

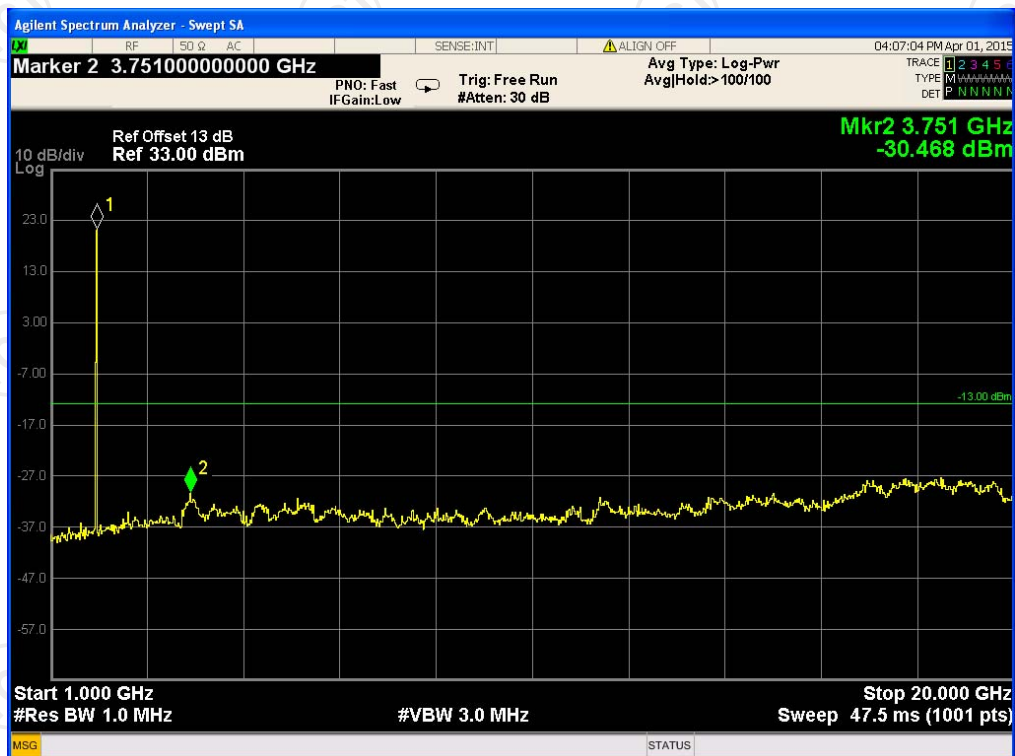
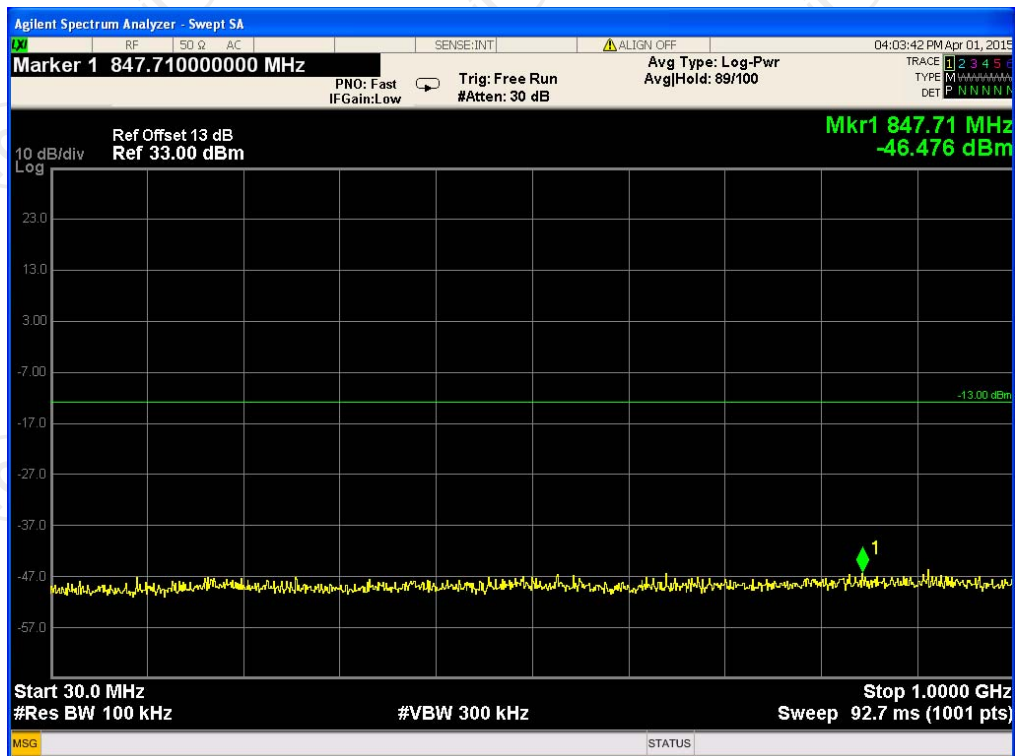
Band:

GSM 1900

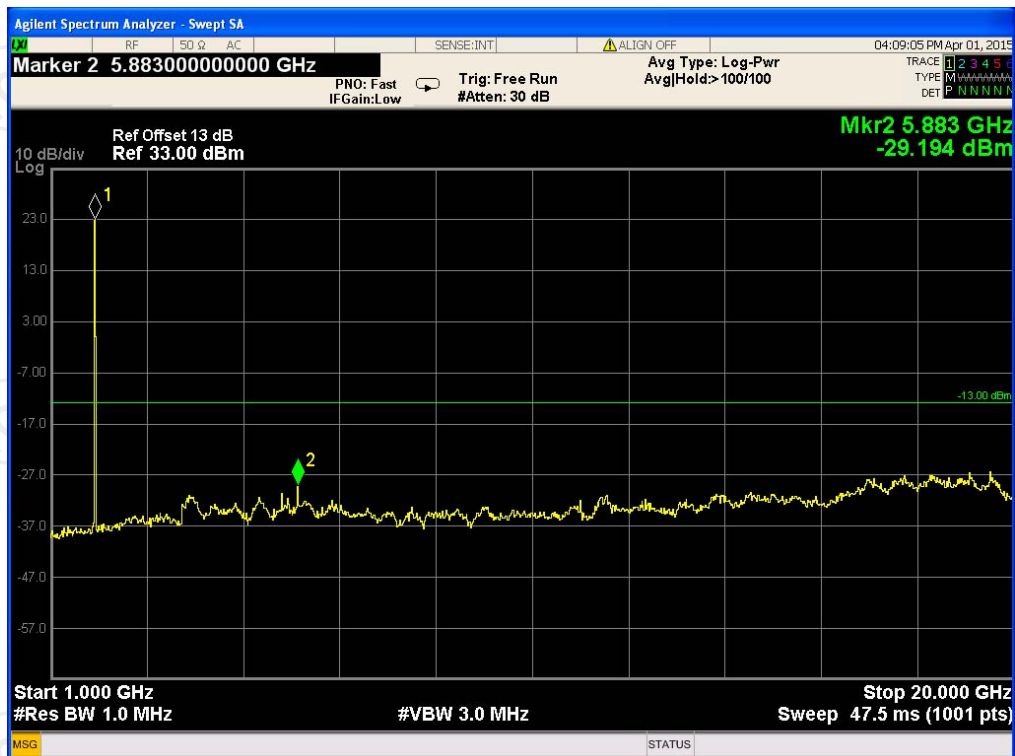
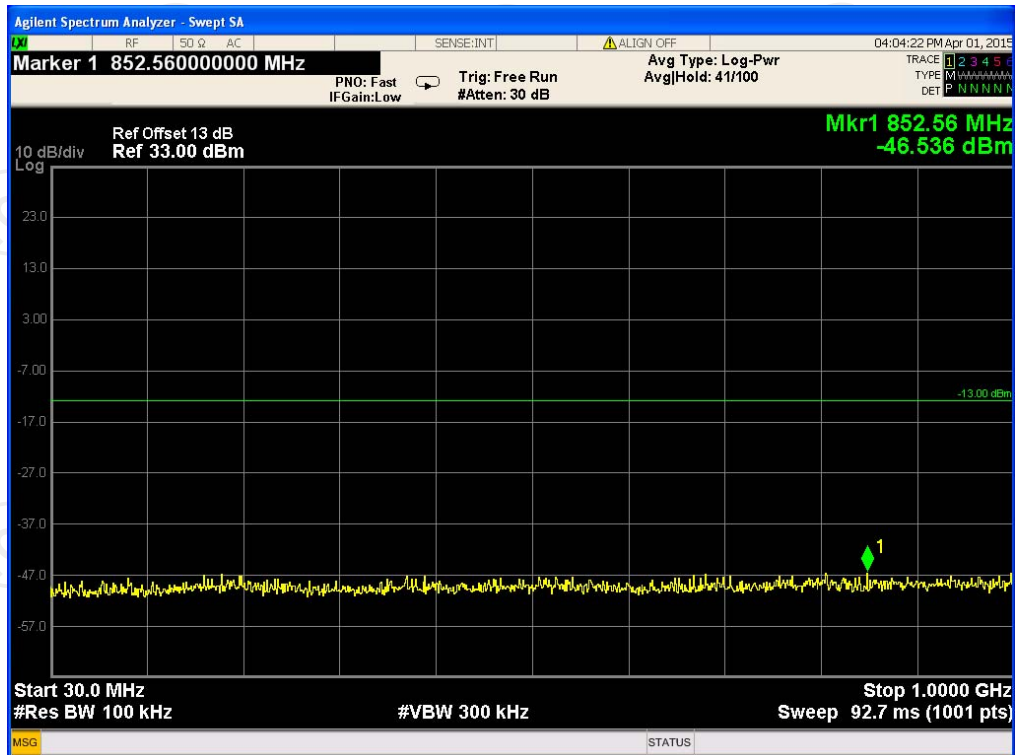
Test Mode:

GSM Link (GMSK)

