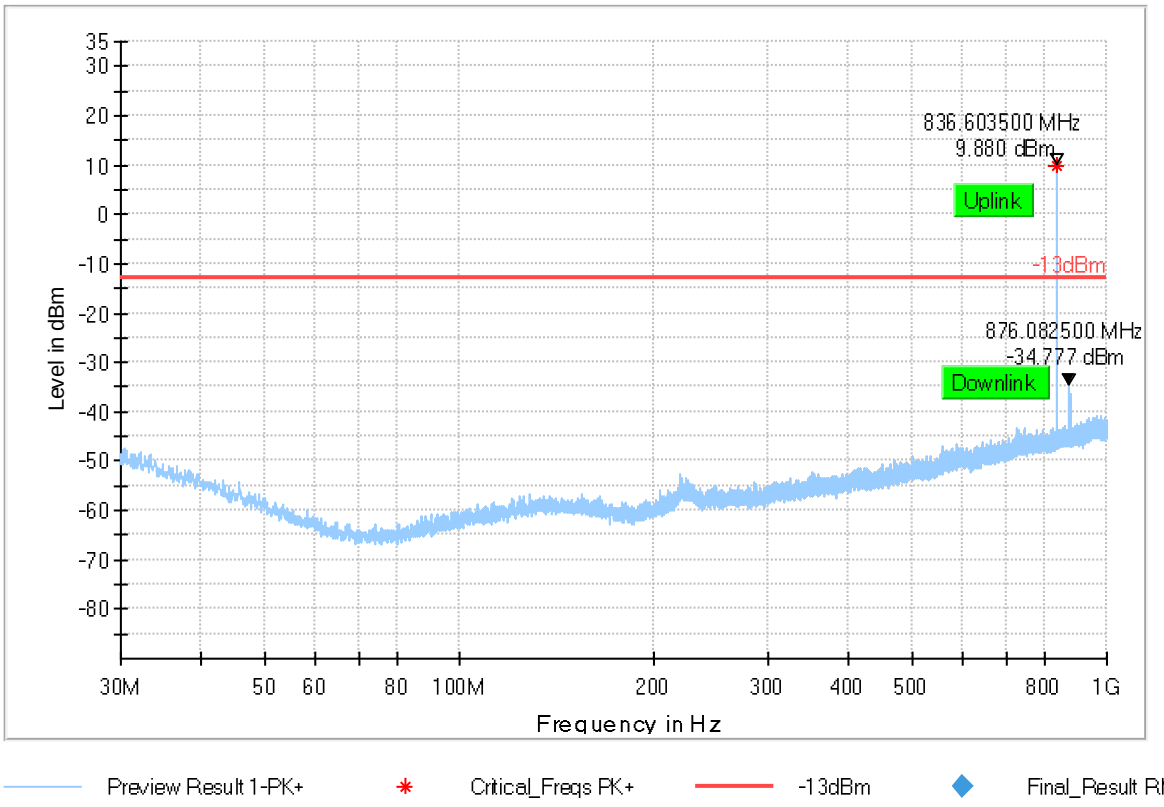
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.617 | -31.975 | -13.00 | 18.97 | 500.0 | 1000.000 | 141.0 | H | 130.0 | -100.9 | 2:31:11 PM - 10/24/2019 |
| 7320.753 | -32.348 | -13.00 | 19.35 | 500.0 | 1000.000 | 257.0 | H | 134.0 | -97.9 | 2:34:17 PM - 10/24/2019 |



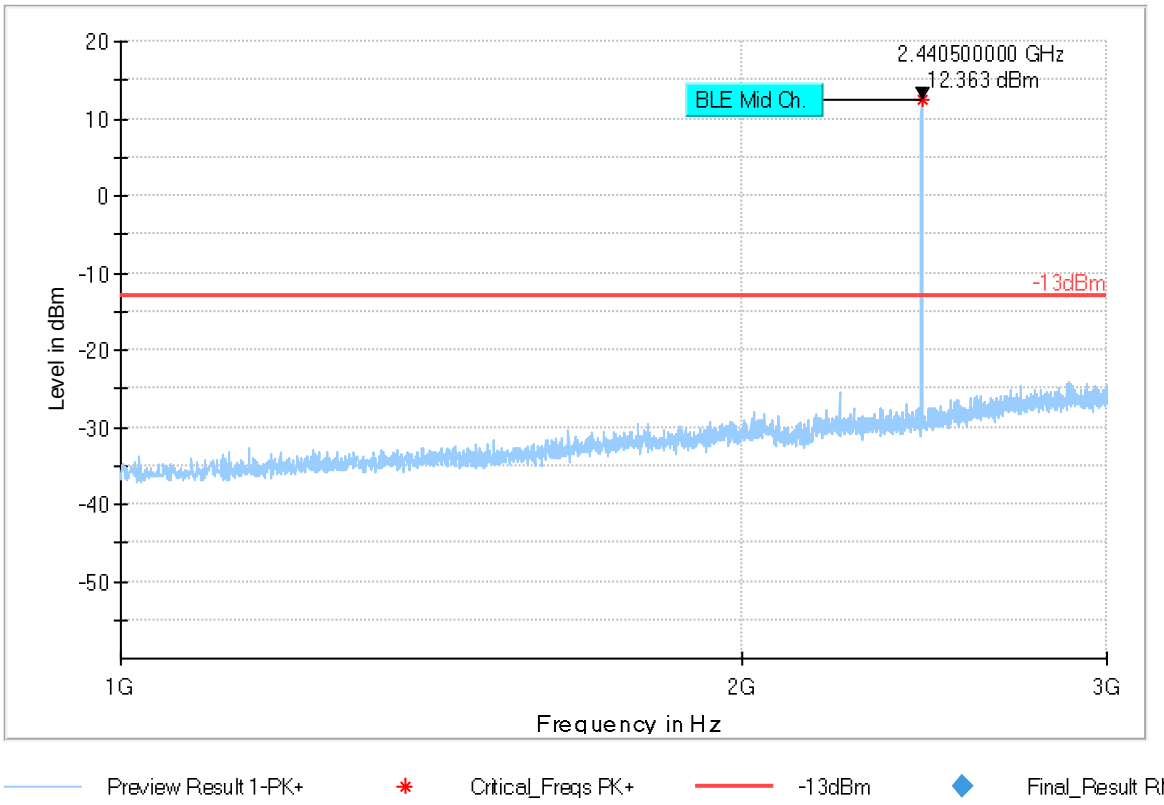
| Plot # 24 Radiated Emissions: 9 kHz – 30 MHz |
|---|
| Channel: Mid |



| Plot # 25 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



| Plot # 26 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: Mid |

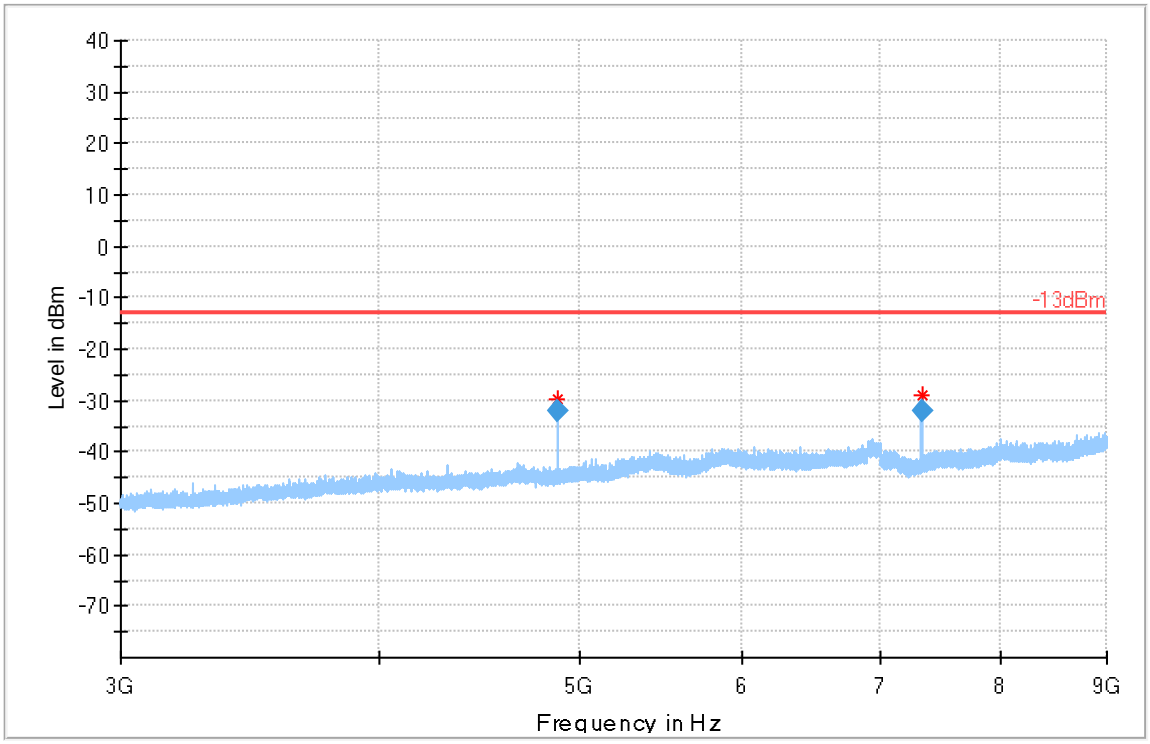


**Plot # 27 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: Mid**

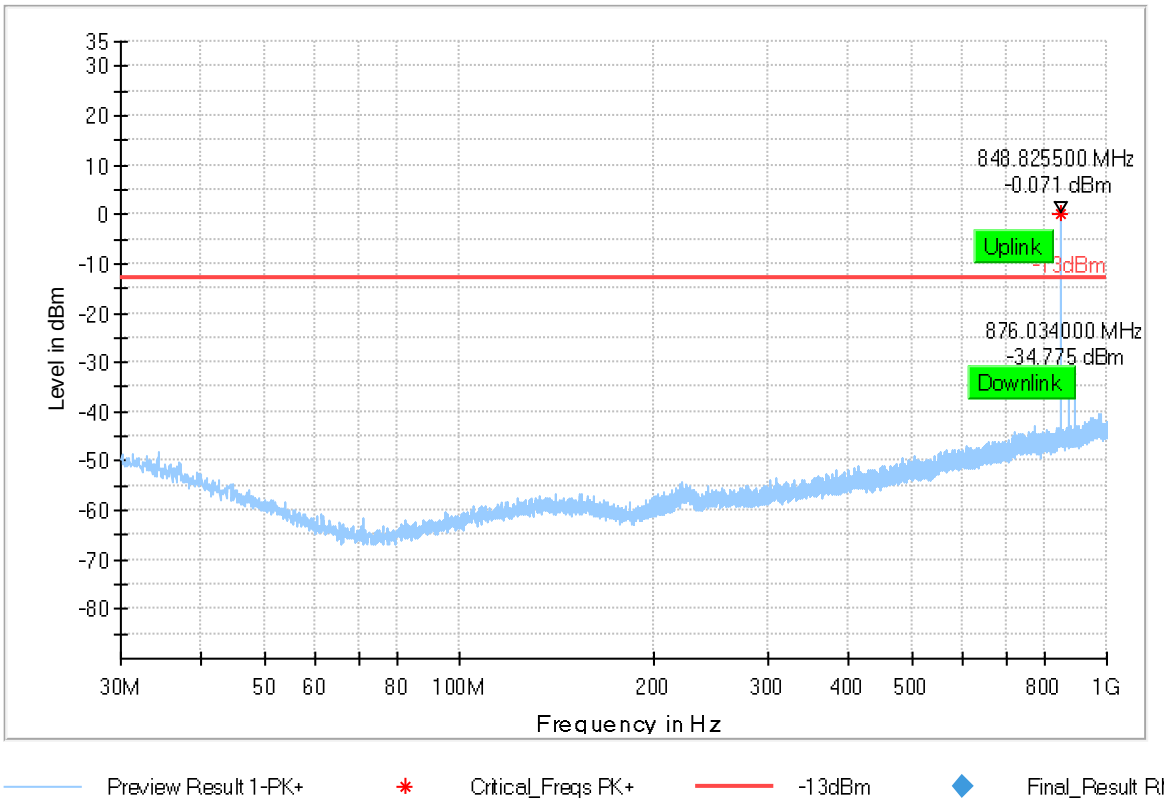
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.497 | -32.050 | -13.00 | 19.05 | 500.0 | 1000.000 | 116.0 | H | 128.0 | -100.9 | 2:17:31 PM - 10/24/2019 |
| 7320.837 | -32.271 | -13.00 | 19.27 | 500.0 | 1000.000 | 257.0 | H | 134.0 | -97.9 | 2:20:40 PM - 10/24/2019 |

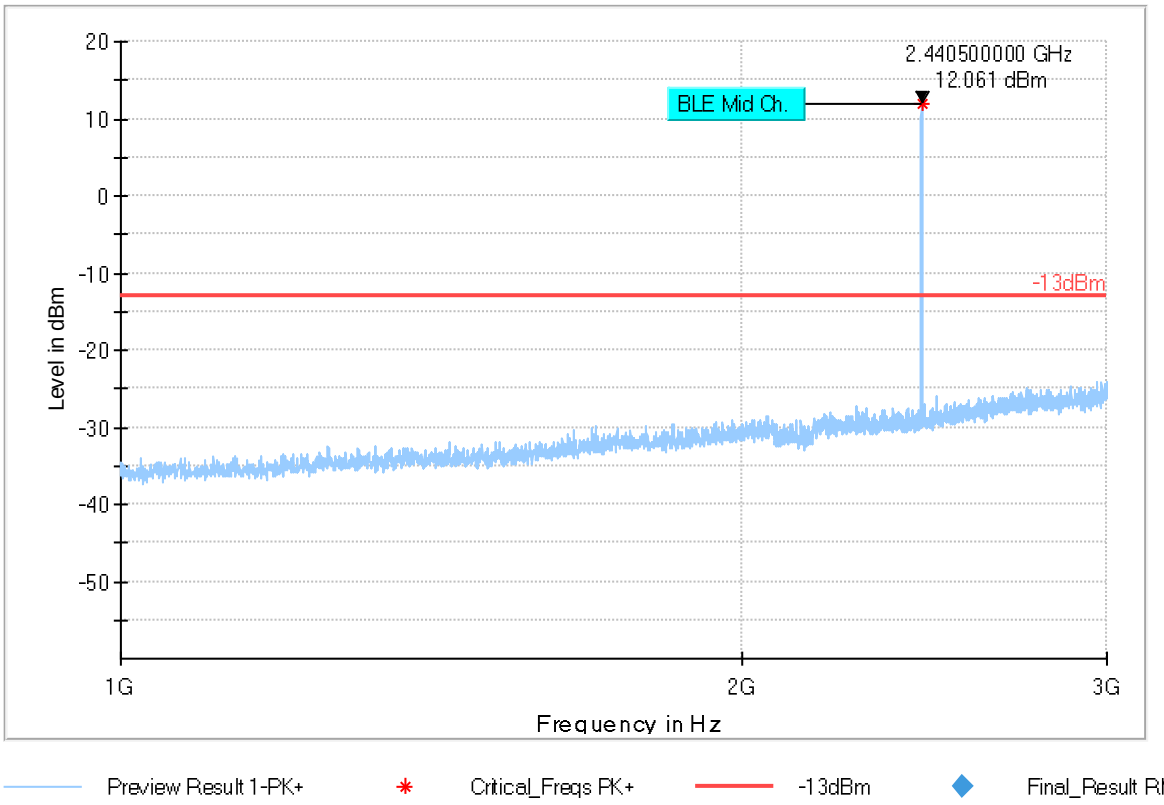


**Plot # 28 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: High**



| Plot # 29 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: High |

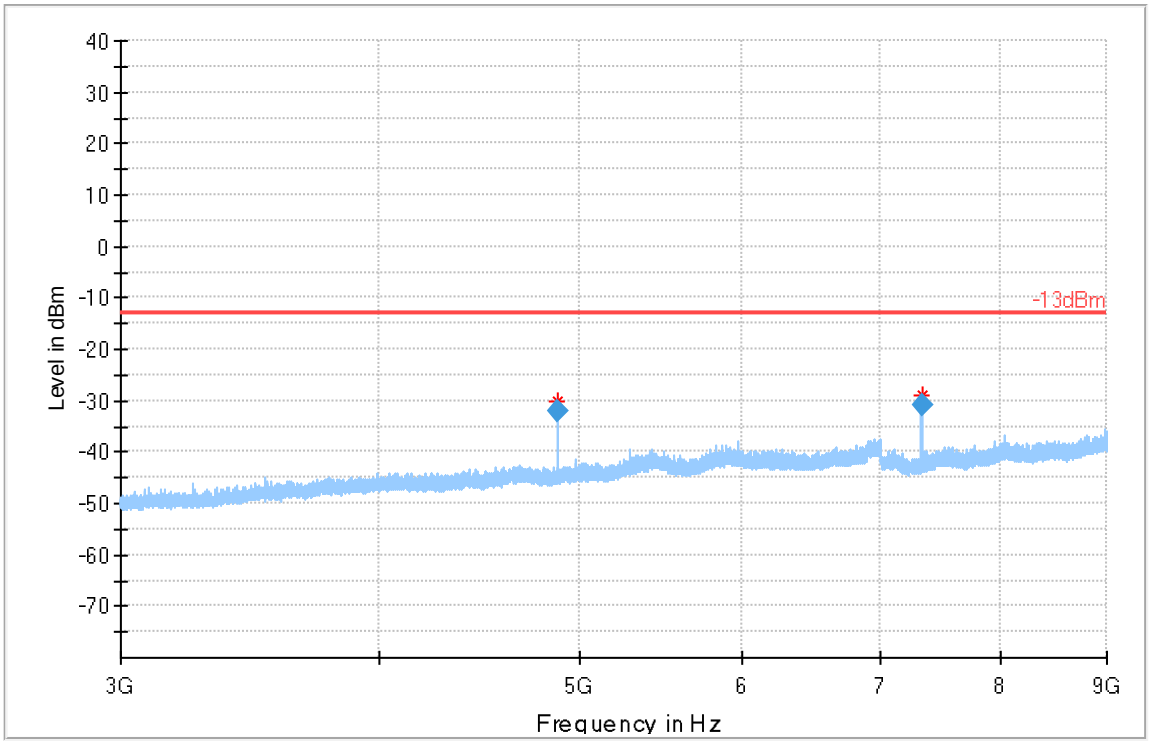


**Plot # 30 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: High**

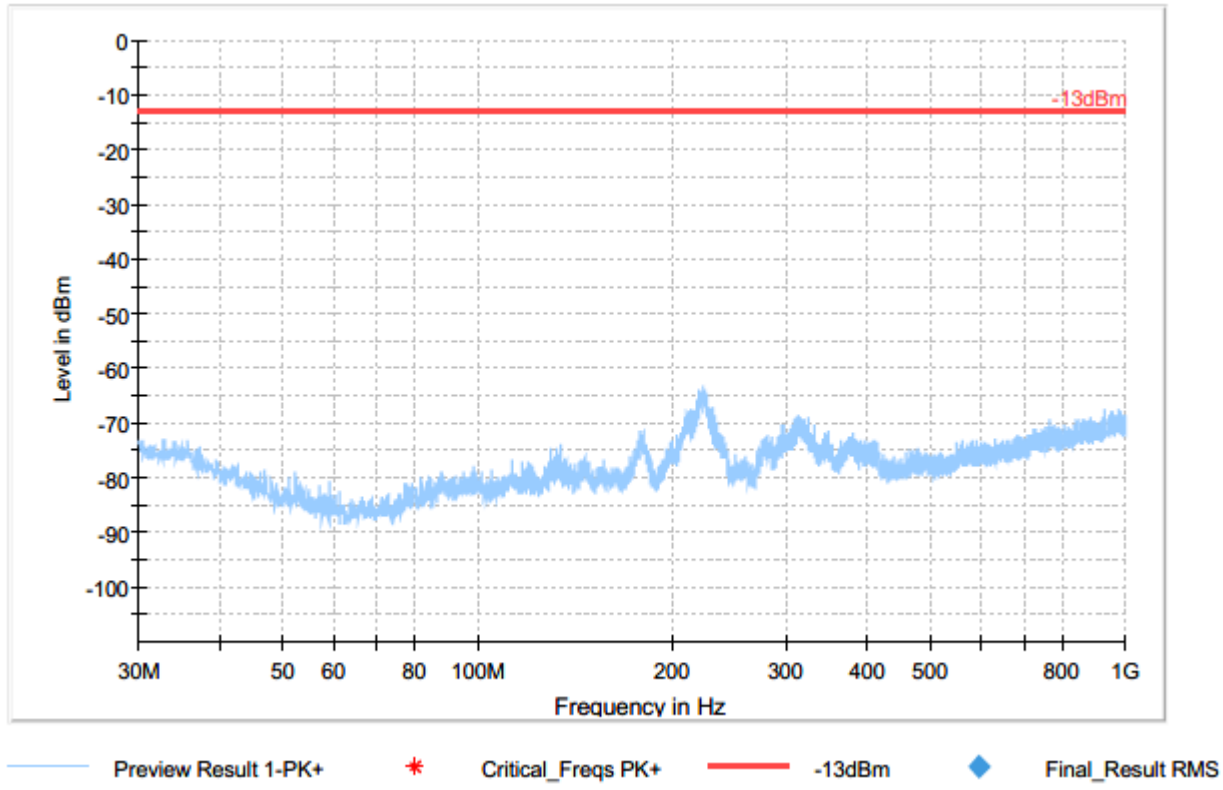
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.485 | -32.230 | -13.00 | 19.23 | 500.0 | 1000.000 | 117.0 | H | 127.0 | -100.9 | 2:45:54 PM - 10/24/2019 |
| 7320.701 | -30.878 | -13.00 | 17.88 | 500.0 | 1000.000 | 259.0 | H | 133.0 | -97.9 | 2:49:03 PM - 10/24/2019 |

