FCC RADIO TEST REPORT
FCC ID: 2ADPCX5

Product：	High precision GNSS handset
Trade Name：	SOUTH, SANDING, KOLIDA
Model Number：	Polar X5
Serial Model：	Polar X2, Polar X3, Polar X6, S720, S750, S760, D4, D6, D6-P, K720, K750, K760
Report No.：	STUEMO015121606581RF1

Prepared for

Guangzhou SOUTH Surveying & Mapping Instrument Co.,Ltd.

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Prepared by

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TEST RESULT CERTIFICATION

Applicant's name	:	Guangzhou SOUTH Surveying & Mapping Instrument Co.,Ltd.
Address	:	Room 301 South Building, No.24-26 Keyun Road, Tian He District, Guangzhou, China
Manufacture's Name	:	South Navigation Limited
Address	:	Layer 2-3, N0.52-54 Jian Zhong Road, Tian He District, Guangzhou, China
Product name	:	High precision GNSS handset
Model and/or type reference	:	Polar X5
Serial Model:		Polar X2, Polar X3, Polar X6, S720, S750, S760, D4, D6, D6-P, K720, K750, K760
Standards	:	FCC Part 22H and 24E
Test procedure		ANSI/TIA 603-D (2010)

This device described above has been tested by STU, and the test results show that the equipment under test (EUT) is in compliance with the FCC requirements. And it is applicable only to the tested sample identified in the report.

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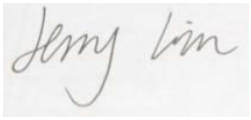
Testing Engineer : 

(Jerry Lin)

Technical Manager : 

(Jimmy Yao)

Authorized Signatory : 

(Terry Yang)

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1. GENERAL INFORMATION

1.1 PRODUCT DESCRIPTION

A major technical description of EUT is described as following:

Product Designation:	High precision GNSS handset
Hardware version:	V1.2
Software version:	1.00.151022.MQH100
FCC ID:	2ADPCX5
Frequency Bands	☒GSM 850 ☒PCS 1900 (U.S. Bands) ☐GSM 900 ☐DCS 1800 (Non-U.S. Bands) U.S. Bands: ☒UMTS FDD Band II ☒UMTS FDD Band V Non-U.S. Bands: ☐UMTS FDD Band I ☐UMTS FDD Band VIII
Modulation	GSM/GPRS 850/1900: GMSK EDGE 850/1900: 8PSK WCDMA 850/1900: QPSK,16QAM
Adapter	Model:DSA-42D-12 Input: AC 100-240V, 50/60Hz, 1.2A Output:DC 12V, 3A
Battery Charger	Model:CH-SA3011 Input: DC 12V, 3A Output:DC 4.2V, 2A
Battery	Model: BTNF-L7412W Rated Voltage: 3.7V capacity :7200mah
Antenna Type	FPCB antenna
GPRS Class	10
Extreme Vol. Limits:	DC 3.3 V to 4.2 V (Nominal DC 3.7 V)
Extreme Temp. Tolerance	-10℃ to +50℃
** Note: The High Voltage 4.2V and Low Voltage 3.3V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.	

1.2 RELATED SUBMITTAL(S) / GRANT (S)

This submittal(s) (test report) is intended for **FCC ID: 2ADPCX5** filing to comply with the FCC Part 22H&24E .

1.3 TEST METHODOLOGY

The radiated emission testing was performed according to the procedures of ANSI C 63.4: 2003; TIA/EIA 603 and FCC CFR 47 Rules of 2.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057.

1.4 TEST FACILITY

The test site used to collect the radiated data is located at:
BZT Testing Technology Co., Ltd.
Add.: Buliding 17,Xinghua Road Xingwei industrial Park Fuyong,Baoan District, Shenzhen, Guangdong,China
FCC Registered No.: 701733

1.5 MEASUREMENT INSTRUMENTS

NAME OF EQUIPMENT	MANUFACTURER	MODEL	SERIAL NUMBER	NEXT CAL. DATE
SPECTRUM ANALYZER	AGILENT	E4440A	US44300399	2016.6.26
SPECTRUM ANALYZER	MXA SIGNAL Analyzer	N9020A	MY50140340	2016.7.02
TEST RECEIVER	R&S	ESCI	A0304218	2016.6.26
COMMUNICATION TESTER	AGILENT	8960	3104A03367	2016.6.26
COMMUNICATION TESTER	R&S	CMU200	A0304247	2016.6.26
TEST RECEIVER	R&S	FCKL1528	A0304230	2016.7.02
LISN	SCHWARZBECK	NSLK8127	A0304233	2016.7.02
CLIMATE CHAMBER	ALBATROSS	--	--	2016.7.09
Loop Antenna	Daze	ZN30900N	SEL0097	2016.6.26
Bilogical Antenna	A.H. Systems Inc.	SAS-521-4	N/A	2016.7.01
Horn Antenna	EM	EM-AH-10180	N/A	2016.6.28

1.6 SPECIAL ACCESSORIES

The battery and the charger, earphone supplied by the applicant were used as accessories and being tested with EUT intended for FCC grant together.

1.7 EQUIPMENT MODIFICATIONS

Not available for this EUT intended for grant.

2. SYSTEM TEST CONFIGURATION

2.1 EUT CONFIGURATION

The EUT configuration for testing is installed on RF field strength measurement to meet the Commission's requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

2.2 EUT EXERCISE

The Transmitter was operated in the maximum output power mode through Communication Tester. The TX frequency was fixed which was for the purpose of the measurements.

2.3 CONFIGURATION OF EUT SYSTEM

Fig. 2-1 Configuration of EUT System

Table 2-1 Equipment Used in EUT System

Item	Equipment	Model No.	ID or Specification	Note
1	High precision GNSS handset	Polar X5	FCC ID: 2ADPCX5	EUT

Note: All the accessories have been used during the test.
the following "EUT" in setup diagram means EUT system.

3. SUMMARY OF TEST RESULTS

Item Number	Item Description		FCC Rules	Result
1	Output Power	Conducted Output Power	22.913(a) / 24.232 (b)	Pass
		Radiated Output Power		
2	Spurious Emission	Conducted Spurious Emission	2.1051 / 22.917 / 24.238	Pass
		Radiated Spurious Emission		
3	Mains Conducted Emission		15.107 / 15.207	Pass
4	Frequency Stability		2.1055 /24.235	Pass
5	Occupied Bandwidth		2.1049 (h)(i)	Pass
6	Emission Bandwidth		22.917(b) / 24.238 (b)	Pass
7	Band Edge		22.917(b) / 24.238 (b)	Pass

4. DESCRIPTION OF TEST MODES

During the testing, the EUT was controlled via Rhode & Schwarz Digital Radio Communication Tester (CMU 200) to ensure max power transmission and proper modulation. Three channels (The top channel, the middle channel and the bottom channel) were chosen for testing on both GPRS850 and GPRS1900 frequency band.

Note: GSM/GPRS850, GSM/GPRS1900, HSDPA band II, HSUPA band II, HSDPA band V, HSUPA band V modes have been tested during the test.

the worst condition (GPRS 850) be recorded in the test report if no other modes test data.

5. OUTPUT POWER

5.1 Conducted Output Power

5.1.1 MEASUREMENT METHOD

The EUT was setup for the max output power with pseudo random data modulation. Power was measured with Spectrum Analyzer. The measurements were performed on all modes(GPRS/EDGE850, GPRS/EDGE1900, HSDPA band II, HSUPA band II, HSDPA band V, HSUPA band V) at 3 typical channels(the Top Channel, the Middle Channel and the Bottom Channel) for each band.

5.1.2 MEASUREMENT RESULT

Conducted Output Power Limits for GSM 850 MHZ		
Mode	**Nominal Peak Power**	**Tolerance(dB)**
GSM	32 dBm	+/- 1
GPRS/EDGE	32 dBm	+/- 1

Conducted Output Power Limits for PCS 1900 MHZ		
Mode	**Nominal Peak Power**	**Tolerance(dB)**
GSM	29dBm	+/- 1
GPRS/EDGE	29dBm	+/- 1

Conducted Output Power Limits for UMTS band II		
Mode	**Nominal Peak Power**	**Tolerance(dB)**
UMTS band II	23 dBm	+/- 1
Conducted Output Power Limits for UMTS band V		
Mode	**Nominal Peak Power**	**Tolerance(dB)**
UMTS band V	23 dBm	+/- 1

GSM 850:

Mode	Frequency (MHz)	Peak Power	AVG Power
GSM850	824.2	28.48	28.19
	836.6	28.49	28.15
	848.8	28.46	28.22
GPRS850 (1 Slot)	824.2	28.50	**28.24**
	836.6	**28.51**	28.18
	848.8	28.48	28.18
GPRS850 (2 Slot)	824.2	27.43	27.19
	836.6	27.34	27.13
	848.8	27.38	27.16
GPRS850 (3 Slot)	824.2	25.36	25.03
	836.6	25.21	24.82
	848.8	25.25	24.87
GPRS850 (4 Slot)	824.2	24.34	24.06
	836.6	24.07	23.69
	848.8	24.18	23.82
EDGE850 (1 Slot)	824.2	28.49	28.23
	836.6	28.44	28.15
	848.8	28.47	28.17
EDGE850 (2 Slot)	824.2	27.36	27.01
	836.6	27.32	26.95
	848.8	27.29	27.02
EDGE850 (3 Slot)	824.2	25.29	25.05
	836.6	25.21	24.90
	848.8	25.24	24.84
EDGE850 (4 Slot)	824.2	24.23	24.02
	836.6	24.12	23.72
	848.8	24.16	23.90

PCS 1900:

Mode	Frequency (MHz)	Peak Power	AVG Power
GSM1900	1850.2	29.34	29.08
	1880	29.56	29.19
	1909.8	**29.64**	**29.41**
GPRS1900 (1 Slot)	1850.2	29.36	28.97
	1880	29.00	28.68
	1909.8	29.64	29.40
GPRS1900 (2 Slot)	1850.2	28.35	27.99
	1880	27.96	27.66
	1909.8	28.58	28.25
GPRS1900 (3 Slot)	1850.2	26.17	25.80
	1880	25.79	25.49
	1909.8	26.57	26.28
GPRS1900 (4 Slot)	1850.2	25.07	24.77
	1880	24.64	24.43
	1909.8	25.56	25.36
EDGE1900 (1 Slot)	1850.2	29.33	29.03
	1880	28.99	28.70
	1909.8	29.62	29.26
EDGE1900 (2 Slot)	1850.2	28.19	27.82
	1880	27.91	27.57
	1909.8	28.61	28.33
EDGE1900 (3 Slot)	1850.2	26.11	25.78
	1880	25.81	25.55
	1909.8	26.48	26.16
EDGE1900 (4 Slot)	1850.2	24.97	24.76
	1880	24.81	24.50
	1909.8	25.44	25.13

UMTS BAND II

Mode	Frequency(MHz)	Peak Power	AVG Power
WCDMA 1900 RMC	1852.4	23.31	20.01
	1880	**23.49**	**20.08**
	1907.6	23.36	20.07
HSDPA Subtest 1	1852.4	23.04	19.60
	1880	22.77	19.11
	1907.6	22.53	18.94
HSDPA Subtest 2	1852.4	21.98	18.84
	1880	21.71	18.39
	1907.6	21.70	18.51
HSDPA Subtest 3	1852.4	21.48	18.22
	1880	21.21	17.91
	1907.6	20.88	17.67
HSDPA Subtest 4	1852.4	20.93	17.60
	1880	20.47	17.47
	1907.6	20.43	17.27
HSUPA Subtest 1	1852.4	22.89	19.68
	1880	22.63	19.49
	1907.6	22.65	19.33
HSUPA Subtest 2	1852.4	21.95	18.82
	1880	21.54	18.26
	1907.6	21.32	18.16
HSUPA Subtest 3	1852.4	21.37	18.31
	1880	21.02	17.77
	1907.6	20.76	17.58
HSUPA Subtest 4	1852.4	20.59	17.51
	1880	20.12	17.08
	1907.6	20.31	17.12
HSUPA Subtest 5	1852.4	19.86	16.71
	1880	19.61	16.65
	1907.6	19.44	16.38

UMTS BAND V

Mode	Frequency(MHz)	Peak Power	AVG Power
WCDMA 850 RMC	826.4	25.41	22.15
	836.6	**25.52**	**22.34**
	846.6	25.40	22.20
HSDPA Subtest 1	826.4	25.17	21.75
	836.6	24.93	21.31
	846.6	24.83	21.22
HSDPA Subtest 2	826.4	24.16	20.98
	836.6	23.82	20.62
	846.6	23.80	20.56
HSDPA Subtest 3	826.4	23.50	20.32
	836.6	23.30	20.11
	846.6	23.11	19.82
HSDPA Subtest 4	826.4	22.95	19.67
	836.6	22.75	19.56
	846.6	22.58	19.42
HSUPA Subtest 1	826.4	25.17	21.95
	836.6	24.90	21.72
	846.6	24.79	21.58
HSUPA Subtest 2	826.4	24.03	20.83
	836.6	23.73	20.46
	846.6	23.62	20.33
HSUPA Subtest 3	826.4	23.52	20.38
	836.6	23.10	19.96
	846.6	22.94	19.65
HSUPA Subtest 4	826.4	22.83	19.69
	836.6	22.41	19.20
	846.6	22.36	19.17
HSUPA Subtest 5	826.4	22.15	18.99
	836.6	21.90	18.74
	846.6	21.67	18.40

According to 3GPP 25.101 sub-clause 6.2.2 , the maximum output power is allowed to be reduced by following the table.

Table 6.1aA: UE maximum output power with HS-DPCCH and E-DCH

UE Transmit Channel Configuration	CM(db)	MPR(db)
For all combinations of ,DPDCH,DPCCH HS-DPDCH,E-DPDCH and E-DPCCH	0≤ CM≤3.5	MAX(CM-1,0)
Note: CM=1 for β_c/β_d=12/15, β_{hs}/β_c=24/15.For all other combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH the MPR is based on the relative CM difference.		

The device supports MPR to solve linearity issues (ACLR or SEM) due to the higher peak-to average ratios (PAR) of the HSUPA signal. This prevents saturating the full range of the TX DAC inside of device and provides a reduced power output to the RF transceiver chip according to the Cubic Metric (a function of the combinations of DPDCH, DPCCH, HS-DPCCH, E-DPDCH and E-DPCCH).

When E-DPDCH channels are present the beta gains on those channels are reduced firsts to try to get the power under the allowed limit. If the beta gains are lowered as far as possible, then a hard limiting is applied at the maximum allowed level.

The SW currently recalculates the cubic metric every time the beta gains on the E-DPDCH are reduced. The cubic metric will likely get lower each time this is done .However, there is no reported reduction of maximum output power in the HSUPA mode since the device also provides a compensate for the power back-off by increasing the gain of TX_AGC in the transceiver (PA) device.

The end effect is that the DUT output power is identical to the case where there is no MPR in the device.

5.2 Radiated Output Power

5.2.1 MEASUREMENT METHOD

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:

ASUBST = PSUBST_TX - PSUBST_RX - LSUBST_CABLES + GSUBST_TX_ANT

ATOT = LCABLES + ASUBST

Where ASUBST is the final substitution correction including receive antenna gain.

PSUBST_TX is signal generator level,

PSUBST_RX is receiver level,

LSUBST_CABLES is cable losses including TX cable,

GSUBST_TX_ANT is substitution antenna gain.

ATOT is total correction factor including cable loss and substitution correction

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

5.2.2 PROVISIONS APPLICABLE

This is the test for the maximum radiated power from the EUT. Rule Part 24.232(b) specifies, “Mobile/portable stations are limited to 2 watts e.i.r.p. Peak power” and 24.232(c) specifies that "Peak transmit power must be measured over any interval of continuous transmission using instrumentation calibrated in terms of an rms-equivalent voltage.” Rule Part 22.913(a) specifies “Maximum ERP. The effective radiated power (ERP) of base transmitters and cellular repeaters must not exceed 500 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.”

Mode	Nominal Peak Power
GSM 850	<=38.45 dBm (7W)
PCS 1900	<=33 dBm (2W)
UMTS BAND II	<=33 dBm (2W)
UMTS BANDV	<=38.45 dBm (7W)

5.2.3 MEASUREMENT RESULT

Radiated Power (ERP) for GSM 850 MHZ				
Mode	Frequency	Result		Conclusion
		Max. Peak ERP (dBm)	Polarization Of Max. ERP	
GSM850	824.2	27.32	Horizontal	Pass
	824.2	27.66	Vertical	Pass
	836.6	27.43	Horizontal	Pass
	836.6	**27.89**	Vertical	Pass
	848.8	27.28	Horizontal	Pass
	848.8	27.39	Vertical	Pass
NOTE: ATOT is total correction factor including cable loss and substitution correction During the test, the data of ATOT was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of ATOT.				

Radiated Power (ERP) for GPRS 850 MHZ				
Mode	Frequency	Result		Conclusion
		Max. Peak ERP (dBm)	Polarization Of Max. ERP	
GPRS850	824.2	27.23	Horizontal	Pass
	824.2	27.15	Vertical	Pass
	836.6	27.51	Horizontal	Pass
	836.6	**27.72**	Vertical	Pass
	848.8	27.17	Horizontal	Pass
	848.8	27.41	Vertical	Pass
NOTE: ATOT is total correction factor including cable loss and substitution correction During the test, the data of ATOT was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of ATOT.				

Radiated Power (E.I.R.P) for PCS 1900 MHZ				
Mode	Frequency	Result		Conclusion
		Max. Peak E.I.R.P.(dBm)	Polarization Of Max. E.I.R.P.	
PCS1900	1850.2	27.13	Horizontal	Pass
	1850.2	27.52	Vertical	Pass
	1880.0	27.46	Horizontal	Pass
	1880.0	27.74	Vertical	Pass
	1909.8	27.14	Horizontal	Pass
	1909.8	**27.91**	Vertical	Pass
NOTE: ATOT is total correction factor including cable loss and substitution correction During the test, the data of ATOT was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of ATOT.				

