

FCC Radio Test Report

FCC ID: QISAGS2-L03

This report concerns (check one): ☒ Original Grant ☐ Class I Change ☐ Class II Change

Project No. : 1808C216
Equipment : HUAWEI MediaPad T5
Model Name : AGS2-L03
Series Model : N/A
Applicant : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd., Bantian, Longgang District, Shenzhen, 518129, P.R.C

Date of Receipt : Aug. 24, 2018
Date of Test : Aug. 27, 2018 ~ Sep. 07, 2018
Issued Date : Sep. 13, 2018
Tested by : BTL Inc.

Technical Manager

: David Mao
(David Mao)

Authorized Signatory

: Steven Lu
(Steven Lu)

B T L I N C .

No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan,
Guangdong, China.

TEL: +86-769-8318-3000 FAX: +86-769-8319-6000



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BTL's reports apply only to the specific samples tested under conditions. It is manufacture's responsibility to ensure that additional production units of this model are manufactured with the identical electrical and mechanical components. **BTL** shall have no liability for any declarations, inferences or generalizations drawn by the client or others from **BTL** issued reports.

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BTL's laboratory quality assurance procedures are in compliance with the **ISO Guide 17025** requirements, and accredited by the conformity assessment authorities listed in this test report.

BTL is not responsible for the sampling stage, so the results only apply to the sample as received.

The information, data and test plan are provided by manufacturer, so it is manufacturer's responsibility to ensure that the apparatus meets the essential requirements in all the possible configurations as representative of its intended use.

Limitation

For the use of the authority's logo is limited unless the Test Standard(s)/Scope(s)/Item(s) mentioned in this test report is (are) included in the conformity assessment authorities acceptance respective.

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REPORT ISSUED HISTORY

Issued No.	Description	Issued Date
BTL-FCCP-5-1808C216	Original Issue.	Sep. 13, 2018

1. CERTIFICATION

Equipment : HUAWEI MediaPad T5
Brand Name : HUAWEI
Model Name : AGS2-L03
Series Model : N/A
Applicant : Huawei Technologies Co., Ltd.
Manufacturer : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C
Factory : Huawei Technologies Co., Ltd.
Address : Administration Building, Headquarters of Huawei Technologies Co., Ltd.,
Bantian, Longgang District, Shenzhen, 518129, P.R.C
Date of Test : Aug. 27, 2018 ~ Sep. 07, 2018
Test Sample : Engineering Sample No.: D180807232 for conducted, D180807229 for
radiated.
Standard(s) : 47 CFR FCC Part 22 Subpart H
47 CFR FCC Part 2
ANSI/TIA-603-D-2010
FCC KDB 971168 D01 Power Meas License Digital Systems v03

The above equipment has been tested and found compliance with the requirement of the relative standards by BTL Inc.

The test data, data evaluation, and equipment configuration contained in our test report (Ref No. BTL-FCCP-5-1808C216) were obtained utilizing the test procedures, test instruments, test sites that has been accredited by the Authority of NVLAP according to the ISO-17025 quality assessment standard and technical standard(s).

Test result included in this report is only for the GSM850, WCDMA Band V, LTE Band 5 part.

2. SUMMARY OF TEST RESULTS

Test procedures according to the technical standard(s):

FCC Part 22 Subpart H & Part 2			
Standard(s) Section	Test Item	Judgment	Tested By
2.1046 22.913(a)	Radiated power	PASS	Paul Li
2.1046 22.913(a)	Maximum Output Power	PASS	Paul Li
2.1049(h) 22.917(a)	Occupied Bandwidth	PASS	Paul Li
2.1051 22.917(a)	Conducted Spurious Emissions	PASS	Paul Li
2.1053 22.917(a)	Radiated Spurious Emissions	PASS	Paul Li
22.917(a)	Band Edge Measurements	PASS	Paul Li
-	Peak To Average Ratio	PASS	Paul Li
2.1055 22.355	Frequency Stability	PASS	Paul Li

2.1 TEST FACILITY

The test facilities used to collect the test data in this report is at the location of No.3, Jinshagang 1st Road, Shixia, Dalang Town, Dongguan, Guangdong, China.

BTL's test firm number for FCC: 854385

BTL's designation number for FCC: CN5020

2.2 MEASUREMENT UNCERTAINTY

The measurement uncertainty figures shall be calculated according the methods described in the ETSI TR 100 028 and shall correspond to an expansion factor (coverage factor) $k=1.96$ or $k=2$ (which provide confidence levels of respectively 90% and 95.45% in the case where the distributions characterizing the actual measurement uncertainties are normal (Gaussian)).

Measurement Uncertainty for a Level of Confidence of 95 %, $U=2 \times U_c(y)$.

The BTL measurement uncertainty as below table:

A. Radiated Measurement :

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03	CISPR	9KHz ~ 30MHz	V	3.79
		9KHz ~ 30MHz	H	3.57
		30MHz ~ 200MHz	V	3.82
		30MHz ~ 200MHz	H	3.78
		200MHz ~ 1,000MHz	V	4.10
		200MHz ~ 1,000MHz	H	4.06

Test Site	Method	Measurement Frequency Range	Ant. H / V	U,(dB)
DG-CB03	CISPR	1GHz ~ 18GHz	V	3.12
		1GHz ~ 18GHz	H	3.68

Note: Unless specifically mentioned, the uncertainty of measurement has not been taken into account to declare the compliance or non-compliance to the specification.

3. GENERAL INFORMATION

3.1 GENERAL DESCRIPTION OF EUT

Equipment	HUAWEI MediaPad T5			
Brand Name	HUAWEI			
Model Name	AGS2-L03			
Series Model	N/A			
Model Difference(s)	N/A			
Modulation Type	GSM/GPRS	GMSK		
	EDGE	GMSK, 8PSK		
	WCDMA	UL: BPSK DL: QPSK		
	WCDMA(HSDPA/HSUPA)	16QAM		
	LTE	UL: QPSK, 16QAM DL: QPSK, 16QAM		
Operation Frequency	GSM /EDGE/GPRS	824.2 MHz ~ 848.8 MHz		
	WCDMA Band V	826.4 MHz ~ 846.6 MHz		
	LTE 5 (Channel Bandwidth: 1.4MHz)	824.7 MHz ~ 848.3 MHz		
	LTE 5 (Channel Bandwidth: 3MHz)	825.5 MHz ~ 847.5 MHz		
	LTE 5 (Channel Bandwidth: 5MHz)	826.5 MHz ~ 846.5 MHz		
	LTE 5 (Channel Bandwidth: 10MHz)	829.0 MHz ~ 844.0 MHz		
Max. ERP Power	GSM/GPRS	GMSK	30.58	dBm
	EDGE	8PSK	24.27	dBm
	WCDMA	BPSK	21.34	dBm
	WCDMA_HSDPA	16QAM	21.22	dBm
	WCDMA_HSUPA	16QAM	21.21	dBm
	LTE 5 (Channel Bandwidth: 1.4MHz)	QPSK	21.84	dBm
		16QAM	20.91	dBm
	LTE 5 (Channel Bandwidth: 3MHz)	QPSK	21.68	dBm
		16QAM	20.97	dBm
	LTE 5 (Channel Bandwidth: 5MHz)	QPSK	22.60	dBm
		16QAM	21.84	dBm
	LTE 5 (Channel Bandwidth: 10MHz)	QPSK	22.61	dBm
		16QAM	21.88	dBm

Antenna Type	Internal Antenna	
Antenna Gain	-0.4 dBi	
Hardware Version	A6t6e	
Software Version	AGS2-L03 8.0.0.20(C605)	
IMEI No.	Conducted	004401721233332
	Radiated	004401721233373
Power Source	1# DC voltage supplied from AC/DC adapter. Model: HW-050100U01 2# Supplied from battery. Model: HB2899C0ECW-C	
Power Rating	1# I/P: 100-240V~,50/60Hz,0.2A O/P: DC 5V, 1A 2# DC 3.82V, 4980mAh	

Note:

- 1.For a more detailed features description, please refer to the manufacturer's specifications or the user's manual.
- 2.The EUT contains following accessory devices.

Item	Manufacturer	Factory	Description
Adapter	Huawei Technologies Co., Ltd.	HUIZHOU BYD ELECTRONIC CO., LTD.	PDM Number: 02220780 Model Name: HW-050100U01 Input Voltage : 100-240V ~50/60Hz, 0.2A Output Voltage: DC 5V,1A (The EU and US adapter are the same PCB board of same factory)
		Shenzhen Huntkey Electric Co., Ltd.	
		DONG GUAN PHITEK ELECTRONICS CO., LTD.	
Battery	Huawei Technologies Co.,Ltd.	SCUD (FUJIAN) Electronics Co., Ltd	PDM Number: 24022744 Model Name: HB2899C0ECW-C Rated Voltage: DC 3.82V Rated Capacity: 4980mAh
USB Cable	Huawei Technologies Co.,Ltd.	FOXCONN INTERCONNECT TECHNOLOGY LIMITED	Model Name: 04071002
		HONGLIN TECHNOLOGY CO.,LTD	
		Luxshare Precision Industry Co., Ltd.	

3.2 DESCRIPTION OF TEST MODES AND TEST CONDITION

Pre-Scan has been conducted to determine the worst-case mode from all possible combinations between available modulations, data rates, XYZ axis and antenna ports
The worst case was found when positioned on X-plane for EIRP and X-axis for radiated emission.
Following channel(s) was (were) selected for the final test as listed below:

GSM MODE			
Test Item	Available Channel	Tested Channel	Mode
ERP	128 to 251	128, 190, 251	GSM, EDGE
Maximum Output Power	128 to 251	128, 190, 251	GSM, EDGE
Occupied Bandwidth	128 to 251	128, 190, 251	GSM, EDGE
Conducted Emission	128 to 251	190	GSM, EDGE
Radiated Emission	128 to 251	190	GSM, EDGE
Band Edge	128 to 251	128, 251	GSM, EDGE
Peak to Average Ratio	128 to 251	128, 190, 251	GSM, EDGE
Frequency Stability	128 to 251	190	GSM

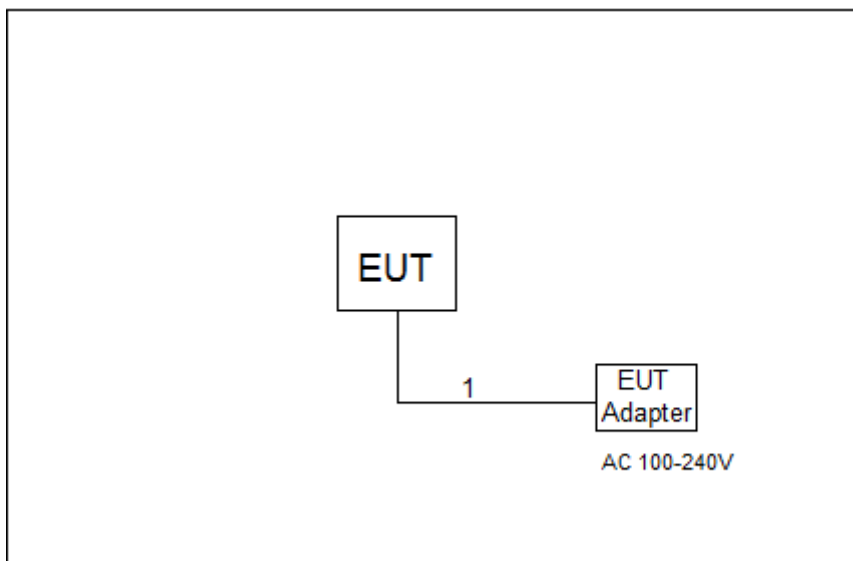
WCDMA MODE			
Test Item	Available Channel	Tested Channel	Mode
ERP	4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA, HSUPA
Maximum Output Power	4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA, HSUPA
Conducted Emission	4132 to 4233	4182	WCDMA, HSDPA, HSUPA
Radiated Emission	4132 to 4233	4182	WCDMA
Band Edge	4132 to 4233	4132, 4233	WCDMA, HSDPA, HSUPA
Peak to Average Ratio	4132 to 4233	4132, 4182, 4233	WCDMA, HSDPA, HSUPA
Frequency Stability	4132 to 4233	4182	WCDMA

LTE BAND 5					
Test Item	Available Channel	Tested Channel	Channel Bandwidth	Modulation	Mode
ERP	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK, 16QAM	1RB/3RB/6RB
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM	1RB/8RB/15RB
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	1RB/12RB/25RB
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	1RB/25RB/50RB
Occupied Bandwidth	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK, 16QAM	6 RB
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM	15 RB
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	25 RB
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	50 RB
Conducted Emission	20407 to 20643	20525	1.4MHz	QPSK	1 RB
	20425 to 20625	20525	5MHz	QPSK	1 RB
	20450 to 20600	20525	10MHz	QPSK	1 RB
Radiated Emission	20407 to 20643	20525	1.4MHz	QPSK	1 RB
	20425 to 20625	20525	5MHz	QPSK	1 RB
	20450 to 20600	20525	10MHz	QPSK	1 RB
Band Edge	20407 to 20643	20407	1.4MHz	QPSK	1 RB
					6 RB
		20643	1.4MHz	QPSK	1 RB
					6 RB
	20415 to 20635	20415	3MHz	QPSK	1 RB
					15 RB
		20635	3MHz	QPSK	1 RB
					15 RB
	20425 to 20625	20425	5MHz	QPSK	1 RB
					25 RB
		20625	5MHz	QPSK	1 RB
					25 RB
	20450 to 20600	20450	10MHz	QPSK	1 RB
					50 RB
		20600	10MHz	QPSK	1 RB
					50 RB
Peak To Average Ratio	20407 to 20643	20407, 20525, 20643	1.4MHz	QPSK, 16QAM	1 RB
	20415 to 20635	20415, 20525, 20635	3MHz	QPSK, 16QAM	1 RB
	20425 to 20625	20425, 20525, 20625	5MHz	QPSK, 16QAM	1 RB
	20450 to 20600	20450, 20525, 20600	10MHz	QPSK, 16QAM	1 RB
Frequency Stability	20407 to 20643	20525	1.4MHz	QPSK	1 RB
	20415 to 20635	20525	3MHz	QPSK	1 RB
	20425 to 20625	20525	5MHz	QPSK	1 RB
	20450 to 20600	20525	10MHz	QPSK	1 RB

EUT TEST CONDITIONS:

Test Item	Environmental Conditions	Test Voltage
ERP	25°C, 60%RH	DC 3.82V
Maximum Output Power	25°C, 65%RH	DC 3.82V
Occupied Bandwidth	25°C, 65%RH	DC 3.82V
Conducted Emission	25°C, 65%RH	DC 3.82V
Radiated Emission	25°C, 60%RH	AC 120V/60Hz
Band Edge	25°C, 65%RH	DC 3.82V
Peak to Average Ratio	25°C, 65%RH	DC 3.82V
Frequency Stability	Normal and Extreme	Normal and Extreme

3.3 BLOCK DIAGRAM SHOWING THE CONFIGURATION OF SYSTEM TESTED FOR RADIATED



3.4 DESCRIPTION OF SUPPORT UNITS

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Series No.
-	-	-	-	-	-

Item	Shielded Type	Ferrite Core	Length	Note
1	NO	NO	1.2m	DC Cable

4. TEST RESULT

4.1 OUTPUT POWER MEASUREMENT

4.1.1 LIMIT

Mobile / Portable station are limited to 7 watts e.r.p.

4.1.2 TEST PROCEDURE

EURP/ ERP:

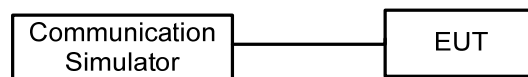
1. EIRP= Output Power +Antenan gain
ERP power= EIPR power-2.15dBi.

Maximum Output Power:

The EUT was set up for the maximum power with GSM, GPRS, EDGE, WCDMA and LTE link data modulation and link up with simulator. Set the EUT to transmit under low, middle and high channel and record the power level shown on simulator.

4.1.3 TESTSETUP LAYOUT

Output Power Measurement



4.1.4 TEST DEVIATION

No deviation

4.1.5 TEST RESULTS

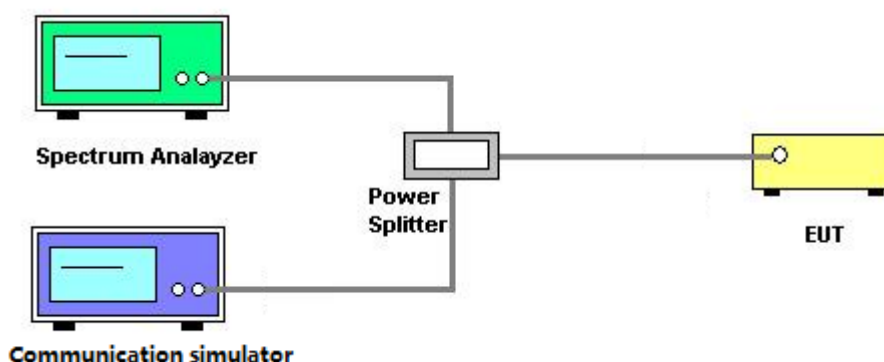
Please refer to the Appendix A.

4.2 OCCUPIED BANDWIDTH MEASUREMENT

4.2.1 TEST PROCEDURE

The EUT makes a call to the communication simulator. All measurements were done at low, middle and high operational frequency range. The communication simulator station system controlled a EUT to export maximum output power under transmission mode and specific channel frequency. Use OBW measurement function of Spectrum analyzer to measure 99 % occupied bandwidth and 26dB bandwidth.

4.2.2 TEST SETUP LAYOUT



4.2.3 TEST DEVIATION

No deviation

4.2.4 TEST RESULTS

Please refer to the Appendix B.

4.3 CONDUCTED EMISSIONS MEASUREMENT

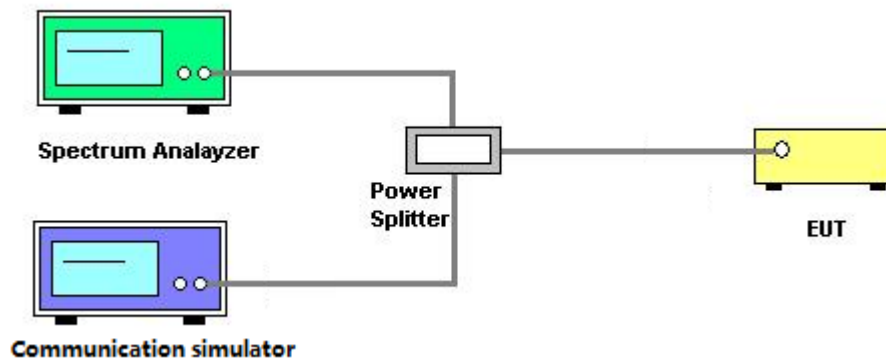
4.3.1 LIMIT

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

4.3.2 TEST PROCEDURES

1. The testing follows FCC KDB 971168 v03 Section 6.0.
2. The EUT was connected to spectrum analyzer and system simulator via a power divider.
3. The band edges of low and high channels for the highest RF powers were measured. Set $RBW \geq 1\%$ EBW in the 1MHz band immediately outside and adjacent to the band edge.
4. Set spectrum analyzer with RMS detector.
5. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
6. The limit line is derived from $43 + 10 \log(P)$ dB below the transmitter power P(Watts)
 $= P(W) - [43 + 10 \log(P)](dB)$
 $= [30 + 10 \log(P)](dBm) - [43 + 10 \log(P)](dB)$
 $= -13dBm$

4.3.3 TESTSETUP LAYOUT



4.3.4 TESTDEVIATION

No deviation

4.3.5 TEST RESULTS

Please refer to the Appendix C.

4.4 RADIATED EMISSIONS MEASUREMENT

4.4.1 LIMIT

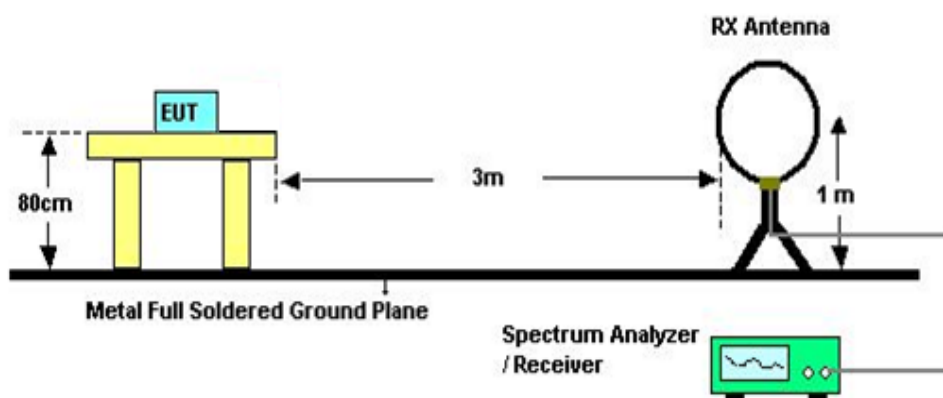
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least $43 + 10 \log(P)$ dB. The emission limit equal to -13dBm.

4.4.2 TEST PROCEDURES

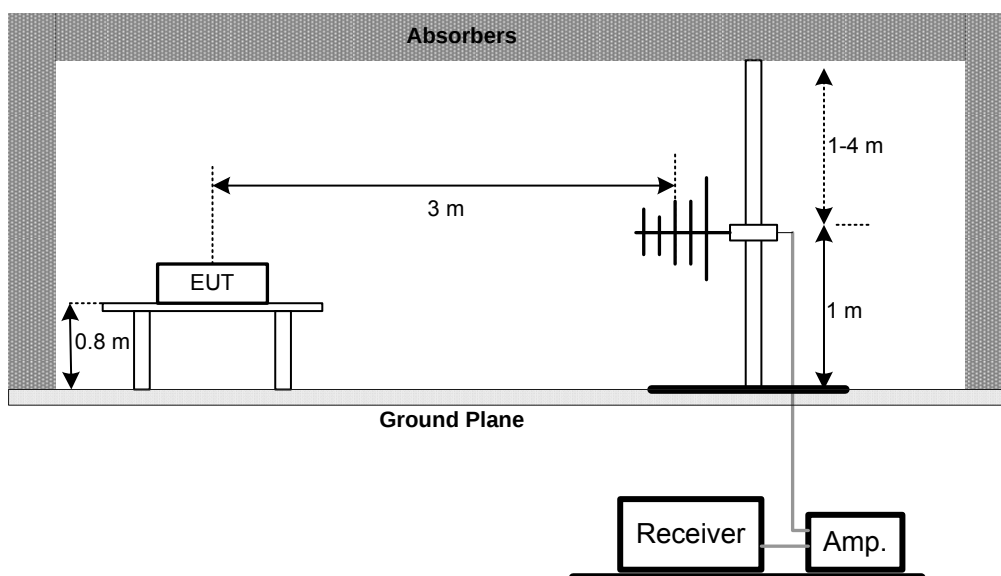
1. Substitution method is used for E.I.R.P measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
2. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value " of step a. Record the power level of S.G
3. $EIRP = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}.$
4. E.R.P power can be calculated form E.I.R.P power by subtracting the gain of dipole, $E.R.P \text{ power} = E.I.P.R \text{ power} - 2.15\text{dBi}.$
5. The resolution bandwidth and video bandwidth of test receiver/spectrum analyzer is 1MHz/3MHz.

4.4.3 TESTSETUP LAYOUT

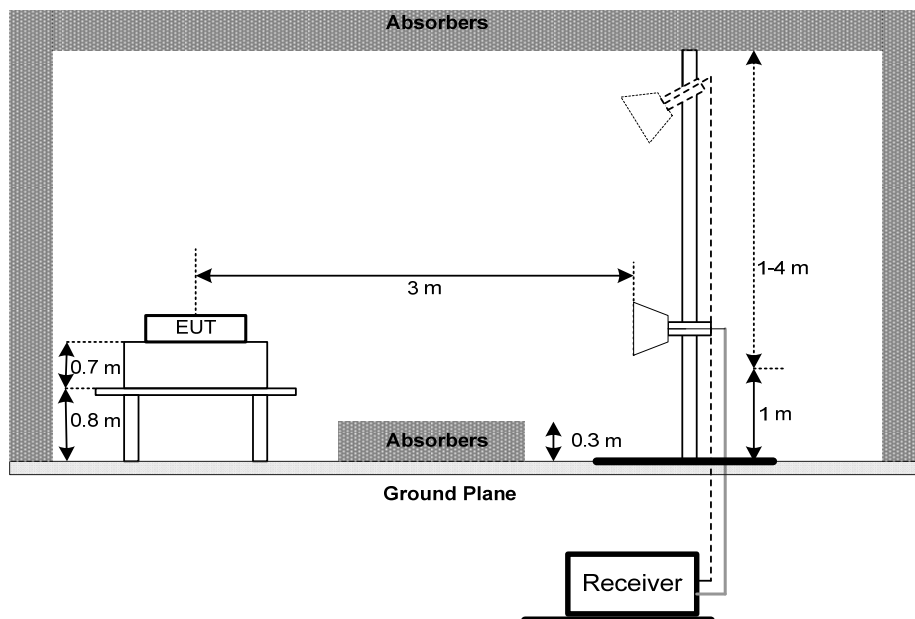
Below 30MHz



30MHz to 1GHz



1GHz to 18GHz



4.4.4 TESTDEVIATION

No deviation

4.4.5 TEST RESULTS (9KHZ TO 30MHZ)

Please refer to the Appendix D.

4.4.6 TEST RESULTS (30MHZ TO 1000MHZ)

Please refer to the Appendix E.

4.4.7 TEST RESULTS (ABOVE 1000MHZ)

Please refer to the Appendix F.

4.5 BAND EDGE MEASUREMENT

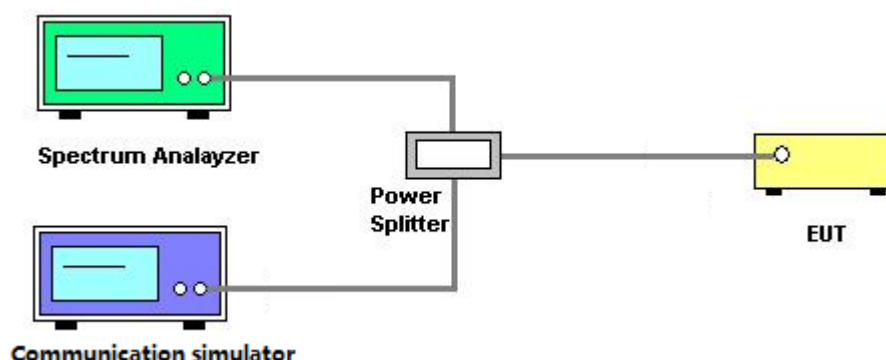
4.5.1 LIMIT

A 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. 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.