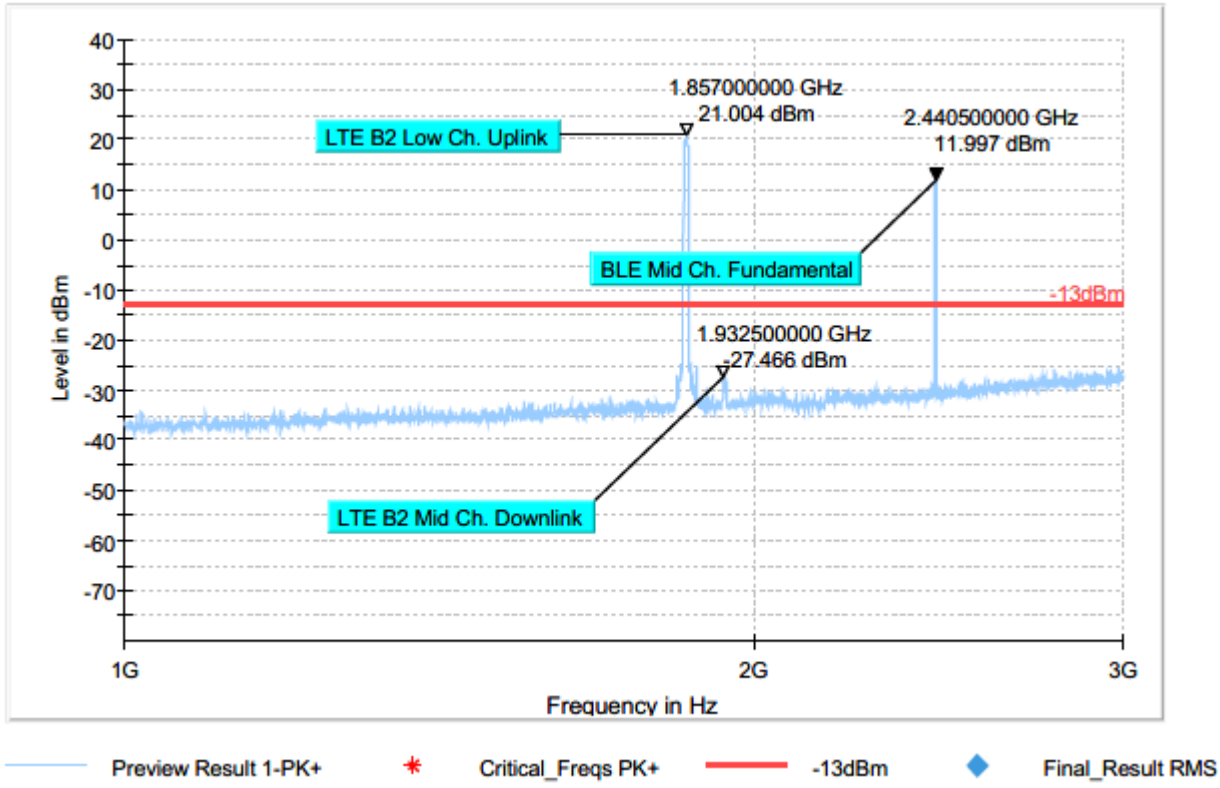


## LTE Band 2

| Plot # 31 Radiated Emissions: 30 MHz - 1 GHz |
|---|
| Channel: Low |



| Plot # 32 Radiated Emissions: 1 GHz - 3 GHz |
|---|
| Channel: Low |

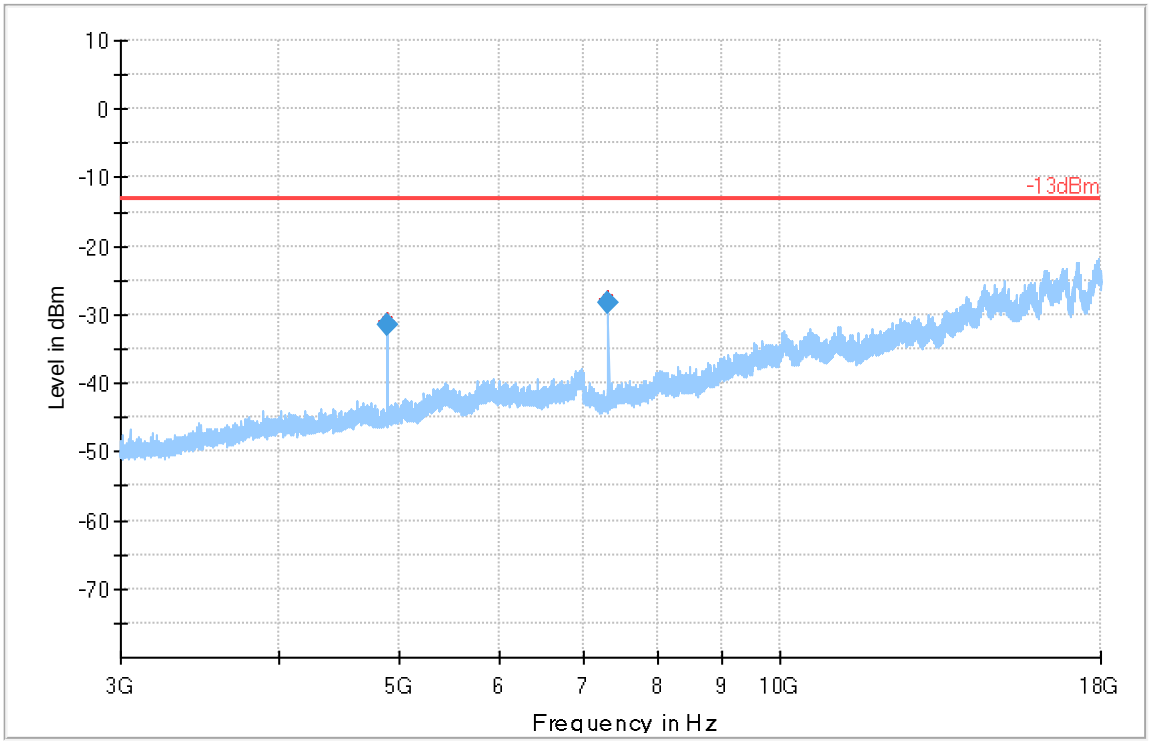


**Plot # 33 Radiated Emissions: 3 GHz - 18 GHz**

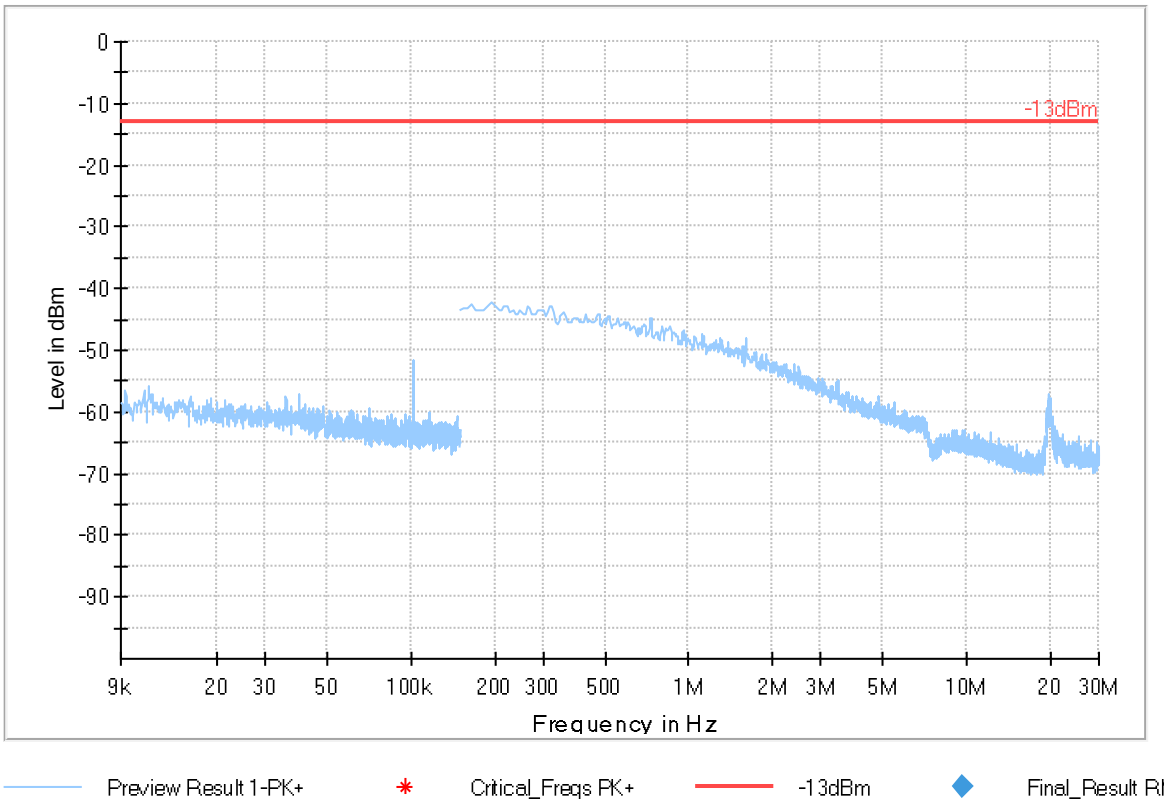
**Channel: Low**

## Final_Result

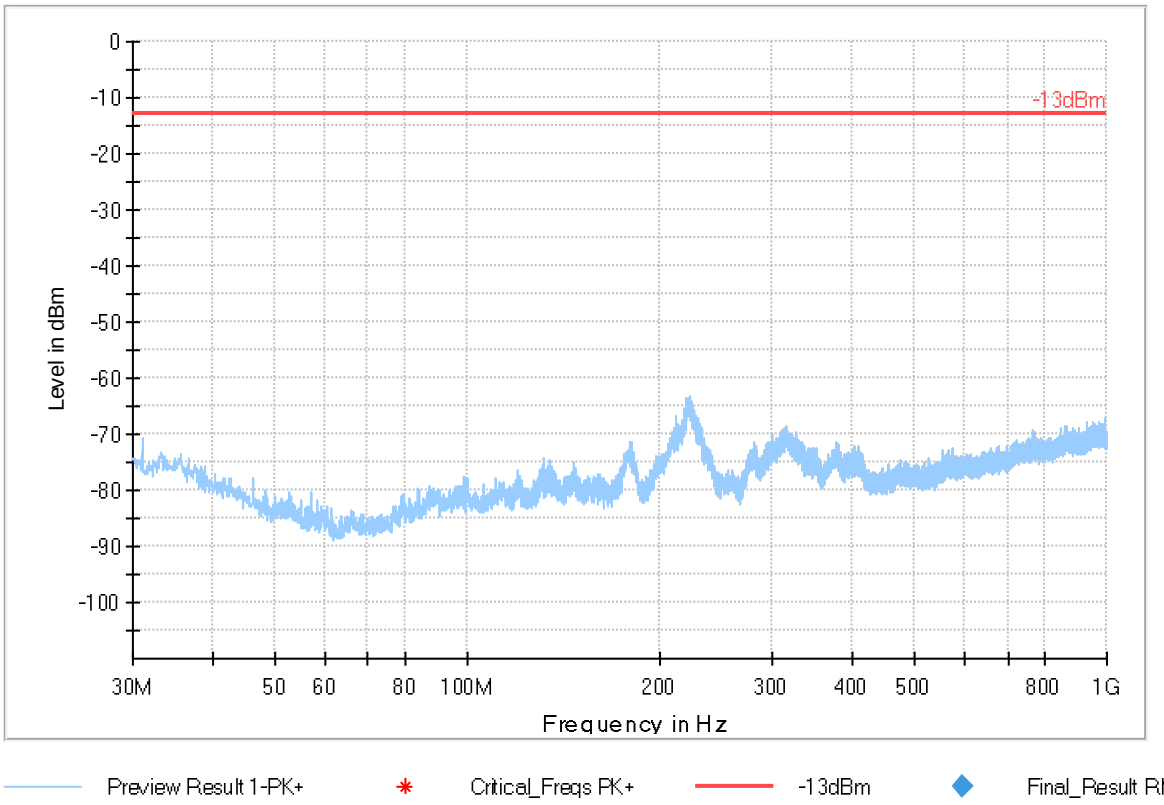
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.363 | -31.419 | -13.00 | 18.42 | 200.0 | 1000.000 | 121.0 | H | 177.0 | -100.9 | 4:50:57 PM - 10/23/2019 |
| 7320.718 | -28.364 | -13.00 | 15.36 | 200.0 | 1000.000 | 107.0 | H | 79.0 | -97.9 | 4:47:26 PM - 10/23/2019 |



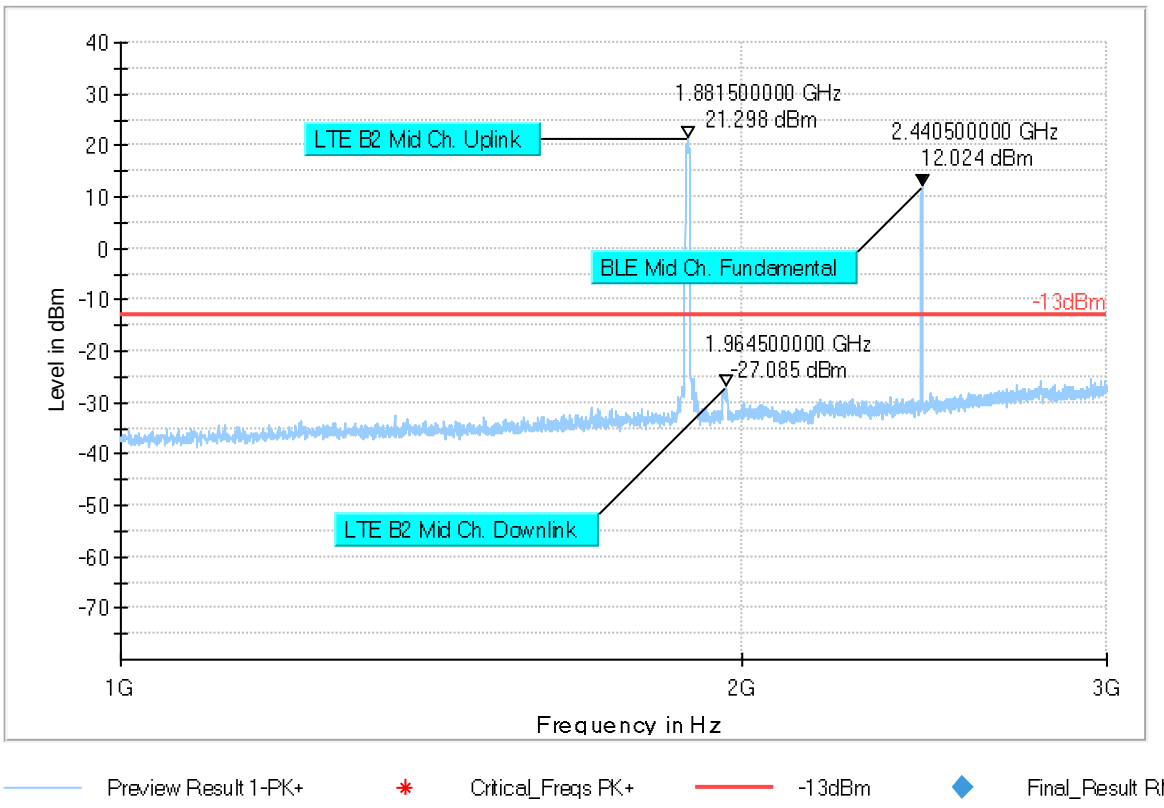
| Plot # 34 Radiated Emissions: 9 kHz - 30 MHz |
|---|
| Channel: Mid |



| Plot # 35 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



| Plot # 36 Radiated Emissions: 1 GHz - 3 GHz |
|---|
| Channel: Mid |

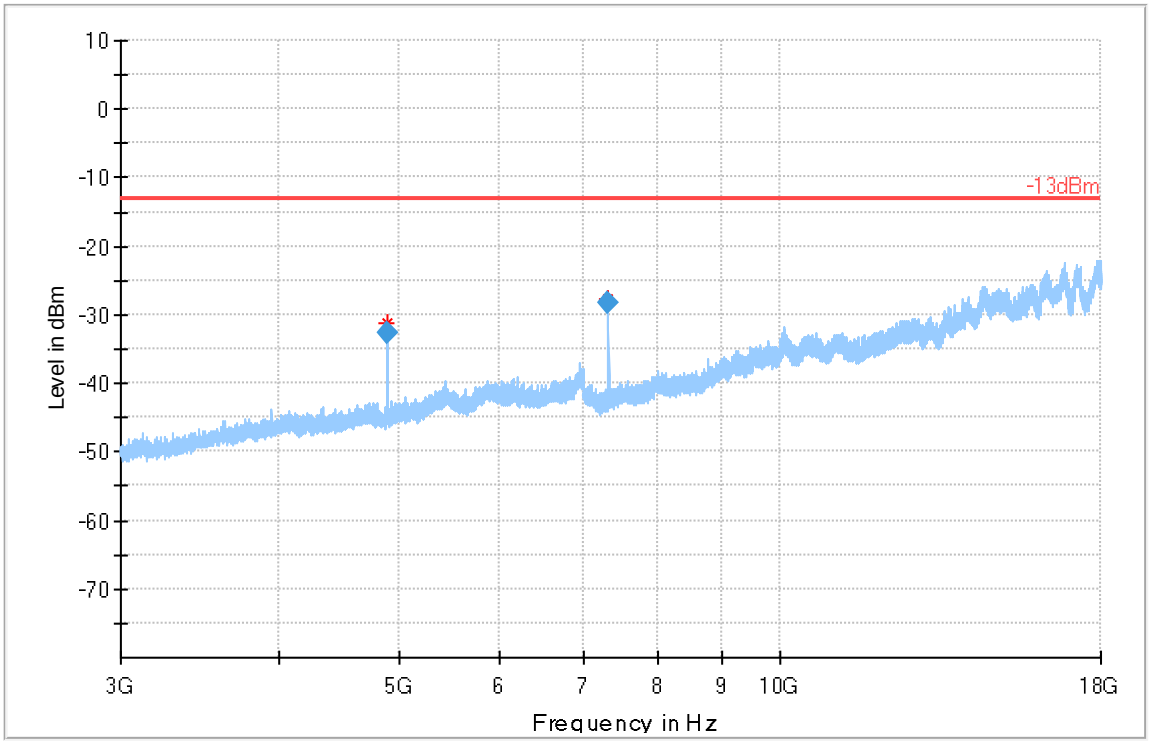


**Plot # 37 Radiated Emissions: 3 GHz – 18 GHz**

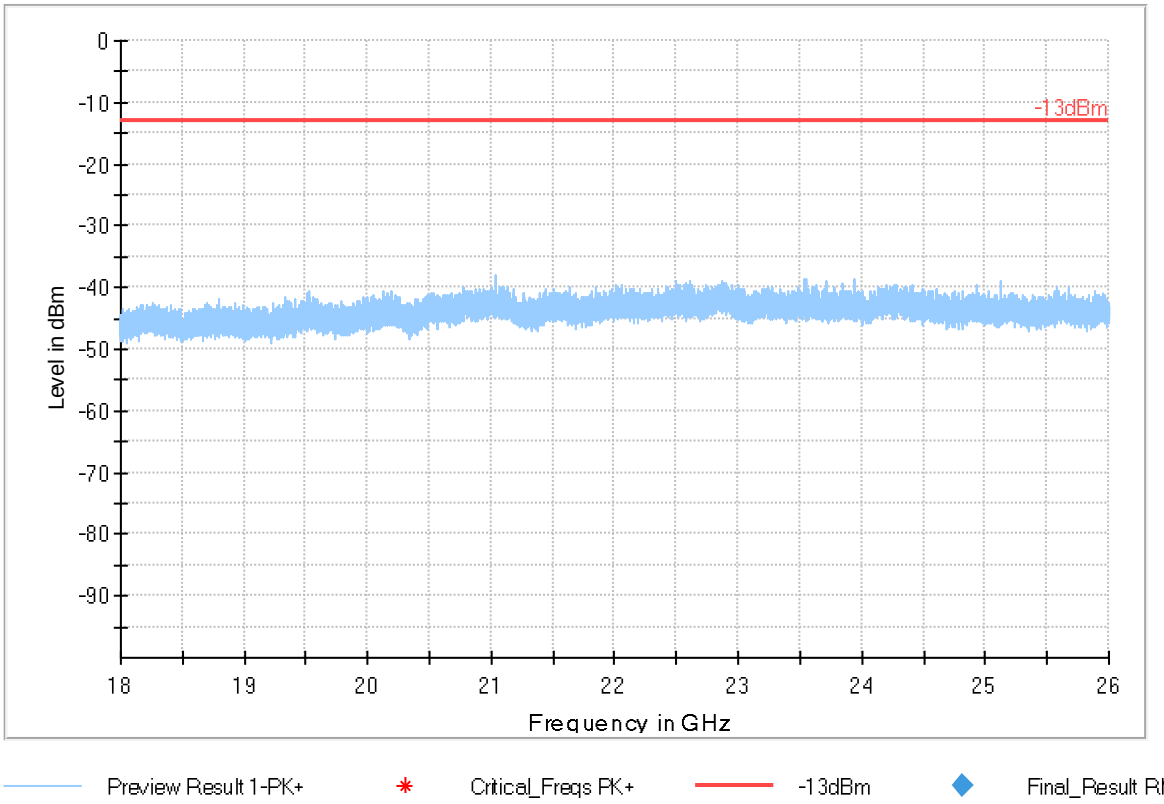
**Channel: Mid**

## Final_Result

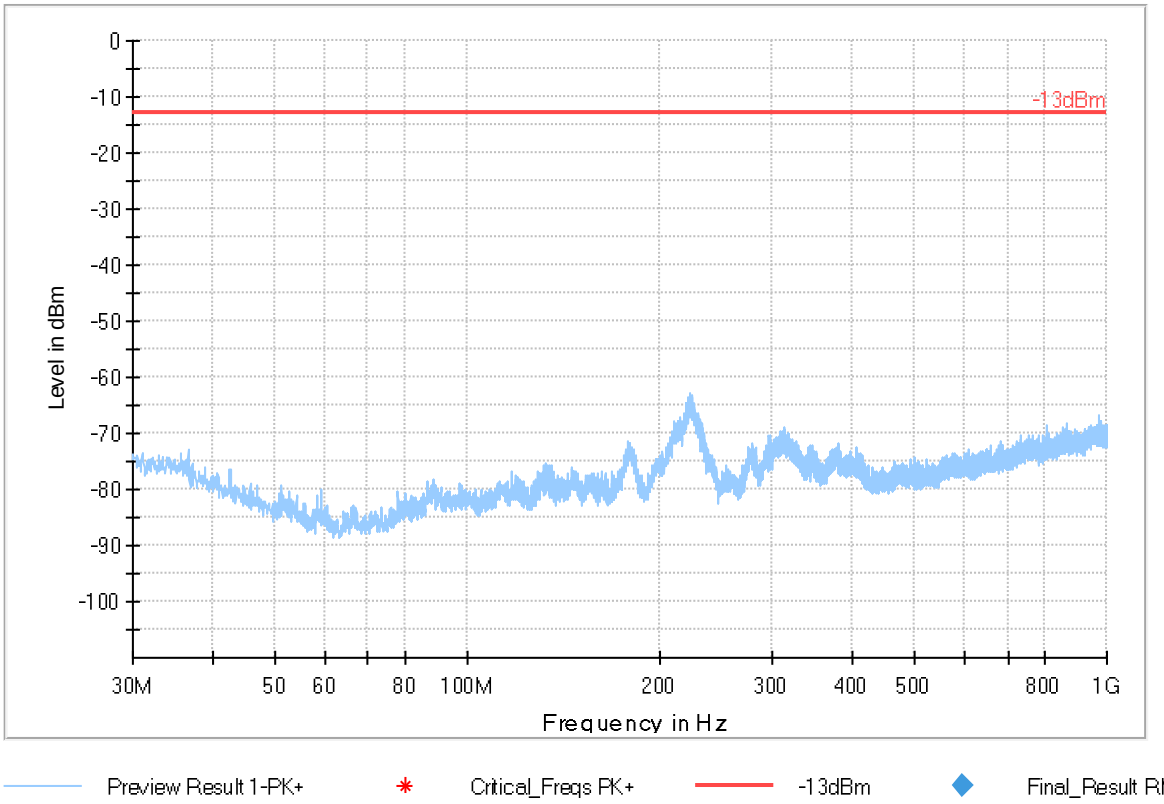
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.557 | -32.561 | -13.00 | 19.56 | 200.0 | 1000.000 | 117.0 | H | 178.0 | -100.9 | 4:35:03 PM - 10/23/2019 |
| 7320.775 | -28.298 | -13.00 | 15.30 | 200.0 | 1000.000 | 133.0 | H | 79.0 | -97.9 | 4:31:34 PM - 10/23/2019 |



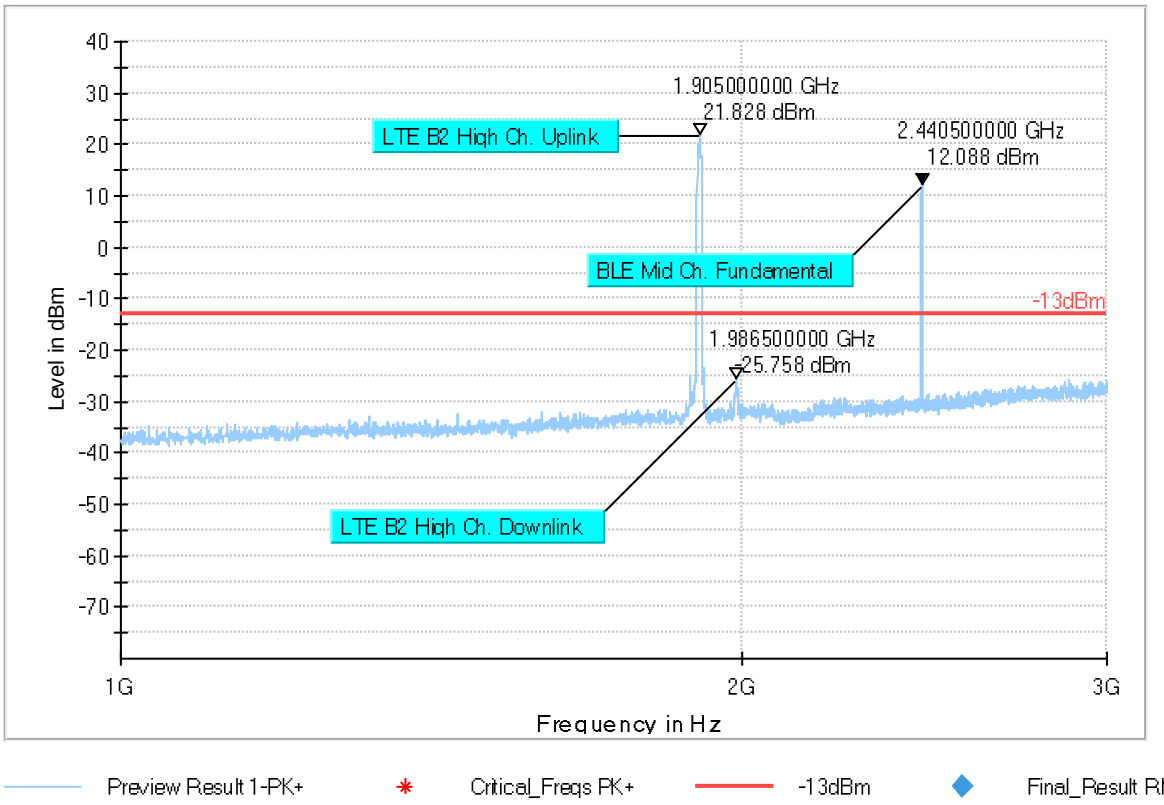
| Plot # 38 Radiated Emissions: 18 GHz – 26 GHz |
|---|
| Channel: Mid |



| Plot # 39 Radiated Emissions: 30 MHz - 1 GHz |
|---|
| Channel: High |



| Plot # 40 Radiated Emissions: 1 GHz - 3 GHz |
|---|
| Channel: High |

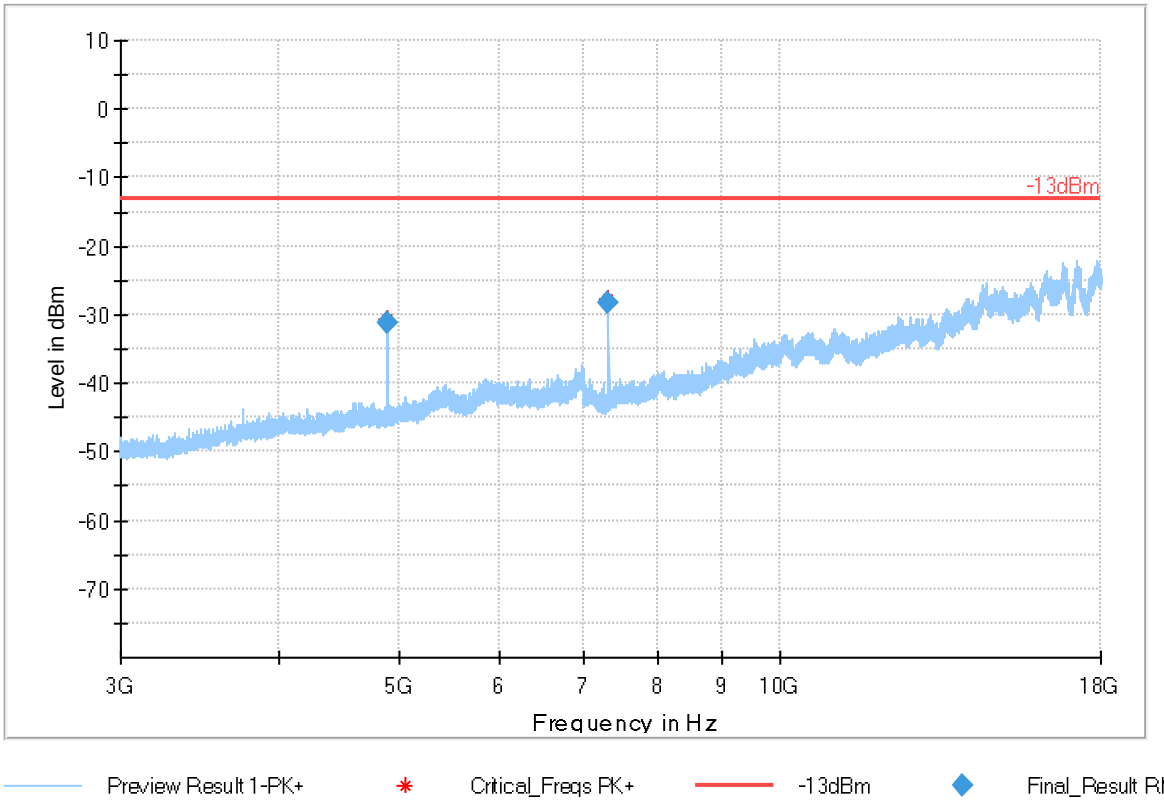


**Plot # 41 Radiated Emissions: 3 GHz - 18 GHz**

**Channel: High**

## Final_Result

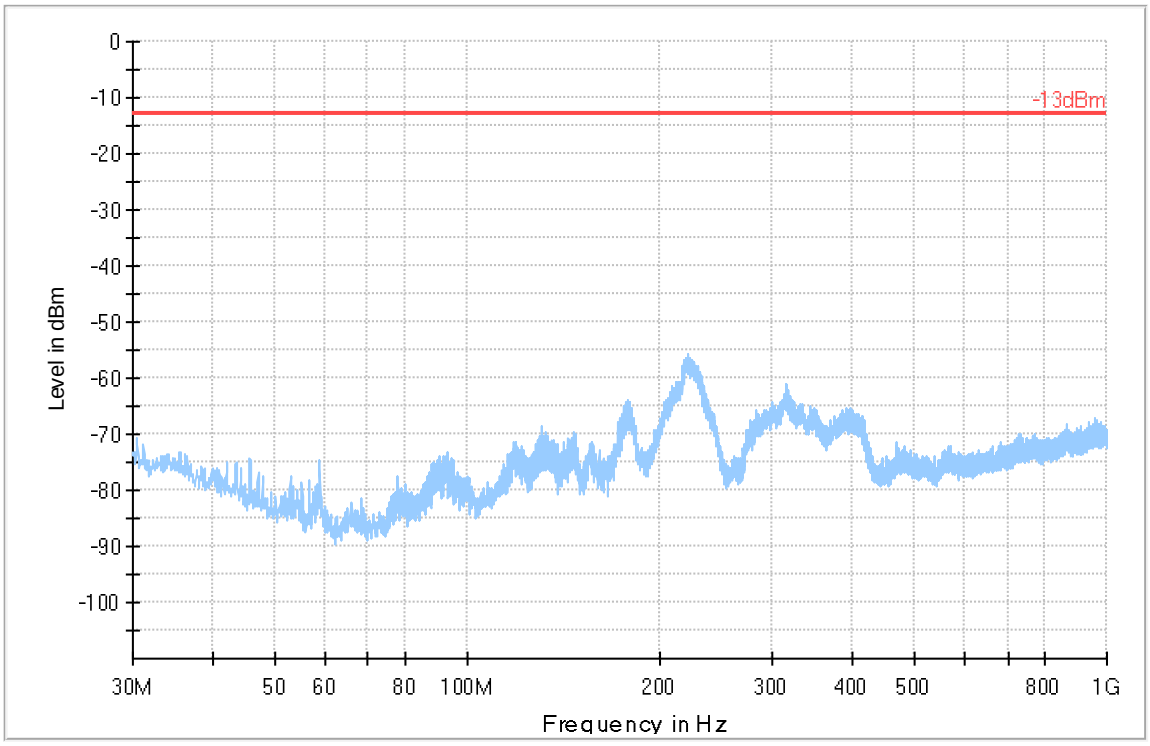
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.476 | -31.320 | -13.00 | 18.32 | 200.0 | 1000.000 | 121.0 | H | 176.0 | -100.9 | 5:06:33 PM - 10/23/2019 |
| 7320.739 | -28.266 | -13.00 | 15.27 | 200.0 | 1000.000 | 133.0 | H | 79.0 | -97.9 | 5:03:05 PM - 10/23/2019 |



