



TEST REPORT

According to

FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E

Applicant	:	AIR S.R.L.
Address	:	Corrientes 733 - Rosario - Santa Fe, Argentina (ZIP CODE: 2000)
Manufacturer	:	GREEN CONNECT INTERNATIONAL CORP.
Address	:	4F., NO.87, LN.87, SEC.1, SIHCHUAN RD., BANCIAO DIST., NEW TAIPEI CITY 22063, TAIWAN
Equipment	:	CX Phone
Model No.	:	CX502E
Trade Name	:	CX

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History of this test report

☒ ORIGINAL

☐ Additional attachment as following record:



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Model No.	: CX502E
Trade Name	: CX

I HEREBY CERTIFY THAT :

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 – 2009 and TIA/EIA 603** and the energy emitted by this equipment was **passed** **FCC Rule FCC PART 22 Subpart H and PART 24 Subpart E** in both radiated and conducted emission limits.

Testing was carried out on Jun 09, 2015 at **Cerpass Technology Corp.**

Signature

Miro Chueh/ Technical director




1. Report of Measurements and Examinations

FCC 47 CFR PART 22 SUBPART H AND PART 24 SUBPART E ANSI C63.4: 2009,TIA/EIA 603		
Test Parameter	Test Performed	Remark
Conducted Emission	YES	PASS
Field Strength of Spurious Radiation Measurement	YES	PASS
Occupied Bandwidth	YES	PASS
Maximum Peak Output Power	YES	PASS
ERP & EIRP Measurement	YES	PASS
Out of Band Emission at Antenna Terminals	YES	PASS
Peak-Average Ratio	YES	PASS
Frequency Stability V.S. Temperature Measurement	YES	PASS
Reguency Stability V.S. Voltage Measurement	YES	PASS

2. Test Configuration of Equipment under Test

2.1. Feature of Equipment under Test

CX Phone	Model No:	CX502E
Operation Frequency Range	GSM /GPRS/EDGE 850:824.2MHz-848.8MHz GSM /GPRS/EDGE 1900:1850.2MHz-1909.8MHz	
EUT Power Rating:	DC 3.7V supplied by battery and DC5V supplied by adapter	
Adapter Spec.	Manufacturer:	SHENZHEN FUJIA APPLIANCE CO., LTD.
	Model No.:	FJ-SW1160501000UA
	Input Rating:	100-240Vac 50/60Hz 0.3A Max
	Output Rating:	5V  1000mA



2.2. Test Manner

Test Manner

- | | |
|---|--|
| a | During testing, the interface cables and equipment positions were varied according to 47 CFR, Part 2, PART 22 Subpart H and PART 24 Subpart E. |
| b | Adjust the EUT at the test mode and the test channel. Then test. |

The test modes:

The EUT had been tested under operating condition.

After verification, all tests were carried out with the worst case test modes as shown below except radiated spurious emission below 1GHz and power line conducted emissions below 30MHz, which worst case was in normal link mode only.

EUT staying in continuous transmitting mode was programmed.

GSM 850:

Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing.

GSM 1900:

Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.

GPRS 850:

Channel Low (CH128), Channel Mid (CH190) and Channel High (CH251) were chosen for full testing.

GPRS 1900:

Channel Low (CH512), Channel Mid (CH661) and Channel High (CH810) were chosen for full testing.

2.3. Description of Test System

No.	Device	Manufacturer	Model No.	Description
1	N/A	N/A	N/A	N/A

**2.4. General Information of Test**

<input type="checkbox"/>	Test Site	CerpPASS Technology Corporation Test Laboratory Address: No.10, Ln. 2, Lianfu St., Luzhu Dist., Taoyuan City 33848, Taiwan (R.O.C.) Tel: +886-3-3226-888 Fax: +886-3-3226-881 Address: No.68-1, Shihbachongsi, Shihding Township, New Taipei City 223, Taiwan, R.O.C. Tel: +886-2-2663-8582
	FCC	TW1079, TW1061, 390316, 228391, 641184
	IC	4934B-1, 4934E-1, 4934E-2
	VCCI	T-2205 for Telecommunication Test C-4663 for Conducted emission test R-3428, R-4218 for Radiated emission test G-812, G-813 for radiated disturbance above 1GHz
<input checked="" type="checkbox"/>	Test Site	CerpPASS Technology (Suzhou) Co.,Ltd Address: No.66, Tangzhuang Road, Suzhou Industrial Park, Jiangsu 215006, China Tel: +86-512-6917-5888 Fax: +86-512-6917-5666
	FCC	916572, 331395
	IC	7290A-1, 7290A-2
	VCCI	T-343 for Telecommunication Test C-2919 for Conducted emission test R-2670 for Radiated emission test G-227 for radiated disturbance above 1GHz

2.5. Measurement Uncertainty

Measurement Item	Measurement Frequency	Polarization	Uncertainty
Conducted Emission	9 kHz ~ 30 MHz	LINE/NEUTRAL	±2.71 dB
Radiated Emission	30 MHz ~ 25GHz	Vertical	±4.11 dB
		Horizontal	±4.10 dB
Occupied Bandwidth	---	---	±7500 Hz
Maximum Peak Output Power	---	---	±1.4 dB
Band GPRSs	---	---	±2.2 dB
Power Spectral Density	---	---	±2.2 dB

3. Test of Conducted Emission

3.1. Test Limit

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 KHz on the 120 VAC power and return leads of the EUT according to the methods defined in ANSI C63.4-2003 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 2.2. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

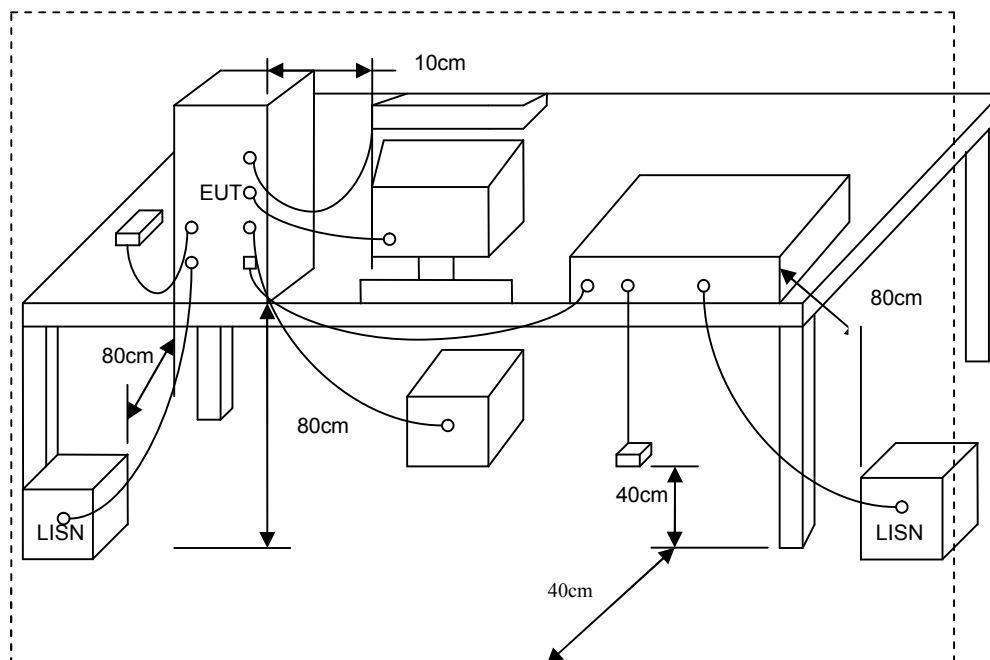
Frequency (MHz)	Quasi Peak (dB μ V)	Average (dB μ V)
0.15 – 0.5	66-56*	56-46*
0.5 – 5.0	56	46
5.0 – 30.0	60	50

*Decreases with the logarithm of the frequency.

