FCC 47 CFR PART 22H and 24E

Test Report

Product Type	:	Smartphone
Applicant	:	QBEX Electronics Corp.
Address	:	1606 NW 84th Ave, Miami, FL33126, USA
Trade Name	:	QBEX
Model Number	:	QBA769
Test Specification	:	FCC 47 CFR PART 22H: Oct, 2012 FCC 47 CFR PART 24E: Oct, 2012 ANSI/TIA-603-C-2004
Application Purpose	:	Original
Receive Date	:	Mar. 22, 2013
Test Period	:	Apr. 19 ~ Apr. 25, 2013
Issue Date	:	Apr. 29, 2013

Issue by

A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
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Taiwan Accreditation Foundation accreditation number: 1330

Revision History

Rev.	Issue Date	Revisions	Revised By
00	Apr. 29, 2013	Initial Issue	

Verification of Compliance

Issued Date: 04/29/2013

Product Type	:	Smartphone
Applicant	:	QBEX Electronics Corp.
Address	:	1606 NW 84th Ave, Miami, FL33126, USA
Trade Name	:	QBEX
Model Number	:	QBA769
FCC ID	:	XFM-QBA769
EUT Rated Voltage	:	DC 5.0V, 1000mA
Test Voltage	:	120 Vac / 60 Hz
Applicable Standard	:	FCC 47 CFR PART 22H: Oct, 2012 FCC 47 CFR PART 24E: Oct, 2012 ANSI/TIA-603-C-2004
Application Purpose	:	Original
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: 2009 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	:		Reviewed By	:	
(Manager)		(Murphy Wang)	(Testing Engineer)		(Fly Lu)

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1 General Information

1.1. EUT Description

Applicant		QBEX Electronics Corp.			
Applicant Address		1606 NW 84th Ave, Miami, FL33126, USA			
Manufacturer		TRANSAVA INC. (SZ)			
Manufacturer Address		Unit 10c, Block 7, East Pacific Garden 2,Shen Zhen, Guangdong, China 518040			
Product Type		Smartphone			
Trade Name		QBEX			
Model Number		QBA769			
FCC ID		XFM-QBA769			
IMEI No.		IMEI 1:354515040754300, IMEI 2:354515042723113			
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
	WCDMA/ HSDPA/ HSUPA	Band	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
		V	826.4 ~ 846.6	871.4 ~ 891.6	QPSK
Channel Control		Auto			
Type of Antenna		Internal Antenna			
Antenna Gain (dBi)		GSM/GPRS/EGPRS850 : -0.8 dBi GSM/GPRS/EGPRS1900 : -1.2 dBi WCDMA/ HSDPA/ HSUPA Band V : -0.8 dBi			
Max. RF Output power		GSM/GPRS 850 : 32.56 dBm / 1.803 W EGPRS 850 : 29.19 dBm / 0.830 W GSM/GPRS 1900 : 29.33 dBm / 0.857 W EGPRS 1900 : 27.88 dBm / 0.614 W WCDMA/ HSDPA/ HSUPA Band V : 25.86 dBm / 0.385 W			
Max. ERP/EIRP		GSM 850 : 29.97 dBm / 0.993 W EGPRS 850 : 26.47 dBm / 0.444 W GSM 1900 : 27.50 dBm / 0.562 W EGPRS 1900 : 26.88 dBm / 0.488 W WCDMA Band V : 24.19 dBm / 0.262 W			
Emission Designator		GSM 850 : 248KGXW EGPRS 850 : 253KG7W GSM 1900 : 248KGXW EGPRS 1900 : 244KG7W WCDMA Band V : 4M19F9W			

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
Mode 2: GSM 1900 Link Mode
Mode 3: EGPRS 850 Link Mode
Mode 4: EGPRS 1900 Link Mode
Mode 5: WCDMA Band V Link Mode

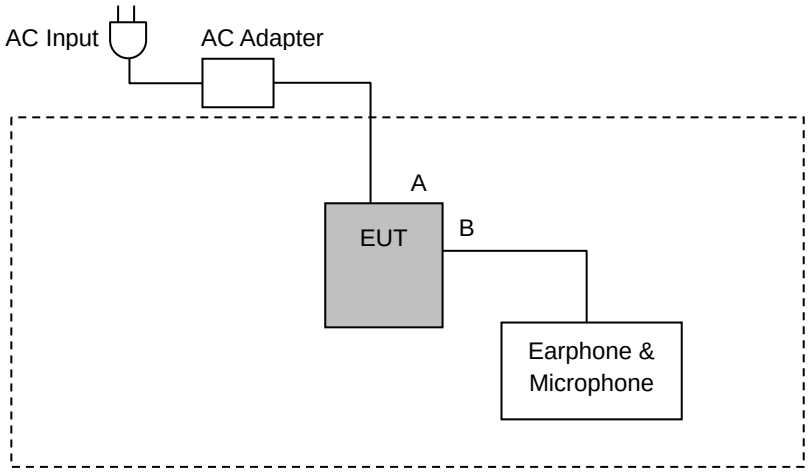
Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

By preliminary testing and verifying three axis (X, Y and Z) position of EUT transmitted status, it was found that "X axis" position was the worst, then the final test was executed the worst condition and test data were recorded in this report.

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	USB Cable	Shielded, 0.6 m with one core
B	Earphone & Microphone Cable	Non-Shielded, 1.2 m

1.5. Test Site Environment

Items	Required (IEC 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
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)	RSS-Gen (4.6.1)	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 Spurious 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) RSS-Gen (4.10)	< $43+10\log_{10}$(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

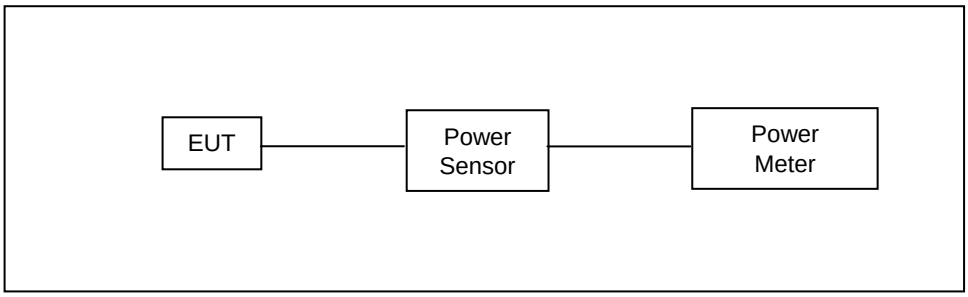
N/A

2.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/19/2012	(2)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/19/2012	(2)
Test Site	ATL	TE05	TE05	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	QBA769						
Test Item	RF Output Power						
Date of Test	04/19/2013			Test Site		TE05	
Bands	Modulation Type	Data Rate	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
GSM 850	GMSK	-----	824.2	32.39	1.734	32.51	1.782
			836.6	32.41	1.742	32.53	1.791
			848.8	32.43	1.750	**32.56**	**1.803**
GRRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	GMSK	4Down1Up (Duty Factor 1/8)	824.2	32.32	1.706	32.41	1.742
			836.6	32.36	1.722	32.44	1.754
			848.8	32.39	1.734	32.51	1.782
		3Down2Up (Duty Factor 2/8)	824.2	31.73	1.489	31.86	1.535
			836.6	31.75	1.496	31.88	1.542
			848.8	31.79	1.510	31.92	1.556
		2Down3Up (Duty Factor 3/8)	824.2	30.99	1.256	31.10	1.288
			836.6	31.04	1.271	31.15	1.303
			848.8	31.99	1.581	31.19	1.315
		1Down4Up (Duty Factor 4/8)	824.2	30.78	1.197	30.87	1.222
			836.6	30.81	1.205	30.91	1.233
			848.8	30.85	1.216	30.96	1.247
EGPRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	824.2	26.22	0.419	29.08	0.809
			836.6	26.37	0.434	29.11	0.815
			848.8	26.45	0.442	**29.19**	**0.830**
		3Down2Up (Duty Factor 2/8)	824.2	25.38	0.345	28.27	0.671
			836.6	25.46	0.352	28.31	0.678
			848.8	25.57	0.361	28.36	0.685
		2Down3Up (Duty Factor 3/8)	824.2	25.56	0.360	28.21	0.662
			836.6	25.67	0.369	28.29	0.675
			848.8	25.73	0.374	28.37	0.687
		1Down4Up (Duty Factor 4/8)	824.2	25.45	0.351	28.12	0.649
			836.6	25.57	0.361	28.27	0.671
			848.8	25.69	0.371	28.29	0.675

Note: 1. The peak power testing result was used peak detector.

2. SIM1 & SIM2 can't transmit simultaneously.

Model Number	QBA769						
Test Item	RF Output Power						
Date of Test	04/19/2013			Test Site		TE05	
Bands	Modulation Type	Data Rate	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
GSM 1900	GMSK	-----	1850.20	28.85	0.767	29.16	0.824
			1880.00	29.03	0.800	29.24	0.839
			1909.80	29.15	0.822	**29.33**	**0.857**
GRRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	GMSK	4Down1Up (Duty Factor 1/8)	1850.20	28.82	0.762	29.13	0.818
			1880.00	28.98	0.791	29.21	0.834
			1909.80	29.11	0.815	29.29	0.849
		3Down2Up (Duty Factor 2/8)	1850.20	27.81	0.604	28.17	0.656
			1880.00	27.97	0.627	28.22	0.664
			1909.80	28.16	0.655	28.33	0.681
		2Down3Up (Duty Factor 3/8)	1850.20	26.39	0.436	26.61	0.458
			1880.00	26.55	0.452	26.77	0.475
			1909.80	26.73	0.471	26.84	0.483
		1Down4Up (Duty Factor 4/8)	1850.20	26.15	0.412	26.37	0.434
			1880.00	26.33	0.430	26.54	0.451
			1909.80	26.51	0.448	26.63	0.460
EGPRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	1850.20	25.73	0.374	27.43	0.553
			1880.00	25.98	0.396	27.69	0.587
			1909.80	26.27	0.424	**27.88**	**0.614**
		3Down2Up (Duty Factor 2/8)	1850.20	25.35	0.343	27.56	0.570
			1880.00	25.54	0.358	27.79	0.601
			1909.80	25.76	0.377	27.83	0.607
		2Down3Up (Duty Factor 3/8)	1850.20	24.56	0.286	26.88	0.488
			1880.00	24.87	0.307	27.03	0.505
			1909.80	25.06	0.321	27.46	0.557
		1Down4Up (Duty Factor 4/8)	1850.20	23.56	0.227	26.44	0.441
			1880.00	23.71	0.235	26.54	0.451
			1909.80	24.19	0.262	26.88	0.488

Note: 1. The peak power testing result was used peak detector.

2. SIM1 & SIM2 can't transmit simultaneously.

Model Number	QBA769						
Test Item	RF Output Power						
Date of Test	04/19/2013			Test Site		TE05	
Bands	Modulation Type	Sub-Test	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
WCDMA Band V	QPSK	-----	826.4	22.32	0.171	25.41	0.348
			836.6	22.37	0.173	25.69	0.371
			846.6	22.49	0.177	**25.86**	**0.385**
HSDPA Band V	QPSK	1	826.4	22.21	0.166	25.32	0.340
			836.6	22.26	0.168	25.59	0.362
			846.6	22.37	0.173	25.77	0.378
		2	826.4	22.18	0.165	25.29	0.338
			836.6	22.24	0.167	25.57	0.361
			846.6	22.36	0.172	25.76	0.377
		3	826.4	21.70	0.148	24.81	0.303
			836.6	21.77	0.150	25.10	0.324
			846.6	21.86	0.153	25.26	0.336
		4	826.4	21.69	0.148	24.80	0.302
			836.6	21.75	0.150	25.08	0.322
			846.6	21.84	0.153	25.24	0.334
HSUPA Band V	QPSK	1	826.4	21.22	0.132	24.31	0.270
			836.6	21.27	0.134	24.59	0.288
			846.6	21.39	0.138	24.76	0.299
		2	826.4	19.20	0.083	22.29	0.169
			836.6	19.26	0.084	22.58	0.181
			846.6	19.37	0.086	22.74	0.188
		3	826.4	20.20	0.105	22.29	0.169
			836.6	20.24	0.106	22.56	0.180
			846.6	20.34	0.108	22.71	0.187
		4	826.4	19.18	0.083	22.27	0.169
			836.6	19.24	0.084	22.56	0.180
			846.6	19.35	0.086	22.72	0.187
		5	826.4	21.20	0.132	24.29	0.269
			836.6	21.23	0.133	24.55	0.285
			846.6	21.36	0.137	24.73	0.297

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.

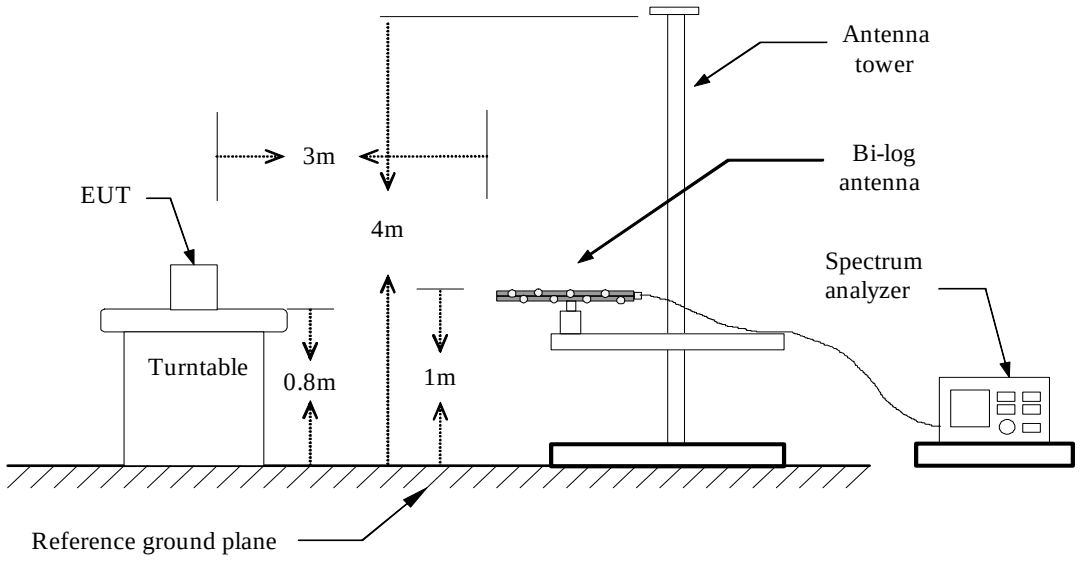
3.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/21/2013	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/21/2013	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2013	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2013	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	06/29/2012	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/15/2012	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/21/2012	(1)
Test Site	ATL	TE01	888001	08/28/2012	(1)

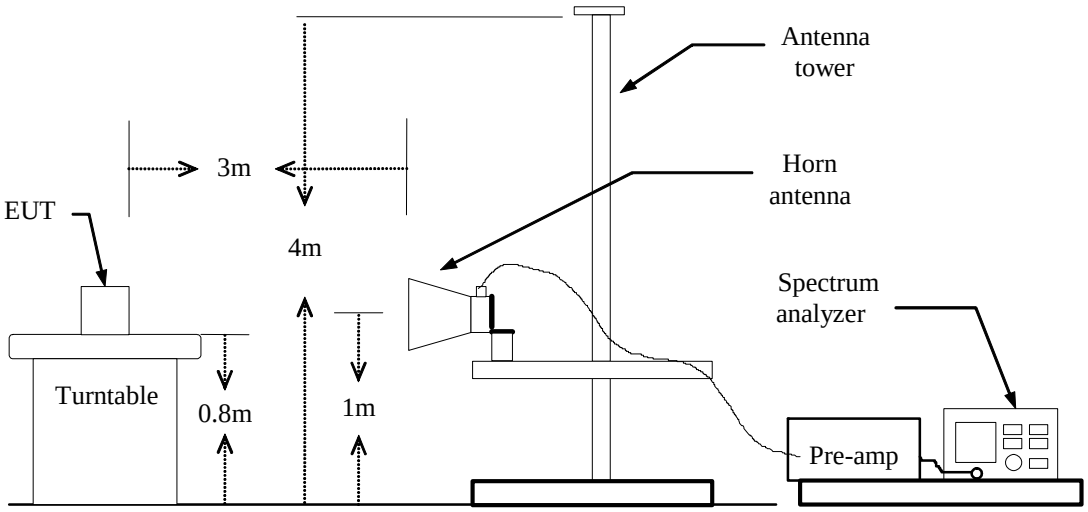
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

3.3. Setup

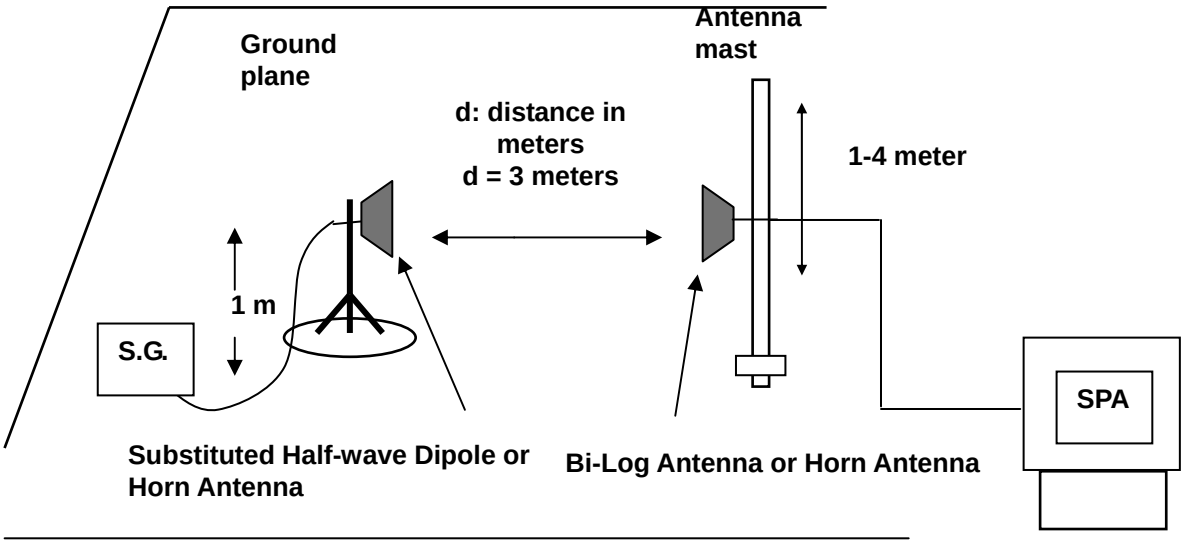
Below 1 GHz



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	QBA769							
Test Item	ERP/EIRP							
Date of Test	04/25/2013					Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	ERP		Limit
						(dBm)	(W)	
GSM 850	GMSK	824.2	H	16.32	11.29	27.61	0.577	< 7W
			V	18.01	11.29	29.30	0.851	< 7W
		836.6	H	16.13	11.34	27.47	0.558	< 7W
			V	18.63	11.34	**29.97**	**0.993**	< 7W
		848.8	H	15.80	11.47	27.27	0.533	< 7W
			V	17.70	11.47	29.17	0.826	< 7W
EGPRS 850	8PSK	824.2	H	11.50	11.29	22.79	0.190	< 7W
			V	14.38	11.29	25.67	0.369	< 7W
		836.6	H	11.98	11.34	23.32	0.215	< 7W
			V	14.19	11.34	25.53	0.357	< 7W
		848.8	H	12.20	11.47	23.67	0.233	< 7W
			V	15.00	11.47	**26.47**	**0.444**	< 7W

Model Number	QBA769							
Test Item	ERP/EIRP							
Date of Test	04/25/2013					Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	EIRP		Limit
						(dBm)	(W)	
GSM 1900	GMSK	1850.20	H	12.37	11.39	23.76	0.238	< 2W
			V	15.38	11.39	26.77	0.475	< 2W
		1880.00	H	12.06	11.65	23.71	0.235	< 2W
			V	12.06	11.65	23.71	0.235	< 2W
		1909.80	H	9.60	11.91	21.51	0.142	< 2W
			V	15.59	11.91	**27.50**	**0.562**	< 2W
EGPRS 1900	8PSK	1850.20	H	11.90	11.39	23.29	0.213	< 2W
			V	15.49	11.39	**26.88**	**0.488**	< 2W
		1880.00	H	10.82	11.65	22.47	0.177	< 2W
			V	15.05	11.65	26.70	0.468	< 2W
		1909.80	H	10.12	11.90	22.02	0.159	< 2W
			V	13.69	11.91	25.60	0.363	< 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.

Model Number	QBA769							
Test Item	ERP/EIRP							
Date of Test	04/25/2013					Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	ERP		Limit
						(dBm)	(W)	
WCDMA Band V	QPSK	826.4	H	8.09	11.31	19.40	0.087	< 7W
			V	12.72	11.31	24.03	0.253	< 7W
		836.6	H	10.10	11.34	21.44	0.139	< 7W
			V	12.75	11.34	24.09	0.256	< 7W
		846.6	H	10.04	11.46	21.50	0.141	< 7W
			V	12.73	11.46	**24.19**	**0.262**	< 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.

4 Occupied Bandwidth Test

4.1. Limit

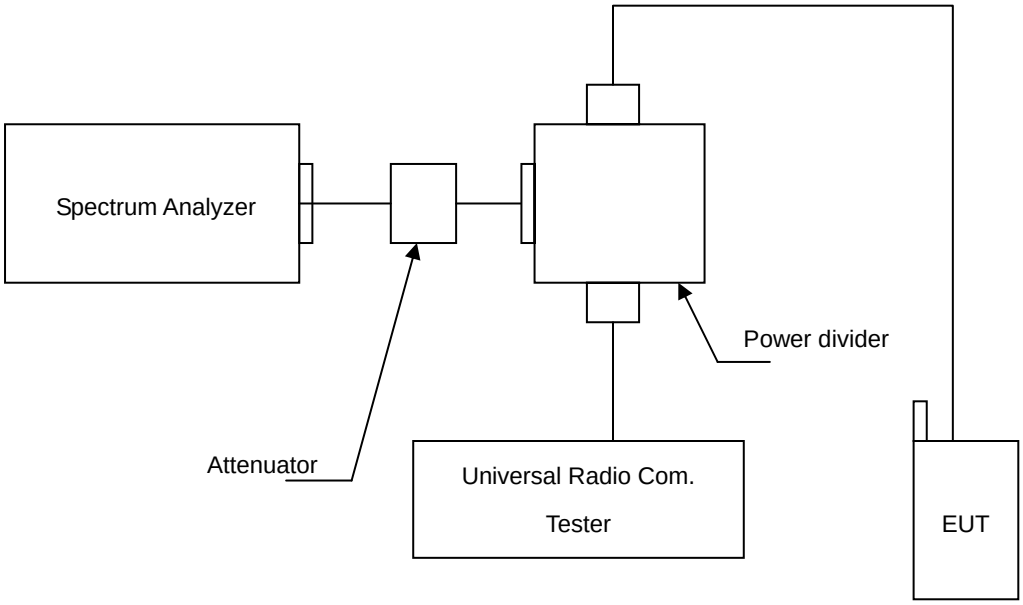
The Occupied Bandwidth Limit: N/A.

4.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2012	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power Divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	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.

