

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

Product Type : Wireless module
Applicant : Telit Communications S.p.A.
Address : Viale Stazione di Prosecco 5/b, 34010, Trieste, Italy
Trade Name : Telit
Model Number : HE920-NA
Test Specification : FCC 47 CFR PART 22H: Oct, 2012
FCC 47 CFR PART 24E: Oct, 2012
CANADA RSS-132 ISSUE 3: Jan. 2013
CANADA RSS-133 ISSUE 6: Jan. 2013
Canada RSS-Gen ISSUE 3: Dec., 2010
ANSI/TIA-603-C-2004
Application Purpose : Class II Permissive Change
Receive Date : Nov. 20, 2013
Test Period : Nov. 25 ~Dec. 04, 2013
Issue Date : Feb. 26, 2014

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

Note: This report shall not be reproduced except in full, without the written approval of A Test Lab Techno Corp. This document may be altered or revised by A Test Lab Techno Corp. personnel only, and shall be noted in the revision section of the document. The client should not use it to claim product endorsement by TAF, or any government agencies. The test results in the report only apply to the tested sample.

Revision History

Rev.	Issue Date	Revisions	Revised By
00	Jan. 27, 2014	Initial Issue	
01	Feb. 26, 2014	Revised class II permissive change description and chapter 5 data.	Peggy Chang

Verification of Compliance

Issued Date: 02/26/2014

Product Type : Wireless module

Applicant : Telit Communications S.p.A.

Address : Viale Stazione di Prosecco 5/b, 34010, Trieste, Italy

Trade Name : Telit

Model Number : HE920-NA

FCC ID : RI7HE920NA

IC : 5131B-HE920NA

EUT Rated Voltage : DC 3.8V

Test Voltage : DC 3.8V

Applicable Standard : FCC 47 CFR PART 22H: Oct, 2012
FCC 47 CFR PART 24E: Oct, 2012
CANADA RSS-132 ISSUE 3: Jan. 2013
CANADA RSS-133 ISSUE 6: Jan. 2013
Canada RSS-Gen ISSUE 3: Dec., 2010
ANSI/TIA-603-C-2004

Application Purpose : Class II Permissive Change

Test Result : Complied

Performing Lab. : A Test Lab Techno Corp.
No. 140-1, Changan Street, Bade City,
Taoyuan County 334, Taiwan R.O.C.
Tel : +886-3-2710188 / Fax : +886-3-2710190
Taiwan Accreditation Foundation accreditation number: 1330
<http://www.atl-lab.com.tw/e-index.htm>



The above equipment was tested by A Test Lab Techno Corp. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in ANSI C63.4: 2009 and the energy emitted by the sample tested as described in this report is in compliance with the requirements of FCC Rules Part 22H, Part 24E.

The test results of this report relate only to the tested sample identified in this report.

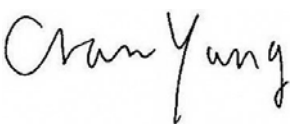
Approved By :  : 
(Manager) (Cran Yang) (Testing Engineer) (Fly Lu)

TABLE OF CONTENTS

1	General Information	6
1.1.	EUT Description	6
1.2.	Mode of Operation.....	7
1.3.	EUT Exercise Software	8
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.	Test Setup.....	15
3.4.	Test Procedure	15
3.5.	Uncertainty	15
3.6.	Test Result.....	16
4	Peak to Average Ratio Test.....	18
4.1.	Limit	18
4.2.	Test Instruments	18
4.3.	Setup	18
4.4.	Test Procedure	19
4.5.	Uncertainty	19
4.6.	Test Result.....	19
4.7.	Test Graphs	20
5	Emission Bandwidth & Occupied Bandwidth Test.....	21
5.1.	Limit	21
5.2.	Test Instruments	21
5.3.	Setup	21
5.4.	Test Procedure	22
5.5.	Uncertainty	22
5.6.	Test Result.....	22
5.7.	Test Graphs	23

6	Band Edge Test	29
6.1.	Limit	29
6.2.	Test Instruments	29
6.3.	Setup	29
6.4.	Test Procedure	30
6.5.	Uncertainty	30
6.6.	Test Result.....	30
6.7.	Test Graphs	31
7	Conducted Spurious Emission Test	35
7.1.	Limit	35
7.2.	Test Instruments	35
7.3.	Setup	35
7.4.	Test Procedure	36
7.5.	Uncertainty	36
7.6.	Test Result.....	36
8	Field Strength of Spurious Radiation Test.....	39
8.1.	Limit	39
8.2.	Test Instruments	39
8.3.	Setup	40
8.4.	Test Procedure	40
8.5.	Uncertainty	41
8.6.	Test Result.....	42
9	Frequency Stability (Temperature & Voltage Variation) Test.....	55
9.1.	Limit	55
9.2.	Test Instruments	55
9.3.	Setup	55
9.4.	Test Procedure	56
9.5.	Uncertainty	56
9.6.	Test Result.....	57

1 General Information

1.1. EUT Description

Applicant	Telit Communications S.p.A.				
Applicant Address	Viale Stazione di Prosecco 5/b, 34010, Trieste, Italy				
Manufacturer	Telit Communications S.p.A.				
Manufacturer Address	Viale Stazione di Prosecco 5/b, 34010, Trieste, Italy				
Product Type	Wireless module				
Trade Name	Telit				
Model Number	HE920-NA				
Class II Permissive Change Description	[Hardware changes] From version 1.00 to 1.10 For HE920-NA, three duplexers respectively for WCDMA FDD II, IV, V have been replaced with smaller ones and several related matching values have been changed. For both HE920-NA, WCDMA Rx diversity antenna switch has been replaced with smaller one from same vendor. For both HE920-NA, PCB has been modified just to reflect the changes described above. GSM and all other parts are 100% same as before. [Software changes] From version 14.10.001 to 14.12.000-B028 For HE920-NA, Qualcomm MDM6200 baseline upgraded to 3.5. Captured differences below have nothing to do with protocols. For HE920-NA, GPRS and EGPRS multi slot class changed from 33 to 10 For HE920-NA, DTM mode class changed from 11 to 9 For HE920-NA, GPS disabled All other changes are related to AT command interfaces and have no influences on previous certifications.				
FCC ID	RI7HE920NA				
IC	5131B-HE920NA				
Mode	GSM/GPRS/E GPRS/DTM	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/ HSPA+	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	Dipole Antenna				
Antenna Gain (dBi)	GSM/GPRS/EGPRS/DTM 850 : 6.79 dBi GSM/GPRS/EGPRS/DTM 1900 : 3.01 dBi WCDMA/ HSDPA/ HSUPA/HSPA+ Band II : 3.01 dBi WCDMA/ HSDPA/ HSUPA/HSPA+ Band V : 6.79 dBi				

Max. RF Output power	GSM/GPRS 850	:	32.98 dBm	/	1.986 W
	EGPRS 850	:	29.86 dBm	/	0.968 W
	DTM 850	:	32.95 dBm	/	1.972 W
	GSM/GPRS 1900	:	29.12 dBm	/	0.817 W
	EGPRS 1900	:	28.34 dBm	/	0.682 W
	DTM 1900	:	28.77 dBm	/	0.753 W
	WCDMA/ HSDPA/ HSUPA/HSPA+ Band II	:	26.68 dBm	/	0.466 W
	WCDMA/ HSDPA/ HSUPA/HSPA+ Band V	:	27.23 dBm	/	0.528 W
Max. ERP/EIRP	GSM 850	:	37.62 dBm	/	5.781 W
	EGPRS 850	:	34.50 dBm	/	2.818 W
	GSM 1900	:	32.13 dBm	/	1.633 W
	EGPRS 1900	:	31.35 dBm	/	1.365 W
	WCDMA/ HSDPA/ HSUPA/HSPA+ Band II	:	29.69 dBm	/	0.931 W
	WCDMA/ HSDPA/ HSUPA/HSPA+ Band V	:	31.96 dBm	/	1.570 W
Emission Designator	GSM/GPRS 850	:	249KGXW		
	EGPRS 850	:	250KG7W		
	GSM/GPRS 1900	:	249KGXW		
	EGPRS 1900	:	248KG7W		
	WCDMA/ HSDPA/ HSUPA/HSPA+ Band II	:	4M17F9W		
	WCDMA/ HSDPA/ HSUPA/HSPA+ Band V	:	4M17F9W		

1.2. Mode of Operation

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

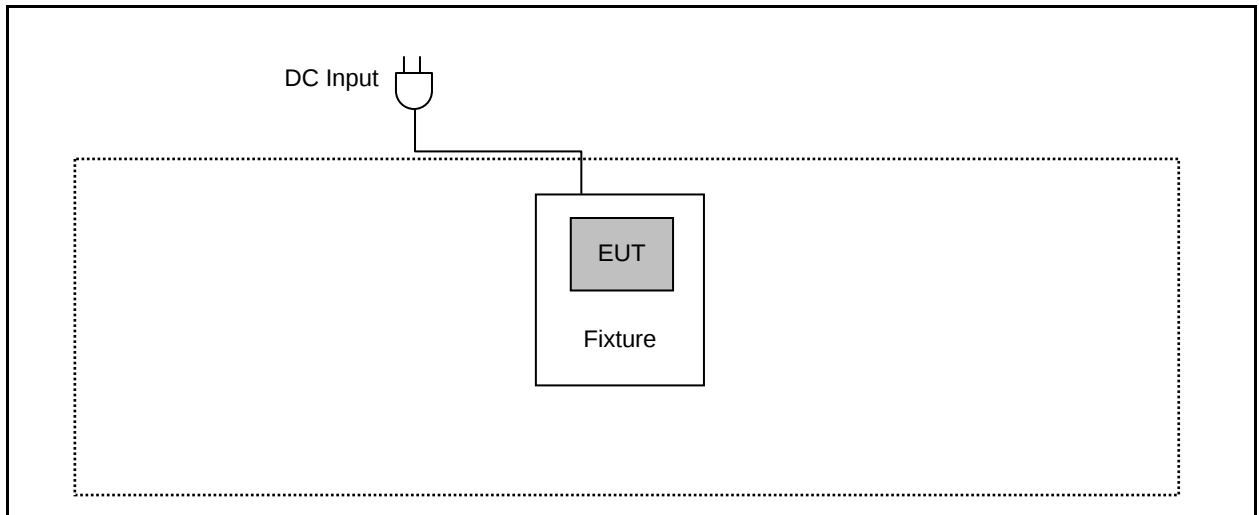
Test Mode
Mode 1: GSM 850 Link Mode
Mode 2: GSM 1900 Link Mode
Mode 3: EGPRS 850 Link Mode
Mode 4: EGPRS 1900 Link Mode
Mode 5: WCDMA Band II Link Mode
Mode 6: WCDMA Band V Link Mode
Mode 7: Receive Link Mode

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.

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 68-1)	Actual
Temperature (°C)	15-35	26
Humidity (%RH)	25-75	60
Barometric pressure (mbar)	860-1060	950

1.6. Summary of Test Result

Description	FCC Rule	IC Rule	Limit	Result
Conducted Output Power	§2.1046	N/A	N/A	Pass
Effective Radiated Power	§22.913(a)(2)	RSS-132(4.4) SRSP-503(5.1.3)	< 7 Watts for FCC (<6.3 Watts for IC)	Pass
Equivalent Isotropic Radiated Power	§24.232(c)	RSS-133 (6.4) SRSP-510(5.1.2)	< 2 Watts	Pass
Peak to average ratio	§24.232(d)	RSS-133 (6.4)	< 13 dB	Pass
Emission Bandwidth & Occupied Bandwidth	§2.1049 §22.917(a) §24.238(a)	RSS-Gen (4.6.1)	N/A	Pass
Band Edge Measurement	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1)RSS-133 (6.5.1)	< 43+10log ₁₀ (P[Watts])	Pass
Conducted Spurious Emission	§2.1051 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1)	< 43+10log ₁₀ (P[Watts])	Pass
Field Strength of Spurious Radiation	§2.1053 §22.917(a) §24.238(a)	RSS-132 (4.5.1) RSS-133 (6.5.1) RSS-Gen (4.10)	< 43+10log ₁₀ (P[Watts])	Pass
Frequency Stability for Temperature & Voltage	§2.1055 §22.355 §24.235	RSS-132(4.3) RSS-133(6.3)	< 2.5 ppm	Pass

2 RF Output Power Test

2.1. Limit

N/A

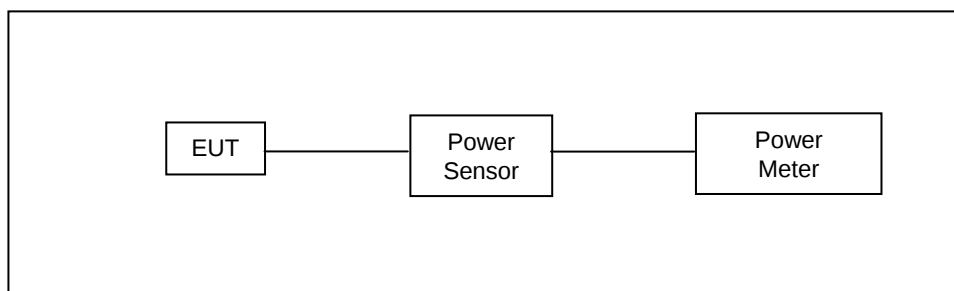
2.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/15/2011	(2)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/15/2011	(2)
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

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

2.3. Test Setup



2.4. Test Procedure

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

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

2.5. Uncertainty

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

2.6. Test Result

Model Number	HE920-NA						
Test Item	RF Output Power						
Date of Test	11/25/2013			Test Site		TE05	
Bands	Modulation Type	Data Rate	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
GSM 850	GMSK	-----	824.2	32.38	1.730	32.68	1.854
			836.6	32.52	1.786	32.87	1.936
			848.8	32.63	1.832	32.98	1.986
GRRS 850 Multi Class :10 Max Up:2 Max Down:4 Sum:5	GMSK	4Down1Up (Duty Factor 1/8)	824.2	32.21	1.663	32.49	1.774
			836.6	32.38	1.730	32.71	1.866
			848.8	32.45	1.758	32.79	1.901
		3Down2Up (Duty Factor 2/8)	824.2	32.09	1.618	32.40	1.738
			836.6	32.19	1.656	32.50	1.778
			848.8	32.28	1.690	32.59	1.816
EGPRS 850 Multi Class :10 Max Up:2 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	824.2	26.55	0.452	29.62	0.916
			836.6	26.66	0.463	29.66	0.925
			848.8	26.73	0.471	29.86	0.968
		3Down2Up (Duty Factor 2/8)	824.2	26.03	0.401	29.28	0.847
			836.6	26.08	0.406	29.32	0.855
			848.8	26.12	0.409	29.38	0.867
DTM 850 (GSM+ GPRS) Multi Class :9 Max Up:2 Max Down:4 Sum:5	GMSK	3Down2Up (Duty Factor 2/8)	824.2	31.90	1.549	32.13	1.633
			836.6	31.96	1.570	32.20	1.660
			848.8	32.00	1.585	32.28	1.690
DTM 850 (GSM+ EGPRS) Multi Class :9 Max Up:2 Max Down:4 Sum:5	GMSK+ 8PSK	3Down2Up (Duty Factor 2/8)	824.2	25.02	0.318	32.66	1.845
			836.6	25.11	0.324	32.85	1.928
			848.8	25.14	0.327	32.95	1.972

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

Model Number	HE920-NA						
Test Item	RF Output Power						
Date of Test	11/25/2013			Test Site		TE05	
Bands	Modulation Type	Data Rate	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
GSM 1900	GMSK	-----	1850.2	28.69	0.740	28.87	0.771
			1880.0	28.72	0.745	28.96	0.787
			1909.8	28.82	0.762	29.12	0.817
GRRS 1900 Multi Class :10 Max Up:2 Max Down:4 Sum:5	GMSK	4Down1Up (Duty Factor 1/8)	1850.2	28.54	0.714	28.73	0.746
			1909.8	28.59	0.723	28.82	0.762
			1909.8	28.66	0.735	28.95	0.785
		3Down2Up (Duty Factor 2/8)	1850.2	28.49	0.706	28.66	0.735
			1909.8	28.51	0.710	28.74	0.748
			1909.8	28.56	0.718	28.81	0.760
EGPRS 1900 Multi Class :10 Max Up:2 Max Down:4 Sum:5	8PSK	4Down1Up (Duty Factor 1/8)	1850.2	25.02	0.318	28.34	0.682
			1880.0	24.89	0.308	28.22	0.664
			1909.8	24.81	0.303	28.21	0.662
		3Down2Up (Duty Factor 2/8)	1850.2	24.93	0.311	28.21	0.662
			1909.8	24.76	0.299	28.17	0.656
			1909.8	24.67	0.293	28.02	0.634
DTM 1900 (GSM+ GPRS) Multi Class :9 Max Up:2 Max Down:4 Sum:5	GMSK	3Down2Up (Duty Factor 3/8)	1850.2	27.80	0.603	27.87	0.612
			1909.8	27.89	0.615	28.05	0.638
			1909.8	28.00	0.631	28.18	0.658
DTM 1900 (GSM+ EGPRS) Multi Class :9 Max Up:2 Max Down:4 Sum:5	GMSK+ 8PSK	3Down2Up (Duty Factor 3/8)	1850.2	24.50	0.282	28.77	0.753
			1909.8	24.21	0.264	28.72	0.745
			1909.8	24.14	0.259	28.58	0.721

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

Model Number	HE920-NA						
Test Item	RF Output Power						
Date of Test	11/25/2013			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	23.28	0.213	26.68	0.466
			1880.0	23.09	0.204	26.59	0.456
			1907.6	23.02	0.200	26.51	0.448
HSDPA Band II	QPSK	1	1852.4	22.40	0.174	25.80	0.380
			1880.0	22.27	0.169	25.71	0.372
			1907.6	22.03	0.160	25.51	0.356
		2	1852.4	22.41	0.174	25.81	0.381
			1880.0	22.29	0.169	25.73	0.374
			1907.6	22.01	0.159	25.46	0.352
		3	1852.4	21.88	0.154	25.28	0.337
			1880.0	21.76	0.150	25.20	0.331
			1907.6	21.53	0.142	25.01	0.317
		4	1852.4	21.88	0.154	25.28	0.337
			1880.0	21.74	0.149	25.18	0.330
			1907.6	21.50	0.141	24.98	0.315
HSUPA/HSPA Band II	QPSK	1	1852.4	21.93	0.156	25.33	0.341
			1880.0	21.80	0.151	25.24	0.334
			1907.6	21.50	0.141	24.99	0.316
		2	1852.4	19.93	0.098	23.33	0.215
			1880.0	19.79	0.095	23.23	0.210
			1907.6	19.52	0.090	23.01	0.200
		3	1852.4	20.95	0.124	24.35	0.272
			1880.0	20.81	0.121	24.25	0.266
			1907.6	20.53	0.113	24.02	0.252
		4	1852.4	19.92	0.098	23.32	0.215
			1880.0	19.78	0.095	23.22	0.210
			1907.6	19.53	0.090	23.02	0.200
		5	1852.4	21.91	0.155	25.31	0.340
			1880.0	21.83	0.152	25.28	0.337
			1907.6	21.52	0.142	25.01	0.317

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

Model Number	HE920-NA						
Test Item	RF Output Power						
Date of Test	11/25/2013			Test Site		TE05	
Bands	Modulation Type	Sub-Test	Frequency (MHz)	Burst Average Power		Peak Power	
				(dBm)	(W)	(dBm)	(W)
WCDMA Band V	QPSK	-----	826.4	23.69	0.234	27.23	0.528
			836.6	23.60	0.229	27.14	0.518
			846.6	24.00	0.251	27.32	0.540
HSDPA Band V	QPSK	1	826.4	22.38	0.173	25.88	0.387
			836.6	22.26	0.168	25.79	0.379
			846.6	22.71	0.187	26.03	0.401
		2	826.4	22.35	0.172	25.85	0.385
			836.6	22.24	0.167	25.77	0.378
			846.6	22.68	0.185	26.00	0.398
		3	826.4	21.88	0.154	25.38	0.345
			836.6	21.77	0.150	25.30	0.339
			846.6	22.21	0.166	25.53	0.357
		4	826.4	21.86	0.153	25.36	0.344
			836.6	21.75	0.150	25.28	0.337
			846.6	22.22	0.167	25.54	0.358
HSUPA/HAPA Band V	QPSK	1	826.4	21.88	0.154	25.34	0.342
			836.6	21.74	0.149	25.28	0.337
			846.6	22.22	0.167	25.53	0.357
		2	826.4	19.90	0.098	23.36	0.217
			836.6	19.75	0.094	23.29	0.213
			846.6	20.22	0.105	23.53	0.225
		3	826.4	20.90	0.123	24.36	0.273
			836.6	20.75	0.119	24.29	0.269
			846.6	21.22	0.132	24.53	0.284
		4	826.4	19.88	0.097	23.34	0.216
			836.6	19.73	0.094	23.27	0.212
			846.6	20.20	0.105	23.51	0.224
		5	826.4	21.84	0.153	25.30	0.339
			836.6	21.72	0.149	25.26	0.336
			846.6	22.20	0.166	25.51	0.356

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

3 Effective Radiated Power / Equivalent Isotropic Radiated Power Test

3.1. Limit

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

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

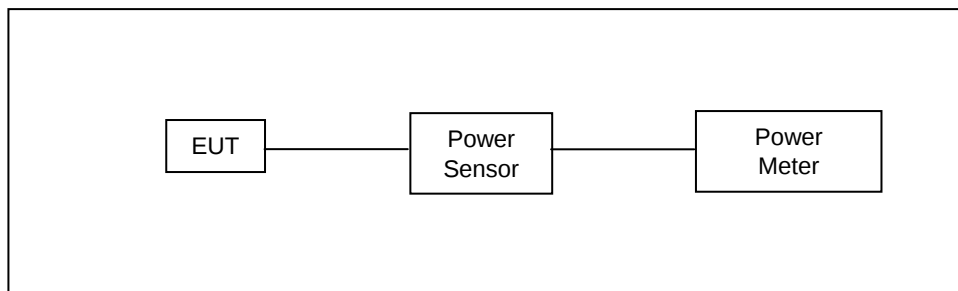
3.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Single Channel PK Power Sensor	Agilent	N1911A	MY45101619	12/15/2011	(2)
Wideband Power Meter	Agilent	N1921A	MY45241957	12/15/2011	(2)
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

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

3.3. Test Setup



3.4. Test Procedure

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

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

3.5. Uncertainty

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

3.6. Test Result

Model Number	HE920-NA						
Test Item	ERP/EIRP						
Date of Test	11/25/2013				Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Peak Conducted power (dBm)	Antenna Gain (dBi)	ERP		Limit
					(dBm)	(W)	
GSM 850	GMSK	824.2	32.68	6.79	37.32	5.395	< 7W
		836.6	32.87	6.79	37.51	5.636	< 7W
		848.8	32.98	6.79	37.62	5.781	< 7W
EGPRS 850	8PSK	824.2	29.62	6.79	34.26	2.667	< 7W
		836.6	29.66	6.79	34.30	2.692	< 7W
		848.8	29.86	6.79	34.50	2.818	< 7W

Model Number	HE920-NA						
Test Item	ERP/EIRP						
Date of Test	11/25/2013				Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Peak Conducted power (dBm)	Antenna Gain (dBi)	EIRP		Limit
					(dBm)	(W)	
GSM 1900	GMSK	1850.20	28.87	3.01	31.88	1.542	< 2W
		1880.00	28.96	3.01	31.97	1.574	< 2W
		1909.80	29.12	3.01	32.13	1.633	< 2W
EGPRS 1900	8PSK	1850.20	28.34	3.01	31.35	1.365	< 2W
		1880.00	28.22	3.01	31.23	1.327	< 2W
		1909.80	28.21	3.01	31.22	1.324	< 2W

Model Number	HE920-NA						
Test Item	ERP/EIRP						
Date of Test	11/25/2013				Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Peak Conducted power (dBm)	Antenna Gain (dBi)	EIRP		Limit
					(dBm)	(W)	
WCDMA Band II	QPSK	1852.4	26.68	3.01	29.69	0.931	< 2W
		1880.0	26.59	3.01	29.60	0.912	< 2W
		1907.6	26.51	3.01	29.52	0.895	< 2W

Note: ERP = Peak Conducted power + Antenna Gain - 2.15, EIRP = Peak Conducted power + Antenna Gain

Model Number	HE920-NA						
Test Item	ERP/EIRP						
Date of Test	11/25/2013				Test Site	TE01	
Bands	Modulation Type	Frequency (MHz)	Peak Conducted power (dBm)	Antenna Gain (dBi)	ERP		Limit
					(dBm)	(W)	
WCDMA Band V	QPSK	826.4	27.23	6.79	31.87	1.538	< 7W
		836.6	27.14	6.79	31.78	1.507	< 7W
		846.6	27.32	6.79	31.96	1.570	< 7W

Note: ERP = Peak Conducted power + Antenna Gain - 2.15, EIRP = Peak Conducted power + Antenna Gain

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.

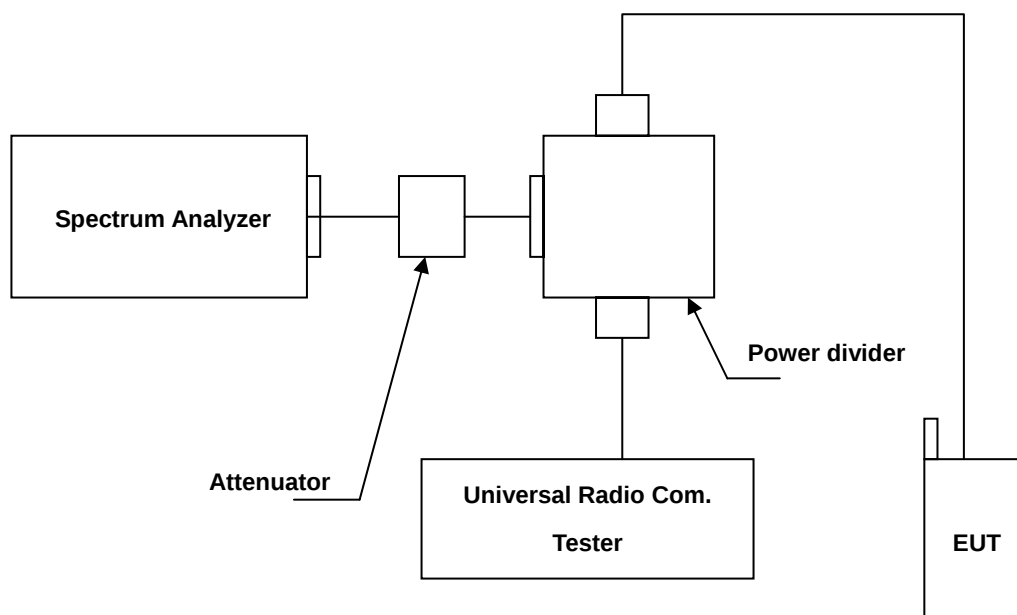
4.2. Test Instruments

Equipment	Manufacturer	Model No.	Serial No.	Cal. Date	Remark
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(1)
Wideband Radio Communication Test	R & S	CMW500	103168	11/05/2013	(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%.

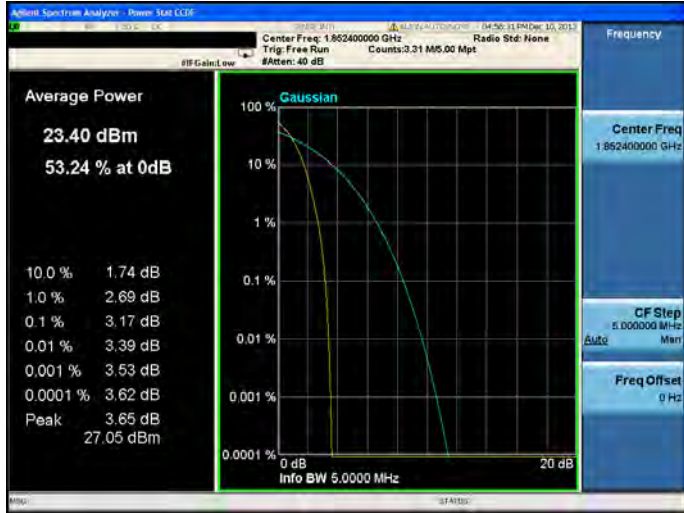
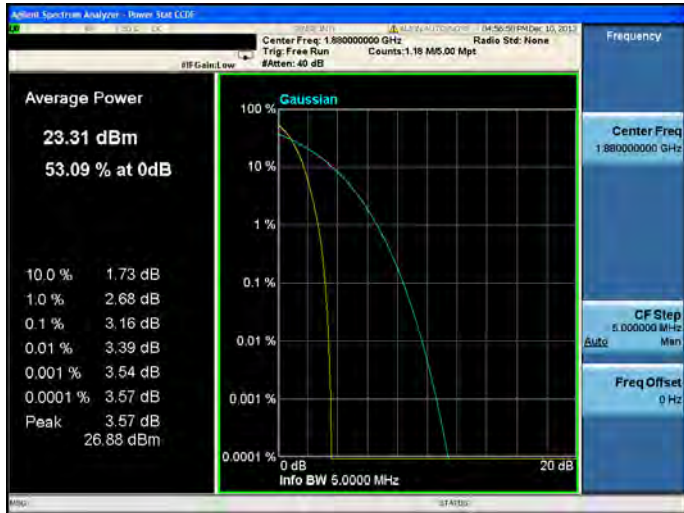
4.5. Uncertainty

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

4.6. Test Result

Model Number	HE920-NA			
Test Item	Peak to Average Ratio			
Date of Test	12/11/2013			Test Site TE05
Bands	Channel	Frequency (MHz)	Peak to Average Ratio (dB)	Limit (dB)
WCDMA Band II	9262	1852.4	3.17	< 13
	9400	1880.0	3.16	< 13
	9538	1907.6	3.27	< 13

4.7. Test Graphs

Mode 5: WCDMA Band II Link Mode																	
1850.20 MHz	 Average Power 23.40 dBm 53.24 % at 0dB <table border="1"> <tr><td>10.0 %</td><td>1.74 dB</td></tr> <tr><td>1.0 %</td><td>2.69 dB</td></tr> <tr><td>0.1 %</td><td>3.17 dB</td></tr> <tr><td>0.01 %</td><td>3.39 dB</td></tr> <tr><td>0.001 %</td><td>3.53 dB</td></tr> <tr><td>0.0001 %</td><td>3.62 dB</td></tr> <tr><td>Peak</td><td>3.65 dB</td></tr> <tr><td></td><td>27.05 dBm</td></tr> </table> Center Freq: 1.852400000 GHz Trig: Free Run Counts: 3.21 M5.00 Mpt Radio Std: None #B Gain: Low #Att: 40 dB Frequency Center Freq: 1.852400000 GHz CF Step: 5.000000 MHz Auto Man Freq Offset: 0 Hz Info BW: 5.0000 MHz	10.0 %	1.74 dB	1.0 %	2.69 dB	0.1 %	3.17 dB	0.01 %	3.39 dB	0.001 %	3.53 dB	0.0001 %	3.62 dB	Peak	3.65 dB		27.05 dBm
10.0 %	1.74 dB																
1.0 %	2.69 dB																
0.1 %	3.17 dB																
0.01 %	3.39 dB																
0.001 %	3.53 dB																
0.0001 %	3.62 dB																
Peak	3.65 dB																
	27.05 dBm																
1880.00 MHz	 Average Power 23.31 dBm 53.09 % at 0dB <table border="1"> <tr><td>10.0 %</td><td>1.73 dB</td></tr> <tr><td>1.0 %</td><td>2.68 dB</td></tr> <tr><td>0.1 %</td><td>3.16 dB</td></tr> <tr><td>0.01 %</td><td>3.39 dB</td></tr> <tr><td>0.001 %</td><td>3.54 dB</td></tr> <tr><td>0.0001 %</td><td>3.57 dB</td></tr> <tr><td>Peak</td><td>3.57 dB</td></tr> <tr><td></td><td>26.88 dBm</td></tr> </table> Center Freq: 1.880000000 GHz Trig: Free Run Counts: 1.18 M5.00 Mpt Radio Std: None #B Gain: Low #Att: 40 dB Frequency Center Freq: 1.880000000 GHz CF Step: 5.000000 MHz Auto Man Freq Offset: 0 Hz Info BW: 5.0000 MHz	10.0 %	1.73 dB	1.0 %	2.68 dB	0.1 %	3.16 dB	0.01 %	3.39 dB	0.001 %	3.54 dB	0.0001 %	3.57 dB	Peak	3.57 dB		26.88 dBm
10.0 %	1.73 dB																
1.0 %	2.68 dB																
0.1 %	3.16 dB																
0.01 %	3.39 dB																
0.001 %	3.54 dB																
0.0001 %	3.57 dB																
Peak	3.57 dB																
	26.88 dBm																
1909.80 MHz	 Average Power 23.07 dBm 52.45 % at 0dB <table border="1"> <tr><td>10.0 %</td><td>1.76 dB</td></tr> <tr><td>1.0 %</td><td>2.76 dB</td></tr> <tr><td>0.1 %</td><td>3.27 dB</td></tr> <tr><td>0.01 %</td><td>3.51 dB</td></tr> <tr><td>0.001 %</td><td>3.66 dB</td></tr> <tr><td>0.0001 %</td><td>3.77 dB</td></tr> <tr><td>Peak</td><td>3.79 dB</td></tr> <tr><td></td><td>26.86 dBm</td></tr> </table> Center Freq: 1.907800000 GHz Trig: Free Run Counts: 3.25 M5.00 Mpt Radio Std: None #B Gain: Low #Att: 40 dB Frequency Center Freq: 1.907800000 GHz CF Step: 5.000000 MHz Auto Man Freq Offset: 0 Hz Info BW: 5.0000 MHz	10.0 %	1.76 dB	1.0 %	2.76 dB	0.1 %	3.27 dB	0.01 %	3.51 dB	0.001 %	3.66 dB	0.0001 %	3.77 dB	Peak	3.79 dB		26.86 dBm
10.0 %	1.76 dB																
1.0 %	2.76 dB																
0.1 %	3.27 dB																
0.01 %	3.51 dB																
0.001 %	3.66 dB																
0.0001 %	3.77 dB																
Peak	3.79 dB																
	26.86 dBm																

5 Emission Bandwidth & Occupied Bandwidth Test

5.1. Limit

The Occupied Bandwidth Limit:

N/A.