3.2. Test Procedures

1. The EUT was placed on a table, which is 0.8m above ground plane.
2. Maximum procedure was performed on the six highest emissions to ensure EUT compliance.
3. Repeat above procedures until all frequency measured were complete.

3.3. Typical Test Setup



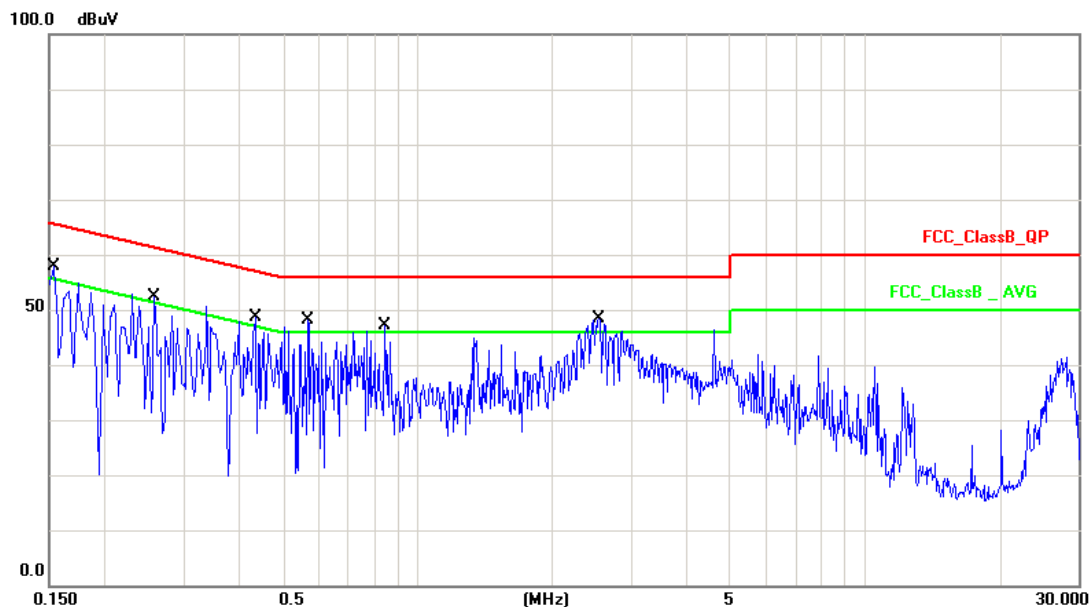
**3.4. Measurement Equipment**

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date.
Test Receiver	R&S	ESCI	100565	2015.03.24	2016.03.23
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
AMN	R&S	ESH2-Z5	100182	2014.09.04	2015.09.03
Two-Line V-Network	R&S	ENV216	100325	2014.12.04	2015.12.05
ISN	FCC	FCC-TLISN-T2-02	20379	2015.03.24	2016.03.23
ISN	FCC	FCC-TLISN-T4-02	20380	2015.03.24	2016.03.23
ISN	FCC	FCC-TLISN-T8-02	20381	2015.03.24	2016.03.23
ISN	TESEQ	ISN ST08	30175	2015.03.24	2016.03.23
Current Probe	R&S	EZ-17	100303	2015.04.04	2016.04.03
Passive Voltage Probe	R&S	ESH2-Z3	100026	2015.03.24	2016.03.23
Pulse Limiter	R&S	ESH3-Z2	100529	2015.03.24	2016.03.23
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-004	2015.03.31	2016.03.30



3.5. Test Result and Data

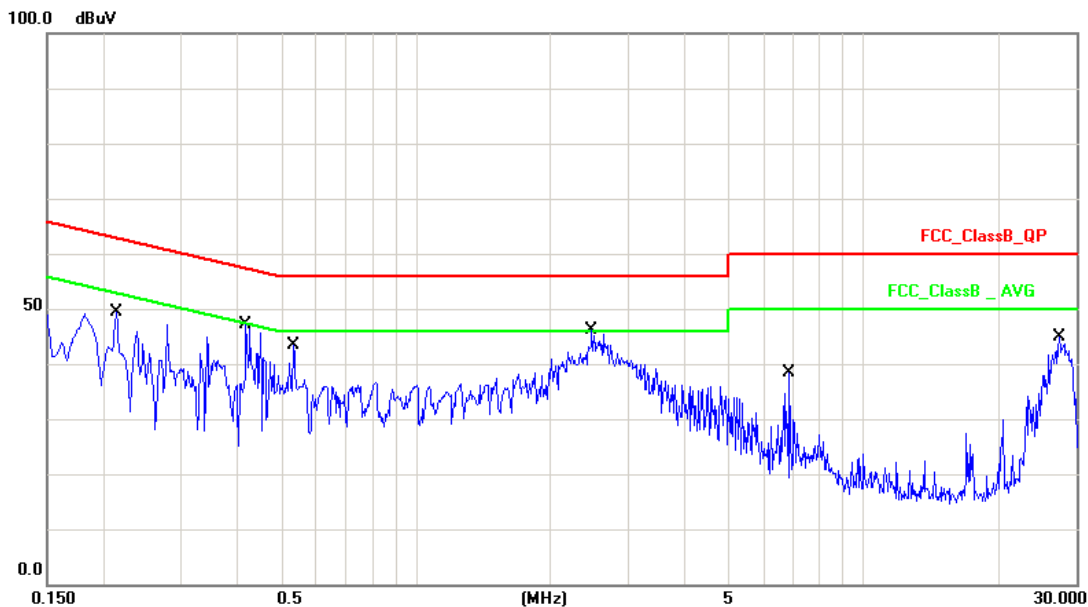
Test Item	Conduction Emission
Product	CX502E
Test Mode	Normal Link
Phase	Line
Test Date	2015/06/23



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.1539	10.13	23.46	33.59	65.78	-32.19	QP
2	0.1539	10.13	2.21	12.34	55.78	-43.44	AVG
3	0.2580	10.13	20.11	30.24	61.49	-31.25	QP
4	0.2580	10.13	10.25	20.38	51.49	-31.11	AVG
5	0.4340	10.15	22.62	32.77	57.18	-24.41	QP
6	0.4340	10.15	9.10	19.25	47.18	-27.93	AVG
7	0.5700	10.16	14.85	25.01	56.00	-30.99	QP
8	0.5700	10.16	-2.37	7.79	46.00	-38.21	AVG
9	0.8460	10.15	26.94	37.09	56.00	-18.91	QP
10	0.8460	10.15	13.13	23.28	46.00	-22.72	AVG
11	2.5420	10.18	42.05	52.23	56.00	-3.77	QP
12	2.5420	10.18	21.87	32.05	46.00	-13.95	AVG



Test Item	Conduction Emission
Product	CX502E
Test Mode	Normal Link
Phase	Neutral
Test Date	2015/06/23



No.	Frequency (MHz)	Factor (dB)	Reading (dBuV)	Level (dBuV)	Limit (dBuV)	Margin (dB)	Detector
1	0.2140	10.13	32.69	42.82	63.04	-20.22	QP
2	0.2140	10.13	9.28	19.41	53.04	-33.63	AVG
3	0.4180	10.15	25.66	35.81	57.49	-21.68	QP
4	0.4180	10.15	1.19	11.34	47.49	-36.15	AVG
5	0.5340	10.15	23.10	33.25	56.00	-22.75	QP
6	0.5340	10.15	4.08	14.23	46.00	-31.77	AVG
7	2.4780	10.19	32.05	42.24	56.00	-13.76	QP
8	2.4780	10.19	12.54	22.73	46.00	-23.27	AVG
9	6.8460	10.27	4.11	14.38	60.00	-45.62	QP
10	6.8460	10.27	-3.26	7.01	50.00	-42.99	AVG
11	27.4740	10.31	30.29	40.60	60.00	-19.40	QP
12	27.4740	10.31	18.95	29.26	50.00	-20.74	AVG

Note: Measurement Level = Reading Level + Correct Factor



4. Occupied Bandwidth

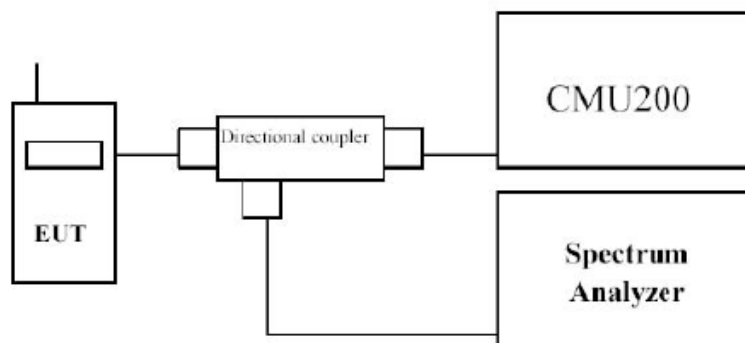
4.1. Test Limit

According to §FCC 2.1049.

