FCC RADIO TEST REPORT
FCC ID: 2ADWUP5047A

Product: Smart phone
Trade Mark: Cosmo Z
Model No.: P5047A
Serial Model: P5047AD
Report No.: NTEK-2017NT04142704F5
Issue Date: 15 May. 2017

Prepared for

ONE DIAMOND ELECTRONICS INC.

1450 Frazee Road, Suite 303, San Diego, California, United States

Prepared by

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TABLE OF CONTENTS

1 TEST RESULT CERTIFICATION 3

2 SUMMARY OF TEST RESULTS 4

3 FACILITIES AND ACCREDITATIONS 5

3.1 FACILITIES 5
3.2 LABORATORY ACCREDITATIONS AND LISTINGS 5
3.3 MEASUREMENT UNCERTAINTY 5

4 GENERAL DESCRIPTION OF EUT 6

5 DESCRIPTION OF TEST MODES 8

6 SETUP OF EQUIPMENT UNDER TEST 9

6.1 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM 9
6.2 SUPPORT EQUIPMENT 10
6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS 11

7 TEST REQUIREMENTS 12

7.1 CONDUCTED EMISSIONS TEST 12
7.2 FIELD STRENGTH OF SPURIOUS RADIATION 21
7.3 EFFECTIVE RADIATED POWER AND EFFECTIVE ISOTROPIC RADIATED POWER 31
7.4 CONDUCTED OUTPUT POWER 35
7.5 FREQUENCY STABILITY 40
7.6 PEAK-TO-AVERAGE RATIO 46
7.7 26DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH 52
7.8 CONDUCTED BAND EDGE 58
7.9 CONDUCTED SPURIOUS EMISSION AT ANTENNA TERMINAL 63

1 TEST RESULT CERTIFICATION

Applicant's name ..... :	ONE DIAMOND ELECTRONICS INC.
Address ..... :	1450 Frazee Road, Suite 303, San Diego, California, United States
Manufacturer's Name ..... :	Shenzhen X&F Technology Co., Ltd.
Address ..... :	Shenzhen, Nanshan District science and Technology Park Wandelai North Block Building 5&6 floor
Product description	
Product name ..... :	Smart phone
Model and/or type reference ..... :	P5047A
Serial Model ..... :	P5047AD

Measurement Procedure Used:

APPLICABLE STANDARDS	
APPLICABLE STANDARD/ TEST PROCEDURE	TEST RESULT
47 CFR Part 2, Part 22H, Part 24E ANSI/ TIA/ EIA-603-D-2010 FCC KDB 971168 D01 Power Meas. License Digital Systems v02v02	Complied

This device described above has been tested by Shenzhen NTEK Testing Technology Co., Ltd., 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.
This report shall not be reproduced except in full, without the written approval of Shenzhen NTEK Testing Technology Co., Ltd., this document may be altered or revised by Shenzhen NTEK Testing Technology Co., Ltd., personnel only, and shall be noted in the revision of the document.
The test results of this report relate only to the tested sample identified in this report.

Date of Test : 14 Apr. 2017 ~ 15 May. 2017

Testing Engineer : Susan Su
(Susan Su)

Technical Manager : Jason chen
(Jason Chen)

Authorized Signatory : Sam . Chen
(Sam Chen)

2 SUMMARY OF TEST RESULTS

FCC Part22, Subpart H/ FCC Part24, Subpart E			
FCC Rule	**Test Item**	**Verdict**	**Remark**
2.1046	Conducted Output Power	PASS	
24.232(d)	Peak-to-Average Ratio	PASS	
2.1049 22.917(b) 24.238(b)	Occupied Bandwidth	PASS	
2.1051 22.917(a) 24.238(a)	Band Edge	PASS	
22.913(a)(2)	Effective Radiated Power	PASS	
24.232(c)	Equivalent Isotropic Radiated Power	PASS	
2.1053 22.917(a) 24.238(a)	Field Strength of Spurious Radiation	PASS	
2.1055 22.355 24.235	Frequency Stability for Temperature & Voltage	PASS	
2.1051 22.917(a) 24.238(a)	Conducted Emission	PASS	

Remark:
1. “N/A” denotes test is not applicable in this Test Report.
2. All test items were verified and recorded according to the standards and without any deviation during the test.
3. No modifications are made to the EUT during all test items.
4. This EUT has also been tested and complied with the requirements of FCC Part 15, Subpart B, recorded in a separate test report.

3 FACILITIES AND ACCREDITATIONS

3.1 FACILITIES

All measurement facilities used to collect the measurement data are located at
1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.
The sites are constructed in conformance with the requirements of ANSI C63.7, ANSI C63.10 and CISPR Publication 22.

3.2 LABORATORY ACCREDITATIONS AND LISTINGS

Site Description

EMC Lab.	:	Accredited by CNAS, 2014.09.04 The Laboratory has been assessed and proved to be in compliance with CNAS-CL01:2006 (identical to ISO/IEC 17025:2005) The Certificate Registration Number is L5516. Accredited by Industry Canada, August 29, 2012 The Certificate Registration Number is 9270A-1. Accredited by FCC, September 6, 2013 The Certificate Registration Number is 238937.
Name of Firm	:	ShenZhen NTEK Testing Technology Co., Ltd
Site Location	:	1/F, Building E, Fenda Science Park, Sanwei Community, Xixiang Street, Bao'an District, Shenzhen 518126 P.R. China.

3.3 MEASUREMENT UNCERTAINTY

The reported uncertainty of measurement, where expended uncertainty U is based on a standard uncertainty multiplied by a coverage factor of k=2, providing a level of confidence of approximately 95 %.

No.	Item	Uncertainty
1	Measuring Uncertainty for a Level of Confidence of 95% (U = 2Uc(y))	2.5dB

4 GENERAL DESCRIPTION OF EUT

Product Feature and Specification	
Equipment	Smart phone
Trade Mark	Cosmo Z
FCC ID	2ADWUP5047A
Model No.	P5047A
Serial Model	P5047AD
Model Difference	All the model are the same circuit and RF module, except the model No.
Operating Frequency	☒GSM850: TX824.2MHz~848.8MHz /RX869.2MHz~893.8MHz; ☒UMTS FDD Band V: TX826.4MHz~846.6MHz /RX871.4MHz~891.6MHz; ☒PCS1900: TX1850.2MHz~1909.8MHz /RX1930.2MHz~1989.8MHz; ☒UMTS FDD Band II: TX1852.4MHz~1907.6MHz /RX1932.4MHz~1987.6MHz;
Modulation	☒GMSK for GSM/GPRS; ☒8PSK for EGPRS(Downlink Only); ☒QPSK for UMTS bands;
Number of Channels	☒124 Channels for GSM850; ☒102 Channels for UMTS FDD Band V; ☒299 Channels for PCS1900; ☒277 Channels for UMTS FDD Band II;
GPRS Class	☒Multi-Class12 ☒Only 4 timeslots are used for GPRS
SIM CARD	The Phone has One SIM Card socket ☒IMEI Code1:350616000000 ☐IMEI Code2:
Antenna Type	FPCB Antenna
Antenna Gain	2 dBi
Power supply	☒DC supply: Battery DC 3.8V/2400mAh or DC 5V from Adapter.
	☒Adapter supply: Model: RD0501000-USBA-18MG Input:100~240V 50~60Hz 0.15mA Output:5V, 1000mA
HW Version	vd9.72.f3
SW Version	B610MB

Note: Based on the application, features, or specification exhibited in User's Manual, the EUT is considered as an ITE/Computing Device. More details of EUT technical specification, please refer to the User's Manual. The High Voltage 4.4V and Low Voltage 3.6V was declared by manufacturer, The EUT couldn't be operate normally with higher or lower voltage.

Revision History

Report No.	Version	Description	Issued Date
NTEK-2017NT04142704F5	Rev.01	Initial issue of report	May 15, 2017

5 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 low channel, the middle channel and the high channel) were chosen for testing on both GPRS850 and GPRS1900 frequency band.
Note: GSM/GPRS 850, GSM/GPRS 1900, HSDPA band II, HSUPA band II, HSDPA band V, HSUPA band V modes have been tested during the test. the worst condition (GSM850, GSM1900 RMC 12.2k) be recorded in the test report if no other modes test data.

Antenna port conducted and radiated test items were performed according to KDB 971168 D01 Power Meas. License Digital Systems v02r02 with maximum output power.
Radiated measurements were performed with rotating EUT in different three orthogonal test planes to find the maximum emission.
Radiated emissions were investigated as following frequency range:
1. 30 MHz to 10th harmonic for GSM850/UMTS FDD Band V.
2. 30 MHz to 10th harmonic for GSM1900/UMTS FDD Band II.
All modes and data rates and positions were investigated.

Test modes are chosen to be reported as the worst case configuration below:

Test Modes		
Band	For Conducted Test Cases	For Radiated Test Cases
GSM 850	GSM Link	GSM Link
GSM 1900	GSM Link	GSM Link
UMTS Band II	RMC 12.2Kbps Link	RMC 12.2Kbps Link
UMTS Band V	RMC 12.2Kbps Link	RMC 12.2Kbps Link

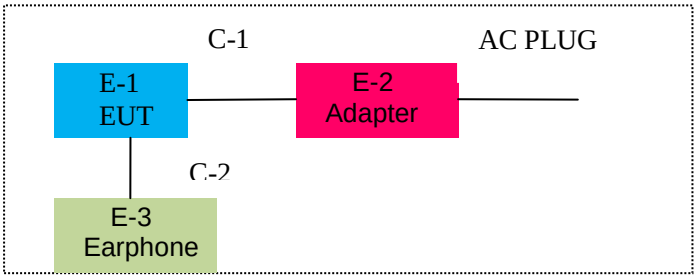
Test Frequency and Channels:

Frequency Band	☒ GSM 850		☒GSM 1900		☒ UMTS Band II		☒UMTS Band V	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)	Channel	Frequency (MHz)
CH_H	251	848.8	810	1909.8	9538	1907.6	4233	846.6
CH_M	190	836.4	661	1880.0	9400	1880.0	4183	836.4
CH_L	128	824.2	512	1850.2	9262	1852.4	4132	826.4

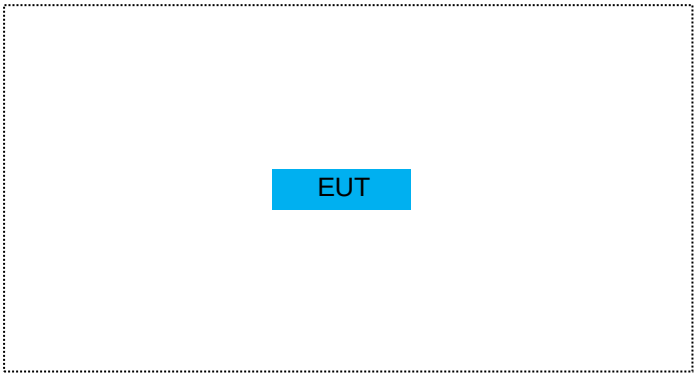
6 SETUP OF EQUIPMENT UNDER TEST

6.1 BLOCK DIAGRAM CONFIGURATION OF TEST SYSTEM

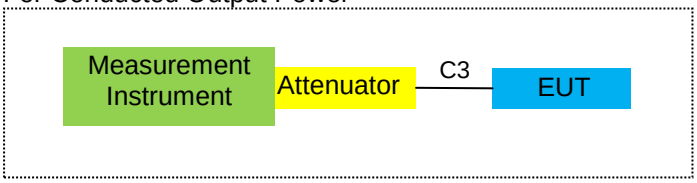
For AC Conducted Emission Mode



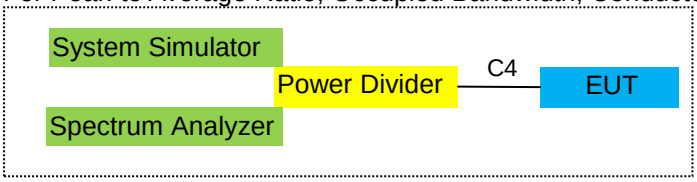
For Radiated Test Cases



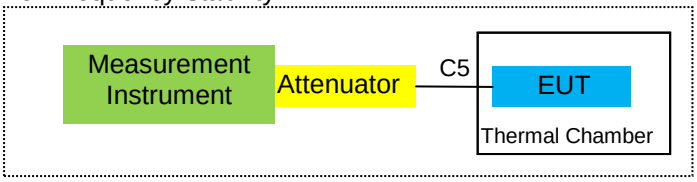
For Conducted Output Power



For Peak-to Average Ratio, Occupied Bandwidth, Conducted Band edge and Conducted Spurious Emission



For Frequency Stability



6.2 SUPPORT EQUIPMENT

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

Item	Equipment	Mfr/Brand	Model/Type No.	FCC ID	Note
E-1	Smart phone	N/A	P5047A	2ADWUP5047A	EUT
E-2	Adapter	N/A	RD0501000-USB A-18MG	N/A	Peripherals
E-3	Earphone	N/A	2688	N/A	Peripherals

Item	Cable Type	Shielded Type	Ferrite Core	Length
C-1	USB Cable	NO	NO	1.2m
C-2	Earphone Cable	NO	NO	0.8m
C-3	RF Cable	NO	NO	0.5m
C-4	RF Cable	NO	NO	0.5m
C-5	RF Cable	NO	NO	0.5m

Notes:

(1) The support equipment was authorized by Declaration of Confirmation.
(2) For detachable type I/O cable should be specified the length in cm in『Length』column.
(3) “YES” is means “shielded” “with core”; “NO” is means “unshielded” “without core”.

6.3 EQUIPMENTS LIST FOR ALL TEST ITEMS

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Last calibration	Calibrated until	Calibration period
1	MXA Signal Analyzer	Agilent	N9020A	MY49100060	2016.11.19	2017.11.18	1 year
2	Test Receiver	R&S	ESPI	101318	2016.06.07	2017.06.06	1 year
3	Bilog Antenna	TESEQ	CBL6111D	31216	2016.07.06	2017.07.05	1 year
4	50Ω Coaxial Switch	Anritsu	MP59B	6200264416	2016.06.07	2017.06.06	1 year
5	Horn Antenna	EM	EM-AH-10180	2011071402	2016.07.06	2017.07.05	1 year
6	Horn Ant	Schwarzbeck	BBHA 9170	9170-181	2016.07.06	2017.07.05	1 year
7	Amplifier	EM	EM-30180	060538	2016.07.06	2017.07.05	1 year
8	Loop Antenna	ARA	PLA-1030/B	1029	2016.06.08	2017.06.07	1 year
9	Power Meter	R&S	NRVS	100696	2016.07.06	2017.07.05	1 year
10	Power Sensor	R&S	URV5-Z4	0395.1619.05	2016.07.06	2017.07.05	1 year
11	Test Cable	N/A	R-01	N/A	2016.07.06	2017.07.05	1 year
12	Test Cable	N/A	R-02	N/A	2016.07.06	2017.07.05	1 year
13	Test Cable	N/A	R-03	N/A	2016.06.29	2017.06.28	1 year
14	Test Receiver	R&S	ESCI	101160	2016.06.06	2017.06.05	1 year
15	LISN	R&S	ENV216	101313	2016.08.24	2017.08.23	1 year
16	LISN	EMCO	3816/2	00042990	2016.08.24	2017.08.23	1 year
17	50Ω Coaxial Switch	Anritsu	MP59B	6200264417	2016.06.07	2017.06.06	1 year
18	Passive Voltage Probe	R&S	ESH2-Z3	100196	2016.06.07	2017.06.06	1 year
19	Test Cable	N/A	C01	N/A	2016.06.08	2017.06.07	1 year
20	Test Cable	N/A	C02	N/A	2016.06.08	2017.06.07	1 year
21	Test Cable	N/A	C03	N/A	2016.06.08	2017.06.07	1 year
22	Attenuator	MCE	24-10-34	BN9258	2016.06.08	2017.06.07	1 year
23	Spectrum Analyzer	agilent	e4440a	us44300399	2016.06.08	2017.06.07	1 year
24	test receiver	R&S	ESCI	a0304218	2016.06.08	2017.06.07	1 year
25	Communication Tester	R&S	CMU200	A0304247	2016.06.08	2017.06.07	1 year
26	Thermal Chamber	Ten Billion	TTC-B3C	TBN-960502	2016.06.08	2017.06.07	1 year

Note: Each piece of equipment is scheduled for calibration once a year.

7 TEST REQUIREMENTS

7.1 CONDUCTED EMISSIONS TEST

7.1.1 Applicable Standard

According to FCC KDB 971168 D01 v02r02 Section 6.0

7.1.2 Conformance Limit

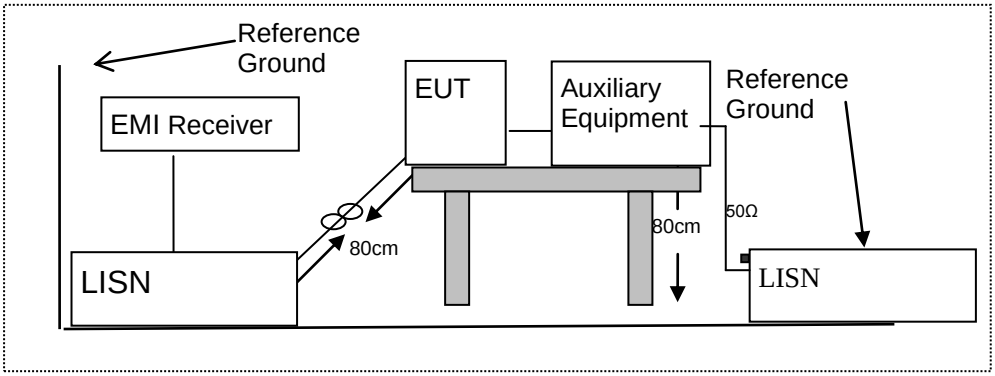
Frequency(MHz)	Conducted Emission Limit	
	Quasi-peak	Average
0.15-0.5	66-56*	56-46*
0.5-5.0	56	46
5.0-30.0	60	50

Note: 1. *Decreases with the logarithm of the frequency
2. The lower limit shall apply at the transition frequencies
3. The limit decreases in line with the logarithm of the frequency in the range of 0.15 to 0.50MHz.

7.1.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.1.4 Test Configuration



7.1.5 Test Procedure

According to the requirements in Section 13.1.4.1 of ANSI C63.10-2013 Conducted emissions the EUT measured in the frequency range between 0.15 MHz and 30 MHz using CISPR Quasi-Peak and average detector mode.

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room.
2. The EUT was placed on a table which is 0.8m above ground plane.
3. Connect EUT to the power mains through a line impedance stabilization network (LISN). All other support equipments powered from additional LISN(s). The LISN provide 50 Ohm/ 50uH of coupling impedance for the measuring instrument.
4. Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40cm long.
5. I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.
6. LISN at least 80 cm from nearest part of EUT chassis.
7. The frequency range from 150KHz to 30MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth(IF bandwidth=9KHz) with Maximum Hold Mode
9. For the actual test configuration, please refer to the related Item –EUT Test Photos.

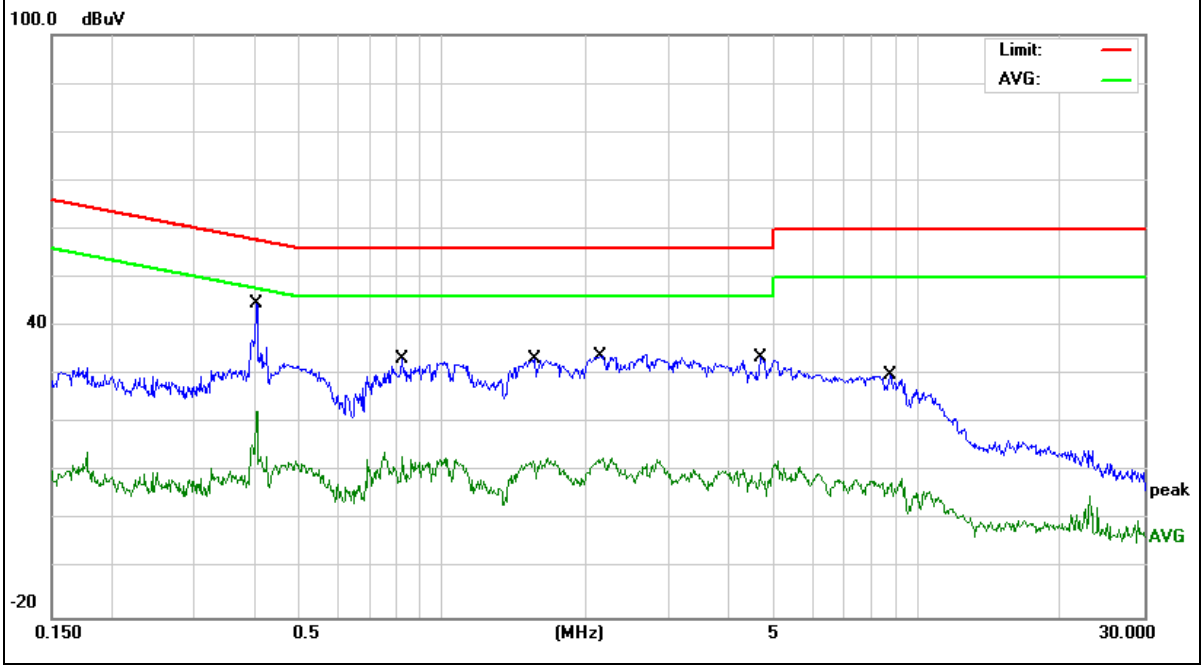
7.1.6 Test Results

EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase ：	L
Test Voltage ：	DC 5.0V from Adapter AC 120V/60Hz	Test Mode：	GSM Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.406	44.43	0.15	44.58	57.73	-13.15	QP
0.406	22.32	0.15	22.47	47.73	-25.26	AVG
0.8177	33.14	0.2	33.34	56	-22.66	QP
0.8177	13.05	0.2	13.25	46	-32.75	AVG
1.566	33.03	0.19	33.22	56	-22.78	QP
1.566	11.52	0.19	11.71	46	-34.29	AVG
2.1459	33.56	0.17	33.73	56	-22.27	QP
2.1459	11.65	0.17	11.82	46	-34.18	AVG
4.6619	33.25	0.24	33.49	56	-22.51	QP
4.6619	8.29	0.24	8.53	46	-37.47	AVG
8.7378	29.64	0.28	29.92	60	-30.08	QP
8.7378	7.31	0.28	7.59	50	-42.41	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

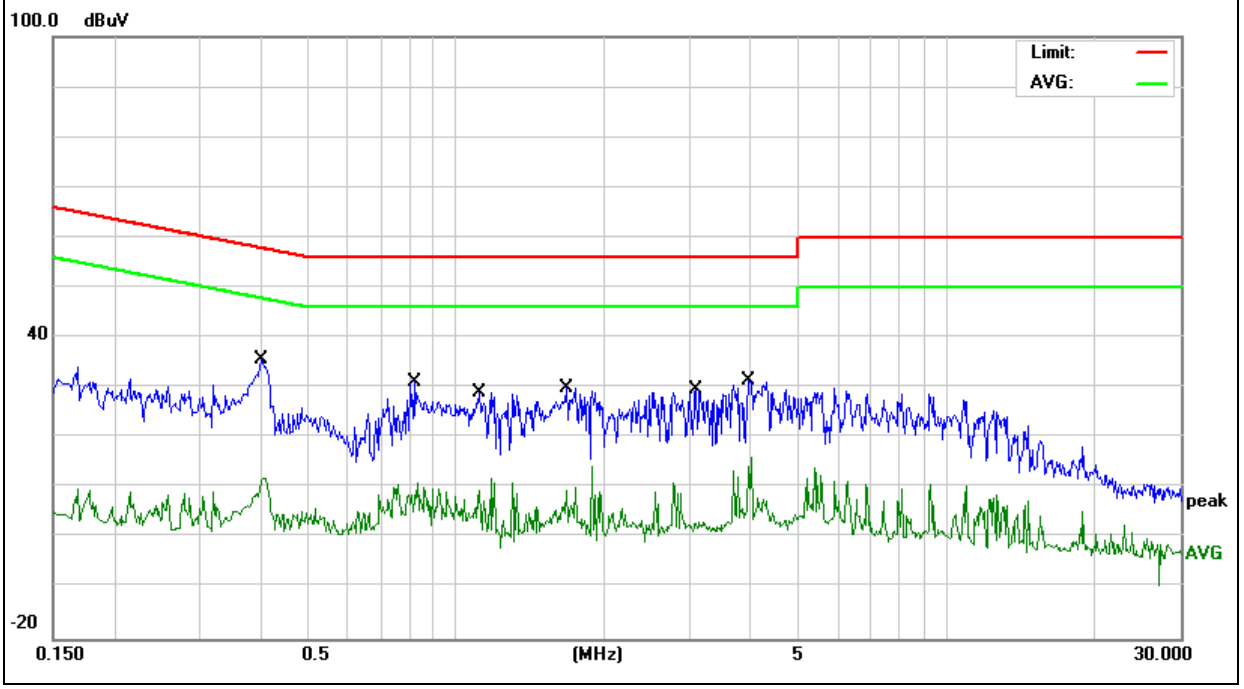


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	N
Test Voltage ：	DC 5.0V from Adapter AC 120V/60Hz	Test Mode：	GSM Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.398	35.63	0.16	35.79	57.89	-22.1	QP
0.398	9.5	0.16	9.66	47.89	-38.23	AVG
0.8178	30.97	0.23	31.2	56	-24.8	QP
0.8178	5.03	0.23	5.26	46	-40.74	AVG
1.114	28.87	0.23	29.1	56	-26.9	QP
1.114	4.52	0.23	4.75	46	-41.25	AVG
1.6738	29.88	0.22	30.1	56	-25.9	QP
1.6738	9.47	0.22	9.69	46	-36.31	AVG
3.0819	29.4	0.21	29.61	56	-26.39	QP
3.0819	2.87	0.21	3.08	46	-42.92	AVG
3.962	31.28	0.22	31.5	56	-24.5	QP
3.962	10.43	0.22	10.65	46	-35.35	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