Radiated Power (E.I.R.P) for GPRS1900 MHZ				
Mode	**Frequency**	**Result**		**Conclusion**
		Max. Peak E.I.R.P.(dBm)	**Polarization Of Max. E.I.R.P.**	
GPRS1900	1850.2	27.21	Horizontal	Pass
	1850.2	27.14	Vertical	Pass
	1880.0	27.78	Horizontal	Pass
	1880.0	27.14	Vertical	Pass
	1909.8	27.57	Horizontal	Pass
	1909.8	**27.96**	Vertical	Pass
NOTE: ATOT is total correction factor including cable loss and substitution correction During the test, the data of ATOT was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of ATOT.				

Radiated Power (EIRP) for UMTS band II				
Mode	**Frequency**	**Result**		**Conclusion**
		Max. Peak EIRP (dBm)	**Polarization Of Max. EIRP**	
RMC 12.2kbps	1852.4	19.13	Horizontal	Pass
	1852.4	19.25	Vertical	Pass
	1880	19.67	Horizontal	Pass
	1880	19.55	Vertical	Pass
	1907.6	**20.04**	Horizontal	Pass
	1907.6	19.89	Vertical	Pass
NOTE: ATOT is total correction factor including cable loss and substitution correction During the test, the data of ATOT was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of ATOT.				

Radiated Power (E.R.P) for UMTS band V				
Mode	Frequency	Result		Conclusion
		Max. Peak E.R.P.(dBm)	Polarization Of Max. E.R.P.	
RMC 12.2kbps	826.4	19.12	Horizontal	Pass
	826.4	19.17	Vertical	Pass
	835.0	20.11	Horizontal	Pass
	835.0	20.01	Vertical	Pass
	846.6	**20.23**	Horizontal	Pass
	846.6	19.89	Vertical	Pass
NOTE: ATOT is total correction factor including cable loss and substitution correction During the test, the data of ATOT was added in the Test Spectrum Analyze, so Spectrum Analyze reading is the final values which contain the data of ATOT.				

NOTE 1: in the part, result the worst case GPRS 1slot for GSM 850 and PCS1900, and RMC 12.2kbps for UMTS band II and band V.

6. SPURIOUS EMISSION

6.1 CONDUCTED SPURIOUS EMISSION

6.1.1 MEASUREMENT METHOD

The following steps outline the procedure used to measure the conducted emissions from the EUT.

1, Determine frequency range for measurements: From CFR 2.1057 the spectrum should be investigated from the lowest radio frequency generated in the equipment up to at least the 10th harmonic of the carrier frequency. For the equipment of PCS1900 band, this equates to a frequency range of 30 MHz to 19.1 GHz, data taken from 30 MHz to 20 GHz. For GSM850, data taken from 30 MHz to 9 GHz.

2, Determine EUT transmit frequencies: the following typical channels were chosen to conducted emissions testing.

Typical Channels for testing of GSM/GPRS 850 MHz	
Channel	Frequency (MHz)
128	824.2
190	836.6
251	848.8

Typical Channels for testing of PCS/ GPRS 1900 MHz	
Channel	Frequency (MHz)
512	1850.2
661	1880.0
810	1909.8

Typical Channels for testing of UMTS band II	
Channel	Frequency (MHz)
9262	1852.4
9400	1880.0
9538	1907.6

Typical Channels for testing of UMTS band V	
Channel	Frequency (MHz)
4132	826.4
4175	835.0
4233	846.6

6.1.2 PROVISIONS APPLICABLE

On any frequency outside frequency band of the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. For all power levels +30 dBm to 0 dBm, this becomes a constant specification limit of -13 dBm.

6.1.3 MEASUREMENT RESULT

PLEASE REFER TO：APPENDIX I TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

Note: 1. Below 30MHZ no Spurious found and The GSM modes is the worst condition.

2. As no emission found in standby or receive mode, no recording in this report.

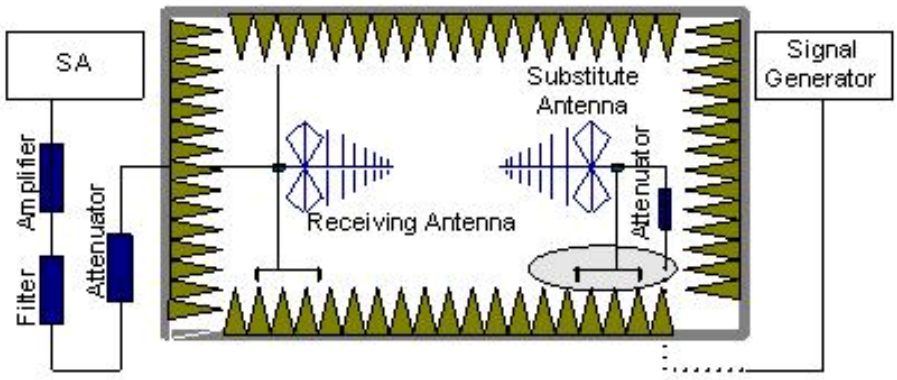
6.2 Radiated Spurious Emission

6.2.1 MEASUREMENT METHOD

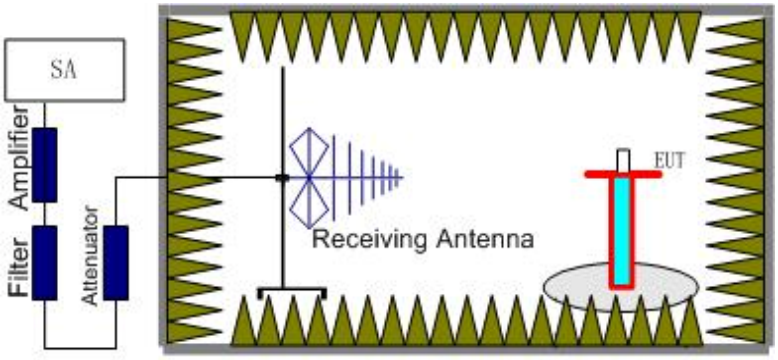
The measurements procedures specified in TIA-603C-2004 were used for testing. The spectrum was scanned from 30 MHz to the 10th harmonic of the highest frequency generated within the equipment. The resolution bandwidth is set 1MHz as outlined in Part 24.238. The measurements were performed on all modes(GPRS850, GPRS1900, HSDPA band II, HSDPA band V) at 3 typical channels(the Top Channel, the Middle Channel and the Bottom Channel) for each band.

The procedure of radiated spurious emissions is as follows:

a) Pre-calibration With pre-calibration method, the Radiated Spurious Emissions(RSE) is calculated as, RSE=Rx（dBuV）+CL（dB）+SA（dB）+Gain（dBi）-107（dBuV to dBm）The SA is calibrated using following setup.



b) EUT was placed on a 0.8 meter high non-conductive stand at a 3 meter test distance from the receive antenna. A receiving antenna was placed on the antenna mast 3 meters from the test item for emission measurements. The height of receiving antenna is 0.8m. The test setup refers to figure below. Detected emissions were maximized at each frequency by rotating the test item and adjusting the receiving antenna polarization. The radiated emission measurements of all non-harmonic and harmonics of the transmit frequency through the 10th harmonic were measured with peak detector and 1MHz bandwidth.



Radiated emissions measurements were made only at the upper, middle, and lower carrier frequencies of the PCS 1900 band (1850.2 MHz, 1880 MHz and 1909.8 MHz) ,GSM850 band (824.2MHz, 836.6MHz, 848.8MHz), UMTS band II(1852.4MHz, 1880MHz, 1907.6MHz), UMTS band V(826.4MHz, 835.0MHz, 846.6MHz) . It was decided that measurements at these three carrier frequencies would be sufficient to demonstrate compliance with emissions limits because it was seen that all the significant spurs occur well outside the band and no radiation was seen from a carrier in one block of any band into any of the other blocks.

The substitution method is used. Substitution values at each frequency are measured before and saved to the test software. A "reference path loss" is established and the A_{Rpl} is the attenuation of “reference path loss”, and including the gain of receive antenna, the gain of the preamplifier, the cable loss and the air loss. The measurement results are obtained as described below: $Power=P_{Mea}+A_{Rpl}$

6.2.2 PROVISIONS APPLICABLE

(a) On any frequency outside a licensee’s frequency block (e.g. A, D, B, etc.) within the USPCS spectrum, the power of any emission shall be attenuated below the transmitter power (P, in Watts) by at least 43+10Log(P) dB. The specification that emissions shall be attenuated below the transmitter power (P) by at least 43 + 10 log (P) dB, translates in the relevant power range (1 to 0.001 W) to -13 dBm. At 1 W the specified minimum attenuation becomes 43 dB and relative to a 30 dBm (1 W) carrier becomes a limit of -13 dBm. At 0.001 W (0 dBm) the minimum attenuation is 13 dB, which again yields a limit of -13 dBm. In this way a translation of the specification from relative to absolute terms is carried out.

Note: only result the worst condition of each test mode:

6.2.3 MEASUREMENT RESULT

GSM 850:

The Worst Test Results Channel 128/824.2 MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1648.467	-35.52	-4.65	-40.17	-13	-27.17	Horizontal
2472.682	-36.71	-2.21	-38.92	-13	-25.92	Horizontal
3296.834	-31.68	0.21	-31.47	-13	-18.47	Horizontal
1648.451	-38.32	-4.65	-42.97	-13	-29.97	Vertical
2472.652	-41.43	-2.21	-43.64	-13	-30.64	Vertical
3296.865	-42.62	0.21	-42.83	-13	-29.83	Vertical
The Worst Test Results Channel 190/836.6 MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1673.265	-36.57	-4.65	-41.22	-13	-28.22	Horizontal
2509.843	-42.21	-2.21	-44.42	-13	-31.42	Horizontal
3346.421	-38.87	0.21	-38.66	-13	-25.66	Horizontal
1673.254	-37.34	-4.65	-41.99	-13	-28.99	Vertical
2509.853	-31.37	-2.21	-33.58	-13	-20.58	Vertical
3346.452	-36.28	0.21	-36.07	-13	-23.07	Vertical
The Worst Test Results Channel 251/848.8 MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1697.645	-35.32	-4.65	-39.97	-13	-26.97	Horizontal
2546.462	-43.74	-2.21	-45.95	-13	-32.95	Horizontal
3395.272	-42.41	0.21	-42.2	-13	-29.2	Horizontal
1697.632	-35.83	-4.65	-40.48	-13	-27.48	Vertical
2546.452	-41.97	-2.21	-44.18	-13	-31.18	Vertical
3395.217	-37.62	0.21	-37.41	-13	-24.41	Vertical

Note: Below 30MHZ no Spurious found and The GSM modes is the worst condition.

PCS 1900:

The Worst Test Results for Channel 512/1850.2MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
3700.424	-33.32	0.33	-32.99	-13	-19.99	Horizontal
5550.672	-35.51	4.01	-31.5	-13	-18.5	Horizontal
7400.897	-42.35	10.7	-31.65	-13	-18.65	Horizontal
3700.432	-34.35	0.33	-34.02	-13	-21.02	Vertical
5550.653	-35.42	4.01	-31.41	-13	-18.41	Vertical
7400.842	-41.37	10.7	-30.67	-13	-17.67	Vertical
The Worst Test Results for Channel 661/1880.0MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
3760.167	-36.38	0.33	-36.05	-13	-23.05	Horizontal
5640.245	-32.22	4.01	-28.21	-13	-15.21	Horizontal
7520.223	-42.36	10.7	-31.66	-13	-18.66	Horizontal
3760.175	-31.38	0.33	-31.05	-13	-18.05	Vertical
5640.242	-36.57	4.01	-32.56	-13	-19.56	Vertical
7520.243	-37.52	10.7	-26.82	-13	-13.82	Vertical
The Worst Test Results for Channel 810/1909.8MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
3819.632	-32.56	0.33	-32.23	-13	-19.23	Horizontal
5729.443	-35.62	4.01	-31.61	-13	-18.61	Horizontal
7639.275	-37.77	10.7	-27.07	-13	-14.07	Horizontal
3819.641	-32.62	0.33	-32.29	-13	-19.29	Vertical
5729.484	-41.78	4.01	-37.77	-13	-24.77	Vertical
7639.232	-38.63	10.7	-27.93	-13	-14.93	Vertical

Note: Below 30MHZ no Spurious found and The GSM modes is the worst condition.

UMTS band II:

Channel 9663/1932.6MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
3866.793	-34.74	0.33	-34.41	-13	-21.41	Horizontal
5998.195	-35.29	4.01	-31.28	-13	-18.28	Horizontal
3866.810	-34.72	0.33	-34.39	-13	-21.39	Vertical
5998.188	-31.47	4.01	-27.46	-13	-14.46	Vertical
Channel 9800/1960MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
3921.079	-31.42	0.33	-31.09	-13	-18.09	Horizontal
5883.188	-35.68	4.01	-31.67	-13	-18.67	Horizontal
3921.093	-27.21	0.33	-26.88	-13	-13.88	Vertical
5883.200	-35.79	4.01	-31.78	-13	-18.78	Vertical
Channel 9937/1987.4MHz						
Frequency(MHz)	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
3975.192	-36.36	0.33	-36.03	-13	-23.03	Horizontal
5961.735	-38.42	4.01	-34.41	-13	-21.41	Horizontal
3975.154	-27.43	0.33	-27.1	-13	-14.1	Vertical
5961.797	-35.61	4.01	-31.6	-13	-18.6	Vertical

Note: Below 30MHZ no Spurious found and The RMC modes is the worst condition.

UMTS band V:

Channel 4358/871.6MHz						
Frequency(MHz	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1745.782	-34.36	-4.65	-39.01	-13	-26.01	Horizontal
2613.143	-35.22	-2.21	-37.43	-13	-24.43	Horizontal
1745.792	-32.43	-4.65	-37.08	-13	-24.08	Vertical
2613.145	-31.58	-2.21	-33.79	-13	-20.79	Vertical
Channel 4400/880MHz						
Frequency(MHz	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1762.225	-31.41	-4.65	-36.06	-13	-23.06	Horizontal
2643.774	-35.78	-2.21	-37.99	-13	-24.99	Horizontal
1762.157	-27.45	-4.65	-32.1	-13	-19.1	Vertical
2643.721	-35.73	-2.21	-37.94	-13	-24.94	Vertical
Channel 4457/891.4MHz						
Frequency(MHz	Power(dBm)	A_{Rpl}	P_{Mea}(dBm)	Limit（dBm）	Margin(dBm)	Polarity
1784.773	-36.76	-4.65	-41.41	-13	-28.41	Horizontal
2675.759	-38.52	-2.21	-40.73	-13	-27.73	Horizontal
1784.159	-26.78	-4.65	-31.43	-13	-18.43	Vertical
2675.734	-35.24	-2.21	-37.45	-13	-24.45	Vertical

Note: Below 30MHZ no Spurious found and The RMC modes is the worst condition.

7. FREQUENCY STABILITY

7.1 MEASUREMENT METHOD

In order to measure the carrier frequency under the condition of AFC lock, it is necessary to make measurements with the EUT in a “call mode”. This is accomplished with the use of R&S CMU200 DIGITAL RADIO COMMUNICATION TESTER.

1 , Measure the carrier frequency at room temperature.

2 , Subject the EUT to overnight soak at -10℃.

3 , With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on channel 661 for PCS 1900 band , channel 190 for GSM 850 band, channel 9400 for UMTS band II and channel 4175 for UMTS band V measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

4 , Repeat the above measurements at 10℃ increments from -10℃ to +50℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

5 , Re-measure carrier frequency at room temperature with nominal voltage. Vary supply voltage from minimum voltage to maximum voltage, in 0.1Volt increments re-measuring carrier frequency at each voltage. Pause at nominal voltage for 1 1/2 hours unpowered, to allow any self-heating to stabilize, before continuing.

6 , Subject the EUT to overnight soak at +50℃.

7 , With the EUT, powered via nominal voltage, connected to the CMU200 and in a simulated call on the centre channel, measure the carrier frequency. These measurements should be made within 2 minutes of Powering up the EUT, to prevent significant self-warming.

8 , Repeat the above measurements at 10℃ increments from +50℃ to -10℃. Allow at least 1 1/2 hours at each temperature, unpowered, before making measurements.

9 , At all temperature levels hold the temperature to +/- 0.5℃ during the measurement procedure.

7.2 PROVISIONS APPLICABLE

7.2.1 For Hand carried battery powered equipment

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. As this transceiver is considered "Hand carried, battery powered equipment" Section 2.1055(d)(2) applies. This requires that the lower voltage for frequency stability testing be specified by the manufacturer. This transceiver is specified to operate with an input voltage of between 3.4VDC and 4.2VDC, with a nominal voltage of 3.7VDC. Operation above or below these voltage limits is prohibited by transceiver software in order to prevent improper operation as well as to protect components from overstress. These voltages represent a tolerance of -10 % and +12.5 %. For the purposes of measuring frequency stability these voltage limits are to be used.

7.2.2 For equipment powered by primary supply voltage

According to the JTC standard the frequency stability of the carrier shall be accurate to within 0.1 ppm of the received frequency from the base station. This accuracy is sufficient to meet Sec. 24.235, Frequency Stability. The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. For this EUT section 2.1055(d)(1) applies. This requires varying primary supply voltage from 85 to 115 percent of the nominal value for other than hand carried battery equipment, the normal environment temperature is 20°C.

7.3 MEASUREMENT RESULT

Frequency Error Against Voltage for GSM 850 band		
Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.4	5	0.006
3.7	1	0.001
4.2	4	0.005

Frequency Error Against Temperature for GSMS850 band		
temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
-10	23	0.028
0	46	0.055
10	17	0.020
20	22	0.026
30	19	0.023
40	21	0.025
50	24	0.029

Note: The EUT doesn't work below -10℃, The GSM modes(836.6MHz, middle channel) is the worst condition.

Frequency Error Against Voltage for GSM1900 band		
Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.4	24	0.013
3.7	19	0.010
4.2	27	0.014

Frequency Error Against Temperature for GSM1900 band		
temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
-10	41	0.022
0	37	0.020
10	41	0.022
20	40	0.021
30	38	0.020
40	41	0.022
50	49	0.026

Note: The EUT doesn't work below -10℃, The GSM modes(1880MHz, middle channel) is the worst condition.

