FCC/ISED RF TEST REPORT

ISSUED BY
Shenzhen BALUN Technology Co., Ltd.

FOR

HALO Connect Gateway

ISSUED TO
Aperia Technologies

1616 Rollins Road, Burlingame, CA 94010

Tested by: _____
Heng Aiping
(Engineer)
Date: Apr. 15, 2019

Approved by: _____
Wei Yanquan
(Chief Engineer)
Date: Apr. 15, 2019

Report No.:	BL-HK18C0003-501
EUT Name:	HALO Connect Gateway
Model Name:	GW-10 (refer to section 2.4)
Brand Name:	Aperia Technologies
Test Standard:	47 CFR Part 2 (10-1-17 Edition) RSS-Gen (Issue 5, April 2018) (Others refer to chapter 3.1)
FCC ID:	2ARY2-HALOC
ISED Number:	24637-HALOC
Test Conclusion:	Pass
Test Date:	Dec. 04, 2018 ~ Apr. 11, 2019
Date of Issue:	Apr. 15, 2019

Block B, 1st FL,Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong, P. R. China 518055
TEL: +86-755-66850100, FAX: +86-755-61824271
Email: qc@baluntek.com
www.baluntek.com

Revision History

Version	Issue Date	Revisions Content
Rev. 01	Mar. 20, 2019	Initial Issue
Rev. 02	Apr. 15, 2019	Added DC-HSDPA conducted output power in annex A.1.1. Reduced the conducted power and retested in annex A.1.1. Revised the LTE test channels for spurious radiation test in section 4.3. For the note on page12, added conducted power retest description. Revised RSS-130 version and related information in section 3 and 5. Retested RSE of LTE B13 and revised test data in section annex A.7.

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1 ADMINISTRATIVE DATA (GENERAL INFORMATION)

1.1 Identification of the Testing Laboratory

Company Name	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Phone Number	+86 755 6685 0100

1.2 Identification of the Responsible Testing Location

Test Location	Shenzhen BALUN Technology Co., Ltd.
Address	Block B, 1st FL, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China.
Accreditation Certificate	The laboratory has been listed by Industry Canada to perform electromagnetic emission measurements. The recognition numbers of test site are 11524A-1. The laboratory is a testing organization accredited by FCC as an accredited testing laboratory. The designation number is CN1196. The laboratory is a testing organization accredited by American Association for Laboratory Accreditation(A2LA) according to ISO/IEC 17025. The accreditation certificate number is 4344.01. The laboratory is a testing organization accredited by China National Accreditation Service for Conformity Assessment (CNAS) according to ISO/IEC 17025. The accreditation certificate number is L6791.
Description	All measurement facilities used to collect the measurement data are located at Block B, FL 1, Baisha Science and Technology Park, Shahe Xi Road, Nanshan District, Shenzhen, Guangdong Province, P. R. China 518055

1.3 Laboratory Condition

Ambient Temperature	20 °C to 35 °C
Ambient Relative Humidity	30 % to 60 %
Ambient Pressure	98 kPa to 102 kPa

1.4 Announce

(1) The test report reference to the report template version v1.4.

(2) The test report is invalid if not marked with the signatures of the persons responsible for preparing and approving the test report.

(3) The test report is invalid if there is any evidence and/or falsification.

(4) The results documented in this report apply only to the tested sample, under the conditions and modes of operation as described herein.

(5) This document may not be altered or revised in any way unless done so by BALUN and all revisions are duly noted in the revisions section.

(6) Content of the test report, in part or in full, cannot be used for publicity and/or promotional purposes without prior written approval from the laboratory.

2 PRODUCT INFORMATION

2.1 Applicant Information

Applicant	Aperia Technologies
Address	1616 Rollins Road, Burlingame, CA 94010

2.2 Manufacturer Information

Manufacturer	Volansys Technologies Pvt Ltd
Address	A-503, Mondeal Square, Near Crown Plaza Hotel, S. G Highway, Ahmedabad 380 015, Gujarat.

2.3 Factory Information

Factory	Volansys Technologies Pvt Ltd.
Address	A-503, Mondeal Square, Near Crown Plaza Hotel, S. G Highway, Ahmedabad 380 015, Gujarat

2.4 General Description for Equipment under Test (EUT)

EUT Name	HALO Connect Gateway
Model Name Under Test	GW-10
Series Model Name	GW-10, GW-20
Description of Model name differentiation	Only change of sub-1GHz Rx receiver modules as below: Model No.: GW-10 (for xBR type sub-1GHz Rx) Model No.: GW-20 (for cc1310 type sub-1GHz Rx)
Hardware Version	REV A2
Software Version	RC1
Dimensions (Approx.)	L=7.5 inch, W=4.375 inch, H=1.97 inch
Weight (Approx.)	435gm (with battery inside)

2.5 Ancillary Equipment

Ancillary Equipment 1	Battery	
	Brand Name	Howell
	Model No.	HWE 606090
	Serial No.	HW606090
	Capacity	4000 mAh
	Rated Voltage	3.7 V
	Limit Charge Voltage	4.2 V
Ancillary Equipment 2	GPS Antenna	
Ancillary Equipment 3	LTE Antenna	
Ancillary Equipment 4	Sub-1GHz (433MHz) Antenna	
Ancillary Equipment 5	Power Line	
	Length (Approx.)	2.0 m

2.6 Technical Information

All Network and Wireless connectivity for EUT	3G Network WCDMA/HSDPA/HSUPA Band 2/4/5 4G Network FDD LTE Band 2/4/5/12/13 Bluetooth 4.2 BLE Zigbee, GPS, 433 MHz Only RX
About the Product	The equipment is HALO Connect Gateway, intended for used with information technology equipment.

The requirement for the following technical information of the EUT was tested in this report:

Operating Bands	WCDMA/HSDPA/HSUPA Band 2/ 4/ 5 FDD LTE Band 2/ 4/ 5/ 12/ 13	
Modulation Type	WCDMA	QPSK
	HSDPA /HSUPA	QPSK
		16QAM
	LTE	QPSK
		16QAM
TX Frequency Range	WCDMA/HSDPA/HSUPA Band 2: 1850 MHz ~ 1910 MHz WCDMA/HSDPA/HSUPA Band 4: 1710 MHz ~ 1755 MHz WCDMA/HSDPA/HSUPA Band 5: 824 MHz ~ 849 MHz FDD LTE Band 2: 1850 MHz ~ 1910 MHz FDD LTE Band 4: 1710 MHz ~ 1755 MHz FDD LTE Band 5: 824 MHz ~ 849 MHz FDD LTE Band 12: 699 MHz ~ 716 MHz FDD LTE Band 13: 777 MHz ~ 787 MHz	
Rx Frequency Range	WCDMA/HSDPA/HSUPA Band 2: 1930 MHz ~ 1990 MHz WCDMA/HSDPA/HSUPA Band 4: 2110 MHz ~ 2155 MHz WCDMA/HSDPA/HSUPA Band 5: 869 MHz ~ 894 MHz FDD LTE Band 2: 1930 MHz ~ 1990 MHz FDD LTE Band 4: 2110 MHz ~ 2155 MHz FDD LTE Band 5: 869 MHz ~ 894 MHz FDD LTE Band 12: 729 MHz ~ 746 MHz FDD LTE Band 13: 746 MHz ~ 756 MHz	
Power Class	WCDMA/HSDPA/HSUPA Band 2: 3 WCDMA/HSDPA/HSUPA Band 4: 3 WCDMA/HSDPA/HSUPA Band 5: 3 FDD LTE Band 2: 3 FDD LTE Band 4: 3 FDD LTE Band 5: 3 FDD LTE Band 12: 3 FDD LTE Band 13: 3	
Antenna Type	Whip	
Antenna Gain	WCDMA/HSDPA/HSUPA Band 2: 3 dBi WCDMA/HSDPA/HSUPA Band 4: 3 dBi	

	WCDMA/HSDPA/HSUPA Band 5: 3 dBi FDD LTE Band 2: 3 dBi FDD LTE Band 4: 3 dBi FDD LTE Band 5: 3 dBi FDD LTE Band 12: 3 dBi FDD LTE Band 13: 3 dBi
The Max RF Output Power (EIRP/ERP)	28.28 dBm

Note 1: The EUT information are declared by manufacturer. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

3 SUMMARY OF TEST RESULTS

3.1 Test Standards

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-17 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 Subpart H (10-1-17 Edition)	Cellular Radiotelephone Service
3	47 CFR Part 24 Subpart E (10-1-17 Edition)	Broadband PCS
4	47 CFR Part 27 (10-1-17 Edition)	Miscellaneous Wireless Communications Services
5	RSS-Gen Issue5 (April 2018)	General Requirements and Information for the Certification of Radio Apparatus
6	RSS-130 Issue1 (October 2013)	Mobile Broadband Services (MBS) Equipment Operating in the Frequency Bands 698-756 MHz and 777-787 MHz
7	RSS-132 Issue3 (January 2013)	Cellular Telephone Systems Operating in the Bands 824-849 MHz and 869-894 MHz
8	RSS-133 Issue6 (January 2018)	2 GHz Personal Communications Services
9	RSS-139 Issue3 (July 2015)	Advanced Wireless Services (AWS) Equipment Operating in the Bands 1710-1780 MHz and 2110-2180 MHz
10	ANSI/TIA-603-E-2016	Land Mobile FM or PM Communications Equipment Measurement and Performance Standards
11	KDB 971168 D01 v03r01	Measurement Guidance for Certification of Licensed Digital Transmitters

3.2 Test Verdict

No.	Description	FCC Part No.	ISED Part No.	Test Result	Verdict
1	Conducted RF Output Power	2.1046	RSS-Gen 6.12 RSS-130 4.4 RSS-132 5.4 RSS-133 6.4 RSS-139 6.5	Reporting only (ANNEX A.1)	Pass
2	Effective (Isotropic) Radiated Power	2.1046 22.913 24.232 27.50	RSS-Gen 6.12 RSS-130 4.4 RSS-132 5.4 RSS-133 6.4 RSS-139 6.5	ANNEX A.1	Pass
3	Peak to Average Radio	2.1046 24.232(d) 27.50(d)	RSS-130 4.4 RSS-132 5.4 RSS-133 6.4 RSS-139 6.5	ANNEX A.2	Pass
4	Occupied Bandwidth	2.1049 22.917 24.238 27.53	RSS-Gen 6.7	ANNEX A.3	Pass
5	Frequency Stability	2.1055 22.355 24.235 27.54	RSS-Gen 6.11 RSS-130 4.3 RSS-132 5.3 RSS-133 6.3 RSS-139 6.4	ANNEX A.4	Pass
6	Spurious Emission at Antenna Terminals	2.1051 22.917 24.238 27.53	RSS-Gen 6.13 RSS-130 4.6 RSS-132 5.5 RSS-133 6.5 RSS-139 6.6	ANNEX A.5	Pass
7	Band Edge	2.1051 22.917 24.238 27.53	RSS-130 4.6 RSS-132 5.5 RSS-133 6.5 RSS-139 6.6	ANNEX A.6	Pass
8	Field Strength of Spurious Radiation	2.1053 22.917 24.238 27.53	RSS-Gen 6.13 RSS-130 4.6 RSS-132 5.5 RSS-133 6.5 RSS-139 6.6	ANNEX A.7	Pass
9	Receiver Spurious Emissions	N/A	RSS-Gen 7 RSS-132 5.6 RSS-133 6.6	ANNEX A.8	Pass
10	AC Power-line Conducted Emissions	N/A	RSS-Gen 8.8	ANNEX A.9	Pass

No.	Description	FCC Part No.	ISED Part No.	Test Result	Verdict
Note: The only difference between the EUT (test samples in this report) and testing sample of report No.R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1 (FCC ID: XMR201807EG91NA, IC ID: 10224A-2018EG91NA), which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018 is that added enclosure. And RF module is the same. Therefore, all conducted test result please refer to report No. R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1 (FCC ID: XMR201807EG91NA, IC ID: 10224A-2018EG91NA), which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018. In order to ensure test result to be re-inherent for the leverage of the test result from the original module, the conducted output power are retested, and the max conducted power of this EUT in report is less than the max conducted output power of the original module.					

4 GENERAL TEST CONFIGURATIONS

4.1 Test Environments

During the measurement, the environmental conditions were within the listed ranges:

Test Voltage of the EUT	NV (Normal Voltage)	12/24 V
Test Temperature of the EUT	NT (Normal Temperature)	Ambient

4.2 Test Equipment List

Description	Manufacturer	Model	Serial No.	Software /Firmware Version	Cal. Date	Cal. Due
Conducted Test System						
Test Software 1	R&S	CMUgo	N/A	V2.0.1	N/A	N/A
Test Software 2	R&S	CMWRun	N/A	V1.8.9	N/A	N/A
Test Software 3	BALUN	BL410R	N/A	V2.1.1.384	N/A	N/A
Universal Radio Communication Tester	R&S	CMU 200	119280	V5.13	2018.03.16	2019.03.15
Wideband Radio Communication Tester	R&S	CMW 500	127794	V3.5.137	2018.06.15	2019.06.14
Wideband Radio Communication Tester	R&S	CMW 500	120598	V3.5.137	2018.03.05	2019.03.04
Spectrum Analyzer	R&S	FSV-30	103118	2.30.SP1	2018.06.15	2019.06.14
Spectrum Analyzer	Agilent	E4440A	MY45304434	A.11.21	2018.11.01	2019.10.31
Spectrum Analyzer	Agilent	E4440A	MY46181663	A.11.21	2018.11.01	2019.10.31
Temperature Chamber	AHK	SP20	1412	N/A	2018.06.15	2019.06.14
DC Power Supply	ITECH	IT6863A	600014010687210020	N/A	2018.06.14	2019.06.13
Power Sensor	Agilent	E9304A H18	MY41497164	N/A	2018.11.01	2019.10.31
Power Splitter	KMW	DCPD-LDC	1305003215	N/A	N/A	N/A
Attenuator (20 dB)	KMW	ZA-S1-201	110617091	N/A	N/A	N/A
Attenuator (6 dB)	KMW	ZA-S1-61	1305003189	N/A	N/A	N/A
Radiated Test System						
Test Software	BALUN	BL410_E	N/A	V16.921	N/A	N/A
Test Antenna-Bi-Log	Schwarzbeck	VULB 9163	9163-624	N/A	2017.07.22	2019.07.21

Description	Manufacturer	Model	Serial No.	Software /Firmware Version	Cal. Date	Cal. Due
(30 MHz-3 GHz)						
Test Antenna-Horn(1-18 GHz)	Schwarzbeck	BBHA 9120D	9120D-1600	N/A	2016.07.12	2019.07.11
Test Antenna-Horn(18-40 GHz)	A-INFO	LB-180400KF	J211060273	N/A	2017.01.06	2019.01.05
Anechoic Chamber	RAINFORD	9m*6m*6m	N/A	N/A	2017.02.21	2019.02.20
Shielded Enclosure	ChangNing	CN-130701	130703	N/A	N/A	N/A
EMI Receiver	KEYSIGHT	N9038A	MY53220118	A.14.16	2018.11.07	2019.11.06
Spectrum Analyzer	R&S	FSV-30	103118	2.30.SP1	2018.06.15	2019.06.14
Wideband Radio Communication Tester	R&S	CMW 500	121551	V3.2.73	2018.05.07	2019.05.06

4.3 Test Configurations

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Effective (Isotropic) Radiated Power	WCDMA Band 2	v	v	v
	WCDMA Band 4	v	v	v
	WCDMA Band 5	v	v	v
	HSDPA Band 2	v	v	v
	HSDPA Band 4	v	v	v
	HSDPA Band 5	v	v	v
	HSUPA Band 2	v	v	v
	HSUPA Band 4	v	v	v
	HSUPA Band 5	v	v	v
Field Strength of Spurious Radiation	WCDMA Band 2	v	v	v
	WCDMA Band 4	v	v	v
	WCDMA Band 5	v	v	v
Note 1: The mark “v” means that this configuration is chosen for testing.				

Test Mode	UL Channel	UL Channel No.	UL Frequency (MHz)
WCDMA Band 2	Low Channel	9262	1852.4
	Middle Channel	9400	1880.0
	High Channel	9538	1907.6
WCDMA Band 4	Low Channel	1312	1712.4
	Middle Channel	1412	1732.4
	High Channel	1513	1752.6
WCDMA Band 5	Low Channel	4132	826.4
	Middle Channel	4182	836.4
	High Channel	4233	846.6

LTE Band	Bandwidth (MHz)						Modulation Type		RB#			Test Channel		
	1.4	3	5	10	15	20	QPSK	16-QAM	1	Half	Full	LCH	MCH	HCH
Effective (Isotropic) Radiated Power														
2	v	v	v	v	v	v	v	v	v	v	v	v	v	v
4	v	v	v	v	v	v	v	v	v	v	v	v	v	v
5	v	v	v	v	n	n	v	v	v	v	v	v	v	v
12	v	v	v	v	n	n	v	v	v	v	v	v	v	v
13	n	n	v	v	n	n	v	v	v	v	v	v	v	v
Field Strength of Spurious Radiation														
2	v	v	v	v	v	v	v	--	v	--	--	v	v	v
4	v	v	v	v	v	v	v	--	v	--	--	v	v	v
5	v	v	v	v	n	n	v	--	v	--	--	v	v	v
12	v	v	v	v	n	n	v	--	v	--	--	v	v	v
13	n	n	v	v	n	n	v	--	v	--	--	v	v	v

Note 1: The mark “v” means that this configuration is chosen for testing.
Note 2: The mark “n” means that this bandwidth is not supported.

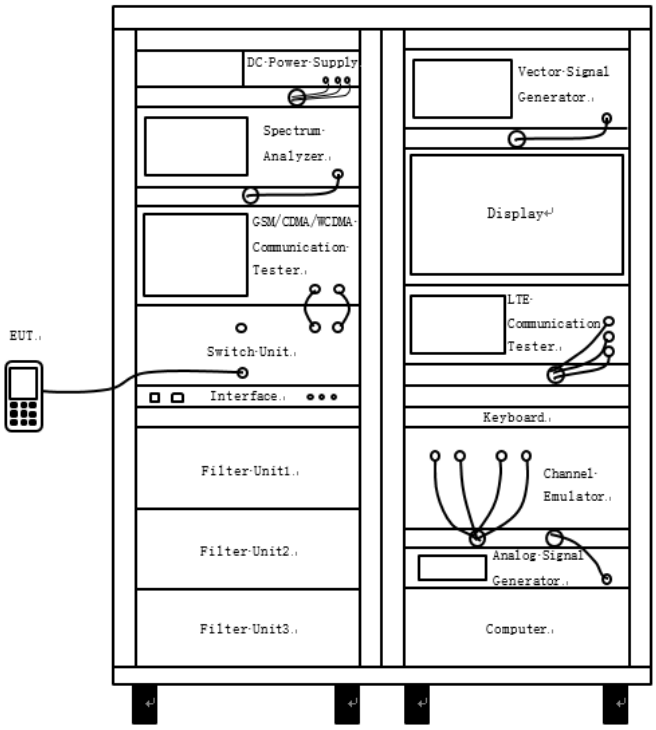
Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
LTE Band 2	Low Range	1.4	18607	1850.7
		3	18615	1851.5
		5	18625	1852.5
		10	18650	1855
		15	18675	1857.5
		20	18700	1860
	Middle Range	1.4/3/5/10/15/20	18900	1880
	High Range	1.4	19193	1909.3
		3	19185	1908.5
		5	19175	1907.5
		10	19150	1905
		15	19125	1902.5
		20	19100	1900
LTE Band 4	Low Range	1.4	19957	1710.7
		3	19965	1711.5
		5	19975	1712.5
		10	20000	1715
		15	20025	1717.5
		20	20050	1720
	Middle Range	1.4/3/5/10/15/20	20175	1732.5
	High Range	1.4	20393	1754.3
		3	20385	1753.5
		5	20375	1752.5
		10	20350	1750

Test Mode	UL Channel	Channel Bandwidth (MHz)	UL Channel No.	UL Frequency (MHz)
		15	20325	1747.5
		20	20300	1745
LTE Band 5	Low Range	1.4	20407	824.7
		3	20415	825.5
		5	20425	826.5
		10	20450	829
	Middle Range	1.4/3/5/10	20525	836.5
	High Range	1.4	20643	848.3
		3	20635	847.5
		5	20625	846.5
		10	20600	844
LTE Band 12	Low Range	1.4	23017	699.7
		3	23025	700.5
		5	23035	701.5
		10	23060	704
	Middle Range	1.4/3/5/10	23095	707.5
	High Range	1.4	23173	715.3
		3	23165	714.5
		5	23155	713.5
		10	23130	711
LTE Band 13	Low Range	5	23180	777
	Middle Range	5/10	23230	782
	High Range	5	23279	786.9

Test Items	Test Mode	Test Channel		
		LCH	MCH	HCH
Receiver Spurious Emissions	LTE Band 5	--	v	--
AC Power-line Conducted Emissions	LTE Band 5	--	v	--
Note 1: The mark “v” means that this configuration is the worst test mode for Receiver Spurious Emissions and AC Power-line Conducted Emissions measurement.				

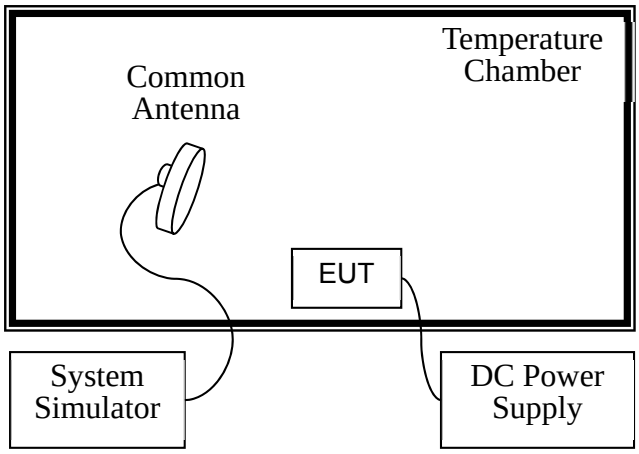
4.4 Test Setup

4.4.1 For Antenna Port Test



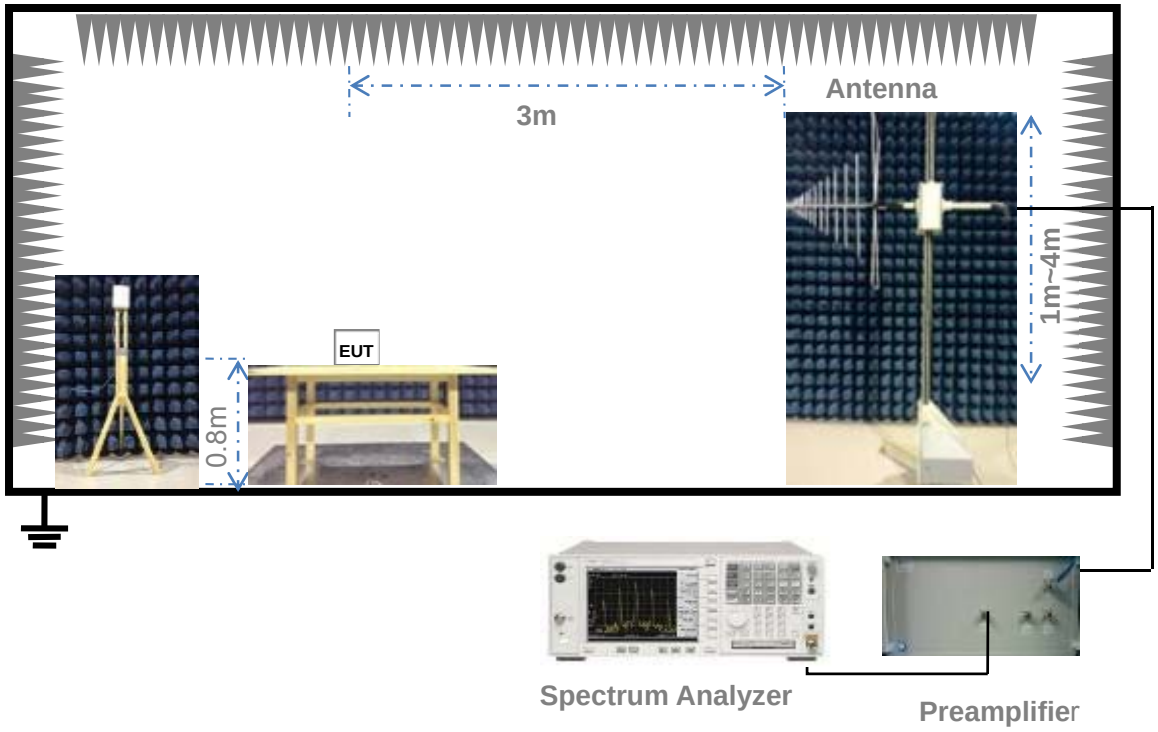
(Diagram 1)

4.4.2 For Frequency Stability Test



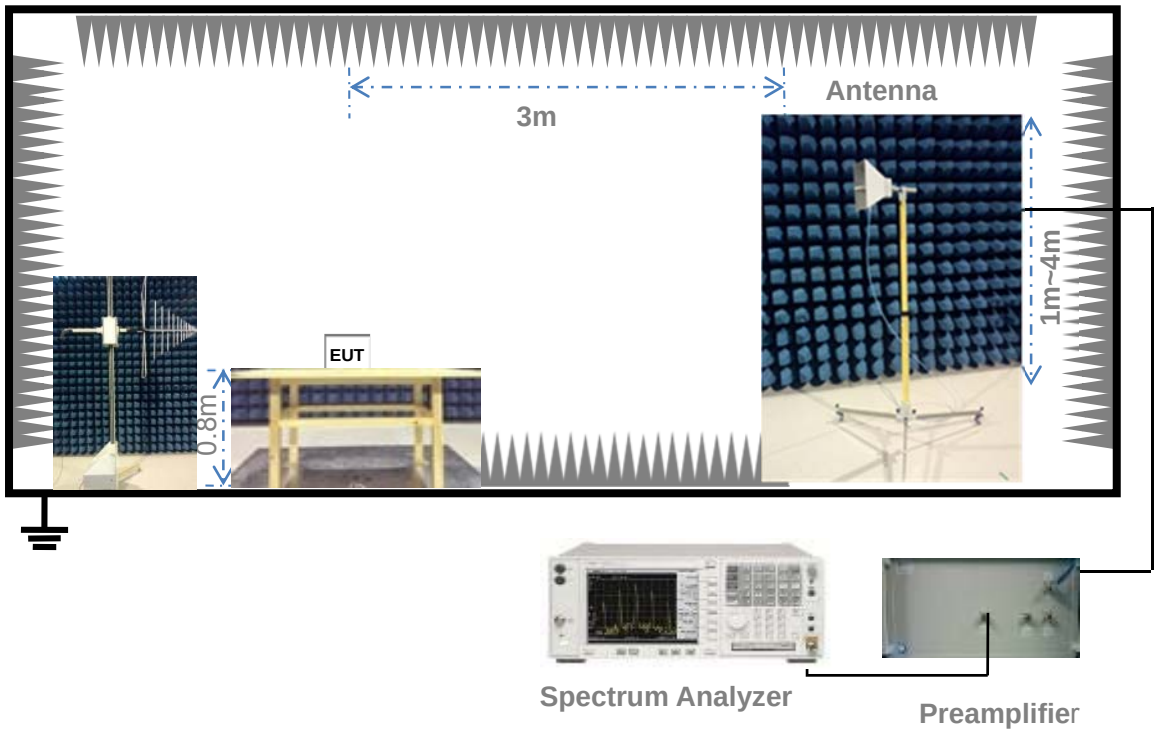
(Diagram 2)

4.4.3 For Radiated Test (30 MHz ~ 1 GHz)



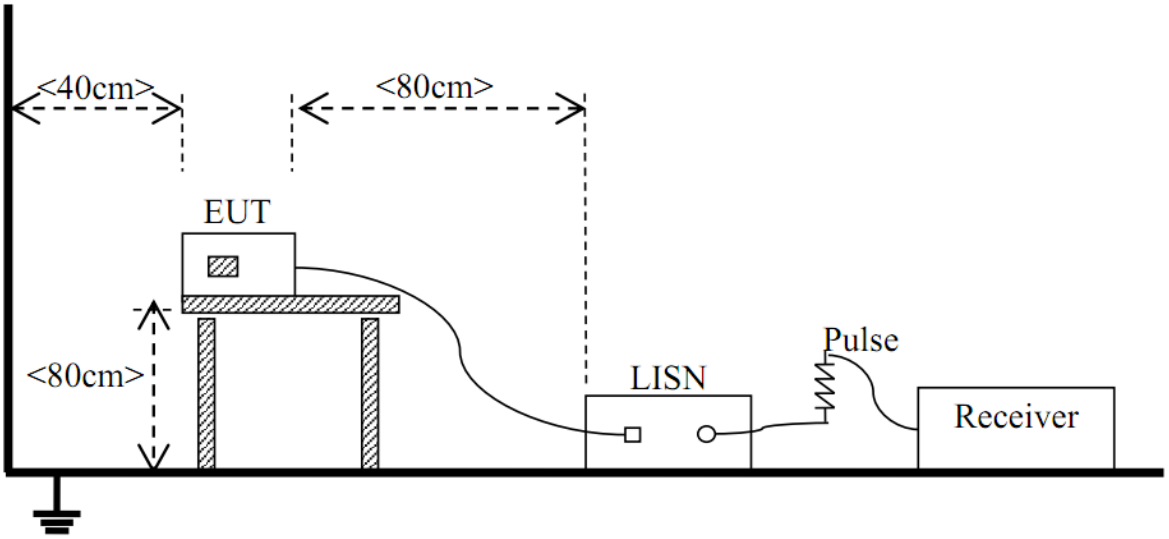
(Diagram 3)

4.4.4 For Radiated Test (Above 1 GHz)



(Diagram 4)

4.4.5 For AC Power-line Conducted Emissions



(Diagram 5)

5 TEST ITEMS

5.1 Transmitter Radiated Power (EIRP/ERP)

5.1.1 Limit

FCC § 2.1046 & 22.913(a) & 24.232(c) & 27.50(b) & 27.50(c) & 27.50(d) & 27.50(h)

According to FCC section 22.913(a) (5), the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7 watts.

According to FCC section 24.232(c), mobile and portable stations are limited to 2 watts EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications.

According to FCC section 27.50(b) (10), portable stations (hand-held devices) transmitting in the 746-757MHz, 776-788MHz, and 805-806MHz bands are limited to 3 watts ERP.

FCC section 27.50(c) (10), portable stations (hand-held devices) in the 600MHz uplink band and the 698-746MHz band, and fixed and mobile stations in the 600MHz uplink band are limited to 3 watts ERP.

FCC section 27.50(d) (4), 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. Fixed stations operating in the 1710-1755 MHz band are limited to a maximum antenna height of 10 meters above ground. Mobile and portable stations operating in these bands must employ a means for limiting power to the minimum necessary for successful communications.

(7) Fixed, mobile, and portable (hand-held) stations operating in the 2000-2020 MHz band are limited to 2 watts EIRP.

And FCC section 27.50(h) (2), for mobile and other user stations, mobile stations are limited to 2.0 watts EIRP. All user stations are limited to 2.0 watts transmitter output power.

RSS-Gen § 6.12 & RSS-130 § 4.4 & RSS-132 § 5.4 & RSS-133 § 6.4 & RSS-139 § 6.5

According to RSS-130 § 4.4, the e.i.r.p shall not exceed 50 watts for mobile equipment or for outdoor fixed subscriber equipment, nor shall it exceed 5 watts for portable equipment or for indoor fixed subscriber equipment.

According to RSS-132 § 5.4, the Effective Radiated Power (ERP) for mobile equipment shall not exceed 11.5 watts.

According to RSS-133 § 6.4 (SRSP 510), mobile stations and hand-held portables are limited to 2 watts maximum EIRP.

According to RSS-139 § 6.5, the EIRP for mobile and portable transmitters shall not exceed 1 watt..

5.1.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for conducted test, and the section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description is used for radiated test. The photo of test setup please refer to ANNEX B.

5.1.3 Test Procedure

Description of the Conducted Output Power Measurement

The EUT is coupled to the SS with attenuator through power splitter; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading. A system simulator is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power. The measured power in the radio frequency on the transmitter output terminals shall be reported.

The relevant equation for determining the conducted measured value is:

Conducted Output Power Value (dBm) = Measured Value (dBm) + Path Loss (dB)

where:
Conducted Output Power Value = final conducted measured value in the conducted power test, in dBm;
Measured Value = measured conducted power received by spectrum analyzer or power meter, in dBm;
Path Loss = signal attenuation in the connecting cable between the transmitter and spectrum analyzer or power meter, including external cable loss, in dB;

During the test, the data of Path Loss (dB) is added in the spectrum analyzer or power meter, so Measured Value (dBm) is the final values which contains the data of Path Loss (dB).

For example:

In the conducted output power test, when measured value for GSM850 is 24.7 dBm, and path loss is 8.5 dB, then final conducted output power value is:

Conducted Output Power Value (dBm) = 24.7 dBm + 8.5 dB = 33.2 dBm

Description of the Transmitter Radiated Power Measurement

In many cases, the RF output power limits for licensed digital transmission devices is specified in terms of effective radiated power (ERP) or equivalent isotropic radiated power (EIRP). Typically, ERP is specified when the operating frequency is less than or equal to 1 GHz and EIRP is specified when the operating frequency is greater than 1 GHz. Both are determined by adding the transmit antenna gain to the conducted RF output power with the primary difference between the two being that when determining the ERP, the transmit antenna gain is referenced to a dipole antenna (i.e., dBd) whereas when determining the EIRP, the transmit antenna gain is referenced to an isotropic antenna (dBi).

Final measurement calculation as below:

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:

ERP/EIRP = P_{Meas} + GT − LC

where:
ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as P_{Meas}, typically dBW or dBm);
P_{Meas} = measured transmitter output power or PSD, in dBm or dBW;
GT = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
dBd (ERP)=dBi (EIRP) -2.15 dB
LC = signal attenuation in the connecting cable between the transmitter and antenna, in dB.

For devices utilizing multiple antennas, KDB 662911 provides guidance for determining the effective array transmit antenna gain term to be used in the above equation.

For example:
In the EIRP test, when P_{Meas} value for GSM1900 is 30.2 dBm, LC is 0.6 dB, and GT is -3.4 dB, then final EIRP value is:
EIRP for GSM1900 = 30.2 dBm - 3.4 dBi - 0.6 dB = 26.2 dBm

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:
ERP/EIRP (dBm) = SA Read Value (dBm) + Correction Factor (dB)

where:
ERP/EIRP = effective or equivalent radiated power, in dBm;
SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;
Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

ERP (dBm) = 21dBm + 8dB = 29dBm

5.1.4 Test Result

Please refer to ANNEX A.1.

5.2 Peak to Average Ratio

5.2.1 Limit

FCC § 2.1046 & 24.232(d) & 27.50(d)

RSS-130 § 4.4 & RSS-132 § 5.4 & RSS-133 § 6.4 & RSS-139 § 6.5

In addition, when the transmitter power is measured in terms of average value, the peak-to-average power ratio (PAPR) of the transmitter shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

According to FCC section 24.232(d), power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with 24.232 (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of § 24.51. 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.

FCC section 24.232(e), peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms equivalent voltage. The measurement results shall be properly adjusted for any instrument limitations, such as detector response times, limited resolution bandwidth capability when compared to the emission bandwidth, sensitivity, etc., so as to obtain a true peak measurement for the emission in question over the full bandwidth of the channel.

According to FCC section 27.50(d) (5), in measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13dB.

5.2.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.2.3 Test Procedure

Here the lowest, middle and highest channels are selected to perform testing to verify the peak-to-average ratio.

According to KDB 971168 D01, there is CCDF procedure for PAPR:

a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;

b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;

c) Set the number of counts to a value that stabilizes the measured CCDF curve;

d) Set the measurement interval as follows:

1) for continuous transmissions, set to 1 ms,

2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.

e) Record the maximum PAPR level associated with a probability of 0.1%.

Alternate procedure for PAPR:

Use one of the procedures presented in 4.1 to measure the total peak power and record as P_{Pk}. Use one of the applicable procedures presented 4.2 to measure the total average power and record as P_{Avg}. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from:

PAPR (dB) = P_{Pk} (dBm) - P_{Avg} (dBm).

5.2.4 Test Result

Please refer to ANNEX A.2.

5.3 Occupied Bandwidth

5.3.1 Limit

FCC § 2.1049

RSS-Gen § 6.7

The occupied bandwidth is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are each equal to 0.5 percent of the total mean power radiated by a given emission.

Many of the individual rule parts specify a relative OBW in lieu of the 99% OBW. In such cases, the OBW is defined as the width of the signal between two points, one below the carrier center frequency and on above the carrier center frequency, outside of which all emissions are attenuated by at least X dB below the transmitter power, where the value of X is typically specified as 26.

5.3.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.3.3 Test Procedure

The following procedure shall be used for measuring power bandwidth.

a) The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The frequency span for the spectrum analyzer shall be set wide enough to capture all modulation products including the emission skirts (i.e., two to five times the anticipated OBW).

b) The nominal IF filter bandwidth (3 dB RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.

c) Set the reference level of the instrument as required to keep the signal from exceeding the maximum input mixer level for linear operation. In general, the peak of the spectral envelope must be at least 10log (OBW / RBW) below the reference level.

d) NOTE—Steps a) through c) may require iteration to adjust within the specified tolerances.

e) For -26 dB OBW, the dynamic range of the spectrum analyzer at the selected RBW shall be at least 10dB below the target “-X dB down” requirement, e.g. -26 dB OBW, the spectrum analyzer noise floor at the selected RBW shall be 36dB below the reference value.

f) Set the detection mode to peak, and the trace mode to max hold.

g) For 99% OBW, use the 99 % power bandwidth function of the spectrum analyzer (if available) and report the measured bandwidth.

If the instrument does not have a 99 % power bandwidth function, the trace data points are to be recovered and directly summed in linear power terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5 % of the total is reached; that frequency is recorded as the lower frequency. The process is repeated until 99.5 % of the total is reached; that frequency is recorded as the upper frequency.

The 99 % power bandwidth is the difference between these two frequencies.

h) For -26 dB OBW, determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace (this is the reference value).

Determine the “-X dB down amplitude” as equal to (reference value -X). Alternatively, this calculation can be performed by the analyzer by using the marker-delta function.

Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below “-X dB down amplitude” determined in step g). If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.

i) The OBW shall be reported by providing plot(s) of the measuring instrument display. The frequency and amplitude axes and scale shall be clearly labeled. Tabular data may be reported in addition to the plot(s).

j) Change variable modulations, coding, or channel bandwidth settings, then repeat above test procedures.

5.3.4 Test Result

Please refer to ANNEX A.3.

5.4 Frequency Stability

5.4.1 Limit

FCC § 2.1055 & 22.355 & 24.235 & 27.54

RSS-Gen § 6.11 & RSS-130 § 4.3 & RSS-132 § 5.3 & RSS-133 § 6.3 & RSS-139 § 6.4

FCC § 2.1055 & RSS-Gen § 6.11

The frequency stability shall be measured with variation of ambient temperature as follows:

(1) The temperature is varied from -30°C to +50°C.

(2) Frequency measurements shall be made at the extremes of the specified temperature range and at intervals of not more than 10°C through the range.

The frequency stability shall be measured with variation of primary supply voltage as follows:

(1) Vary primary supply voltage from 85 to 115 percent of the nominal value for other than carried battery equipment.

(2) For hand carried, battery powered equipment, reduce primary supply voltage to the battery operating and point which shall be specified by the manufacture.

(3) The supply voltage shall be measured at the input to the cable normally provided with the equipment, or at the power supply terminals if cables are not normally provided.

FCC § 22.355

Except as otherwise provided in this part, the carrier frequency of each transmitter in the Public Mobile Services must be maintained within the tolerances given in Table C-1 of this section.

Table C-1—Frequency Tolerance for Transmitters in the Public Mobile Services

Frequency range (MHz)	Base, fixed (ppm)	Mobile > 3 watts (ppm)	Mobile ≤ 3 watts (ppm)
25 to 50	20.0	20.0	50.0
50 to 450	5.0	5.0	50.0
450 to 512	2.5	5.0	5.0
821 to 896	1.5	2.5	2.5
928 to 929	5.0	n/a	n/a
929 to 960	1.5	n/a	n/a
2110 to 2220	10.0	n/a	n/a

FCC § 24.235

The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block.

FCC § 27.54

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

RSS-130 § 4.3

The frequency offset shall be measured according to the procedure described in RSS-Gen and recorded.

RSS-132 § 5.3

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.5 ppm for base stations.

RSS-133 § 6.3

The carrier frequency shall not depart from the reference frequency in excess of ±2.5 ppm for mobile stations and ±1.0 ppm for base stations.

RSS-139 § 6.4

The frequency stability shall be sufficient to ensure that the occupied bandwidth stays within the operating frequency block when tested to the temperature and supply voltage variations specified in RSS-Gen.

5.4.2 Test Setup

The section 4.4.2 (Diagram 2) test setup description is used for this test. The photo of test setup please refer to ANNEX B.

5.4.3 Test Procedure

1. The EUT is placed in a temperature chamber.

2. The temperature is set to 25°C and allowed to stabilize. After sufficient soak time, the transmitting frequency error is measured.

3. The temperature is increased by not more than 10 degrees, allowed to stabilize and soak, and then repeat the frequency error measurement.

4. Repeat procedure 3 until +50°C and -30°C is reached.

5. Change supply voltage, and repeat measurement until extreme voltage is reached.

5.4.4 Test Result

Please refer to ANNEX A.4.

5.5 Spurious Emission at Antenna Terminals

5.5.1 Limit

FCC § 2.1051 & 22.917(a) & 24.238(a) & 27.53(c) & 27.53(f) & 27.53(g) & 27.53(h) & 27.53(m)

RSS-Gen § 6.13 & RSS-130 § 4.6 & RSS-132 § 5.5 & RSS-133 § 6.5 & RSS-139 § 6.6

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a) & RSS-132 § 5.5 & RSS-133 § 6.5

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. This is calculated to be -13 dBm.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

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

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(f)

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 equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz 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 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1) & RSS-139 § 6.6

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (−10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

• 43+10logP dB (−13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (−25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

RSS-130 § 4.6

The power of any unwanted emissions in any 100kHz bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10\log_{10}P$ (watts), dB. However, in the bandwidth of 30kHz may be employed.

In addition to the limit outlined in above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

(i) 76 + 10 log10 p (watts), dB, for base and fixed equipment, and

(ii) 65 + 10 log10 p (watts), dB, for mobile and portable equipment.

(b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

5.5.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.5.3 Test Procedure

The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer. The spectrum is scanned from the lowest frequency generated in the equipment up to a frequency including its 10th harmonic. On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43 + 10 log(P) dB. Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1 MHz or greater. However, in the 1 MHz bands immediately outside and adjacent to the frequency blocks a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

1. The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

2. CMW500 is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power.

3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.

4. Spurious emissions are tested with 0.001MHz RBW for frequency less than 150kHz, 0.01MHz RBW for frequency less than 30MHz, 0.1MHz RBW for frequency less than 1GHz, and 1MHz RBW for frequency above 1GHz. And sweep point number are at least 401, referring to following formula.

Sweep point number = Span/RBW

VBW=3*RBW

Detector Mode=mean or average power

5. Record the frequencies and levels of spurious emissions.

5.5.4 Test Result

Please refer to ANNEX A.5.

5.6 Band Edge

5.6.1 Limit

FCC § 2.1051 & 22.917(a) & 24.238(a) & 27.53(c) & 27.53(g) & 27.53(h) & 27.53(m)

RSS-130 § 4.6 & RSS-132 § 5.5 & RSS-133 § 6.5 & RSS-139 § 6.6

In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed.

The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emissions are attenuated at least 26 dB below the transmitter power.

FCC § 22.917(a) & 24.238(a) & RSS-132 § 5.5 & RSS-133 § 6.5

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. This is calculated to be -13 dBm.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

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

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz 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 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1) & RSS-139 § 6.6

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (−10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

• 43+10logP dB (−13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (−25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

RSS-130 § 4.6

The power of any unwanted emissions in any 100kHz bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10\log_{10}P$ (watts), dB. However, in the bandwidth of 30kHz may be employed.

In addition to the limit outlined in above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

(i) 76 + 10 log10 p (watts), dB, for base and fixed equipment, and

(ii) 65 + 10 log10 p (watts), dB, for mobile and portable equipment.

