FCC Test Report

(Part 27)

Client Information:

*Applicant: Netradyne Inc

*Applicant add.: 9171 Towne Centre Drive, Suite 110, San Diego, CA 92122

Product Information:

*EUT Name: Lumia 3

*Model No.: DCM-NA1-300

*Brand Name: netradyne

FCC ID: 2AM8R-DCM-NA1-300

Standards: FCC PART 27

AA Electro Magnetic Test Laboratory Private Limited

Add.: Plot No 174, Udyog Vihar - Phase 4, Sector 18,
Gurgaon, Haryana, India

Date of Receipt:	Jul. 23, 2024	Date of Test:	Jul. 23~ Dec. 03, 2024
Date of Issue:	Dec. 30, 2024	Test Result:	Pass

Disclaimer: The * Information are provided by Manufacturer and it is verified through the Request form and Marking Label, AA Electro Magnetic Test Laboratory is not responsible for the above information accuracy. This device described above has been tested by AA Electro Magnetic Test Laboratory Private Limited, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

*This test report must not be used by the client to claim product endorsement by any agency of the U.S. government.

Prepared By: (+ signature) Ankur Kumar: _____

Reviewed & Approved by: (+ signature)
Dr. Lenin Raja (Authorized Representative) (/ lenin83/) _____

1 Contents

Plot No.174, Udyog Vihar Phase 4, Sector -18, Gurgaon -122016, Haryana, India
Contact:0124-4235350, 4145343; e-mail: info @aaemtlabs.com; Website: www.aaemtlabs.com

2 Test Summary

2.1 Compliance with FCC Part 27

Applied Standard: FCC Part 27			
FCC Clause	**Test Item**	**Result**	**Remarks**
2.1046 27.50(d)(4)	Maximum Peak Output Power	Pass	Meet the requirement of limit.
2.1047	Modulation Characteristics	Pass	Meet the requirement.
2.1055 27.54	Frequency Stability	Pass	Meet the requirement of limit.
2.1049 27.53(h)	Occupied Bandwidth	Pass	Meet the requirement of limit.
27.50(d)(5)	Peak to Average Ratio	Pass	Meet the requirement of limit.
27.53(h)	Band Edge Measurements	Pass	Meet the requirement of limit.
2.1051 27.53(h)	Conducted Spurious Emissions	Pass	Meet the requirement of limit.
2.1053 27.53(h)	Radiated Spurious Emissions	Pass	Meet the requirement of limit.

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2.2 Measurement Uncertainty

All measurements involve certain levels of uncertainties, the following measurements uncertainty Levels have estimated based on standards, the maximum value of the uncertainty as below:

No.	Item	Uncertainty
1	Conducted Emission Test	2.82dB
2	Radiated Emission Test	2.79dB

2.3 Test Location

All tests were performed at:

AA Electro Magnetic Test Laboratory Private Limited

Plot No 174, Udyog Vihar - Phase 4, Sector 18, Gurgaon, Haryana, India

Tel.: +91-0124-4235350

3 Test Facility

The test facility is recognized, certified or accredited by the following organizations:

ILAC / NABL Accreditation No.: TC-8597

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by National Accreditation Board for Testing and Calibration Laboratories (NABL).

ILAC –A2LA Accreditation No.: 5593.01

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered American Association of Laboratory Accreditation (A2LA).

FCC- Recognition No.: 137777

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Federal Communications Commission (FCC).

ISED Recognition No.: 26046

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Institute for Social and Economic Development (ISED).

VCCI- Registration No: 4053

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Voluntary Control Council for Interference (VCCI).

TEC Designation No.: IND063

Three 3m Semi-Anechoic Chamber, 1 full-Anechoic chamber and 2 Shielding Rooms of AA Electro Magnetic Test Laboratory Private Limited have been registered by Telecommunication Engineering (TEC) Center.

BIS Recognition No: 816586

BIS recognized as per CRS scheme for IT electronics, LED control gears, Lamp, Inverter / UPS are recognized as per LRS 2020.

3.1 Deviation from standard

None

3.2 Abnormalities from standard conditions

None

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4 General Information

4.1 General Description of EUT

*Manufacturer:	Netradyne Inc	
*Manufacturer Address:	9171 Towne Centre Drive, Suite 110, San Diego, CA 92122	
*EUT Name:	Lumia 3	
*Model No:	DCM-NA1-300	
*Brand Name:	netradyne	
*Derivative model No.:	N/A	
Frequency Range:	LTE Band 4 Channel Bandwidth: 20MHz	1720 MHz ~ 1745 MHz
	LTE Band 12 Channel Bandwidth: 10MHz	704 MHz ~ 711 MHz
	LTE Band 66 Channel Bandwidth: 20MHz	1720 MHz ~ 1770 MHz
	LTE Band 71 Channel Bandwidth: 20MHz	673 MHz ~ 688 MHz
Modulation Technology:	LTE Band 4,12,66,71 : QPSK	
*Antenna Gain(dBi):	1dBi	
*H/W No.:	001-10-00008	
*S/W No.:	EC25AFXDGAR07A02M1G	
Power Supply Range:	Input: 5VDC 1A	
Note:		
1.	For a more detailed features description, please refer to the manufacturer's specifications or the User's Manual.	
Condition of Sample on receipt	Good / ~~Satisfactory / Fit for Testing~~	
Opinions and Interpretations:	~~See the specific Note / Annexure if any in the whole /full report~~/NA	

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4.2 EUT channels and frequencies list:

LTE BAND 4

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	EIRP	20050 to 20300	20050, 20175, 20300	20 MHz	QPSK
-	Frequency Stability	20050 to 20300	20050, 20300	20 MHz	QPSK
-	Occupied Bandwidth	20050 to 20300	20050, 20175, 20300	20 MHz	QPSK
-	Peak to Average Ratio	20050 to 20300	20050, 20175, 20300	20 MHz	QPSK

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	Band Edge	20050 to 20300	20050	20 MHz	QPSK
			20300	20 MHz	QPSK
-	Conducted Emission	20050 to 20300	20050, 20175, 20300	20 MHz	QPSK
-	Radiated Emission	20050 to 20300	20050, 20175, 20300	20 MHz	QPSK

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LTE BAND 12

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	EIRP	23060 to 23130	23060, 23095, 23130	10MHz	QPSK
-	Frequency Stability	23060 to 23130	23060, 23130	10MHz	QPSK
-	Occupied Bandwidth	23060 to 23130	23060, 23095, 23130	10MHz	QPSK
-	Peak to Average Ratio	23060 to 23130	23060, 23095, 23130	10MHz	QPSK

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	Band Edge	23060 to 23130	23060	10MHz	QPSK
			23130	10MHz	QPSK
-	Conducted Emission	23060 to 23130	23060, 23095, 23130	10MHz	QPSK
-	Radiated Emission	23060 to 23130	23060, 23095, 23130	10MHz	QPSK

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LTE BAND 66

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	EIRP	132072 to 132572	132072, 132322, 132572	20MHz	QPSK
-	Frequency Stability	132072 to 132572	132072, 132572	20MHz	QPSK
-	Occupied Bandwidth	132072 to 132572	132072, 132322, 132572	20MHz	QPSK
-	Peak to Average Ratio	132072 to 132572	132072, 132322, 132572	20MHz	QPSK

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	Band Edge	132072 to 132572	132072	20MHz	QPSK
			132572	20MHz	QPSK
-	Conducted Emission	132072 to 132572	132072, 132322, 132572	20MHz	QPSK
-	Radiated Emission	132072 to 132572	132072, 132322, 132572	20MHz	QPSK

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LTE BAND 71

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	EIRP	133222 to 133372	133222, 133322, 133372	20MHz	QPSK
-	Frequency Stability	133222 to 133372	133222, 133372	20MHz	QPSK
-	Occupied Bandwidth	133222 to 133372	133222, 133322, 133372	20MHz	QPSK
-	Peak to Average Ratio	133222 to 133372	133222, 133322, 133372	20MHz	QPSK

EUT Configure	Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation
-	Band Edge	133222 to 133372	133222	20MHz	QPSK
			133372	20MHz	QPSK
-	Conducted Emission	133222 to 133372	133222, 133322, 133372	20MHz	QPSK
-	Radiated Emission	133222 to 133372	133222, 133322, 133372	20MHz	QPSK

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4.3 EUT Peripheral List

No.	Equipment	Manufacturer	FCC ID	Model No.	Serial No.	Power cord	Remark
1.	N/A	N/A	N/A	N/A	N/A	N/A	N/A

4.4 Test Peripheral List

No.	Equipment	Manufacturer	EMC Compliance	Model No.	Serial No.	Power cord	signal cable
1.	Laptop	DELL	N/A	Latitude E7240	6SJ2T02	2m unshielded	N/A

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5 Equipments List for All Test Items

No	Test Equipment	Manufacturer	Model No	Serial No	Cal. Date	Cal.Due Date
1	Spectrum Analyzer	Rohde and Schwarz	FSP	101163	2023/02/13	2025/02/13
2	Loop antenna	DAZE Beijing	ZN30900C	18052	2023/09/15	2026/09/15
3	Hi power horn antenna	DAZE Beijing	ZN30700	18012	2023/09/11	2026/09/10
4	MXA Signal Analyzer	Keysight	N9020A	6272323218	2023/07/27	2025/07/27
5	Horn antenna	DAZE Beijing	ZN30703	18005	2023/09/11	2026/09/10
6	Pre amplifier	KELIANDA	LNA-0009295	-	2024/01/10	2025/01/10
7	Pre amplifier	KELIANDA	CF-00218	-	2024/01/10	2025/01/10
8	Biconical Antenna	DAZE Beijing	ZN30505C	17038	2023/09/11	2026/09/10
9	EMI-RECEIVER	Schwarzbeck	FCKL	1528194	2024/01/10	2025/01/10
10	LISN	Kyoritsu	KNW-407	8-1789-5	2024/01/10	2025/01/10
11	Network-LISN	SCHWAR ZBECK	NNBM8125	81251314	2024/01/10	2025/01/10
12	Network-LISN	SCHWAR ZBECK	NNBM8125	81251315	2024/01/10	2025/01/10
13	PULSELIMITER	Rohde and Schwarz	ESH3-Z2	100681	-	-
14	50Ω Coaxial Switch	DAIWA	1565157	-	-	-
15	50Ω Coaxial Switch	-	-	-	-	-
16	Wireless signal power meter	DARE!!	RPR3006W	RFSW190220	2024/01/13	2025/01/13
17	Signal Generator	KEYSIGHT	N5181A	512071	2024/01/10	2026/01/10
18	RF Vector Signal Generator	Keysight	N5182B	512094	2024/01/10	2026/01/10

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19	Spectrum analyzer	R&S	FSV-40N	101385	2023/04/28	2025/04/28
20	Radio Communication Tester	R&S	CMW 500	124589	2023/09/08	2025/09/08
21	Signal Generator	R&S	SMP02	837017/004 836593/005	2023/09/08	2025/09/08
22	Climatic Chamber	Sunrise Scientific Instruments	-	-	2024/11/06	2025/11/05
23	Attenuators	AGILENT	8494B	-	-	-
24	Attenuators	AGILENT	8495B	-	-	-

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5.1 Output Power Measurement

5.1.1 LIMITS OF OUTPUT POWER MEASUREMENT

Fixed, mobile, and portable (hand-held) stations operating in the 1710–1755 MHz band and mobile and portable stations operating in the 1695-1710 MHz and 1755-1780 MHz bands are limited to 1 watt EIRP.

Portable stations (hand-held devices) operating in the 746-757 MHz, 776-788 MHz and 805-806 MHz band are limited to 3 watts ERP

Portable stations (hand-held device) operating in the 600 MHz uplink band and the 698-746 MHz band, and fixed and mobile stations in the 600 MHz uplink band are limited to 3 watts ERP.

5.1.2 TEST PROCEDURES

EIRP / ERP Measurement:

a. All measurements were done at low, middle and high operational frequency range. RBW and VBW is 10 MHz for LTE mode.

b. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a tx cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step b. Record the power level of S.G.

d. EIRP = Output power level of S.G – TX cable loss + Antenna gain of substitution horn. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB.

CONDUCTED POWER MEASUREMENT:

a. The EUT was set up for the maximum power with LTE link data modulation and link up with simulator.

b. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

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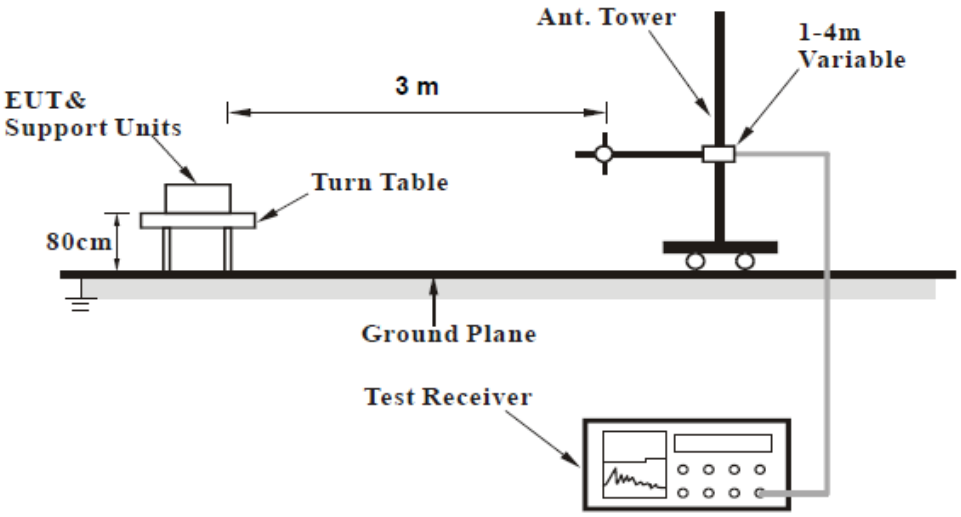
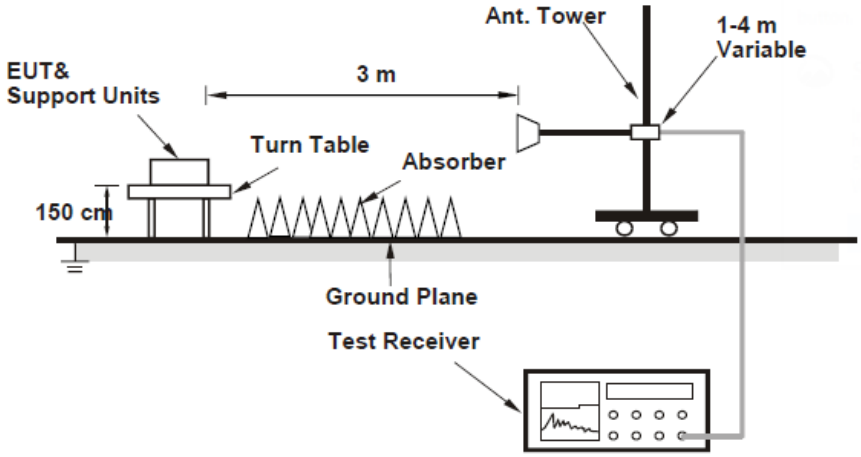
5.1.3 TEST SETUP

EIRP / ERP Measurement:

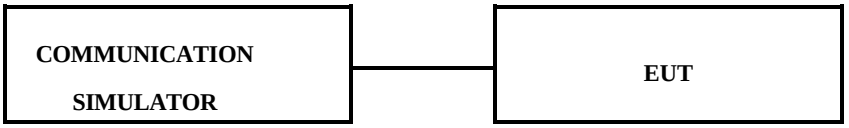
<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



CONDUCTED POWER MEASUREMENT:



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5.1.4 Test results

Conducted Output Power (dBm)

Band 4

LTE Band 4				
Modulation	Bandwidth	Channels	Frequency (MHz)	Tx Average (dBm)
QPSK	20MHz	20050	1720	22.52
		20175	1732.5	22.40
		20300	1745	23.00

Band 12

LTE Band 12				
Modulation	Bandwidth	Channels	Frequency (MHz)	Tx Average (dBm)
QPSK	10MHz	23060	704	27.45
		23095	707.5	27.30
		23130	711	27.41

Band 66

LTE Band 66				
Modulation	Bandwidth	Channels	Frequency (MHz)	Tx Average (dBm)
QPSK	20MHz	132072	1720	22.36
		132322	1745	22.86
		132572	1770	22.67

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Band 71

LTE Band 71				
Modulation	Bandwidth	Channels	Frequency (MHz)	Tx Average (dBm)
QPSK	20MHz	133222	673	24.23
		133322	683	24.95
		133372	688	25.16

ERP Power (dBm)

Note: ERP (dBm) = Reading (dBm) + Correction Factor (dB)

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5.2 FREQUENCY STABILITY MEASUREMENT

5.2.1 LIMITS OF FREQUENCY STABILIITY MEASUREMENT

The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

5.2.2 TEST PROCEDURE

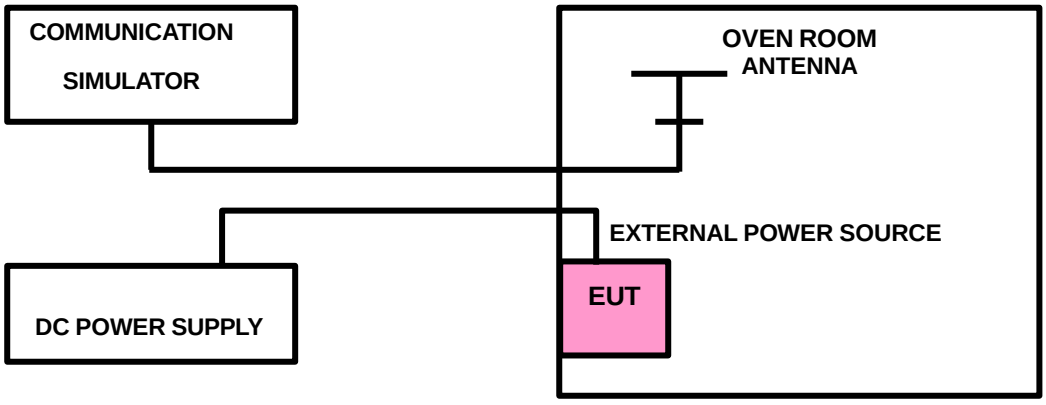
a. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.

b. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.

c. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the ±0.5℃ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.

NOTE: The frequency error was recorded frequency error from the communication simulator.

5.2.3 TEST SETUP



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5.2.4 TEST RESULTS

Frequency Error vs. Temperature

Temp. (°C)	LTE Band 4 Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1720.01275	7.412	1745.00934	5.352
20	1720.01238	7.197	1745.01012	5.799
50	1720.01254	7.290	1745.00906	5.191

Temp. (°C)	LTE Band 12 Channel Bandwidth: 10 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	704.00619	8.792	711.00502	7.060
20	704.00596	8.465	711.00486	6.835
50	704.00603	8.565	711.00495	6.962

Temp. (°C)	LTE Band 66 Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	1720.00890	5.174	1770.00764	4.316
20	1720.00832	4.837	1770.00810	4.576
50	1720.00911	5.296	1770.00791	4.468

Temp. (°C)	LTE Band 71 Channel Bandwidth: 20 MHz			
	Low Channel		High Channel	
	Frequency (MHz)	Frequency Error (ppm)	Frequency (MHz)	Frequency Error (ppm)
-20	673.00421	6.255	688.00387	5.625
20	673.00392	5.824	688.00402	5.843
50	673.00408	6.062	688.00411	5.973

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5.3 OCCUPIED BANDWIDTH MEASUREMENT

5.3.1 Limits of Occupied Bandwidth Measurement

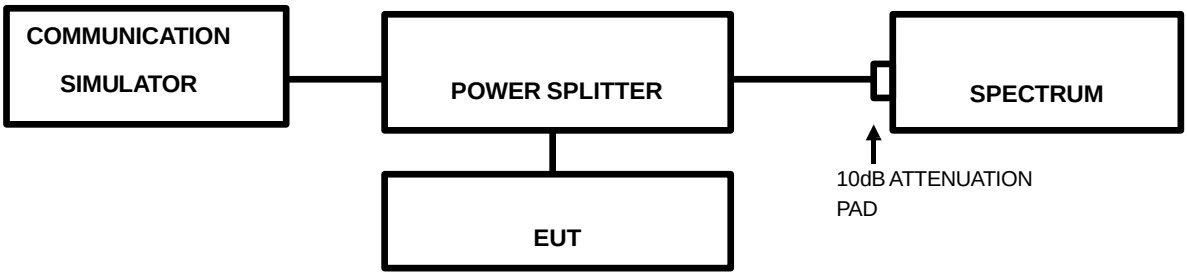
The width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5 % of the total mean power of a given emission.

5.3.2 TEST PROCEDURES

a. The conducted occupied bandwidth used the power splitter via EUT RF power connector between simulation base station and spectrum analyzer.

b. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth.

5.3.3 TEST SETUP



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5.3.4 TEST RESULTS

LTE Band 4		
Channel Bandwidth: 20 MHz		
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)
		QPSK
20050	1720	17.92
20175	1732.5	17.92
20300	1745	17.84

LTE Band 12		
Channel Bandwidth: 10 MHz		
Channel	Frequency (MHz)	99 % Occupied Bandwidth
		QPSK
23060	704	8.96
23095	707.5	8.96
23130	711	8.96

LTE Band 66		
Channel Bandwidth: 20 MHz		
Channel	Frequency (MHz)	99 % Occupied Bandwidth (MHz)
		QPSK
132072	1720	18.00
132322	1745	18.00
132572	1770	18.08

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LTE Band 71		
Channel Bandwidth: 20 MHz		
Channel	Frequency (MHz)	99 % Occupied Bandwidth
		QPSK
133222	673	18.00
133322	683	17.92
133372	688	17.92

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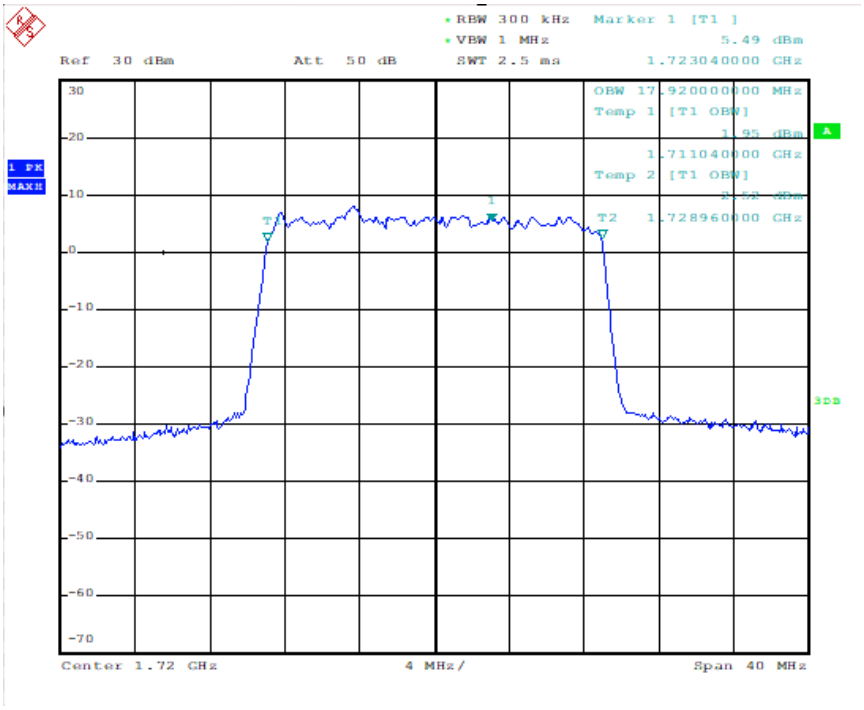
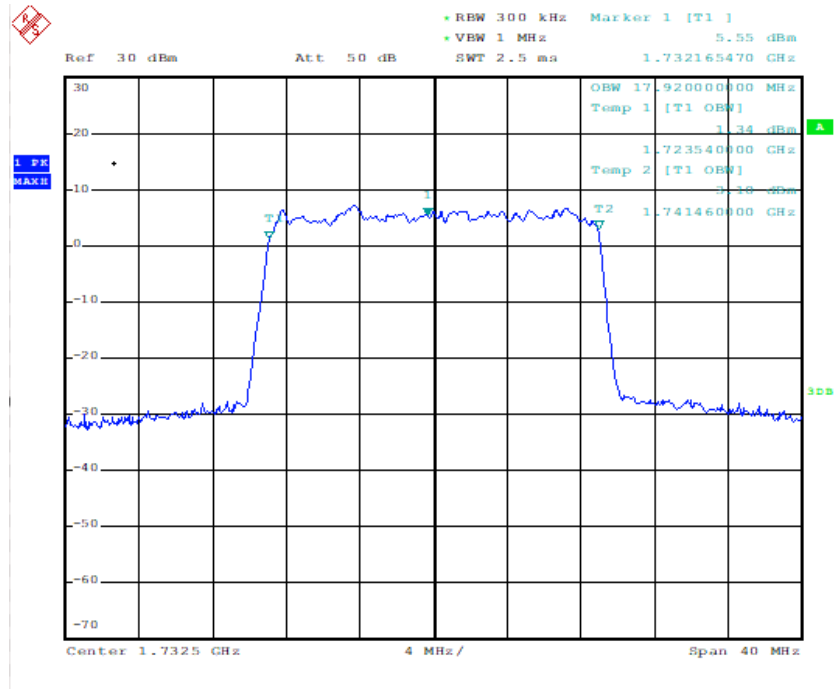
Band 4

