



REPORT No.: SZ14110040W01

FCC TEST REPORT

APPLICANT : GUANGDONG OPPO MOBILE
TELECOMMUNICATIONS CORP.,LTD

PRODUCT NAME : Mobile Phone

MODEL NAME : OPPO 3006

TRADE NAME : OPPO

BRAND NAME : OPPO

FCC ID : R9C-3006

STANDARD(S) : 47 CFR Part 22 Subpart H
47 CFR Part 24 Subpart E

ISSUE DATE : 2014-11-27



SHENZHEN MORLAB COMMUNICATIONS TECHNOLOGY Co., Ltd.

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MORLAB GROUP

FL1-3, Building A, FeiYang Science Park, No.8 LongChang Road,
Block67, BaoAn District, ShenZhen , GuangDong Province, P. R. China

Tel: 86-755-36698555
Http://www.morlab.com

Fax: 86-755-36698525
E-mail: service@morlab.cn



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Change History		
Issue	Date	Reason for change
1.0	Nov 27, 2014	First edition



Test Report Declaration

Applicant	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP.,LTD
Applicant Address	NO.18 HAIBIN ROAD, WUSHA, CHANG'AN, DONGGUAN, GUANGDONG,CHINA
Manufacturer	GUANGDONG OPPO MOBILE TELECOMMUNICATIONS CORP.,LTD
Manufacturer Address	NO.18 HAIBIN ROAD, WUSHA, CHANG'AN, DONGGUAN, GUANGDONG,CHINA
Product Name	Mobile Phone
Model Name	OPPO 3006
Brand Name	OPPO
HW Version	11
SW Version	ColorOS V2.0.0i
Test Standards	47 CFR Part 22 Subpart H 47 CFR Part 24 Subpart E
Test Date	2014-11-11 to 2014-11-27
Test Result	PASS

Tested by : Liu Zhisen
Liu Zhisen

Reviewed by : Huang Pulong
Huang Pulong

Approved by : Zeng Dexin
Zeng Dexin

1. GENERAL INFORMATION

1.1 EUT Description

Frequency Range	GSM 850MHz: Tx: 824.20 - 848.80MHz (at intervals of 200kHz); Rx: 869.20 - 893.80MHz (at intervals of 200kHz) GSM 1900MHz: Tx: 1850.20 - 1909.80MHz (at intervals of 200kHz); Rx: 1930.20 - 1989.80MHz (at intervals of 200kHz) WCDMA 850MHz Tx: 826.4 - 846.6MHz (at intervals of 200kHz); Rx: 871.4 - 891.6MHz (at intervals of 200kHz) WCDMA 1900MHz Tx: 1852.4 - 1907.6MHz (at intervals of 200kHz); Rx: 1932.4 - 1987.6MHz (at intervals of 200kHz)
Modulation Type.....	GSM,GPRS Mode with GMSK Modulation EDGE Mode with 8PSK Modulation WCDMA Mode with QPSK Modulation HSDPA Mode with QPSK Modulation HSUPA Mode with QPSK Modulation HSPA+ Mode with QPSK Modulation
Multislot Class.....	GPRS: Multislot Class 12,EGPRS: Multislot Class 12
Antenna Type.....	PIFA Antenna
Emission Designators	GSM 850:251KGXW,GSM 1900:250KGXW EGPRS850:247KG7W, EGPRS1900:252KG7W, WCDMA 850:4M15F9W ,WCDMA1900:4M15F9W

Note 1: The transmitter (Tx) frequency arrangement of the Cellular 850MHz band used by the EUT can be represented with the formula $F(n)=824.2+0.2*(n-128)$, $128 \leq n \leq 251$; the lowest, middle, highest channel numbers (ARFCHs) used and tested in this report are separately 128 (824.2MHz), 190 (836.6MHz) and 251 (848.8MHz).

Note 2: The transmitter (Tx) frequency arrangement of the PCS 1900MHz band used by the EUT can be represented with the formula $F(n)=1850.2+0.2*(n-512)$, $512 \leq n \leq 810$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 512 (1850.2MHz), 661 (1880.0MHz) and 810 (1909.8MHz).

Note 3: The transmitter (Tx) frequency arrangement of the WCDMA 850MHz band used by the EUT can be represented with the formula $F(n)=826.4+0.2*(n-4132)$, $4132 \leq n \leq 4233$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 4132 (826.4MHz), 4175(835MHz) and 4233 (846.6MHz).

Note 4: The transmitter (Tx) frequency arrangement of the WCDMA 1900MHz band used by the EUT can



be represented with the formula $F(n)=1852.4+0.2*(n-9262)$, $9262 \leq n \leq 9538$; the lowest, middle and highest channel numbers (ARFCHs) used and tested in this report are separately 9262 (1852.4MHz), 9400 (1880MHz) and 9538 (1907.6MHz).

Note 5: For a more detailed description, please refer to Specification or User's Manual supplied by the applicant and/or manufacturer.

1.2 Test Standards and Results

The objective of the report is to perform testing according to 47 CFR Part 2, Part 22 and Part 24 for the EUT FCC ID Certification:

No.	Identity	Document Title
1	47 CFR Part 2 (10-1-13 Edition)	Frequency Allocations and Radio Treaty Matters; General Rules and Regulations
2	47 CFR Part 22 (10-1-13 Edition)	Public Mobile Services
3	47 CFR Part 24 (10-1-13 Edition)	Personal Communications Services

Test detailed items/section required by FCC rules and results are as below:

No.	Section	Description	Result
1	2.1046	Conducted RF Output Power	PASS
2.	24.232(d)	Peak to average ratio	PASS
2	2.1049,22.917 24.238	99% Occupied Bandwidth	PASS
3	2.1055,22.355 24.235	Frequency Stability	PASS
4	2.1051,2.1057 22.917,24.238,	Conducted Out of Band Emissions	PASS
5	2.1051,2.1057 22.917,24.238	Band Edge	PASS
6	22.913,24.232	Transmitter Radiated Power (EIPR/ERP)	PASS
7	2.1053,2.1057 22.917,24.238	Radiated Out of Band Emissions	PASS

NOTE: Measurement method according to TIA/EIA 603.D-2010



1.3 Facilities and Accreditations

1.3.1 Facilities

All measurement facilities used to collect the measurement data are located at FL.1, Building A, FeiYang Science Park, No.8 LongChang Road,Block 67, BaoAn District, ShenZhen, GuangDong Province,P. R. China 518101. The test site is constructed in conformance with the requirements of ANSI C63.7, ANSI C63.4 and CISPR Publication 22; the FCC registration number is 695796.

1.3.2 Test Environment Conditions

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

Temperature (°C):	15 - 35
Relative Humidity (%):	30 -60
Atmospheric Pressure (kPa):	86-106

2. 47 CFR PART 2, PART 22H & 24E REQUIREMENTS

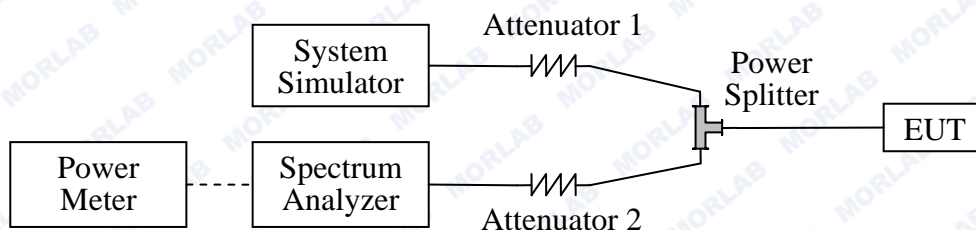
2.1 Conducted RF Output Power

2.1.1 Requirement

According to FCC section 2.1046(a), for transmitters other than single sideband, independent sideband and controlled carrier radiotelephone, power output shall be measured at the RF output terminals when the transmitter is adjusted in accordance with the tune-up procedure to give the values of current and voltage on the circuit elements specified in FCC section 2.1033(c)(8).

2.1.2 Test Description

1. Test Setup:



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 50Ohm; the path loss as the factor is calibrated to correct the reading. The EUT is commanded by the SS to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS.

The Power Meter was just used for the Conducted RF Output Power test of WCDMA Model.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
Power Meter	Agilent	E4418B	GB43318055	2014.02.26	2015.02.25
Power Sensor	Agilent	8482A	MY41091706	2014.02.26	2015.02.25
Power Splitter	Weinschel	1506A	NW521	2014.02.26	2015.02.25
Attenuator 1	Resnet	20dB	(n.a.)	2014.02.26	2015.02.25
Attenuator 2	Resnet	3dB	(n.a.)	2014.02.26	2015.02.25

2.1.3 Test Results

Here the lowest, middle and highest channels are selected to perform testing to verify the conducted RF output power of the EUT.

1. GSM Model Test Verdict:

Band	Channel	Frequency (MHz)	Measured Output Power		Limit dBm	Verdict
			dBm	Refer to Plot		
GSM 850MHz	128	824.2	33.35	Plot A1 to A3	35	<u>PASS</u>
	190	836.6	33.23			<u>PASS</u>
	251	848.8	33.16			<u>PASS</u>
GSM 1900MHz	512	1850.2	28.69	Plot B1 to B3	32	<u>PASS</u>
	661	1880.0	29.94			<u>PASS</u>
	810	1909.8	28.99			<u>PASS</u>
GPRS 850MHz	128	824.2	29.13	Plot C1 to C3 ^{Note 1}	35	<u>PASS</u>
	190	836.6	29.15			<u>PASS</u>
	251	848.8	29.11			<u>PASS</u>
GPRS 1900MHz	512	1850.2	24.74	Plot D1 to D3 ^{Note 1}	32	<u>PASS</u>
	661	1880.0	25.94			<u>PASS</u>
	810	1909.8	25.12			<u>PASS</u>
EGPRS 850MHz	128	824.2	31.17	Plot E1 to E3 ^{Note 1}	35	<u>PASS</u>
	190	836.6	30.97			<u>PASS</u>
	251	848.8	31.29			<u>PASS</u>
EGPRS 1900MHz	512	1850.2	26.02	Plot F1 to F3 ^{Note 1}	32	<u>PASS</u>
	661	1880.0	27.24			<u>PASS</u>
	810	1909.8	26.49			<u>PASS</u>

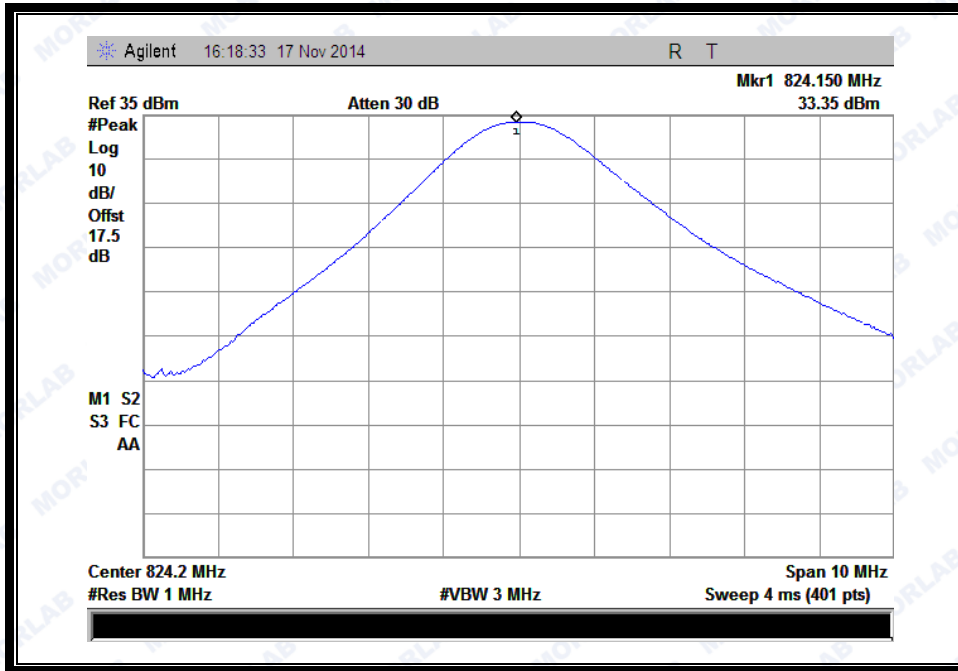
Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.



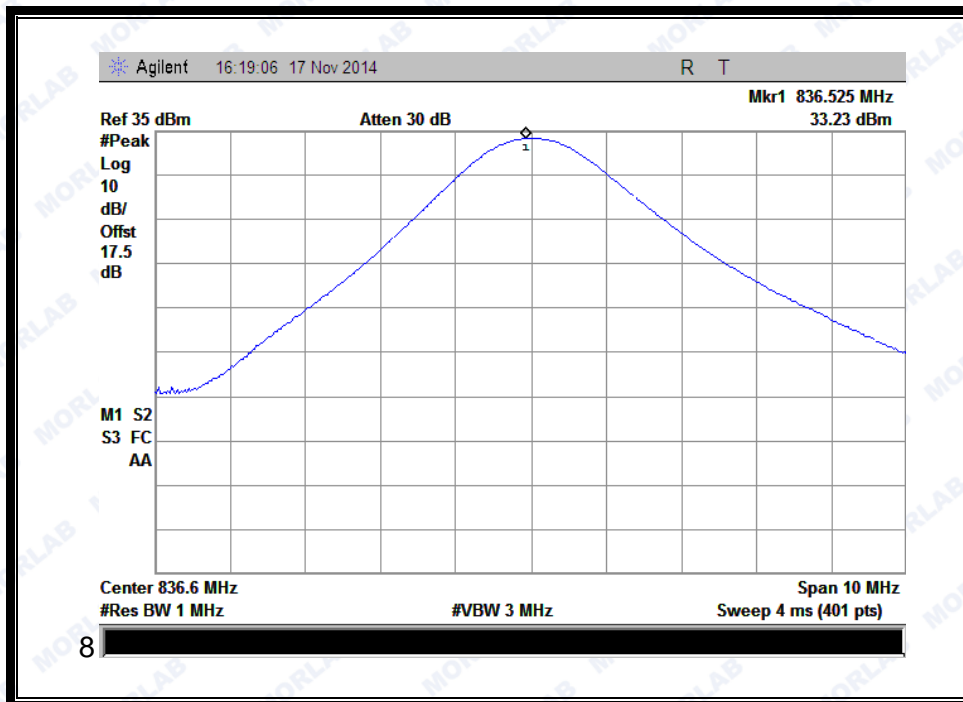
2. WCDMA Model Test Verdict:

Item	band	WCDMA 850			WCDMA 1900		
	ARFCN	4132	4175	4233	9262	9400	9538
	subtest	dBm			dBm		
5.2(WCDMA)	non	24.03	24.06	23.97	23.06	23.42	23.04
HSDPA	1	23.76	23.76	23.83	21.97	23.14	23.54
	2	23.75	23.74	23.80	21.95	23.12	23.55
	3	23.27	23.26	23.31	21.46	22.63	23.04
	4	23.26	23.25	23.33	21.48	22.64	23.05
HSUPA	1	23.73	23.72	23.84	22.11	23.48	23.30
	2	21.72	21.70	21.83	20.11	21.47	21.31
	3	22.73	22.70	22.82	21.12	22.48	22.29
	4	21.71	21.73	21.84	20.12	21.48	21.30
	5	23.72	23.71	23.83	22.12	23.49	23.31
HSPA+	1	23.67	23.77	23.86	22.10	23.36	23.35
Note:	The Conducted RF Output Power test of WCDMA /HSDPA /HSUPA /HSPA+ was tested by power meter.						

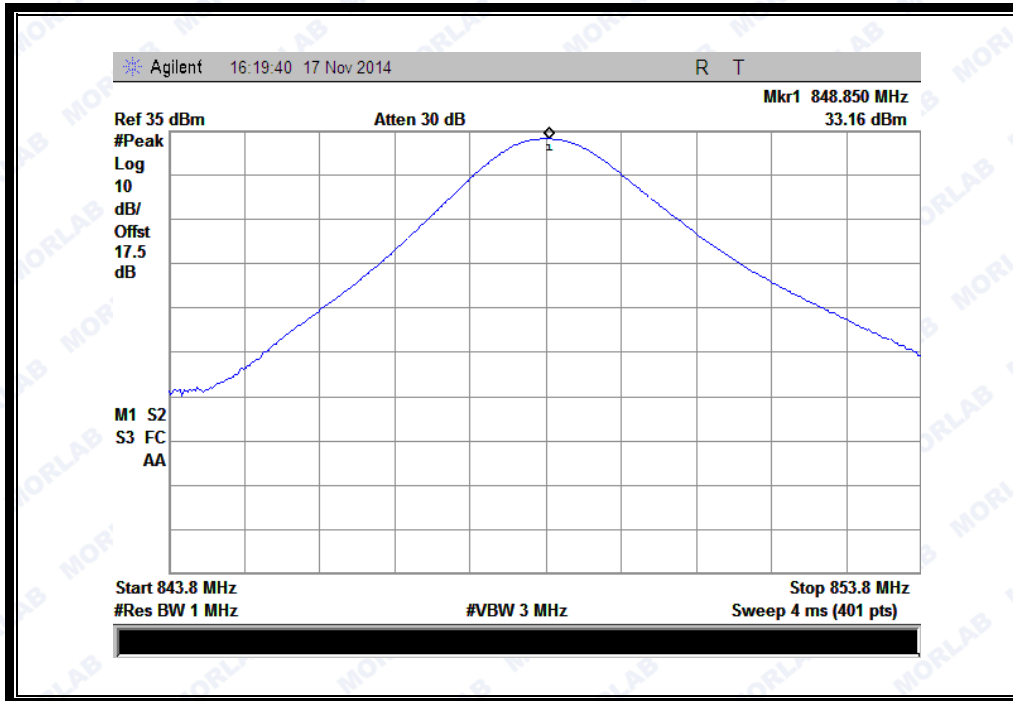
3. GSM Model Test Plots:



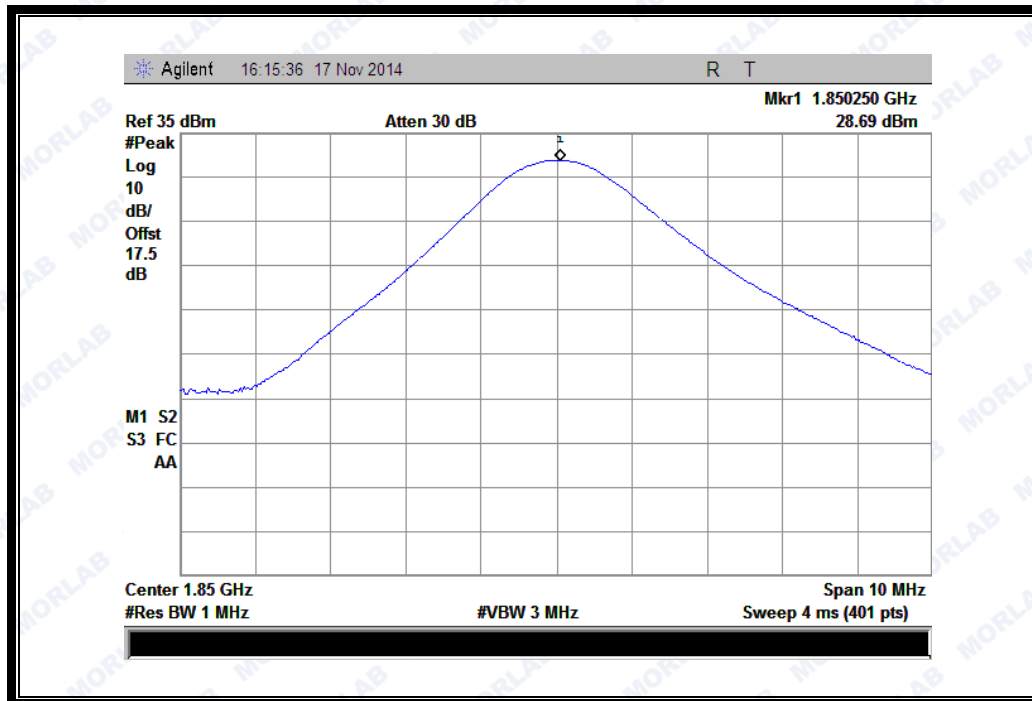
(Plot A1:GSM 850MHz Channel = 128)



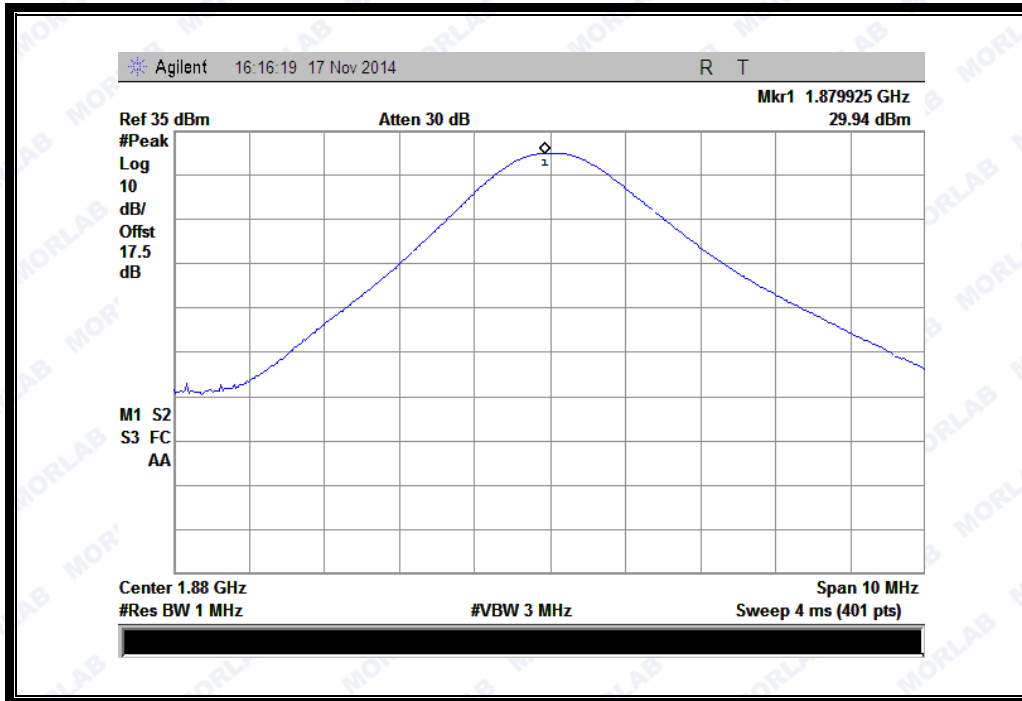
(Plot A2:GSM 850MHz Channel = 190)



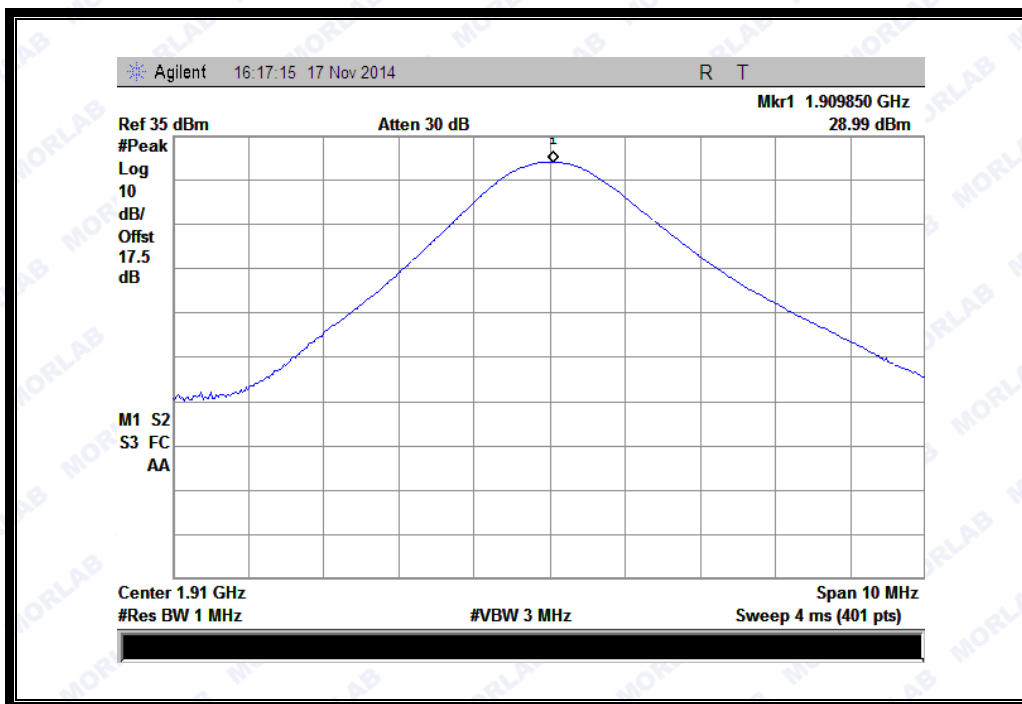
(Plot A3:GSM 850MHz Channel = 251)



(Plot B1: GSM 1900MHz Channel = 512)

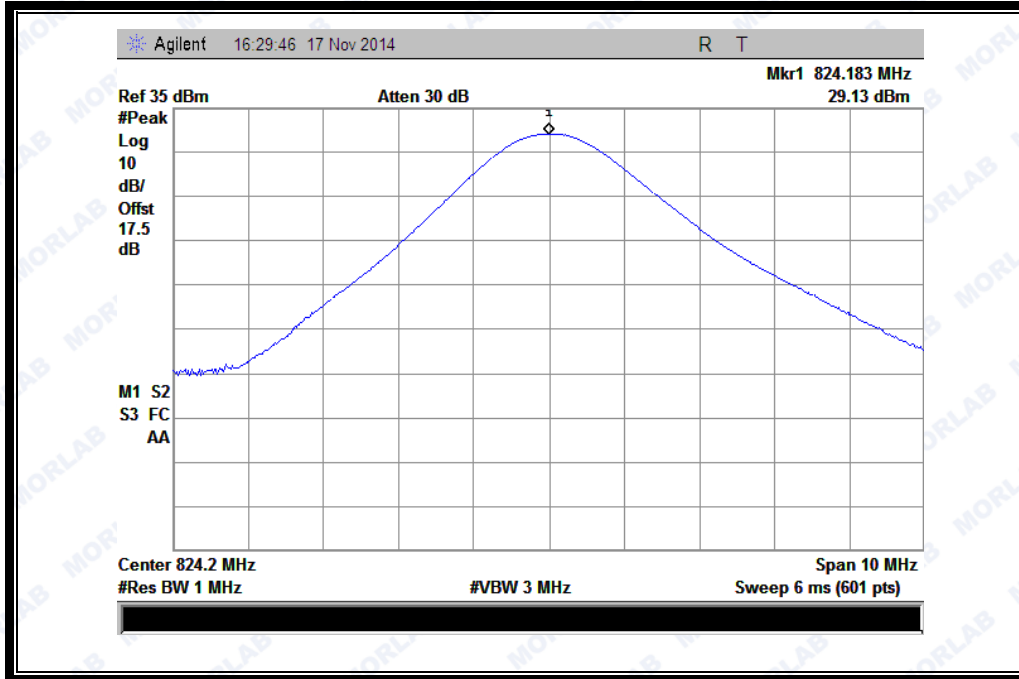


(Plot B2: GSM 1900MHz Channel = 661)

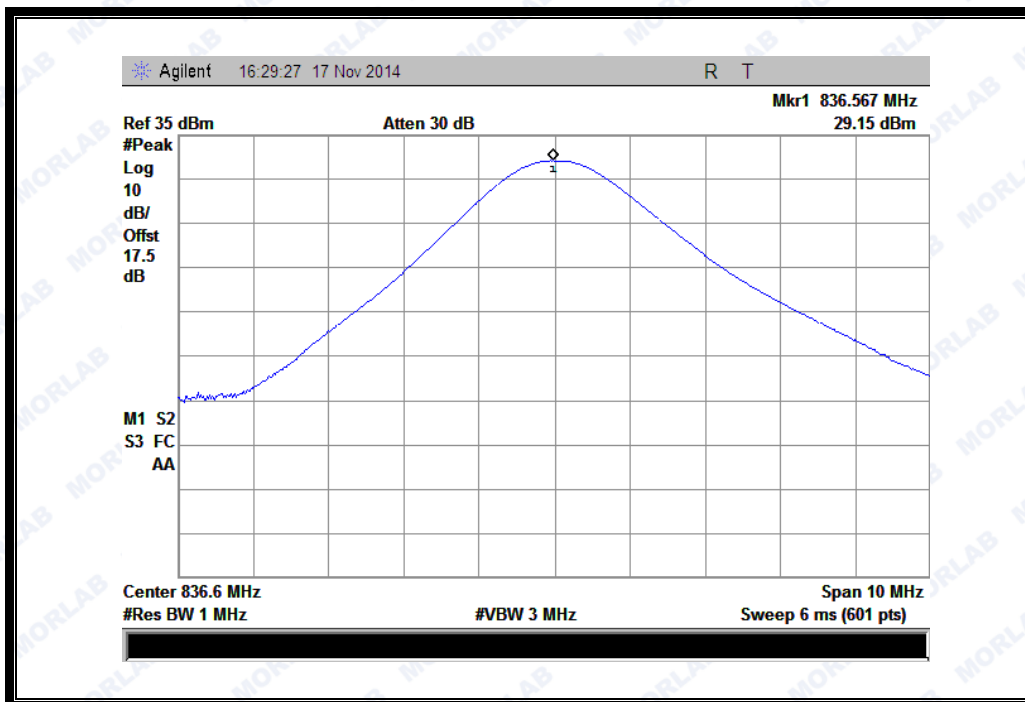


(Plot B3: GSM 1900Hz Channel = 810)

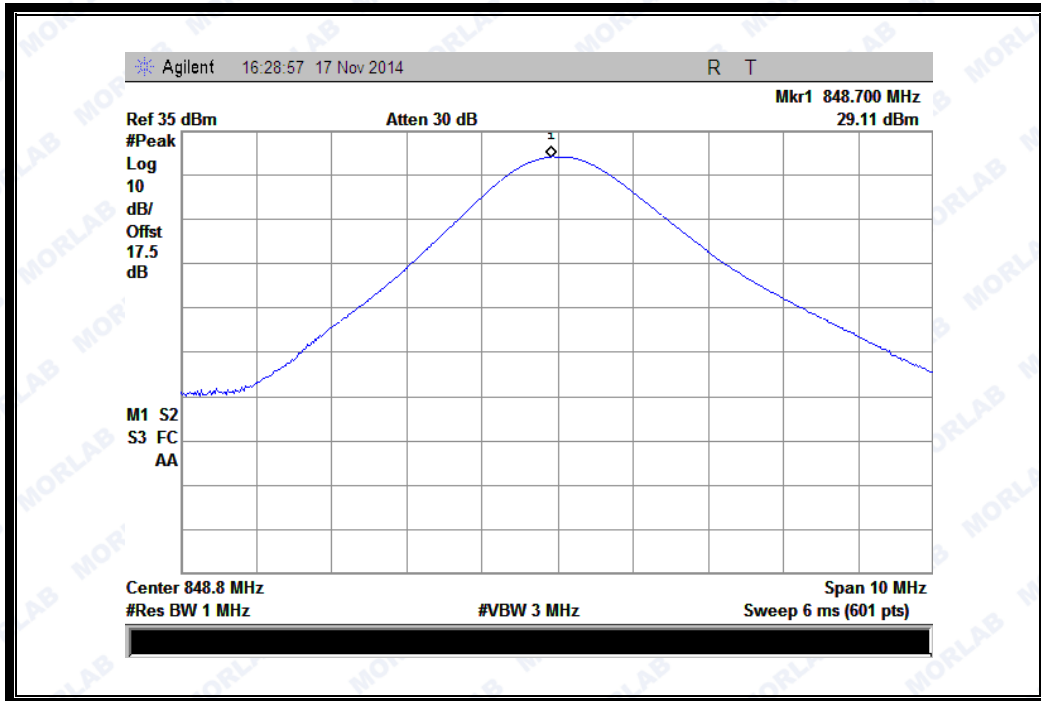




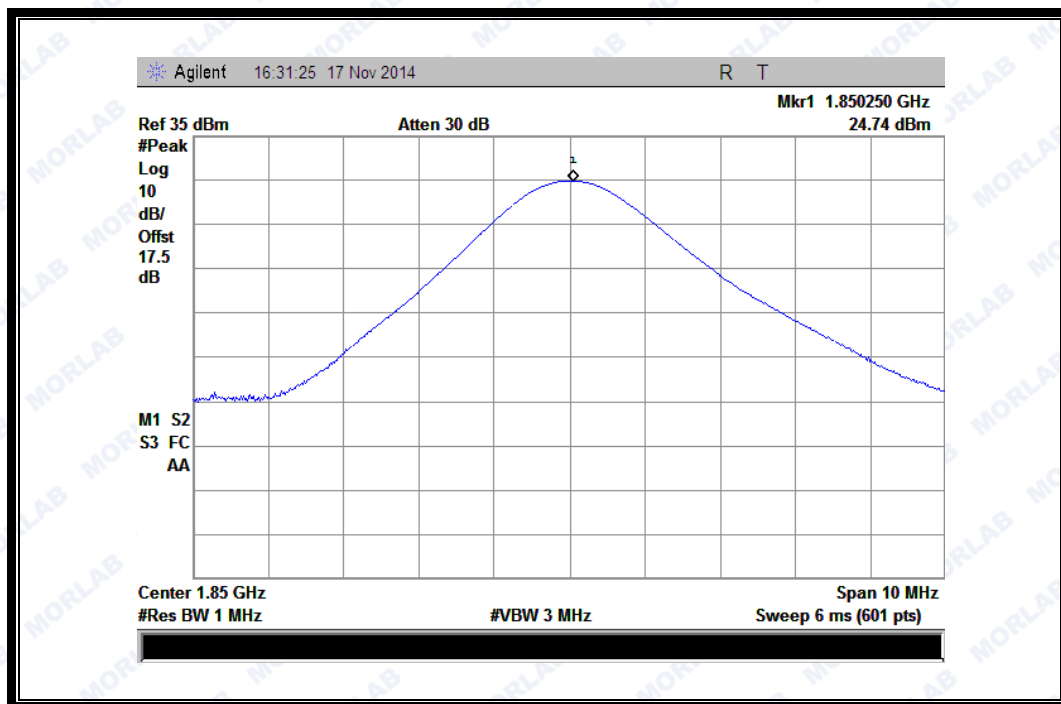
(Plot C 1: GPRS 850MHz Channel = 128)



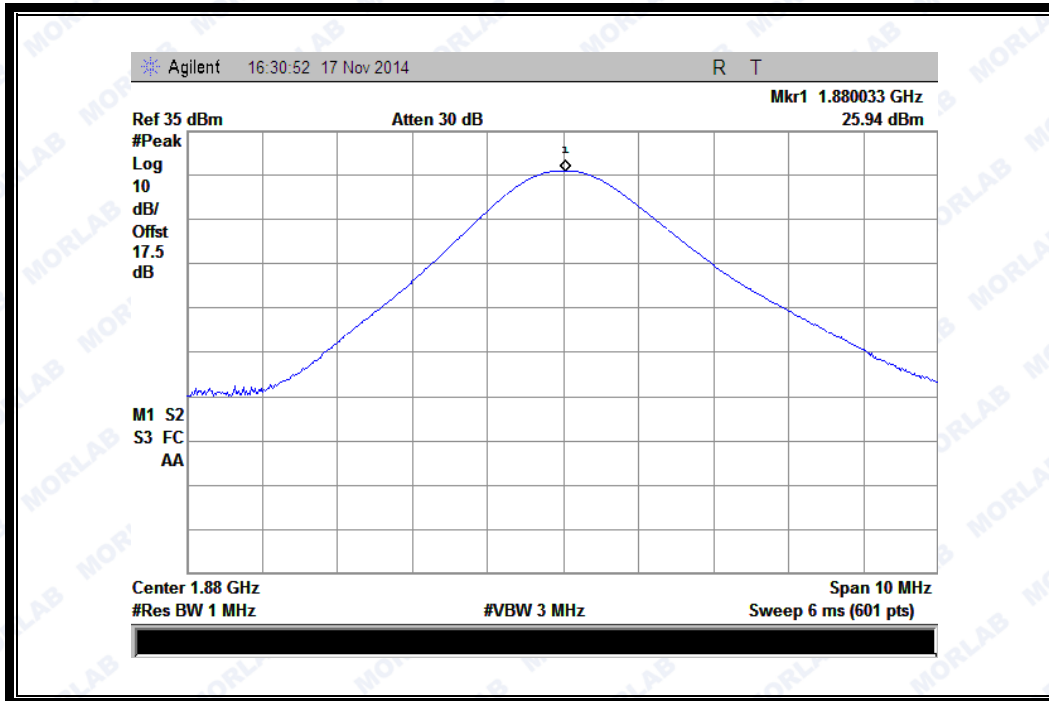
(Plot C 2: GPRS 850MHz Channel = 190)



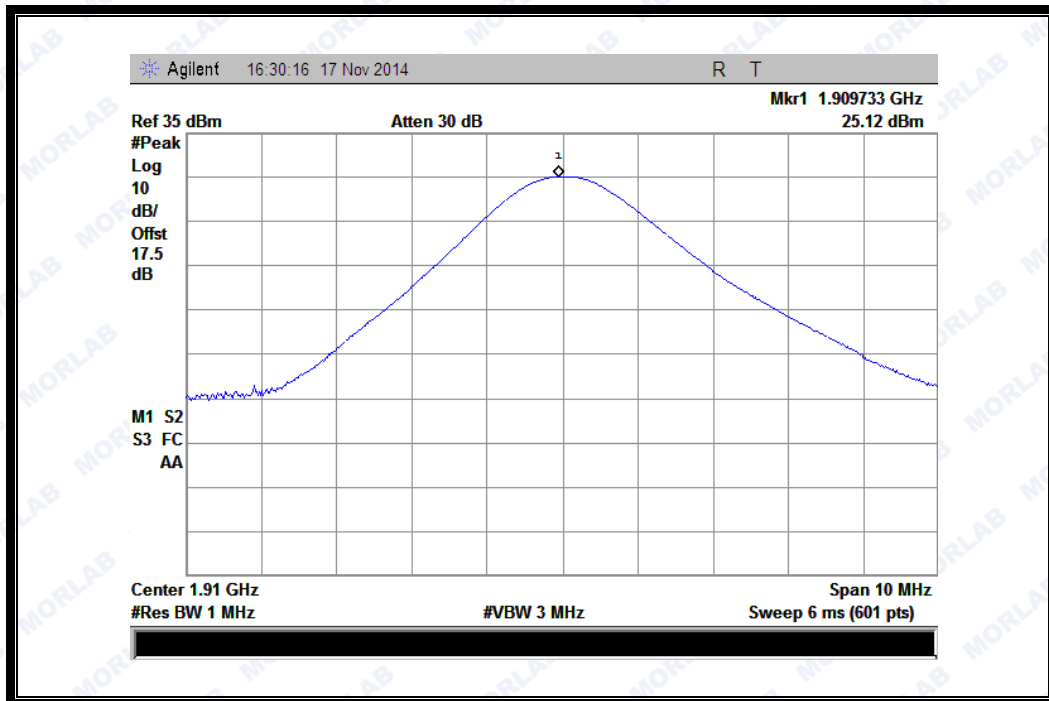
(Plot C 3: GPRS 850MHz Channel = 251)



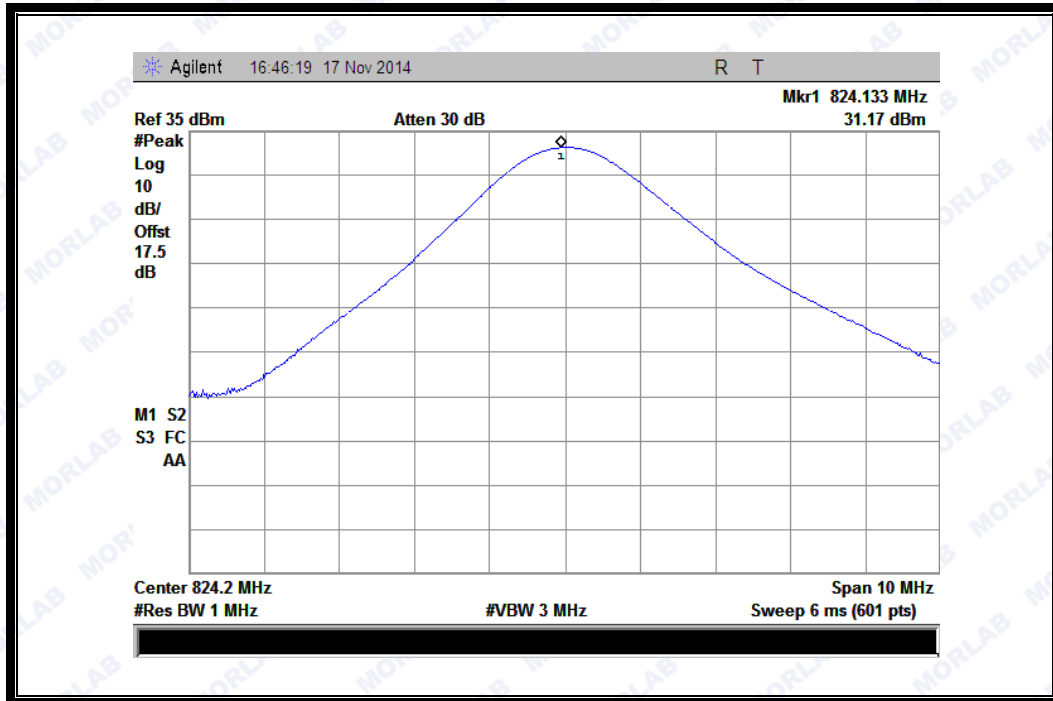
(Plot D 1: GPRS 1900MHz Channel = 512)



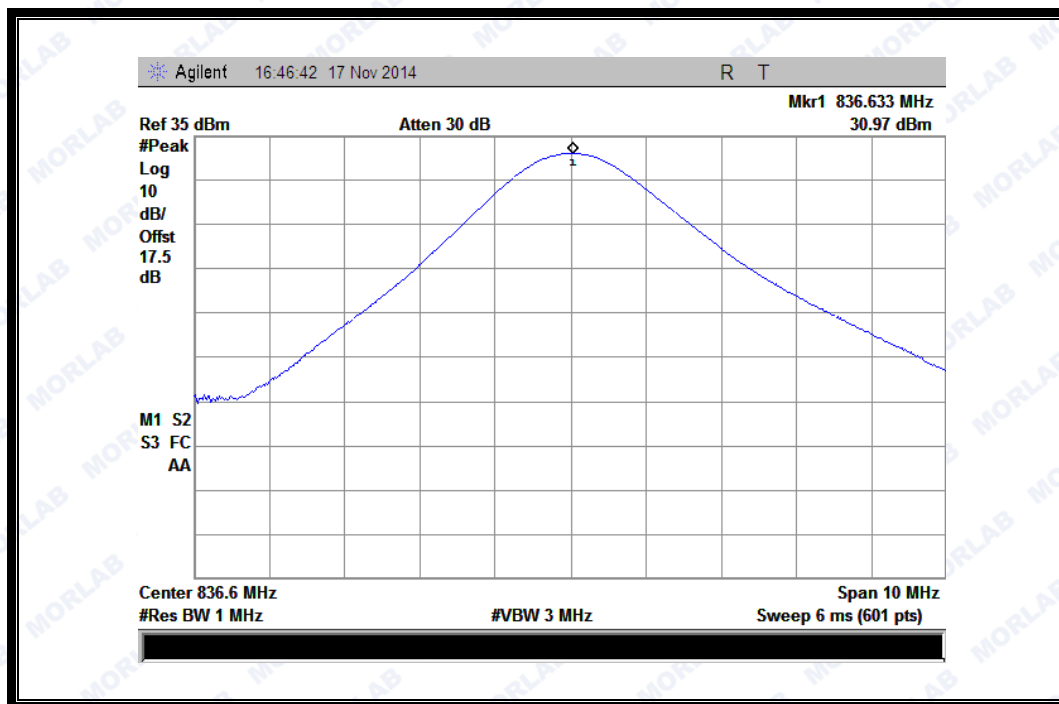
(Plot D 2: GPRS 1900MHz Channel = 661)



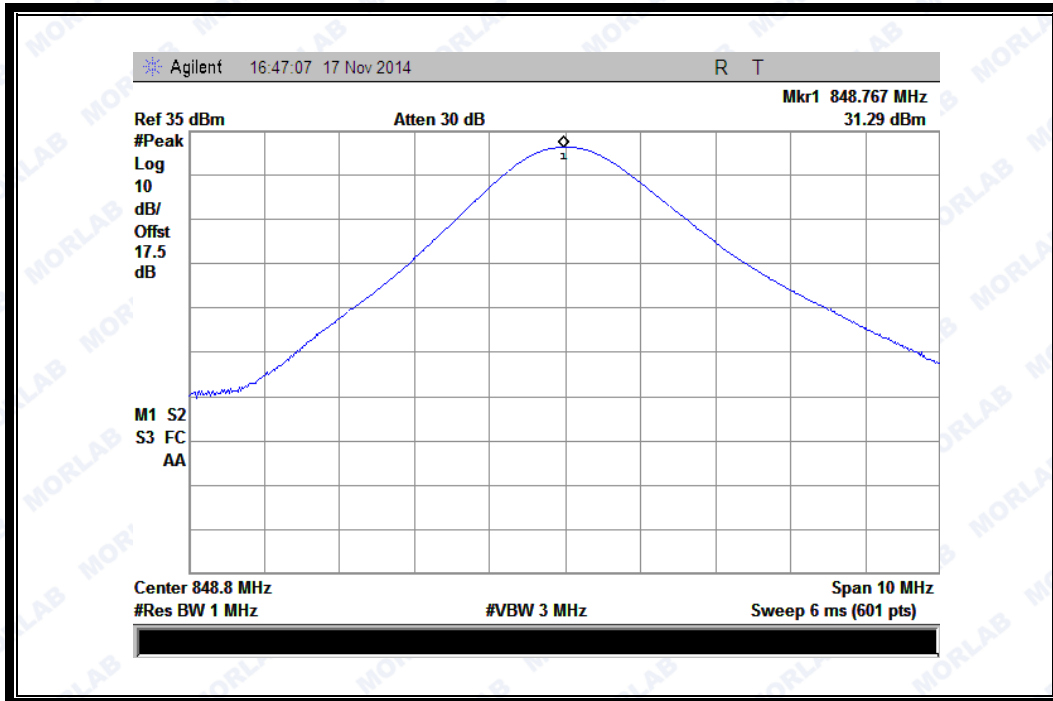
(Plot D 3: GPRS 1900MHz Channel = 810)



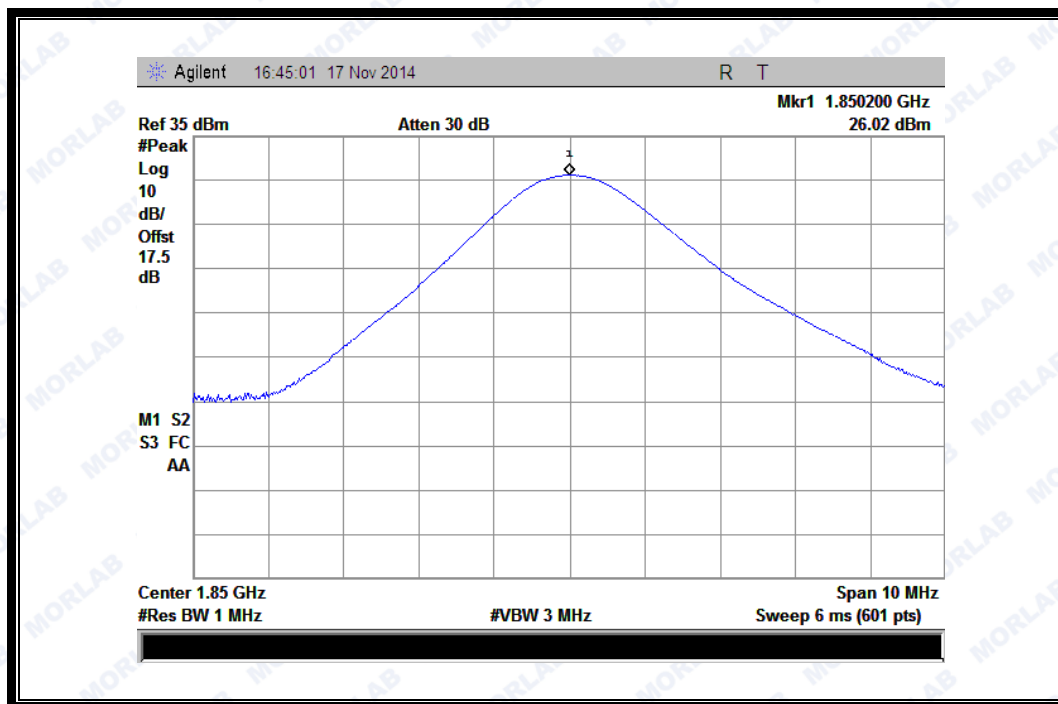
(Plot E1: EGPRS 850MHz Channel = 128)



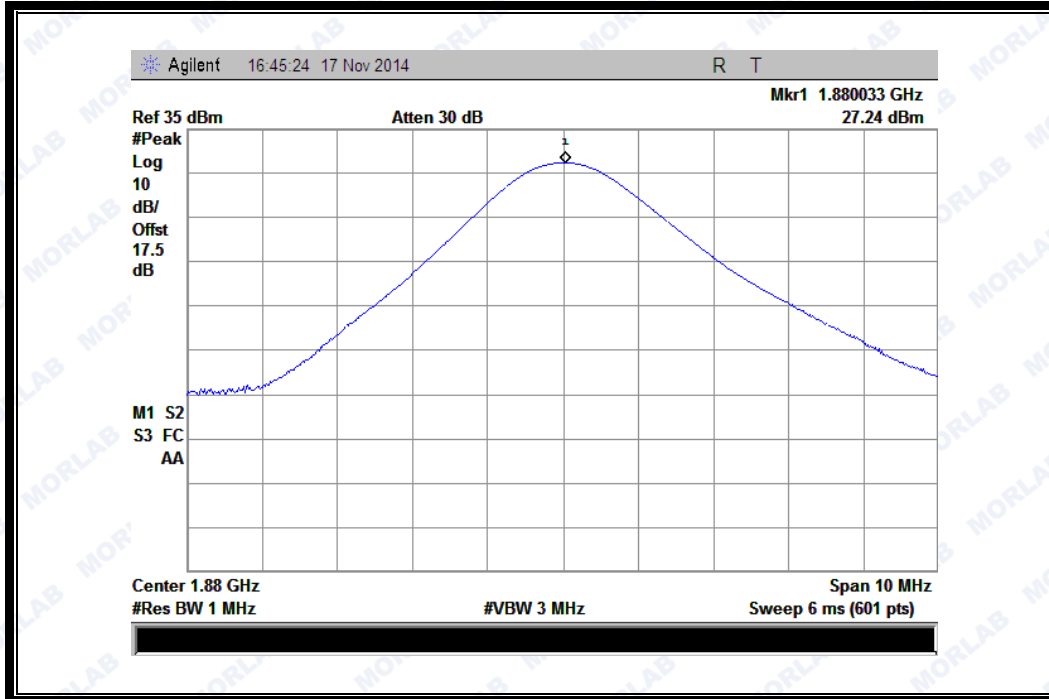
(Plot E2: EGPRS 850MHz Channel = 190)



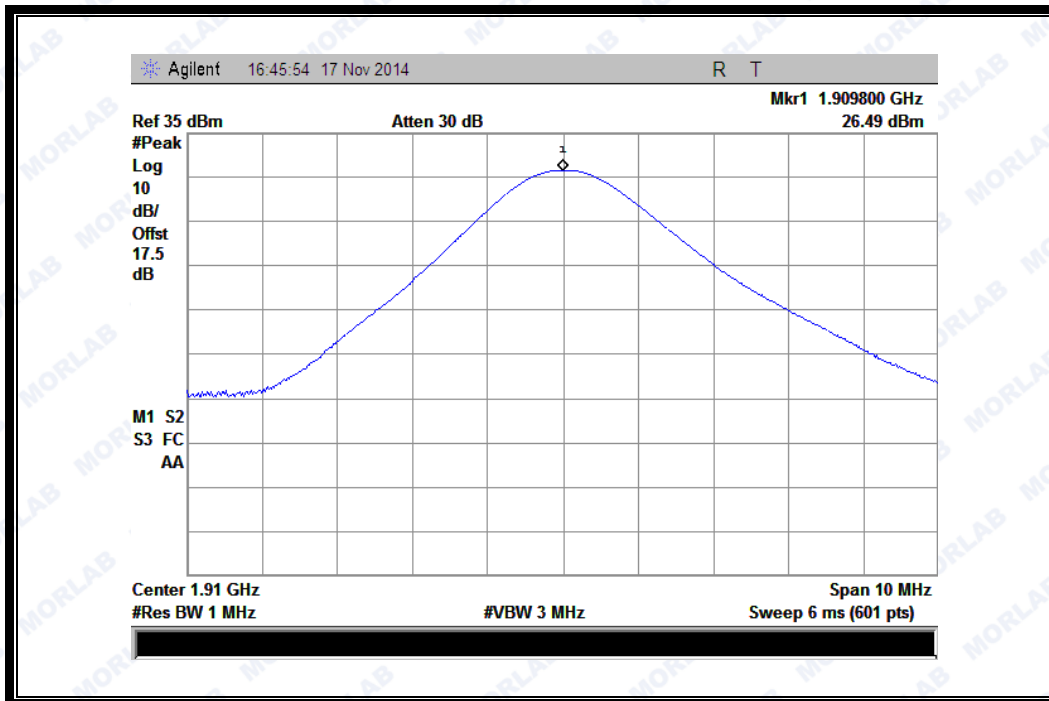
(Plot E3: EGPRS 850MHz Channel = 251)



(Plot F1:EGPRS 1900MHz Channel = 512)



(Plot F2:EGPRS 1900MHz Channel = 661)



(Plot F3:EGPRS 1900Hz Channel = 810)

2.2 Peak to Average Ratio

2.2.1 Definition

According to FCC section 2.1049 and FCC 24.232(d) the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

2.2.2 Test Description

See section 2.1.2 of this report.

2.2.3 Test Verdict

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

Test procedures:

A. For GSM/EGPRS operating mode:

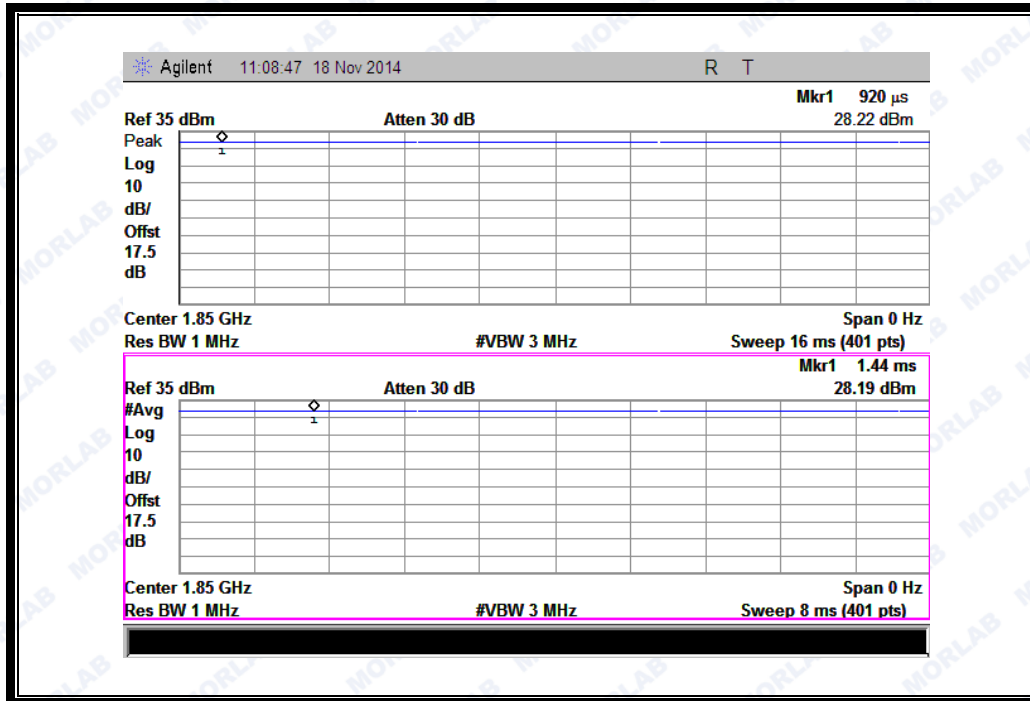
- a. Set RBW=1MHz, VBW=1MHz, peak detector in spectrum analyzer.
- b. Set EUT in maximum output power, and triggered the bust signal.
- c. Measured respectively the peak level and mean level, and the deviation was recorded as Peak to Average ratio.

B. For UMTS operating mode:

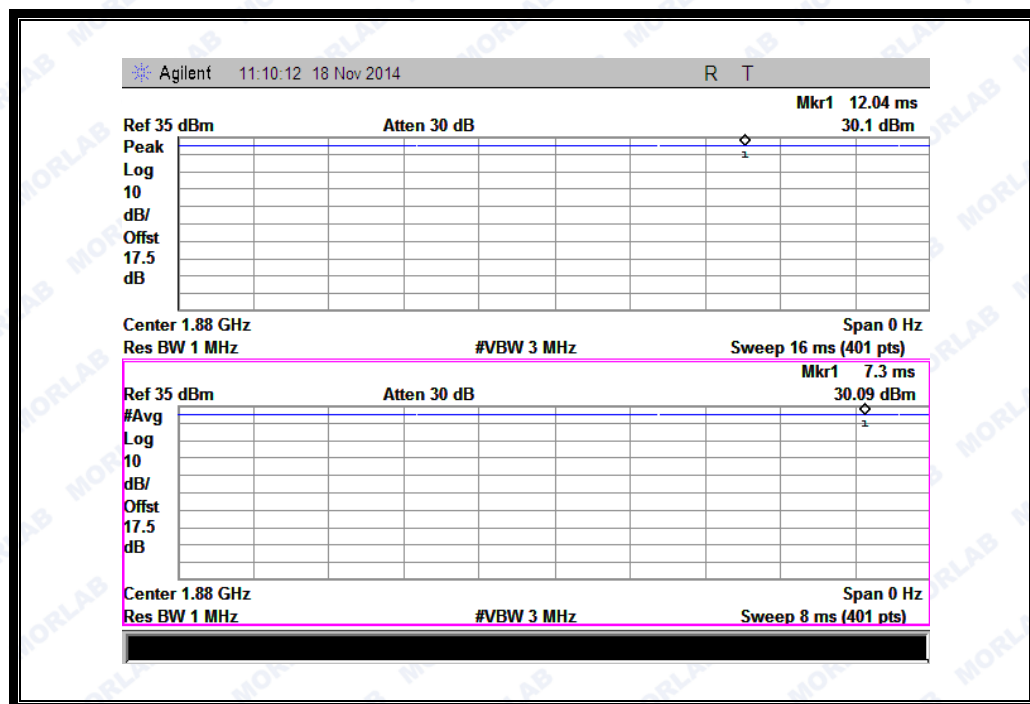
- a. Set the CCDF (Complementary Cumulative Distribution Function) option in spectrum analyzer.
- b. The highest RF powers were measured and recorded the maximum PAPR level associated with a probability of 0.1%.

1. Test Verdict:

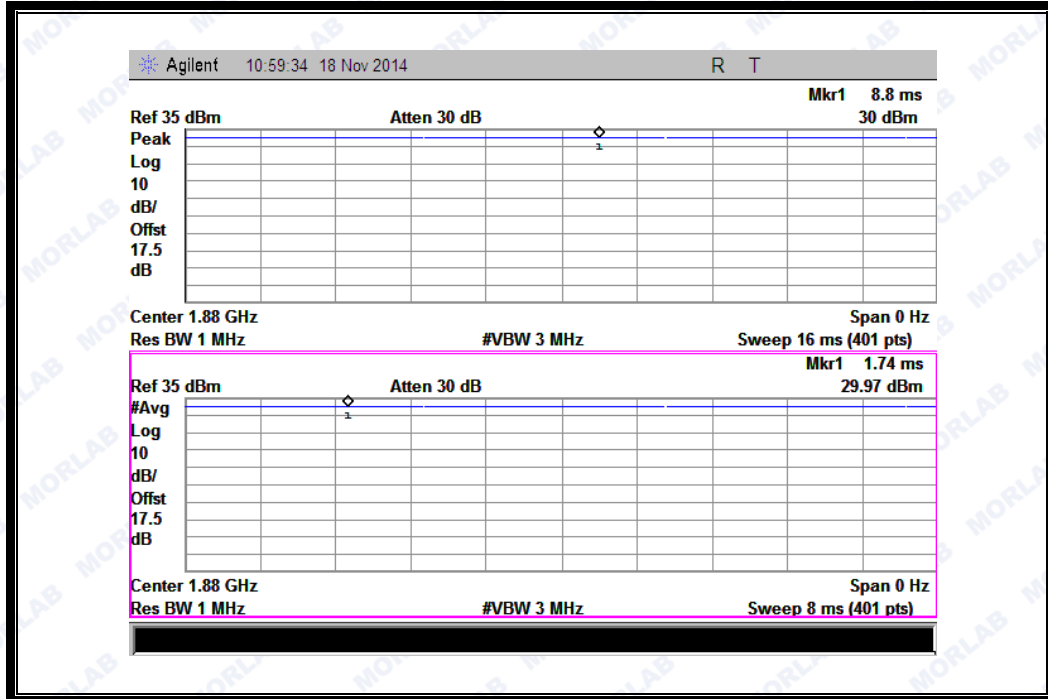
Band	Channel	Frequency (MHz)	Peak to Average ratio		Limit dBm	Verdict
			dBm	Refer to Plot		
GSM 1900MHz	512	1850.2	0.03	Plot A1 to A3	13	PASS
	661	1880.0	0.01			PASS
	810	1909.8	0.03			PASS
EGPRS 1900MHz	512	1850.2	0.02	Plot B1 to B3	13	PASS
	661	1880.0	0.03			PASS
	810	1909.8	0.01			PASS
WCDMA 1900MHz	9262	1852.4	3.14	Plot C1 toC3	13	PASS
	9400	1880	2.78			PASS
	9538	1907.6	3.07			PASS



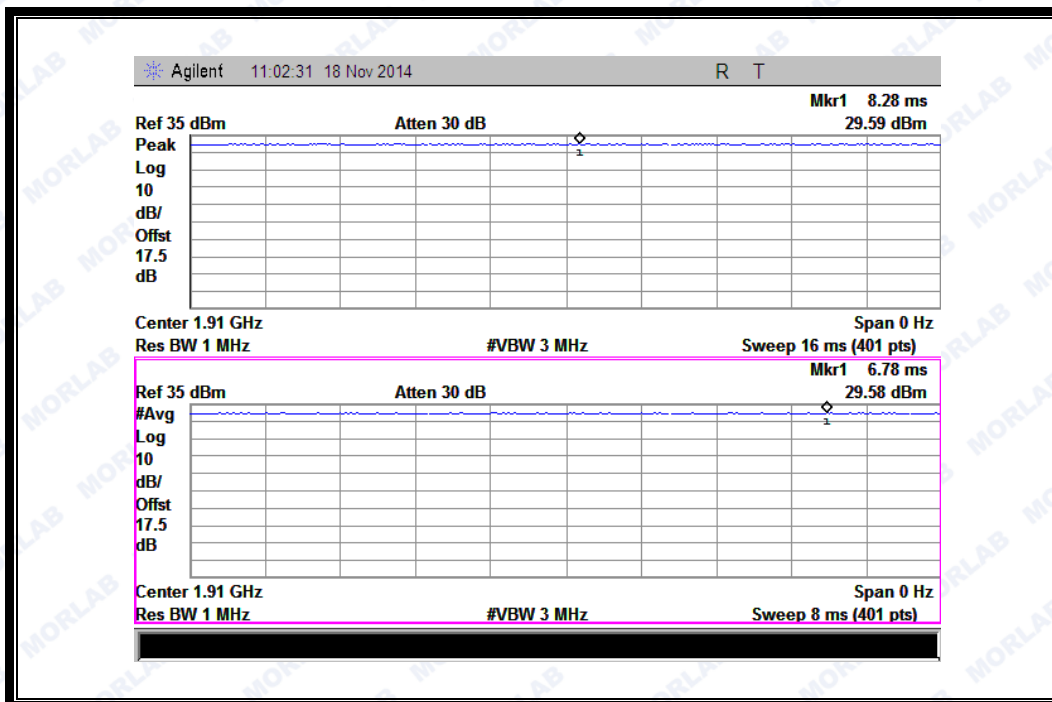
(Plot A1:GSM 1900 MHz Channel = 512)



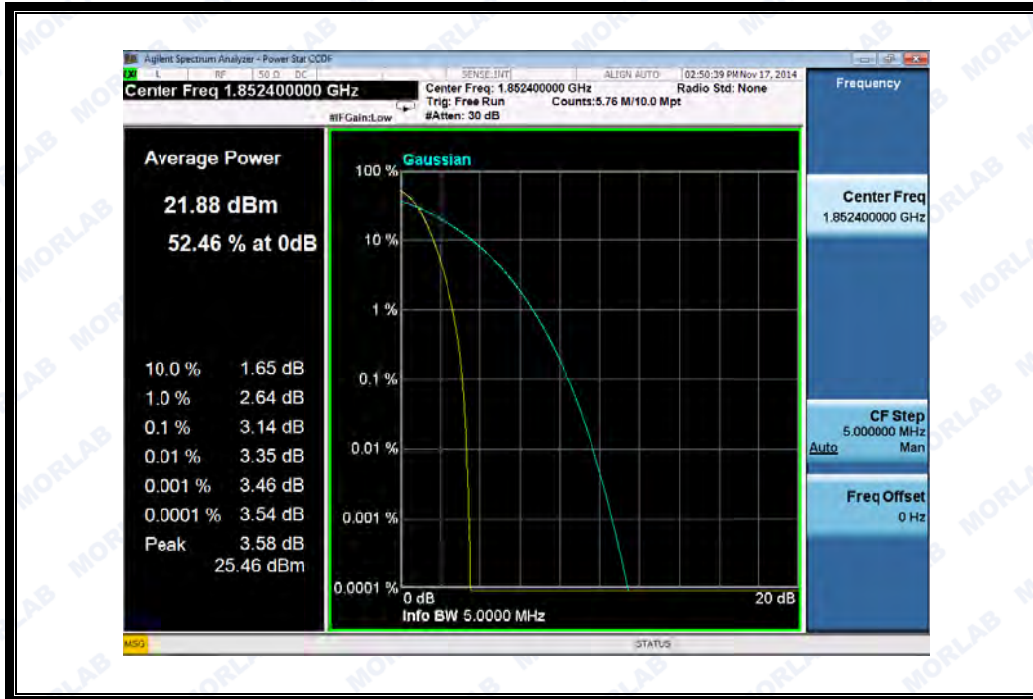
(Plot A2:GSM 1900 MHz Channel = 661)



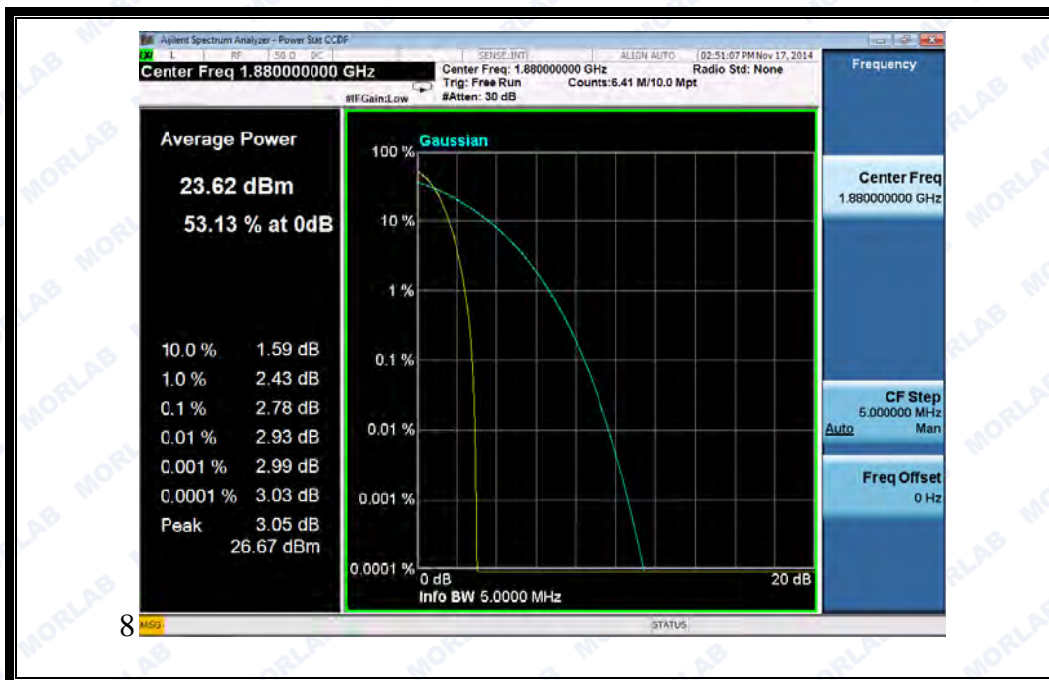
(Plot B2: EGPRS 1900MHz Channel = 661)



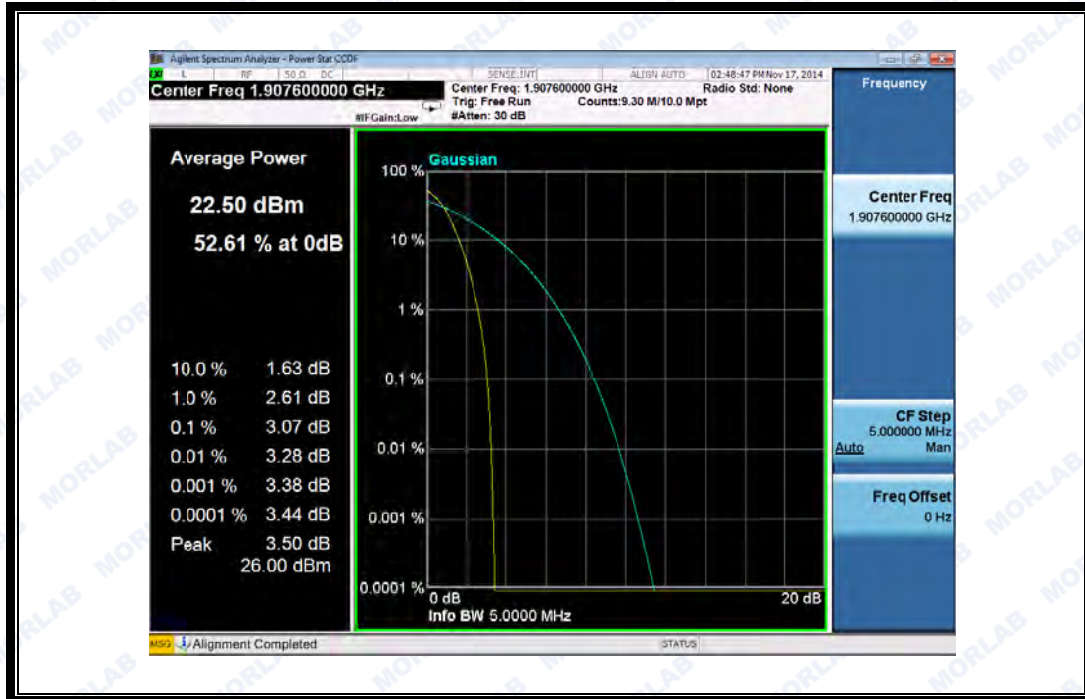
(Plot B3: EGPRS 1900MHz Channel = 810)



(Plot C1: WCDMA 1900MHz Channel = 9262)



(Plot C2: WCDMA 1900MHz Channel = 9400)



(Plot C3: WCDMA 1900MHz Channel = 9538)

2.3 99% Occupied Bandwidth

2.3.1 Definition

According to FCC section 2.1049 and FCC § 22.917 & 24.238 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.

