FCC TEST REPORT

Test report
On Behalf of
CPR GLOBAL TECH LTD
For
WATCHU
Model No.: WUCPR01, WUCPR02 , WUCPR03, WUCPR04

FCC ID: 2AJ29-WATCHUGPS1

Prepared for :	**CPR GLOBAL TECH LTD** **York Chambers, York Street, Swansea, SA1 3LZ, United Kingdom**
Prepared By :	**Laboratory of Shenzhen United Testing Technology Co., Ltd** **Room 316-319, Block B, Honghualing Industrial Park of the Fifth Zone, Taoyuan Street, Nanshan District, Shenzhen, Guangdong, China**
Date of Test:	**November. 6, 2016 ~ November. 11, 2016**
Date of Report:	**November. 11, 2016**
Report Number:	**UNI1601006051-E**

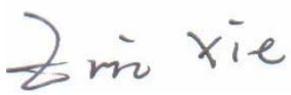
TEST RESULT CERTIFICATION

Applicant's name	:	CPR GLOBAL TECH LTD
Address	:	York Chambers, York Street, Swansea, SA1 3LZ, United Kingdom
Manufacture's Name	:	Shenzhen OneMeter Sunshine Technology Co., Ltd
Address	:	7F/B, Baoju Bldg, Baoneng Science and Technology Industrial Park, No.1 Qingxiang Road, Longhua New Zone, Shenzhen 518001, China

Product description

Trade Mark:		Watchu
Product name	:	WATCHU
Model and/or type reference	:	WUCPR01, WUCPR02 , WUCPR03, WUCPR04
Standards	:	FCC Part 22H and 24E ANSI C63.10: 2013

Date of Test	:	
Date (s) of performance of tests	:	**November. 6, 2016 ~ November. 11, 2016**
Date of Issue	:	**November. 11, 2016**
Test Result	:	**Pass**

Testing Engineer : 

(Eric Xie)

Technical Manager : 

(Dora Qin)

Authorized Signatory : 

(Kait Chen)

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1. TEST SUMMARY

1.1 TEST PROCEDURES AND RESULTS

DESCRIPTION OF TEST	RESULT
Conducted Output power	COMPLIANT
Radiated Output power(erp/eirp)	COMPLIANT
Peak-to-average Ratio (PAR) of Transmitter	COMPLIANT
Occupied bandwidth	COMPLIANT
Frequency stability	COMPLIANT
Conducted spurious emission (Antenna terminal)	COMPLIANT
Radiated spurious emissions	COMPLIANT
Block edge compliance	COMPLIANT
Power Line Conducted Emission Test	COMPLIANT
Conducted Output power	COMPLIANT

1.2 TEST FACILITY

Test Firm : Dongguan Dongdian Testing Service Co., Ltd
Certificated by FCC, Registration No.: 270092

Address : No.17 Zongbu road 2, Songshan Lake Sci&Tech Park, DongGuan City, Guangdong province,523808 China

1.3 MEASUREMENT UNCERTAINTY

Measurement Uncertainty

Conducted Emission Expanded Uncertainty	=	2.23dB, k=2
Radiated emission expanded uncertainty(9kHz-30MHz)	=	3.08dB, k=2
Radiated emission expanded uncertainty(30MHz-1000MHz)	=	4.42dB, k=2
Radiated emission expanded uncertainty(Above 1GHz)	=	4.06dB, k=2

2. GENERAL INFORMATION

2.1 GENERAL DESCRIPTION OF EUT

Equipment	WATCHU
Model Name	WUCPR01
Serial No	WUCPR02 , WUCPR03, WUCPR04
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: WUCPR01.
FCC ID	**2AJ29-WATCHUGPS1**
Antenna Type	Integrated Antenna
Antenna Gain	1 dBi
Operation Band:	GSM850, PCS1900
Operation frequency	GSM/GPRS 850: 824~849MHz GSM/GPRS 1900: 1850~1910MHz
Modulation Type	GMSK for GSM/GPRS
Power Source	N/A
Power Rating	DC 3.7V from battery or DC 5V from adapter

Equipment	WATCHU
Model Name	WUCPR01
Serial No	WUCPR02 , WUCPR03, WUCPR04
Model Difference	All model's the function, software and electric circuit are the same, only with a product color and model named different. Test sample model: WUCPR01.
FCC ID	**2AJ29-WATCHUGPS1**
Antenna Type	Integrated Antenna
Antenna Gain	1 dBi
Operation frequency	802.11b/g/n 20:2412~2462 MHz 802.11n 40: 2422~2452MHz
Number of Channels	802.11b/g/n20: 11CH 802.11n 40: 7CH
Modulation Type	CCK/OFDM/DBPSK/DAPSK
Power Source	N/A
Power Rating	DC 3.7V from battery or DC 5V from adapter

Note: This report only GSM test report, WIFI transmitters see the other test report.

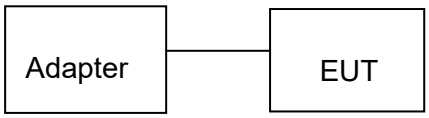
2.1.1 Carrier Frequency of Channels

During all testing, EUT is in link mode with base station emulator at maximum power level in each test mode and channel as below:

Mode	Channel	Frequency(MHz)
GSM 850	128	824.2
	190	836.6
	251	848.8
PCS 1900	512	1850.2
	661	1880.0
	810	1909.8

2.2 DESCRIPTION OF TEST SETUP

Operation of EUT during conducted testing:



Operation of EUT during Radiation testing:

2.3 MEASUREMENT INSTRUMENTS LIST

Item	Equipment	Manufacturer	Model No.	Serial No.	Last Cal.	Cal. Interval
1.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
2.	LISN	SchwarzBeck	NSLK 8126	8126377	Feb. 19, 2016	1 Year
3.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Feb. 19, 2016	1 Year
4.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
5.	EMI Test Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
6.	Trilog Broadband Antenna	Schwarzbeck	VULB9163	VULB 9163-289	Feb. 19, 2016	1 Year
7.	Pre-amplifier	Compliance Direction	PAP-0203	22008	Feb. 19, 2016	1 Year
8.	EMI Test Software EZ-EMC	SHURPLE	N/A	N/A	N/A	N/A
9.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
10.	LISN	SchwarzBeck	NSLK 8126	8126377	Feb. 19, 2016	1 Year
11.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Feb. 19, 2016	1 Year
12.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
13.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
14.	EMI Receiver	Rohde & Schwarz	ESCI	100627	Feb. 19, 2016	1 Year
15.	LISN	SchwarzBeck	NSLK 8126	8126377	Feb. 19, 2016	1 Year
16.	RF Switching Unit	Compliance Direction	RSU-M2	38303	Feb. 19, 2016	1 Year
17.	EMI Test Software ES-K1	Rohde & Schwarz	N/A	N/A	N/A	N/A
18.	Power Meter	R&S	NRVD	SEL0069	Feb. 19, 2016	1 Year
19.	Power Sensor	R&S	URV5-Z2	SEL0071	Feb. 19, 2016	1 Year
20.	Power Sensor	R&S	URV5-Z2	SEL0072	Feb. 19, 2016	1 Year
21.	Software EMC32	R&S	EMC32-S	SEL0082	N/A	N/A
22.	Log-periodic Antenna	Amplifier Reasearch	AWUCPR0180	SEL0073	N/A	N/A
23.	Antenna Tripod	Amplifier Reasearch	TP1000A	SEL0074	N/A	N/A
24.	High Gain Horn Antenna(0.8-5GHz)	Amplifier Reasearch	AT4002A	SEL0075	N/A	N/A
25.	Spectrum analyzer	Agilent	N9020A	MY49911048	Feb. 19, 2016	1 Year
26.	Spectrum analyzer	Agilent	E4407B	MY46184326	Feb. 19, 2016	1 Year
27.	COMMUNICATION TESTER	R&S	CMU200	A0304247	Feb. 19, 2016	1 Year

3. CONDUCTED EMISSIONS TEST

3.1 Conducted Power Line Emission Limit

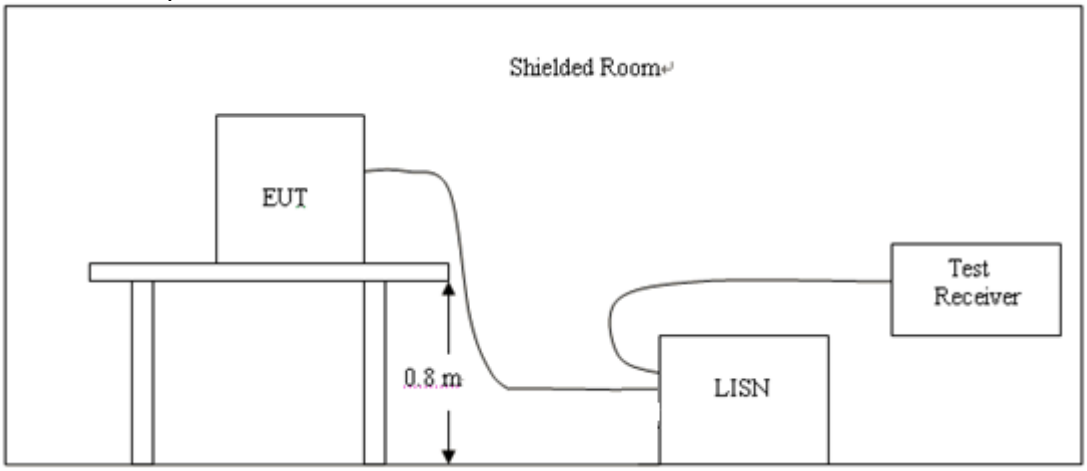
For unintentional device, according to § 15.107(a) Line Conducted Emission Limits is as following

Frequency (MHz)	Maximum RF Line Voltage (dBμV)			
	CLASS A		CLASS B	
	Q.P.	Ave.	Q.P.	Ave.
0.15 - 0.50	79	66	66-56*	56-46*
0.50 - 5.00	73	60	56	46
5.00 - 30.0	73	60	60	50

* Decreasing linearly with the logarithm of the frequency

For intentional device, according to §15.207(a) Line Conducted Emission Limit is same as above table.

3.2 Test Setup



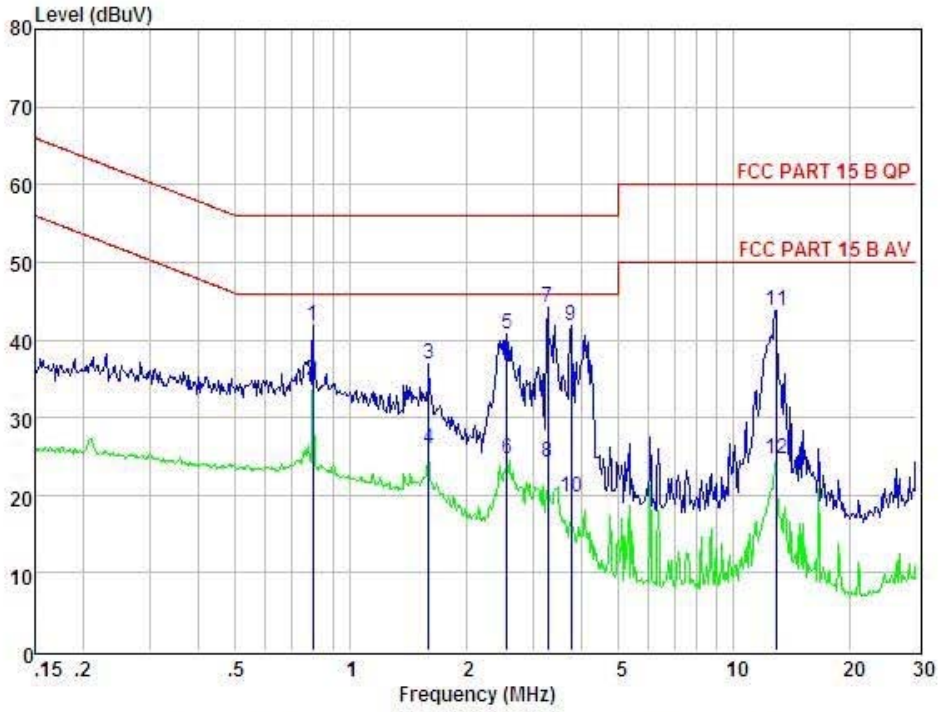
3.3 Test Procedure

1, The equipment was set up as per the test configuration to simulate typical actual usage per the user's manual. The EUT is a tabletop system, a wooden table with a height of 0.8 meters is used and is placed on the ground plane as per ANSI C63.10.
2, Support equipment, if needed, was placed as per ANSI C63.10.
3, All I/O cables were positioned to simulate typical actual usage as per ANSI C63.10.
4, If a EUT received DC power from the USB Port of Notebook PC, the PC's adapter received AC120V/60Hz power through a Line Impedance Stabilization Network (LISN) which supplied power source and was grounded to the ground plane.
5, All support equipments received AC power from a second LISN, if any.
6, The EUT test program was started. Emissions were measured on each current carrying line of the EUT using a spectrum Analyzer / Receiver connected to the LISN powering the EUT. The LISN has two monitoring points: Line 1 (Hot Side) and Line 2 (Neutral Side). Two scans were taken: one with Line 1 connected to Analyzer / Receiver and Line 2 connected to a 50 ohm load; the second scan had Line 1 connected to a 50 ohm load and Line 2 connected to the Analyzer / Receiver.
7, Analyzer / Receiver scanned from 150 KHz to 30MHz for emissions in each of the test modes.