1720MHz



1732.5MHz



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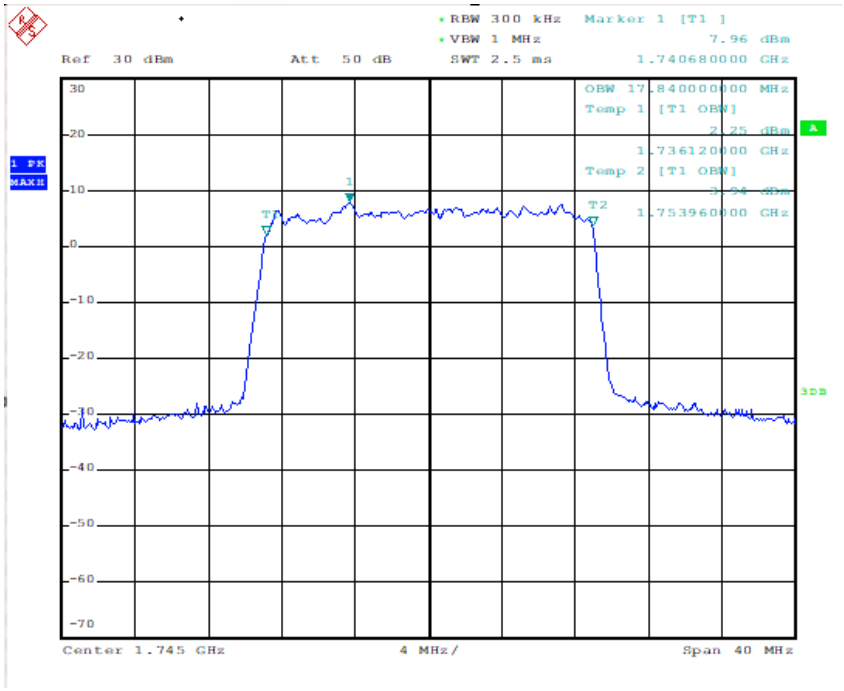
Contact:0124-4235350, 4145343; e-mail: info @aaemtlabs.com; Website: www.aaemtlabs.com

1745MHz


Plot No.174, Udyog Vihar Phase 4, Sector -18, Gurgaon -122016, Haryana, India
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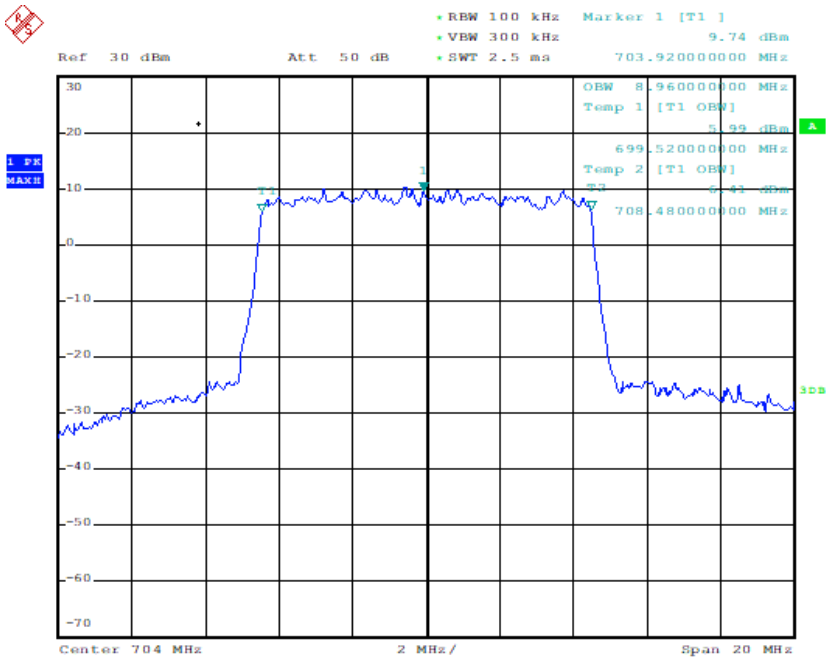
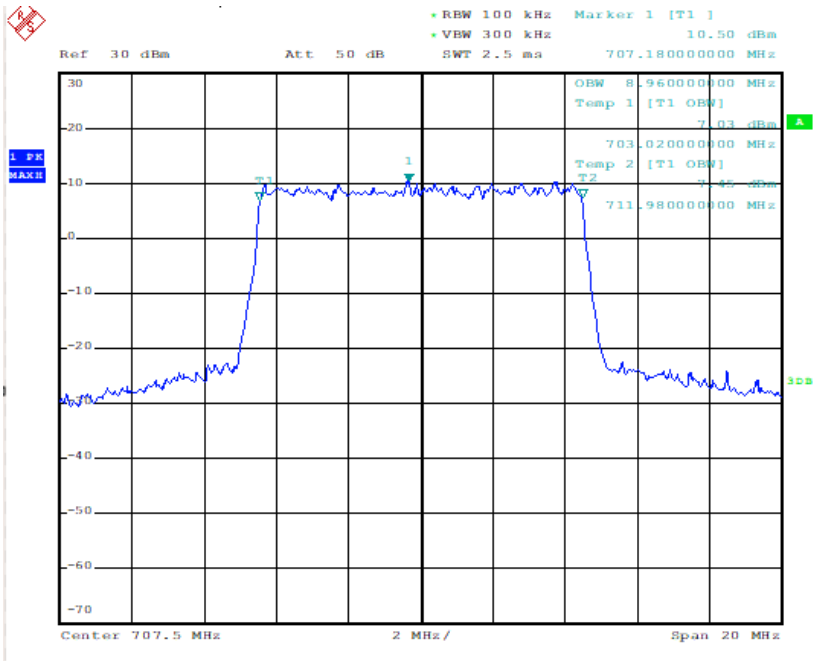
Band 12

704MHz

707.5MHz


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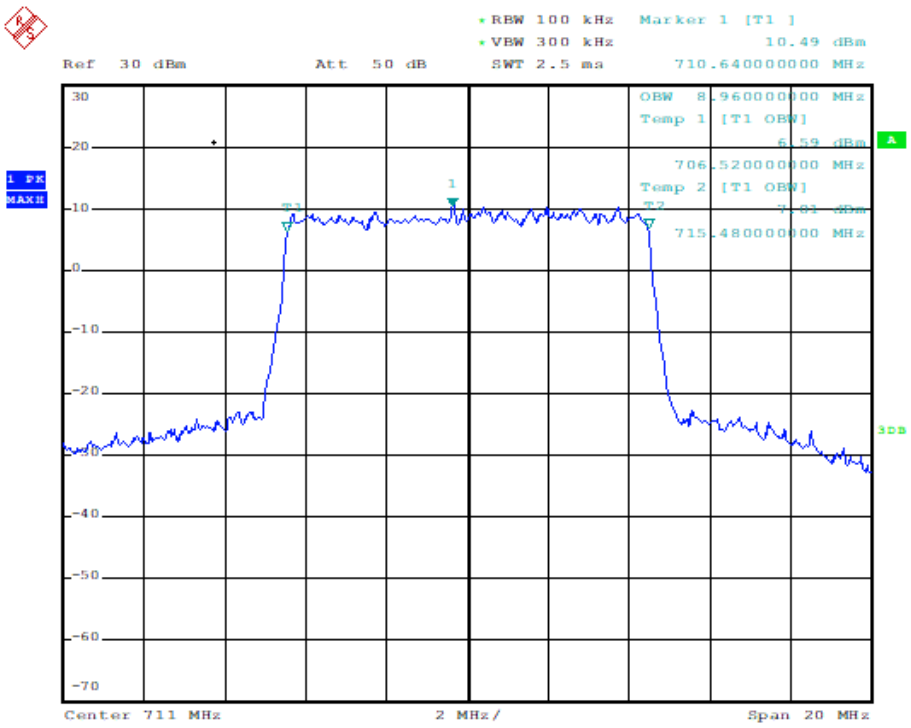
711MHz


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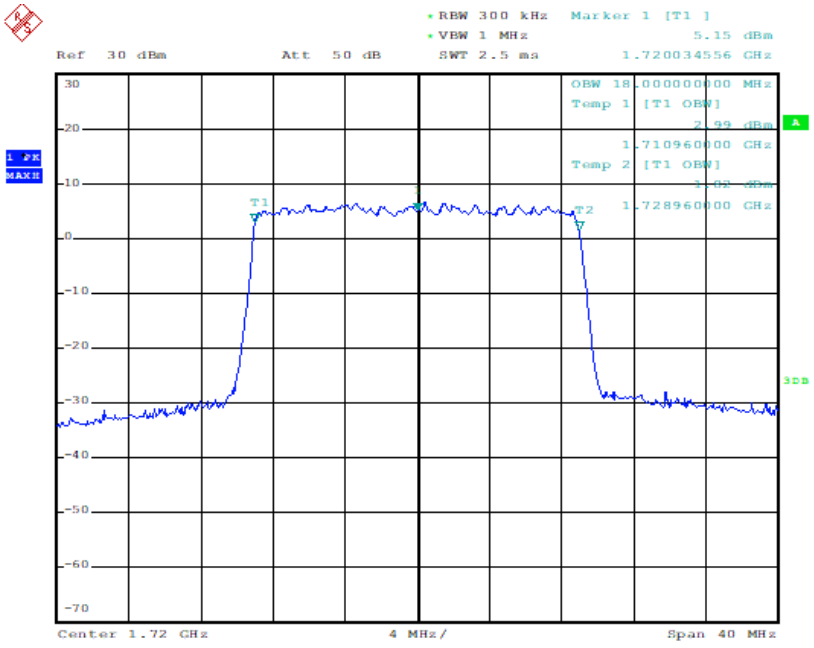
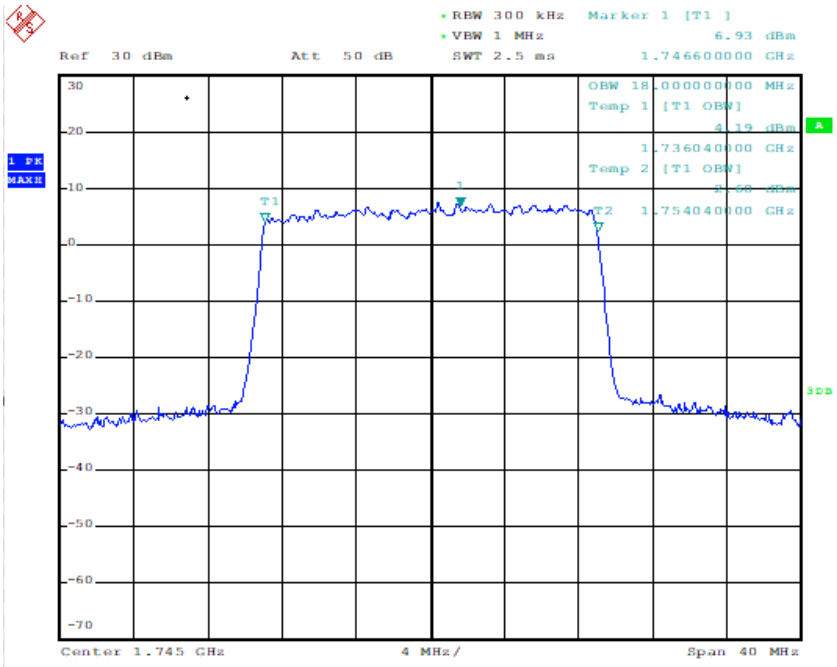
Band 66

1720 MHz

1745 MHz


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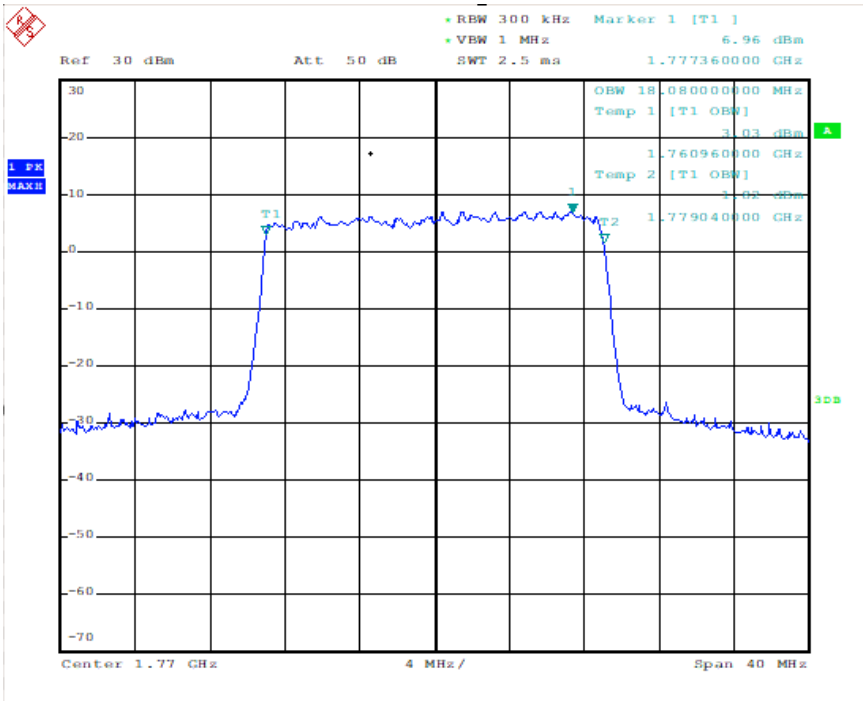
1770 MHz


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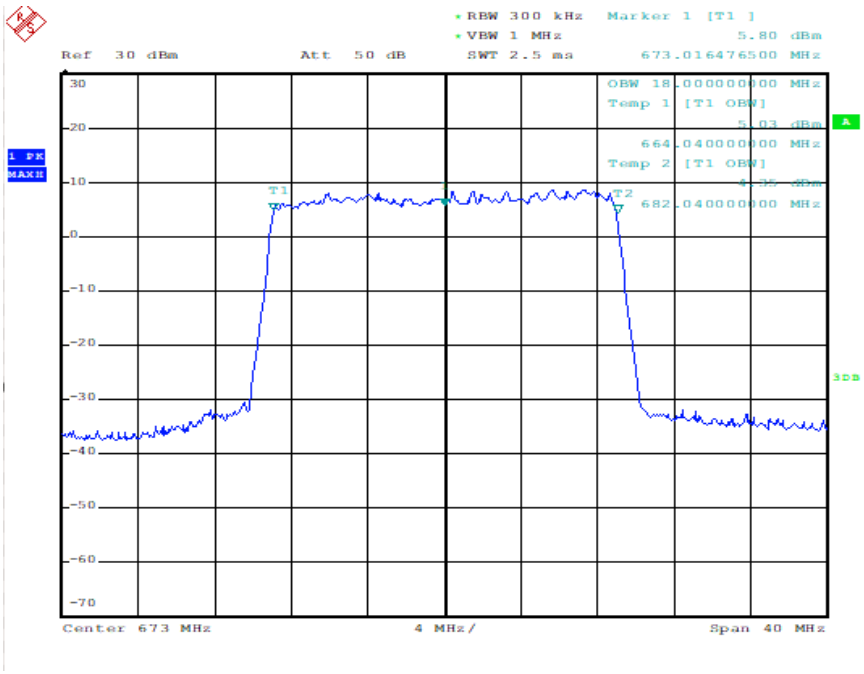
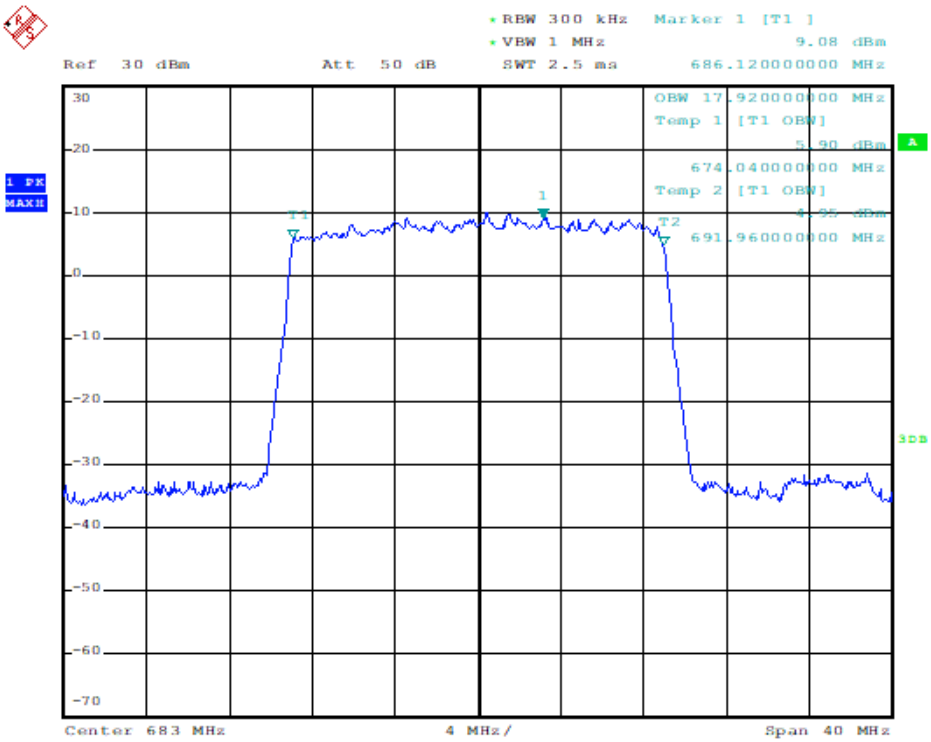
Band 71

673 MHz

683 MHz


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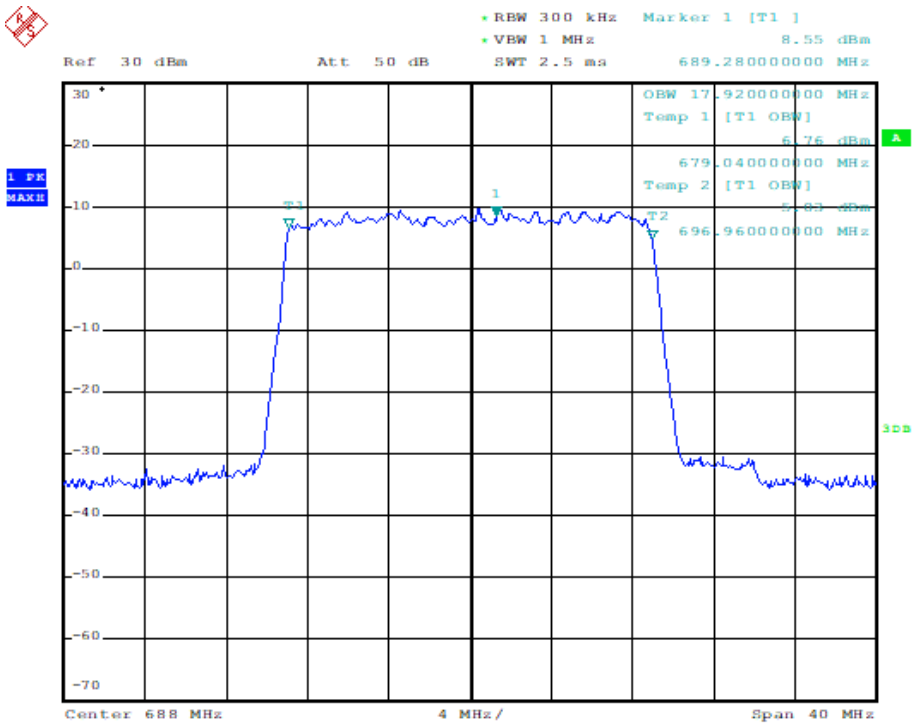
688 MHz



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5.4 BAND EDGE MEASUREMENT

5.4.1LIMITS OF BAND EDGE MEASUREMENT

For operations in the 698-787 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB. Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kilohertz or greater.

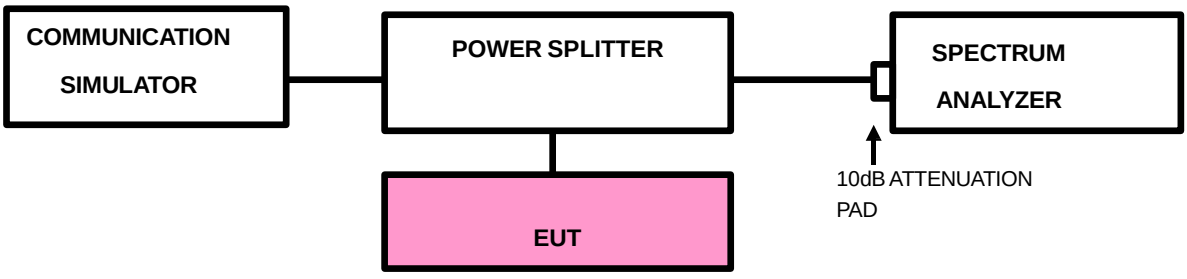
However, in the 100 kilohertz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

For operations in the 746-758 MHz band and the 776-788 MHz band, the power of any emission outside a licensee's frequency band(s) of operation shall be attenuated below the transmitter power (P) within the licensed band(s) of operation, measured in watts, by at least 43 + 10 log (P) dB.

On all frequencies between 763-775 MHz and 793-805 MHz, by a factor no less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations.

For operations in the 1710–1755 MHz bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB.

5.4.2TEST SETUP



5.4.3TEST PROCEDURES

a. All measurements were done at low and high operational frequency range.

b. The center frequency of spectrum is the band edge frequency and span is 1~5 MHz. RBW of the spectrum is 20 KHz and VBW of the spectrum is 100 kHz. (LTE bandwidth 1.4MHz)

C. Record the max trace plot into the test report.

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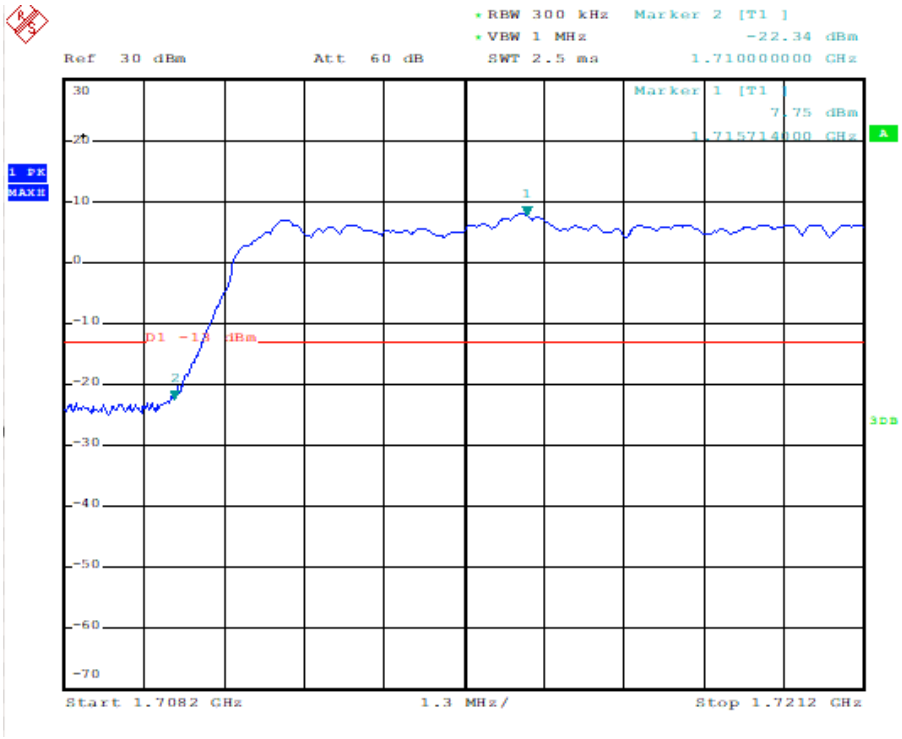
6.5.4. TEST RESULTS