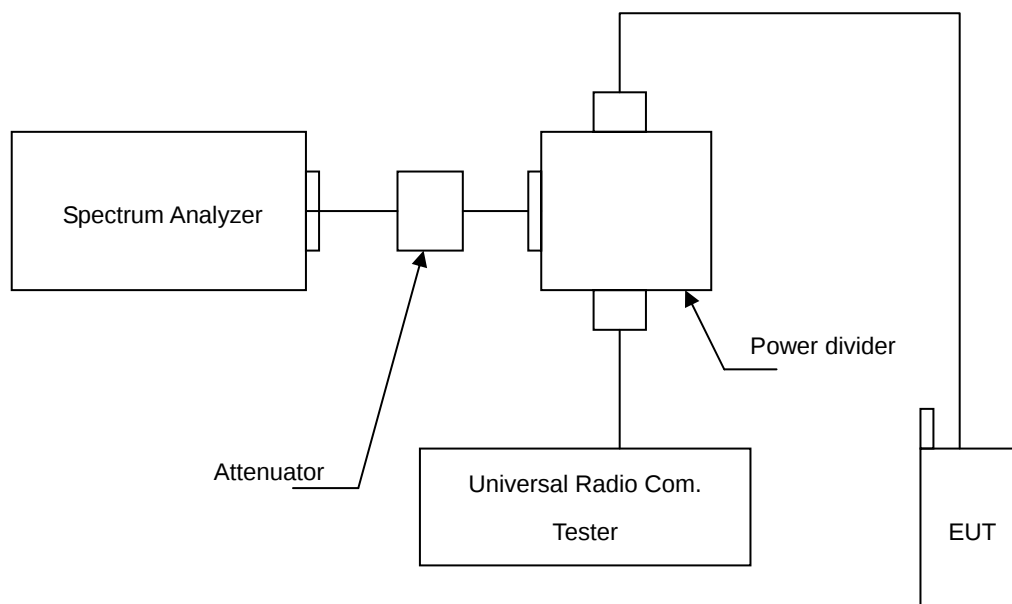
5.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(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

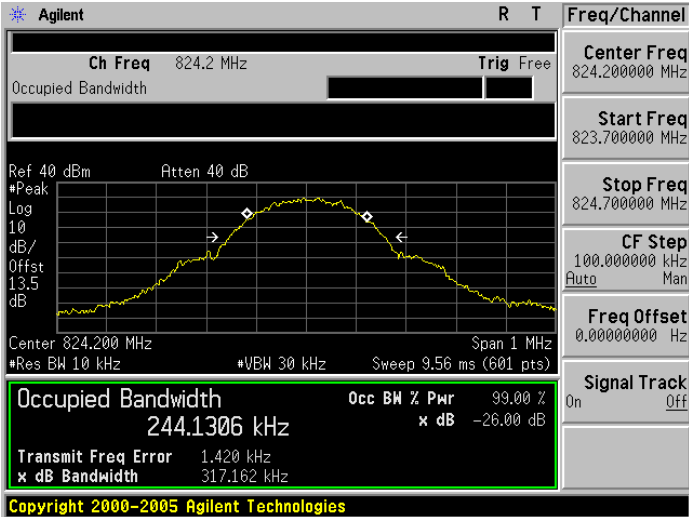
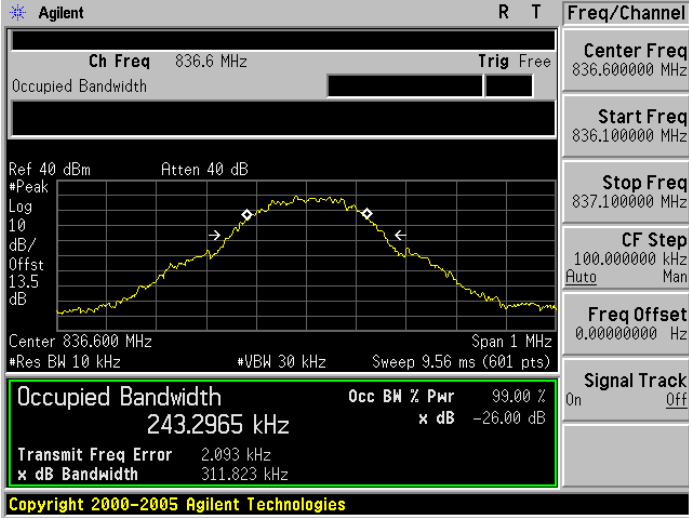
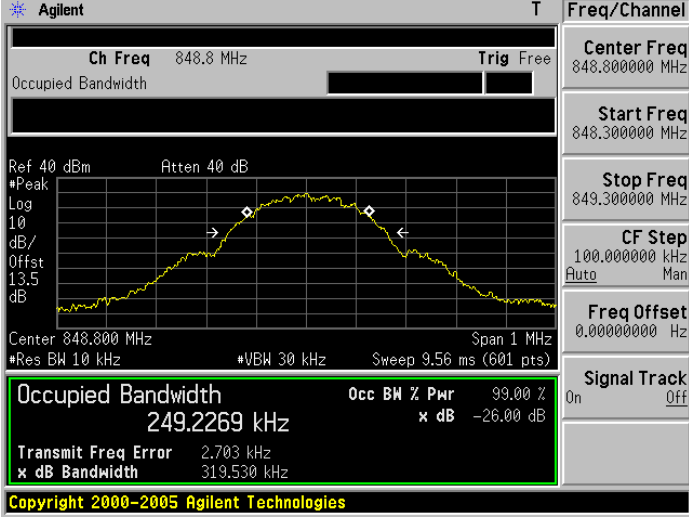
The measurement uncertainty is defined as $\pm 10\text{Hz}$

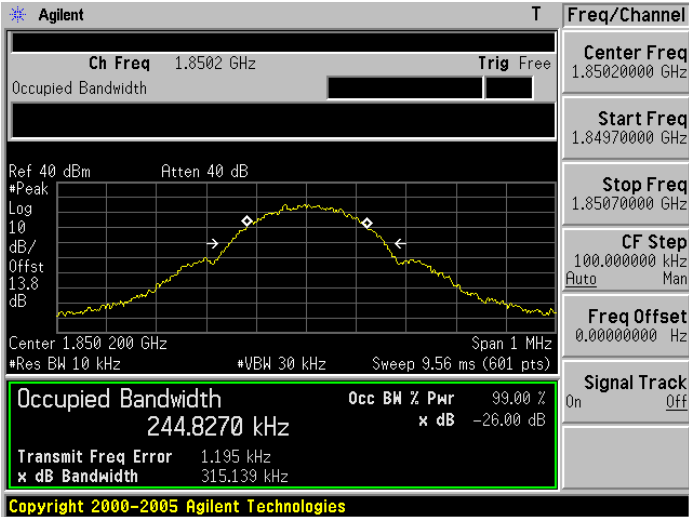
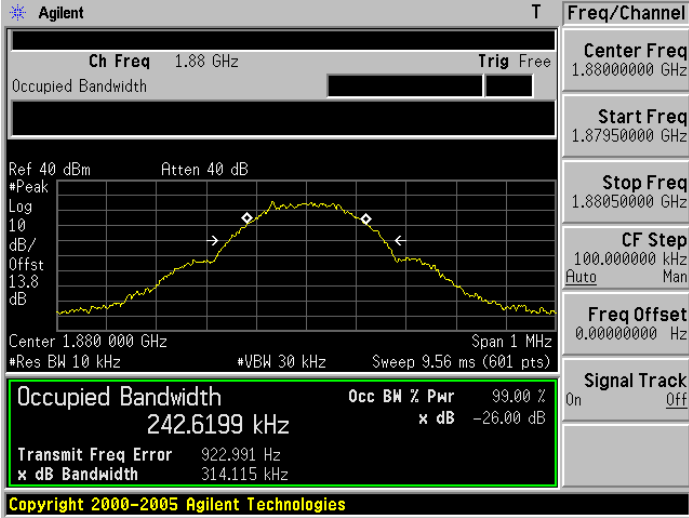
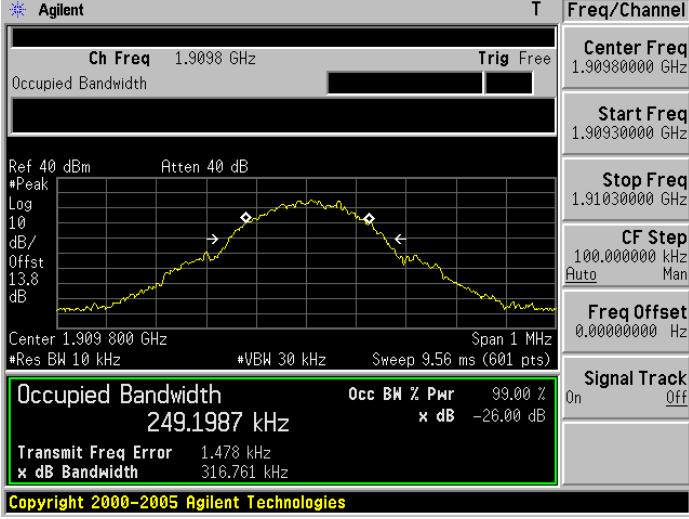
5.6. Test Result

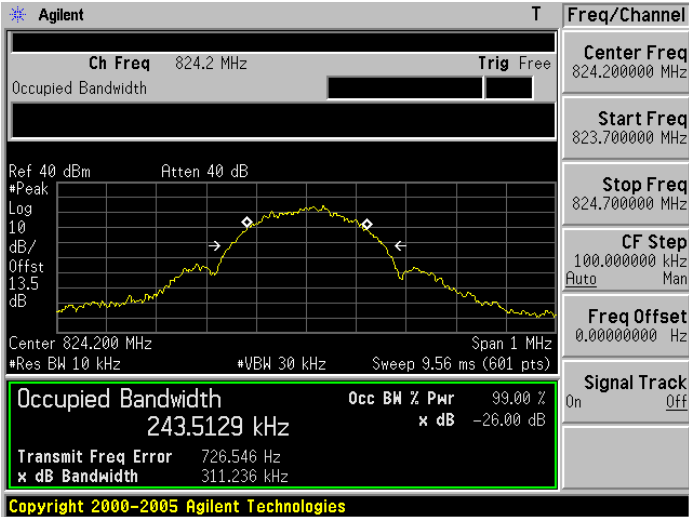
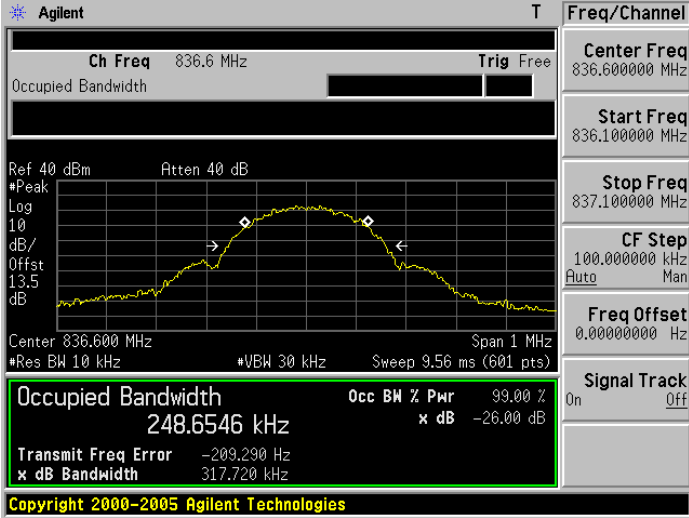
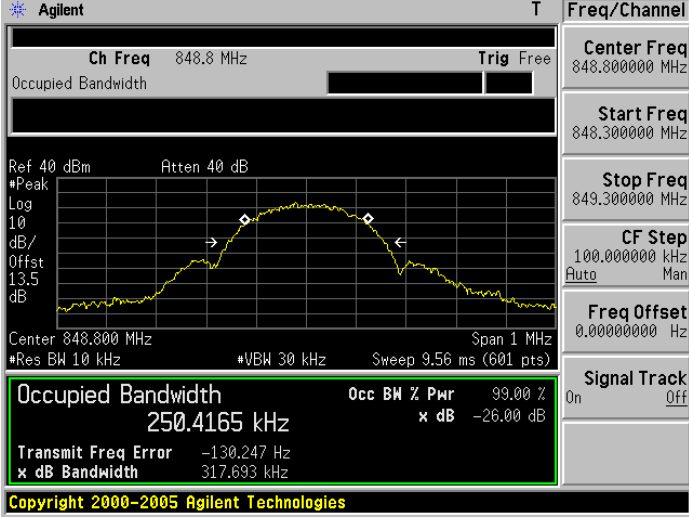
Model Number	HE920-NA				
Test Item	Emission Bandwidth & Occupied Bandwidth				
Date of Test	12/04/2013			Test Site	TE05
Bands	Channel	Frequency (MHz)	-26dB Bandwidth (kHz)	99% Bandwidth (kHz)	Note
GSM 850	128	824.2	317.162	244.1306	RBW:10KHz , VBW:30KHz
	190	836.6	311.823	243.2965	RBW:10KHz , VBW:30KHz
	251	848.8	319.530	249.2269	RBW:10KHz , VBW:30KHz
GSM 1900	512	1850.20	315.139	244.8270	RBW:10KHz , VBW:30KHz
	661	1880.00	314.115	242.6199	RBW:10KHz , VBW:30KHz
	810	1909.80	316.761	249.1987	RBW:10KHz , VBW:30KHz
EGPRS 850	128	824.2	311.236	243.5129	RBW:10KHz , VBW:30KHz
	190	836.6	317.720	248.6546	RBW:10KHz , VBW:30KHz
	251	848.8	317.693	250.4165	RBW:10KHz , VBW:30KHz
EGPRS 1900	512	1850.20	314.945	240.6707	RBW:10KHz , VBW:30KHz
	661	1880.00	313.015	247.1433	RBW:10KHz , VBW:30KHz
	810	1909.80	314.560	247.9683	RBW:10KHz , VBW:30KHz

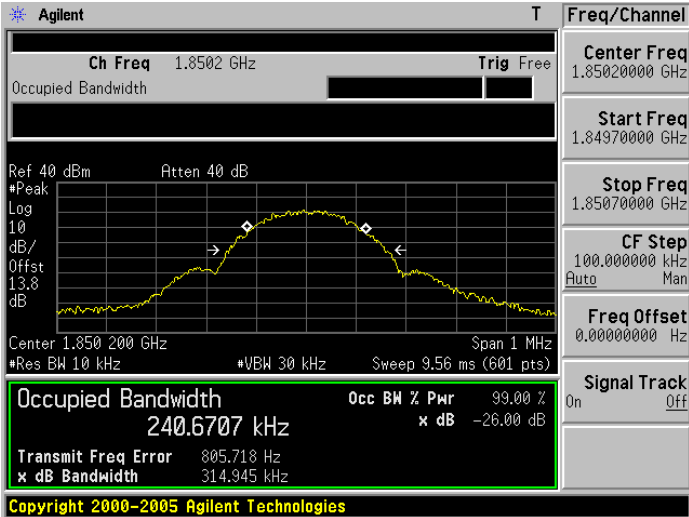
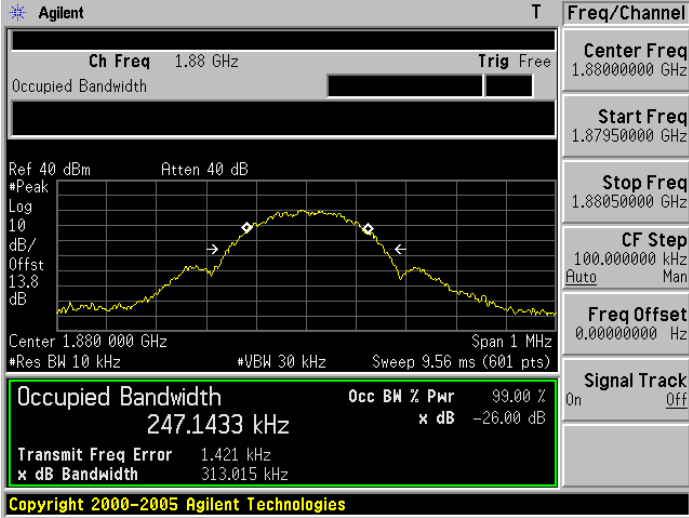
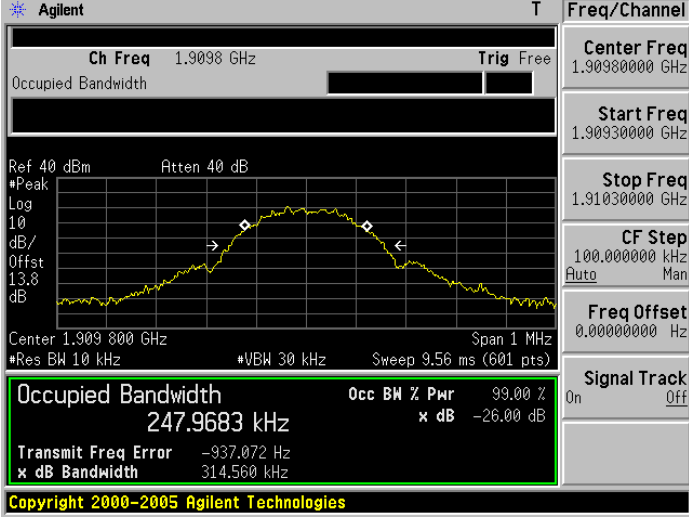
Model Number	HE920-NA				
Test Item	Emission Bandwidth & Occupied Bandwidth				
Date of Test	11/25/2013			Test Site	TE05
Bands	Channel	Frequency (MHz)	-26dB Bandwidth (MHz)	99% Bandwidth (MHz)	Note
WCDMA Band II	9262	1852.4	4.677	4.1558	RBW:100KHz , VBW:300KHz
	9400	1880.0	4.675	4.1714	RBW:100KHz , VBW:300KHz
	9538	1907.6	4.655	4.1282	RBW:100KHz , VBW:300KHz
WCDMA Band V	4132	826.4	4.673	4.1441	RBW:100KHz , VBW:300KHz
	4183	836.6	4.664	4.1486	RBW:100KHz , VBW:300KHz
	4233	846.6	4.663	4.1650	RBW:100KHz , VBW:300KHz

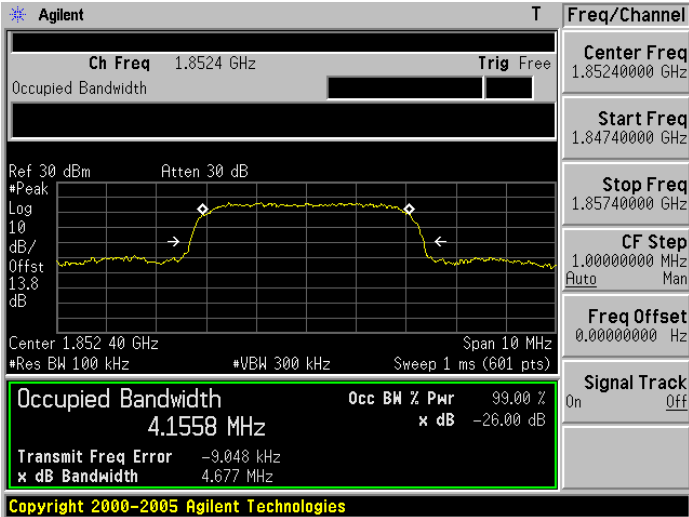
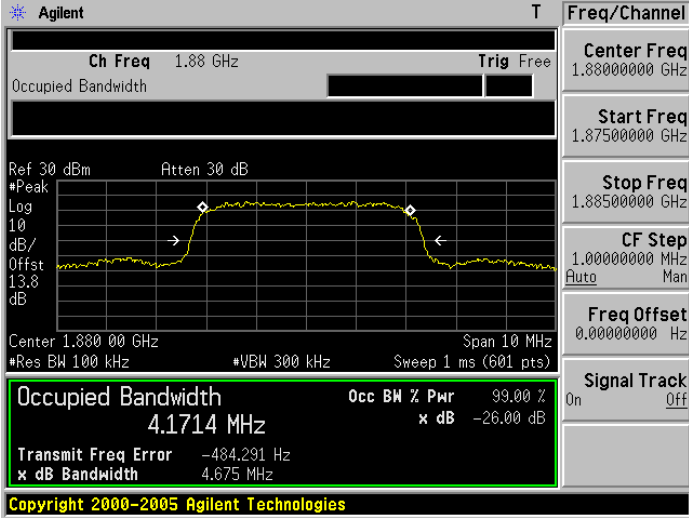
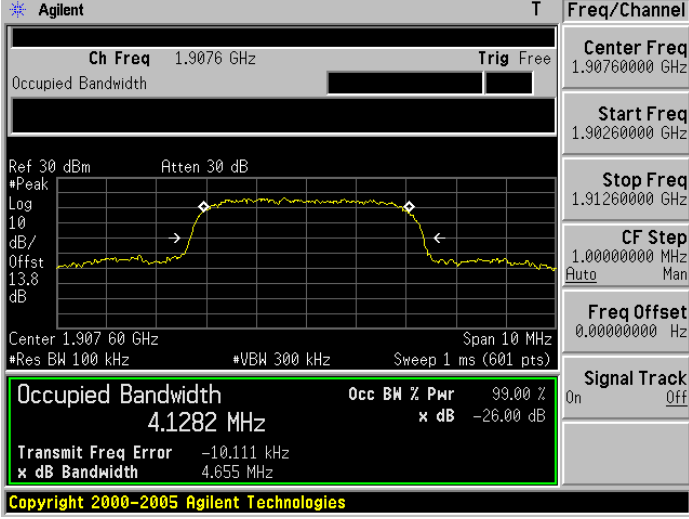
5.7. Test Graphs

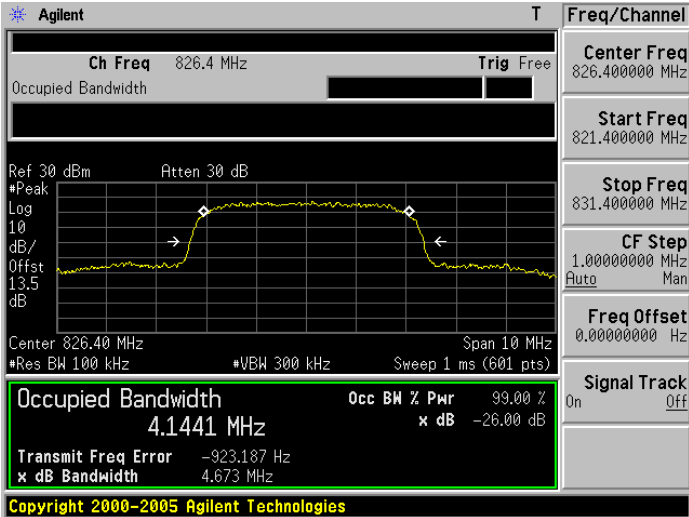
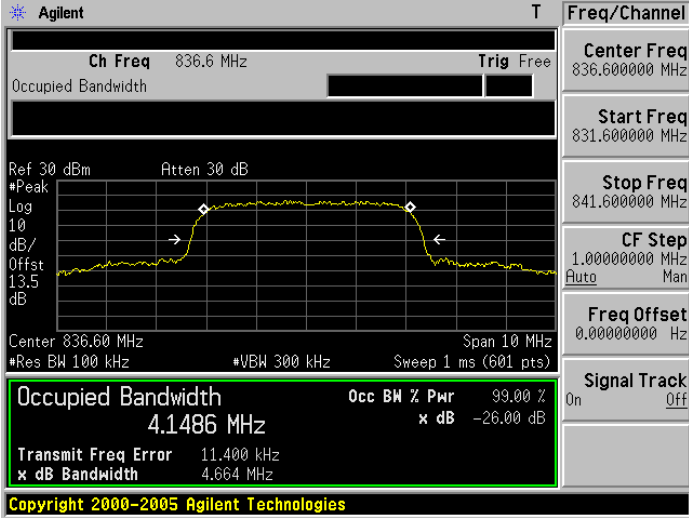
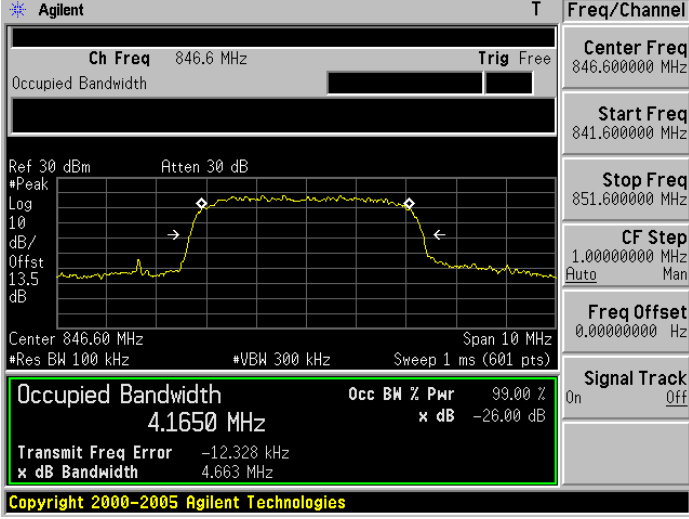
Mode 1: GSM 850 Link Mode	
824.2 MHz	
836.6 MHz	
848.8 MHz	

Mode 2: GSM 1900 Link Mode	
1850.20 MHz	 Agilent T Freq/Channel Ch Freq 1.8502 GHz Trig Free Occupied Bandwidth Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.8 dB Center 1.850 200 GHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 244.8270 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.195 kHz x dB Bandwidth 315.139 kHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.85020000 GHz Start Freq 1.84970000 GHz Stop Freq 1.85070000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off
1880.00 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Occupied Bandwidth Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.8 dB Center 1.880 000 GHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 242.6199 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 922.991 Hz x dB Bandwidth 314.115 kHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.88000000 GHz Start Freq 1.87950000 GHz Stop Freq 1.88050000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off
1909.80 MHz	 Agilent T Freq/Channel Ch Freq 1.9098 GHz Trig Free Occupied Bandwidth Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.8 dB Center 1.909 800 GHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 249.1987 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.478 kHz x dB Bandwidth 316.761 kHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.90980000 GHz Start Freq 1.90930000 GHz Stop Freq 1.91030000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off

Mode 3: EGPRS 850 Link Mode	
824.2 MHz	 Agilent 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 0.0000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.5 dB Center 824.200 MHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 243.5129 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 726.546 Hz x dB Bandwidth 311.236 kHz Copyright 2000-2005 Agilent Technologies
836.6 MHz	 Agilent 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 0.0000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.5 dB Center 836.600 MHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 248.6546 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -209.290 Hz x dB Bandwidth 317.720 kHz Copyright 2000-2005 Agilent Technologies
848.8 MHz	 Agilent 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 0.0000000 Hz Signal Track On Off Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.5 dB Center 848.800 MHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 250.4165 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -130.247 Hz x dB Bandwidth 317.693 kHz Copyright 2000-2005 Agilent Technologies

Mode 4: EGPRS 1900 Link Mode	
1850.20 MHz	 Agilent T Freq/Channel Ch Freq 1.8502 GHz Trig Free Occupied Bandwidth Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.8 dB Center 1.850 200 GHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 240.6707 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 805.718 Hz x dB Bandwidth 314.945 kHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.85020000 GHz Start Freq 1.84970000 GHz Stop Freq 1.85070000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off
1880.00 MHz	 Agilent T Freq/Channel Ch Freq 1.88 GHz Trig Free Occupied Bandwidth Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.8 dB Center 1.880 000 GHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 247.1433 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 1.421 kHz x dB Bandwidth 313.015 kHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.88000000 GHz Start Freq 1.87950000 GHz Stop Freq 1.88050000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off
1909.80 MHz	 Agilent T Freq/Channel Ch Freq 1.9098 GHz Trig Free Occupied Bandwidth Ref 40 dBm Atten 40 dB #Peak Log 10 dB/Offst 13.8 dB Center 1.909 800 GHz Span 1 MHz #Res BW 10 kHz #VBW 30 kHz Sweep 9.56 ms (601 pts) Occupied Bandwidth 247.9683 kHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -937.072 Hz x dB Bandwidth 314.560 kHz Copyright 2000-2005 Agilent Technologies Freq/Channel Center Freq 1.90980000 GHz Start Freq 1.90930000 GHz Stop Freq 1.91030000 GHz CF Step 100.000000 kHz Auto Man Freq Offset 0.0000000 Hz Signal Track On Off

Mode 5: WCDMA Band II Link Mode	
1850.20 MHz	 Agilent 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 13.8 dB Center 1.852 40 GHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1558 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -9.048 kHz x dB Bandwidth 4.677 MHz Copyright 2000-2005 Agilent Technologies
1880.00 MHz	 Agilent 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 13.8 dB Center 1.880 00 GHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1714 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -484.291 Hz x dB Bandwidth 4.675 MHz Copyright 2000-2005 Agilent Technologies
1909.80 MHz	 Agilent 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 13.8 dB Center 1.907 60 GHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1282 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -10.111 kHz x dB Bandwidth 4.655 MHz Copyright 2000-2005 Agilent Technologies

Mode 6: WCDMA Band V Link Mode	
826.4 MHz	 Agilent 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 13.5 dB Center 826.40 MHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1441 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -923.187 Hz x dB Bandwidth 4.673 MHz Copyright 2000-2005 Agilent Technologies
836.6 MHz	 Agilent 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 13.5 dB Center 836.60 MHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1486 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error 11.400 kHz x dB Bandwidth 4.664 MHz Copyright 2000-2005 Agilent Technologies
846.6 MHz	 Agilent 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 13.5 dB Center 846.60 MHz Span 10 MHz #Res BW 100 kHz #VBW 300 kHz Sweep 1 ms (601 pts) Occupied Bandwidth 4.1650 MHz Occ BW % Pwr 99.00 % x dB -26.00 dB Transmit Freq Error -12.328 kHz x dB Bandwidth 4.663 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.

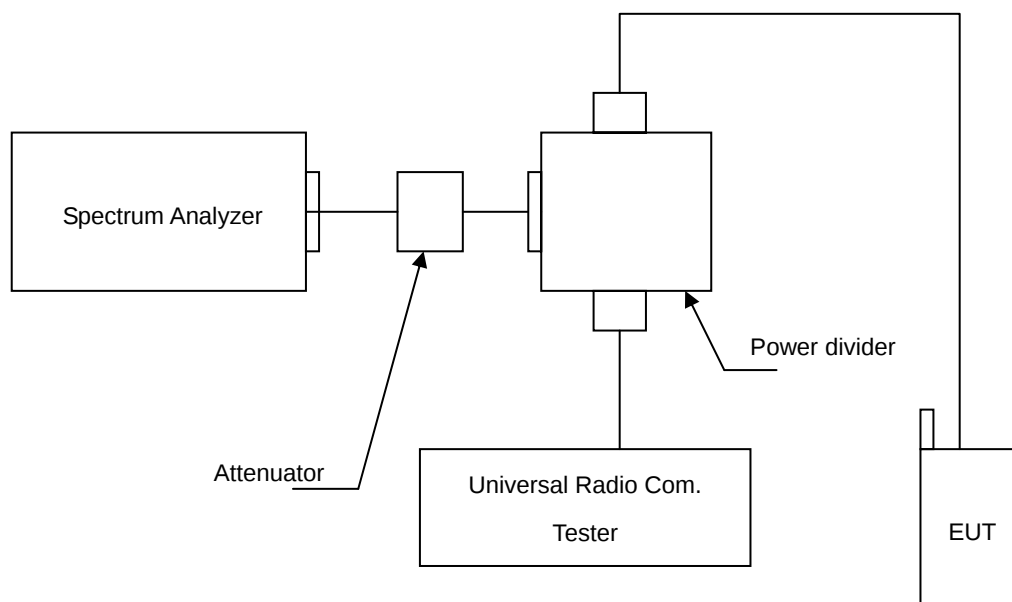
6.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(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=100 kHz; VB=300 kHz for WCDMA Band V and WCDMA Band II.

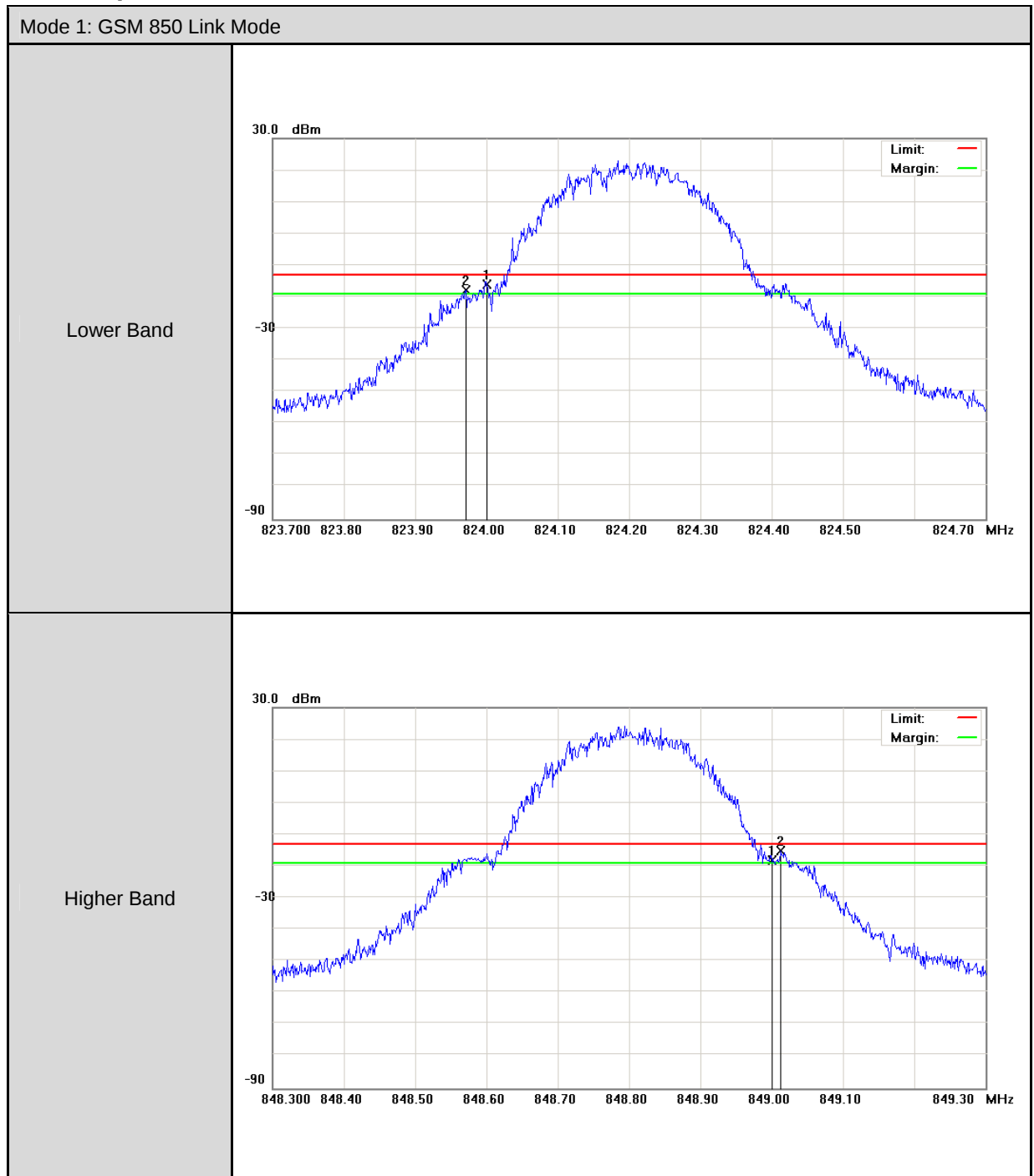
6.5. Uncertainty

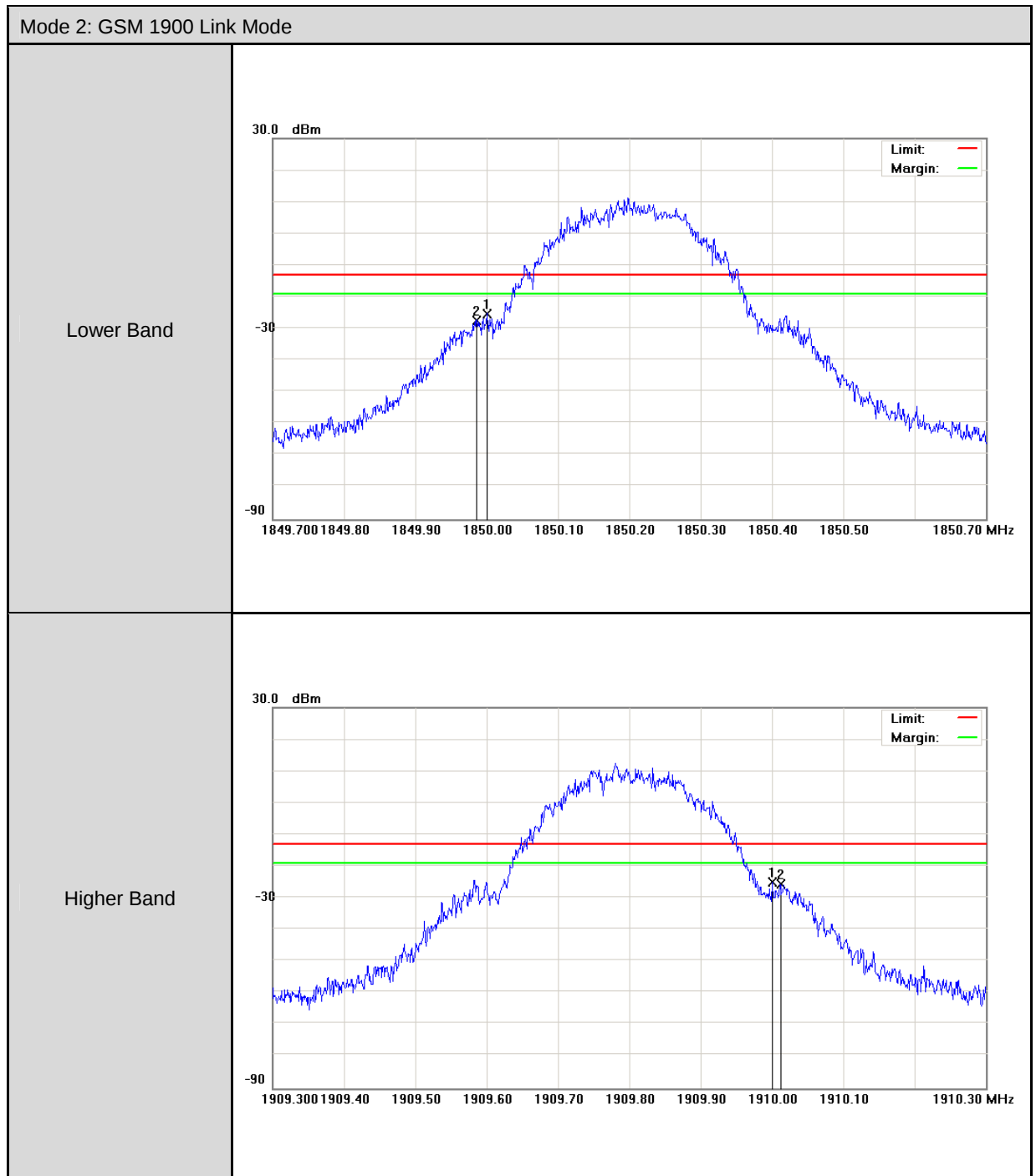
The measurement uncertainty is defined as $\pm 10\text{Hz}$

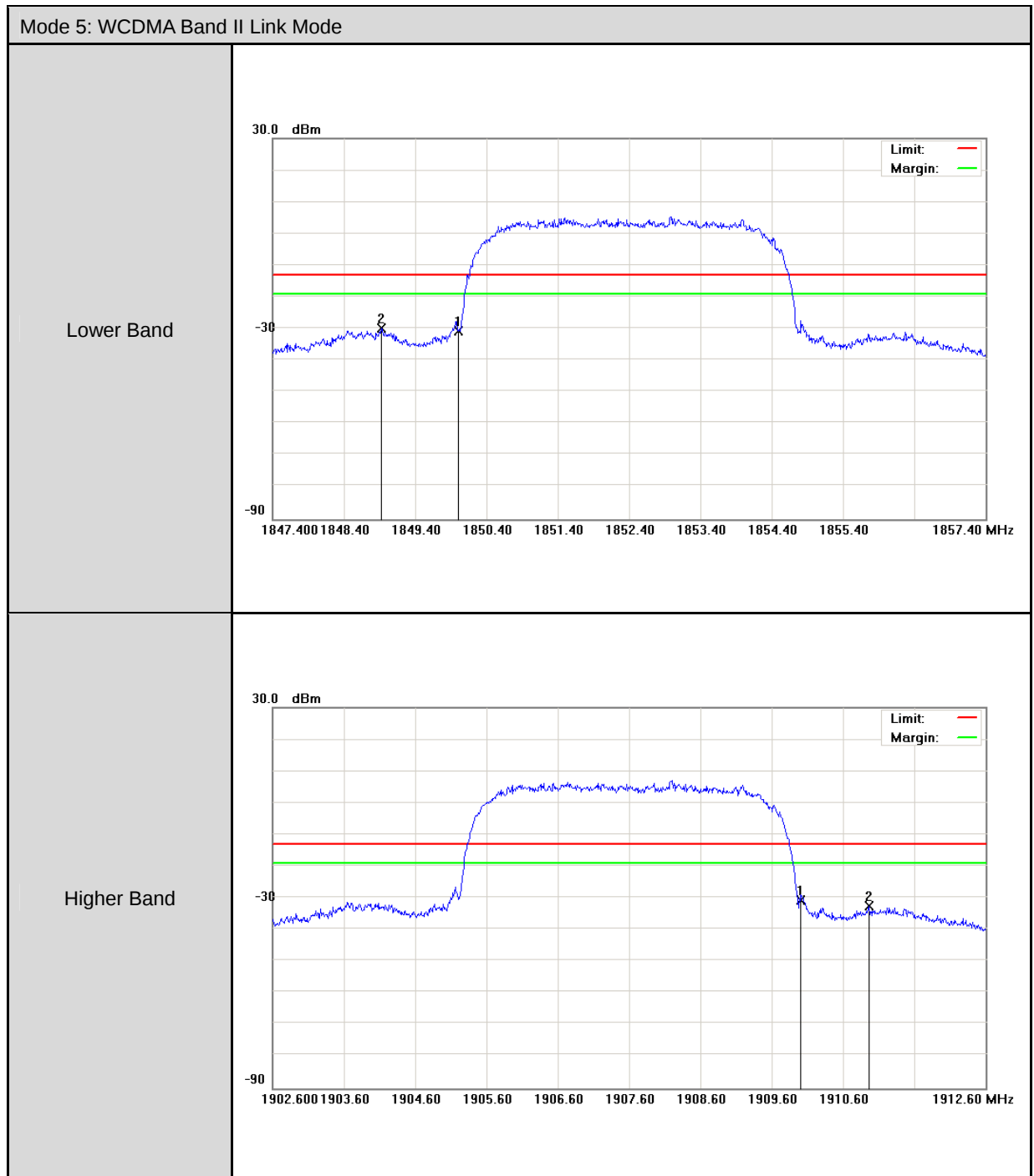
6.6. Test Result

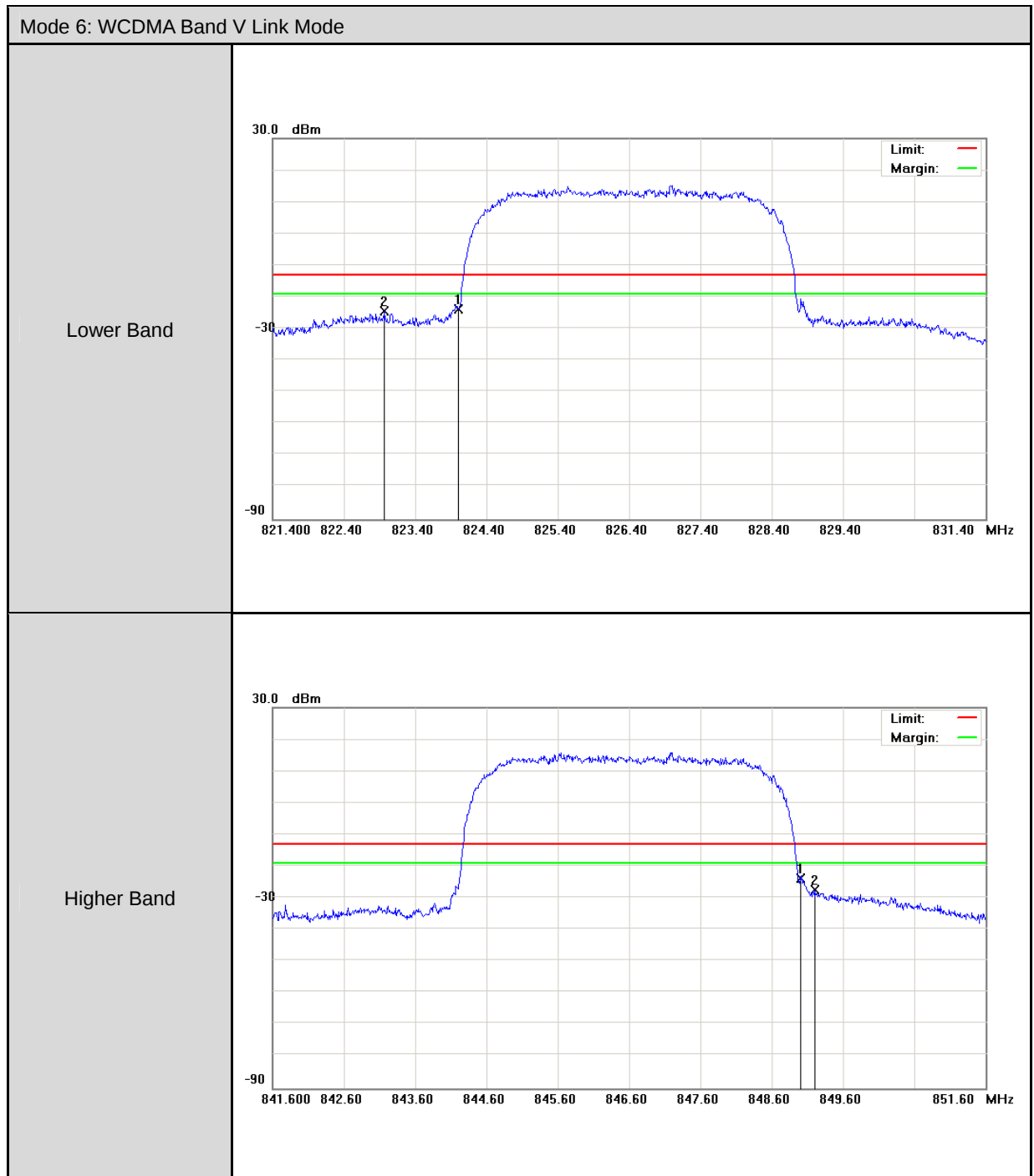
Model Number		HE920-NA				
Test Item		Band Edge				
Date of Test		11/25/2013			Test Site	TE05
Bands		Channel	Frequency (MHz)	Bandwidth (dBm)	Limit (dBm)	Result
GSM 850	Lower	128	824.0000	-16.05	-13	Pass
	Higher	251	849.0000	-15.29	-13	Pass
GSM 1900	Lower	512	1850.000	-25.43	-13	Pass
	Higher	810	1910.000	-25.14	-13	Pass
WCDMA Band II	Lower	9262	1850.000	-29.98	-13	Pass
	Higher	9538	1910.000	-30.88	-13	Pass
WCDMA Band V	Lower	4132	824.0000	-23.80	-13	Pass
	Higher	4233	849.0000	-23.83	-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