3.4 Test Result

PASS

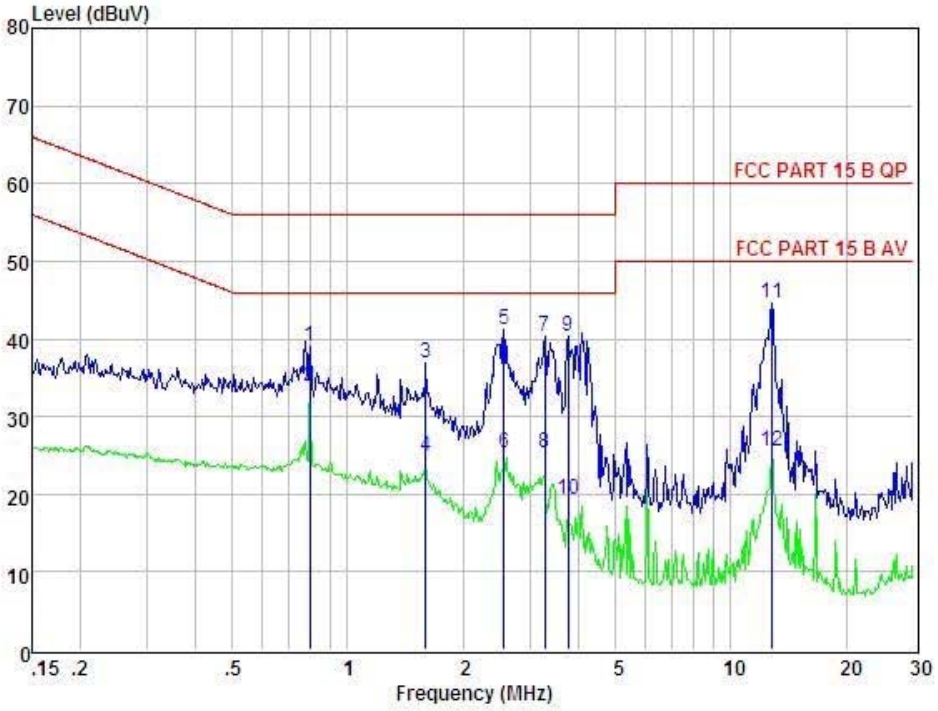
All the test modes completed for test.



Condition : FCC PART 15 B QP POL: NEUTRAL Temp:26 ℃ Hum:48 %

Item	Freq	Read	LISN Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	0.796	31.98	0.00	-9.71	0.10	41.79	56.00	-14.21	QP
2	0.796	24.98	0.00	-9.71	0.10	34.79	46.00	-11.21	Average
3	1.602	27.08	0.05	-9.71	0.10	36.94	56.00	-19.06	QP
4	1.602	16.08	0.05	-9.71	0.10	25.94	46.00	-20.06	Average
5	2.554	30.84	0.06	-9.70	0.11	40.71	56.00	-15.29	QP
6	2.554	14.84	0.06	-9.70	0.11	24.71	46.00	-21.29	Average
7	3.276	34.37	0.07	-9.69	0.12	44.25	56.00	-11.75	QP
8	3.276	14.37	0.07	-9.69	0.12	24.25	46.00	-21.75	Average
9	3.759	31.85	0.08	-9.69	0.12	41.74	56.00	-14.26	QP
10	3.759	9.85	0.08	-9.69	0.12	19.74	46.00	-26.26	Average
11	12.920	33.81	0.23	-9.44	0.22	43.70	60.00	-16.30	QP
12	12.920	14.81	0.23	-9.44	0.22	24.70	50.00	-25.30	Average

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



Condition : FCC PART 15 B QP POL: LINE Temp:26 ℃ Hum:48 %

Item	Freq	Read	LISN Factor	Preamp Factor	Cable Lose	Level	Limit	Margin	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dBuV	
1	0.796	29.17	0.00	-9.71	0.10	38.98	56.00	-17.02	QP
2	0.796	24.17	0.00	-9.71	0.10	33.98	46.00	-12.02	Average
3	1.602	27.09	0.05	-9.71	0.10	36.95	56.00	-19.05	QP
4	1.602	15.09	0.05	-9.71	0.10	24.95	46.00	-21.05	Average
5	2.554	31.39	0.06	-9.70	0.11	41.26	56.00	-14.74	QP
6	2.554	15.39	0.06	-9.70	0.11	25.26	46.00	-20.74	Average
7	3.276	30.38	0.07	-9.69	0.12	40.26	56.00	-15.74	QP
8	3.276	15.38	0.07	-9.69	0.12	25.26	46.00	-20.74	Average
9	3.759	30.43	0.08	-9.69	0.12	40.32	56.00	-15.68	QP
10	3.759	9.43	0.08	-9.69	0.12	19.32	46.00	-26.68	Average
11	12.784	34.71	0.24	-9.44	0.22	44.61	60.00	-15.39	QP
12	12.784	15.71	0.24	-9.44	0.22	25.61	50.00	-24.39	Average

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss

4 Conducted Output power

4.1 Test Limit

Cellular Telephone 850MHz	PCS 1900MHz
/	/

4.2 Test Procedure

1 The EUT's RF output port was connected to base station.
2 A call is set up by the SS according to the generic call set up procedure
3 Set EUT at maximum power level through base station by power level command
4 Measure the maximum output power of EUT at each frequency band and mode by base station.

4.3 Measurement Equipment Used

Same as Radiated Emission Measurement

4.4 Test Result

PASS
All the test modes completed for test.

GSM850 Mode			
Test Channel	Frequency (MHz)	Maximum Peak Conducted Output Power (dBm)	LIMIT dBm
128	824.2	32.72	/
190	836.6	32.84	/
251	848.8	32.79	/
PCS 1900 Mode			
512	1850.2	30.21	/
661	1880	30.35	/
810	1909.8	30.28	/

5 Radiated Output power

5.1 Test Limit

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.”

GSM 850MHz	PCS 1900MHz
38.5dBm(ERP)	33dBm(EIRP)

5.2 Test Procedure

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in an anechoic chamber. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and a spectrum analyzer with RBW= 3MHz,VBW= 3MHz and peak detector settings.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. The highest 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
3. Effective Isotropic Radiated Power (EIRP) was measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (for frequency lelow 1GHz) or Horn antenna(for frequecny above 1GHz) at same location with same polarize of reveiver antenna and then a known power of each measure frequency from S.G. was applied into the dipole antenna or Horn 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 –Substitution antenna Loss(only for Dipole antenna) - Analyzer reading. Then the EUT’s EIRP was calculated with the correction factor, EIRP= LVL + Correction factor and ERP = EIRP – 2.15

5.3 Measurement Equipment Used

Same as Radiated Emission Measurement

5.4 Test Result

Conclusion: **PASS**					
Mode	Channel	LVL (dBm)	Correction factor(dB)	ERP (dBm)	EIRP (dBm)
GSM 850	128	3.85	30.42	32.12	/
	190	3.92	30.21	31.98	/
	251	3.89	30.05	31.79	/
PCS 1900	512	-16.63	46.80	/	30.17
	661	-16.17	46.45	/	30.28
	810	-16.35	46.58	/	30.23
ERP=LVL + Correction factor -2.15 EIRP=LVL+ Correction factor					

6 PEAK-TO- AVERAGE RATIO(PAR) OF TRANSMITTER

6.1 Test Limit

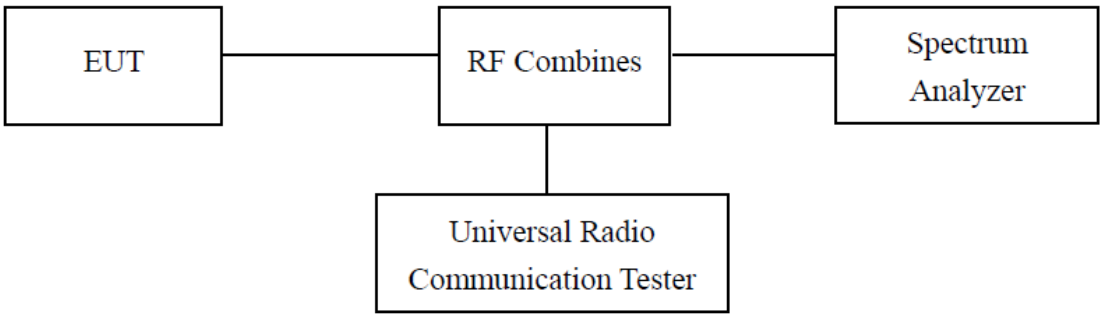
According to §24.232(d), Power measurements for transmissions by stations authorized under this section may be made either in accordance with a Commission-approved average power technique or in compliance with paragraph (e) of this section. In both instances, equipment employed must be authorized in accordance with the provisions of §24.51. In measuring transmissions in this band using an average power technique, the peak-to-average ratio (PAR) of the transmission may not exceed 13 dB.

According to §27.50(B), the peak-to-average power ratio (PAPR) of the transmitter output power must not exceed 13 dB. The PAPR measurements should be made using either an instrument with complementary cumulative distribution function (CCDF) capabilities to determine that PAPR will not exceed 13 dB for more than 0.1 percent of the time or other Commission approved procedure. The measurement must be performed using a signal corresponding to the highest PAPR expected during periods of continuous transmission.

6.2 Test Procedure

The RF output terminal of the transmitter was connected to the input of the spectrum analyzer via a suitable attenuation. The RBW of the spectrum analyzer was set to 30kHz and the peak-to-average ratio (PAR) of the transmission was recorded. Record the maximum PAPR level associated with a probability of 0.1%.

Test Configuration for the emission bandwidth testing:



6.3 Measurement Equipment Used

Same as Radiated Emission Measurement

6.4 Test Result

Conclusion: **PASS**

GSM850 Mode			
Test Channel	Frequency (MHz)	**PAR** (dB)	LIMIT dB
128	824.2	8.42	13
190	836.6	8.51	13
251	848.8	8.53	13
PCS 1900 Mode			
512	1850.2	9.17	13
661	1880	9.25	13
810	1909.8	9.23	13

7 OCCUPIED BANDWIDTH MEASUREMENT

7.1 Test Limit

N/A

7.2 Test Procedure

1. The EUT' RF output port was connected to Spectrum Analyzer and Base Station via power divider.
2. Spectrum analyzer's occupied bandwidth measure function was used to measure 99% bandwidth and -26dBc bandwidth

7.3 Measurement Equipment Used

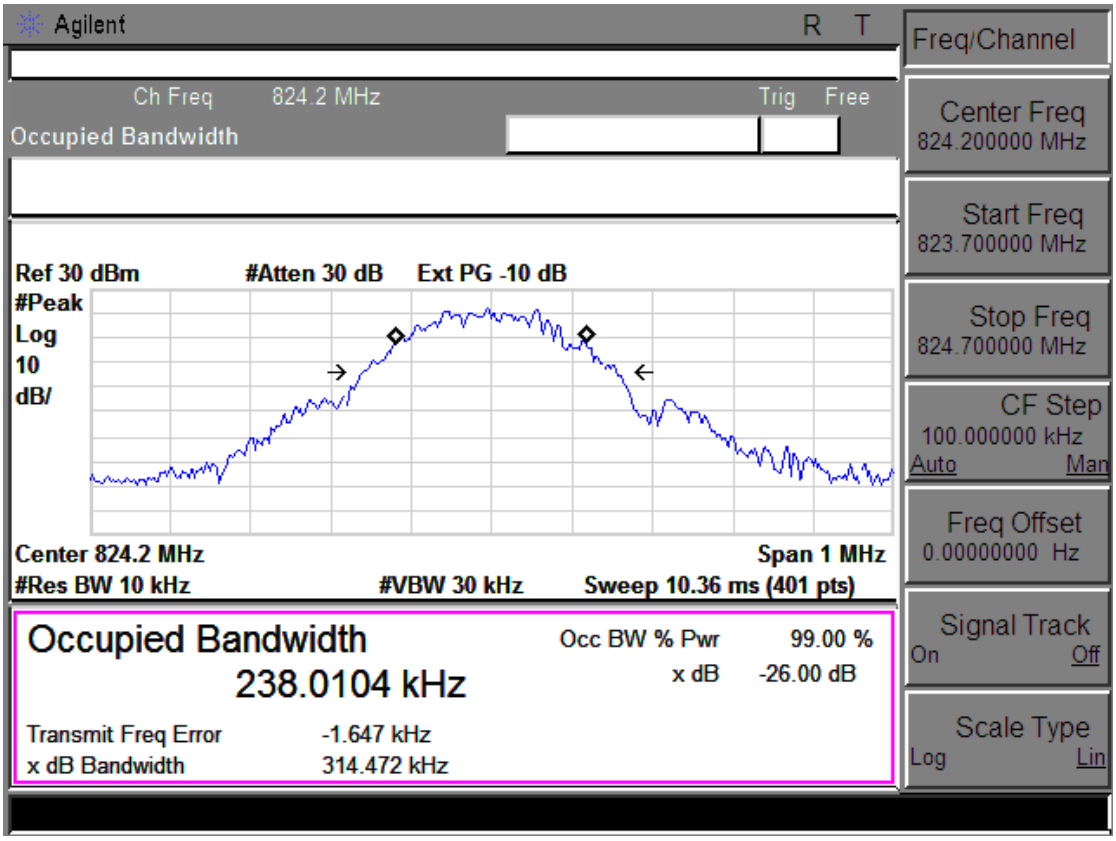
Same as Radiated Emission Measurement

7.4 Test Result

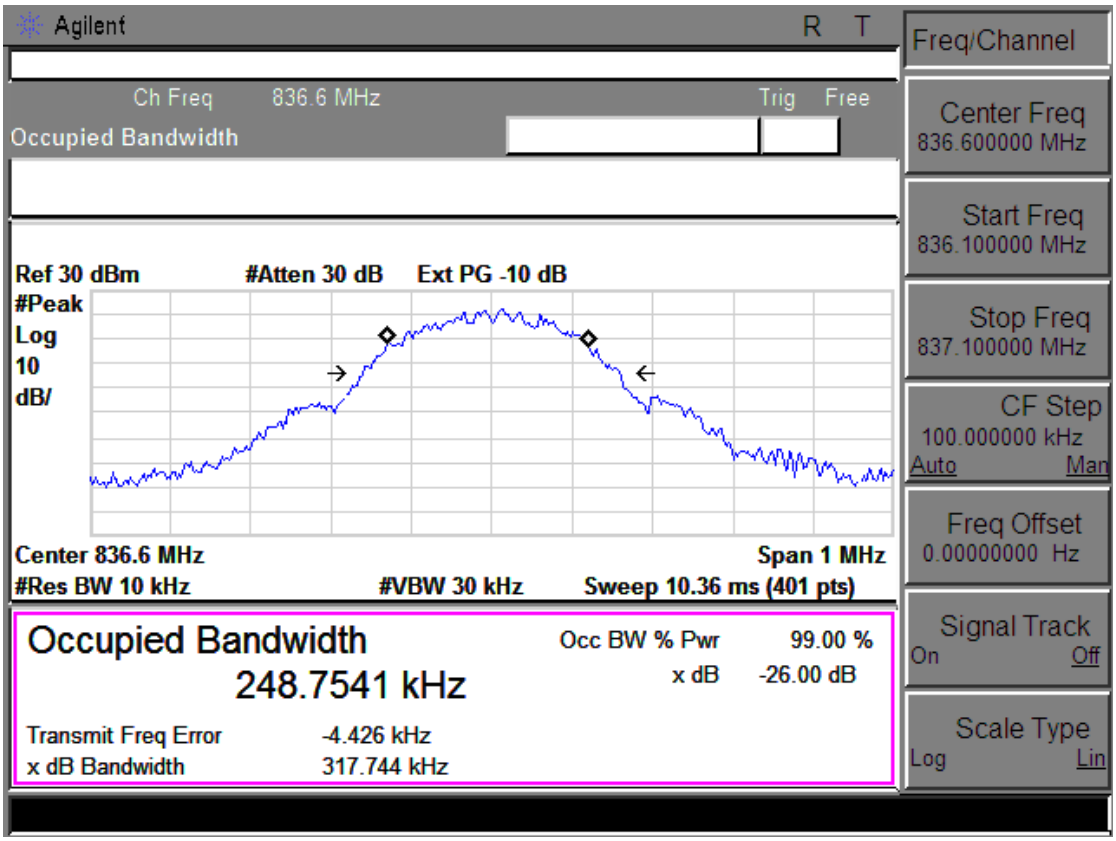
PASS
All the test modes completed for test.