Frequency Error Against Voltage for UMTS band II		
Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.4	46	0.024
3.7	39	0.021
4.2	48	0.026

Frequency Error Against Temperature for UMTS band II		
temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
-10	61	0.032
0	52	0.028
10	47	0.025
20	46	0.024
30	38	0.020
40	41	0.022
50	50	0.027

Note: The EUT doesn't work below -10℃, The UMTS band II(1880MHz ,middle channel) is the worst condition.

Frequency Error Against Voltage for UMTS band V		
Voltage(V)	Frequency error(Hz)	Frequency error(ppm)
3.4	37	0.044
3.7	28	0.034
4.2	30	0.036

Frequency Error Against Temperature for UMTS band V		
temperature(℃)	Frequency error(Hz)	Frequency error(ppm)
-10	49	0.059
0	42	0.050
10	39	0.047
20	29	0.035
30	29	0.035
40	31	0.037
50	40	0.048

Note: The EUT doesn't work below -10℃, The UMTS band V(835MHz,middle channel) is the worst condition.

8. OCCUPIED BANDWIDTH

8.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

8.2 PROVISIONS APPLICABLE

The occupied bandwidth (99%) shall not exceed 300 KHz.

8.3 MEASUREMENT RESULT

Occupied Bandwidth (99%) for GSM 850 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	824.2	245.14
Middle Channel	836.6	245.57
High Channel	848.8	245.71

Occupied Bandwidth (99%) for GPRS 850 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	824.2	249.76
Middle Channel	836.6	244.80
High Channel	848.8	246.15

Occupied Bandwidth (99%) for EDGE 850 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	824.2	246.54
Middle Channel	836.6	244.05
High Channel	848.8	245.92

Occupied Bandwidth (99%) for GSM1900 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	1850.2	243.66
Middle Channel	1880.0	248.34
High Channel	1909.8	247.83

Occupied Bandwidth (99%) for GPRS1900 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	1850.2	247.31
Middle Channel	1880.0	240.93
High Channel	1909.8	246.74

Occupied Bandwidth (99%) for EDGE1900 band		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(kHz)
Low Channel	1850.2	247.79
Middle Channel	1880.0	247.75
High Channel	1909.8	245.64

Occupied Bandwidth (99%) for UMTS band II		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(MHz)
Low Channel	1852.4	4.100
Middle Channel	1880	4.113
High Channel	1907.6	4.162

Occupied Bandwidth (99%) for UMTS HSDPA band II		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(MHz)
Low Channel	1852.4	4.094
Middle Channel	1880	4.112
High Channel	1907.6	4.190

Occupied Bandwidth (99%) for UMTS band II		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(MHz)
Low Channel	1852.4	4.102
Middle Channel	1880	4.114
High Channel	1907.6	4.205

Occupied Bandwidth (99%) for UMTS band V		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(MHz)
Low Channel	826.4	4.102
Middle Channel	835.0	4.106
High Channel	846.6	4.101

Occupied Bandwidth (99%) for UMTS HSDPA band V		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(MHz)
Low Channel	826.4	4.095
Middle Channel	835.0	4.100
High Channel	846.6	4.094

Occupied Bandwidth (99%) for UMTS HSDPA band V		
Mode	Frequency(MHz)	Occupied Bandwidth (99%)(MHz)
Low Channel	826.4	4.100
Middle Channel	835.0	4.102
High Channel	846.6	4.098

9. EMISSION BANDWIDTH

9.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

9.2 PROVISIONS APPLICABLE

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

9.3 MEASUREMENT RESULT

Emission Bandwidth (-26dBc) for GSM850 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	824.2	313.2
Middle Channel	836.6	312.0
High Channel	848.8	322.9

Emission Bandwidth (-26dBc) for GPRS850 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	824.2	320.3
Middle Channel	836.6	320.2
High Channel	848.8	320.1

Emission Bandwidth (-26dBc) for GPRS850 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	824.2	310.0
Middle Channel	836.6	316.5
High Channel	848.8	311.6

Emission Bandwidth (-26dBc) for GSM1900 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	1850.2	315.5
Middle Channel	1880.0	318.4
High Channel	1909.8	323.8

Emission Bandwidth (-26dBc) for GPRS1900 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	1850.2	316.6
Middle Channel	1880.0	313.3
High Channel	1909.8	319.3

Emission Bandwidth (-26dBc) for EDGE1900 band		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(kHz)
Low Channel	1850.2	317.6
Middle Channel	1880.0	319.8
High Channel	1909.8	318.3

Emission Bandwidth (-26dBc) for UMTS band II		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)
Low Channel	1852.4	4.670
Middle Channel	1880.0	4.708
High Channel	1907.6	4.891

Emission Bandwidth (-26dBc) for UMTS HSDPA band II		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)
Low Channel	1852.4	4.678
Middle Channel	1880.0	4.686
High Channel	1907.6	5.960

Emission Bandwidth (-26dBc) for UMTS HSUPA band II		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)
Low Channel	1852.4	4.665
Middle Channel	1880.0	4.668
High Channel	1907.6	5.924

Emission Bandwidth (-26dBc) for UMTS band V		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)
Low Channel	826.4	4.673
Middle Channel	835.0	4.668
High Channel	846.6	4.672

Emission Bandwidth (-26dBc) for UMTS HSDPA band V		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)
Low Channel	826.4	4.662
Middle Channel	835.0	4.671
High Channel	846.6	4.664

Emission Bandwidth (-26dBc) for UMTS HSUPA band V		
Mode	Frequency(MHz)	Emission Bandwidth (-26dBc)(MHz)
Low Channel	826.4	4.677
Middle Channel	835.0	4.680
High Channel	846.6	4.678

10. BAND EDGE

10.1 MEASUREMENT METHOD

The test set up and general procedure is similar to conducted peak output power test. Only different for setting the measurement configuration of the measuring instrument of Spectrum Analyzer.

10.2 PROVISIONS APPLICABLE

As Specified in FCC rules of 22.917(b) and 24.238(b).

10.3 MEASUREMENT RESULT

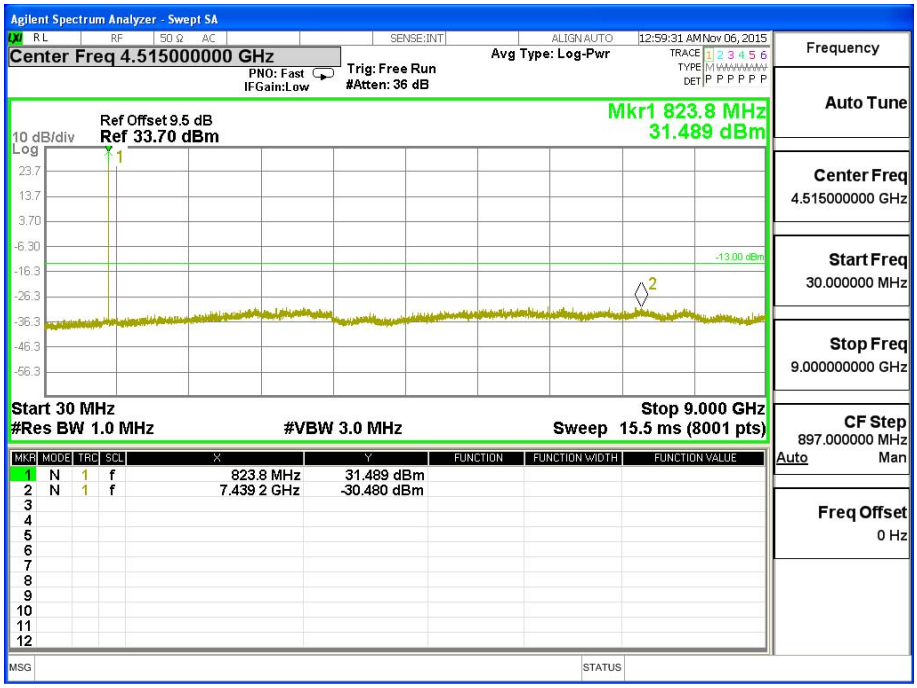
Please refers to Appendix III for compliance test plots for band edges.

APPENDIX I

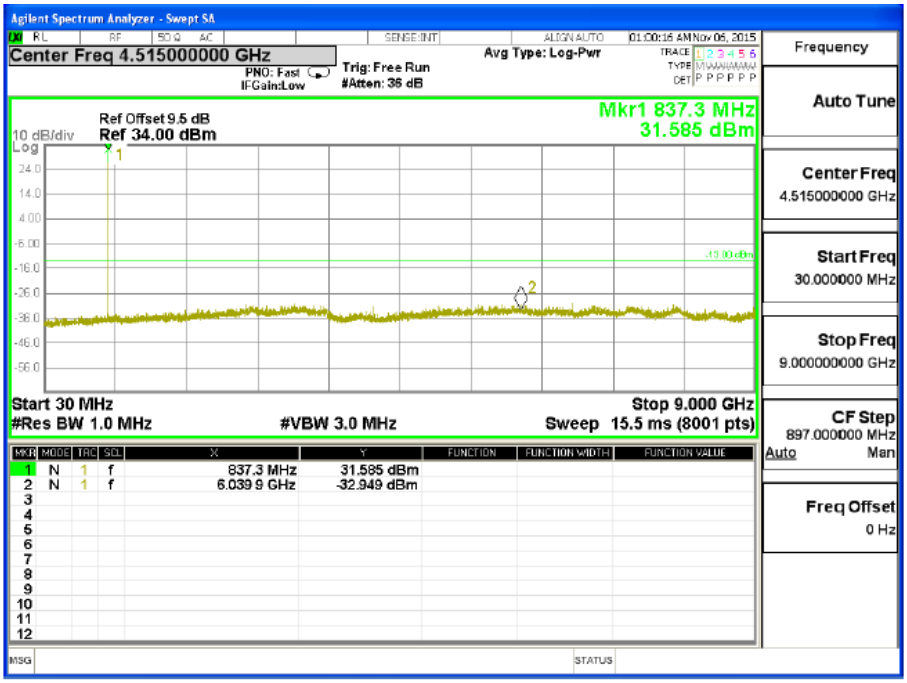
TEST PLOTS FOR CONDUCTED SPURIOUS EMISSION

CONDUCTED EMISSION IN GSM 850 BAND

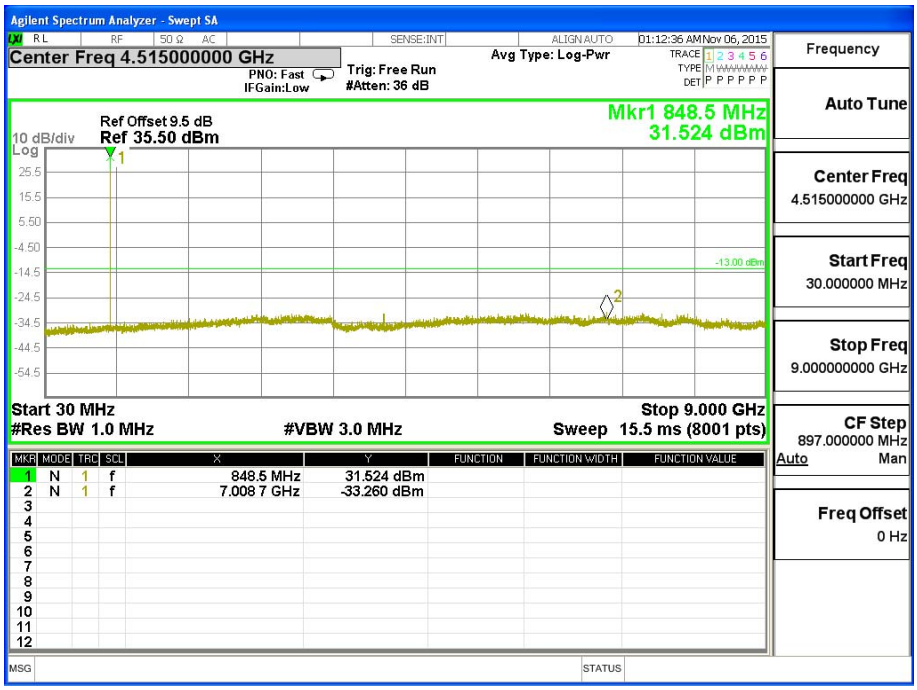
Conducted Emission Transmitting Mode CH 128 30MHz – 9GHz



Conducted Emission Transmitting Mode CH 190 30MHz – 9GHz

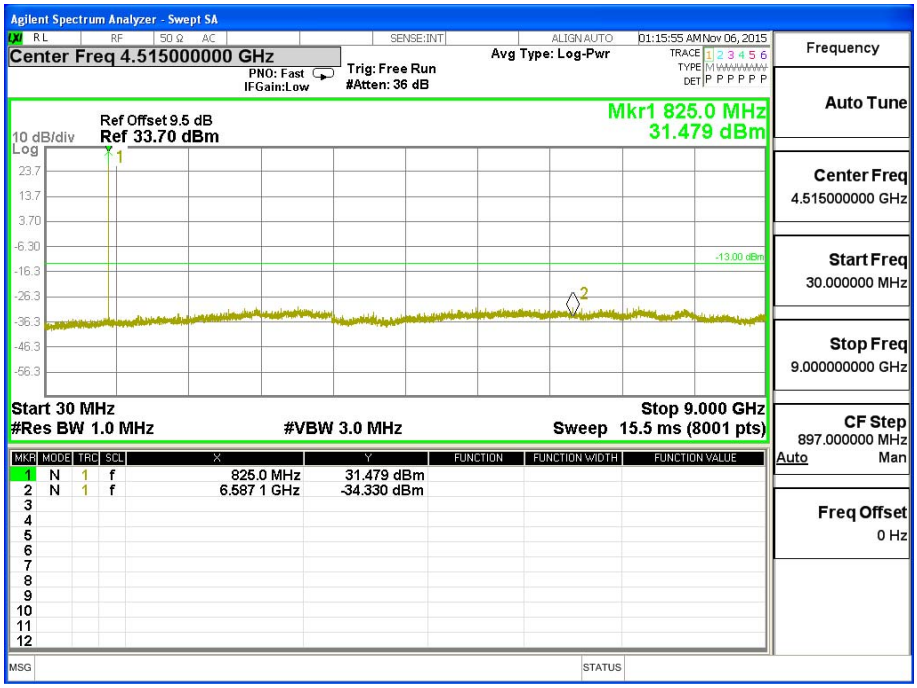


Conducted Emission Transmitting Mode CH 251 30MHz – 9GHz

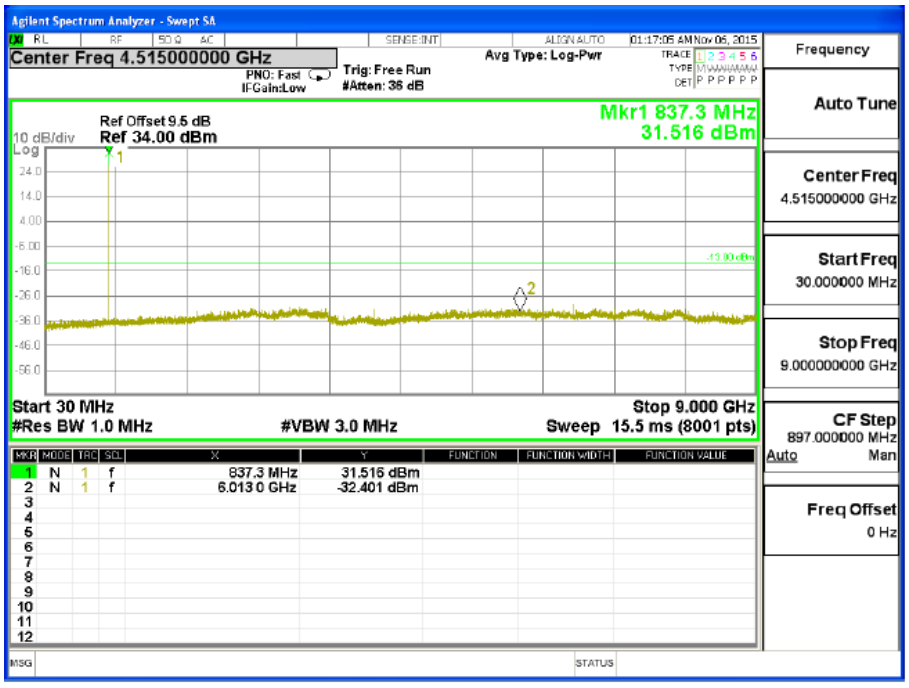


CONDUCTED EMISSION IN EDGE 850 BAND

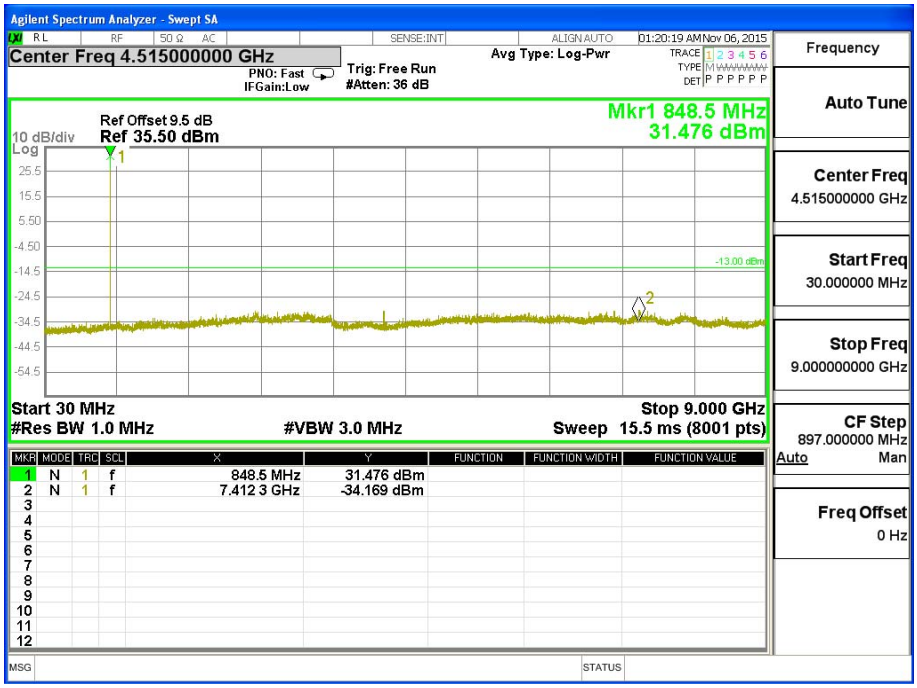
Conducted Emission Transmitting Mode CH 128 30MHz – 9GHz



