

FCC 47 CFR PART 22H and 24E**Test Report**

Product Type : Rugged Handheld Computer
Applicant : Unitech Electronics Co., Ltd.
Address : 5F., No.136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan 231, R.O.C.
Trade Name : unitech
Model Number : PA820
Test Specification : FCC 47 CFR PART 22H
FCC 47 CFR PART 24E
ANSI/TIA-603-D 2010
Application Purpose : Original
Receive Date : Mar. 19, 2015
Test Period : Jul. 07 ~ Sep. 30, 2015
Issue Date : Oct. 27, 2015

Issue by

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



Taiwan Accreditation Foundation accreditation number: 1330

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Revision History

Rev.	Issue Date	Revisions	Revised By
00	Oct. 27, 2015	Initial Issue	

Verification of Compliance

Issued Date: 10/27/2015

Product Type : Rugged Handheld Computer
Applicant : Unitech Electronics Co., Ltd.
Address : 5F., No.136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan 231, R.O.C.
Trade Name : unitech
Model Number : PA820
FCC ID : HLEPA820BTNP
EUT Rated Voltage : DC 5V, 1A
Test Voltage : 120 Vac / 60 Hz ; DC 3.50V / 3.70V / 4.25V
Applicable Standard : FCC 47 CFR PART 22H
FCC 47 CFR PART 24E
ANSI/TIA-603-D 2010
Application Purpose : Original
Test Result : Complied
Performing Lab. : A Test Lab Techno Corp.

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<http://www.atl-lab.com.tw/e-index.htm>



A Test Lab Techno Corp. tested the above equipment in accordance with the requirements set forth in the above standards. All indications of Pass/Fail in this report are opinions expressed by A Test Lab Techno Corp. based on interpretations and/or observations of test results. Measurement Uncertainties were not taken into account and are published for informational purposes only. The test results show that the equipment tested is capable of demonstrating compliance with the requirements as documented in this report.

Approved By : Fly Lu Reviewed By : Eric Ou Yang
(Manager) (Fly Lu) (Testing Engineer) (Eric Ou Yang)

TABLE OF CONTENTS

1	General Information	6
1.1.	EUT Description	6
1.2.	Mode of Operation.....	7
1.3.	EUT Exercise Software	7
1.4.	Configuration of Test System Details	8
1.5.	Test Site Environment	8
1.6.	Summary of Test Result	9
2	RF Output Power Test	10
2.1.	Limit	10
2.2.	Test Instruments	10
2.3.	Test Setup.....	10
2.4.	Test Procedure	10
2.5.	Uncertainty	10
2.6.	Test Result.....	11
3	Effective Radiated Power / Equivalent Isotropic Radiated Power Test.....	15
3.1.	Limit	15
3.2.	Test Instruments	15
3.3.	Setup	15
3.4.	Test Procedure	17
3.5.	Uncertainty	17
3.6.	Test Result.....	18
4	Peak to Average Ratio Test.....	20
4.1.	Limit	20
4.2.	Test Instruments	20
4.3.	Setup	20
4.4.	Test Procedure	21
4.5.	Uncertainty	21
4.6.	Test Result.....	21
4.7.	Test Graphs	22
5	Emission Bandwidth & Occupied Bandwidth Test.....	23
5.1.	Limit	23
5.2.	Test Instruments	23
5.3.	Setup	23
5.4.	Test Procedure	24
5.5.	Uncertainty	24
5.6.	Test Result.....	24
5.7.	Test Graphs	25

6	Band Edge Test	31
6.1.	Limit	31
6.2.	Test Instruments	31
6.3.	Setup	31
6.4.	Test Procedure	32
6.5.	Uncertainty	32
6.6.	Test Result.....	32
6.7.	Test Graphs	33
7	Conducted Spurious Emission Test	37
7.1.	Limit	37
7.2.	Test Instruments	37
7.3.	Setup	37
7.4.	Test Procedure	38
7.5.	Uncertainty	38
7.6.	Test Result.....	38
8	Field Strength of Spurious Radiation Test	105
8.1.	Limit	105
8.2.	Test Instruments	105
8.3.	Setup	106
8.4.	Test Procedure	107
8.5.	Uncertainty	107
8.6.	Test Result.....	108
9	Frequency Stability (Temperature & Voltage Variation) Test	112
9.1.	Limit	112
9.2.	Test Instruments	112
9.3.	Setup	112
9.4.	Test Procedure	113
9.5.	Uncertainty	113
9.6.	Test Result.....	114

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 231,			
Manufacturer		Unitech Electronics Co., Ltd.			
Manufacturer Address		5F., No.136, Lane 235, Pao-Chiao Rd., Hsin-Tien Dist., New Taipei City, Taiwan 231,			
Product Type		Rugged Handheld Computer			
Trade Name		unitech			
Model Number		PA820			
FCC ID		HLEPA820BTNP			
IMEI No.		359998040102016			
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
	WCDMA (RMC12.2K)/ HSDPA/ HSUPA	Band	UL Frequency (MHz)	DL Frequency (MHz)	Modulation
		II	1852.4 ~ 1907.6	1932.4 ~ 1987.6	QPSK
		V	826.4 ~ 846.6	871.4 ~ 891.6	QPSK
Channel Control		Auto			
Type of Antenna		FPCB Antenna			
Antenna Gain (dBi)		GPRS/EGPRS 850 : 1.0 dBi GPRS/EGPRS 1900 : 3.7 dBi WCDMA/ HSDPA/ HSUPA Band II : 3.7 dBi WCDMA/ HSDPA/ HSUPA Band V : 1.0 dBi			
Max. RF Output power		GPRS 850 : 31.99 dBm / 1.581 W EGPRS 850 : 29.68 dBm / 0.929 W GPRS 1900 : 29.20 dBm / 0.832 W EGPRS 1900 : 28.70 dBm / 0.741 W WCDMA/ HSDPA/ HSUPA Band II : 25.28 dBm / 0.337 W WCDMA/ HSDPA/ HSUPA Band V : 25.45 dBm / 0.351 W			
Max. ERP/EIRP		GPRS 850 : 31.62 dBm / 1.452 W EGPRS 850 : 27.47 dBm / 0.558 W GPRS 1900 : 27.87 dBm / 0.612 W EGPRS 1900 : 24.30 dBm / 0.269 W WCDMA/ HSDPA/ HSUPA Band II : 21.89 dBm / 0.155 W WCDMA/ HSDPA/ HSUPA Band V : 22.33 dBm / 0.171 W			

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
Mode 5: WCDMA Band II Link Mode
Mode 6: WCDMA Band V Link Mode

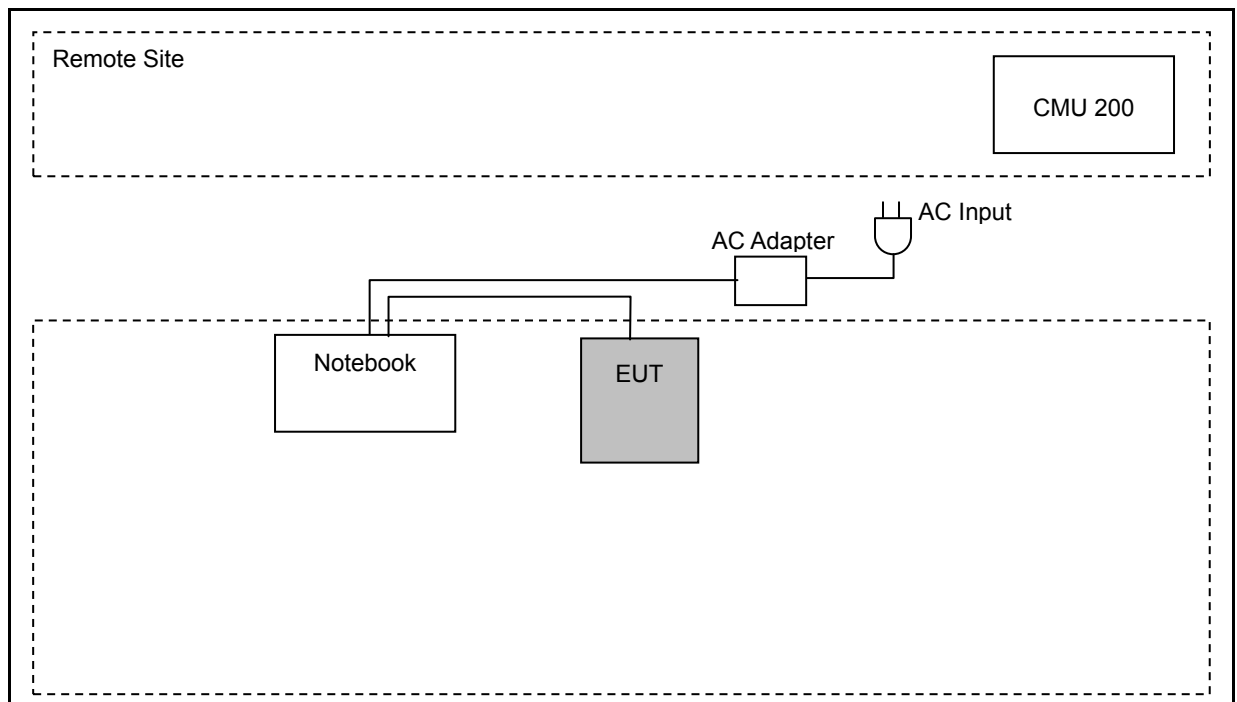
Note: Regards to the frequency band operation: the lowest, middle and highest frequency of channel were selected to perform the test, then shown on this report.

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



1.5. Test Site Environment

Items	Required (IEC 60068-1)	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	Limit	Result
Conducted Output Power	§2.1046	N/A	Pass
Effective Radiated Power	§22.913(a)(2)	< 7 Watts	Pass
Equivalent Isotropic Radiated Power	§24.232(c)	≤ 2 Watts	Pass
Peak to average ratio	§24.232(d)	< 13 dB	Pass
Emission Bandwidth & Occupied Bandwidth	§2.1049 §22.917(a) §24.238(a)	N/A	Pass
Band Edge Measurement	§2.1051 §22.917(a) §24.238(a)	< 43+10log ₁₀ (P[Watts])	Pass
Conducted Spurious Emission	§2.1051 §22.917(a) §24.238(a)	< 43+10log ₁₀ (P[Watts])	Pass
Field Strength of Spurious Radiation	§2.1053 §22.917(a) §24.238(a)	< 43+10log ₁₀ (P[Watts])	Pass
Frequency Stability for Temperature & Voltage	§2.1055 §22.355 §24.235	< 2.5 ppm	Pass

2 RF Output Power Test

2.1. Limit

N/A

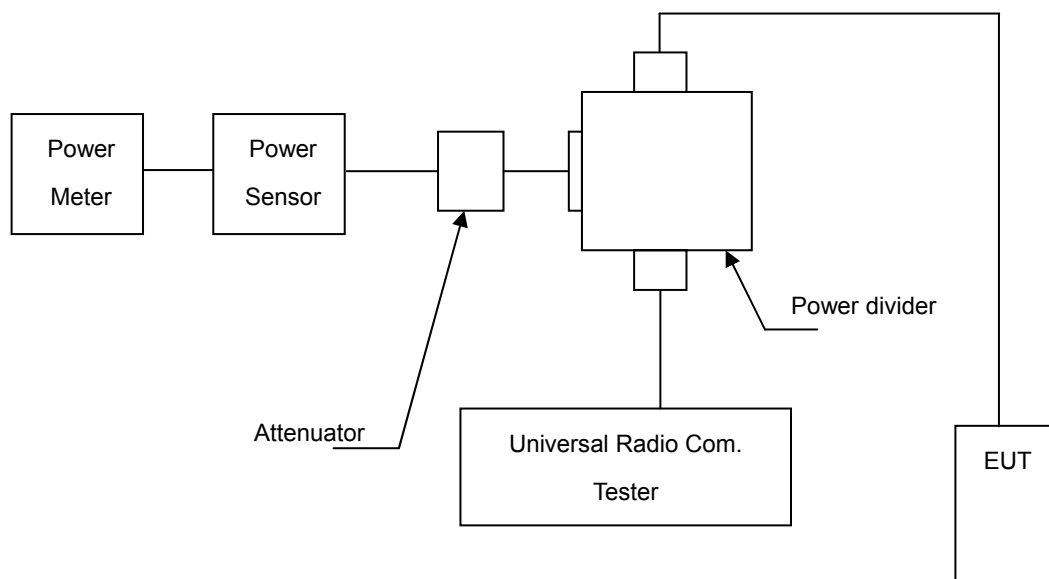
2.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	10/21/2014	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/15/2014	(1)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/15/2014	(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.

2.3. Test Setup



2.4. Test Procedure

The measurement is made according to 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	PA820						
Test Item	RF Output Power						
Date of Test	07/07/2015			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	31.83	1.524	31.99	1.581
			836.6	31.82	1.521	31.98	1.578
			848.8	31.80	1.514	31.96	1.570
		3Down2Up (Duty Factor 2/8)	824.2	30.27	1.064	30.45	1.109
			836.6	30.26	1.062	30.44	1.107
			848.8	30.24	1.057	30.42	1.102
		2Down3Up (Duty Factor 3/8)	824.2	28.41	0.693	28.58	0.721
			836.6	28.40	0.692	28.57	0.719
			848.8	28.38	0.689	28.55	0.716
		1Down4Up (Duty Factor 4/8)	824.2	26.64	0.461	26.77	0.475
			836.6	26.63	0.460	26.76	0.474
			848.8	26.61	0.458	26.74	0.472
EGPRS 850 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	824.2	26.59	0.456	29.68	0.929
			836.6	26.54	0.451	29.63	0.918
			848.8	26.47	0.444	29.56	0.904
		3Down2Up (Duty Factor 2/8)	824.2	24.67	0.293	27.80	0.603
			836.6	24.62	0.290	27.75	0.596
			848.8	24.55	0.285	27.68	0.586
		2Down3Up (Duty Factor 3/8)	824.2	22.69	0.186	25.80	0.380
			836.6	22.64	0.184	25.75	0.376
			848.8	22.57	0.181	25.68	0.370
		1Down4Up (Duty Factor 4/8)	824.2	21.13	0.130	24.25	0.266
			836.6	21.08	0.128	24.17	0.261
			848.8	21.01	0.126	24.10	0.257

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

Model Number	PA820						
Test Item	RF Output Power						
Date of Test	07/07/2015			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	28.99	0.793	29.20	0.832
			1880.00	28.91	0.778	29.12	0.817
			1909.80	28.88	0.773	29.09	0.811
		3Down2Up (Duty Factor 2/8)	1850.20	27.40	0.550	27.59	0.574
			1880.00	27.32	0.540	27.51	0.564
			1909.80	27.29	0.536	27.48	0.560
		2Down3Up (Duty Factor 3/8)	1850.20	25.57	0.361	25.73	0.374
			1880.00	25.49	0.354	25.65	0.367
			1909.80	25.46	0.352	25.62	0.365
		1Down4Up (Duty Factor 4/8)	1850.20	23.78	0.239	23.95	0.248
			1880.00	23.70	0.234	23.87	0.244
			1909.80	23.67	0.233	23.84	0.242
EGPRS 1900 Multi Class :12 Max Up:4 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	1850.20	25.54	0.358	28.70	0.741
			1880.00	25.46	0.352	28.62	0.728
			1909.80	25.43	0.349	28.59	0.723
		3Down2Up (Duty Factor 2/8)	1850.20	23.95	0.248	27.09	0.512
			1880.00	23.87	0.244	27.01	0.502
			1909.80	23.84	0.242	26.98	0.499
		2Down3Up (Duty Factor 3/8)	1850.20	22.12	0.163	25.27	0.337
			1880.00	22.04	0.160	25.19	0.330
			1909.80	22.01	0.159	25.16	0.328
		1Down4Up (Duty Factor 4/8)	1850.20	20.33	0.108	23.50	0.224
			1880.00	20.25	0.106	23.42	0.220
			1909.80	20.22	0.105	23.39	0.218

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

Model Number	PA820						
Test Item	RF Output Power						
Date of Test	07/07/2015			Test Site		TE05	
Bands	Modulation Type	Sub-Test	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
WCDMA Band II	QPSK	-----	1852.4	21.95	0.157	25.22	0.333
			1880.0	22.01	0.159	25.25	0.335
			1907.6	22.04	0.160	25.28	0.337
HSDPA Band II	QPSK	1	1852.4	21.33	0.136	24.58	0.287
			1880.0	21.40	0.138	24.62	0.290
			1907.6	21.45	0.140	24.67	0.293
		2	1852.4	21.24	0.133	24.49	0.281
			1880.0	21.32	0.136	24.54	0.284
			1907.6	21.39	0.138	24.61	0.289
		3	1852.4	20.76	0.119	24.01	0.252
			1880.0	20.84	0.121	24.06	0.255
			1907.6	20.92	0.124	24.14	0.259
		4	1852.4	20.70	0.117	23.95	0.248
			1880.0	20.79	0.120	24.01	0.252
			1907.6	20.87	0.122	24.09	0.256
HSUPA Band II	QPSK	1	1852.4	20.85	0.122	24.12	0.258
			1880.0	20.95	0.124	24.19	0.262
			1907.6	21.02	0.126	24.26	0.267
		2	1852.4	18.79	0.076	22.06	0.161
			1880.0	18.90	0.078	22.14	0.164
			1907.6	19.00	0.079	22.24	0.167
		3	1852.4	19.76	0.095	23.03	0.201
			1880.0	19.89	0.097	23.13	0.206
			1907.6	19.99	0.100	23.23	0.210
		4	1852.4	18.73	0.075	22.00	0.158
			1880.0	18.86	0.077	22.10	0.162
			1907.6	18.95	0.079	22.19	0.166
		5	1852.4	20.73	0.118	24.00	0.251
			1880.0	20.86	0.122	24.10	0.257
			1907.6	20.96	0.125	24.20	0.263

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

Model Number	PA820						
Test Item	RF Output Power						
Date of Test	07/07/2015			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	21.72	0.149	24.99	0.316
			836.6	22.15	0.164	25.42	0.348
			846.6	22.18	0.165	25.45	0.351
HSDPA Band V	QPSK	1	826.4	21.13	0.130	24.42	0.277
			836.6	21.59	0.144	24.88	0.308
			846.6	21.65	0.146	24.94	0.312
		2	826.4	21.04	0.127	24.33	0.271
			836.6	21.51	0.142	24.80	0.302
			846.6	21.60	0.145	24.89	0.308
		3	826.4	20.56	0.114	23.85	0.243
			836.6	21.03	0.127	24.32	0.270
			846.6	21.12	0.129	24.41	0.276
		4	826.4	20.48	0.112	23.77	0.238
			836.6	20.96	0.125	24.25	0.266
			846.6	21.07	0.128	24.36	0.273
HSUPA Band V	QPSK	1	826.4	20.63	0.116	23.91	0.246
			836.6	21.11	0.129	24.39	0.275
			846.6	21.22	0.132	24.50	0.282
		2	826.4	18.54	0.071	21.82	0.152
			836.6	19.03	0.080	22.31	0.170
			846.6	19.19	0.083	22.47	0.177
		3	826.4	19.49	0.089	22.77	0.189
			836.6	20.00	0.100	23.28	0.213
			846.6	20.15	0.104	23.43	0.220
		4	826.4	18.47	0.070	21.75	0.150
			836.6	18.97	0.079	22.25	0.168
			846.6	19.13	0.082	22.41	0.174
		5	826.4	20.47	0.111	23.75	0.237
			836.6	20.99	0.126	24.27	0.267
			846.6	21.15	0.130	24.43	0.277

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(c): The EIRP of mobile transmitters and auxiliary test transmitters must not exceed 2 Watts.

3.2. Test Instruments

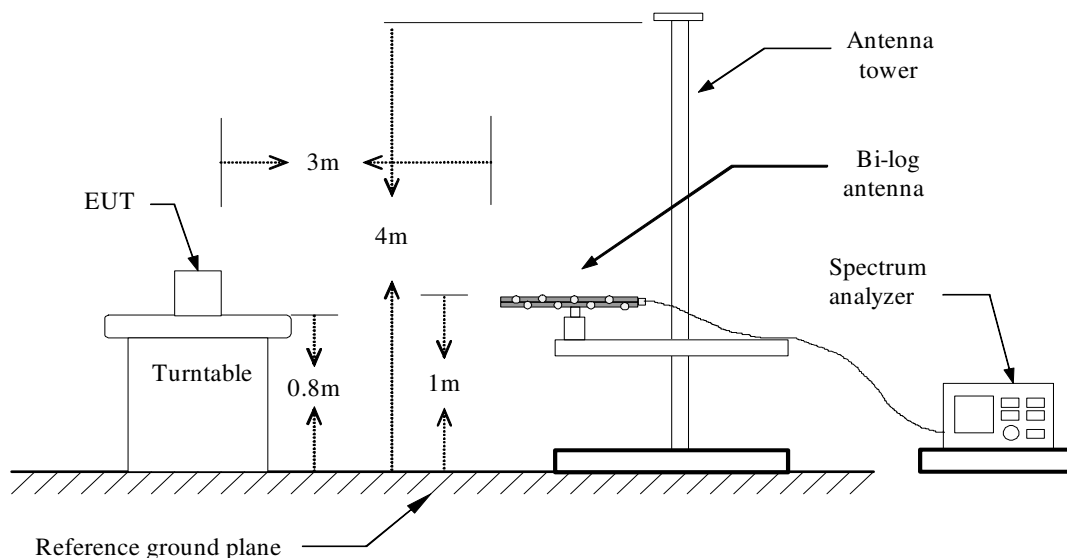
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	08/11/2015	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/06/2015	(1)
Test Site	ATL	TE01	888001	08/27/2015	(1)

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

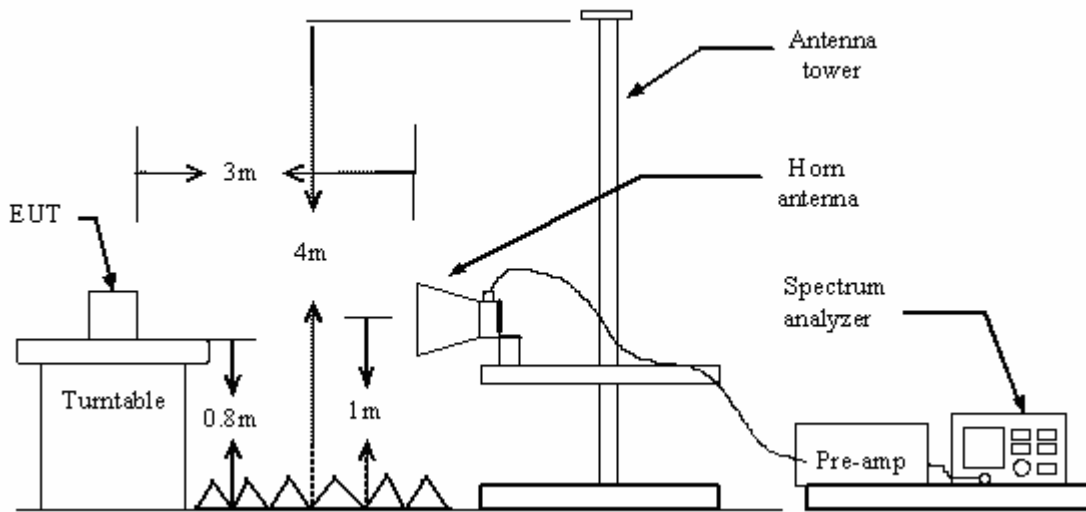
Note: N.C.R. = No Calibration Request.

3.3. Setup

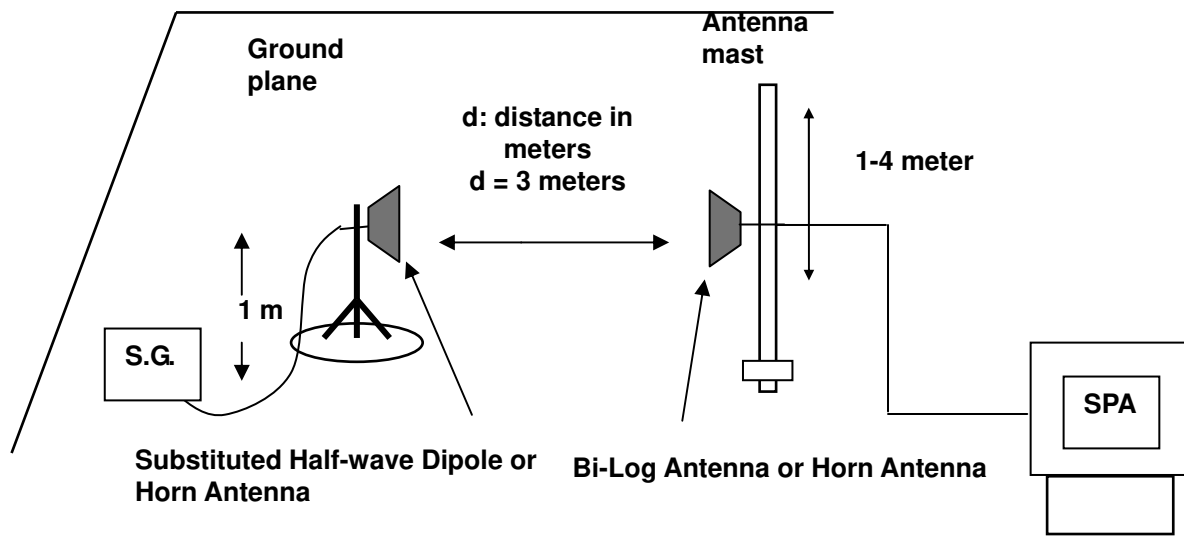
Below 1 GHz



Above 1 GHz



For Substituted Method Test Set-UP



3.4. Test Procedure

- a. The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range).
- b. Radiation Emission measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- c. The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- d. $E.I.R.P. = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$
- e. $E.R.P. = E.I.R.P. - 2.15 \text{ dB}$

Note: 1. For WCDMA and CDMA signals, a peak detector is used with $RBW = VBW = 5\text{MHz}$.

2. For AMPS, GSM, and NADC TDMA signals, a peak detector is used, with $RBW = VBW = 1 \text{ MHz}$.

3.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is $\pm 3.072 \text{ dB}$.

3.6. Test Result

Model Number	PA820							
Test Item	ERP/EIRP							
Date of Test	09/11/2015					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	18.50	10.81	29.31	0.853	< 7W
			V	20.81	10.81	31.62	1.452	< 7W
		836.6	H	18.01	10.82	28.83	0.764	< 7W
			V	20.40	10.82	31.22	1.324	< 7W
		848.8	H	18.02	10.90	28.92	0.780	< 7W
			V	20.31	10.90	31.21	1.321	< 7W
EGPRS 850	8PSK	824.2	H	14.52	10.81	25.33	0.341	< 7W
			V	16.65	10.82	27.47	0.558	< 7W
		836.6	H	13.52	10.82	24.34	0.272	< 7W
			V	15.47	10.82	26.29	0.426	< 7W
		848.8	H	12.88	10.90	23.78	0.239	< 7W
			V	15.27	10.90	26.17	0.414	< 7W

Model Number	PA820							
Test Item	ERP/EIRP							
Date of Test	09/11/2015					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	16.88	6.33	23.21	0.209	< 2W
			V	21.33	6.33	27.66	0.583	< 2W
		1880.00	H	16.69	6.55	23.24	0.211	< 2W
			V	21.32	6.55	27.87	0.612	< 2W
		1909.80	H	16.85	6.79	23.64	0.231	< 2W
			V	20.96	6.79	27.75	0.596	< 2W
EGPRS 1900	8PSK	1850.20	H	16.06	6.33	22.39	0.173	< 2W
			V	17.78	6.33	24.11	0.258	< 2W
		1880.00	H	15.67	6.55	22.22	0.167	< 2W
			V	17.75	6.55	24.30	0.269	< 2W
		1909.80	H	15.47	6.79	22.26	0.168	< 2W
			V	17.26	6.79	24.05	0.254	< 2W

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

2. For WCDMA and CDMA 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	PA820							
Test Item	ERP/EIRP							
Date of Test	09/11/2015					Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Ant. Polar.	Read Level (dBm)	Correction Factor (dBm)	EIRP		Limit
						(dBm)	(W)	
WCDMA Band II	QPSK	1852.4	H	12.41	6.34	18.75	0.075	< 2W
			V	15.55	6.34	21.89	0.155	< 2W
		1880.0	H	12.47	6.55	19.02	0.080	< 2W
			V	14.77	6.56	21.33	0.136	< 2W
		1907.6	H	12.48	6.78	19.26	0.084	< 2W
			V	14.86	6.78	21.64	0.146	< 2W

Model Number	PA820							
Test Item	ERP/EIRP							
Date of Test	09/11/2015					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	10.04	10.81	20.85	0.122	< 7W
			V	10.86	11.47	22.33	0.171	< 7W
		836.6	H	9.62	10.82	20.44	0.111	< 7W
			V	9.75	11.54	21.29	0.135	< 7W
		846.6	H	9.94	10.87	20.81	0.121	< 7W
			H	10.42	11.81	22.23	0.167	< 7W

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

2. For WCDMA and CDMA 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 Peak to Average Ratio Test

4.1. Limit

In measuring transmissions in this band using an average power technique, the peak to-average ratio (PAR) of the transmission may not exceed 13 dB.