(b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

5.6.2 Test Setup

The section 4.4.1 (Diagram 1) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.6.3 Test Procedure

The EUT, which is powered by the Battery, is coupled to the Spectrum Analyzer (SA) and the System Simulator (SS) with attenuators through the Power Splitter; the RF load attached to the EUT antenna terminal is 50 Ohm; the path loss as the factor is calibrated to correct the reading.

1.The EUT is coupled to the system simulator and spectrum analyzer; the RF load attached to EUT antenna terminal is 50Ohm; the path loss as the factor is calibrated to correct the reading.

2. CMW500 is used to establish communication with the EUT, and its parameters are set to force the EUT transmitting at maximum output power.

3. The RF output of the transmitter is connected to the input of the spectrum analyzer through sufficient attenuation.

4. The center of the spectrum analyzer was set to block edge frequency.

5. Band edge are tested with 1%*cBW (RBW), and sweep point number referred to following formula.

Sweep point number = 2*Span/RBW

VBW=3RBW

6. Record the frequencies and levels of spurious emissions.

5.6.4 Test Result

Please refer to ANNEX A.6.

5.7 Field Strength of Spurious Radiation

5.7.1 Limit

FCC § 2.1053 & 22.917(a) & 24.238(a) & 27.53(c) & 27.53(f) & 27.53(g) & 27.53(h) & 27.53(m)

RSS-Gen § 6.13 & RSS-130 § 4.6 & RSS-132 § 5.5 & RSS-133 § 6.5 & RSS-139 § 6.6

FCC § 22.917(a) & 24.238(a) & RSS-132 § 5.5 & RSS-133 § 6.5

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. This is calculated to be -13 dBm.

FCC § 27.53(c)

For operations in the 746–758 MHz band and the 776–788 MHz band, the power of any emission outside the 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, in accordance with the following:

(1) On any frequency outside the 746–758 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(2) On any frequency outside the 776–788 MHz band, the power of any emission shall be attenuated outside the band below the transmitter power (P) by at least 43 + 10 log (P) dB;

(3) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 76 + 10 log (P) dB in a 6.25 kHz band segment, for base and fixed stations;

(4) On all frequencies between 763–775 MHz and 793–805 MHz, by a factor not less than 65 + 10 log (P) dB in a 6.25 kHz band segment, for mobile and portable stations;

(5) Compliance with the provisions of paragraphs (c)(1) and (c)(2) of this section is based on the use of measurement instrumentation employing a resolution bandwidth of 100 kHz or greater.

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

(6) Compliance with the provisions of paragraphs (c)(3) and (c)(4) of this section is based on the use of measurement instrumentation such that the reading taken with any resolution bandwidth setting should be adjusted to indicate spectral energy in a 6.25 kHz segment.

FCC § 27.53(f)

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 equivalent isotropically radiated power (EIRP) for wideband signals, and -80 dBW EIRP for discrete emissions of less than 700 Hz bandwidth. For the purpose of equipment authorization, a transmitter shall be tested with an antenna that is representative of the type that will be used with the equipment in normal operation.

FCC § 27.53(g)

For operations in the 600MHz band and the 698-746MHz 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 kHz bands immediately outside and adjacent to a licensee's frequency block, a resolution bandwidth of at least 30 kHz may be employed.

FCC § 27.53(h) (1) & RSS-139 § 6.6

Except as otherwise specified below, for operations in the 1695-1710 MHz, 1710-1755 MHz, 1755-1780 MHz, 1915-1920 MHz, 1995-2000 MHz, 2000-2020 MHz, 2110-2155 MHz, 2155-2180 MHz, and 2180-2200 bands, the power of any emission outside a licensee's frequency block shall be attenuated below the transmitter power (P) in watts by at least $43 + 10 \log_{10}(P)$ dB.

FCC § 27.53(m) (4)

For mobile digital stations (BRS and EBS stations), the attenuation factor shall be not less than:

• 40+10logP dB (–10 dBm, 100 nW) on all frequencies between the channel edge and 5 MHz from the channel edge.

• 43+10logP dB (–13 dBm, 50 nW) on all frequencies between 5 MHz and X MHz from the channel edge,

• 55+10logP dB (–25 dBm, 3 nW) on all frequencies more than X MHz from the channel edge, where X is the greater of 6 MHz or the actual emission bandwidth (26 dB).

In addition, the attenuation factor shall not be less that 43 + 10 log (P) dB on all frequencies between 2490.5 MHz and 2496 MHz and 55 + 10 log (P) dB at or below 2490.5 MHz. Mobile Satellite Service licensees operating on frequencies below 2495 MHz may also submit a documented interference complaint against BRS licensees operating on channel BRS Channel 1 on the same terms and conditions as adjacent channel BRS or EBS licensees.

RSS-130 § 4.6

The power of any unwanted emissions in any 100kHz bandwidth on any frequency outside the frequency range(s) within which the equipment is designed to operate shall be attenuated below the transmitter power, P (dBW), by at least $43 + 10\log_{10}P$ (watts), dB. However, in the bandwidth of 30kHz may be employed.

In addition to the limit outlined in above, equipment operating in the frequency bands 746-756 MHz and 777-787 MHz shall also comply with the following restrictions:

(a) The power of any unwanted emissions in any 6.25 kHz bandwidth for all frequencies between 763-775 MHz and 793-806 MHz shall be attenuated below the transmitter power, P (dBW), by at least:

(i) 76 + 10 log10 p (watts), dB, for base and fixed equipment, and

(ii) 65 + 10 log10 p (watts), dB, for mobile and portable equipment.

(b) The e.i.r.p. in the band 1559-1610 MHz shall not exceed −70 dBW/MHz for wideband signal and −80 dBW for discrete emission with bandwidth less than 700 Hz.

5.7.2 Test Setup

The section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.7.3 Test Procedure

1. On a test site, the EUT shall be placed at 80cm height on a turn table, and in the position close to normal use as declared by the applicant.

2. The test antenna shall be oriented initially for vertical polarization located 3 m from EUT to correspond to the fundamental frequency of the transmitter.

3. The output of the test antenna shall be connected to the measuring receiver and the peak detector is used for the measurement.

4. During the measurement of the EUT, the resolution bandwidth was to 1 MHz and the average bandwidth was set to 1 MHz.

5. The transmitter shall be switched on; the measuring receiver shall be tuned to the frequency of the transmitter under test.

6. The test antenna shall be raised and lowered through the specified range of height until the maximum signal level is detected by the measuring receiver.

7. The transmitter shall be rotated through 360° in the horizontal plane, until the maximum signal level is detected by the measuring receiver.

8. The test antenna shall be raised and lowered again through the specified range of height until the maximum signal level is detected by the measuring receiver.

9. The maximum signal level detected by the measuring receiver shall be noted.

10. The EUT was replaced by half-wave dipole (824 ~ 849 MHz) or horn antenna (1 850 ~ 1 910 MHz) connected to a signal generator.

11. In necessary, the input attenuator setting on the measuring receiver shall be adjusted in order to increase the sensitivity of the measuring receiver.

12. The test antenna shall be raised and lowered through the specified range of height to ensure that the maximum signal is received.

13. The input signal to the substitution antenna shall be adjusted to the level that produces a level detected by the measuring received, which is equal to the level noted while the transmitter radiated power was measured, corrected for the change of input attenuator setting of the measuring receiver.

14. The input level to the substitution antenna shall be recorded as power level in dBm, corrected for any change of input attenuator setting of the measuring receiver.

15. The measurement shall be repeated with the test antenna and the substitution antenna orientated for horizontal polarization.

Final measurement calculation as below:

The relevant equation for determining the ERP/EIRP from the radiated RF output power is:

ERP/EIRP (dBm) = SA Read Value (dBm) + Correction Factor (dB)

where:
ERP/EIRP = effective or equivalent radiated power, in dBm;
SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;
Correction Factor = total correction factor including cable loss, in dB;

During the test, the data of Correction Factor (dB) is added in the EMI receiver or spectrum analyzer, so SA Read Value (dBm) is the final values which contains the data of Correction Factor (dB).

For example:

In the ERP test, when SA read value for GSM850 is 21dBm, and correction factor is 8dB, then final ERP value for GSM850 is:

ERP (dBm) = 21dBm + 8dB = 29dBm

5.7.4 Test Result

Please refer to ANNEX A.7.

5.8 Receiver Spurious Emissions

5.8.1 Limit

RSS-Gen § 7.3/4 & RSS-132 § 5.6 & RSS-133 § 6.6

For emissions at frequencies below 1 GHz, measurements shall be performed using a CISPR quasi-peak detector and the related measurement bandwidth. At frequencies above 1 GHz, measurements shall be performed using a linear average detector with a minimum resolution bandwidth of 1 MHz.

As an alternative to CISPR quasi-peak or average measurements, compliance with the emission limit can be demonstrated using measuring equipment employing a peak detector function properly adjusted for factors such as pulse desensitization, as required, with a measurement bandwidth equal to, or greater than, the applicable CISPR quasi-peak bandwidth or 1 MHz bandwidth, respectively.

Receiver Radiated Limits

Radiated emission measurements shall be performed with the receiver antenna connected to the receiver antenna ports. The search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is higher, to at least five times the highest tunable or local oscillator frequency, whichever is higher, without exceeding 40 GHz.

Spurious emissions from receivers shall not exceed the radiated emissions limits shown in Table 2 below.

Table 2 –Receiver radiated emissions limits

Frequency (MHz)	Field Strength (μV/m at 3 metres)
30 - 88	100
88 - 216	150
216 - 960	200
Above 960	500

Receiver Conducted Limits

If the receiver has a detachable antenna of known impedance, an antenna-conducted spurious emissions measurement is permitted as an alternative to radiated measurement. However, the radiated method is preferred.

The antenna-conducted test shall be performed with the antenna disconnected and with the receiver antenna port connected to a measuring instrument having equal input impedance to that specified for the antenna. The RF cable connecting the receiver under test to the measuring instrument shall also have the same impedance to that specified for the receiver's antenna.

The spurious emissions from the receiver at any discrete frequency, measured at the antenna port by the antenna-conducted method, shall not exceed 2 nW in the frequency range 30-1000 MHz and 5 nW above 1 GHz.

5.8.2 Test Setup

The section 4.4.3 and 4.4.4 (Diagram 3, 4) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.8.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

All Spurious Emission tests were performed in X, Y, Z axis direction. And only the worst axis test condition was recorded in this test report.

An initial pre-scan was performed in the chamber using the EMI Receiver in peak detection mode. Quasi-peak measurements were conducted based on the peak sweep graph. The EUT was measured by Bi-Log antenna with 2 orthogonal polarities.

5.8.4 Test Result

Please refer to ANNEX A.8.

5.9 AC Power-line Conducted Emissions

5.9.1 Limit

RSS-Gen § 8.8

For AC power-line conducted emissions, both quasi-peak and average detectors having the characteristics specified in CAN/CSA-CISPR 16-1-1:15 for the 150 kHz to 30 MHz frequency range shall be employed.

Unless stated otherwise in the applicable RSS, for radio apparatus that are designed to be connected to the public utility AC power network, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the range 150 kHz to 30 MHz shall not exceed the limits in table 3, as measured using a 50 μH / 50 Ω line impedance stabilization network. This requirement applies for the radio frequency voltage measured between each power line and the ground terminal of each AC power-line mains cable of the EUT.

For an EUT that connects to the AC power lines indirectly, through another device, the requirement for compliance with the limits in table 3 shall apply at the terminals of the AC power-line mains cable of a representative support device, while it provides power to the EUT. The lower limit applies at the boundary between the frequency ranges. The device used to power the EUT shall be representative of typical applications.

Table 3 –AC power-line conducted emissions limits

Frequency (MHz)	Conducted limit (dBμV)	
	Quasi-peak	Average
0.15 - 0.5	66 to 56[Note1]	56 to 46 [Note1]
0.5 - 5	56	46
5 - 30	60	50

Note 1: The level decreases linearly with the logarithm of the frequency.

5.9.2 Test Setup

The section 4.4.5 (Diagram 5) test setup description was used for this test. The photo of test setup please refer to ANNEX B.

5.9.3 Test Procedure

The test employing the methods of measurement described in the publication referenced in Section 3(b) (ANSI C63.4);

The EUT is connected to the power mains through a LISN which provides 50 Ω/50 μH of coupling impedance for the measuring instrument. The test frequency range is from 150 kHz to 30 MHz. The maximum conducted interference is searched using Peak (PK), Quasi-peak (QP) and Average (AV) detectors; the emission levels that are more than the AV and QP limits, and that have narrow margins from the AV and QP limits will be re-measured with AV and QP detectors. Tests for both L phase and N phase lines of the power mains connected to the EUT are performed.

Devices subject to Part 15 must be tested for all available U.S. voltages and frequencies (such as a nominal 120 VAC, 50/60 Hz and 240 VAC, 50/60 Hz) for which the device is capable of operation. A device rated for 50/60 Hz operation need not be tested at both frequencies provided the radiated and line conducted emissions are the same at both frequencies.

5.9.4 Test Result

Please refer to ANNEX A.9.

ANNEX A TEST RESULTS

A.1 Transmitter Radiated Power (EIRP/ERP)

A.1.1 Conducted Output Power

WCDMA Mode Test Data

Test Band	Test Channel	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
WCDMA Band 2	LCH	23.11	0.205
	MCH	23.26	0.212
	HCH	23.17	0.207
HSDPA Band 2	LCH	22.38	0.173
	MCH	22.26	0.168
	HCH	22.13	0.163
HSUPA Band 2	LCH	22.09	0.162
	MCH	22.12	0.163
	HCH	22.13	0.163
DC-HSDPA Band 2	LCH	22.95	0.197
	MCH	22.79	0.190
	HCH	22.84	0.192

Test Band	Test Channel	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
WCDMA Band 4	LCH	23.31	0.214
	MCH	23.35	0.217
	HCH	23.28	0.213
HSDPA Band 4	LCH	23.10	0.204
	MCH	23.23	0.210
	HCH	23.15	0.207
HSUPA Band 4	LCH	23.04	0.201
	MCH	23.00	0.200
	HCH	22.79	0.190
DC- HSDPA Band 4	LCH	23.08	0.203
	MCH	23.17	0.207
	HCH	22.90	0.195

Test Band	Test Channel	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
WCDMA Band 5	LCH	22.75	0.188
	MCH	22.74	0.188
	HCH	22.92	0.196
HSDPA Band 5	LCH	22.71	0.187
	MCH	22.58	0.181
	HCH	22.59	0.182
HSUPA Band 5	LCH	22.42	0.175
	MCH	22.34	0.171
	HCH	22.52	0.179
DC- HSDPA Band 5	LCH	22.79	0.190
	MCH	22.49	0.177
	HCH	22.61	0.182

Note 1: For the HSDPA and HSUPA mode, all subtests were tested and just the worst data were recorded in this table.

HSDPA Conducted Output Power

Band	Channel	Conducted Output Average Power							
		Subtest1		Subtest2		Subtest3		Subtest4	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
HSDPA Band 2	LCH	22.33	0.171	22.38	0.173	21.85	0.153	21.83	0.152
	MCH	22.21	0.166	22.26	0.168	21.73	0.149	21.80	0.151
	HCH	22.13	0.163	22.03	0.160	21.70	0.148	21.77	0.150
HSDPA Band 4	LCH	23.10	0.204	23.09	0.204	22.82	0.191	22.80	0.191
	MCH	23.23	0.210	23.20	0.209	22.78	0.190	22.71	0.187
	HCH	22.96	0.198	23.15	0.207	22.57	0.181	22.55	0.180
HSDPA Band 5	LCH	22.63	0.183	22.71	0.187	21.99	0.158	22.26	0.168
	MCH	22.58	0.181	22.57	0.181	22.14	0.164	21.95	0.157
	HCH	22.59	0.182	22.50	0.178	22.25	0.168	22.08	0.161

HSUPA Conducted Output Power

Band	Channel	Conducted Output Average Power									
		Subtest1		Subtest2		Subtest3		Subtest4		Subtest5	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
HSUPA Band 2	LCH	22.09	0.162	20.94	0.124	21.16	0.131	21.86	0.153	22.09	0.162
	MCH	22.12	0.163	20.93	0.124	21.22	0.132	21.27	0.134	21.85	0.153
	HCH	22.13	0.163	20.66	0.116	20.80	0.120	21.31	0.135	22.04	0.160
HSUPA Band 4	LCH	22.21	0.166	21.51	0.142	22.42	0.175	21.77	0.150	23.04	0.201
	MCH	22.53	0.179	21.10	0.129	22.12	0.163	21.81	0.152	23.00	0.200
	HCH	22.79	0.190	21.23	0.133	22.27	0.169	21.91	0.155	22.72	0.187
HSUPA Band 5	LCH	22.35	0.172	20.79	0.120	21.55	0.143	21.35	0.136	22.42	0.175
	MCH	22.34	0.171	21.19	0.132	21.64	0.146	21.40	0.138	22.25	0.168
	HCH	22.01	0.159	20.60	0.115	21.59	0.144	21.36	0.137	22.52	0.179

DC-HSDPA Conducted Output Power

Band	Channel	Conducted Output Average Power							
		Subtest1		Subtest2		Subtest3		Subtest4	
		(dBm)	(W)	(dBm)	(W)	(dBm)	(W)	(dBm)	(W)
DC-HSDPA Band 2	LCH	22.90	0.195	22.95	0.197	22.55	0.180	22.62	0.183
	MCH	22.77	0.189	22.79	0.190	22.33	0.171	22.62	0.183
	HCH	22.84	0.192	22.64	0.184	22.21	0.166	22.13	0.163
DC-HSDPA Band 4	LCH	23.08	0.203	22.98	0.199	22.53	0.179	22.61	0.182
	MCH	23.00	0.200	23.17	0.207	22.65	0.184	22.60	0.182
	HCH	22.90	0.195	22.82	0.191	22.51	0.178	22.39	0.173
DC-HSDPA Band 5	LCH	22.53	0.179	22.79	0.190	22.20	0.166	22.18	0.165
	MCH	22.49	0.177	22.39	0.173	22.13	0.163	22.04	0.160
	HCH	22.60	0.182	22.61	0.182	22.16	0.164	22.13	0.163

LTE Mode Test Data

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band2					
1.4 MHz	LCH	QPSK	RB1#0	23.63	0.231
			RB1#3	23.75	0.237
			RB1#5	23.75	0.237
			RB3#0	23.68	0.233
			RB3#2	23.55	0.227
			RB3#3	23.66	0.233
			RB6#0	22.46	0.176
		16-QAM	RB1#0	22.35	0.172
			RB1#3	22.43	0.175
			RB1#5	22.48	0.177
	MCH	QPSK	RB1#0	23.24	0.211
			RB1#3	23.30	0.214
			RB1#5	23.31	0.214
			RB3#0	23.52	0.225
			RB3#2	23.55	0.227
			RB3#3	23.58	0.228
			RB6#0	22.64	0.184
		16-QAM	RB1#0	22.45	0.176
			RB1#3	22.38	0.173
			RB1#5	22.18	0.165
	HCH	QPSK	RB1#0	23.40	0.219
			RB1#3	23.43	0.220
			RB1#5	23.33	0.215
			RB3#0	23.36	0.217
			RB3#2	23.38	0.218
			RB3#3	23.30	0.214
			RB6#0	22.15	0.164
		16-QAM	RB1#0	22.38	0.173
			RB1#3	22.57	0.181
			RB1#5	22.29	0.169
3 MHz	LCH	QPSK	RB1#0	23.60	0.229
			RB1#7	23.83	0.241
			RB1#14	23.54	0.226
			RB8#0	22.86	0.193
			RB8#4	22.75	0.188
			RB8#7	22.63	0.183
			RB15#0	22.67	0.185
		16-QAM	RB1#0	22.50	0.178

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band2					
			RB1#7	22.53	0.179
			RB1#14	22.32	0.171
	MCH	QPSK	RB1#0	23.33	0.215
			RB1#7	23.34	0.216
			RB1#14	23.41	0.219
			RB8#0	22.86	0.193
			RB8#4	22.75	0.188
			RB8#7	22.79	0.190
			RB15#0	22.65	0.184
		16-QAM	RB1#0	22.40	0.174
			RB1#7	22.24	0.167
			RB1#14	22.41	0.174
	HCH	QPSK	RB1#0	23.23	0.210
			RB1#7	23.31	0.214
			RB1#14	23.44	0.221
			RB8#0	22.65	0.184
			RB8#4	22.73	0.187
			RB8#7	22.69	0.186
			RB15#0	22.32	0.171
		16-QAM	RB1#0	22.29	0.169
			RB1#7	22.29	0.169
			RB1#14	22.17	0.165
5 MHz	LCH	QPSK	RB1#0	23.38	0.218
			RB1#13	23.40	0.219
			RB1#24	23.28	0.213
			RB12#0	22.66	0.184
			RB12#6	22.55	0.180
			RB12#13	22.62	0.183
			RB25#0	22.74	0.188
		16-QAM	RB1#0	22.20	0.166
			RB1#13	22.26	0.168
			RB1#24	22.15	0.164
	MCH	QPSK	RB1#0	23.55	0.226
			RB1#13	23.46	0.222
			RB1#24	23.33	0.215
			RB12#0	22.64	0.184
			RB12#6	22.70	0.186
			RB12#13	22.45	0.176
			RB25#0	22.55	0.180

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band2					
10 MHz	HCH	16-QAM	RB1#0	22.41	0.174
			RB1#13	22.09	0.162
			RB1#24	22.07	0.161
		QPSK	RB1#0	23.02	0.200
			RB1#13	23.09	0.204
			RB1#24	23.10	0.204
			RB12#0	22.03	0.160
			RB12#6	22.37	0.173
			RB12#13	22.19	0.165
			RB25#0	22.25	0.168
		16-QAM	RB1#0	22.06	0.161
			RB1#13	21.93	0.156
			RB1#24	21.69	0.148
	LCH	QPSK	RB1#0	23.20	0.209
			RB1#25	23.22	0.210
			RB1#49	23.28	0.213
			RB25#0	22.19	0.166
			RB25#13	22.21	0.166
			RB25#25	22.18	0.165
			RB50#0	22.33	0.171
		16-QAM	RB1#0	22.11	0.163
			RB1#25	22.28	0.169
			RB1#49	22.26	0.168
	MCH	QPSK	RB1#0	23.30	0.214
			RB1#25	23.27	0.212
			RB1#49	23.25	0.211
			RB25#0	22.23	0.167
			RB25#13	22.31	0.170
			RB25#25	22.23	0.167
			RB50#0	21.98	0.158
		16-QAM	RB1#0	22.09	0.162
			RB1#25	21.93	0.156
			RB1#49	22.06	0.161
	HCH	QPSK	RB1#0	23.20	0.209
			RB1#25	23.18	0.208
			RB1#49	23.16	0.207
			RB25#0	22.10	0.162
			RB25#13	21.75	0.149
			RB25#25	21.88	0.154

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band2					
			RB50#0	21.78	0.151
		16-QAM	RB1#0	21.96	0.157
			RB1#25	21.90	0.155
			RB1#49	21.98	0.158
15 MHz	LCH	QPSK	RB1#0	23.81	0.241
			RB1#38	23.40	0.219
			RB1#74	23.52	0.225
			RB36#0	22.50	0.178
			RB36#19	22.49	0.178
			RB36#39	22.62	0.183
			RB75#0	22.64	0.184
		16-QAM	RB1#0	22.38	0.173
			RB1#38	22.46	0.176
			RB1#74	22.30	0.170
	MCH	QPSK	RB1#0	23.31	0.214
			RB1#38	23.54	0.226
			RB1#74	23.35	0.216
			RB36#0	22.33	0.171
			RB36#19	22.39	0.173
			RB36#39	22.39	0.173
			RB75#0	22.42	0.175
		16-QAM	RB1#0	22.10	0.162
			RB1#38	21.98	0.158
			RB1#74	21.97	0.157
	HCH	QPSK	RB1#0	23.31	0.215
			RB1#38	22.80	0.191
			RB1#74	22.87	0.194
			RB36#0	22.18	0.165
			RB36#19	22.13	0.163
			RB36#39	22.22	0.167
			RB75#0	22.26	0.168
		16-QAM	RB1#0	22.26	0.168
			RB1#38	21.71	0.148
			RB1#74	21.94	0.156
20 MHz	LCH	QPSK	RB1#0	23.29	0.214
			RB1#50	23.32	0.215
			RB1#99	23.29	0.213
			RB50#0	22.47	0.176
			RB50#25	22.27	0.169

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band2					
			RB50#50	22.33	0.171
			RB100#0	22.35	0.172
		16-QAM	RB1#0	21.98	0.158
			RB1#50	22.26	0.168
			RB1#99	21.81	0.152
	MCH	QPSK	RB1#0	23.25	0.211
			RB1#50	23.32	0.215
			RB1#99	23.36	0.217
			RB50#0	22.24	0.168
			RB50#25	22.15	0.164
			RB50#50	22.16	0.164
			RB100#0	22.15	0.164
		16-QAM	RB1#0	22.10	0.162
			RB1#50	22.18	0.165
			RB1#99	22.11	0.162
	HCH	QPSK	RB1#0	23.19	0.208
			RB1#50	23.11	0.205
			RB1#99	22.98	0.199
			RB50#0	22.20	0.166
			RB50#25	22.02	0.159
			RB50#50	22.09	0.162
			RB100#0	22.16	0.164
		16-QAM	RB1#0	22.08	0.161
			RB1#50	21.86	0.153
			RB1#99	21.56	0.143

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band4					
1.4 MHz	LCH	QPSK	RB1#0	23.65	0.232
			RB1#3	23.82	0.241
			RB1#5	23.47	0.222
			RB3#0	23.64	0.231
			RB3#2	23.50	0.224
			RB3#3	23.36	0.217
			RB6#0	22.48	0.177
		16-QAM	RB1#0	22.25	0.168
			RB1#3	22.50	0.178
			RB1#5	22.49	0.177
	MCH	QPSK	RB1#0	23.28	0.213
			RB1#3	23.54	0.226
			RB1#5	23.30	0.214
			RB3#0	23.46	0.222
			RB3#2	23.36	0.217
			RB3#3	23.55	0.226
			RB6#0	22.49	0.177
		16-QAM	RB1#0	22.17	0.165
			RB1#3	22.22	0.167
			RB1#5	22.04	0.160
	HCH	QPSK	RB1#0	23.34	0.216
			RB1#3	23.53	0.225
			RB1#5	23.40	0.219
			RB3#0	23.31	0.215
			RB3#2	23.38	0.218
			RB3#3	23.41	0.219
			RB6#0	22.32	0.171
		16-QAM	RB1#0	22.29	0.170
			RB1#3	22.29	0.169
			RB1#5	21.97	0.157
3 MHz	LCH	QPSK	RB1#0	23.51	0.224
			RB1#7	23.58	0.228
			RB1#14	23.47	0.222
			RB8#0	22.46	0.176
			RB8#4	22.53	0.179
			RB8#7	22.57	0.181
			RB15#0	22.49	0.177
		16-QAM	RB1#0	22.29	0.169
			RB1#7	22.02	0.159

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band4					
			RB1#14	22.26	0.168
	MCH	QPSK	RB1#0	23.41	0.219
			RB1#7	23.32	0.215
			RB1#14	23.43	0.220
			RB8#0	22.49	0.177
			RB8#4	22.45	0.176
			RB8#7	22.46	0.176
			RB15#0	22.37	0.173
		16-QAM	RB1#0	22.16	0.165
			RB1#7	22.11	0.163
			RB1#14	22.31	0.170
	HCH	QPSK	RB1#0	23.16	0.207
			RB1#7	23.10	0.204
			RB1#14	23.34	0.216
			RB8#0	22.10	0.162
			RB8#4	22.14	0.164
			RB8#7	22.20	0.166
			RB15#0	22.05	0.160
		16-QAM	RB1#0	21.94	0.156
			RB1#7	21.88	0.154
			RB1#14	22.16	0.165
5 MHz	LCH	QPSK	RB1#0	23.36	0.217
			RB1#13	23.34	0.216
			RB1#24	23.20	0.209
			RB12#0	22.43	0.175
			RB12#6	22.25	0.168
			RB12#13	22.42	0.175
			RB25#0	22.34	0.171
		16-QAM	RB1#0	21.78	0.151
			RB1#13	21.76	0.150
			RB1#24	21.73	0.149
	MCH	QPSK	RB1#0	23.43	0.220
			RB1#13	23.35	0.216
			RB1#24	23.38	0.218
			RB12#0	22.17	0.165
			RB12#6	22.54	0.179
			RB12#13	22.46	0.176
			RB25#0	22.25	0.168
		16-QAM	RB1#0	22.29	0.169

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band4					
			RB1#13	21.86	0.154
			RB1#24	22.02	0.159
	HCH	QPSK	RB1#0	23.39	0.218
			RB1#13	23.19	0.209
			RB1#24	23.14	0.206
			RB12#0	22.18	0.165
			RB12#6	22.19	0.166
			RB12#13	22.23	0.167
			RB25#0	22.29	0.169
		16-QAM	RB1#0	22.13	0.163
			RB1#13	21.92	0.156
			RB1#24	21.92	0.156
10 MHz	LCH	QPSK	RB1#0	23.75	0.237
			RB1#25	23.49	0.223
			RB1#49	23.71	0.235
			RB25#0	22.56	0.180
			RB25#13	22.49	0.177
			RB25#25	22.48	0.177
			RB50#0	22.28	0.169
		16-QAM	RB1#0	22.42	0.175
			RB1#25	22.30	0.170
			RB1#49	22.11	0.163
	MCH	QPSK	RB1#0	23.28	0.213
			RB1#25	23.39	0.218
			RB1#49	23.50	0.224
			RB25#0	22.40	0.174
			RB25#13	22.40	0.174
			RB25#25	22.43	0.175
			RB50#0	22.29	0.170
		16-QAM	RB1#0	21.98	0.158
			RB1#25	22.13	0.163
			RB1#49	22.02	0.159
	HCH	QPSK	RB1#0	23.66	0.232
			RB1#25	23.37	0.217
			RB1#49	23.59	0.228
			RB25#0	22.44	0.175
			RB25#13	22.43	0.175
			RB25#25	22.14	0.164
			RB50#0	22.15	0.164

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band4					
		16-QAM	RB1#0	22.39	0.173
			RB1#25	22.32	0.171
			RB1#49	22.46	0.176
15 MHz	LCH	QPSK	RB1#0	23.80	0.240
			RB1#38	23.55	0.226
			RB1#74	23.71	0.235
			RB36#0	22.63	0.183
			RB36#19	22.59	0.182
			RB36#39	22.65	0.184
			RB75#0	22.75	0.188
		16-QAM	RB1#0	22.51	0.178
			RB1#38	22.33	0.171
			RB1#74	22.39	0.174
	MCH	QPSK	RB1#0	23.59	0.229
			RB1#38	23.38	0.218
			RB1#74	23.40	0.219
			RB36#0	22.39	0.173
			RB36#19	22.39	0.173
			RB36#39	22.36	0.172
			RB75#0	22.42	0.175
		16-QAM	RB1#0	22.06	0.161
			RB1#38	22.14	0.164
			RB1#74	22.33	0.171
	HCH	QPSK	RB1#0	23.49	0.223
			RB1#38	23.27	0.212
			RB1#74	23.31	0.214
			RB36#0	22.34	0.171
			RB36#19	22.43	0.175
			RB36#39	22.41	0.174
			RB75#0	22.43	0.175
		16-QAM	RB1#0	22.61	0.182
			RB1#38	22.10	0.162
			RB1#74	22.26	0.168
20 MHz	LCH	QPSK	RB1#0	23.60	0.229
			RB1#50	23.43	0.220
			RB1#99	23.36	0.217
			RB50#0	22.54	0.180
			RB50#25	22.56	0.181
			RB50#50	22.52	0.179

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band4					
			RB100#0	22.63	0.183
		16-QAM	RB1#0	22.30	0.170
			RB1#50	22.35	0.172
			RB1#99	21.91	0.155
	MCH	QPSK	RB1#0	23.48	0.223
			RB1#50	23.43	0.220
			RB1#99	23.42	0.220
			RB50#0	22.41	0.174
			RB50#25	22.46	0.176
			RB50#50	22.19	0.166
			RB100#0	22.26	0.168
		16-QAM	RB1#0	22.01	0.159
			RB1#50	21.97	0.157
			RB1#99	22.17	0.165
	HCH	QPSK	RB1#0	23.34	0.216
			RB1#50	23.17	0.207
			RB1#99	23.15	0.207
			RB50#0	22.39	0.173
			RB50#25	22.39	0.174
			RB50#50	22.11	0.162
			RB100#0	22.15	0.164
		16-QAM	RB1#0	22.21	0.166
			RB1#50	22.17	0.165
			RB1#99	22.05	0.160

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band5					
1.4 MHz	LCH	QPSK	RB1#0	23.43	0.220
			RB1#3	23.35	0.216
			RB1#5	23.46	0.222
			RB3#0	23.10	0.204
			RB3#2	23.36	0.217
			RB3#3	23.21	0.210
			RB6#0	22.34	0.172
		16-QAM	RB1#0	22.09	0.162
			RB1#3	22.27	0.169
			RB1#5	22.09	0.162
	MCH	QPSK	RB1#0	23.12	0.205
			RB1#3	23.28	0.213
			RB1#5	23.07	0.203
			RB3#0	23.00	0.199
			RB3#2	23.20	0.209
			RB3#3	23.25	0.211
			RB6#0	22.27	0.169
		16-QAM	RB1#0	22.03	0.159
			RB1#3	21.94	0.156
			RB1#5	22.07	0.161
	HCH	QPSK	RB1#0	23.43	0.220
			RB1#3	23.41	0.219
			RB1#5	23.27	0.212
			RB3#0	23.25	0.211
			RB3#2	23.17	0.208
			RB3#3	23.33	0.215
			RB6#0	22.26	0.168
		16-QAM	RB1#0	22.03	0.160
			RB1#3	22.37	0.173
			RB1#5	22.18	0.165
3 MHz	LCH	QPSK	RB1#0	23.38	0.218
			RB1#7	23.35	0.216
			RB1#14	23.21	0.209
			RB8#0	22.18	0.165
			RB8#4	22.31	0.170
			RB8#7	22.35	0.172
			RB15#0	22.41	0.174
		16-QAM	RB1#0	22.00	0.159
			RB1#7	22.12	0.163

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band5					
			RB1#14	21.98	0.158
	MCH	QPSK	RB1#0	23.27	0.212
			RB1#7	23.08	0.203
			RB1#14	23.33	0.215
			RB8#0	22.35	0.172
			RB8#4	22.25	0.168
			RB8#7	22.13	0.163
			RB15#0	22.19	0.166
		16-QAM	RB1#0	21.77	0.150
			RB1#7	21.88	0.154
			RB1#14	22.22	0.167
	HCH	QPSK	RB1#0	23.14	0.206
			RB1#7	23.17	0.207
			RB1#14	23.38	0.218
			RB8#0	22.32	0.171
			RB8#4	22.41	0.174
			RB8#7	22.17	0.165
			RB15#0	22.30	0.170
		16-QAM	RB1#0	22.22	0.167
			RB1#7	22.26	0.168
			RB1#14	22.14	0.164
5 MHz	LCH	QPSK	RB1#0	23.26	0.212
			RB1#13	23.20	0.209
			RB1#24	23.17	0.207
			RB12#0	22.35	0.172
			RB12#6	22.19	0.166
			RB12#13	22.25	0.168
			RB25#0	22.10	0.162
		16-QAM	RB1#0	21.80	0.151
			RB1#13	21.90	0.155
			RB1#24	21.75	0.150
	MCH	QPSK	RB1#0	23.30	0.214
			RB1#13	23.26	0.212
			RB1#24	23.14	0.206
			RB12#0	22.32	0.171
			RB12#6	22.34	0.171
			RB12#13	22.11	0.162
			RB25#0	22.30	0.170
		16-QAM	RB1#0	22.09	0.162

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band5					
			RB1#13	21.74	0.149
			RB1#24	21.84	0.153
	HCH	QPSK	RB1#0	23.25	0.211
			RB1#13	23.28	0.213
			RB1#24	23.08	0.203
			RB12#0	22.18	0.165
			RB12#6	22.16	0.164
			RB12#13	22.38	0.173
			RB25#0	22.32	0.170
		16-QAM	RB1#0	22.17	0.165
			RB1#13	21.95	0.157
			RB1#24	22.00	0.158
10 MHz	LCH	QPSK	RB1#0	23.44	0.221
			RB1#25	23.59	0.228
			RB1#49	23.60	0.229
			RB25#0	22.18	0.165
			RB25#13	22.28	0.169
			RB25#25	22.17	0.165
			RB50#0	22.33	0.171
		16-QAM	RB1#0	22.28	0.169
			RB1#25	22.06	0.161
			RB1#49	22.32	0.171
	MCH	QPSK	RB1#0	23.35	0.216
			RB1#25	23.44	0.221
			RB1#49	23.27	0.212
			RB25#0	22.40	0.174
			RB25#13	22.25	0.168
			RB25#25	22.36	0.172
			RB50#0	22.37	0.173
		16-QAM	RB1#0	22.20	0.166
			RB1#25	21.92	0.156
			RB1#49	21.90	0.155
	HCH	QPSK	RB1#0	23.37	0.217
			RB1#25	23.51	0.225
			RB1#49	23.43	0.220
			RB25#0	22.01	0.159
			RB25#13	22.28	0.169
			RB25#25	22.17	0.165
			RB50#0	22.33	0.171

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band5					
		16-QAM	RB1#0	22.01	0.159
			RB1#25	22.27	0.169
			RB1#49	22.22	0.167

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band12					
1.4 MHz	LCH	QPSK	RB1#0	23.36	0.217
			RB1#3	23.20	0.209
			RB1#5	23.08	0.203
			RB3#0	23.11	0.204
			RB3#2	23.06	0.203
			RB3#3	22.89	0.194
			RB6#0	22.03	0.159
		16-QAM	RB1#0	21.96	0.157
			RB1#3	21.87	0.154
			RB1#5	21.76	0.150
	MCH	QPSK	RB1#0	22.96	0.198
			RB1#3	23.17	0.207
			RB1#5	23.06	0.202
			RB3#0	22.91	0.196
			RB3#2	23.13	0.206
			RB3#3	22.94	0.197
			RB6#0	22.06	0.161
		16-QAM	RB1#0	21.72	0.149
			RB1#3	21.92	0.156
			RB1#5	21.68	0.147
	HCH	QPSK	RB1#0	23.30	0.214
			RB1#3	23.40	0.219
			RB1#5	23.40	0.219
			RB3#0	23.03	0.201
			RB3#2	23.19	0.209
			RB3#3	23.17	0.207
			RB6#0	22.11	0.163
		16-QAM	RB1#0	22.03	0.160
			RB1#3	22.20	0.166
			RB1#5	22.13	0.163
3 MHz	LCH	QPSK	RB1#0	23.27	0.212
			RB1#7	22.89	0.194
			RB1#14	23.06	0.202
			RB8#0	21.75	0.150
			RB8#4	21.80	0.151
			RB8#7	21.98	0.158
			RB15#0	22.00	0.159
		16-QAM	RB1#0	21.70	0.148
			RB1#7	21.87	0.154

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band12					
			RB1#14	21.72	0.149
	MCH	QPSK	RB1#0	23.05	0.202
			RB1#7	23.07	0.203
			RB1#14	22.74	0.188
			RB8#0	21.84	0.153
			RB8#4	22.14	0.164
			RB8#7	21.95	0.157
			RB15#0	22.12	0.163
		16-QAM	RB1#0	21.77	0.150
			RB1#7	21.54	0.142
			RB1#14	21.59	0.144
	HCH	QPSK	RB1#0	23.10	0.204
			RB1#7	23.18	0.208
			RB1#14	23.24	0.211
			RB8#0	22.13	0.163
			RB8#4	22.05	0.160
			RB8#7	21.99	0.158
			RB15#0	22.24	0.168
		16-QAM	RB1#0	21.91	0.155
			RB1#7	21.82	0.152
			RB1#14	22.10	0.162
5 MHz	LCH	QPSK	RB1#0	22.92	0.196
			RB1#13	22.97	0.198
			RB1#24	23.01	0.200
			RB12#0	21.79	0.151
			RB12#6	21.81	0.152
			RB12#13	21.79	0.151
			RB25#0	21.70	0.148
		16-QAM	RB1#0	21.58	0.144
			RB1#13	21.57	0.144
			RB1#24	21.55	0.143
	MCH	QPSK	RB1#0	23.02	0.200
			RB1#13	23.05	0.202
			RB1#24	22.69	0.186
			RB12#0	22.12	0.163
			RB12#6	21.93	0.156
			RB12#13	22.03	0.160
			RB25#0	22.07	0.161
		16-QAM	RB1#0	21.39	0.138

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band12					
			RB1#13	21.44	0.139
			RB1#24	21.61	0.145
	HCH	QPSK	RB1#0	23.03	0.201
			RB1#13	23.09	0.204
			RB1#24	23.05	0.202
			RB12#0	21.99	0.158
			RB12#6	22.06	0.161
			RB12#13	21.90	0.155
			RB25#0	21.87	0.154
		16-QAM	RB1#0	21.57	0.143
			RB1#13	21.70	0.148
			RB1#24	21.60	0.145
10 MHz	LCH	QPSK	RB1#0	23.08	0.203
			RB1#25	23.10	0.204
			RB1#49	22.98	0.199
			RB25#0	21.71	0.148
			RB25#13	21.98	0.158
			RB25#25	21.93	0.156
			RB50#0	21.86	0.154
		16-QAM	RB1#0	21.78	0.151
			RB1#25	21.95	0.157
			RB1#49	21.73	0.149
	MCH	QPSK	RB1#0	22.79	0.190
			RB1#25	23.19	0.209
			RB1#49	23.12	0.205
			RB25#0	22.04	0.160
			RB25#13	21.97	0.157
			RB25#25	21.81	0.152
			RB50#0	22.02	0.159
		16-QAM	RB1#0	21.59	0.144
			RB1#25	21.74	0.149
			RB1#49	21.61	0.145
	HCH	QPSK	RB1#0	23.15	0.207
			RB1#25	23.23	0.210
			RB1#49	23.12	0.205
			RB25#0	22.04	0.160
			RB25#13	21.92	0.156
			RB25#25	21.85	0.153
			RB50#0	21.94	0.156

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band12					
		16-QAM	RB1#0	22.02	0.159
			RB1#25	21.79	0.151
			RB1#49	21.80	0.151

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band13					
5 MHz	LCH	QPSK	RB1#0	23.36	0.217
			RB1#13	23.26	0.212
			RB1#24	23.29	0.213
			RB12#0	22.18	0.165
			RB12#6	22.26	0.168
			RB12#13	22.12	0.163
			RB25#0	22.37	0.172
		16-QAM	RB1#0	22.08	0.161
			RB1#13	22.27	0.169
			RB1#24	21.96	0.157
	MCH	QPSK	RB1#0	23.05	0.202
			RB1#13	23.27	0.212
			RB1#24	23.05	0.202
			RB12#0	22.25	0.168
			RB12#6	22.25	0.168
			RB12#13	22.27	0.169
			RB25#0	22.18	0.165
		16-QAM	RB1#0	21.96	0.157
			RB1#13	21.77	0.150
			RB1#24	21.90	0.155
	HCH	QPSK	RB1#0	23.16	0.207
			RB1#13	23.21	0.209
			RB1#24	23.35	0.216
			RB12#0	22.25	0.168
			RB12#6	22.22	0.167
			RB12#13	22.52	0.179
			RB25#0	22.25	0.168
		16-QAM	RB1#0	21.79	0.151
			RB1#13	21.94	0.156
			RB1#24	21.90	0.155
10 MHz	MCH	QPSK	RB1#0	23.42	0.220
			RB1#25	23.18	0.208
			RB1#49	23.32	0.215
			RB25#0	22.06	0.161
			RB25#13	22.18	0.165
			RB25#25	22.31	0.170
			RB50#0	22.34	0.171
		16-QAM	RB1#0	22.19	0.166
			RB1#25	21.97	0.158

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	Conducted Output Average Power (dBm)	Conducted Output Average Power (W)
LTE Band13					
			RB1#49	22.04	0.160

A.1.2 Effective (Isotropic) Radiated Power

WCDMA Mode Test Data

Test Band	Channel	Measured EIRP		Limit (W)	Verdict
		EIRP (dBm)	EIRP (W)		
WCDMA B2	LCH	24.37	0.273	2	Pass
	MCH	24.94	0.312		Pass
	HCH	24.16	0.261		Pass
HSDPA B2	LCH	23.32	0.215		Pass
	MCH	23.12	0.205		Pass
	HCH	23.13	0.205		Pass
HSUPA B2	LCH	22.36	0.172		Pass
	MCH	22.69	0.186		Pass
	HCH	21.34	0.136		Pass

Test Band	Channel	Measured EIRP		Limit (W)	Verdict
		EIRP (dBm)	EIRP (W)		
WCDMA B4	LCH	28.28	0.672	1	Pass
	MCH	26.27	0.424		Pass
	HCH	26.25	0.421		Pass
HSDPA B4	LCH	28.27	0.672		Pass
	MCH	26.81	0.479		Pass
	HCH	26.51	0.447		Pass
HSUPA B4	LCH	26.48	0.444		Pass
	MCH	25.26	0.336		Pass
	HCH	24.21	0.264		Pass

Test Band	Channel	Measured EIRP		Limit (W)	Verdict
		ERP (dBm)	ERP (W)		
WCDMA B5	LCH	24.04	0.254	7	Pass
	MCH	23.21	0.209		Pass
	HCH	23.26	0.212		Pass
HSDPA B5	LCH	24.91	0.310		Pass
	MCH	23.24	0.211		Pass
	HCH	23.43	0.220		Pass
HSUPA B5	LCH	20.14	0.103		Pass
	MCH	21.85	0.153		Pass
	HCH	22.51	0.178		Pass

Note 1: For the HSDPA and HSUPA mode, all subtests were tested and just the worst data were recorded in this table.