Conducted Emission Transmitting Mode CH 190 30MHz – 9GHz

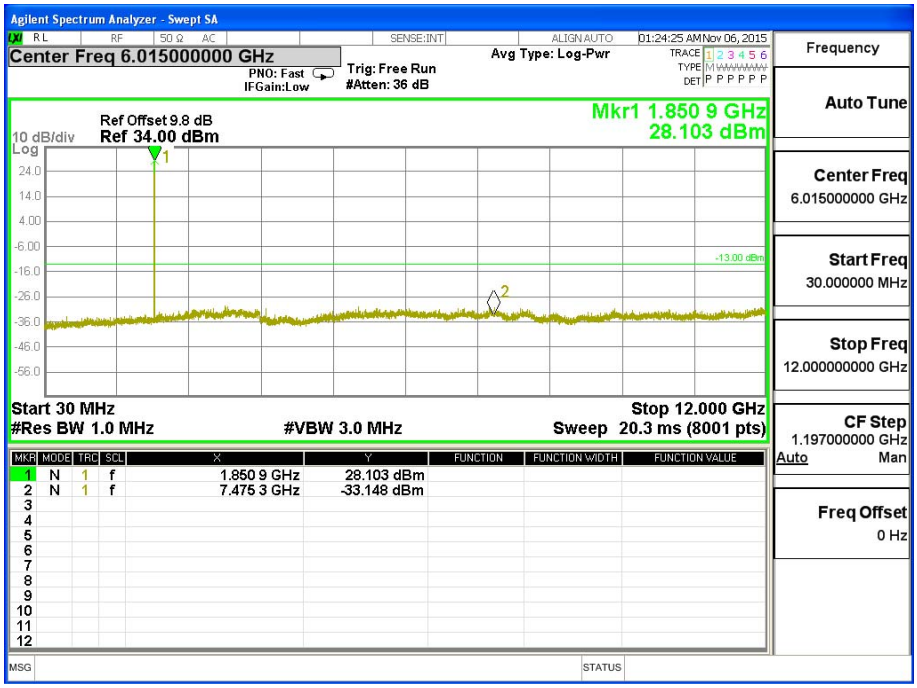


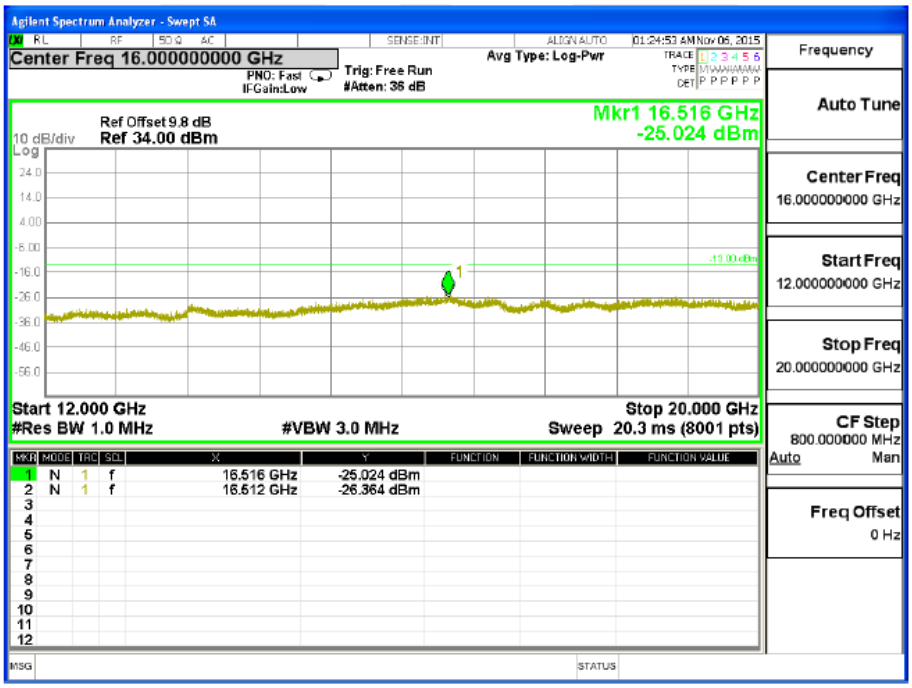
Conducted Emission Transmitting Mode CH 251 30MHz – 9GHz



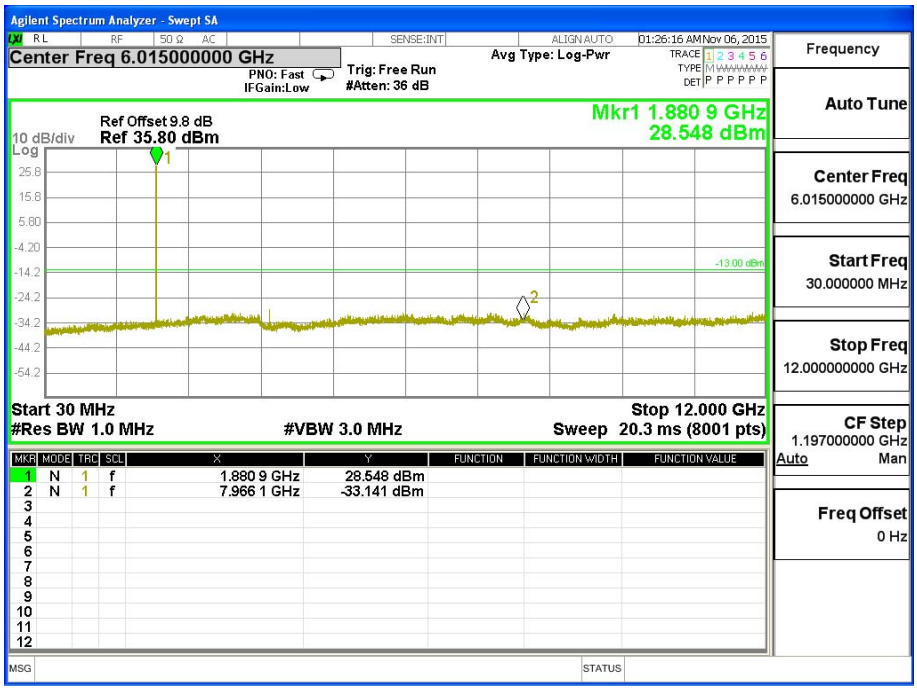
CONDUCTED EMISSION IN GSM1900 BAND

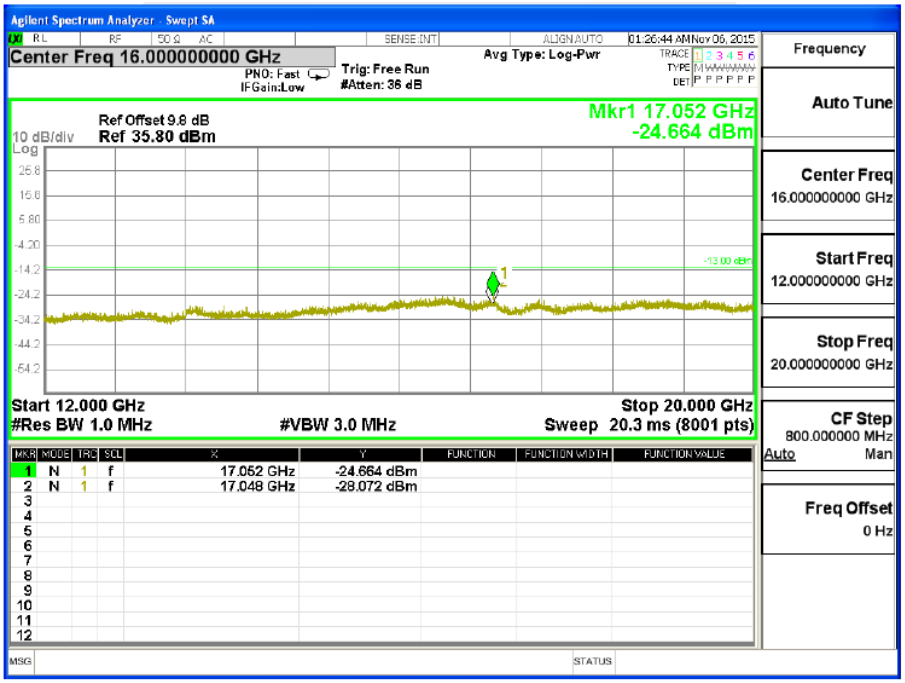
Conducted Emission Transmitting Mode CH 512 30MHz – 20GHz



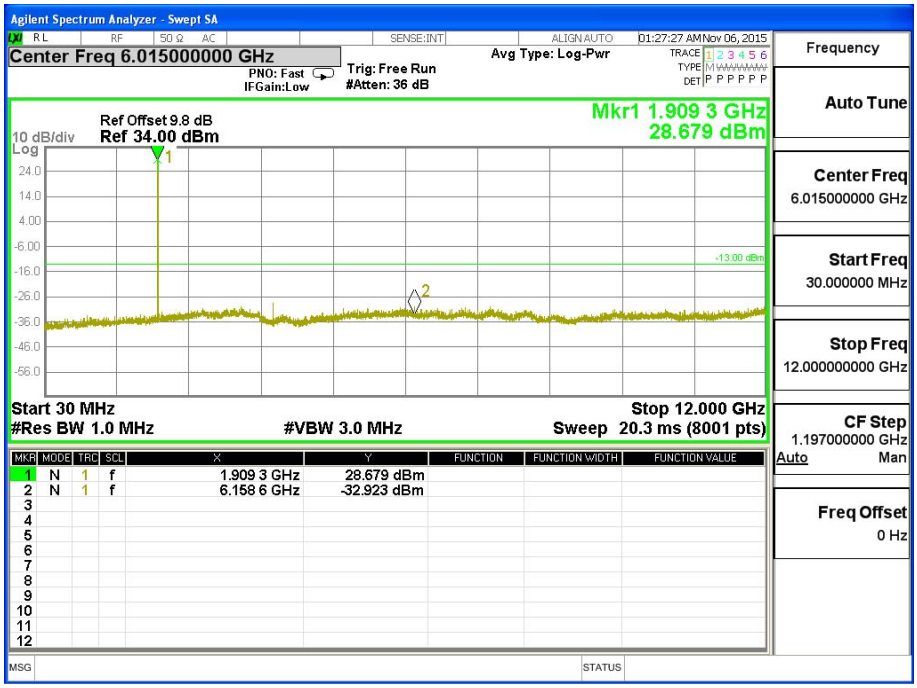


Conducted Emission Transmitting Mode CH 661 30MHz – 20GHz

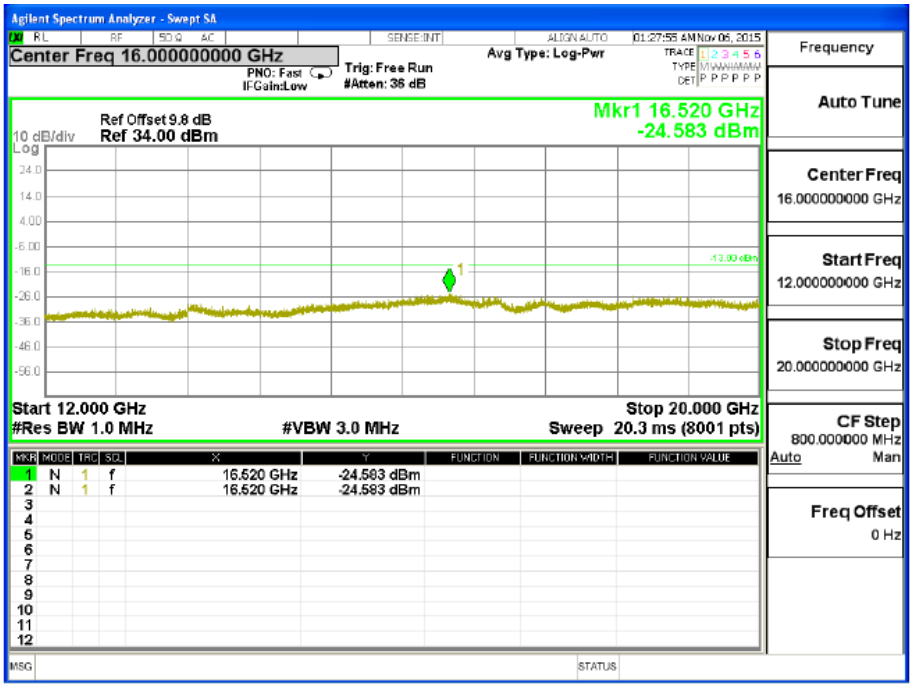




Conducted Emission Transmitting Mode CH 810 30MHz – 20GHz

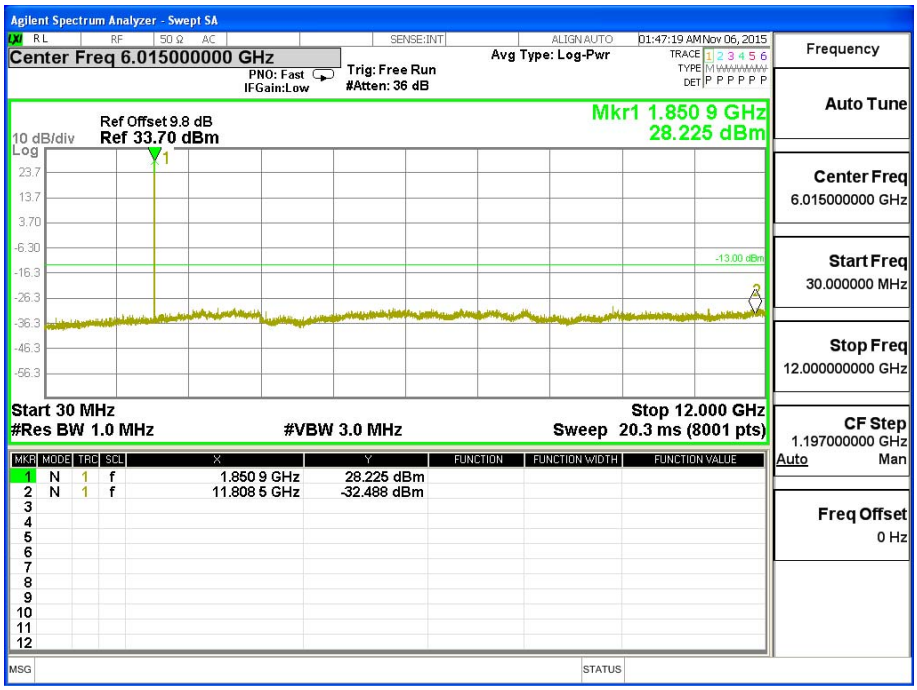


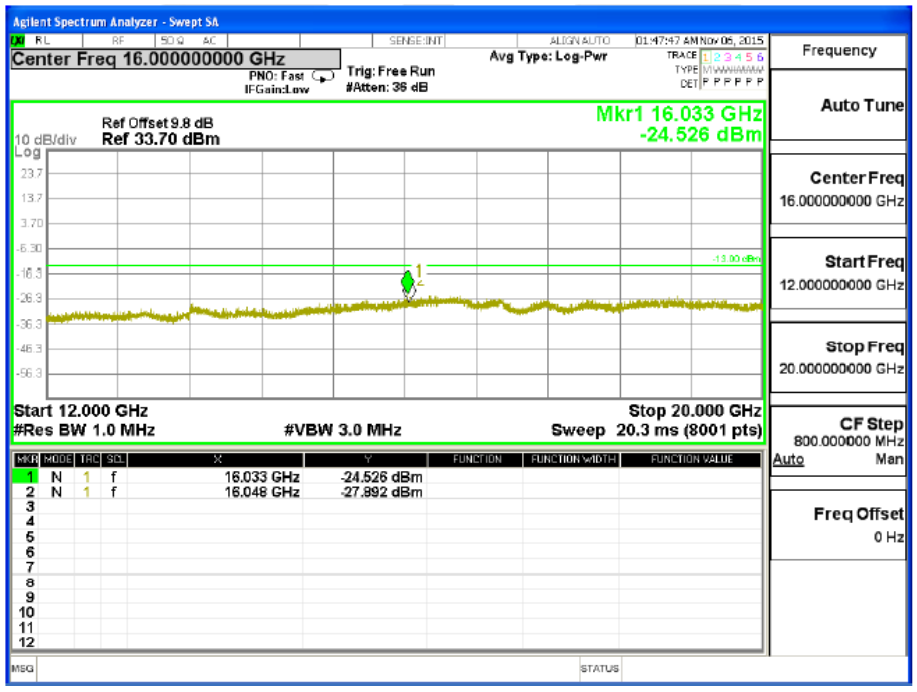
Conducted Emission Transmitting Mode CH 661 2GHz – 20GHz