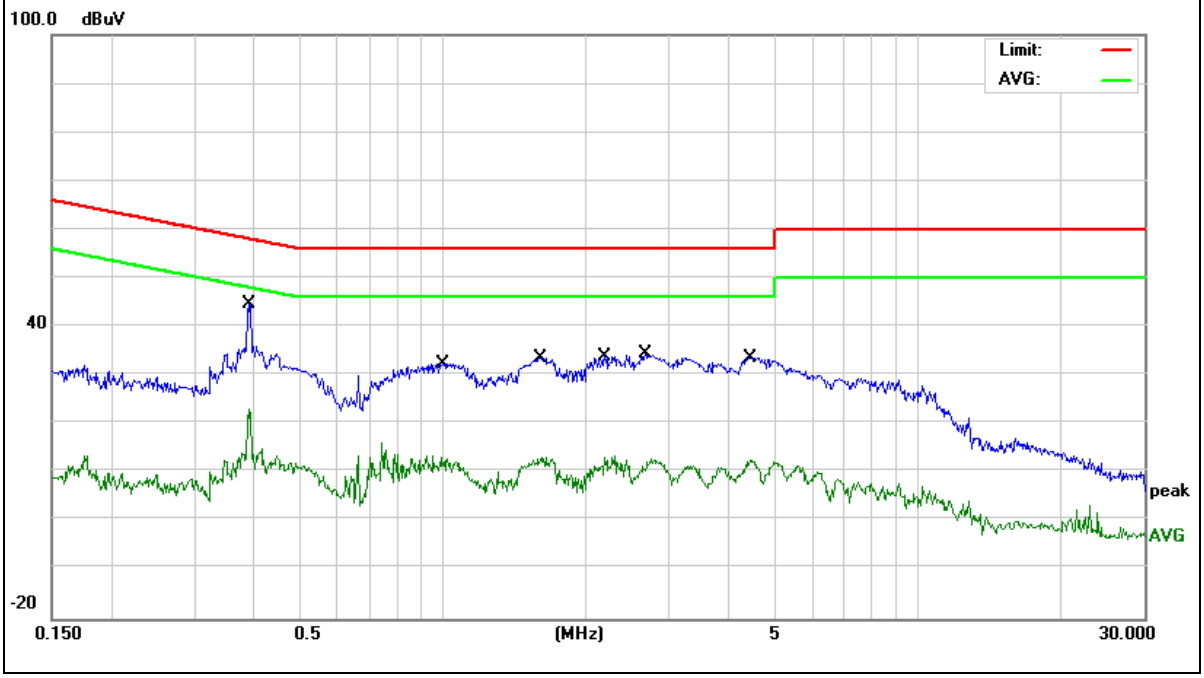


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	L
Test Voltage ：	DC 5.0V from Adapter AC 240V/60Hz	Test Mode：	GSM Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.3899	44.46	0.14	44.6	58.06	-13.46	QP
0.3899	21.04	0.14	21.18	48.06	-26.88	AVG
1.002	32.24	0.2	32.44	56	-23.56	QP
1.002	11.33	0.2	11.53	46	-34.47	AVG
1.6019	33.4	0.19	33.59	56	-22.41	QP
1.6019	12.66	0.19	12.85	46	-33.15	AVG
2.1899	33.83	0.17	34	56	-22	QP
2.1899	13	0.17	13.17	46	-32.83	AVG
2.6659	34.11	0.19	34.3	56	-21.7	QP
2.6659	10.2	0.19	10.39	46	-35.61	AVG
4.4419	33.44	0.23	33.67	56	-22.33	QP
4.4419	12.39	0.23	12.62	46	-33.38	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

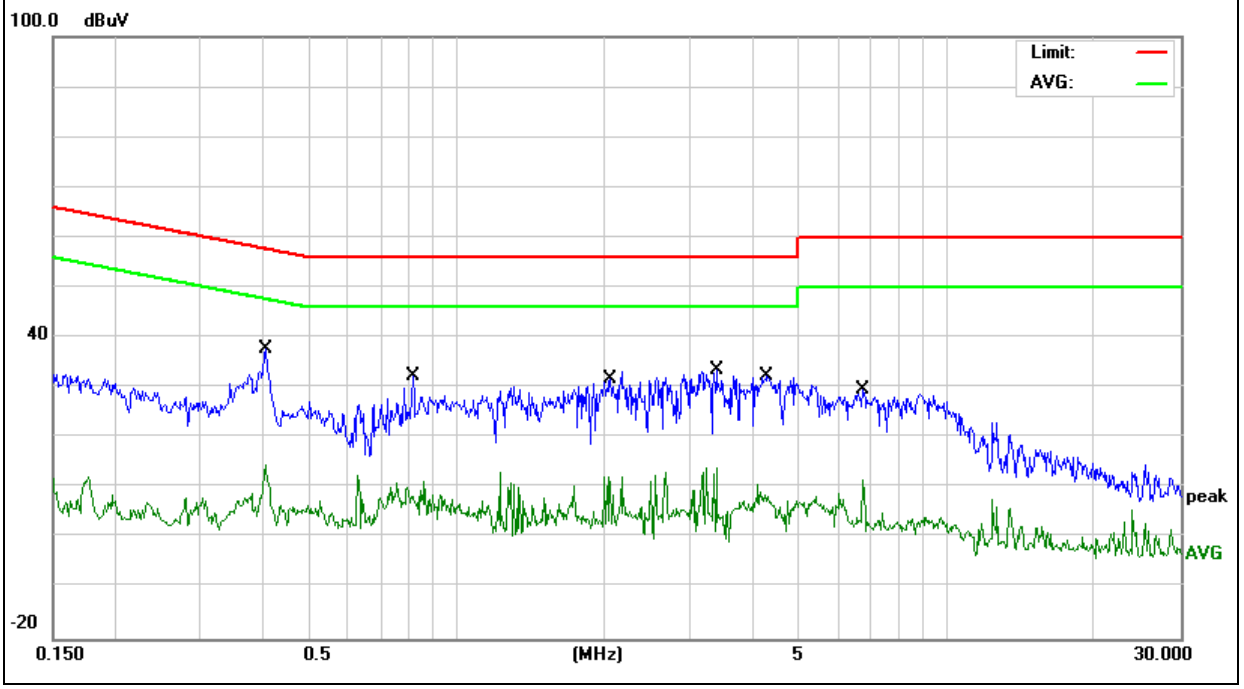


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	N
Test Voltage ：	DC 5.0V from Adapter AC 240V/60Hz	Test Mode：	GSM Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.4097	37.73	0.17	37.9	57.65	-19.75	QP
0.4097	14.01	0.17	14.18	47.65	-33.47	AVG
0.8137	32.19	0.23	32.42	56	-23.58	QP
0.8137	7.98	0.23	8.21	46	-37.79	AVG
2.0619	31.6	0.2	31.8	56	-24.2	QP
2.0619	10.76	0.2	10.96	46	-35.04	AVG
3.394	33.39	0.21	33.6	56	-22.4	QP
3.394	1.38	0.21	1.59	46	-44.41	AVG
4.2938	32.01	0.22	32.23	56	-23.77	QP
4.2938	7.92	0.22	8.14	46	-37.86	AVG
6.7538	29.45	0.25	29.7	60	-30.3	QP
6.7538	11.27	0.25	11.52	50	-38.48	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

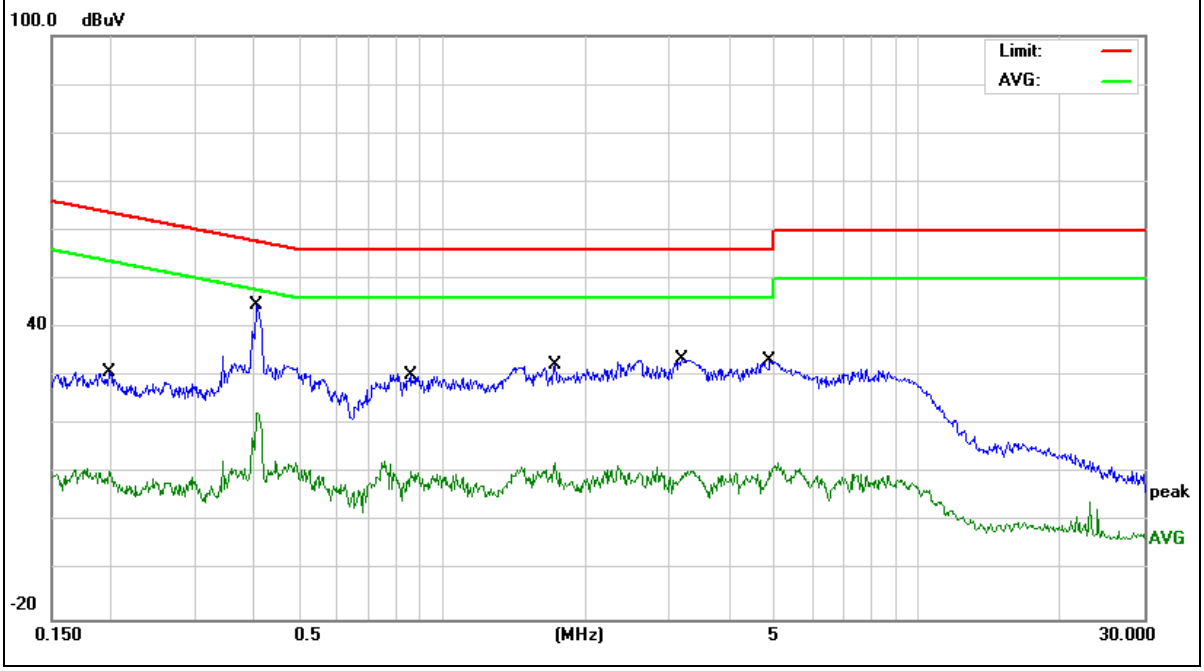


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	L
Test Voltage ：	DC 5.0V from Adapter AC 120V/60Hz	Test Mode：	UMTS Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.198	30.62	0.13	30.75	63.69	-32.94	QP
0.198	10.19	0.13	10.32	53.69	-43.37	AVG
0.406	44.43	0.15	44.58	57.73	-13.15	QP
0.406	22.38	0.15	22.53	47.73	-25.2	AVG
0.8538	30.1	0.2	30.3	56	-25.7	QP
0.8538	9.65	0.2	9.85	46	-36.15	AVG
1.7177	32.14	0.18	32.32	56	-23.68	QP
1.7177	11.7	0.18	11.88	46	-34.12	AVG
3.2058	33.36	0.21	33.57	56	-22.43	QP
3.2058	8.61	0.21	8.82	46	-37.18	AVG
4.8978	32.88	0.24	33.12	56	-22.88	QP
4.8978	10.26	0.24	10.5	46	-35.5	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

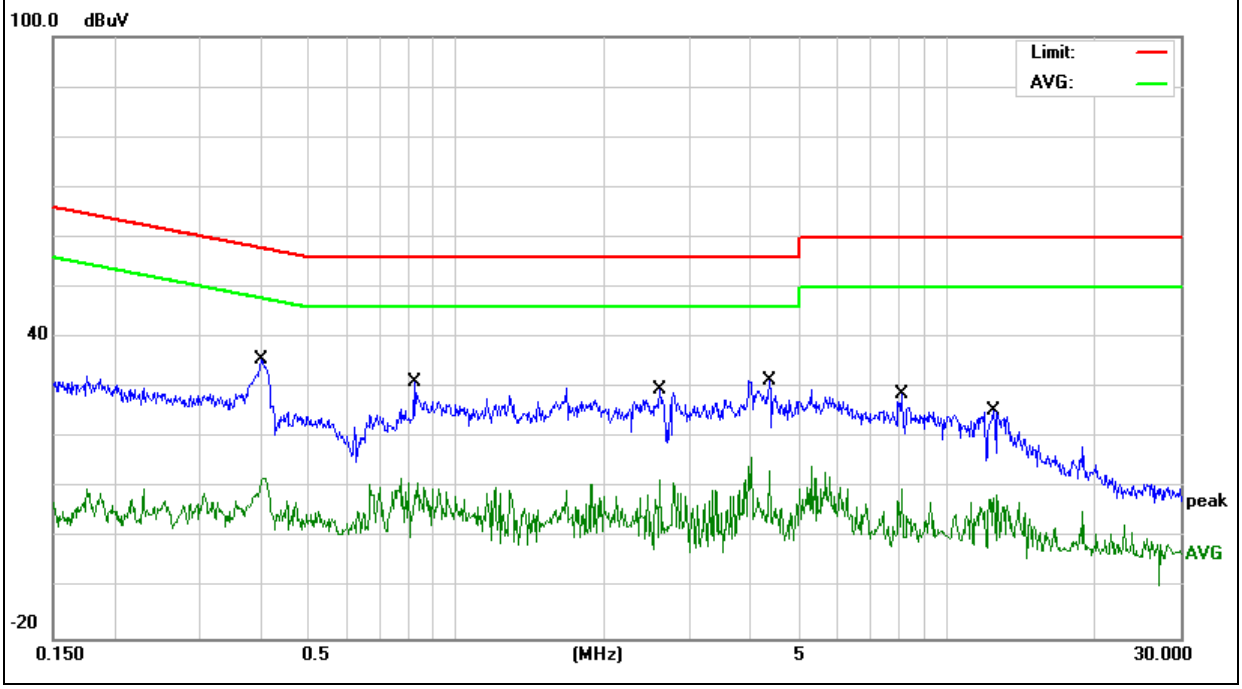


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	N
Test Voltage ：	DC 5.0V from Adapter AC 120V/60Hz	Test Mode：	UMTS Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.398	35.63	0.16	35.79	57.89	-22.1	QP
0.398	9.5	0.16	9.66	47.89	-38.23	AVG
0.8176	30.97	0.23	31.2	56	-24.8	QP
0.8176	7.93	0.23	8.16	46	-37.84	AVG
2.6059	29.59	0.21	29.8	56	-26.2	QP
2.6059	1.02	0.21	1.23	46	-44.77	AVG
4.3578	31.38	0.22	31.6	56	-24.4	QP
4.3578	13.3	0.22	13.52	46	-32.48	AVG
8.0859	28.54	0.26	28.8	60	-31.2	QP
8.0859	-0.14	0.26	0.12	50	-49.88	AVG
12.5014	25.32	0.28	25.6	60	-34.4	QP
12.5014	7.7	0.28	7.98	50	-42.02	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

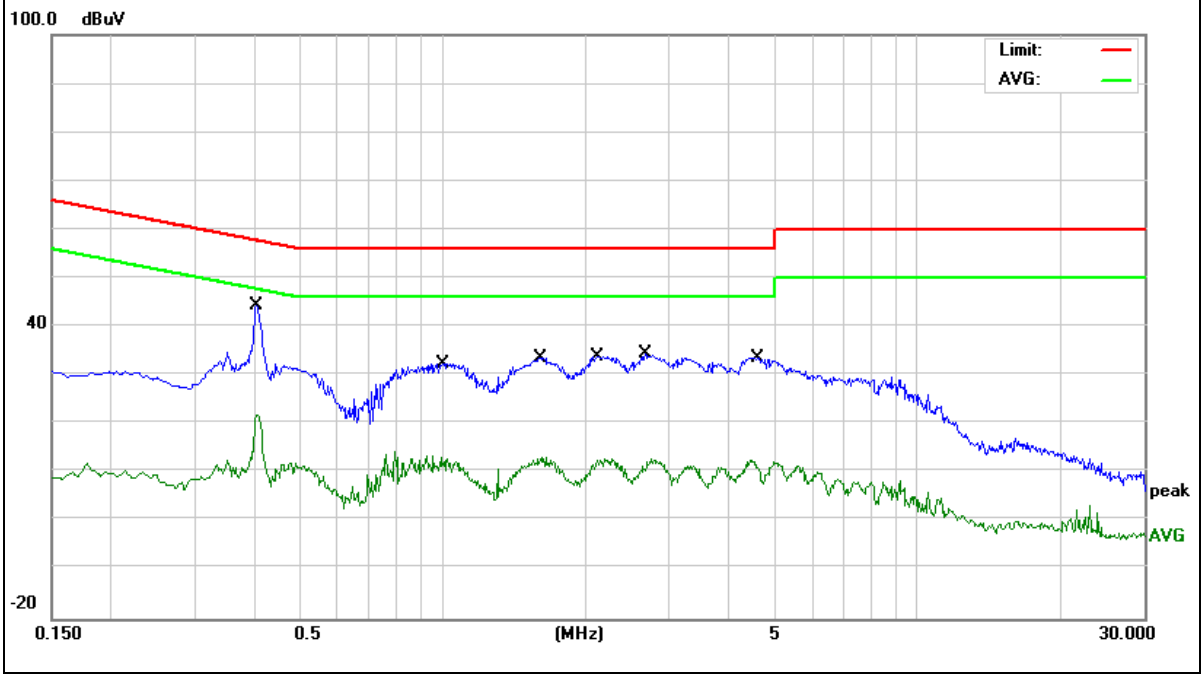


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	L
Test Voltage ：	DC 5.0V from Adapter AC 240V/60Hz	Test Mode：	UMTS Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.406	44.34	0.15	44.49	57.73	-13.24	QP
0.406	21.83	0.15	21.98	47.73	-25.75	AVG
1.002	32.24	0.2	32.44	56	-23.56	QP
1.002	11.33	0.2	11.53	46	-34.47	AVG
1.6019	33.4	0.19	33.59	56	-22.41	QP
1.6019	12.66	0.19	12.85	46	-33.15	AVG
2.1179	33.65	0.17	33.82	56	-22.18	QP
2.1179	12.27	0.17	12.44	46	-33.56	AVG
2.6659	34.11	0.19	34.3	56	-21.7	QP
2.6659	10.2	0.19	10.39	46	-35.61	AVG
4.6177	33.43	0.24	33.67	56	-22.33	QP
4.6177	10.96	0.24	11.2	46	-34.8	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.

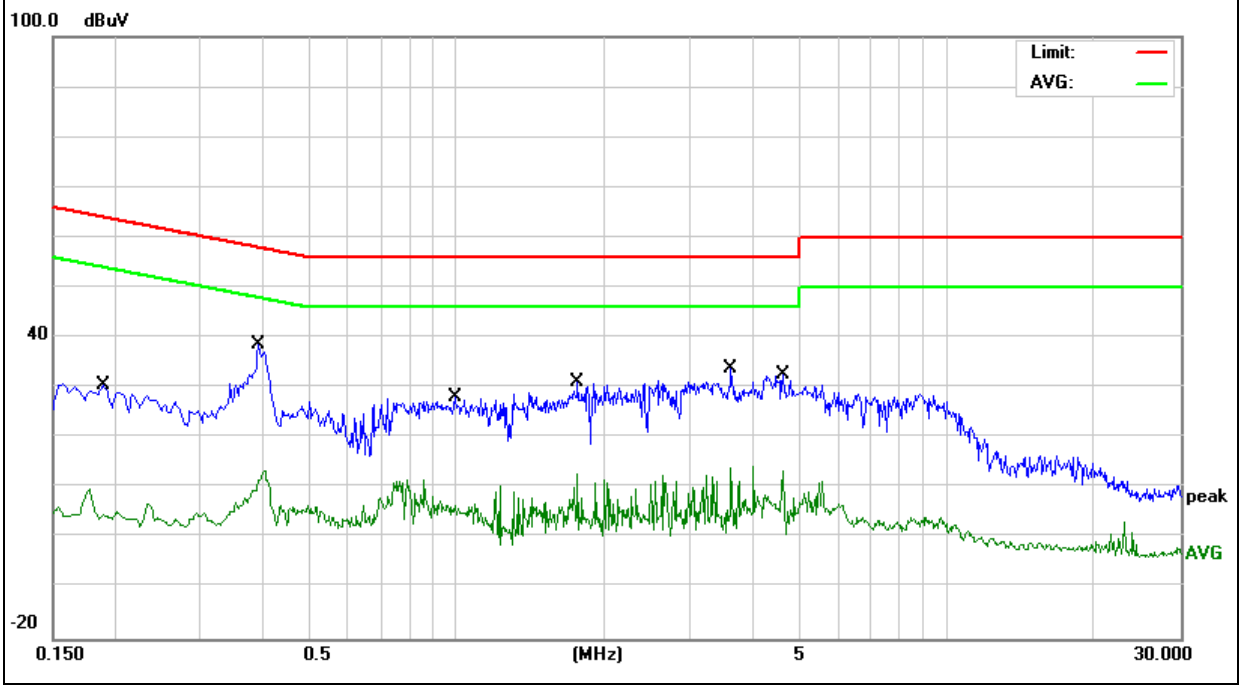


EUT：	Smart phone	Model Name ：	P5047A
Temperature：	26 ℃	Relative Humidity：	54%
Pressure：	1010hPa	Phase :	N
Test Voltage ：	DC 5.0V from Adapter AC 240V/60Hz	Test Mode：	UMTS Link

Frequency	Reading Level	Correct Factor	Measure-ment	Limits	Margin	Remark
(MHz)	(dBμV)	(dB)	(dBμV)	(dBμV)	(dB)	
0.19	30.35	0.12	30.47	64.03	-33.56	QP
0.19	4.56	0.12	4.68	54.03	-49.35	AVG
0.394	38.43	0.16	38.59	57.98	-19.39	QP
0.394	11.55	0.16	11.71	47.98	-36.27	AVG
0.9939	27.92	0.24	28.16	56	-27.84	QP
0.9939	6.26	0.24	6.5	46	-39.5	AVG
1.766	30.99	0.21	31.2	56	-24.8	QP
1.766	12.63	0.21	12.84	46	-33.16	AVG
3.6299	33.58	0.22	33.8	56	-22.2	QP
3.6299	13.73	0.22	13.95	46	-32.05	AVG
4.6299	32.37	0.23	32.6	56	-23.4	QP
4.6299	13.3	0.23	13.53	46	-32.47	AVG

Remark:

1. All readings are Quasi-Peak and Average values.
2. Factor = Insertion Loss + Cable Loss.



7.2 FIELD STRENGTH OF SPURIOUS RADIATION

7.2.1 Applicable Standard

According to FCC KDB 971168 D01 v02r02 Section 5.8 and ANSI/ TIA-603-D-2010 Section 2.2.12

7.2.2 Conformance Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitter power (P) by a factor of at least 43 + 10 log (P) dB. The spectrum is scanned from 30 MHz up to a frequency including its 10th harmonic.

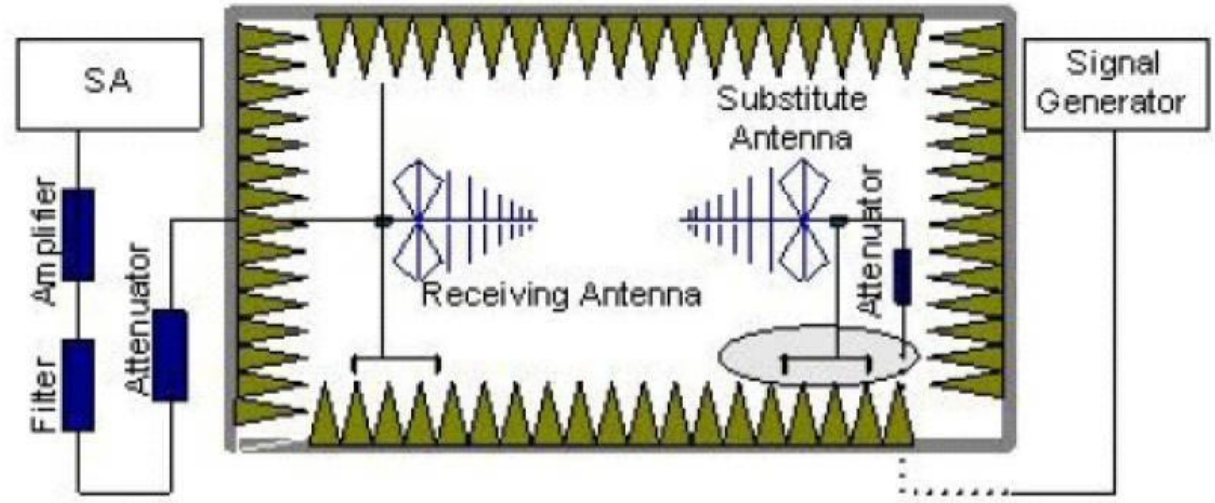
7.2.3 Measuring Instruments

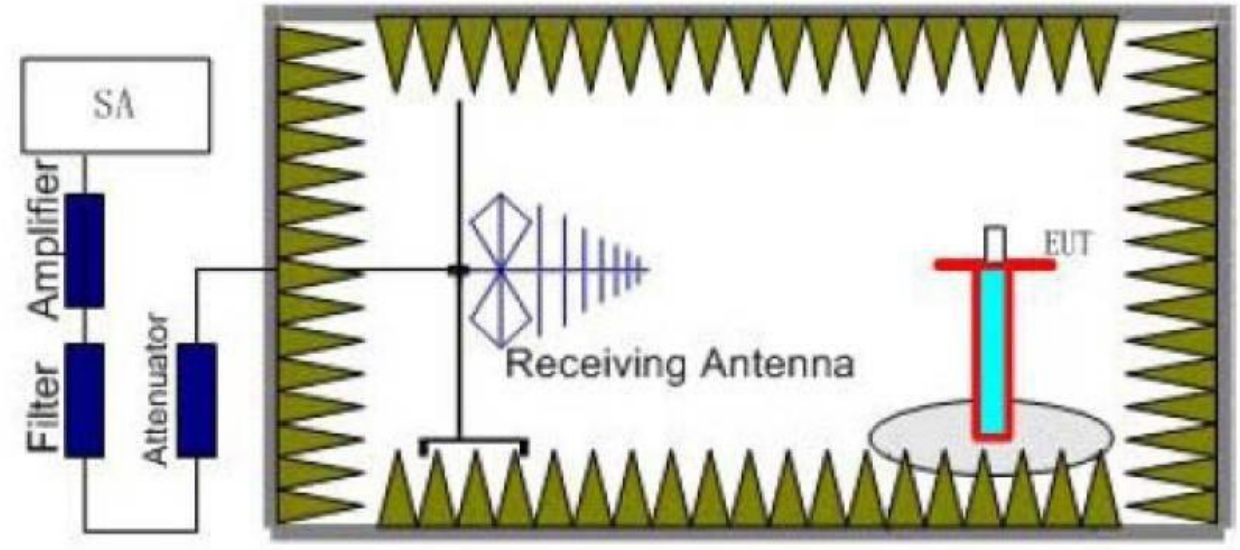
The Measuring equipment is listed in the section 6.3 of this test report.

