FCC 47 CFR PART 22H and 24E

Product Type	:	Smartphone
Applicant	:	HTC Corporation
Address		No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan
Trade Name	:	HTC
Model Number	:	PC10110
Test Specification	:	FCC 47 CFR PART 22H: Oct, 2009 FCC 47 CFR PART 24E: Oct, 2009 ANSI/TIA-603-C 2004
Issue Date	:	Aug.30, 2010

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
Tel：+886-3-2710188 / Fax：+886-3-2710190

Taiwan Accreditation Foundation accreditation number: 1330

Revision History

Rev.	Issue Date	Revisions	Revised By
00	Aug. 30, 2010	Initial Issue	

Verification of Compliance

Issued Date: 2010/08/30

Product Type	:	Smartphone
Applicant	:	HTC Corporation
Address	:	No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan
Trade Name	:	HTC
Model Number	:	PC10110
FCC ID	:	NM8PC10110
EUT Rated Voltage	:	DC 5.0V, 1.0A
Test Voltage	:	120 Vac / 60 Hz
Applicable Standard	:	FCC 47 CFR PART 22H: Oct, 2009 FCC 47 CFR PART 24E: Oct, 2009 ANSI/TIA-603-C 2004
Test Result	:	Complied
Performing Lab.	:	A Test Lab Techno Corp. No. 140-1, Changan Street, Bade City Taoyuan County 334, Taiwan R.O.C. Tel：+886-3-2710188 / Fax：+886-3-2710190 Taiwan Accreditation Foundation accreditation number: 1330 http://www.atl-lab.com.tw/e-index.htm

The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2003 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 22H, Part 24E.
The test results of this report relate only to the tested sample identified in this report.

Approved By	:	Miller Lee	Reviewed By	:	Gary Wu
(Manager)		(Miller Lee)	(Testing Engineer)		(Gary Wu)

TABLE OF CONTENTS

1 General Information

1.1. EUT Description

Applicant		HTC Corporation			
Applicant Address		No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan			
Manufacturer		HTC Corporation			
Manufacturer Address		No. 23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan			
Product Type		Smartphone			
Trade Name		HTC			
Model Number		PC10110			
FCC ID		NM8PC10110			
Mode	GSM/GPRS/ EGPRS	Band	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
		850	824.2 ~ 848.8	869.2 ~ 893.8	GMSK/8PSK
		1900	1850.2 ~ 1909.8	1930.2 ~ 1989.8	GMSK/8PSK
Channel Control		Auto			
Type of Antenna		PIFA Antenna			
Antenna Gain (dBi)		GSM/GPRS/EGPRS 850: -1.93 dBi GSM/GPRS/EGPRS 1900: 1.11 dBi			
Max. RF Output power		GSM/GPRS 850: 32.88 dBm / 1.941 W, EGPRS 850: 26.77 dBm / 0.475 W GSM/GPRS 1900: 29.78 dBm / 0.951 W, EGPRS 1900: 25.18 dBm / 0.330 W			
Max. ERP/EIRP		GSM/GPRS 850: 27.72 dBm / 0.592 W, EGPRS 850: 27.14 dBm / 0.518 W GSM/GPRS 1900: 28.50 dBm / 0.708 W, EGPRS 1900: 28.46 dBm / 0.701 W			
Emission Designator		GSM/GPRS 850: 247KGXW, EGPRS 850: 245KG7W GSM/GPRS 1900: 248KGXW, EGPRS 1900: 248KG7W			

1.2. Mode of Operation

ATL has verified the construction and function in typical operation. All the test modes were carried out with the EUT in normal operation, which was shown in this test report and defined as:

Test Mode
Mode 1: GSM 850 Link
Mode 2: GSM 1900 Link
Mode 3: EGPRS 850 Link
Mode 4: EGPRS 1900 Link

Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

Tested System Details

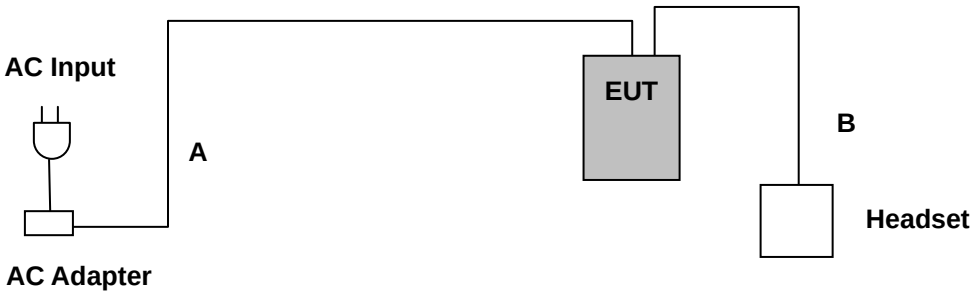
The types for all equipments, plus descriptions of all cables used in the tested system (including inserted cards) are:

	Product	Manufacturer	Model Number	Serial Number	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	109369	N/A

1.3. EUT Exercise Software

1.	Setup the EUT and Base Station (CMU200) as shown on 1.4.
2.	Turn on the power of all equipment.

1.4. Configuration of Test System Details



Signal Cable Type		Signal Cable Description
A	Power Cable	Shielded, 1.2 m
B	Headset Cable	Non-Shielded, 1.25 m

1.5. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	25
Humidity (%RH)	25-75	50
Barometric pressure (mbar)	860-1060	950

1.6. Summary of Test Result

Description	FCC Rule	IC Rule	Limit	Result
Conducted Output Power	§2.1046	N/A	N/A	Pass
Effective Radiated Power	§22.913(a)(2)	RSS-132(4.4) SRSP-503(5.1.3)	< 7 Watts for FCC (<6.3 Watts for IC)	Pass
Equivalent Isotropic Radiated Power	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	< 2 Watts	Pass
Occupied Bandwidth	§2.1049 §22.917(a) §24.238(a)	N/A	N/A	Pass
Band Edge Measurement	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1)RSS-133 (6.5.1)	< $43+10\log_{10}$(P[Watts])	Pass
Conducted Emission	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	< $43+10\log_{10}$(P[Watts])	Pass
Field Strength of Spurious Radiation	§2.1053 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	< $43+10\log_{10}$(P[Watts])	Pass
Frequency Stability for Temperature & Voltage	§2.1055 §22.355 §24.235	RSS-132(4.3) RSS-133(6.3)	< 2.5 ppm	Pass

2 RF Output Power Test

2.1. Limit

N/A

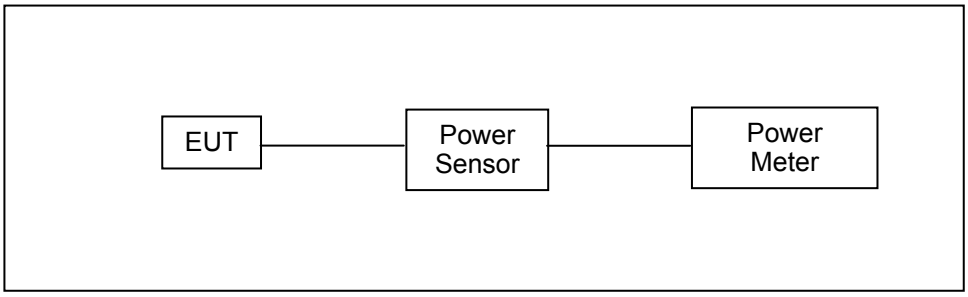
2.2. Test Instruments

Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	109369	07/29/2009	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	07/19/2010	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	07/19/2010	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

2.3. Test Setup



2.4. Test Procedure

The measurement is made according to ANSI/TIA-603-C-2004 as follows:

1. The transmitter output was connected to power meter and base station through power divider.
2. Set base station for EUT at GSM 850: PCL=5 and PCS 1900: PCL=0.
3. Set base station for EUT at WCDMA Band V and WCDMA Band II, power level was set to maximum.
4. Select lowest, middle, and highest channels for each band.

2.5. Uncertainty

The measurement uncertainty is defined as for RF output power measurement is 1.2 dB.

2.6. Test Result

Model Number	PC10110					
Test Item	RF Output Power					
Date of Test	08/18/2010			Test Site	TE02	
Bands	Data Rate	Frequency (MHz)	Time-Average Power		Peak Power	
			(dBm)	(W)	(dBm)	(W)
GSM 850	-----	824.2	23.32	0.215	32.53	1.791
		836.6	23.34	0.216	32.67	1.849
		848.8	23.50	0.224	**32.88**	**1.941**
GRRS 850	4Down1Up	824.2	23.00	0.199	32.35	1.718
		836.6	23.04	0.201	32.26	1.683
		848.8	23.13	0.206	32.39	1.734
	3Down2Up	824.2	24.90	0.309	31.15	1.303
		836.6	25.25	0.335	31.67	1.469
		848.8	25.37	0.344	31.71	1.483
EGPRS 850	4Down1Up	824.2	17.23	0.053	26.53	0.450
		836.6	17.43	0.055	26.77	0.475
		848.8	17.50	0.056	26.75	0.473
	3Down2Up	824.2	18.70	0.074	25.08	0.322
		836.6	18.94	0.078	25.28	0.337
		848.8	19.08	0.081	25.48	0.353
GSM 1900	-----	1850.20	20.17	0.104	29.48	0.887
		1880.00	20.42	0.110	**29.78**	**0.951**
		1909.80	20.36	0.109	29.64	0.920
GRRS 1900	4Down1Up	1850.20	19.97	0.099	29.29	0.849
		1880.00	20.27	0.106	29.50	0.891
		1909.80	20.24	0.106	29.48	0.887
	3Down2Up	1850.20	21.86	0.153	28.11	0.647
		1880.00	22.32	0.171	28.72	0.745
		1909.80	22.44	0.175	28.81	0.760
EGPRS 1900	4Down1Up	1850.20	15.82	0.038	25.13	0.326
		1880.00	15.85	0.038	25.04	0.319
		1909.80	15.88	0.039	25.18	0.330
	3Down2Up	1850.20	17.92	0.062	24.24	0.265
		1880.00	17.89	0.061	24.26	0.267
		1909.80	17.92	0.062	24.23	0.265

Note: The peak power testing result was used peak detector.

3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

3.1. Limit

For FCC Part 22.913(a)(2): The ERP of mobile transmitters and auxiliary test transmitters must not exceed 7 Watts.

For FCC Part 24.232(b): The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

3.2. Test Instruments

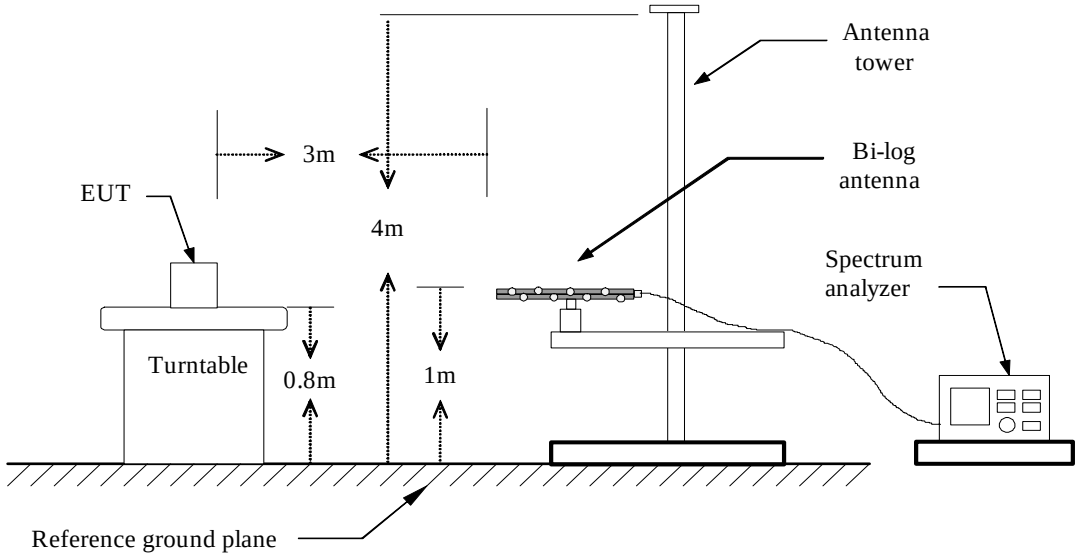
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/07/2009	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	02/24/2010	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2010	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2010	(1)
Bi-log Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	08/02/2010	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/29/2010	(1)
Horn Antenna	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/29/2010	(1)
Test Site	ATL	TE01	888001	07/30/2010	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

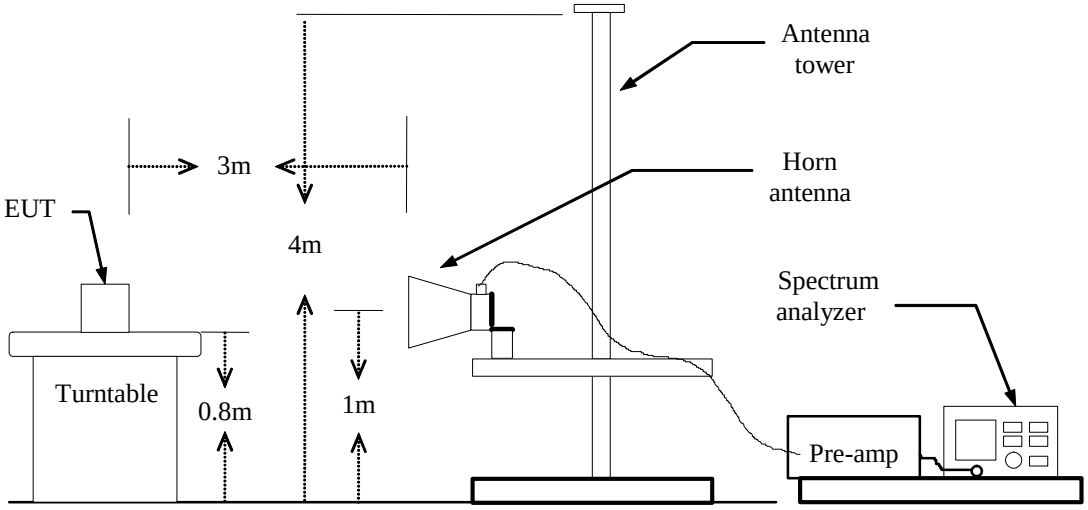
NOTE: N.C.R. = No Calibration Request.

3.3. Test Setup

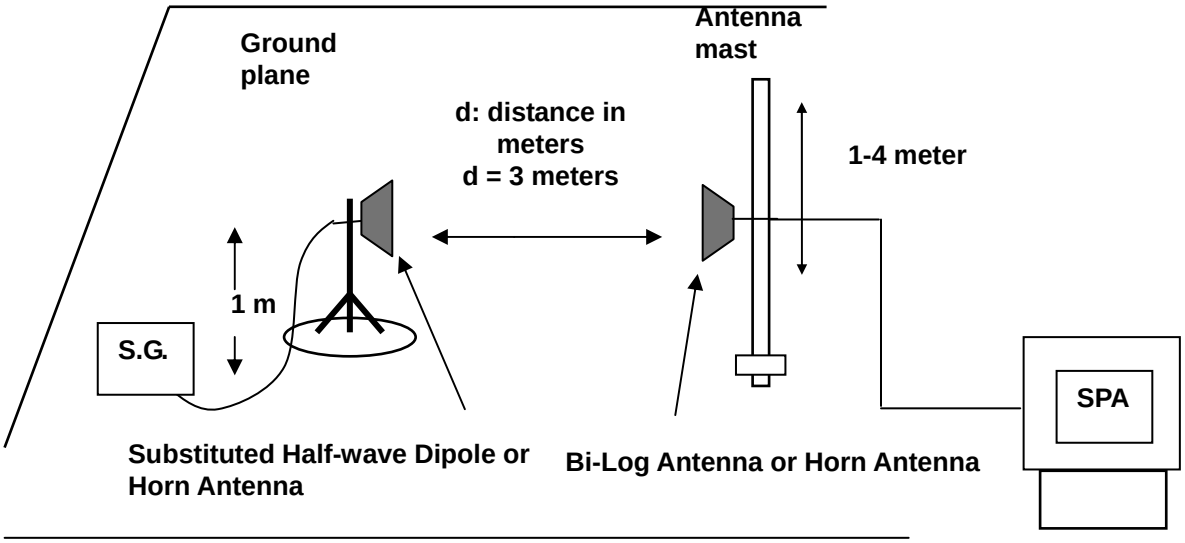
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



3.4. Test Procedure

The measurement is made according to ANSI/TIA-603-C-2004 as follows:

The EUT was placed on an non-conductive turntable using a non-conductive support. The radiated emission at the fundamental frequency was measured at 3 m with a test antenna and EMI spectrum analyzer.

During the measurement of the EUT, the resolution bandwidth was set to 3MHz and the average bandwidth was set to 3MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824-849MHz, and EIRP in frequency band 1851.25 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1851.25-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable (dB)

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable (dB)

3.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is ± 3.072 dB.

3.6. Test Result

Model Number	PC10110						
Test Item	ERP/EIRP						
Test Mode	Mode 1: GSM 850 Link						
Date of Test	08/25/2010				Test Site	TC03	
Bands	Frequency (MHz)	Ant. Polar. (H / V)	Read Level (dBm)	Correction factor (dB)	ERP		Limit
					(dBm)	(W)	
GSM 850	824.2	H	13.65	8.63	22.28	0.169	< 7W
		V	11.33	7.78	19.11	0.081	< 7W
	836.6	H	15.34	10.34	25.68	0.370	< 7W
		V	13.87	8.02	21.89	0.155	< 7W
	848.8	H	15.92	11.80	**27.72**	**0.592**	< 7W
		V	14.80	8.05	22.85	0.193	< 7W
EGPRS 850	824.2	H	13.50	8.59	22.09	0.162	< 7W
		V	9.95	7.80	17.75	0.060	< 7W
	836.6	H	14.54	10.32	24.86	0.306	< 7W
		V	12.78	8.02	20.80	0.120	< 7W
	848.8	H	15.34	11.80	**27.14**	**0.518**	< 7W
		V	14.43	8.04	22.47	0.177	< 7W

Note: 1. ERP/EIRP = Read Level + Correction factor.

2. For WCDMA signals, a peak detector is used with RBW = VBW = 5MHz.

3. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW= 1 MHz.

Model Number	PC10110						
Test Item	ERP/EIRP						
Test Mode	Mode 2: GSM 1900 Link						
Date of Test	08/25/2010				Test Site	TC03	
Bands	Frequency (MHz)	Ant. Polar. (H / V)	Read Level (dBm)	Correction factor (dB)	ERP		Limit
					(dBm)	(W)	
GSM 1900	1850.20	H	17.99	10.42	28.41	0.693	< 2W
		V	18.27	8.26	26.53	0.450	< 2W
	1880.00	H	18.06	10.44	**28.50**	**0.708**	< 2W
		V	18.26	8.50	26.76	0.474	< 2W
	1909.80	H	17.74	10.44	28.18	0.658	< 2W
		V	18.14	8.73	26.87	0.486	< 2W
EGPRS 1900	1850.20	H	18.04	10.42	**28.46**	**0.701**	< 2W
		V	18.20	8.26	26.46	0.443	< 2W
	1880.00	H	17.93	10.44	28.37	0.687	< 2W
		V	18.20	8.50	26.70	0.468	< 2W
	1909.80	H	17.78	10.43	28.21	0.662	< 2W
		V	18.16	8.73	26.89	0.489	< 2W

Note: 1. ERP/EIRP = Read Level + Correction factor.

2. For WCDMA signals, a peak detector is used with RBW = VBW = 5MHz.

3. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with RBW = VBW= 1 MHz.

4 Occupied Bandwidth Test

4.1. Limit

The Occupied Bandwidth Limit:

N/A.