Note 2: ERP/EIRP = SA Read Value + Correction Factor

where:

ERP/EIRP = effective or equivalent radiated power, in dBm;

SA Read Value = measured transmitter power received by EMI receiver or spectrum analyzer, in dBm;

Correction Factor = total correction factor including cable loss, in dB;

LTE Mode Test Data

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2							
1.4 MHz	LCH	QPSK	RB1#0	25.98	0.396	2.00	Pass
			RB6#0	26.21	0.418	2.00	Pass
		16-QAM	RB1#0	26.42	0.439	2.00	Pass
			RB6#0	26.33	0.430	2.00	Pass
	MCH	QPSK	RB1#0	26.48	0.445	2.00	Pass
			RB6#0	26.21	0.418	2.00	Pass
		16-QAM	RB1#0	25.78	0.378	2.00	Pass
			RB6#0	26.02	0.400	2.00	Pass
	HCH	QPSK	RB1#0	26.21	0.418	2.00	Pass
			RB6#0	26.08	0.406	2.00	Pass
		16-QAM	RB1#0	26.32	0.429	2.00	Pass
			RB6#0	26.41	0.438	2.00	Pass
3 MHz	LCH	QPSK	RB1#0	26.45	0.441	2.00	Pass
			RB15#0	26.21	0.418	2.00	Pass
		16-QAM	RB1#0	26.84	0.483	2.00	Pass
			RB15#0	26.44	0.441	2.00	Pass
	MCH	QPSK	RB1#0	25.99	0.397	2.00	Pass
			RB15#0	26.02	0.400	2.00	Pass
		16-QAM	RB1#0	25.76	0.377	2.00	Pass
			RB15#0	25.55	0.359	2.00	Pass
	HCH	QPSK	RB1#0	26.32	0.429	2.00	Pass
			RB15#0	26.22	0.419	2.00	Pass
		16-QAM	RB1#0	26.08	0.406	2.00	Pass
			RB15#0	26.16	0.413	2.00	Pass
5 MHz	LCH	QPSK	RB1#0	26.88	0.488	2.00	Pass
			RB25#0	26.49	0.446	2.00	Pass
		16-QAM	RB1#0	26.52	0.449	2.00	Pass
			RB25#0	26.33	0.430	2.00	Pass
	MCH	QPSK	RB1#0	27.01	0.502	2.00	Pass
			RB25#0	26.45	0.442	2.00	Pass
		16-QAM	RB1#0	26.89	0.489	2.00	Pass
			RB25#0	26.77	0.475	2.00	Pass
	HCH	QPSK	RB1#0	26.57	0.454	2.00	Pass
			RB25#0	26.86	0.485	2.00	Pass
		16-QAM	RB1#0	26.48	0.445	2.00	Pass
			RB25#0	26.38	0.435	2.00	Pass
10 MHz	LCH	QPSK	RB1#0	25.46	0.352	2.00	Pass
			RB50#0	25.63	0.366	2.00	Pass
		16-QAM	RB1#0	25.79	0.379	2.00	Pass
			RB50#0	25.48	0.353	2.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND2							
	MCH	QPSK	RB1#0	25.86	0.386	2.00	Pass
			RB50#0	25.74	0.375	2.00	Pass
		16-QAM	RB1#0	26.01	0.399	2.00	Pass
			RB50#0	25.84	0.384	2.00	Pass
	HCH	QPSK	RB1#0	26.22	0.419	2.00	Pass
			RB50#0	25.98	0.396	2.00	Pass
		16-QAM	RB1#0	25.49	0.354	2.00	Pass
			RB50#0	25.47	0.352	2.00	Pass
15 MHz	LCH	QPSK	RB1#0	25.48	0.353	2.00	Pass
			RB75#0	25.92	0.391	2.00	Pass
		16-QAM	RB1#0	25.49	0.354	2.00	Pass
			RB75#0	25.77	0.378	2.00	Pass
	MCH	QPSK	RB1#0	25.81	0.381	2.00	Pass
			RB75#0	25.64	0.366	2.00	Pass
		16-QAM	RB1#0	25.94	0.393	2.00	Pass
			RB75#0	25.98	0.396	2.00	Pass
	HCH	QPSK	RB1#0	25.86	0.386	2.00	Pass
			RB75#0	25.77	0.377	2.00	Pass
		16-QAM	RB1#0	25.84	0.384	2.00	Pass
			RB75#0	25.87	0.387	2.00	Pass
20 MHz	LCH	QPSK	RB1#0	25.66	0.368	2.00	Pass
			RB100#0	25.48	0.353	2.00	Pass
		16-QAM	RB1#0	25.62	0.365	2.00	Pass
			RB100#0	25.42	0.348	2.00	Pass
	MCH	QPSK	RB1#0	25.67	0.369	2.00	Pass
			RB100#0	25.65	0.367	2.00	Pass
		16-QAM	RB1#0	25.33	0.341	2.00	Pass
			RB100#0	25.47	0.353	2.00	Pass
	HCH	QPSK	RB1#0	25.42	0.349	2.00	Pass
			RB100#0	25.74	0.375	2.00	Pass
		16-QAM	RB1#0	25.48	0.353	2.00	Pass
			RB100#0	25.86	0.386	2.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4							
1.4 MHz	LCH	QPSK	RB1#0	22.84	0.192	1.00	Pass
			RB6#0	22.65	0.184	1.00	Pass
		16-QAM	RB1#0	22.48	0.177	1.00	Pass
			RB6#0	23.01	0.200	1.00	Pass
	MCH	QPSK	RB1#0	23.22	0.210	1.00	Pass
			RB6#0	23.02	0.200	1.00	Pass
		16-QAM	RB1#0	22.98	0.199	1.00	Pass
			RB6#0	22.88	0.194	1.00	Pass
	HCH	QPSK	RB1#0	23.02	0.201	1.00	Pass
			RB6#0	22.87	0.194	1.00	Pass
		16-QAM	RB1#0	22.76	0.189	1.00	Pass
			RB6#0	23.03	0.201	1.00	Pass
3 MHz	LCH	QPSK	RB1#0	23.12	0.205	1.00	Pass
			RB15#0	23.42	0.220	1.00	Pass
		16-QAM	RB1#0	23.33	0.215	1.00	Pass
			RB15#0	22.88	0.194	1.00	Pass
	MCH	QPSK	RB1#0	22.94	0.197	1.00	Pass
			RB15#0	22.79	0.190	1.00	Pass
		16-QAM	RB1#0	22.64	0.184	1.00	Pass
			RB15#0	22.81	0.191	1.00	Pass
	HCH	QPSK	RB1#0	22.86	0.193	1.00	Pass
			RB15#0	22.48	0.177	1.00	Pass
		16-QAM	RB1#0	22.83	0.192	1.00	Pass
			RB15#0	22.63	0.183	1.00	Pass
5 MHz	LCH	QPSK	RB1#0	23.34	0.216	1.00	Pass
			RB25#0	23.41	0.219	1.00	Pass
		16-QAM	RB1#0	23.39	0.218	1.00	Pass
			RB25#0	23.04	0.201	1.00	Pass
	MCH	QPSK	RB1#0	23.40	0.219	1.00	Pass
			RB25#0	23.47	0.222	1.00	Pass
		16-QAM	RB1#0	23.39	0.218	1.00	Pass
			RB25#0	23.42	0.220	1.00	Pass
	HCH	QPSK	RB1#0	23.23	0.210	1.00	Pass
			RB25#0	23.31	0.214	1.00	Pass
		16-QAM	RB1#0	23.43	0.220	1.00	Pass
			RB25#0	23.47	0.222	1.00	Pass
10 MHz	LCH	QPSK	RB1#0	23.76	0.238	1.00	Pass
			RB50#0	23.66	0.232	1.00	Pass
		16-QAM	RB1#0	23.68	0.234	1.00	Pass
			RB50#0	23.49	0.223	1.00	Pass
	MCH	QPSK	RB1#0	23.48	0.223	1.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	EIRP (dBm)	EIRP (W)	Limit (W)	Verdict
LTE BAND4							
			RB50#0	23.67	0.233	1.00	Pass
		16-QAM	RB1#0	23.64	0.231	1.00	Pass
			RB50#0	23.75	0.237	1.00	Pass
	HCH	QPSK	RB1#0	23.68	0.234	1.00	Pass
			RB50#0	23.78	0.239	1.00	Pass
		16-QAM	RB1#0	23.61	0.230	1.00	Pass
			RB50#0	23.68	0.233	1.00	Pass
15 MHz	LCH	QPSK	RB1#0	23.48	0.223	1.00	Pass
			RB75#0	23.36	0.217	1.00	Pass
		16-QAM	RB1#0	23.65	0.232	1.00	Pass
			RB75#0	23.52	0.225	1.00	Pass
	MCH	QPSK	RB1#0	23.54	0.226	1.00	Pass
			RB75#0	23.35	0.216	1.00	Pass
		16-QAM	RB1#0	23.43	0.220	1.00	Pass
			RB75#0	23.45	0.221	1.00	Pass
	HCH	QPSK	RB1#0	23.52	0.225	1.00	Pass
			RB75#0	23.44	0.221	1.00	Pass
		16-QAM	RB1#0	23.25	0.212	1.00	Pass
			RB75#0	23.35	0.216	1.00	Pass
20 MHz	LCH	QPSK	RB1#0	22.87	0.193	1.00	Pass
			RB100#0	22.94	0.197	1.00	Pass
		16-QAM	RB1#0	23.03	0.201	1.00	Pass
			RB100#0	23.12	0.205	1.00	Pass
	MCH	QPSK	RB1#0	22.85	0.193	1.00	Pass
			RB100#0	23.02	0.200	1.00	Pass
		16-QAM	RB1#0	23.00	0.200	1.00	Pass
			RB100#0	23.14	0.206	1.00	Pass
	HCH	QPSK	RB1#0	22.86	0.193	1.00	Pass
			RB100#0	23.06	0.202	1.00	Pass
		16-QAM	RB1#0	22.95	0.197	1.00	Pass
			RB100#0	22.88	0.194	1.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5							
1.4 MHz	LCH	QPSK	RB1#0	26.98	0.499	7.00	Pass
			RB6#0	27.02	0.504	7.00	Pass
		16-QAM	RB1#0	27.21	0.526	7.00	Pass
			RB6#0	26.88	0.488	7.00	Pass
	MCH	QPSK	RB1#0	27.32	0.540	7.00	Pass
			RB6#0	27.20	0.525	7.00	Pass
		16-QAM	RB1#0	26.95	0.495	7.00	Pass
			RB6#0	26.88	0.487	7.00	Pass
	HCH	QPSK	RB1#0	27.02	0.504	7.00	Pass
			RB6#0	26.68	0.466	7.00	Pass
		16-QAM	RB1#0	27.21	0.526	7.00	Pass
			RB6#0	26.90	0.490	7.00	Pass
3 MHz	LCH	QPSK	RB1#0	27.66	0.583	7.00	Pass
			RB15#0	26.99	0.500	7.00	Pass
		16-QAM	RB1#0	27.72	0.592	7.00	Pass
			RB15#0	26.97	0.497	7.00	Pass
	MCH	QPSK	RB1#0	26.99	0.500	7.00	Pass
			RB15#0	26.86	0.486	7.00	Pass
		16-QAM	RB1#0	27.03	0.504	7.00	Pass
			RB15#0	26.93	0.494	7.00	Pass
	HCH	QPSK	RB1#0	27.22	0.527	7.00	Pass
			RB15#0	26.89	0.488	7.00	Pass
		16-QAM	RB1#0	26.90	0.489	7.00	Pass
			RB15#0	26.65	0.463	7.00	Pass
5 MHz	LCH	QPSK	RB1#0	27.21	0.526	7.00	Pass
			RB25#0	27.02	0.504	7.00	Pass
		16-QAM	RB1#0	27.43	0.554	7.00	Pass
			RB25#0	27.18	0.523	7.00	Pass
	MCH	QPSK	RB1#0	27.32	0.540	7.00	Pass
			RB25#0	26.86	0.486	7.00	Pass
		16-QAM	RB1#0	27.24	0.529	7.00	Pass
			RB25#0	27.00	0.501	7.00	Pass
	HCH	QPSK	RB1#0	27.46	0.557	7.00	Pass
			RB25#0	27.03	0.505	7.00	Pass
		16-QAM	RB1#0	27.21	0.526	7.00	Pass
			RB25#0	27.03	0.504	7.00	Pass
10 MHz	LCH	QPSK	RB1#0	27.33	0.541	7.00	Pass
			RB50#0	27.22	0.527	7.00	Pass
		16-QAM	RB1#0	27.01	0.502	7.00	Pass
			RB50#0	26.84	0.483	7.00	Pass
	MCH	QPSK	RB1#0	27.18	0.523	7.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND5							
			RB50#0	26.86	0.486	7.00	Pass
		16-QAM	RB1#0	27.19	0.524	7.00	Pass
			RB50#0	26.77	0.475	7.00	Pass
	HCH	QPSK	RB1#0	27.32	0.540	7.00	Pass
			RB50#0	27.05	0.506	7.00	Pass
		16-QAM	RB1#0	27.43	0.554	7.00	Pass
			RB50#0	26.83	0.482	7.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12							
1.4 MHz	LCH	QPSK	RB1#0	25.48	0.353	3.00	Pass
			RB6#0	25.02	0.318	3.00	Pass
		16-QAM	RB1#0	25.43	0.349	3.00	Pass
			RB6#0	24.98	0.315	3.00	Pass
	MCH	QPSK	RB1#0	25.33	0.341	3.00	Pass
			RB6#0	25.00	0.316	3.00	Pass
		16-QAM	RB1#0	25.44	0.350	3.00	Pass
			RB6#0	24.88	0.307	3.00	Pass
	HCH	QPSK	RB1#0	25.54	0.358	3.00	Pass
			RB6#0	25.21	0.332	3.00	Pass
		16-QAM	RB1#0	25.38	0.345	3.00	Pass
			RB6#0	25.01	0.317	3.00	Pass
3 MHz	LCH	QPSK	RB1#0	25.74	0.375	3.00	Pass
			RB15#0	25.25	0.335	3.00	Pass
		16-QAM	RB1#0	25.77	0.377	3.00	Pass
			RB15#0	25.48	0.353	3.00	Pass
	MCH	QPSK	RB1#0	25.46	0.351	3.00	Pass
			RB15#0	25.16	0.328	3.00	Pass
		16-QAM	RB1#0	25.49	0.354	3.00	Pass
			RB15#0	25.14	0.326	3.00	Pass
	HCH	QPSK	RB1#0	25.74	0.375	3.00	Pass
			RB15#0	25.26	0.336	3.00	Pass
		16-QAM	RB1#0	25.65	0.368	3.00	Pass
			RB15#0	25.36	0.343	3.00	Pass
5 MHz	LCH	QPSK	RB1#0	25.85	0.385	3.00	Pass
			RB25#0	25.46	0.351	3.00	Pass
		16-QAM	RB1#0	25.86	0.385	3.00	Pass
			RB25#0	25.45	0.351	3.00	Pass
	MCH	QPSK	RB1#0	25.83	0.382	3.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND12							
			RB25#0	25.18	0.329	3.00	Pass
		16-QAM	RB1#0	25.76	0.377	3.00	Pass
			RB25#0	25.35	0.343	3.00	Pass
	HCH	QPSK	RB1#0	25.76	0.376	3.00	Pass
			RB25#0	25.12	0.325	3.00	Pass
		16-QAM	RB1#0	25.83	0.382	3.00	Pass
			RB25#0	25.32	0.340	3.00	Pass
10 MHz	LCH	QPSK	RB1#0	25.21	0.332	3.00	Pass
			RB50#0	24.98	0.315	3.00	Pass
		16-QAM	RB1#0	25.35	0.343	3.00	Pass
			RB50#0	25.01	0.317	3.00	Pass
	MCH	QPSK	RB1#0	25.52	0.357	3.00	Pass
			RB50#0	24.77	0.300	3.00	Pass
		16-QAM	RB1#0	25.25	0.335	3.00	Pass
			RB50#0	24.88	0.307	3.00	Pass
	HCH	QPSK	RB1#0	25.43	0.349	3.00	Pass
			RB50#0	24.59	0.288	3.00	Pass
		16-QAM	RB1#0	25.01	0.317	3.00	Pass
			RB50#0	24.56	0.285	3.00	Pass

Test BW	Test Channel	Test Mode	Test RB (Size#Offset)	ERP (dBm)	ERP (W)	Limit (W)	Verdict
LTE BAND13							
5 MHz	LCH	QPSK	RB1#0	25.123	0.325	3.00	Pass
			RB25#0	24.512	0.283	3.00	Pass
		16-QAM	RB1#0	25.246	0.335	3.00	Pass
			RB25#0	24.752	0.299	3.00	Pass
	MCH	QPSK	RB1#0	25.563	0.360	3.00	Pass
			RB25#0	24.780	0.301	3.00	Pass
		16-QAM	RB1#0	25.476	0.353	3.00	Pass
			RB25#0	24.862	0.306	3.00	Pass
	HCH	QPSK	RB1#0	25.552	0.359	3.00	Pass
			RB25#0	25.013	0.317	3.00	Pass
		16-QAM	RB1#0	25.421	0.353	3.00	Pass
			RB25#0	25.012	0.317	3.00	Pass
10 MHz	MCH	QPSK	RB1#0	24.951	0.310	3.00	Pass
			RB50#0	24.482	0.280	3.00	Pass
		16-QAM	RB1#0	25.013	0.320	3.00	Pass
			RB50#0	24.281	0.270	3.00	Pass

A.2 Peak to Average Ratio

Peak to Average Ratio test result please refer to original test report No.R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1, which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018 section 5.5 Peak- to-Average Power Ratio (PAPR).

A.3 Occupied Bandwidth

Occupied Bandwidth test result please refer to original test report No.R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1, which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018 section 5.3 Occupied Bandwidth.

A.4 Frequency Stability

Frequency Stability test result please refer to original test report No.R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1, which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018 section 5.6 Frequency Stability.

A.5 Spurious Emission at Antenna Terminals

Spurious Emission at Antenna Terminals test result please refer to original test report No.R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1, which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018 section 5.7 Spurious Emission at Antenna Terminals.

A.6 Band Edge

Band Edge test result please refer to original test report No.R1805A0250-R1&R1805A0250-R2&R1805A0250-R3&R1805A0250-R4 V1&R1805A0250-R5V1& R1805A0250-R6V1, which was issued by TA Technology (Shanghai) Co., Ltd. on Jul. 12, 2018 section 5.4 Band Edge Compliance.

A.7 Field Strength of Spurious Radiation

Note 1: Only the worst data with different transmit bandwidth for LTE are shown here.

Note 2: The frequencies of verdict which are marked by "N/A" should be ignored because they are UE carrier frequency.

WCDMA Mode Test Verdict

Test Band	Test Channel	Refer to Plot	Verdict
WCDMA Band 2	LCH	1.1	Pass
	MCH	1.2	Pass
	HCH	1.3	Pass
WCDMA Band 4	LCH	2.1	Pass
	MCH	2.2	Pass
	HCH	2.3	Pass
WCDMA Band 5	LCH	3.1	Pass
	MCH	3.2	Pass
	HCH	3.3	Pass

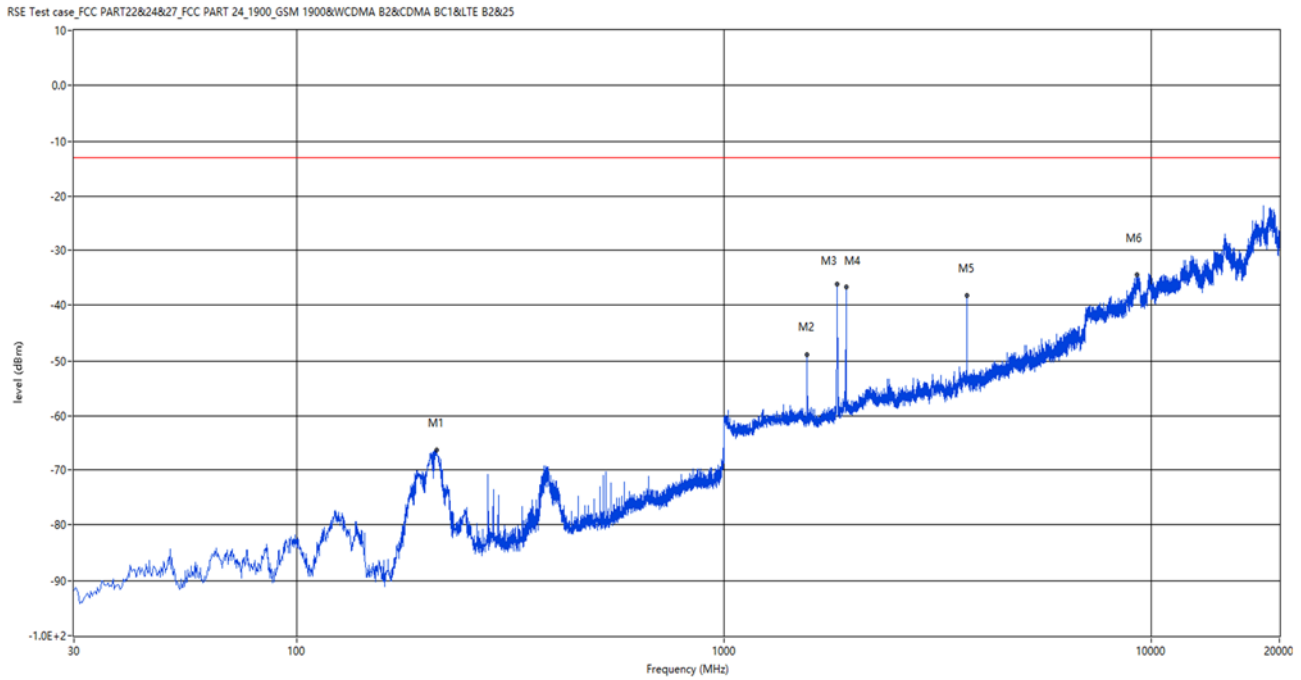
LTE Mode Test Verdict

Test Band	Test Bandwidth	Test Channel	Test Mode	Test RB (Size#Offset)	Refer to Plot[Note3]	Verdict
Band 2	1.4 MHz	MCH	QPSK	RB1#0	4.1	Pass
	3 MHz	MCH	QPSK	RB1#0	4.2	Pass
	5 MHz	MCH	QPSK	RB1#0	4.3	Pass
	10 MHz	MCH	QPSK	RB1#0	4.4	Pass
	15 MHz	MCH	QPSK	RB1#0	4.5	Pass
	20 MHz	MCH	QPSK	RB1#0	4.6	Pass
Band 4	1.4 MHz	MCH	QPSK	RB1#0	5.1	Pass
	3 MHz	MCH	QPSK	RB1#0	5.2	Pass
	5 MHz	MCH	QPSK	RB1#0	5.3	Pass
	10 MHz	MCH	QPSK	RB1#0	5.4	Pass
	15 MHz	MCH	QPSK	RB1#0	5.5	Pass
	20 MHz	MCH	QPSK	RB1#0	5.6	Pass
Band 5	1.4 MHz	MCH	QPSK	RB1#0	6.1	Pass
	3 MHz	MCH	QPSK	RB1#0	6.2	Pass
	5 MHz	MCH	QPSK	RB1#0	6.3	Pass
	10 MHz	MCH	QPSK	RB1#0	6.4	Pass
Band 12	1.4 MHz	MCH	QPSK	RB1#0	7.1	Pass
	3 MHz	MCH	QPSK	RB1#0	7.2	Pass
	5 MHz	MCH	QPSK	RB1#0	7.3	Pass
	10 MHz	MCH	QPSK	RB1#0	7.4	Pass
Band 13	5 MHz	MCH	QPSK	RB1#0	8.1	Pass
	10 MHz	MCH	QPSK	RB1#0	8.2	Pass

1 WCDMA B2

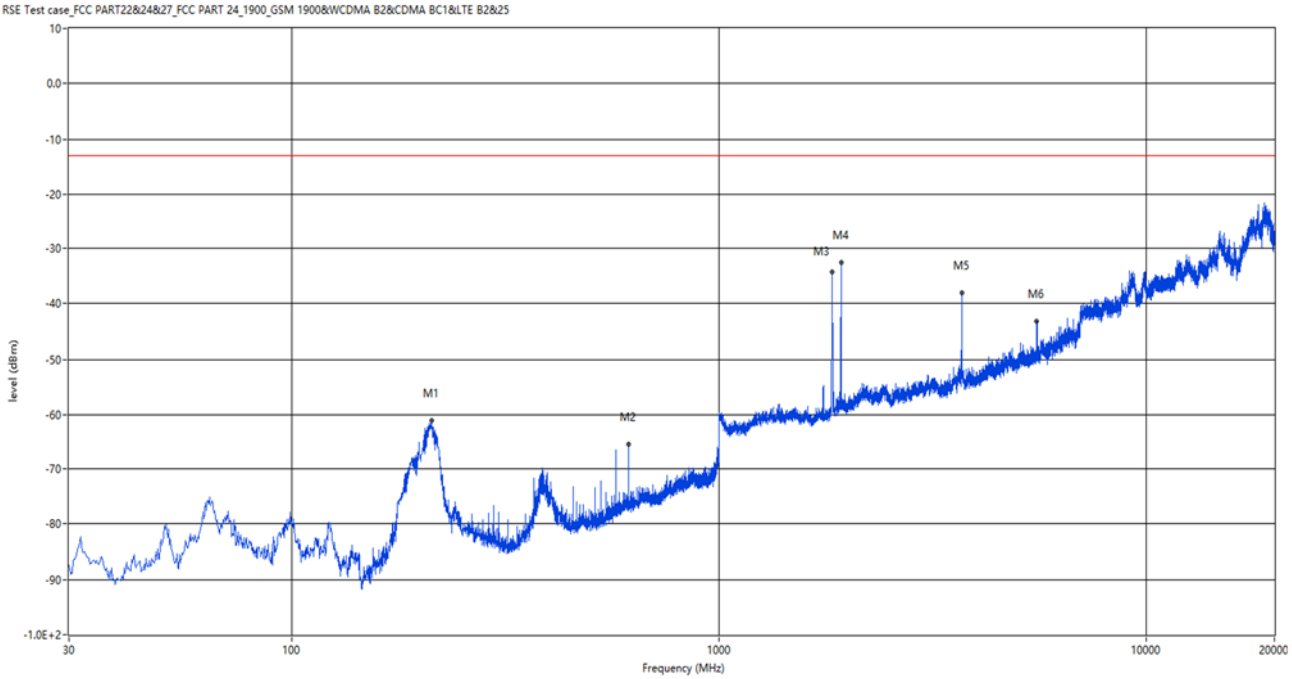
1.1 WCDMA B2 Low Channel

RSE-H WCDMA B2 CH9262 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.875	-66.24	-15.22	-13.0	-53.24	268.00	Horizontal	Horizontal	Pass
1567.000	-48.85	-3.76	-13.0	-35.85	95.00	Horizontal	Horizontal	Pass
1843.000	-36.17	-1.46	-13.0	-23.17	289.00	Horizontal	Horizontal	N/A
1931.500	-36.69	-2.01	-13.0	-23.69	69.00	Horizontal	Horizontal	N/A
3703.000	-38.30	5.29	-13.0	-25.30	192.00	Horizontal	Horizontal	Pass
9284.187	-34.40	36.08	-13.0	-21.40	119.00	Horizontal	Horizontal	Pass

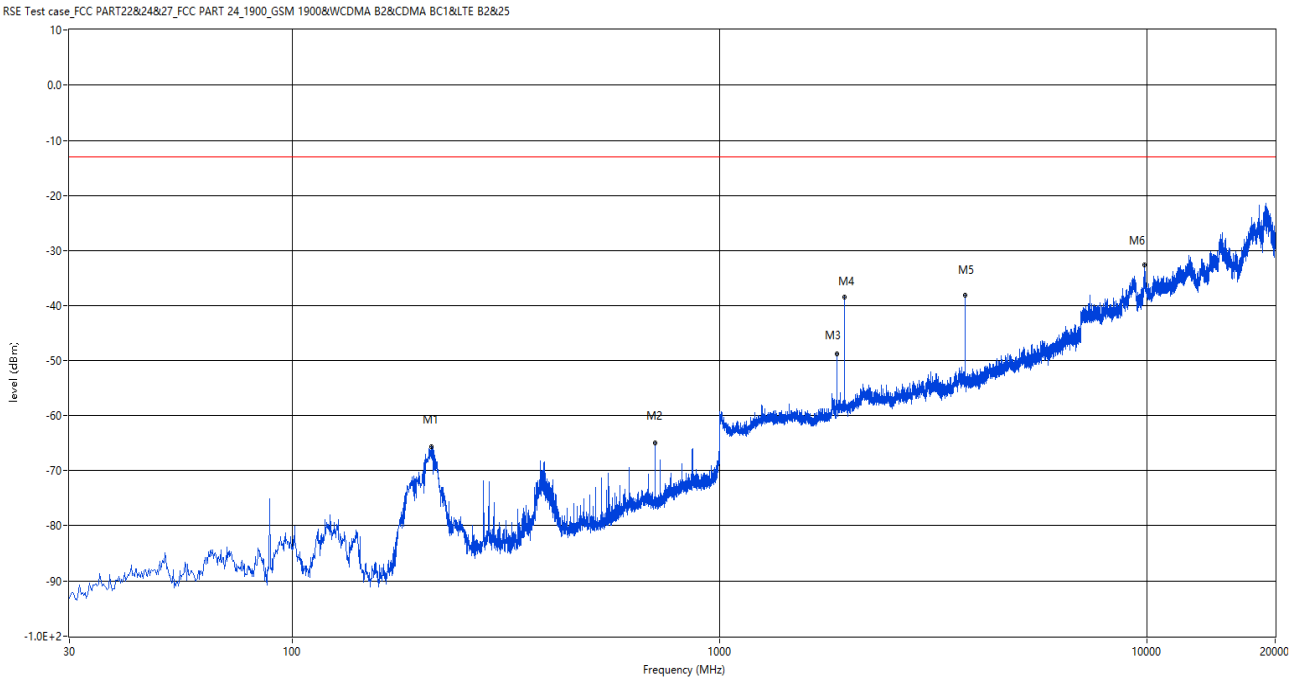
RSE-V WCDMA B2 CH9262 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
212.117	-61.12	-15.19	-13.0	-48.12	0.00	Vertical	Horizontal	Pass
613.213	-65.42	-5.48	-13.0	-52.42	153.00	Vertical	Horizontal	Pass
1843.000	-34.34	-1.46	-13.0	-21.34	302.00	Vertical	Horizontal	N/A
1931.000	-32.55	-2.04	-13.0	-19.55	99.00	Vertical	Horizontal	N/A
3703.000	-38.11	5.29	-13.0	-25.11	188.00	Vertical	Horizontal	Pass
5554.000	-43.25	9.84	-13.0	-30.25	89.00	Vertical	Horizontal	Pass

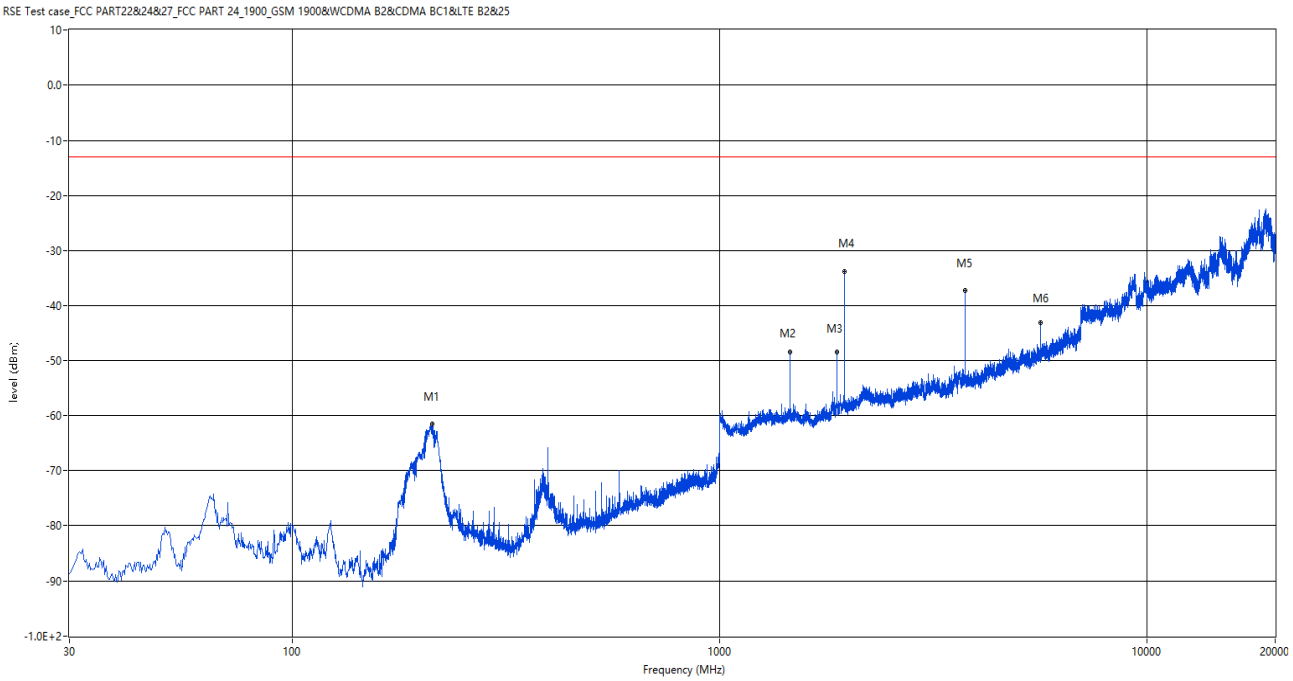
1.2 WCDMA B2 Middle Channel

RSE-H WCDMA B2 CH9400 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.633	-65.76	-15.25	-13.0	-52.76	287.00	Horizontal	Horizontal	Pass
706.333	-65.06	-4.99	-13.0	-52.06	69.00	Horizontal	Horizontal	Pass
1881.000	-48.88	-1.10	-13.0	-35.88	283.00	Horizontal	Horizontal	N/A
1961.500	-38.44	-1.17	-13.0	-25.44	189.00	Horizontal	Horizontal	N/A
3759.000	-38.07	4.98	-13.0	-25.07	169.00	Horizontal	Horizontal	Pass
9905.188	-32.62	36.37	-13.0	-19.62	262.00	Horizontal	Horizontal	Pass

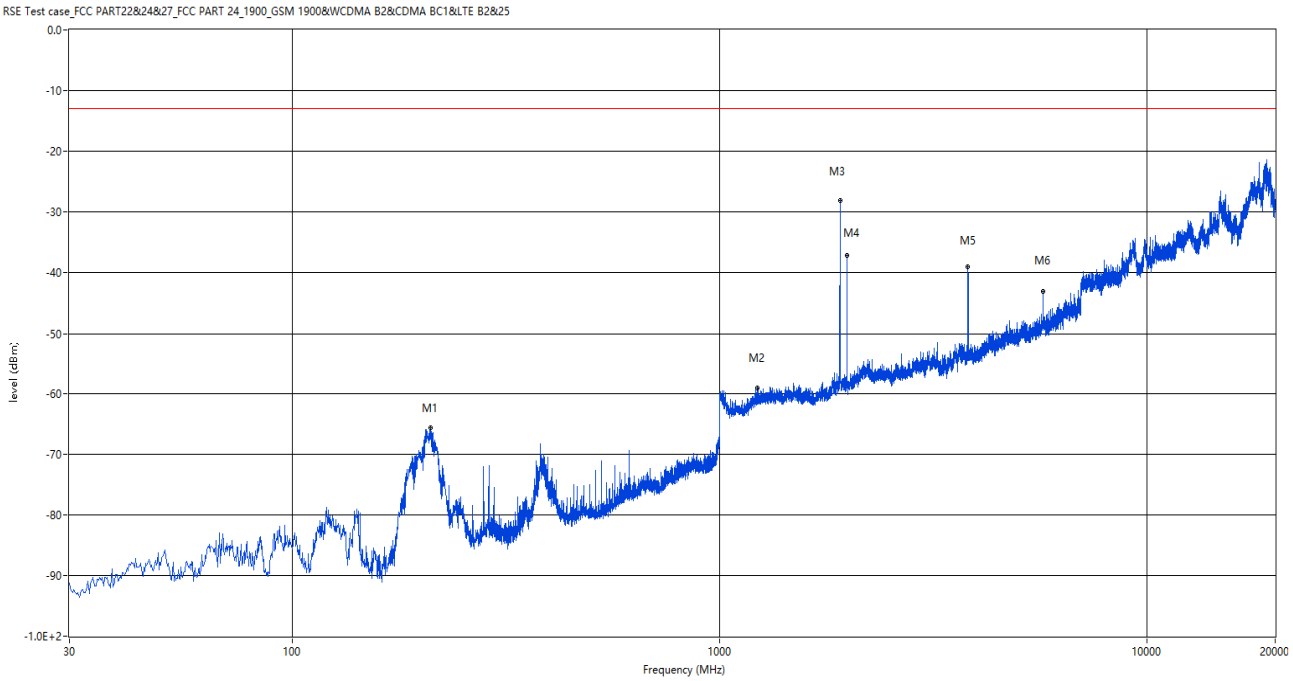
RSE-V WCDMA B2 CH9400 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
212.117	-61.58	-15.19	-13.0	-48.58	355.00	Vertical	Horizontal	Pass
1462.000	-48.51	-3.17	-13.0	-35.51	191.00	Vertical	Horizontal	Pass
1881.500	-48.59	-1.10	-13.0	-35.59	317.00	Vertical	Horizontal	N/A
1959.500	-33.74	-1.30	-13.0	-20.74	97.00	Vertical	Horizontal	N/A
3762.000	-37.17	4.95	-13.0	-24.17	191.00	Vertical	Horizontal	Pass
5640.000	-43.09	10.13	-13.0	-30.09	300.00	Vertical	Horizontal	Pass

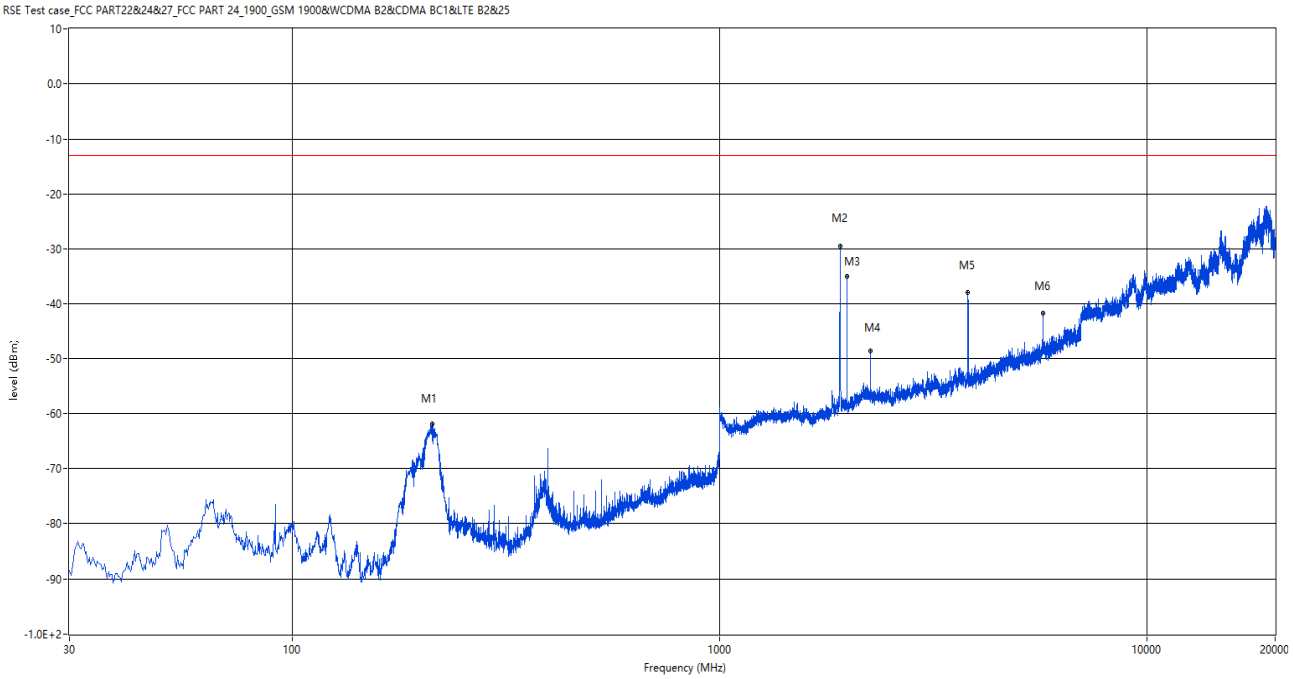
1.3 WCDMA B2 High Channel

RSE-H WCDMA B2 CH9538 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
210.663	-65.70	-15.38	-13.0	-52.70	264.00	Horizontal	Horizontal	Pass
1226.500	-59.14	-3.42	-13.0	-46.14	343.00	Horizontal	Horizontal	Pass
1915.500	-28.16	-0.34	-13.0	-15.16	290.00	Horizontal	Horizontal	N/A
1989.000	-37.17	-2.05	-13.0	-24.17	320.00	Horizontal	Horizontal	N/A
3817.000	-38.96	5.23	-13.0	-25.96	128.00	Horizontal	Horizontal	Pass
5720.000	-43.00	10.88	-13.0	-30.00	189.00	Horizontal	Horizontal	Pass