4.5. Uncertainty

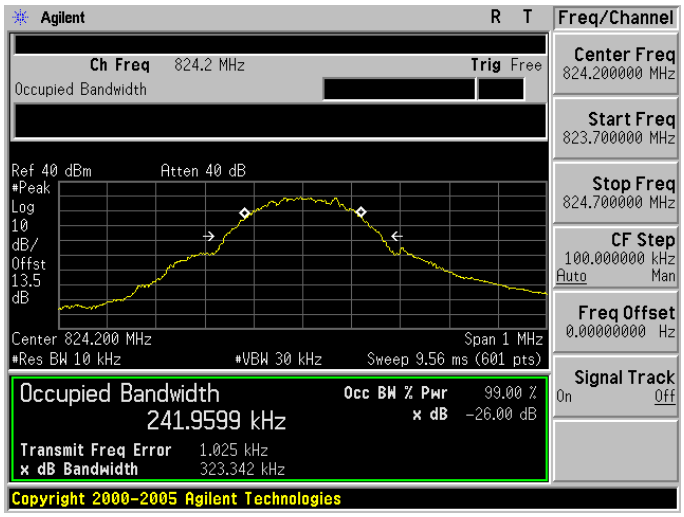
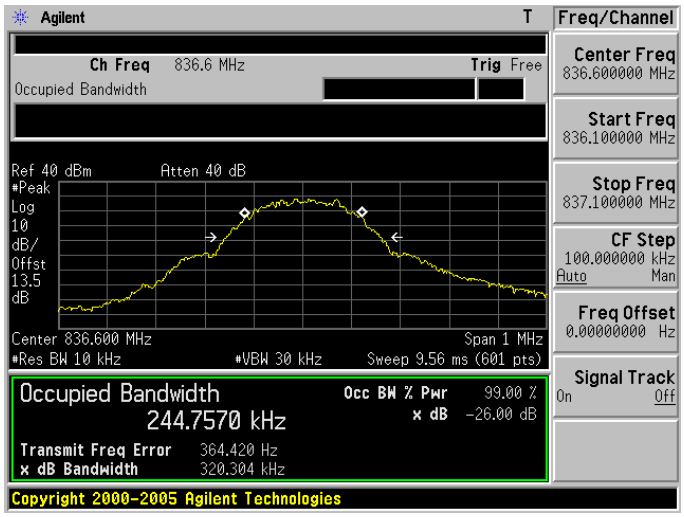
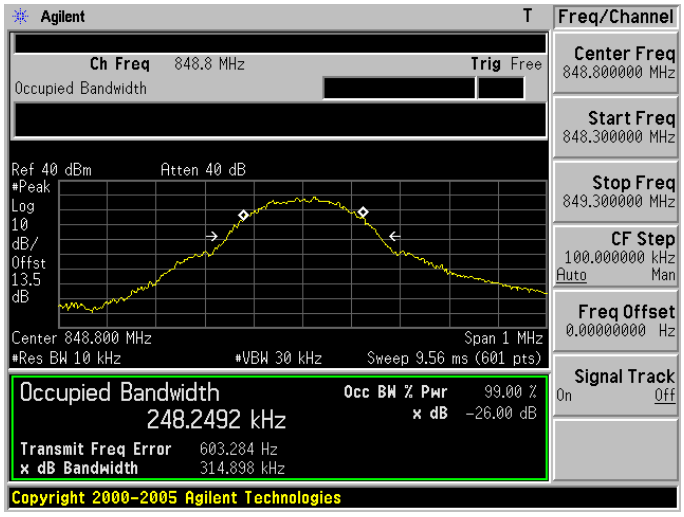
The measurement uncertainty is defined as ± 10Hz

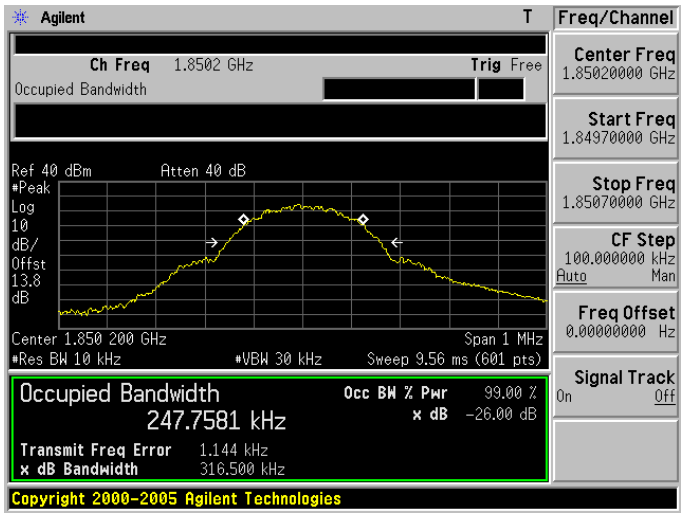
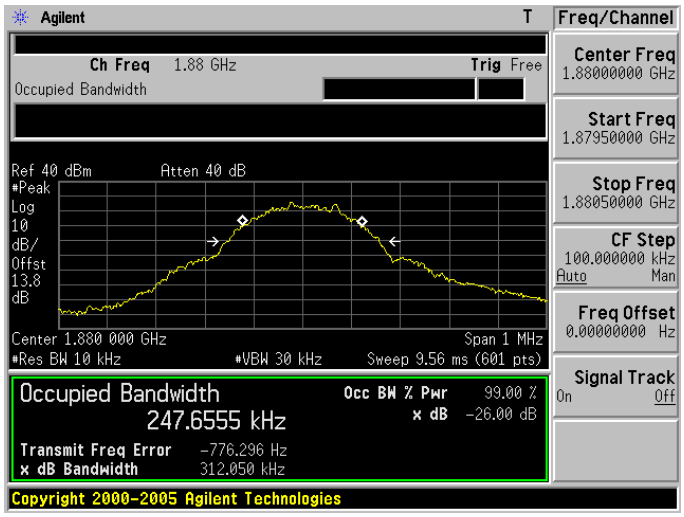
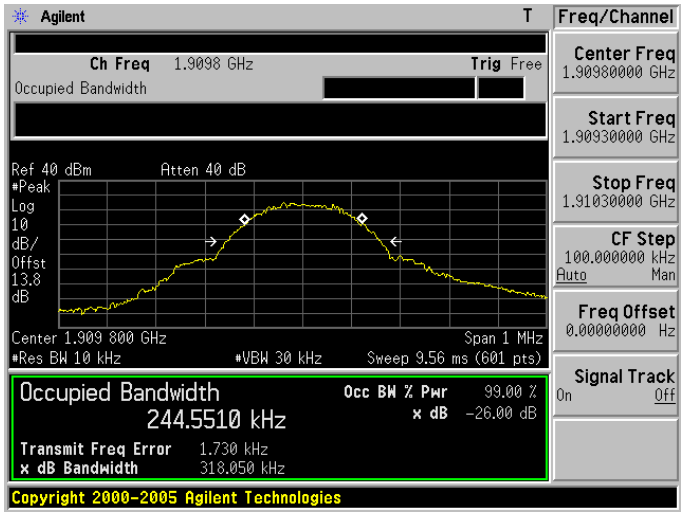
4.6. Test Result

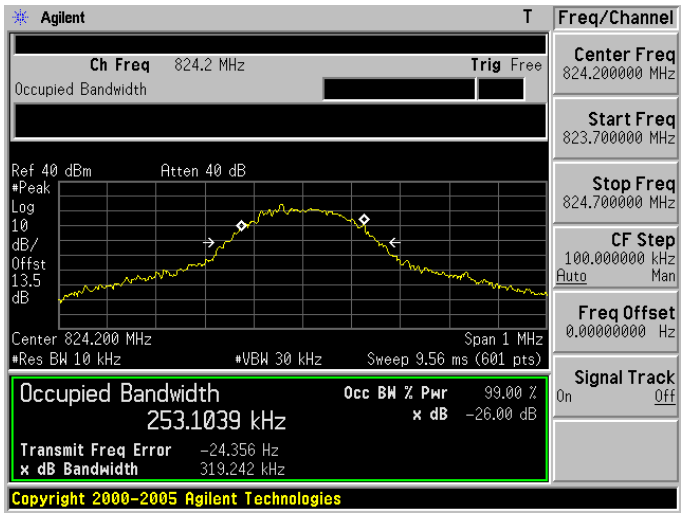
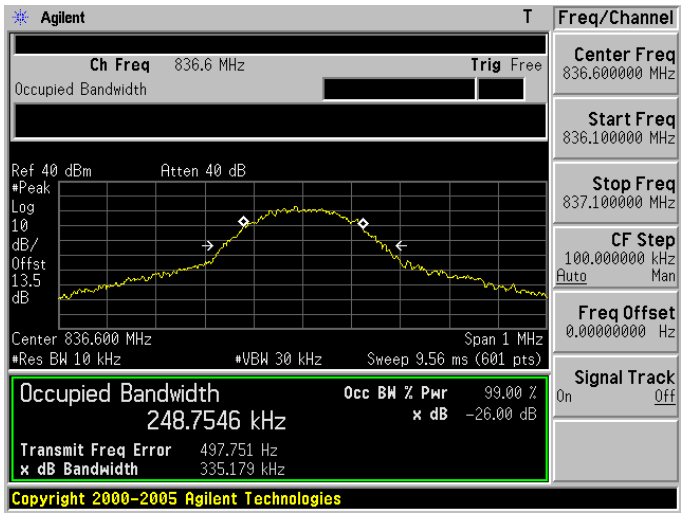
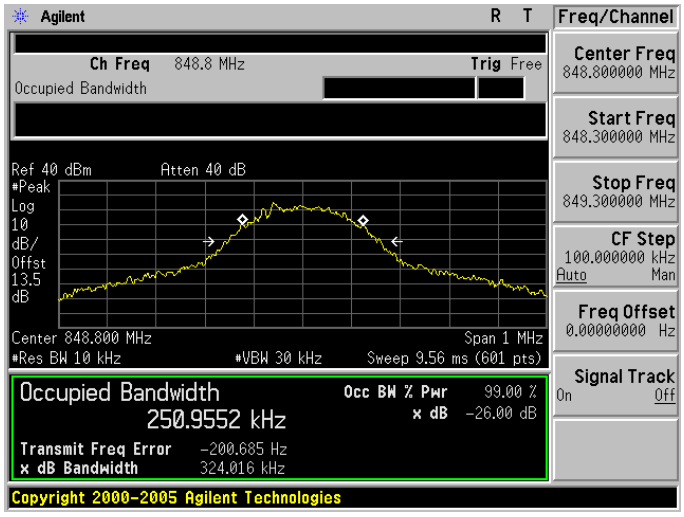
Model Number	QBA769				
Test Item	Occupied Bandwidth				
Date of Test	04/19/2013			Test Site	TE05
Bands	Channel	Frequency (MHz)	99% Bandwidth (kHz)	Note	
GSM 850	128	824.2	241.9599	RBW:10KHz , VBW:30KHz	
	190	836.6	244.7570	RBW:10KHz , VBW:30KHz	
	251	848.8	248.2492	RBW:10KHz , VBW:30KHz	
GSM 1900	512	1850.20	247.7581	RBW:10KHz , VBW:30KHz	
	661	1880.00	247.6555	RBW:10KHz , VBW:30KHz	
	810	1909.80	244.5510	RBW:10KHz , VBW:30KHz	
GPRS 850	128	824.2	253.1039	RBW:10KHz , VBW:30KHz	
	190	836.6	248.7546	RBW:10KHz , VBW:30KHz	
	251	848.8	250.9552	RBW:10KHz , VBW:30KHz	
GPRS 1900	512	1850.20	244.3154	RBW:10KHz , VBW:30KHz	
	661	1880.00	241.7548	RBW:10KHz , VBW:30KHz	
	810	1909.80	241.1597	RBW:10KHz , VBW:30KHz	

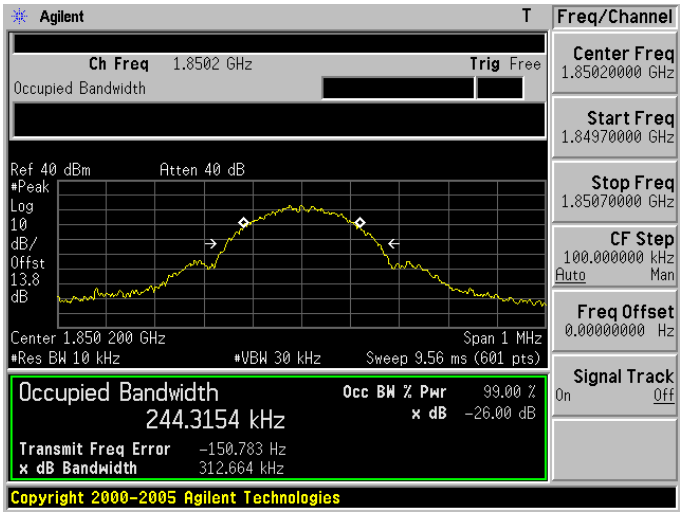
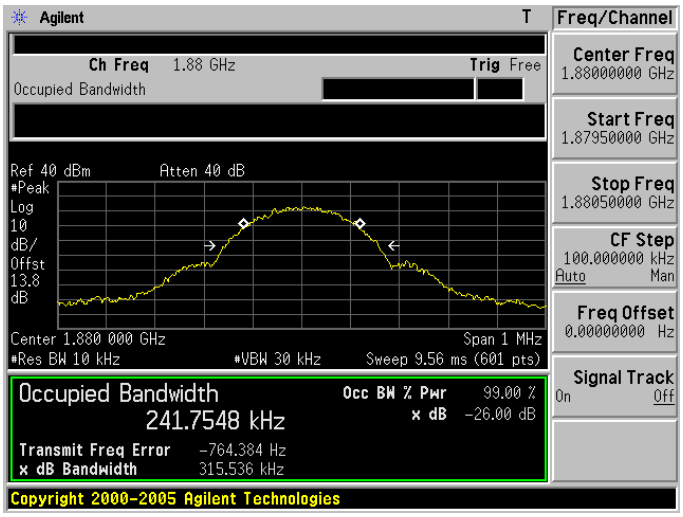
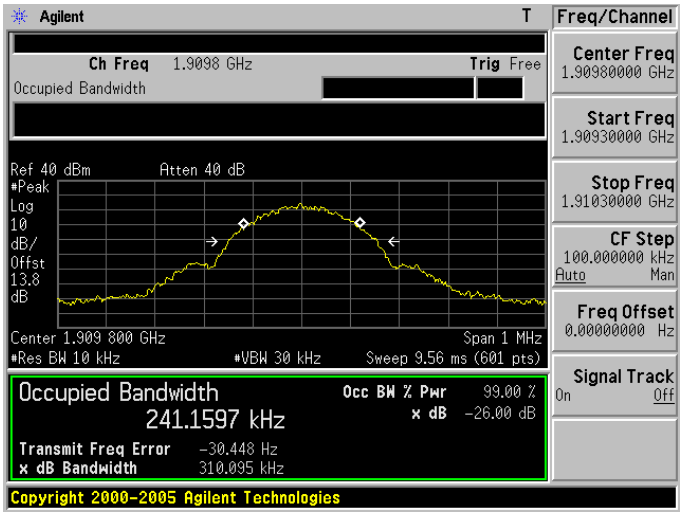
Model Number	QBA769				
Test Item	Occupied Bandwidth				
Date of Test	04/19/2013			Test Site	TE05
Bands	Channel	Frequency (MHz)	99% Bandwidth (MHz)	Note	
WCDMA Band V	4132	826.4	4.1802	RBW:100KHz , VBW:300KHz	
	4183	836.6	4.1500	RBW:100KHz , VBW:300KHz	
	4233	846.6	4.1903	RBW:100KHz , VBW:300KHz	

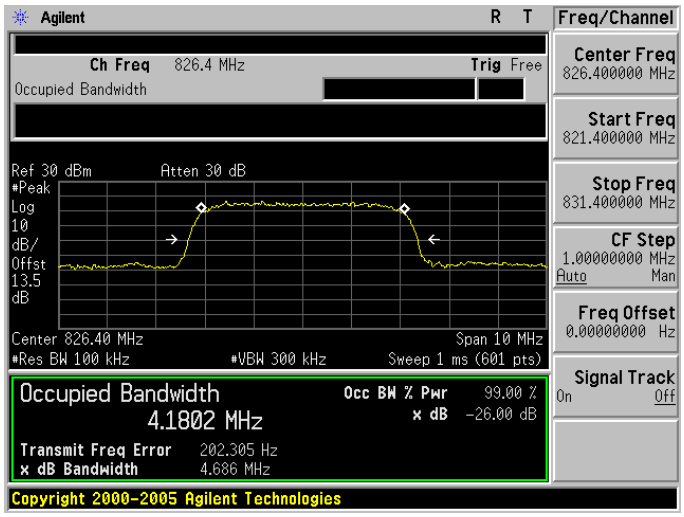
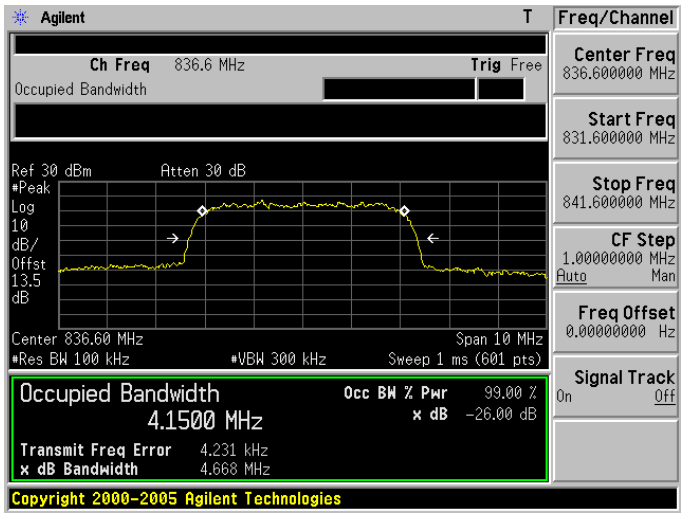
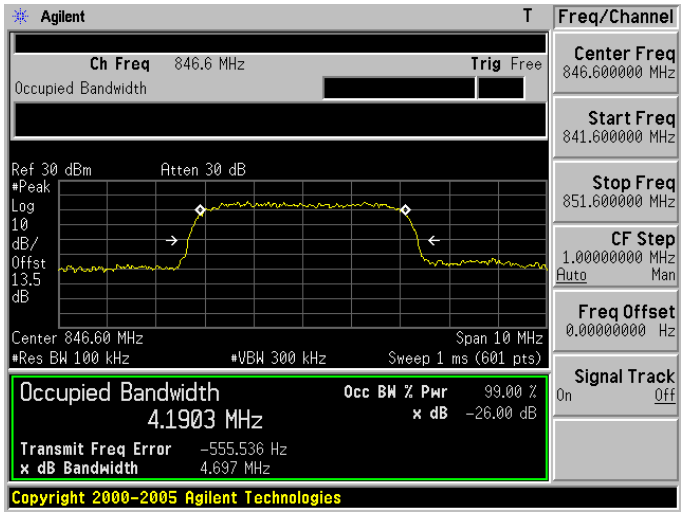
4.7. Test Graphs

Mode 1: GSM 850 Link Mode	
824.2 MHz	
836.6 MHz	
848.8 MHz	

Mode 2: GSM 1900 Link Mode	
1850.20 MHz	
1880.00 MHz	
1909.80 MHz	

Mode 3: EGPRS 850 Link Mode	
824.2 MHz	
836.6 MHz	
848.8 MHz	

Mode 4: EGPRS 1900 Link Mode	
1850.20 MHz	
1880.00 MHz	
1909.80 MHz	

Mode 5: WCDMA Band V Link Mode	
826.4 MHz	
836.6 MHz	
846.6 MHz	

5 Band Edge Test

5.1. Limit

The Band Edge Limit:

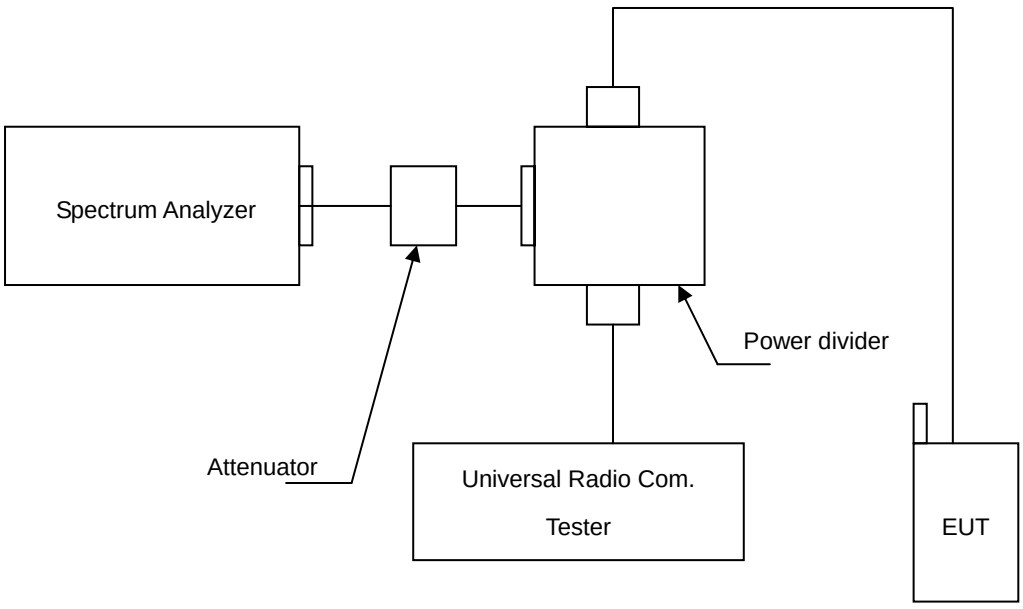
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

5.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2012	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power Divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

5.3. Setup



5.4. Test Procedure

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

3. The EUT was connected to Spectrum Analyzer and Base Station via Power Divider.
4. 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.
5. The band edge setting:
   a. RB=10 kHz; VB=30 kHz for GSM 850 and PCS 1900.
   b. RB=100 kHz; VB=300 kHz for WCDMA Band V and WCDMA Band II.

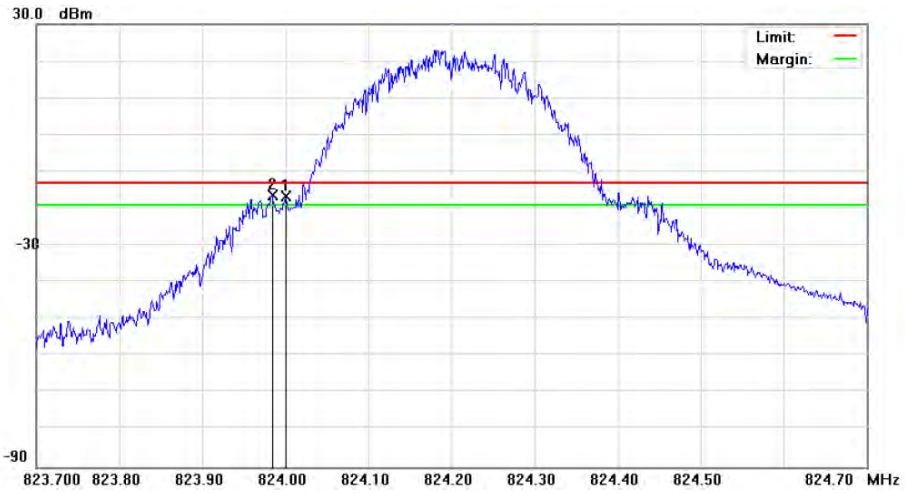
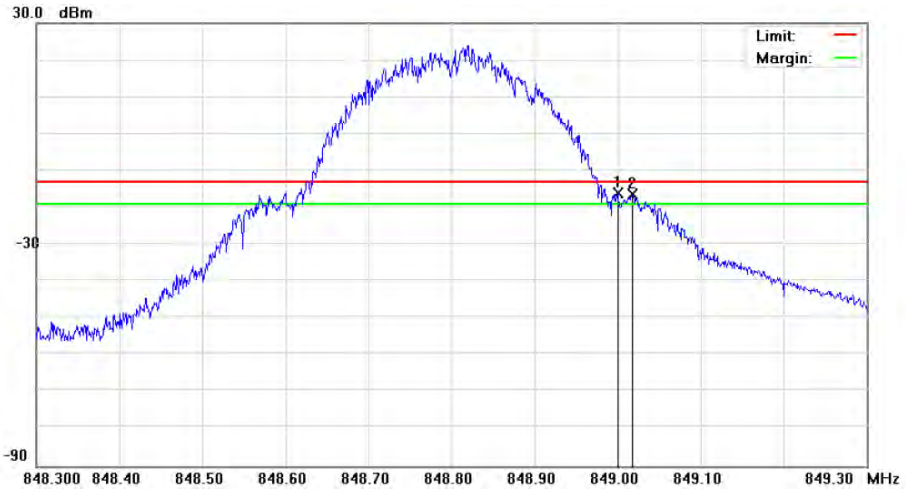
5.5. Uncertainty

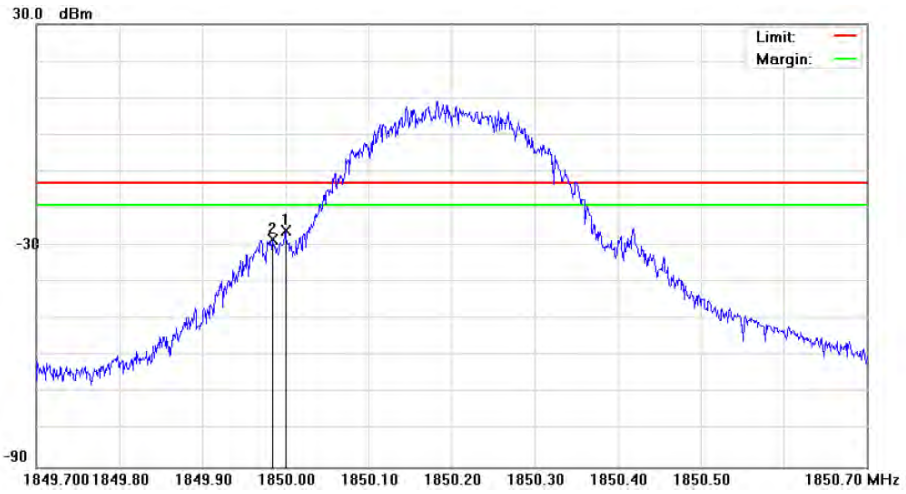
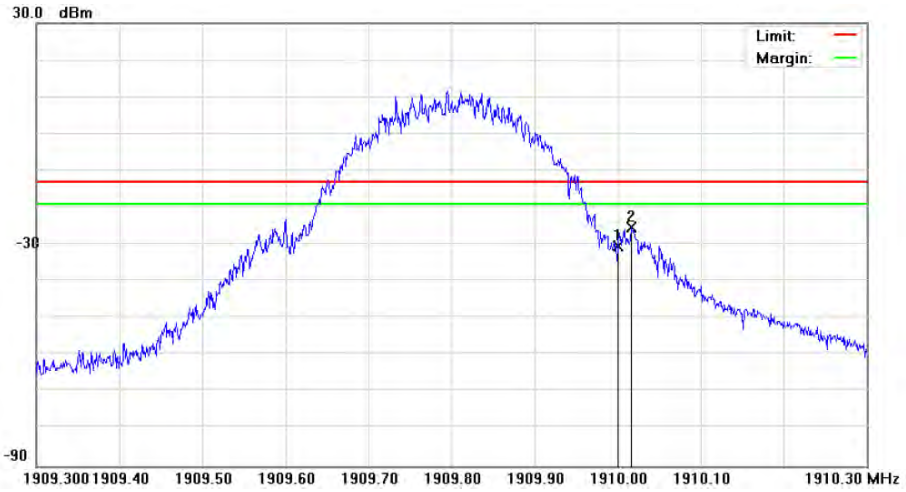
The measurement uncertainty is defined as ± 10Hz