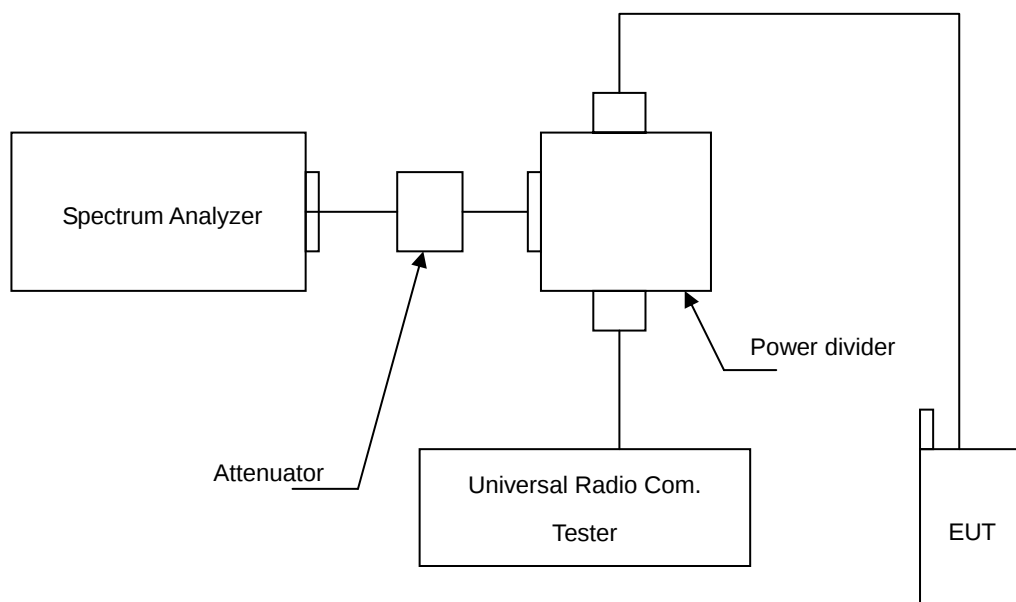
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Spectrum Analyzer	Agilent	E4445A	MY46181986	05/16/2013	(1)
Attenuator	RADIALL	R41572000	0603033073	N.C.R.	-----
Power Divider	Agilent	87302C	3239A00760	N.C.R.	-----
Test Site	ATL	TE05	TE05	N.C.R.	-----

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

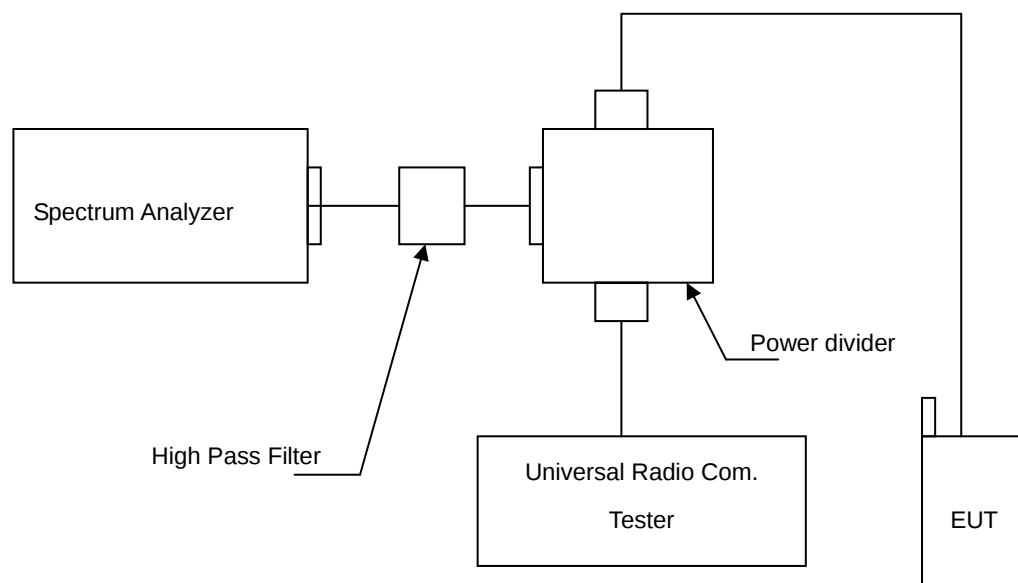
Note: N.C.R. = No Calibration Request.

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.
4. Test setting at GSM 850 RB>100 kHz, VB>100 kHz; PCS 1900 RB>1MHz, VB>1MHz.

7.5. Uncertainty

The measurement uncertainty is evaluated as ± 2.24 dB.

7.6. Test Result

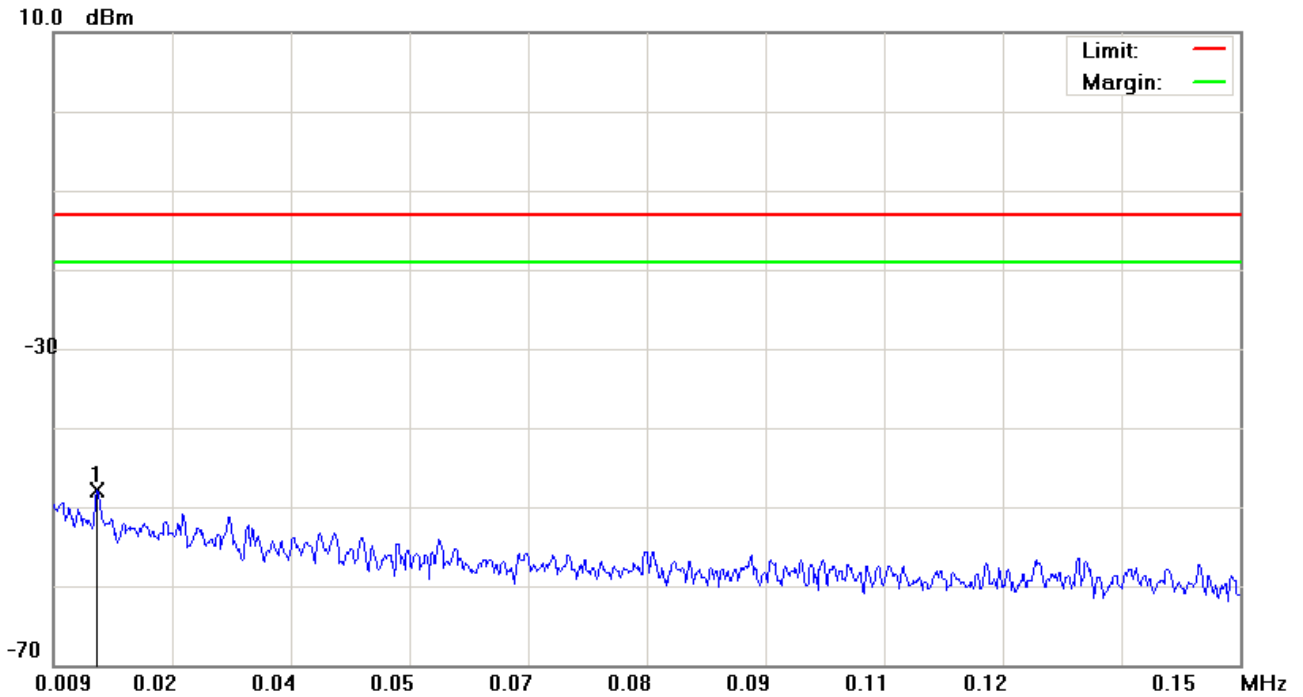
Model Number	HE920-NA		
Test Item	Conducted Spurious Emission		
Test Mode	Mode 1 / Mode 2 / Mode 4 / Mode 5		
Date of Test	11/25/2013, 12/04/2013	Test Site	TE05

File :HE920-NA(CH128)

Data :#1

Date: 2013/12/4

Time: 下午 02:34:06



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	0.0142	-78.40	30.56	-47.84	-13.00	-34.84	peak		

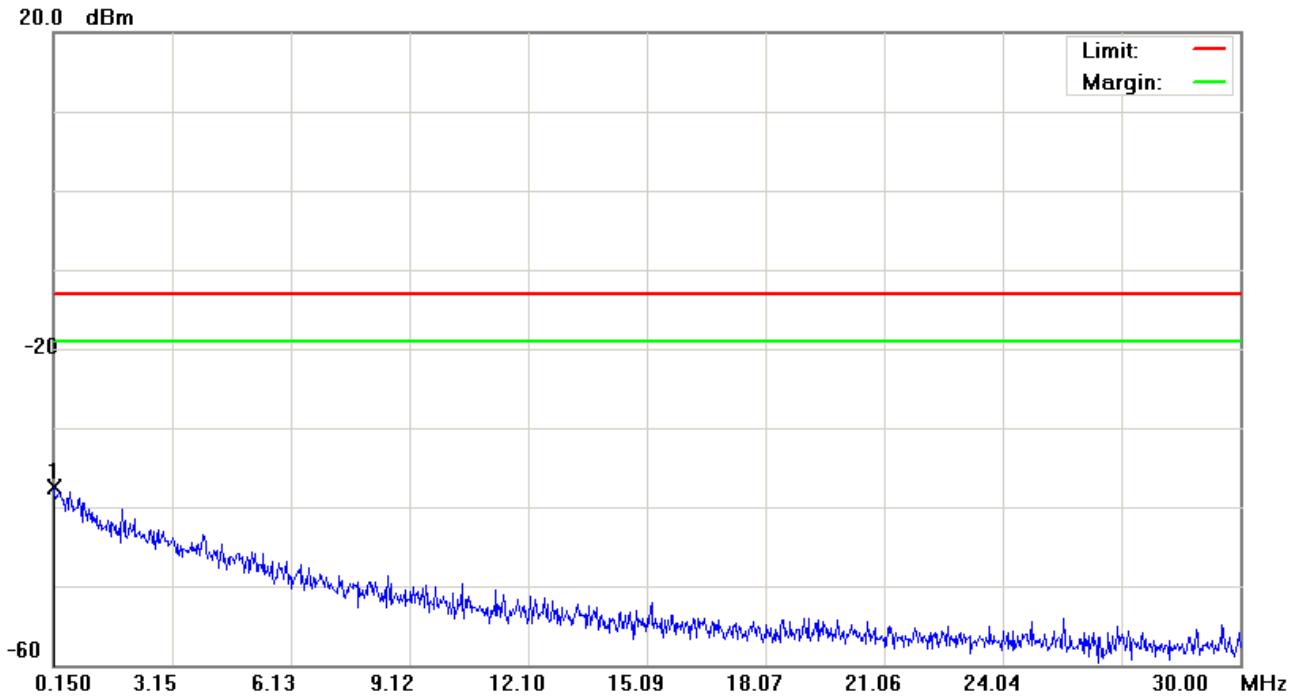
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH128)

Data :#2

Date: 2013/12/4

Time: 下午 02:34:30



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	0.1650	-68.05	30.63	-37.42	-13.00	-24.42	peak		

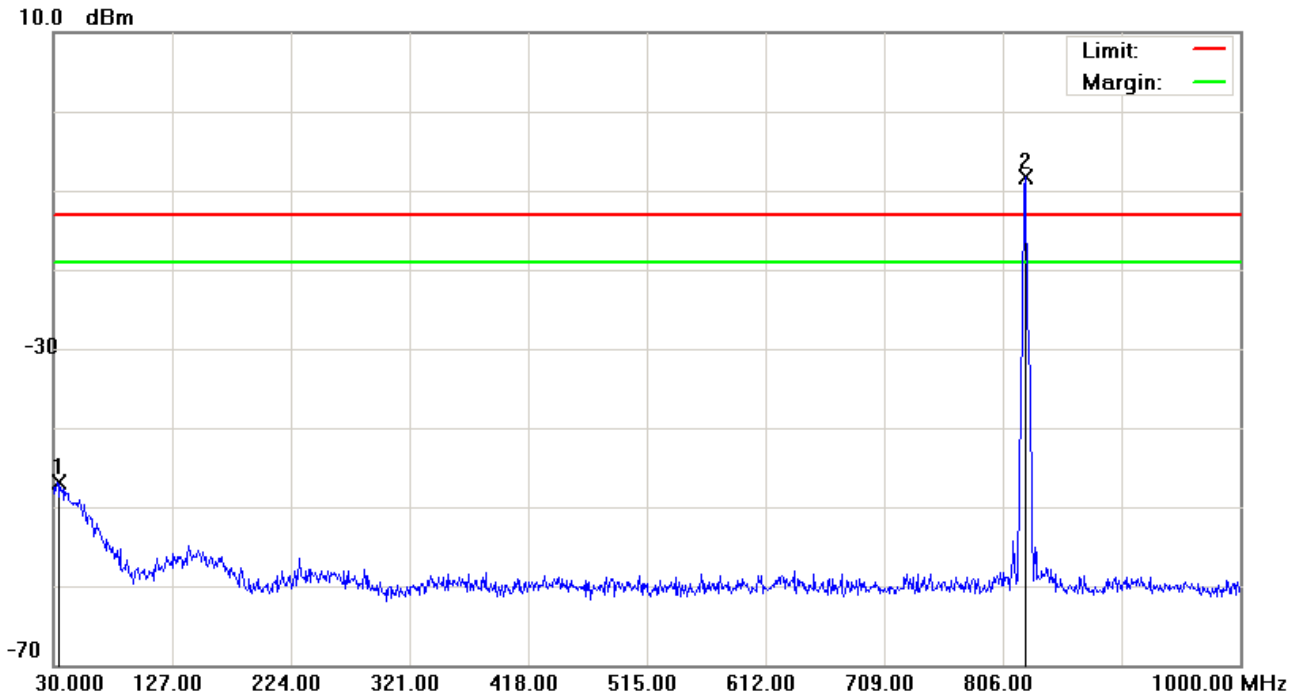
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH128)

Data :#3

Date: 2013/12/4

Time: 下午 02:34:54



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: GSM 850

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		33.3950	-63.77	16.83	-46.94	-13.00	-33.94	peak			
2	*	824.4300	-12.12	3.84	-8.28	-13.00	4.72	peak			Tx

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

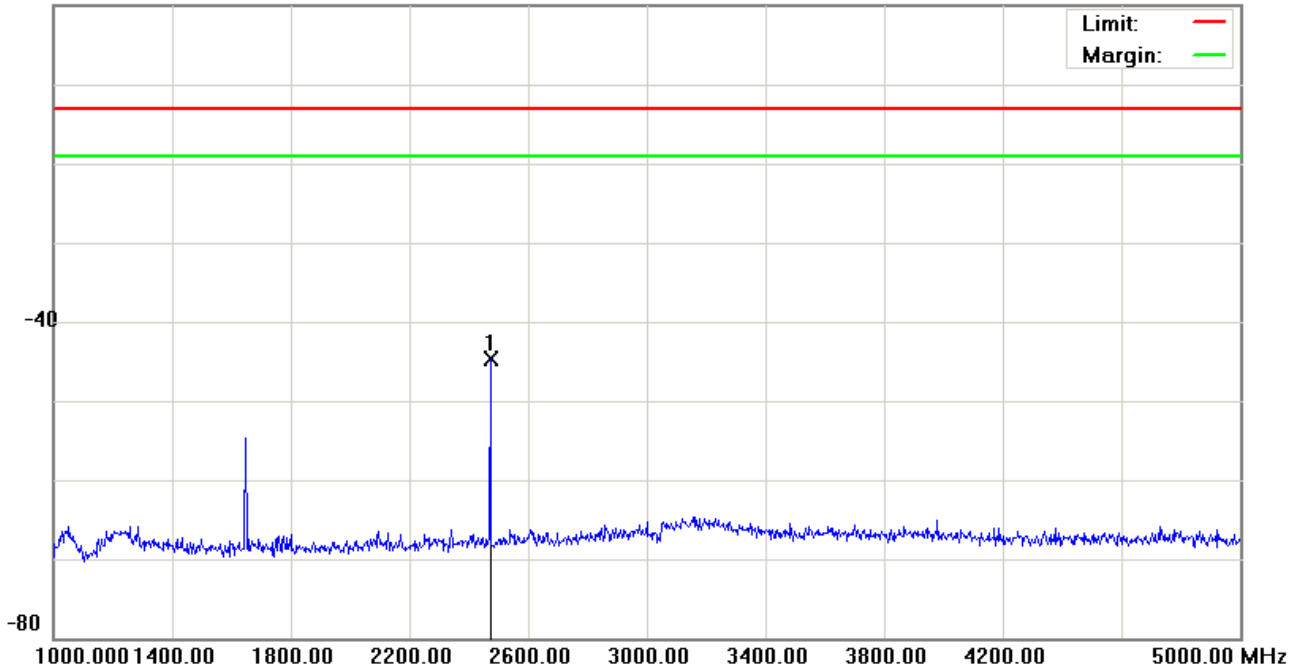
File :HE920-NA(CH128)

Data :#4

Date: 2013/12/4

Time: 下午 03:11:40

0.0 dBm



Site: site #1

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

EUT: Wireless module

M/N: HE920-NA

Mode: GSM 850

Note:

Polarization: **Conducted Power**

Power: DC 3.8V

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	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	2472.000	-49.14	4.45	-44.69	-13.00	-31.69	peak			

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

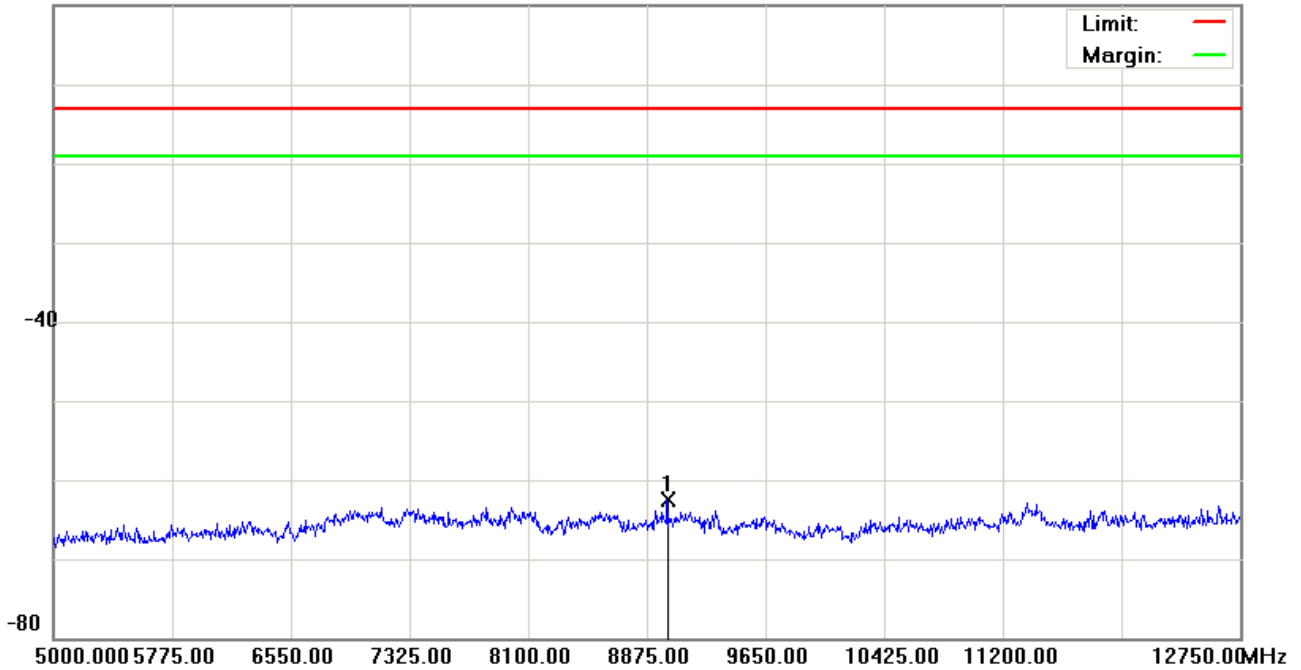
File :HE920-NA(CH128)

Data :#5

Date: 2013/12/4

Time: 下午 03:12:03

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	9010.625	-67.95	5.52	-62.43	-13.00	-49.43	peak		

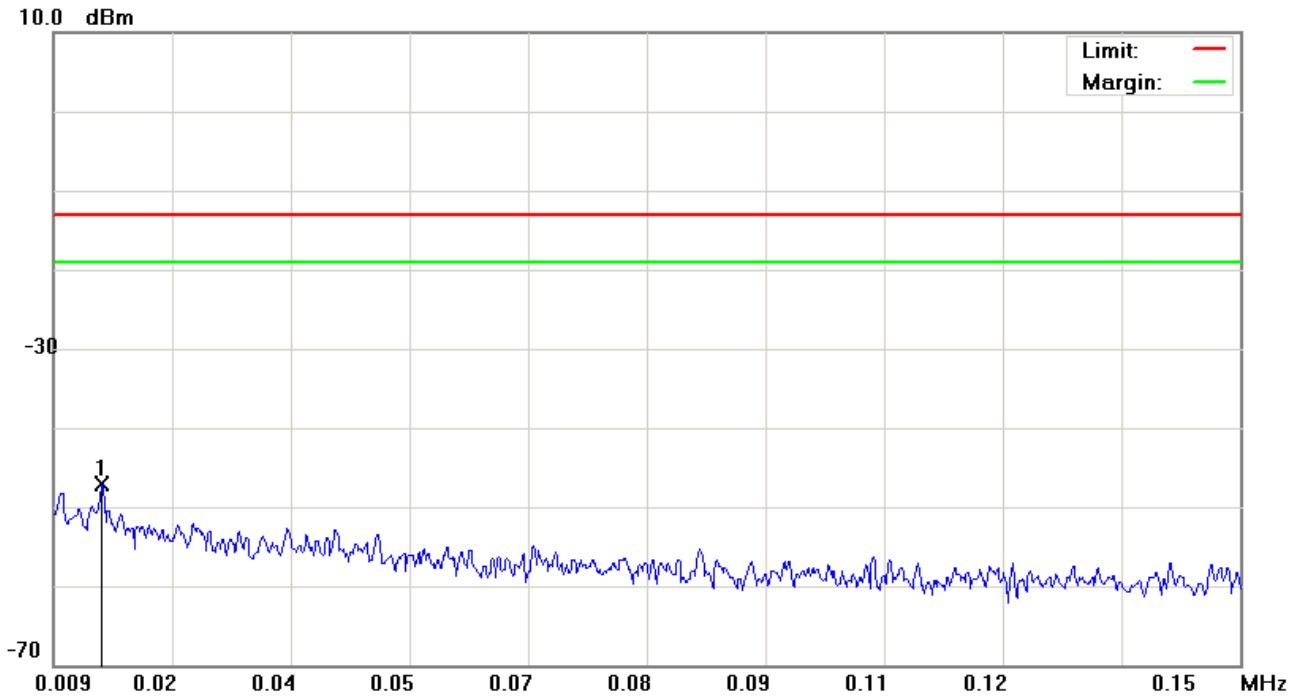
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH190)

Data :#1

Date: 2013/12/4

Time: 下午 02:38:07



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	0.0148	-77.67	30.56	-47.11	-13.00	-34.11	peak		

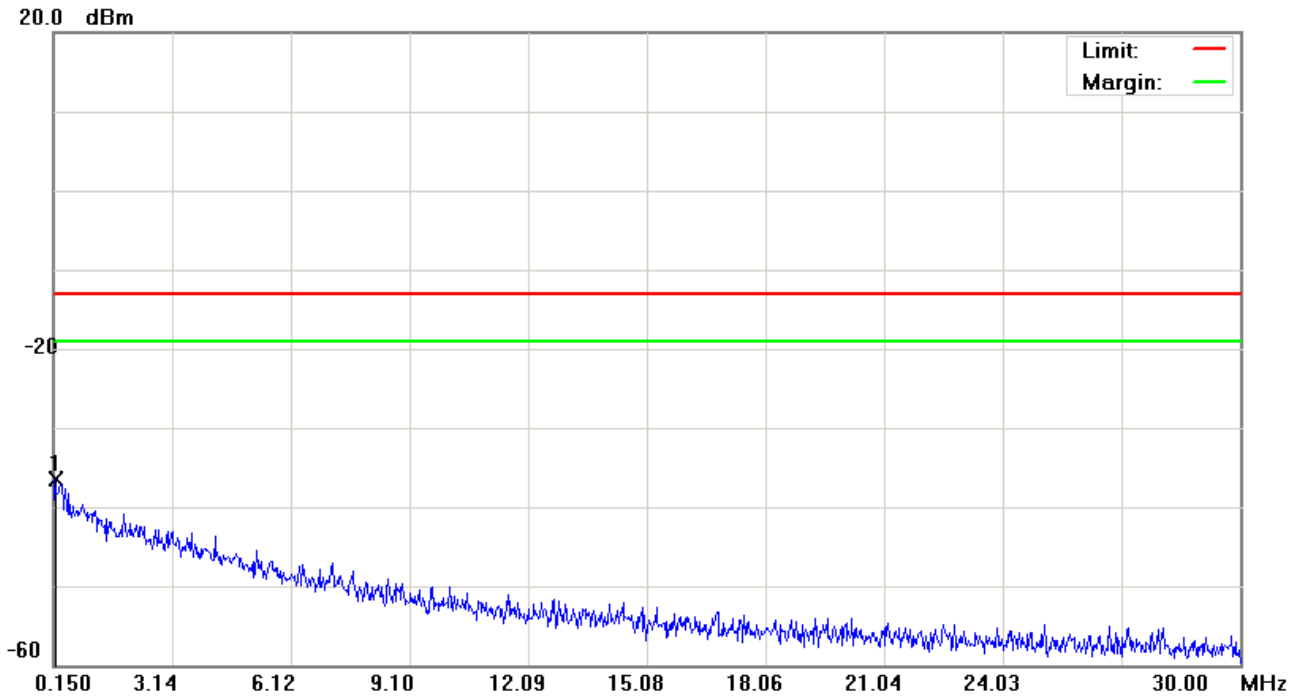
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH190)

Data :#2

Date: 2013/12/4

Time: 下午 02:38:31



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	0.1948	-67.47	30.88	-36.59	-13.00	-23.59	peak		

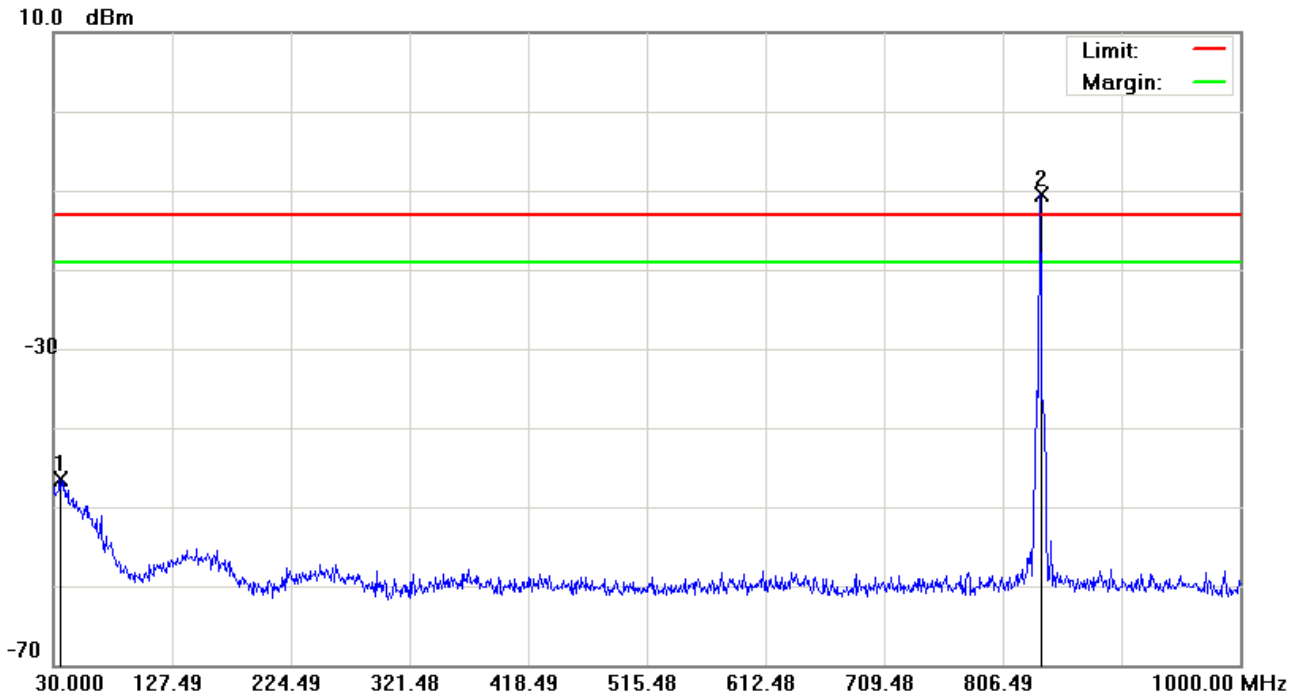
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH190)

Data :#3

Date: 2013/12/4

Time: 下午 02:38:55



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: GSM 850

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		35.3350	-63.15	16.61	-46.54	-13.00	-33.54	peak			
2	*	836.5550	-14.36	3.96	-10.40	-13.00	2.60	peak			Tx

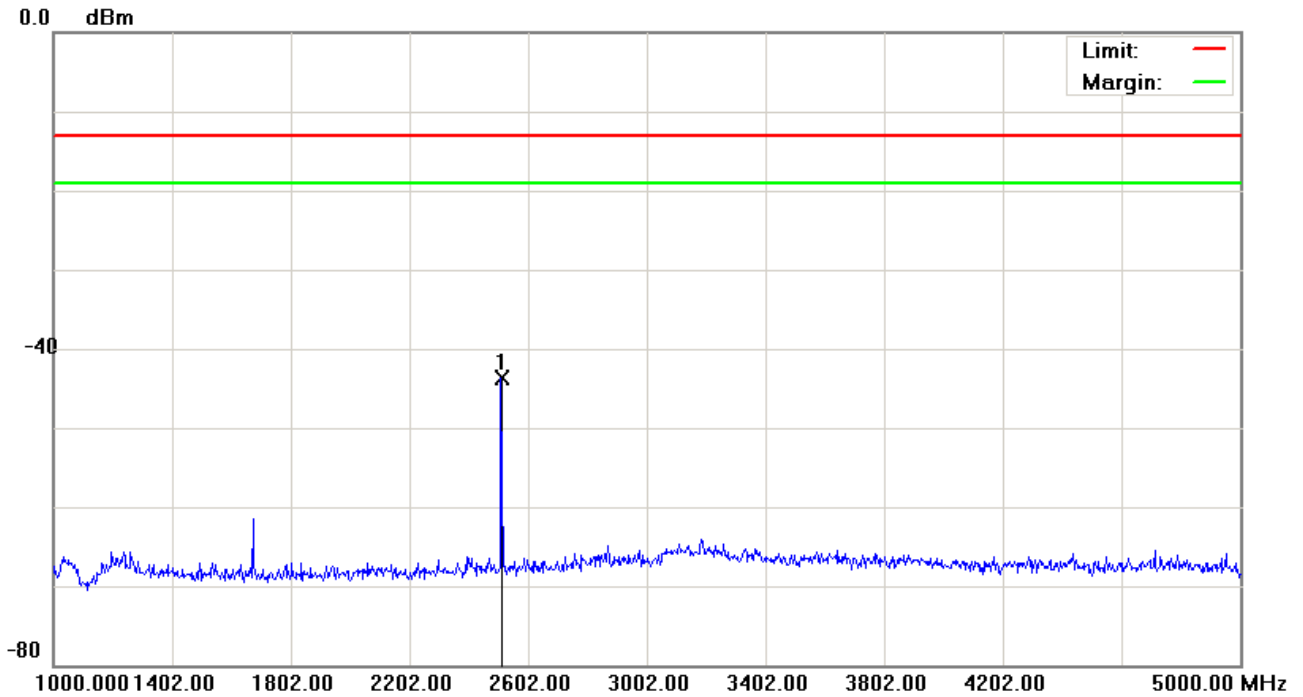
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH190)

Data :#4

Date: 2013/12/4

Time: 下午 03:12:35



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 850

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	2510.000	-48.08	4.36	-43.72	-13.00	-30.72	peak			

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

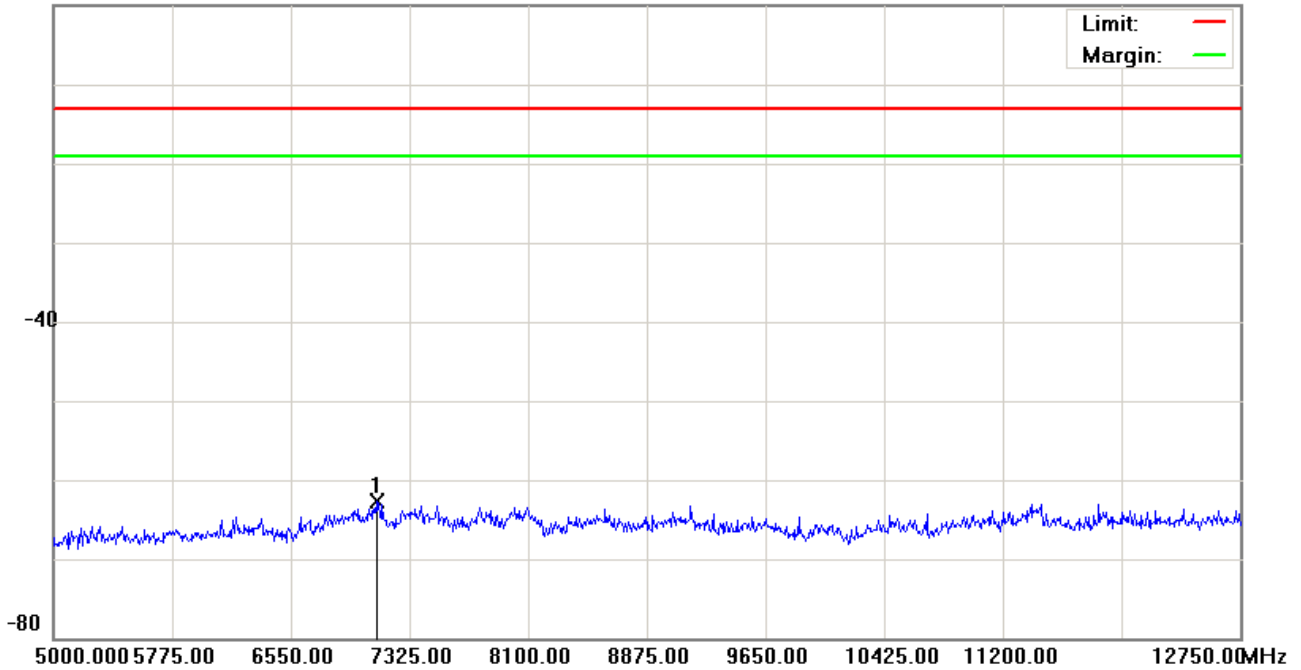
File :HE920-NA(CH190)

Data :#5

Date: 2013/12/4

Time: 下午 03:12:58

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	7111.875	-67.82	5.14	-62.68	-13.00	-49.68	peak		

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

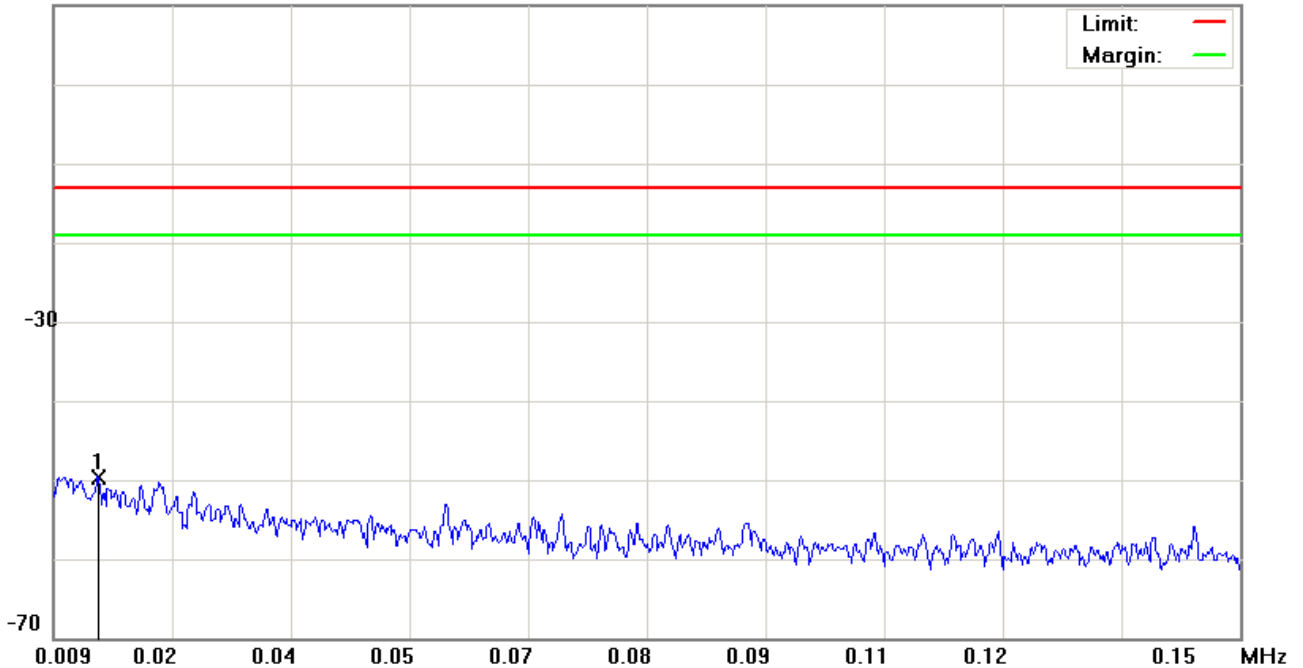
File :HE920-NA(CH251)

Data :#1

Date: 2013/12/4

Time: 下午 02:40:52

10.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	0.0143	-80.16	30.56	-49.60	-13.00	-36.60	peak		