RSE-V WCDMA B2 CH9538 30MHz-20GHz

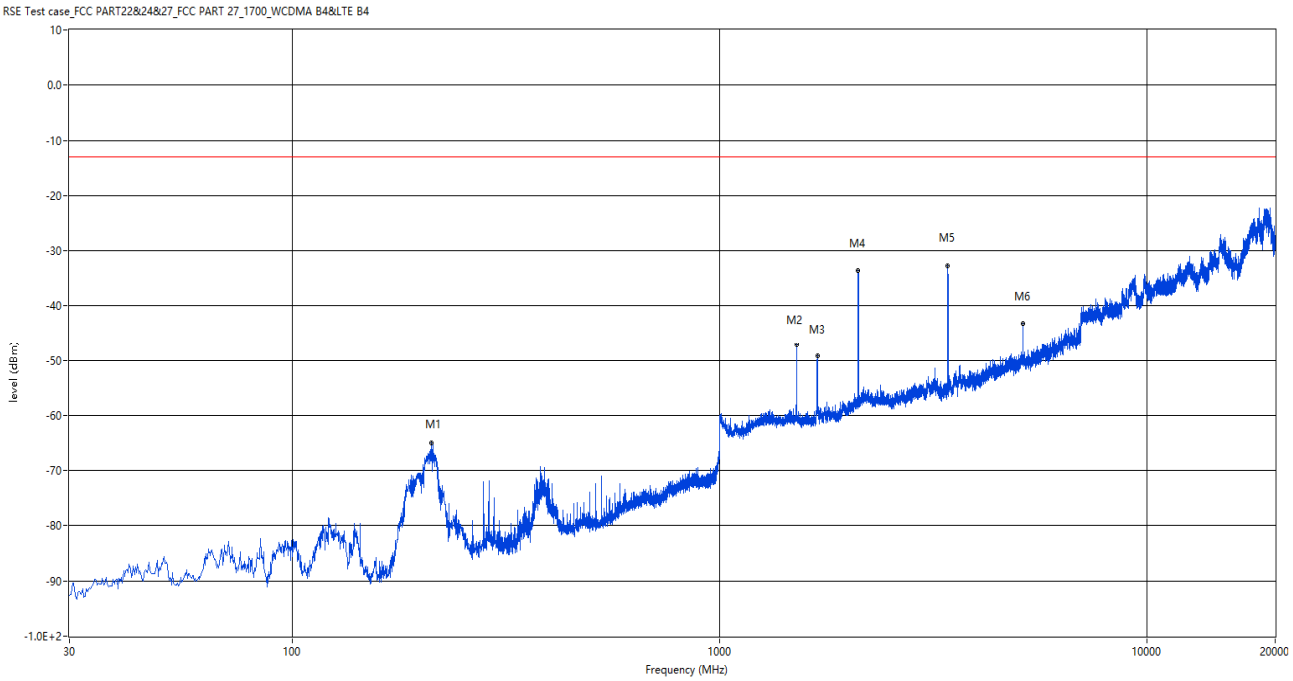


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
212.602	-61.95	-15.13	-13.0	-48.95	0.00	Vertical	Horizontal	Pass
1915.000	-29.39	-0.36	-13.0	-16.39	310.00	Vertical	Horizontal	N/A
1986.500	-34.92	-2.14	-13.0	-21.92	86.00	Vertical	Horizontal	N/A
2256.500	-48.70	0.43	-13.0	-35.70	239.00	Vertical	Horizontal	Pass
3814.000	-37.89	5.13	-13.0	-24.89	201.00	Vertical	Horizontal	Pass
5724.000	-41.74	11.15	-13.0	-28.74	221.00	Vertical	Horizontal	Pass

2 WCDMA B4

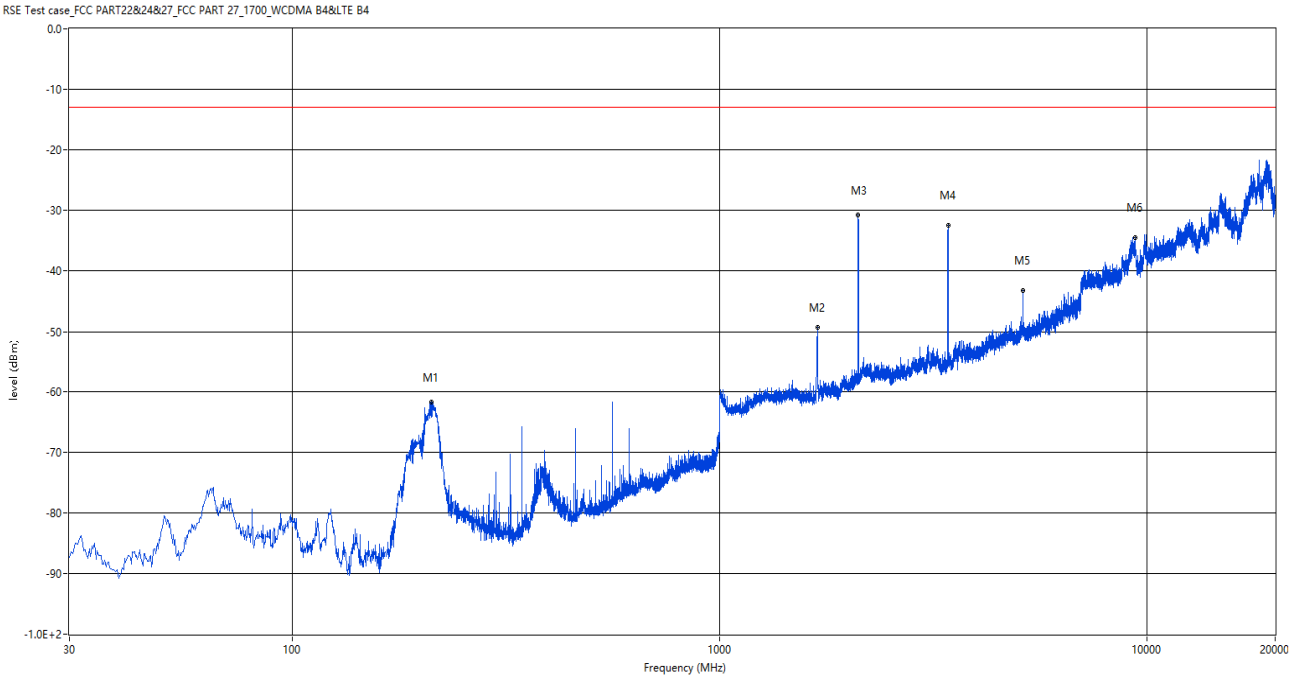
2.1 WCDMA B4 Low Channel

RSE H WCDMA B4 CH1312 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.148	-65.05	-15.27	-13.0	-52.05	277.00	Horizontal	Horizontal	Pass
1517.000	-47.15	-3.40	-13.0	-34.15	87.00	Horizontal	Horizontal	Pass
1694.000	-49.15	-2.45	-13.0	-36.15	255.00	Horizontal	Horizontal	N/A
2112.000	-33.58	-0.70	-13.0	-20.58	187.00	Horizontal	Horizontal	N/A
3422.000	-32.66	3.05	-13.0	-19.66	288.00	Horizontal	Horizontal	Pass
5134.000	-43.27	9.81	-13.0	-30.27	186.00	Horizontal	Horizontal	Pass

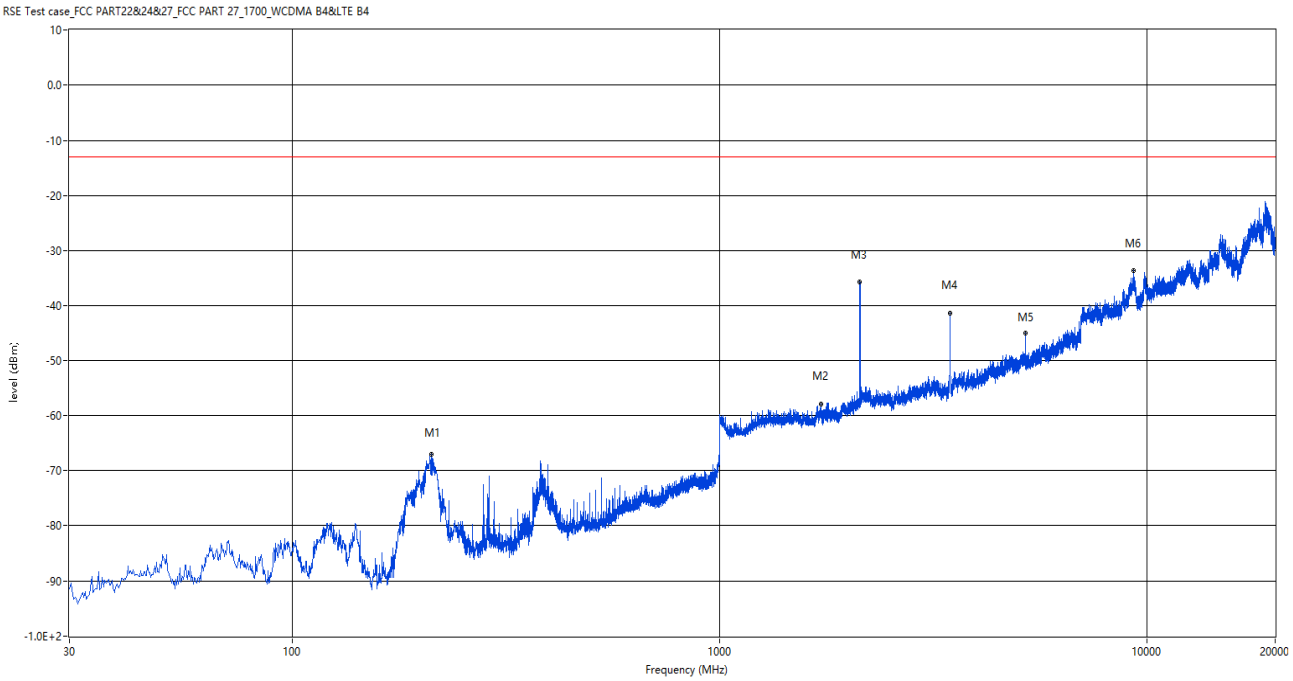
RSE V WCDMA B4 CH1312 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.148	-61.74	-15.27	-13.0	-48.74	30.00	Vertical	Horizontal	Pass
1695.000	-49.28	-2.43	-13.0	-36.28	38.00	Vertical	Horizontal	N/A
2111.500	-30.68	-0.72	-13.0	-17.68	360.00	Vertical	Horizontal	N/A
3427.000	-32.42	3.10	-13.0	-19.42	303.00	Vertical	Horizontal	Pass
5134.000	-43.19	9.81	-13.0	-30.19	39.00	Vertical	Horizontal	Pass
9387.688	-34.48	36.35	-13.0	-21.48	244.00	Vertical	Horizontal	Pass

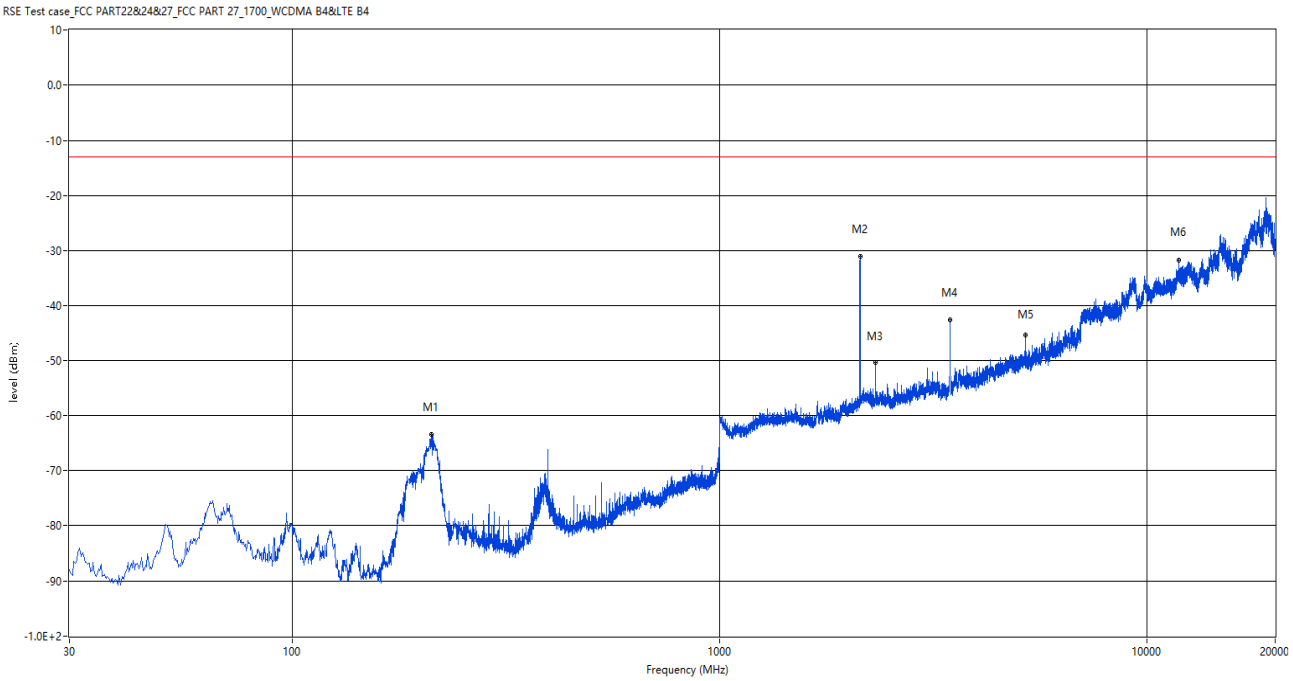
2.2 WCDMA B4 Middle Channel

RSE-H WCDMA B4 CH1412 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.633	-67.04	-15.20	-13.0	-54.04	288.00	Horizontal	Horizontal	Pass
1726.500	-58.04	-2.21	-13.0	-45.04	5.00	Horizontal	Horizontal	Pass
2131.000	-35.67	-0.52	-13.0	-22.67	96.00	Horizontal	Horizontal	N/A
3463.000	-41.23	3.96	-13.0	-28.23	112.00	Horizontal	Horizontal	Pass
5196.000	-44.89	9.12	-13.0	-31.89	180.00	Horizontal	Horizontal	Pass
9305.750	-33.65	35.95	-13.0	-20.65	78.00	Horizontal	Horizontal	Pass

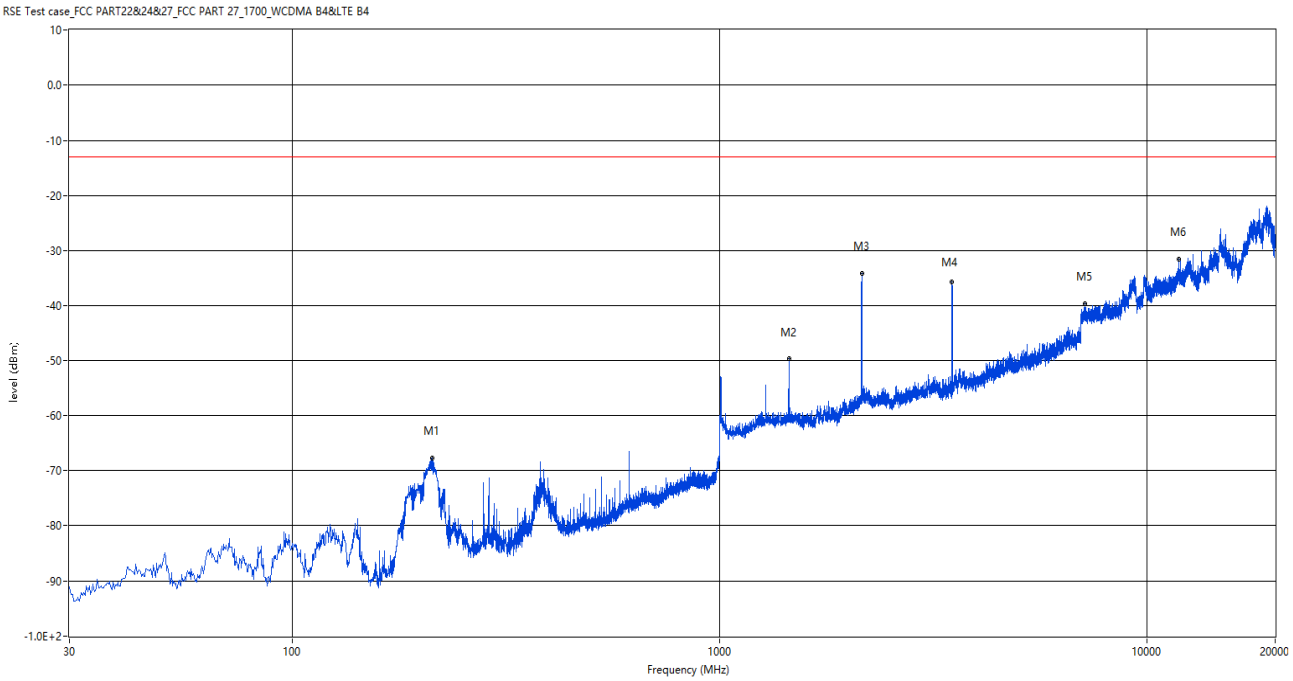
RSE-V WCDMA B4 CH1412 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.633	-63.49	-15.20	-13.0	-50.49	13.00	Vertical	Horizontal	Pass
2132.000	-30.94	-0.49	-13.0	-17.94	87.00	Vertical	Horizontal	N/A
2321.000	-50.37	0.09	-13.0	-37.37	242.00	Vertical	Horizontal	Pass
3467.000	-42.55	3.78	-13.0	-29.55	310.00	Vertical	Horizontal	Pass
5193.000	-45.22	9.14	-13.0	-32.22	327.00	Vertical	Horizontal	Pass
11917.688	-31.75	37.16	-13.0	-18.75	141.00	Vertical	Horizontal	Pass

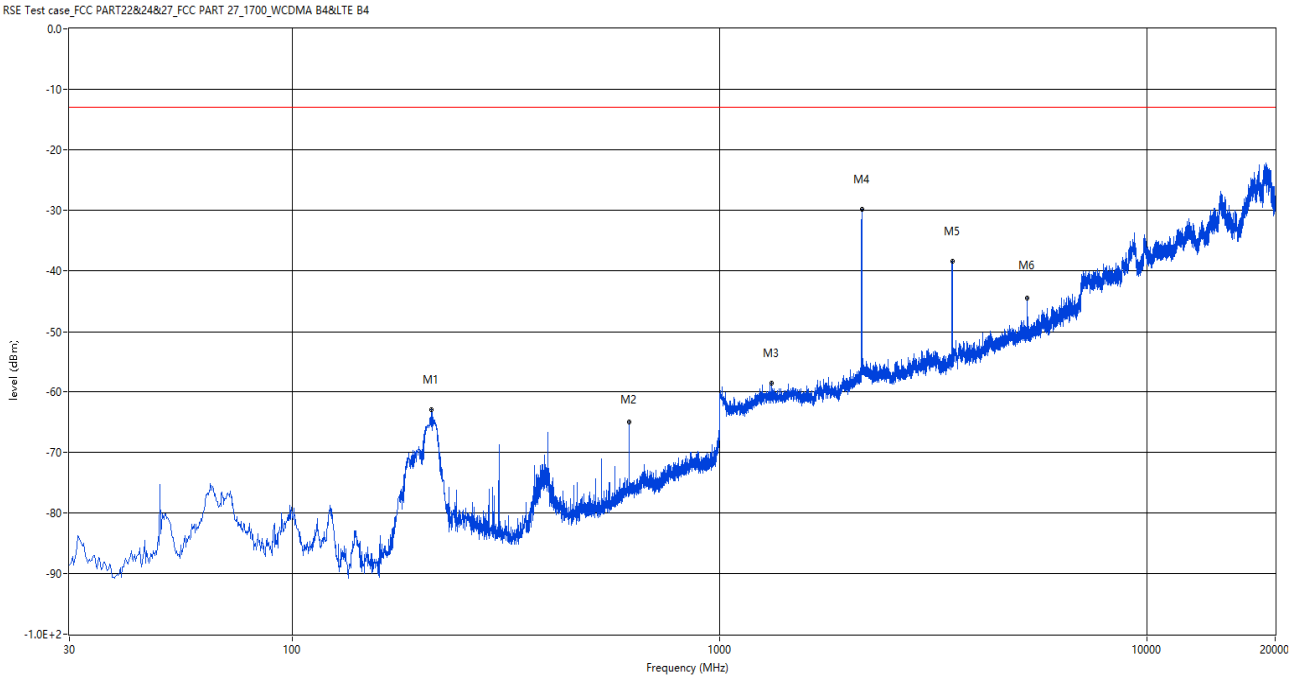
2.3 WCDMA B4 High Channel

RSE-H WCDMA B4 CH1513 30MHz-20GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
212.117	-67.71	-15.13	-13.0	-54.71	288.00	Horizontal	Horizontal	Pass
1452.000	-49.79	-3.20	-13.0	-36.79	87.00	Horizontal	Horizontal	Pass
2152.000	-34.05	0.07	-13.0	-21.05	59.00	Horizontal	Horizontal	N/A
3503.000	-35.66	3.79	-13.0	-22.66	152.00	Horizontal	Horizontal	Pass
7155.250	-39.55	30.53	-13.0	-26.55	360.00	Horizontal	Horizontal	Pass
11910.500	-31.58	37.02	-13.0	-18.58	165.00	Horizontal	Horizontal	Pass

RSE-V WCDMA B4 CH1513 30MHz-20GHz

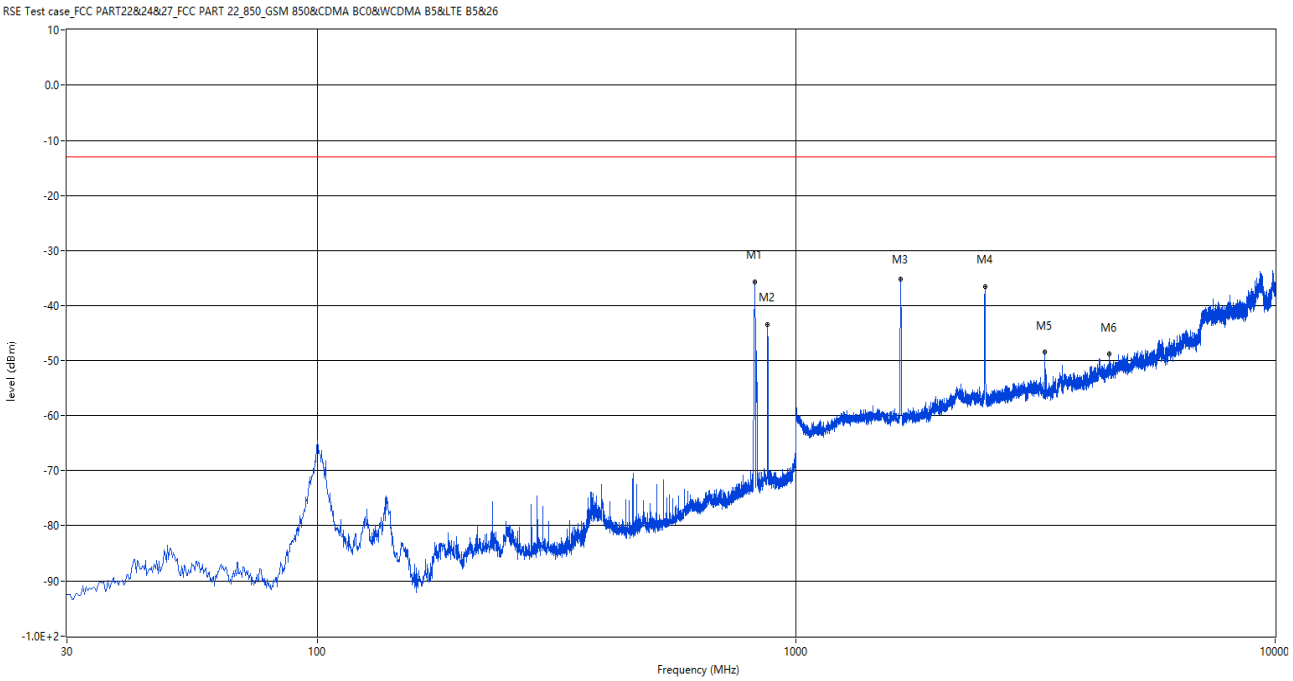


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
211.633	-62.98	-15.20	-13.0	-49.98	0.00	Vertical	Horizontal	Pass
613.213	-65.02	-5.41	-13.0	-52.02	209.00	Vertical	Horizontal	Pass
1323.500	-58.61	-3.30	-13.0	-45.61	71.00	Vertical	Horizontal	Pass
2151.000	-29.82	0.04	-13.0	-16.82	126.00	Vertical	Horizontal	N/A
3508.000	-38.40	3.94	-13.0	-25.40	168.00	Vertical	Horizontal	Pass
5255.000	-44.44	9.33	-13.0	-31.44	315.00	Vertical	Horizontal	Pass

3 WCDMA B5

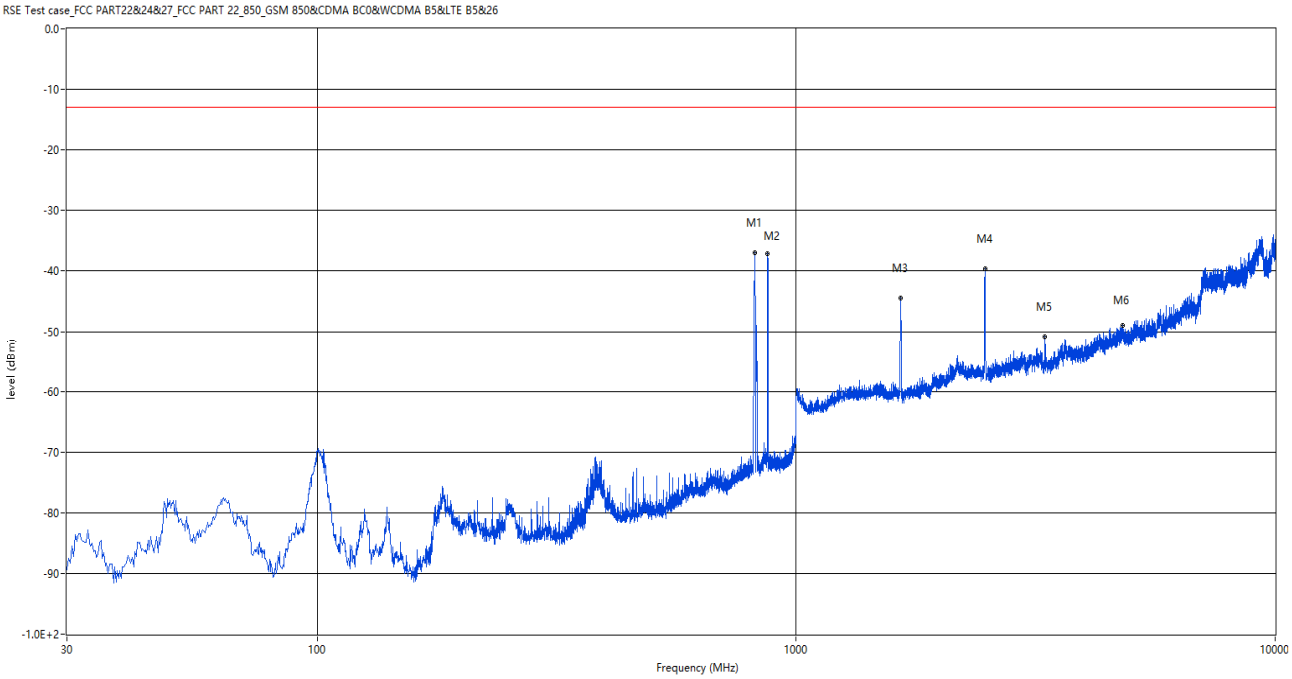
3.1 WCDMA B5 Low Channel

RSE H WCDMA B5 CH14132 30MHz-10GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
818.852	-35.69	-1.54	-13.0	-22.69	221.00	Horizontal	Horizontal	N/A
870.505	-43.42	-1.35	-13.0	-30.42	55.00	Horizontal	Horizontal	N/A
1651.000	-35.19	-4.21	-13.0	-22.19	142.00	Horizontal	Horizontal	Pass
2478.000	-36.56	1.40	-13.0	-23.56	169.00	Horizontal	Horizontal	Pass
3306.000	-48.49	2.65	-13.0	-35.49	93.00	Horizontal	Horizontal	Pass
4506.000	-48.93	7.14	-13.0	-35.93	62.00	Horizontal	Horizontal	Pass

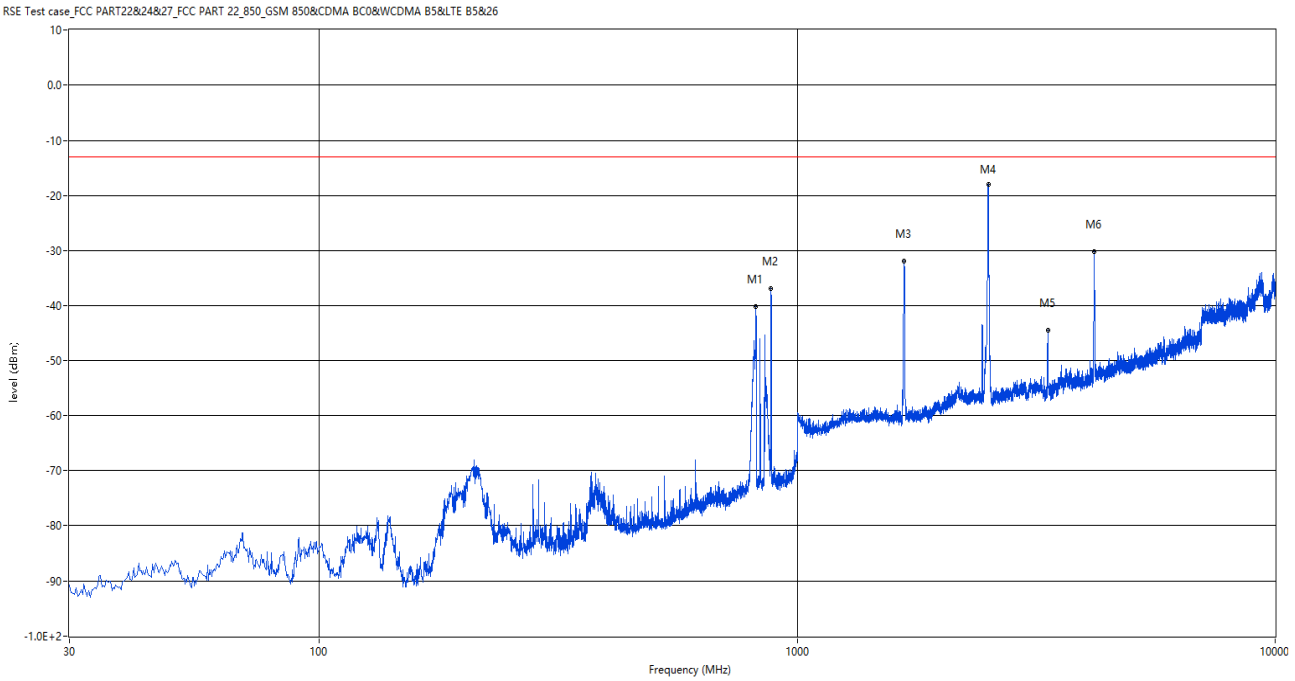
RSE V WCDMA B5 CH4132 30MHz-10GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
820.065	-37.01	-1.51	-13.0	-24.01	360.00	Vertical	Horizontal	N/A
871.233	-37.19	-1.45	-13.0	-24.19	55.00	Vertical	Horizontal	N/A
1650.500	-44.49	-4.16	-13.0	-31.49	43.00	Vertical	Horizontal	Pass
2479.500	-39.59	1.26	-13.0	-26.59	24.00	Vertical	Horizontal	Pass
3308.000	-50.87	2.71	-13.0	-37.87	127.00	Vertical	Horizontal	Pass
4805.000	-49.06	8.41	-13.0	-36.06	181.00	Vertical	Horizontal	Pass

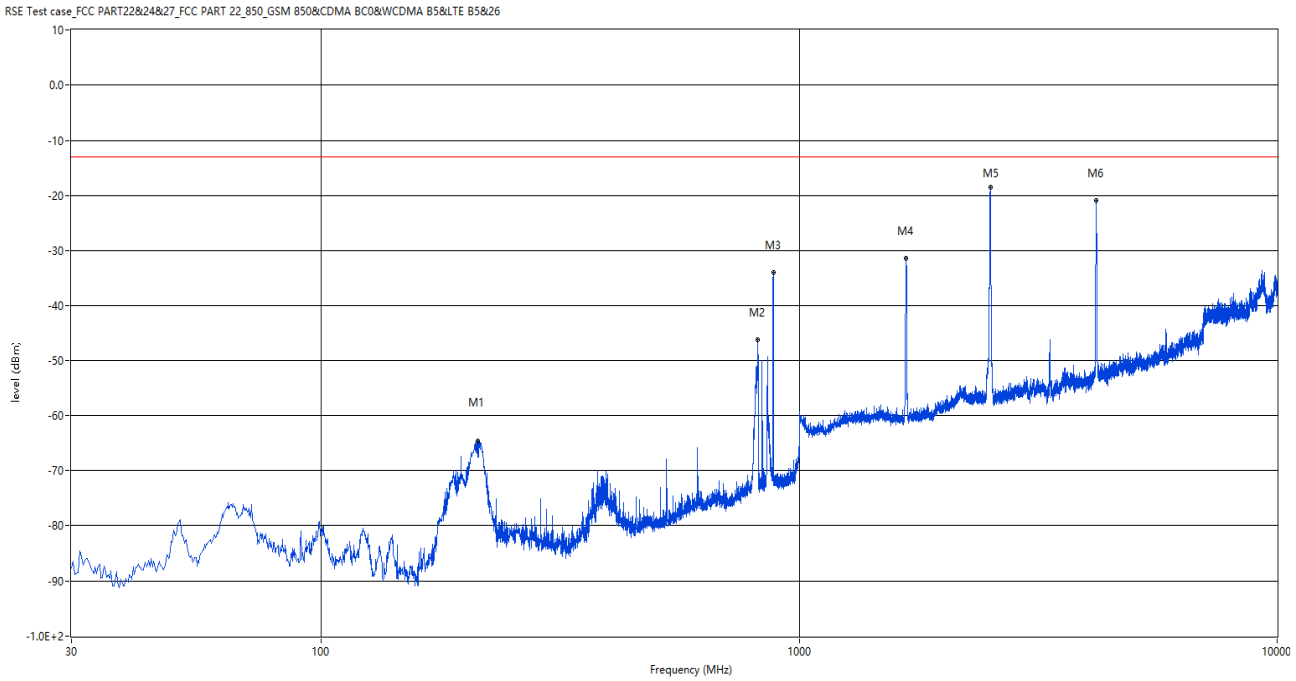
3.2 WCDMA B5 Middle Channel

RSE-H WCDMA B5 CH4182 30MHz-10GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
817.882	-40.05	-1.62	-13.0	-27.05	196.00	Horizontal	Horizontal	N/A
879.962	-36.88	-1.36	-13.0	-23.88	0.00	Horizontal	Horizontal	N/A
1675.000	-31.85	-3.97	-13.0	-18.85	324.00	Horizontal	Horizontal	Pass
2511.000	-17.94	0.68	-13.0	-4.94	140.00	Horizontal	Horizontal	Pass
3348.000	-44.45	3.23	-13.0	-31.45	122.00	Horizontal	Horizontal	Pass
4183.000	-30.15	6.10	-13.0	-17.15	209.00	Horizontal	Horizontal	Pass

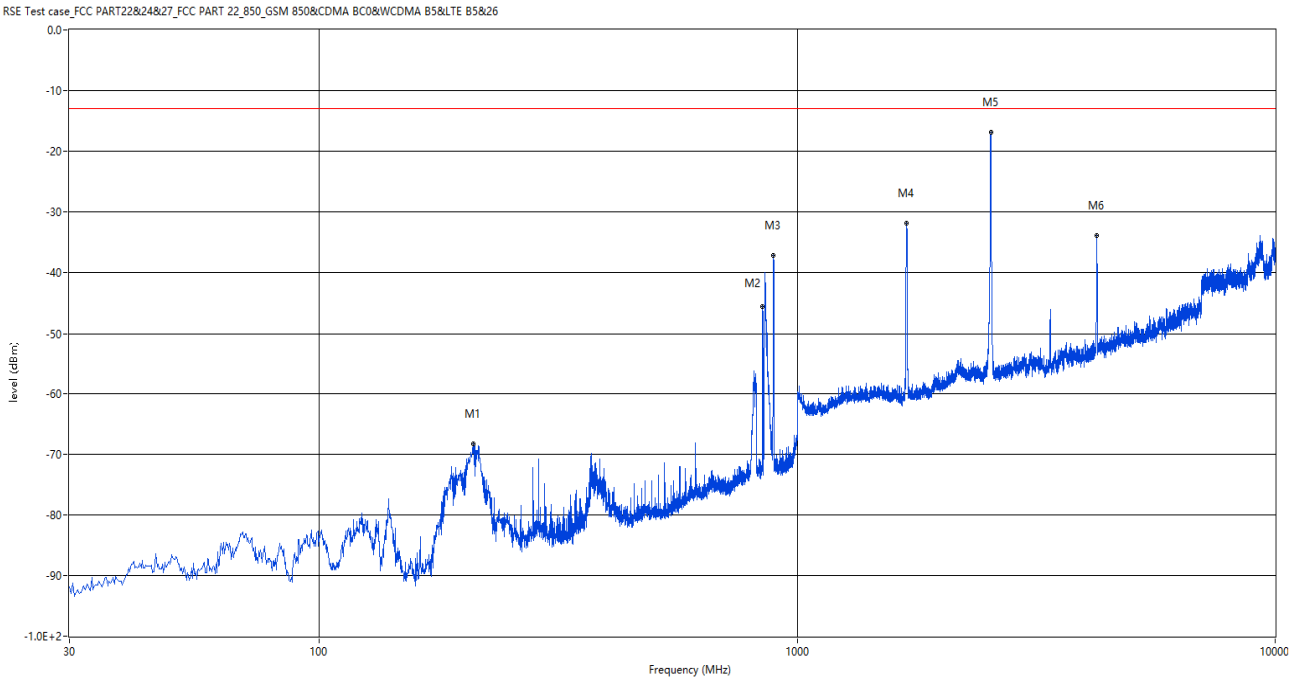
RSE-V WCDMA B5 CH4182 30MHz-10GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
212.602	-64.69	-15.20	-13.0	-51.69	17.00	Vertical	Horizontal	Pass
820.065	-46.12	-1.51	-13.0	-33.12	207.00	Vertical	Horizontal	N/A
882.873	-34.00	-1.40	-13.0	-21.00	67.00	Vertical	Horizontal	N/A
1675.000	-31.43	-3.97	-13.0	-18.43	72.00	Vertical	Horizontal	Pass
2510.500	-18.50	0.71	-13.0	-5.50	308.00	Vertical	Horizontal	Pass
4180.000	-20.96	6.29	-13.0	-7.96	112.00	Vertical	Horizontal	Pass

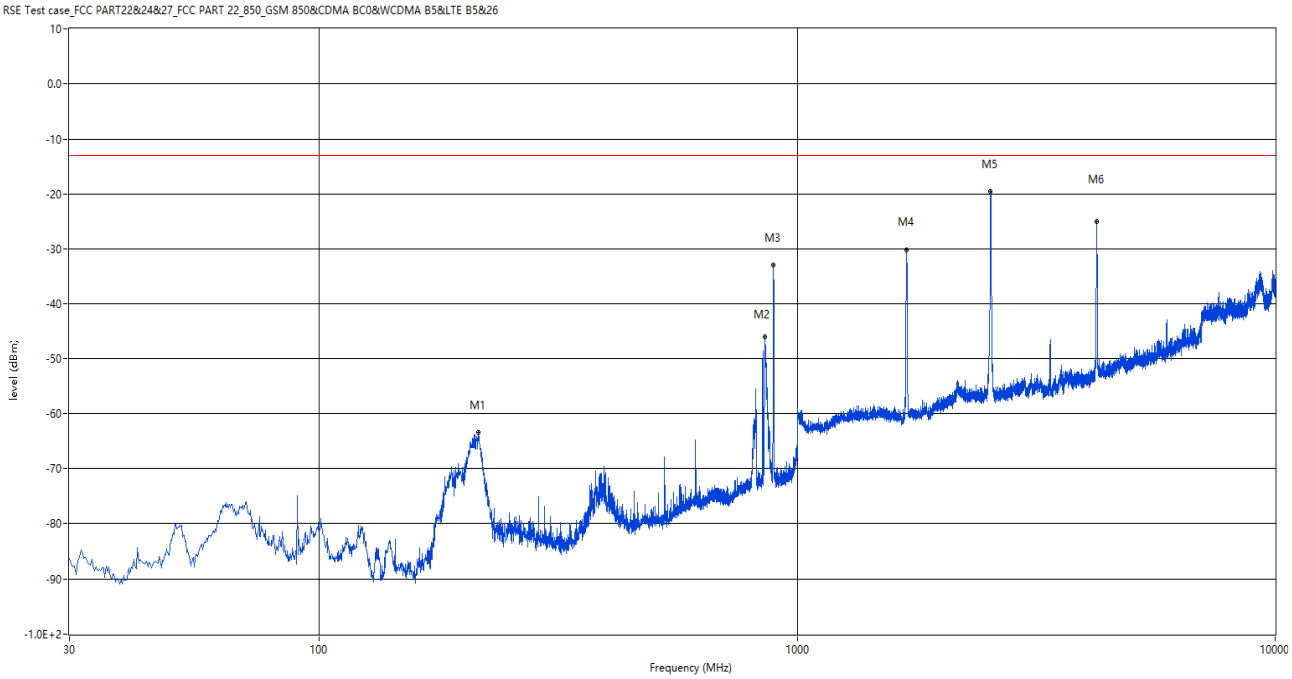
3.3 WCDMA B5 High Channel

RSE-H WCDMA B5 CH4233 30MHz-10GHz



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
209.693	-68.38	-15.39	-13.0	-55.38	259.00	Horizontal	Horizontal	Pass
846.982	-45.53	-1.18	-13.0	-32.53	205.00	Horizontal	Horizontal	N/A
890.633	-37.10	-1.19	-13.0	-24.10	0.00	Horizontal	Horizontal	N/A
1695.500	-31.88	-3.51	-13.0	-18.88	317.00	Horizontal	Horizontal	Pass
2540.000	-16.83	0.23	-13.0	-3.83	113.00	Horizontal	Horizontal	Pass
4234.000	-33.90	6.58	-13.0	-20.90	172.00	Horizontal	Horizontal	Pass

RSE-V WCDMA B5 CH4233 30MHz-10GHz

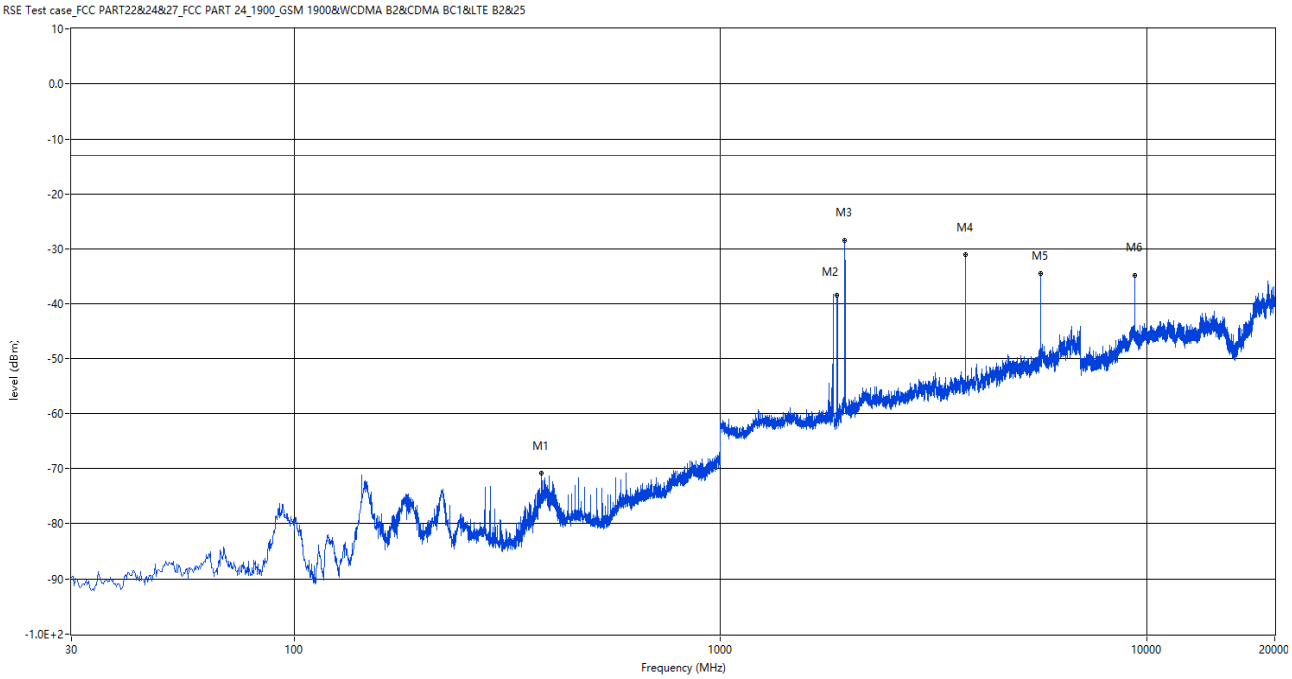


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
215.512	-63.40	-15.09	-13.0	-50.40	6.00	Vertical	Horizontal	Pass
855.955	-45.87	-0.92	-13.0	-32.87	195.00	Vertical	Horizontal	N/A
890.390	-32.88	-1.20	-13.0	-19.88	66.00	Vertical	Horizontal	N/A
1695.000	-30.09	-3.53	-13.0	-17.09	245.00	Vertical	Horizontal	Pass
2539.500	-19.46	0.28	-13.0	-6.46	234.00	Vertical	Horizontal	Pass
4231.000	-24.99	6.59	-13.0	-11.99	124.00	Vertical	Horizontal	Pass