4.5.2 TEST PROCEDURES

1. All measurements were done at low and high operational frequency range.
2. The center frequency of spectrum is the band edge frequency and span is 1.5MHz. RB of the spectrum is 3kHz and VB of the spectrum is 10kHz (GSM/GPRS/EDGE).
3. The center frequency of spectrum is the band edge frequency and span is 10MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (WCDMA).
4. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 15kHz and VB of the spectrum is 43kHz (LTE Bandwidth 1.4MHz).
5. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 30kHz and VB of the spectrum is 91kHz (LTE Bandwidth 3MHz).
6. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 51kHz and VB of the spectrum is 150kHz (LTE Bandwidth 5MHz).
7. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 100kHz and VB of the spectrum is 300kHz (LTE Bandwidth 10MHz).
8. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 150kHz and VB of the spectrum is 470kHz (LTE Bandwidth 15MHz).
9. The center frequency of spectrum is the band edge frequency and span is 2MHz. RB of the spectrum is 200kHz and VB of the spectrum is 620kHz (LTE Bandwidth 20MHz).
10. Record the max trace plot into the test report.

4.5.3 TESTSETUP LAYOUT



4.5.4 TESTDEVIATION

No deviation

4.5.5 TEST RESULTS

Please refer to the Appendix G.

4.6 PEAK TO AVERAGE RATIO MEASUREMENT

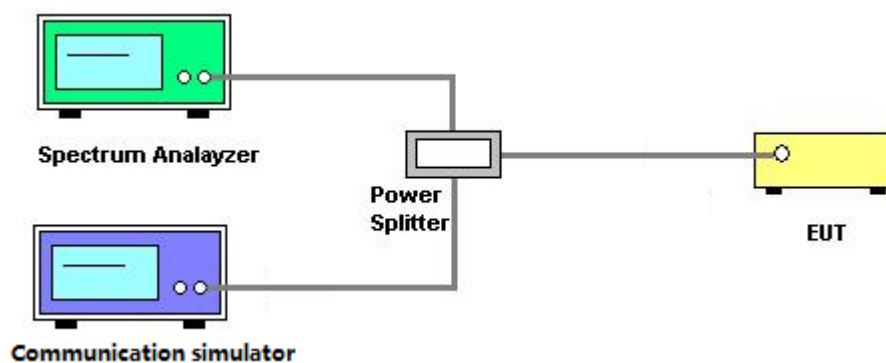
4.6.1 LIMIT

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.

4.6.2 TEST PROCEDURES

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

4.6.3 TESTSETUP LAYOUT



4.6.4 TESTDEVIATION

No deviation

4.6.5 TEST RESULTS

Please refer to the Appendix H.

4.7 FREQUENCY STABILITY MEASUREMENT

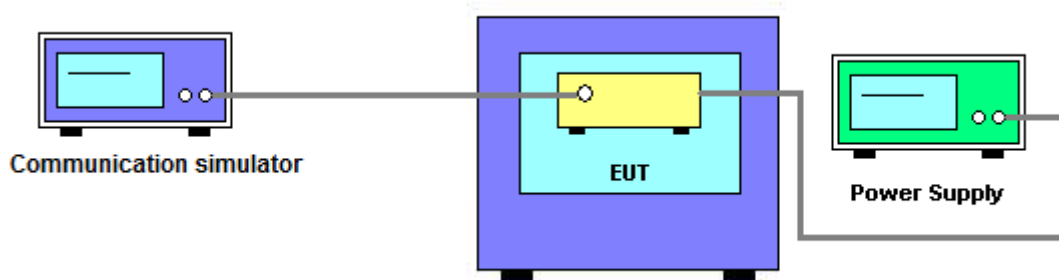
4.7.1 LIMIT

1.5 ppm is for base and fixed station. 2.5 ppm is for mobile station.

4.7.2 TEST PROCEDURES

1. Device is placed at the oven room. The oven room could control the temperatures and humidity. Power warm up is at least 15 min and power applied should perform before recording frequency error.
2. EUT is connected the external power supply to control the DC input power. The test voltage range is from minimum to maximum working voltage. Each step shall be record the frequency error rate.
3. The temperature range step is 10 degrees in this test items. All temperature levels shall be hold the $\pm 0.5^{\circ}\text{C}$ during the measurement testing. The each temperature step shall be at least 0.5 hours, consider the EUT could be test under the stability condition.
4. The frequency error was recorded frequency error from the communication simulator.

4.7.3 TESTSETUP LAYOUT



4.7.4 TESTDEVIATION

No deviation

4.7.5 TEST RESULTS

Please refer to the Appendix I.

5. LIST OF MEASUREMENT EQUIPMENTS

Radiated Emission Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Antenna	Schwarbeck	VULB9160	9160-3232	Mar. 11, 2019
2	Amplifier	Agilent	8449B	3008A02274	Mar. 11, 2019
3	Amplifier	HP	8447D	2944A09673	Aug. 11, 2019
4	HighPass Filter	Wairwright Instruments Gmbh	WHK 1.5/15G-10ST	11	Mar. 11, 2019
5	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1710/1785-1690/180 5-60/12SS	38	Mar. 11, 2019
6	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 824/849-810/863-60/ 9SS	7	Mar. 11, 2019
7	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 880/915-860/935-60/ 9SS	14	Mar. 11, 2019
8	Band Reject Filter	Wairwright Instruments Gmbh	WRCG 1850/1910-1830/193 0-60/10SS	17	Mar. 11, 2019
9	HighPass Filter	Wairwright Instruments Gmbh	WHK3.1/18G-10SS	24	Mar. 11, 2019
10	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 11, 2019
11	Microwave Preamplifier With Adaptor	EMC INSTRUMENT	EMC2654045	980039 & HA01	Mar. 11, 2019
12	Receiver	Agilent	N9038A	MY52130039	Aug. 11, 2019
13	wideband radio communication tester	R&S	CMW500	152372	Mar. 11, 2019
14	Cable	emci	LMR-400(30MHz-1G Hz)(8m+5m)	N/A	May 25, 2019
15	Cable	mitron	B10-01-01-12M	18072744	Jul. 30, 2019
16	Controller	ETS-Lindgren	2090	N/A	N/A
17	Measurement Software	Farad	EZ-EMC Ver.NB-03A1-01	N/A	N/A
18	Loop Antenna	EM	EM-6876-1	230	Feb. 07, 2019
19	Double Ridged Guide Antenna	ETS	3115	75789	Mar. 11, 2019
20	Broad-Band Horn Antenna	Schwarzbeck	BBHA 9170	9170319	Jun. 30, 2019

Conducted Emission & Band Edge & Occupied Bandwidth Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 11, 2019
2	EXA Spectrum Analyzer	Agilent	N9010A	MY50520044	Mar. 11, 2019
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Mar. 11, 2019
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 11, 2019
5	Spectrum Analyzer	R&S	FSP40	100185	Aug. 11, 2019

Frequency Stability Measurement					
Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Calibrated until
1	Wireless Communication Test SET	Agilent	E5515C	MY48364183	Mar. 11, 2019
2*	Multi-output DC Power Supply	GW Instek	GPC-3030DN	EK880675	Sep. 26, 2020
3	POWER SPLITTER	Mini-Circuits	ZFRSC-123-S+	331000910-1	Mar. 11, 2019
4	wideband radio communication tester	R&S	CMW500	152372	Mar. 11, 2019

Remark: "N/A" denotes no model name, serial no. or calibration specified.

All calibration period of equipment list is one year.

*All calibration period of equipment list is three year.

APPENDIX A – MAXIMUM OUTPUT POWER

Maximum Output Power (dBm):

GSM850		Burst Output Power		
		128CH	190CH	251CH
		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		33.07	33.10	33.13
GPRS/EDGE (GMSK)	1 Tx Slot	33.07	33.10	33.13
	2 Tx Slot	31.53	31.50	31.52
	3 Tx Slot	29.28	29.28	29.29
	4 Tx Slot	28.32	28.32	28.33
EDGE (8PSK)	1 Tx Slot	26.82	26.61	26.58
	2 Tx Slot	25.24	25.01	24.92
	3 Tx Slot	22.98	23.01	23.05
	4 Tx Slot	21.94	21.85	22.04

Modulation	Band	WCDMA V		
	Tx Channel	4132CH	4182CH	4233CH
	Frequency	826.4MHz	836.4MHz	846.6MHz
BPSK	RMC 12.2K	23.68	23.78	23.89
	RMC 64K	23.64	23.75	23.76
	RMC 144K	23.67	23.77	23.77
	RMC 384K	23.64	23.73	23.75
16QAM	HSDPA Subtest-1	23.67	23.73	23.77
	HSDPA Subtest-2	21.78	21.77	21.88
	HSDPA Subtest-3	21.70	21.84	21.89
	HSDPA Subtest-4	21.81	21.79	21.84
16QAM	HSUPA Subtest-1	21.53	21.56	21.56
	HSUPA Subtest-2	21.01	20.95	21.03
	HSUPA Subtest-3	21.57	21.53	21.58
	HSUPA Subtest-4	20.74	20.88	20.97
	HSUPA Subtest-5	23.72	23.76	23.76

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20407CH	20525CH	20643CH
				824.7MHz	836.5MHz	848.3MHz
5 / 1.4M	QPSK	1	0	23.77	24.04	24.28
		1	2	23.87	24.12	24.39
		1	5	23.70	23.94	24.29
		3	0	23.77	24.07	24.31
		3	1	23.79	24.09	24.35
		3	2	23.78	24.03	24.35
		6	0	22.73	23.09	23.34
	16QAM	1	0	22.63	23.32	23.33
		1	2	22.70	23.41	23.46
		1	5	22.56	23.29	23.39
		3	0	22.71	23.20	23.25
		3	1	22.74	23.23	23.30
		3	2	22.72	23.17	23.30
		6	0	21.56	22.01	22.20

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20415CH	20525CH	20635CH
				825.5MHz	836.5MHz	847.5MHz
5 / 3M	QPSK	1	0	23.60	23.96	23.83
		1	7	23.85	24.08	24.23
		1	14	23.60	23.71	24.04
		8	0	22.66	23.14	23.19
		8	4	22.69	23.05	23.29
		8	7	22.52	22.93	23.24
		15	0	22.62	22.98	23.24
	16QAM	1	0	22.73	23.35	22.96
		1	7	23.03	23.52	23.38
		1	14	22.54	23.05	23.15
		8	0	21.62	22.15	22.12
		8	4	21.66	22.07	22.24
		8	7	21.53	21.94	22.17
		15	0	21.52	21.97	22.12

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20425CH	20525CH	20625CH
				826.5MHz	836.5MHz	846.5MHz
5 / 5M	QPSK	1	0	24.65	25.02	24.72
		1	13	23.67	23.97	24.19
		1	24	24.61	24.84	25.15
		12	0	22.61	23.09	22.95
		12	6	22.60	23.14	23.14
		12	11	22.57	22.91	23.16
		25	0	22.50	22.89	22.99
	16QAM	1	0	23.86	24.39	24.02
		1	13	22.78	23.35	23.54
		1	24	23.80	24.19	24.13
		12	0	21.58	22.12	21.90
		12	6	21.52	22.11	22.11
		12	11	21.51	21.90	22.11
		25	0	21.51	21.83	21.86

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20450CH	20525CH	20600CH
				829.0MHz	836.5MHz	844.0MHz
5 / 10M	QPSK	1	0	24.68	25.16	24.76
		1	25	24.50	24.84	24.56
		1	49	24.84	24.49	25.13
		25	0	23.36	23.76	23.30
		25	13	23.48	23.75	23.68
		25	25	23.46	23.46	23.60
		50	0	23.42	23.58	23.59
	16QAM	1	0	23.85	24.43	23.77
		1	25	23.81	24.32	23.68
		1	49	24.09	23.87	24.16
		25	0	22.27	22.78	22.23
		25	13	22.42	22.71	22.61
		25	25	22.40	22.38	22.62
		50	0	22.27	22.48	22.53

ERP Power (dBm):

GSM850		ERP Power		
		128CH	190CH	251CH
		824.2MHz	836.6MHz	848.8MHz
GSM (CS)		30.52	30.55	30.58
GPRS/EDGE (GMSK)	1 Tx Slot	30.52	30.55	30.58
	2 Tx Slot	28.98	28.95	28.97
	3 Tx Slot	26.73	26.73	26.74
	4 Tx Slot	25.77	25.77	25.78
EDGE (8PSK)	1 Tx Slot	24.27	24.06	24.03
	2 Tx Slot	22.69	22.46	22.37
	3 Tx Slot	20.43	20.46	20.50
	4 Tx Slot	19.39	19.30	19.49

Modulation	Band	WCDMA V		
	Tx Channel	4132CH	4182CH	4233CH
	Frequency	826.4MHz	836.4MHz	846.6MHz
BPSK	RMC 12.2K	21.13	21.23	21.34
	RMC 64K	21.09	21.20	21.21
	RMC 144K	21.12	21.22	21.22
	RMC 384K	21.09	21.18	21.20
16QAM	HSDPA Subtest-1	21.12	21.18	21.22
	HSDPA Subtest-2	19.23	19.22	19.33
	HSDPA Subtest-3	19.15	19.29	19.34
	HSDPA Subtest-4	19.26	19.24	19.29
16QAM	HSUPA Subtest-1	18.98	19.01	19.01
	HSUPA Subtest-2	18.46	18.40	18.48
	HSUPA Subtest-3	19.02	18.98	19.03
	HSUPA Subtest-4	18.19	18.33	18.42
	HSUPA Subtest-5	21.17	21.21	21.21

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20407CH	20525CH	20643CH
				824.7MHz	836.5MHz	848.3MHz
5 / 1.4M	QPSK	1	0	21.22	21.49	21.73
		1	2	21.32	21.57	21.84
		1	5	21.15	21.39	21.74
		3	0	21.22	21.52	21.76
		3	1	21.24	21.54	21.80
		3	2	21.23	21.48	21.80
		6	0	20.18	20.54	20.79
	16QAM	1	0	20.08	20.77	20.78
		1	2	20.15	20.86	20.91
		1	5	20.01	20.74	20.84
		3	0	20.16	20.65	20.70
		3	1	20.19	20.68	20.75
		3	2	20.17	20.62	20.75
		6	0	19.01	19.46	19.65

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20415CH	20525CH	20635CH
				825.5MHz	836.5MHz	847.5MHz
5 / 3M	QPSK	1	0	21.05	21.41	21.28
		1	7	21.30	21.53	21.68
		1	14	21.05	21.16	21.49
		8	0	20.11	20.59	20.64
		8	4	20.14	20.50	20.74
		8	7	19.97	20.38	20.69
		15	0	20.07	20.43	20.69
	16QAM	1	0	20.18	20.80	20.41
		1	7	20.48	20.97	20.83
		1	14	19.99	20.50	20.60
		8	0	19.07	19.60	19.57
		8	4	19.11	19.52	19.69
		8	7	18.98	19.39	19.62
		15	0	18.97	19.42	19.57

LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20425CH	20525CH	20625CH
				826.5MHz	836.5MHz	846.5MHz
5 / 5M	QPSK	1	0	22.10	22.47	22.17
		1	13	21.12	21.42	21.64
		1	24	22.06	22.29	22.60
		12	0	20.06	20.54	20.40
		12	6	20.05	20.59	20.59
		12	11	20.02	20.36	20.61
		25	0	19.95	20.34	20.44
	16QAM	1	0	21.31	21.84	21.47
		1	13	20.23	20.80	20.99
		1	24	21.25	21.64	21.58
		12	0	19.03	19.57	19.35
		12	6	18.97	19.56	19.56
		12	11	18.96	19.35	19.56
		25	0	18.96	19.28	19.31

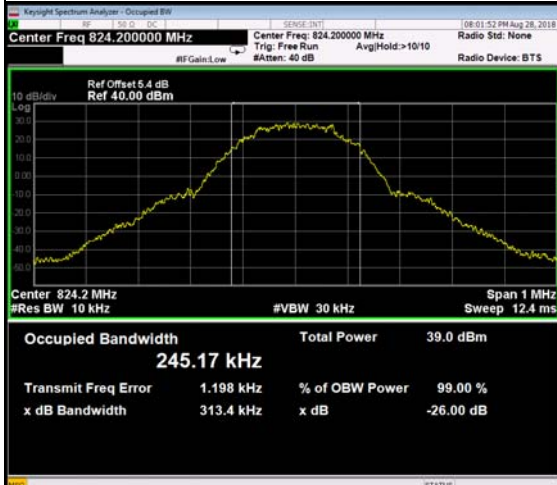
LTE Band / BW	Modulation	RB Size	RB Offset	Low CH	Mid CH	High CH
				20450CH	20525CH	20600CH
				829.0MHz	836.5MHz	844.0MHz
5 / 10M	QPSK	1	0	22.13	22.61	22.21
		1	25	21.95	22.29	22.01
		1	49	22.29	21.94	22.58
		25	0	20.81	21.21	20.75
		25	13	20.93	21.20	21.13
		25	25	20.91	20.91	21.05
		50	0	20.87	21.03	21.04
	16QAM	1	0	21.30	21.88	21.22
		1	25	21.26	21.77	21.13
		1	49	21.54	21.32	21.61
		25	0	19.72	20.23	19.68
		25	13	19.87	20.16	20.06
		25	25	19.85	19.83	20.07
		50	0	19.72	19.93	19.98

APPENDIX B - OCCUPIED BANDWIDTH

GSM850					
GSM			EDGE		
CS			8PSK		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
128	824.2	0.245	128	824.2	0.251
190	836.6	0.246	190	836.6	0.250
251	848.8	0.247	251	848.8	0.253
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
128	824.2	0.313	128	824.2	0.323
190	836.6	0.322	190	836.6	0.316
251	848.8	0.318	251	848.8	0.323

Spectrum Plot

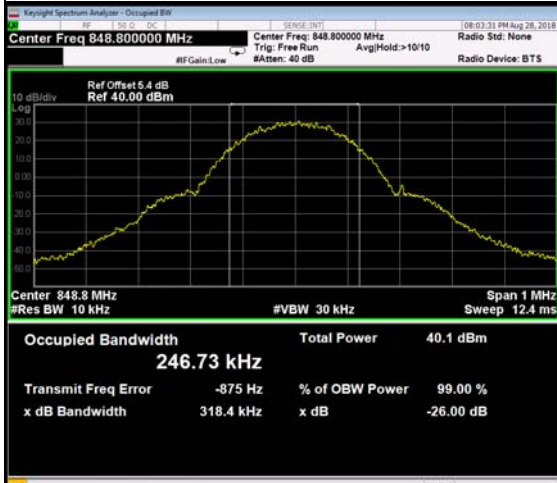
GSM -128



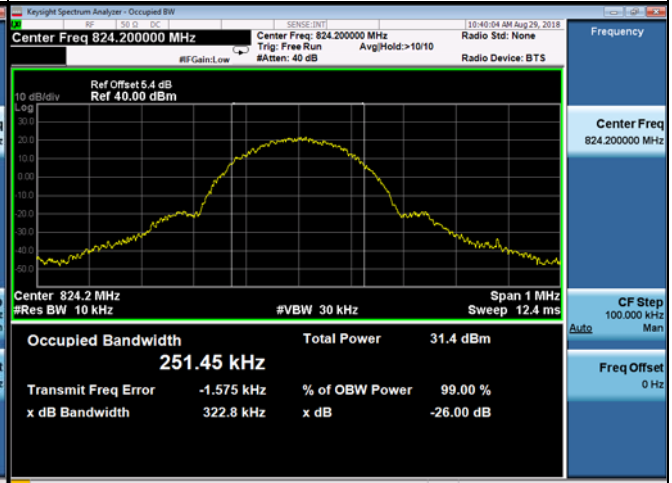
GSM-190



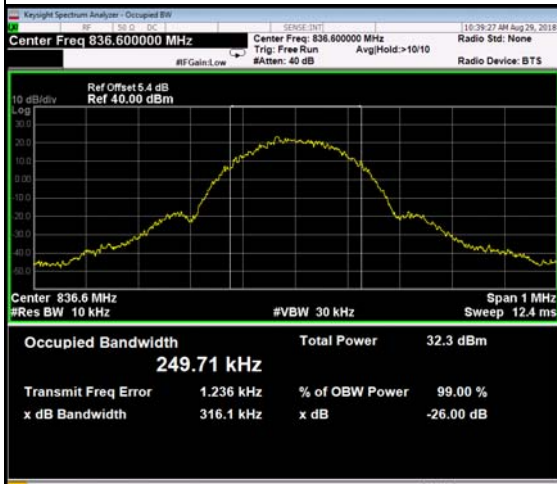
GSM-251



EDGE-128



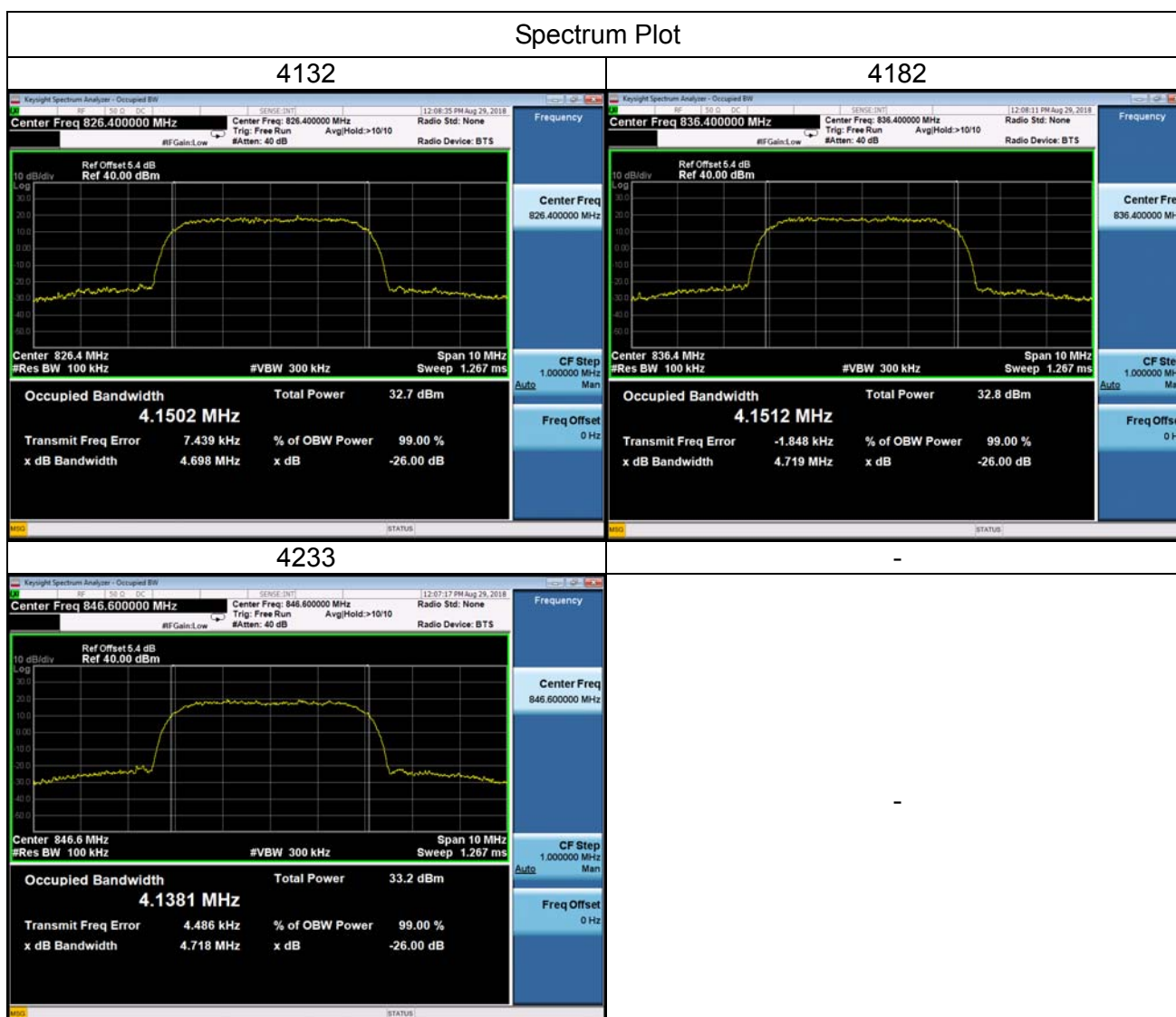
EDGE-190



EDGE-251



WCDMA Band V					
BPSK					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
4132	826.4	4.150	4132	826.4	4.698
4182	836.4	4.151	4182	836.4	4.719
4233	846.6	4.138	4233	846.6	4.718



WCDMA_HSDPA Band V					
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
4132	826.4	4.139	4132	826.4	4.713
4182	836.4	4.136	4182	836.4	4.709
4233	846.6	4.128	4233	846.6	4.713



WCDMA_HSUPA Band V					
16QAM					
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
4132	826.4	4.148	4132	826.4	4.722
4182	836.4	4.144	4182	836.4	4.697
4233	846.6	4.133	4233	846.6	4.711



LTE Band 5_1.4M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20407	824.7	1.087	20407	824.7	1.092
20525	836.5	1.092	20525	836.5	1.093
20643	848.3	1.092	20643	848.3	1.094
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20407	824.7	1.227	20407	824.7	1.233
20525	836.5	1.239	20525	836.5	1.228
20643	848.3	1.228	20643	848.3	1.242

Spectrum Plot

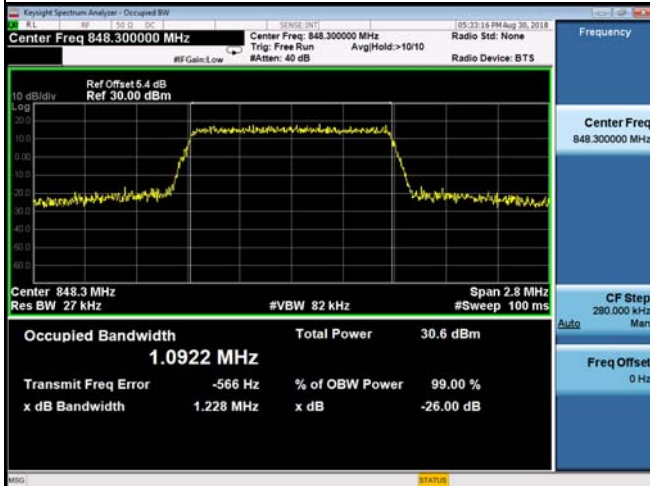
QPSK-20407



QPSK-20525



QPSK-20643



16QAM-20407



16QAM-20525



16QAM-20643



LTE Band 5_3M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20415	825.5	2.691	20415	825.5	2.697
20525	836.5	2.696	20525	836.5	2.702
20635	847.5	2.697	20635	847.5	2.696
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20415	825.5	2.979	20415	825.5	2.977
20525	836.5	2.949	20525	836.5	2.925
20635	847.5	2.944	20635	847.5	2.968