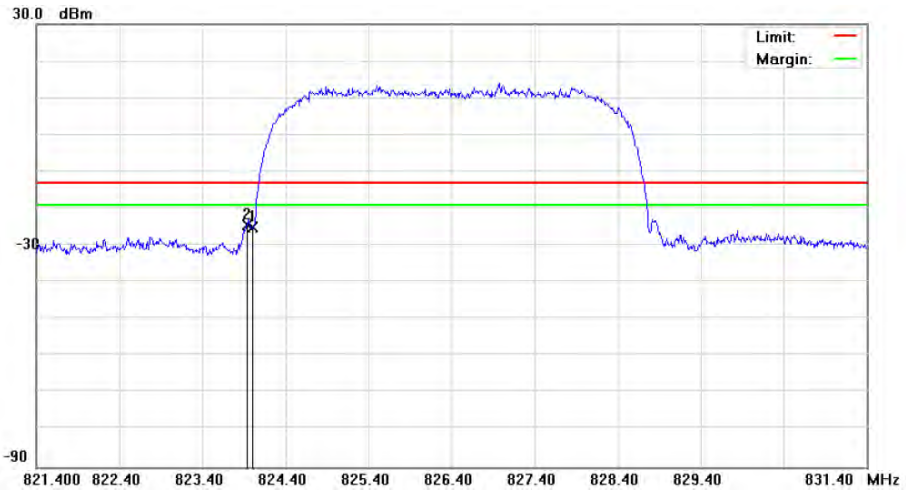
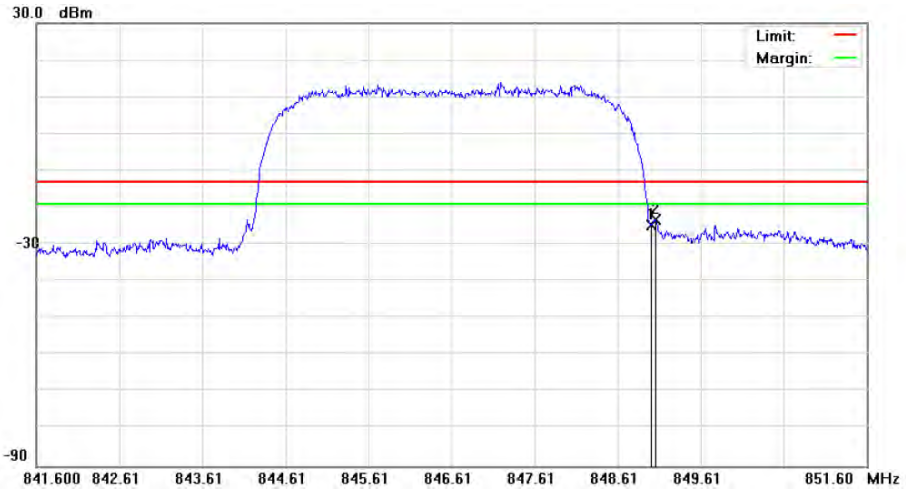
5.6. Test Result

Model Number		QBA769				
Test Item		Band Edge				
Date of Test		04/19/2013			Test Site	TE05
Bands		Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result
GSM 850	Lower	128	824.0000	-16.32	-13	Pass
	Higher	251	849.0000	-16.08	-13	Pass
GSM 1900	Lower	512	1850.000	-25.95	-13	Pass
	Higher	810	1910.000	-25.30	-13	Pass
WCDMA Band V	Lower	4132	824.0000	-24.54	-13	Pass
	Higher	4233	849.0000	-23.36	-13	Pass

5.7. Test Graphs

Mode 1: GSM 850 Link Mode	
Lower Band	
Higher Band	

Mode 2: GSM 1900 Link Mode	
Lower Band	
Higher Band	

Mode 5: WCDMA Band V Link Mode	
Lower Band	
Higher Band	

6 Conducted Spurious Emission 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.

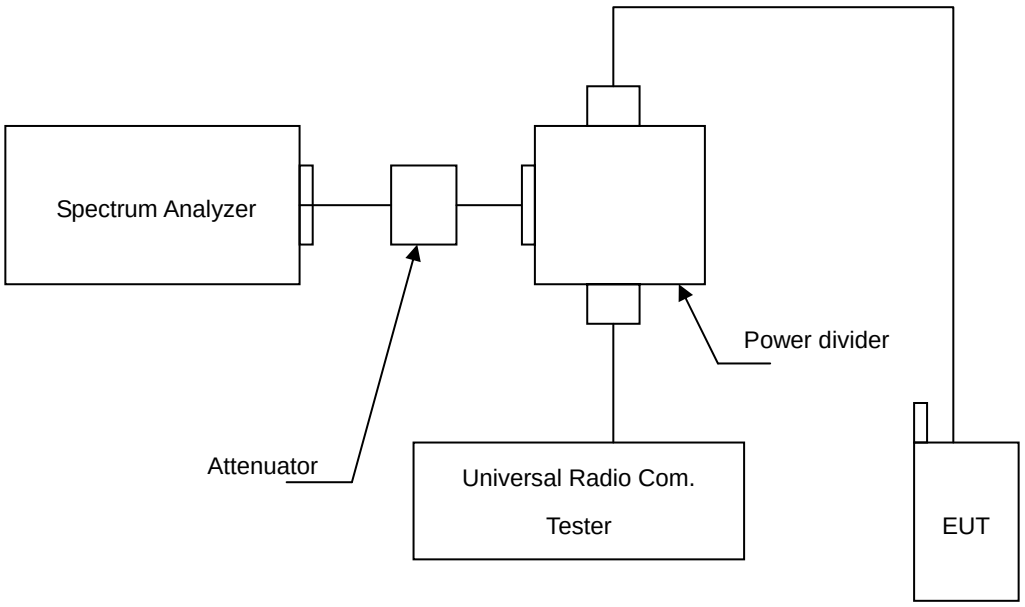
6.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/10/2012	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power Divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

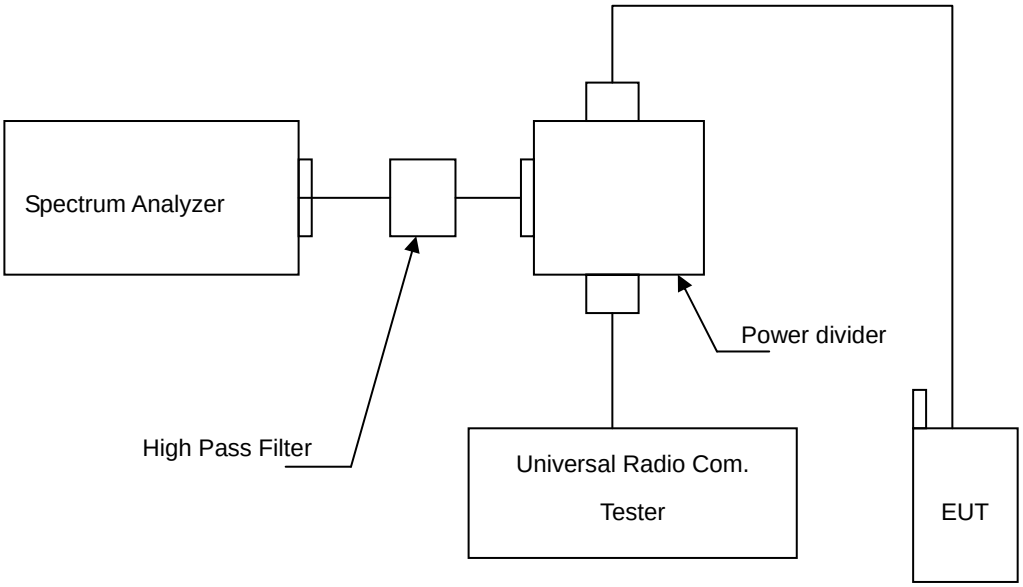
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

6.3. Setup

Below 2.8GHz



Above 2.8GHz



6.4. 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.

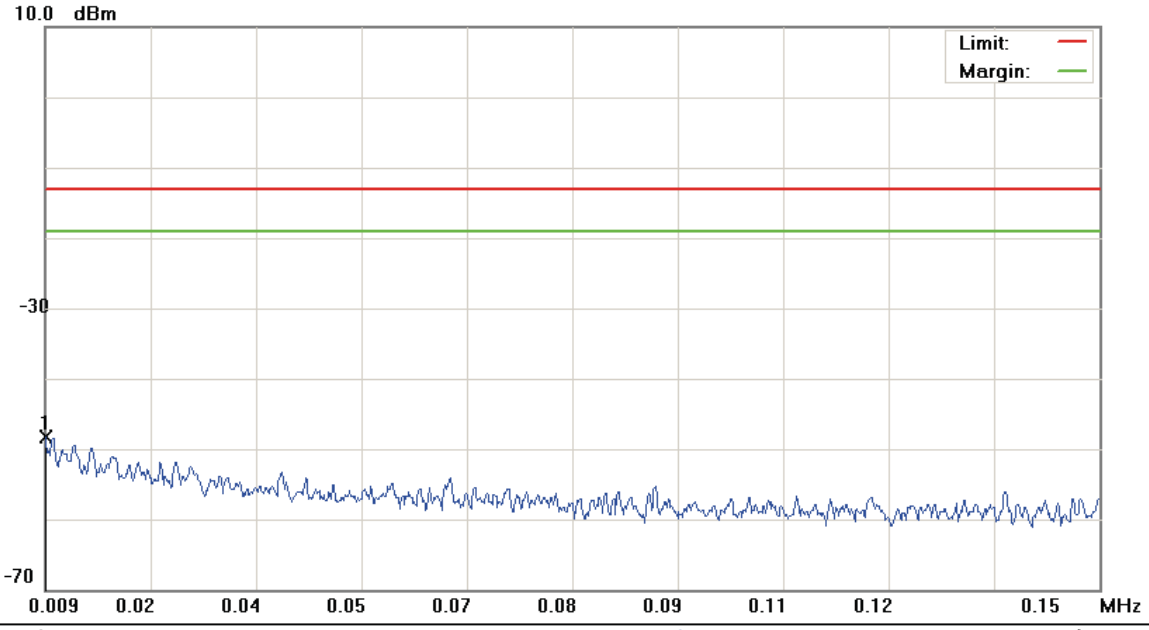
6.5. Uncertainty

The measurement uncertainty is evaluated as ± 2.24 dB.

6.6. Test Result

Model Number	QBA769		
Test Item	Conducted Emission		
Test Mode	Mode 1 / Mode 2 / Mode 5		
Date of Test	04/19/2013	Test Site	TE05

File :QBA769(CH128) Data :#1 Date: 2013/4/19 Time: 下午 03:57:05



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

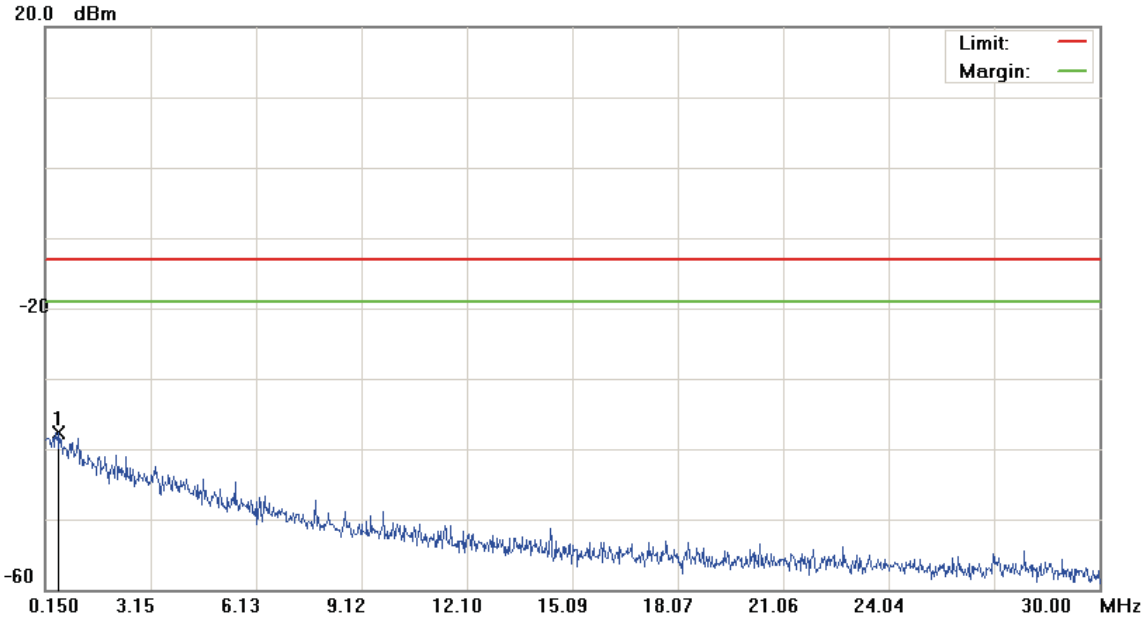
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0090	-78.90	30.58	-48.32	-13.00	-35.32	peak			

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

File :QBA769(CH128) Data :#2 Date: 2013/4/19 Time: 下午 03:57:29



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

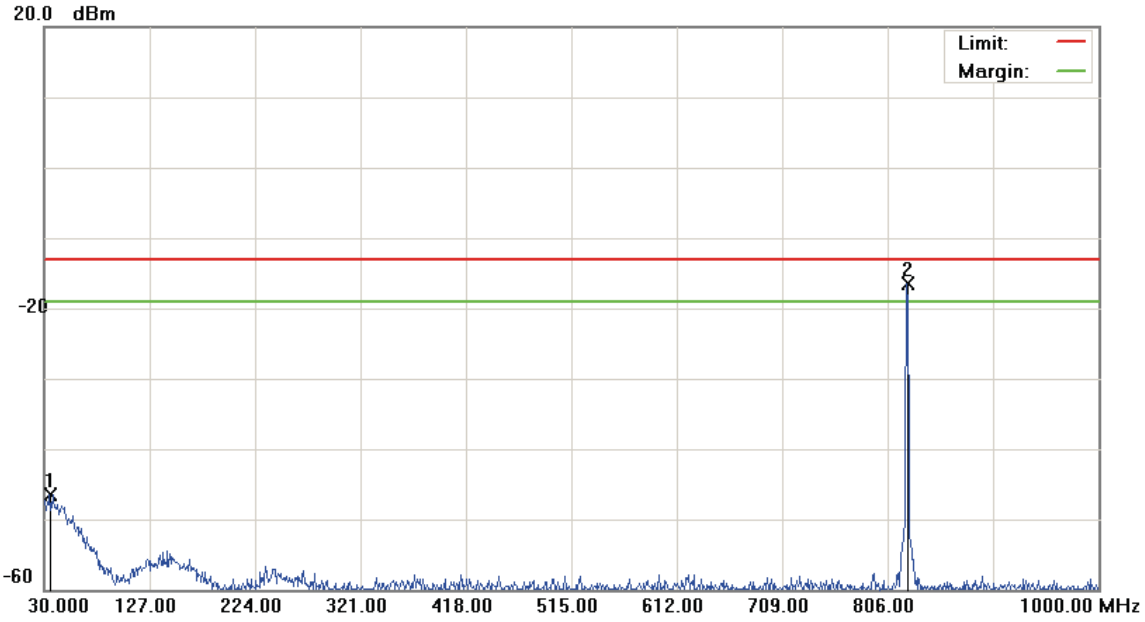
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.5082	-69.73	32.02	-37.71	-13.00	-24.71	peak			

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

File :QBA769(CH128) Data :#3 Date: 2013/4/19 Time: 下午 03:57:53



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

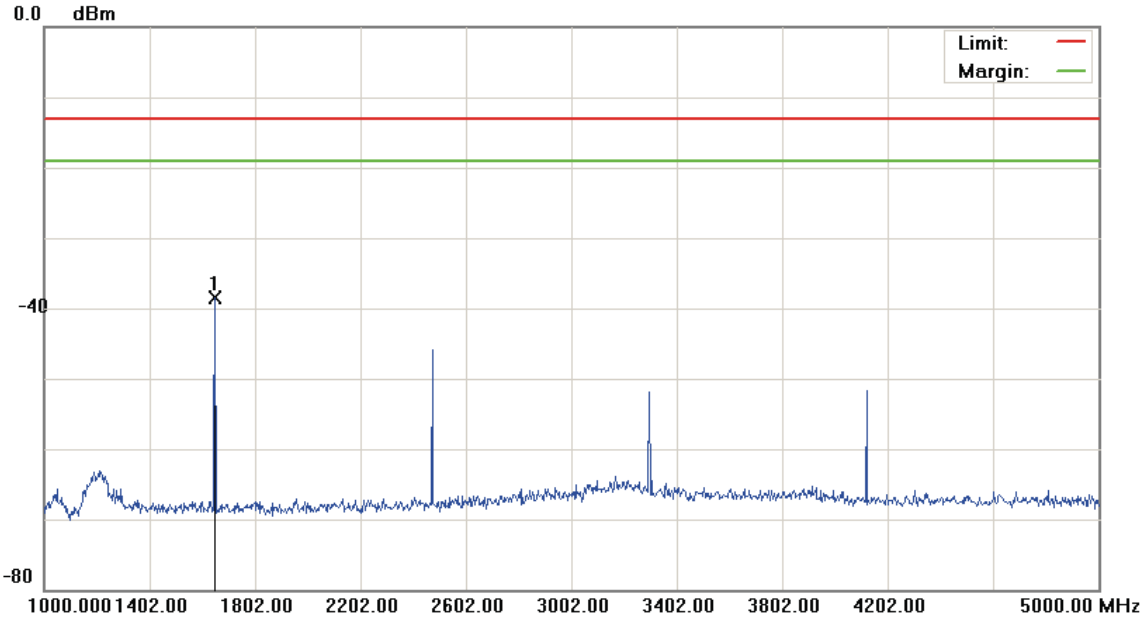
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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		35.3350	-63.05	16.61	-46.44	-13.00	-33.44	peak			
2	*	823.9450	-20.26	3.83	-16.43	-13.00	-3.43	peak			Tx

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

File :QBA769(CH128) Data :#4 Date: 2013/4/19 Time: 下午 04:08:16



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

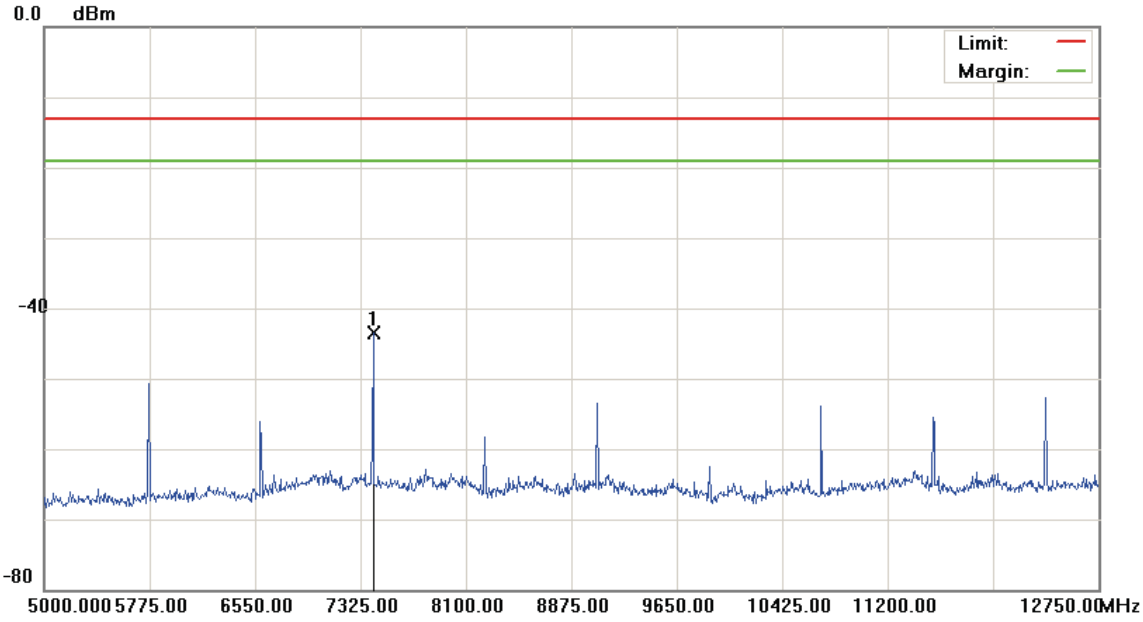
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	1648.000	-42.97	4.45	-38.52	-13.00	-25.52	peak			

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

File :QBA769(CH128) Data :#5 Date: 2013/4/19 Time: 下午 04:08:39



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

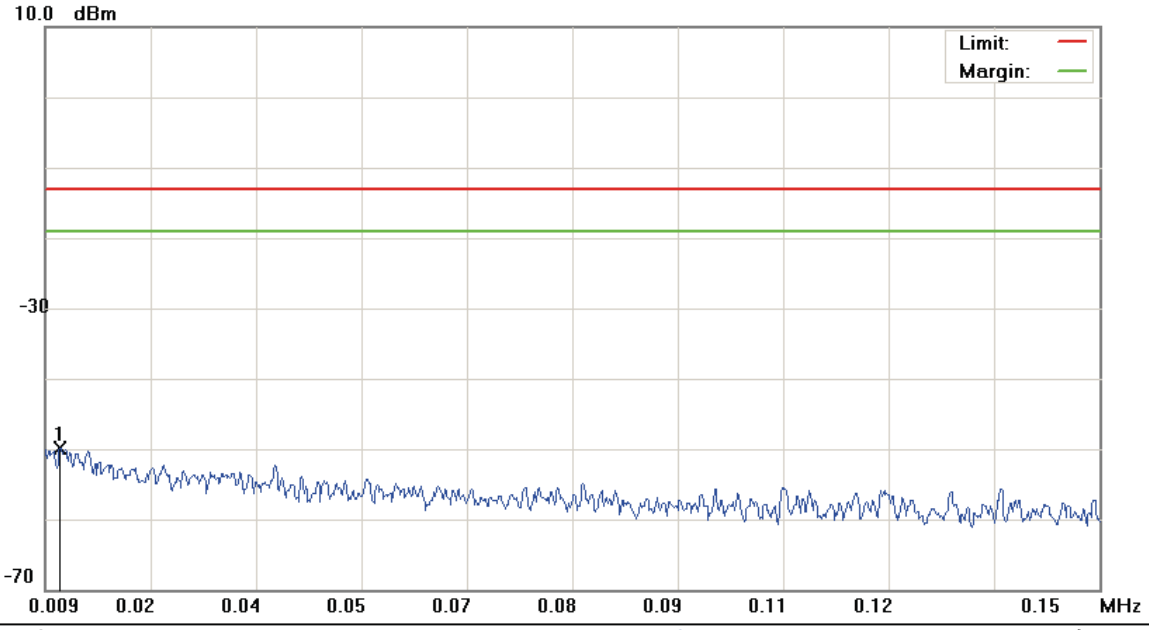
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	7418.000	-48.63	5.21	-43.42	-13.00	-30.42	peak			

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

File :QBA769(CH190) Data :#1 Date: 2013/4/19 Time: 下午 04:03:40



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

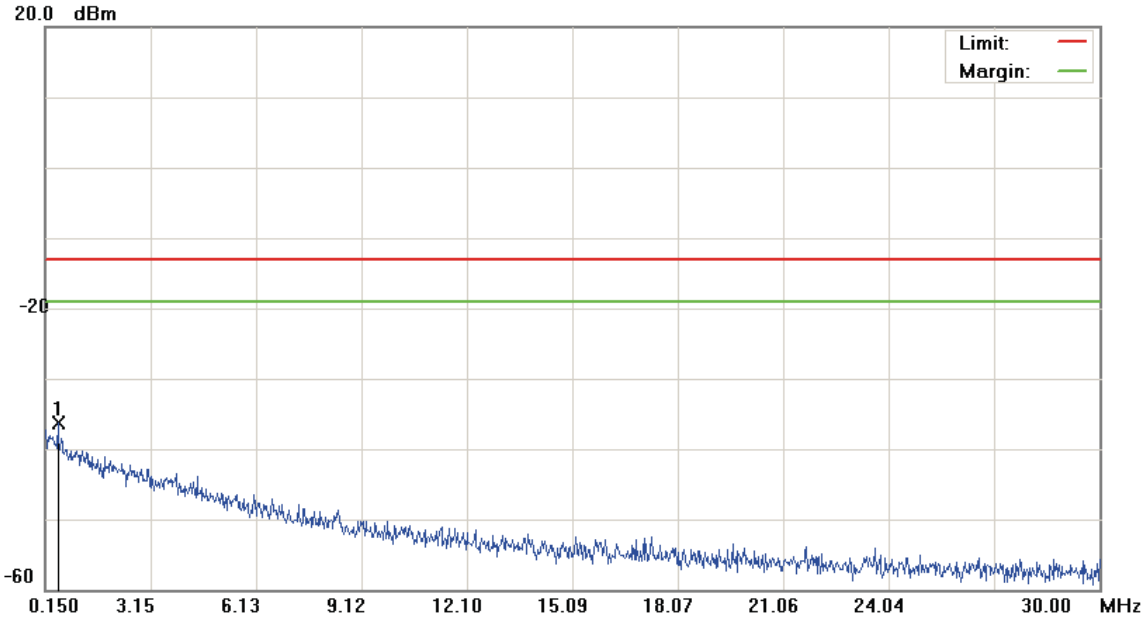
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0110	-80.39	30.57	-49.82	-13.00	-36.82	peak			