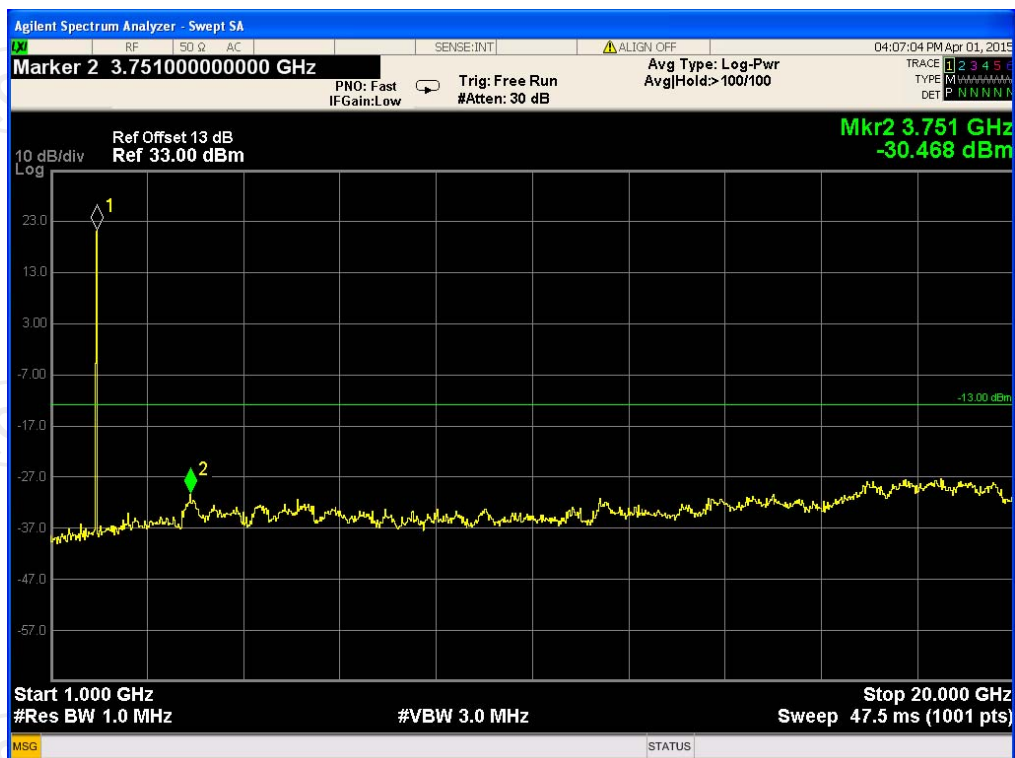
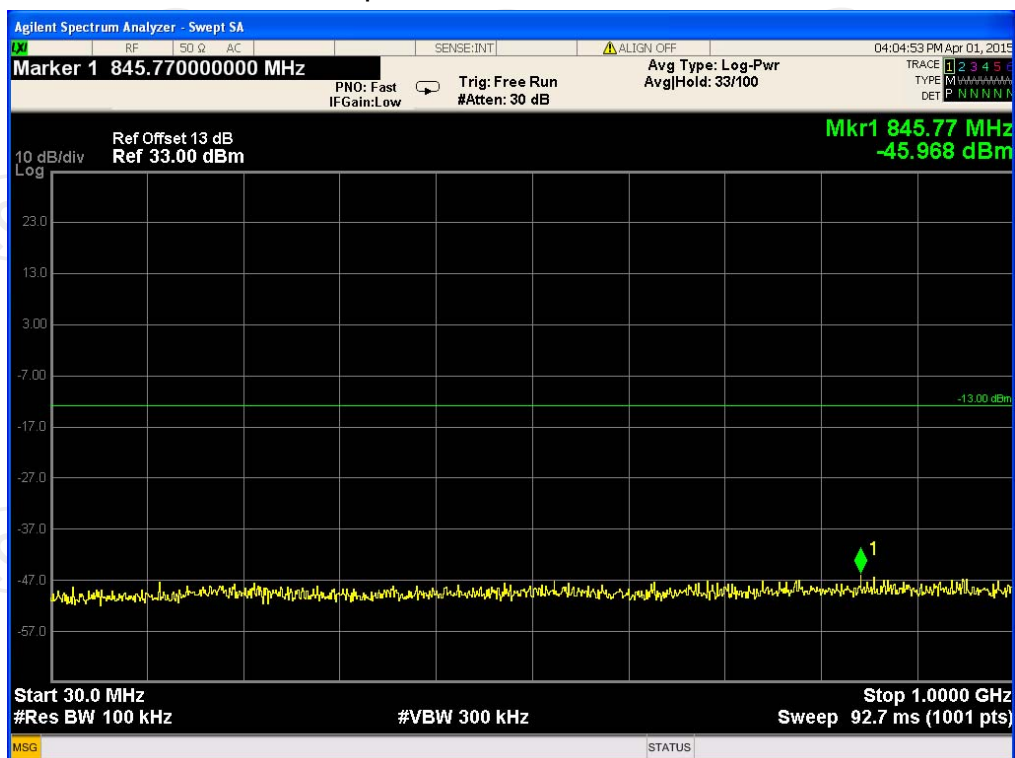
Conducted Spurious Emission on Channel 512



Conducted Spurious Emission on Channel 661



Conducted Spurious Emission on Channel 810



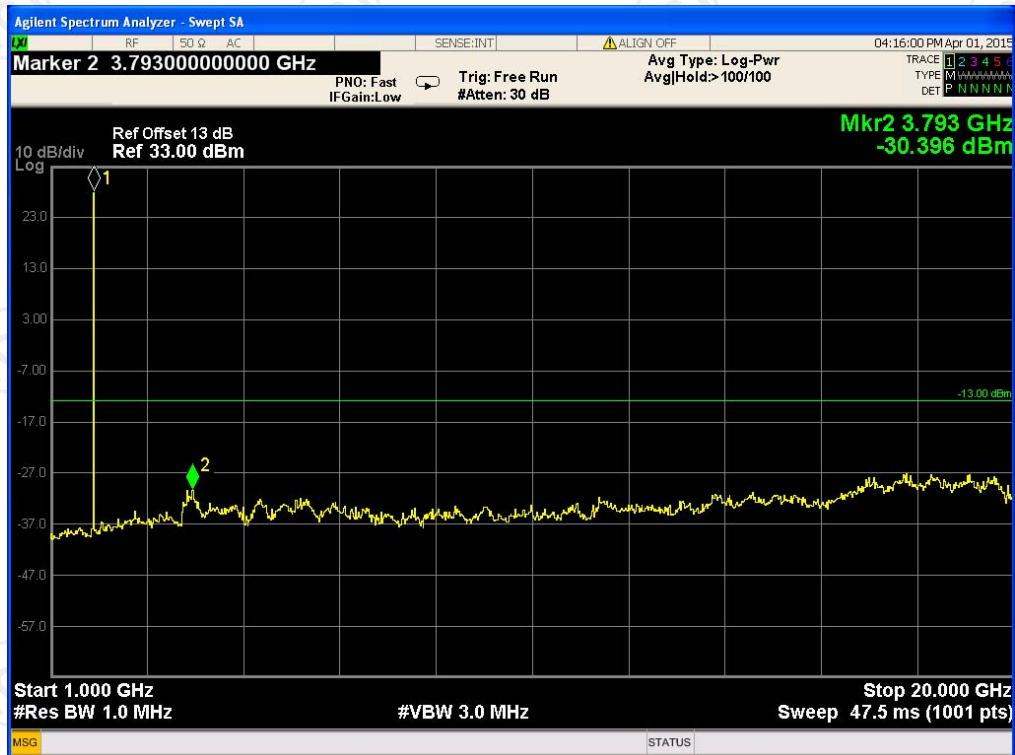
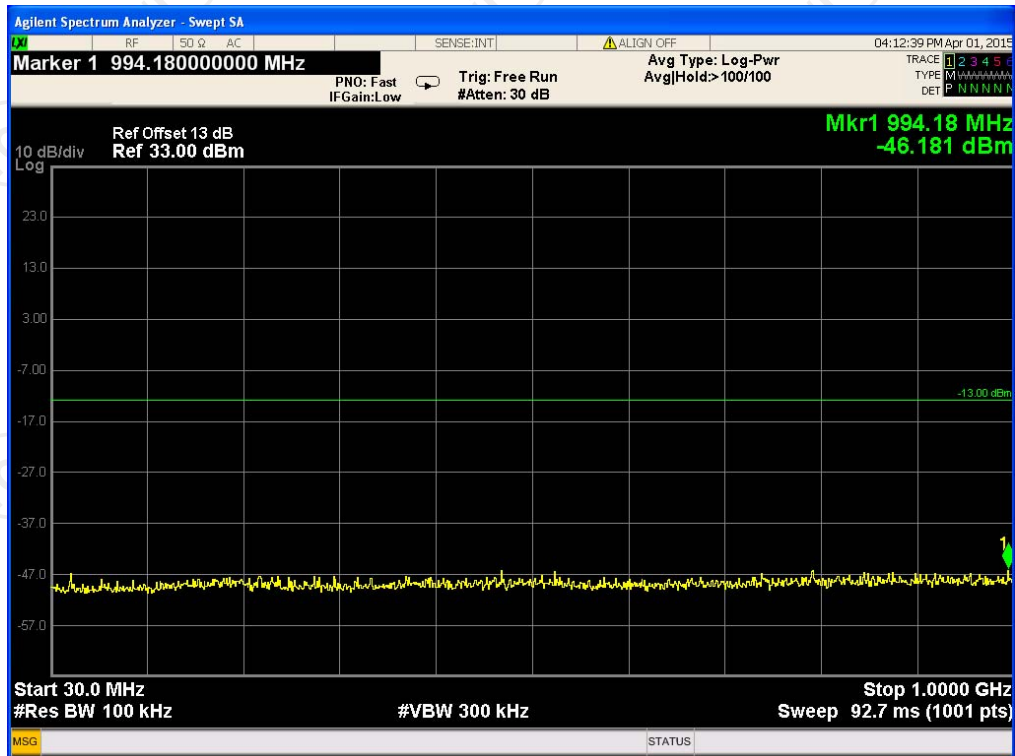
Band:

GSM 1900

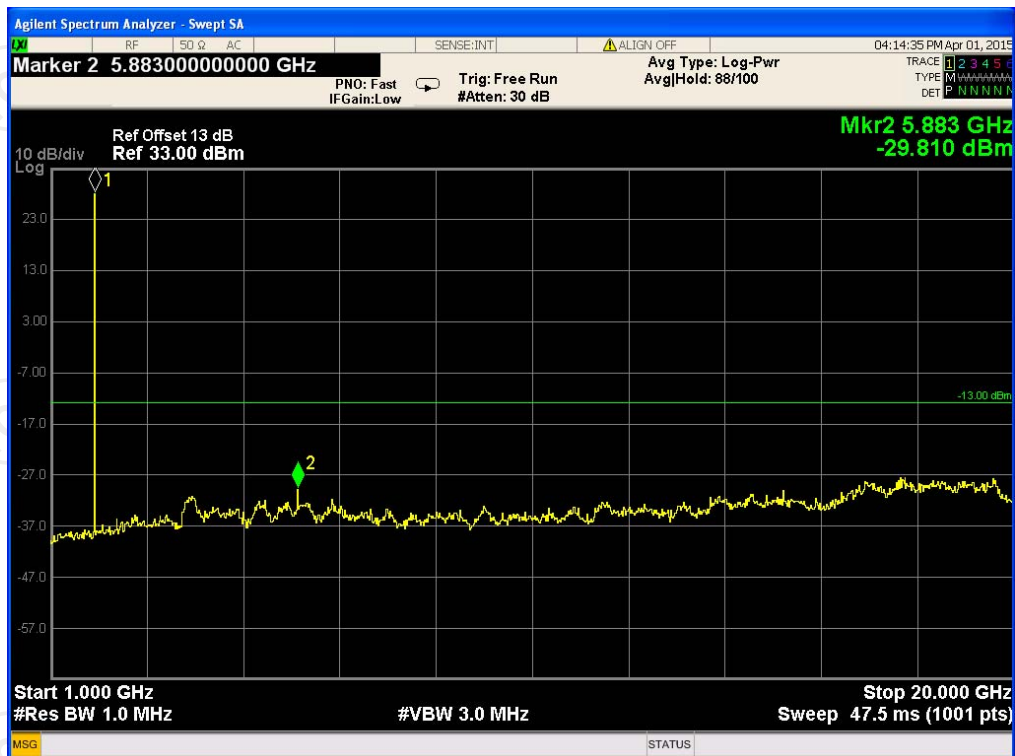
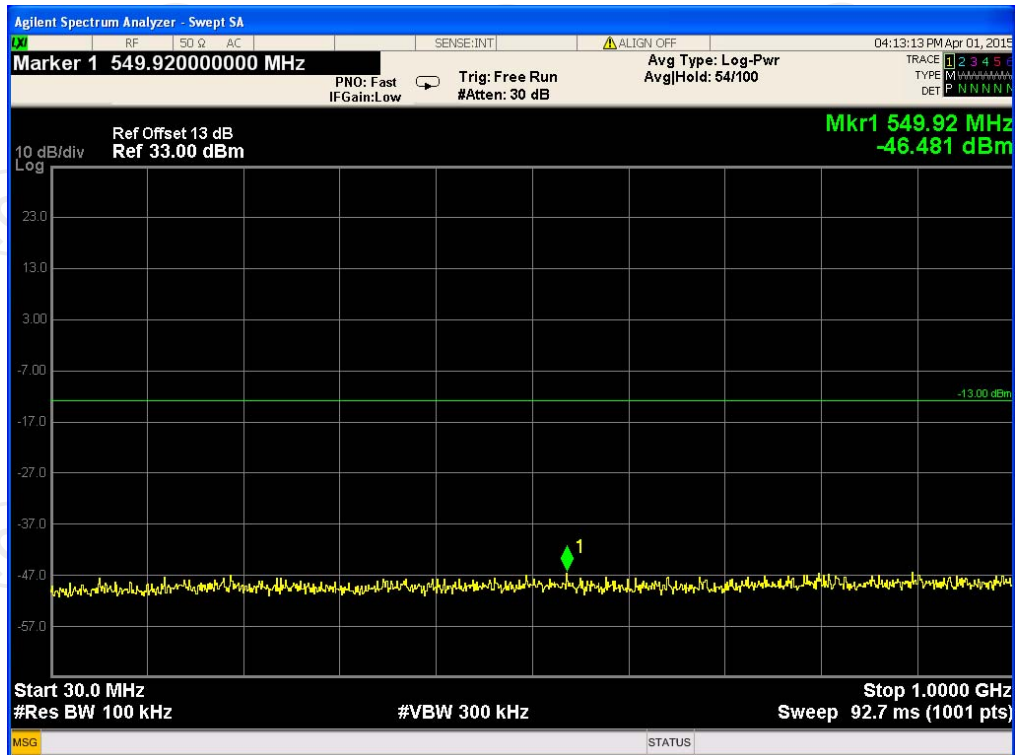
Test Mode:

GPRS Class 8 Link

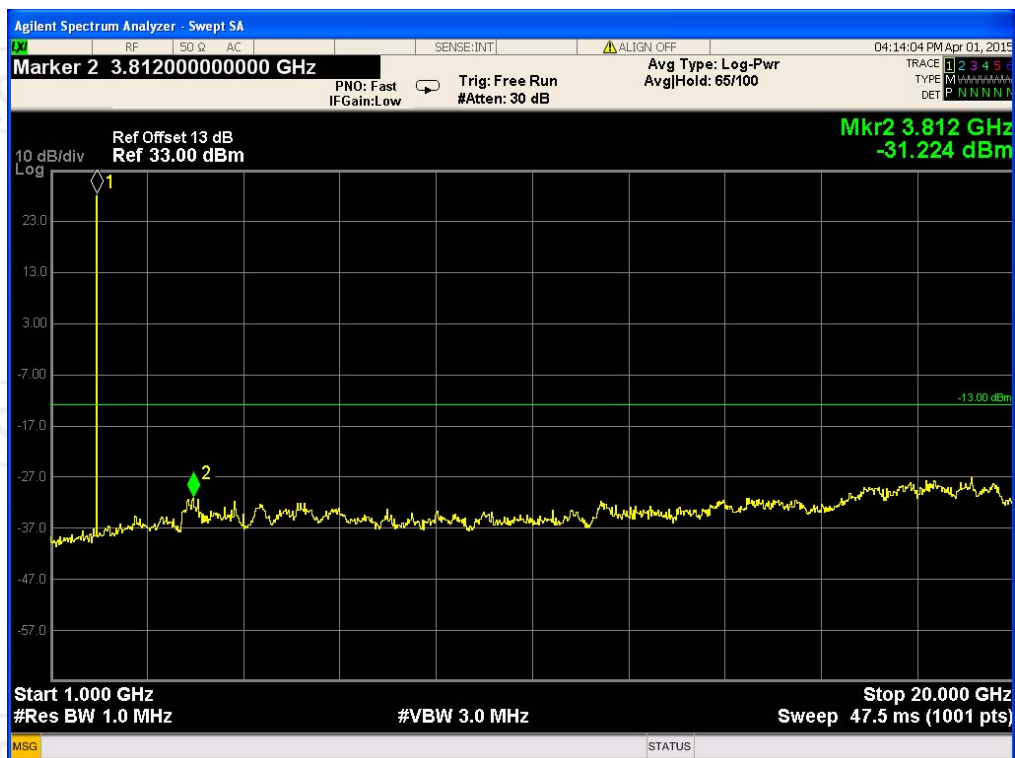
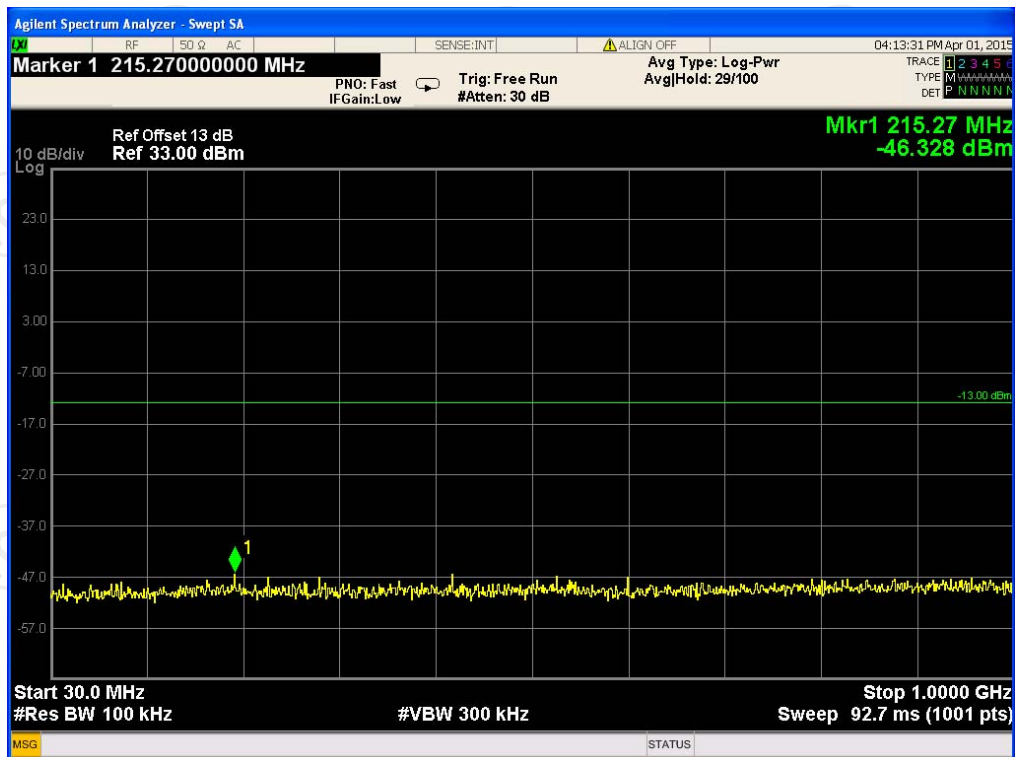
Conducted Spurious Emission on Channel 512