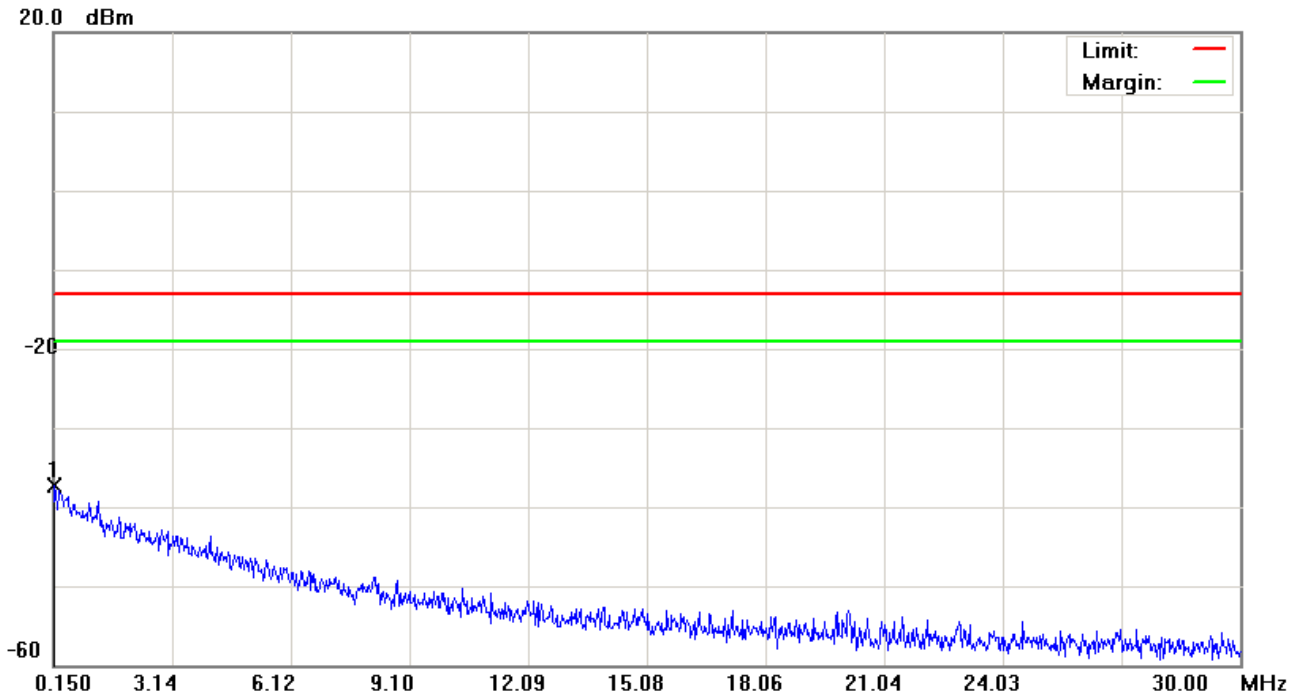
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH251)

Data :#2

Date: 2013/12/4

Time: 下午 02:41:16



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: GSM 850

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	0.1500	-67.84	30.51	-37.33	-13.00	-24.33	peak			

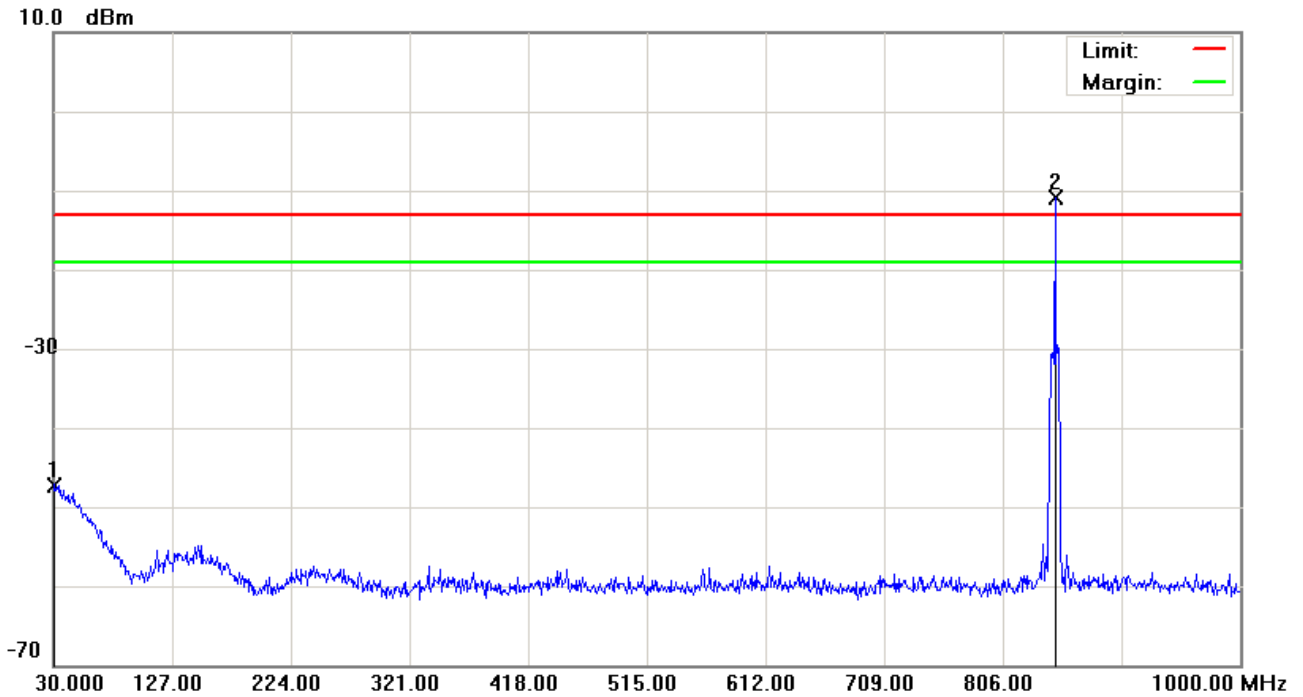
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH251)

Data :#3

Date: 2013/12/4

Time: 下午 02:41:40



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: GSM 850

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		30.0000	-64.41	17.21	-47.20	-13.00	-34.20	peak			
2	*	848.6800	-14.85	3.98	-10.87	-13.00	2.13	peak			Tx

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

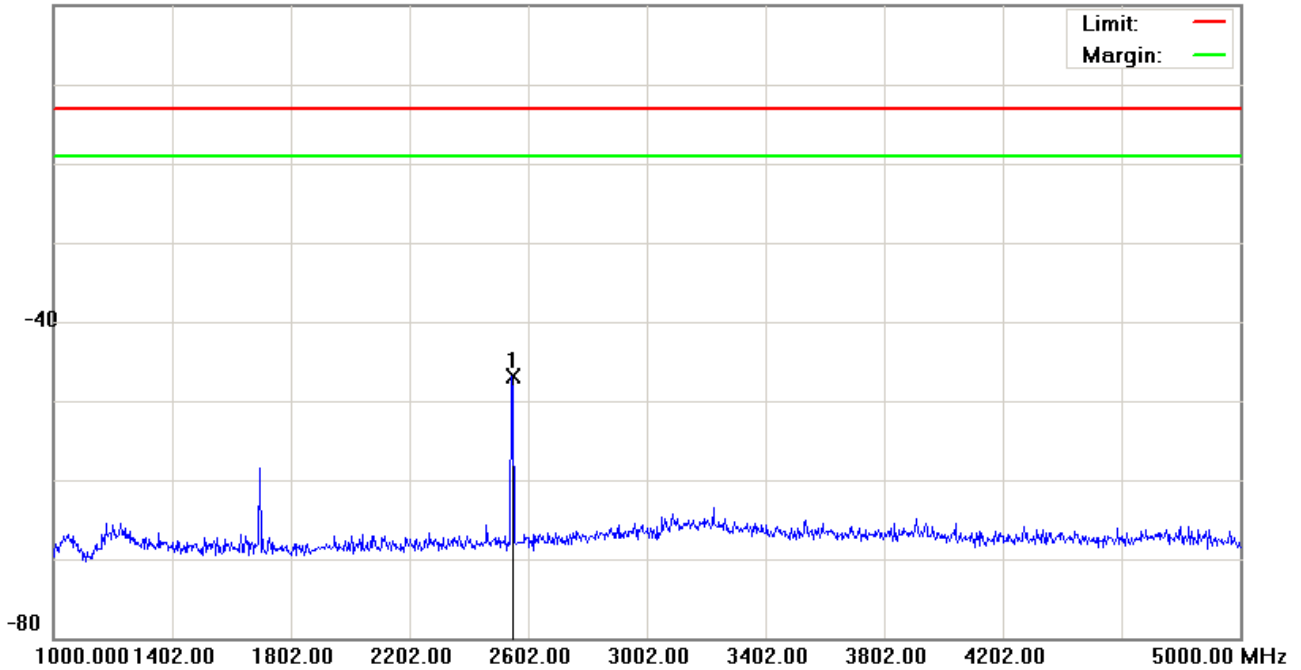
File :HE920-NA(CH251)

Data :#4

Date: 2013/12/4

Time: 下午 03:13:49

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 850

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	*	2546.000	-51.26	4.45	-46.81	-13.00	-33.81	peak		

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

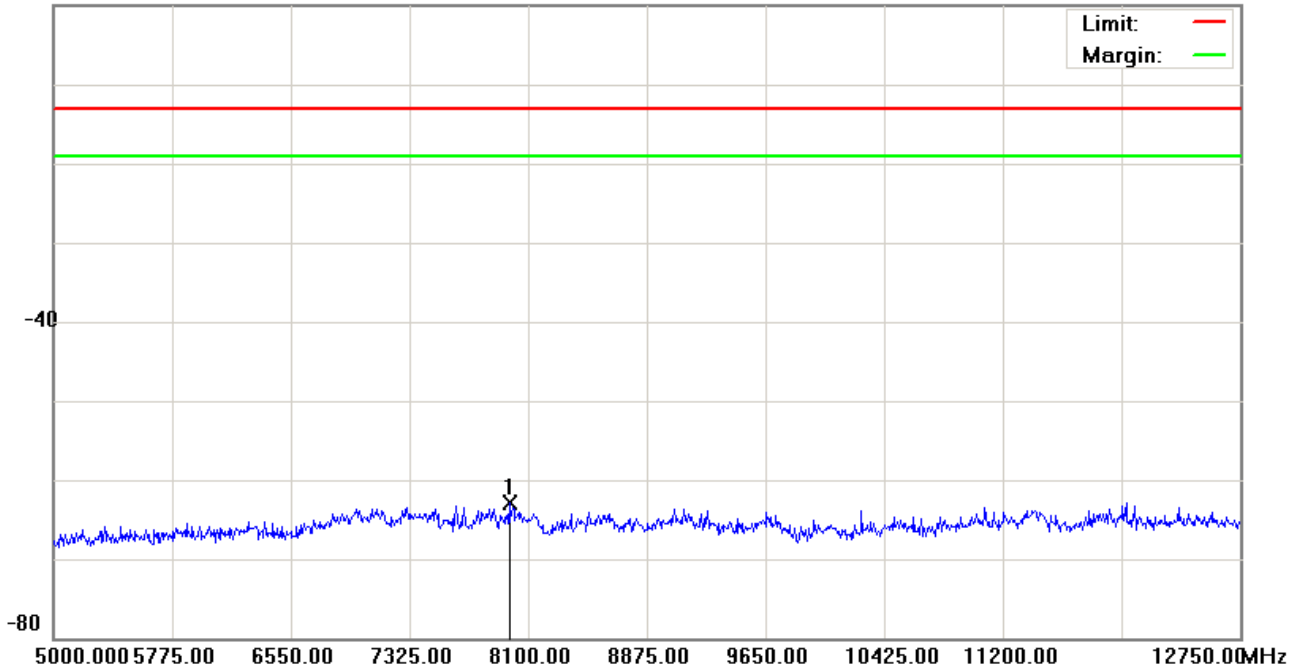
File :HE920-NA(CH251)

Data :#5

Date: 2013/12/4

Time: 下午 03:14:12

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 850

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	7976.000	-68.16	5.30	-62.86	-13.00	-49.86	peak			

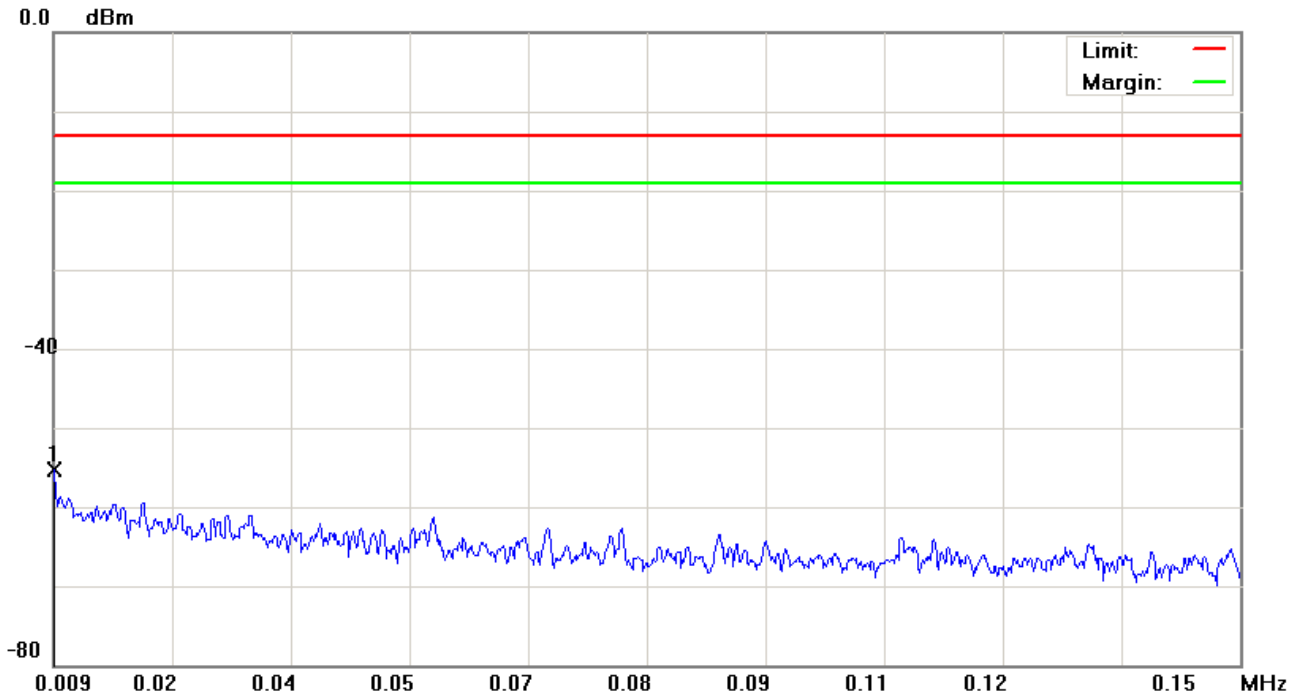
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH512)

Data :#1

Date: 2013/12/4

Time: 下午 02:07:47



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: GSM 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	*	0.0090	-66.56	11.32	-55.24	-13.00	-42.24	peak		

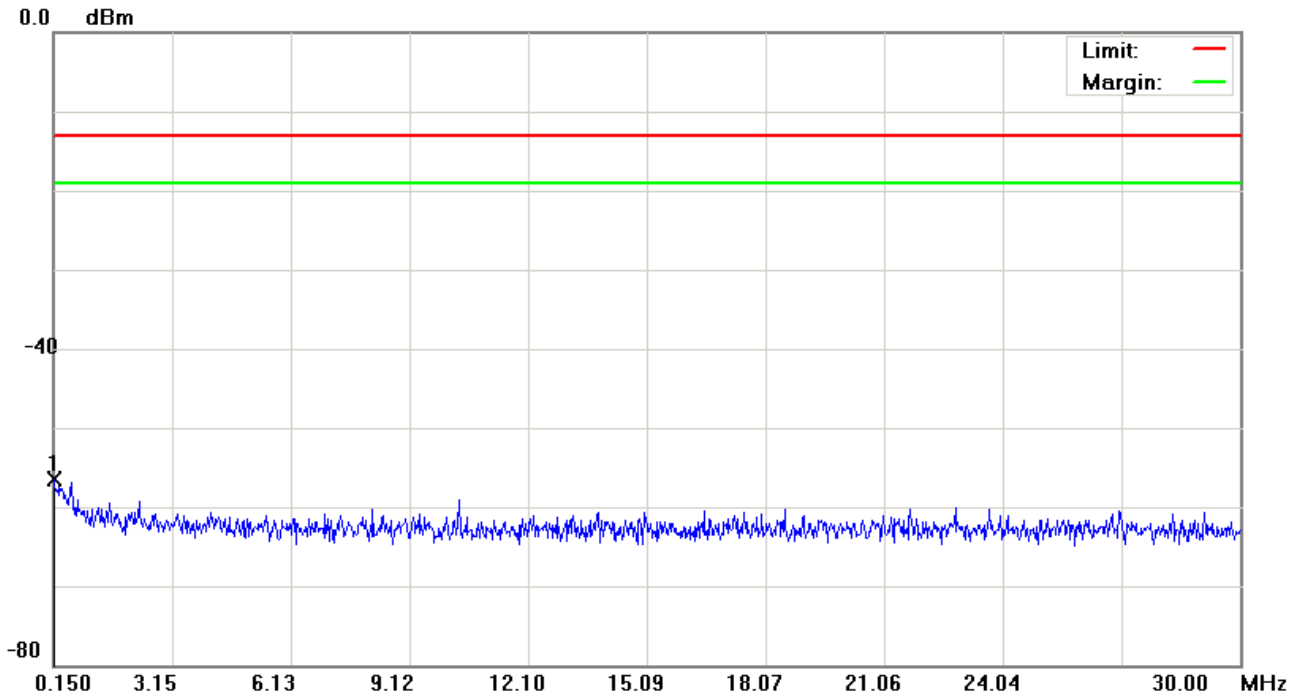
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH512)

Data :#2

Date: 2013/12/4

Time: 下午 02:08:11



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	0.1650	-68.99	12.46	-56.53	-13.00	-43.53	peak			

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

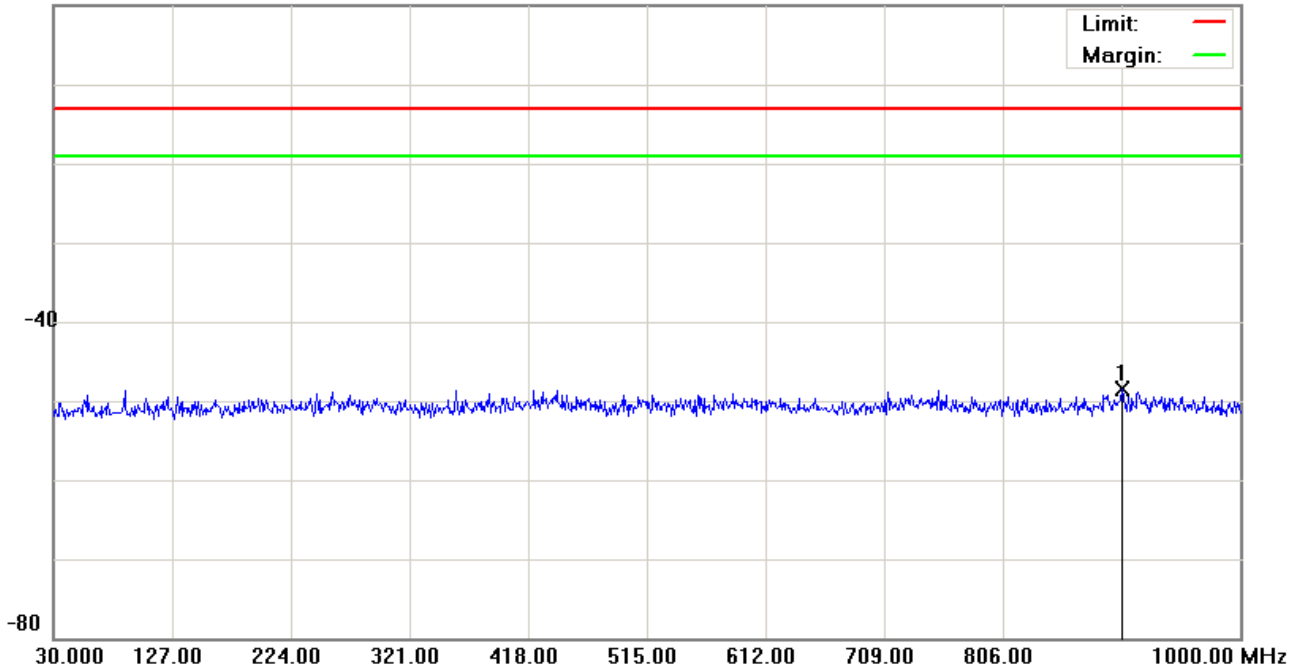
File :HE920-NA(CH512)

Data :#3

Date: 2013/12/4

Time: 下午 02:08:35

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	903.9700	-61.74	13.24	-48.50	-13.00	-35.50	peak			

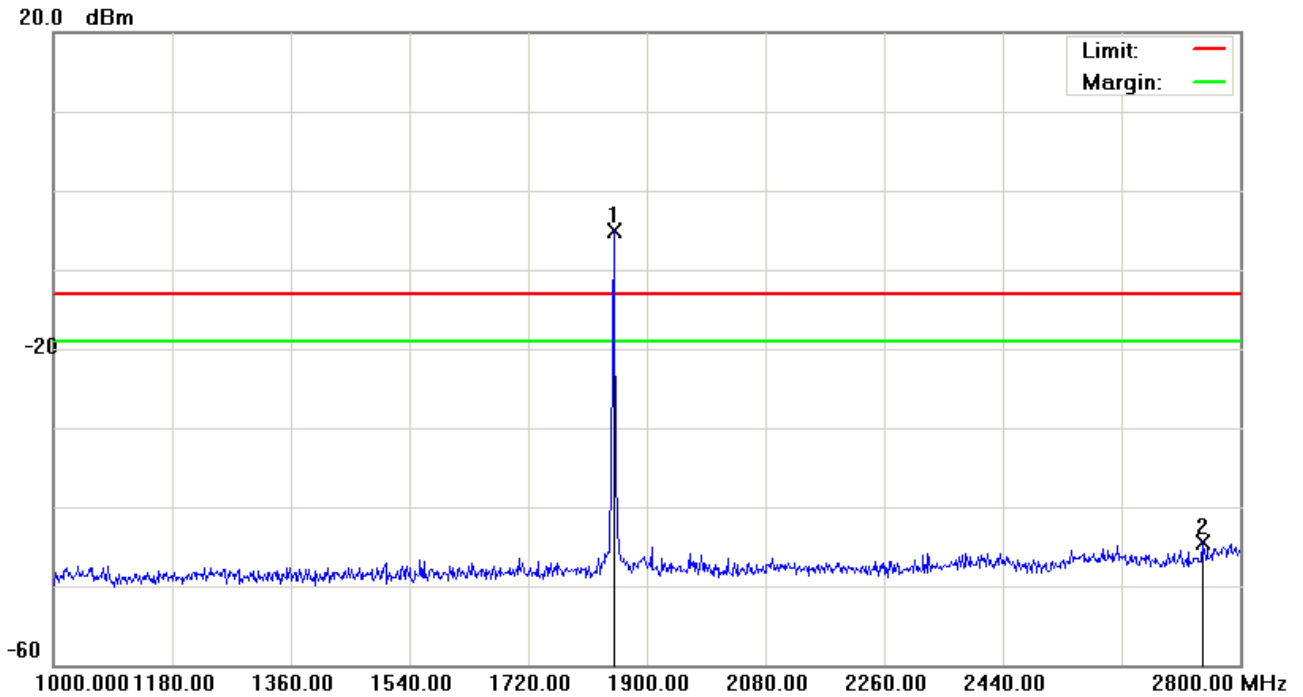
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH512)

Data :#4

Date: 2013/12/4

Time: 下午 02:26:37



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1850.500	-9.40	4.26	-5.14	-13.00	7.86	peak			Tx
2		2742.400	-49.60	5.20	-44.40	-13.00	-31.40	peak			

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

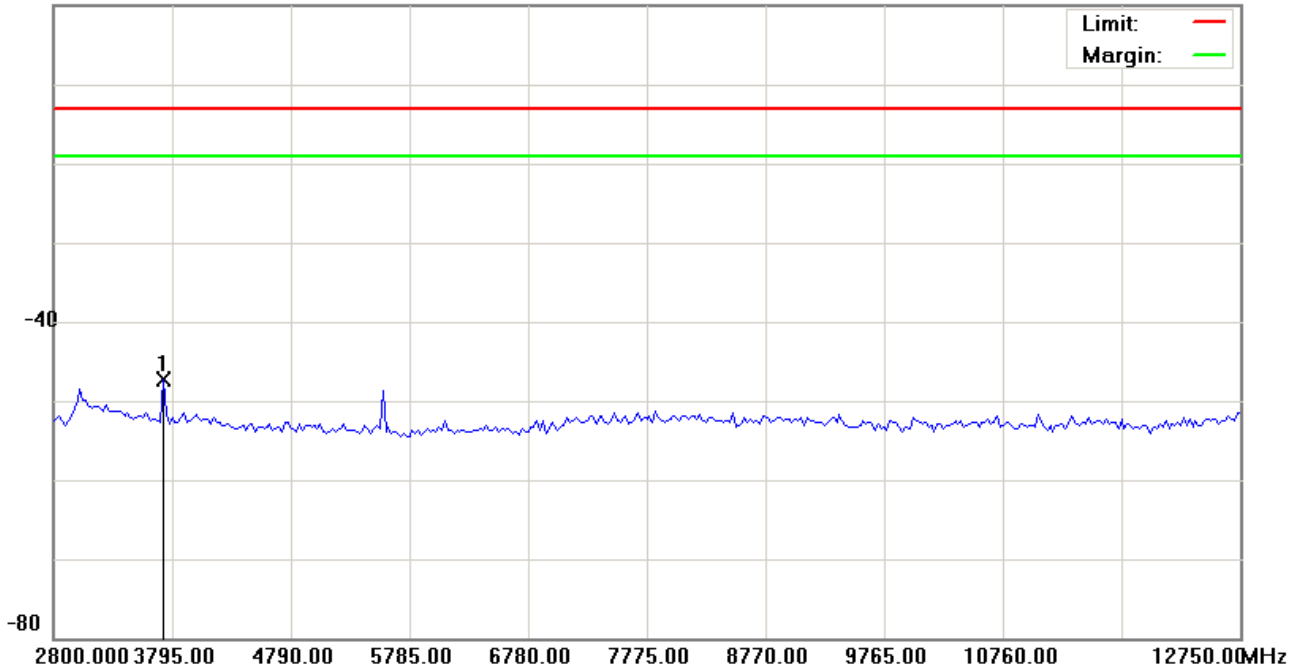
File :HE920-NA(CH512)

Data :#5

Date: 2013/12/4

Time: 下午 01:37:01

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	3720.375	-52.20	4.88	-47.32	-13.00	-34.32	peak			

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

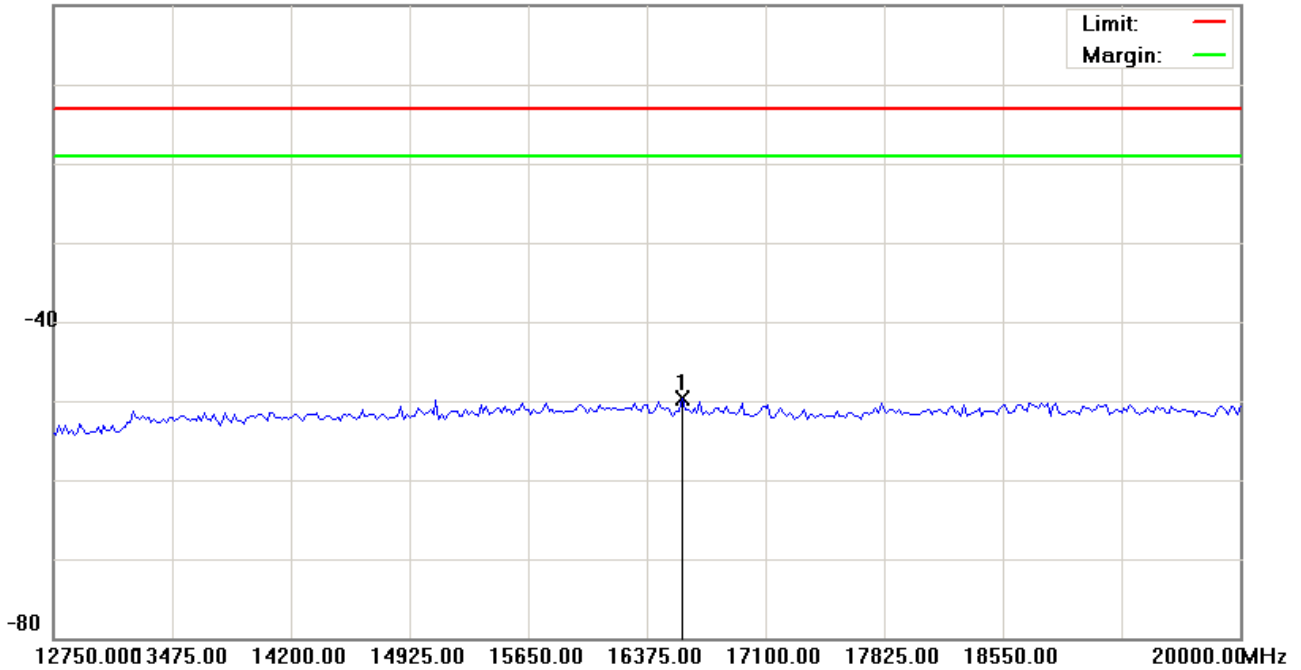
File :HE920-NA(CH512)

Data :#6

Date: 2013/12/4

Time: 下午 01:37:20

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 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	*	16592.500	-56.08	6.47	-49.61	-13.00	-36.61	peak		

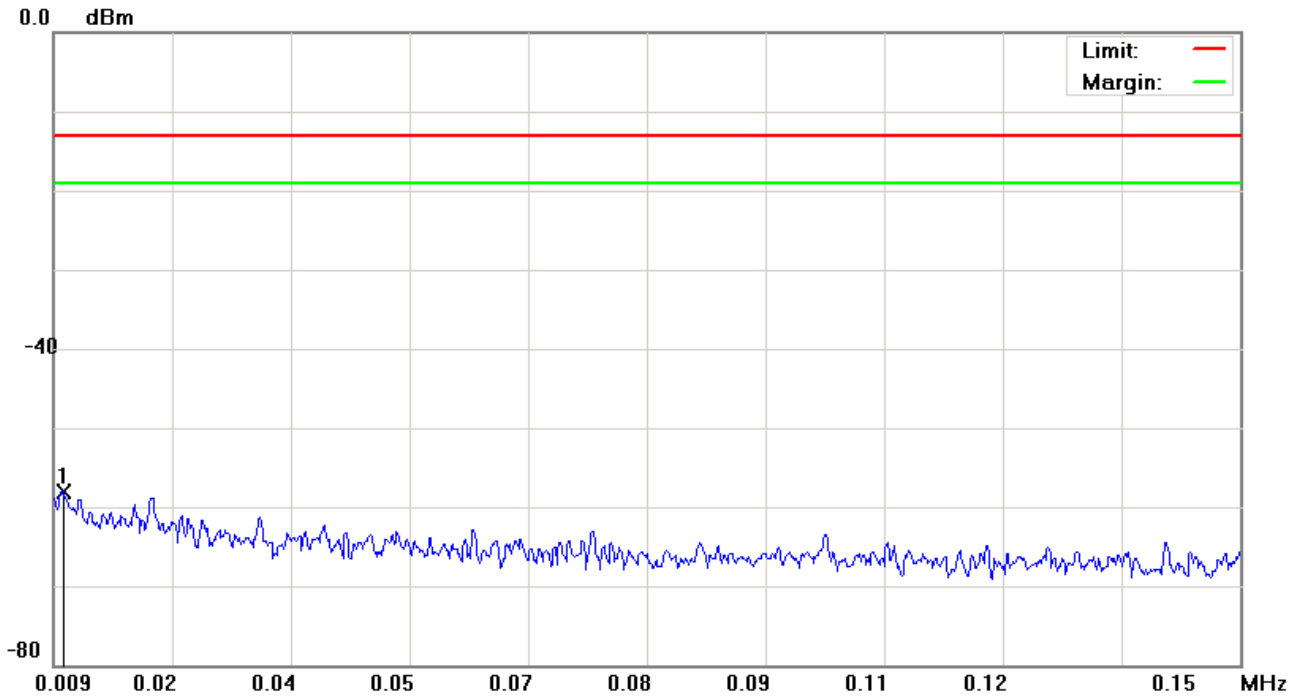
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH661)

Data :#1

Date: 2013/12/4

Time: 下午 02:09:36



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: GSM 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	*	0.0101	-69.34	11.34	-58.00	-13.00	-45.00	peak		

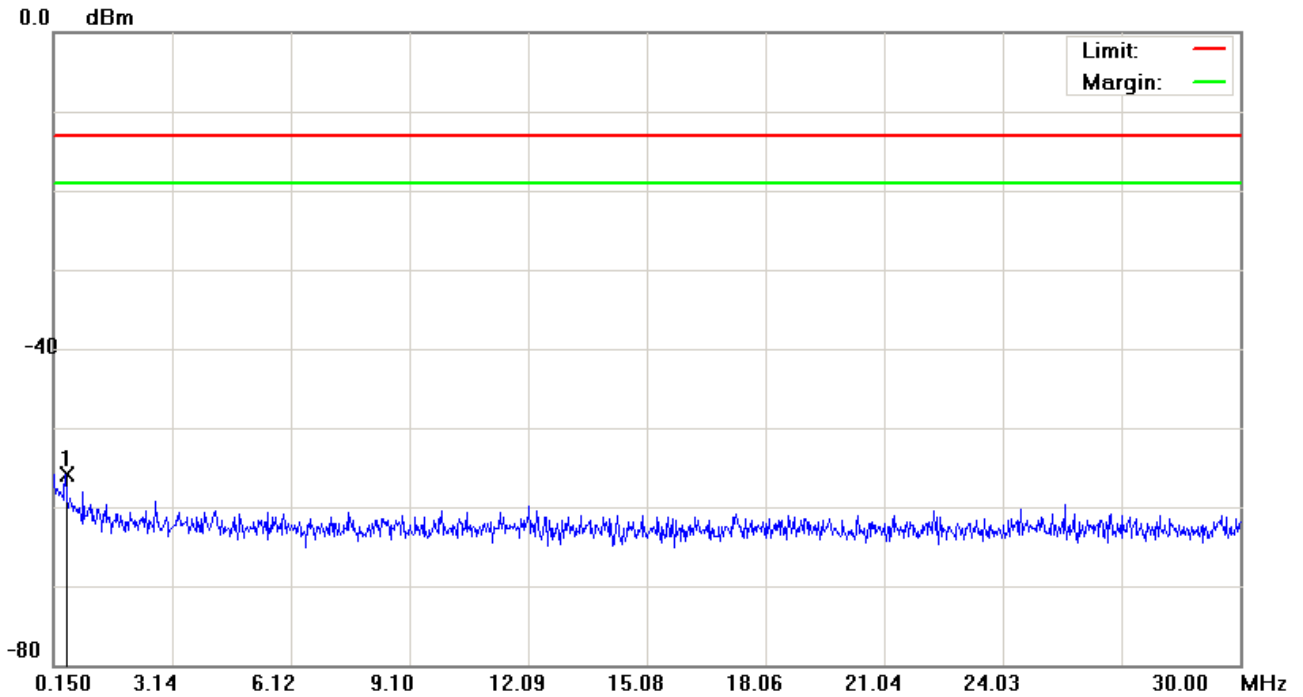
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH661)

Data :#2

Date: 2013/12/4

Time: 下午 02:10:01



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: GSM 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	*	0.4634	-68.63	12.81	-55.82	-13.00	-42.82	peak		

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

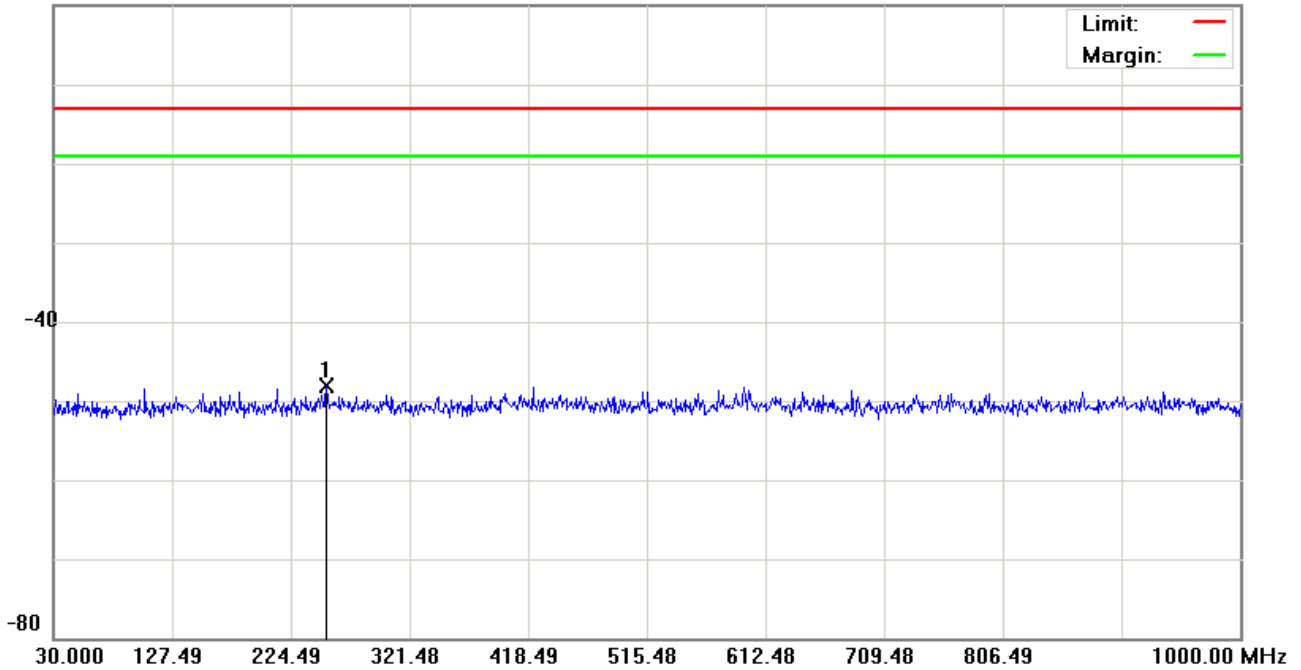
File :HE920-NA(CH661)

Data :#3

Date: 2013/12/4

Time: 下午 02:10:25

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: GSM 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	*	253.1000	-61.45	13.28	-48.17	-13.00	-35.17	peak		

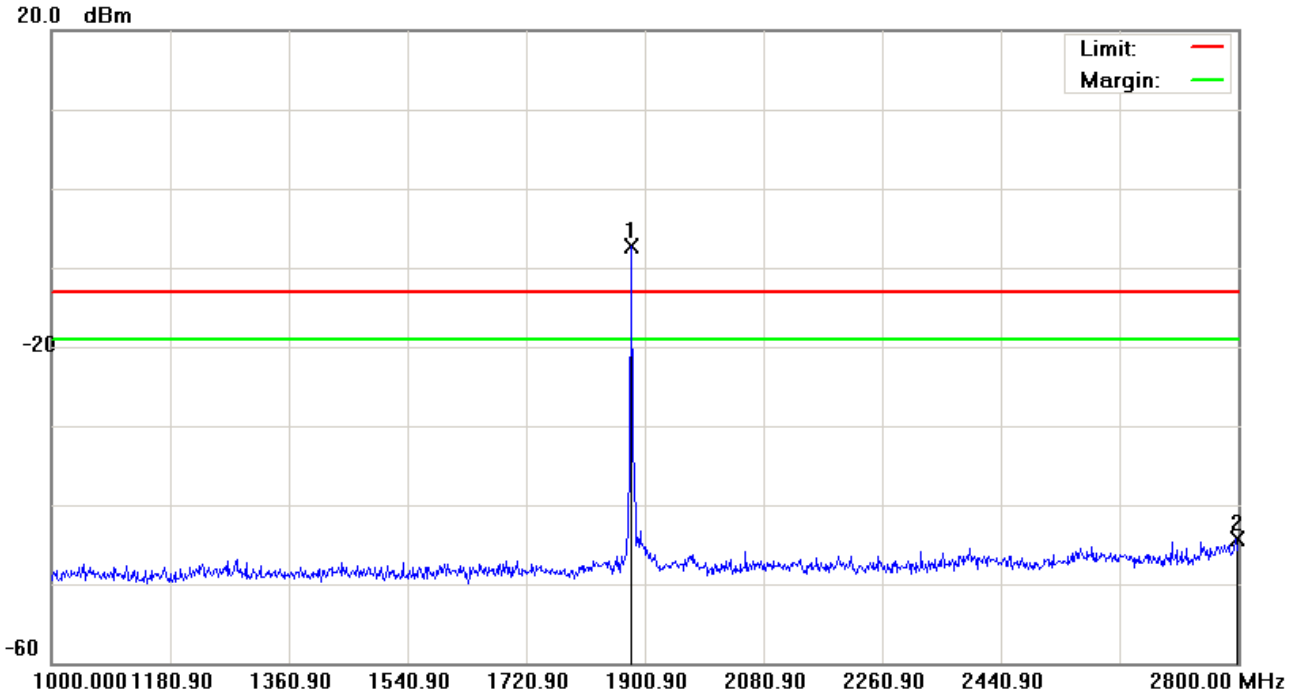
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH661)

