FCC 47 CFR PART 22H and 24E

Test Report

Product Type	:	Rugged Tablet Computer
Applicant	:	Unitech Electronics Co., Ltd.
Address	:	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan
Trade Name	:	unitech
Model Number	:	TB100xxxxxxxxx
Test Specification	:	FCC 47 CFR PART 22H: Oct, 2012 FCC 47 CFR PART 24E: Oct, 2012 ANSI/TIA-603-C-2004
Application Purpose	:	Class II Permissive Change
Receive Date	:	Jan. 22, 2013
Test Period	:	Jan. 24 ~ Jan. 31, 2013
Issue Date	:	Mar. 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	Mar 29, 2013	Initial Issue	

Verification of Compliance

Issued Date: 03/29/2013

Product Type	:	Rugged Tablet Computer
Applicant	:	Unitech Electronics Co., Ltd.
Address	:	5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan
Trade Name	:	unitech
Model Number	:	TB100xxxxxxxxx
FCC ID	:	HLETB100BTNP
EUT Rated Voltage	:	DC 12V, 2A
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	:	Class II Permissive Change
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		Unitech Electronics Co., Ltd.			
Applicant Address		5F, No. 136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan			
Manufacturer		AAEON Technology. Inc.			
Manufacturer Address		5F, No. 135, Lane 235, Pao Chiao Rd.,Hsin-Tien Dist,New Taipei City,Taiwan			
Product Type		Rugged Tablet Computer			
Trade Name		unitech			
Model Number		TB100xxxxxxxxx (Where x is 0-9，A-Z，a-z，-or blank) for marketing purpose)			
FCC ID		HLETB100BTNP			
IMEI No.		354283042059653			
Mode	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		PCB Antenna			
Antenna Gain (dBi)		GPRS/EGPRS 850 : 3.91 dBi GPRS/EGPRS 1900 : 3.91 dBi			
Max. RF Output power		GPRS 850 : 32.76 dBm / 1.888 W EGPRS 850 : 30.69 dBm / 1.172 W GPRS 1900 : 29.69 dBm / 0.931 W EGPRS 1900 : 29.45 dBm / 0.881 W			
Max. ERP/EIRP		GPRS 850 : 31.48 dBm / 1.406 W EGPRS 850 : 30.50 dBm / 1.122 W GPRS 1900 : 26.01 dBm / 0.399 W EGPRS 1900 : 24.99 dBm / 0.316 W			
Emission Designator		GPRS 850 : 243KGXW EGPRS 850 : 244KG7W GPRS 1900 : 249KGXW EGPRS 1900 : 245KG7W			

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: GPRS 850 Link Mode
Mode 2: GPRS 1900 Link Mode
Mode 3: EGPRS 850 Link Mode
Mode 4: EGPRS 1900 Link Mode

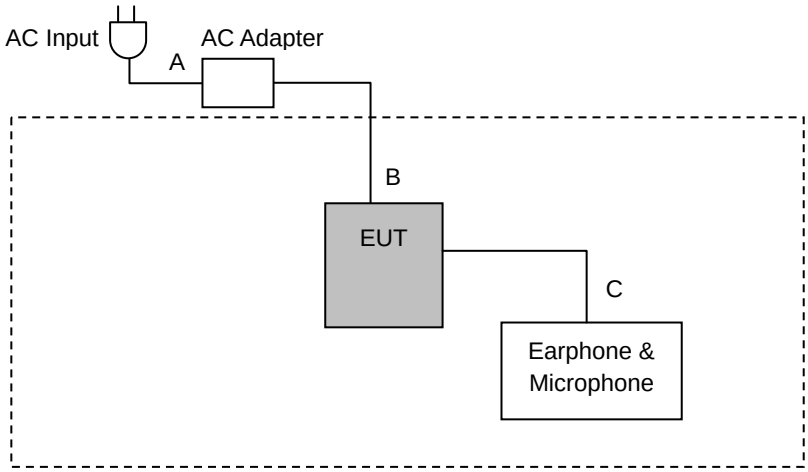
Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

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	AC Power Cable	Shielded, 1.8 m
B	DC Power Cable	Shielded, 1.8 m
B	Earphone & Microphone Cable	Non-Shielded, 1.8 m

Devices Description					
Product		Manufacturer	Model Number	Serial Number	Power Cord
1.	-----	-----	-----	-----	-----

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

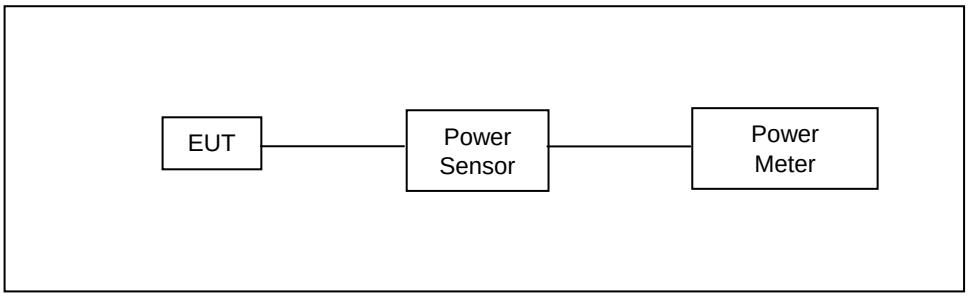
N/A

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	TB100-0AC2UA7G						
Test Item	RF Output Power						
Date of Test	01/24/2013			Test Site		TE05	
Bands	Modulation Type	Data Rate	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
GRRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	GMSK	4Down1Up (Duty Factor 1/8)	824.2	32.26	1.683	**32.76**	**1.888**
			836.6	32.24	1.675	32.74	1.879
			848.8	32.16	1.644	32.55	1.799
		3Down2Up (Duty Factor 2/8)	824.2	30.60	1.148	30.74	1.186
			836.6	30.57	1.140	30.69	1.172
			848.8	30.42	1.102	30.61	1.151
		2Down3Up (Duty Factor 3/8)	824.2	29.56	0.904	29.66	0.925
			836.6	29.47	0.885	29.58	0.908
			848.8	29.31	0.853	29.47	0.885
		1Down4Up (Duty Factor 4/8)	824.2	27.51	0.564	27.63	0.579
			836.6	27.44	0.555	27.56	0.570
			848.8	27.28	0.535	27.47	0.558
EGPRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	824.2	27.34	0.542	**30.69**	**1.172**
			836.6	27.29	0.536	30.57	1.140
			848.8	27.14	0.518	30.44	1.107
		3Down2Up (Duty Factor 2/8)	824.2	25.27	0.337	28.46	0.701
			836.6	25.11	0.324	28.32	0.679
			848.8	25.06	0.321	28.14	0.652
		2Down3Up (Duty Factor 3/8)	824.2	24.23	0.265	27.49	0.561
			836.6	24.15	0.260	27.32	0.540
			848.8	24.06	0.255	27.22	0.527
		1Down4Up (Duty Factor 4/8)	824.2	23.12	0.205	26.33	0.430
			836.6	23.09	0.204	26.27	0.424
			848.8	22.98	0.199	26.03	0.401

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

Model Number	TB100-0AC2UA7G						
Test Item	RF Output Power						
Date of Test	01/24/2013			Test Site		TE05	
Bands	Modulation Type	Data Rate	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
GRRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	GMSK	4Down1Up (Duty Factor 1/8)	1850.20	29.36	0.863	29.43	0.877
			1880.00	29.41	0.873	29.57	0.906
			1909.80	29.46	0.883	**29.69**	**0.931**
		3Down2Up (Duty Factor 2/8)	1850.20	27.81	0.604	28.09	0.644
			1880.00	27.84	0.608	28.11	0.647
			1909.80	27.92	0.619	28.17	0.656
		2Down3Up (Duty Factor 3/8)	1850.20	26.74	0.472	26.84	0.483
			1880.00	26.76	0.474	26.91	0.491
			1909.80	26.84	0.483	26.99	0.500
		1Down4Up (Duty Factor 4/8)	1850.20	25.73	0.374	25.88	0.387
			1880.00	25.78	0.378	25.96	0.394
			1909.80	25.85	0.385	26.03	0.401
EGPRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	1850.20	26.09	0.406	29.21	0.834
			1880.00	26.11	0.408	29.32	0.855
			1909.80	26.19	0.416	**29.45**	**0.881**
		3Down2Up (Duty Factor 2/8)	1850.20	24.02	0.252	27.15	0.519
			1880.00	24.11	0.258	27.26	0.532
			1909.80	24.17	0.261	27.33	0.541
		2Down3Up (Duty Factor 3/8)	1850.20	22.89	0.195	26.13	0.410
			1880.00	22.93	0.196	26.22	0.419
			1909.80	23.07	0.203	26.31	0.428
		1Down4Up (Duty Factor 4/8)	1850.20	21.88	0.154	25.09	0.323
			1880.00	21.95	0.157	25.17	0.329
			1909.80	22.03	0.160	25.26	0.336

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.

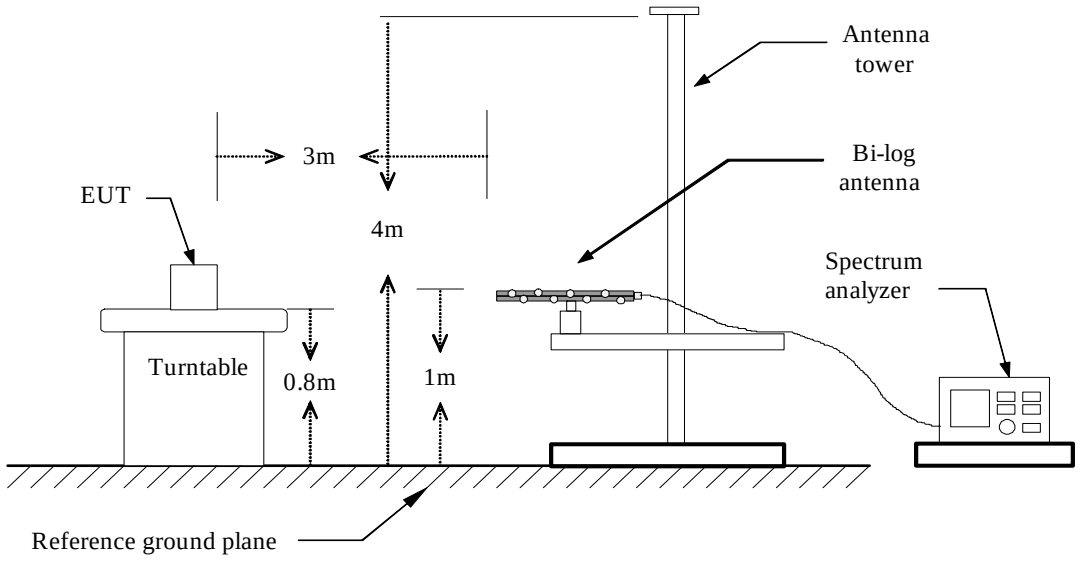
3.2. Test Instruments

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	02/22/2012	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/22/2012	(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)

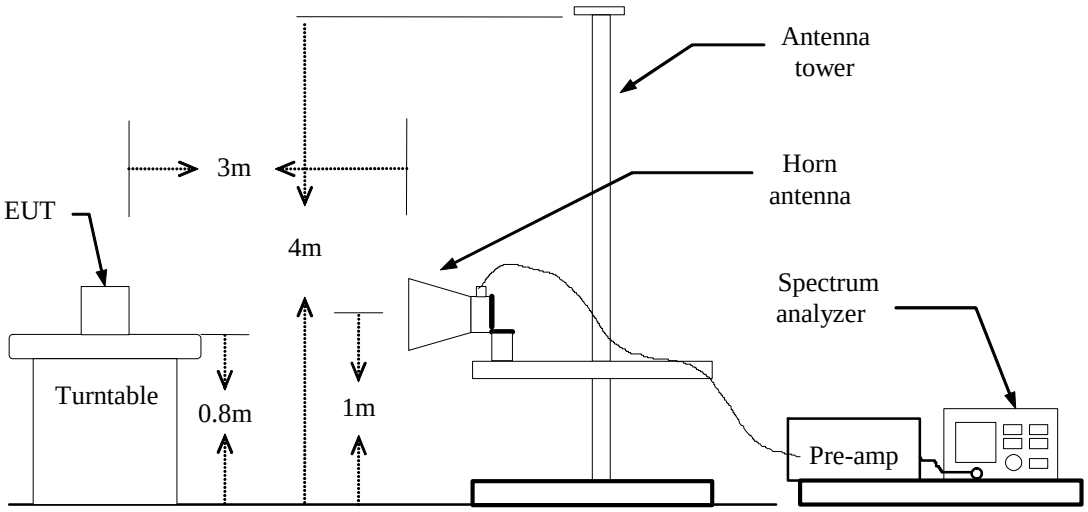
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

3.3. Setup

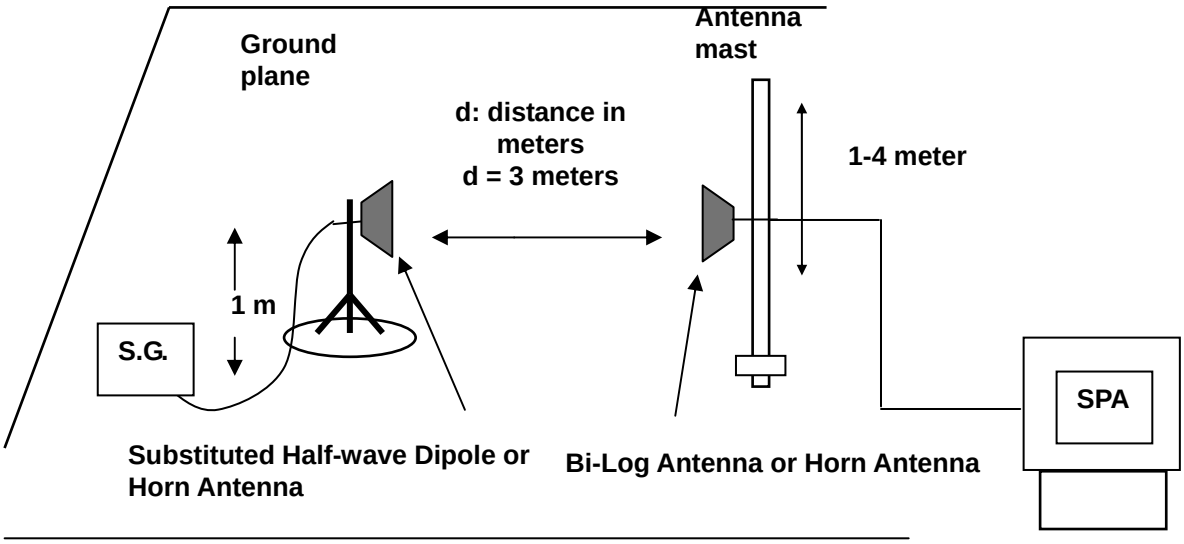
Below 1 GHz



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	TB100-0AC2UA7G							
Test Item	ERP/EIRP							
Date of Test	01/30/2013					Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	ERP		Limit
						(dBm)	(W)	
GPRS 850	GMSK	824.2	H	13.97	11.95	25.92	0.391	< 7W
			V	20.11	11.29	31.40	1.380	< 7W
		836.6	H	13.30	12.07	25.37	0.344	< 7W
			V	20.14	11.34	31.48	1.406	< 7W
		848.8	H	11.85	12.50	24.35	0.272	< 7W
			V	19.19	11.46	30.65	1.161	< 7W
EGPRS 850	8PSK	824.2	H	12.39	11.95	24.34	0.272	< 7W
			V	19.21	11.29	30.50	1.122	< 7W
		836.6	H	11.73	12.07	23.80	0.240	< 7W
			V	18.32	11.34	29.66	0.925	< 7W
		848.8	H	12.51	12.50	25.01	0.317	< 7W
			V	18.61	11.47	30.08	1.019	< 7W

Model Number	TB100-0AC2UA7G							
Test Item	ERP/EIRP							
Date of Test	01/30/2013					Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	EIRP		Limit
						(dBm)	(W)	
GPRS 1900	GMSK	1850.20	H	12.46	13.55	26.01	0.399	< 2W
			V	13.95	11.39	25.34	0.342	< 2W
		1880.00	H	11.82	13.58	25.40	0.347	< 2W
			V	10.39	11.65	22.04	0.160	< 2W
		1909.80	H	11.75	13.61	25.36	0.344	< 2W
			V	10.41	11.90	22.31	0.170	< 2W
EGPRS 1900	8PSK	1850.20	H	11.44	13.55	24.99	0.316	< 2W
			V	13.11	11.39	24.50	0.282	< 2W
		1880.00	H	11.13	13.59	24.72	0.296	< 2W
			V	9.84	11.65	21.49	0.141	< 2W
		1909.80	H	11.20	13.61	24.81	0.303	< 2W
			V	8.76	11.91	20.67	0.117	< 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:

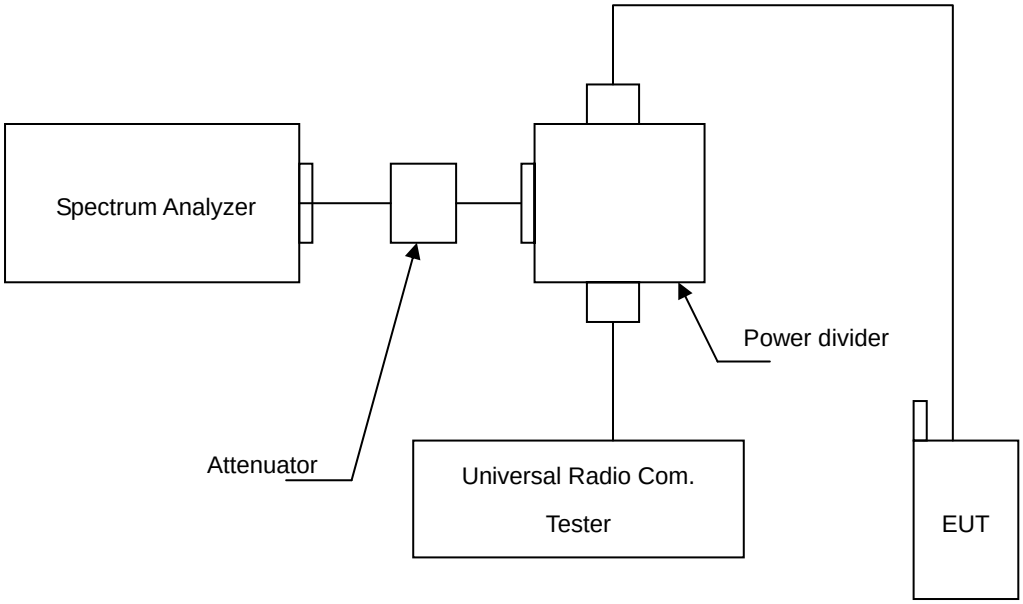
N/A.