4 LTE Band 2

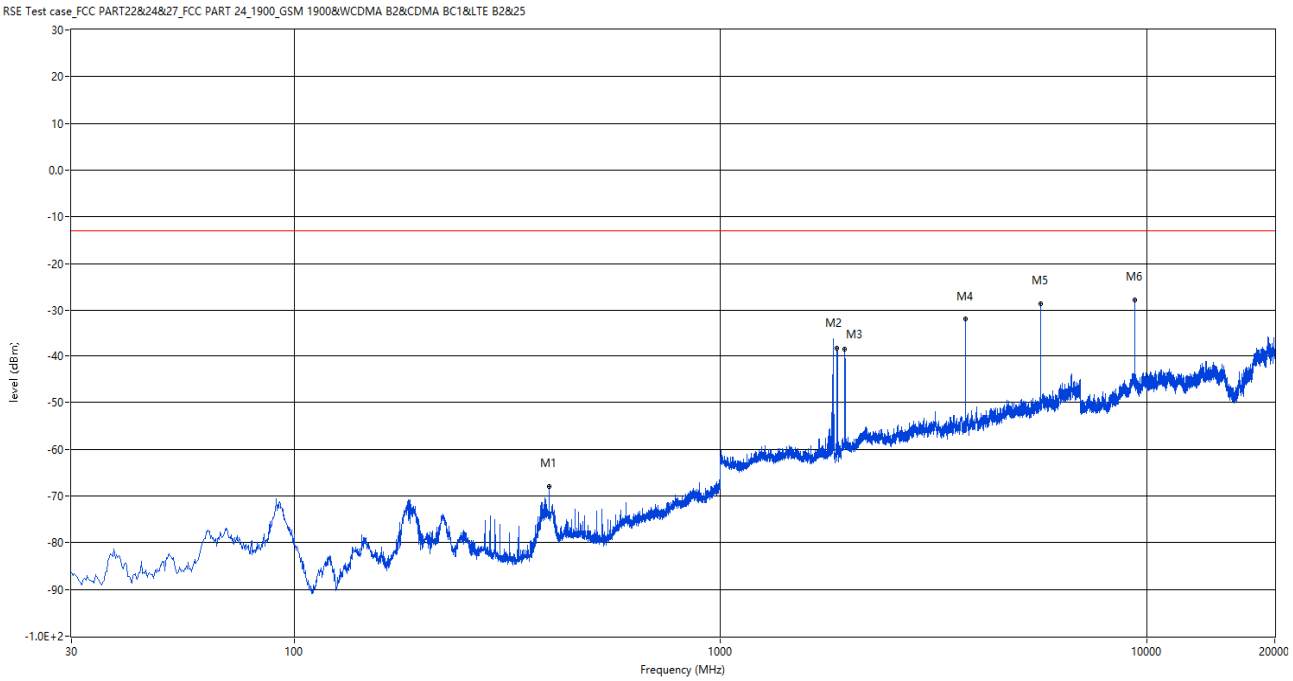
4.1 LTE Band 2 Bandwidth 1.4MHz, Middle Channel

RSE-H 1.4wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
379.927	-70.89	-12.60	-13.0	-57.89	107.00	Horizontal	Horizontal	Pass
1880.000	-38.37	-5.69	-13.0	-25.37	262.00	Horizontal	Horizontal	N/A
1960.500	-28.36	-4.94	-13.0	-15.36	137.00	Horizontal	Horizontal	N/A
3760.000	-31.07	1.91	-13.0	-18.07	89.00	Horizontal	Horizontal	Pass
5639.000	-34.51	6.21	-13.0	-21.51	211.00	Horizontal	Horizontal	Pass
9397.750	-34.80	13.99	-13.0	-21.80	324.00	Horizontal	Horizontal	Pass

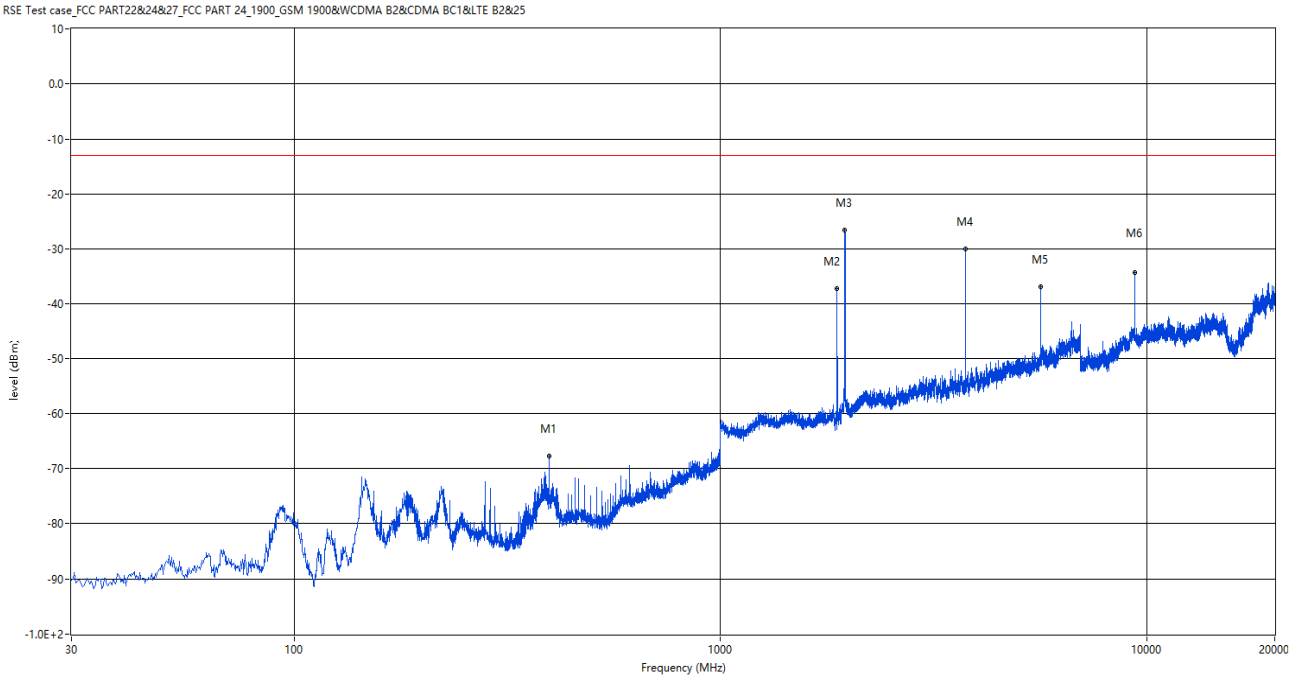
RSE-V 1.4wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.91	-10.95	-13.0	-54.91	0.00	Vertical	Horizontal	Pass
1880.000	-38.39	-5.69	-13.0	-25.39	280.00	Vertical	Horizontal	N/A
1960.500	-38.54	-4.94	-13.0	-25.54	347.00	Vertical	Horizontal	N/A
3760.000	-31.94	1.91	-13.0	-18.94	75.00	Vertical	Horizontal	Pass
5639.000	-28.63	6.21	-13.0	-15.63	58.00	Vertical	Horizontal	Pass
9397.750	-27.78	13.99	-13.0	-14.78	279.00	Vertical	Horizontal	Pass

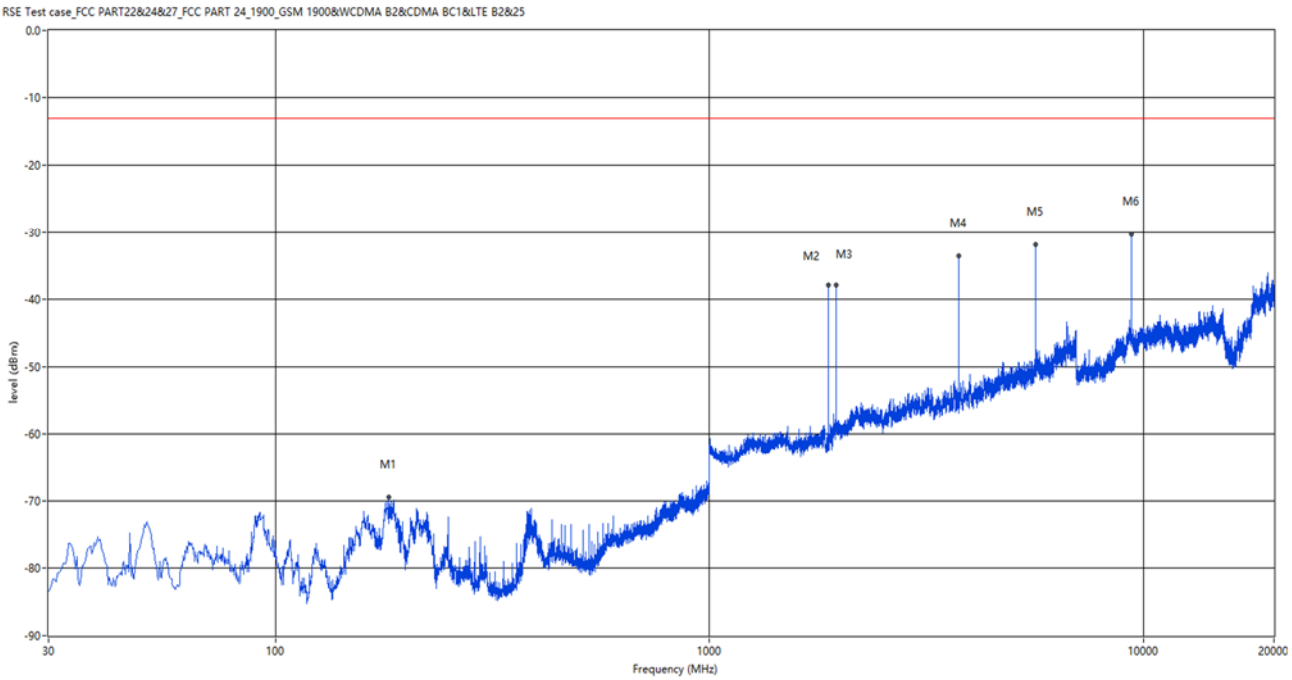
4.2 LTE Band 2 Bandwidth 3MHz, Middle Channel

RSE-H 3wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.70	-10.95	-13.0	-54.70	92.00	Horizontal	Horizontal	Pass
1879.000	-37.27	-5.70	-13.0	-24.27	260.00	Horizontal	Horizontal	N/A
1961.000	-26.61	-4.88	-13.0	-13.61	135.00	Horizontal	Horizontal	N/A
3758.000	-30.00	1.85	-13.0	-17.00	144.00	Horizontal	Horizontal	Pass
5637.000	-36.83	6.07	-13.0	-23.83	164.00	Horizontal	Horizontal	Pass
9394.875	-34.20	13.97	-13.0	-21.20	319.00	Horizontal	Horizontal	Pass

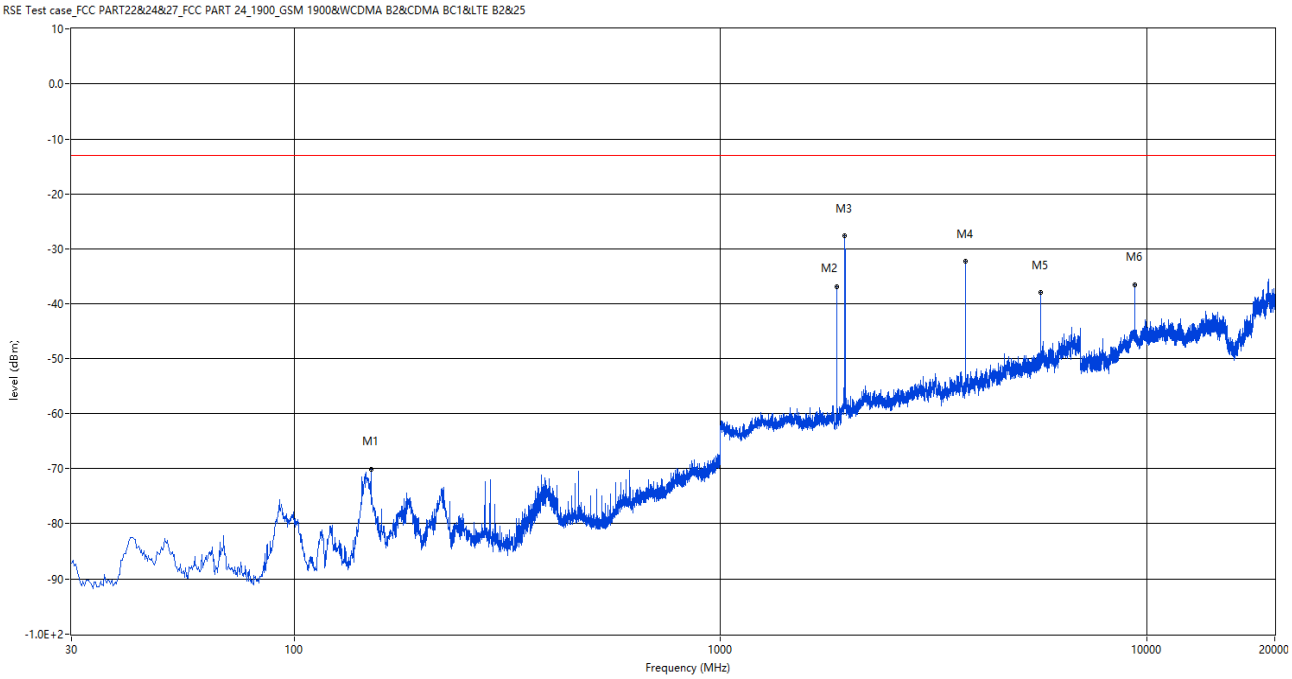
RSE-V 3wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
182.775	-69.53	-16.67	-13.0	-56.53	219.00	Vertical	Horizontal	Pass
1879.500	-37.97	-5.69	-13.0	-24.97	273.00	Vertical	Horizontal	N/A
1961.000	-37.84	-4.88	-13.0	-24.84	20.00	Vertical	Horizontal	N/A
3758.000	-33.53	1.85	-13.0	-20.53	360.00	Vertical	Horizontal	Pass
5637.000	-31.86	6.07	-13.0	-18.86	48.00	Vertical	Horizontal	Pass
9393.438	-30.34	13.96	-13.0	-17.34	276.00	Vertical	Horizontal	Pass

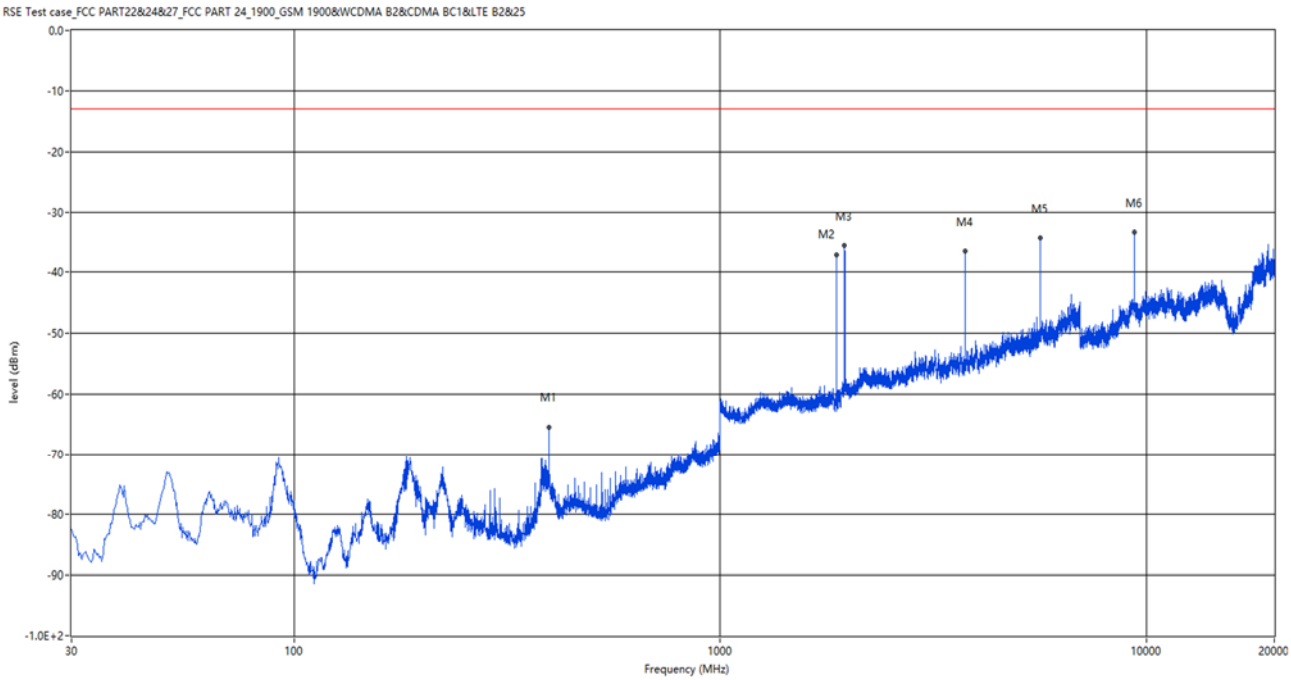
4.3 LTE Band 2 Bandwidth 5MHz, Middle Channel

RSE-H 5wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
151.250	-70.16	-17.24	-13.0	-57.16	283.00	Horizontal	Horizontal	Pass
1878.500	-36.83	-5.70	-13.0	-23.83	267.00	Horizontal	Horizontal	N/A
1960.000	-27.55	-5.00	-13.0	-14.55	31.00	Horizontal	Horizontal	N/A
3756.000	-32.22	1.74	-13.0	-19.22	145.00	Horizontal	Horizontal	Pass
5634.000	-37.92	6.12	-13.0	-24.92	49.00	Horizontal	Horizontal	Pass
9389.125	-36.58	13.93	-13.0	-23.58	159.00	Horizontal	Horizontal	Pass

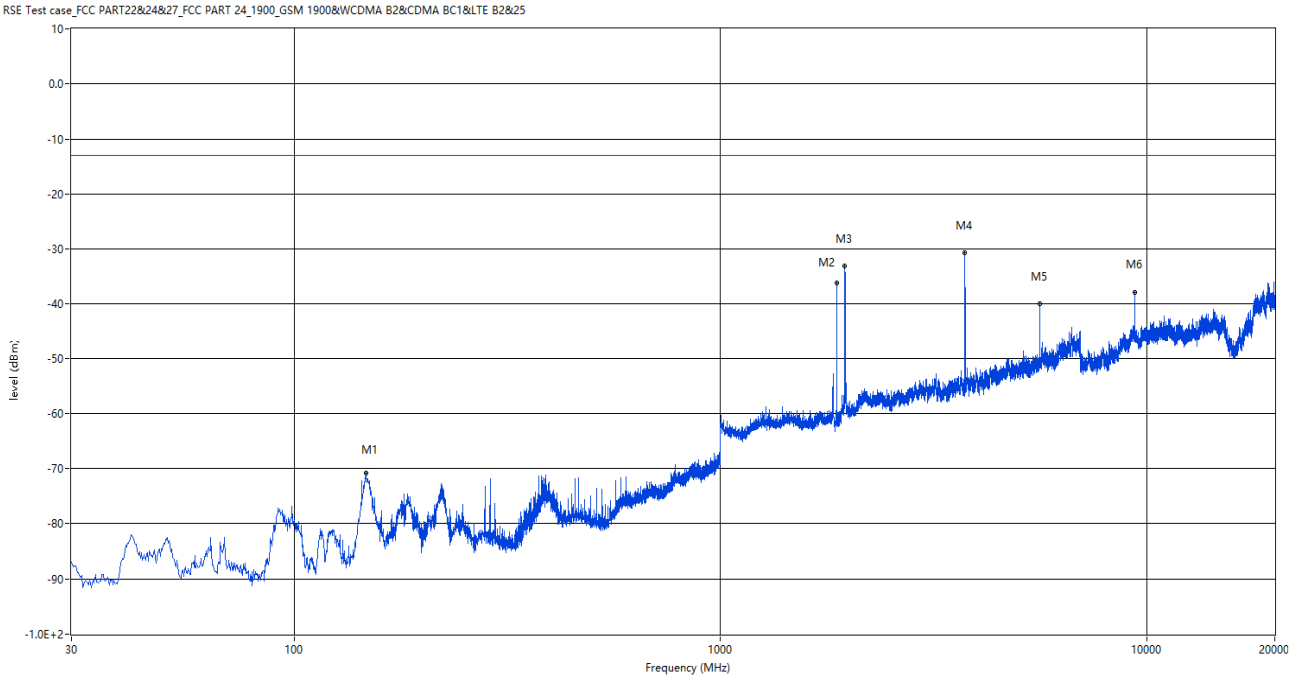
RSE-V 5wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-65.50	-10.95	-13.0	-52.50	348.00	Vertical	Horizontal	Pass
1878.500	-37.07	-5.70	-13.0	-24.07	277.00	Vertical	Horizontal	N/A
1958.500	-35.56	-4.91	-13.0	-22.56	30.00	Vertical	Horizontal	N/A
3756.000	-36.57	1.74	-13.0	-23.57	218.00	Vertical	Horizontal	Pass
5634.000	-34.30	6.12	-13.0	-21.30	280.00	Vertical	Horizontal	Pass
9389.125	-33.32	13.93	-13.0	-20.32	104.00	Vertical	Horizontal	Pass

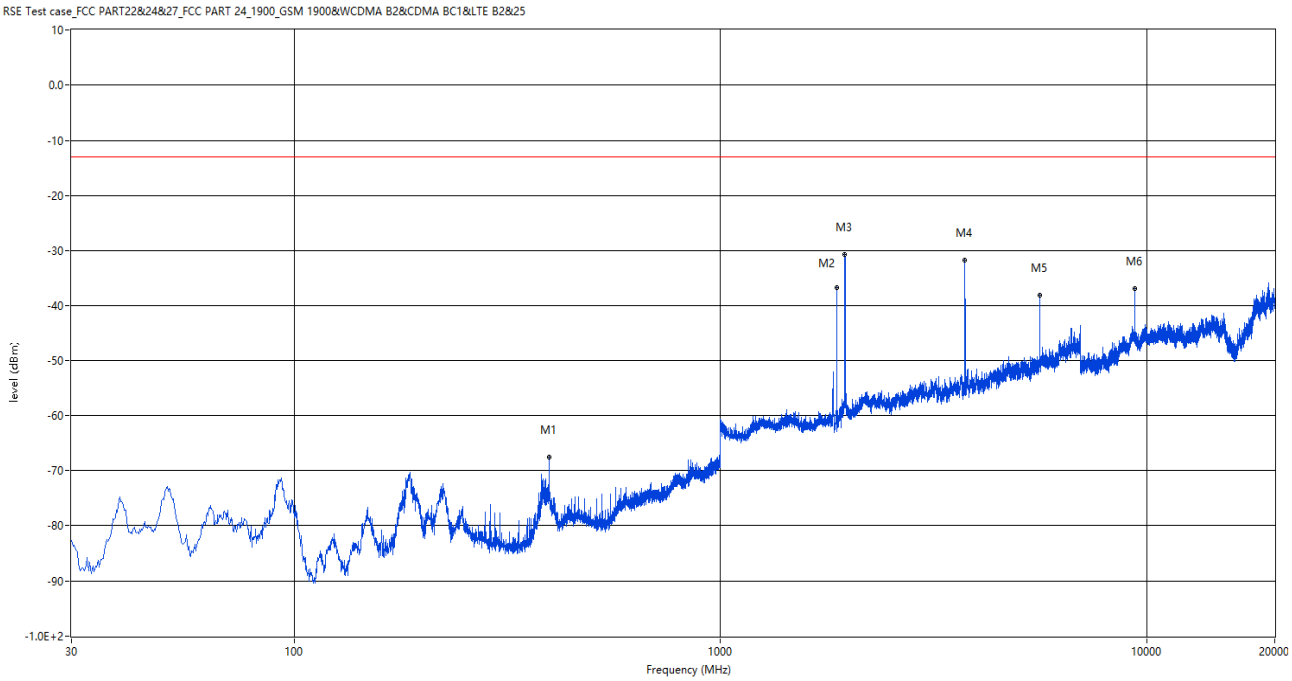
4.4 LTE Band 2 Bandwidth 10MHz, Middle Channel

RSE-H 10wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
147.128	-70.86	-17.66	-13.0	-57.86	314.00	Horizontal	Horizontal	Pass
1876.000	-36.15	-5.72	-13.0	-23.15	257.00	Horizontal	Horizontal	N/A
1960.500	-33.09	-4.94	-13.0	-20.09	23.00	Horizontal	Horizontal	N/A
3752.000	-30.73	1.65	-13.0	-17.73	156.00	Horizontal	Horizontal	Pass
5627.000	-39.99	6.11	-13.0	-26.99	62.00	Horizontal	Horizontal	Pass
9379.063	-37.96	13.85	-13.0	-24.96	76.00	Horizontal	Horizontal	Pass

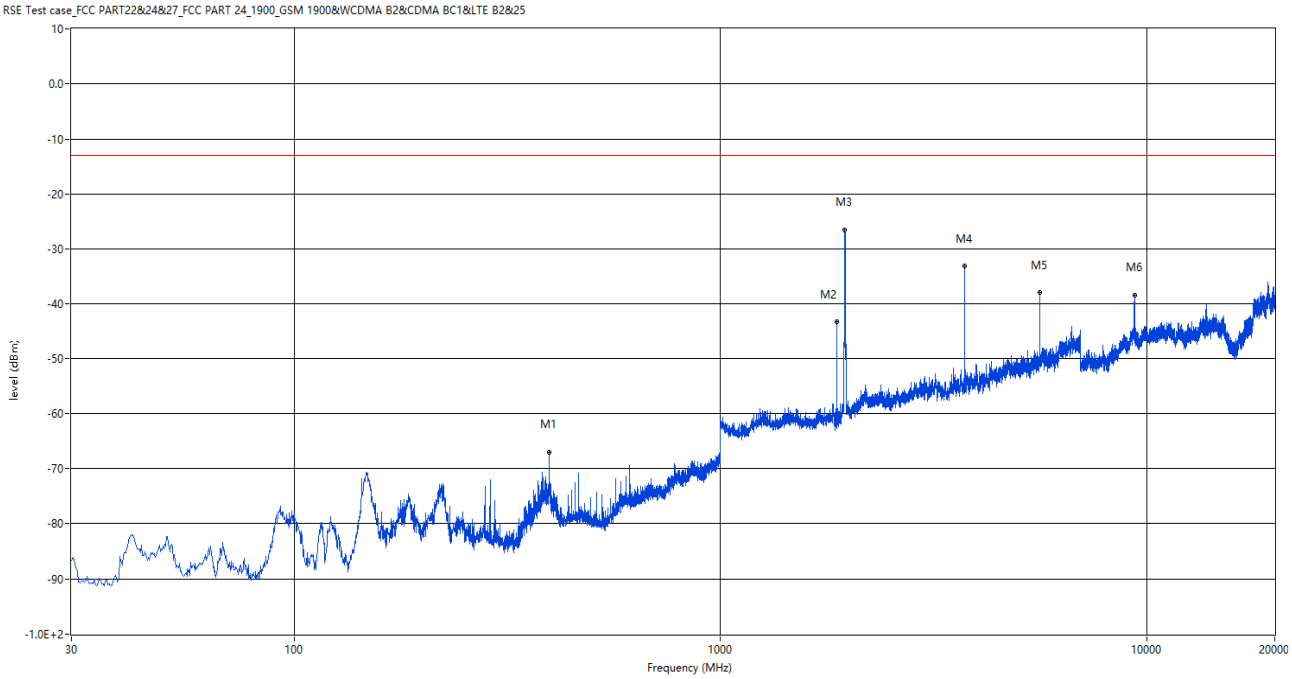
RSE-V 10wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.51	-10.95	-13.0	-54.51	296.00	Vertical	Horizontal	Pass
1876.000	-36.66	-5.72	-13.0	-23.66	270.00	Vertical	Horizontal	N/A
1957.500	-30.76	-4.75	-13.0	-17.76	136.00	Vertical	Horizontal	N/A
3752.000	-31.77	1.65	-13.0	-18.77	84.00	Vertical	Horizontal	Pass
5627.000	-38.00	6.11	-13.0	-25.00	360.00	Vertical	Horizontal	Pass
9379.063	-36.87	13.85	-13.0	-23.87	318.00	Vertical	Horizontal	Pass

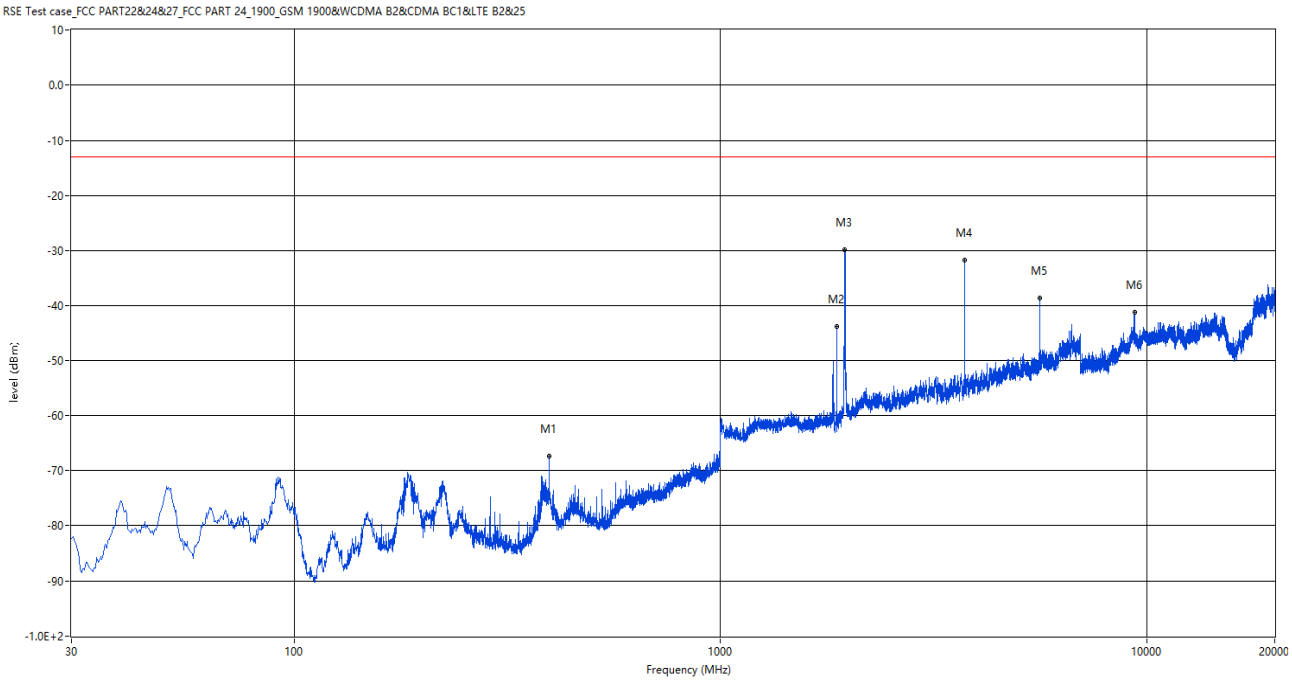
4.5 LTE Band 2 Bandwidth 15MHz, Middle Channel

RSE-H 15wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.02	-10.95	-13.0	-54.02	78.00	Horizontal	Horizontal	Pass
1874.000	-43.22	-5.73	-13.0	-30.22	266.00	Horizontal	Horizontal	N/A
1960.000	-26.48	-5.00	-13.0	-13.48	145.00	Horizontal	Horizontal	N/A
3747.000	-33.08	1.58	-13.0	-20.08	0.00	Horizontal	Horizontal	Pass
5621.000	-37.86	6.20	-13.0	-24.86	50.00	Horizontal	Horizontal	Pass
9367.562	-38.45	13.65	-13.0	-25.45	283.00	Horizontal	Horizontal	Pass

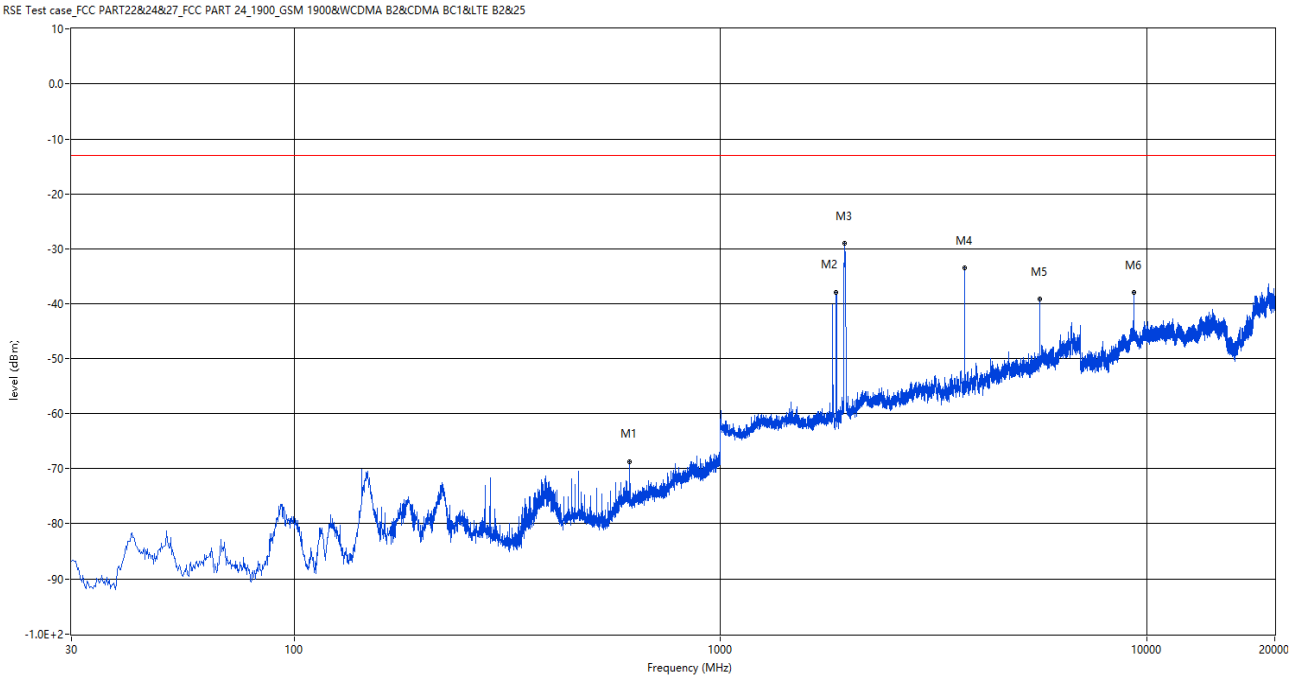
RSE-V 15wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.37	-10.95	-13.0	-54.37	94.00	Vertical	Horizontal	Pass
1874.000	-43.71	-5.73	-13.0	-30.71	254.00	Vertical	Horizontal	N/A
1960.000	-29.82	-5.00	-13.0	-16.82	14.00	Vertical	Horizontal	N/A
3747.000	-31.71	1.58	-13.0	-18.71	17.00	Vertical	Horizontal	Pass
5620.000	-38.63	6.21	-13.0	-25.63	311.00	Vertical	Horizontal	Pass
9367.562	-41.12	13.65	-13.0	-28.12	254.00	Vertical	Horizontal	Pass

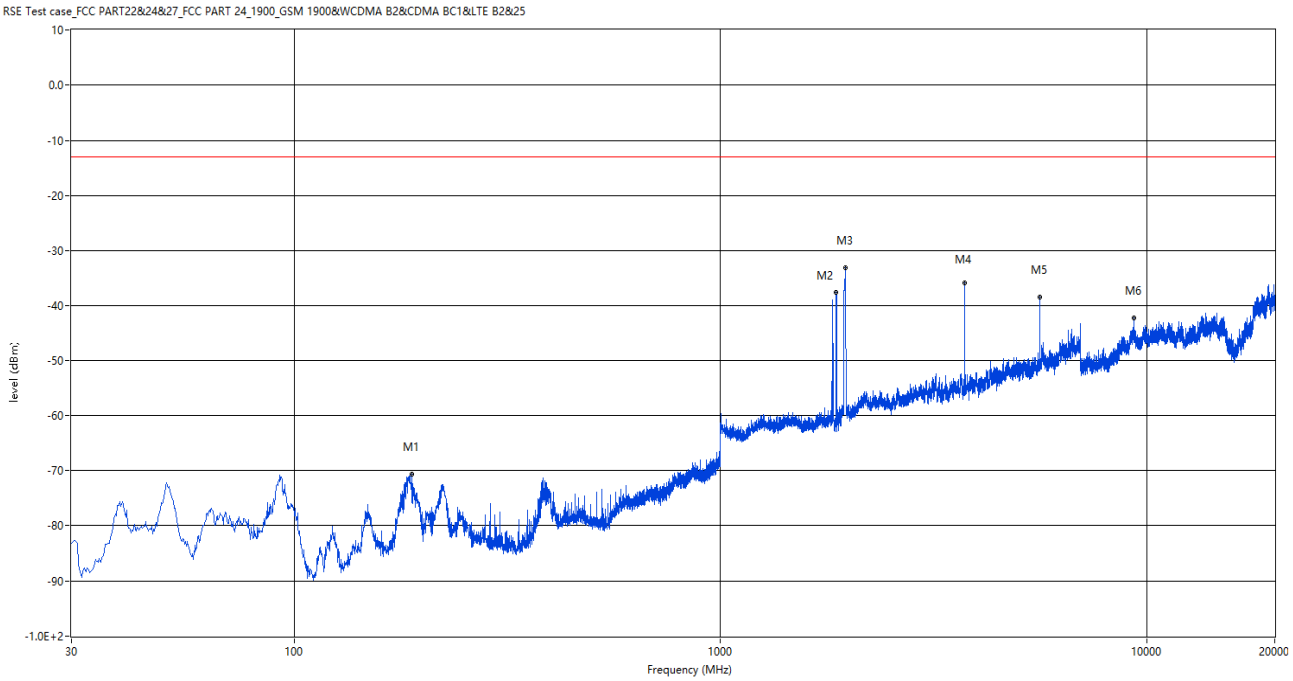
4.6 LTE Band 2 Bandwidth 20MHz, Middle Channel

RSE-H 20wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
613.213	-68.70	-5.76	-13.0	-55.70	325.00	Horizontal	Horizontal	Pass
1871.500	-37.84	-5.75	-13.0	-24.84	264.00	Horizontal	Horizontal	N/A
1960.500	-29.02	-4.94	-13.0	-16.02	25.00	Horizontal	Horizontal	N/A
3743.000	-33.41	1.70	-13.0	-20.41	8.00	Horizontal	Horizontal	Pass
5614.000	-39.13	6.22	-13.0	-26.13	360.00	Horizontal	Horizontal	Pass
9356.063	-37.87	13.51	-13.0	-24.87	313.00	Horizontal	Horizontal	Pass

RSE-V 20wid 30MHz-20GHz MID

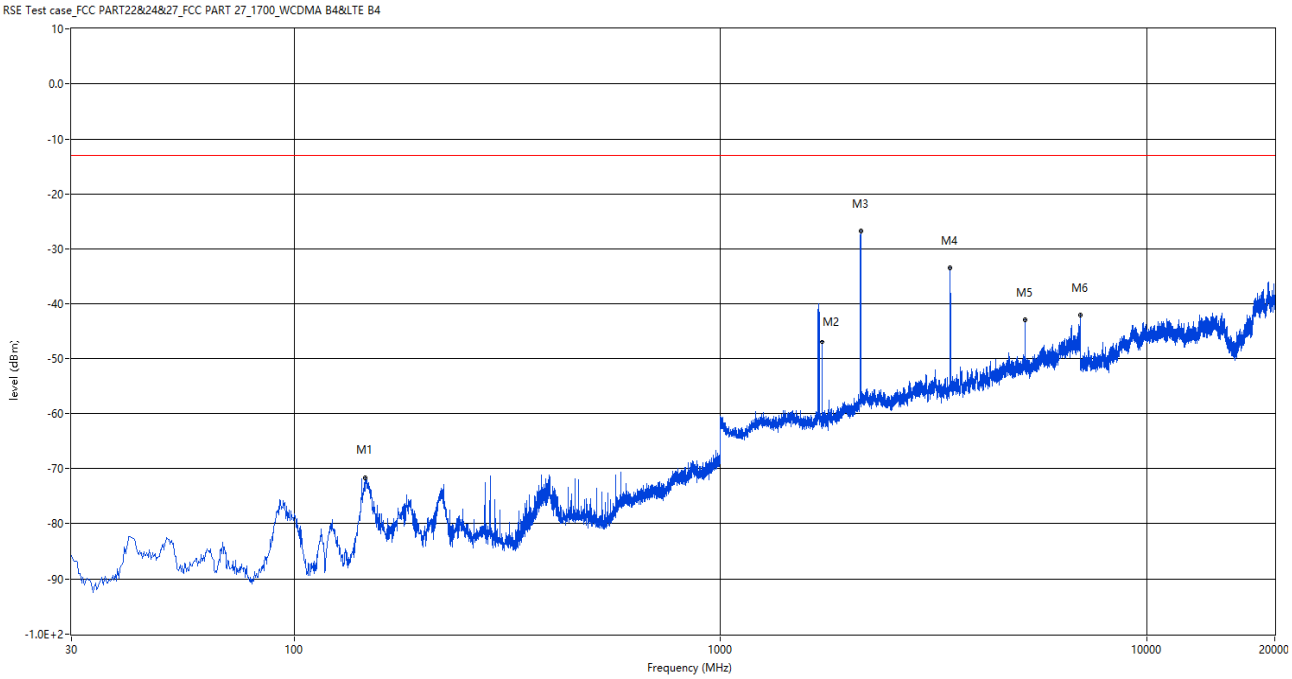


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
188.837	-70.69	-16.93	-13.0	-57.69	119.00	Vertical	Horizontal	Pass
1871.500	-37.54	-5.75	-13.0	-24.54	272.00	Vertical	Horizontal	N/A
1962.500	-33.12	-4.83	-13.0	-20.12	31.00	Vertical	Horizontal	N/A
3743.000	-35.76	1.70	-13.0	-22.76	152.00	Vertical	Horizontal	Pass
5614.000	-38.38	6.22	-13.0	-25.38	304.00	Vertical	Horizontal	Pass
9356.063	-42.14	13.51	-13.0	-29.14	45.00	Vertical	Horizontal	Pass