Conducted Spurious Emission on Channel 661



Conducted Spurious Emission on Channel 810



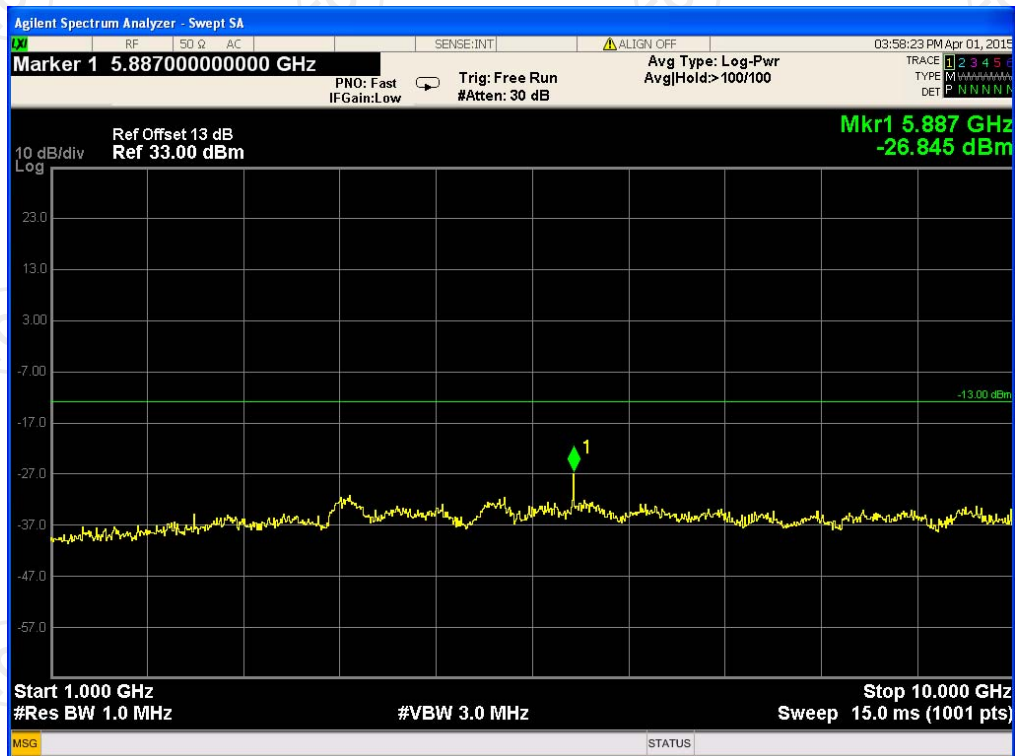
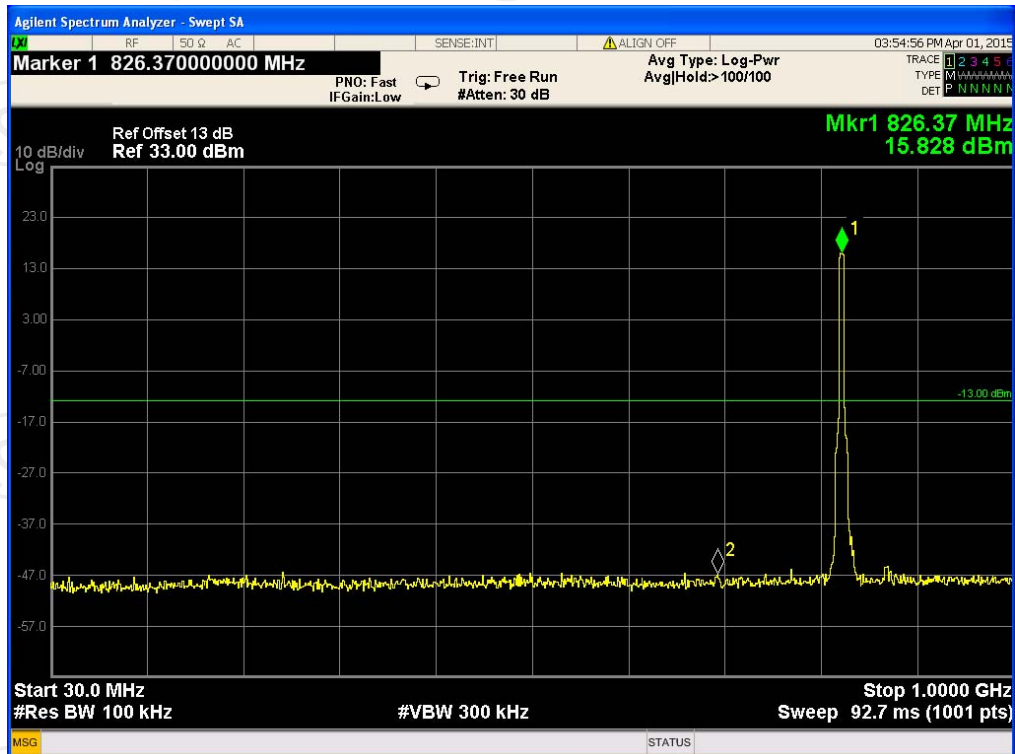
Band:

WCDMA Band V

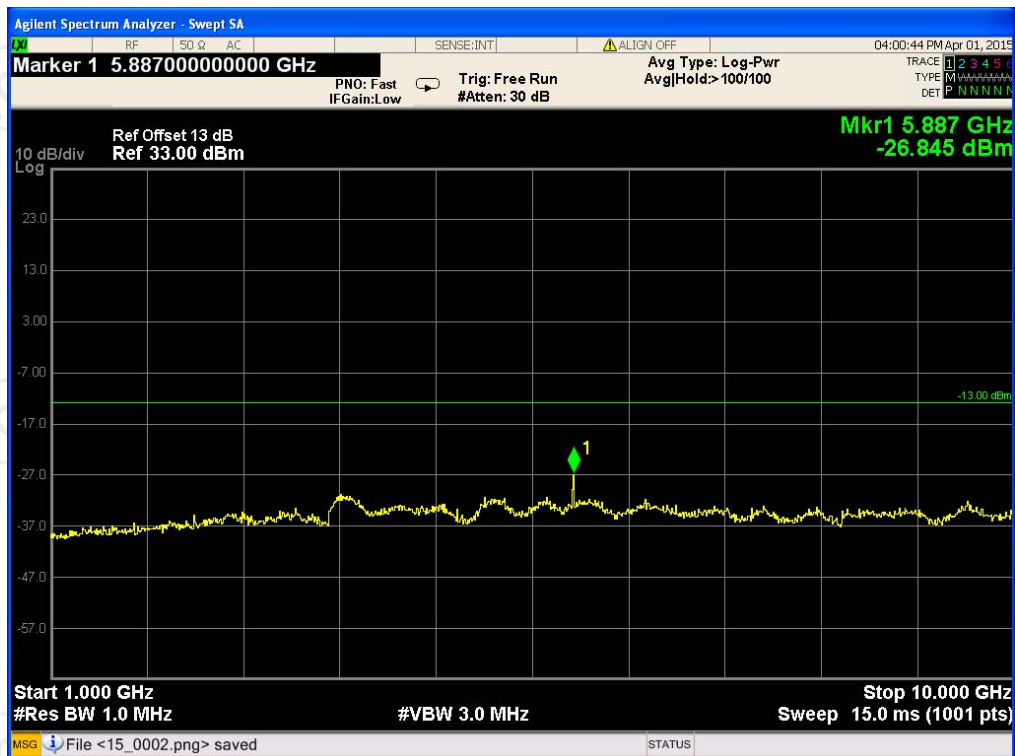
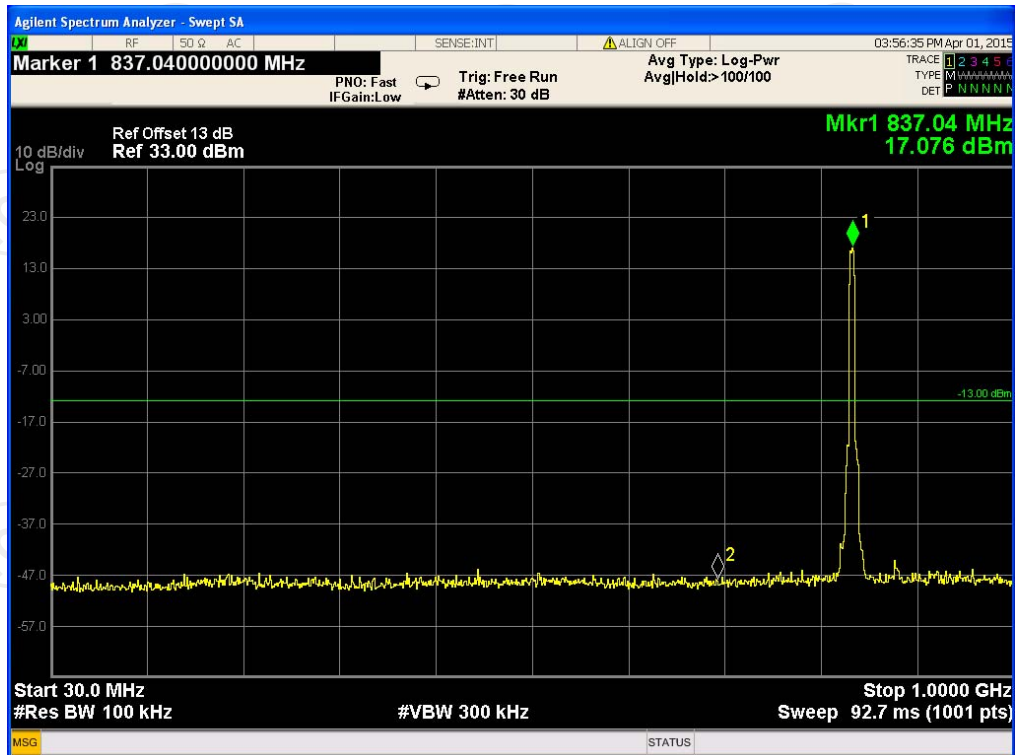
Test Mode:

RMC 12.2Kbps Link
(QPSK)