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.

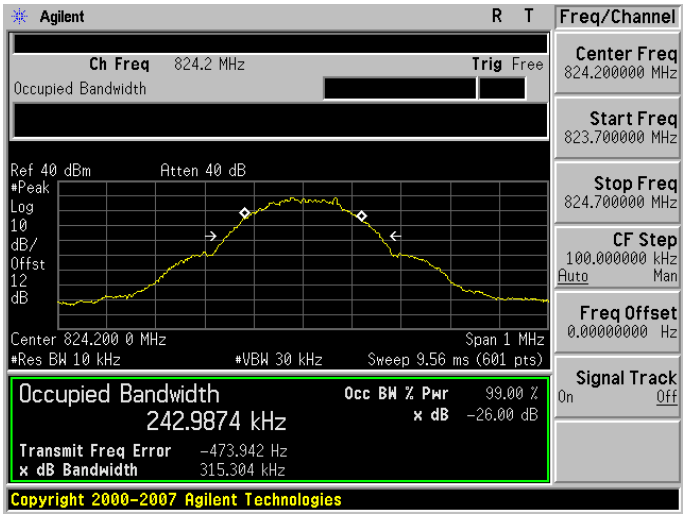
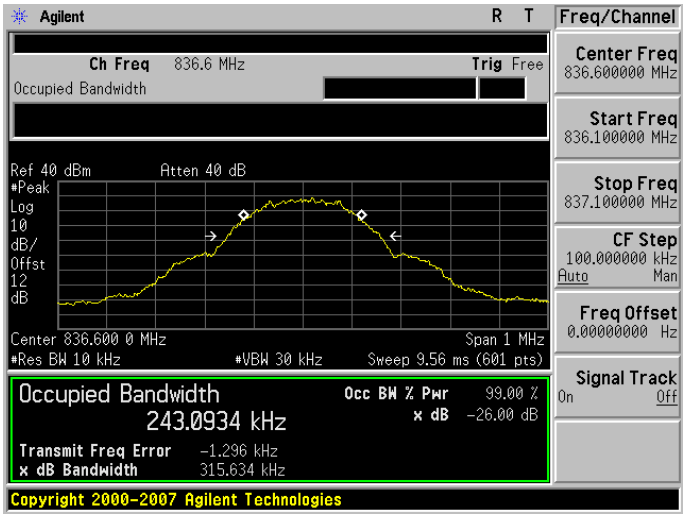
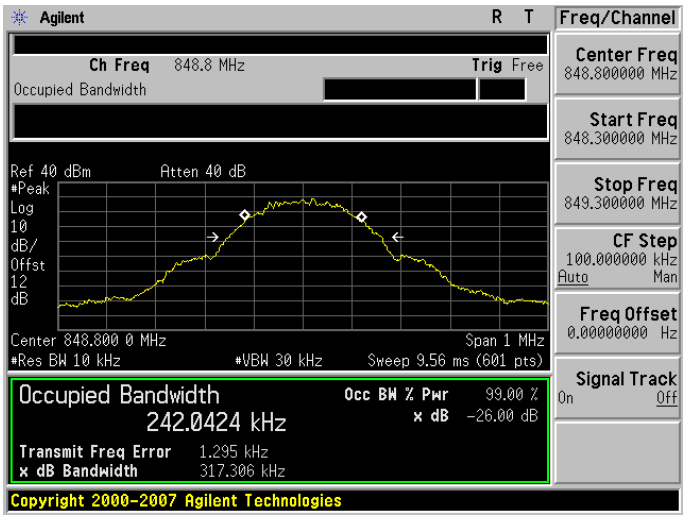
4.5. Uncertainty

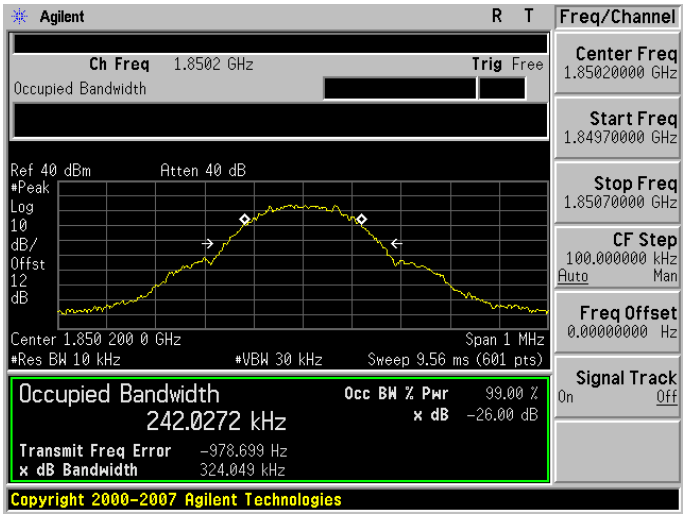
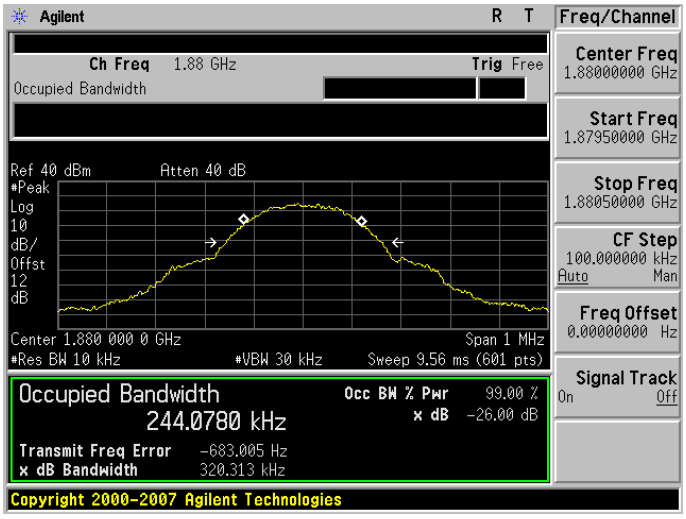
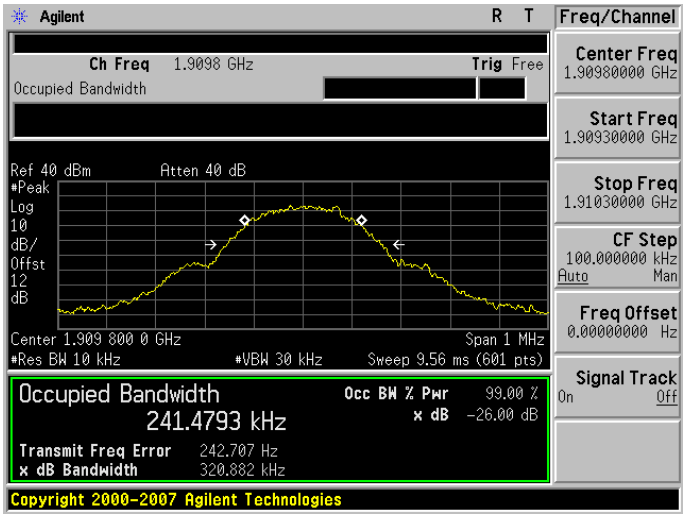
The measurement uncertainty is defined as ± 10Hz

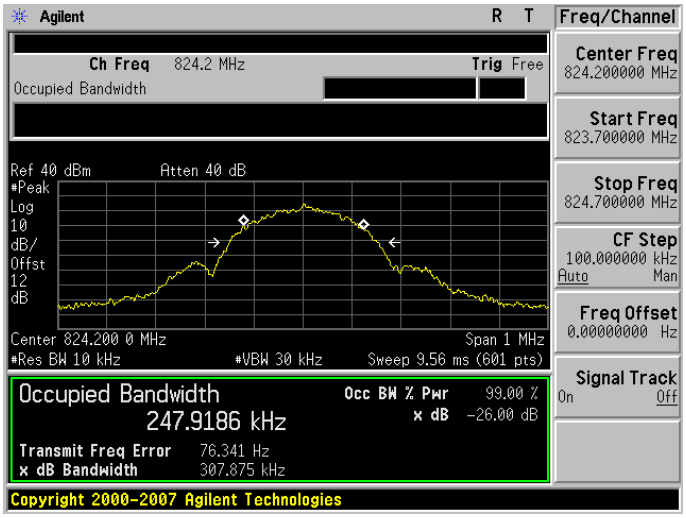
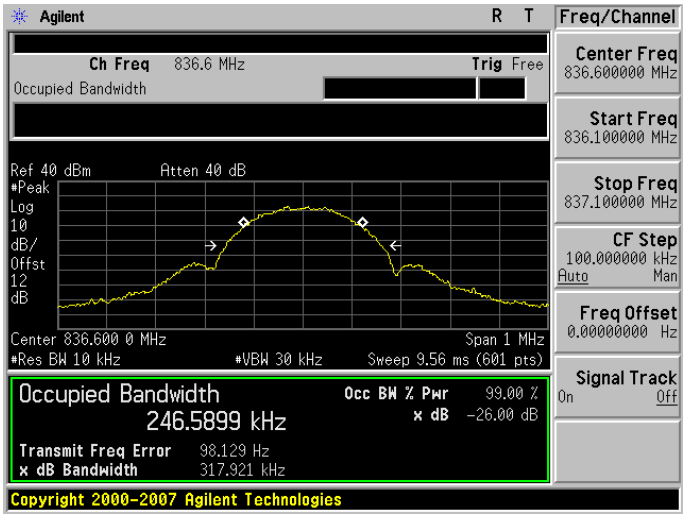
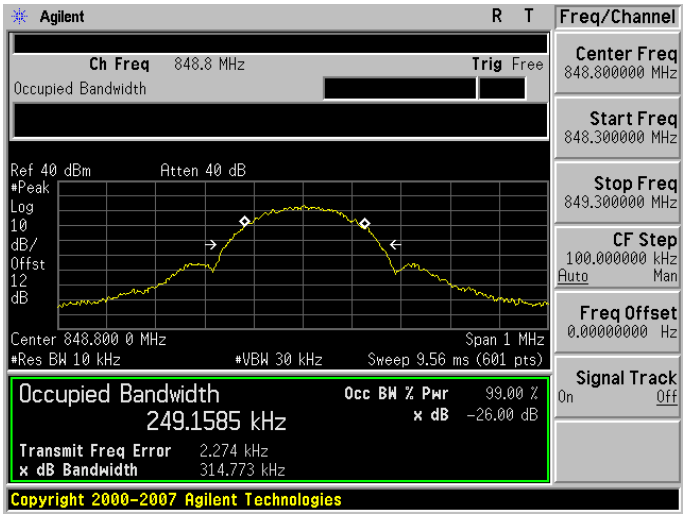
4.6. Test Result

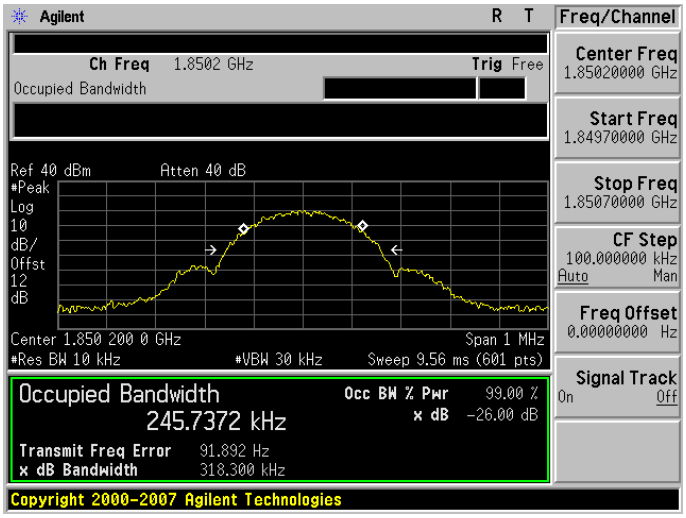
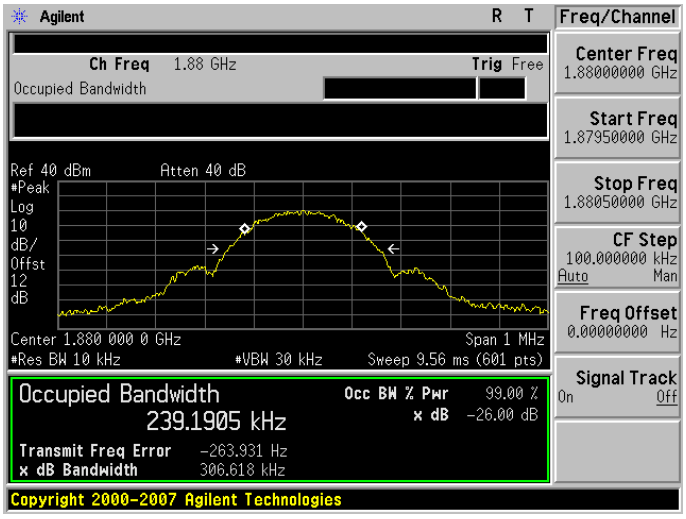
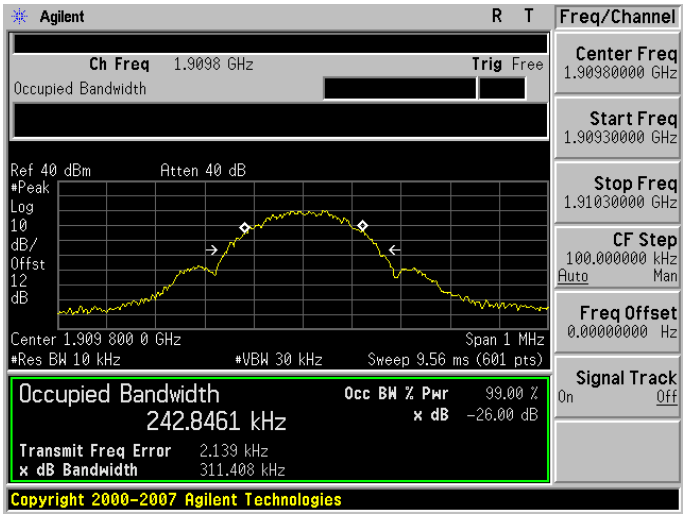
Model Number	TB100-0AC2UA7G				
Test Item	Occupied Bandwidth				
Date of Test	01/24/2013			Test Site	TE05
Bands	Channel	Frequency (MHz)	99% Bandwidth (kHz)	Note	
GPRS 850	128	824.2	242.9874	RBW:10KHz , VBW:30KHz	
	190	836.6	243.0934	RBW:10KHz , VBW:30KHz	
	251	848.8	242.0424	RBW:10KHz , VBW:30KHz	
GPRS 1900	512	1850.20	242.0272	RBW:10KHz , VBW:30KHz	
	661	1880.00	244.0780	RBW:10KHz , VBW:30KHz	
	810	1909.80	241.4793	RBW:10KHz , VBW:30KHz	
GPRS 850	128	824.2	247.9186	RBW:10KHz , VBW:30KHz	
	190	836.6	246.5899	RBW:10KHz , VBW:30KHz	
	251	848.8	249.1585	RBW:10KHz , VBW:30KHz	
GPRS 1900	512	1850.20	245.7372	RBW:10KHz , VBW:30KHz	
	661	1880.00	239.1905	RBW:10KHz , VBW:30KHz	
	810	1909.80	242.8461	RBW:10KHz , VBW:30KHz	

4.7. Test Graphs

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

Mode 2: GPRS 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	

5 Band Edge Test

5.1. Limit

The Band Edge Limit:

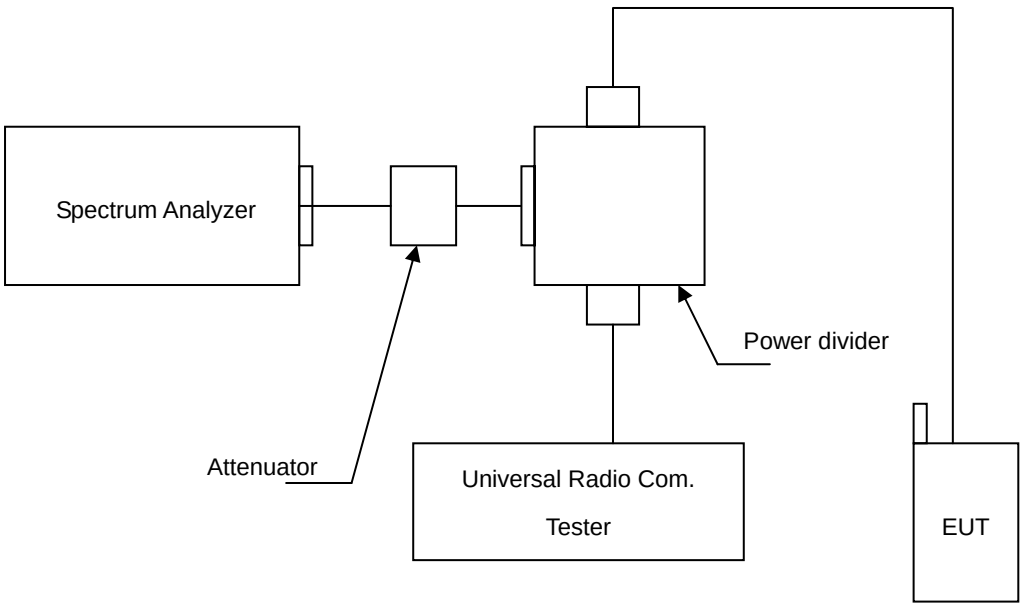
The power of any emission outside of the authorized operating frequency ranges must be attenuated below the transmitting power (P) by a factor of at least 43 + 10log(P) dB.

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.

