

Suzhou ShiRuizhuo Technology Co., Ltd.

TEST REPORT

SCOPE OF WORK:

RF report

MODEL:

RRAR3MON, RRAR4MON

REPORT NUMBER:

2509B1059SHA-007

ISSUE DATE:

Dec 2, 2025

DOCUMENT CONTROL NUMBER:

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FCC ID: 2BQXJ-RRAR3MON01

IC: 34326-RRAR3MON01

LTE CAT4 module FCC ID: XMR202212EG25GL

LTE CAT4 module IC: 10224A-2022EG25GL

Summary:

The equipment complies with the requirements according to the following standard(s) or Specification:

FCC 47 CFR Part 2, FCC 47 CFR Part 22, FCC 47 CFR Part 24, FCC 47 CFR Part 27, FCC 47 CFR Part 90, ANSI C63.26:2015

RSS 130 Issue 2, RSS 132 Issue 4, RSS 133 Issue 7, RSS 139 Issue 4, RSS 199 Issue 4, RSS Gen Issue 5+A1+A2

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TEST REPORT

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Revision History

Report No.	Version	Description	Issued Date
2509B1059SHA-007	Rev. 01	Initial issue of report	Dec 2, 2025

Statement

This product uses a certified LTE CAT4 Module(model: EG25-GL). LTE CAT4 Module's FCC ID is XMR202212EG25GL, IC ID is 10224A-2022EG25GL. The FCC certified module reports refer to 2211RSU065-U1, 2211RSU065-U2, 2211RSU065-U3 and 2211RSU065-U4 issued by MRT Technology (Suzhou) Co., Ltd. The ISED certified module reports refer to 2211RSU065-C1, 2211RSU065-C2 and 2211RSU065-C3 issued by MRT Technology (Suzhou) Co., Ltd. After evaluation, RSE against the product when communicating with CMW500 was tested and the RSE data is listed in this report.

Measurement result summary

For RSE of whole product

TEST ITEM	FCC REFERENCE	IC REFERENCE	Result
Spurious Emission (Radiated)	2.1053, 22.917(a), 24.238(a), 27.53(c) (f) (g) (h) (m), 90.691(a)	RSS-130 §4.7, RSS-132 §5.5 RSS-133 §6.5, RSS-139 §6.6 RSS-199 §4.5	Pass

Notes: 1: NA =Not Applicable

2: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

3: Additions, Deviations and Exclusions from Standards: None.

For FCC GSM&WCDMA:

TEST ITEM	FCC REFERENCE	TEST RESULT	Notes
Occupied Bandwidth	2.1049	NT	Please refer to the certified module report 2211RSU065-U1 issued by MRT Technology (Suzhou) Co., Ltd.
Frequency Stability	2.1055, 22.355 24.235, 27.54	NT	
Equivalent (Isotropic) Radiated Power	22.913(a)(5), 27.50(d)(4) 24.232(c)	NT	
Band Edge	2.1051, 22.917(a) 24.238(a), 27.53(h)	NT	
Spurious Emission(Conducted)	2.1051, 22.917(a) 24.238(a), 27.53(h)	NT	
Peak to Average Ratio	22.913(d), 24.232(d) 27.50(d)(5)	NT	
Spurious Emissions(Radiated)	2.1053, 22.917(a) 24.238(a), 27.53(h)	NT	

Notes: 1: NA =Not Applicable

2: "NT" means this test is not performed within this report and the results can refer to the related based report.

3: Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

TEST REPORT

For FCC LTE:

TEST ITEM	FCC REFERENCE	TEST RESULT	Notes
Occupied Bandwidth	2.1049	NT	Please refer to the certified module report 2211RSU065-U2 issued by MRT Technology (Suzhou) Co., Ltd.
Frequency Stability	2.1055, 22.355 24.235, 27.54	NT	
Equivalent (Isotropic) Radiated Power	22.913(a)(5), 27.50(b)(9) 27.50(c)(9), 27.50(d)(4) 27.50(h)(2), 24.232(c)	NT	
Band Edge	2.1051, 22.917(a), 24.238(a) 27.53(c) (f) (g) (h) (m)	NT	
Spurious Emission(Conducted)	2.1051, 22.917(a), 24.238(a) 27.53(c) (f) (g) (h) (m)	NT	
Peak to Average Ratio	24.232(d), 27.50(d)(5)	NT	
Spurious Emissions(Radiated)	2.1053, 22.917(a), 24.238(a) 27.53(c) (f) (g) (h) (m)	NT	

Notes: 1: NA =Not Applicable

2: "NT" means this test is not performed within this report and the results can refer to the related based report.

3. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

For FCC LTE(Part 90):

TEST ITEM	FCC REFERENCE	TEST RESULT	Notes
Occupied Bandwidth	2.1049	NT	Please refer to the certified module report 2211RSU065-U3 issued by MRT Technology (Suzhou) Co., Ltd.
Frequency Stability	2.1055, 90.213	NT	
Conducted Output Power	90.635	NT	
Band Edge	2.1051, 90.691(a)	NT	
Spurious Emission(Conducted)	2.1051, 90.691(a)	NT	
Spurious Emissions(Radiated)	2.1053, 90.691(a)	NT	

Notes: 1: NA =Not Applicable

2: "NT" means this test is not performed within this report and the results can refer to the related based report.

3. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

TEST REPORT

For ISED GSM&WCDMA:

TEST ITEM	IC REFERENCE	TEST RESULT	Notes
Occupied Bandwidth	RSS-132 §5.1, RSS-133 §6.1 RSS-139 §5.2	NT	Please refer to the certified module report 2211RSU065-C1 issued by MRT Technology (Suzhou) Co., Ltd.
Frequency Stability	RSS-132 §5.3, RSS-133 §6.3 RSS-139 §5.4	NT	
Equivalent (Isotropic) Radiated Power	RSS-132 §5.4, RSS-133 §6.4 RSS-139 §5.5	NT	
Band Edge	RSS-132 §5.5, RSS-133 §6.5 RSS-139 §5.6	NT	
Spurious Emission(Conducted)	RSS-132 §5.5, RSS-133 §6.5 RSS-139 §5.6	NT	
Peak to Average Ratio	RSS-132 §5.4, RSS-133 §6.4 RSS-139 §5.5	NT	
Transmitter Spurious Emission (Radiated)	RSS-132 §5.5, RSS-133 §6.5 RSS-139 §5.6	NT	
Receiver Spurious Emission (Radiated)	RSS-Gen §7.3, RSS-133 §6.6	NT	

Notes: 1: NA =Not Applicable

2: "NT" means this test is not performed within this report and the results can refer to the related based report.

3. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

TEST REPORT

For ISSED LTE:

TEST ITEM	IC REFERENCE	TEST RESULT	Notes
Occupied Bandwidth	RSS-130 §4.3, RSS-132 §5.1, RSS-133 §6.1, RSS-139 §6.1, RSS-199 §4.2	NT	Please refer to the certified module report 2211RSU065- C2 issued by MRT Technology (Suzhou) Co., Ltd.
Frequency Stability	RSS-130 §4.5, RSS-132 §5.3, RSS-133 §6.3, RSS-139 §6.4, RSS-199 §4.3	NT	
Equivalent (Isotropic) Radiated Power	RSS-130 §4.6, RSS-132 §5.4 RSS-133 §6.4, RSS-139 §6.5 RSS-199 §4.4	NT	
Band Edge	RSS-130 §4.7, RSS-132 §5.5 RSS-133 §6.5, RSS-139 §6.6 RSS-199 §4.5	NT	
Spurious Emission(Conducted)	RSS-130 §4.7, RSS-132 §5.5 RSS-133 §6.5, RSS-139 §6.6 RSS-199 §4.5	NT	
Peak to Average Ratio	RSS-130 §4.6.1, RSS-132 §5.4 RSS-133 §6.4, RSS-139 §6.5 RSS-199 §4.4	NT	
Transmitter Spurious Emission (Radiated)	RSS-130 §4.7, RSS-132 §5.5 RSS-133 §6.5, RSS-139 §6.6 RSS-199 §4.5	NT	
Receiver Spurious Emission (Radiated)	RSS-Gen §7.3, RSS-132 §5.6 RSS-133 §6.6	NT	

Notes: 1: NA =Not Applicable

2: "NT" means this test is not performed within this report and the results can refer to the related based report.

3. Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

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1 GENERAL INFORMATION

1.1 Description of Equipment Under Test (EUT)

Product name:	Robotic Lawn Mower
Type/Model/PMN/HVIN:	RRAR3MON, RRAR4MON
Description of EUT:	The EUT is Robotic Lawn Mower. The 2 models are fully same except for the battery and the battery charger. The EUT contains WIFI2.4G, WIFI5G, BLE, 4G and LORA functions. This report is for 4G. The worst data is listed in the report.
Rating:	Rated Input: RRAR3MON: 32VDC/3.2A, RRAR4MON: 32VDC/4A Charging Station: MHCR00RR Rated Input: 32VDC/3.75A/4.69A Rated Output: 32VDC/3.2A/4A, 5.2VDC/1A Battery Charger for RRAR3MON: TZAL01 Input: 100-240VAC 50/60Hz 2A, Output: 32VDC 3.75A 120W Battery Charger for RRAR4MON: TZAM01 Input: 100-240VAC 50/60Hz 2A, Output: 32VDC 4.69A 150.08W
EUT type:	☐ Table top ☒ Floor standing
Hardware Version:	Refer to the certified module report
Software Version:	Refer to the certified module report
Sample No.:	A250910-39-001
Sample received date:	Sep 18, 2025
Date of test:	Sep 18~Nov 7, 2025

1.2 Technical Information

GSM Band:	GSM 850, PCS1900
UMTS Band:	Band 2, 4, 5
E-UTRA Band:	Band 2, 4, 5, 7, 12, 13, 25, 26, 38, 41, 66
Antenna Information:	Max 2.92dBi, PCB antenna(Declared by manufacturer) For details, refer to FCC certified module reports: 2211RSU065-U1, 2211RSU065-U2, 2211RSU065-U3, 2211RSU065-U4 and ISED certified module reports: 2211RSU065-C1, 2211RSU065-C2, 2211RSU065-C3.

1.3 Description of Test Facility

Name:	Intertek Testing Services (Shanghai FTZ) Co., Ltd.
Address:	Building 86, No. 1198 Qinzhou Road(North), Shanghai 200233, P.R. China
Telephone:	86 21 61278200
Telefax:	86 21 54262353

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The test facility is recognized, certified, or accredited by these organizations:	CNAS Accreditation Lab Registration No. CNAS L21189
	FCC Accredited Lab Designation Number: CN0175
	IC Registration Lab CAB identifier.: CN0014
	VCCI Registration Lab Registration No.: R-14243, G-10845, C-14723, T-12252
	A2LA Accreditation Lab Certificate Number: 3309.02

2 TEST SPECIFICATIONS

2.1 Standards or specification

FCC 47 CFR Part 2, FCC 47 CFR Part 22, FCC 47 CFR Part 24, FCC 47 CFR Part 27, FCC 47 CFR Part 90, ANSI C63.26:2015

RSS 130 Issue 2, RSS 132 Issue 4, RSS 133 Issue 7, RSS 139 Issue 4, RSS 199 Issue 4, RSS Gen Issue 5+A1+A2

2.2 Mode of operation during the test

Within this test report, EUT was pretested under all available operation modes and the worst results were listed in the report.

GSM mode: GSM Bands communicated with CMW500.

WCDMA mode: WCDMA Bands communicated with CMW500.

LTE mode: LTE Bands communicated with CMW500.

2.3 Test software list

Test Items	Software	Manufacturer	Version
Conducted emission	ESxS-K1	R&S	V2.1.0
Radiated emission	ES-K1	R&S	V1.71

2.4 Test peripherals used

Item No.	Name	Band and Model	Description
-	-	-	-

TEST REPORT

2.5 Test environment condition:

Test items	Temperature	Humidity
Radiated Spurious Emission	22°C	55% RH

2.6 Instrument list

Radiated Emission					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☒	Test Receiver	R&S	ESIB 26	EC 3045	2026-08-18
☒	TRILOG broadband Antenna	Schwarzbeck	VULB9168	EC 6402	2026-04-06
☒	Pre-amplifier	Tonscend	tap01018050	EC 6432-1	2025-12-03
☒	Horn antenna	Tonscend	bha9120d	EC 6432-2	2026-04-10
☒	Universal Radio Communication Tester	R&S	CMW500	EC5944	2027-03-11
☒	Semi-anechoic chamber	Albatross	-	EC 3048	2026-07-11
Additional instrument					
Used	Equipment	Manufacturer	Type	Internal no.	Due date
☐	Thermo-Hygrograph	Testo	175h1	EC6642	2026-08-29
☒	Thermo-Hygrograph	Testo	175h1	EC 6643	2026-08-29

2.7 Measurement Uncertainty

Test item	Measurement uncertainty
Maximum peak output power	$\pm 0.74\text{dB}$
Radiated Emissions in restricted frequency bands below 1GHz	$\pm 4.90\text{dB}$
Radiated Emissions in restricted frequency bands above 1GHz	$\pm 5.02\text{dB}$
Emission outside the frequency band	$\pm 2.89\text{dB}$
Power line conducted emission	$\pm 3.19\text{dB}$

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3 Radiated spurious emissions

Test result: Pass

3.1 Limit

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. The emission limit equal to -13dBm.