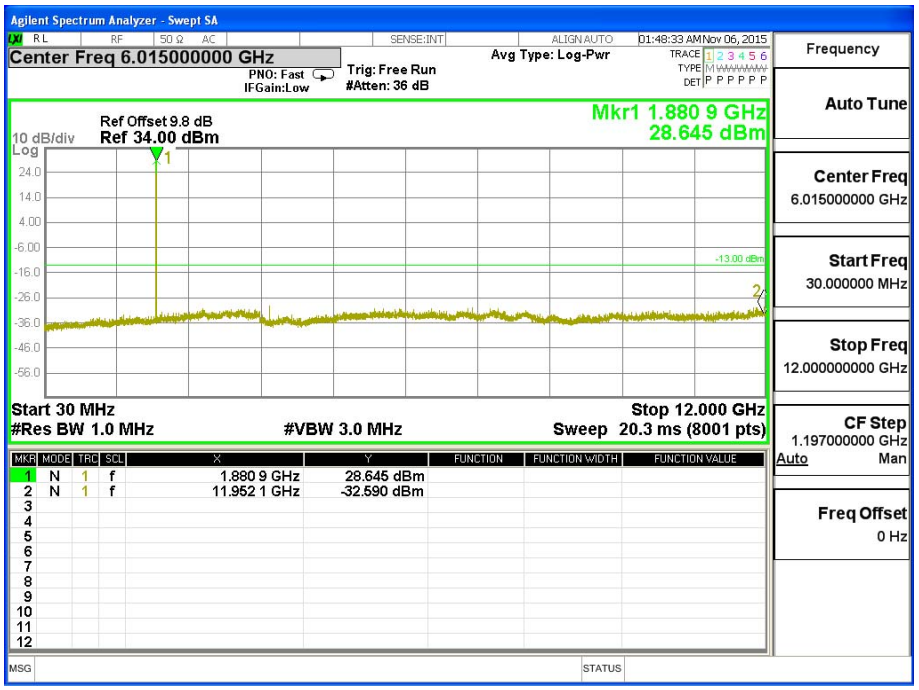
CONDUCTED EMISSION IN GPRS1900 BAND

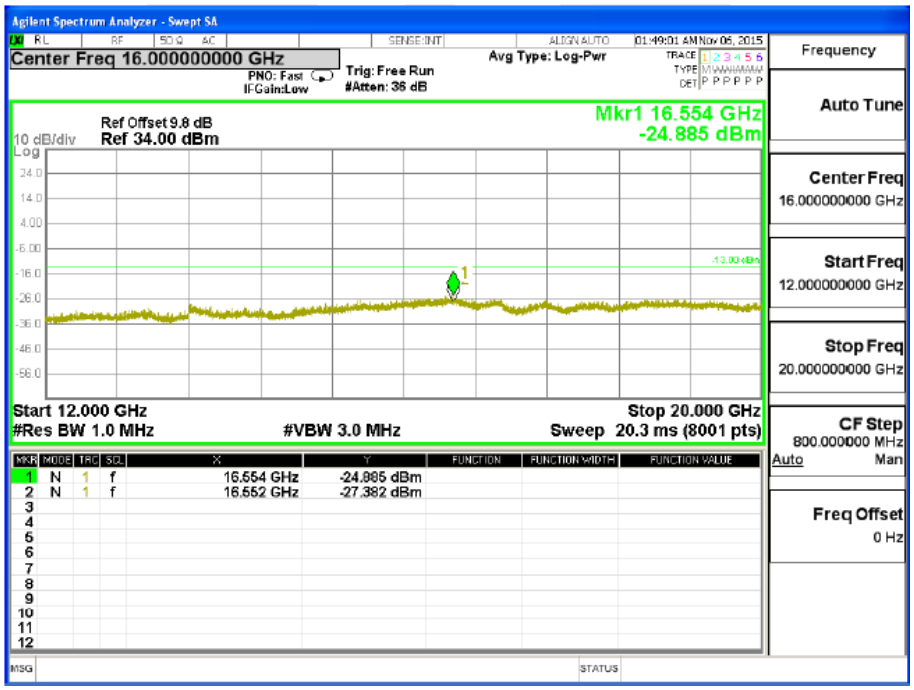
Conducted Emission Transmitting Mode CH 512 30MHz – 20GHz



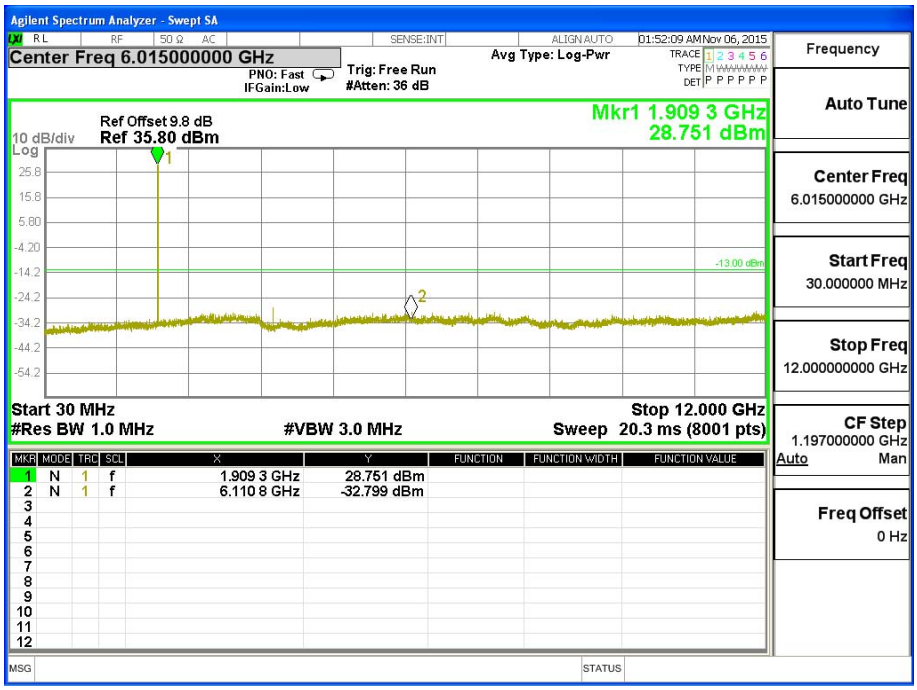


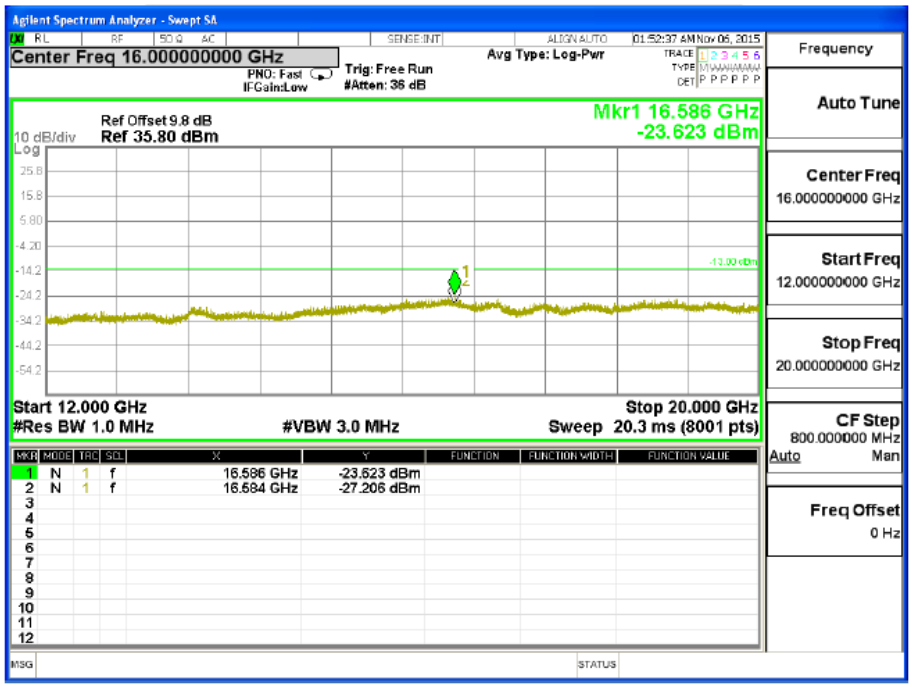
Conducted Emission Transmitting Mode CH 661 30MHz – 20GHz





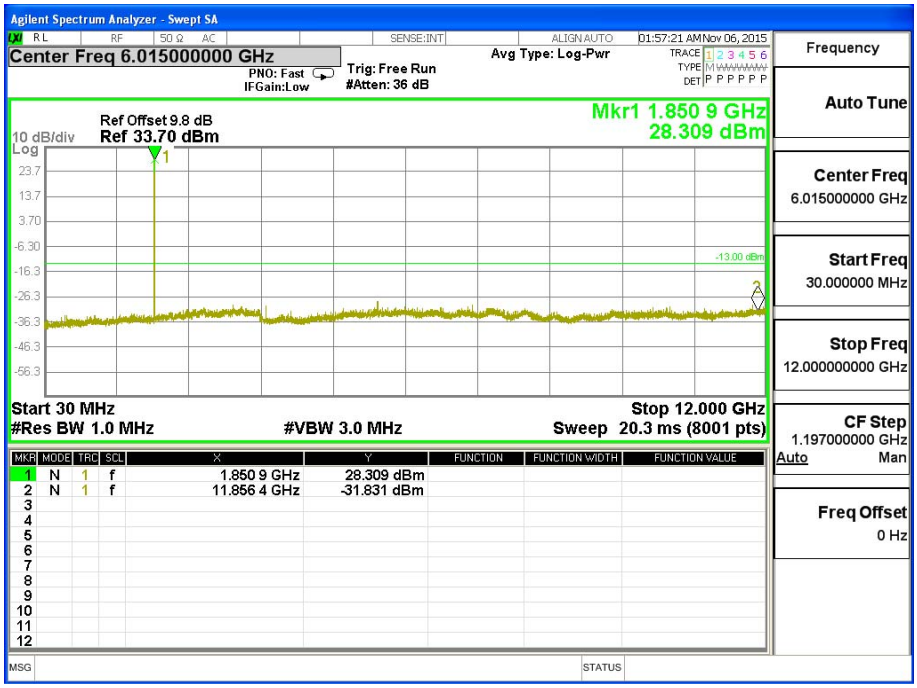
Conducted Emission Transmitting Mode CH 810 30MHz – 20GHz

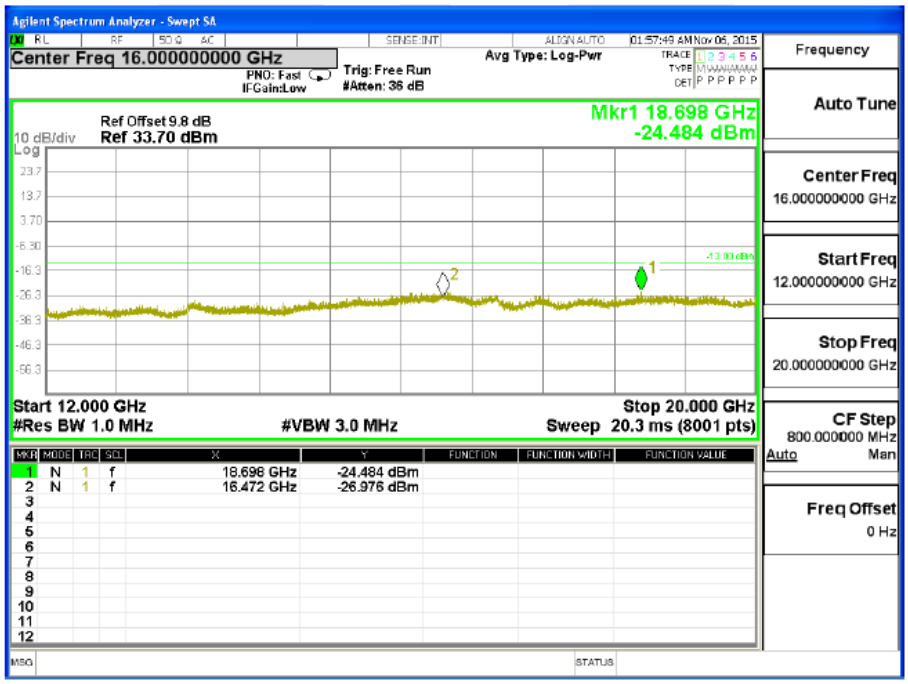




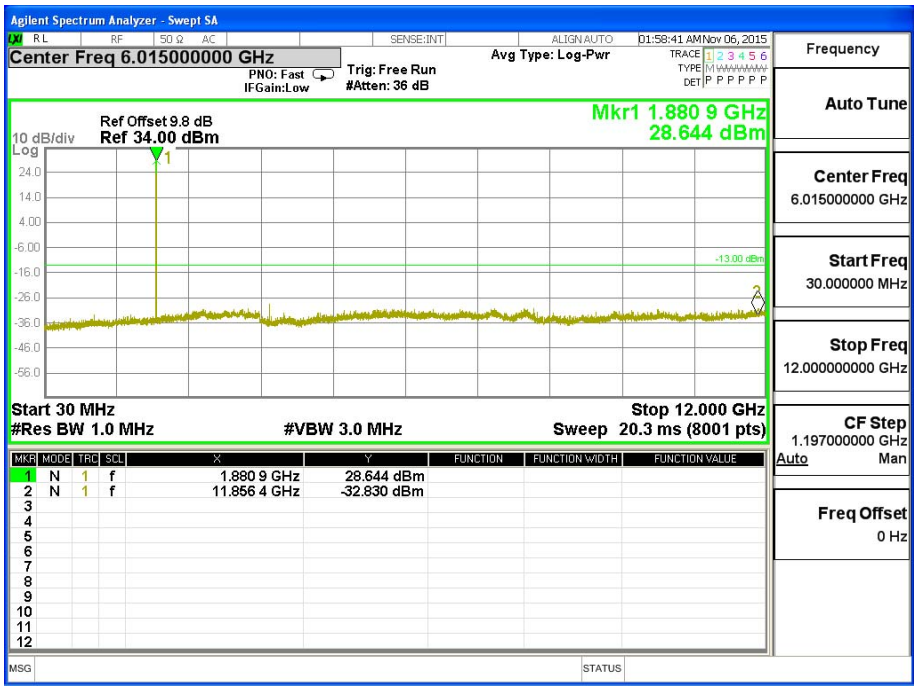
CONDUCTED EMISSION IN EDGE 1900 BAND

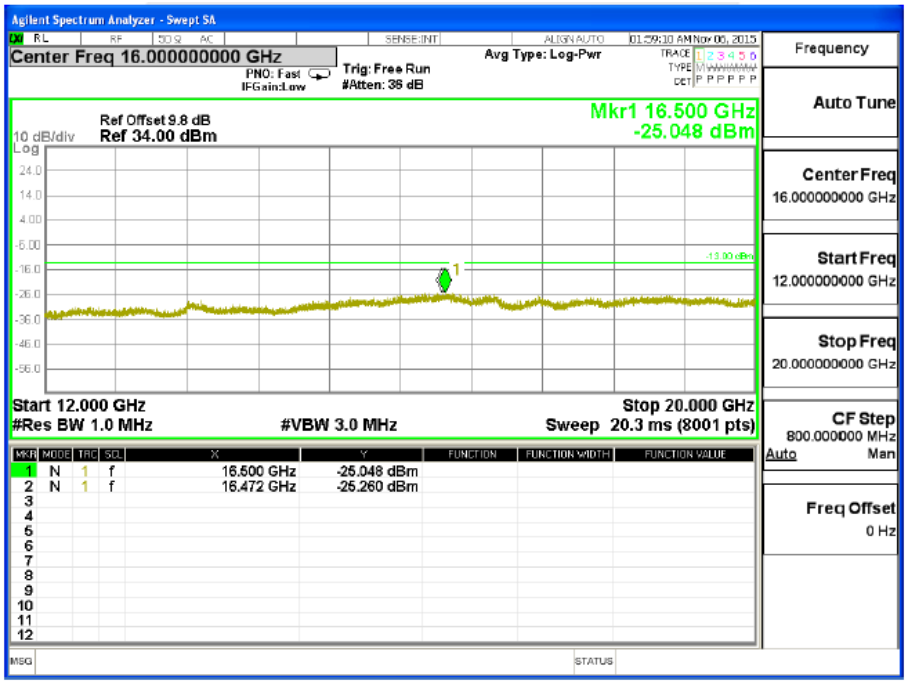
Conducted Emission Transmitting Mode CH 512 30MHz – 20GHz



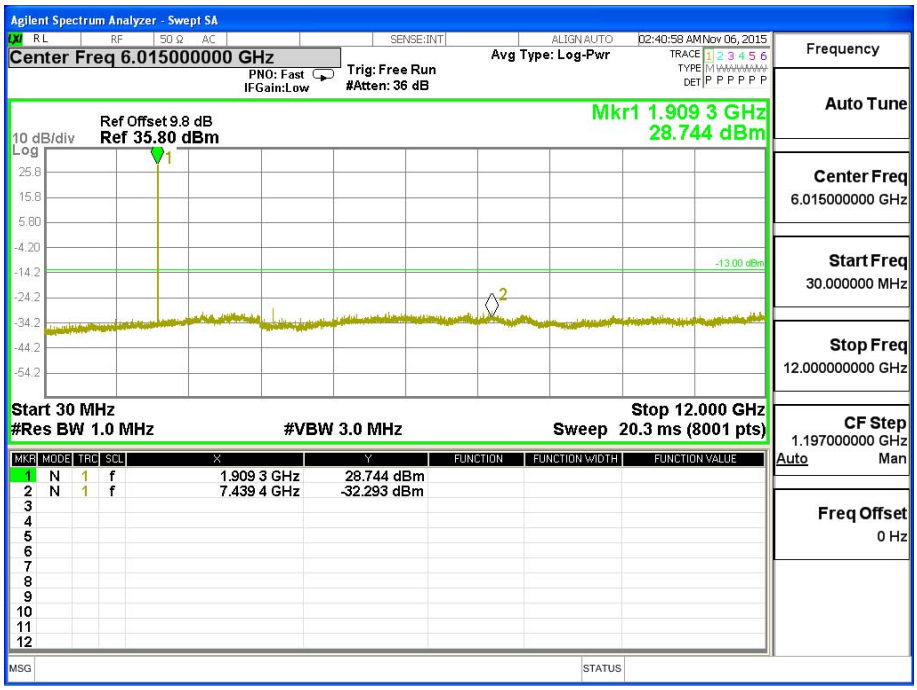


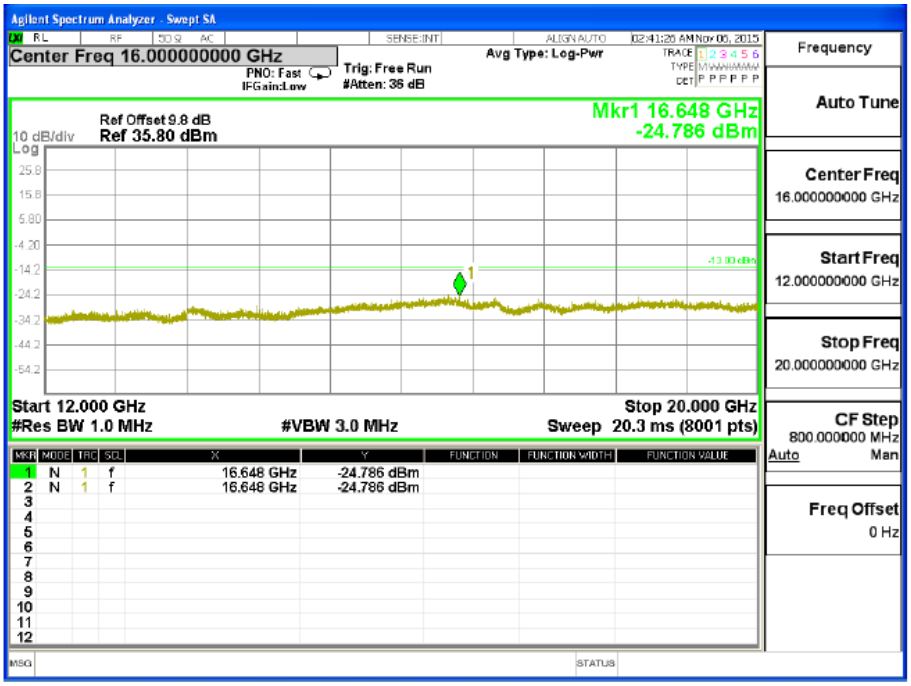
Conducted Emission Transmitting Mode CH 661 30MHz – 20GHz