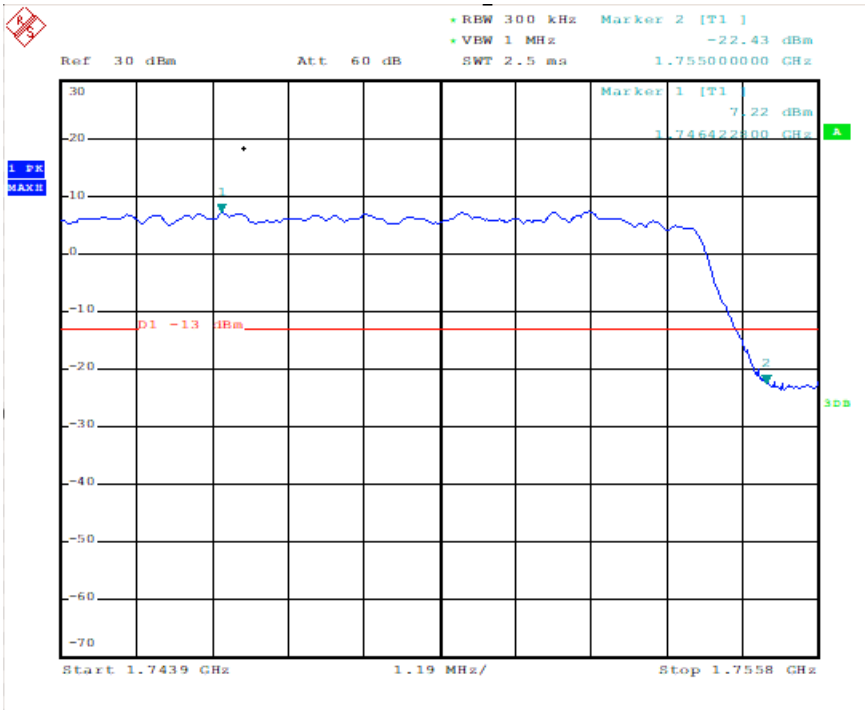
LTE Band 4

Channel Bandwidth: 20 MHz

1720MHz



1745MHz



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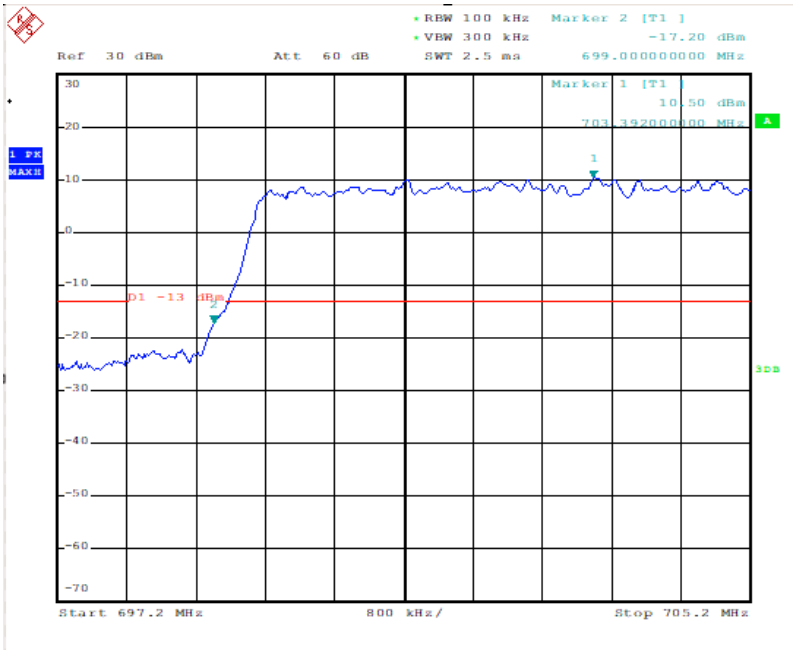
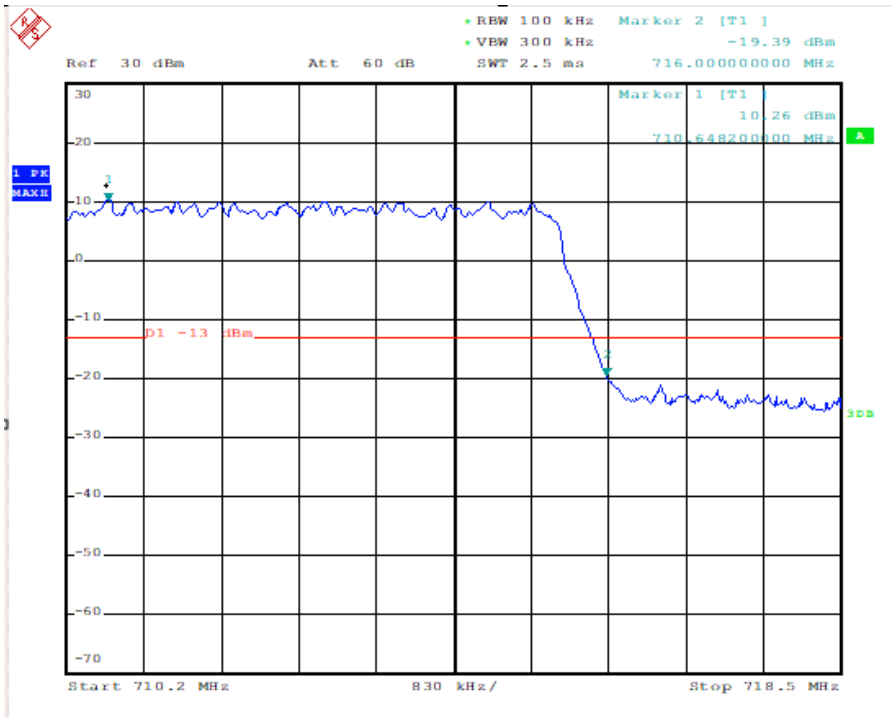
LTE Band 12

Channel Bandwidth: 10 MHz

704MHz



711MHz



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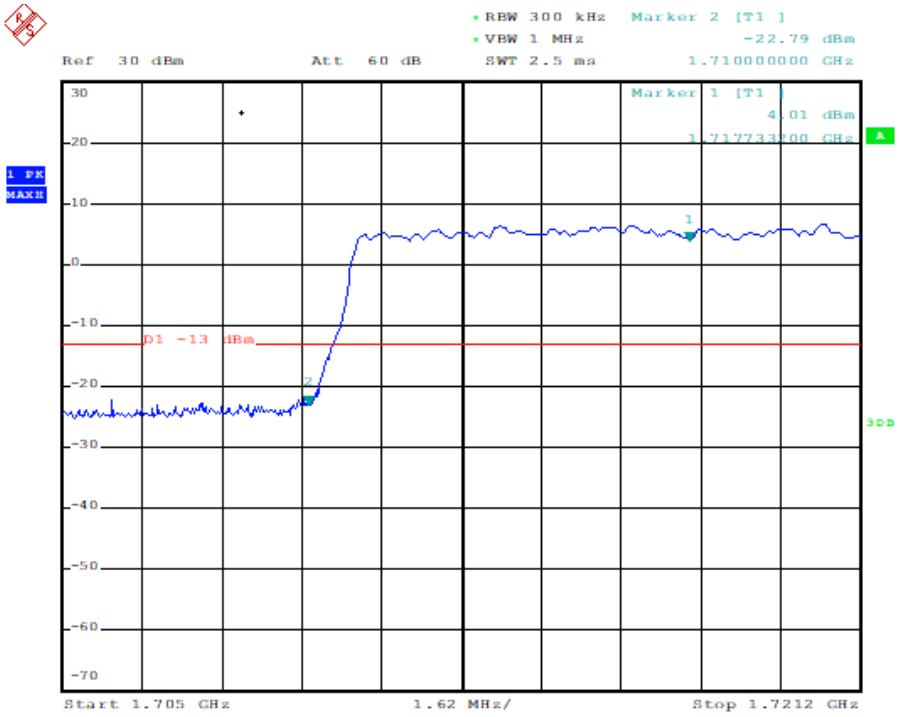
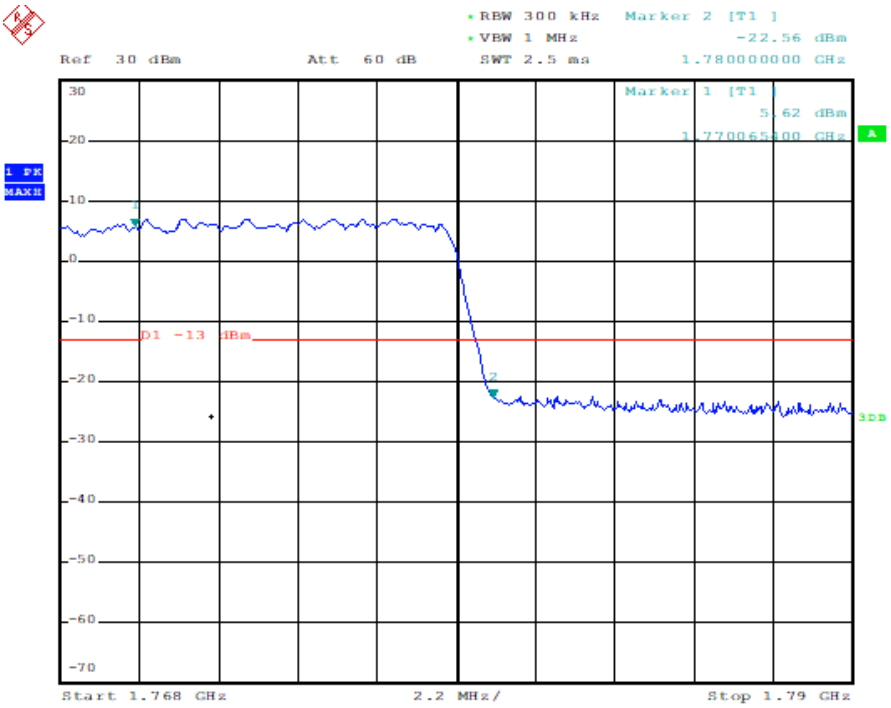
LTE Band 66

Channel Bandwidth: 20 MHz

1720MHz



1770MHz



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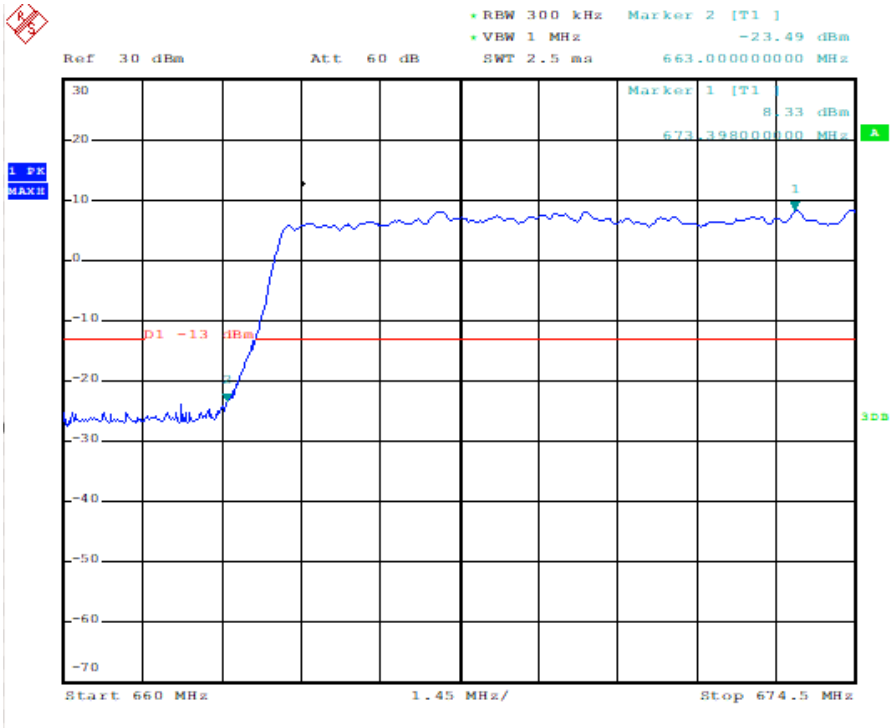
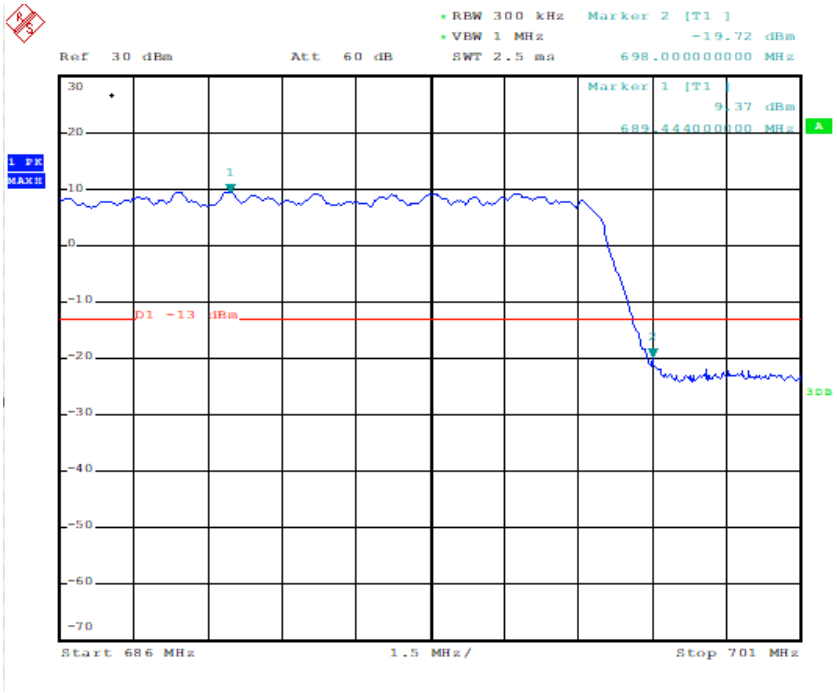
LTE Band 71

Channel Bandwidth: 20 MHz

673MHz



688MHz



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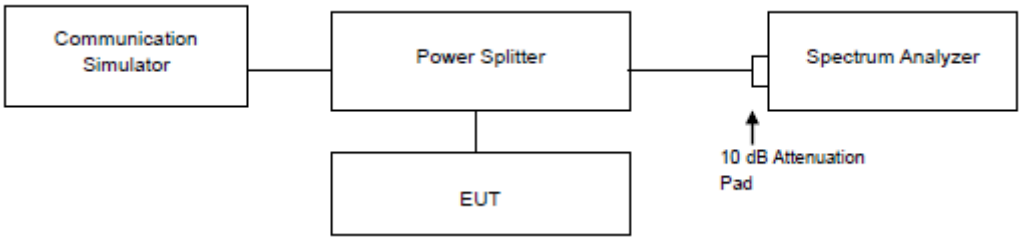
5.5 PEAK TO AVERAGE RATIO

5.3.5 Limits of Peak to Average Ratio Measurement

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

5.3.6 Test Setup



5.3.7 Test Procedures

1. Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
2. Set the number of counts to a value that stabilizes the measured CCDF curve;
3. Record the maximum PAPR level associated with a probability of 0.1 %.

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5.3.8 Test Result

LTE Band 4		
Channel Bandwidth: 20 MHz		
Channel	Frequency (MHz)	Peak to Average Ratio
		QPSK
20050	1720	4.26
20175	1732.5	4.22
20300	1745	4.26

LTE Band 12		
Channel Bandwidth: 10 MHz		
Channel	Frequency (MHz)	Peak to Average Ratio
		QPSK
23060	704	3.62
23095	707.5	3.70
23130	711	3.71

LTE Band 66		
Channel Bandwidth: 20 MHz		
Channel	Frequency (MHz)	Peak to Average Ratio
		QPSK
132072	1720	4.25
132322	1745	4.26
132572	1770	4.26

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LTE Band 71		
Channel Bandwidth: 10 MHz		
Channel	Frequency (MHz)	Peak to Average Ratio
		QPSK
133222	673	4.17
133322	683	3.91
133372	688	3.93

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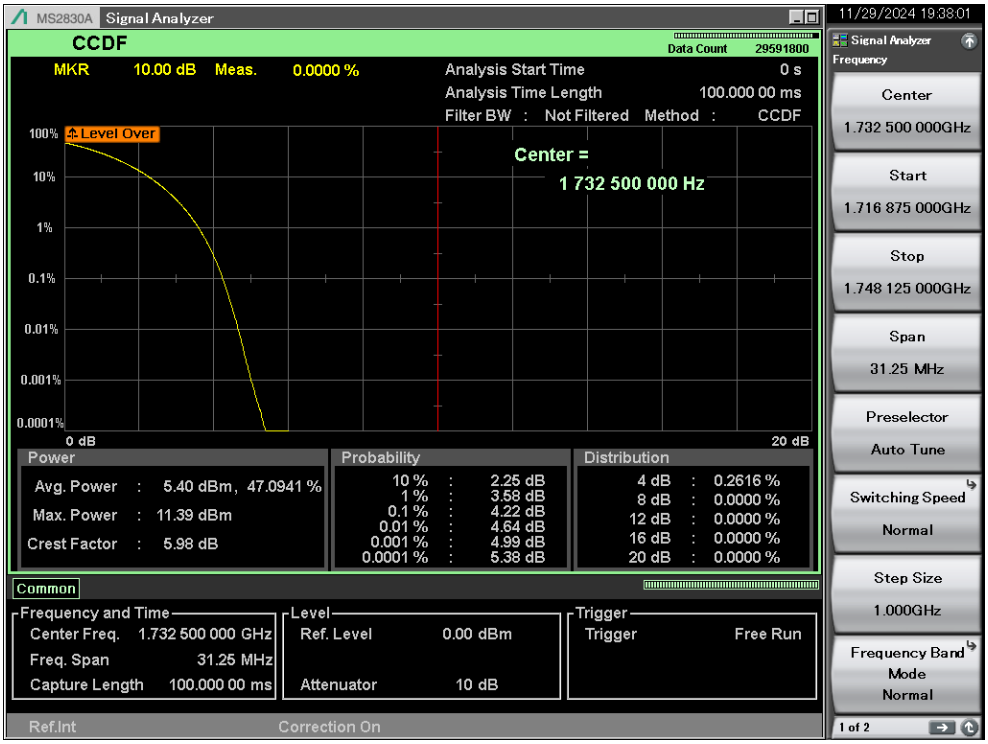
Band 4

1720MHz

1732.5MHz



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1745MHz


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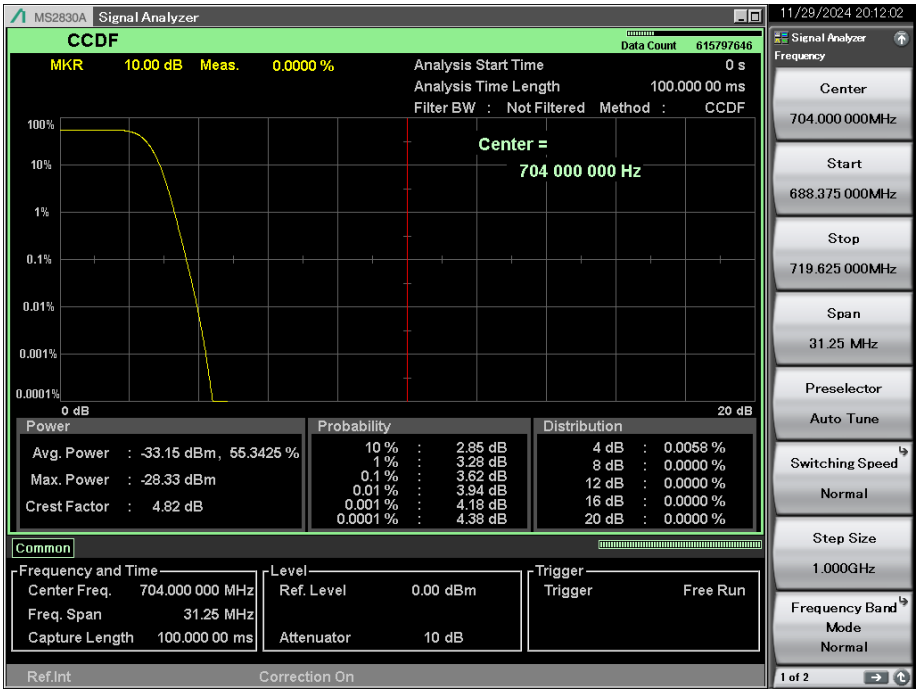
Band 12

704MHz

707.5MHz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711MHz

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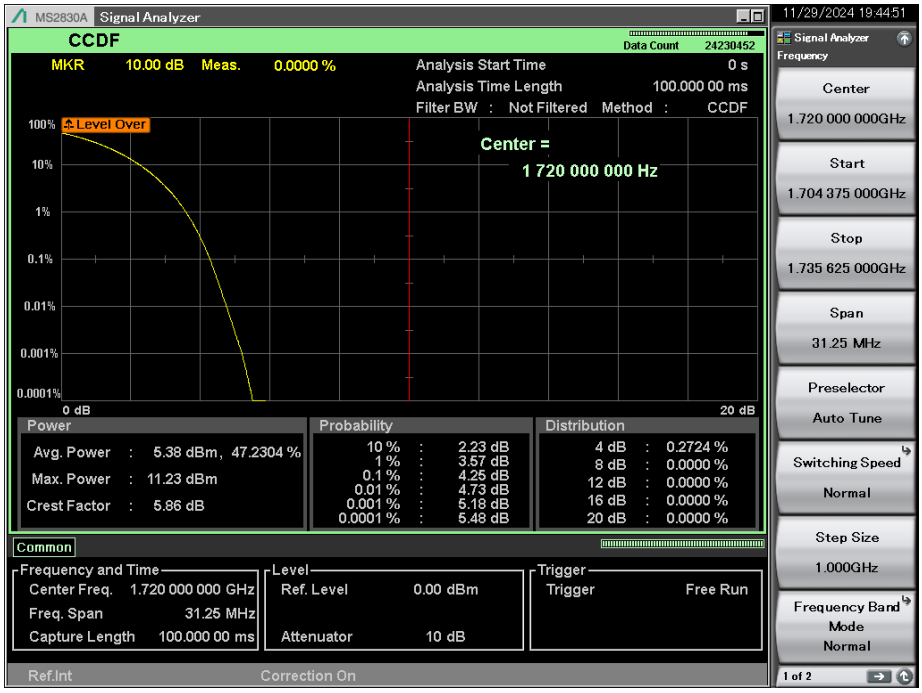
Band 66

1720 MHz

1745 MHz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1770 MHz

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Band 71

673 MHz

683 MHz

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688 MHz


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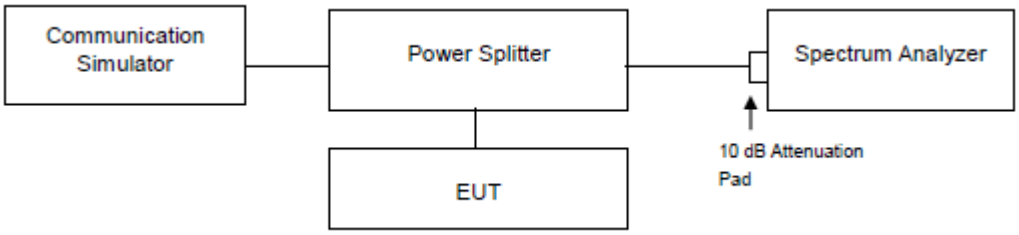
5.4 Conducted Spurious Emissions

5.4.1 Limits of Conducted Spurious Emissions Measurement

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 -13 dBm.

5.4.2 Test Setup



5.4.3 Test Procedure

a. The EUT makes a phone call to the communication simulator. All measurements were done at low, middle and high operational frequency range.

b. Measuring frequency range is from 9 kHz to 1 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 100 kHz and VBW = 300 kHz is used for conducted emission measurement.

c. Measuring frequency range is from 1 GHz to 27 GHz. 10 dB attenuation pad is connected with spectrum. RBW = 1 MHz and VBW = 3 MHz is used for conducted emission measurement.

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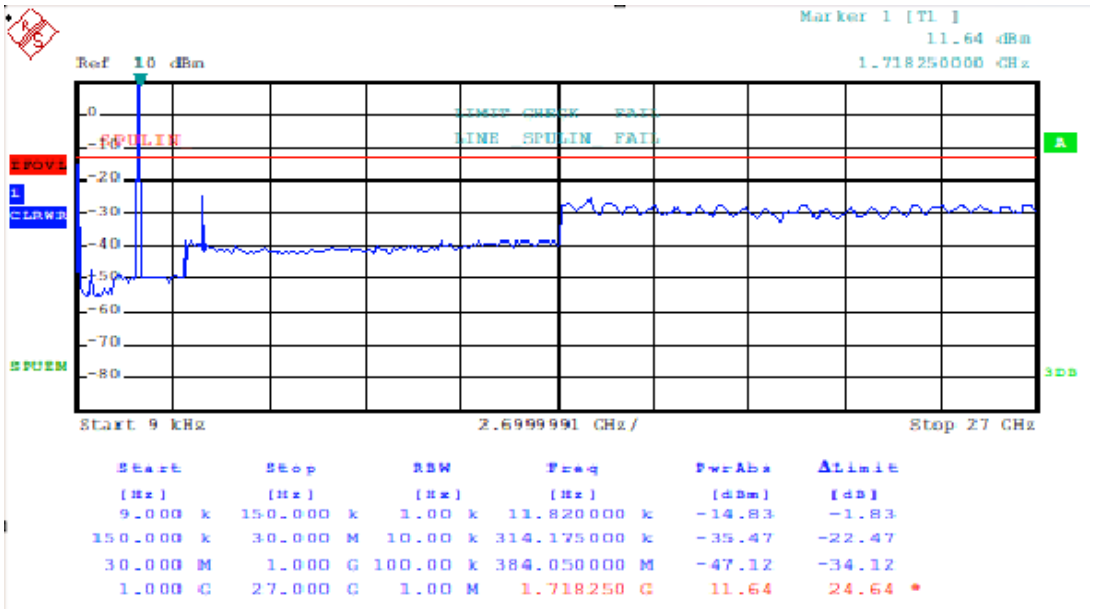
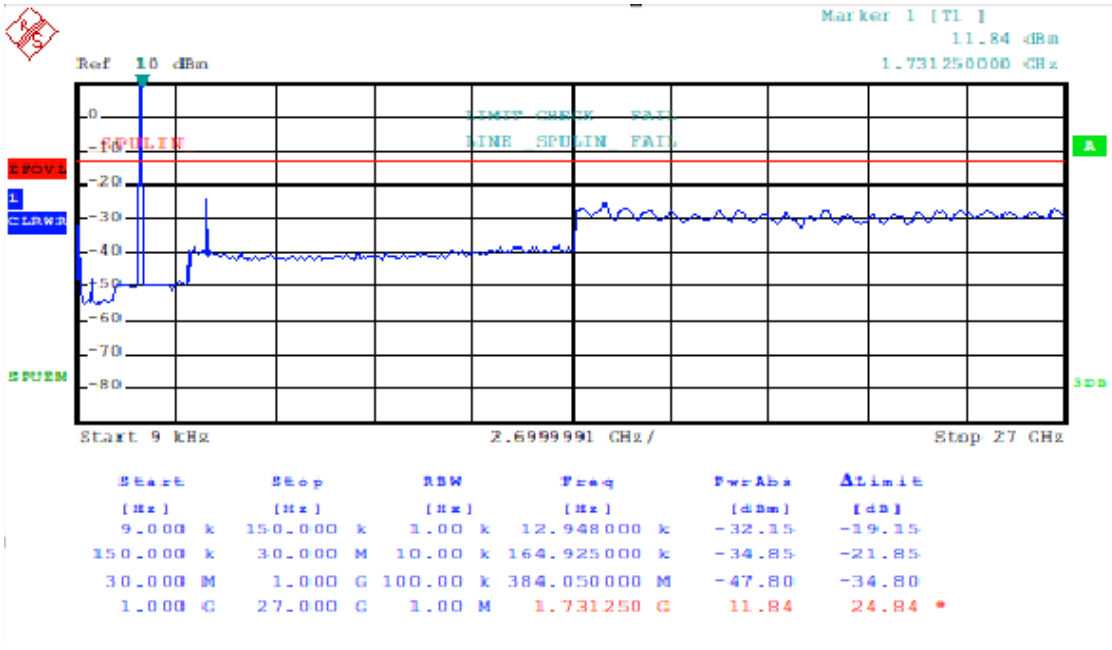
5.4.4 Test Results

LTE Band 4

Channel Bandwidth: 20 MHz

1720MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.
1732.5MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.