## UMTS II

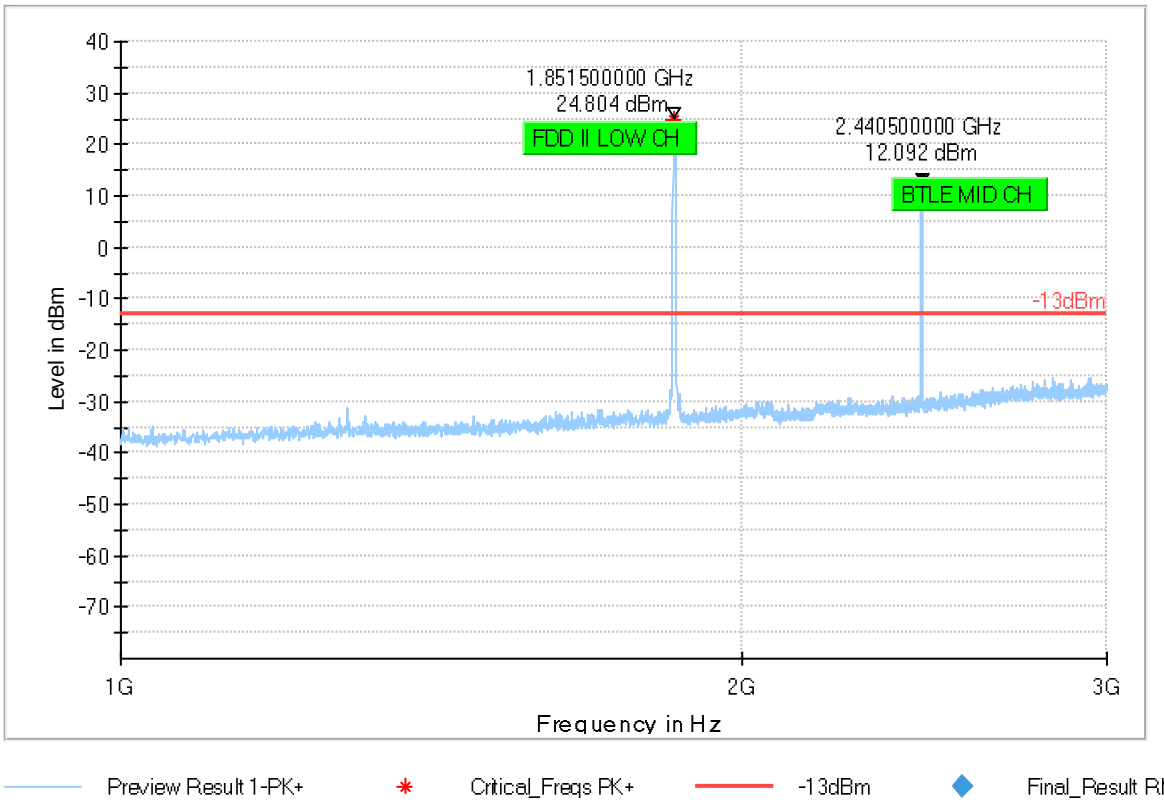
**Plot # 42 Radiated Emissions: 30 MHz - 1 GHz**

**Channel: Low**



**Plot # 43 Radiated Emissions: 1 GHz - 3 GHz**

**Channel: Low**

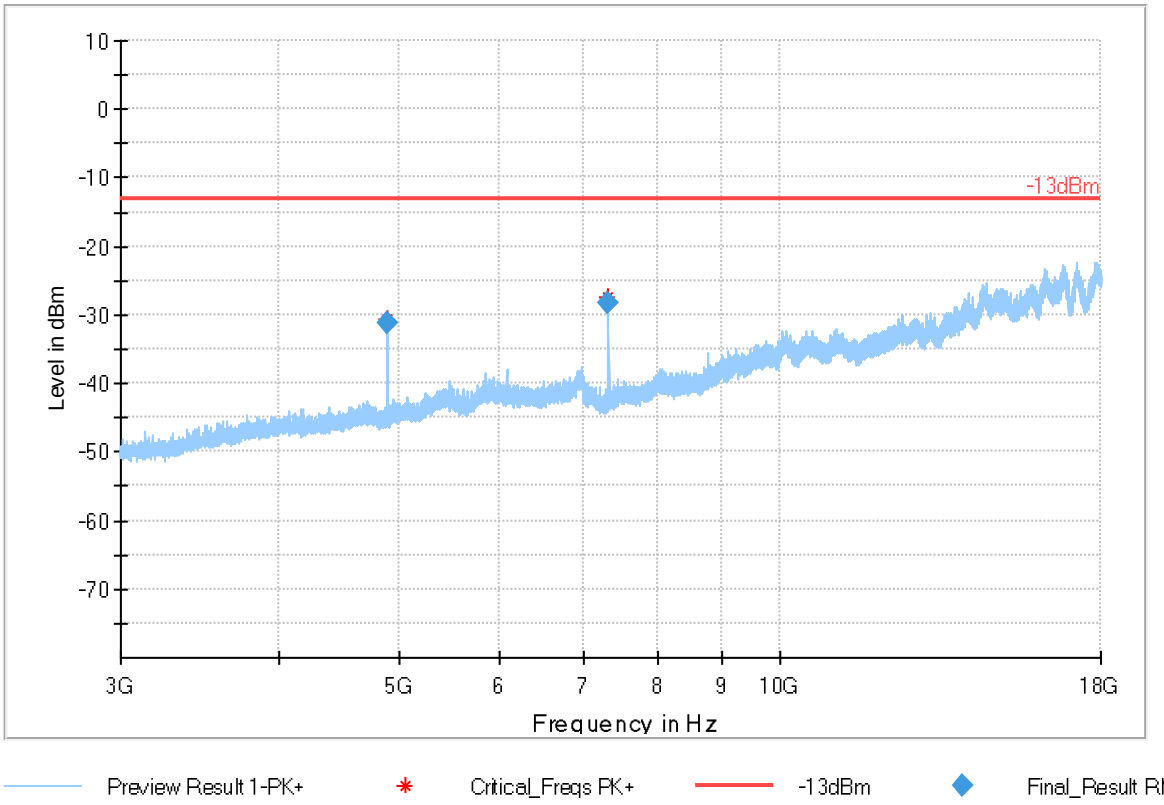


**Plot # 44 Radiated Emissions: 3 GHz - 18 GHz**

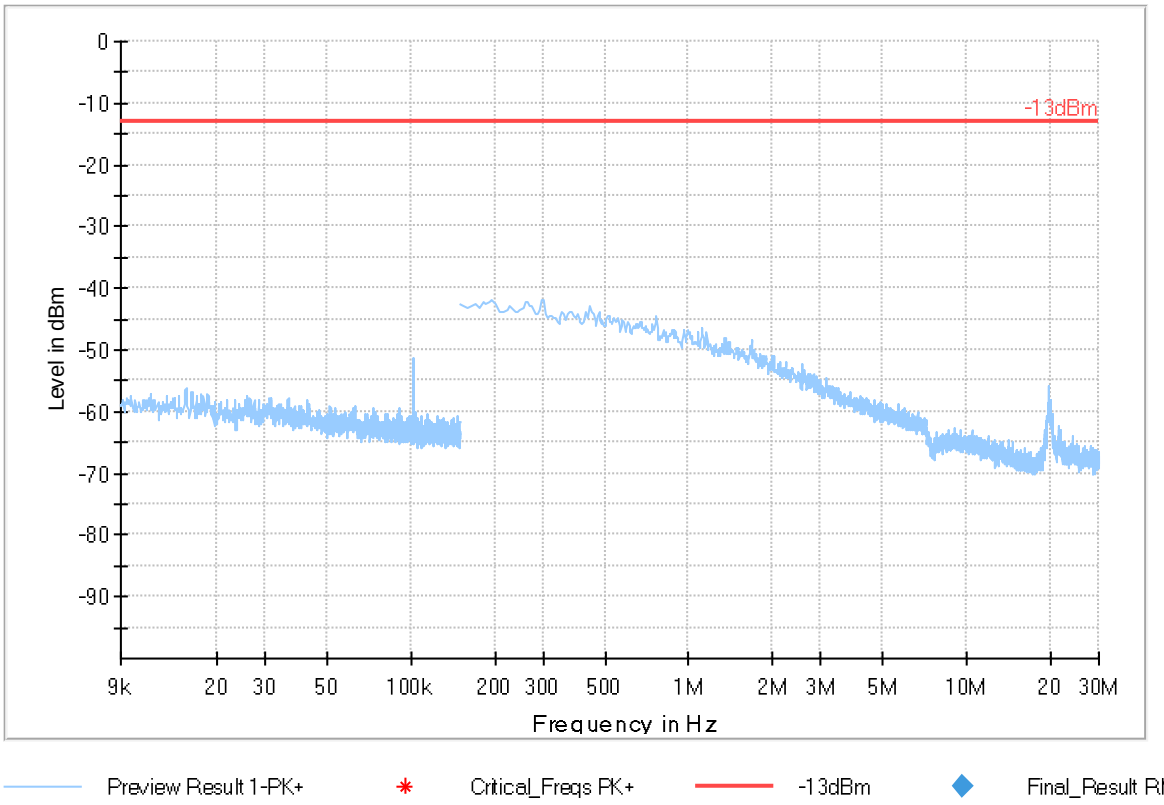
**Channel: Low**

## Final_Result

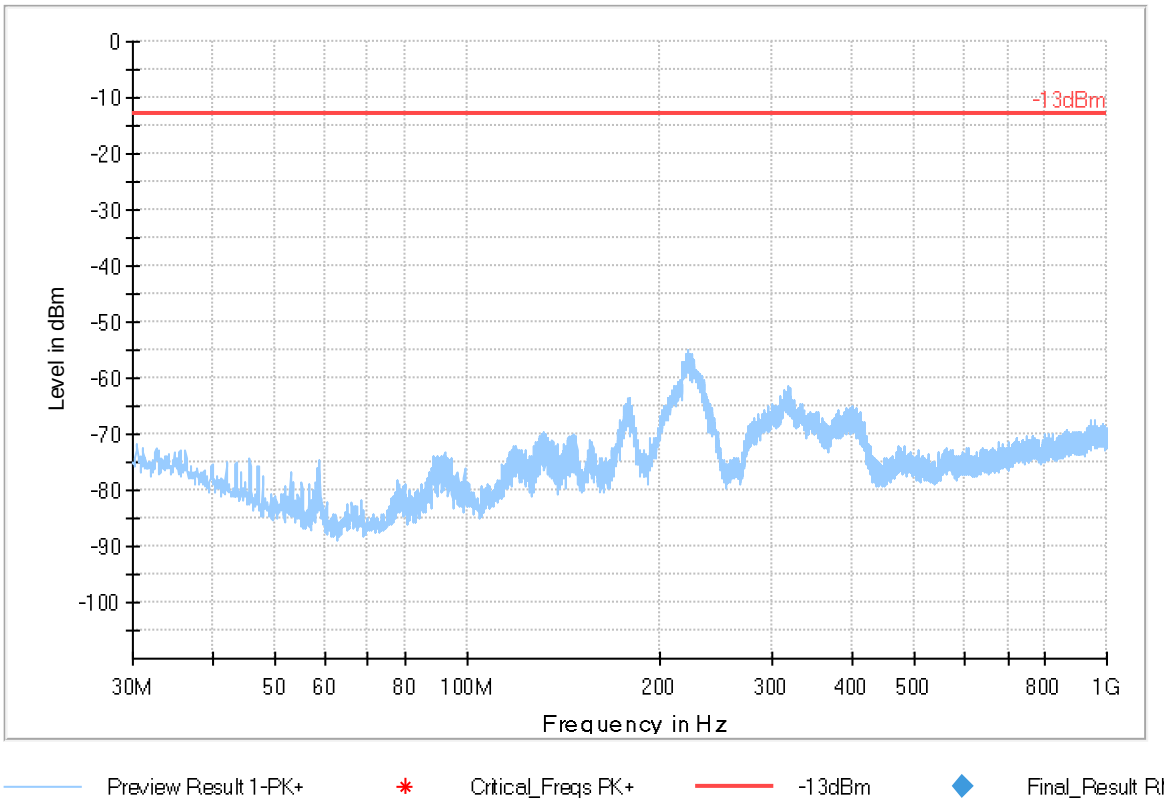
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.545 | -31.228 | -13.00 | 18.23 | 200.0 | 1000.000 | 121.0 | H | 176.0 | -100.9 | 7:49:38 PM - 10/23/2019 |
| 7320.685 | -28.216 | -13.00 | 15.22 | 200.0 | 1000.000 | 133.0 | H | 79.0 | -97.9 | 7:46:07 PM - 10/23/2019 |



| Plot # 45 Radiated Emissions: 9 kHz - 30 MHz |
|---|
| Channel: Mid |

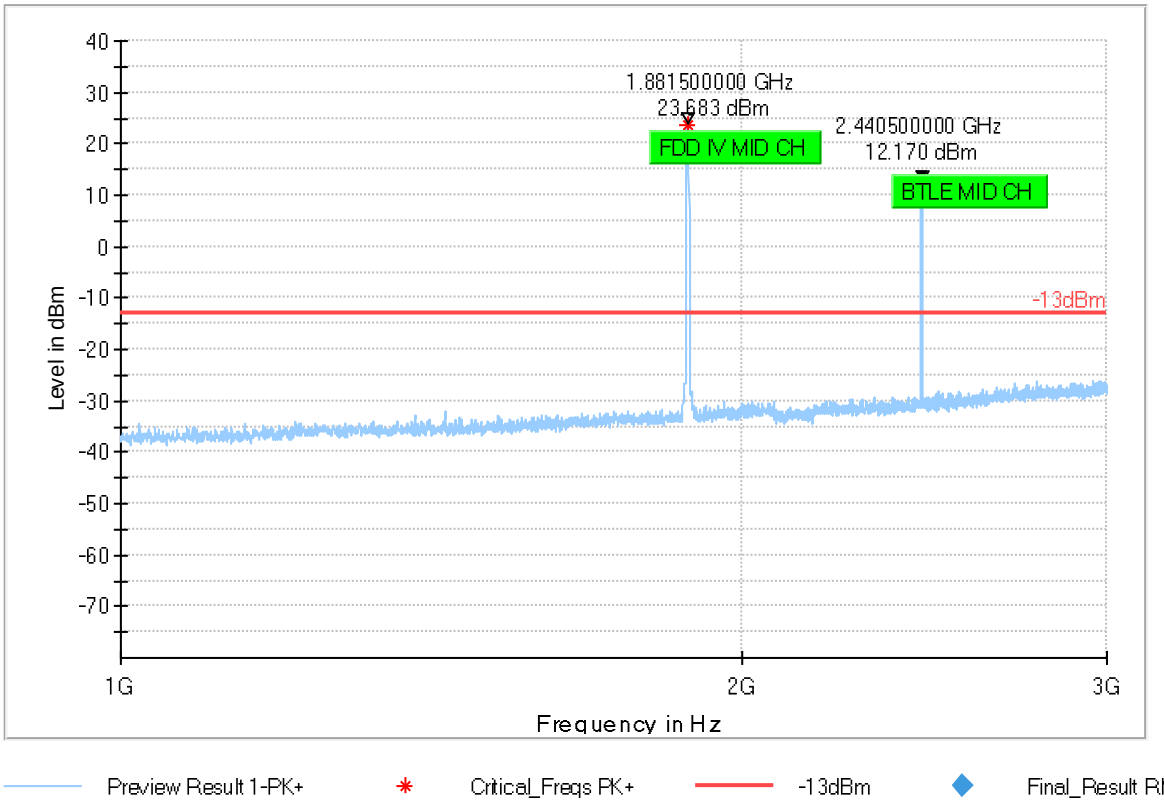


| Plot # 46 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



**Plot # 47 Radiated Emissions: 1 GHz - 3 GHz**

**Channel: Mid**

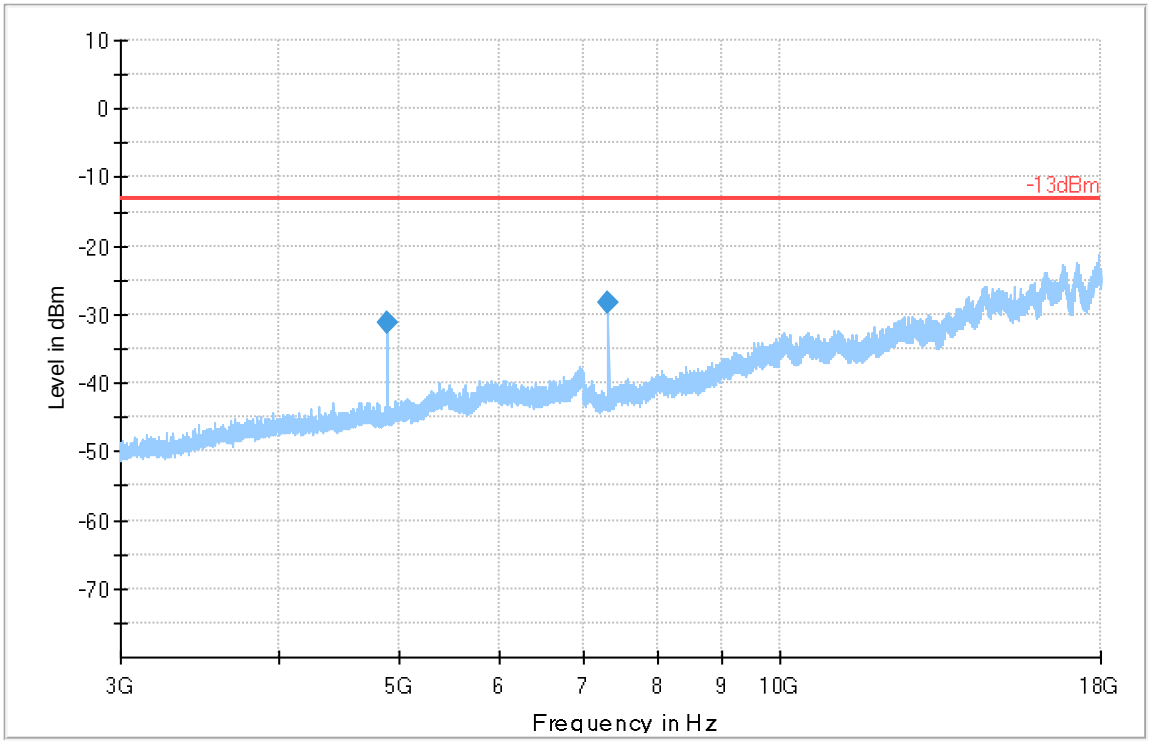


**Plot # 48 Radiated Emissions: 3 GHz – 18 GHz**

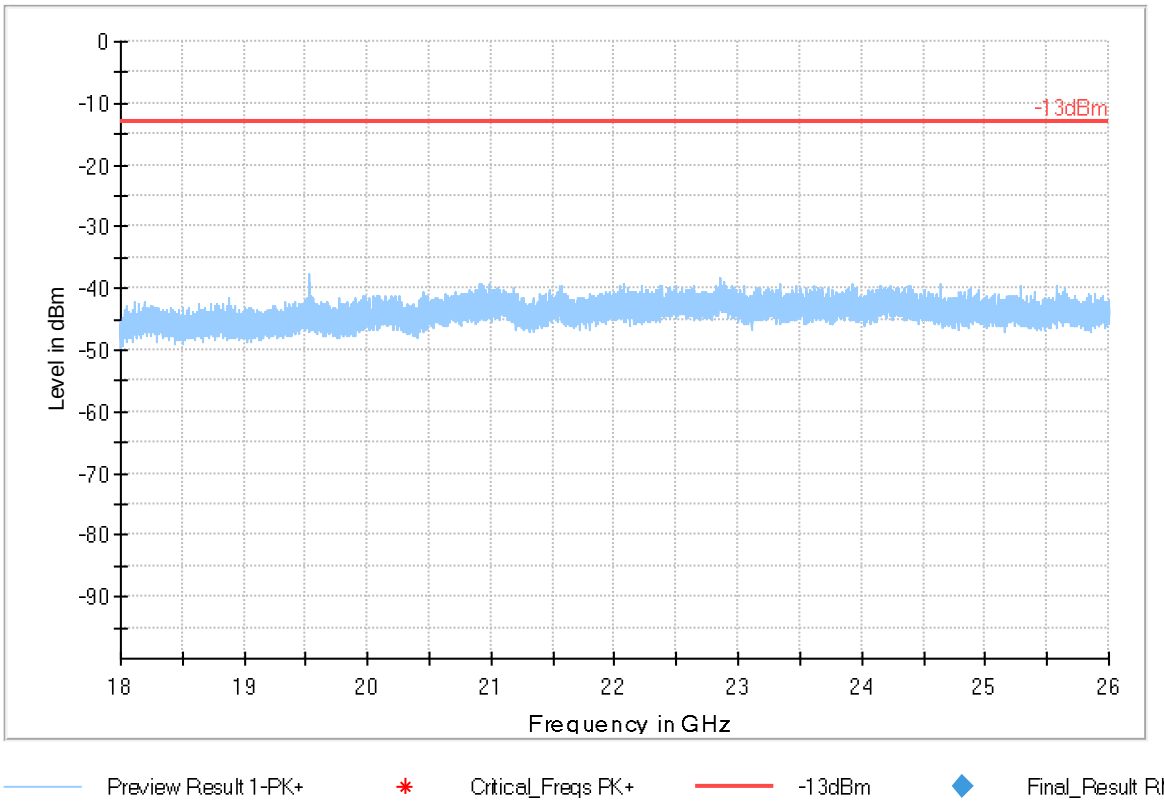
**Channel: Mid**

## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.596 | -31.154 | -13.00 | 18.15 | 200.0 | 1000.000 | 121.0 | H | 178.0 | -100.9 | 7:33:19 PM - 10/23/2019 |
| 7320.735 | -28.231 | -13.00 | 15.23 | 200.0 | 1000.000 | 107.0 | H | 77.0 | -97.9 | 7:29:45 PM - 10/23/2019 |