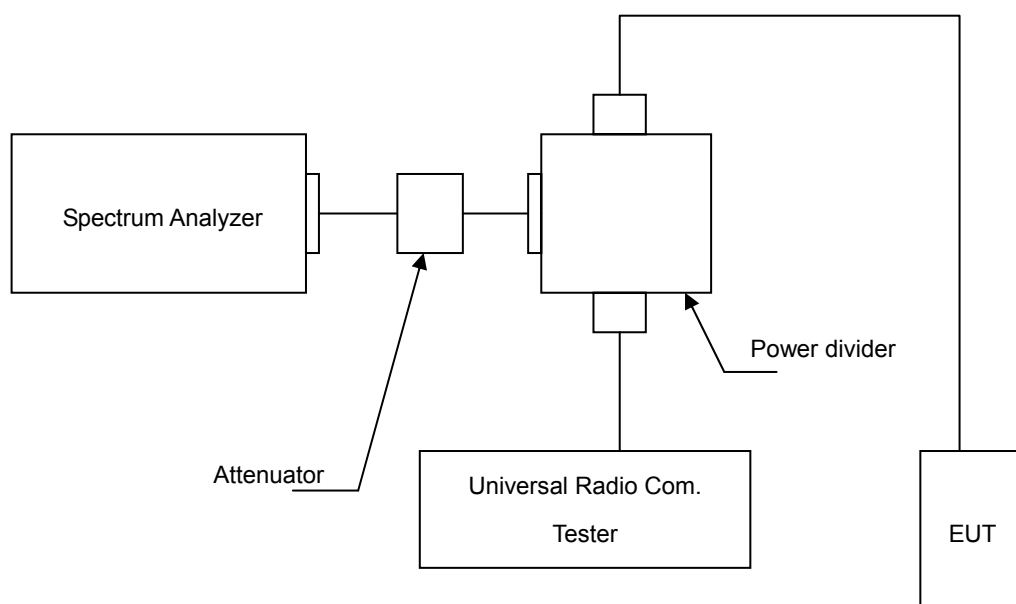
4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2014	(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 24:

- Set resolution/measurement bandwidth signal's occupied bandwidth;
- Set the number of counts to a value that stabilizes the measured CCDF curve;
- Record the maximum PAPR level associated with a probability of 0.1%.

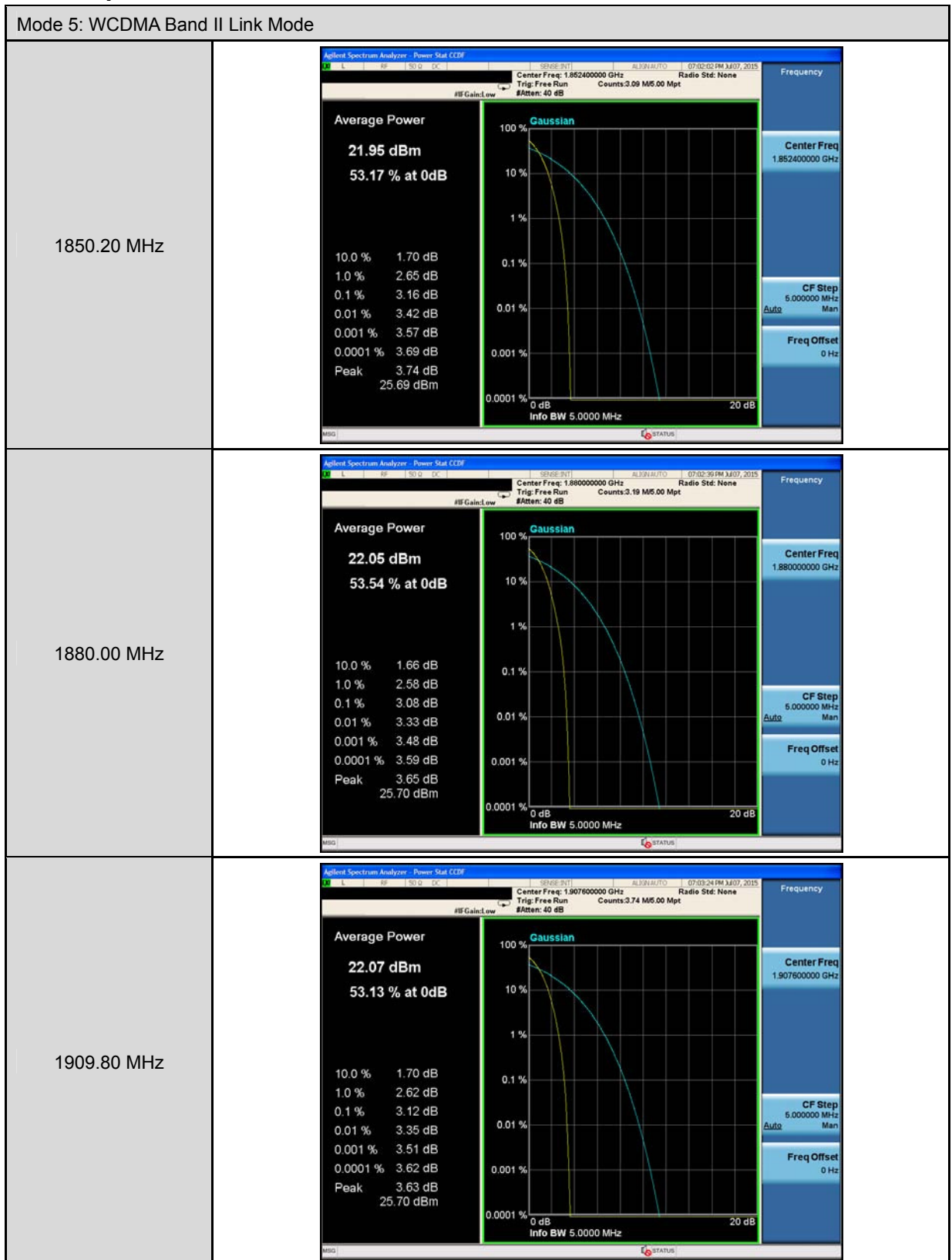
4.5. Uncertainty

The measurement uncertainty is defined as for Conducted Power measurement is 1.2 dB.

4.6. Test Result

Model Number	PA820			
Test Item	Peak to Average Ratio			
Date of Test	07/07/2015			Test Site TE05
Bands	Channel	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
WCDMA Band II	9262	1852.4	3.16	< 13
	9400	1880.0	3.08	< 13
	9538	1907.6	3.12	< 13

4.7. Test Graphs



5 Emission Bandwidth & Occupied Bandwidth Test

5.1. Limit

The Occupied Bandwidth Limit:

N/A.

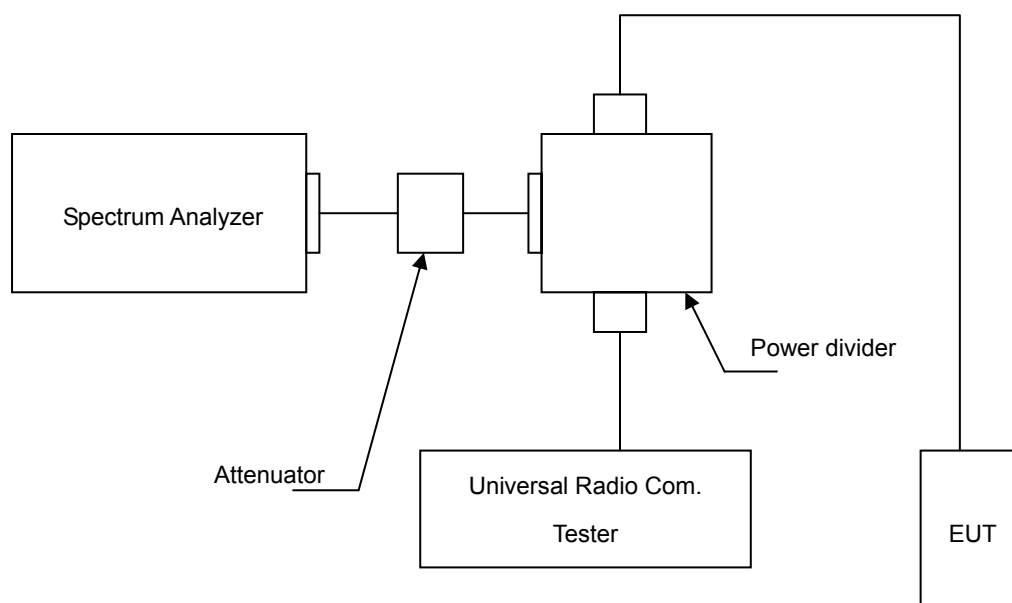
5.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	10/21/2014	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(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:

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.

5.5. Uncertainty

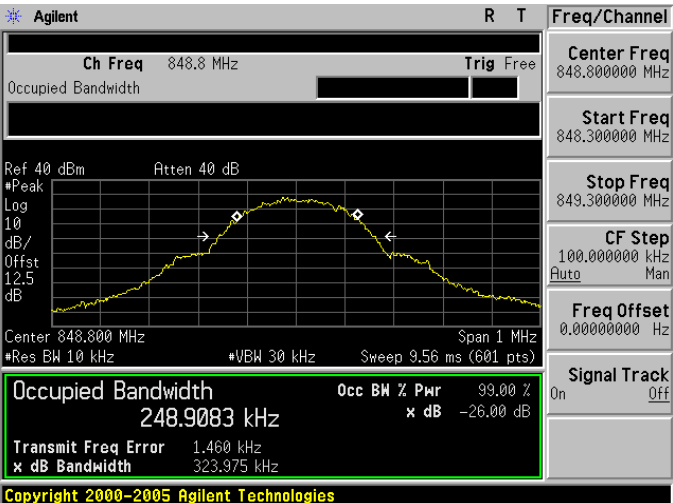
The measurement uncertainty is defined as $\pm 10\text{Hz}$

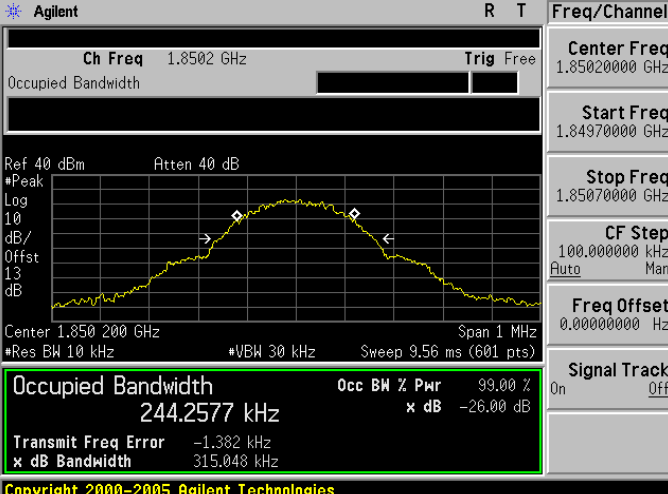
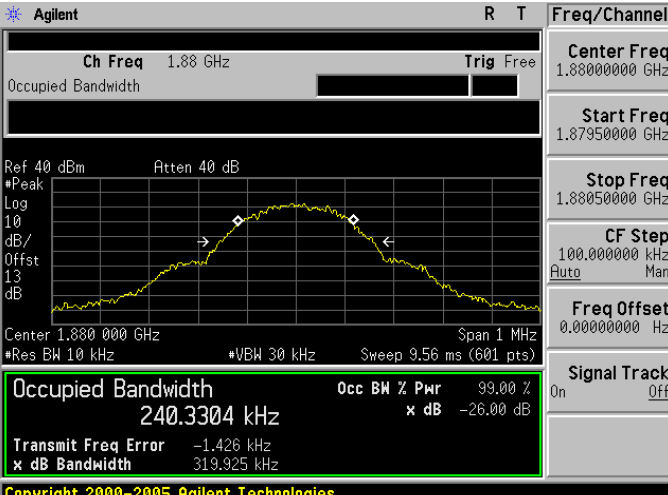
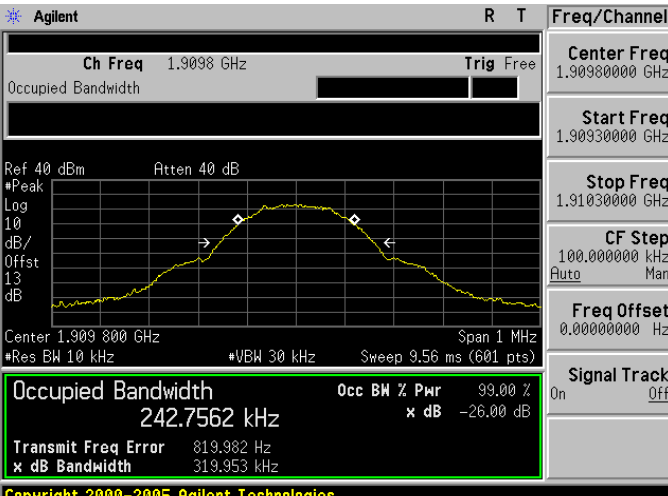
5.6. Test Result

Model Number	PA820				
Test Item	Emission Bandwidth & Occupied Bandwidth				
Date of Test	07072015			Test Site	TE05
Bands	Channel	Frequency (MHz)	-26dB Bandwidth (kHz)	99% Bandwidth (kHz)	Note
GPRS 850	128	824.2	320.178	242.3433	RBW:10KHz , VBW:30KHz
	190	836.6	327.257	243.6626	RBW:10KHz , VBW:30KHz
	251	848.8	323.975	248.9083	RBW:10KHz , VBW:30KHz
GPRS 1900	512	1850.20	315.048	244.2577	RBW:10KHz , VBW:30KHz
	661	1880.00	319.925	240.3304	RBW:10KHz , VBW:30KHz
	810	1909.80	319.953	242.7562	RBW:10KHz , VBW:30KHz
EGPRS 850	128	824.2	312.906	241.2969	RBW:10KHz , VBW:30KHz
	190	836.6	316.515	247.5595	RBW:10KHz , VBW:30KHz
	251	848.8	314.149	241.8445	RBW:10KHz , VBW:30KHz
EGPRS 1900	512	1850.20	313.849	244.3944	RBW:10KHz , VBW:30KHz
	661	1880.00	317.996	245.5147	RBW:10KHz , VBW:30KHz
	810	1909.80	319.789	245.8704	RBW:10KHz , VBW:30KHz

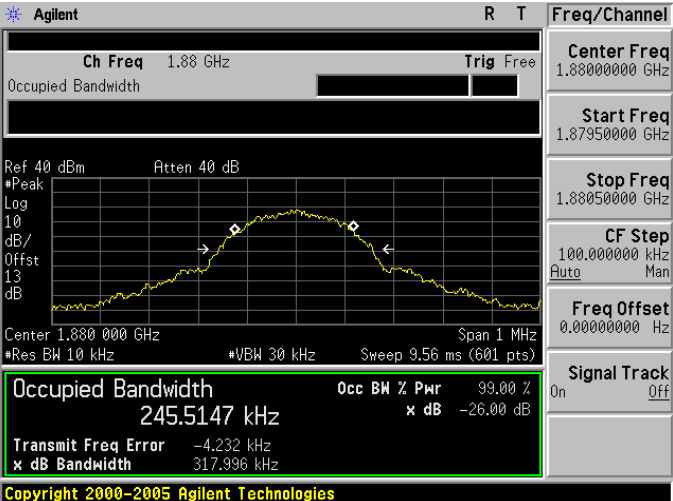
Model Number	PA820				
Test Item	Emission Bandwidth & Occupied Bandwidth				
Date of Test	07072015			Test Site	TE05
Bands	Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Note
WCDMA Band II	9262	1852.4	4.695	4.1641	RBW:100KHz , VBW:300KHz
	9400	1880.0	4.665	4.1978	RBW:100KHz , VBW:300KHz
	9538	1907.6	4.684	4.1695	RBW:100KHz , VBW:300KHz
WCDMA Band V	4132	826.4	4.681	4.1377	RBW:100KHz , VBW:300KHz
	4183	836.6	4.677	4.1449	RBW:100KHz , VBW:300KHz
	4233	846.6	4.666	4.1105	RBW:100KHz , VBW:300KHz

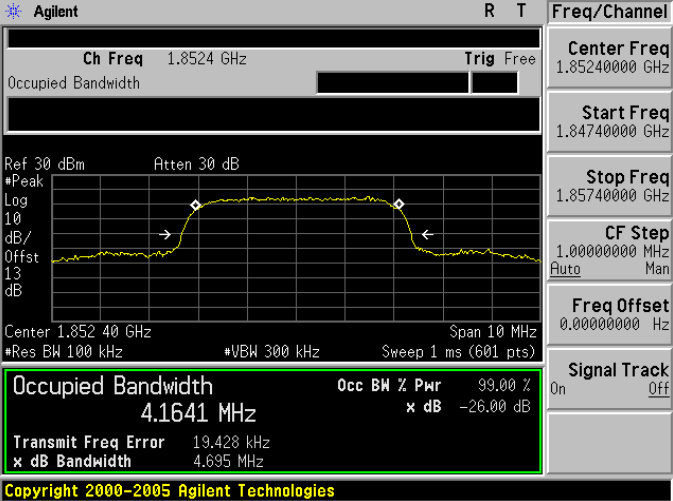
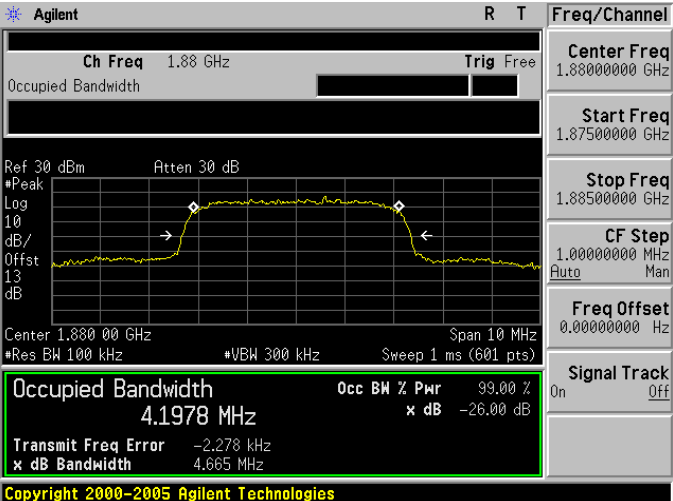
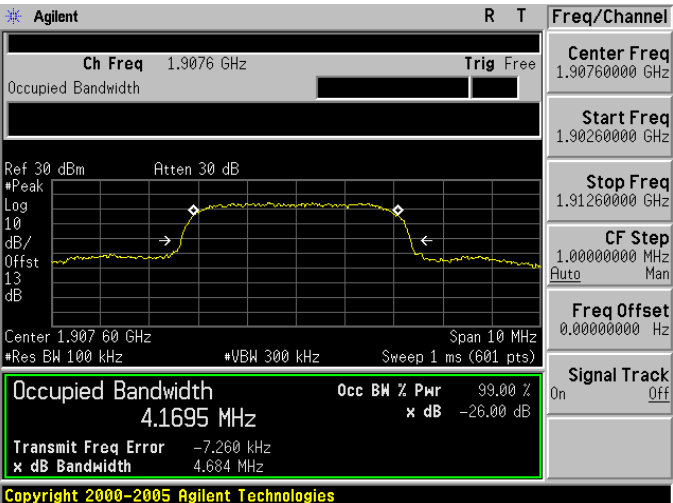
5.7. Test Graphs

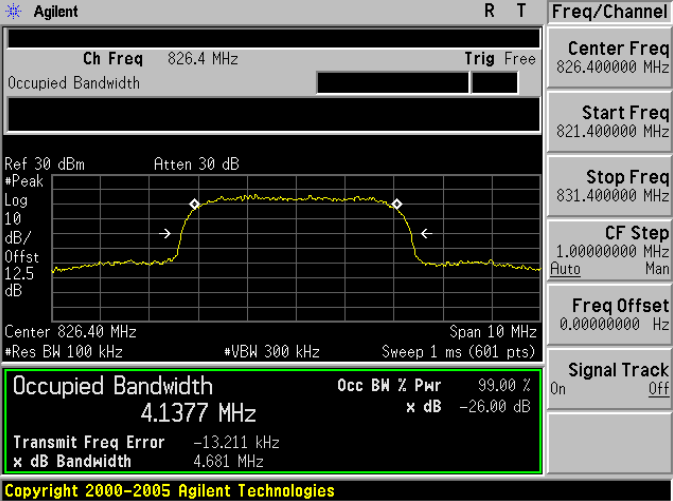
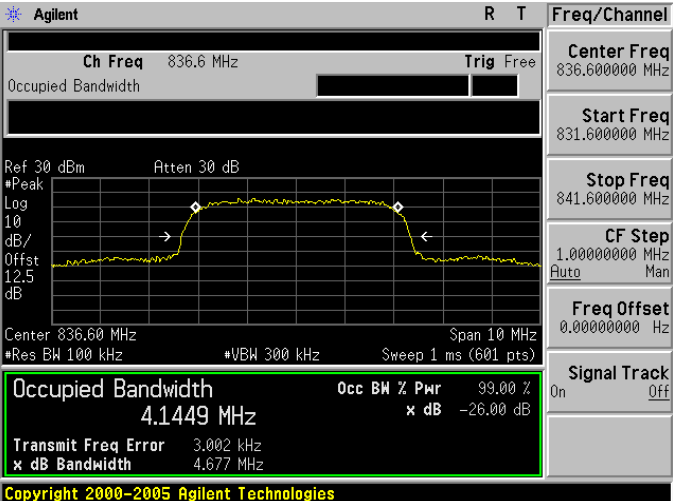
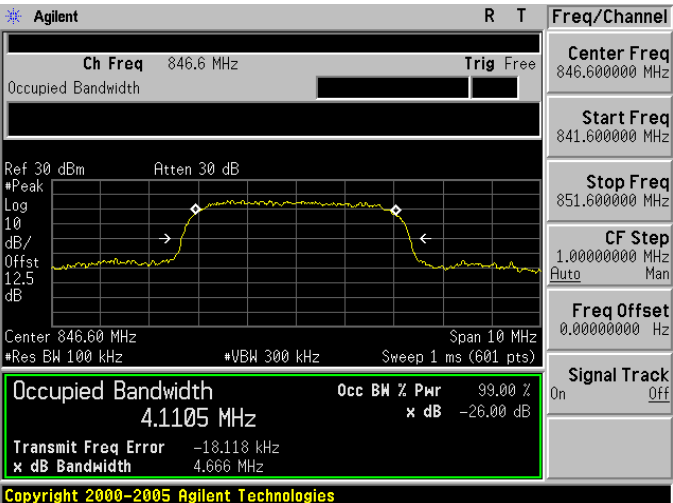
Mode 1: GPRS 850 Link Mode	
824.2 MHz	 Agilent R T Freq/Channel Ch Freq 824.2 MHz Trig Free Center Freq 824.200000 MHz Start Freq 823.700000 MHz Stop Freq 824.700000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 12.5 dB Center 824.200 MHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 242.3433 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.169 kHz x dB Bandwidth 320.178 kHz Copyright 2000-2005 Agilent Technologies
836.6 MHz	 Agilent R T Freq/Channel Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Start Freq 836.100000 MHz Stop Freq 837.100000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 12.5 dB Center 836.600 MHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 243.6626 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 2.546 kHz x dB Bandwidth 317.257 kHz Copyright 2000-2005 Agilent Technologies
848.8 MHz	 Agilent R T Freq/Channel Ch Freq 848.8 MHz Trig Free Center Freq 848.800000 MHz Start Freq 848.300000 MHz Stop Freq 849.300000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 12.5 dB Center 848.800 MHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 248.9083 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.460 kHz x dB Bandwidth 323.975 kHz Copyright 2000-2005 Agilent Technologies

Mode 2: GPRS 1900 Link Mode	
1850.20 MHz	 Copyright 2000-2005 Agilent Technologies
1880.00 MHz	 Copyright 2000-2005 Agilent Technologies
1909.80 MHz	 Copyright 2000-2005 Agilent Technologies

Mode 3: EGPRS 850 Link Mode	
824.2 MHz	 Agilent R T Freq/Channel Ch Freq 824.2 MHz Trig Free Center Freq 824.200000 MHz Start Freq 823.700000 MHz Stop Freq 824.700000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 12.5 dB Center 824.200 MHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 241.2969 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 575.506 Hz x dB Bandwidth 312.906 kHz Copyright 2000-2005 Agilent Technologies
836.6 MHz	 Agilent R T Freq/Channel Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Start Freq 836.100000 MHz Stop Freq 837.100000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 12.5 dB Center 836.600 MHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 247.5595 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.540 kHz x dB Bandwidth 316.515 kHz Copyright 2000-2005 Agilent Technologies
848.8 MHz	 Agilent R T Freq/Channel Ch Freq 848.8 MHz Trig Free Center Freq 848.800000 MHz Start Freq 848.300000 MHz Stop Freq 849.300000 MHz CF Step 100.000000 kHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 12.5 dB Center 848.800 MHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 241.8445 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.008 kHz x dB Bandwidth 314.149 kHz Copyright 2000-2005 Agilent Technologies

Mode 4: EGPRS 1900 Link Mode	
1850.20 MHz	 Agilent R T Freq/Channel Ch Freq 1.8502 GHz Trig Free Center Freq 1.8502000 GHz Start Freq 1.8497000 GHz Stop Freq 1.8507000 GHz CF Step 100.00000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 13 dB Center 1.850 200 GHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % 244.3944 kHz x dB -26.00 dB Transmit Freq Error 291.561 Hz x dB Bandwidth 313.849 kHz Copyright 2000-2005 Agilent Technologies
1880.00 MHz	 Agilent R T Freq/Channel Ch Freq 1.88 GHz Trig Free Center Freq 1.8800000 GHz Start Freq 1.8795000 GHz Stop Freq 1.8805000 GHz CF Step 100.00000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 13 dB Center 1.880 000 GHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % 245.5147 kHz x dB -26.00 dB Transmit Freq Error -4.232 kHz x dB Bandwidth 317.996 kHz Copyright 2000-2005 Agilent Technologies
1909.80 MHz	 Agilent R T Freq/Channel Ch Freq 1.9098 GHz Trig Free Center Freq 1.9098000 GHz Start Freq 1.9093000 GHz Stop Freq 1.9103000 GHz CF Step 100.00000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB Peak Log 10 dB/Offst 13 dB Center 1.909 800 GHz Span 1 MHz Res BW 10 kHz VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth Occ BW % Pwr 99.00 % 245.8704 kHz x dB -26.00 dB Transmit Freq Error 1.056 kHz x dB Bandwidth 319.789 kHz Copyright 2000-2005 Agilent Technologies

Mode 5: WCDMA Band II Link Mode	
1850.20 MHz	 Agilent R T Freq/Channel Ch Freq 1.8524 GHz Trig Free Center Freq 1.85240000 GHz Start Freq 1.84740000 GHz Stop Freq 1.85740000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 30 dBm Atten 30 dB Peak Log 10 dB/Offst 13 dB Center 1.852 40 GHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1641 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 19.428 kHz x dB Bandwidth 4.695 MHz Copyright 2000-2005 Agilent Technologies
1880.00 MHz	 Agilent R T Freq/Channel Ch Freq 1.88 GHz Trig Free Center Freq 1.88000000 GHz Start Freq 1.87500000 GHz Stop Freq 1.88500000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 30 dBm Atten 30 dB Peak Log 10 dB/Offst 13 dB Center 1.880 00 GHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1978 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -2.278 kHz x dB Bandwidth 4.665 MHz Copyright 2000-2005 Agilent Technologies
1909.80 MHz	 Agilent R T Freq/Channel Ch Freq 1.9076 GHz Trig Free Center Freq 1.90760000 GHz Start Freq 1.90260000 GHz Stop Freq 1.91260000 GHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 30 dBm Atten 30 dB Peak Log 10 dB/Offst 13 dB Center 1.907 60 GHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1695 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -7.260 kHz x dB Bandwidth 4.684 MHz Copyright 2000-2005 Agilent Technologies

Mode 6: WCDMA Band V Link Mode	
826.4 MHz	 Agilent R T Freq/Channel Ch Freq 826.4 MHz Trig Free Center Freq 826.400000 MHz Start Freq 821.400000 MHz Stop Freq 831.400000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 30 dBm Atten 30 dB Peak Log 10 dB/Offst 12.5 dB Center 826.40 MHz Span 10 MHz Res BW 100 kHz VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1377 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -13.211 kHz x dB Bandwidth 4.681 MHz Copyright 2000-2005 Agilent Technologies
836.6 MHz	 Agilent R T Freq/Channel Ch Freq 836.6 MHz Trig Free Center Freq 836.600000 MHz Start Freq 831.600000 MHz Stop Freq 841.600000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 30 dBm Atten 30 dB Peak Log 10 dB/Offst 12.5 dB Center 836.60 MHz Span 10 MHz Res BW 100 kHz VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1449 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 3.002 kHz x dB Bandwidth 4.677 MHz Copyright 2000-2005 Agilent Technologies
846.6 MHz	 Agilent R T Freq/Channel Ch Freq 846.6 MHz Trig Free Center Freq 846.600000 MHz Start Freq 841.600000 MHz Stop Freq 851.600000 MHz CF Step 1.00000000 MHz Auto Man Freq Offset 0.00000000 Hz Signal Track On Off Ref 30 dBm Atten 30 dB Peak Log 10 dB/Offst 12.5 dB Center 846.60 MHz Span 10 MHz Res BW 100 kHz VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1105 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -18.118 kHz x dB Bandwidth 4.666 MHz Copyright 2000-2005 Agilent Technologies

6 Band Edge Test

6.1. 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 $43 + 10\log(P)$ dB.