The Band Edge Limit:

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

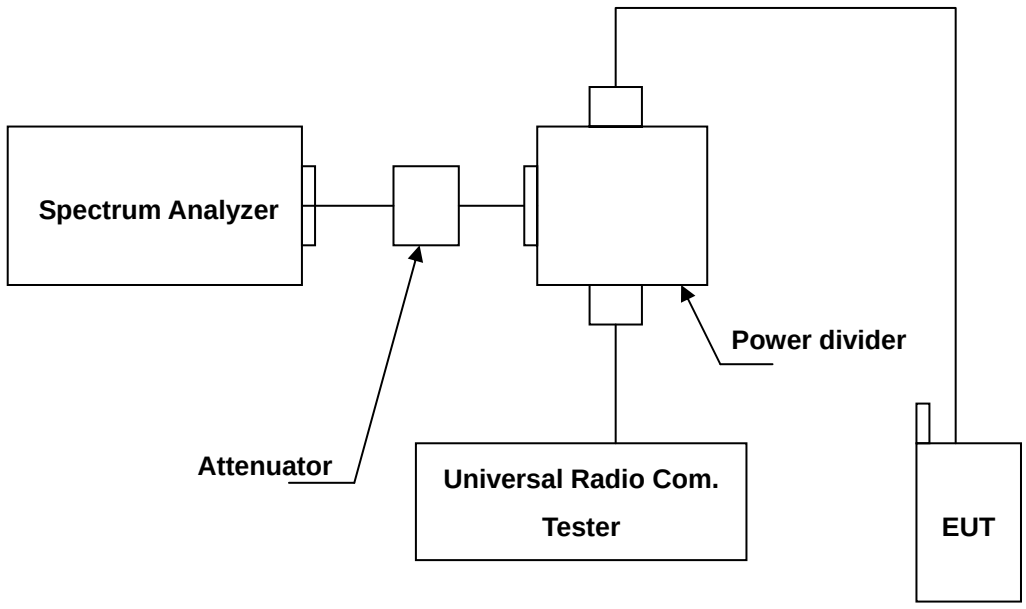
4.2. Test Instruments

Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	109369	07/29/2009	(2)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

4.3. Setup



4.4. Test Procedure

The measurement is made according to FCC rules part 22 and 24:

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The occupied bandwidth of middle channel for the highest and lowest RF powers was measured.
3. The band edge of low and high channels for the highest RF powers within the transmitting frequency band were measured. Setting RBW as roughly BW/100.
4. The band edge setting:
   a. RB=3 kHz; VB=3 kHz for GSM 850 and PCS 1900.
   b. RB=100 kHz; VB=100 kHz for WCDMA Band V and WCDMA Band II.

4.5. Uncertainty

The measurement uncertainty is defined as ± 10Hz

4.6. Test Result

99% Occupied Bandwidth

Model Number	PC10110			
Test Item	Occupied Bandwidth			
Test Mode	Mode 1: GSM 850 Link			
Date of Test	08/09/2010		Test Site	TE02
Channel No.	Frequency (MHz)	99% Bandwidth (kHz)	Note	
128	824.2	244.3454	RBW:3KHz , VBW:10KHz	
190	836.6	245.1186	RBW:3KHz , VBW:10KHz	
251	848.8	246.6852	RBW:3KHz , VBW:10KHz	

Figure Channel 128

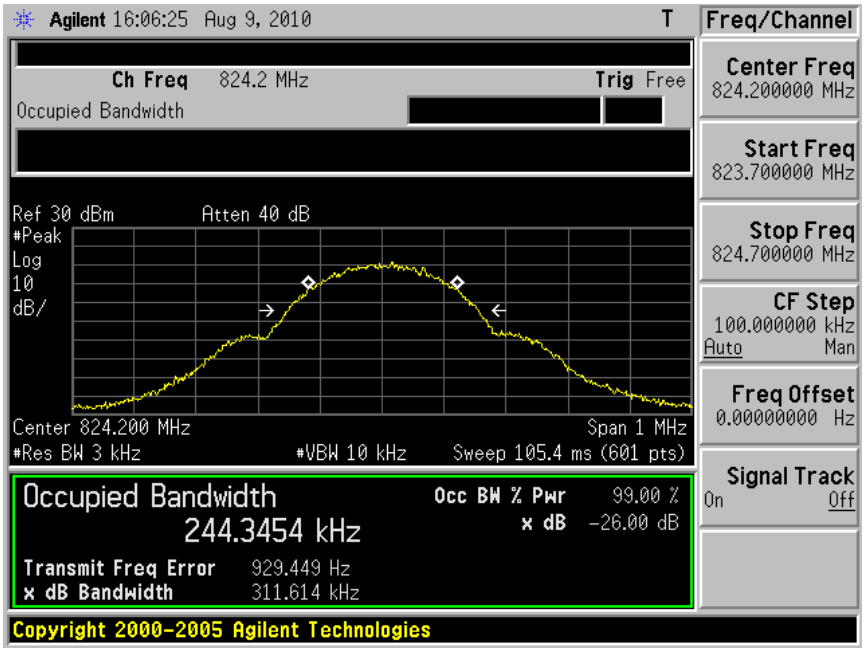


Figure Channel 190

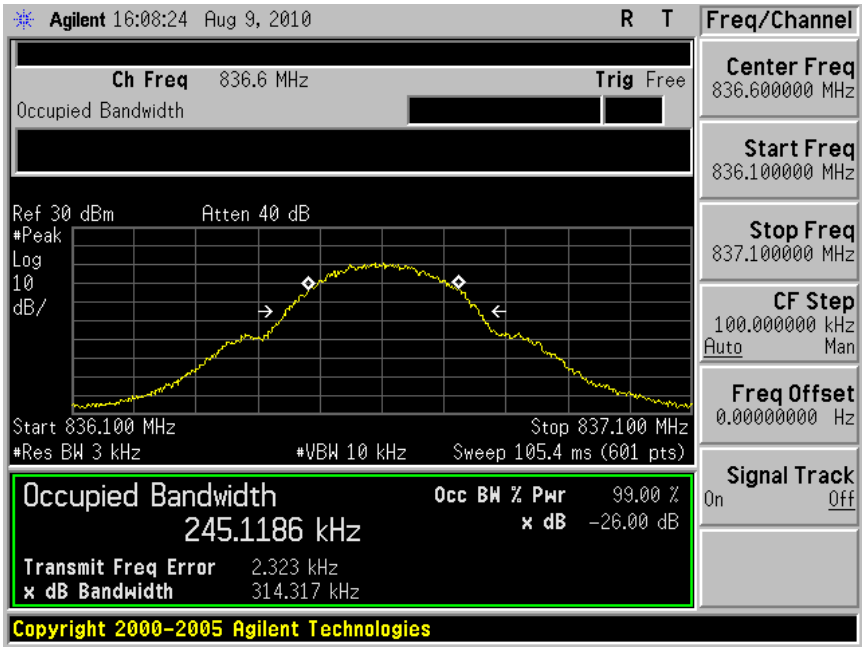
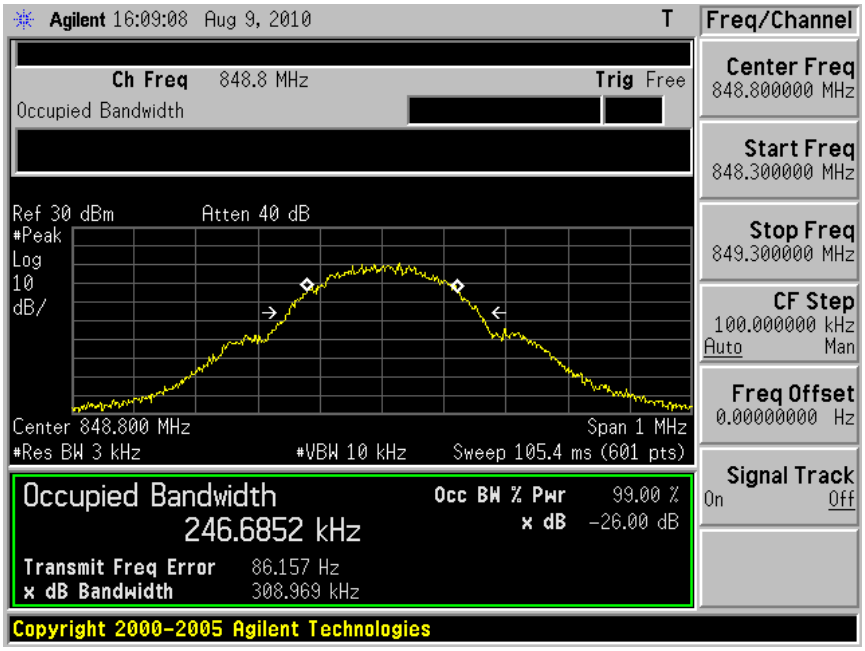


Figure Channel 251



Model Number	PC10110			
Test Item	Occupied Bandwidth			
Test Mode	Mode 2: GSM 1900 Link			
Date of Test	08/09/2010		Test Site	TE02
Channel No.	Frequency (MHz)	99% Bandwidth (kHz)	Note	
512	1850.20	244.9050	RBW:3KHz , VBW:10KHz	
661	1880.00	242.1023	RBW:3KHz , VBW:10KHz	
810	1909.80	242.3231	RBW:3KHz , VBW:10KHz	

Figure Channel 512

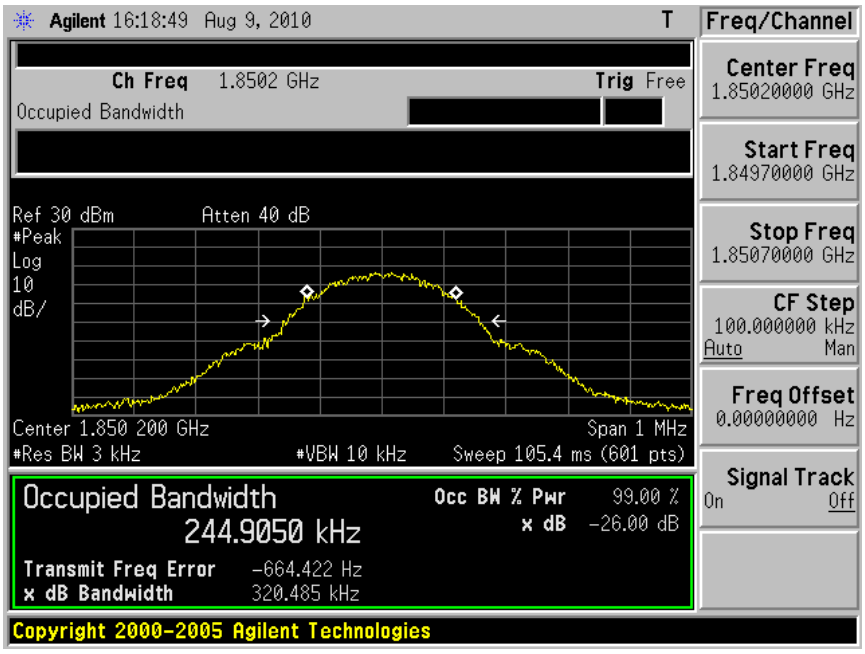


Figure Channel 661

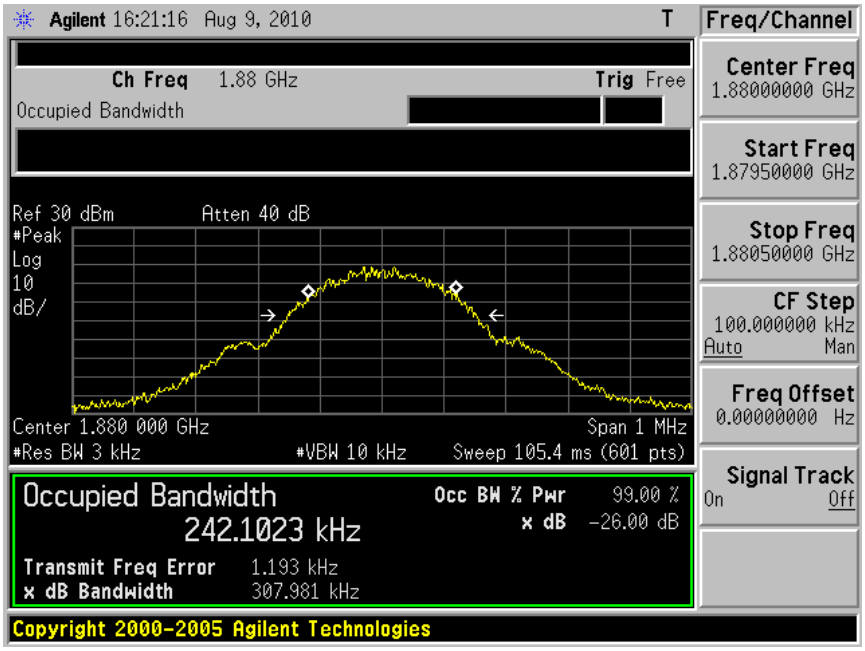
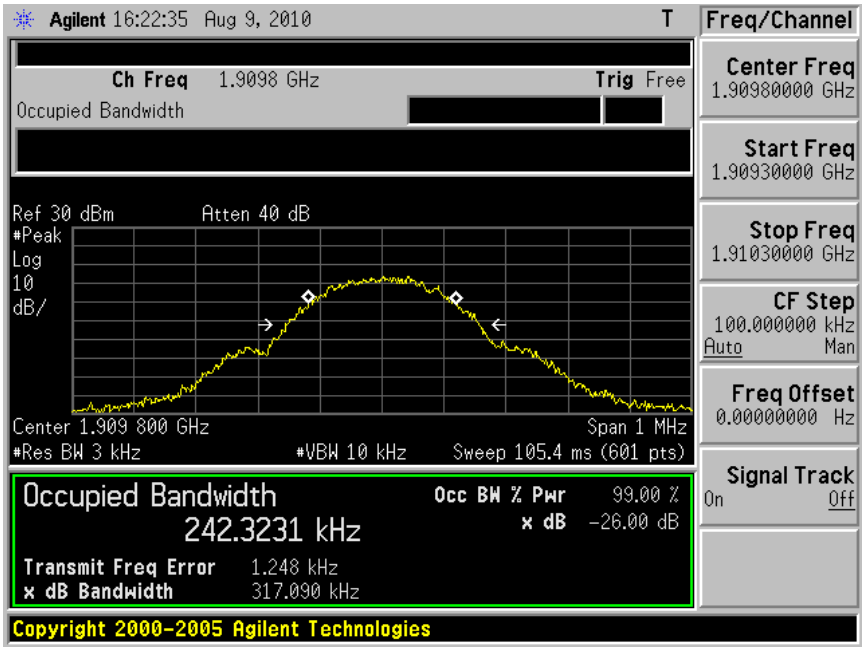


Figure Channel 810



Model Number	PC10110			
Test Item	Occupied Bandwidth			
Test Mode	Mode 3: EGPRS 850 Link			
Date of Test	08/09/2010		Test Site	TE02
Channel No.	Frequency (MHz)	99% Bandwidth (kHz)	Note	
128	824.2	245.2115	RBW:3KHz , VBW:10KHz	
190	836.6	248.2065	RBW:3KHz , VBW:10KHz	
251	848.8	243.1903	RBW:3KHz , VBW:10KHz	

Figure Channel 128

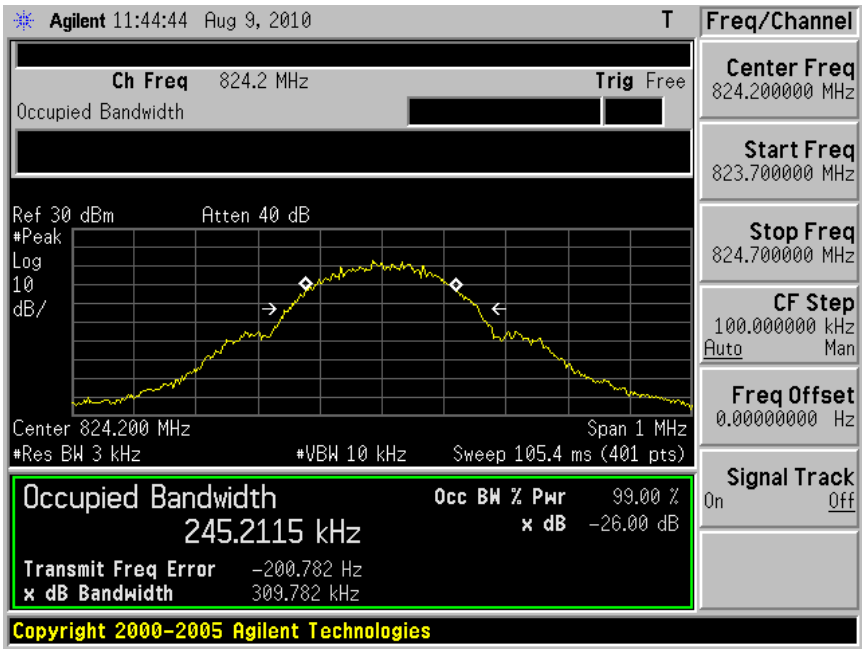


Figure Channel 190

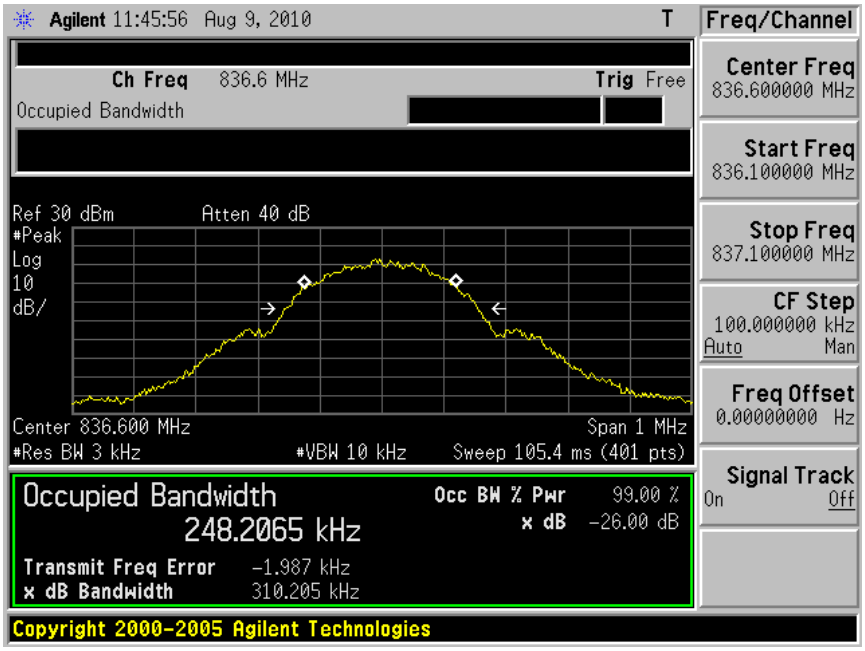
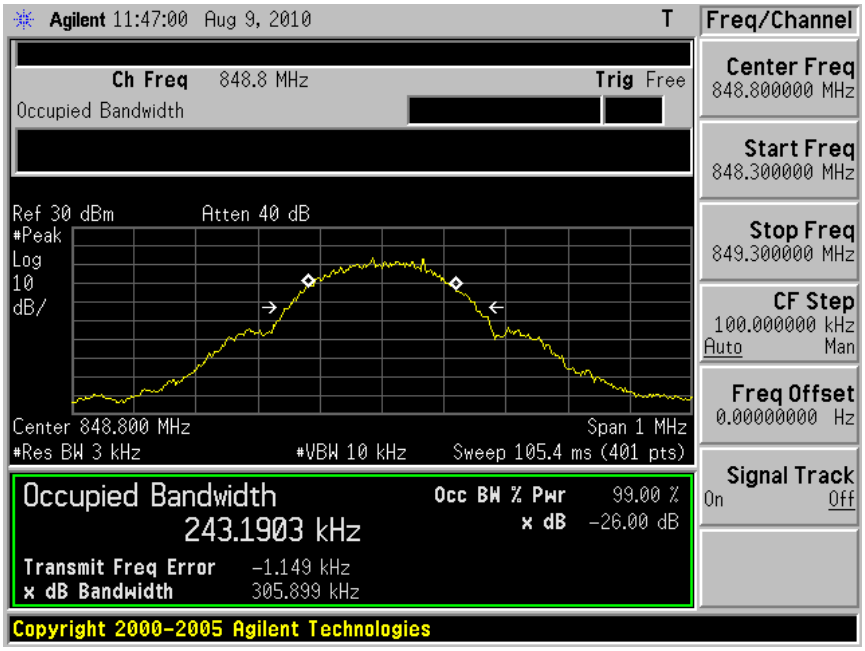


Figure Channel 251



Model Number	PC10110			
Test Item	Occupied Bandwidth			
Test Mode	Mode 4: EGPRS 1900 Link			
Date of Test	08/09/2010		Test Site	TE02
Channel No.	Frequency (MHz)	99% Bandwidth (kHz)	Note	
512	1850.20	244.2323	RBW:3KHz , VBW:10KHz	
661	1880.00	246.7343	RBW:3KHz , VBW:10KHz	
810	1909.80	248.2080	RBW:3KHz , VBW:10KHz	