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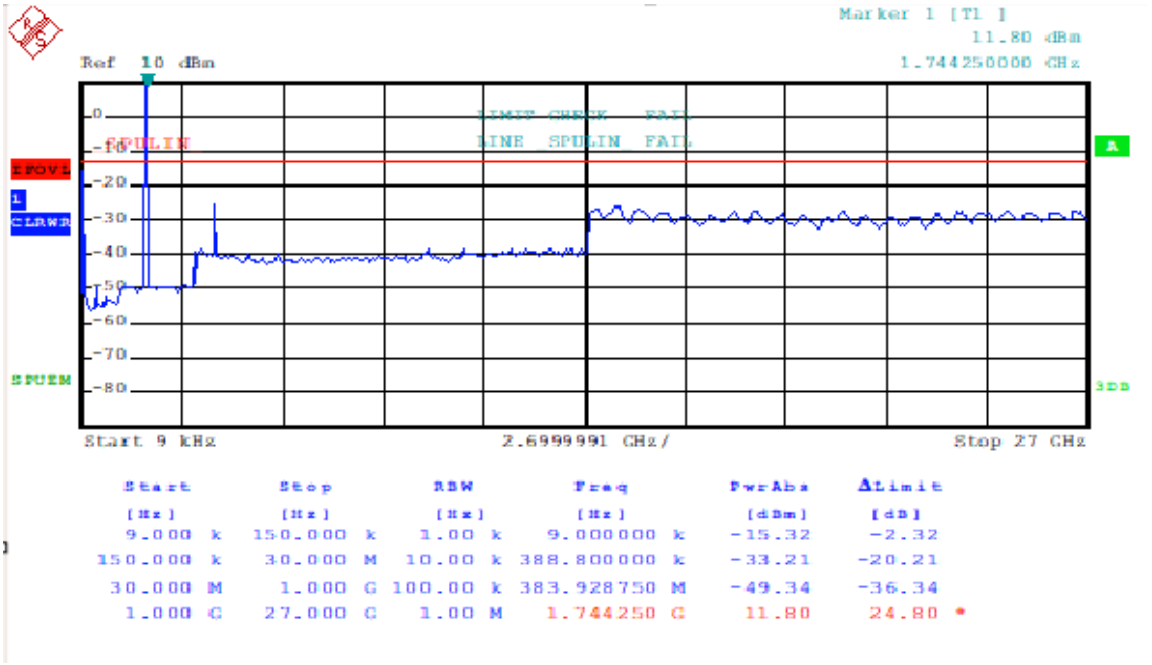
Contact:0124-4235350, 4145343; e-mail: info @aaemtlabs.com; Website: www.aaemtlabs.com

1745MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.

Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
9.000 k	150.000 k	1.00 k	9.000000 k	-15.32	-2.32
150.000 k	30.000 M	10.00 k	388.800000 k	-33.21	-20.21
30.000 M	1.000 G	100.00 k	383.928750 M	-49.34	-36.34
1.000 G	27.000 G	1.00 M	1.744250 G	11.80	24.80 *

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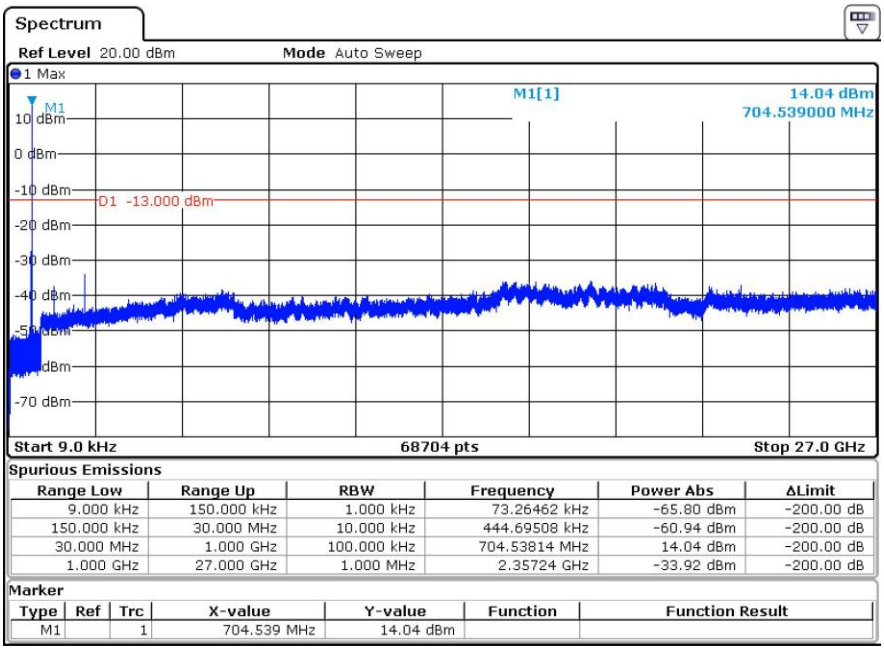
LTE Band 12

Channel Bandwidth: 10 MHz

704MHz



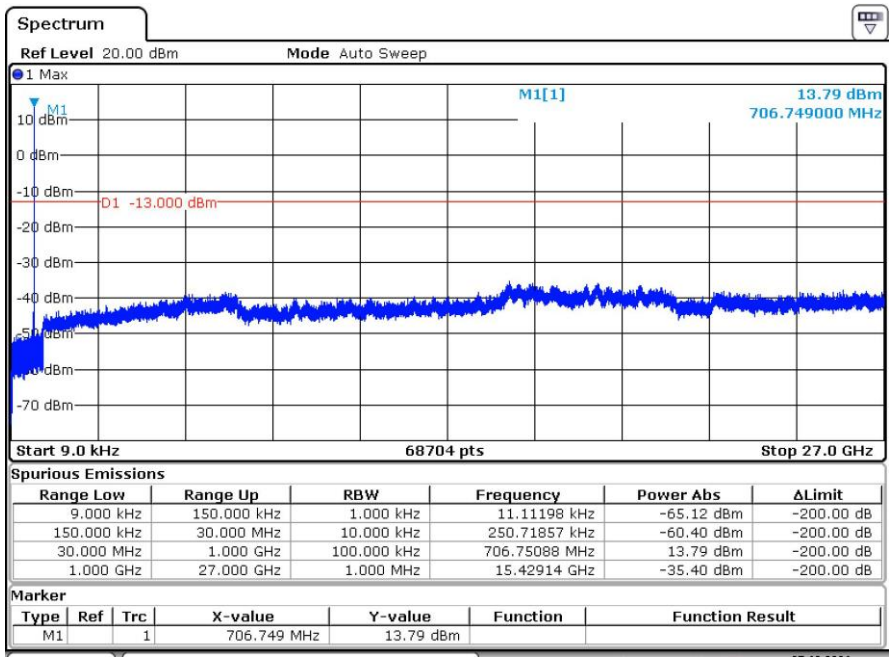
Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	150.000 kHz	1.000 kHz	73.26462 kHz	-65.80 dBm	-200.00 dB
150.000 kHz	30.000 MHz	10.000 kHz	444.69508 kHz	-60.94 dBm	-200.00 dB
30.000 MHz	1.000 GHz	100.000 kHz	704.53814 MHz	14.04 dBm	-200.00 dB
1.000 GHz	27.000 GHz	1.000 MHz	2.35724 GHz	-33.92 dBm	-200.00 dB

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	704.539 MHz	14.04 dBm		

707.5MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	150.000 kHz	1.000 kHz	11.11198 kHz	-65.12 dBm	-200.00 dB
150.000 kHz	30.000 MHz	10.000 kHz	250.71857 kHz	-60.40 dBm	-200.00 dB
30.000 MHz	1.000 GHz	100.000 kHz	706.75088 MHz	13.79 dBm	-200.00 dB
1.000 GHz	27.000 GHz	1.000 MHz	15.42914 GHz	-35.40 dBm	-200.00 dB

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	706.749 MHz	13.79 dBm		

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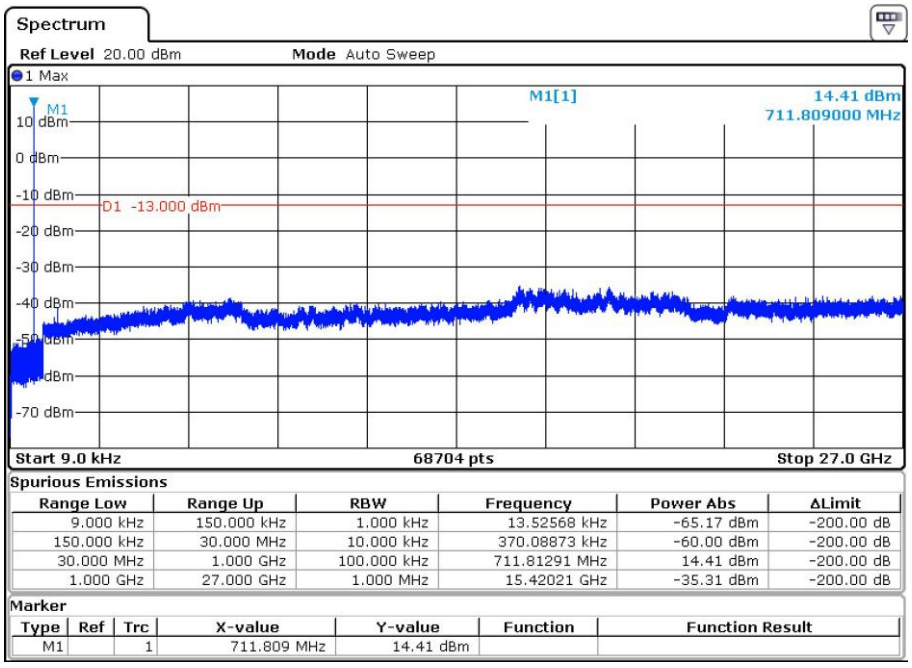
711MHz



Spurious Emissions

Range Low	Range Up	RBW	Frequency	Power Abs	ΔLimit
9.000 kHz	150.000 kHz	1.000 kHz	13.52568 kHz	-65.17 dBm	-200.00 dB
150.000 kHz	30.000 MHz	10.000 kHz	370.08873 kHz	-60.00 dBm	-200.00 dB
30.000 MHz	1.000 GHz	100.000 kHz	711.81291 MHz	14.41 dBm	-200.00 dB
1.000 GHz	27.000 GHz	1.000 MHz	15.42021 GHz	-35.31 dBm	-200.00 dB

Marker

Type	Ref	Trc	X-value	Y-value	Function	Function Result
M1		1	711.809 MHz	14.41 dBm		

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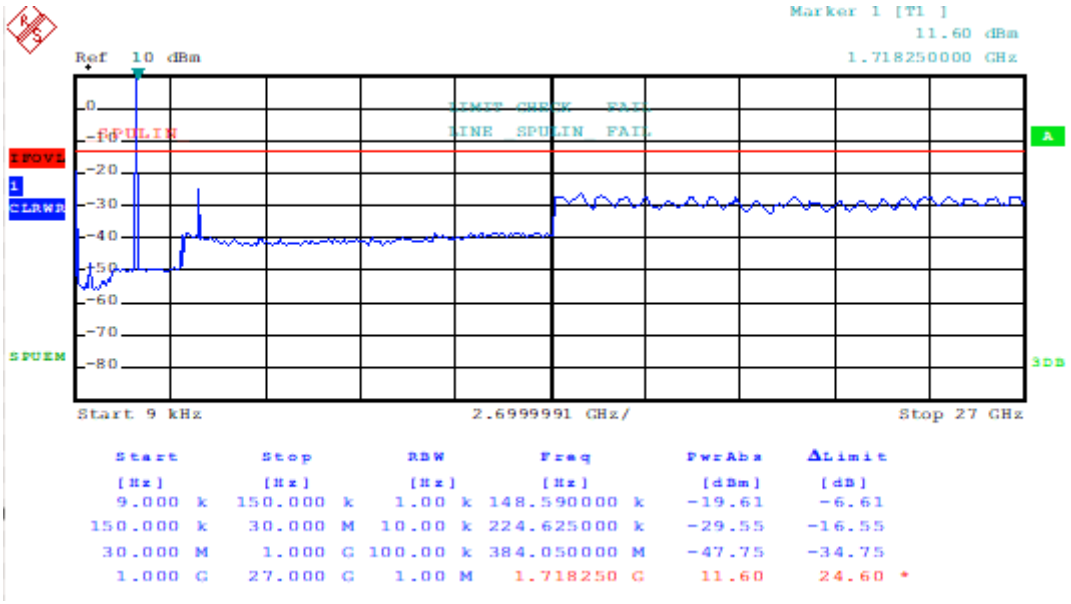
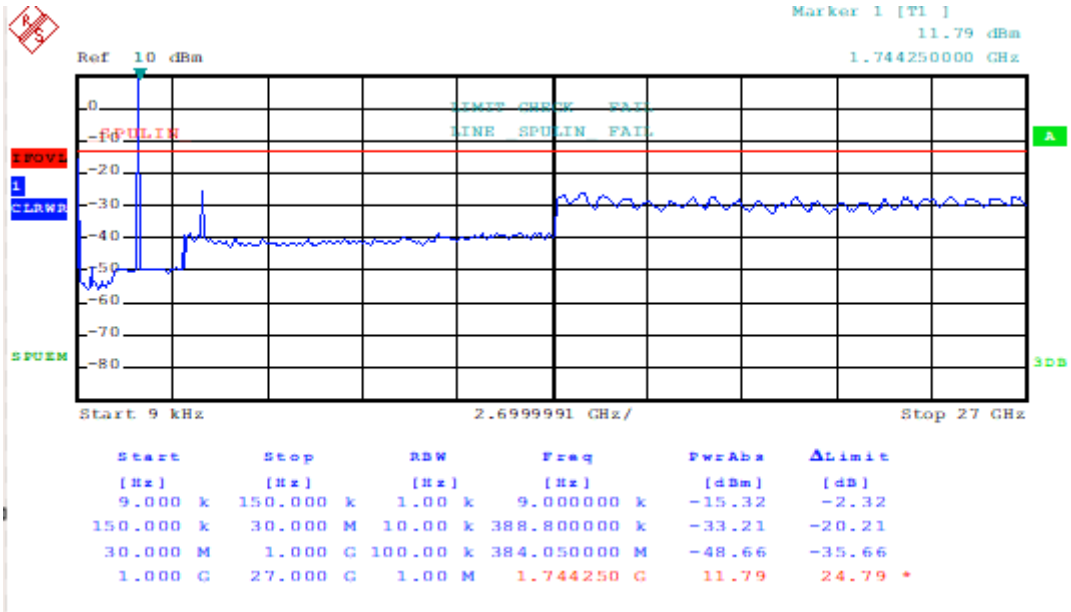
Band 66

Channel Bandwidth: 20 MHz

1720 MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.
1745 MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.

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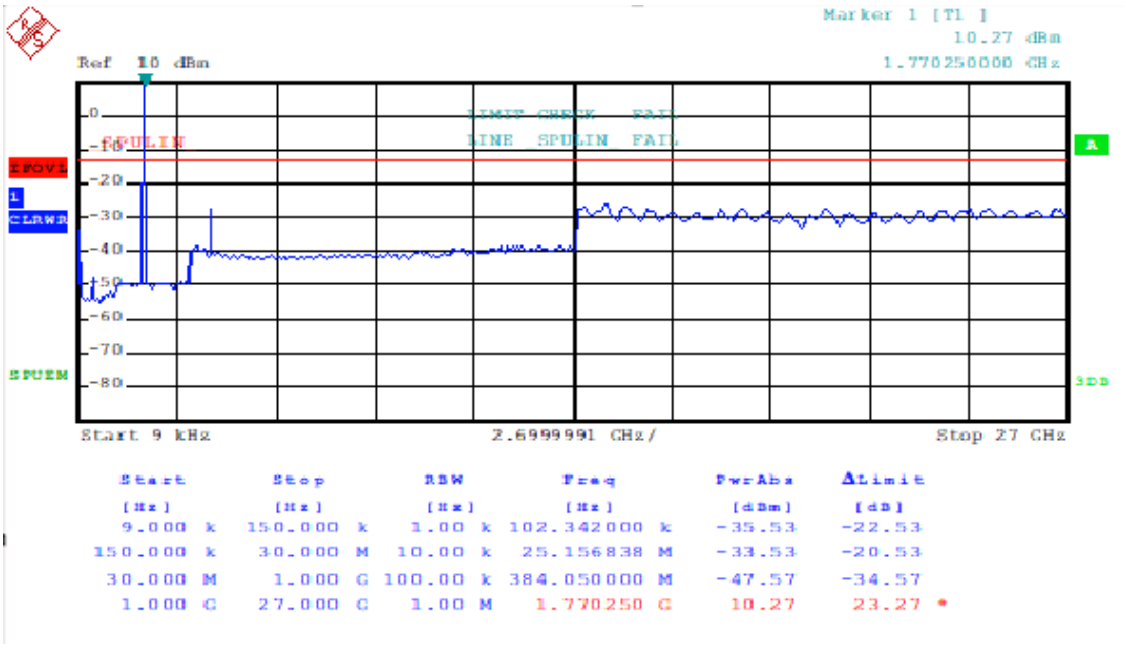
1770 MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.

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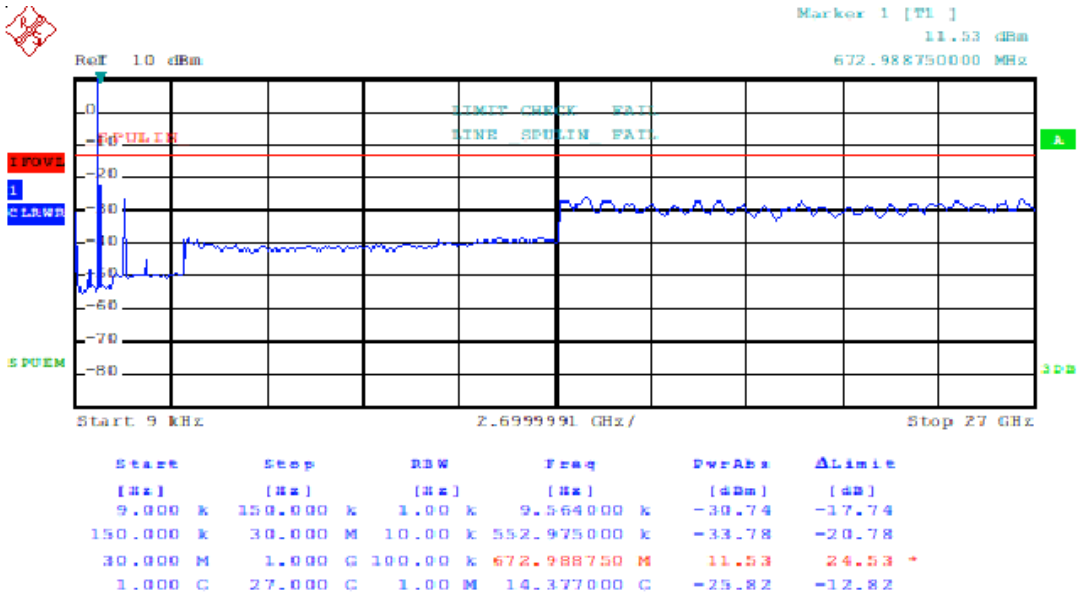
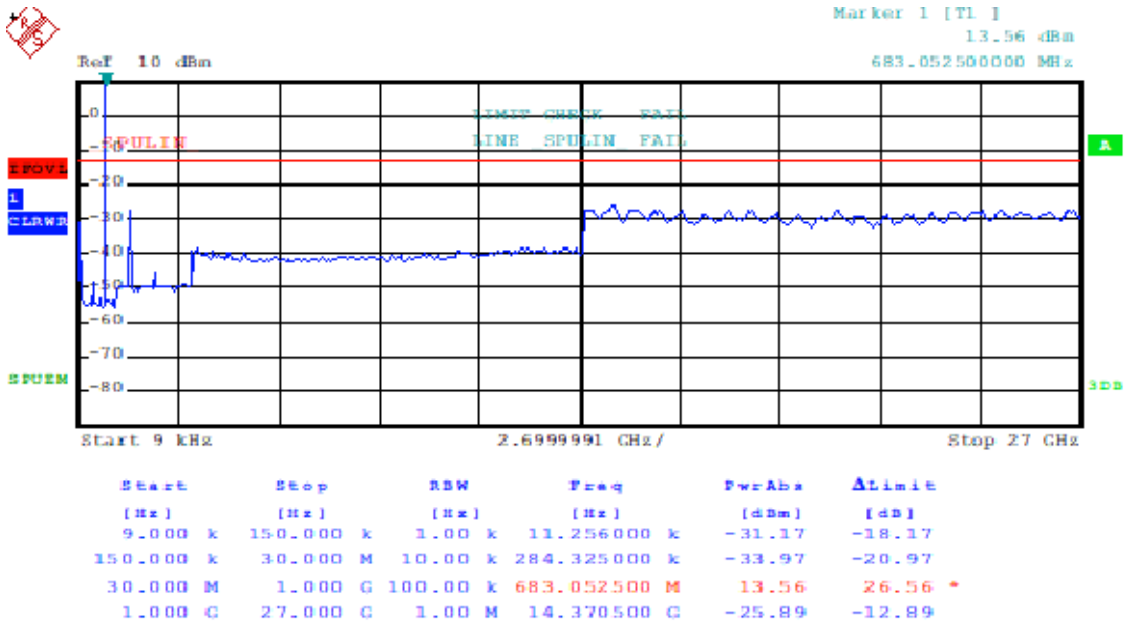
Band 71

Channel Bandwidth: 20 MHz

673 MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.
683 MHz

M1 is intentional frequency of the EUT. Hence, considered as PASS.

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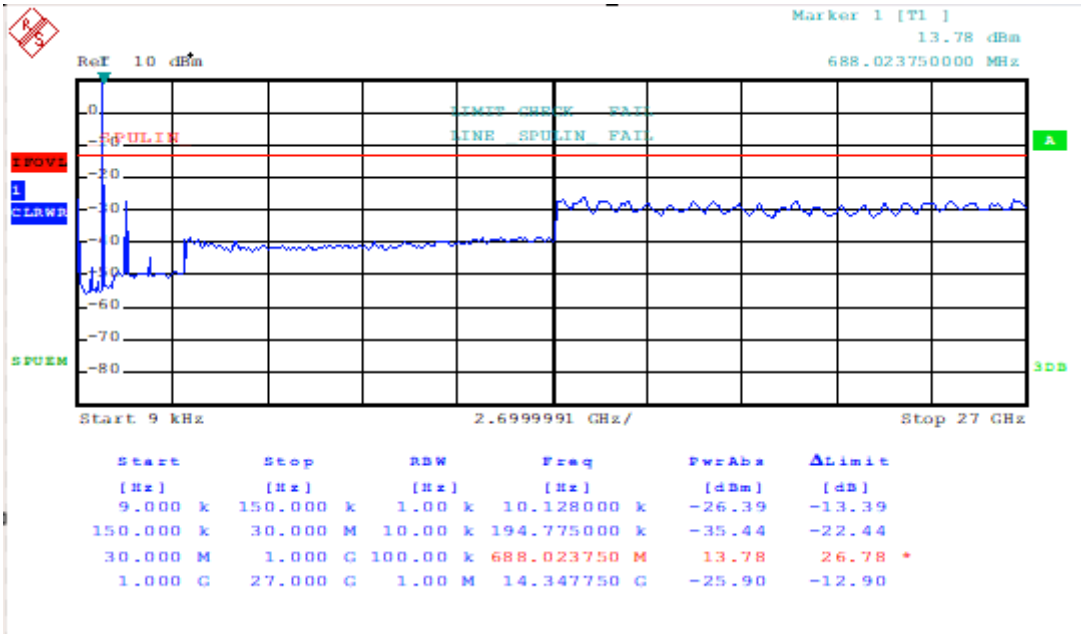
688 MHz



Start [Hz]	Stop [Hz]	RBW [Hz]	Freq [Hz]	PwrAbs [dBm]	ΔLimit [dB]
9.000 k	150.000 k	1.00 k	10.128000 k	-26.39	-13.39
150.000 k	30.000 M	10.00 k	194.775000 k	-35.44	-22.44
30.000 M	1.000 G	100.00 k	688.023750 M	13.78	26.78 *
1.000 G	27.000 G	1.00 M	14.347750 G	-25.90	-12.90

M1 is intentional frequency of the EUT. Hence, considered as PASS**.**

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5.5 Radiated Emission Measurement

5.5.1 Limits of Radiated Emission Measurement

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 is equal to -13 dBm.