For Band 7, 38/41 For mobile digital stations, the attenuation factor shall be not less than $40 + 10 \log(P)$ dB on all frequencies between the channel edge and 5 megahertz from the channel edge, $43 + 10 \log(P)$ dB on all frequencies between 5 megahertz and X megahertz from the channel edge, and $55 + 10 \log(P)$ dB on all frequencies more than X megahertz from the channel edge, where X is the greater of 6 megahertz or the actual emission bandwidth

For LTE Band 13, For operations in the 746-758 MHz, 775 -788 MHz, and 805- 806 MHz bands, emissions in the band 1559- 1610 MHz shall be limited to -70 dBW/MHz (-40dBm/MHz) equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW (-50dBm) EIRP for discrete emissions of less than 700 Hz bandwidth.

3.2 Measurement Procedure

The field strength of spurious emission was measured in the following position:

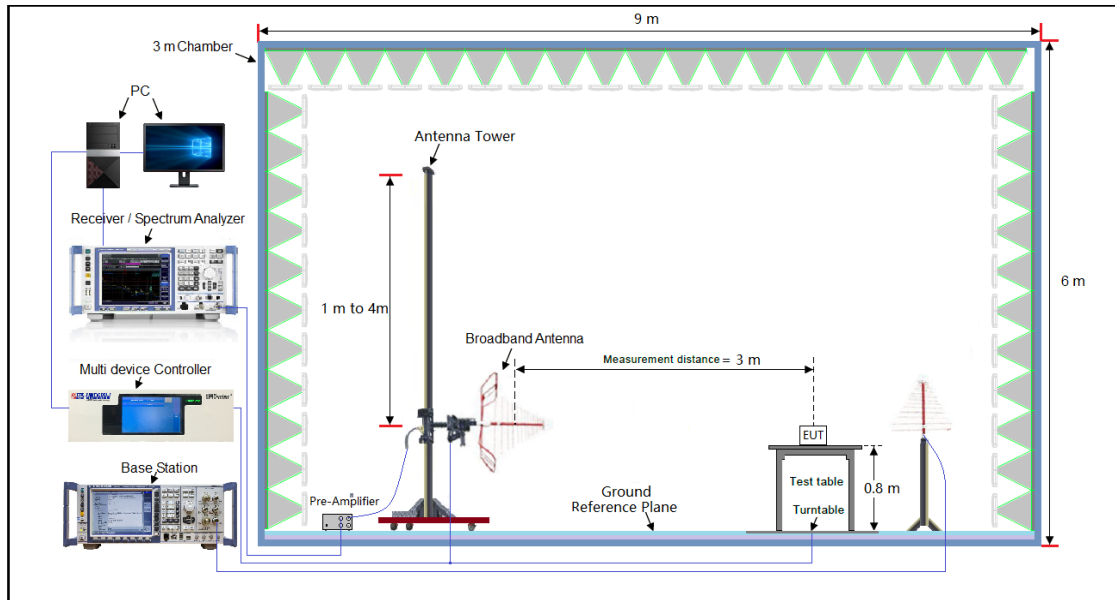
1. Connect the EUT to BS and ensure the EUT worked at maximum output power.
2. Initially the test antenna is closely coupled to the MS and any spurious emission radiated by the MS is detected by the test antenna and receiver.
3. Radiated Spurious Emission is tested under normal temperature and normal voltage conditions.
4. The EUT was placed on the top of a rotating table 0.8 meters (for 30MHz ~ 1GHz) / 1.5 meters (for above 1GHz) above the ground at 3 meter chamber room for test. The table was rotated 360 degrees to determine the position of the highest radiation.
5. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower.
6. The height of antenna is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement.
7. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rotatable table was turned from 0 degrees to 360 degrees to find the maximum reading.

Note:

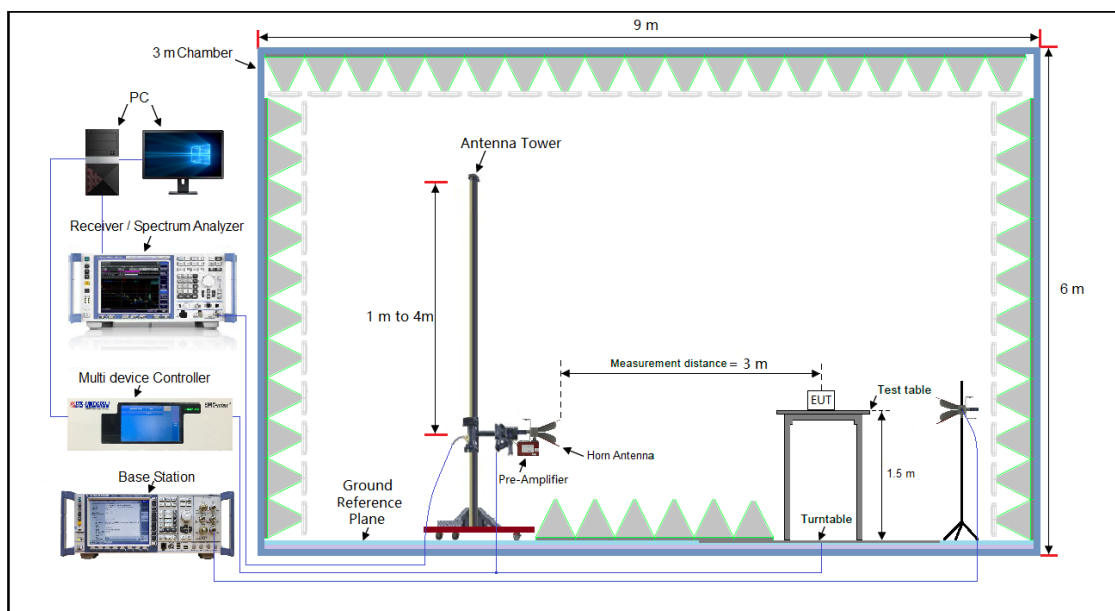
1. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 100kHz and the video bandwidth is 300kHz for Peak detection (PK) at frequency below 1GHz.
2. The resolution bandwidth of test receiver/spectrum analyzer is 1 MHz and the video bandwidth is 3 MHz for Peak detection (PK) at frequency above 1GHz.