Spectrum Plot

QPSK-20415



QPSK-20525



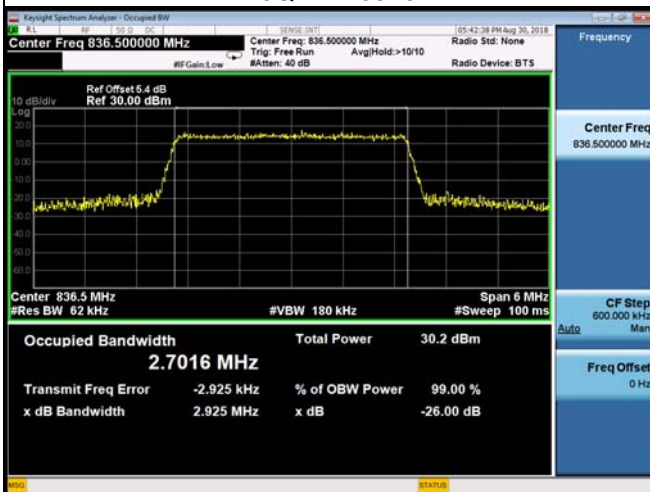
QPSK-20635



16QAM-20415



16QAM-20525



16QAM-20635



LTE Band 5_5M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20425	826.5	4.511	20425	826.5	4.505
20525	836.5	4.505	20525	836.5	4.509
20625	846.5	4.495	20625	846.5	4.505
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20425	826.5	4.922	20425	826.5	4.934
20525	836.5	4.961	20525	836.5	4.968
20625	846.5	4.914	20625	846.5	4.942

Spectrum Plot

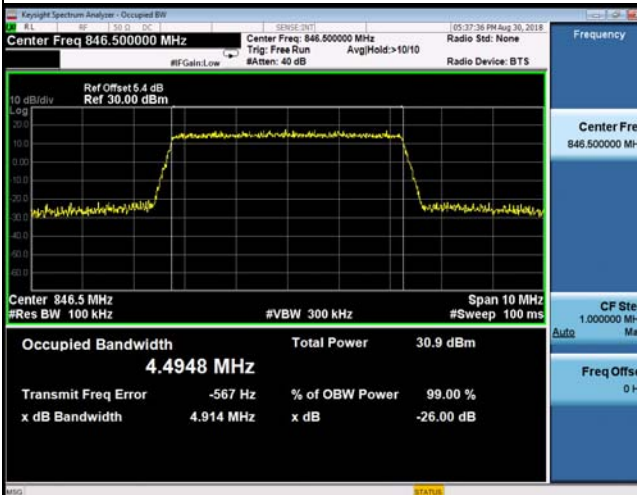
QPSK-20425



QPSK-20525



QPSK-20625



16QAM-20425



16QAM-20525



16QAM-20625



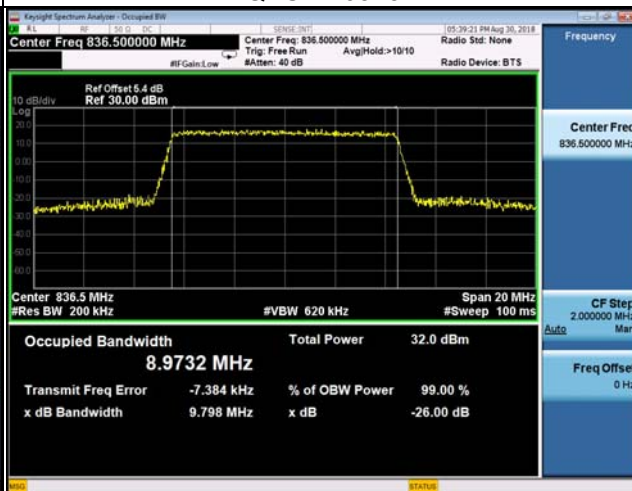
LTE Band 5_10M					
QPSK			16QAM		
Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)	Channel	Frequency (MHz)	99% Occupied Bandwidth (MHz)
20450	829.0	8.977	20450	829.0	8.974
20525	836.5	8.973	20525	836.5	8.975
20600	844.0	8.982	20600	844.0	8.970
Channel	Frequency (MHz)	26dB Bandwidth (MHz)	Channel	Frequency (MHz)	26dB Bandwidth (MHz)
20450	829.0	9.861	20450	829.0	9.802
20525	836.5	9.798	20525	836.5	9.868
20600	844.0	9.828	20600	844.0	9.889

Spectrum Plot

QPSK-20450



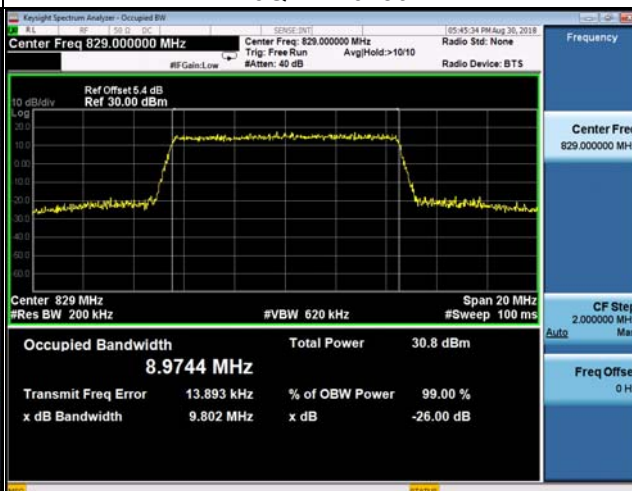
QPSK-20525



QPSK-20600



16QAM-20450



16QAM-20525



16QAM-20600



APPENDIX C - CONDUCTED EMISSIONS

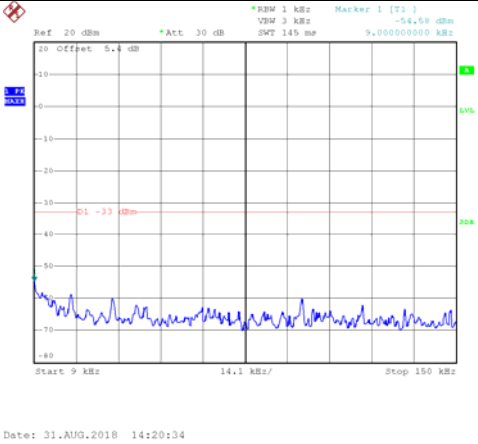
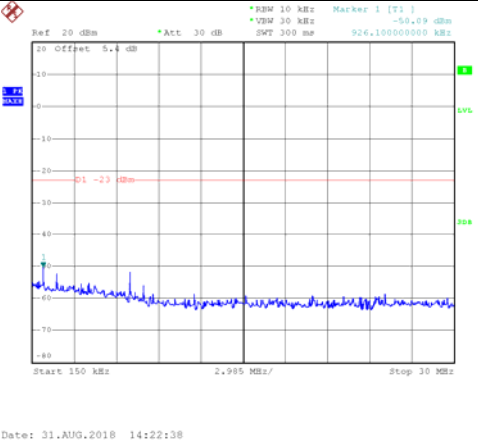
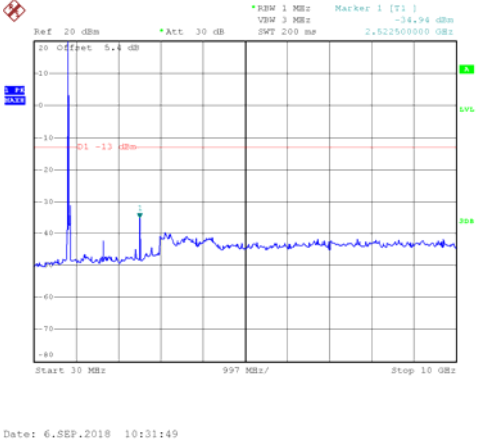
GSM850			
GSM		GSM	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
190	836.6	190	836.6
GSM		EDGE	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
190	836.6	190	836.6
EDGE		EDGE	
Channel	Frequency(MHz)	Channel	Frequency(MHz)
190	836.6	190	836.6

WCDMA Band V			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
4182	836.4	4182	836.4
Channel	Frequency(MHz)	-	-
4182	836.4	-	-

WCDMA_HSDPA Band V			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
4182	836.4	4182	836.4
Date: 1.SEP.2018 17:29:29		Date: 1.SEP.2018 17:31:19	
Channel	Frequency(MHz)	-	-
4182	836.4	-	-
Date: 31.AUG.2018 17:02:33		-	

WCDMA_HSUPA Band V			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
4182	836.4	4182	836.4
Date: 1.SEP.2018 17:29:44		Date: 1.SEP.2018 17:30:20	
Channel	Frequency(MHz)	-	-
4182	836.4	-	-
Date: 31.AUG.2018 17:02:42		-	

LTE Band 5_1.4M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20525	836.5	20525	836.5
Ref: 20 dBm, Att: 30 dB, RBW: 1 kHz, VSW: 3 kHz, SWP: 145 ms, Marker 1 [T1]: -55.44 dBm, 9.00000000 kHz Start: 9 kHz, 14.1 kHz/, Stop: 150 kHz Date: 31.AUG.2018 14:19:05		Ref: 20 dBm, Att: 30 dB, RBW: 10 kHz, VSW: 30 kHz, SWP: 300 ms, Marker 1 [T1]: -50.47 dBm, 926.10000000 kHz Start: 150 kHz, 2.985 MHz/, Stop: 30 MHz Date: 31.AUG.2018 14:22:28	
Channel	Frequency(MHz)	-	-
20525	836.5	-	-
Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, VSW: 3 MHz, SWP: 200 ms, Marker 1 [T1]: -33.29 dBm, 2.62250000 GHz Start: 30 MHz, 997 MHz/, Stop: 10 GHz Date: 6.SEP.2018 10:27:55		-	

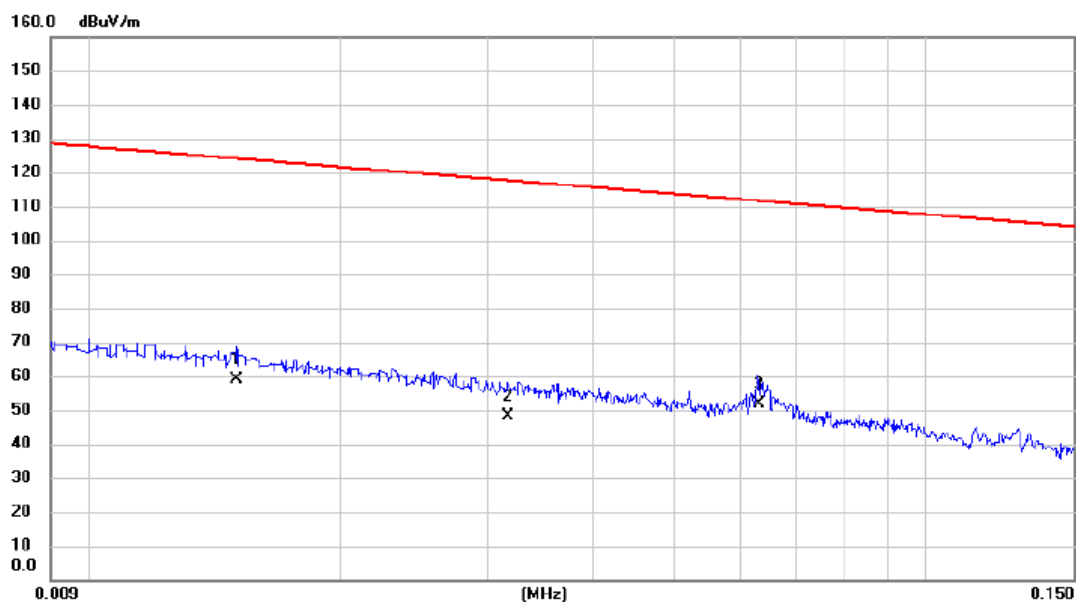
LTE Band 5_5M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20525	836.5	20525	836.5
			
Channel	Frequency(MHz)	-	-
20525	836.5	-	-
		-	

LTE Band 5_10M			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
20525	836.5	20525	836.5
Ref: 20 dBm, Att: 30 dB, RBW: 1 kHz, Marker 1 [T1], VSW: 3 kHz, SWP: 145 ms, -54.35 dBm, 9.00000000 kHz Start: 9 kHz, 14.1 kHz/, Stop: 150 kHz Date: 31.AUG.2018 14:20:56		Ref: 20 dBm, Att: 30 dB, RBW: 10 kHz, Marker 1 [T1], VSW: 30 kHz, SWP: 300 ms, -48.46 dBm, 3.373800000 MHz Start: 150 kHz, 2.985 MHz/, Stop: 30 MHz Date: 31.AUG.2018 14:23:12	
Channel	Frequency(MHz)	-	-
20525	836.5	-	-
Ref: 20 dBm, Att: 30 dB, RBW: 1 MHz, Marker 1 [T1], VSW: 3 MHz, SWP: 200 ms, -39.07 dBm, 2.622500000 GHz Start: 30 MHz, 997 MHz/, Stop: 10 GHz Date: 6.SEP.2018 10:29:51		-	

APPENDIX D - RADIATED EMISSION (9KHZ TO 30MHZ)

Test Mode: TX Mode _Adapter: Huntkey

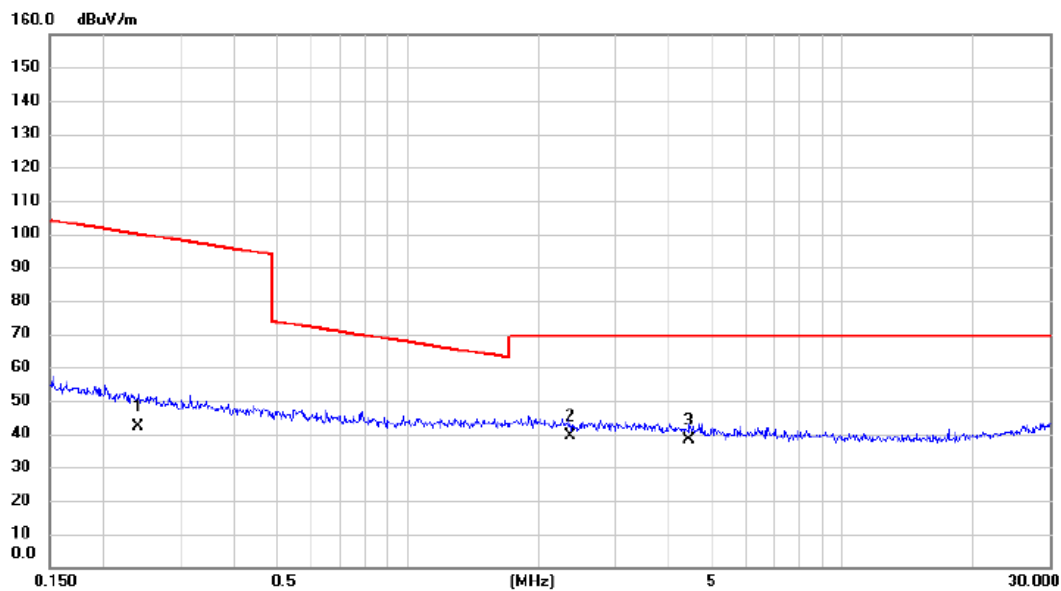
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0150	38.10	20.72	58.82	124.08	-65.26	AVG	
2		0.0317	28.30	19.82	48.12	117.58	-69.46	AVG	
3	*	0.0631	32.50	19.27	51.77	111.60	-59.83	AVG	

Test Mode: TX Mode_Adapter: Huntkey

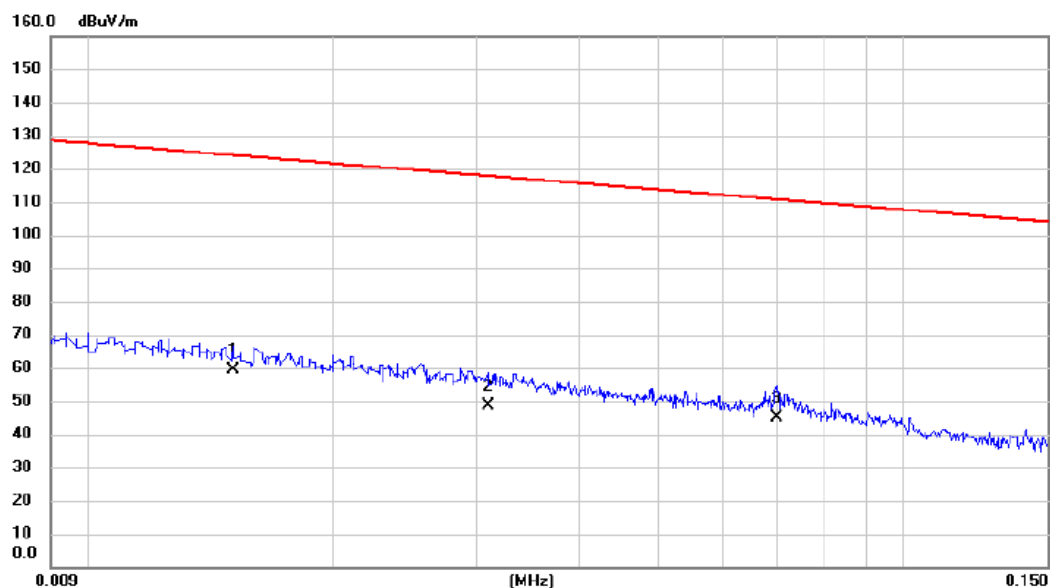
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2404	25.10	17.08	42.18	99.99	-57.81	AVG	
2	*	2.3585	22.70	16.90	39.60	69.54	-29.94	QP	
3		4.4540	22.80	15.49	38.29	69.54	-31.25	QP	

Test Mode:	TX Mode_Adapter: Huntkey
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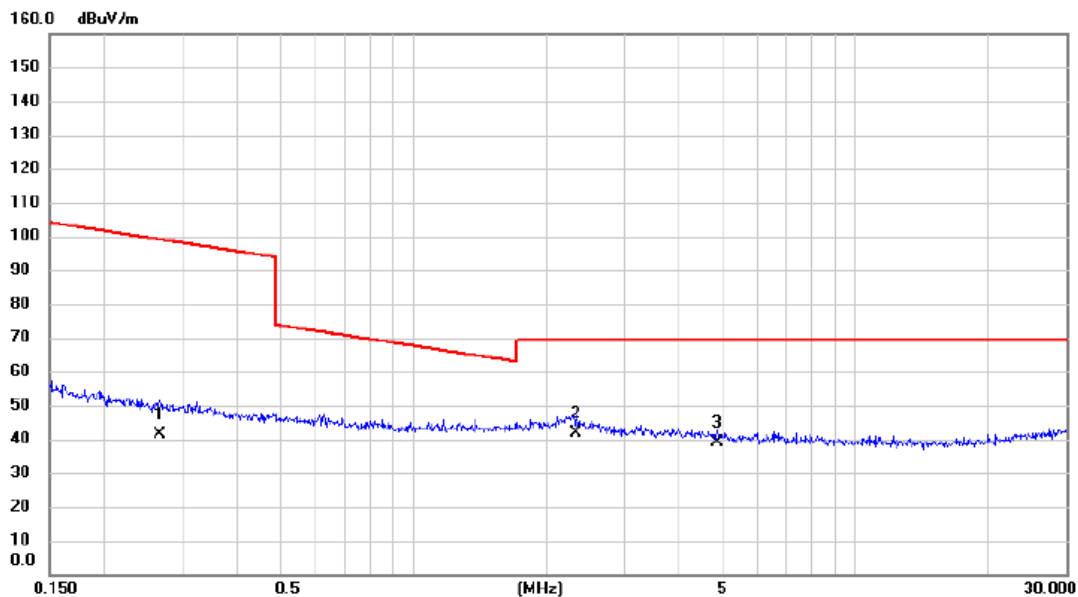
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1	*	0.0151	38.50	20.71	59.21	124.03	-64.82	AVG	
2		0.0310	28.80	19.84	48.64	117.78	-69.14	AVG	
3		0.0700	25.70	19.13	44.83	110.70	-65.87	AVG	

Test Mode: TX Mode_Adapter: Huntkey

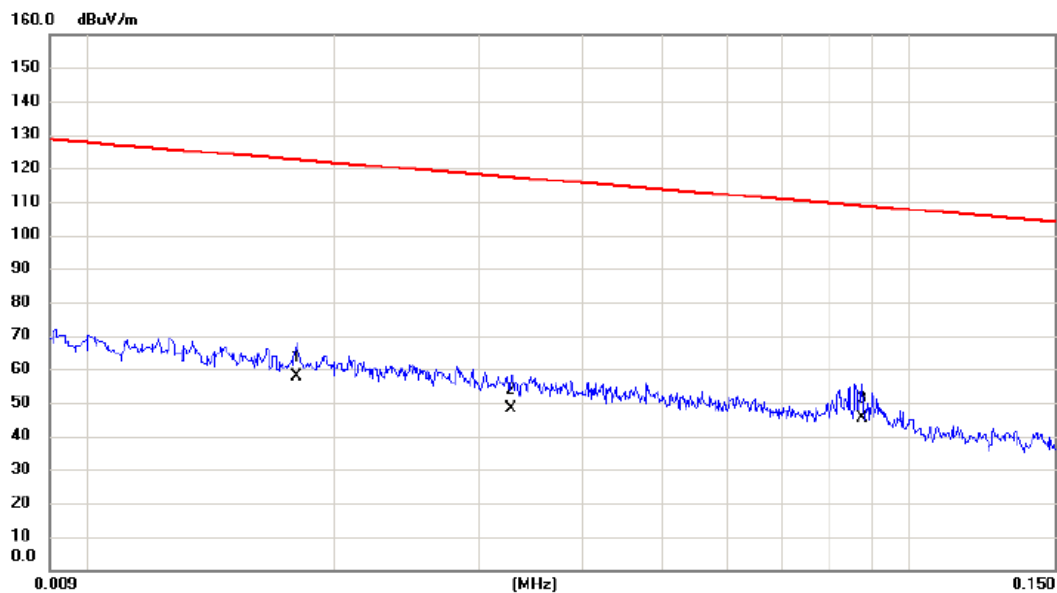
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	Comment
1		0.2672	24.30	17.05	41.35	99.07	-57.72	AVG	
2	*	2.3336	24.70	16.92	41.62	69.54	-27.92	QP	
3		4.8738	23.60	15.25	38.85	69.54	-30.69	QP	

Test Mode: TX Mode _Adapter: PHITEK

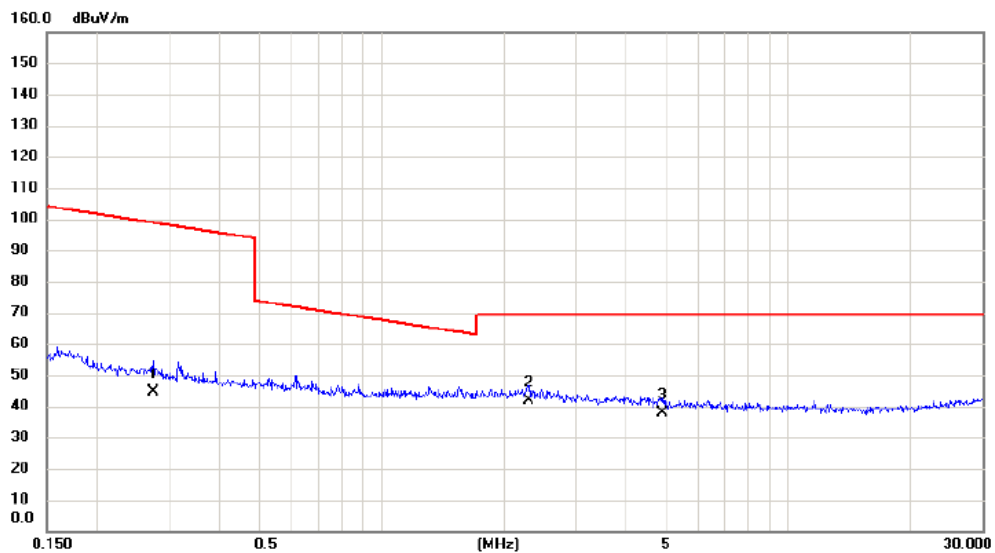
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0180	37.60	20.30	57.90	122.50	-64.60	AVG	
2		0.0328	28.50	19.81	48.31	117.29	-68.98	AVG	
3	*	0.0875	26.80	18.73	45.53	108.76	-63.23	AVG	

Test Mode: TX Mode_Adapter: PHITEK

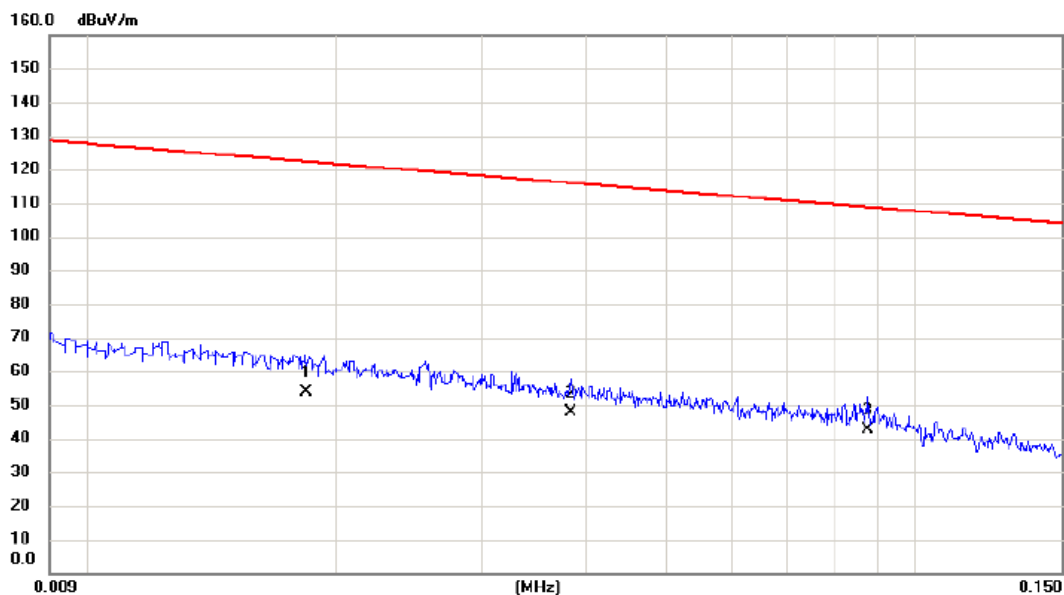
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2744	27.50	17.05	44.55	98.84	-54.29	AVG	
2	*	2.2968	24.80	16.94	41.74	69.54	-27.80	QP	
3		4.8997	22.40	15.23	37.63	69.54	-31.91	QP	