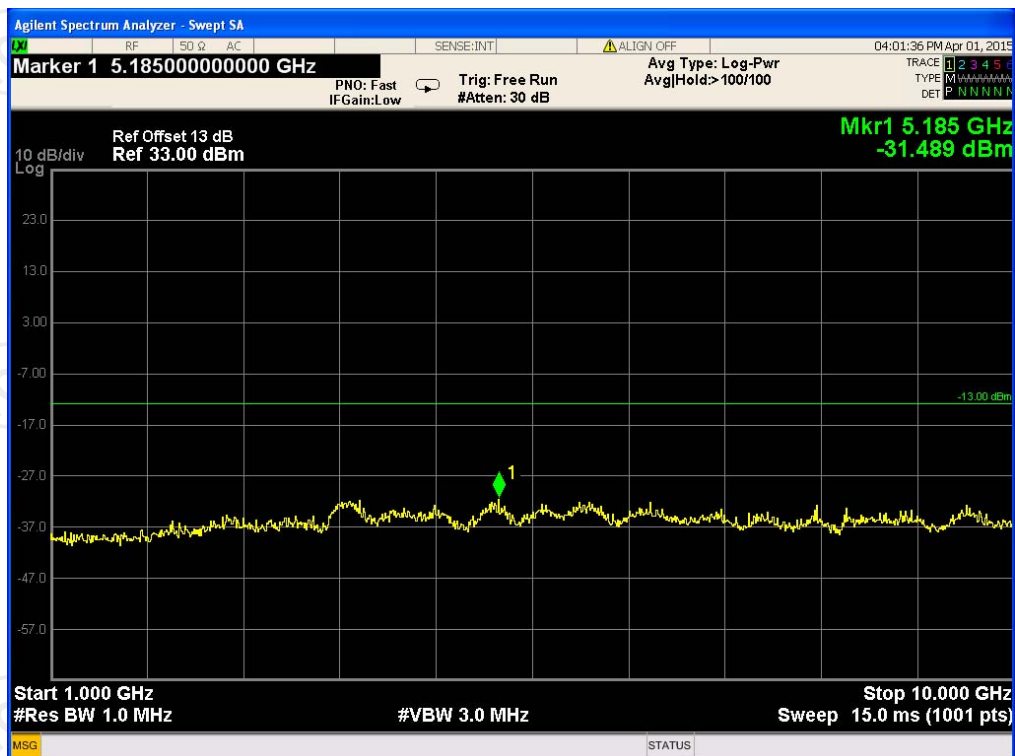
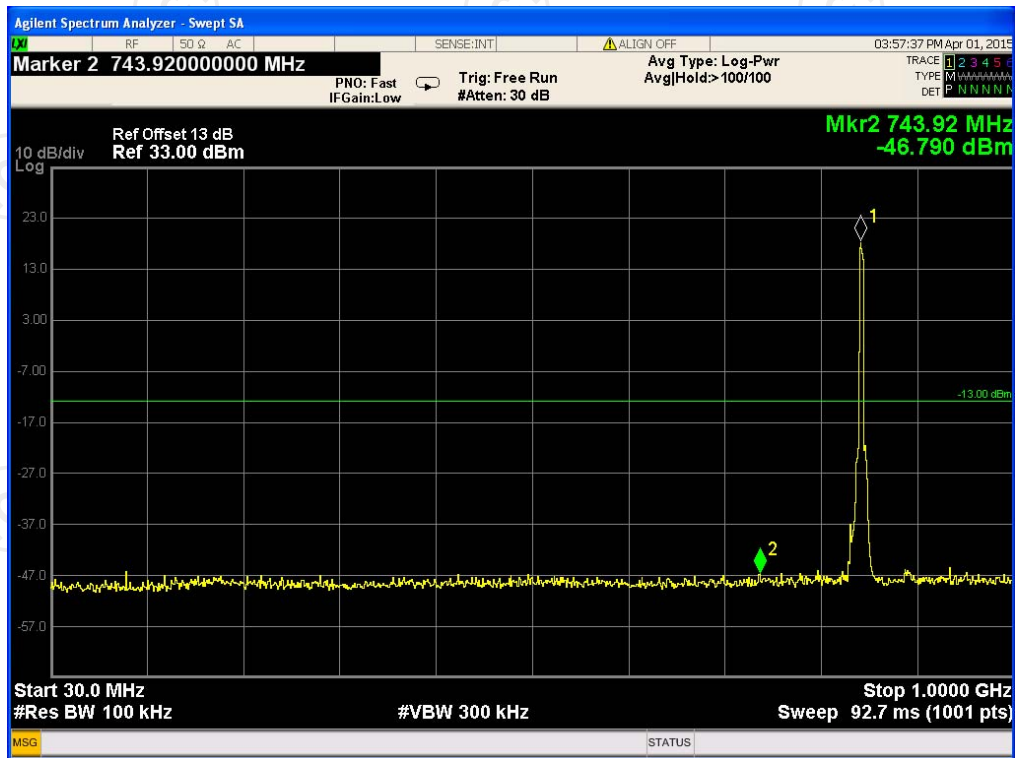
Conducted Spurious Emission on Channel 4132



Conducted Spurious Emission on Channel 4183

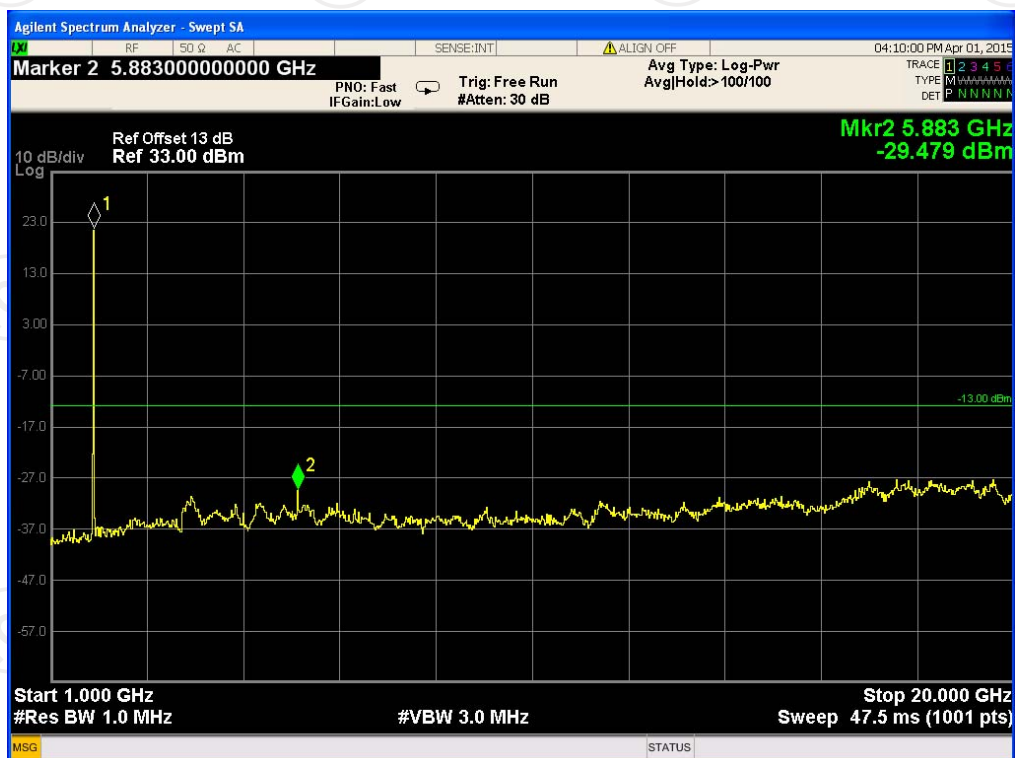
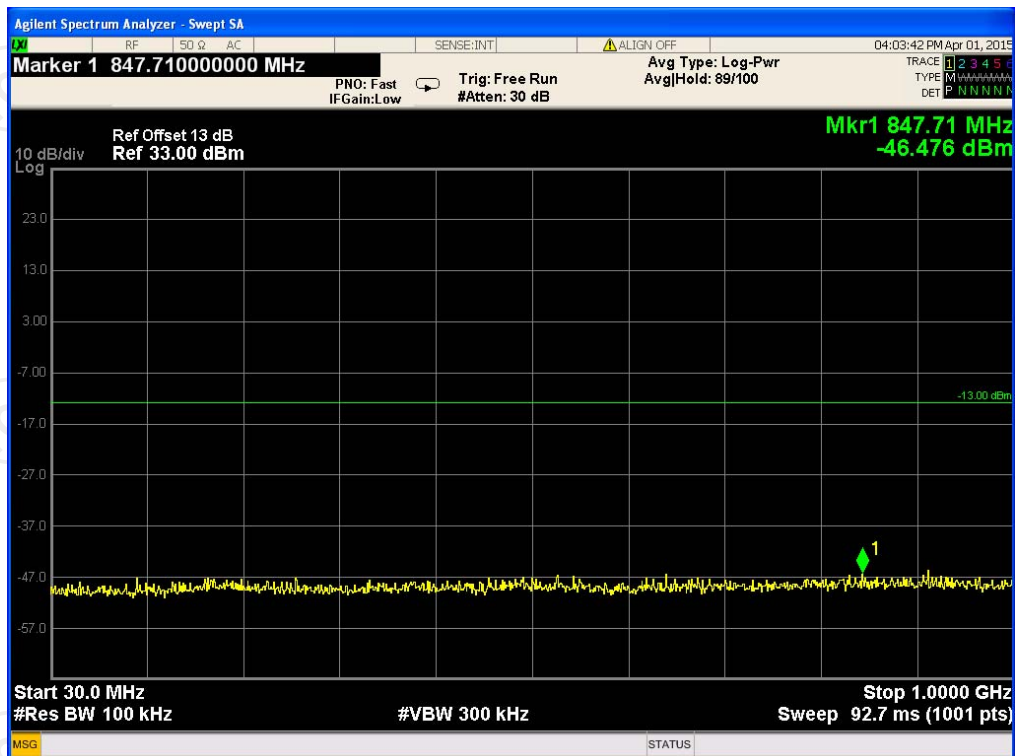