3.3 Test Setup

Radiated Emissions 30MHz to 1GHz Test setup



Radiated Emissions Above 1GHz Test setup

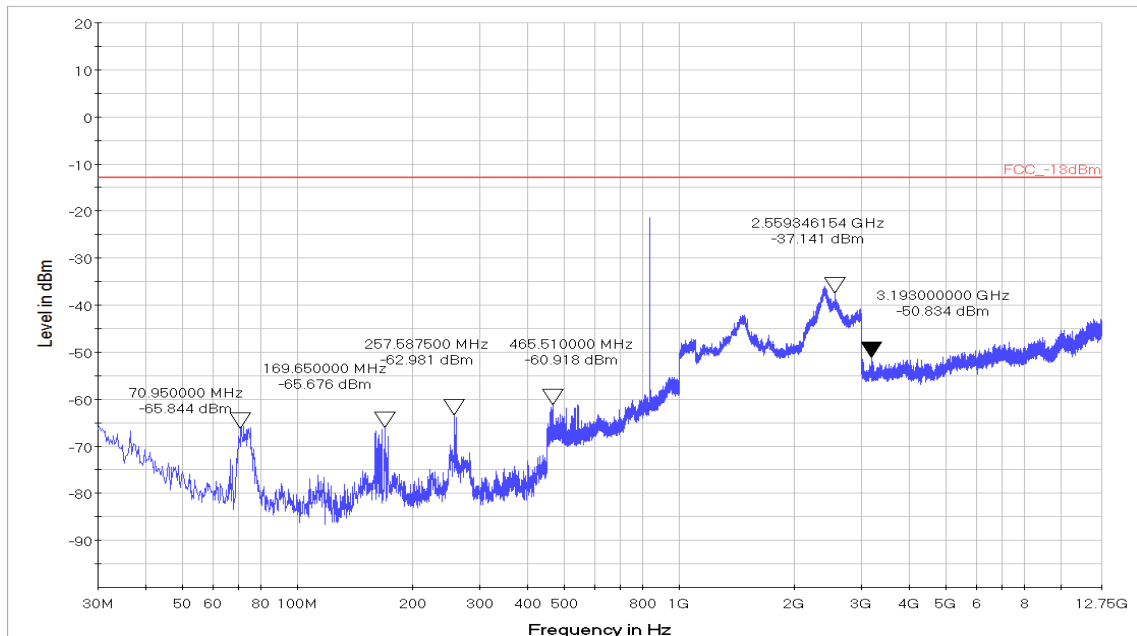


TEST REPORT

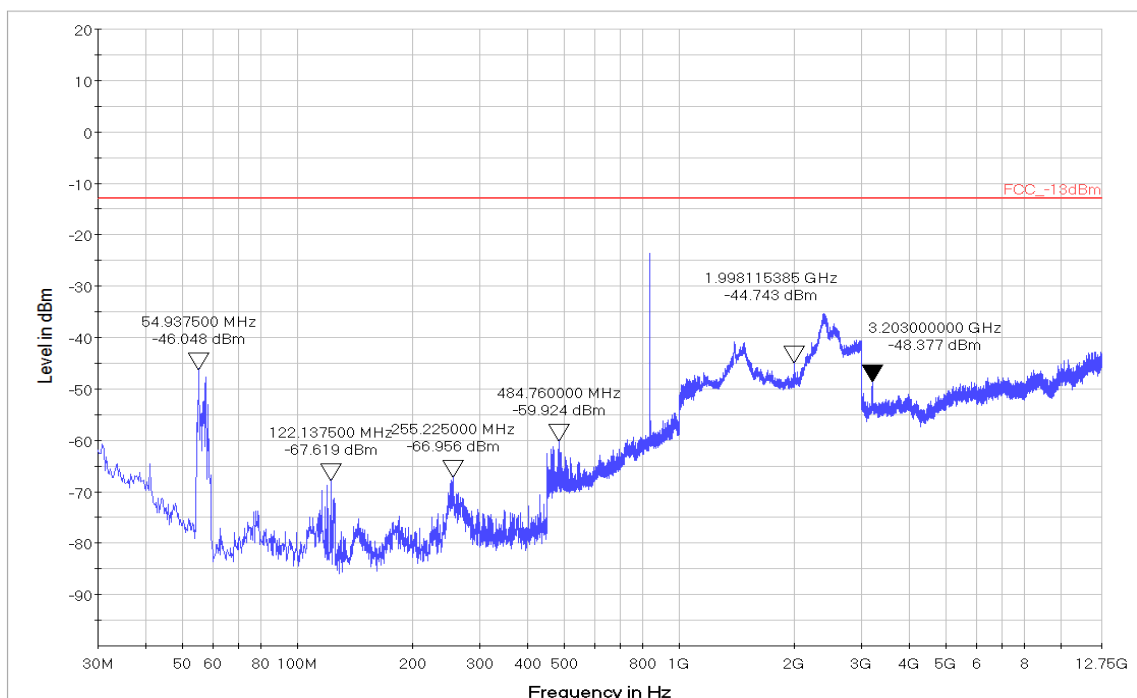
3.4 Test data

GSM 850

Horizontal

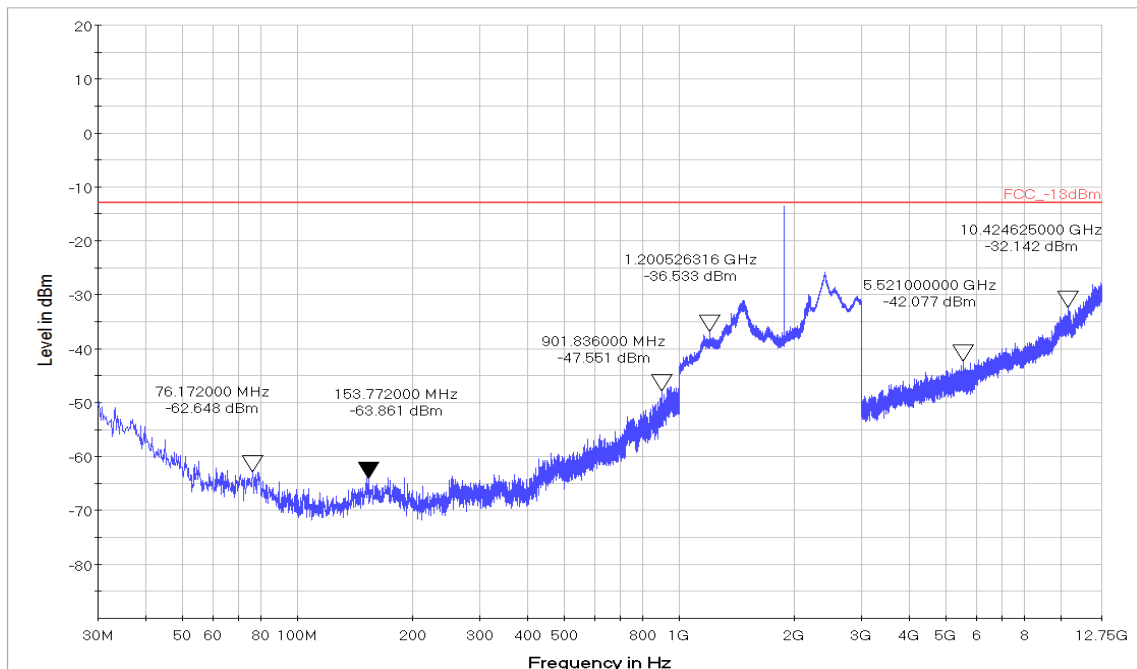


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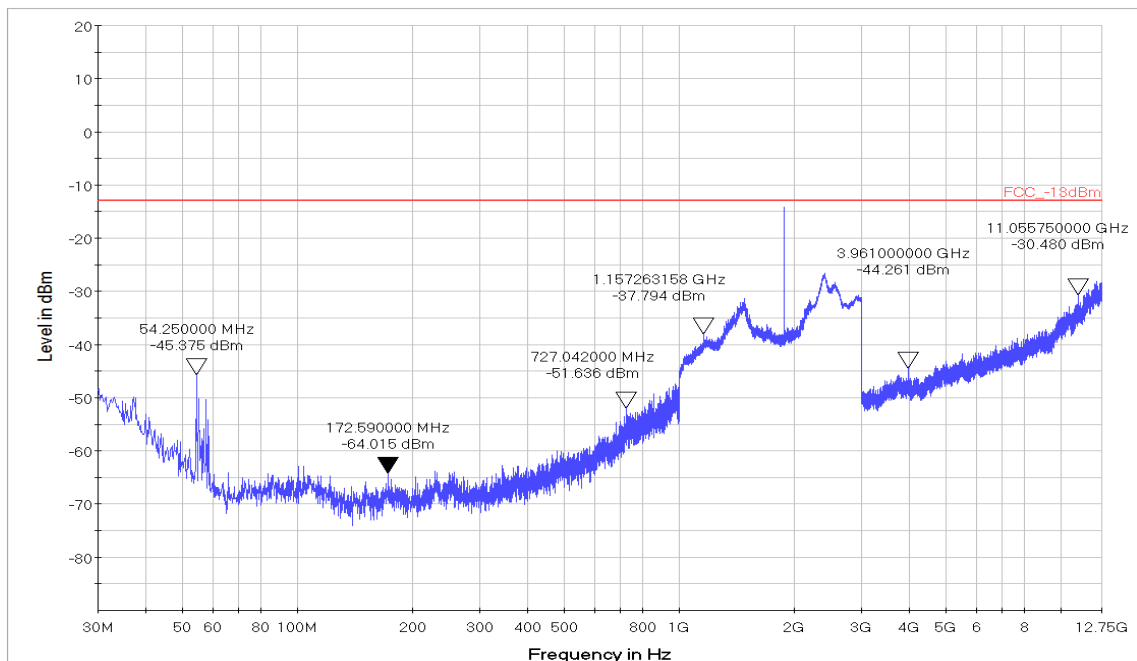


GSM 1900

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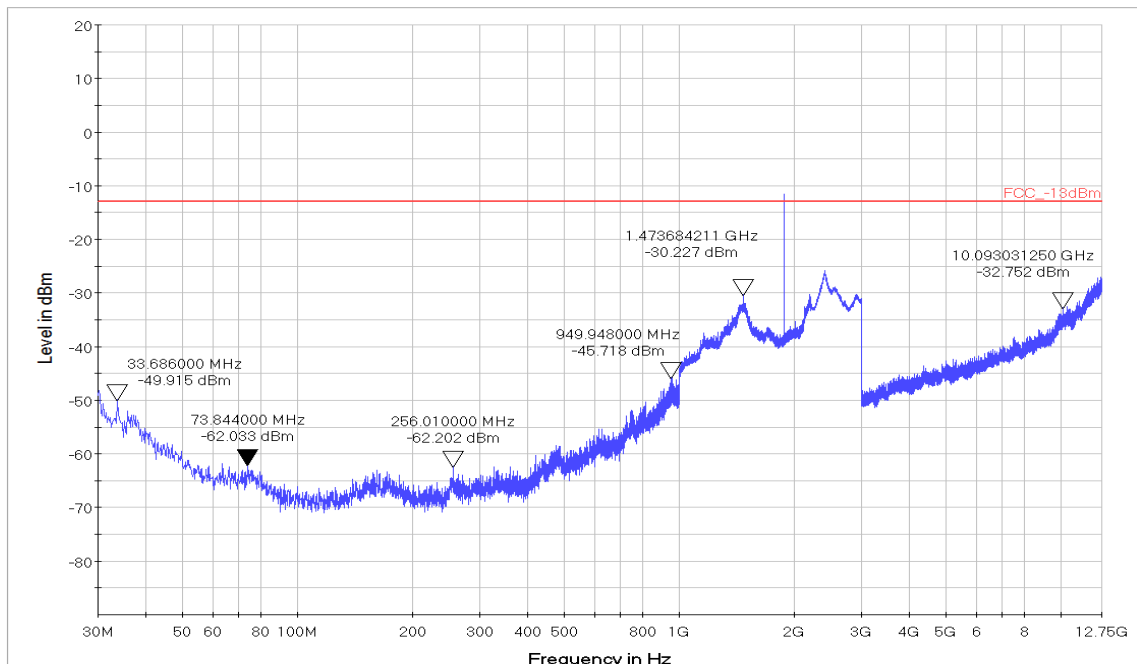


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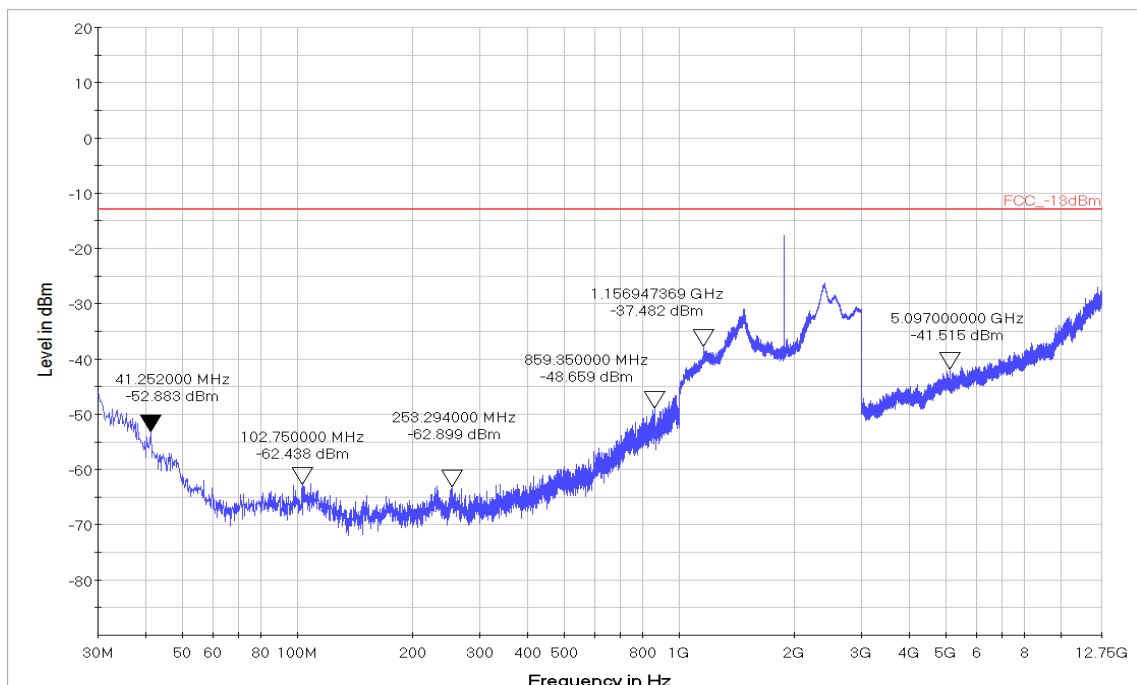


WCDMA B2

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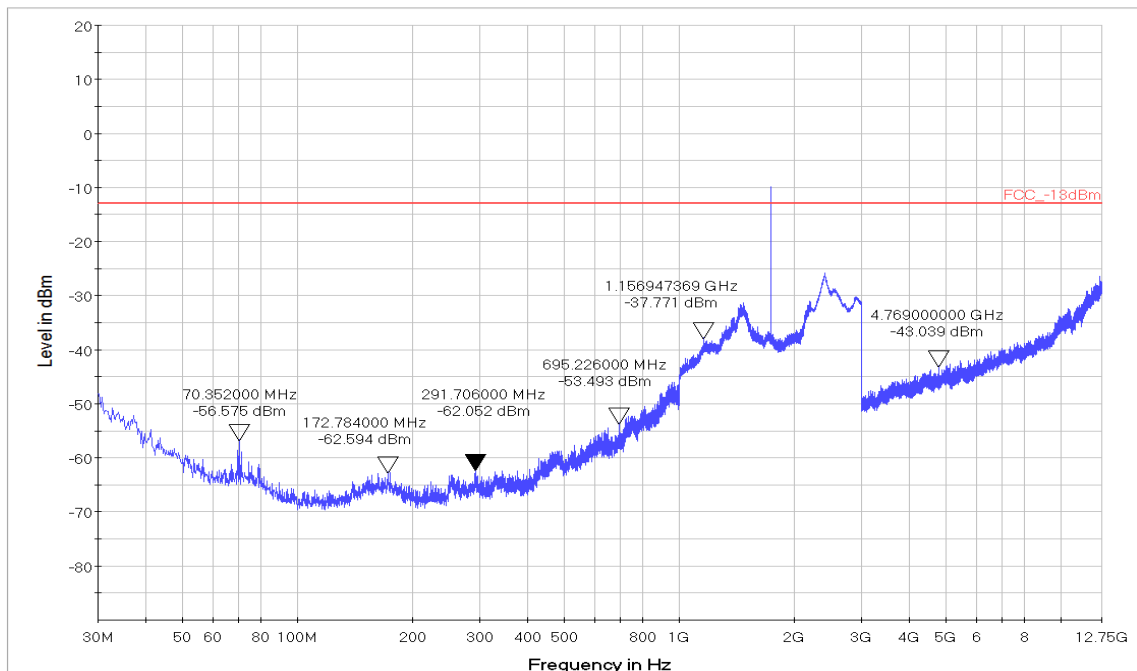