GSM850 Mode			
Frequency (MHz)	**26dB Bandwidth (MHz)**	**99% bandwidth (MHz)**	**Result**
824.2	314.47	238.01	**PASS**
836.6	317.74	248.75	**PASS**
848.8	314.09	244.65	**PASS**

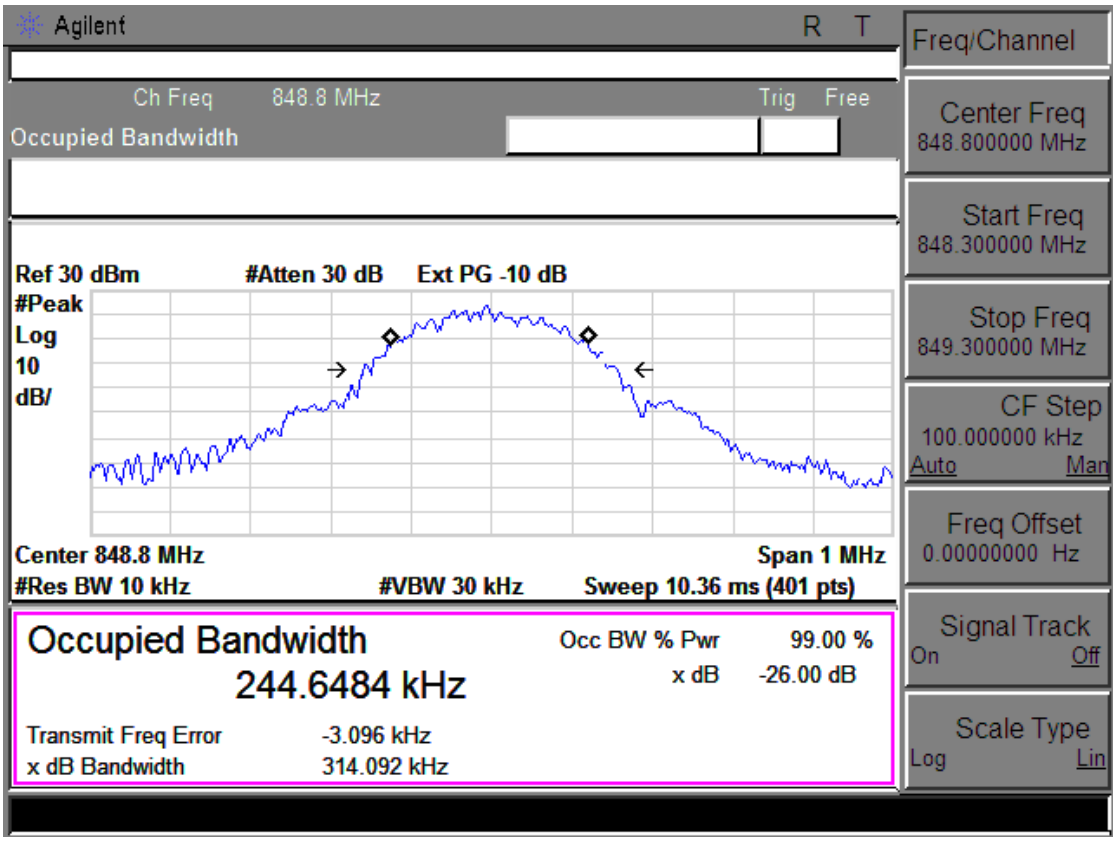
GSM 850 CH128



GSM 850 CH190

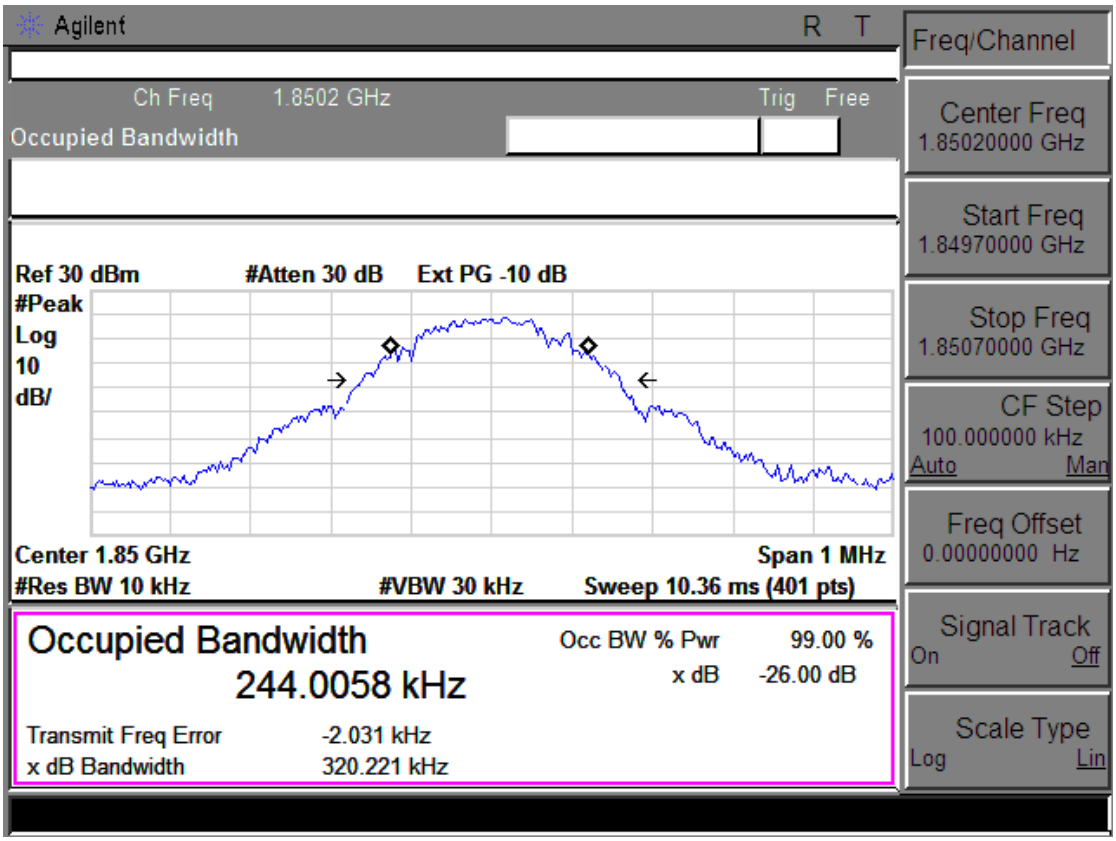


GSM 850 CH251

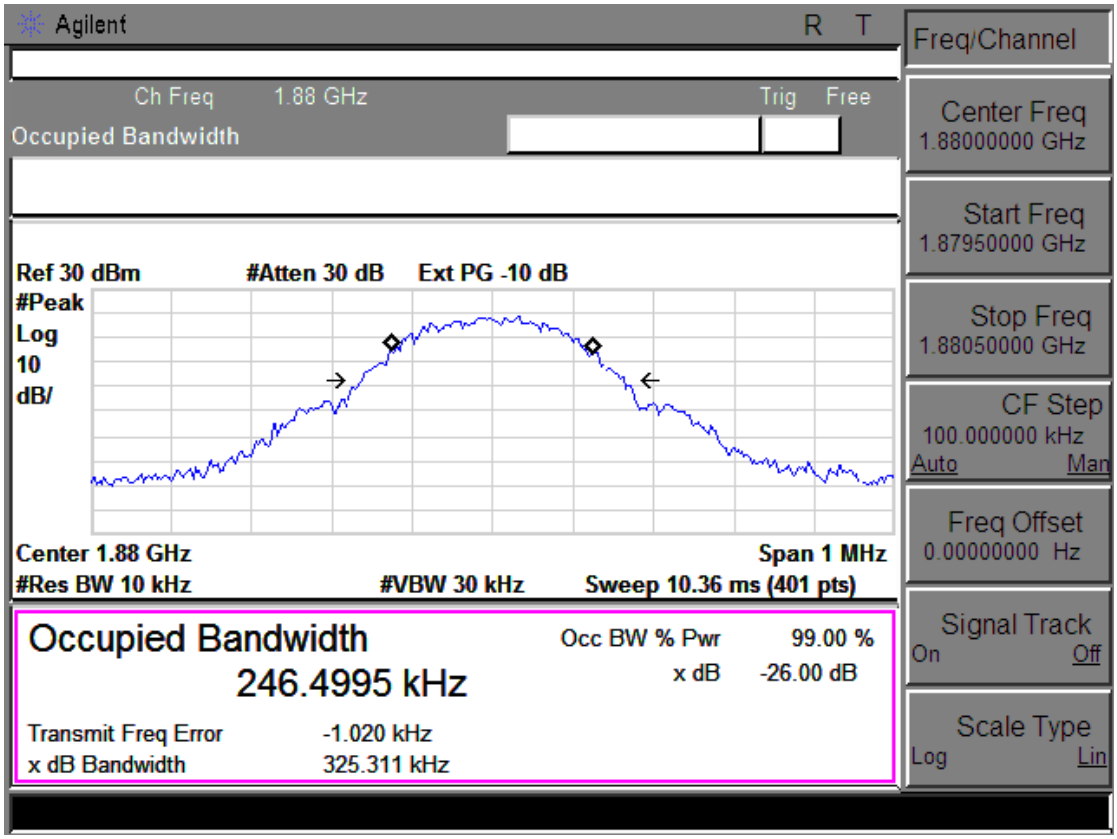


PCS1900 Mode			
Frequency (MHz)	**26dB Bandwidth (MHz)**	**99% bandwidth (MHz)**	**Result**
1850.2	320.22	244.01	**PASS**
1880	325.31	246.50	**PASS**
1909.8	313.35	242.06	**PASS**

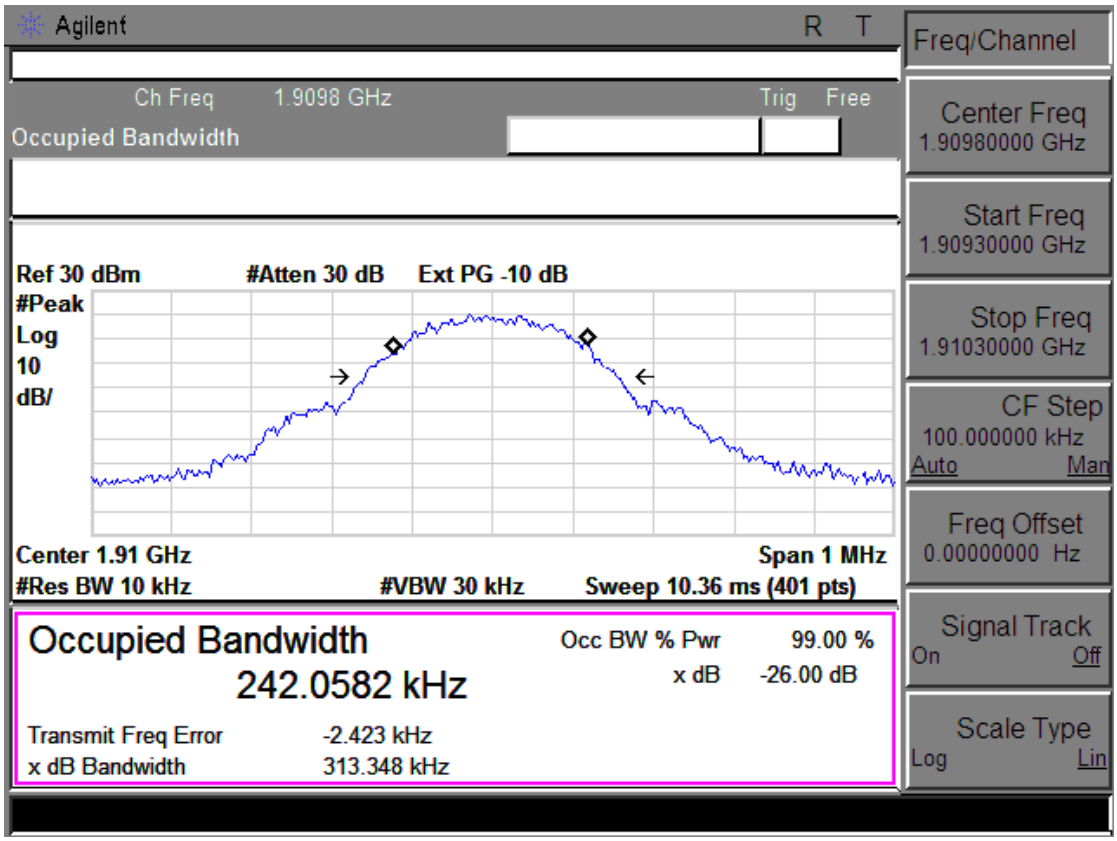
PCS 1900 CH512



PCS 1900 CH661



PCS 1900 CH810



8 Frequency stability

8.1 Test Limit

GSM 850MHz	PCS 1900MHz
± 2.5 ppm	Must stay within the authorized frequency block

8.2 Test Procedure

Test Procedures for Temperature Variation:

1. The EUT was set up in the thermal chamber and connected with the base station.
2. With power OFF, the temperature was decreased to -10°C and the EUT was stabilized for three hours. Power was applied and the maximum change in frequency was recorded within one minute.
3. With power OFF, the temperature was raised in 10°C step up to 45°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.
4. If the EUT can not be turned on at -10°C, the testing lowest temperature will be raised in 10°C step until the EUT can be turned on.

Test Procedures for Voltage Variation:

1. The EUT was placed in a temperature chamber at 25±5° C and connected with the base station.
2. The power supply voltage to the EUT was varied from DC 5V to 3V
3. The variation in frequency was measured for the worst case.