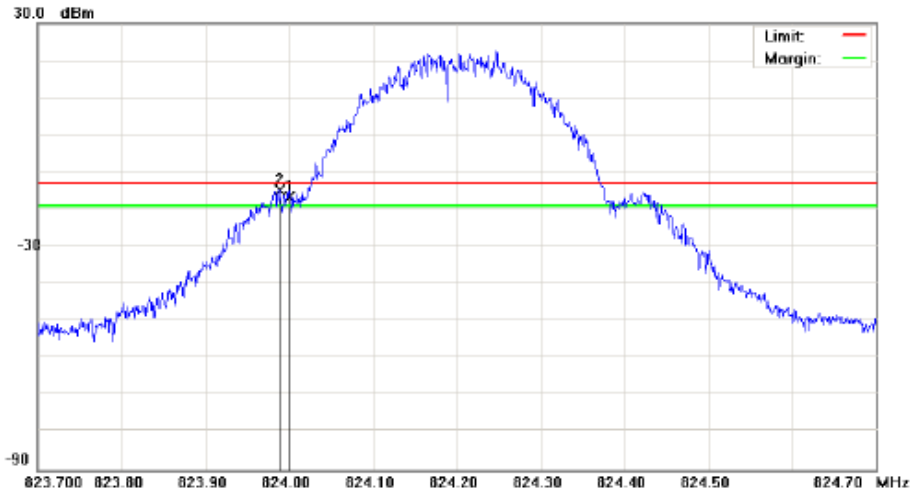
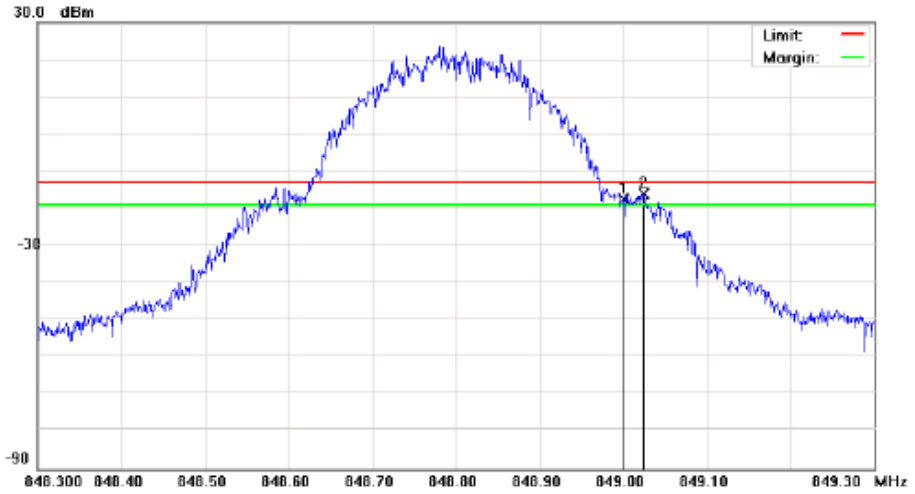
5.5. Uncertainty

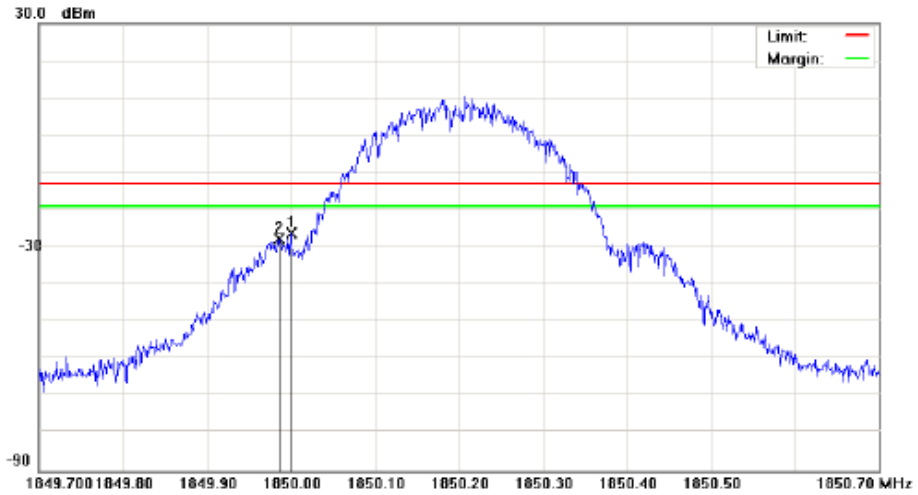
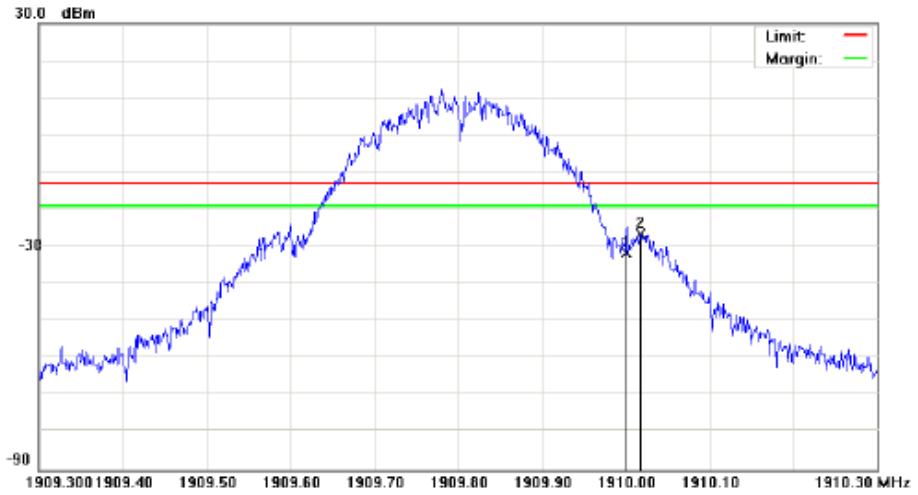
The measurement uncertainty is defined as ± 10Hz

5.6. Test Result

Model Number		TB100-0AC2UA7G				
Test Item		Band Edge				
Date of Test		01/24/2013			Test Site	TE05
Bands		Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result
GPRS 850	Lower	128	824.0000	-14.75	-13	Pass
	Higher	251	849.0000	-15.90	-13	Pass
GPRS 1900	Lower	512	1850.000	-26.32	-13	Pass
	Higher	810	1910.000	-26.47	-13	Pass

5.7. Test Graphs

Mode 1: GPRS 850 Link Mode	
Lower Band	
Higher Band	

Mode 2: GPRS 1900 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.

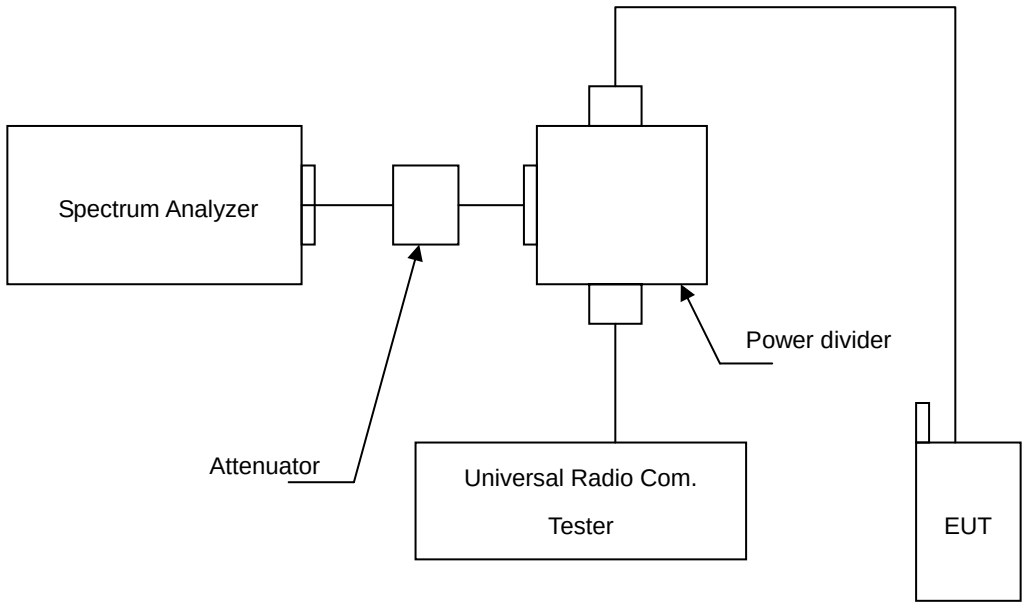
6.2. Test Instruments

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.	-----

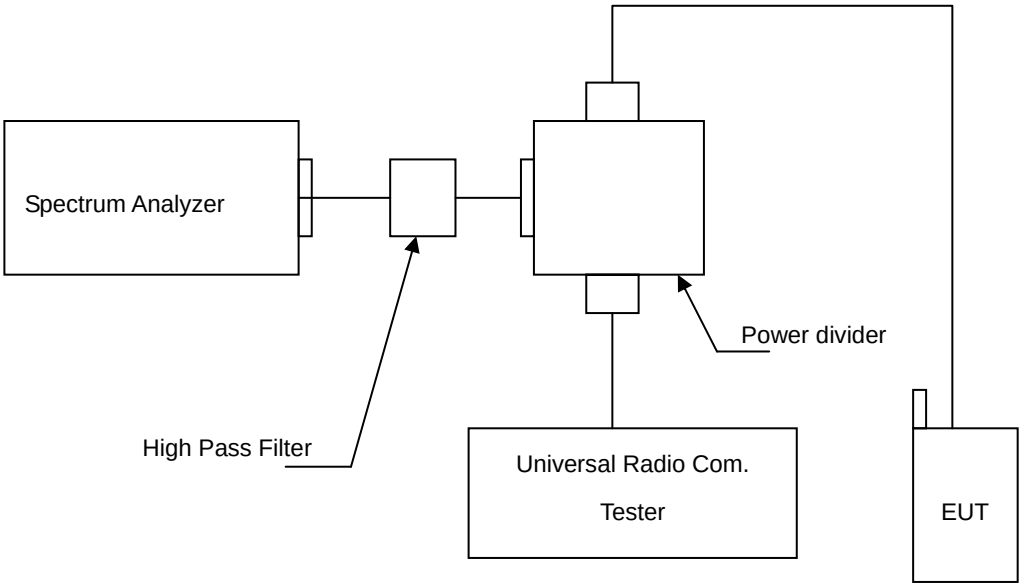
Remark: (1) Calibration period 1 year. (2) Calibration period 2 years.
Note: N.C.R. = No Calibration Request.

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.

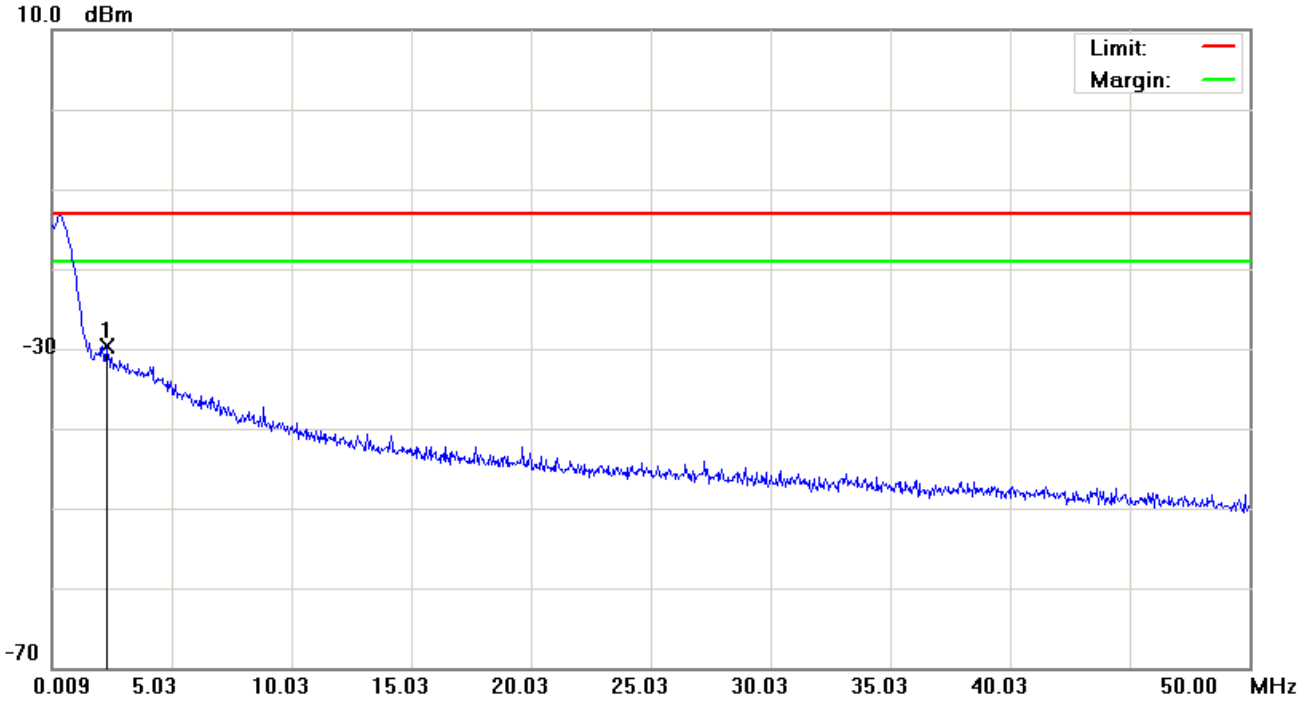
6.5. Uncertainty

The measurement uncertainty is evaluated as ± 2.24 dB.

6.6. Test Result

Model Number	TB100-0AC2UA7G		
Test Item	Conducted Emission		
Test Mode	Mode 1 / Mode 2 / Mode 4 / Mode 5		
Date of Test	01/24/2013	Test Site	TE05

File: TB100-0AC2UA7G (CH128) Data :#1 Date: 2013/1/25 Time: 上午 09:32:01



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

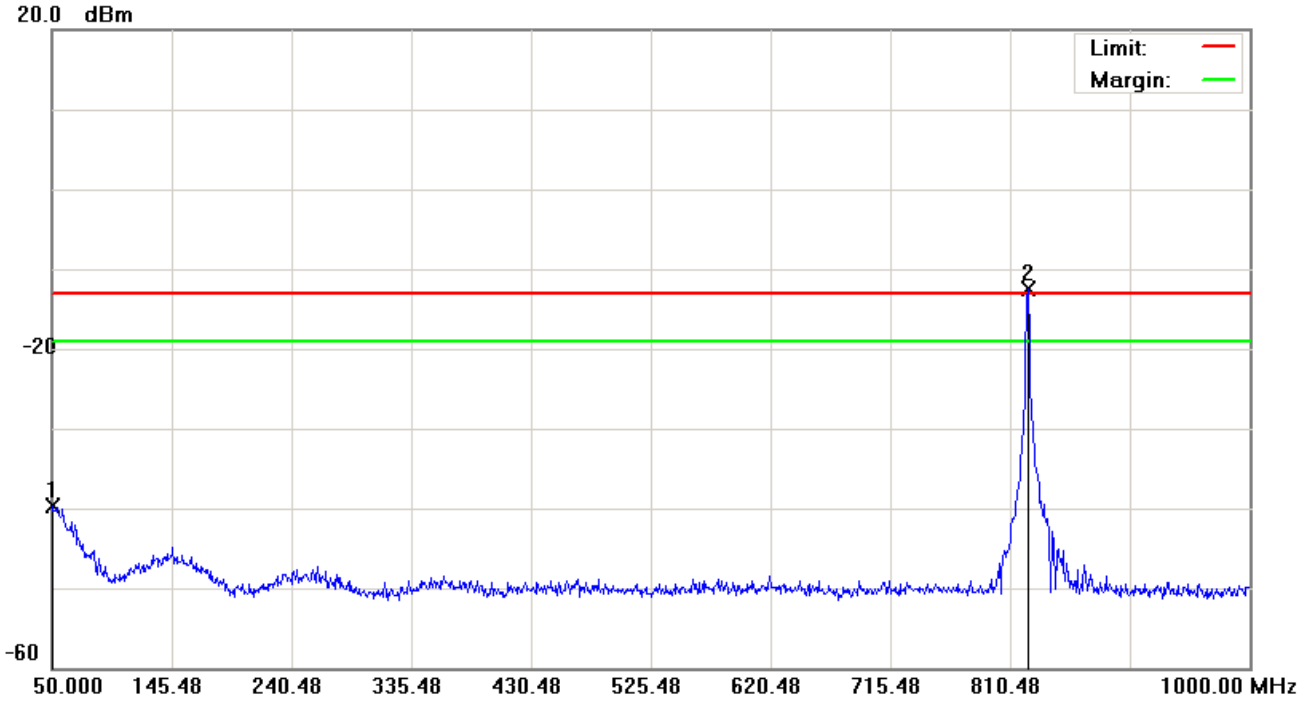
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	2.3086	-60.68	31.00	-29.68	-13.00	-16.68	peak			

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

File: TB100-0AC2UA7G (CH128) Data :#2 Date: 2013/1/25 Time: 上午 09:32:25



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

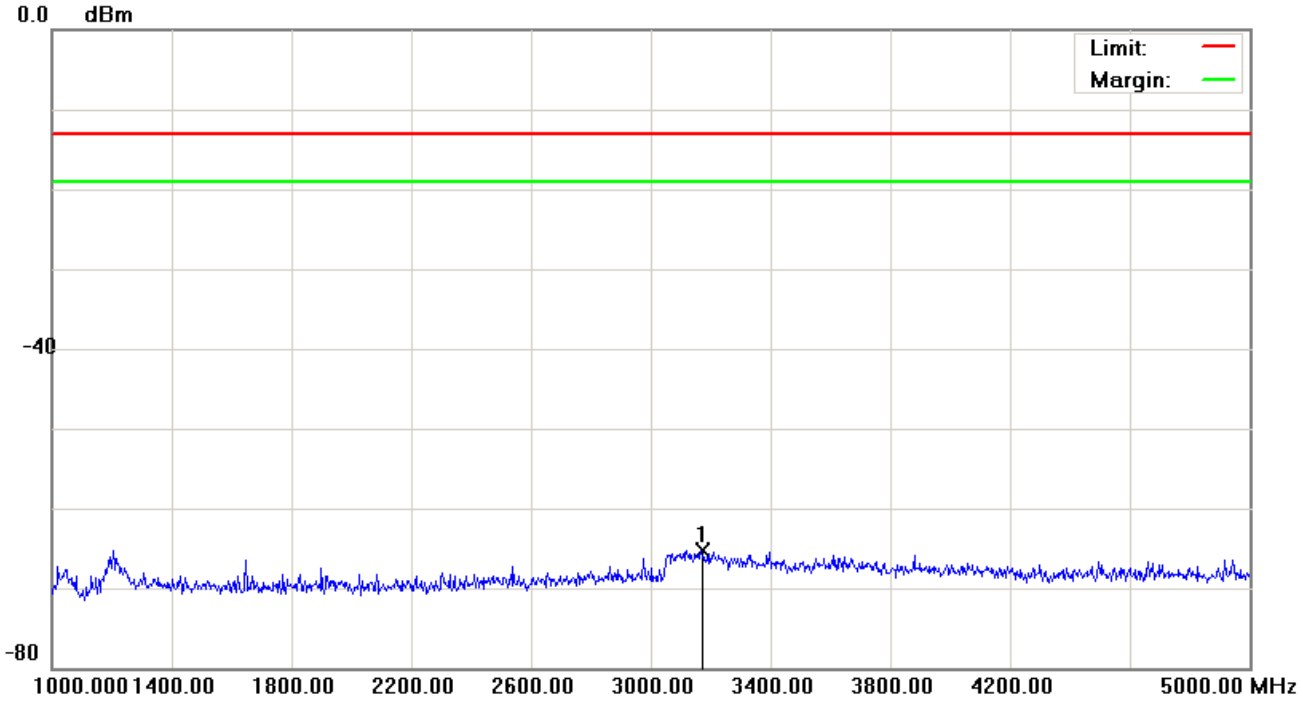
Polarization: ***Conducted po***
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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		50.4750	-54.35	14.61	-39.74	-13.00	-26.74	peak			
2	*	824.2500	-16.28	3.84	-12.44	-13.00	0.56	peak			Tx