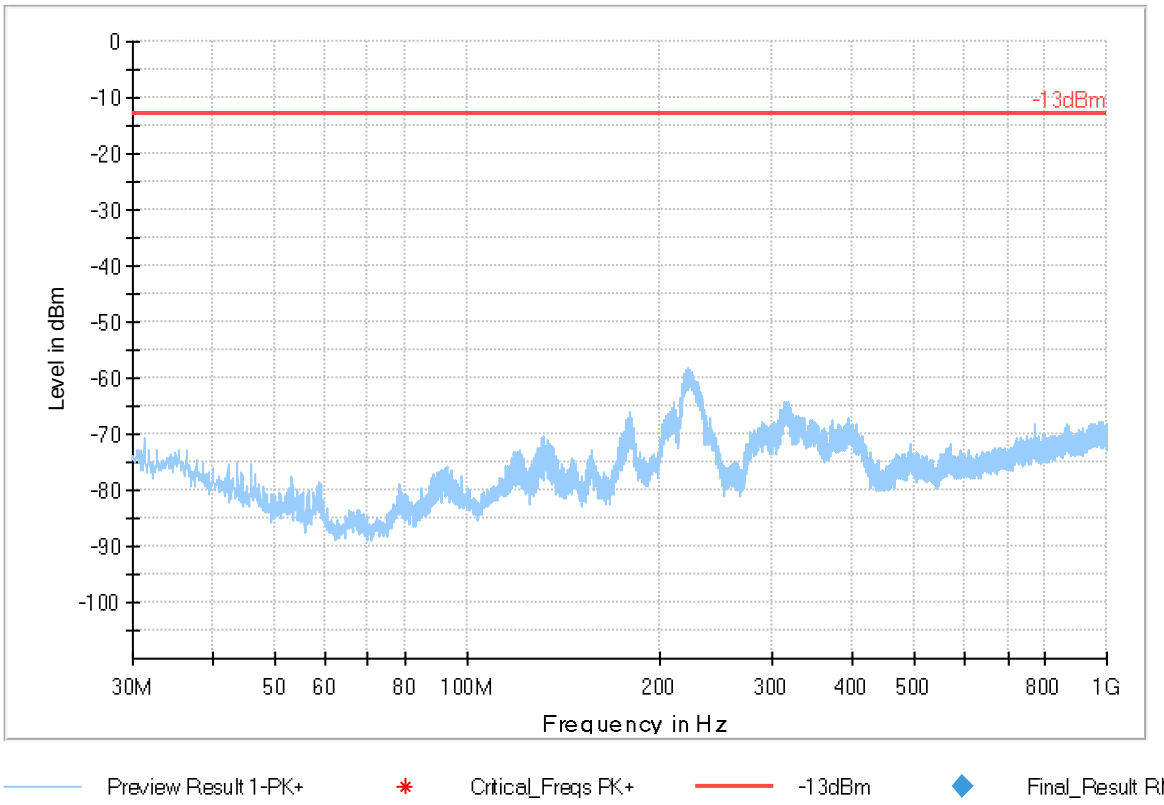


| Plot # 49 Radiated Emissions: 18 GHz – 26 GHz |
|---|
| Channel: Mid |

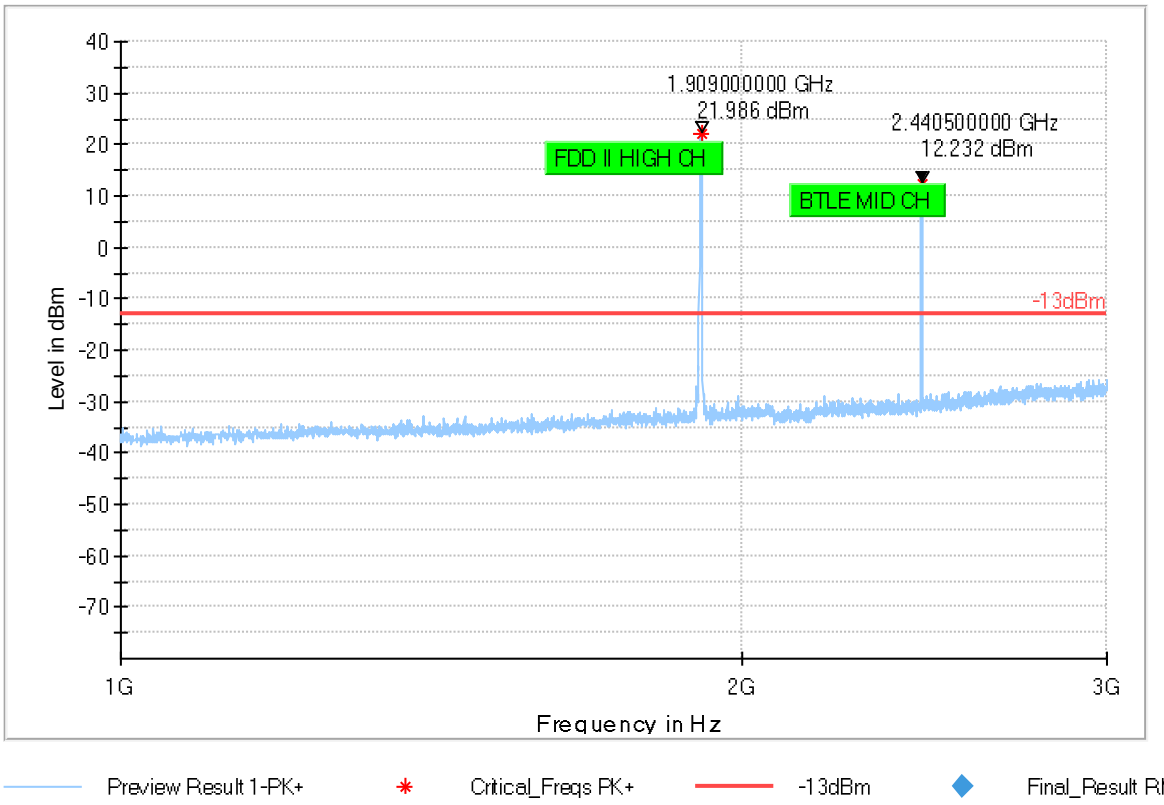


**Plot # 50 Radiated Emissions: 30 MHz - 1 GHz**

**Channel: High**



| Plot # 51 Radiated Emissions: 1 GHz - 3 GHz |
|---|
| Channel: High |

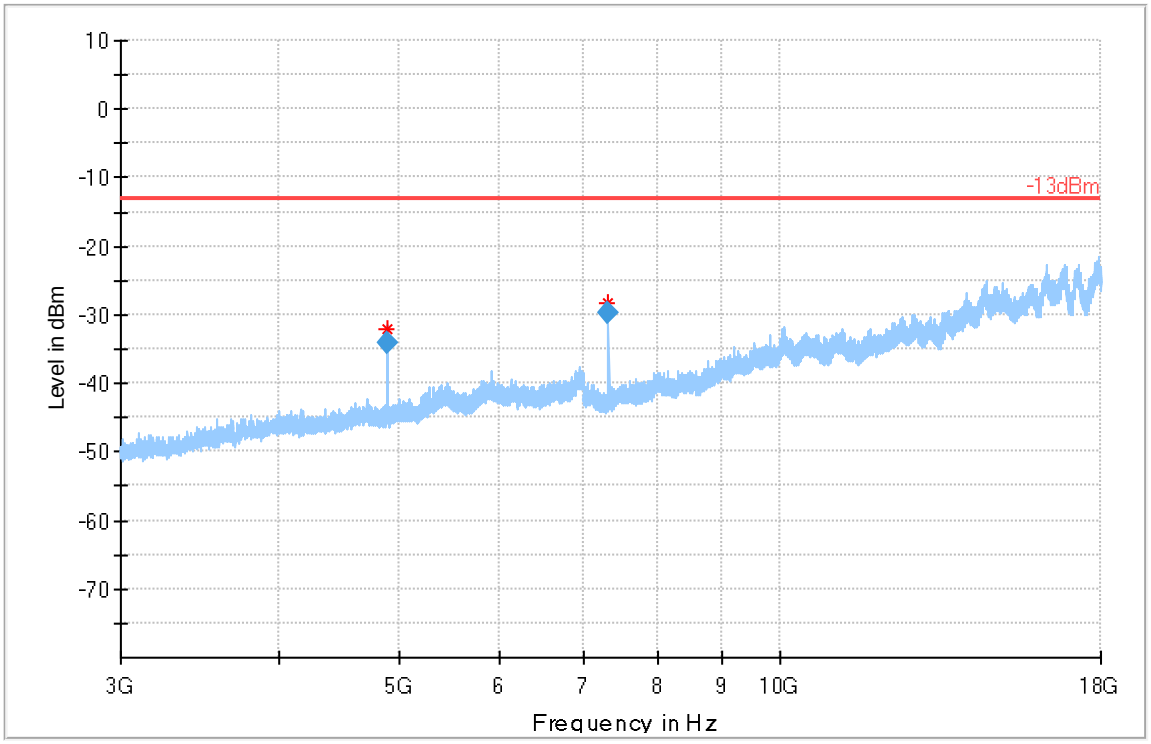


**Plot # 52 Radiated Emissions: 3 GHz - 18 GHz**

**Channel: High**

## Final_Result

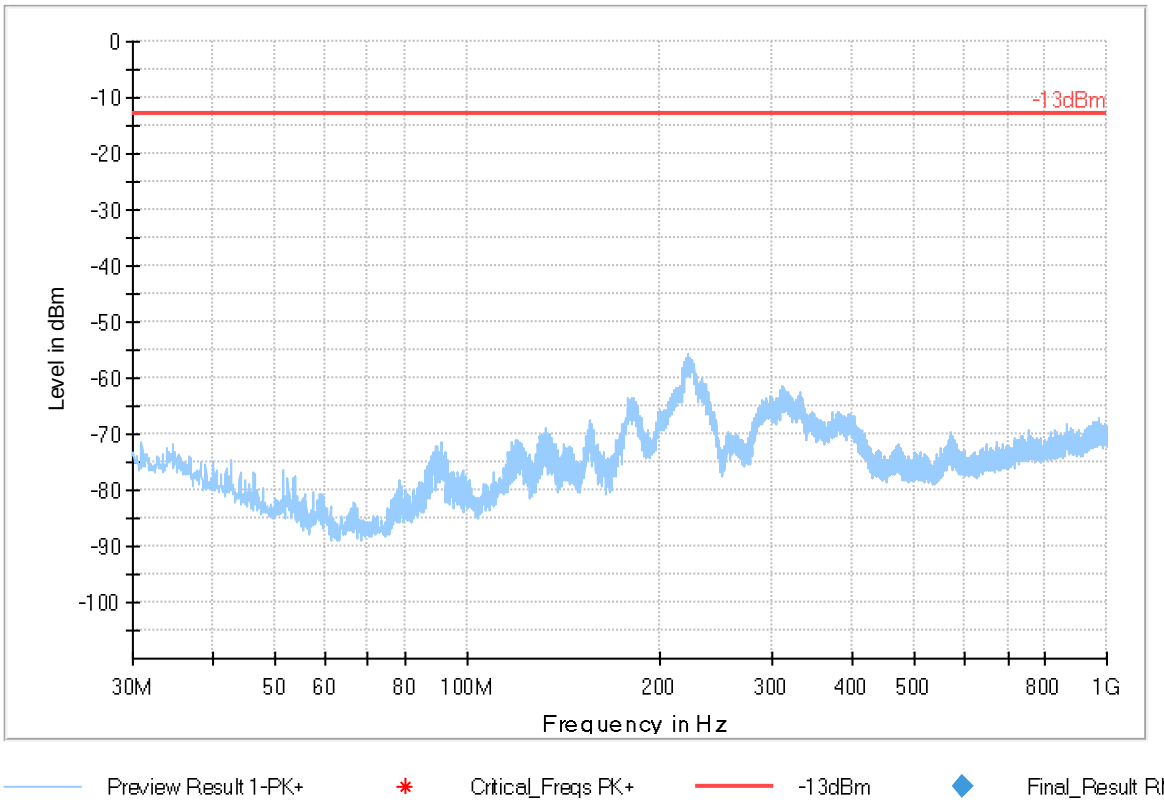
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.615 | -34.123 | -13.00 | 21.12 | 200.0 | 1000.000 | 137.0 | H | 186.0 | -100.9 | 11:07:07 AM - 10/24/2019 |
| 7320.858 | -29.679 | -13.00 | 16.68 | 200.0 | 1000.000 | 120.0 | H | 79.0 | -97.9 | 11:03:48 AM - 10/24/2019 |



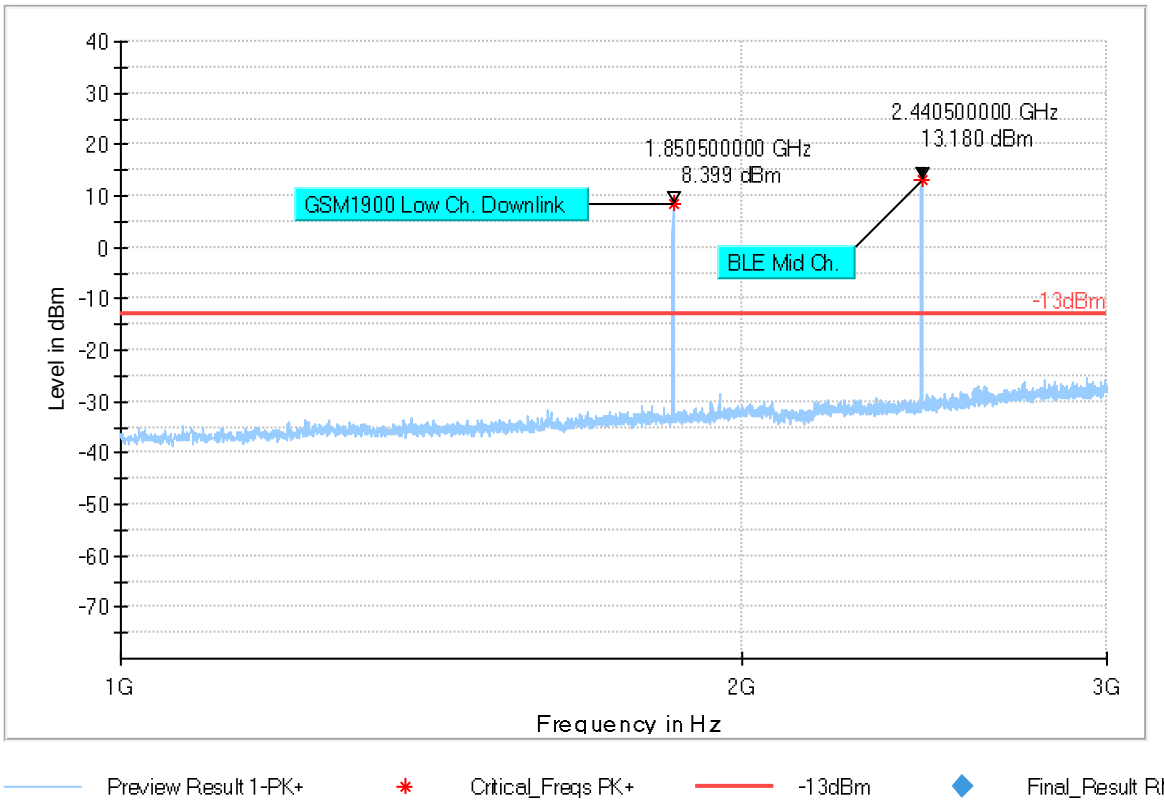
## GSM 1900

**Plot # 53 Radiated Emissions: 30 MHz - 1 GHz**

**Channel: Low**



| Plot # 54 Radiated Emissions: 1 GHz - 3 GHz |
|---|
| Channel: Low |

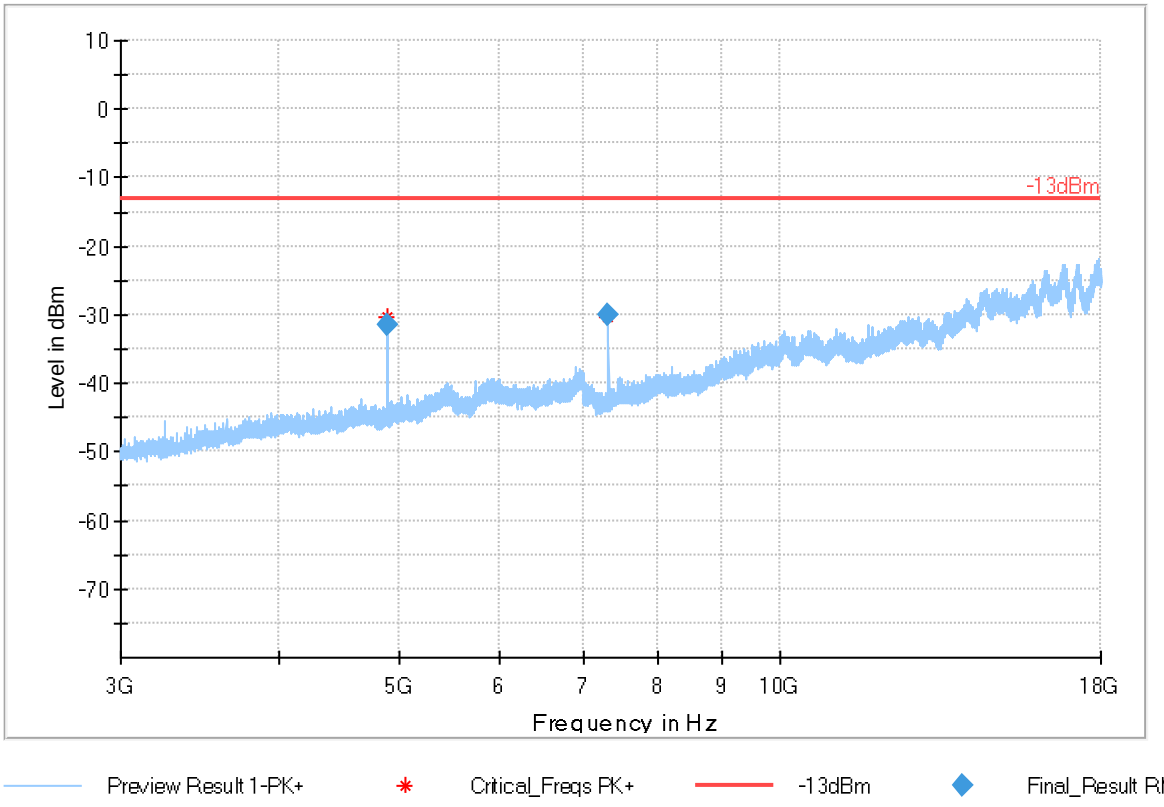


**Plot # 55 Radiated Emissions: 3 GHz - 18 GHz**

**Channel: Low**

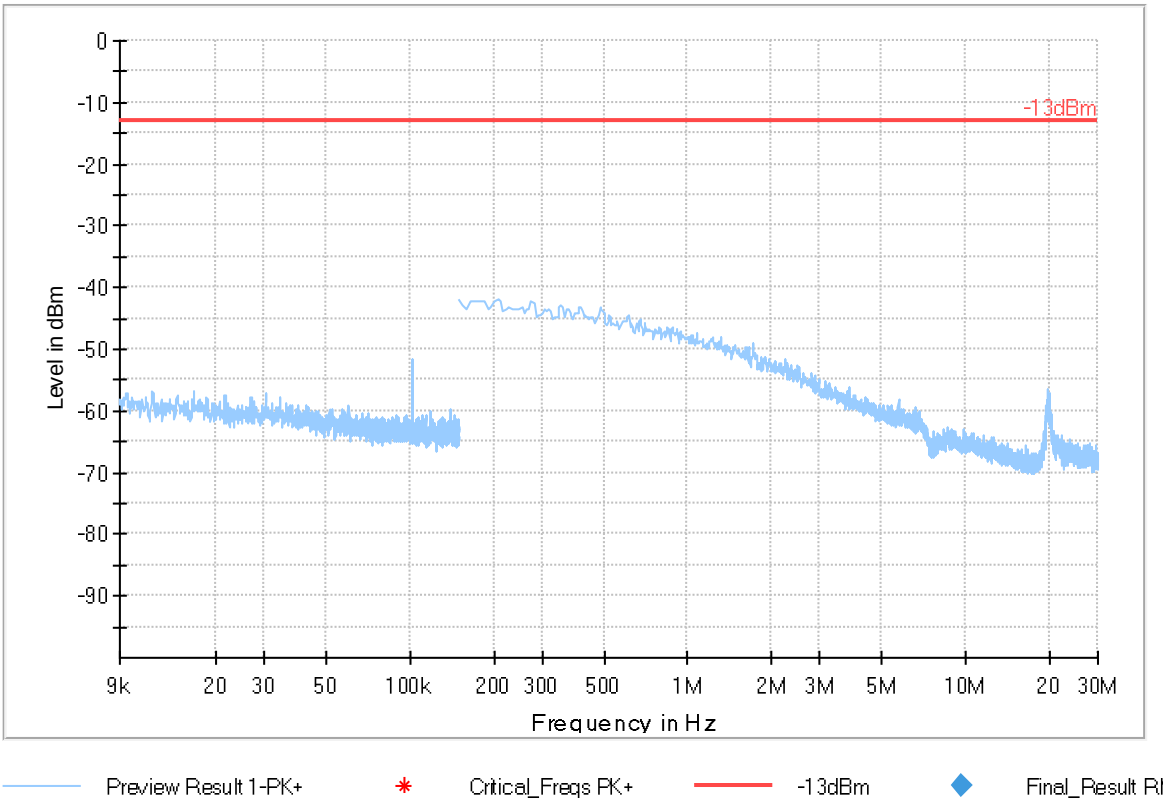
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.565 | -31.435 | -13.00 | 18.44 | 200.0 | 1000.000 | 205.0 | V | 132.0 | -100.9 | 3:57:29 PM - 10/24/2019 |
| 7320.495 | -30.113 | -13.00 | 17.11 | 200.0 | 1000.000 | 189.0 | V | 33.0 | -97.9 | 3:54:11 PM - 10/24/2019 |

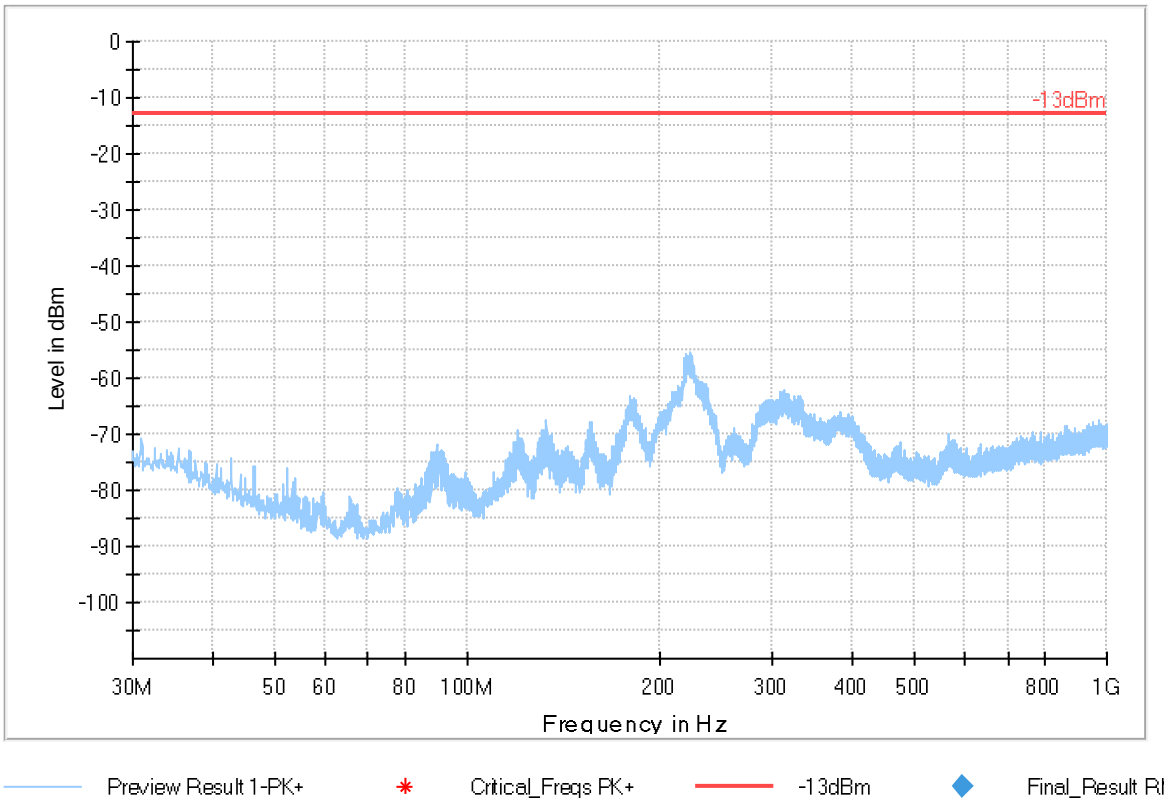


**Plot # 56 Radiated Emissions: 9 kHz - 30 MHz**

**Channel: Mid**

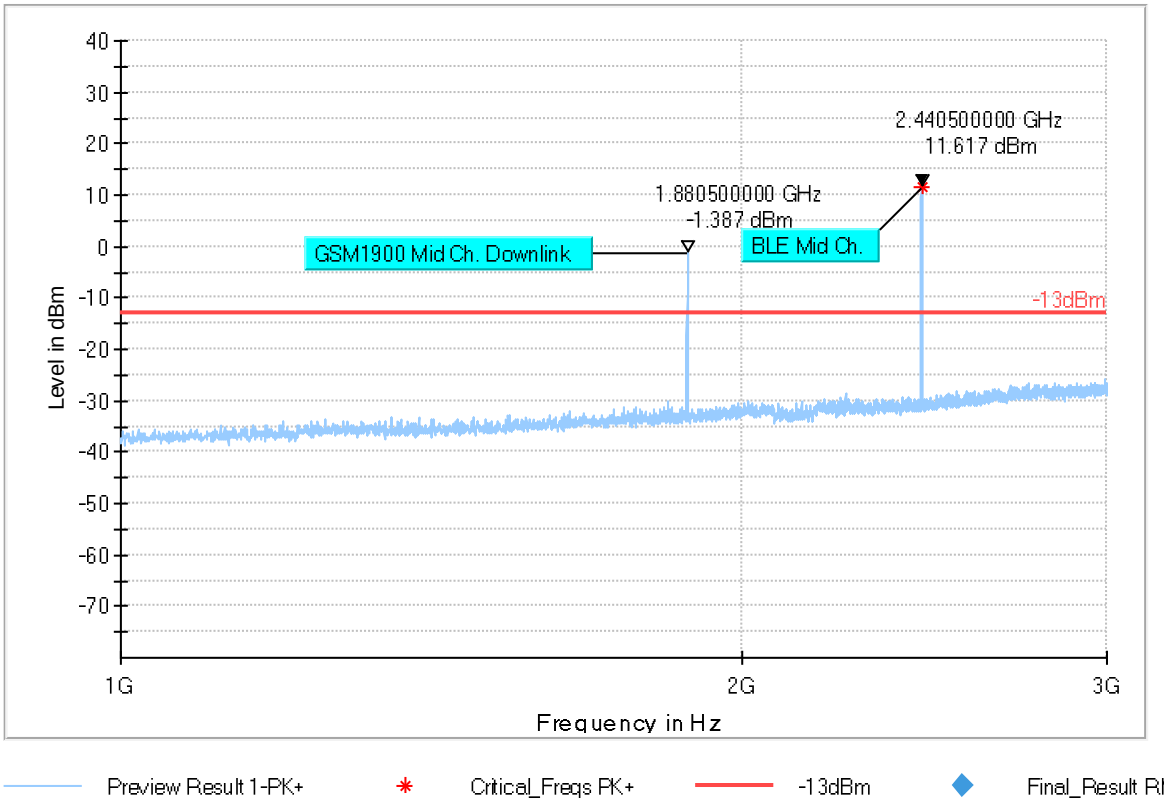


| Plot # 57 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



**Plot # 58 Radiated Emissions: 1 GHz - 3 GHz**

**Channel: Mid**

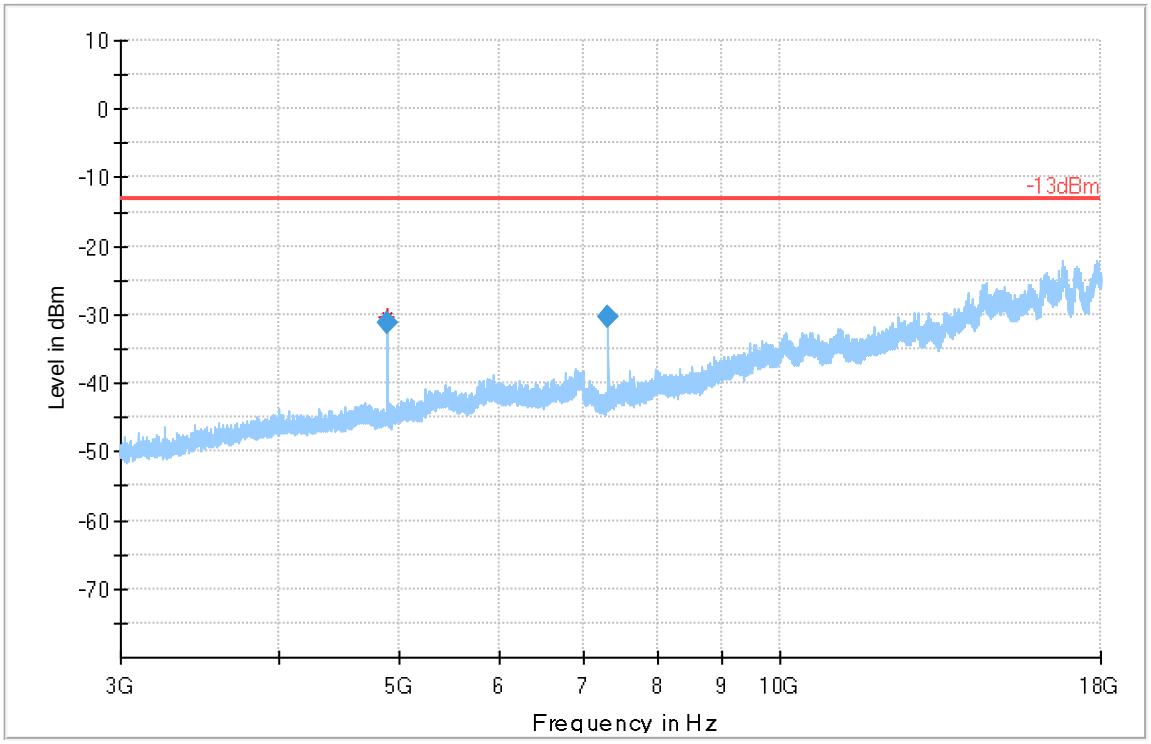


**Plot # 59 Radiated Emissions: 3 GHz – 18 GHz**

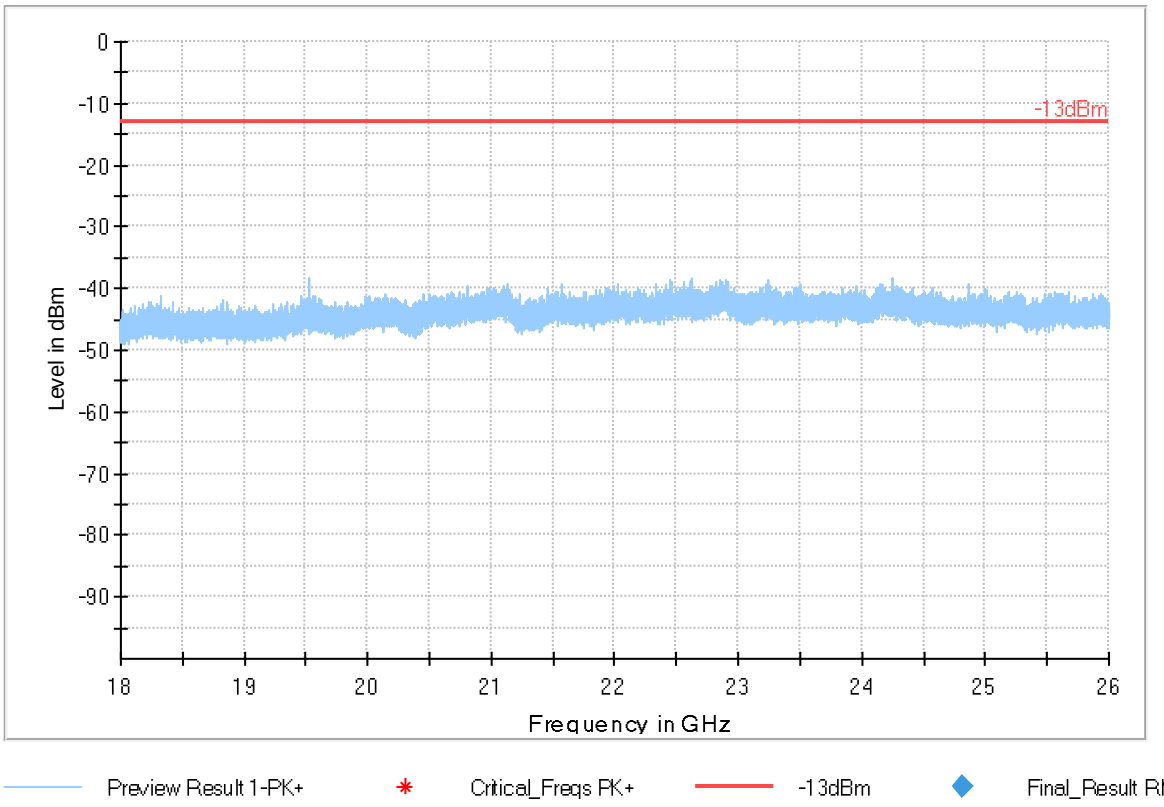
**Channel: Mid**

## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.559 | -31.116 | -13.00 | 18.12 | 200.0 | 1000.000 | 206.0 | V | 133.0 | -100.9 | 3:40:11 PM - 10/24/2019 |
| 7320.839 | -30.189 | -13.00 | 17.19 | 200.0 | 1000.000 | 188.0 | V | 34.0 | -97.9 | 3:36:53 PM - 10/24/2019 |