5.5.2 Test Procedure

1. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8 m (below or equal 1 GHz) and/or 1.5 m (above 1 GHz) height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1 m to 4 m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.

2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
3. EIRP = Output power level of S.G – TX cable loss + Antenna gain
4. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, E.R.P power = E.I.R.P power - 2.15 dB

NOTE: The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1 MHz/3 MHz.

4.5.1 Deviation from Test Standard

No deviation.

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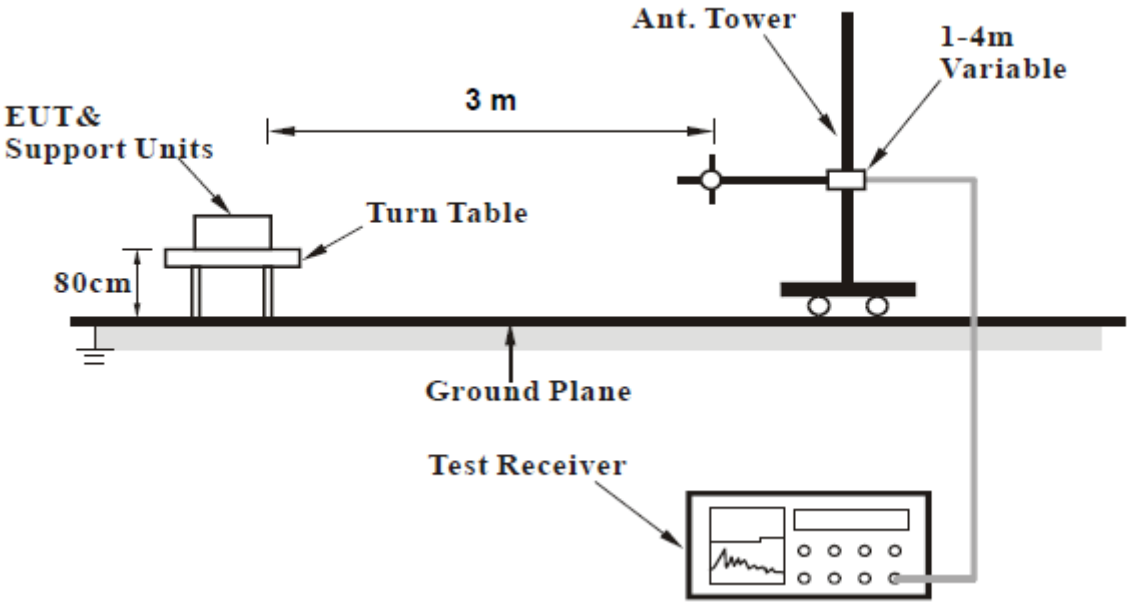
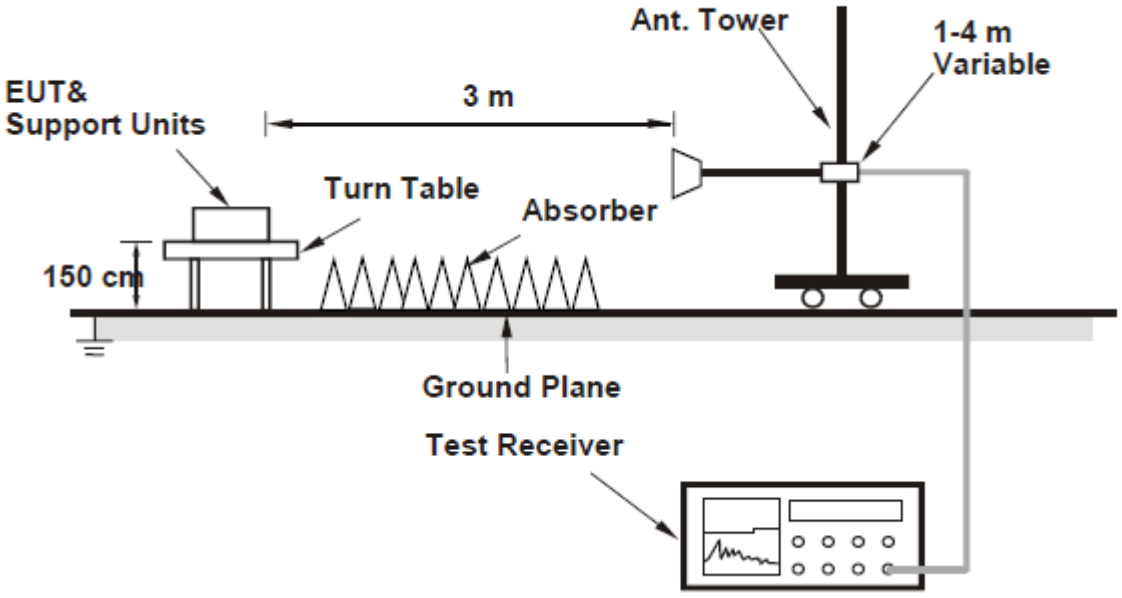
5.5.3 Test Setup

<Radiated Emission below or equal 1 GHz>



<Radiated Emission above 1 GHz>



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5.5.4 Test Results

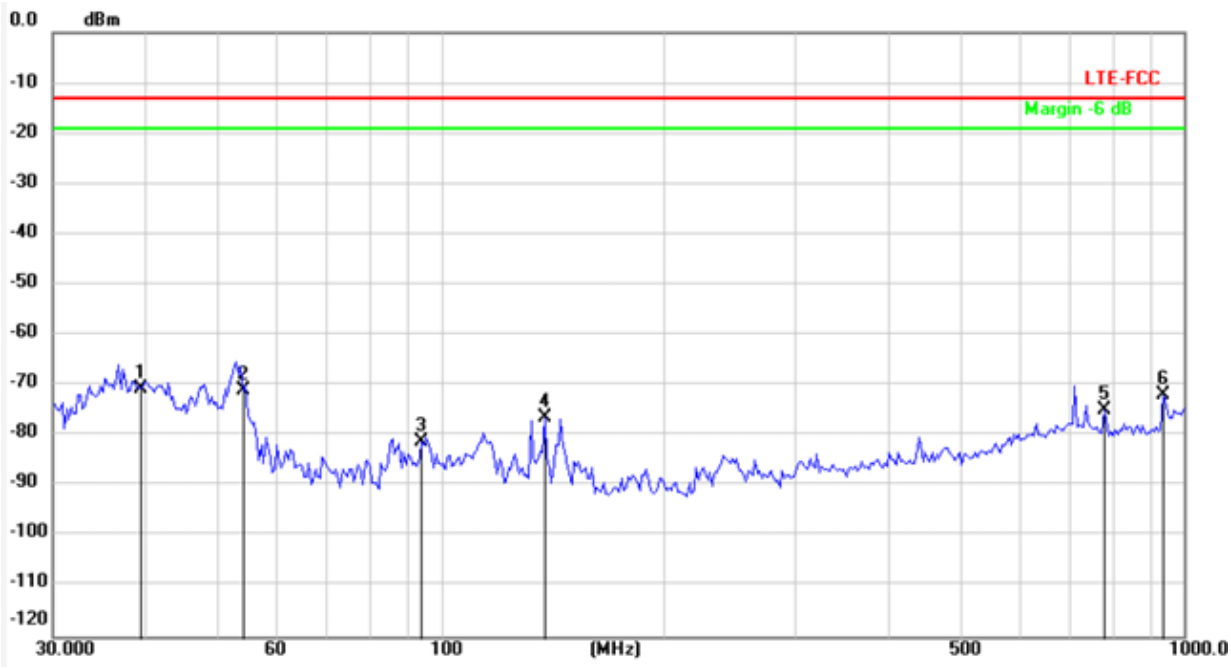
LTE Band 4

Channel Bandwidth: 20 MHz

CH 20050

30MHz-1GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	39.4587	-11.85	-58.73	-70.58	-13.00	-57.58	peak
2	54.1349	-12.18	-58.76	-70.94	-13.00	-57.94	peak
3	94.3135	-12.24	-68.79	-81.03	-13.00	-68.03	peak
4	137.8398	-15.55	-60.94	-76.49	-13.00	-63.49	peak
5	781.9605	-0.54	-74.38	-74.92	-13.00	-61.92	peak
6	938.7137	0.35	-72.16	-71.81	-13.00	-58.81	peak

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LTE Band 4

Channel Bandwidth: 20 MHz

CH 20050

30MHz-1GHz

Horizontal

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	32.4107	-10.93	-68.08	-79.01	-13.00	-66.01	peak
2	53.7558	-10.15	-67.48	-77.63	-13.00	-64.63	peak
3	92.9972	-10.44	-72.46	-82.90	-13.00	-69.90	peak
4	216.1194	-9.66	-61.70	-71.36	-13.00	-58.36	peak
5	320.3306	-6.22	-59.89	-66.11	-13.00	-53.11	peak
6	646.8215	0.14	-74.18	-74.04	-13.00	-61.04	peak

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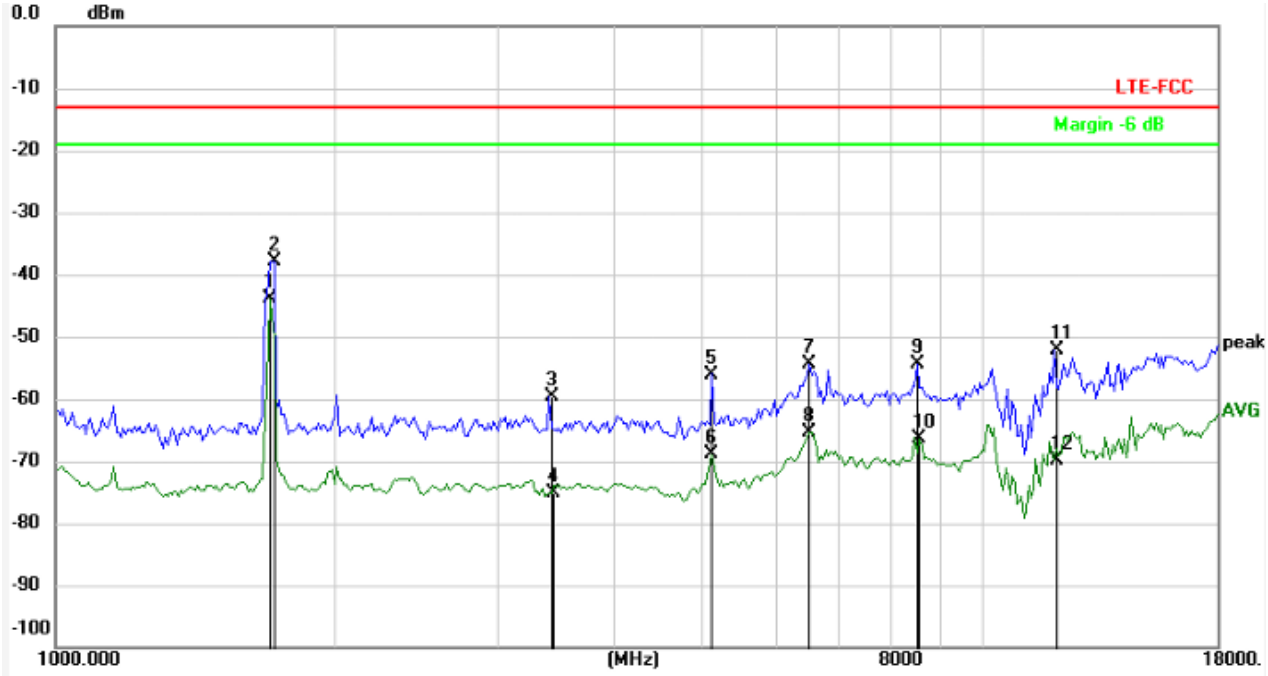
LTE Band 4

Channel Bandwidth: 20 MHz

CH 20050

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1703.856	22.38	-66.27	-43.89	-13.00	-30.89	AVG
2	1720.000	22.39	-60.38	-37.99	-13.00	-24.99	peak
3	3414.304	28.55	-88.05	-59.50	-13.00	-46.50	peak
4	3434.138	28.62	-103.62	-75.00	-13.00	-62.00	AVG
5	5121.444	33.67	-89.67	-56.00	-13.00	-43.00	peak
6	5121.444	33.67	-102.57	-68.90	-13.00	-55.90	AVG
7	6532.007	29.99	-84.48	-54.49	-13.00	-41.49	peak
8	6532.007	29.99	-95.31	-65.32	-13.00	-52.32	AVG
9	8526.350	41.25	-95.70	-54.45	-13.00	-41.45	QP
10	8575.881	41.20	-107.53	-66.33	-13.00	-53.33	AVG
11	12000.026	47.15	-99.26	-52.11	-13.00	-39.11	peak
12	12000.026	47.15	-116.98	-69.83	-13.00	-56.83	AVG

Note: Markers 1 & 2 are intentional frequency from EUT.

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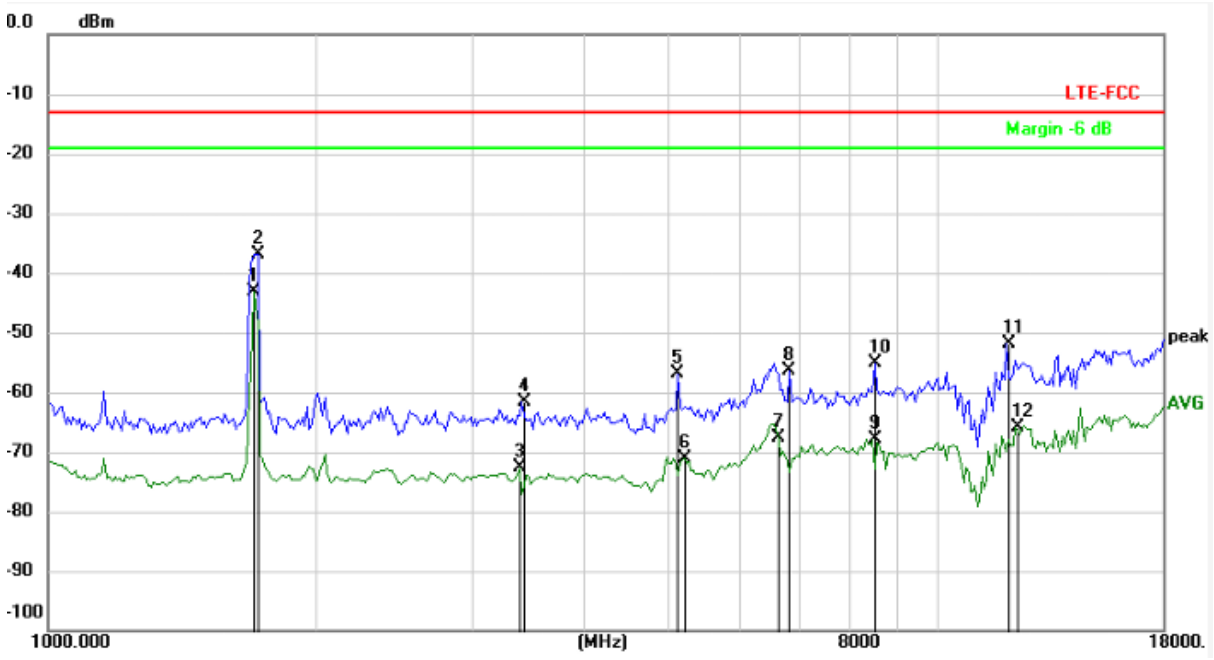
LTE Band 4

Channel Bandwidth: 20 MHz

CH 20050

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1703.856	22.38	-65.58	-43.20	-13.00	-30.20	AVG
2	1720.000	22.39	-59.37	-36.98	-13.00	-23.98	peak
3	3394.584	28.49	-101.09	-72.60	-13.00	-59.60	AVG
4	3414.304	28.55	-90.05	-61.50	-13.00	-48.50	peak
5	5121.444	33.67	-90.66	-56.99	-13.00	-43.99	peak
6	5211.217	33.87	-105.10	-71.23	-13.00	-58.23	AVG
7	6646.506	33.78	-101.32	-67.54	-13.00	-54.54	AVG
8	6841.814	38.98	-95.25	-56.27	-13.00	-43.27	peak
9	8477.106	41.26	-109.23	-67.97	-13.00	-54.97	AVG
10	8526.350	41.25	-96.28	-55.03	-13.00	-42.03	peak
11	12000.026	47.15	-99.11	-51.96	-13.00	-38.96	peak
12	12281.304	47.46	-113.44	-65.98	-13.00	-52.98	AVG

Note: Markers 1 & 2 are intentional frequency from EUT.

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LTE Band 4

Channel Bandwidth: 20 MHz

CH 20300

30MHz-1GHz

Vertical

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	37.3016	-12.35	-54.28	-66.63	-13.00	-53.63	peak
2	42.9305	-11.74	-57.63	-69.37	-13.00	-56.37	peak
3	54.1349	-12.18	-58.76	-70.94	-13.00	-57.94	peak
4	135.9162	-15.46	-67.49	-82.95	-13.00	-69.95	peak
5	144.7898	-15.53	-61.17	-76.70	-13.00	-63.70	peak
6	723.7930	-1.19	-76.63	-77.82	-13.00	-64.82	peak

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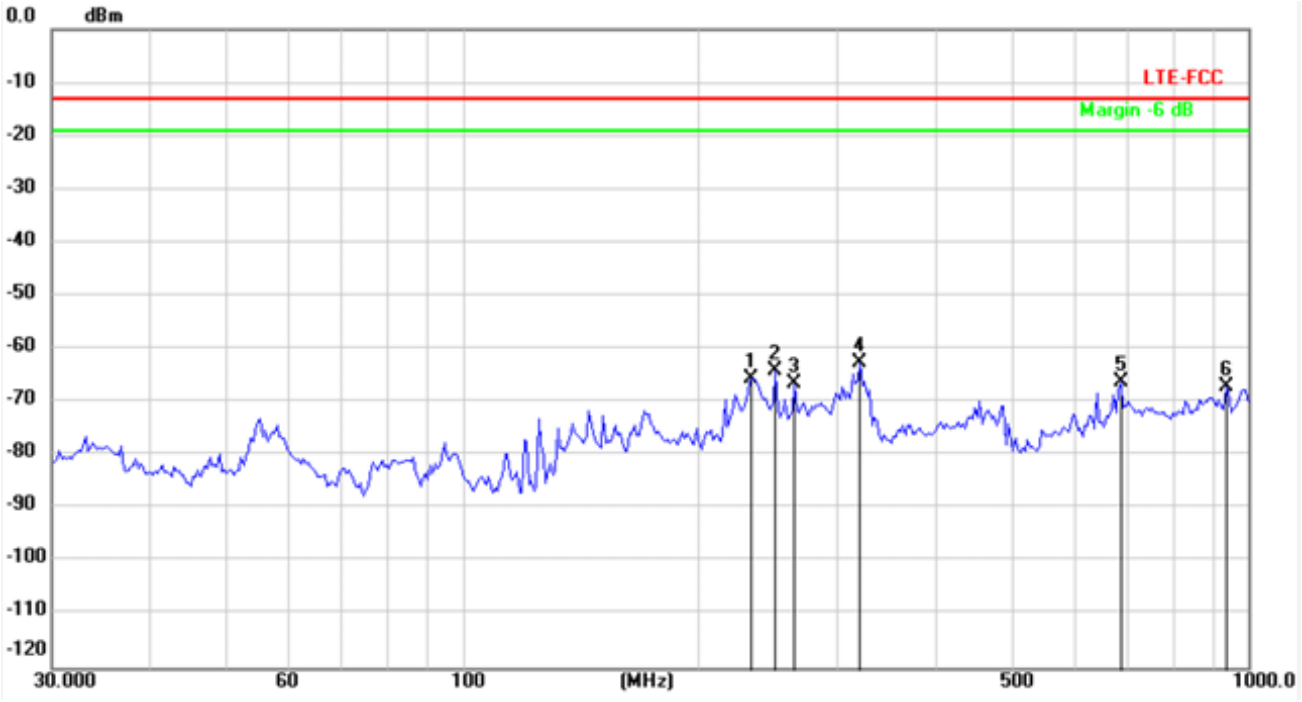
LTE Band 4

Channel Bandwidth: 20 MHz

CH 20300

30MHz-1GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	233.4876	-8.85	-56.62	-65.47	-13.00	-52.47	peak
2	250.4858	-8.07	-55.99	-64.06	-13.00	-51.06	peak
3	264.9707	-7.68	-58.88	-66.56	-13.00	-53.56	peak
4	320.3306	-6.22	-56.39	-62.61	-13.00	-49.61	peak
5	689.0507	0.39	-66.66	-66.27	-13.00	-53.27	peak
6	938.7137	2.35	-69.26	-66.91	-13.00	-53.91	peak

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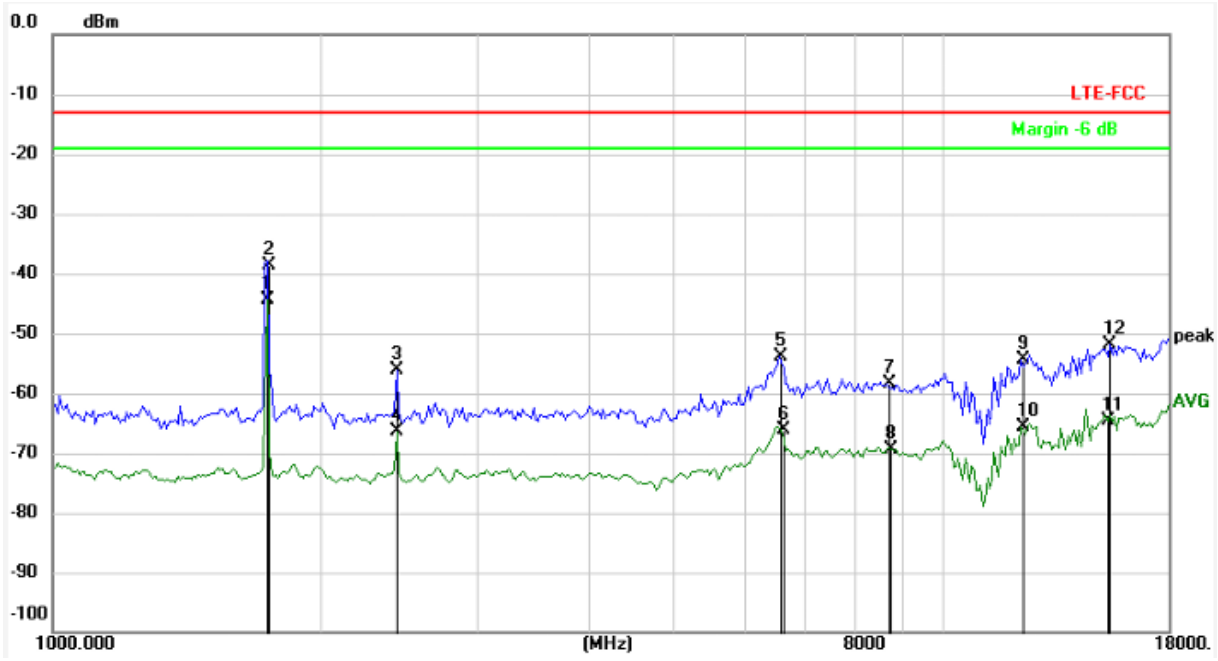
LTE Band 4

Channel Bandwidth: 20 MHz

CH 20300

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1743.794	-3.73	-40.69	-44.42	-13.00	-31.42	AVG
2	1745.000	-3.72	-35.00	-38.72	-13.00	-25.72	peak
3	2440.050	-2.73	-53.45	-56.18	-13.00	-43.18	peak
4	2440.050	-2.73	-63.71	-66.44	-13.00	-53.44	AVG
5	6569.953	-3.85	-49.92	-53.77	-13.00	-40.77	peak
6	6608.119	-2.67	-63.47	-66.14	-13.00	-53.14	AVG
7	8675.808	3.49	-61.91	-58.42	-13.00	-45.42	peak
8	8776.898	3.42	-72.91	-69.49	-13.00	-56.49	AVG
9	12281.304	8.41	-62.78	-54.37	-13.00	-41.37	peak
10	12281.304	8.41	-74.08	-65.67	-13.00	-52.67	AVG
11	15394.016	9.97	-74.54	-64.57	-13.00	-51.57	AVG
12	15483.442	9.99	-61.84	-51.85	-13.00	-38.85	peak

Note: Markers 1 & 2 are intentional frequency from EUT.