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

File: TB100-0AC2UA7G (CH128) Data :#3 Date: 2013/1/25 Time: 上午 09:57:52



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

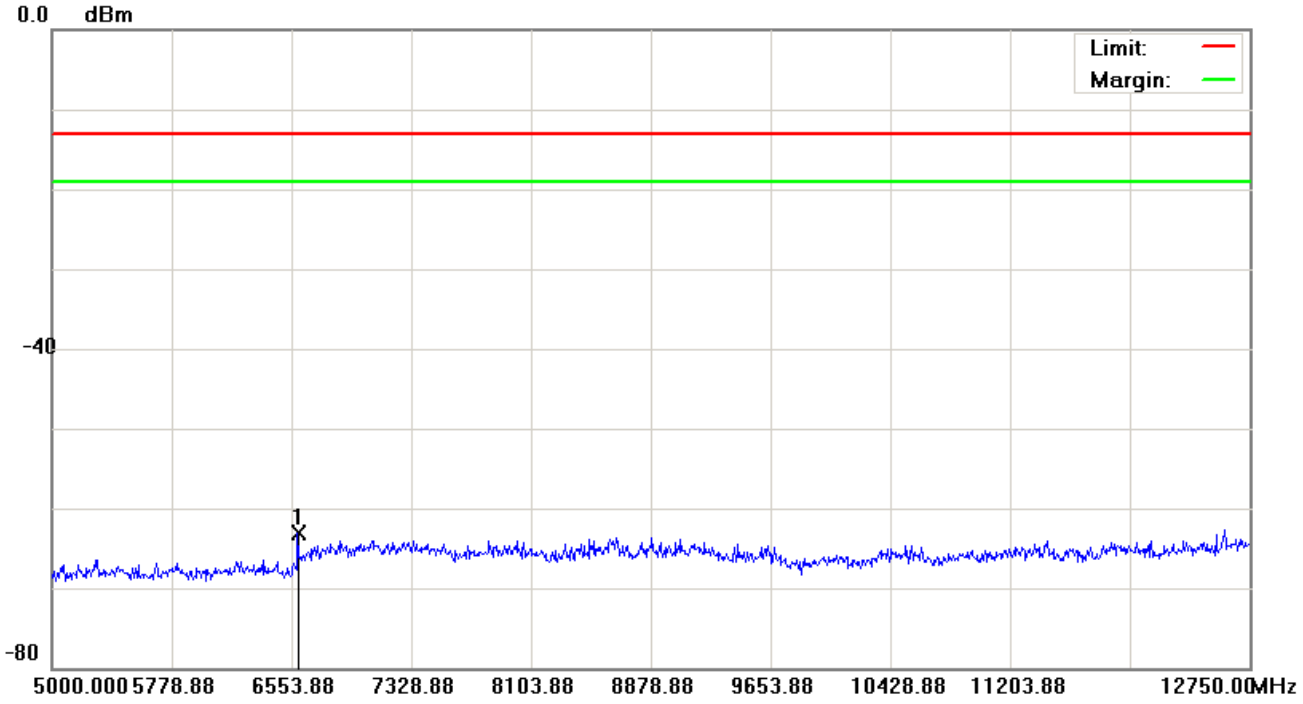
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	3170.000	-69.84	4.60	-65.24	-13.00	-52.24	peak			

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

File: TB100-0AC2UA7G (CH128) Data :#4 Date: 2013/1/25 Time: 上午 09:58:15



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

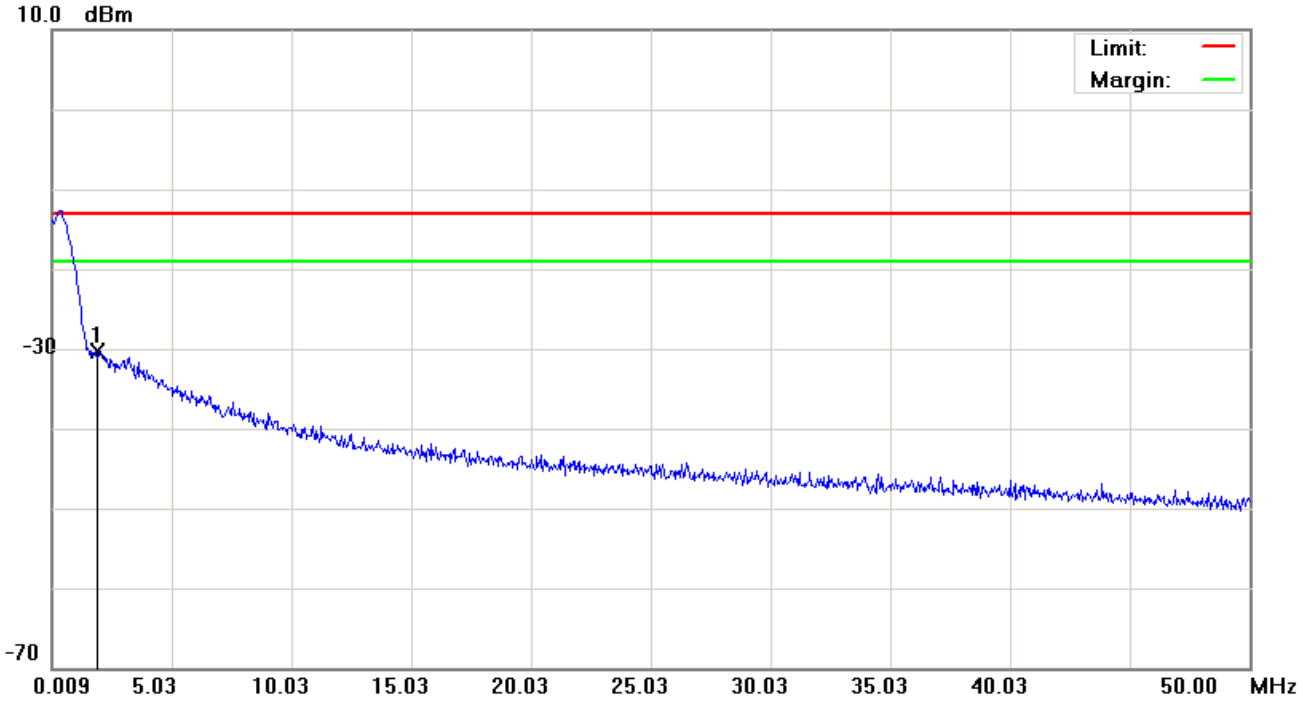
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	6592.625	-67.82	4.73	-63.09	-13.00	-50.09	peak			

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

File: TB100-0AC2UA7G (CH190) Data :#1 Date: 2013/1/25 Time: 上午 09:41:12



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

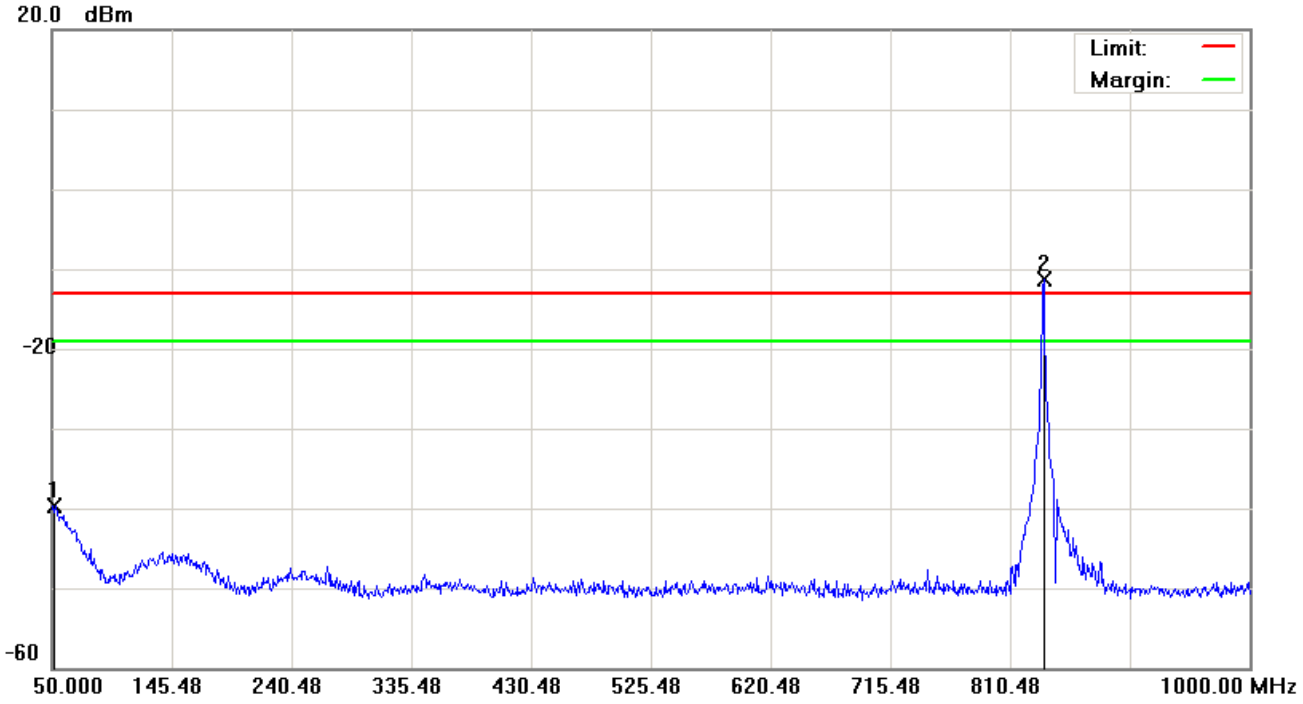
Polarization: ***Conducted po***
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	1.8836	-61.47	31.17	-30.30	-13.00	-17.30	peak			

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

File: TB100-0AC2UA7G (CH190) Data :#2 Date: 2013/1/25 Time: 上午 09:41:36



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

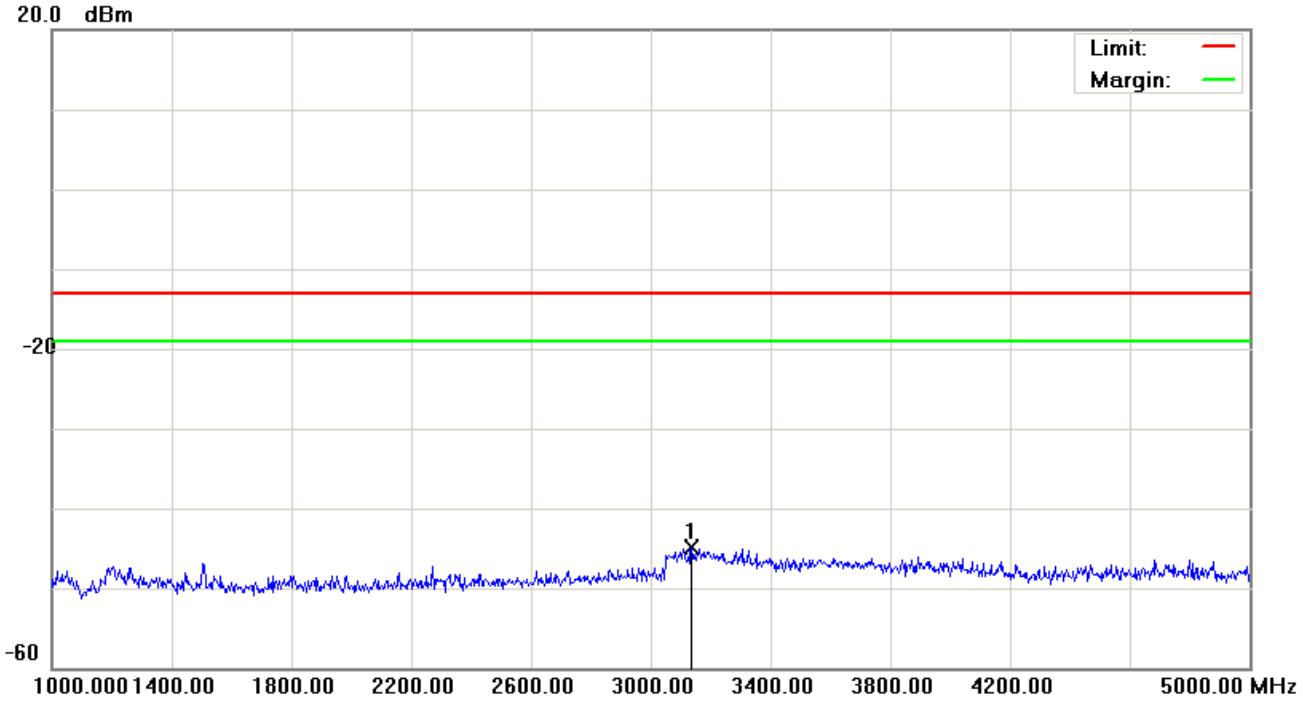
Polarization: ***Conducted po***
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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		51.4250	-54.11	14.44	-39.67	-13.00	-26.67	peak			
2	*	836.6000	-15.26	3.96	-11.30	-13.00	1.70	peak			Tx

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

File: TB100-0AC2UA7G (CH190) Data :#3 Date: 2013/1/25 Time: 上午 09:58:56



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

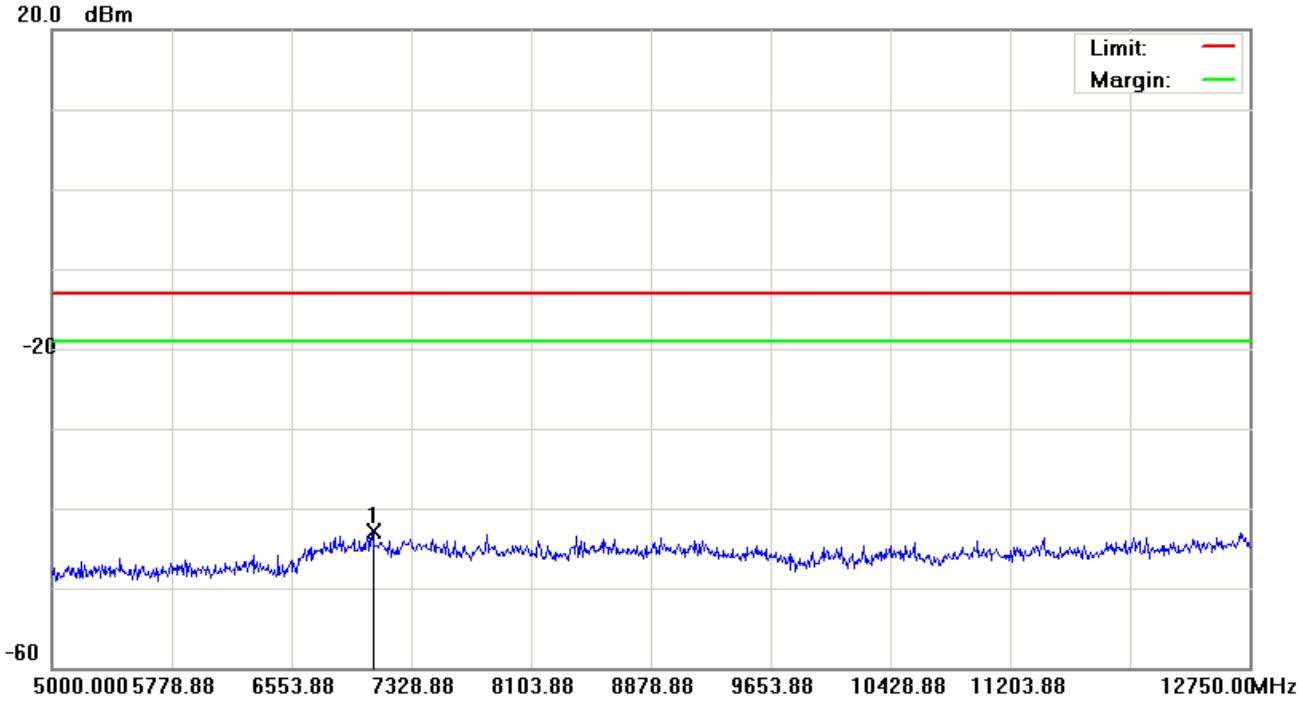
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	3136.000	-49.48	4.56	-44.92	-13.00	-31.92	peak			

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

File: TB100-0AC2UA7G (CH190) Data :#4 Date: 2013/1/25 Time: 上午 09:59:19



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

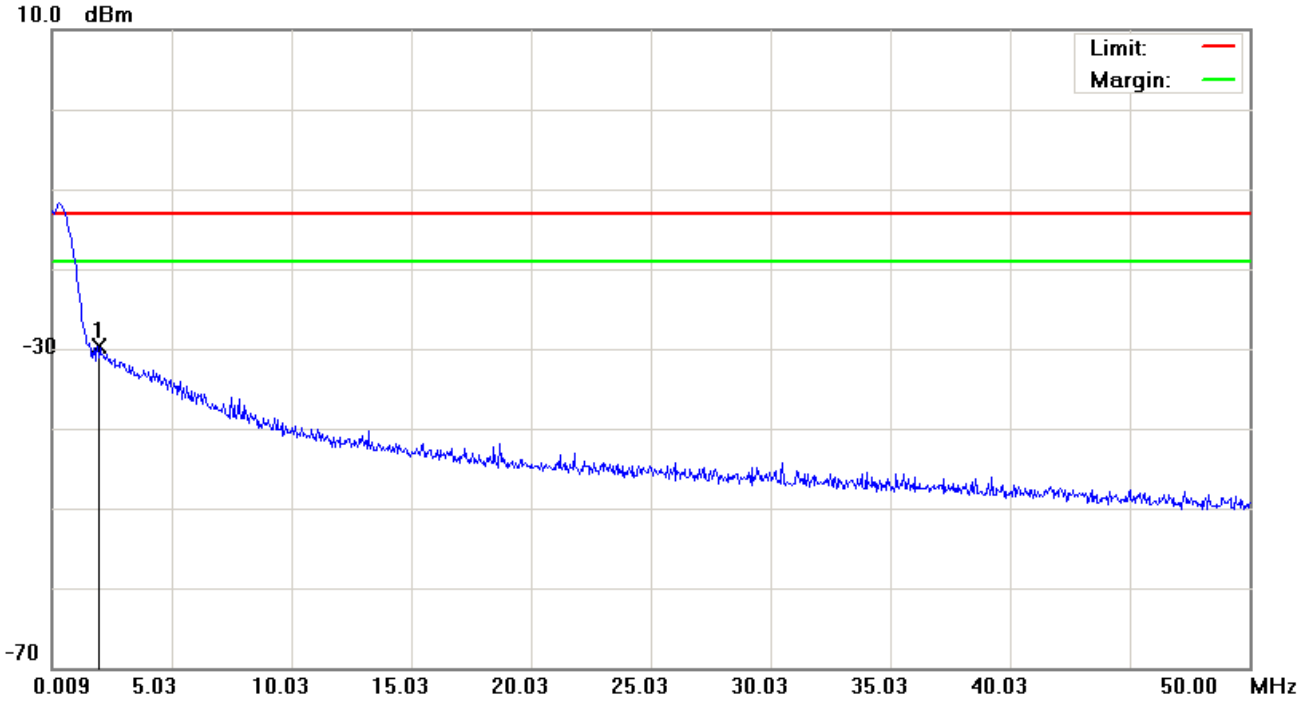
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	7073.125	-47.91	4.94	-42.97	-13.00	-29.97	peak			