Data :#4

Date: 2013/12/4

Time: 下午 02:28:00



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1880.200	-11.91	4.65	-7.26	-13.00	5.74	peak			Tx
2		2797.300	-50.13	5.91	-44.22	-13.00	-31.22	peak			

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

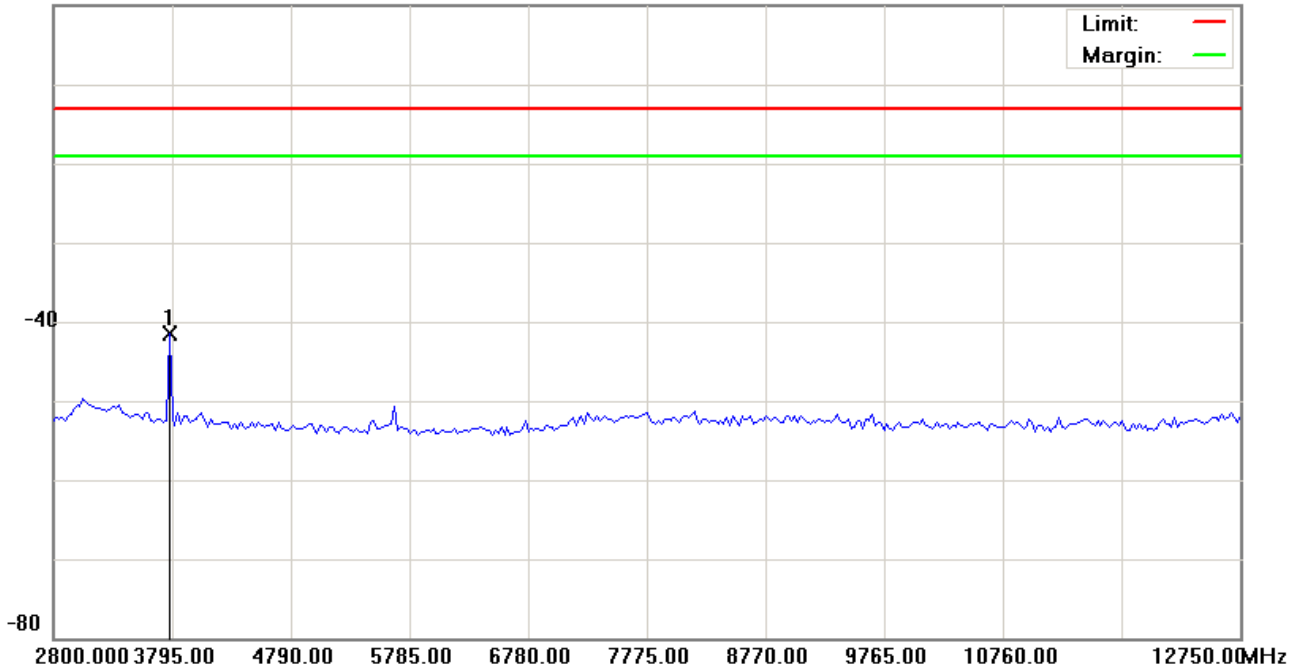
File :HE920-NA(CH661)

Data :#5

Date: 2013/12/4

Time: 下午 01:40:31

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	3770.125	-46.52	4.93	-41.59	-13.00	-28.59	peak			

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

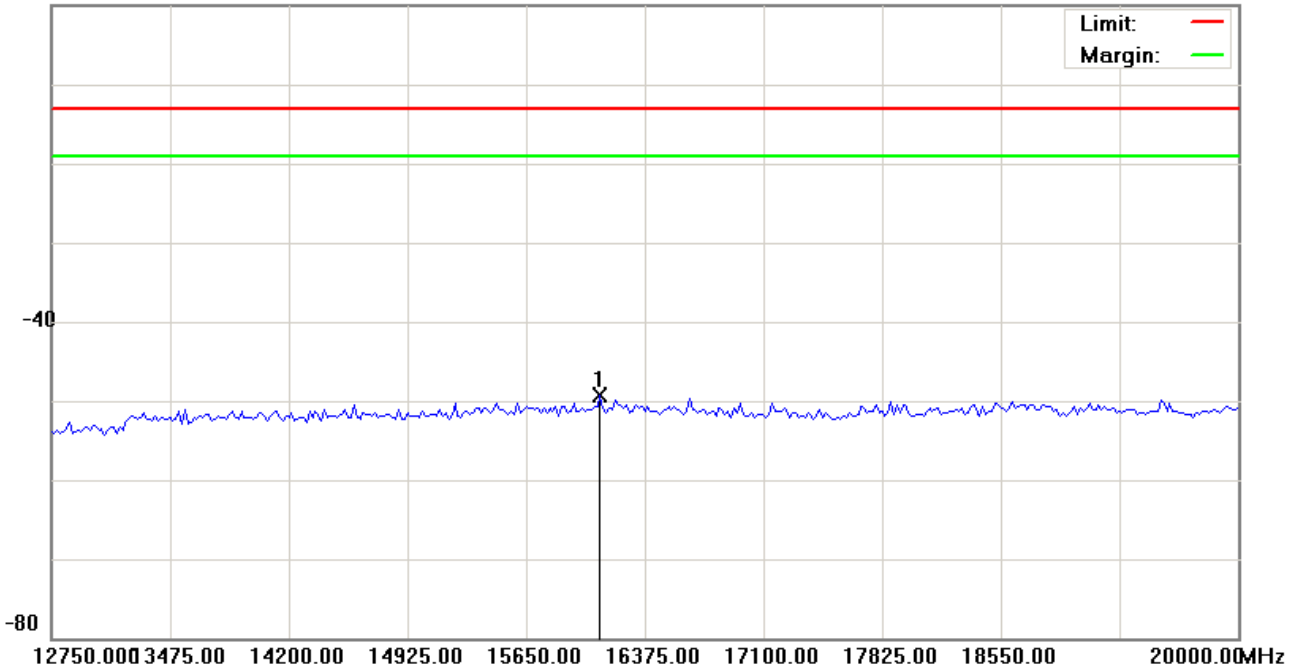
File :HE920-NA(CH661)

Data :#6

Date: 2013/12/4

Time: 下午 01:40:51

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 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	*	16103.125	-55.66	6.33	-49.33	-13.00	-36.33	peak		

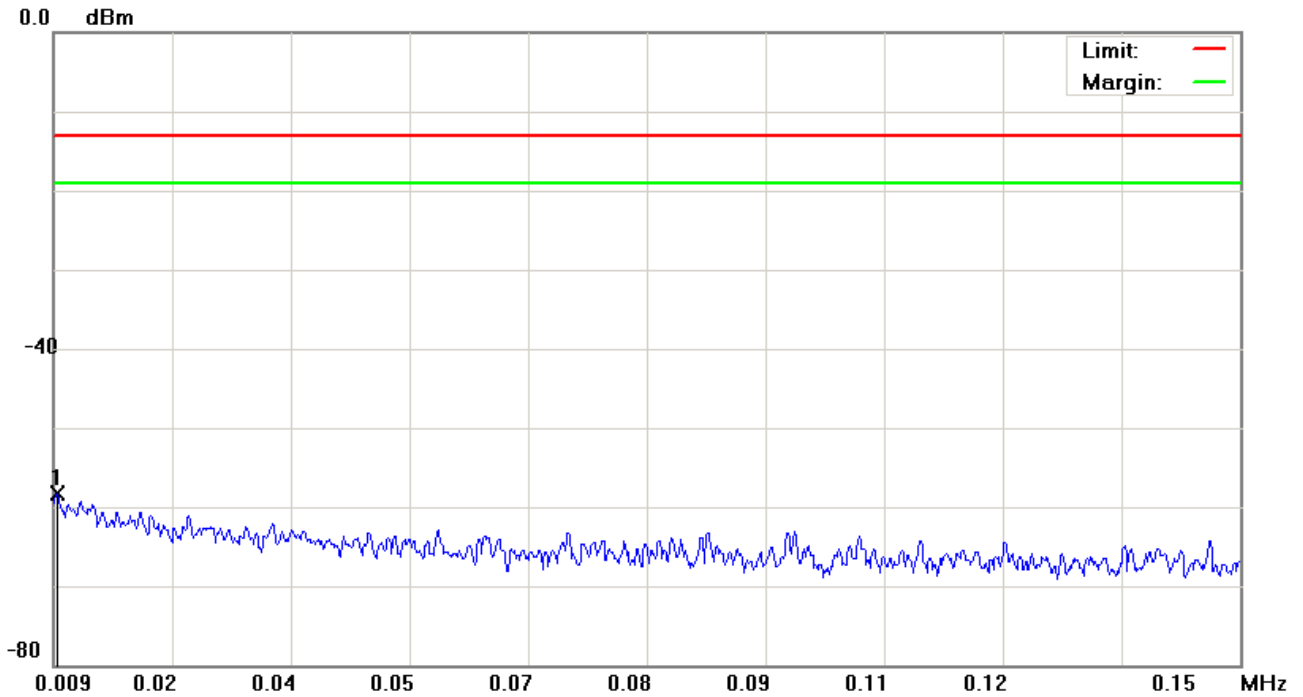
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH810)

Data :#1

Date: 2013/12/4

Time: 下午 02:11:49



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: GSM 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	*	0.0094	-69.55	11.33	-58.22	-13.00	-45.22	peak		

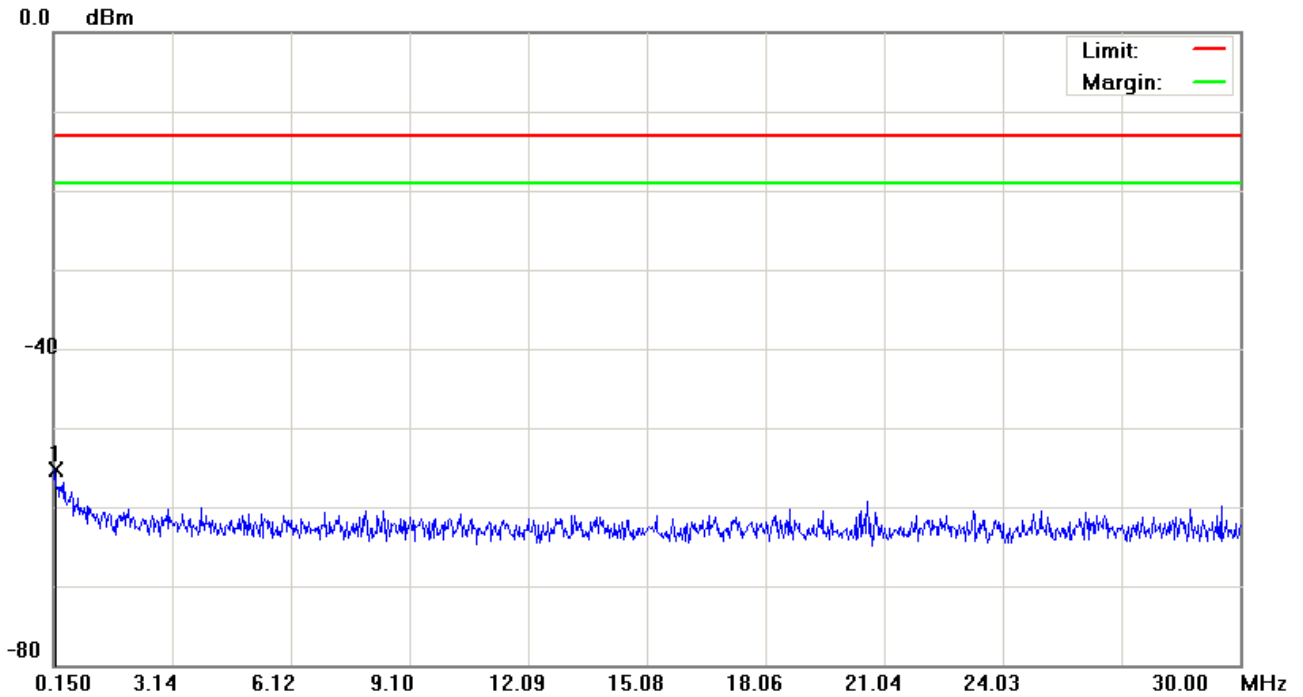
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH810)

Data :#2

Date: 2013/12/4

Time: 下午 02:12:13



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: GSM 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	*	0.1948	-67.74	12.45	-55.29	-13.00	-42.29	peak		

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

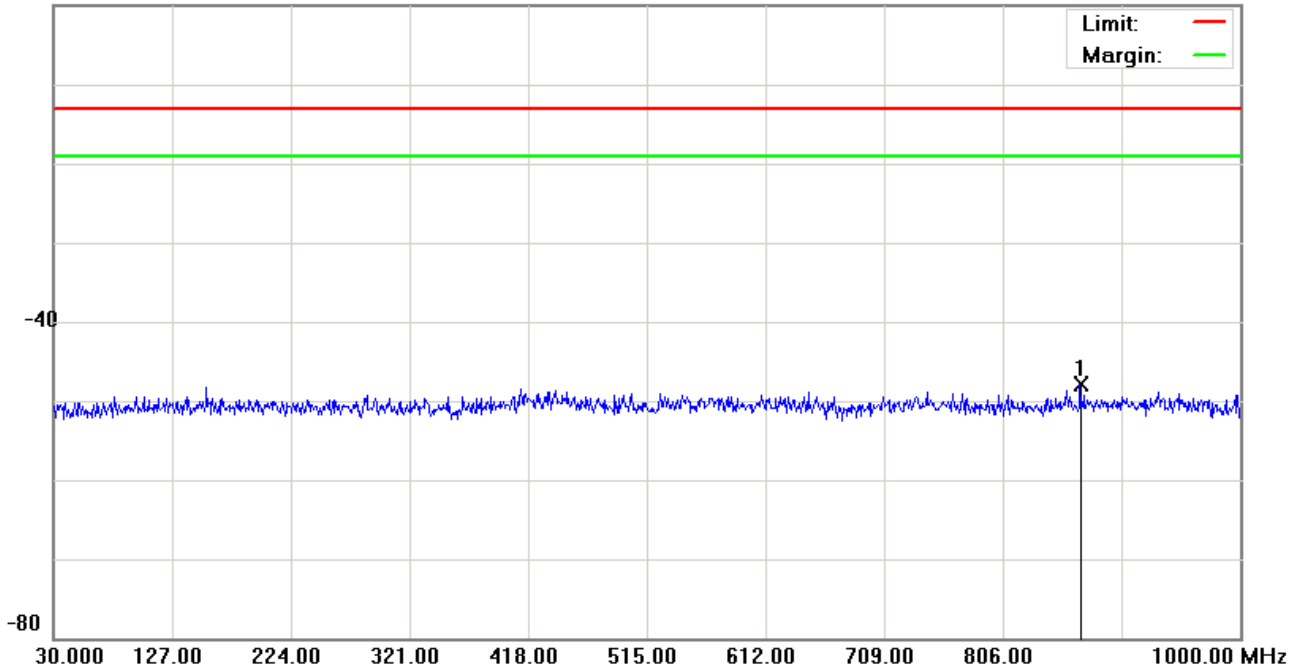
File :HE920-NA(CH810)

Data :#3

Date: 2013/12/4

Time: 下午 02:12:37

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	869.5350	-61.15	13.27	-47.88	-13.00	-34.88	peak			

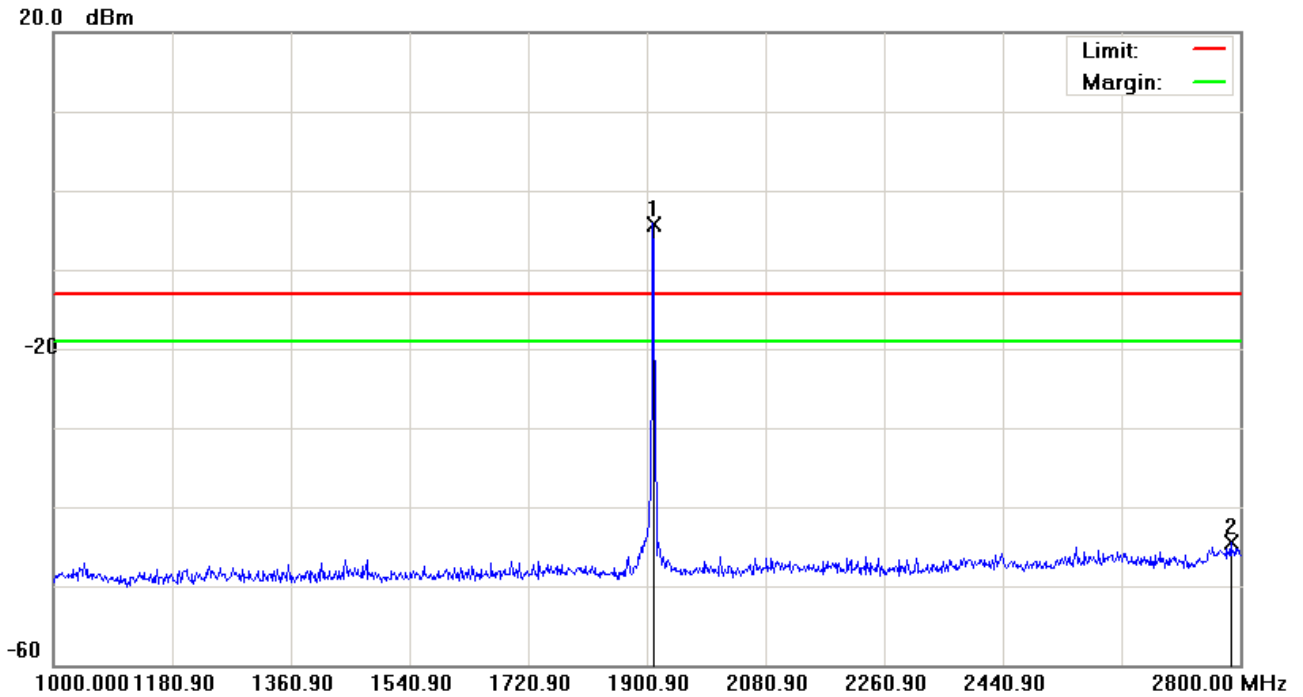
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH810)

Data :#4

Date: 2013/12/4

Time: 下午 02:30:02



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1909.900	-9.91	5.71	-4.20	-13.00	8.80	peak			Tx
2		2786.500	-50.32	5.89	-44.43	-13.00	-31.43	peak			

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

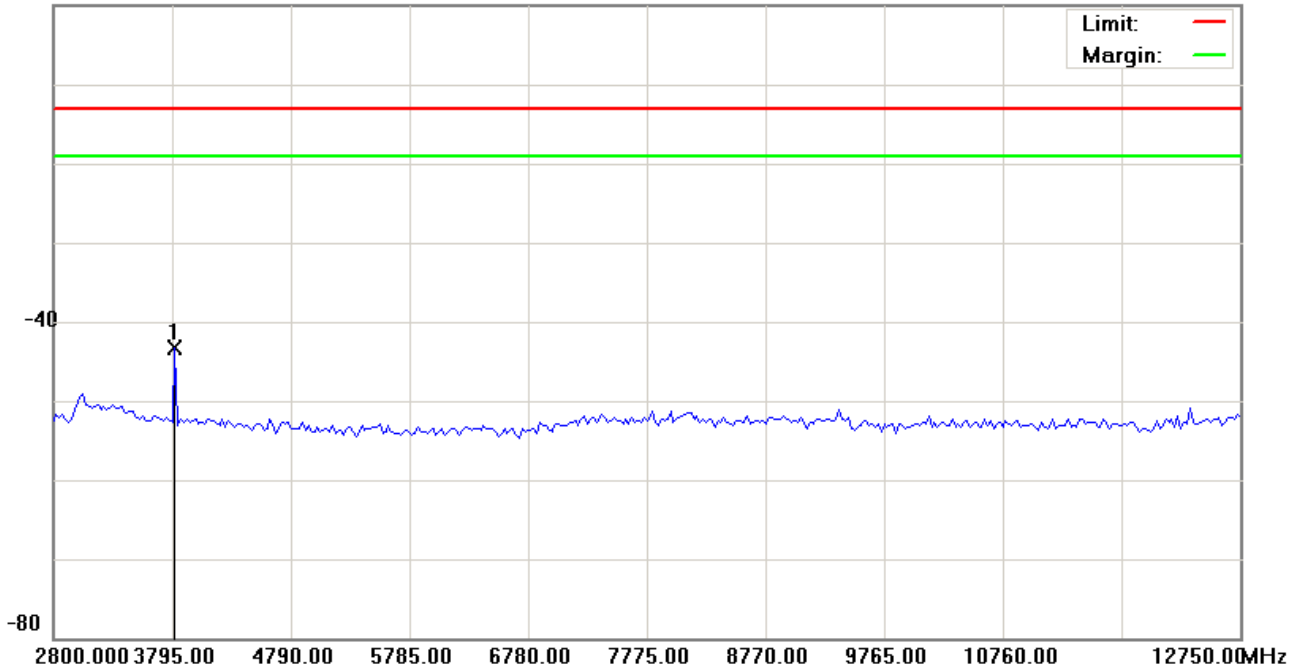
File :HE920-NA(CH810)

Data :#5

Date: 2013/12/4

Time: 下午 01:41:49

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 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	*	3819.875	-48.18	4.91	-43.27	-13.00	-30.27	peak		

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

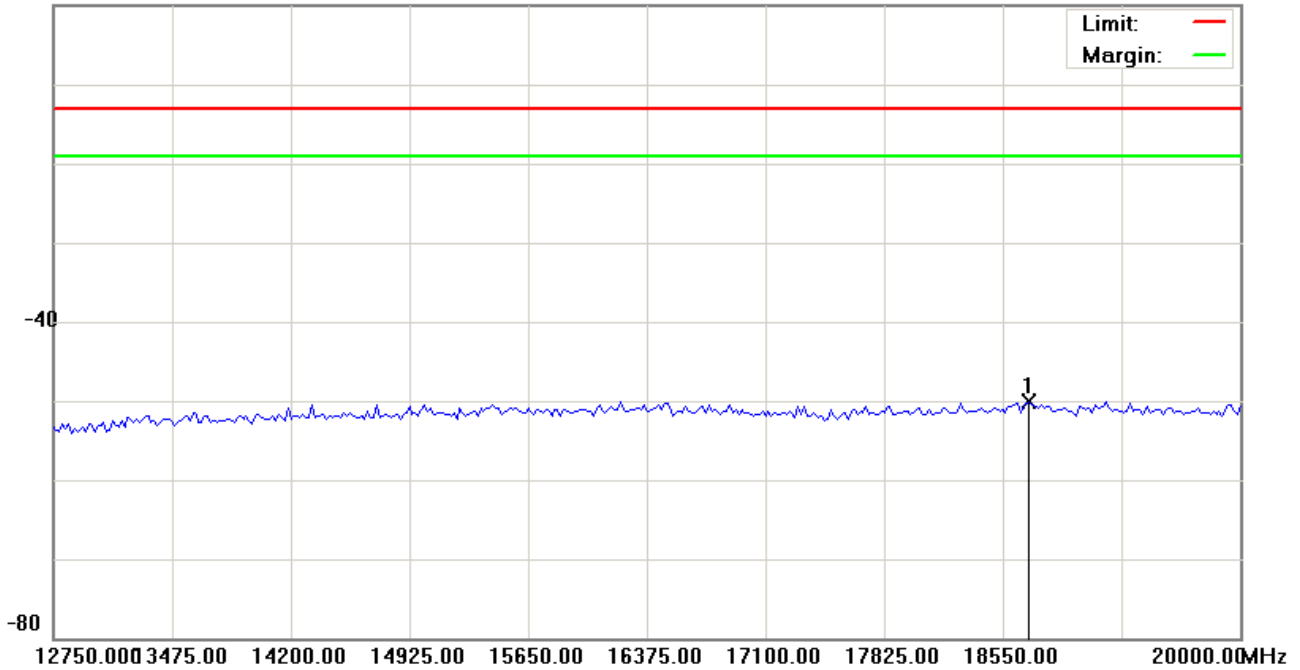
File :HE920-NA(CH810)

Data :#6

Date: 2013/12/4

Time: 下午 01:42:09

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: GSM 1900

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	18713.125	-57.07	7.07	-50.00	-13.00	-37.00	peak			

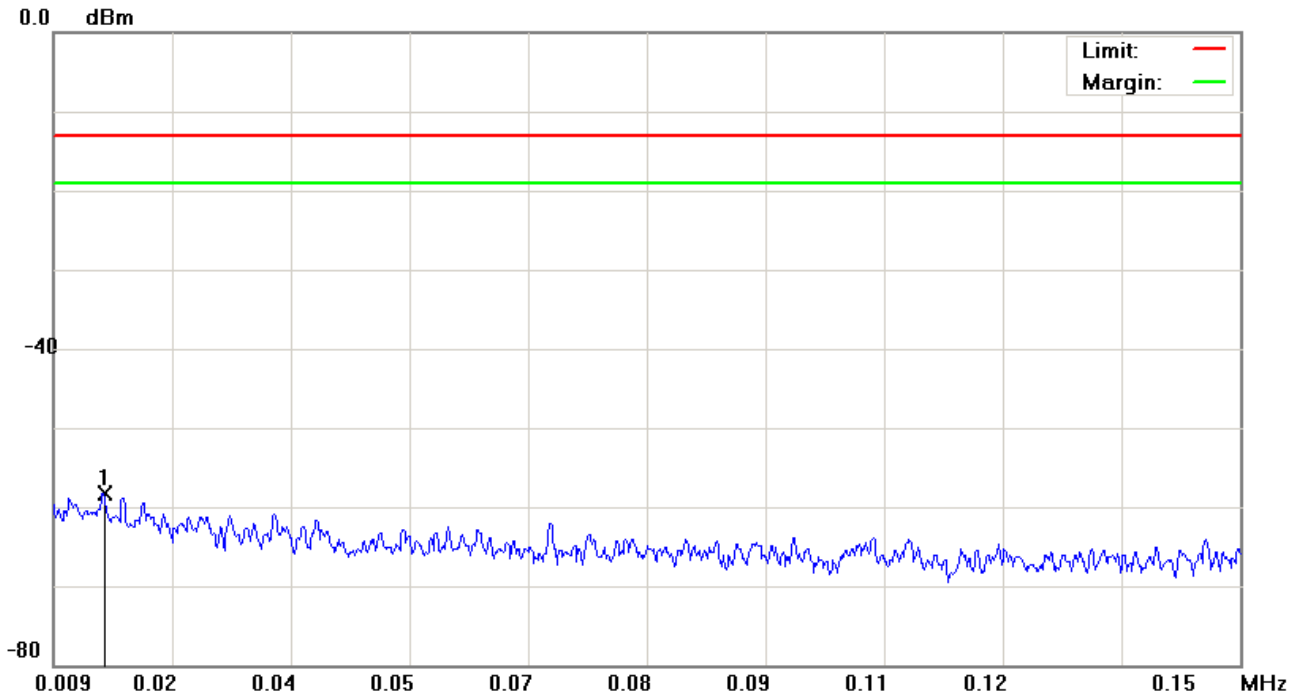
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9262)

Data :#1

Date: 2013/11/25

Time: 上午 11:51:16



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

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	*	0.0150	-69.64	11.39	-58.25	-13.00	-45.25	peak		

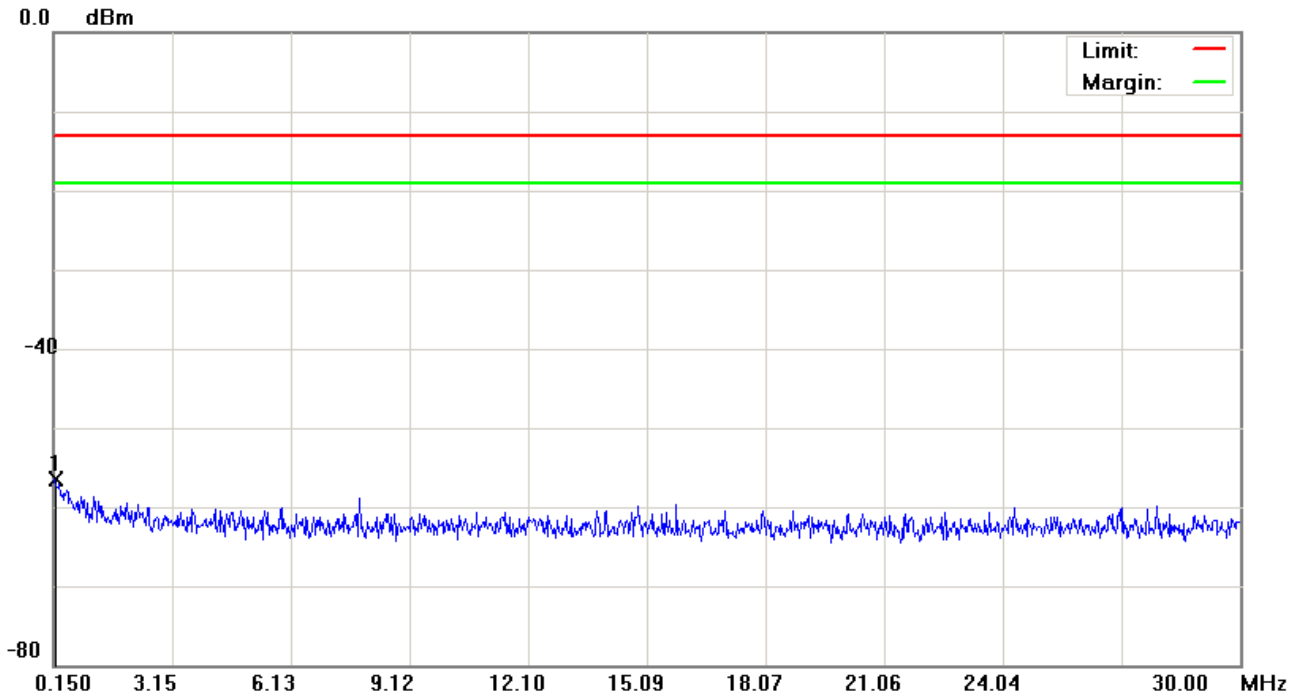
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9262)

Data :#2

Date: 2013/11/25

Time: 上午 11:51:40



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	0.1948	-68.85	12.45	-56.40	-13.00	-43.40	peak			

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

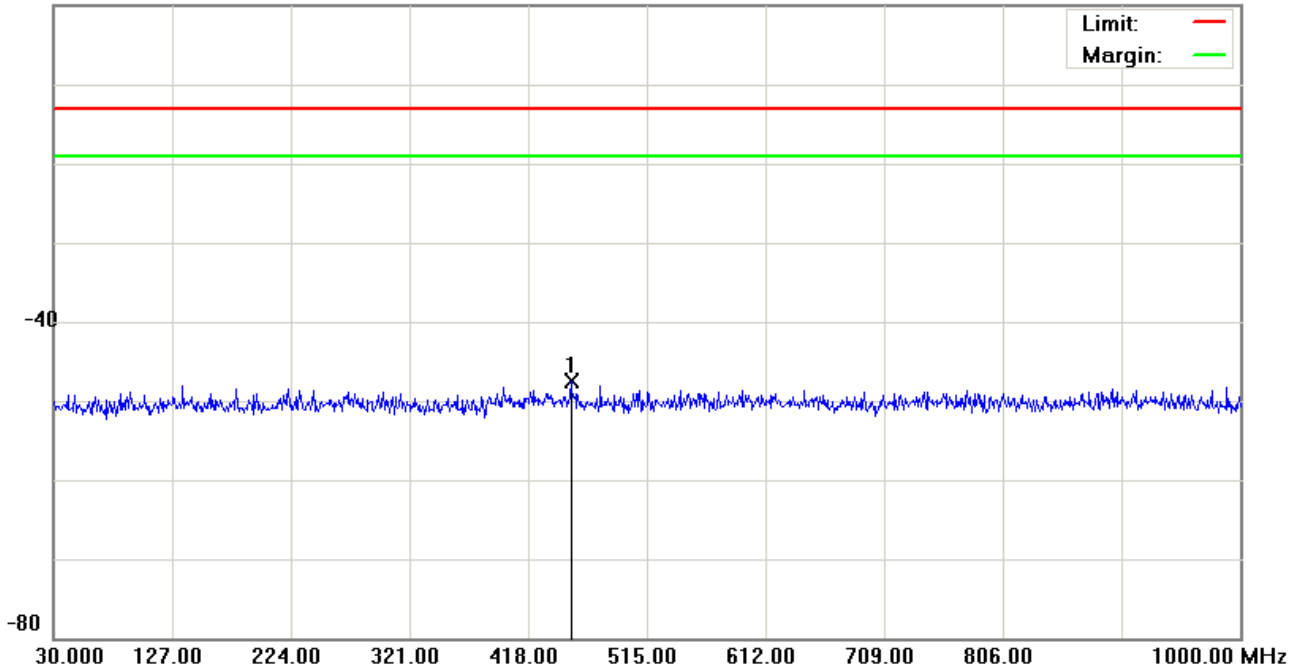
File :HE920-NA(CH9262)

Data :#3

Date: 2013/11/25

Time: 上午 11:52:04

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	453.4050	-60.70	13.22	-47.48	-13.00	-34.48	peak			

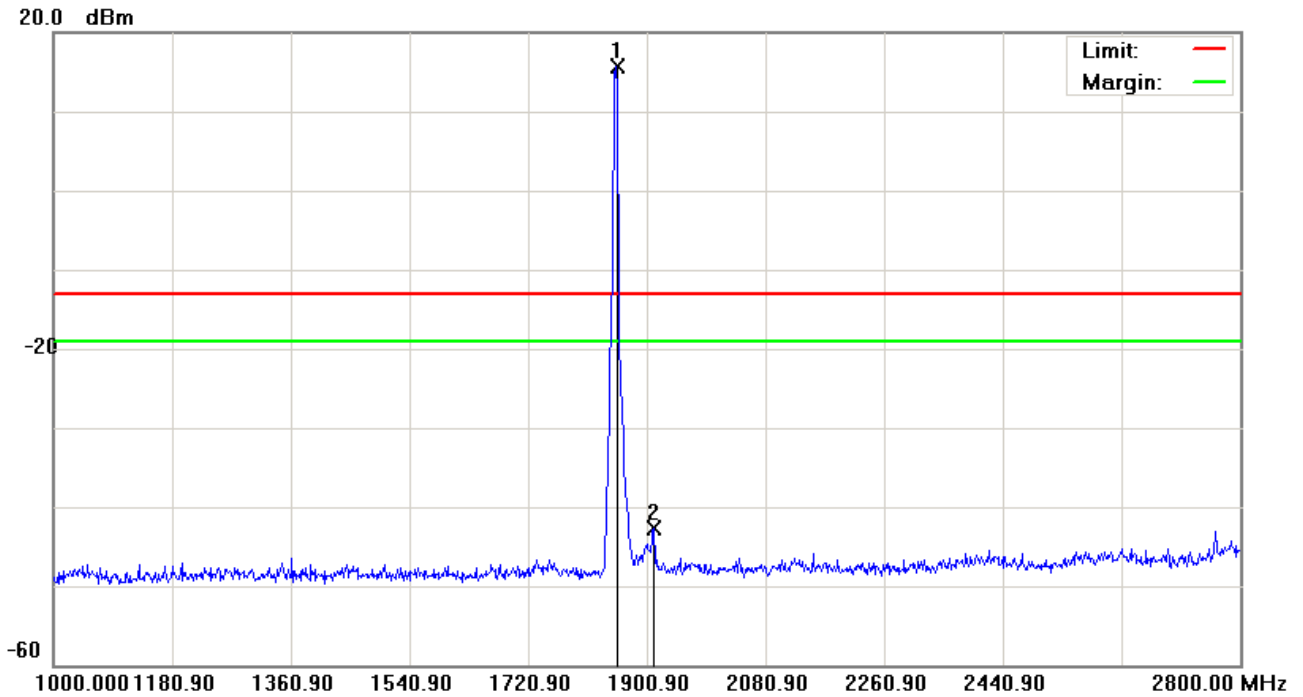
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9262)

Data :#4

Date: 2013/11/25

Time: 下午 01:24:27



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1854.100	11.36	4.28	15.64	-13.00	28.64	peak			Tx
2		1910.800	-48.34	5.63	-42.71	-13.00	-29.71	peak			

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

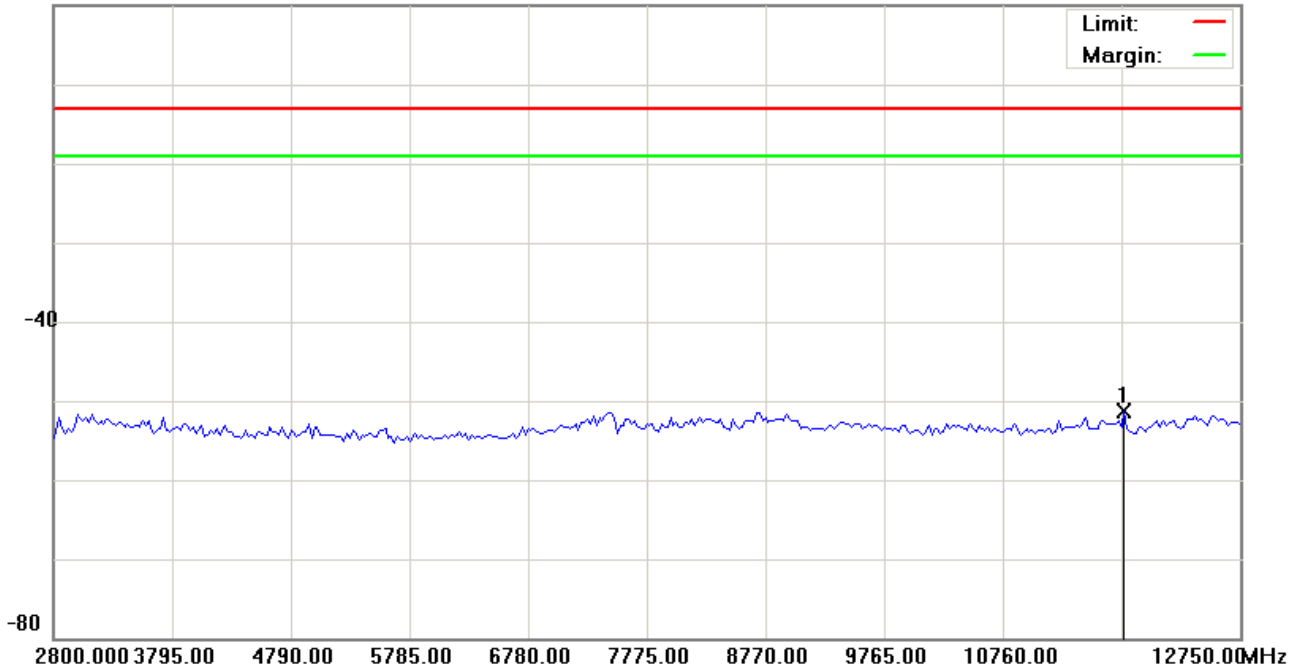
File :HE920-NA(CH9262)