5 LTE Band 4

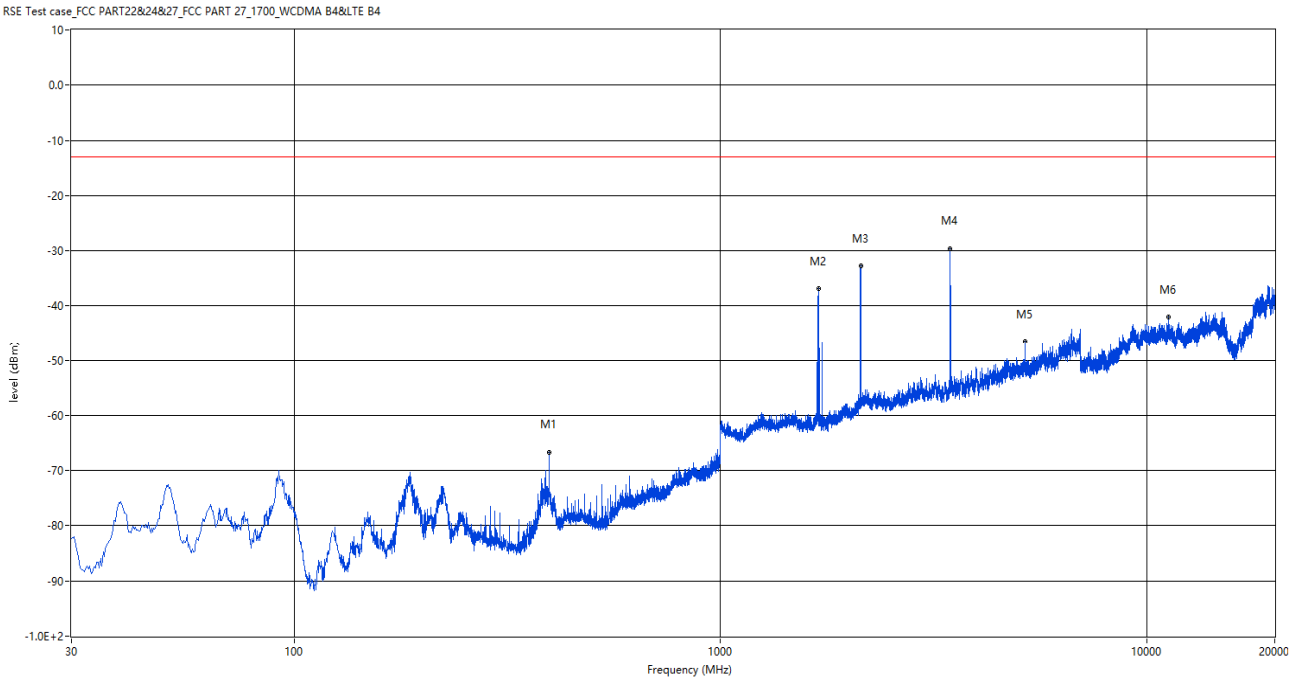
5.1 LTE Band 4 Bandwidth 1.4MHz, Middle Channel

RSE-H 1.4wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
146.885	-71.60	-17.83	-13.0	-58.60	145.00	Horizontal	Horizontal	Pass
1733.500	-47.03	-5.88	-13.0	-34.03	221.00	Horizontal	Horizontal	N/A
2133.000	-26.68	-3.74	-13.0	-13.68	51.00	Horizontal	Horizontal	N/A
3465.000	-33.48	2.05	-13.0	-20.48	33.00	Horizontal	Horizontal	Pass
5197.000	-42.83	5.36	-13.0	-29.83	148.00	Horizontal	Horizontal	Pass
6988.000	-42.04	11.36	-13.0	-29.04	100.00	Horizontal	Horizontal	Pass

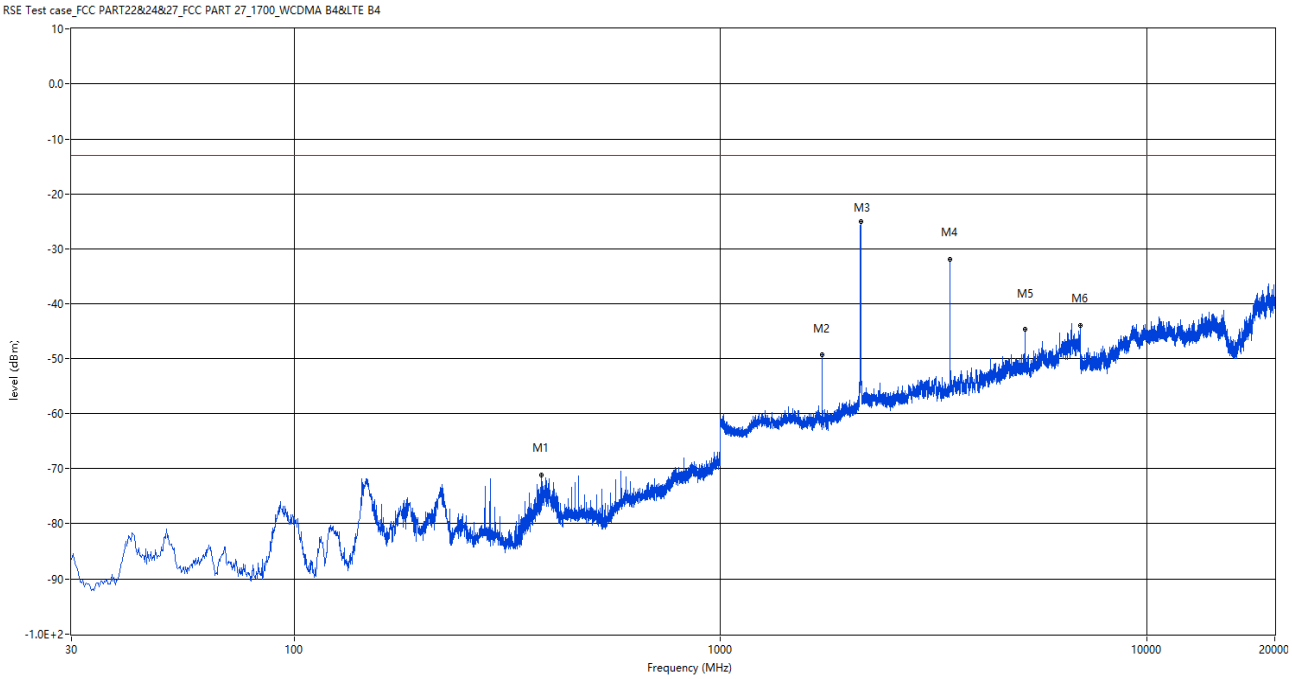
RSE-V 1.4wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-66.69	-11.05	-13.0	-53.69	311.00	Vertical	Horizontal	Pass
1697.000	-36.92	-5.84	-13.0	-23.92	200.00	Vertical	Horizontal	Pass
2133.500	-32.66	-3.66	-13.0	-19.66	127.00	Vertical	Horizontal	N/A
3465.000	-29.56	2.05	-13.0	-16.56	76.00	Vertical	Horizontal	Pass
5199.000	-46.52	5.32	-13.0	-33.52	155.00	Vertical	Horizontal	Pass
11269.375	-42.02	14.66	-13.0	-29.02	206.00	Vertical	Horizontal	Pass

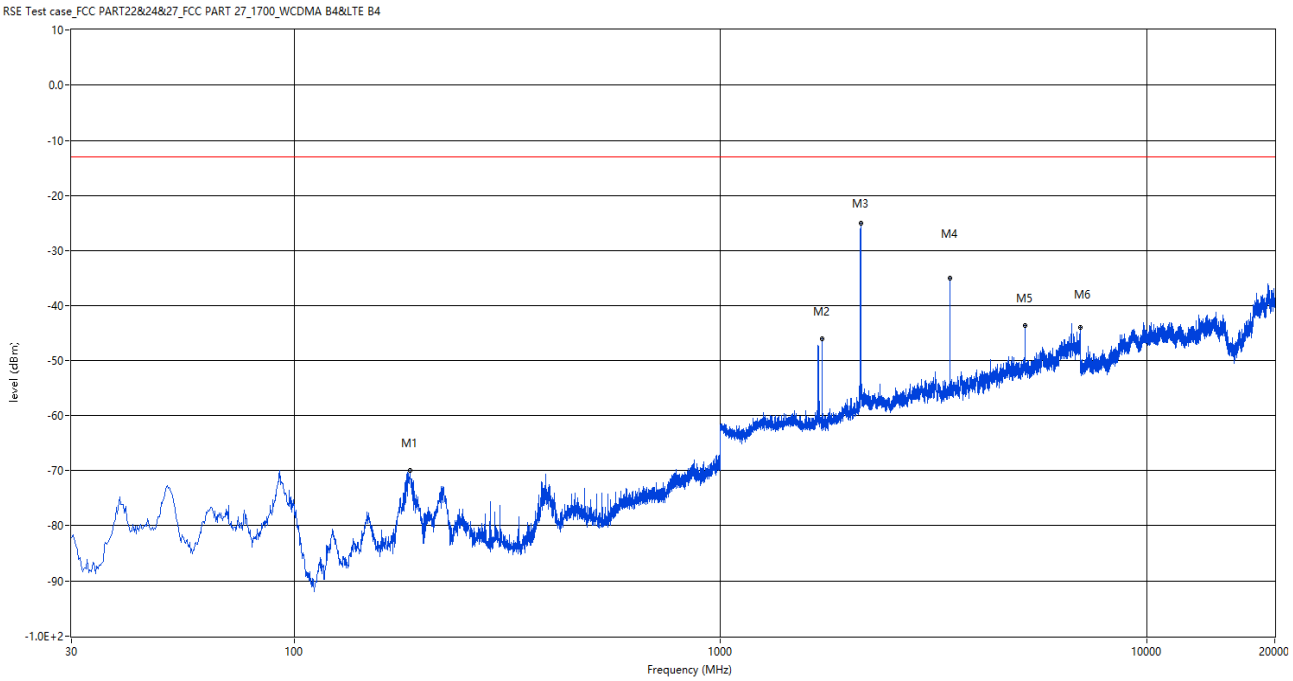
5.2 LTE Band 4 Bandwidth 3MHz, Middle Channel

RSE-H 3wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
380.655	-71.25	-12.37	-13.0	-58.25	96.00	Horizontal	Horizontal	Pass
1732.000	-49.35	-5.87	-13.0	-36.35	259.00	Horizontal	Horizontal	N/A
2133.500	-25.09	-3.66	-13.0	-12.09	114.00	Horizontal	Horizontal	N/A
3463.000	-31.90	2.08	-13.0	-18.90	97.00	Horizontal	Horizontal	Pass
5194.000	-44.58	5.42	-13.0	-31.58	165.00	Horizontal	Horizontal	Pass
6984.000	-43.94	11.26	-13.0	-30.94	244.00	Horizontal	Horizontal	Pass

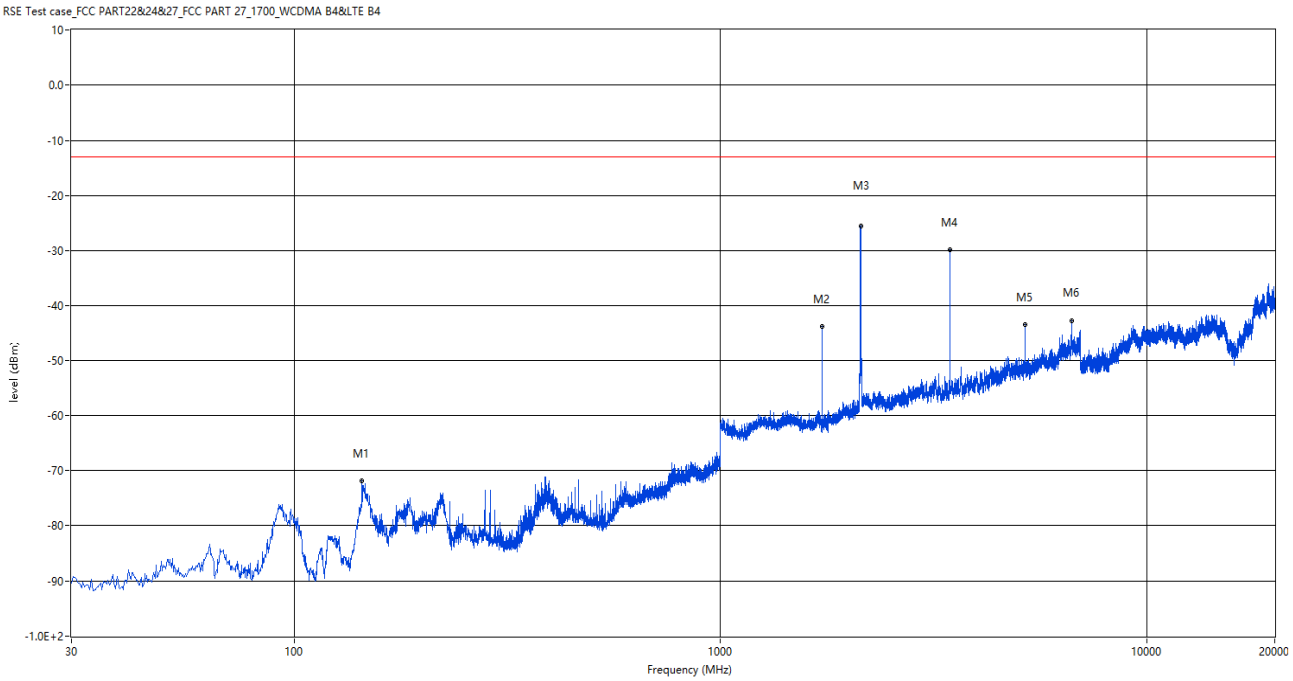
RSE-V 3wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
187.383	-69.93	-16.47	-13.0	-56.93	148.00	Vertical	Horizontal	Pass
1734.000	-45.92	-5.89	-13.0	-32.92	221.00	Vertical	Horizontal	N/A
2134.000	-25.07	-3.60	-13.0	-12.07	44.00	Vertical	Horizontal	N/A
3463.000	-34.91	2.08	-13.0	-21.91	127.00	Vertical	Horizontal	Pass
5194.000	-43.49	5.42	-13.0	-30.49	152.00	Vertical	Horizontal	Pass
6997.000	-43.88	11.20	-13.0	-30.88	188.00	Vertical	Horizontal	Pass

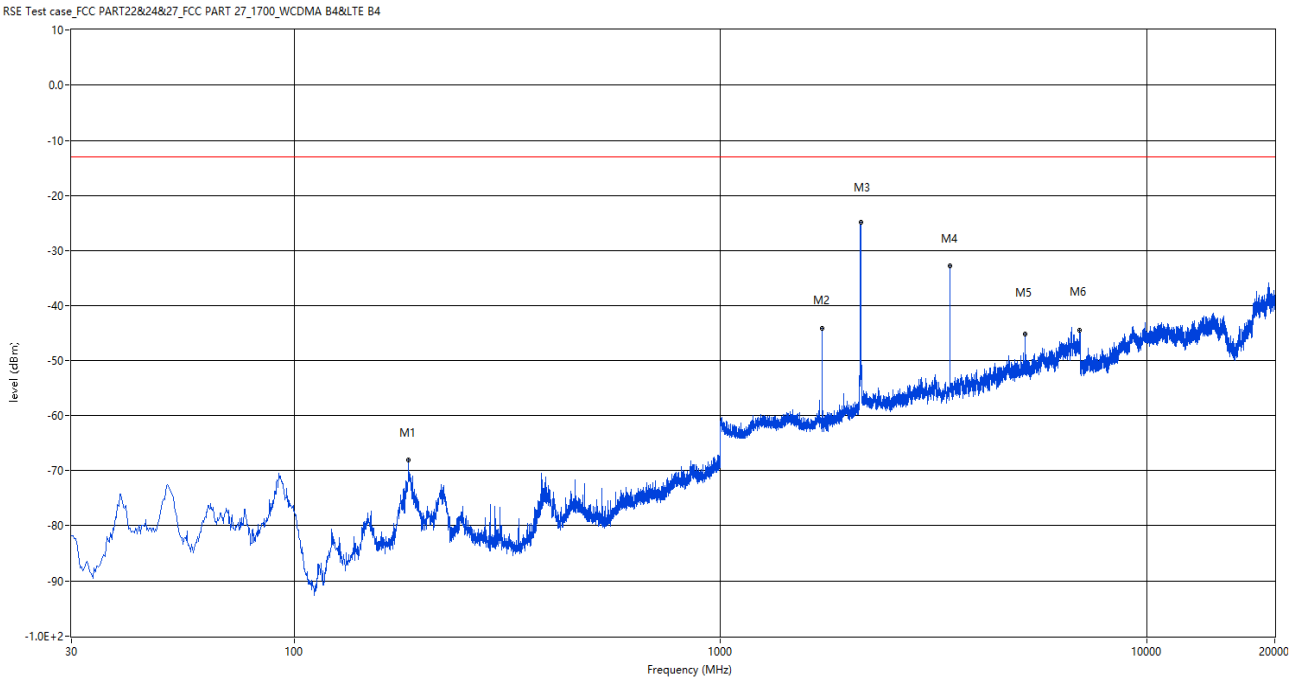
5.3 LTE Band 4 Bandwidth 5MHz, Middle Channel

RSE-H 5wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
143.975	-71.88	-18.42	-13.0	-58.88	300.00	Horizontal	Horizontal	Pass
1731.000	-43.73	-5.87	-13.0	-30.73	270.00	Horizontal	Horizontal	N/A
2135.000	-25.54	-3.54	-13.0	-12.54	122.00	Horizontal	Horizontal	N/A
3461.000	-29.86	1.96	-13.0	-16.86	83.00	Horizontal	Horizontal	Pass
5191.000	-43.38	5.28	-13.0	-30.38	147.00	Horizontal	Horizontal	Pass
6680.000	-42.61	11.05	-13.0	-29.61	197.00	Horizontal	Horizontal	Pass

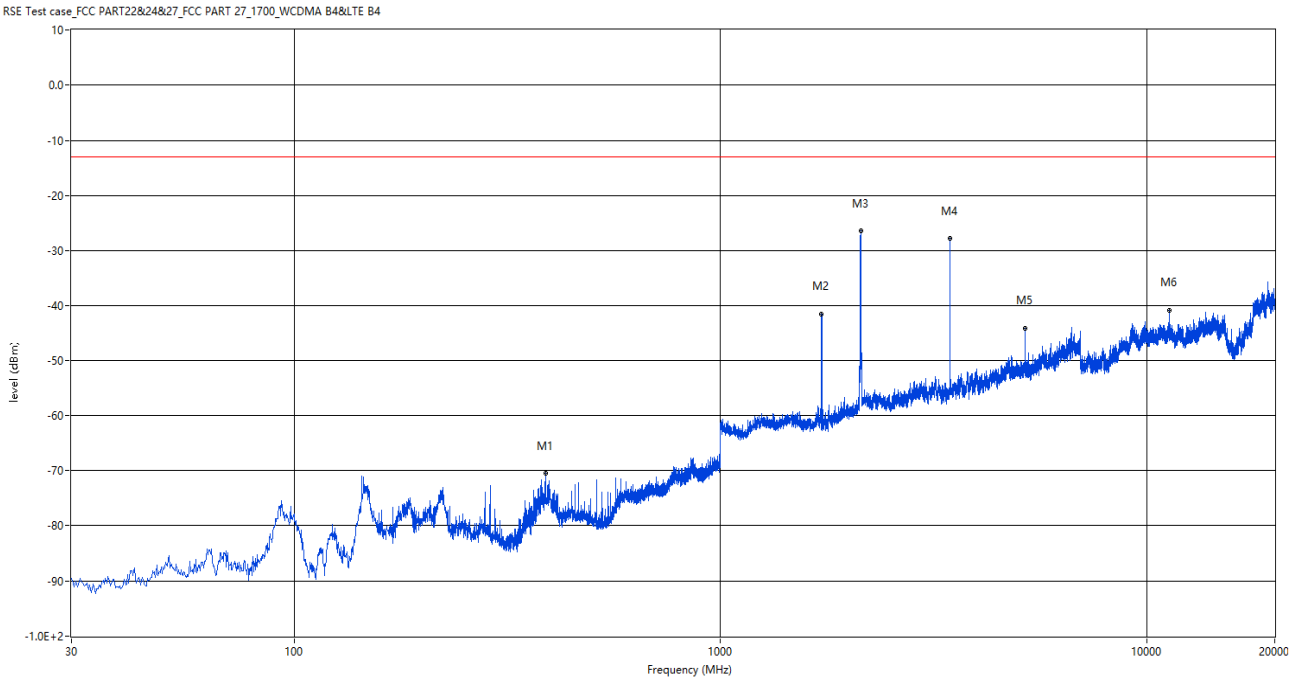
RSE-V 5wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
185.200	-68.16	-16.55	-13.0	-55.16	117.00	Vertical	Horizontal	Pass
1731.000	-43.99	-5.87	-13.0	-30.99	259.00	Vertical	Horizontal	N/A
2133.500	-24.85	-3.66	-13.0	-11.85	32.00	Vertical	Horizontal	N/A
3461.000	-32.94	1.96	-13.0	-19.94	88.00	Vertical	Horizontal	Pass
5192.000	-45.13	5.34	-13.0	-32.13	164.00	Vertical	Horizontal	Pass
6979.000	-44.45	11.06	-13.0	-31.45	360.00	Vertical	Horizontal	Pass

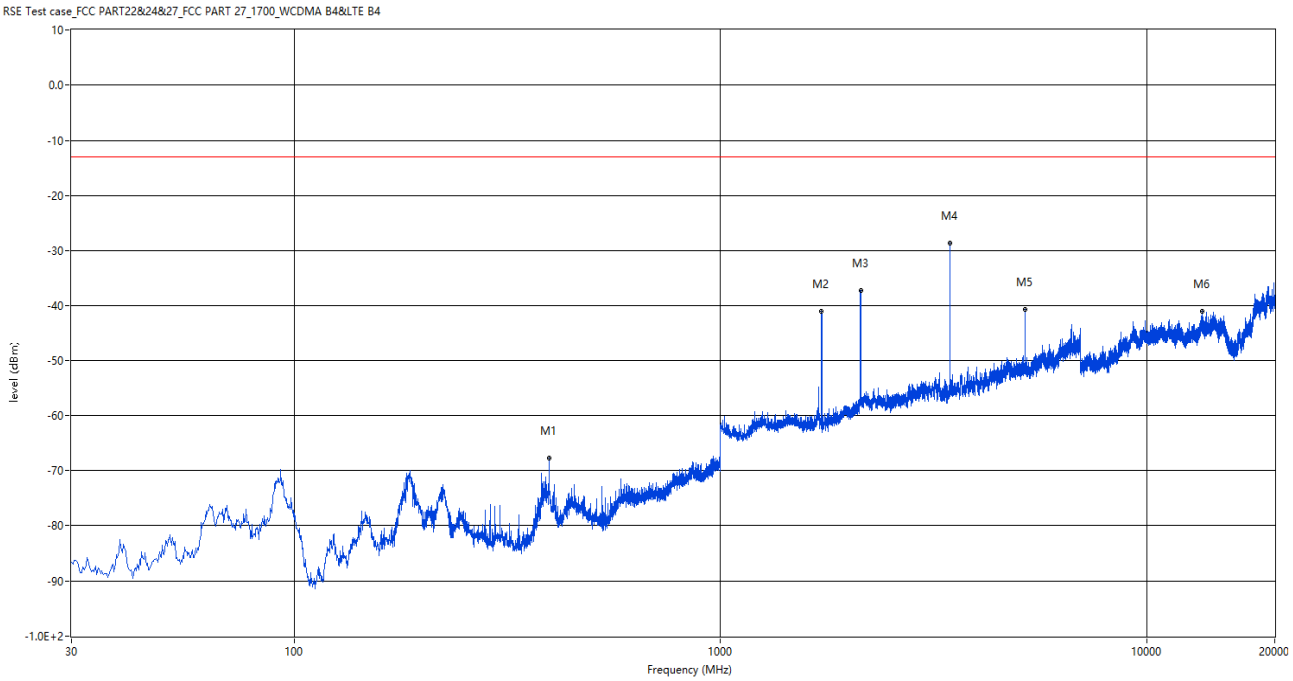
5.4 LTE Band 4 Bandwidth 10MHz, Middle Channel

RSE-H 10wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
388.415	-70.54	-11.64	-13.0	-57.54	118.00	Horizontal	Horizontal	Pass
1728.500	-41.40	-5.85	-13.0	-28.40	262.00	Horizontal	Horizontal	N/A
2133.500	-26.36	-3.66	-13.0	-13.36	110.00	Horizontal	Horizontal	N/A
3457.000	-27.71	1.96	-13.0	-14.71	87.00	Horizontal	Horizontal	Pass
5185.000	-43.98	5.37	-13.0	-30.98	164.00	Horizontal	Horizontal	Pass
11308.188	-40.72	14.89	-13.0	-27.72	239.00	Horizontal	Horizontal	Pass

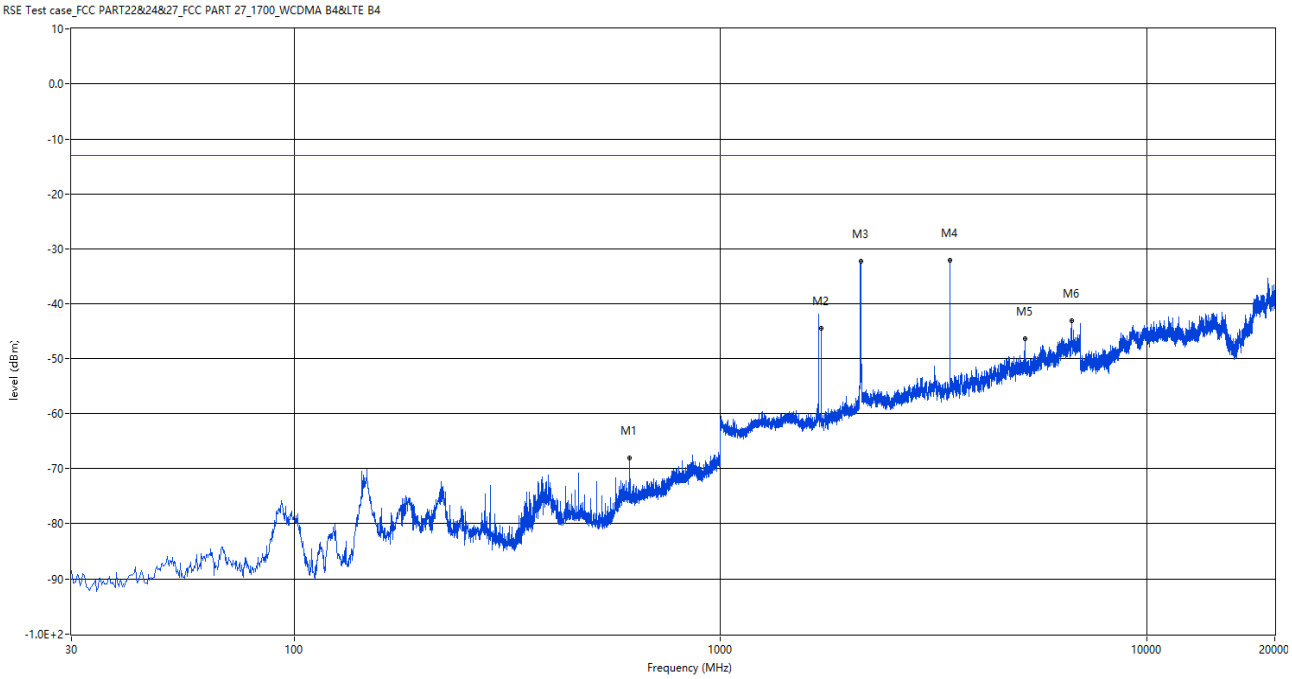
RSE-V 10wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.70	-11.05	-13.0	-54.70	301.00	Vertical	Horizontal	Pass
1728.500	-41.03	-5.85	-13.0	-28.03	187.00	Vertical	Horizontal	N/A
2136.500	-37.26	-3.63	-13.0	-24.26	225.00	Vertical	Horizontal	N/A
3457.000	-28.57	1.96	-13.0	-15.57	321.00	Vertical	Horizontal	Pass
5185.000	-40.68	5.37	-13.0	-27.68	279.00	Vertical	Horizontal	Pass
13484.063	-40.95	15.16	-13.0	-27.95	50.00	Vertical	Horizontal	Pass

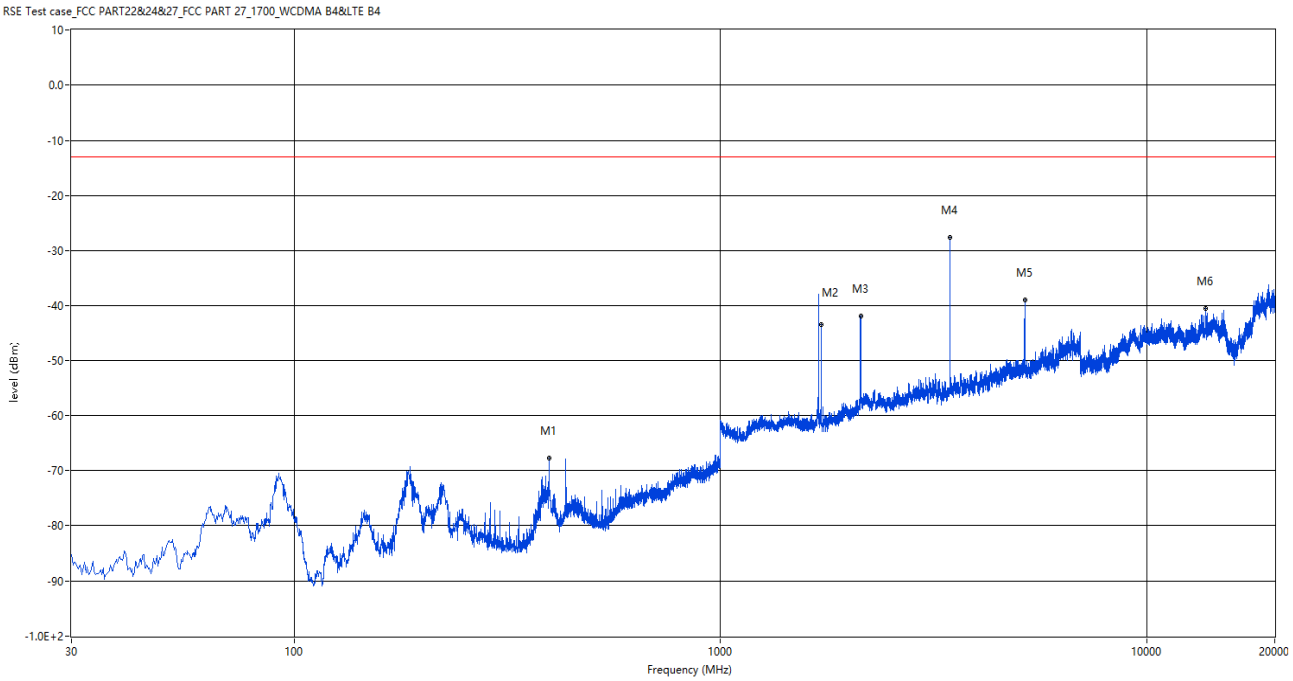
5.5 LTE Band 4 Bandwidth 15MHz, Middle Channel

RSE-H 15wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
613.213	-68.11	-5.71	-13.0	-55.11	274.00	Horizontal	Horizontal	Pass
1726.500	-44.43	-5.84	-13.0	-31.43	265.00	Horizontal	Horizontal	N/A
2134.000	-32.15	-3.60	-13.0	-19.15	202.00	Horizontal	Horizontal	N/A
3452.000	-32.00	1.47	-13.0	-19.00	85.00	Horizontal	Horizontal	Pass
5178.000	-46.31	5.28	-13.0	-33.31	276.00	Horizontal	Horizontal	Pass
6673.000	-43.07	11.36	-13.0	-30.07	16.00	Horizontal	Horizontal	Pass

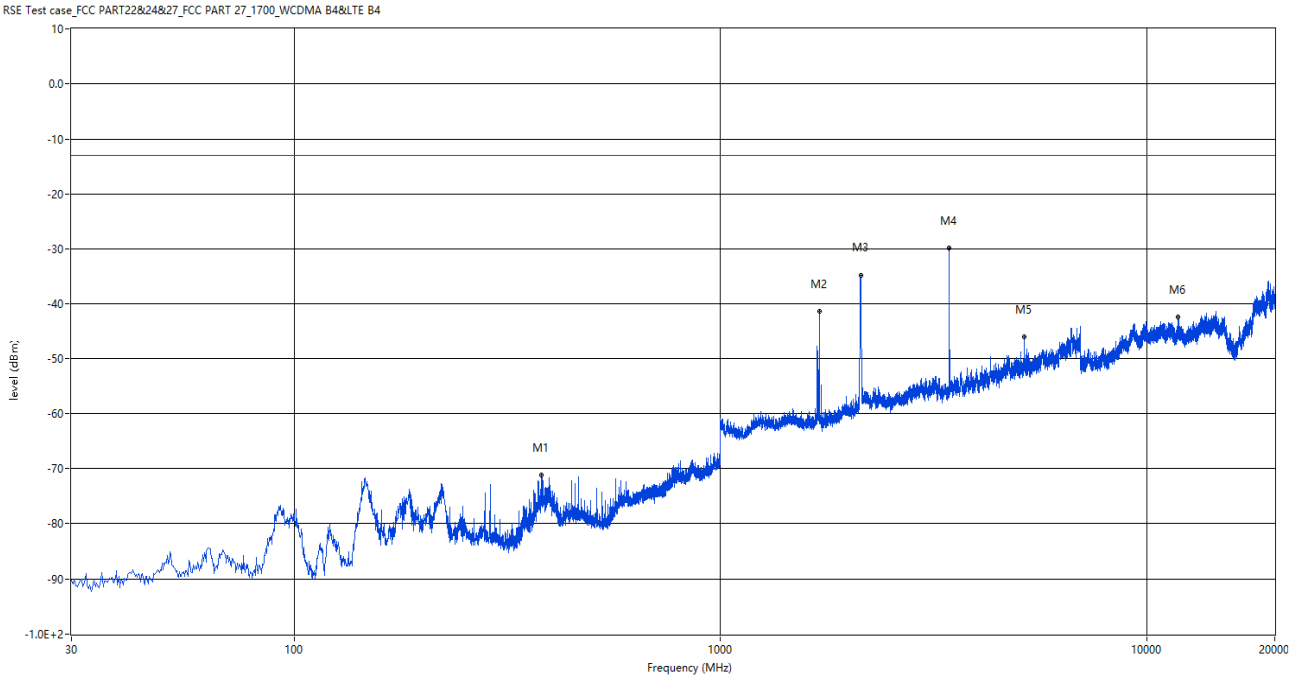
RSE-V 15wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
395.932	-67.71	-11.05	-13.0	-54.71	84.00	Vertical	Horizontal	Pass
1726.500	-43.37	-5.84	-13.0	-30.37	174.00	Vertical	Horizontal	N/A
2135.500	-41.87	-3.52	-13.0	-28.87	9.00	Vertical	Horizontal	N/A
3452.000	-27.65	1.47	-13.0	-14.65	320.00	Vertical	Horizontal	Pass
5178.000	-38.86	5.28	-13.0	-25.86	284.00	Vertical	Horizontal	Pass
13799.437	-40.50	16.94	-13.0	-27.50	87.00	Vertical	Horizontal	Pass

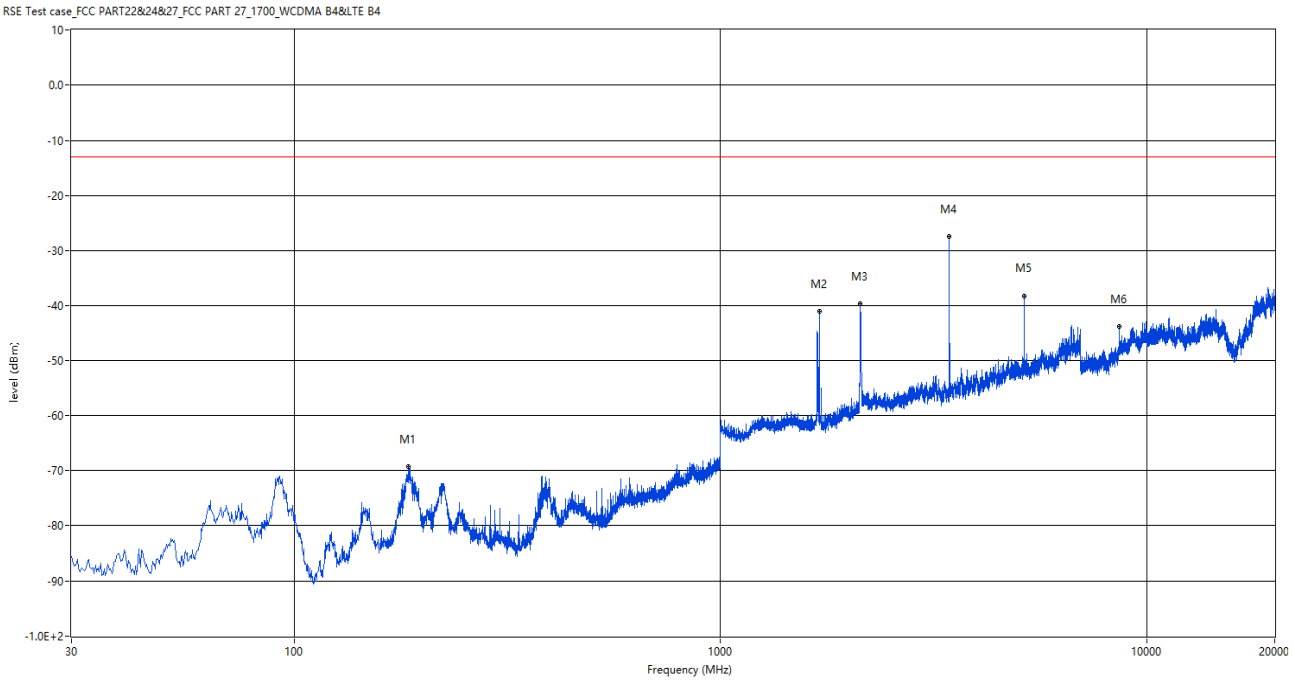
5.6 LTE Band 4 Bandwidth 20MHz, Middle Channel

RSE-H 20wid 30MHz-20GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
380.898	-71.25	-12.39	-13.0	-58.25	118.00	Horizontal	Horizontal	Pass
1706.500	-41.34	-5.72	-13.0	-28.34	264.00	Horizontal	Horizontal	N/A
2134.500	-34.71	-3.57	-13.0	-21.71	285.00	Horizontal	Horizontal	N/A
3448.000	-29.74	1.25	-13.0	-16.74	100.00	Horizontal	Horizontal	Pass
5171.000	-46.00	5.25	-13.0	-33.00	298.00	Horizontal	Horizontal	Pass
11830.000	-42.38	14.72	-13.0	-29.38	215.00	Horizontal	Horizontal	Pass

RSE-V 20wid 30MHz-20GHz MID

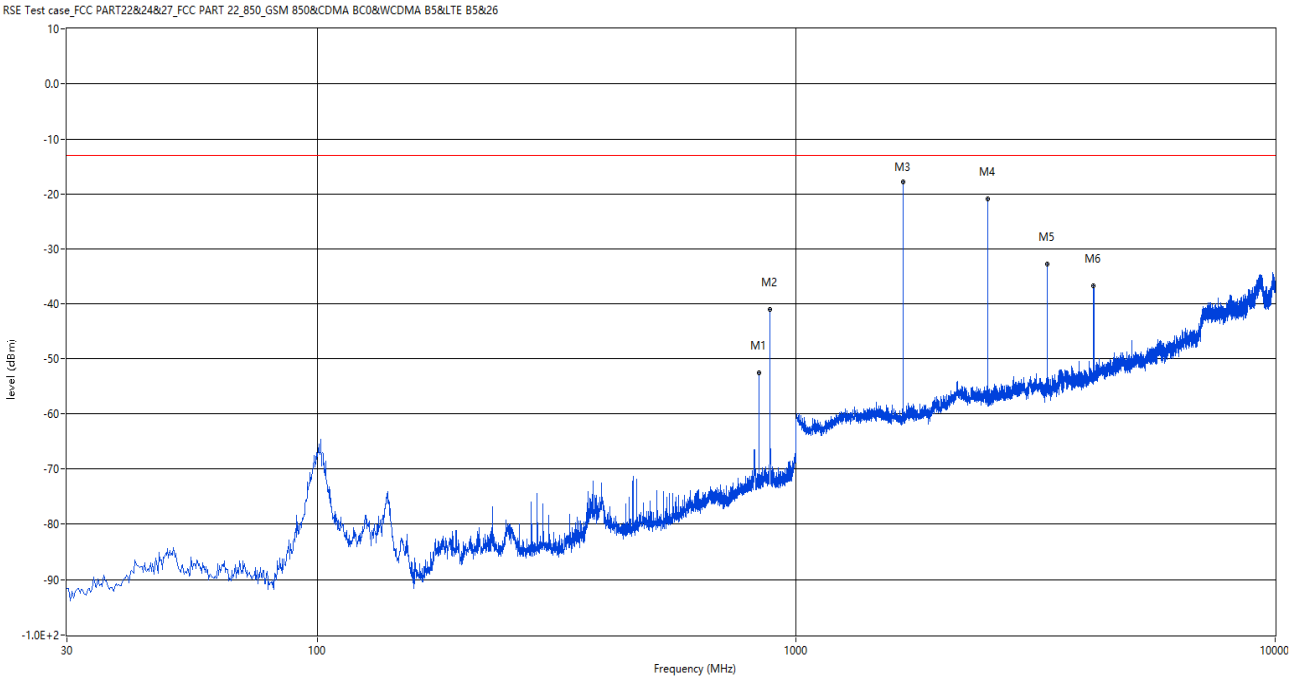


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
185.443	-69.30	-16.54	-13.0	-56.30	103.00	Vertical	Horizontal	Pass
1706.000	-40.96	-5.72	-13.0	-27.96	312.00	Vertical	Horizontal	N/A
2126.000	-39.65	-3.85	-13.0	-26.65	217.00	Vertical	Horizontal	N/A
3448.000	-27.49	1.25	-13.0	-14.49	289.00	Vertical	Horizontal	Pass
5171.000	-38.15	5.25	-13.0	-25.15	289.00	Vertical	Horizontal	Pass
8618.625	-43.64	10.03	-13.0	-30.64	209.00	Vertical	Horizontal	Pass

6 LTE Band 5

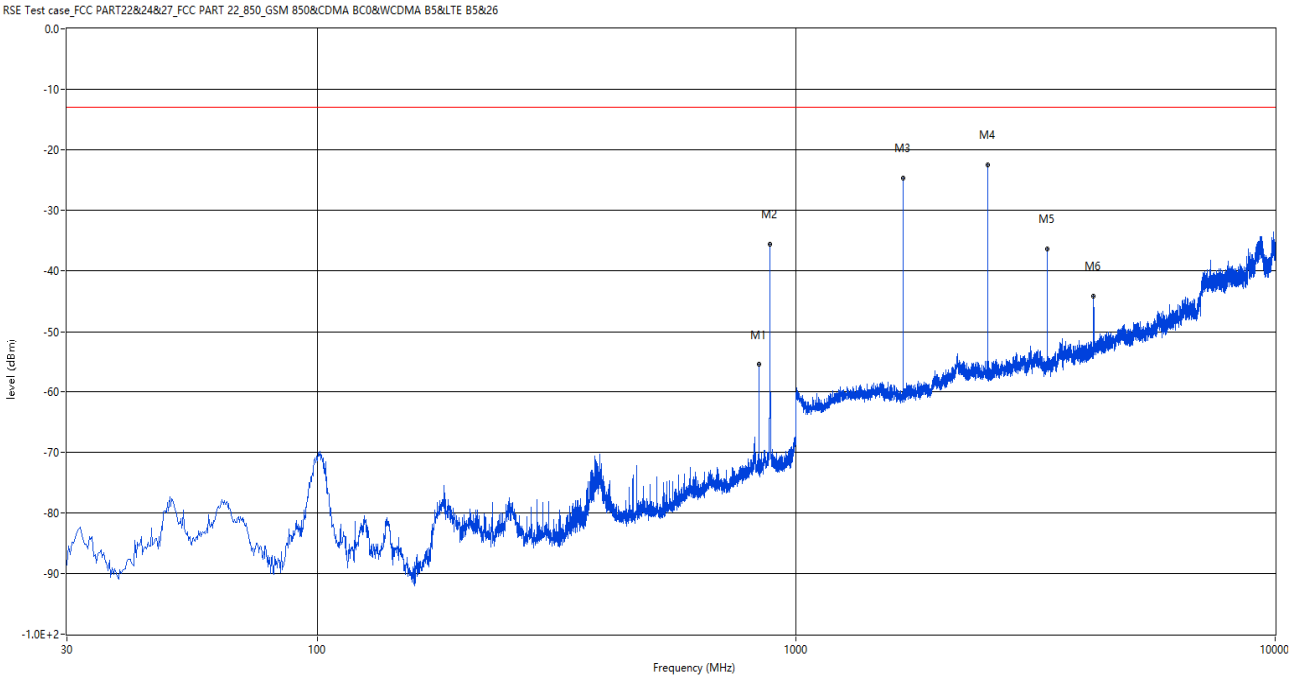
6.1 LTE Band 5 Bandwidth 1.4MHz, Middle Channel