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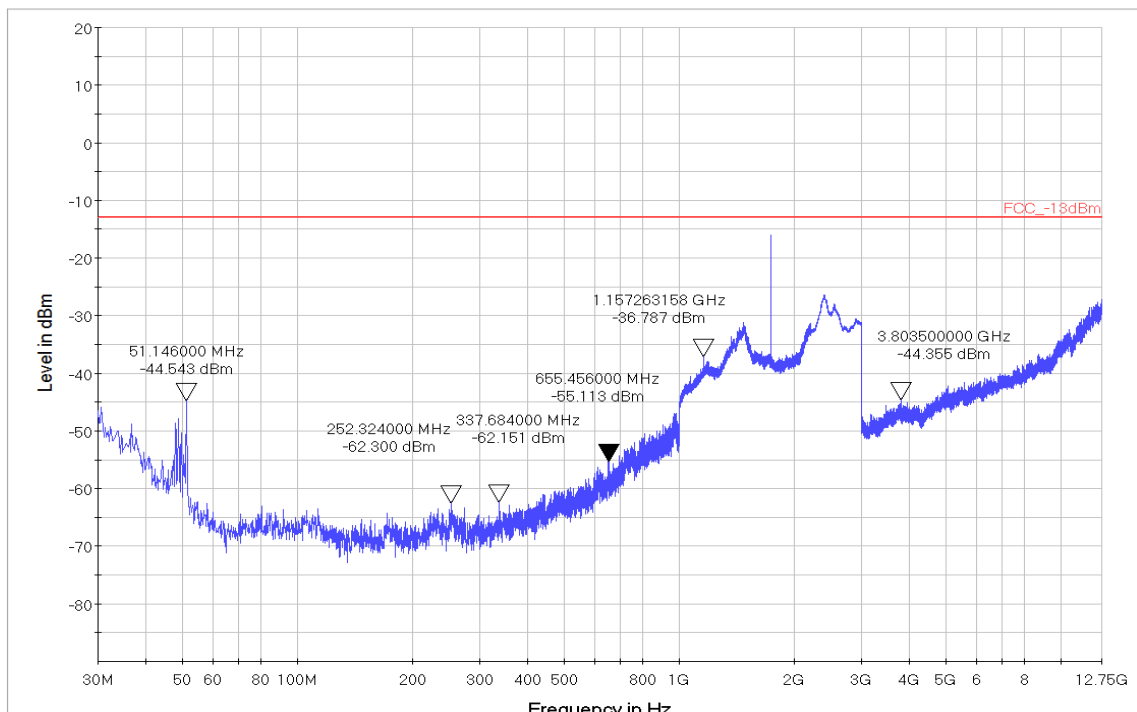


WCDMA B4

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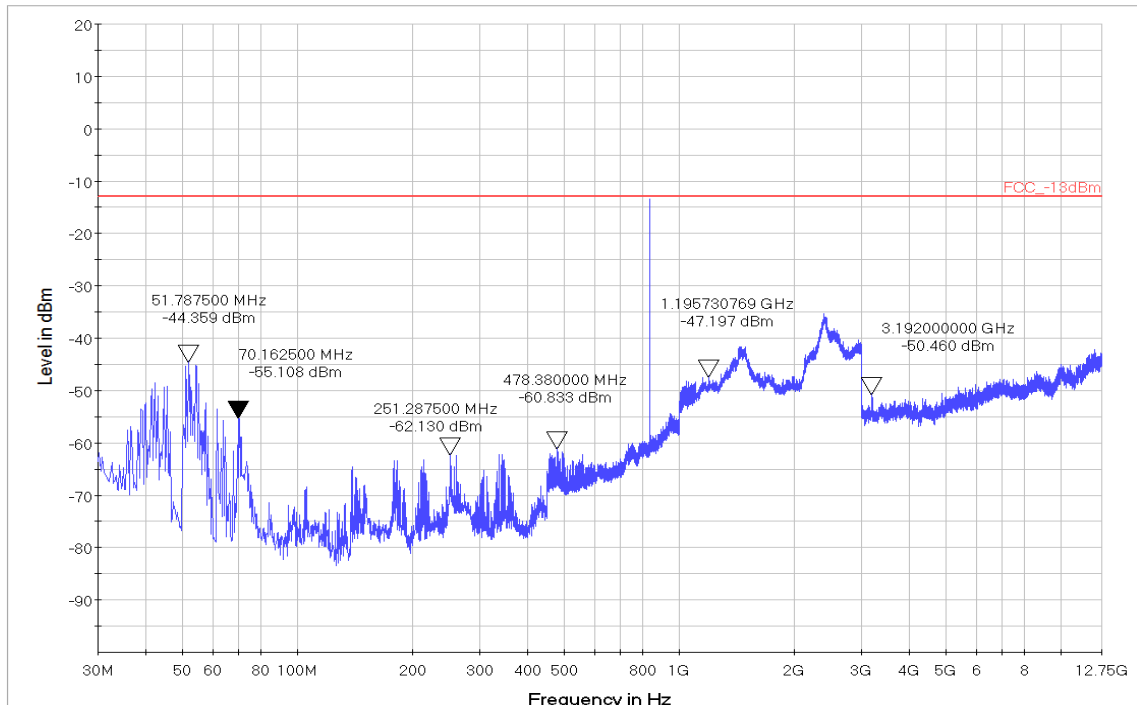


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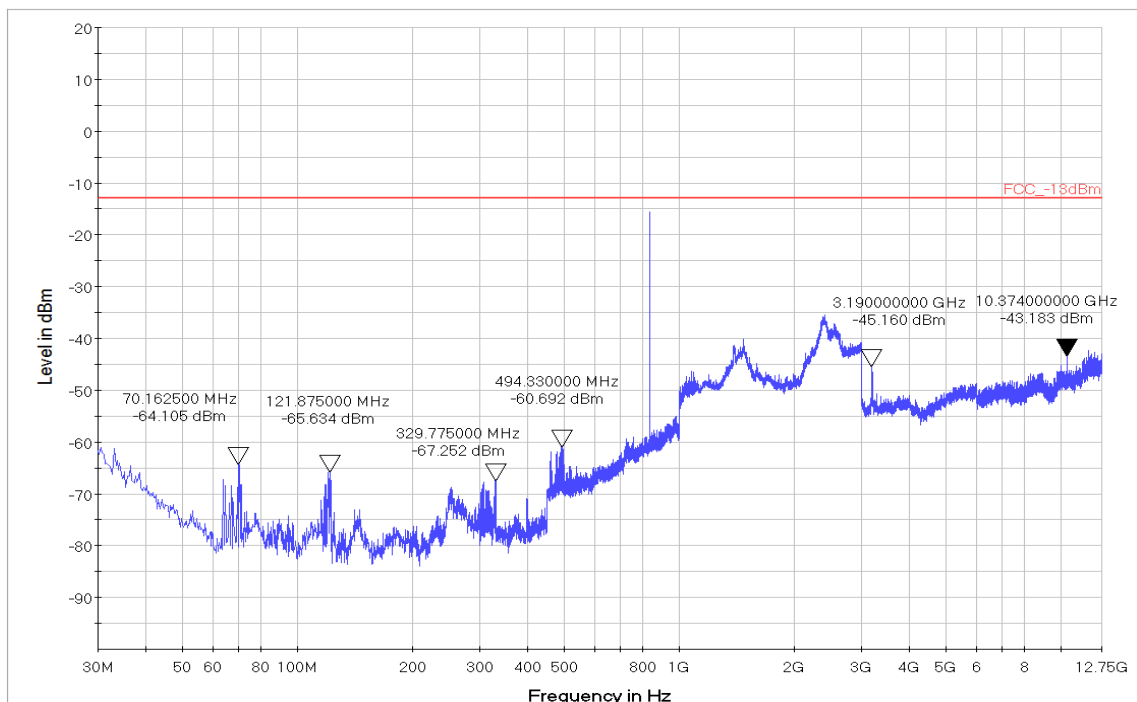


WCDMA B5

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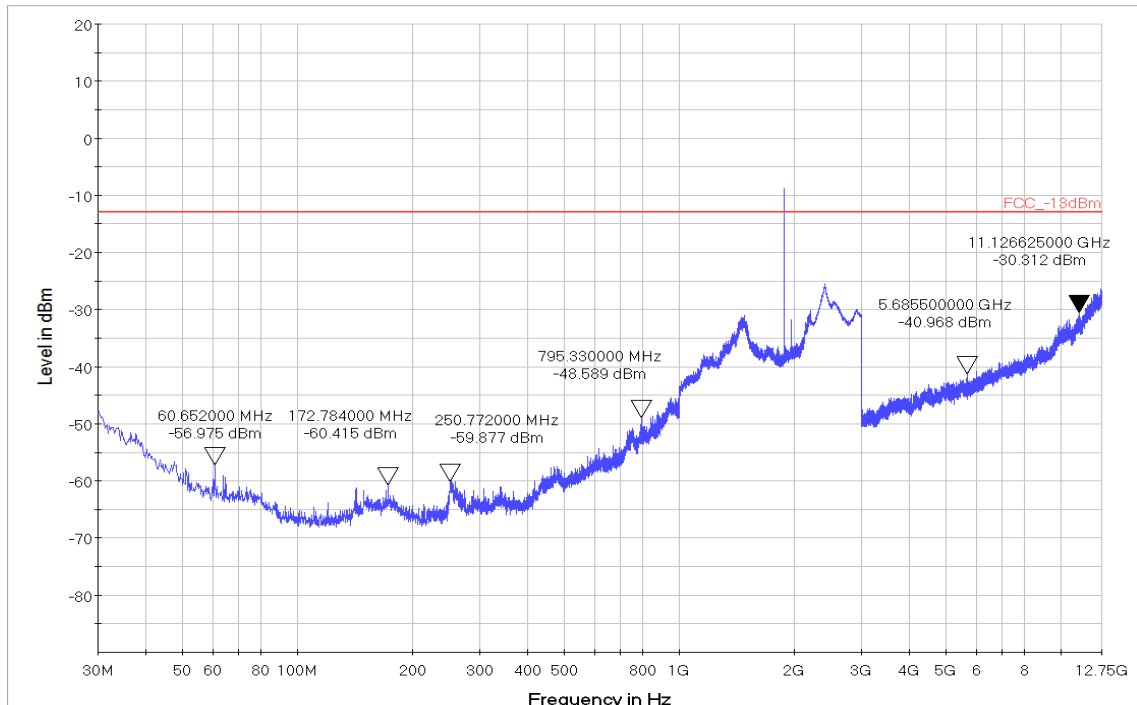


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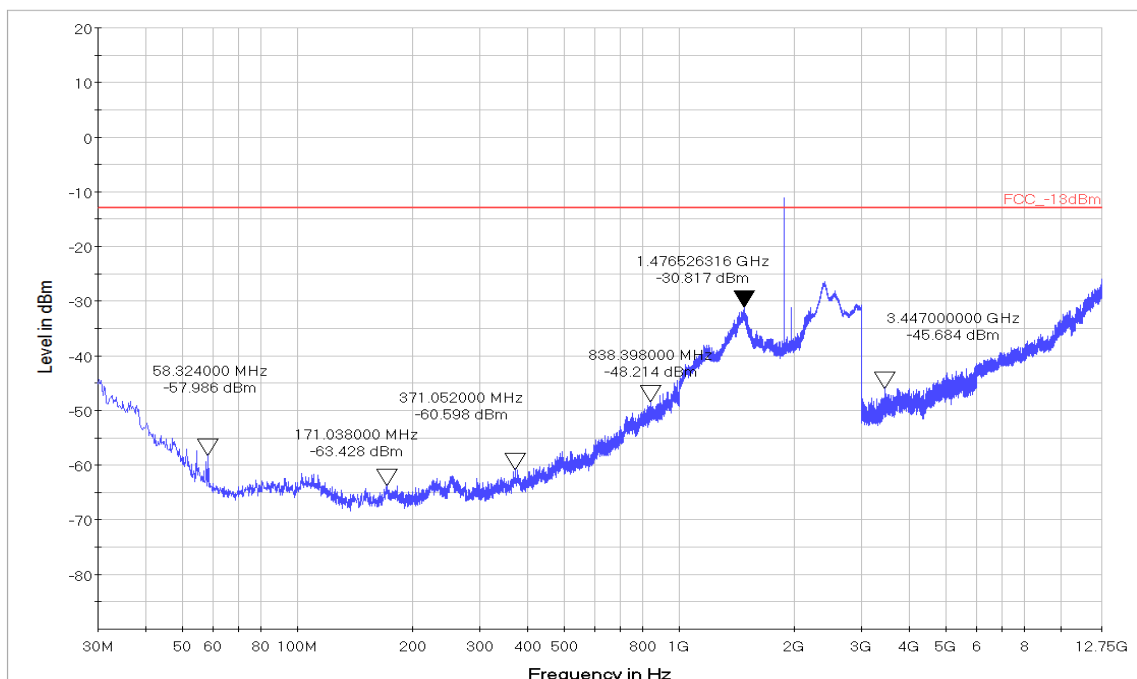