Figure Channel 512

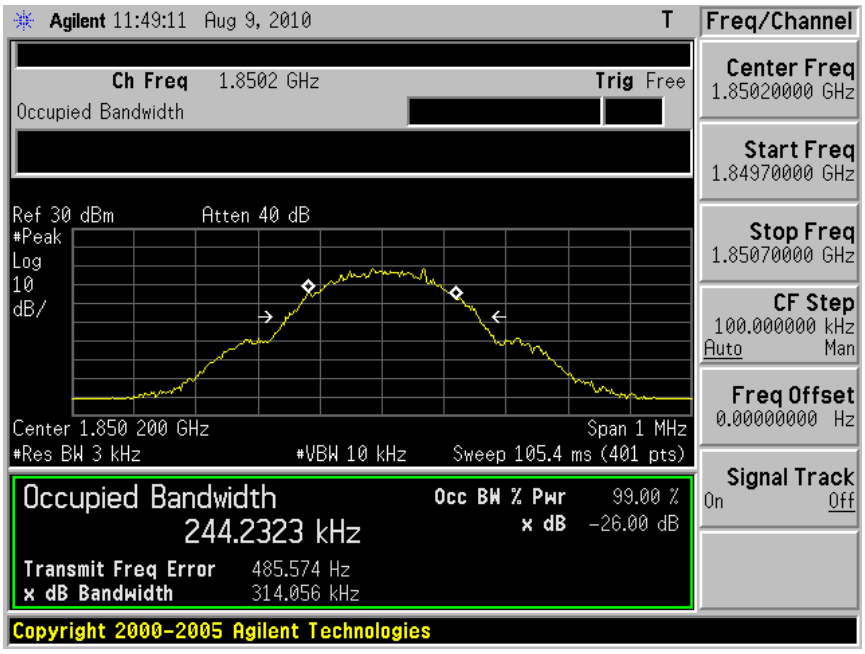


Figure Channel 661

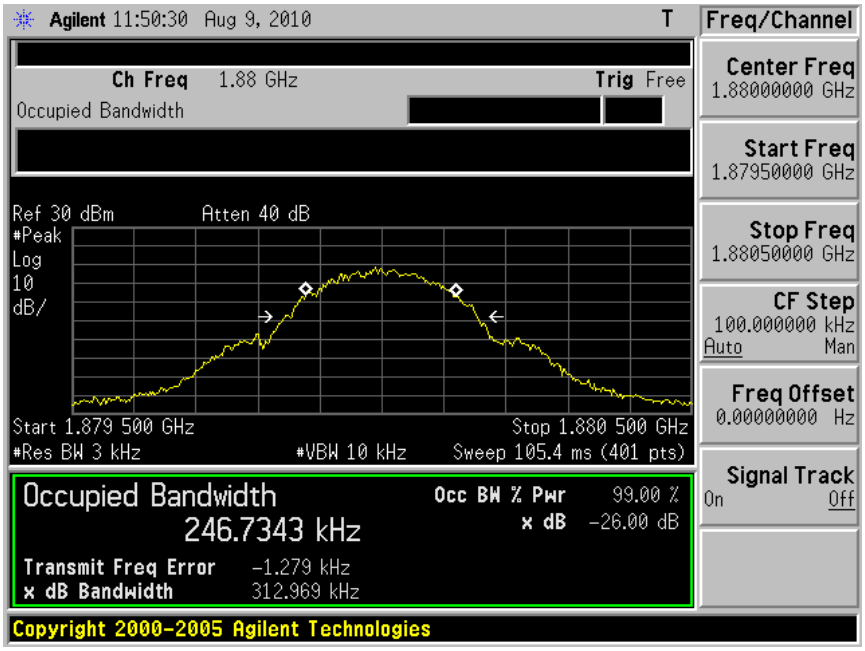
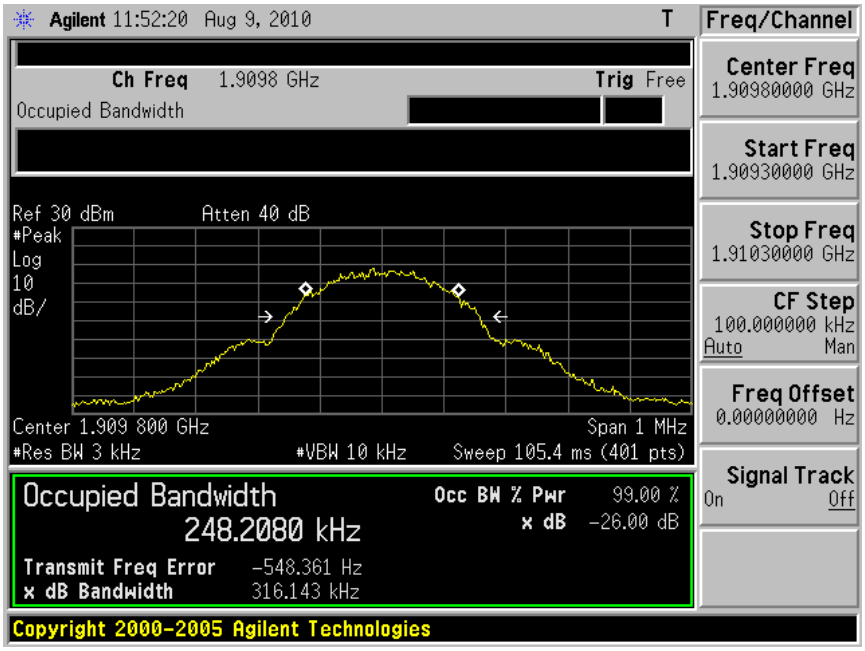


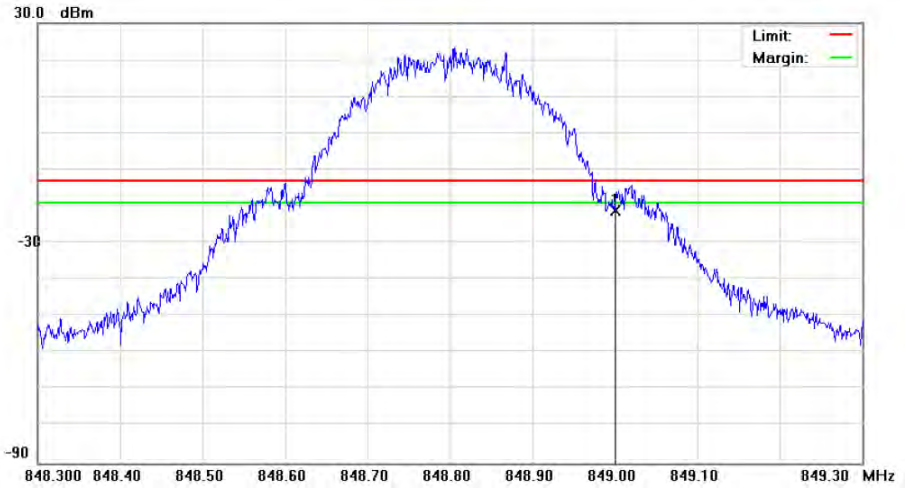
Figure Channel 810



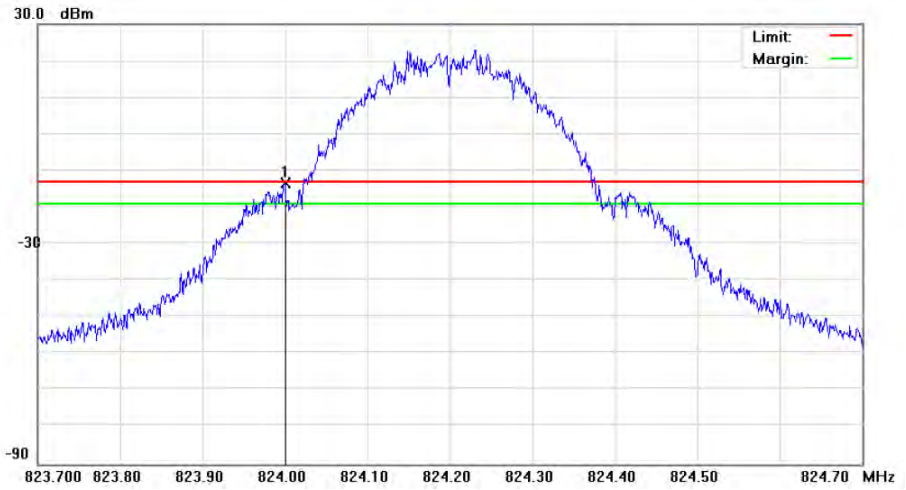
Band Edge

Model Number	PC10110				
Test Item	Band Edge				
Test Mode	Mode 1: GSM 850 Link				
Date of Test	08/09/2010		Test Site	TE02	
Band	Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result
Lower	128	824.0000	-21.00	-13	Pass
Higher	251	849.0000	-13.48	-13	Pass

Lower Band

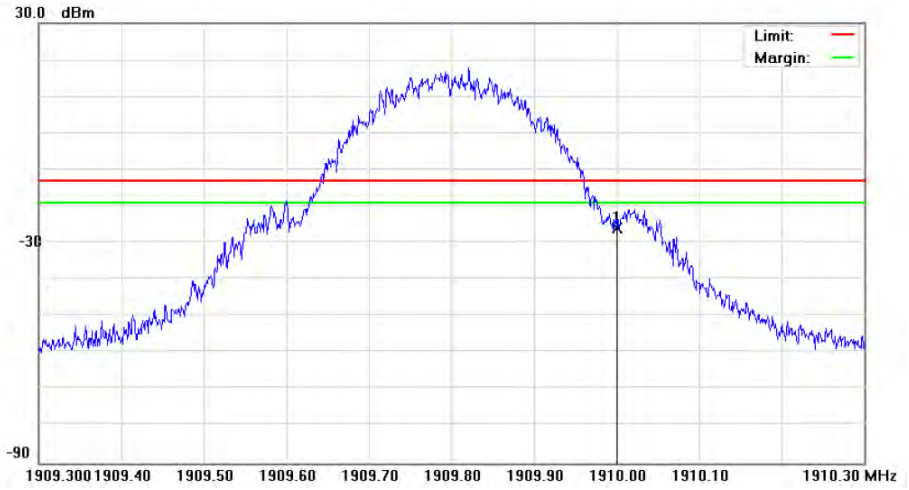


Higher Band

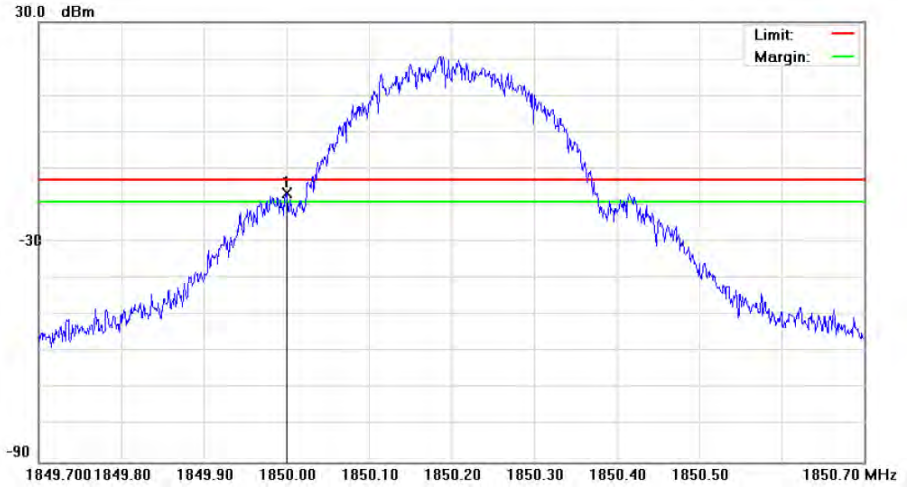


Model Number	PC10110				
Test Item	Band Edge				
Test Mode	Mode 2: GSM 1900 Link				
Date of Test	08/09/2010		Test Site	TE02	
Band	Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result
Lower	512	1850.000	-26.09	-13	Pass
Higher	810	1910.000	-16.70	-13	Pass

Lower Band



Higher Band



5 Conducted Emission Test

5.1. Limit

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

5.2. Test Instruments

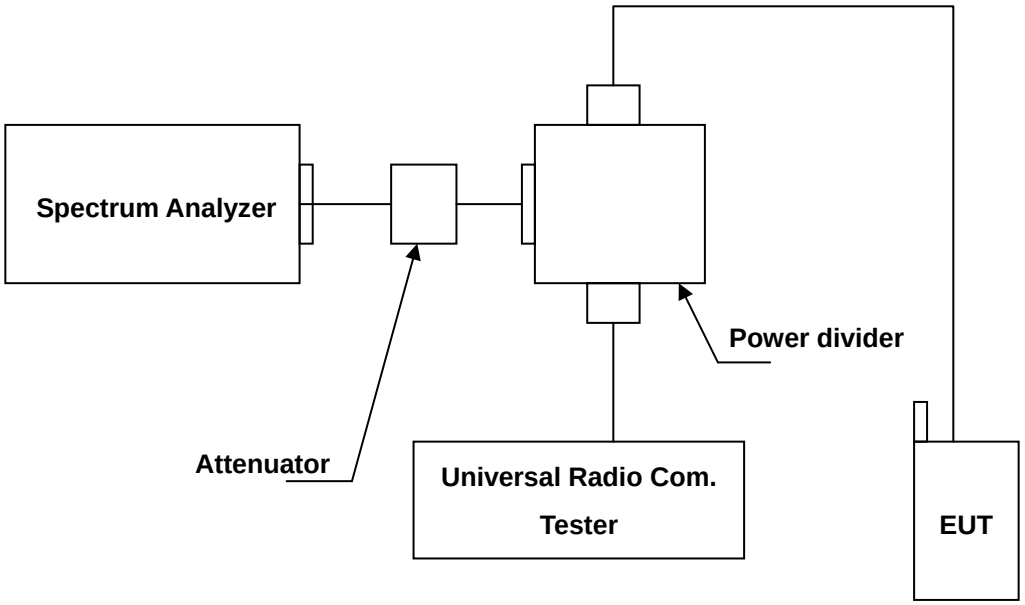
Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2009	(2)
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	109369	07/29/2009	(2)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

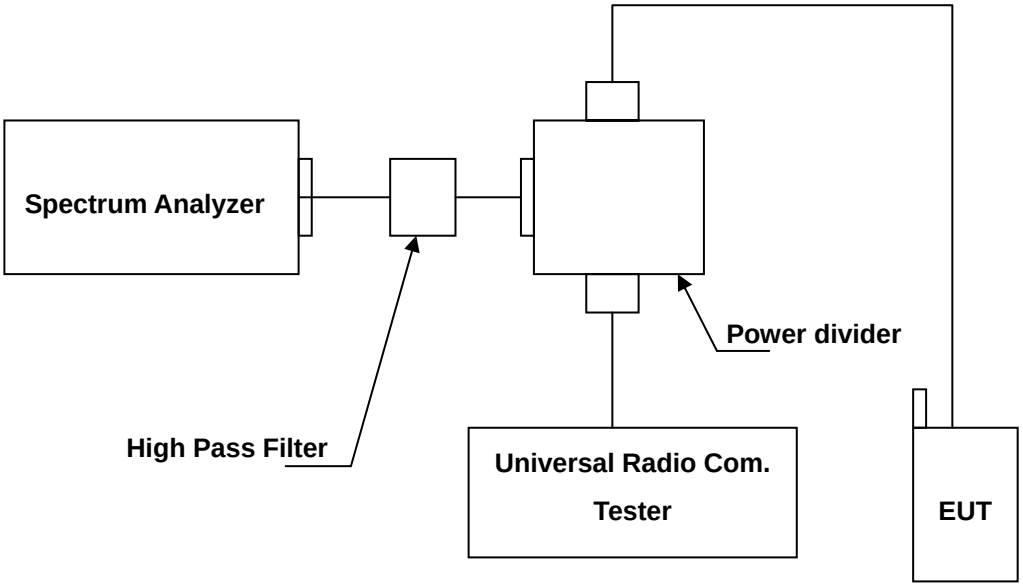
NOTE: N.C.R. = No Calibration Request.

5.3. Setup

Below 2.8GHz



Above 2.8GHz



5.4. Test Procedure

1. The EUT was connected to Spectrum Analyzer and Base Station via power divider.
2. The middle channel for the highest RF power within the transmitting frequency was measured.
3. The conducted spurious emission for the whole frequency range was taken.
4. Test setting at GSM 850 RB>100 kHz, VB>100 kHz; PCS 1900 RB>1MHz, VB>1MHz.

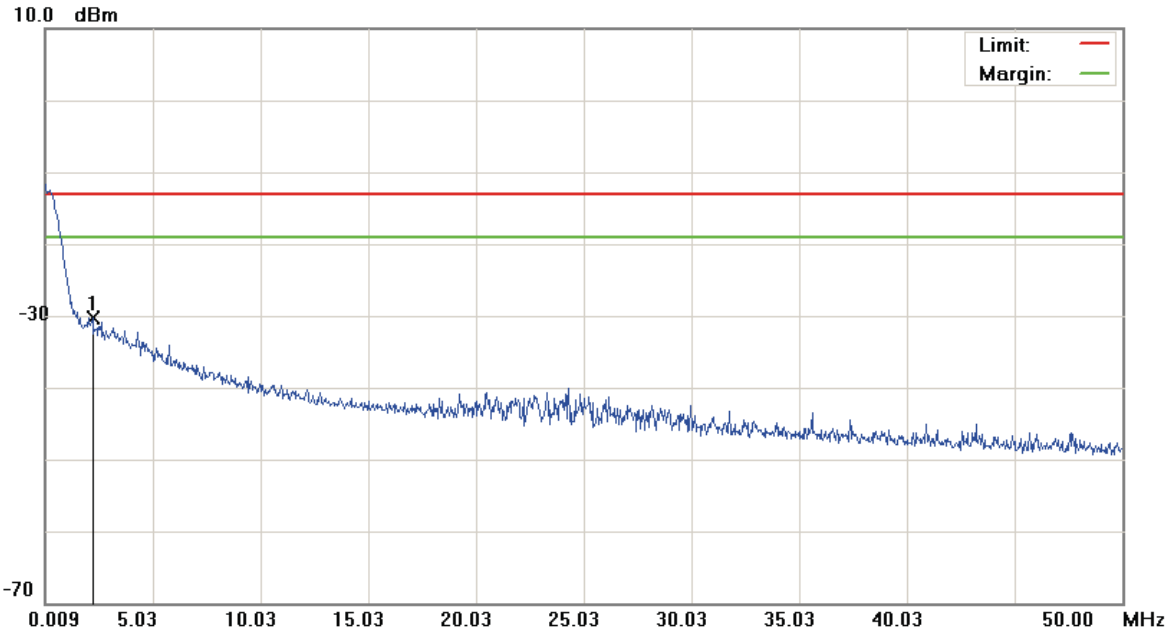
5.5. Uncertainty

The measurement uncertainty is evaluated as ± 2.24 dB.