Occupied bandwidth is also known as the 99% emission bandwidth,

2.3.2 Test Description

See section 2.1.2 of this report.

2.3.3 Test Verdict

Here the lowest, middle and highest channels are selected to perform testing to verify the 99% occupied bandwidth.

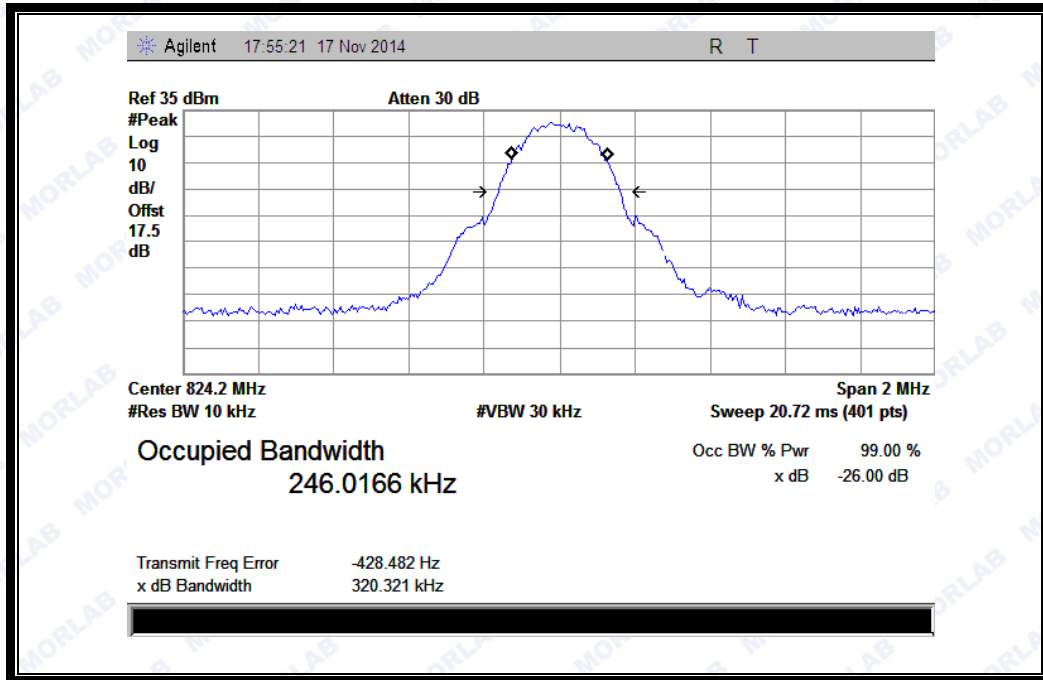
2. Test Verdict:

Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
EDGE 850MHz	128	824.2	320.321 KHz	246.0166 KHz	Plot A
	190	836.6	321.574 KHz	246.8219 KHz	Plot B
	251	848.8	313.963 KHz	245.5959 KHz	Plot C
EDGE 1900MHz	512	1850.2	320.573 KHz	247.2625 KHz	Plot D
	661	1880.0	316.235 KHz	236.7035 KHz	Plot E
	810	1909.8	318.166 KHz	251.9387 KHz	Plot F
WCDMA 850MHz	4132	826.4	4.611 MHz	4.1433 MHz	Plot G
	4175	835	4.605 MHz	4.1367 MHz	Plot H
	4233	846.6	4.604 MHz	4.1354 MHz	Plot I
WCDMA 1900MHz	9262	1852.4	4.621 MHz	4.1429 MHz	Plot J
	9400	1880	4.616 MHz	4.1391 MHz	Plot K
	9538	1907.6	4.601 MHz	4.1417 MHz	Plot L
HSDPA 850MHz	4132	826.4	4.592 MHz	4.1372 MHz	Plot M
	4175	835	4.591 MHz	4.1454 MHz	Plot N
	4233	846.6	4.602 MHz	4.1372 MHz	Plot O
HSDPA 1900MHz	9262	1852.4	4.606 MHz	4.1432 MHz	Plot P
	9400	1880	4.618 MHz	4.1384 MHz	Plot Q
	9538	1907.6	4.611 MHz	4.1399 MHz	Plot R
HSUPA 850MHz	4132	826.4	4.609 MHz	4.1330 MHz	Plot S
	4175	835	4.596 MHz	4.1417 MHz	Plot T
	4233	846.6	4.604 MHz	4.1461 MHz	Plot U

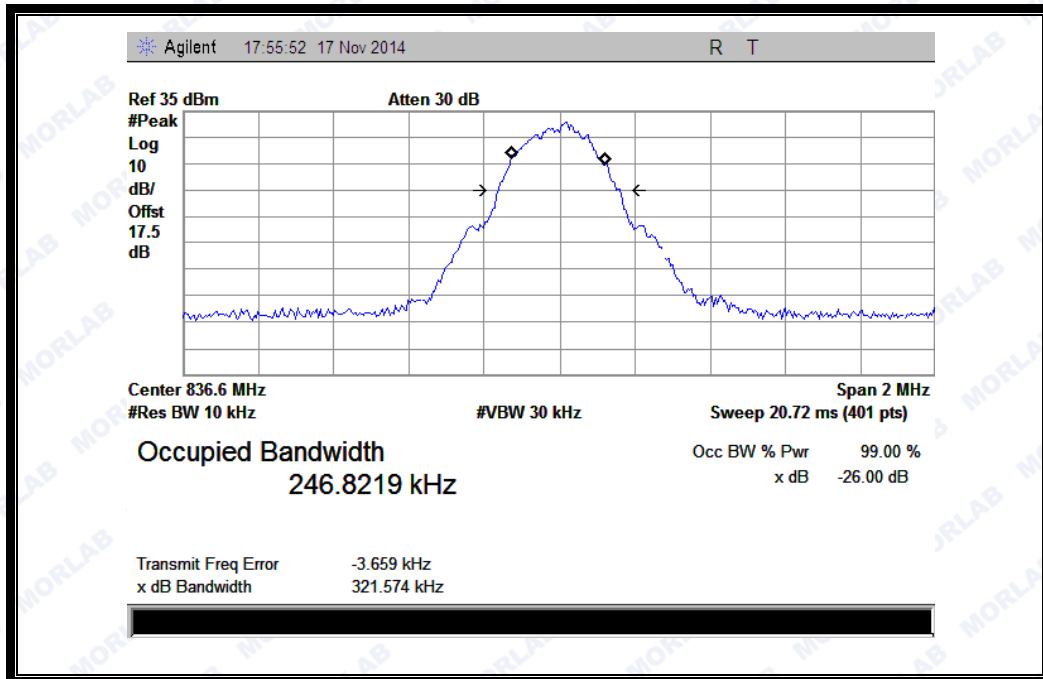


Band	Channel	Frequency (MHz)	26dB bandwidth	99% Occupied Bandwidth	Refer to Plot
HSUPA 1900MHz	9262	1852.4	4.607 MHz	4.1409 MHz	Plot V
	9400	1880	4.620 MHz	4.1500 MHz	Plot W
	9538	1907.6	4.597 MHz	4.1427 MHz	Plot X
HSPA+ 850MHz	4132	826.4	4.604 MHz	4.1385 MHz	Plot Y
	4175	835	4.591 MHz	4.1447 MHz	Plot Z
	4233	846.6	4.623 MHz	4.1419 MHz	Plot A1
HSPA+ 1900MHz	9262	1852.4	4.596 MHz	4.1427 MHz	Plot B1
	9400	1880	4.620 MHz	4.1501 MHz	Plot C1
	9538	1907.6	4.605 MHz	4.1410 MHz	Plot D1
GSM 850MHz	128	824.2	306.286 KHz	240.7604 MHz	Plot E1
	190	836.6	304.697 KHz	240.9479 KHz	Plot F1
	251	848.8	303.695 KHz	235.4425 KHz	Plot G1
GSM 1900MHz	512	1850.2	304.592 KHz	245.7012 KHz	Plot H1
	661	1880.0	306.971 KHz	240.6193 KHz	Plot I1
	810	1909.8	305.843 KHz	241.0252 KHz	Plot J2
GPRS 850MHz	128	824.2	319.214 KHz	250.5927 KHz	Plot K1
	190	836.6	315.111 KHz	249.2213 KHz	Plot L1
	251	848.8	311.768 KHz	248.9811 KHz	Plot M1
GPRS 1900MHz	512	1850.2	322.345 KHz	249.8569 KHz	Plot N1
	661	1880.0	321.231 KHz	244.0663 KHz	Plot O1
	810	1909.8	316.063 KHz	246.5805 KHz	Plot P1

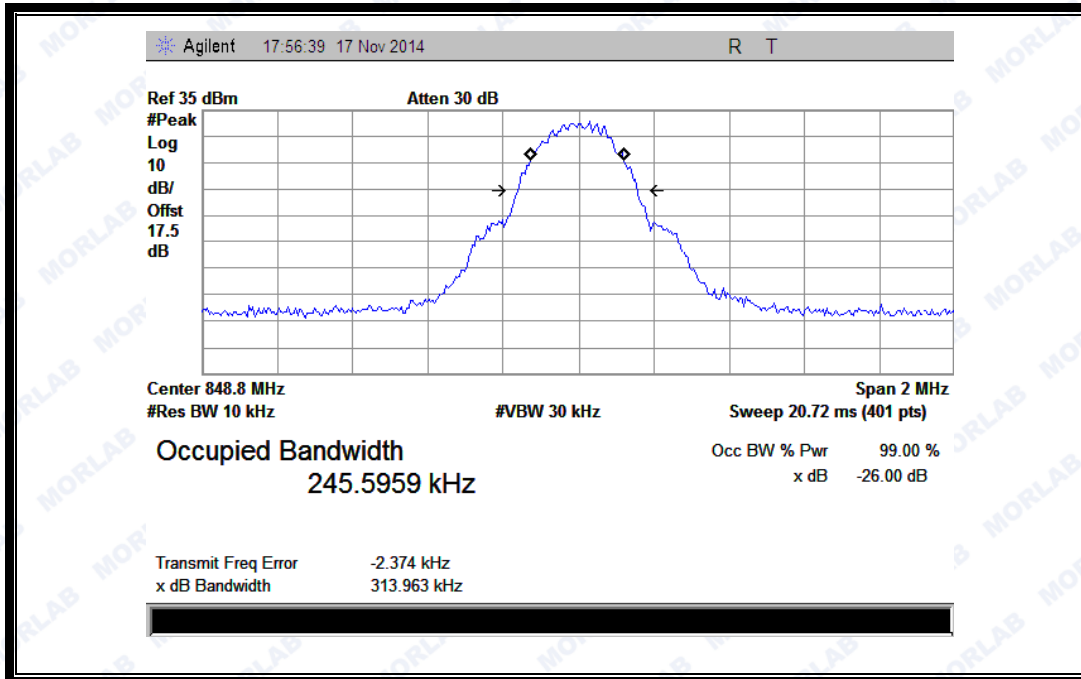
3. Test Plots:



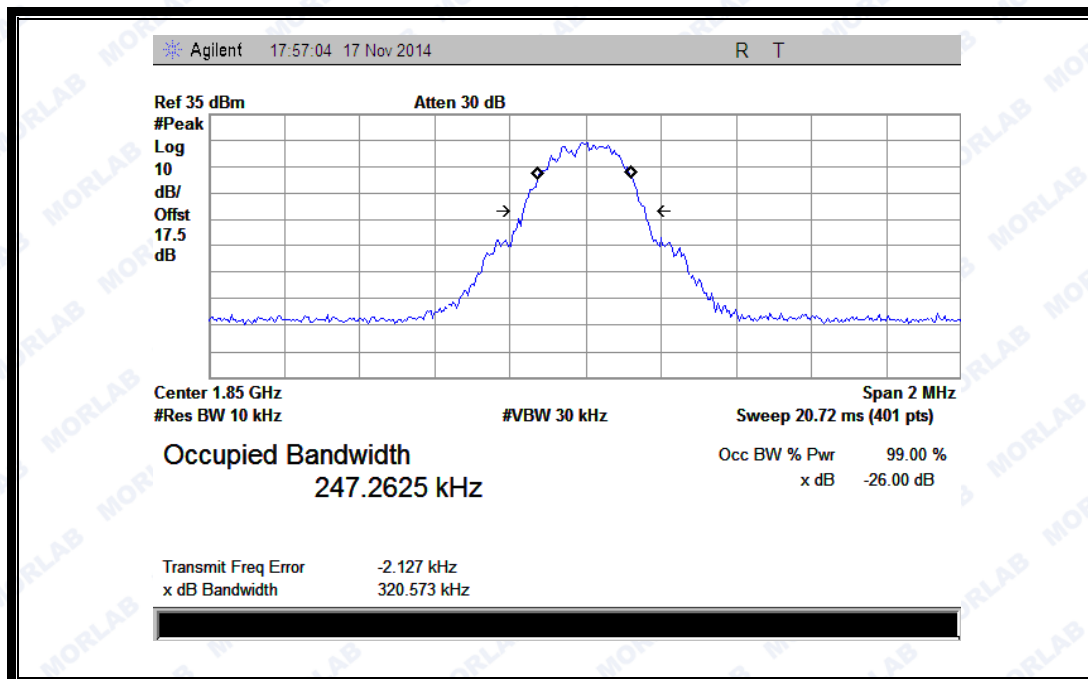
(Plot A: EGPRS 850MHz Channel = 128)



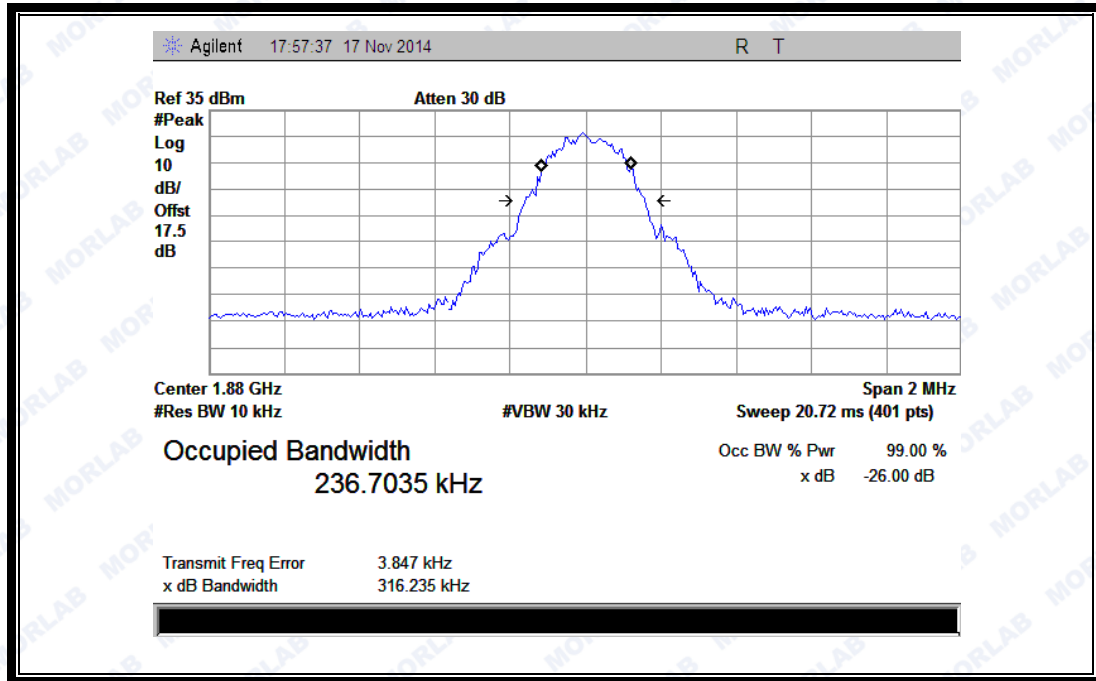
(Plot B: EGPRS 850MHz Channel = 190)



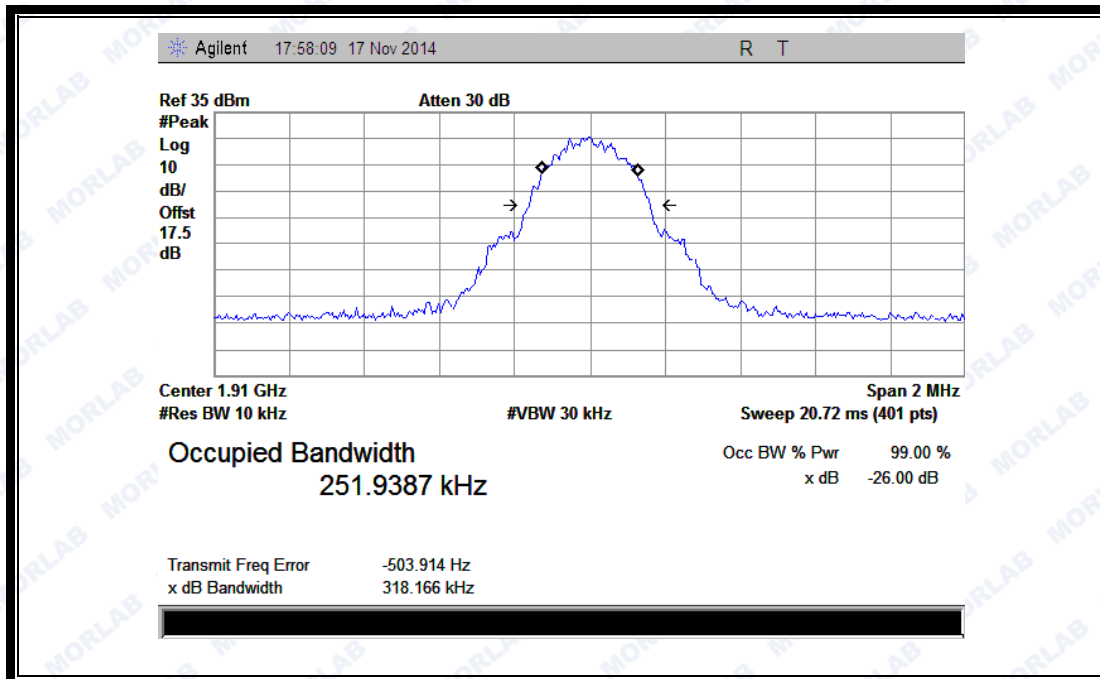
(Plot C: EGPRS 850MHz Channel = 251)



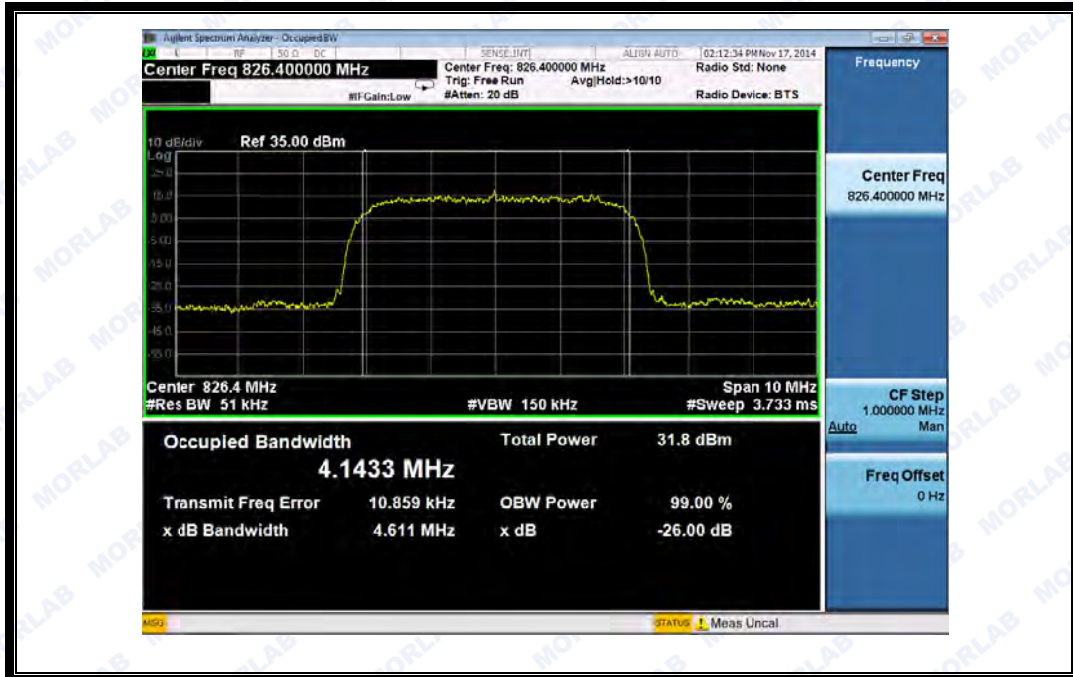
(Plot D: EGPRS1900MHz Channel = 512)



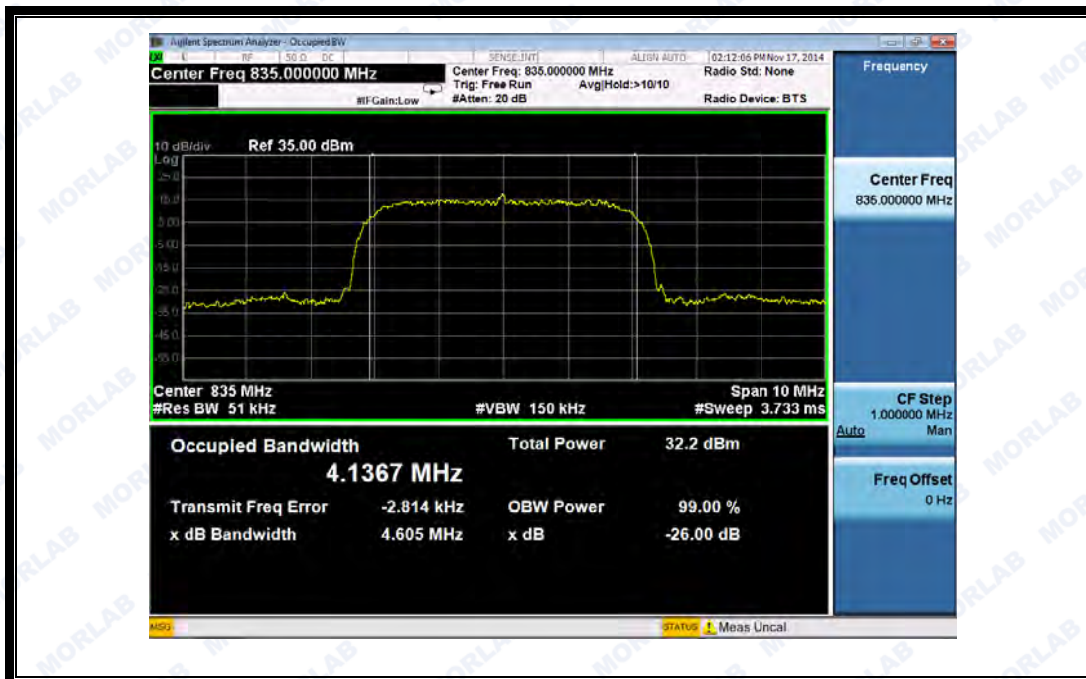
(Plot E: EGPRS1900MHz Channel = 661)



(Plot F: EGPRS 1900MHz Channel = 810)



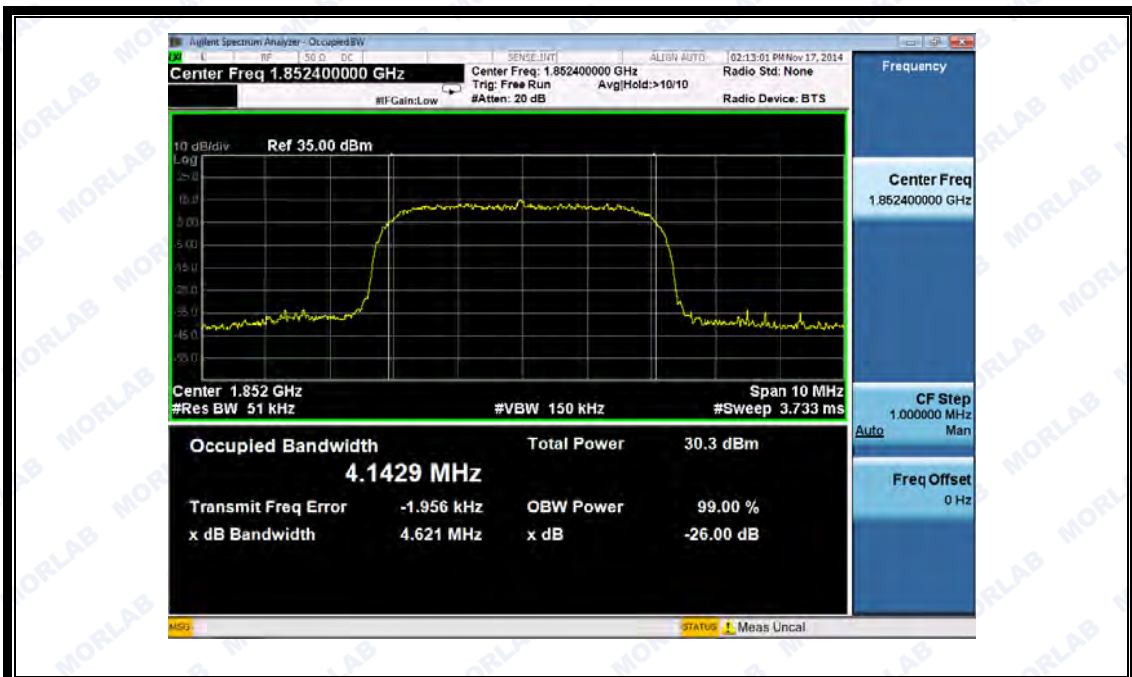
(Plot G: WCDMA 850MHz Channel = 4132)



(Plot H: WCDMA 850 MHz Channel = 4175)



(Plot I: WCDMA 850MHz Channel = 4233)



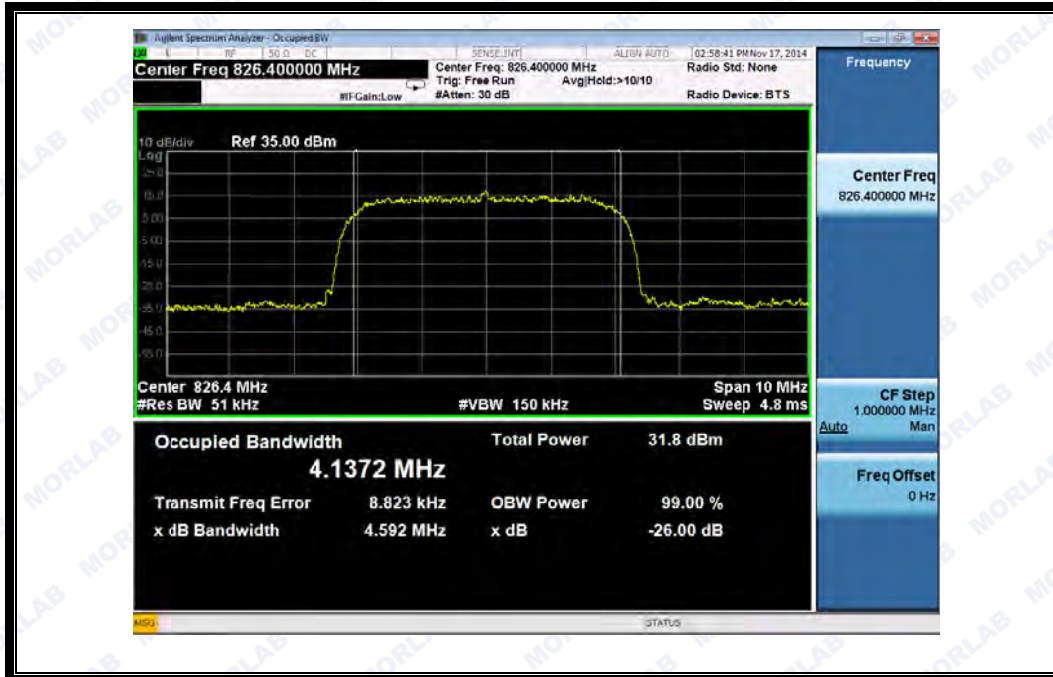
(Plot J: WCDMA 1900MHz Channel = 9262)



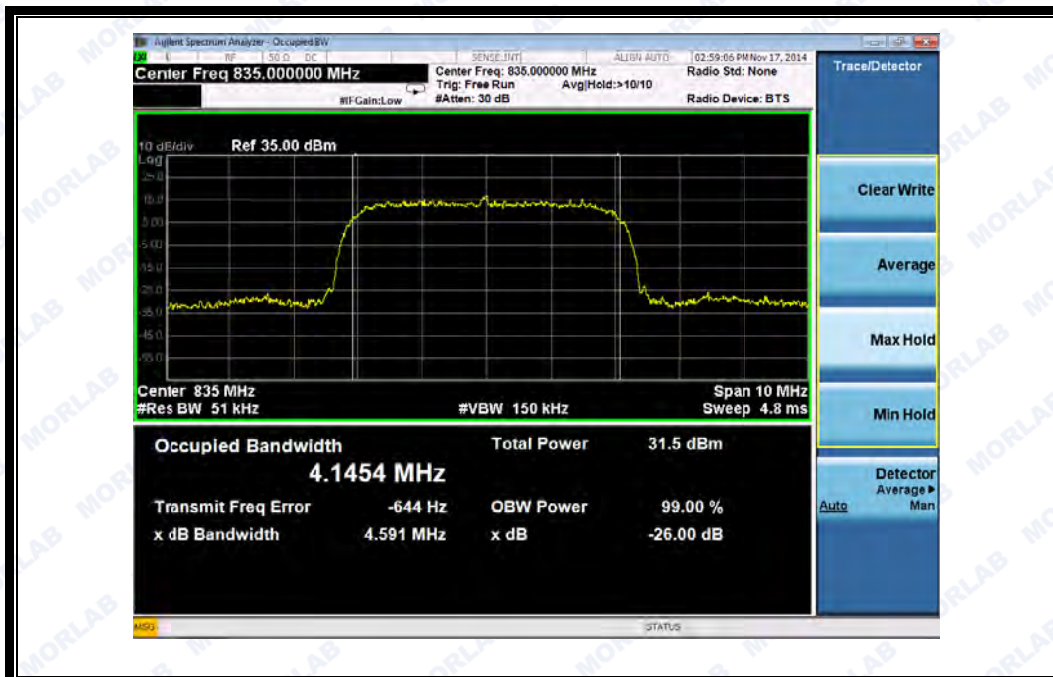
(Plot K: WCDMA 1900 MHz Channel = 9400)



(Plot L: WCDMA1900MHz Channel = 9538)



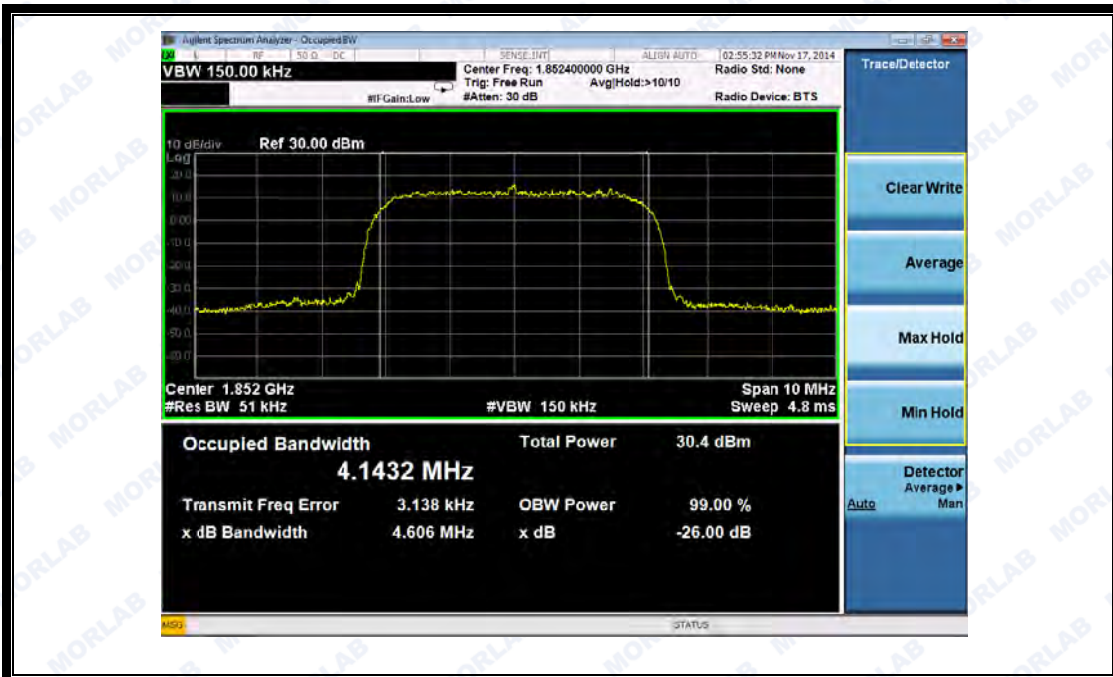
(Plot M: HSDPA 850MHz Channel = 4132)



(Plot N: HSDPA850 MHz Channel = 4175)



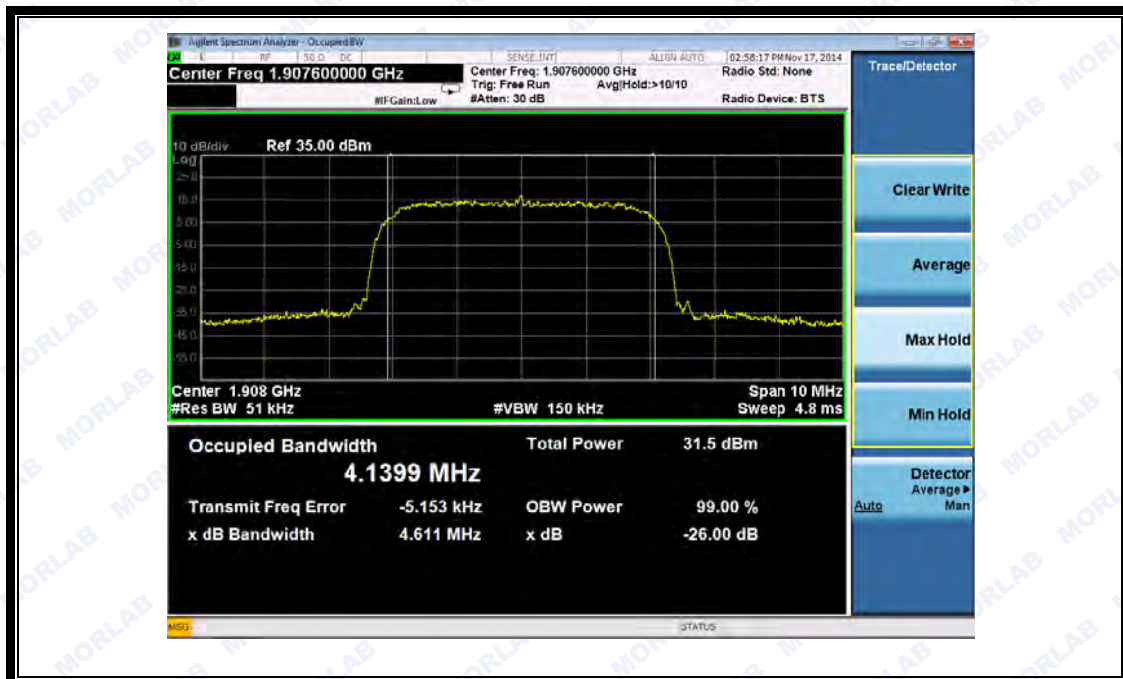
(Plot O: HSDPA 850 MHz Channel = 4233)



(Plot P: HSDPA 1900 MHz Channel = 9262)



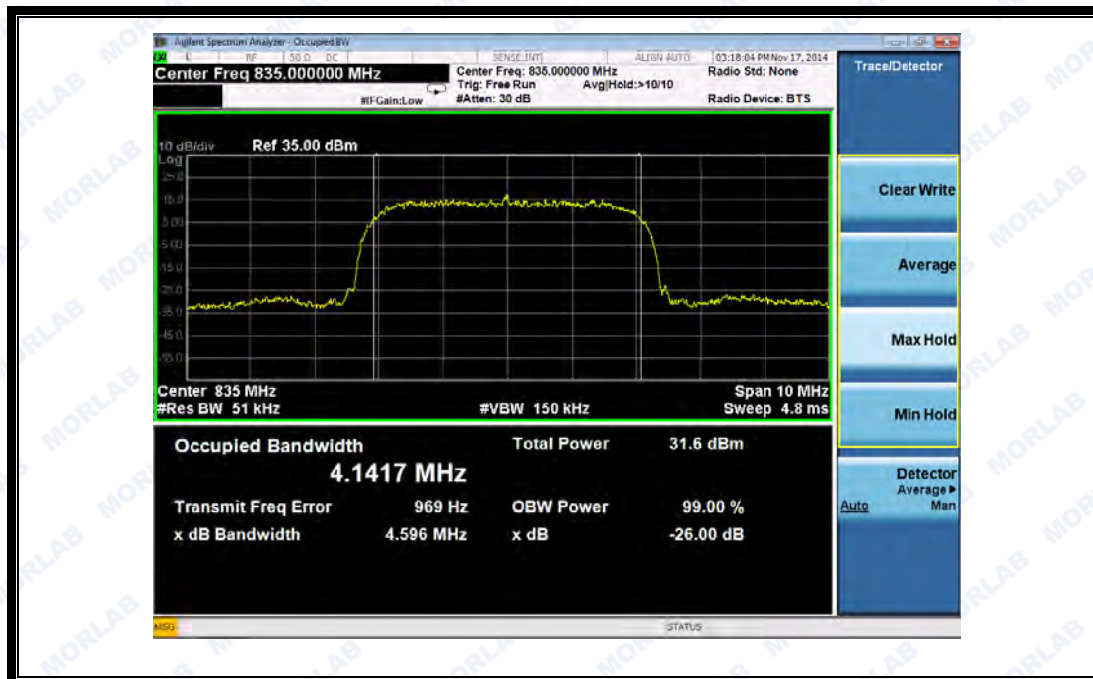
(Plot Q: HSDPA1900 MHz Channel = 9400)



(Plot R: HSDPA 1900 MHz Channel = 9538)



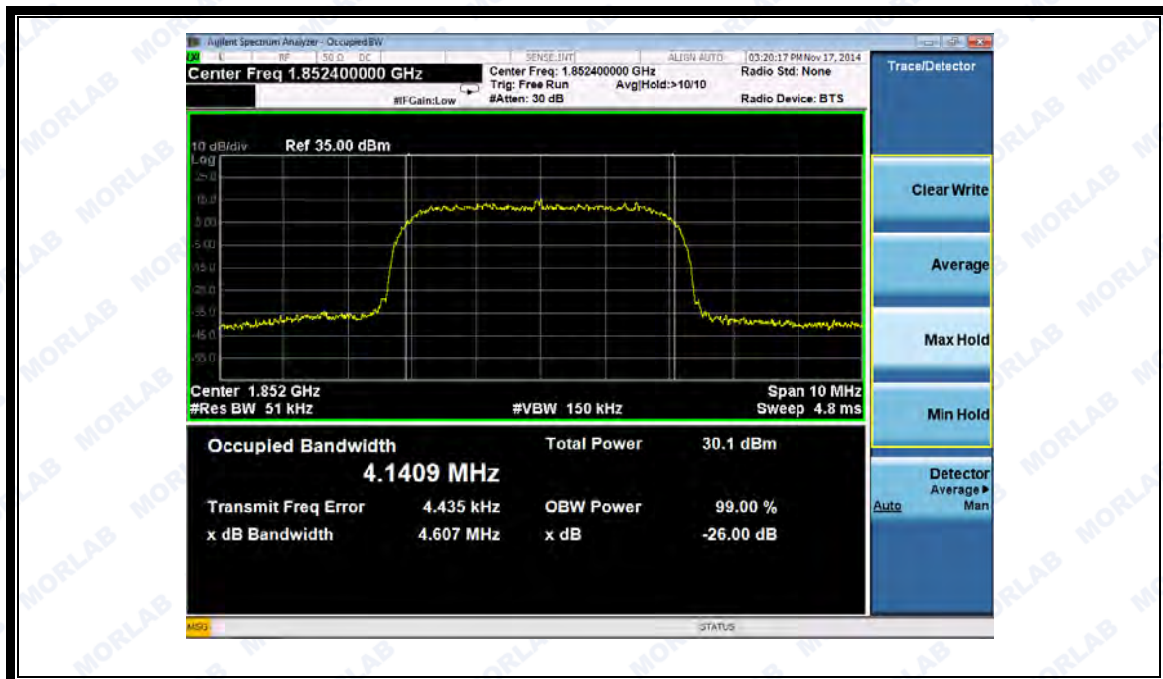
(Plot S: HSUPA850 MHz Channel = 4132)



(Plot T: HSUPA850 MHz Channel = 4175)



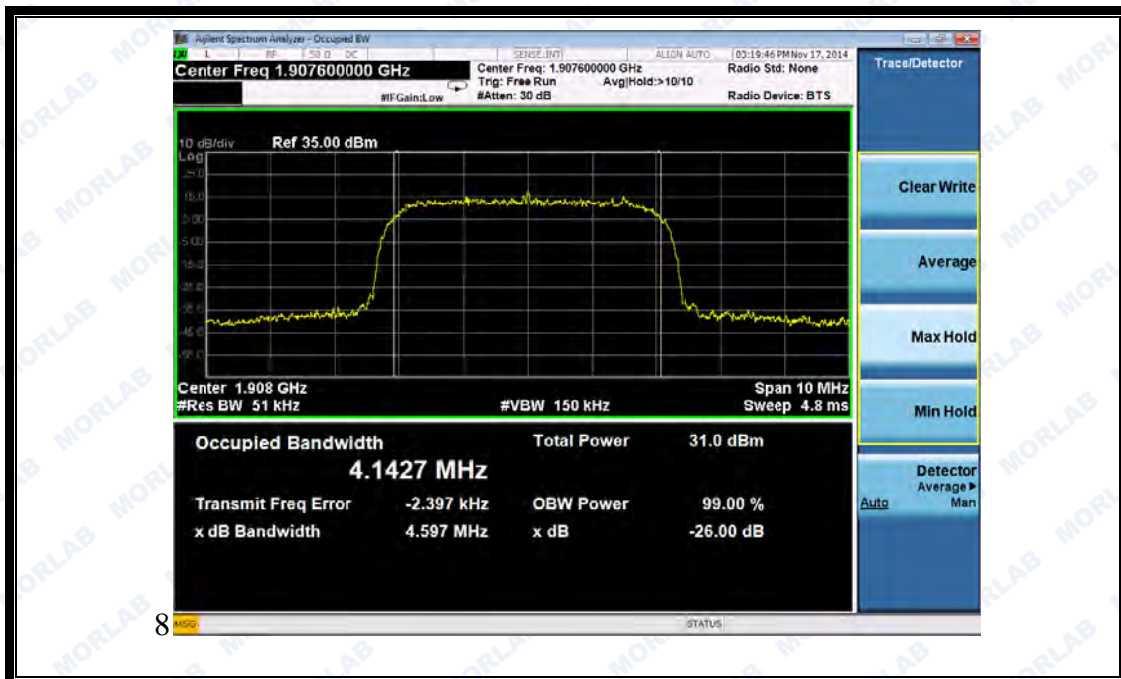
(Plot U: HSUPA850 MHz Channel = 4233)



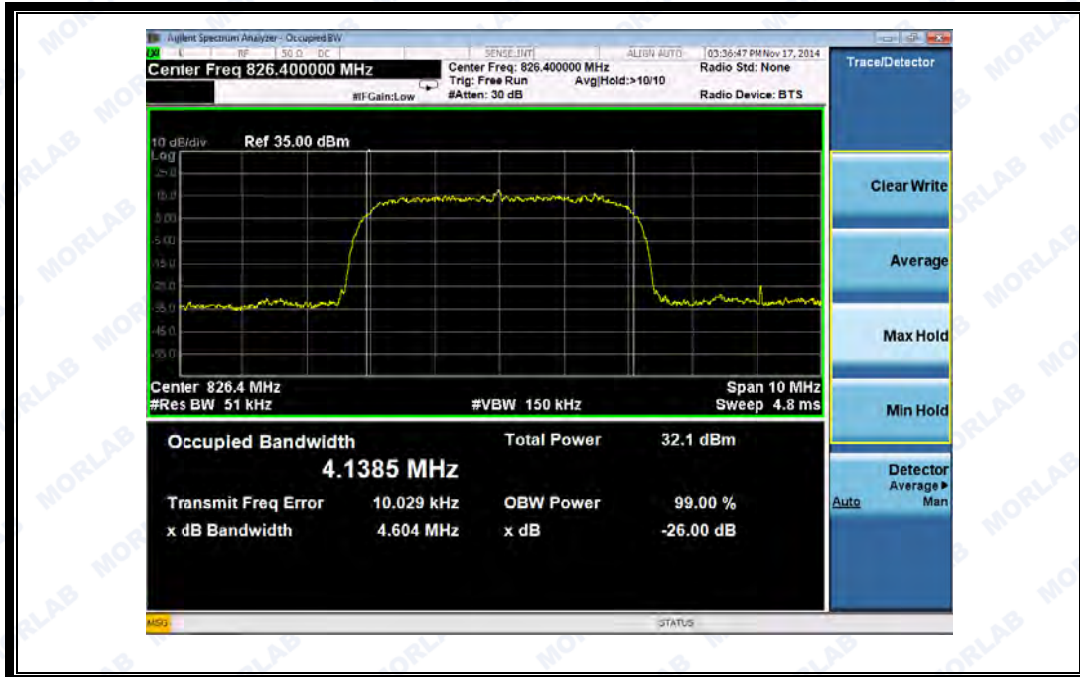
(Plot V: HSUPA1900 MHz Channel = 9262)



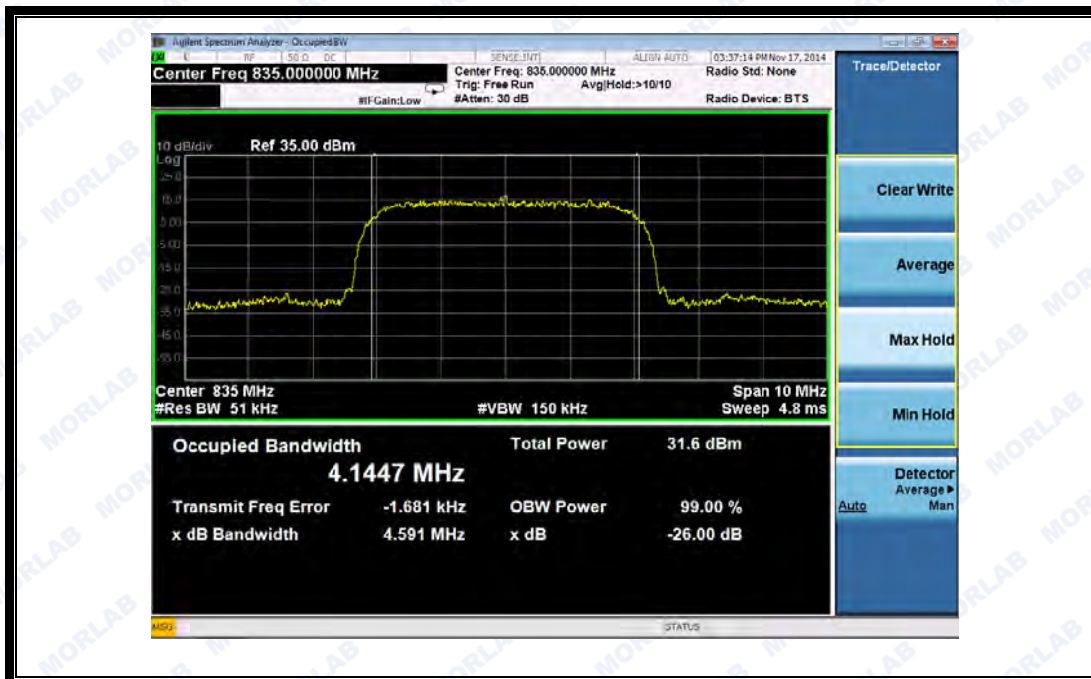
(Plot W: HSUPA1900 MHz Channel = 9400)



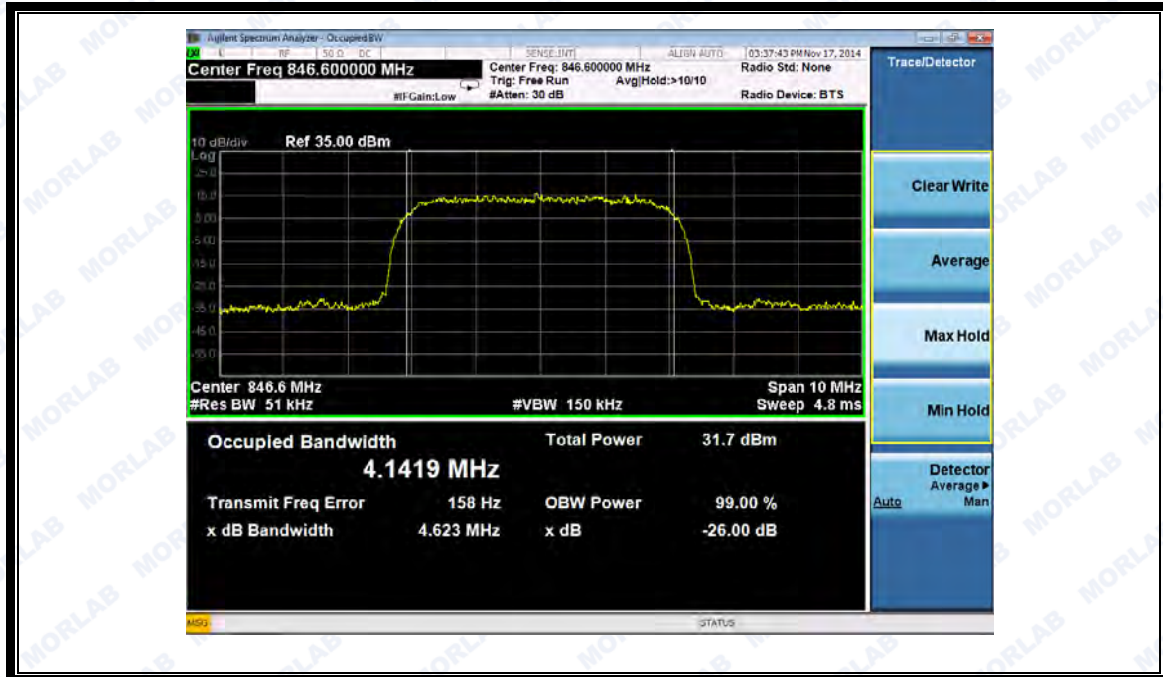
(Plot X: HSUPA1900 MHz Channel = 9538)



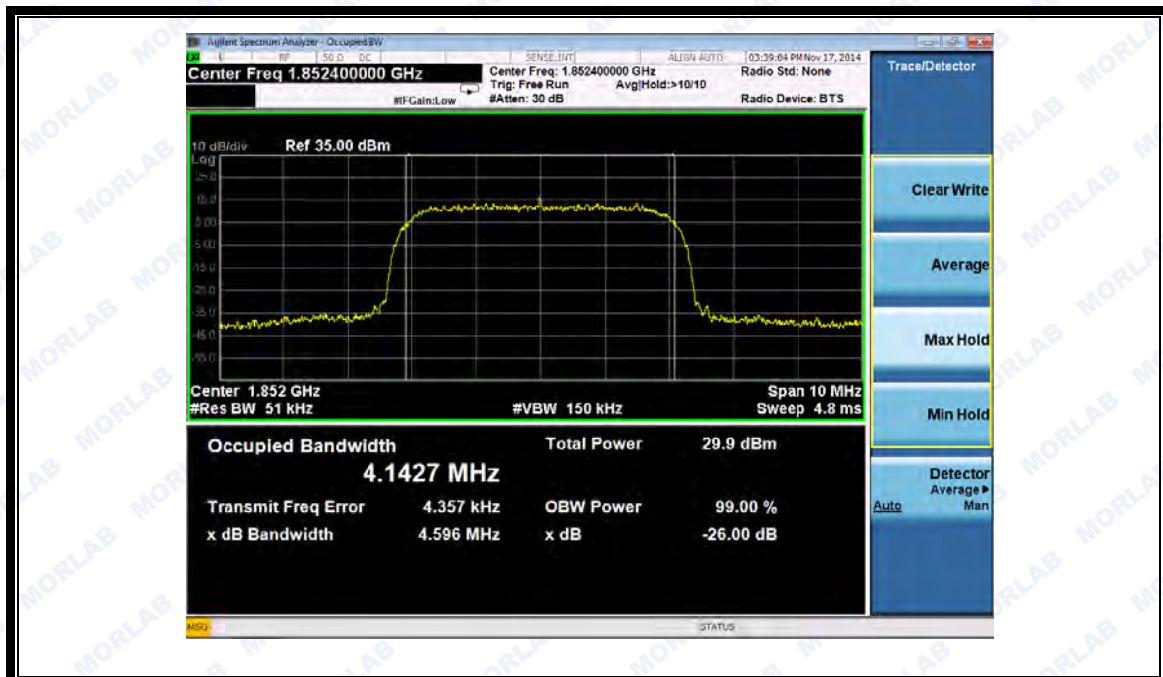
(Plot Y: HSPA+850 MHz Channel = 4132)



(Plot Z: HSPA+850 MHz Channel = 4175)



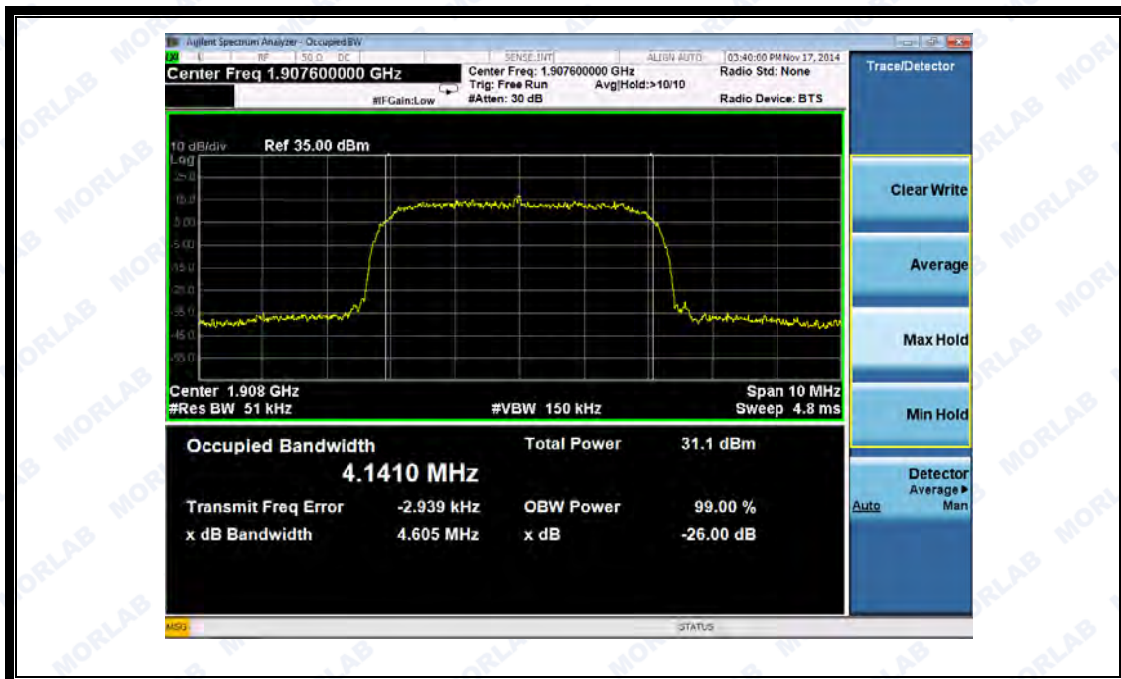
(Plot A1: HSPA+850 MHz Channel = 4233)



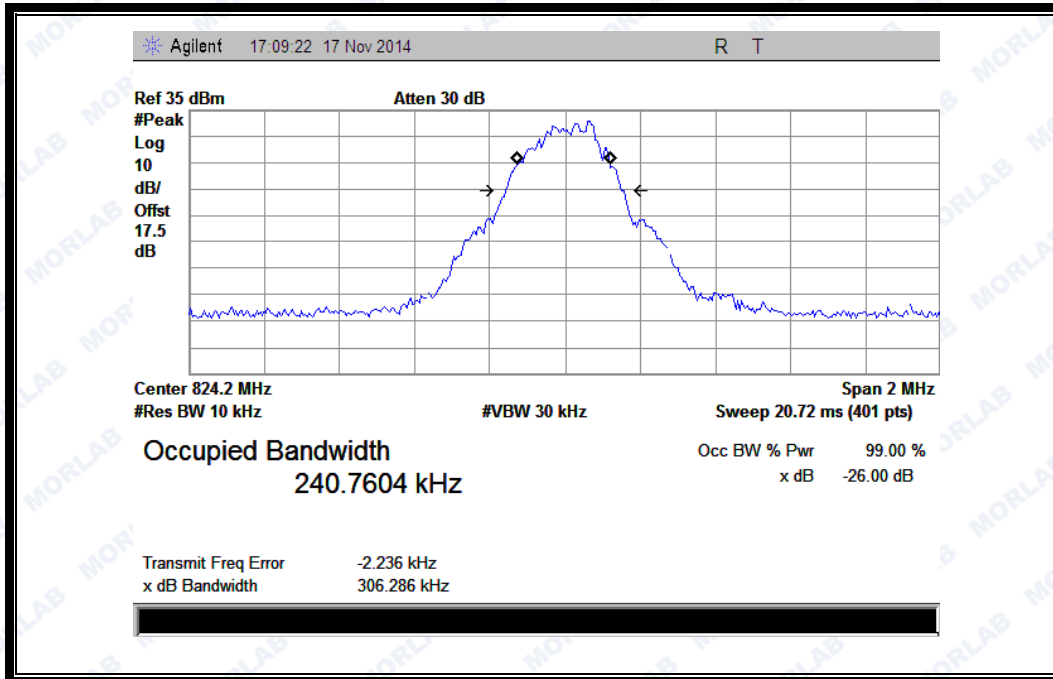
(Plot B1: HSPA+1900 MHz Channel = 9262)



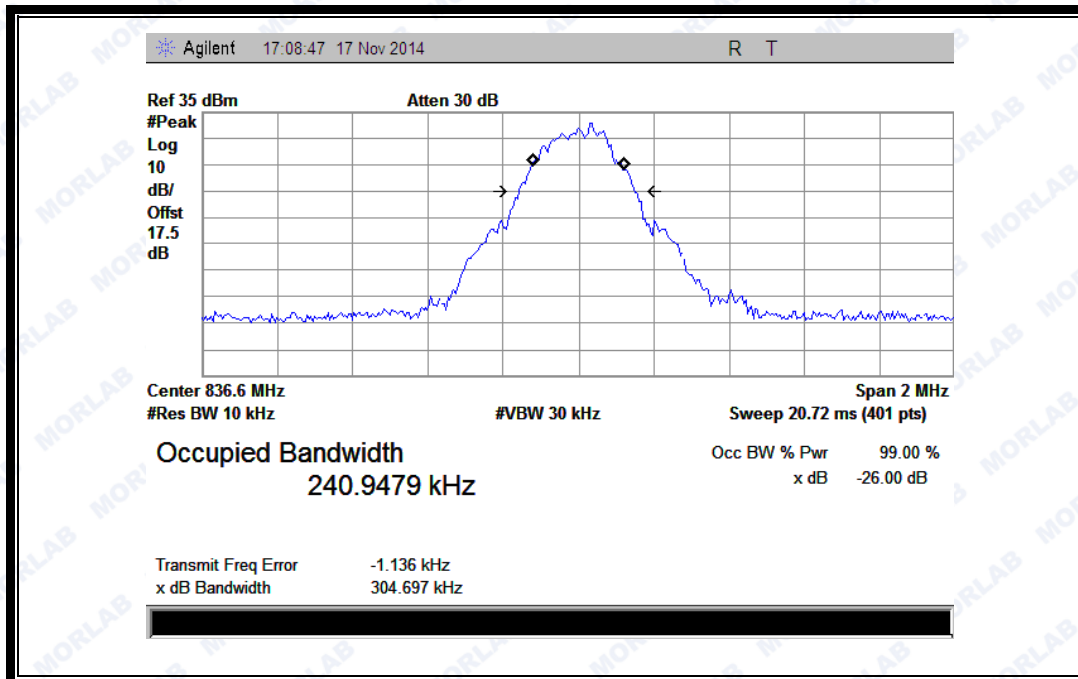
(Plot C1: HSPA+1900 MHz Channel = 9400)



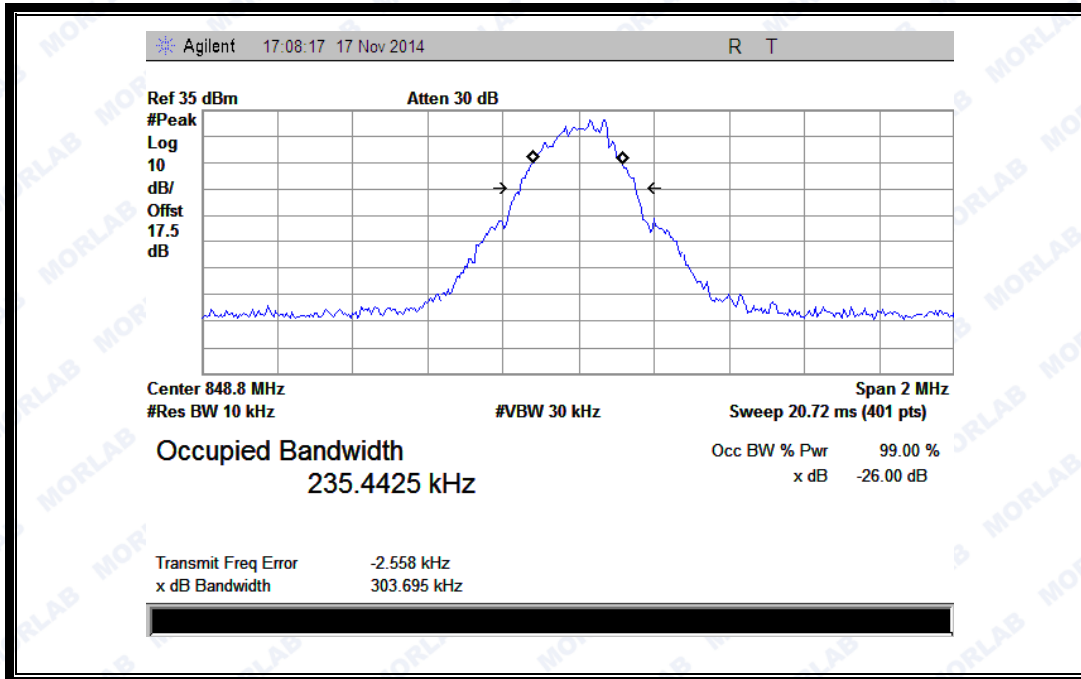
(Plot D1: HSPA+1900 MHz Channel = 9538)



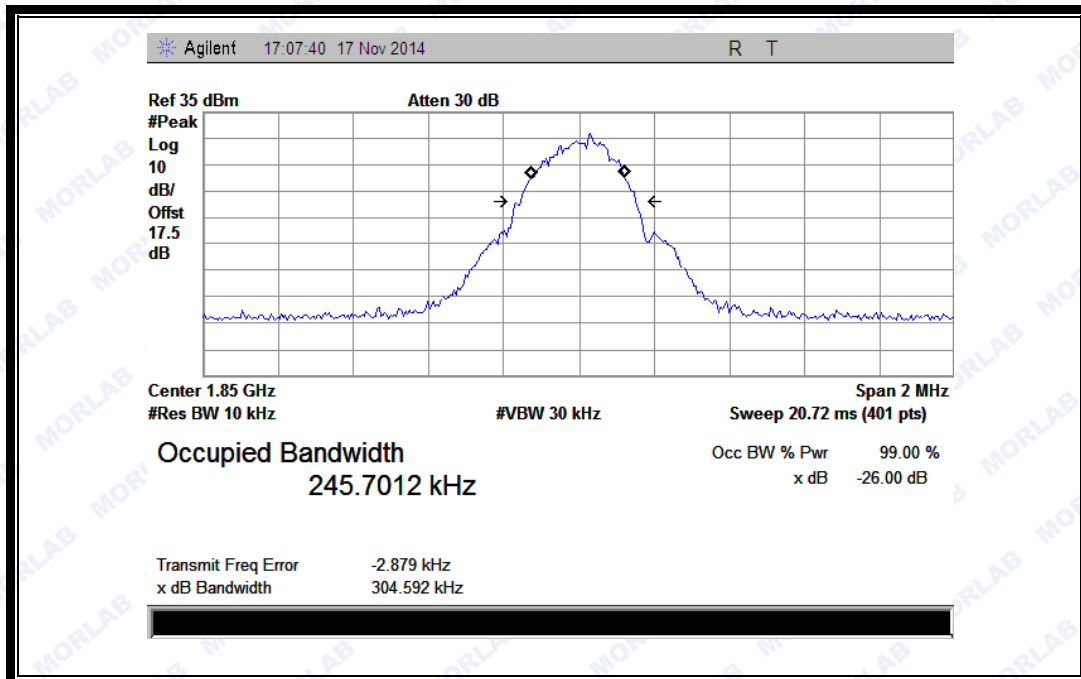
(Plot E1: GSM 850MHz Channel = 128)



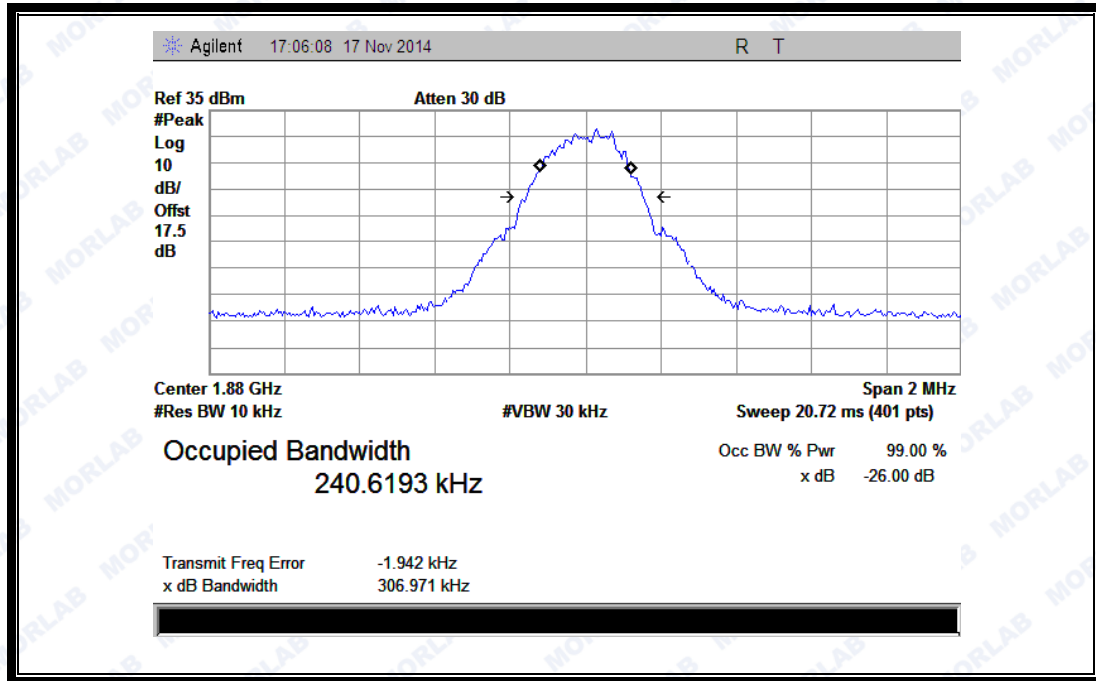
(Plot F1:GSM 850MHz Channel = 190)