Data :#5

Date: 2013/11/25

Time: 上午 09:14:29

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	11779.875	-56.50	5.19	-51.31	-13.00	-38.31	peak			

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

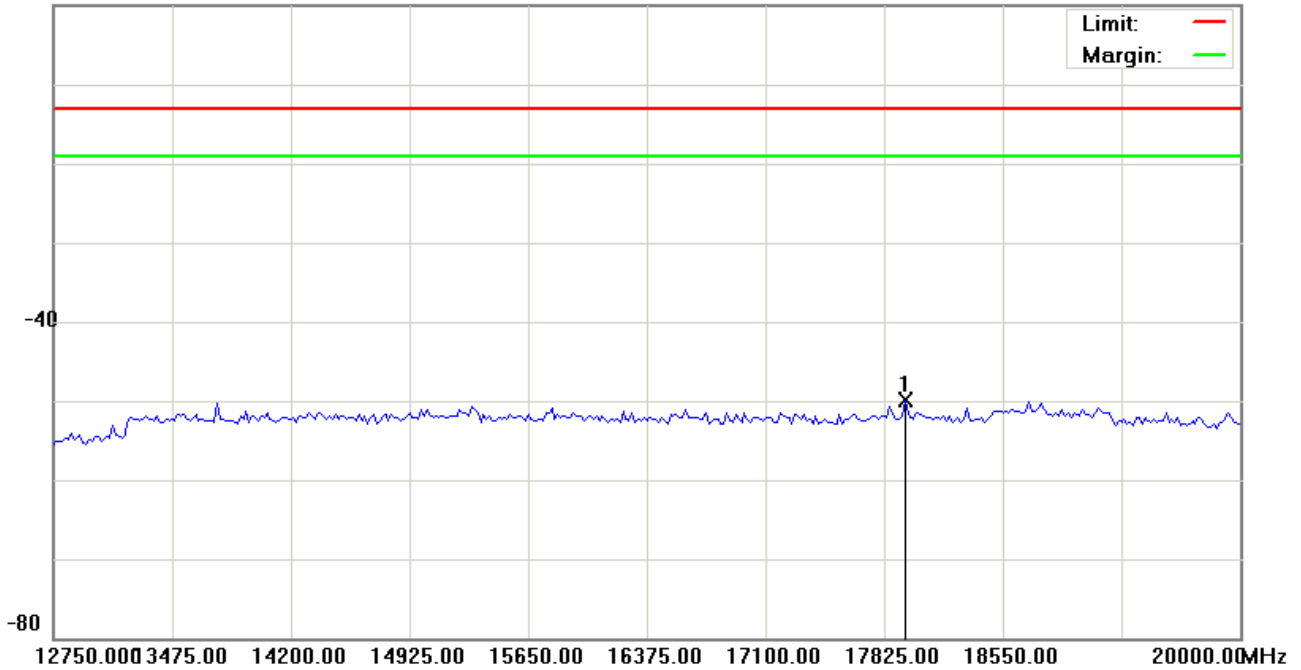
File :HE920-NA(CH9262)

Data :#6

Date: 2013/11/25

Time: 上午 09:14:52

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	17951.875	-56.82	6.86	-49.96	-13.00	-36.96	peak			

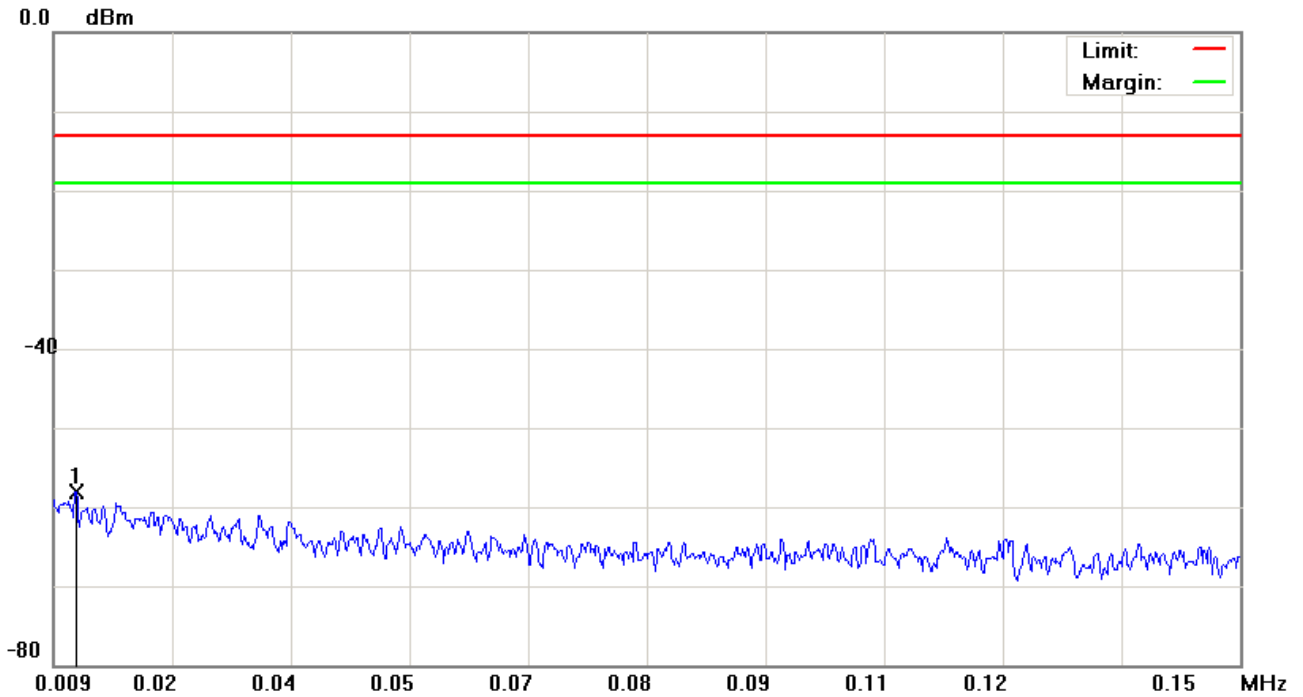
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9400)

Data :#1

Date: 2013/11/25

Time: 上午 11:52:50



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	0.0117	-69.52	11.35	-58.17	-13.00	-45.17	peak			

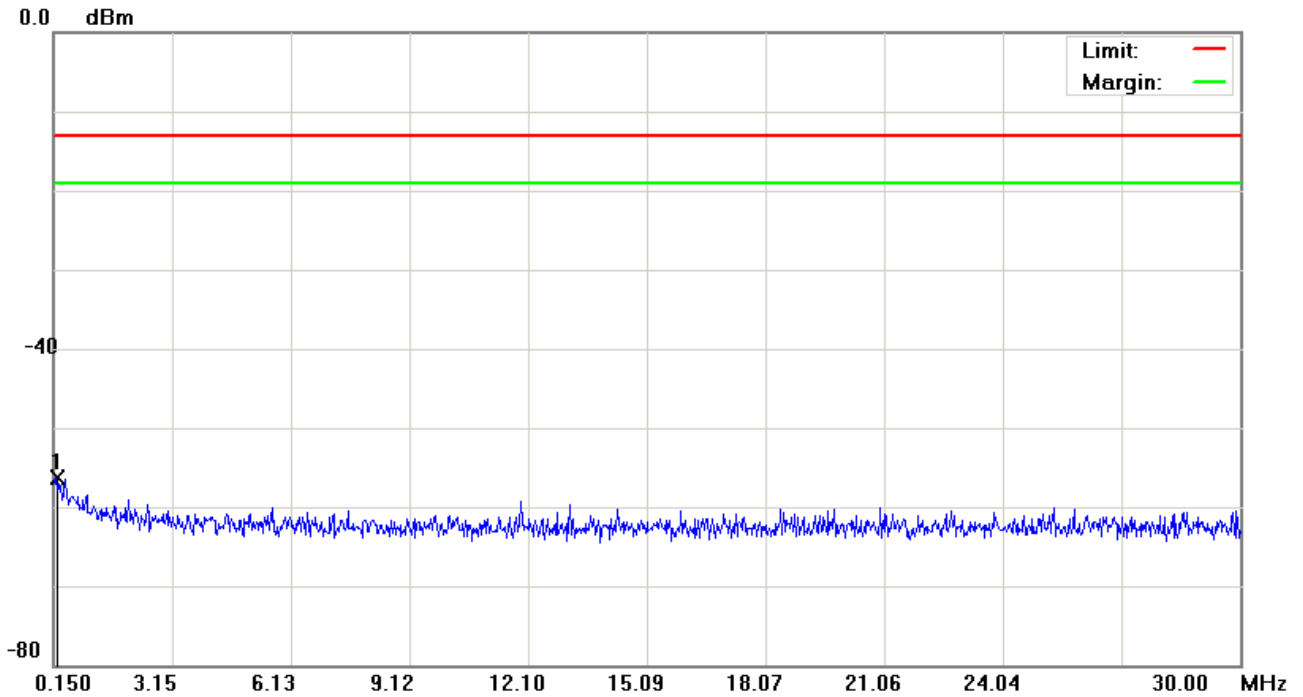
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9400)

Data :#2

Date: 2013/11/25

Time: 上午 11:53:14



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

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	*	0.2246	-68.77	12.47	-56.30	-13.00	-43.30	peak		

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

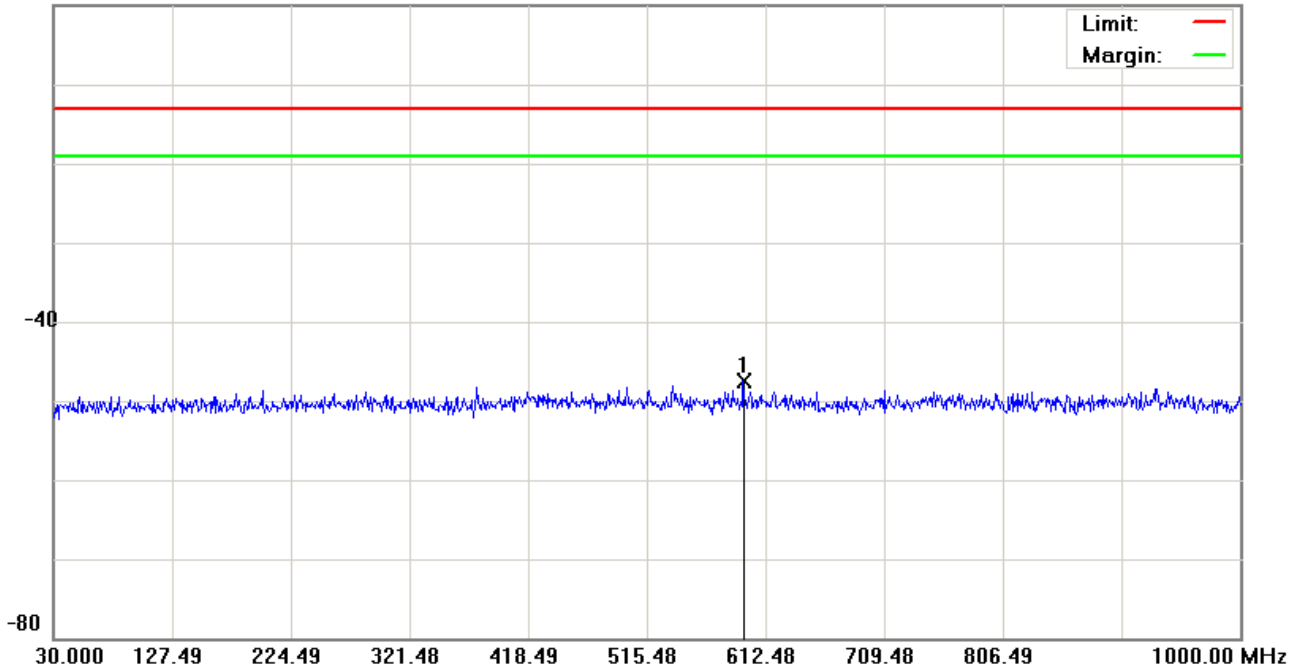
File :HE920-NA(CH9400)

Data :#3

Date: 2013/11/25

Time: 上午 11:53:37

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	594.0550	-60.74	13.19	-47.55	-13.00	-34.55	peak			

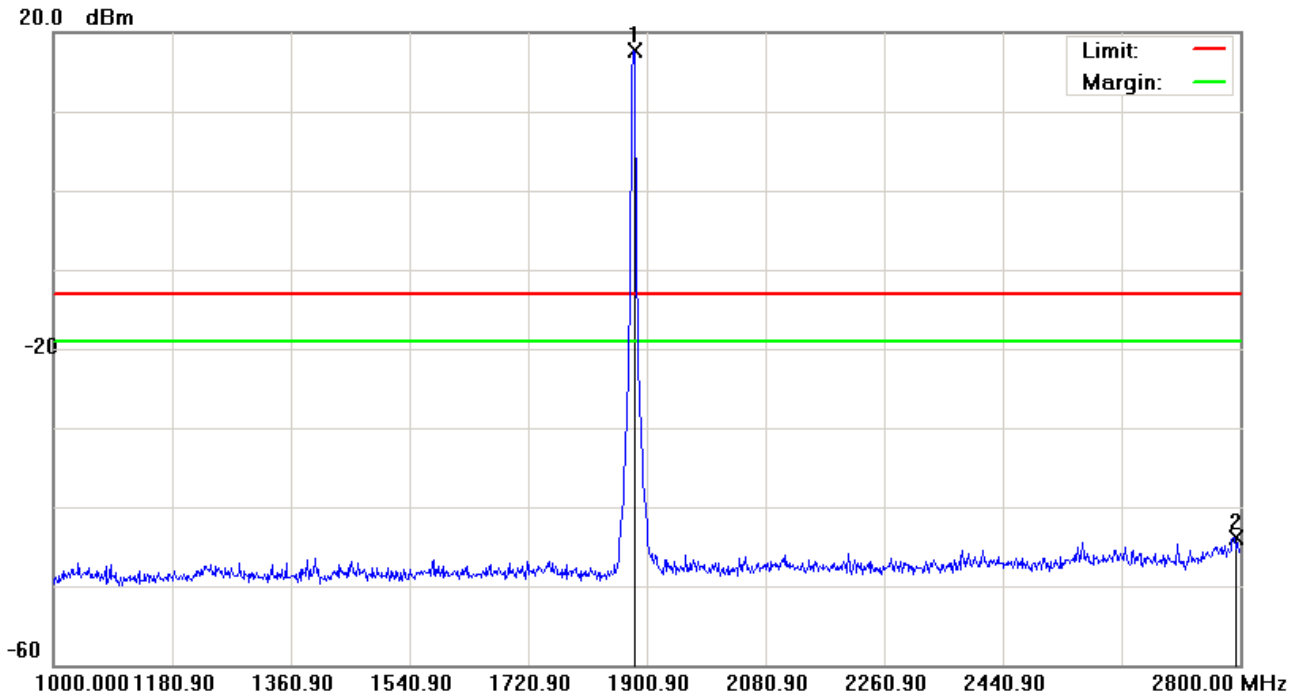
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9400)

Data :#4

Date: 2013/11/25

Time: 下午 01:32:26



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1881.100	12.97	4.74	17.71	-13.00	30.71	peak			Tx
2		2791.900	-49.85	5.90	-43.95	-13.00	-30.95	peak			

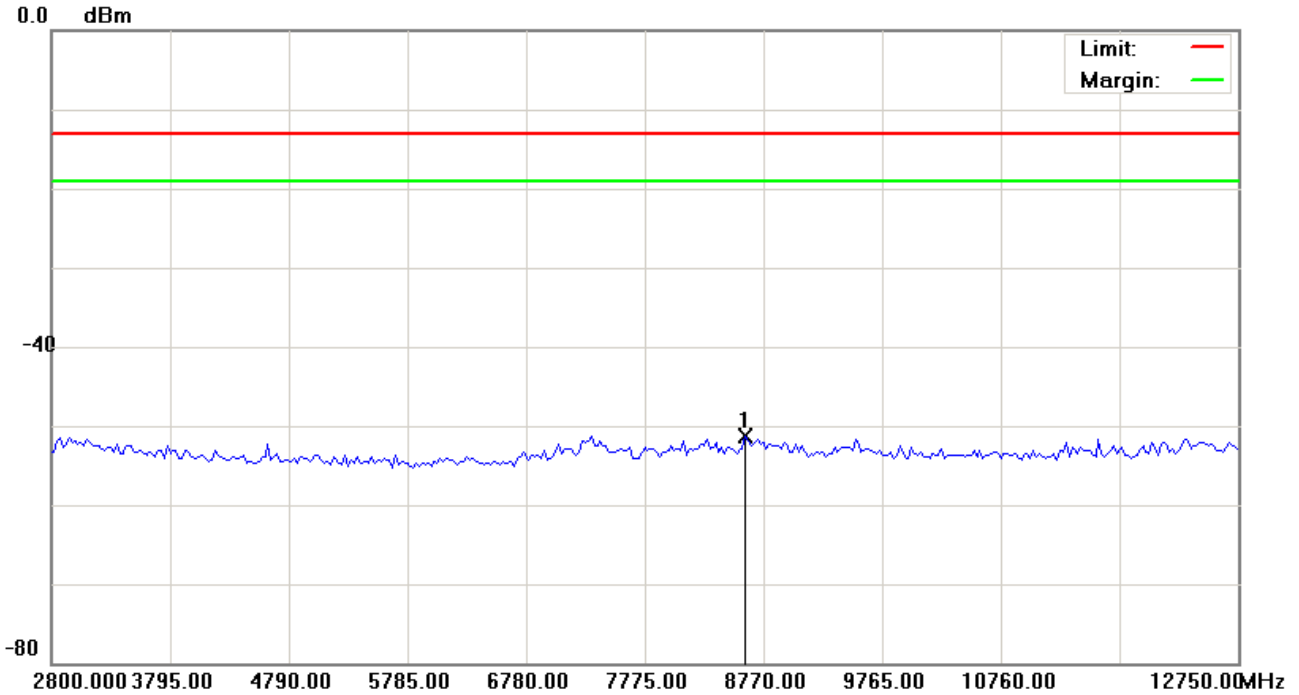
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9400)

Data :#5

Date: 2013/11/25

Time: 上午 09:15:40



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

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	*	8620.750	-56.93	5.63	-51.30	-13.00	-38.30	peak		

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

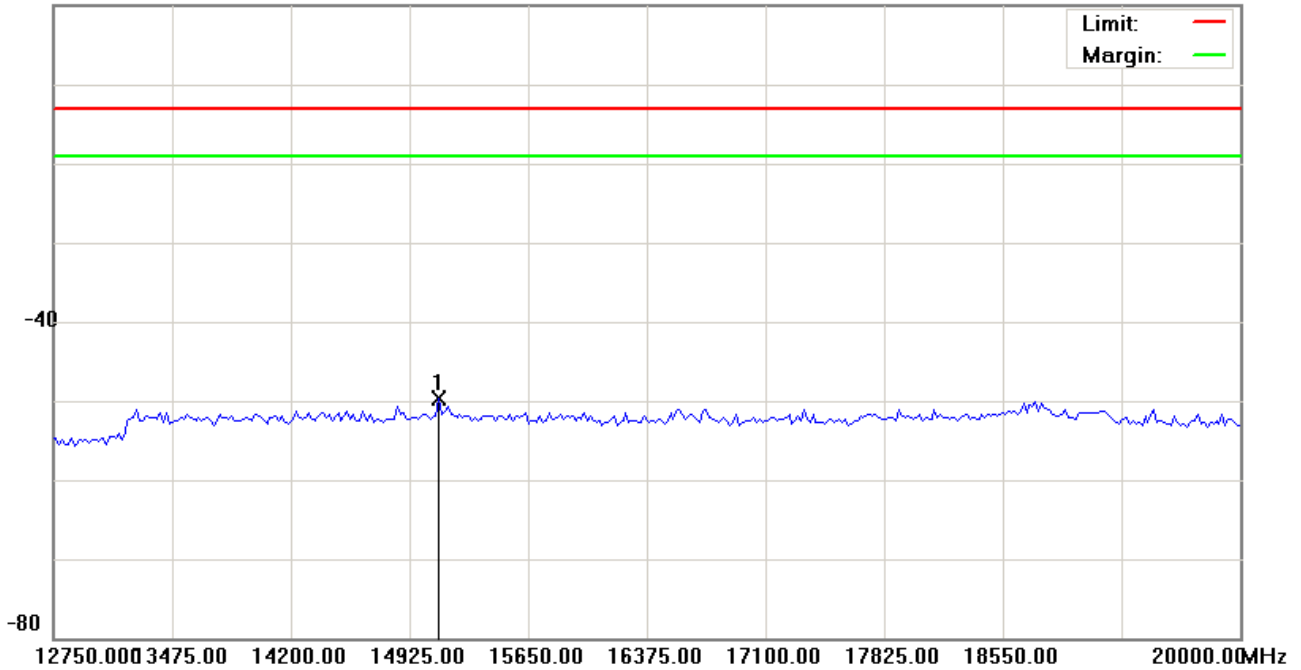
File :HE920-NA(CH9400)

Data :#6

Date: 2013/11/25

Time: 上午 09:16:01

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	15106.250	-55.82	6.04	-49.78	-13.00	-36.78	peak			

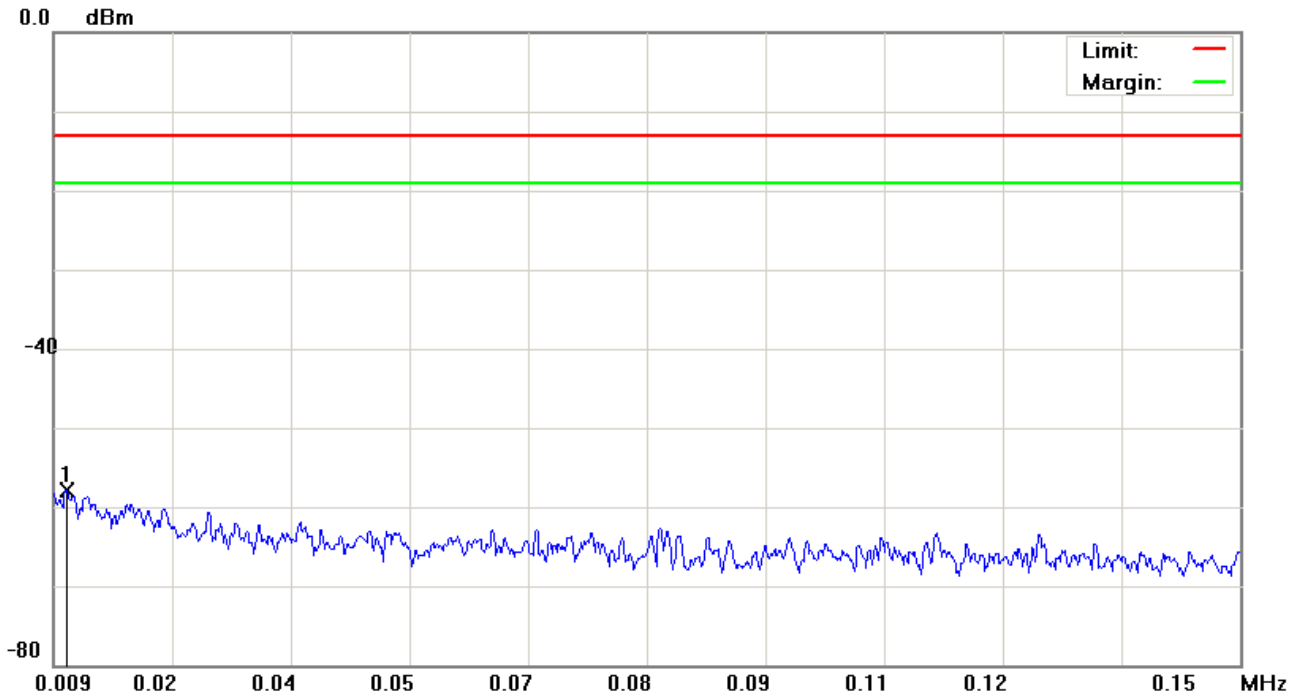
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9538)

Data :#1

Date: 2013/11/25

Time: 上午 11:55:05



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

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	*	0.0106	-69.28	11.34	-57.94	-13.00	-44.94	peak		

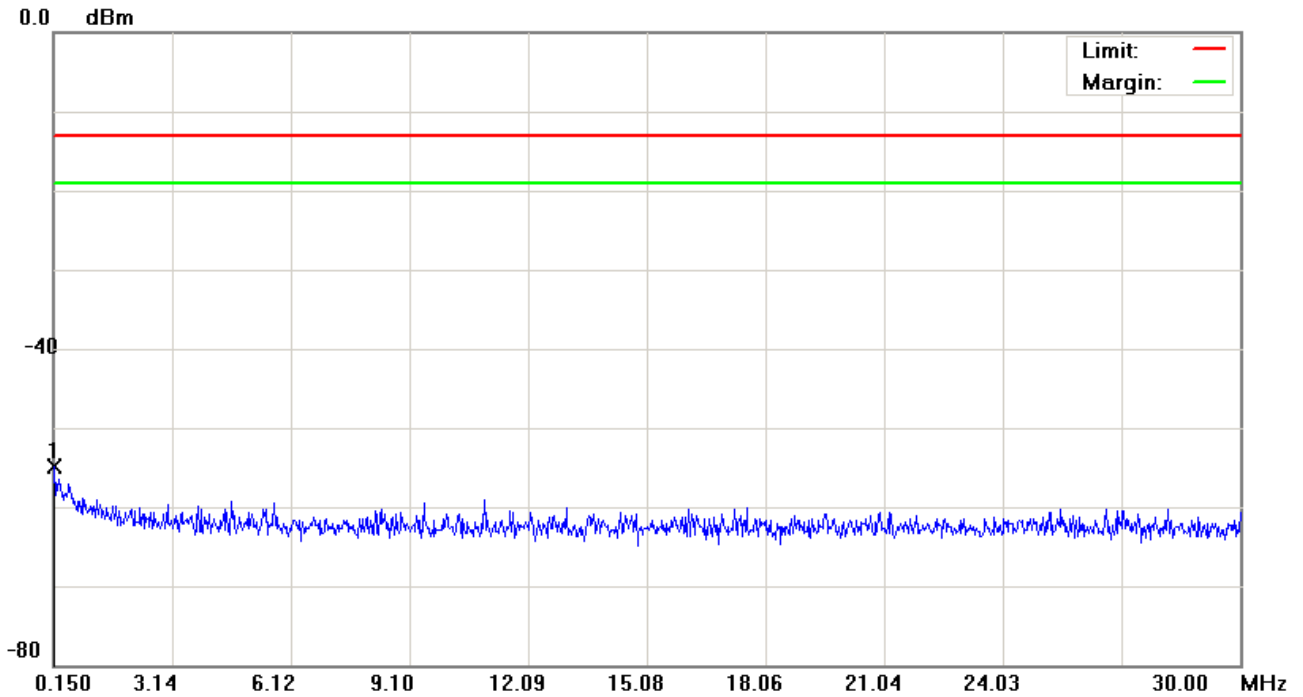
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9538)

Data :#2

Date: 2013/11/25

Time: 上午 11:55:28



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

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	*	0.1798	-67.29	12.45	-54.84	-13.00	-41.84	peak		

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

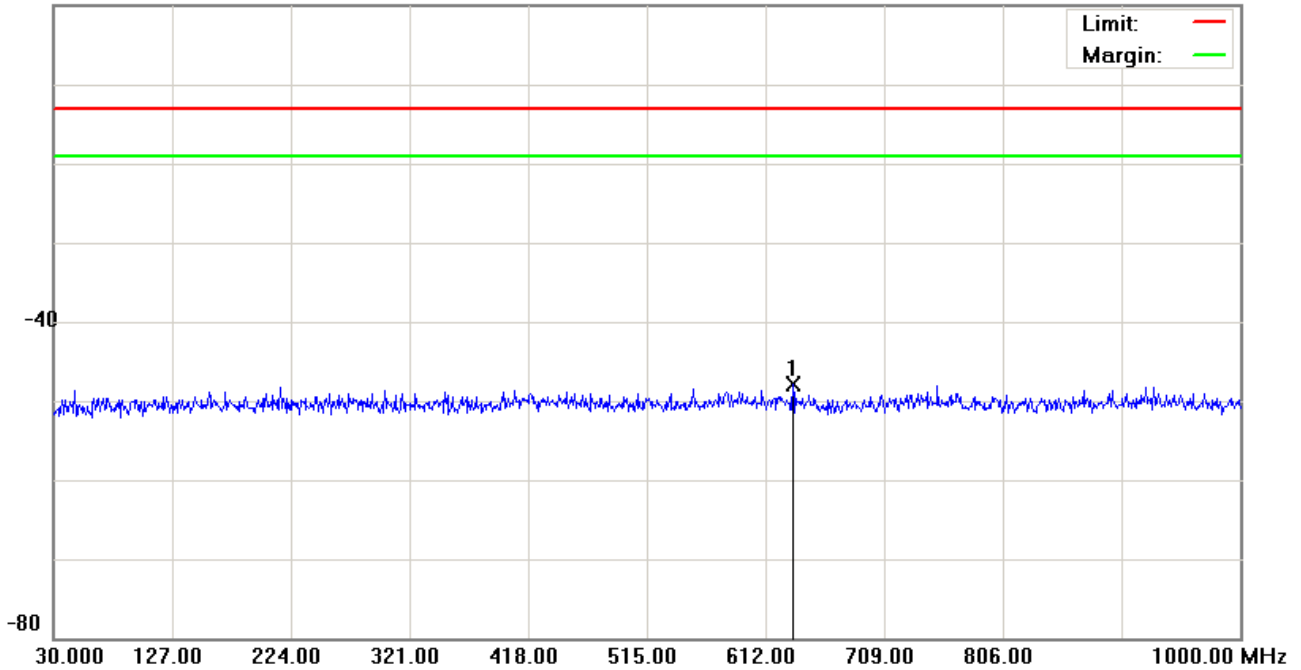
File :HE920-NA(CH9538)

Data :#3

Date: 2013/11/25

Time: 上午 11:55:52

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

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	*	634.3100	-61.09	13.14	-47.95	-13.00	-34.95	peak		

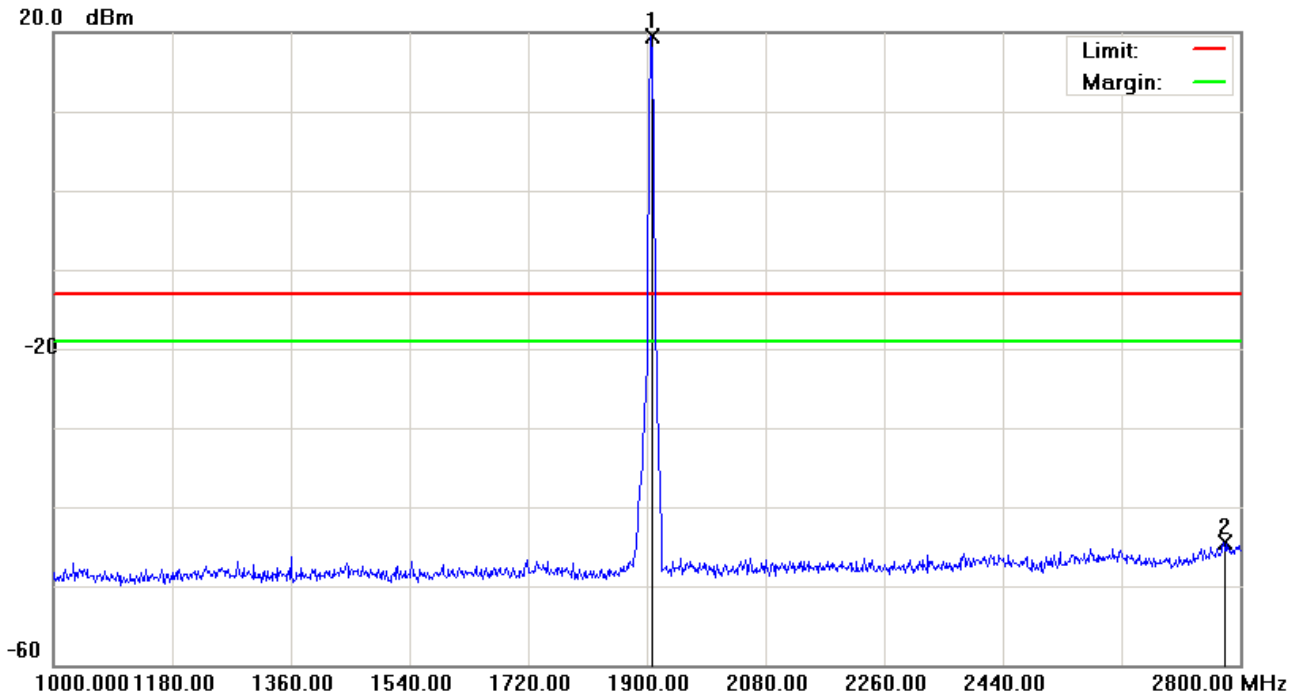
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH9538)

Data :#4

Date: 2013/11/25

Time: 下午 01:27:14



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band II

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1906.300	13.41	6.05	19.46	-13.00	32.46	peak			Tx
2		2775.700	-50.33	5.82	-44.51	-13.00	-31.51	peak			

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

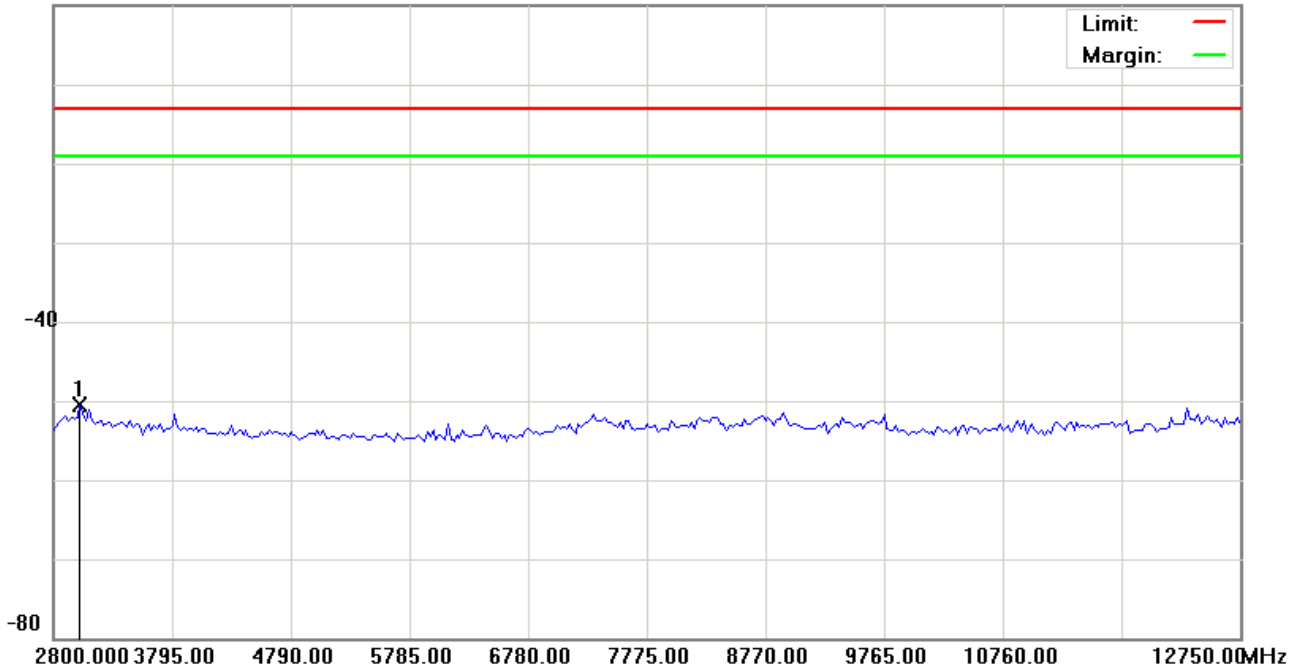
File :HE920-NA(CH9538)

Data :#5

Date: 2013/11/25

Time: 上午 09:16:41

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

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	*	3023.875	-55.98	5.48	-50.50	-13.00	-37.50	peak		

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

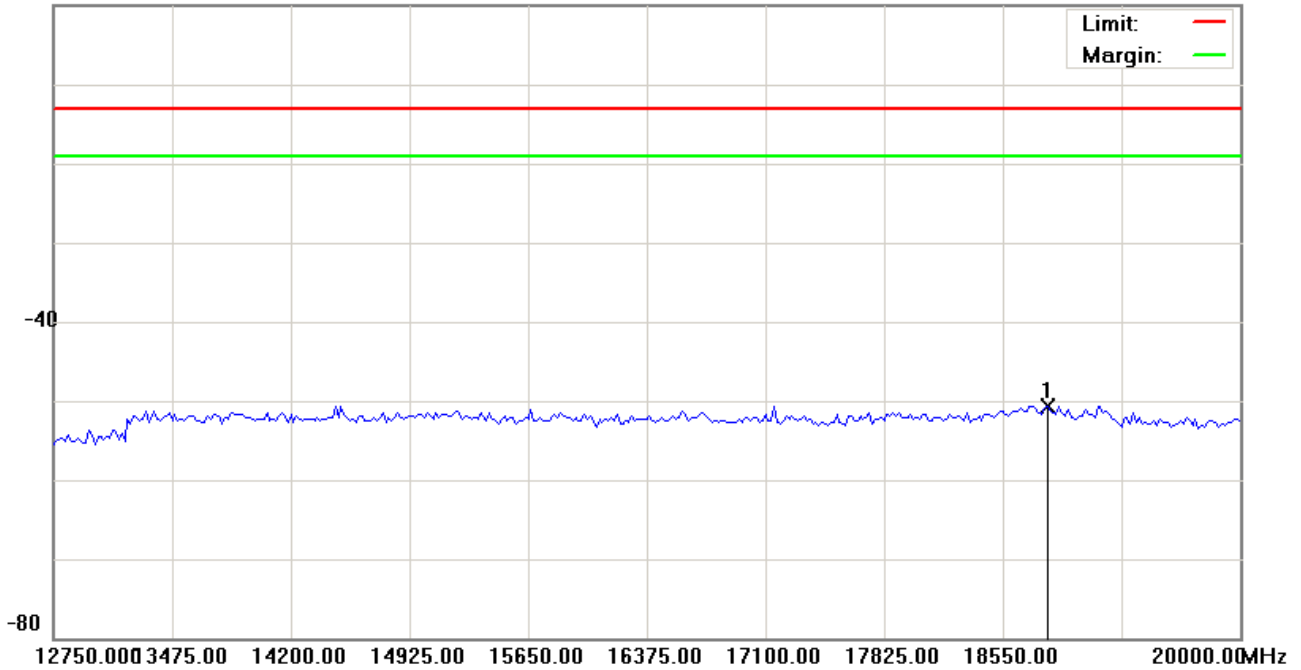
File :HE920-NA(CH9538)

Data :#6

Date: 2013/11/25

Time: 上午 09:17:02

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

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	*	18821.875	-57.74	7.10	-50.64	-13.00	-37.64	peak		