5.6. Test Result

Model Number	PC10110		
Test Item	Conducted Emission		
Mode	Mode 1: GSM 850 Link Mode 2: GSM 1900 Link		
Date of Test	08/09/2010	Test Site	TE02

File :PC10110(CH128) Data :#1 Date: 2010/8/9 Time: PM 05:03:41



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH128(824.2MHz)

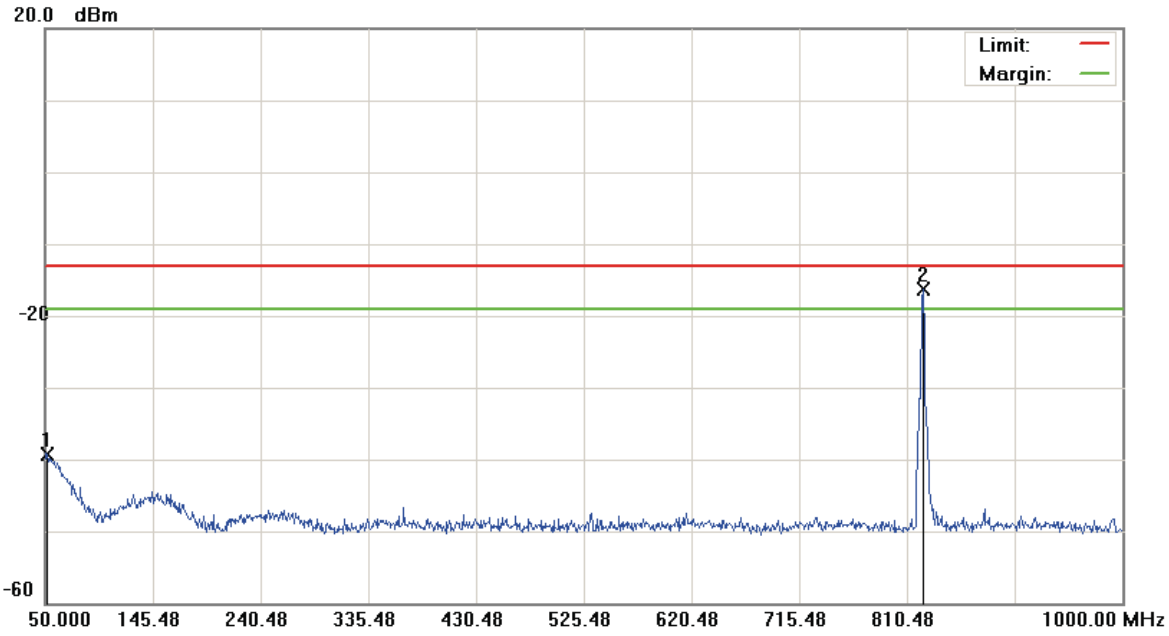
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	2.2336	-61.44	31.20	-30.24	-13.00	-17.24	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH128) Data :#2 Date: 2010/8/9 Time: PM 05:04:06



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH128(824.2MHz)

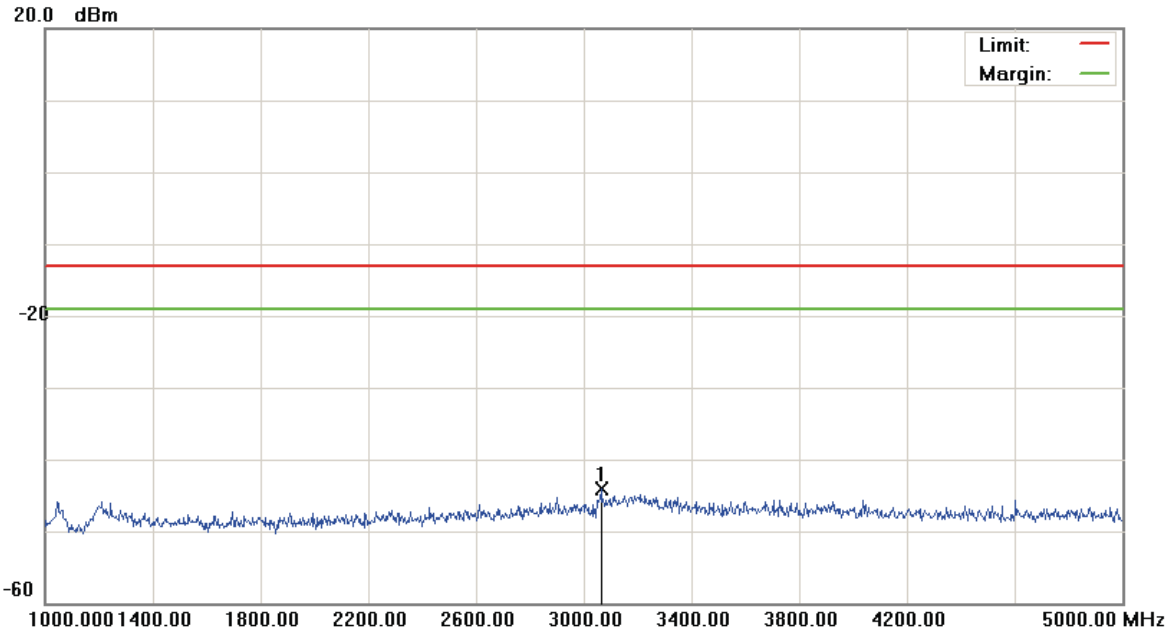
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		51.9000	-53.70	14.36	-39.34	-13.00	-26.34	peak			
2	*	824.2500	-20.15	3.84	-16.31	-13.00	-3.31	peak			Tx

*:Maximum data x:Over limit !:over margin

File :PC10110(CH128) Data :#3 Date: 2010/8/9 Time: PM 05:15:29



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH128(824.2MHz)

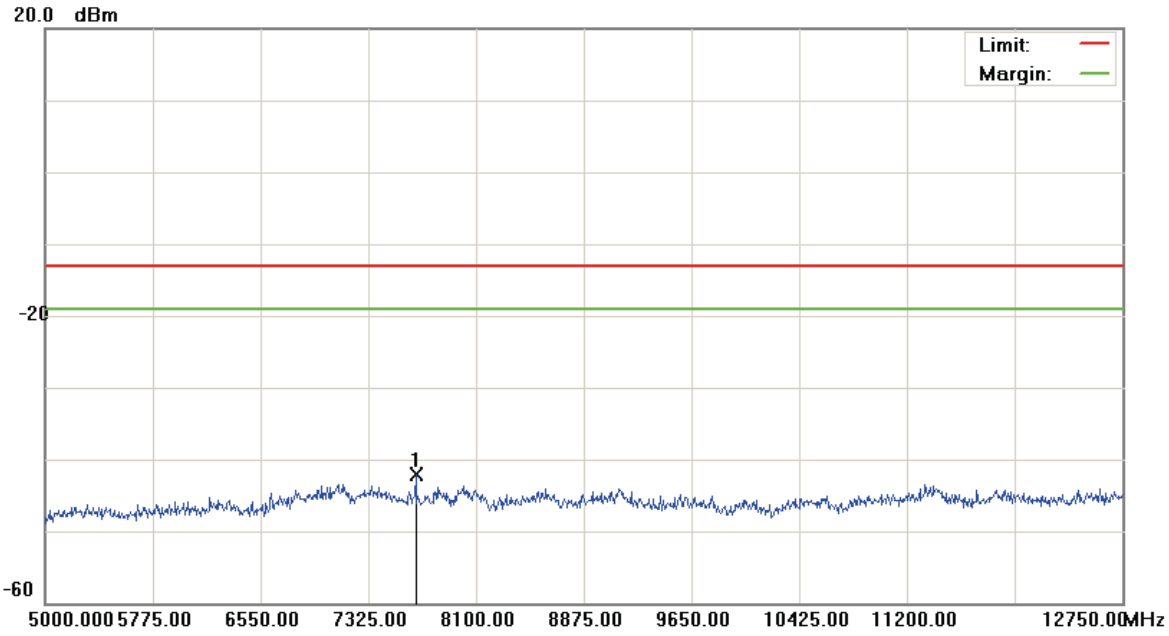
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	3066.000	-48.54	4.39	-44.15	-13.00	-31.15	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH128) Data :#4 Date: 2010/8/9 Time: PM 05:15:52



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH128(824.2MHz)

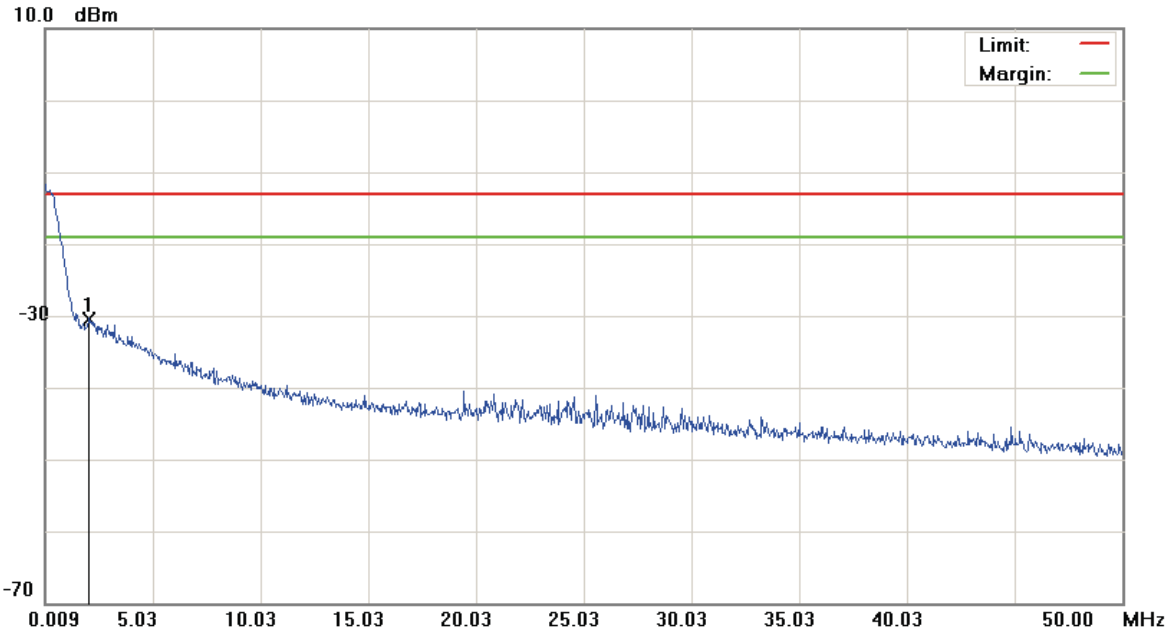
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	7666.000	-47.14	5.02	-42.12	-13.00	-29.12	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH190) Data :#1 Date: 2010/8/9 Time: PM 05:05:27



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH190(836.6MHz)

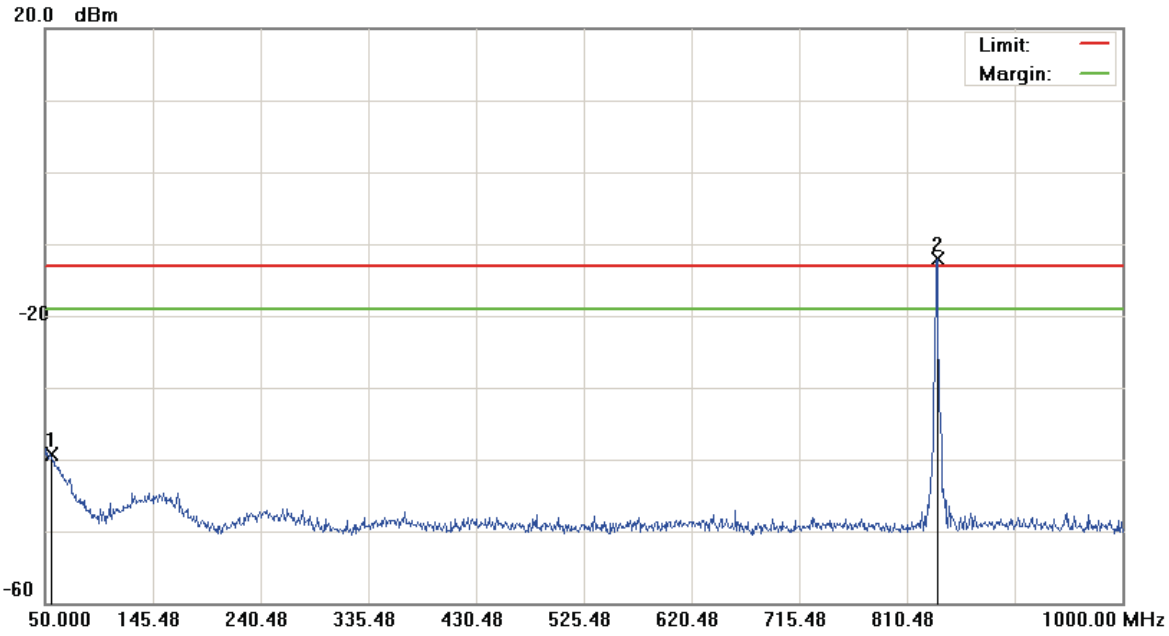
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	2.0586	-61.85	31.45	-30.40	-13.00	-17.40	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH190) Data :#2 Date: 2010/8/9 Time: PM 05:05:51



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH190(836.6MHz)

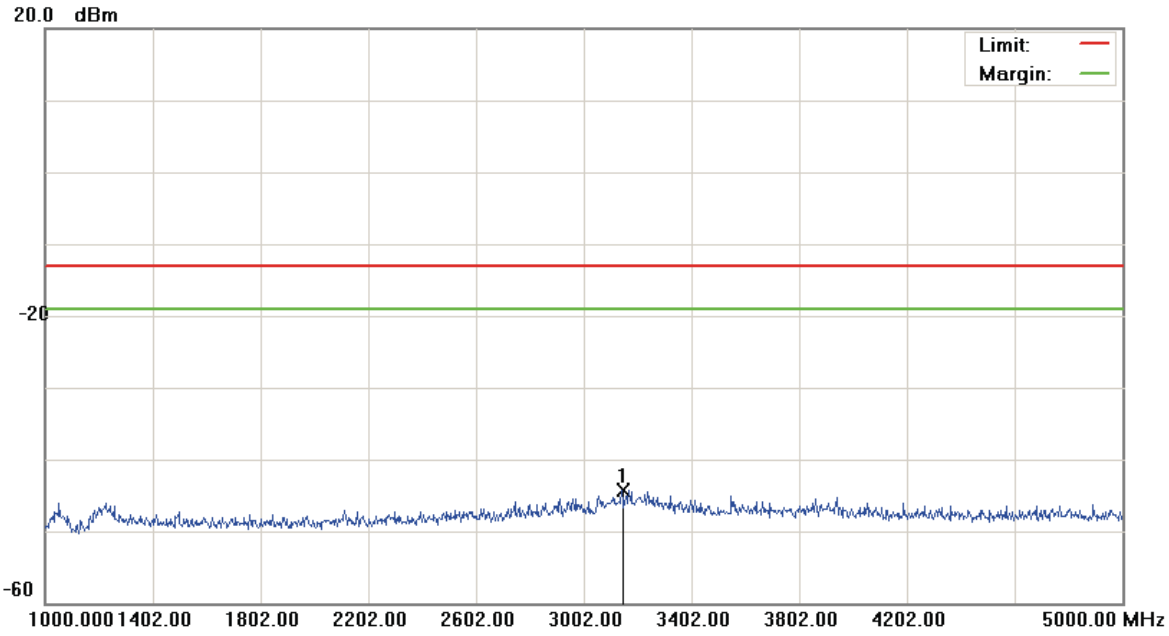
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		55.2250	-52.98	13.77	-39.21	-13.00	-26.21	peak			
2	*	836.6000	-16.14	3.96	-12.18	-13.00	0.82	peak			Tx

*:Maximum data x:Over limit !:over margin

File :PC10110(CH190) Data :#3 Date: 2010/8/9 Time: PM 05:12:24



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH190(836.6MHz)

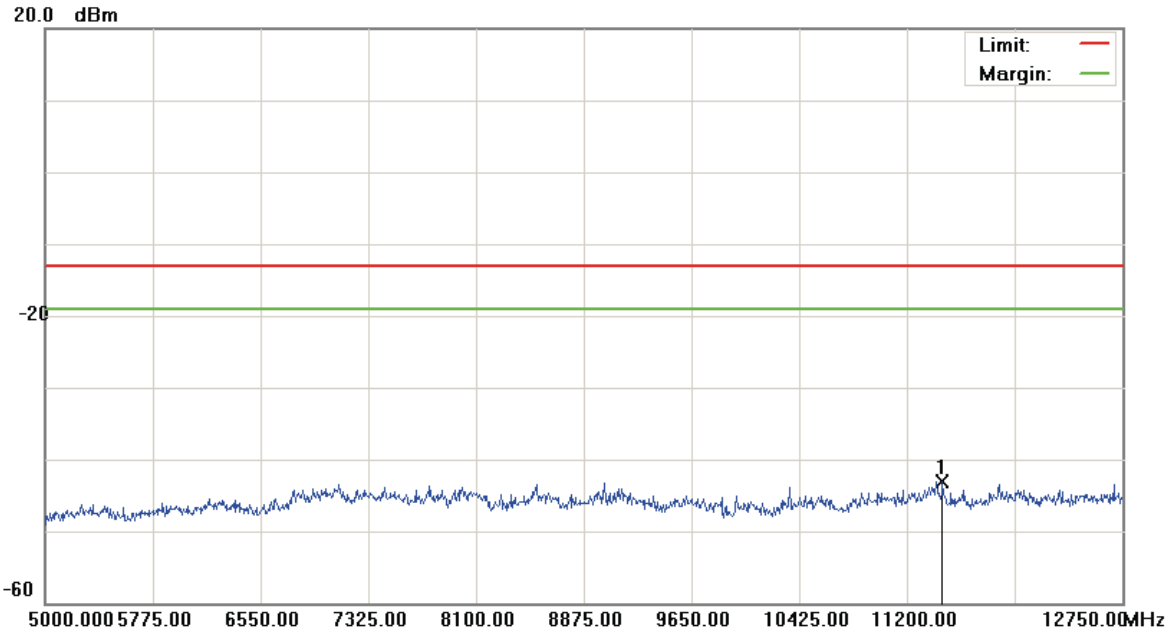
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	3142.000	-48.86	4.56	-44.30	-13.00	-31.30	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH190) Data :#4 Date: 2010/8/9 Time: PM 05:12:47



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH190(836.6MHz)

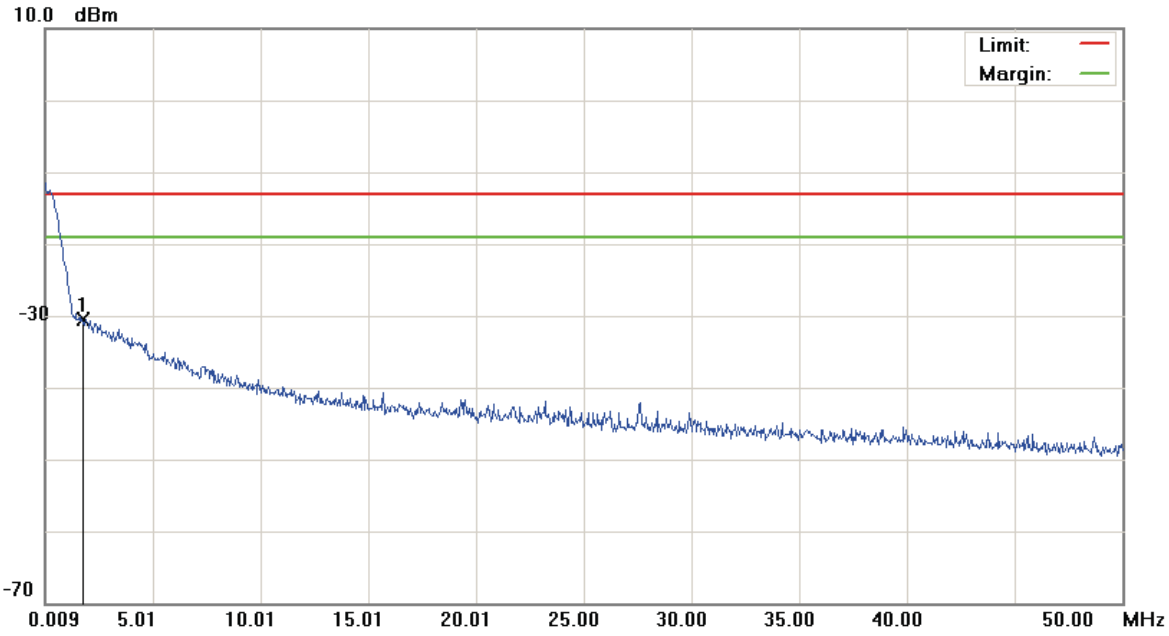
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	11455.750	-48.54	5.48	-43.06	-13.00	-30.06	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH251) Data :#1 Date: 2010/8/9 Time: PM 05:07:20



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH251(848.8MHz)