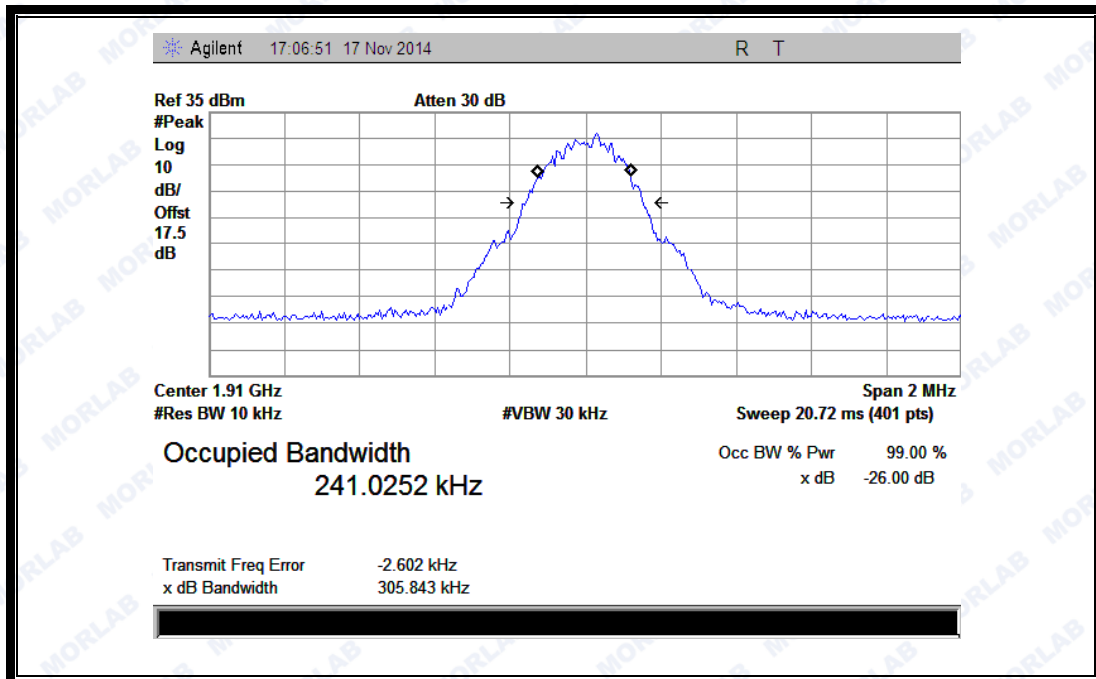
(Plot G1: GSM 850MHz Channel = 251)



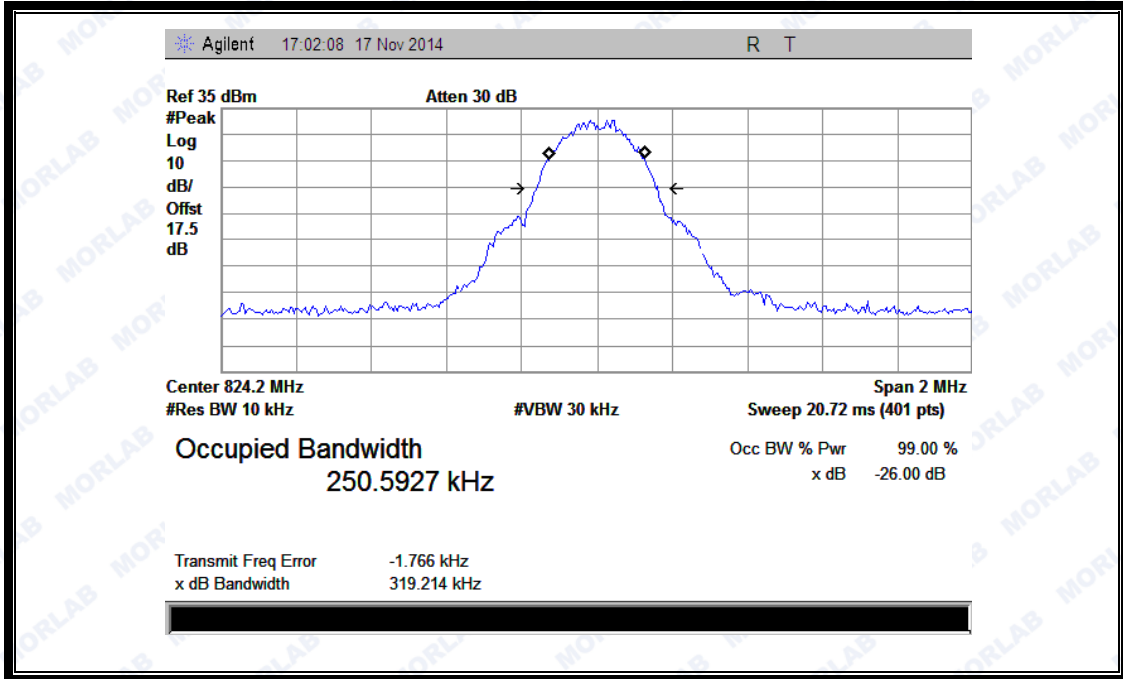
(Plot H1: GSM 1900MHz Channel = 512)



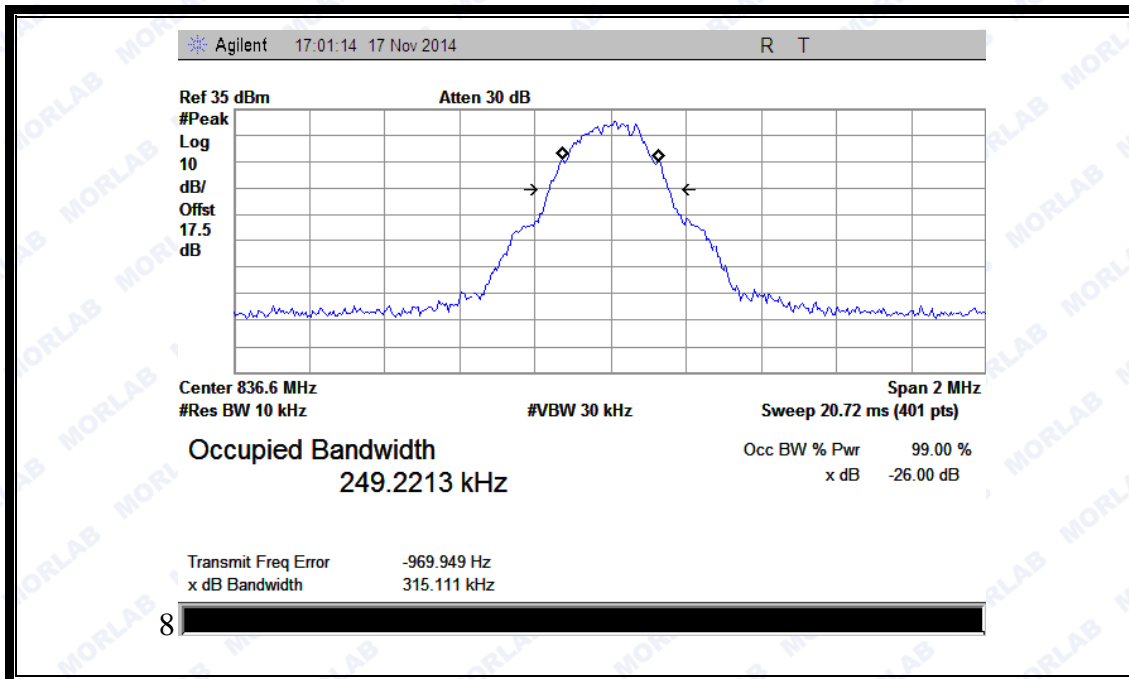
(Plot I1: GSM 1900MHz Channel = 661)



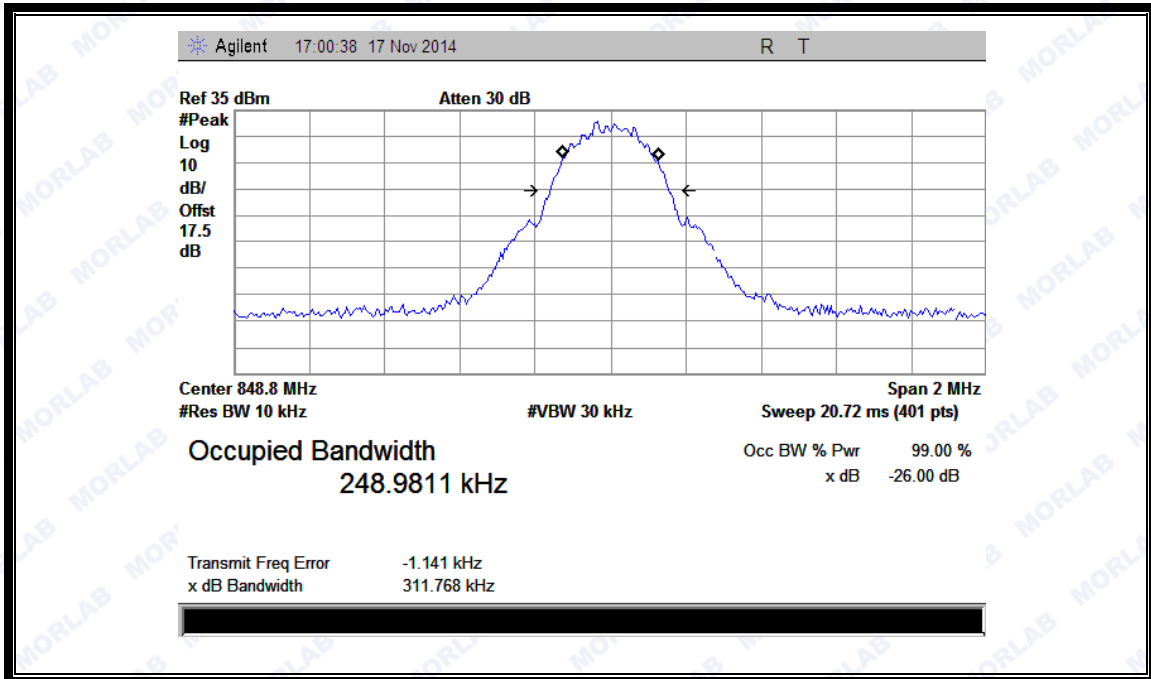
(Plot J1: GSM 1900MHz Channel = 810)



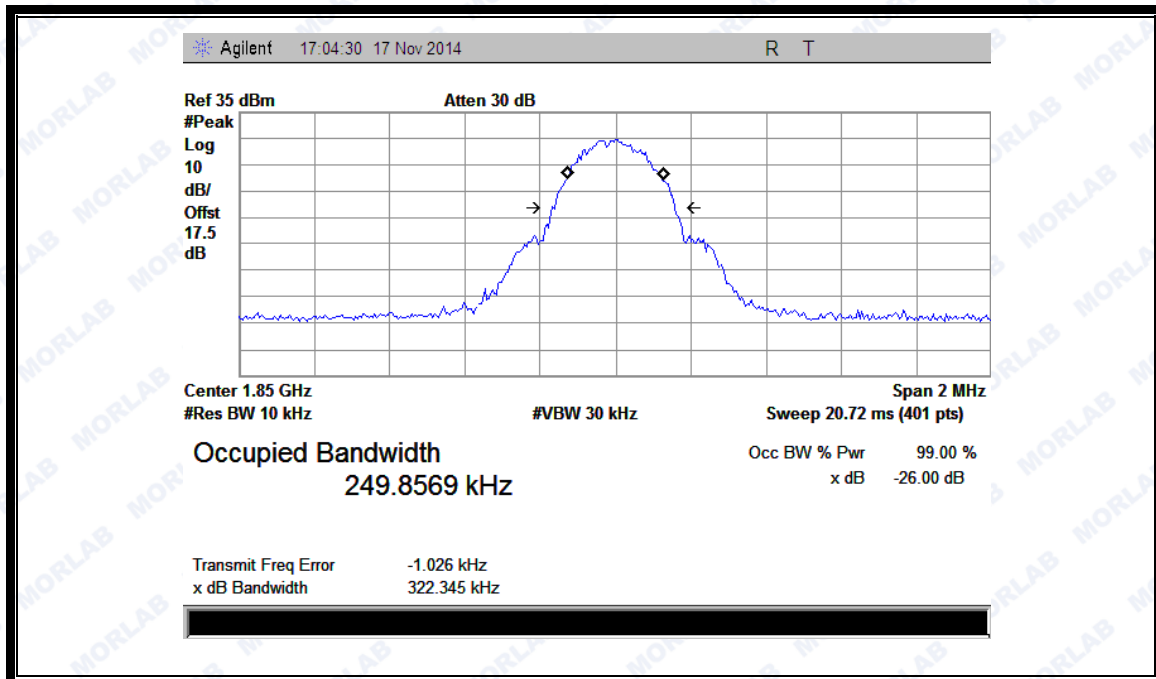
(Plot K1: GPRS 850MHz Channel = 128)



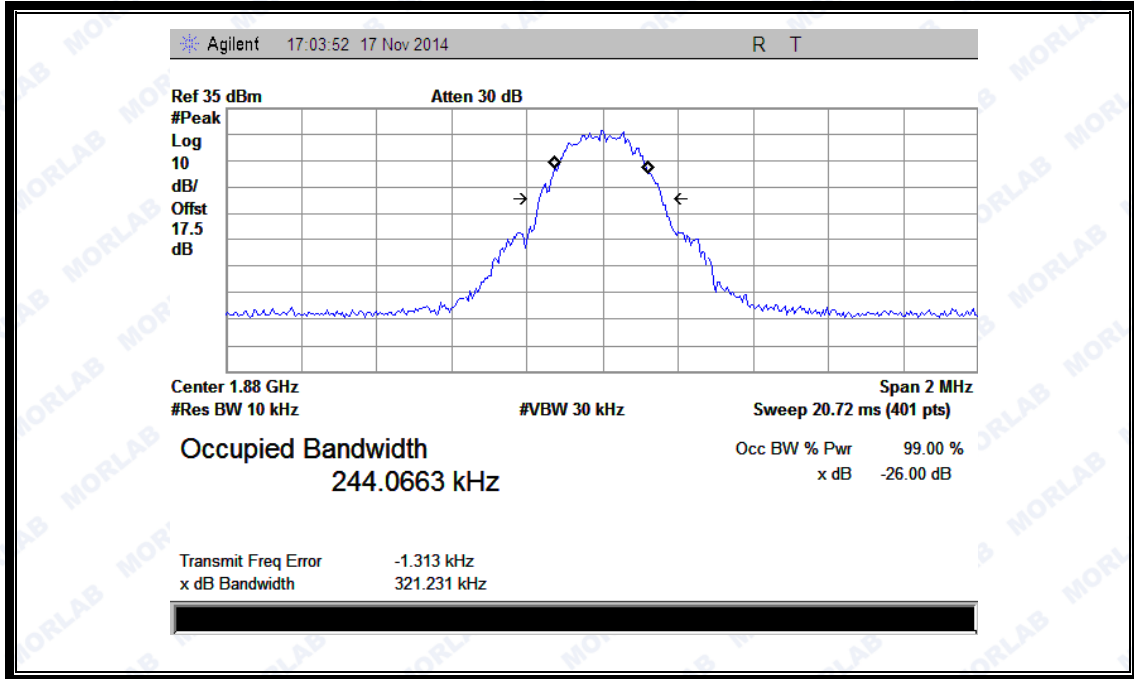
(Plot L1: GPRS 850MHz Channel = 190)



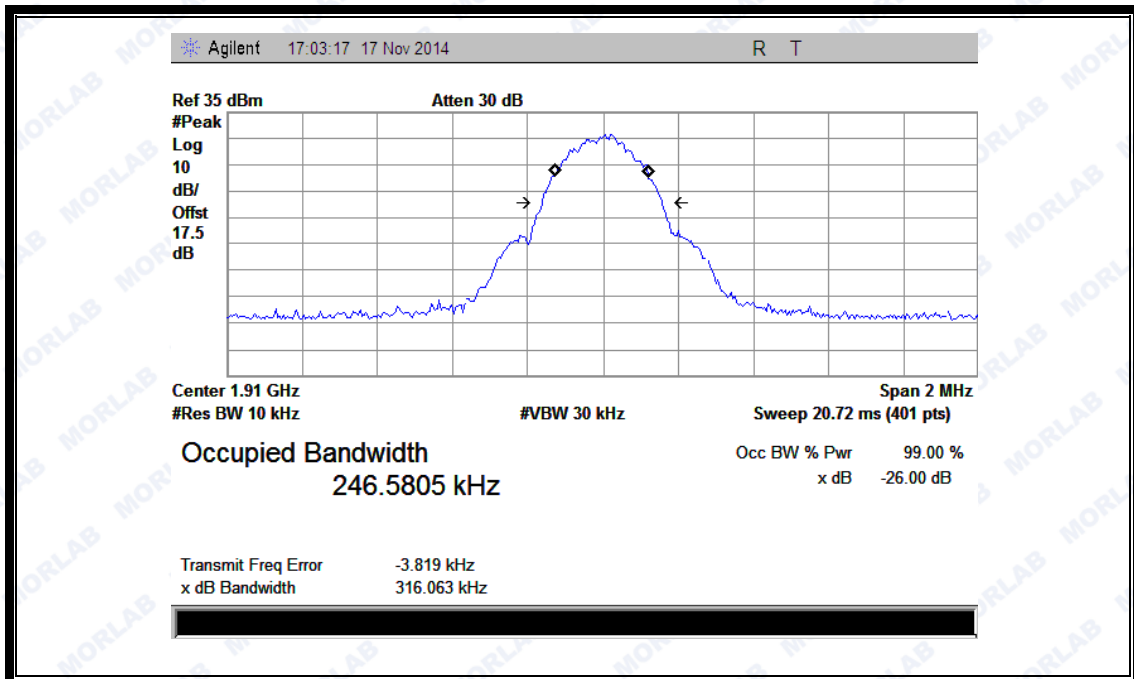
(Plot M1: GPRS850MHz Channel = 251)



(Plot N1: GPRS 1900MHz Channel = 512)



(Plot O1: GPRS 1900MHz Channel = 661)



(Plot P1: GPRS 1900MHz Channel = 810)

2.4 Frequency Stability

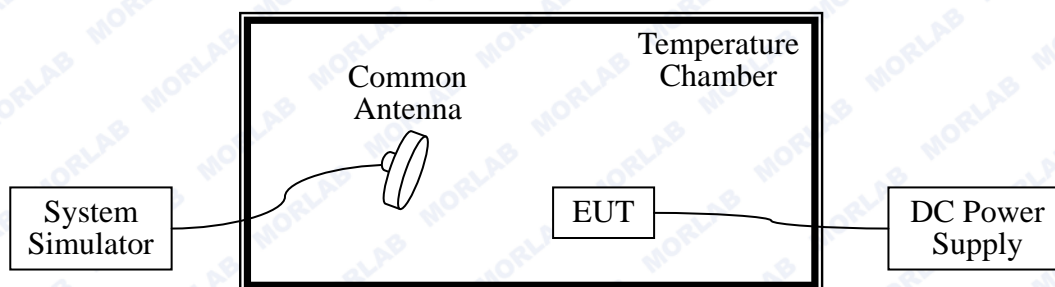
2.4.1 Requirement

According to FCC section 22.355 and FCC section 24.235, the frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. According to FCC section 2.1055, the test conditions are:

- (a) The temperature is varied from -30°C to $+50^{\circ}\text{C}$ at intervals of not more than 10°C .
- (b) For hand carried battery powered equipment, the primary supply voltage is reduced to the battery operating end point which shall be specified by the manufacture. 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.

2.4.2 Test Description

1. Test Setup:



The EUT, which is powered by the DC Power Supply directly, is located in the Temperature Chamber. The EUT is commanded by the System Simulator (SS) to operate at the maximum output power i.e. Power Control Level (PCL) = 5 and Power Class = 4. A call is established between the EUT and the SS via a Common Antenna.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2014.02.26	2015.02.25
DC Power Supply	Good Will	GPS-3030DD	EF920938	2014.02.26	2015.02.25
Temperature Chamber	YinHe Experimental Equip.	HL4003T	(n.a.)	2014.02.26	2015.02.25

2.4.3 Test Verdict

The nominal, highest and lowest extreme voltages are separately 3.8VDC, 4.35VDC and 3.6VDC, which are specified by the applicant; the normal temperature here used is 25°C . The frequency deviation limit of



850MHz band is ± 2.5 ppm, and 1900MHz is ± 1 ppm.

1. GSM 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	-23.45	± 2060.5	23.12	± 2091.5	18.17	± 2122	
	-20	27.11		12.43		-15.02		
	-10	-2.25		-17.46		15.11		
	0	30.26		31.14		5.05		
	+10	21.79		-24.93		3.02		
	+20	-19.56		-17.19		10.76		
	+30	34.36		19.36		-16.53		
	+40	41.63		19.64		-2.13		
4.35	+55	39.28	23.27	-12.89	3.6	+25	-15.73	-7.55
	+25	-17.65	37.13	7.78				

2. GSM 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	16.11	± 1850.2	24.18	± 1880.0	36.15	± 1909.8	
	-20	37.18		-21.48		-18.88		
	-10	-2.05		-13.76		-16.88		
	0	40.06		-18.38		19.32		
	+10	1.98		-21.61		25.31		
	+20	-19.76		15.52		31.26		
	+30	38.76		-0.78		-29.21		
	+40	46.56		36.37		19.33		
4.35	+55	39.89	24.02	-19.37	3.6	+25	37.88	27.09
	+25	-5.69	15.22	19.89				

3. EDGE 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 128 (824.2MHz)		Channel = 190 (836.6MHz)		Channel = 251 (848.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	-31.12	±2060.5	26.19	±2091.5	6.22	±2122	
	-20	36.98		13.73		-13.80		
	-10	-3.25		-18.35		11.16		
	0	43.06		39.10		5.05		
	+10	1.99		-22.06		3.02		
	+20	-19.86		-16.11		10.76		
	+30	39.56		17.76		-16.51		
	+40	48.62		15.54		-2.11		
	+55	39.98	3.57	-12.89				
4.35	+25	-15.71		14.05		-7.83		
3.6	+25	-15.01		7.93		6.88		

4. EDGE 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 512 (1850.2MHz)		Channel = 661 (1880.0MHz)		Channel = 810 (1909.8MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	-11.87	±1850.2	25.12	±1880.0	1.57	±1909.8	
	-20	2.72		7.63		-13.76		
	-10	1.25		-25.78		-13.21		
	0	2.57		-1.36		13.23		
	+10	-10.78		-17.98		5.23		
	+20	-2.11		-21.61		37.16		
	+30	14.03		14.58		-27.88		
	+40	5.43		-0.78		19.34		
	+55	-2.46	39.07	-16.77				
4.35	+25	19.02		4.08		26.59		
3.6	+25	-7.19		14.13		19.03		

5. WCDMA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	18.11	±2066	14.21	±2087.5	-1.10	±2116.5	<u>PASS</u>
	-20	-7.51		-0.62		-18.48		
	-10	-3.43		22.45		7.67		
	0	16.47		13.25		4.32		
	+10	30.18		1.31		-17.33		
	+20	32.07		-12.22		11.90		
	+30	-7.98		30.62		6.63		
	+40	26.31		13.45		28.93		
+55	12.10	-12.42	19.76					
4.35	+25	-6.17		32.12		23.89		
3.6	+25	18.56		-17.80		-18.12		

6. WCDMA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	-4.12	±1852.4	-11.67	±1880.0	-1.29	±1907.6	<u>PASS</u>
	-20	19.15		12.28		25.60		
	-10	5.35		-14.36		15.11		
	0	18.92		18.59		-3.17		
	+10	32.40		21.39		18.12		
	+20	13.55		38.27		-10.39		
	+30	2.31		2.37		17.47		
	+40	-12.52		-13.47		28.84		
+55	-13.65	-5.81	-2.53					
4.35	+25	24.23		14.68		21.05		
3.6	+25	23.12		25.37		-25.11		

7. HSDPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	28.46	±2066	-24.87	±2087.5	17.11	±2116.5	<u>PASS</u>
	-20	-8.66		-14.06		14.41		
	-10	20.85		37.23		21.57		
	0	12.78		-8.41		-24.37		
	+10	-14.75		-13.95		-13.96		
	+20	8.78		-24.37		35.11		
	+30	-1.49		12.88		-8.31		
	+40	17.14		-14.75		-13.95		
+55	-23.61	23.37	25.37					
4.35	+25	33.03	7.93	7.98				
3.6	+25	17.14	-31.21	1.98				

8. HSDPA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	11.17	±1852.4	-3.54	±1880	2.50	±1907.6	<u>PASS</u>
	-20	-16.05		22.71		-8.48		
	-10	20.42		15.37		-14.02		
	0	-3.11		-12.21		-9.01		
	+10	21.71		10.60		5.64		
	+20	20.12		-4.81		-3.85		
	+30	-15.01		35.11		9.57		
	+40	29.71		8.46		27.32		
+55	16.42	-24.88	-12.42					
4.35	+25	-11.25	29.53	-2.83				
3.6	+25	11.53	-2.17	14.32				

9. HSUPA 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	28.12	±2066	14.51	±2087.5	15.05	±2116.5	<u>PASS</u>
	-20	-15.40		-19.43		27.52		
	-10	-12.71		-12.79		39.71		
	0	-14.09		-0.44		-7.32		
	+10	-0.37		0.01		-4.91		
	+20	-11.85		-6.64		21.35		
	+30	28.57		24.25		-5.94		
	+40	-11.89		9.73		13.78		
+55	-0.45	25.76	28.55					
4.35	+25	2.78		-4.67		28.31		
3.6	+25	3.65		5.65		-6.60		

10. HSUPA 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	38.54	±1852.4	-11.69	±1880	7.17	±1907.6	<u>PASS</u>
	-20	28.13		-0.74		2.12		
	-10	7.82		0.11		-4.85		
	0	2.41		14.82		17.08		
	+10	-4.73		-15.25		-1.86		
	+20	16.22		-11.79		23.52		
	+30	-1.55		-0.44		-0.48		
	+40	24.16		1.25		-12.05		
+55	14.79	-7.84	-5.81					
4.35	+25	-8.08		6.72		27.38		
3.6	+25	22.78		-1.72		-15.45		

11. HSPA+ 850MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 4123 (826.4MHz)		Channel = 4175 (835MHz)		Channel = 4233 (846.6MHz)		
		Hz	Limit	Hz	Limit	Hz	Limit	
3.8	-30	27.55	±2066	13.31	±2087.5	13.45	±2116.5	
	-20	-14.40		-19.33		27.52		
	-10	-12.71		-12.79		39.71		
	0	-14.09		-0.44		-7.32		
	+10	-0.37		0.01		-4.91		
	+20	-11.85		-6.64		21.35		
	+30	29.57		24.25		-5.94		
	+40	-11.89		9.73		13.78		
	+55	-0.45	29.76	28.55				
4.35	+25	1.78		-4.67		28.98		
3.6	+25	1.35		6.35		-7.93		

12. HSPA+ 1900MHz Band

Test Conditions		Frequency Deviation						Verdict
Power (VDC)	Temperature (°C)	Channel = 9262 (1852.4MHz)		Channel = 9400 (1880.0MHz)		Channel = 9538 (1907.6MHz)		
		Hz	Limits	Hz	Limits	Hz	Limits	
3.8	-30	31.67	±1852.4	-13.19	±1880	7.29	±1907.6	
	-20	28.23		-0.82		2.12		
	-10	7.82		0.21		-4.85		
	0	2.41		15.82		17.08		
	+10	-4.73		-15.25		-1.86		
	+20	16.22		-11.79		24.52		
	+30	-1.55		-0.44		-0.48		
	+40	24.16		1.25		-12.05		
	+55	14.79	-7.84	-5.81				
4.35	+25	-8.08		6.71		28.38		
3.6	+25	22.38		-1.22		-16.38		

2.5 Conducted Out of Band Emissions

2.5.1 Requirement

According to FCC section 22.917(a) and FCC section 24.238(a) 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 calculated to be -13dBm.

2.5.2 Test Description

See section 2.1.2 of this report.

2.5.3 Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The lowest, middle and highest channels are tested to verify the out of band emissions.

1. Test Verdict:

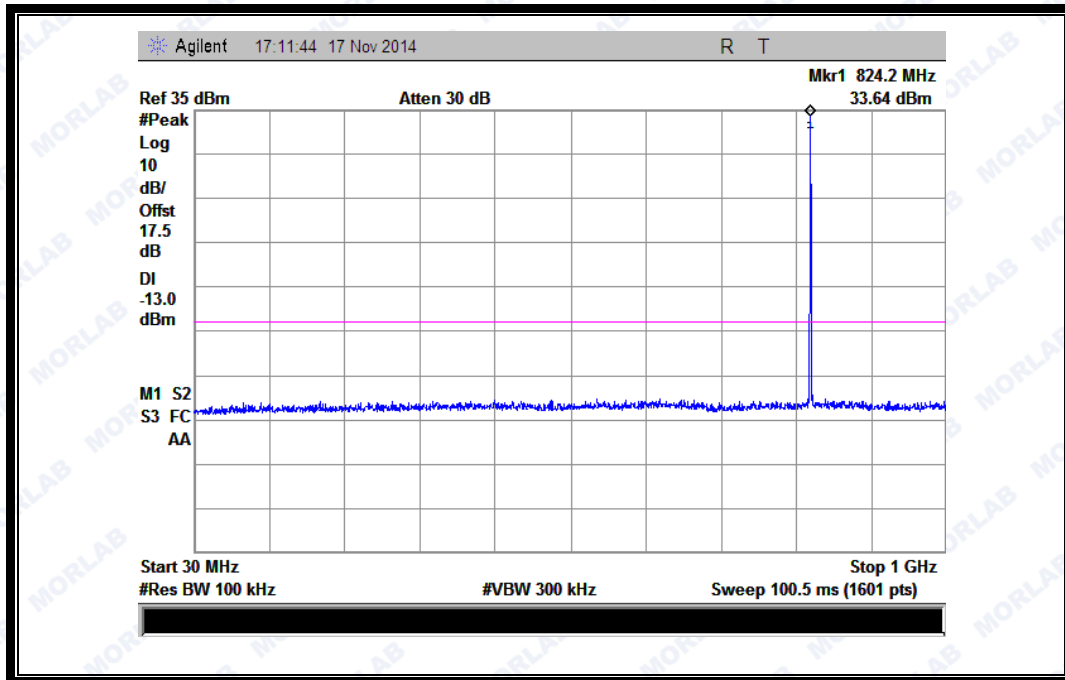
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-19.81	Plot A1toA1.1	-13	<u>PASS</u>
	190	836.6	-19.34	Plot A2toA2.1		<u>PASS</u>
	251	848.8	-20.23	Plot A3toA3.1		<u>PASS</u>
GSM 1900MHz	512	1850.2	-18.99	Plot B1toB1.1	-13	<u>PASS</u>
	661	1880.0	-18.03	Plot B2toB2.1		<u>PASS</u>
	810	1909.8	-21.21	Plot B3toB3.1		<u>PASS</u>
EDGE 850MHz	128	824.2	-20.21	Plot C1toC1.1	-13	<u>PASS</u>
	190	836.6	-19.97	Plot C2toC2.1		<u>PASS</u>
	251	848.8	-18.74	Plot C3toC3.1		<u>PASS</u>
EDGE 1900MHz	512	1850.2	-19.51	Plot D1toD1.1	-13	<u>PASS</u>
	661	1880.0	-20.78	Plot D2toD2.1		<u>PASS</u>
	810	1909.8	-20.45	Plot D3toD3.1		<u>PASS</u>
WCDMA 850MHz	4132	826.4	<-25	Plot E1toE1.1	-13	<u>PASS</u>
	4175	835	<-25	Plot E2toE2.1		<u>PASS</u>
	4233	846.6	<-25	Plot E3toE3.1		<u>PASS</u>
WCDMA 1900MHz	9262	1852.4	<-25	Plot F1toF1.1	-13	<u>PASS</u>
	9400	1880	<-25	Plot F2toF2.1		<u>PASS</u>
	9538	1907.6	<-25	Plot F3toF3.1		<u>PASS</u>



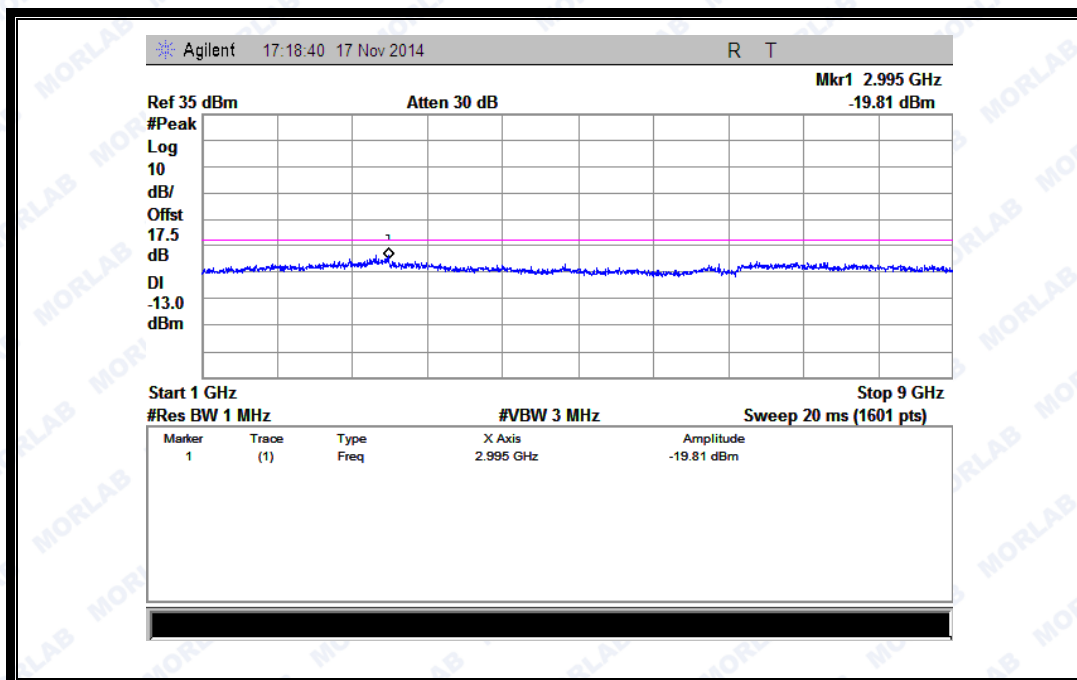
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
HSDPA 850MHz	4132	826.4	<-25	Plot G1toG1.1	-13	<u>PASS</u>
	4175	835	<-25	Plot G2toG2.1		<u>PASS</u>
	4233	846.6	<-25	Plot G3toG3.1		<u>PASS</u>
HSDPA 1900MHz	9262	1852.4	<-25	Plot H1toH1.1	-13	<u>PASS</u>
	9400	1880	<-25	Plot H2toH2.1		<u>PASS</u>
	9538	1907.6	<-25	Plot H3toH3.1		<u>PASS</u>
HSUPA 850MHz	4132	826.4	<-25	Plot I1toI1.1	-13	<u>PASS</u>
	4175	835	<-25	Plot I2toI2.1		<u>PASS</u>
	4233	846.6	<-25	Plot I3toI3.1		<u>PASS</u>
HSUPA 1900MHz	9262	1852.4	<-25	Plot J1toJ1.1	-13	<u>PASS</u>
	9400	1880	<-25	Plot J2toJ2.1		<u>PASS</u>
	9538	1907.6	<-25	Plot J3toJ3.1		<u>PASS</u>
HSPA+ 850MHz	4132	826.4	<-25	Plot K1toK1.1	-13	<u>PASS</u>
	4175	835	<-25	Plot K2toK2.1		<u>PASS</u>
	4233	846.6	<-25	Plot K3toK3.1		<u>PASS</u>
HSPA+ 1900MHz	9262	1852.4	<-25	Plot L1toL1.1	-13	<u>PASS</u>
	9400	1880	<-25	Plot L2toL2.1		<u>PASS</u>
	9538	1907.6	<-25	Plot L3toL3.1		<u>PASS</u>

2. Test Plots for the Whole Measurement Frequency Range:

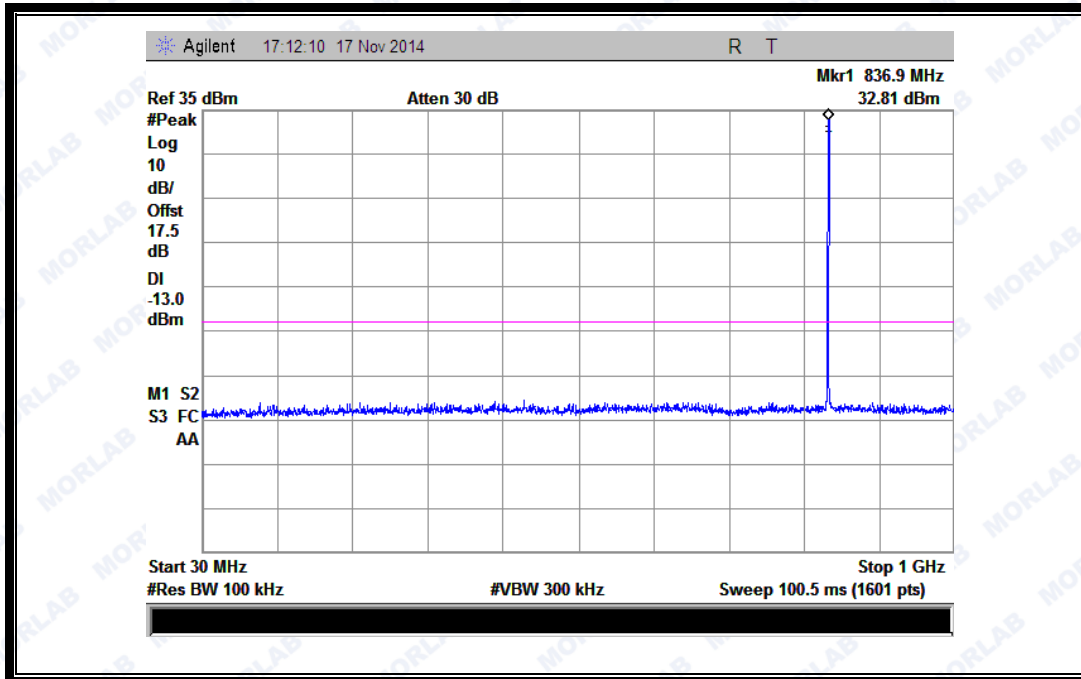
Note: the power of the EUT transmitting frequency should be ignored.



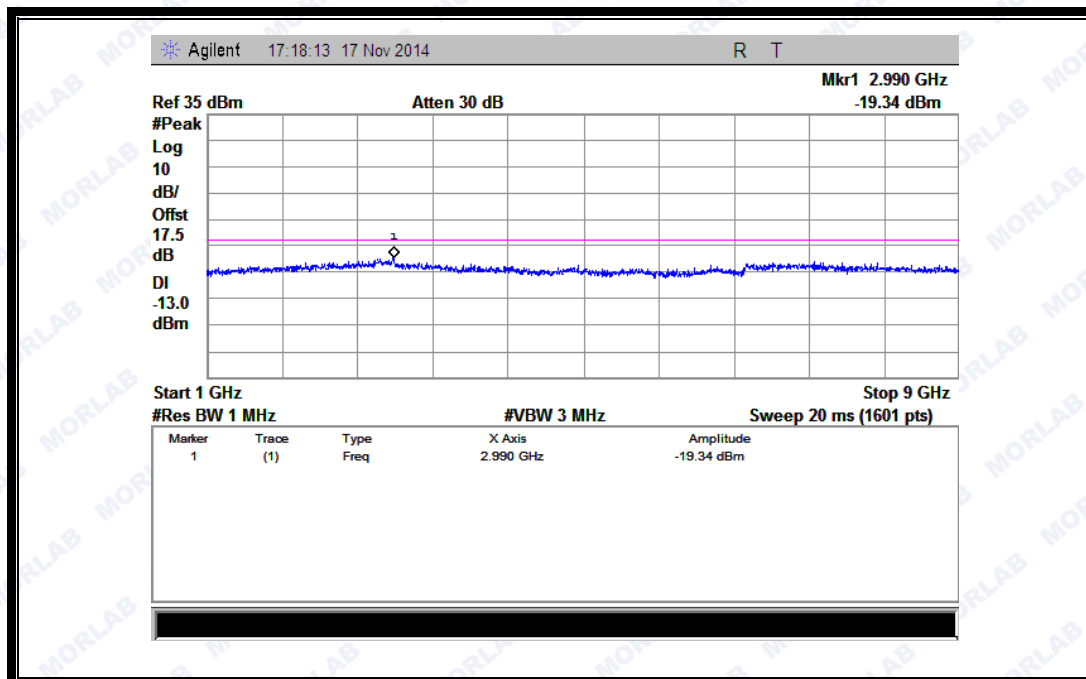
(Plot A1:GSM 850MHz Channel = 128, 30MHz to 1GHz)



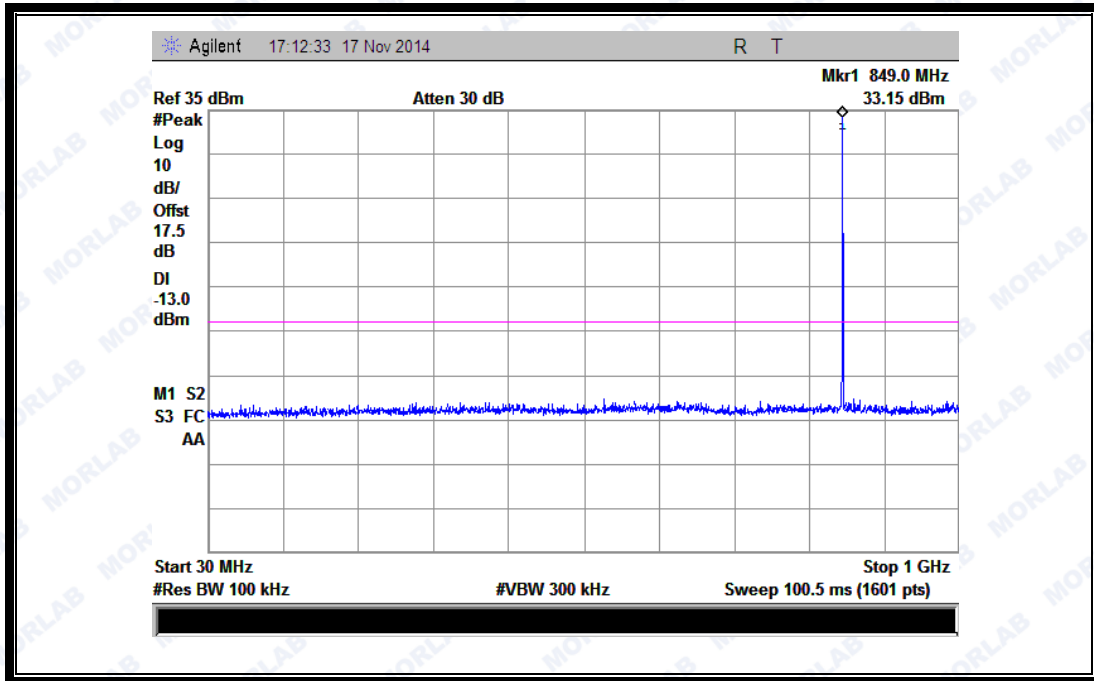
(Plot A1.1: GSM 850MHz Channel = 128, 1GHz to 9GHz)



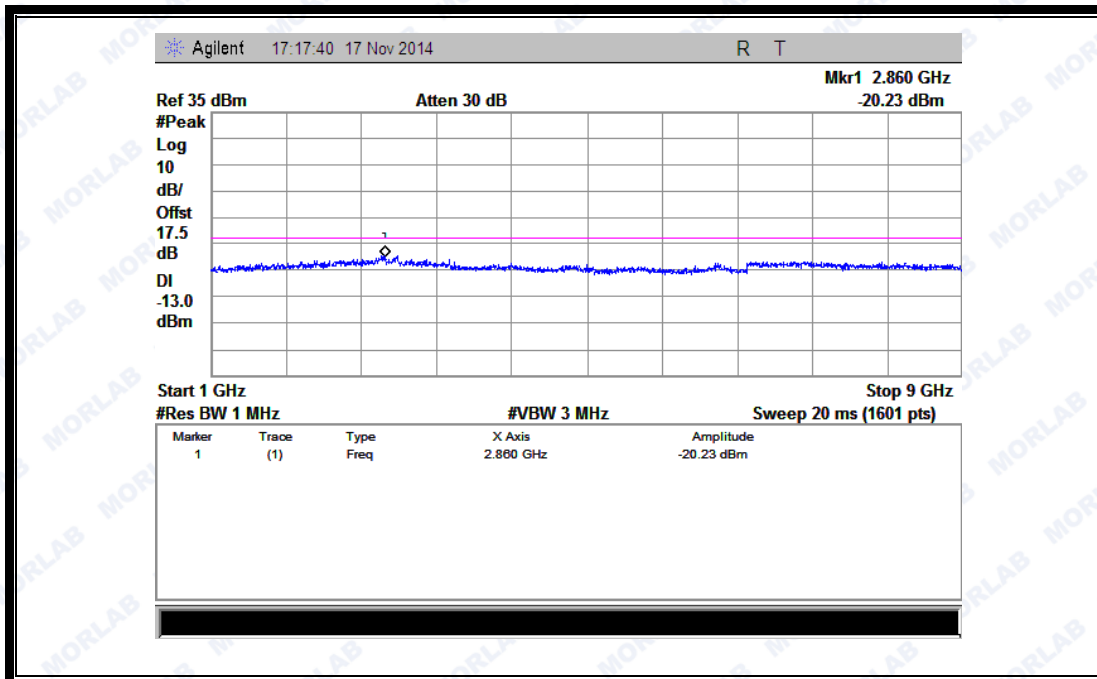
(Plot A2: GSM 850MHz Channel = 190, 30MHz to 1GHz)



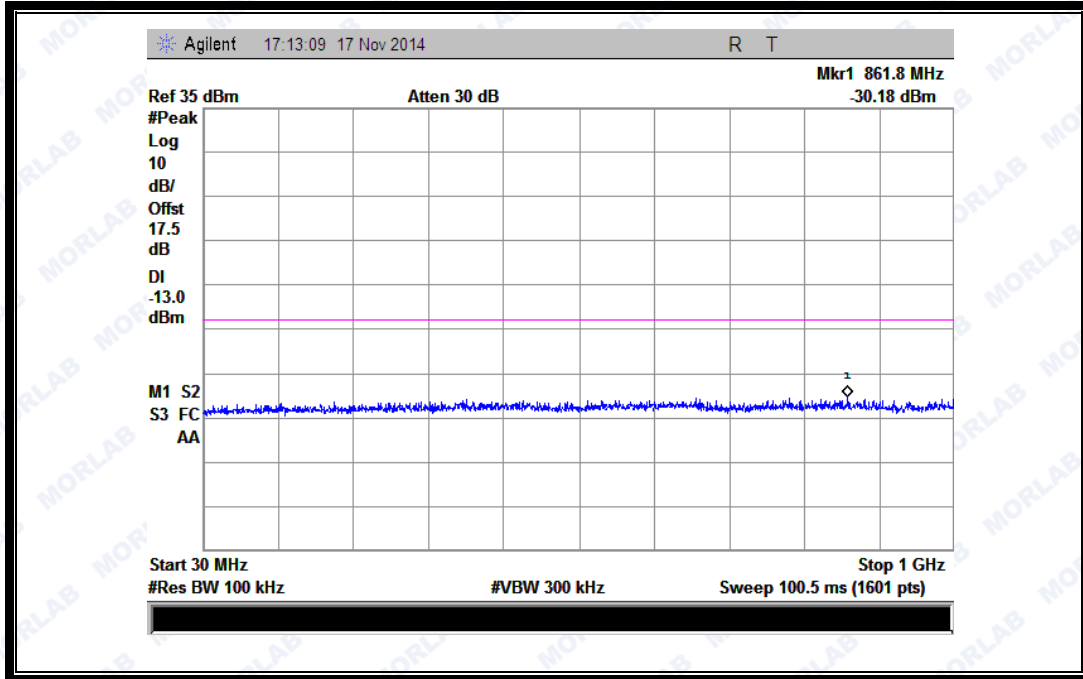
(Plot A2.1: GSM 850MHz Channel = 190, 1GHz to 9GHz)



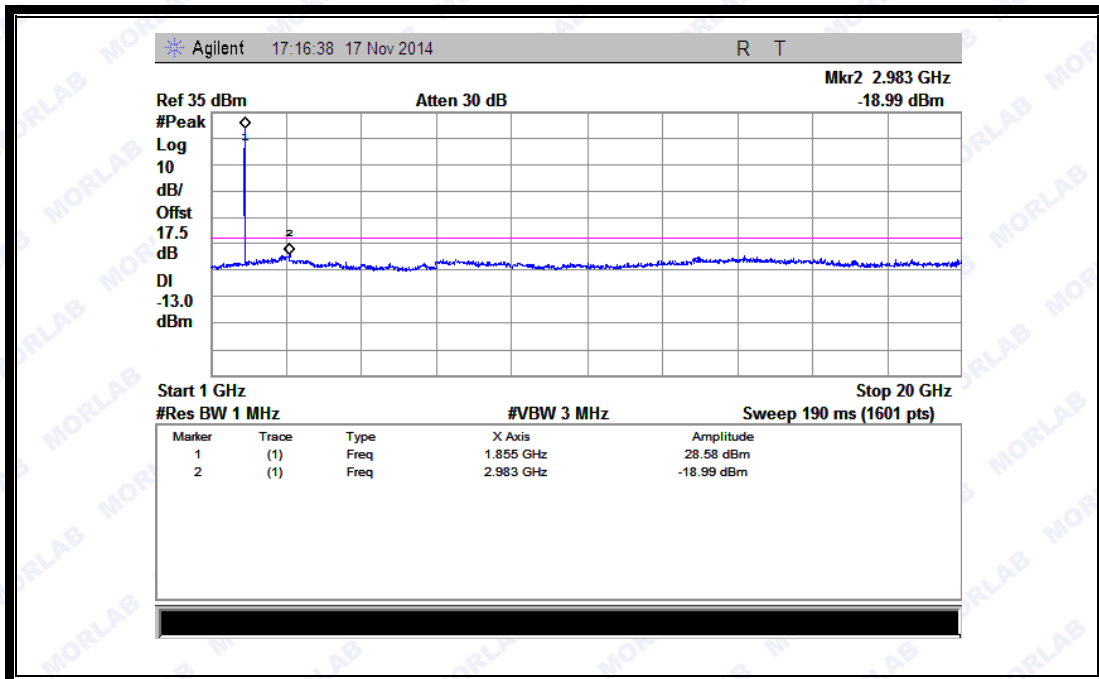
(Plot A3: GSM 850MHz Channel = 251, 30MHz to 1GHz)



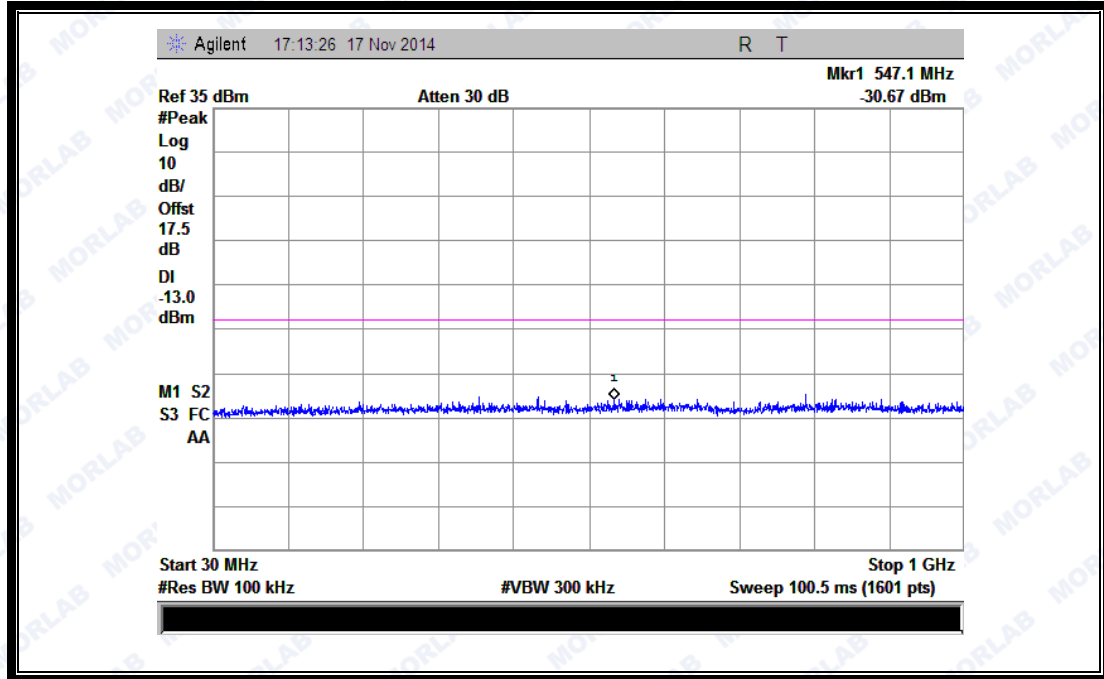
(Plot A3.1: GSM 850MHz Channel = 251, 1GHz to 9GHz)



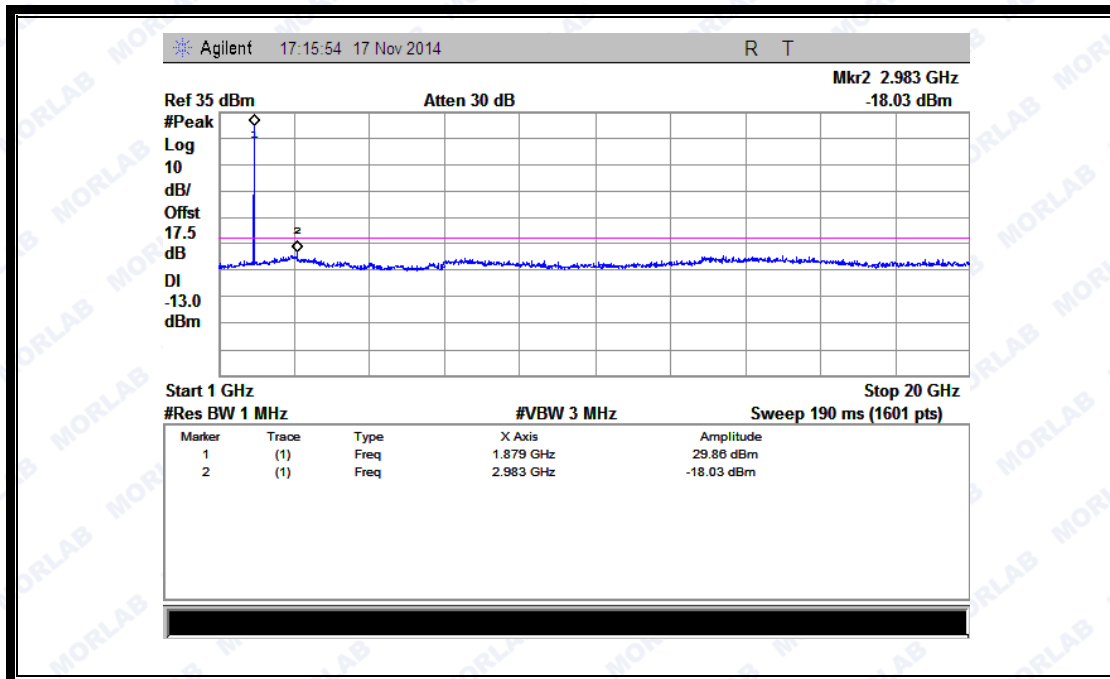
(Plot B1: GSM 1900MHz Channel = 512, 30MHz to 1GHz)



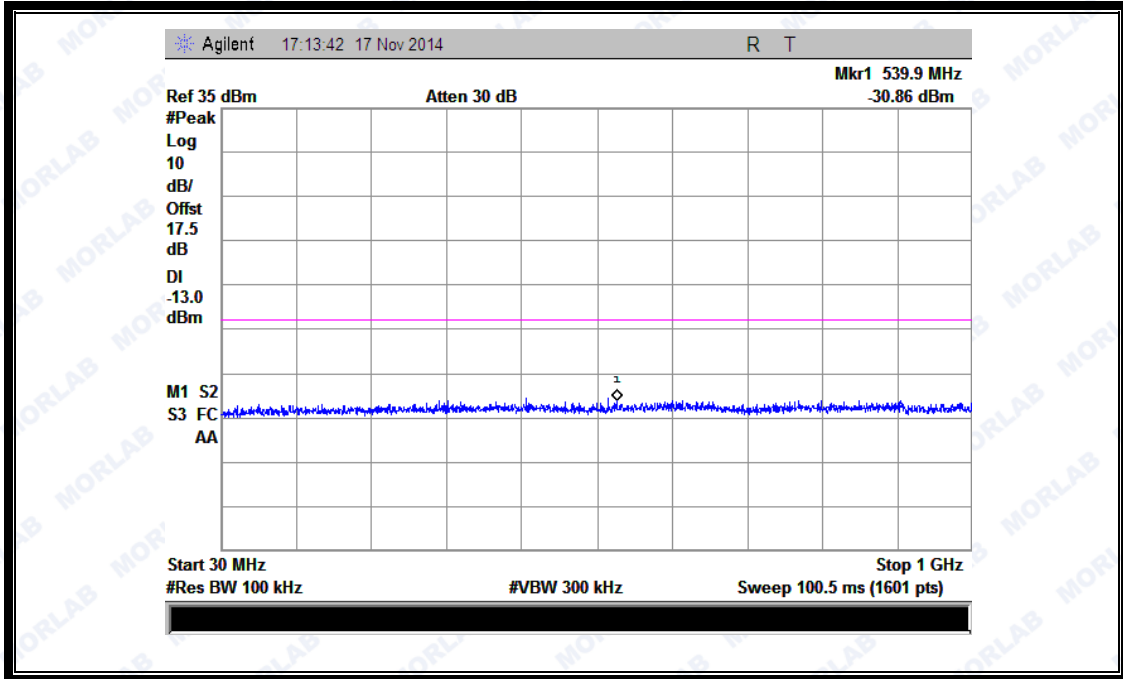
(Plot B1.1: GSM 1900MHz Channel = 512, 1GHz to 20GHz)



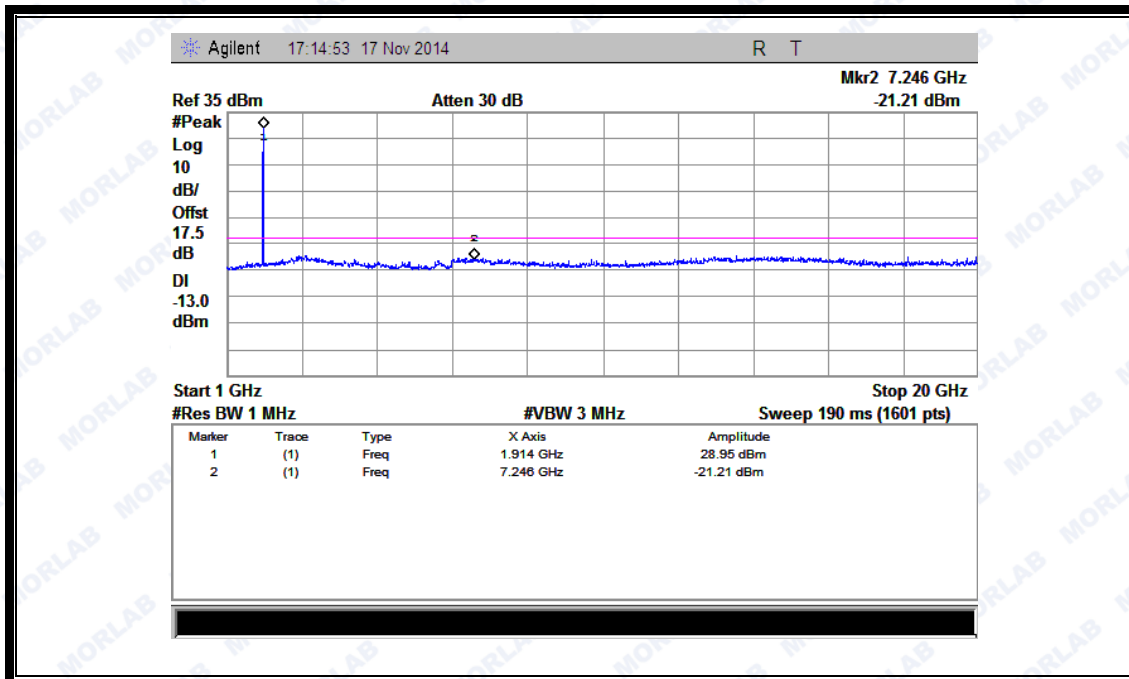
(Plot B2: GSM 1900MHz Channel = 661, 30MHz to 1GHz)



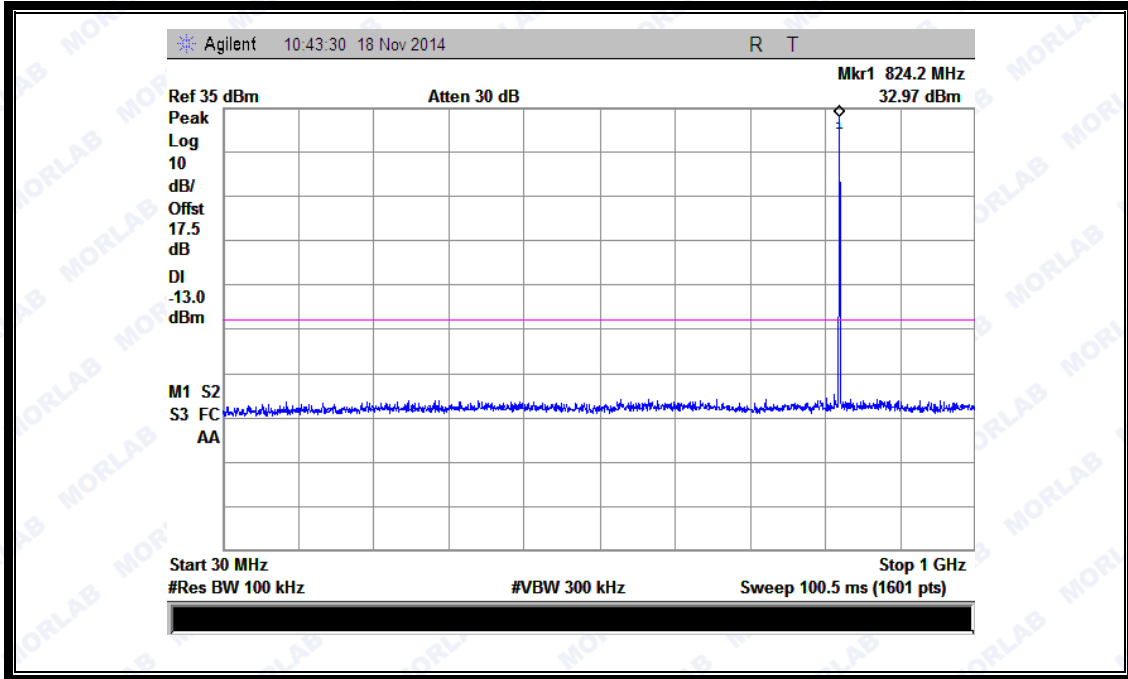
(Plot B2.1: GSM 1900MHz Channel = 661, 1GHz to 20GHz)



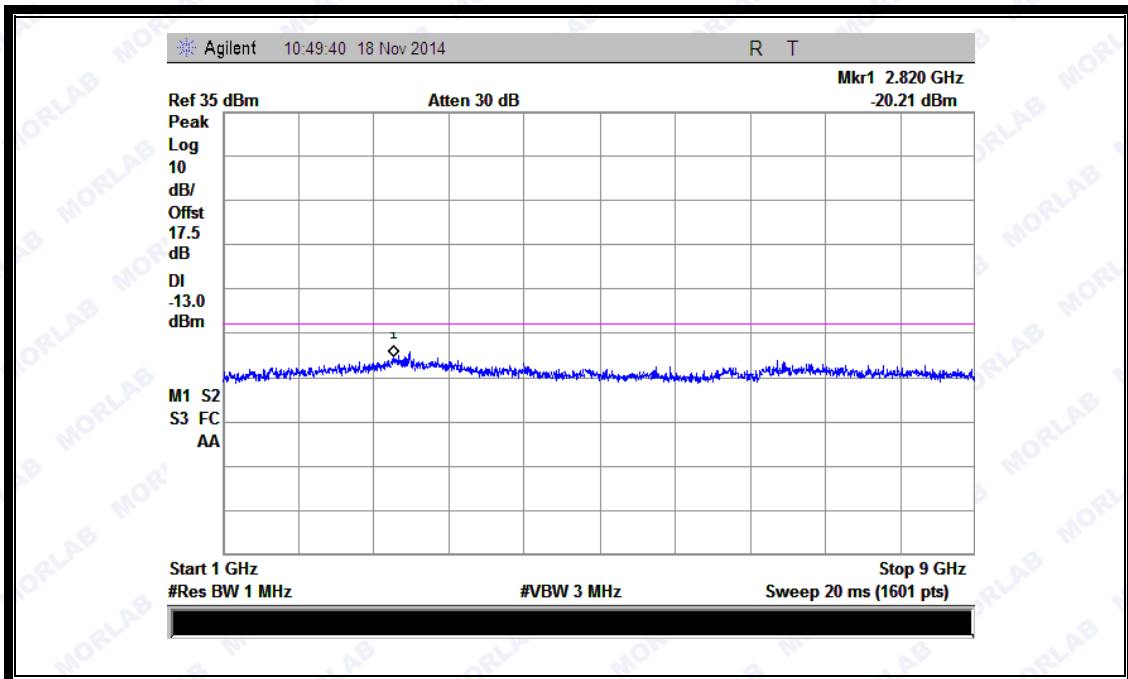
(Plot B3: GSM 1900MHz Channel = 810, 30MHz to 1GHz)



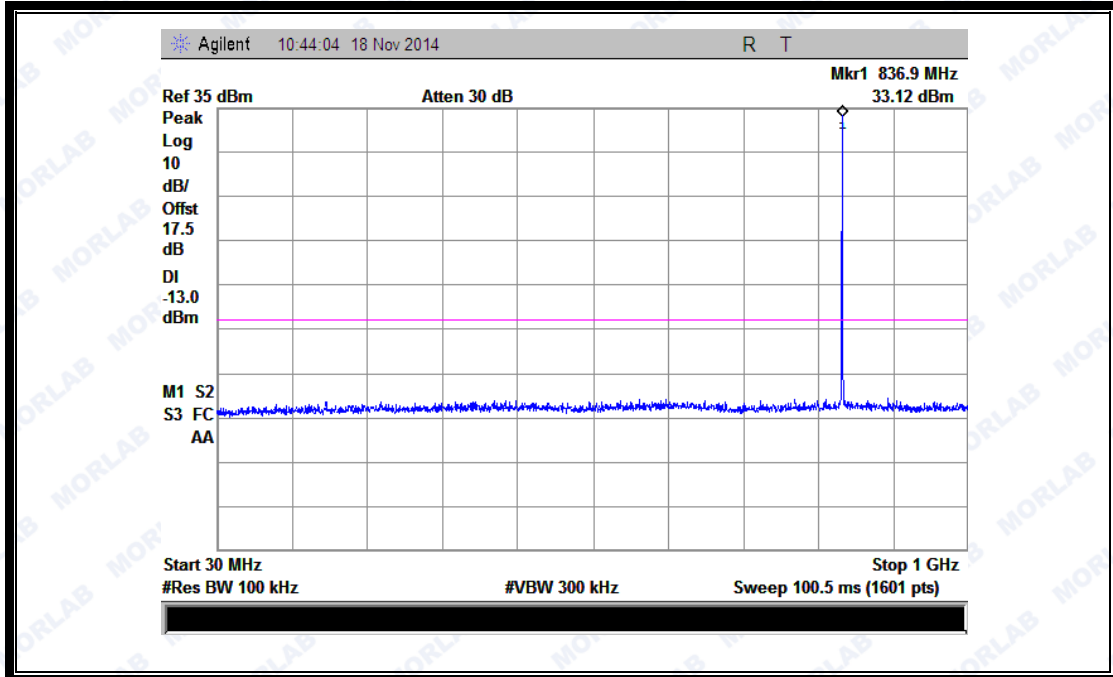
(Plot B3.1: GSM 1900MHz Channel = 810, 1GHz to 20GHz)



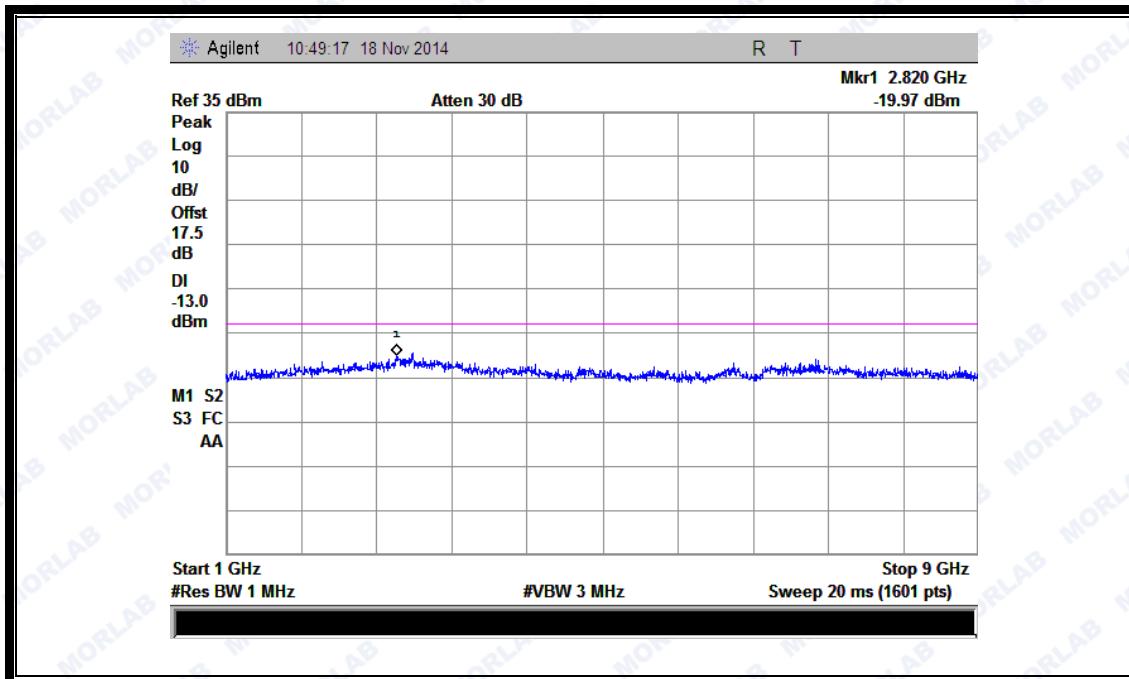
(Plot C1: EDGE 850MHz Channel = 128, 30MHz to 1GHz)