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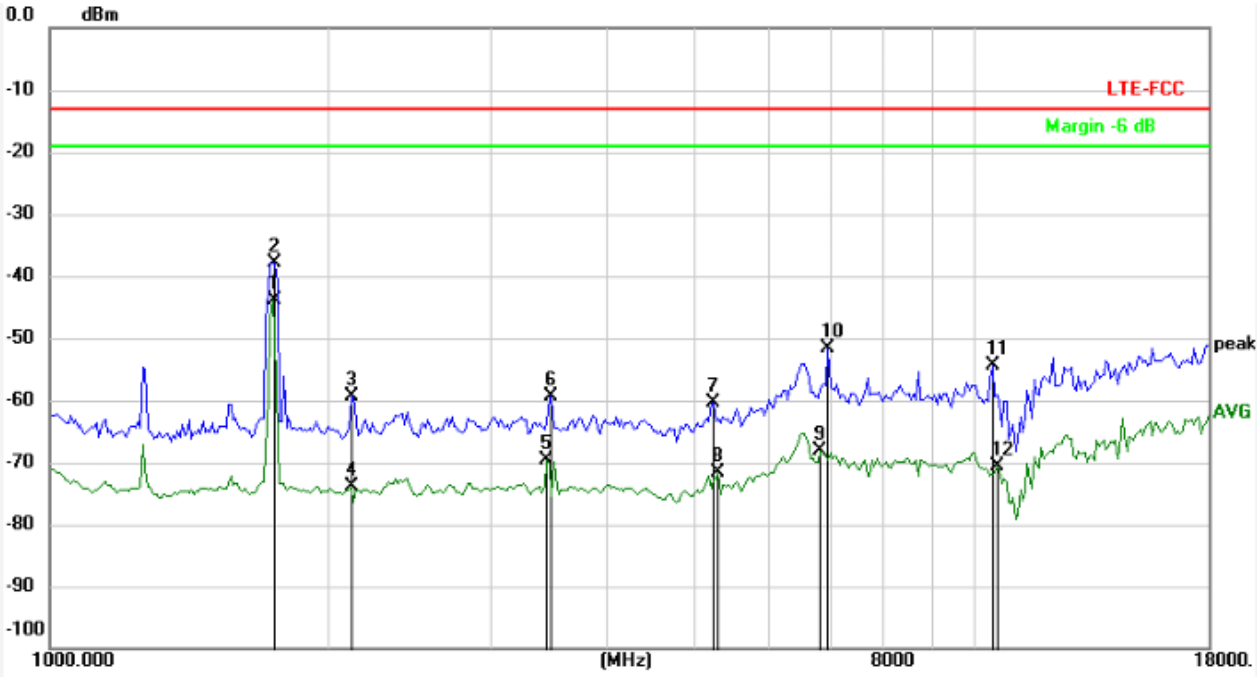
LTE Band 4

Channel Bandwidth: 20 MHz

CH 20300

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1743.795	22.42	-66.23	-43.81	-13.00	-30.81	AVG
2	1745.000	22.43	-60.38	-37.95	-13.00	-24.95	peak
3	2123.366	23.41	-82.68	-59.27	-13.00	-46.27	peak
4	2123.366	23.41	-97.32	-73.91	-13.00	-60.91	AVG
5	3454.087	28.67	-98.28	-69.61	-13.00	-56.61	AVG
6	3494.334	28.80	-88.18	-59.38	-13.00	-46.38	peak
7	5241.490	33.99	-94.31	-60.32	-13.00	-47.32	peak
8	5302.564	34.20	-105.92	-71.72	-13.00	-58.72	AVG
9	6841.814	38.98	-107.18	-68.20	-13.00	-55.20	AVG
10	6961.743	39.32	-90.93	-51.61	-13.00	-38.61	peak
11	10503.255	43.79	-98.26	-54.47	-13.00	-41.47	peak
12	10625.639	44.69	-115.43	-70.74	-13.00	-57.74	AVG

Note: Markers 1 & 2 are intentional frequency from EUT.

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LTE Band 12

Channel Bandwidth: 10 MHz

CH 23060

30MHz-1GHz

Vertical

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	35.5112	-13.76	-53.08	-66.84	-13.00	-53.84	peak
2	53.0056	-13.09	-58.71	-71.80	-13.00	-58.80	peak
3	120.6118	-14.99	-68.86	-83.85	-13.00	-70.85	peak
4	468.1650	-5.53	-74.85	-80.38	-13.00	-67.38	peak
5	704.0000	-2.55	-11.11	-13.66	-13.00	-0.66	peak
6	945.3336	0.78	-72.56	-71.78	-13.00	-58.78	peak

Note: Marker 5 is intentional frequency from EUT. Hence considered as Pass.

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LTE Band 12

Channel Bandwidth: 10 MHz

CH 23060

30MHz-1GHz

Horizontal

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	55.6782	-11.22	-70.90	-82.12	-13.00	-69.12	peak
2	73.2331	-15.05	-69.64	-84.69	-13.00	-71.69	peak
3	98.3752	-10.62	-75.85	-86.47	-13.00	-73.47	peak
4	216.1197	-10.66	-67.62	-78.28	-13.00	-65.28	peak
5	471.4665	-3.52	-76.37	-79.89	-13.00	-66.89	peak
6	704.0000	-0.55	-12.93	-13.48	-13.00	-0.48	peak

Note: Marker 6 is intentional frequency from EUT. Hence considered as Pass.

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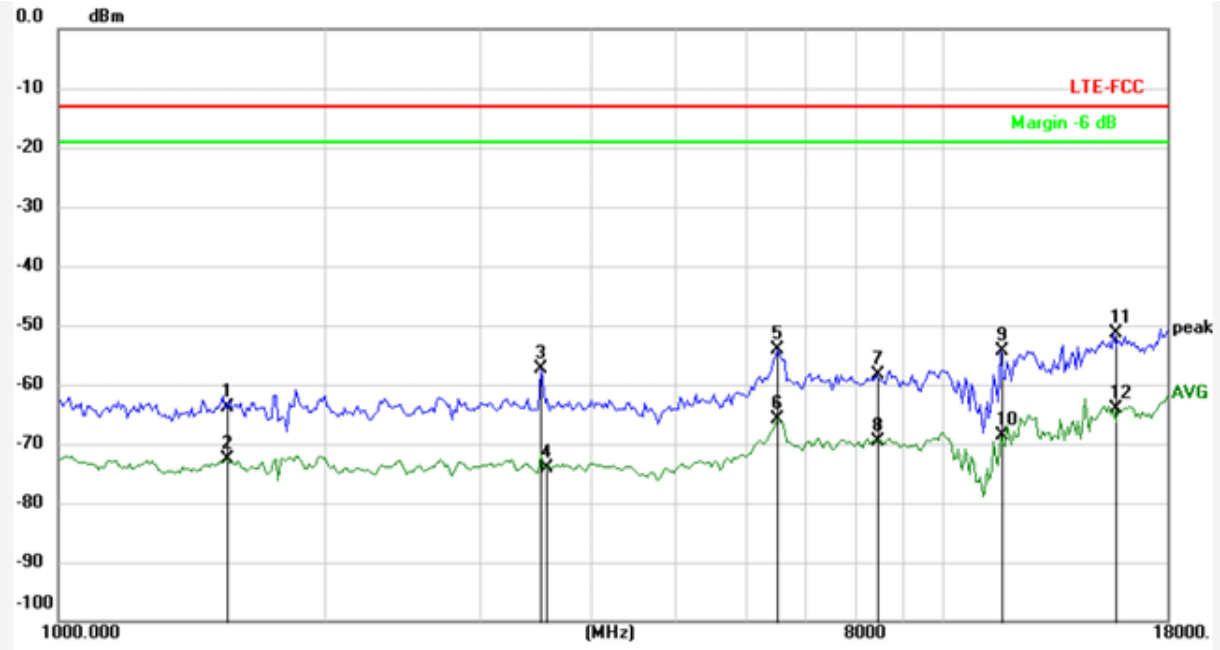
LTE Band 12

Channel Bandwidth: 10 MHz

CH 23060

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1553.044	-3.86	-59.96	-63.82	-13.00	-50.82	peak
2	1553.044	-3.86	-68.78	-72.64	-13.00	-59.64	AVG
3	3514.633	-1.11	-56.32	-57.43	-13.00	-44.43	peak
4	3555.586	-1.05	-72.96	-74.01	-13.00	-61.01	AVG
5	6532.007	-5.03	-49.01	-54.04	-13.00	-41.04	peak
6	6532.007	-5.03	-60.77	-65.80	-13.00	-52.80	AVG
7	8428.146	3.90	-62.38	-58.48	-13.00	-45.48	peak
8	8428.146	3.90	-73.46	-69.56	-13.00	-56.56	AVG
9	11657.470	8.49	-62.85	-54.36	-13.00	-41.36	peak
10	11657.470	8.49	-77.15	-68.66	-13.00	-55.66	AVG
11	15663.856	9.85	-61.31	-51.46	-13.00	-38.46	peak
12	15663.856	9.85	-73.94	-64.09	-13.00	-51.09	AVG

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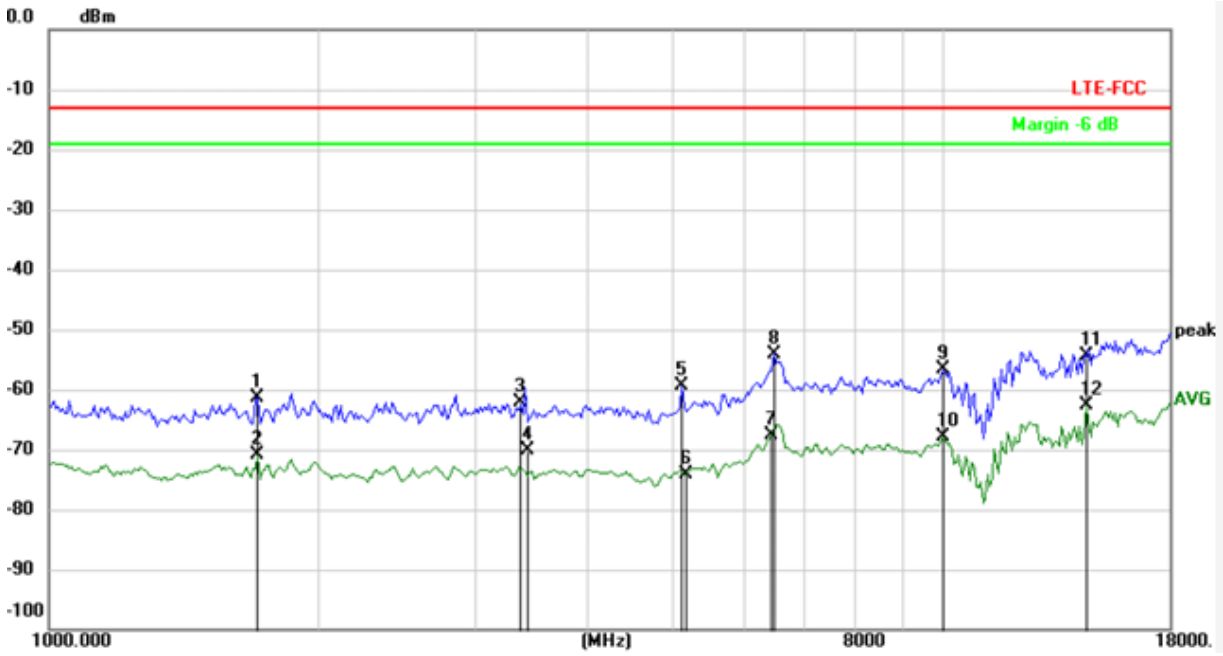
LTE Band 12

Channel Bandwidth: 10 MHz

CH 23060

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1713.754	-3.75	-57.73	-61.48	-13.00	-48.48	peak
2	1713.754	-3.75	-67.16	-70.91	-13.00	-57.91	AVG
3	3374.978	-1.33	-60.83	-62.16	-13.00	-49.16	peak
4	3414.304	-1.27	-68.89	-70.16	-13.00	-57.16	AVG
5	5121.444	0.74	-60.21	-59.47	-13.00	-46.47	peak
6	5151.196	0.77	-74.81	-74.04	-13.00	-61.04	AVG
7	6456.773	7.34	-74.99	-67.65	-13.00	-54.65	AVG
8	6494.281	8.59	-62.59	-54.00	-13.00	-41.00	peak
9	10027.653	5.22	-61.82	-56.60	-13.00	-43.60	peak
10	10027.653	5.22	-73.08	-67.86	-13.00	-54.86	AVG
11	14443.772	9.79	-64.27	-54.48	-13.00	-41.48	peak
12	14527.677	9.79	-72.30	-62.51	-13.00	-49.51	AVG

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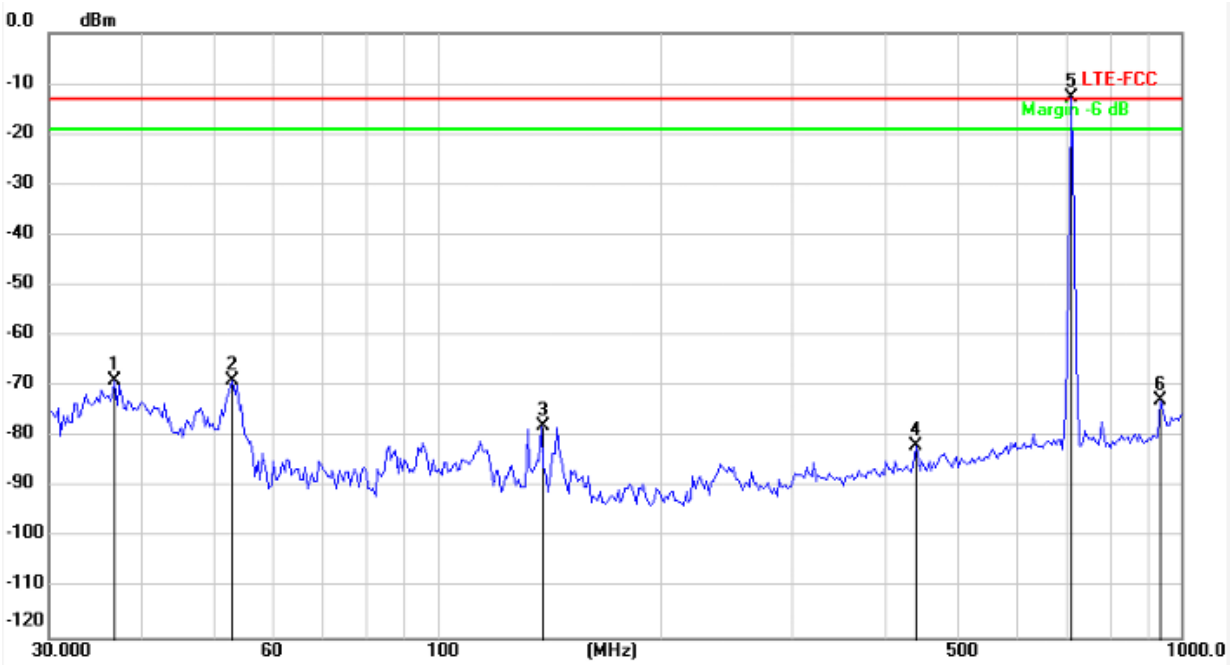
LTE Band 12

Channel Bandwidth: 10 MHz

CH 23130

30MHz-1GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	36.7811	-12.46	-56.35	-68.81	-13.00	-55.81	peak
2	53.0056	-12.09	-56.75	-68.84	-13.00	-55.84	peak
3	137.8400	-15.55	-62.44	-77.99	-13.00	-64.99	peak
4	439.4730	-5.14	-76.61	-81.75	-13.00	-68.75	peak
5	711.0000	-1.39	-11.26	-12.65	-13.00	0.35	peak
6	938.7139	0.35	-73.16	-72.81	-13.00	-59.81	peak

Note: Marker 5 is intentional frequency from EUT. Hence considered as Pass.

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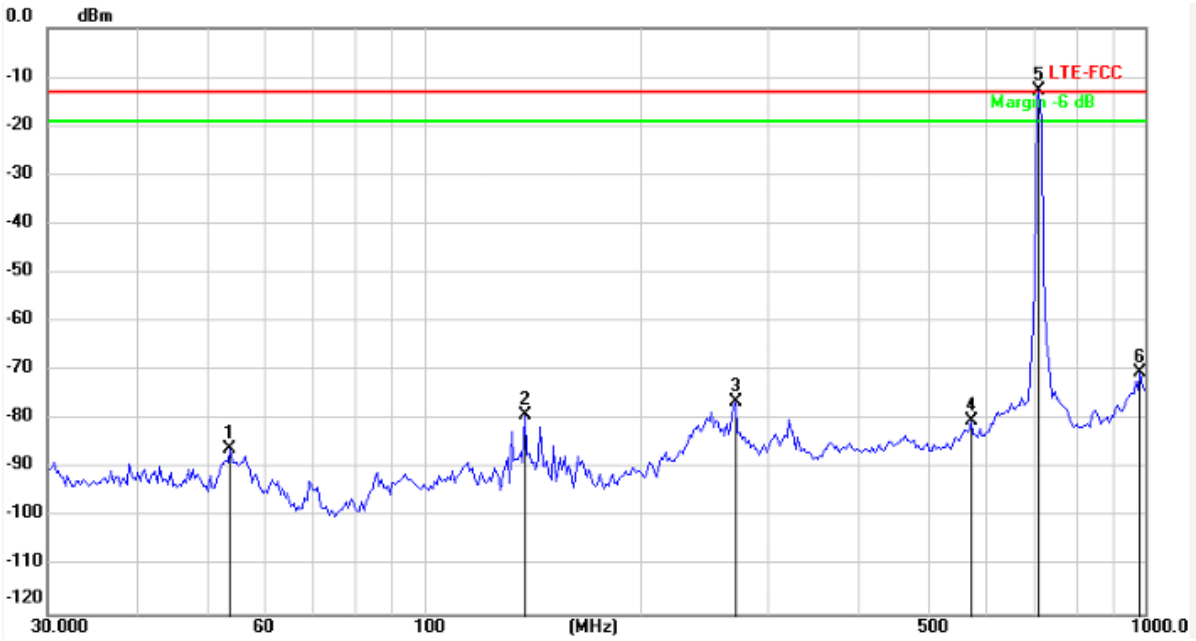
LTE Band 12

Channel Bandwidth: 10 MHz

CH 23130

30MHz-1GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	53.7558	-10.15	-75.93	-86.08	-13.00	-73.08	peak
2	137.8398	-13.55	-65.39	-78.94	-13.00	-65.94	peak
3	270.6162	-7.54	-68.78	-76.32	-13.00	-63.32	peak
4	573.9881	-0.52	-79.66	-80.18	-13.00	-67.18	peak
5	711.0000	0.61	-13.24	-12.63	-13.00	0.37	peak
6	986.0439	4.62	-74.95	-70.33	-13.00	-57.33	peak

Note: Marker 5 is intentional frequency from EUT. Hence considered as Pass.

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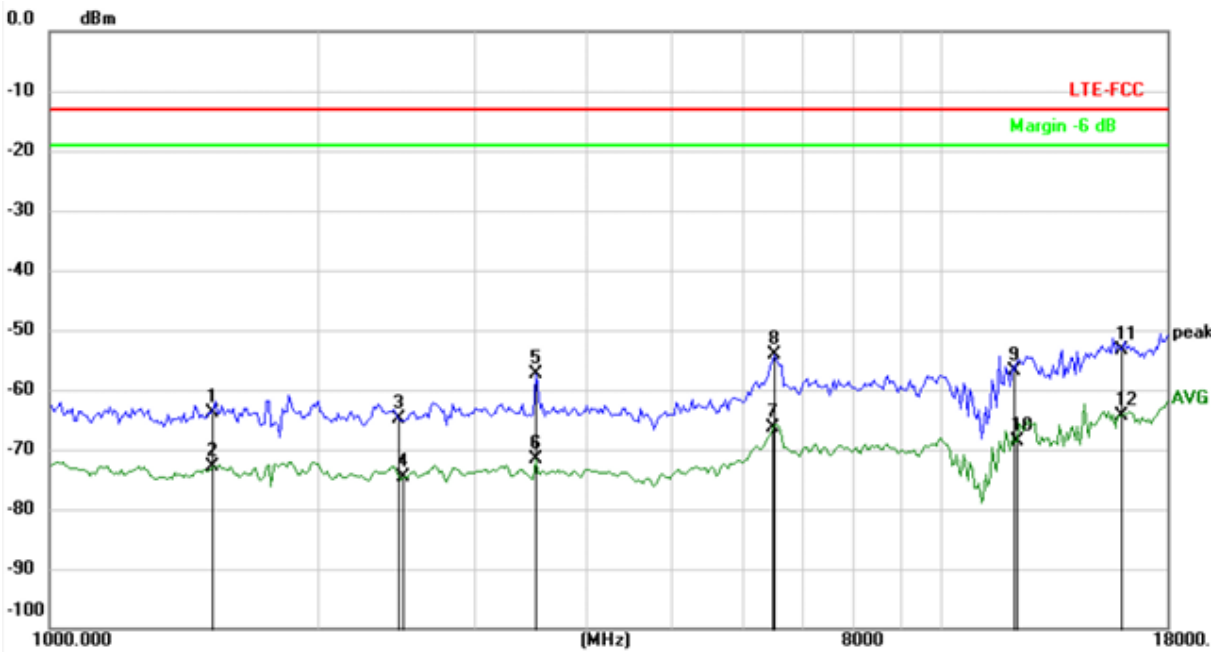
LTE Band 12

Channel Bandwidth: 10 MHz

CH 23130

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1517.475	-3.88	-60.11	-63.99	-13.00	-50.99	peak
2	1526.290	-3.88	-69.11	-72.99	-13.00	-59.99	AVG
3	2468.481	-2.70	-62.10	-64.80	-13.00	-51.80	peak
4	2497.244	-2.68	-72.05	-74.73	-13.00	-61.73	AVG
5	3514.633	-1.11	-56.32	-57.43	-13.00	-44.43	peak
6	3514.633	-1.11	-70.60	-71.71	-13.00	-58.71	AVG
7	6494.281	8.59	-74.84	-66.25	-13.00	-53.25	AVG
8	6532.007	-5.03	-49.01	-54.04	-13.00	-41.04	peak
9	12139.850	8.38	-65.27	-56.89	-13.00	-43.89	peak
10	12210.372	8.39	-76.94	-68.55	-13.00	-55.55	AVG
11	16031.013	9.54	-62.96	-53.42	-13.00	-40.42	peak
12	16031.013	9.54	-74.02	-64.48	-13.00	-51.48	AVG

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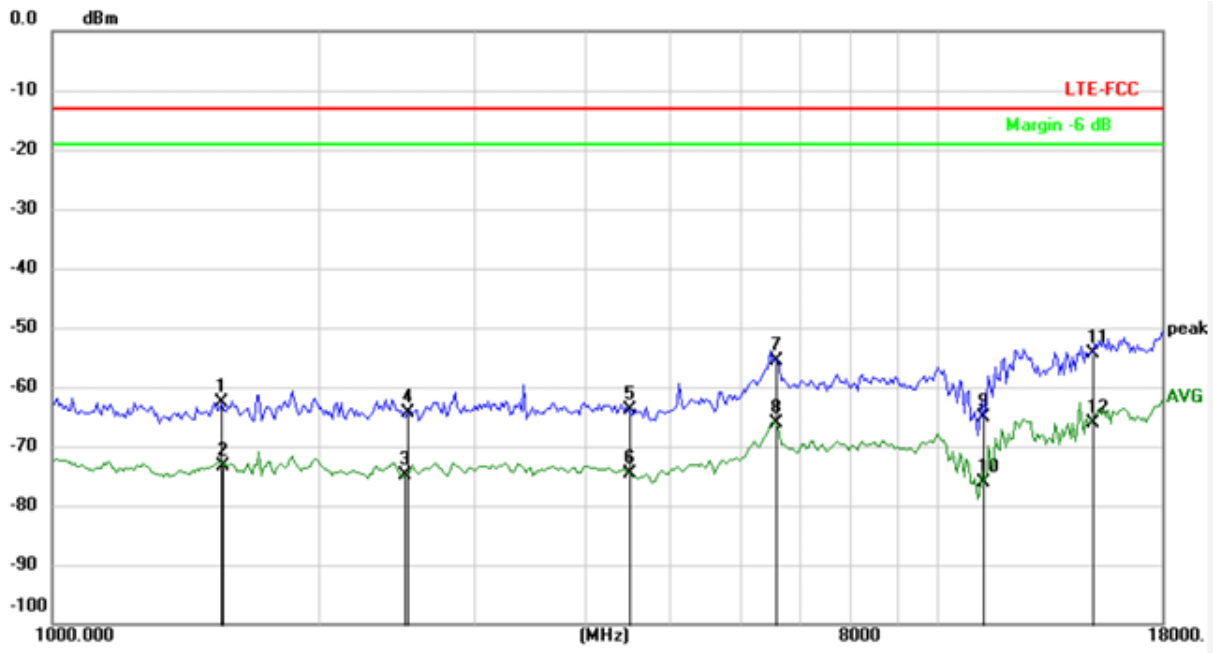
LTE Band 12