Conducted Spurious Emission on Channel 4233

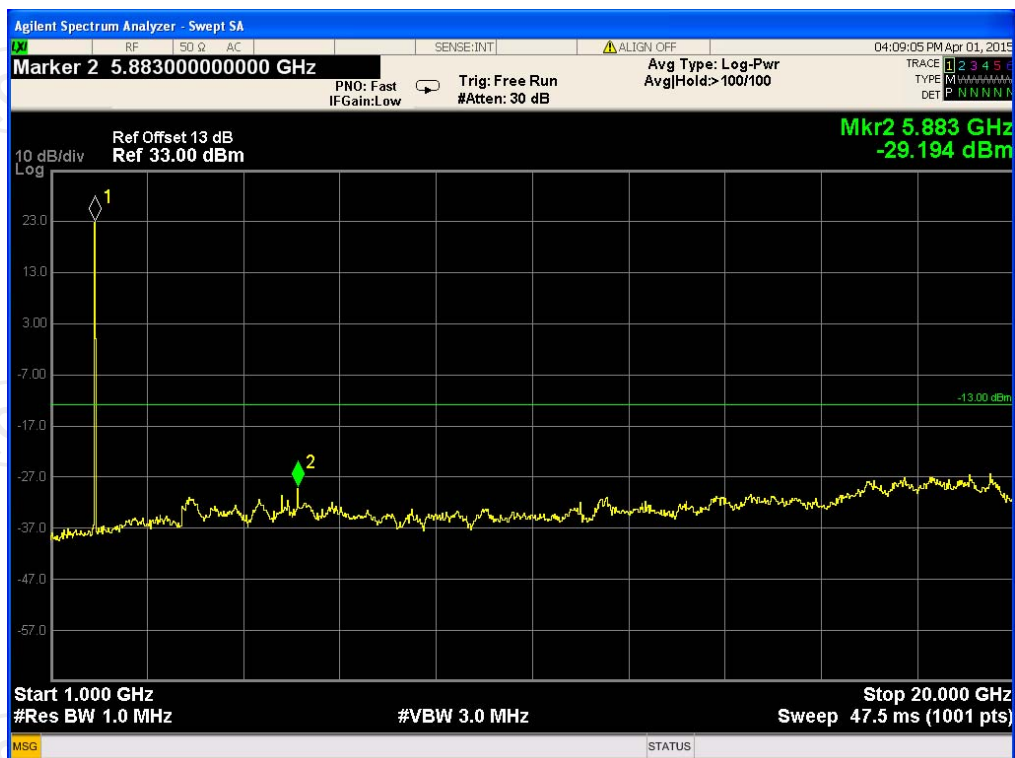
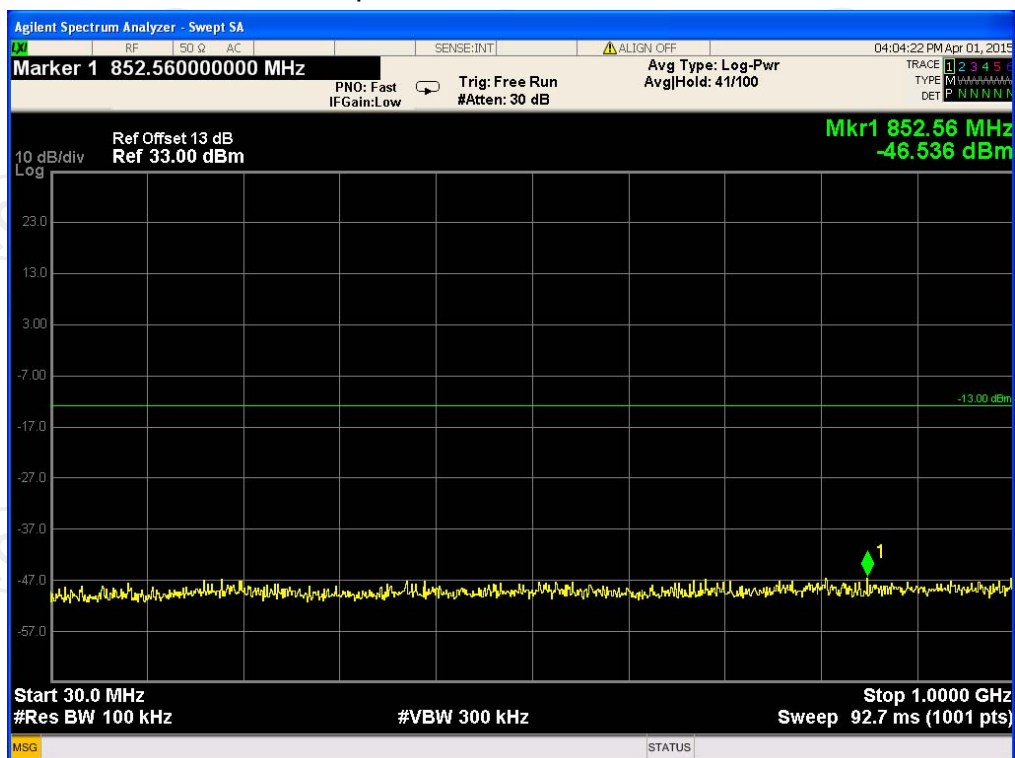


Band:	WCDMA Band II	Test Mode:	RMC 12.2Kbps Link (QPSK)
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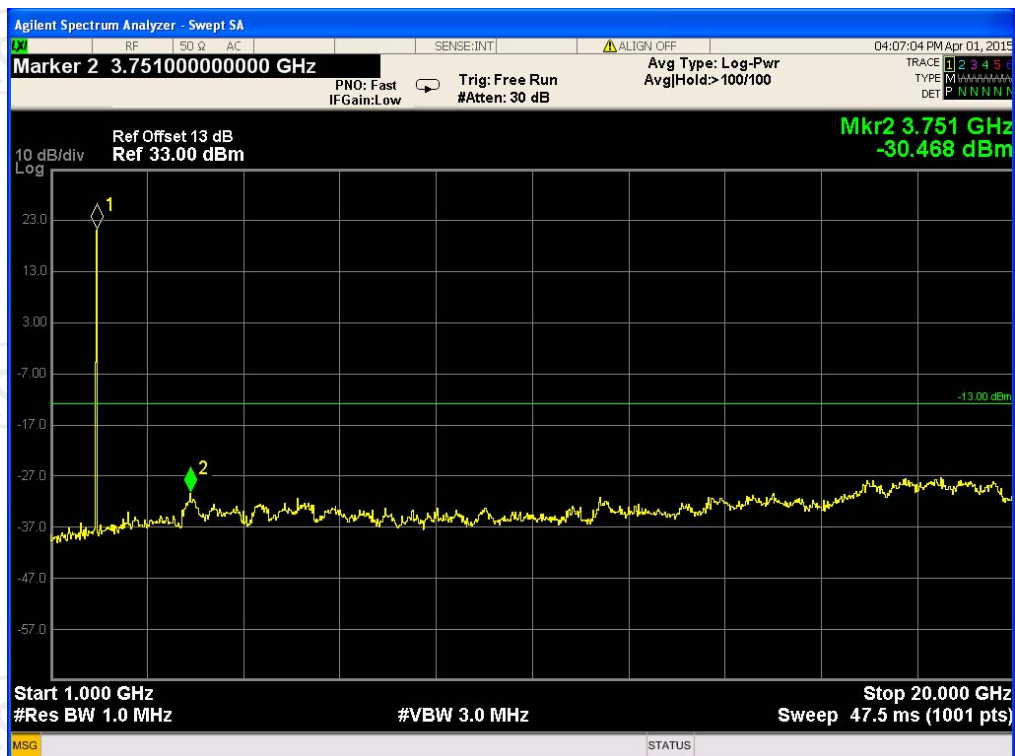
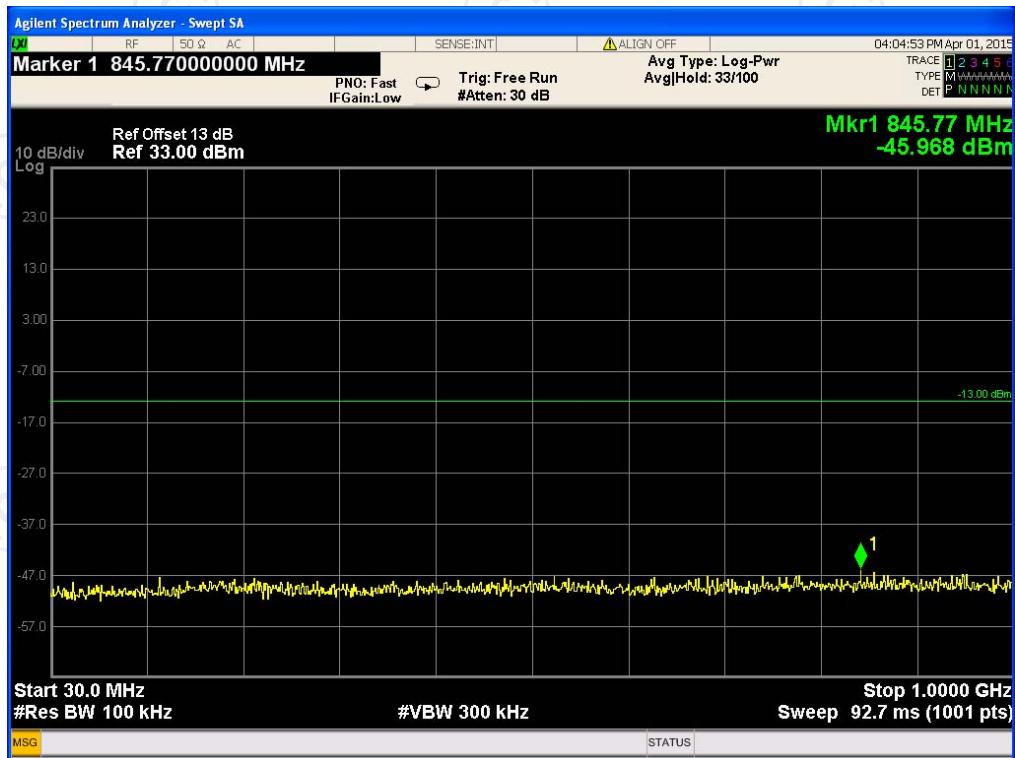
Conducted Spurious Emission on Channel 9262



Conducted Spurious Emission on Channel 9400

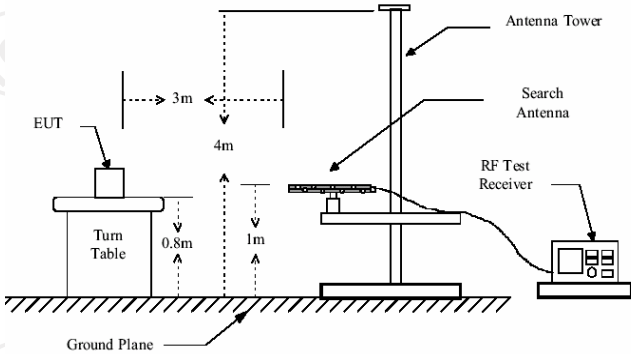
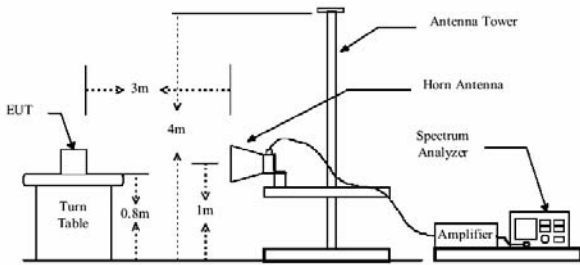


Conducted Spurious Emission on Channel 9538



6.6. Effective Radiated Power and Effective Isotropic Radiated Power Measurement

6.6.1. Test Specification

Test Requirement:	FCC part 22.913(a) and FCC part 24.232(b)																										
Test Method:	FCC part 2.1046																										
Receiver Setup:		<table><tr><td></td><td>GSM/GPRS/GPRS</td><td>WCDMA/HSPA</td></tr><tr><td>SPAN</td><td>500kHz</td><td>10MHz</td></tr><tr><td>RBW</td><td>10kHz</td><td>100kHz</td></tr><tr><td>VBW</td><td>30kHz</td><td>300kHz</td></tr><tr><td>Detector</td><td>RMS</td><td>RMS</td></tr><tr><td>Trace</td><td>Average</td><td>Average</td></tr><tr><td>Average Type</td><td>Power</td><td>Power</td></tr><tr><td>Sweep Count</td><td>100</td><td>100</td></tr></table>		GSM/GPRS/GPRS	WCDMA/HSPA	SPAN	500kHz	10MHz	RBW	10kHz	100kHz	VBW	30kHz	300kHz	Detector	RMS	RMS	Trace	Average	Average	Average Type	Power	Power	Sweep Count	100	100	
	GSM/GPRS/GPRS	WCDMA/HSPA																									
SPAN	500kHz	10MHz																									
RBW	10kHz	100kHz																									
VBW	30kHz	300kHz																									
Detector	RMS	RMS																									
Trace	Average	Average																									
Average Type	Power	Power																									
Sweep Count	100	100																									
Limit:	GSM850: 7W ERP PCS1900: 2W EIRP WCDMA Band V: 7W ERP WCDMA Band II: 2W EIRP																										
Test setup:	<p>For ERP</p>  <p>For EIRP</p> 																										
Test Procedure:	<p>1. The testing follows FCC KDB 971168 v02r02 Section 5.2.1. (for CDMA/WCDMA), Section 5.2.2.2 (for GSM/GPRS/GPRS) and ANSI / TIA-603-C-2004 Section 2.2.17.</p> <p>2. The EUT was placed on a non-conductive rotating</p>																										