8.3 Measurement Equipment Used

Same as Radiated Emission Measurement

8.4 Test Result

PASS

All the test modes completed for test.

Mode	Temperature (℃)	Frequency error (Hz)	frequency error (ppm)
GSM 850 CH190	5V	-17.95	-0.021
	4.5V	-20.13	-0.024
	4V	-18.49	-0.022
	3.5V	-22.57	-0.027
	3V	-23.46	-0.028
PCS 1900 CH661	5V	-33.46	-0.018
	4.5V	-34.72	-0.018
	4V	-35.89	-0.019
	3.5V	-33.68	-0.018
	3V	-34.16	-0.018
Conclusion: **PASS**			

Mode	Temperature (℃)	Frequency error (Hz)	frequency error (ppm)
GSM 850 CH190	-30	43.16	0.052
	-20	35.72	0.043
	-10	23.44	0.028
	0	-19.73	-0.024
	10	-22.43	-0.027
	20	-23.65	-0.028
	30	-22.89	-0.027
	40	-24.53	-0.013
	50	-25.72	-0.014
PCS 1900 CH661	-10	68.46	0.036
	0	66.57	0.035
	10	71.25	0.038
	20	70.84	0.038
	30	76.44	0.041
	40	-63.62	0.041
	50	-58.47	-0.034
Conclusion: **PASS**			

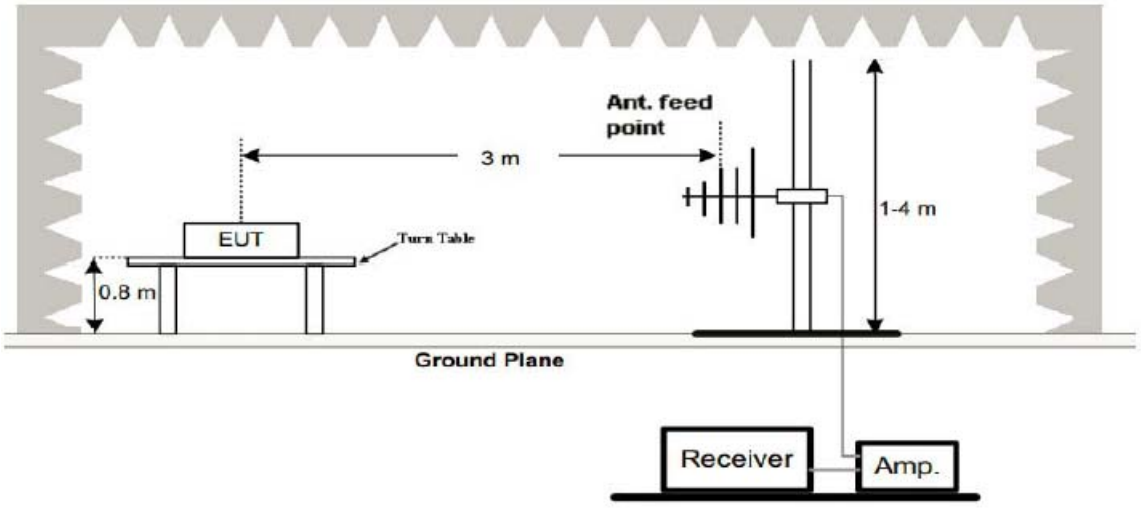
9 RADIATED EMISSION TEST

9.1 Radiation Limit

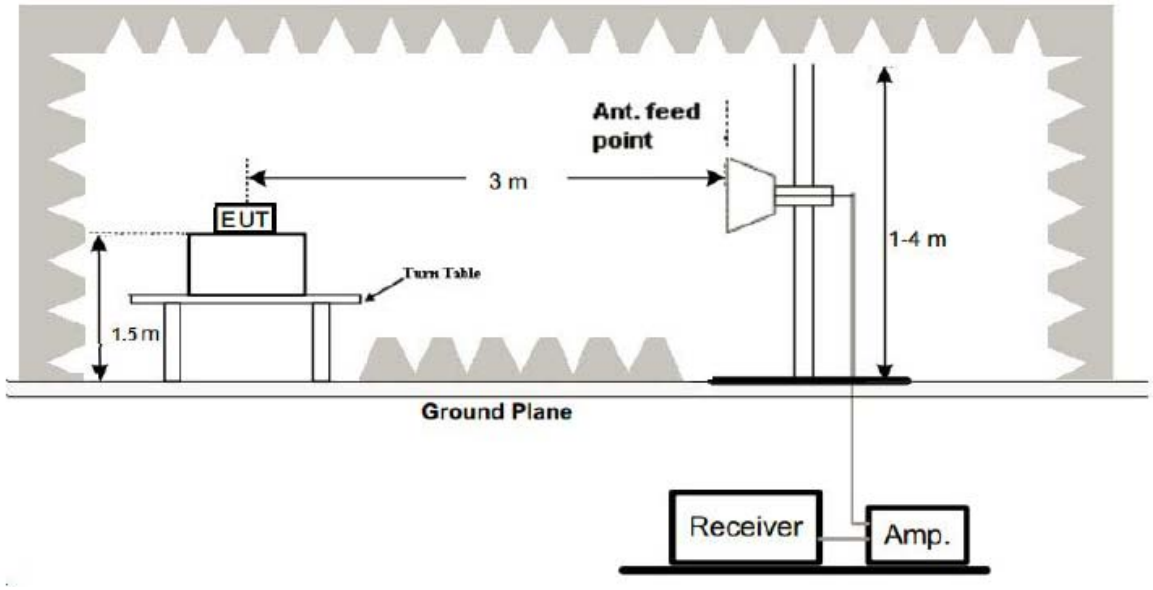
The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency outside the frequency band by at least (43 + 10 log P) dB, in this case, -13dBm.

9.2 Test Setup

（1）Radiated Emission Test-Up Frequency 30MHz~1GHz



（2）Radiated Emission Test-Up Frequency Above 1GHz



9.3 Test Procedure

1. The EUT was placed on an non-conductive rotating platform with 0.8 meter height in an anechoic chamber. The radiated spurious emissions from 30MHz to 10th harmonious of fundamental frequency were measured at 3m with a test antenna and a spectrum analyzer with RBW= 1MHz,VBW= 1MHz ,peak detector settings.
2. During the measurement, the EUT was enforced in maximum power and linked with a base station. All the spurious emissions (record as LVL) at 3m were measured by 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.
3. Final spurious emissions levels were measured by substitution method according to TIA/EIA-603-C. The EUT was replaced by dipole antenna (for frequency below 1GHz) or Horn antenna (for frequency above 1GHz) at same location with same polarize of receiver antenna and then a known power of each measure frequency from S.G. was applied into the dipole antenna or Horn 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 –Substitution antenna Loss(only for Dipole antenna) - Analyzer reading. Then final spurious emissions were calculated with the correction factor, EIRP= LVL + Correction factor and ERP = EIRP – 2.15

9.4 Test Result

PASS

All the test modes completed for test. The worst case of Radiated Emission; the test data of this mode was reported.

GSM 850:

The Worst Test Results Channel 128/824.2 MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit(dBm)	Polarity
1648.379	-26.79	-4.65	-31.44	-13.00	Horizontal
2471.322	-25.41	-2.10	-27.51	-13.00	Horizontal
4118.454	-25.73	11.80	-13.93	-13.00	Horizontal
1648.379	-26.44	-4.65	-31.09	-13.00	Vertical
2471.322	-27.12	-2.10	-29.22	-13.00	Vertical
4118.454	-26.89	11.80	-15.09	-13.00	Vertical
The Worst Test Results Channel 190/836.6 MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit(dBm)	Polarity
1673.317	-26.43	-4.97	-31.4	-13.00	Horizontal
2506.234	-27.51	-2.10	-29.61	-13.00	Horizontal
3339.401	-27.92	3.46	-24.46	-13.00	Horizontal
1673.317	-25.98	-4.97	-30.95	-13.00	Vertical
2506.234	-27.76	-2.10	-29.86	-13.00	Vertical
3339.401	-26.32	3.46	-22.86	-13.00	Vertical
The Worst Test Results Channel 251/848.8 MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit(dBm)	Polarity
1698.254	-25.89	-4.94	-30.83	-13.00	Horizontal
2541.147	-26.49	-2.02	-28.51	-13.00	Horizontal
3384.835	-28.12	3.49	-24.63	-13.00	Horizontal
1698.254	-26.55	-4.94	-31.49	-13.00	Vertical
2541.147	-27.39	-2.02	-29.41	-13.00	Vertical
3384.835	-28.24	3.49	-24.75	-13.00	Vertical

PCS 1900:

The Worst Test Results for Channel 512/1850.2MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit (dBm)	Polarity
1793.017	-27.32	-3.54	-30.86	-13.00	Horizontal
3720.698	-38.49	13.01	-25.48	-13.00	Horizontal
5543.641	-40.73	14.7	-26.03	-13.00	Horizontal
1793.017	-26.54	-3.54	-30.08	-13.00	Vertical
3720.698	-40.32	13.01	-27.31	-13.00	Vertical
5543.641	-41.32	14.7	-26.62	-13.00	Vertical

The Worst Test Results for Channel 661/1880.0MHz					
Frequency(MHz)	Power(dBm)	A_{Rpl} (dBm)	P_{Mea}(dBm)	Limit (dBm)	Polarity
1822.943	-27.44	-3.48	-30.92	-13.00	Horizontal
3763.092	-40.25	13.8	-26.45	-13.00	Horizontal
5628.429	-43.58	15.4	-28.18	-13.00	Horizontal
1822.943	-28.64	-3.48	-32.12	-13.00	Vertical
3763.092	-41.35	13.8	-27.55	-13.00	Vertical
5628.429	-42.48	15.4	-27.08	-13.00	Vertical

The Worst Test Results for Channel 810/1909.8MHz					
Frequency(MHz)	Power(dBm)	ARpl (dBm)	PMea(dBm)	Limit (dBm)	Polarity
1967.581	-26.44	-3.26	-29.7	-13.00	Horizontal
3847.880	-40.84	12.4	-28.44	-13.00	Horizontal
5713.217	-43.66	15.75	-27.91	-13.00	Horizontal
1967.581	-29.42	-3.26	-32.68	-13.00	Vertical
3847.880	-40.95	12.4	-28.55	-13.00	Vertical
5713.217	-43.22	15.75	-27.47	-13.00	Vertical

10 BAND EDGE

10.1 Limits

The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency outside the frequency band by at least (43 + 10 log P) dB, in this case, -13dBm.

10.2 Test Procedure

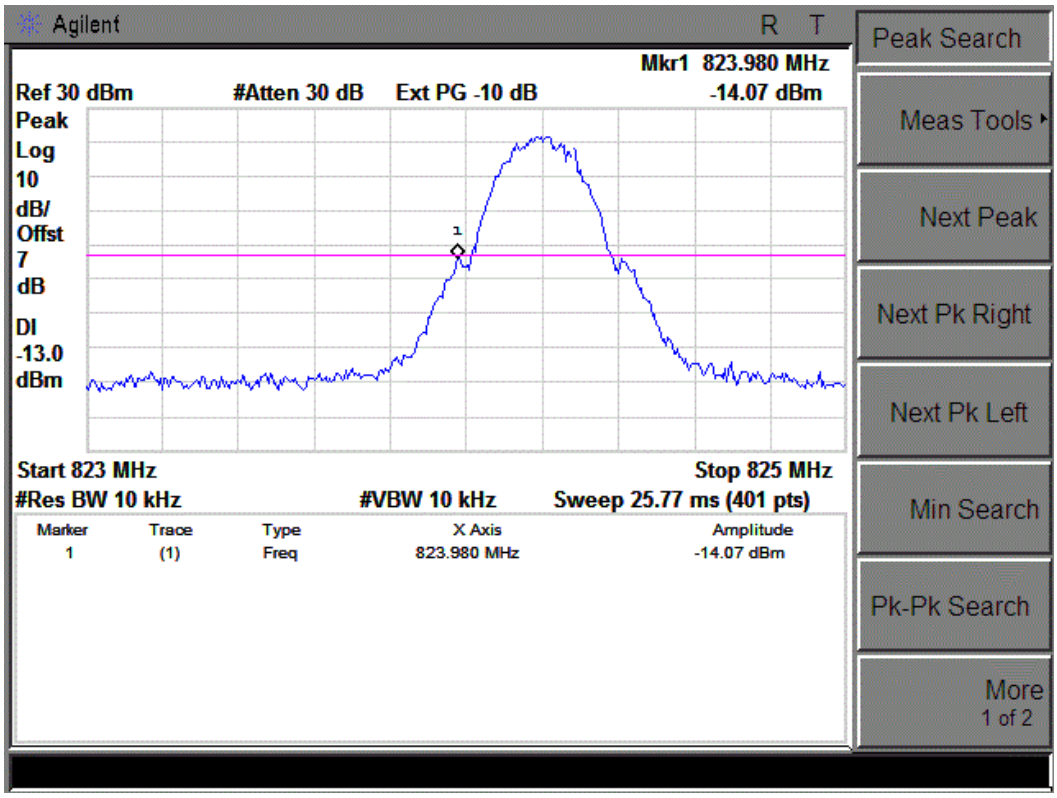
1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The band edges of low and high channels for the highest RF powers were measured.