Channel Bandwidth: 10 MHz

CH 23130

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1553.044	-3.86	-58.88	-62.74	-13.00	-49.74	peak
2	1562.066	-3.87	-69.59	-73.46	-13.00	-60.46	AVG
3	2511.751	-2.65	-72.33	-74.98	-13.00	-61.98	AVG
4	2526.342	-2.62	-61.72	-64.34	-13.00	-51.34	peak
5	4482.644	-0.04	-63.83	-63.87	-13.00	-50.87	peak
6	4508.684	0.00	-74.61	-74.61	-13.00	-61.61	AVG
7	6569.953	-3.85	-51.65	-55.50	-13.00	-42.50	peak
8	6608.118	-2.67	-63.56	-66.23	-13.00	-53.23	AVG
9	11324.692	8.46	-73.48	-65.02	-13.00	-52.02	peak
10	11324.692	8.46	-84.61	-76.15	-13.00	-63.15	AVG
11	14954.575	9.87	-64.26	-54.39	-13.00	-41.39	peak
12	14954.575	9.87	-75.95	-66.08	-13.00	-53.08	AVG

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LTE Band 66

Channel Bandwidth: 20 MHz

CH 132072

30MHz-1GHz

Vertical

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	53.0056	-12.09	-52.75	-64.84	-13.00	-51.84	peak
2	36.7811	-12.46	-53.35	-65.81	-13.00	-52.81	peak
3	132.1489	-15.26	-61.10	-76.36	-13.00	-63.36	peak
4	137.8398	-15.55	-60.44	-75.99	-13.00	-62.99	peak
5	144.7898	-15.53	-60.67	-76.20	-13.00	-63.20	peak
6	439.4730	-5.14	-72.61	-77.75	-13.00	-64.75	peak

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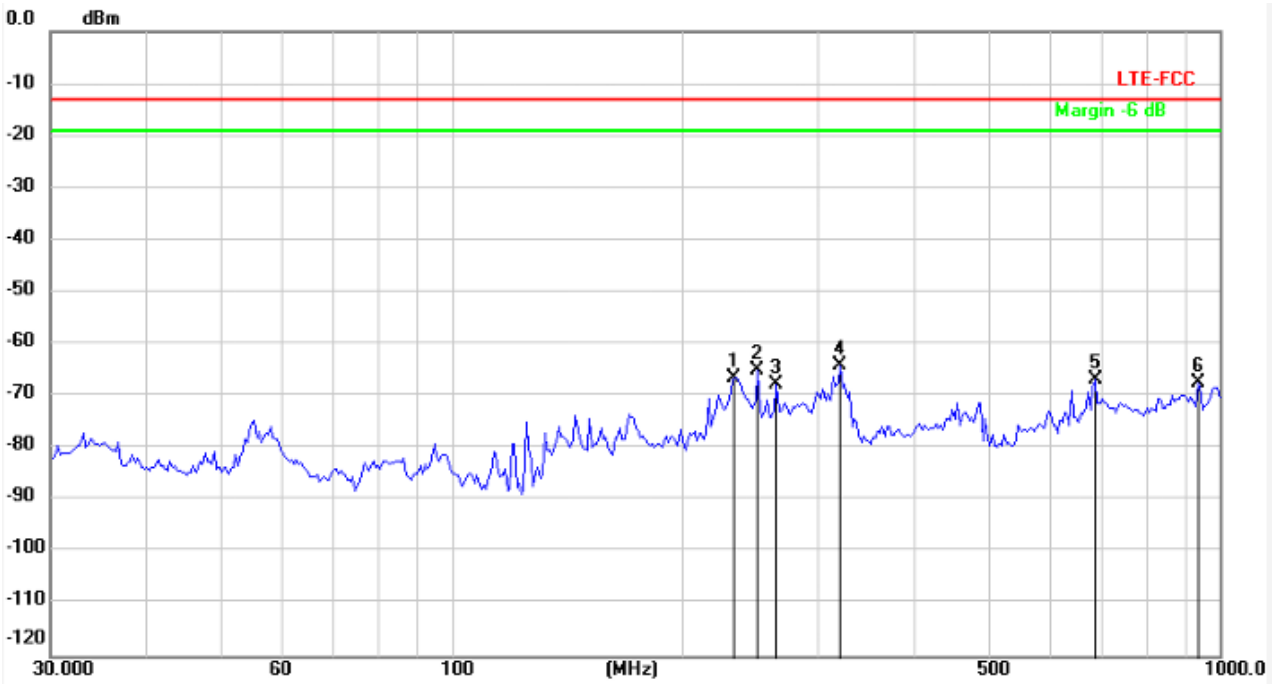
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132072

30MHz-1GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	233.4875	-8.85	-57.62	-66.47	-13.00	-53.47	peak
2	250.4858	-8.07	-56.99	-65.06	-13.00	-52.06	peak
3	264.9707	-7.68	-59.88	-67.56	-13.00	-54.56	peak
4	320.3306	-6.22	-57.89	-64.11	-13.00	-51.11	peak
5	689.0507	0.39	-67.16	-66.77	-13.00	-53.77	peak
6	938.7137	2.35	-69.76	-67.41	-13.00	-54.41	peak

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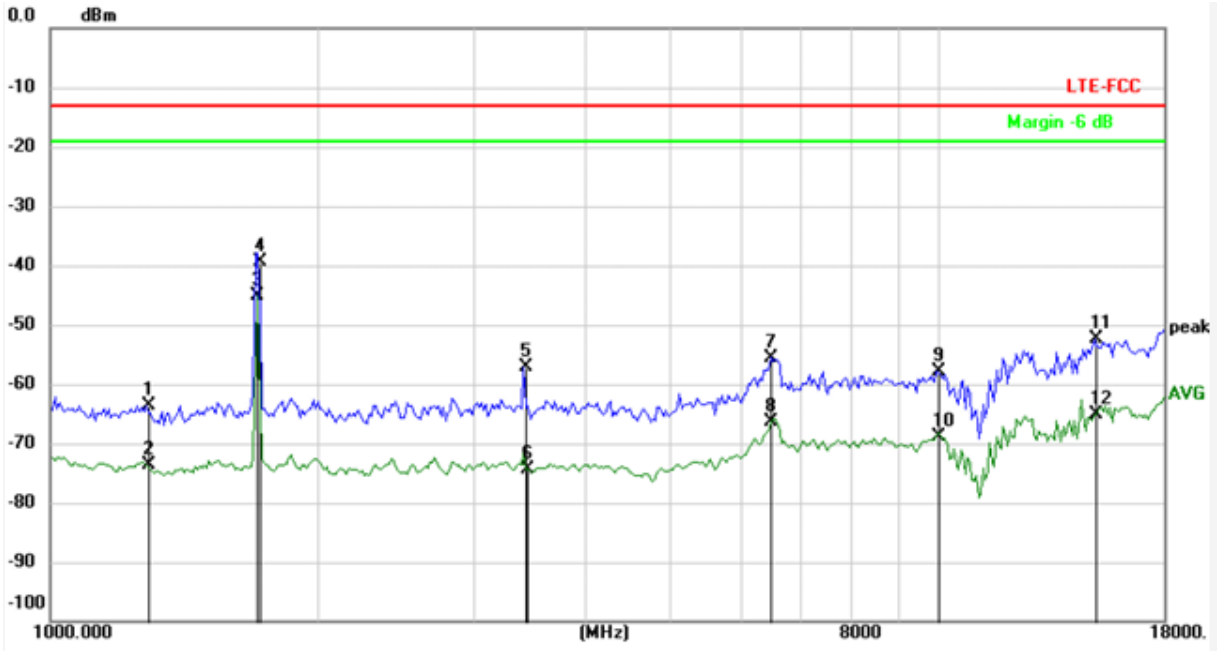
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132072

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1282.832	-4.27	-59.26	-63.53	-13.00	-50.53	peak
2	1282.832	-4.27	-69.42	-73.69	-13.00	-60.69	AVG
3	1713.754	-3.75	-41.33	-45.08	-13.00	-32.08	AVG
4	1720.000	-3.74	-35.57	-39.31	-13.00	-26.31	peak
5	3414.304	-1.27	-55.87	-57.14	-13.00	-44.14	peak
6	3434.138	-1.23	-73.26	-74.49	-13.00	-61.49	AVG
7	6494.281	8.59	-64.09	-55.50	-13.00	-42.50	peak
8	6494.281	8.59	-74.84	-66.25	-13.00	-53.25	AVG
9	9969.738	5.07	-63.04	-57.97	-13.00	-44.97	peak
10	9969.738	5.07	-73.82	-68.75	-13.00	-55.75	AVG
11	15041.448	9.89	-62.23	-52.34	-13.00	-39.34	peak
12	15041.448	9.89	-75.03	-65.14	-13.00	-52.14	AVG

Note: Markers 3 & 4 are intentional frequency from EUT.

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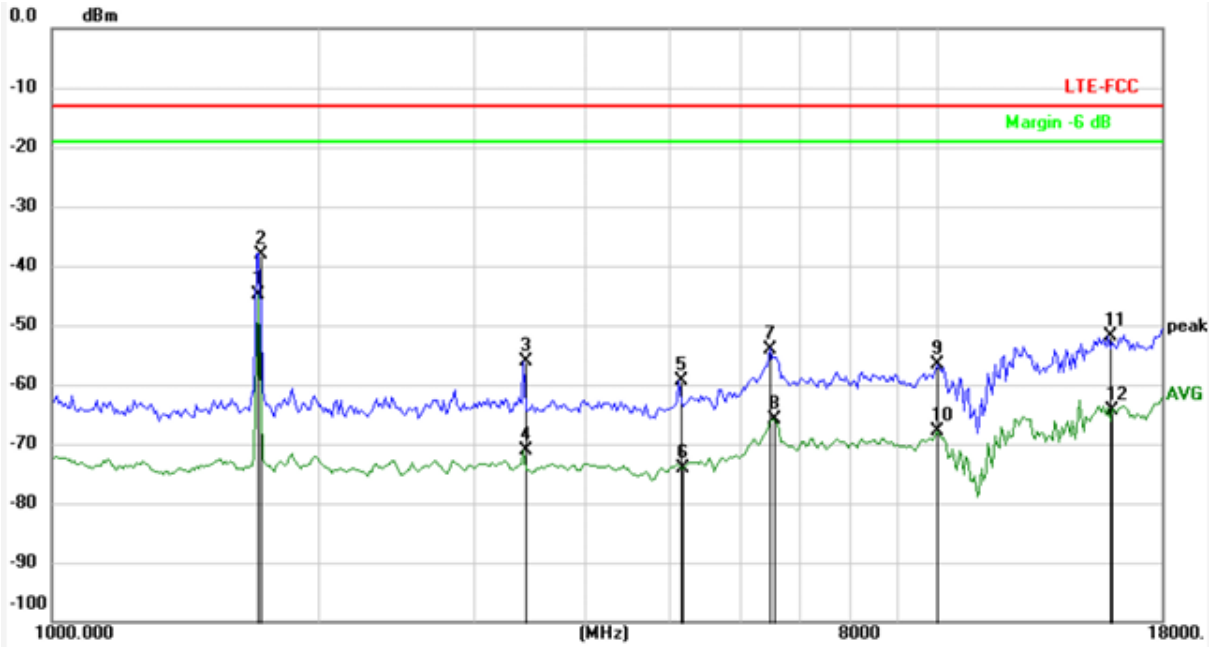
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132072

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1713.754	-3.75	-41.16	-44.91	-13.00	-31.91	AVG
2	1720.000	-3.74	-34.44	-38.18	-13.00	-25.18	peak
3	3414.304	-1.27	-54.93	-56.20	-13.00	-43.20	peak
4	3414.304	-1.27	-69.89	-71.16	-13.00	-58.16	AVG
5	5121.445	0.74	-60.21	-59.47	-13.00	-46.47	peak
6	5151.196	0.77	-74.81	-74.04	-13.00	-61.04	AVG
7	6494.281	8.59	-62.59	-54.00	-13.00	-41.00	peak
8	6532.008	-5.03	-60.75	-65.78	-13.00	-52.78	AVG
9	10027.653	5.22	-61.82	-56.60	-13.00	-43.60	peak
10	10027.653	5.22	-73.08	-67.86	-13.00	-54.86	AVG
11	15663.856	9.85	-61.71	-51.86	-13.00	-38.86	peak
12	15846.371	9.69	-73.94	-64.25	-13.00	-51.25	AVG

Note: Markers 1 & 2 are intentional frequency from EUT.

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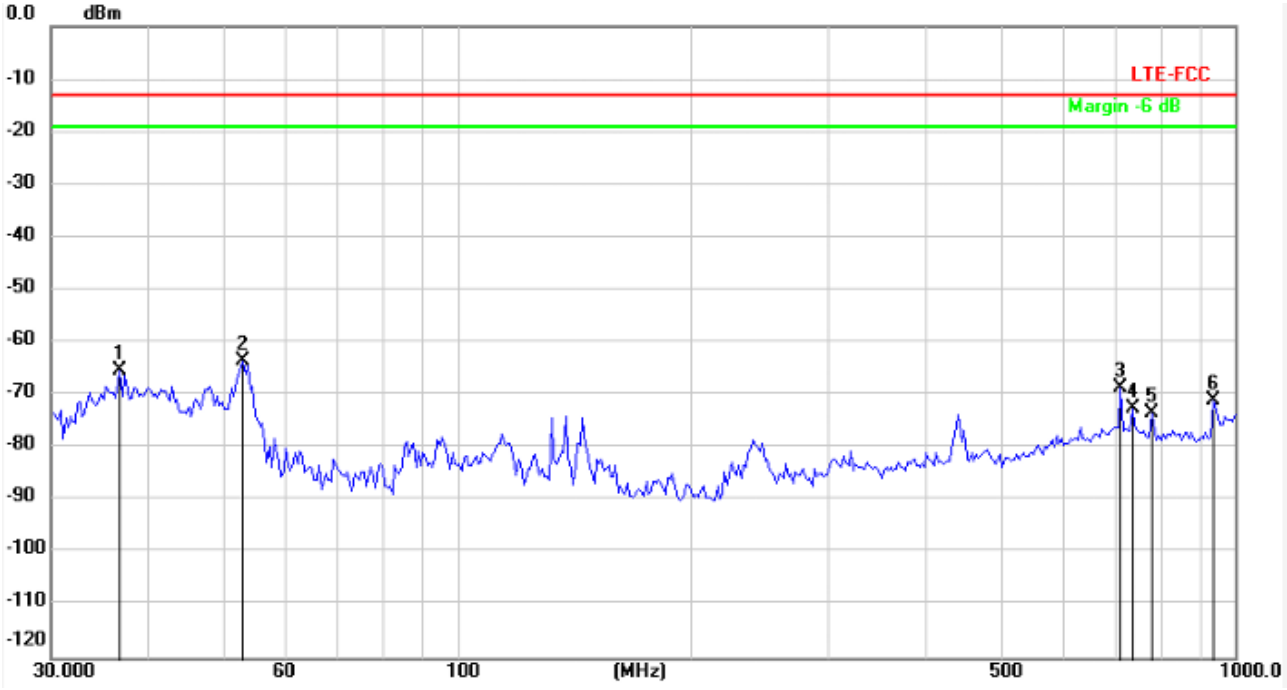
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132572

30MHz-1GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	36.7811	-12.46	-52.85	-65.31	-13.00	-52.31	peak
2	53.0056	-12.09	-51.25	-63.34	-13.00	-50.34	peak
3	713.6915	-1.34	-67.31	-68.65	-13.00	-55.65	peak
4	739.2136	-0.96	-71.46	-72.42	-13.00	-59.42	peak
5	781.9605	-0.54	-72.88	-73.42	-13.00	-60.42	peak
6	938.7137	0.35	-71.16	-70.81	-13.00	-57.81	peak

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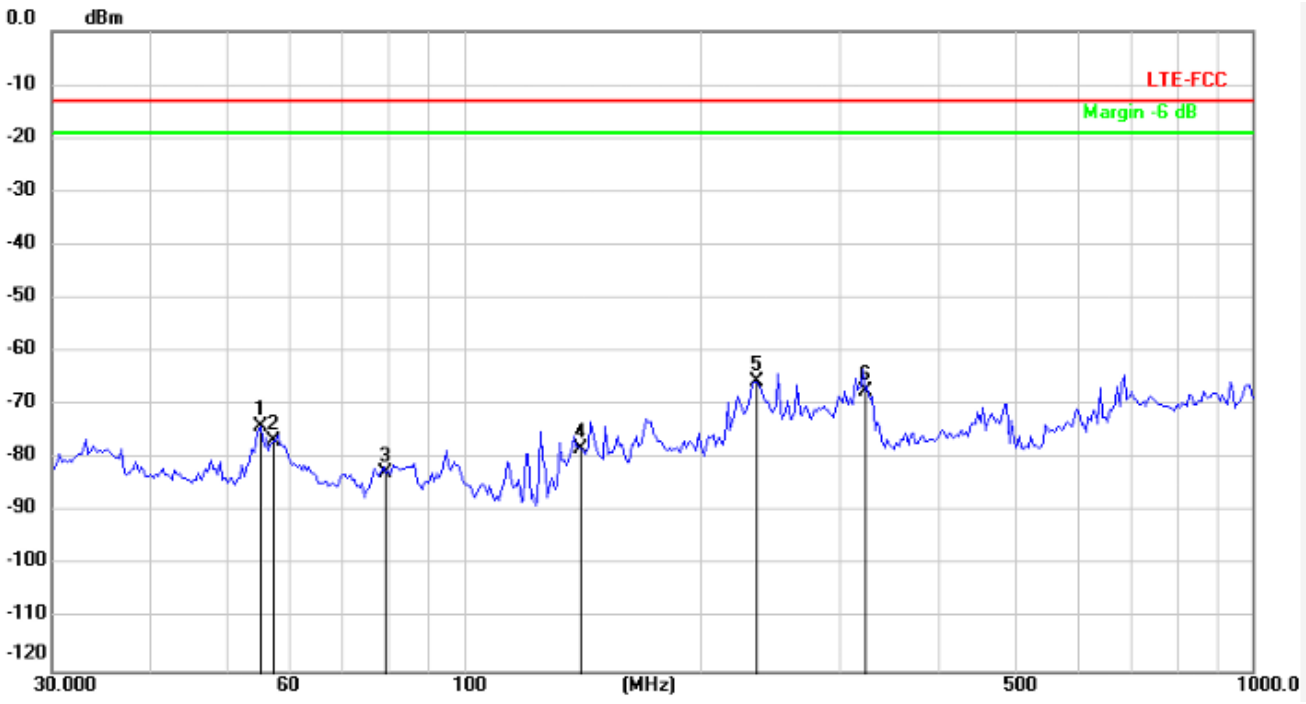
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132572

30MHz-1GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	55.2882	-10.24	-63.68	-73.92	-13.00	-60.92	peak
2	57.2653	-10.16	-66.35	-76.51	-13.00	-63.51	peak
3	79.6764	-14.11	-68.44	-82.55	-13.00	-69.55	peak
4	140.7766	-13.64	-64.59	-78.23	-13.00	-65.23	peak
5	235.1346	-8.78	-56.75	-65.53	-13.00	-52.53	peak
6	322.5894	-6.16	-61.19	-67.35	-13.00	-54.35	peak

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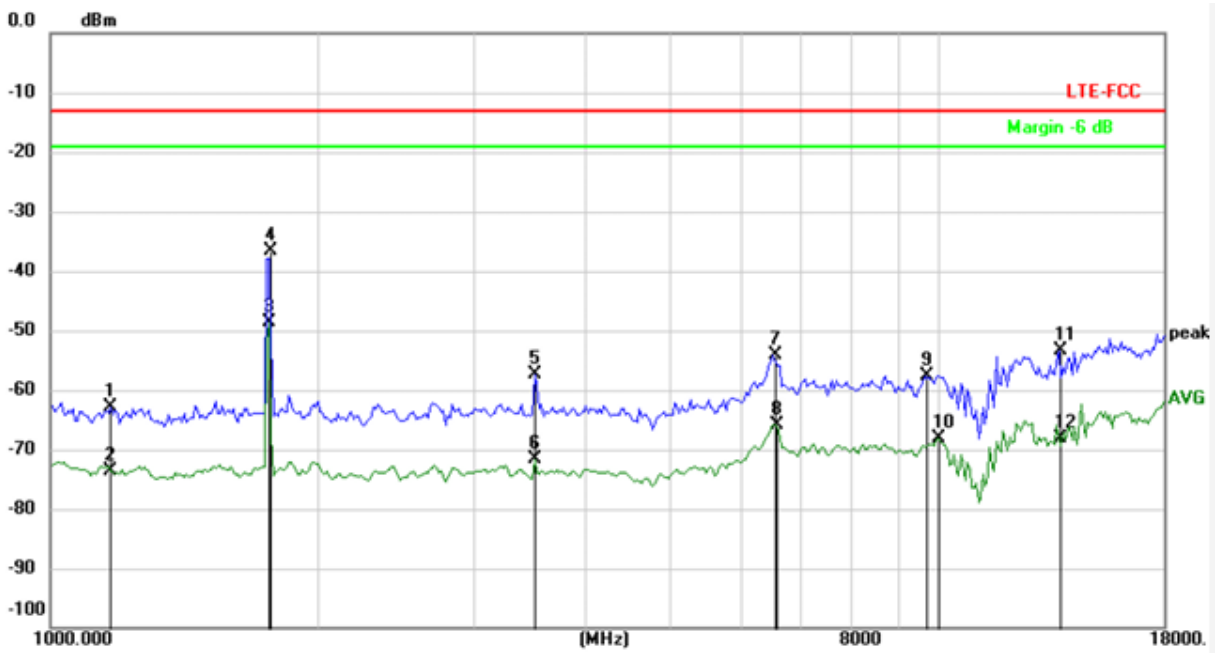
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132572

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1169.285	-4.33	-58.59	-62.92	-13.00	-49.92	peak
2	1169.285	-4.33	-69.26	-73.59	-13.00	-60.59	AVG
3	1764.113	-3.71	-44.89	-48.60	-13.00	-35.60	AVG
4	1770.000	-3.71	-32.96	-36.67	-13.00	-23.67	peak
5	3514.633	-1.11	-56.32	-57.43	-13.00	-44.43	peak
6	3514.633	-1.11	-70.60	-71.71	-13.00	-58.71	AVG
7	6532.008	-5.03	-49.01	-54.04	-13.00	-41.04	peak
8	6569.953	-3.85	-61.94	-65.79	-13.00	-52.79	AVG
9	9685.139	3.83	-61.35	-57.52	-13.00	-44.52	peak
10	10027.653	5.22	-73.38	-68.16	-13.00	-55.16	AVG
11	13710.094	9.50	-62.97	-53.47	-13.00	-40.47	peak
12	13710.094	9.50	-77.66	-68.16	-13.00	-55.16	AVG

Note: Markers 3 & 4 are intentional frequency from EUT.

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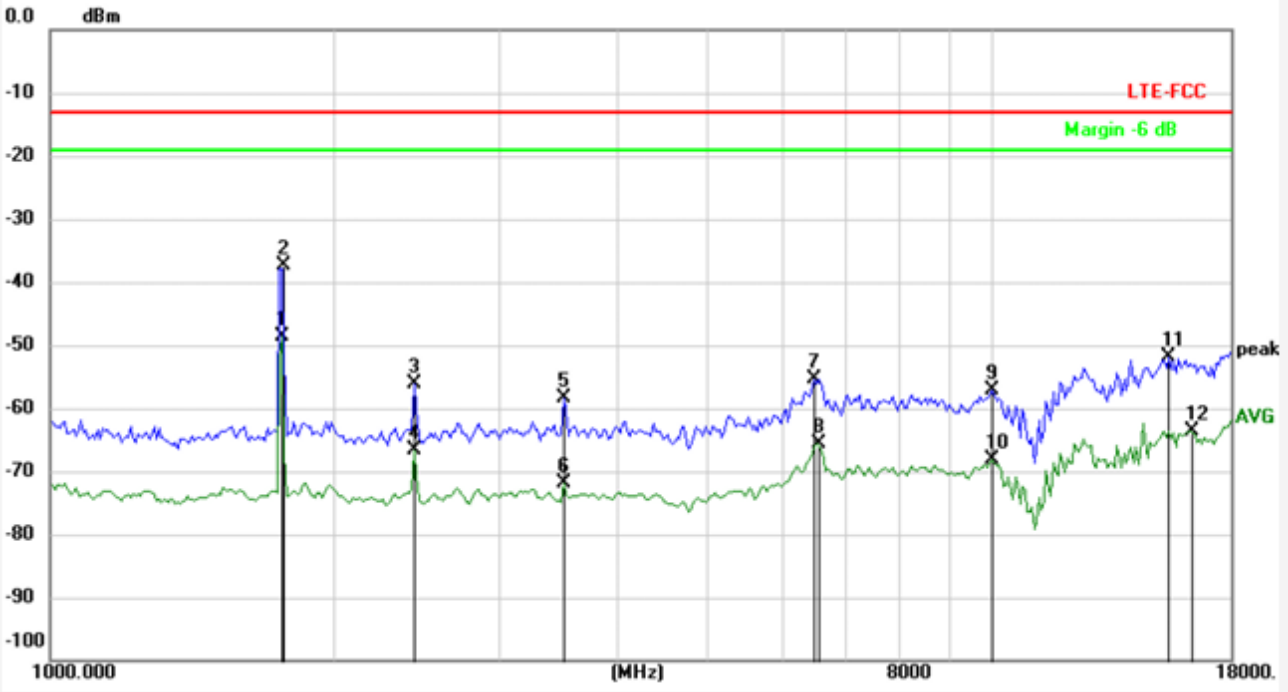
LTE Band 66

Channel Bandwidth: 20 MHz

CH 132572

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1764.113	-3.71	-44.97	-48.68	-13.00	-35.68	AVG
2	1770.000	-3.71	-33.76	-37.47	-13.00	-24.47	peak
3	2440.050	-2.73	-53.28	-56.01	-13.00	-43.01	peak
4	2440.050	-2.73	-63.86	-66.59	-13.00	-53.59	AVG
5	3514.633	-1.11	-57.22	-58.33	-13.00	-45.33	peak
6	3514.633	-1.11	-70.87	-71.98	-13.00	-58.98	AVG
7	6494.281	8.59	-63.98	-55.39	-13.00	-42.39	peak
8	6532.008	-5.03	-60.61	-65.64	-13.00	-52.64	AVG
9	10027.653	5.22	-62.40	-57.18	-13.00	-44.18	peak
10	10027.653	5.22	-73.29	-68.07	-13.00	-55.07	AVG
11	15483.442	9.99	-61.98	-51.99	-13.00	-38.99	peak
12	16312.019	9.48	-73.10	-63.62	-13.00	-50.62	AVG

Note: Markers 1 & 2 are intentional frequency from EUT.