Test Mode: TX Mode_Adapter: PHITEK

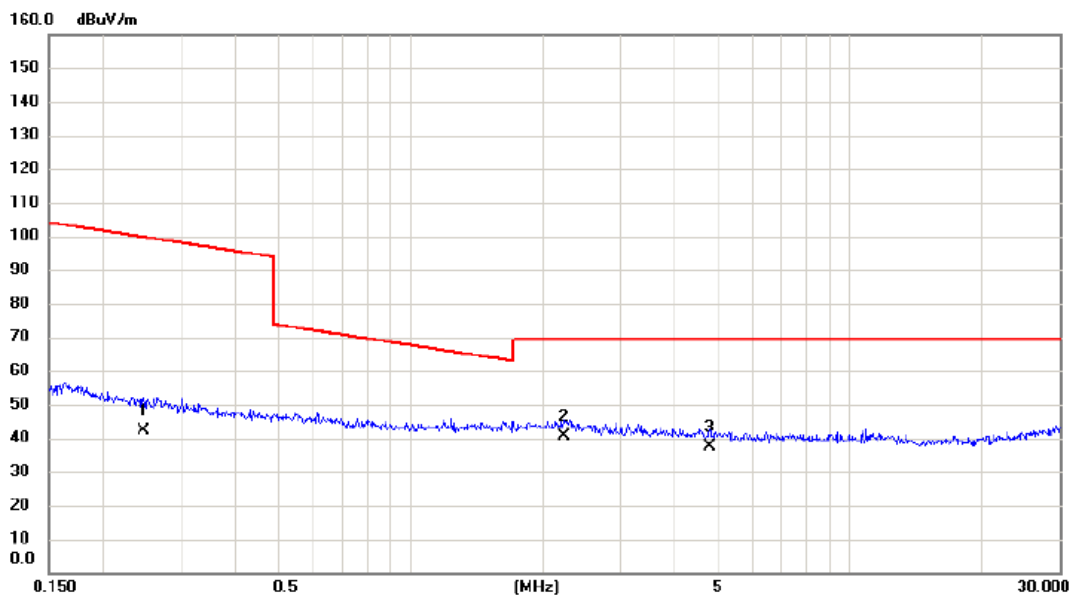
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0184	33.60	20.24	53.84	122.31	-68.47	AVG	
2		0.0383	28.10	19.72	47.82	115.94	-68.12	AVG	
3	*	0.0875	23.70	18.73	42.43	108.76	-66.33	AVG	

Test Mode: TX Mode_Adapter: PHITEK

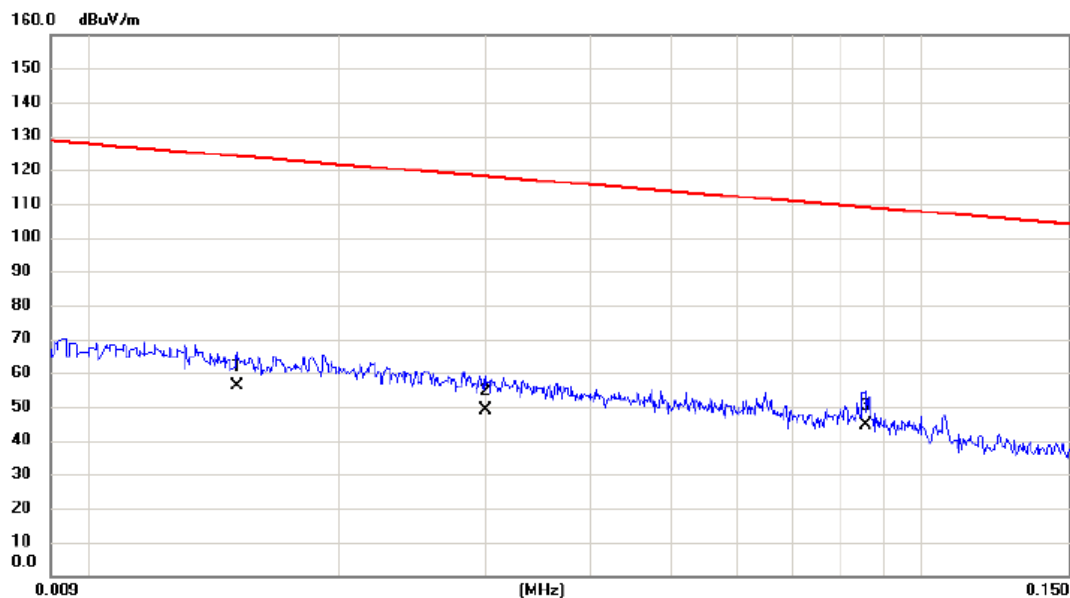
Ant 90°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2468	25.20	17.07	42.27	99.76	-57.49	AVG	
2	*	2.2367	23.60	16.97	40.57	69.54	-28.97	QP	
3		4.7970	22.20	15.29	37.49	69.54	-32.05	QP	

Test Mode: TX Mode _Adapter: BYD

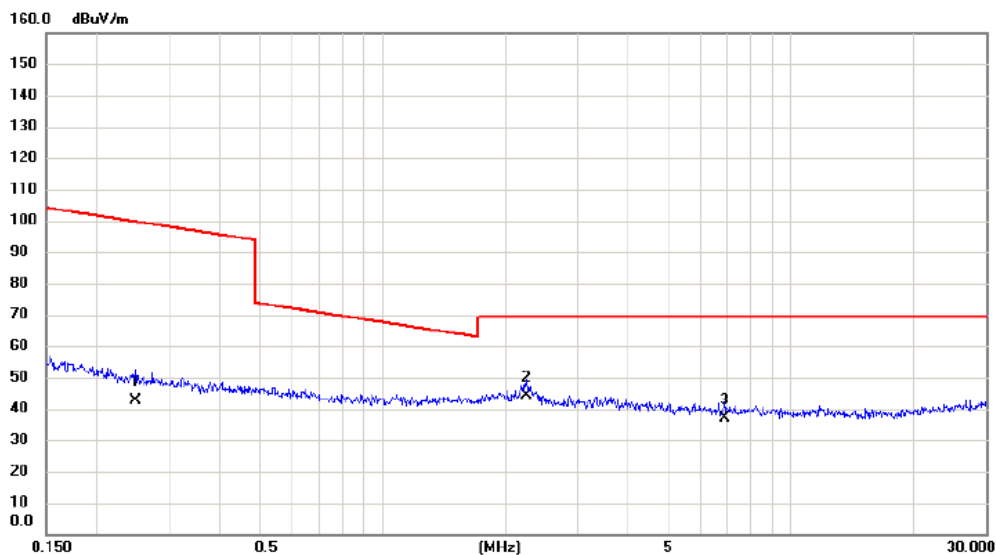
Ant 0°



No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.0151	35.60	20.71	56.31	124.03	-67.72	AVG	
2		0.0300	29.21	19.85	49.06	118.06	-69.00	AVG	
3	*	0.0857	25.90	18.77	44.67	108.95	-64.28	AVG	

Test Mode: TX Mode_Adapter: BYD

Ant 0°

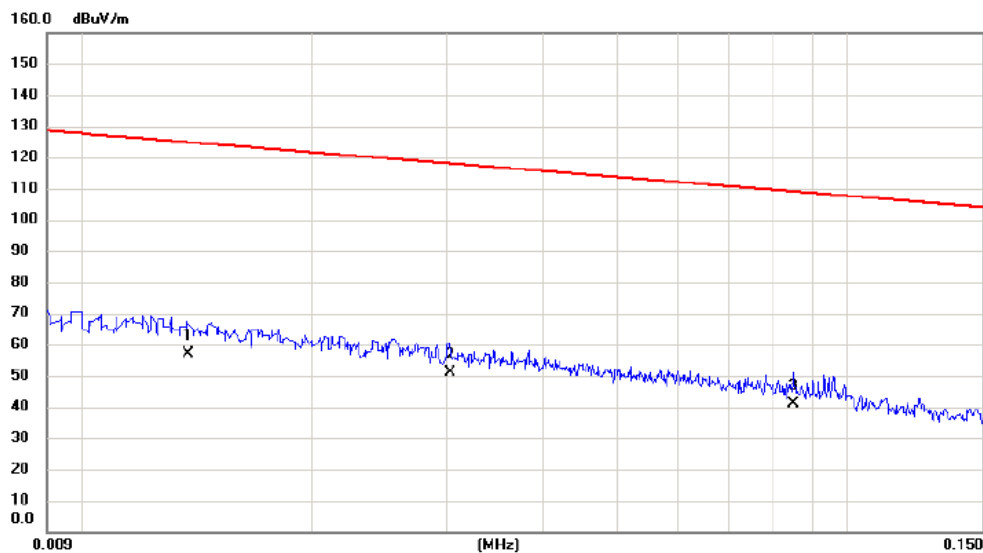


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.2481	25.40	17.06	42.46	99.71	-57.25	AVG	
2	*	2.2486	27.30	16.96	44.26	69.54	-25.28	QP	
3		6.8776	22.10	14.86	36.96	69.54	-32.58	QP	

Test Mode:

TX Mode_Adapter: BYD

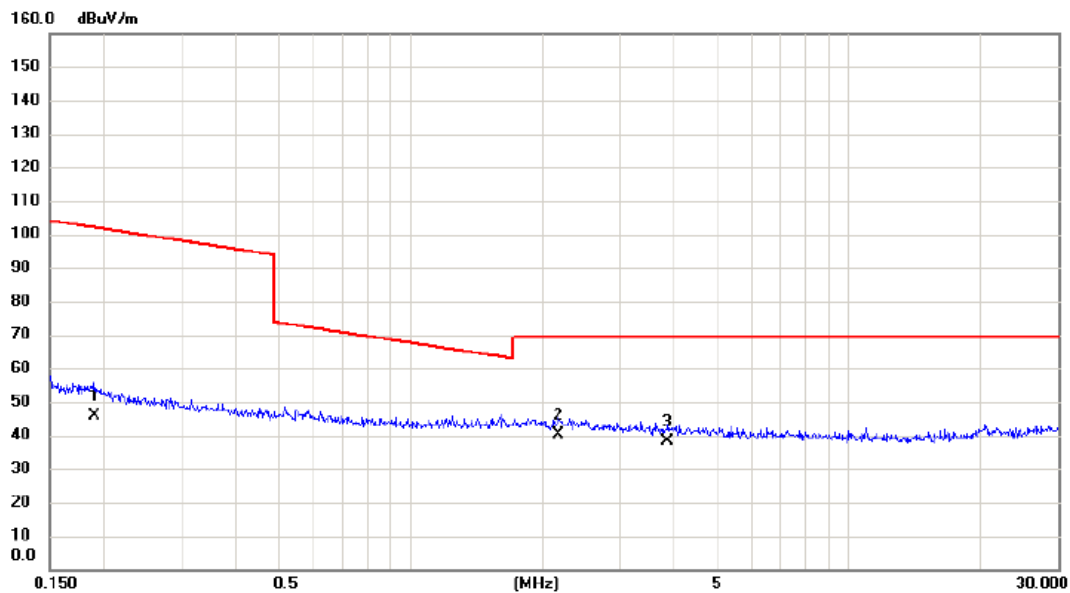
Ant 90°



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin	Detector	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		
1		0.0138	36.30	20.89	57.19	124.81	-67.62	AVG	
2	*	0.0303	31.10	19.85	50.95	117.98	-67.03	AVG	
3		0.0850	22.40	18.79	41.19	109.02	-67.83	AVG	

Test Mode: TX Mode_Adapter: BYD

Ant 90°

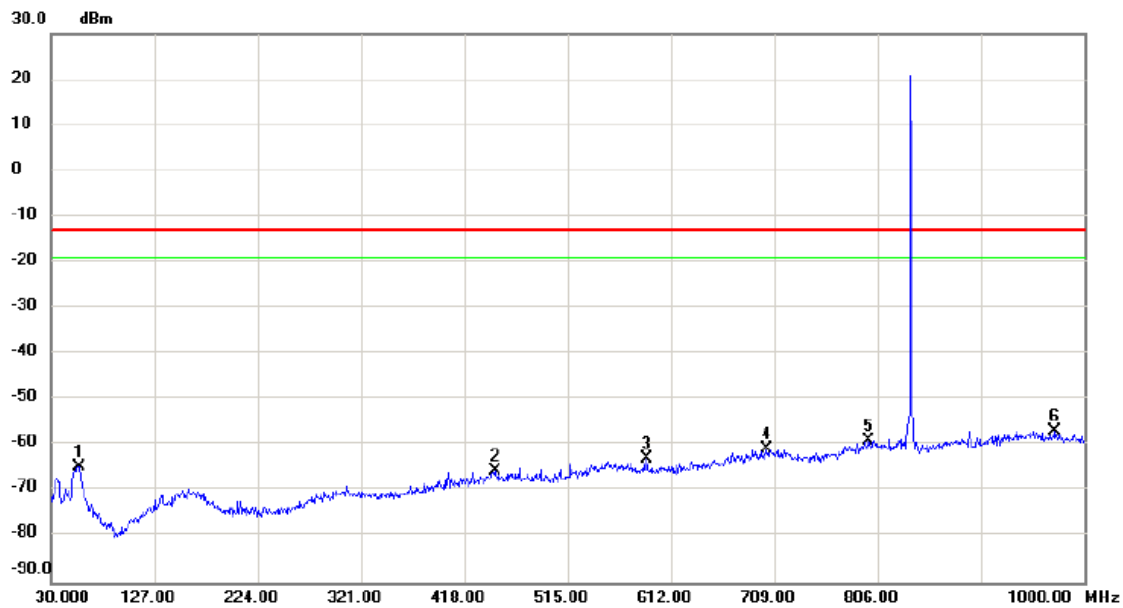


No.	Mk.	Freq. MHz	Reading Level dBuV	Correct Factor dB	Measure- ment dBuV/m	Limit dBuV/m	Margin dB	Detector	Comment
1		0.1894	28.50	17.17	45.67	102.06	-56.39	AVG	
2	*	2.1783	23.40	17.00	40.40	69.54	-29.14	QP	
3		3.8603	22.30	15.86	38.16	69.54	-31.38	QP	

APPENDIX E - RADIATED EMISSION (30MHZ TO 1GHZ)

Test Mode: GSM850_TX CH190_GSM_with Earphone

Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		56.216	-69.27	4.52	-64.75	-13.00	-51.75	peak	
2		446.547	-77.46	12.05	-65.41	-13.00	-52.41	peak	
3		589.279	-76.44	13.46	-62.98	-13.00	-49.98	peak	
4		701.912	-77.70	16.80	-60.90	-13.00	-47.90	peak	
5		797.067	-77.29	18.38	-58.91	-13.00	-45.91	peak	
6	*	972.813	-77.25	20.46	-56.79	-13.00	-43.79	peak	

Test Mode:

GSM850_TX CH190_GSM_with Earphone

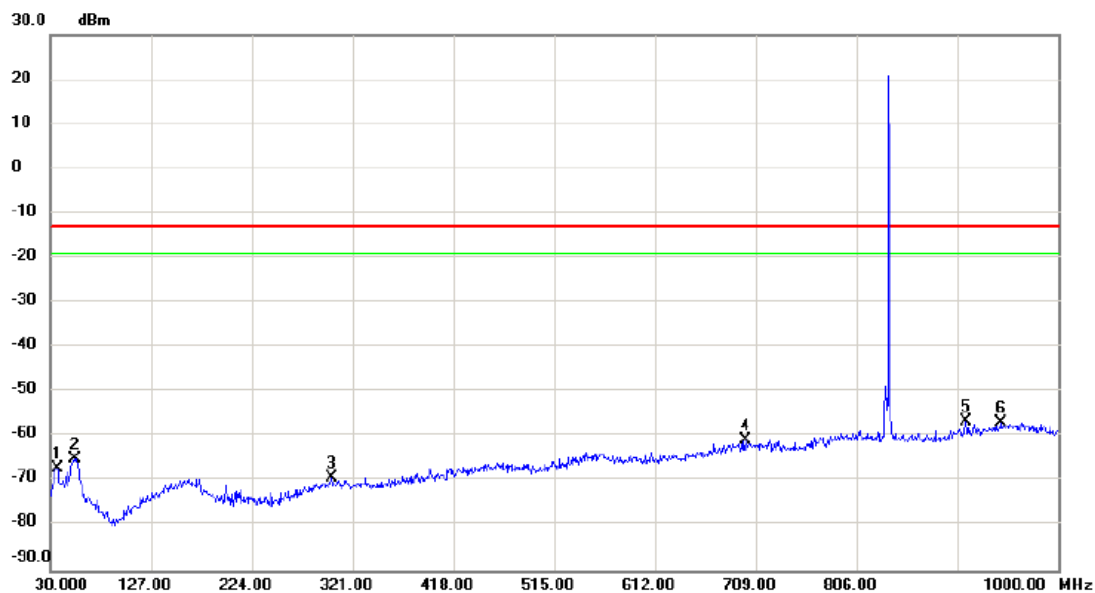
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		165.936	-77.67	8.63	-69.04	-13.00	-56.04	peak	
2		476.647	-77.04	11.58	-65.46	-13.00	-52.46	peak	
3		566.947	-76.38	13.84	-62.54	-13.00	-49.54	peak	
4		691.540	-76.65	16.43	-60.22	-13.00	-47.22	peak	
5		769.880	-75.22	16.74	-58.48	-13.00	-45.48	peak	
6	*	942.713	-77.12	20.71	-56.41	-13.00	-43.41	peak	

Test Mode: GSM850_TX CH190_EDGE_with Earphone

Vertical

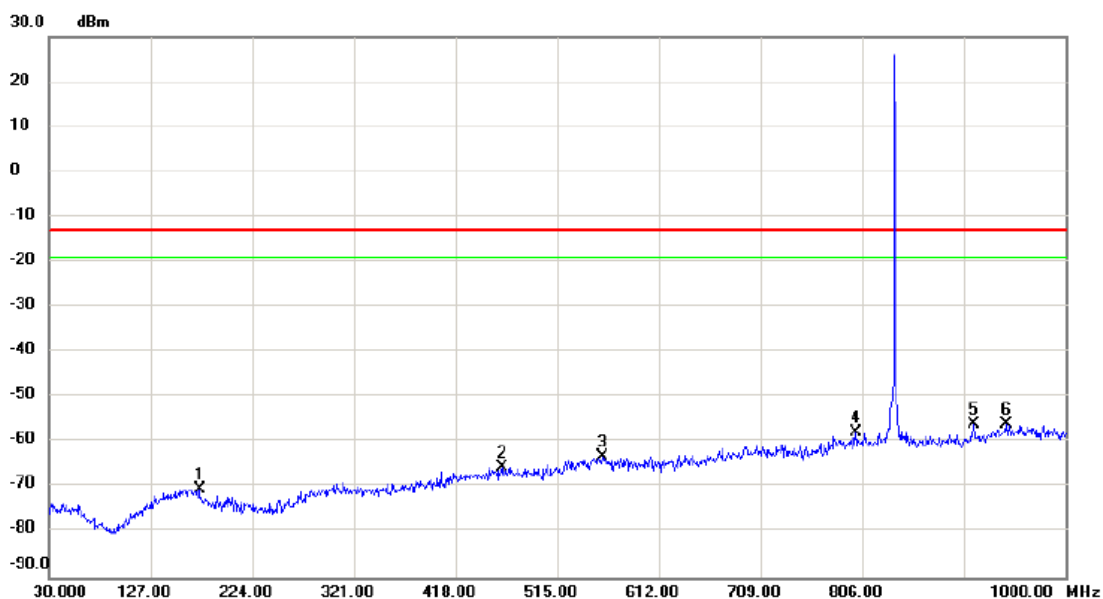


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		36.797	-71.68	4.73	-66.95	-13.00	-53.95	peak	
2		53.303	-69.53	4.66	-64.87	-13.00	-51.87	peak	
3		300.901	-78.23	9.21	-69.02	-13.00	-56.02	peak	
4		698.999	-77.47	16.80	-60.67	-13.00	-47.67	peak	
5	*	911.642	-76.12	19.46	-56.66	-13.00	-43.66	peak	
6		945.626	-77.73	20.82	-56.91	-13.00	-43.91	peak	

Test Mode:

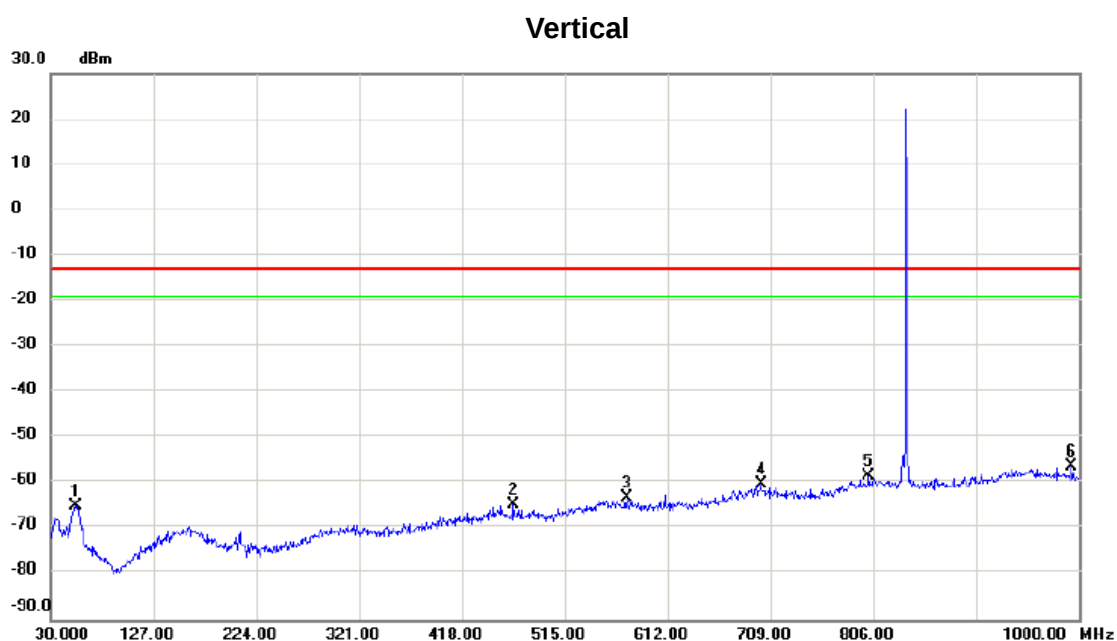
GSM850_TX CH190_EDGE_with Earphone

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		173.704	-78.02	7.79	-70.23	-13.00	-57.23	peak	
2		462.082	-77.31	11.91	-65.40	-13.00	-52.40	peak	
3		558.208	-77.18	13.99	-63.19	-13.00	-50.19	peak	
4		799.980	-76.19	18.55	-57.64	-13.00	-44.64	peak	
5		912.613	-75.56	19.50	-56.06	-13.00	-43.06	peak	
6	*	943.684	-76.64	20.75	-55.89	-13.00	-42.89	peak	

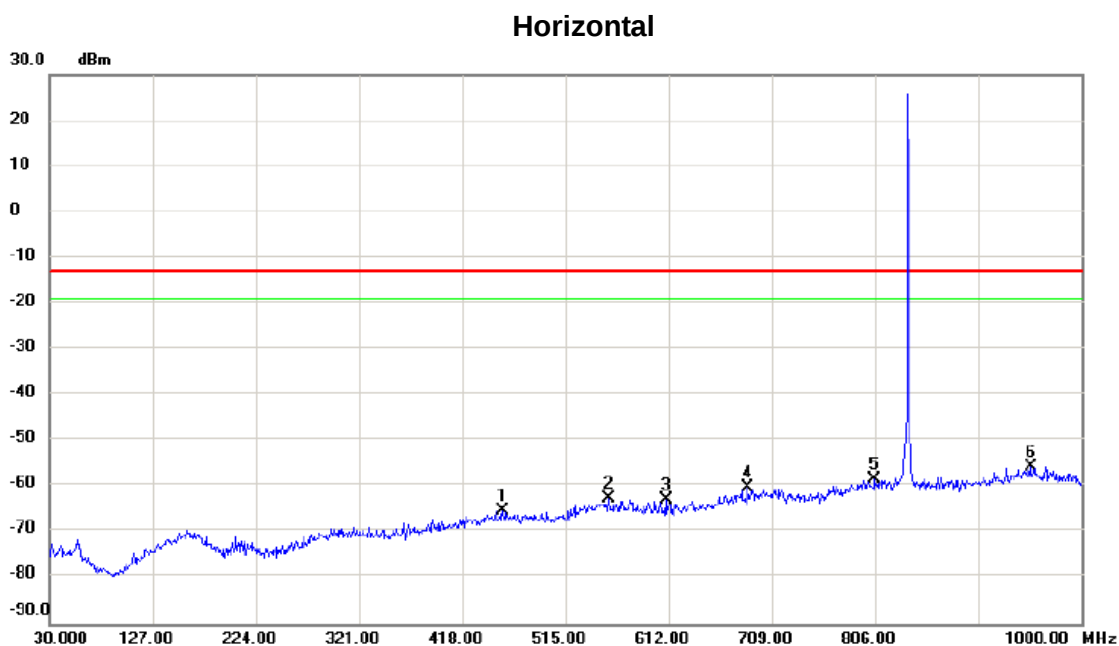
Test Mode: GSM850_TX CH190_GSM_without Earphone



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		53.303	-69.48	4.66	-64.82	-13.00	-51.82	peak	
2		466.937	-76.59	11.81	-64.78	-13.00	-51.78	peak	
3		573.744	-76.91	13.73	-63.18	-13.00	-50.18	peak	
4		699.970	-76.94	16.84	-60.10	-13.00	-47.10	peak	
5		801.922	-76.98	18.52	-58.46	-13.00	-45.46	peak	
6	*	993.203	-76.34	19.96	-56.38	-13.00	-43.38	peak	

Test Mode:

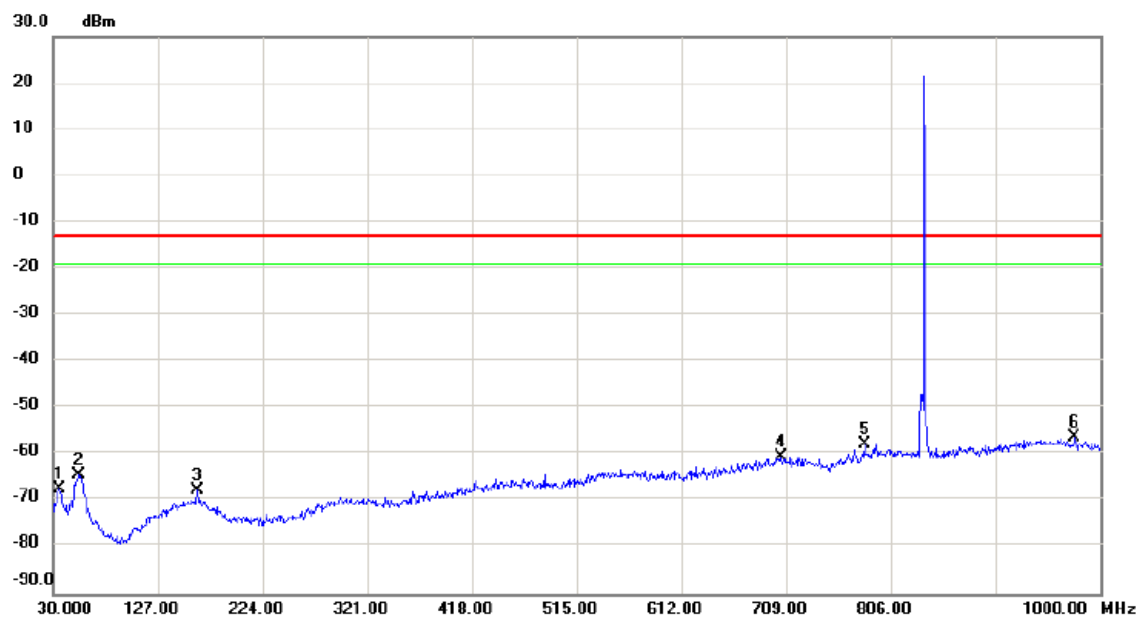
GSM850_TX CH190_GSM_without Earphone



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	Level	Factor	ment			Detector	Comment
			dBm	dB	dBm	dBm	dB		
1		456.256	-77.26	12.04	-65.22	-13.00	-52.22	peak	
2		555.295	-76.48	14.04	-62.44	-13.00	-49.44	peak	
3		609.670	-76.43	13.50	-62.93	-13.00	-49.93	peak	
4		686.376	-76.39	16.18	-60.21	-13.00	-47.21	peak	
5		805.806	-76.86	18.45	-58.41	-13.00	-45.41	peak	
6	*	952.422	-76.50	20.94	-55.56	-13.00	-42.56	peak	