4.2. Test Procedures

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW is set to 3 times the RBW, -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

4.3. Test Setup Layout



4.4. Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	Agilent	E4407B	MY44211883	2014.09.12	2015.09.11
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30



4.5. Test Result and Data

Test Item	Occupied Channel Bandwidth
Test Mode	GSM 850
Test Date	2015-06-22

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
128	824.20	306.567	241.955
189	836.40	312.650	243.884
251	848.80	314.244	244.371

Figure Channel 128 (824.20MHz)

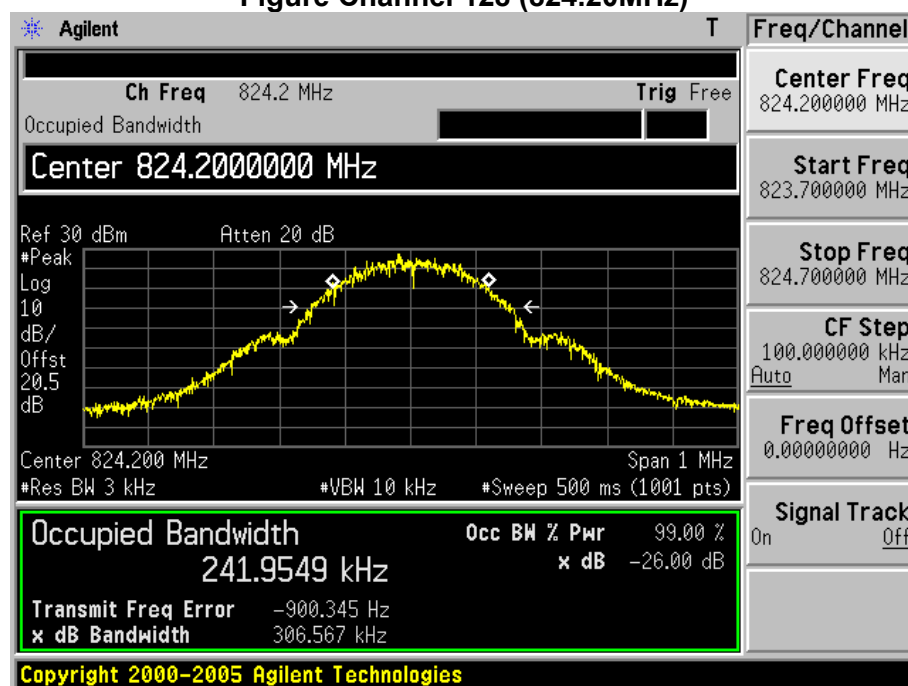




Figure Channel 189 (836.40MHz)

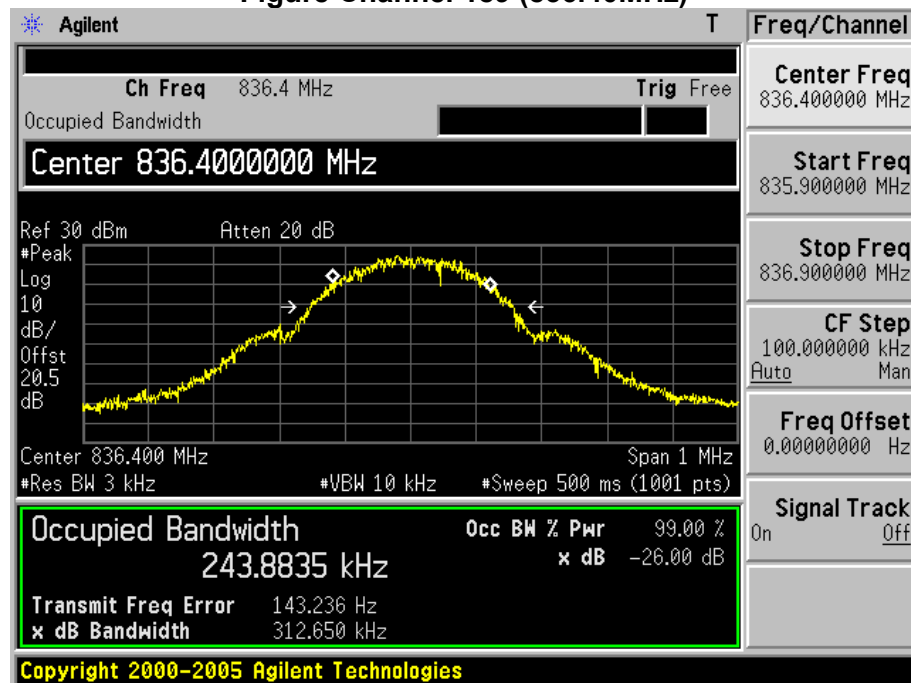
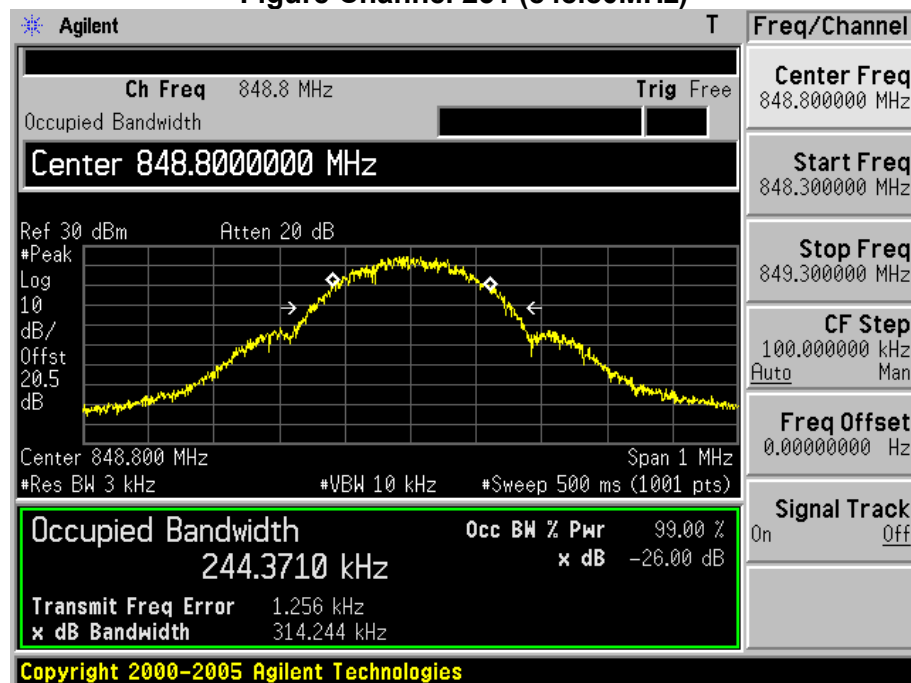


Figure Channel 251 (848.80MHz)





Test Item	Occupied Channel Bandwidth
Test Mode	GSM 1900
Test Date	2015-06-22

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
512	1850.20	319.605	245.780
661	1880.00	314.930	243.757
810	1909.80	318.707	242.893