	<p>platform 0.8 meters high in a semi-anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RMS detector per section 5. of KDB 971168 D01.</p> <p>3. During the measurement, the system simulator parameters were set to force the EUT transmitting at maximum output power. The maximum emission was recorded from analyzer power level (LVL) from the 360 degrees rotation of the turntable and the test antenna raised and lowered over a range from 1 to 4 meters in both horizontally and vertically polarized orientations.</p> <p>4. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (substitution antenna) at the same location, and then a known power from S.G. was applied into the dipole antenna through a Tx cable, and then recorded the maximum Analyzer reading through raised and lowered the test antenna. The correction factor (in dB) = S.G. - Tx Cable loss + Substitution antenna gain - Analyzer reading. Then the EUT's EIRP was calculated with the correction factor, $EIRP = LVL + \text{Correction factor}$ and $ERP = EIRP - 2.15$.</p>
Test results:	PASS

6.6.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
ESPI Test Receiver	ROHDE&SCHWARZ	ESVD	100008	Sep.16 , 2015
Spectrum Analyzer	ROHDE&SCHWARZ	FSEM	848597/001	Sep.16 , 2015
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep.16 , 2015
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep.16 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.6.3. Test Data

Test Result of ERP

GSM850 (GSM) Radiated Power ERP					
Horizontal Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	ERP (dBm)	ERP (W)
824.40	10.47	17.95	1.56	29.98	1.00
836.40	10.08	17.86	1.53	29.47	0.89
848.80	11.19	17.79	1.52	30.50	1.10
Vertical Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	ERP (dBm)	ERP (W)
824.40	7.36	17.95	1.56	26.87	0.49
836.40	7.15	17.86	1.53	26.54	0.45
848.80	6.16	17.79	1.52	25.47	0.35

* ERP = LVL (dBm) + Correction Factor (dB) + Cable loss

GSM850 (GPRS class 8) Radiated Power ERP					
Horizontal Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor	Cable loss (dB)	ERP (dBm)	ERP (W)
824.40	7.84	17.95	1.56	27.35	0.54
836.40	8.03	17.86	1.53	27.42	0.55
848.80	8.58	17.79	1.52	27.89	0.62
Vertical Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	ERP (dBm)	ERP (W)
824.40	4.74	17.95	1.56	24.25	0.27
836.40	4.00	17.86	1.53	23.39	0.22
848.80	5.41	17.79	1.52	24.72	0.30

* ERP = LVL (dBm) + Correction Factor (dB) + Cable loss

WCDMA Band V (RMC 12.2Kbps) Radiated Power ERP					
Horizontal Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor	Cable loss (dB)	ERP (dBm)	ERP (W)
826.40	-2.30	17.89	1.55	17.17	0.05
836.40	-1.67	18.03	1.52	17.75	0.06
846.60	-1.28	18.78	1.54	18.01	0.06
Vertical Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor	Cable loss (dB)	ERP (dBm)	ERP (W)
826.40	-2.27	17.92	1.55	17.20	0.05
836.40	-1.80	17.90	1.52	17.62	0.06
846.60	-2.31	17.75	1.54	16.98	0.05

* ERP = LVL (dBm) + Correction Factor (dB) + Cable loss

Test Result of EIRP

GSM1900 (GSM) Radiated Power EIRP					
Horizontal Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	EIRP (dBm)	EIRP (W)
1850.20	15.62	8.93	2.32	26.87	0.49
1880.00	14.85	9.34	2.35	26.54	0.45
1909.80	16.39	9.13	2.33	27.85	0.61
Vertical Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	EIRP (dBm)	EIRP (W)
1850.20	17.07	8.93	2.32	28.32	0.68
1880.00	17.20	9.34	2.35	28.89	0.77
1909.80	17.56	9.13	2.33	29.02	0.80

$EIRP = LVL (dBm) + Correction Factor (dB) + Cable loss$

GSM1900 (GPRS class 8) Radiated Power EIRP					
Horizontal Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	EIRP (dBm)	EIRP (W)
1850.20	12.11	8.93	2.32	23.36	0.22
1880.00	12.52	9.34	2.35	24.21	0.26
1909.80	12.74	9.13	2.33	24.20	0.26
Vertical Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	EIRP (dBm)	EIRP (W)
1850.20	15.34	8.93	2.32	26.59	0.46
1880.00	15.05	9.34	2.35	26.74	0.47
1909.80	15.55	9.13	2.33	27.01	0.50

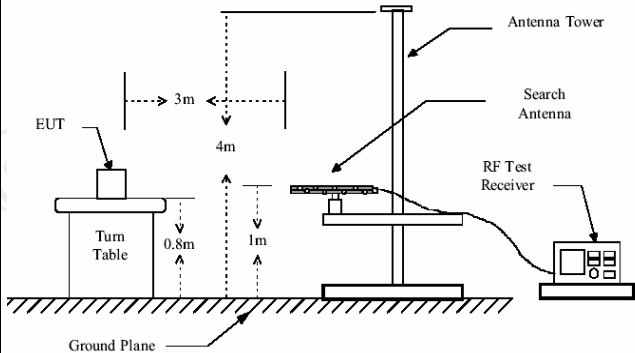
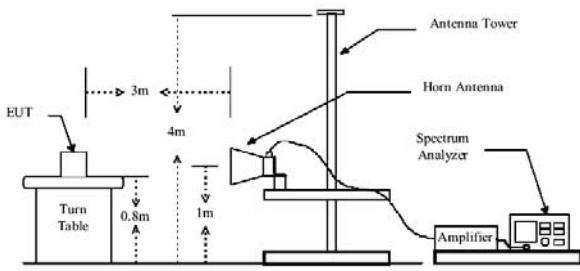
* $EIRP = LVL (dBm) + Correction Factor (dB) + Cable loss$

WCDMA Band II (RMC 12.2Kbps) Radiated Power EIRP					
Horizontal Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	ERP (dBm)	ERP (W)
1852.40	9.00	8.91	2.32	20.23	0.11
1880.00	9.42	9.21	2.35	20.98	0.13
1907.60	9.63	9.05	2.34	21.02	0.13
Vertical Polarization					
Frequency (MHz)	LVL (dBm)	Correction Factor(dB)	Cable loss (dB)	ERP (dBm)	ERP (W)
1852.40	9.91	8.91	2.32	21.14	0.13
1880.00	10.5	9.21	2.35	22.06	0.16
1907.60	10.82	9.05	2.34	22.21	0.17

* EIRP = LVL (dBm)+ Correction Factor (dB + Cable loss

6.7. Field Strength of Spurious Radiation Measurement

6.7.1. Test Specification

Test Requirement:	FCC part 22.917(a) and FCC part 24.238(a)
Test Method:	FCC part 2.1053
Limit:	-13dBm
Test setup:	<p>For 30MHz~1GHz</p>  <p>Above 1GHz</p> 
Test Procedure:	<ol style="list-style-type: none"> 1. The testing follows FCC KDB 971168 v02r02 Section 5.8 and ANSI / TIA-603-C-2004 Section 2.2.12. 2. The EUT was placed on a rotatable wooden table 0.8 meters above the ground. 3. The EUT was set 3 meters from the receiving antenna, which was mounted on the antenna tower. 4. The table was rotated 360 degrees to determine the position of the highest spurious emission. 5. The height of the receiving antenna is varied between one meter and four meters to search for the maximum spurious emission for both horizontal and vertical polarizations. 6. Make the measurement with the spectrum analyzer's RBW = 1MHz, VBW = 3MHz, taking record of maximum spurious emission. 7. A horn antenna was substituted in place of the EUT and was driven by a signal generator. 8. Tune the output power of signal generator to the

	<p>same emission level with EUT maximum spurious emission.</p> <p>9. Taking the record of output power at antenna port.</p> <p>10. Repeat step 7 to step 8 for another polarization.</p> <p>11. EIRP (dBm) = S.G. Power – Tx Cable Loss + Tx Antenna Gain</p> <p>12. ERP (dBm) = EIRP - 2.15</p> <p>13. The RF fundamental frequency should be excluded against the limit line in the operating frequency band.</p> <p>14. The limit line is derived from $43 + 10\log(P)$ dB below the transmitter power P(Watts)</p> <p>= $P(W) - [43 + 10\log(P)]$ (dB)</p> <p>= $[30 + 10\log(P)]$ (dBm) - $[43 + 10\log(P)]$ (dB)</p> <p>= -13dBm.</p>
Test results:	PASS

6.7.2. Test Instruments

Radiated Emission Test Site (966)				
Name of Equipment	Manufacturer	Model	Serial Number	Calibration Due
ESPI Test Receiver	ROHDE&SCHWARZ	ESVD	100008	Sep.16 , 2015
Spectrum Analyzer	ROHDE&SCHWARZ	FSEM	848597/001	Sep.16 , 2015
Broadband Antenna	Schwarzbeck	VULB9163	340	Sep.16 , 2015
Pre-Amplifier	HP	8447D	2727A05017	Sep.16 , 2015
Pre-Amplifier	EM Electronics Corporation CO.,LTD	EM30265	07032613	Sep.16 , 2015
Horn Antenna	Schwarzbeck	BBHA 9120D	631	Sep.16 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
Coax cable	TCT	N/A	N/A	Sep.15 , 2015
EMI Test Software	Shurple Technology	EZ-EMC	N/A	N/A

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.7.3. Test Data

Band	GSM850		Test channel:	Lowest
Test mode:	GSM Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1648.40	Vertical	-43.51	-13.00	PASS
2472.60	V	-40.28		
3296.80	V	-48.10		
1648.40	Horizontal	-43.41		
2472.60	H	-35.43		
3296.80	H	-48.71		
Test mode:	GSM850		Test channel:	Middle
Test mode:	GSM Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.20	Vertical	-41.84	-13.00	PASS
2509.80	V	-44.85		
3346.40	V	-47.12		
1673.20	Horizontal	-41.32		
2509.80	H	-36.86		
3346.40	H	-47.84		
Test mode:	GSM850		Test channel:	Highest
Test mode:	GSM Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1697.60	Vertical	-41.76	-13.00	PASS
2546.40	V	-44.96		
3395.20	V	-56.32		
1697.60	Horizontal	-41.69		
2546.40	H	-45.86		
3395.20	H	-53.84		