Test Mode: GSM850_ TX CH190_EDGE_without Earphone

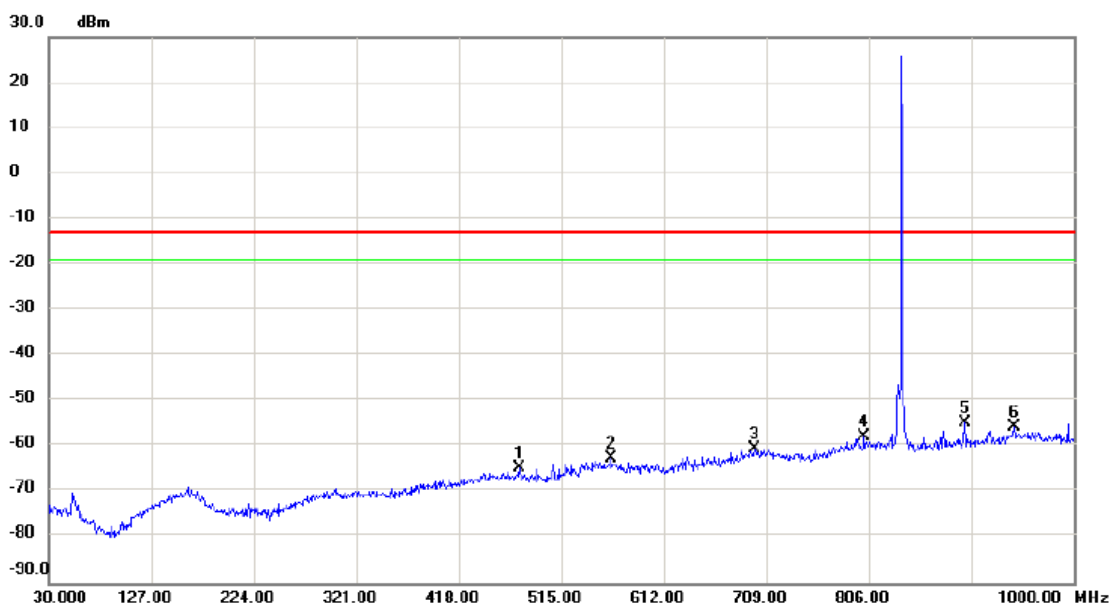
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		35.826	-72.08	4.62	-67.46	-13.00	-54.46	peak	
2		54.274	-69.00	4.63	-64.37	-13.00	-51.37	peak	
3		163.994	-76.52	8.75	-67.77	-13.00	-54.77	peak	
4		703.854	-77.11	16.74	-60.37	-13.00	-47.37	peak	
5		781.531	-75.06	17.44	-57.62	-13.00	-44.62	peak	
6	*	976.697	-76.75	20.36	-56.39	-13.00	-43.39	peak	

Test Mode: GSM850_TX CH190_EDGE_without Earphone

Horizontal

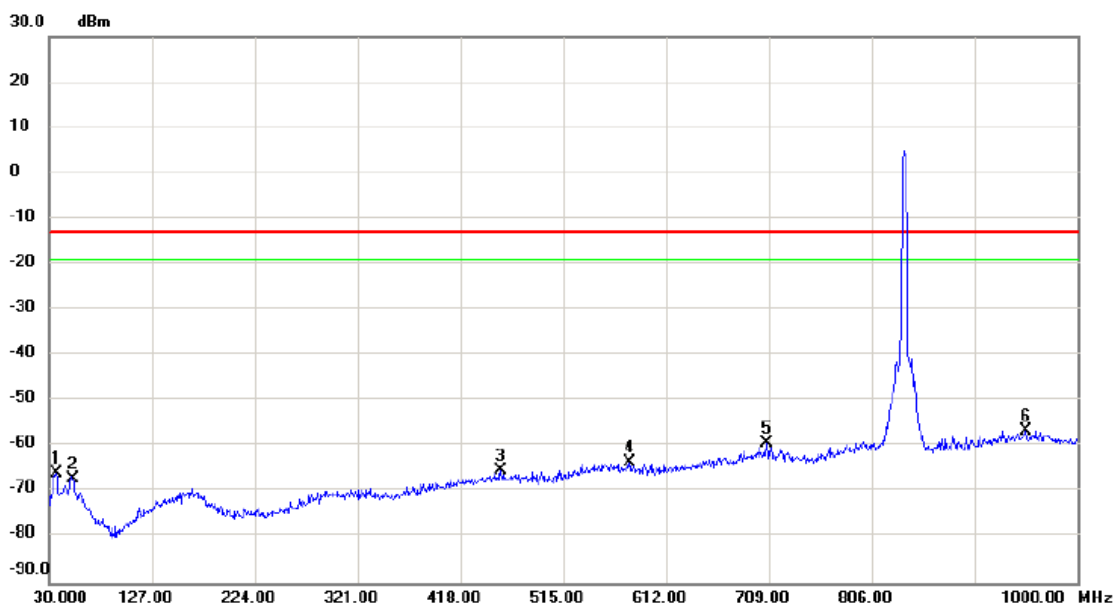


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		475.676	-76.22	11.61	-64.61	-13.00	-51.61	peak	
2		562.092	-76.56	13.93	-62.63	-13.00	-49.63	peak	
3		698.028	-77.26	16.74	-60.52	-13.00	-47.52	peak	
4		801.922	-76.17	18.52	-57.65	-13.00	-44.65	peak	
5	*	897.077	-73.81	18.92	-54.89	-13.00	-41.89	peak	
6		943.684	-76.35	20.75	-55.60	-13.00	-42.60	peak	

Test Mode:

WCDMA Band V_TX CH4182

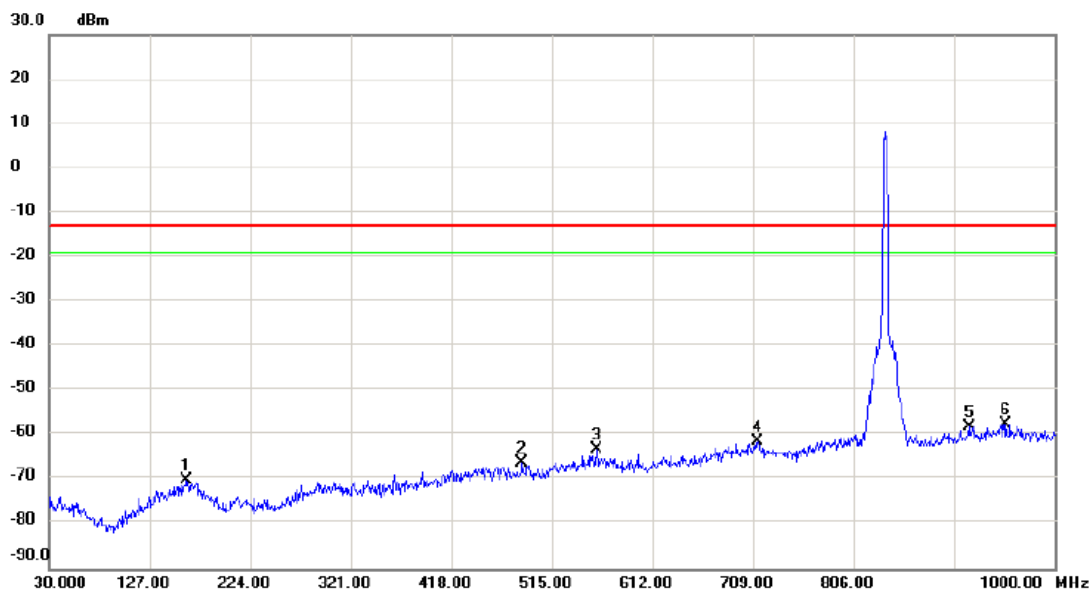
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		36.797	-70.69	4.73	-65.96	-13.00	-52.96	peak	
2		52.332	-71.73	4.70	-67.03	-13.00	-54.03	peak	
3		456.256	-77.36	12.04	-65.32	-13.00	-52.32	peak	
4		577.628	-77.25	13.67	-63.58	-13.00	-50.58	peak	
5		706.767	-75.87	16.68	-59.19	-13.00	-46.19	peak	
6	*	951.451	-77.40	20.97	-56.43	-13.00	-43.43	peak	

Test Mode: WCDMA Band V_TX CH4182

Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		163.023	-78.72	8.81	-69.91	-13.00	-56.91	peak	
2		486.356	-77.42	11.37	-66.05	-13.00	-53.05	peak	
3		558.208	-77.00	13.99	-63.01	-13.00	-50.01	peak	
4		713.564	-77.73	16.49	-61.24	-13.00	-48.24	peak	
5		917.467	-77.70	19.68	-58.02	-13.00	-45.02	peak	
6	*	953.393	-78.44	20.92	-57.52	-13.00	-44.52	peak	

Test Mode: LTE Band 5_TX CH20525_1.4M

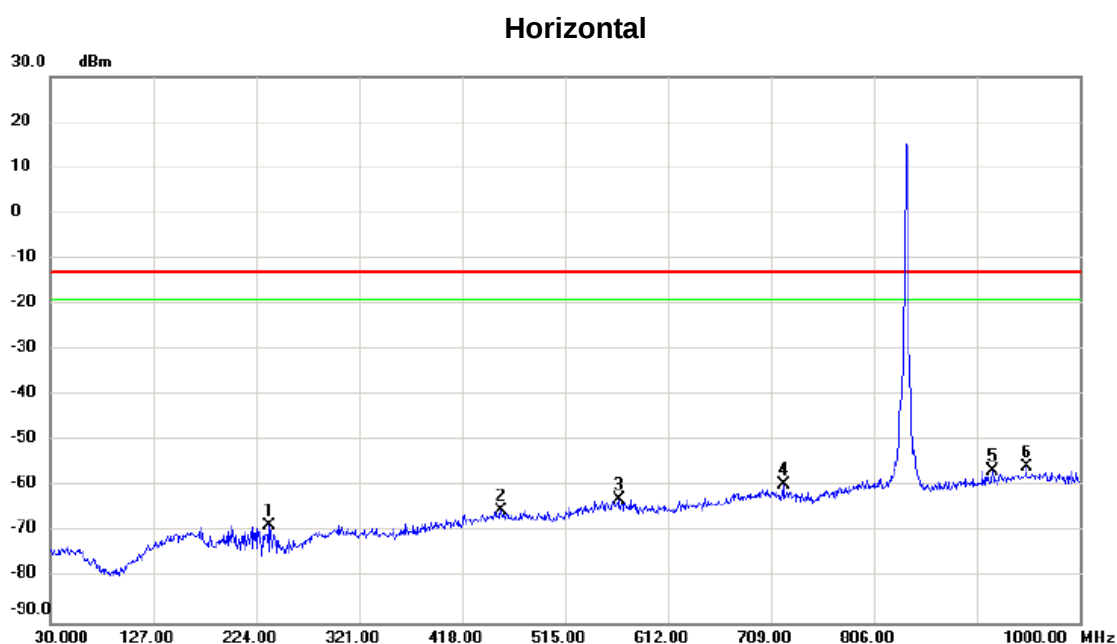
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		36.790	-71.33	4.73	-66.60	-13.00	-53.60	peak	
2		56.675	-69.50	4.43	-65.07	-13.00	-52.07	peak	
3		554.770	-77.36	14.04	-63.32	-13.00	-50.32	peak	
4		698.330	-77.73	16.76	-60.97	-13.00	-47.97	peak	
5		795.330	-76.89	18.27	-58.62	-13.00	-45.62	peak	
6	*	967.505	-77.02	20.58	-56.44	-13.00	-43.44	peak	

Test Mode:

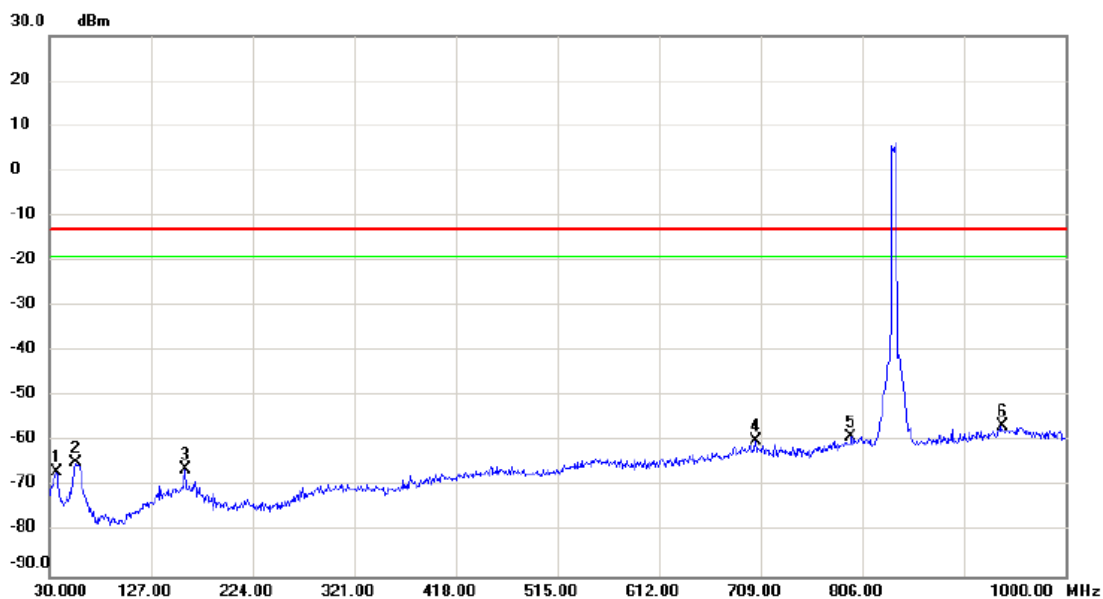
LTE Band 5_TX CH20525_1.4M



No.	Mk.	Freq.	Reading	Correct	Measure-	Limit	Margin		
		MHz	dBm	Factor	ment			Detector	Comment
1		236.610	-73.47	4.82	-68.65	-13.00	-55.65	peak	
2		454.860	-77.36	12.08	-65.28	-13.00	-52.28	peak	
3		565.440	-76.66	13.86	-62.80	-13.00	-49.80	peak	
4		720.640	-75.79	16.31	-59.48	-13.00	-46.48	peak	
5		917.550	-76.19	19.69	-56.50	-13.00	-43.50	peak	
6	*	949.560	-76.66	20.98	-55.68	-13.00	-42.68	peak	

Test Mode: LTE Band 5_TX CH20525_5M

Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		37.275	-71.68	4.81	-66.87	-13.00	-53.87	peak	
2		55.705	-69.37	4.57	-64.80	-13.00	-51.80	peak	
3		160.465	-75.04	8.97	-66.07	-13.00	-53.07	peak	
4		704.150	-76.64	16.75	-59.89	-13.00	-46.89	peak	
5		795.330	-77.31	18.27	-59.04	-13.00	-46.04	peak	
6	*	939.375	-77.15	20.58	-56.57	-13.00	-43.57	peak	

Test Mode: LTE Band 5_TX CH20525_5M

Horizontal

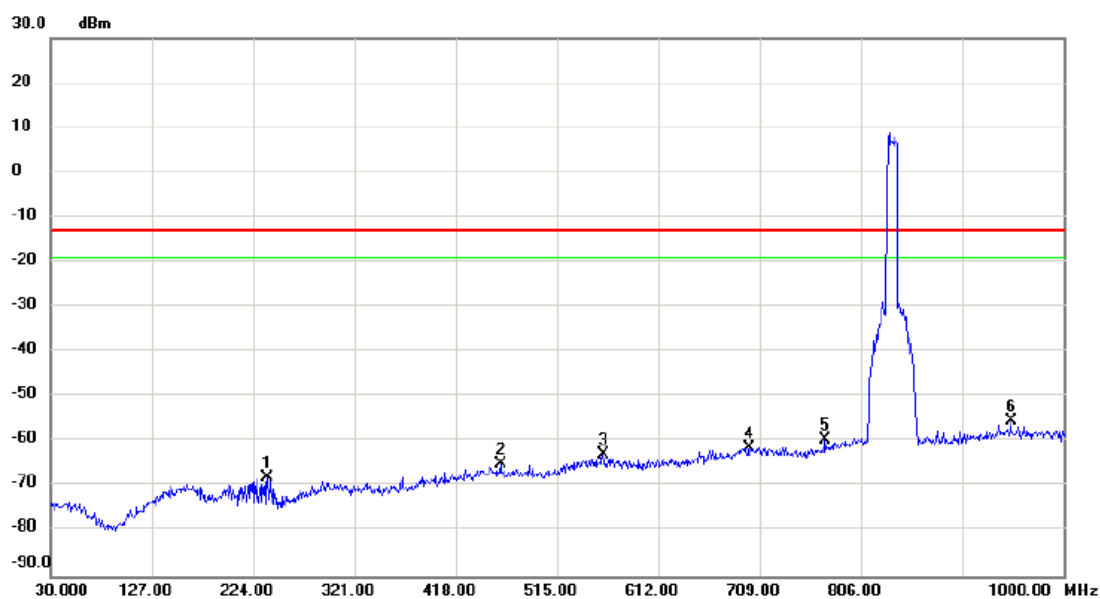


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		56.190	-76.31	4.52	-71.79	-13.00	-58.79	peak	
2		161.435	-77.88	8.90	-68.98	-13.00	-55.98	peak	
3		467.470	-76.76	11.79	-64.97	-13.00	-51.97	peak	
4		559.620	-76.57	13.97	-62.60	-13.00	-49.60	peak	
5		707.060	-77.26	16.67	-60.59	-13.00	-47.59	peak	
6	*	959.260	-76.62	20.78	-55.84	-13.00	-42.84	peak	

Test Mode:

LTE Band 5_TX CH20525_10M

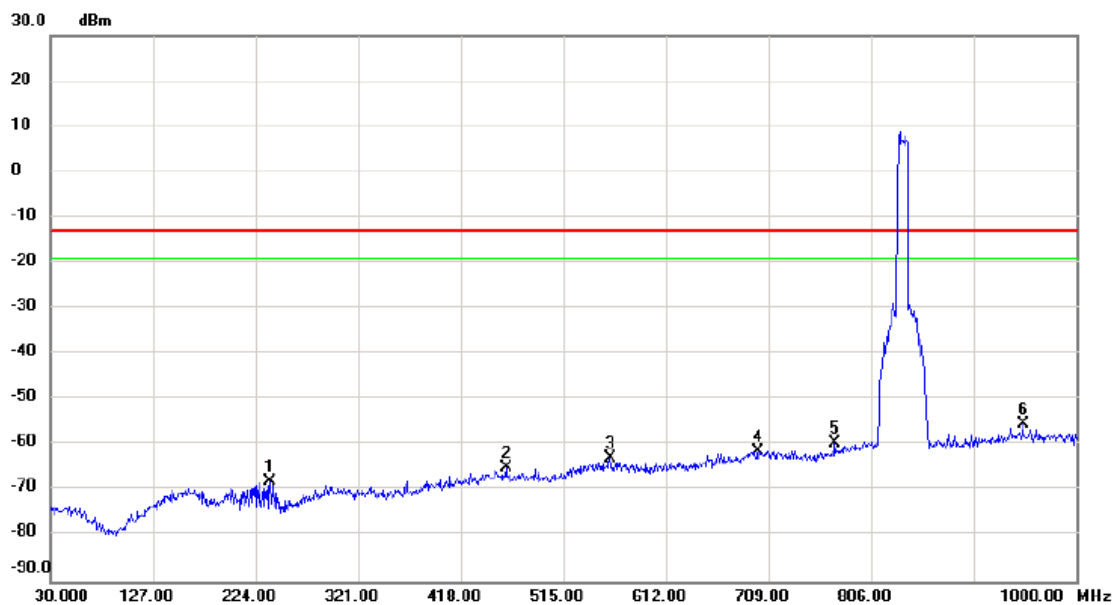
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		238.065	-72.69	4.86	-67.83	-13.00	-54.83	peak	
2		461.165	-76.90	11.93	-64.97	-13.00	-51.97	peak	
3		559.135	-76.76	13.97	-62.79	-13.00	-49.79	peak	
4		699.785	-78.13	16.83	-61.30	-13.00	-48.30	peak	
5		772.050	-76.54	16.87	-59.67	-13.00	-46.67	peak	
6	*	950.045	-76.47	21.01	-55.46	-13.00	-42.46	peak	

Test Mode: LTE Band 5_TX CH20525_10M

Horizontal

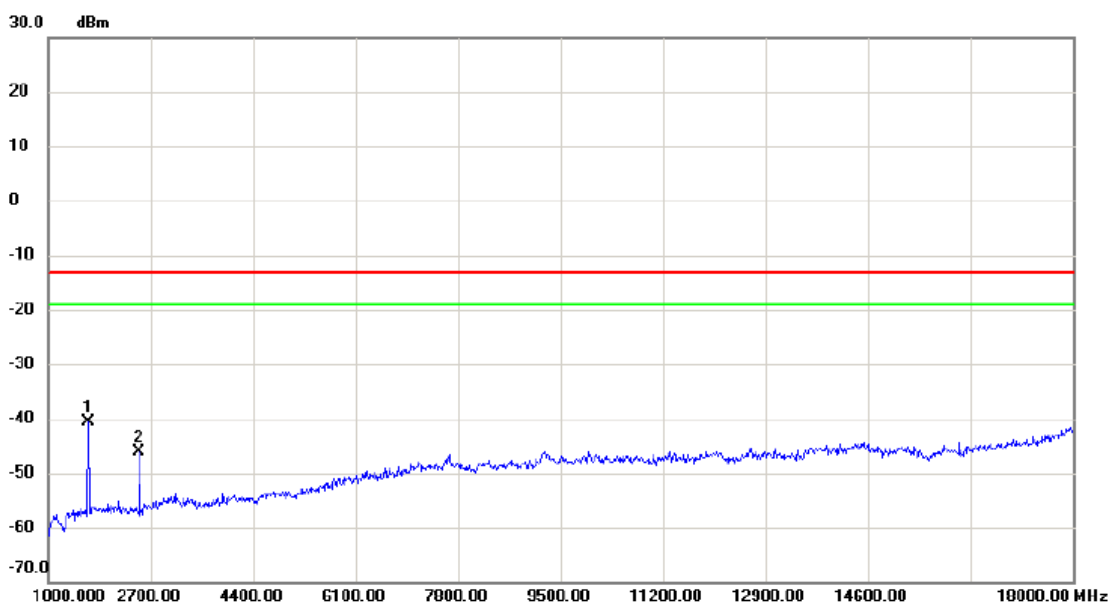


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		238.065	-72.69	4.86	-67.83	-13.00	-54.83	peak	
2		461.165	-76.90	11.93	-64.97	-13.00	-51.97	peak	
3		559.135	-76.76	13.97	-62.79	-13.00	-49.79	peak	
4		699.785	-78.13	16.83	-61.30	-13.00	-48.30	peak	
5		772.050	-76.54	16.87	-59.67	-13.00	-46.67	peak	
6 *		950.045	-76.47	21.01	-55.46	-13.00	-42.46	peak	

APPENDIX F - RADIATED EMISSION (ABOVE 1GHZ)

Test Mode: GSM850_ TX CH190_GSM_with Earphone

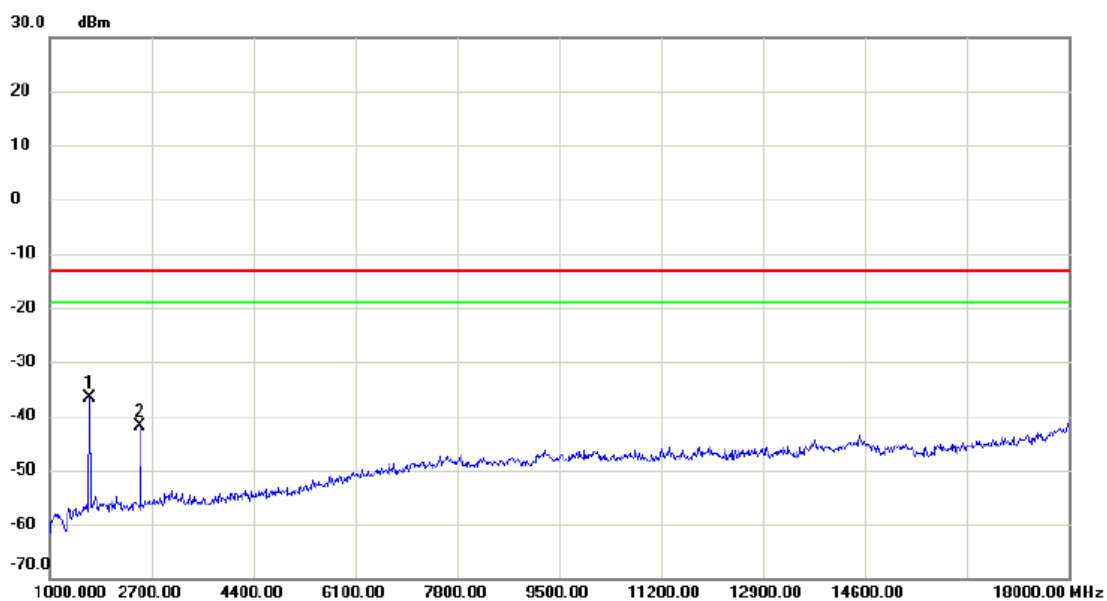
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	1671.500	-48.77	8.22	-40.55	-13.00	-27.55	peak	
2		2513.000	-55.22	9.12	-46.10	-13.00	-33.10	peak	