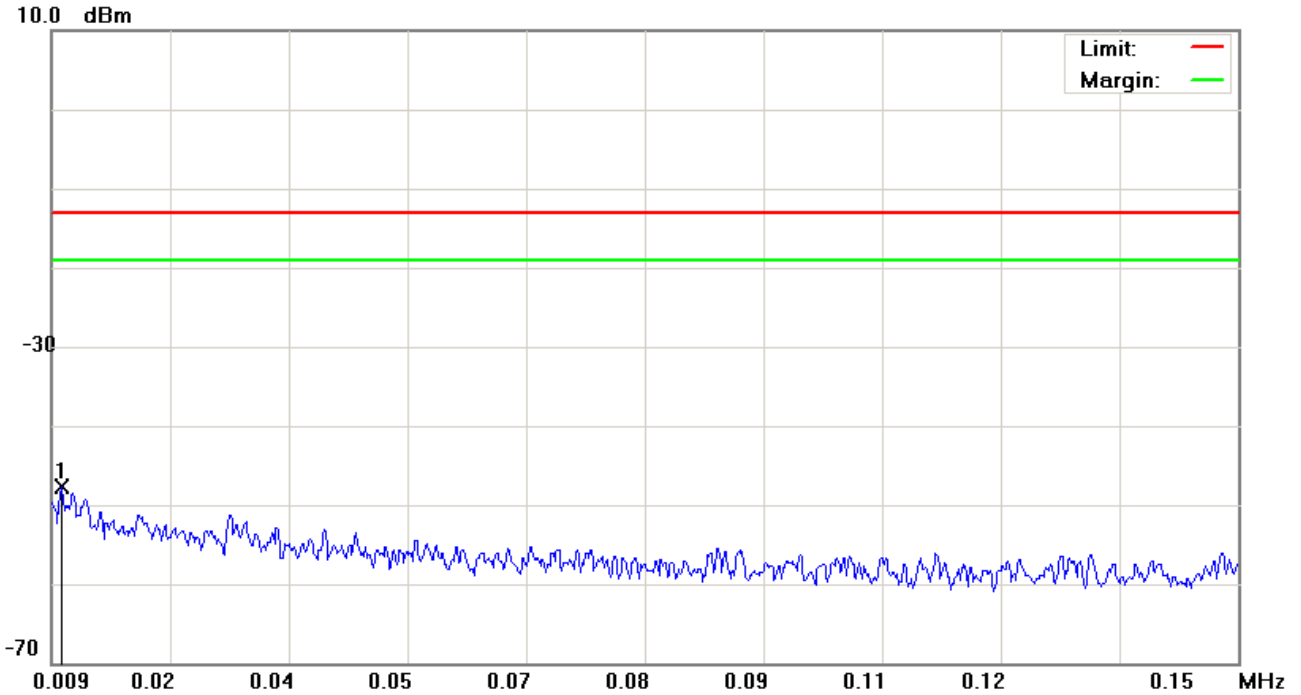
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4132)

Data :#1

Date: 2013/11/25

Time: 下午 01:39:54



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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	*	0.0102	-78.34	30.57	-47.77	-13.00	-34.77	peak		

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

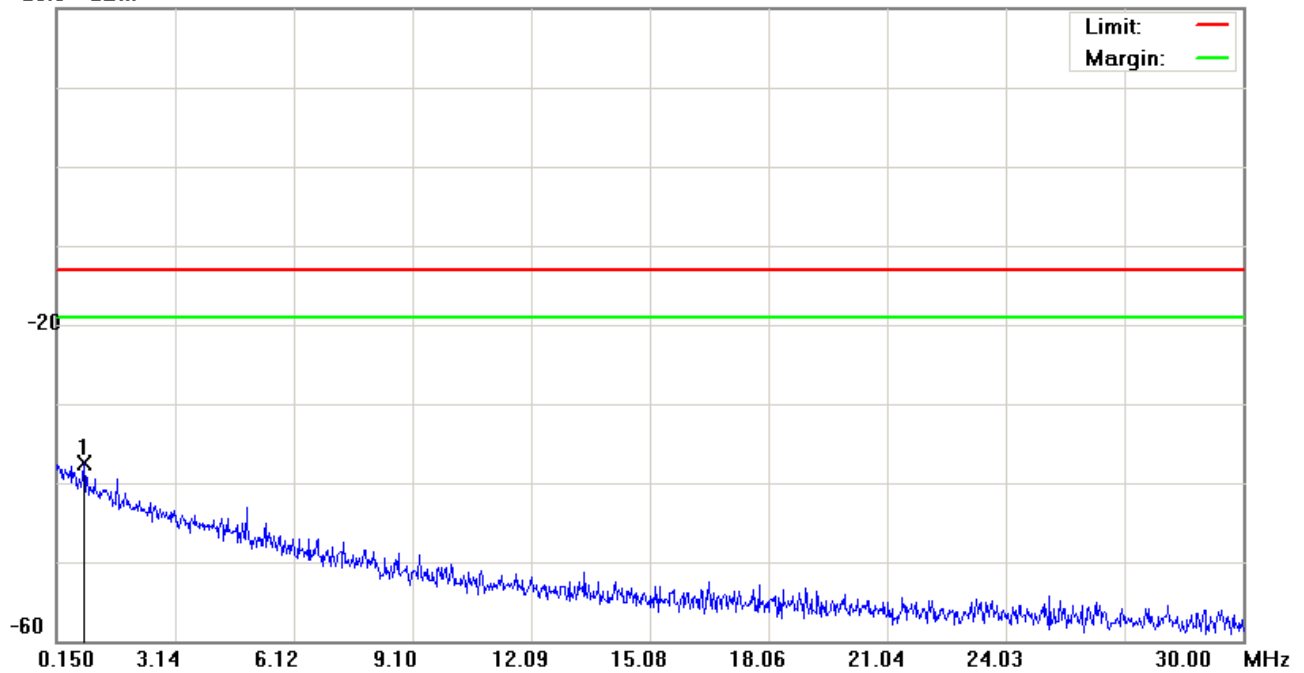
File :HE920-NA(CH4132)

Data :#2

Date: 2013/11/25

Time: 下午 01:40:18

20.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	0.8366	-69.39	31.95	-37.44	-13.00	-24.44	peak			

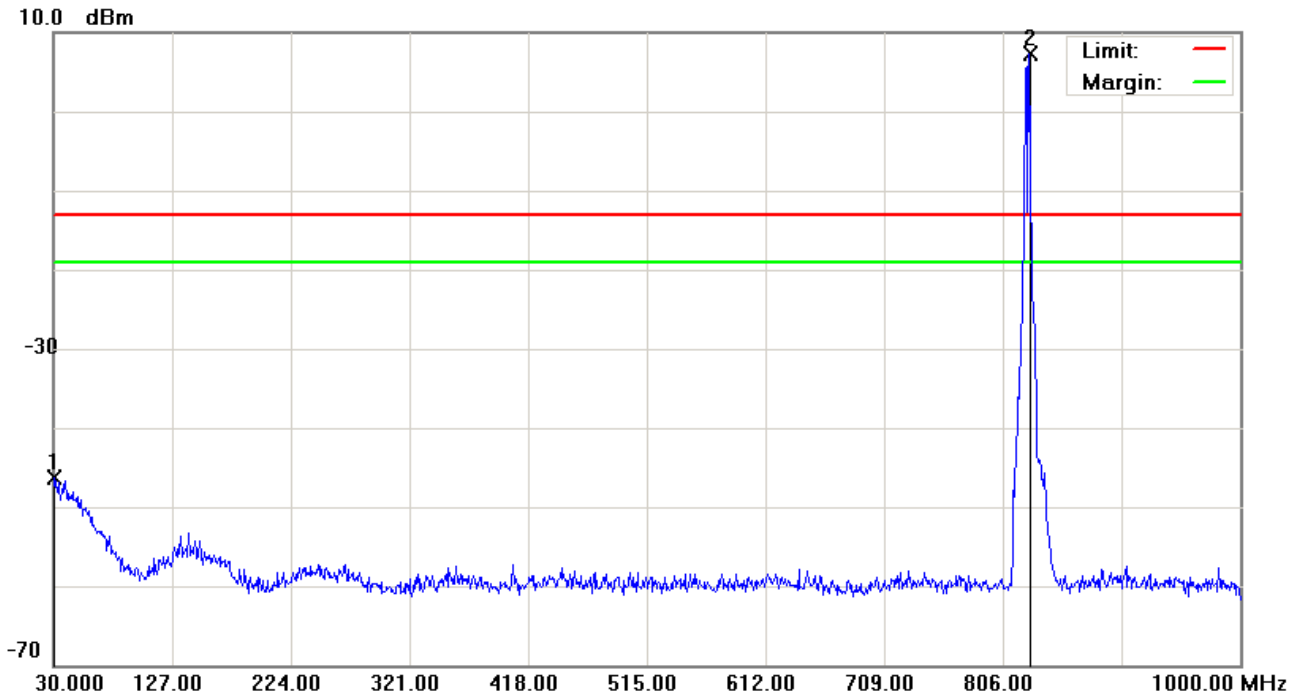
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4132)

Data :#3

Date: 2013/11/25

Time: 下午 01:40:42



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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		30.9700	-63.38	17.10	-46.28	-13.00	-33.28	peak		
2	*	827.8250	3.38	3.87	7.25	-13.00	20.25	peak		Tx

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

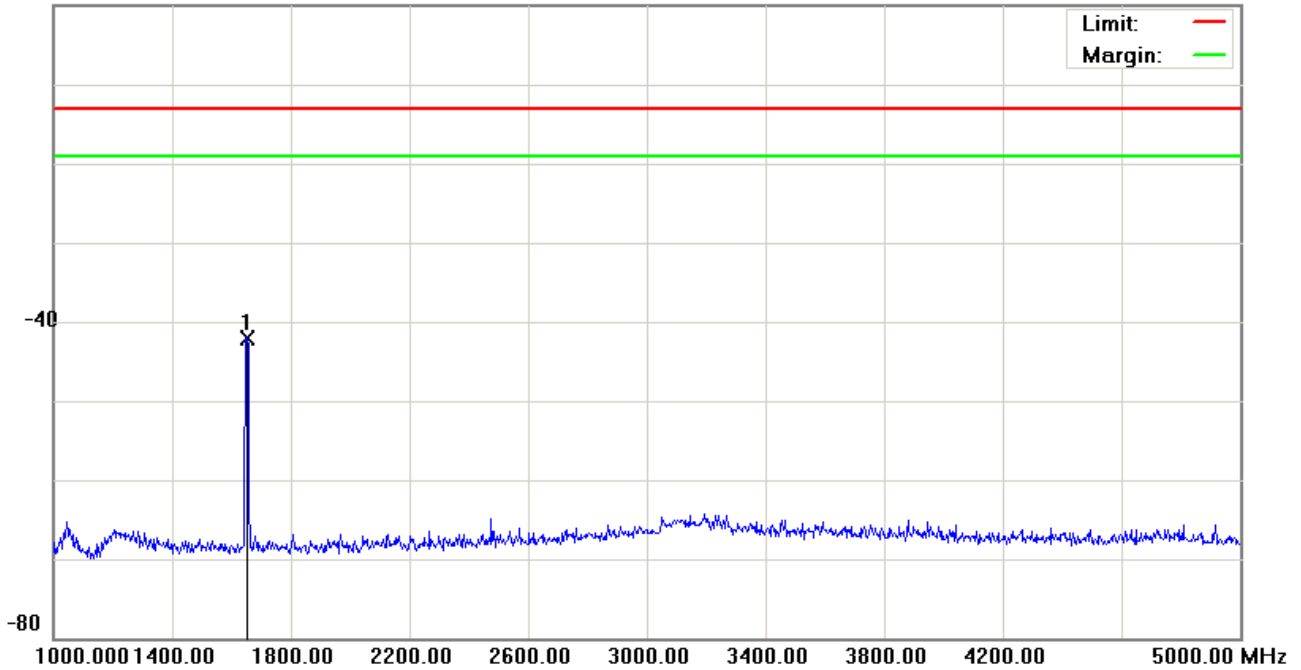
File :HE920-NA(CH4132)

Data :#4

Date: 2013/11/25

Time: 下午 01:51:09

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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	*	1650.000	-46.55	4.45	-42.10	-13.00	-29.10	peak		

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

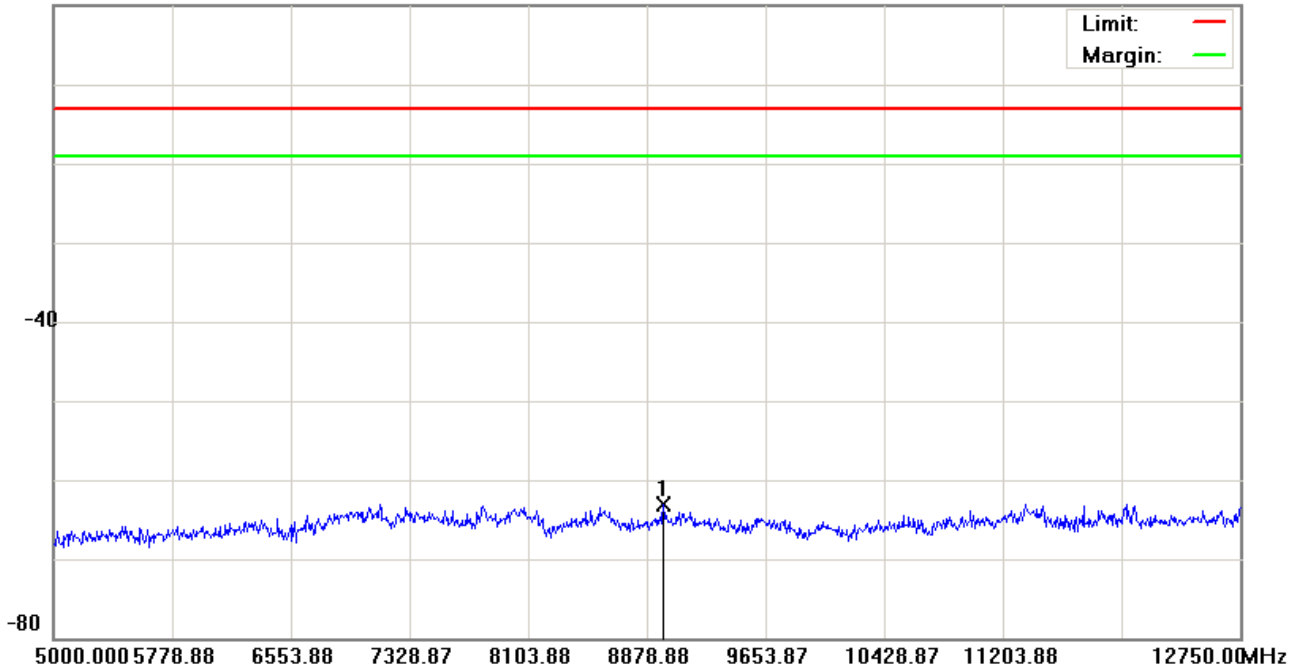
File :HE920-NA(CH4132)

Data :#5

Date: 2013/11/25

Time: 下午 01:51:32

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Antenna Height cm	Table Degree	Comment
1	*	8983.500	-68.57	5.53	-63.04	-13.00	-50.04	peak		

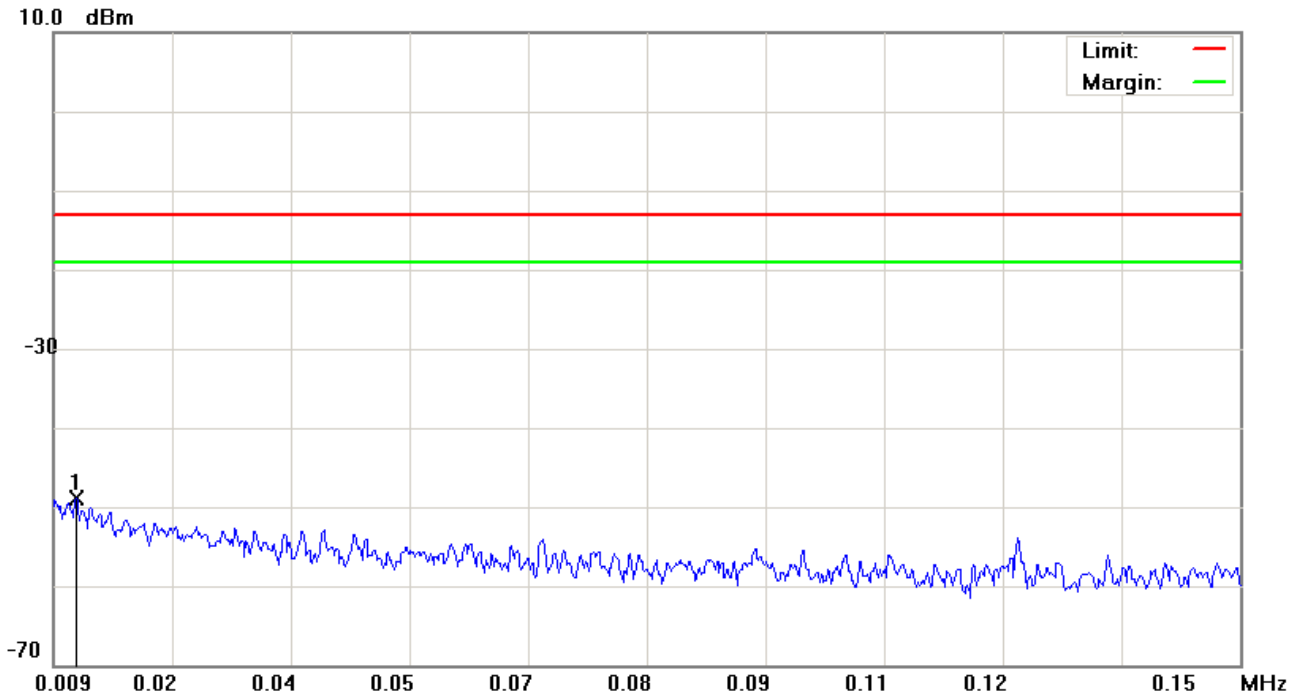
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4183)

Data :#1

Date: 2013/11/25

Time: 下午 01:43:00



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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	*	0.0117	-79.54	30.57	-48.97	-13.00	-35.97	peak		

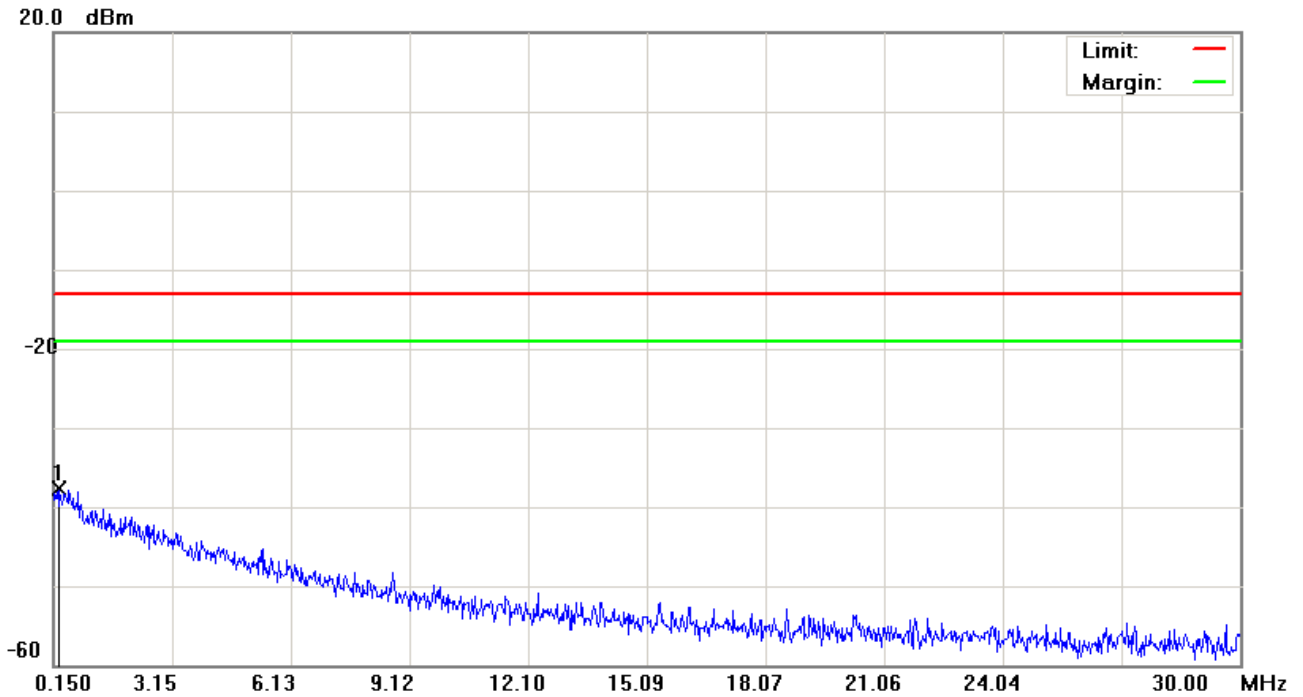
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4183)

Data :#2

Date: 2013/11/25

Time: 下午 01:43:24



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	0.2993	-69.53	31.73	-37.80	-13.00	-24.80	peak			

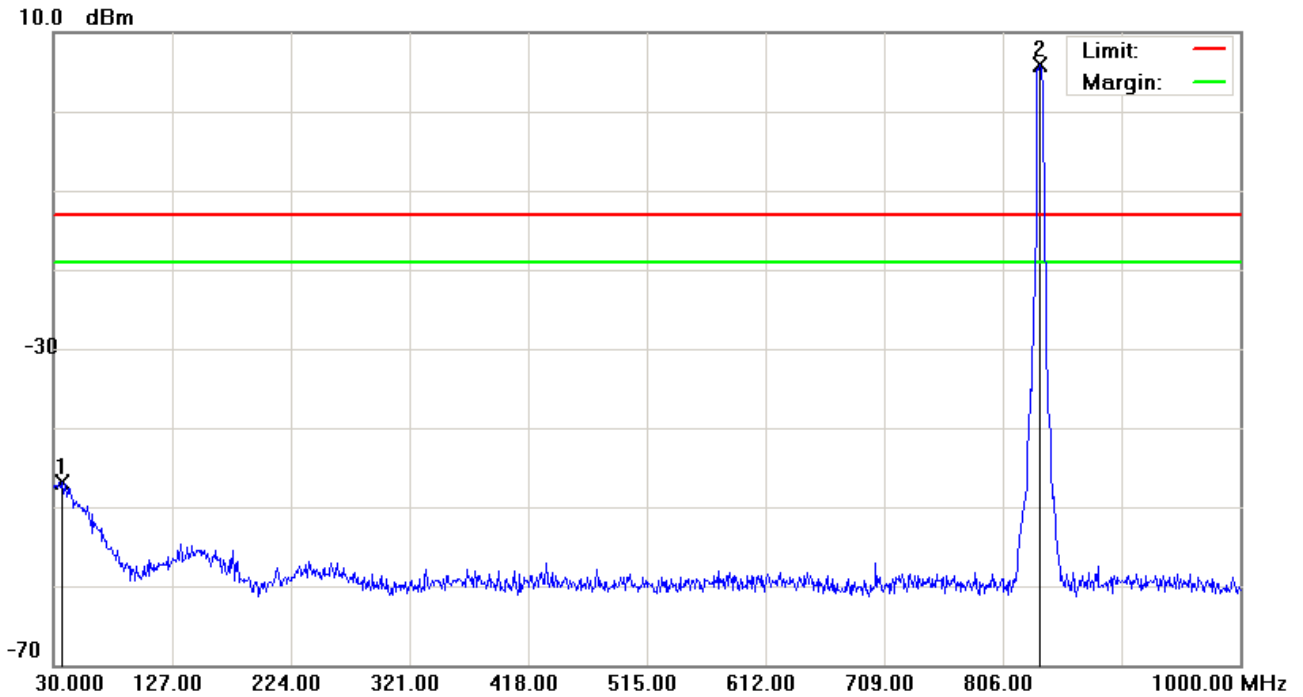
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4183)

Data :#3

Date: 2013/11/25

Time: 下午 01:43:48



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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		36.7900	-63.31	16.44	-46.87	-13.00	-33.87	peak		
2	*	836.0700	1.87	3.96	5.83	-13.00	18.83	peak		Tx

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

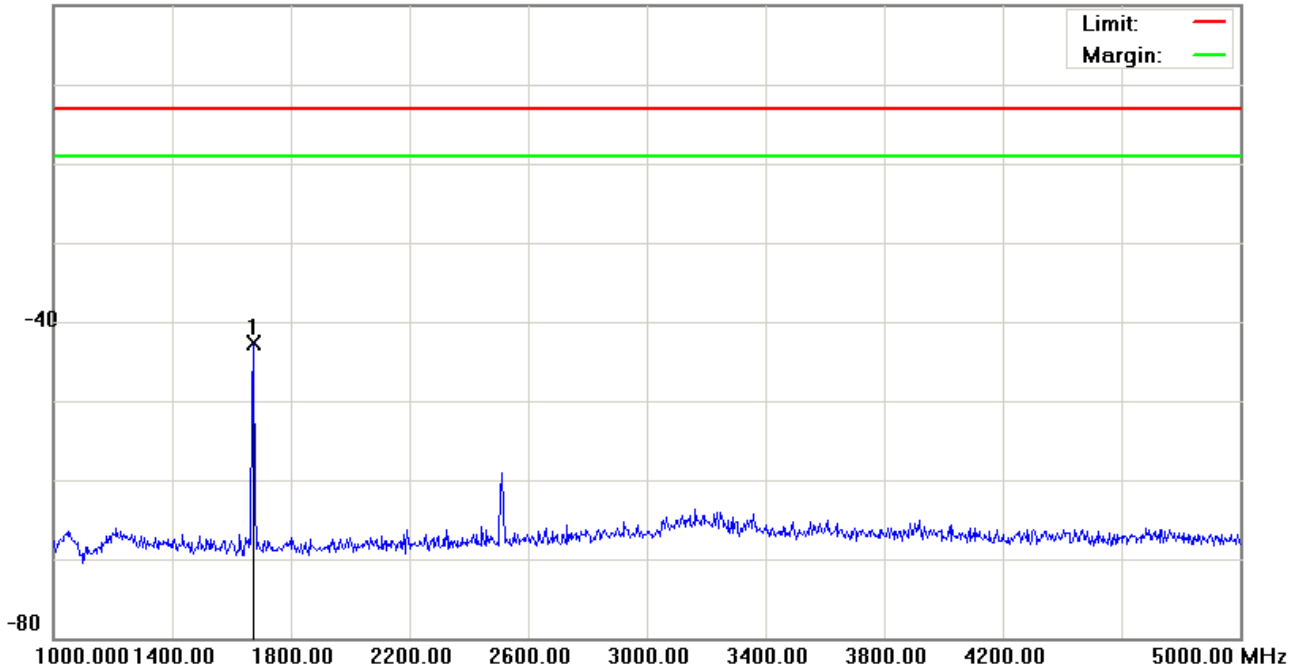
File :HE920-NA(CH4183)

Data :#4

Date: 2013/11/25

Time: 下午 01:52:49

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1676.000	-47.24	4.47	-42.77	-13.00	-29.77	peak			

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

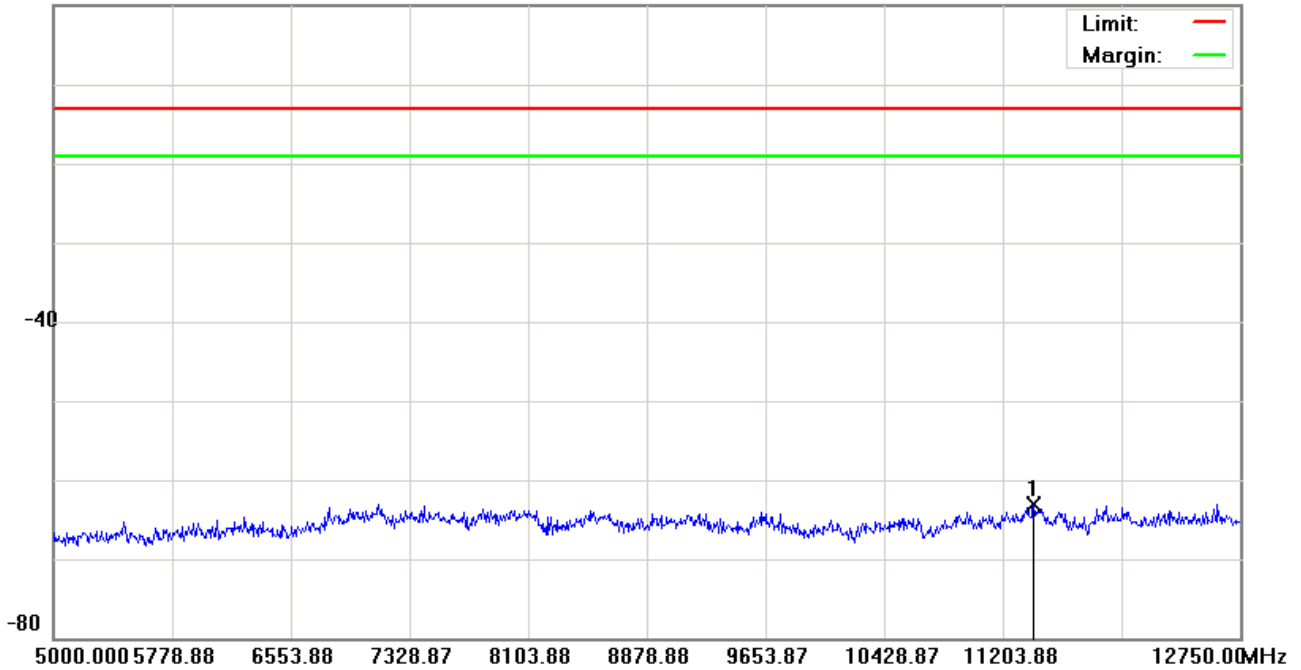
File :HE920-NA(CH4183)

Data :#5

Date: 2013/11/25

Time: 下午 01:53:12

0.0 dBm



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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	*	11401.500	-68.67	5.56	-63.11	-13.00	-50.11	peak		

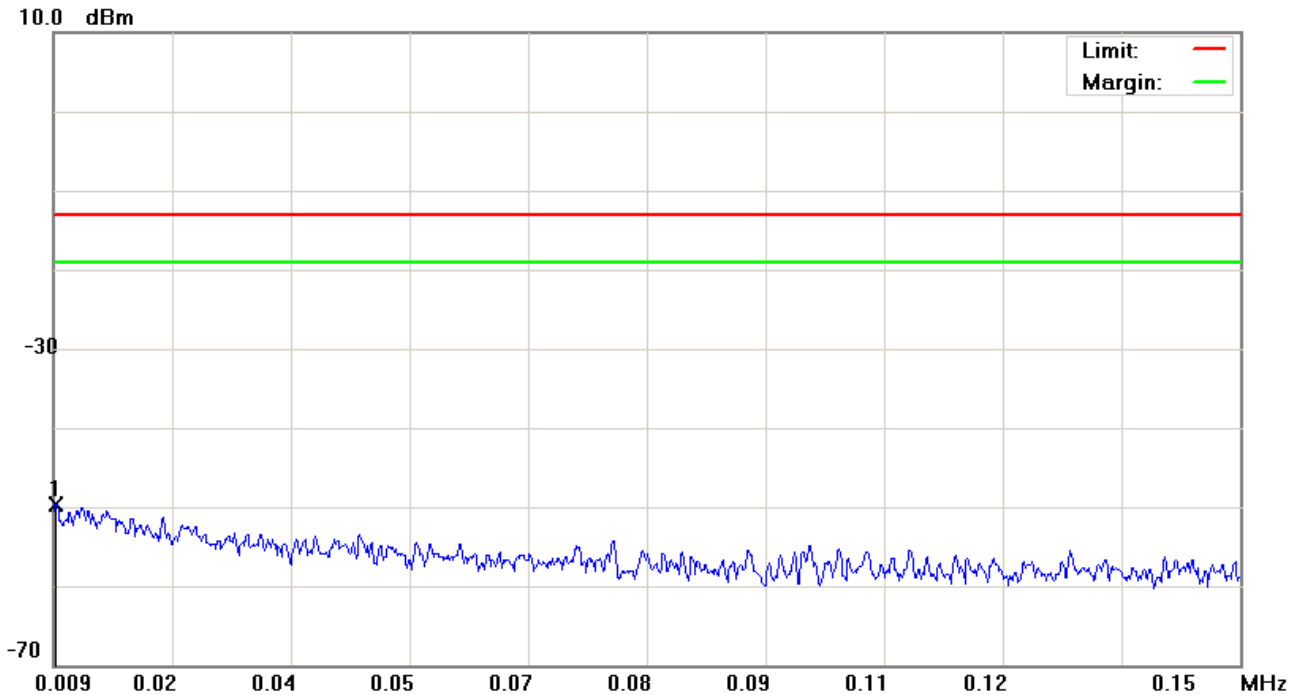
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4233)

Data :#1

Date: 2013/11/25

Time: 下午 01:45:31



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1 KHz VBW: 3 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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	*	0.0093	-80.26	30.58	-49.68	-13.00	-36.68	peak		

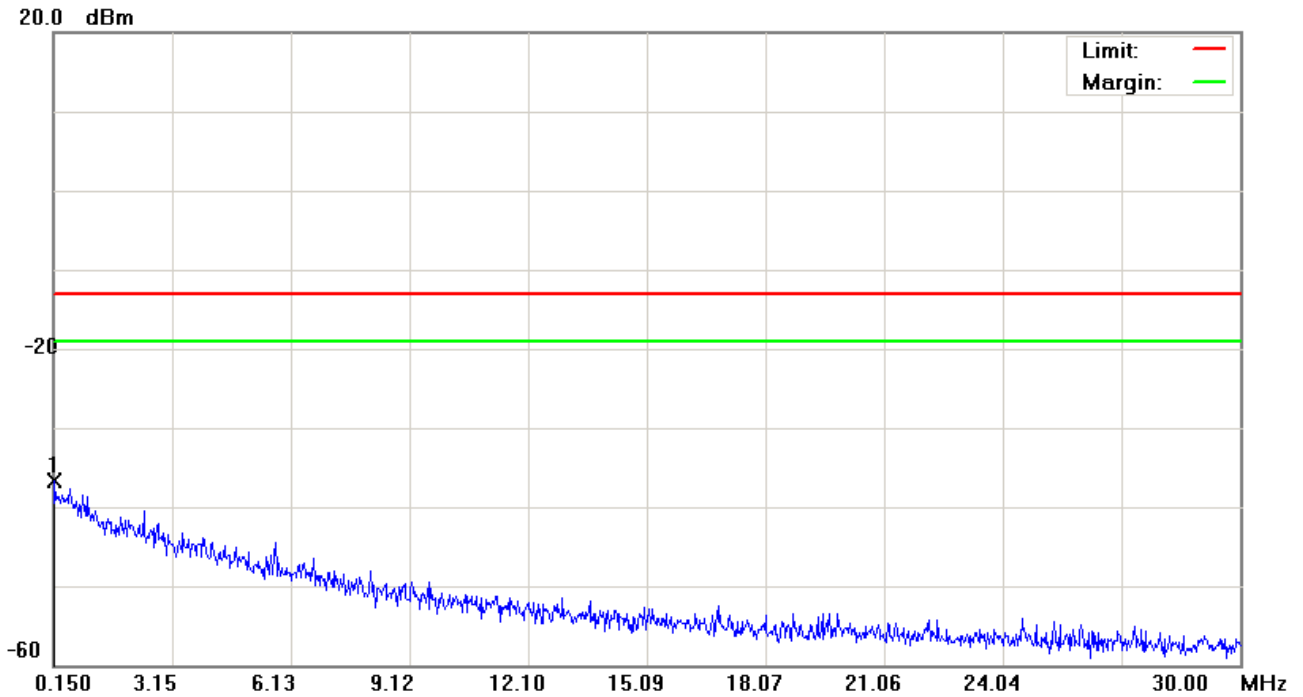
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4233)

Data :#2

Date: 2013/11/25

Time: 下午 01:45:55



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 10 KHz VBW: 30 KHz

M/N: HE920-NA

Mode: WCDMA Band V

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	*	0.1798	-67.55	30.75	-36.80	-13.00	-23.80	peak		

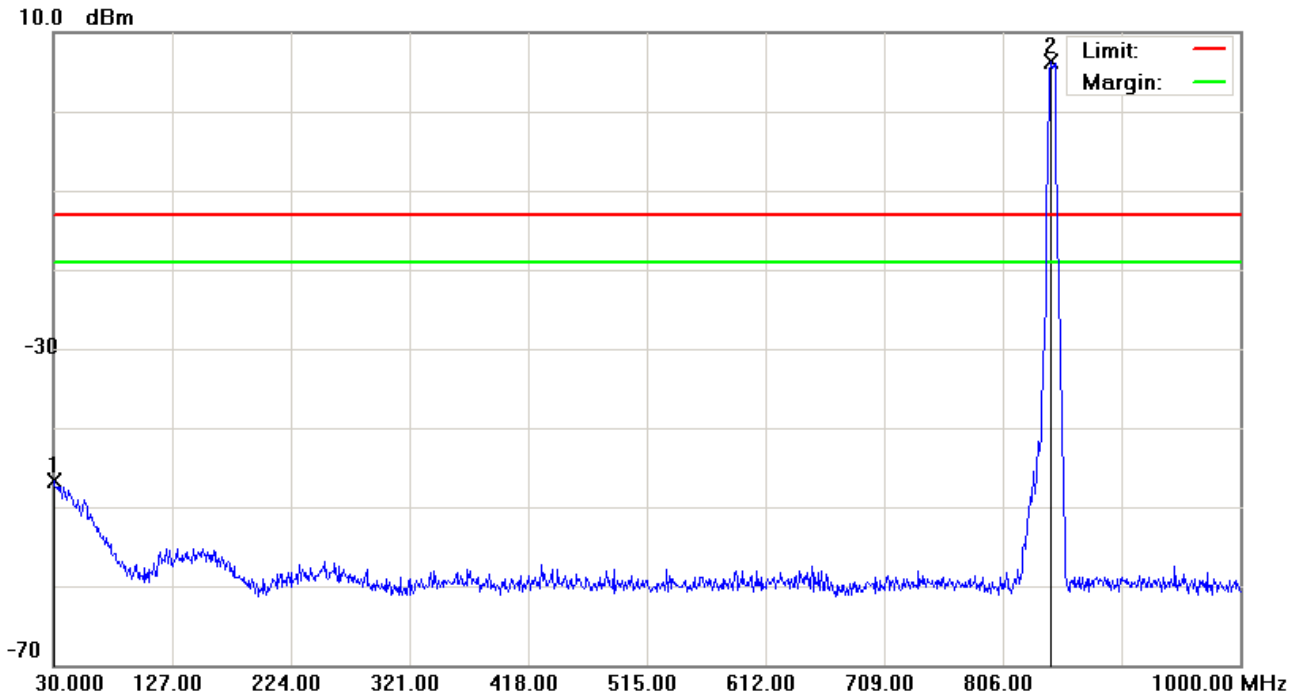
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4233)

Data :#3

Date: 2013/11/25

Time: 下午 01:46:19



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 100 KHz VBW: 300 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1		30.0000	-63.91	17.21	-46.70	-13.00	-33.70	peak			
2	*	845.7700	2.26	3.99	6.25	-13.00	19.25	peak			Tx

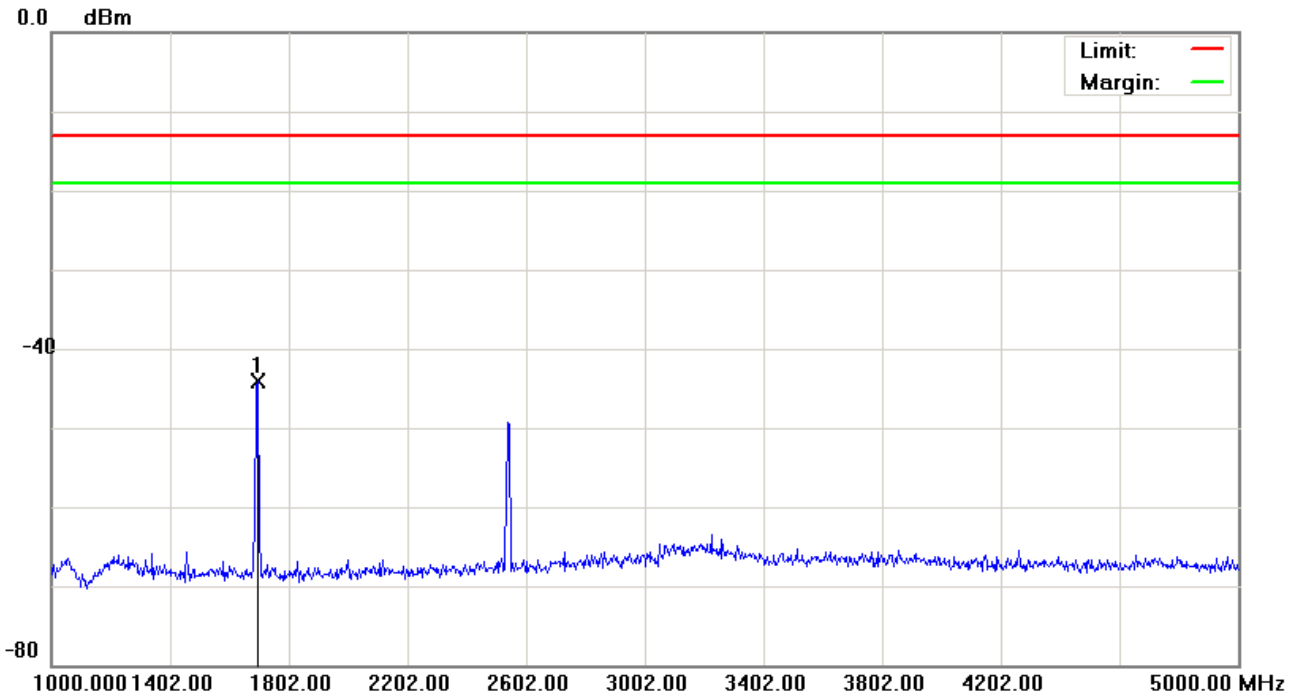
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4233)