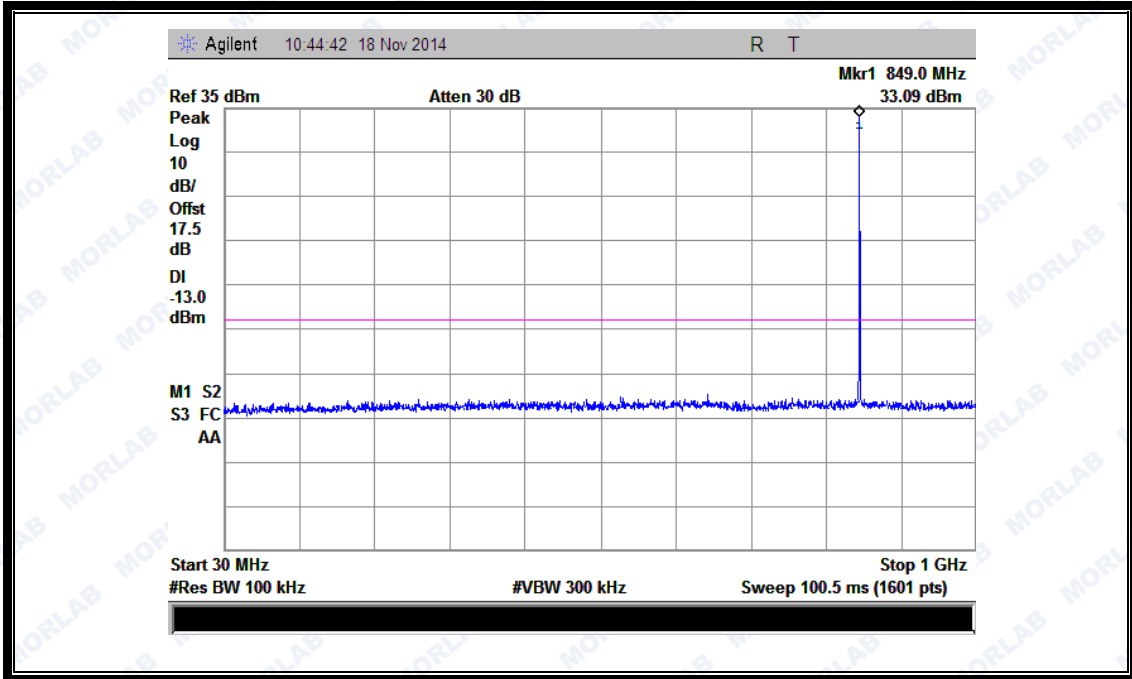
(Plot C1.1: EDGE 850MHz Channel = 128, 1GHz to 9GHz)



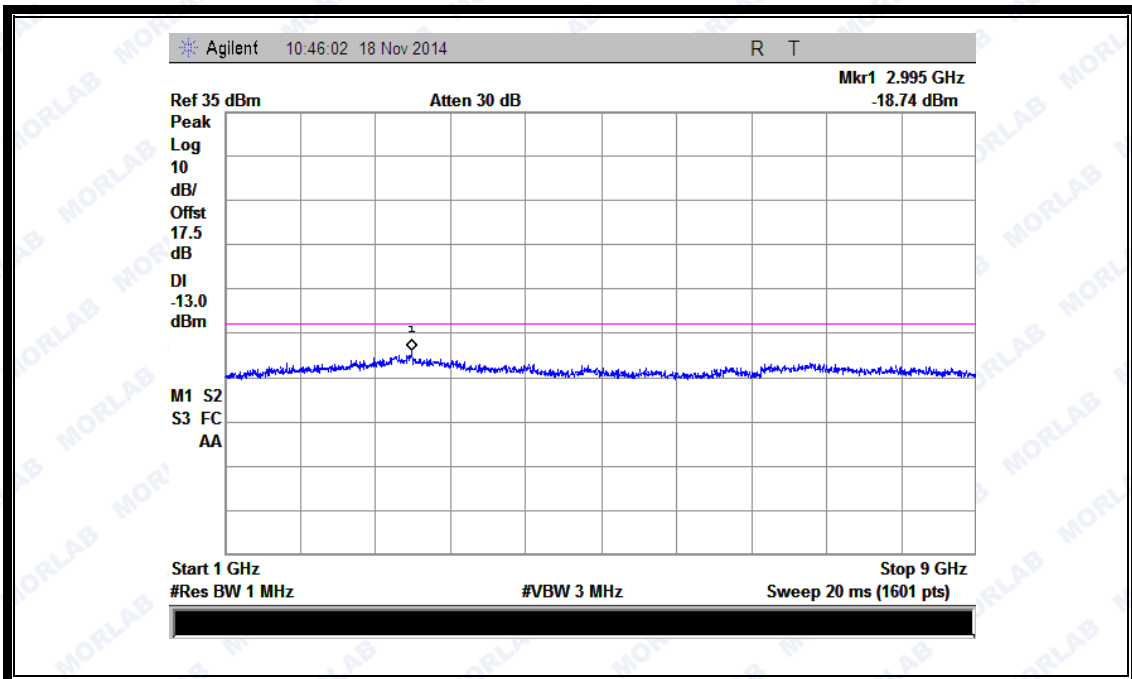
(Plot C2: EDGE 850MHz Channel = 190, 30MHz to 1GHz)



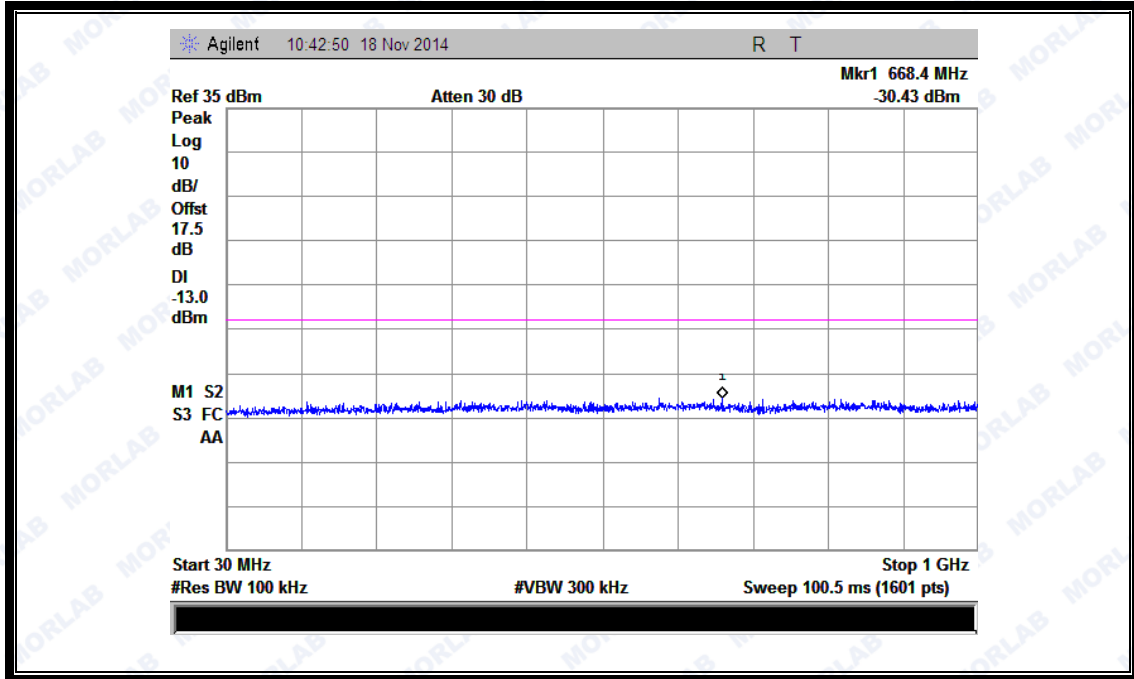
(Plot C2.1: EDGE 850MHz Channel = 190, 1GHz to 9GHz)



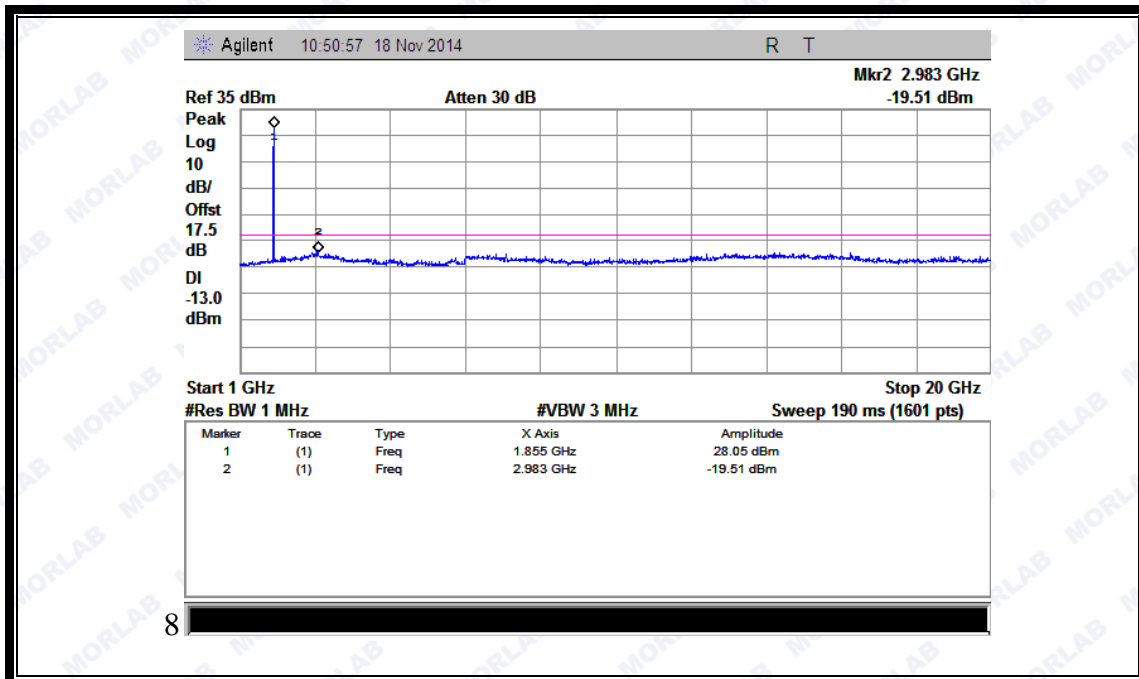
(Plot C3: EDGE 850MHz Channel = 251, 30MHz to 1GHz)



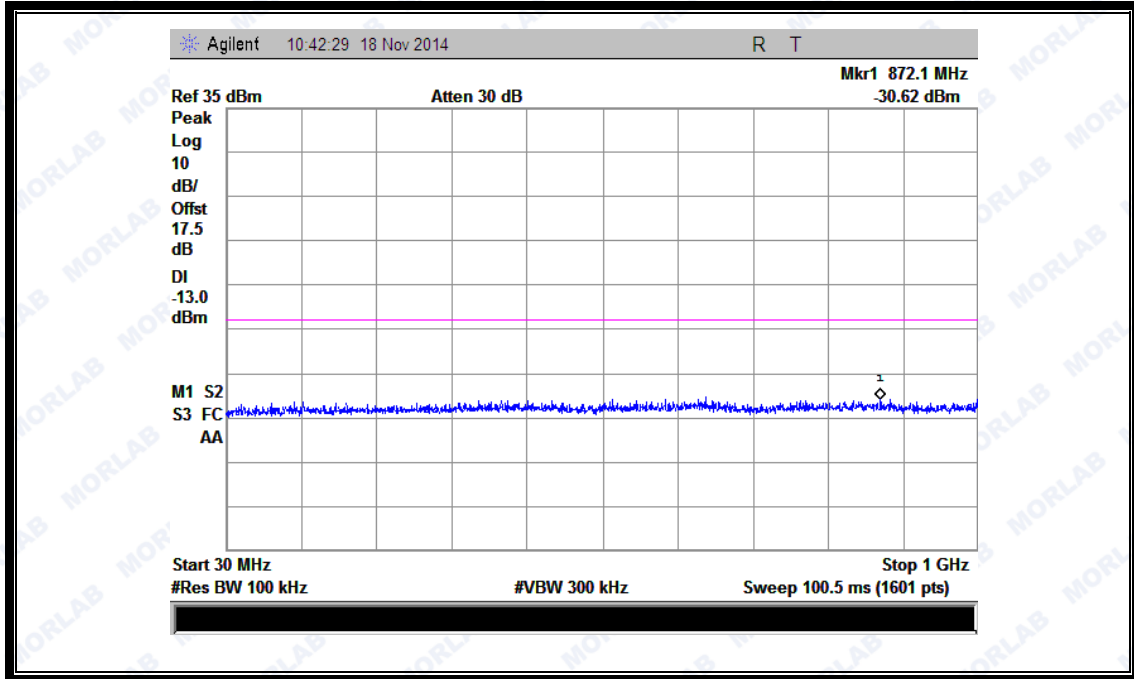
(Plot C3.1: EDGE 850MHz Channel = 251, 1GHz to 9GHz)



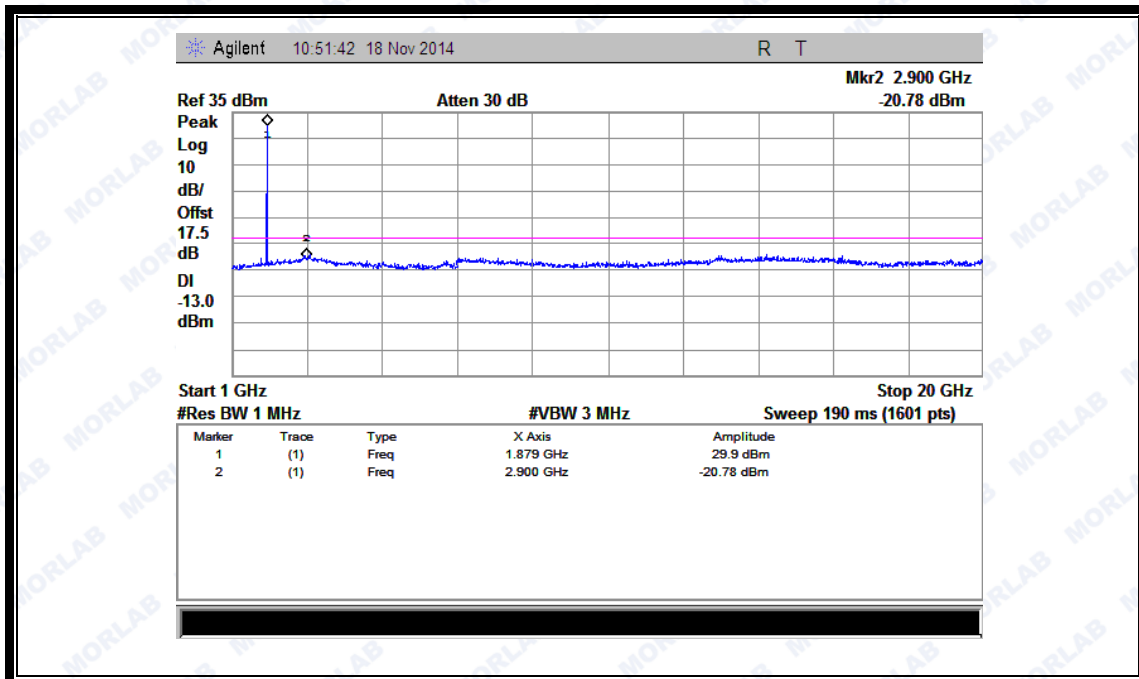
(Plot D1: EDGE 1900MHz Channel = 512, 30MHz to 1GHz)



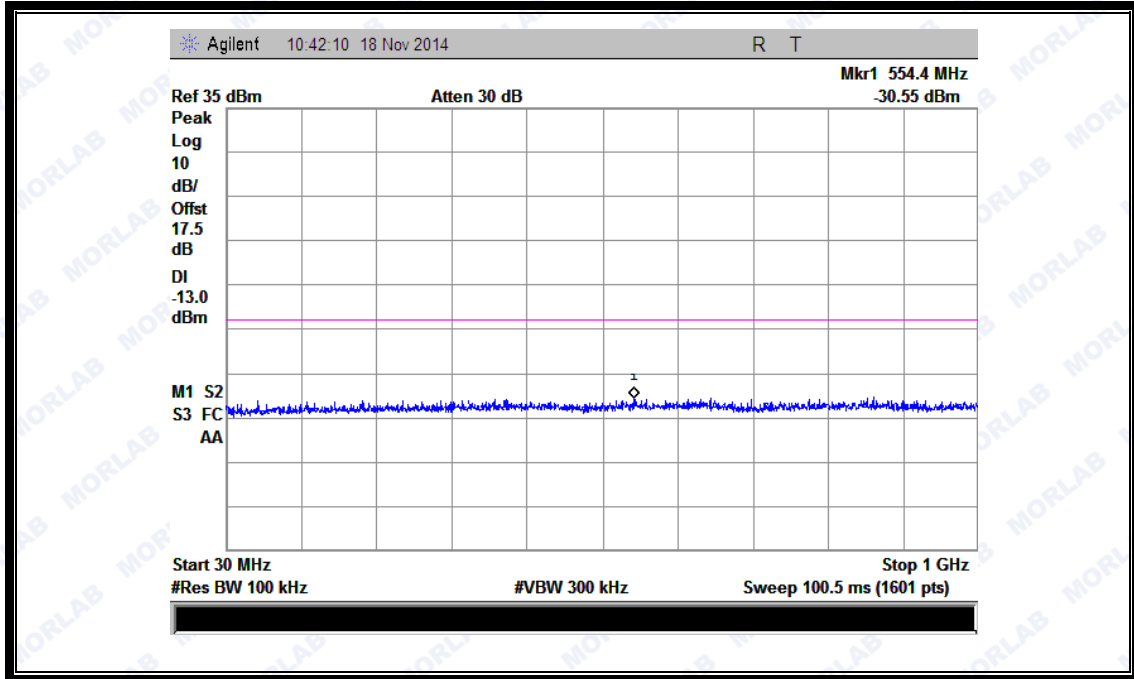
(Plot D1.1: EDGE 1900MHz Channel = 512, 1GHz to 20GHz)



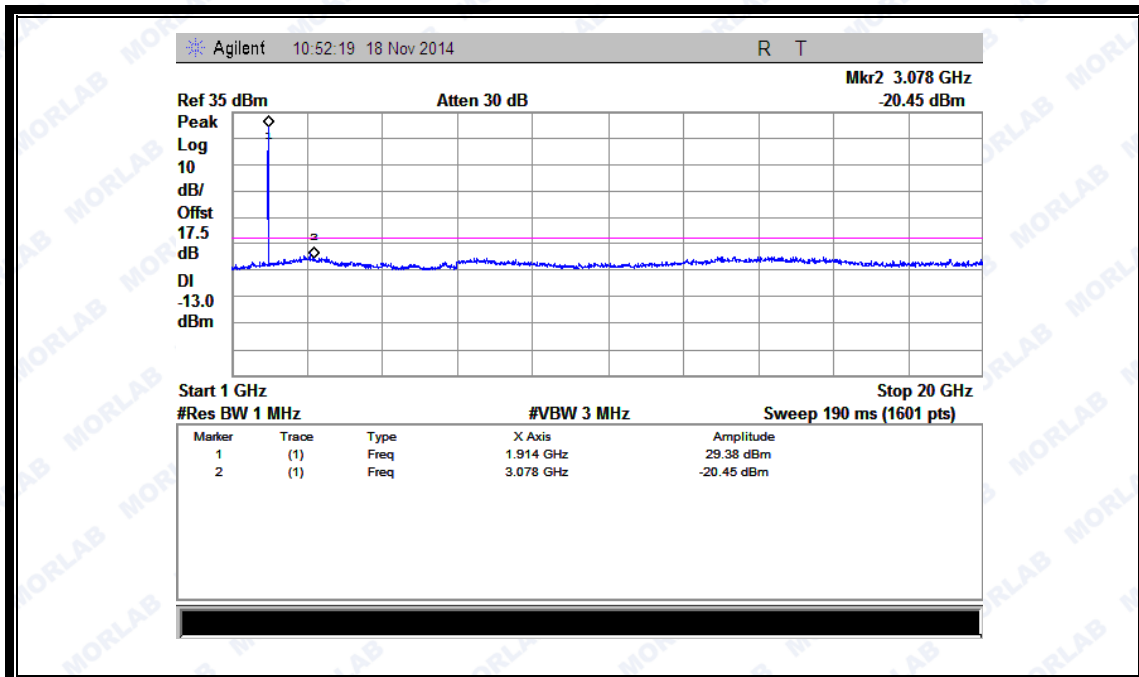
(Plot D2: EDGE 1900MHz Channel = 661, 30MHz to 1GHz)



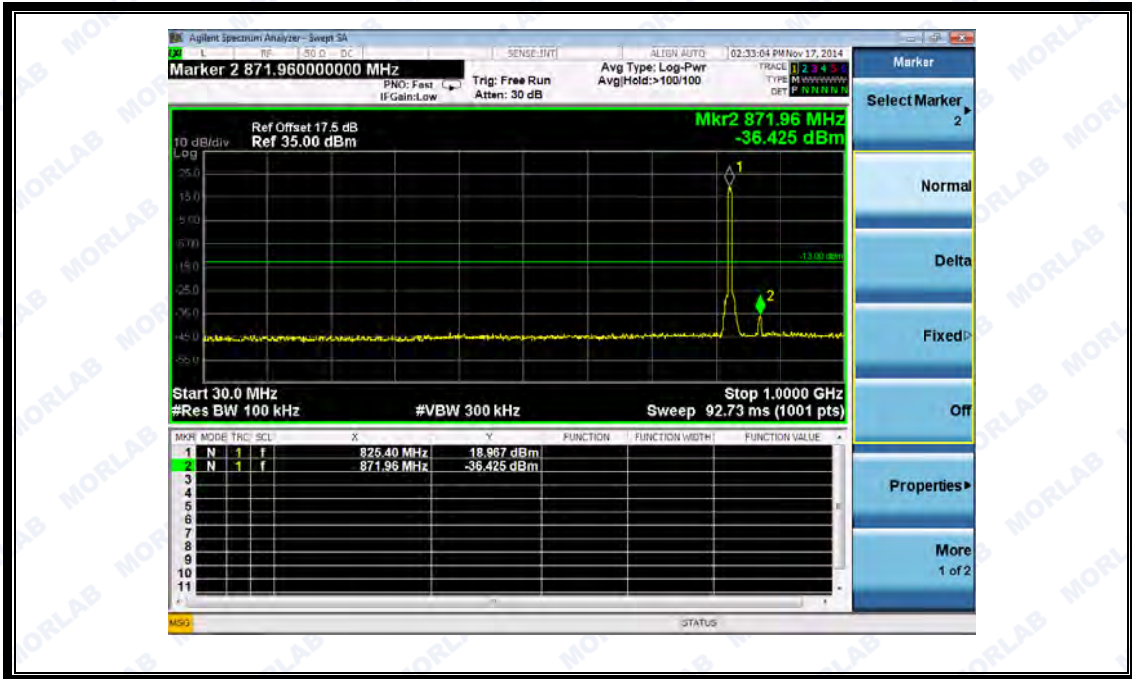
(Plot D2.1: EDGE 1900MHz Channel = 661, 1GHz to 20GHz)



(Plot D3: EDGE 1900MHz Channel = 810, 30MHz to 1GHz)



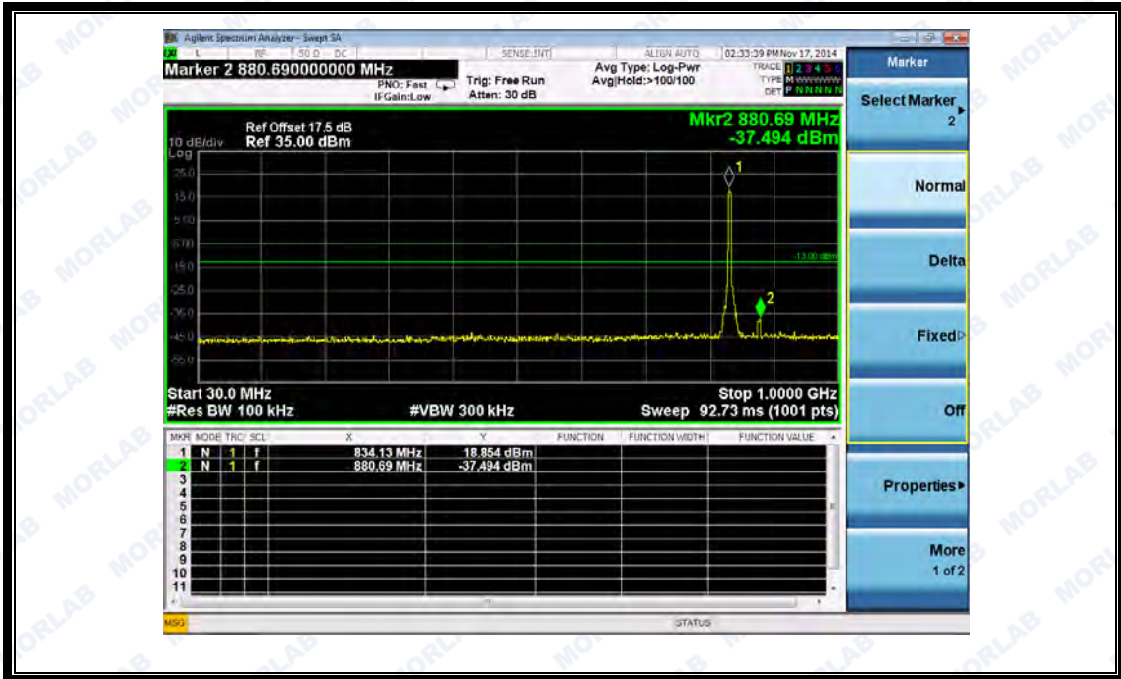
(Plot D3.1: EDGE 1900MHz Channel = 810, 1GHz to 20GHz)



(Plot E1: WCDMA850MHz Channel = 4132, 30MHz to 1GHz)



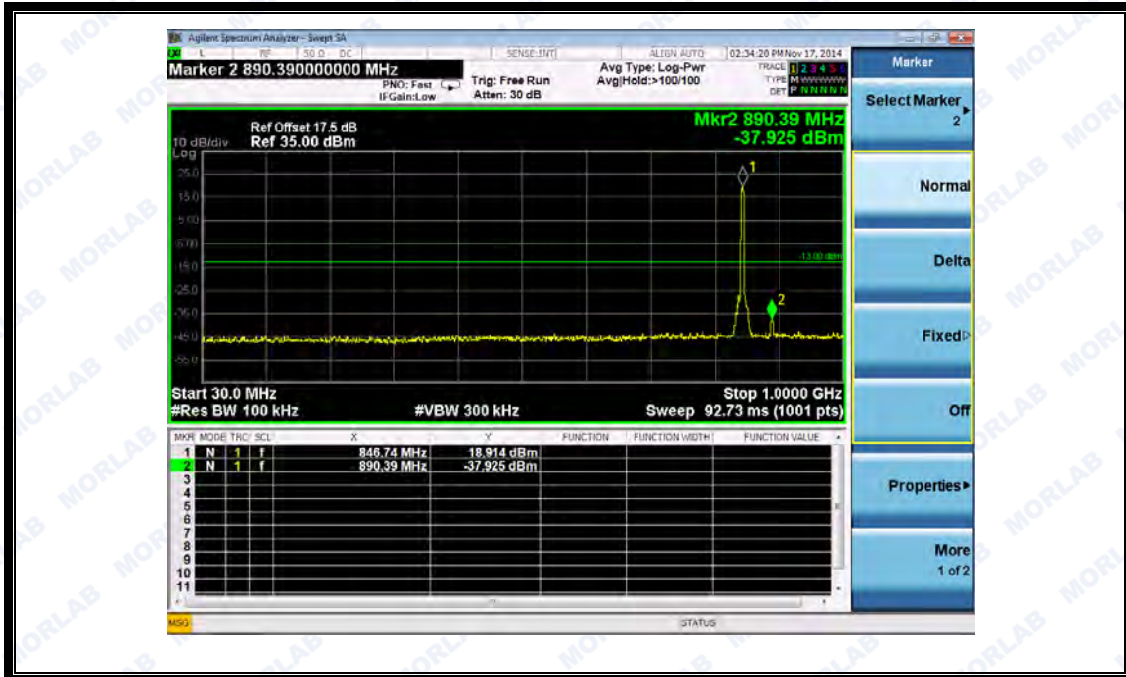
(Plot E1.1: WCDMA850MHz Channel = 4132, 1GHz to 9GHz)



(Plot E2: WCDMA850MHz Channel = 4175, 30MHz to 1GHz)



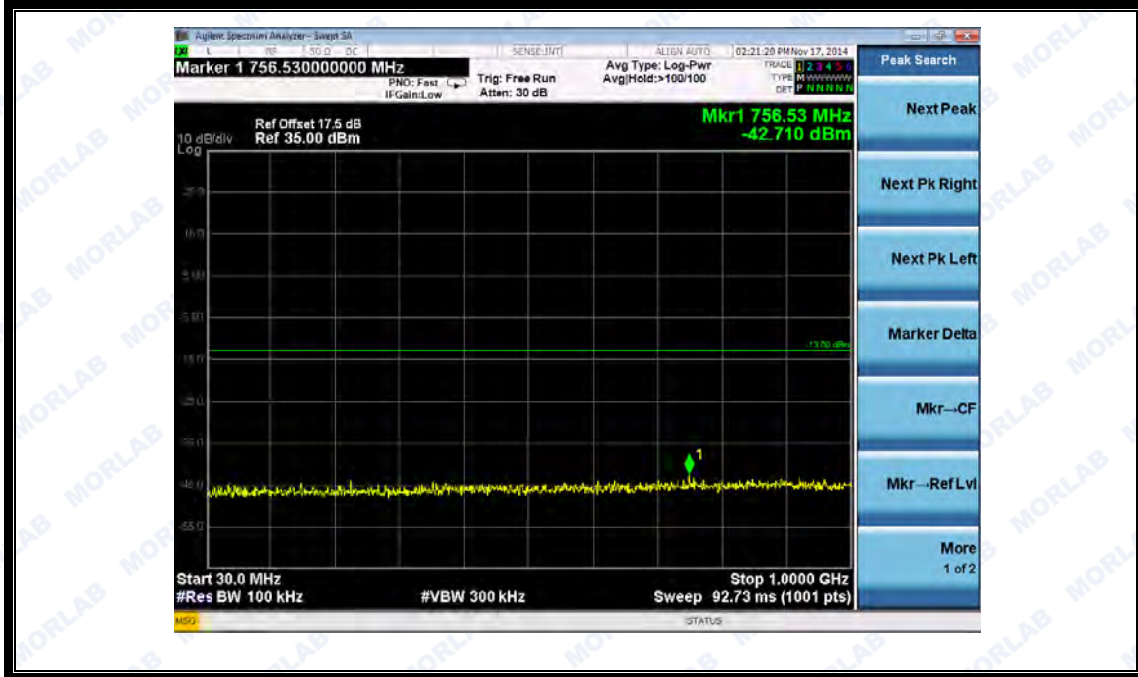
(Plot E2.1: WCDMA850MHz Channel = 4175, 1GHz to 9GHz)



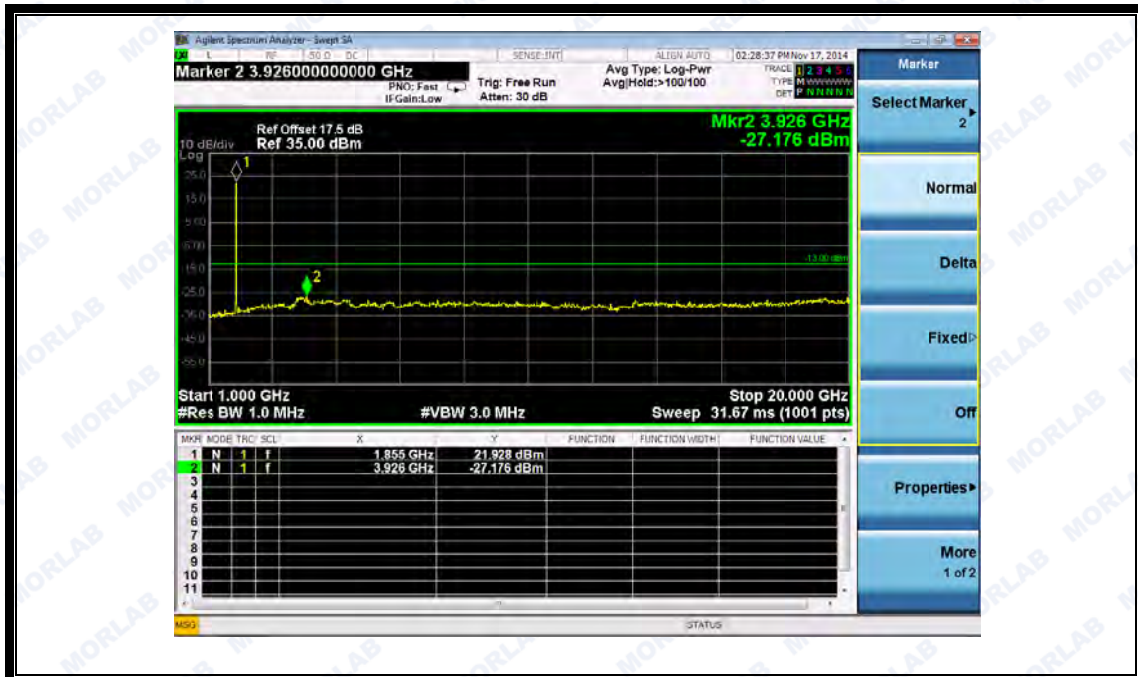
(Plot E3: WCDMA850MHz Channel = 4233, 30MHz to 1GHz)



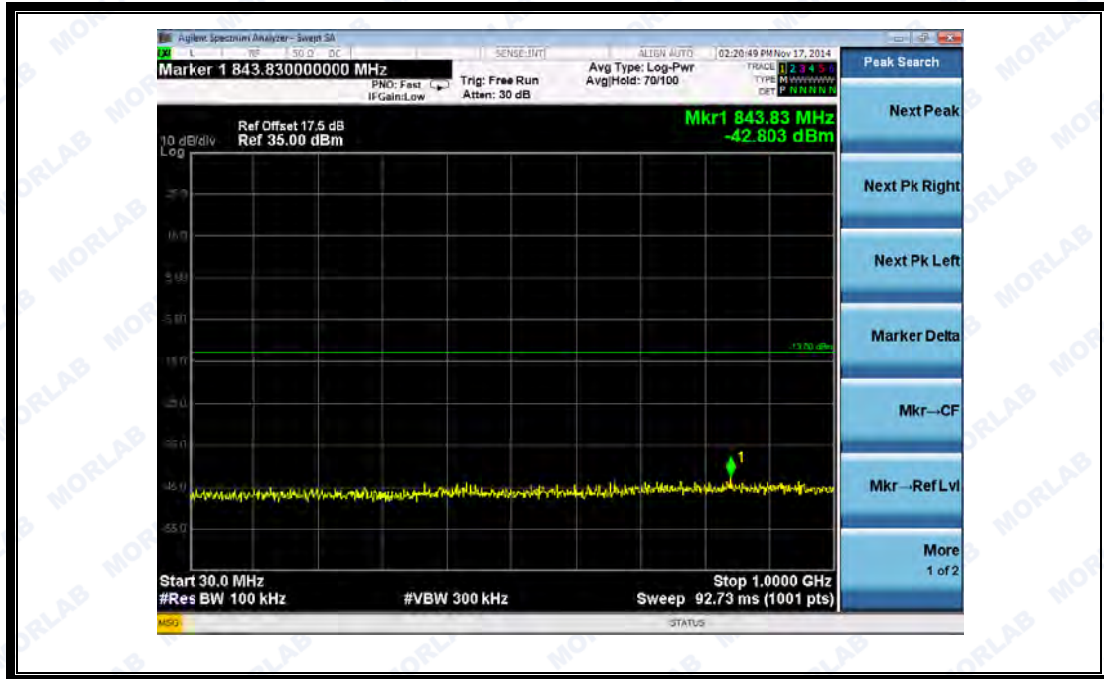
(Plot E3.1: WCDMA850MHz Channel = 4233, 1GHz to 9GHz)



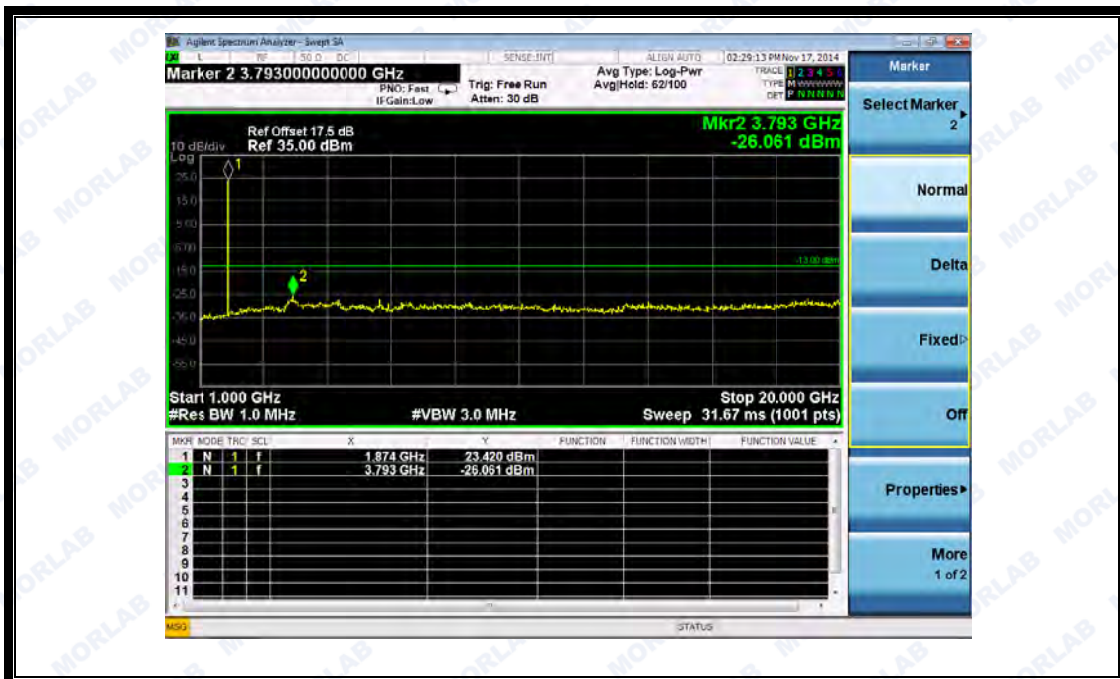
(Plot F1:WCDMA1900MHz Channel = 9262, 30MHz to 1GHz)



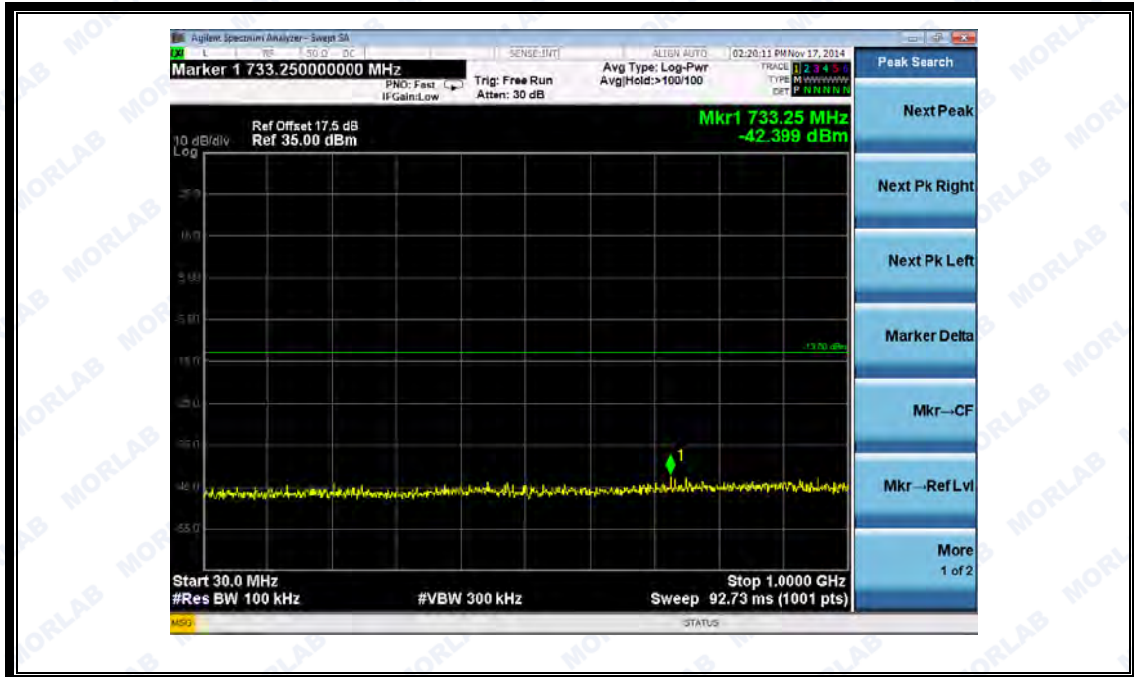
(Plot F1.1: WCDMA1900MHz Channel = 9262, 1GHz to 20GHz)



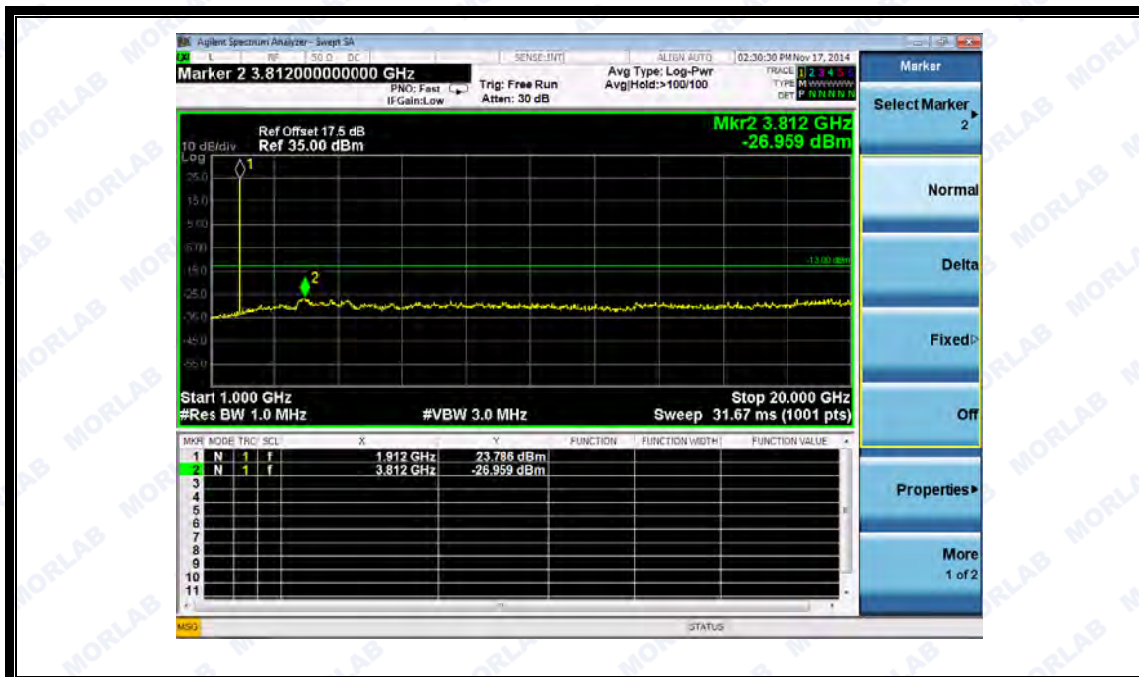
(Plot F2:WCDMA1900MHz Channel = 9400, 30MHz to 1GHz)



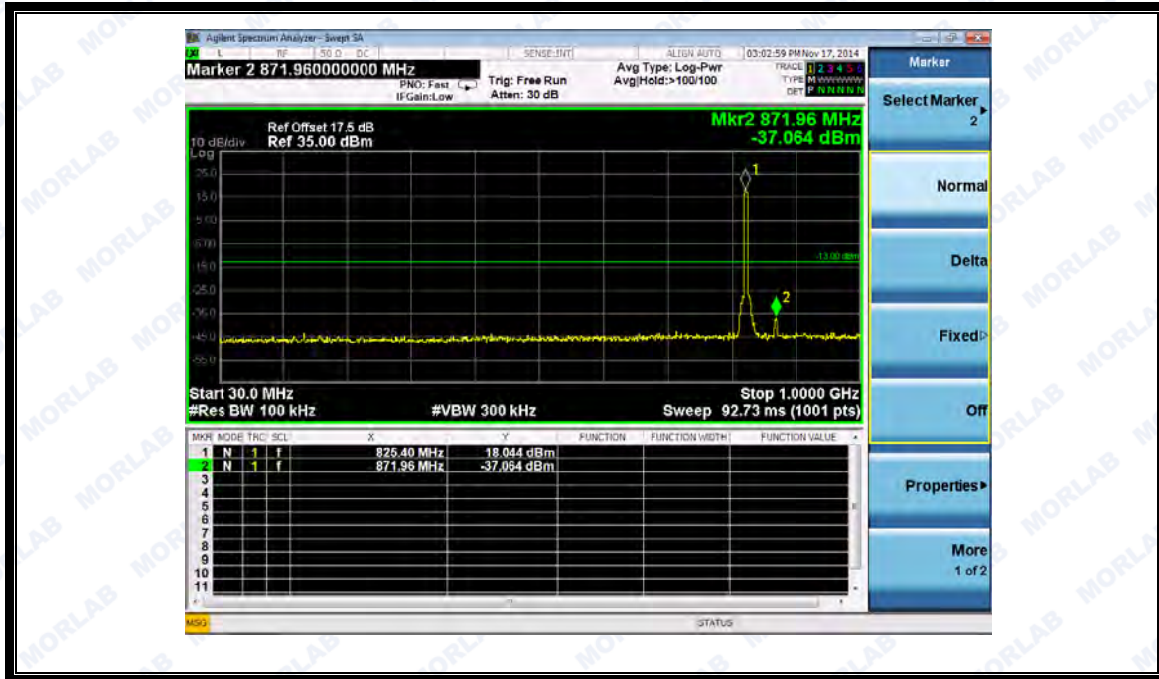
(Plot F2.1: WCDMA1900MHz Channel = 9400, 1GHz to 20GHz)



(Plot F3:WCDMA1900MHz Channel = 9538, 30MHz to 1GHz)



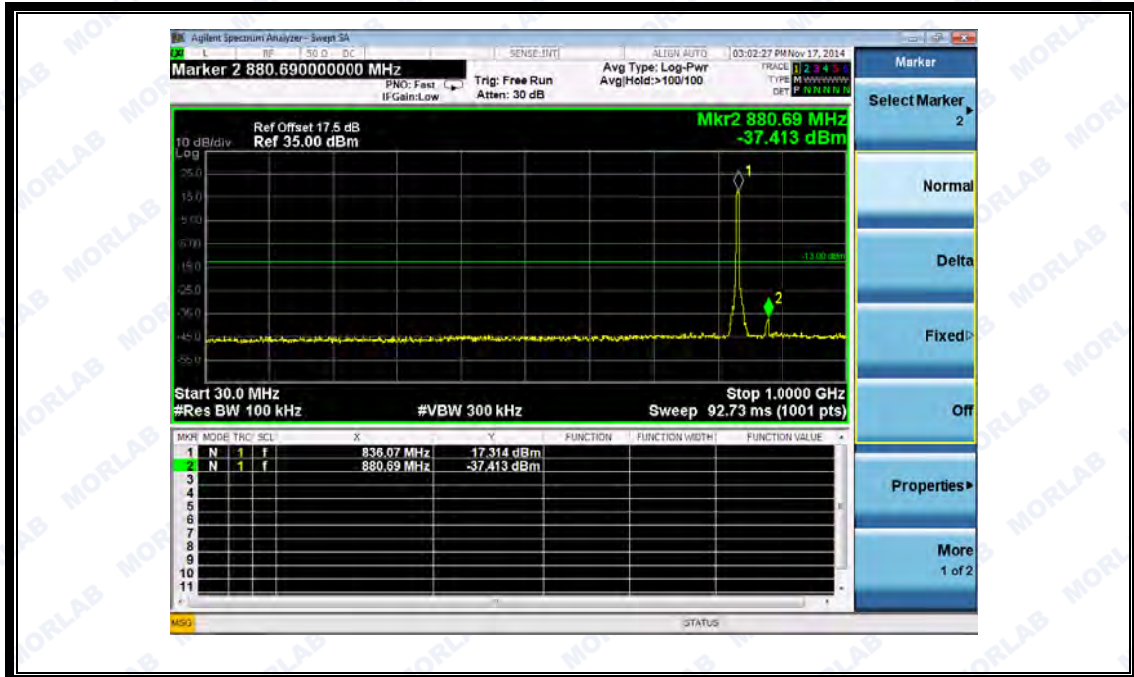
(Plot F3.1: WCDMA1900MHz Channel = 9538 1GHz to 20GHz)



(Plot G1: HSDPA 850MHz Channel = 4132, 30MHz to 1GHz)



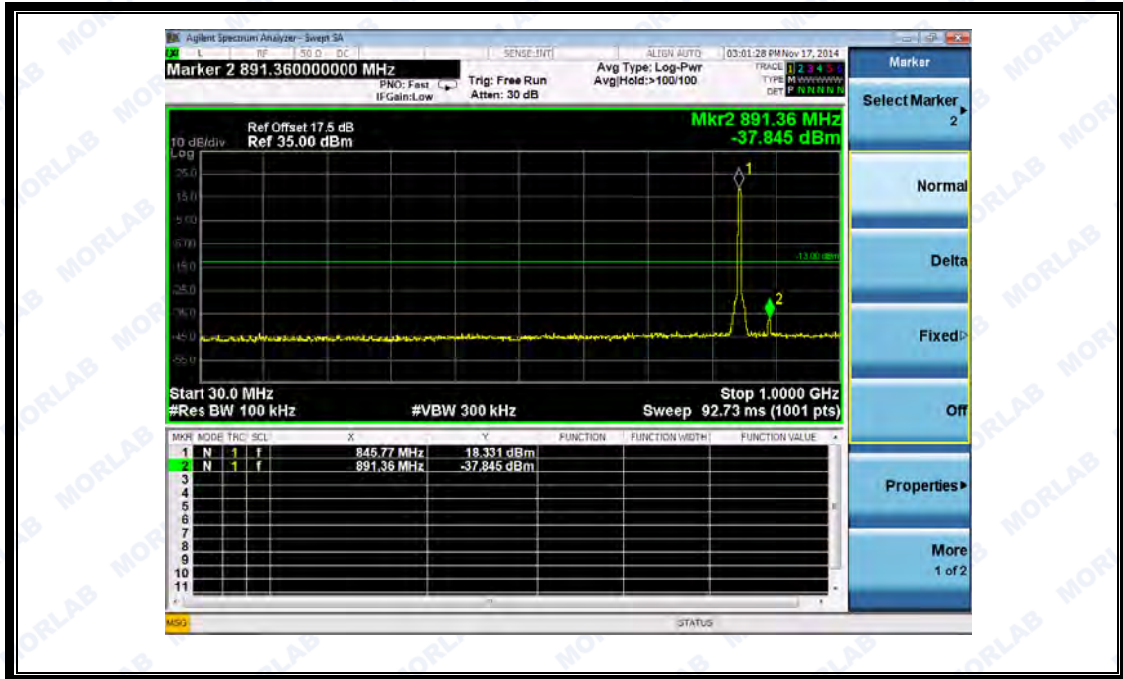
(Plot G1.1: HSDPA 850MHz Channel = 4132, 1GHz to 9GHz)



(Plot G2: HSDPA 850MHz Channel = 4175, 30MHz to 1GHz)



(Plot G2.1: HSDPA 850MHz Channel = 4175, 1GHz to 9GHz)



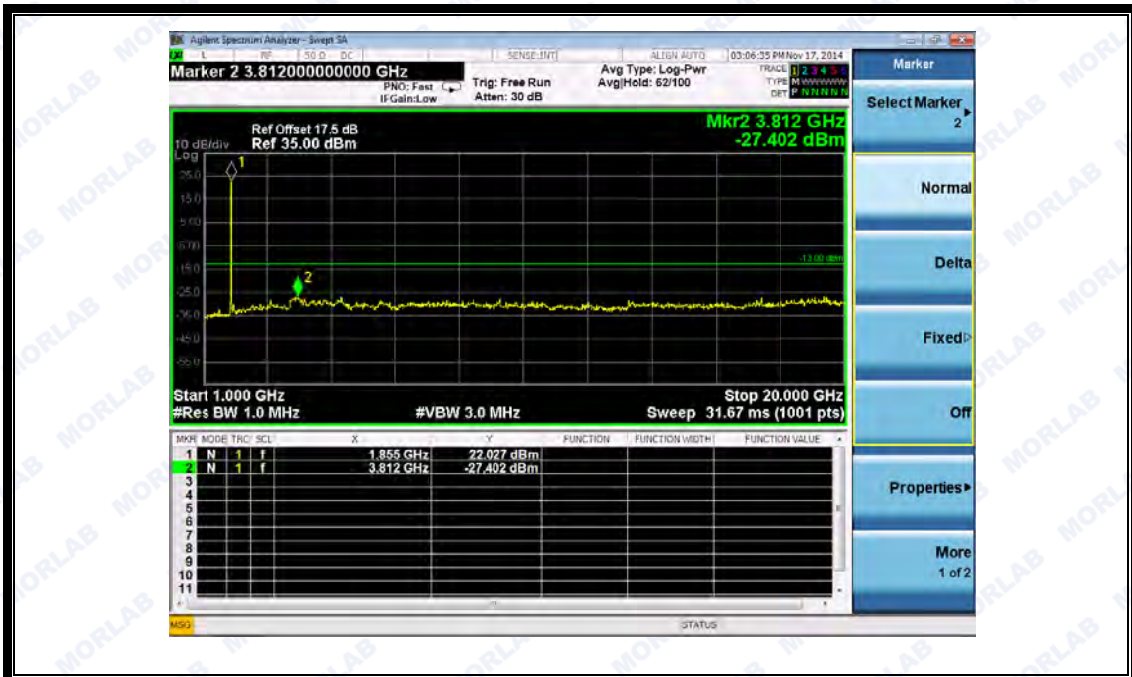
(Plot G3: HSDPA850MHz Channel = 4233, 30MHz to 1GHz)



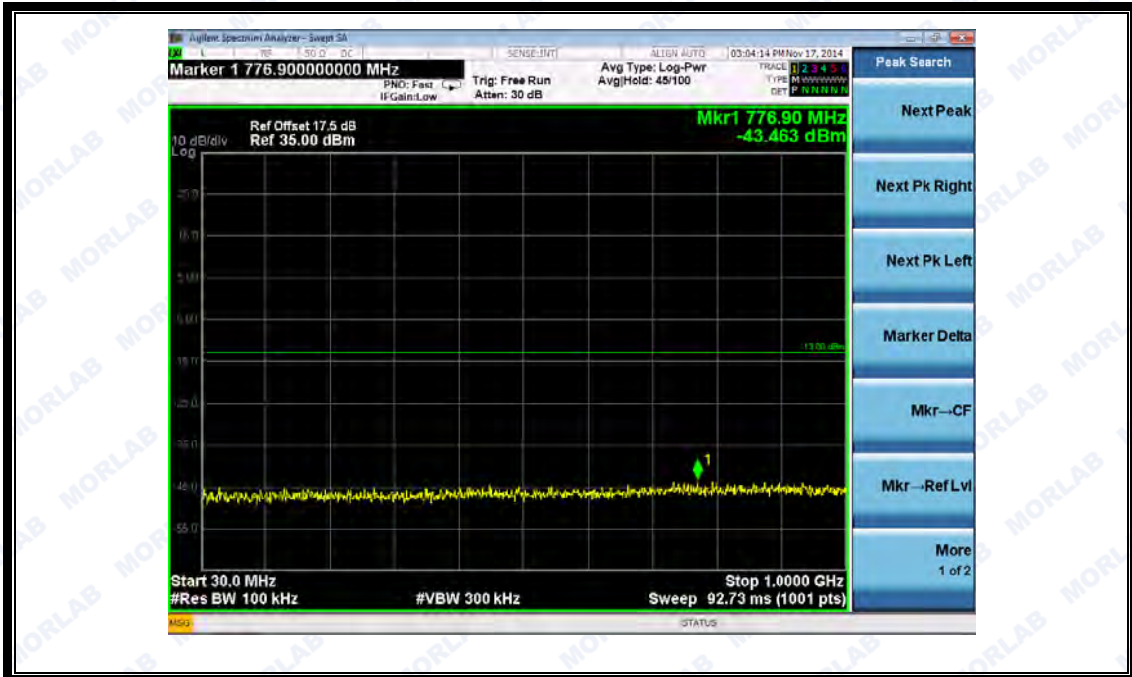
(Plot G3.1: HSDPA850MHz Channel = 4233, 1GHz to 9GHz)



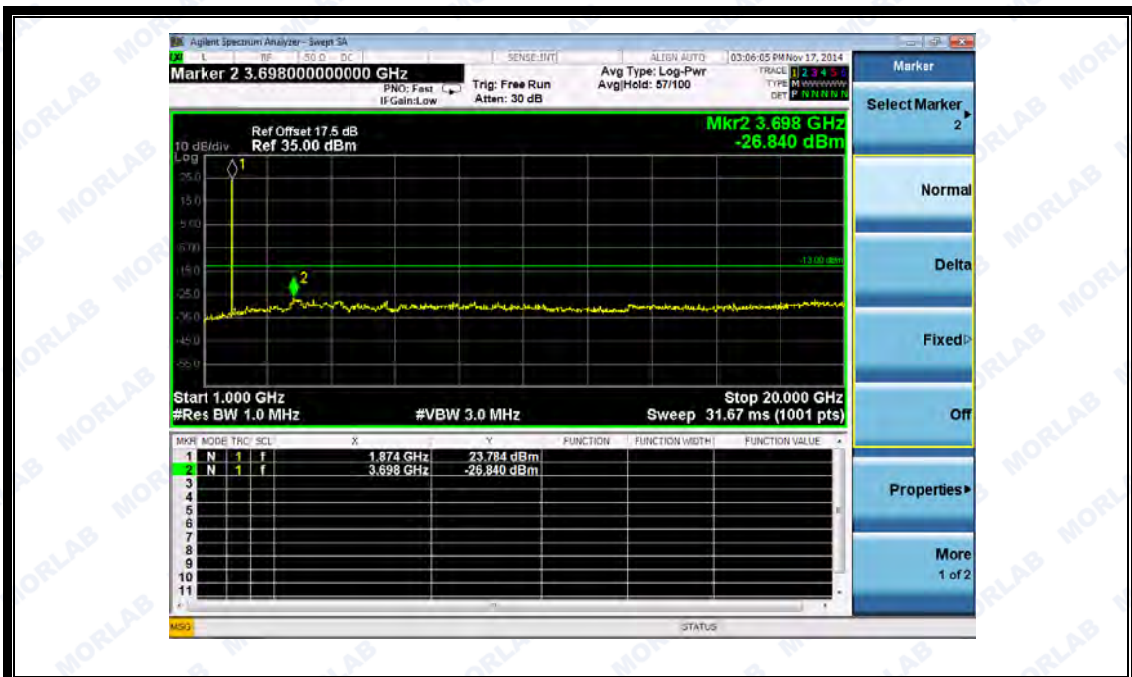
(Plot H1: HSDPA1900MHz Channel = 9262, 30MHz to 1GHz)



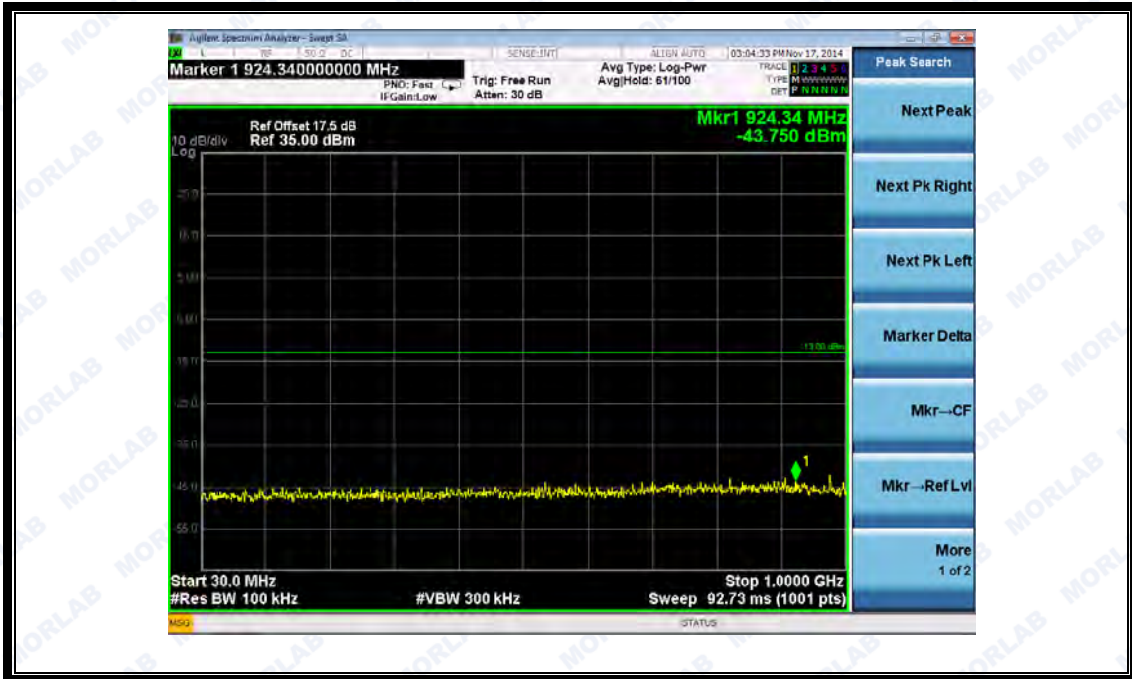
(Plot H1.1: HSDPA1900MHz Channel = 9262, 1GHz to 20GHz)



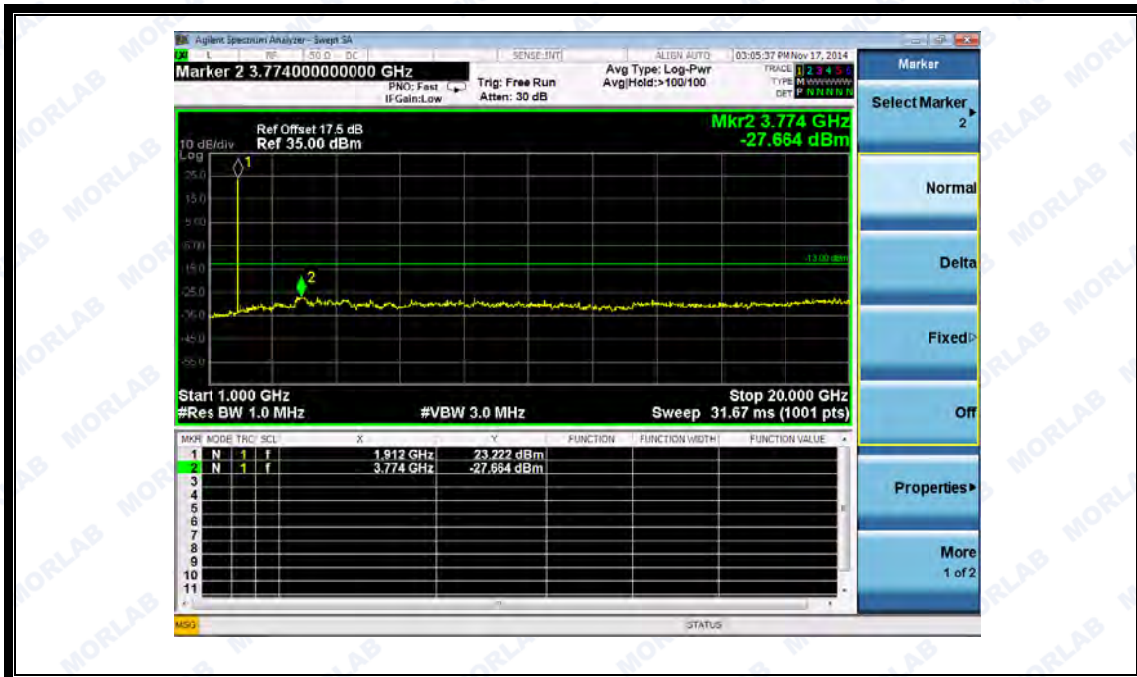
(Plot H2: HSDPA1900MHz Channel = 9400, 30MHz to 1GHz)



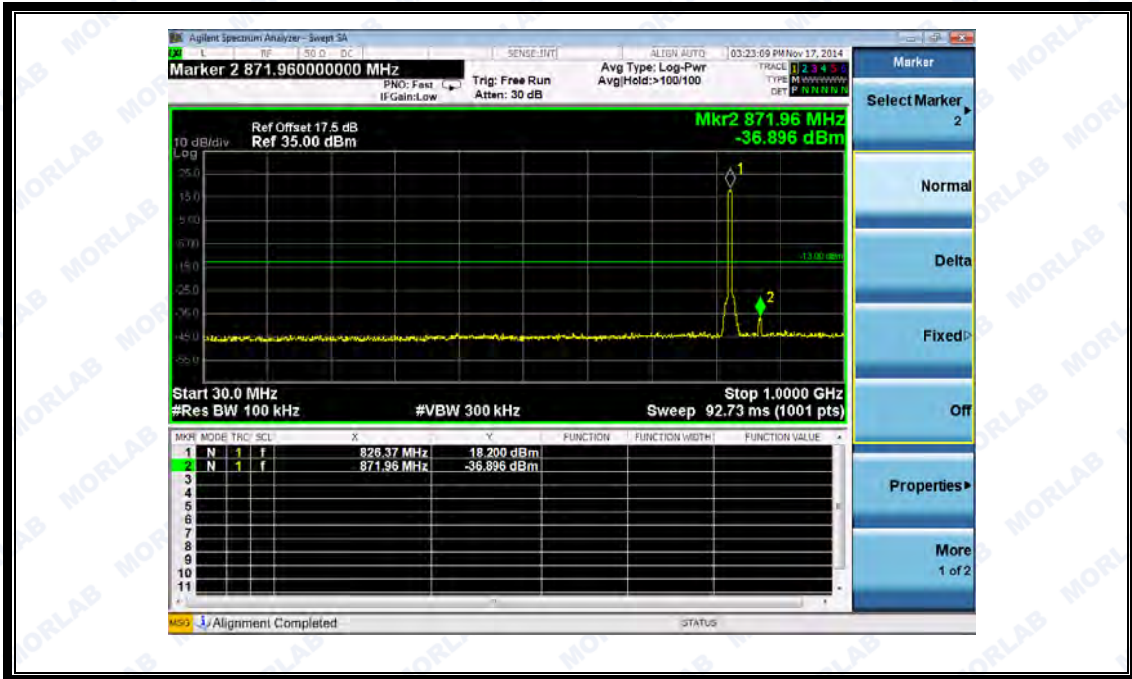
(Plot H2.1: HSDPA1900MHz Channel = 9400, 1GHz to 20GHz)



(Plot H3: HSDPA1900MHz Channel = 9538, 30MHz to 1GHz)



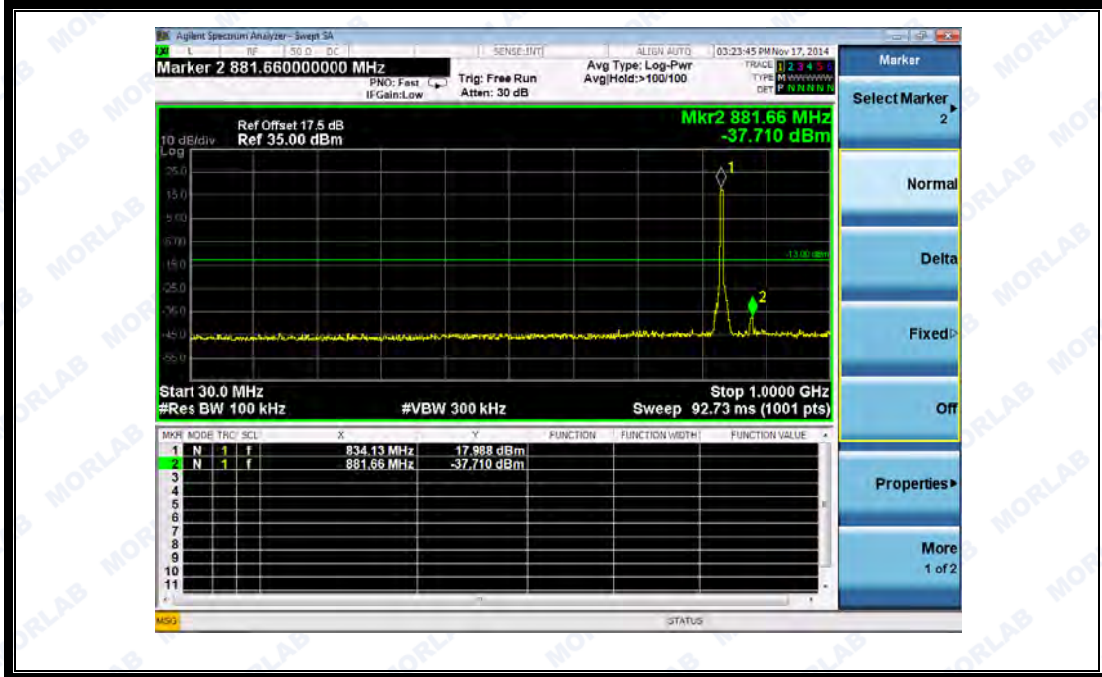
(Plot H3.1: HSDPA1900MHz Channel = 9538 1GHz to 20GHz)