RSE-H 1.4wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
836.070	-52.66	-1.41	-13.0	-39.66	232.00	Horizontal	Horizontal	N/A
881.417	-41.03	-1.40	-13.0	-28.03	52.00	Horizontal	Horizontal	N/A
1672.000	-17.87	-3.91	-13.0	-4.87	149.00	Horizontal	Horizontal	Pass
2508.000	-20.83	0.90	-13.0	-7.83	172.00	Horizontal	Horizontal	Pass
3344.000	-32.81	3.11	-13.0	-19.81	173.00	Horizontal	Horizontal	Pass
4180.000	-36.66	6.29	-13.0	-23.66	173.00	Horizontal	Horizontal	Pass

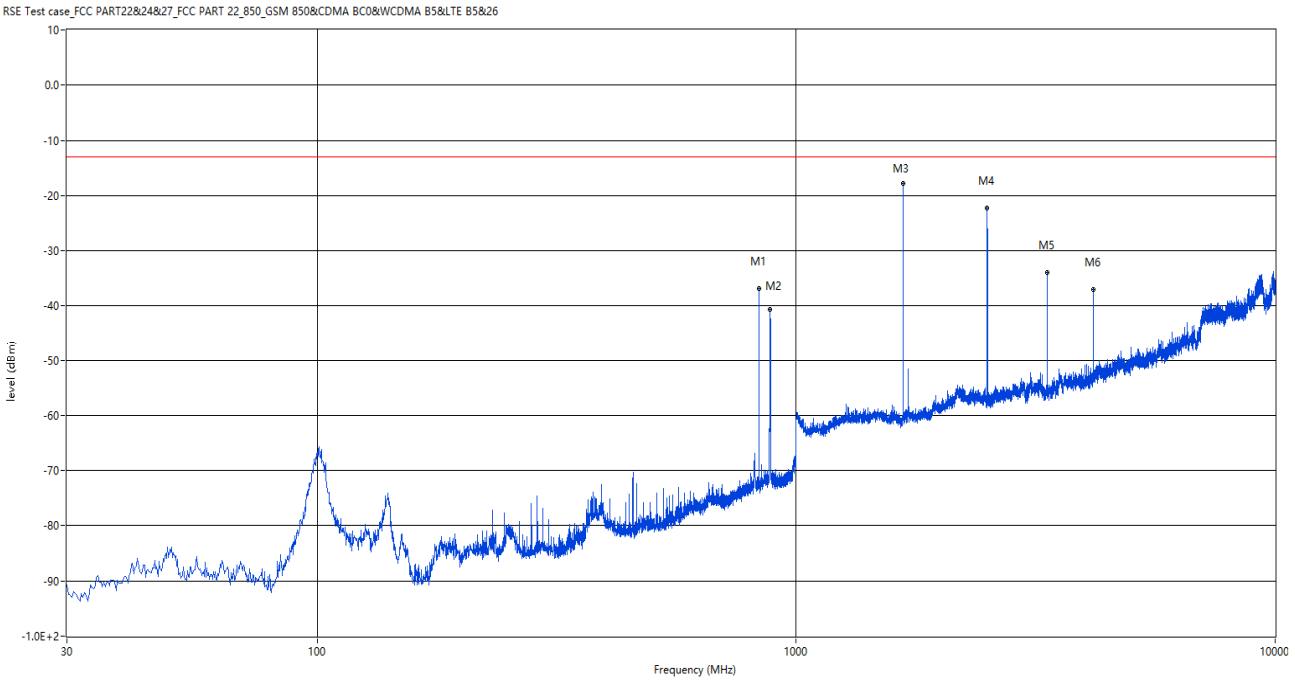
RSE-V 1.4wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
836.070	-55.56	-1.41	-13.0	-42.56	47.00	Vertical	Horizontal	N/A
881.660	-35.63	-1.40	-13.0	-22.63	47.00	Vertical	Horizontal	N/A
1672.000	-24.67	-3.91	-13.0	-11.67	64.00	Vertical	Horizontal	Pass
2508.000	-22.44	0.90	-13.0	-9.44	22.00	Vertical	Horizontal	Pass
3344.000	-36.31	3.11	-13.0	-23.31	123.00	Vertical	Horizontal	Pass
4180.000	-44.16	6.29	-13.0	-31.16	194.00	Vertical	Horizontal	Pass

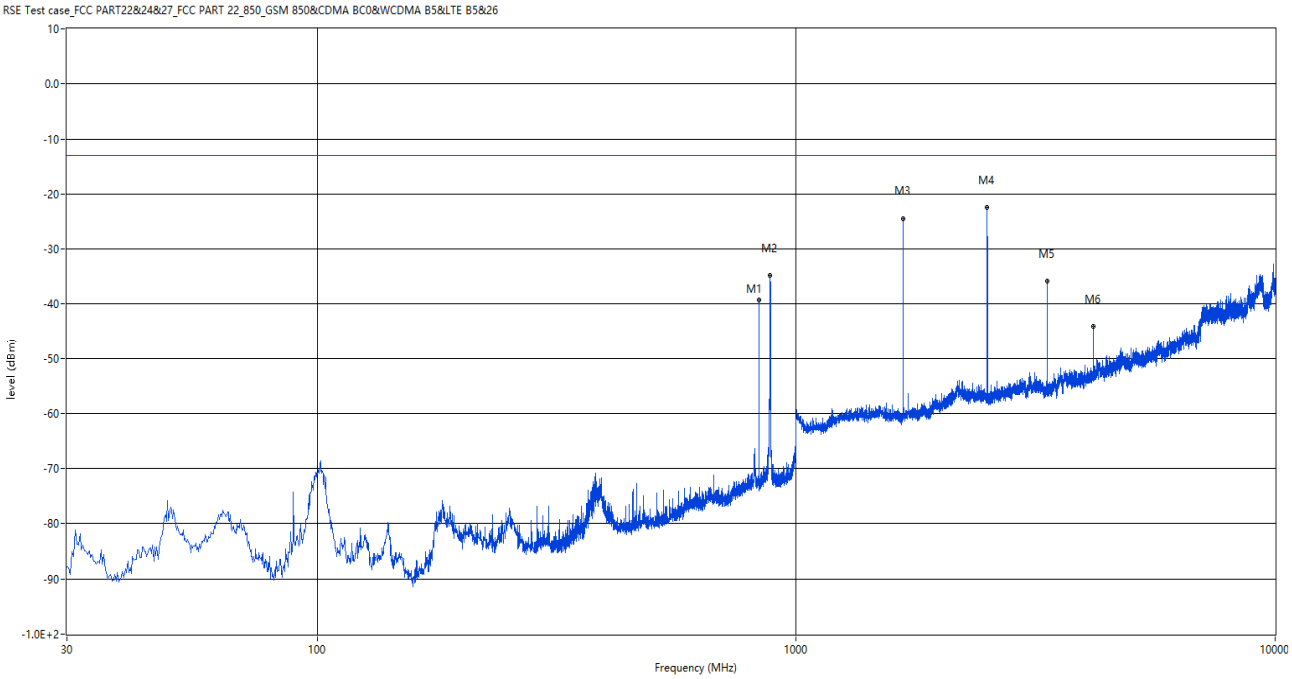
6.2 LTE Band 5 Bandwidth 3MHz, Middle Channel

RSE-H 3wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
835.100	-36.86	-1.42	-13.0	-23.86	218.00	Horizontal	Horizontal	N/A
882.388	-40.66	-1.40	-13.0	-27.66	48.00	Horizontal	Horizontal	N/A
1670.500	-17.75	-3.96	-13.0	-4.75	174.00	Horizontal	Horizontal	Pass
2505.500	-22.22	0.82	-13.0	-9.22	149.00	Horizontal	Horizontal	Pass
3341.000	-33.88	3.05	-13.0	-20.88	164.00	Horizontal	Horizontal	Pass
4176.000	-36.99	6.48	-13.0	-23.99	136.00	Horizontal	Horizontal	Pass

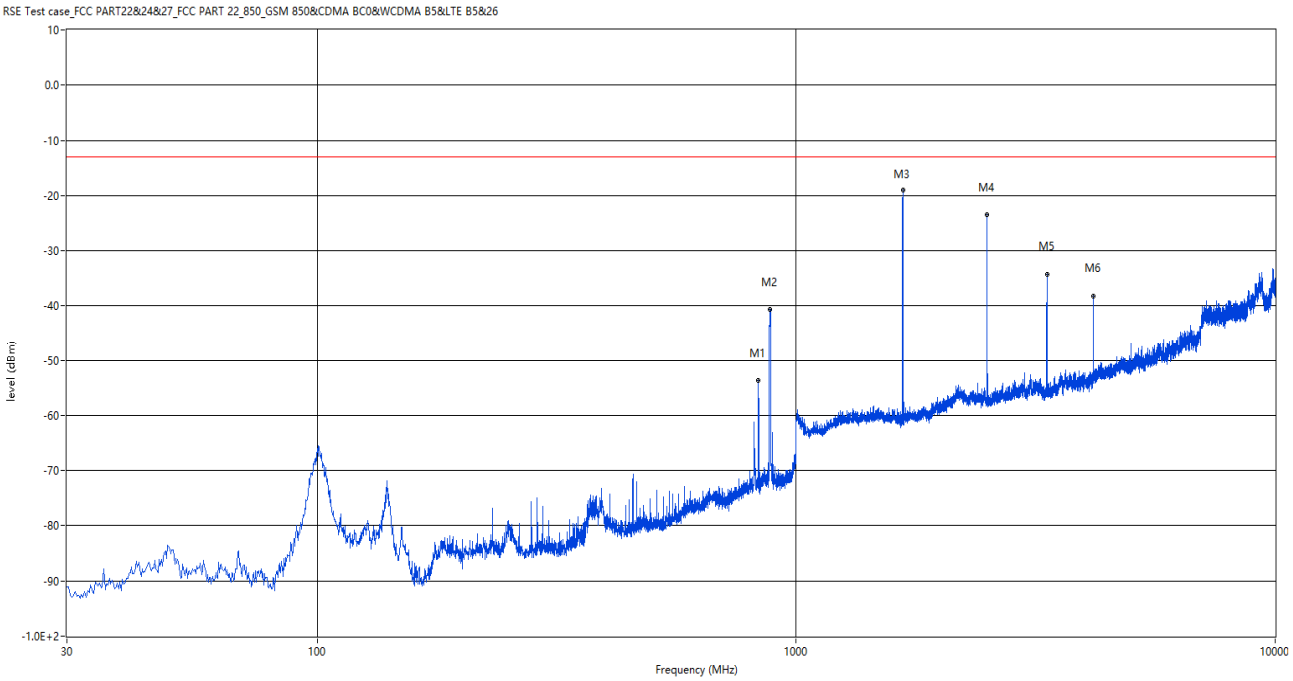
RSE-V 3wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
835.100	-39.21	-1.42	-13.0	-26.21	220.00	Vertical	Horizontal	N/A
880.690	-34.79	-1.38	-13.0	-21.79	28.00	Vertical	Horizontal	N/A
1670.500	-24.42	-3.96	-13.0	-11.42	18.00	Vertical	Horizontal	Pass
2505.500	-22.49	0.82	-13.0	-9.49	40.00	Vertical	Horizontal	Pass
3341.000	-35.84	3.05	-13.0	-22.84	119.00	Vertical	Horizontal	Pass
4176.000	-44.06	6.48	-13.0	-31.06	268.00	Vertical	Horizontal	Pass

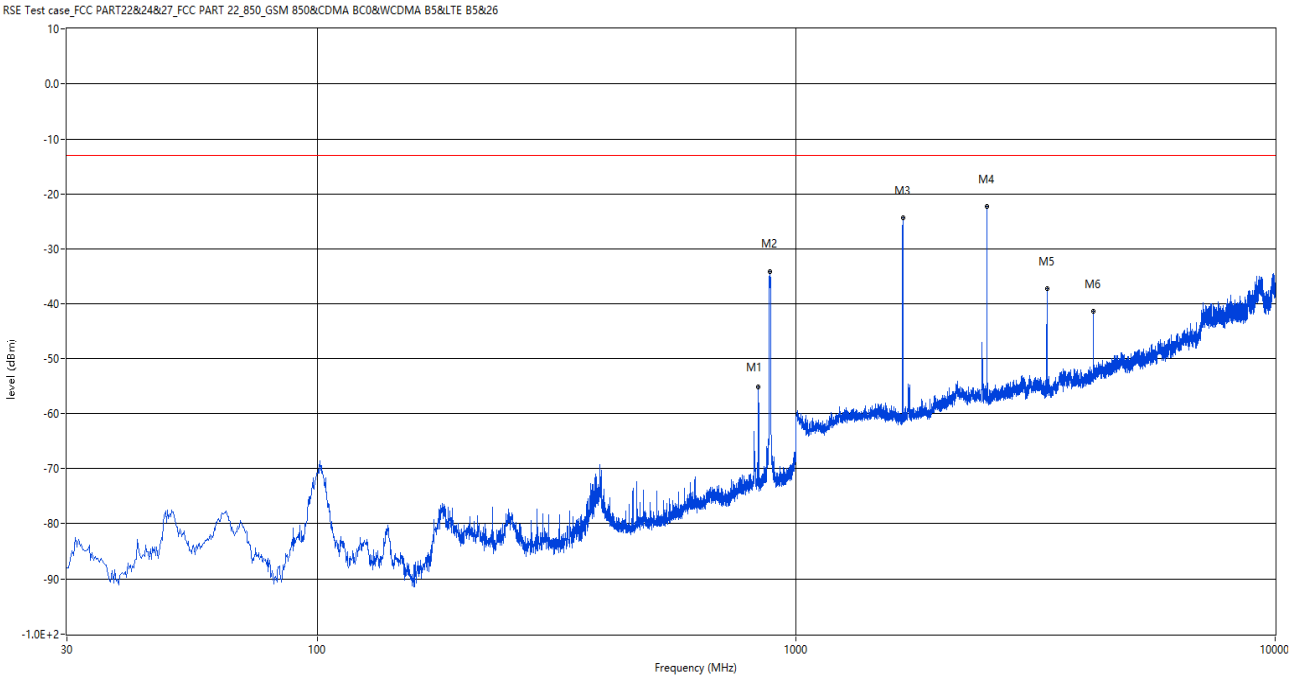
6.3 LTE Band 5 Bandwidth 5MHz, Middle Channel

RSE-H 5wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
834.372	-53.69	-1.42	-13.0	-40.69	227.00	Horizontal	Horizontal	N/A
879.720	-40.64	-1.36	-13.0	-27.64	163.00	Horizontal	Horizontal	N/A
1668.500	-18.96	-3.97	-13.0	-5.96	164.00	Horizontal	Horizontal	Pass
2503.000	-23.52	0.68	-13.0	-10.52	215.00	Horizontal	Horizontal	Pass
3337.000	-34.19	3.25	-13.0	-21.19	78.00	Horizontal	Horizontal	Pass
4172.000	-38.14	6.47	-13.0	-25.14	153.00	Horizontal	Horizontal	Pass

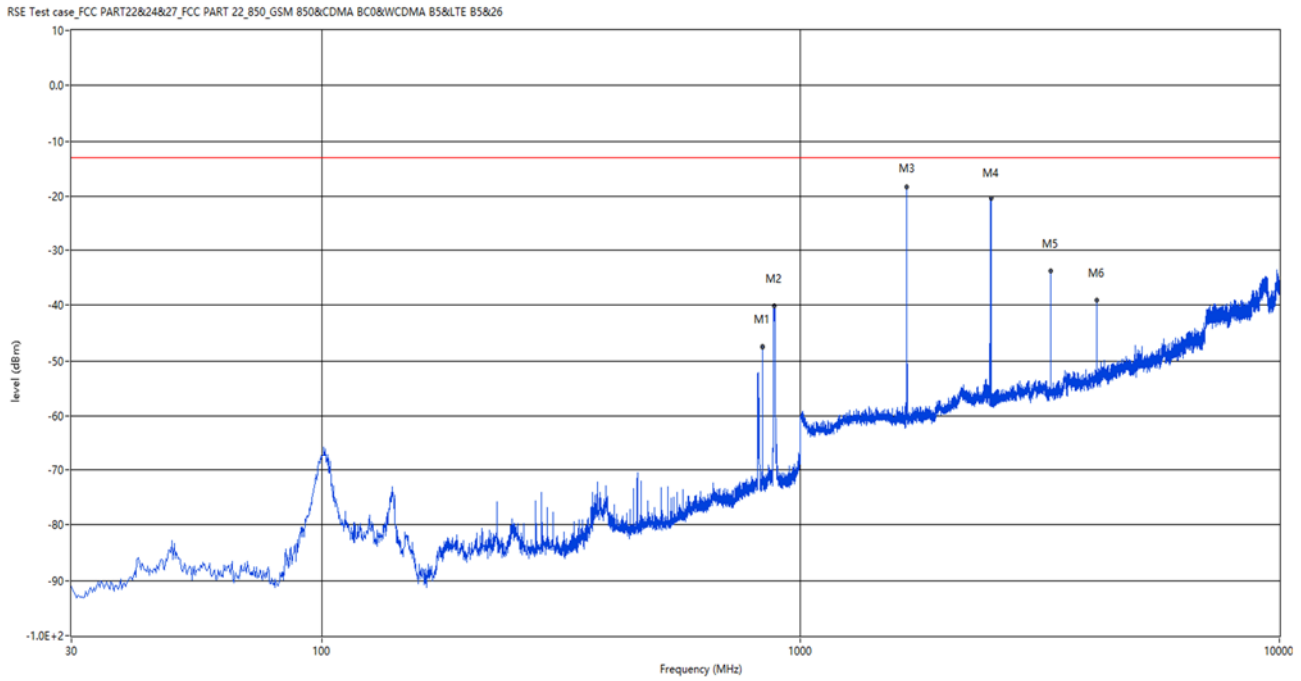
RSE-V 5wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
834.372	-55.20	-1.42	-13.0	-42.20	202.00	Vertical	Horizontal	N/A
880.205	-34.04	-1.37	-13.0	-21.04	37.00	Vertical	Horizontal	N/A
1668.500	-24.31	-3.97	-13.0	-11.31	72.00	Vertical	Horizontal	Pass
2503.000	-22.35	0.68	-13.0	-9.35	46.00	Vertical	Horizontal	Pass
3337.000	-37.18	3.25	-13.0	-24.18	116.00	Vertical	Horizontal	Pass
4172.000	-41.30	6.47	-13.0	-28.30	238.00	Vertical	Horizontal	Pass

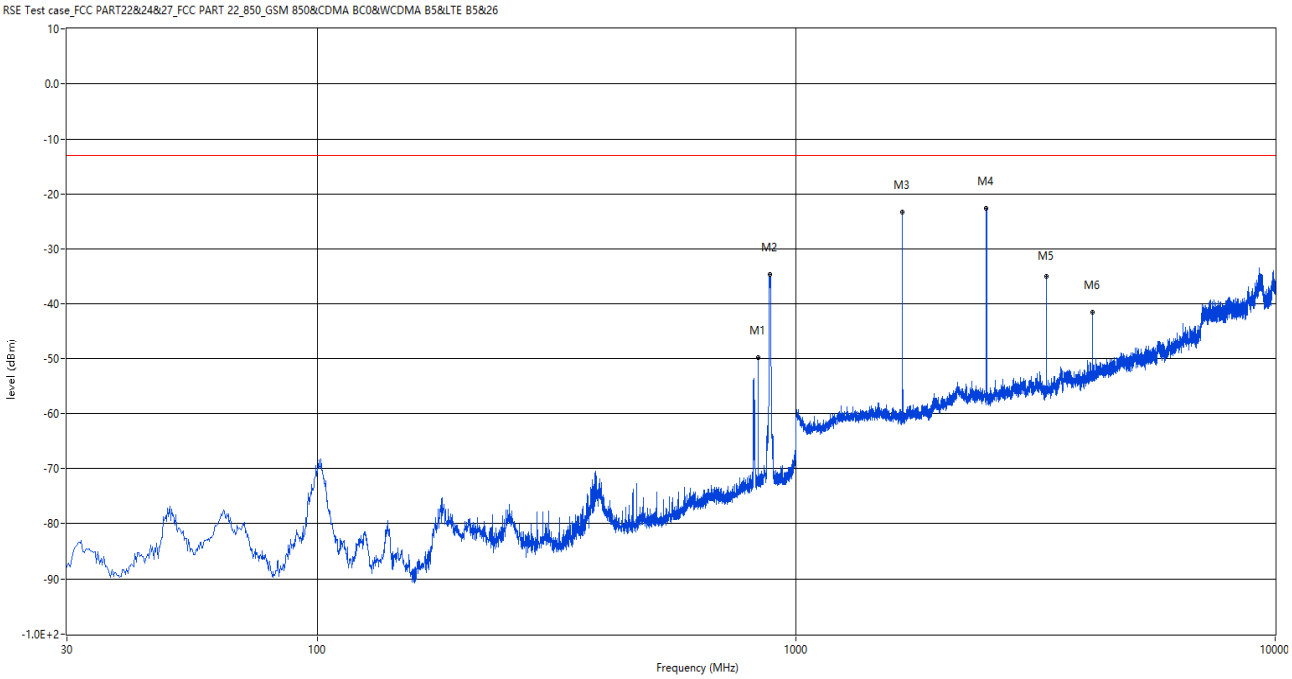
6.4 LTE Band 5 Bandwidth 10MHz, Middle Channel

RSE-H 10wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
832.190	-47.53	-1.44	-13.0	-34.53	223.00	Horizontal	Horizontal	N/A
882.145	-40.08	-1.41	-13.0	-27.08	54.00	Horizontal	Horizontal	N/A
1664.000	-18.32	-4.09	-13.0	-5.32	172.00	Horizontal	Horizontal	Pass
2496.500	-20.43	0.58	-13.0	-7.43	172.00	Horizontal	Horizontal	Pass
3328.000	-33.73	3.15	-13.0	-20.73	135.00	Horizontal	Horizontal	Pass
4160.000	-39.16	6.36	-13.0	-26.16	135.00	Horizontal	Horizontal	Pass

RSE-V 10wid 30MHz-10GHz MID

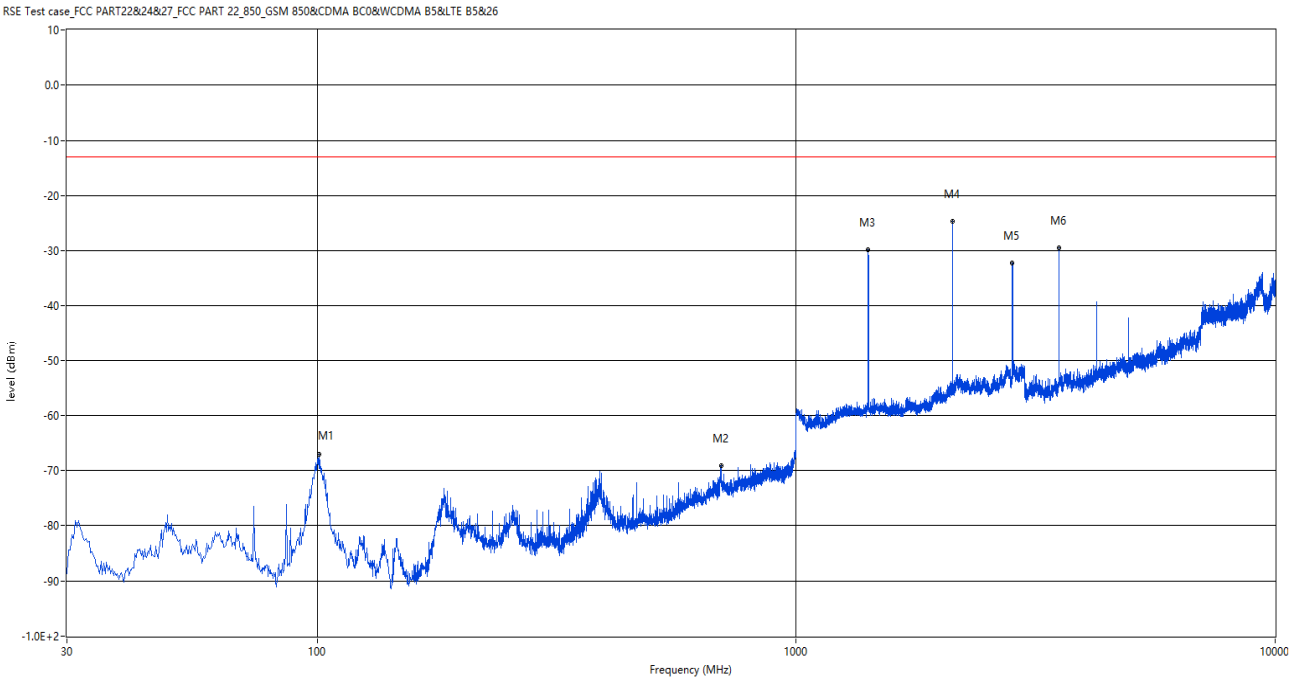


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
831.948	-49.82	-1.44	-13.0	-36.82	361.00	Vertical	Horizontal	N/A
880.690	-34.67	-1.38	-13.0	-21.67	32.00	Vertical	Horizontal	N/A
1664.000	-23.24	-4.09	-13.0	-10.24	20.00	Vertical	Horizontal	Pass
2496.000	-22.59	0.58	-13.0	-9.59	140.00	Vertical	Horizontal	Pass
3328.000	-34.91	3.15	-13.0	-21.91	138.00	Vertical	Horizontal	Pass
4160.000	-41.47	6.36	-13.0	-28.47	193.00	Vertical	Horizontal	Pass

7 LTE Band 12

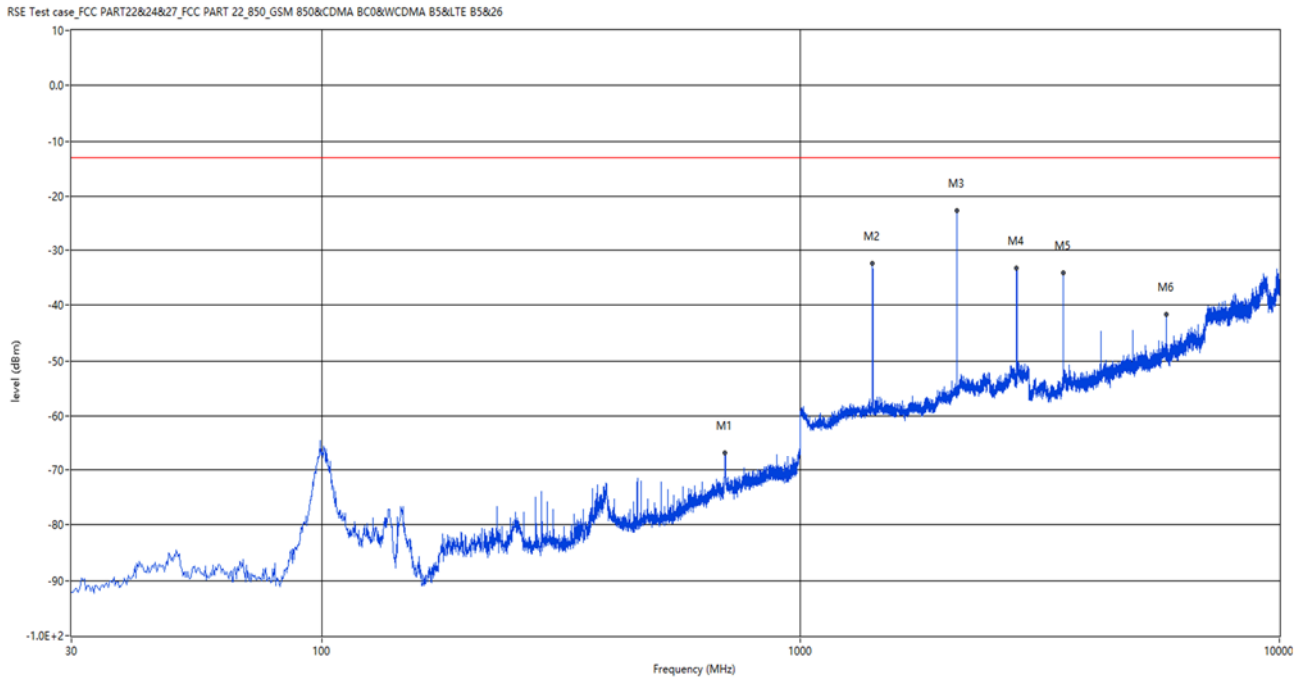
7.1 LTE Band 12 Bandwidth 1.4MHz, Middle Channel

RSE-H 1.4wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
101.052	-67.02	-19.63	-13.0	-54.02	40.00	Horizontal	Horizontal	N/A
696.390	-69.18	-1.18	-13.0	-56.18	361.00	Horizontal	Horizontal	Pass
1414.000	-29.88	-1.52	-13.0	-16.88	360.00	Horizontal	Horizontal	Pass
2121.000	-24.64	1.48	-13.0	-11.64	176.00	Horizontal	Horizontal	Pass
2828.000	-32.24	5.50	-13.0	-19.24	47.00	Horizontal	Horizontal	Pass
3535.000	-29.45	4.09	-13.0	-16.45	117.00	Horizontal	Horizontal	Pass

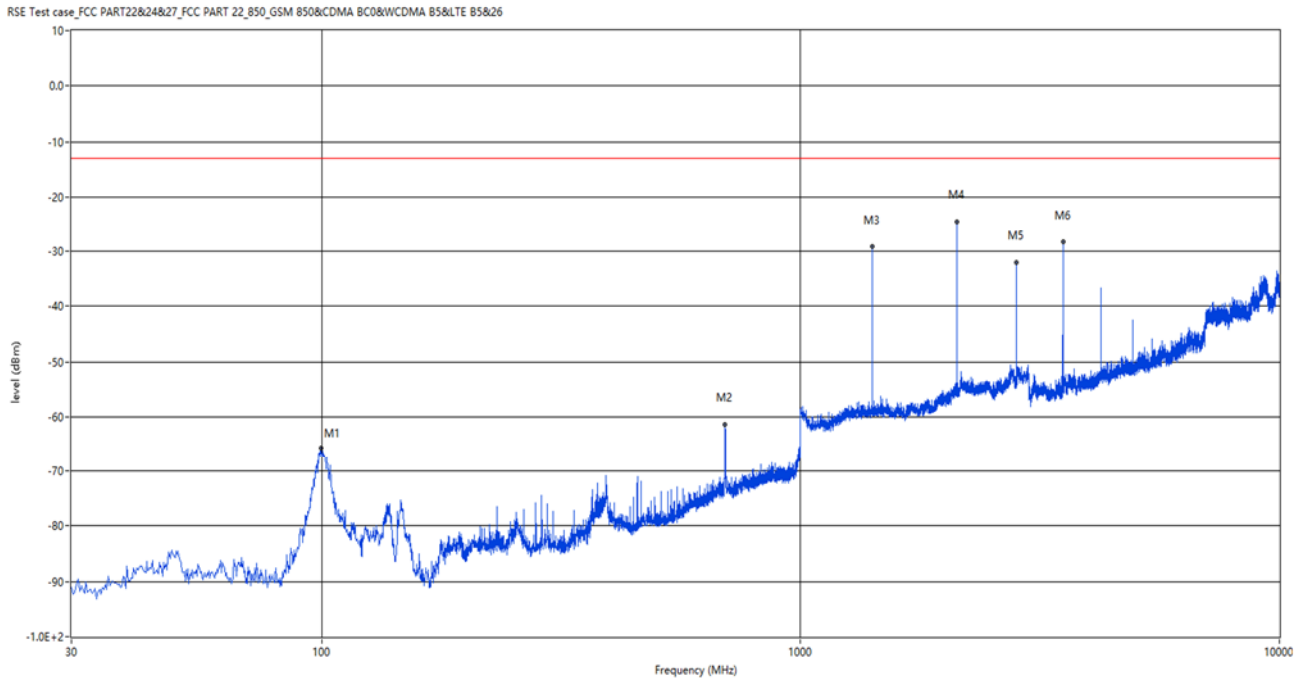
RSE-V 1.4wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
695.662	-66.72	-1.15	-13.0	-53.72	234.00	Vertical	Horizontal	N/A
1414.000	-32.38	-1.52	-13.0	-19.38	116.00	Vertical	Horizontal	Pass
2121.000	-22.57	1.48	-13.0	-9.57	154.00	Vertical	Horizontal	Pass
2828.000	-33.27	5.50	-13.0	-20.27	77.00	Vertical	Horizontal	Pass
3535.000	-34.12	4.09	-13.0	-21.12	361.00	Vertical	Horizontal	Pass
5810.000	-41.64	10.84	-13.0	-28.64	361.00	Vertical	Horizontal	Pass

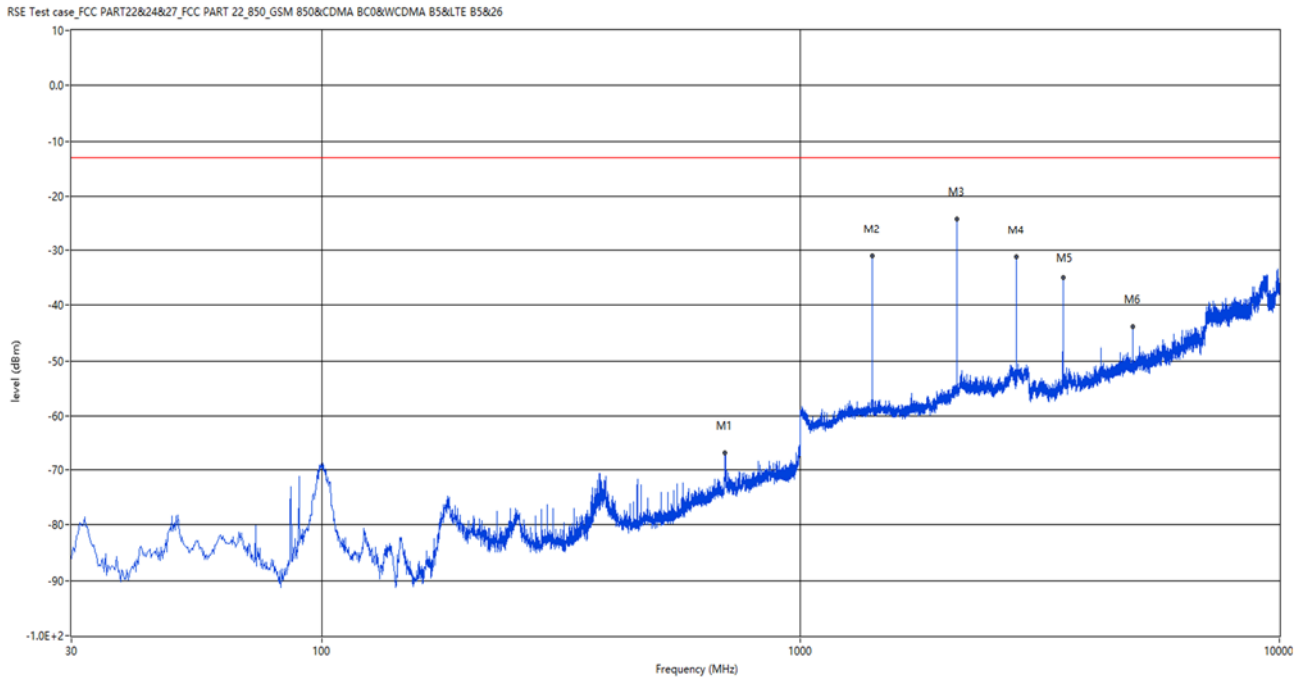
7.2 LTE Band 12 Bandwidth 3MHz, Middle Channel

RSE-H 3wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
99.598	-65.75	-19.53	-13.0	-52.75	139.00	Horizontal	Horizontal	Pass
695.905	-61.46	-1.16	-13.0	-48.46	99.00	Horizontal	Horizontal	N/A
1412.500	-29.09	-1.48	-13.0	-16.09	0.00	Horizontal	Horizontal	Pass
2118.500	-24.54	1.44	-13.0	-11.54	185.00	Horizontal	Horizontal	Pass
2825.000	-31.99	5.22	-13.0	-18.99	58.00	Horizontal	Horizontal	Pass
3531.000	-28.24	4.05	-13.0	-15.24	134.00	Horizontal	Horizontal	Pass

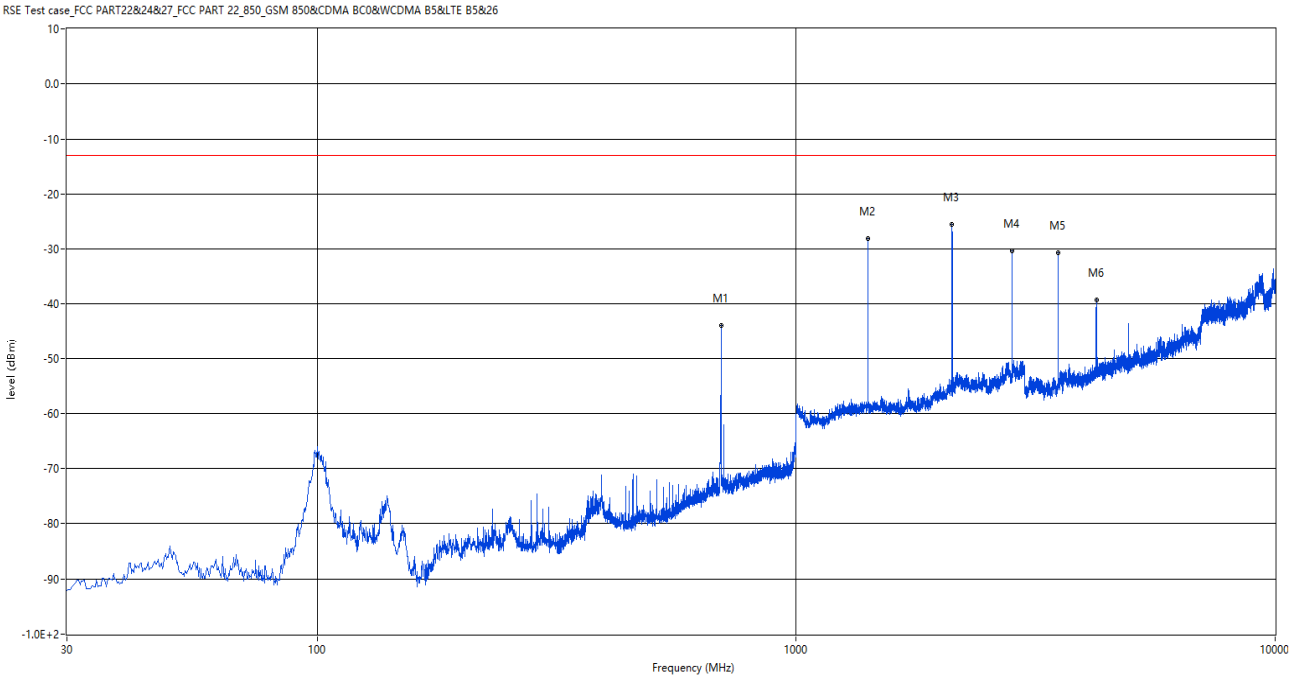
RSE-V 3wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
695.905	-66.74	-1.16	-13.0	-53.74	361.00	Vertical	Horizontal	N/A
1412.500	-30.99	-1.48	-13.0	-17.99	93.00	Vertical	Horizontal	Pass
2118.500	-24.19	1.44	-13.0	-11.19	133.00	Vertical	Horizontal	Pass
2825.000	-31.19	5.22	-13.0	-18.19	0.00	Vertical	Horizontal	Pass
3531.000	-34.93	4.05	-13.0	-21.93	0.00	Vertical	Horizontal	Pass
4944.000	-43.87	8.18	-13.0	-30.87	320.00	Vertical	Horizontal	Pass

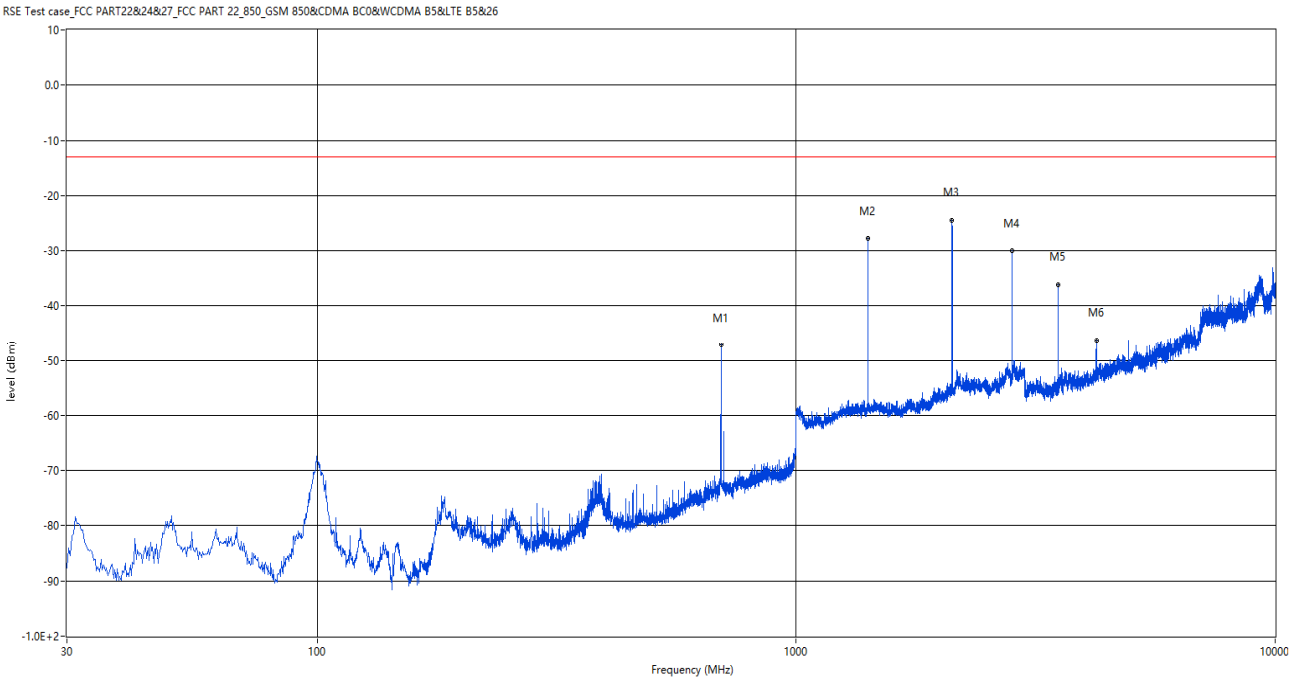
7.3 LTE Band 12 Bandwidth 5MHz, Middle Channel

RSE-H 5wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
696.633	-43.96	-1.19	-13.0	-30.96	225.00	Horizontal	Horizontal	N/A
1410.500	-28.11	-1.45	-13.0	-15.11	-1.00	Horizontal	Horizontal	Pass
2116.000	-25.58	1.53	-13.0	-12.58	188.00	Horizontal	Horizontal	Pass
2821.000	-30.41	4.72	-13.0	-17.41	165.00	Horizontal	Horizontal	Pass
3527.000	-30.66	3.86	-13.0	-17.66	122.00	Horizontal	Horizontal	Pass
4232.000	-39.28	6.60	-13.0	-26.28	188.00	Horizontal	Horizontal	Pass