7.2.4 Test Configuration

According to the TIA/EIA 603D:2010 test method, The Receiver or Spectrum was scanned from 9 KHz to the 10th harmonic of the highest frequency generated within the equipment, which is the transmitted carrier that can be as high as 1910 MHz The resolution bandwidth is set as outlined in Part 24.238, Part 22.917. The spectrum is scanned with the mobile station transmitting at carrier frequencies that pertain to low, mid and high channels of WCDMA Band II / WCDMA Band V / GSM 850 / GSM 1900.

TEST CONFIGURATION





7.2.5 Test Procedure

1. EUT was placed on a 1.50 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 EUT for emission measurements. The height of receiving antenna is 1.50 meter. Detected emissions were maximized at each frequency by rotating the EUT through 360° and adjusting the receiving antenna polarization. The radiated emission measurements of all transmit frequencies in three channels (High, Middle, Low) were measured with peak detector.
2. A log-periodic antenna or double-ridged waveguide horn antenna shall be substituted in place of the EUT. The log-periodic antenna will be driven by a signal generator and the level will be adjusted till the same power value on the spectrum analyzer or receiver. The level of the spurious emissions can be calculated through the level of the signal generator, cable loss, the gain of the substitution antenna and the reading of the spectrum analyzer or receiver.
3. The EUT is then put into continuously transmitting mode at its maximum power level during the test.Set Test Receiver or Spectrum RBW=1MHz,VBW=3MHz, And the maximum value of the receiver should be recorded as (P_r).
4. The EUT shall be replaced by a substitution antenna. In the chamber, an substitution antenna for the frequency band of interest is placed at the reference point of the chamber. An RF Signal source for the frequency band of interest is connected to the substitution antenna with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A power (P_{Mea}) is applied to the input of the substitution antenna, and adjust the level of the signal generator output until the value of the receiver reach the previously recorded (P_r). The power of signal source (P_{Mea}) is recorded. The test should be performed by rotating the test item and adjusting the receiving antenna polarization.
5. A amplifier should be connected to the Signal Source output port. And the cable should be connect between the Amplifier and the Substitution Antenna. The cable loss (P_{cl}) ,the Substitution Antenna Gain (G_a) and the Amplifier Gain (P_{Ag}) should be recorded after test.
   The measurement results are obtained as described below:
   Power(EIRP)=P_{Mea}- P_{Ag} - P_{cl} + G_a
6. This value is EIRP since the measurement is calibrated using an antenna of known gain (2.15 dBi) and known input power.
7. ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.

7.2.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS850//EGPRS850/GSM/GPRS1900/ EGPRS1900 UMTS band II/ UMTS band V	Test By:	Susan Su

■ Radiated Spurious Emission

GSM850_ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1648.4	-41.39	5.98	3	9.11	-38.26	-13	-25.26	H
2472.6	-47.18	6.84	3	9.56	-44.46	-13	-31.46	H
1648.4	-37.28	5.98	3	9.11	-34.15	-13	-21.15	V
2472.6	-42.52	6.84	3	9.56	-39.80	-13	-26.80	V
GSM850_ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1673.2	-39.14	5.98	3	9.11	-36.01	-13	-23.01	H
2509.8	-42.39	6.84	3	9.56	-39.67	-13	-26.67	H
1673.2	-35.16	5.98	3	9.11	-32.03	-13	-19.03	V
2509.8	-37.88	6.84	3	9.56	-35.16	-13	-22.16	V
GSM850_ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1697.6	-46.01	5.98	3	9.11	-42.88	-13	-29.88	H
2546.4	-50.07	6.84	3	9.56	-47.35	-13	-34.35	H
1697.6	-41.30	5.98	3	9.11	-38.17	-13	-25.17	V
2546.4	-45.54	6.84	3	9.56	-42.82	-13	-29.82	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

GPRS850_ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1648.4	-48.75	3.86	3	8.56	-44.05	-13	-31.05	H
2472.6	-53.14	4.29	3	6.98	-50.45	-13	-37.45	H
1648.4	-44.13	3.86	3	8.56	-39.43	-13	-26.43	V
2472.6	-50.82	4.29	3	6.98	-48.13	-13	-35.13	V
GPRS850_ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1673.2	-46.50	3.9	3	8.58	-41.82	-13	-28.82	H
2509.8	-52.52	4.32	3	6.8	-50.04	-13	-37.04	H
1673.2	-42.40	3.9	3	8.58	-37.72	-13	-24.72	V
2509.8	-48.38	4.32	3	6.8	-45.90	-13	-32.90	V
GPRS850_ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1697.6	-53.93	3.91	3	9.06	-48.78	-13	-35.78	H
2546.4	-55.24	4.32	3	6.65	-52.91	-13	-39.91	H
1697.6	-51.66	3.91	3	9.06	-46.51	-13	-33.51	V
2546.4	-52.19	4.32	3	6.65	-49.86	-13	-36.86	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

EGPRS850_ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1648.4	-52.30	3.86	3	8.56	-47.60	-13	-34.60	H
2472.6	-52.88	4.29	3	6.98	-50.19	-13	-37.19	H
1648.4	-48.88	3.86	3	8.56	-44.18	-13	-31.18	V
2472.6	-49.37	4.29	3	6.98	-46.68	-13	-33.68	V
EGPRS850_ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1673.2	-51.80	3.9	3	8.58	-47.12	-13	-34.12	H
2509.8	-52.45	4.32	3	6.8	-49.97	-13	-36.97	H
1673.2	-48.95	3.9	3	8.58	-44.27	-13	-31.27	V
2509.8	-49.97	4.32	3	6.8	-47.49	-13	-34.49	V
EGPRS850_ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1697.6	-52.43	3.91	3	9.06	-47.28	-13	-34.28	H
2546.4	-52.66	4.32	3	6.65	-50.33	-13	-37.33	H
1697.6	-48.95	3.91	3	9.06	-43.80	-13	-30.80	V
2546.4	-50.07	4.32	3	6.65	-47.74	-13	-34.74	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

GSM1900_ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3700.4	-43.47	5.26	3	9.88	-38.85	-13	-25.85	H
5550.6	-47.41	6.11	3	11.36	-42.16	-13	-29.16	H
3700.4	-45.34	5.26	3	9.88	-40.72	-13	-27.72	V
5550.6	-48.85	6.11	3	11.36	-43.60	-13	-30.60	V
GSM1900_ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3760	-39.67	5.32	3	10.03	-34.96	-13	-21.96	H
5640	-44.38	6.19	3	11.41	-39.16	-13	-26.16	H
3760	-42.74	5.32	3	10.03	-38.03	-13	-25.03	V
5640	-46.99	6.19	3	11.41	-41.77	-13	-28.77	V
GSM1900_ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3819.6	-46.59	5.36	3	9.62	-42.33	-13	-29.33	H
5729.4	-51.90	6.24	3	11.46	-46.68	-13	-33.68	H
3819.6	-49.43	5.36	3	9.62	-45.17	-13	-32.17	V
5729.4	-55.33	6.24	3	11.46	-50.11	-13	-37.11	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

GPRS1900_ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3700.4	-51.28	5.26	3	9.88	-46.66	-13	-33.66	H
5550.6	-58.41	6.11	3	11.36	-53.16	-13	-40.16	H
3700.4	-54.05	5.26	3	9.88	-49.43	-13	-36.43	V
5550.6	-62.55	6.11	3	11.36	-57.30	-13	-44.30	V
GPRS1900_ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	EIRP(dBm)	(dBm)	(dB)	
3760	-47.74	5.32	3	10.03	-43.03	-13	-30.03	H
5640	-55.61	6.19	3	11.41	-50.39	-13	-37.39	H
3760	-50.31	5.32	3	10.03	-45.60	-13	-32.60	V
5640	-58.78	6.19	3	11.41	-53.56	-13	-40.56	V
GPRS1900_ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3819.6	-59.30	5.36	3	9.62	-55.04	-13	-42.04	H
5729.4	-61.64	6.24	3	11.46	-56.42	-13	-43.42	H
3819.6	-60.84	5.36	3	9.62	-56.58	-13	-43.58	V
5729.4	-64.26	6.24	3	11.46	-59.04	-13	-46.04	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

EGPRS1900_ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3700.4	-57.88	5.26	3	9.88	-53.26	-13	-40.26	H
5550.6	-48.60	6.11	3	11.36	-43.35	-13	-30.35	H
3700.4	-57.25	5.26	3	9.88	-52.63	-13	-39.63	V
5550.6	-50.22	6.11	3	11.36	-44.97	-13	-31.97	V
EGPRS1900_ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	EIRP(dBm)	(dBm)	(dB)	
3760	-56.02	5.32	3	10.03	-51.31	-13	-38.31	H
5640	-51.25	6.19	3	11.41	-46.03	-13	-33.03	H
3760	-50.36	5.32	3	10.03	-45.65	-13	-32.65	V
5640	-52.58	6.19	3	11.41	-47.36	-13	-34.36	V
EGPRS1900_ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3819.6	-51.35	5.36	3	9.62	-47.09	-13	-34.09	H
5729.4	-45.35	6.24	3	11.46	-40.13	-13	-27.13	H
3819.6	-40.15	5.36	3	9.62	-35.89	-13	-22.89	V
5729.4	-38.25	6.24	3	11.46	-33.03	-13	-20.03	V

Remark:

1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3. Margin = Emission Level – Limit
4. We test both H direction and V direction, recorded worst case direction.

WCDMA Band II _ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3704.8	-44.84	5.26	3	9.88	-40.22	-13	-27.22	H
5557.2	-48.59	6.11	3	11.36	-43.34	-13	-30.34	H
3704.8	-50.17	5.26	3	9.88	-45.55	-13	-32.55	V
5557.2	-55.58	6.11	3	11.36	-50.33	-13	-37.33	V
WCDMA Band II _ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3760	-38.84	5.32	3	10.03	-34.13	-13	-21.13	H
5640	-47.68	6.19	3	11.41	-42.46	-13	-29.46	H
3760	-46.24	5.32	3	10.03	-41.53	-13	-28.53	V
5640	-54.62	6.19	3	11.41	-49.40	-13	-36.40	V
WCDMA Band II _ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
3815.2	-48.98	5.36	3	9.62	-44.72	-13	-31.72	H
5722.8	-54.08	6.24	3	11.46	-48.86	-13	-35.86	H
3815.2	-54.25	5.36	3	9.62	-49.99	-13	-36.99	V
5722.8	-57.37	6.24	3	11.46	-52.15	-13	-39.15	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

WCDMA Band V _ Low Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1652.8	-46.31	3.86	3	8.56	-41.61	-13	-28.61	H
2479.2	-48.34	4.29	3	6.98	-45.65	-13	-32.65	H
1652.8	-42.59	3.86	3	8.56	-37.89	-13	-24.89	V
2479.2	-42.63	4.29	3	6.98	-39.94	-13	-26.94	V
WCDMA Band V _ Middle Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1672.8	-43.85	3.9	3	8.58	-39.17	-13	-26.17	H
2509.2	-45.62	4.32	3	6.8	-43.14	-13	-30.14	H
1672.8	-39.19	3.9	3	8.58	-34.51	-13	-21.51	V
2509.2	-42.69	4.32	3	6.8	-40.21	-13	-27.21	V
WCDMA Band V _ High Channel								
Frequency	SG Level	Cable Loss	Diatance	Antenna Gain	Absolute Level	Limit	Margin	Polarization
(MHz)	(dBm)	(dB)	(m)	(dBi)	(dBm)	(dBm)	(dB)	
1693.2	-47.41	3.91	3	9.06	-42.26	-13	-29.26	H
2539.8	-48.05	4.32	3	6.65	-45.72	-13	-32.72	H
1693.2	-44.29	3.91	3	9.06	-39.14	-13	-26.14	V
2539.8	-45.05	4.32	3	6.65	-42.72	-13	-29.72	V

Remark:
1. We were tested all Configuration refer 3GPP TS134 121.
2. Absolute Level = SG Level- Cable Loss+ Antenna Gain
3.Margin = Emission Level – Limit
4.We test both H direction and V direction, recorded worst case direction.

7.3 EFFECTIVE RADIATED POWER AND EFFECTIVE ISOTROPIC RADIATED POWER

7.3.1 Applicable Standard

According to FCC KDB 971168 D01 v02r02 Section 5.2.1/ Section 5.2.2.2 and ANSI/ TIA-603-D-2010 Section 2.2.17

7.3.2 Conformance Limit

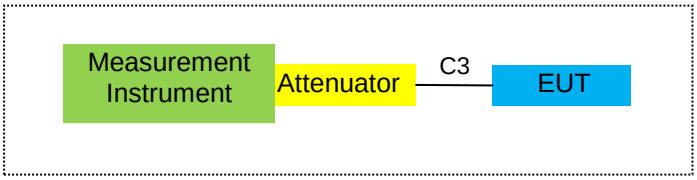
The substitution method, in ANSI / TIA / EIA-603-D-2010, was used for ERP/EIRP measurement, and the spectrum analyzer configuration follows KDB 971168 D01 Power Meas. License Digital Systems v02r02. The ERP of mobile transmitters must not exceed 7 Watts (Cellular Band) and the EIRP of mobile transmitters are limited to 2 Watts (PCS Band).

7.3.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.3.4 Test Configuration

(a) For E.R.P and E.I.R.P Measurements



7.3.5 Test Procedure

The measurements procedures specified in TIA-603-D-2010 were applied.
In an anechoic antenna test chamber, a half-wave dipole antenna for the frequency band of interest is placed at the reference centre of the chamber. An RF Signal source for the frequency band of interest is connected to the dipole with a cable that has been constructed to not interfere with the radiation pattern of the antenna. A known (measured) power (Pin) is applied to the input of the dipole, and the power received (Pr) at the chamber's probe antenna is recorded.

The relevant equation for determining the ERP or EIRP from the conducted RF output power measured using the guidance provided above is:
ERP/EIRP = SGLevel -Pcl +Ga
where:
ERP/EIRP = effective or equivalent radiated power, respectively (expressed in the same units as SGLevel, typically dBW or dBm);
SGLevel = Signal generator output power or PSD, in dBm or dBW;
Ga = gain of the transmitting antenna, in dBd (ERP) or dBi (EIRP);
Pcl = signal attenuation in the connecting cable between the transmitter and antenna, in dB.[2]

The EUT is substituted for the dipole at the reference centre of the chamber and a scan is performed to obtain the radiation pattern.
From the radiation pattern, the co-ordinates where the maximum antenna gain occurs are identified.

The EUT is then put into continuously transmitting mode at its maximum power level.

Power mode measurements are performed with the receiving antenna placed at the coordinates determined in Step 3 to determine the output power as defined in Rule 24.232 (b) and (c). The "reference path loss" from Step1 is added to this result.

This value is EIRP since the measurement is calibrated using a half-wave dipole antenna of known gain (2.15 dBi) and known input power (Pin).

ERP can be calculated from EIRP by subtracting the gain of the dipole, ERP = EIRP -2.15dBi.

Both horizontal and vertical antenna polarities were tested and performed pretest to three orthogonal axis. The worst case emissions were reported.

Substitution antenna and Receiving Antenna:

Item	Kind of Equipment	Manufacturer	Type No.	Serial No.	Character	Note
1	Bilog Antenna	TESEQ	CBL6111D	31216	30MHz~2GHz	Receiving Antenna
2	Horn Antenna	EM	EM-AH-10180	2011071402	1GHz~18GHz	Receiving Antenna
3	Bilog Antenna	TESEQ	CBL6111D	31216	30MHz~2GHz	Substitution antenna
4	Horn Antenna	EM	EM-AH-10180	2011071402	1GHz~18GHz	Substitution antenna

Use the following spectrum analyzer settings:

	GSM/GPRS	UMTS band
Span	500KHz	10MHz
RBW	10KHz	300KHz
VBW	30KHz	1MHz
Detector	RMS	RMS
Trace	Average	Average
Average Type	Power	Power
Sweep Count	100	100

7.3.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS 850/GSM/GPRS/EGPRS 1900/ UMTS band II/ UMTS band V	Test By:	Susan Su

■ Effective Radiated Power

Radiated Power (ERP) for GSM850						
Frequency	SG Level	Pcl	Ga	Correction	(ERP)	ERP
(MHz)	(dBm)	(dB)	(dB)	(dBi)	(dBm)	(W)
824.2	32.74	0.39	1	2.15	31.2	1.3183
836.6	32.75	0.35	1.1	2.15	31.35	1.3646
848.8	32.72	0.32	1.2	2.15	31.45	1.3964

Radiated Power (ERP) for GPRS850						
Frequency	SG Level	Pcl	Ga	Correction	(ERP)	ERP
(MHz)	(dBm)	(dB)	(dB)	(dBi)	(dBm)	(W)
824.2	32.75	0.39	1	2.15	31.21	1.3213
836.6	32.82	0.35	1.1	2.15	31.42	1.3868
848.8	32.81	0.32	1.2	2.15	31.54	1.4256

Radiated Power (ERP) for EGPRS850						
Frequency	SG Level	Pcl	Ga	Correction	(ERP)	ERP
(MHz)	(dBm)	(dB)	(dB)	(dBi)	(dBm)	(W)
824.2	31.36	0.39	1	2.15	29.82	0.9594
836.6	31.42	0.35	1.1	2.15	30.02	1.0046
848.8	31.49	0.32	1.2	2.15	30.22	1.0520

Radiated Power (ERP) for UMTS band V						
Frequency	SG Level	Pcl	Ga	Correction	(ERP)	ERP
(MHz)	(dBm)	(dB)	(dB)	(dBi)	(dBm)	(W)
824.2	22.58	0.39	1	2.15	21.04	0.1271
836.6	22.77	0.35	1.1	2.15	21.37	0.1371
848.8	22.54	0.32	1.2	2.15	21.27	0.1340

Note:
SG Level= Signal generator output
Pcl= cable loss
Ga= Antenna Gain
Peak EIRP(dBm)= SGLevel -Pcl +Ga
ERP(dBm)=EIRP-2.15

■ Effective Isotropic Radiated Power

Radiated Power (E.I.R.P) for GSM 1900 MHZ					
Frequency (MHz)	SGLevel (dBm)	Pcl (dB)	Ga (dB)	EIRP (dBm)	EIRP (W)
1850.2	30.2	0.47	1.58	29.73	0.9397
1880	30.08	0.47	1.72	29.61	0.9141
1909.8	29.85	0.46	1.85	29.39	0.8690

Radiated Power (E.I.R.P) for GPRS 1900 MHZ					
Frequency (MHz)	SGLevel (dBm)	Pcl (dB)	Ga (dB)	EIRP (dBm)	EIRP (W)
1850.2	30.21	0.47	1.58	29.74	0.9419
1880	30.09	0.47	1.72	29.62	0.9162
1909.8	29.85	0.46	1.85	29.39	0.8690

Radiated Power (E.I.R.P) for EGPRS 1900 MHZ					
Frequency (MHz)	SGLevel (dBm)	Pcl (dB)	Ga (dB)	EIRP (dBm)	EIRP (W)
1850.2	28.66	0.47	1.58	28.19	0.6592
1880	29.35	0.47	1.72	28.88	0.7727
1909.8	29.74	0.46	1.85	29.28	0.8472

Radiated Power (E.I.R.P) for UMTS band II					
Frequency (MHz)	SGLevel (dBm)	Pcl (dB)	Ga (dB)	EIRP (dBm)	EIRP (W)
1852.4	22.91	0.47	1.59	23.44	0.2208
1880	22.35	0.47	1.72	22.88	0.1941
1907.6	21.95	0.46	1.84	22.49	0.1774

Note:
SG Level= Signal generator output
Pcl= cable loss
Ga= Antenna Gain
Peak EIRP(dBm)= SGLevel –Pcl+Ga.

7.4 CONDUCTED OUTPUT POWER

7.4.1 Applicable Standard

According to FCC Part 2.1046 and FCC Part 22.913(a)(2) and FCC Part 24.232(c) and FCC KDB 971168 D01 v02r02 Section 5.2

7.4.2 Conformance Limit

Extend coverage on a secondary basis into cellular unserved areas, as those areas are defined in §22.949, the ERP of base transmitters and cellular repeaters of such systems must not exceed 1000 Watts. The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts(38.5dBm).

Mobile and portable stations are limited to 2 watts (33dBm)EIRP and the equipment must employ a means for limiting power to the minimum necessary for successful communications..

7.4.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.4.4 Test Setup

Please refer to Section 6.1 of this test report.

7.4.5 Test Procedure

Connect the EUT to Universal Radio Communication Tester CMU200 or CMU500 via the antenna connector.
A call is set up by the SS according to the generic call set up procedure on a channel with ARFCN in the ARFCN range, power control level set to Max power. The frequency band is set as selected frequency,
The RF output of the transmitter was connected to base station simulator.
Set EUT at maximum average power by base station simulator.
Set RBW = 1-5% of the OBW, not to exceed 1 MHz.
Set VBW ≥ 3 × RBW.
Number of points in sweep ≥ 2 × span / RBW. (This gives bin-to-bin spacing ≤ RBW/2, so that narrowband signals are not lost between frequency bins.)
Sweep time = auto.
Detector = RMS (power averaging).
Set sweep trigger to “free run”.
Trace average at least 100 traces in power averaging (i.e., RMS) mode; however, the number of traces to be averaged shall be increased above 100 as needed such that the average accurately represents the true average over the on and off periods of the transmitter.
Compute power by integrating the spectrum across the OBW of the signal using the instrument’s band power measurement function with band limits set equal to the OBW band edges. If the instrument does not have a band power function, sum the spectrum levels (in power units) at intervals equal to the RBW extending across the entire OBW of the spectrum.
Add 10 log (1/x), where x is the duty cycle, to the measured power in order to compute the average power during the actual transmission times (because the measurement represents an average over both the on and off times of the transmission). For example, add 10 log (1/0.25) = 6 dB if the duty cycle is a constant 25%.
Measure lowest, middle, and highest channels for each bandwidth and different modulation.
Measure and record the results in the test report.