(Plot I 1: HSUPA 850MHz Channel = 4132, 30MHz to 1GHz)



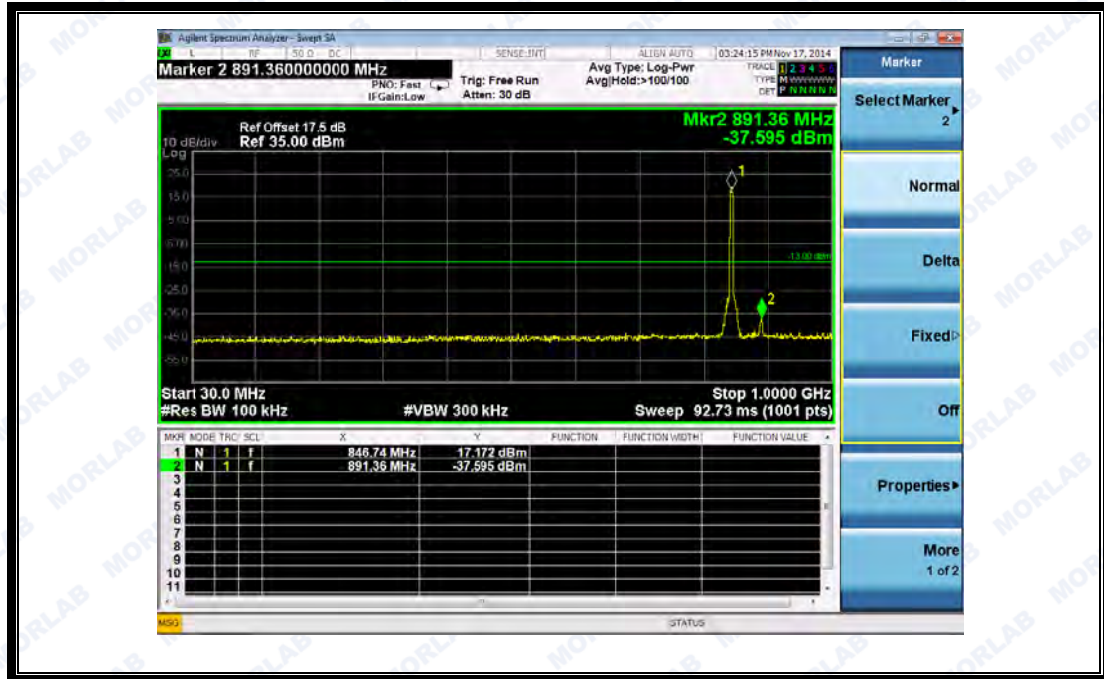
(Plot I1.1: HSUPA 850MHz Channel = 4132, 1GHz to 9GHz)



(Plot I 2: HSUPA 850MHz Channel = 4175, 30MHz to 1GHz)



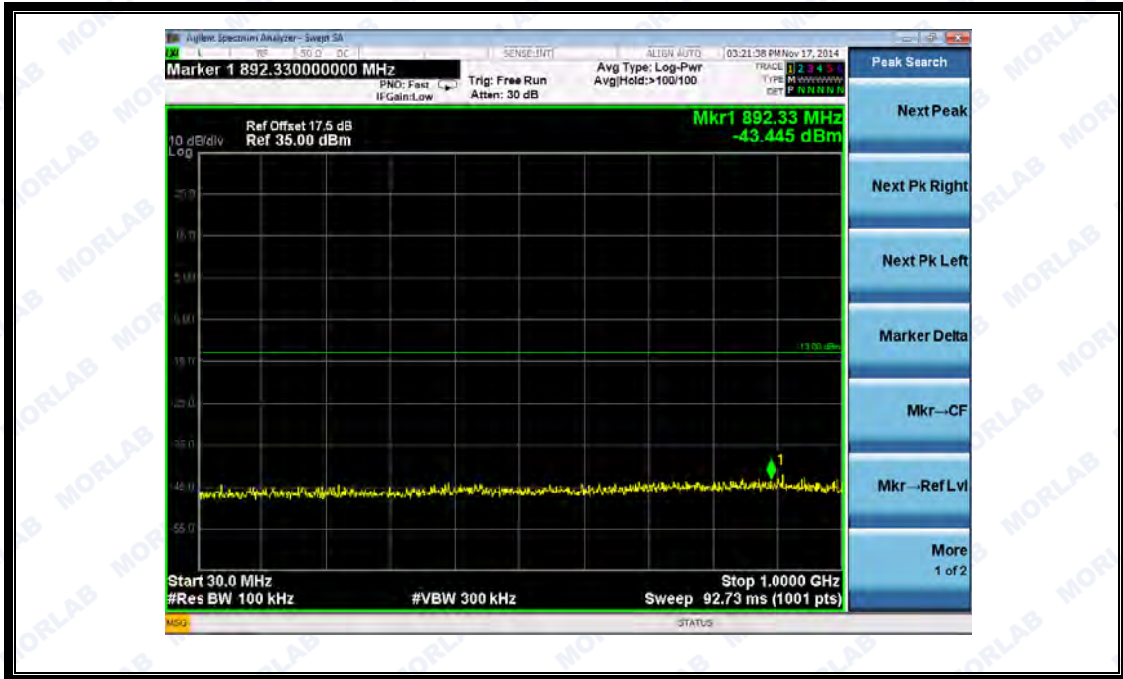
(Plot I2.1: HSUPA 850MHz Channel = 4175, 1GHz to 9GHz)



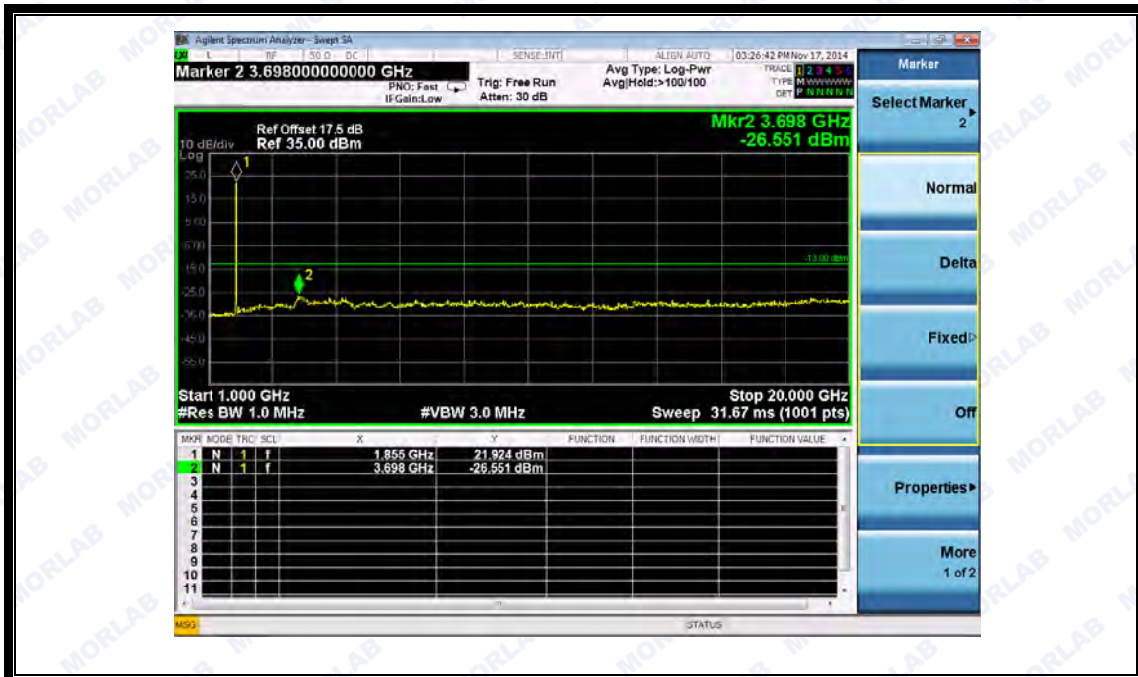
(Plot I 3: HSUPA850MHz Channel = 4233, 30MHz to 1GHz)



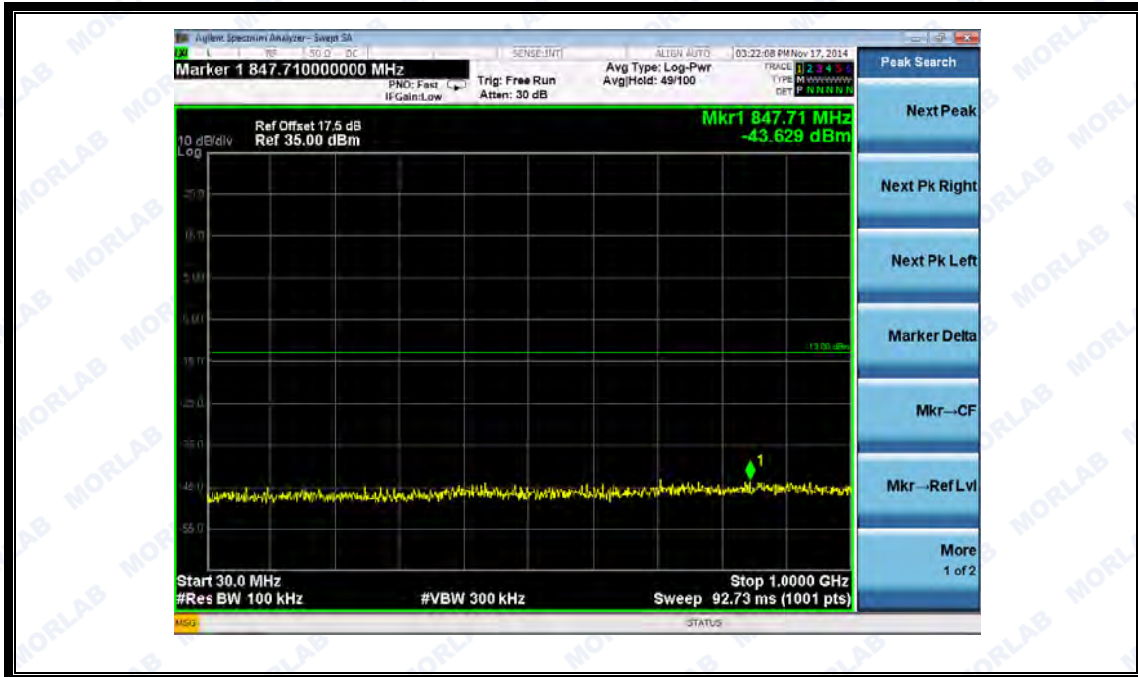
(Plot I3.1: HSUPA850MHz Channel = 4233, 1GHz to 9GHz)



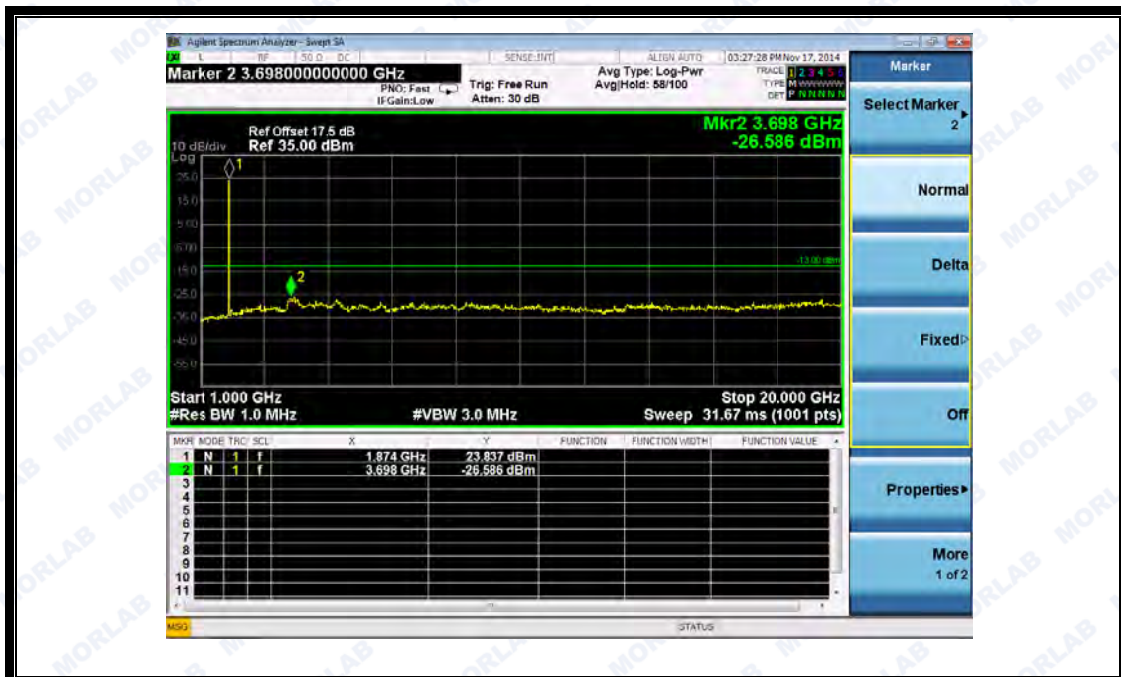
(Plot J 1: HSUPA1900MHz Channel = 9262, 30MHz to 1GHz)



(Plot J1.1: HSUPA1900MHz Channel = 9262, 1GHz to 20GHz)



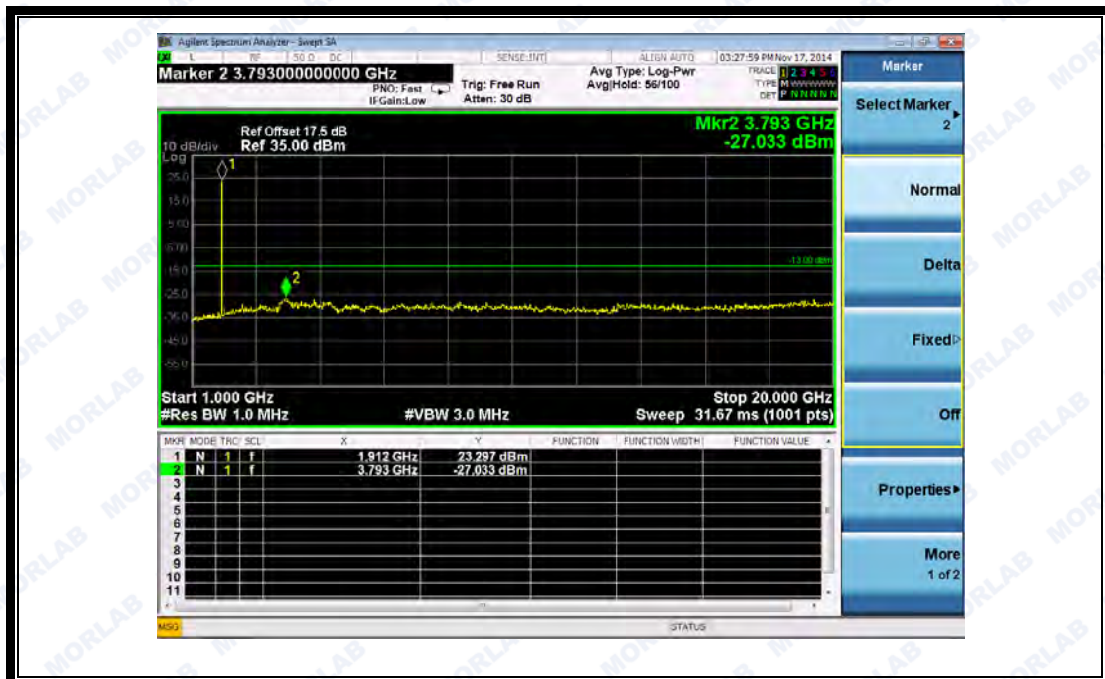
(Plot J 2: HSUPA1900MHz Channel = 9400, 30MHz to 1GHz)



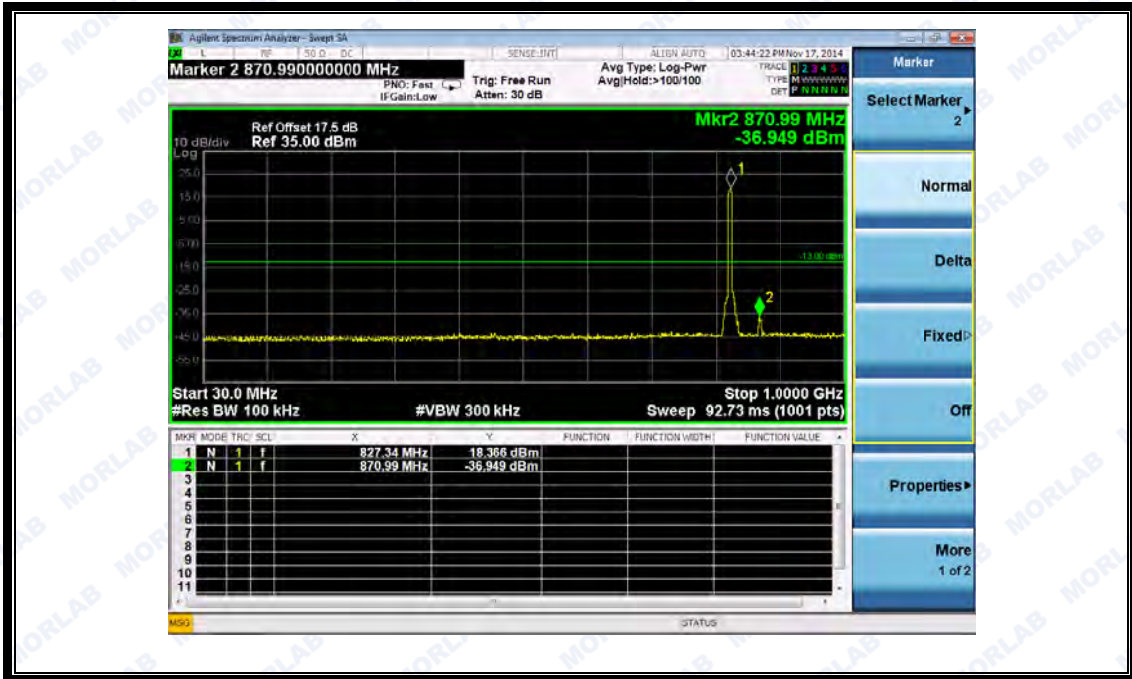
(Plot J2.1: HSUPA1900MHz Channel = 9400, 1GHz to 20GHz)



(Plot J 3: HSUPA1900MHz Channel = 9538, 30MHz to 1GHz)



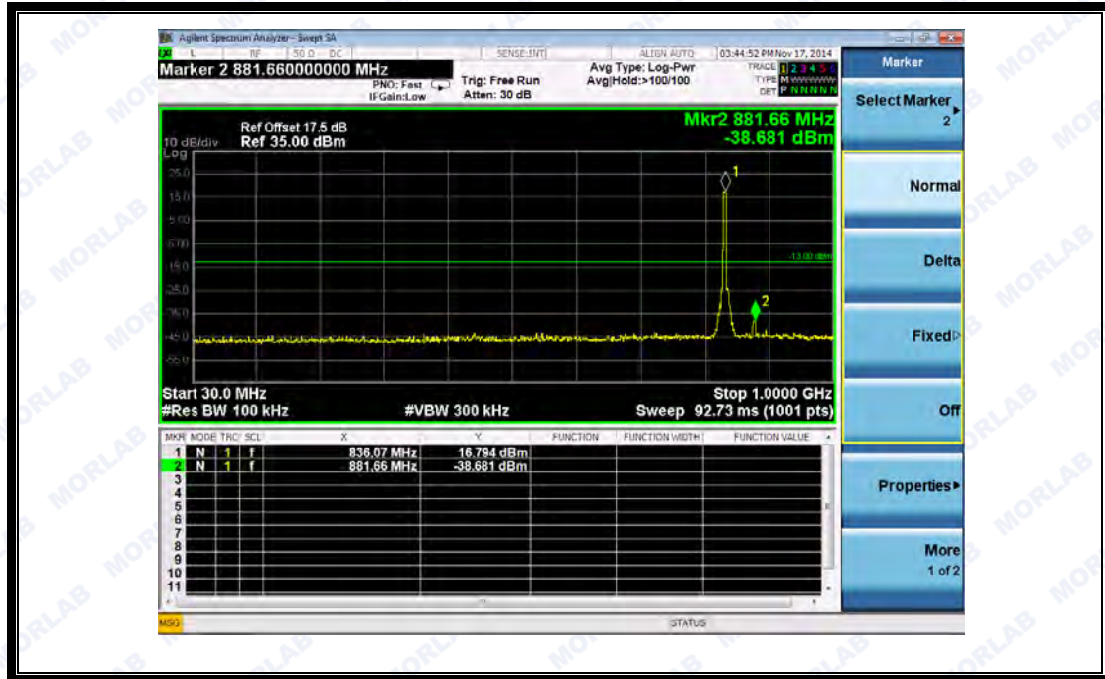
(Plot J3.1: HSUPA1900MHz Channel = 9538 1GHz to 20GHz)



(Plot K 1: HSPA+ 850MHz Channel = 4132, 30MHz to 1GHz)



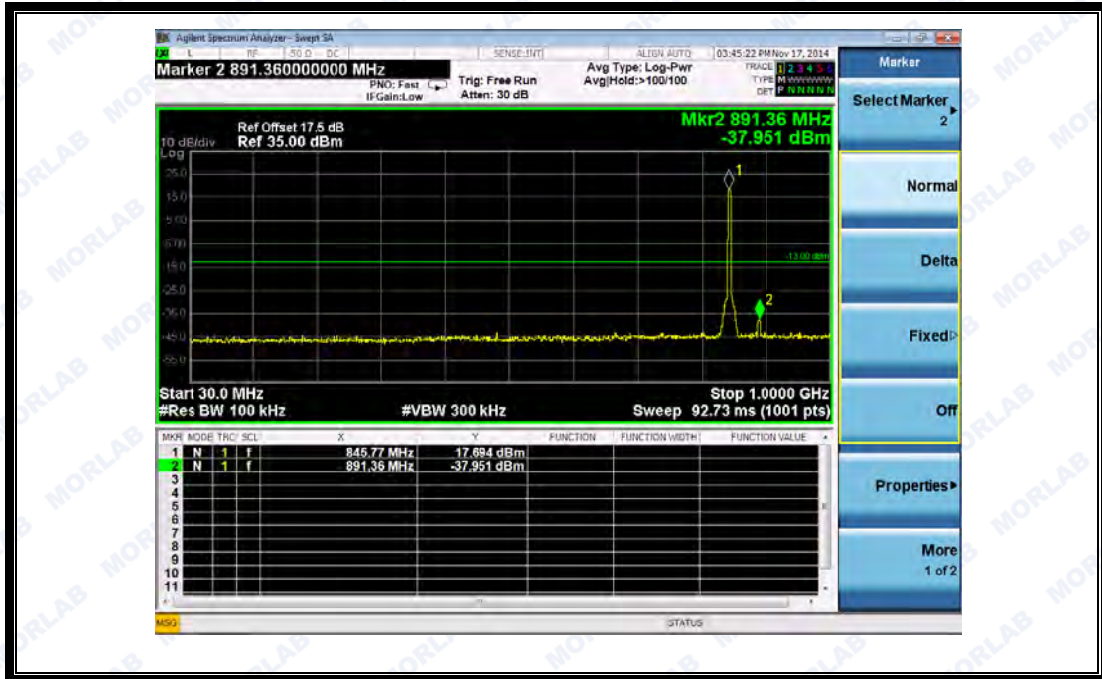
(Plot K1.1: HSPA+ 850MHz Channel = 4132, 1GHz to 9GHz)



(Plot K 2: HSPA+ 850MHz Channel = 4175, 30MHz to 1GHz)



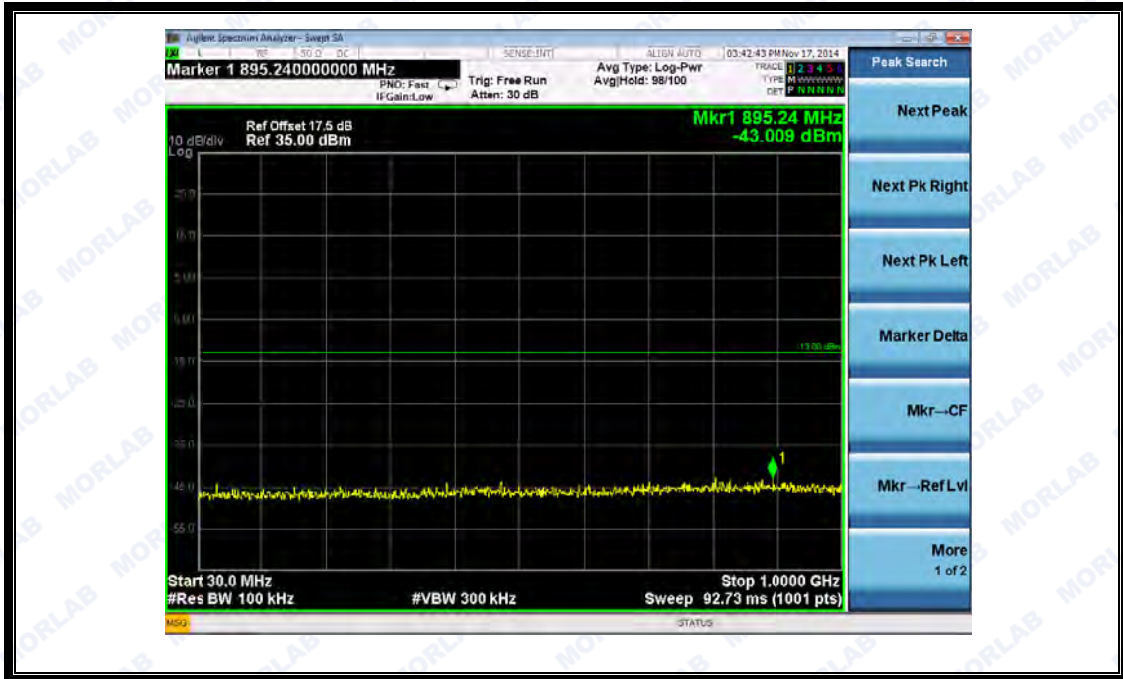
(Plot K2.1: HSPA+ 850MHz Channel = 4175, 1GHz to 9GHz)



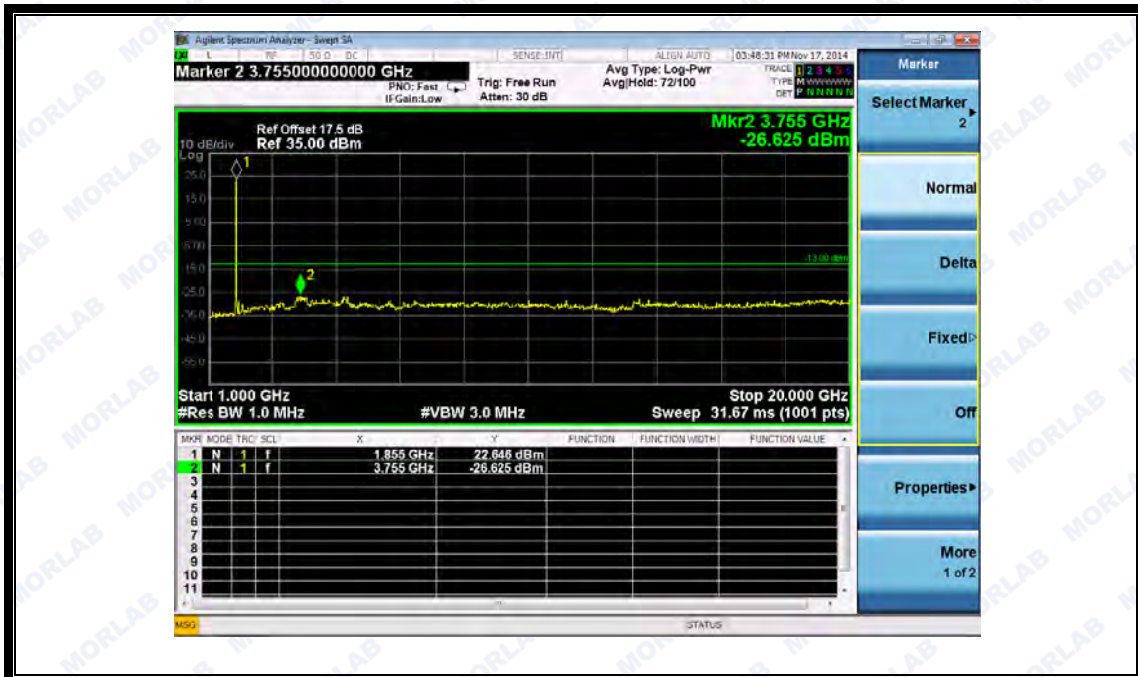
(Plot K 3: HSPA+ 850MHz Channel = 4233, 30MHz to 1GHz)



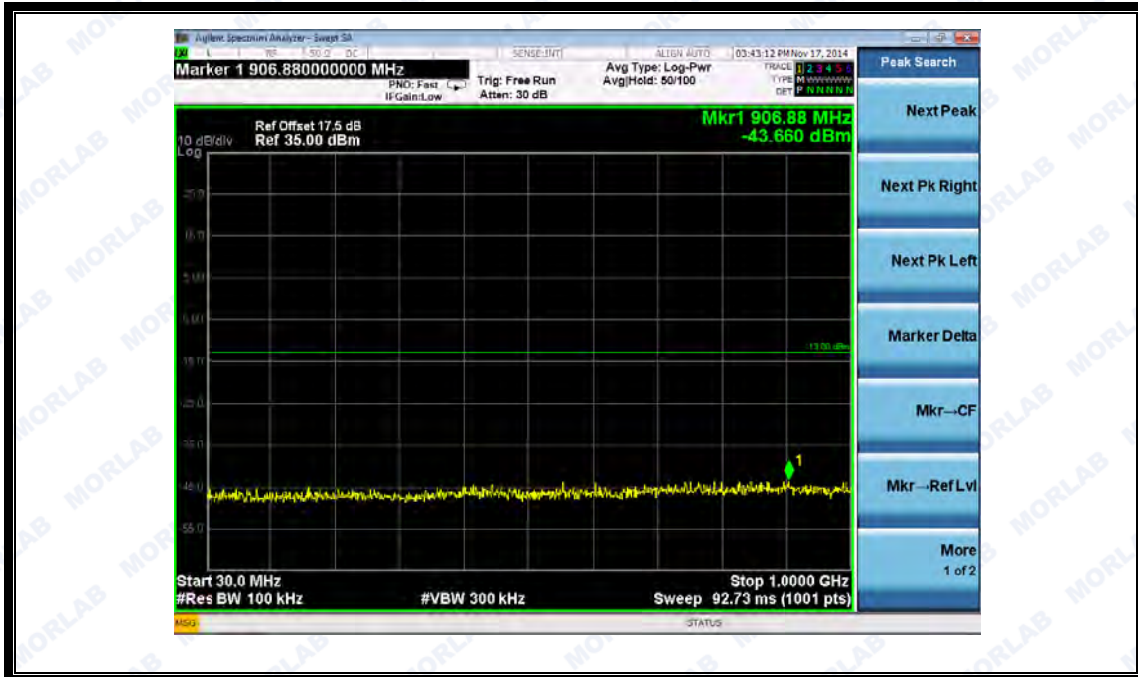
(Plot K3.1: HSPA+ 850MHz Channel = 4233, 1GHz to 9GHz)



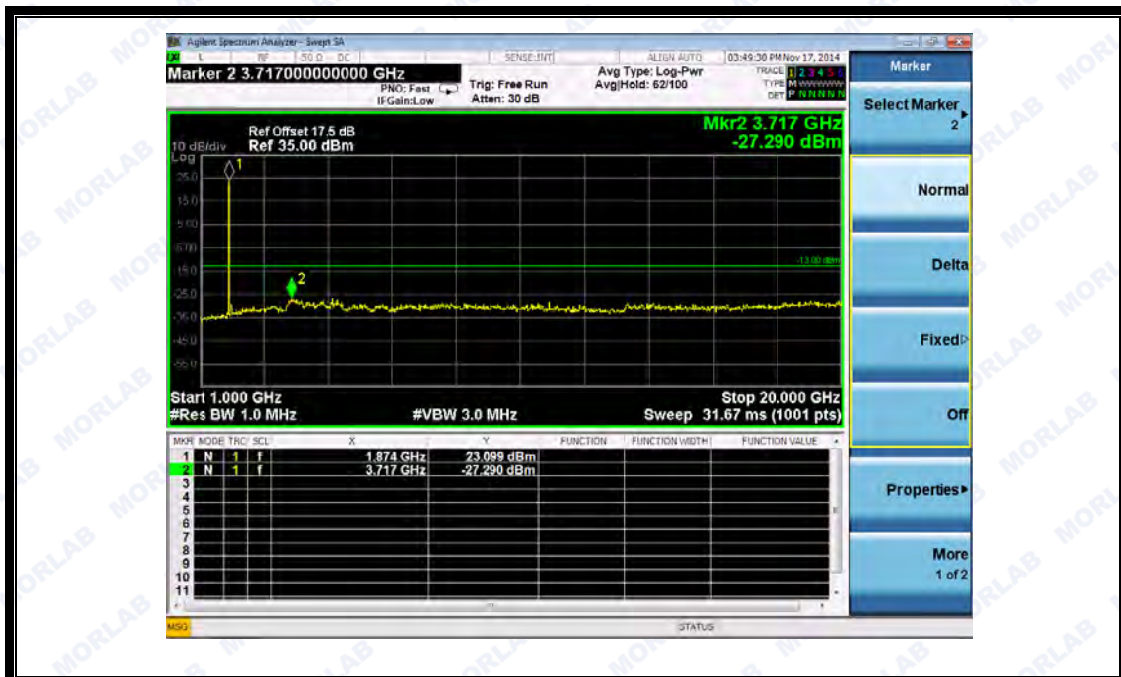
(Plot K 1: HSPA+ 1900MHz Channel = 9262, 30MHz to 1GHz)



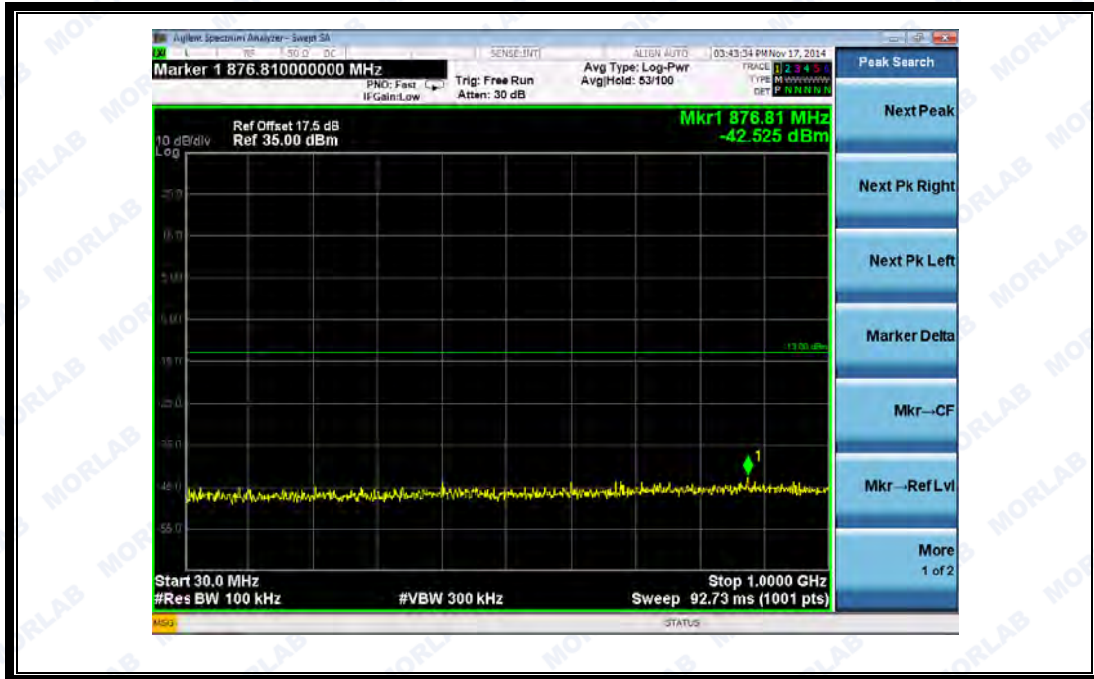
(Plot K1.1: HSPA+ 1900MHz Channel = 9262, 1GHz to 20GHz)



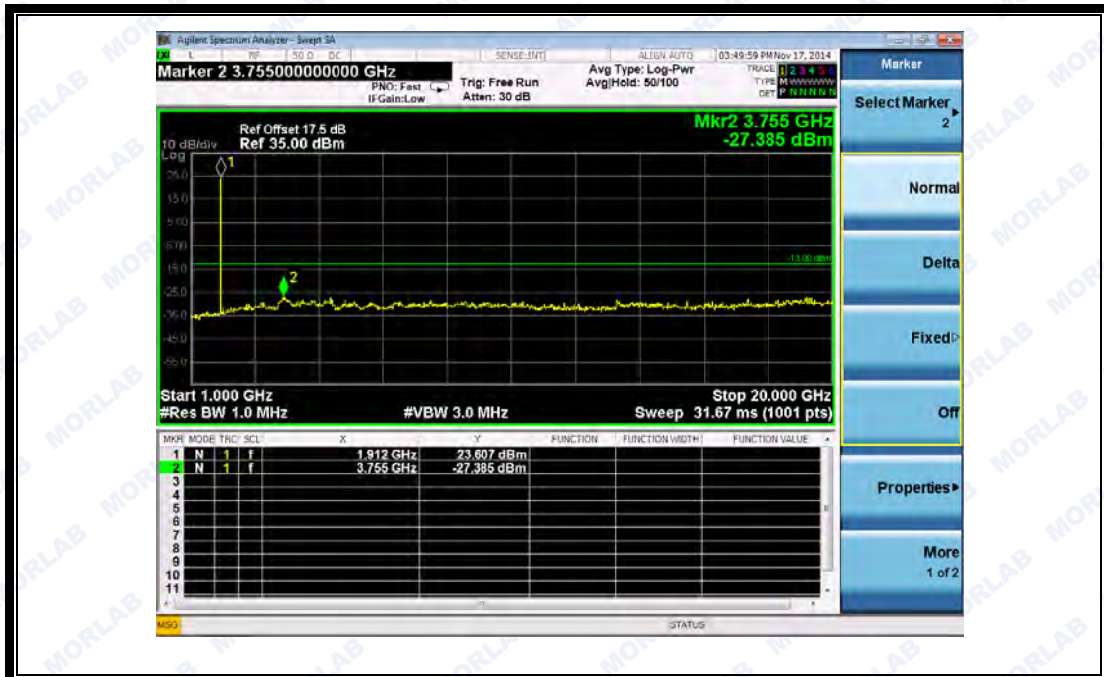
(Plot K 2: HSPA+ 1900MHz Channel = 9400, 30MHz to 1GHz)



(Plot K2.1: HSPA+ 1900MHz Channel = 9400, 1GHz to 20GHz)



(Plot K 3: HSPA+ 1900MHz Channel = 9538, 30MHz to 1GHz)



(Plot K3.1: HSPA+ 1900MHz Channel = 9538 1GHz to 20GHz)

2.6 Band Edge

2.6.1 Requirement

According to FCC section 22.917(b) and FCC section 24.238(b) in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth (26dB emission bandwidth) of the fundamental emission of the transmitter may be employed.

2.6.2 Test Description

See section 2.1.2 of this report.

2.6.3 Test Result

The lowest and highest channels are tested to verify the band edge emissions.

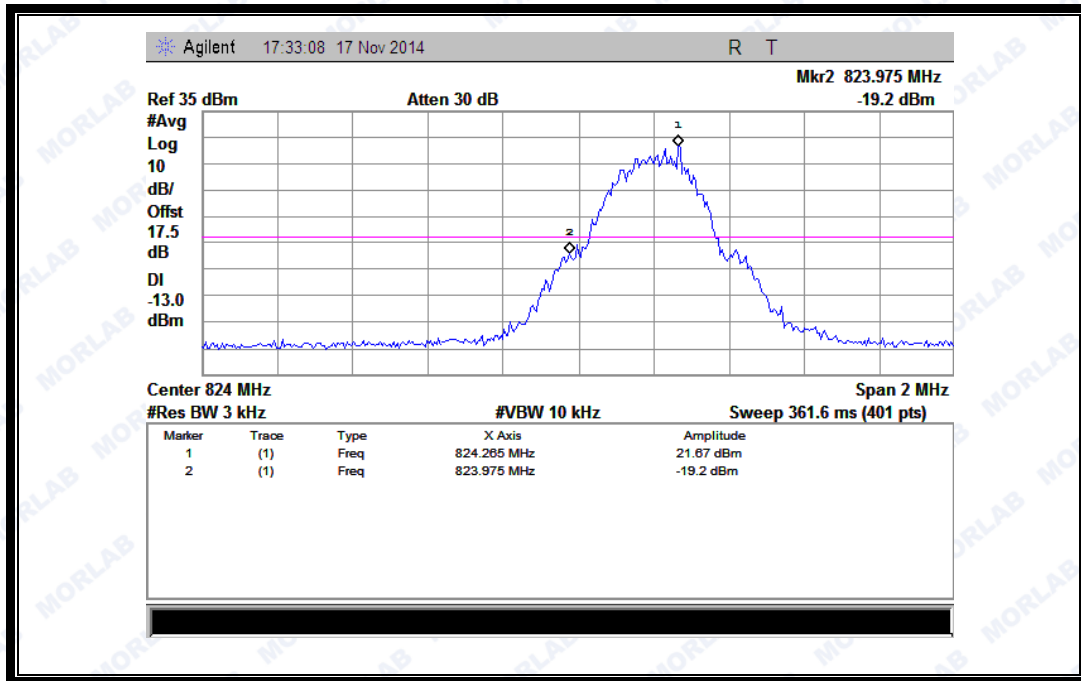
1. Test Verdict:

Band	Channel	Frequency (MHz)	Measured Max. Band Edge Emission (dBm)	Refer to Plot	Limit (dBm)	Verdict
GSM 850MHz	128	824.2	-18.3	Plat A	-13	<u>PASS</u>
	251	848.8	-16.45	Plot B		<u>PASS</u>
GSM 1900MHz	512	1850.2	-21.64	Plat C	-13	<u>PASS</u>
	810	1909.8	-19.93	Plot D		<u>PASS</u>
EDGE 850MHz	128	824.2	-17.68	Plat E	-13	<u>PASS</u>
	251	848.8	-18.22	Plot F		<u>PASS</u>
EDGE 1900MHz	512	1850.2	-20.76	Plat G	-13	<u>PASS</u>
	810	1909.8	-17.07	Plot H		<u>PASS</u>
WCDMA 850MHz	4132	826.4	-17.851	Plat I	-13	<u>PASS</u>
	4233	846.6	-21.074	Plot J		<u>PASS</u>
WCDMA 1900MHz	9262	1852.4	-22.755	Plat K	-13	<u>PASS</u>
	9538	1907.6	-23.928	Plot L		<u>PASS</u>
HSDPA 850MHz	4132	826.4	-20.147	Plat M	-13	<u>PASS</u>
	4233	846.6	-21.153	Plot N		<u>PASS</u>
HSDPA 1900MHz	9262	1852.4	-24.748	Plat O	-13	<u>PASS</u>
	9538	1907.6	-25.017	Plot P		<u>PASS</u>
HSUPA 850MHz	4132	826.4	-18.742	Plat Q	-13	<u>PASS</u>
	4233	846.6	-21.236	Plot R		<u>PASS</u>

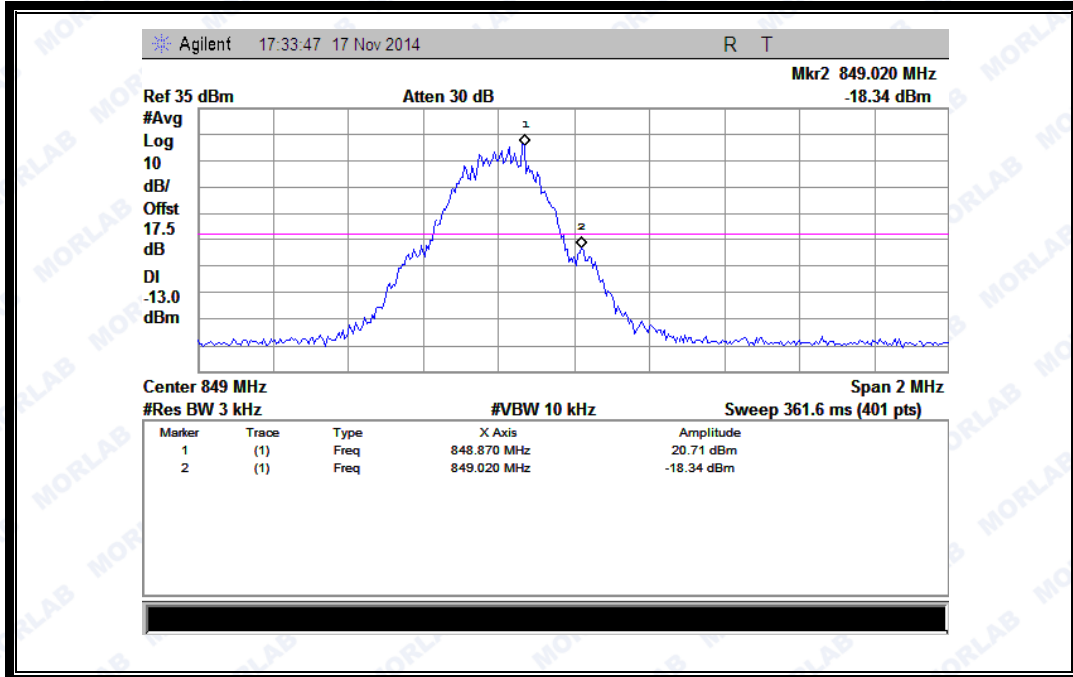


HSUPA 1900MHz	9262	1852.4	-22.617	Plat S	-13	<u>PASS</u>
	9538	1907.6	-23.662	Plot T		<u>PASS</u>
HSPA+ 850MHz	4132	826.4	-18.651	Plat U	-13	<u>PASS</u>
	4233	846.6	-21.202	Plot V		<u>PASS</u>
HSPA+ 1900MHz	9262	1852.4	-22.966	Plat W	-13	<u>PASS</u>
	9538	1907.6	-24.879	Plot X		<u>PASS</u>

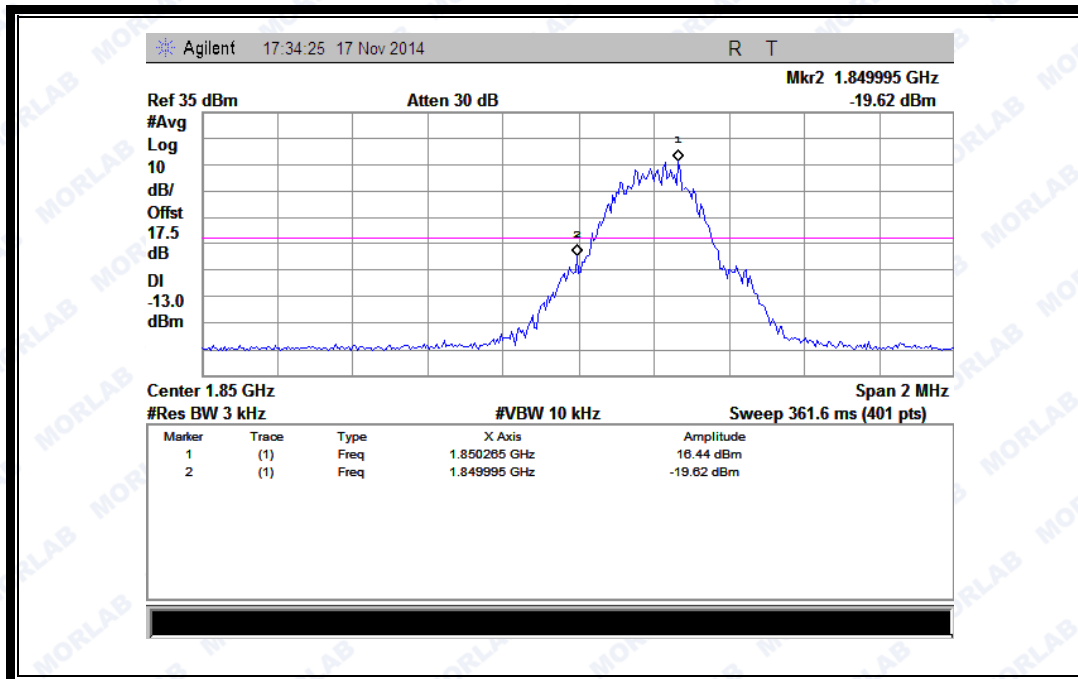
2. Test Plots:



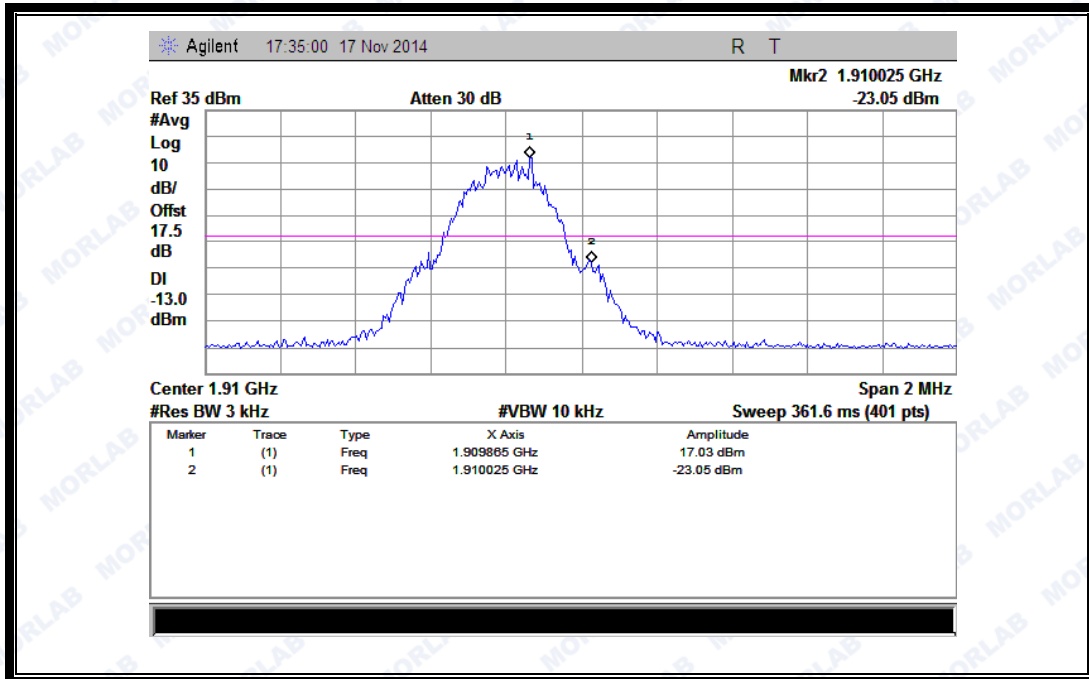
(Plot A: GSM 850 Channel = 128)



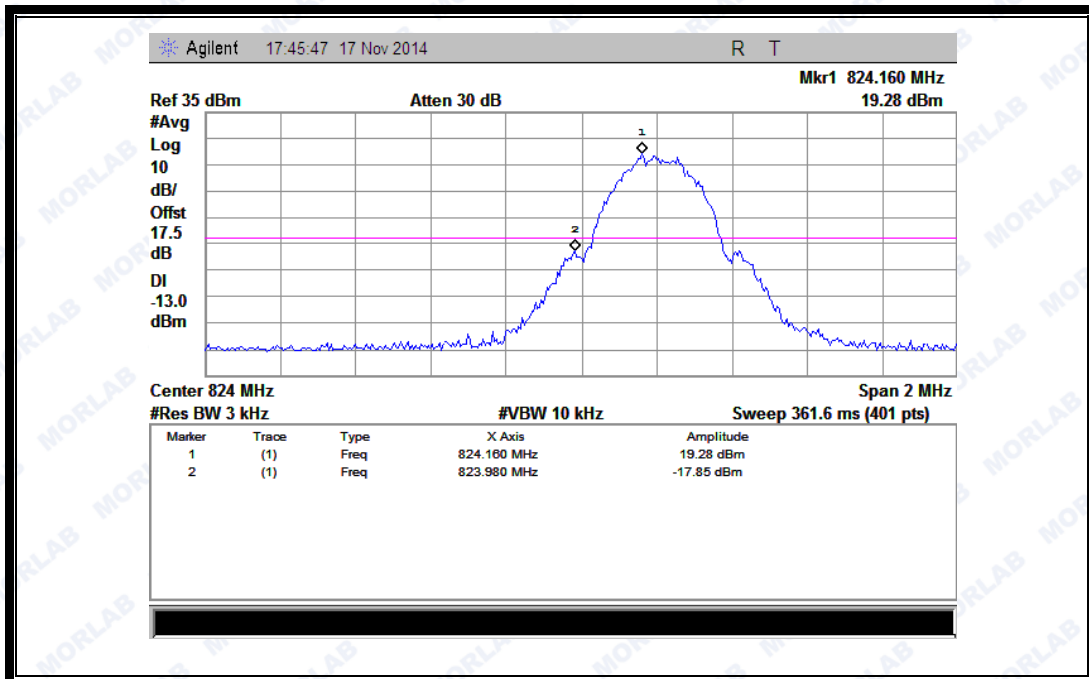
(Plot B: GSM 850 Channel = 251)



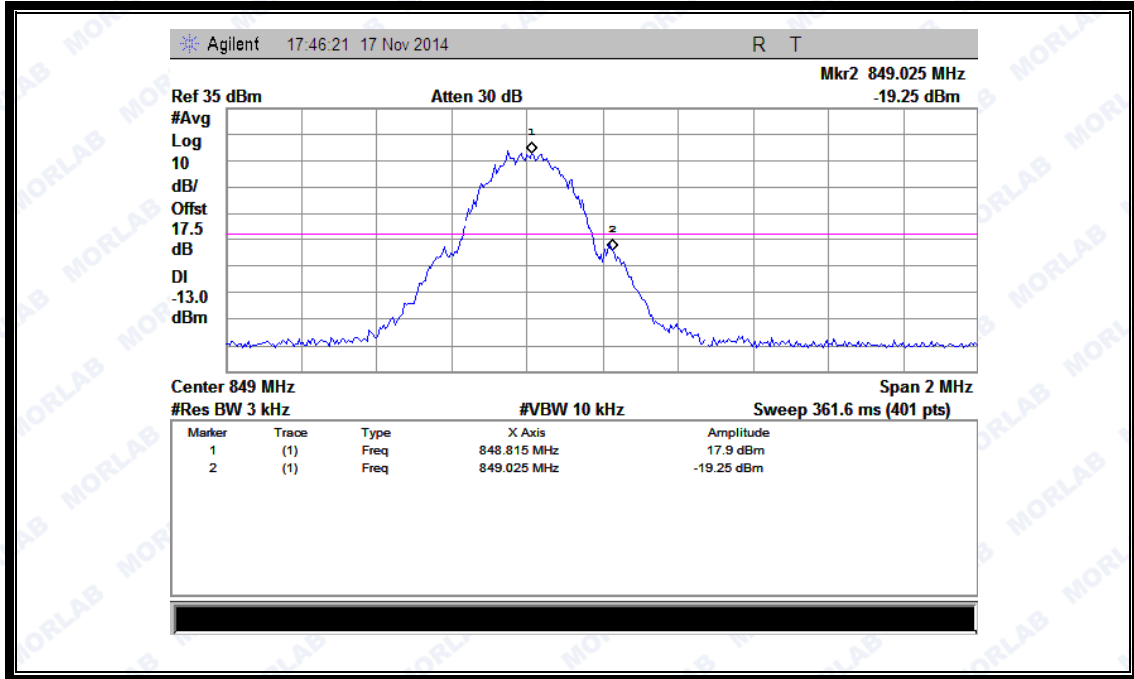
(Plot C: GSM 1900 Channel = 512)



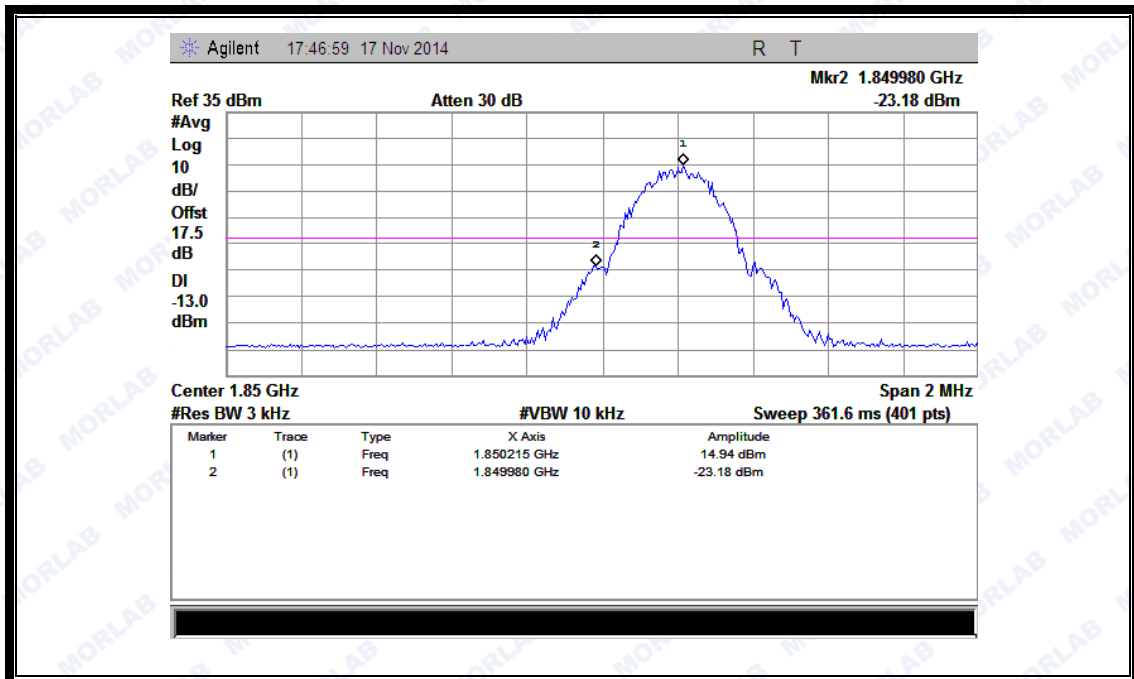
(Plot D: GSM 1900 Channel = 810)



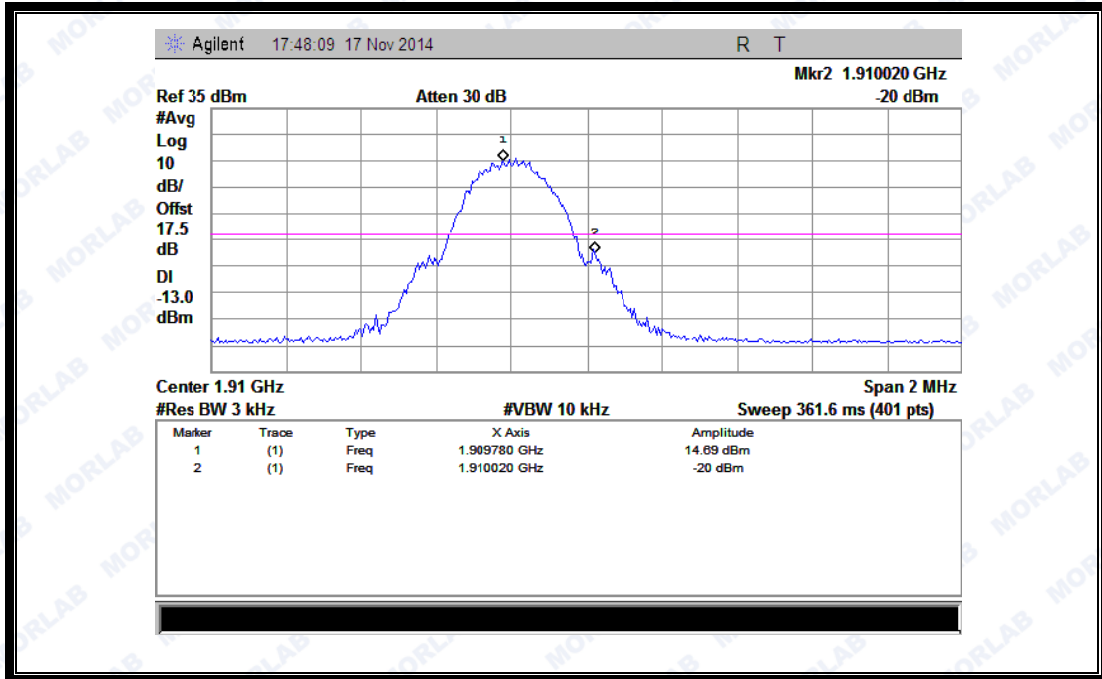
(Plot E: EGPRS 850 Channel = 128)



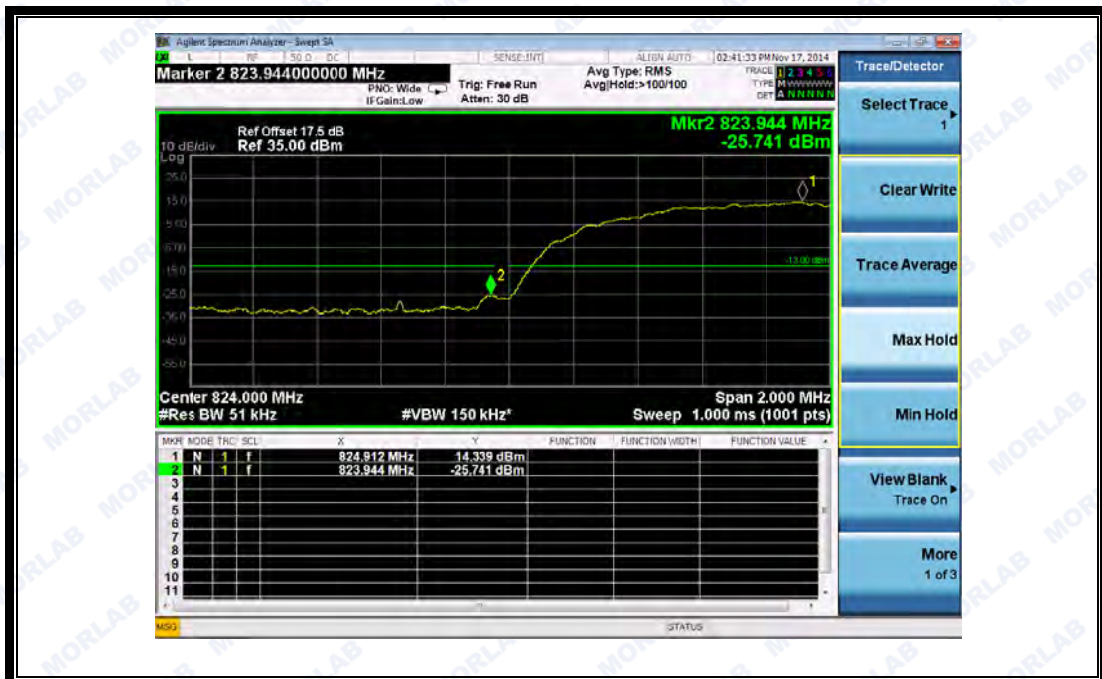
(Plot F: EGPRS 850 Channel = 251)



(Plot G: EGPRS 1900 Channel = 512)



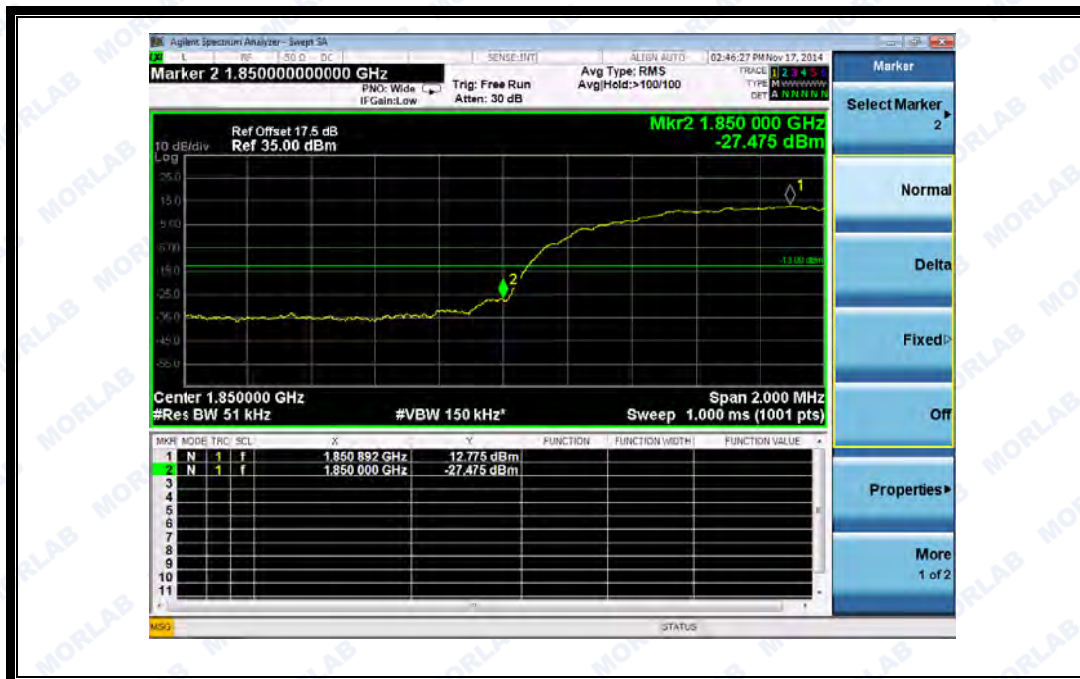
(Plot H: EGPRS 1900 Channel = 810)



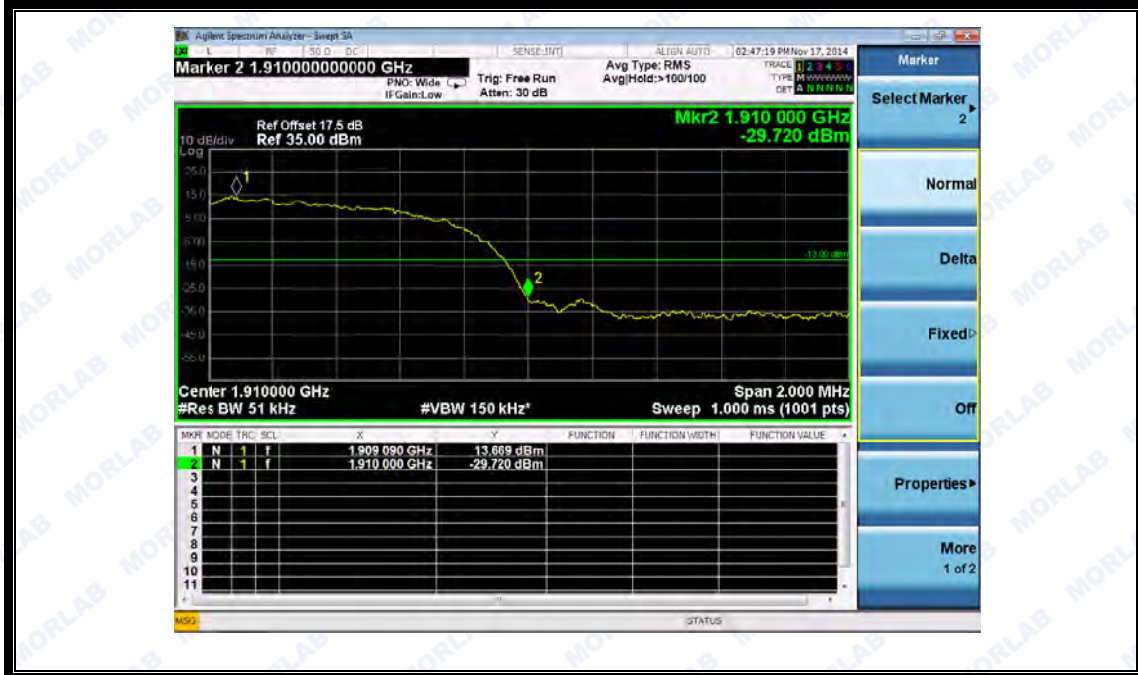
(Plot I: WCDMA 850 Channel = 4132)