LTE B2

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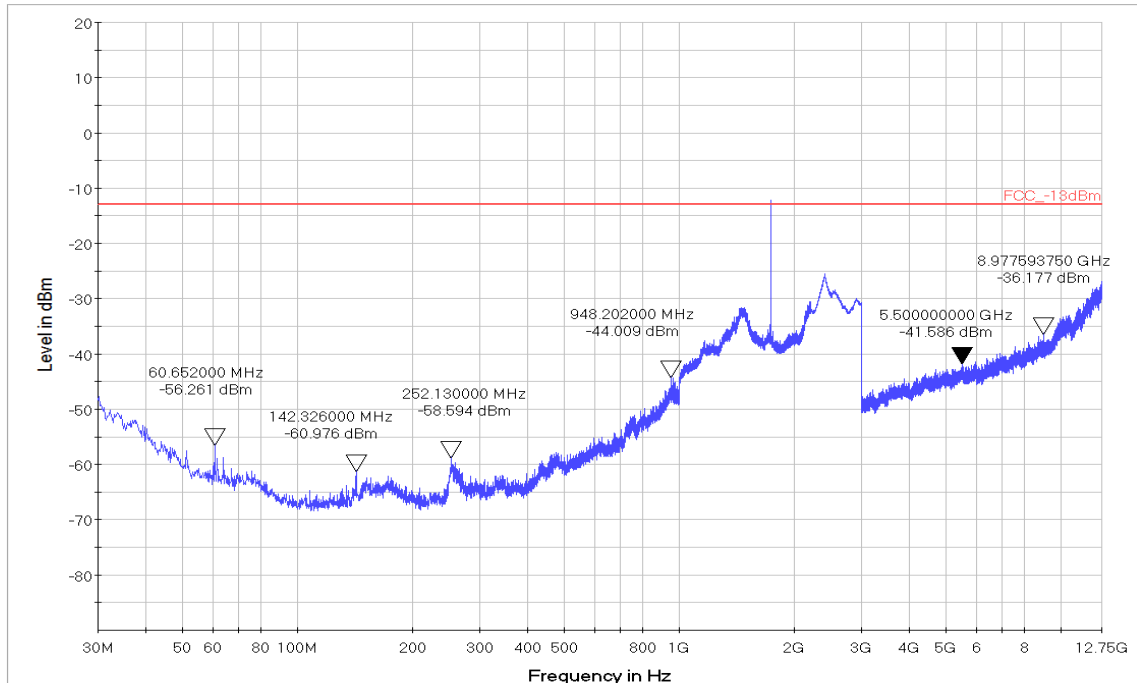


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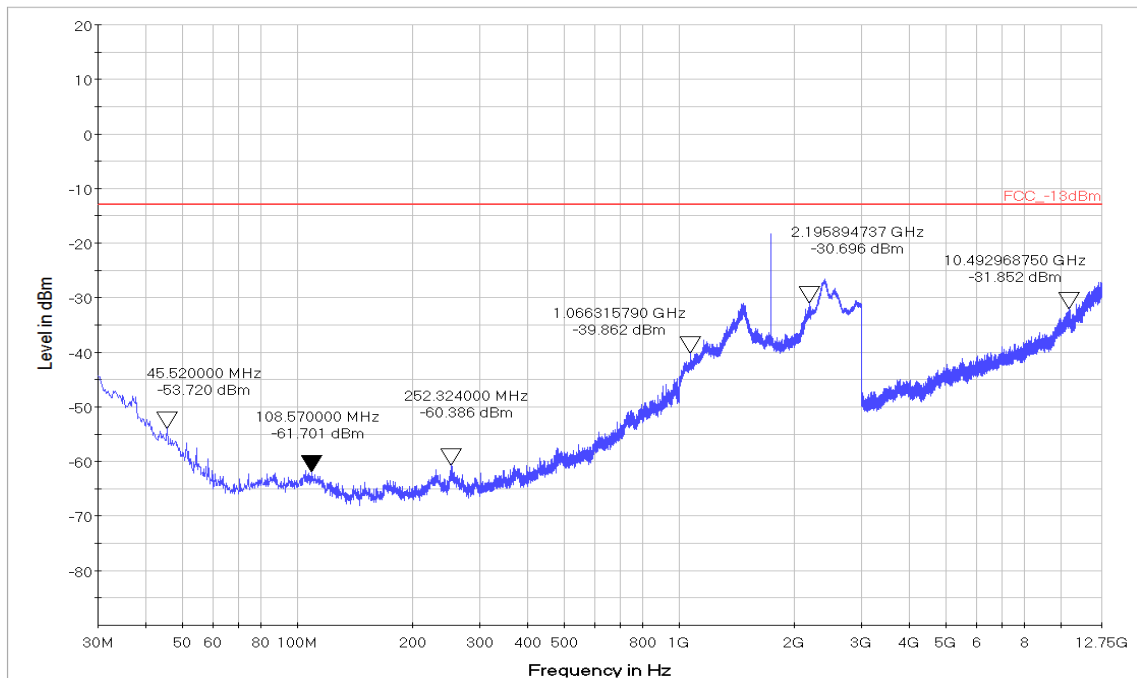


LTE B4

Horizontal

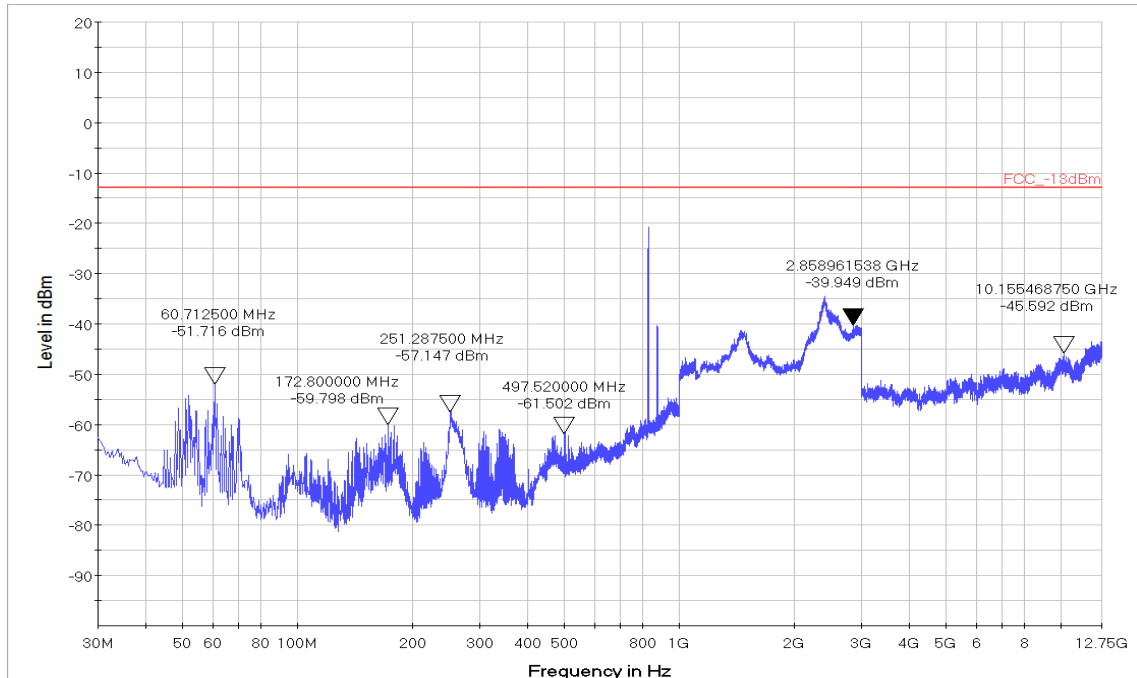


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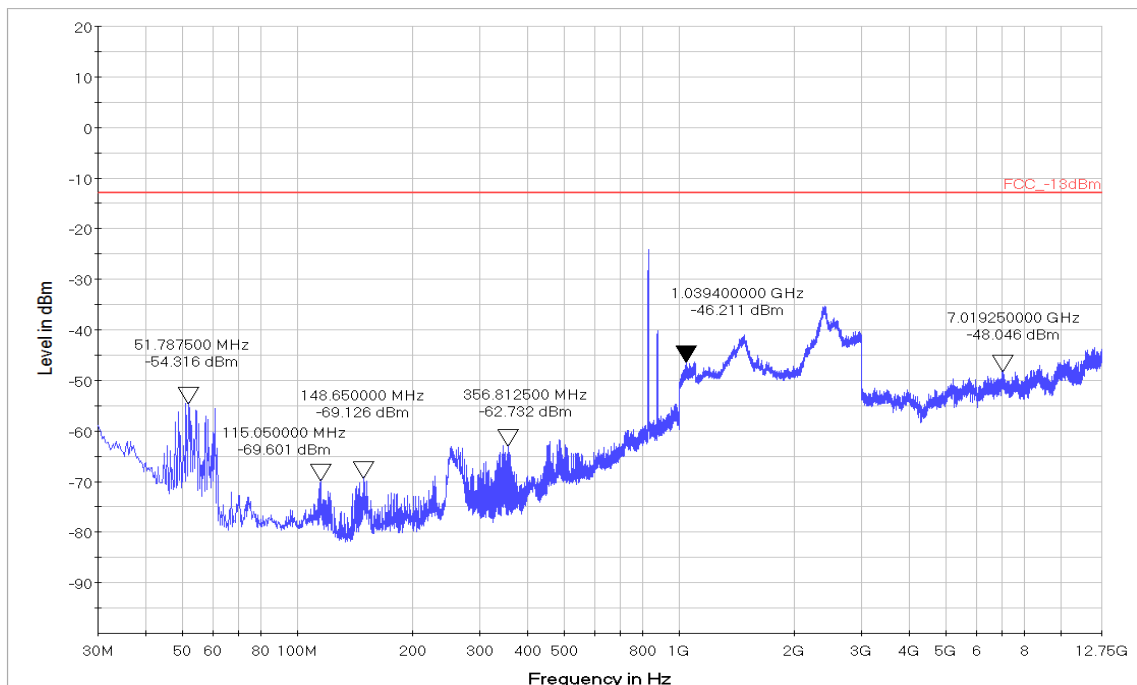


LTE B5

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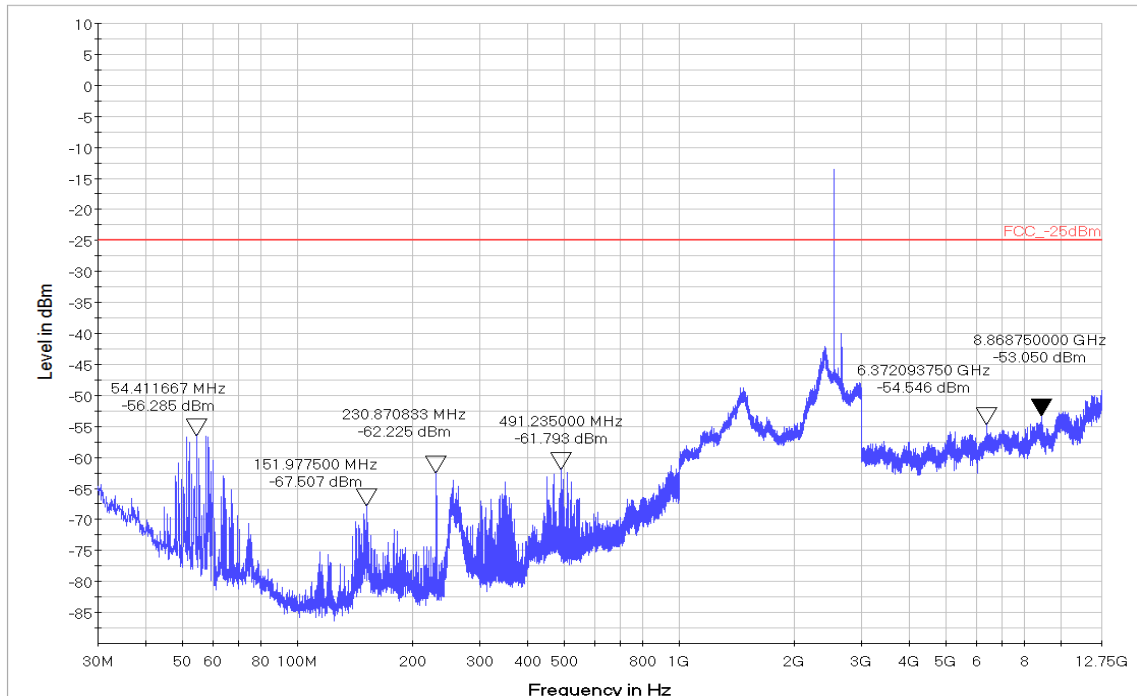