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

File: TB100-0AC2UA7G CH251) Data :#1 Date: 2013/1/25 Time: 上午 09:52:45



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

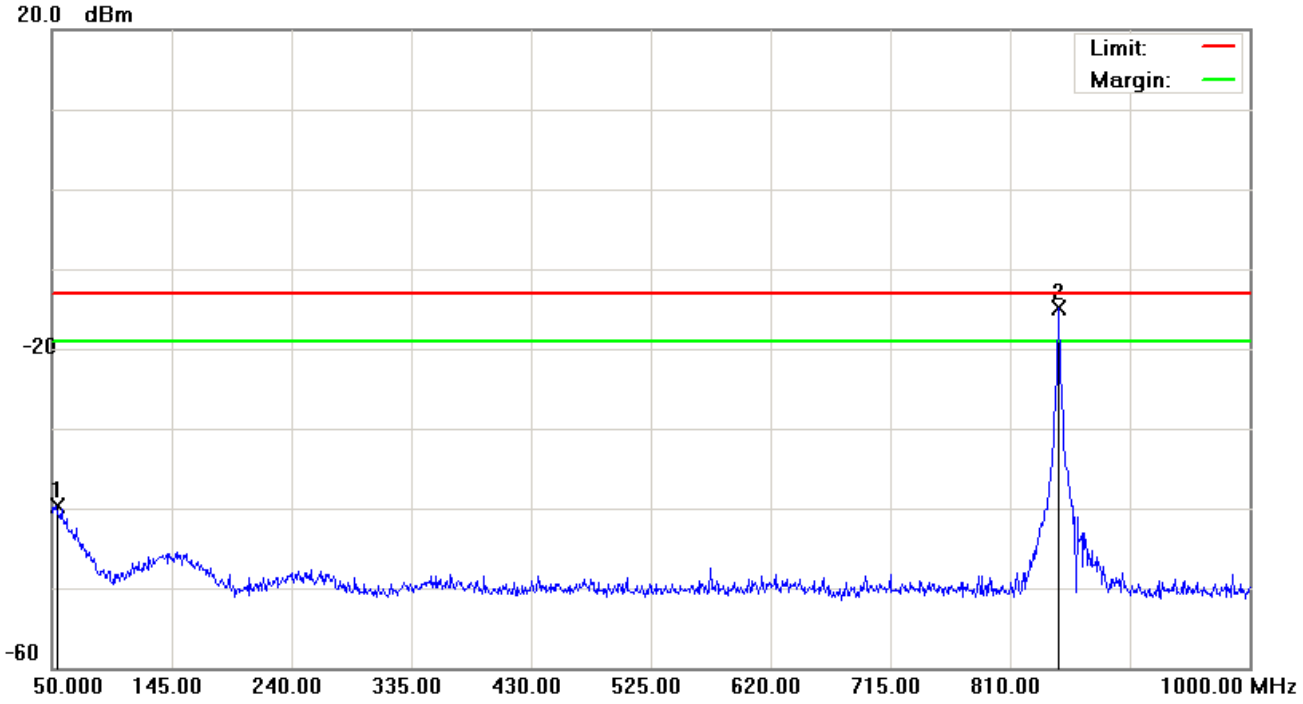
Polarization: ***Conducted po***
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	1.9336	-61.00	31.24	-29.76	-13.00	-16.76	peak			

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

File: TB100-0AC2UA7G (CH251) Data :#2 Date: 2013/1/25 Time: 上午 09:53:09



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

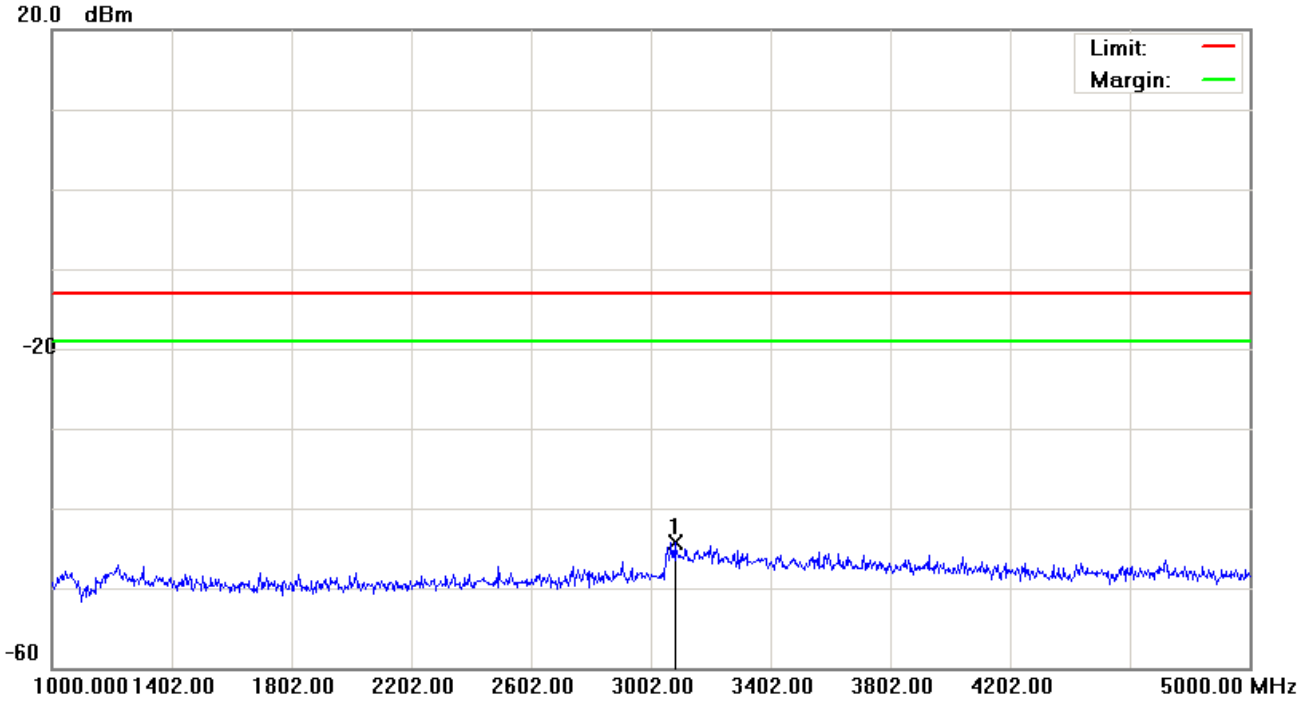
Polarization: ***Conducted po***
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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		53.3250	-53.74	14.10	-39.64	-13.00	-26.64	peak			
2	*	848.9500	-18.79	3.98	-14.81	-13.00	-1.81	peak			Tx

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

File: TB100-0AC2UA7G (CH251) Data :#3 Date: 2013/1/25 Time: 上午 09:59:54



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

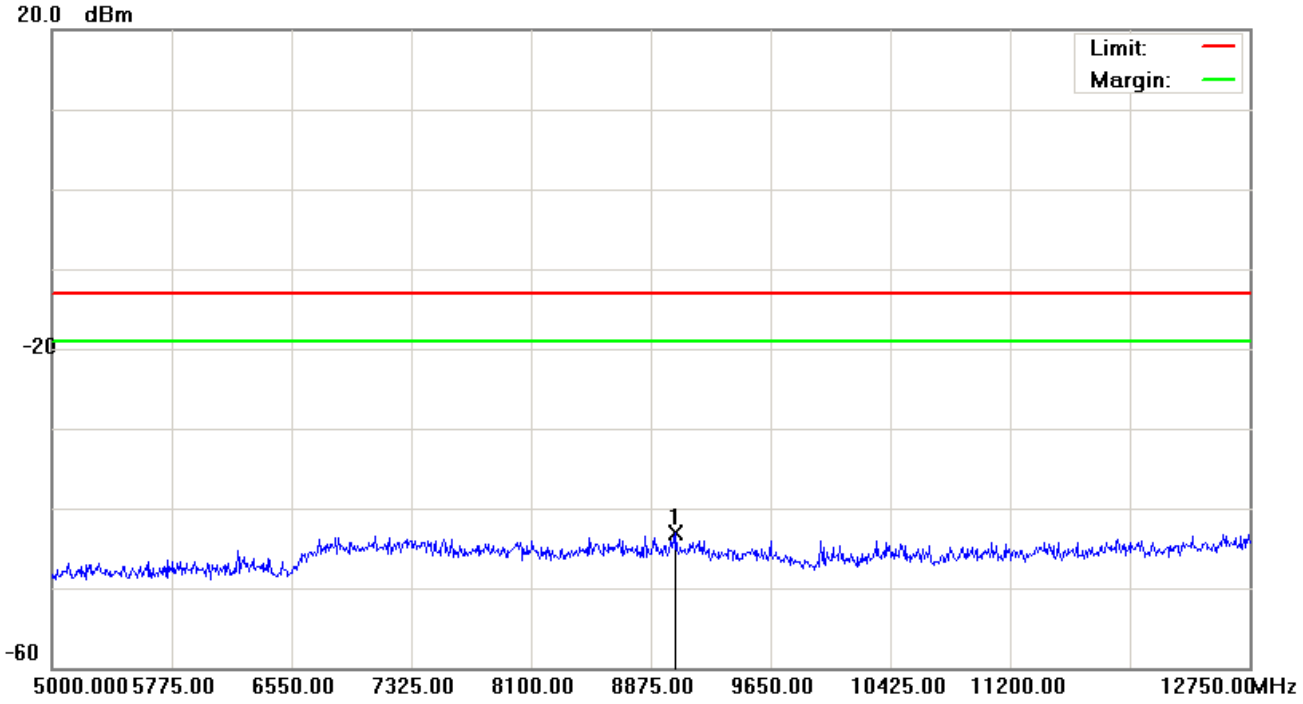
Polarization: *Conducted po*
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	3080.000	-48.67	4.46	-44.21	-13.00	-31.21	peak			

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

File: TB100-0AC2UA7G (CH251) Data :#4 Date: 2013/1/25 Time: 上午 10:00:17



Site: : RF Conducted
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS850
Note:

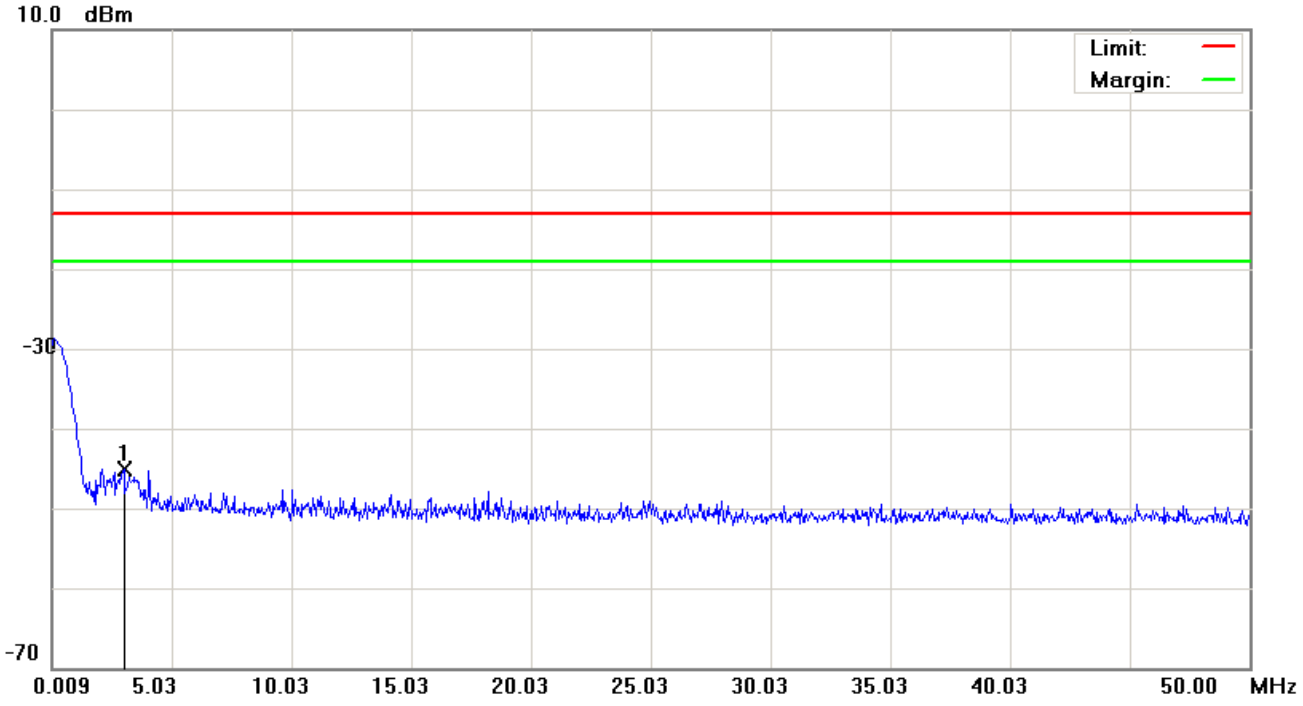
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	9037.750	-48.55	5.44	-43.11	-13.00	-30.11	peak			

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

File: TB100-0AC2UA7G (CH512) Data :#1 Date: 2013/1/24 Time: 下午 05:23:08



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

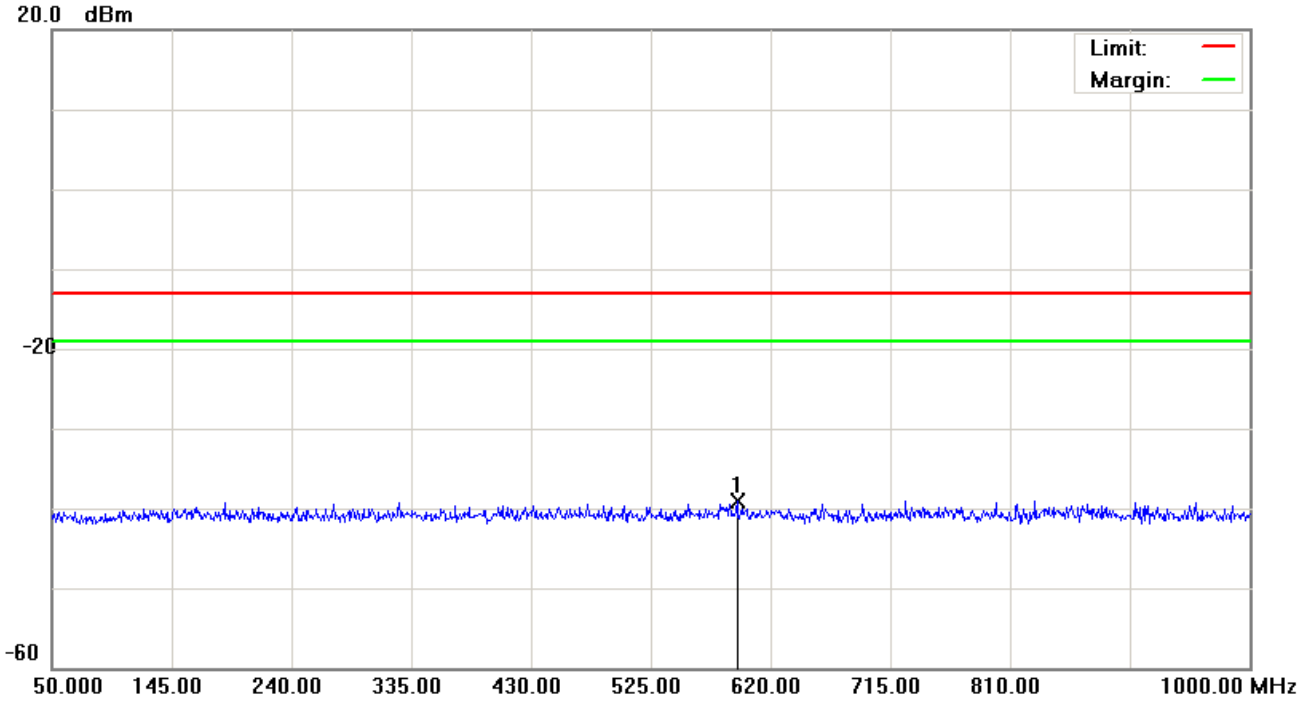
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	3.0085	-58.17	12.98	-45.19	-13.00	-32.19	peak			