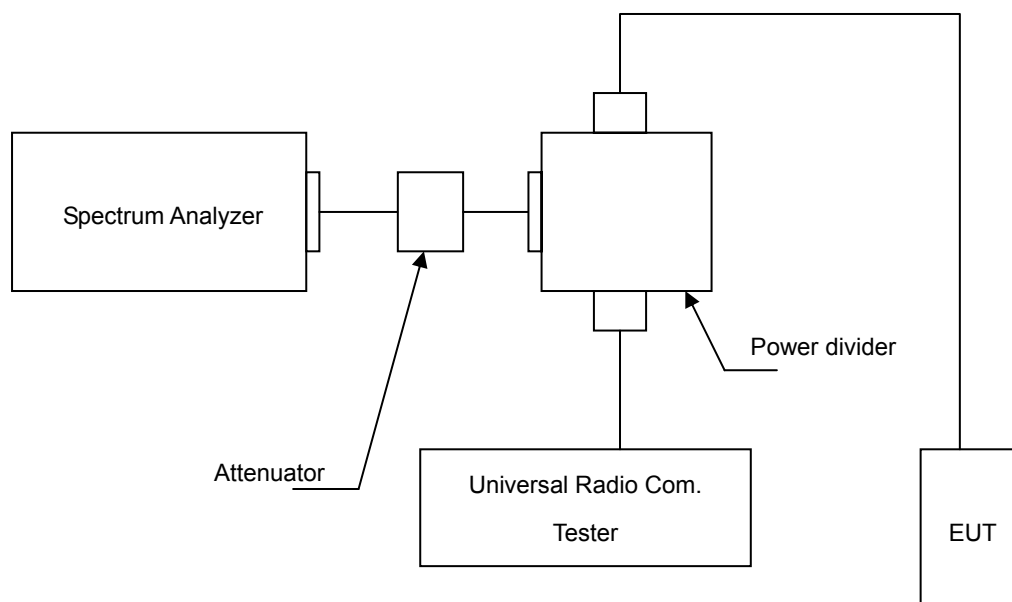
6.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	10/21/2014	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(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



6.4. 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 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.
3. The band edge setting:
 - a. RB=10 kHz; VB=30 kHz for GSM 850 and PCS 1900.
 - b. RB=51 kHz; VB=160 kHz for WCDMA Band V and WCDMA Band II.

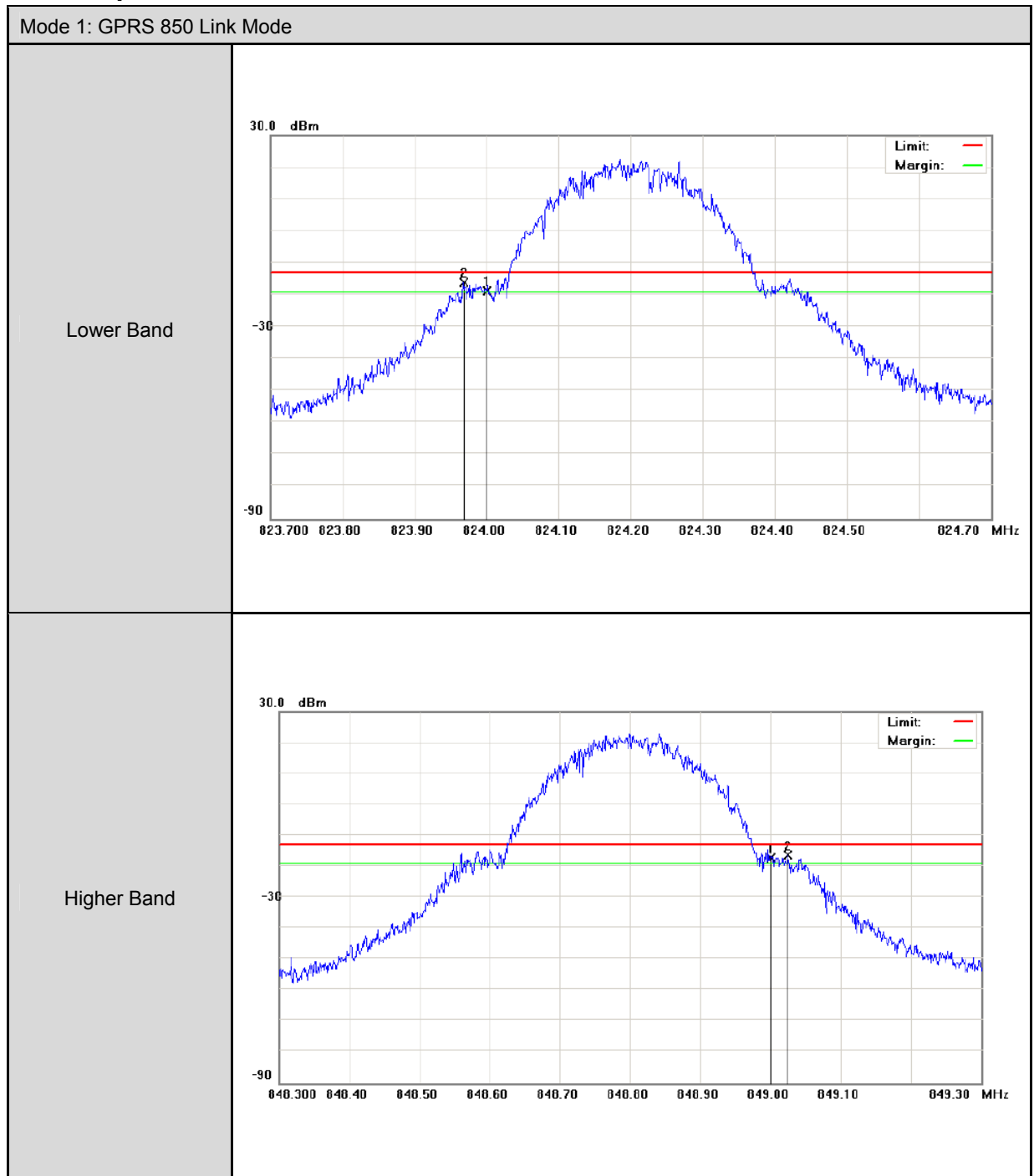
6.5. Uncertainty

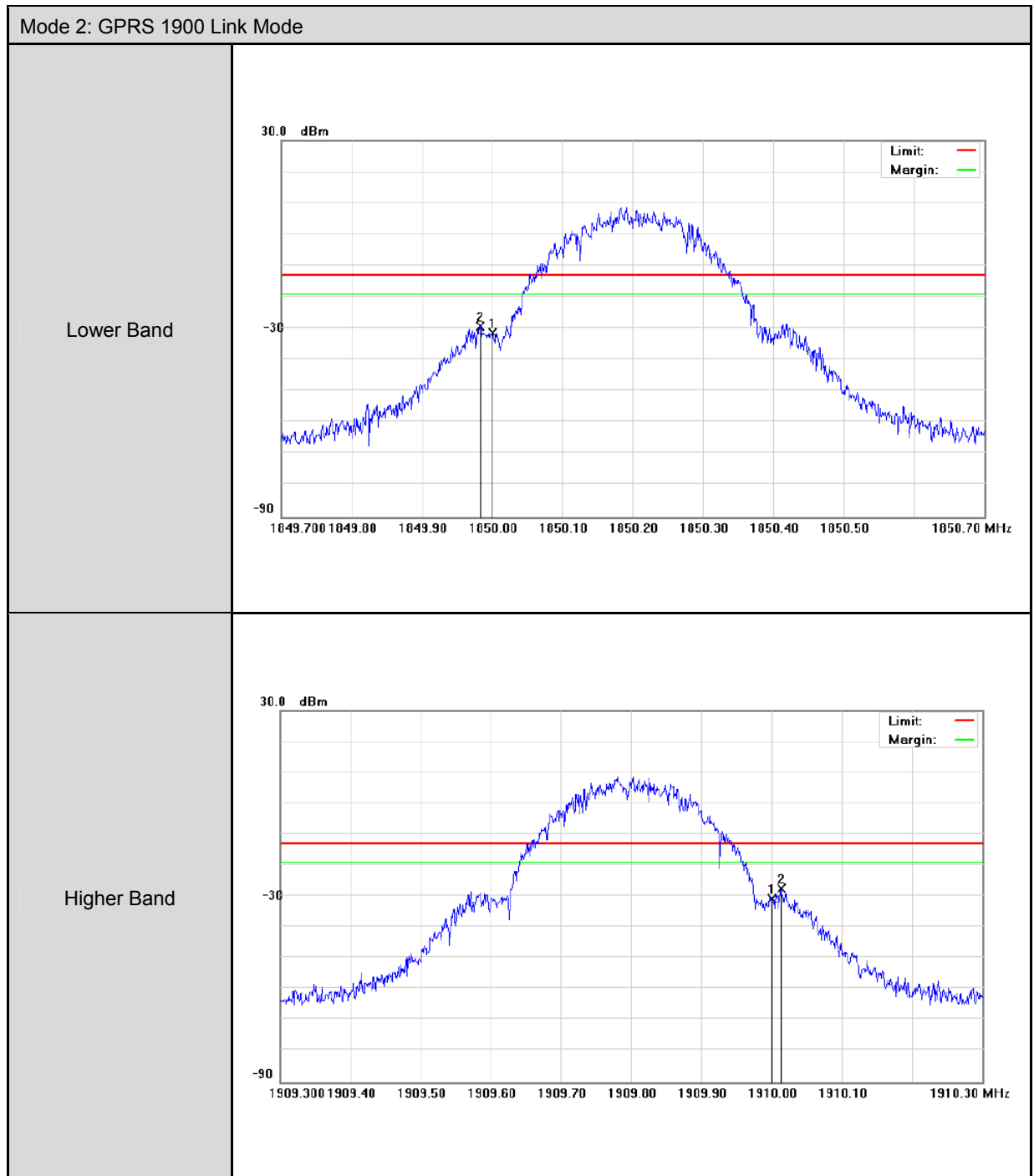
The measurement uncertainty is defined as $\pm 10\text{Hz}$

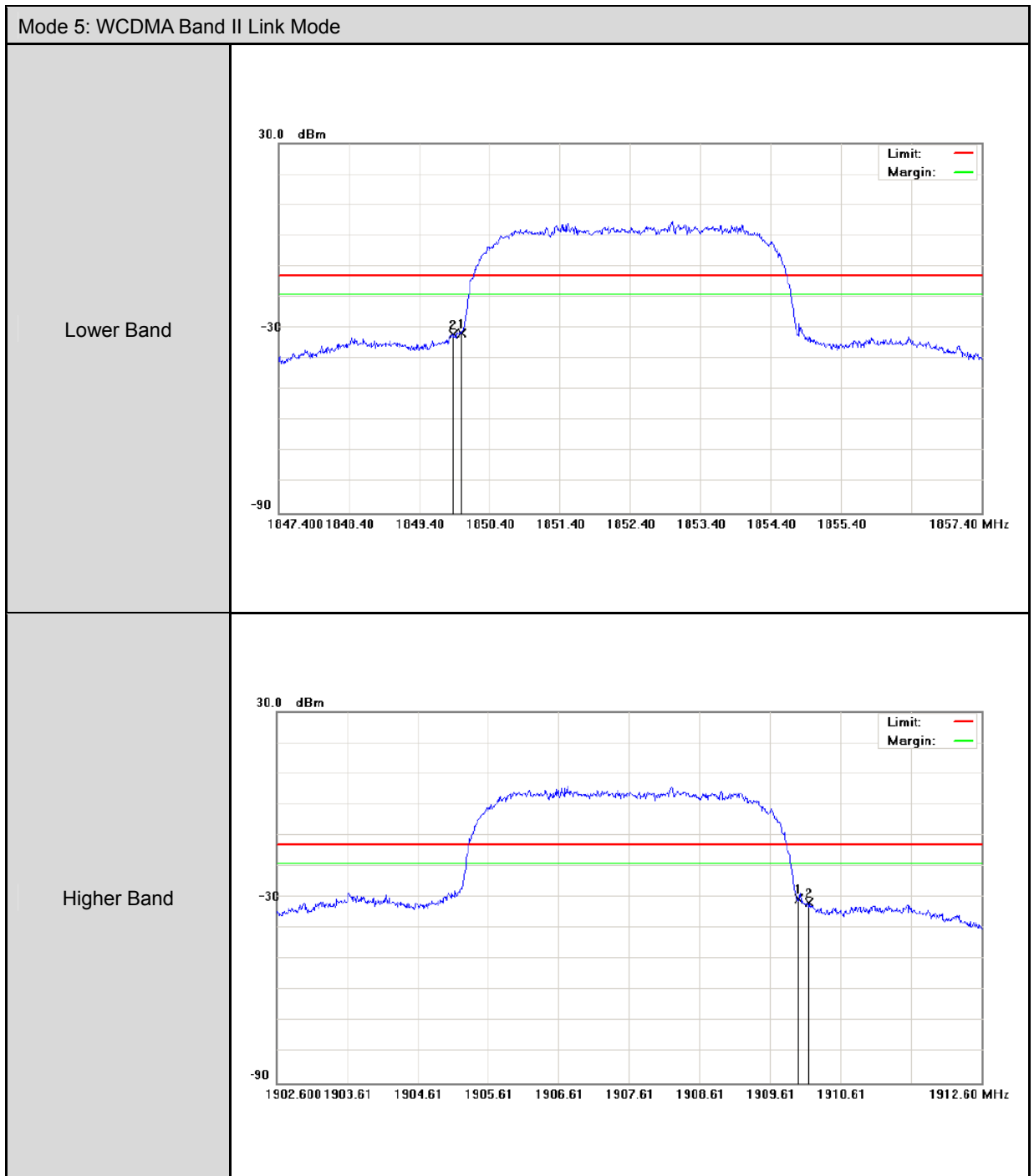
6.6. Test Result

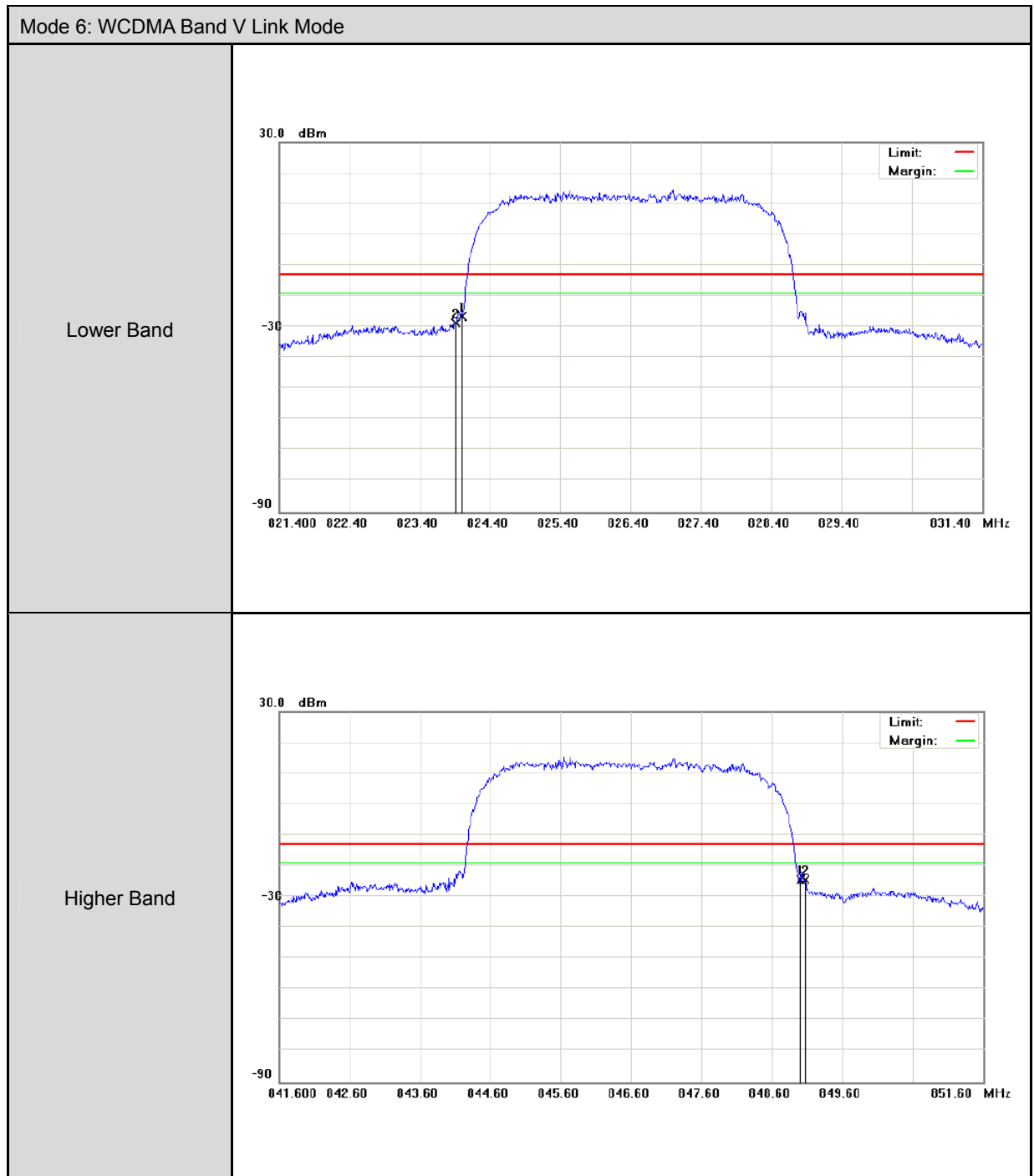
Model Number		PA820				
Test Item		Band Edge				
Date of Test		07072015			Test Site	TE05
Bands		Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result
GPRS 850	Lower	128	824.0000	-16.17	-13	Pass
	Higher	251	849.0000	-16.46	-13	Pass
GPRS 1900	Lower	512	1850.000	-29.12	-13	Pass
	Higher	810	1910.000	-27.39	-13	Pass
WCDMA Band II	Lower	9262	1850.000	-31.72	-13	Pass
	Higher	9538	1910.000	-30.31	-13	Pass
WCDMA Band V	Lower	4132	824.0000	-26.41	-13	Pass
	Higher	4233	849.0000	-24.53	-13	Pass

6.7. Test Graphs









7 Conducted Spurious Emission 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 $43 + 10\log(P)$ dB.

7.2. Test Instruments

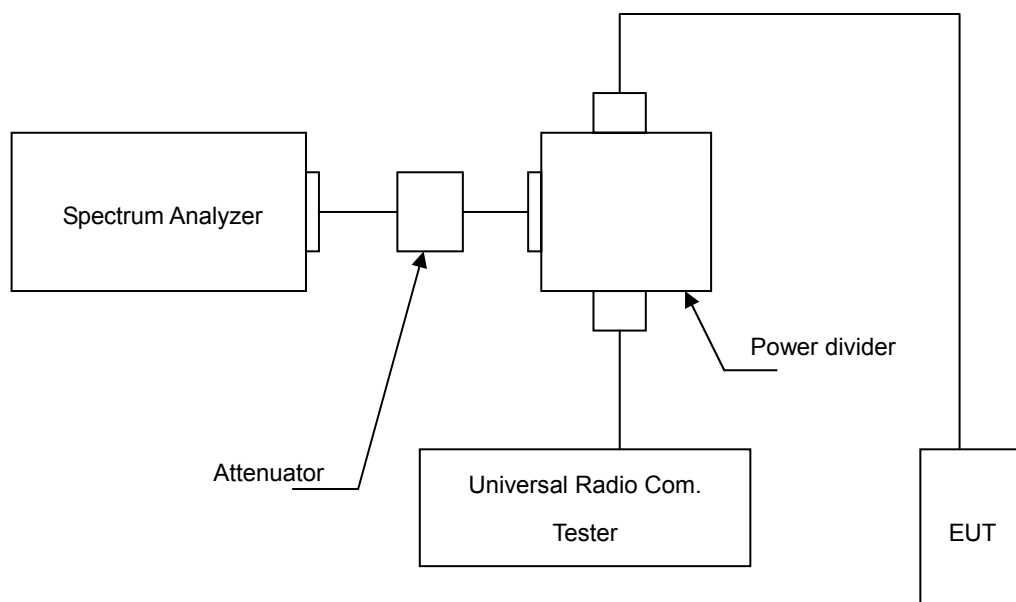
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	10/21/2014	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/14/2015	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power Divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

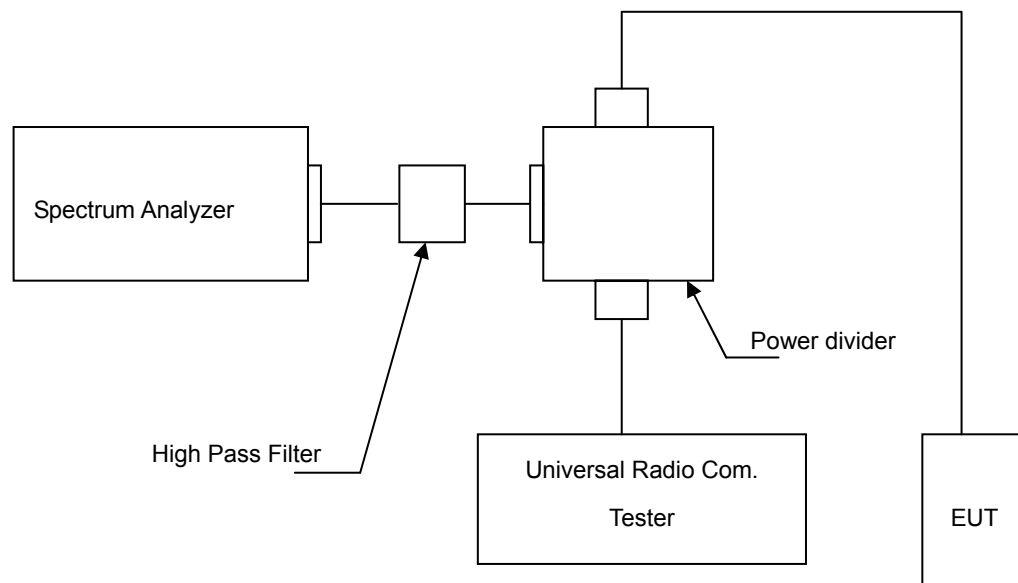
Note: N.C.R. = No Calibration Request.

7.3. Setup

Below 2.8GHz



Above 2.8GHz



7.4. 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.

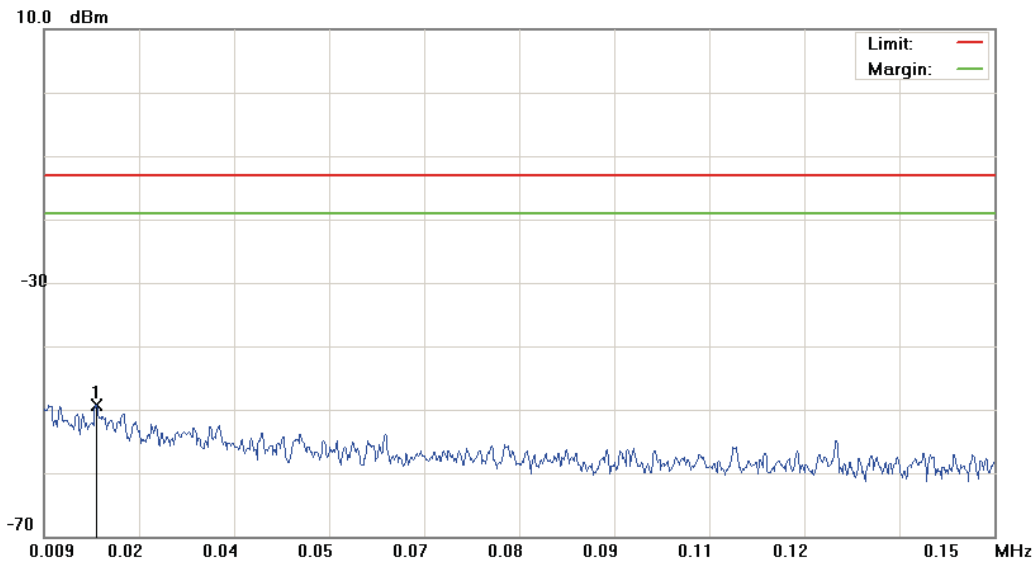
7.5. Uncertainty

The measurement uncertainty is evaluated as ± 2.24 dB.

7.6. Test Result

Model Number	PA820		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1 / Mode 2 / Mode 5 / Mode 6		
Date of Test	07072015	Test Site	TE05

File :PA820(CH128) Data :#1 Date: 2015/7/7 Time: 下午 03:18:37



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1 KHz VBW: 3 KHz
M/N: PA820
Mode: GPRS 850
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.0168	-79.90	30.55	-49.35	-13.00	-36.35	peak		

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

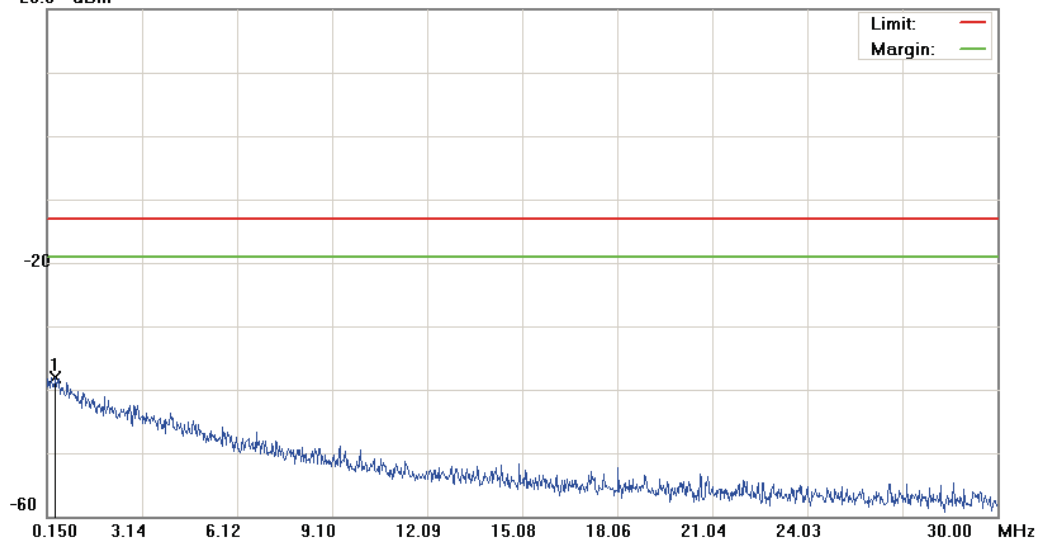
File :PA820(CH128)

Data :#2

Date: 2015/7/7

Time: 下午 03:19:01

20.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

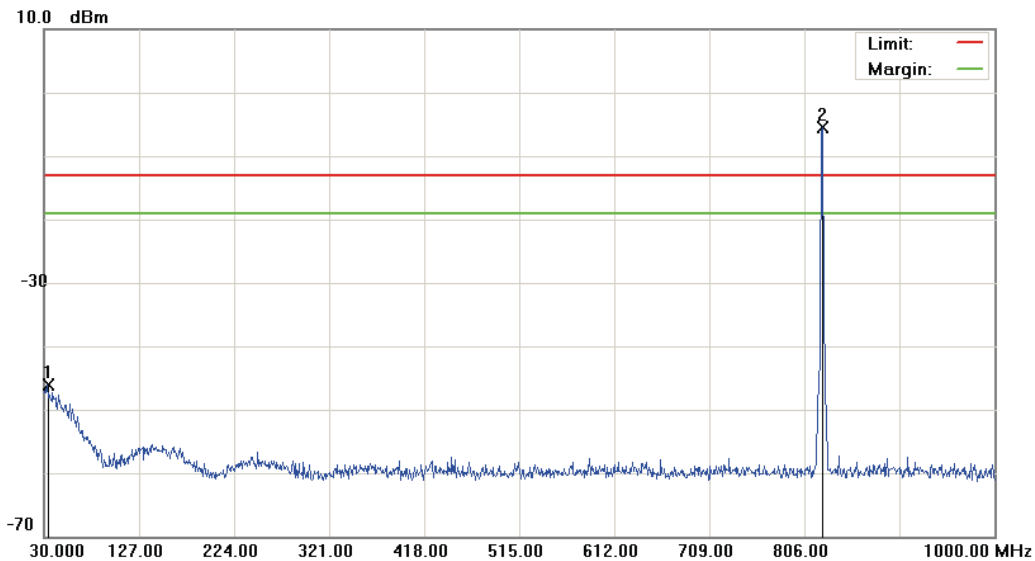
Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.4187	-69.94	31.93	-38.01	-13.00	-25.01	peak		Comment

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

File :PA820(CH128) Data :#3 Date: 2015/7/7 Time: 下午 03:19:25

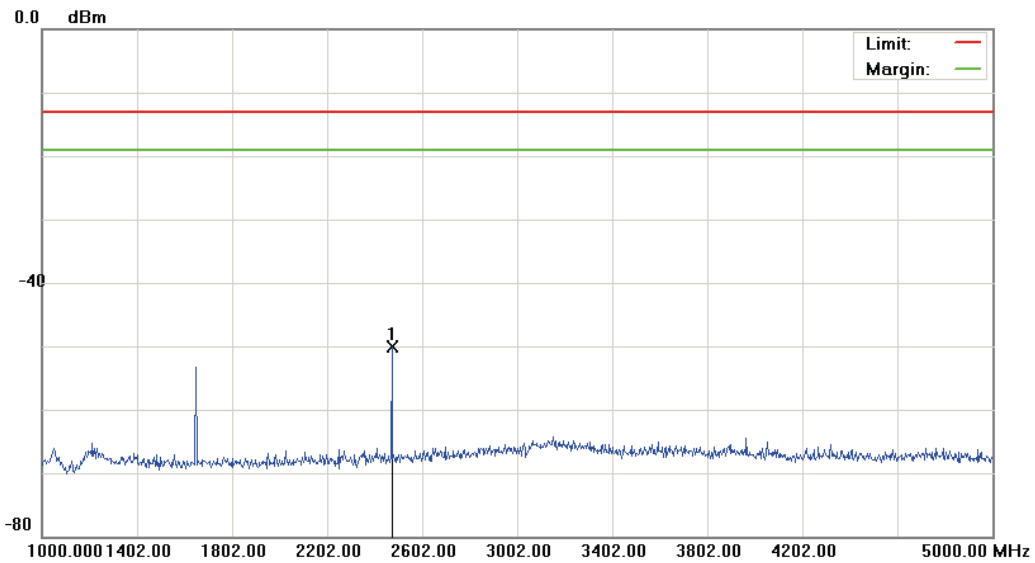


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: GPRS 850		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1		33.3950	-63.00	16.83	-46.17	-13.00	-33.17	peak		
2	*	824.4300	-9.37	3.84	-5.53	-13.00	7.47	peak		Tx

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

File :PA820(CH128) Data :#4 Date: 2015/7/7 Time: 下午 03:32:51



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: GPRS 850		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	2472.000	-54.62	4.45	-50.17	-13.00	-37.17	peak		