Figure Channel 512 (1850.20MHz)

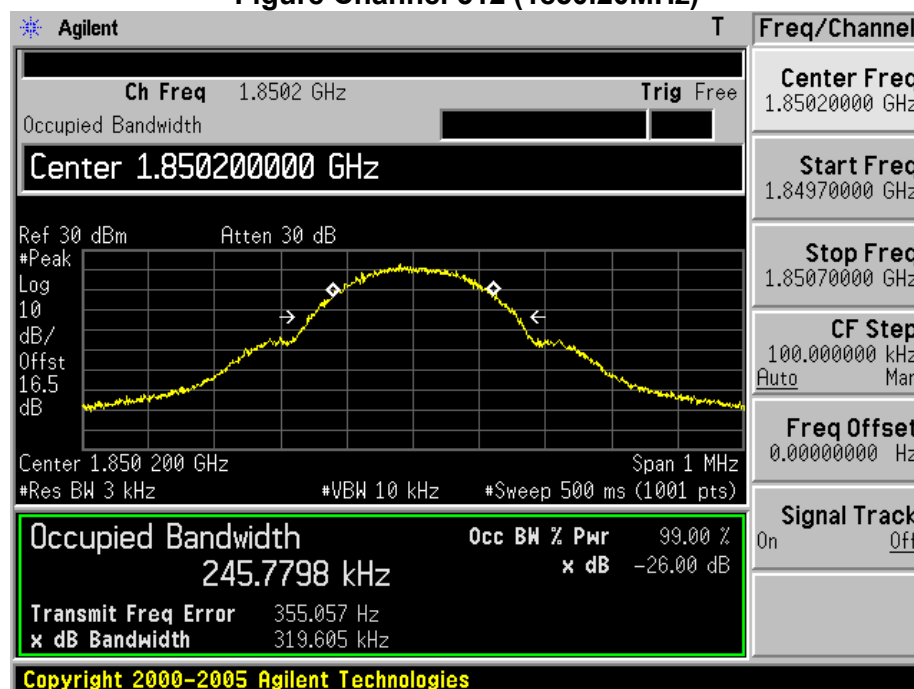




Figure Channel 661 (1880.00MHz)

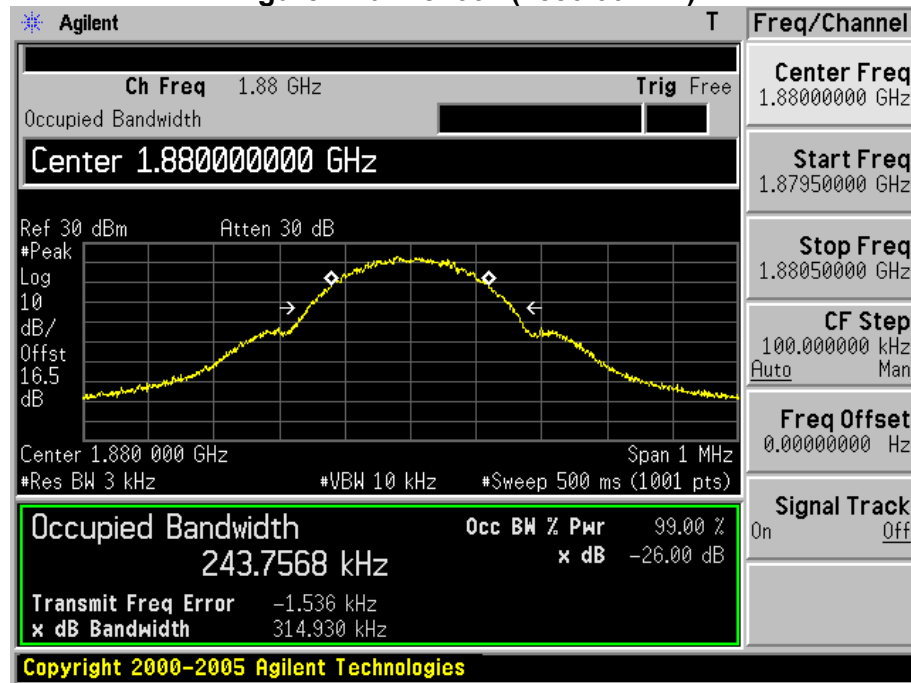
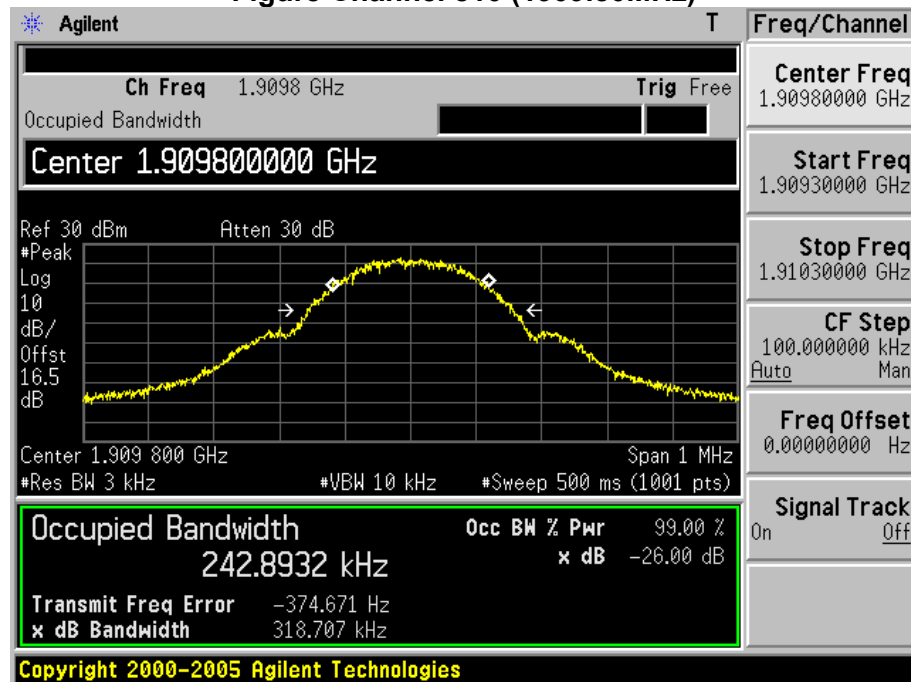


Figure Channel 810 (1909.80MHz)





Test Item	Occupied Channel Bandwidth
Test Mode	GPRS 850
Test Date	2015-06-22

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
128	824.20	305.801	239.063
189	836.40	317.538	245.885
251	848.80	292.724	241.133

Figure Channel 128 (824.20MHz)

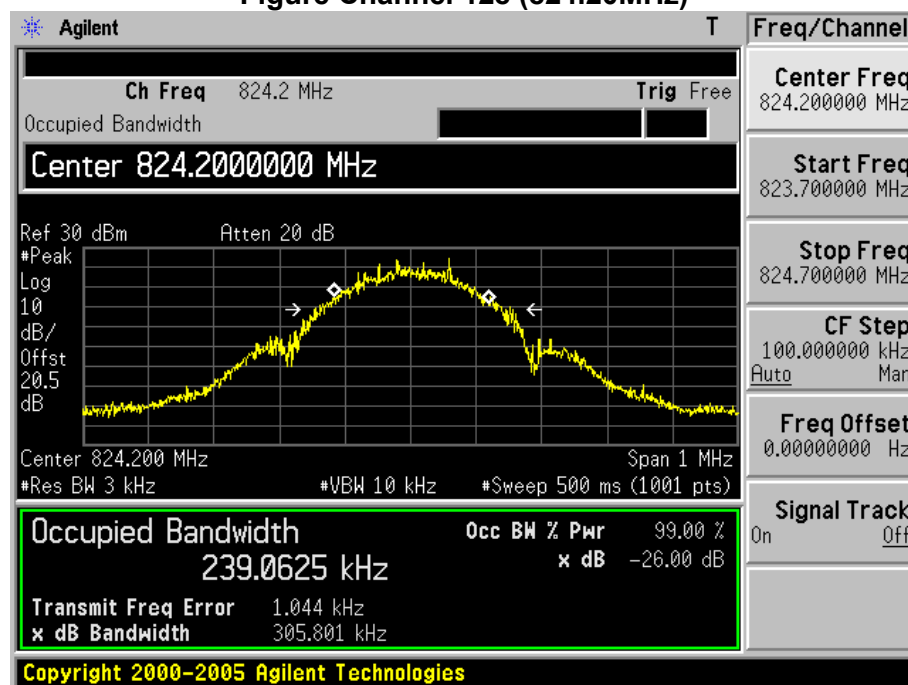




Figure Channel 189 (836.40MHz)