| Plot # 60 Radiated Emissions: 18 GHz – 26 GHz |
|---|
| Channel: Mid |

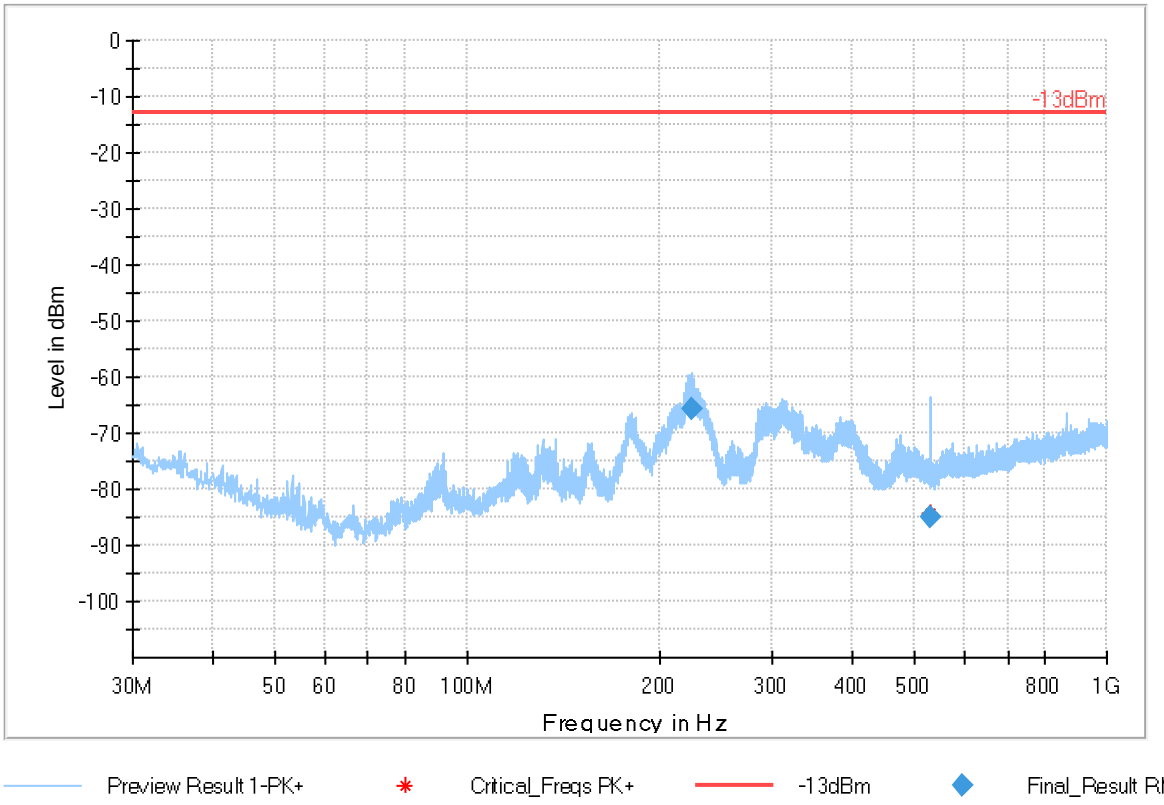


**Plot # 61 Radiated Emissions: 30 MHz - 1 GHz**

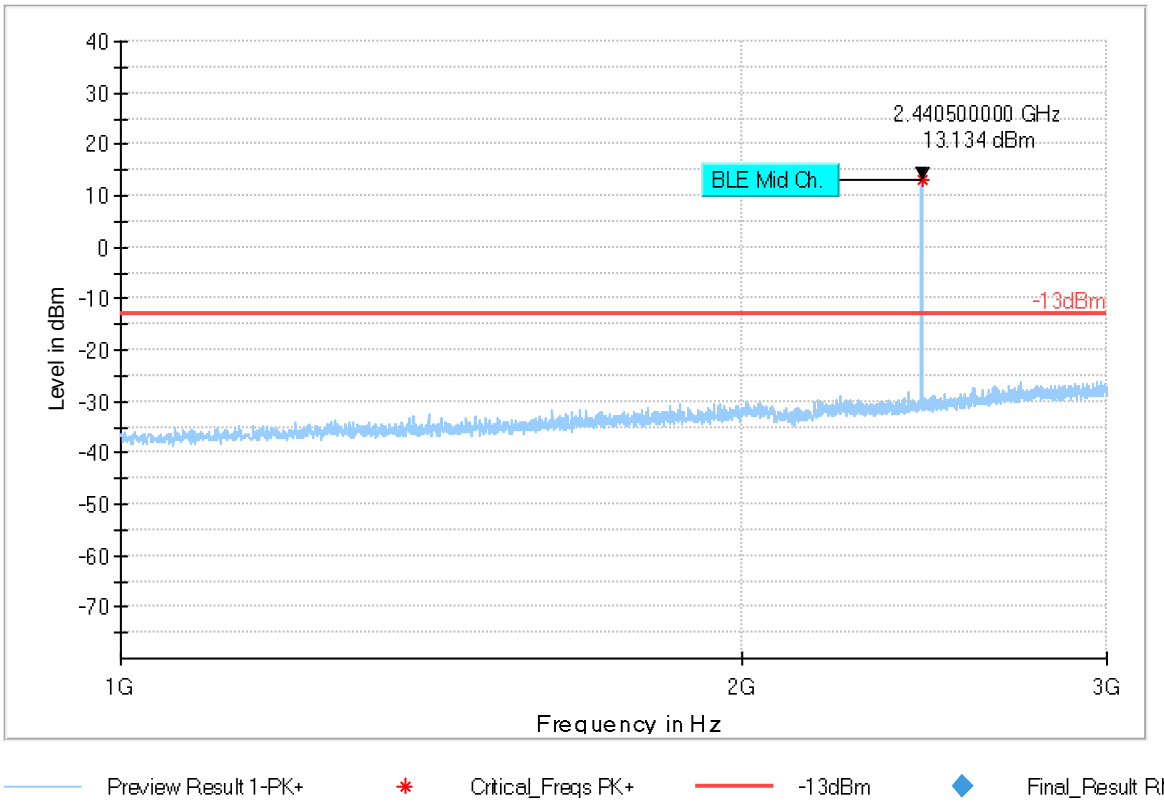
**Channel: High**

## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 223.880 | -65.536 | -13.00 | 52.54 | 200.0 | 100.000 | 158.0 | H | 130.0 | -112.8 | 4:34:27 PM - 10/24/2019 |
| 530.019 | -85.011 | -13.00 | 72.01 | 200.0 | 100.000 | 120.0 | V | 288.0 | -107.5 | 4:37:42 PM - 10/24/2019 |



| Plot # 62 Radiated Emissions: 1 GHz - 3 GHz |
|---|
| Channel: High |

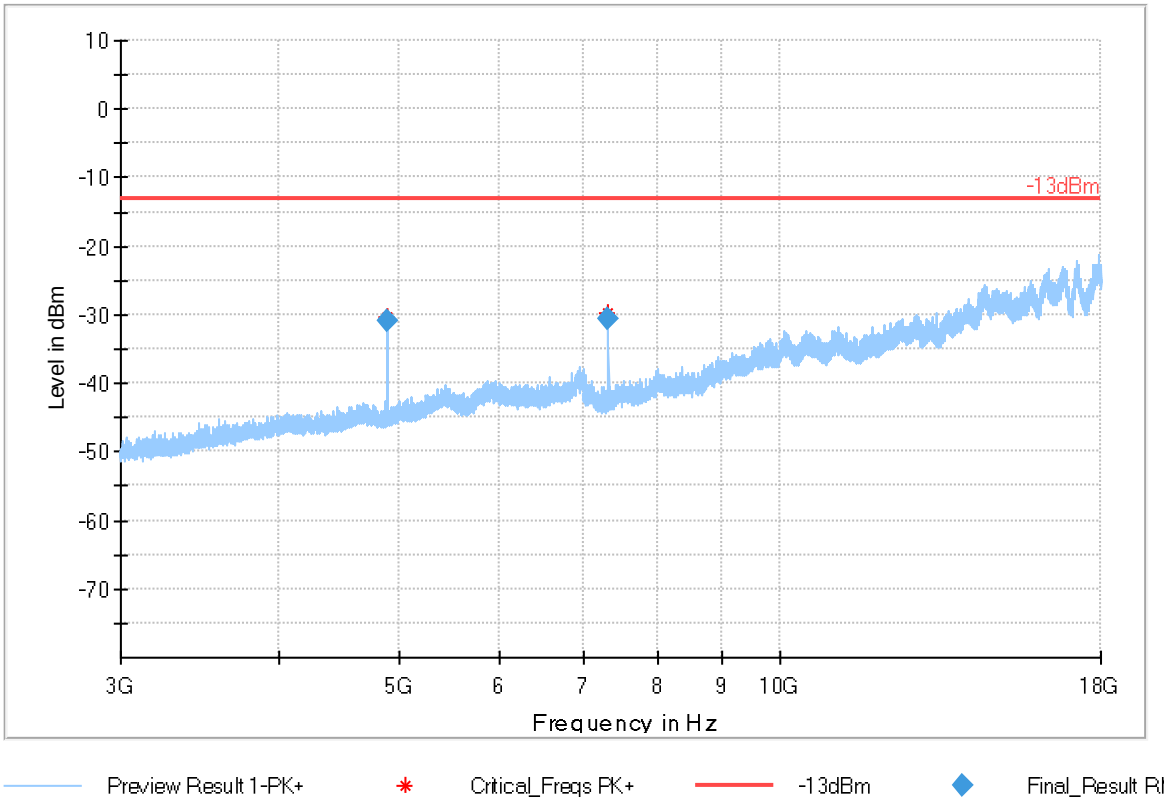


**Plot # 63 Radiated Emissions: 3 GHz - 18 GHz**

**Channel: High**

## Final_Result

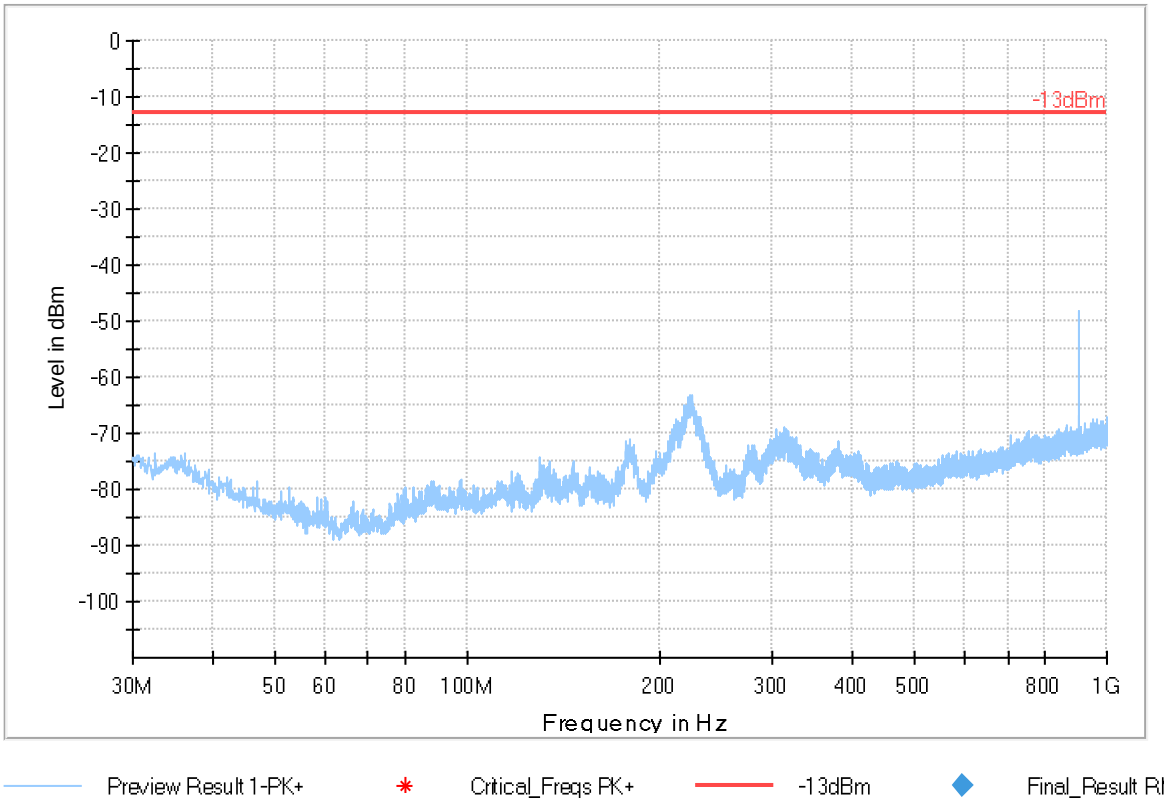
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.508 | -30.798 | -13.00 | 17.80 | 200.0 | 1000.000 | 207.0 | V | 133.0 | -100.9 | 4:11:59 PM - 10/24/2019 |
| 7320.832 | -30.601 | -13.00 | 17.60 | 200.0 | 1000.000 | 186.0 | V | 33.0 | -97.9 | 4:08:40 PM - 10/24/2019 |



## LTE Band 4

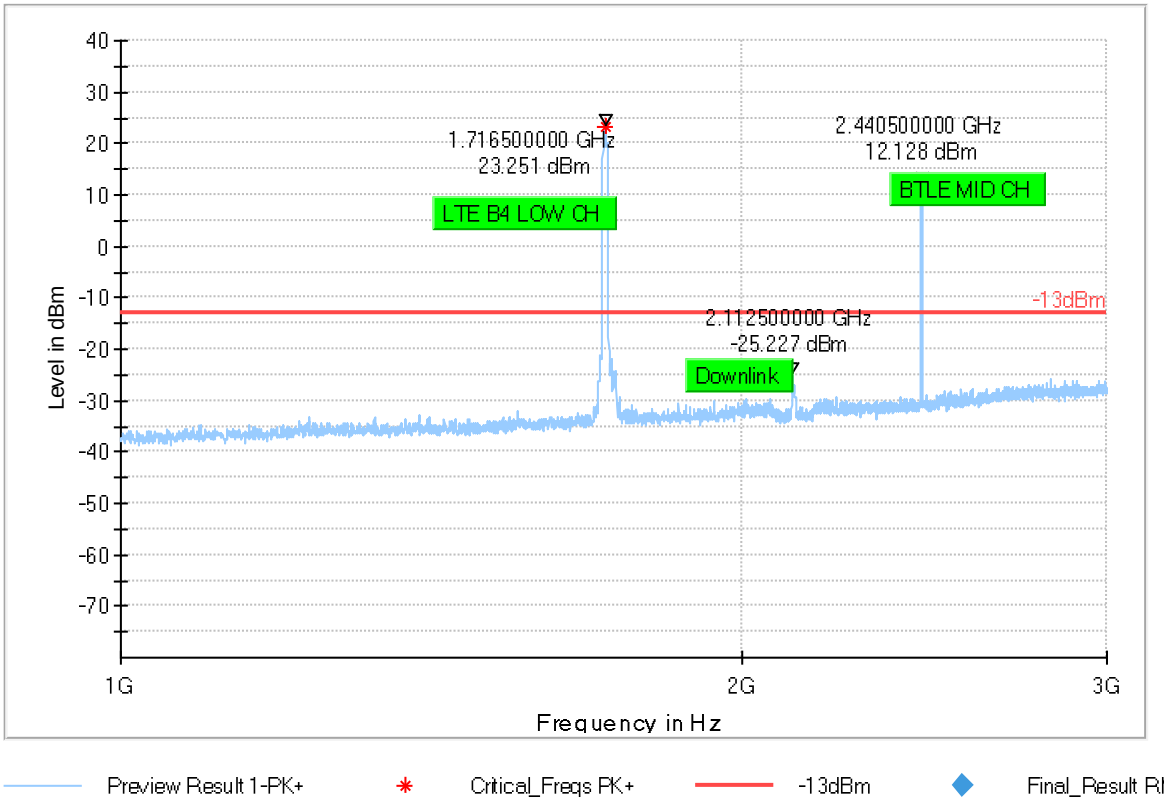
**Plot # 64 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: Low**



**Plot # 65 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: Low**

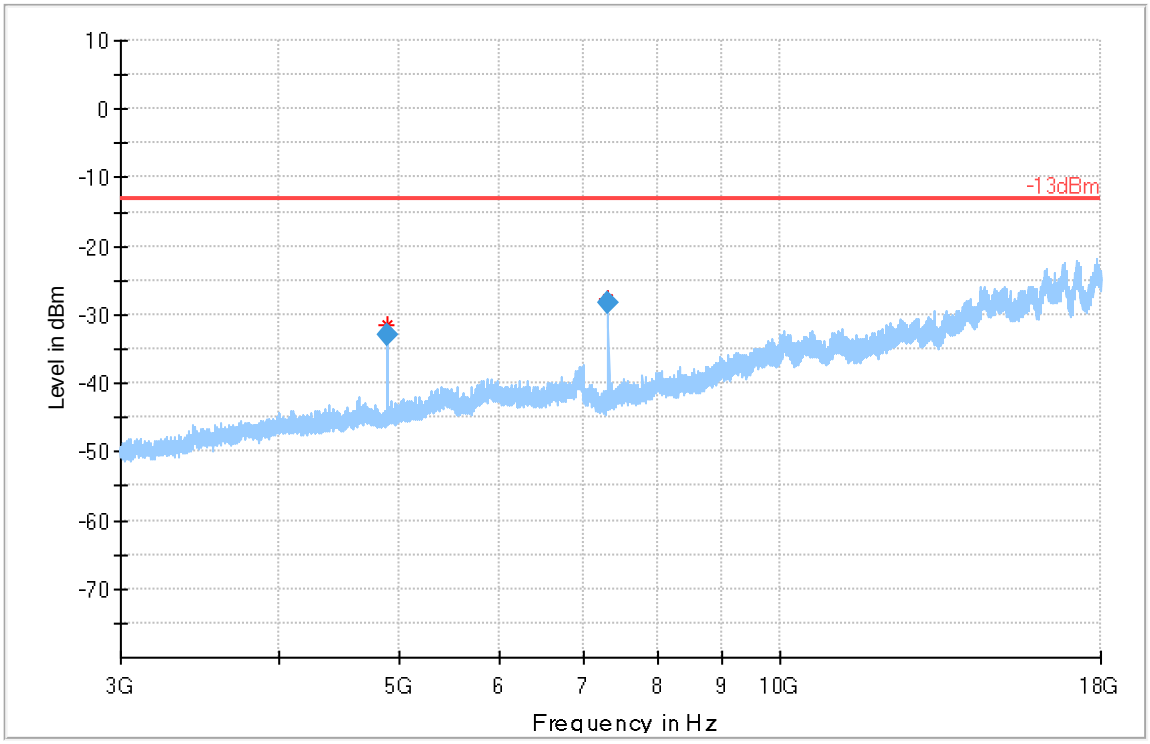


**Plot # 66 Radiated Emissions: 3 GHz – 18 GHz**

**Channel: Low**

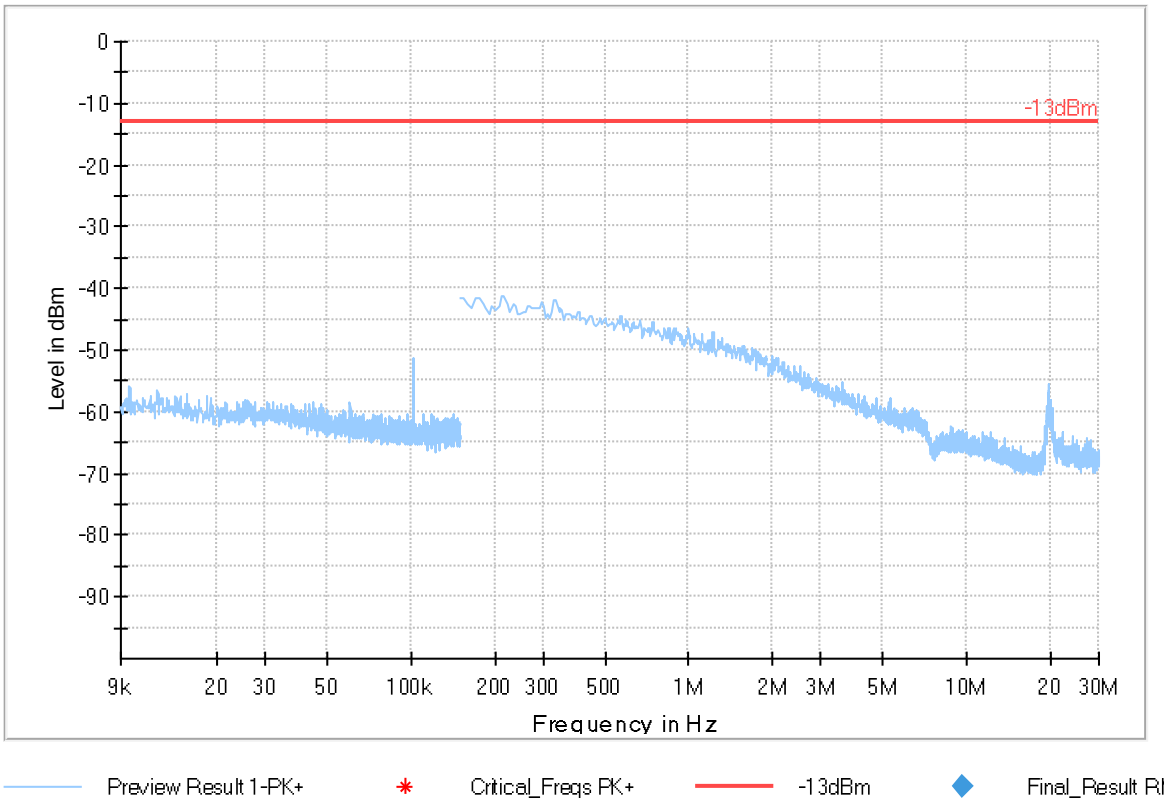
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.635 | -32.832 | -13.00 | 19.83 | 200.0 | 1000.000 | 117.0 | H | 178.0 | -100.9 | 5:40:40 PM - 10/23/2019 |
| 7320.733 | -28.286 | -13.00 | 15.29 | 200.0 | 1000.000 | 133.0 | H | 78.0 | -97.9 | 5:37:11 PM - 10/23/2019 |