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

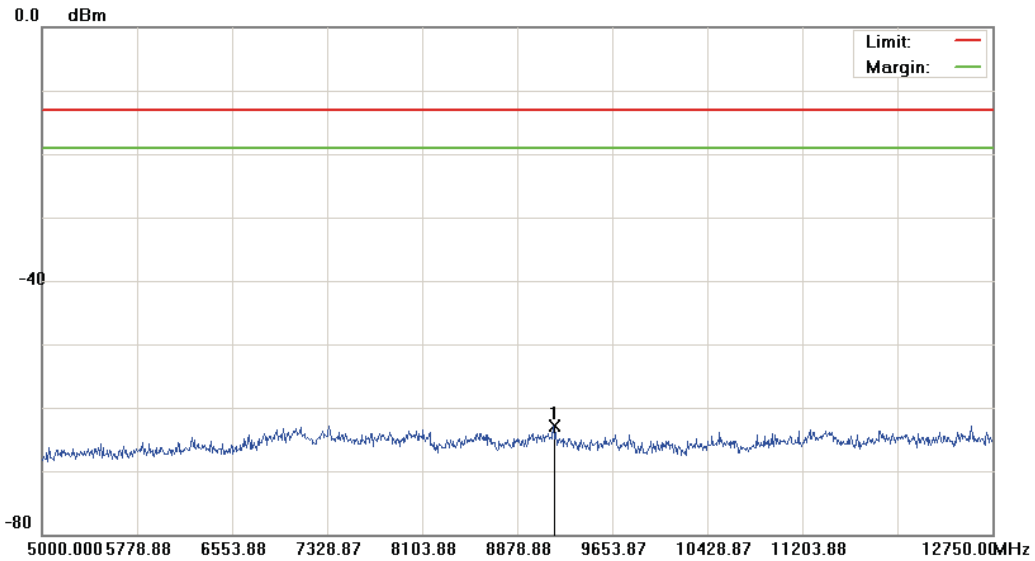


File :PA820(CH128)

Data :#5

Date: 2015/7/7

Time: 下午 03:33:14



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	9173.375	-68.69	5.81	-62.88	-13.00	-49.88	peak		Comment

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

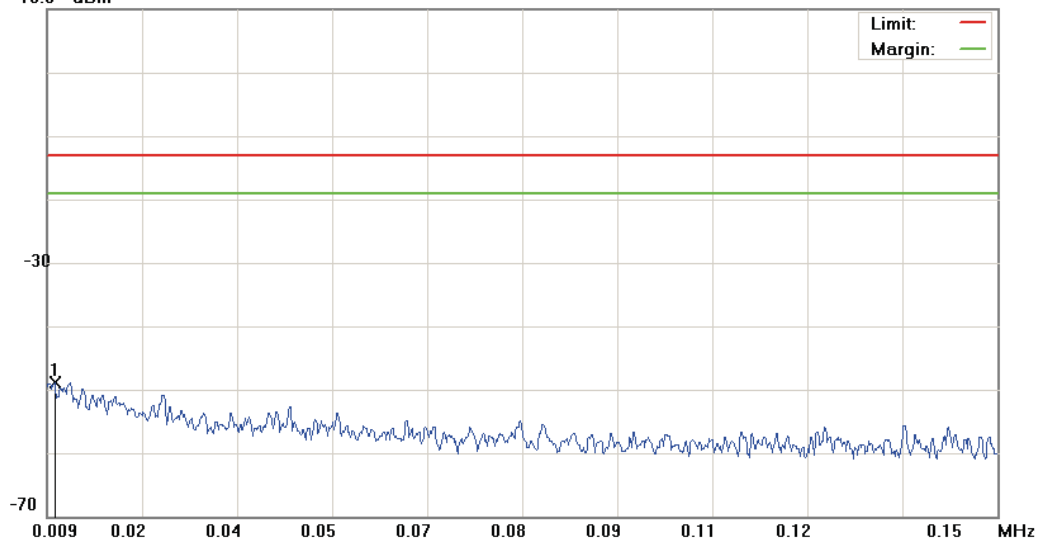
File :PA820(CH190)

Data :#1

Date: 2015/7/7

Time: 下午 03:21:06

10.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1 KHz VBW: 3 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.0101	-79.46	30.57	-48.89	-13.00	-35.89	peak		Comment

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

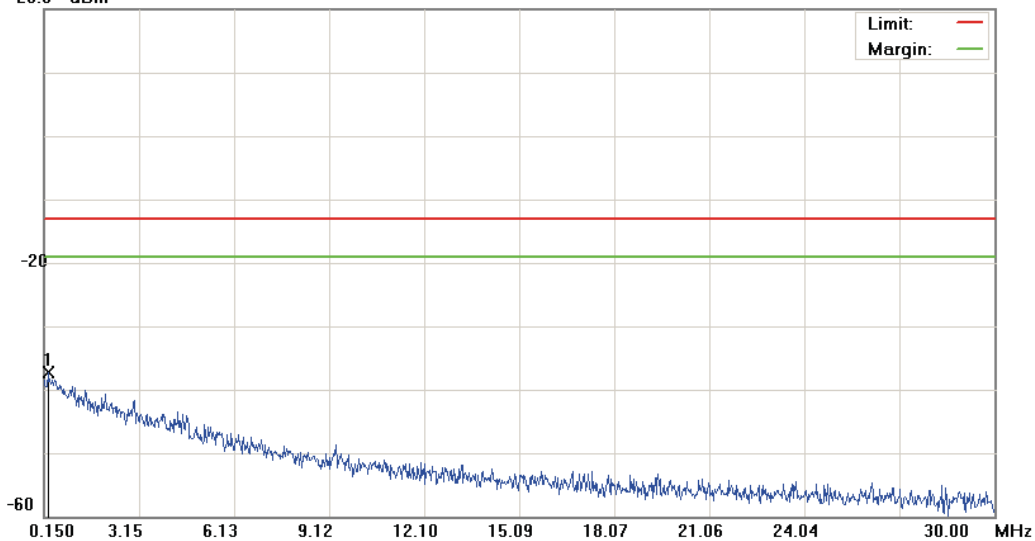
File :PA820(CH190)

Data :#2

Date: 2015/7/7

Time: 下午 03:21:30

20.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

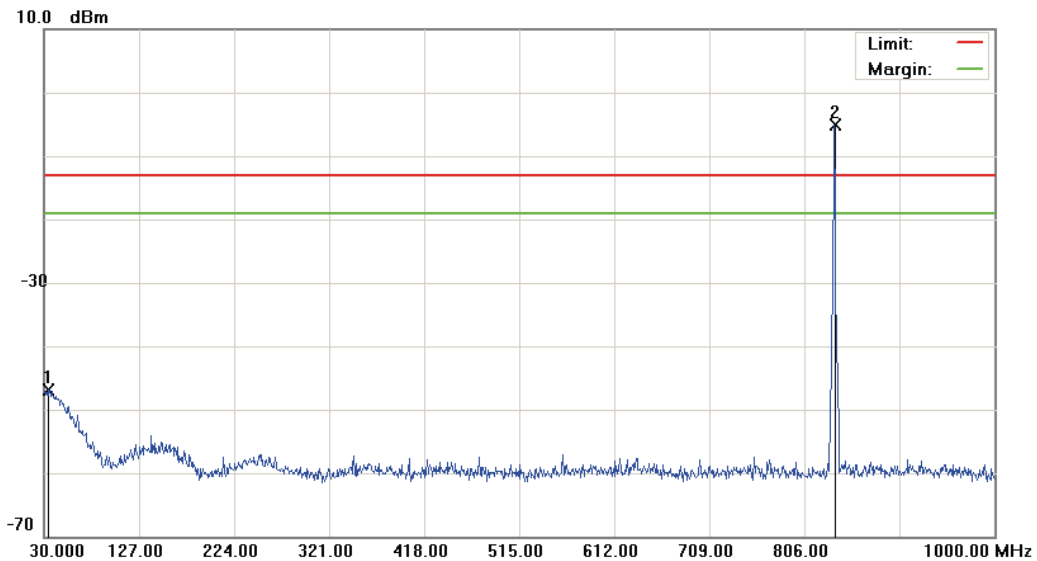
Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.2694	-68.82	31.49	-37.33	-13.00	-24.33	peak		Comment

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

File :PA820(CH190) Data :#3 Date: 2015/7/7 Time: 下午 03:21:55

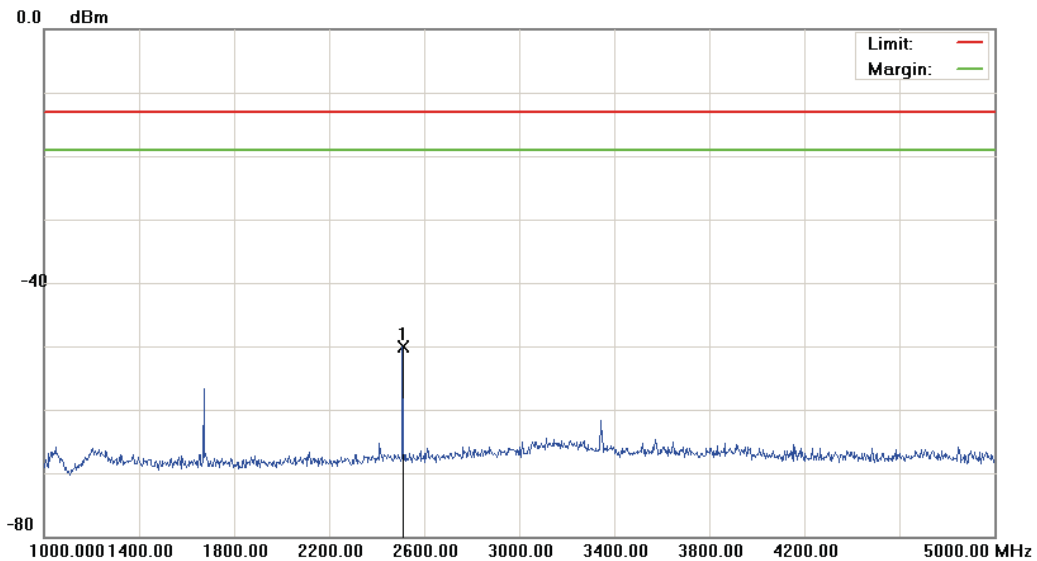


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: GPRS 850		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1		34.3650	-63.65	16.72	-46.93	-13.00	-33.93	peak		
2	*	836.5550	-8.96	3.96	-5.00	-13.00	8.00	peak		Tx

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

File :PA820(CH190) Data :#4 Date: 2015/7/7 Time: 下午 03:33:57



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: GPRS 850		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	2510.000	-54.54	4.36	-50.18	-13.00	-37.18	peak		

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

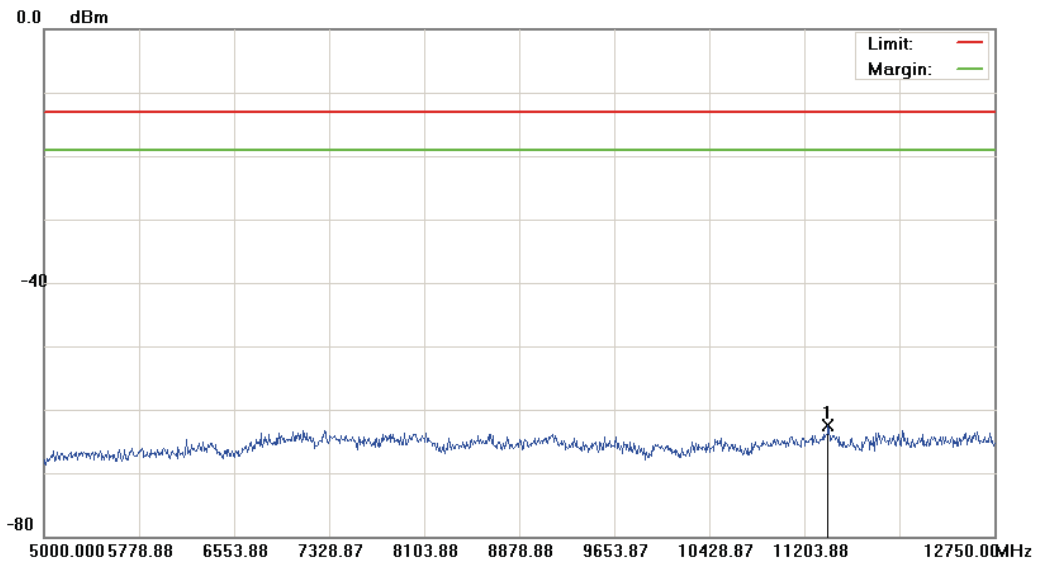


File :PA820(CH190)

Data :#5

Date: 2015/7/7

Time: 下午 03:34:20



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm
1	*	11393.750	-68.06	5.53	-62.53	-13.00	-49.53	peak	degree

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

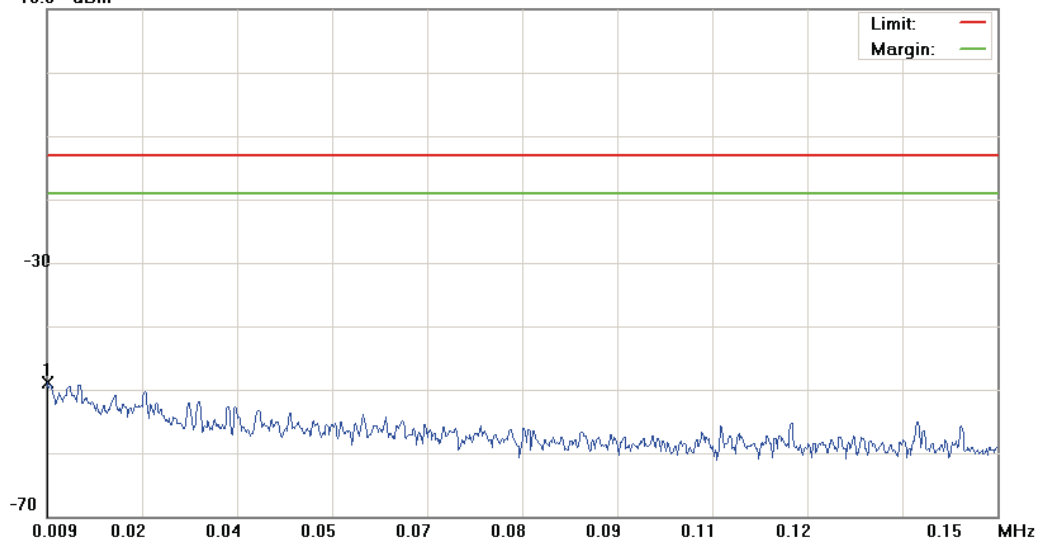
File :PA820(CH251)

Data :#1

Date: 2015/7/7

Time: 下午 03:24:14

10.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1 KHz VBW: 3 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.0090	-79.41	30.58	-48.83	-13.00	-35.83	peak		Comment

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

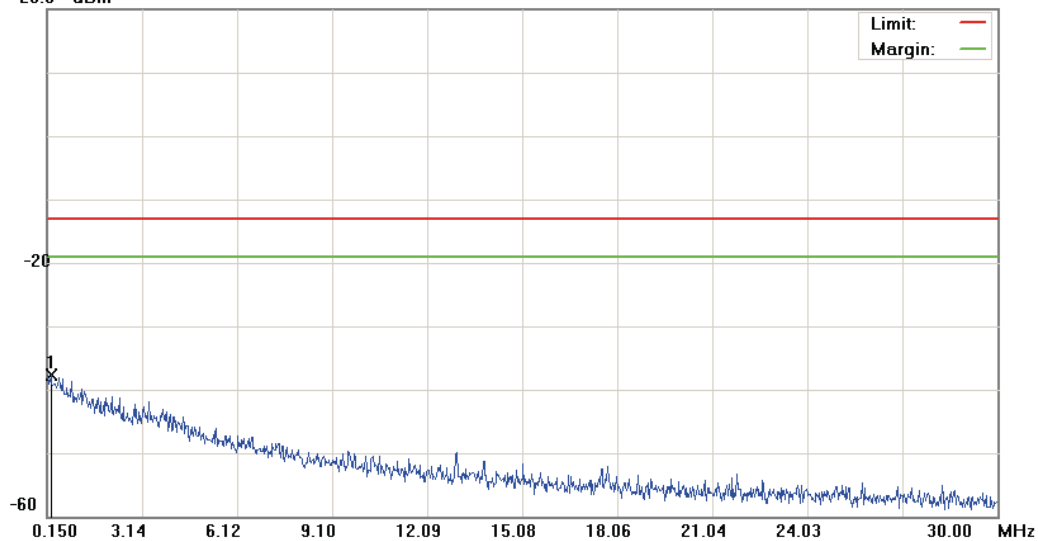
File :PA820(CH251)

Data :#2

Date: 2015/7/7

Time: 下午 03:24:38

20.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.2843	-69.23	31.61	-37.62	-13.00	-24.62	peak		Comment

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

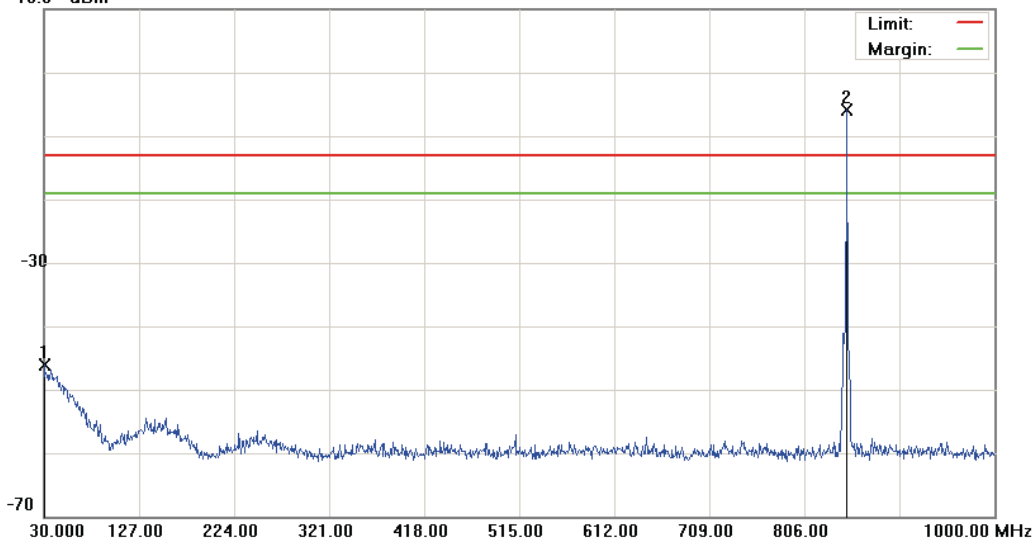
File :PA820(CH251)

Data :#3

Date: 2015/7/7

Time: 下午 03:25:02

10.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

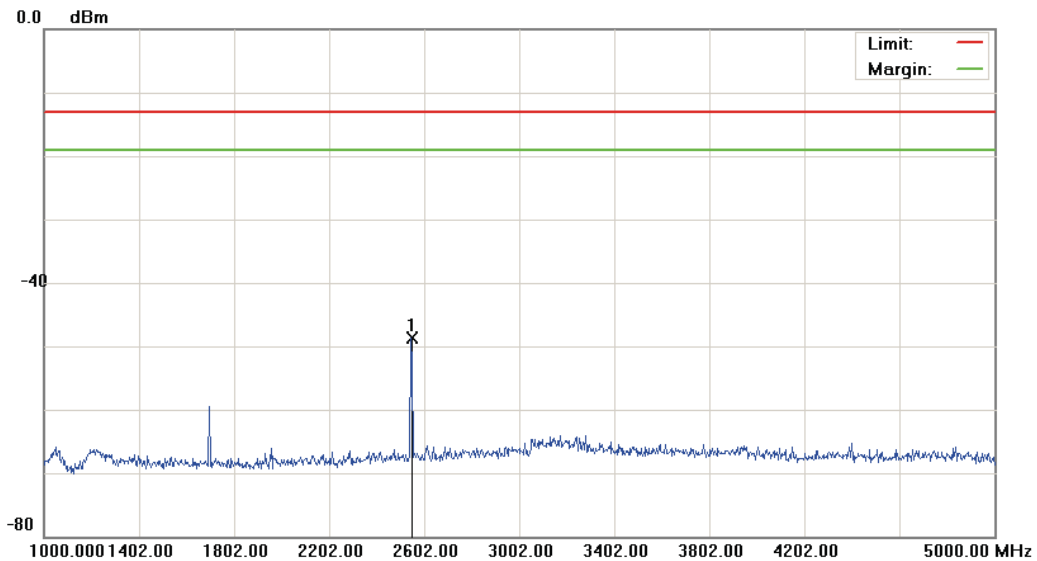
Humidity: 55 %

RBW: 100 KHz VBW: 300 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1		30.0000	-63.26	17.21	-46.05	-13.00	-33.05	peak		
2	*	849.6500	-9.92	3.98	-5.94	-13.00	7.06	peak		Tx

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

File :PA820(CH251) Data :#4 Date: 2015/7/7 Time: 下午 03:35:00



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: GPRS 850		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	2546.000	-53.24	4.45	-48.79	-13.00	-35.79	peak	

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

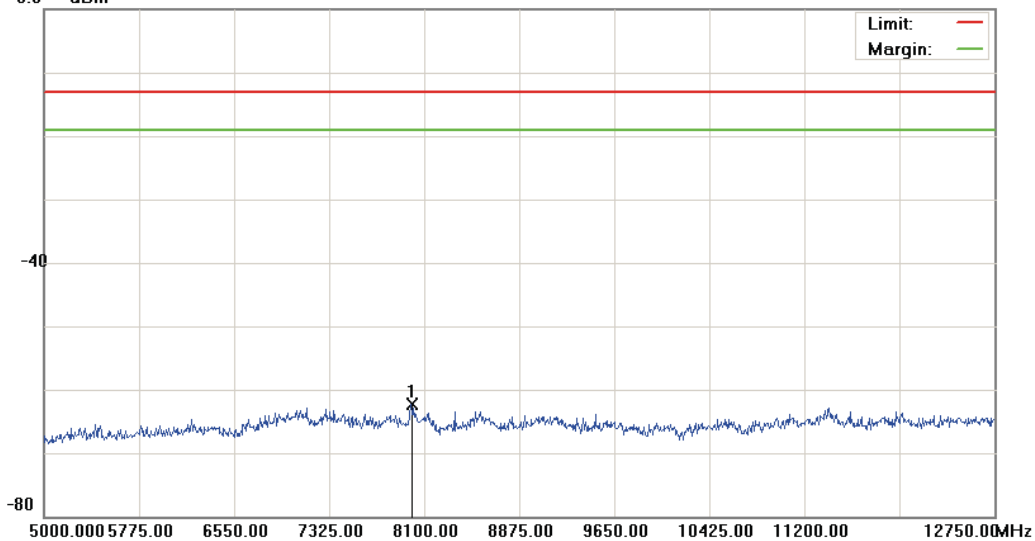
File :PA820(CH251)

Data :#5

Date: 2015/7/7

Time: 下午 03:35:23

0.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 850

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	7995.375	-67.77	5.53	-62.24	-13.00	-49.24	peak	degree

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



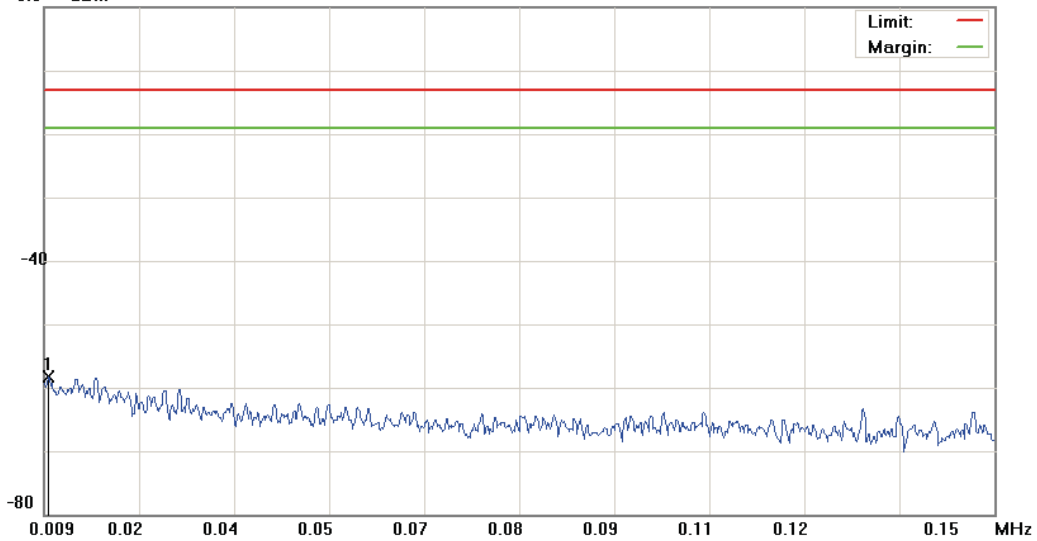
File :PA820(CH512)

Data :#1

Date: 2015/7/7

Time: 下午 02:28:05

0.0 dBm



Site: site #1
Limit: FCC Part 24 conducted(9k-26.5G)
EUT: Rugged Handheld Computer
M/N: PA820
Mode: GPRS 1900
Note:

Polarization: Conducted Power
Power: DC 3.7V
Distance:

Temperature: 26 °C
Humidity: 55 %
RBW: 1 KHz VBW: 3 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	0.0097	-69.61	11.33	-58.28	-13.00	-45.28	peak		

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

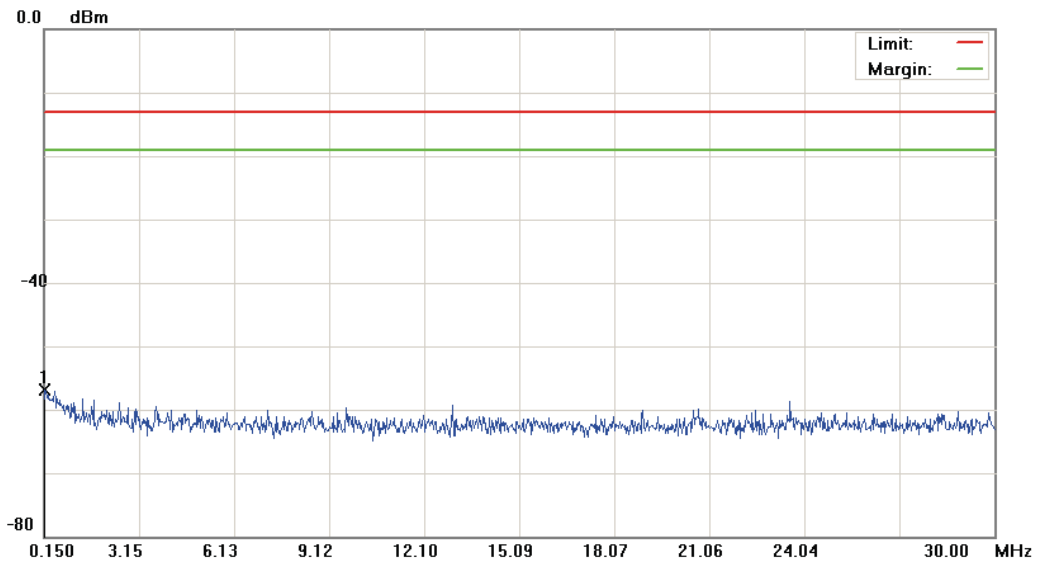


File :PA820(CH512)

Data :#2

Date: 2015/7/7

Time: 下午 02:28:29



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 1900

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

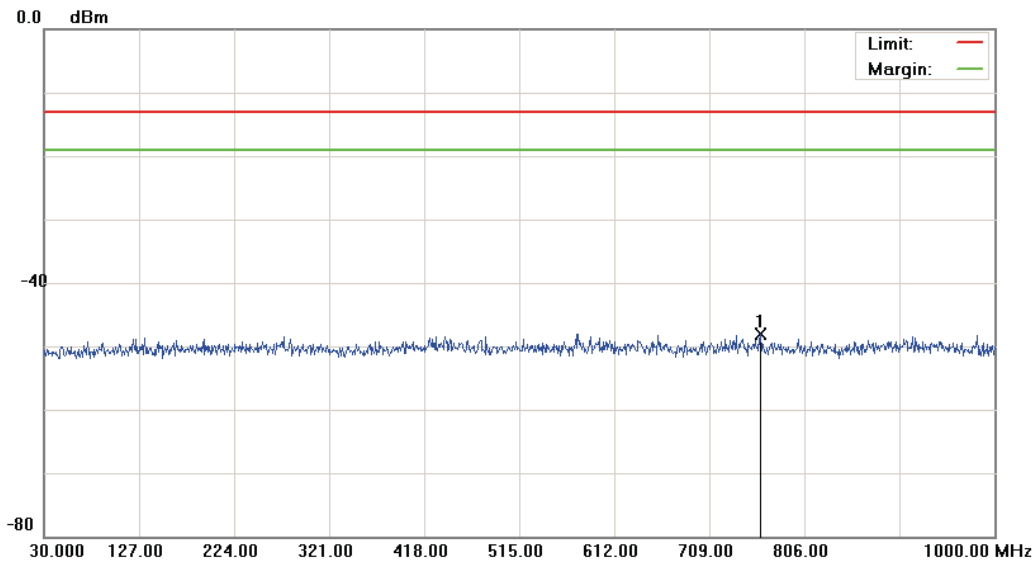
Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	0.1798	-69.39	12.45	-56.94	-13.00	-43.94	peak	Comment