7.4.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS 850/GSM/GPRS/EGPRS 1900 UMTS band II/ UMTS band V	Test By:	Susan Su

Output Power for GSM850

Mode	Frequency(MHz)	Maximum Burst-Average Output Power
GSM850	824.2	32.59
	836.6	32.53
	848.8	32.45
GPRS850 (1 Slot)	824.2	32.58
	836.6	32.56
	848.8	32.49
GPRS850 (2 Slot)	824.2	31.79
	836.6	31.79
	848.8	31.74
GPRS850 (3 Slot)	824.2	30.07
	836.6	30.04
	848.8	30.01
GPRS850 (4 Slot)	824.2	28.94
	836.6	28.95
	848.8	28.94
EGPRS850 (1 Slot)	824.2	27.49
	836.6	27.45
	848.8	27.38
EGPRS850 (2 Slot)	824.2	26.20
	836.6	26.09
	848.8	25.95
EGPRS850 (3 Slot)	824.2	23.98
	836.6	23.95
	848.8	23.85
EGPRS850 (4 Slot)	824.2	22.97
	836.6	22.95
	848.8	22.81

N/A: Not Applicable

Output Power for PCS1900

Mode	Frequency(MHz)	Maximum Burst-Average Output Power
GSM1900	1850.2	29.83
	1880	29.80
	1909.8	29.78
GPRS1900 (1 Slot)	1850.2	29.83
	1880	29.81
	1909.8	29.75
GPRS1900 (2 Slot)	1850.2	29.07
	1880	29.07
	1909.8	29.05
GPRS1900 (3 Slot)	1850.2	27.33
	1880	27.35
	1909.8	27.38
GPRS1900 (4 Slot)	1850.2	26.25
	1880	26.29
	1909.8	26.33
EGPRS1900 (1 Slot)	1850.2	26.98
	1880	27.08
	1909.8	27.21
EGPRS1900 (2 Slot)	1850.2	26.14
	1880	26.25
	1909.8	26.31
EGPRS1900 (3 Slot)	1850.2	24.15
	1880	24.37
	1909.8	24.57
EGPRS1900 (4 Slot)	1850.2	23.19
	1880	23.23
	1909.8	23.41

N/A: Not Applicable

Output Power for UMTS BAND II

Mode	Frequency(MHz)	Maximum Burst-Average Output Power
WCDMA 1900 RMC	1852.4	22.45
	1880	22.63
	1907.6	22.58
HSDPA Subtest 1	1852.4	21.67
	1880	21.87
	1907.6	21.90
HSDPA Subtest 2	1852.4	21.24
	1880	21.43
	1907.6	21.48
HSDPA Subtest 3	1852.4	21.29
	1880	21.47
	1907.6	21.53
HSDPA Subtest 4	1852.4	21.28
	1880	21.43
	1907.6	21.53
HSUPA Subtest 1	1852.4	21.22
	1880	21.44
	1907.6	21.49
HSUPA Subtest 2	1852.4	21.18
	1880	21.38
	1907.6	21.38
HSUPA Subtest 3	1852.4	21.19
	1880	21.42
	1907.6	21.42
HSUPA Subtest 4	1852.4	21.21
	1880	21.39
	1907.6	21.45
HSUPA Subtest 5	1852.4	21.58
	1880	21.79
	1907.6	21.95

Output Power for UMTS BAND V

Mode	Frequency(MHz)	Maximum Burst-Average Output Power
WCDMA 850 RMC	826.4	22.61
	835	22.52
	846.6	22.71
HSDPA Subtest 1	826.4	21.61
	835	21.55
	846.6	21.73
HSDPA Subtest 2	826.4	21.12
	835	21.06
	846.6	21.18
HSDPA Subtest 3	826.4	21.16
	835	21.07
	846.6	21.22
HSDPA Subtest 4	826.4	21.14
	835	21.07
	846.6	21.25
HSUPA Subtest 1	826.4	21.12
	835	21.06
	846.6	21.18
HSUPA Subtest 2	826.4	21.06
	835	21.08
	846.6	21.18
HSUPA Subtest 3	826.4	21.08
	835	21.12
	846.6	21.11
HSUPA Subtest 4	826.4	21.11
	835	21.09
	846.6	21.21
HSUPA Subtest 5	826.4	21.65
	835	21.59
	846.6	21.75

7.5 FREQUENCY STABILITY

7.5.1 Applicable Standard

According to FCC Part 2.1055 and FCC Part 22.355 and FCC Part 24.235 and FCC KDB 971168 D01 Section 9.0

7.5.2 Conformance Limit

The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center frequency.

7.5.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.5.4 Test Setup

Please refer to Section 6.1 of this test report.

7.5.5 Test Procedure

Connect the EUT to Universal Radio Communication Tester CMU200 or CMU500 via the antenna connector. A call is set up by the SS according to the generic call set up procedure on a channel with ARFCN in the ARFCN range, power control level set to Max power. MS TXPWR_MAX_CCH is set to the maximum value supported by the Power Class of the Mobile under test.
EUT was placed at temperature chamber and connected to an external power supply.
Temperature and voltage condition shall be tested to confirm frequency stability.
For Temperature Variation

1. The testing follows FCC KDB 971168 D01 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 -10°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.

For Voltage Variation

1. The testing follows FCC KDB 971168 D01 v02r02 Section 9.0.
2. The EUT was placed in a temperature chamber at 25±5° C and connected with the system simulator.
3. The power supply voltage to the EUT was varied from 85% to 115% of the nominal value measured at the input to the EUT.
4. The variation in frequency was measured for the worst case.

7.5.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS850/GSM/GPRS /EGPRS 1900/UMTS band II/ UMTS band V	Test By:	Susan Su
Results: PASS			

Frequency Error Against Voltage for GSM 850 band		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	22	0.0263
3.6	17	0.0203
4.4	12	0.0143

Frequency Error Against Temperature for GSM 850 band		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	21	0.0251
0	17	0.0203
5	12	0.0143
15	25	0.0299
25	13	0.0155
35	26	0.0311
45	31	0.0371

Frequency Error Against Voltage for GPRS850 band		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	22	0.0263
3.6	26	0.0311
4.4	19	0.0227

Frequency Error Against Temperature for GPRS850 band		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	28	0.0335
0	24	0.0287
5	22	0.0263
15	22	0.0263
25	15	0.0179
35	24	0.0287
45	30	0.0359

Frequency Error Against Voltage for EGPRS850 band		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	26	0.0311
3.6	23	0.0275
4.4	34	0.0406

Frequency Error Against Temperature for EGPRS850 band		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	29	0.0347
0	42	0.0502
5	27	0.0323
15	30	0.0359
25	26	0.0311
35	20	0.0239
45	24	0.0287

Note:
1. Normal Voltage = 3.8V; Battery End Point (BEP) = 3.6V; Maximum Voltage =4.4V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Frequency Error Against Voltage for PCS 1900 band		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	37	0.0197
3.6	31	0.0165
4.4	27	0.0144

Frequency Error Against Temperature for PCS 1900 band		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	30	0.0160
0	31	0.0165
5	22	0.0117
15	26	0.0138
25	34	0.0181
35	22	0.0117
45	21	0.0112

Frequency Error Against Voltage for GPRS1900 band		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	34	0.0181
3.6	28	0.0149
4.4	32	0.0170

Frequency Error Against Temperature for GPRS1900 band		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	38	0.0202
0	27	0.0144
5	23	0.0122
15	36	0.0191
25	28	0.0149
35	23	0.0122
45	15	0.0080

Frequency Error Against Voltage for EGPRS1900 band		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	31	0.0165
3.6	21	0.0112
4.4	18	0.0096

Frequency Error Against Temperature for EGPRS1900 band		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	24	0.0128
0	17	0.0090
5	23	0.0122
15	27	0.0144
25	35	0.0186
35	21	0.0112
45	17	0.0090

Note:
1. Normal Voltage = 3.8V; Battery End Point (BEP) = 3.6V; Maximum Voltage =4.4V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

Frequency Error Against Voltage for UMTS band II		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	11	0.0059
3.6	18	0.0096
4.4	25	0.0133

Frequency Error Against Temperature for UMTS band II		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	16	0.0085
0	32	0.0170
5	19	0.0101
15	17	0.0090
25	24	0.0128
35	18	0.0096
45	23	0.0122

Frequency Error Against Voltage for UMTS band V		
Voltage (V)	Frequency Error (Hz)	Frequency Error (ppm)
3.8	25	0.0299
3.6	17	0.0203
4.4	18	0.0215

Frequency Error Against Temperature for UMTS band V		
Temperature (℃)	Frequency Error (Hz)	Frequency Error (ppm)
-10	26	0.0311
0	25	0.0299
5	21	0.0251
15	19	0.0227
25	14	0.0167
35	26	0.0311
45	19	0.0227

Note:

1. Normal Voltage = 3.8V; Battery End Point (BEP) = 3.6V; Maximum Voltage =4.4V
2. The frequency fundamental emissions stay within the authorized frequency block based on the frequency deviation measured is small.

7.6 PEAK-TO-AVERAGE RATIO

7.6.1 Applicable Standard

According to FCC 22.913 and FCC 24.232(d) and FCC KDB 971168 D01 Section 5.7.1

7.6.2 Conformance Limit

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.

7.6.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.6.4 Test Setup

Please refer to Section 6.1 of this test report.

7.6.5 Test Procedure

The EUT was connected to Spectrum Analyzer and Base Station via power divider.
The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
Set the number of counts to a value that stabilizes the measured CCDF curve.
Set the measurement interval to 1 ms.
Record the maximum PAPR level associated with a probability of 0.1%.
a) Refer to instrument's analyzer instruction manual for details on how to use the power statistics/CCDF function;
b) Set resolution/measurement bandwidth ≥ signal's occupied bandwidth;
c) Set the number of counts to a value that stabilizes the measured CCDF curve;
d) Set the measurement interval as follows:
1) for continuous transmissions, set to 1 ms,
2) for burst transmissions, employ an external trigger that is synchronized with the EUT burst timing sequence, or use the internal burst trigger with a trigger level that allows the burst to stabilize and set the measurement interval to a time that is less than or equal to the burst duration.
e) Record the maximum PAPR level associated with a probability of 0.1%.

7.6.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS 850/GSM/GPRS/EGPRS 1900/UMTS band II/ UMTS band V	Test By:	Susan Su
Results: PASS			

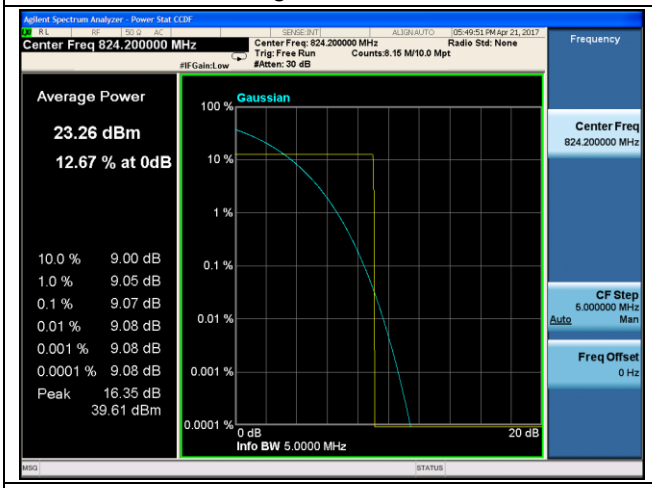
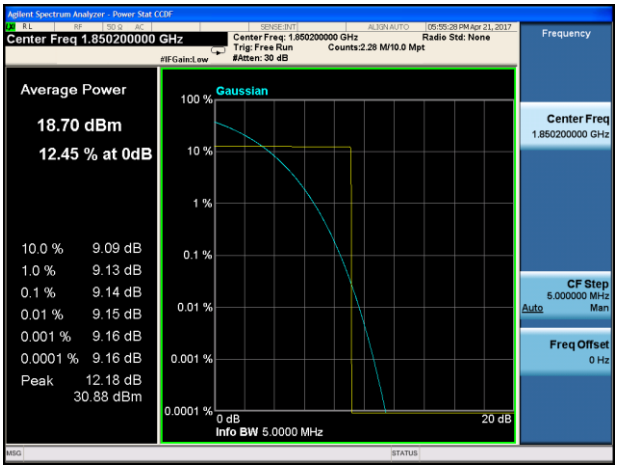
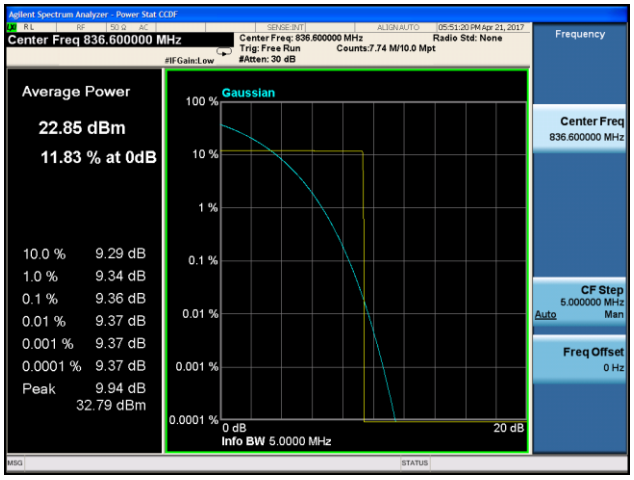
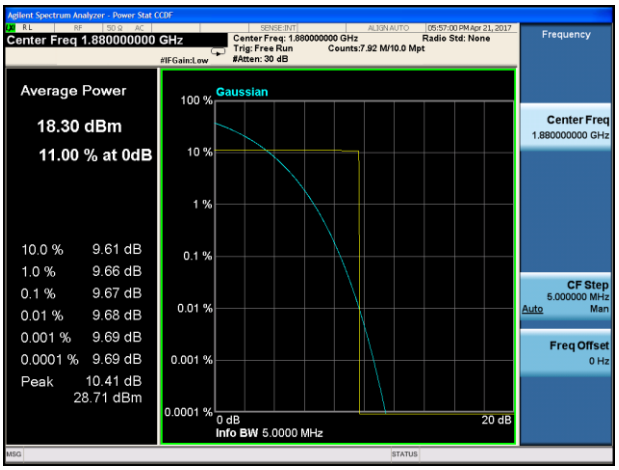
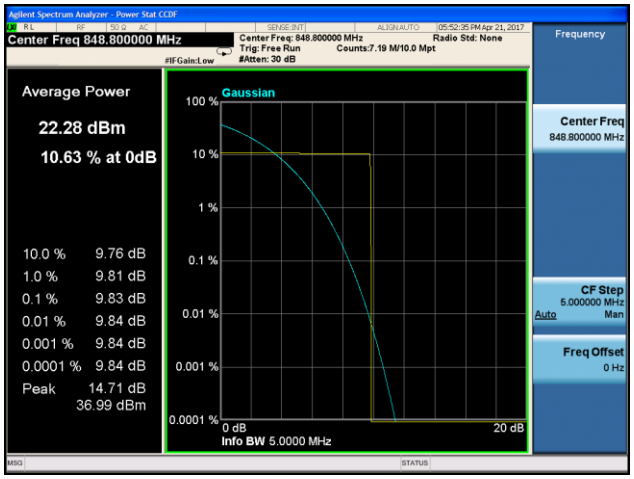
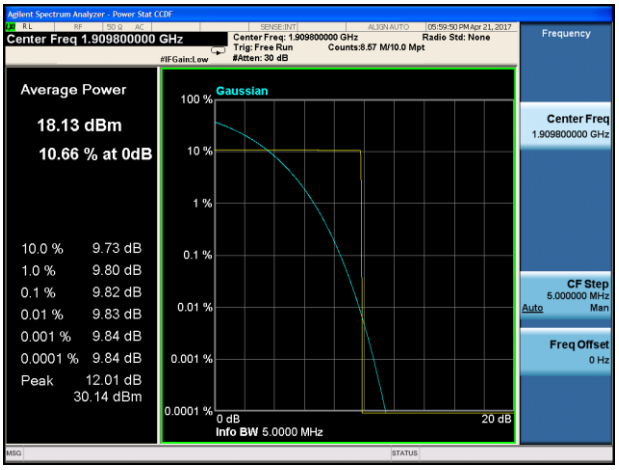
Cellular Band						
Modes	GSM850			GSM1900		
Channel	128 (Low)	190 (Mid)	251 (High)	512 (Low)	661 (Mid)	810 (High)
Frequency(MHz)	824.2	836.6	848.8	1850.2	1880	1909.8
Peak-to-Average Ratio (dB)	9.07	9.36	9.83	9.14	9.67	9.82

Cellular Band						
Modes	GPRS850			GPRS1900		
Channel	128 (Low)	190 (Mid)	251 (High)	512 (Low)	661 (Mid)	810 (High)
Frequency(MHz)	824.2	836.6	848.8	1850.2	1880	1909.8
Peak-to-Average Ratio (dB)	9.49	9.78	9.59	9.91	9.88	9.10

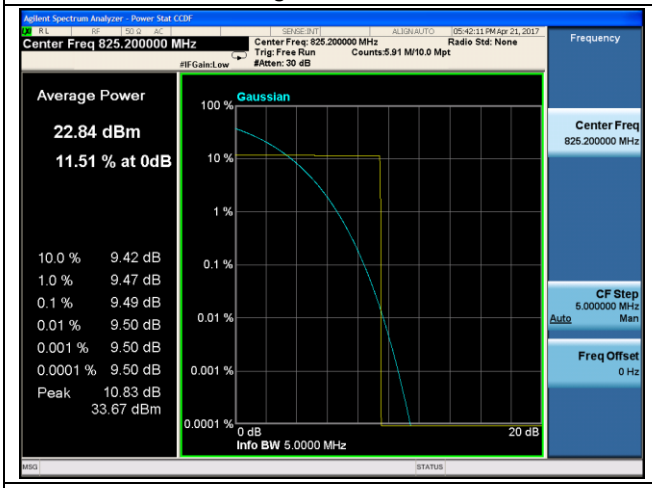
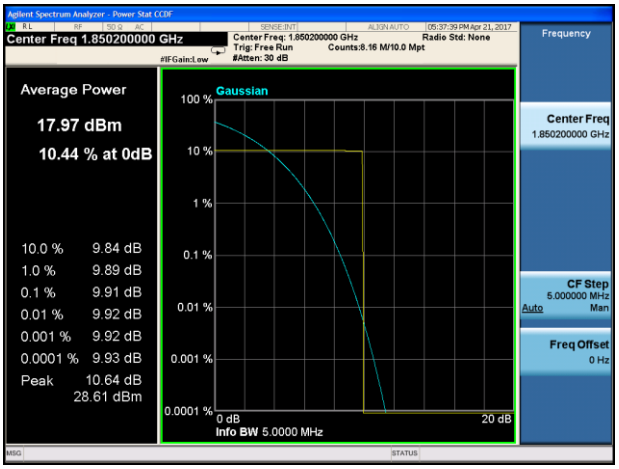
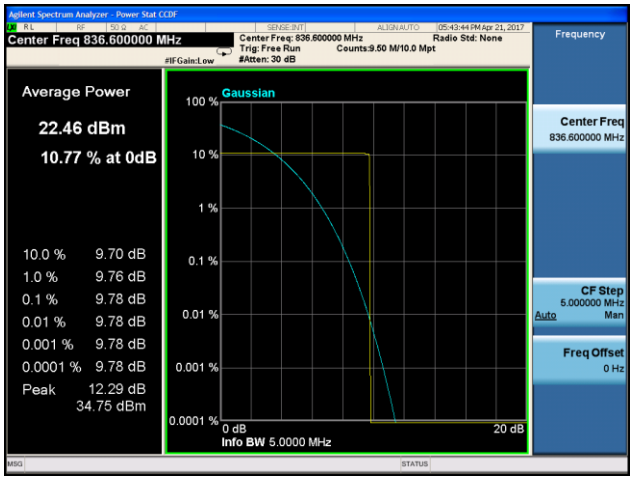
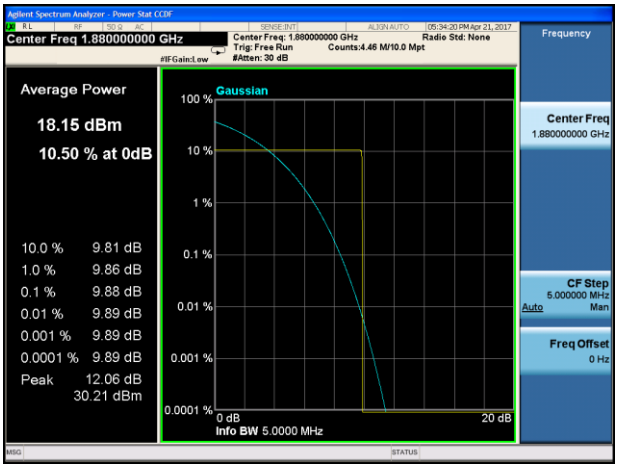
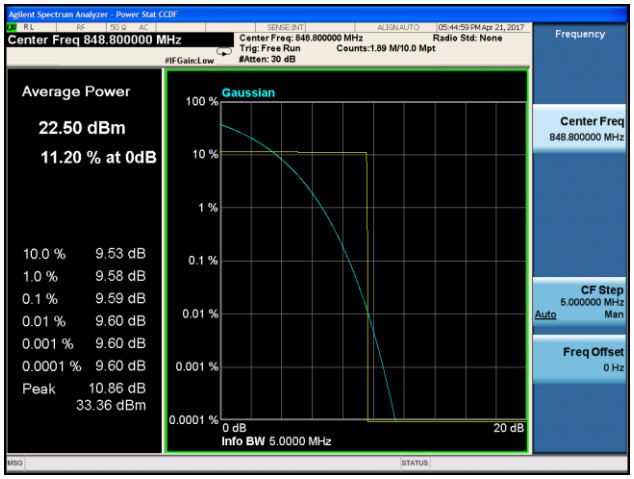
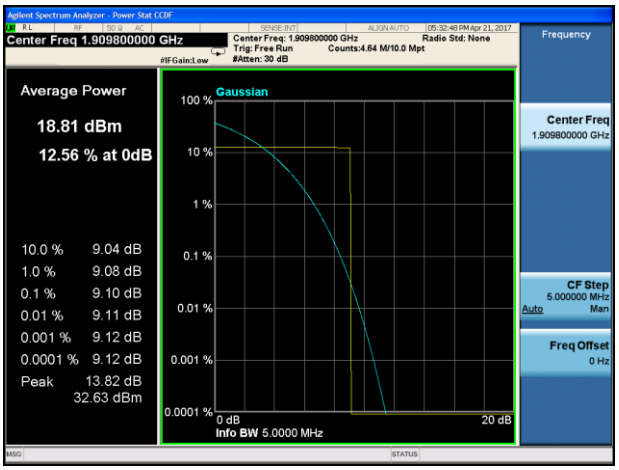
Cellular Band						
Modes	EGPRS850			EGPRS1900		
Channel	128 (Low)	190 (Mid)	251 (High)	512 (Low)	661 (Mid)	810 (High)
Frequency(MHz)	824.2	836.6	848.8	1850.2	1880	1909.8
Peak-to-Average Ratio (dB)	12.56	12.45	11.74	12.29	10.86	12.32

UMTS Band						
Modes	WCDMA Band II (RMC 12.2Kbps)			WCDMA Band V (RMC 12.2Kbps)		
Channel	9262 (Low)	9400 (Mid)	9538 (High)	4132 (Low)	4175 (Mid)	4233 (High)
Frequency(MHz)	1852.4	1880	1907.6	826.4	836.6	846.6
Peak-to-Average Ratio (dB)	2.85	2.91	2.88	2.72	3.04	2.91

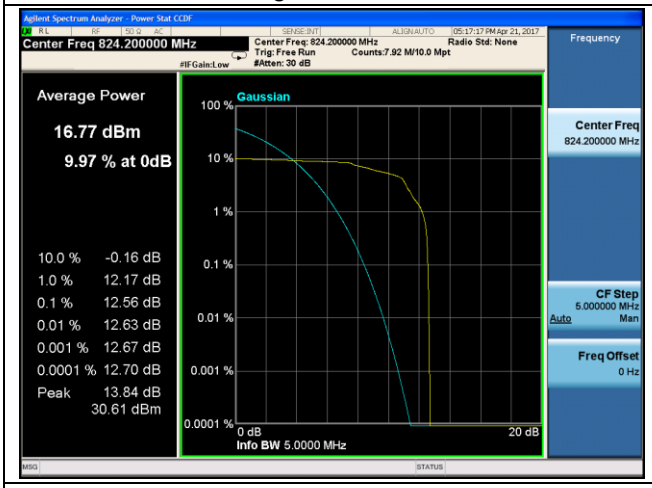
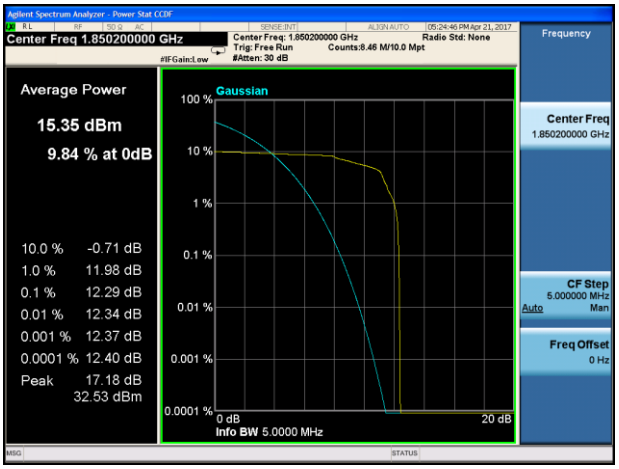
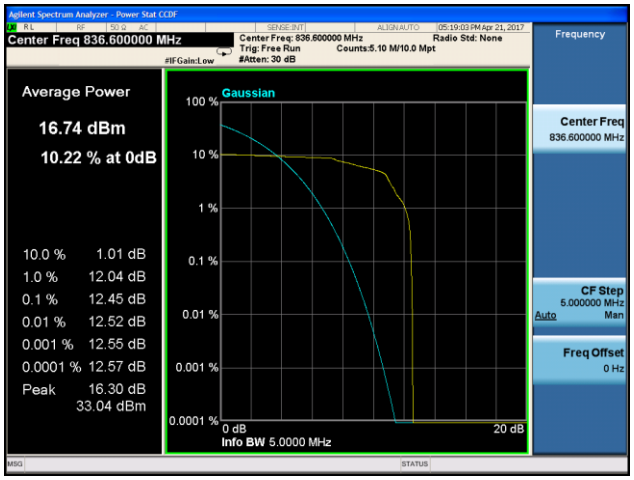
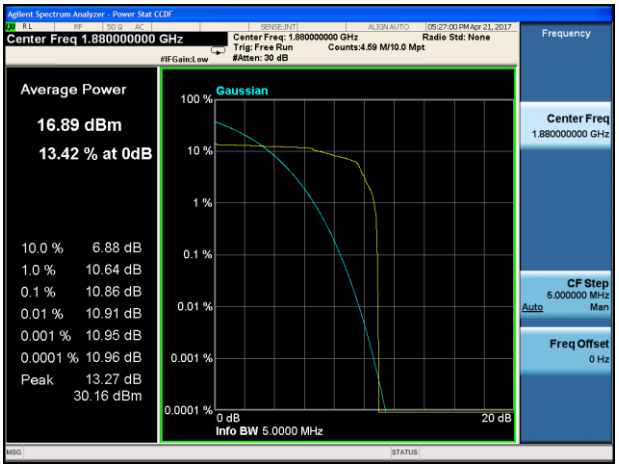
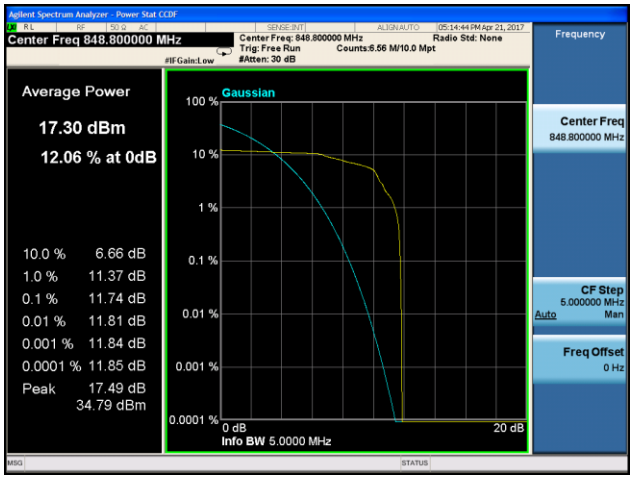
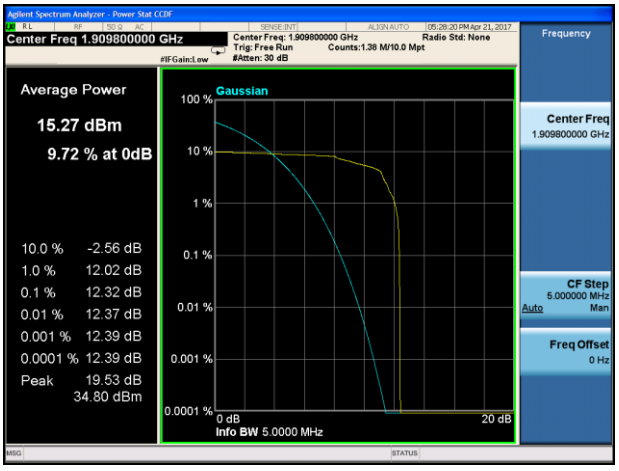
Test plot