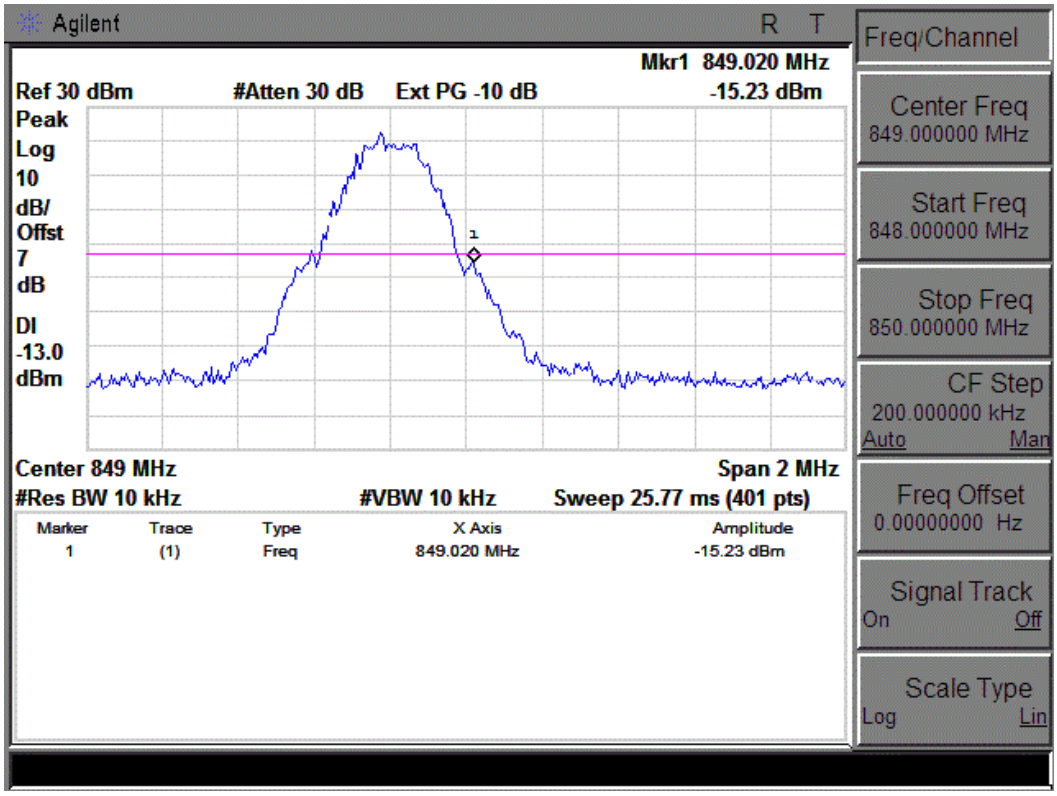
10.3 Test Result

PASS

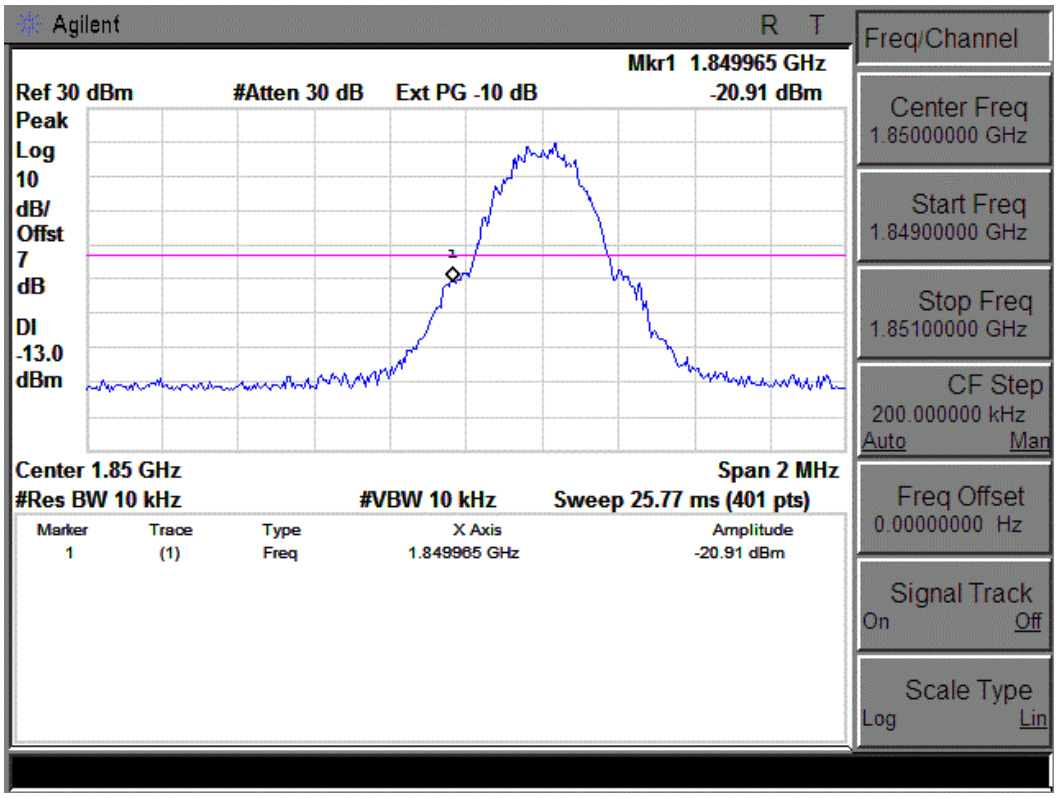
All the test modes completed for test. The test data of this mode was reported.

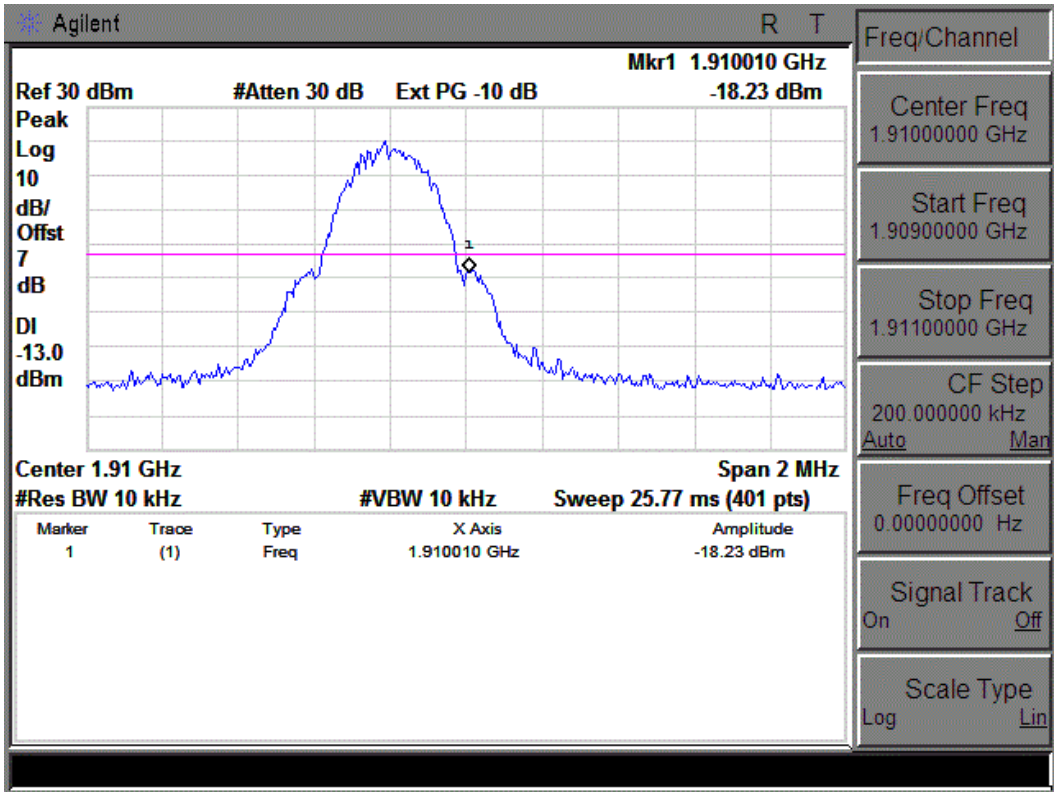
Test Mode: GSM 850





Test Mode: GSM 1900





11 Conducted spurious emissions

11.1 Test Limit

The mean power of emissions must be attenuated below the mean power of the unmodulated carrier (P) on any frequency outside the frequency band by at least (43 + 10 log P) dB, in this case, -13dBm.

11.2 Test Procedure

1. The EUT was connected to spectrum analyzer and base station via power divider.
2. The low, middle and high channels of each band and mode's spurious emissions for 30MHz to 10th Harmonic were measured by Spectrum analyzer.

11.3 Measurement Equipment Used

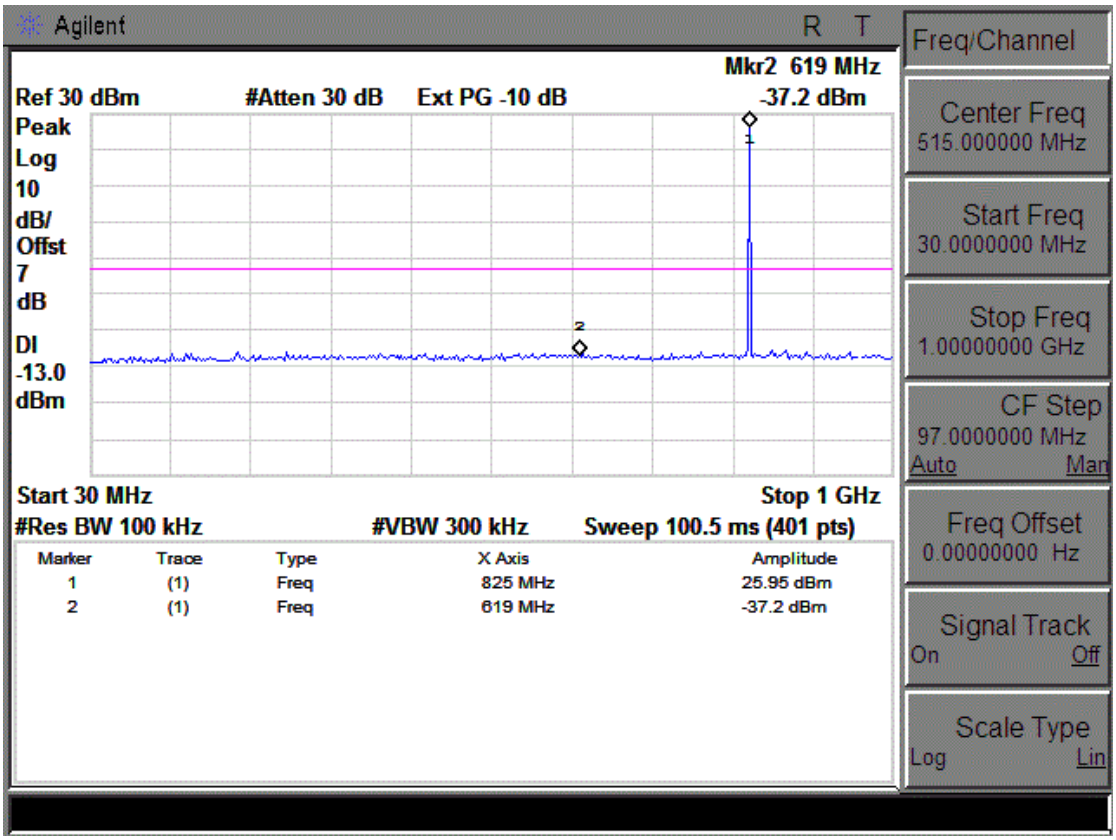
Same as Radiated Emission Measurement

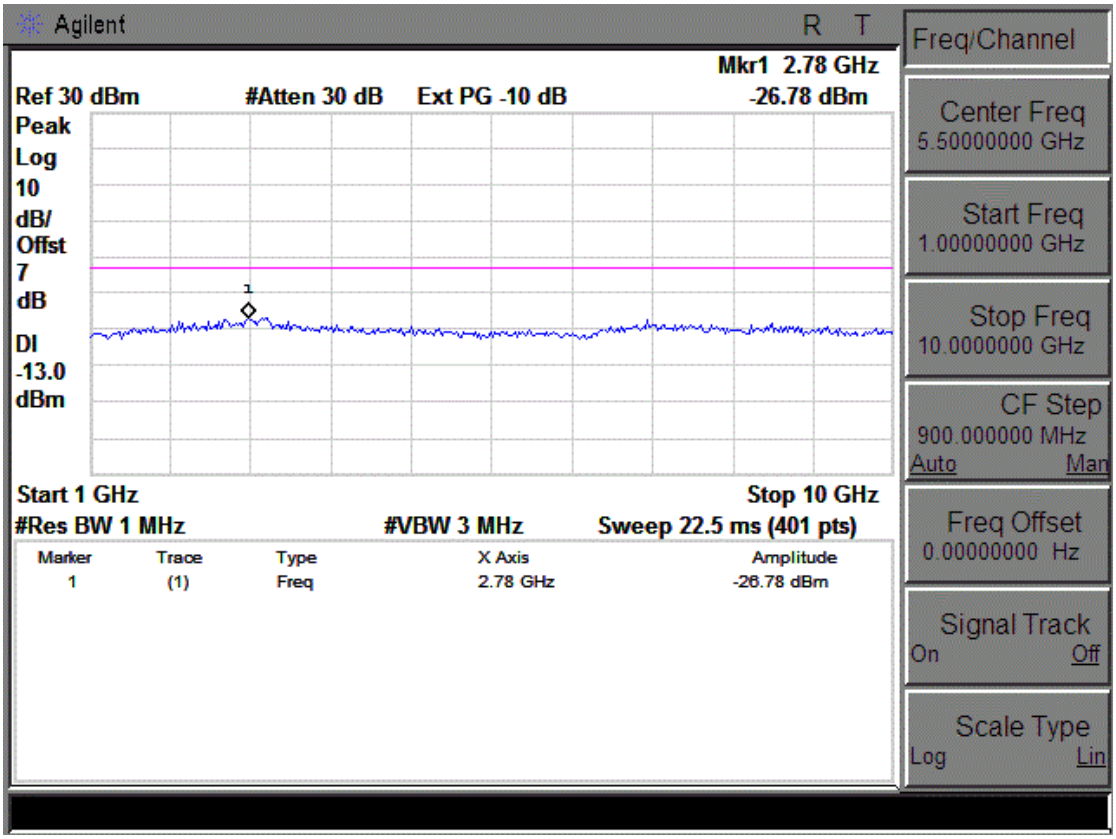
11.4 Test Result

PASS

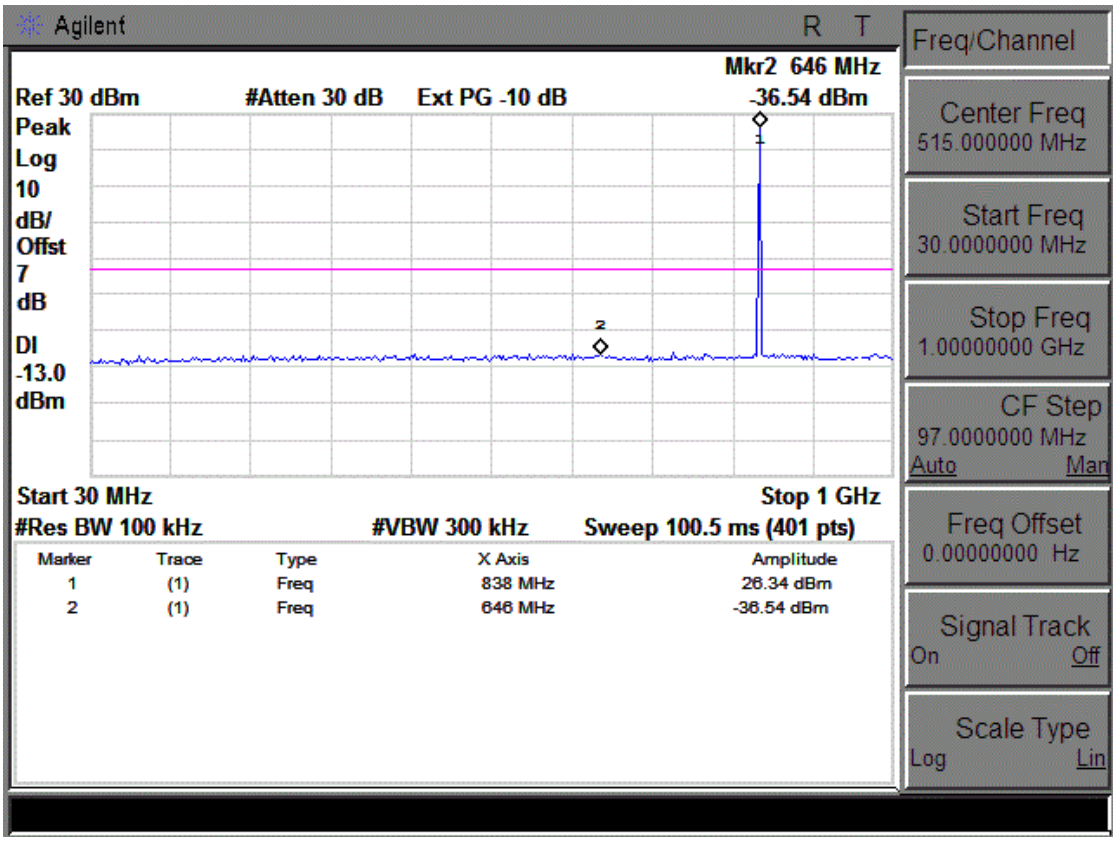
All the test modes completed for test.