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

File: TB100-0AC2UA7G (CH512) Data :#2 Date: 2013/1/24 Time: 下午 05:23:32



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

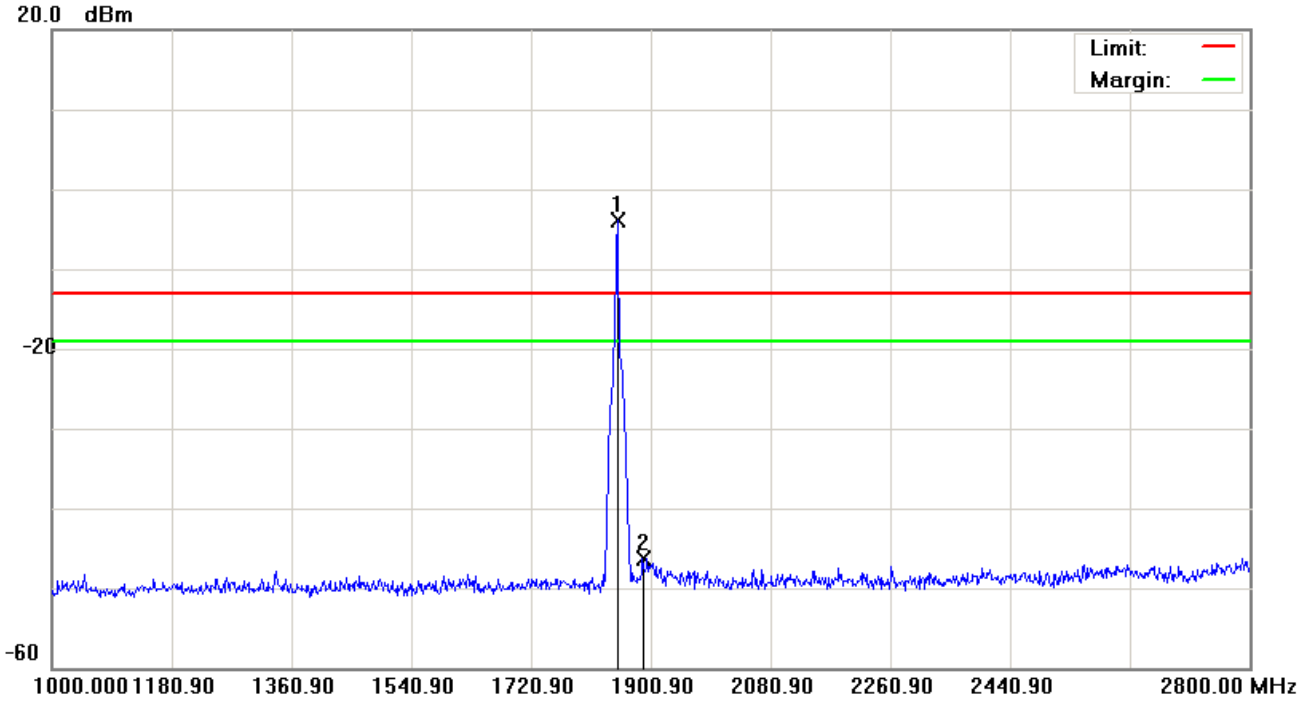
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	593.4000	-52.20	13.19	-39.01	-13.00	-26.01	peak			

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

File: TB100-0AC2UA7G (CH512) Data :#3 Date: 2013/1/24 Time: 下午 05:28:33



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

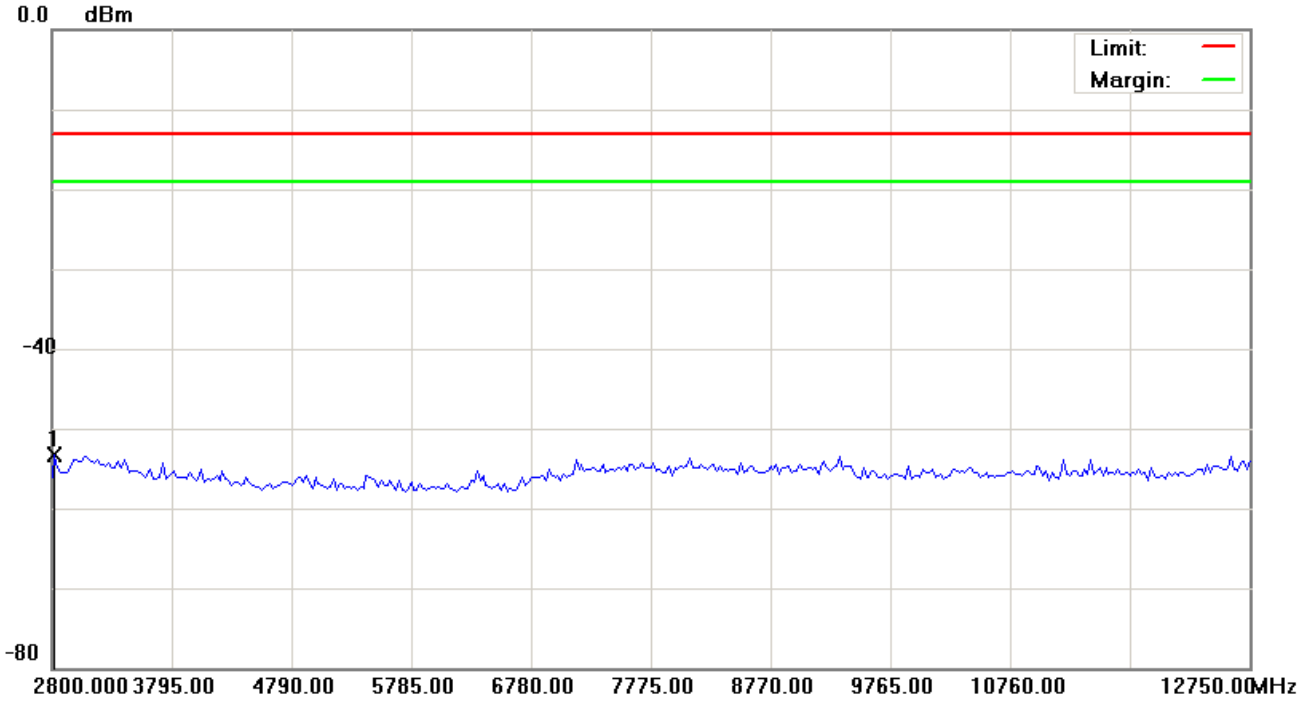
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	-8.08	4.26	-3.82	-13.00	9.18	peak			Tx
2		1888.300	-51.67	5.46	-46.21	-13.00	-33.21	peak			

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

File: TB100-0AC2UA7G (CH512) Data :#4 Date: 2013/1/25 Time: 上午 10:08:01



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

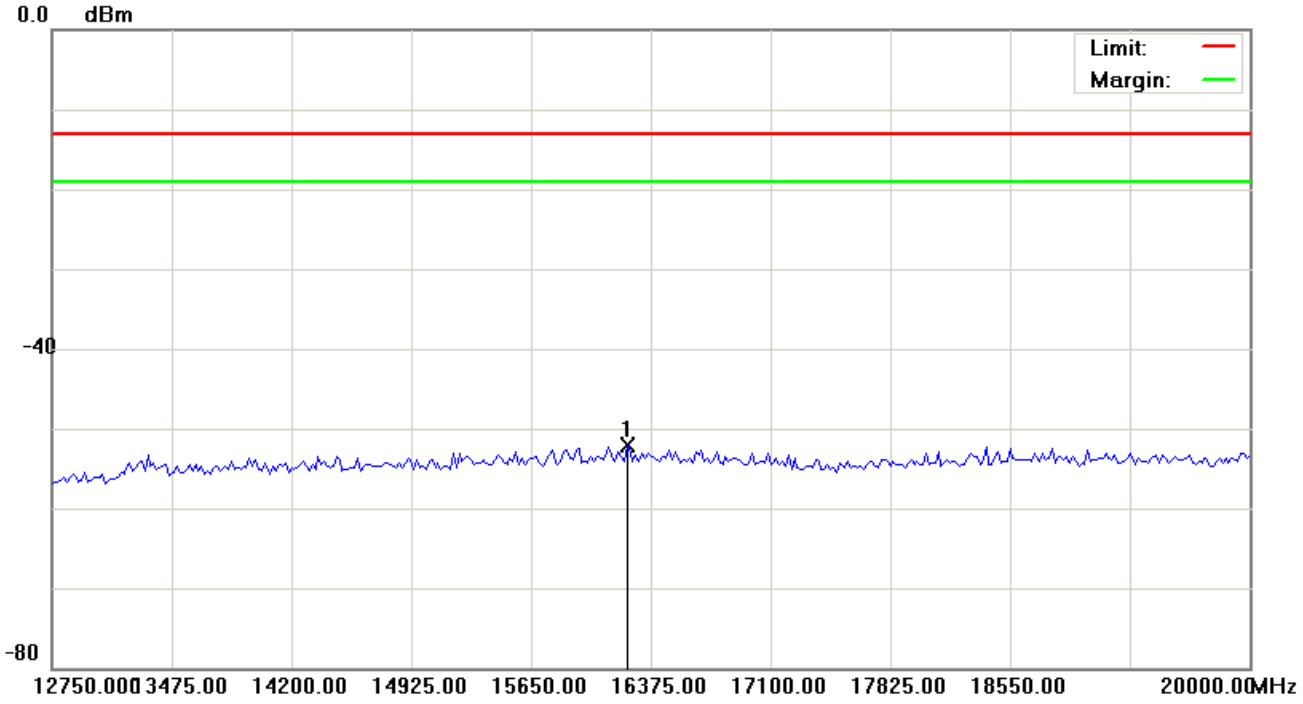
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	2824.875	-59.23	5.87	-53.36	-13.00	-40.36	peak			

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

File: TB100-0AC2UA7G (CH512) Data :#5 Date: 2013/1/25 Time: 上午 10:08:21



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

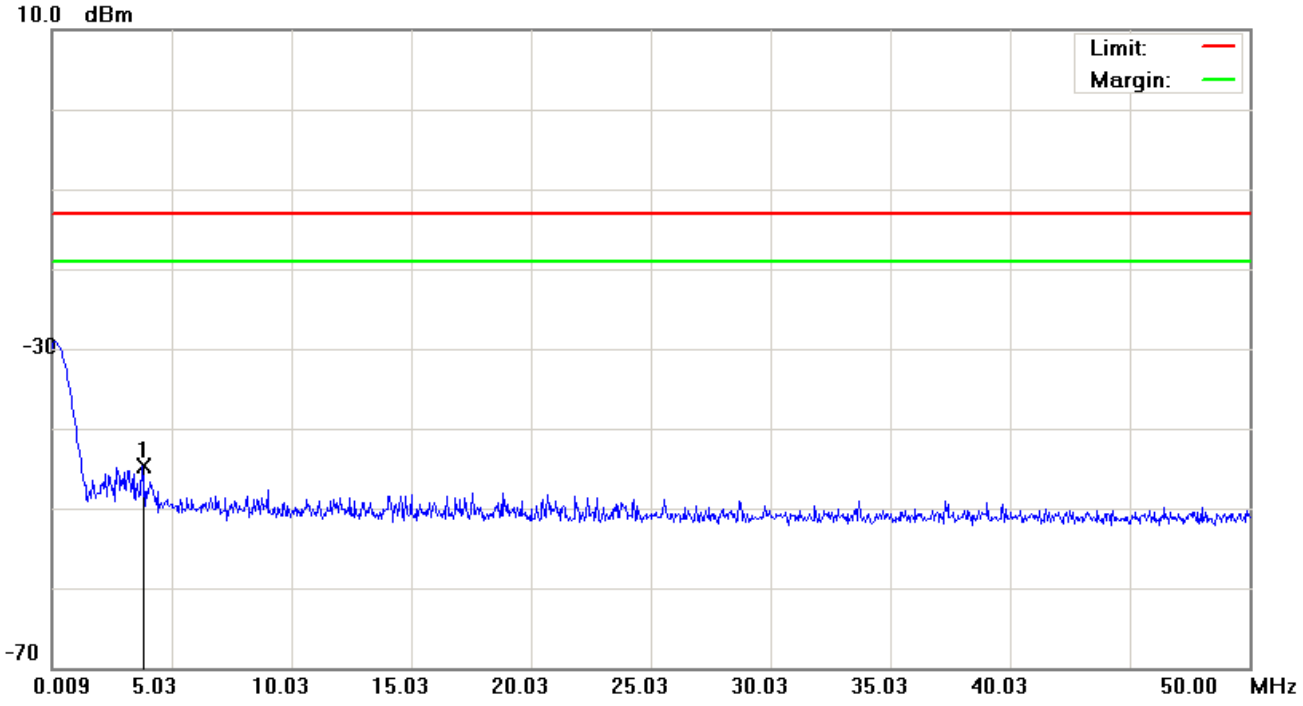
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	16230.000	-58.52	6.36	-52.16	-13.00	-39.16	peak			

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

File: TB100-0AC2UA7G (CH661) Data :#1 Date: 2013/1/24 Time: 下午 05:24:13



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

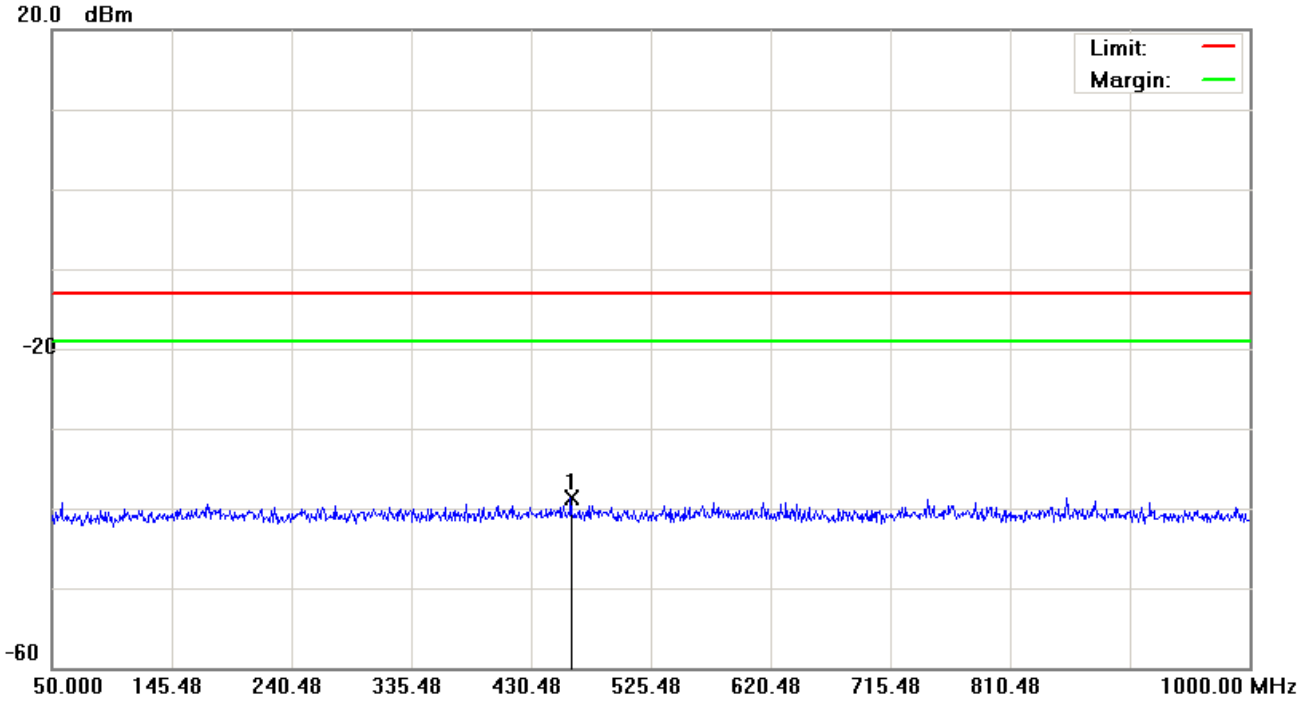
Polarization: ***Conducted po***
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	3.7833	-57.80	13.19	-44.61	-13.00	-31.61	peak			

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

File: TB100-0AC2UA7G (CH661) Data :#2 Date: 2013/1/24 Time: 下午 05:24:37



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

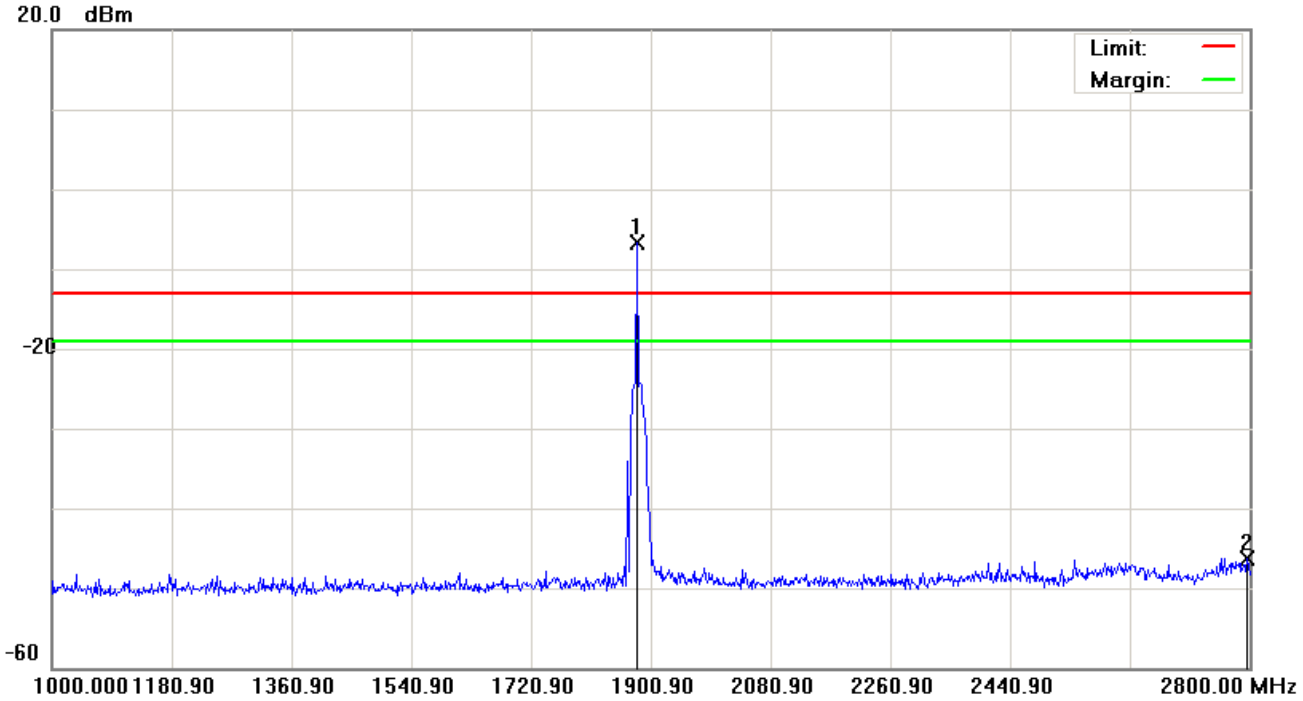
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	461.8250	-51.96	13.20	-38.76	-13.00	-25.76	peak			