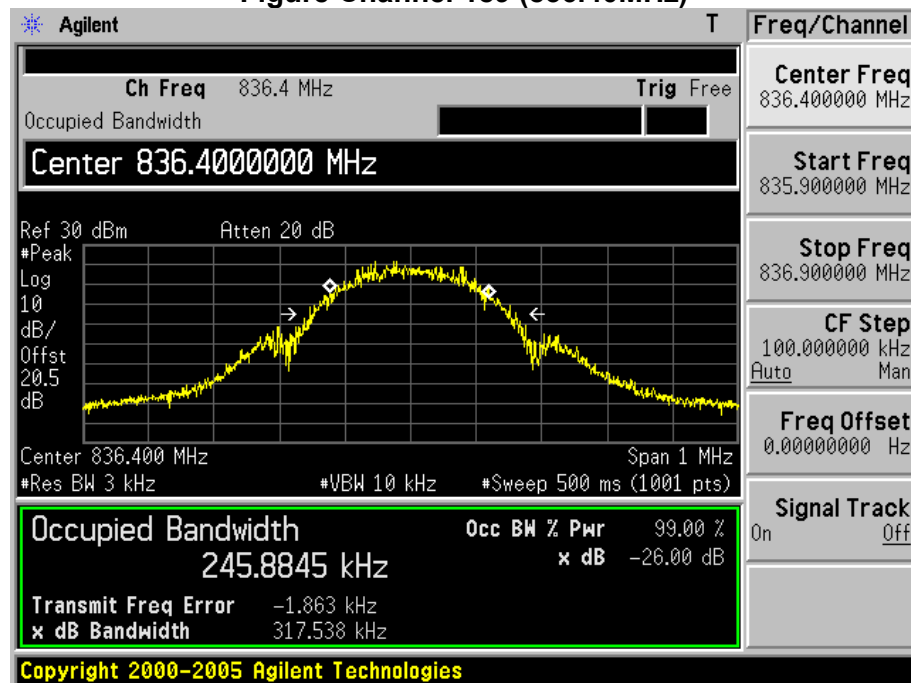
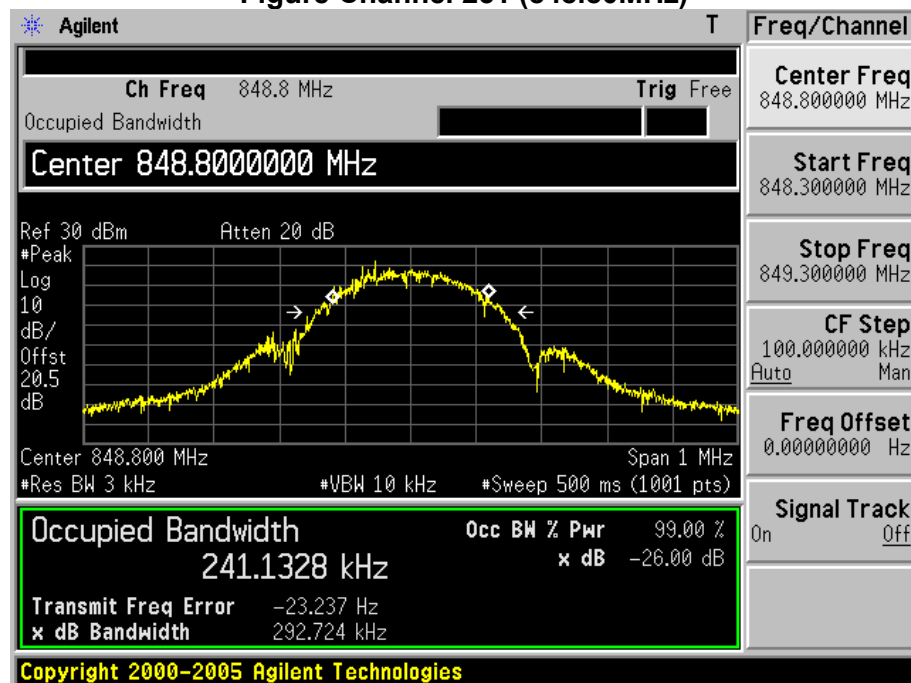


Figure Channel 251 (848.80MHz)





Test Item	Occupied Channel Bandwidth
Test Mode	GPRS 1900
Test Date	2015-06-22

Channel No.	Frequency (MHz)	-26dB Occupied Bandwidth (kHz)	99% Occupied Bandwidth (kHz)
512	1850.20	317.441	247.204
661	1880.00	301.871	246.979
810	1909.80	308.863	242.683

Figure Channel 512 (1850.20MHz)

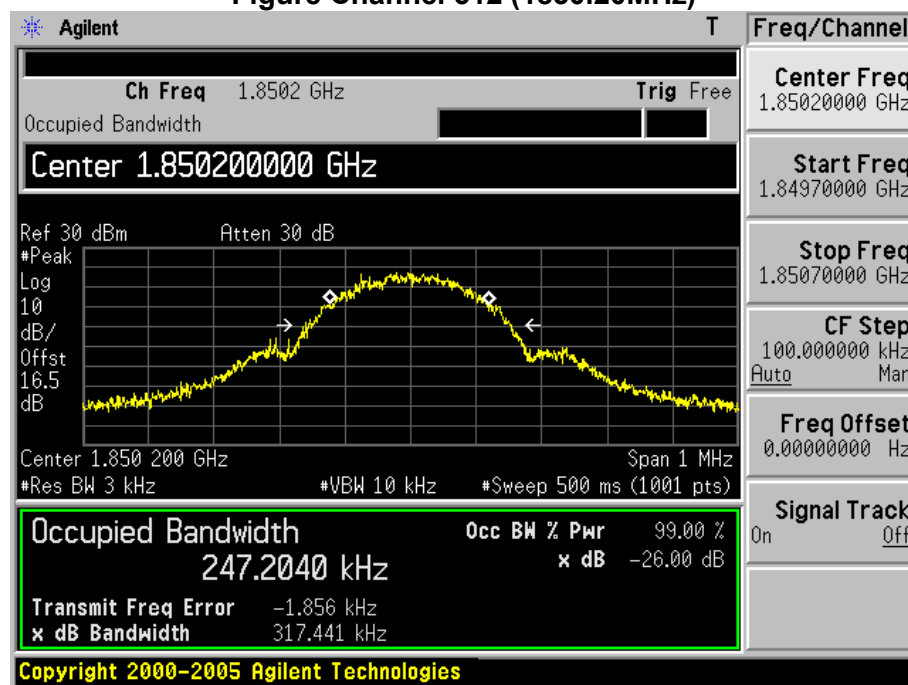




Figure Channel 661 (1880.00MHz)