(GSM850)	(GSM1900)
Peak-to-Average Ratio on channel 128	Peak-to-Average Ratio on channel 512
	
Peak-to-Average Ratio on channel 190	Peak-to-Average Ratio on channel 661
	
Peak-to-Average Ratio on channel 251	Peak-to-Average Ratio on channel 810
	

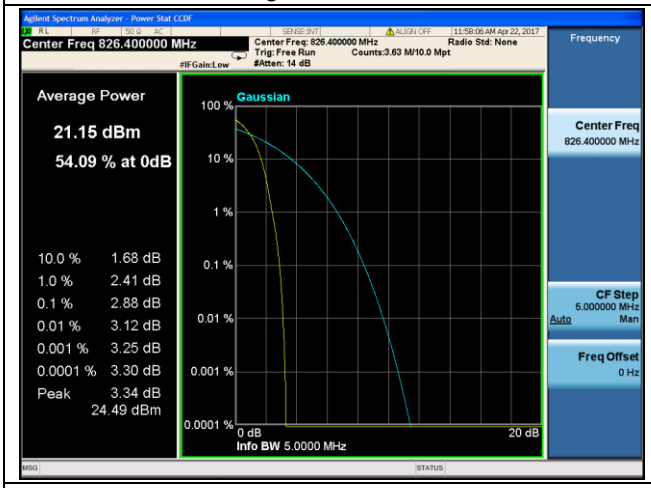
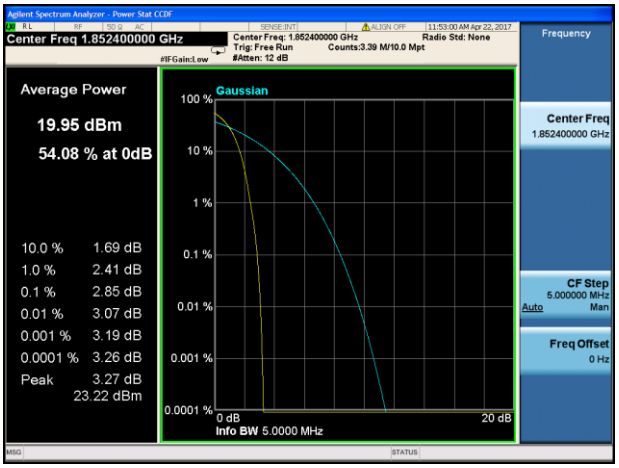
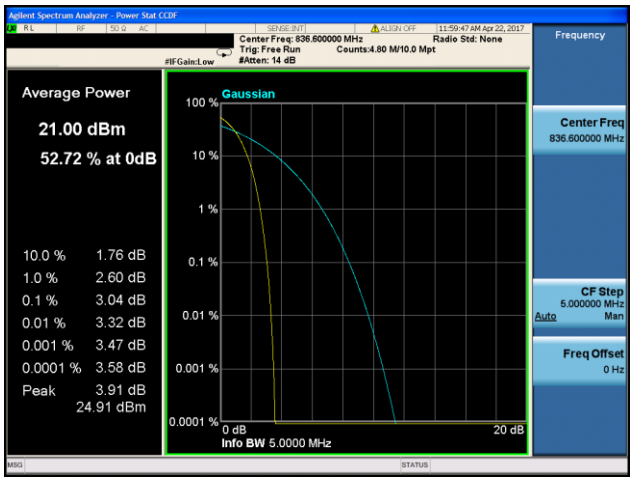
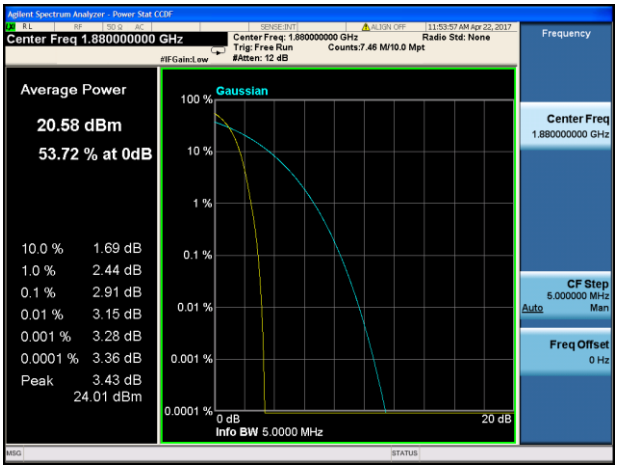
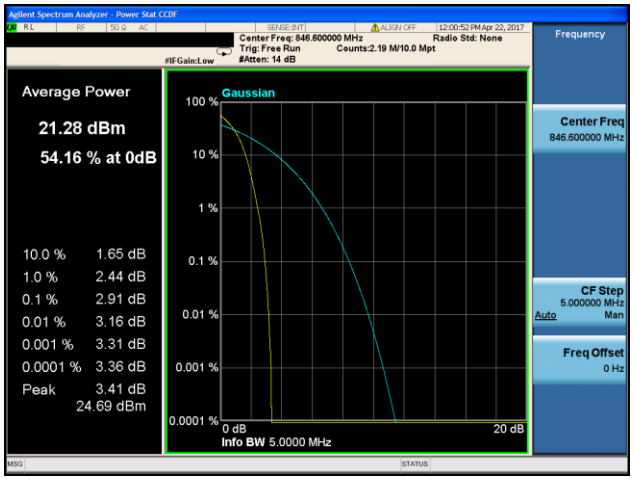
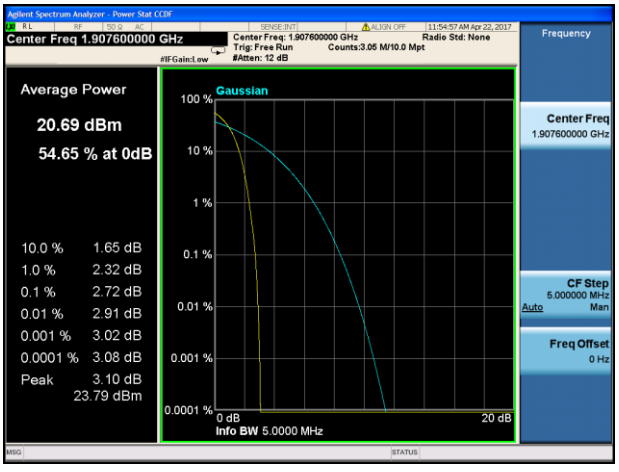
Test plot

(GPRS850)	(GPRS1900)
Peak-to-Average Ratio on channel 128	Peak-to-Average Ratio on channel 512
	
Peak-to-Average Ratio on channel 190	Peak-to-Average Ratio on channel 661
	
Peak-to-Average Ratio on channel 251	Peak-to-Average Ratio on channel 810
	

Test plot

(EGPRS850)	(EGPRS1900)
Peak-to-Average Ratio on channel 128	Peak-to-Average Ratio on channel 512
	
Peak-to-Average Ratio on channel 190	Peak-to-Average Ratio on channel 661
	
Peak-to-Average Ratio on channel 251	Peak-to-Average Ratio on channel 810
	

Test plot

UMTS Band V	UMTS Band II
Peak-to-Average Ratio on channel 4132	Peak-to-Average Ratio on channel 9262
	
Peak-to-Average Ratio on channel 4183	Peak-to-Average Ratio on channel 9400
	
Peak-to-Average Ratio on channel 4233	Peak-to-Average Ratio on channel 9538
	

7.7 26DB BANDWIDTH AND 99% OCCUPIED BANDWIDTH

7.7.1 Applicable Standard

According to FCC Part 2.1049 and FCC Part 22H and FCC Part 24E and FCC KDB 971168 D01 Section 4.0

7.7.2 Conformance Limit

The occupied bandwidth is the width of a frequency band such that, below the lower and above the upper frequency limits, the mean powers emitted are each equal to a specified percentage 0.5% of the total mean transmitted power.
The 26 dB emission bandwidth is defined as the frequency range between two points, one above and one below the carrier frequency, at which the spectral density of the emission is attenuated 26 dB below the maximum in-band spectral density of the modulated signal. Spectral density (power per unit bandwidth) is to be measured with a detector of resolution bandwidth equal to approximately 1.0% of the emission bandwidth.

7.7.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.7.4 Test Setup

Please refer to Section 6.1 of this test report.

7.7.5 Test Procedure

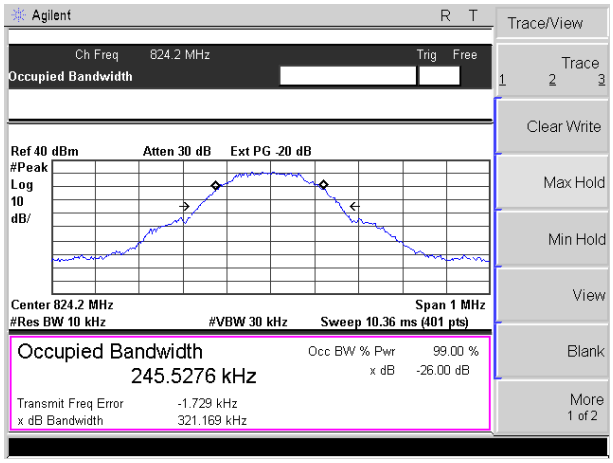
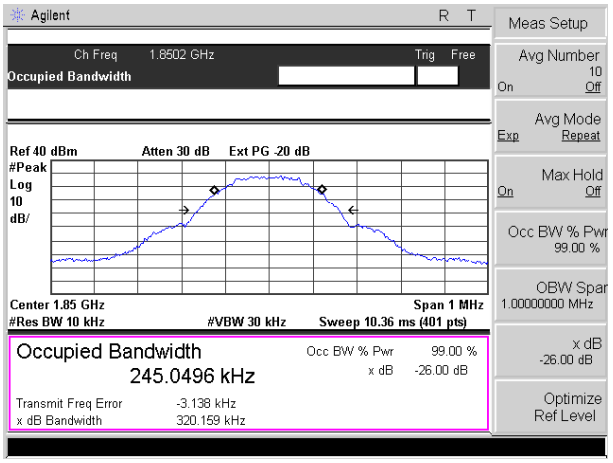
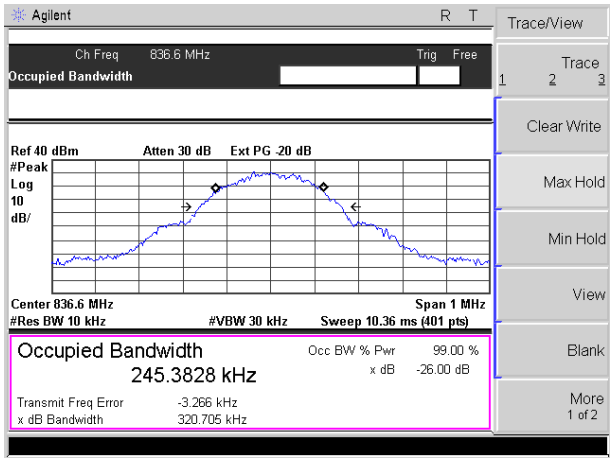
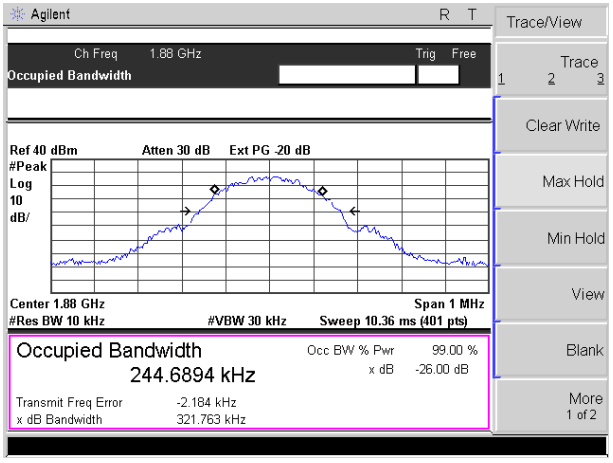
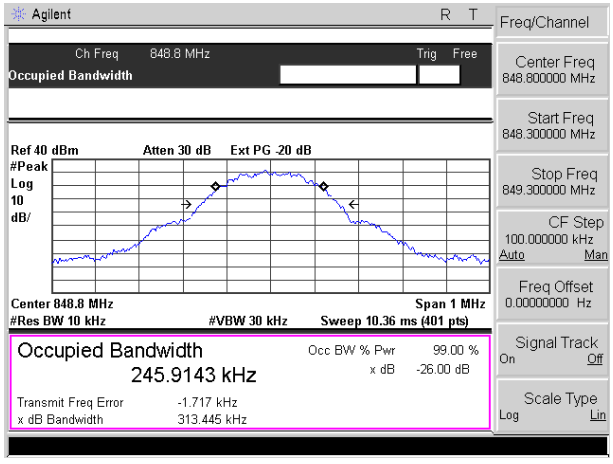
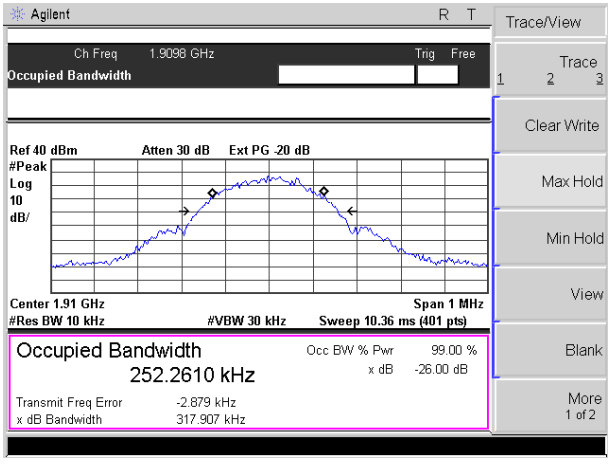
The testing follows FCC KDB 971168 v02r02 Section 4.0.
The EUT was connected to Spectrum Analyzer and Base Station via power divider.
The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator. The path loss was compensated to the results for each measurement.
The spectrum analyzer center frequency is set to the nominal EUT channel center frequency. The span range for the spectrum analyzer shall be between two and five times the anticipated OBW.
The nominal resolution bandwidth (RBW) shall be in the range of 1 to 5 % of the anticipated OBW, and the VBW shall be at least 3 times the RBW.
Set the detection mode to peak, and the trace mode to max hold.
Determine the reference value: Set the EUT to transmit a modulated signal. Allow the trace to stabilize. Set the spectrum analyzer marker to the highest level of the displayed trace.
(this is the reference value)
Determine the “-26 dB down amplitude” as equal to (Reference Value – X).
Place two markers, one at the lowest and the other at the highest frequency of the envelope of the spectral display such that each marker is at or slightly below the “–X dB down amplitude” determined in step 6. If a marker is below this “-X dB down amplitude” value it shall be placed as close as possible to this value. The OBW is the positive frequency difference between the two markers.
Use the 99 % power bandwidth function of the spectrum analyzer and report the measured bandwidth.

7.7.6 Test Results

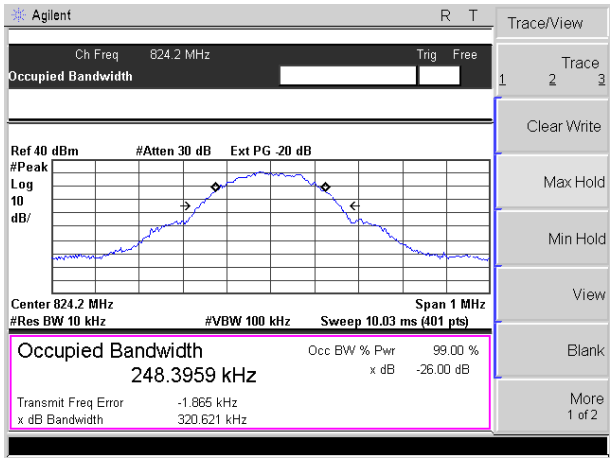
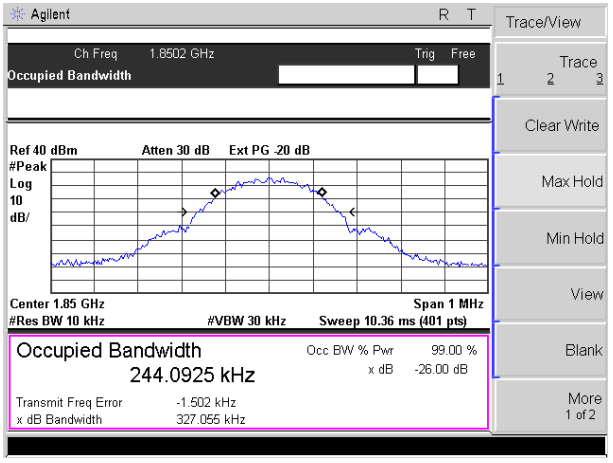
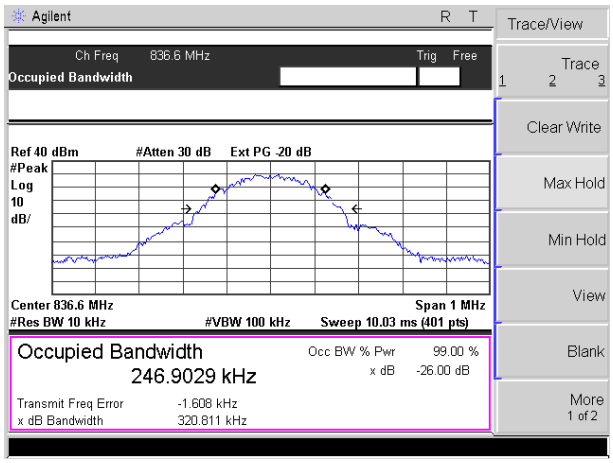
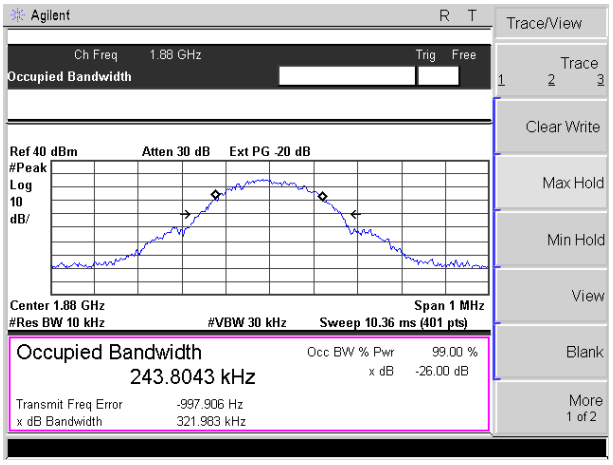
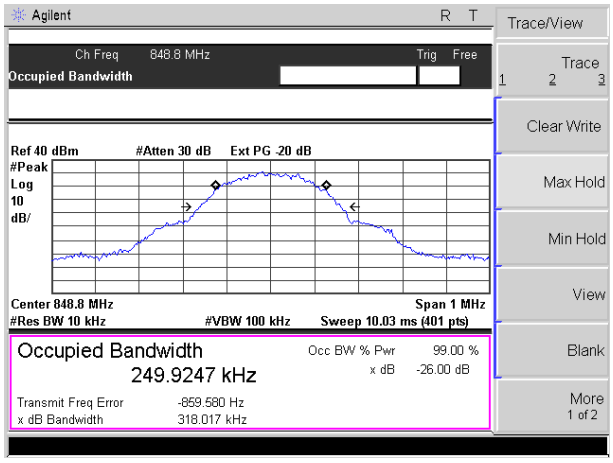
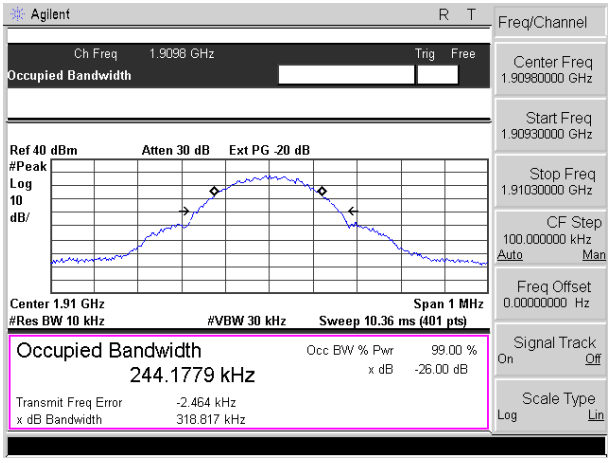
EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS 850/GSM/GPRS/EGPRS 1900 /UMTS band II/ UMTS band V	Test By:	Susan Su
Results: PASS			

Operation Mode	Channel Number	Channel Frequency (MHz)	26dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Limit (kHz)	Verdict
GSM850	128	824.2	321.169	245.5276	N/A	PASS
	190	836.4	320.705	245.3828	N/A	PASS
	251	848.8	313.445	245.9143	N/A	PASS
GSM1900	512	1850.2	320.159	245.0496	N/A	PASS
	661	1880.0	321.763	244.6894	N/A	PASS
	810	1909.8	317.907	252.2610	N/A	PASS
GPRS850	128	824.2	320.621	248.3959	N/A	PASS
	190	836.4	320.811	246.9029	N/A	PASS
	251	848.8	318.017	249.9247	N/A	PASS
GPRS1900	512	1850.2	327.055	244.0925	N/A	PASS
	661	1880.0	321.983	243.8043	N/A	PASS
	810	1909.8	318.817	244.1779	N/A	PASS
EGPRS850	128	824.2	321.118	251.0265	N/A	PASS
	190	836.4	325.447	251.4906	N/A	PASS
	251	848.8	321.045	251.7476	N/A	PASS
EGPRS1900	512	1850.2	332.723	258.9702	N/A	PASS
	661	1880.0	325.007	249.1005	N/A	PASS
	810	1909.8	335.935	254.6787	N/A	PASS
UMTS Band V	4132	826.4	4883	4228.7	N/A	PASS
	4183	836.4	4866	4214.3	N/A	PASS
	4233	846.6	4884	4191.8	N/A	PASS
UMTS Band II	9262	1852.4	4892	4197.5	N/A	PASS
	9400	1880.0	4861	4208.3	N/A	PASS
	9538	1907.6	4890	4216.3	N/A	PASS