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

File: TB100-0AC2UA7G (CH661) Data :#3 Date: 2013/1/24 Time: 下午 05:29:44



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

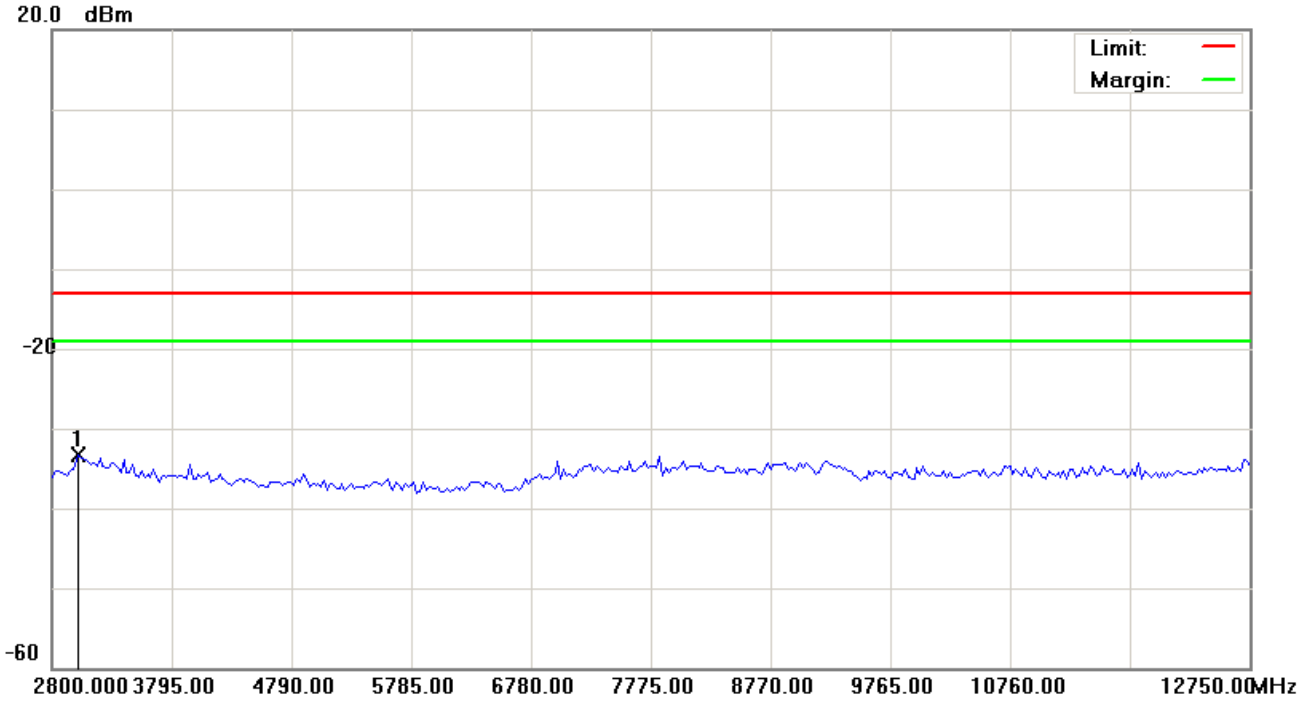
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	-11.28	4.65	-6.63	-13.00	6.37	peak			Tx
2		2796.400	-52.16	5.90	-46.26	-13.00	-33.26	peak			

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

File: TB100-0AC2UA7G (CH661) Data :#4 Date: 2013/1/25 Time: 上午 10:08:53



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

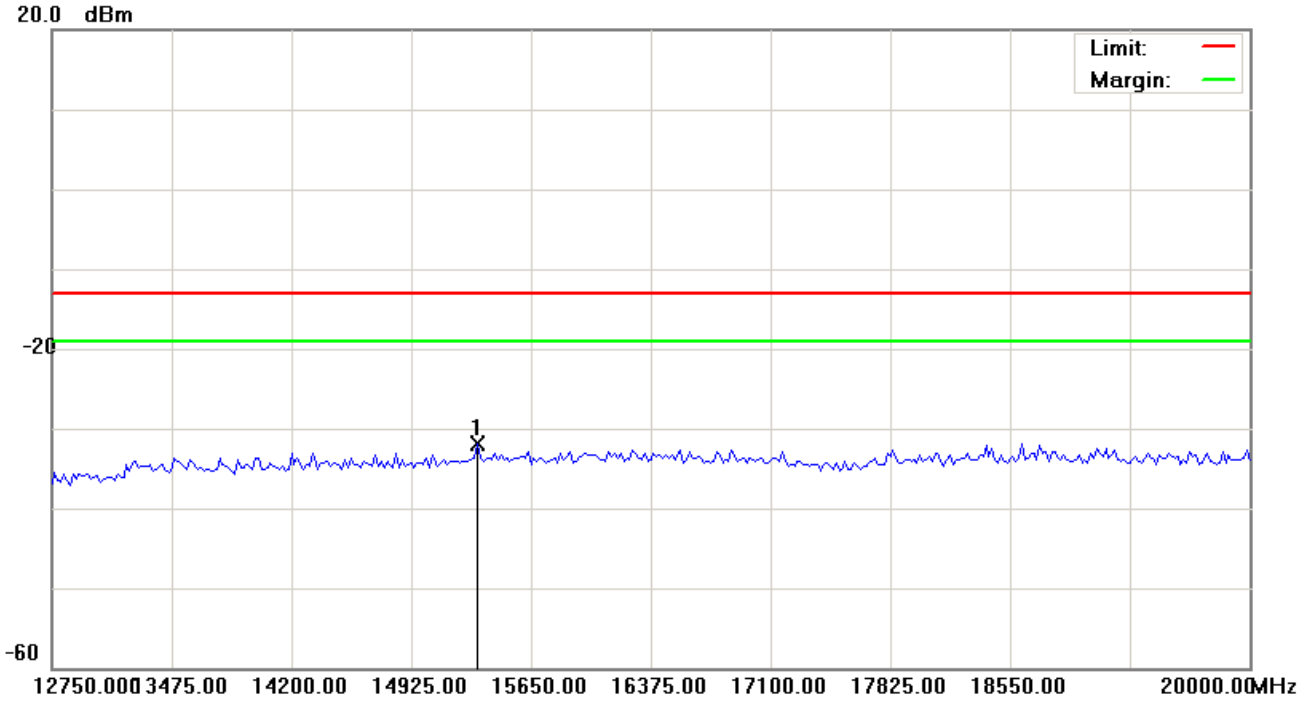
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	3023.875	-38.70	5.48	-33.22	-13.00	-20.22	peak			

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

File: TB100-0AC2UA7G (CH661) Data :#5 Date: 2013/1/25 Time: 上午 10:09:12



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

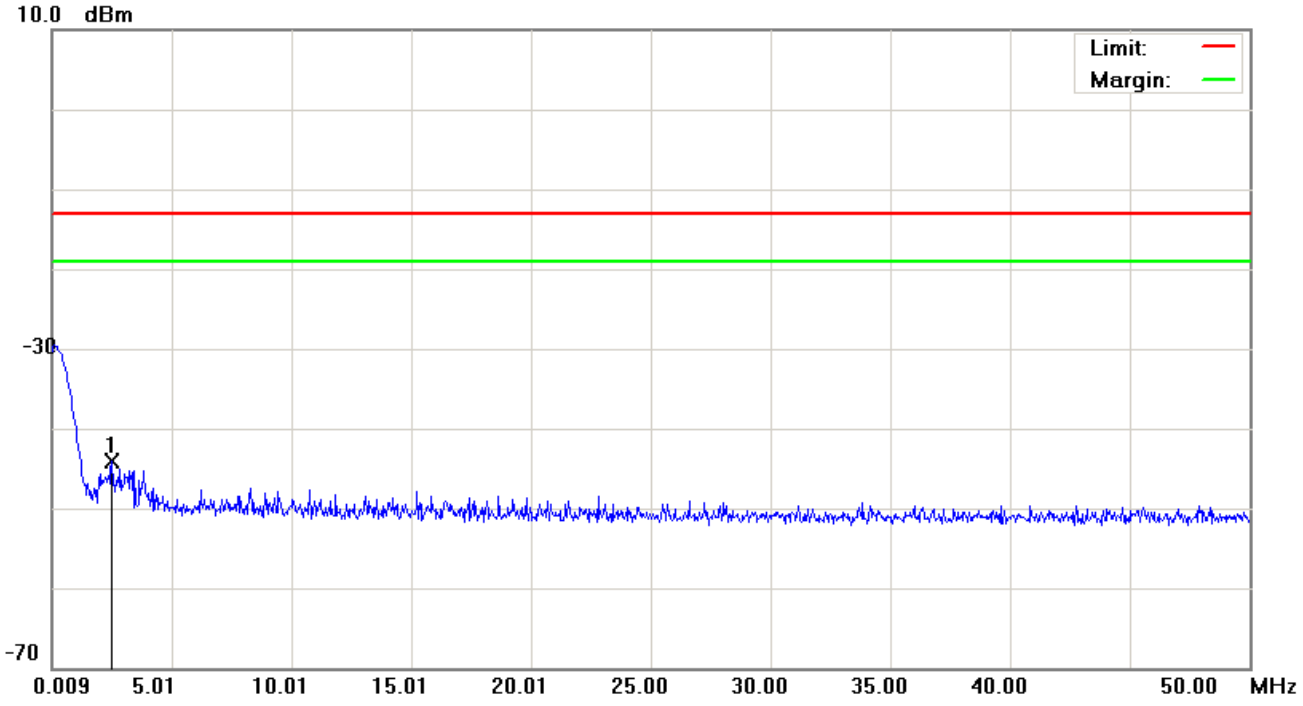
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	15323.750	-37.90	6.10	-31.80	-13.00	-18.80	peak			

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

File: TB100-0AC2UA7G CH810) Data :#1 Date: 2013/1/24 Time: 下午 05:25:17



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

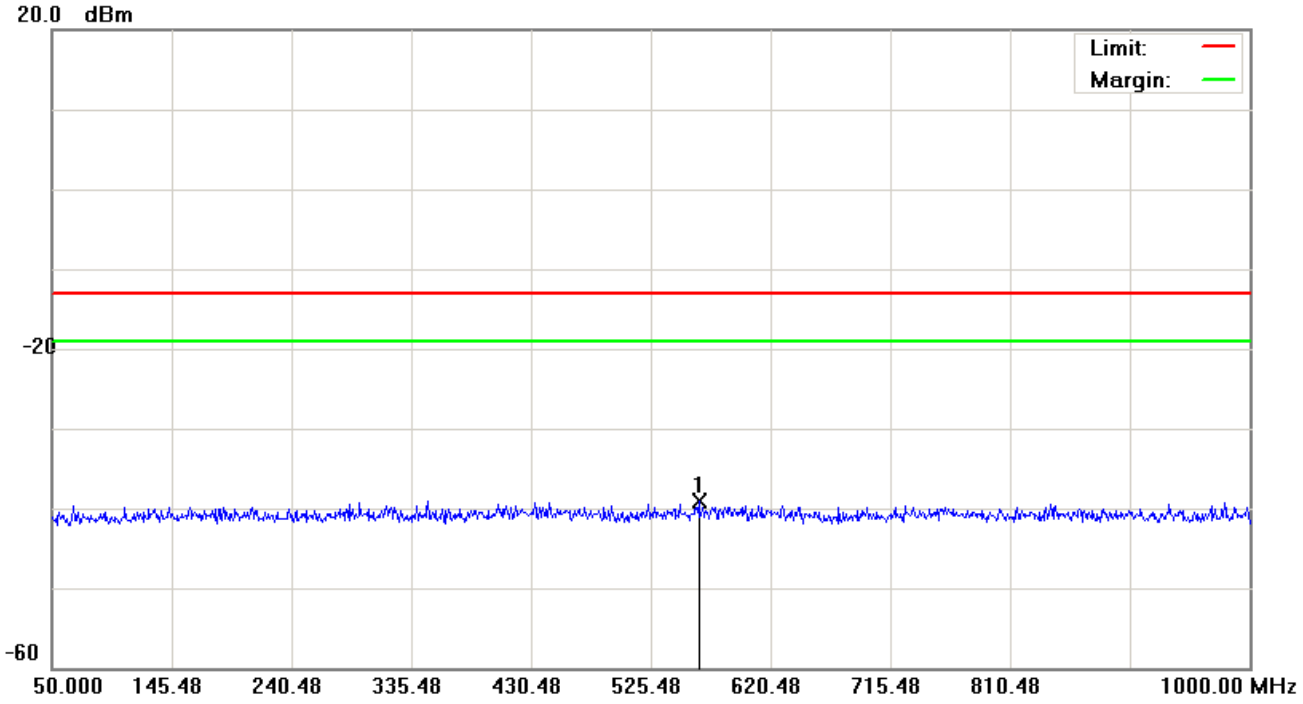
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	2.5085	-57.04	12.89	-44.15	-13.00	-31.15	peak			

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

File: TB100-0AC2UA7G (CH810) Data :#2 Date: 2013/1/24 Time: 下午 05:25:41



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

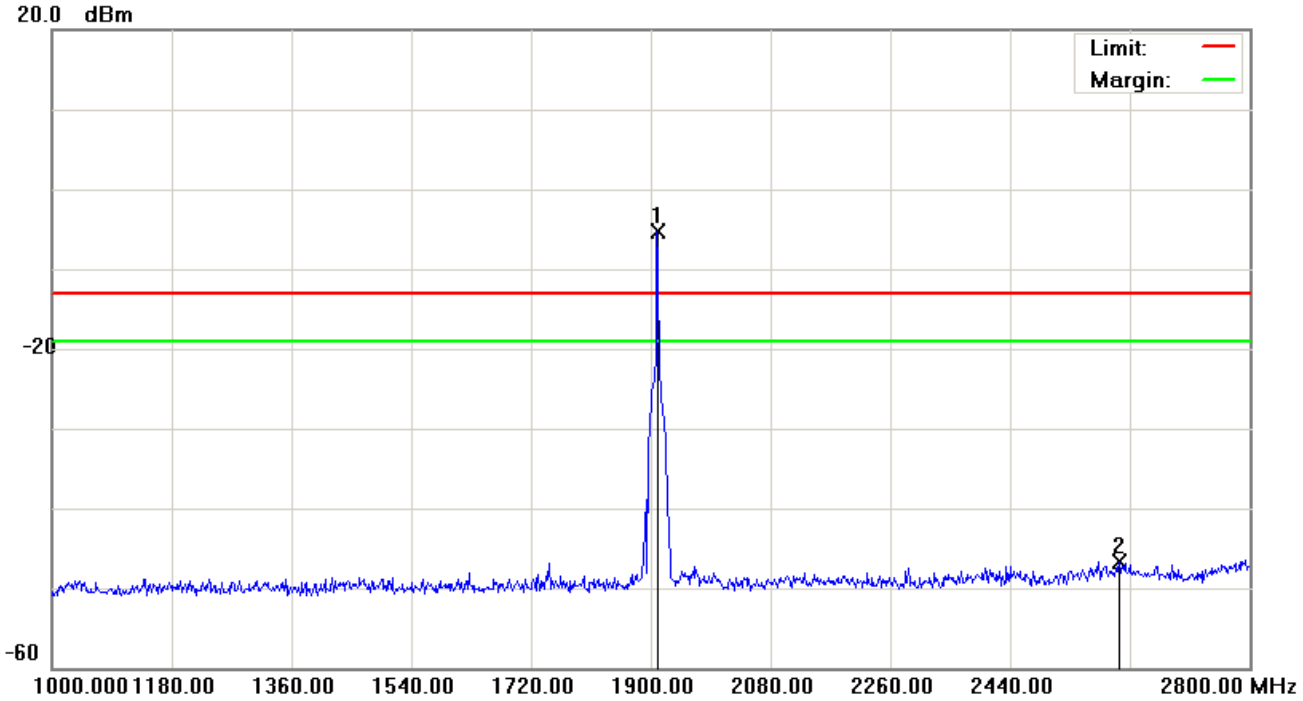
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	563.0000	-52.13	13.12	-39.01	-13.00	-26.01	peak			

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

File: TB100-0AC2UA7G (CH810) Data :#3 Date: 2013/1/24 Time: 下午 05:31:39



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

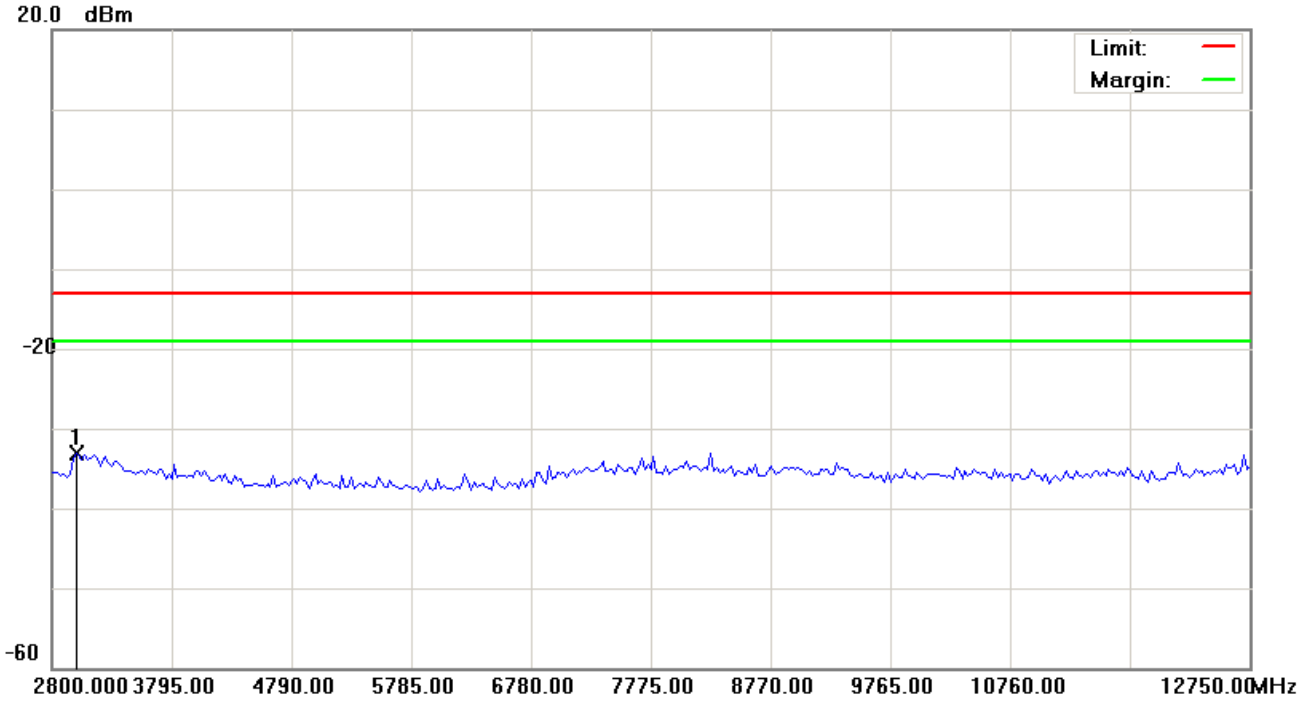
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	-11.01	5.71	-5.30	-13.00	7.70	peak			Tx
2		2603.800	-52.09	5.45	-46.64	-13.00	-33.64	peak			