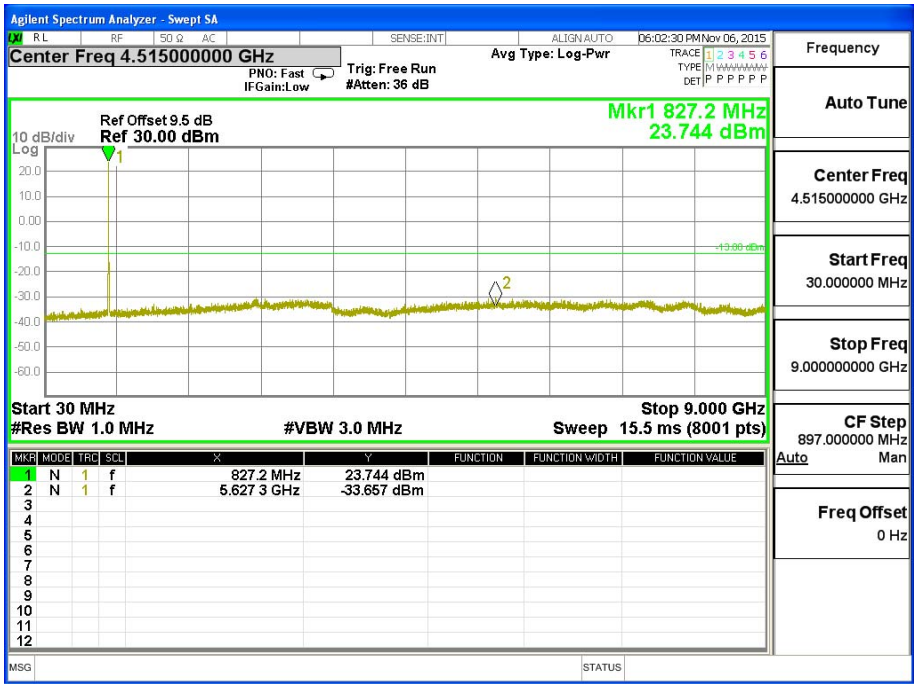
Conducted Emission Transmitting Mode CH 810 30MHz – 20GHz



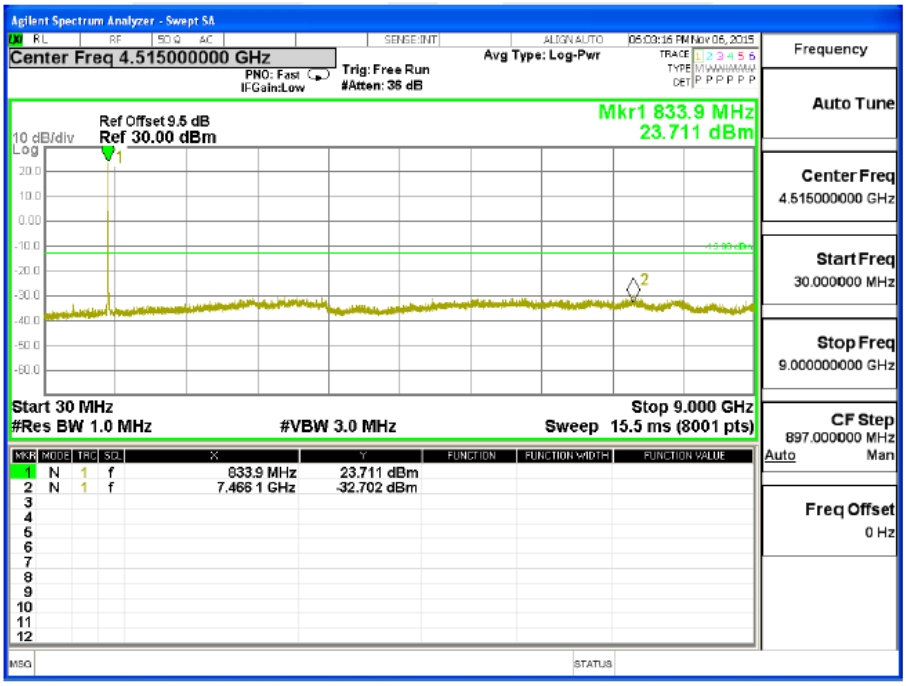


CONDUCTED EMISSION IN UMTS band V

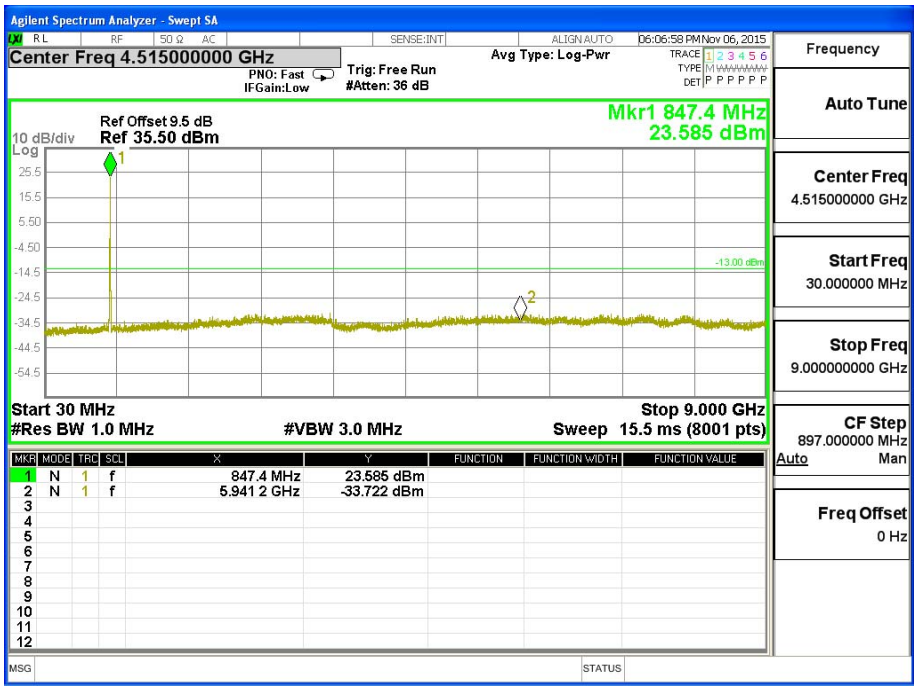
Conducted Emission Transmitting Mode 4132 30MHz – 9GHz



Conducted Emission Transmitting Mode CH 4183 30MHz – 9GHz

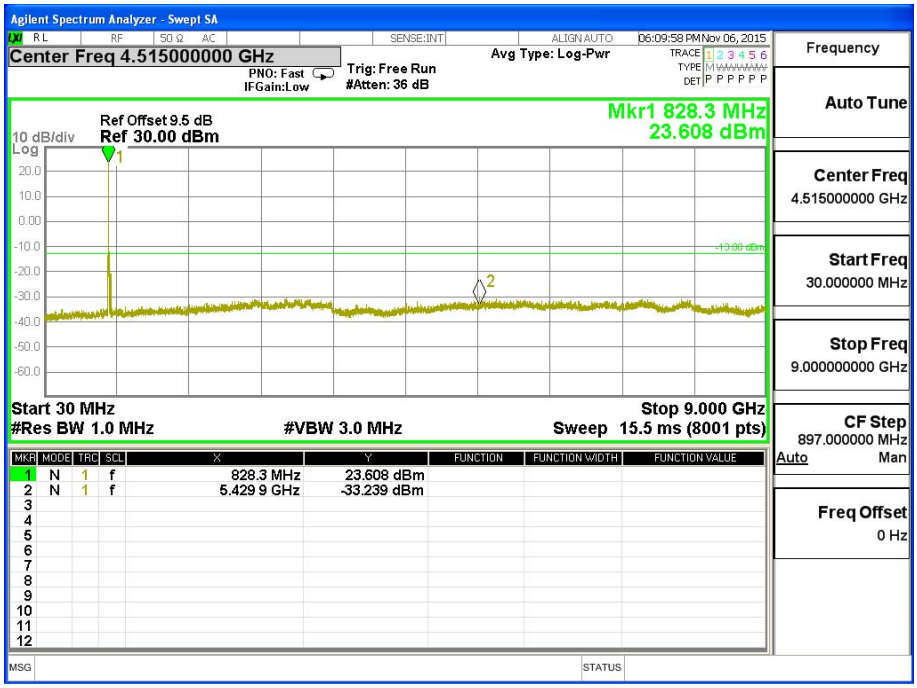


Conducted Emission Transmitting Mode CH 4233 30MHz – 9GHz

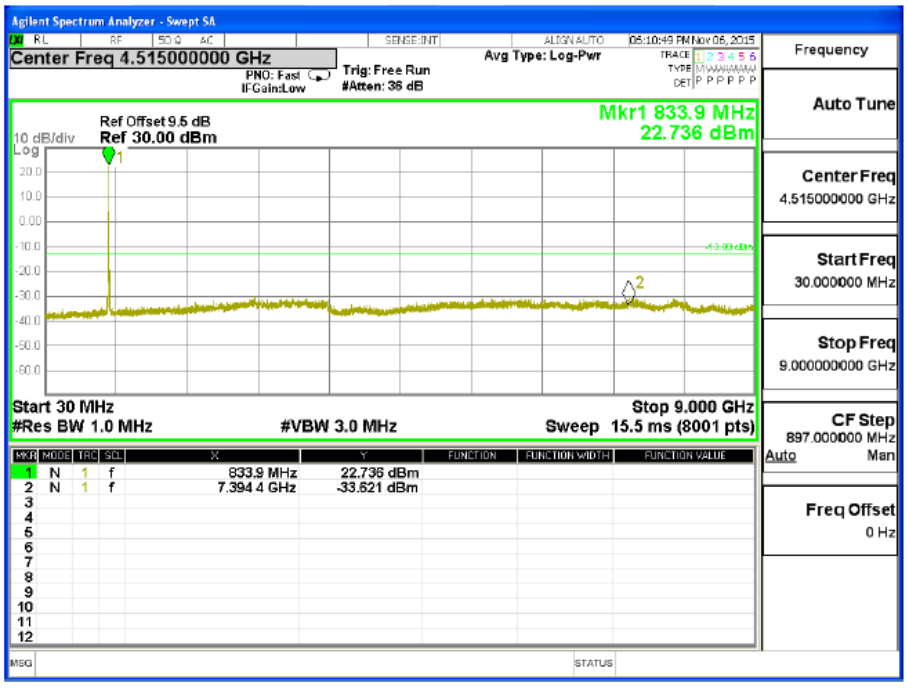


CONDUCTED EMISSION IN UMTS HSDPA band V

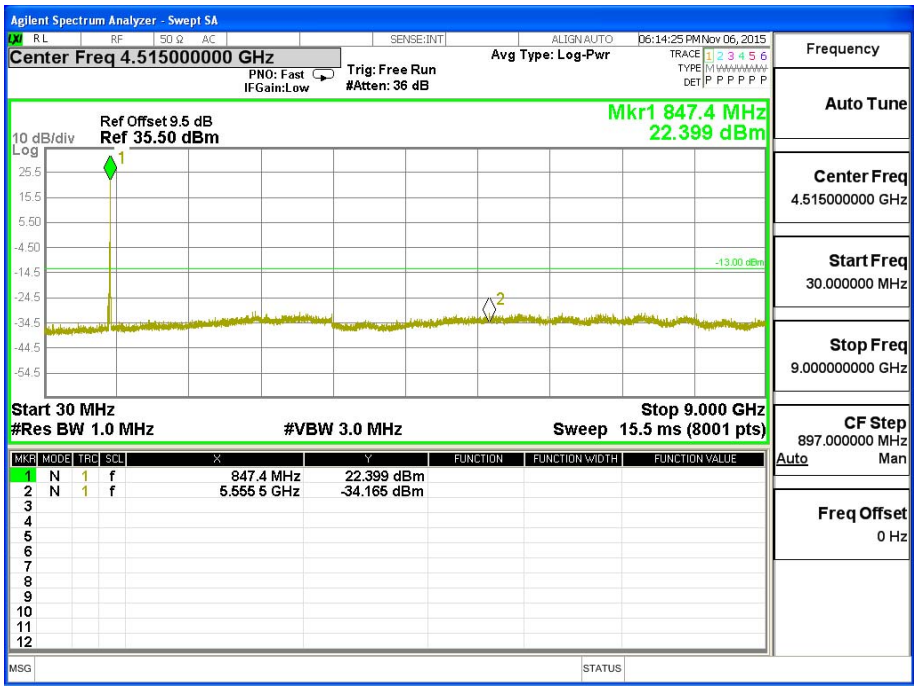
Conducted Emission Transmitting Mode CH 4132 30MHz – 9GHz