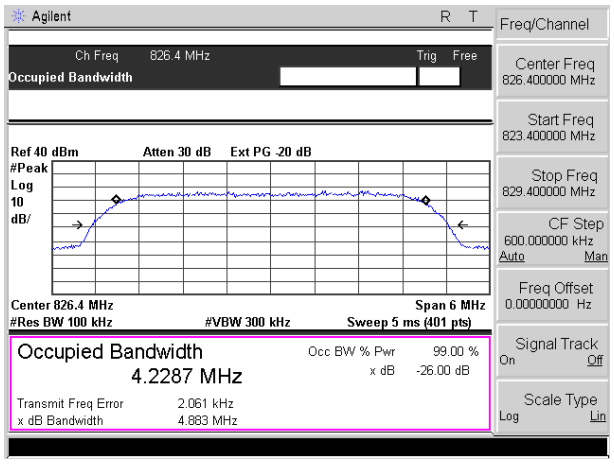
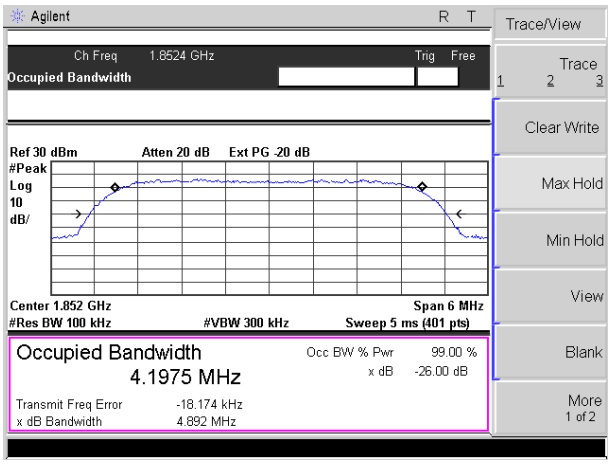
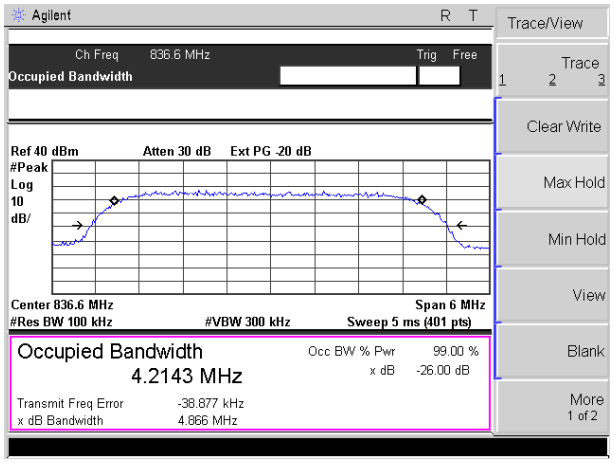
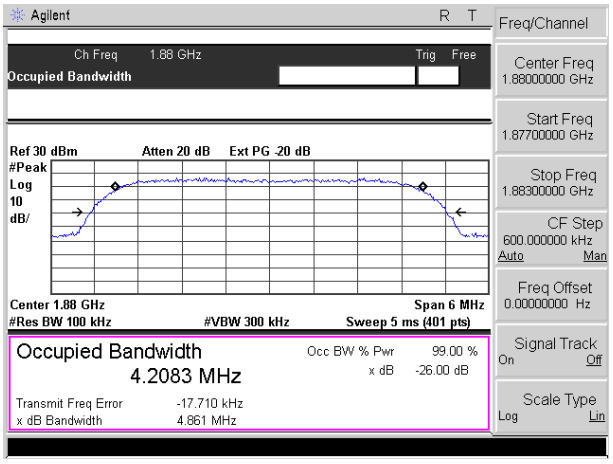
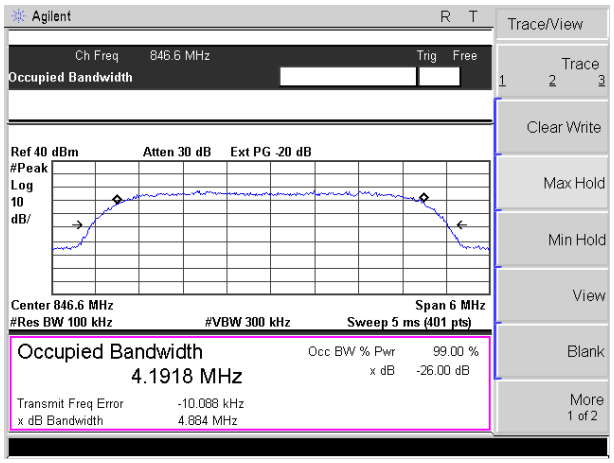
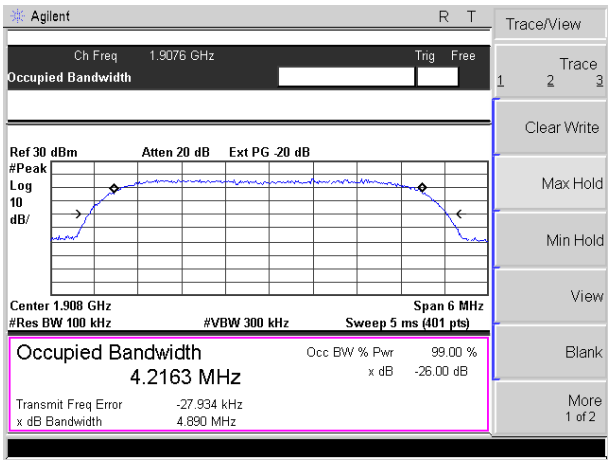
Test plot

(GSM850)	(GSM1900)
-26dB&99% Bandwidth plot on channel 128	-26dB&99% Bandwidth plot on channel 512
	
-26dB&99% Bandwidth plot on channel 190	-26dB&99% Bandwidth plot on channel 661
	
-26dB&99% Bandwidth plot on channel 251	-26dB&99% Bandwidth plot on channel 810
	

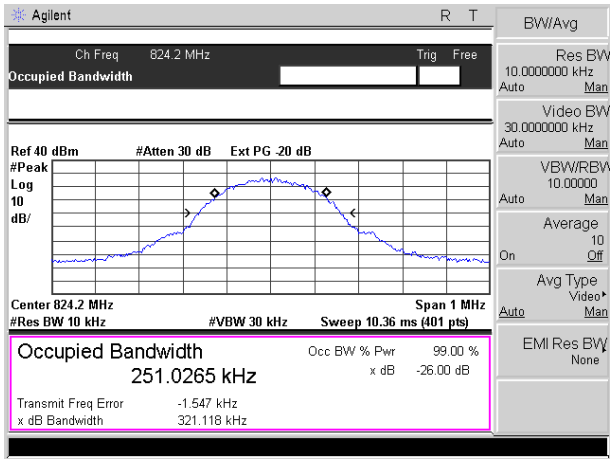
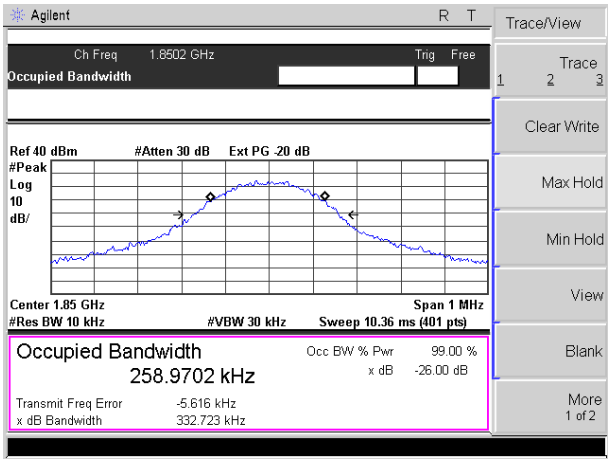
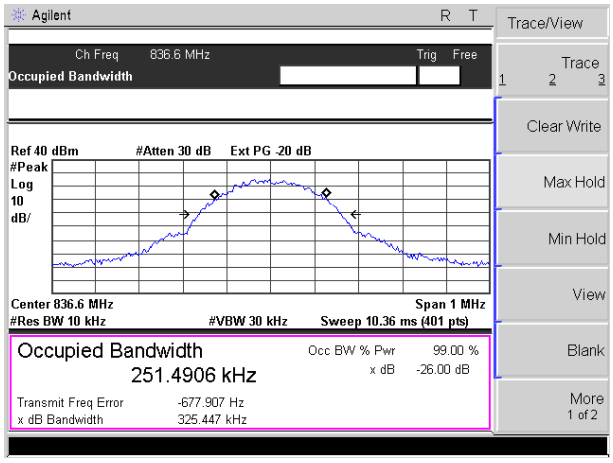
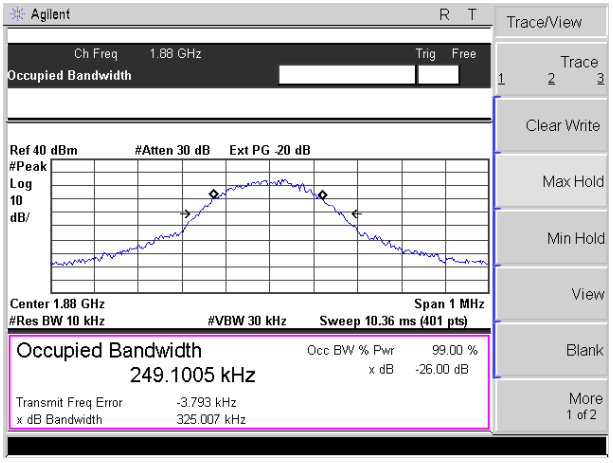
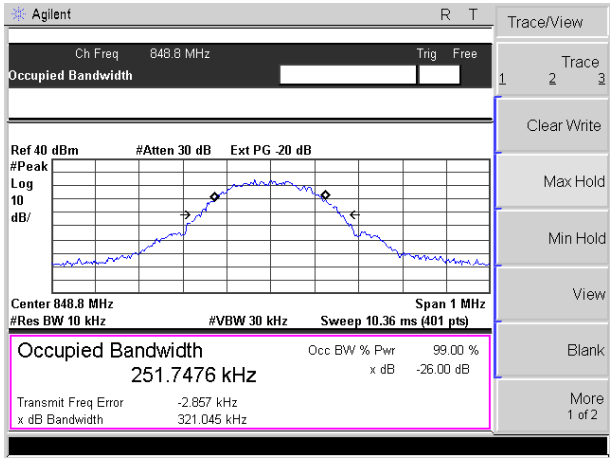
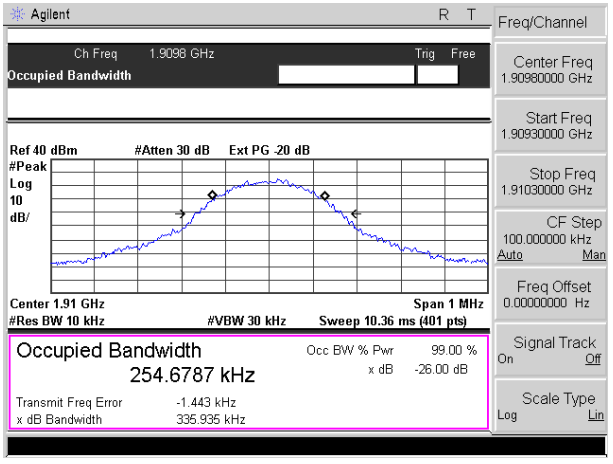
Test plot

(GPRS850)	(GPRS1900)
-26dB&99% Bandwidth plot on channel 128	-26dB&99% Bandwidth plot on channel 512
	
-26dB&99% Bandwidth plot on channel 190	-26dB&99% Bandwidth plot on channel 661
	
-26dB&99% Bandwidth plot on channel 251	-26dB&99% Bandwidth plot on channel 810
	

Test plot

UMTS Band V	UMTS Band II
-26dB&99% Bandwidth plot on channel 4132	-26dB&99% Bandwidth plot on channel 9262
	
-26dB&99% Bandwidth plot on channel 4183	-26dB&99% Bandwidth plot on channel 9400
	
-26dB&99% Bandwidth plot on channel 4233	-26dB&99% Bandwidth plot on channel 9538
	

Test plot

(EGPRS850)	(EGPRS1900)
-26dB&99% Bandwidth plot on channel 128	-26dB&99% Bandwidth plot on channel 512
	
-26dB&99% Bandwidth plot on channel 190	-26dB&99% Bandwidth plot on channel 661
	
-26dB&99% Bandwidth plot on channel 251	-26dB&99% Bandwidth plot on channel 810
	

7.8 CONDUCTED BAND EDGE

7.8.1 Applicable Standard

According to FCC Part 2.1051 and FCC Part 22.917(a) and 24.238(a) and FCC KDB 971168 D01 Section6.0

7.8.2 Conformance Limit

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.

7.8.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.8.4 Test Setup

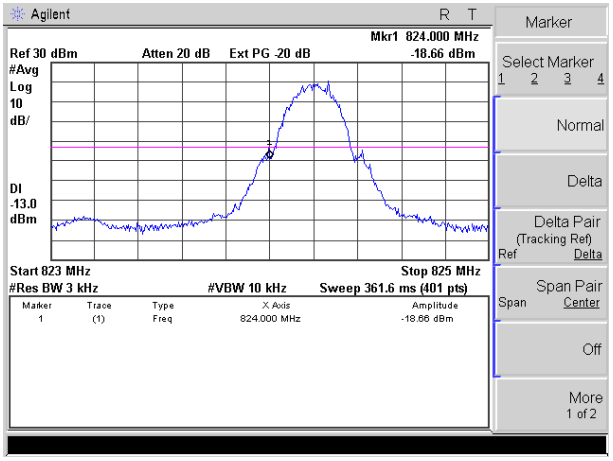
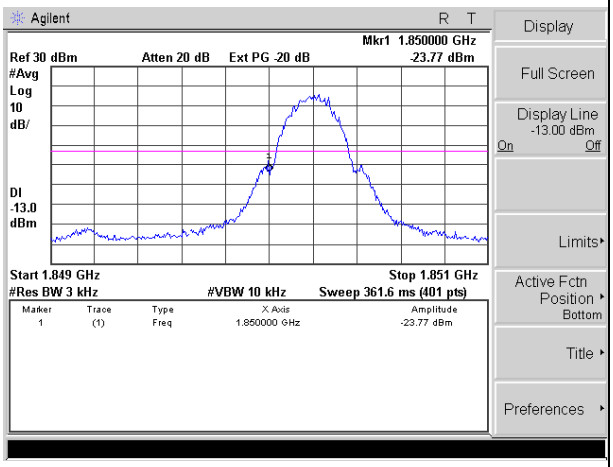
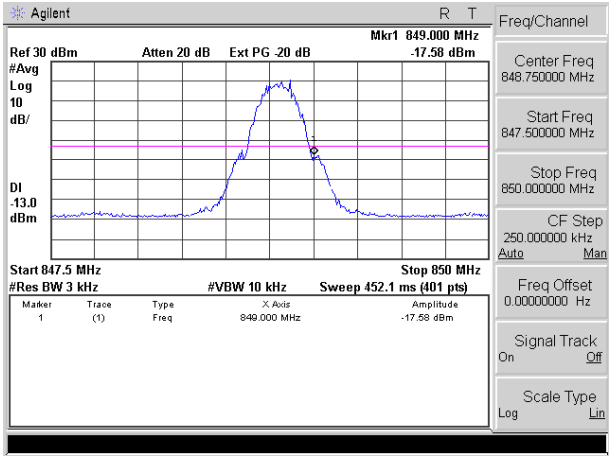
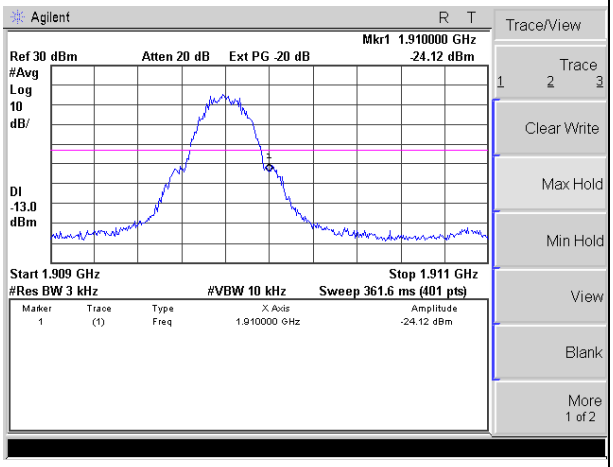
Please refer to Section 6.1 of this test report.

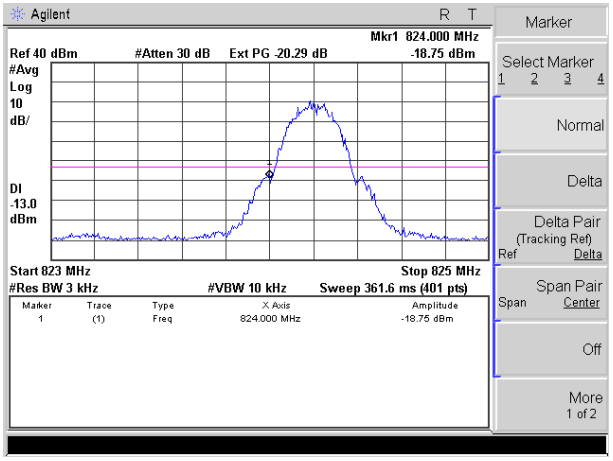
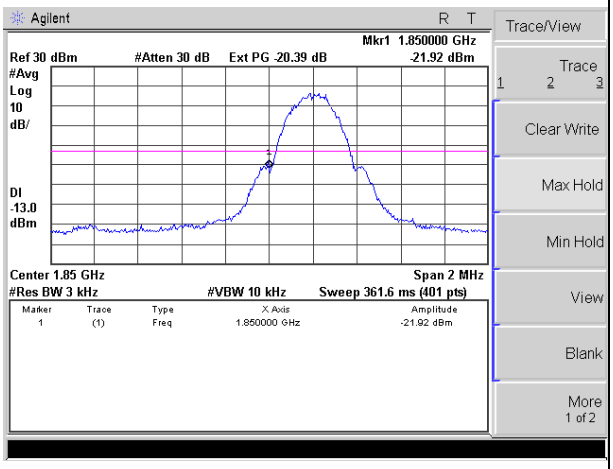
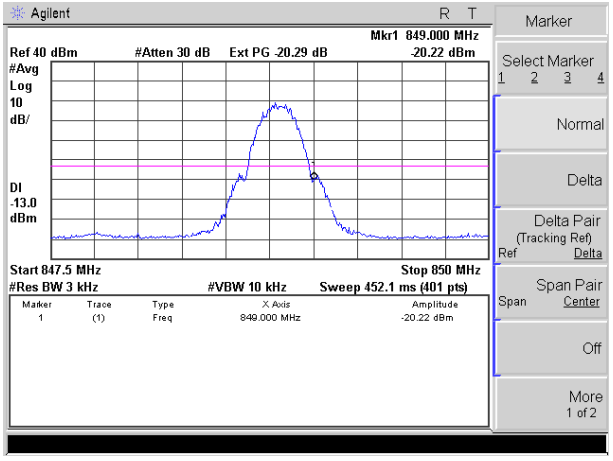
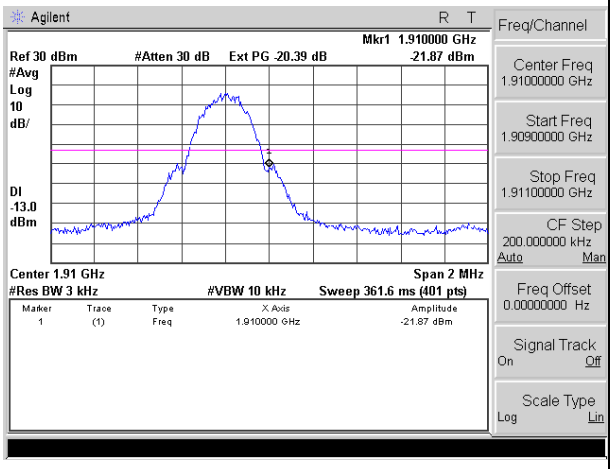
7.8.5 Test Procedure

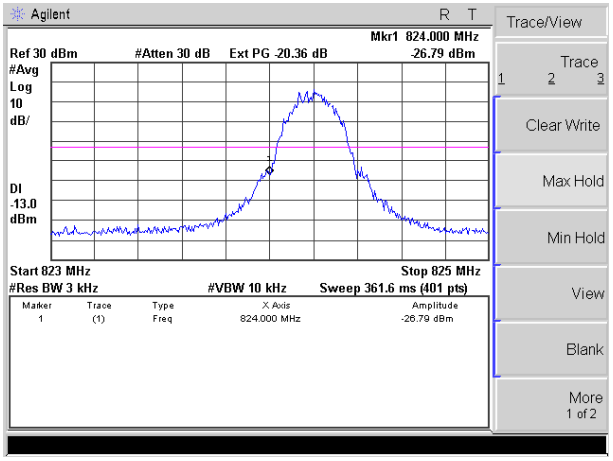
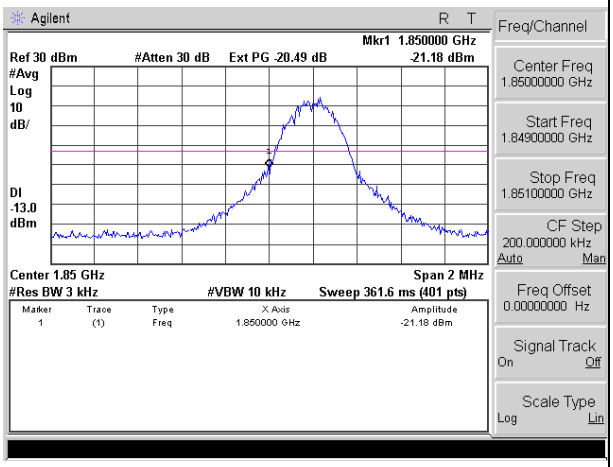
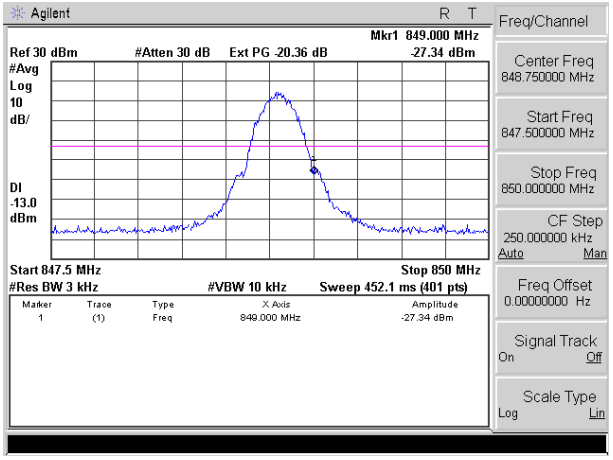
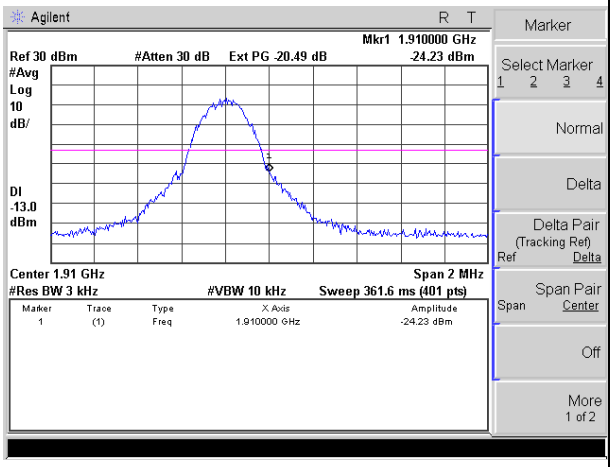
The testing follows FCC KDB 971168 v02r02 Section 6.0.
The EUT was connected to Spectrum Analyzer and Base Station via power divider.
The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
The path loss was compensated to the results for each measurement.
The band edges of low and high channels for the highest RF powers were measured.
The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)
= P(W) - [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.

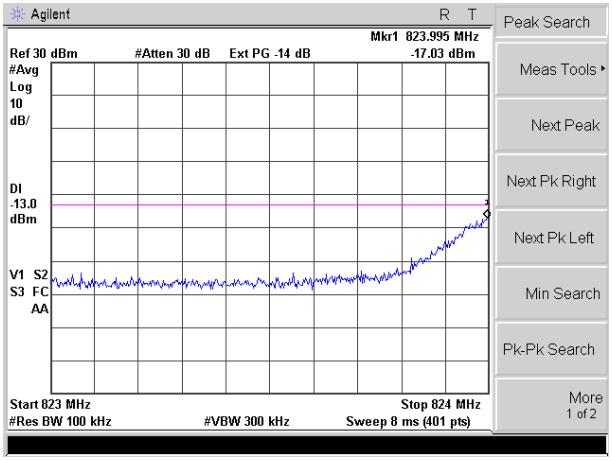
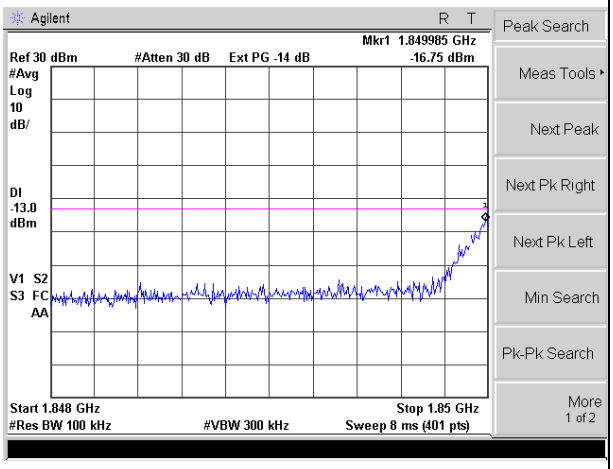
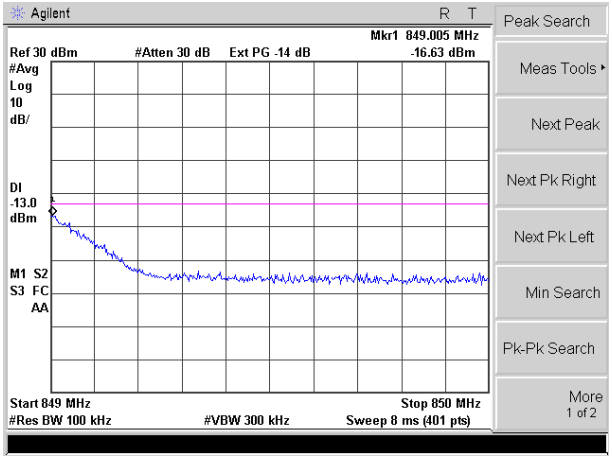
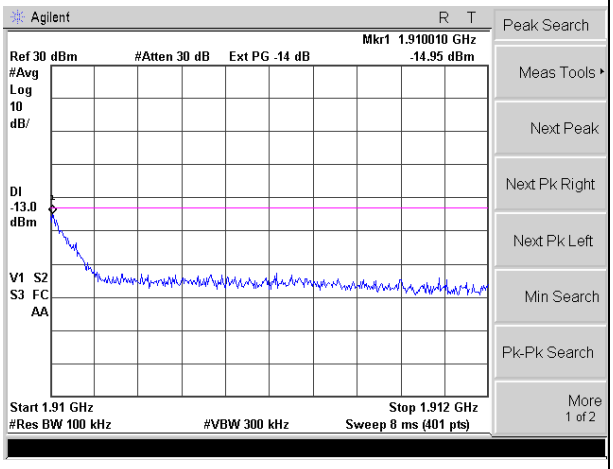
7.8.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS850/GSM/GPRS/GPRS 1900/UMTS band II/ UMTS band V	Test By:	Susan Su
Results: PASS			

Test plot For	
(GSM850)	(GSM1900)
Conducted Band Edge plot on channel 128	Conducted Band Edge plot on channel 512
	
Conducted Band Edge plot on channel 251	Conducted Band Edge plot on channel 810
	

Test plot For	
(GPRS850)	(GPRS1900)
Conducted Band Edge plot on channel 128	Conducted Band Edge plot on channel 512
	
Conducted Band Edge plot on channel 251	Conducted Band Edge plot on channel 810
	

Test plot For	
(EGPRS850)	(EGPRS1900)
Conducted Band Edge plot on channel 128	Conducted Band Edge plot on channel 512
	
Conducted Band Edge plot on channel 251	Conducted Band Edge plot on channel 810
	

Test plot For	
UMTS Band V	UMTS Band II
Conducted Band Edge plot on channel 4132	Conducted Band Edge plot on channel 9262
	
Conducted Band Edge plot on channel 4233	Conducted Band Edge plot on channel 9538
	

7.9 CONDUCTED SPURIOUS EMISSION AT ANTENNA TERMINAL

7.9.1 Applicable Standard

According to FCC Part 2.1051 and FCC Part 22.917(a) and Part 24.238(a) and FCC KDB 971168 D01 Section6.0

7.9.2 Conformance Limit

The power of any emission outside of the authorized operating frequency ranges must be lower than the transmitter power (P) by a factor of at least 43 + 10 log (P) dB.
It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

7.9.3 Measuring Instruments

The Measuring equipment is listed in the section 6.3 of this test report.