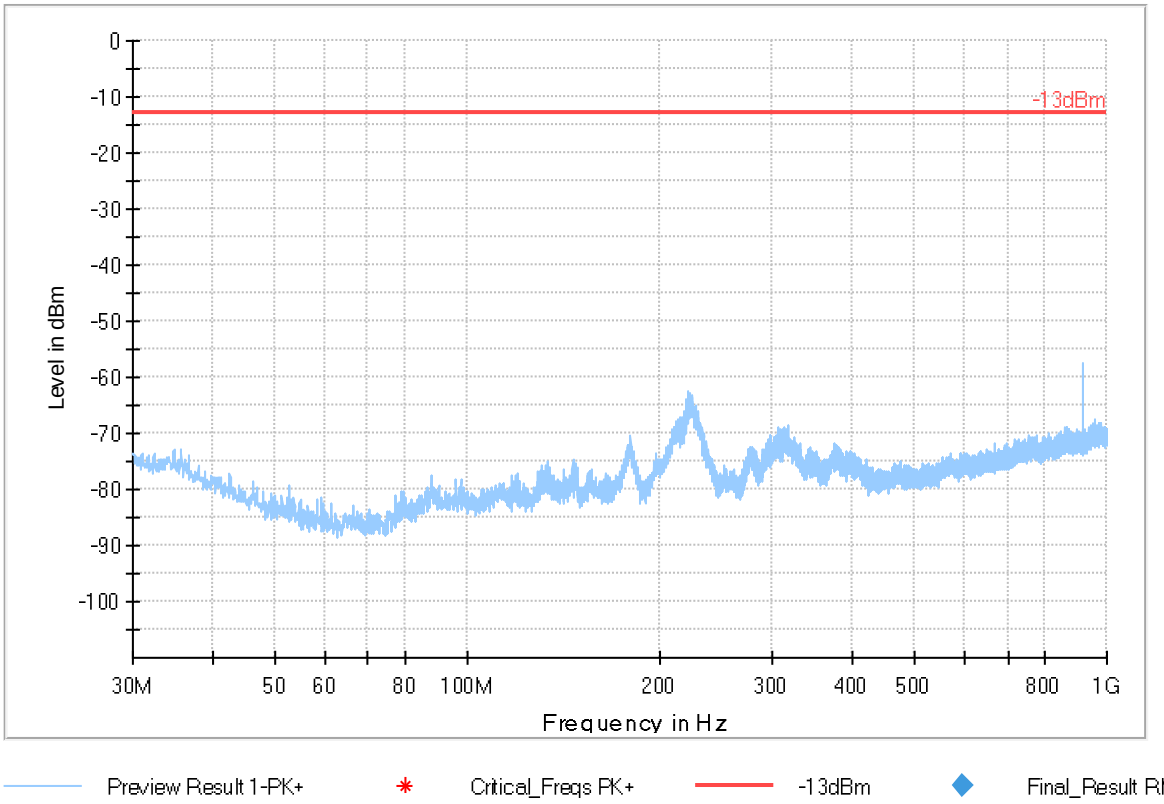


**Plot # 67 Radiated Emissions: 9 kHz – 30 MHz**

**Channel: Mid**

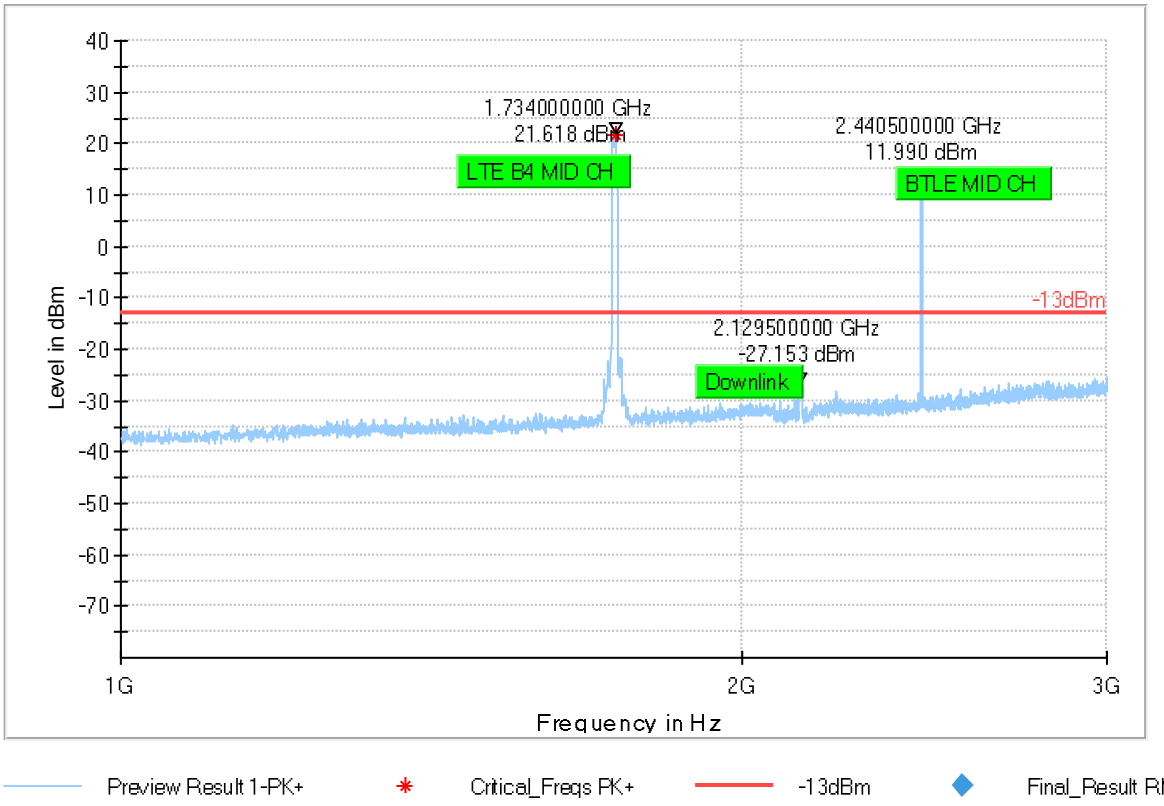


| Plot # 68 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



**Plot # 69 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: Mid**

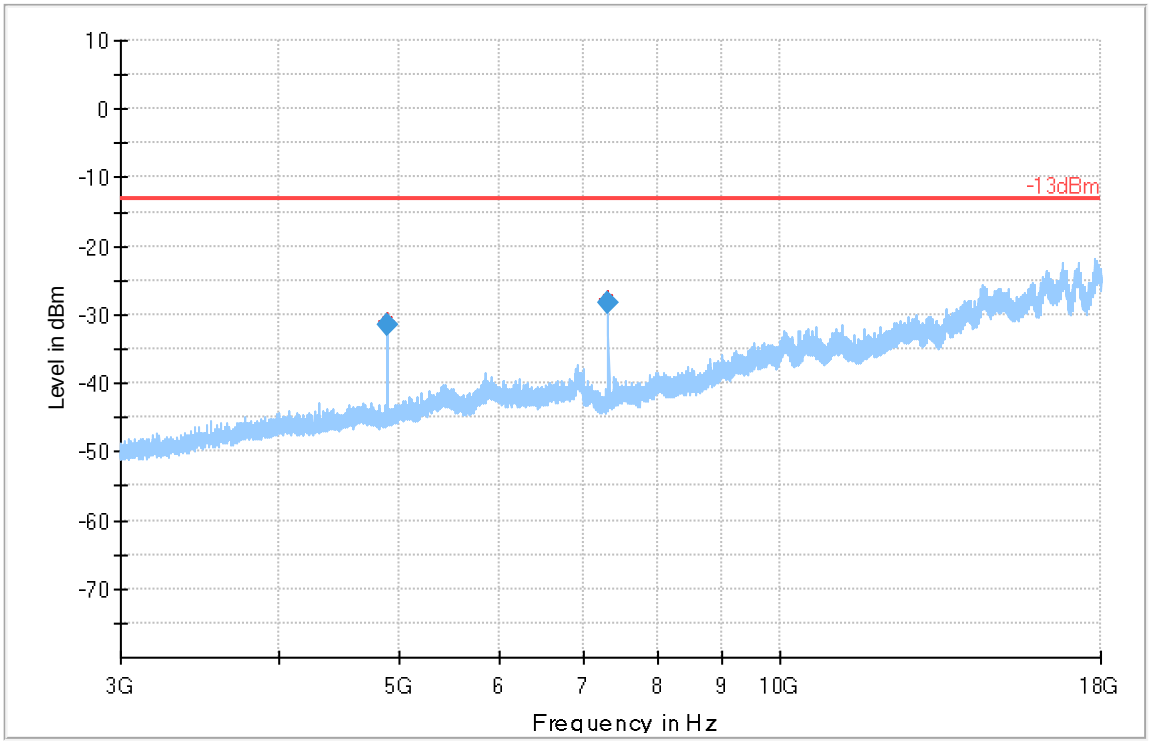


**Plot # 70 Radiated Emissions: 3 GHz – 18 GHz**

**Channel: Mid**

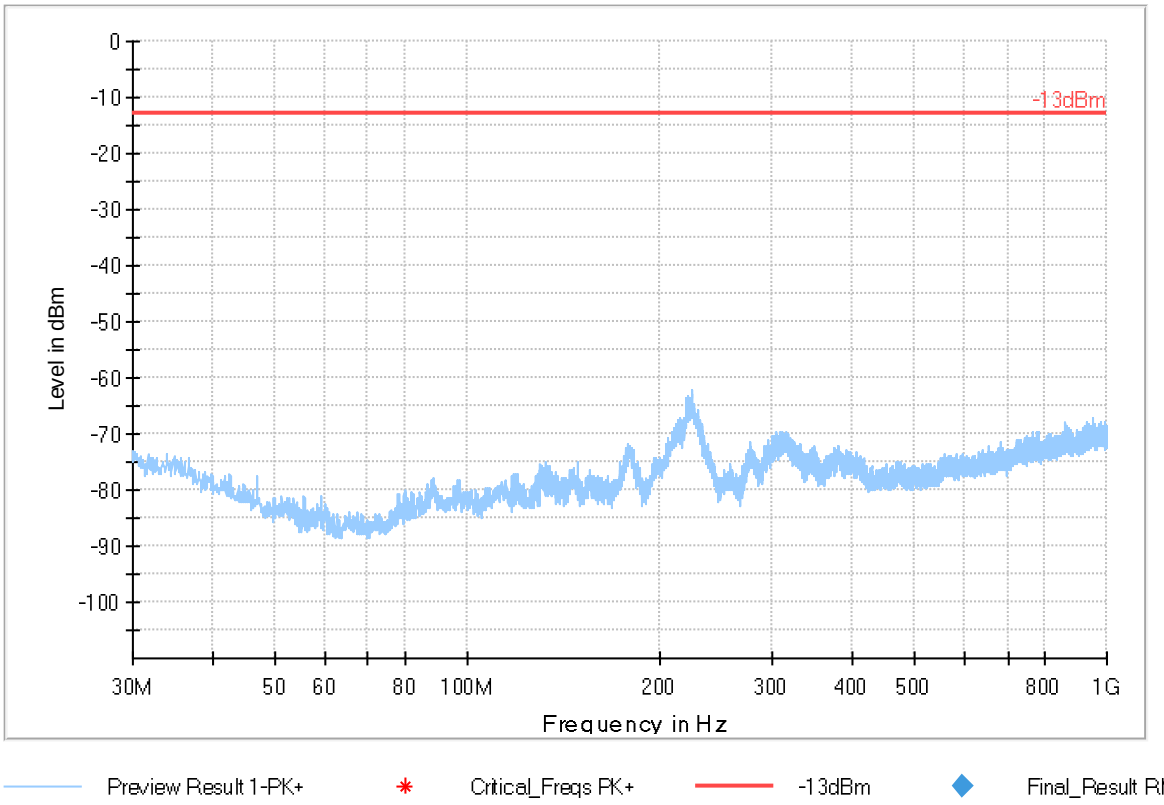
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.466 | -31.357 | -13.00 | 18.36 | 200.0 | 1000.000 | 121.0 | H | 176.0 | -100.9 | 5:24:49 PM - 10/23/2019 |
| 7320.729 | -28.320 | -13.00 | 15.32 | 200.0 | 1000.000 | 107.0 | H | 78.0 | -97.9 | 5:21:16 PM - 10/23/2019 |



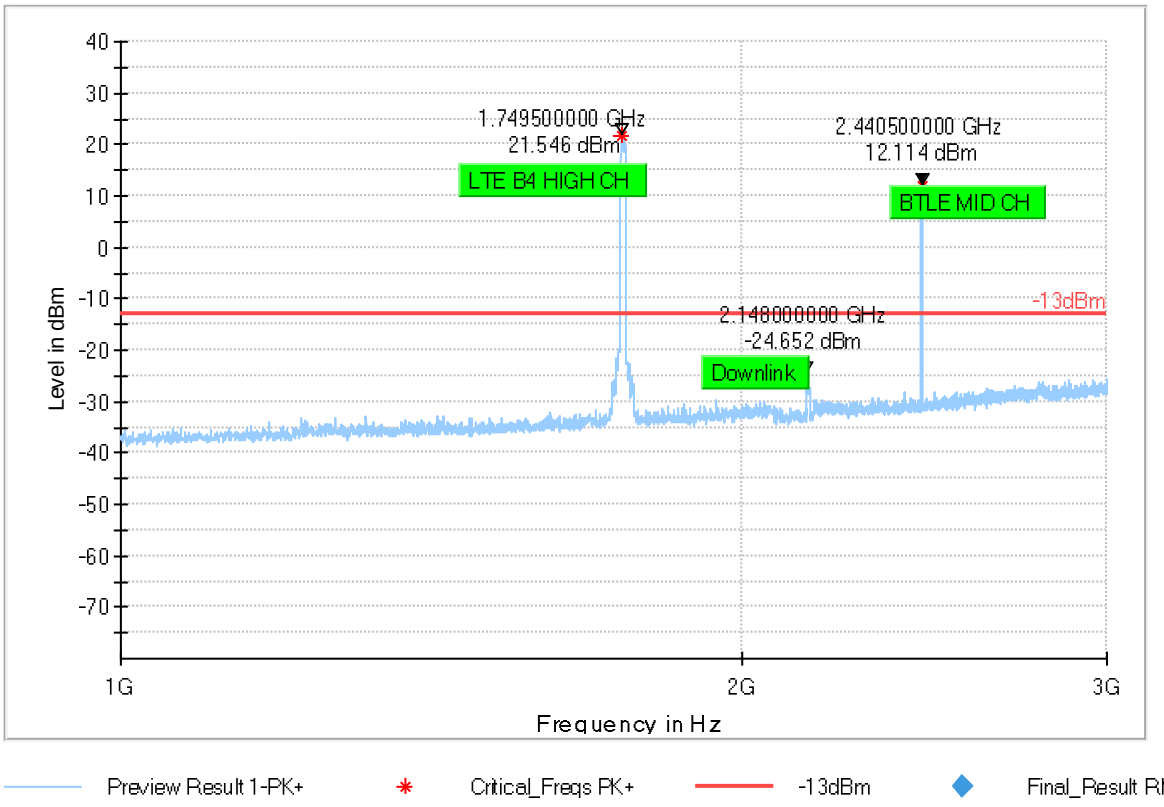
**Plot # 71 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: High**



**Plot # 72 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: High**

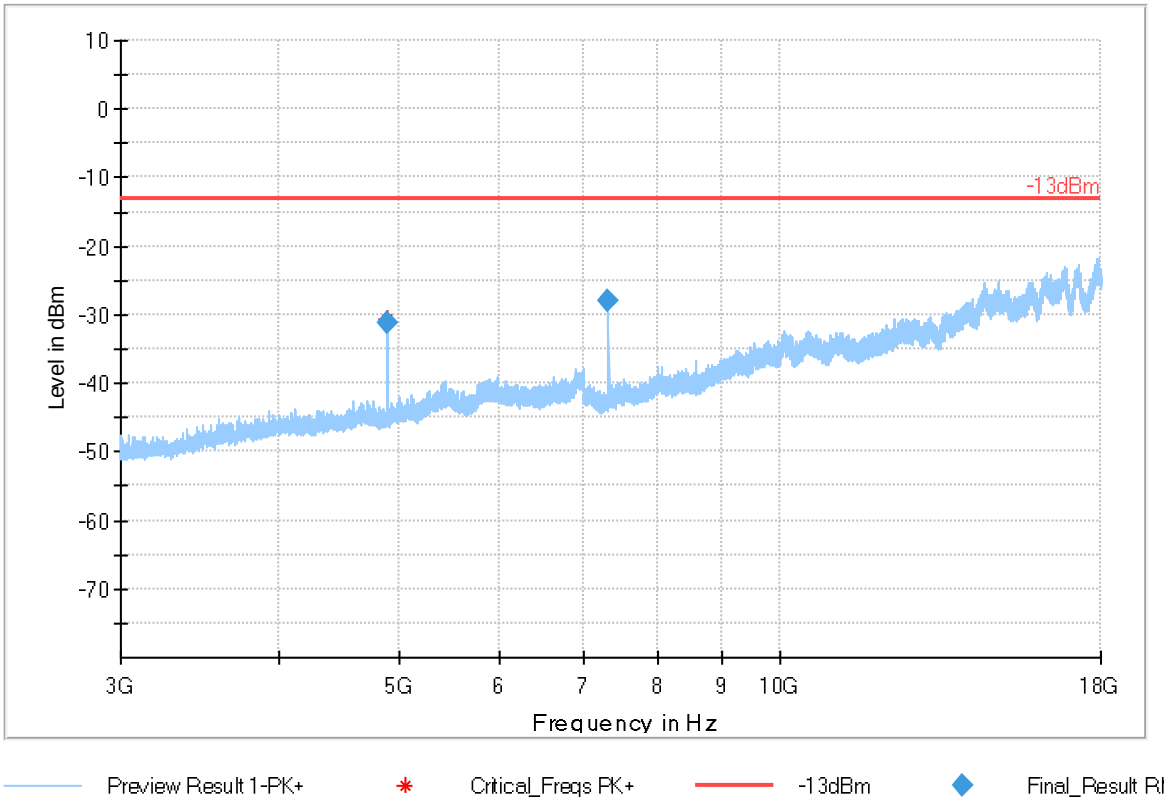


**Plot # 73 Radiated Emissions: 3 GHz – 18 GHz**

**Channel: High**

## Final_Result

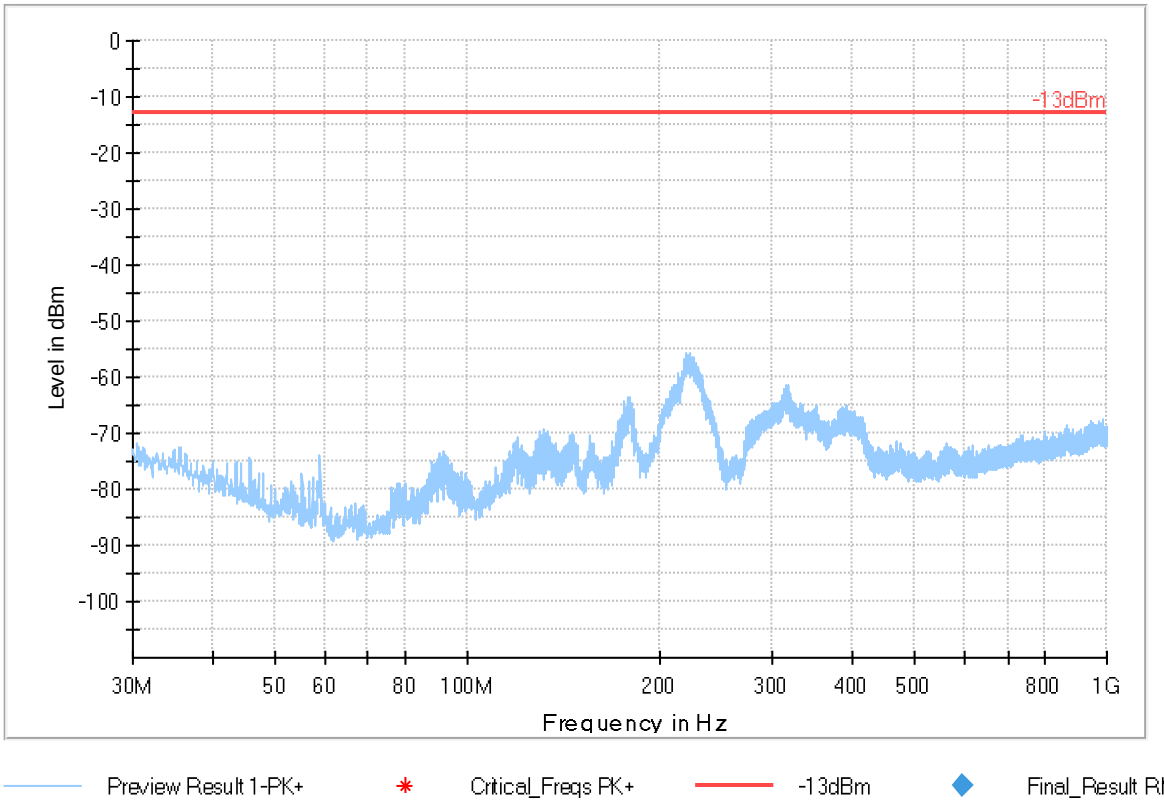
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.488 | -31.162 | -13.00 | 18.16 | 200.0 | 1000.000 | 121.0 | H | 177.0 | -100.9 | 6:01:42 PM - 10/23/2019 |
| 7320.671 | -28.130 | -13.00 | 15.13 | 200.0 | 1000.000 | 114.0 | H | 78.0 | -97.9 | 5:58:13 PM - 10/23/2019 |