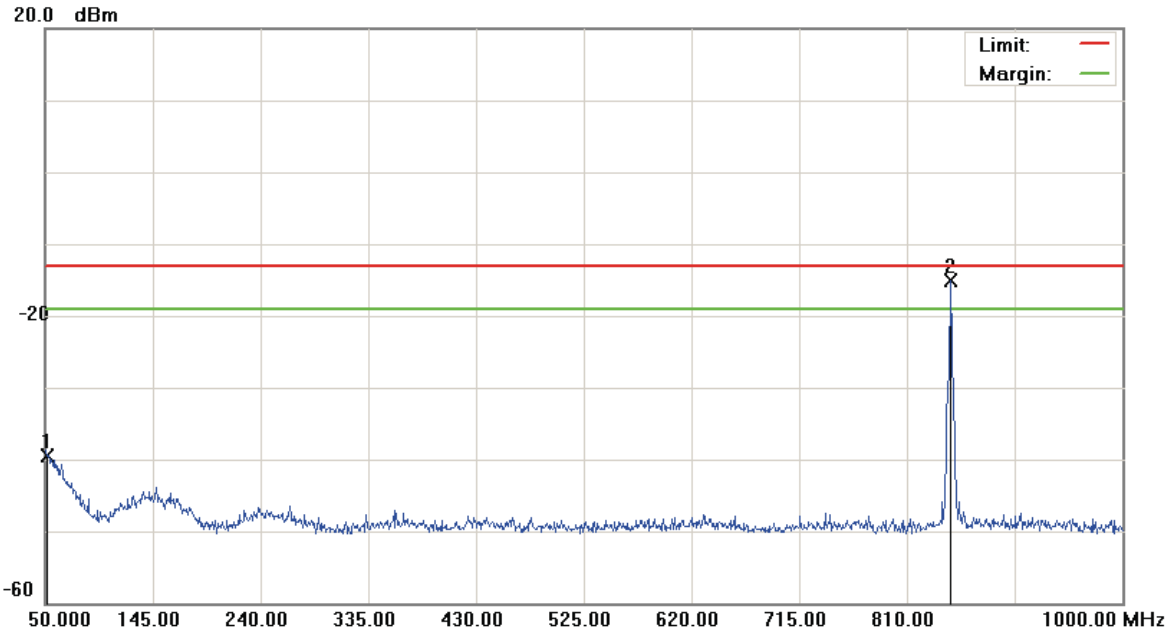
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1.7337	-61.45	31.02	-30.43	-13.00	-17.43	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH251) Data :#2 Date: 2010/8/9 Time: PM 05:07:44



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH251(848.8MHz)

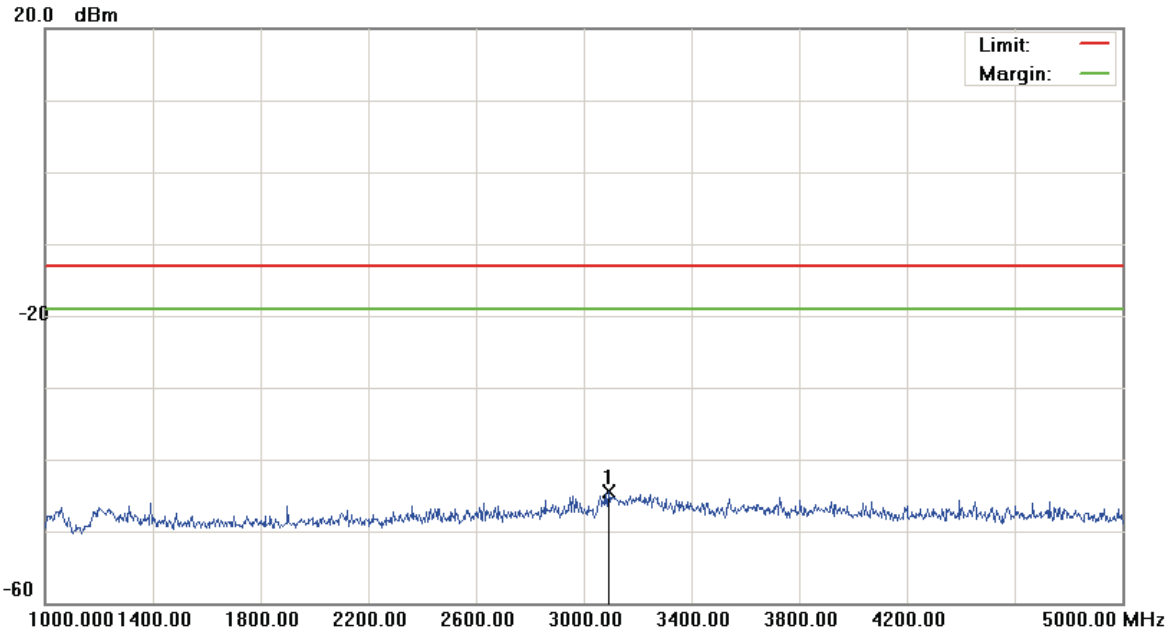
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1		51.9000	-53.81	14.36	-39.45	-13.00	-26.45	peak			
2	*	848.9500	-18.99	3.98	-15.01	-13.00	-2.01	peak			Tx

*:Maximum data x:Over limit !:over margin

File :PC10110(CH251) Data :#3 Date: 2010/8/9 Time: PM 05:10:52



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH251(848.8MHz)

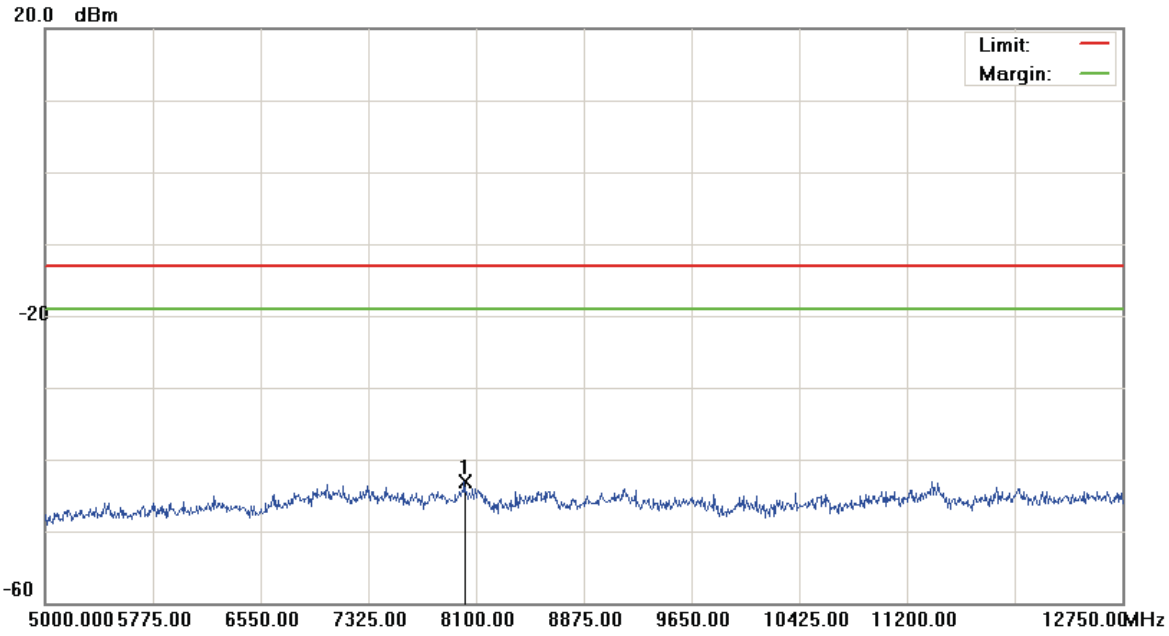
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	3092.000	-49.08	4.52	-44.56	-13.00	-31.56	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH251) Data :#4 Date: 2010/8/9 Time: PM 05:11:15



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: GSM850
Note: CH251(848.8MHz)

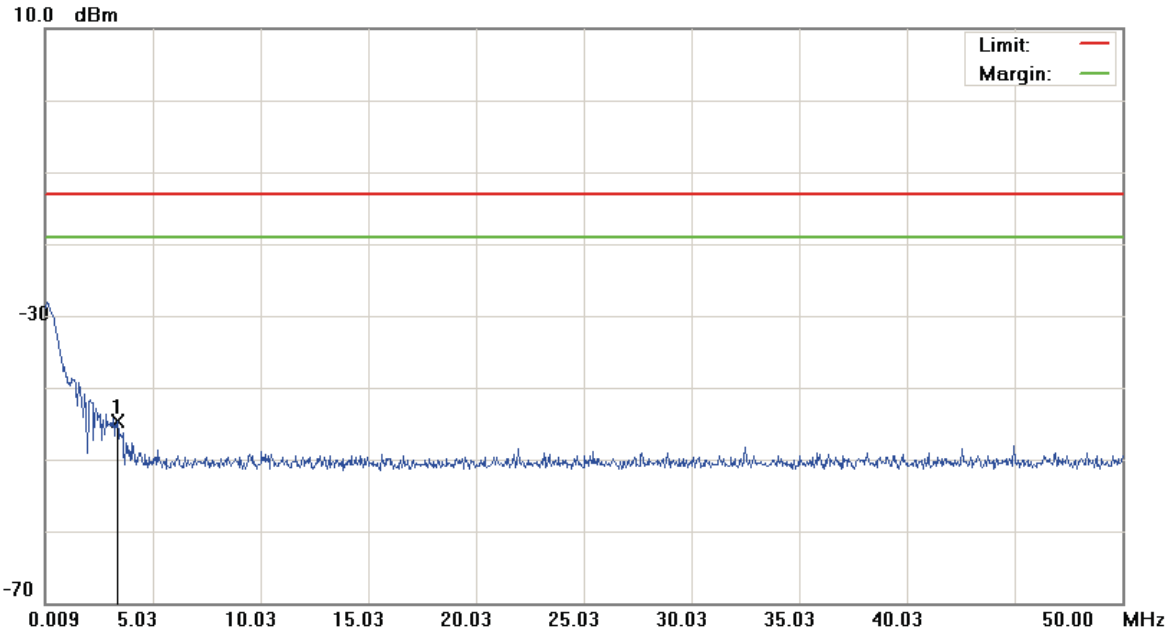
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	8018.625	-48.54	5.44	-43.10	-13.00	-30.10	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH512) Data :#1 Date: 2010/8/9 Time: PM 04:41:54



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH512(1850.2MHz)

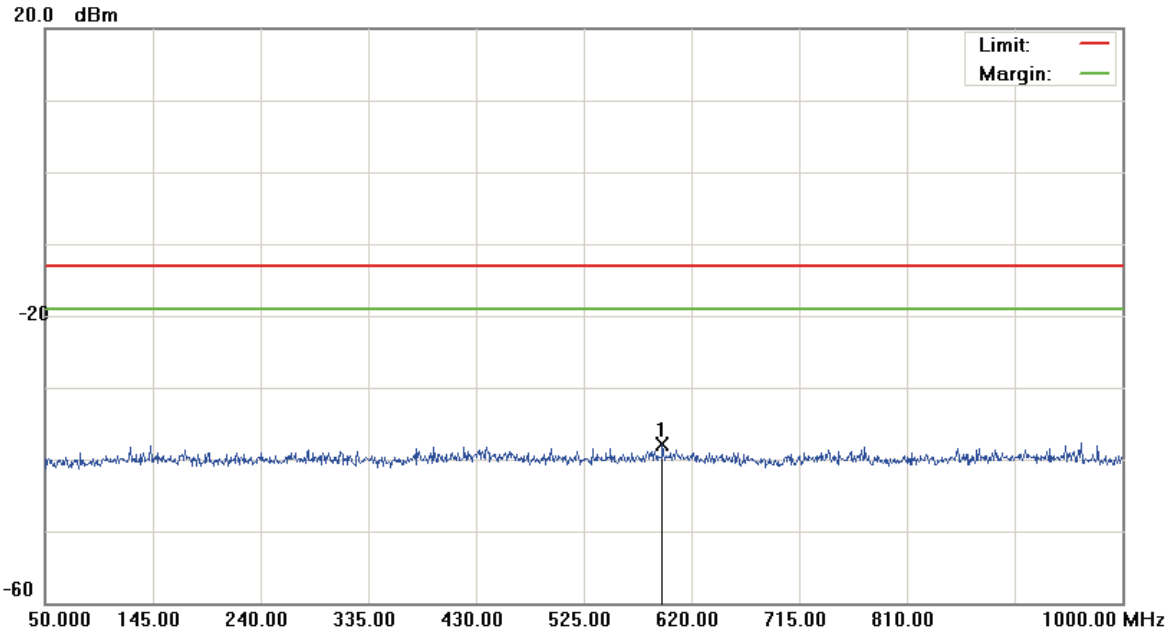
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	3.3584	-57.85	13.11	-44.74	-13.00	-31.74	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH512) Data :#2 Date: 2010/8/9 Time: PM 04:42:18



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH512(1850.2MHz)

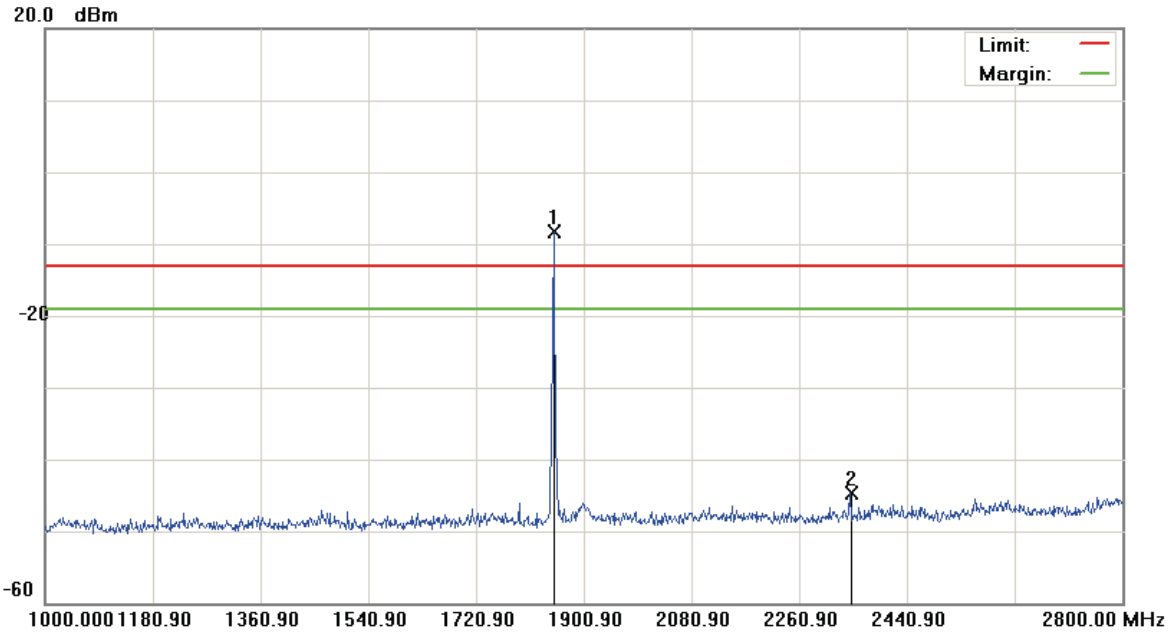
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	594.3500	-51.12	13.18	-37.94	-13.00	-24.94	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH512) Data :#3 Date: 2010/8/9 Time: PM 04:51:05



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH512(1850.2MHz)

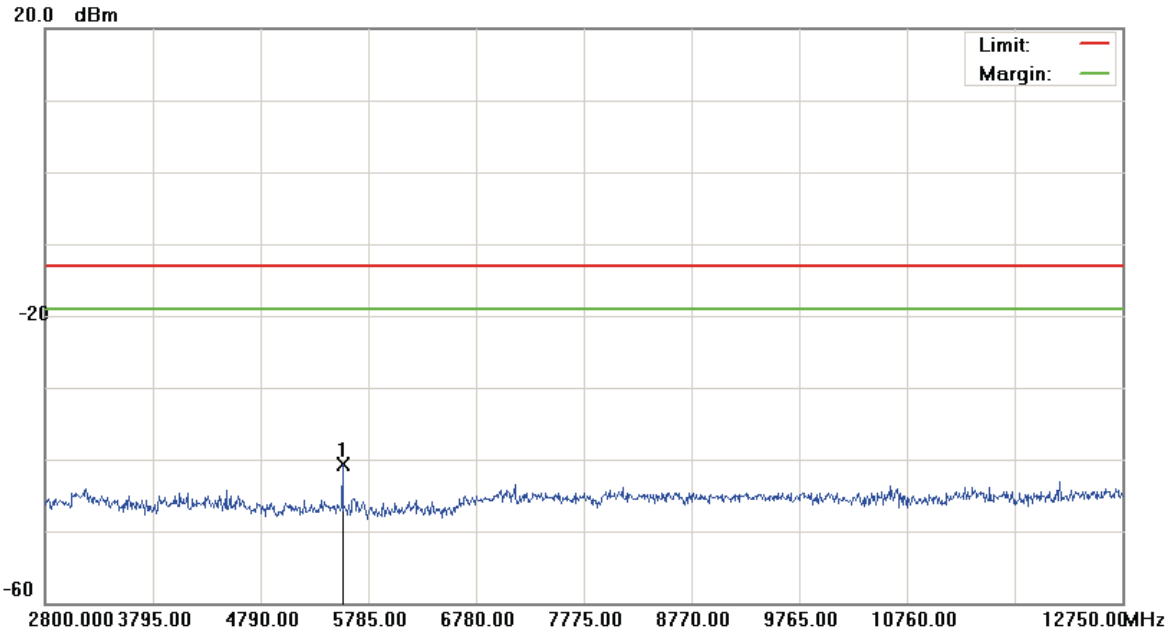
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1850.500	-12.54	4.26	-8.28	-13.00	4.72	peak			Tx
2		2345.500	-49.23	4.59	-44.64	-13.00	-31.64	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH512) Data :#4 Date: 2010/7/21 Time: PM 07:56:24



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-20G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH512(1850.2MHz)

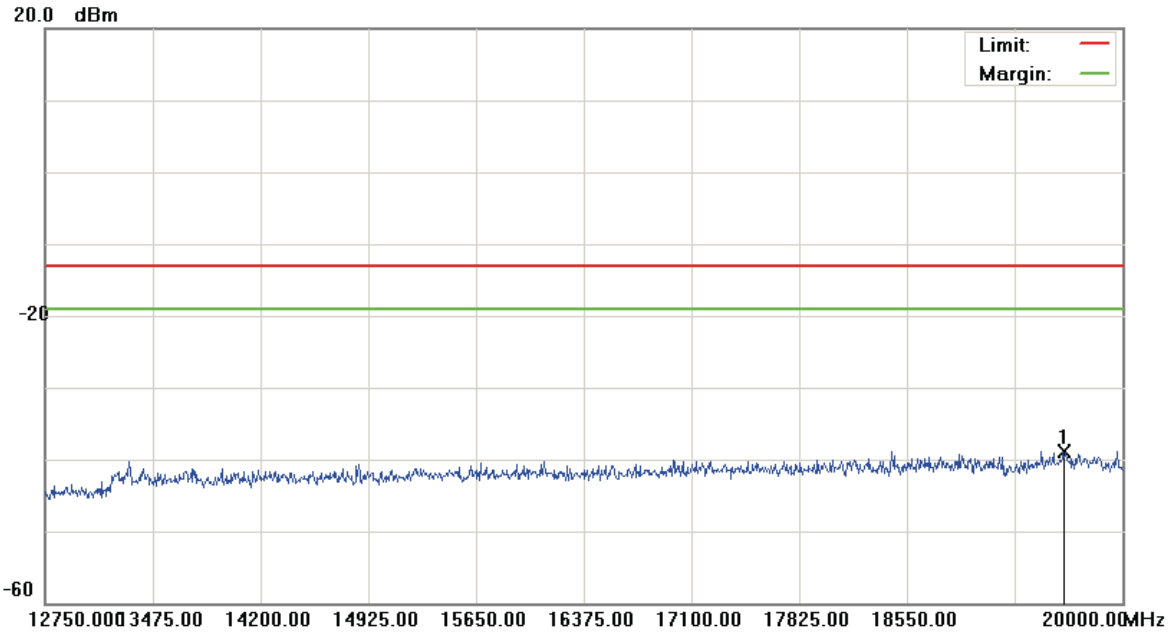
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	5551.175	-45.57	4.87	-40.70	-13.00	-27.70	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH512) Data :#5 Date: 2010/7/21 Time: PM 07:56:29



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-20G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH512(1850.2MHz)