Test Mode: GSM850_ TX CH190_GSM_with Earphone

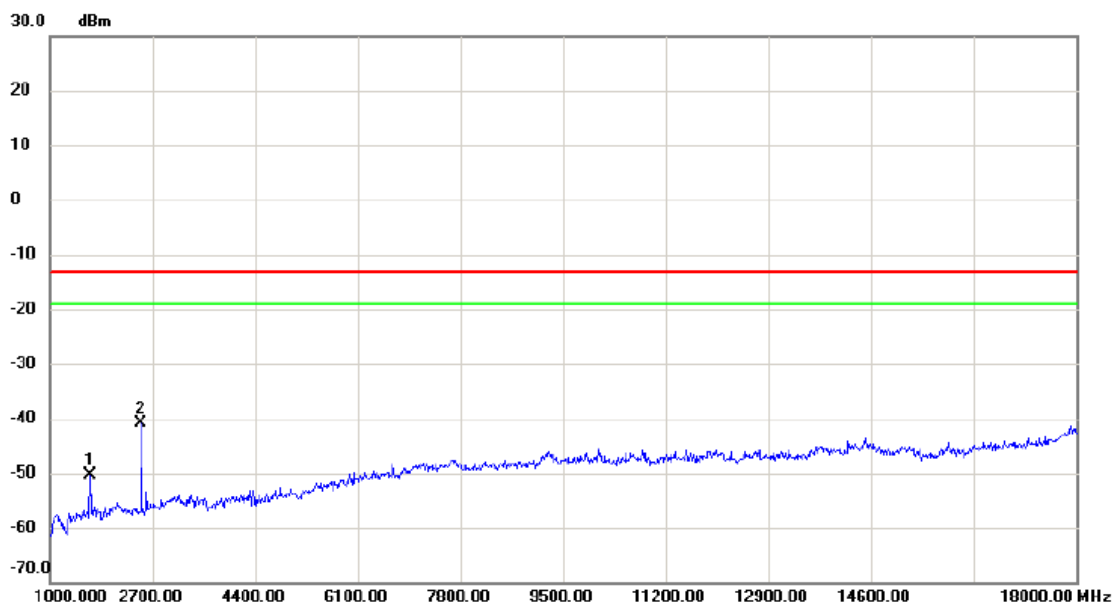
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	1671.500	-44.78	8.22	-36.56	-13.00	-23.56	peak	
2		2513.000	-51.10	9.12	-41.98	-13.00	-28.98	peak	

Test Mode: GSM850_ TX CH190_EDGE_with Earphone

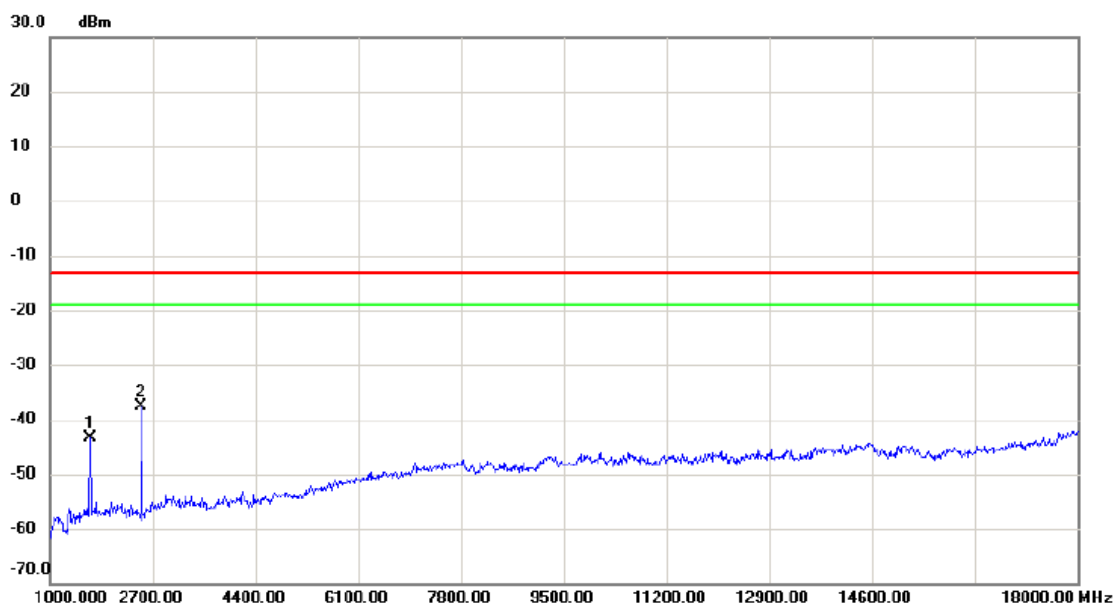
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-58.65	8.22	-50.43	-13.00	-37.43	peak	
2	*	2513.000	-49.89	9.12	-40.77	-13.00	-27.77	peak	

Test Mode: GSM850_ TX CH190_EDGE_with Earphone

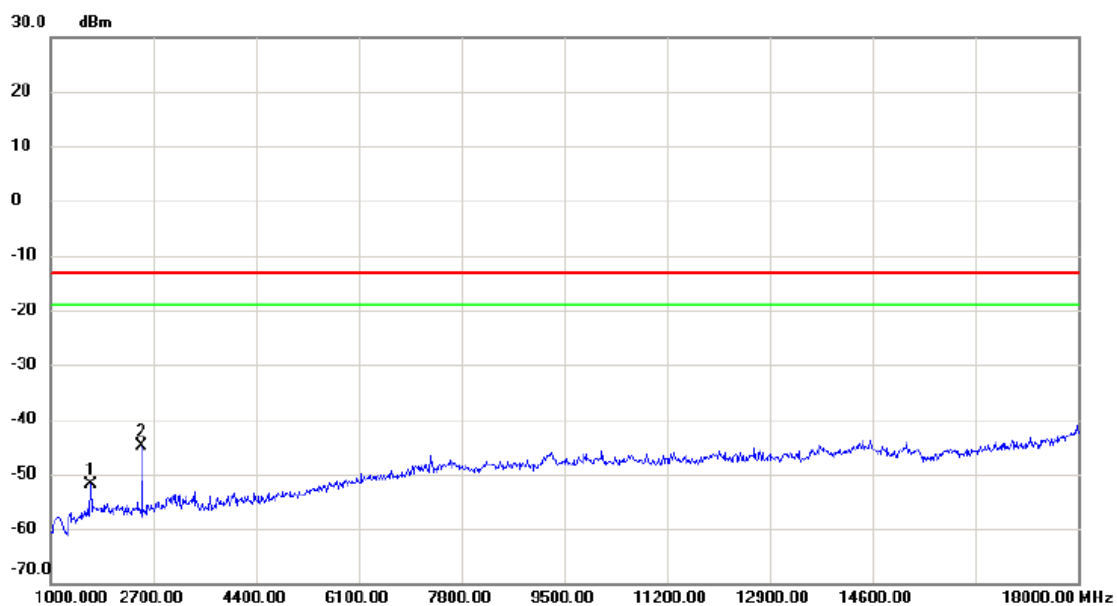
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-51.70	8.22	-43.48	-13.00	-30.48	peak	
2	*	2513.000	-46.85	9.12	-37.73	-13.00	-24.73	peak	

Test Mode:	GSM850_ TX CH190_GSM_without Earphone
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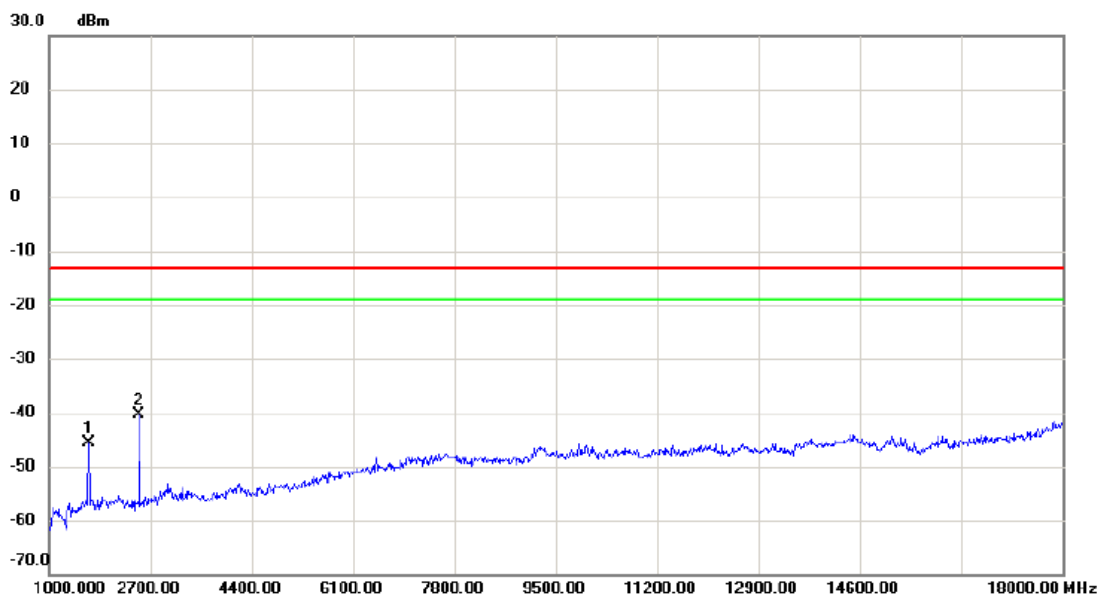
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-60.10	8.22	-51.88	-13.00	-38.88	peak	
2	*	2513.000	-54.03	9.12	-44.91	-13.00	-31.91	peak	

Test Mode: GSM850_ TX CH190_GSM_without Earphone

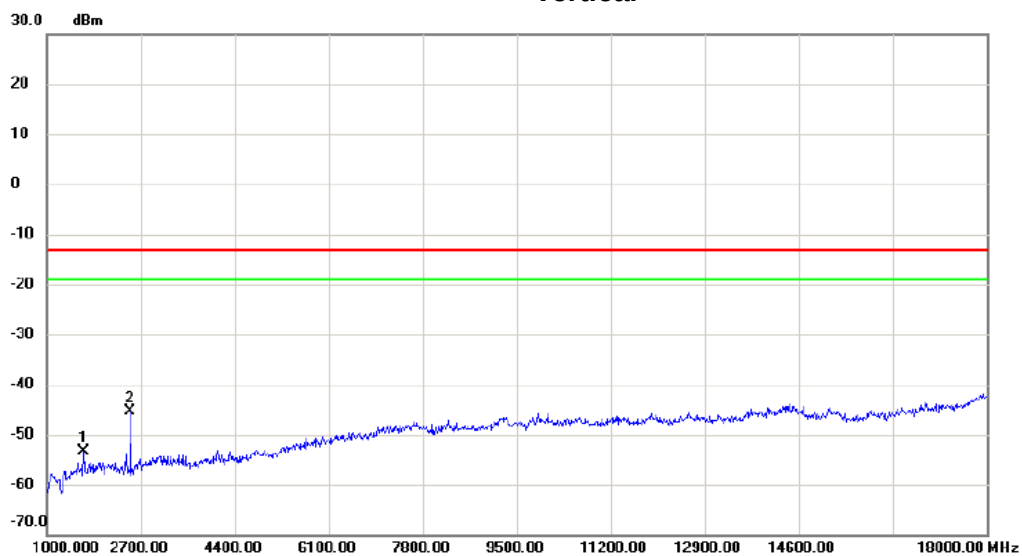
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-53.82	8.22	-45.60	-13.00	-32.60	peak	
2	*	2513.000	-49.55	9.12	-40.43	-13.00	-27.43	peak	

Test Mode: GSM850_ TX CH190_EDGE_without Earphone

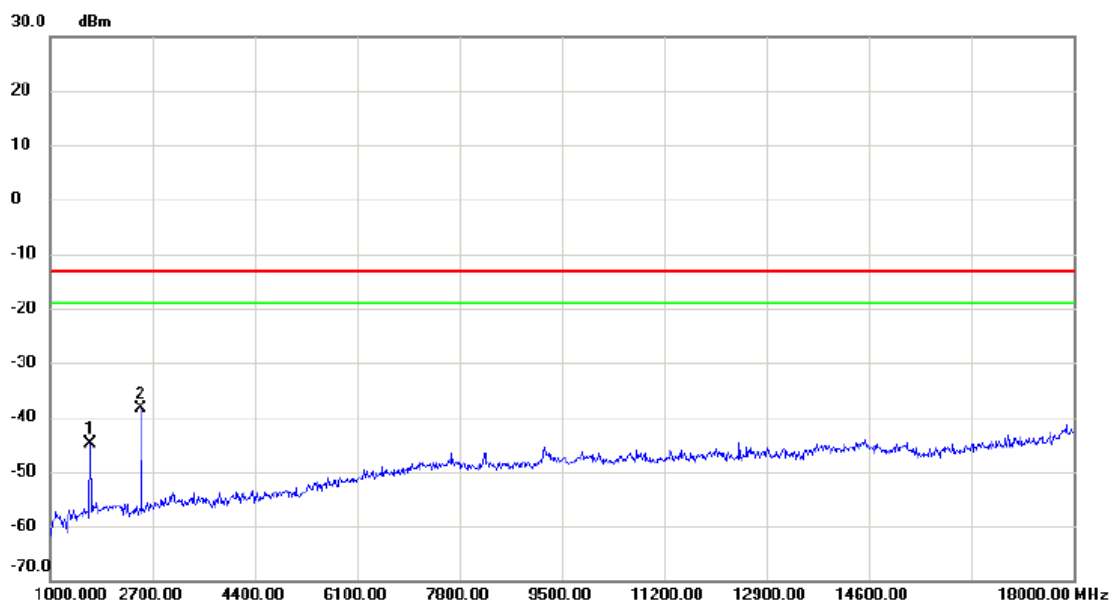
Vertical



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-61.62	8.22	-53.40	-13.00	-40.40	peak	
2	*	2513.000	-54.51	9.12	-45.39	-13.00	-32.39	peak	

Test Mode:	GSM850_ TX CH190_EDGE_without Earphone
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Horizontal

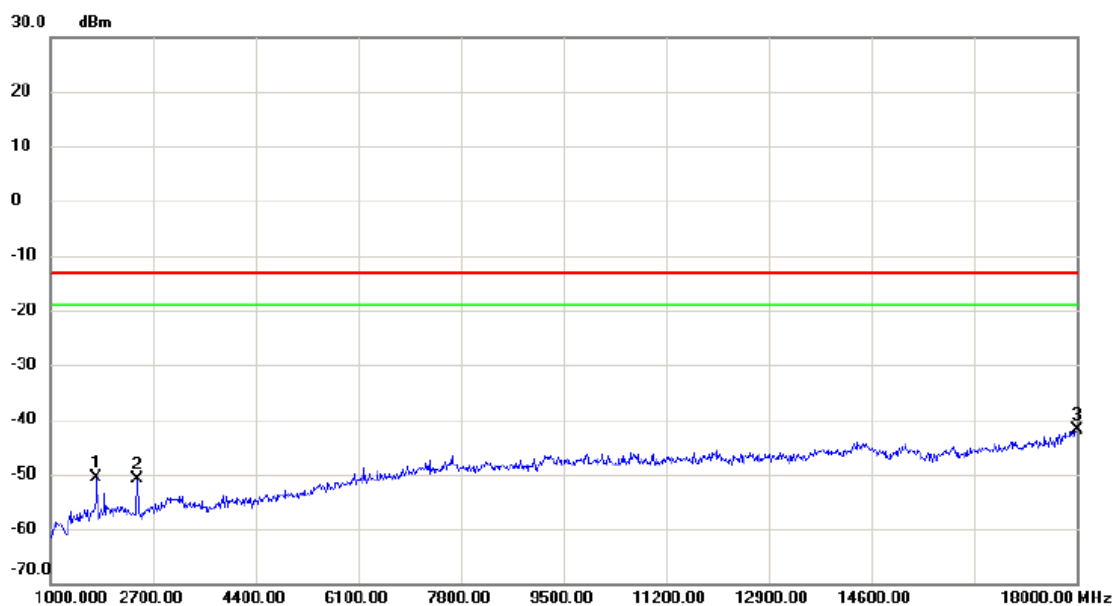


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-53.09	8.22	-44.87	-13.00	-31.87	peak	
2	*	2513.000	-47.60	9.12	-38.48	-13.00	-25.48	peak	

Test Mode:

WCDMA Band V_TX CH4182

Vertical

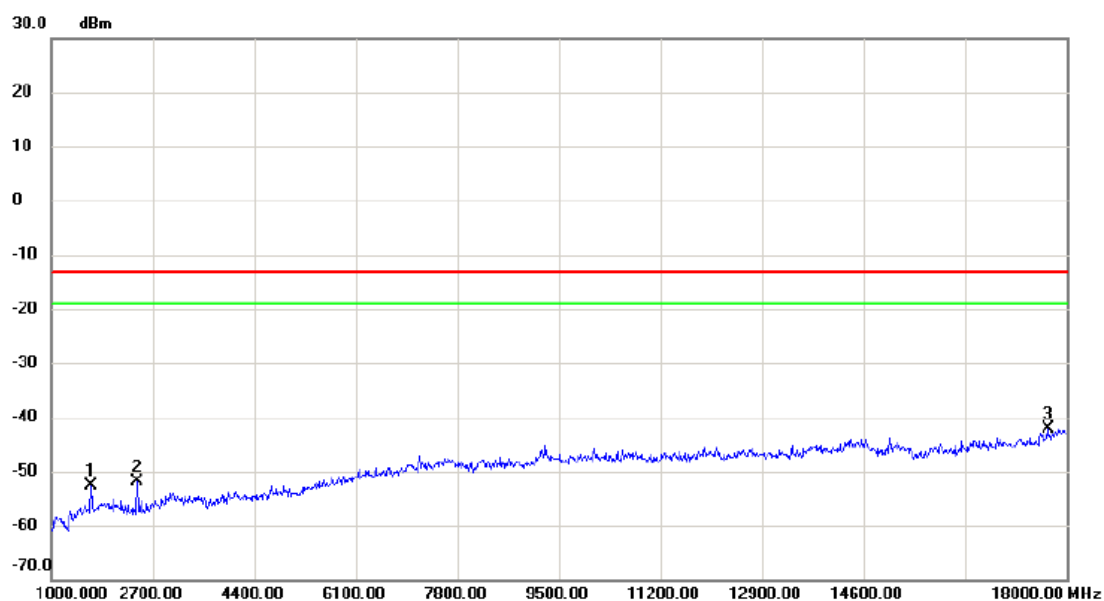


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1765.000	-59.08	8.57	-50.51	-13.00	-37.51	peak	
2		2436.500	-59.94	9.09	-50.85	-13.00	-37.85	peak	
3	*	18000.000	-71.45	29.51	-41.94	-13.00	-28.94	peak	

Test Mode:

WCDMA Band V_TX CH4182

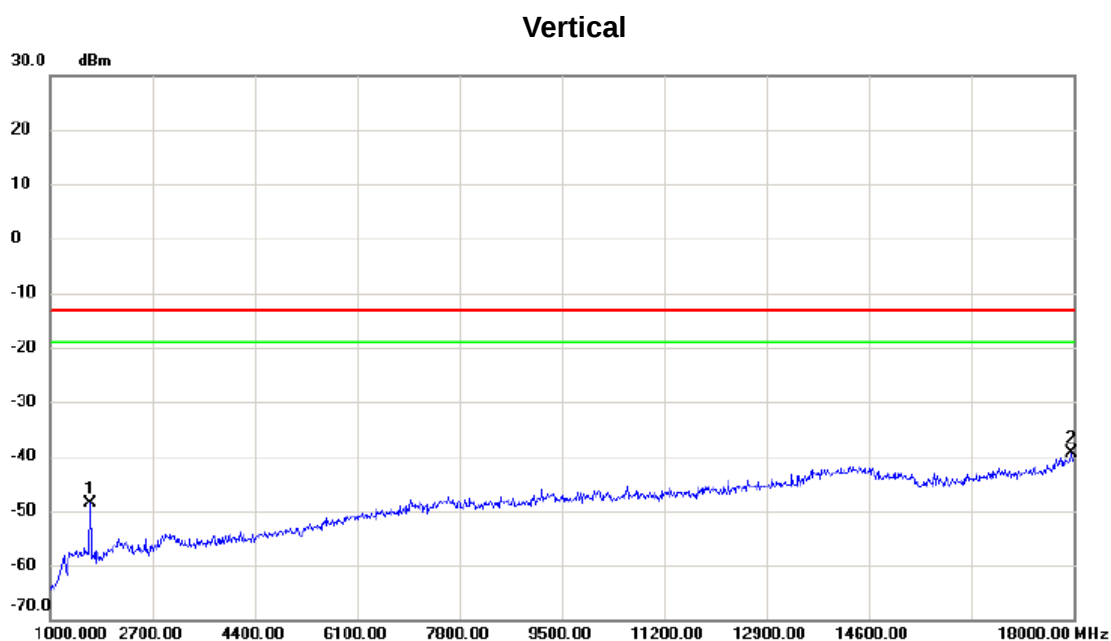
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-60.73	8.22	-52.51	-13.00	-39.51	peak	
2		2436.500	-60.94	9.09	-51.85	-13.00	-38.85	peak	
3	*	17685.500	-70.69	28.56	-42.13	-13.00	-29.13	peak	

Test Mode:

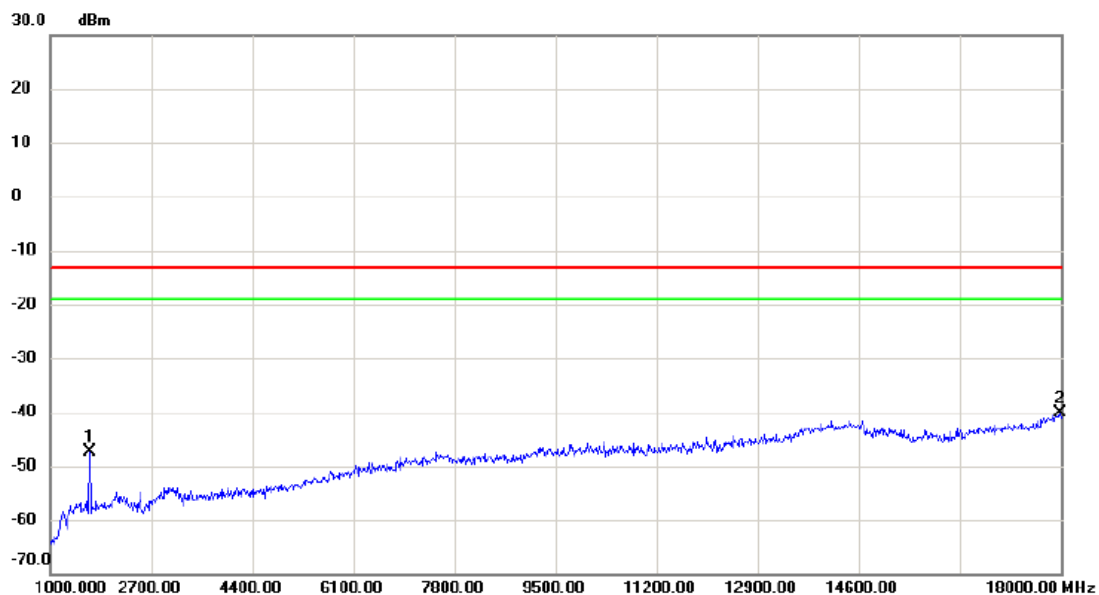
LTE Band 5_TX CH20525_1.4M



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-56.59	7.85	-48.74	-13.00	-35.74	peak	
2	*	17974.500	-70.24	30.93	-39.31	-13.00	-26.31	peak	

Test Mode:	LTE Band 5_TX CH20525_1.4M
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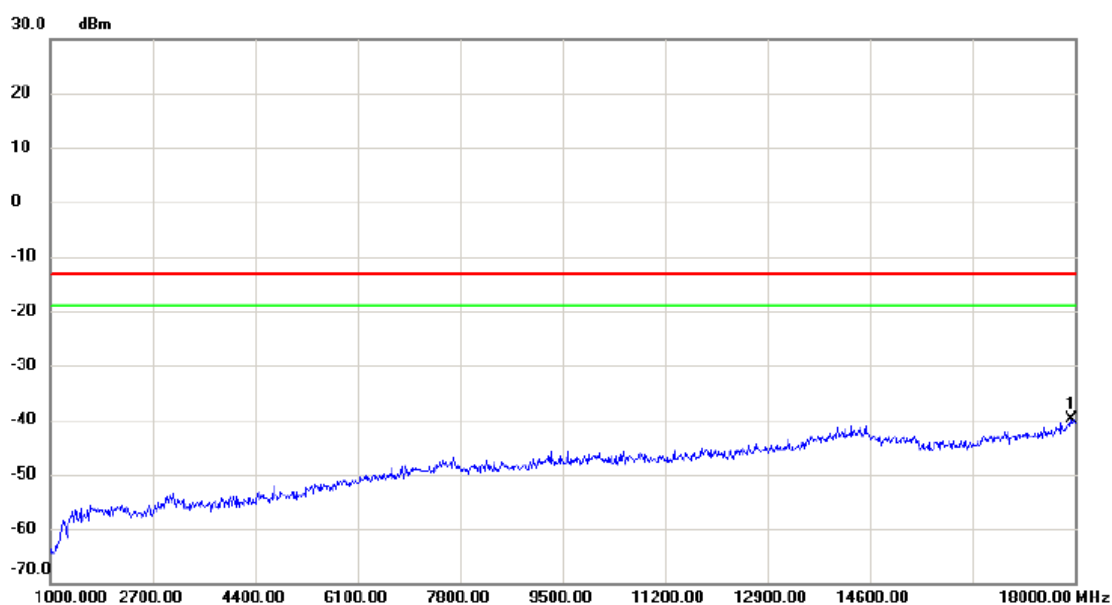
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-55.25	7.85	-47.40	-13.00	-34.40	peak	
2	*	17983.000	-70.99	30.96	-40.03	-13.00	-27.03	peak	

Test Mode:	LTE Band 5_TX CH20525_5M
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Vertical

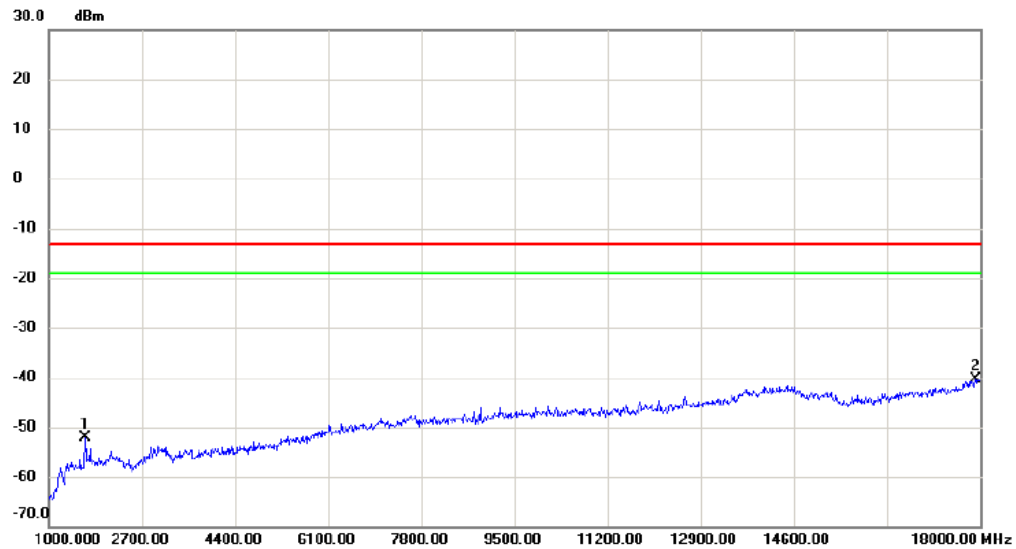


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	17940.500	-70.80	30.83	-39.97	-13.00	-26.97	peak	