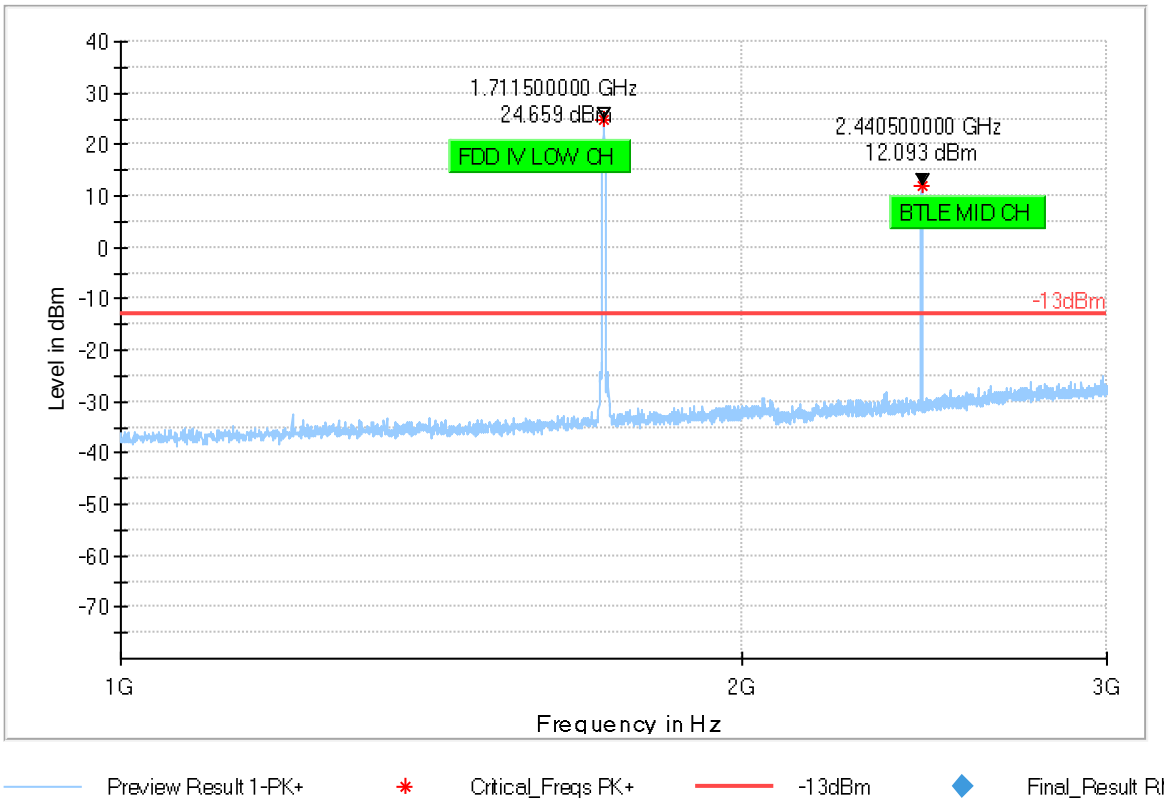
## UMTS IV

**Plot # 74 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: Low**



| Plot # 75 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: Low |

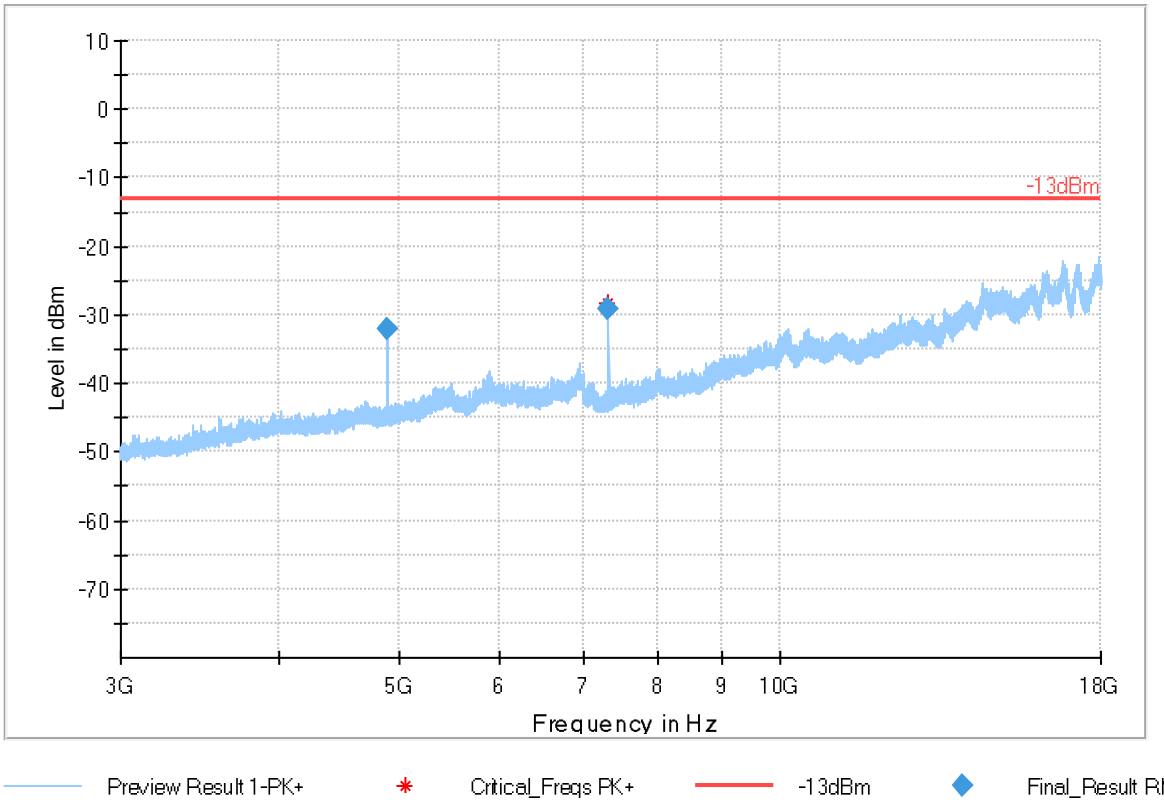


**Plot # 76 Radiated Emissions: 3 GHz – 18 GHz**

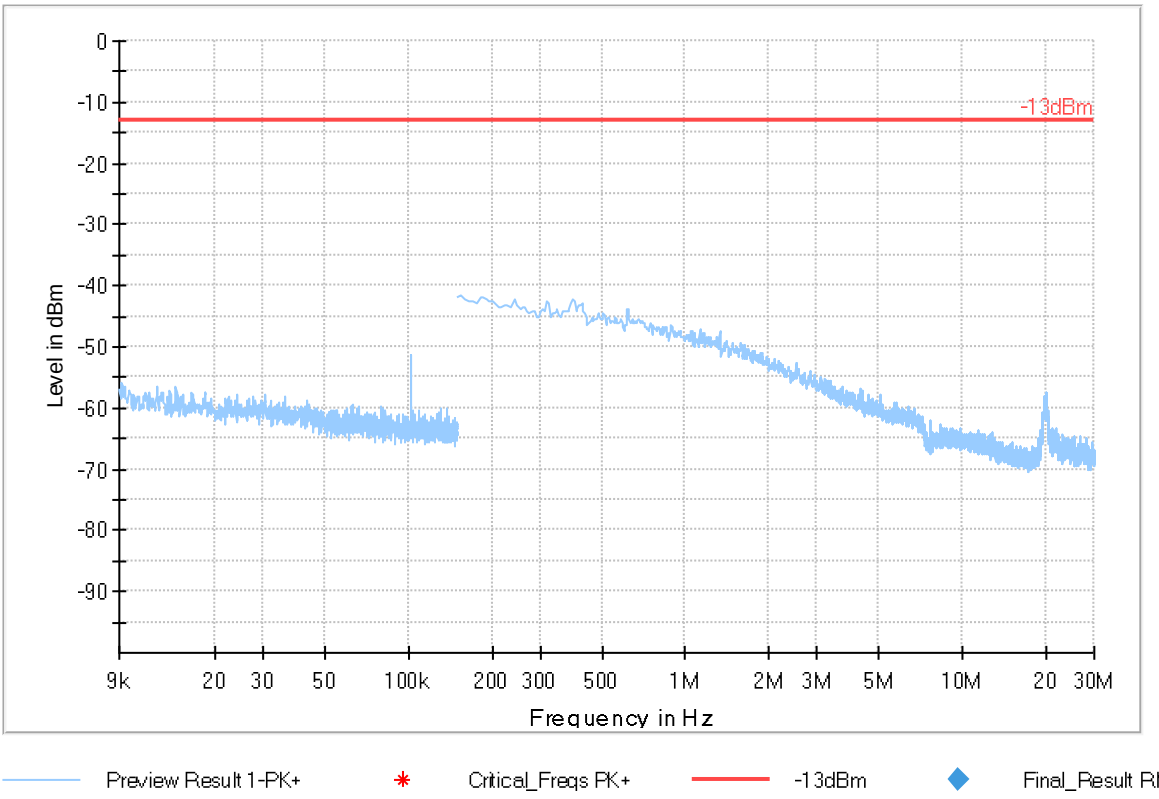
**Channel: Low**

## Final_Result

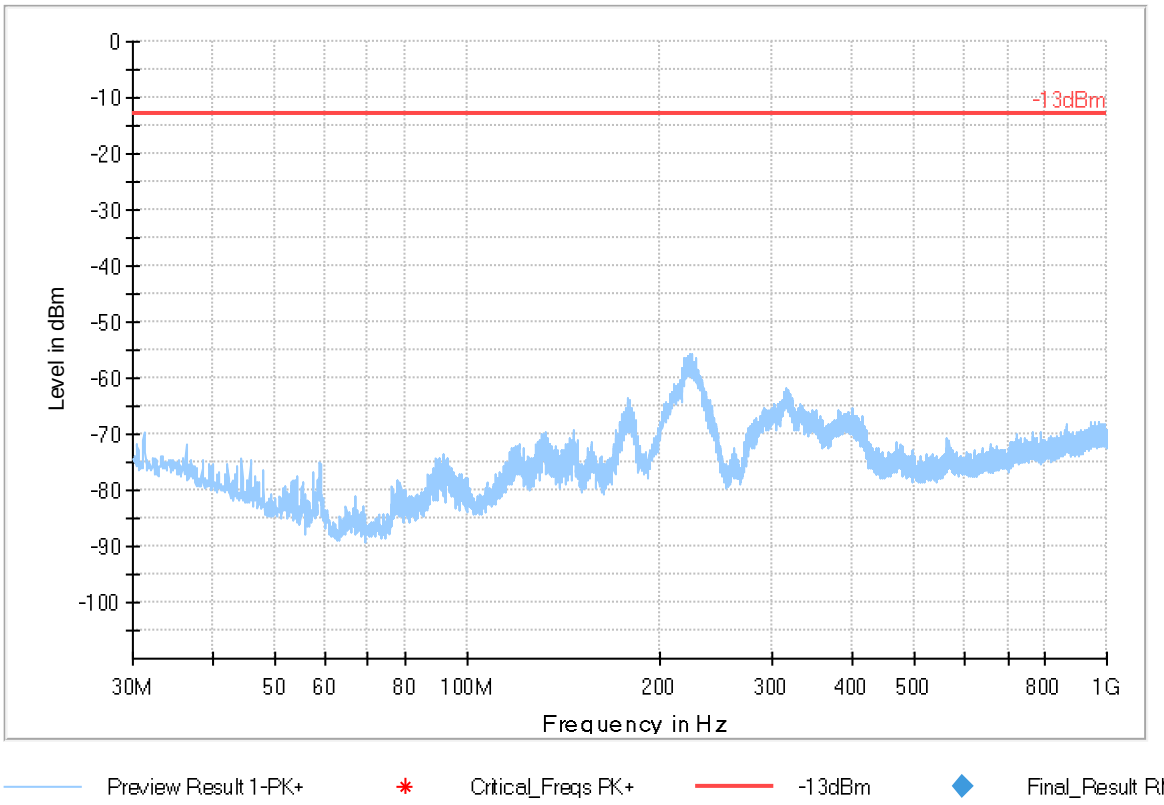
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.374 | -32.048 | -13.00 | 19.05 | 200.0 | 1000.000 | 114.0 | H | 187.0 | -100.9 | 11:20:55 AM - 10/24/2019 |
| 7320.800 | -29.179 | -13.00 | 16.18 | 200.0 | 1000.000 | 121.0 | H | 80.0 | -97.9 | 11:17:37 AM - 10/24/2019 |



| Plot # 77 Radiated Emissions: 9 kHz – 30 MHz |
|---|
| Channel: Mid |

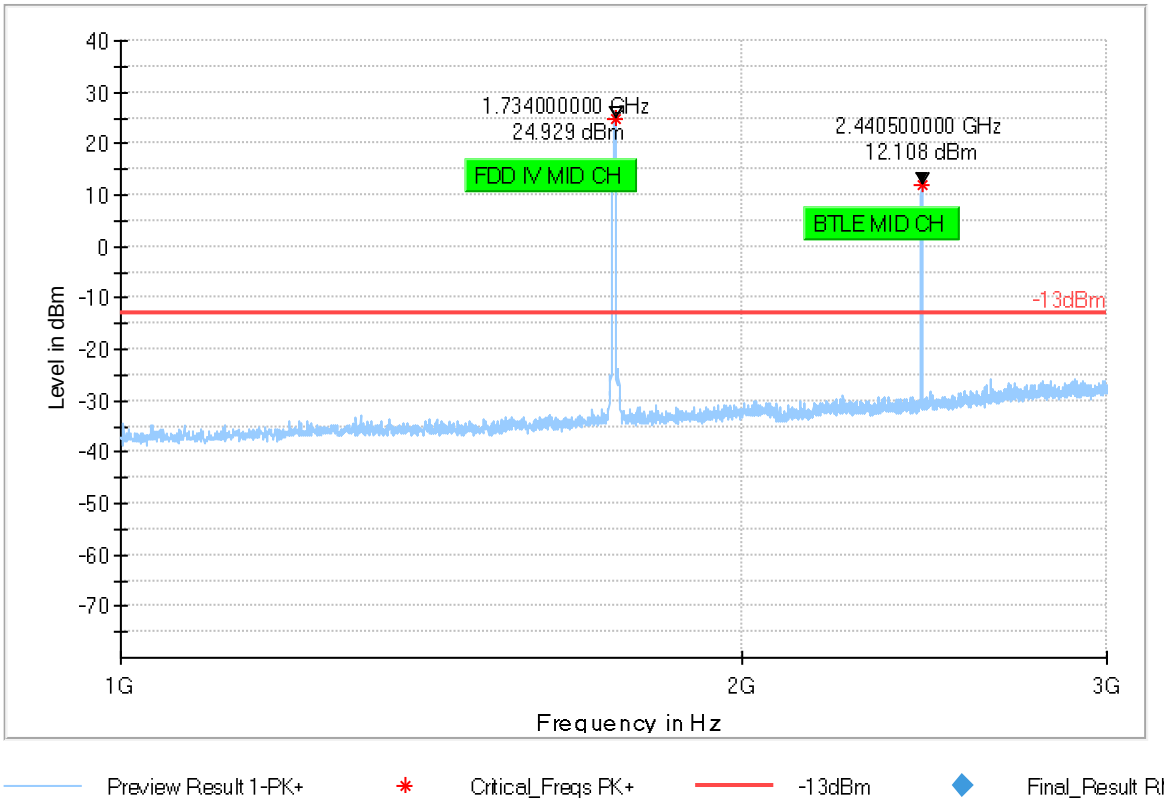


| Plot # 78 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



**Plot # 79 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: Mid**

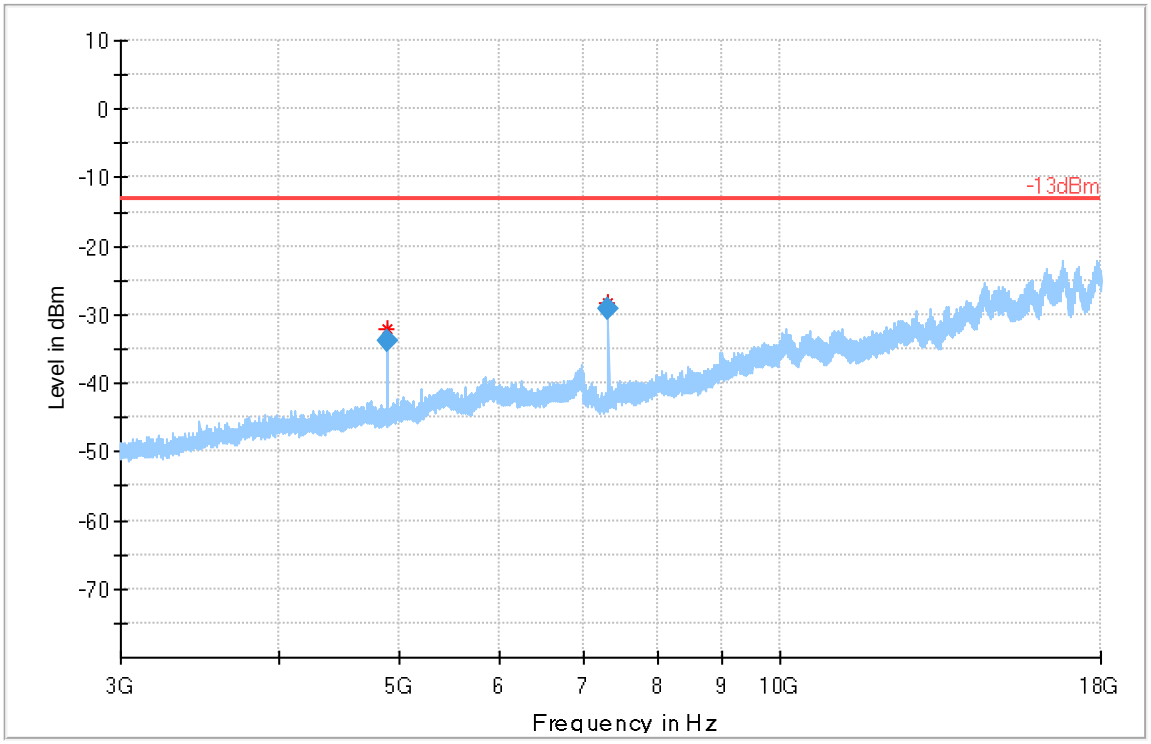


**Plot # 80 Radiated Emissions: 3 GHz – 18 GHz**

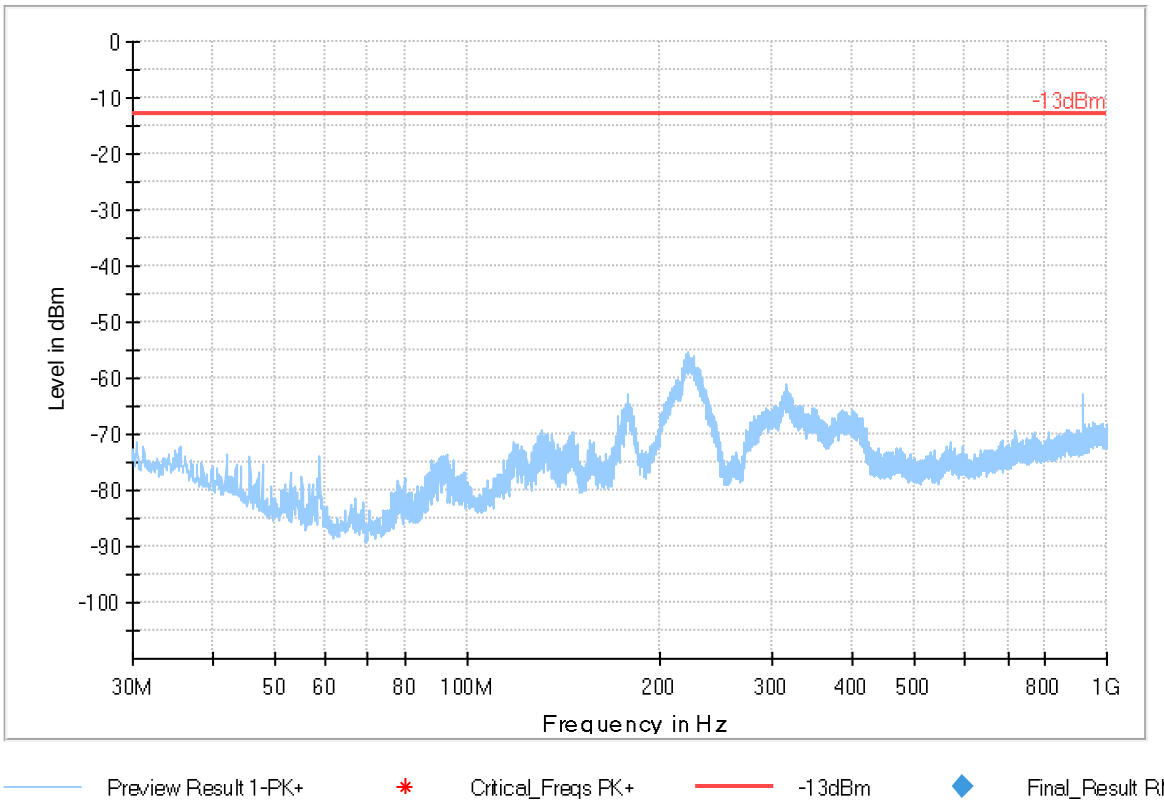
**Channel: Mid**

## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.484 | -33.898 | -13.00 | 20.90 | 200.0 | 1000.000 | 144.0 | H | 200.0 | -100.9 | 11:34:38 AM - 10/24/2019 |
| 7320.828 | -29.222 | -13.00 | 16.22 | 200.0 | 1000.000 | 120.0 | H | 80.0 | -97.9 | 11:31:19 AM - 10/24/2019 |

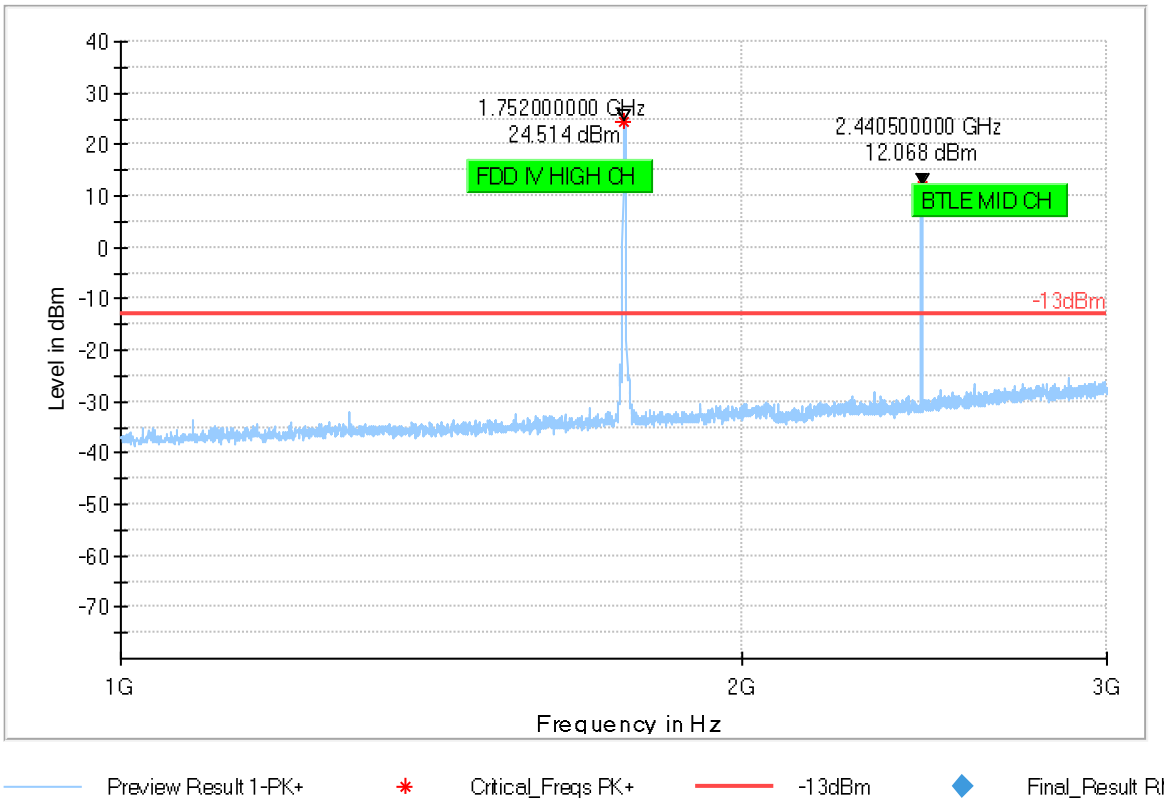


| Plot # 81 Radiated Emissions: 30 MHz – 1 GHz |
|---|
| Channel: High |



**Plot # 82 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: High**

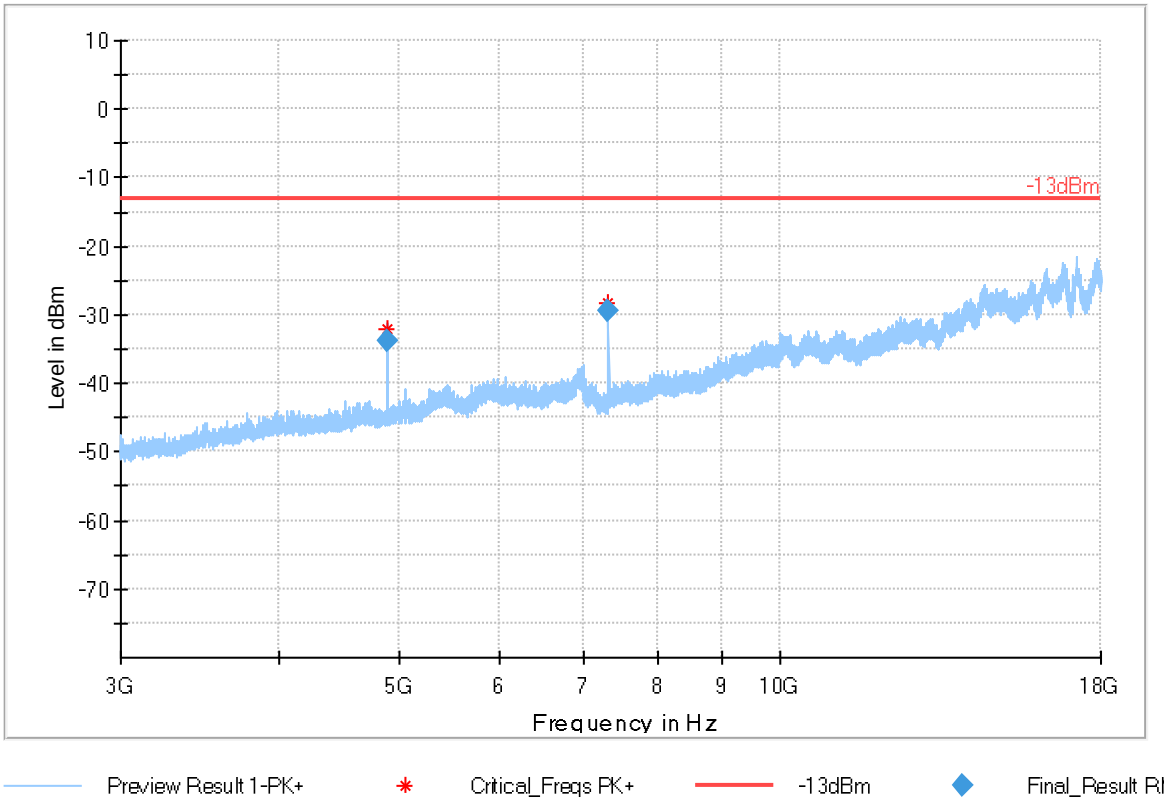


**Plot # 83 Radiated Emissions: 3 GHz – 18 GHz**

**Channel: High**

## Final_Result

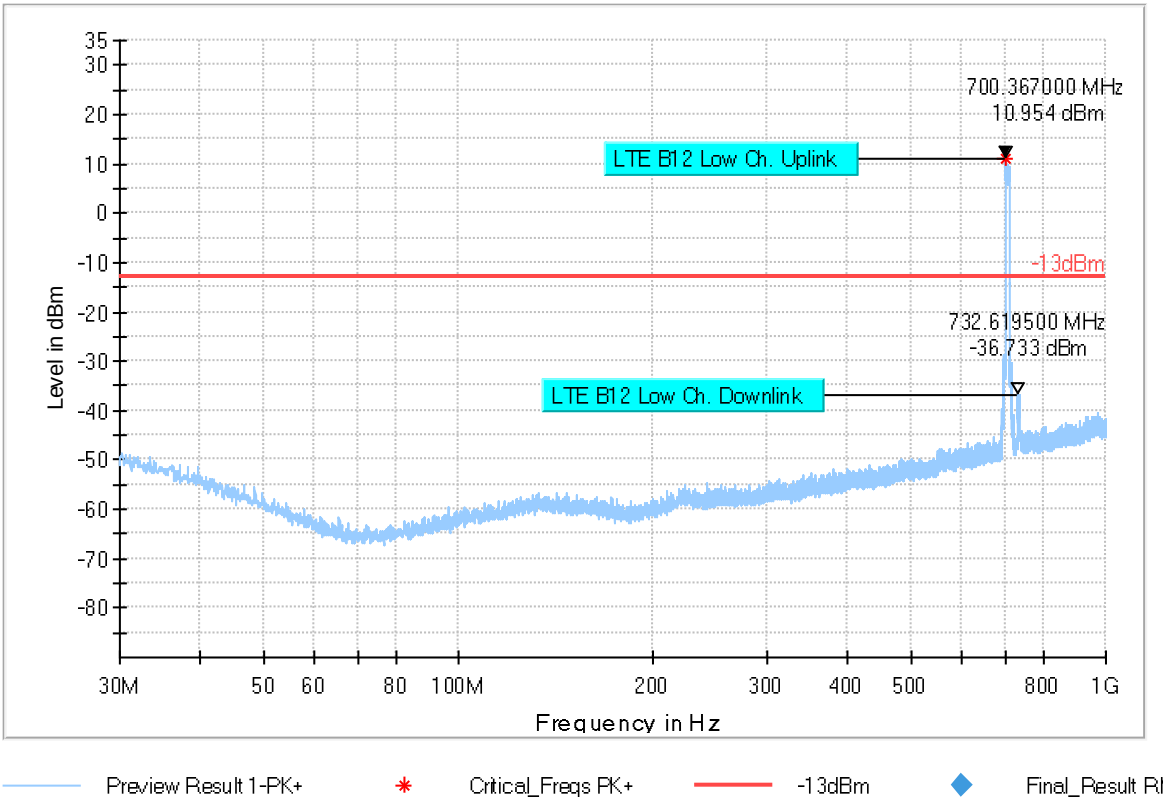
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.626 | -33.836 | -13.00 | 20.84 | 200.0 | 1000.000 | 138.0 | H | 186.0 | -100.9 | 11:49:26 AM - 10/24/2019 |
| 7320.801 | -29.391 | -13.00 | 16.39 | 200.0 | 1000.000 | 121.0 | H | 79.0 | -97.9 | 11:46:05 AM - 10/24/2019 |



## LTE Band 12

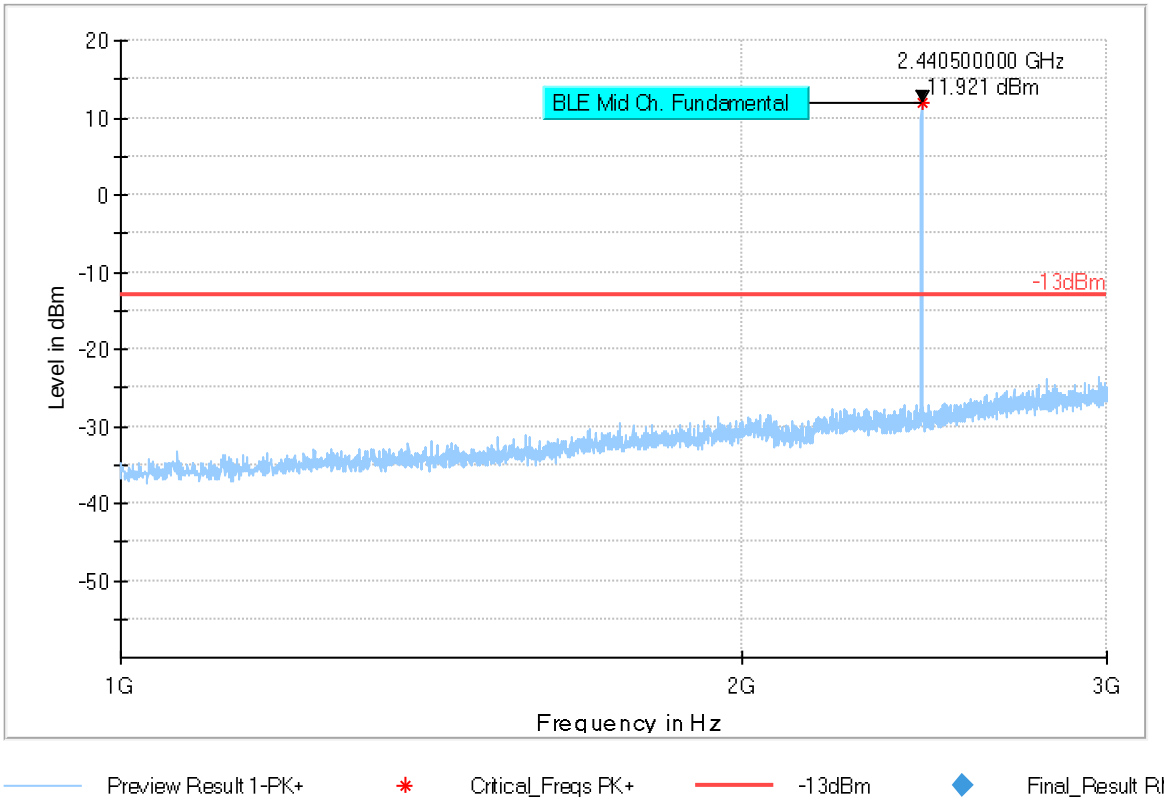
**Plot # 84 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: Low**