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

File :PA820(CH512) Data :#3 Date: 2015/7/7 Time: 下午 02:28:53

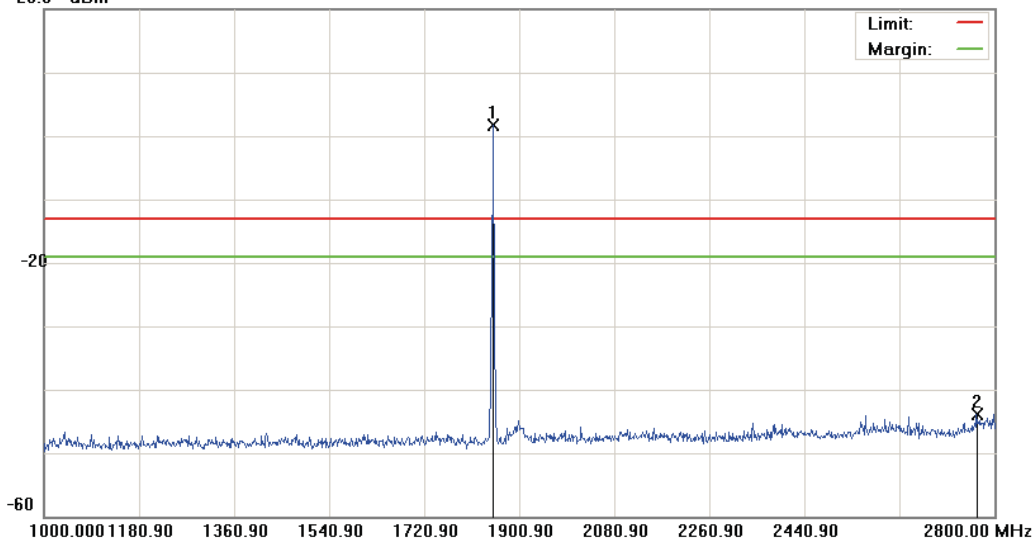


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 100 KHz VBW: 300 KHz
M/N: PA820
Mode: GPRS 1900
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	761.3800	-61.21	13.15	-48.06	-13.00	-35.06	peak	

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

File :PA820(CH512) Data :#4 Date: 2015/7/7 Time: 下午 02:34:56
20.0 dBm

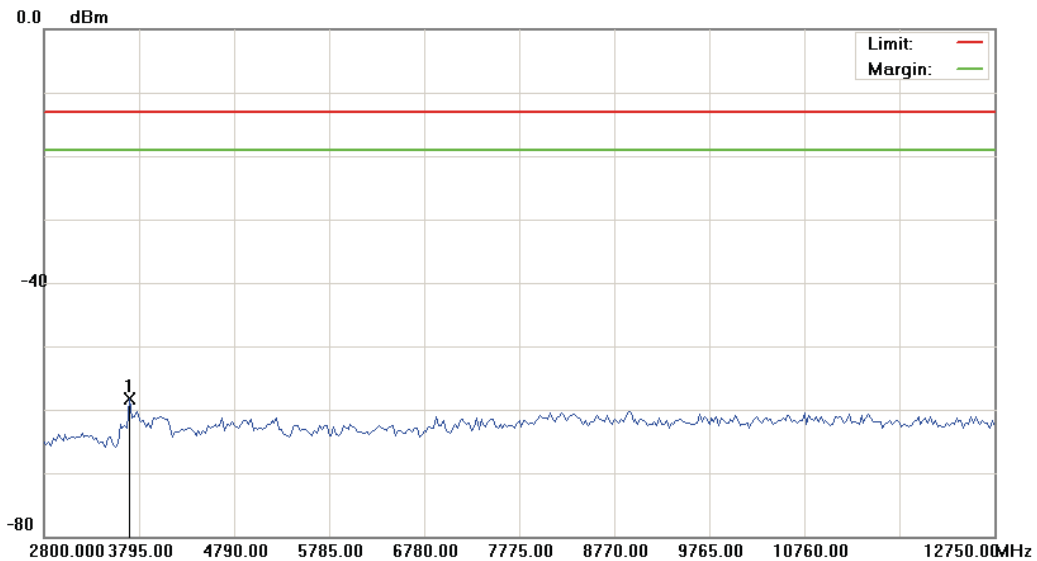


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: GPRS 1900
Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	1851.400	-2.50	4.26	1.76	-13.00	14.76	peak		Tx
2		2766.700	-49.55	5.69	-43.86	-13.00	-30.86	peak		

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

File :PA820(CH512) Data :#5 Date: 2015/7/7 Time: 下午 03:49:01



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: GPRS 1900		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	3695.500	-63.20	4.87	-58.33	-13.00	-45.33	peak		

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

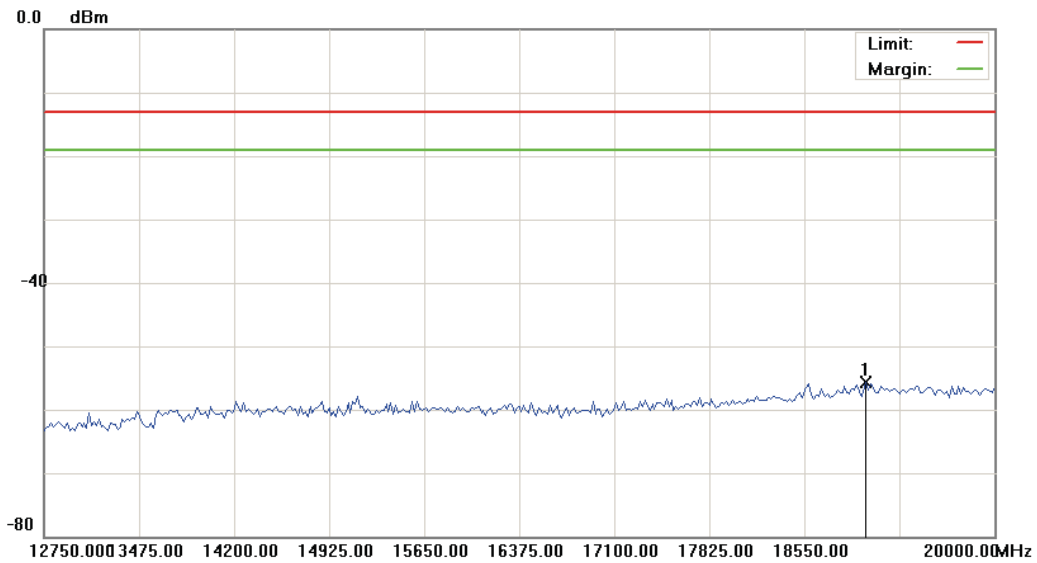


File :PA820(CH512)

Data :#6

Date: 2015/7/7

Time: 下午 03:49:20

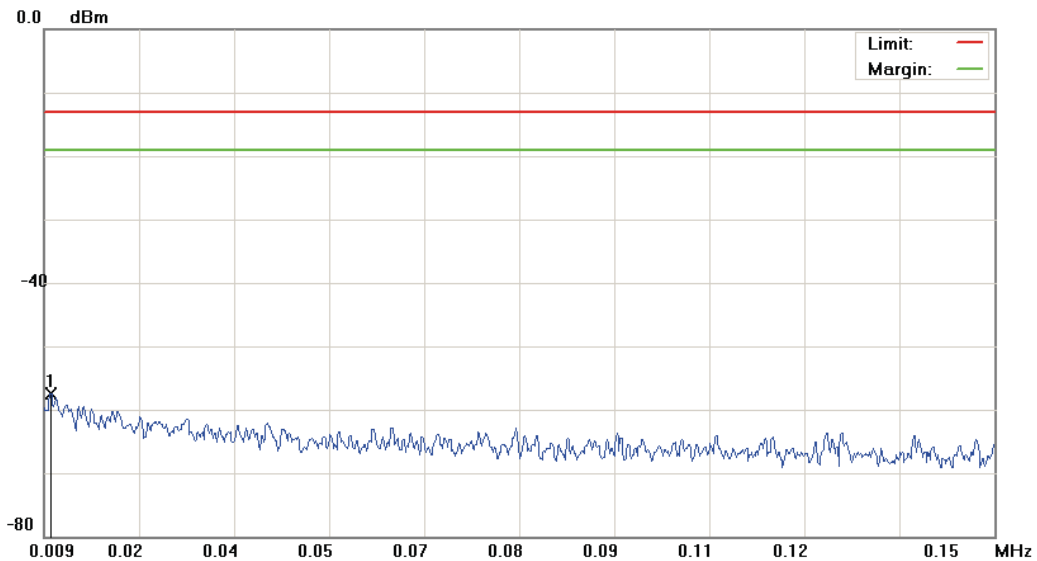


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: GPRS 1900
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	19021.250	-62.91	7.16	-55.75	-13.00	-42.75	peak	

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

File :PA820(CH661) Data :#1 Date: 2015/7/7 Time: 下午 02:29:37

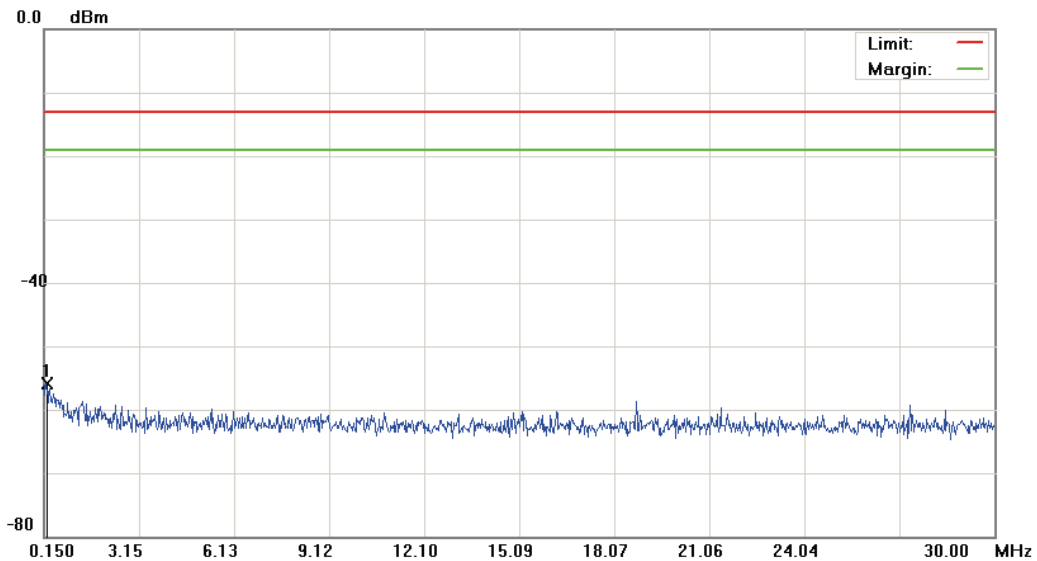


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1 KHz VBW: 3 KHz
M/N: PA820		
Mode: GPRS 1900		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	0.0100	-68.80	11.33	-57.47	-13.00	-44.47	peak		

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

File :PA820(CH661) Data :#2 Date: 2015/7/7 Time: 下午 02:30:01



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 10 KHz VBW: 30 KHz
M/N: PA820		
Mode: GPRS 1900		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.2246	-68.44	12.47	-55.97	-13.00	-42.97	peak		

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



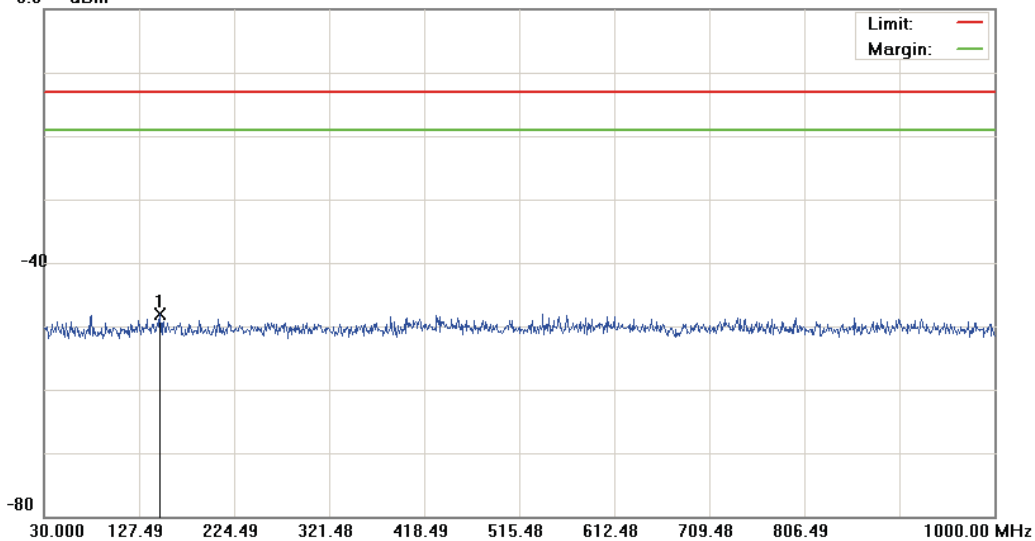
File :PA820(CH661)

Data :#3

Date: 2015/7/7

Time: 下午 02:30:25

0.0 dBm



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 1900

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

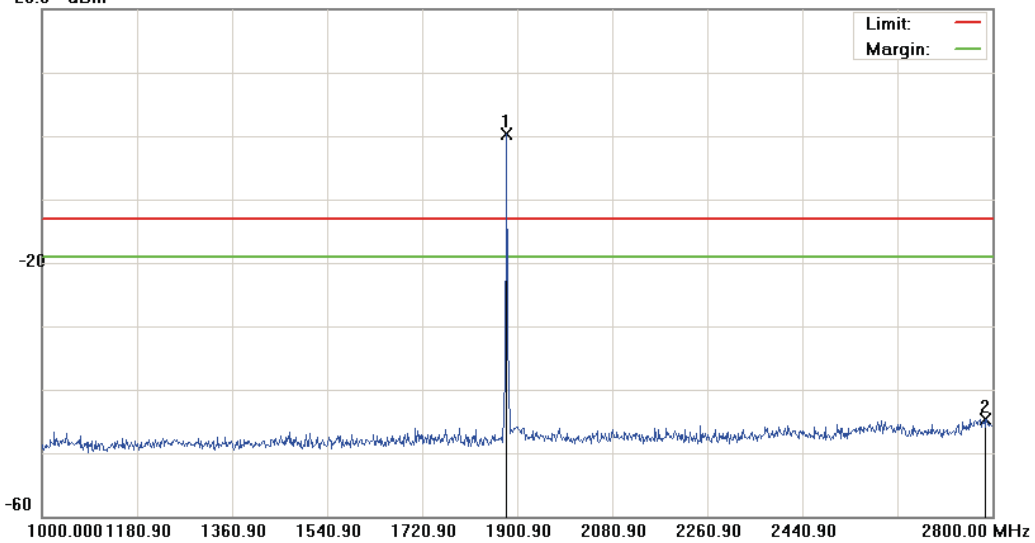
Humidity: 55 %

RBW: 100 KHz VBW: 300 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm
1	*	148.3400	-61.40	13.34	-48.06	-13.00	-35.06	peak	degree

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

File :PA820(CH661) Data :#4 Date: 2015/7/7 Time: 下午 02:38:50
20.0 dBm



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: GPRS 1900
Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	1880.200	-4.28	4.65	0.37	-13.00	13.37	peak		Tx
2		2785.600	-50.53	5.89	-44.64	-13.00	-31.64	peak		

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

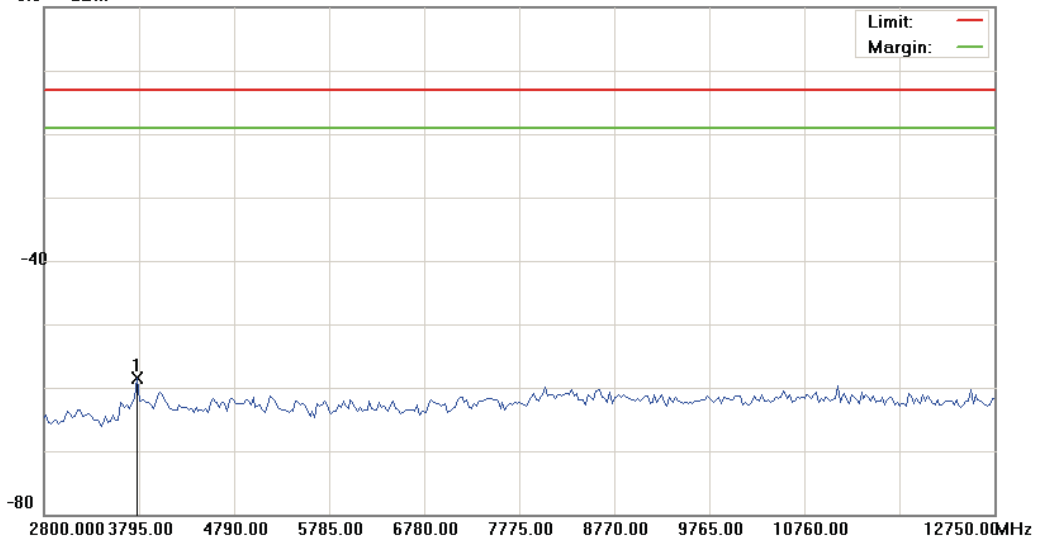
File :PA820(CH661)

Data :#5

Date: 2015/7/7

Time: 下午 03:49:52

0.0 dBm



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: GPRS 1900		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	3770.125	-63.38	4.93	-58.45	-13.00	-45.45	peak	

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

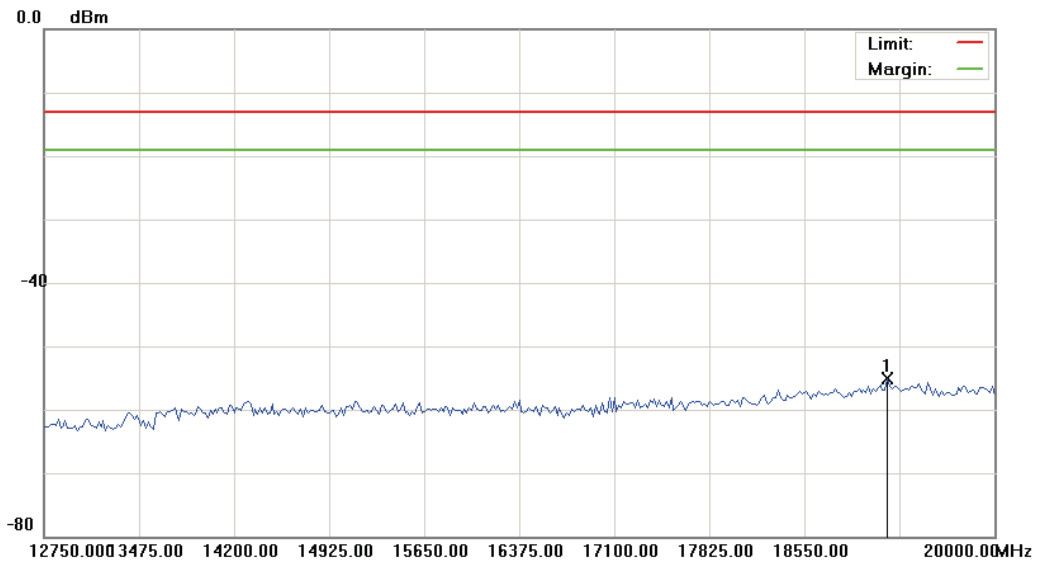


File :PA820(CH661)

Data :#6

Date: 2015/7/7

Time: 下午 03:50:11

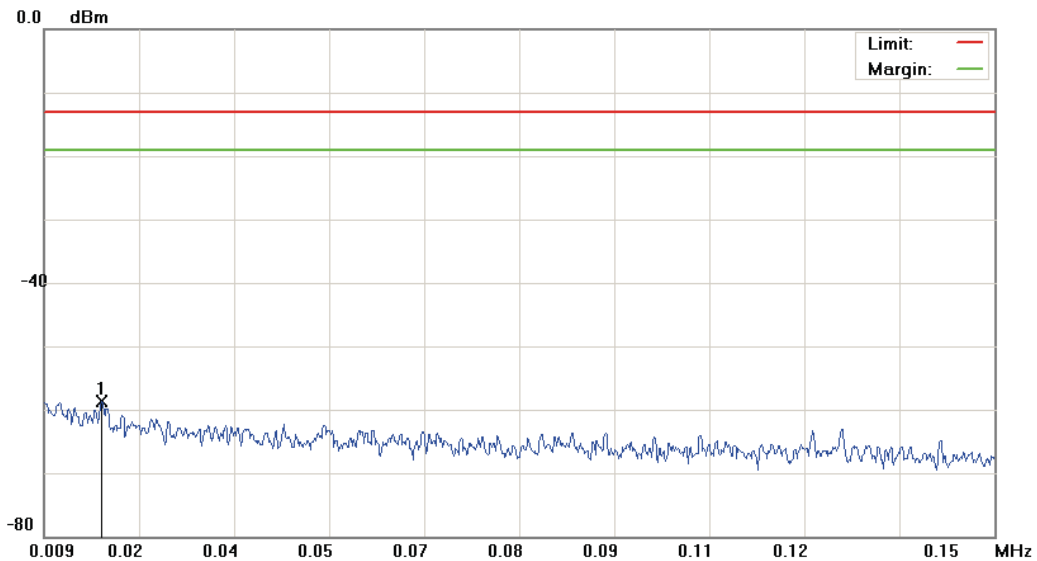


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: GPRS 1900
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm
1	*	19184.375	-62.31	7.21	-55.10	-13.00	-42.10	peak	degree

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

File :PA820(CH810) Data :#1 Date: 2015/7/7 Time: 下午 02:31:42



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1 KHz VBW: 3 KHz
M/N: PA820		
Mode: GPRS 1900		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.0176	-70.14	11.42	-58.72	-13.00	-45.72	peak		

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



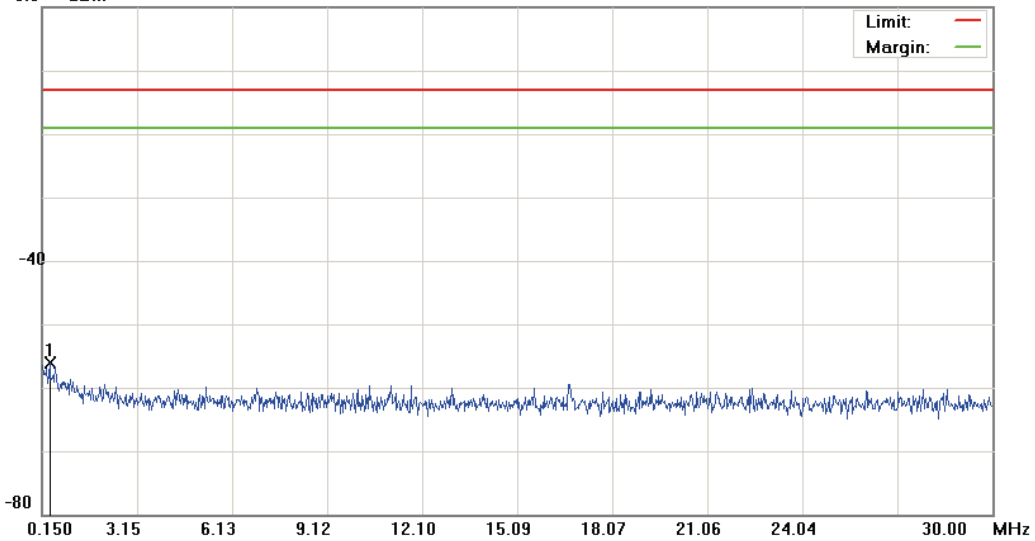
File :PA820(CH810)

Data :#2

Date: 2015/7/7

Time: 下午 02:32:06

0.0 dBm



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 1900

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.3888	-68.97	12.79	-56.18	-13.00	-43.18	peak		Comment

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



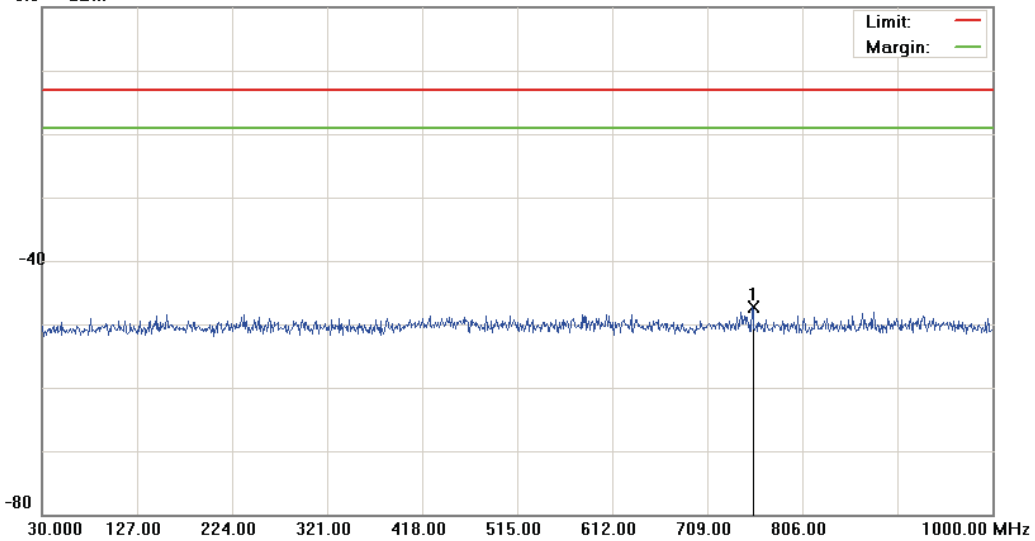
File :PA820(CH810)

Data :#3

Date: 2015/7/7

Time: 下午 02:32:30

0.0 dBm



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 100 KHz VBW: 300 v
M/N: PA820
Mode: GPRS 1900
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	755.0750	-60.52	13.16	-47.36	-13.00	-34.36	peak		

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



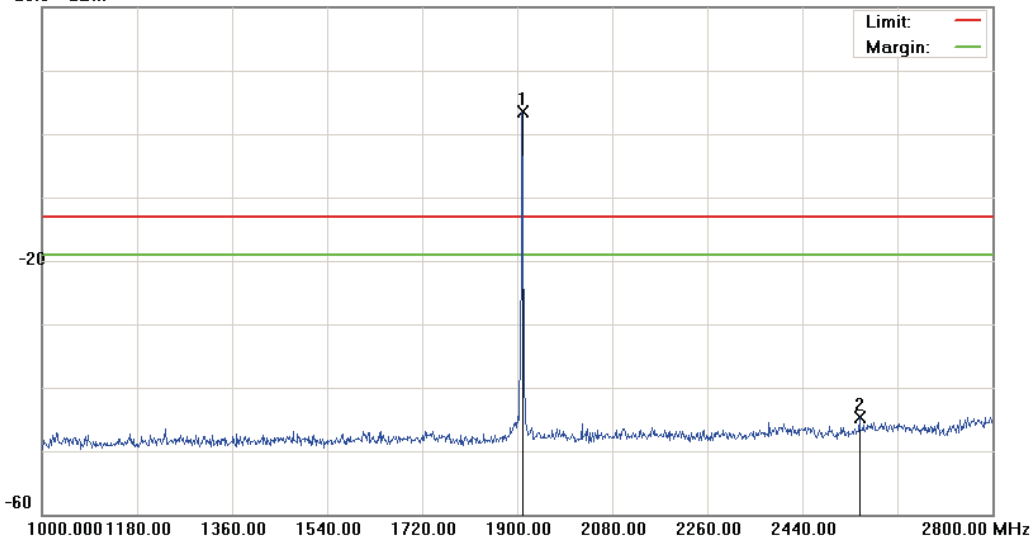
File :PA820(CH810)

Data :#4

Date: 2015/7/7

Time: 下午 02:40:30

20.0 dBm



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 1900

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

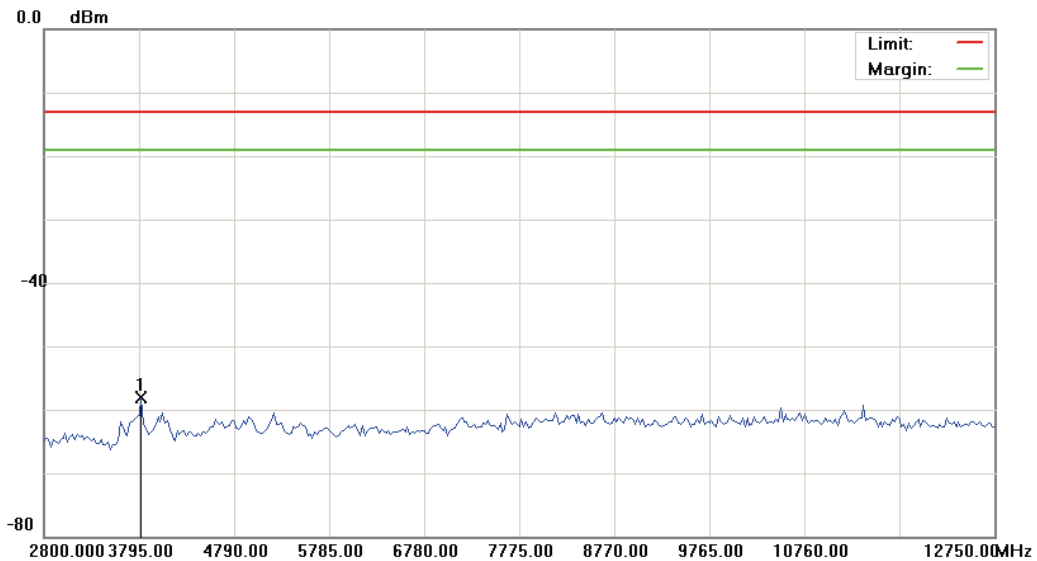
Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	1909.900	-2.24	5.71	3.47	-13.00	16.47	peak		Tx
2		2548.000	-49.85	5.14	-44.71	-13.00	-31.71	peak		

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

File :PA820(CH810) Data :#5 Date: 2015/7/7 Time: 下午 03:50:44



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: GPRS 1900		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	3819.875	-63.05	4.91	-58.14	-13.00	-45.14	peak		