7.9.4 Test Setup

Please refer to Section 6.1 of this test report.

7.9.5 Test Procedure

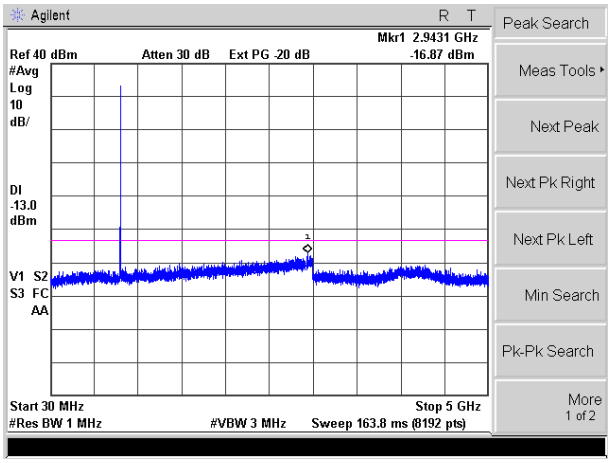
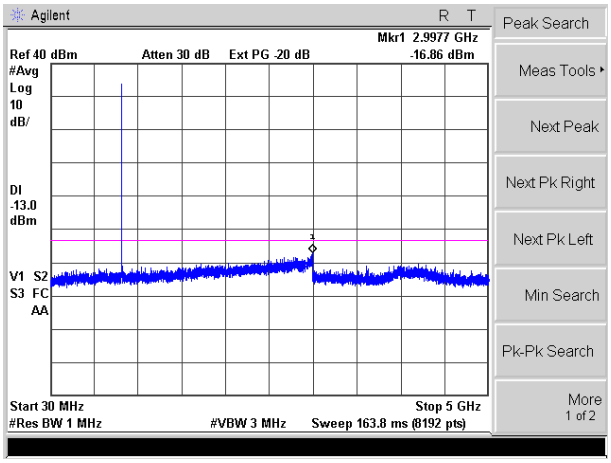
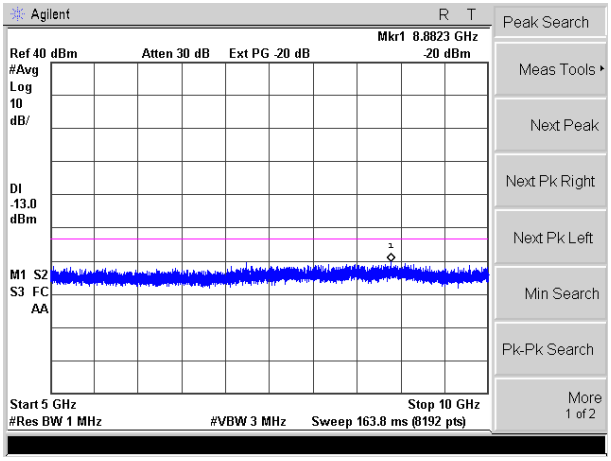
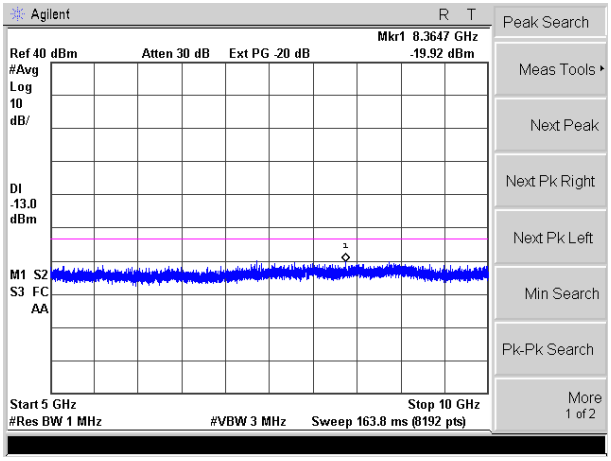
The testing follows FCC KDB 971168 v02r02 Section 6.0.
The EUT was connected to Spectrum Analyzer and Base Station via power divider.
The RF output of EUT was connected to the spectrum analyzer by RF cable and attenuator.
The path loss was compensated to the results for each measurement.
The middle channel for the highest RF power within the transmitting frequency was measured.
The conducted spurious emission for the whole frequency range was taken.
The RF fundamental frequency should be excluded against the limit line in the operating frequency band.
The limit line is derived from 43 + 10log(P) dB below the transmitter power P(Watts)

= P(W) - [43 + 10log(P)] (dB)
= [30 + 10log(P)] (dBm) - [43 + 10log(P)] (dB)
= -13dBm.

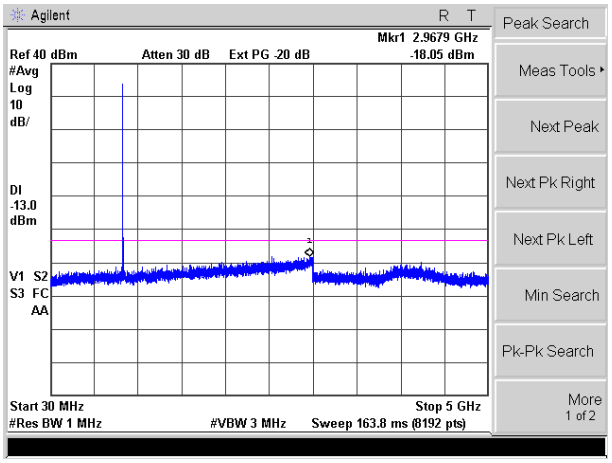
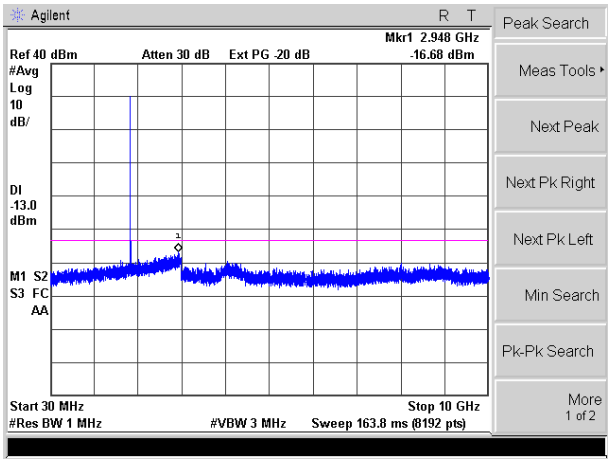
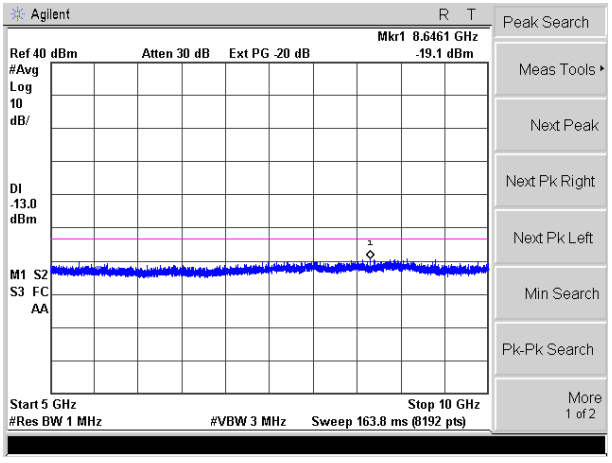
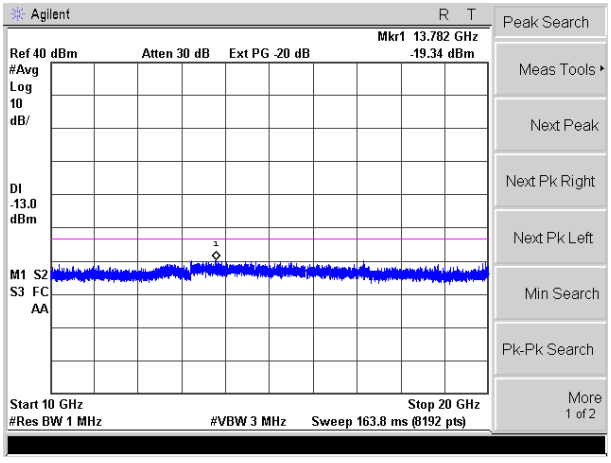
7.9.6 Test Results

EUT:	Smart phone	Model No.:	P5047A
Temperature:	20 ℃	Relative Humidity:	48%
Test Mode:	GSM/GPRS/EGPRS 850/GSM/GPRS/EGPRS 1900/UMTS band II/ UMTS band V	Test By:	Susan Su
Results: PASS			

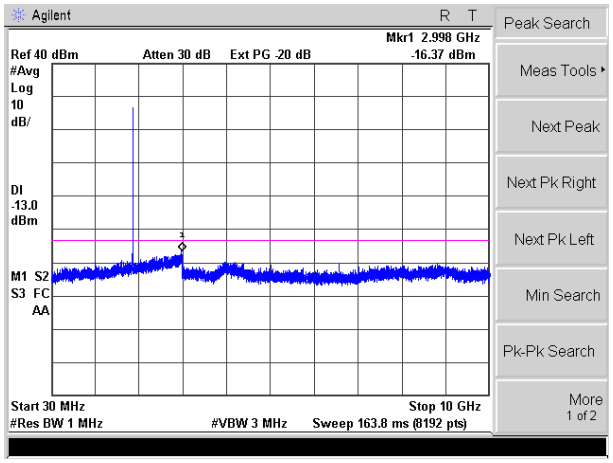
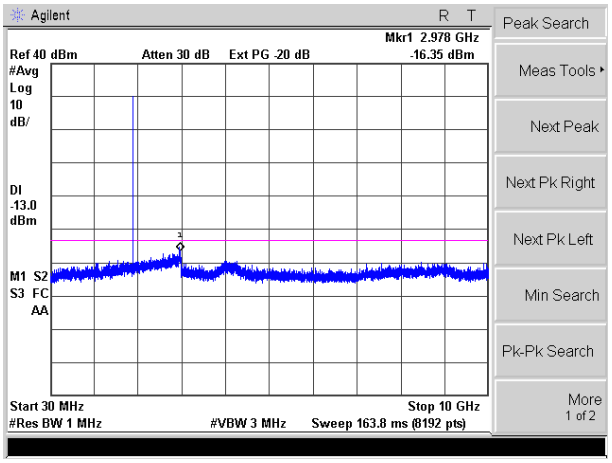
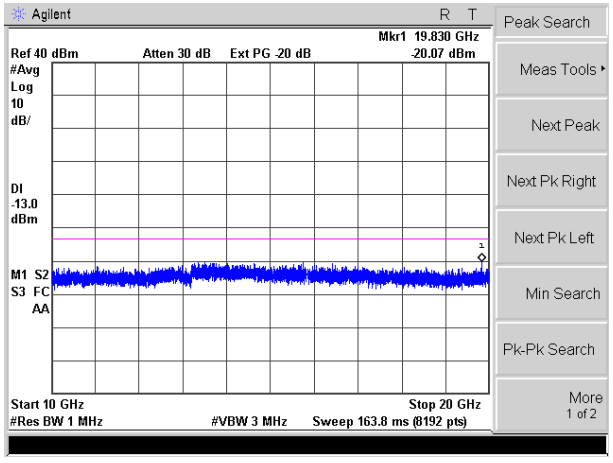
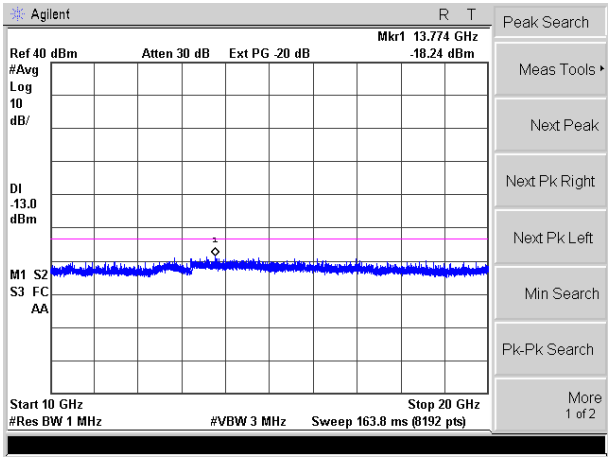
Test Plot

GSM850 Conducted Emission Transmitting Mode CH 128 30MHz – 5GHz	GSM850 Conducted Emission Transmitting Mode CH 190 30MHz – 5GHz
	
Conducted Emission Transmitting Mode CH 128 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 190 5GHz – 10GHz
	

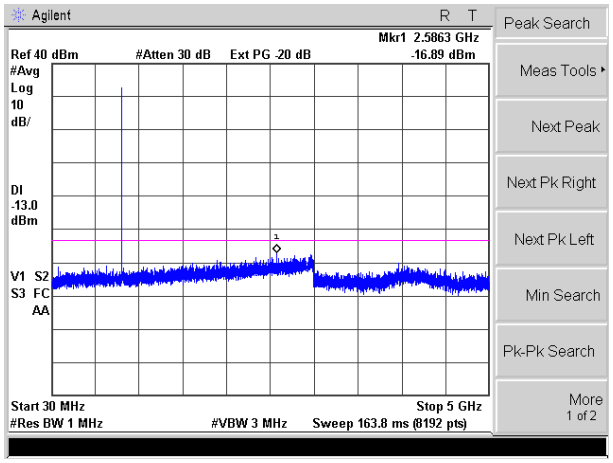
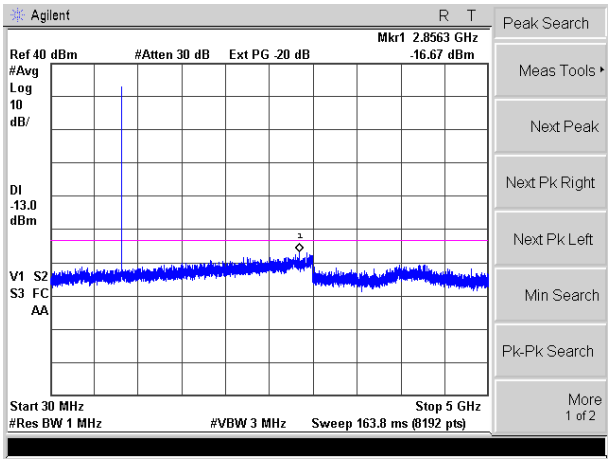
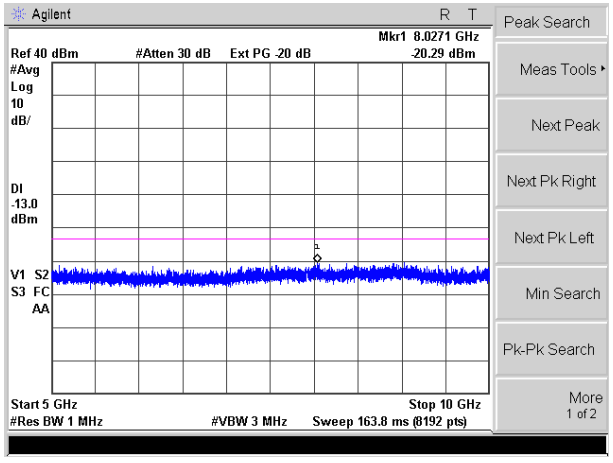
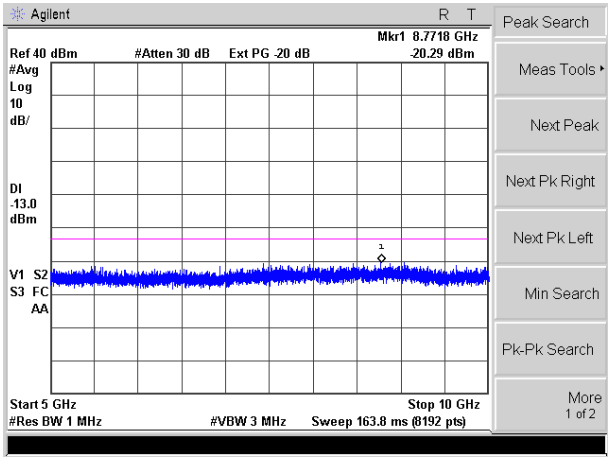
Test Plot

GSM850	GSM1900
Conducted Emission Transmitting Mode CH 251 30MHz – 5GHz	Conducted Emission Transmitting Mode CH 512 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 251 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 512 10GHz – 20GHz
	

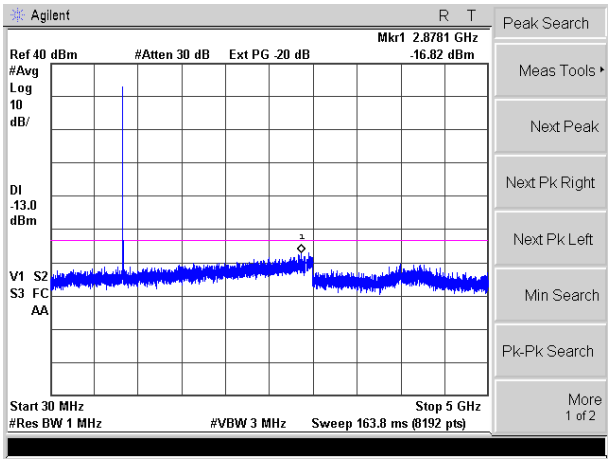
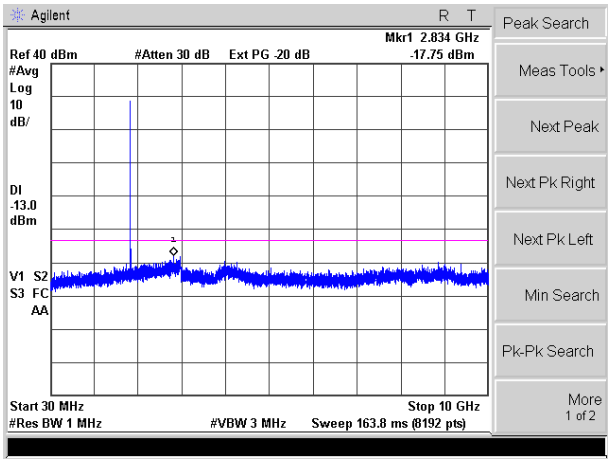
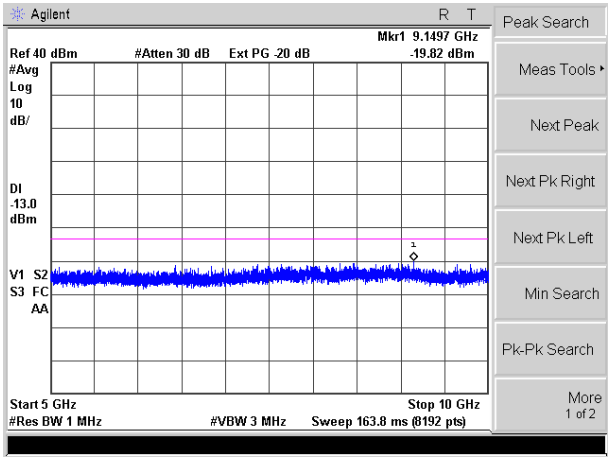
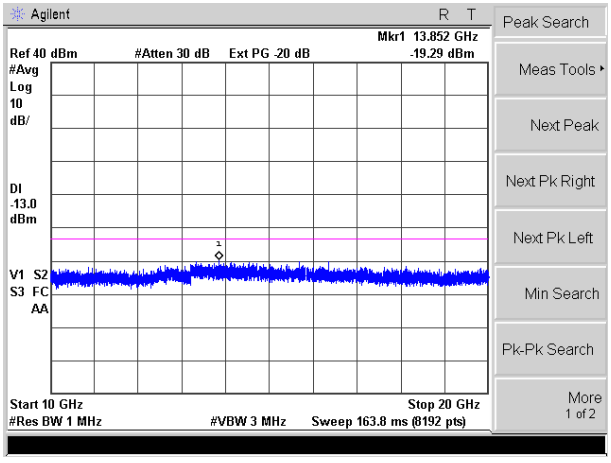
Test Plot

GSM1900 Conducted Emission Transmitting Mode CH 661 30MHz – 10GHz	GSM1900 Conducted Emission Transmitting Mode CH 810 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 661 10GHz – 20GHz	Conducted Emission Transmitting Mode CH 810 10GHz – 20GHz
	

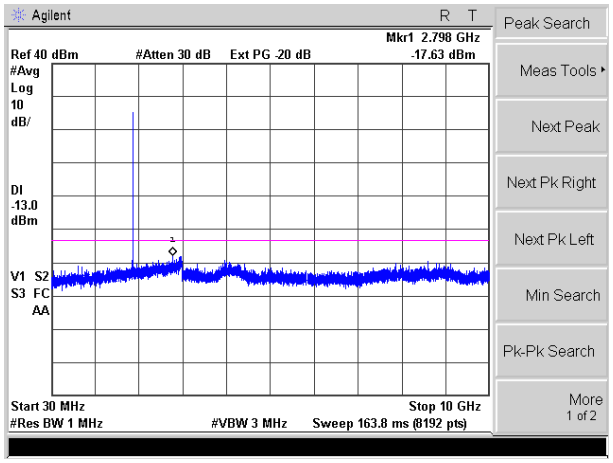
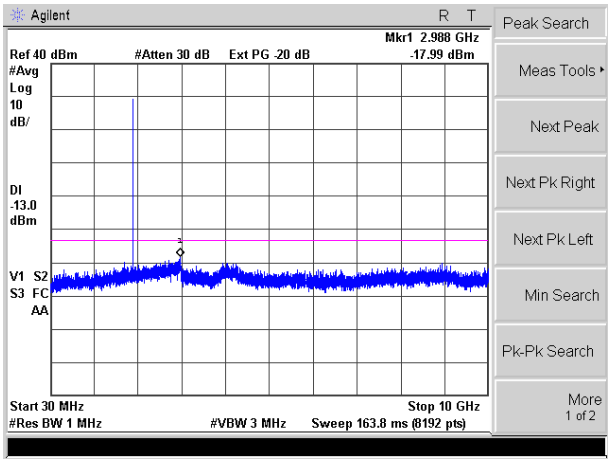
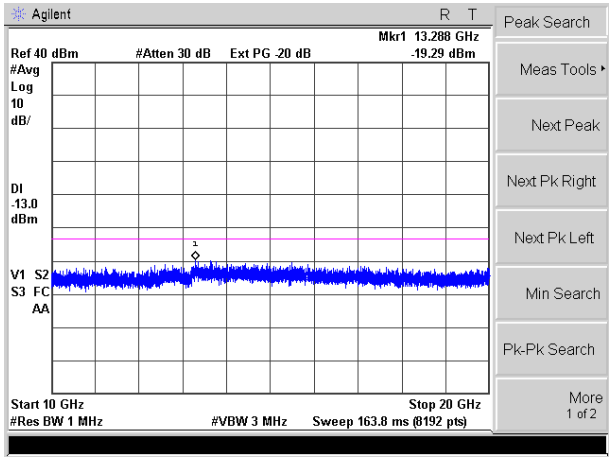
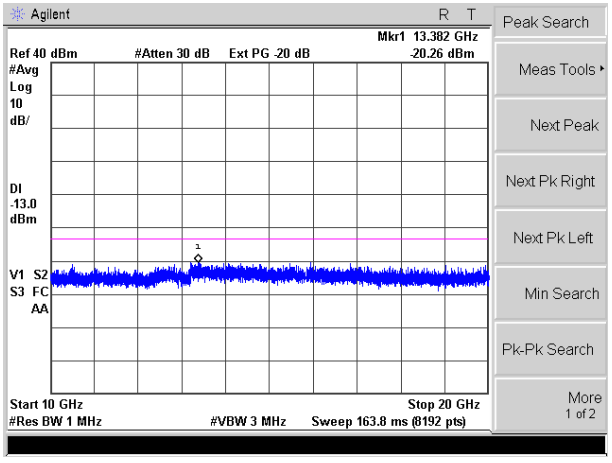
Test Plot