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

File :QBA769(CH190) Data :#2 Date: 2013/4/19 Time: 下午 04:04:04



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

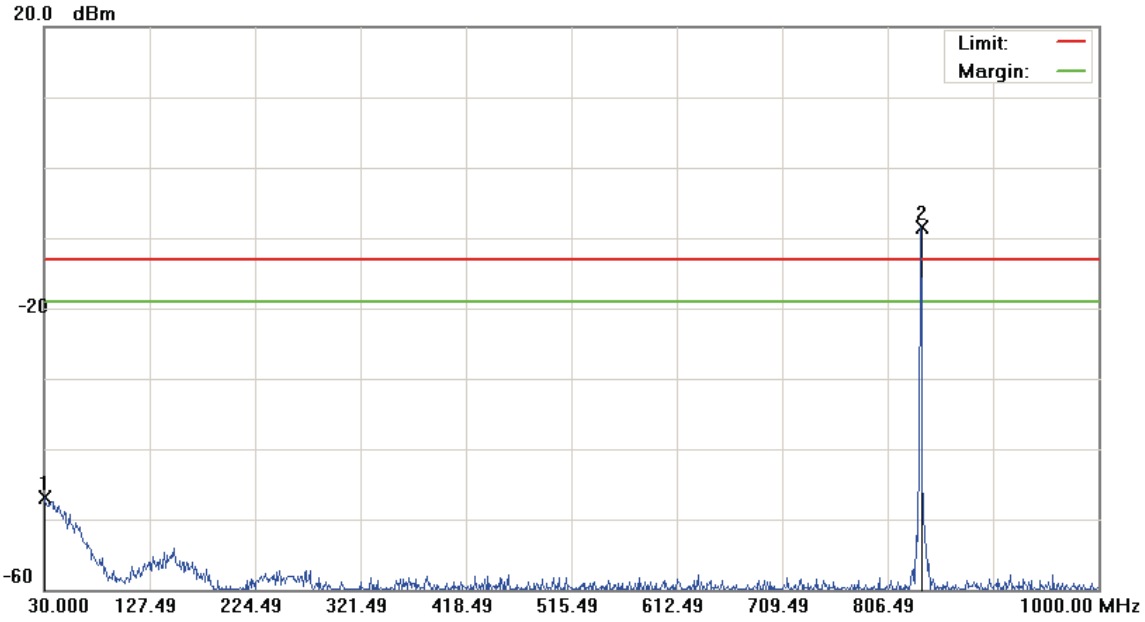
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.5231	-68.21	32.01	-36.20	-13.00	-23.20	peak			

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

File :QBA769(CH190) Data :#3 Date: 2013/4/19 Time: 下午 04:04:28



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

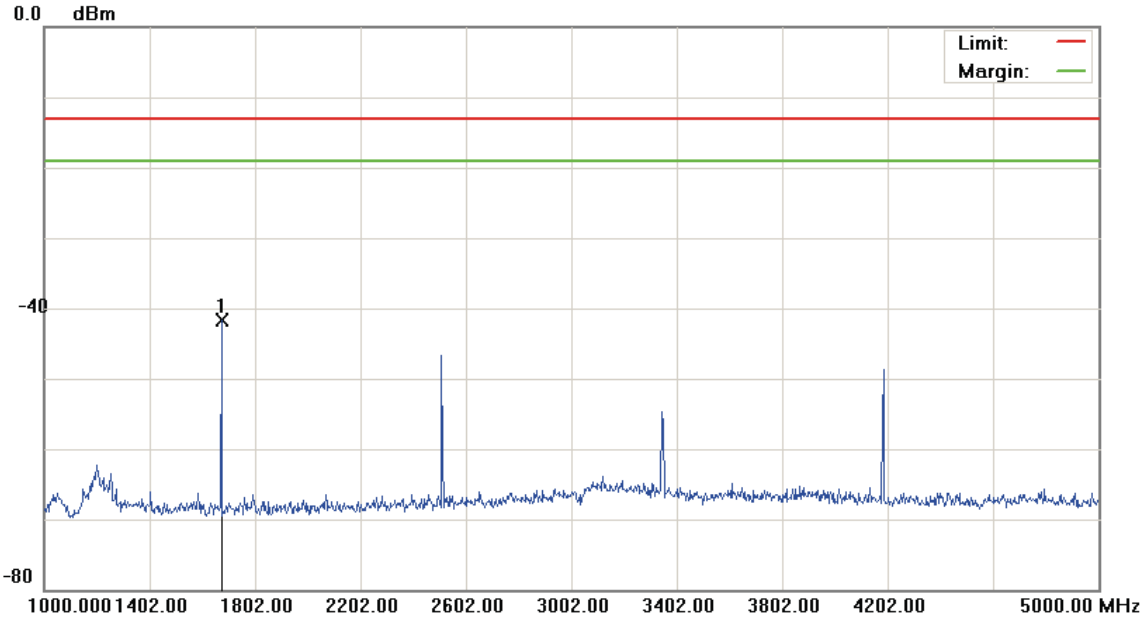
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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		30.4850	-64.13	17.16	-46.97	-13.00	-33.97	peak			
2	*	836.5550	-12.51	3.96	-8.55	-13.00	4.45	peak			Tx

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

File :QBA769(CH190) Data :#4 Date: 2013/4/19 Time: 下午 04:09:14



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

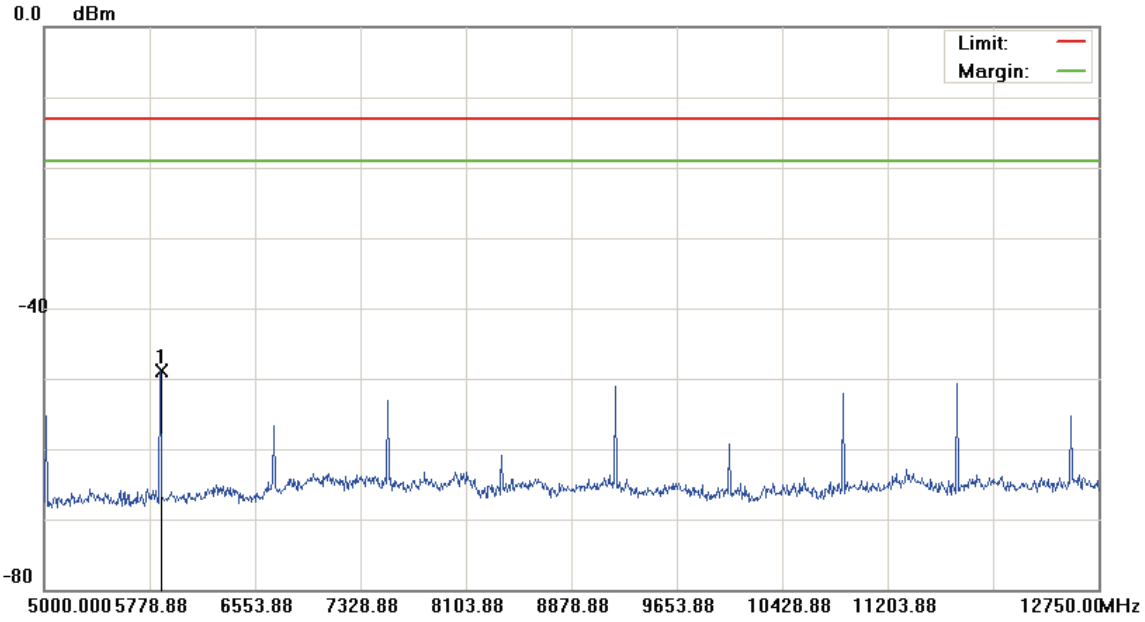
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	1674.000	-46.08	4.46	-41.62	-13.00	-28.62	peak			

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

File :QBA769(CH190) Data :#5 Date: 2013/4/19 Time: 下午 04:09:37



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

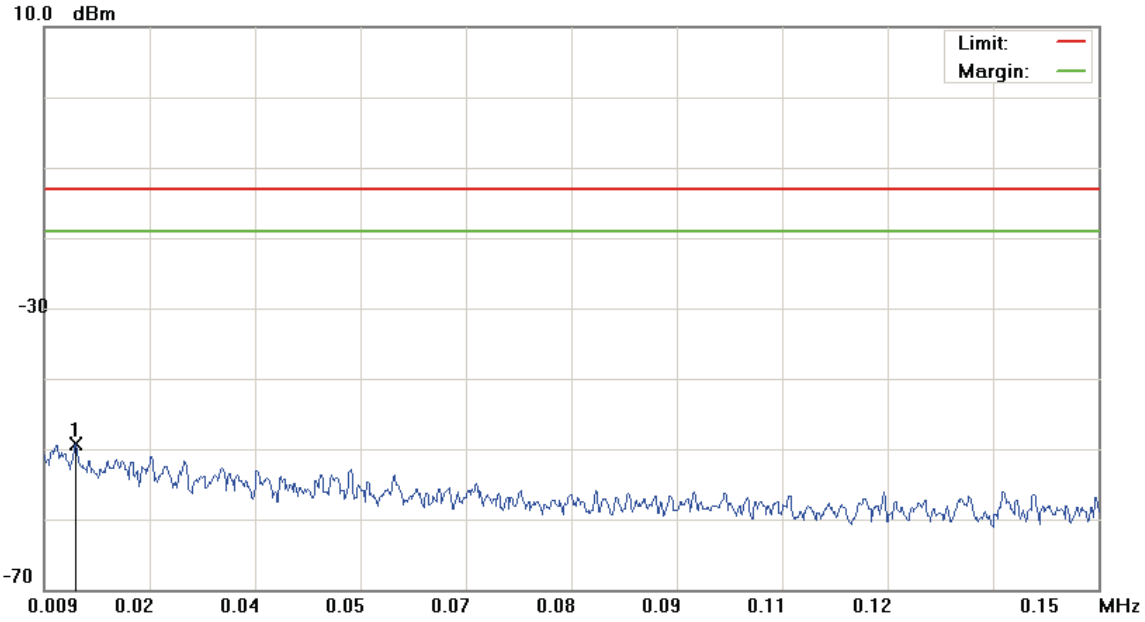
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	5856.375	-53.75	4.88	-48.87	-13.00	-35.87	peak			

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

File :QBA769(CH251) Data :#1 Date: 2013/4/19 Time: 下午 04:05:33



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

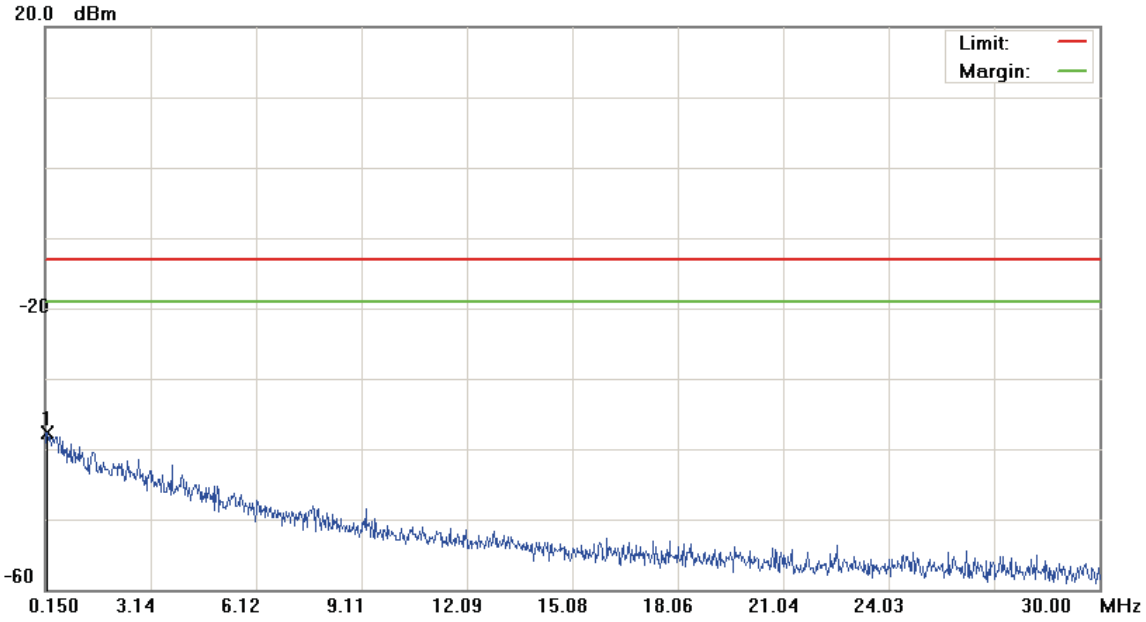
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0132	-79.93	30.56	-49.37	-13.00	-36.37	peak			

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

File :QBA769(CH251) Data :#2 Date: 2013/4/19 Time: 下午 04:05:57



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

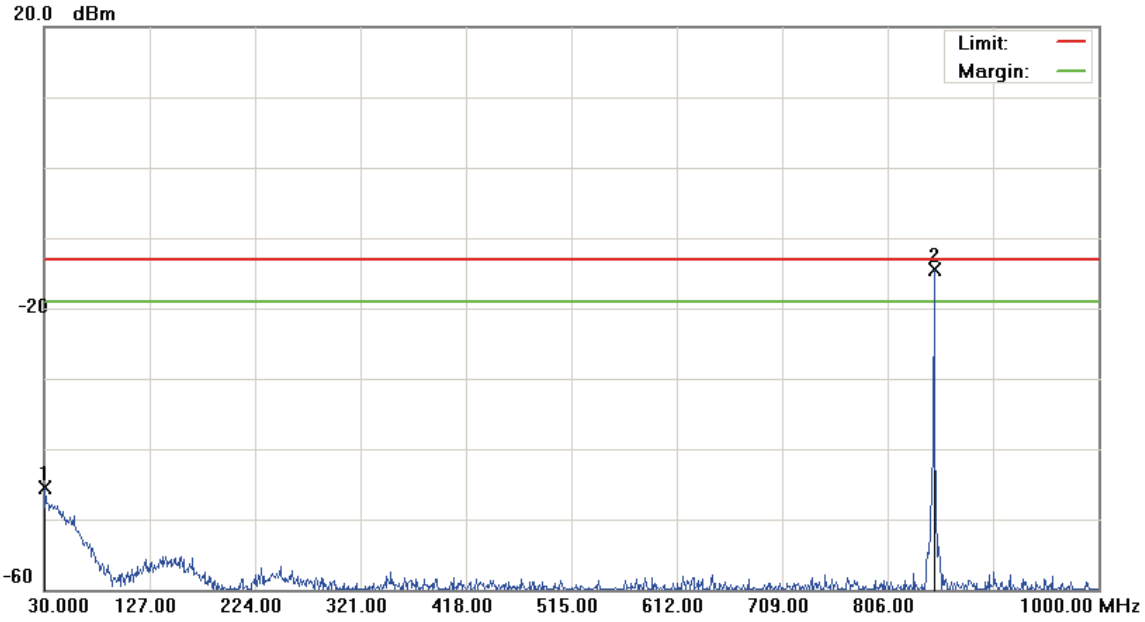
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.2097	-68.65	31.00	-37.65	-13.00	-24.65	peak			

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

File :QBA769(CH251) Data :#3 Date: 2013/4/19 Time: 下午 04:06:21



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

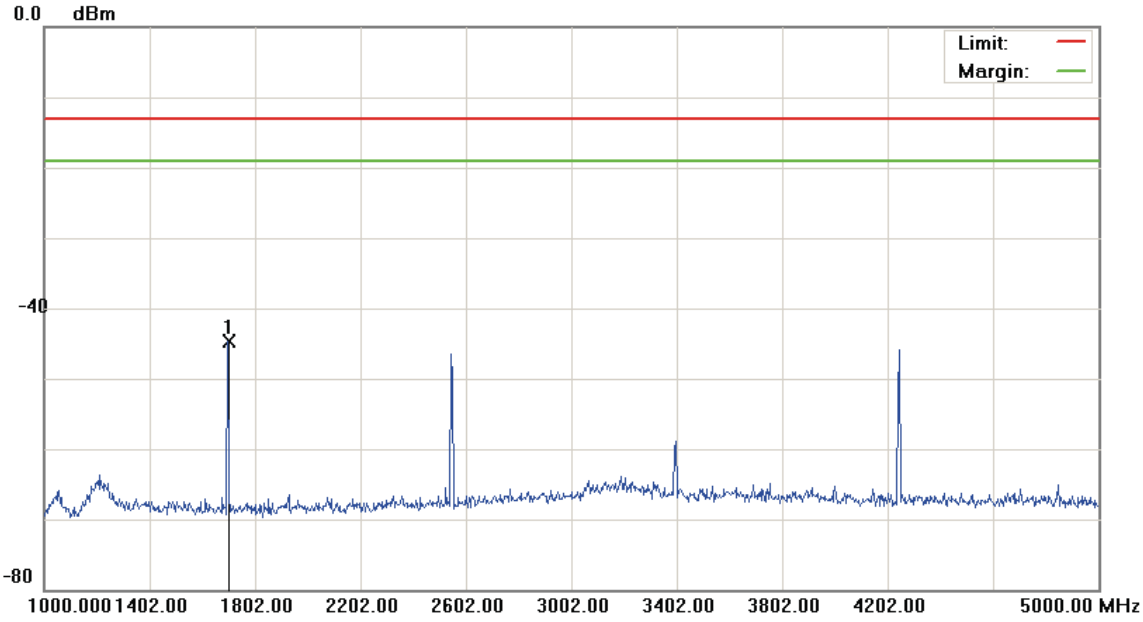
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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		30.9700	-62.60	17.10	-45.50	-13.00	-32.50	peak			
2	*	848.6800	-18.39	3.98	-14.41	-13.00	-1.41	peak			Tx

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

File :QBA769(CH251) Data :#4 Date: 2013/4/19 Time: 下午 04:10:09



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

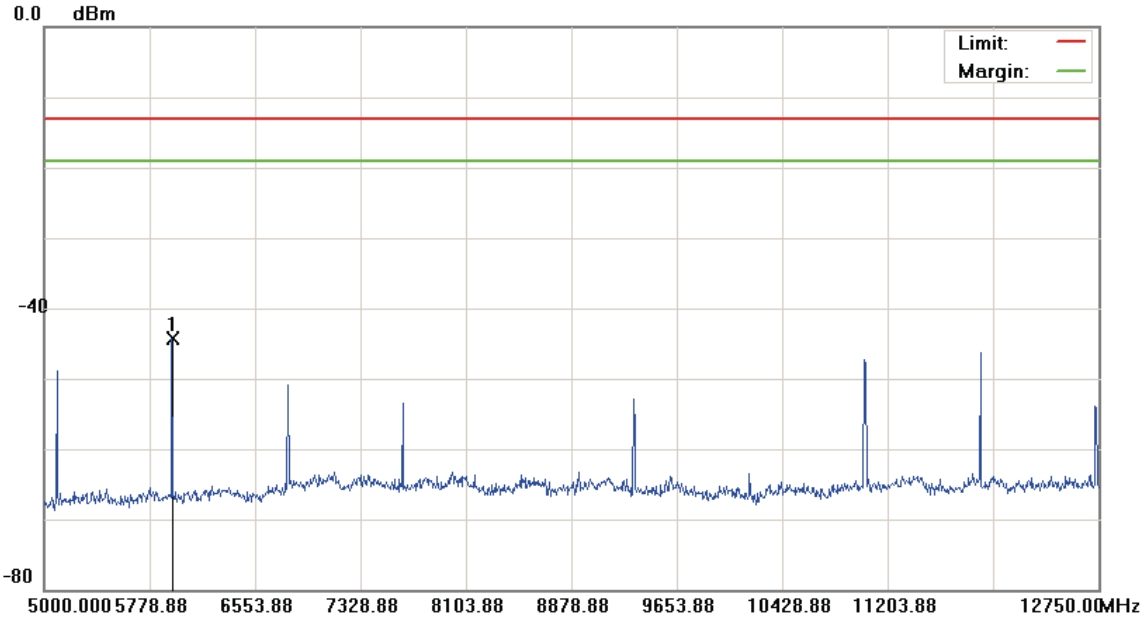
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	1698.000	-49.14	4.48	-44.66	-13.00	-31.66	peak			

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

File :QBA769(CH251) Data :#5 Date: 2013/4/19 Time: 下午 04:10:32



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 850
Note:

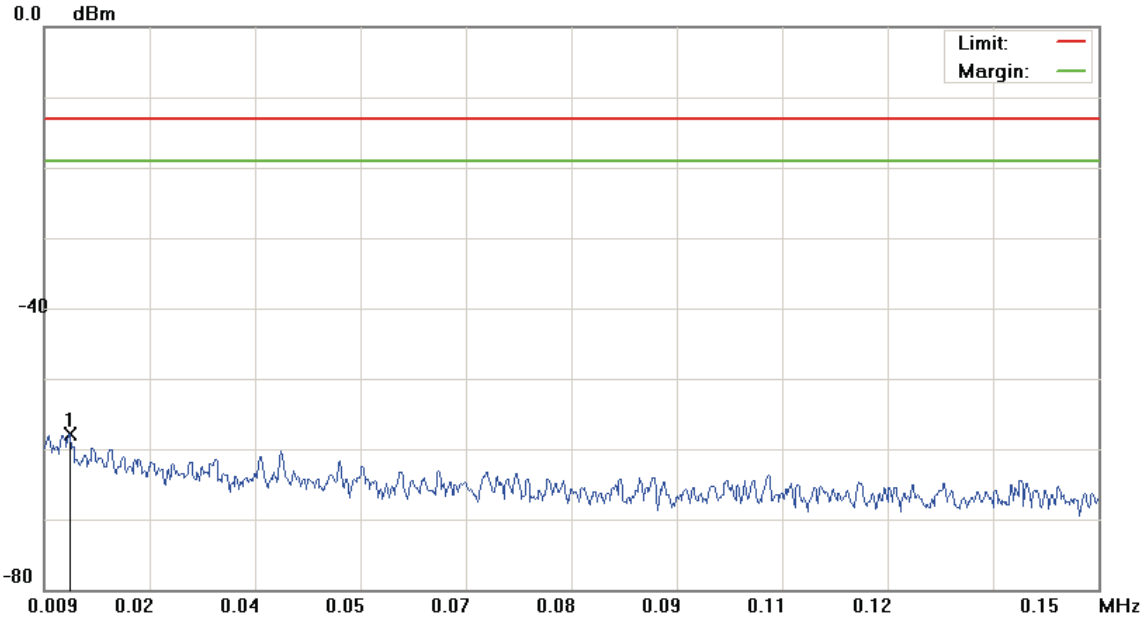
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	5941.625	-49.18	4.97	-44.21	-13.00	-31.21	peak			

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

File :QBA769(CH512) Data :#1 Date: 2013/4/19 Time: 下午 03:21:02



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

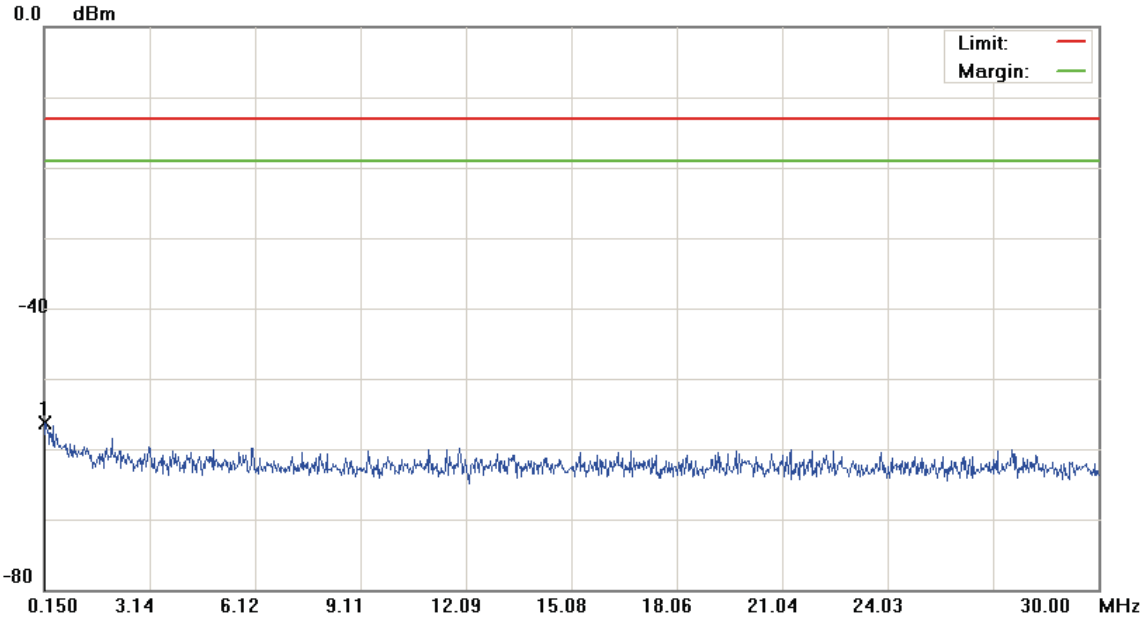
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0123	-69.32	11.36	-57.96	-13.00	-44.96	peak			