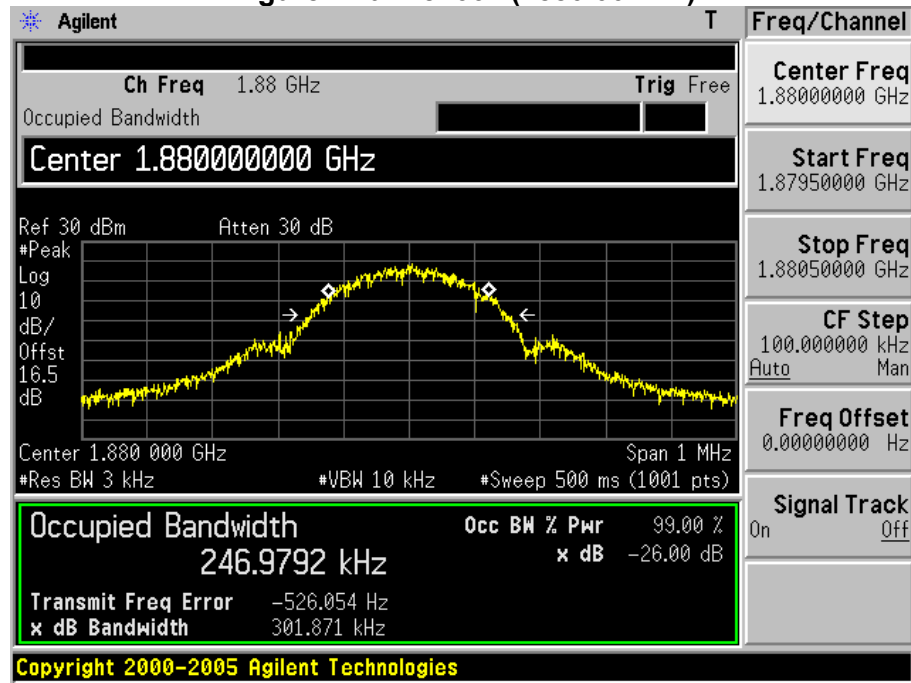
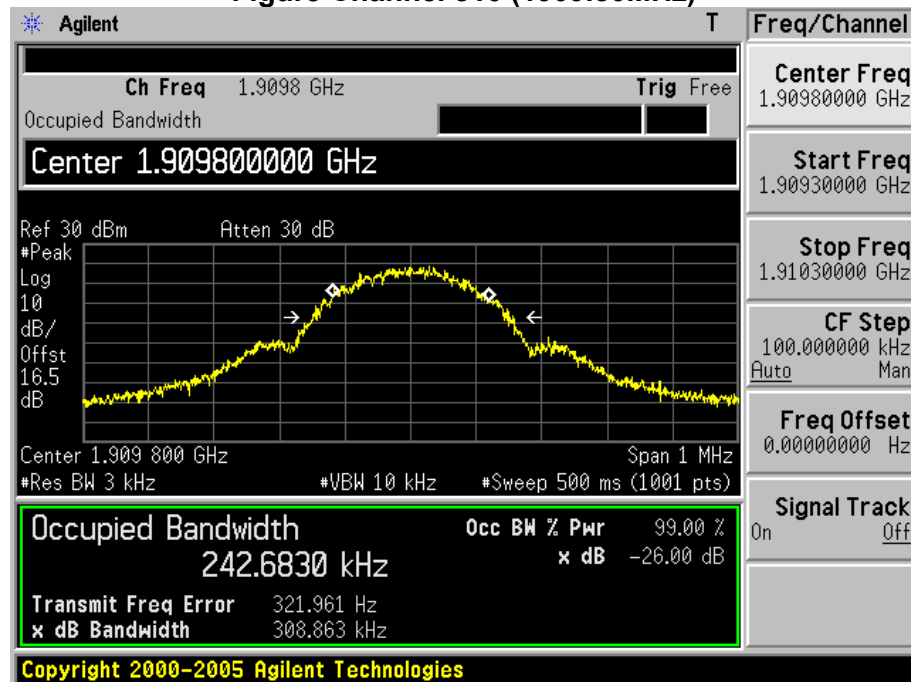


Figure Channel 810 (1909.80MHz)





5. Maximum Output Power

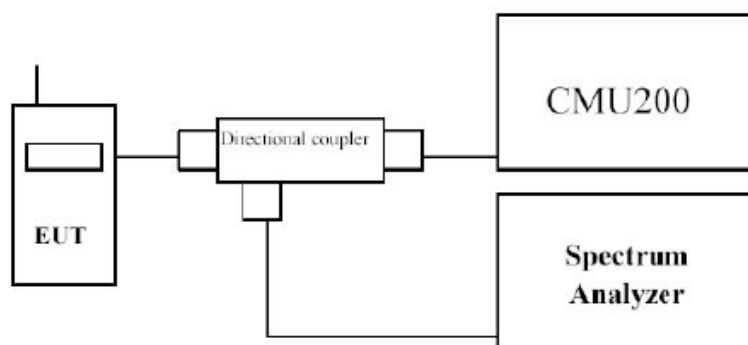
5.1. Test Limit

According to FCC §2.1046.

5.2. Test Procedure

- Place the EUT on a bench and set it in transmitting mode.
- Connect a low loss RF cable from the antenna port to a spectrum analyzer and CMU200 by a Directional Coupler.
- EUT Communicate with CMU200, then selects a channel for testing.
- Add a correction factor to the display of spectrum, and then test.

5.3. Test Setup Layout



5.4. Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	E4407B	Agilent	MY44211883	2014.09.12	2015.09.11
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30
Universal Radio Communication Tester	R&S	CMU200	108823	2015.03.24	2016.03.23

**5.5. Test Result and Data**

Band	Frequency (MHz)	Conducted Power (dBm)
GSM850	824.2	32.02
	836.6	32.36
	848.8	32.29
GPRS850(1slot)	824.2	31.82
	836.6	31.98
	848.8	31.85
GPRS850(2slot)	824.2	30.41
	836.6	30.52
	848.8	30.45
GPRS850(3slot)	824.2	28.05
	836.6	28.26
	848.8	28.11
GPRS850(4slot)	824.2	26.64
	836.6	26.71
	848.8	26.58
EDGE850(1slot)	824.2	28.25
	836.6	28.23
	848.8	28.19
EDGE850(2slot)	824.2	27.92
	836.6	27.88
	848.8	27.83
EDGE850(3slot)	824.2	26.26
	836.6	26.21
	848.8	26.15
EDGE850(4slot)	824.2	25.92
	836.6	25.94
	848.8	25.88

Note: All conducted measurements are based on a RMS detector.



6. ERP & EIRP MEASUREMENT

6.1. Test Limit

According to FCC §2.1046

FCC 22.913(a): The Effective Radiated Power (ERP) of mobile transmitters must not exceed 7 Watts.

FCC 24.232(b): The equivalent Isotropic Radiated Power (EIRP) must not exceed 2 Watts.

6.2. Test Procedure

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

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

ERP in frequency band 824-849MHz, and EIRP in frequency band 1850 –1910MHz were measured using a substitution method. The EUT was replaced by half-wave dipole (824-849MHz) or horn antenna (1850-1910MHz) connected to a signal generator. The spectrum analyzer reading was recorded and ERP/EIRP was calculated as follows:

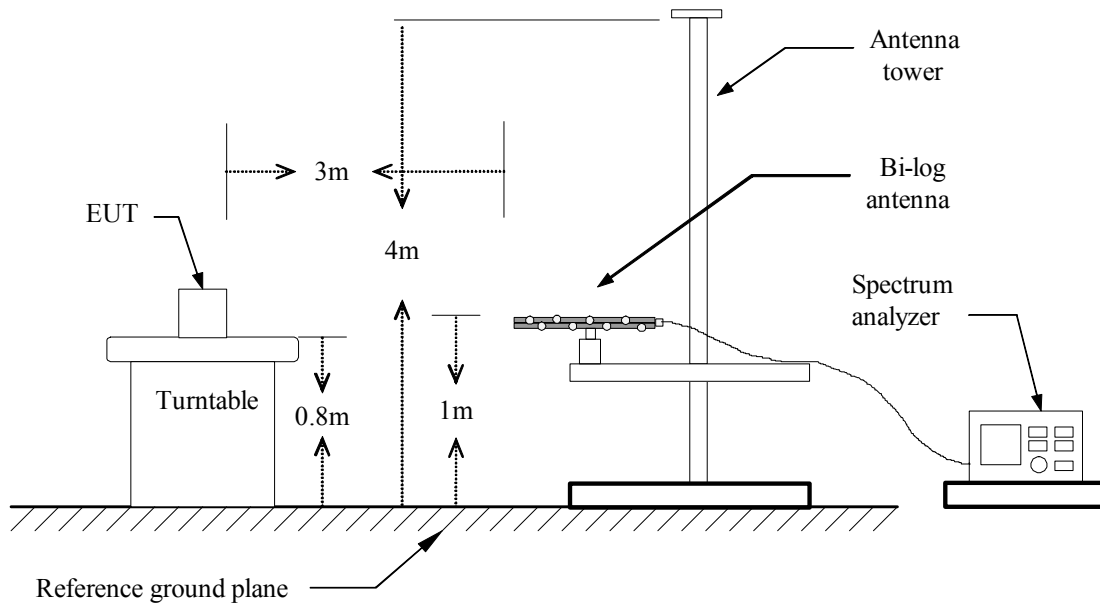
$$\text{ERP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBd)} - \text{Cable (dB)}$$

$$\text{EIRP} = \text{S.G. output (dBm)} + \text{Antenna Gain (dBi)} - \text{Cable (dB)}$$

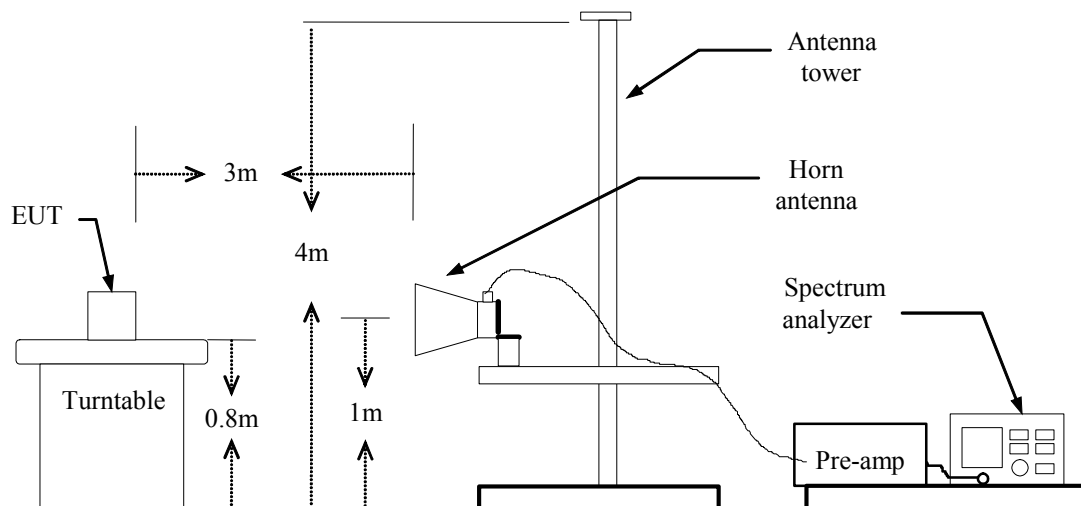


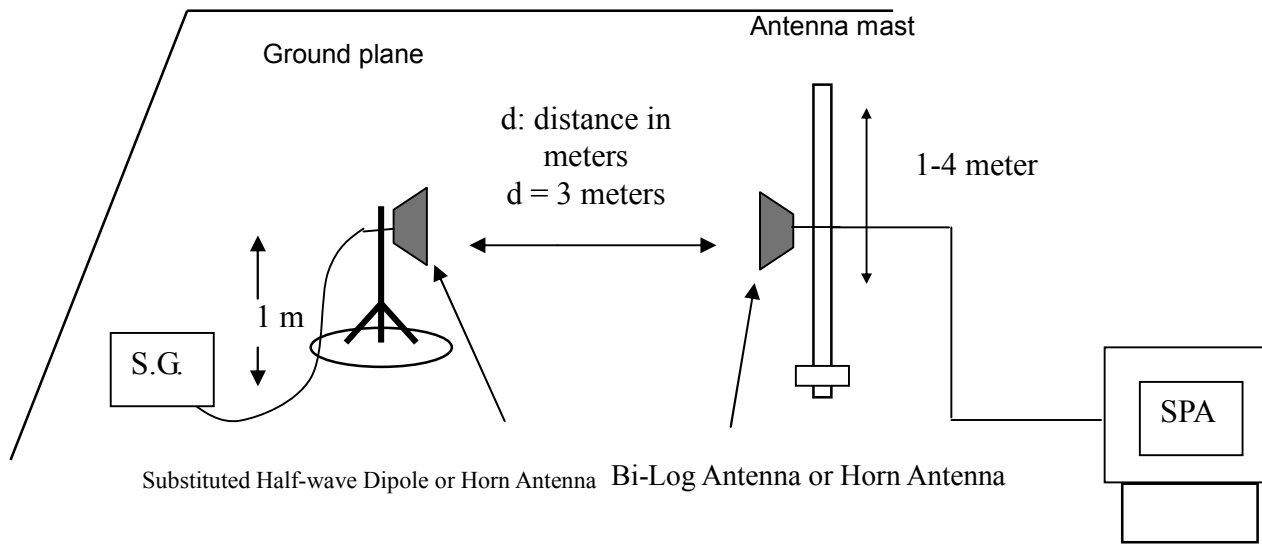
6.3. Test Setup Layout

Below 1 GHz



Above 1 GHz



**For Substituted Method Test Set-UP****6.4. Measurement Equipment**

Instrument/Ancillary	Manufacturer	Model No.	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	Agilent	E4407B	MY44211883	2014.09.25	2015.09.25
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
H64 Amplifier	HP	8447F	3113A05582	2015.03.24	2016.03.23
Preamplifier	Agilent	8449B	ED-HE-EMI-077	2015.03.24	2016.03.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-618	2015.05.24	2016.05.23
Temperature/Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30

**6.5. Test Result and Data**

Date of Test	2015/06/18	Test Site	AC102
--------------	------------	-----------	-------

Band	Modulation	Freq. (MHz)	ERP (dBm)	H/V
GSM850	GMSK	824.2	27.33	H
		836.4	27.24	H
		848.8	27.52	H
		824.2	32.34	V
		836.4	32.67	V
		848.8	32.11	V
GPRS850	GMSK	824.2	25.55	H
		836.4	25.75	H
		848.8	25.26	H
		824.2	30.25	V
		836.4	30.33	V
		848.8	30.74	V



Band	Modulation	Freq. (MHz)	EIRP (dBm)	H/V
PCS1900	GMSK	1850.2	23.73	H
		1880.0	23.62	H
		1909.8	23.13	H
		1850.2	28.31	V
		1880.0	28.58	V
		1909.8	28.35	V
GPRS1900	GMSK	1850.2	22.36	H
		1880.0	22.63	H
		1909.8	22.47	H
		1850.2	27.25	V
		1880.0	27.84	V
		1909.8	27.24	V



7. Spurious Emission

7.1. Test Limit

According to FCC §2.1051, FCC §22.917, FCC §24.238(a).

Out of Band Emissions: The mean power of emission must be attenuated below the mean power of the non-modulated carrier (P) on any frequency twice or more than twice the fundamental frequency by at least $43 + 10 \log P$ dB.

Mobile Emissions in Base Frequency Range: The mean power of any emissions appearing in the base station frequency range from cellular mobile transmitters operated must be attenuated to a level not exceed -80 dBm at the transmit antenna connector.

Band GPRS Requirements: In the 1MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the Out of band Emission.