Test Mode:

LTE Band 5_TX CH20525_5M

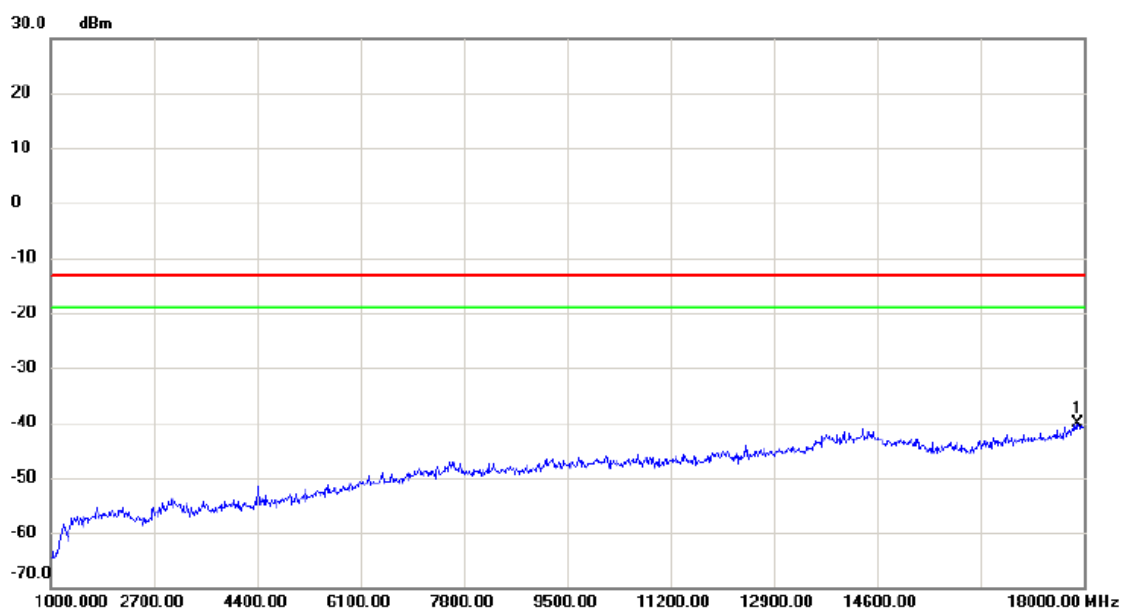
Horizontal



No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1		1671.500	-60.05	7.85	-52.20	-13.00	-39.20	peak	
2	*	17923.500	-71.25	30.78	-40.47	-13.00	-27.47	peak	

Test Mode: LTE Band 5_TX CH20525_10M

Vertical

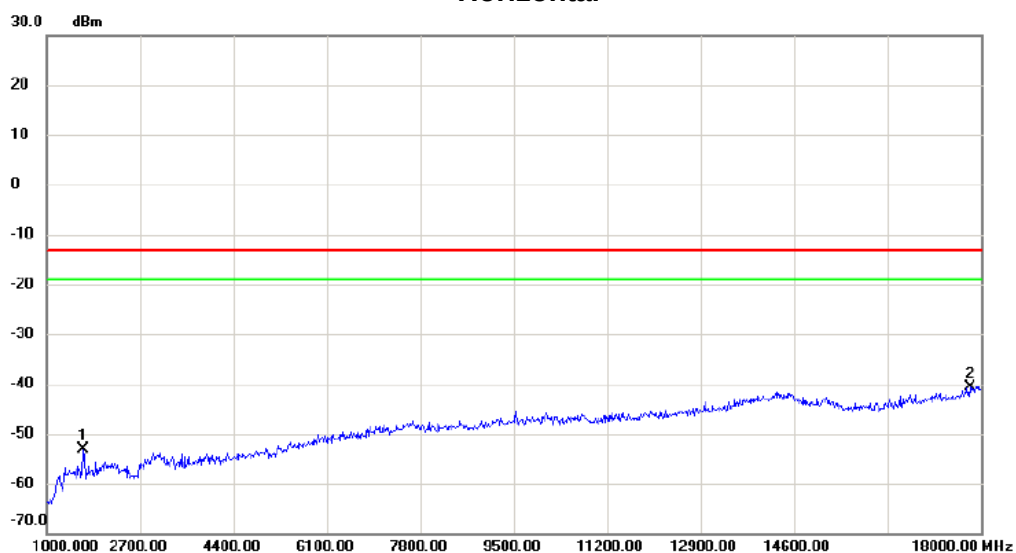


No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Margin dB	Detector	Comment
1	*	17889.500	-70.88	30.67	-40.21	-13.00	-27.21	peak	

Test Mode:

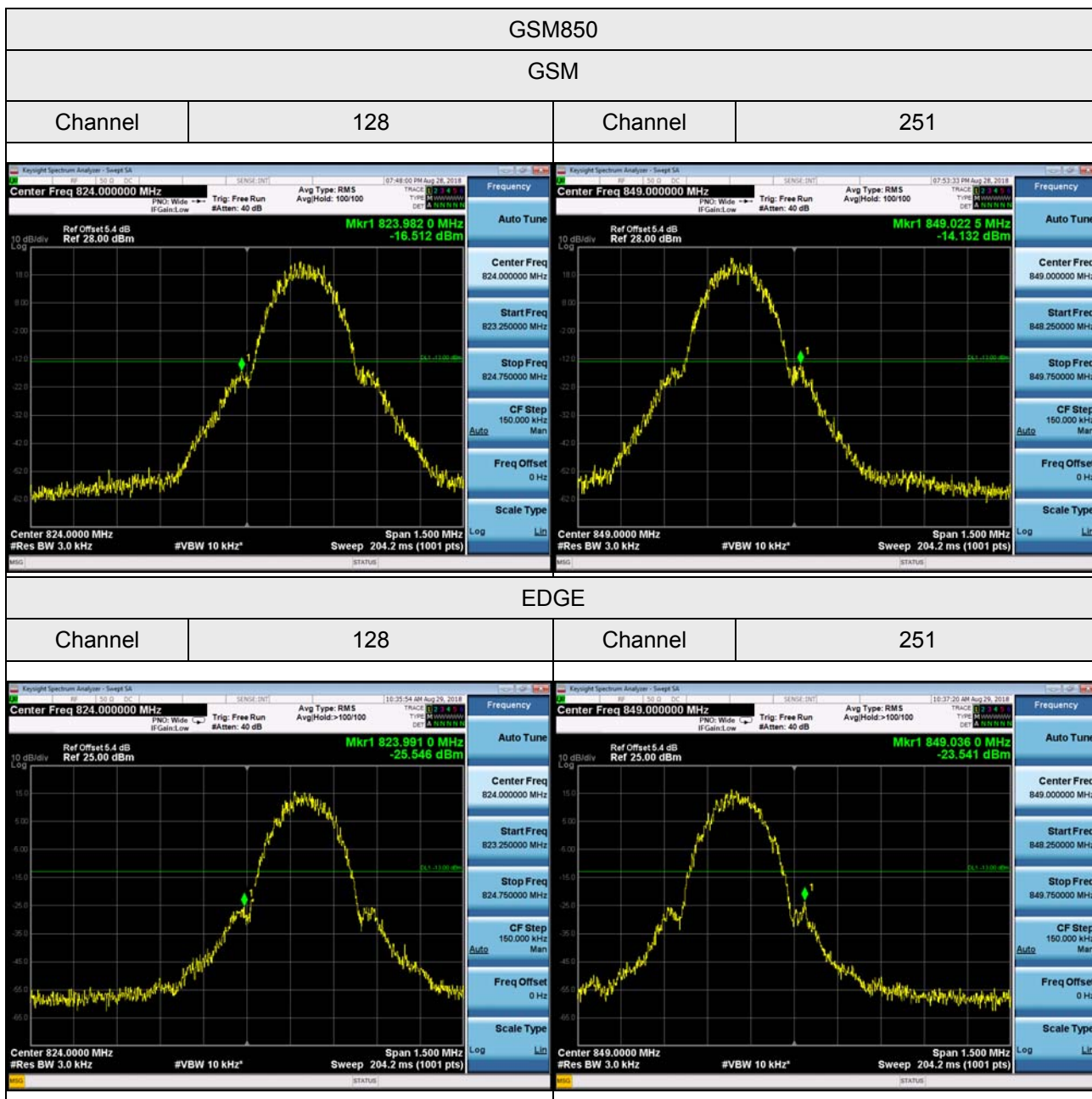
LTE Band 5_TX CH20525_10M

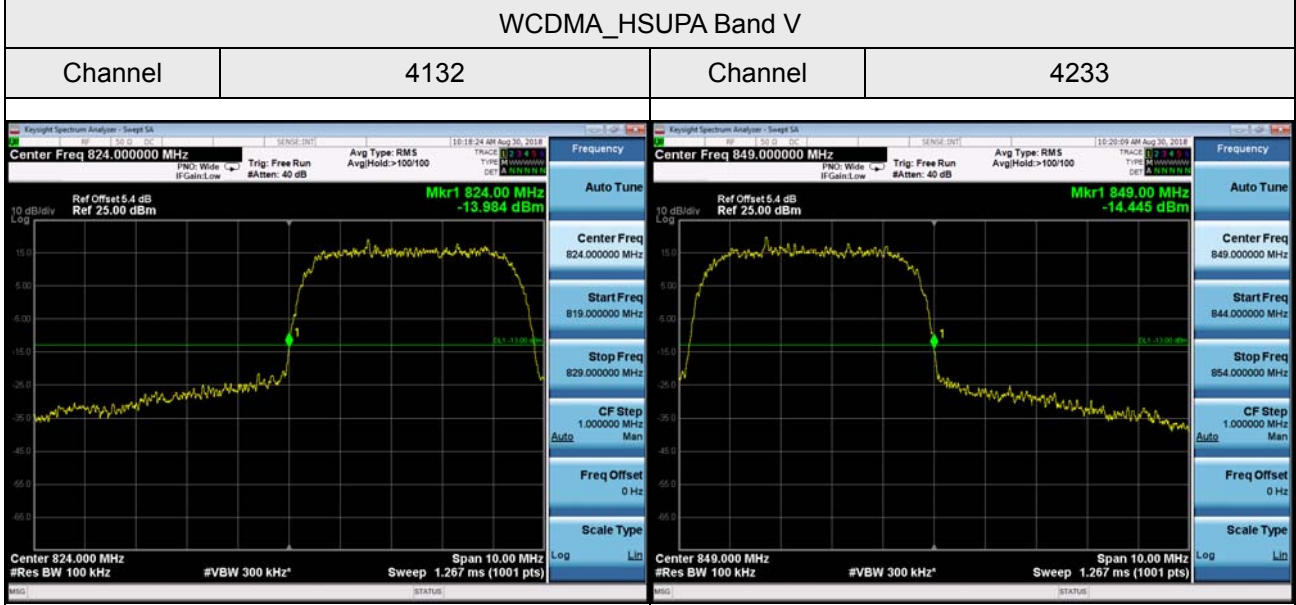
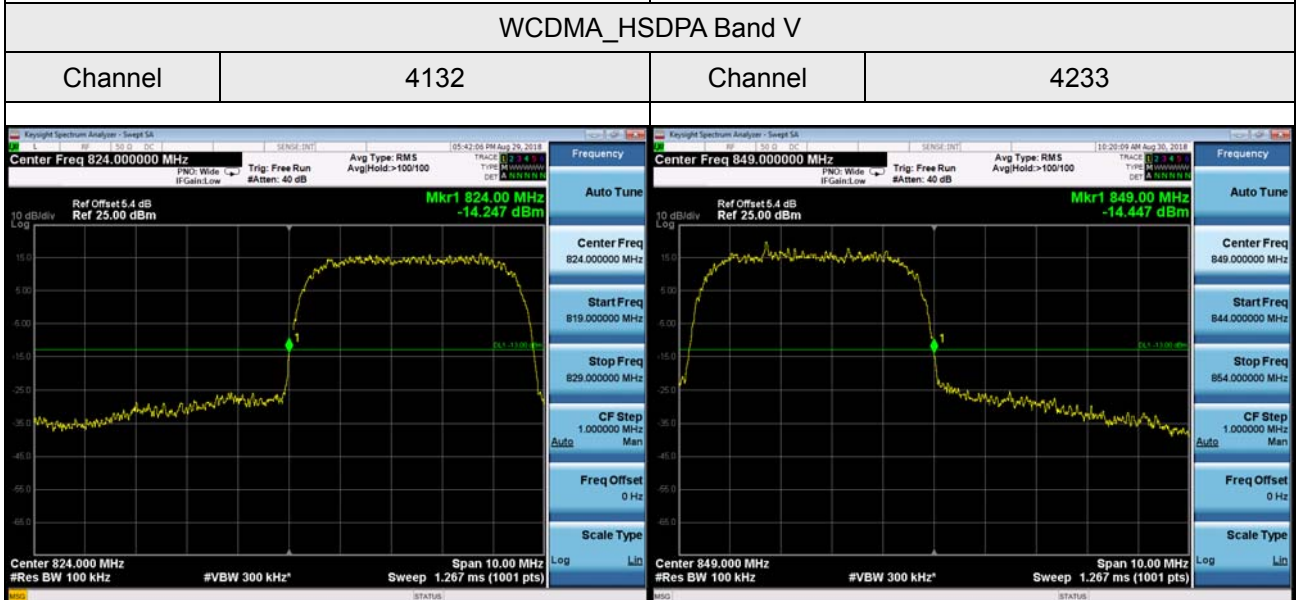
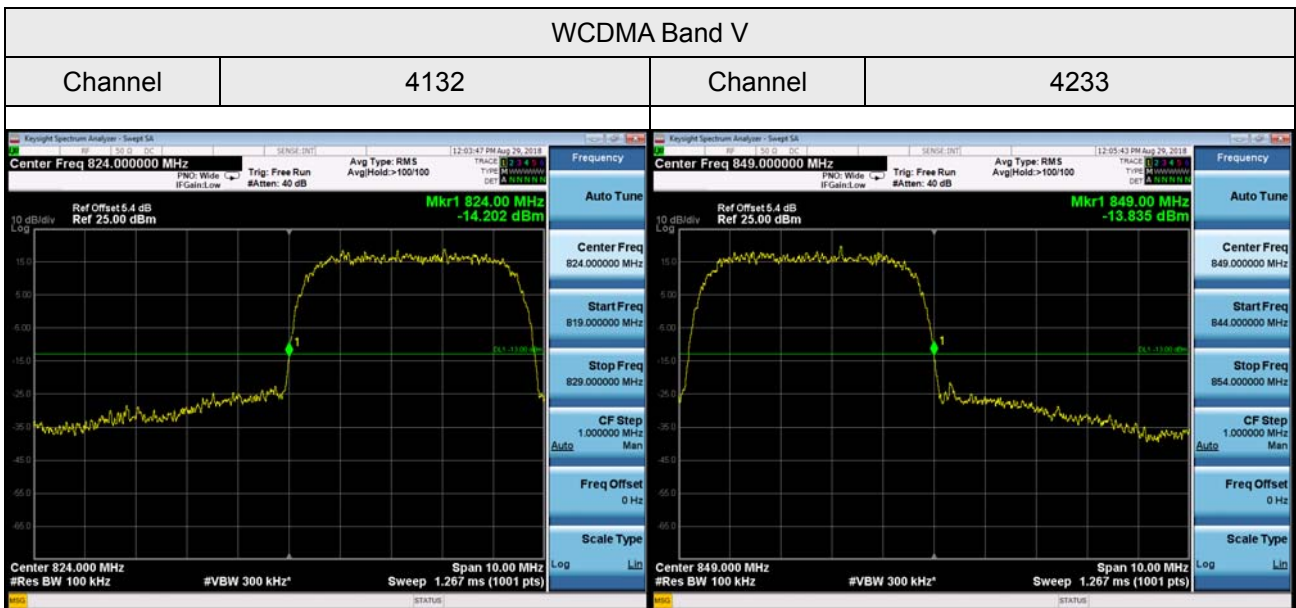
Horizontal



No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Margin		
		MHz	dBm	dB	dBm	dBm	dB	Detector	Comment
1		1671.500	-60.99	7.85	-53.14	-13.00	-40.14	peak	
2	*	17804.500	-70.97	30.42	-40.55	-13.00	-27.55	peak	

APPENDIX G - BAND EDGE





LTE Band 5_1.4M

1RB0

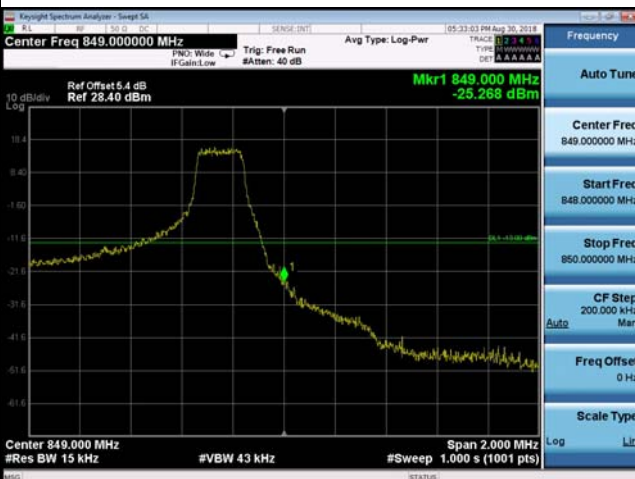
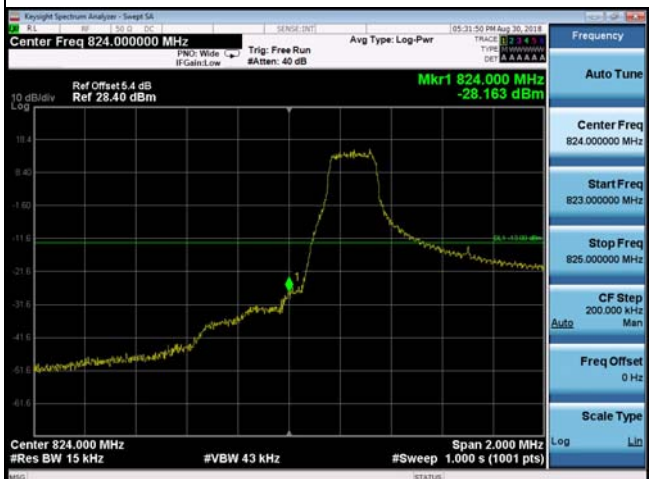
1RB5

Channel

20407

Channel

20643



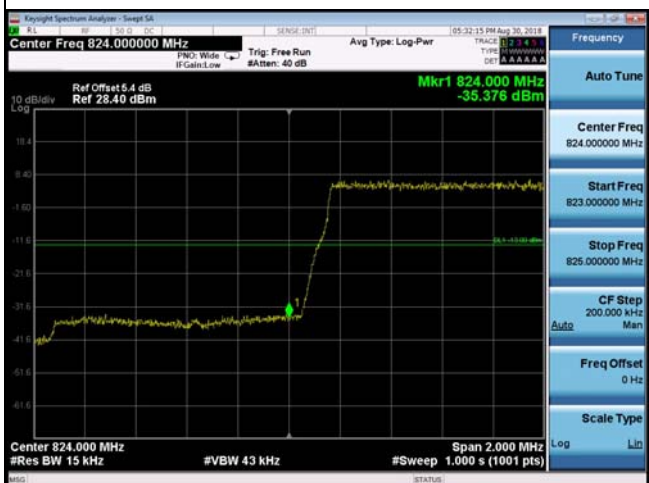
6RB0

Channel

20407

Channel

20643



LTE Band 5_3M

1RB0

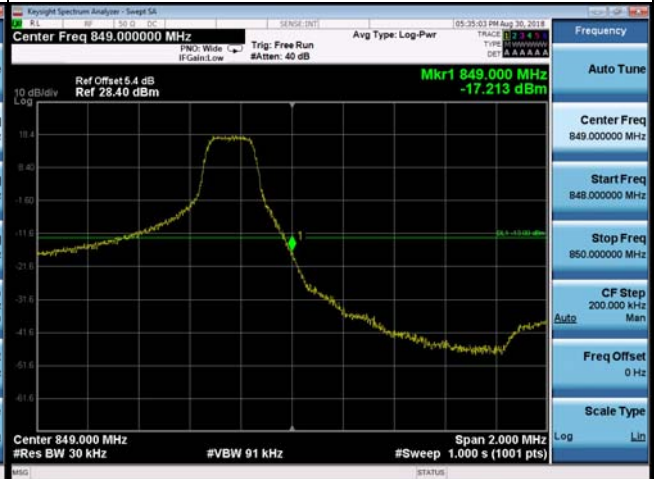
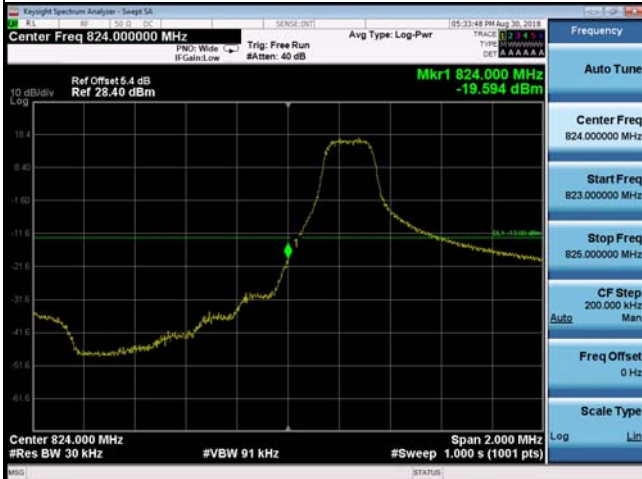
1RB14

Channel

20415

Channel

20635



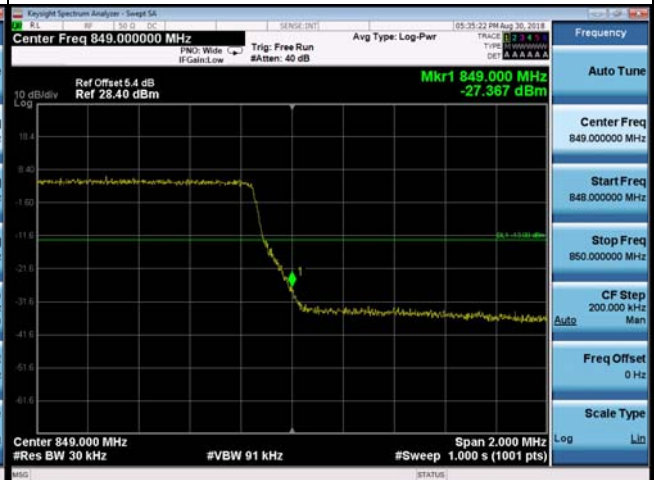
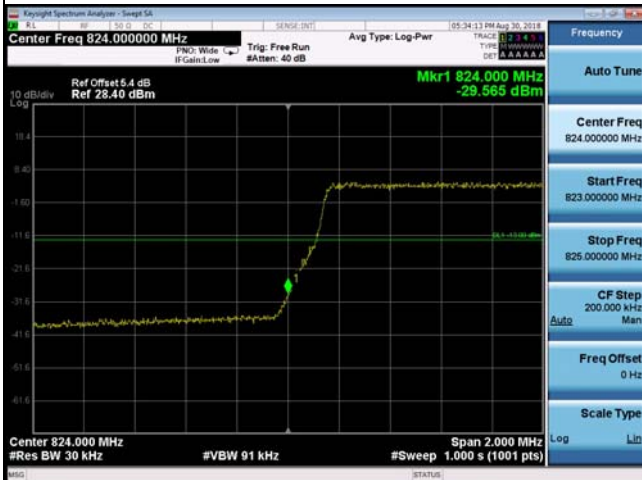
15RB0