GPRS850 Conducted Emission Transmitting Mode CH 128 30MHz – 5GHz	GPRS850 Conducted Emission Transmitting Mode CH 190 30MHz – 5GHz
	
Conducted Emission Transmitting Mode CH 128 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 190 5GHz – 10GHz
	

Test Plot

GPRS850	GPRS1900
Conducted Emission Transmitting Mode CH 251 30MHz – 5GHz	Conducted Emission Transmitting Mode CH 512 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 251 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 512 10GHz – 20GHz
	

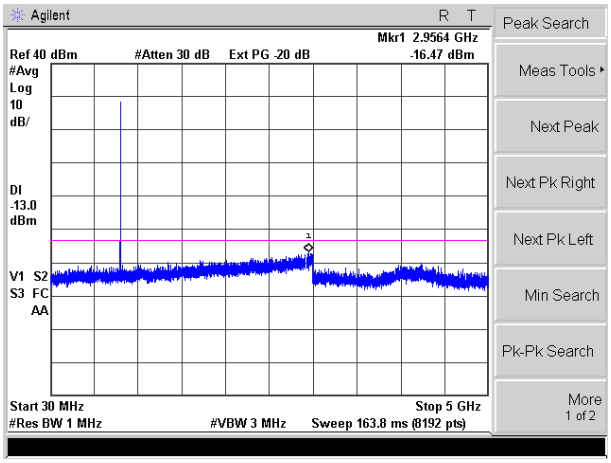
Test Plot

GPRS1900 Conducted Emission Transmitting Mode CH 661 30MHz – 10GHz	GPRS1900 Conducted Emission Transmitting Mode CH 810 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 661 10GHz – 20GHz	Conducted Emission Transmitting Mode CH 810 10GHz – 20GHz
	

Test Plot

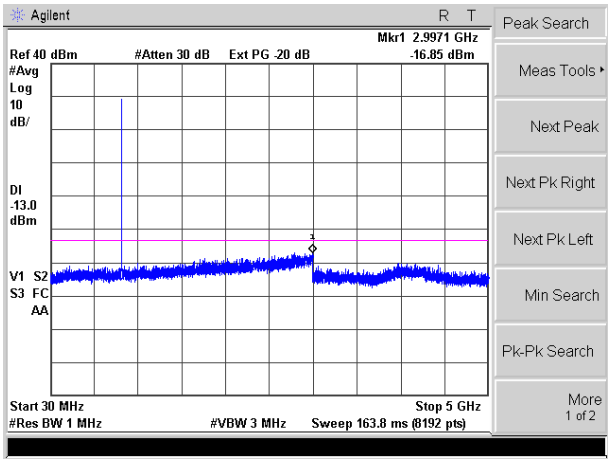
EGPRS850

Conducted Emission Transmitting Mode CH 128
30MHz – 5GHz

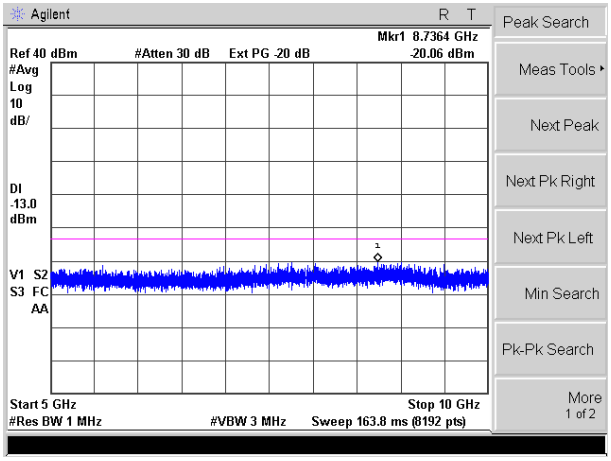


EGPRS850

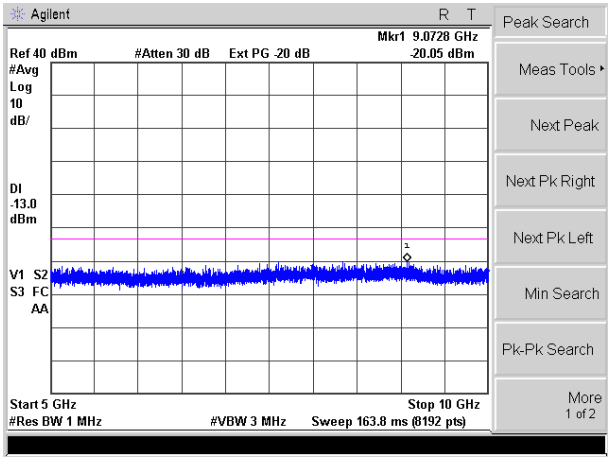
Conducted Emission Transmitting Mode CH 190
30MHz – 5GHz



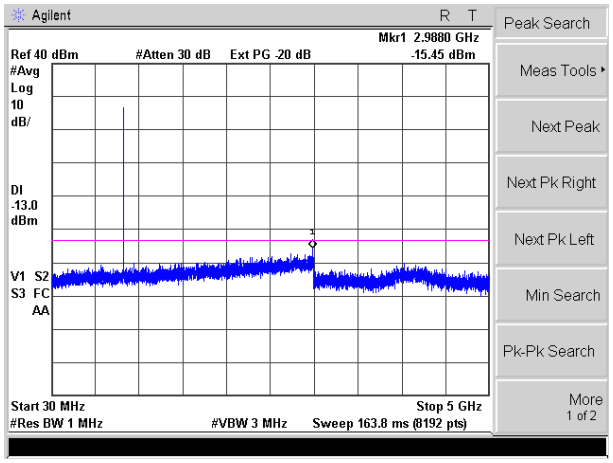
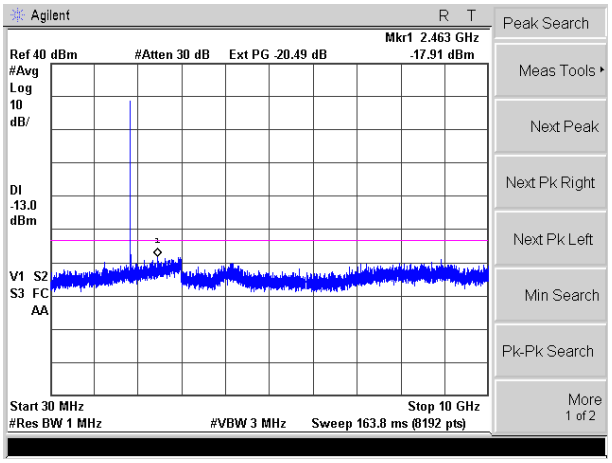
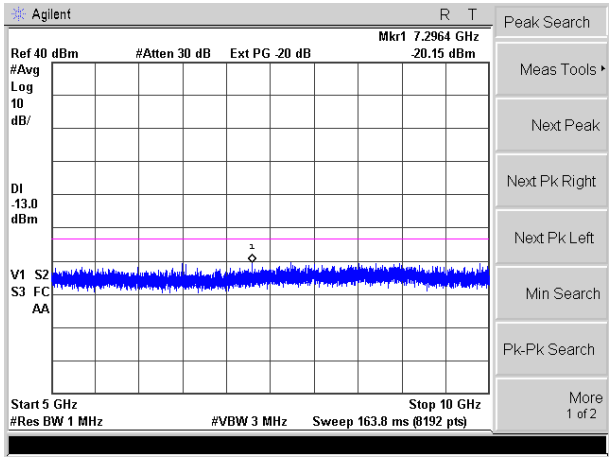
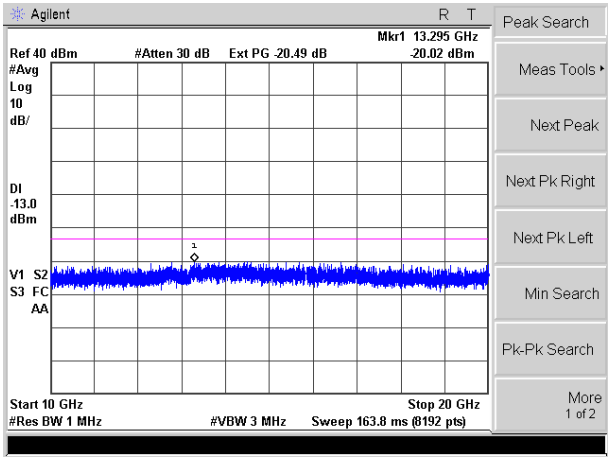
Conducted Emission Transmitting Mode CH 128
5GHz – 10GHz



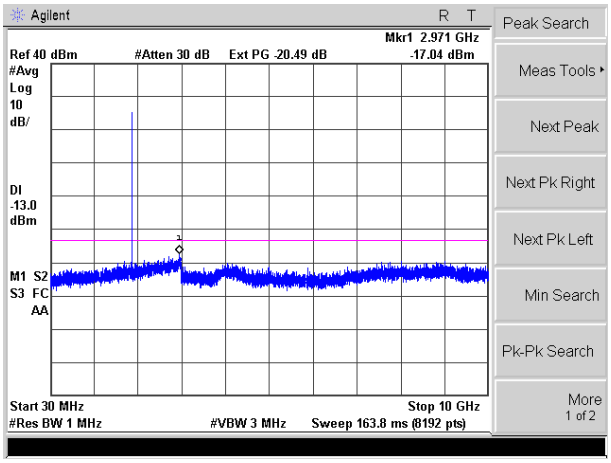
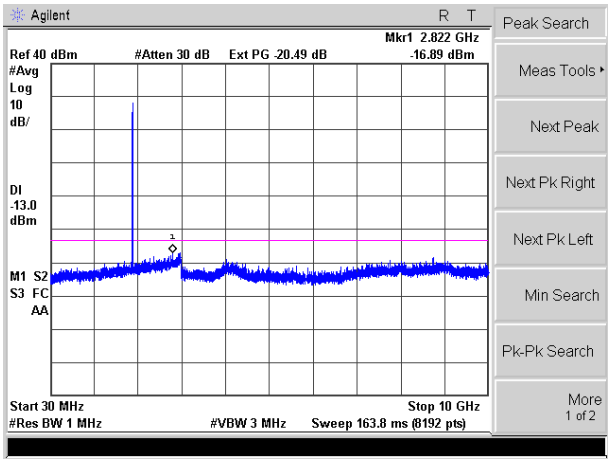
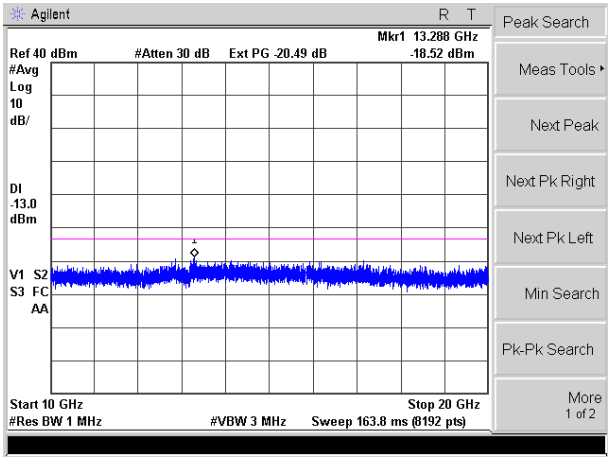
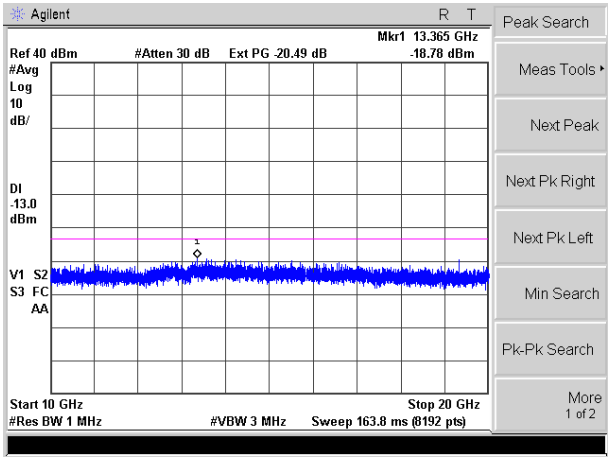
Conducted Emission Transmitting Mode CH 190
5GHz – 10GHz



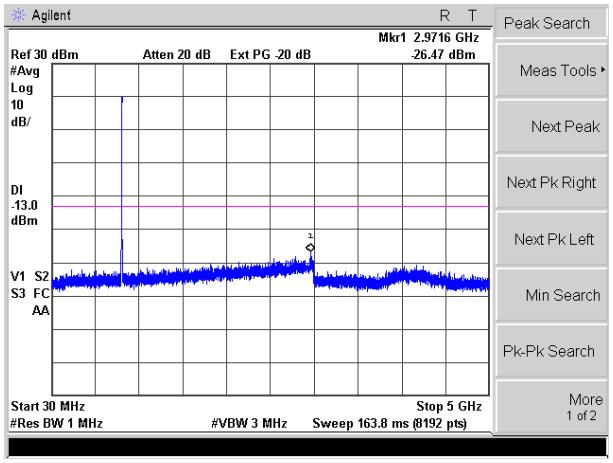
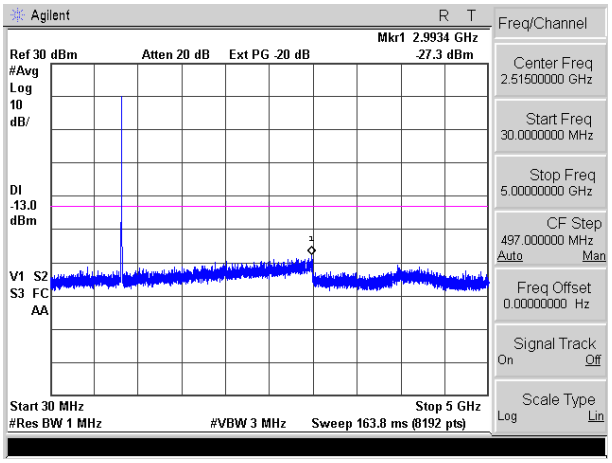
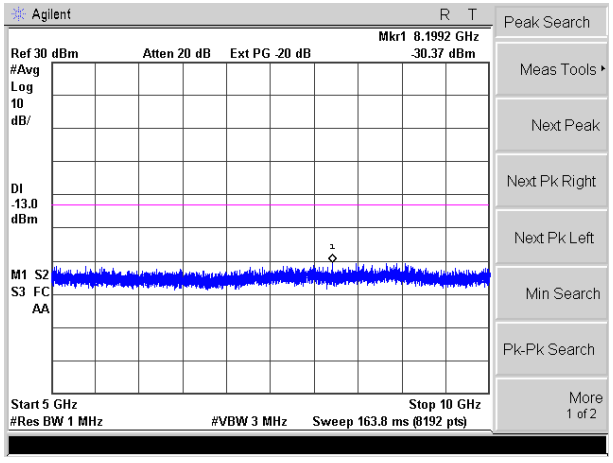
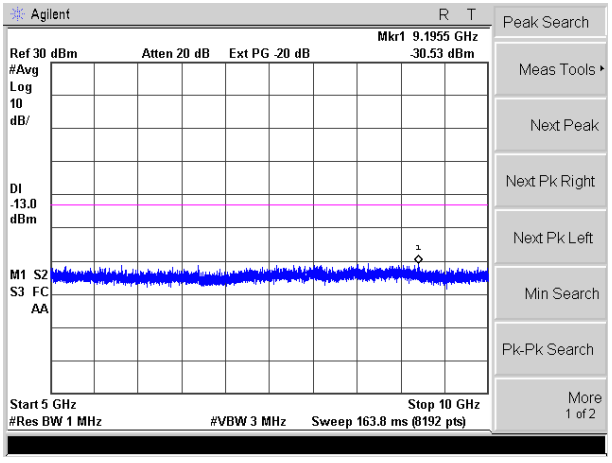
Test Plot

EGPRS850	EGPRS1900
Conducted Emission Transmitting Mode CH 251 30MHz – 5GHz	Conducted Emission Transmitting Mode CH 512 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 251 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 512 10GHz – 20GHz
	

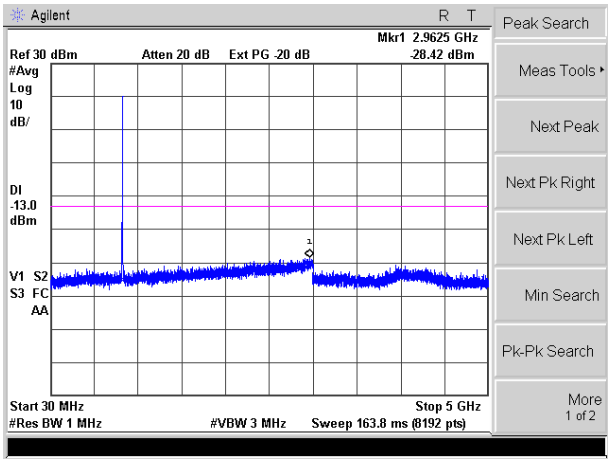
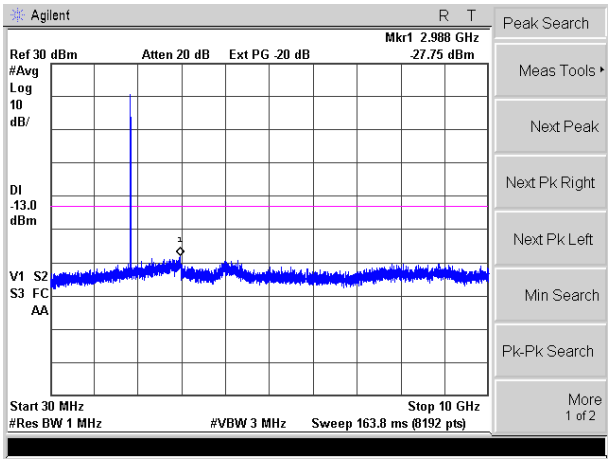
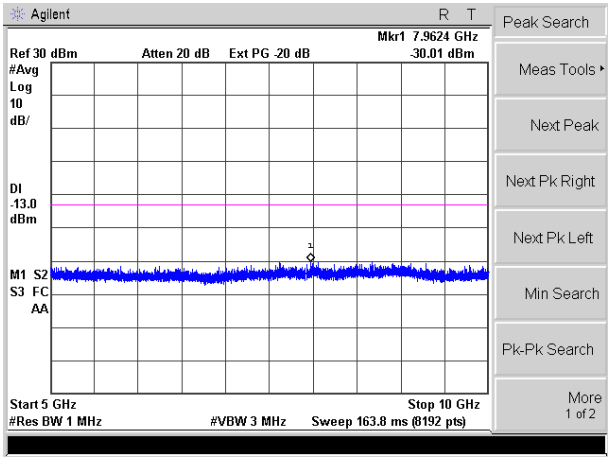
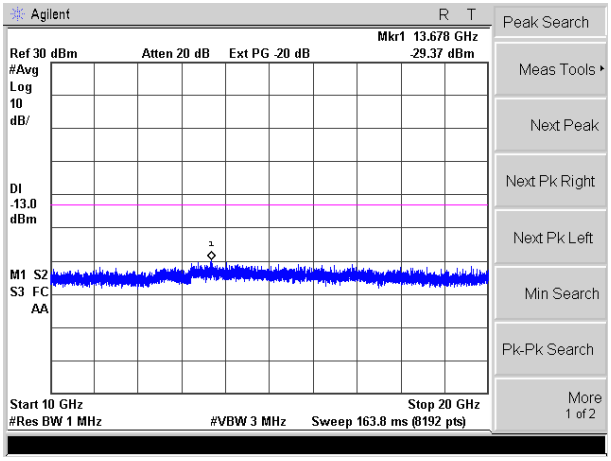
Test Plot

EGPRS1900 Conducted Emission Transmitting Mode CH 661 30MHz – 10GHz	EGPRS1900 Conducted Emission Transmitting Mode CH 810 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 661 10GHz – 20GHz	Conducted Emission Transmitting Mode CH 810 10GHz – 20GHz
	

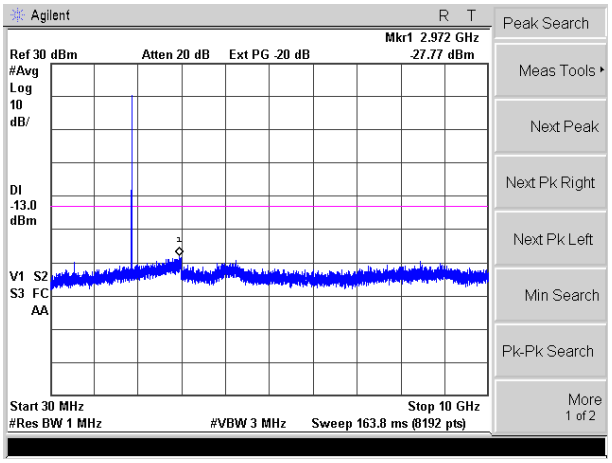
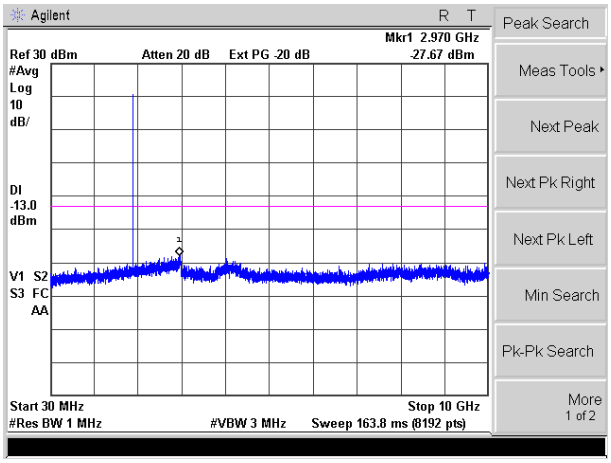
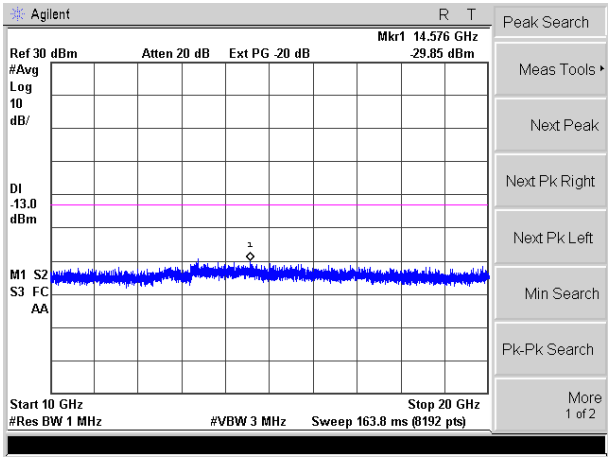
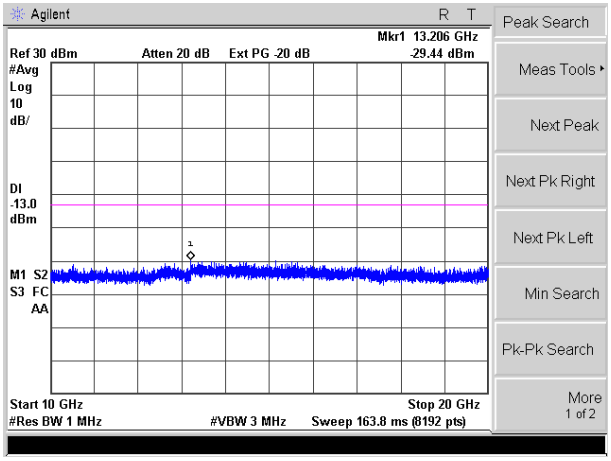
Test Plot

UMTS band V Conducted Emission Transmitting Mode CH 4132 30MHz – 5GHz	UMTS band V Conducted Emission Transmitting Mode CH 4183 30MHz – 5GHz
	
Conducted Emission Transmitting Mode CH 4132 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 4183 5GHz – 10GHz
	

Test Plot

UMTS band V	UMTS band II
Conducted Emission Transmitting Mode CH 4233 30MHz – 5GHz	Conducted Emission Transmitting Mode CH 9262 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 4233 5GHz – 10GHz	Conducted Emission Transmitting Mode CH 9262 10GHz – 20GHz
	

Test Plot

UMTS band II	UMTS band II
Conducted Emission Transmitting Mode CH 9400 30MHz – 10GHz	Conducted Emission Transmitting Mode CH 9538 30MHz – 10GHz
	
Conducted Emission Transmitting Mode CH 9400 10GHz – 20GHz	Conducted Emission Transmitting Mode CH 9538 10GHz – 20GHz
	

END OF REPORT