Conducted Emission Transmitting Mode CH 4132 30MHz – 9GHz

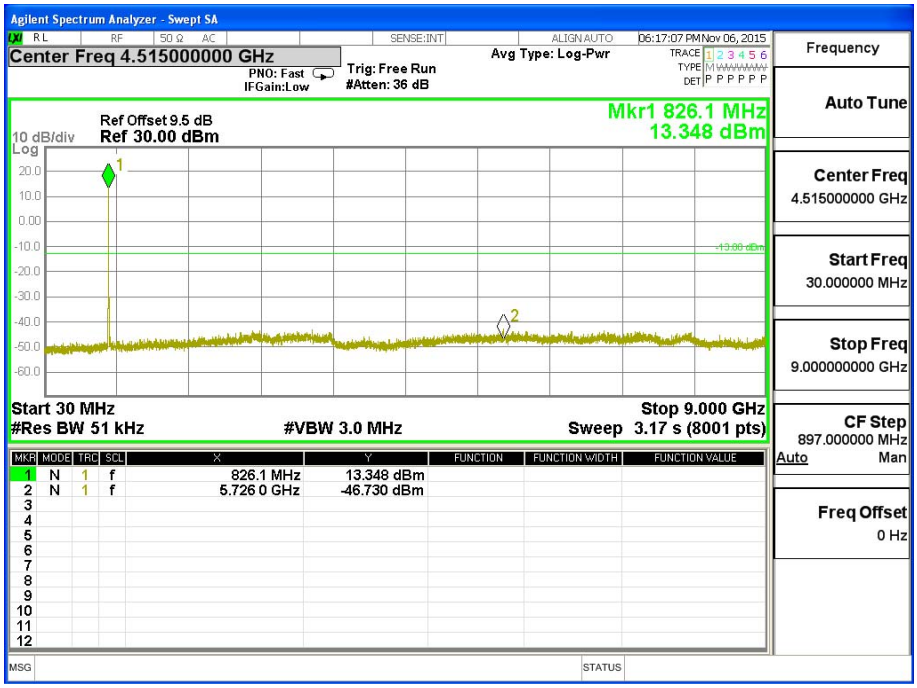


Conducted Emission Transmitting Mode CH 4233 30MHz – 9GHz

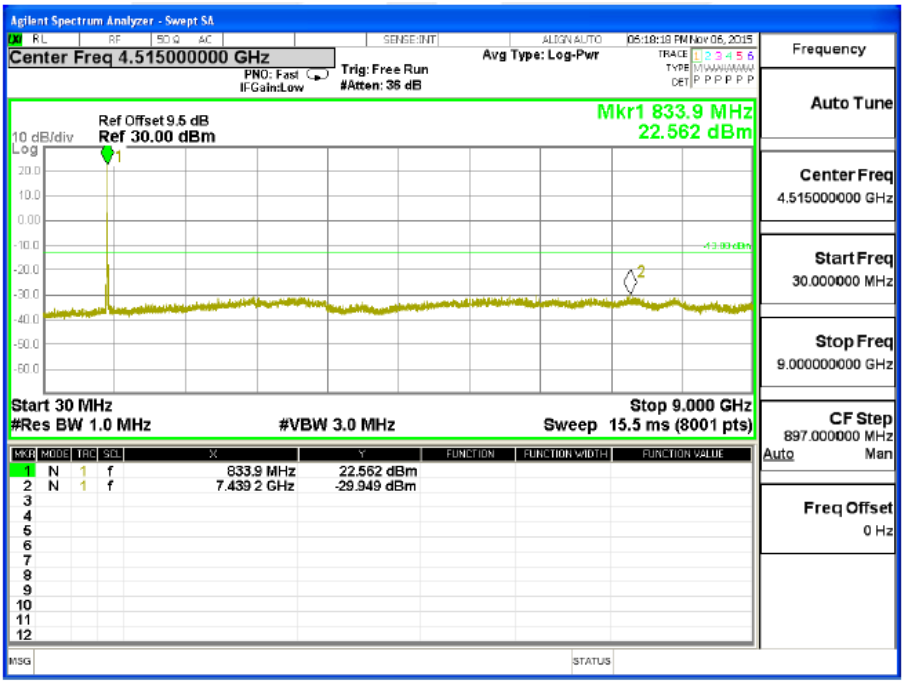


CONDUCTED EMISSION IN UMTS HSUPA band V

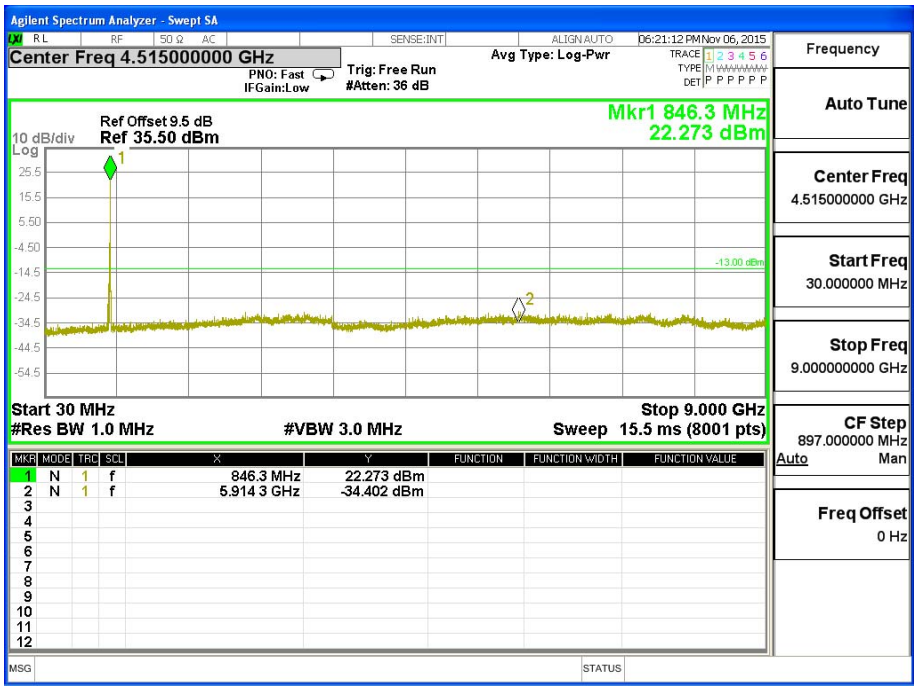
Conducted Emission Transmitting Mode CH 4132 30MHz – 9GHz



Conducted Emission Transmitting Mode CH 4183 30MHz – 9GHz

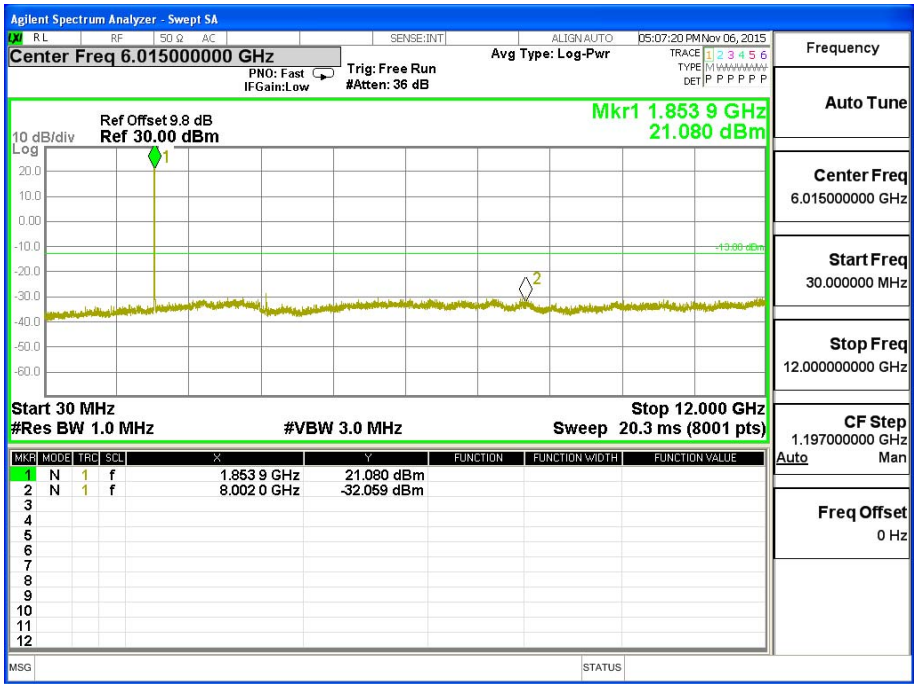


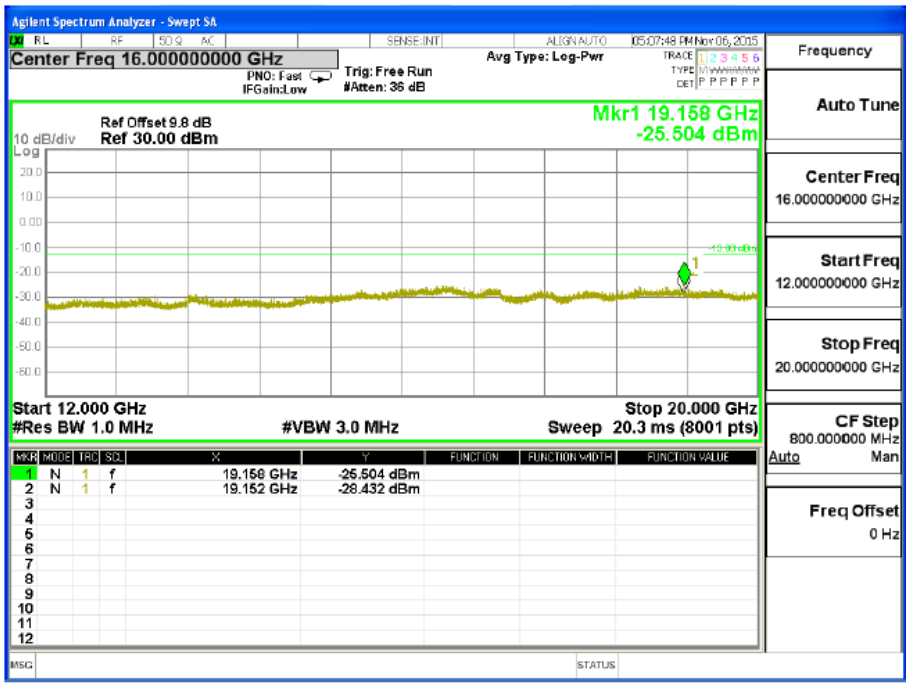
Conducted Emission Transmitting Mode CH 4233 30MHz – 9GHz



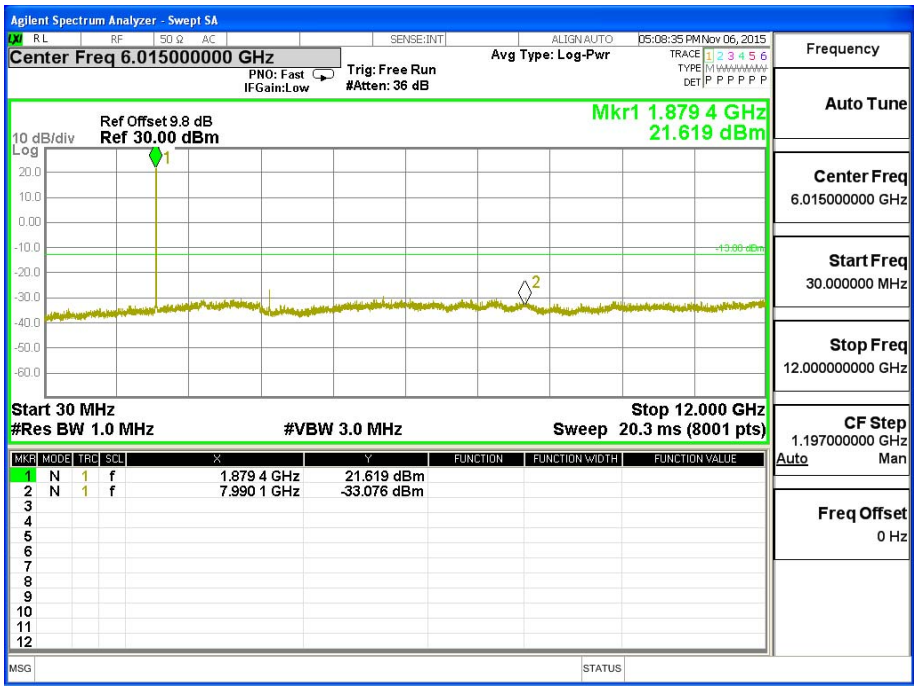
CONDUCTED EMISSION IN UMTS band II

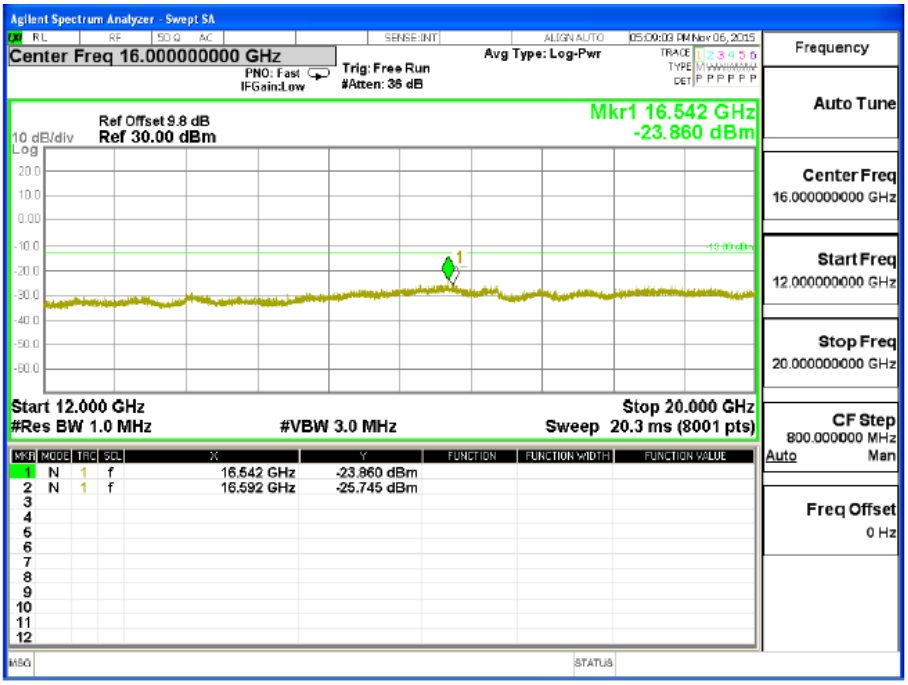
Conducted Emission Transmitting Mode 9262 30MHz – 20GHz



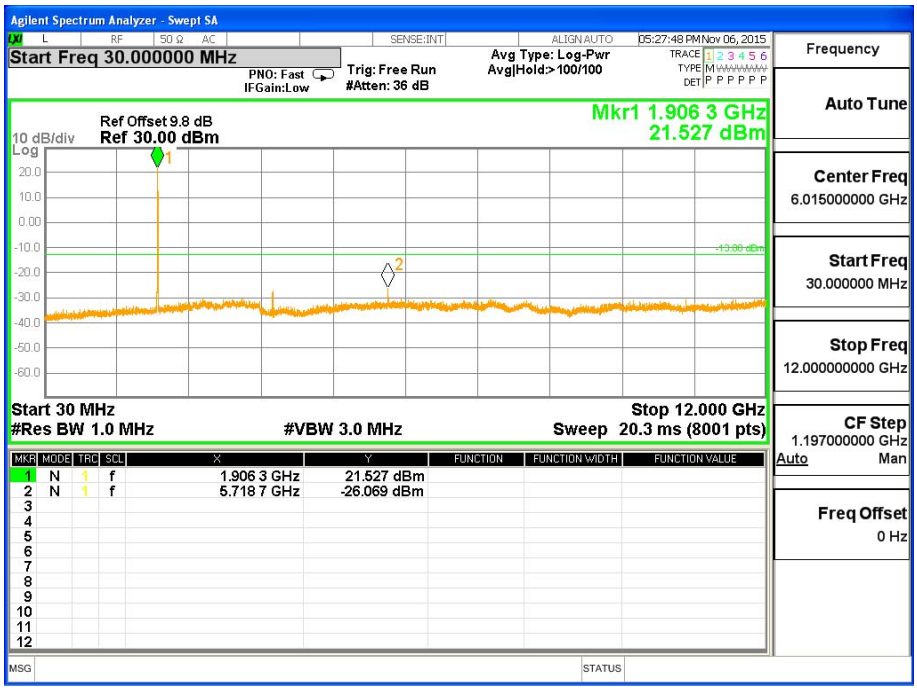


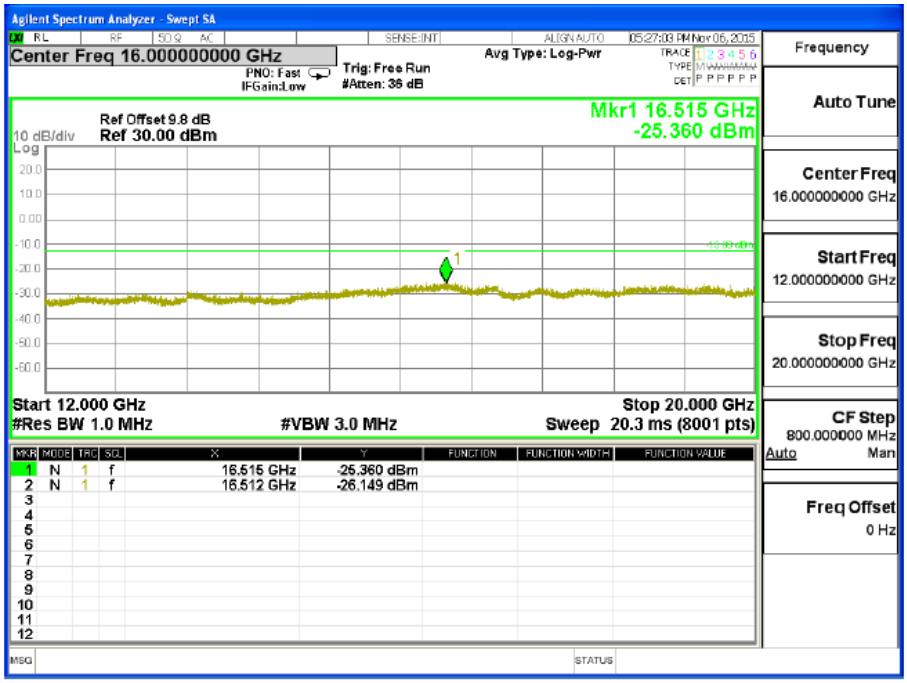
Conducted Emission Transmitting Mode CH 9400 30MHz – 20GHz





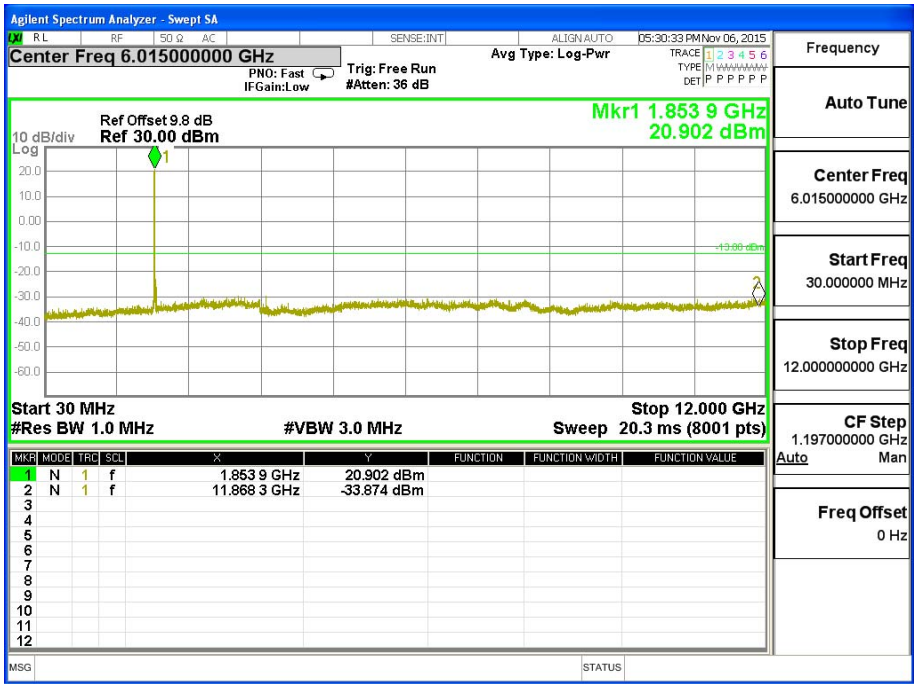
Conducted Emission Transmitting Mode CH 9538 30MHz – 20GHz