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

File :QBA769(CH512) Data :#2 Date: 2013/4/19 Time: 下午 03:21:26



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

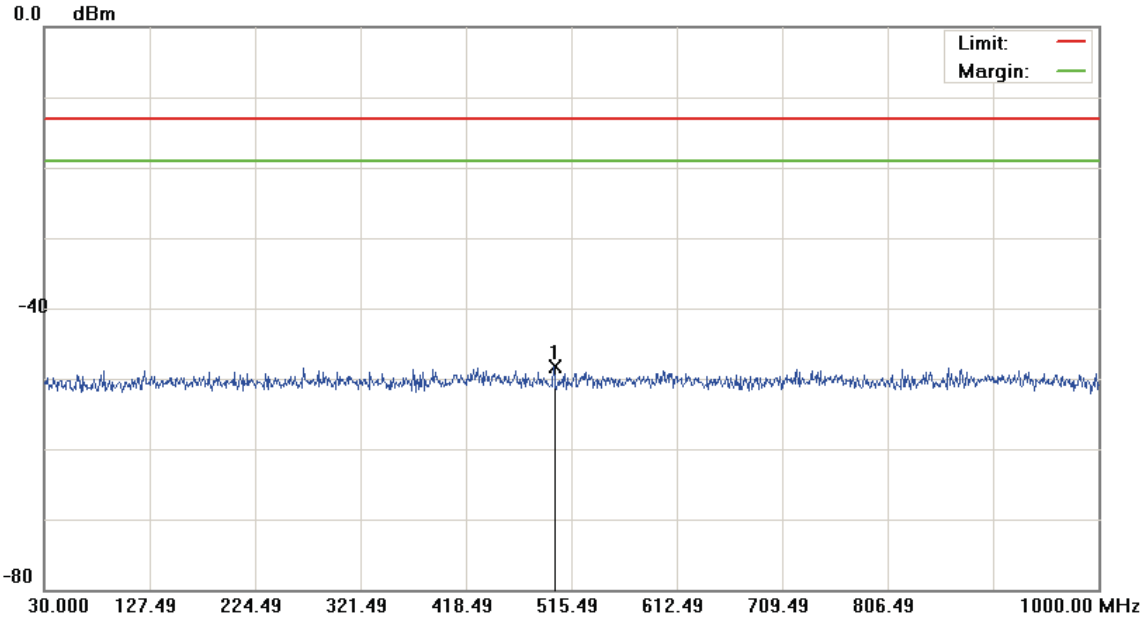
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.1500	-68.83	12.47	-56.36	-13.00	-43.36	peak			

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

File :QBA769(CH512) Data :#3 Date: 2013/4/19 Time: 下午 03:21:50



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

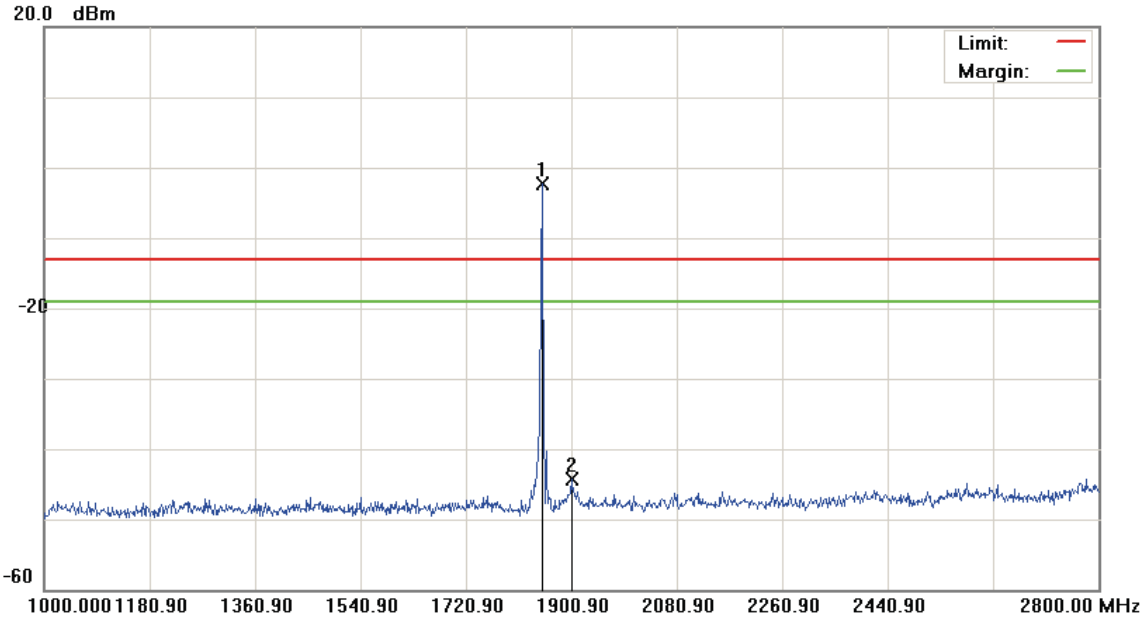
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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	*	498.9950	-61.43	13.14	-48.29	-13.00	-35.29	peak			

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

File :QBA769(CH512) Data :#4 Date: 2013/4/19 Time: 下午 03:44:36



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

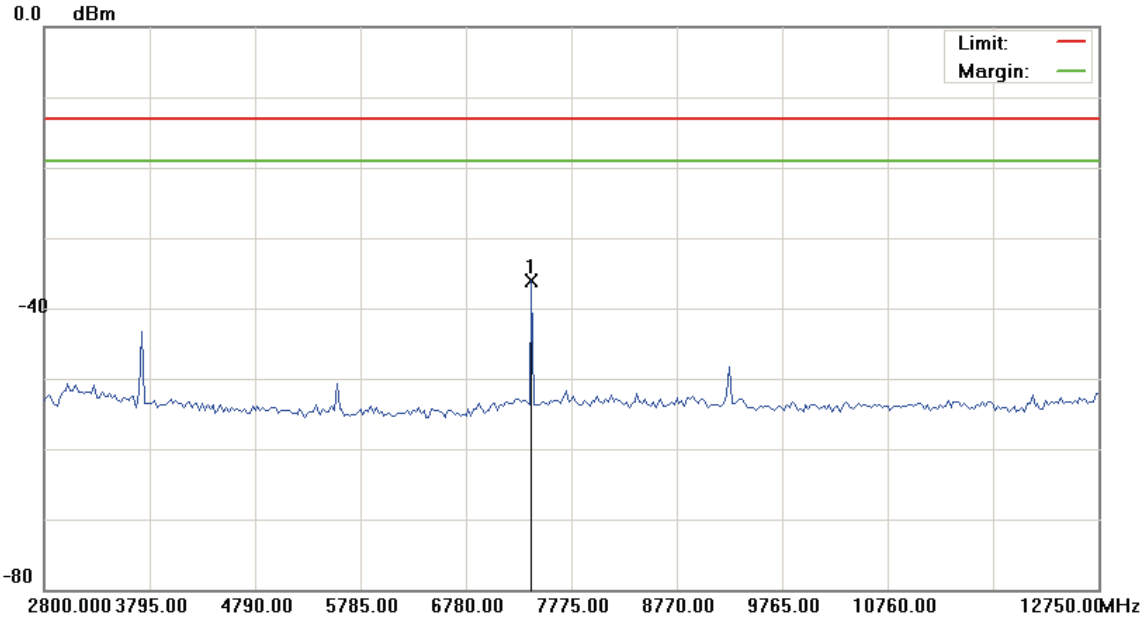
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	-6.57	4.26	-2.31	-13.00	10.69	peak			Tx
2		1900.900	-50.83	6.55	-44.28	-13.00	-31.28	peak			

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

File :QBA769(CH512) Data :#5 Date: 2013/4/19 Time: 下午 03:49:27



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

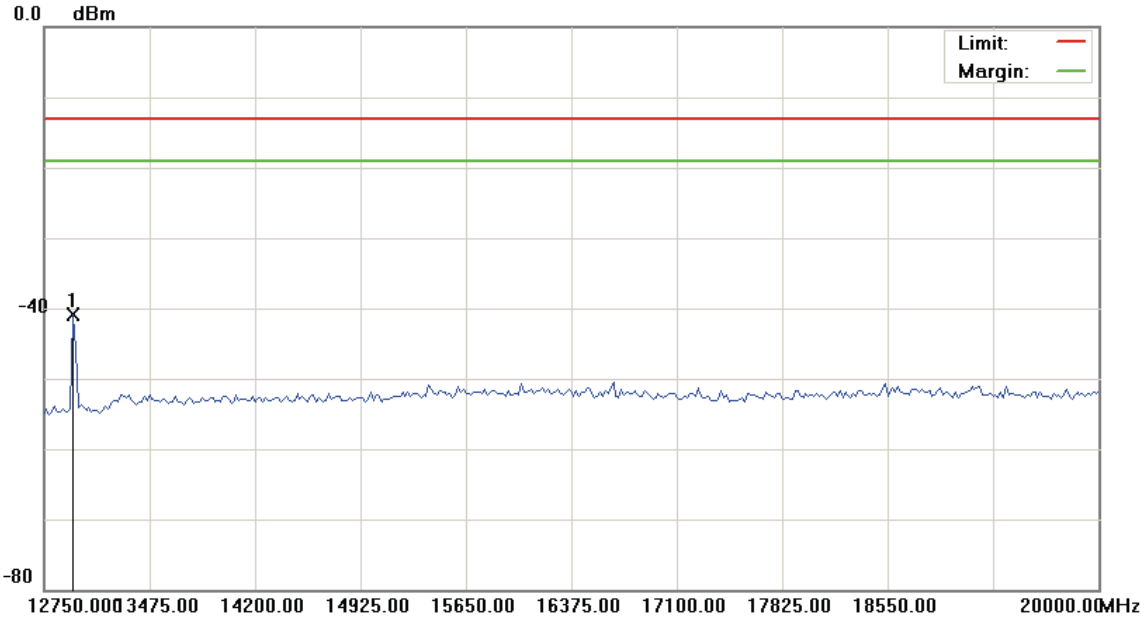
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	7401.875	-41.21	5.09	-36.12	-13.00	-23.12	peak			

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

File :QBA769(CH512) Data :#6 Date: 2013/4/19 Time: 下午 03:49:47



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

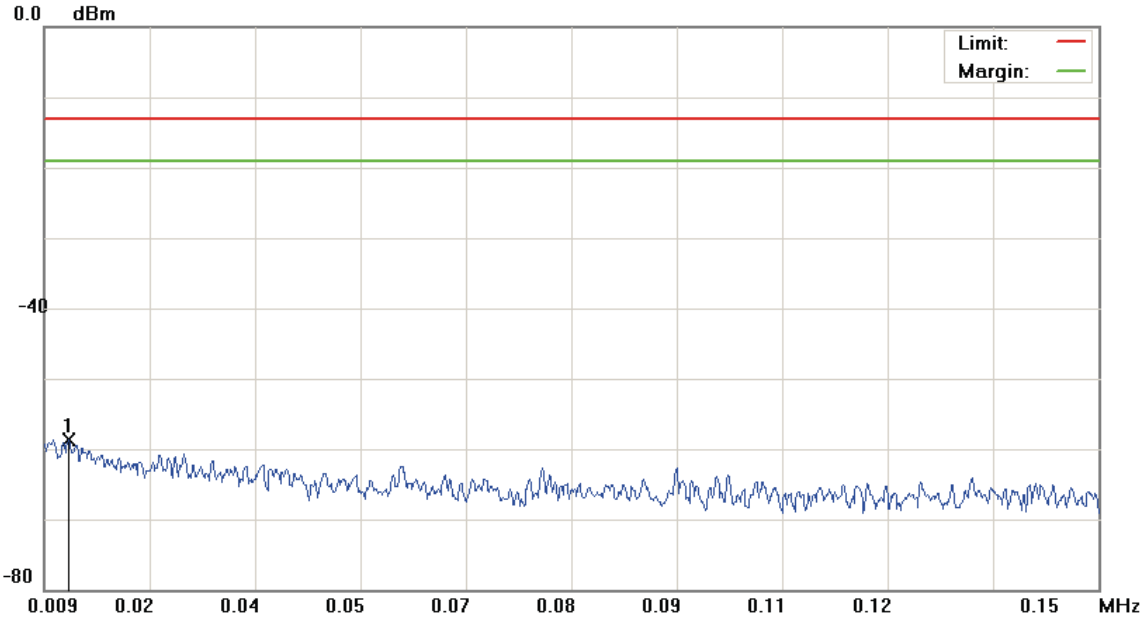
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	12949.375	-46.29	5.43	-40.86	-13.00	-27.86	peak			

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

File :QBA769(CH661) Data :#1 Date: 2013/4/19 Time: 下午 03:22:40



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

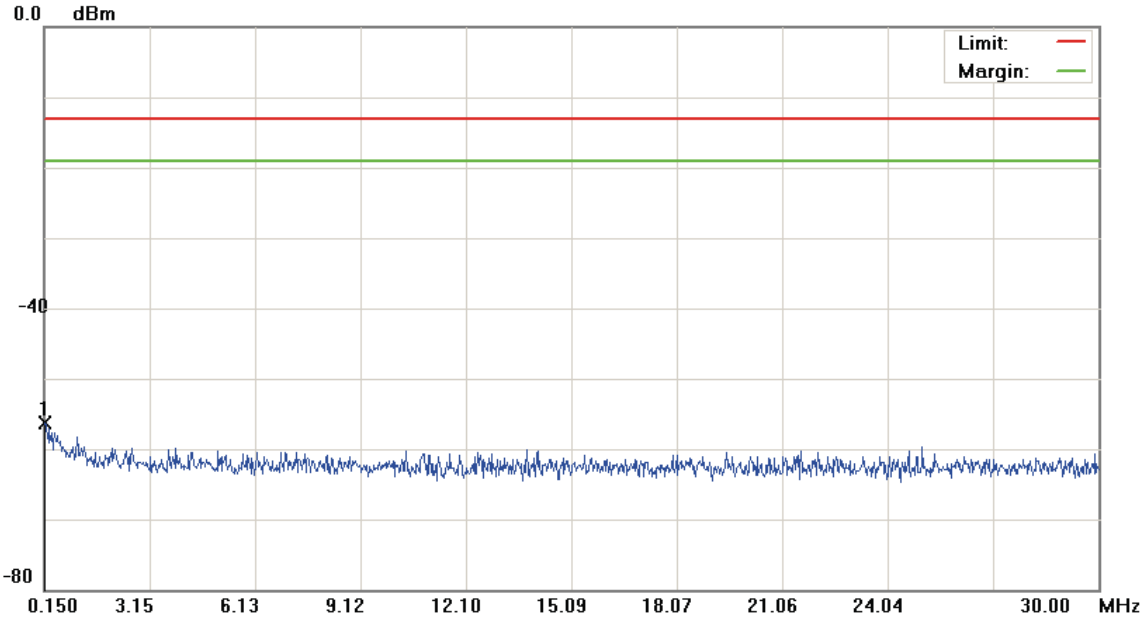
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0122	-69.99	11.36	-58.63	-13.00	-45.63	peak			

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

File :QBA769(CH661) Data :#2 Date: 2013/4/19 Time: 下午 03:23:04



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

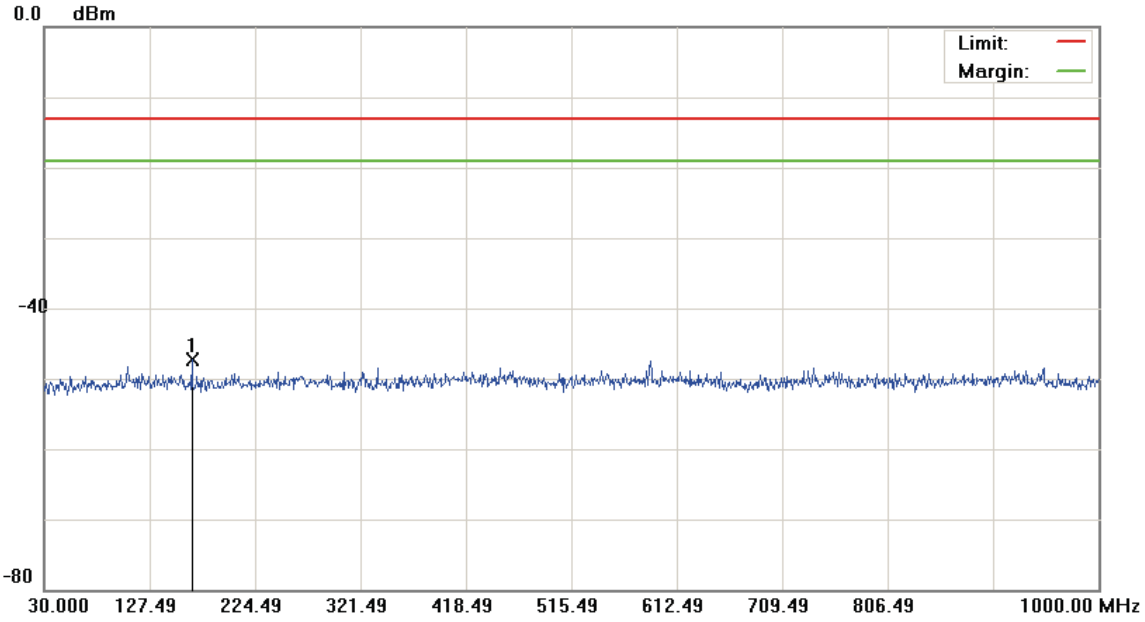
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.1798	-68.79	12.45	-56.34	-13.00	-43.34	peak			

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

File :QBA769(CH661) Data :#3 Date: 2013/4/19 Time: 下午 03:23:28



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

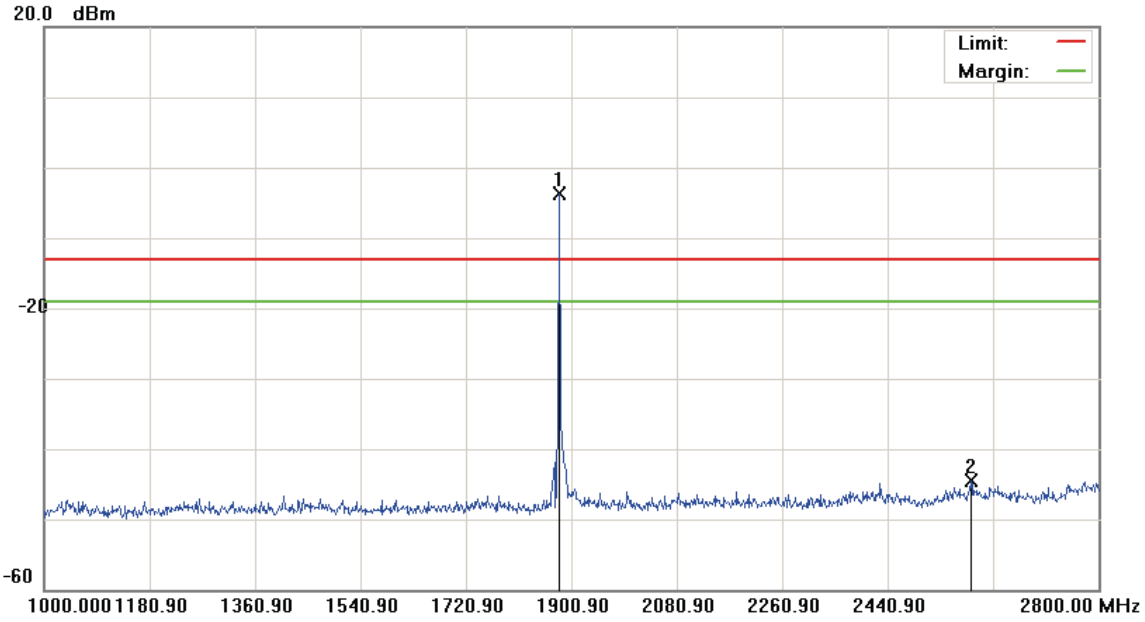
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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	*	166.2850	-60.68	13.34	-47.34	-13.00	-34.34	peak			

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

File :QBA769(CH661) Data :#4 Date: 2013/4/19 Time: 下午 03:42:00



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

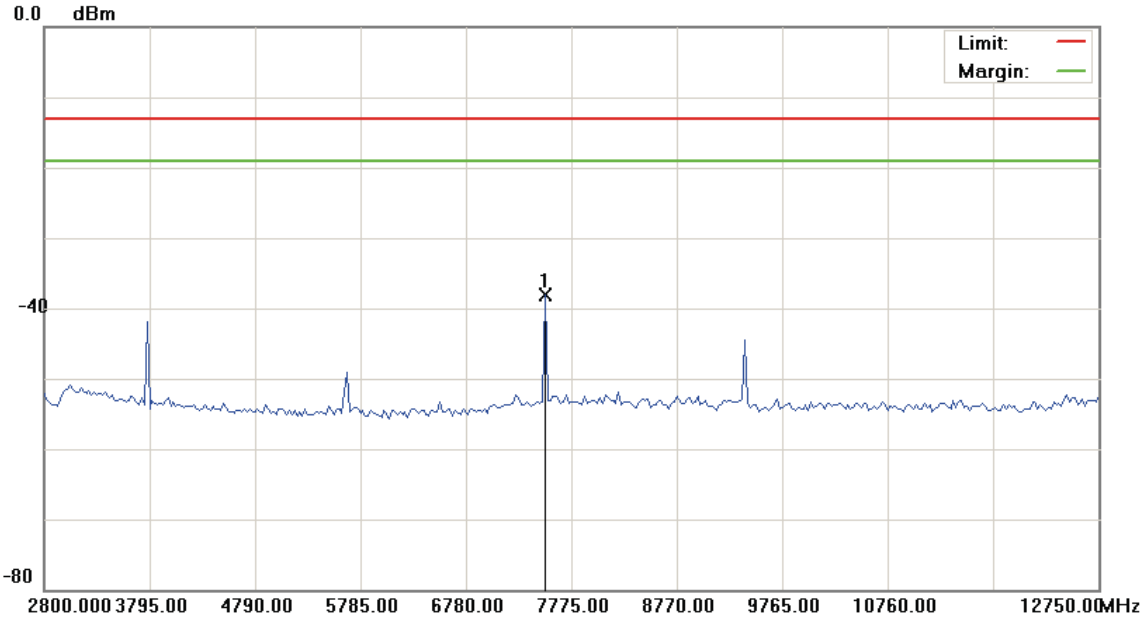
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	-8.44	4.65	-3.79	-13.00	9.21	peak			Tx
2		2582.200	-49.89	5.36	-44.53	-13.00	-31.53	peak			

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

File :QBA769(CH661) Data :#5 Date: 2013/4/19 Time: 下午 03:50:16



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

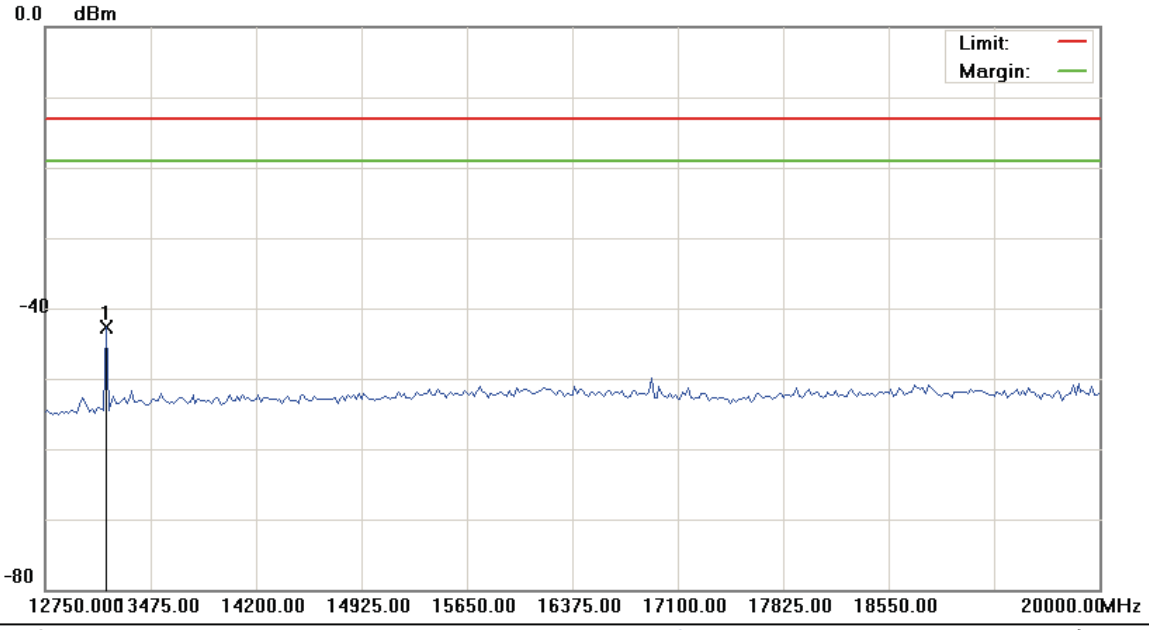
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	7526.250	-43.10	5.05	-38.05	-13.00	-25.05	peak			