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

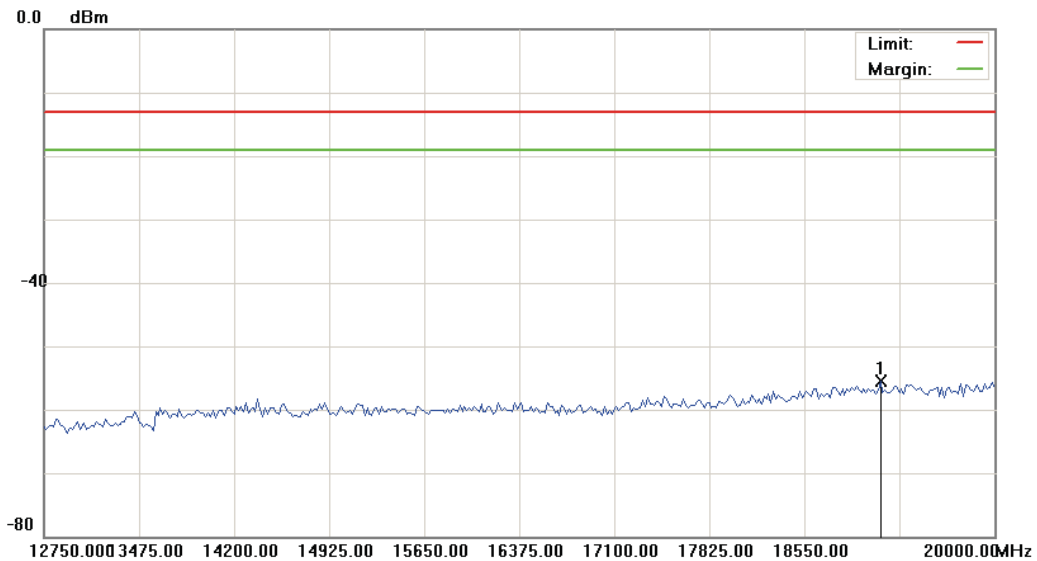


File :PA820(CH810)

Data :#6

Date: 2015/7/7

Time: 下午 03:51:03



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: GPRS 1900

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

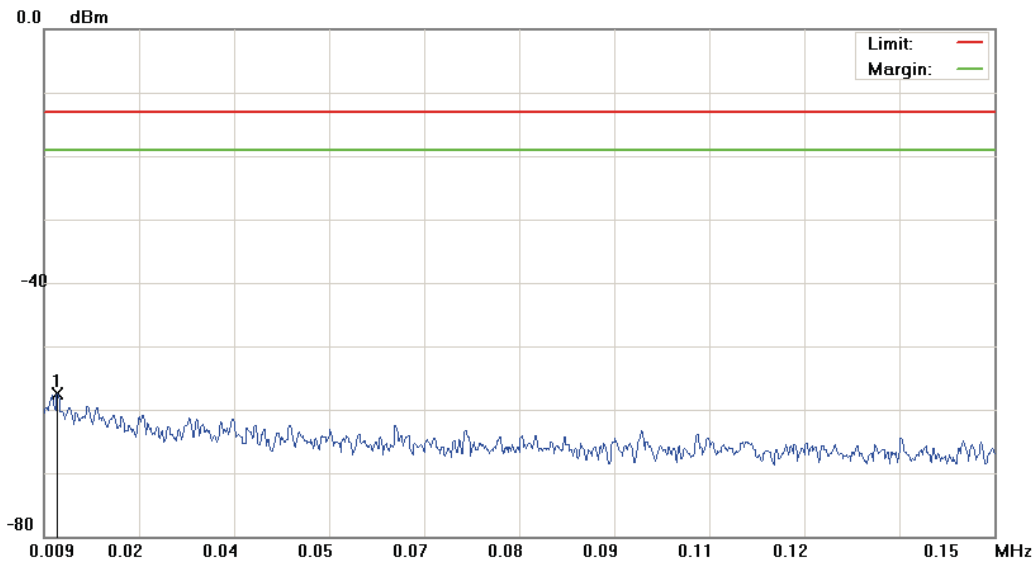
Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	19130.000	-62.69	7.19	-55.50	-13.00	-42.50	peak		

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

File :PA820(CH9262) Data :#1 Date: 2015/7/7 Time: 下午 02:50:20

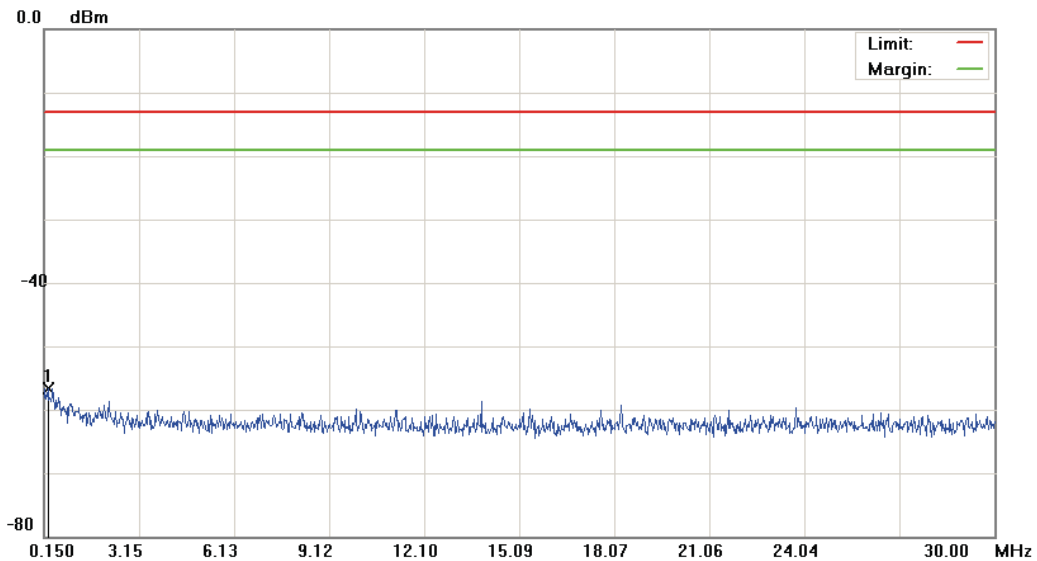


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1 KHz VBW: 3 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.0110	-68.82	11.35	-57.47	-13.00	-44.47	peak		

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

File :PA820(CH9262) Data :#2 Date: 2015/7/7 Time: 下午 02:50:44

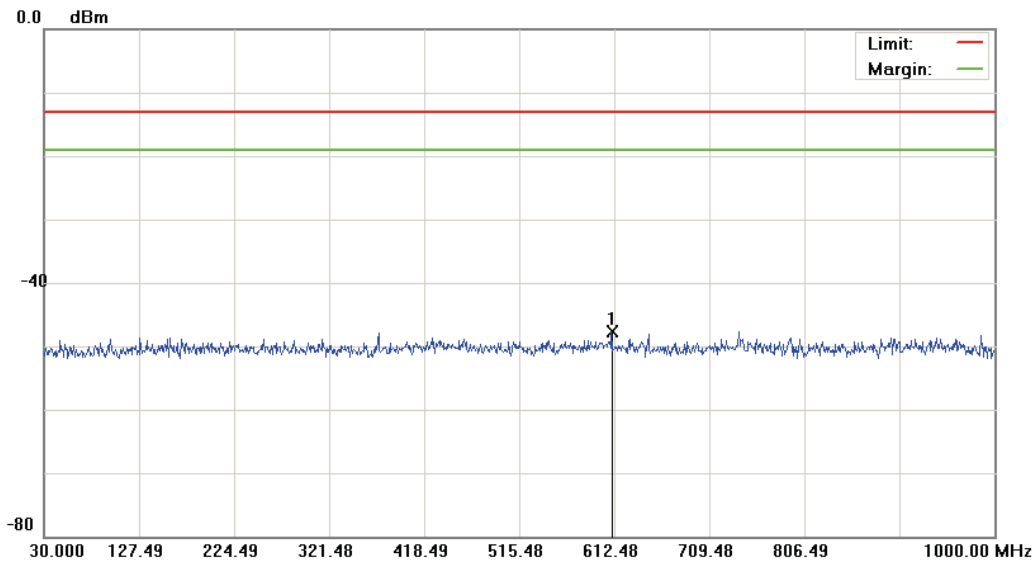


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 10 KHz VBW: 30 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.2843	-69.36	12.59	-56.77	-13.00	-43.77	peak		

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

File :PA820(CH9262) Data :#3 Date: 2015/7/7 Time: 下午 02:51:08



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: WCDMA Band II		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	609.5750	-60.88	13.17	-47.71	-13.00	-34.71	peak		

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

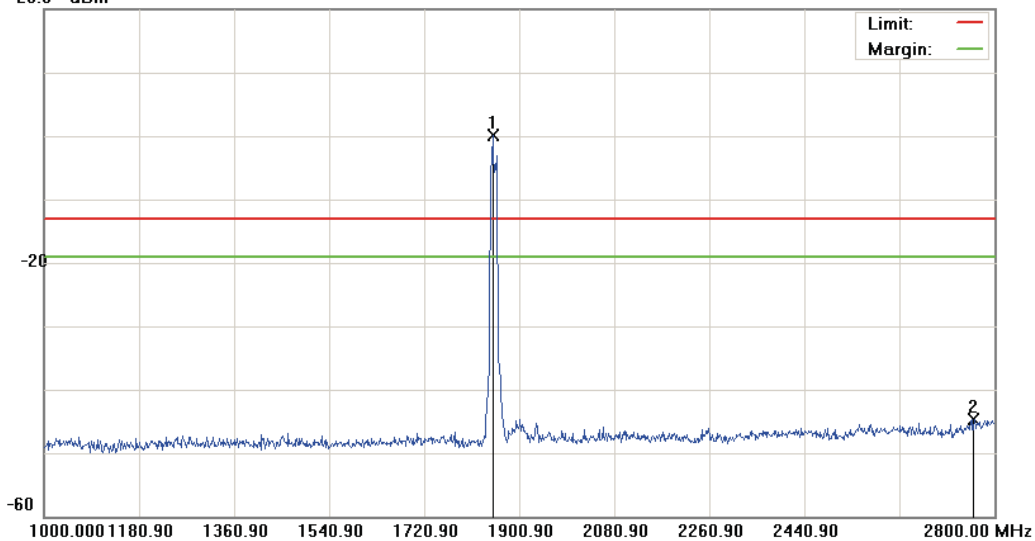
File :PA820(CH9262)

Data :#4

Date: 2015/7/7

Time: 下午 02:55:45

20.0 dBm



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band II

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	1850.500	-4.09	4.26	0.17	-13.00	13.17	peak		Tx
2		2759.500	-50.27	5.59	-44.68	-13.00	-31.68	peak		

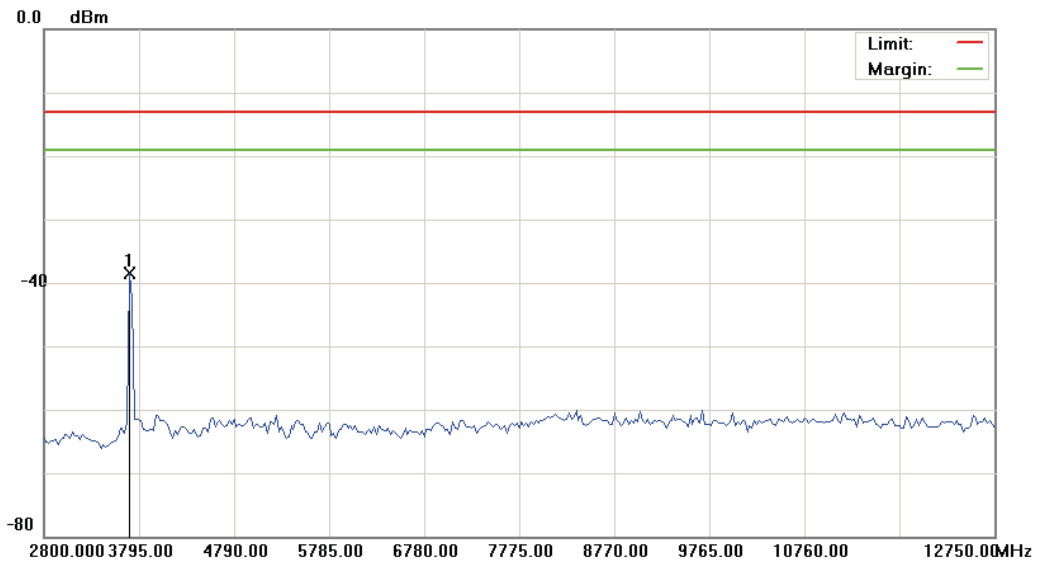
*:Maximum data x:Over limit !:over margin

File :PA820(CH9262)

Data :#5

Date: 2015/7/7

Time: 下午 03:44:12



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band II

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	3695.500	-43.45	4.87	-38.58	-13.00	-25.58	peak		

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

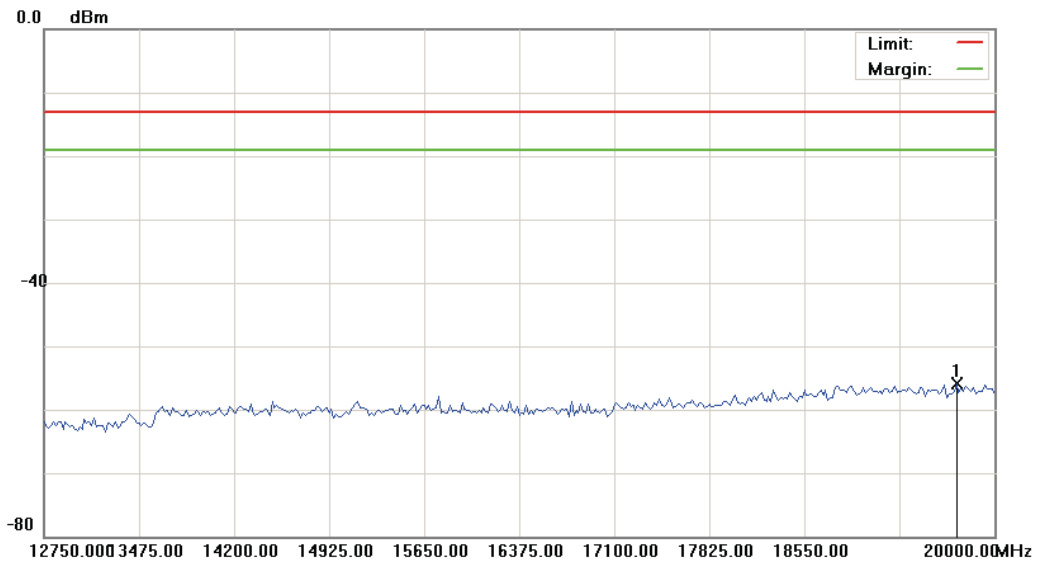


File :PA820(CH9262)

Data :#6

Date: 2015/7/7

Time: 下午 03:44:31

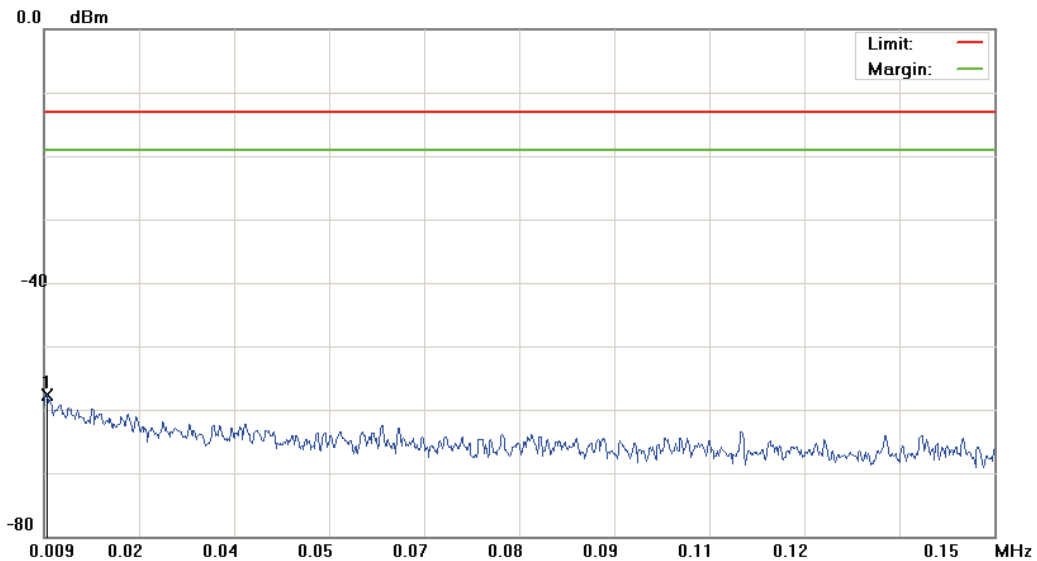


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	19710.000	-63.22	7.36	-55.86	-13.00	-42.86	peak		Comment

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

File :PA820(CH9400) Data :#1 Date: 2015/7/7 Time: 下午 02:52:01



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1 KHz VBW: 3 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.0094	-69.09	11.33	-57.76	-13.00	-44.76	peak		

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

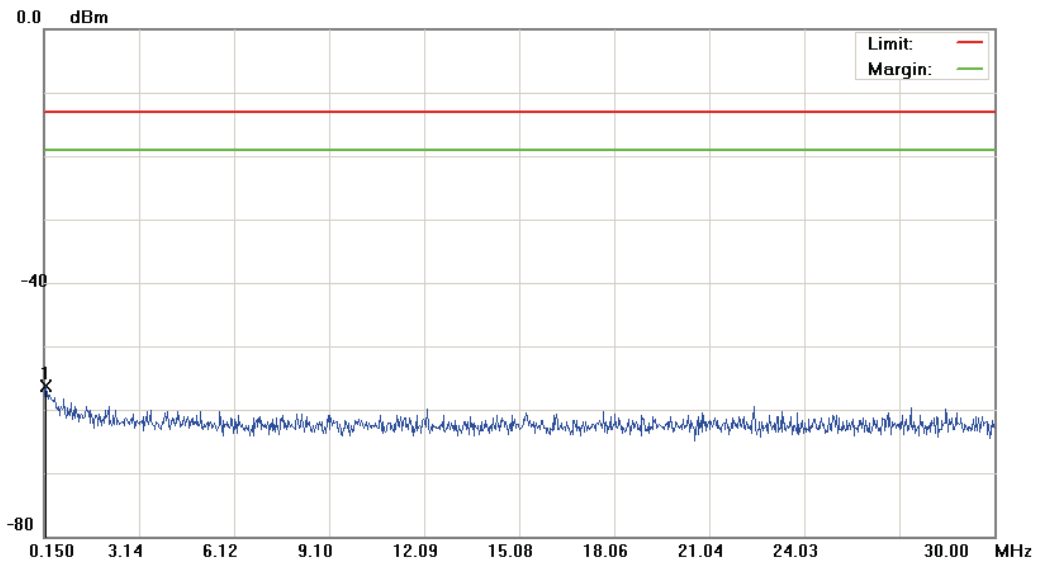


File :PA820(CH9400)

Data :#2

Date: 2015/7/7

Time: 下午 02:52:25

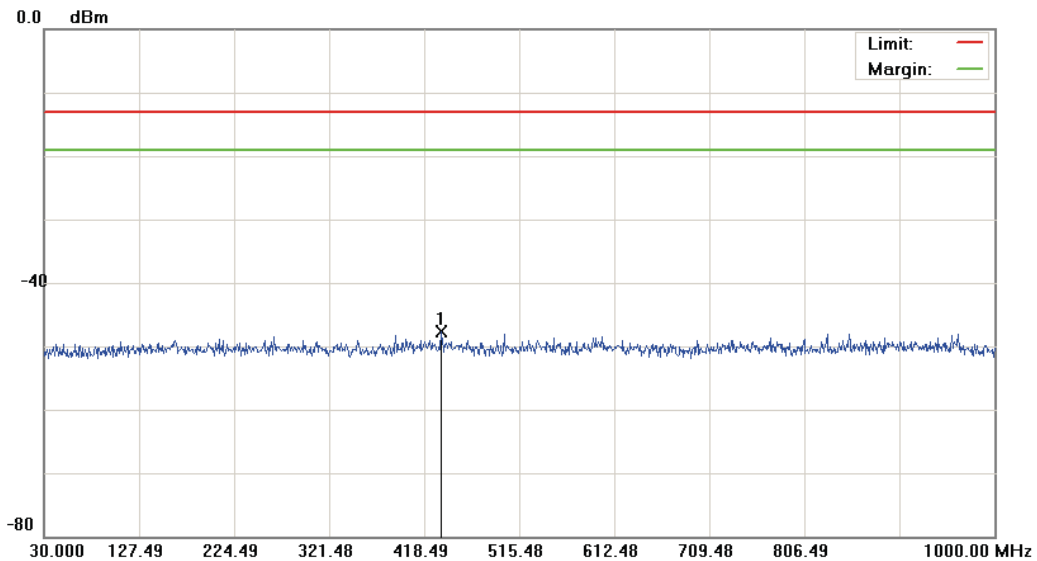


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 10 KHz VBW: 30 KHz
M/N: PA820		
Mode: WCDMA Band II		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	0.2097	-68.83	12.44	-56.39	-13.00	-43.39	peak	Comment

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

File :PA820(CH9400) Data :#3 Date: 2015/7/7 Time: 下午 02:52:49

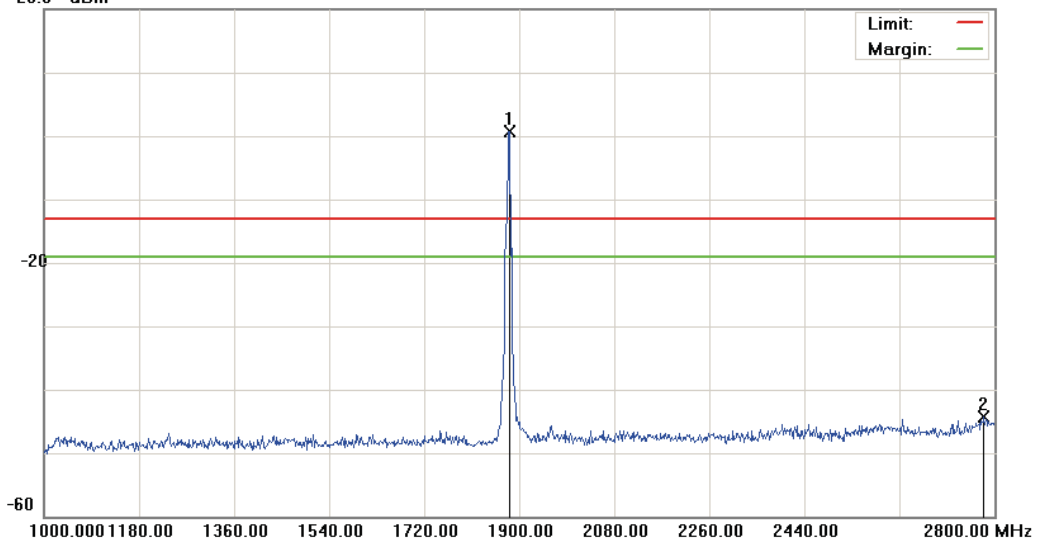


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: WCDMA Band II		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	435.4600	-61.02	13.25	-47.77	-13.00	-34.77	peak		

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

File :PA820(CH9400) Data :#4 Date: 2015/7/7 Time: 下午 03:06:09
20.0 dBm



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree degree	Comment
1	*	1882.000	-4.11	4.83	0.72	-13.00	13.72	peak		Tx
2		2780.200	-50.22	5.88	-44.34	-13.00	-31.34	peak		

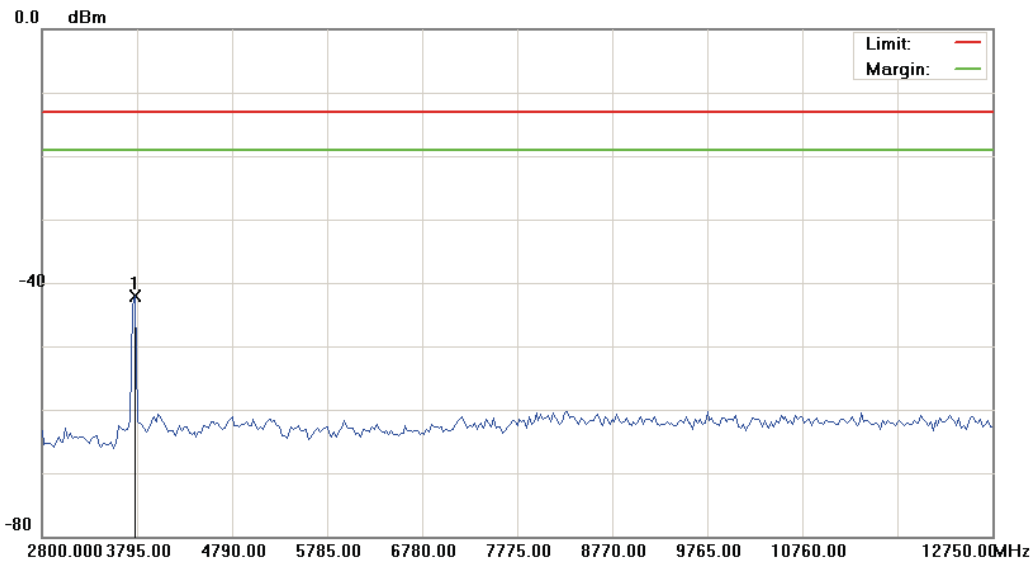
*:Maximum data x:Over limit !:over margin

File :PA820(CH9400)

Data :#5

Date: 2015/7/7

Time: 下午 03:45:05



Site: site #1

Polarization: Conducted Power

Temperature: 26 °C

Limit: FCC Part 24 conducted(9k-26.5G)

Power: DC 3.7V

Humidity: 55 %

EUT: Rugged Handheld Computer

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: PA820

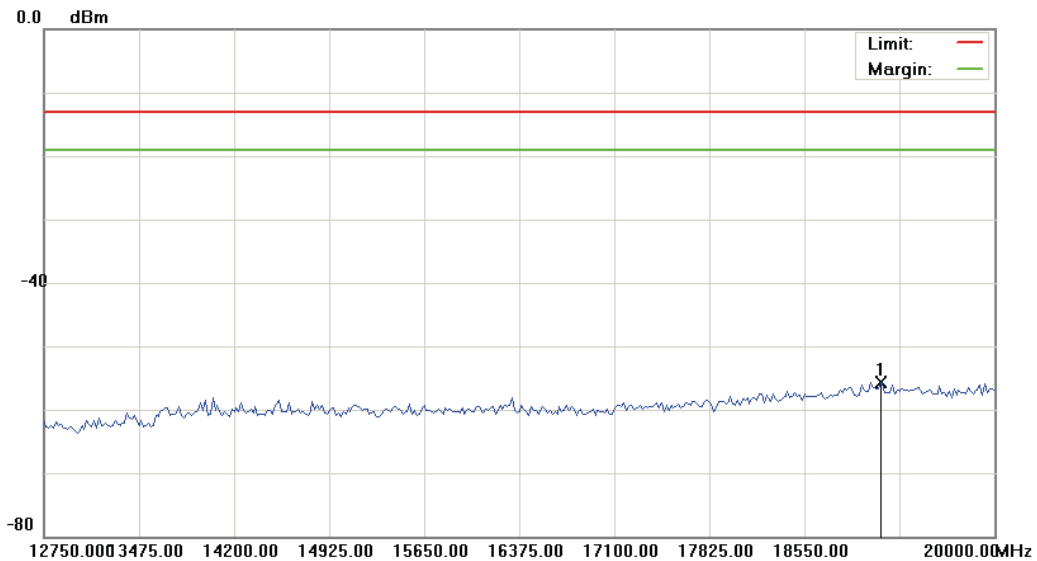
Mode: WCDMA Band II

Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	3770.125	-47.03	4.93	-42.10	-13.00	-29.10	peak		Comment

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

File :PA820(CH9400) Data :#6 Date: 2015/7/7 Time: 下午 03:45:24

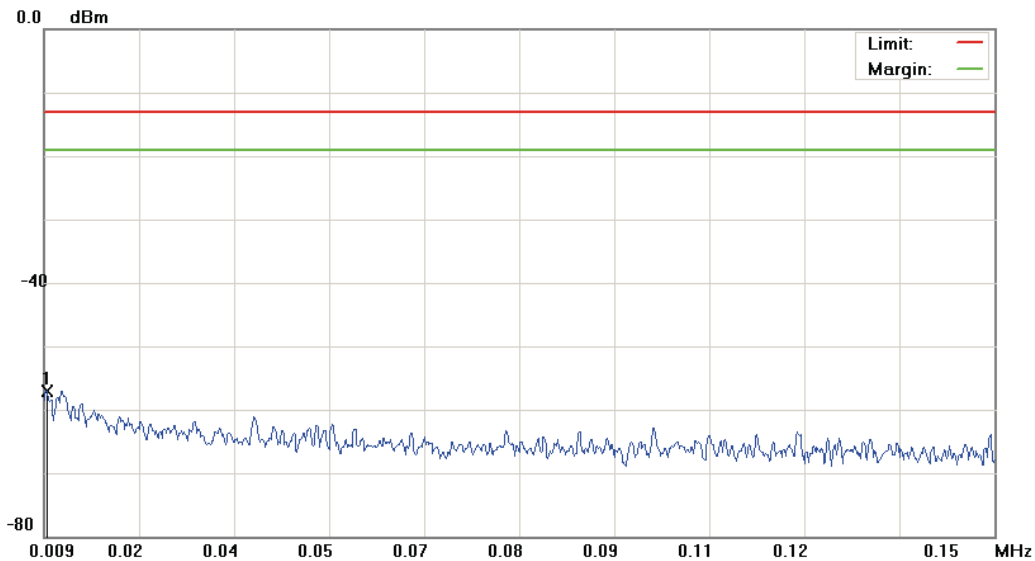


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	19130.000	-62.85	7.19	-55.66	-13.00	-42.66	peak		Comment