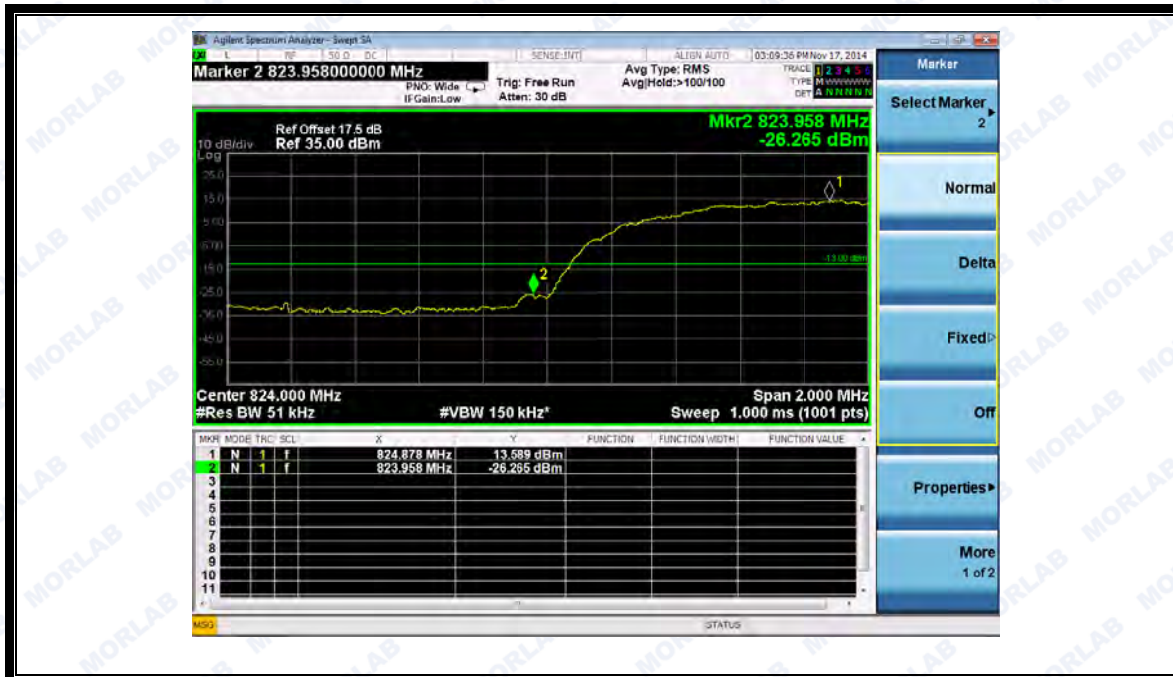
(Plot J: WCDMA 850 Channel = 4233)



(Plot K: WCDMA 1900 Channel = 9262)



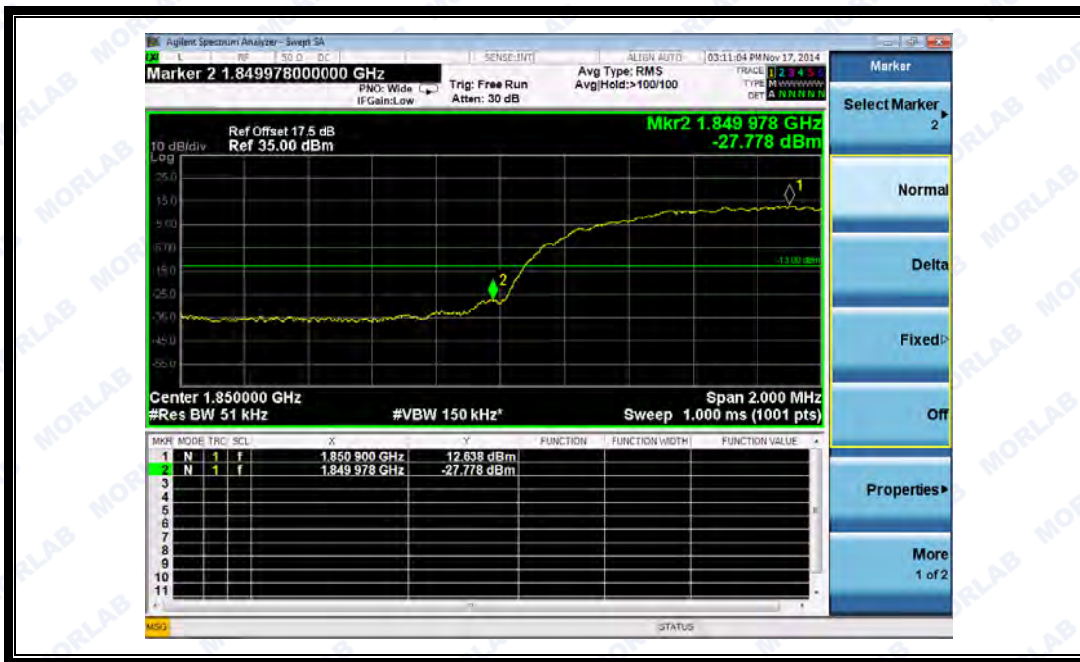
(Plot L: WCDMA 1900 Channel = 9538)



(Plot M: HSDPA 850 Channel = 4132)



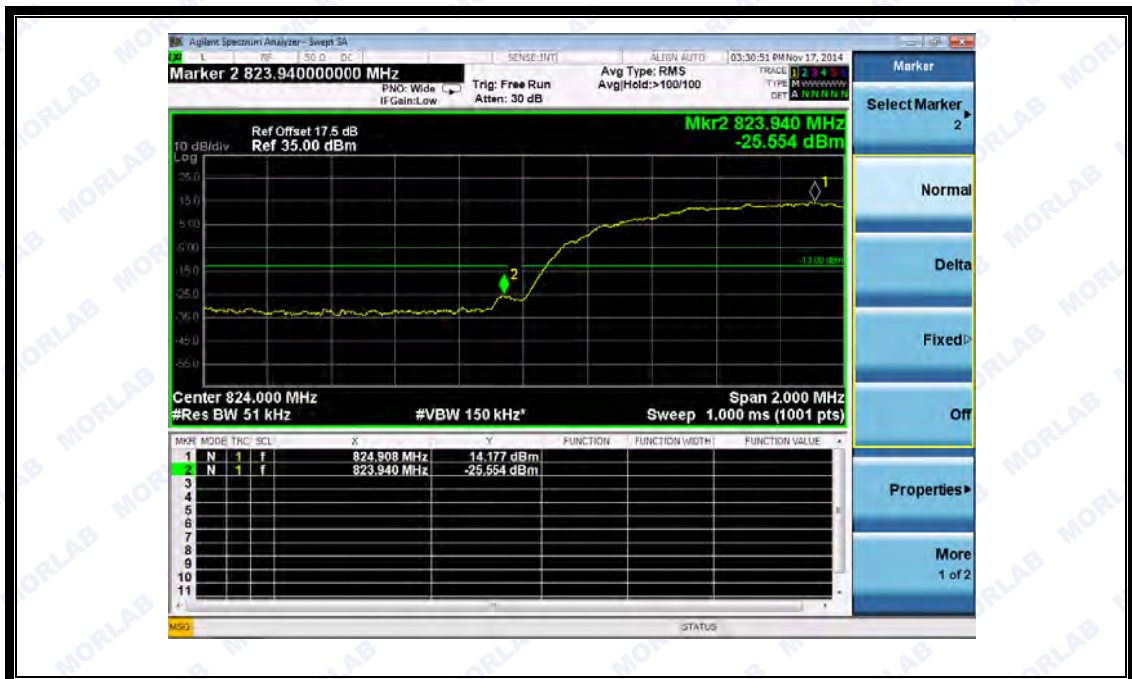
(Plot N: HSDPA850 Channel = 4233)



(Plot O: HSDPA 1900 Channel = 9262)



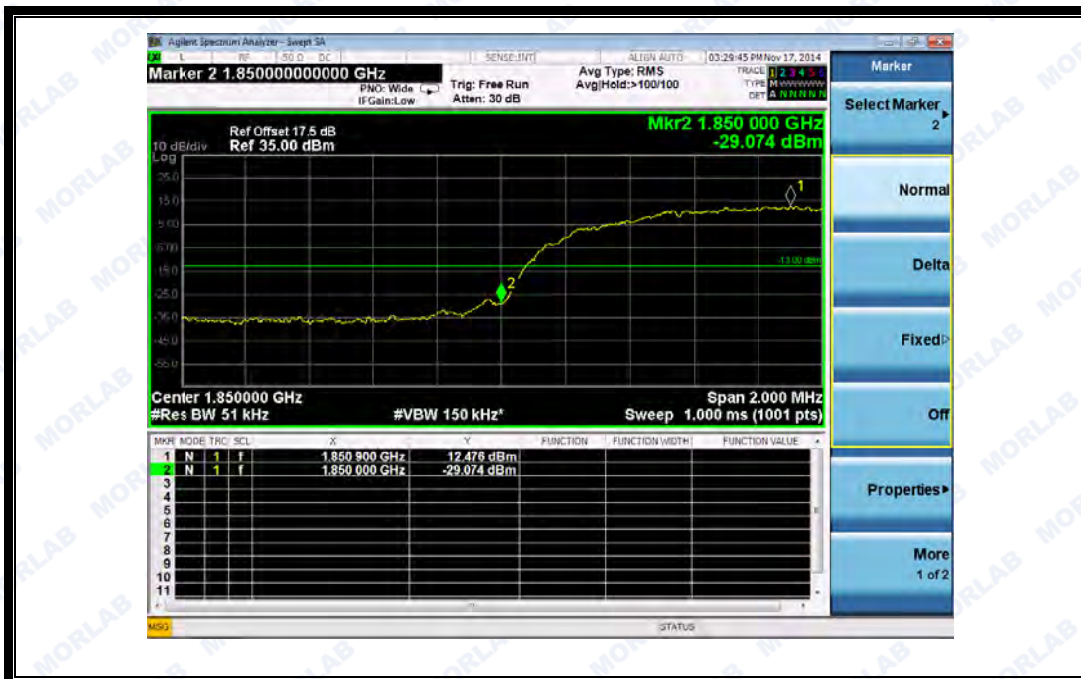
(Plot P: HSDPA 1900 Channel = 9538)



(Plot Q: HSUPA 850 Channel = 4132)



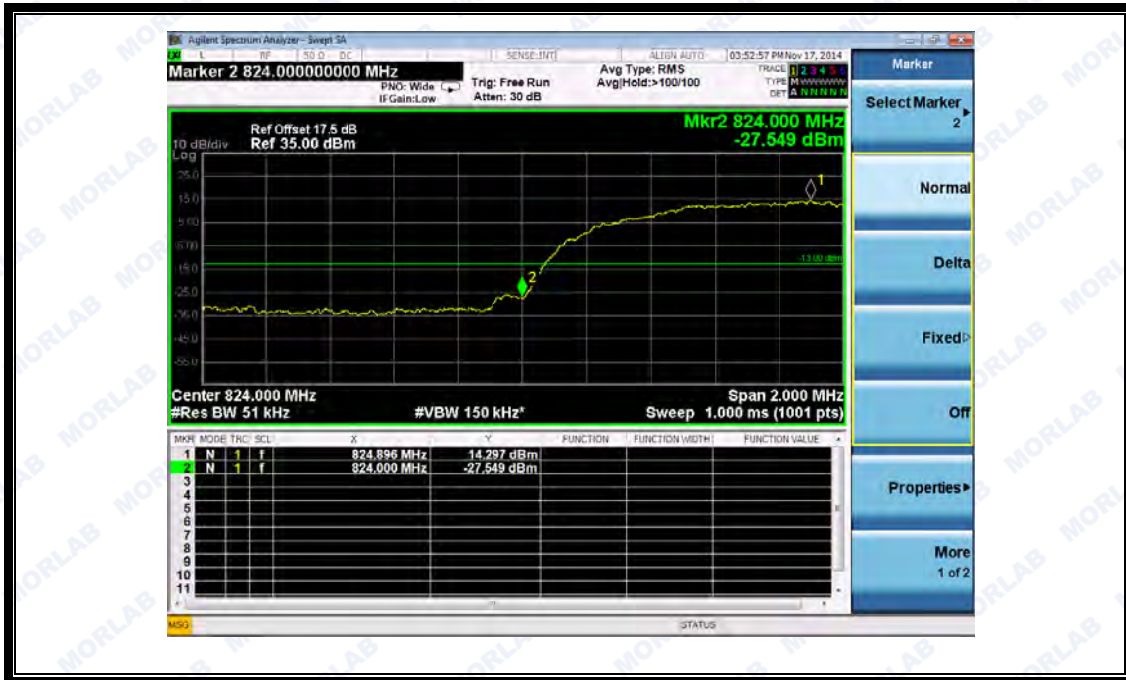
(Plot R: HSUPA850 Channel = 4233)



(Plot S: HSUPA 1900 Channel = 9262)



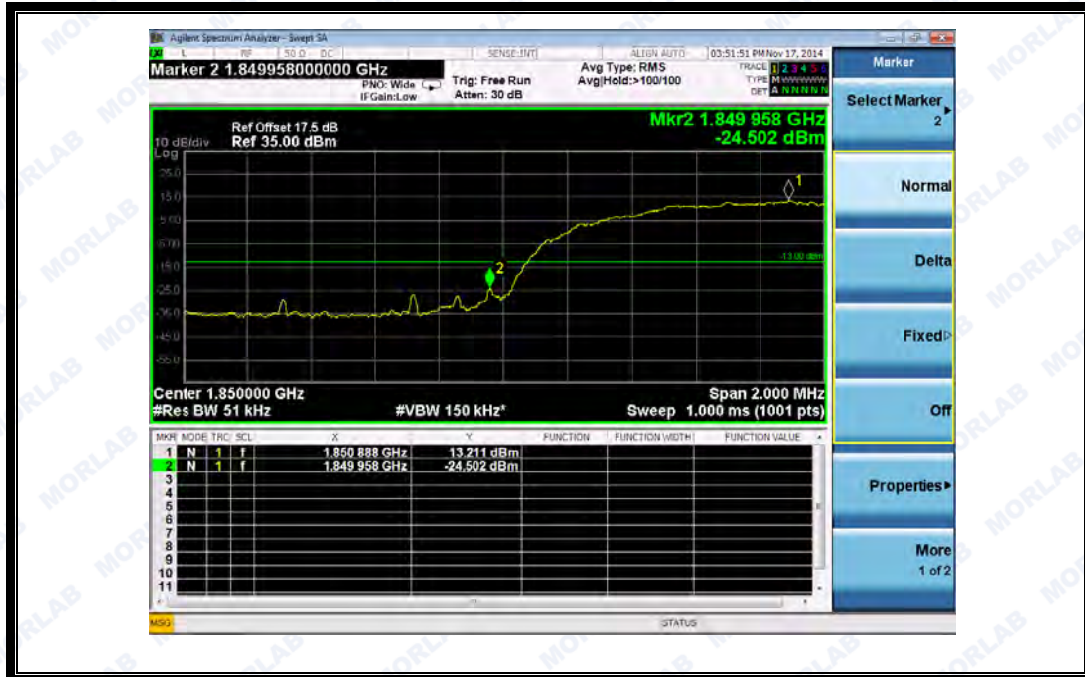
(Plot T: HSUPA 1900 Channel = 9538)



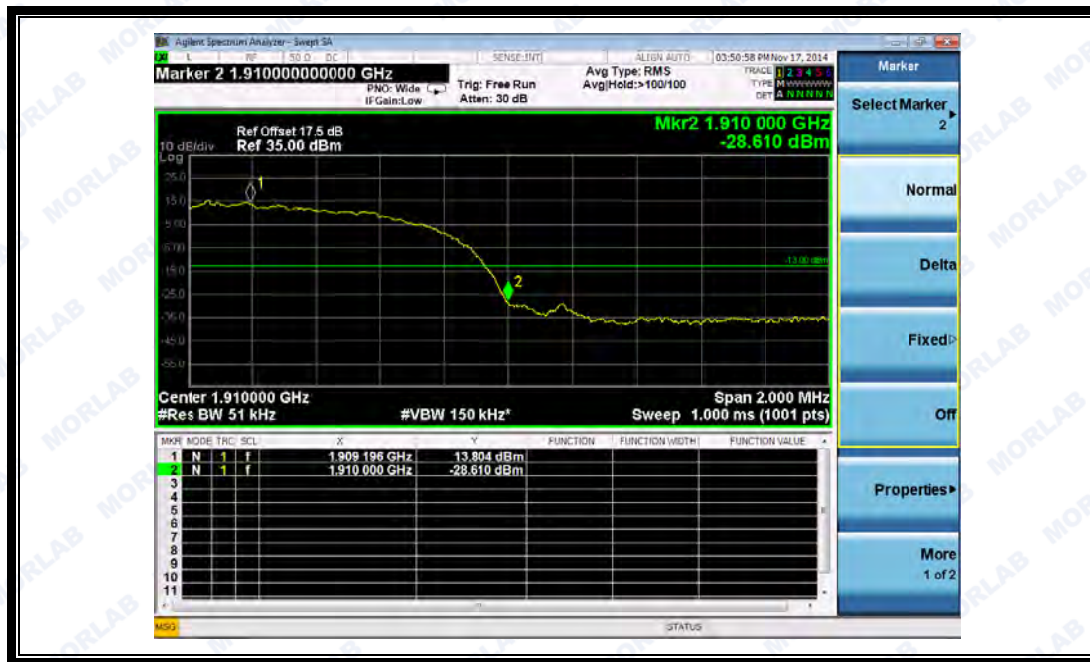
(Plot U: HSPA+ 850 Channel = 4132)



(Plot V: HSPA+ 850 Channel = 4233)



(Plot W: HSPA+ 1900 Channel = 9262)



(Plot X: HSPA+ 1900 Channel = 9538)

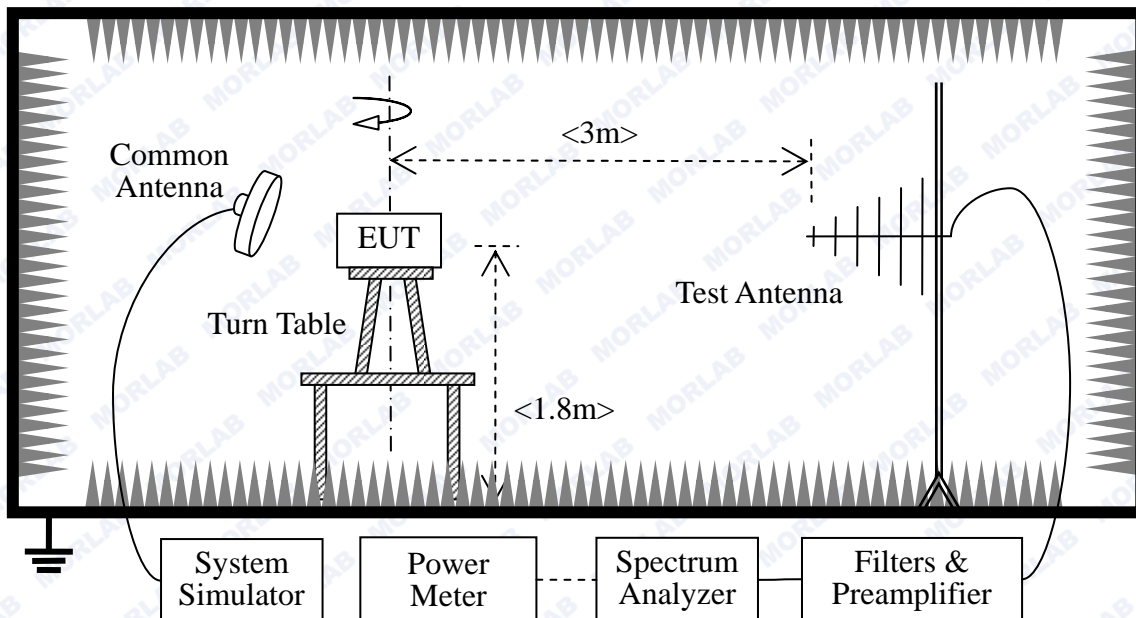
2.7 Transmitter Radiated Power (EIRP/ERP)

2.7.1 Requirement

According to FCC section 22.913, the Effective Radiated Power (ERP) of mobile transmitters and auxiliary test transmitters must not exceed 7Watts, and FCC section 24.232, the broadband PCS mobile station is limited to 2 Watts e.i.r.p. peak power

2.7.2 Test Description

1. Test Setup:



The EUT, which is powered by the Battery charged with the AC Adapter, is located in a 3m Full-Anechoic Chamber; the cable loss, air loss and so on of the site as factors are pre-calibrated using the "Substitution" method, and calculated to correct the reading.

A call is established between the EUT and the SS via a Common Antenna. The EUT is commanded by the SS to operate at the maximum and minimum output power (i.e. GSM850MHz band Power Control Level (PCL) = 5/19 and Power Class = 4, GSM1900MHz band Power Control Level (PCL) = 0/15 and Power Class = 1), and only the test result of the maximum output power was recorded.

- GSM Maximum RF output power: GSM 850 33.35dBm, GSM 1900 29.94dBm, EGPRS 850 31.29dBm, EGPRS 1900 27.24dBm, WCDMA 850 24.06dBm, WCDMA 1900 23.55dBm, Please refer to section 2.1.3 of this report.

- Step size (dB): 3dB



- Minimum RF power: GSM 850 3.1dBm, GSM 1900 0.3dBm, EGPRS 850 3.1dBm, EGPRS 1900 0.21dBm, WCDMA 850 0.39dBm, WCDMA 1900 0.5dBm.

The Test Antenna is a Bi-Log one (used for 30MHz to 1GHz) or a Horn one (used for above 3GHz), and it's located at the same height as the EUT. The Filters consists of Notch Filters and High Pass Filter.

2. Equipments List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Pre-AMPs	lucix	S10M100L3802	S020180L3203	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2014.02.26	2015.02.25

2.7.3 Test Result

The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested.

The substitution corrections are obtained as described below:

$$A_{\text{SUBST}} = P_{\text{SUBST_TX}} - P_{\text{SUBST_RX}} - L_{\text{SUBST_CABLES}} + G_{\text{SUBST_TX_ANT}}$$

$$A_{\text{TOT}} = L_{\text{CABLES}} + A_{\text{SUBST}}$$

Where A_{SUBST} is the final substitution correction including receive antenna gain.

$P_{\text{SUBST_TX}}$ is signal generator level,

$P_{\text{SUBST_RX}}$ is receiver level,

$L_{\text{SUBST_CABLES}}$ is cable losses including TX cable,

$G_{\text{SUBST_TX_ANT}}$ is substitution antenna gain.

A_{TOT} is total correction factor including cable loss and substitution correction

During the test, the data of A_{TOT} was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of A_{TOT} .



1. GSM Model Test Verdict:

Band	Channel	Frequency (MHz)	PCL	Measured ERP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 850MHz	128	824.20	5	29.94	0.986	Plot A	38.5	7	PASS
	190	836.60	5	30.63	1.156				PASS
	251	848.80	5	30.49	1.119				PASS
GPRS 850MHz	128	824.20	5	27.27	0.533	Plot B ^{Note 1}	38.5	7	PASS
	190	836.60	5	27.19	0.524				PASS
	251	848.80	5	27.17	0.521				PASS
EGPRS 850MHz	128	824.20	5	28.49	0.706	Plot C ^{Note 1}	38.5	7	PASS
	190	836.60	5	28.2	0.661				PASS
	251	848.80	5	28.16	0.655				PASS

Band	Channel	Frequency (MHz)	PCL	Measured EIRP			Limit		Verdict
				dBm	W	Refer to Plot	dBm	W	
GSM 1900MHz	512	1850.2	0	27.71	0.590	Plot D	33	2	PASS
	661	1880.0	0	26.96	0.497				PASS
	810	1909.8	0	27.75	0.596				PASS
GPRS 1900MHz	512	1850.2	0	24.69	0.294	Plot E ^{Note 1}	33	2	PASS
	661	1880.0	0	24.39	0.275				PASS
	810	1909.8	0	24.78	0.301				PASS
EGPRS 1900MHz	512	1850.2	0	25.85	0.385	Plot F ^{Note 1}	33	2	PASS
	661	1880.0	0	25.75	0.376				PASS
	810	1909.8	0	25.65	0.367				PASS

Note 1: For the GPRS and EGPRS model, all the slots were tested and just the worst data was record in this report.

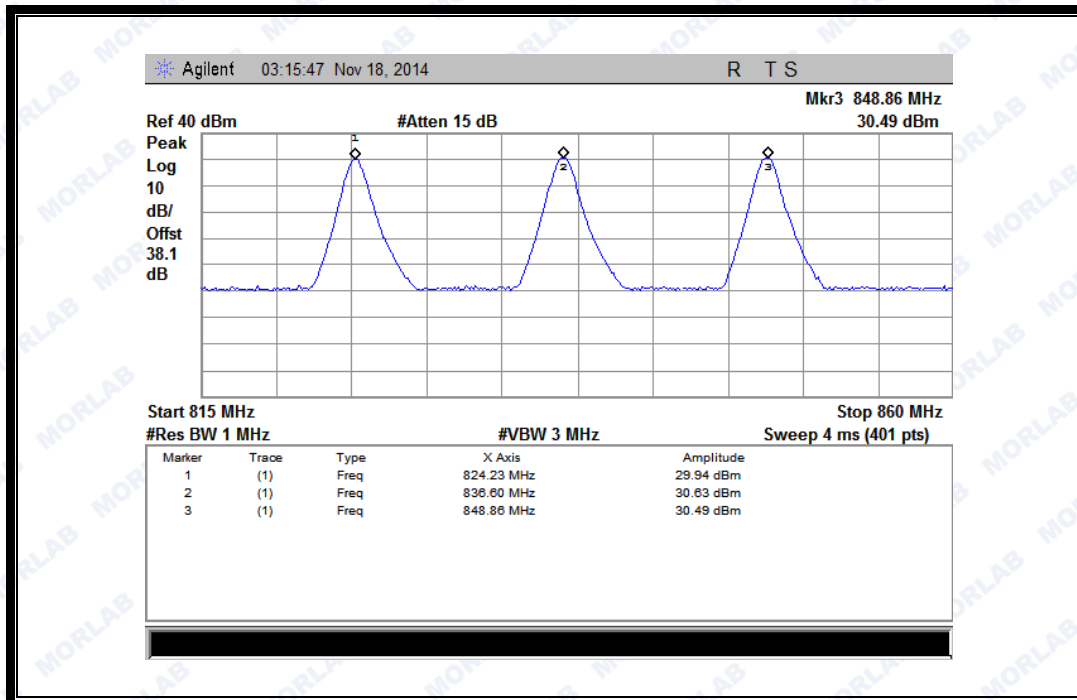


2. WCDMA Model Test Verdict:

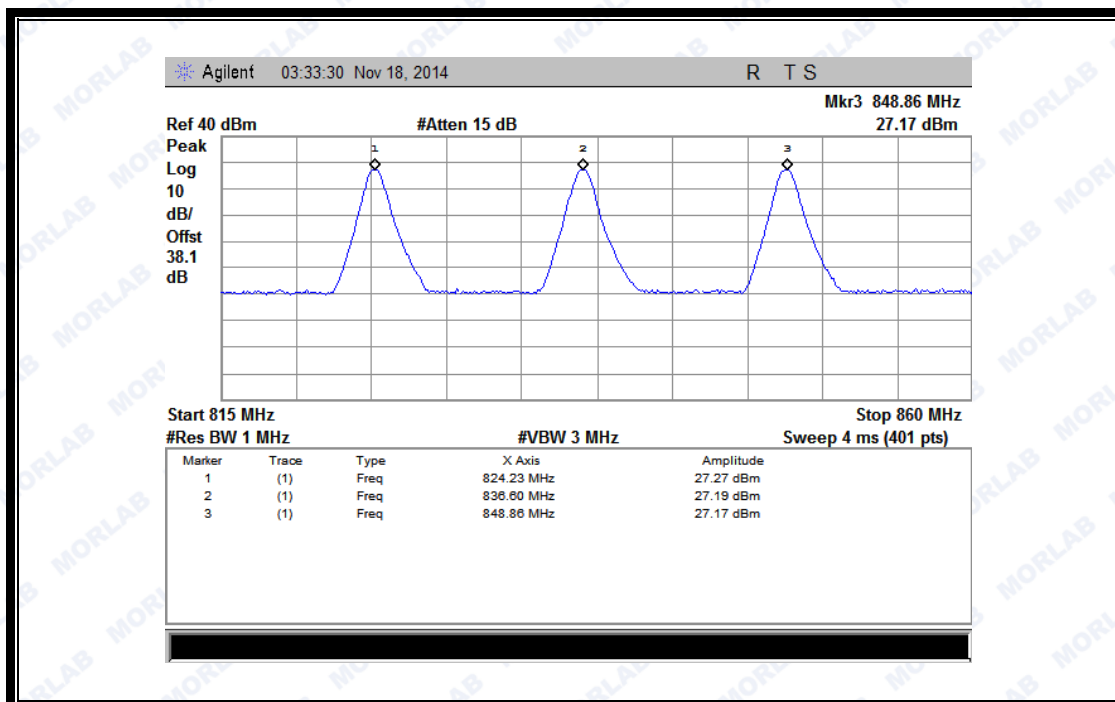
Band	Channel	Frequency (MHz)	Measured ERP			Limit		Verdict
			dBm	W	Refer to Plot	dBm	W	
WCDMA 850MHz	4132	826.4	21.25	0.133	Plot G	38.5	7	PASS
	4175	835	21.72	0.149				PASS
	4233	846.6	21.49	0.141				PASS
HSDPA 850MHz	4132	826.4	20.63	0.116	Plot H	38.5	7	PASS
	4175	835	20.58	0.114				PASS
	4233	846.6	20.66	0.116				PASS
HSUPA 850MHz	4132	826.4	20.48	0.112	Plot I	38.5	7	PASS
	4175	835	20.9	0.123				PASS
	4233	846.6	20.58	0.114				PASS
HSPA+ 850MHz	4132	826.4	20.52	0.113	Plot J	38.5	7	PASS
	4175	835	20.51	0.112				PASS
	4233	846.6	20.72	0.118				PASS

Band	Channel	Frequency (MHz)	Measured EIRP			Limit		Verdict
			dBm	W		dBm	W	
WCDMA 1900MHz	9262	1852.4	21.11	0.129	Plot K	33	2	PASS
	9400	1880	21.89	0.155				PASS
	9538	1907.6	21.42	0.139				PASS
HSDPA 1900MHz	9262	1852.4	20.78	0.120	Plot L	33	2	PASS
	9400	1880	20.69	0.117				PASS
	9538	1907.6	20.33	0.108				PASS
HSUPA 1900MHz	9262	1852.4	20.29	0.107	Plot M	33	2	PASS
	9400	1880	20.39	0.109				PASS
	9538	1907.6	20.4	0.111				PASS
HSPA+ 1900MHz	9262	1852.4	20.86	0.122	Plot N	33	2	PASS
	9400	1880	20.56	0.114				PASS
	9538	1907.6	20.49	0.112				PASS

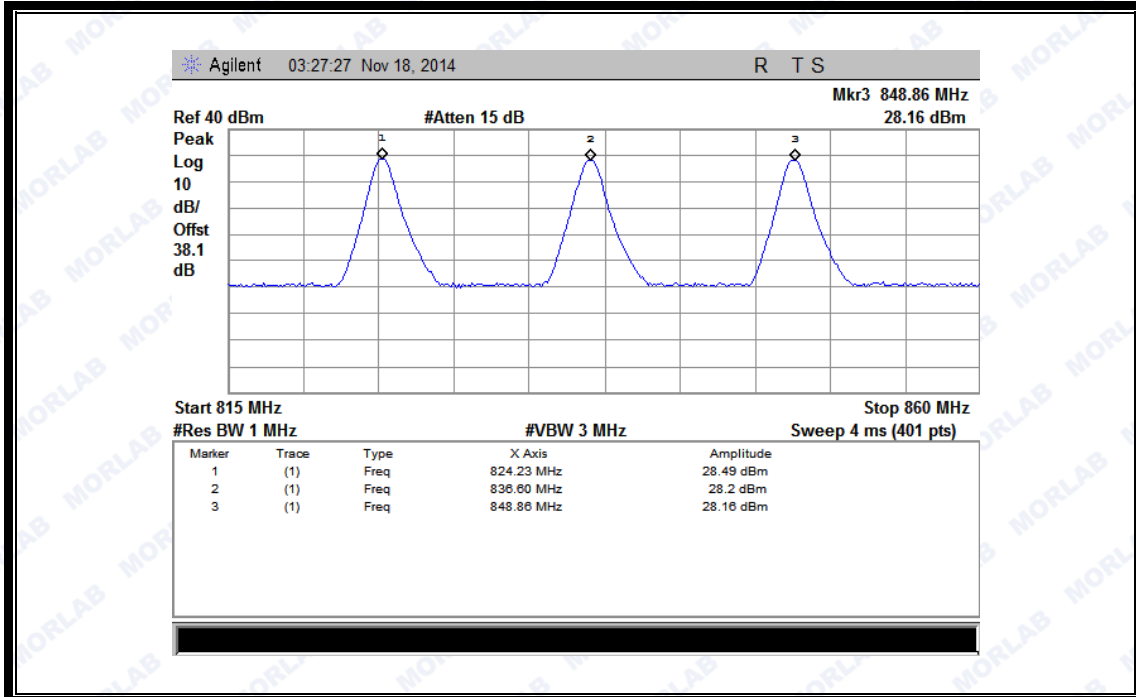
3. Test Plots:



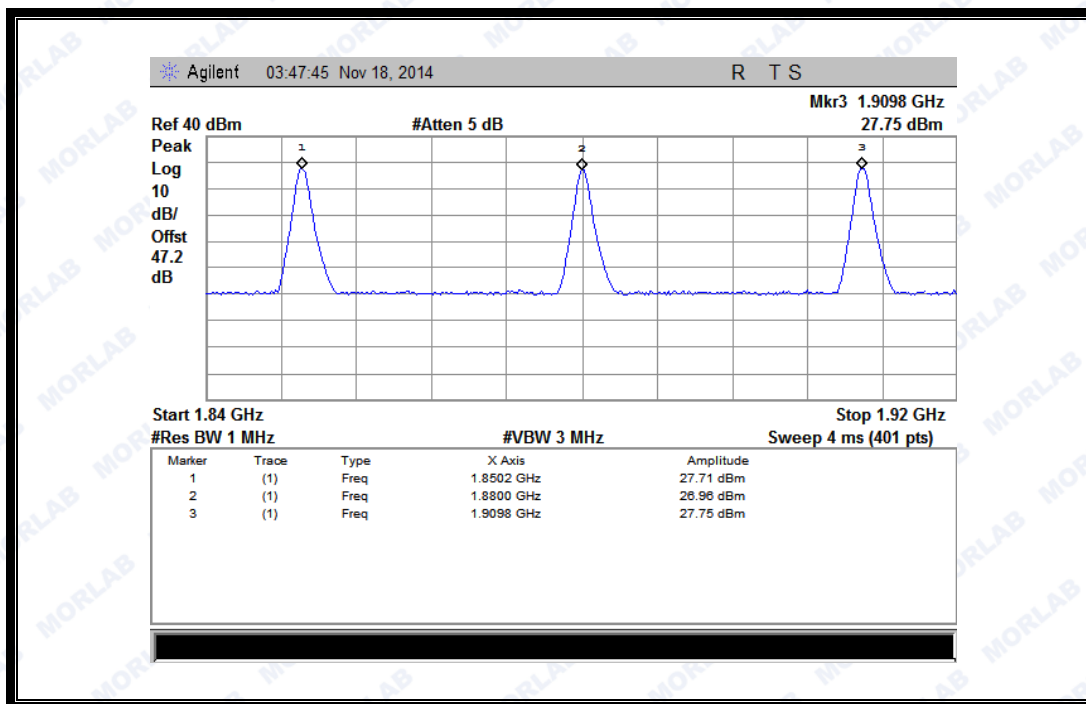
(Plot A: GSM 850MHz Channel = 128, 190, 251)



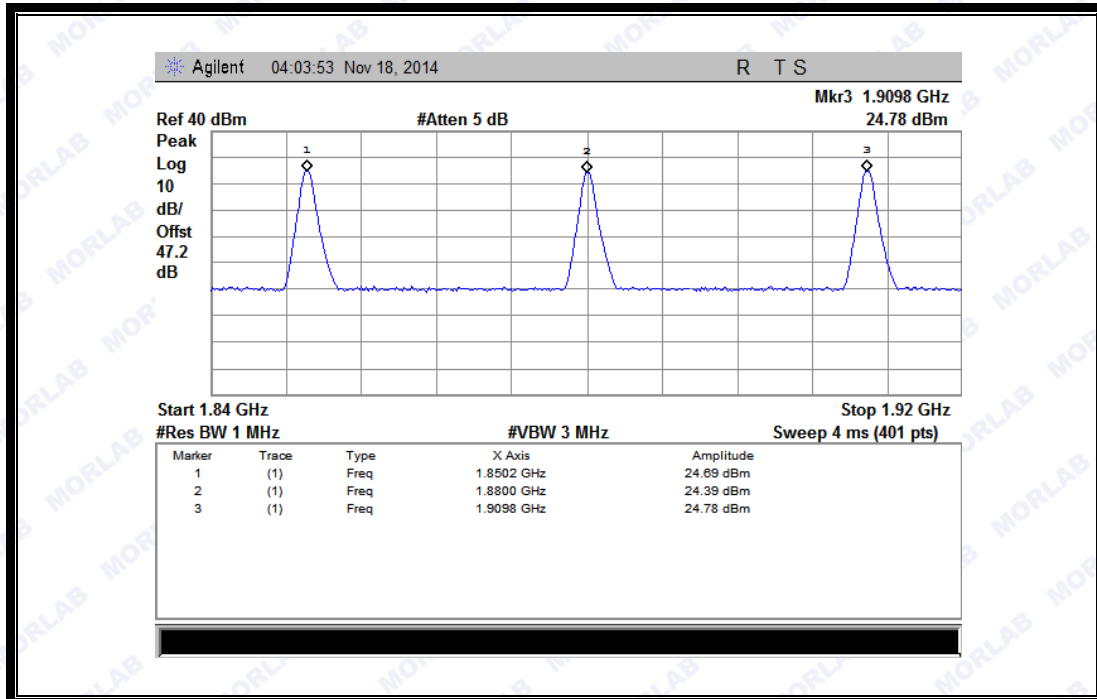
(Plot B: GPRS 850MHz Channel = 128, 190, 251)



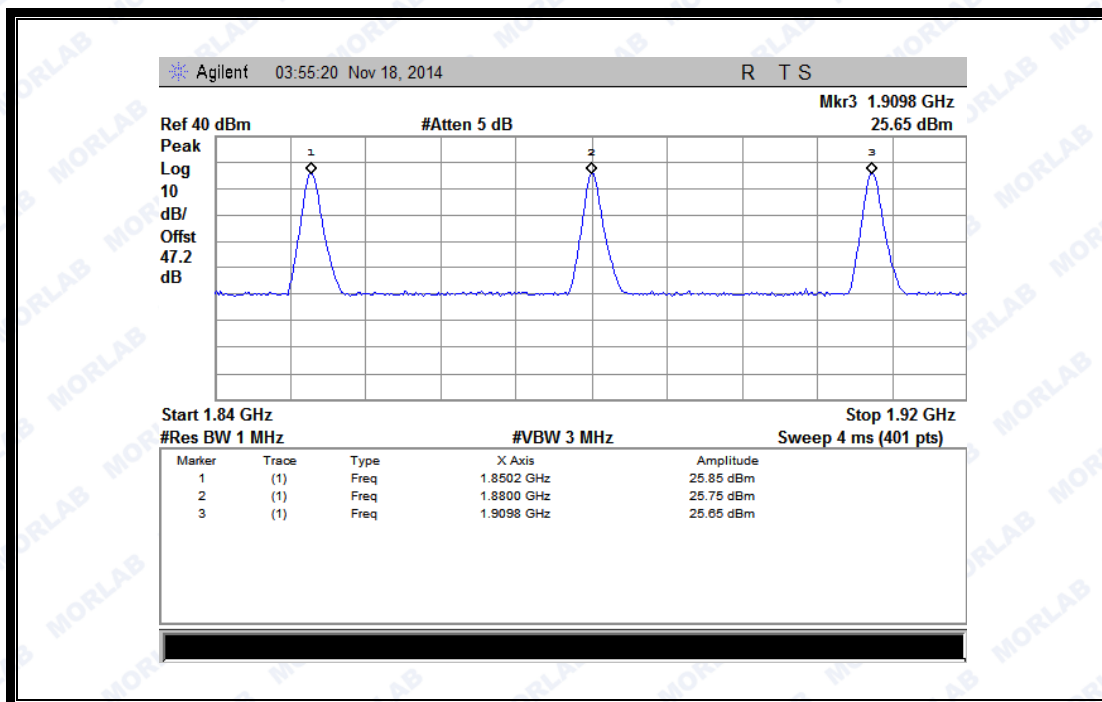
(Plot C: EGPRS 850MHz Channel = 128, 190, 251)



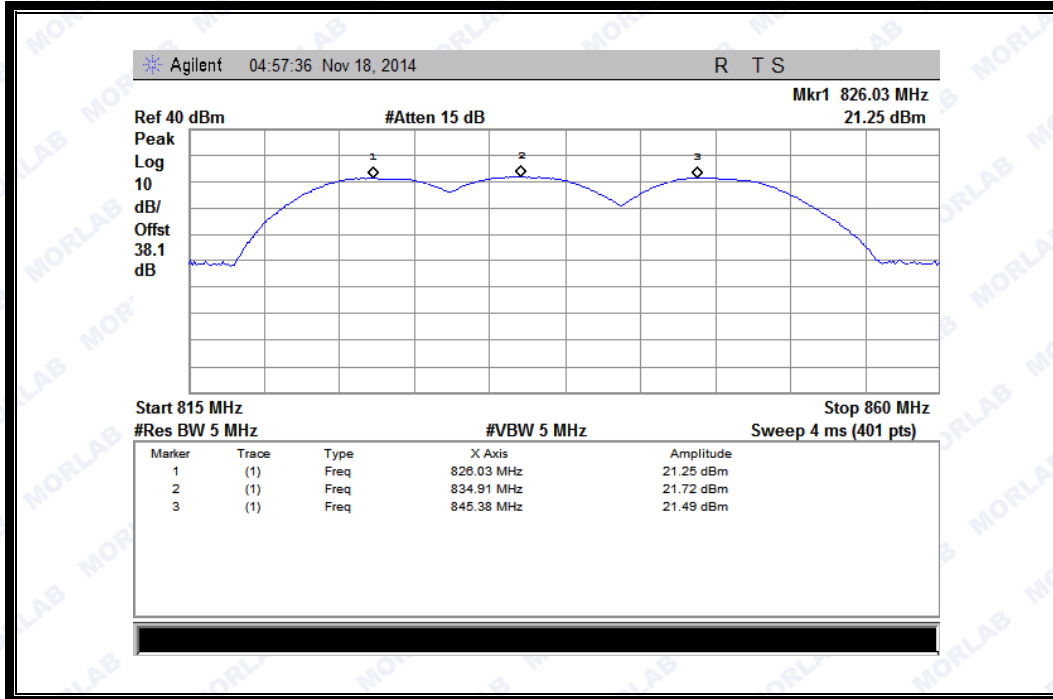
(Plot D: GSM 1900MHz Channel = 512, 661, 810)



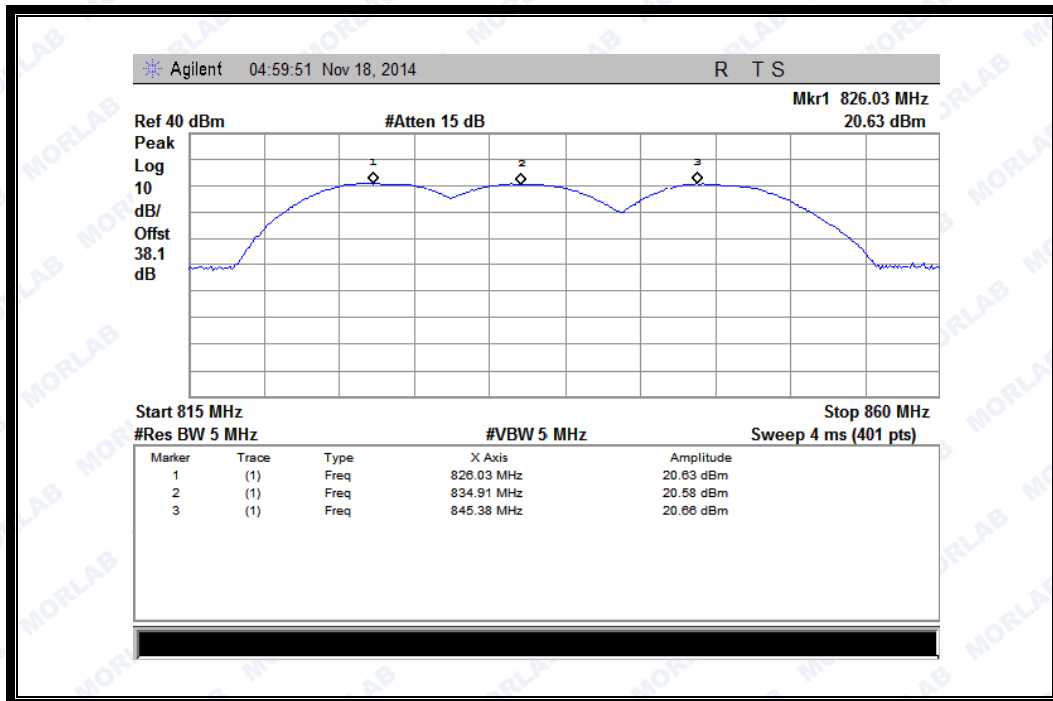
(Plot E: GPRS 1900MHz Channel = 512, 661, 810)



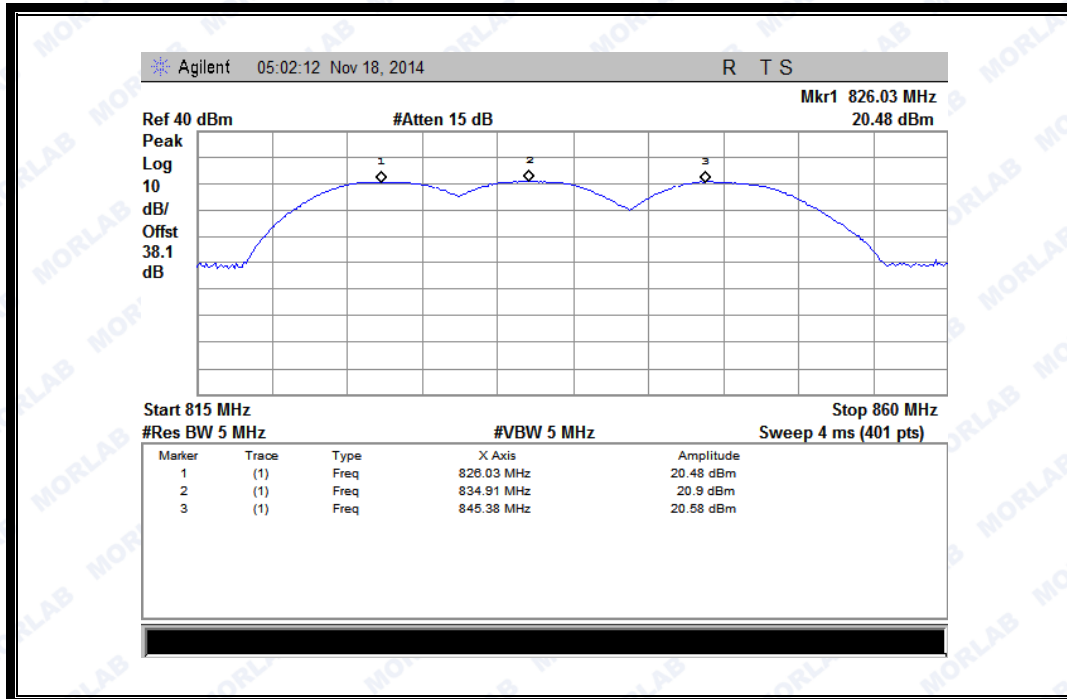
(Plot F: EGPRS 1900MHz Channel = 512, 661, 810)



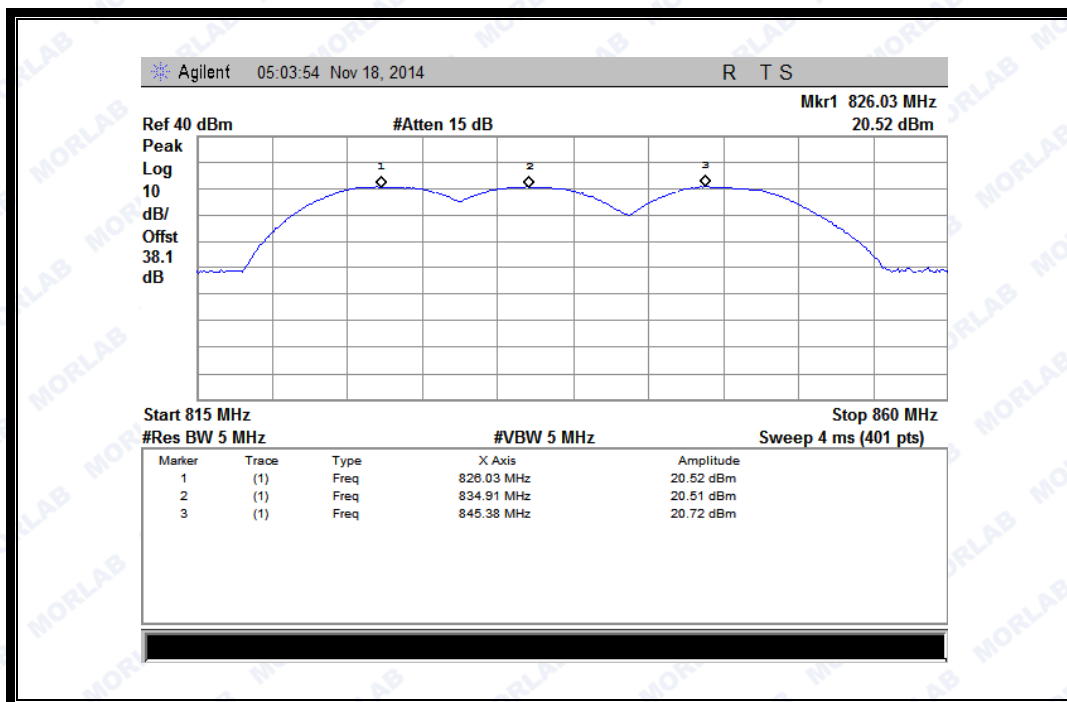
(Plot G: WCDMA 850 MHz Channel = 4132, 4175, 4233)



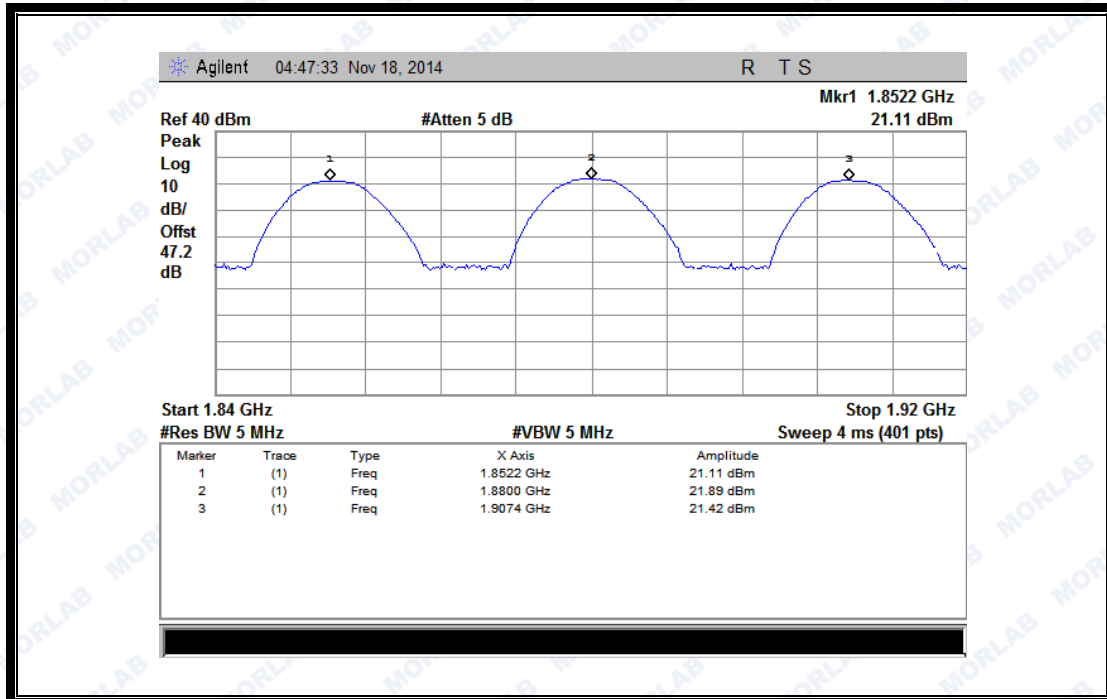
(Plot H: HSDPA 850 MHz Channel = 4132, 4175, 4233)



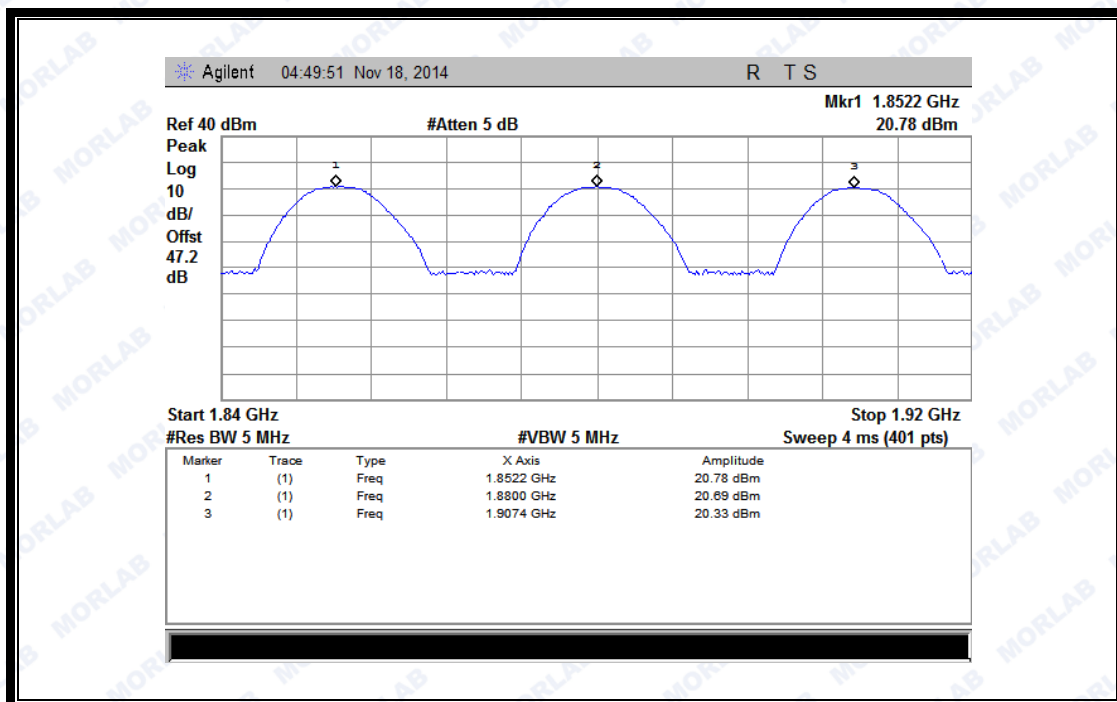
(Plot I: HSUPA 850 MHz Channel = 4132, 4175, 4233)



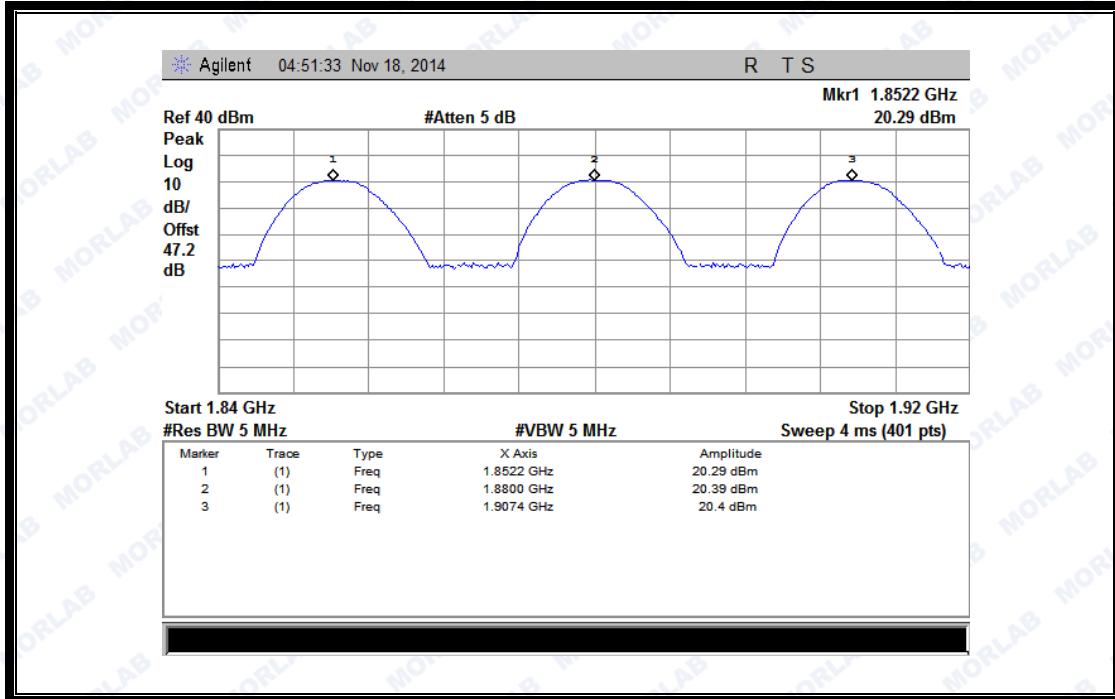
(Plot J: HSPA+ 850 MHz Channel = 4132, 4175, 4233)



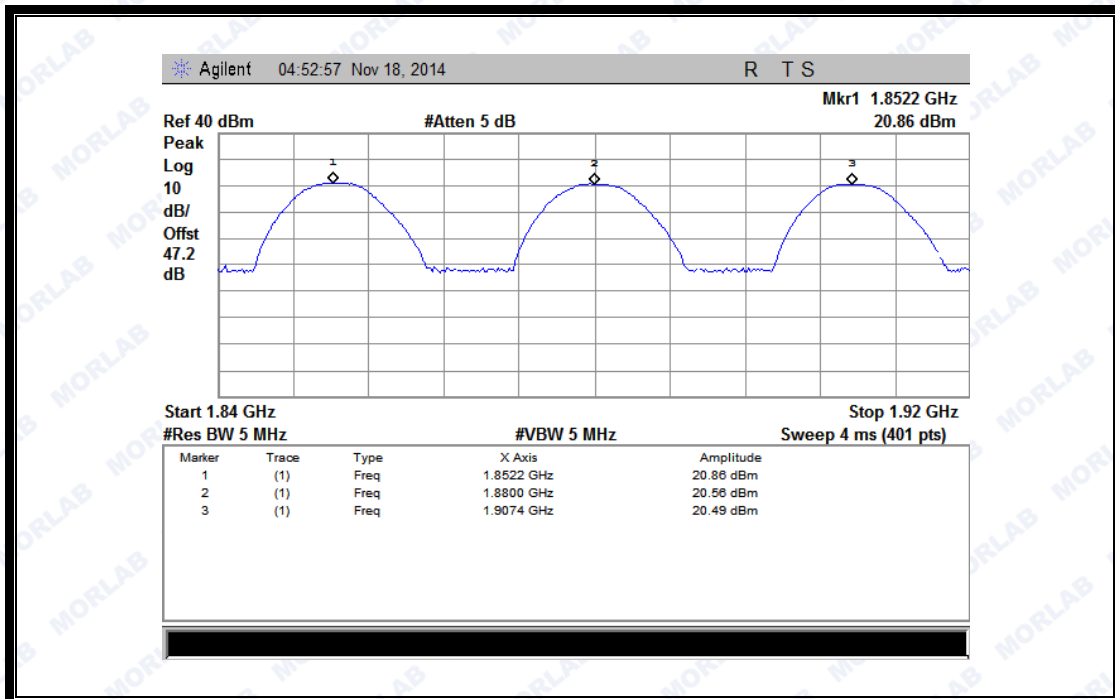
(Plot K: WCDMA 1900 MHz Channel = 9262, 9400, 9538)



(Plot L: HSDPA1900 MHz Channel = 9262, 9400, 9538)



(Plot M: HSUPA1900 MHz Channel = 9262, 9400, 9538)



(Plot N: HSPA+ 1900 MHz Channel = 9262, 9400, 9538)

2.8 Radiated Out of Band Emissions

2.8.1 Requirement

According to FCC section 22.917(a) and section 24.238(a) 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 calculated to be -13dBm.

The spurious emission with frequency band 1900 according to FCC section 2.1057.

2.8.2 Test Description

See section 2.7.2 of this report.

Equipment List:

Description	Manufacturer	Model	Serial No.	Cal. Date	Cal. Due
System Simulator	Agilent	E5515C	GB43130131	2014.02.26	2015.02.25
Spectrum Analyzer	Agilent	E7405A	US44210471	2014.02.26	2015.02.25
Full-Anechoic Chamber	Albatross	9m*6m*6m	(n.a.)	2014.02.26	2015.02.25
Test Antenna - Bi-Log	Schwarzbeck	VULB 9163	9163-274	2014.02.26	2015.02.25
Test Antenna - Horn	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Substitution Antenna	Schwarzbeck	BBHA 9120C	9120C-384	2014.02.26	2015.02.25
Pre-AMPs	Lucix	S10M100L3802	S020180L3203	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C836.5-25-X	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1747.5-75-X2	NA	2014.02.26	2015.02.25
Notch Filter	COM-MW	ZBSF-C1880-60-X2	NA	2014.02.26	2015.02.25

Note: when doing measurements above 1GHz, the EUT has been within the 3dB cone width of the horn antenna during horizontal antenna.

2.8.3 Test Result

The measurement frequency range is from 30MHz to the 10th harmonic of the fundamental frequency. The Turn Table is actuated to turn from 0° to 360°, and both horizontal and vertical polarizations of the Test Antenna are used to find the maximum radiated power. The lowest, middle and highest channels are tested to verify the out of band emissions.



1. Test Verdict:

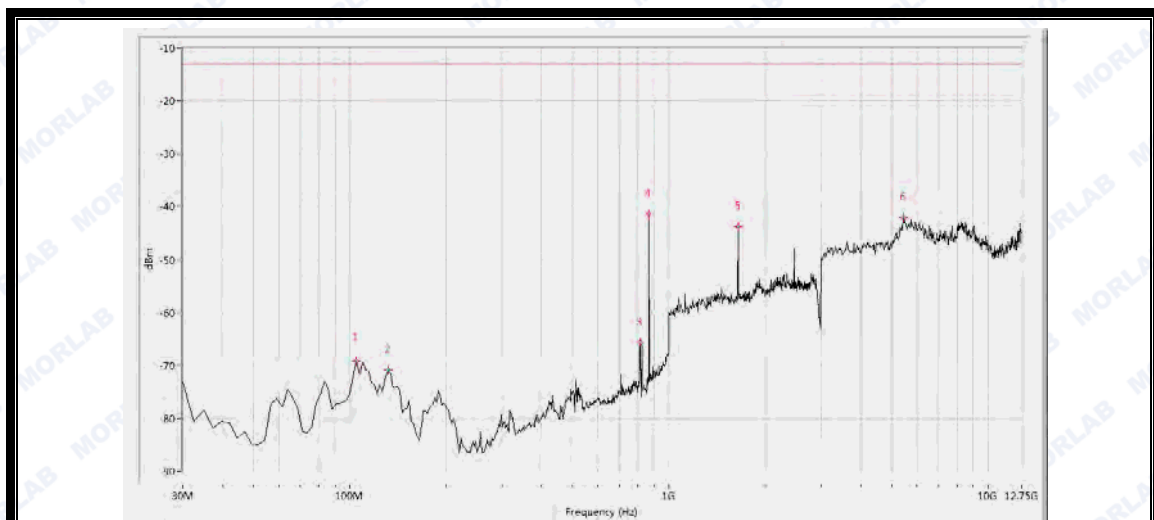
Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
GSM 850MHz	128	824.2	< -25	< -25	Plot A.1/A.2	-13	<u>PASS</u>
	190	836.6	< -25	< -25	Plot A.3/A.4		<u>PASS</u>
	251	848.8	< -25	< -25	Plot A.5/A.6		<u>PASS</u>
GSM 1900MHz	512	1850.2	< -25	< -25	Plot B.1/B.2	-13	<u>PASS</u>
	661	1880.0	< -25	< -25	Plot B.3/B.4		<u>PASS</u>
	810	1909.8	< -25	< -25	Plot B.5/B.6		<u>PASS</u>
EDGE 850MHz	128	824.2	< -25	< -25	Plot C.1/C.2	-13	<u>PASS</u>
	190	836.6	< -25	< -25	Plot C.3/C.4		<u>PASS</u>
	251	848.8	< -25	< -25	Plot C.5/C.6		<u>PASS</u>
EDGE 1900MHz	512	1850.2	< -25	< -25	Plot D.1/D.2	-13	<u>PASS</u>
	661	1880.0	< -25	< -25	Plot D.3/D.4		<u>PASS</u>
	810	1909.8	< -25	< -25	Plot D.5/D.6		<u>PASS</u>
WCDMA 850MHz	4132	826.4	< -25	< -25	Plot E.1/E.2	-13	<u>PASS</u>
	4175	835	< -25	< -25	Plot E.3/E.4		<u>PASS</u>
	4233	846.6	< -25	< -25	Plot E.5/E.6		<u>PASS</u>
WCDMA 1900MHz	9262	1852.4	< -25	< -25	Plot F.1/F.2	-13	<u>PASS</u>
	9400	1880	< -25	< -25	Plot F.3/F.4		<u>PASS</u>
	9538	1907.6	< -25	< -25	Plot F.5/F.6		<u>PASS</u>
HSDPA 850MHz	4132	826.4	< -25	< -25	Plot G.1/G.2	-13	<u>PASS</u>
	4175	835	< -25	< -25	Plot G.3/G.4		<u>PASS</u>
	4233	846.6	< -25	< -25	Plot G.5/G.6		<u>PASS</u>
HSDPA 1900MHz	9262	1852.4	< -25	< -25	Plot H.1/H.2	-13	<u>PASS</u>
	9400	1880	< -25	< -25	Plot H.3/H.4		<u>PASS</u>
	9538	1907.6	< -25	< -25	Plot H.5/H.6		<u>PASS</u>
HSUPA 850MHz	4132	826.4	< -25	< -25	Plot I.1/I.2	-13	<u>PASS</u>
	4175	835	< -25	< -25	Plot I.3/I.4		<u>PASS</u>
	4233	846.6	< -25	< -25	Plot I.5/I.6		<u>PASS</u>
HSUPA 1900MHz	9262	1852.4	< -25	< -25	Plot J.1/J.2	-13	<u>PASS</u>
	9400	1880	< -25	< -25	Plot J.3/J.4		<u>PASS</u>
	9538	1907.6	< -25	< -25	Plot J.5/J.6		<u>PASS</u>
HSPA+ 850MHz	4132	826.4	< -25	< -25	Plot K.1/K.2	-13	<u>PASS</u>
	4175	835	< -25	< -25	Plot K.3/K.4		<u>PASS</u>
	4233	846.6	< -25	< -25	Plot K.5/K.6		<u>PASS</u>
HSPA+	9262	1852.4	< -25	< -25	Plot L.1/L.2	-13	<u>PASS</u>

Band	Channel	Frequency (MHz)	Measured Max. Spurious Emission (dBm)		Refer to Plot	Limit (dBm)	Verdict
			Test Antenna Horizontal	Test Antenna Vertical			
1900MHz	9400	1880	< -25	< -25	Plot L.3/L.4		<u>PASS</u>
	9538	1907.6	< -25	< -25	Plot L.5/L.6		<u>PASS</u>

2. Test Plots for the Whole Measurement Frequency Range:

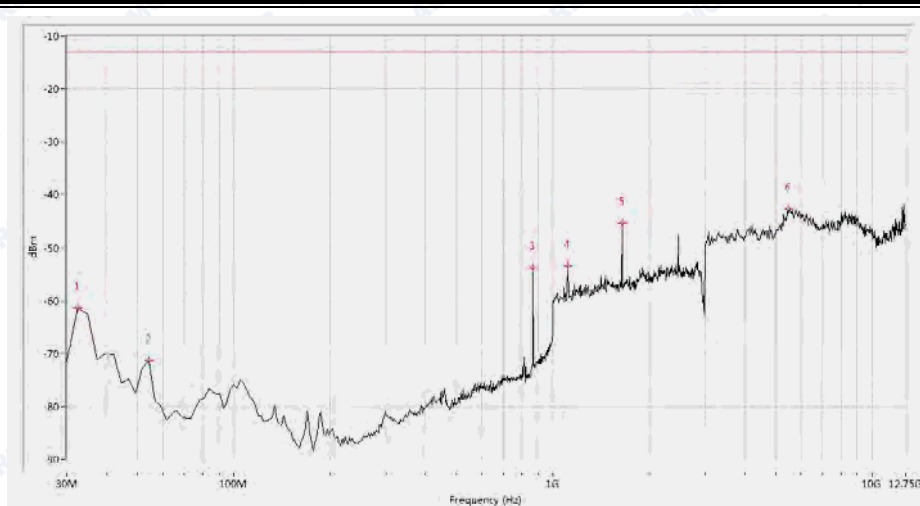
Note1: the power of the EUT transmitting frequency should be ignored.

Note2: 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.