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

File :QBA769(CH661) Data :#6 Date: 2013/4/19 Time: 下午 03:50:36



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

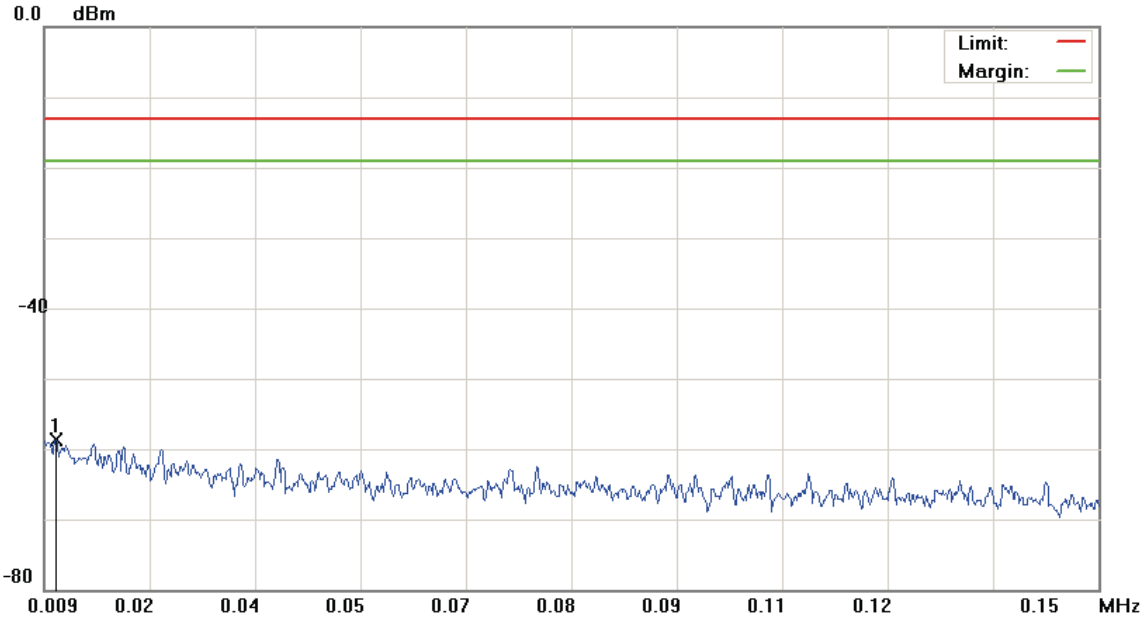
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	13166.875	-48.18	5.49	-42.69	-13.00	-29.69	peak			

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

File :QBA769(CH810) Data :#1 Date: 2013/4/19 Time: 下午 03:24:25



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

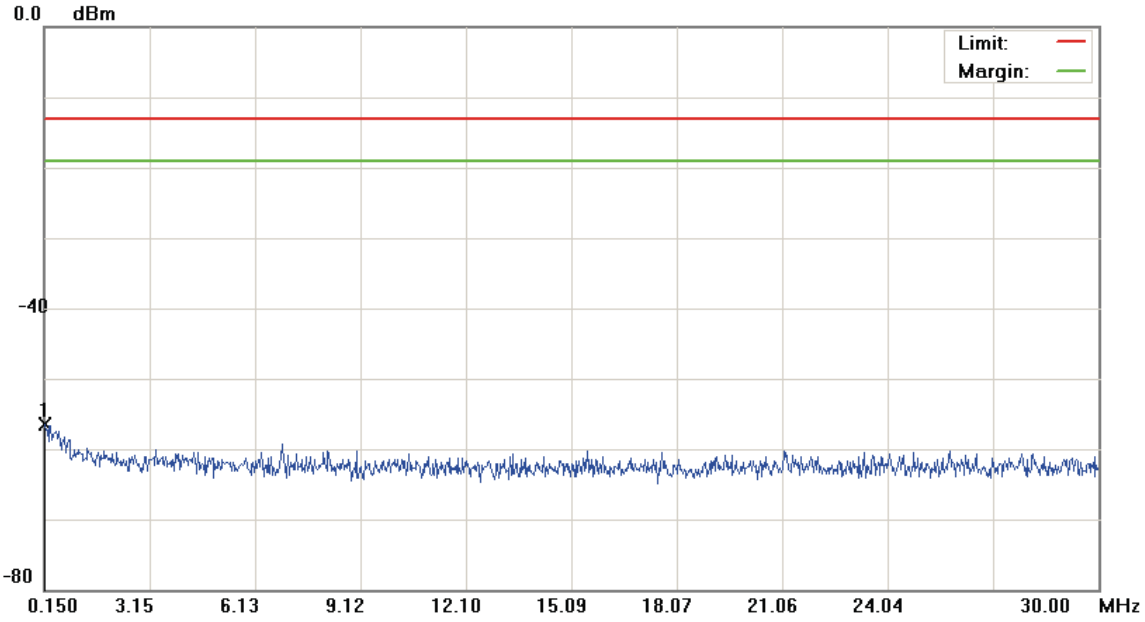
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0106	-70.08	11.34	-58.74	-13.00	-45.74	peak			

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

File :QBA769(CH810) Data :#2 Date: 2013/4/19 Time: 下午 03:24:48



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

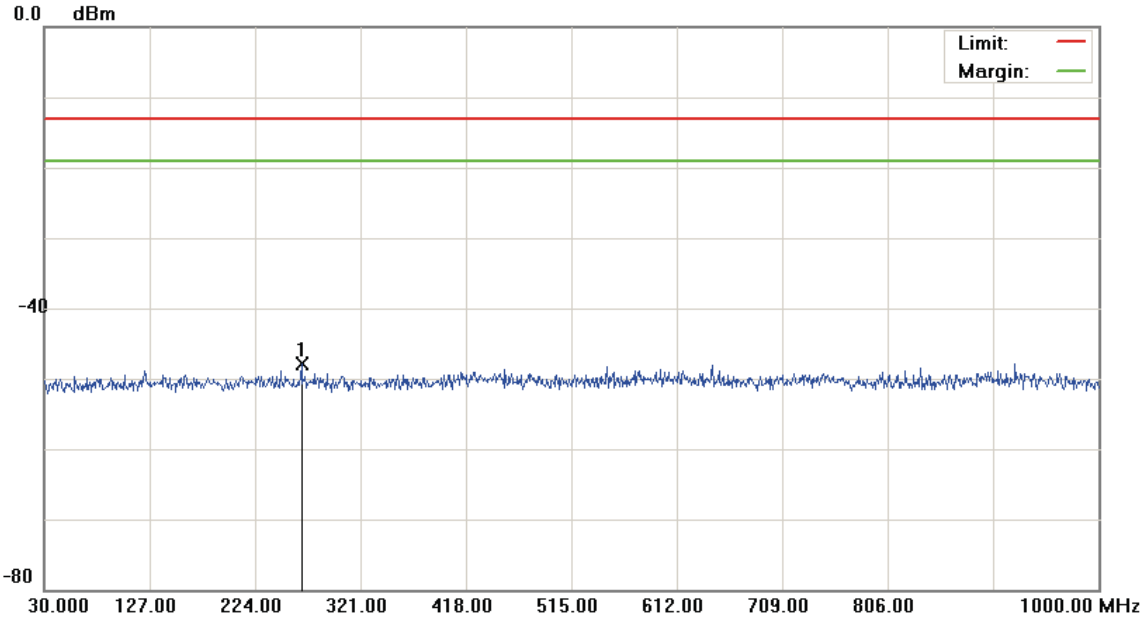
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.1798	-68.85	12.45	-56.40	-13.00	-43.40	peak			

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

File :QBA769(CH810) Data :#3 Date: 2013/4/19 Time: 下午 03:25:12



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

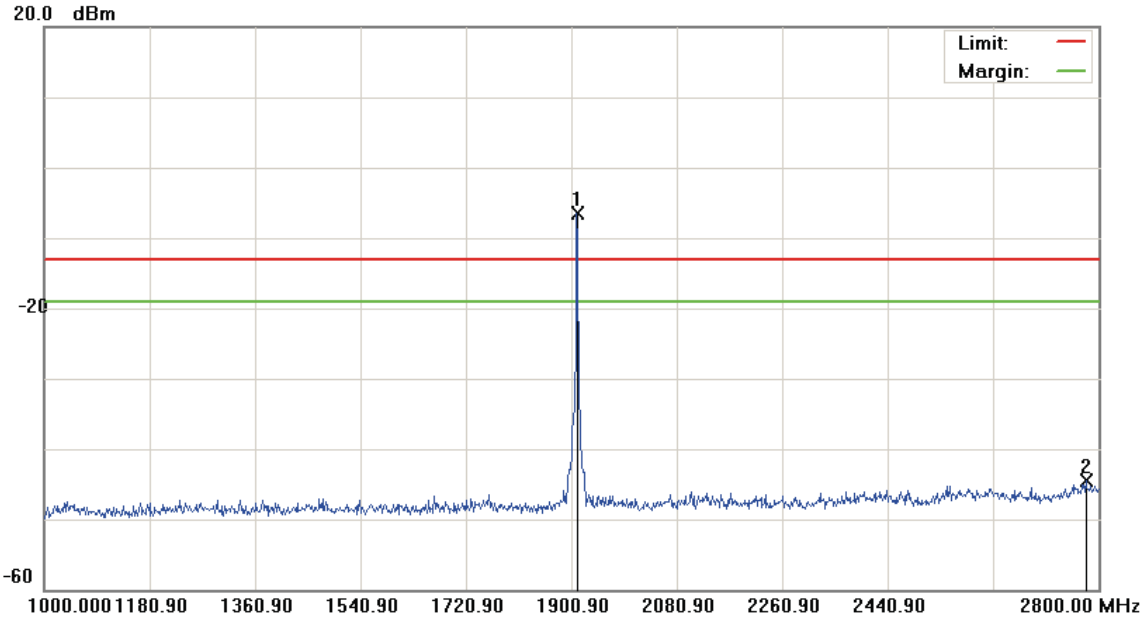
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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	*	267.1650	-61.12	13.31	-47.81	-13.00	-34.81	peak			

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

File :QBA769(CH810) Data :#4 Date: 2013/4/19 Time: 下午 03:43:32



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

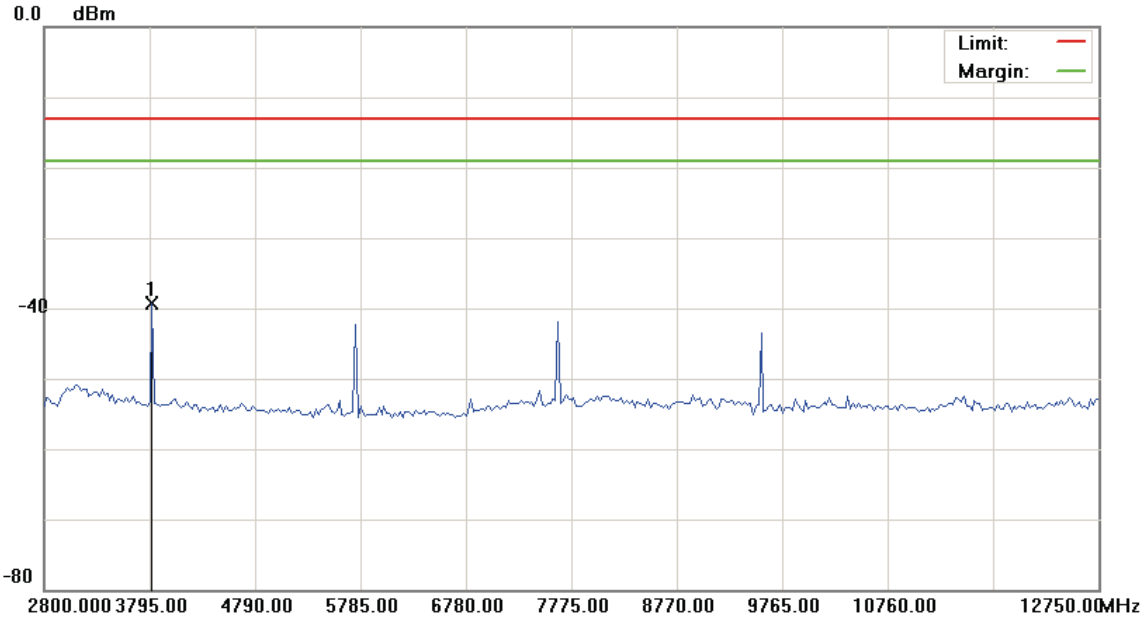
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	-12.14	5.71	-6.43	-13.00	6.57	peak			Tx
2		2779.300	-50.30	5.87	-44.43	-13.00	-31.43	peak			

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

File :QBA769(CH810) Data :#5 Date: 2013/4/19 Time: 下午 03:51:18



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

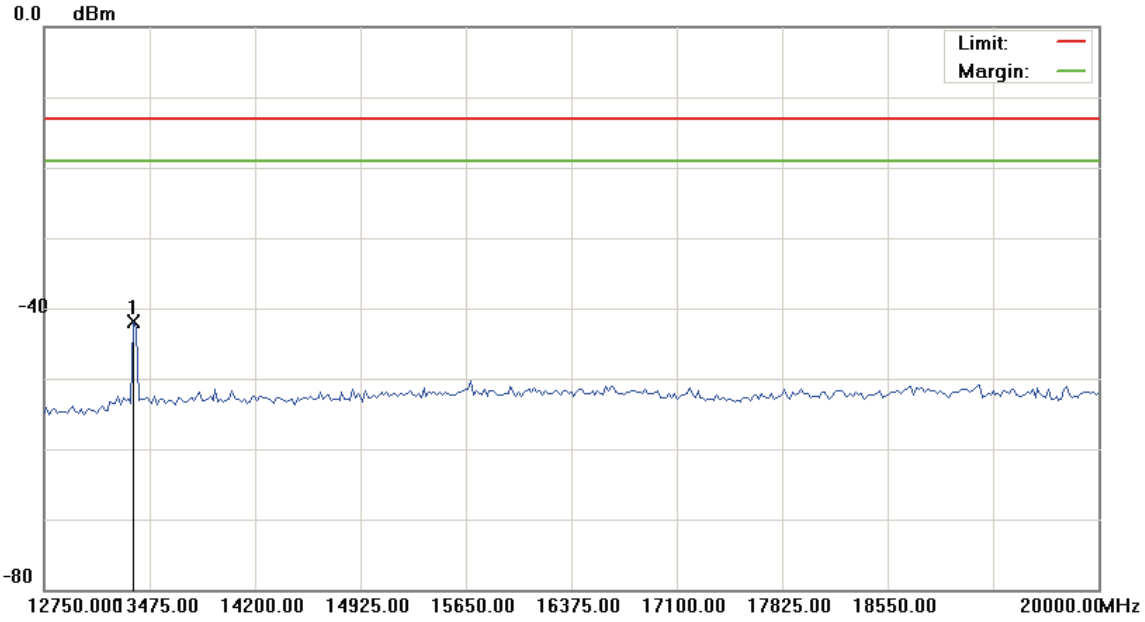
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	3819.875	-44.24	4.91	-39.33	-13.00	-26.33	peak			

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

File :QBA769(CH810) Data :#6 Date: 2013/4/19 Time: 下午 03:51:38



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Smartphone
M/N: QBA769
Mode: GSM 1900
Note:

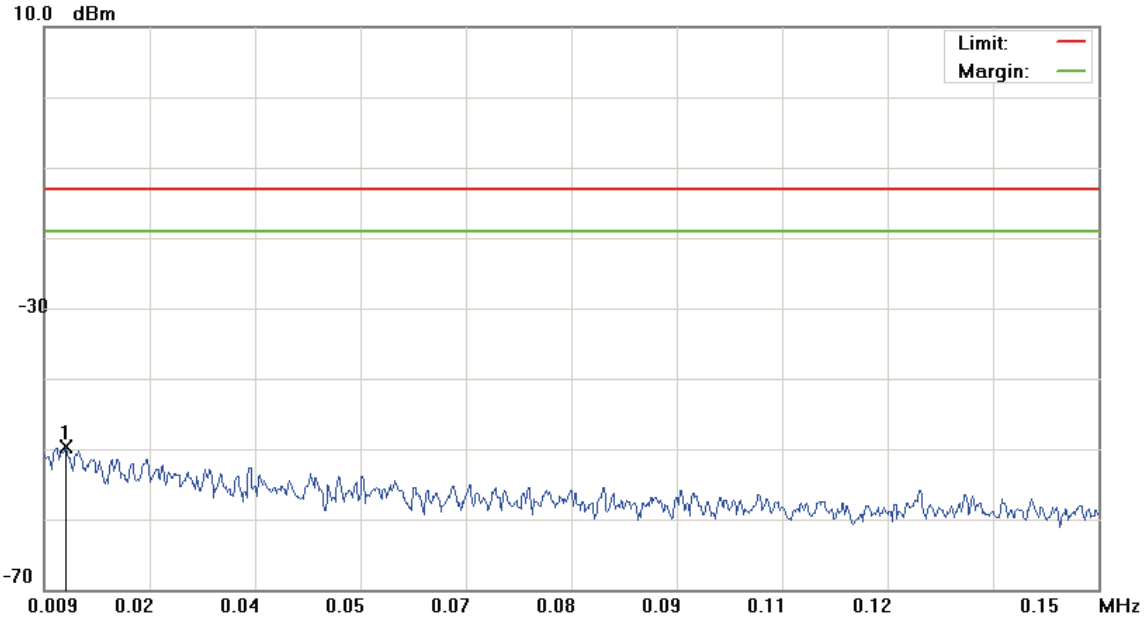
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	13366.250	-47.48	5.55	-41.93	-13.00	-28.93	peak			

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

File :QBA769(CH4132) Data :#1 Date: 2013/4/19 Time: 下午 01:38:31



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

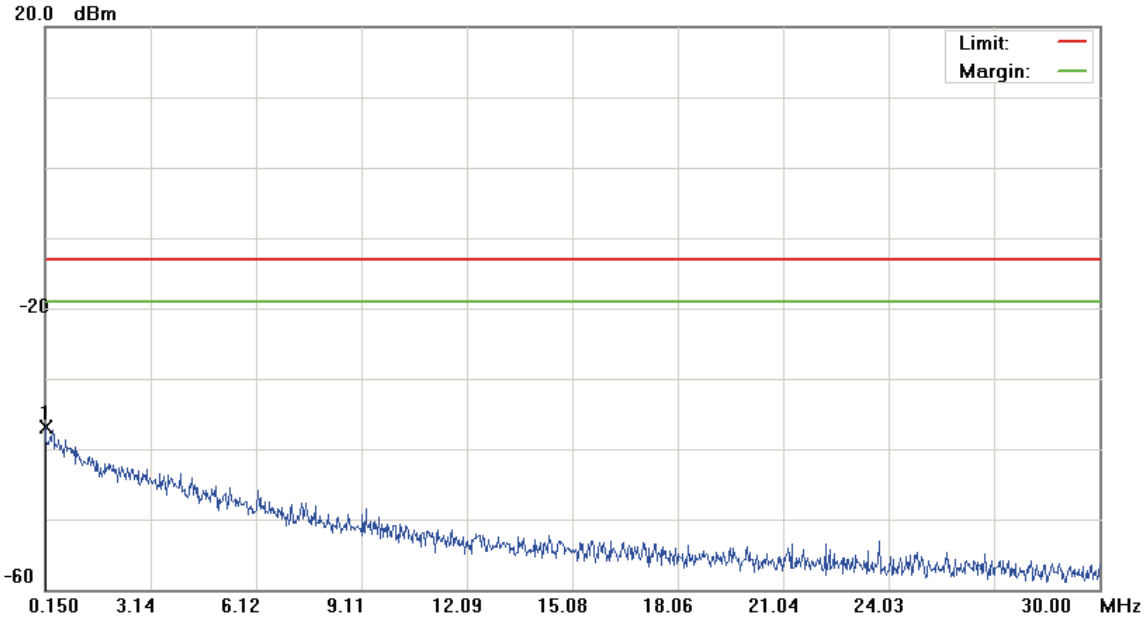
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0120	-80.18	30.57	-49.61	-13.00	-36.61	peak			

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

File :QBA769(CH4132) Data :#2 Date: 2013/4/19 Time: 下午 01:38:55



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

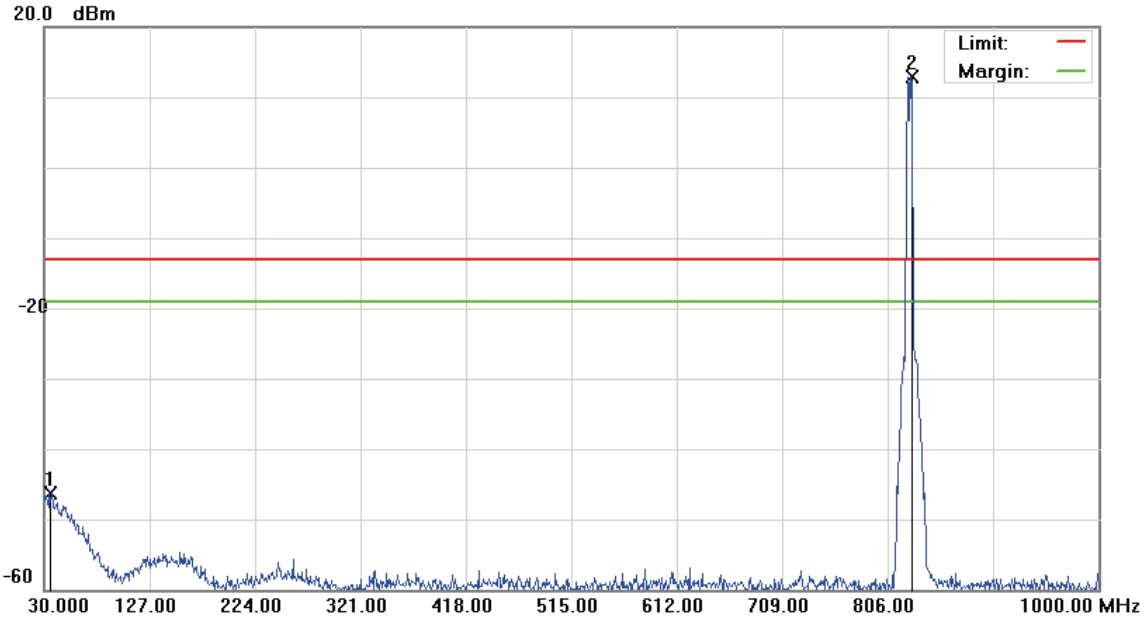
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.1500	-67.37	30.51	-36.86	-13.00	-23.86	peak			

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

File :QBA769(CH4132) Data :#3 Date: 2013/4/19 Time: 下午 01:39:19



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

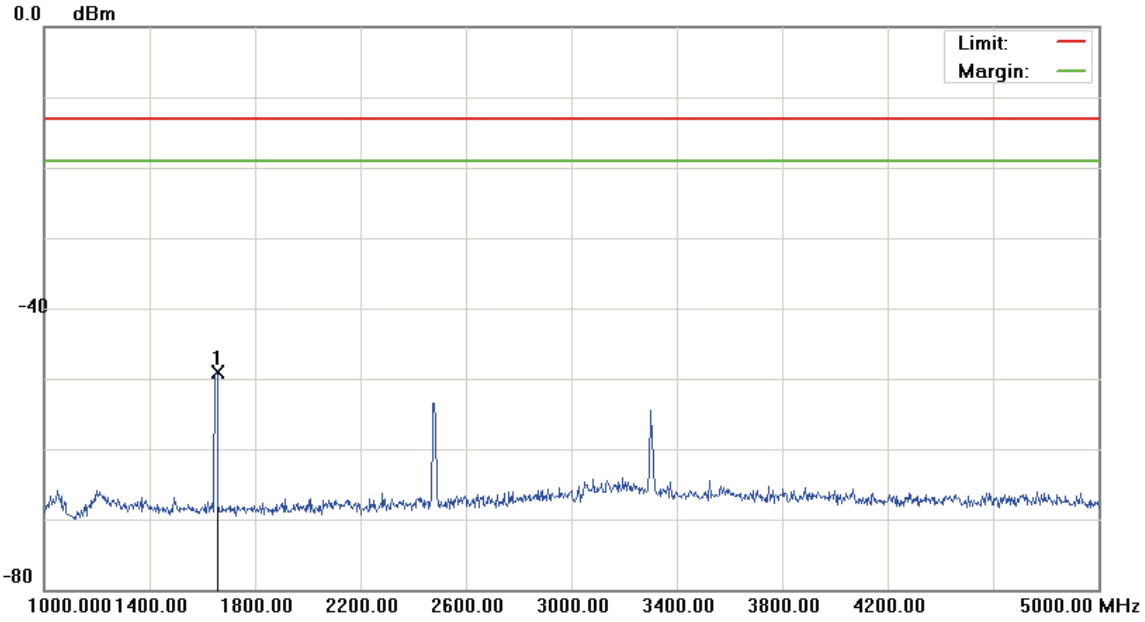
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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		35.3350	-62.81	16.61	-46.20	-13.00	-33.20	peak			
2	*	827.8250	9.13	3.87	13.00	-13.00	26.00	peak			Tx