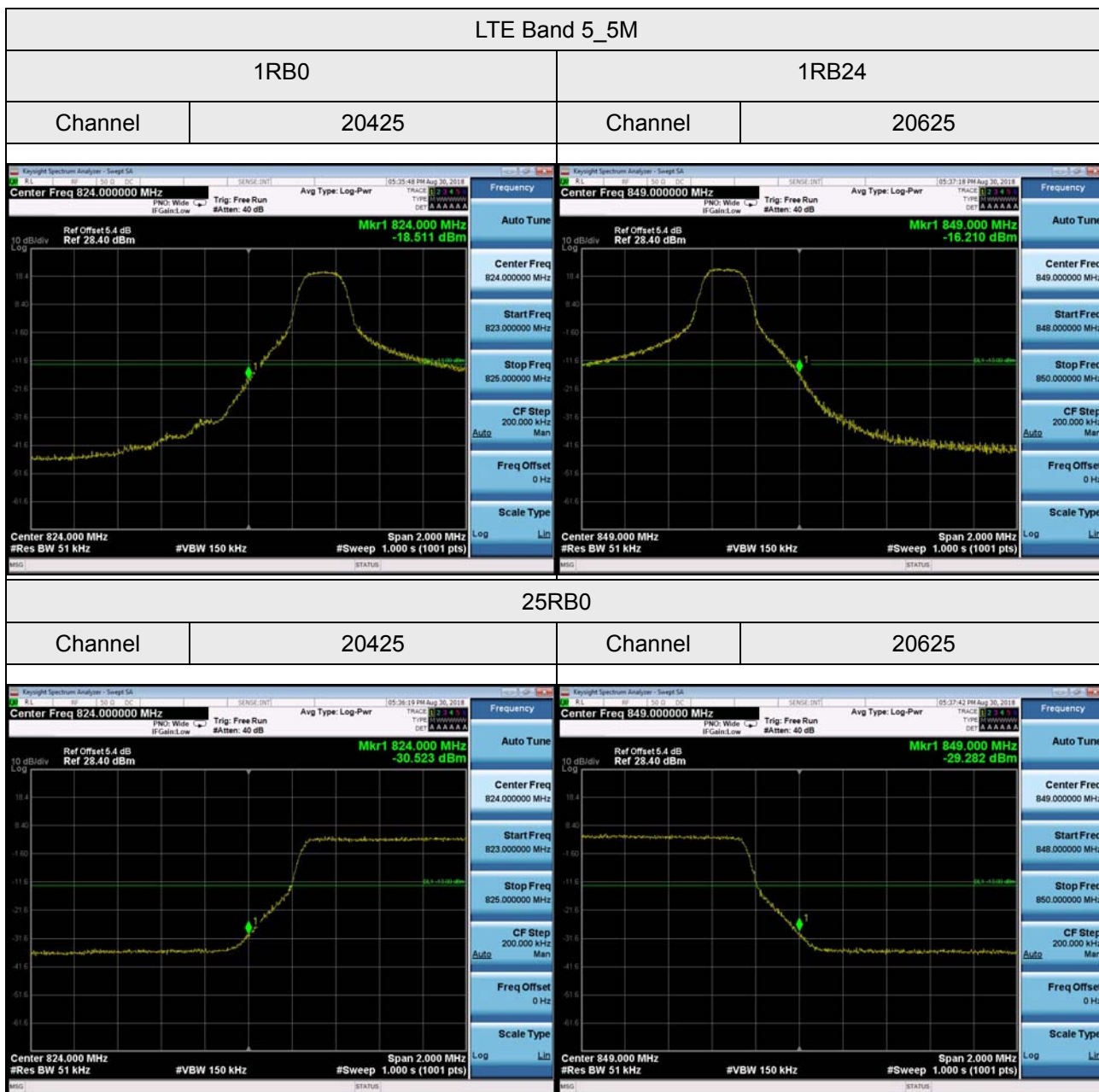
Channel

20415

Channel

20635





LTE Band 5_10M

1RB0

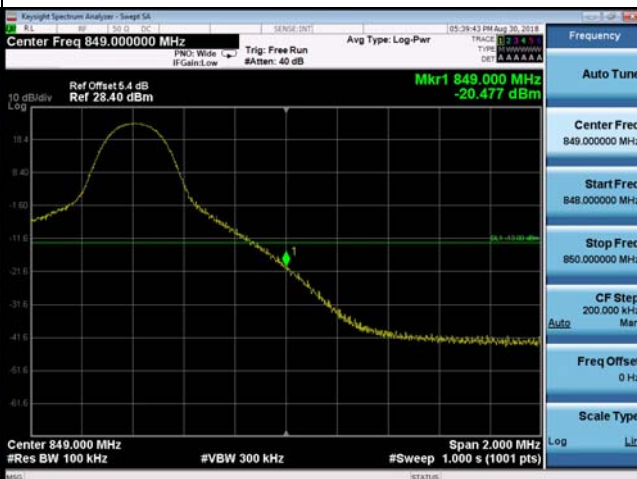
1RB49

Channel

20450

Channel

20600



50RB0

Channel

20450

Channel

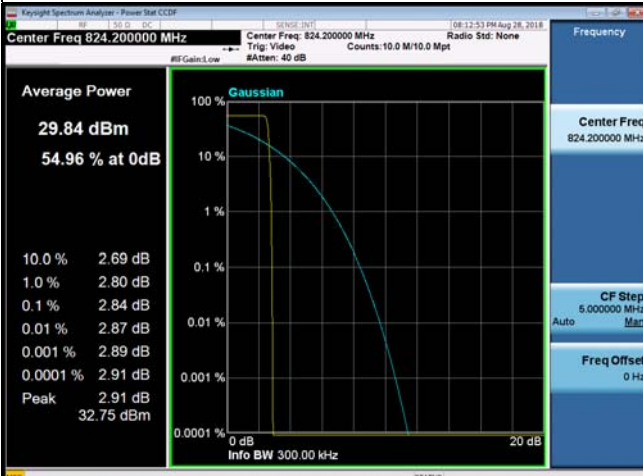
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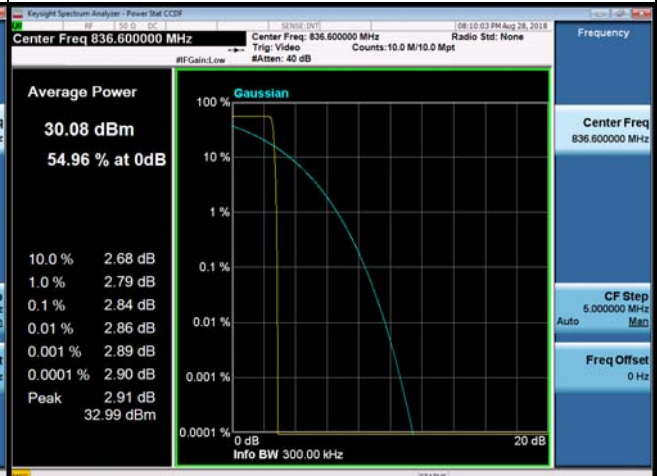
APPENDIX H - PEAK TO AVERAGE RATIO

GSM 850 Spectrum Plot

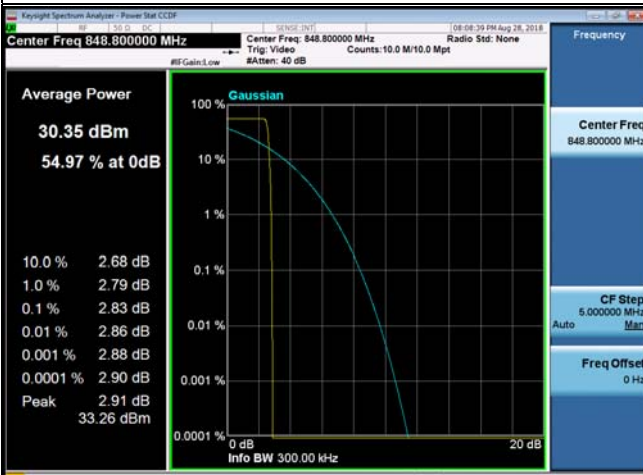
GSM -128



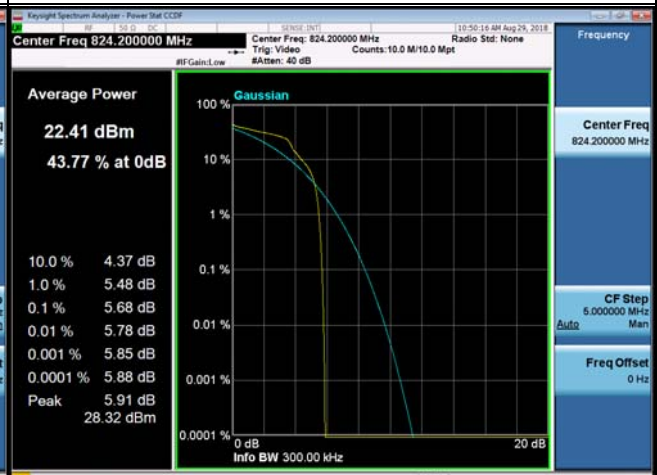
GSM-190



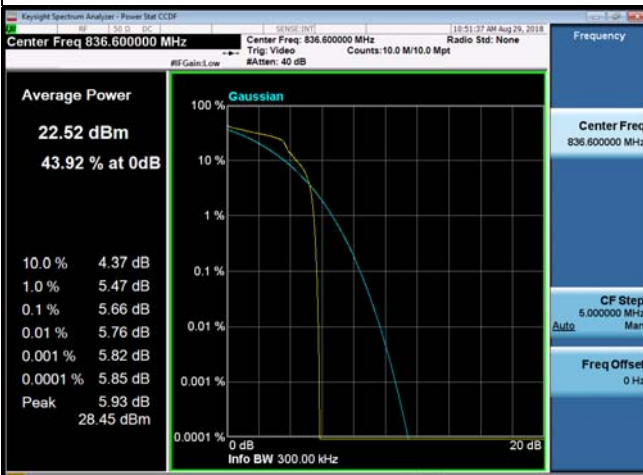
GSM-251



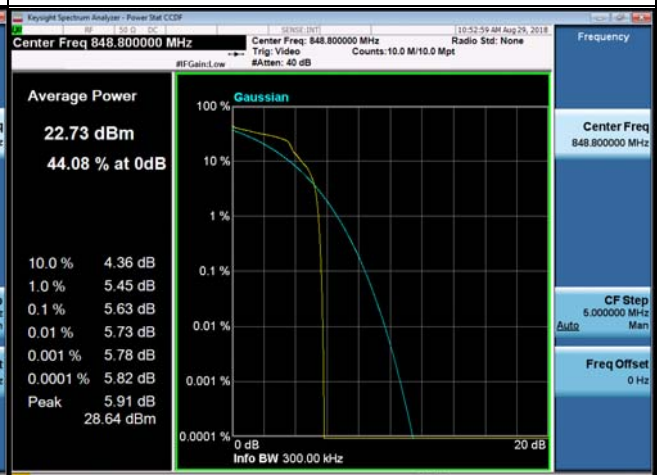
EDGE-128



EDGE-190

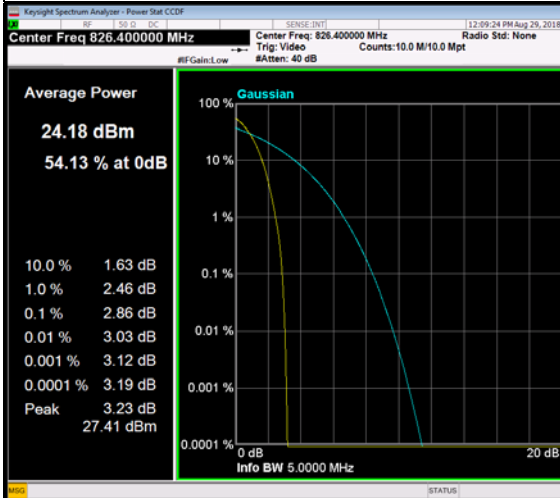


EDGE-251

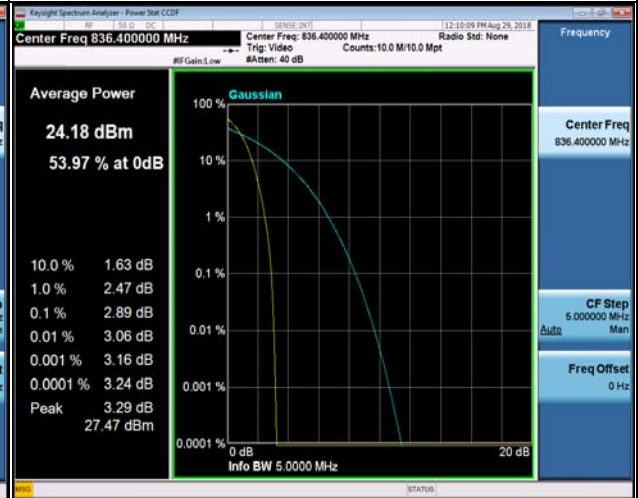


WCDMA Band V Spectrum Plot

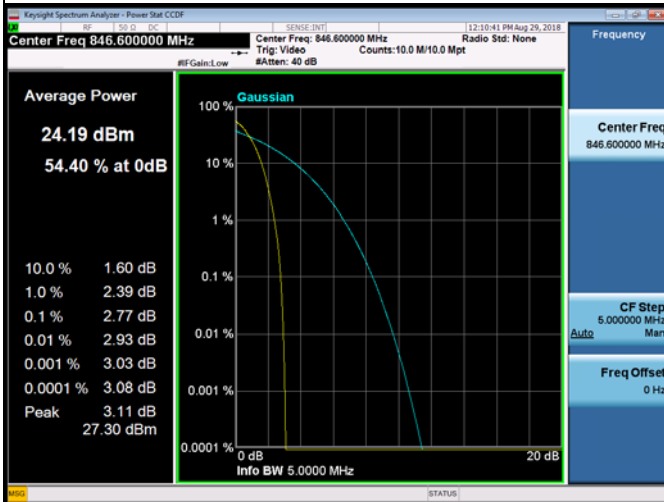
4132



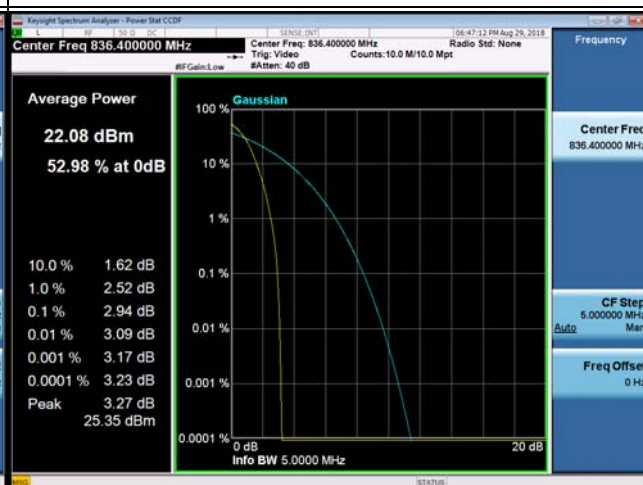
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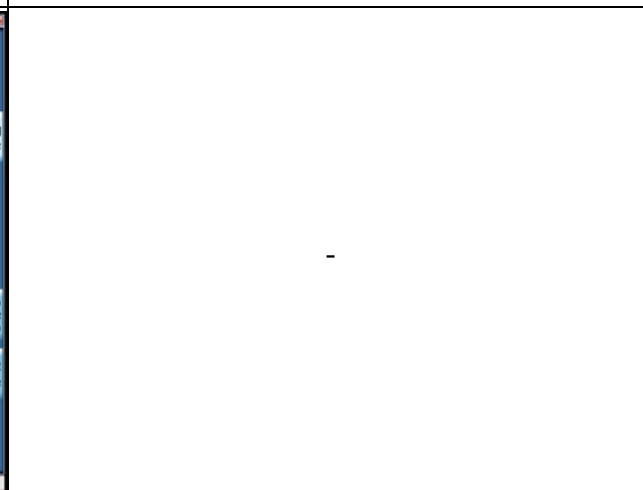
4233



4182



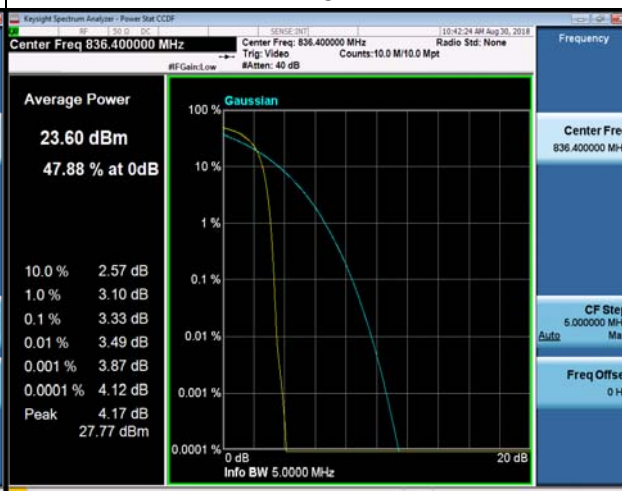
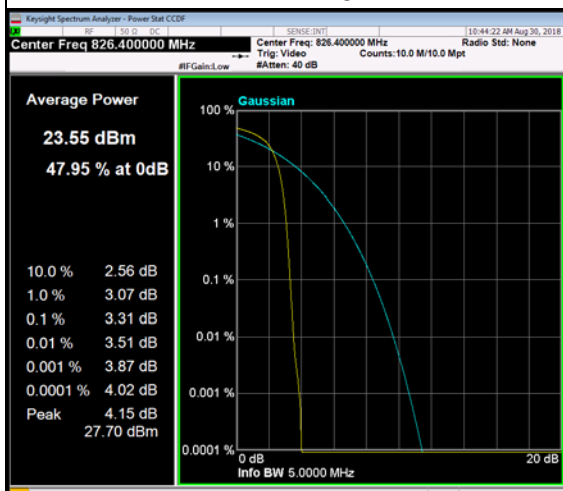
1



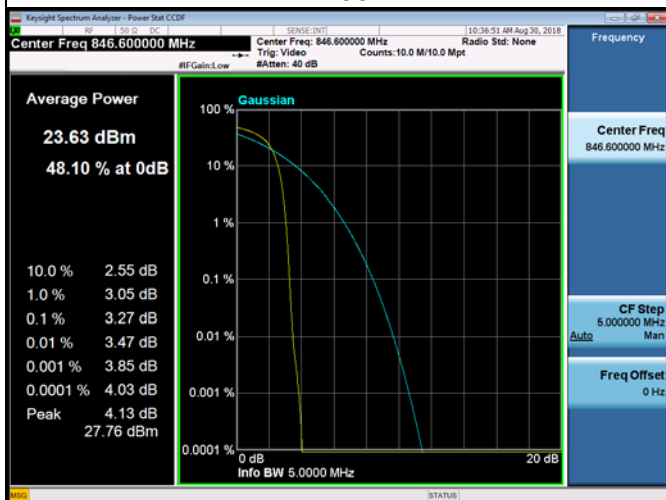
WCDMA_HSUPA Band V Spectrum Plot

4132

4182

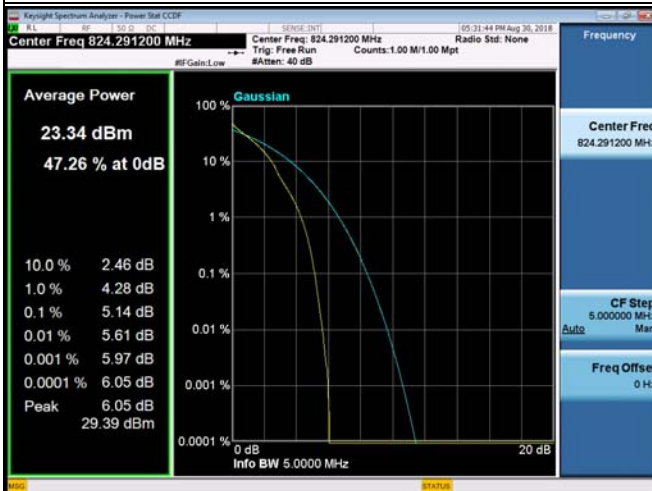


4233

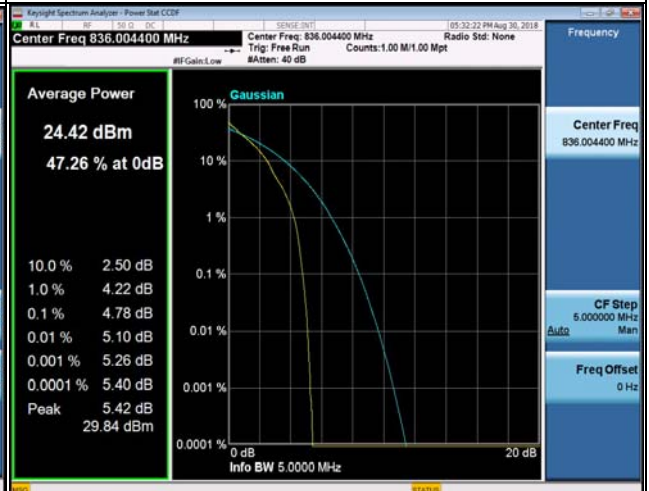


LTE Band 5 Spectrum Plot_1.4M

QPSK-20407



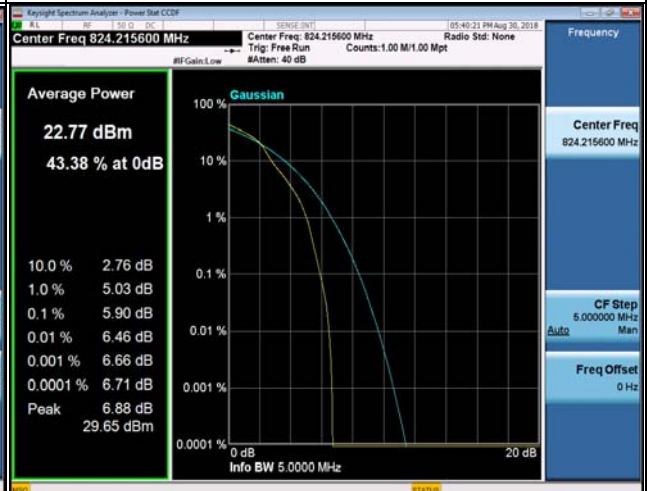
QPSK-20525



QPSK-20643



16QAM-20407



16QAM-20525

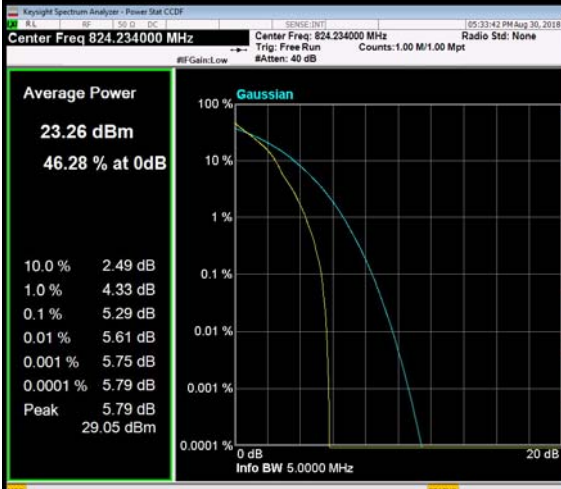


16QAM-20643



LTE Band 5 Spectrum Plot_3M

QPSK-20415



QPSK-20525



QPSK-20635



16QAM-20415



16QAM-20525



16QAM-20635



LTE Band 5 Spectrum Plot_5M

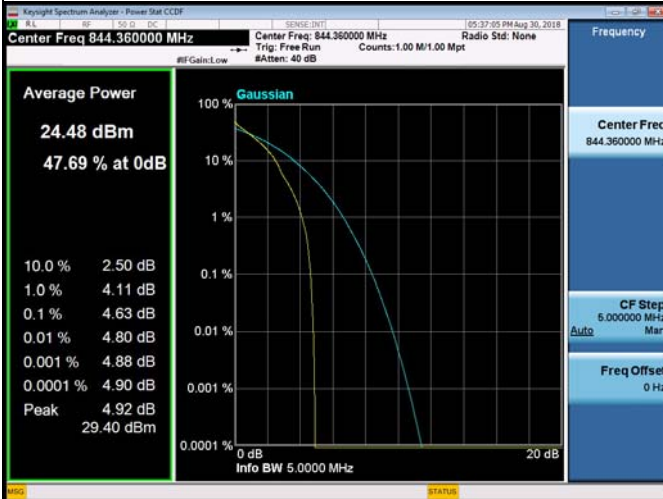
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QPSK-20525



QPSK-20625



16QAM-20425



16QAM-20525



16QAM-20625



LTE Band 5 Spectrum Plot_10M

QPSK-20450



QPSK-20525



QPSK-20600



16QAM-20450



16QAM-20525



16QAM-20600



APPENDIX G - FREQUENCY STABILITY

Test Mode:	GSM850_CH190
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Temperature vs. Frequency Stability

Temperature(°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
-30	5.06	0.006048291	±2.5
-20	5.33	0.006371026	
-10	5.98	0.00714798	
0	4.68	0.005594071	
10	6.73	0.008044466	
20	5.49	0.006562276	
30	6.54	0.007817356	
40	6.87	0.00821181	
50	6.32	0.007554387	
Max. Deviation (ppm)	6.87	0.00821181	

Voltage vs. Frequency Stability

Voltage(Volts)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
4.35	3.18	0.0038011	±2.5
3.82	3.94	0.004709539	
3.60	3.58	0.004279225	
Max. Deviation (ppm)	3.94	0.004709539	

Test Mode:	WCDMA Band V_CH4182
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Temperature vs. Frequency Stability

Temperature(°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
-30	7.35	0.008787661	±2.5
-20	6.73	0.008046389	
-10	8.54	0.010210426	
0	8.40	0.010043042	
10	6.36	0.007604017	
20	7.39	0.008835485	
30	7.89	0.009433286	
40	7.69	0.009194165	
50	6.50	0.007771401	
Max. Deviation (ppm)	8.54	0.010210426	

Voltage vs. Frequency Stability

Voltage(Volts)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
4.35	7.11	0.008500717	±2.5
3.82	8.46	0.010114778	
3.60	8.56	0.010234338	
Max. Deviation (ppm)	8.56	0.010234338	

Test Mode:	LTE Band 5_CH20525_1.4M
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Temperature vs. Frequency Stability

Temperature(°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
-30	3.86	0.004614465	±2.5
-20	-5.73	-0.00684997	
-10	-3.16	-0.003777645	
0	-2.93	-0.00350269	
10	5.22	0.006240287	
20	-3.17	-0.0037896	
30	-2.31	-0.002761506	
40	3.59	0.004291692	
50	4.56	0.005451285	
Max. Deviation (ppm)	-5.73	-0.00684997	

Voltage vs. Frequency Stability

Voltage(Volts)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
4.35	2.80	0.00334728	±2.5
3.82	2.96	0.003538553	
3.60	-3.12	-0.003729827	
Max. Deviation (ppm)	-3.12	-0.003729827	

Test Mode:	LTE Band 5_CH20525_3M
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Temperature vs. Frequency Stability

Temperature(°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
-30	-3.63	-0.00433951	±2.5
-20	3.75	0.004482965	
-10	4.78	0.005714286	
0	5.43	0.006491333	
10	-2.66	-0.003179916	
20	4.26	0.005092648	
30	-3.82	-0.004566647	
40	1.55	0.001852959	
50	3.69	0.004411237	
Max. Deviation (ppm)	5.43	0.006491333	

Voltage vs. Frequency Stability

Voltage(Volts)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
4.35	-2.92	-0.003490735	±2.5
3.82	2.68	0.003203825	
3.60	-3.60	-0.004303646	
Max. Deviation (ppm)	-3.60	-0.004303646	

Test Mode:	LTE Band 5_CH20525_5M
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Temperature vs. Frequency Stability

Temperature(°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
-30	6.62	0.007913927	±2.5
-20	3.57	0.004267782	
-10	-1.63	-0.001948595	
0	4.38	0.005236103	
10	-2.47	-0.002952779	
20	4.03	0.004817693	
30	5.24	0.006264196	
40	3.80	0.004542738	
50	-2.68	-0.003203825	
Max. Deviation (ppm)	6.62	0.007913927	

Voltage vs. Frequency Stability

Voltage(Volts)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
4.35	-3.58	-0.004279737	±2.5
3.82	-4.83	-0.005774059	
3.60	-2.47	-0.002952779	
Max. Deviation (ppm)	-4.83	-0.005774059	

Test Mode:	LTE Band 5_CH20525_10M
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Temperature vs. Frequency Stability

Temperature(°C)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
-30	-3.75	-0.004482965	± 2.5
-20	6.98	0.008344292	
-10	1.88	0.00224746	
0	-4.24	-0.005068739	
10	-2.73	-0.003263598	
20	-5.17	-0.006180514	
30	6.64	0.007937836	
40	2.53	0.003024507	
50	1.77	0.002115959	
Max. Deviation (ppm)	6.98	0.008344292	

Voltage vs. Frequency Stability

Voltage(Volts)	Frequency Error (Hz)	Frequency Error (ppm)	Limit(ppm)
4.35	-3.92	-0.004686192	± 2.5
3.82	-2.91	-0.003478781	
3.60	3.27	0.003909145	
Max. Deviation (ppm)	-3.92	-0.004686192	