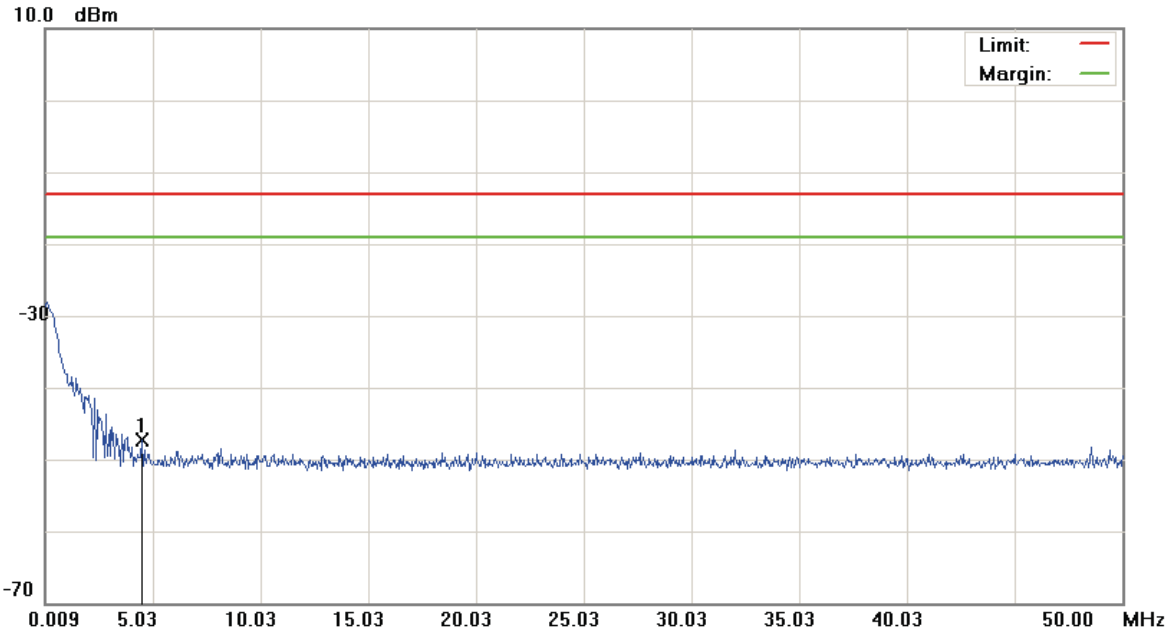
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	19604.875	-46.14	7.33	-38.81	-13.00	-25.81	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH661) Data :#1 Date: 2010/8/9 Time: PM 04:43:36



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH661(1880MHz)

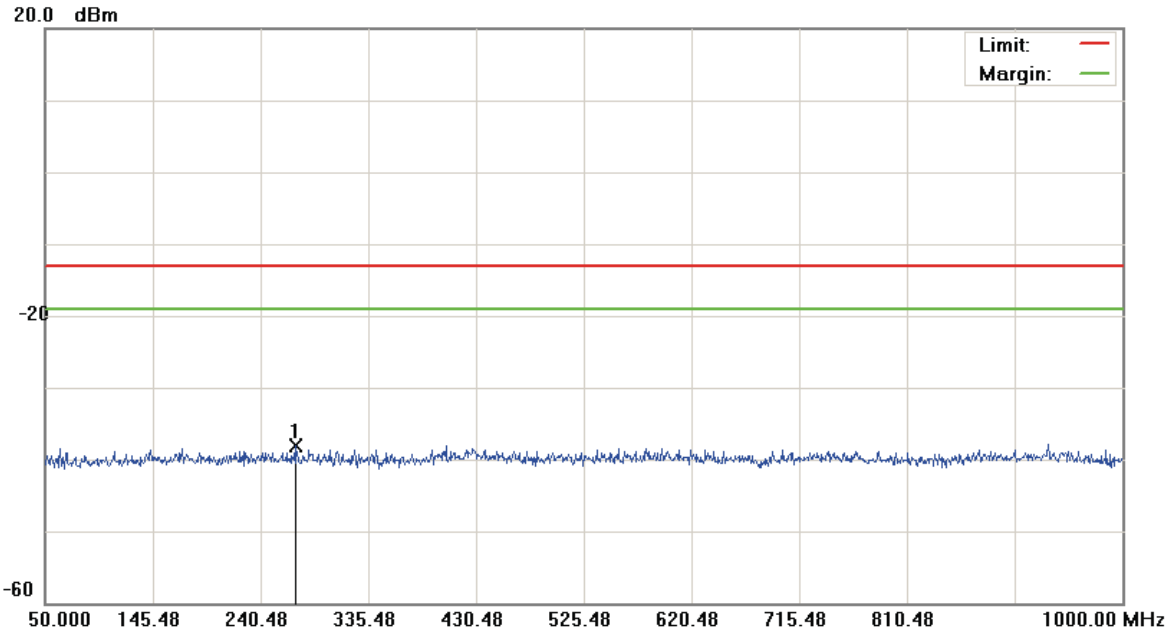
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	4.5082	-60.49	13.22	-47.27	-13.00	-34.27	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH661) Data :#2 Date: 2010/8/9 Time: PM 04:44:00



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH661(1880MHz)

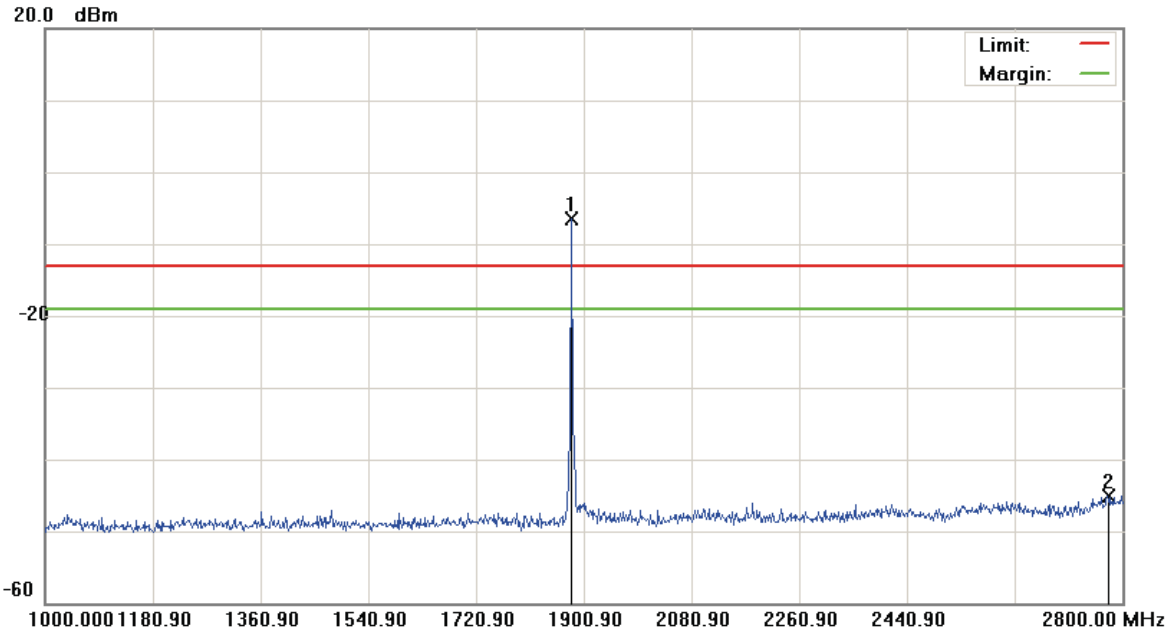
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	270.4000	-51.41	13.30	-38.11	-13.00	-25.11	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH661) Data :#3 Date: 2010/8/9 Time: PM 04:52:14



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH661(1880MHz)

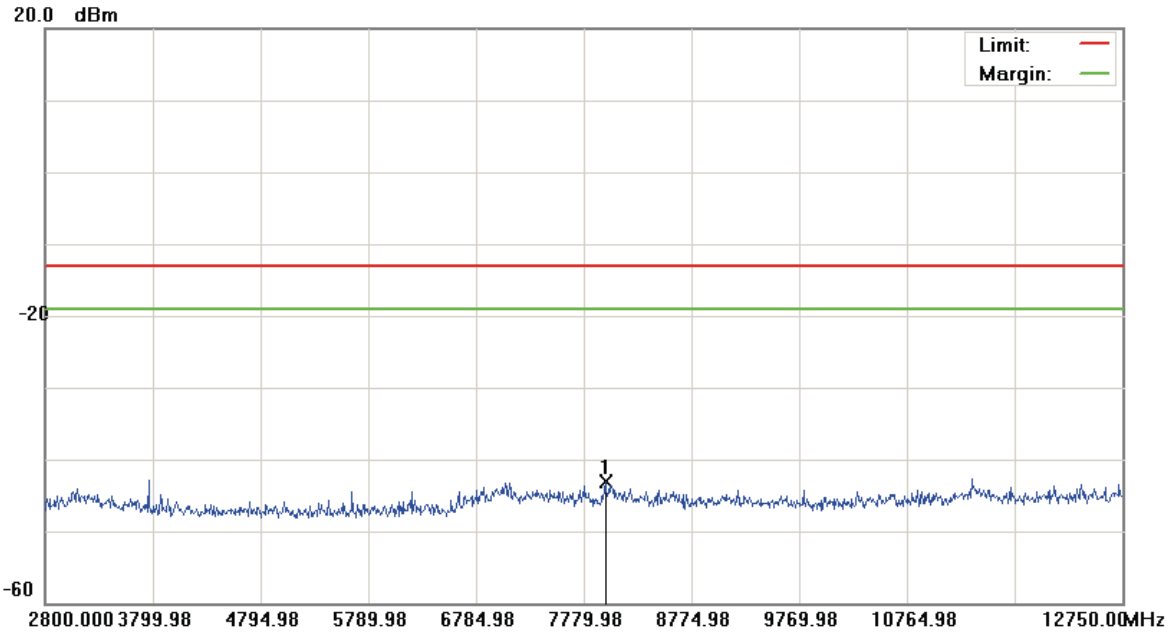
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1880.200	-11.18	4.65	-6.53	-13.00	6.47	peak			Tx
2		2775.700	-50.88	5.82	-45.06	-13.00	-32.06	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH661) Data :#4 Date: 2010/8/9 Time: PM 04:52:31



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-20G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH661(1880MHz)

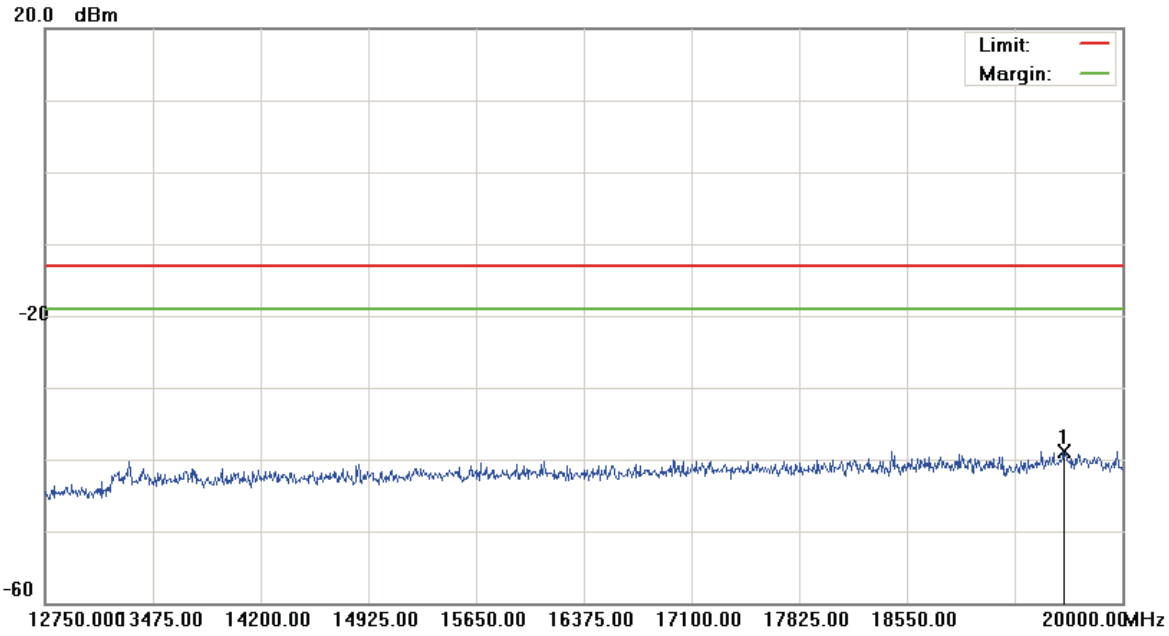
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	7978.975	-48.55	5.52	-43.03	-13.00	-30.03	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH661) Data :#5 Date: 2010/8/9 Time: PM 04:52:54



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-20G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH661(1880MHz)

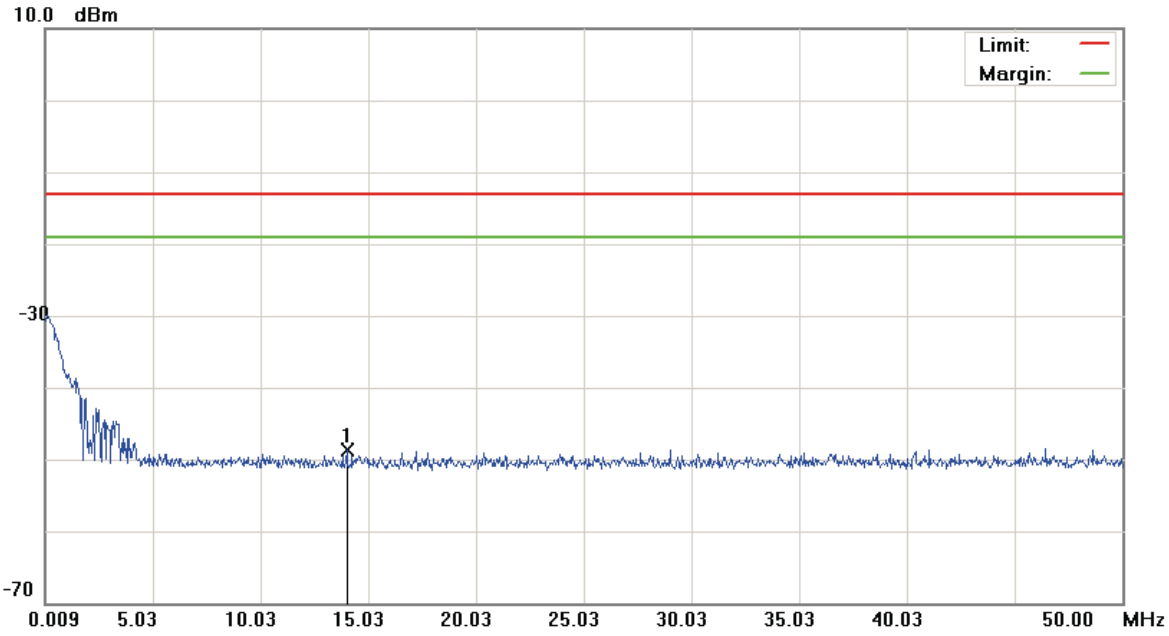
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	19604.875	-46.14	7.33	-38.81	-13.00	-25.81	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH810) Data :#1 Date: 2010/8/9 Time: PM 04:44:54



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH810(1909.8MHz)

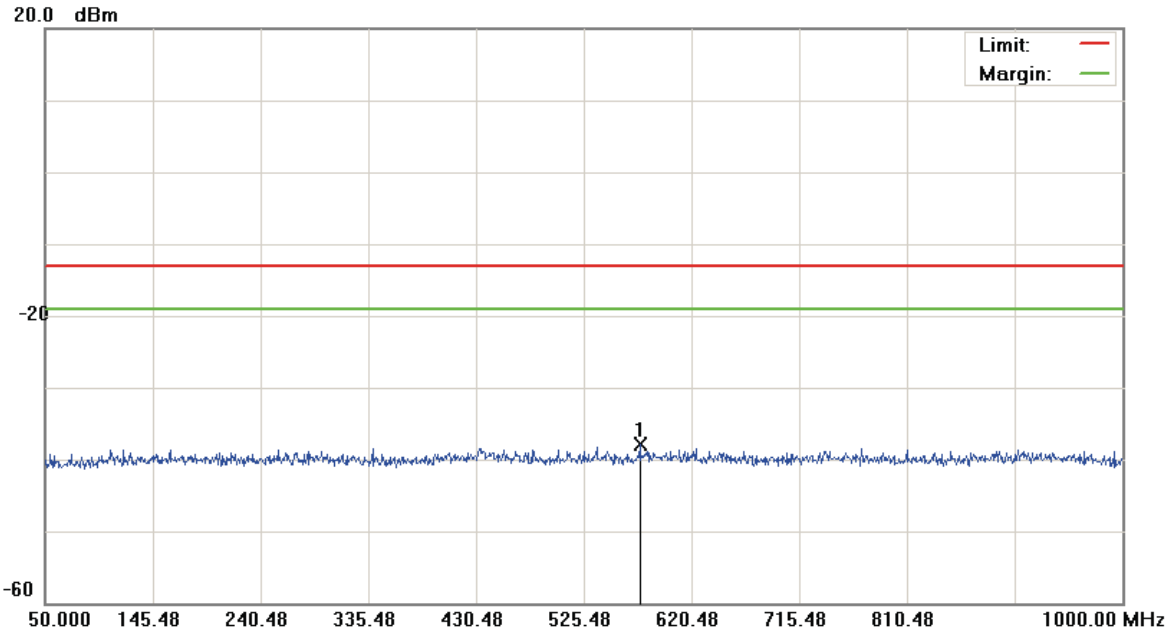
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	14.0065	-62.05	13.32	-48.73	-13.00	-35.73	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH810) Data :#2 Date: 2010/8/9 Time: PM 04:45:18



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH810(1909.8MHz)

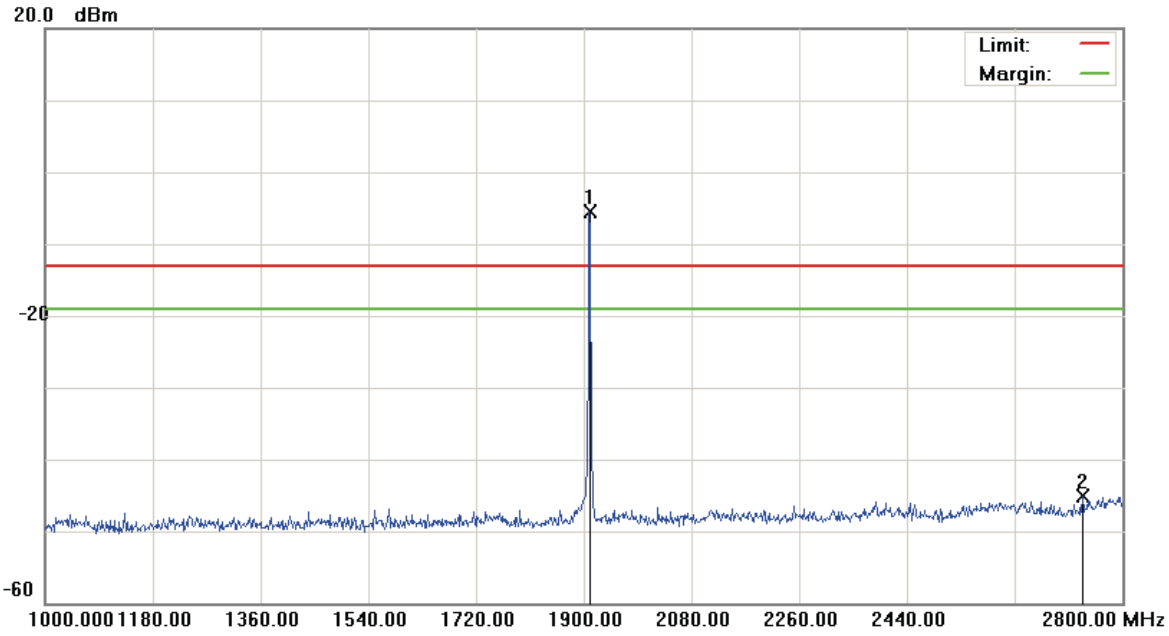
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	574.8750	-51.03	13.18	-37.85	-13.00	-24.85	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH810) Data :#3 Date: 2010/8/9 Time: PM 04:53:25



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-12.75G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH810(1909.8MHz)