Data :#4

Date: 2013/11/25

Time: 下午 01:53:55



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	1696.000	-48.63	4.48	-44.15	-13.00	-31.15	peak			

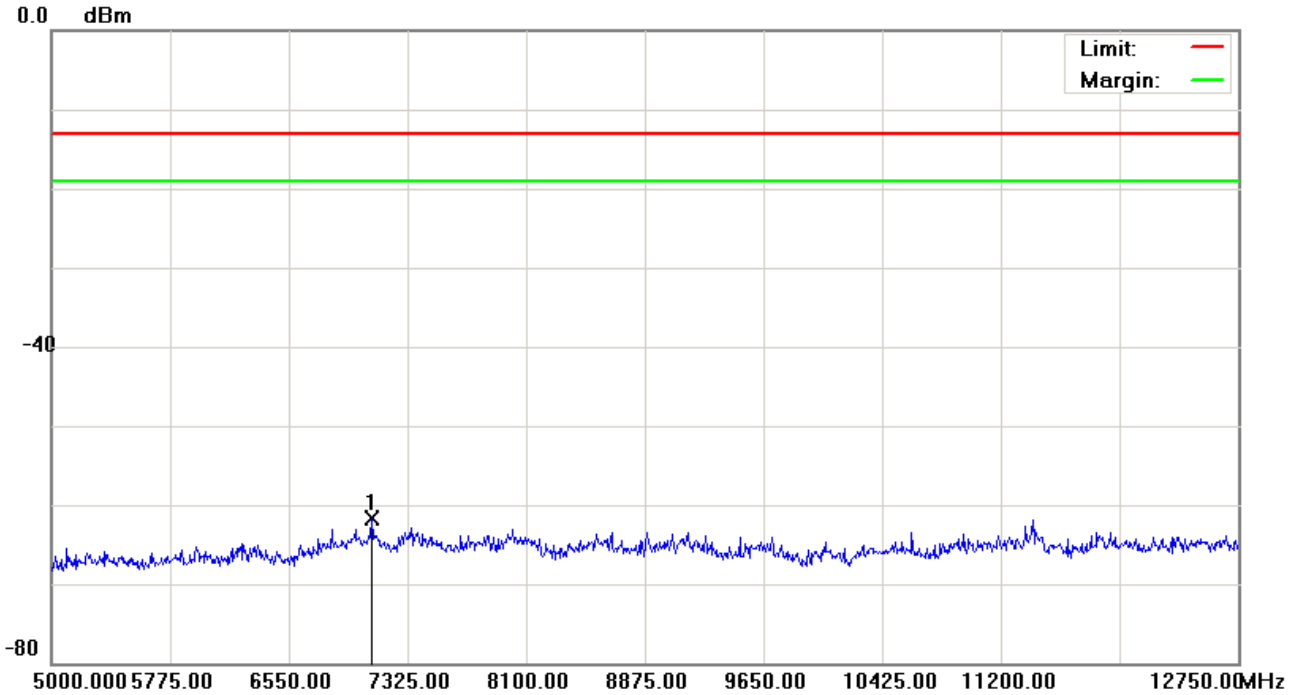
*:Maximum data x:Over limit !:over margin

File :HE920-NA(CH4233)

Data :#5

Date: 2013/11/25

Time: 下午 01:54:18



Site: site #1

Polarization: **Conducted Power**

Temperature: 26 °C

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

Power: DC 3.8V

Humidity: 55 %

EUT: Wireless module

Distance:

RBW: 1000 KHz VBW: 3000 KHz

M/N: HE920-NA

Mode: WCDMA Band V

Note:

No.	Mk.	Freq. MHz	Reading Level dBm	Correct Factor dB	Measure- ment dBm	Limit dBm	Over dB	Detector	Antenna Height cm	Table Degree degree	Comment
1	*	7092.500	-66.79	5.05	-61.74	-13.00	-48.74	peak			

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

Band	CH	Frequency (MHz)	Measurement (dBm)	Antanna Gain (dBi)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Over (dB)
GSM850	128	0.0142	-47.84	6.79	-41.05	-43.20	-13.00	-30.20
		0.1650	-37.42	6.79	-30.63	-32.78	-13.00	-19.78
		33.3950	-46.94	6.79	-40.15	-42.30	-13.00	-29.30
		2472.0000	-44.69	6.79	-37.90		-13.00	-24.90
		9010.6250	-62.43	6.79	-55.64		-13.00	-42.64
	190	0.0148	-47.11	6.79	-40.32	-42.47	-13.00	-29.47
		0.1948	-36.59	6.79	-29.80	-31.95	-13.00	-18.95
		35.3350	-46.54	6.79	-39.75	-41.90	-13.00	-28.90
		2510.0000	-43.72	6.79	-36.93		-13.00	-23.93
		7111.8750	-62.68	6.79	-55.89		-13.00	-42.89
	251	0.0143	-49.60	6.79	-42.81	-44.96	-13.00	-31.96
		0.1500	-37.33	6.79	-30.54	-32.69	-13.00	-19.69
		30.0000	-47.20	6.79	-40.41	-42.56	-13.00	-29.56
		2546.0000	-46.81	6.79	-40.02		-13.00	-27.02
		7976.0000	-62.86	6.79	-56.07		-13.00	-43.07

Band	CH	Frequency (MHz)	Measurement (dBm)	Antanna Gain (dBi)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Over (dB)
GSM1900	512	0.0090	-55.24	3.01	-52.23	-54.38	-13.00	-41.38
		0.1650	-56.53	3.01	-53.52	-55.67	-13.00	-42.67
		903.9700	-48.50	3.01	-45.49	-47.64	-13.00	-34.64
		2742.4000	-44.40	3.01	-41.39		-13.00	-28.39
		3720.3750	-47.32	3.01	-44.31		-13.00	-31.31
		16592.5000	-49.61	3.01	-46.60		-13.00	-33.60
	661	0.0101	-58.00	3.01	-54.99	-57.14	-13.00	-44.14
		0.4634	-55.82	3.01	-52.81	-54.96	-13.00	-41.96
		253.1000	-48.17	3.01	-45.16	-47.31	-13.00	-34.31
		2797.3000	-44.22	3.01	-41.21		-13.00	-28.21
		3770.1250	-41.59	3.01	-38.58		-13.00	-25.58
		16103.1250	-49.33	3.01	-46.32		-13.00	-33.32
	810	0.0094	-58.22	3.01	-55.21	-57.36	-13.00	-44.36
		0.1948	-55.29	3.01	-52.28	-54.43	-13.00	-41.43
		869.5350	-47.88	3.01	-44.87	-47.02	-13.00	-34.02
		2786.5000	-44.43	3.01	-41.42		-13.00	-28.42
		3819.8750	-43.27	3.01	-40.26		-13.00	-27.26
		18713.1250	-50.00	3.01	-46.99		-13.00	-33.99

Band	CH	Frequency (MHz)	Measurement (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Over (dB)
WCDMA Band II	9262	0.0150	-58.25	3.01	-55.24	-57.39	-13.00	-44.39
		0.1948	-56.40	3.01	-53.39	-55.54	-13.00	-42.54
		453.4050	-47.48	3.01	-44.47	-46.62	-13.00	-33.62
		1910.8000	-42.71	3.01	-39.70		-13.00	-26.70
		11779.8750	-51.31	3.01	-48.30		-13.00	-35.30
		17951.8750	-49.96	3.01	-46.95		-13.00	-33.95
	9400	0.0117	-58.17	3.01	-55.16	-57.31	-13.00	-44.31
		0.2246	-56.30	3.01	-53.29	-55.44	-13.00	-42.44
		594.0550	-47.55	3.01	-44.54	-46.69	-13.00	-33.69
		2791.9000	-43.95	3.01	-40.94		-13.00	-27.94
		8620.7500	-51.30	3.01	-48.29		-13.00	-35.29
		15106.2500	-49.78	3.01	-46.77		-13.00	-33.77
	9538	0.0106	-57.94	3.01	-54.93	-57.08	-13.00	-44.08
		0.1798	-54.84	3.01	-51.83	-53.98	-13.00	-40.98
		634.3100	-47.95	3.01	-44.94	-47.09	-13.00	-34.09
		2775.7000	-44.51	3.01	-41.50		-13.00	-28.50
		3023.8750	-50.50	3.01	-47.49		-13.00	-34.49
		18821.8750	-50.64	3.01	-47.63		-13.00	-34.63

Band	CH	Frequency (MHz)	Measurement (dBm)	Antenna Gain (dBi)	EIRP (dBm)	ERP (dBm)	Limit (dBm)	Over (dB)
WCDMA Band V	4132	0.0102	-47.77	6.79	-40.98	-43.13	-13.00	-30.13
		0.8366	-37.44	6.79	-30.65	-32.80	-13.00	-19.80
		30.9700	-46.28	6.79	-39.49	-41.64	-13.00	-28.64
		1650.0000	-42.10	6.79	-35.31		-13.00	-22.31
		8983.5000	-63.04	6.79	-56.25		-13.00	-43.25
	4183	0.0117	-48.97	6.79	-42.18	-44.33	-13.00	-31.33
		0.2993	-37.80	6.79	-31.01	-33.16	-13.00	-20.16
		36.7900	-46.87	6.79	-40.08	-42.23	-13.00	-29.23
		1676.0000	-42.77	6.79	-35.98		-13.00	-22.98
		11401.5000	-63.11	6.79	-56.32		-13.00	-43.32
	4233	0.0093	-49.68	6.79	-42.89	-45.04	-13.00	-32.04
		0.1798	-36.80	6.79	-30.01	-32.16	-13.00	-19.16
		30.0000	-46.70	6.79	-39.91	-42.06	-13.00	-29.06
		1696.0000	-44.15	6.79	-37.36		-13.00	-24.36
		7092.5000	-61.74	6.79	-54.95		-13.00	-41.95

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.

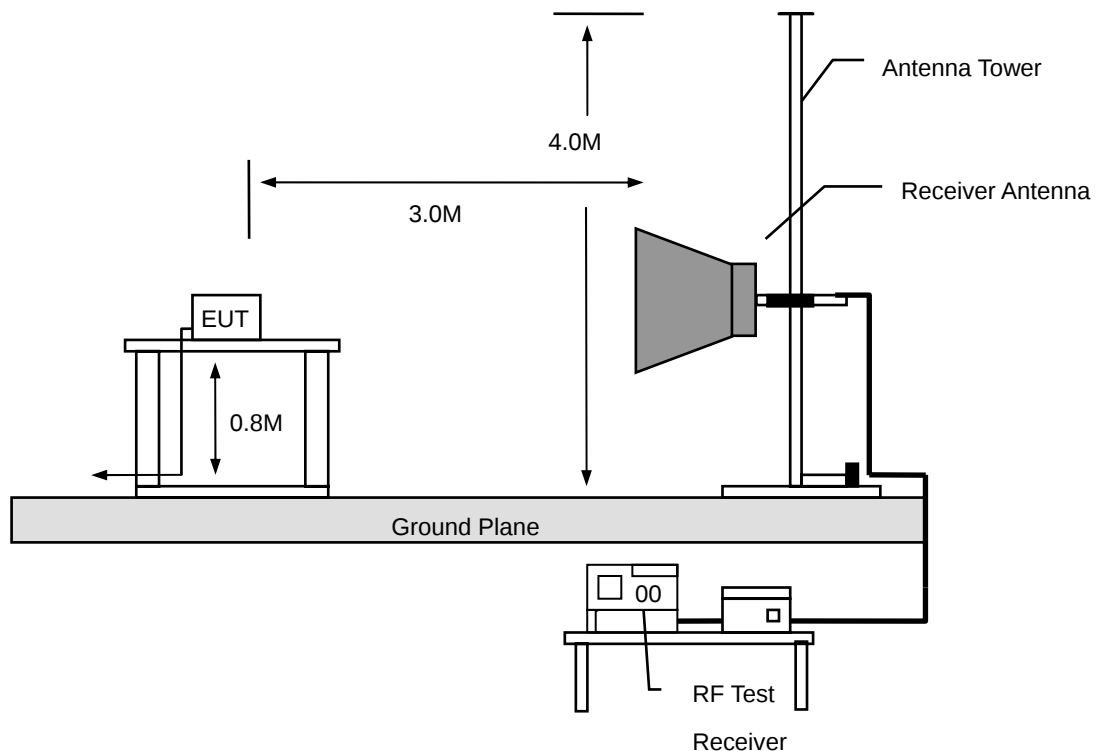
8.2. Test Instruments

3 Meter Chamber					
Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
RF Pre-selector	Agilent	N9039A	MY46520256	01/21/2013	(2)
Spectrum Analyzer	Agilent	E4446A	MY46180578	01/21/2013	(1)
Pre Amplifier	Agilent	8449B	3008A02237	02/21/2013	(1)
Pre Amplifier	Agilent	8447D	2944A10961	02/21/2013	(1)
Broadband Antenna (30MHz~1GHz)	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	9163-270	07/01/2013	(1)
Horn Antenna (1~18GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9120D	9120D-550	06/10/2013	(1)
Horn Antenna (18~40GHz)	SCHWARZBECK MESS-ELEKTRONIK	BBHA9170	9170-320	06/13/2013	(1)
Test Site	ATL	TE01	888001	08/28/2013	(1)

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

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

8.3. Setup



8.4. Test Procedure

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

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

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

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

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

For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in peak mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

Appropriate preamplifiers were used for improving sensitivity and precautions were taken to avoid overloading or desensitizing the spectrum analyzer. No post – detector video filters were used in the test.

The spectrum analyzer's 6 dB bandwidth was set to 1 MHz, and the analyzer was operated in the peak detection mode, for frequencies both below and up 1 GHz. The average levels were obtained by subtracting the duty cycle correction factor from the peak readings.

The following procedures were used to convert the emission levels measured in decibels referenced to 1 microvolt (dBuV) into field intensity in micro volts per meter (uV/m).

The actual field intensity in decibels referenced to 1 microvolt in to field intensity in micro volts per meter (dBuV/m). The actual field intensity in decibels referenced to 1 microvolt per meter (dBuV/m) is determined by algebraically adding the measured reading in dBuV, the antenna factor (dB), and cable loss (dB) and Subtracting the gain of preamplifier (dB) is auto calculate in spectrum analyzer.

$$(1) \text{ Amplitude (dBuV/m) = FI (dBuV) + AF (dBuV) + CL (dBuV) - Gain (dB)}$$

FI= Reading of the field intensity.

AF= Antenna factor.

CL= Cable loss.

P.S Amplitude is auto calculate in spectrum analyzer.

$$(2) \text{ Actual Amplitude (dBuV/m) = Amplitude (dBuV) - Dis(dB)}$$

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

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

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

8.5. Uncertainty

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

8.6. Test Result

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	12/04/2013
Frequency:	824.2 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-69.23	-5.04	-74.27	-13.00	-61.27	peak	H
260.0000	-63.36	-4.34	-67.70	-13.00	-54.70	peak	H
423.5000	-80.25	3.52	-76.73	-13.00	-63.73	peak	H
564.0000	-70.06	7.78	-62.28	-13.00	-49.28	peak	H
666.0000	-80.04	7.12	-72.92	-13.00	-59.92	peak	H
946.0000	-81.07	14.85	-66.22	-13.00	-53.22	peak	H
3184.000	-70.04	18.23	-51.81	-13.00	-38.81	peak	H
4768.000	-74.45	22.52	-51.93	-13.00	-38.93	peak	H
6832.000	-73.11	31.93	-41.18	-13.00	-28.18	peak	H
129.0000	-69.82	13.37	-56.45	-13.00	-43.45	peak	V
160.0000	-81.64	12.68	-68.96	-13.00	-55.96	peak	V
260.0000	-69.25	-1.56	-70.81	-13.00	-57.81	peak	V
390.0000	-74.53	1.48	-73.05	-13.00	-60.05	peak	V
450.0000	-75.31	1.57	-73.74	-13.00	-60.74	peak	V
709.0000	-75.52	10.49	-65.03	-13.00	-52.03	peak	V
2860.000	-71.24	19.22	-52.02	-13.00	-39.02	peak	V
4768.000	-72.14	26.69	-45.45	-13.00	-32.45	peak	V
6796.000	-73.50	30.02	-43.48	-13.00	-30.48	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	12/04/2013
Frequency:	836.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-67.54	-5.04	-72.58	-13.00	-59.58	peak	H
260.0000	-61.25	-4.34	-65.59	-13.00	-52.59	peak	H
395.5000	-80.80	2.15	-78.65	-13.00	-65.65	peak	H
507.0000	-77.55	7.21	-70.34	-13.00	-57.34	peak	H
564.0000	-70.34	7.78	-62.56	-13.00	-49.56	peak	H
695.5000	-75.38	6.96	-68.42	-13.00	-55.42	peak	H
2884.000	-71.00	17.45	-53.55	-13.00	-40.55	peak	H
4720.000	-73.98	22.27	-51.71	-13.00	-38.71	peak	H
6880.000	-74.41	32.12	-42.29	-13.00	-29.29	peak	H
129.0000	-70.27	13.37	-56.90	-13.00	-43.90	peak	V
201.5000	-81.81	9.97	-71.84	-13.00	-58.84	peak	V
260.0000	-69.61	-1.56	-71.17	-13.00	-58.17	peak	V
390.0000	-74.68	1.48	-73.20	-13.00	-60.20	peak	V
450.0000	-74.90	1.57	-73.33	-13.00	-60.33	peak	V
685.5000	-80.36	9.74	-70.62	-13.00	-57.62	peak	V
2800.000	-71.85	18.79	-53.06	-13.00	-40.06	peak	V
4684.000	-72.75	26.53	-46.22	-13.00	-33.22	peak	V
6844.000	-71.96	30.16	-41.80	-13.00	-28.80	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	1	Date:	12/04/2013
Frequency:	848.8 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-67.71	-5.04	-72.75	-13.00	-59.75	peak	H
156.0000	-73.71	0.18	-73.53	-13.00	-60.53	peak	H
260.0000	-61.83	-4.34	-66.17	-13.00	-53.17	peak	H
393.5000	-80.54	1.97	-78.57	-13.00	-65.57	peak	H
564.5000	-71.47	7.77	-63.70	-13.00	-50.70	peak	H
648.0000	-77.02	6.95	-70.07	-13.00	-57.07	peak	H
2848.000	-72.09	17.35	-54.74	-13.00	-41.74	peak	H
4768.000	-73.92	22.52	-51.40	-13.00	-38.40	peak	H
6784.000	-72.36	31.71	-40.65	-13.00	-27.65	peak	H
129.0000	-71.07	13.37	-57.70	-13.00	-44.70	peak	V
200.0000	-81.99	10.15	-71.84	-13.00	-58.84	peak	V
260.0000	-69.40	-1.56	-70.96	-13.00	-57.96	peak	V
390.0000	-74.82	1.48	-73.34	-13.00	-60.34	peak	V
520.0000	-76.60	3.11	-73.49	-13.00	-60.49	peak	V
731.5000	-78.32	10.65	-67.67	-13.00	-54.67	peak	V
2896.000	-71.24	19.48	-51.76	-13.00	-38.76	peak	V
4732.000	-73.95	26.62	-47.33	-13.00	-34.33	peak	V
6796.000	-73.73	30.02	-43.71	-13.00	-30.71	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	12/04/2013
Frequency:	1850.2 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-68.84	-5.04	-73.88	-13.00	-60.88	peak	H
200.0000	-77.70	2.95	-74.75	-13.00	-61.75	peak	H
260.0000	-62.83	-4.34	-67.17	-13.00	-54.17	peak	H
507.0000	-78.85	7.21	-71.64	-13.00	-58.64	peak	H
669.0000	-79.81	7.09	-72.72	-13.00	-59.72	peak	H
936.0000	-81.28	14.84	-66.44	-13.00	-53.44	peak	H
3268.000	-69.02	18.46	-50.56	-13.00	-37.56	peak	H
4876.000	-72.22	23.09	-49.13	-13.00	-36.13	peak	H
6832.000	-72.27	31.93	-40.34	-13.00	-27.34	peak	H
129.0000	-71.63	13.37	-58.26	-13.00	-45.26	peak	V
202.0000	-81.98	9.91	-72.07	-13.00	-59.07	peak	V
260.0000	-73.41	-1.56	-74.97	-13.00	-61.97	peak	V
390.0000	-74.40	1.48	-72.92	-13.00	-59.92	peak	V
520.0000	-76.54	3.11	-73.43	-13.00	-60.43	peak	V
767.0000	-79.28	11.07	-68.21	-13.00	-55.21	peak	V
2908.000	-72.44	19.57	-52.87	-13.00	-39.87	peak	V
4768.000	-72.12	26.69	-45.43	-13.00	-32.43	peak	V
7036.000	-73.12	30.62	-42.50	-13.00	-29.50	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	12/04/2013
Frequency:	1880.0 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-69.15	-5.04	-74.19	-13.00	-61.19	peak	H
159.5000	-75.66	1.30	-74.36	-13.00	-61.36	peak	H
260.0000	-62.51	-4.34	-66.85	-13.00	-53.85	peak	H
417.5000	-81.06	3.32	-77.74	-13.00	-64.74	peak	H
546.0000	-79.78	8.12	-71.66	-13.00	-58.66	peak	H
896.0000	-80.16	13.89	-66.27	-13.00	-53.27	peak	H
2752.000	-68.97	17.12	-51.85	-13.00	-38.85	peak	H
4732.000	-73.16	22.32	-50.84	-13.00	-37.84	peak	H
6844.000	-73.53	31.98	-41.55	-13.00	-28.55	peak	H
129.0000	-70.84	13.37	-57.47	-13.00	-44.47	peak	V
204.0000	-81.40	9.66	-71.74	-13.00	-58.74	peak	V
312.0000	-77.87	1.71	-76.16	-13.00	-63.16	peak	V
520.0000	-77.30	3.11	-74.19	-13.00	-61.19	peak	H
630.5000	-80.53	8.76	-71.77	-13.00	-58.77	peak	V
932.5000	-80.95	12.40	-68.55	-13.00	-55.55	peak	V
3040.000	-71.53	20.46	-51.07	-13.00	-38.07	peak	V
4816.000	-72.57	26.78	-45.79	-13.00	-32.79	peak	V
6892.000	-74.27	30.27	-44.00	-13.00	-31.00	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	2	Date:	12/04/2013
Frequency:	1909.8 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-69.29	-5.04	-74.33	-13.00	-61.33	peak	H
160.0000	-75.44	1.45	-73.99	-13.00	-60.99	peak	H
260.0000	-62.25	-4.34	-66.59	-13.00	-53.59	peak	H
520.0000	-79.08	7.65	-71.43	-13.00	-58.43	peak	H
663.5000	-80.56	7.14	-73.42	-13.00	-60.42	peak	H
915.0000	-81.33	14.58	-66.75	-13.00	-53.75	peak	H
2800.000	-70.40	17.24	-53.16	-13.00	-40.16	peak	H
4756.000	-71.95	22.45	-49.50	-13.00	-36.50	peak	H
6724.000	-72.79	31.45	-41.34	-13.00	-28.34	peak	H
129.0000	-71.46	13.37	-58.09	-13.00	-45.09	peak	V
200.5000	-82.25	10.08	-72.17	-13.00	-59.17	peak	V
260.0000	-69.86	-1.56	-71.42	-13.00	-58.42	peak	V
400.0000	-78.69	1.33	-77.36	-13.00	-64.36	peak	V
663.5000	-80.32	9.42	-70.90	-13.00	-57.90	peak	V
812.0000	-80.58	11.51	-69.07	-13.00	-56.07	peak	V
2956.000	-71.81	19.90	-51.91	-13.00	-38.91	peak	V
4804.000	-73.18	26.75	-46.43	-13.00	-33.43	peak	V
6892.000	-75.01	30.27	-44.74	-13.00	-31.74	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	12/03/2013
Frequency:	1852.4 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-73.05	-5.04	-78.09	-13.00	-65.09	peak	H
260.0000	-72.06	-4.34	-76.40	-13.00	-63.40	peak	H
400.0000	-79.40	2.55	-76.85	-13.00	-63.85	peak	H
534.0000	-80.49	8.09	-72.40	-13.00	-59.40	peak	H
658.5000	-80.07	7.13	-72.94	-13.00	-59.94	peak	H
873.5000	-81.09	13.15	-67.94	-13.00	-54.94	peak	H
2884.000	-72.80	17.45	-55.35	-13.00	-42.35	peak	H
4864.000	-73.14	23.04	-50.10	-13.00	-37.10	peak	H
6700.000	-73.79	31.34	-42.45	-13.00	-29.45	peak	H
126.0000	-70.14	10.40	-59.74	-13.00	-46.74	peak	V
160.0000	-76.73	12.68	-64.05	-13.00	-51.05	peak	V
200.5000	-80.58	10.08	-70.50	-13.00	-57.50	peak	V
400.0000	-72.47	1.33	-71.14	-13.00	-58.14	peak	V
490.0000	-74.32	2.56	-71.76	-13.00	-58.76	peak	V
632.5000	-79.34	8.72	-70.62	-13.00	-57.62	peak	V
2992.000	-70.17	20.17	-50.00	-13.00	-37.00	peak	V
4804.000	-72.79	26.75	-46.04	-13.00	-33.04	peak	V
6784.000	-74.10	29.99	-44.11	-13.00	-31.11	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	12/03/2013
Frequency:	1880.0 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-72.63	-5.04	-77.67	-13.00	-64.67	peak	H
227.0000	-76.35	-0.80	-77.15	-13.00	-64.15	peak	H
260.0000	-70.89	-4.34	-75.23	-13.00	-62.23	peak	H
400.0000	-76.80	2.55	-74.25	-13.00	-61.25	peak	H
547.0000	-80.63	8.10	-72.53	-13.00	-59.53	peak	H
868.5000	-80.56	13.10	-67.46	-13.00	-54.46	peak	H
3004.000	-71.91	17.74	-54.17	-13.00	-41.17	peak	H
4852.000	-73.02	22.97	-50.05	-13.00	-37.05	peak	H
6796.000	-74.56	31.76	-42.80	-13.00	-29.80	peak	H
126.0000	-68.99	10.40	-58.59	-13.00	-45.59	peak	V
161.5000	-76.49	11.27	-65.22	-13.00	-52.22	peak	V
200.5000	-81.54	10.08	-71.46	-13.00	-58.46	peak	V
400.0000	-72.59	1.33	-71.26	-13.00	-58.26	peak	V
490.0000	-73.32	2.56	-70.76	-13.00	-57.76	peak	V
760.0000	-78.73	10.96	-67.77	-13.00	-54.77	peak	V
2956.000	-72.05	19.90	-52.15	-13.00	-39.15	peak	V
4684.000	-73.24	26.53	-46.71	-13.00	-33.71	peak	V
6784.000	-72.61	29.99	-42.62	-13.00	-29.62	peak	V

Standard:	FCC Part 24	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	5	Date:	12/03/2013
Frequency:	1907.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-72.85	-5.04	-77.89	-13.00	-64.89	peak	H
260.0000	-71.04	-4.34	-75.38	-13.00	-62.38	peak	H
400.0000	-77.10	2.55	-74.55	-13.00	-61.55	peak	H
490.0000	-79.01	6.35	-72.66	-13.00	-59.66	peak	H
780.0000	-79.11	10.19	-68.92	-13.00	-55.92	peak	H
932.0000	-80.57	14.81	-65.76	-13.00	-52.76	peak	H
3004.000	-70.34	17.74	-52.60	-13.00	-39.60	peak	H
4768.000	-73.82	22.52	-51.30	-13.00	-38.30	peak	H
6700.000	-74.39	31.34	-43.05	-13.00	-30.05	peak	H
126.0000	-69.91	10.40	-59.51	-13.00	-46.51	peak	V
163.5000	-74.01	9.37	-64.64	-13.00	-51.64	peak	V
200.0000	-80.46	10.15	-70.31	-13.00	-57.31	peak	V
400.0000	-71.83	1.33	-70.50	-13.00	-57.50	peak	V
490.0000	-73.75	2.56	-71.19	-13.00	-58.19	peak	V
731.5000	-78.34	10.65	-67.69	-13.00	-54.69	peak	V
2764.000	-72.51	18.53	-53.98	-13.00	-40.98	peak	V
4228.000	-72.65	25.19	-47.46	-13.00	-34.46	peak	V
6364.000	-75.05	28.83	-46.22	-13.00	-33.22	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	6	Date:	12/03/2013
Frequency:	826.4 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-71.03	-5.04	-76.07	-13.00	-63.07	peak	H
234.0000	-75.87	-1.38	-77.25	-13.00	-64.25	peak	H
260.0000	-70.62	-4.34	-74.96	-13.00	-61.96	peak	H
400.0000	-76.96	2.55	-74.41	-13.00	-61.41	peak	H
490.0000	-79.17	6.35	-72.82	-13.00	-59.82	peak	H
729.5000	-80.70	7.82	-72.88	-13.00	-59.88	peak	H
3004.000	-72.59	17.74	-54.85	-13.00	-41.85	peak	H
4384.000	-72.54	20.87	-51.67	-13.00	-38.67	peak	H
6688.000	-73.47	31.29	-42.18	-13.00	-29.18	peak	H
126.0000	-69.14	10.40	-58.74	-13.00	-45.74	peak	V
160.0000	-78.24	12.68	-65.56	-13.00	-52.56	peak	V
200.0000	-81.94	10.15	-71.79	-13.00	-58.79	peak	V
400.0000	-72.15	1.33	-70.82	-13.00	-57.82	peak	V
490.0000	-75.04	2.56	-72.48	-13.00	-59.48	peak	V
650.0000	-79.80	9.00	-70.80	-13.00	-57.80	peak	V
3124.000	-69.96	20.95	-49.01	-13.00	-36.01	peak	V
4756.000	-72.36	26.66	-45.70	-13.00	-32.70	peak	V
6820.000	-73.39	30.10	-43.29	-13.00	-30.29	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	6	Date:	12/03/2013
Frequency:	836.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-71.93	-5.04	-76.97	-13.00	-63.97	peak	H
200.0000	-81.04	2.95	-78.09	-13.00	-65.09	peak	H
260.0000	-70.99	-4.34	-75.33	-13.00	-62.33	peak	H
400.0000	-75.42	2.55	-72.87	-13.00	-59.87	peak	H
520.0000	-79.79	7.65	-72.14	-13.00	-59.14	peak	H
676.0000	-79.53	7.05	-72.48	-13.00	-59.48	peak	H
2896.000	-71.72	17.47	-54.25	-13.00	-41.25	peak	H
4780.000	-73.54	22.57	-50.97	-13.00	-37.97	peak	H
6700.000	-73.26	31.34	-41.92	-13.00	-28.92	peak	H
126.0000	-68.85	10.40	-58.45	-13.00	-45.45	peak	V
165.5000	-73.26	7.48	-65.78	-13.00	-52.78	peak	V
200.0000	-81.68	10.15	-71.53	-13.00	-58.53	peak	V
260.0000	-73.99	-1.56	-75.55	-13.00	-62.55	peak	V
400.0000	-71.98	1.33	-70.65	-13.00	-57.65	peak	V
490.0000	-73.38	2.56	-70.82	-13.00	-57.82	peak	V
2908.000	-72.85	19.57	-53.28	-13.00	-40.28	peak	V
4468.000	-74.33	26.09	-48.24	-13.00	-35.24	peak	V
6748.000	-73.50	29.89	-43.61	-13.00	-30.61	peak	V

Standard:	FCC Part 22	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	6	Date:	12/03/2013
Frequency:	846.6 MHz	Test By:	Fly Lu

Frequency (MHz)	Reading (dBm)	Correct Factor (dB)	Result (dBm)	Limit (dBm)	Margin (dB)	Remark	Ant.Polar. H / V
126.0000	-73.00	-5.04	-78.04	-13.00	-65.04	peak	H
227.0000	-77.42	-0.80	-78.22	-13.00	-65.22	peak	H
260.0000	-71.25	-4.34	-75.59	-13.00	-62.59	peak	H
400.0000	-78.43	2.55	-75.88	-13.00	-62.88	peak	H
522.0000	-80.39	7.72	-72.67	-13.00	-59.67	peak	H
737.0000	-80.70	8.09	-72.61	-13.00	-59.61	peak	H
3436.000	-71.27	18.90	-52.37	-13.00	-39.37	peak	H
5380.000	-73.99	25.50	-48.49	-13.00	-35.49	peak	H
6640.000	-71.91	31.07	-40.84	-13.00	-27.84	peak	H
126.0000	-68.15	10.40	-57.75	-13.00	-44.75	peak	V
160.0000	-77.31	12.68	-64.63	-13.00	-51.63	peak	V
200.0000	-79.99	10.15	-69.84	-13.00	-56.84	peak	V
400.0000	-70.98	1.33	-69.65	-13.00	-56.65	peak	V
490.0000	-73.75	2.56	-71.19	-13.00	-58.19	peak	V
624.0000	-79.67	8.83	-70.84	-13.00	-57.84	peak	V
2908.000	-73.25	19.57	-53.68	-13.00	-40.68	peak	V
4768.000	-72.62	26.69	-45.93	-13.00	-32.93	peak	V
6820.000	-73.38	30.10	-43.28	-13.00	-30.28	peak	V

Standard:	RSS-Gen	Test Distance:	3m
Test item:	Radiated Emission	Power:	DC 3.8V
Model Number:	HE920-NA	Temp.(°C)/Hum.(%RH):	26(°C)/60%RH
Mode:	7	Date:	12/03/2013
		Test By:	Fly Lu

Frequency (MHz)	Reading (dBuV)	Correct Factor (dB/m)	Result (dBuV/m)	Limit (dBuV/m)	Margin (dB)	Remark	Ant.Polar. H / V
2799.000	34.37	5.40	39.77	74.00	-34.23	peak	H
4619.000	33.29	11.19	44.48	74.00	-29.52	peak	H
6663.000	32.14	18.21	50.35	74.00	-23.65	peak	H
2778.000	36.90	5.34	42.24	74.00	-31.76	peak	V
4612.000	34.52	11.16	45.68	74.00	-28.32	peak	V
6761.000	32.22	18.70	50.92	74.00	-23.08	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.

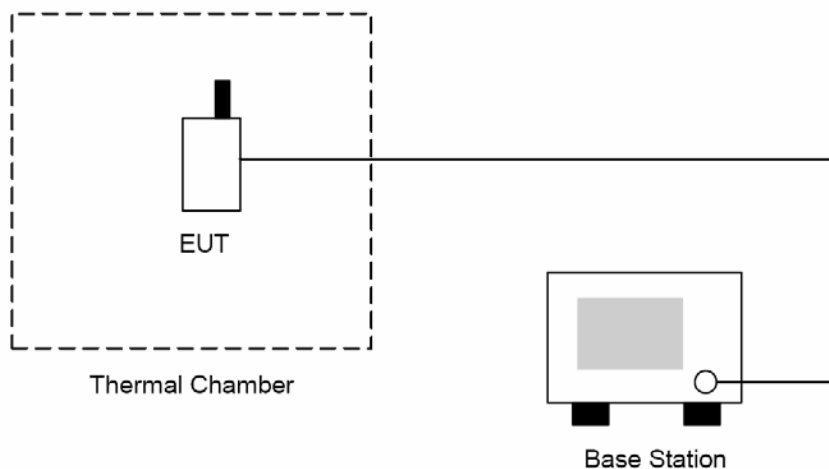
9.2. Test Instruments

Equipment	Manufacturer	Model Number	Serial Number	Cal. Date	Remark
Universal Radio Communication Tester	R & S	CMU200	109369	08/07/2012	(2)
Temperature & Humidity Chamber	TAICHY	MHU-225LA	980729	08/07/2013	(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	HE920-NA					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 1					
Date of Test	12/04/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.80	-20	-14	-0.017	±2.5	Pass
Normal	3.80	-10	-6	-0.007	±2.5	Pass
Normal	3.80	0	-4	-0.005	±2.5	Pass
Normal	3.80	10	9	0.011	±2.5	Pass
High Voltage	4.20	20	14	0.017	±2.5	Pass
Normal	3.80	20	19	0.023	±2.5	Pass
Low Voltage	3.40	20	-5	-0.006	±2.5	Pass
Normal	3.80	30	21	0.025	±2.5	Pass
Normal	3.80	40	14	0.017	±2.5	Pass
Normal	3.80	50	-7	-0.008	±2.5	Pass
Normal	3.80	55	5	0.006	±2.5	Pass

Model Number	HE920-NA					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 2					
Date of Test	12/04/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.80	-20	41	0.022	±2.5	Pass
Normal	3.80	-10	45	0.024	±2.5	Pass
Normal	3.80	0	49	0.026	±2.5	Pass
Normal	3.80	10	53	0.028	±2.5	Pass
High Voltage	4.20	20	50	0.027	±2.5	Pass
Normal	3.80	20	49	0.026	±2.5	Pass
Low Voltage	3.40	20	26	0.014	±2.5	Pass
Normal	3.80	30	33	0.018	±2.5	Pass
Normal	3.80	40	21	0.011	±2.5	Pass
Normal	3.80	50	43	0.023	±2.5	Pass
Normal	3.80	55	55	0.029	±2.5	Pass

Model Number	HE920-NA					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 5					
Date of Test	11/27/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.80	-20	-24	-0.013	±2.5	Pass
Normal	3.80	-10	-7	-0.004	±2.5	Pass
Normal	3.80	0	-17	-0.009	±2.5	Pass
Normal	3.80	10	-5	-0.003	±2.5	Pass
High Voltage	4.20	20	45	0.024	±2.5	Pass
Normal	3.80	20	37	0.020	±2.5	Pass
Low Voltage	3.40	20	-22	-0.012	±2.5	Pass
Normal	3.80	30	29	0.015	±2.5	Pass
Normal	3.80	40	19	0.010	±2.5	Pass
Normal	3.80	50	23	0.012	±2.5	Pass
Normal	3.80	55	46	0.024	±2.5	Pass

Model Number	HE920-NA					
Test Item	Frequency Stability (Temperature & Voltage Variation)					
Test Mode	Mode 6					
Date of Test	11/27/2013				Test Site	TE05
Level	Voltage [Vdc]	Temperature (°C)	Deviation (Hz)	Deviation (ppm)	Limit (ppm)	Result
Normal	3.80	-20	-13	-0.016	±2.5	Pass
Normal	3.80	-10	-8	-0.010	±2.5	Pass
Normal	3.80	0	-5	-0.006	±2.5	Pass
Normal	3.80	10	-15	-0.018	±2.5	Pass
High Voltage	4.20	20	-19	-0.023	±2.5	Pass
Normal	3.80	20	-6	-0.007	±2.5	Pass
Low Voltage	3.40	20	5	0.006	±2.5	Pass
Normal	3.80	30	6	0.007	±2.5	Pass
Normal	3.80	40	3	0.004	±2.5	Pass
Normal	3.80	50	-19	-0.023	±2.5	Pass
Normal	3.80	55	9	0.011	±2.5	Pass