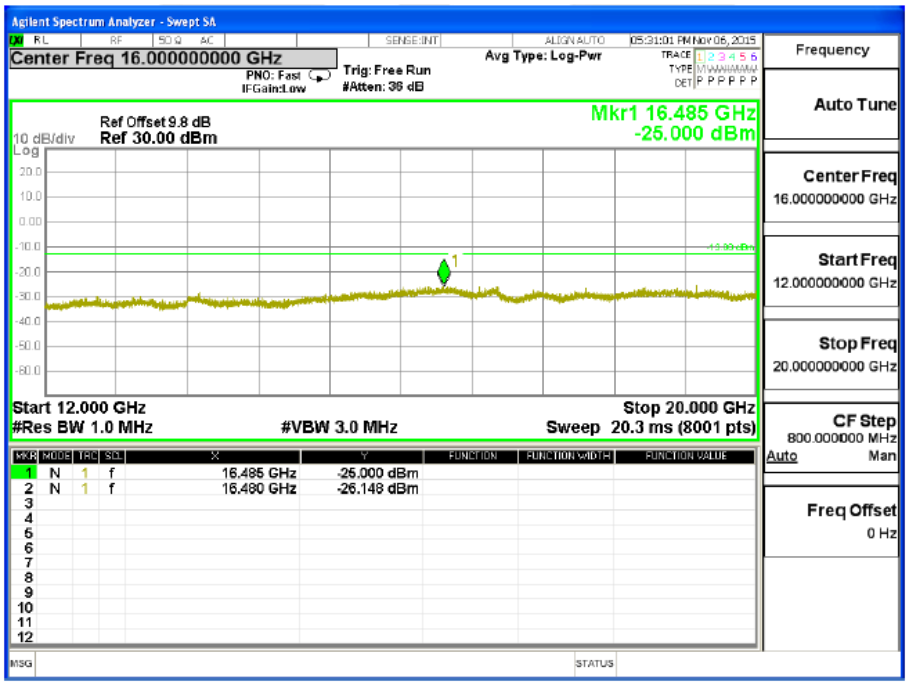




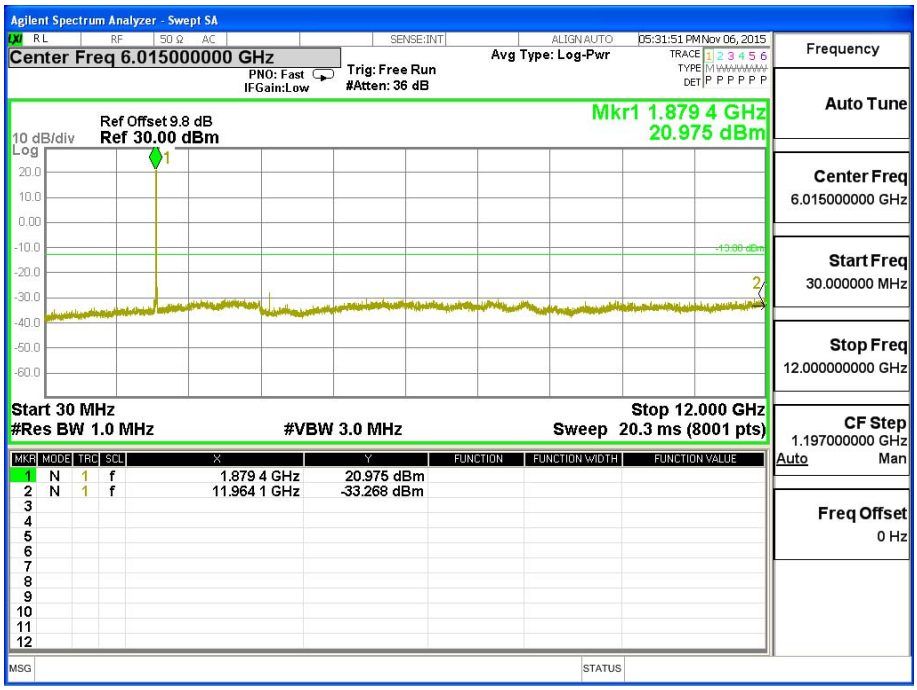
CONDUCTED EMISSION IN UMTS HSDPA band II

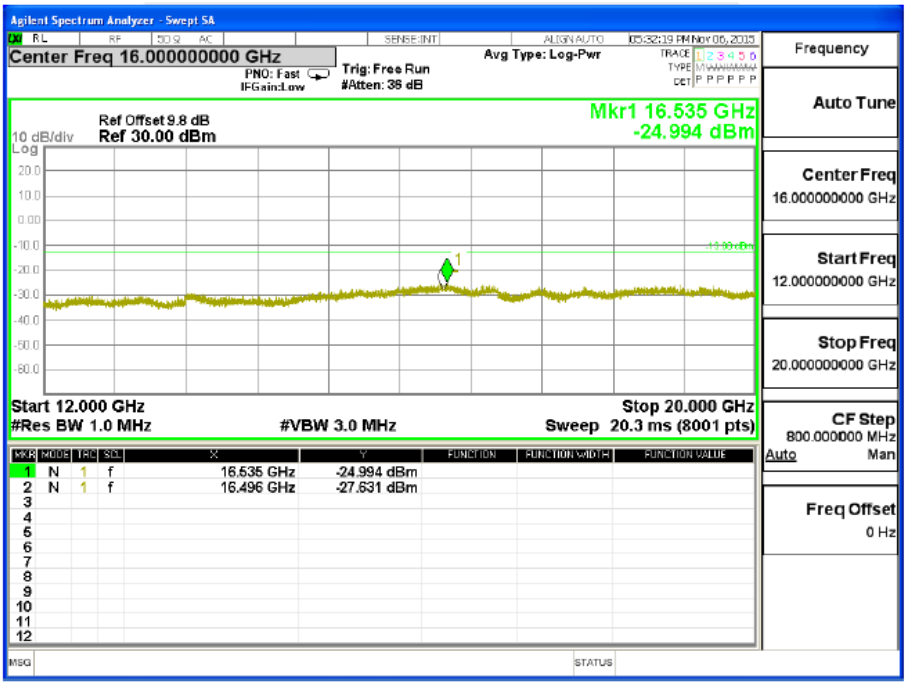
Conducted Emission Transmitting Mode CH 9262 30MHz – 20GHz



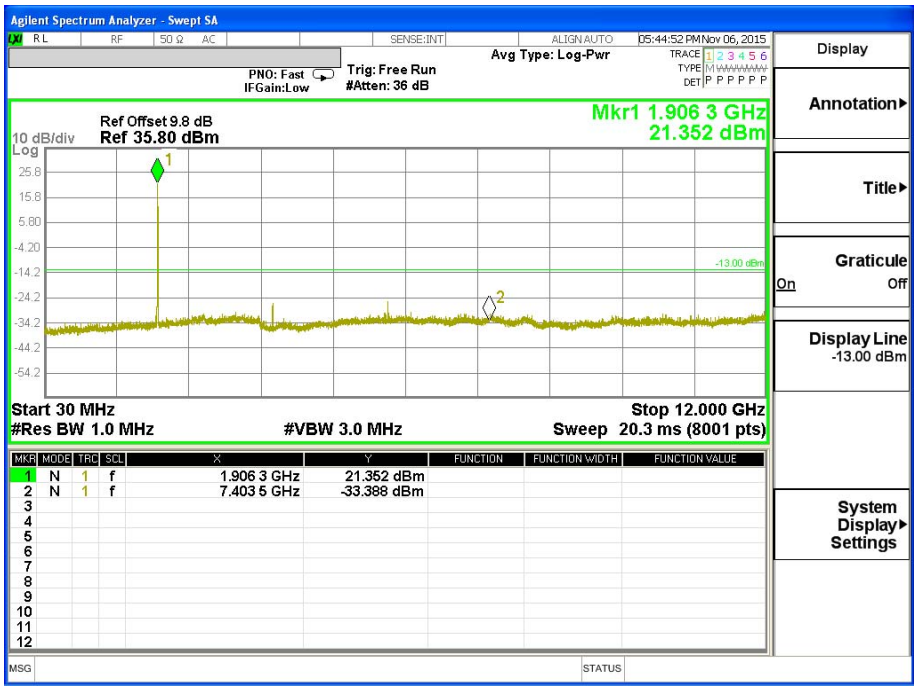


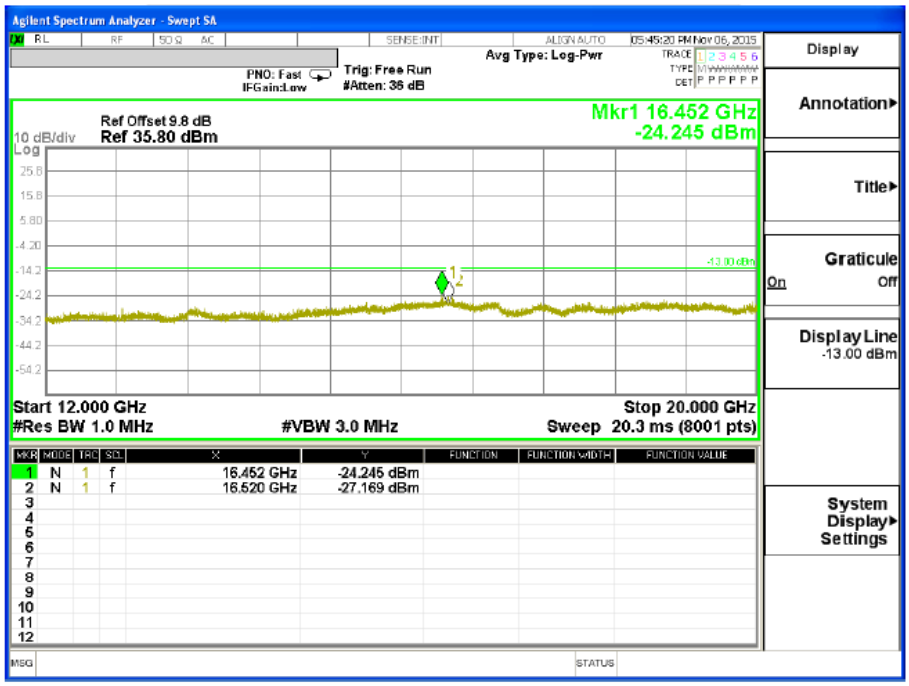
Conducted Emission Transmitting Mode CH 9400 30MHz – 20GHz





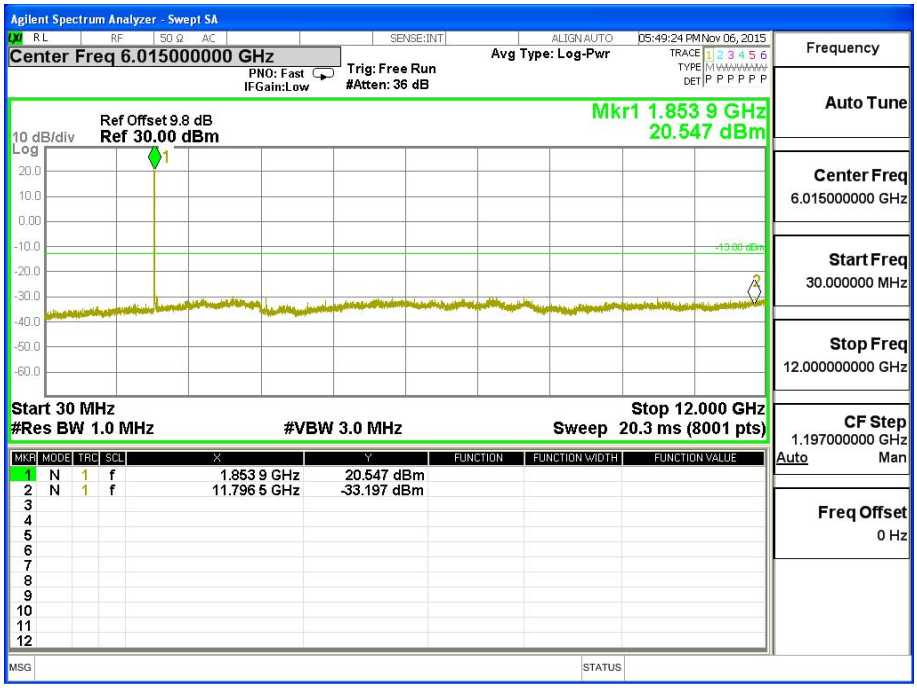
Conducted Emission Transmitting Mode CH 9538 30MHz – 20GHz

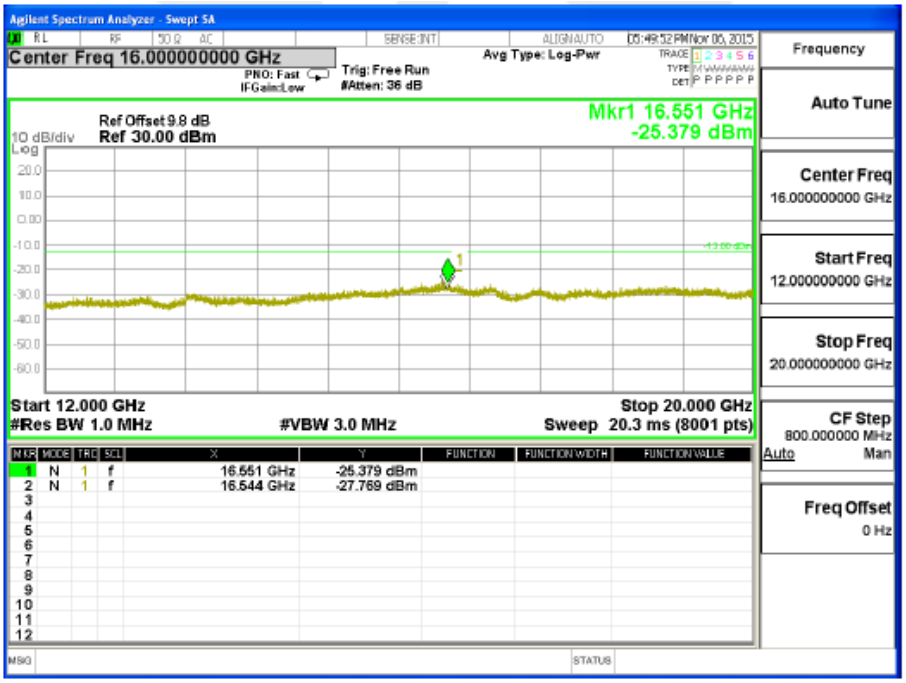




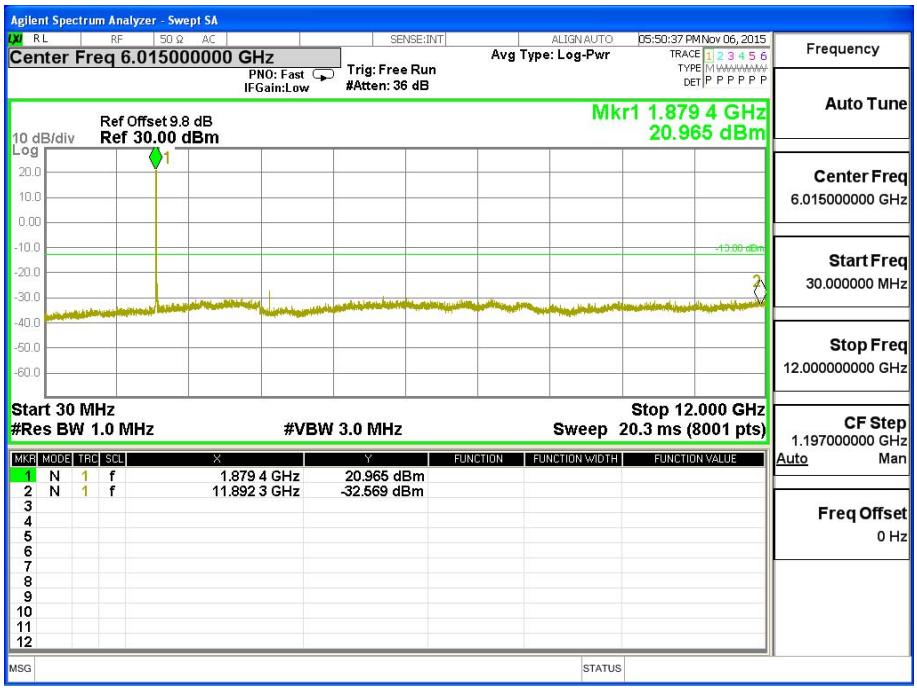
CONDUCTED EMISSION IN UMTS HSUPA band II

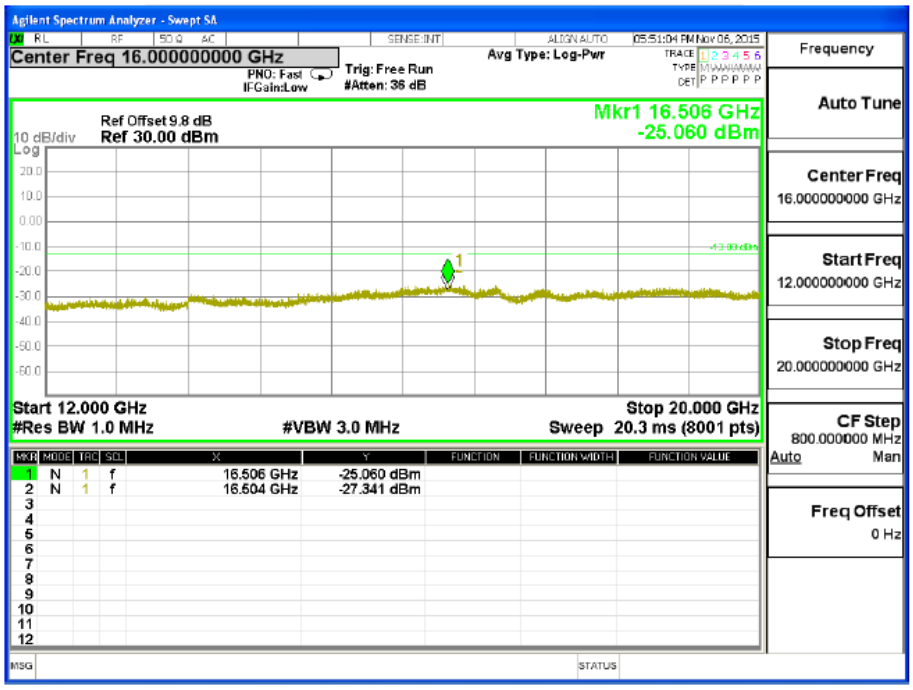
Conducted Emission Transmitting Mode CH 9262 30MHz – 20GHz





Conducted Emission Transmitting Mode CH 9400 30MHz – 20GHz





Conducted Emission Transmitting Mode CH 9538 30MHz – 20GHz