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

File :QBA769(CH4132) Data :#4 Date: 2013/4/19 Time: 下午 01:54:56



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

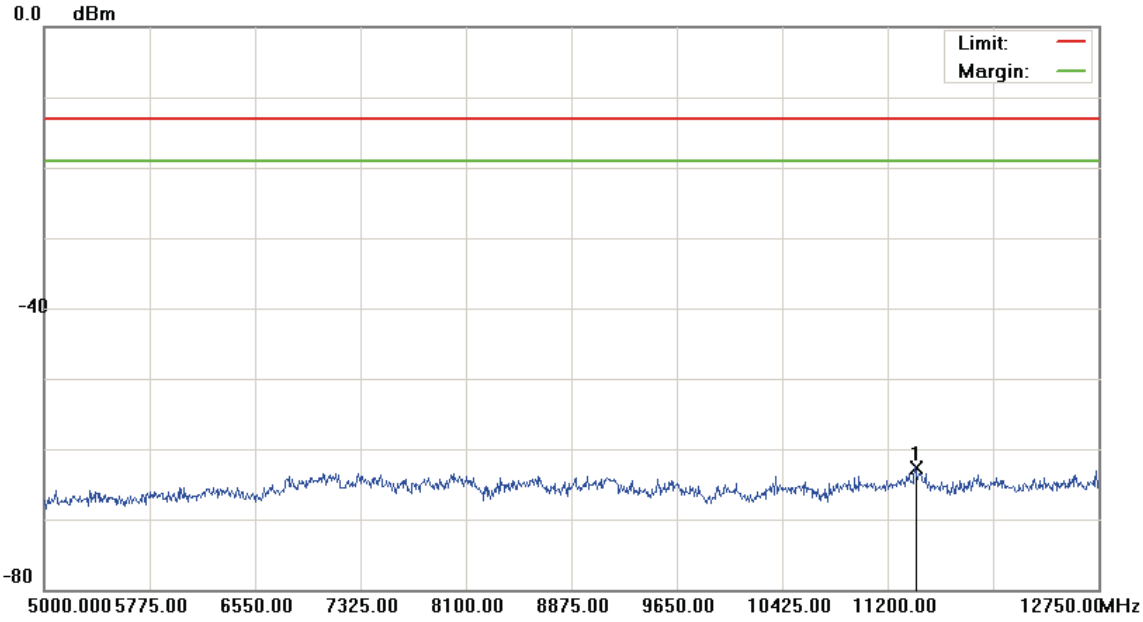
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	1654.000	-53.49	4.45	-49.04	-13.00	-36.04	peak			

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

File :QBA769(CH4132) Data :#5 Date: 2013/4/19 Time: 下午 01:55:19



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

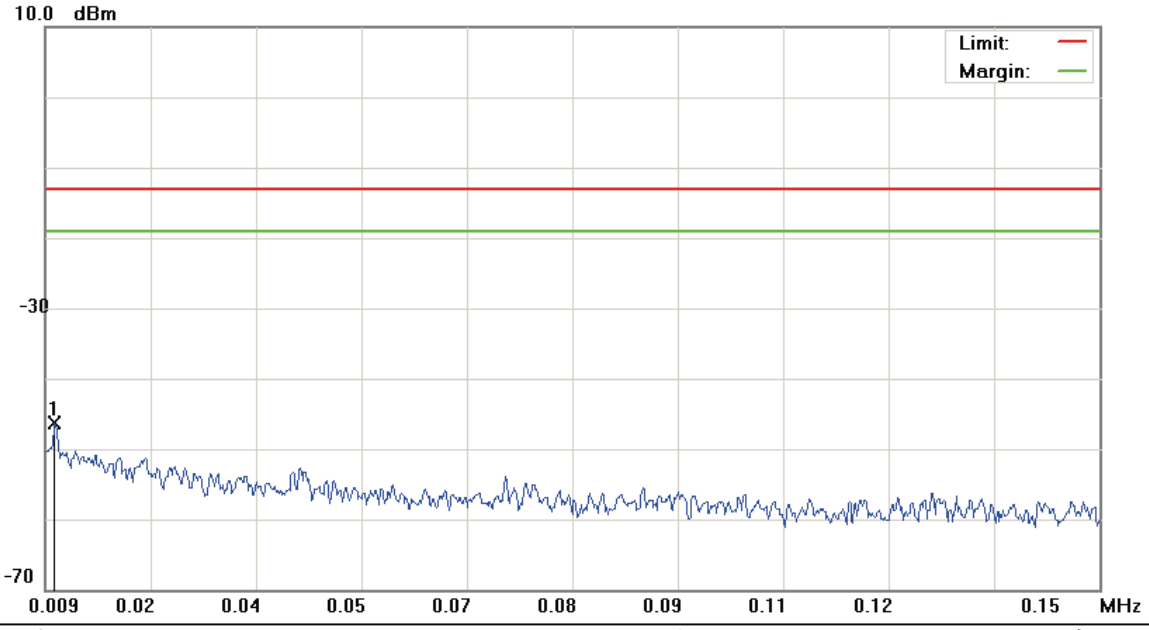
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	11405.375	-68.16	5.56	-62.60	-13.00	-49.60	peak			

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

File :QBA769(CH4183) Data :#1 Date: 2013/4/19 Time: 下午 01:43:54



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

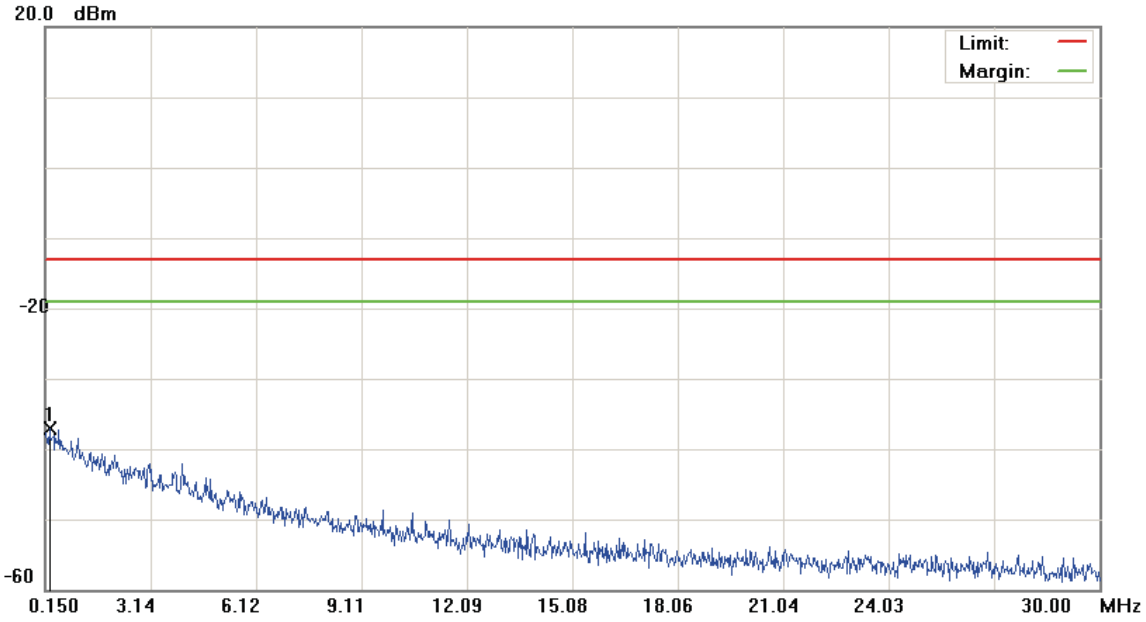
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0103	-76.94	30.57	-46.37	-13.00	-33.37	peak			

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

File :QBA769(CH4183) Data :#2 Date: 2013/4/19 Time: 下午 01:44:18



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

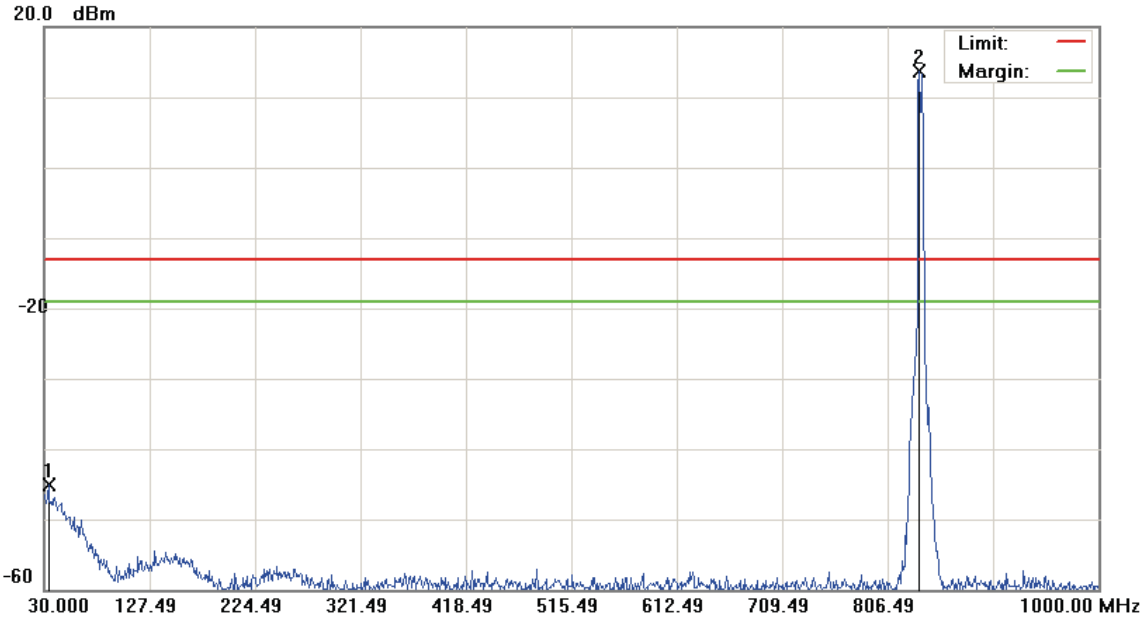
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.2694	-68.59	31.49	-37.10	-13.00	-24.10	peak			

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

File :QBA769(CH4183) Data :#3 Date: 2013/4/19 Time: 下午 01:44:42



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

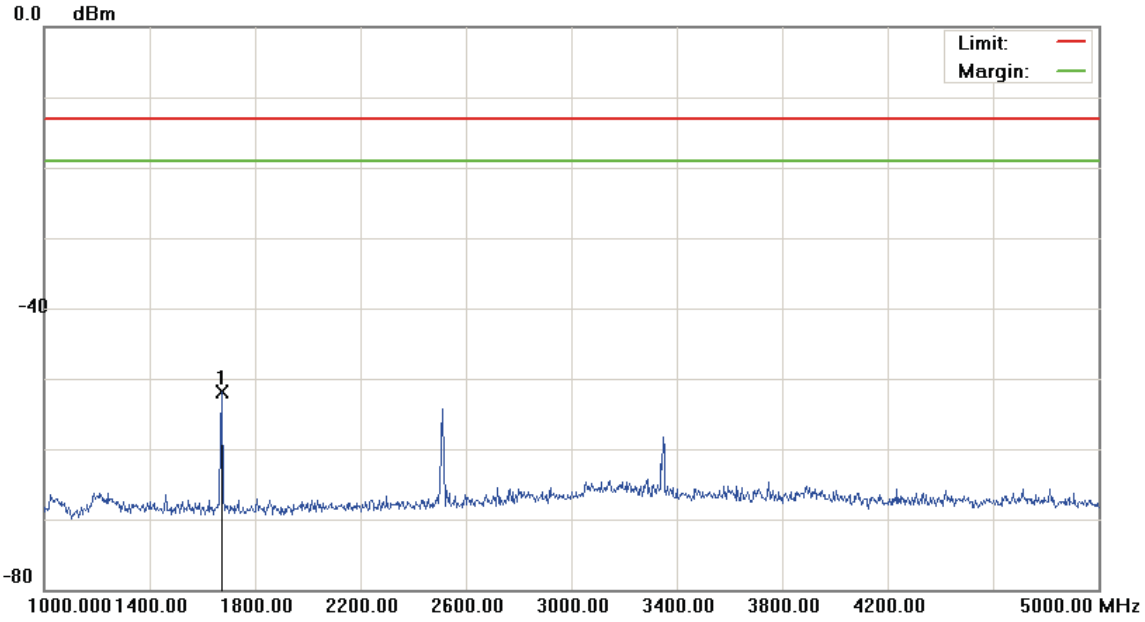
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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		33.8800	-61.83	16.77	-45.06	-13.00	-32.06	peak			
2	*	835.1000	9.76	3.95	13.71	-13.00	26.71	peak			Tx

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

File :QBA769(CH4183) Data :#4 Date: 2013/4/19 Time: 下午 01:56:36



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

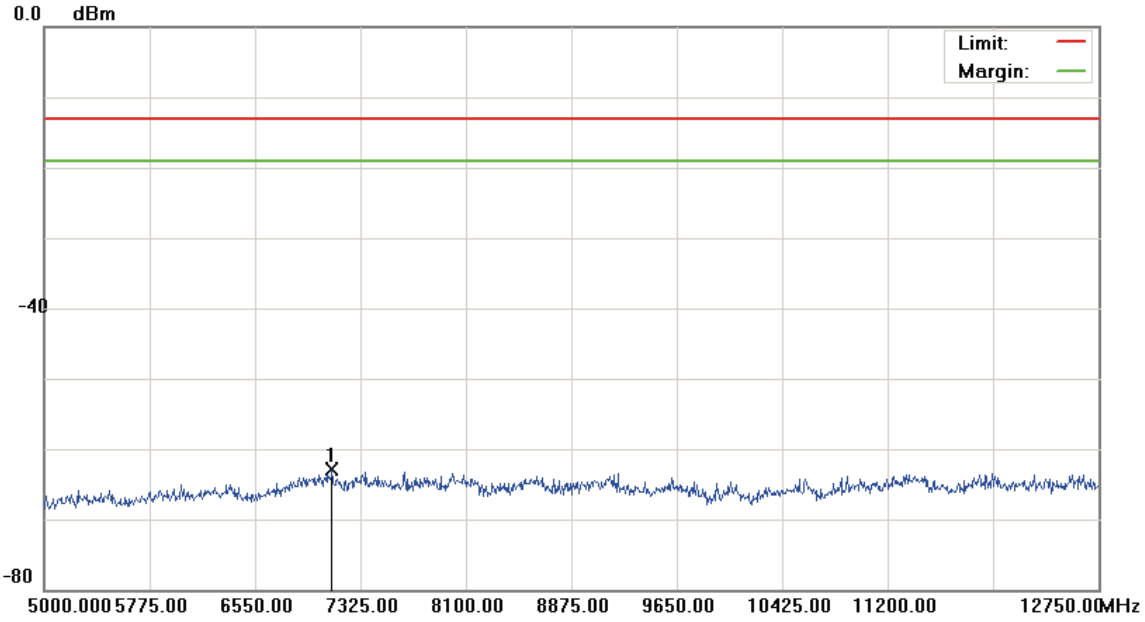
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	1676.000	-56.32	4.47	-51.85	-13.00	-38.85	peak			

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

File :QBA769(CH4183) Data :#5 Date: 2013/4/19 Time: 下午 01:56:59



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

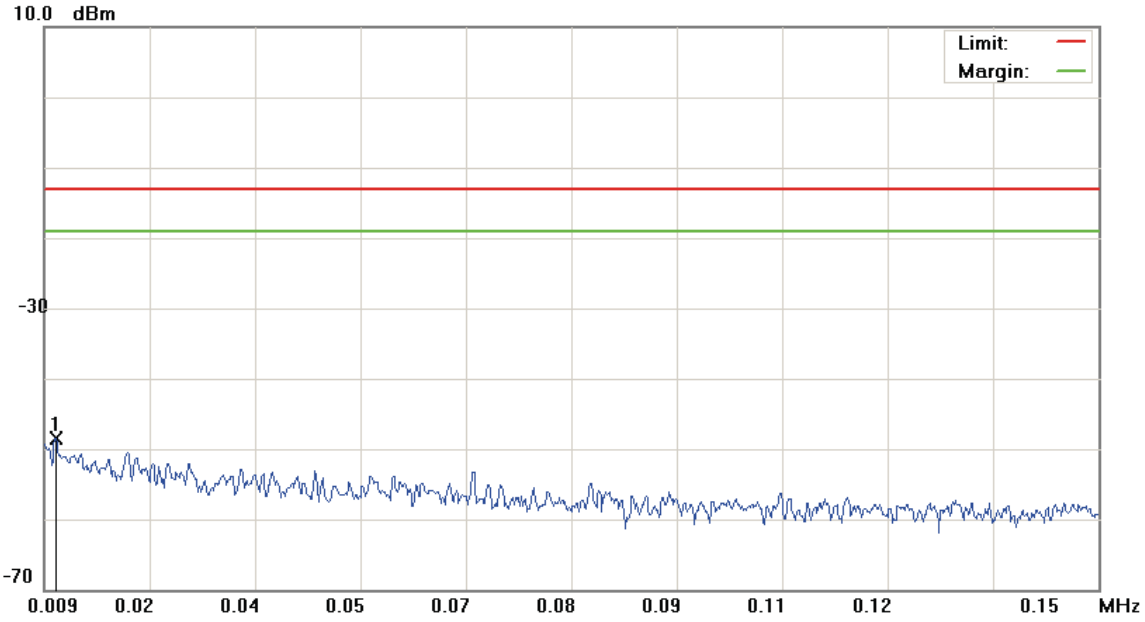
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	7115.750	-68.14	5.15	-62.99	-13.00	-49.99	peak			

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

File :QBA769(CH4233) Data :#1 Date: 2013/4/19 Time: 下午 01:45:58



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

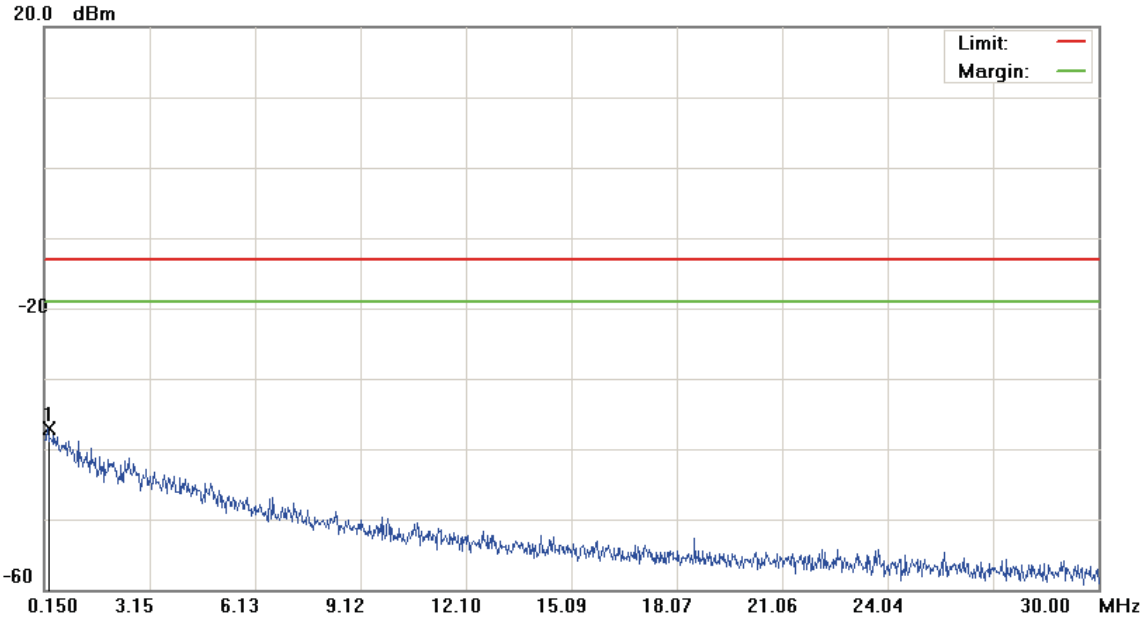
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1 KHz VBW: 3 KHz

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	*	0.0106	-79.06	30.57	-48.49	-13.00	-35.49	peak			

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

File :QBA769(CH4233) Data :#2 Date: 2013/4/19 Time: 下午 01:46:22



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

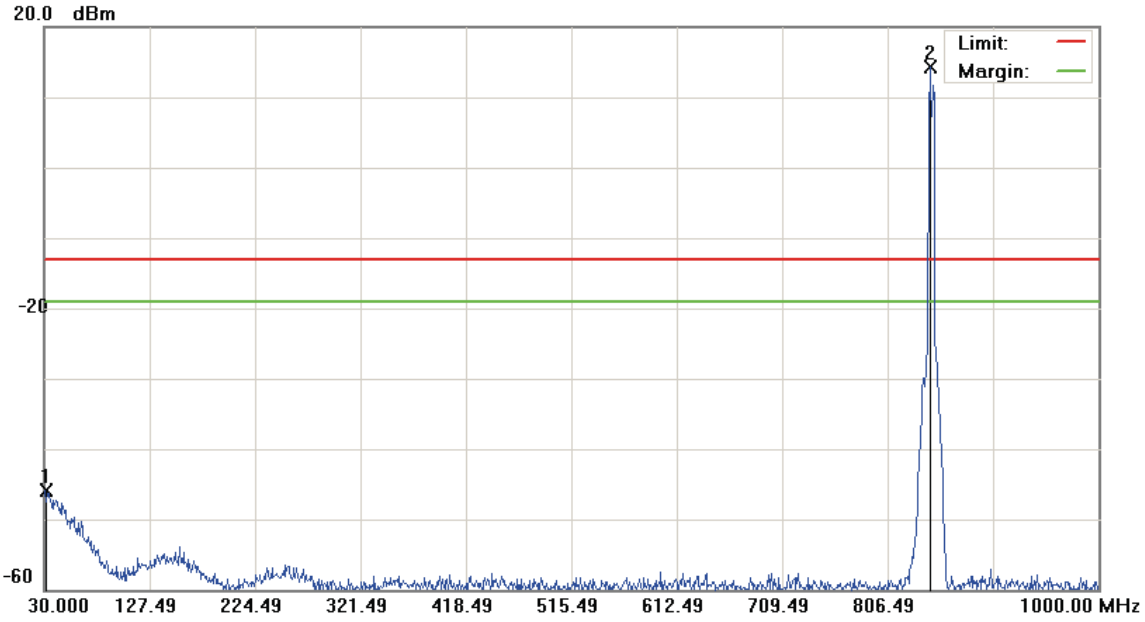
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 10 KHz VBW: 30 KHz

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	*	0.2545	-68.40	31.36	-37.04	-13.00	-24.04	peak			

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

File :QBA769(CH4233) Data :#3 Date: 2013/4/19 Time: 下午 01:46:46



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

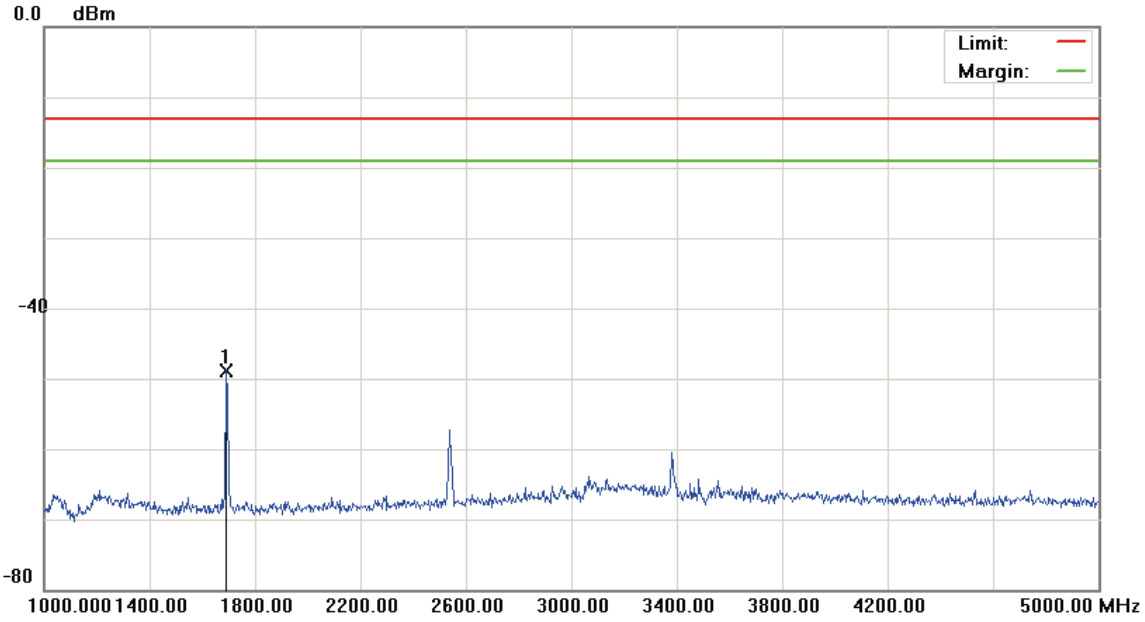
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 100 KHz VBW: 300 KHz

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		31.4550	-62.89	17.05	-45.84	-13.00	-32.84	peak			
2	*	845.2850	10.31	3.99	14.30	-13.00	27.30	peak			Tx

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

File :QBA769(CH4233) Data :#4 Date: 2013/4/19 Time: 下午 01:57:34



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

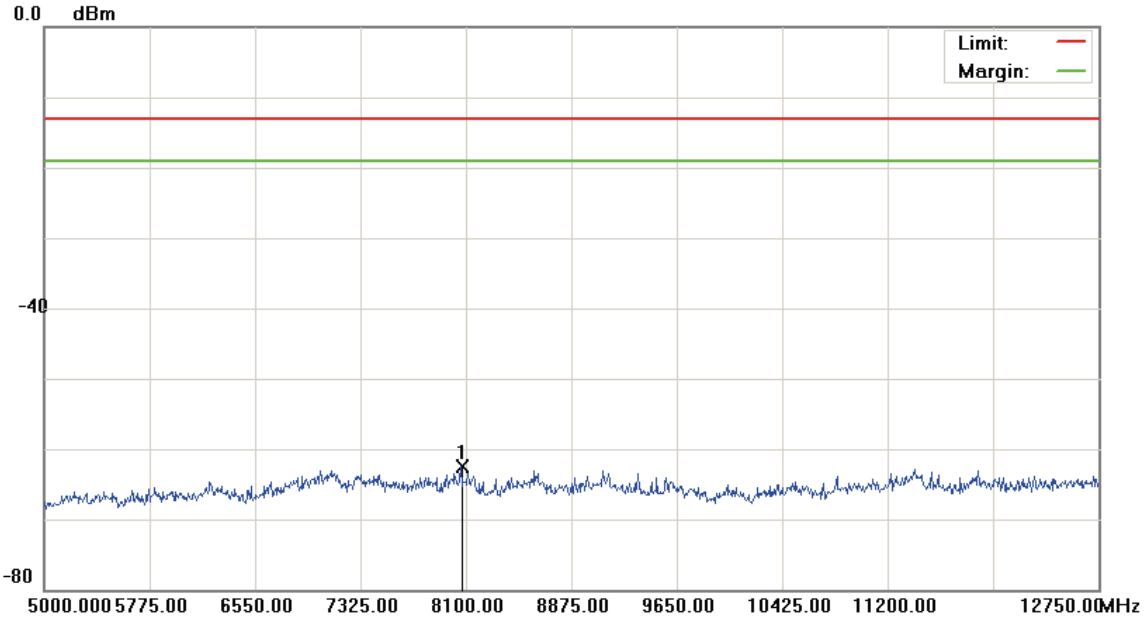
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	1692.000	-53.28	4.48	-48.80	-13.00	-35.80	peak			

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

File :QBA769(CH4233) Data :#5 Date: 2013/4/19 Time: 下午 01:57:57



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Smartphone
M/N: QBA769
Mode: WCDMA Band V
Note:

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

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 3000 KHz

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	*	8065.125	-67.89	5.36	-62.53	-13.00	-49.53	peak			

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

7 Field Strength of Spurious Radiation Test

7.1. 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.