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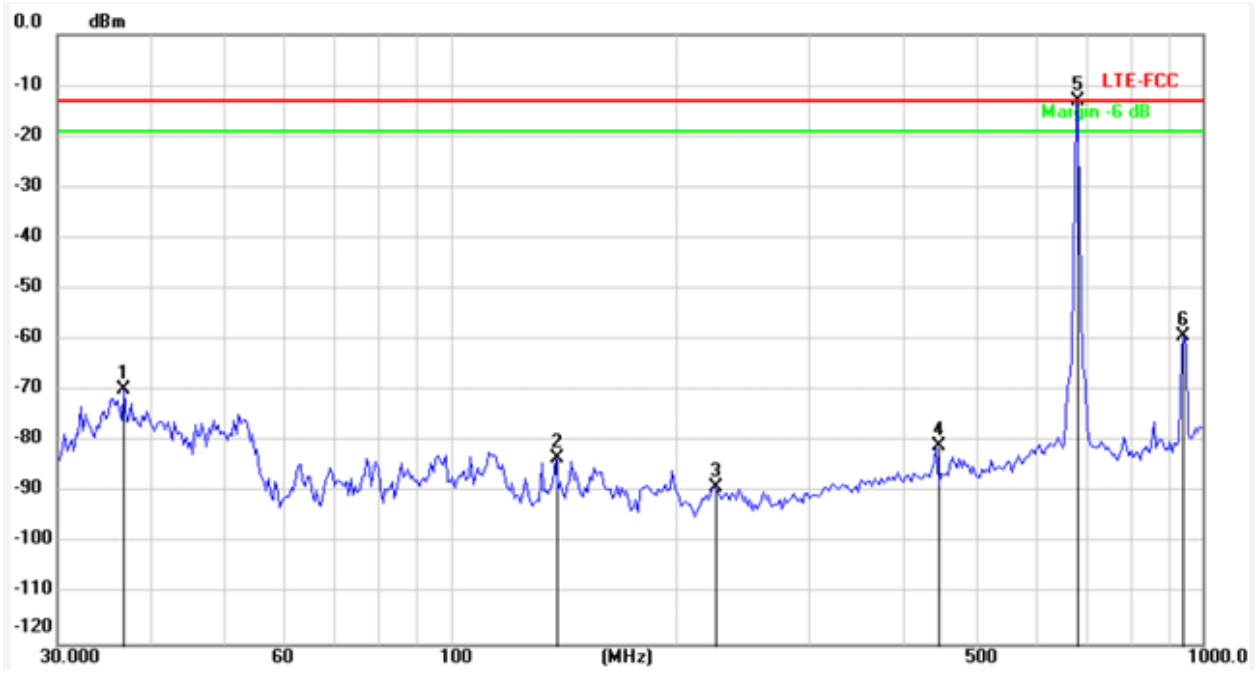
LTE Band 71

Channel Bandwidth: 20 MHz

CH 133222

30MHz-1GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	36.7811	-12.46	-57.18	-69.64	-13.00	-56.64	peak
2	137.8400	-15.55	-67.67	-83.22	-13.00	-70.22	peak
3	223.8482	-11.30	-77.75	-89.05	-13.00	-76.05	peak
4	442.5722	-5.07	-75.90	-80.97	-13.00	-67.97	peak
5	679.4346	-1.66	-11.35	-13.01	-13.00	-0.01	peak
6	945.3336	-0.22	-58.95	-59.17	-13.00	-46.17	peak

Note: Marker 5 is intentional frequency from EUT. Hence considered as Pass.

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LTE Band 71

Channel Bandwidth: 20 MHz

CH 133222

30MHz-1GHz

Horizontal

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	34.5270	-10.89	-79.90	-90.79	-13.00	-77.79	peak
2	94.9788	-10.14	-81.88	-92.02	-13.00	-79.02	peak
3	214.6063	-9.73	-80.96	-90.69	-13.00	-77.69	peak
4	322.5896	-6.16	-75.36	-81.52	-13.00	-68.52	peak
5	679.4346	0.34	-13.28	-12.94	-13.00	0.06	peak
6	938.7139	2.35	-72.50	-70.15	-13.00	-57.15	peak

Note: Marker 5 is intentional frequency from EUT. Hence considered as Pass.

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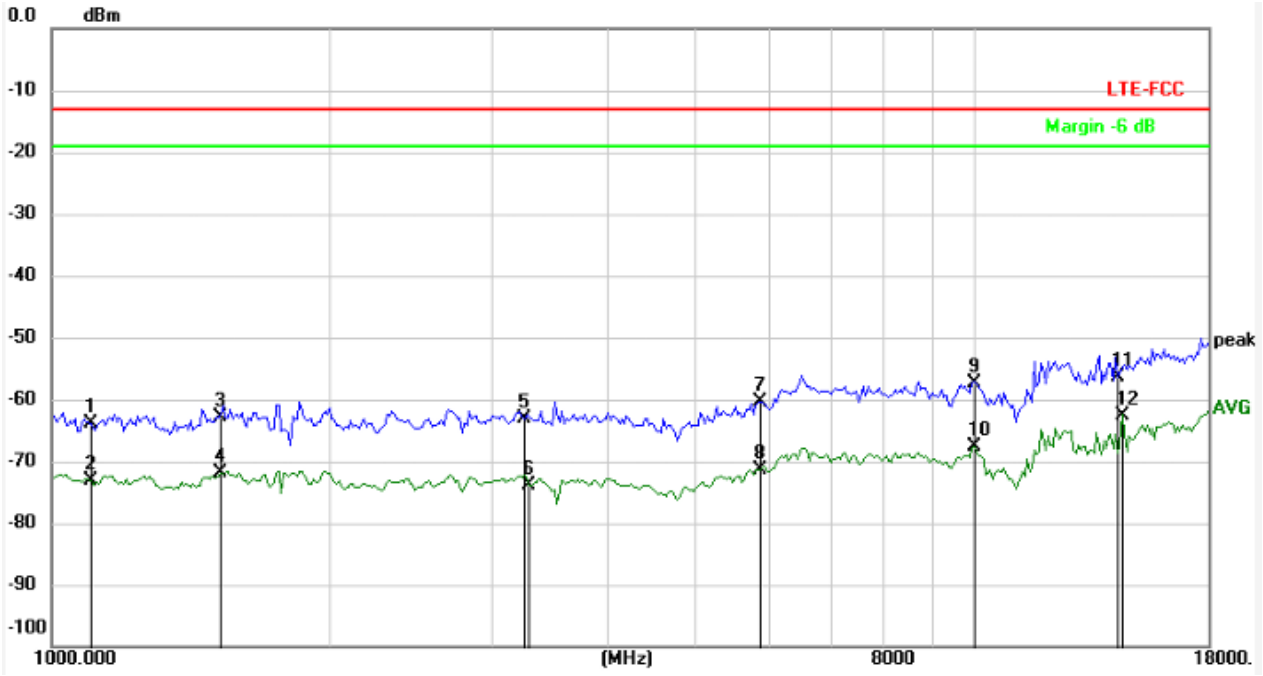
LTE Band 71

Channel Bandwidth: 20 MHz

CH 133222

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1097.108	-4.53	-59.26	-63.79	-13.00	-50.79	peak
2	1097.108	-4.53	-68.54	-73.07	-13.00	-60.07	AVG
3	1517.475	-3.88	-59.11	-62.99	-13.00	-49.99	peak
4	1526.290	-3.88	-68.11	-71.99	-13.00	-58.99	AVG
5	3259.699	-1.52	-61.59	-63.11	-13.00	-50.11	peak
6	3297.681	-1.45	-72.32	-73.77	-13.00	-60.77	AVG
7	5851.278	1.88	-62.34	-60.46	-13.00	-47.46	peak
8	5851.278	1.88	-73.15	-71.27	-13.00	-58.27	AVG
9	9969.738	5.07	-62.35	-57.28	-13.00	-44.28	peak
10	10027.653	5.22	-72.88	-67.66	-13.00	-54.66	AVG
11	14360.350	9.81	-66.13	-56.32	-13.00	-43.32	peak
12	14527.677	9.79	-72.29	-62.50	-13.00	-49.50	AVG

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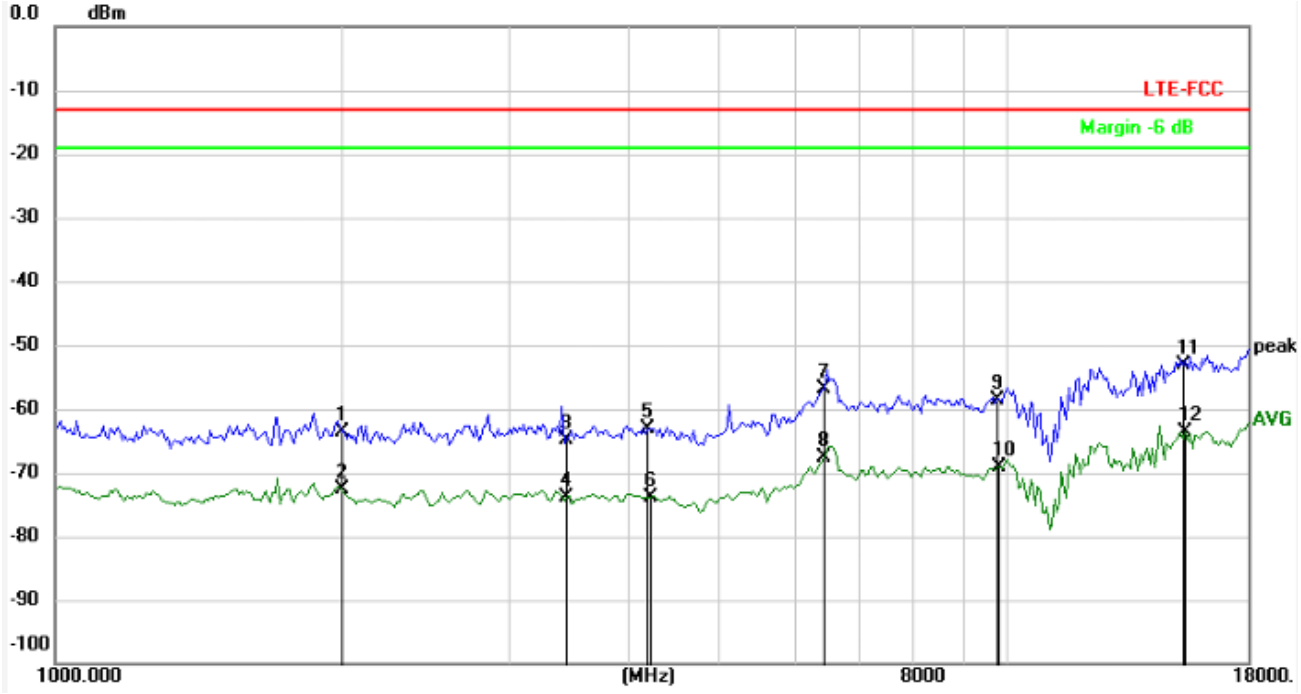
LTE Band 71

Channel Bandwidth: 20 MHz

CH 133222

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	2003.868	-3.44	-60.19	-63.63	-13.00	-50.63	peak
2	2003.868	-3.44	-69.22	-72.66	-13.00	-59.66	AVG
3	3454.087	-1.21	-63.71	-64.92	-13.00	-51.92	peak
4	3454.087	-1.21	-72.56	-73.77	-13.00	-60.77	AVG
5	4205.938	-0.38	-62.81	-63.19	-13.00	-50.19	peak
6	4230.371	-0.35	-73.45	-73.80	-13.00	-60.80	AVG
7	6456.773	7.34	-64.22	-56.88	-13.00	-43.88	peak
8	6456.773	7.34	-74.99	-67.65	-13.00	-54.65	AVG
9	9797.990	4.20	-62.70	-58.50	-13.00	-45.50	peak
10	9854.908	4.49	-73.64	-69.15	-13.00	-56.15	AVG
11	15394.016	9.97	-63.06	-53.09	-13.00	-40.09	peak
12	15483.442	9.99	-73.58	-63.59	-13.00	-50.59	AVG

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LTE Band 71

Channel Bandwidth: 20 MHz

CH 133372

30MHz-1GHz

Vertical

No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	36.7811	-12.46	-54.70	-67.16	-13.00	-54.16	peak
2	52.6345	-12.06	-57.91	-69.97	-13.00	-56.97	peak
3	137.8400	-15.55	-61.13	-76.68	-13.00	-63.68	peak
4	452.0013	-4.85	-72.00	-76.85	-13.00	-63.85	peak
5	688.2259	-1.62	-37.34	-38.96	-13.00	-25.96	peak
6	938.7139	0.35	-68.48	-68.13	-13.00	-55.13	peak

Note: Marker 5 is intentional frequency from EUT.

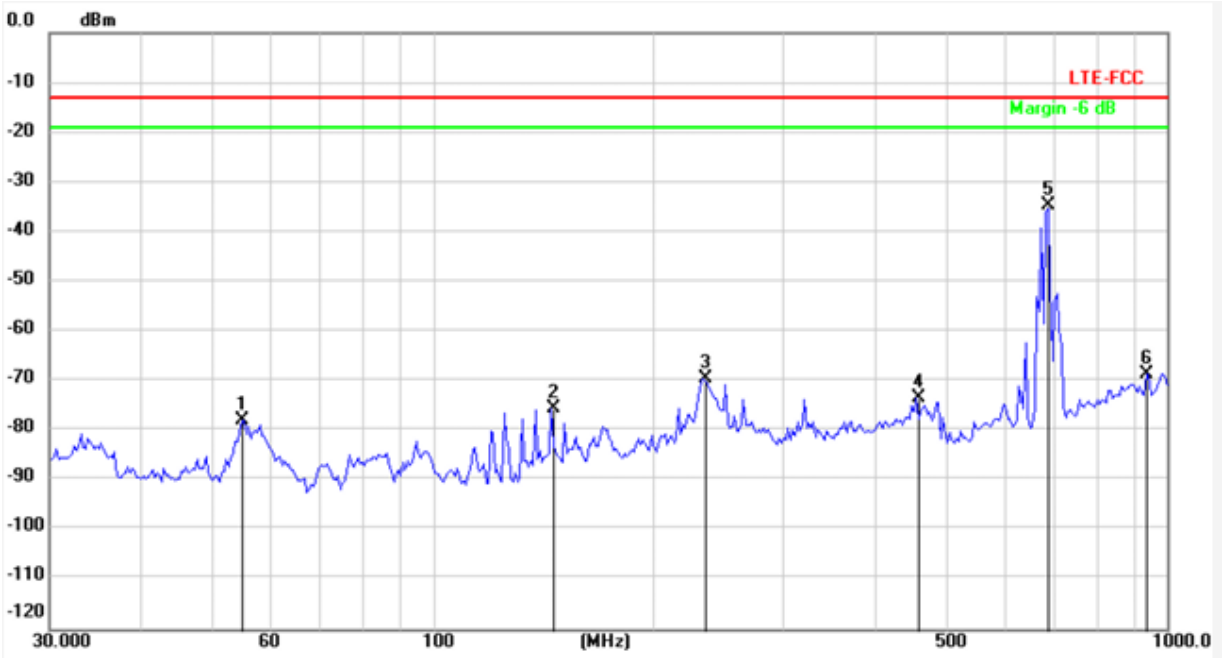
LTE Band 71

Channel Bandwidth: 20 MHz

CH 133372

30MHz-1GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	54.9011	-10.24	-67.59	-77.83	-13.00	-64.83	peak
2	144.7899	-13.53	-62.01	-75.54	-13.00	-62.54	peak
3	233.4881	-8.85	-60.62	-69.47	-13.00	-56.47	peak
4	455.1888	-2.79	-70.57	-73.36	-13.00	-60.36	peak
5	688.0000	0.39	-35.16	-34.77	-13.00	-21.77	peak
6	938.7139	2.35	-70.76	-68.41	-13.00	-55.41	peak

Note: Marker 5 is intentional frequency from EUT.

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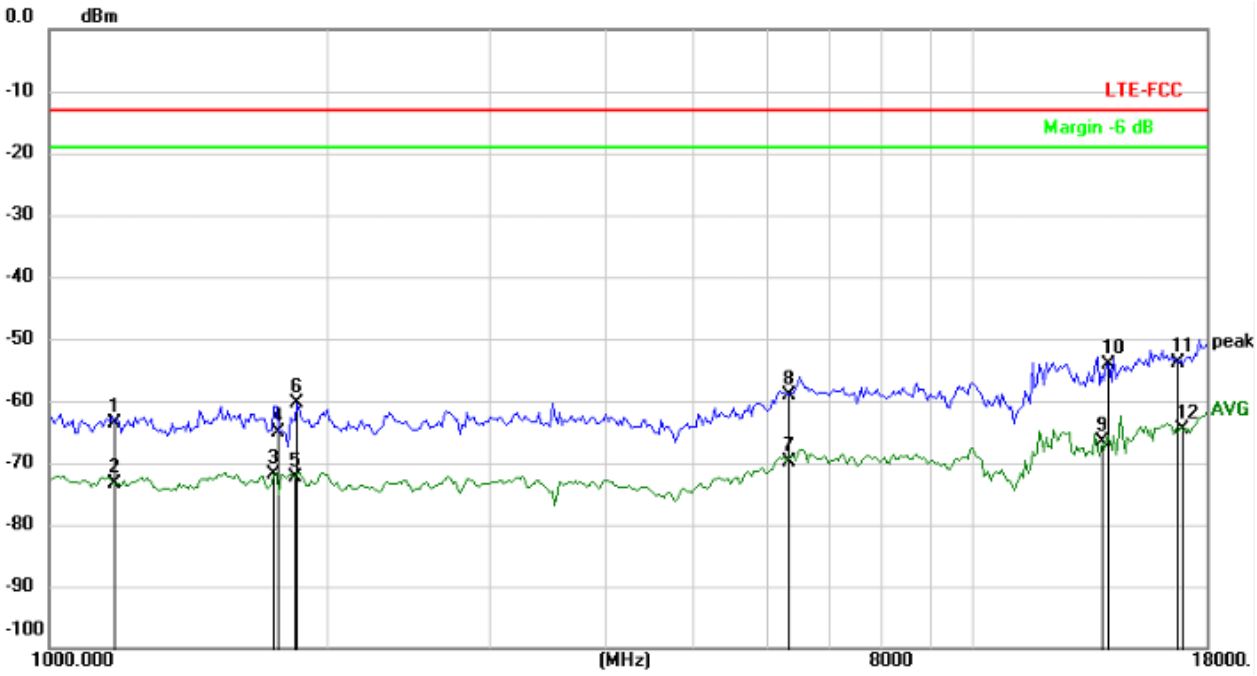
LTE Band 71

Channel Bandwidth: 20 MHz

CH 133372

1GHz-18GHz

Vertical



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1176.078	-4.30	-59.26	-63.56	-13.00	-50.56	peak
2	1176.078	-4.30	-68.96	-73.26	-13.00	-60.26	AVG
3	1753.924	-3.72	-68.27	-71.99	-13.00	-58.99	AVG
4	1774.361	-3.70	-61.47	-65.17	-13.00	-52.17	peak
5	1847.783	-3.61	-68.80	-72.41	-13.00	-59.41	AVG
6	1858.517	-3.59	-56.70	-60.29	-13.00	-47.29	peak
7	6308.894	4.93	-74.89	-69.96	-13.00	-56.96	AVG
8	6345.543	5.14	-64.24	-59.10	-13.00	-46.10	peak
9	13869.844	9.47	-76.05	-66.58	-13.00	-53.58	AVG
10	14112.966	9.86	-64.08	-54.22	-13.00	-41.22	peak
11	16791.349	9.50	-63.46	-53.96	-13.00	-40.96	peak
12	16987.002	9.55	-74.22	-64.67	-13.00	-51.67	AVG

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LTE Band 71

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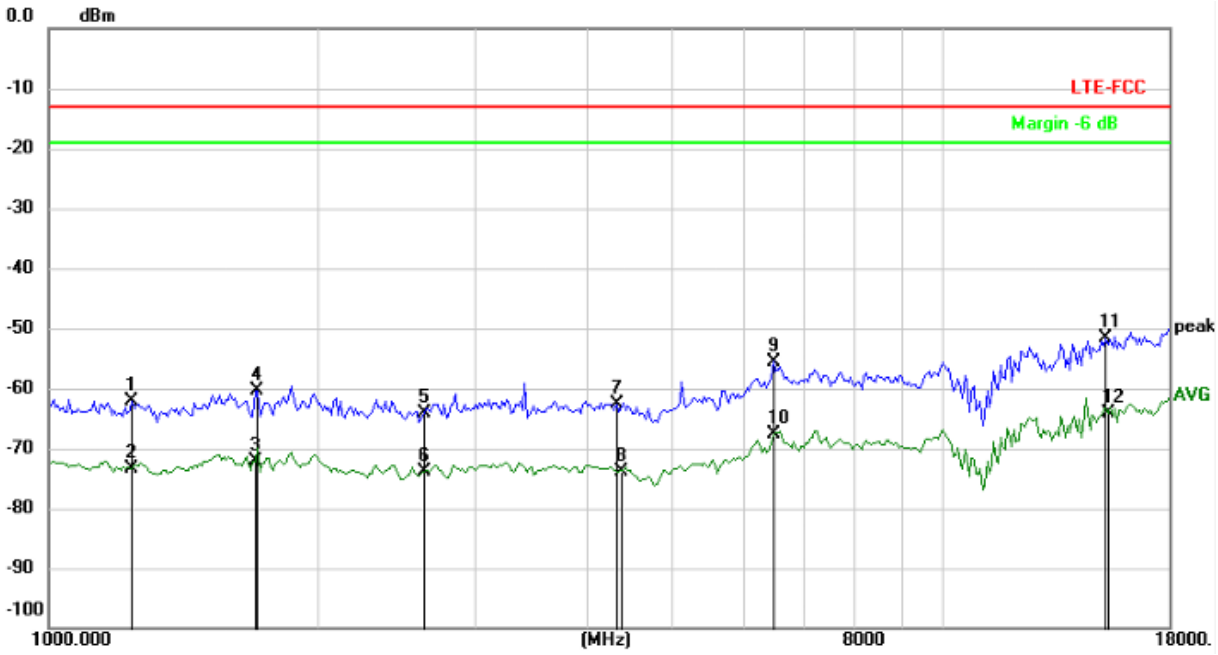
CH 133372

1GHz-18GHz

Horizontal



No.	Frequency (MHz)	Factor (dBm)	Reading (dBm)	Level (dBm)	Limit (dBm)	Margin (dB)	Detector
1	1239.014	-4.25	-57.85	-62.10	-13.00	-49.10	peak
2	1239.014	-4.25	-69.00	-73.25	-13.00	-60.25	AVG
3	1703.856	-3.74	-68.36	-72.10	-13.00	-59.10	AVG
4	1713.754	-3.75	-56.73	-60.48	-13.00	-47.48	peak
5	2630.881	-2.47	-61.67	-64.14	-13.00	-51.14	peak
6	2630.881	-2.47	-71.36	-73.83	-13.00	-60.83	AVG
7	4329.530	-0.22	-62.42	-62.64	-13.00	-49.64	peak
8	4354.681	-0.19	-73.69	-73.88	-13.00	-60.88	AVG
9	6494.281	8.59	-64.09	-55.50	-13.00	-42.50	peak
10	6494.281	8.59	-76.12	-67.53	-13.00	-54.53	AVG
11	15305.107	9.95	-61.50	-51.55	-13.00	-38.55	peak
12	15394.016	9.97	-74.14	-64.17	-13.00	-51.17	AVG

** END OF REPORT**

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