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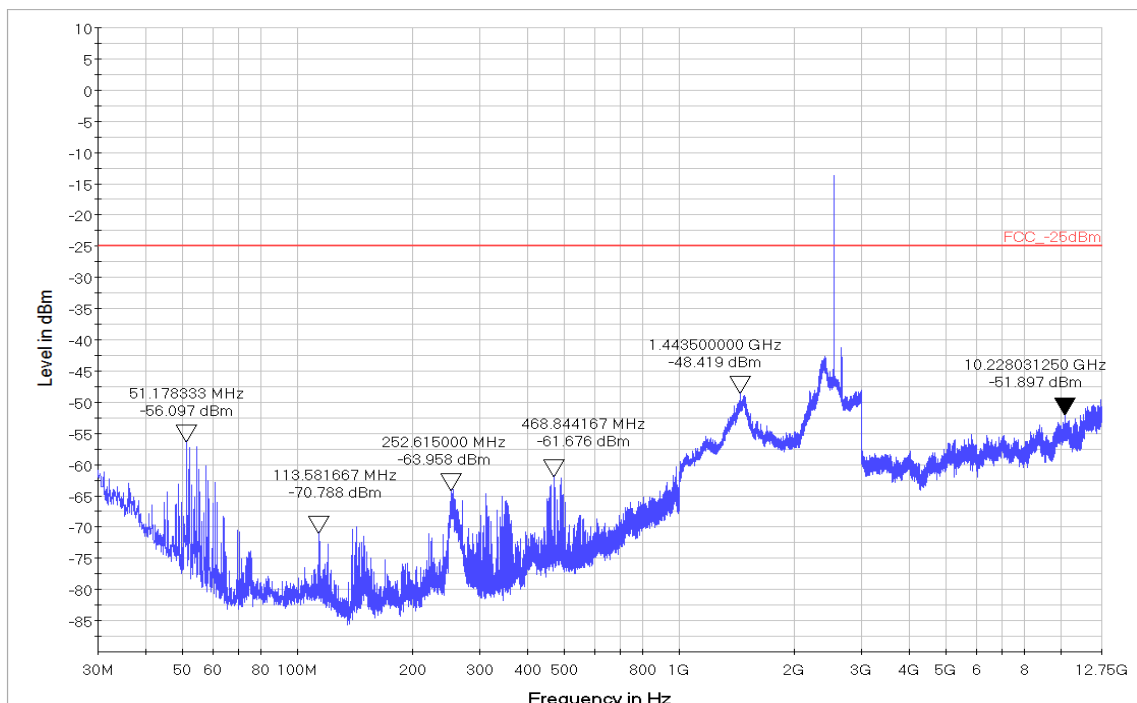


LTE B7

Horizontal

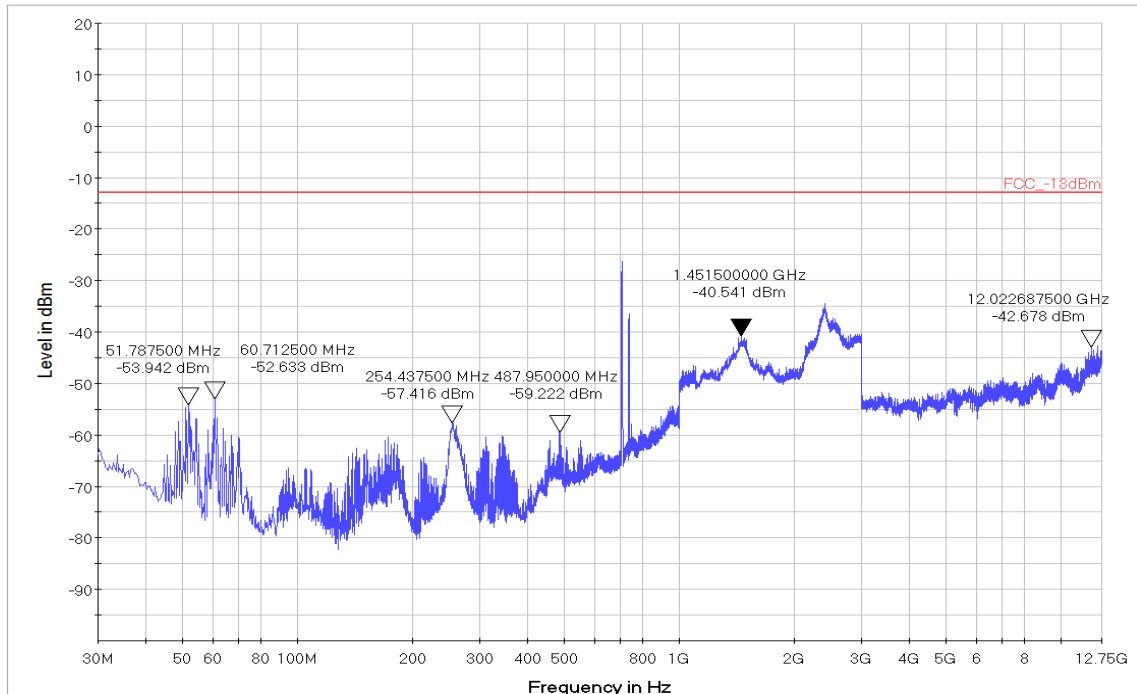


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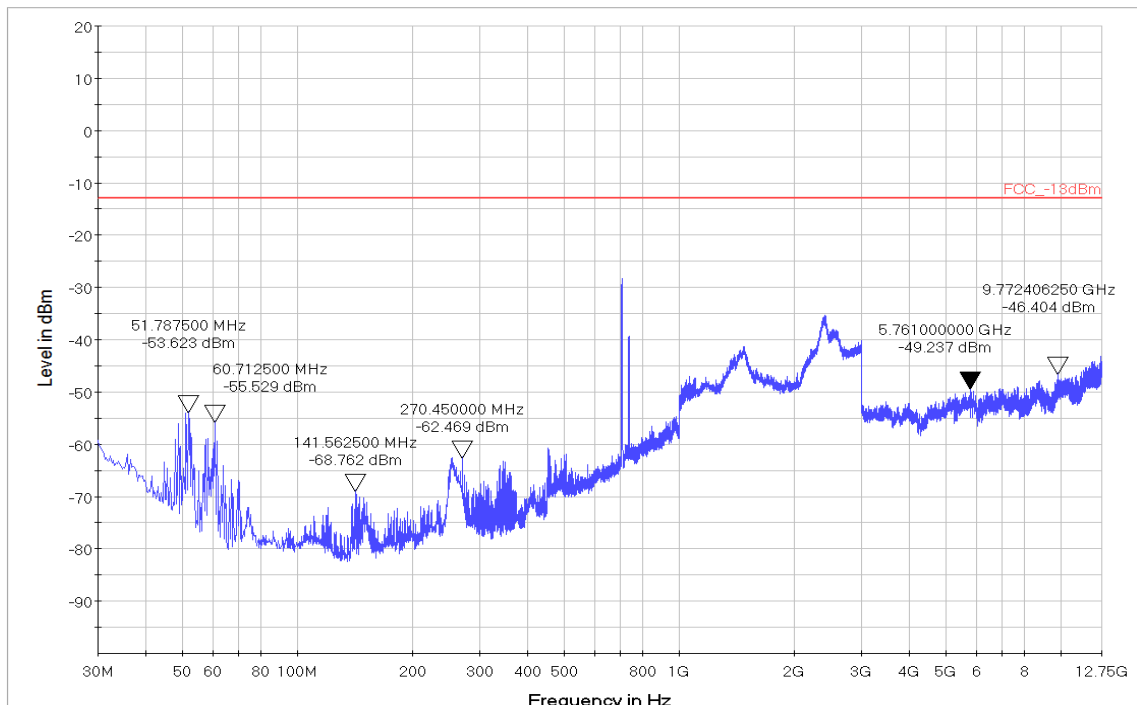


LTE B12

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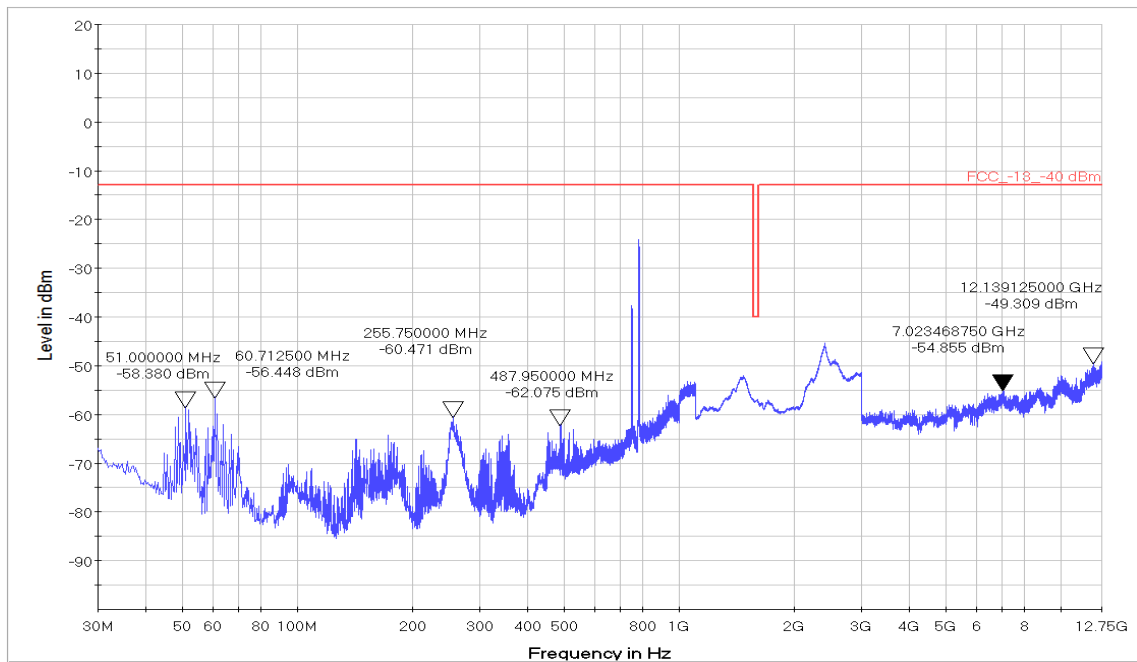


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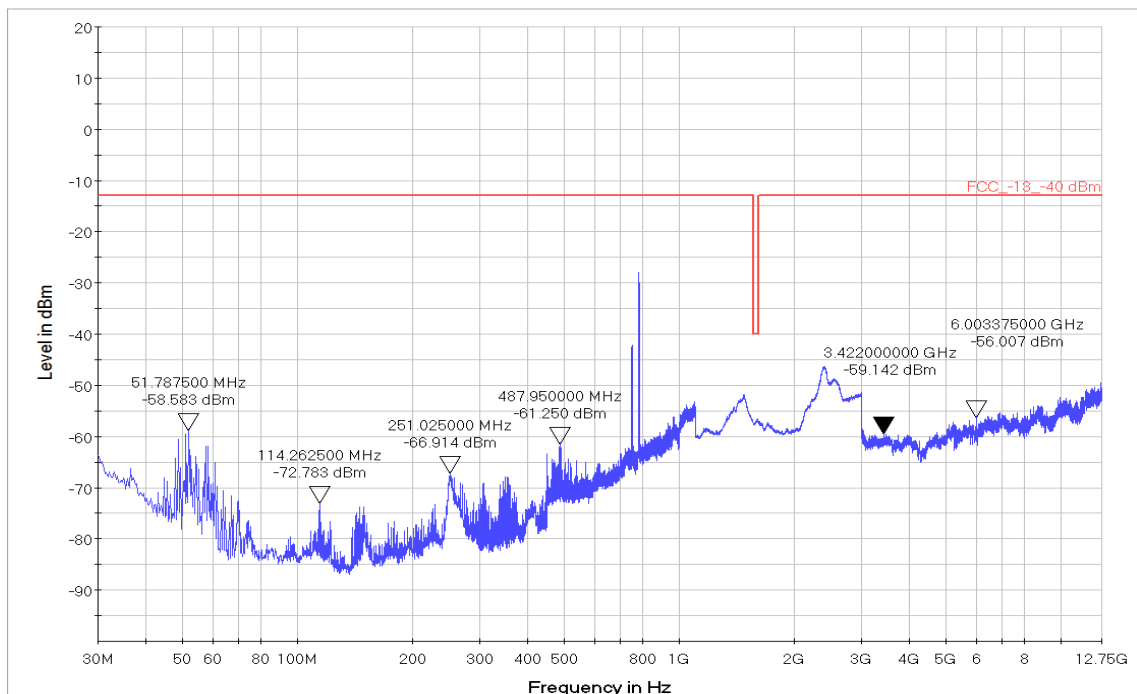