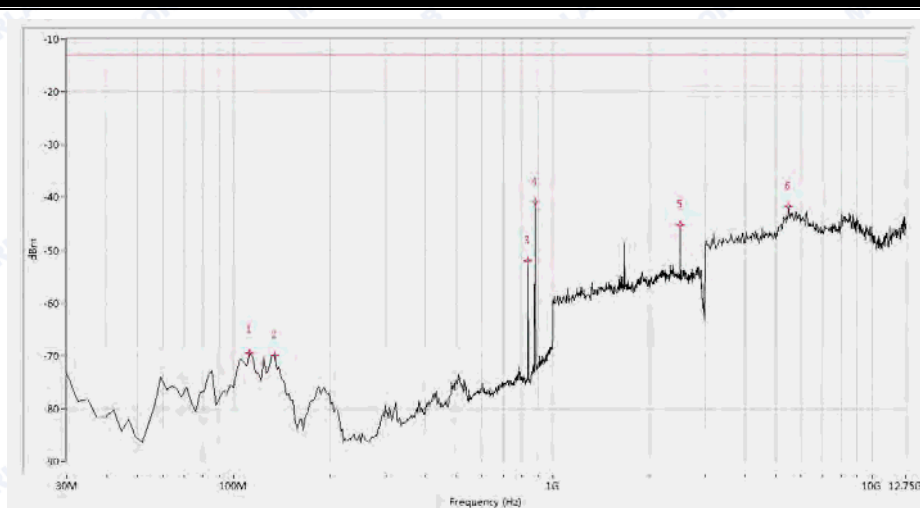
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-69.11	-13.0	56.1	5.0	Horizontal	PASS
131.596	-70.76	-13.0	57.8	0.0	Horizontal	PASS
813.741	-65.56	-13.0	52.6	247.5	Horizontal	N.A
866.958	-41.45	-13.0	28.4	42.0	Horizontal	N.A
1648.379	-43.78	-13.0	30.8	300.0	Horizontal	PASS
5431.421	-42.05	-13.0	29.1	14.8	Horizontal	PASS

(Plot A.1: GSM 850MHz Channel = 128, Test Antenna Horizontal)



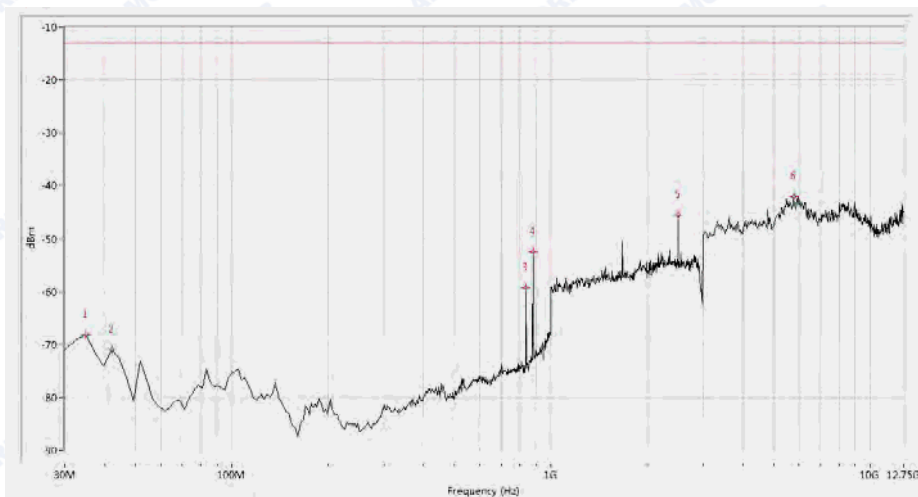
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-61.40	-13.0	48.4	208.1	Vertical	PASS
54.190	-71.31	-13.0	58.3	297.0	Vertical	PASS
866.958	-53.79	-13.0	40.8	202.5	Vertical	N.A
1114.713	-53.47	-13.0	40.5	217.3	Vertical	PASS
1648.379	-45.30	-13.0	32.3	302.1	Vertical	PASS
5480.050	-42.65	-13.0	29.7	0.0	Vertical	PASS

(Plot A.2: GSM 850MHz Channel = 128, Test Antenna Vertical)



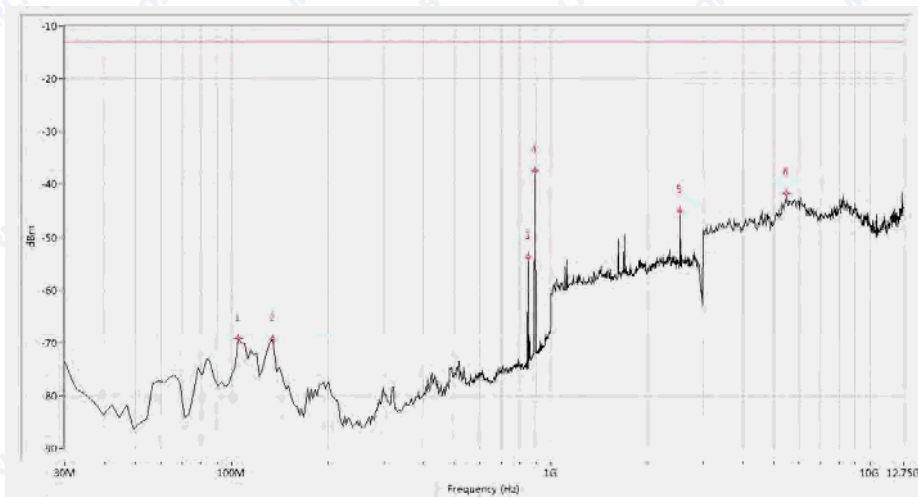
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
112.244	-69.34	-13.0	56.3	-0.0	Horizontal	PASS
134.015	-69.92	-13.0	56.9	339.5	Horizontal	PASS
835.511	-51.95	-13.0	39.0	251.6	Horizontal	N.A
879.052	-40.87	-13.0	27.9	124.4	Horizontal	N.A
2506.234	-45.12	-13.0	32.1	237.1	Horizontal	PASS
5480.050	-41.69	-13.0	28.7	304.8	Horizontal	PASS

(Plot A.3: GSM 850MHz Channel = 190, Test Antenna Horizontal)



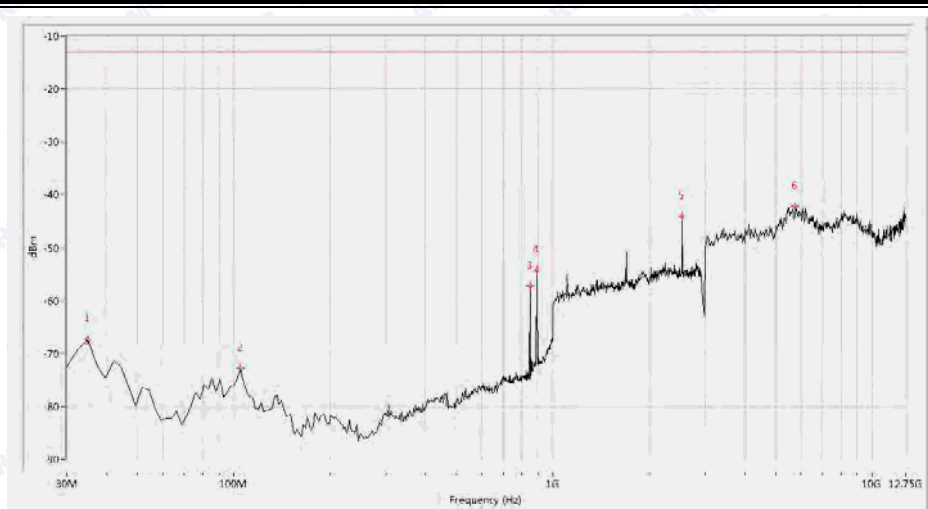
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.20	-13.0	55.2	29.7	Vertical	PASS
42.095	-71.04	-13.0	58.0	273.2	Vertical	PASS
835.511	-59.34	-13.0	46.3	273.2	Vertical	N.A
879.052	-52.51	-13.0	39.5	202.5	Vertical	N.A
2506.234	-45.50	-13.0	32.5	232.7	Vertical	PASS
5771.820	-41.99	-13.0	29.0	224.8	Vertical	PASS

(Plot A.4: GSM 850MHz Channel = 190, Test Antenna Vertical)



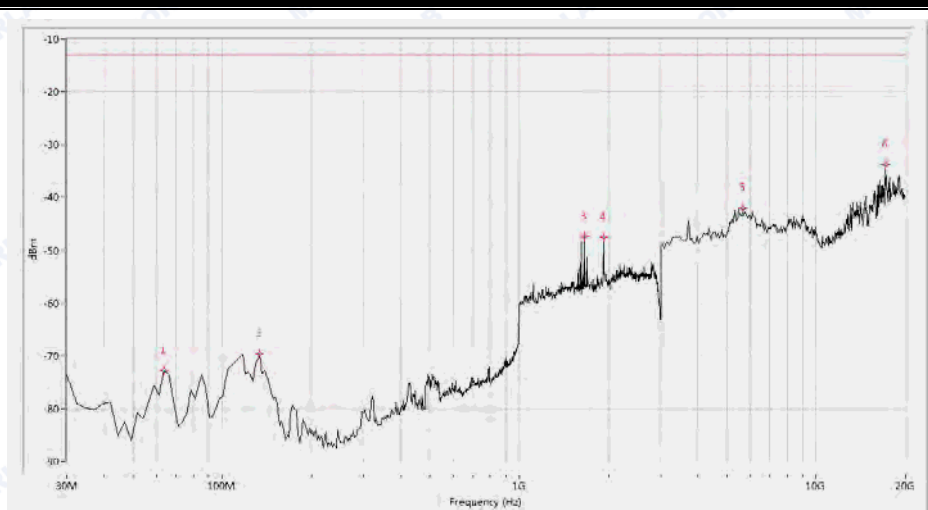
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-69.02	-13.0	56.0	96.0	Horizontal	PASS
134.015	-69.21	-13.0	56.2	111.7	Horizontal	PASS
847.606	-53.76	-13.0	40.8	223.3	Horizontal	N.A
891.147	-37.40	-13.0	24.4	106.1	Horizontal	N.A
2541.147	-45.01	-13.0	32.0	225.4	Horizontal	PASS
5480.050	-41.75	-13.0	28.7	339.1	Horizontal	PASS

(Plot A.5: GSM 850MHz Channel = 251, Test Antenna Horizontal)



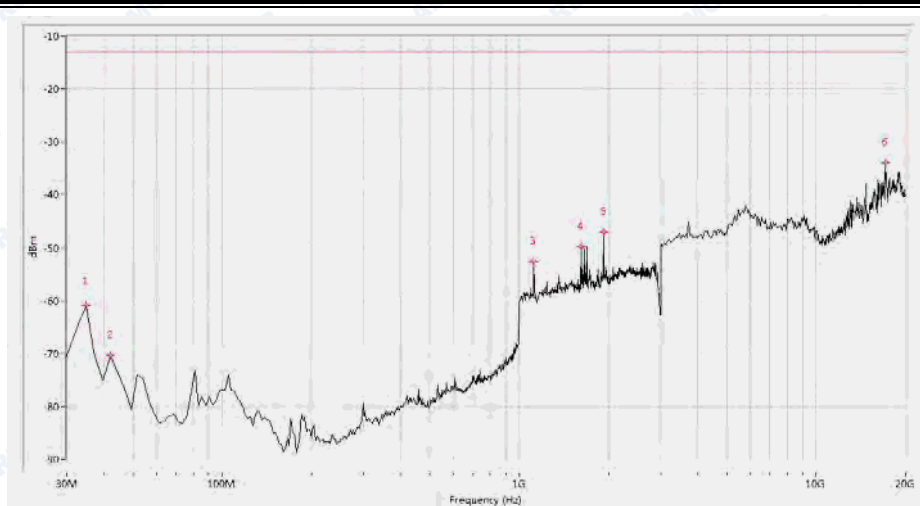
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-67.40	-13.0	54.4	40.3	Vertical	PASS
104.988	-72.71	-13.0	59.7	204.4	Vertical	PASS
847.606	-57.27	-13.0	44.3	97.2	Vertical	N.A
891.147	-54.21	-13.0	41.2	49.9	Vertical	N.A
2541.147	-44.08	-13.0	31.1	252.7	Vertical	PASS
5747.506	-42.18	-13.0	29.2	210.3	Vertical	PASS

(Plot A.6: GSM 850MHz Channel = 251, Test Antenna Vertical)



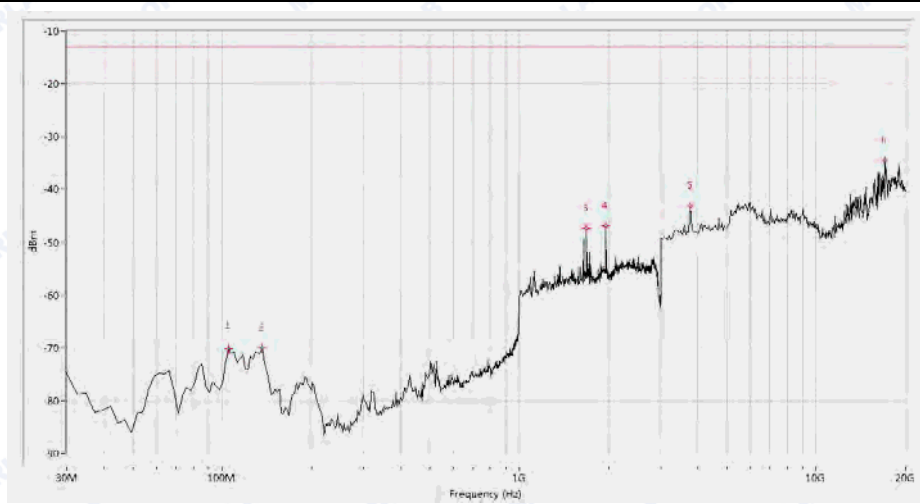
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-72.78	-13.0	59.8	218.1	Horizontal	PASS
134.015	-69.54	-13.0	56.5	356.5	Horizontal	PASS
1658.354	-47.40	-13.0	34.4	54.4	Horizontal	PASS
1927.681	-47.50	-13.0	34.5	126.6	Horizontal	N.A
5670.823	-41.97	-13.0	29.0	86.2	Horizontal	PASS
17159.601	-33.72	-13.0	20.7	0.2	Horizontal	PASS

(Plot B.1: GSM 1900MHz Channel = 512, Test Antenna Horizontal)



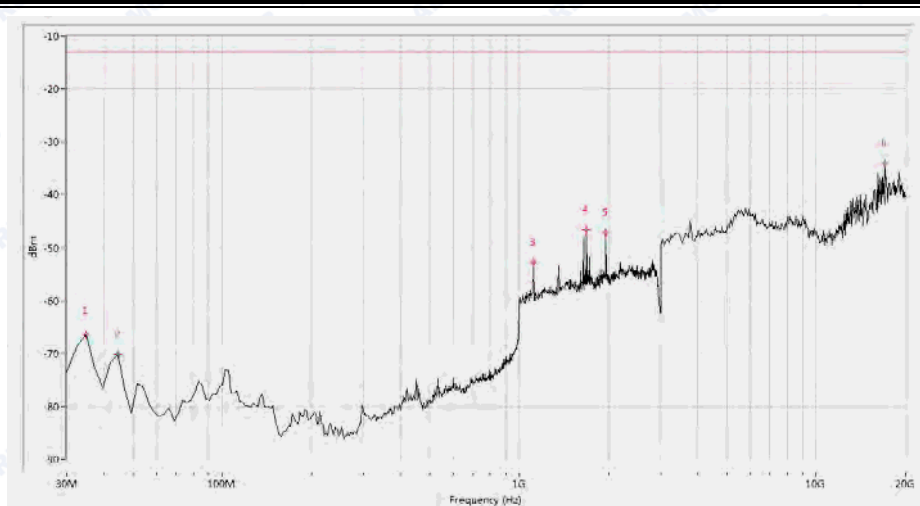
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-60.83	-13.0	47.8	275.4	Vertical	PASS
42.095	-70.36	-13.0	57.4	297.0	Vertical	PASS
1119.701	-52.57	-13.0	39.6	5.7	Vertical	PASS
1618.454	-49.82	-13.0	36.8	300.6	Vertical	PASS
1927.681	-47.00	-13.0	34.0	45.8	Vertical	N.A
17159.601	-33.98	-13.0	21.0	36.8	Vertical	PASS

(Plot B.2: GSM 1900MHz Channel = 512, Test Antenna Vertical)



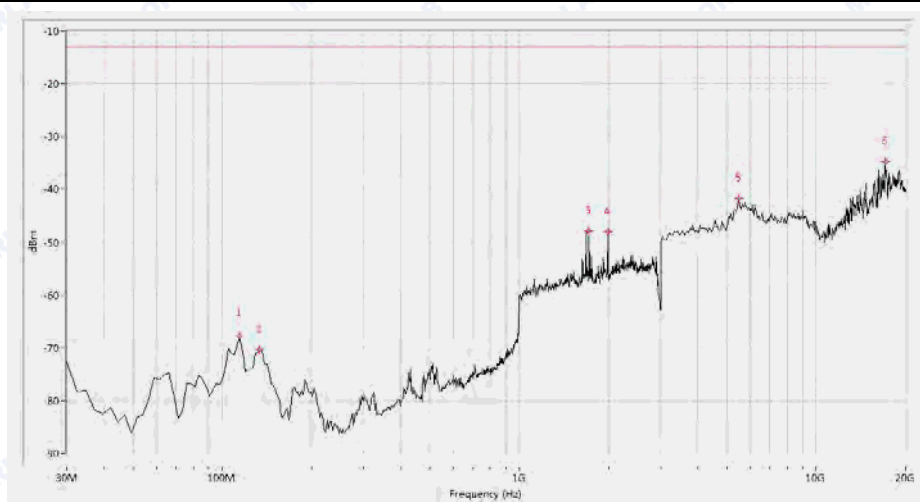
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-70.26	-13.0	57.3	26.8	Horizontal	PASS
136.434	-70.00	-13.0	57.0	143.7	Horizontal	PASS
1688.279	-47.46	-13.0	34.5	70.4	Horizontal	PASS
1957.606	-46.88	-13.0	33.9	236.0	Horizontal	N.A
3763.092	-43.12	-13.0	30.1	350.9	Horizontal	PASS
17032.419	-34.58	-13.0	21.6	-0.0	Horizontal	PASS

(Plot B.3: GSM 1900MHz Channel = 661, Test Antenna Horizontal)



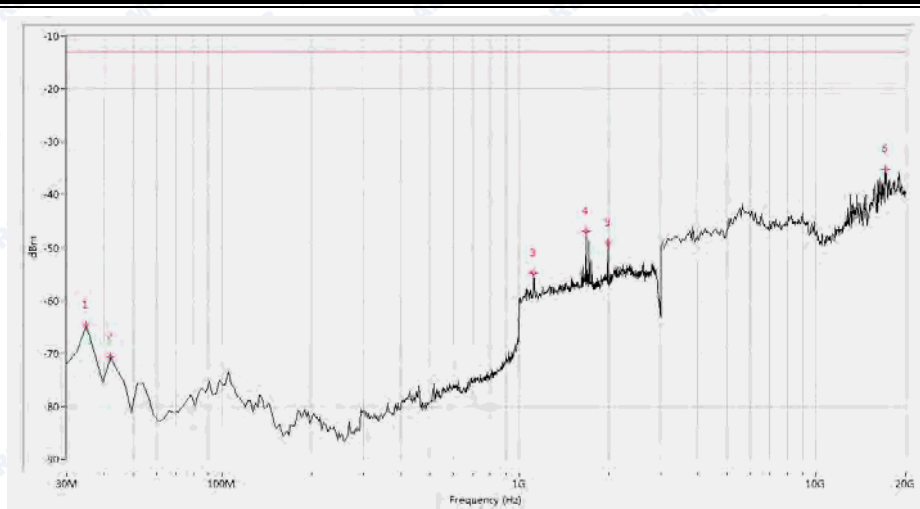
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-66.35	-13.0	53.4	96.8	Vertical	PASS
44.514	-70.17	-13.0	57.2	4.0	Vertical	PASS
1119.701	-52.78	-13.0	39.8	80.5	Vertical	PASS
1688.279	-46.67	-13.0	33.7	62.2	Vertical	PASS
1957.606	-47.19	-13.0	34.2	234.9	Vertical	N.A
17032.419	-34.12	-13.0	21.1	-0.0	Vertical	PASS

(Plot B.4: GSM 1900MHz Channel = 661, Test Antenna Vertical)



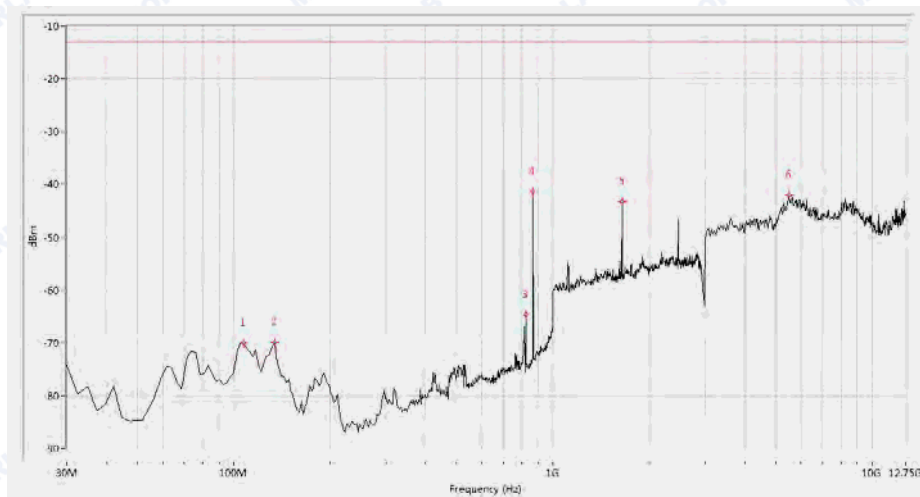
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
114.663	-67.89	-13.0	54.9	95.7	Horizontal	PASS
134.015	-70.32	-13.0	57.3	281.4	Horizontal	PASS
1718.204	-47.94	-13.0	34.9	237.8	Horizontal	PASS
1987.531	-47.95	-13.0	34.9	106.4	Horizontal	N.A
5501.247	-41.68	-13.0	28.7	224.3	Horizontal	PASS
17159.601	-34.79	-13.0	21.8	240.7	Horizontal	PASS

(Plot B.5: GSM 1900MHz Channel = 810, Test Antenna Horizontal)



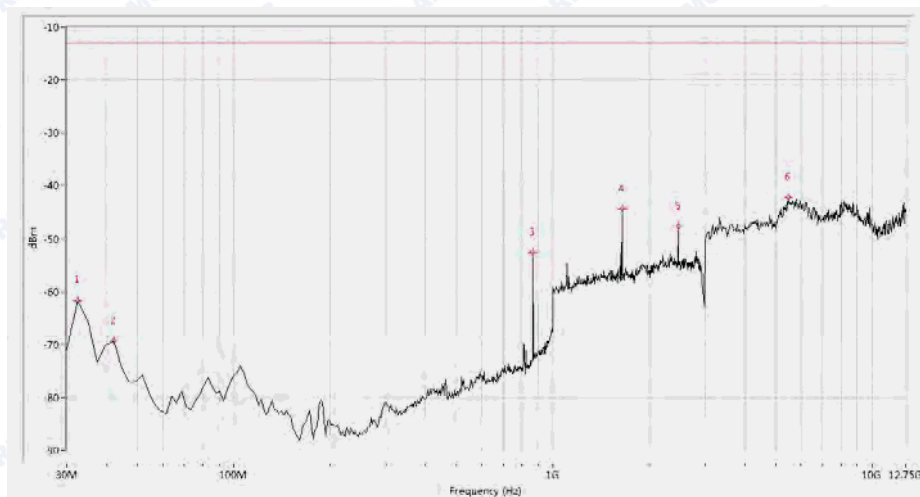
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-64.60	-13.0	51.6	-0.0	Vertical	PASS
42.095	-70.70	-13.0	57.7	248.3	Vertical	PASS
1119.701	-54.82	-13.0	41.8	-0.0	Vertical	PASS
1678.304	-46.92	-13.0	33.9	48.8	Vertical	PASS
1987.531	-49.16	-13.0	36.2	307.0	Vertical	N.A
17159.601	-35.18	-13.0	22.2	165.2	Vertical	PASS

(PlotB.6: GSM 1900MHz Channel = 810, Test Antenna Vertical)



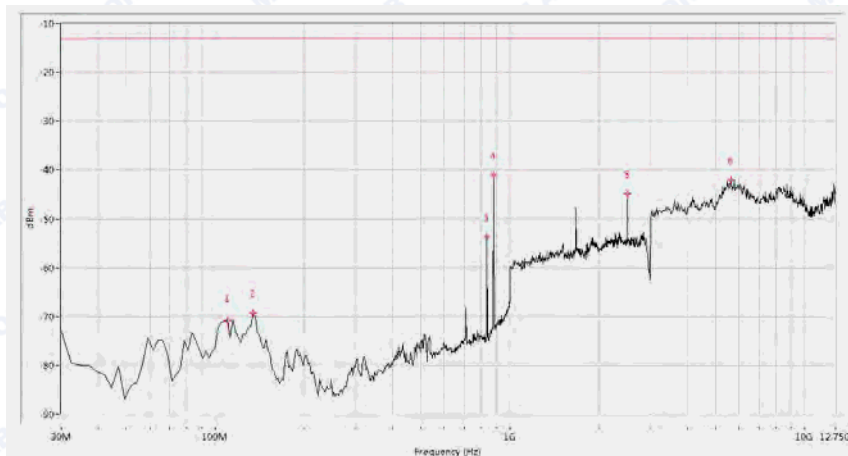
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
107.406	-69.98	-13.0	57.0	272.5	Horizontal	PASS
134.015	-69.88	-13.0	56.9	79.4	Horizontal	PASS
823.416	-64.68	-13.0	51.7	229.7	Horizontal	N.A
866.958	-41.40	-13.0	28.4	55.5	Horizontal	N.A
1648.379	-43.32	-13.0	30.3	52.5	Horizontal	PASS
5504.364	-41.99	-13.0	29.0	329.0	Horizontal	PASS

(Plot C.1: EGPRS 850MHz Channel = 128, Test Antenna Horizontal)



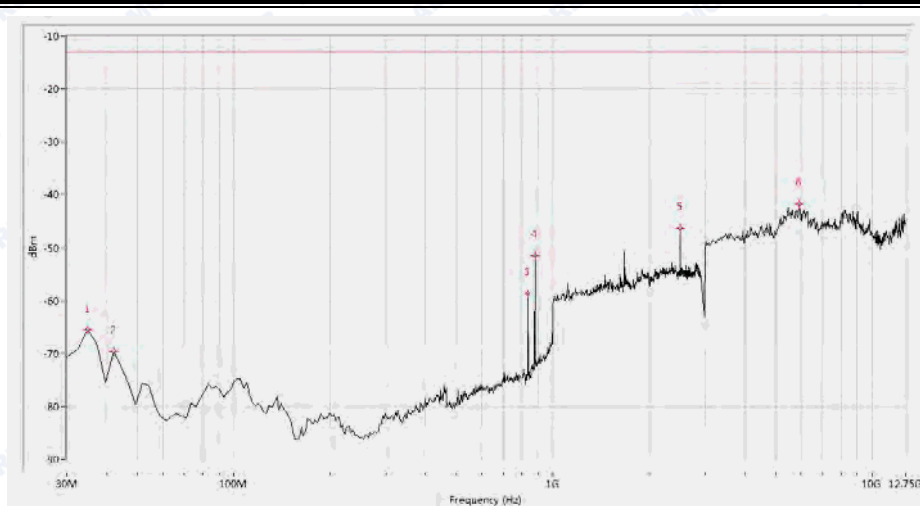
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-61.58	-13.0	48.6	91.2	Vertical	PASS
42.095	-69.27	-13.0	56.3	327.0	Vertical	PASS
866.958	-52.66	-13.0	39.7	193.9	Vertical	N.A
1648.379	-44.35	-13.0	31.3	58.8	Vertical	PASS
2471.322	-47.75	-13.0	34.8	252.4	Vertical	PASS
5455.736	-42.10	-13.0	29.1	198.0	Vertical	PASS

(Plot C.2: EGPRS 850MHz Channel = 128, Test Antenna Vertical)



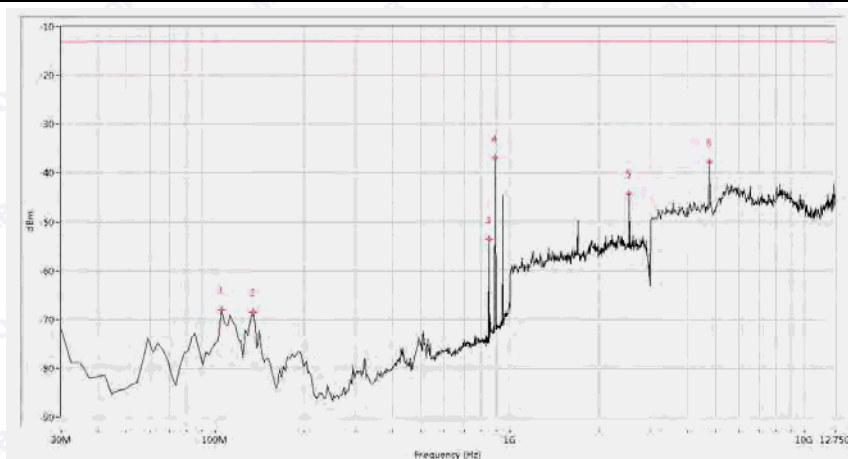
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.87	-13.0	57.9	6.6	Horizontal	PASS
134.015	-69.32	-13.0	56.3	121.0	Horizontal	PASS
835.511	-53.70	-13.0	40.7	265.0	Horizontal	N.A
879.052	-40.97	-13.0	28.0	79.0	Horizontal	N.A
2506.234	-44.92	-13.0	31.9	252.0	Horizontal	PASS
5650.249	-42.05	-13.0	29.0	281.7	Horizontal	PASS

(Plot C.3: EGPRS 850MHz Channel = 190, Test Antenna Horizontal)



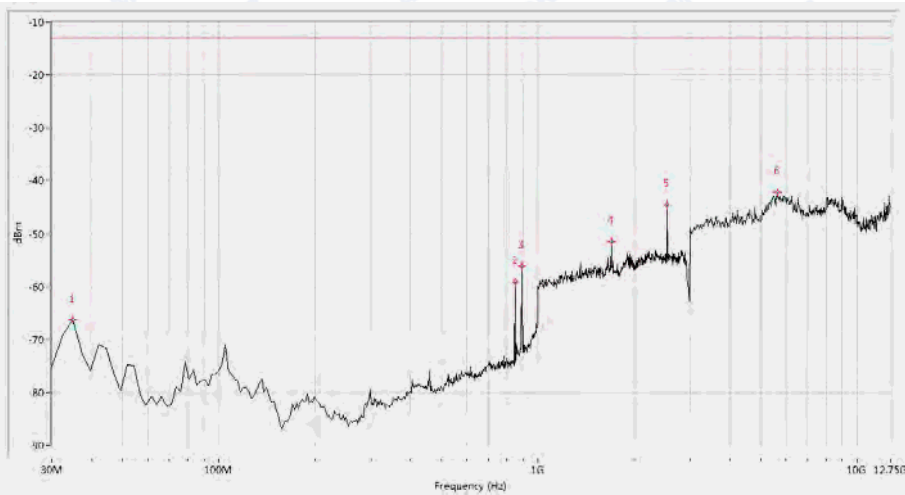
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-65.41	-13.0	52.4	107.6	Vertical	PASS
42.095	-69.55	-13.0	56.5	189.4	Vertical	PASS
835.511	-58.65	-13.0	45.6	86.0	Vertical	N.A
879.052	-51.49	-13.0	38.5	195.0	Vertical	N.A
2506.234	-46.23	-13.0	33.2	253.8	Vertical	PASS
5917.706	-41.61	-13.0	28.6	30.6	Vertical	PASS

(Plot C.4: EGPRS 850MHz Channel = 190, Test Antenna Vertical)



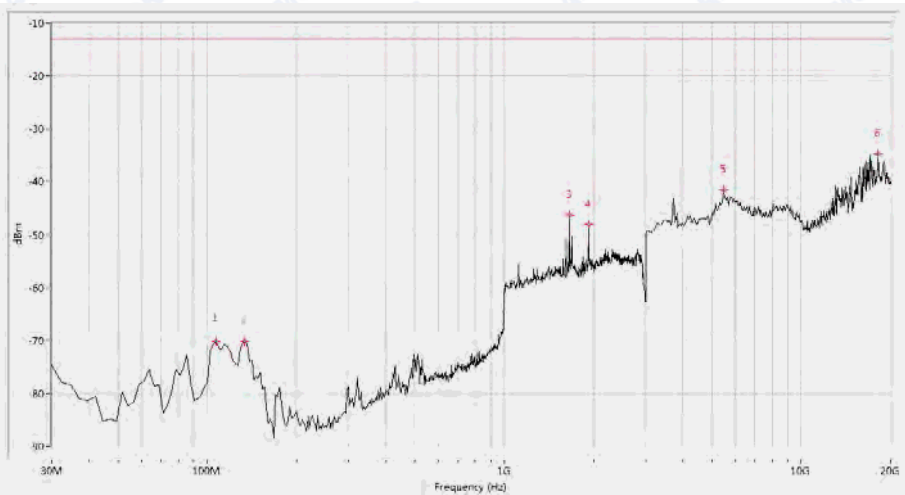
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-67.98	-13.0	55.0	131.0	Horizontal	PASS
134.015	-68.48	-13.0	55.5	200.1	Horizontal	PASS
847.606	-53.60	-13.0	40.6	248.2	Horizontal	N.A
891.147	-36.93	-13.0	23.9	50.6	Horizontal	N.A
2541.147	-44.28	-13.0	31.3	237.1	Horizontal	PASS
4750.623	-37.67	-13.0	24.7	145.2	Horizontal	PASS

(Plot C.5: EGPRS 850MHz Channel = 251, Test Antenna Horizontal)



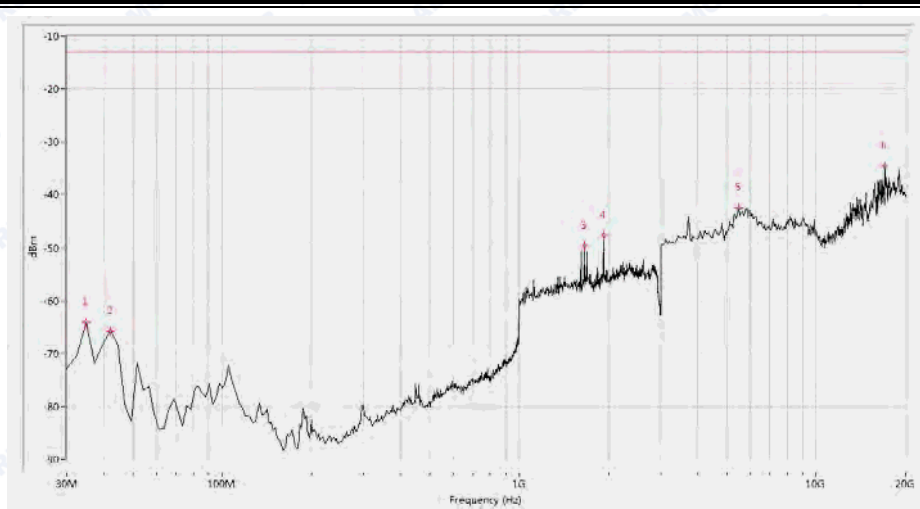
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-66.28	-13.0	53.3	122.5	Vertical	PASS
847.606	-59.17	-13.0	46.2	80.0	Vertical	N.A
891.147	-56.03	-13.0	43.0	170.1	Vertical	N.A
1698.254	-51.44	-13.0	38.4	92.7	Vertical	PASS
2541.147	-44.58	-13.0	31.6	255.0	Vertical	PASS
5625.935	-42.14	-13.0	29.1	292.2	Vertical	PASS

(Plot C.6: EGPRS 850MHz Channel = 251, Test Antenna Vertical)



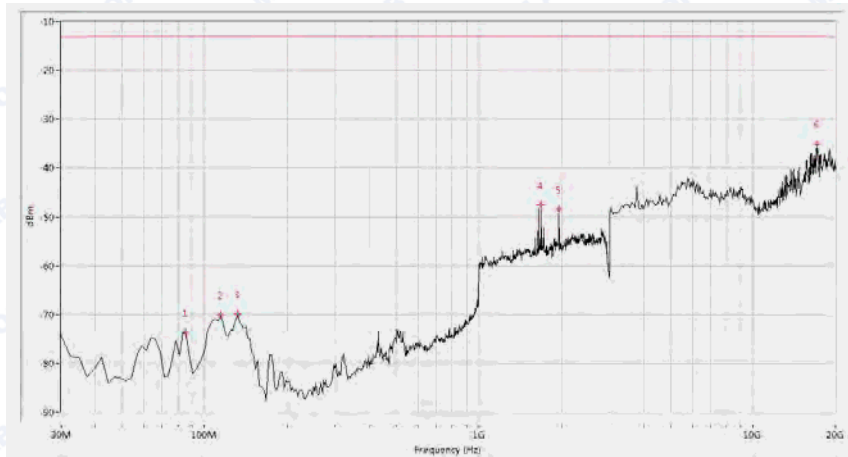
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
107.406	-70.15	-13.0	57.2	315.6	Horizontal	PASS
134.015	-70.14	-13.0	57.1	76.0	Horizontal	PASS
1658.354	-46.32	-13.0	33.3	65.5	Horizontal	PASS
1927.681	-47.98	-13.0	35.0	115.0	Horizontal	N.A
5501.247	-41.54	-13.0	28.5	360.0	Horizontal	PASS
18177.057	-34.76	-13.0	21.8	49.9	Horizontal	PASS

(Plot D.1: EGPRS 1900MHz Channel = 512, Test Antenna Horizontal)



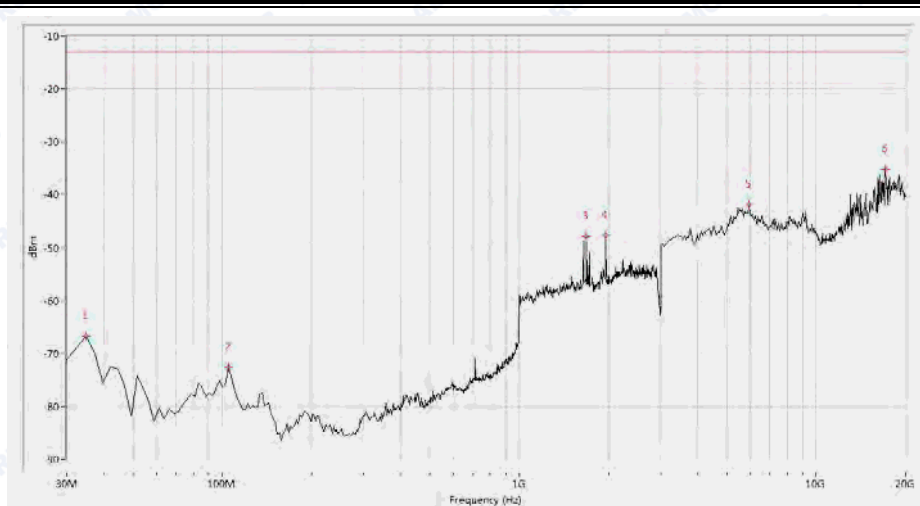
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-64.09	-13.0	51.1	134.4	Vertical	PASS
42.095	-65.73	-13.0	52.7	195.0	Vertical	PASS
1658.354	-49.61	-13.0	36.6	46.5	Vertical	PASS
1927.681	-47.69	-13.0	34.7	331.6	Vertical	N.A
5501.247	-42.53	-13.0	29.5	118.0	Vertical	PASS
17032.419	-34.60	-13.0	21.6	118.0	Vertical	PASS

(Plot D.2: EGPRS 1900MHz Channel = 512, Test Antenna Vertical)



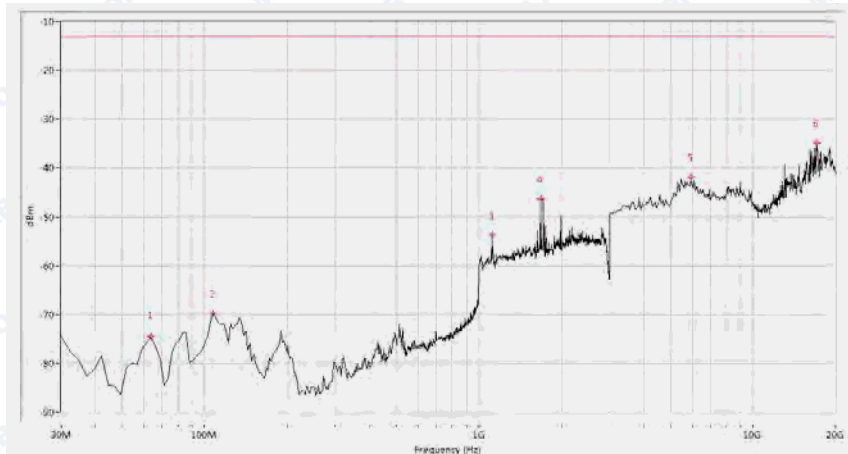
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
85.636	-73.72	-13.0	60.7	339.7	Horizontal	PASS
114.663	-70.11	-13.0	57.1	193.1	Horizontal	PASS
131.596	-69.95	-13.0	57.0	350.9	Horizontal	PASS
1688.279	-47.56	-13.0	34.6	68.8	Horizontal	PASS
1957.606	-48.50	-13.0	35.5	82.9	Horizontal	N.A
17159.601	-34.99	-13.0	22.0	302.9	Horizontal	PASS

(Plot D.3: EGPRS 1900MHz Channel = 661, Test Antenna Horizontal)



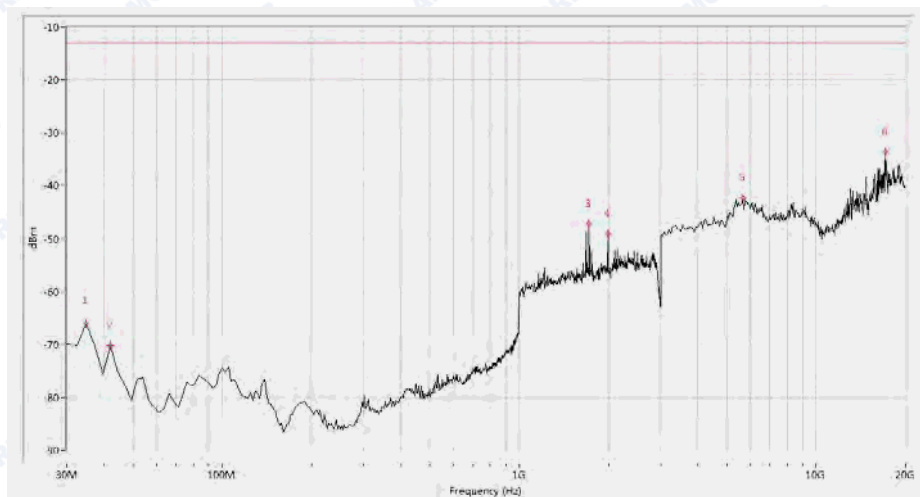
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-66.75	-13.0	53.8	359.1	Vertical	PASS
104.988	-72.52	-13.0	59.5	341.6	Vertical	PASS
1688.279	-47.89	-13.0	34.9	52.1	Vertical	PASS
1957.606	-47.65	-13.0	34.6	240.8	Vertical	N.A
5925.187	-41.86	-13.0	28.9	281.8	Vertical	PASS
17159.601	-35.19	-13.0	22.2	354.9	Vertical	PASS

(Plot D.4: EGPRS 1900MHz Channel = 661, Test Antenna Vertical)



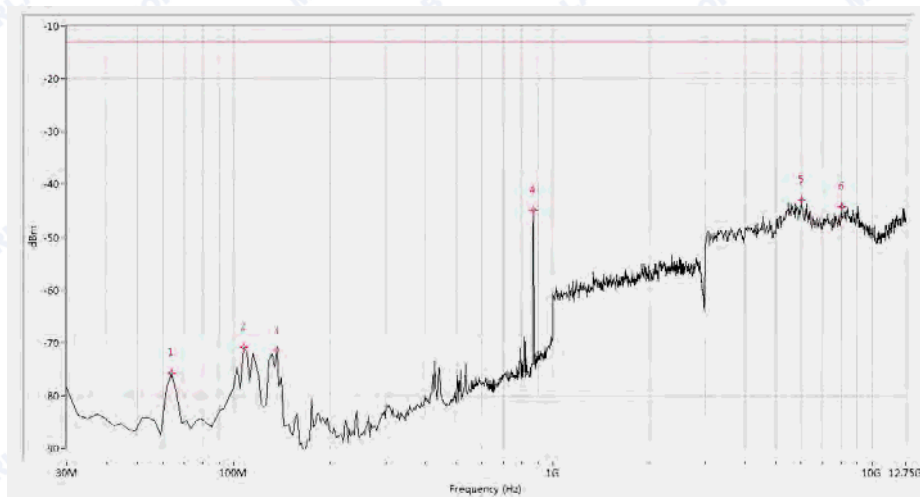
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-74.45	-13.0	61.4	-0.0	Horizontal	PASS
107.406	-69.73	-13.0	56.7	349.5	Horizontal	PASS
1114.713	-53.77	-13.0	40.8	43.6	Horizontal	PASS
1678.304	-46.26	-13.0	33.3	57.4	Horizontal	PASS
5925.187	-41.81	-13.0	28.8	20.8	Horizontal	PASS
17032.419	-34.95	-13.0	21.9	223.7	Horizontal	PASS

(Plot D.5: EGPRS 1900MHz Channel = 810, Test Antenna Horizontal)



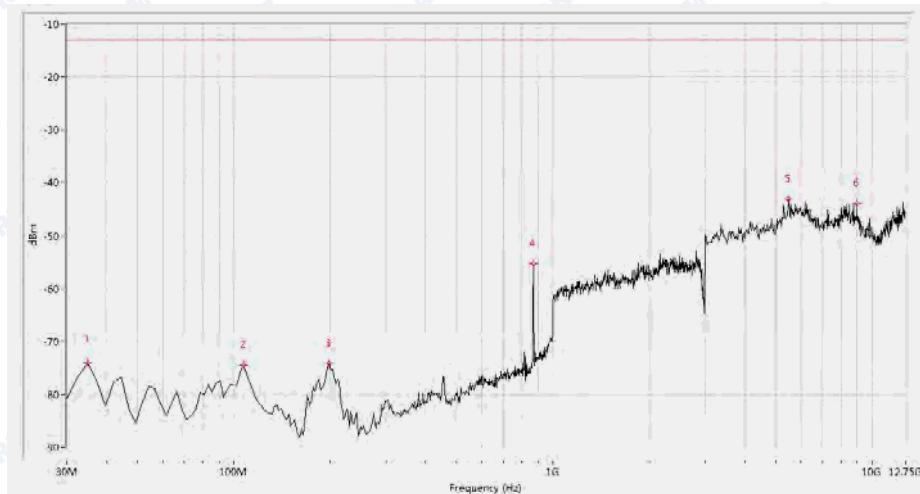
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-66.05	-13.0	53.1	97.2	Vertical	PASS
42.095	-70.25	-13.0	57.2	311.9	Vertical	PASS
1718.204	-47.24	-13.0	34.2	261.6	Vertical	PASS
1987.531	-49.05	-13.0	36.0	229.6	Vertical	N.A
5670.823	-42.29	-13.0	29.3	360.0	Vertical	PASS
17159.601	-33.60	-13.0	20.6	-0.0	Vertical	PASS

(Plot D.6: EGPRS 1900MHz Channel = 810, Test Antenna Vertical)



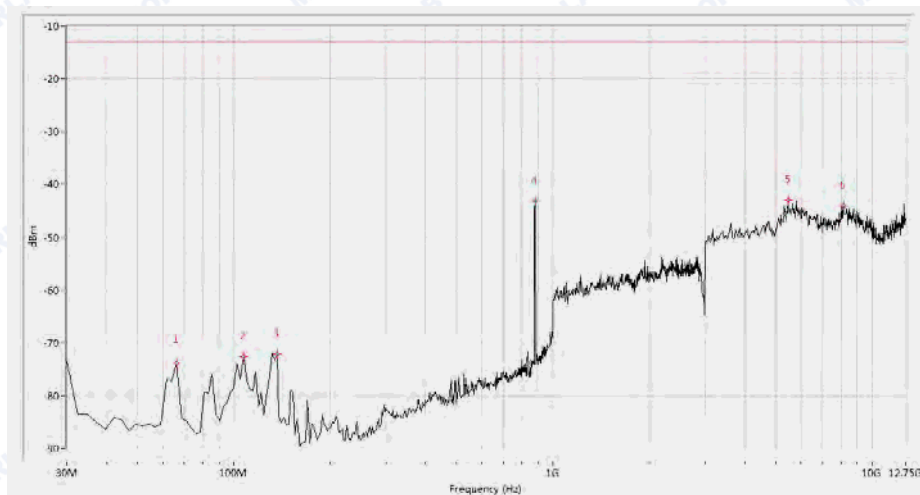
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-75.81	-13.0	62.8	83.8	Horizontal	PASS
107.406	-70.82	-13.0	57.8	61.9	Horizontal	PASS
136.434	-71.44	-13.0	58.4	324.5	Horizontal	PASS
871.796	-44.88	-13.0	31.9	199.5	Horizontal	N.A
6014.963	-42.92	-13.0	29.9	351.2	Horizontal	PASS
8033.042	-44.14	-13.0	31.1	10.1	Horizontal	PASS

(Plot E.1: WCDMA 850MHz Channel = 4132, Test Antenna Horizontal)



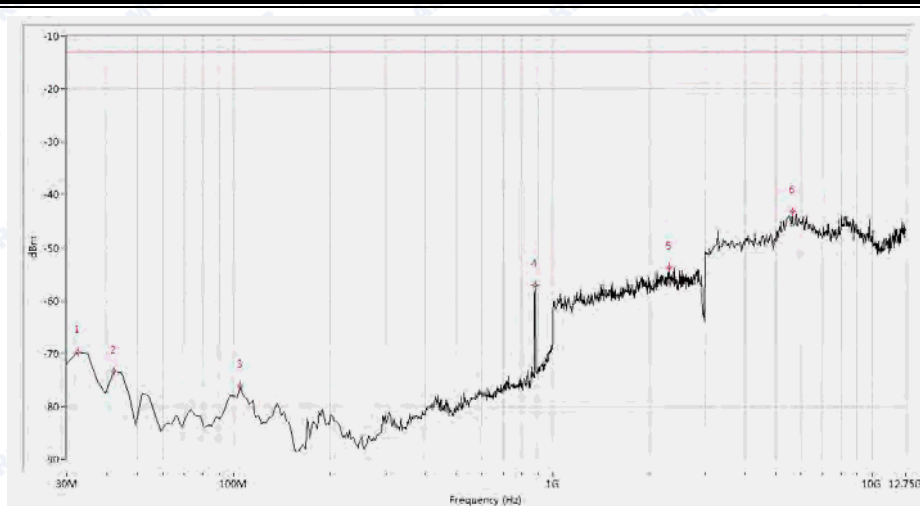
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-73.95	-13.0	60.9	359.9	Vertical	PASS
107.406	-74.55	-13.0	61.6	0.7	Vertical	PASS
199.327	-74.10	-13.0	61.1	134.4	Vertical	PASS
869.377	-55.28	-13.0	42.3	150.4	Vertical	N.A
5480.050	-43.16	-13.0	30.2	189.4	Vertical	PASS
8981.297	-43.90	-13.0	30.9	351.0	Vertical	PASS

(Plot E.2: WCDMA 850MHz Channel = 4132, Test Antenna Vertical)



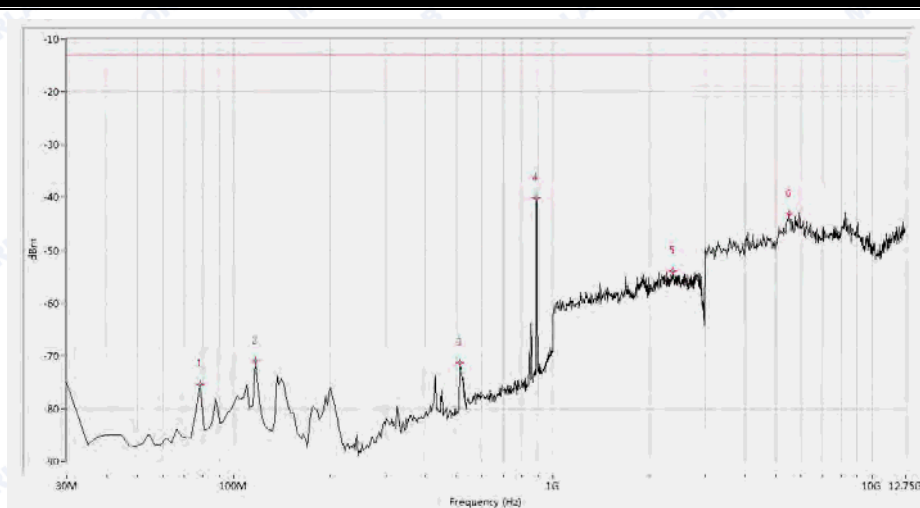
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
66.284	-73.85	-13.0	60.9	97.9	Horizontal	PASS
107.406	-72.54	-13.0	59.5	161.5	Horizontal	PASS
136.434	-72.07	-13.0	59.1	86.7	Horizontal	PASS
879.052	-43.12	-13.0	30.1	-0.0	Horizontal	N.A
5455.736	-43.01	-13.0	30.0	108.0	Horizontal	PASS
8130.299	-44.04	-13.0	31.0	176.8	Horizontal	PASS

(Plot E.3: WCDMA 850MHz Channel = 4175, Test Antenna Horizontal)



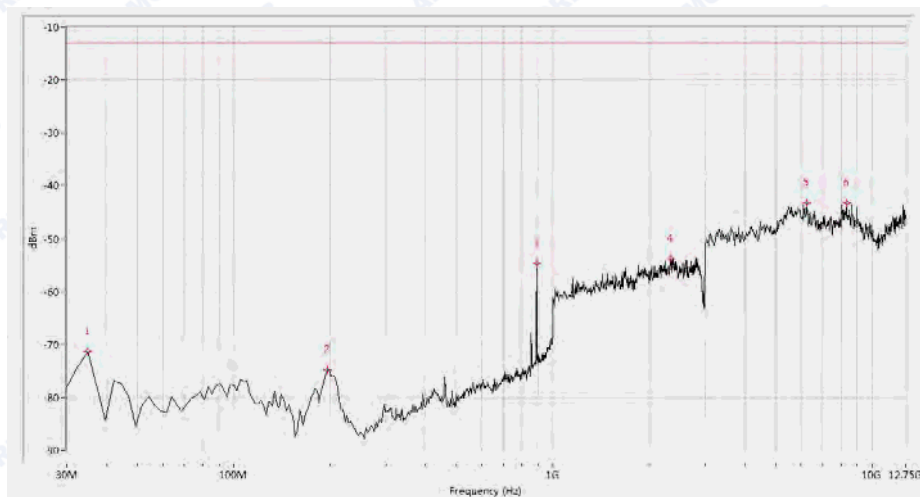
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-69.77	-13.0	56.8	360.0	Vertical	PASS
42.095	-73.37	-13.0	60.4	-0.0	Vertical	PASS
104.988	-76.01	-13.0	63.0	183.9	Vertical	PASS
879.052	-57.01	-13.0	44.0	40.6	Vertical	N.A
2311.721	-53.80	-13.0	40.8	211.1	Vertical	PASS
5625.935	-43.14	-13.0	30.1	132.5	Vertical	PASS

(Plot E.4: WCDMA 850MHz Channel = 4175, Test Antenna Vertical)



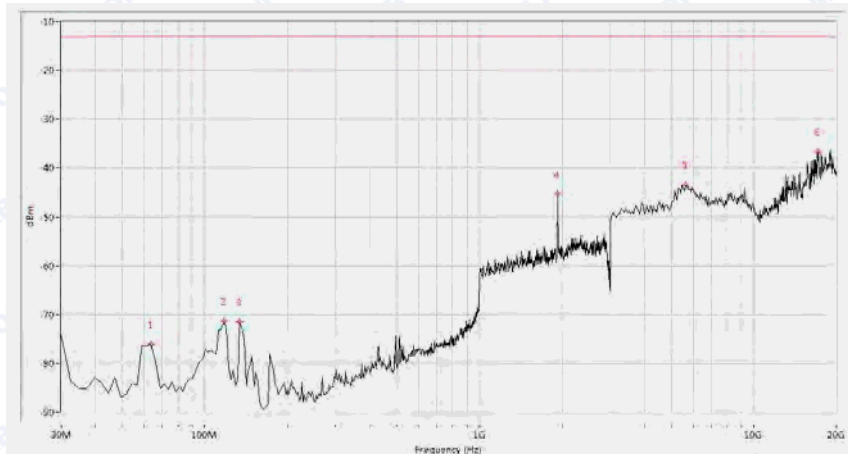
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
78.379	-75.35	-13.0	62.3	84.1	Horizontal	PASS
117.082	-70.93	-13.0	57.9	225.6	Horizontal	PASS
511.372	-71.33	-13.0	58.3	94.9	Horizontal	PASS
888.728	-40.11	-13.0	27.1	3.8	Horizontal	N.A
2376.559	-53.84	-13.0	40.8	179.0	Horizontal	PASS
5504.364	-43.15	-13.0	30.1	320.5	Horizontal	PASS

(Plot E.5: WCDMA 850MHz Channel = 4233, Test Antenna Horizontal)



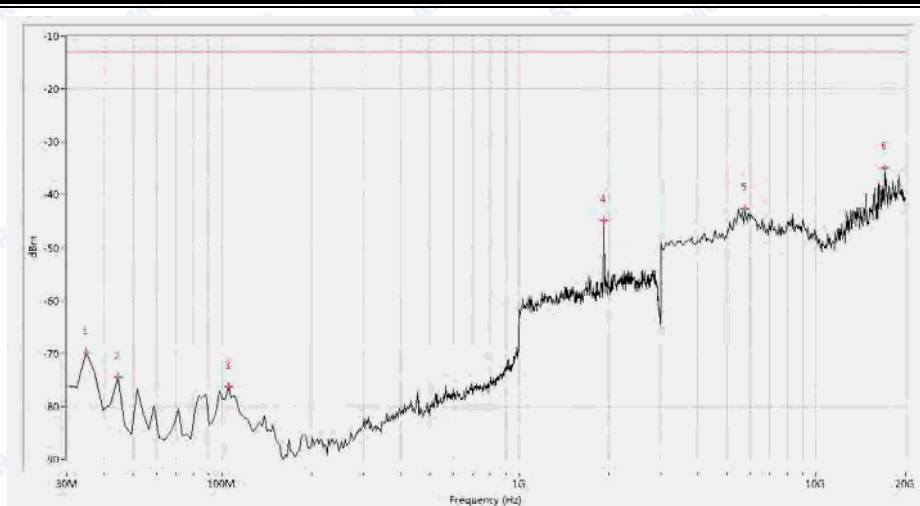
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-71.27	-13.0	58.3	291.4	Vertical	PASS
196.908	-74.77	-13.0	61.8	345.0	Vertical	PASS
891.147	-54.67	-13.0	41.7	144.4	Vertical	N.A
2341.646	-53.66	-13.0	40.7	275.4	Vertical	PASS
6233.791	-43.34	-13.0	30.3	280.6	Vertical	PASS
8349.127	-43.27	-13.0	30.3	9.9	Vertical	PASS

(Plot E.6: WCDMA 850MHz Channel = 4233, Test Antenna Vertical)



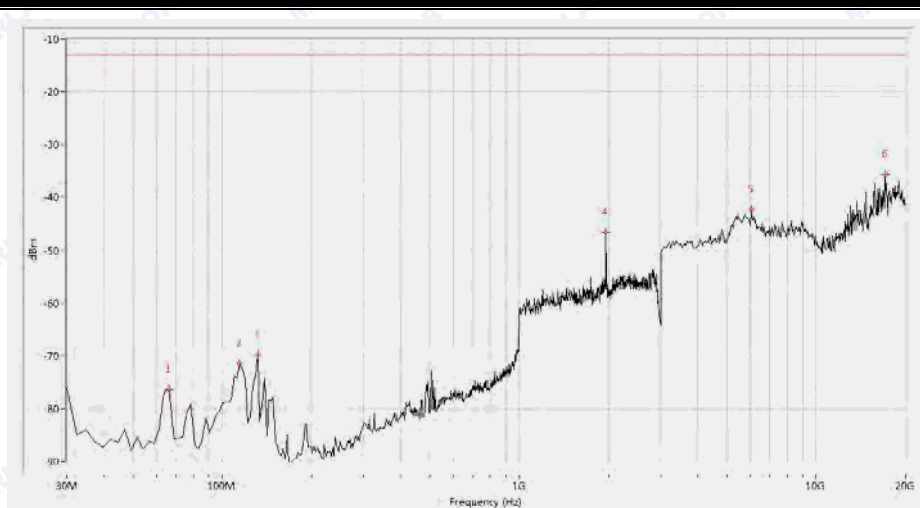
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-76.07	-13.0	63.1	99.0	Horizontal	PASS
117.082	-71.28	-13.0	58.3	336.3	Horizontal	PASS
134.015	-71.53	-13.0	58.5	66.3	Horizontal	PASS
1927.681	-45.39	-13.0	32.4	169.0	Horizontal	N.A
5628.429	-43.39	-13.0	30.4	31.7	Horizontal	PASS
17159.601	-36.56	-13.0	23.6	293.0	Horizontal	PASS

(Plot F.1: WCDMA 1900MHz Channel = 9262, Test Antenna Horizontal)



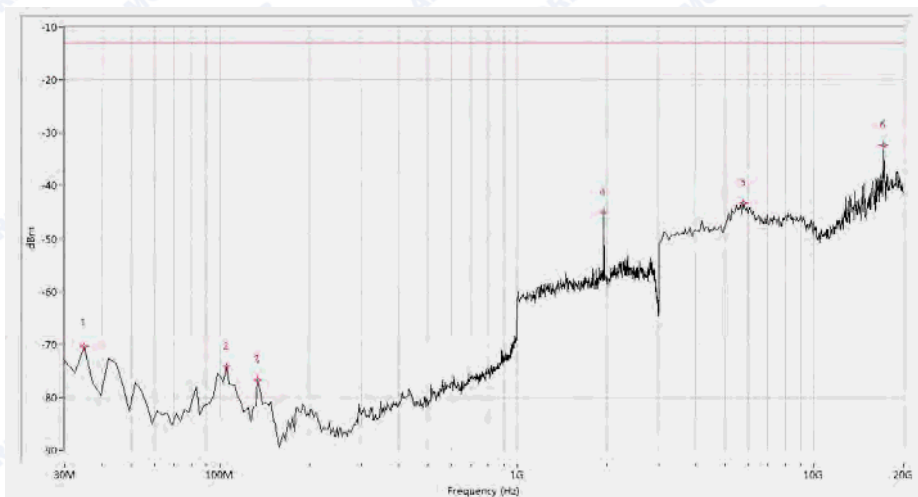
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-69.78	-13.0	56.8	338.3	Vertical	PASS
44.514	-74.45	-13.0	61.4	-0.0	Vertical	PASS
104.988	-76.24	-13.0	63.2	195.4	Vertical	PASS
1927.681	-44.83	-13.0	31.8	209.2	Vertical	N.A
5755.611	-42.64	-13.0	29.6	191.3	Vertical	PASS
17032.419	-34.84	-13.0	21.8	208.8	Vertical	PASS

(Plot F.2: WCDMA 1900MHz Channel = 9262, Test Antenna Vertical)



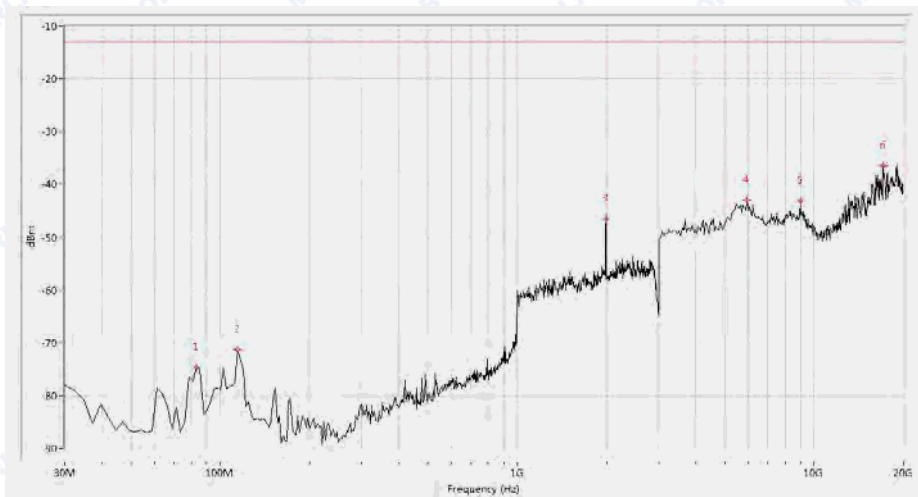
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
66.284	-76.33	-13.0	63.3	89.4	Horizontal	PASS
114.663	-71.48	-13.0	58.5	61.3	Horizontal	PASS
131.596	-69.68	-13.0	56.7	128.0	Horizontal	PASS
1957.606	-46.59	-13.0	33.6	239.1	Horizontal	N.A
6052.369	-42.31	-13.0	29.3	33.3	Horizontal	PASS
17159.601	-35.61	-13.0	22.6	189.5	Horizontal	PASS

(Plot F.3: WCDMA 1900MHz Channel = 9400, Test Antenna Horizontal)



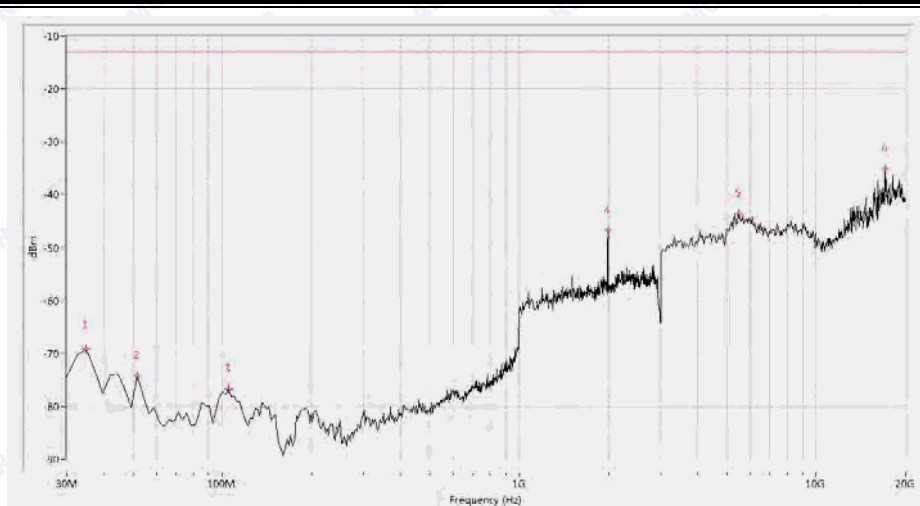
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-70.34	-13.0	57.3	325.2	Vertical	PASS
104.988	-74.12	-13.0	61.1	11.6	Vertical	PASS
134.015	-76.77	-13.0	63.8	206.6	Vertical	PASS
1957.606	-45.01	-13.0	32.0	321.6	Vertical	N.A
5798.005	-43.32	-13.0	30.3	220.7	Vertical	PASS
17159.601	-32.34	-13.0	19.3	294.7	Vertical	PASS

(Plot F.4: WCDMA 1900MHz Channel = 9400, Test Antenna Vertical)



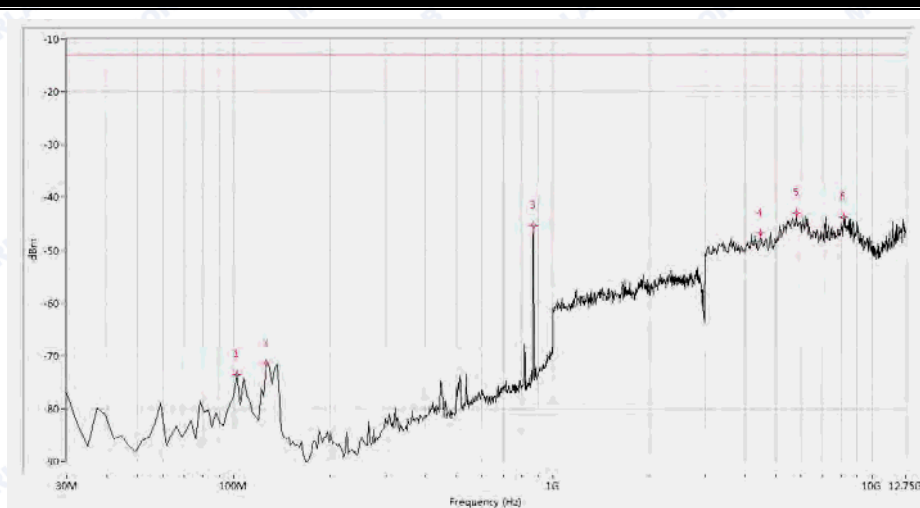
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
83.217	-74.66	-13.0	61.7	94.5	Horizontal	PASS
114.663	-71.33	-13.0	58.3	2.4	Horizontal	PASS
1987.531	-46.49	-13.0	33.5	72.5	Horizontal	N.A
5925.187	-42.92	-13.0	29.9	60.4	Horizontal	PASS
8977.556	-43.13	-13.0	30.1	213.3	Horizontal	PASS
17159.601	-36.38	-13.0	23.4	122.1	Horizontal	PASS

(Plot F.5: WCDMA 1900MHz Channel = 9538, Test Antenna Horizontal)



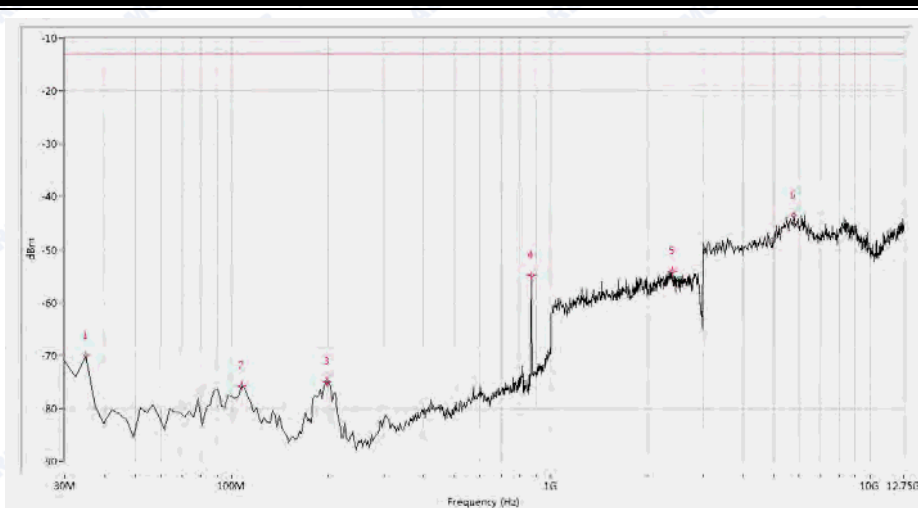
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-69.09	-13.0	56.1	282.1	Vertical	PASS
51.771	-74.20	-13.0	61.2	-0.0	Vertical	PASS
104.988	-76.66	-13.0	63.7	223.0	Vertical	PASS
1987.531	-46.80	-13.0	33.8	90.4	Vertical	N.A
5501.247	-43.61	-13.0	30.6	196.8	Vertical	PASS
17159.601	-34.96	-13.0	22.0	360.0	Vertical	PASS