**Plot # 85 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: Low**

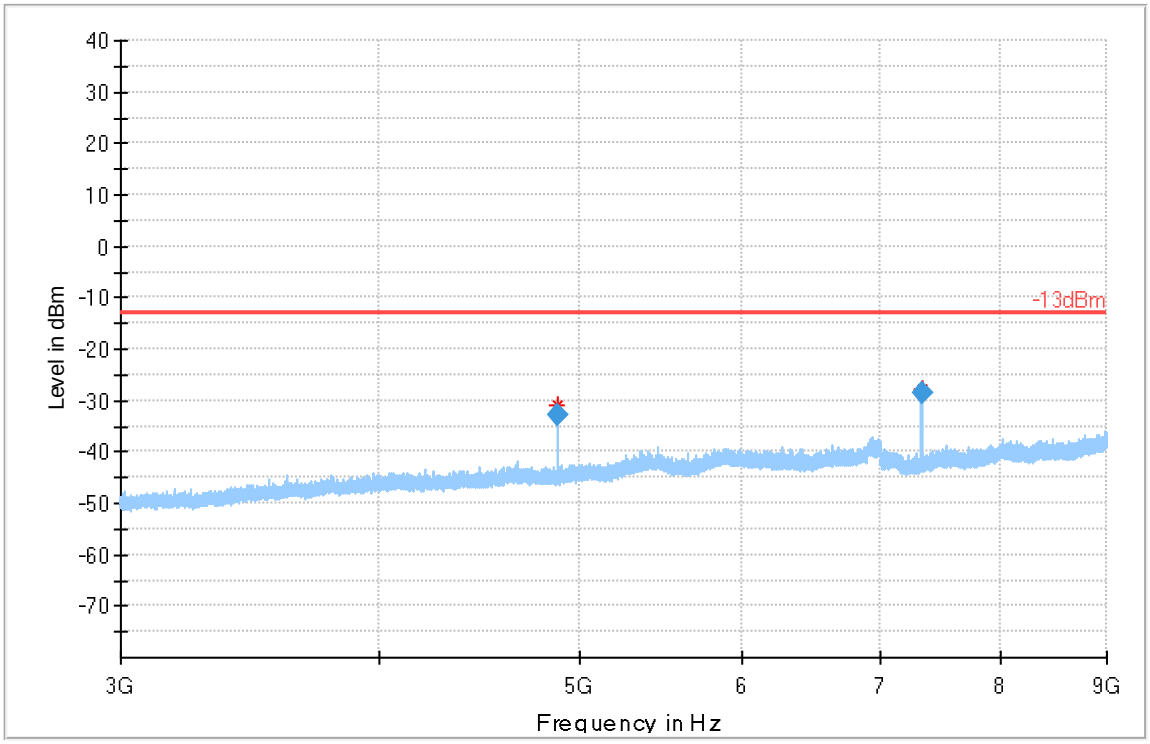


**Plot # 86 Radiated Emissions: 3 GHz – 9 GHz**

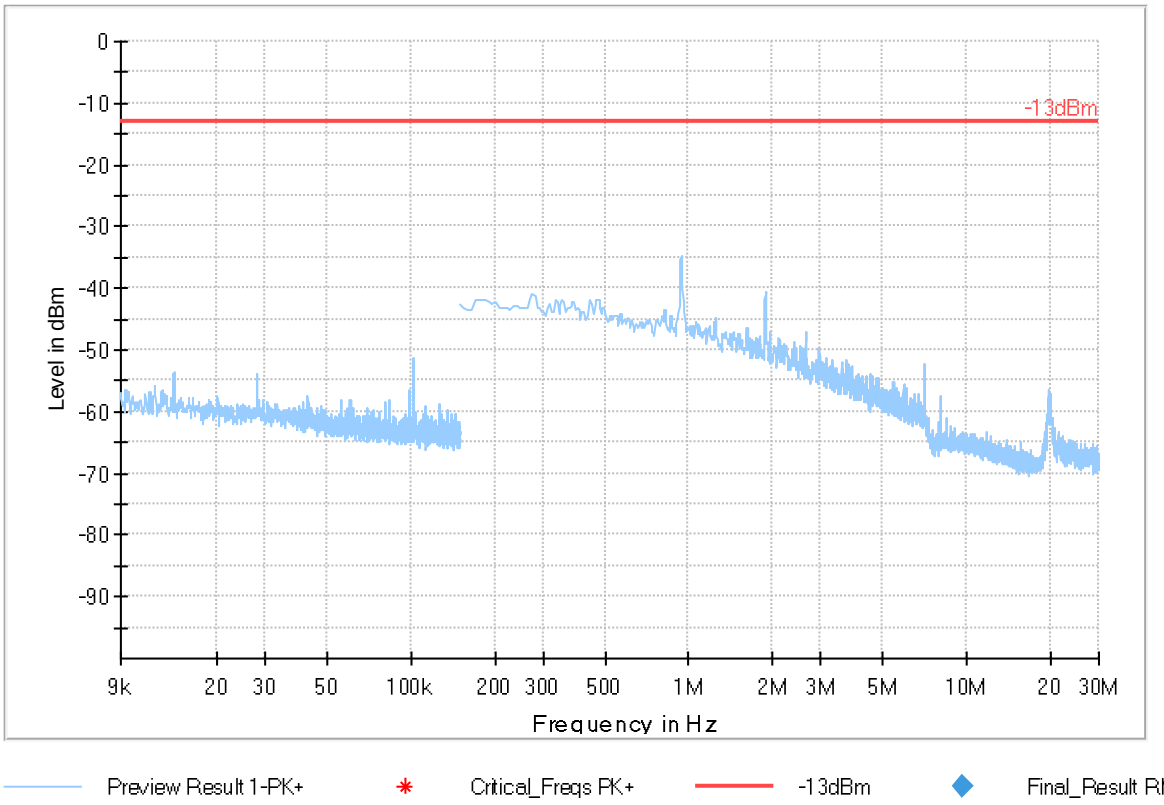
**Channel: Low**

## Final_Result

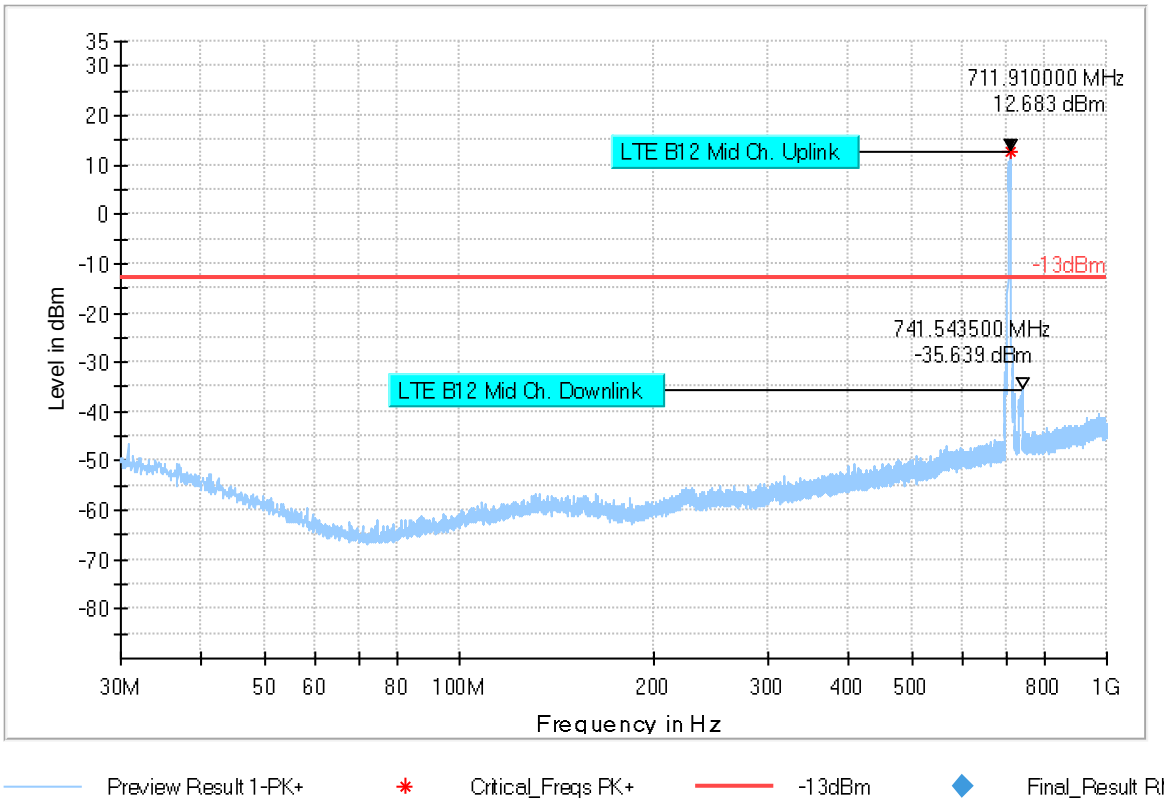
| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.423 | -32.932 | -13.00 | 19.93 | 500.0 | 1000.000 | 116.0 | H | 178.0 | -100.9 | 6:33:14 PM - 10/23/2019 |
| 7320.710 | -28.554 | -13.00 | 15.55 | 500.0 | 1000.000 | 128.0 | H | 76.0 | -97.9 | 6:29:39 PM - 10/23/2019 |



| Plot # 87 Radiated Emissions: 9 kHz – 30 MHz |
|---|
| Channel: Mid |

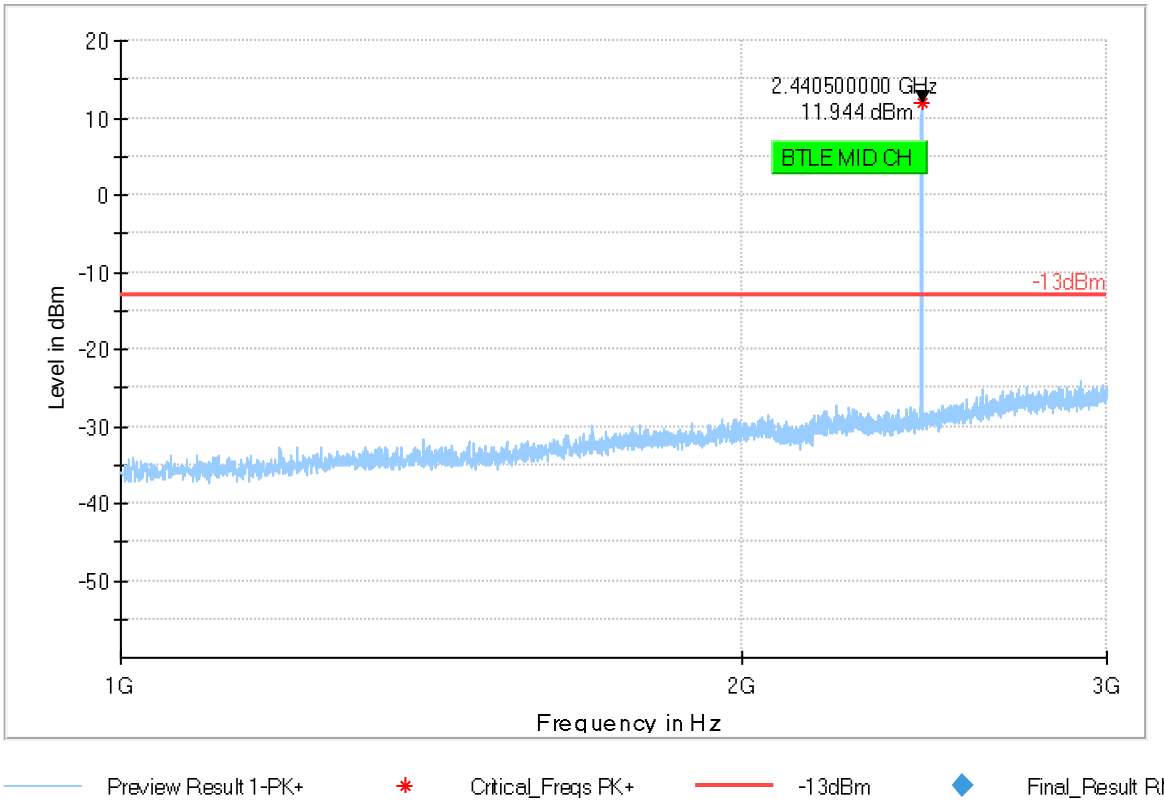


| Plot # 88 Radiated Emissions: 30 MHz – 1GHz |
|---|
| Channel: Mid |



**Plot # 89 Radiated Emissions: 1 GHz – 3 GHz**

**Channel: Mid**

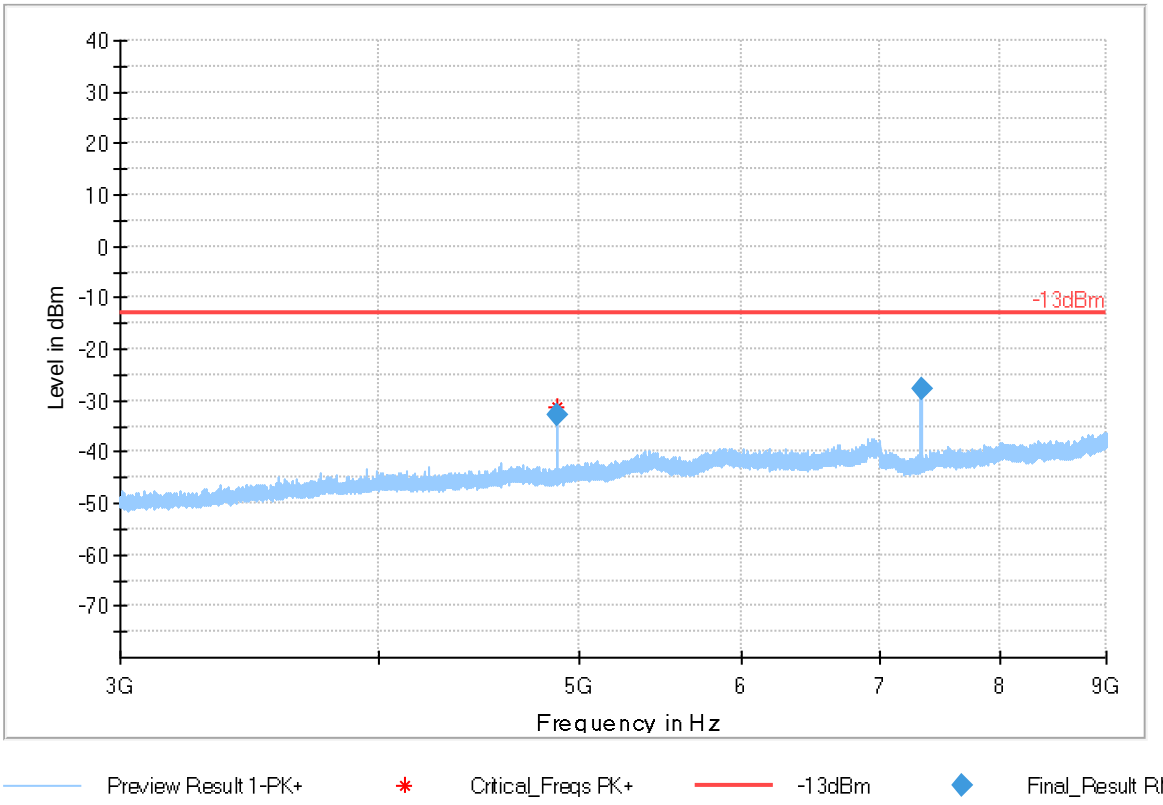


**Plot # 90 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: Mid**

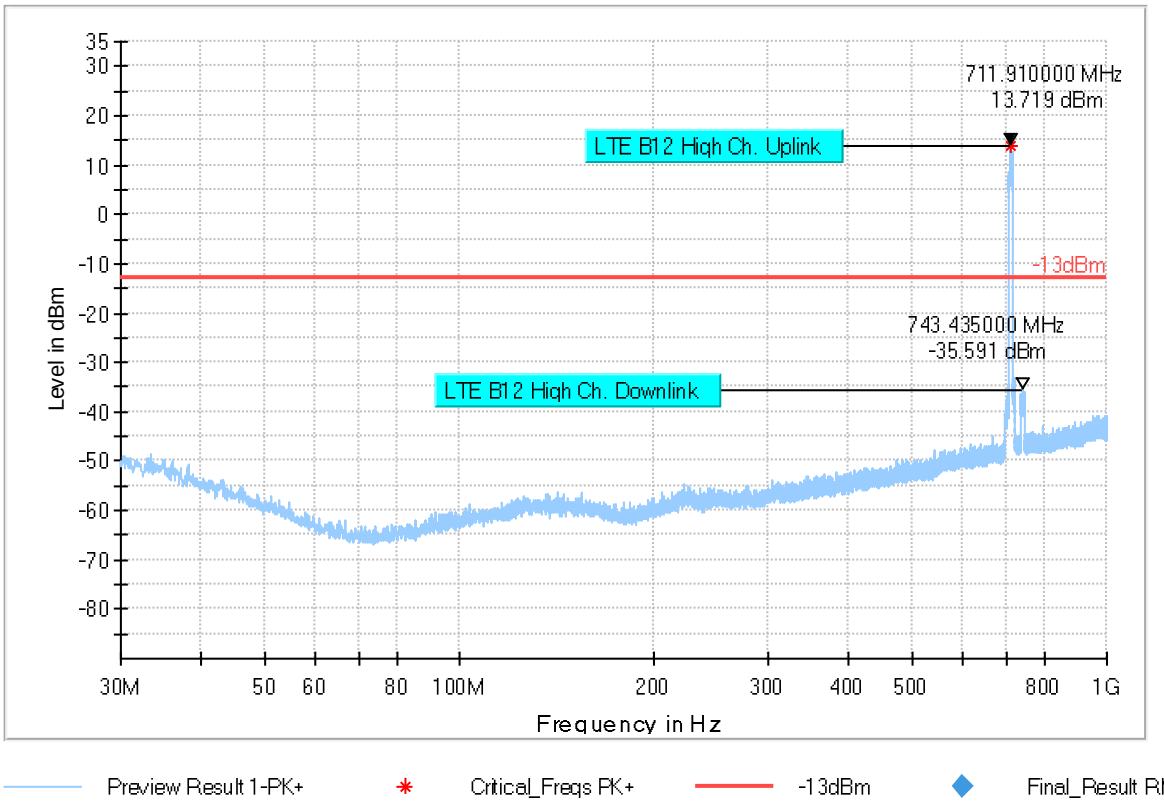
## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.373 | -32.995 | -13.00 | 19.99 | 500.0 | 1000.000 | 116.0 | H | 178.0 | -100.9 | 6:17:53 PM - 10/23/2019 |
| 7320.853 | -27.929 | -13.00 | 14.93 | 500.0 | 1000.000 | 133.0 | H | 77.0 | -97.9 | 6:14:22 PM - 10/23/2019 |

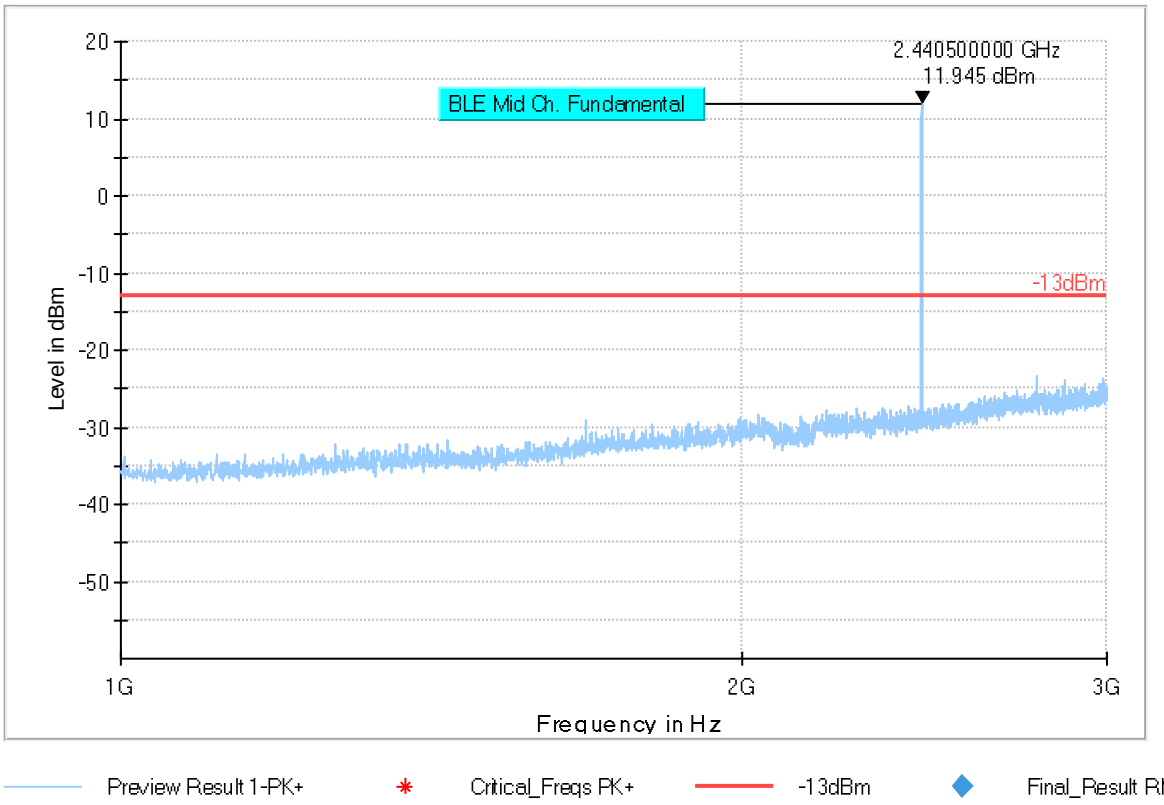


**Plot # 91 Radiated Emissions: 30 MHz – 1 GHz**

**Channel: High**



| Plot # 92 Radiated Emissions: 1 GHz – 3 GHz |
|---|
| Channel: High |

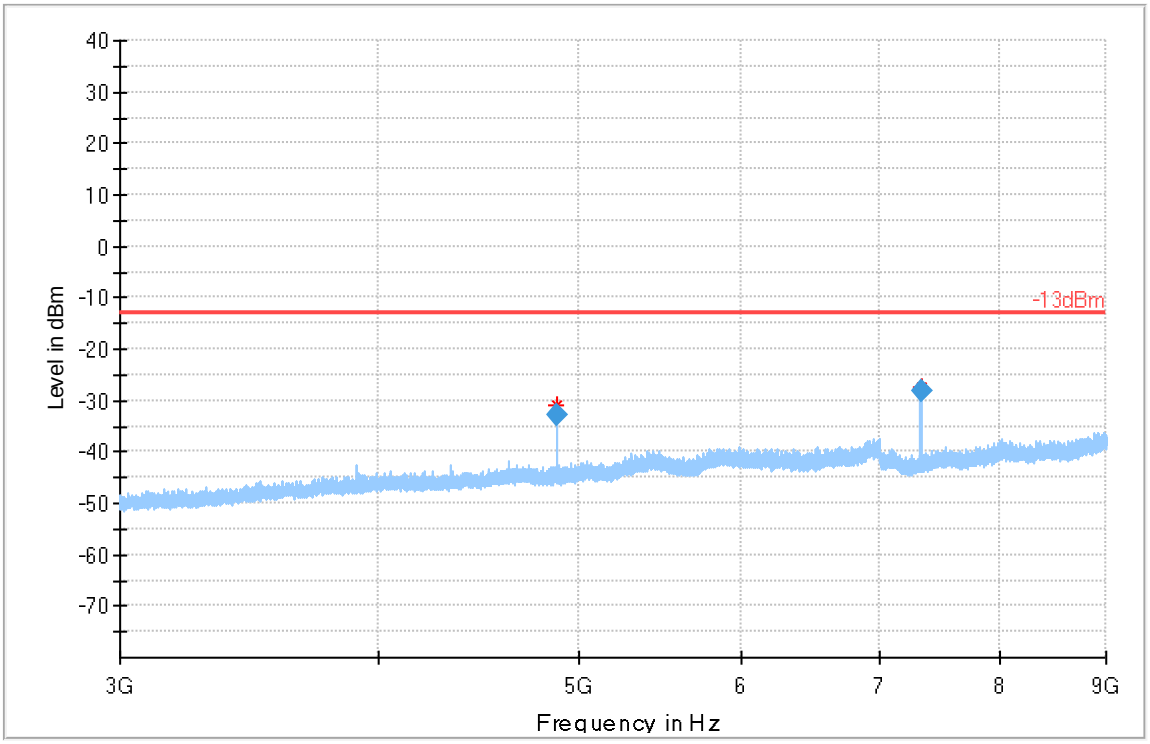


**Plot # 93 Radiated Emissions: 3 GHz – 9 GHz**

**Channel: High**

## Final_Result

| Frequency (MHz) | RMS (dBm) | Limit (dBm) | Margin (dB) | Meas. Time (ms) | Bandwidth (kHz) | Height (cm) | Pol | Azimuth (deg) | Corr. (dB) | Comment |
|---|---|---|---|---|---|---|---|---|---|---|
| 4880.550 | -32.864 | -13.00 | 19.86 | 500.0 | 1000.000 | 117.0 | H | 177.0 | -100.9 | 6:54:57 PM - 10/23/2019 |
| 7320.812 | -27.987 | -13.00 | 14.99 | 500.0 | 1000.000 | 133.0 | H | 78.0 | -97.9 | 6:51:24 PM - 10/23/2019 |



## 8 Test setup photos

Setup photos are included in supporting file name: "EMC_XIRGO-128-19001_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 |
|---|---|---|---|---|---|
| Active Loop Antenna | ETS LINDGREN | 6507 | 00161344 | 3 years | 10/26/2017 |
| Biconlog Antenna | TESEO | CBL 6141B | 41106 | 3 years | 11/01/2017 |
| Horn Antenna | EMCO | 3115 | 00035111 | 3 years | 04/17/2019 |
| Horn Antenna | ETS LINDGREN | 3117 | 00167061 | 3 years | 08/08/2017 |
| Horn Antenna | ETS LINDGREN | 3116C | 00166821 | 3 years | 09/24/2017 |
| Wideband Radio Communication | R&S | CMW500 | 127068 | 2 years | 07/19/2019 |
| Signal Analyzer | R&S | FSV 40 | 101022 | 3 years | 07/15/2019 |
| Thermometer Humidity Monitor | CONTROL COMPANY | 36934-164 | 191871994 | 2 years | 01/10/2019 |
| DC Power Supply | BK PRECISION | 1672 | 1672002260611085 | 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 |
|---|---|---|---|
| 2019-11-08 | EMC_XIRGO-128-19001_FCC_22_24_27_ISED | Initial version | Chin Ming Lui |