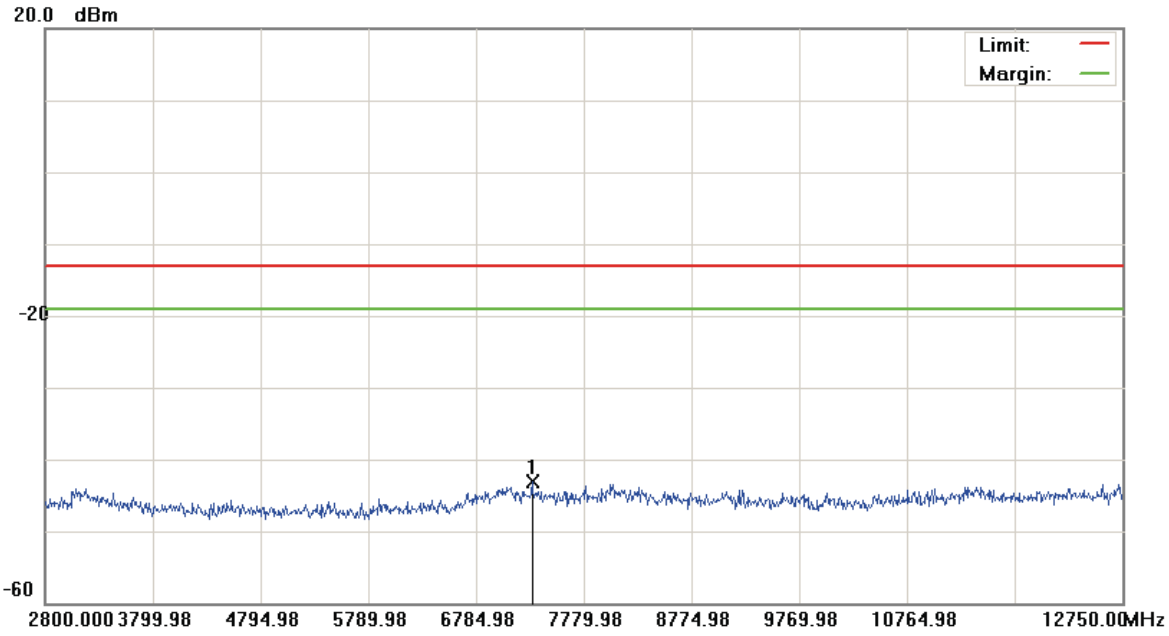
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	1909.900	-11.26	5.71	-5.55	-13.00	7.45	peak			Tx
2		2733.400	-50.01	5.00	-45.01	-13.00	-32.01	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH810) Data :#4 Date: 2010/8/9 Time: PM 04:53:40



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-20G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH810(1909.8MHz)

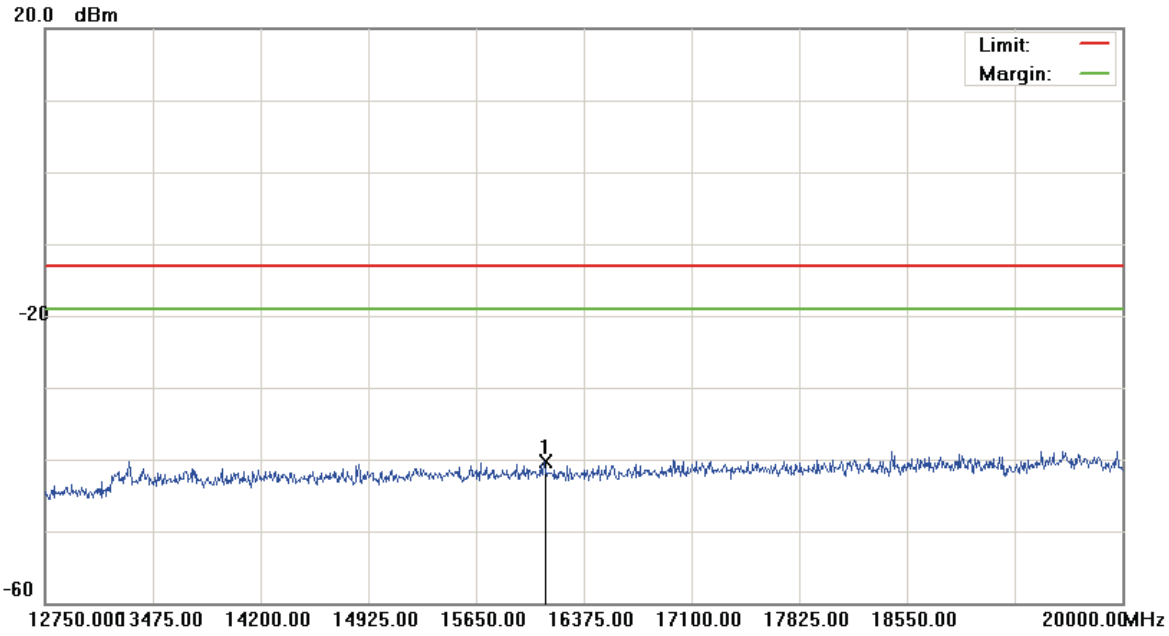
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	7297.400	-48.37	5.21	-43.16	-13.00	-30.16	peak			

*:Maximum data x:Over limit !:over margin

File :PC10110(CH810) Data :#5 Date: 2010/8/9 Time: PM 04:53:57



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-20G)
EUT: Smartphone
M/N: PC10110
Mode: PCS1900
Note: CH810(1909.8MHz)

Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 26 ℃
Humidity: 55 %
RBW: 1000 MHz RBW: 1000 MHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree	Comment
1	*	16110.375	-46.71	6.33	-40.38	-13.00	-27.38	peak			

*:Maximum data x:Over limit !:over margin

6 Field Strength of Spurious Radiation Test

6.1. Limit

The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(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.

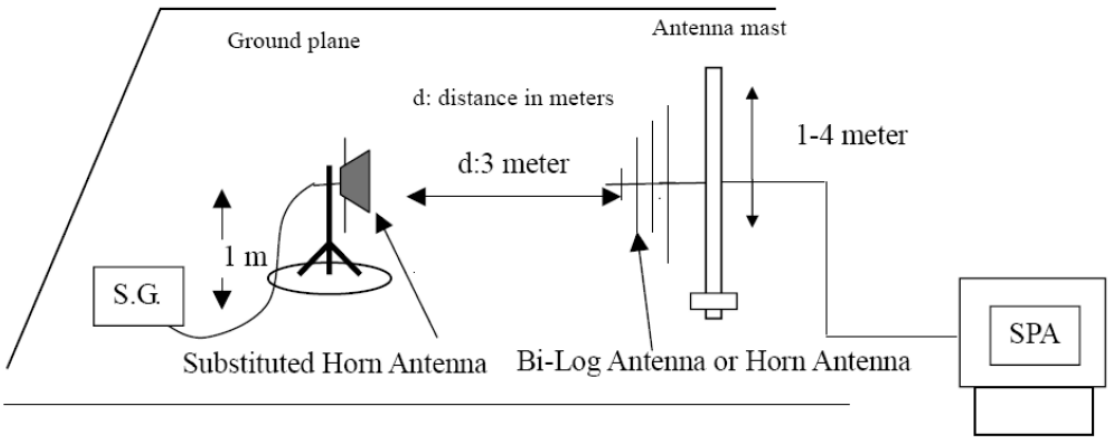
6.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/07/2009	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	02/24/2010	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2010	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2010	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	08/02/2010	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/29/2010	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/29/2010	(1)
Test Site	ATL	TE01	888001	07/30/2010	(1)

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

6.3. Setup



6.4. Test Procedure

The measurement is made according to ANSI/TIA-603-C-2004 as follows:

The equipment under test is placed inside the semi-anechoic chamber on a wooden table at the turntable center. For each spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters and the turntable is rotated 360 degrees to obtain a maximum reading on the spectrum analyzer. This is repeated for both horizontal and vertical polarizations of the receive antenna.

The equipment under test is then replaced with a substitution antenna fed by a signal generator. With the signal generator tuned to a particular spurious frequency, the antenna mast is raised and lowered from 1 to 4 meters to obtain a maximum reading at the spectrum analyzer. The output of the signal generator is then adjusted until a reading identical to that obtained with the actual transmitter is achieved.

The power in dBm of each spurious emission is calculated by correcting the signal generator level for cable loss and gain of the substitution antenna referenced to a dipole. A fully charged battery was used for the supply voltage.

The settings of the receiver were as follows:

Units	dBm
Resolution Bandwidth	1 MHz
Video Bandwidth	Auto
Sweep Time	Auto

The field strength of spurious emission was measured in the following position: EUT stand-up position (Z axis), lie-down position (X, Y axis). The worst emission was found in **lie-down position (X axis)** and the worst case was recorded.

6.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is ± 3.072 dB.

6.6. Test Result

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 1	Date:	2010/08/13
Frequency:	824.2 MHz	Test By:	Gary Wu

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
1	36.7900	-52.55	12.52	-40.03	-13.00	-27.03	peak	H
2	94.9900	-52.67	0.82	-51.85	-13.00	-38.85	peak	H
3	337.4900	-51.83	-1.61	-53.44	-13.00	-40.44	peak	H
4	488.8100	-51.00	11.28	-39.72	-13.00	-26.72	peak	H
5	684.7500	-50.89	2.49	-48.40	-13.00	-35.40	peak	H
6	944.7100	-50.69	14.99	-35.70	-13.00	-22.70	peak	H
7	1308.000	-40.99	10.87	-30.12	-13.00	-17.12	peak	H
8	2868.000	-40.80	13.27	-27.53	-13.00	-14.53	peak	H
1	102.7500	-52.30	-2.99	-55.29	-13.00	-42.29	peak	V
2	274.4400	-51.66	6.22	-45.44	-13.00	-32.44	peak	V
3	351.0700	-51.18	2.91	-48.27	-13.00	-35.27	peak	V
4	602.3000	-51.61	5.16	-46.45	-13.00	-33.45	peak	V
5	733.2500	-51.80	9.15	-42.65	-13.00	-29.65	peak	V
6	998.0600	-49.84	11.15	-38.69	-13.00	-25.69	peak	V
7	1410.000	-41.73	5.00	-36.73	-13.00	-23.73	peak	V
8	2550.000	-40.36	12.54	-27.82	-13.00	-14.82	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 1	Date:	2010/08/13
Frequency:	836.6 MHz	Test By:	Gary Wu

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
1	38.7300	-52.02	12.34	-39.68	-13.00	-26.68	peak	H
2	92.0800	-52.04	1.07	-50.97	-13.00	-37.97	peak	H
3	355.9200	-51.00	-2.20	-53.20	-13.00	-40.20	peak	H
4	484.9300	-50.08	11.46	-38.62	-13.00	-25.62	peak	H
5	782.7200	-51.90	5.46	-46.44	-13.00	-33.44	peak	H
6	925.3100	-50.73	16.04	-34.69	-13.00	-21.69	peak	H
7	1504.000	-40.81	10.36	-30.45	-13.00	-17.45	peak	H
8	2826.000	-40.83	13.12	-27.71	-13.00	-14.71	peak	H
1	46.4900	-50.85	-6.23	-57.08	-13.00	-44.08	peak	V
2	107.6000	-51.31	-2.90	-54.21	-13.00	-41.21	peak	V
3	233.7000	-51.15	0.94	-50.21	-13.00	-37.21	peak	V
4	286.0800	-51.46	6.01	-45.45	-13.00	-32.45	peak	V
5	735.1900	-51.39	9.20	-42.19	-13.00	-29.19	peak	V
6	925.3100	-50.32	9.22	-41.10	-13.00	-28.10	peak	V
7	1590.000	-41.57	6.24	-35.33	-13.00	-22.33	peak	V
8	2878.000	-40.95	15.23	-25.72	-13.00	-12.72	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 1	Date:	2010/08/13
Frequency:	848.8 MHz	Test By:	Gary Wu

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
1	38.7300	-52.10	12.34	-39.76	-13.00	-26.76	peak	H
2	91.1100	-52.18	1.15	-51.03	-13.00	-38.03	peak	H
3	332.6400	-50.50	-2.07	-52.57	-13.00	-39.57	peak	H
4	477.1700	-50.60	11.23	-39.37	-13.00	-26.37	peak	H
5	749.7400	-50.34	4.34	-46.00	-13.00	-33.00	peak	H
6	947.6200	-50.92	14.78	-36.14	-13.00	-23.14	peak	H
7	1136.000	-41.10	11.32	-29.78	-13.00	-16.78	peak	H
8	2758.000	-40.34	12.89	-27.45	-13.00	-14.45	peak	H
1	112.4500	-51.17	-3.47	-54.64	-13.00	-41.64	peak	V
2	213.3300	-51.73	0.55	-51.18	-13.00	-38.18	peak	V
3	288.0200	-50.85	5.85	-45.00	-13.00	-32.00	peak	V
4	477.1700	-50.57	0.54	-50.03	-13.00	-37.03	peak	V
5	629.4600	-50.62	6.81	-43.81	-13.00	-30.81	peak	V
6	931.1300	-50.55	9.32	-41.23	-13.00	-28.23	peak	V
7	1588.000	-41.79	6.23	-35.56	-13.00	-22.56	peak	V
8	2920.000	-39.89	15.57	-24.32	-13.00	-11.32	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2010/08/13
Frequency:	1850.2 MHz	Test By:	Gary Wu

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
1	91.1100	-53.23	1.15	-52.08	-13.00	-39.08	peak	H
2	235.6400	-51.33	-5.63	-56.96	-13.00	-43.96	peak	H
3	443.2200	-50.74	6.58	-44.16	-13.00	-31.16	peak	H
4	481.0500	-52.18	11.64	-40.54	-13.00	-27.54	peak	H
5	740.0400	-50.83	4.18	-46.65	-13.00	-33.65	peak	H
6	904.9400	-51.85	16.72	-35.13	-13.00	-22.13	peak	H
7	1422.000	-40.94	10.57	-30.37	-13.00	-17.37	peak	H
8	2478.000	-40.39	11.92	-28.47	-13.00	-15.47	peak	H
1	103.7200	-51.99	-2.97	-54.96	-13.00	-41.96	peak	V
2	224.0000	-51.65	1.30	-50.35	-13.00	-37.35	peak	V
3	286.0800	-51.28	6.01	-45.27	-13.00	-32.27	peak	V
4	751.6800	-50.30	9.04	-41.26	-13.00	-28.26	peak	V
5	913.6700	-51.93	9.00	-42.93	-13.00	-29.93	peak	V
6	993.2100	-50.93	10.99	-39.94	-13.00	-26.94	peak	V
7	1534.000	-41.55	5.82	-35.73	-13.00	-22.73	peak	V
8	2548.000	-40.17	12.53	-27.64	-13.00	-14.64	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2010/08/13
Frequency:	1880.0 MHz	Test By:	Gary Wu

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
1	37.7600	-53.38	12.44	-40.94	-13.00	-27.94	peak	H
2	94.0200	-52.91	0.92	-51.99	-13.00	-38.99	peak	H
3	351.0700	-51.62	-2.07	-53.69	-13.00	-40.69	peak	H
4	496.5700	-51.93	10.92	-41.01	-13.00	-28.01	peak	H
5	771.0800	-51.64	5.04	-46.60	-13.00	-33.60	peak	H
6	899.1200	-52.71	16.78	-35.93	-13.00	-22.93	peak	H
7	1626.000	-41.27	10.38	-30.89	-13.00	-17.89	peak	H
8	2526.000	-40.67	12.09	-28.58	-13.00	-15.58	peak	H
1	104.6900	-52.63	-2.95	-55.58	-13.00	-42.58	peak	V
2	222.0600	-53.19	1.35	-51.84	-13.00	-38.84	peak	V
3	288.0200	-51.58	5.85	-45.73	-13.00	-32.73	peak	V
4	664.3800	-51.70	8.31	-43.39	-13.00	-30.39	peak	V
5	891.3600	-51.34	8.54	-42.80	-13.00	-29.80	peak	V
6	981.5700	-51.47	10.56	-40.91	-13.00	-27.91	peak	V
7	1552.000	-42.17	5.95	-36.22	-13.00	-23.22	peak	V
8	2592.000	-40.94	12.88	-28.06	-13.00	-15.06	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2010/08/13
Frequency:	1909.8 MHz	Test By:	Gary Wu

No.	Frequency (MHz)	Reading (dBm)	Correct Factor(dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
1	43.5800	-51.98	11.83	-40.15	-13.00	-27.15	peak	H
2	91.1100	-53.44	1.15	-52.29	-13.00	-39.29	peak	H
3	348.1600	-50.63	-1.92	-52.55	-13.00	-39.55	peak	H
4	480.0800	-52.16	11.69	-40.47	-13.00	-27.47	peak	H
5	589.6900	-51.31	3.60	-47.71	-13.00	-34.71	peak	H
6	903.9700	-52.55	16.76	-35.79	-13.00	-22.79	peak	H
7	1406.000	-41.19	10.61	-30.58	-13.00	-17.58	peak	H
8	2728.000	-40.69	12.78	-27.91	-13.00	-14.91	peak	H
1	102.7500	-52.22	-2.99	-55.21	-13.00	-42.21	peak	V
2	221.0900	-51.07	1.37	-49.70	-13.00	-36.70	peak	V
3	277.3500	-52.46	6.35	-46.11	-13.00	-33.11	peak	V
4	341.3700	-51.48	3.59	-47.89	-13.00	-34.89	peak	V
5	723.5500	-50.82	8.92	-41.90	-13.00	-28.90	peak	V
6	979.6300	-51.71	10.49	-41.22	-13.00	-28.22	peak	V
7	1800.000	-41.43	7.87	-33.56	-13.00	-20.56	peak	V
8	2754.000	-41.16	14.21	-26.95	-13.00	-13.95	peak	V

7 Frequency Stability (Temperature Variation) Test

7.1. 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.

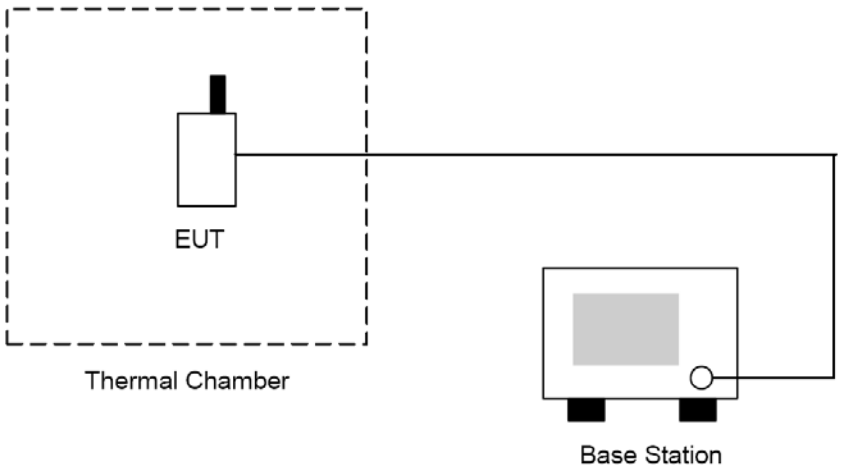
7.2. Test Instruments

Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	109369	07/29/2009	(2)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/26/2009	(2)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

7.3. Setup



7.4. Test Procedure

The measurement is made according to FCC rules part 22 and 24:

1. The EUT and test equipment were set up as shown on the following section.
2. With all power removed, the temperature was decreased to -30℃ and permitted to stabilize for three hours. Power was applied and the maximum change in frequency was note within one minute.
3. With power OFF, the temperature was raised in 10℃ steps. The sample was permitted to stabilize at each step for at least one-half hour. Power was applied and the maximum frequency change was noted within one minute.
4. The temperature tests were performed for the worst case.
5. Test data was recorded.

7.5. Uncertainty

The measurement uncertainty is defined as for Frequency Stability (Temperature Variation) measurement is ± 10Hz.

7.6. Test Result

Model Number	PC10110			
Test Item	Frequency Stability (Temperature Variation)			
Test Mode	Mode 1: GSM 850 Link			
Date of Test	08/09/2010		Test Site	TE02
Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
-30	30.12	0.036	±2.5	Pass
-20	25.47	0.030	±2.5	Pass
-10	19.36	0.023	±2.5	Pass
0	20.19	0.024	±2.5	Pass
10	24.48	0.029	±2.5	Pass
20	26.94	0.032	±2.5	Pass
30	27.32	0.033	±2.5	Pass
40	28.43	0.034	±2.5	Pass
50	26.77	0.032	±2.5	Pass

Model Number	PC10110			
Test Item	Frequency Stability (Temperature Variation)			
Test Mode	Mode 2: GSM 1900 Link			
Date of Test	08/09/2010		Test Site	TE02
Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
-30	19.38	0.010	±2.5	Pass
-20	19.77	0.011	±2.5	Pass
-10	20.46	0.011	±2.5	Pass
0	20.43	0.011	±2.5	Pass
10	17.69	0.009	±2.5	Pass
20	17.27	0.009	±2.5	Pass
30	16.48	0.009	±2.5	Pass
40	16.22	0.009	±2.5	Pass
50	18.35	0.010	±2.5	Pass

8 Frequency Stability (Voltage Variation) Test

8.1. 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.