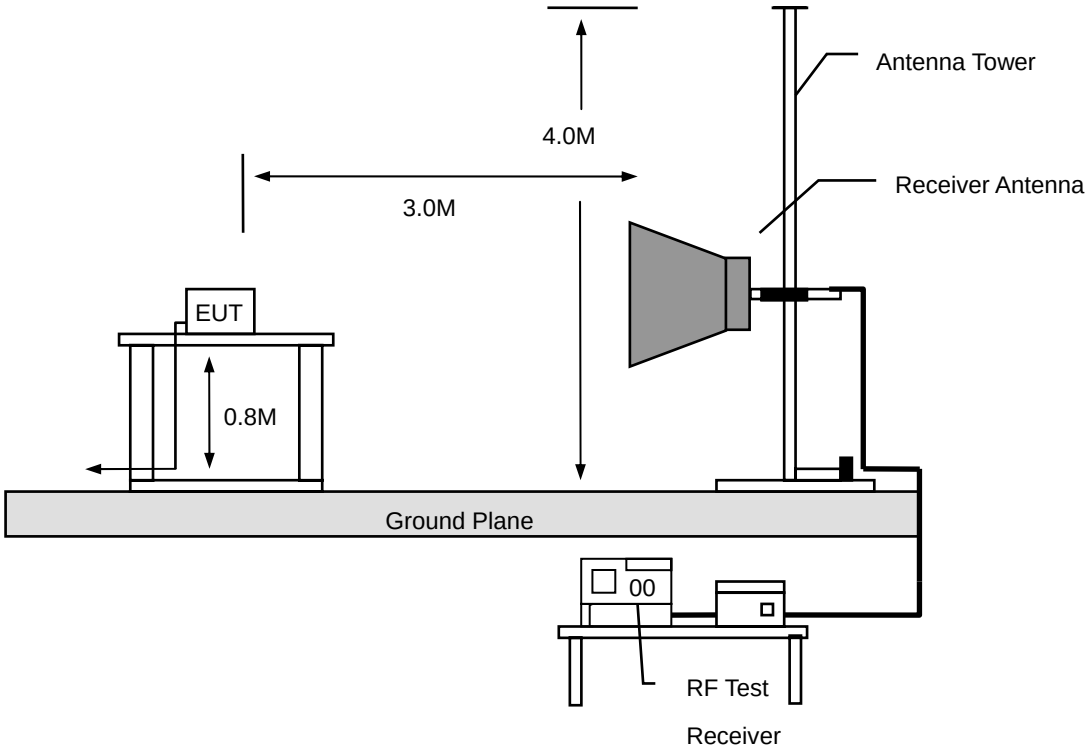
It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

7.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/21/2013	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/21/2013	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2013	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2013	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	06/29/2012	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/15/2012	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/21/2012	(1)
Test Site	ATL	TE01	888001	08/28/2012	(1)

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

Final radiation measurements were made on a three-meter, Semi Anechoic Chamber. The EUT system was placed on a nonconductive turntable which is 0.8 meters height, top surface 1.0 x 1.5 meter. The spectrum was examined from 250 MHz to 2.5 GHz in order to cover the whole spectrum below 10th harmonic which could generate from the EUT. During the test, EUT was set to transmit continuously & Measurements spectrum range from 30 MHz to 26.5 GHz is investigated.

For measurements below 1 GHz the resolution bandwidth is set to 100 kHz for peak detection measurements or 120 kHz for quasi-peak detection measurements. Peak detection is used unless otherwise noted as quasi-peak.

For measurements above 1 GHz the resolution bandwidth is set to 1 MHz, and then the video bandwidth is set to 1 MHz for peak measurements and 10 Hz for average measurements.

A nonconductive material surrounded the EUT to supporting the EUT for standing on tree orthogonal planes. At each condition, the EUT was rotated 360 degrees, and the antenna was raised and lowered from one to four meters to find the maximum emission levels. Measurements were taken using both horizontal and vertical antenna polarization.

SCHWARZBECK MESS-ELEKTRONIK Biconilog Antenna (mode VULB9163) at 3 Meter and the SCHWARZBECK Double Ridged Guide Antenna (model BBHA9120D&9170) was used in frequencies 1 – 26.5 GHz at a distance of 1 meter. All test results were extrapolated to equivalent signal at 3 meters utilizing an inverse linear distance extrapolation Factor (20dB/decade).

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.
Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.
The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.
The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts pre meter (uV/m).
The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro colts per meter (dBuV/m).
The actual field is intensity in referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

(1) Amplitude (dBuV/m) = FI (dBuV) +AF (dBuV) +CL (dBuV)-Gain (dB)

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

(2) Actual Amplitude (dBuV/m) = Amplitude (dBuV)-Dis(dB)

The FCC specified emission limits were calculated according the EUT operating frequency and by following linear interpolation equations:

(a) For fundamental frequency : Transmitter Output < +30dBm

(b) For spurious frequency : Spurious emission limits = fundamental emission limit /10

7.5. Uncertainty

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

7.6. Test Result

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	04/25/2013
Frequency:	824.2 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.5000	-54.97	-1.26	-56.23	-13.00	-43.23	peak	H
301.5000	-62.82	-2.25	-65.07	-13.00	-52.07	peak	H
430.0000	-78.66	3.67	-74.99	-13.00	-61.99	peak	H
593.5000	-79.68	7.82	-71.86	-13.00	-58.86	peak	H
728.0000	-79.40	7.78	-71.62	-13.00	-58.62	peak	H
801.5000	-80.46	11.29	-69.17	-13.00	-56.17	peak	H
3136.000	-67.68	18.10	-49.58	-13.00	-36.58	peak	H
4912.000	-71.64	23.29	-48.35	-13.00	-35.35	peak	H
6892.000	-71.88	32.17	-39.71	-13.00	-26.71	peak	H
151.5000	-52.75	8.59	-44.16	-13.00	-31.16	peak	V
212.0000	-52.69	8.22	-44.47	-13.00	-31.47	peak	V
390.0000	-67.29	1.49	-65.80	-13.00	-52.80	peak	V
520.0000	-75.62	3.11	-72.51	-13.00	-59.51	peak	V
673.0000	-80.28	9.50	-70.78	-13.00	-57.78	peak	V
780.0000	-76.71	11.28	-65.43	-13.00	-52.43	peak	V
3220.000	-69.29	21.50	-47.79	-13.00	-34.79	peak	V
4756.000	-71.16	26.66	-44.50	-13.00	-31.50	peak	V
6880.000	-71.77	30.24	-41.53	-13.00	-28.53	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	04/25/2013
Frequency:	836.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.0000	-52.34	-1.41	-53.75	-13.00	-40.75	peak	H
303.0000	-60.90	-2.15	-63.05	-13.00	-50.05	peak	H
390.0000	-77.17	1.66	-75.51	-13.00	-62.51	peak	H
526.5000	-77.60	7.86	-69.74	-13.00	-56.74	peak	H
677.5000	-80.51	7.04	-73.47	-13.00	-60.47	peak	H
811.5000	-80.99	11.63	-69.36	-13.00	-56.36	peak	H
2788.000	-70.99	17.21	-53.78	-13.00	-40.78	peak	H
4672.000	-73.23	22.01	-51.22	-13.00	-38.22	peak	H
6940.000	-73.94	32.39	-41.55	-13.00	-28.55	peak	H
151.0000	-53.55	8.36	-45.19	-13.00	-32.19	peak	V
260.0000	-54.27	-1.56	-55.83	-13.00	-42.83	peak	V
390.0000	-67.37	1.49	-65.88	-13.00	-52.88	peak	V
520.0000	-77.24	3.11	-74.13	-13.00	-61.13	peak	V
680.0000	-78.56	9.56	-69.00	-13.00	-56.00	peak	V
780.0000	-75.97	11.28	-64.69	-13.00	-51.69	peak	V
3124.000	-68.40	20.95	-47.45	-13.00	-34.45	peak	V
4828.000	-73.53	26.79	-46.74	-13.00	-33.74	peak	V
7084.000	-73.65	30.65	-43.00	-13.00	-30.00	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	04/25/2013
Frequency:	848.8 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.5000	-52.13	-1.26	-53.39	-13.00	-40.39	peak	H
260.0000	-61.59	-4.34	-65.93	-13.00	-52.93	peak	H
390.0000	-76.26	1.66	-74.60	-13.00	-61.60	peak	H
523.5000	-78.61	7.74	-70.87	-13.00	-57.87	peak	H
631.5000	-77.67	7.20	-70.47	-13.00	-57.47	peak	H
778.0000	-81.18	10.08	-71.10	-13.00	-58.10	peak	H
3220.000	-69.66	18.33	-51.33	-13.00	-38.33	peak	H
4828.000	-72.20	22.83	-49.37	-13.00	-36.37	peak	H
6724.000	-73.73	31.45	-42.28	-13.00	-29.28	peak	H
151.5000	-53.75	8.59	-45.16	-13.00	-32.16	peak	V
260.0000	-55.16	-1.56	-56.72	-13.00	-43.72	peak	V
390.0000	-66.38	1.49	-64.89	-13.00	-51.89	peak	V
520.0000	-76.13	3.11	-73.02	-13.00	-60.02	peak	V
613.0000	-79.10	8.38	-70.72	-13.00	-57.72	peak	V
780.0000	-76.96	11.28	-65.68	-13.00	-52.68	peak	V
3052.000	-69.28	20.53	-48.75	-13.00	-35.75	peak	V
4756.000	-71.18	26.66	-44.52	-13.00	-31.52	peak	V
6988.000	-72.08	30.54	-41.54	-13.00	-28.54	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	04/25/2013
Frequency:	1850.2 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
149.0000	-54.06	-2.04	-56.10	-13.00	-43.10	peak	H
260.0000	-61.36	-4.34	-65.70	-13.00	-52.70	peak	H
390.0000	-79.03	1.66	-77.37	-13.00	-64.37	peak	H
553.0000	-81.16	7.97	-73.19	-13.00	-60.19	peak	H
769.5000	-80.96	9.61	-71.35	-13.00	-58.35	peak	H
922.5000	-81.77	14.76	-67.01	-13.00	-54.01	peak	H
3004.000	-70.04	17.74	-52.30	-13.00	-39.30	peak	H
4804.000	-73.44	22.71	-50.73	-13.00	-37.73	peak	H
6628.000	-73.49	31.02	-42.47	-13.00	-29.47	peak	H
151.0000	-55.50	8.36	-47.14	-13.00	-34.14	peak	V
260.0000	-54.28	-1.56	-55.84	-13.00	-42.84	peak	V
390.0000	-67.84	1.49	-66.35	-13.00	-53.35	peak	V
582.5000	-79.80	6.11	-73.69	-13.00	-60.69	peak	V
680.0000	-77.86	9.56	-68.30	-13.00	-55.30	peak	V
920.0000	-79.35	11.87	-67.48	-13.00	-54.48	peak	V
3004.000	-67.98	20.25	-47.73	-13.00	-34.73	peak	V
4720.000	-72.61	26.61	-46.00	-13.00	-33.00	peak	V
6988.000	-72.43	30.54	-41.89	-13.00	-28.89	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	04/25/2013
Frequency:	1880.0 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
150.5000	-56.71	-1.59	-58.30	-13.00	-45.30	peak	H
260.0000	-62.78	-4.34	-67.12	-13.00	-54.12	peak	H
400.0000	-80.82	2.55	-78.27	-13.00	-65.27	peak	H
527.5000	-78.96	7.88	-71.08	-13.00	-58.08	peak	H
705.5000	-80.34	7.10	-73.24	-13.00	-60.24	peak	H
864.5000	-81.29	13.07	-68.22	-13.00	-55.22	peak	H
3196.000	-69.70	18.27	-51.43	-13.00	-38.43	peak	H
4684.000	-72.46	22.06	-50.40	-13.00	-37.40	peak	H
6340.000	-73.84	29.70	-44.14	-13.00	-31.14	peak	H
151.0000	-54.89	8.36	-46.53	-13.00	-33.53	peak	V
260.0000	-54.23	-1.56	-55.79	-13.00	-42.79	peak	V
390.0000	-68.56	1.49	-67.07	-13.00	-54.07	peak	V
520.0000	-78.54	3.11	-75.43	-13.00	-62.43	peak	V
680.0000	-77.15	9.56	-67.59	-13.00	-54.59	peak	V
860.0000	-82.41	11.61	-70.80	-13.00	-57.80	peak	V
3088.000	-69.49	20.74	-48.75	-13.00	-35.75	peak	V
4720.000	-72.33	26.61	-45.72	-13.00	-32.72	peak	V
6748.000	-74.19	29.89	-44.30	-13.00	-31.30	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	04/25/2013
Frequency:	1909.8 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.5000	-52.45	-1.26	-53.71	-13.00	-40.71	peak	H
260.0000	-62.54	-4.34	-66.88	-13.00	-53.88	peak	H
444.0000	-79.84	4.04	-75.80	-13.00	-62.80	peak	H
609.0000	-80.34	7.84	-72.50	-13.00	-59.50	peak	H
801.0000	-81.10	11.27	-69.83	-13.00	-56.83	peak	H
919.5000	-81.59	14.73	-66.86	-13.00	-53.86	peak	H
3148.000	-69.78	18.14	-51.64	-13.00	-38.64	peak	H
4780.000	-73.36	22.57	-50.79	-13.00	-37.79	peak	H
6628.000	-74.80	31.02	-43.78	-13.00	-30.78	peak	H
151.5000	-53.97	8.59	-45.38	-13.00	-32.38	peak	V
260.0000	-54.96	-1.56	-56.52	-13.00	-43.52	peak	V
390.0000	-67.95	1.49	-66.46	-13.00	-53.46	peak	V
520.0000	-75.58	3.11	-72.47	-13.00	-59.47	peak	V
680.0000	-77.95	9.56	-68.39	-13.00	-55.39	peak	V
859.5000	-81.24	11.61	-69.63	-13.00	-56.63	peak	V
3184.000	-70.04	21.28	-48.76	-13.00	-35.76	peak	V
4708.000	-72.63	26.57	-46.06	-13.00	-33.06	peak	V
6556.000	-72.48	29.36	-43.12	-13.00	-30.12	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	04/25/2013
Frequency:	826.4 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.0000	-52.57	-1.41	-53.98	-13.00	-40.98	peak	H
260.0000	-61.54	-4.34	-65.88	-13.00	-52.88	peak	H
390.0000	-76.21	1.66	-74.55	-13.00	-61.55	peak	H
527.0000	-77.92	7.87	-70.05	-13.00	-57.05	peak	H
653.0000	-80.33	7.04	-73.29	-13.00	-60.29	peak	H
758.0000	-81.09	9.01	-72.08	-13.00	-59.08	peak	H
3004.000	-69.54	17.74	-51.80	-13.00	-38.80	peak	H
4636.000	-72.26	21.80	-50.46	-13.00	-37.46	peak	H
6700.000	-73.76	31.34	-42.42	-13.00	-29.42	peak	H
147.5000	-55.39	8.14	-47.25	-13.00	-34.25	peak	V
260.0000	-54.01	-1.56	-55.57	-13.00	-42.57	peak	V
390.0000	-67.95	1.49	-66.46	-13.00	-53.46	peak	V
493.0000	-77.46	2.62	-74.84	-13.00	-61.84	peak	V
617.0000	-79.93	8.68	-71.25	-13.00	-58.25	peak	V
740.0000	-80.88	10.49	-70.39	-13.00	-57.39	peak	V
3100.000	-69.30	20.81	-48.49	-13.00	-35.49	peak	V
4756.000	-70.66	26.66	-44.00	-13.00	-31.00	peak	V
6868.000	-72.90	30.21	-42.69	-13.00	-29.69	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	04/25/2013
Frequency:	836.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.5000	-53.65	-1.26	-54.91	-13.00	-41.91	peak	H
260.0000	-61.36	-4.34	-65.70	-13.00	-52.70	peak	H
390.0000	-76.55	1.66	-74.89	-13.00	-61.89	peak	H
530.0000	-77.43	7.95	-69.48	-13.00	-56.48	peak	H
623.0000	-79.25	7.56	-71.69	-13.00	-58.69	peak	H
728.0000	-80.27	7.78	-72.49	-13.00	-59.49	peak	H
2896.000	-69.98	17.47	-52.51	-13.00	-39.51	peak	H
4624.000	-72.82	21.75	-51.07	-13.00	-38.07	peak	H
6496.000	-74.25	30.45	-43.80	-13.00	-30.80	peak	H
151.5000	-53.94	8.59	-45.35	-13.00	-32.35	peak	V
260.0000	-55.04	-1.56	-56.60	-13.00	-43.60	peak	V
390.0000	-67.56	1.49	-66.07	-13.00	-53.07	peak	V
520.0000	-75.21	3.11	-72.10	-13.00	-59.10	peak	V
658.5000	-79.77	9.33	-70.44	-13.00	-57.44	peak	V
773.0000	-78.22	11.17	-67.05	-13.00	-54.05	peak	V
3004.000	-70.04	20.25	-49.79	-13.00	-36.79	peak	V
4624.000	-71.65	26.43	-45.22	-13.00	-32.22	peak	V
6832.000	-72.70	30.13	-42.57	-13.00	-29.57	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	QBA769	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	5	Date:	04/25/2013
Frequency:	846.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
151.5000	-52.83	-1.26	-54.09	-13.00	-41.09	peak	H
260.0000	-62.17	-4.34	-66.51	-13.00	-53.51	peak	H
390.0000	-78.74	1.66	-77.08	-13.00	-64.08	peak	H
529.0000	-79.07	7.94	-71.13	-13.00	-58.13	peak	H
633.0000	-79.63	7.13	-72.50	-13.00	-59.50	peak	H
746.5000	-79.41	8.49	-70.92	-13.00	-57.92	peak	H
3052.000	-68.90	17.88	-51.02	-13.00	-38.02	peak	H
4672.000	-72.58	22.01	-50.57	-13.00	-37.57	peak	H
6964.000	-74.30	32.49	-41.81	-13.00	-28.81	peak	H
151.0000	-55.00	8.36	-46.64	-13.00	-33.64	peak	V
260.0000	-55.39	-1.56	-56.95	-13.00	-43.95	peak	V
390.0000	-68.02	1.49	-66.53	-13.00	-53.53	peak	V
509.0000	-77.89	2.91	-74.98	-13.00	-61.98	peak	V
622.0000	-80.62	8.87	-71.75	-13.00	-58.75	peak	V
733.5000	-79.93	10.61	-69.32	-13.00	-56.32	peak	V
3028.000	-69.80	20.39	-49.41	-13.00	-36.41	peak	V
4684.000	-73.79	26.53	-47.26	-13.00	-34.26	peak	V
6652.000	-74.26	29.62	-44.64	-13.00	-31.64	peak	V

8 Frequency Stability (Temperature & Voltage Variation) Test

8.1. Limit

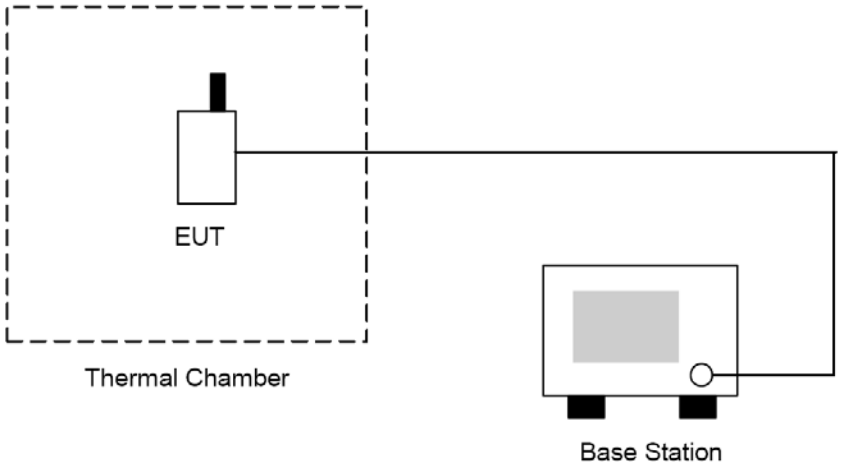
The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center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

8.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/07/2012	(1)
Test Site	ATL	TE05	TE05	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

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 EUT was placed in a temperature chamber at 25±5 ℃ and connected as the following section.
5. The power supply voltage to the EUT was varied from BEP to 115% of the nominal value measured at the input to the EUT.
6. The temperature tests were performed for the worst case.
7. Test data was recorded.

8.5. Uncertainty

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

8.6. Test Result

Model Number	QBA769					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 1					
Date of Test	04/19/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-30	12	0.014	±2.5	Pass
Normal	3.70	-20	15	0.018	±2.5	Pass
Normal	3.70	-10	10	0.012	±2.5	Pass
Normal	3.70	0	9	0.011	±2.5	Pass
Normal	3.70	10	11	0.013	±2.5	Pass
Battery full point	4.25	20	7	0.008	±2.5	Pass
Normal	3.70	20	6	0.007	±2.5	Pass
Battery cut-off point	3.60	20	11	0.013	±2.5	Pass
Normal	3.70	30	7	0.008	±2.5	Pass
Normal	3.70	40	9	0.011	±2.5	Pass
Normal	3.70	50	6	0.007	±2.5	Pass

Model Number	QBA769					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 2					
Date of Test	04/19/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-30	24	0.013	±2.5	Pass
Normal	3.70	-20	18	0.010	±2.5	Pass
Normal	3.70	-10	9	0.005	±2.5	Pass
Normal	3.70	0	15	0.008	±2.5	Pass
Normal	3.70	10	22	0.012	±2.5	Pass
Battery full point	4.25	20	26	0.014	±2.5	Pass
Normal	3.70	20	14	0.007	±2.5	Pass
Battery cut-off point	3.60	20	16	0.009	±2.5	Pass
Normal	3.70	30	20	0.011	±2.5	Pass
Normal	3.70	40	21	0.011	±2.5	Pass
Normal	3.70	50	18	0.010	±2.5	Pass

Model Number	QBA769					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 5					
Date of Test	04/19/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-30	-5	-0.006	±2.5	Pass
Normal	3.70	-20	-2	-0.002	±2.5	Pass
Normal	3.70	-10	4	0.005	±2.5	Pass
Normal	3.70	0	-3	-0.004	±2.5	Pass
Normal	3.70	10	5	0.006	±2.5	Pass
Battery full point	4.25	20	-3	-0.004	±2.5	Pass
Normal	3.70	20	2	0.002	±2.5	Pass
Battery cut-off point	3.60	20	-5	-0.006	±2.5	Pass
Normal	3.70	30	-1	-0.001	±2.5	Pass
Normal	3.70	40	-2	-0.002	±2.5	Pass
Normal	3.70	50	6	0.007	±2.5	Pass