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

File: TB100-0AC2UA7G (CH810) Data :#4 Date: 2013/1/25 Time: 上午 10:09:43



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

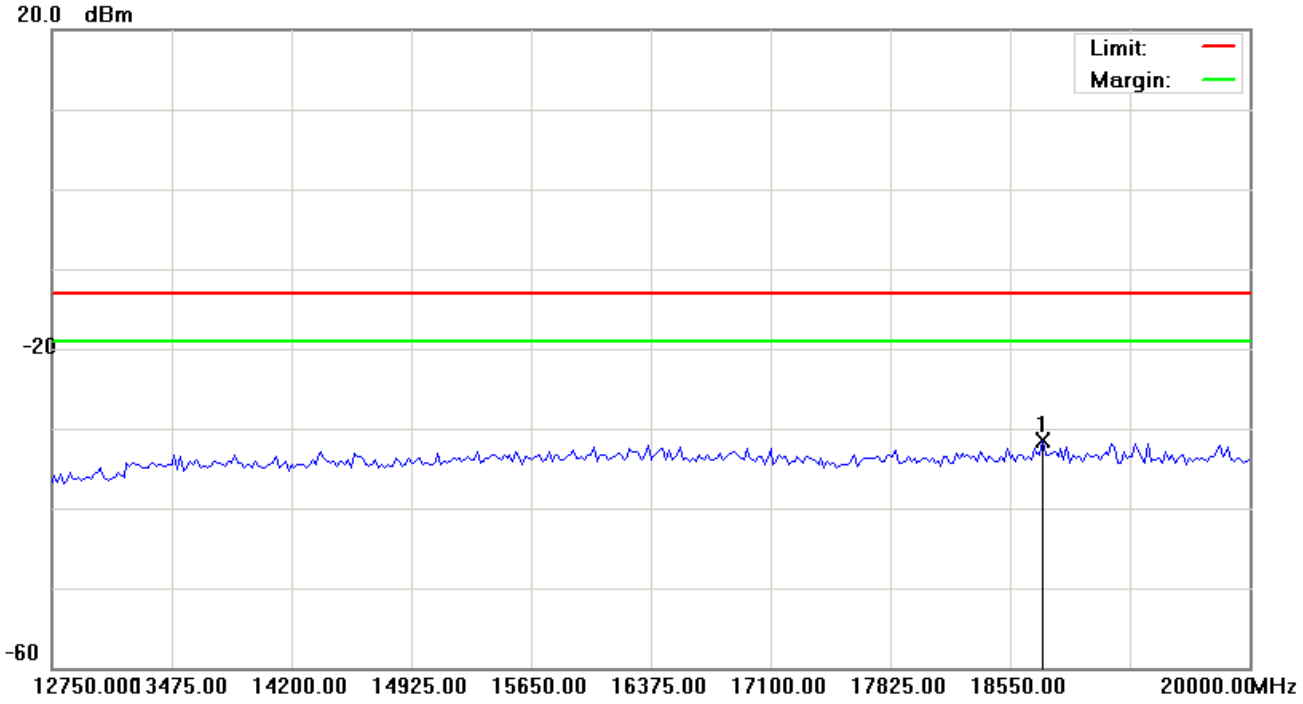
Polarization: Conducted po
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	2999.000	-38.50	5.48	-33.02	-13.00	-20.02	peak			

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

File: TB100-0AC2UA7G (CH810) Data :#5 Date: 2013/1/25 Time: 上午 10:10:03



Site: : RF Conducted
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Tablet Computer
M/N: TB100-0AC2UA7G
Mode: GPRS1900
Note:

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

Temperature: 23 ℃
Humidity: 55.2 %
RBW: 1000 KHz VBW: 1000 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	*	18749.375	-38.50	7.08	-31.42	-13.00	-18.42	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.

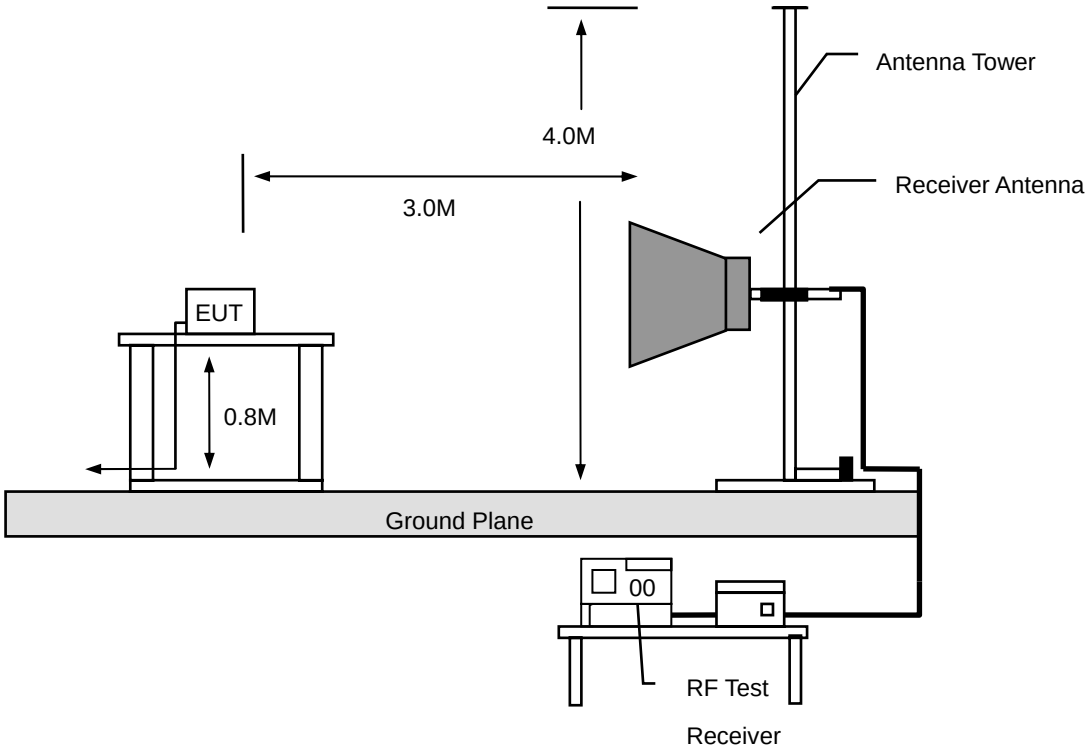
It is measured by means of a calibrated spectrum analyzer and scanned from 30 MHz up to a frequency including its 10th harmonic.

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	02/22/2012	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/22/2012	(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:	TB100-0AC2UA7G	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	01/31/2013
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
156.5000	-66.00	0.33	-65.67	-13.00	-52.67	peak	H
260.0000	-58.85	-4.34	-63.19	-13.00	-50.19	peak	H
390.0000	-73.09	1.66	-71.43	-13.00	-58.43	peak	H
497.0000	-69.82	6.79	-63.03	-13.00	-50.03	peak	H
564.0000	-73.01	7.78	-65.23	-13.00	-52.23	peak	H
728.0000	-78.51	7.78	-70.73	-13.00	-57.73	peak	H
3328.000	-70.06	18.62	-51.44	-13.00	-38.44	peak	H
5428.000	-71.81	25.73	-46.08	-13.00	-33.08	peak	H
7732.000	-72.33	33.73	-38.60	-13.00	-25.60	peak	H
130.5000	-76.78	14.10	-62.68	-13.00	-49.68	peak	V
220.0000	-70.65	5.29	-65.36	-13.00	-52.36	peak	V
370.0000	-73.21	2.03	-71.18	-13.00	-58.18	peak	V
472.5000	-75.66	2.13	-73.53	-13.00	-60.53	peak	V
624.0000	-78.82	8.83	-69.99	-13.00	-56.99	peak	V
700.0000	-77.45	10.19	-67.26	-13.00	-54.26	peak	V
2956.000	-68.45	19.90	-48.55	-13.00	-35.55	peak	V
5284.000	-72.55	27.54	-45.01	-13.00	-32.01	peak	V
7600.000	-72.57	30.95	-41.62	-13.00	-28.62	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	TB100-0AC2UA7G	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	01/31/2013
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
158.5000	-67.31	0.97	-66.34	-13.00	-53.34	peak	H
260.0000	-58.41	-4.34	-62.75	-13.00	-49.75	peak	H
390.0000	-73.46	1.66	-71.80	-13.00	-58.80	peak	H
497.0000	-70.35	6.79	-63.56	-13.00	-50.56	peak	H
602.5000	-75.43	7.91	-67.52	-13.00	-54.52	peak	H
728.0000	-77.09	7.78	-69.31	-13.00	-56.31	peak	H
3124.000	-69.47	18.08	-51.39	-13.00	-38.39	peak	H
5260.000	-71.68	24.95	-46.73	-13.00	-33.73	peak	H
7492.000	-72.83	33.76	-39.07	-13.00	-26.07	peak	H
129.0000	-75.95	13.37	-62.58	-13.00	-49.58	peak	V
260.0000	-67.74	-1.56	-69.30	-13.00	-56.30	peak	V
390.0000	-69.69	1.49	-68.20	-13.00	-55.20	peak	V
490.5000	-76.85	2.58	-74.27	-13.00	-61.27	peak	V
639.0000	-77.18	8.64	-68.54	-13.00	-55.54	peak	V
760.0000	-77.80	10.96	-66.84	-13.00	-53.84	peak	V
2836.000	-69.97	19.05	-50.92	-13.00	-37.92	peak	V
5008.000	-71.28	27.11	-44.17	-13.00	-31.17	peak	H
7276.000	-72.04	30.85	-41.19	-13.00	-28.19	peak	H

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	TB100-0AC2UA7G	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	1	Date:	01/31/2013
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
158.0000	-65.99	0.82	-65.17	-13.00	-52.17	peak	H
260.0000	-59.96	-4.34	-64.30	-13.00	-51.30	peak	H
390.0000	-72.69	1.66	-71.03	-13.00	-58.03	peak	H
497.0000	-69.54	6.79	-62.75	-13.00	-49.75	peak	H
608.5000	-77.27	7.83	-69.44	-13.00	-56.44	peak	H
757.5000	-78.05	8.97	-69.08	-13.00	-56.08	peak	H
3148.000	-68.61	18.14	-50.47	-13.00	-37.47	peak	H
5380.000	-72.44	25.50	-46.94	-13.00	-33.94	peak	H
7756.000	-72.38	33.72	-38.66	-13.00	-25.66	peak	H
129.0000	-76.40	13.37	-63.03	-13.00	-50.03	peak	V
208.0000	-76.14	9.19	-66.95	-13.00	-53.95	peak	V
370.0000	-73.29	2.03	-71.26	-13.00	-58.26	peak	V
497.0000	-75.69	2.69	-73.00	-13.00	-60.00	peak	V
639.0000	-77.97	8.64	-69.33	-13.00	-56.33	peak	V
760.0000	-76.48	10.96	-65.52	-13.00	-52.52	peak	V
3076.000	-69.16	20.66	-48.50	-13.00	-35.50	peak	V
5776.000	-71.49	27.82	-43.67	-13.00	-30.67	peak	V
7852.000	-73.25	30.60	-42.65	-13.00	-29.65	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	TB100-0AC2UA7G	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	01/31/2013
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
155.5000	-67.17	0.01	-67.16	-13.00	-54.16	peak	H
260.0000	-60.45	-4.34	-64.79	-13.00	-51.79	peak	H
390.0000	-71.59	1.66	-69.93	-13.00	-56.93	peak	H
497.0000	-69.81	6.79	-63.02	-13.00	-50.02	peak	H
654.0000	-79.67	7.06	-72.61	-13.00	-59.61	peak	H
820.5000	-79.50	11.92	-67.58	-13.00	-54.58	peak	H
2980.000	-69.89	17.68	-52.21	-13.00	-39.21	peak	H
5200.000	-71.74	24.67	-47.07	-13.00	-34.07	peak	H
7396.000	-72.76	33.55	-39.21	-13.00	-26.21	peak	H
160.0000	-74.86	12.68	-62.18	-13.00	-49.18	peak	V
260.0000	-68.06	-1.56	-69.62	-13.00	-56.62	peak	V
390.0000	-67.99	1.49	-66.50	-13.00	-53.50	peak	V
520.0000	-77.35	3.11	-74.24	-13.00	-61.24	peak	V
680.0000	-78.81	9.56	-69.25	-13.00	-56.25	peak	V
830.0000	-79.47	11.31	-68.16	-13.00	-55.16	peak	V
2896.000	-68.99	19.48	-49.51	-13.00	-36.51	peak	V
4912.000	-70.76	26.95	-43.81	-13.00	-30.81	peak	V
7312.000	-71.91	30.89	-41.02	-13.00	-28.02	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	TB100-0AC2UA7G	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	01/31/2013
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
160.5000	-68.48	1.05	-67.43	-13.00	-54.43	peak	H
260.0000	-59.81	-4.34	-64.15	-13.00	-51.15	peak	H
390.0000	-71.16	1.66	-69.50	-13.00	-56.50	peak	H
497.0000	-71.59	6.79	-64.80	-13.00	-51.80	peak	H
632.0000	-79.59	7.16	-72.43	-13.00	-59.43	peak	H
831.0000	-80.20	12.03	-68.17	-13.00	-55.17	peak	H
3100.000	-68.55	18.01	-50.54	-13.00	-37.54	peak	H
5500.000	-73.14	26.05	-47.09	-13.00	-34.09	peak	H
7828.000	-72.84	33.70	-39.14	-13.00	-26.14	peak	H
158.0000	-74.05	11.73	-62.32	-13.00	-49.32	peak	V
260.0000	-68.18	-1.56	-69.74	-13.00	-56.74	peak	V
390.0000	-66.73	1.49	-65.24	-13.00	-52.24	peak	V
520.0000	-78.19	3.11	-75.08	-13.00	-62.08	peak	V
639.0000	-77.36	8.64	-68.72	-13.00	-55.72	peak	V
800.5000	-79.20	11.85	-67.35	-13.00	-54.35	peak	V
2764.000	-68.45	18.53	-49.92	-13.00	-36.92	peak	V
4972.000	-70.95	27.06	-43.89	-13.00	-30.89	peak	V
7276.000	-72.77	30.85	-41.92	-13.00	-28.92	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	TB100-0AC2UA7G	Temp.(℃)/Hum.(%RH):	26(℃)/60%RH
Mode:	2	Date:	01/31/2013
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
155.5000	-66.96	0.01	-66.95	-13.00	-53.95	peak	H
260.0000	-58.62	-4.34	-62.96	-13.00	-49.96	peak	H
390.0000	-72.16	1.66	-70.50	-13.00	-57.50	peak	H
497.0000	-71.81	6.79	-65.02	-13.00	-52.02	peak	H
680.0000	-77.64	7.02	-70.62	-13.00	-57.62	peak	H
850.0000	-80.27	12.56	-67.71	-13.00	-54.71	peak	H
3172.000	-68.97	18.20	-50.77	-13.00	-37.77	peak	H
5536.000	-72.47	26.21	-46.26	-13.00	-33.26	peak	H
7468.000	-72.44	33.71	-38.73	-13.00	-25.73	peak	H
158.5000	-73.64	11.96	-61.68	-13.00	-48.68	peak	V
260.0000	-67.87	-1.56	-69.43	-13.00	-56.43	peak	V
390.0000	-66.98	1.49	-65.49	-13.00	-52.49	peak	V
598.5000	-79.77	7.33	-72.44	-13.00	-59.44	peak	V
780.0000	-79.43	11.28	-68.15	-13.00	-55.15	peak	V
920.0000	-79.84	11.87	-67.97	-13.00	-54.97	peak	V
3172.000	-68.95	21.21	-47.74	-13.00	-34.74	peak	V
5572.000	-72.27	27.83	-44.44	-13.00	-31.44	peak	V
7708.000	-71.84	30.80	-41.04	-13.00	-28.04	peak	V

8 Frequency Stability (Temperature & Voltage Variation) Test

8.1. Limit

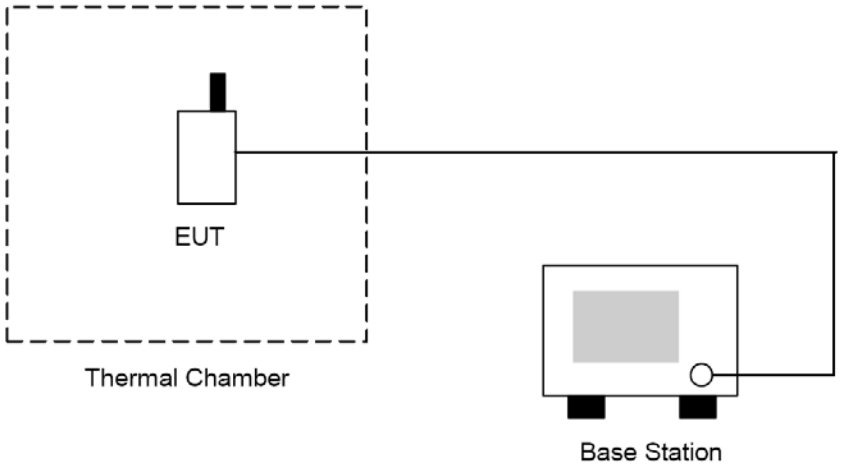
The frequency stability shall be measured by variation of ambient temperature and variation of primary supply voltage to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025% (±2.5ppm) of the center 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	TB100-0AC2UA7G					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 1					
Date of Test	01/25/2012				Test Site	TE05
Level	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	8.51	-30	-3	-0.004	±2.5	Pass
Normal	8.51	-20	-5	-0.006	±2.5	Pass
Normal	8.51	-10	7	0.008	±2.5	Pass
Normal	8.51	0	8	0.010	±2.5	Pass
Normal	8.51	10	13	0.016	±2.5	Pass
Battery full point	8.51	20	-19	-0.023	±2.5	Pass
Normal	7.40	20	22	0.026	±2.5	Pass
Battery cut-off point	6.29	20	-9	-0.011	±2.5	Pass
Normal	6.29	30	-6	-0.007	±2.5	Pass
Normal	6.29	40	-9	-0.011	±2.5	Pass
Normal	6.29	50	10	0.012	±2.5	Pass

Model Number	TB100-0AC2UA7G					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 2					
Date of Test	01/25/2012				Test Site	TE05
Level	Voltage [Vdc]	Temperature (℃)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	8.51	-30	-56	-0.030	±2.5	Pass
Normal	8.51	-20	-63	-0.034	±2.5	Pass
Normal	8.51	-10	-50	-0.027	±2.5	Pass
Normal	8.51	0	-46	-0.024	±2.5	Pass
Normal	8.51	10	-44	-0.023	±2.5	Pass
Battery full point	8.51	20	-46	-0.024	±2.5	Pass
Normal	7.40	20	-56	-0.030	±2.5	Pass
Battery cut-off point	6.29	20	-41	-0.022	±2.5	Pass
Normal	6.29	30	-60	-0.032	±2.5	Pass
Normal	6.29	40	-51	-0.027	±2.5	Pass
Normal	6.29	50	-67	-0.036	±2.5	Pass