LTE B13

Horizontal

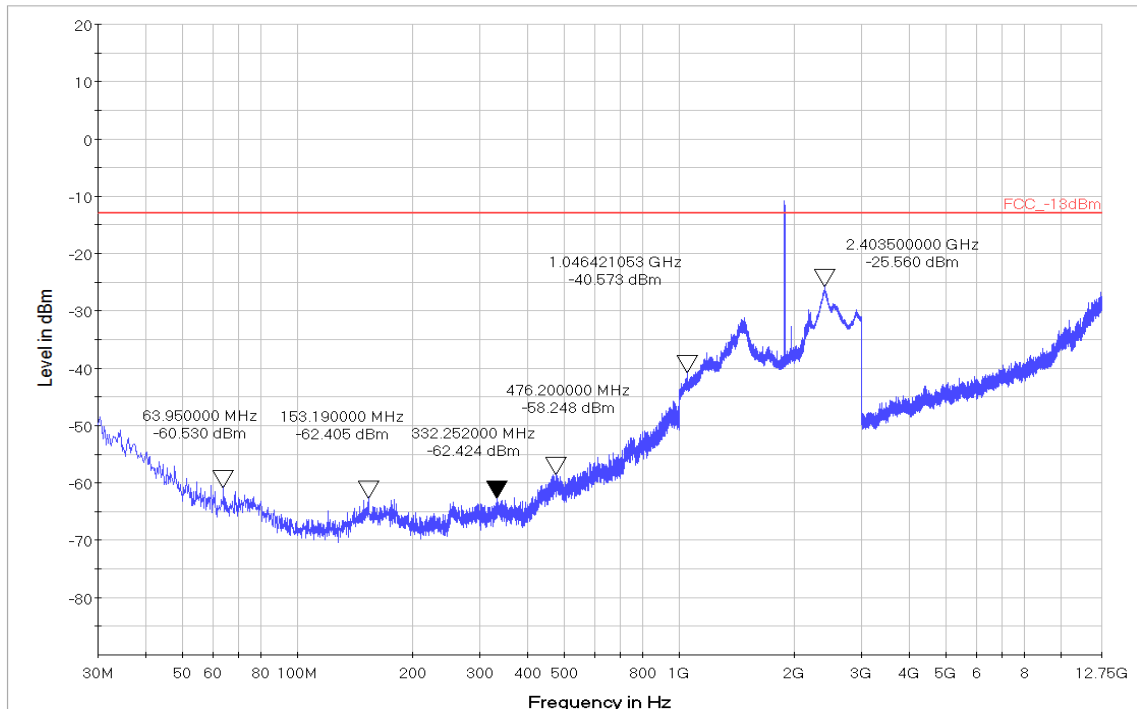


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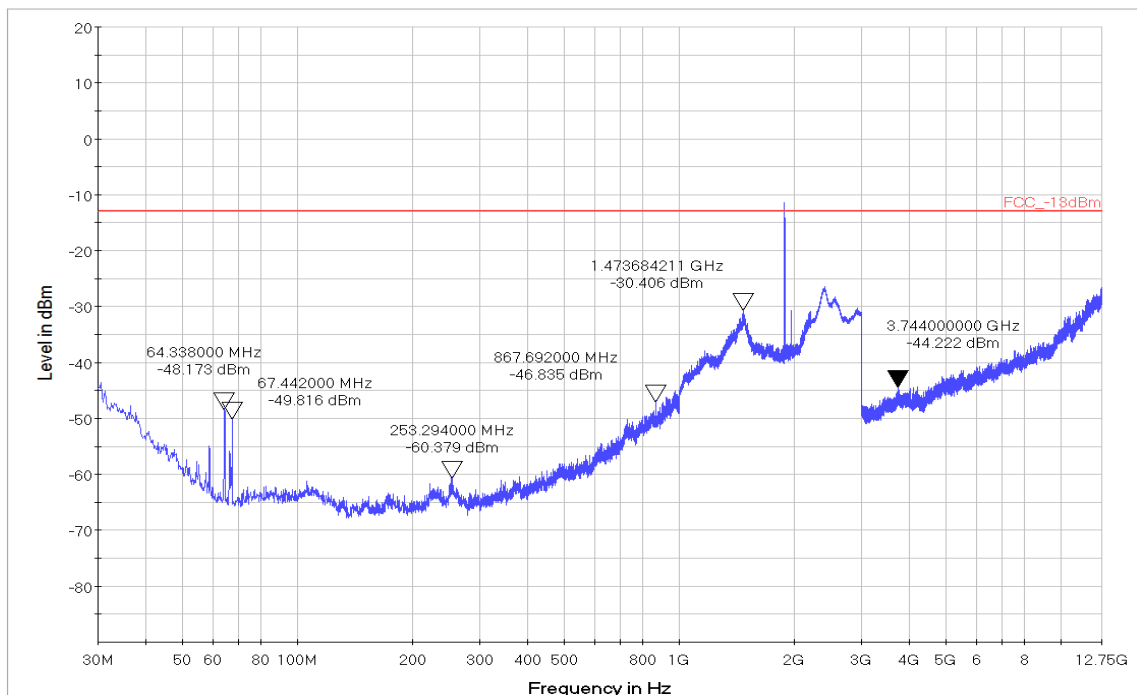


LTE B25

Horizontal

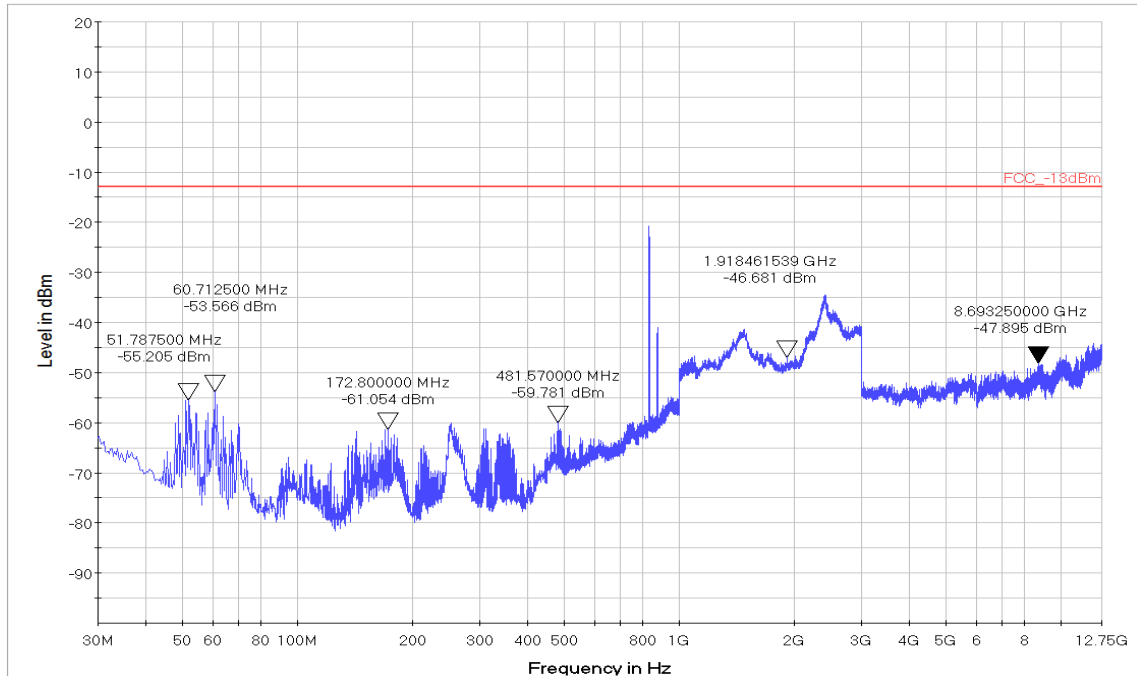


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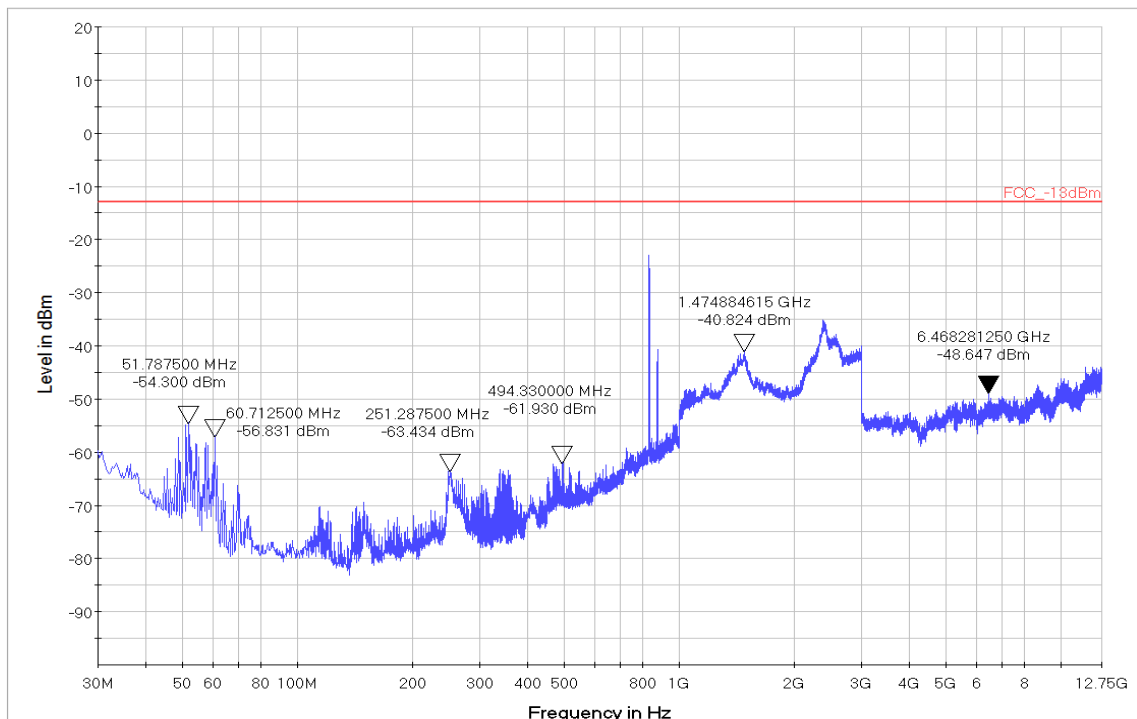