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

File :PA820(CH9538) Data :#1 Date: 2015/7/7 Time: 下午 02:53:30

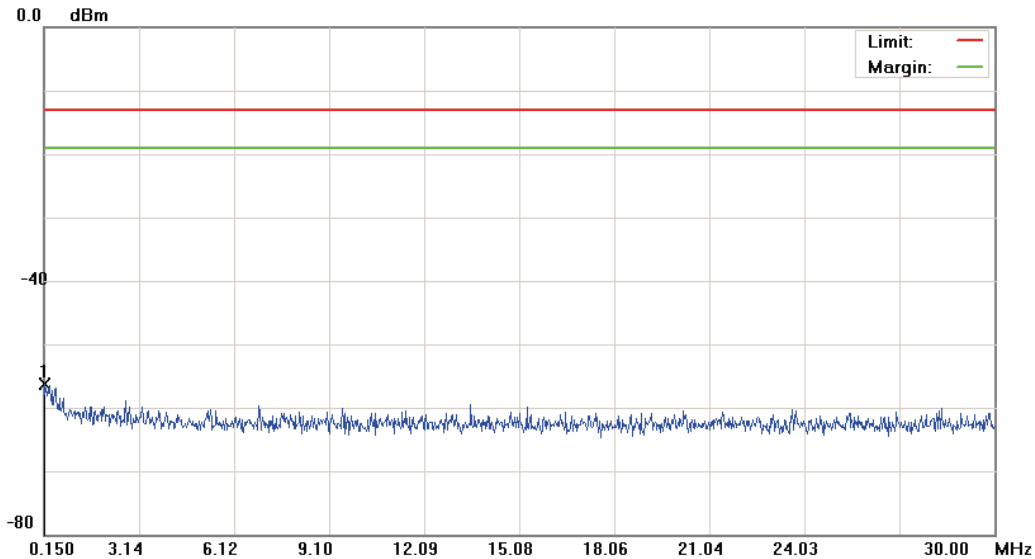


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1 KHz VBW: 3 KHz
M/N: PA820		
Mode: WCDMA Band II		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.0094	-68.36	11.33	-57.03	-13.00	-44.03	peak		

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

File :PA820(CH9538) Data :#2 Date: 2015/7/7 Time: 下午 02:53:54

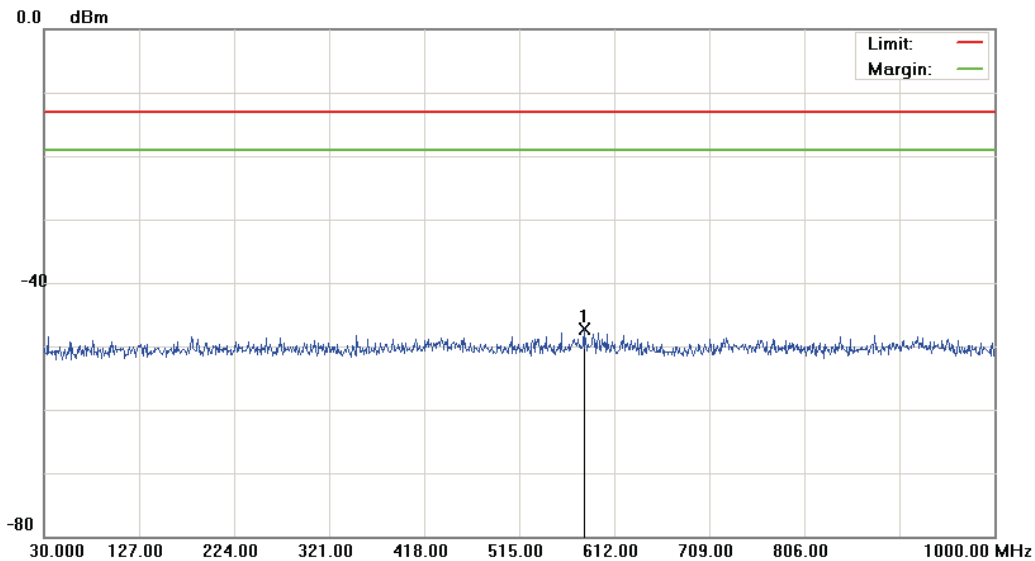


Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 10 KHz VBW: 30 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	0.1500	-68.85	12.47	-56.38	-13.00	-43.38	peak		

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

File :PA820(CH9538) Data :#3 Date: 2015/7/7 Time: 下午 02:54:18

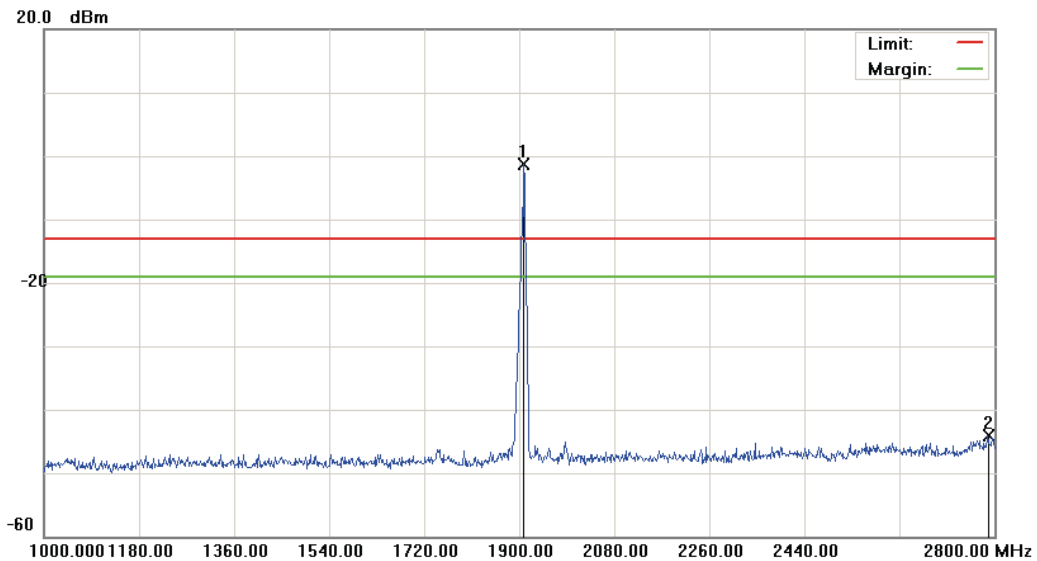


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: WCDMA Band II		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	581.4450	-60.44	13.17	-47.27	-13.00	-34.27	peak		Comment

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

File :PA820(CH9538) Data :#4 Date: 2015/7/7 Time: 下午 03:07:14



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	1909.000	-7.07	5.80	-1.27	-13.00	11.73	peak		Tx
2		2788.300	-50.01	5.89	-44.12	-13.00	-31.12	peak		

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

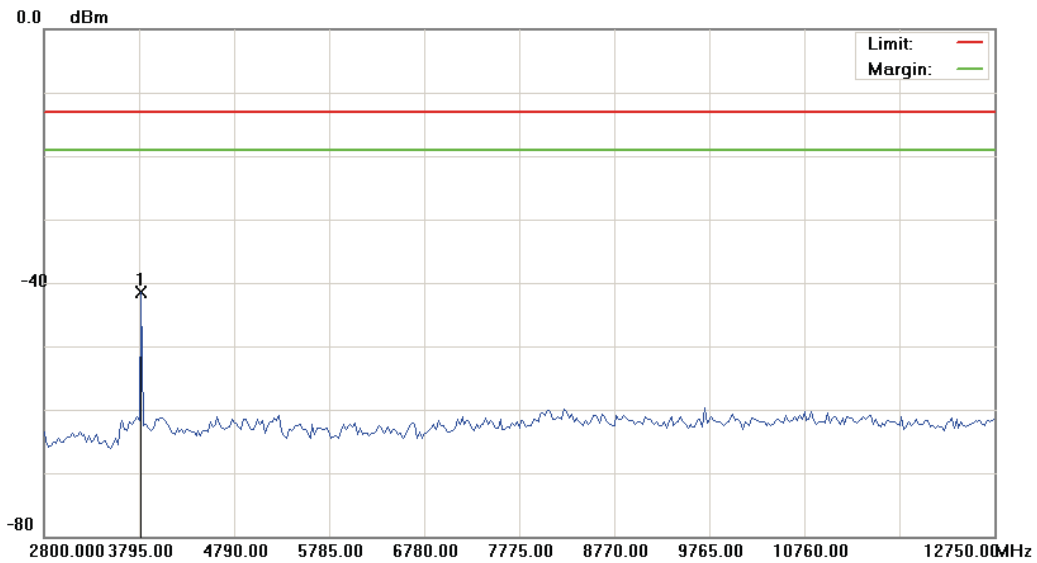


File :PA820(CH9538)

Data :#5

Date: 2015/7/7

Time: 下午 03:45:56



Site: site #1

Limit: FCC Part 24 conducted(9k-26.5G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band II

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

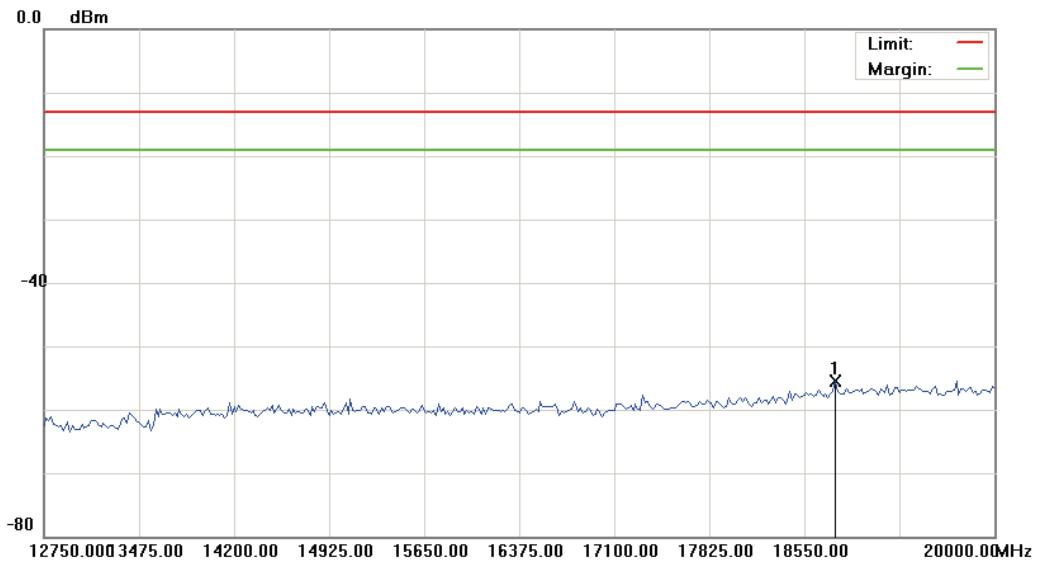
Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	3819.875	-46.36	4.91	-41.45	-13.00	-28.45	peak	

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

File :PA820(CH9538) Data :#6 Date: 2015/7/7 Time: 下午 03:46:15



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 24 conducted(9k-26.5G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: WCDMA Band II
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	18785.625	-62.50	7.09	-55.41	-13.00	-42.41	peak	

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

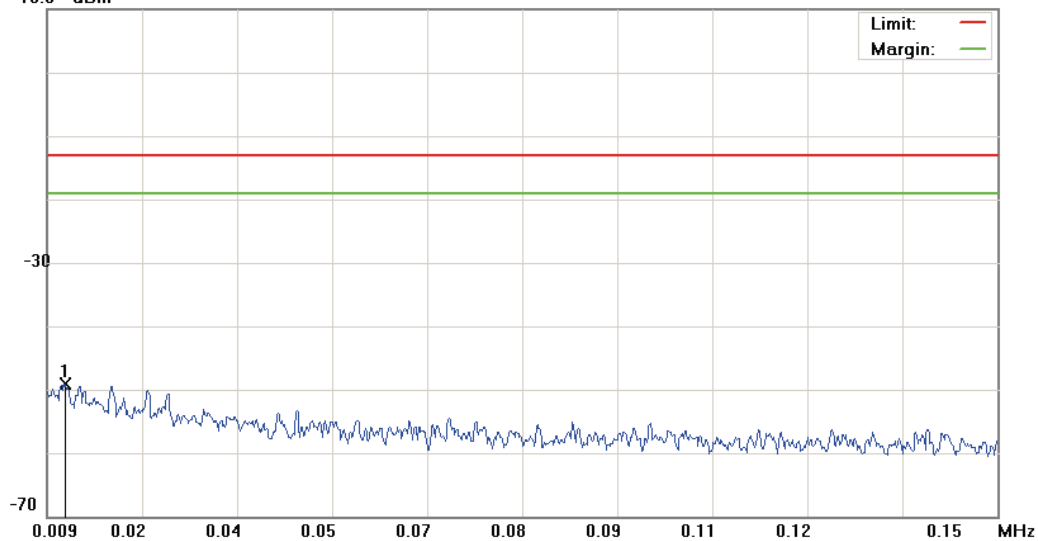
File :PA820(CH4132)

Data :#1

Date: 2015/7/7

Time: 下午 03:10:13

10.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1 KHz VBW: 3 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.0116	-79.64	30.57	-49.07	-13.00	-36.07	peak		Comment

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

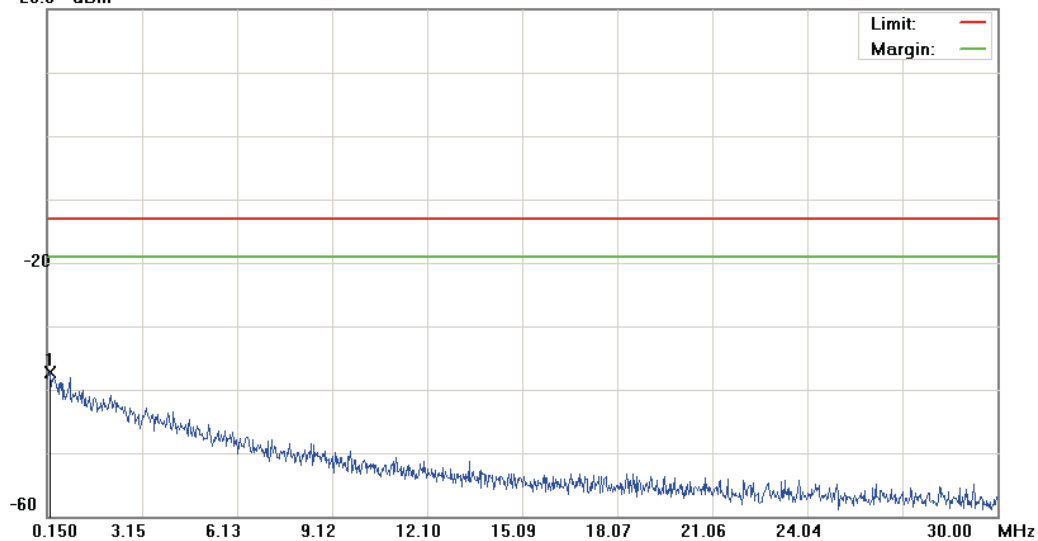
File :PA820(CH4132)

Data :#2

Date: 2015/7/7

Time: 下午 03:10:37

20.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

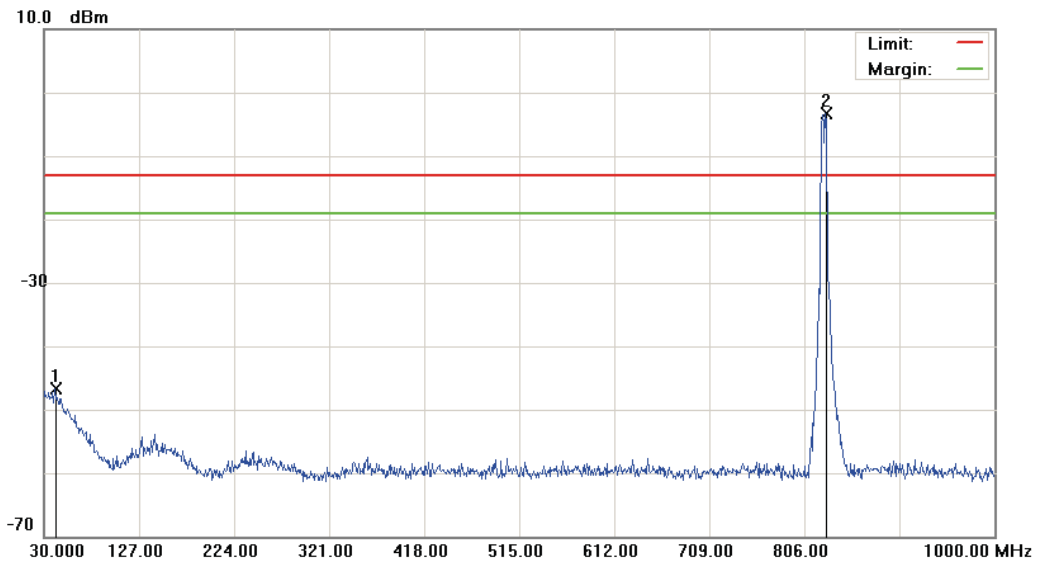
Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.2395	-68.60	31.24	-37.36	-13.00	-24.36	peak		Comment

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

File :PA820(CH4132) Data :#3 Date: 2015/7/7 Time: 下午 03:11:01

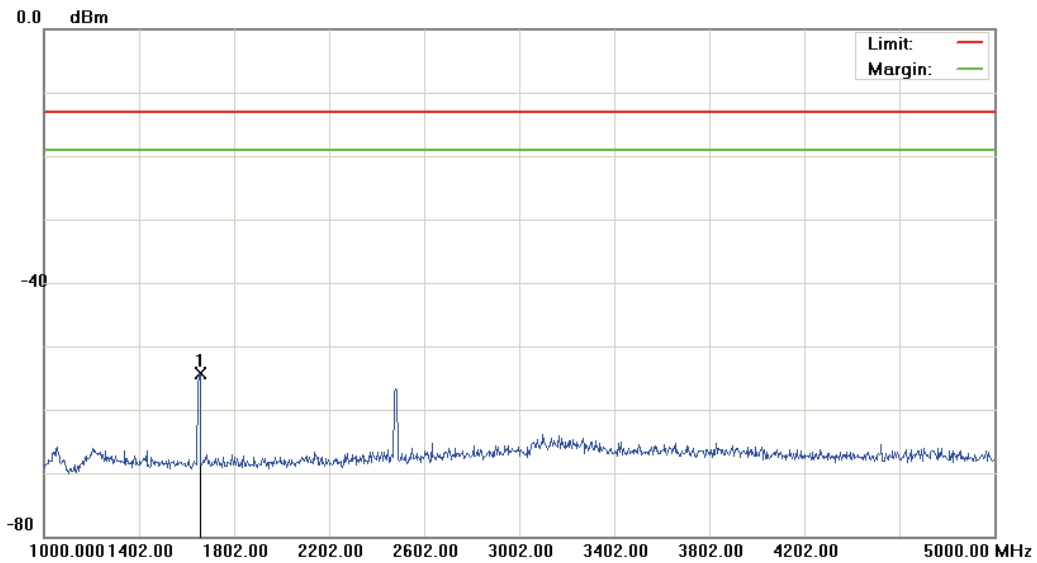


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: WCDMA Band V		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1		41.1550	-62.72	15.95	-46.77	-13.00	-33.77	peak		
2	*	827.8250	-7.10	3.87	-3.23	-13.00	9.77	peak		Tx

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

File :PA820(CH4132) Data :#4 Date: 2015/7/7 Time: 下午 03:37:58



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: WCDMA Band V		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	1654.000	-58.70	4.45	-54.25	-13.00	-41.25	peak		

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

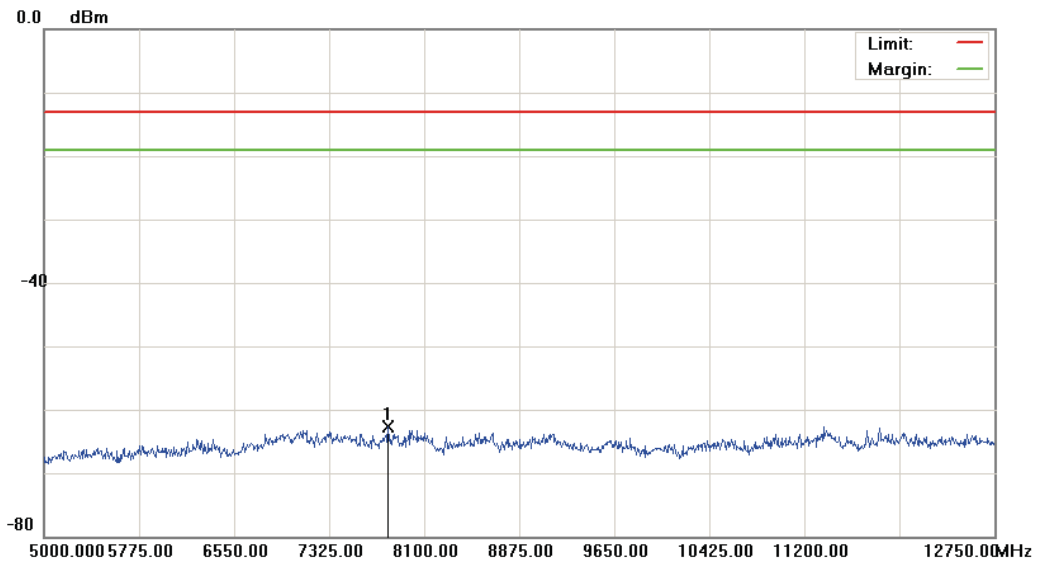


File :PA820(CH4132)

Data :#5

Date: 2015/7/7

Time: 下午 03:38:21



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

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
1	*	7805.500	-67.93	5.29	-62.64	-13.00	-49.64	peak		Comment

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



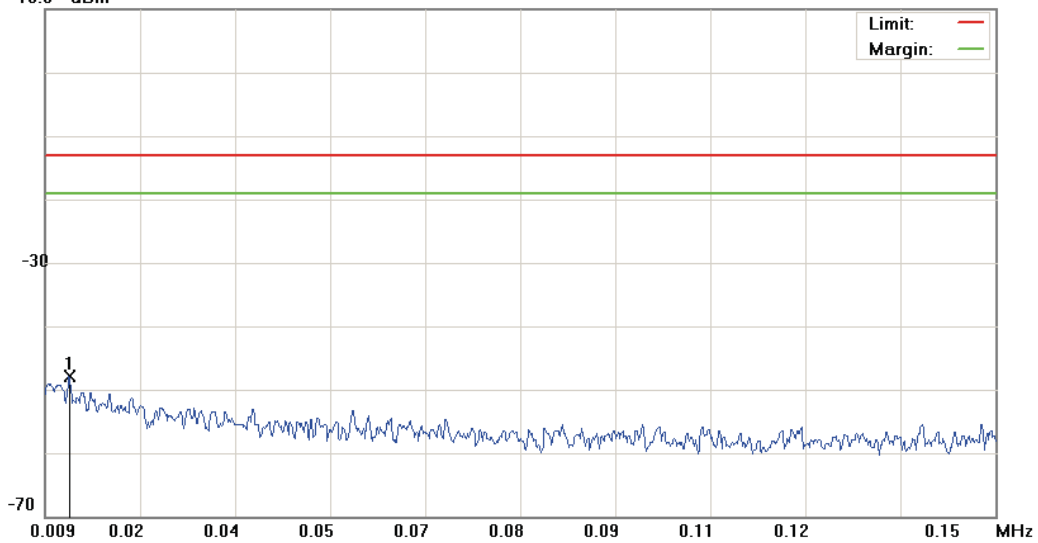
File :PA820(CH4183)

Data :#1

Date: 2015/7/7

Time: 下午 03:12:36

10.0 dBm



Site: site #1
Limit: FCC Part 22 conducted(9k-12.75G)
EUT: Rugged Handheld Computer
M/N: PA820
Mode: WCDMA Band V
Note:

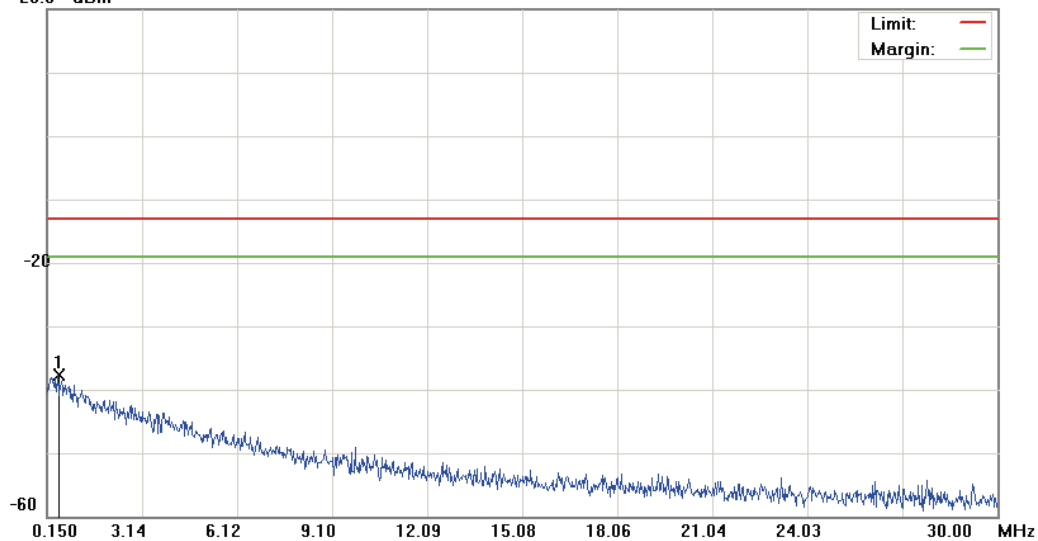
Polarization: Conducted Power
Power: DC 3.7V
Distance:

Temperature: 26 °C
Humidity: 55 %
RBW: 1 KHz VBW: 3 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	cm	degree
1	*	0.0126	-78.55	30.56	-47.99	-13.00	-34.99	peak	

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

File :PA820(CH4183) Data :#2 Date: 2015/7/7 Time: 下午 03:13:00
20.0 dBm



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 10 KHz VBW: 30 KHz
M/N: PA820
Mode: WCDMA Band V
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.4933	-69.69	32.00	-37.69	-13.00	-24.69	peak		Comment

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

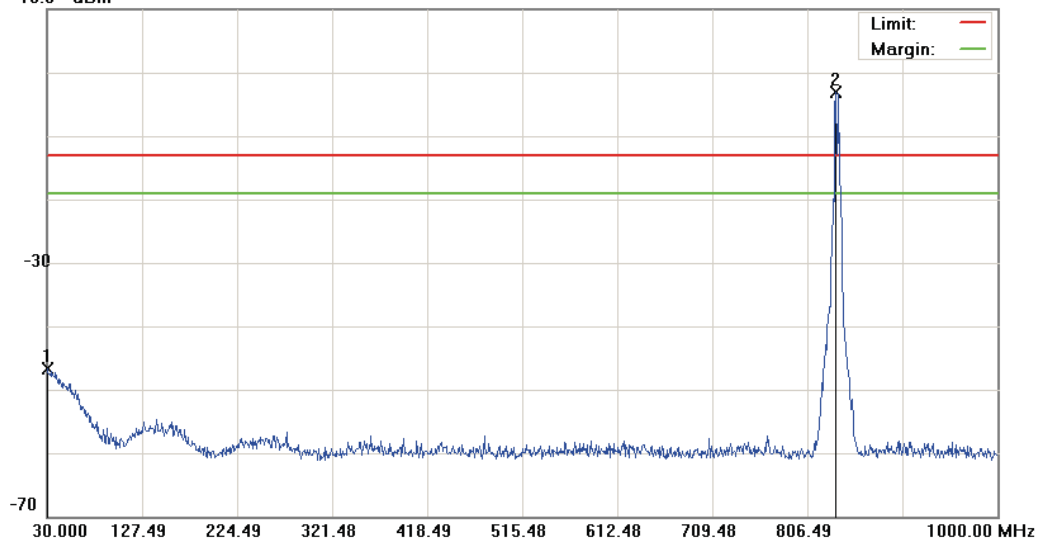
File :PA820(CH4183)

Data :#3

Date: 2015/7/7

Time: 下午 03:13:24

10.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

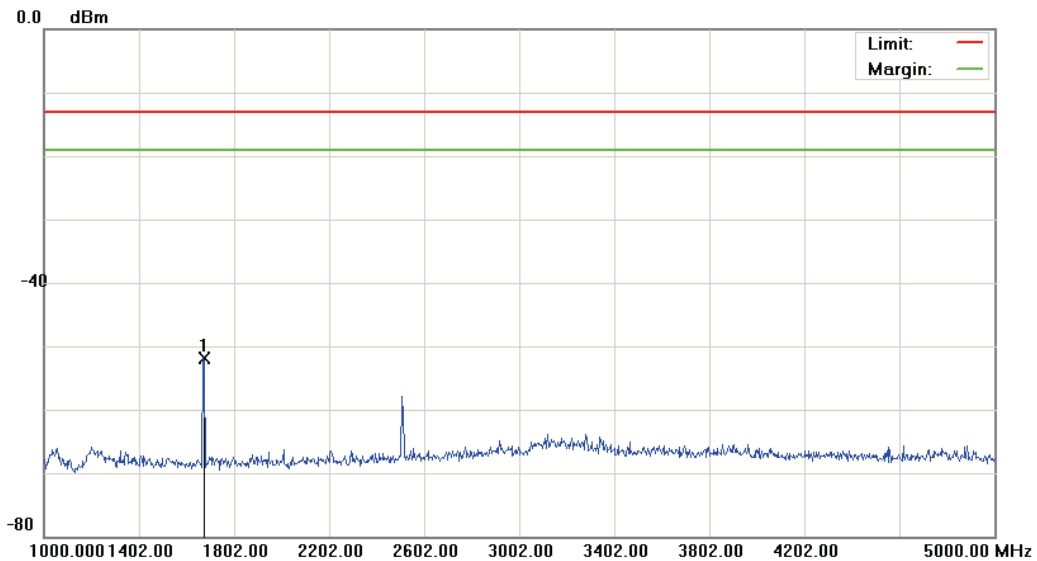
Humidity: 55 %

RBW: 100 KHz VBW: 300 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1		30.4850	-63.81	17.16	-46.65	-13.00	-33.65	peak		
2	*	835.1000	-7.13	3.95	-3.18	-13.00	9.82	peak		Tx