Band	GSM850		Test channel:	Lowest
Test mode:	GPRS class 8 Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1648.40	Vertical	-43.51	-13.00	PASS
2472.60	V	-49.89		
3296.80	V	-49.38		
1648.40	Horizontal	-44.59		
2472.60	H	-49.43		
3296.80	H	-50.34		
Test mode:	GSM850		Test channel:	Middle
Test mode:	GPRS class 8 Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.20	Vertical	-43.89	-13.00	PASS
2509.80	V	-48.72		
3346.40	V	-48.53		
1673.20	Horizontal	-43.65		
2509.80	H	-46.63		
3346.40	H	-47.84		
Test mode:	GSM850		Test channel:	Highest
Test mode:	GPRS class 8 Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1697.60	Vertical	-42.85	-13.00	PASS
2546.40	V	-46.87		
3395.20	V	-52.43		
1697.60	Horizontal	-43.63		
2546.40	H	-46.63		
3395.20	H	-56.84		

Band	GSM 1900		Test channel:	Lowest
Test mode:	GSM Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3700.40	Vertical	-52.79	-13.00	PASS
5550.60	V	-54.82		
7400.80	V	-58.65		
3700.40	Horizontal	-52.65		
5550.60	H	-55.96		
7400.80	H	-56.26		
Test mode:	GSM 1900		Test channel:	Middle
Test mode:	GSM Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-59.65	-13.00	PASS
5640.00	V	-53.45		
7520.00	V	-57.32		
3760.00	Horizontal	-55.62		
5640.00	H	-58.86		
7520.00	H	-58.84		
Test mode:	GSM 1900		Test channel:	Highest
Test mode:	GSM Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3819.60	Vertical	-51.84	-13.00	PASS
5729.40	V	-54.75		
7639.20	V	-57.42		
3819.60	Horizontal	-51.22		
5729.40	H	-56.66		
7639.20	H	-57.74		

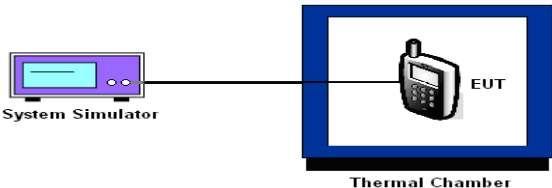
Band	GSM 1900		Test channel:	Lowest
Test mode:	GPRS class 8 Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3700.40	Vertical	-52.41	-13.00	PASS
5550.60	V	-53.32		
7400.80	V	-59.42		
3700.40	Horizontal	-52.41		
5550.60	H	-51.53		
7400.80	H	-53.64		
Test mode:	GSM 1900		Test channel:	Middle
Test mode:	GPRS class 8 Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-54.34	-13.00	PASS
5640.00	V	-55.85		
7520.00	V	-56.32		
3760.00	Horizontal	-54.78		
5640.00	H	-54.96		
7520.00	H	-57.84		
Test mode:	GSM 1900		Test channel:	Highest
Test mode:	GPRS class 8 Link		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3819.60	Vertical	-52.64	-13.00	PASS
5729.40	V	-53.76		
7639.20	V	-54.41		
3819.60	Horizontal	-53.82		
5729.40	H	-52.77		
7639.20	H	-55.44		

Band	WCDMA Band V		Test channel:	Lowest
Test mode:	RMC 12.2Kbps Link (QPSK)		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1652.80	Vertical	-53.36	-13.00	PASS
2479.20	V	-52.72		
3305.60	V	-52.52		
1652.80	Horizontal	-53.57		
2479.20	H	-52.43		
3305.60	H	-52.31		
Test mode:	WCDMA Band V		Test channel:	Middle
Test mode:	RMC 12.2Kbps Link (QPSK)		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1673.20	Vertical	-56.24	-13.00	PASS
2509.80	V	-55.45		
3346.40	V	-58.42		
1673.20	Horizontal	-55.62		
2509.80	H	-58.76		
3346.40	H	-59.94		
Test mode:	WCDMA Band V		Test channel:	Highest
Test mode:	RMC 12.2Kbps Link (QPSK)		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
1693.20	Vertical	-56.62	-13.00	PASS
2539.80	V	-56.75		
3386.40	V	-58.32		
1693.20	Horizontal	-55.42		
2539.80	H	-59.76		
3386.40	H	-59.94		

Band	WCDMA Band II		Test channel:	Lowest
Test mode:	RMC 12.2Kbps Link (QPSK)		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3704.80	Vertical	-52.98	-13.00	PASS
5557.20	V	-51.32		
7409.60	V	-58.69		
3704.80	Horizontal	-53.63		
5557.20	H	-55.52		
7409.60	H	-58.43		
Test mode:	WCDMA Band II		Test channel:	Middle
Test mode:	RMC 12.2Kbps Link (QPSK)		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3760.00	Vertical	-51.74	-13.00	PASS
5640.00	V	-54.63		
7520.00	V	-57.56		
3760.00	Horizontal	-52.41		
5640.00	H	-56.92		
7520.00	H	-58.67		
Test mode:	WCDMA Band II		Test channel:	Highest
Test mode:	RMC 12.2Kbps Link (QPSK)		Temperature :	23~24°C
			Relative Humidity:	46~48%
Note:	Spurious emissions within 30-1000MHz were found more than 20dB below limit line.			
Frequency (MHz)	Spurious Emission		Limit (dBm)	Result
	Polarization	Level (dBm)		
3815.20	Vertical	-51.12	-13.00	PASS
5722.80	V	-54.30		
7630.40	V	-53.82		
3815.20	Horizontal	-53.82		
5722.80	H	-56.96		
7630.40	H	-56.93		

6.8. Frequency Stability Measurement

6.8.1. Test Specification

Test Requirement:	FCC Part 2.1055(a)(1)(b)
Test Method:	FCC Part 2.1055(a)(1)(b)
Limit:	± 2.5 ppm
Test Setup:	 <p>The diagram illustrates the test setup. On the left, a 'System Simulator' is represented by a purple box with a screen and buttons. A line connects it to a 'Thermal Chamber', which is a blue rectangular box. Inside the Thermal Chamber, there is a mobile phone icon labeled 'EUT' (Equipment Under Test).</p>
Test Procedure:	<p>Test Procedures for Temperature Variation</p> <ol style="list-style-type: none"> 1. The testing follows FCC KDB 971168 v02r02 Section 9.0. 2. The EUT was set up in the thermal chamber and connected with the system simulator. 3. With power OFF, the temperature was decreased to -30°C and the EUT was stabilized before testing. Power was applied and the maximum change in frequency was recorded within one minute. 4. With power OFF, the temperature was raised in 10°C steps up to 50°C. The EUT was stabilized at each step for at least half an hour. Power was applied and the maximum frequency change was recorded within one minute. <p>Test Procedures for Voltage Variation</p> <ol style="list-style-type: none"> 1. The testing follows FCC KDB 971168 v02r02 Section 9.0. 2. The EUT was placed in a temperature chamber at $25 \pm 5^{\circ}\text{C}$ and connected with the system simulator. 3. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT. 4. The variation in frequency was measured for the worst case.
Test Result:	PASS

6.8.2. Test Instruments

Equipment	Manufacturer	Model	Serial Number	Calibration Due
System simulator	R&S	CMU200	111382	Sep. 16, 2015
Spectrum Analyzer	Agilent	N9020A	MY49100060	Oct. 21, 2015

Note: The calibration interval of the above test instruments is 12 months and the calibrations are traceable to international system unit (SI).

6.8.3. Test Data

Test Result of Temperature Variation

Band :	GSM 850	Channel:	189
Limit (ppm) :	2.5ppm	Frequency:	836.6
Temperature (°C)	GSM Deviation (ppm)	GPRS Class8 Deviation (ppm)	Result
50	+0.011	+0.009	PASS
40	+0.013	+0.013	
30	+0.012	+0.011	
20	+0.009	+0.011	
10	+0.011	+0.010	
0	+0.012	+0.013	
-10	+0.008	+0.010	
-20	+0.009	+0.012	
-30	+0.011	+0.013	

Band :	GSM 1900	Channel:	661
Limit (ppm) :	2.5ppm	Frequency:	1880
Temperature (°C)	GSM Deviation (ppm)	GPRS Class8 Deviation (ppm)	Result
50	+0.023	+0.012	PASS
40	+0.021	+0.018	
30	+0.019	+0.015	
20	+0.018	+0.016	
10	+0.022	+0.013	
0	+0.023	+0.016	
-10	+0.018	+0.016	
-20	+0.017	+0.014	
-30	+0.022	+0.018	

Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Band :	WCDMA Band V	Channel:	4183
Limit (ppm) :	2.5ppm	Frequency:	836.6
Temperature (°C)	RMC 12.2Kbps Deviation (ppm)	Result	
50	-0.005	PASS	
40	-0.007		
30	-0.007		
20	-0.006		
10	-0.005		
0	-0.007		
-10	-0.006		
-20	-0.007		
-30	-0.005		

Band :	WCDMA Band II	Channel:	9400
Limit (ppm) :	2.5ppm	Frequency:	1880
Temperature (°C)	RMC 12.2Kbps Deviation (ppm)	Result	
50	-0.005	PASS	
40	-0.004		
30	-0.004		
20	-0.005		
10	-0.004		
0	-0.005		
-10	-0.004		
-20	-0.005		
-30	-0.005		

Note: The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Test Result of Voltage Variation

Band & Channel	Mode	Voltage (Volt)	Deviation (ppm)	Limit (ppm)	Result
GSM 850 CH189	GSM	4.2	+0.011	2.5	PASS
		3.8	+0.009		
		BEP	+0.012		
	GPRS class 8	4.2	+0.027		
		3.8	+0.029		
		BEP	+0.031		
GSM 1900 CH661	GSM	4.2	+0.022	(Note 3.)	
		3.8	+0.021		
		BEP	+0.023		
	GPRS class 8	4.2	+0.024		
		3.8	+0.024		
		BEP	+0.025		
WCDMA Band V CH4183	RMC 12.2Kbps	4.2	-0.007	2.5	
		3.8	-0.005		
		BEP	-0.006		
WCDMA Band II CH9400	RMC 12.2Kbps	4.2	-0.005	(Note 3.)	
		3.8	-0.004		
		BEP	-0.005		

Note:

1. Normal Voltage = 3.7V.
2. Battery End Point (BEP) = 3.40 V.
3. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

*******END OF REPORT*******