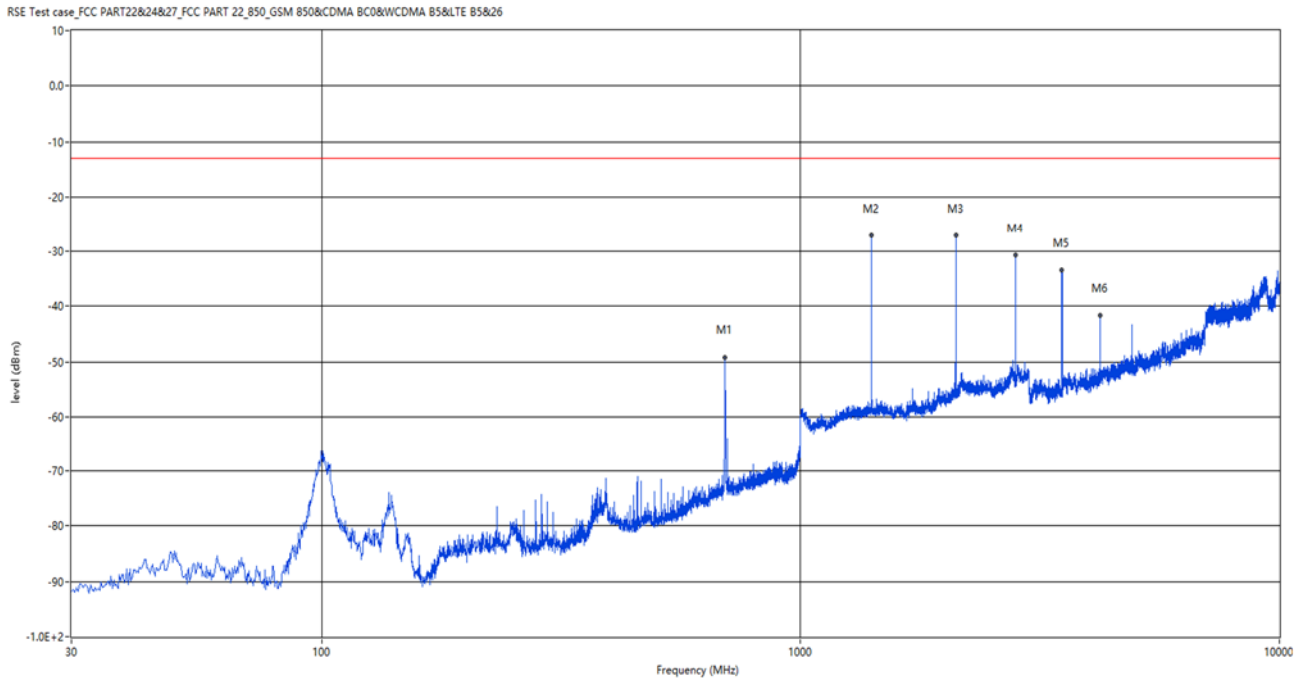
RSE-V 5wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
696.633	-47.12	-1.19	-13.0	-34.12	361.00	Vertical	Horizontal	N/A
1410.500	-27.79	-1.45	-13.0	-14.79	88.00	Vertical	Horizontal	Pass
2116.000	-24.41	1.53	-13.0	-11.41	148.00	Vertical	Horizontal	Pass
2821.500	-30.06	4.80	-13.0	-17.06	360.00	Vertical	Horizontal	Pass
3527.000	-36.10	3.86	-13.0	-23.10	30.00	Vertical	Horizontal	Pass
4232.000	-46.21	6.60	-13.0	-33.21	223.00	Vertical	Horizontal	Pass

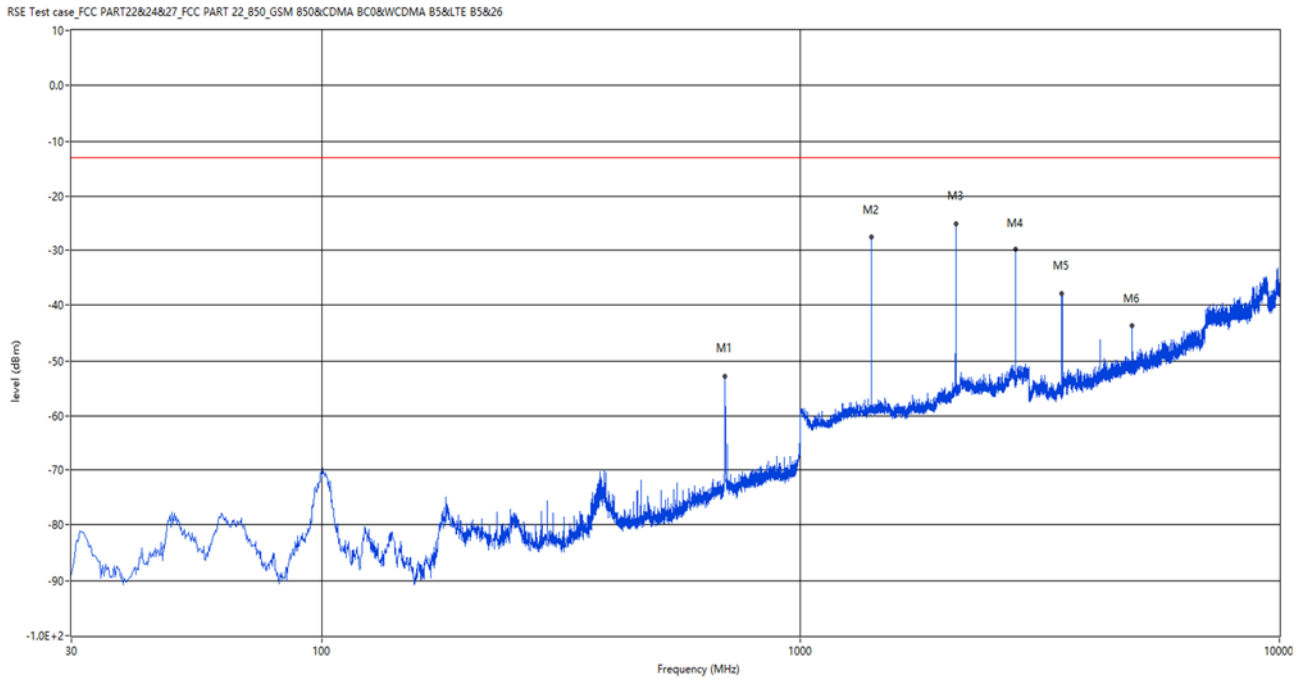
7.4 LTE Band 12 Bandwidth 10MHz, Middle Channel

RSE-H 10wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
694.207	-49.15	-1.72	-13.0	-36.15	248.00	Horizontal	Horizontal	N/A
1406.000	-27.07	-1.51	-13.0	-14.07	-1.00	Horizontal	Horizontal	Pass
2109.000	-27.02	1.79	-13.0	-14.02	165.00	Horizontal	Horizontal	Pass
2812.500	-30.75	4.34	-13.0	-17.75	143.00	Horizontal	Horizontal	Pass
3515.000	-33.39	3.86	-13.0	-20.39	72.00	Horizontal	Horizontal	Pass
4218.000	-41.69	6.32	-13.0	-28.69	174.00	Horizontal	Horizontal	Pass

RSE-V 10wid 30MHz-10GHz MID

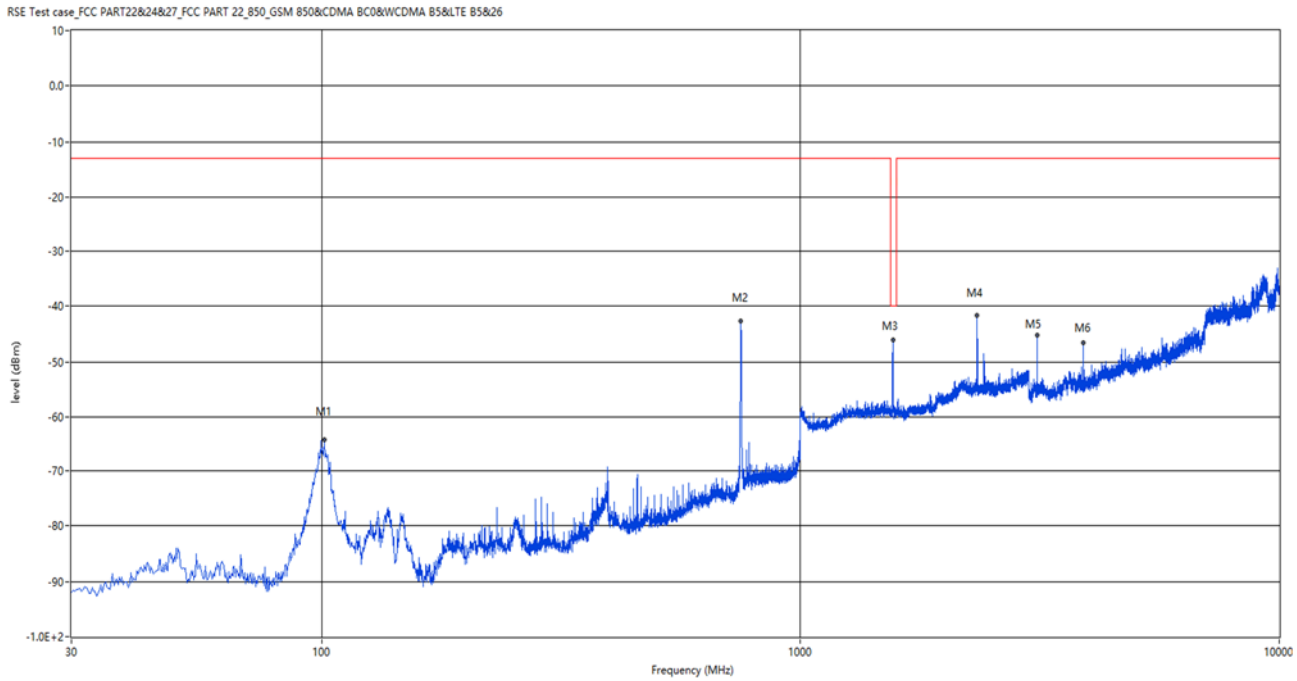


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
694.450	-52.74	-1.53	-13.0	-39.74	33.00	Vertical	Horizontal	N/A
1406.000	-27.51	-1.51	-13.0	-14.51	72.00	Vertical	Horizontal	Pass
2109.000	-24.93	1.79	-13.0	-11.93	31.00	Vertical	Horizontal	Pass
2812.500	-29.78	4.34	-13.0	-16.78	52.00	Vertical	Horizontal	Pass
3515.000	-37.80	3.86	-13.0	-24.80	360.00	Vertical	Horizontal	Pass
4921.000	-43.79	8.23	-13.0	-30.79	295.00	Vertical	Horizontal	Pass

8 LTE Band 13

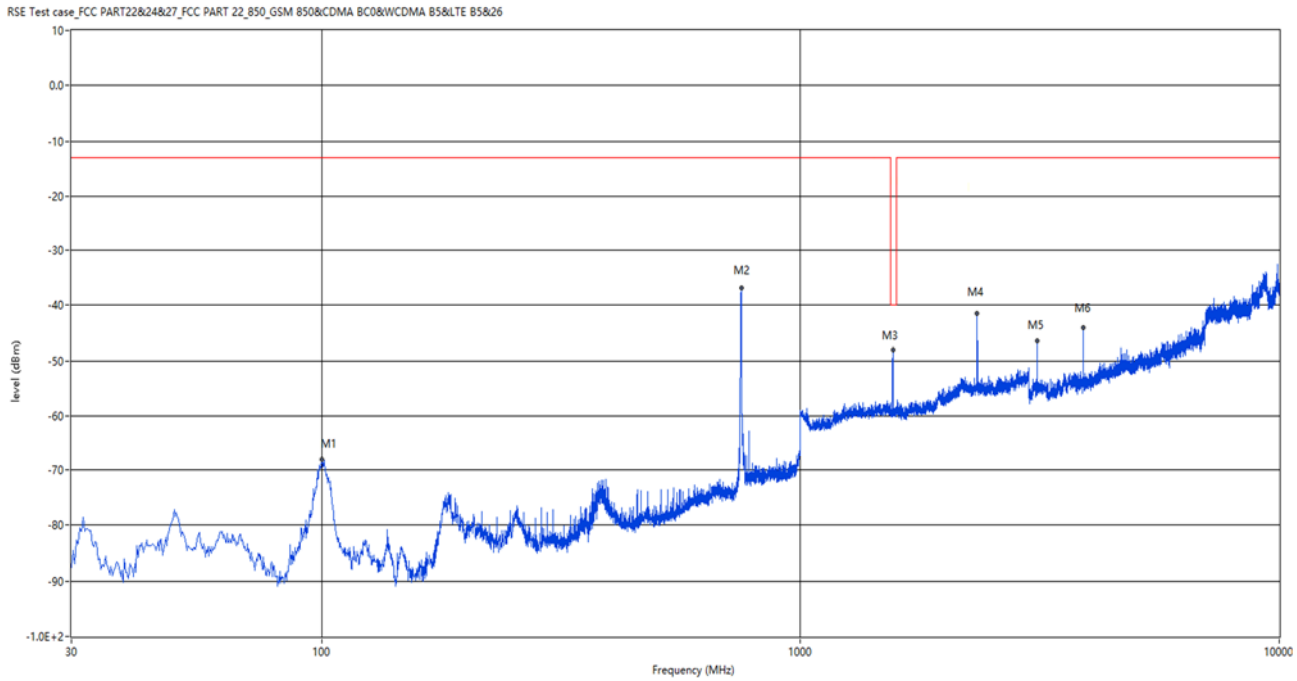
8.1 LTE Band 13 Bandwidth 5MHz, Middle Channel

RSE-H 5wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
101.295	-64.07	-19.66	-13.0	-51.07	322.00	Horizontal	Horizontal	Pass
750.953	-42.25	-2.39	-13.0	-29.25	330.00	Horizontal	Horizontal	N/A
1559.500	-46.05	-2.25	-40.0	-33.05	325.00	Horizontal	Horizontal	Pass
2339.000	-41.68	2.73	-13.0	-28.68	141.00	Horizontal	Horizontal	Pass
3119.000	-55.13	3.86	-13.0	-42.13	158.00	Horizontal	Horizontal	Pass
3899.000	-57.52	5.77	-13.0	-44.52	171.00	Horizontal	Horizontal	Pass

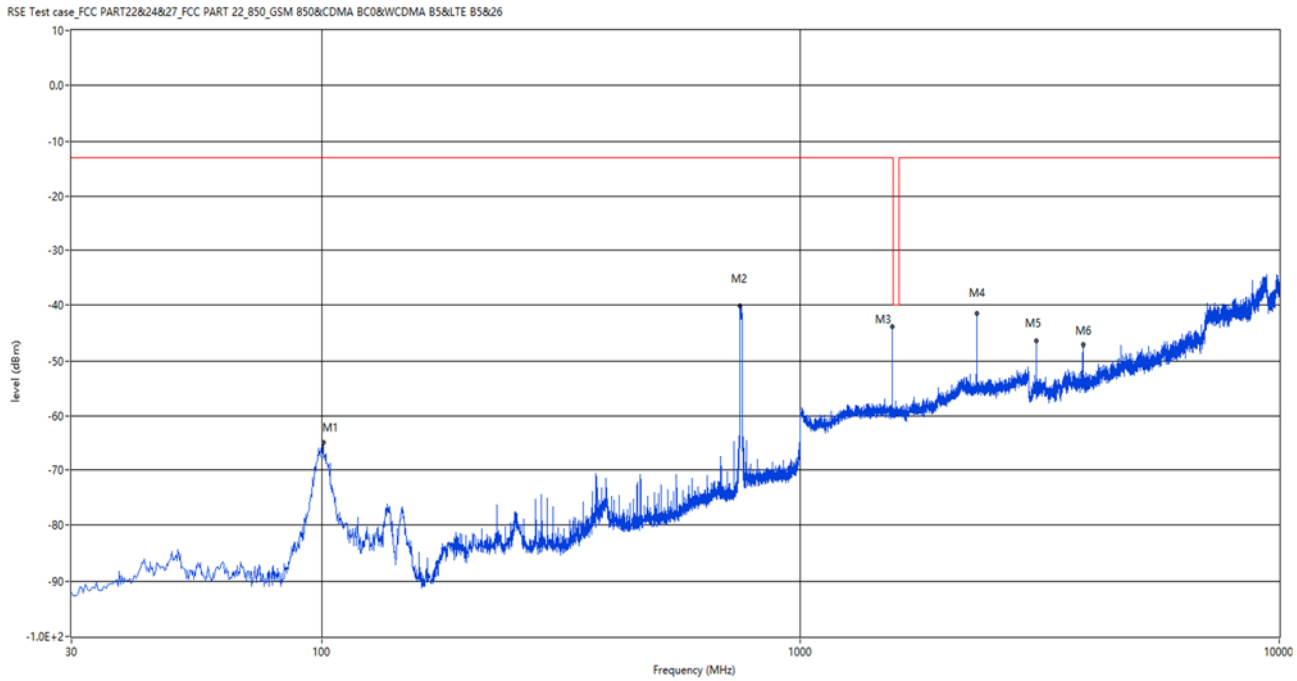
RSE-V 5wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
100.082	-68.06	-19.58	-13.0	-55.06	26.00	Vertical	Horizontal	Pass
751.922	-37.42	-2.34	-13.0	-24.42	65.00	Vertical	Horizontal	N/A
1559.500	-48.56	-2.25	-40.0	-35.56	27.00	Vertical	Horizontal	Pass
2339.500	-41.25	2.70	-13.0	-28.25	91.00	Vertical	Horizontal	Pass
3119.000	-41.11	3.86	-13.0	-28.11	150.00	Vertical	Horizontal	Pass
3899.000	-44.26	5.77	-13.0	-31.26	360.00	Vertical	Horizontal	Pass

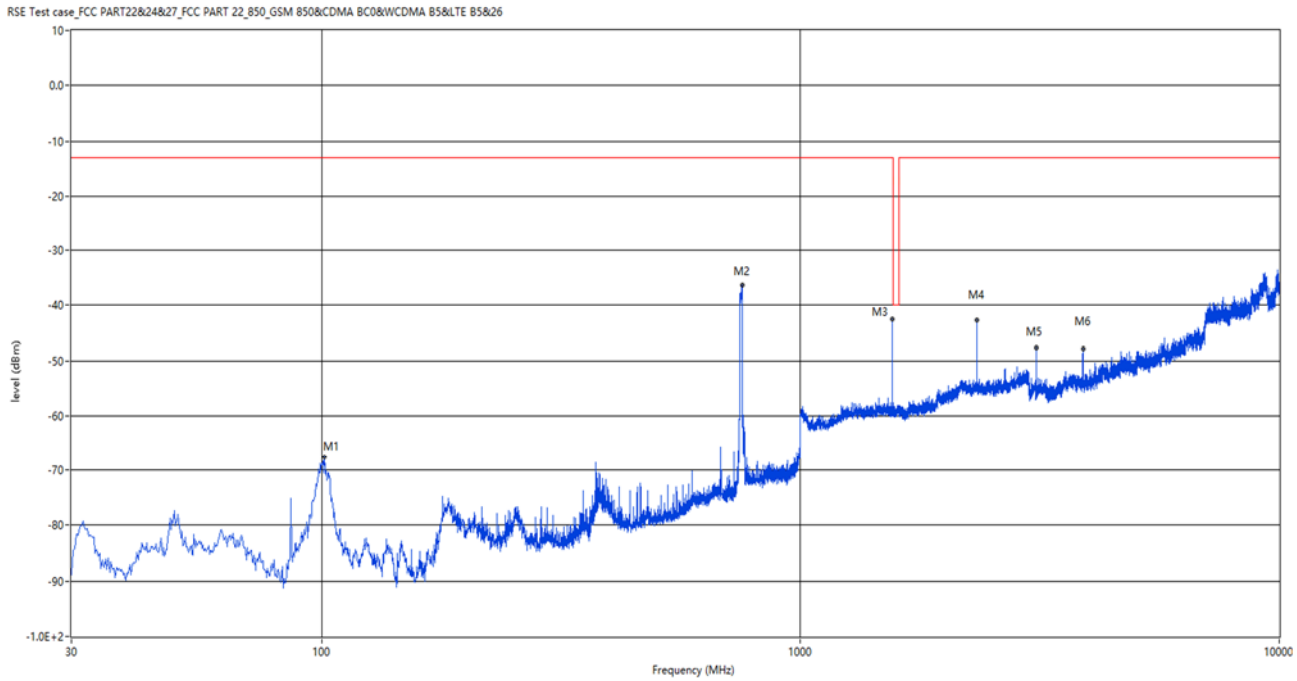
8.2 LTE Band 13 Bandwidth 10MHz, Middle Channel

RSE-H 10wid 30MHz-10GHz MID



Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
100.810	-64.81	-19.62	-13.0	-51.81	151.00	Horizontal	Horizontal	Pass
747.800	-40.11	-2.71	-13.0	-27.11	336.00	Horizontal	Horizontal	N/A
1555.000	-43.29	-2.22	-13.0	-30.29	346.00	Horizontal	Horizontal	Pass
2332.500	-40.67	3.18	-13.0	-27.67	169.00	Horizontal	Horizontal	Pass
3110.000	-47.35	3.10	-13.0	-34.35	120.00	Horizontal	Horizontal	Pass
3888.000	-47.77	5.64	-13.0	-34.77	120.00	Horizontal	Horizontal	Pass

RSE-V 10wid 30MHz-10GHz MID

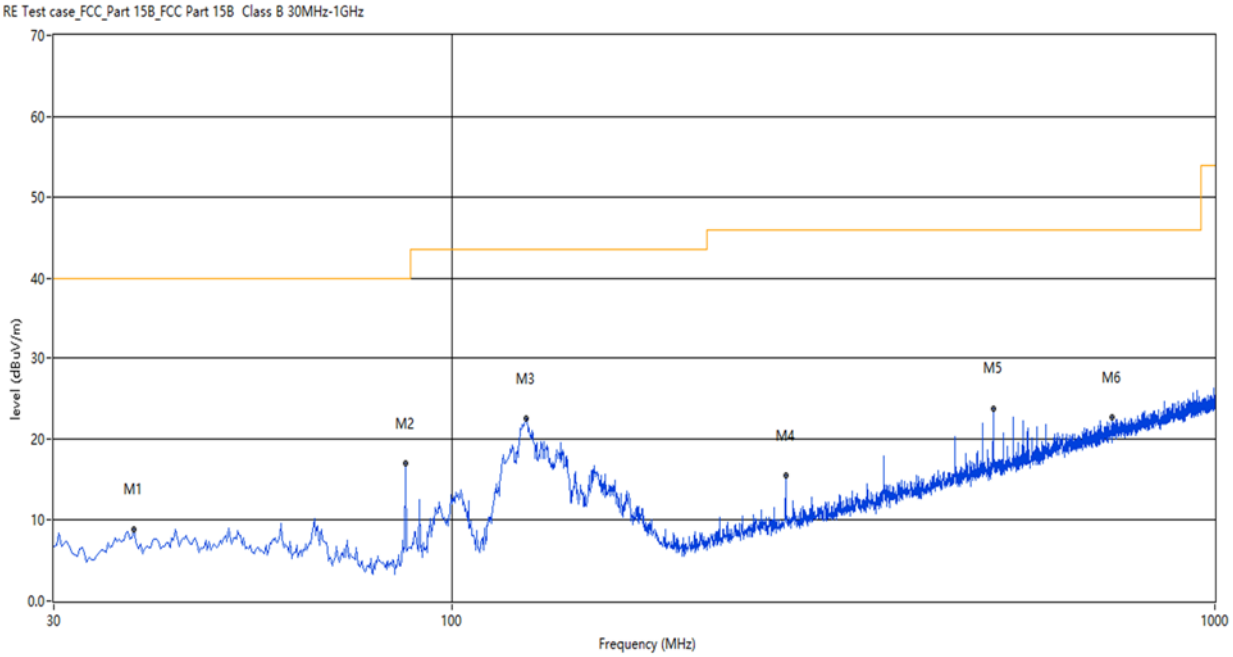


Frequency (MHz)	Result (dBm)	Factor (dB)	PK Limit (dBm)	Over Limit (dB)	Table (o)	ANT	EUT	Verdict
100.790	-68.22	-19.60	-13.0	-55.22	131.00	Vertical	Horizontal	Pass
754.833	-37.52	-2.10	-13.0	-24.52	90.00	Vertical	Horizontal	N/A
1555.000	-41.80	-2.22	-13.0	-28.80	27.00	Vertical	Horizontal	Pass
2332.500	-41.53	3.18	-13.0	-28.53	88.00	Vertical	Horizontal	Pass
3110.000	-47.96	3.10	-13.0	-34.96	0.00	Vertical	Horizontal	Pass
3888.000	-47.85	5.64	-13.0	-34.85	361.00	Vertical	Horizontal	Pass

A.8 Receiver Spurious Emissions

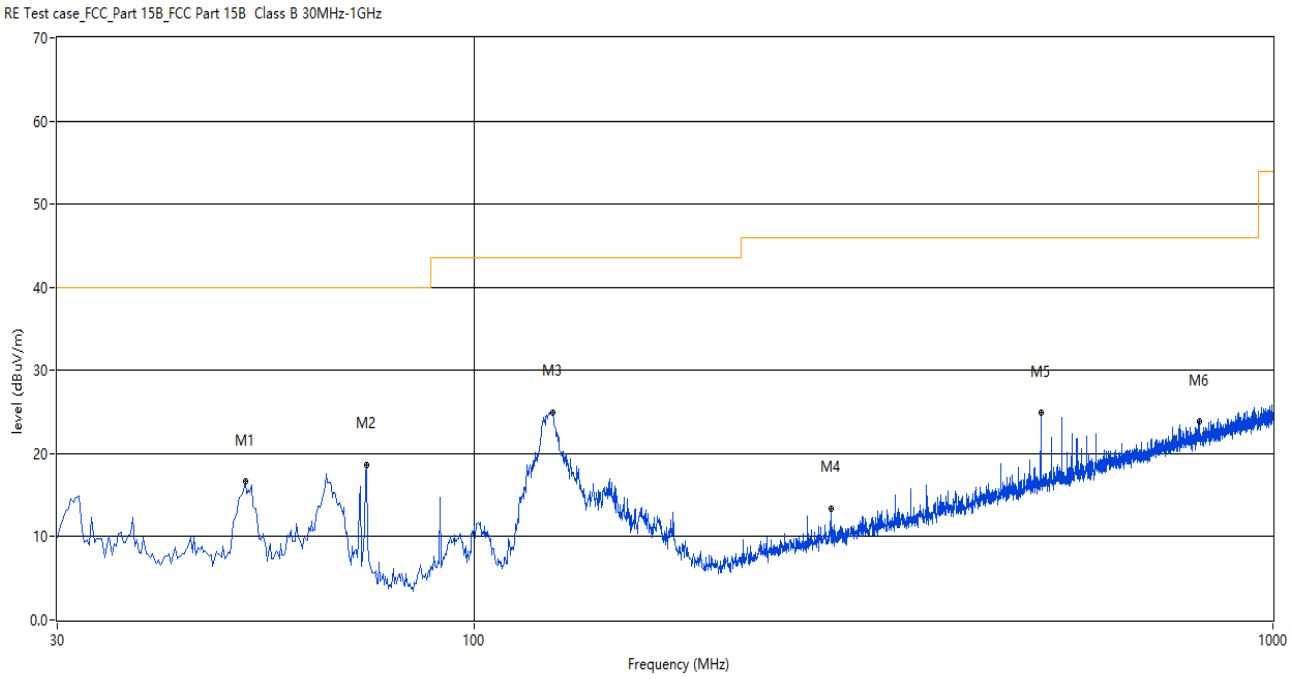
Note: Only the worst test results were recorded in this report.

LTE Band5 30MHz to 1GHz, ANT H



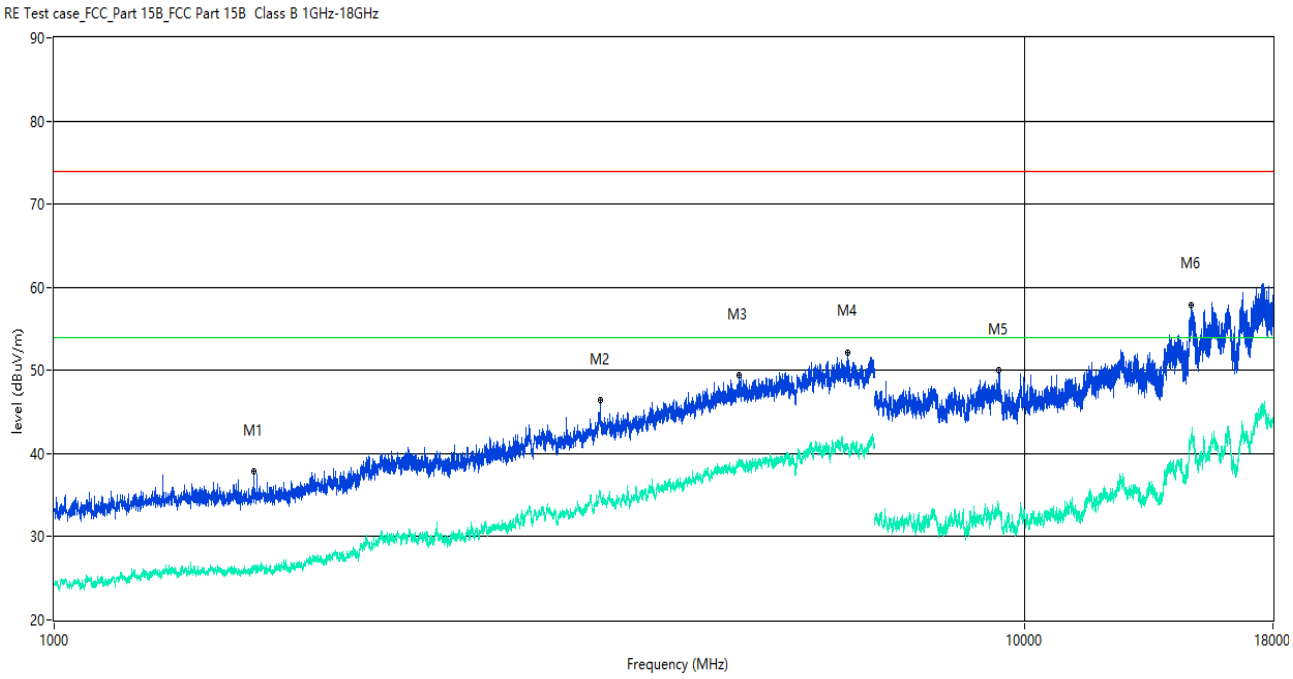
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detect or	Table (o)	Height (cm)	ANT	Verdict
1	38.245	8.88	-26.54	40.0	-31.12	Peak	117.00	100	Horizontal	Pass
2	86.745	16.98	-30.11	40.0	-23.02	Peak	182.00	100	Horizontal	Pass
3	125.060	22.55	-26.58	43.5	-20.95	Peak	106.00	200	Horizontal	Pass
4	273.712	15.50	-25.17	46.0	-30.50	Peak	114.00	200	Horizontal	Pass
5	512.090	23.75	-18.50	46.0	-22.25	Peak	91.00	200	Horizontal	Pass
6	733.977	22.64	-13.86	46.0	-23.36	Peak	0.00	200	Horizontal	Pass

LTE Band5 30MHz to 1GHz, ANT V



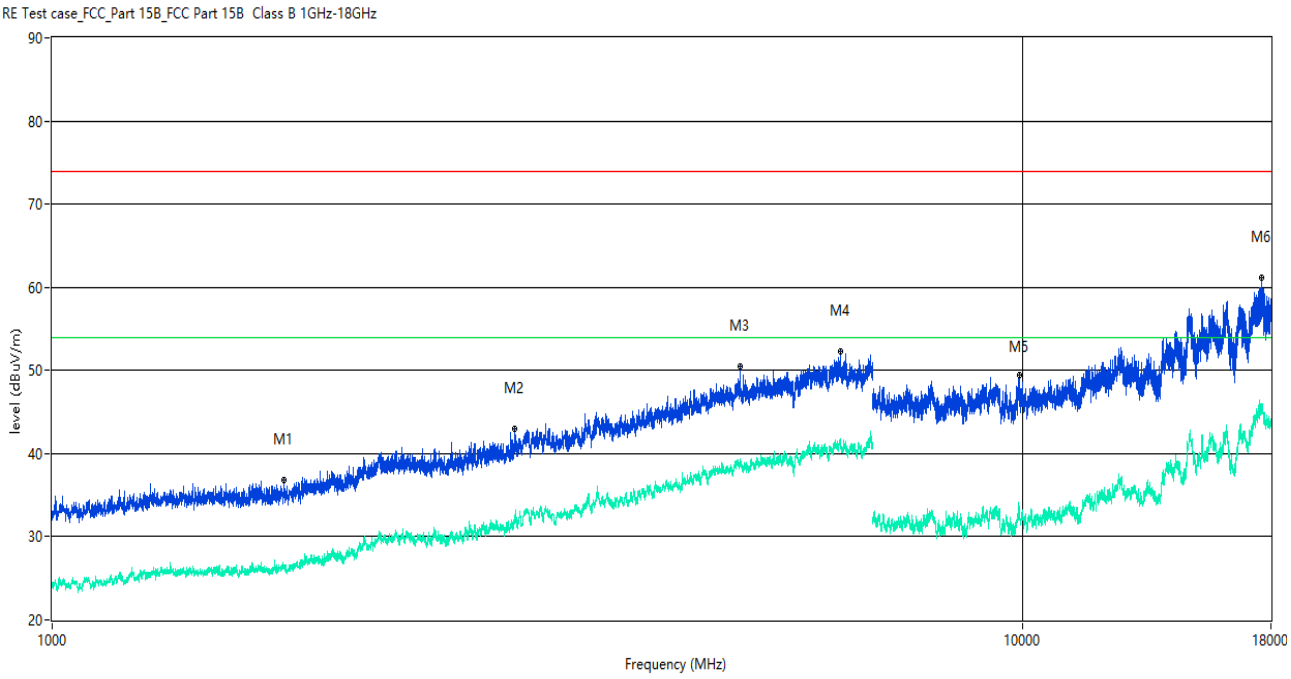
No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1	51.583	16.61	-26.94	40.0	-23.39	Peak	190.00	100	Vertical	Pass
2	73.165	18.67	-29.46	40.0	-21.33	Peak	127.00	200	Vertical	Pass
3	125.302	25.01	-26.55	43.5	-18.49	Peak	72.00	200	Vertical	Pass
4	280.017	13.42	-24.97	46.0	-32.58	Peak	0.00	200	Vertical	Pass
5	512.090	24.92	-18.50	46.0	-21.08	Peak	1.00	100	Vertical	Pass
6	809.638	23.84	-12.50	46.0	-22.16	Peak	0.00	200	Vertical	Pass

LTE Band5 1GHz to 18GHz, ANT H



No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1605.000	26.36	-15.28	54.0	-27.64	AV	143.00	100	Horizontal	Pass
1	1605.000	37.85	-15.28	74.0	-36.15	Peak	143.00	100	Horizontal	Pass
2**	3651.000	35.49	-4.72	54.0	-18.51	AV	169.00	100	Horizontal	Pass
2	3651.000	46.45	-4.72	74.0	-27.55	Peak	169.00	100	Horizontal	Pass
3**	5069.000	38.90	-0.84	54.0	-15.10	AV	98.00	100	Horizontal	Pass
3	5069.000	49.49	-0.84	74.0	-24.51	Peak	98.00	100	Horizontal	Pass
4**	6559.000	41.07	2.84	54.0	-12.93	AV	169.00	100	Horizontal	Pass
4	6559.000	52.20	2.84	74.0	-21.80	Peak	169.00	100	Horizontal	Pass
5**	9390.562	33.90	18.32	54.0	-20.10	AV	6.00	100	Horizontal	Pass
5	9390.562	50.05	18.32	74.0	-23.95	Peak	6.00	100	Horizontal	Pass
6**	14826.375	41.82	26.81	54.0	-12.18	AV	274.00	100	Horizontal	Pass
6	14826.375	57.91	26.81	74.0	-16.09	Peak	274.00	100	Horizontal	Pass

LTE Band5 1GHz to 18GHz, ANT V

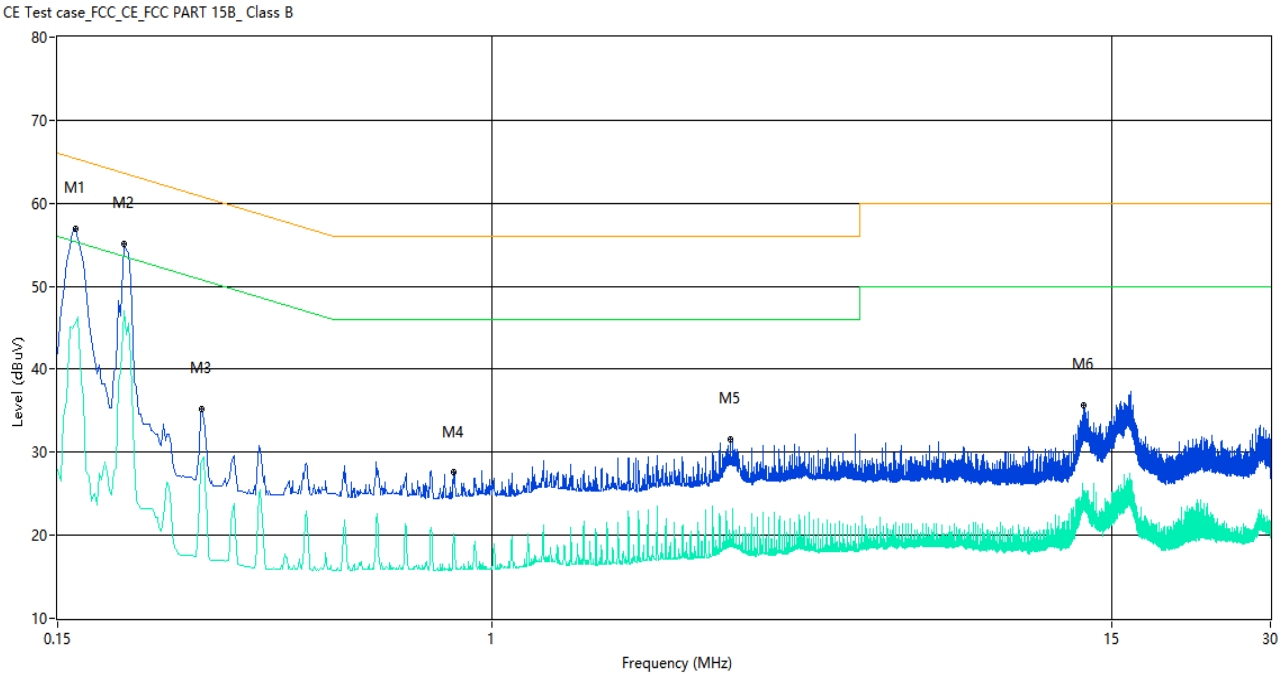


No.	Frequency (MHz)	Results (dBuV/m)	Factor (dB)	Limit (dBuV/m)	Over Limit (dB)	Detector	Table (o)	Height (cm)	ANT	Verdict
1**	1733.500	26.19	-15.18	54.0	-27.81	AV	334.00	100	Vertical	Pass
1	1733.500	36.76	-15.18	74.0	-37.24	Peak	334.00	100	Vertical	Pass
2**	2993.500	31.66	-8.17	54.0	-22.34	AV	289.00	100	Vertical	Pass
2	2993.500	42.96	-8.17	74.0	-31.04	Peak	289.00	100	Vertical	Pass
3**	5113.000	39.33	-0.50	54.0	-14.67	AV	181.00	100	Vertical	Pass
3	5113.000	50.44	-0.50	74.0	-23.56	Peak	181.00	100	Vertical	Pass
4**	6484.000	41.19	3.06	54.0	-12.81	AV	279.00	100	Vertical	Pass
4	6484.000	52.22	3.06	74.0	-21.78	Peak	279.00	100	Vertical	Pass
5**	9909.500	33.33	18.15	54.0	-20.67	AV	117.00	100	Vertical	Pass
5	9909.500	49.45	18.15	74.0	-24.55	Peak	117.00	100	Vertical	Pass
6**	17624.625	45.64	29.46	54.0	-8.36	AV	113.00	100	Vertical	Pass
6	17624.625	61.15	29.46	74.0	-12.85	Peak	113.00	100	Vertical	Pass

A.9 AC Power-line Conducted Emissions

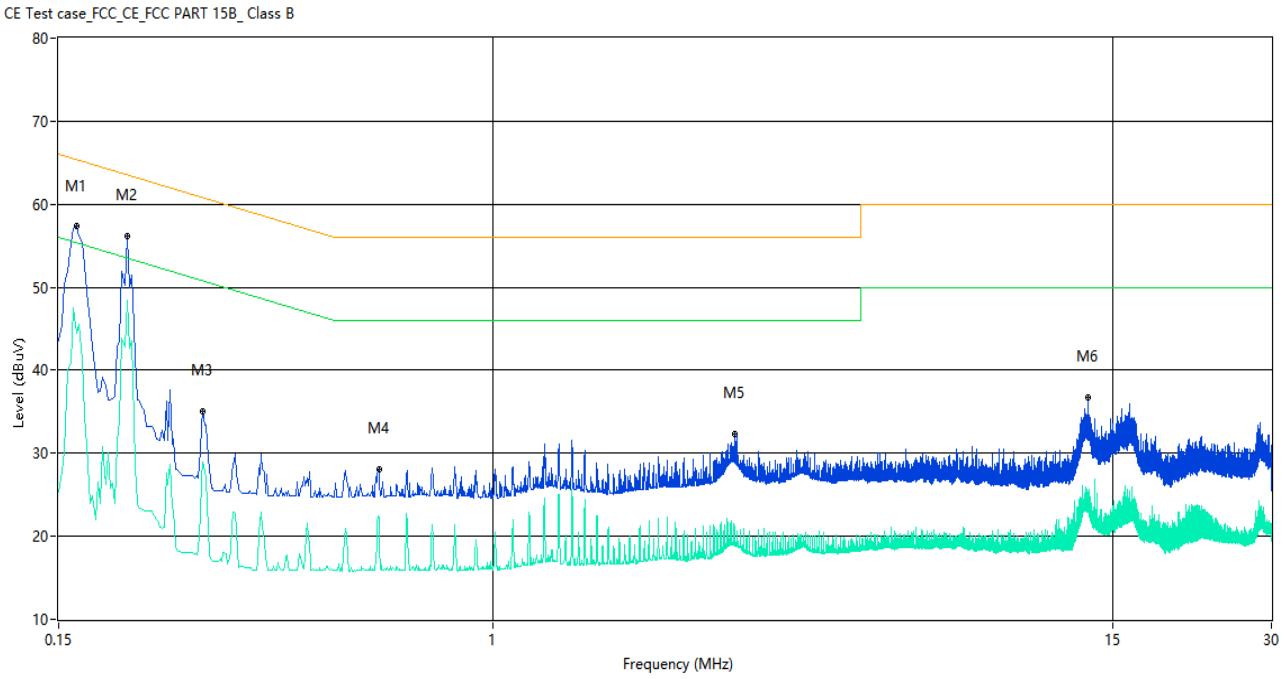
Note: Only the worst test results were recorded in this report.

L Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.162	57.0	10.01	65.4	-8.40	Peak	L Line	Pass
1**	0.162	45.6	10.01	55.4	-9.80	AV	L Line	Pass
2	0.200	55.1	10.01	63.6	-8.50	Peak	L Line	Pass
2**	0.200	47.0	10.01	53.6	-6.60	AV	L Line	Pass
3	0.282	35.3	10.03	60.8	-25.50	Peak	L Line	Pass
3**	0.282	29.0	10.03	50.8	-21.80	AV	L Line	Pass
4	0.846	27.7	10.02	56.0	-28.30	Peak	L Line	Pass
4**	0.846	20.2	10.02	46.0	-25.80	AV	L Line	Pass
5	2.830	31.5	10.09	56.0	-24.50	Peak	L Line	Pass
5**	2.830	19.8	10.09	46.0	-26.20	AV	L Line	Pass
6	13.286	35.6	10.19	60.0	-24.40	Peak	L Line	Pass
6**	13.286	22.6	10.19	50.0	-27.40	AV	L Line	Pass

N Phase



No.	Frequency (MHz)	Results (dBuV)	Factor (dB)	Limit (dBuV)	Over Limit (dB)	Detector	Line	Verdict
1	0.162	57.3	10.01	65.4	-8.10	Peak	N Line	Pass
1**	0.162	44.4	10.01	55.4	-11.00	AV	N Line	Pass
2	0.202	56.1	10.01	63.5	-7.40	Peak	N Line	Pass
2**	0.202	48.4	10.01	53.5	-5.10	AV	N Line	Pass
3	0.282	35.0	10.03	60.8	-25.80	Peak	N Line	Pass
3**	0.282	29.0	10.03	50.8	-21.80	AV	N Line	Pass
4	0.608	28.0	10.03	56.0	-28.00	Peak	N Line	Pass
4**	0.608	22.2	10.03	46.0	-23.80	AV	N Line	Pass
5	2.872	32.3	10.08	56.0	-23.70	Peak	N Line	Pass
5**	2.872	20.2	10.08	46.0	-25.80	AV	N Line	Pass
6	13.442	36.7	10.19	60.0	-23.30	Peak	N Line	Pass
6**	13.442	24.4	10.19	50.0	-25.60	AV	N Line	Pass

ANNEX B TEST SETUP PHOTOS

Please refer to the document “BL-HK18C0003-AR.PDF”.

ANNEX C EUT EXTERNAL PHOTOS

Please refer to the document “BL-HK18C0003-AW.PDF”.

ANNEX D EUT INTERNAL PHOTOS

Please refer to the document “BL-HK18C0003-AI.PDF”.

--END OF REPORT--