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

File :PA820(CH4183) Data :#4 Date: 2015/7/7 Time: 下午 03:38:59

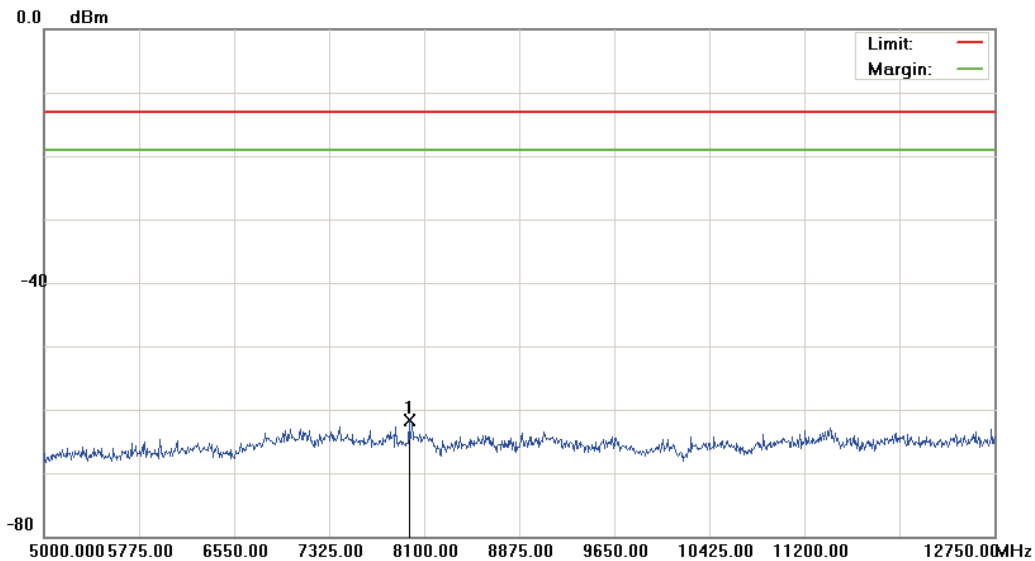


Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: WCDMA Band V		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	1670.000	-56.42	4.46	-51.96	-13.00	-38.96	peak		

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

File :PA820(CH4183) Data :#5 Date: 2015/7/7 Time: 下午 03:39:22



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820		
Mode: WCDMA Band V		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1	*	7976.000	-67.09	5.30	-61.79	-13.00	-48.79	peak		

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



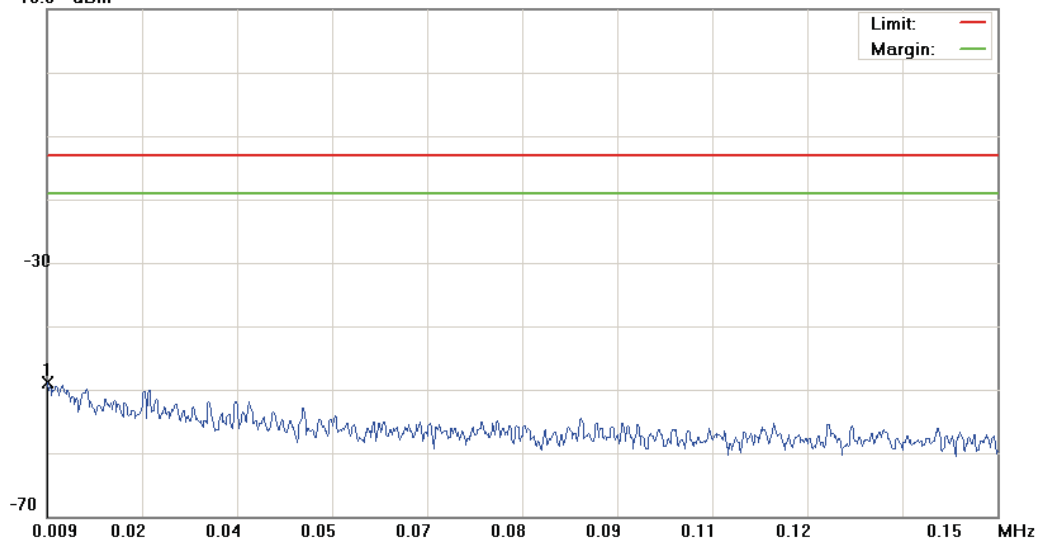
File :PA820(CH4233)

Data :#1

Date: 2015/7/7

Time: 下午 03:14:42

10.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

Humidity: 55 %

RBW: 1 KHz VBW: 3 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm
1	*	0.0091	-79.57	30.58	-48.99	-13.00	-35.99	peak	degree

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



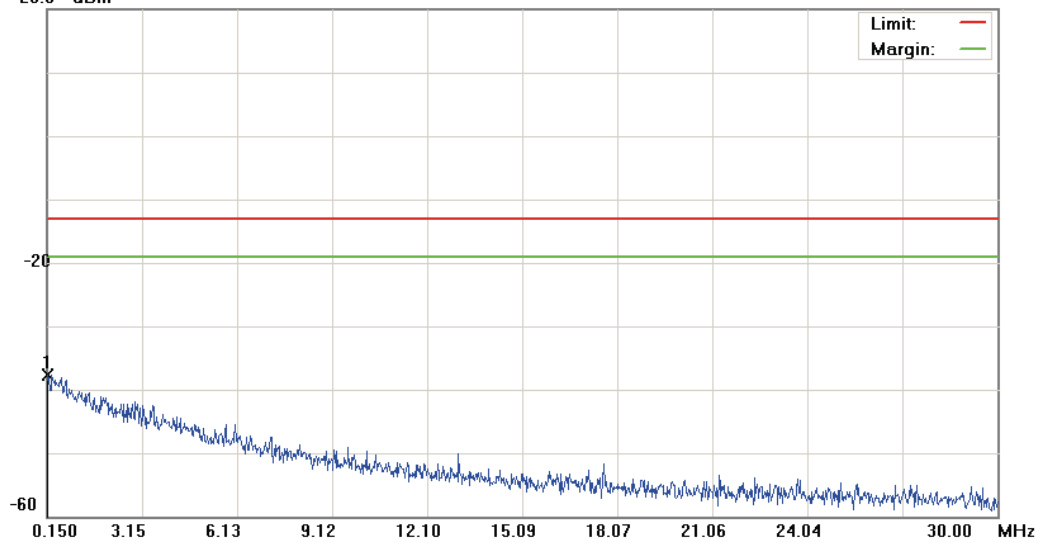
File :PA820(CH4233)

Data :#2

Date: 2015/7/7

Time: 下午 03:15:06

20.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

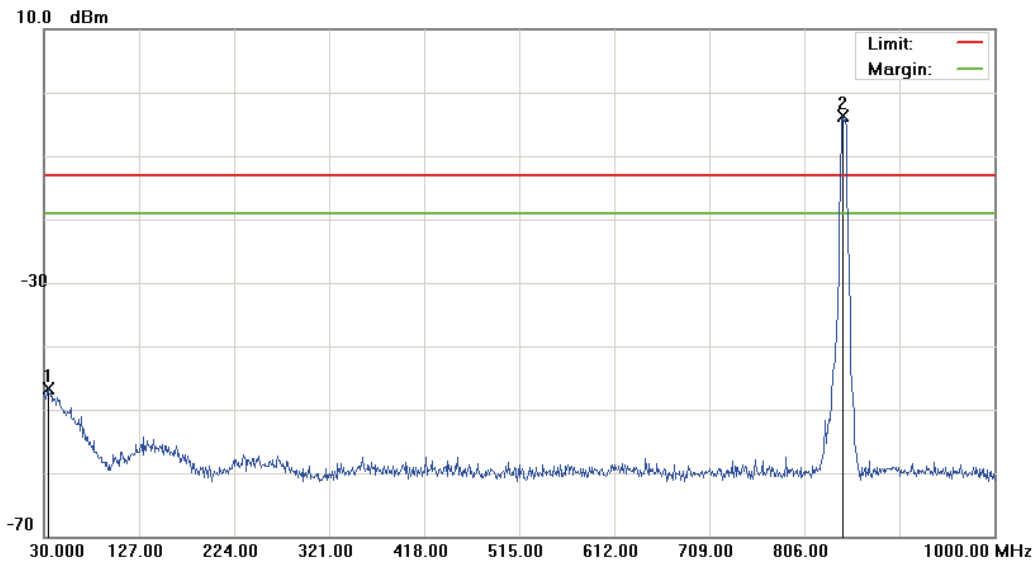
Humidity: 55 %

RBW: 10 KHz VBW: 30 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	0.1798	-68.41	30.75	-37.66	-13.00	-24.66	peak		Comment

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

File :PA820(CH4233) Data :#3 Date: 2015/7/7 Time: 下午 03:15:30



Site: site #1	Polarization: Conducted Power	Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G)	Power: DC 3.7V	Humidity: 55 %
EUT: Rugged Handheld Computer	Distance:	RBW: 100 KHz VBW: 300 KHz
M/N: PA820		
Mode: WCDMA Band V		
Note:		

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	cm	degree	Comment
1		34.3650	-63.45	16.72	-46.73	-13.00	-33.73	peak		
2	*	844.8000	-7.78	3.99	-3.79	-13.00	9.21	peak		Tx

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



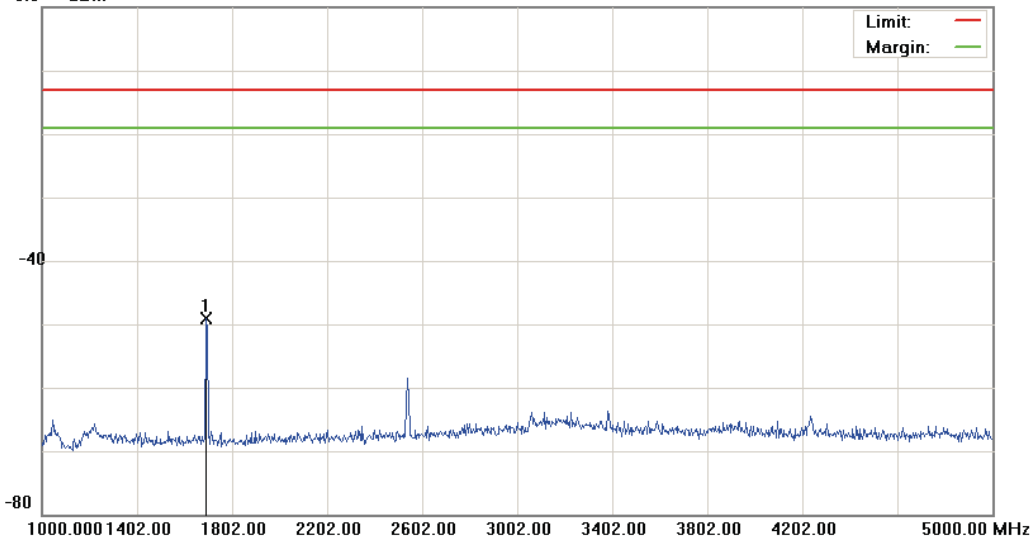
File :PA820(CH4233)

Data :#4

Date: 2015/7/7

Time: 下午 03:40:01

0.0 dBm



Site: site #1

Limit: FCC Part 22 conducted(9k-12.75G)

EUT: Rugged Handheld Computer

M/N: PA820

Mode: WCDMA Band V

Note:

Polarization: Conducted Power

Power: DC 3.7V

Distance:

Temperature: 26 °C

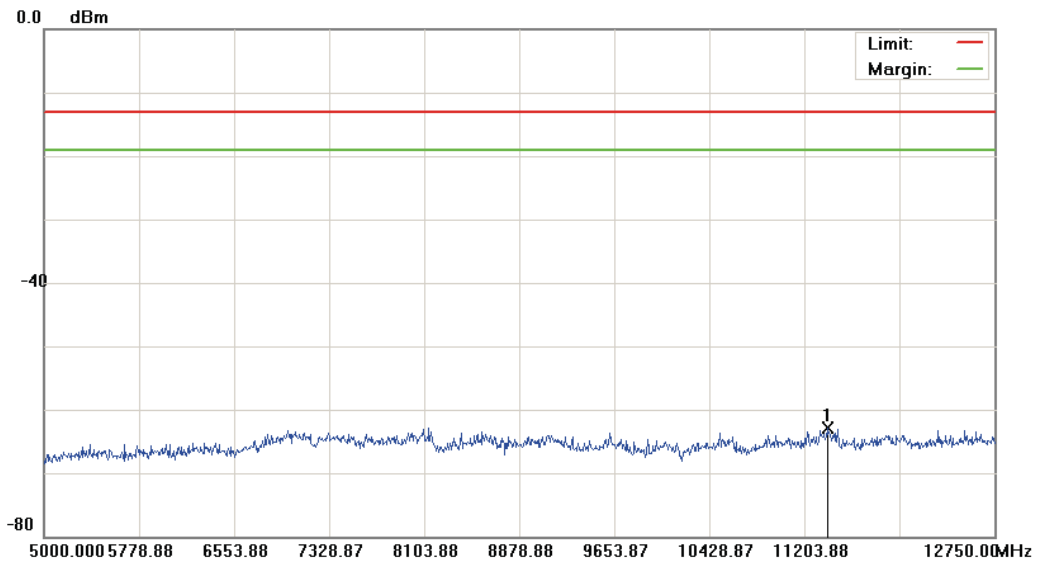
Humidity: 55 %

RBW: 1000 KHz VBW: 3000 KHz

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree
1	*	1690.000	-53.62	4.47	-49.15	-13.00	-36.15	peak		Comment

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

File :PA820(CH4233) Data :#5 Date: 2015/7/7 Time: 下午 03:40:24



Site: site #1 Polarization: Conducted Power Temperature: 26 °C
Limit: FCC Part 22 conducted(9k-12.75G) Power: DC 3.7V Humidity: 55 %
EUT: Rugged Handheld Computer Distance: RBW: 1000 KHz VBW: 3000 KHz
M/N: PA820
Mode: WCDMA Band V
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measurement	Limit	Over	Antenna Height	Table Degree	
		MHz	dBm	dB	dBm	dBm	dB	Detector	cm	degree Comment
1	*	11389.875	-68.49	5.51	-62.98	-13.00	-49.98	peak		

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

8 Field Strength of Spurious Radiation Test

8.1. 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 $43 + 10\log(P)$ dB.

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

8.2. Test Instruments

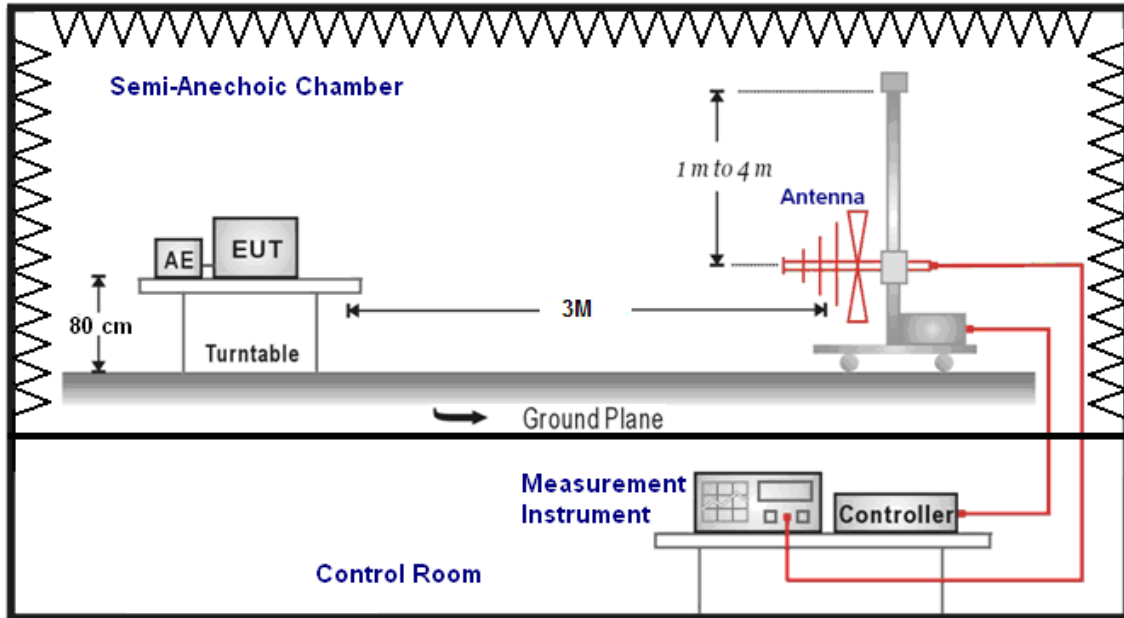
3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/06/2015	(1)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/06/2015	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/24/2015	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/24/2015	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	0811/2015	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/12/2015	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	07/06/2015	(1)
Test Site	ATL	TE01	888001	08/27/2015	(1)

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

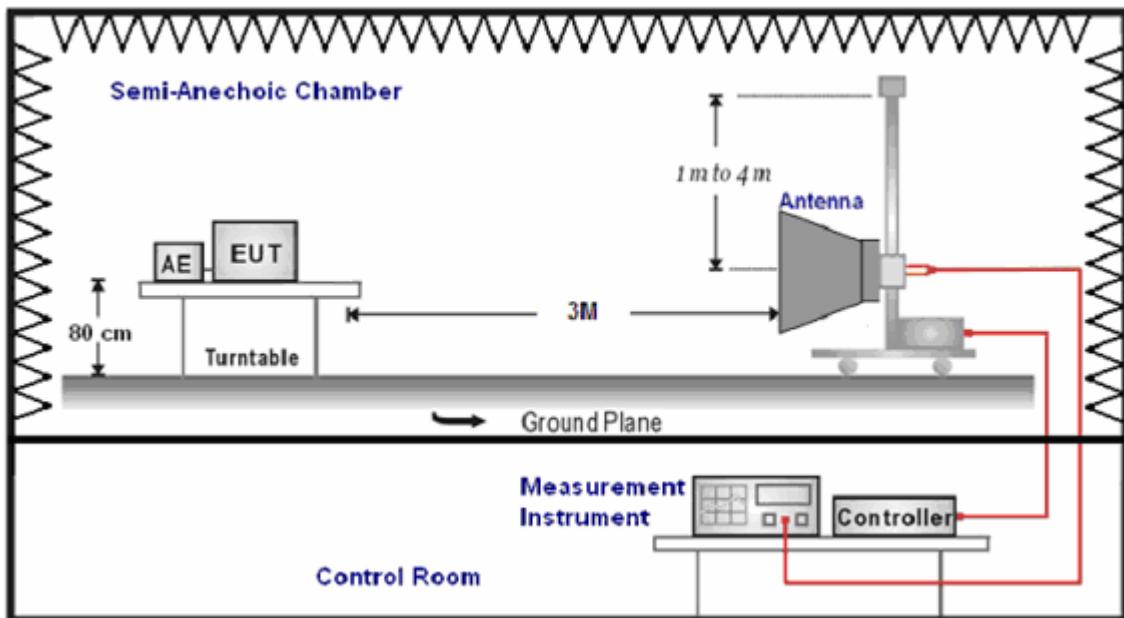
Note: N.C.R. = No Calibration Request.

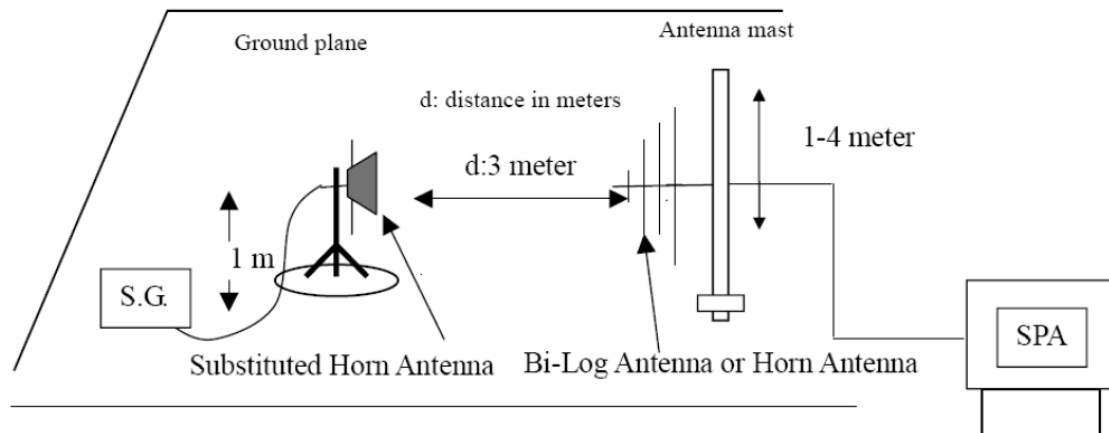
8.3. Setup

Below 1GHz



Above 1GHz





8.4. Test Procedure

- The EUT was set up for the maximum power with LTE link data modulation. The power was measured with Spectrum Analyzer. All measurements were done at 3 channels (low, middle and high operational frequency range). RWB and VBW is 1MHz.
- Radiation Emission measurement. In the semi-anechoic chamber, EUT placed on the 0.8m height of Turn Table, rotated the table around 360 degrees to search the maximum radiation power and receiver antenna shall be rotated vertical and horizontal polarization and moved height from 1m to 4m to find the maximum polar radiated power. The "Read Value" is the spectrum reading the maximum power value.
- The substitution horn antenna is substituted for EUT at the same position and signals generator export the CW signal to the substitution antenna via a TX cable. Rotated the Turn Table and moved receiving antenna to find the maximum radiation power. Adjust output power level of S.G to get a Value of spectrum reading equal to "Read Value" of step a. Record the power level of S.G.
- $E.I.R.P. = \text{Output power level of S.G} - \text{TX cable loss} + \text{Antenna gain of substitution horn}$
- $E.R.P. = E.I.R.P. - 2.15 \text{ dB}$

8.5. Uncertainty

The measurement uncertainty is defined as for Field Strength of Spurious Radiation measurement is $\pm 3.072 \text{ dB}$.

8.6. Test Result

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	09/11/2015
Frequency:	824.2 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
7444.000	-74.13	26.09	-48.04	-13.00	-35.04	peak	H
6208.000	-76.09	22.70	-53.39	-13.00	-40.39	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	09/11/2015
Frequency:	836.6 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
8800.000	-75.73	26.50	-49.23	-13.00	-36.23	peak	H
5236.000	-75.77	20.84	-54.93	-13.00	-41.93	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	09/11/2015
Frequency:	848.8 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
4996.000	-74.47	20.48	-53.99	-13.00	-40.99	peak	H
5644.000	-75.05	21.47	-53.58	-13.00	-40.58	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	09/11/2015
Frequency:	1850.2 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
7696.000	-74.31	26.43	-47.88	-13.00	-34.88	peak	H
5200.000	-74.34	20.79	-53.55	-13.00	-40.55	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	09/11/2015
Frequency:	1880.0 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
8128.000	-74.91	26.50	-48.41	-13.00	-35.41	peak	H
5572.000	-76.33	21.35	-54.98	-13.00	-41.98	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	09/11/2015
Frequency:	1909.8 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
4108.000	-74.25	17.52	-56.73	-13.00	-43.73	peak	H
3040.000	-70.86	14.31	-56.55	-13.00	-43.55	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	09/11/2015
Frequency:	1852.4 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
3796.000	-74.08	16.91	-57.17	-13.00	-44.17	peak	H
6436.000	-76.30	23.37	-52.93	-13.00	-39.93	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	09/11/2015
Frequency:	1880.0 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
6508.000	-75.21	23.60	-51.61	-13.00	-38.61	peak	H
5140.000	-75.09	20.70	-54.39	-13.00	-41.39	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	09/11/2015
Frequency:	1907.6 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
3664.000	-73.47	16.77	-56.70	-13.00	-43.70	peak	H
7300.000	-75.02	25.75	-49.27	-13.00	-36.27	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	6	Date:	09/11/2015
Frequency:	826.4 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
4972.000	-74.97	20.41	-54.56	-13.00	-41.56	peak	H
3868.000	-72.62	16.98	-55.64	-13.00	-42.64	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	6	Date:	09/11/2015
Frequency:	836.6 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
6676.000	-73.78	24.09	-49.69	-13.00	-36.69	peak	H
6172.000	-75.86	22.59	-53.27	-13.00	-40.27	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	AC 120V/60Hz
Model Number:	PA820	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	6	Date:	09/11/2015
Frequency:	846.6 MHz	Test By:	Eric Ou Yang

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
7684.000	-75.09	26.40	-48.69	-13.00	-35.69	peak	H
6316.000	-75.98	23.02	-52.96	-13.00	-39.96	peak	V

9 Frequency Stability (Temperature & Voltage Variation) Test

9.1. 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 $\pm 0.00025\%$ ($\pm 2.5\text{ppm}$) of the center frequency.

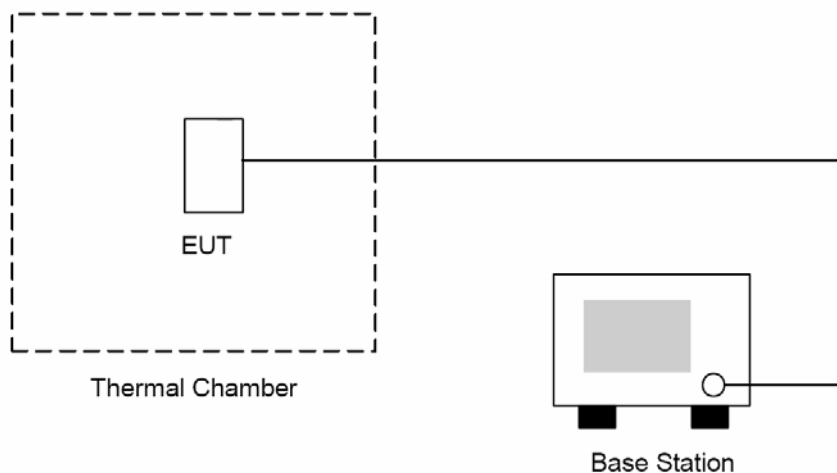
9.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	10/21/2015	(2)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	04/27/2015	(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.

9.3. Setup



9.4. 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°C 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°C 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 $25 \pm 5^{\circ}\text{C}$ 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.

9.5. Uncertainty

The measurement uncertainty is defined as for Frequency Stability (Temperature Variation) measurement is $\pm 10\text{Hz}$.

9.6. Test Result

Model Number	PA820					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 1					
Date of Test	09/30/2015				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-20	12.86	0.015	±2.5	Pass
Normal	3.70	-10	-13.18	-0.016	±2.5	Pass
Normal	3.70	0	6.34	0.008	±2.5	Pass
Normal	3.70	10	10.32	0.012	±2.5	Pass
Battery full point	4.25	20	4.71	0.006	±2.5	Pass
Normal	3.70	20	4.10	0.005	±2.5	Pass
Battery cut-off point	3.50	20	-24.75	-0.030	±2.5	Pass
Normal	3.70	30	6.04	0.007	±2.5	Pass
Normal	3.70	40	-25.07	-0.030	±2.5	Pass
Normal	3.70	50	6.98	0.008	±2.5	Pass
Normal	3.70	60	11.08	0.013	±2.5	Pass

Model Number	PA820					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 2					
Date of Test	09/30/2015				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-20	17.50	0.009	±2.5	Pass
Normal	3.70	-10	-27.79	-0.015	±2.5	Pass
Normal	3.70	0	3.09	0.002	±2.5	Pass
Normal	3.70	10	10.63	0.006	±2.5	Pass
Battery full point	4.25	20	2.21	0.001	±2.5	Pass
Normal	3.70	20	2.59	0.001	±2.5	Pass
Battery cut-off point	3.50	20	-25.63	-0.014	±2.5	Pass
Normal	3.70	30	14.72	0.008	±2.5	Pass
Normal	3.70	40	-25.75	-0.014	±2.5	Pass
Normal	3.70	50	-15.33	-0.008	±2.5	Pass
Normal	3.70	60	20.93	0.011	±2.5	Pass

The EUT operating temperature is -20°C ~ 60°C.

Model Number	PA820					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 5					
Date of Test	09/30/2015				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-20	11.85	0.006	±2.5	Pass
Normal	3.70	-10	-8.75	-0.005	±2.5	Pass
Normal	3.70	0	-2.54	-0.001	±2.5	Pass
Normal	3.70	10	15.08	0.008	±2.5	Pass
Battery full point	4.25	20	6.62	0.004	±2.5	Pass
Normal	3.70	20	4.84	0.003	±2.5	Pass
Battery cut-off point	3.50	20	-27.08	-0.014	±2.5	Pass
Normal	3.70	30	7.83	0.004	±2.5	Pass
Normal	3.70	40	-3.06	-0.002	±2.5	Pass
Normal	3.70	50	5.23	0.003	±2.5	Pass
Normal	3.70	60	1.77	0.001	±2.5	Pass

Model Number	PA820					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 6					
Date of Test	09/30/2015				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.70	-20	16.77	0.020	±2.5	Pass
Normal	3.70	-10	-3.29	-0.004	±2.5	Pass
Normal	3.70	0	4.76	0.006	±2.5	Pass
Normal	3.70	10	13.26	0.016	±2.5	Pass
Battery full point	4.25	20	7.03	0.008	±2.5	Pass
Normal	3.70	20	13.99	0.017	±2.5	Pass
Battery cut-off point	3.50	20	-20.26	-0.024	±2.5	Pass
Normal	3.70	30	14.20	0.017	±2.5	Pass
Normal	3.70	40	-1.46	-0.002	±2.5	Pass
Normal	3.70	50	-3.85	-0.005	±2.5	Pass
Normal	3.70	60	13.87	0.017	±2.5	Pass

The EUT operating temperature is -20°C ~ 60°C.