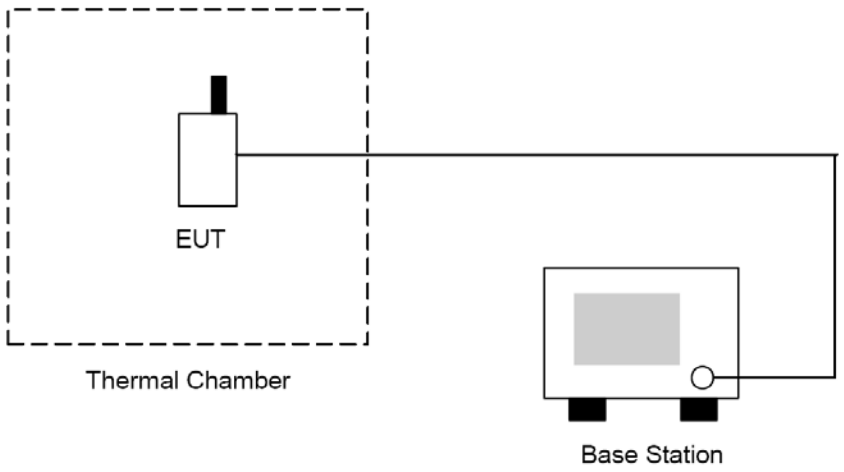
8.2. Test Instruments

Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Universal Radio Communication Tester	ROHDE & SCHWARZ	CMU200	109369	07/29/2009	(2)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/26/2009	(2)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

8.3. Setup



8.4. Test Procedure

1. The EUT was placed in a temperature chamber at 25±5 ℃ and connected as the following section.
2. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
3. The variation in frequency was measured for the worst case.

8.5. Uncertainty

The measurement uncertainty is defined as for Frequency Stability (Voltage Variation) measurement is ± 10Hz.

8.6. Test Result

Model Number	PC10110				
Test Item	Frequency Stability (Voltage Variation)				
Test Mode	Mode 1: GSM 850 Link				
Date of Test	08/09/2010		Test Site	TE02	
Level	Voltage [V]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]	Result
Battery full point	4.20	21.79	0.026	±2.5	Pass
Normal	3.70	24.38	0.029	±2.5	Pass
Battery cut-off point	3.40	23.77	0.028	±2.5	Pass

Model Number	PC10110				
Test Item	Frequency Stability (Voltage Variation)				
Test Mode	Mode 2: GSM 1900 Link				
Date of Test	08/09/2010		Test Site	TE02	
Level	Voltage [V]	Deviation [Hz]	Deviation [ppm]	Limit [ppm]	Result
Battery full point	4.20	21.45	0.011	±2.5	Pass
Normal	3.70	24.72	0.013	±2.5	Pass
Battery cut-off point	3.40	23.58	0.013	±2.5	Pass

9 AC Power Conducted Emissions Test

9.1. Limit

Frequency range (MHz)	Limits (dBuV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5.0	56	46
5.0 to 30	60	50

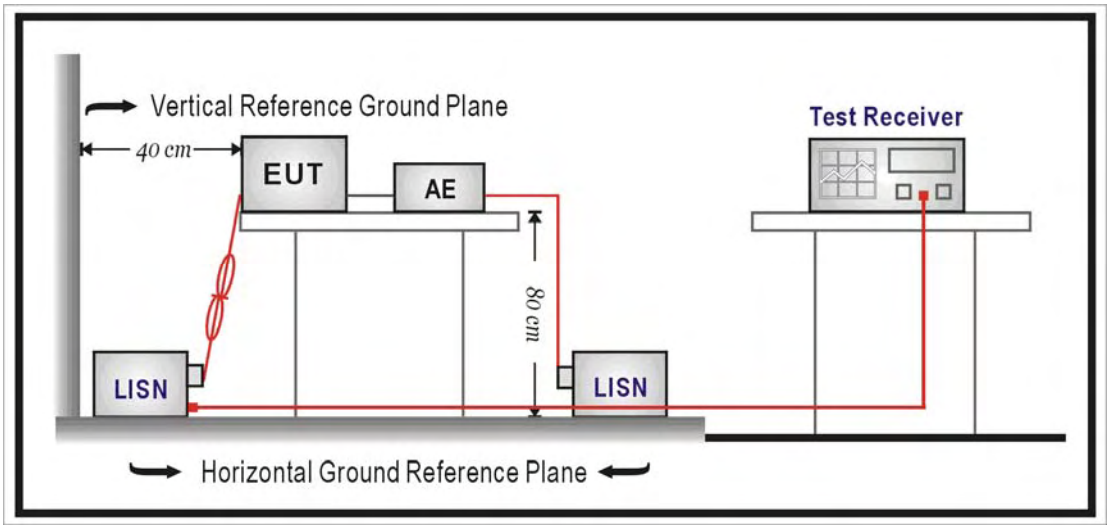
9.2. Test Instruments

Describe	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Test Receiver	R&S	ESCI	100367	03/15/2010	(1)
LISN	R&S	ENV216	101040	03/02/2010	(1)
LISN	R&S	ENV216	101041	03/02/2010	(1)
Test Site	ATL	TE02	TE02	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.

NOTE: N.C.R. = No Calibration Request.

9.3. Setup



9.4. Test Procedure

The measurement is made according to FCC rules15.207:

The power line conducted emission measurements were performed in a shielded enclosure. The EUT was assembled on a wooden table which is 80 centimeters high, was placed 40 centimeters from the back wall and at least 1 meter from the sidewall.

Power was fed to the EUT from the public utility power grid through a line filter and EMCO Model 3162/2 SH Line Impedance Stabilization Networks (LISN). The LISN housing, measuring instrumentation case, ground plane, etc., were electrically bonded together at the same RF potential. The Spectrum analyzer was connected to the AC line through an isolation transformer. The 50-ohm output of the LISN was connected to the spectrum analyzer directly. Conducted emission levels were in the CISPR quasi-peak detection mode. The analyzer's 6 dB bandwidth was set to 9 KHz. No post-detector video filter was used.

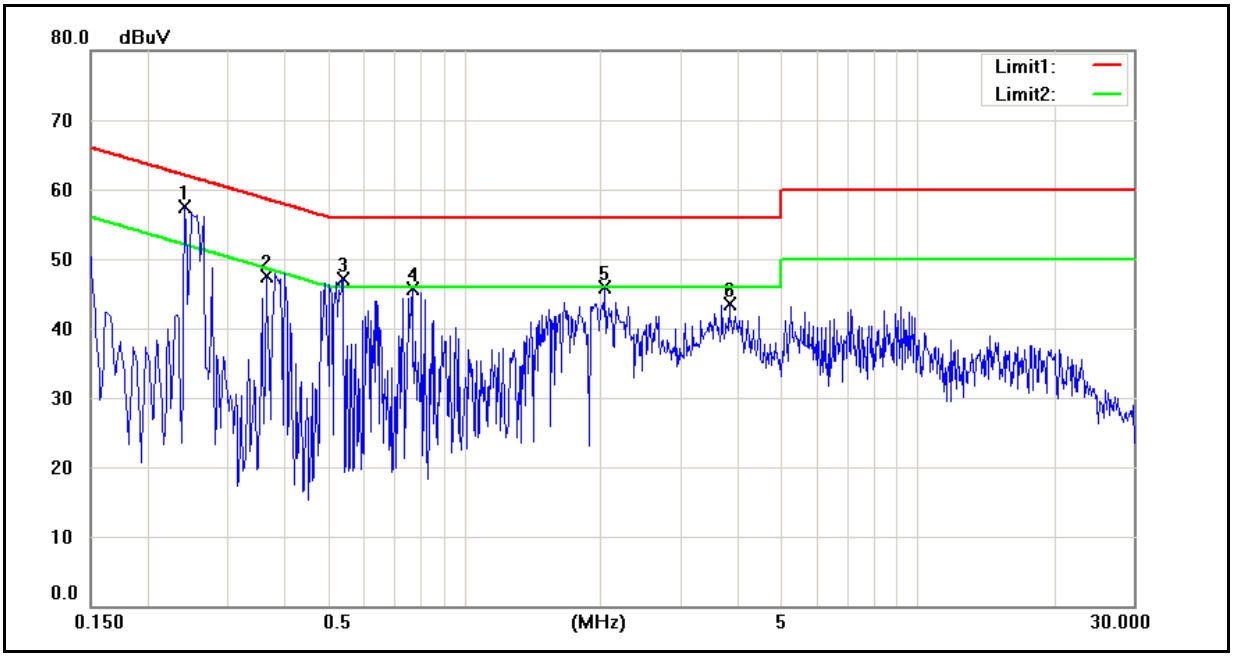
The spectrum was scanned from 150 KHz to 30 MHz. The physical arrangement of the test system and associated cabling was varied (within the scope of arrangements likely to be encountered in actual use) to determine the effect on the unit's emanations in amplitude and frequency. All spurious emission frequencies were observed. The highest emission amplitudes relative to the appropriate limit were measured and have been recorded in section 10.6.

9.5. Uncertainty

The measurement uncertainty is defined as for AC power conducted emission measurement is ± 2.24 dB.

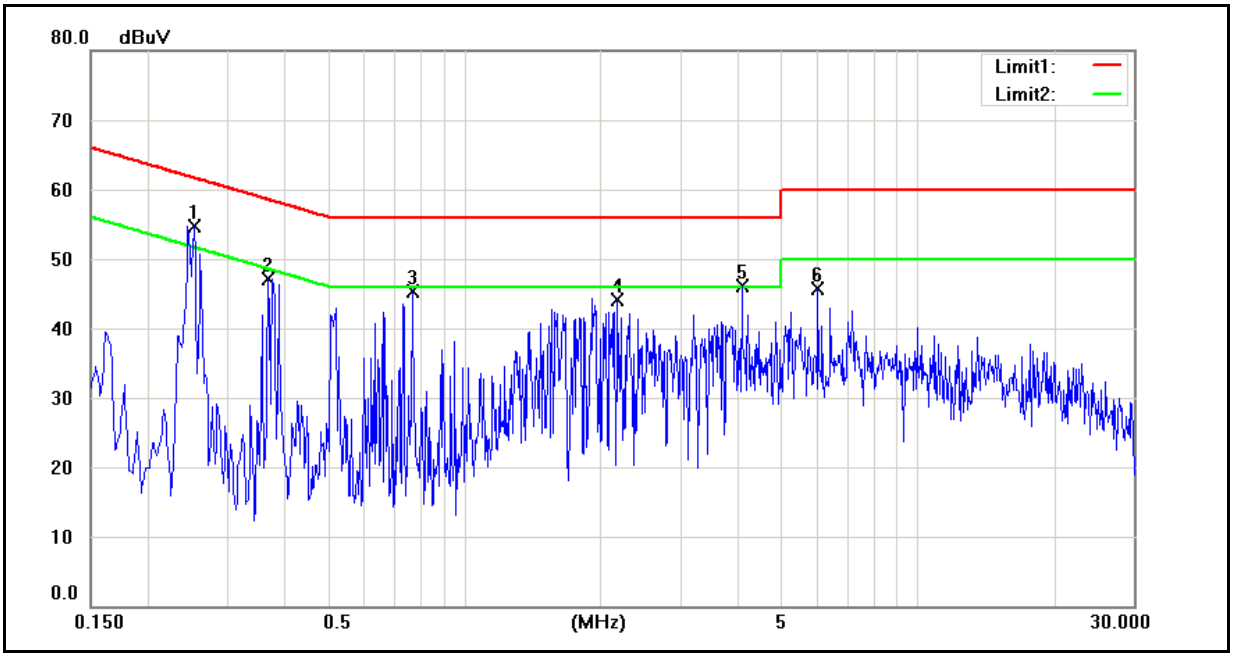
9.6. Test Result

Standard:	FCC Part 15.207	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 1	Date:	2010/08/11
		Test By:	Gary Wu
Description:			



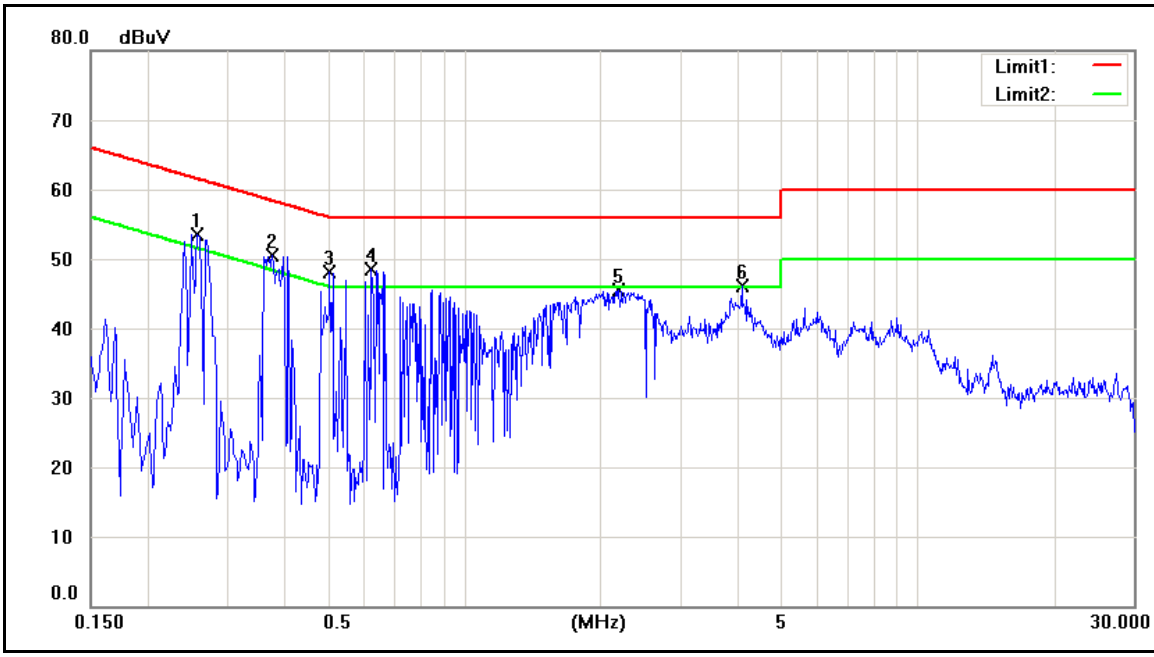
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2420	44.48	17.49	9.59	54.07	27.08	62.03	52.03	-7.96	-24.95	Pass
2	0.3660	34.41	10.91	9.59	44.00	20.50	58.59	48.59	-14.59	-28.09	Pass
3	0.5420	30.57	4.99	9.59	40.16	14.58	56.00	46.00	-15.84	-31.42	Pass
4	0.7700	34.58	17.15	9.60	44.18	26.75	56.00	46.00	-11.82	-19.25	Pass
5	2.0500	33.85	16.06	9.61	43.46	25.67	56.00	46.00	-12.54	-20.33	Pass
6	3.8460	30.68	11.16	9.63	40.31	20.79	56.00	46.00	-15.69	-25.21	Pass

Standard:	FCC Part 15.207	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 1	Date:	2010/08/11
		Test By:	Gary Wu
Description:			



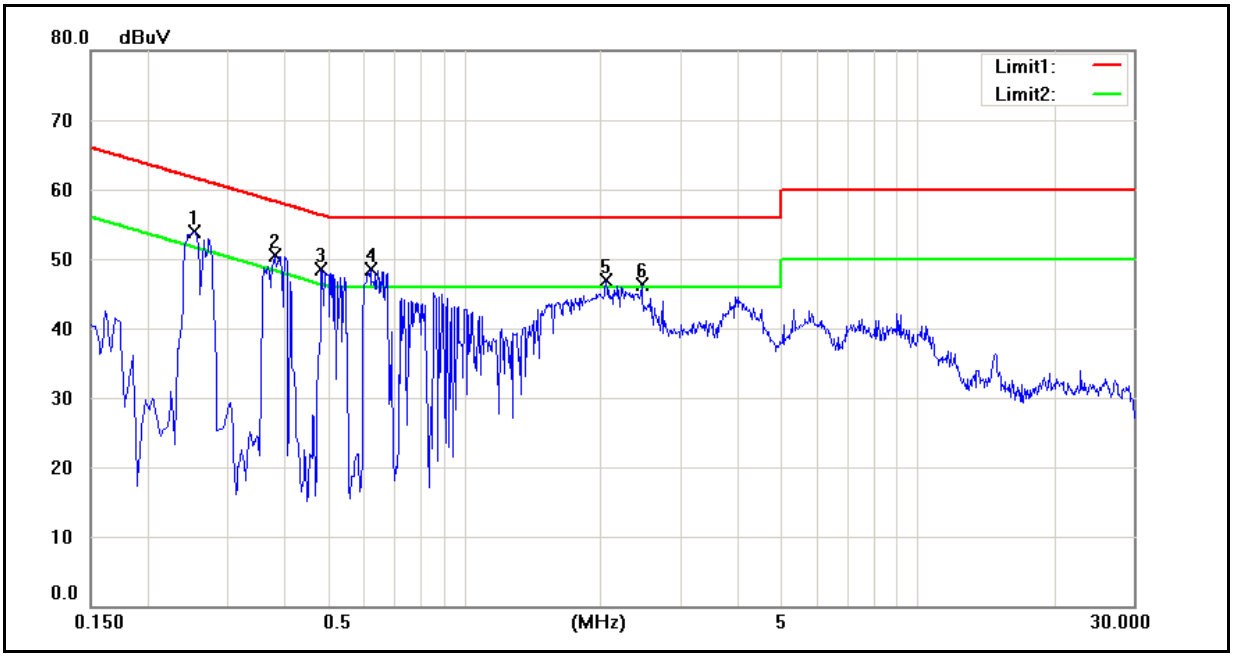
No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2540	43.17	25.03	9.58	52.75	34.61	61.63	51.63	-8.88	-17.02	Pass
2	0.3700	32.78	10.28	9.59	42.37	19.87	58.50	48.50	-16.13	-28.63	Pass
3	0.7700	34.07	17.04	9.59	43.66	26.63	56.00	46.00	-12.34	-19.37	Pass
4	2.1820	31.43	13.02	9.60	41.03	22.62	56.00	46.00	-14.97	-23.38	Pass
5	4.1060	27.80	10.66	9.62	37.42	20.28	56.00	46.00	-18.58	-25.72	Pass
6	6.0300	25.08	7.97	9.65	34.73	17.62	60.00	50.00	-25.27	-32.38	Pass

Standard:	FCC Part 15.207	Line:	L1
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2010/08/11
		Test By:	Gary Wu
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2580	41.57	20.79	9.59	51.16	30.38	61.50	51.50	-10.34	-21.12	Pass
2	0.3780	37.60	15.14	9.59	47.19	24.73	58.32	48.32	-11.13	-23.59	Pass
3	0.5060	33.73	10.77	9.59	43.32	20.36	56.00	46.00	-12.68	-25.64	Pass
4	0.6260	34.65	10.69	9.59	44.24	20.28	56.00	46.00	-11.76	-25.72	Pass
5	2.1980	29.58	8.81	9.61	39.19	18.42	56.00	46.00	-16.81	-27.58	Pass
6	4.0980	28.58	8.65	9.63	38.21	18.28	56.00	46.00	-17.79	-27.72	Pass

Standard:	FCC Part 15.207	Line:	N
Test item:	Conducted Emission	Power:	AC 120V/60Hz
Model Number:	PC10110	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	Mode 2	Date:	2010/08/11
		Test By:	Gary Wu
Description:			



No.	Frequency (MHz)	QP reading (dBuV)	AVG reading (dBuV)	Correction factor (dB)	QP result (dBuV)	AVG result (dBuV)	QP limit (dBuV)	AVG limit (dBuV)	QP margin (dB)	AVG margin (dB)	Remark
1	0.2540	41.79	21.15	9.58	51.37	30.73	61.63	51.63	-10.26	-20.90	Pass
2	0.3820	37.50	15.31	9.59	47.09	24.90	58.24	48.24	-11.15	-23.34	Pass
3	0.4860	34.12	10.11	9.59	43.71	19.70	56.24	46.24	-12.53	-26.54	Pass
4	0.6220	34.74	10.16	9.59	44.33	19.75	56.00	46.00	-11.67	-26.25	Pass
5	2.0580	30.69	10.12	9.60	40.29	19.72	56.00	46.00	-15.71	-26.28	Pass
6	2.4700	29.02	8.48	9.60	38.62	18.08	56.00	46.00	-17.38	-27.92	Pass