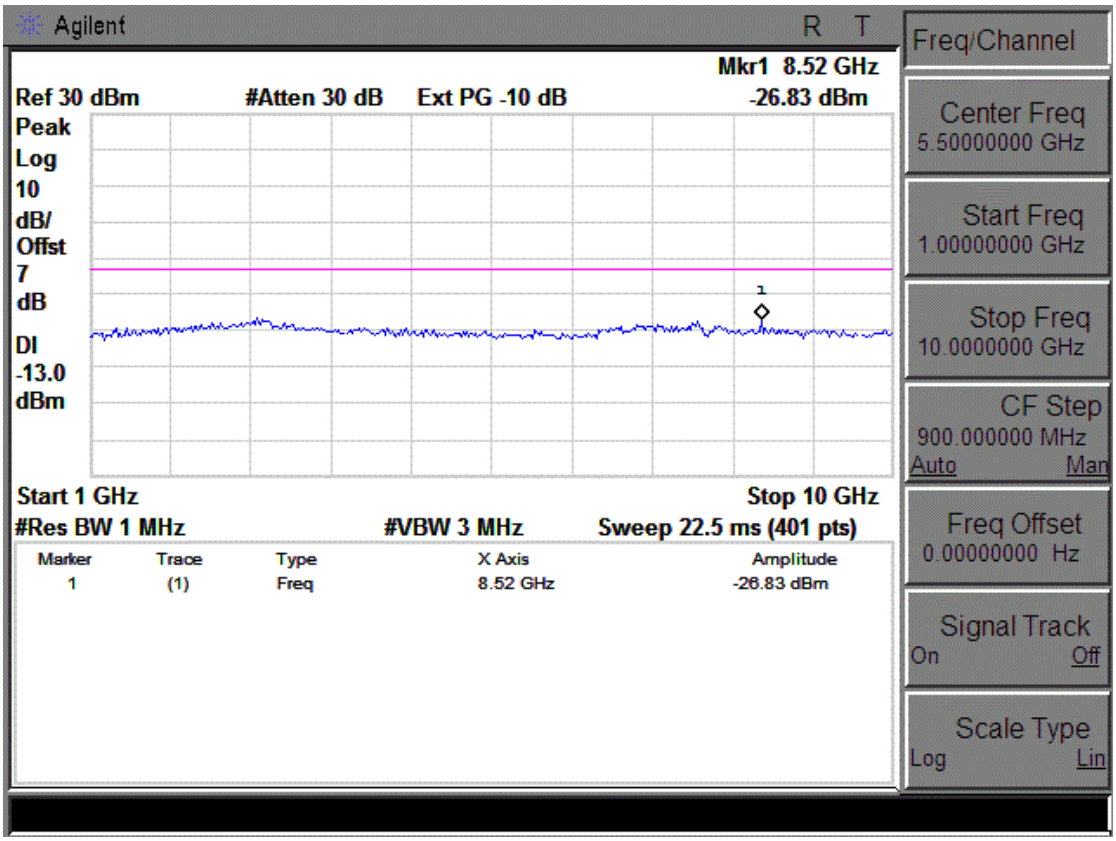
Test Mode: GSM 850 CH 128



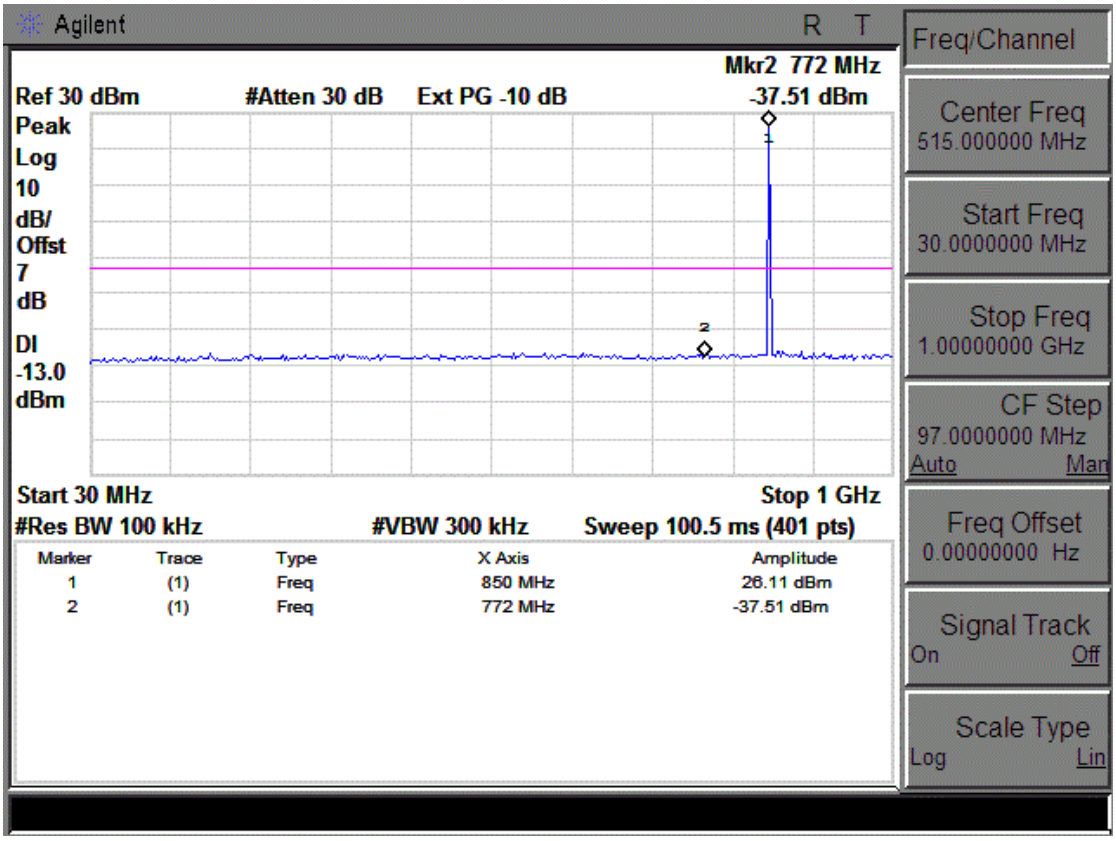


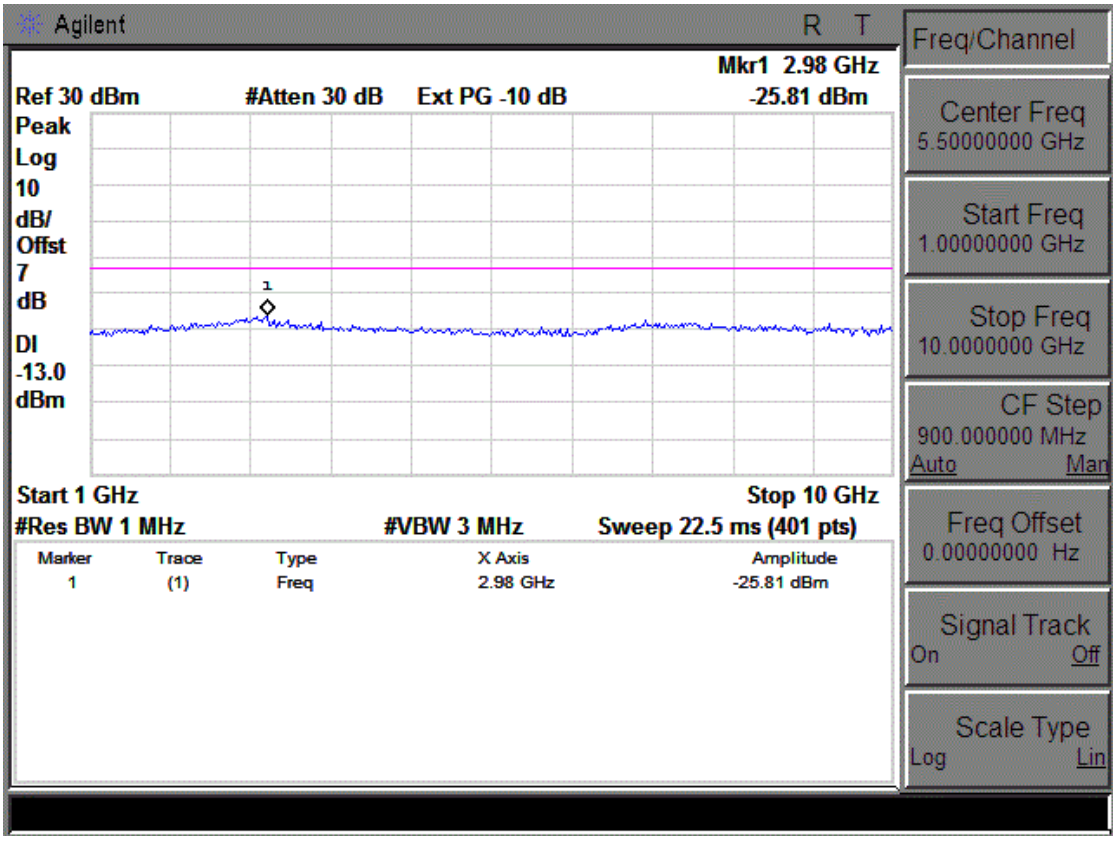
Test Mode: GSM 850 CH 190



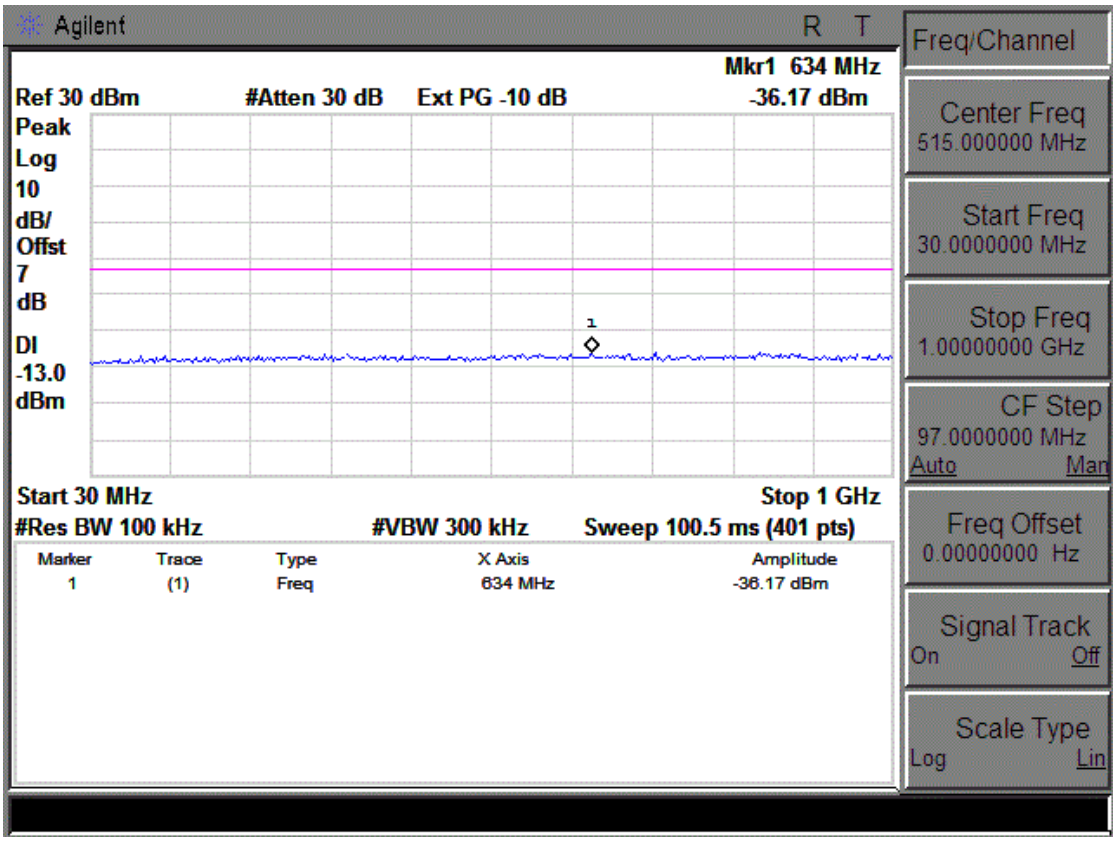


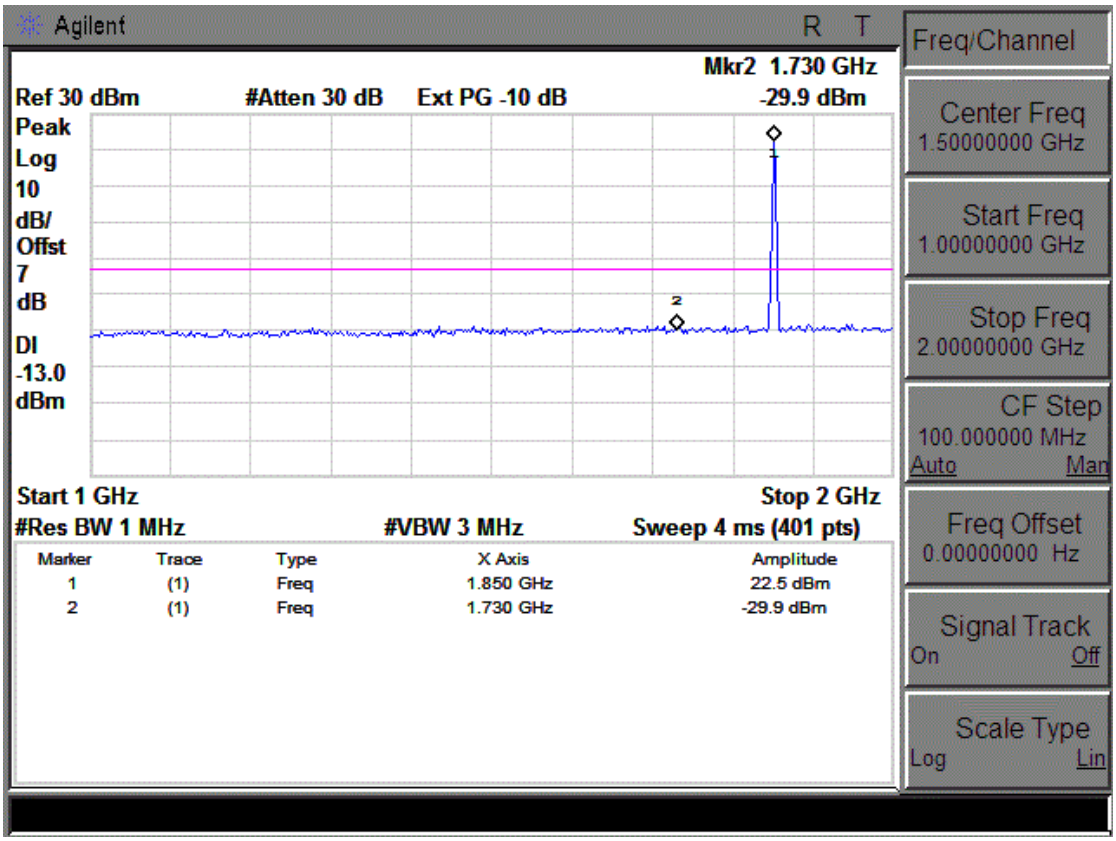
Test Mode: GSM 850 CH 251

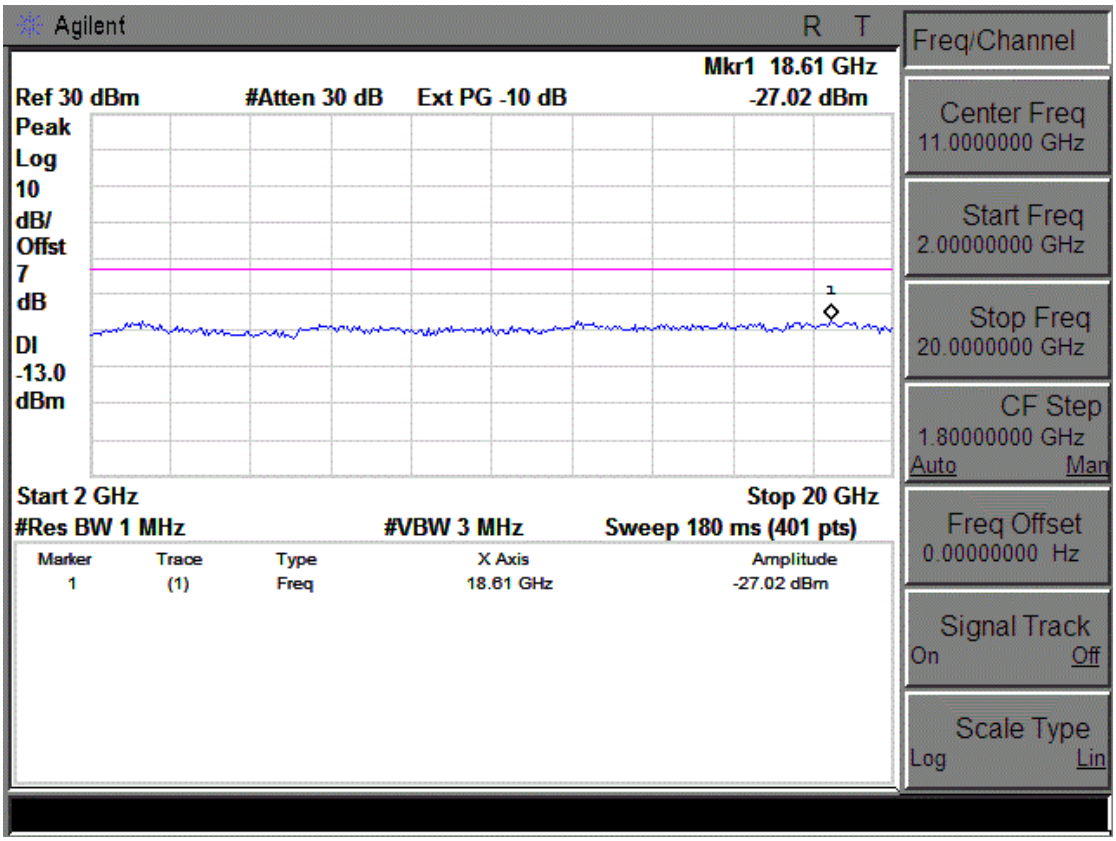




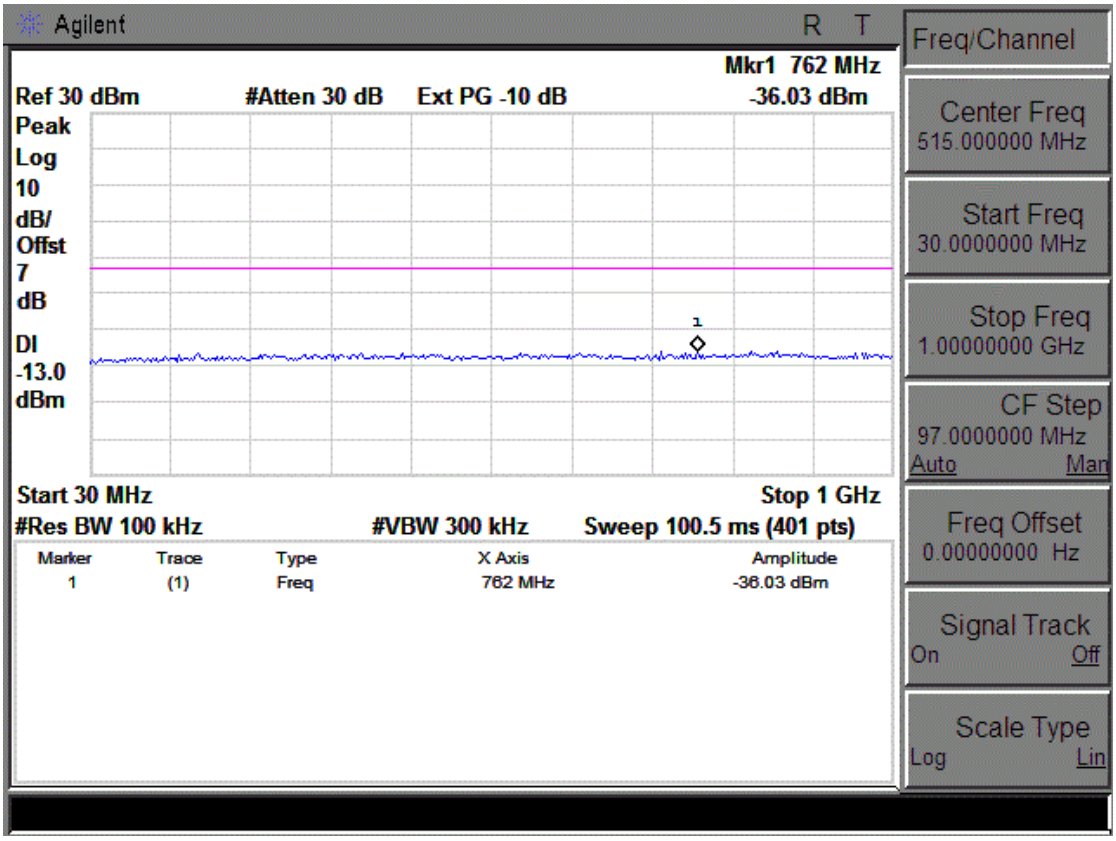
Test Mode: GSM 1900 CH 512

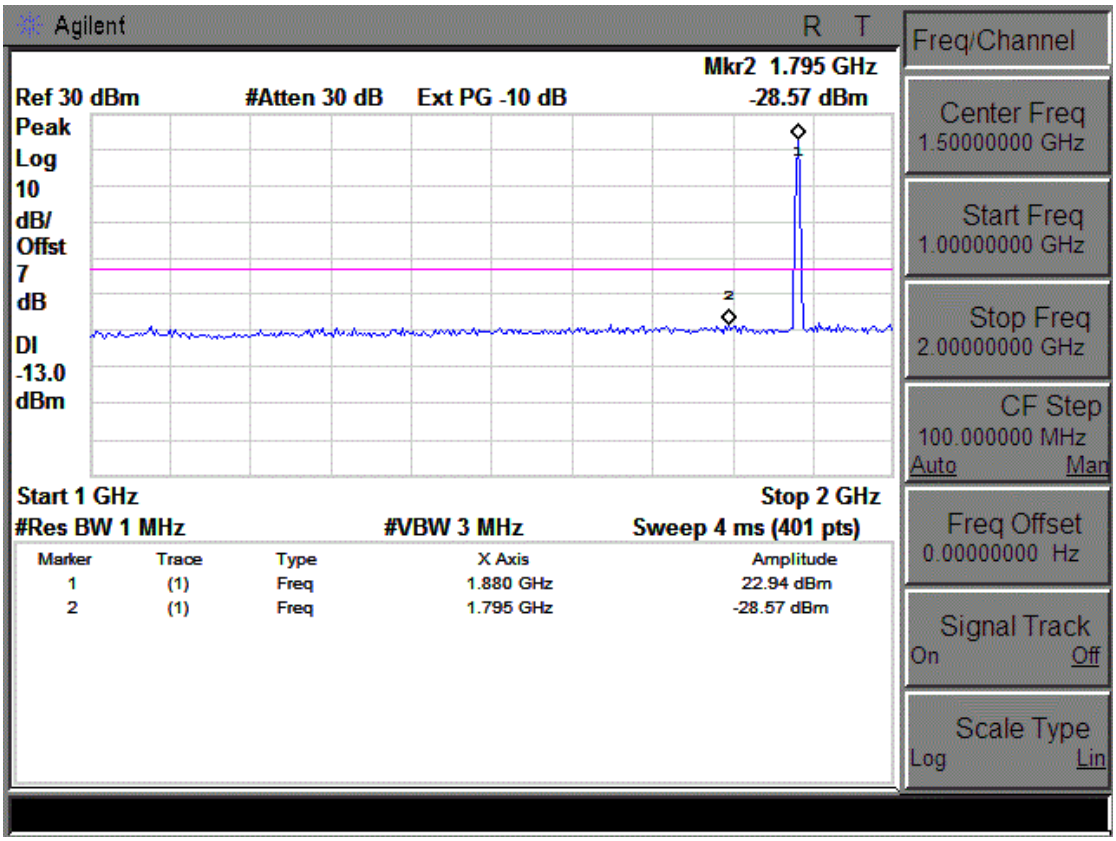


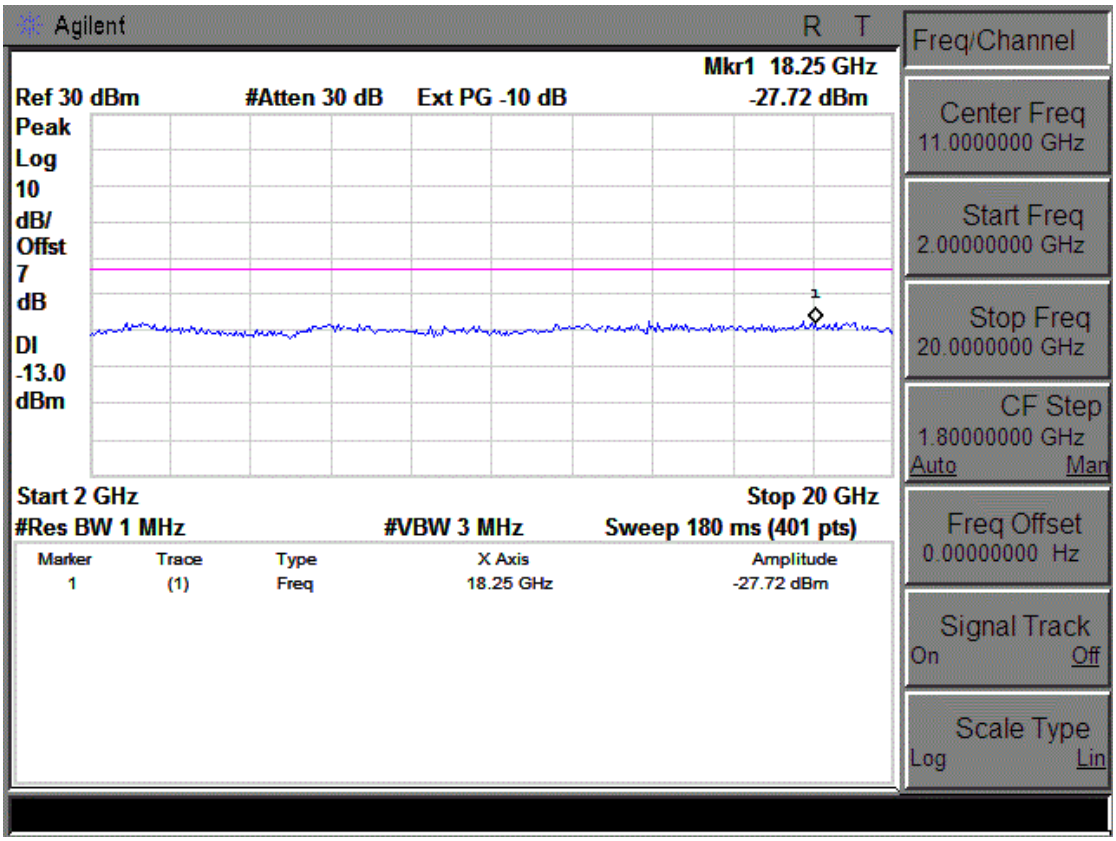




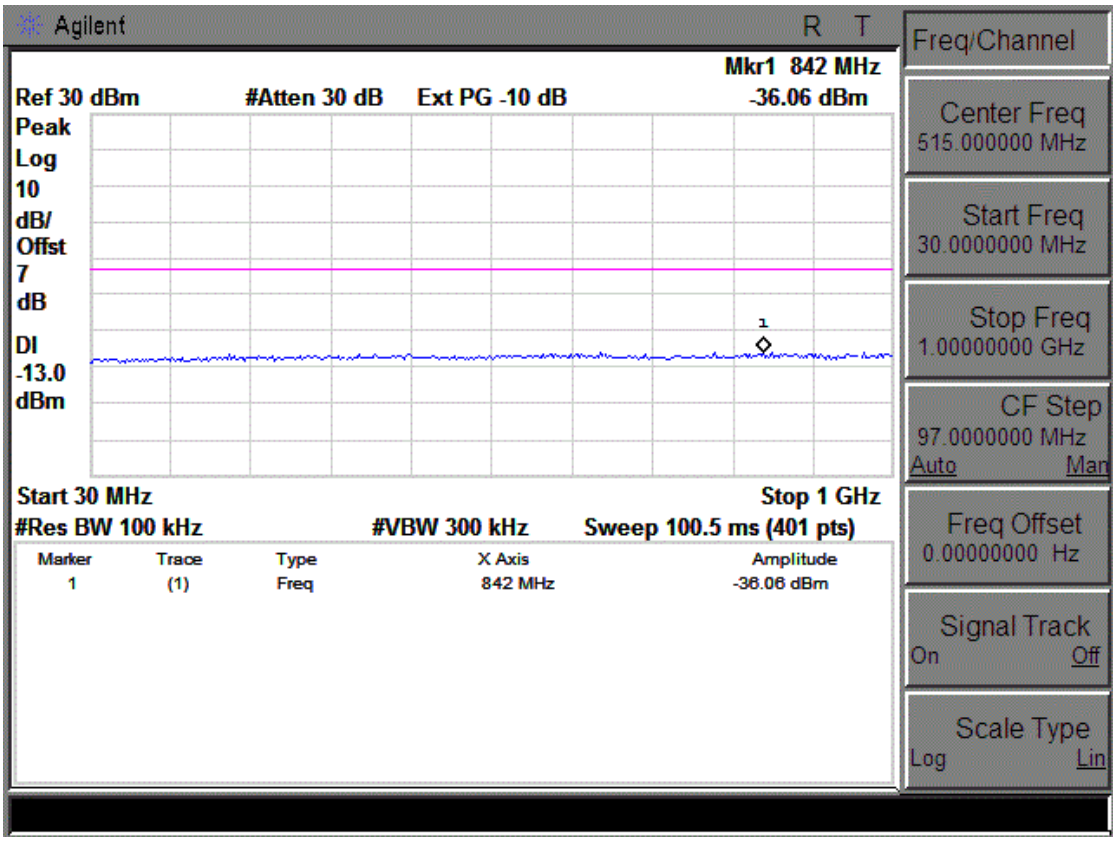
Test Mode: GSM 1900 CH 661

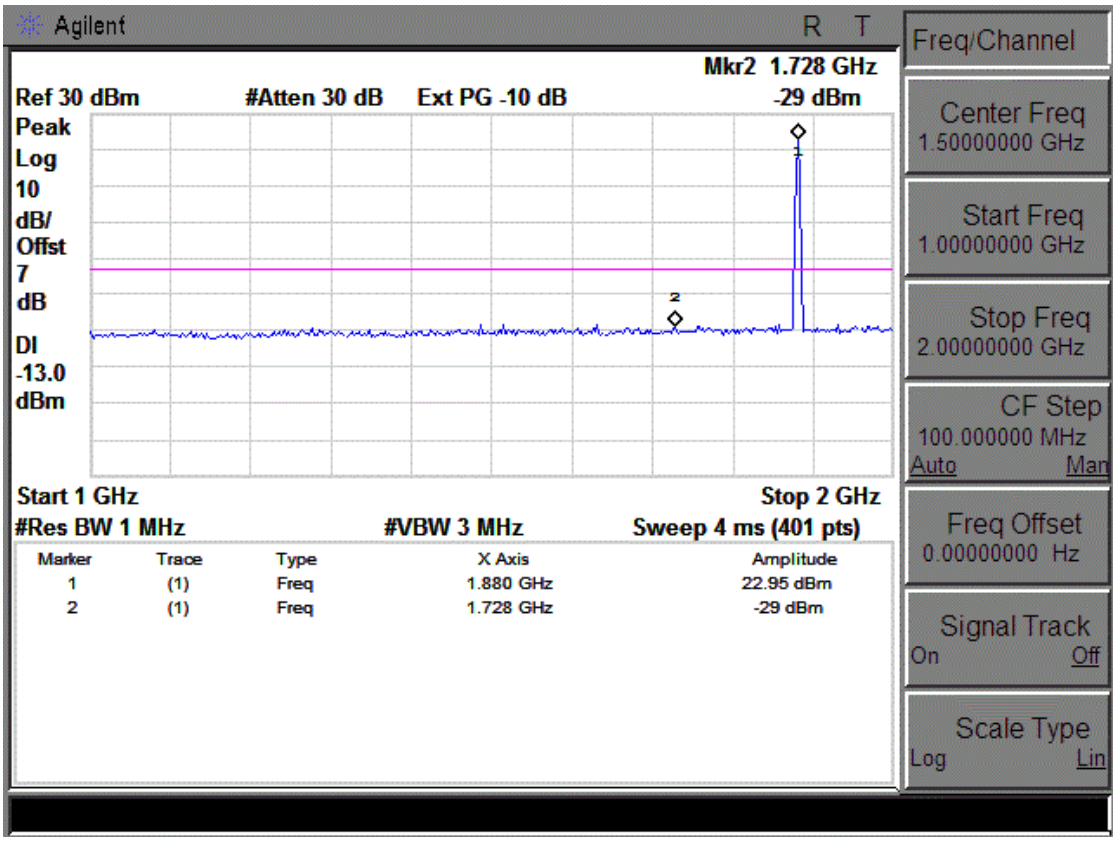


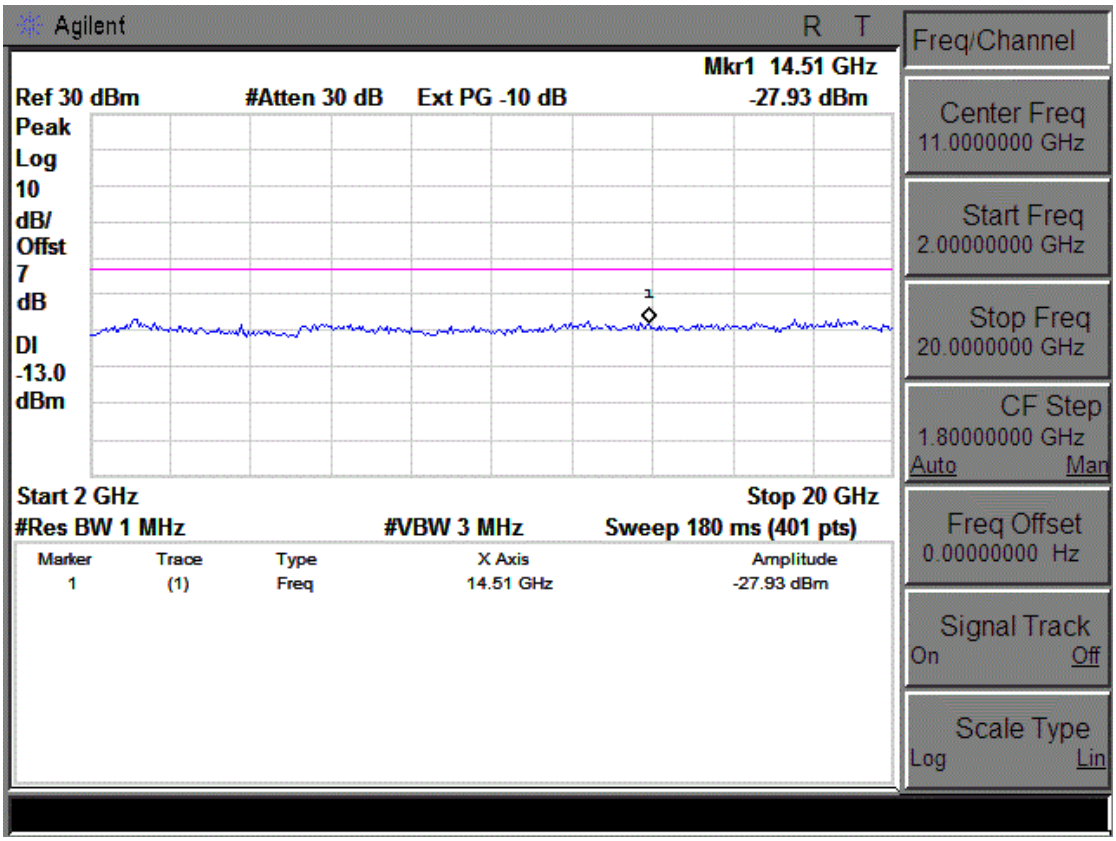

Agilent
R T
Mkr2 1.795 GHz
Ref 30 dBm
#Atten 30 dB
Ext PG -10 dB