LTE B26

Horizontal

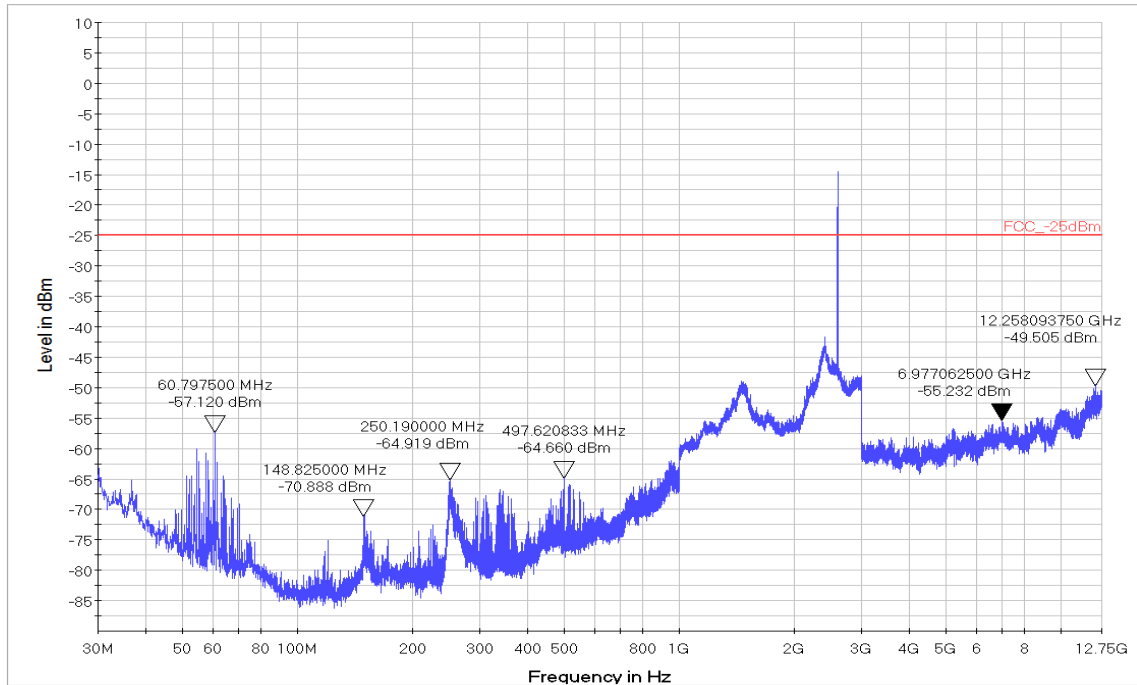


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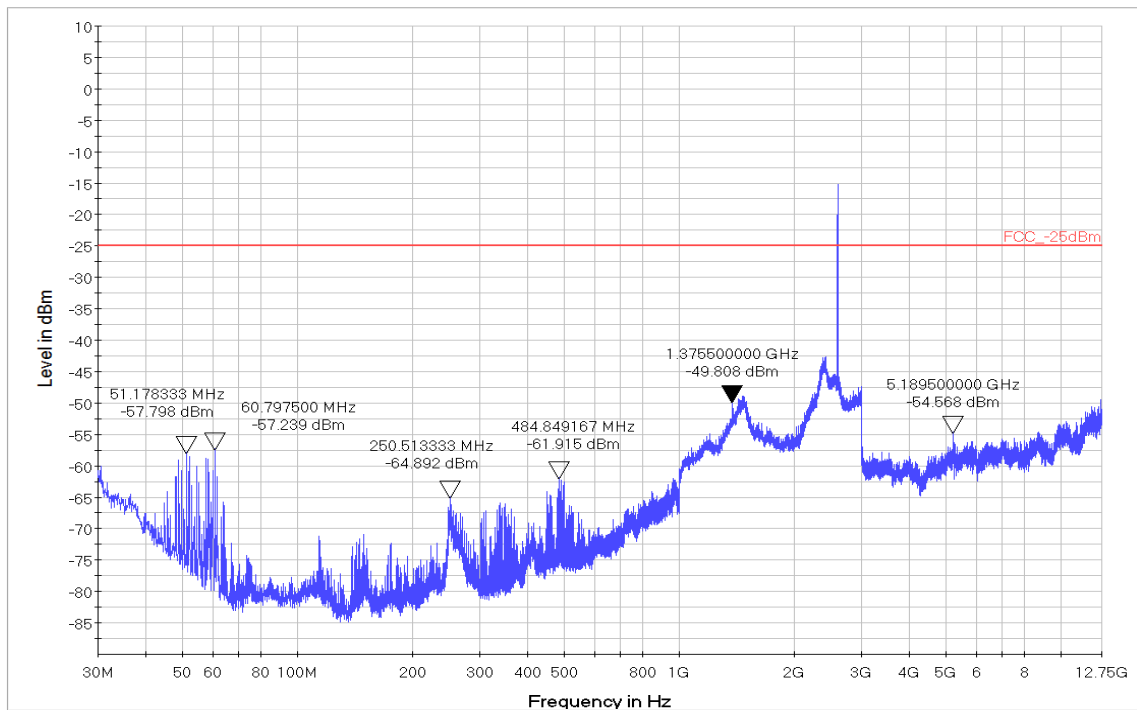


LTE B38

Horizontal

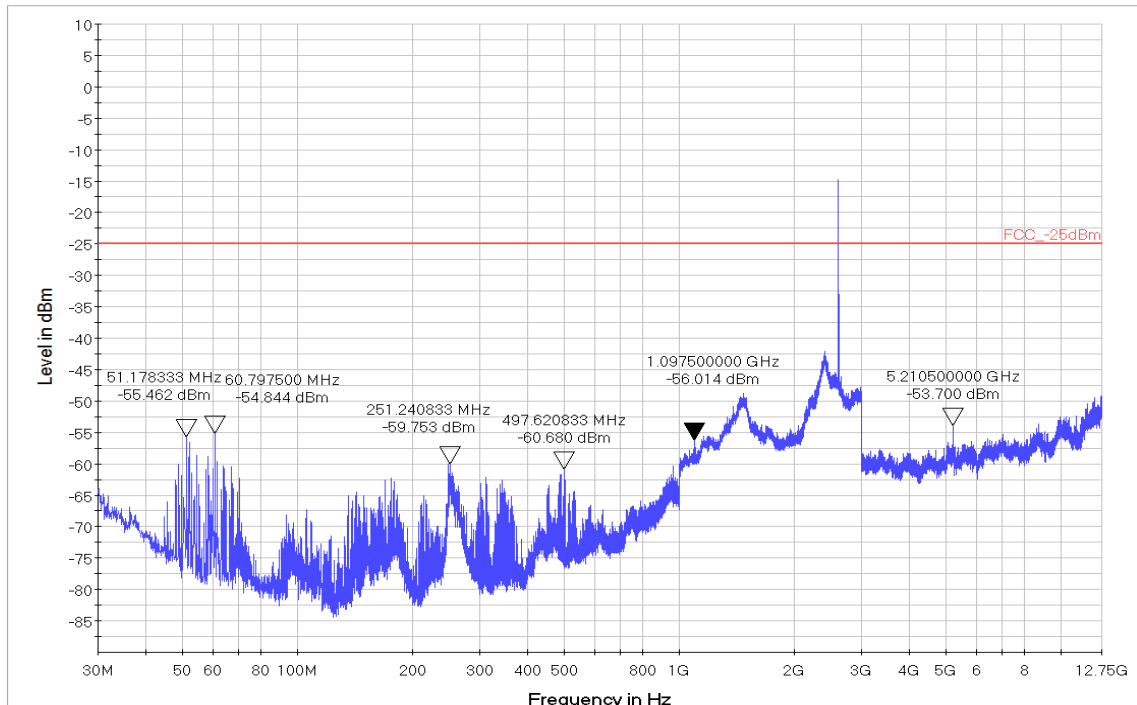


Vertical

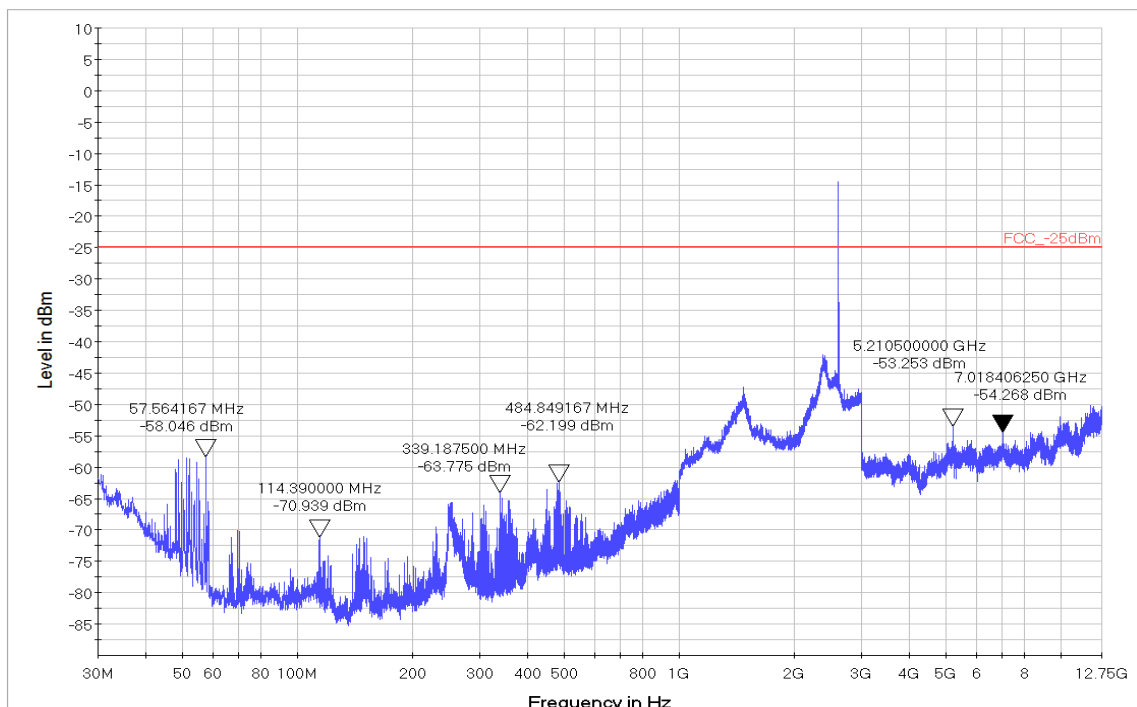


LTE B41

Horizontal

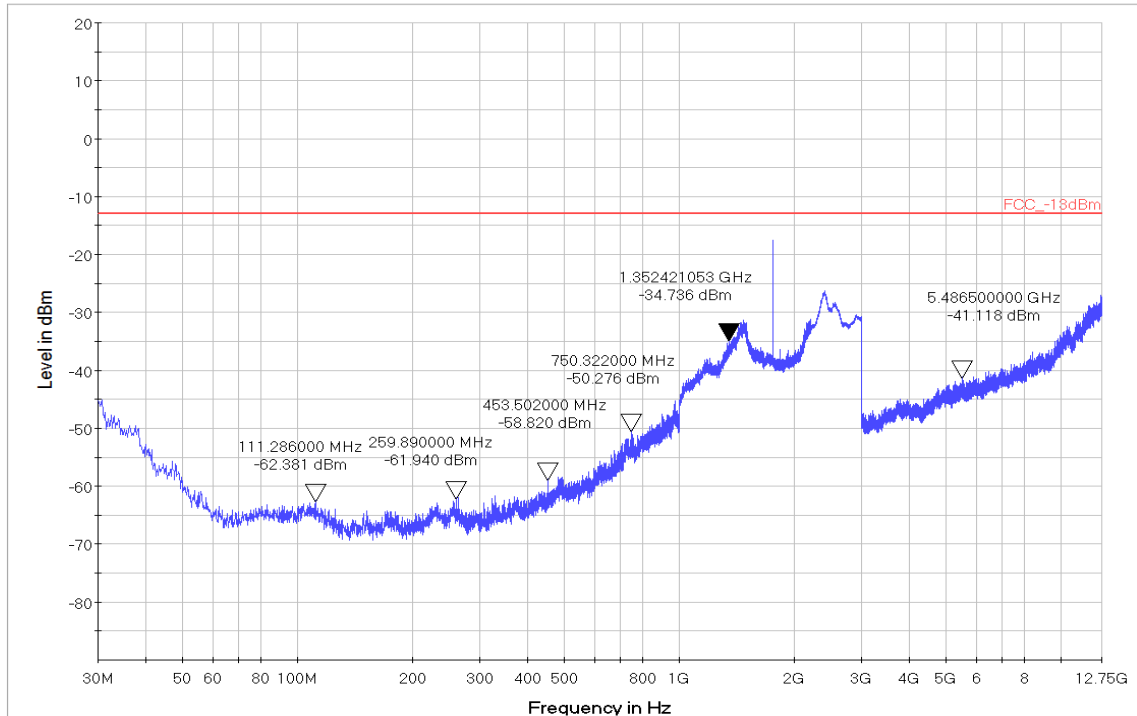


Vertical

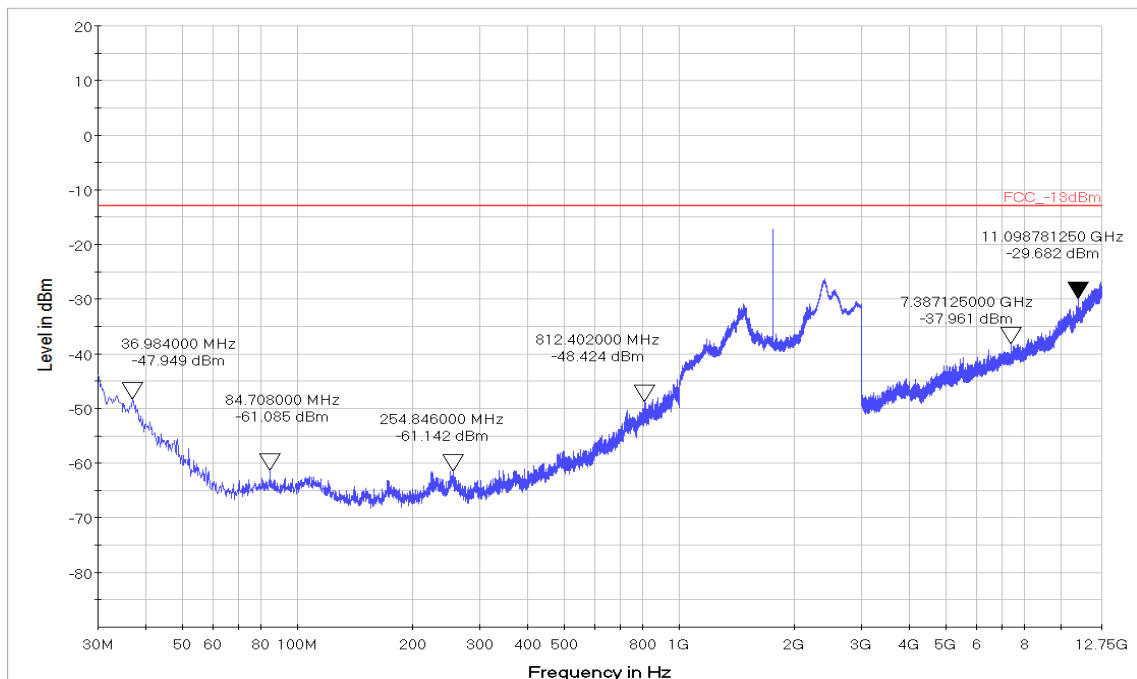


LTE B66

Horizontal



Vertical



4 Antenna requirement

Requirement:

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this section.

Result:

EUT uses a PCB antenna to the intentional radiator, so it can comply with the provisions of this section.

***** END *****