(Plot F.6: WCDMA 1900MHz Channel = 9538, Test Antenna Vertical)



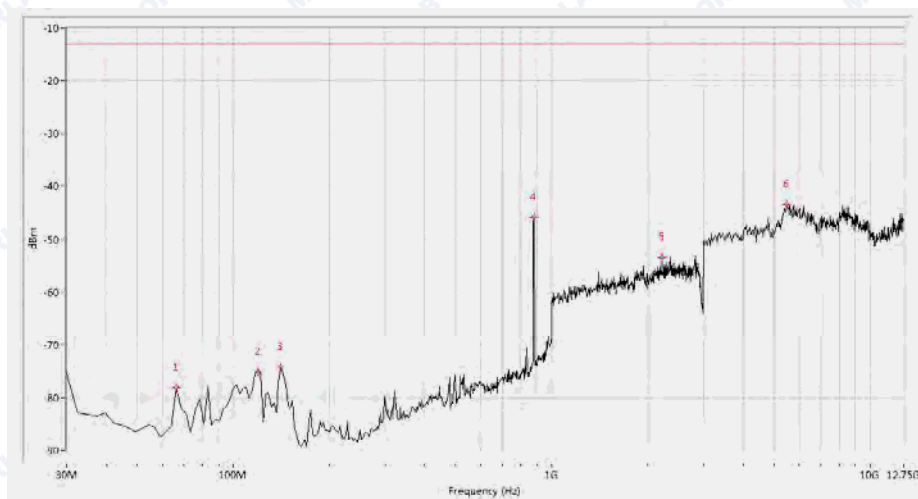
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
102.569	-73.60	-13.0	60.6	86.4	Horizontal	PASS
126.758	-71.39	-13.0	58.4	245.7	Horizontal	PASS
869.377	-45.26	-13.0	32.3	251.2	Horizontal	N.A
4483.167	-46.78	-13.0	33.8	271.3	Horizontal	PASS
5796.135	-42.91	-13.0	29.9	282.5	Horizontal	PASS
8130.299	-43.74	-13.0	30.7	242.7	Horizontal	PASS

(Plot G.1: HSDPA 850MHz Channel = 4132, Test Antenna Horizontal)



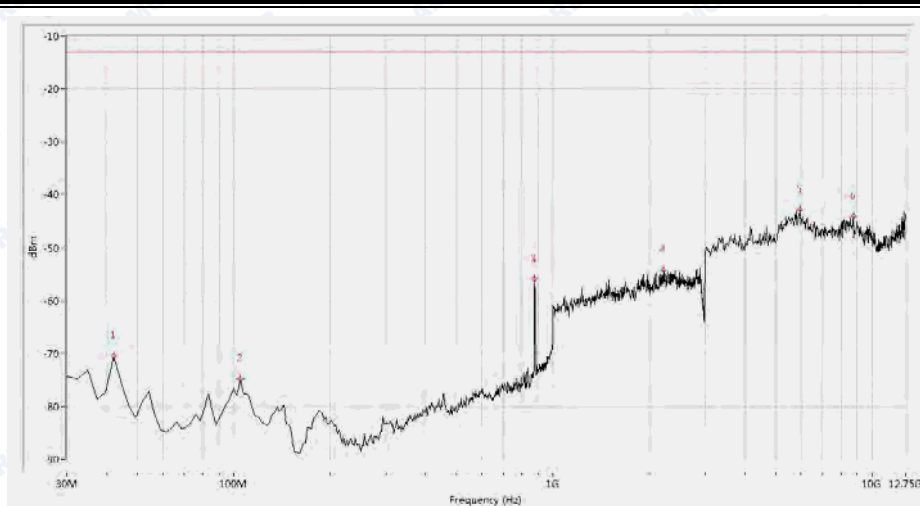
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-70.06	-13.0	57.1	356.3	Vertical	PASS
107.406	-75.73	-13.0	62.7	344.7	Vertical	PASS
199.327	-75.02	-13.0	62.0	120.5	Vertical	PASS
869.377	-54.89	-13.0	41.9	303.3	Vertical	N.A
2396.509	-54.02	-13.0	41.0	275.4	Vertical	PASS
5771.820	-43.57	-13.0	30.6	86.7	Vertical	PASS

(Plot G.2: HSDPA 850MHz Channel = 4132, Test Antenna Vertical)



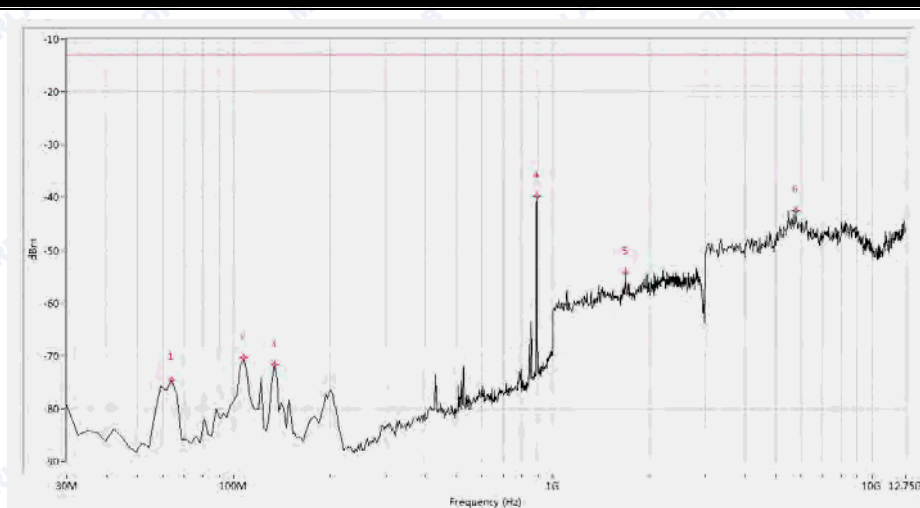
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
66.284	-78.14	-13.0	65.1	72.5	Horizontal	PASS
119.501	-75.03	-13.0	62.0	291.2	Horizontal	PASS
141.272	-74.19	-13.0	61.2	66.9	Horizontal	PASS
879.052	-45.80	-13.0	32.8	242.5	Horizontal	N.A
2221.945	-53.48	-13.0	40.5	172.9	Horizontal	PASS
5480.050	-43.39	-13.0	30.4	29.4	Horizontal	PASS

(Plot G.3: HSDPA 850MHz Channel = 4175, Test Antenna Horizontal)



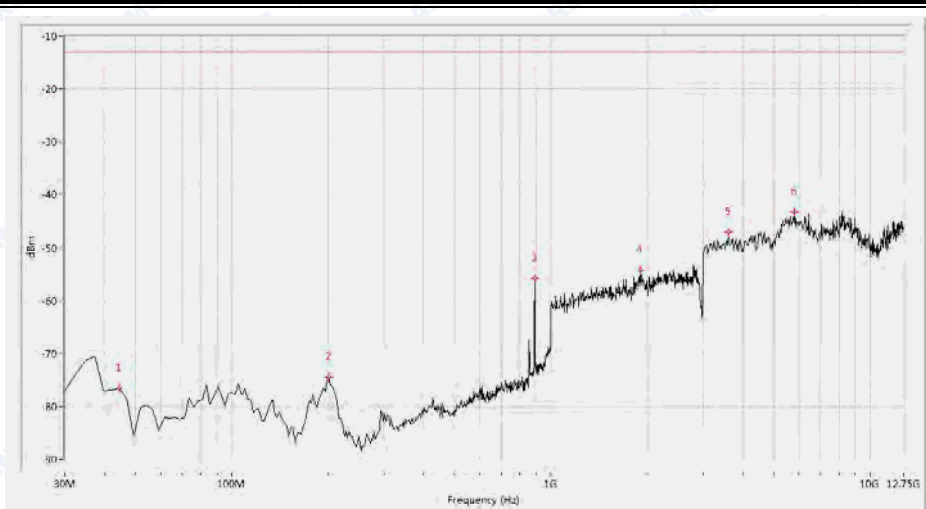
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-70.58	-13.0	57.6	313.0	Vertical	PASS
104.988	-74.85	-13.0	61.9	327.5	Vertical	PASS
876.633	-55.95	-13.0	42.9	204.7	Vertical	N.A
2221.945	-54.26	-13.0	41.3	54.8	Vertical	PASS
5966.334	-42.83	-13.0	29.8	291.8	Vertical	PASS
8738.155	-44.07	-13.0	31.1	360.0	Vertical	PASS

(Plot G.4: HSDPA 850MHz Channel = 4175, Test Antenna Vertical)



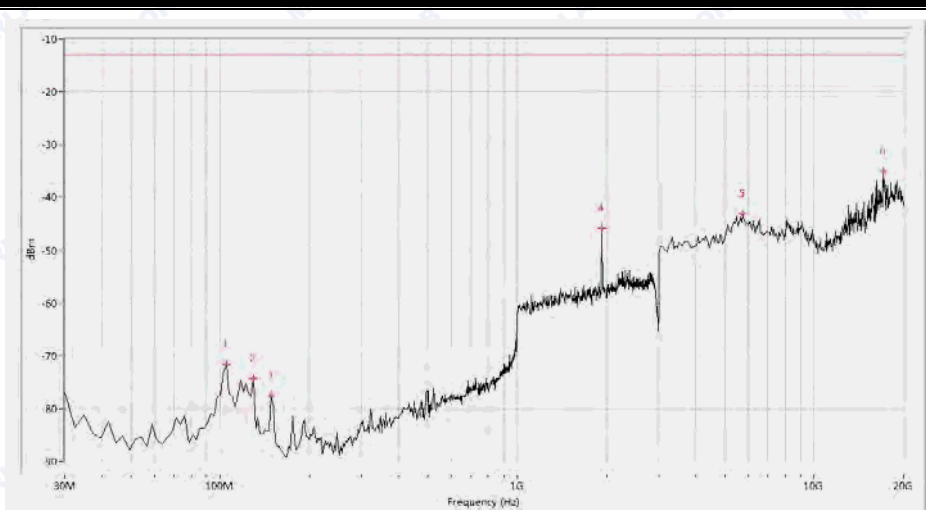
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-74.65	-13.0	61.7	82.4	Horizontal	PASS
107.406	-70.34	-13.0	57.3	352.0	Horizontal	PASS
134.015	-71.58	-13.0	58.6	239.0	Horizontal	PASS
891.147	-39.75	-13.0	26.8	239.0	Horizontal	N.A
1688.279	-54.19	-13.0	41.2	188.7	Horizontal	PASS
5771.820	-42.51	-13.0	29.5	351.3	Horizontal	PASS

(Plot G.5: HSDPA 850MHz Channel = 4233, Test Antenna Horizontal)



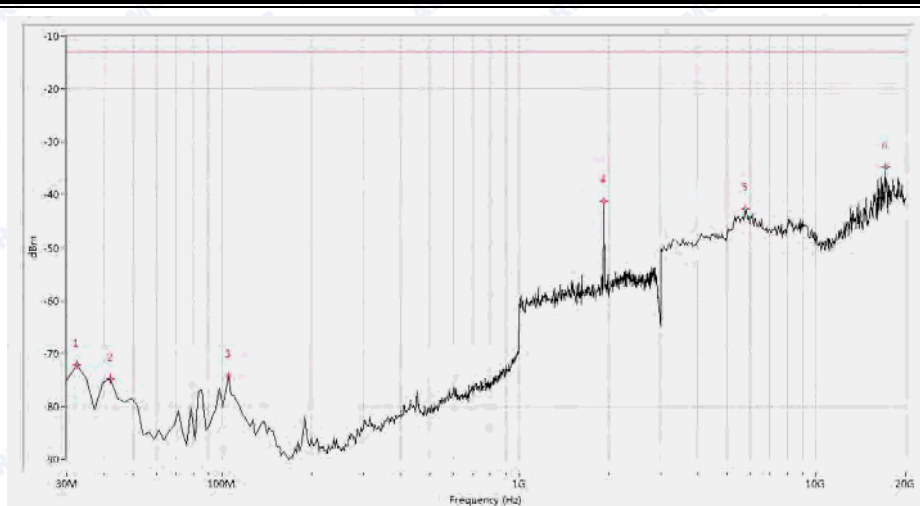
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
44.514	-76.60	-13.0	63.6	331.2	Vertical	PASS
201.746	-74.42	-13.0	61.4	-0.0	Vertical	PASS
891.147	-55.79	-13.0	42.8	128.8	Vertical	N.A
1907.731	-54.21	-13.0	41.2	238.2	Vertical	PASS
3607.855	-47.01	-13.0	34.0	338.3	Vertical	PASS
5820.449	-43.23	-13.0	30.2	43.9	Vertical	PASS

(Plot G.6: HSDPA 850MHz Channel = 4233, Test Antenna Vertical)



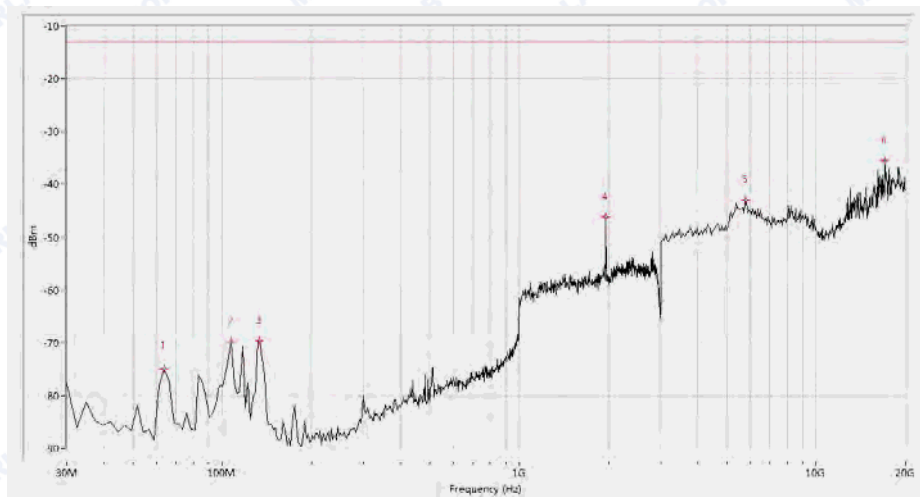
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-71.67	-13.0	58.7	53.6	Horizontal	PASS
129.177	-74.28	-13.0	61.3	356.3	Horizontal	PASS
148.529	-77.48	-13.0	64.5	229.3	Horizontal	PASS
1927.681	-45.80	-13.0	32.8	205.4	Horizontal	N.A
5755.611	-43.15	-13.0	30.1	352.1	Horizontal	PASS
17159.601	-34.98	-13.0	22.0	213.6	Horizontal	PASS

(Plot H.1: HSDPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



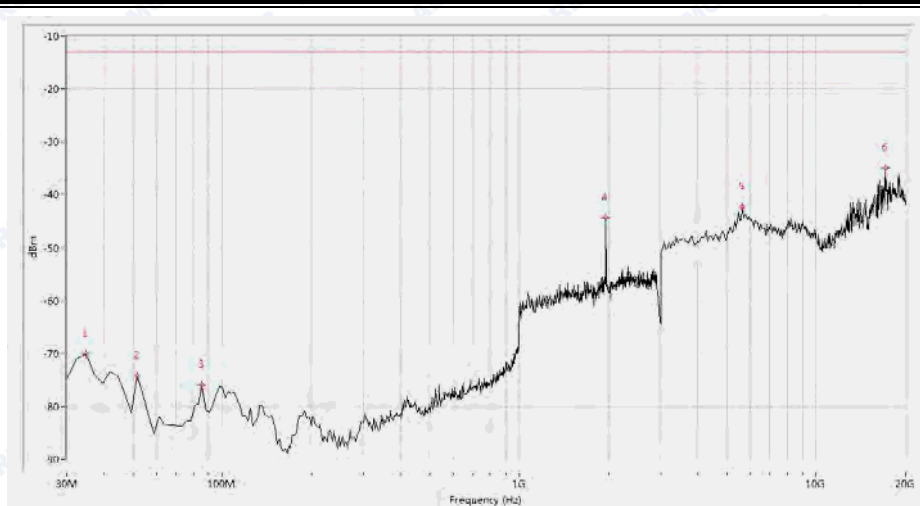
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-72.10	-13.0	59.1	310.0	Vertical	PASS
42.095	-74.82	-13.0	61.8	4.2	Vertical	PASS
104.988	-74.14	-13.0	61.1	228.1	Vertical	PASS
1932.668	-41.28	-13.0	28.3	316.0	Vertical	N.A
5798.005	-42.60	-13.0	29.6	187.2	Vertical	PASS
17159.601	-34.64	-13.0	21.6	356.0	Vertical	PASS

(Plot H.2: HSDPA 1900 MHz Channel = 9262, Test Antenna Vertical)



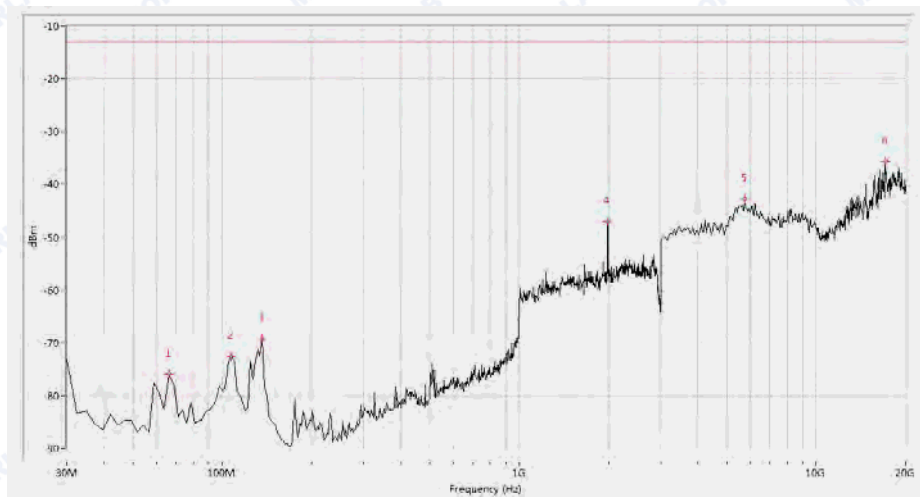
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-74.99	-13.0	62.0	75.2	Horizontal	PASS
107.406	-69.73	-13.0	56.7	166.0	Horizontal	PASS
134.015	-69.55	-13.0	56.5	303.7	Horizontal	PASS
1957.606	-46.06	-13.0	33.1	81.1	Horizontal	N.A
5798.005	-42.99	-13.0	30.0	207.7	Horizontal	PASS
17032.419	-35.53	-13.0	22.5	79.7	Horizontal	PASS

(Plot H.3: HSDPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



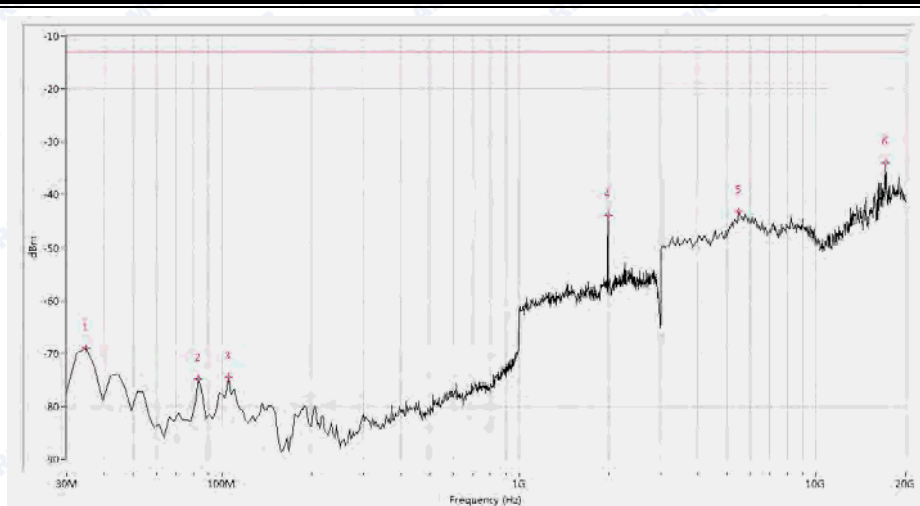
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-70.09	-13.0	57.1	323.7	Vertical	PASS
51.771	-74.12	-13.0	61.1	35.8	Vertical	PASS
85.636	-75.90	-13.0	62.9	194.6	Vertical	PASS
1957.606	-44.44	-13.0	31.4	321.2	Vertical	N.A
5628.429	-42.33	-13.0	29.3	203.2	Vertical	PASS
17159.601	-34.80	-13.0	21.8	360.0	Vertical	PASS

(Plot H.4: HSDPA 1900 MHz Channel = 9400, Test Antenna Vertical)



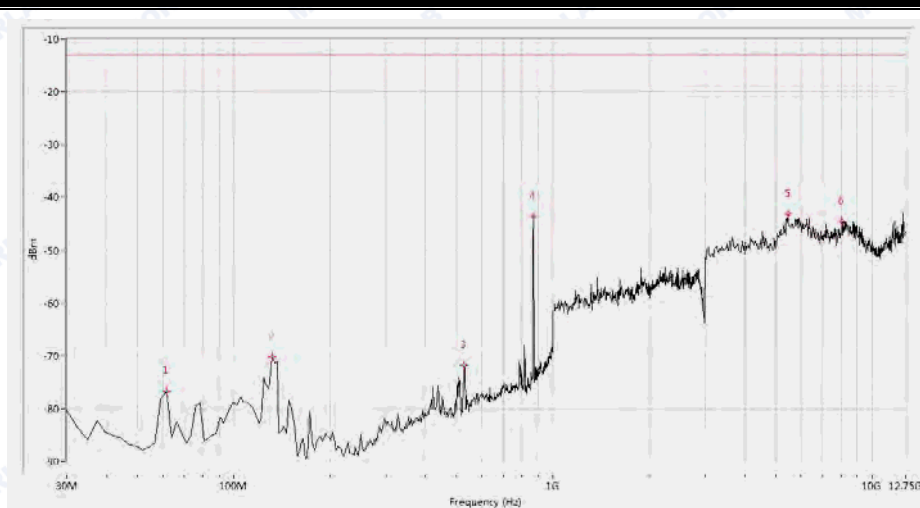
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
66.284	-75.92	-13.0	62.9	68.5	Horizontal	PASS
107.406	-72.58	-13.0	59.6	285.1	Horizontal	PASS
136.434	-69.19	-13.0	56.2	218.5	Horizontal	PASS
1982.544	-47.11	-13.0	34.1	76.3	Horizontal	N.A
5755.611	-42.74	-13.0	29.7	215.1	Horizontal	PASS
17159.601	-35.71	-13.0	22.7	308.6	Horizontal	PASS

(Plot H.5: HSDPA 1900 MHz Channel = 9538, Test Antenna Horizontal)



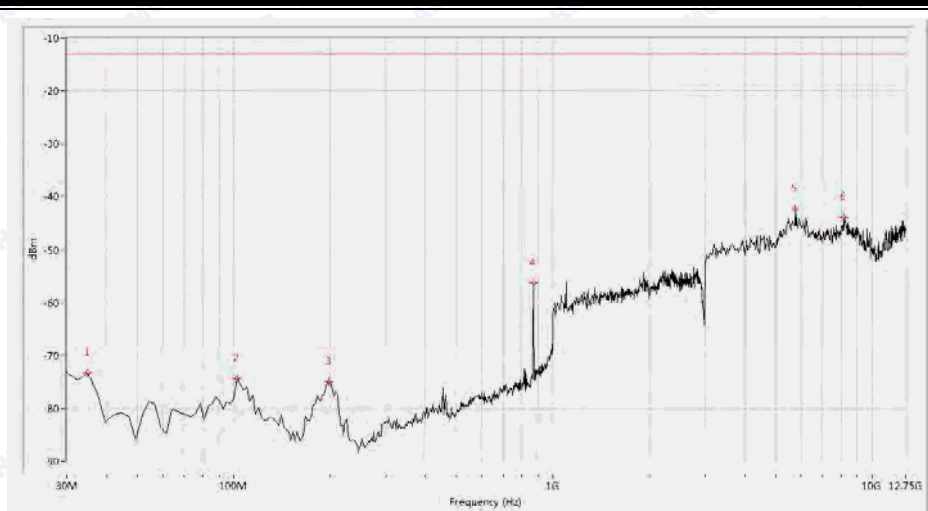
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.86	-13.0	55.9	276.5	Vertical	PASS
83.217	-74.73	-13.0	61.7	8.9	Vertical	PASS
104.988	-74.52	-13.0	61.5	232.6	Vertical	PASS
1987.531	-43.84	-13.0	30.8	78.9	Vertical	N.A
5501.247	-43.17	-13.0	30.2	212.2	Vertical	PASS
17159.601	-33.89	-13.0	20.9	153.0	Vertical	PASS

(Plot H.6: HSDPA 1900 MHz Channel = 9538, Test Antenna Vertical)



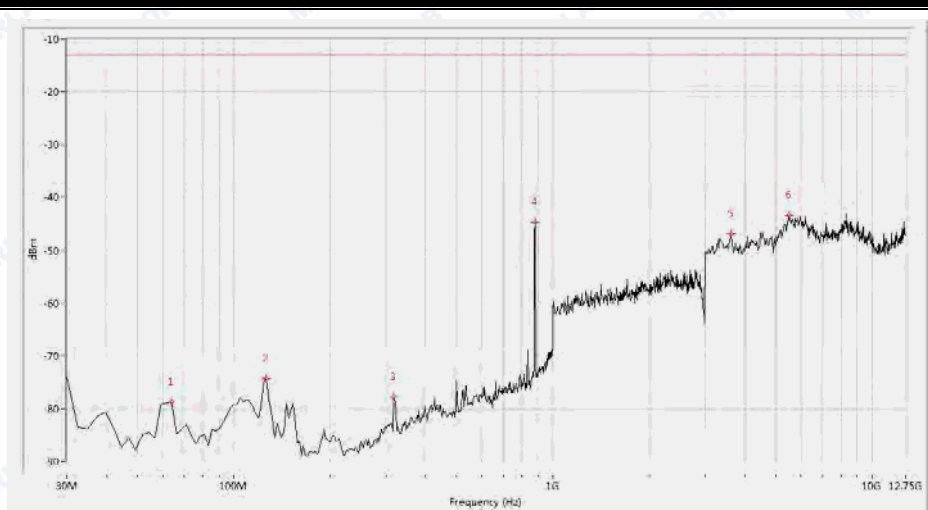
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
61.446	-76.75	-13.0	63.7	97.9	Horizontal	PASS
131.596	-70.15	-13.0	57.1	287.7	Horizontal	PASS
528.304	-71.72	-13.0	58.7	76.7	Horizontal	PASS
869.377	-43.64	-13.0	30.6	87.1	Horizontal	N.A
5455.736	-43.16	-13.0	30.2	298.5	Horizontal	PASS
8057.357	-44.59	-13.0	31.6	-0.0	Horizontal	PASS

(Plot I.1: HSUPA 850MHz Channel = 4132, Test Antenna Horizontal)



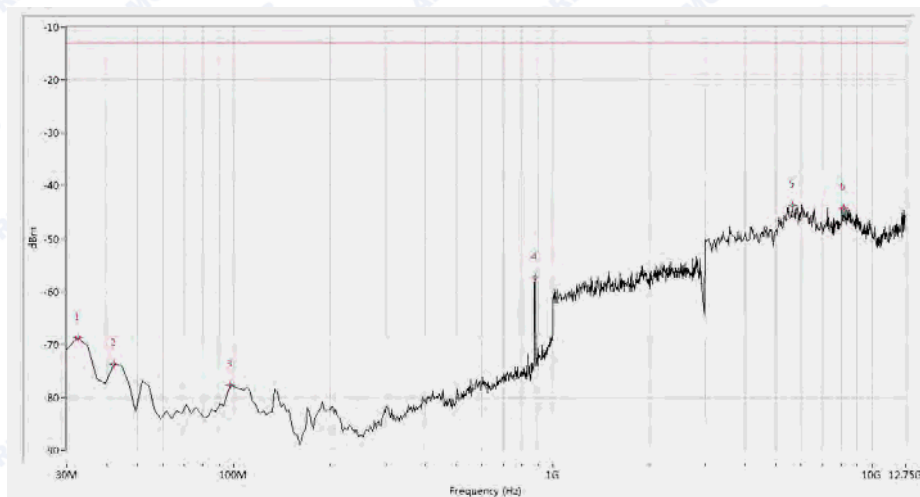
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-73.21	-13.0	60.2	261.3	Vertical	PASS
102.569	-74.25	-13.0	61.3	-0.0	Vertical	PASS
199.327	-74.91	-13.0	61.9	139.6	Vertical	PASS
869.377	-56.19	-13.0	43.2	41.4	Vertical	N.A
5747.506	-42.33	-13.0	29.3	289.2	Vertical	PASS
8154.613	-43.90	-13.0	30.9	26.5	Vertical	PASS

(Plot I.2: HSUPA 850 MHz Channel = 4132, Test Antenna Vertical)



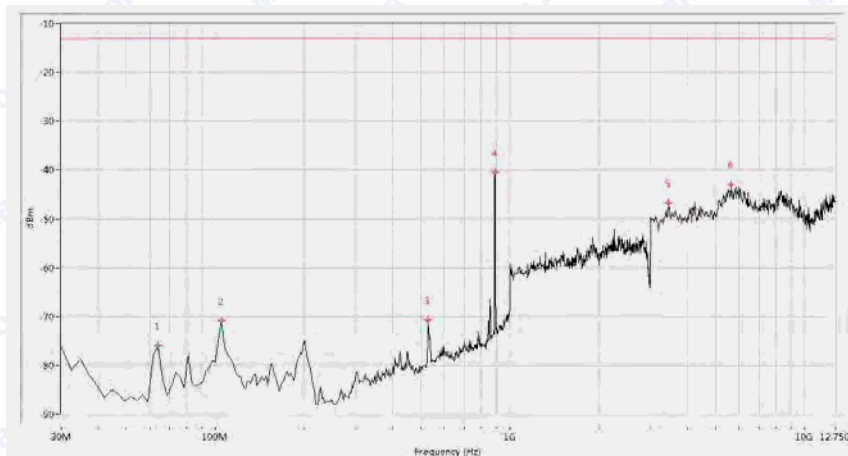
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-78.81	-13.0	65.8	88.9	Horizontal	PASS
126.758	-74.31	-13.0	61.3	88.9	Horizontal	PASS
317.855	-77.85	-13.0	64.9	68.8	Horizontal	PASS
879.052	-44.71	-13.0	31.7	329.4	Horizontal	N.A
3632.170	-46.93	-13.0	33.9	301.1	Horizontal	PASS
5504.364	-43.47	-13.0	30.5	215.1	Horizontal	PASS

(Plot I.3: HSUPA 850MHz Channel = 4175, Test Antenna Horizontal)



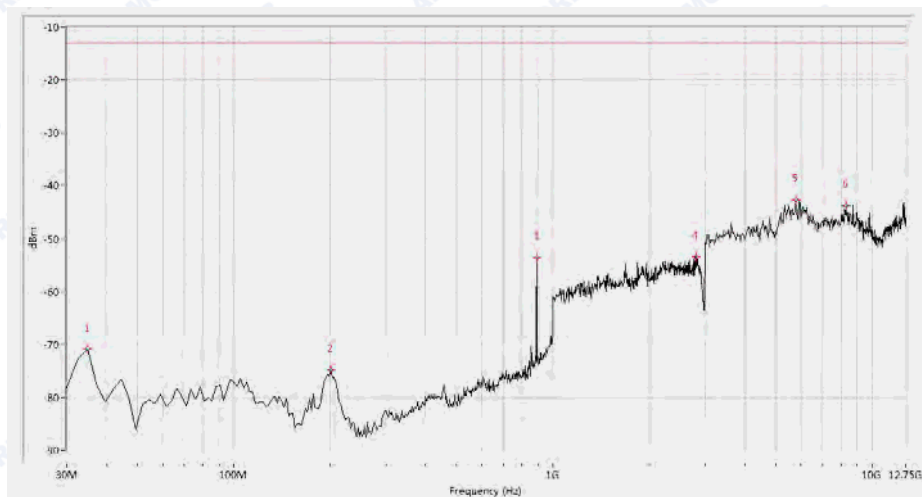
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-68.68	-13.0	55.7	344.3	Vertical	PASS
42.095	-73.76	-13.0	60.8	338.7	Vertical	PASS
97.731	-77.71	-13.0	64.7	32.4	Vertical	PASS
879.052	-57.36	-13.0	44.4	74.5	Vertical	N.A
5625.935	-43.81	-13.0	30.8	100.5	Vertical	PASS
8154.613	-44.22	-13.0	31.2	24.9	Vertical	PASS

(Plot I.4: HSUPA 850MHz Channel = 4175, Test Antenna Vertical)



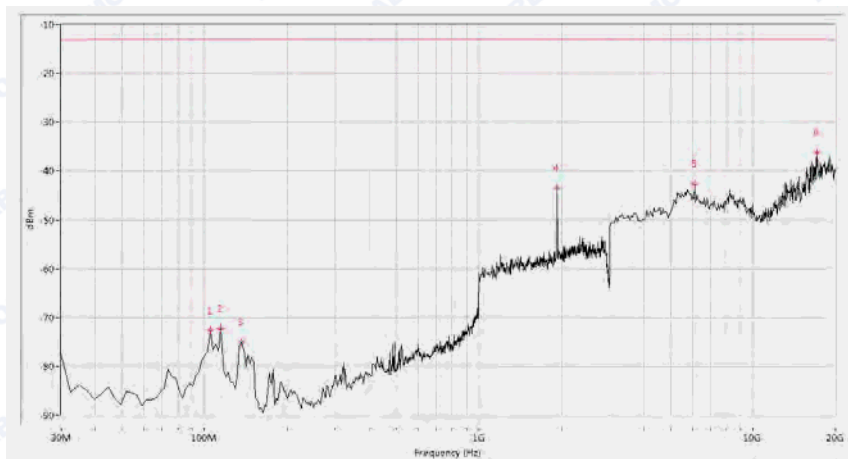
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-75.87	-13.0	62.9	74.8	Horizontal	PASS
104.988	-70.90	-13.0	57.9	110.2	Horizontal	PASS
528.304	-70.75	-13.0	57.8	89.7	Horizontal	PASS
891.147	-40.36	-13.0	27.4	360.0	Horizontal	N.A
3461.970	-46.80	-13.0	33.8	345.4	Horizontal	PASS
5650.249	-42.94	-13.0	29.9	254.6	Horizontal	PASS

(Plot I.5: HSUPA 850MHz Channel = 4233, Test Antenna Horizontal)



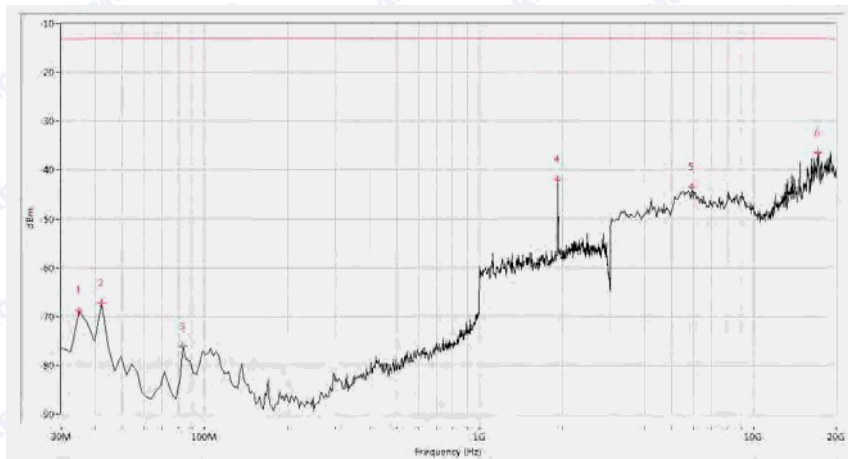
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-70.81	-13.0	57.8	264.6	Vertical	PASS
201.746	-74.79	-13.0	61.8	358.1	Vertical	PASS
891.147	-53.55	-13.0	40.5	141.5	Vertical	N.A
2815.461	-53.44	-13.0	40.4	2.7	Vertical	PASS
5771.820	-42.63	-13.0	29.6	90.4	Vertical	PASS
8276.185	-43.73	-13.0	30.7	123.9	Vertical	PASS

(Plot I.6: HSUPA 850MHz Channel = 4233, Test Antenna Vertical)



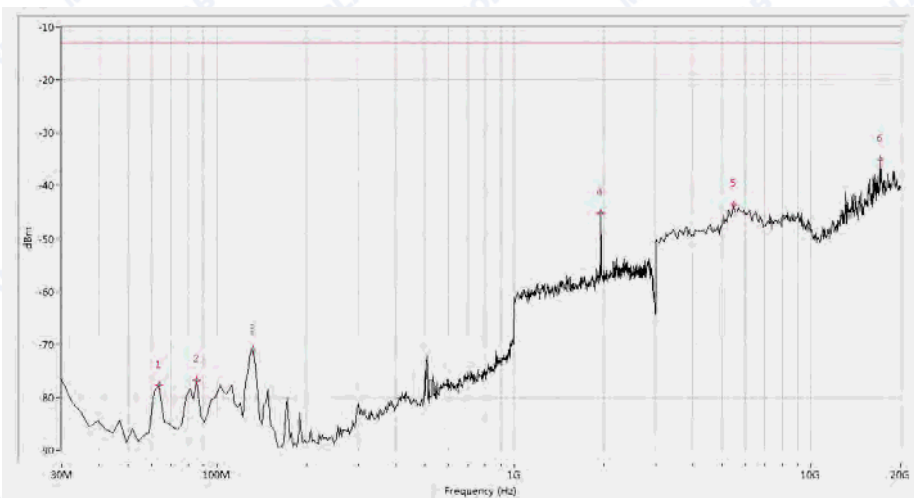
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-72.56	-13.0	59.6	60.8	Horizontal	PASS
114.663	-72.29	-13.0	59.3	50.0	Horizontal	PASS
136.434	-74.99	-13.0	62.0	125.1	Horizontal	PASS
1927.681	-43.44	-13.0	30.4	319.3	Horizontal	N.A
6137.157	-42.60	-13.0	29.6	171.7	Horizontal	PASS
17159.601	-36.10	-13.0	23.1	53.3	Horizontal	PASS

(Plot J.1: HSUPA 1900 MHz Channel = 9262, Test Antenna Horizontal)



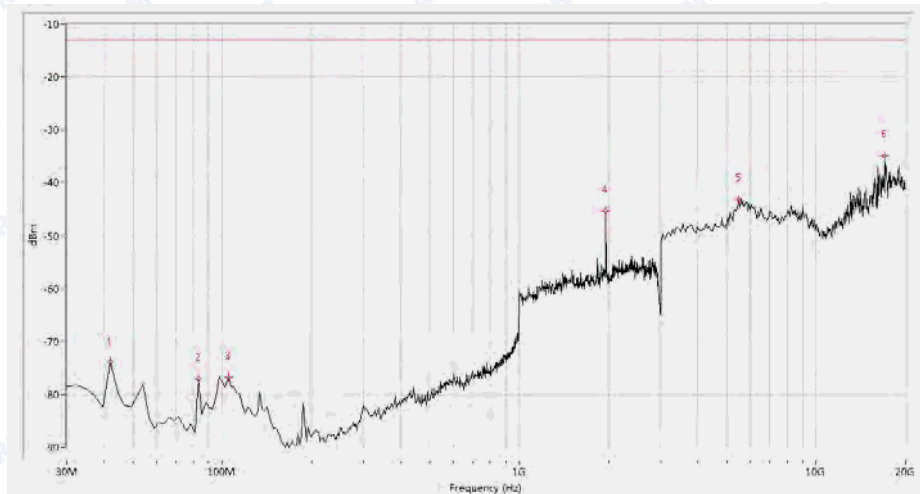
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.89	-13.0	55.9	324.0	Vertical	PASS
42.095	-67.11	-13.0	54.1	27.6	Vertical	PASS
83.217	-76.04	-13.0	63.0	240.7	Vertical	PASS
1932.668	-41.81	-13.0	28.8	320.5	Vertical	N.A
5925.187	-43.45	-13.0	30.4	175.2	Vertical	PASS
17159.601	-36.39	-13.0	23.4	360.0	Vertical	PASS

(Plot J.2: HSUPA 1900 MHz Channel = 9262, Test Antenna Vertical)



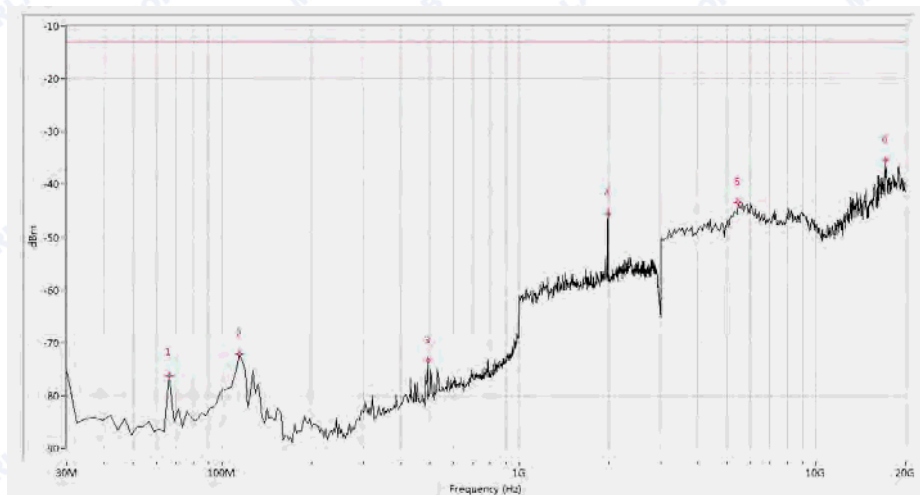
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
63.865	-77.72	-13.0	64.7	53.2	Horizontal	PASS
85.636	-76.69	-13.0	63.7	80.4	Horizontal	PASS
131.596	-70.99	-13.0	58.0	313.0	Horizontal	PASS
1957.606	-45.09	-13.0	32.1	36.1	Horizontal	N.A
5501.247	-43.66	-13.0	30.7	209.6	Horizontal	PASS
17159.601	-35.07	-13.0	22.1	175.3	Horizontal	PASS

(Plot J.3: HSUPA 1900 MHz Channel = 9400, Test Antenna Horizontal)



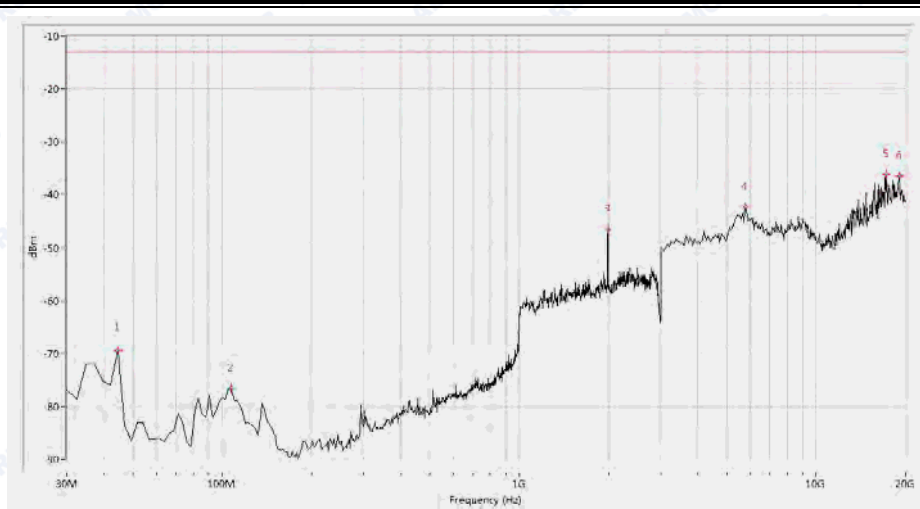
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
42.095	-73.85	-13.0	60.8	308.9	Vertical	PASS
83.217	-77.01	-13.0	64.0	21.6	Vertical	PASS
104.988	-76.62	-13.0	63.6	212.5	Vertical	PASS
1957.606	-45.34	-13.0	32.3	323.5	Vertical	N.A
5501.247	-43.17	-13.0	30.2	190.6	Vertical	PASS
17032.419	-34.90	-13.0	21.9	120.2	Vertical	PASS

(Plot J.4: HSUPA 1900 MHz Channel = 9400, Test Antenna Vertical)



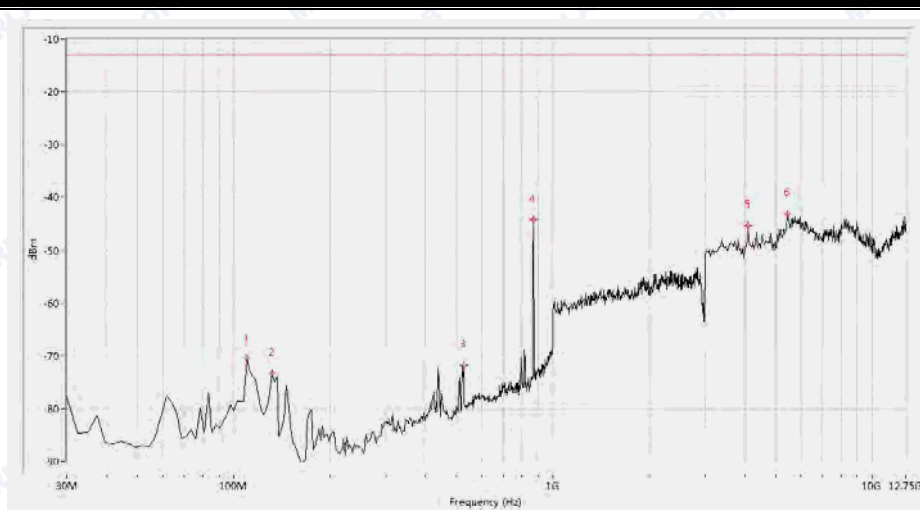
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
66.284	-76.28	-13.0	63.3	63.0	Horizontal	PASS
114.663	-72.08	-13.0	59.1	132.9	Horizontal	PASS
492.020	-73.35	-13.0	60.3	84.6	Horizontal	PASS
1987.531	-45.53	-13.0	32.5	242.3	Horizontal	N.A
5458.853	-43.49	-13.0	30.5	205.9	Horizontal	PASS
17159.601	-35.40	-13.0	22.4	33.5	Horizontal	PASS

(Plot J.5: HSUPA 1900 MHz Channel = 9538, Test Antenna Horizontal)



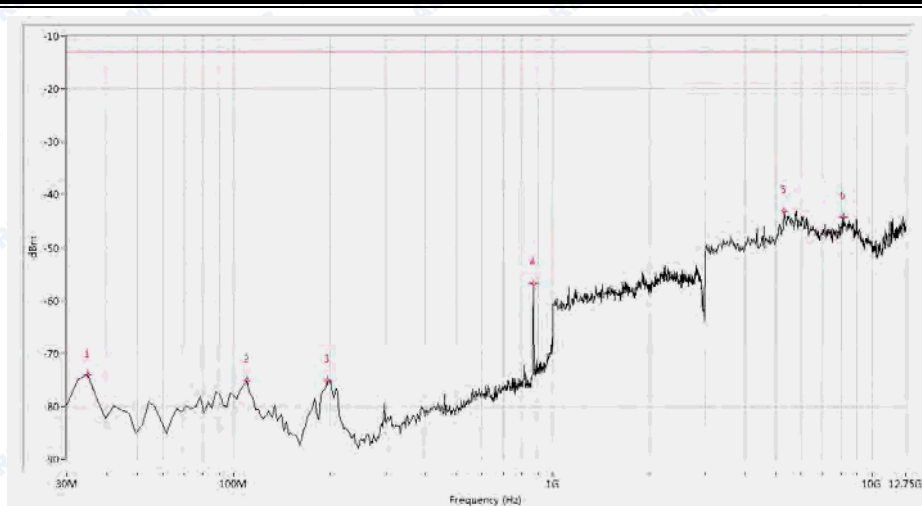
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
44.514	-69.38	-13.0	56.4	329.8	Vertical	PASS
107.406	-76.53	-13.0	63.5	22.4	Vertical	PASS
1987.531	-46.48	-13.0	33.5	355.4	Vertical	N.A
5798.005	-42.37	-13.0	29.4	77.4	Vertical	PASS
17201.995	-36.19	-13.0	23.2	205.4	Vertical	PASS
19067.332	-36.41	-13.0	23.4	18.3	Vertical	PASS

(Plot J.6: HSUPA 1900 MHz Channel = 9538, Test Antenna Vertical)



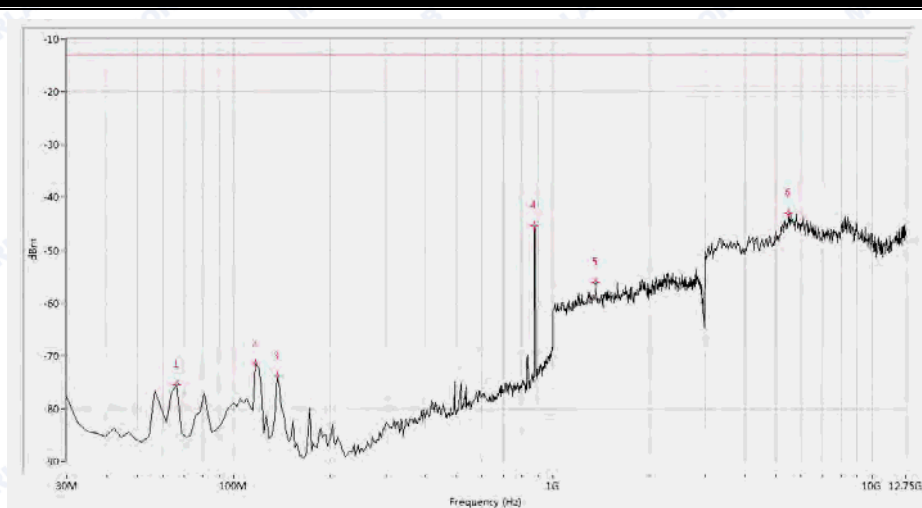
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
109.825	-70.53	-13.0	57.5	86.7	Horizontal	PASS
131.596	-73.30	-13.0	60.3	335.0	Horizontal	PASS
525.885	-71.71	-13.0	58.7	65.2	Horizontal	PASS
871.796	-44.14	-13.0	31.1	-0.0	Horizontal	N.A
4094.140	-45.34	-13.0	32.3	296.3	Horizontal	PASS
5431.421	-43.09	-13.0	30.1	-0.0	Horizontal	PASS

(Plot K.1: HSPA+ 850MHz Channel = 4132, Test Antenna Horizontal)



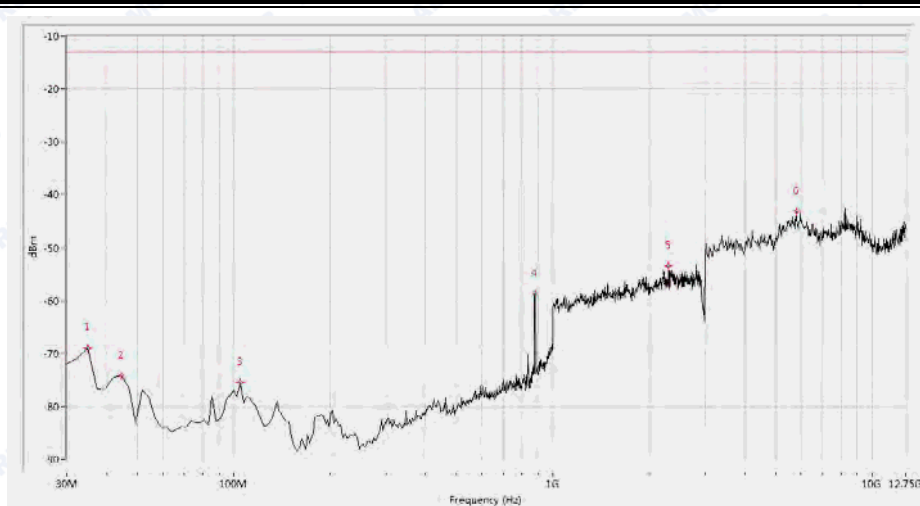
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-74.05	-13.0	61.1	356.8	Vertical	PASS
109.825	-75.16	-13.0	62.2	345.8	Vertical	PASS
196.908	-75.15	-13.0	62.2	117.3	Vertical	PASS
869.377	-56.76	-13.0	43.8	278.5	Vertical	N.A
5309.850	-43.15	-13.0	30.2	195.1	Vertical	PASS
8154.613	-44.17	-13.0	31.2	36.8	Vertical	PASS

(Plot K.2: HSPA+ 850 MHz Channel = 4132, Test Antenna Vertical)



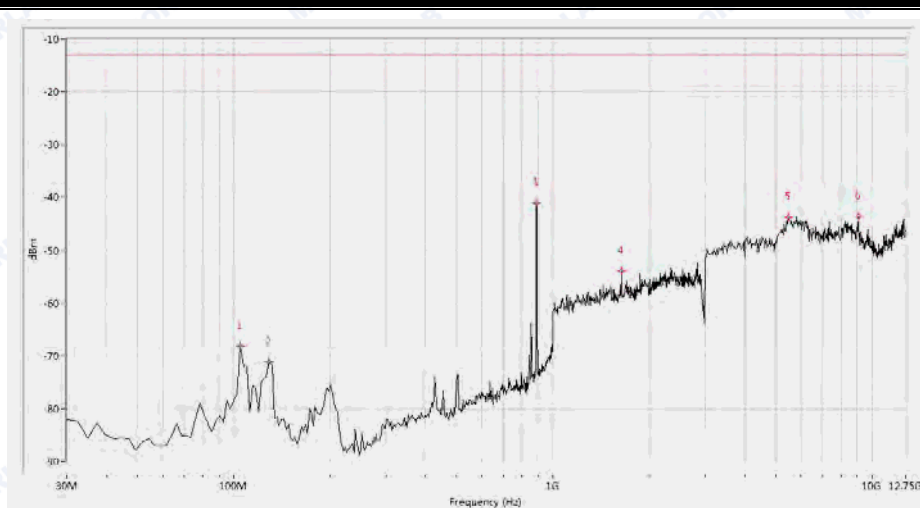
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
66.284	-75.45	-13.0	62.4	82.3	Horizontal	PASS
117.082	-71.40	-13.0	58.4	325.6	Horizontal	PASS
136.434	-73.86	-13.0	60.9	143.7	Horizontal	PASS
876.633	-45.40	-13.0	32.4	241.9	Horizontal	N.A
1364.090	-56.09	-13.0	43.1	360.0	Horizontal	PASS
5480.050	-42.89	-13.0	29.9	295.9	Horizontal	PASS

(Plot K.3: HSPA+ 850MHz Channel = 4175, Test Antenna Horizontal)



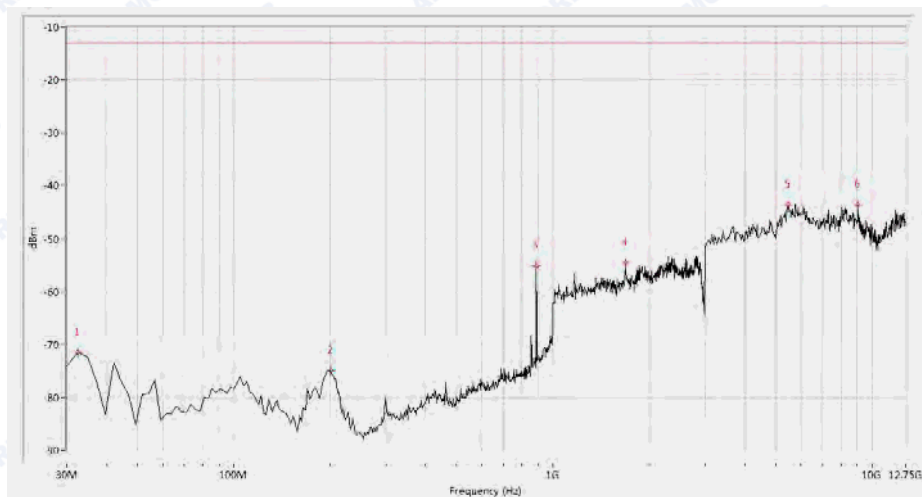
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.87	-13.0	55.9	360.0	Vertical	PASS
44.514	-74.08	-13.0	61.1	1.8	Vertical	PASS
104.988	-75.50	-13.0	62.5	5.7	Vertical	PASS
879.052	-58.63	-13.0	45.6	216.2	Vertical	N.A
2306.733	-53.44	-13.0	40.4	305.9	Vertical	PASS
5796.135	-43.14	-13.0	30.1	36.2	Vertical	PASS

(Plot K.4: HSPA+ 850MHz Channel = 4175, Test Antenna Vertical)



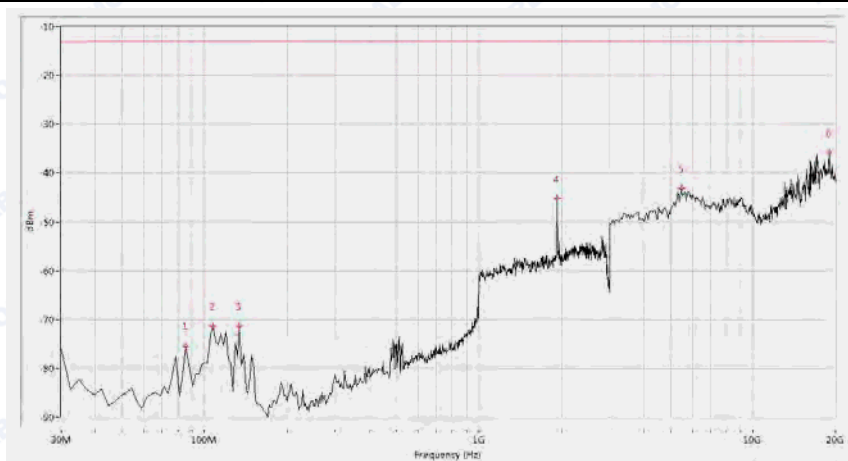
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
104.988	-68.15	-13.0	55.2	84.5	Horizontal	PASS
129.177	-71.10	-13.0	58.1	84.5	Horizontal	PASS
888.728	-41.01	-13.0	28.0	233.3	Horizontal	N.A
1638.404	-53.81	-13.0	40.8	15.0	Horizontal	PASS
5455.736	-43.75	-13.0	30.7	360.0	Horizontal	PASS
9078.554	-43.52	-13.0	30.5	222.6	Horizontal	PASS

(Plot K.5: HSPA+ 850MHz Channel = 4233, Test Antenna Horizontal)



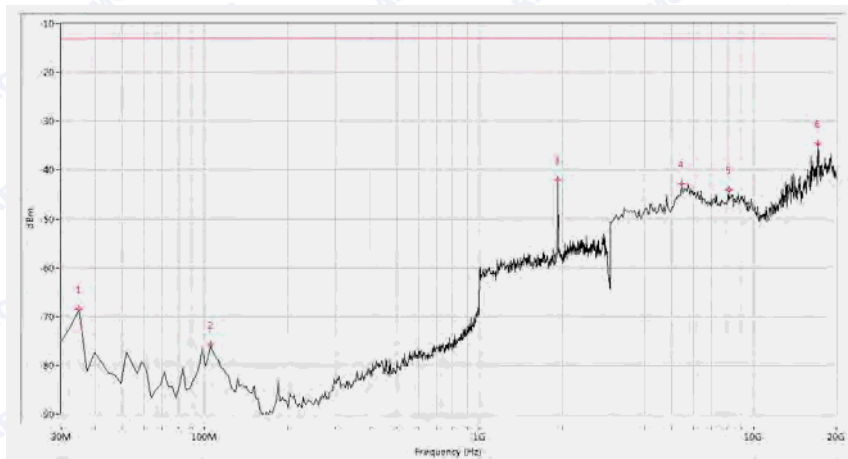
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-71.51	-13.0	58.5	352.3	Vertical	PASS
201.746	-74.90	-13.0	61.9	360.0	Vertical	PASS
888.728	-55.09	-13.0	42.1	128.4	Vertical	N.A
1688.279	-54.56	-13.0	41.6	182.7	Vertical	PASS
5480.050	-43.62	-13.0	30.6	184.3	Vertical	PASS
9054.239	-43.55	-13.0	30.5	-0.0	Vertical	PASS

(Plot K.6: HSPA+ 850MHz Channel = 4233, Test Antenna Vertical)



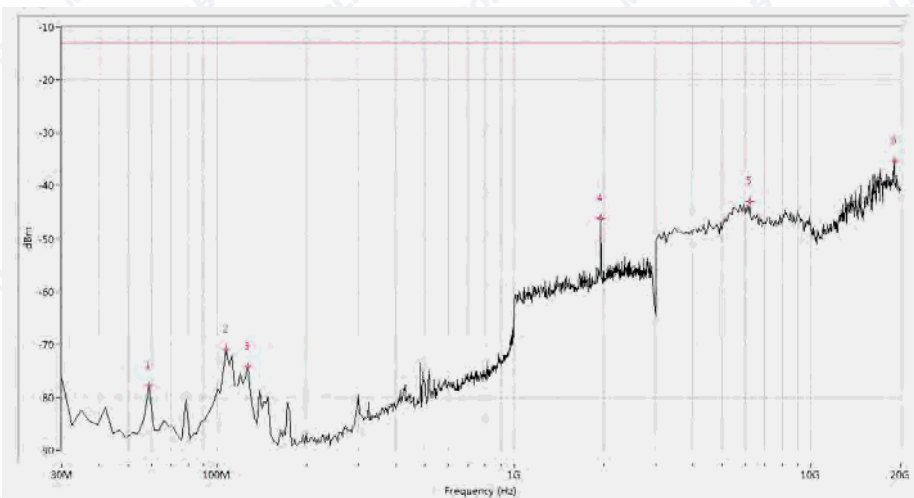
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
85.636	-75.48	-13.0	62.5	66.6	Horizontal	PASS
107.406	-71.36	-13.0	58.4	1.0	Horizontal	PASS
134.015	-71.24	-13.0	58.2	19.7	Horizontal	PASS
1927.681	-45.19	-13.0	32.2	231.9	Horizontal	N.A
5501.247	-43.15	-13.0	30.2	216.2	Horizontal	PASS
18940.150	-35.86	-13.0	22.9	147.0	Horizontal	PASS

(Plot L.1: HSPA+ 1900 MHz Channel = 9262, Test Antenna Horizontal)



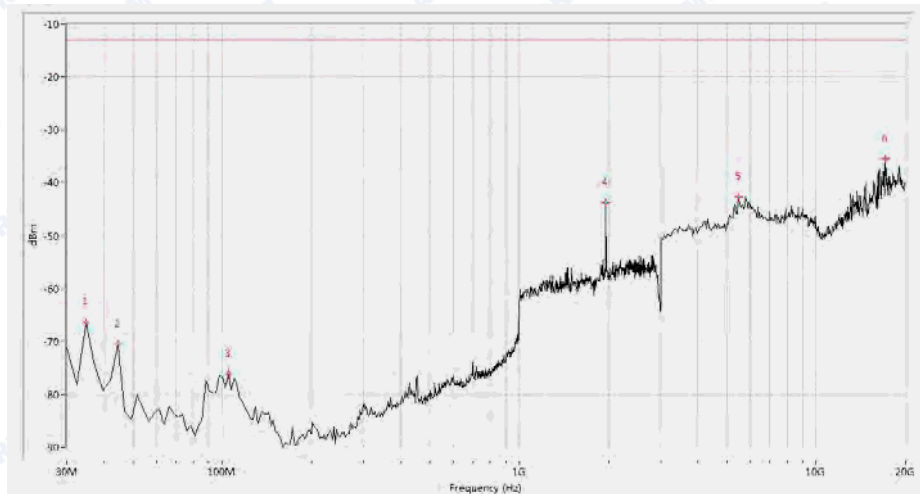
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-68.48	-13.0	55.5	357.7	Vertical	PASS
104.988	-75.68	-13.0	62.7	10.1	Vertical	PASS
1932.668	-41.93	-13.0	28.9	192.5	Vertical	N.A
5458.853	-42.80	-13.0	29.8	222.1	Vertical	PASS
8087.282	-44.12	-13.0	31.1	119.1	Vertical	PASS
17159.601	-34.61	-13.0	21.6	333.0	Vertical	PASS

(Plot L.2: HSPA+ 1900 MHz Channel = 9262, Test Antenna Vertical)



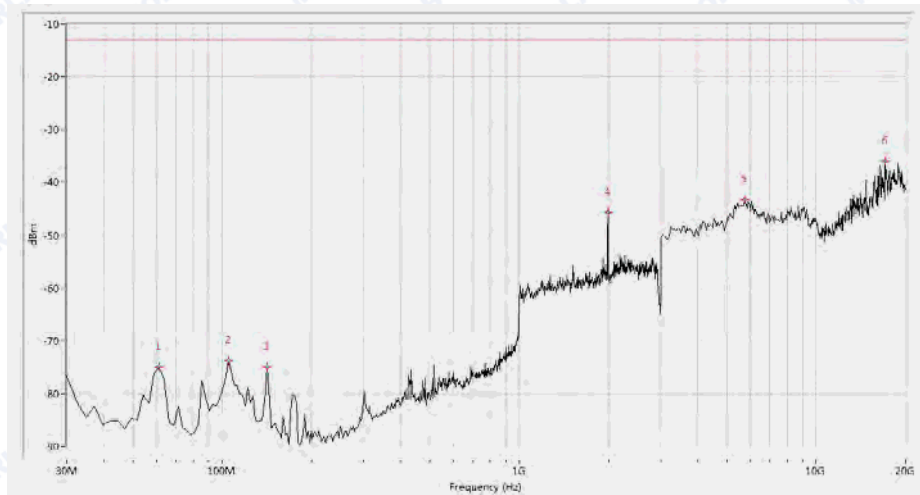
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
59.027	-77.73	-13.0	64.7	68.2	Horizontal	PASS
107.406	-70.97	-13.0	58.0	132.2	Horizontal	PASS
126.758	-74.16	-13.0	61.2	360.0	Horizontal	PASS
1957.606	-46.08	-13.0	33.1	230.4	Horizontal	N.A
6221.945	-42.99	-13.0	30.0	353.2	Horizontal	PASS
19067.332	-35.35	-13.0	22.3	61.1	Horizontal	PASS

(Plot L.3: HSPA+ 1900 MHz Channel = 9400, Test Antenna Horizontal)



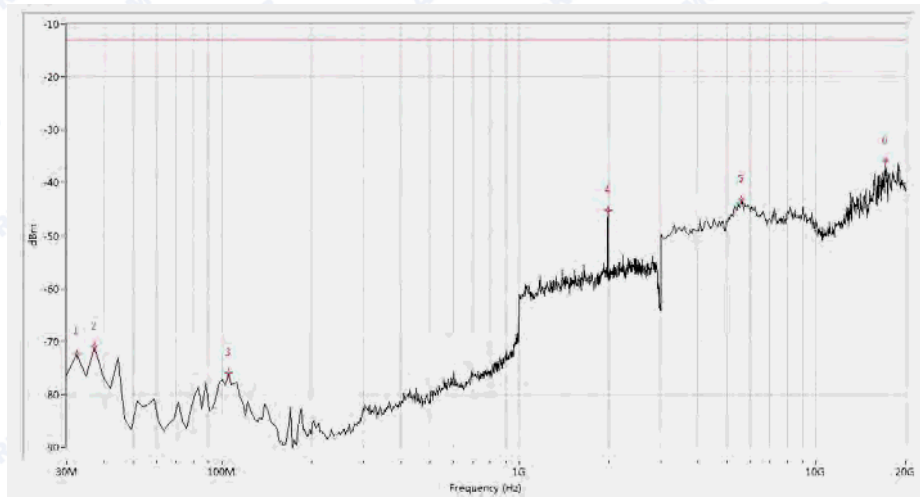
Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
34.838	-66.37	-13.0	53.4	358.6	Vertical	PASS
44.514	-70.52	-13.0	57.5	4.2	Vertical	PASS
104.988	-76.04	-13.0	63.0	193.5	Vertical	PASS
1957.606	-43.73	-13.0	30.7	220.0	Vertical	N.A
5501.247	-42.59	-13.0	29.6	211.7	Vertical	PASS
17159.601	-35.54	-13.0	22.5	119.9	Vertical	PASS

(Plot L.4: HSPA+ 1900 MHz Channel = 9400, Test Antenna Vertical)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
61.446	-74.96	-13.0	62.0	61.1	Horizontal	PASS
104.988	-73.61	-13.0	60.6	177.2	Horizontal	PASS
141.272	-74.94	-13.0	61.9	197.7	Horizontal	PASS
1987.531	-45.67	-13.0	32.7	147.1	Horizontal	N.A
5755.611	-43.31	-13.0	30.3	221.1	Horizontal	PASS
17159.601	-36.03	-13.0	23.0	94.6	Horizontal	PASS

(Plot L.5: HSPA+ 1900 MHz Channel = 9538, Test Antenna Horizontal)



Fre. (MHz)	Peak	Limit(PK)	Margin	Degree	Antenna	Verdict
32.419	-72.42	-13.0	59.4	313.4	Vertical	PASS
37.257	-70.97	-13.0	58.0	-0.0	Vertical	PASS
104.988	-75.83	-13.0	62.8	217.0	Vertical	PASS
1987.531	-45.11	-13.0	32.1	141.4	Vertical	N.A
5586.035	-43.17	-13.0	30.2	207.7	Vertical	PASS
17159.601	-35.80	-13.0	22.8	159.3	Vertical	PASS

(Plot L.6: HSPA+ 1900 MHz Channel = 9538, Test Antenna Vertical)

** END OF REPORT **