-28.57 dBm
Peak
Log
10
dB/
Offst
7
dB
Dl
-13.0
dBm
Start 1 GHz
Stop 2 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 4 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 1.880 GHz 22.94 dBm
2 (1) Freq 1.795 GHz -28.57 dBm
Freq/Channel
Center Freq
1.50000000 GHz
Start Freq
1.00000000 GHz
Stop Freq
2.00000000 GHz
CF Step
100.000000 MHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin


Agilent
R T
Mkr1 18.25 GHz
Ref 30 dBm
#Atten 30 dB
Ext PG -10 dB
-27.72 dBm
Peak
Log
10
dB/
Offst
7
dB
Dl
-13.0
dBm
Start 2 GHz
Stop 20 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 180 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 18.25 GHz -27.72 dBm
Freq/Channel
Center Freq
11.0000000 GHz
Start Freq
2.00000000 GHz
Stop Freq
20.0000000 GHz
CF Step
1.80000000 GHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

Test Mode: GSM 1900 CH 810

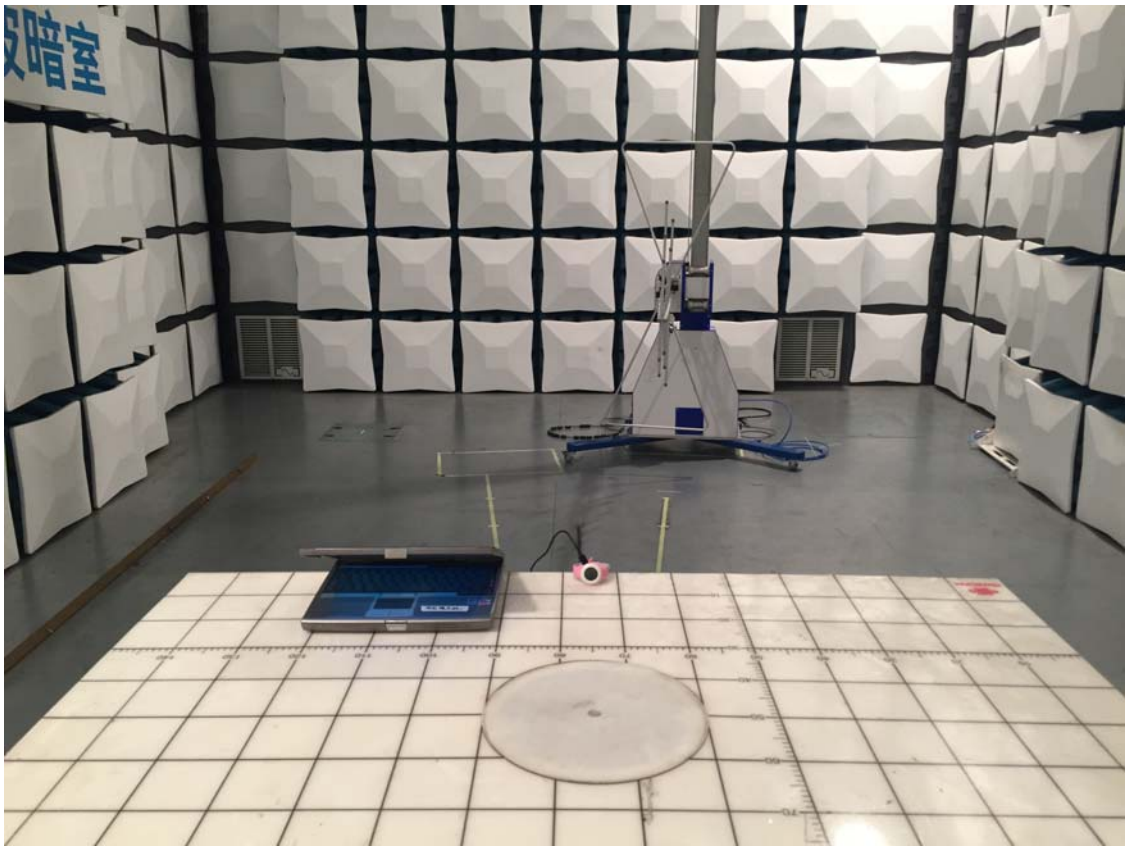





Agilent
R T
Mkr1 14.51 GHz
Ref 30 dBm
#Atten 30 dB
Ext PG -10 dB
-27.93 dBm
Peak
Log
10
dB/
Offst
7
dB
Dl
-13.0
dBm
Start 2 GHz
Stop 20 GHz
#Res BW 1 MHz
#VBW 3 MHz
Sweep 180 ms (401 pts)
Marker Trace Type X Axis Amplitude
1 (1) Freq 14.51 GHz -27.93 dBm
Freq/Channel
Center Freq
11.0000000 GHz
Start Freq
2.00000000 GHz
Stop Freq
20.0000000 GHz
CF Step
1.80000000 GHz
Auto Man
Freq Offset
0.00000000 Hz
Signal Track
On Off
Scale Type
Log Lin

12 PHOTOGRAPH OF TEST

12.1 Radiated Emission



12.2 Conducted Emission