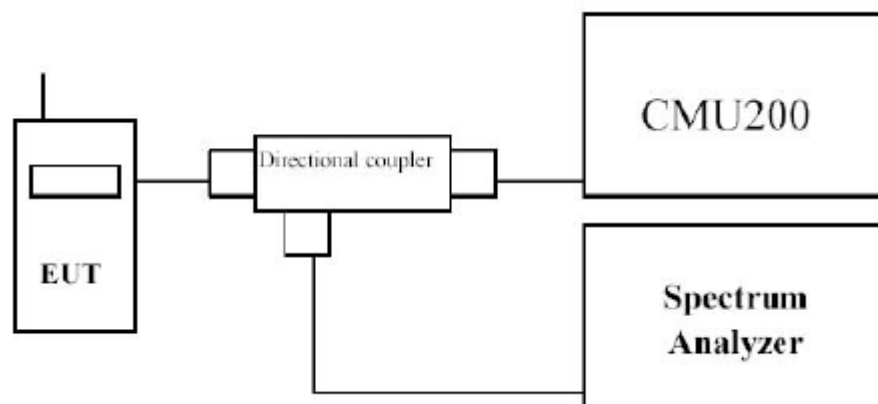
7.2. Test Procedure

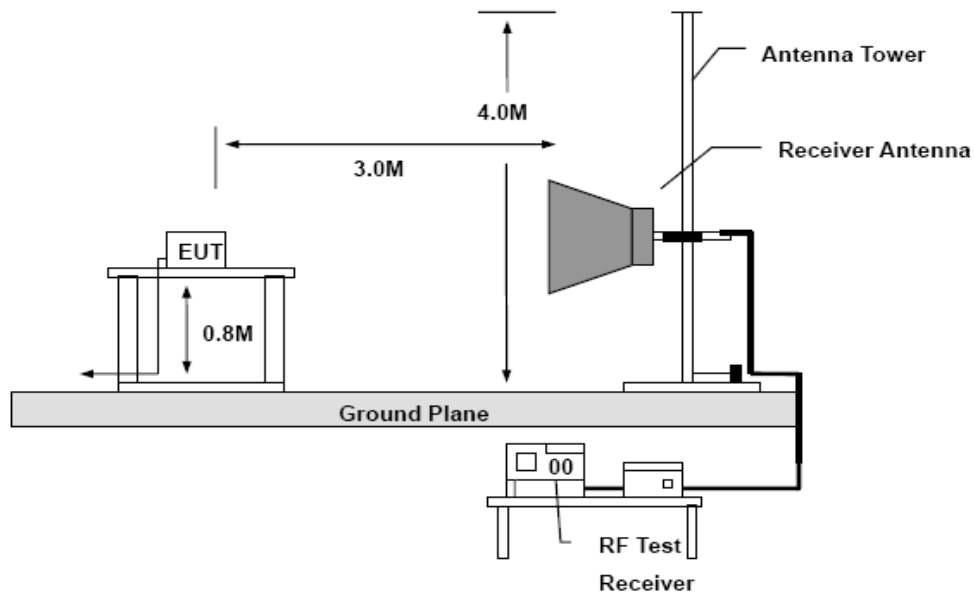
The RF output of the transceiver was connected to a spectrum analyzer through appropriate attenuation. The resolution bandwidth of the spectrum analyzer was set at 1MHz, sufficient scans were taken to show the out of band Emissions if any up to 10th harmonic.

For the out of band: Set the RBW, VBW = 1MHz, Start=30MHz, Stop= 10 th harmonic. Limit = -13 dBm

Band GPRS Requirements (824 MHz and 849 MHz /1850MHz and 1910MHz): In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13 dBm.

7.3. Test Setup Layout





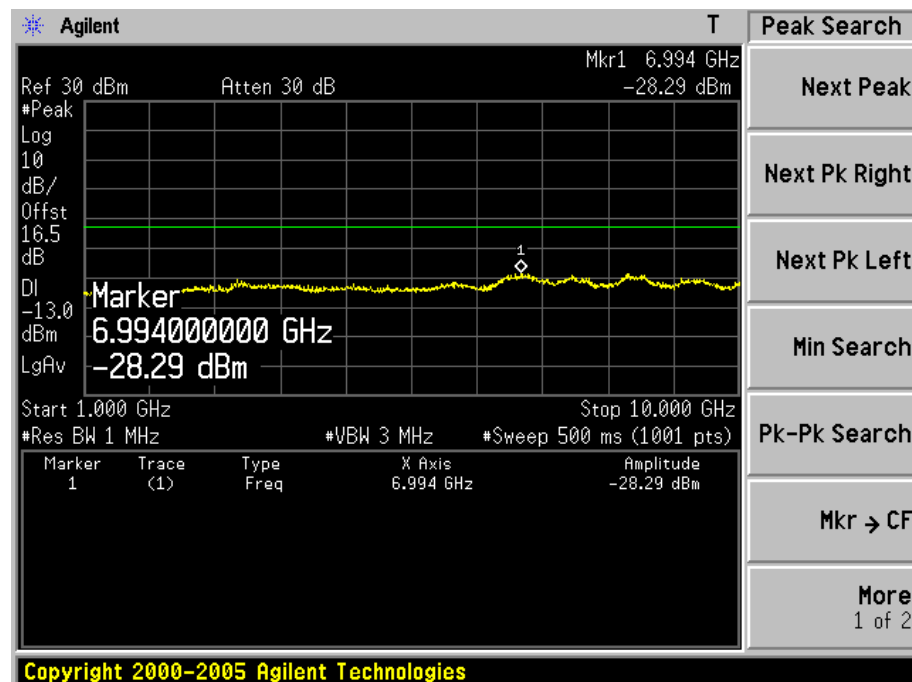
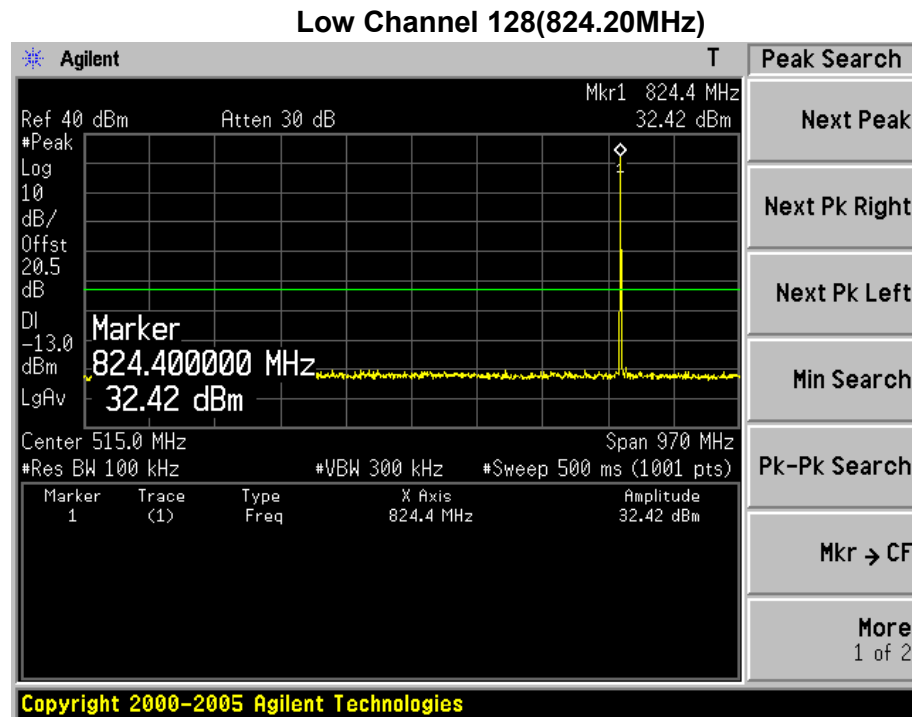
7.4. Measurement Equipment

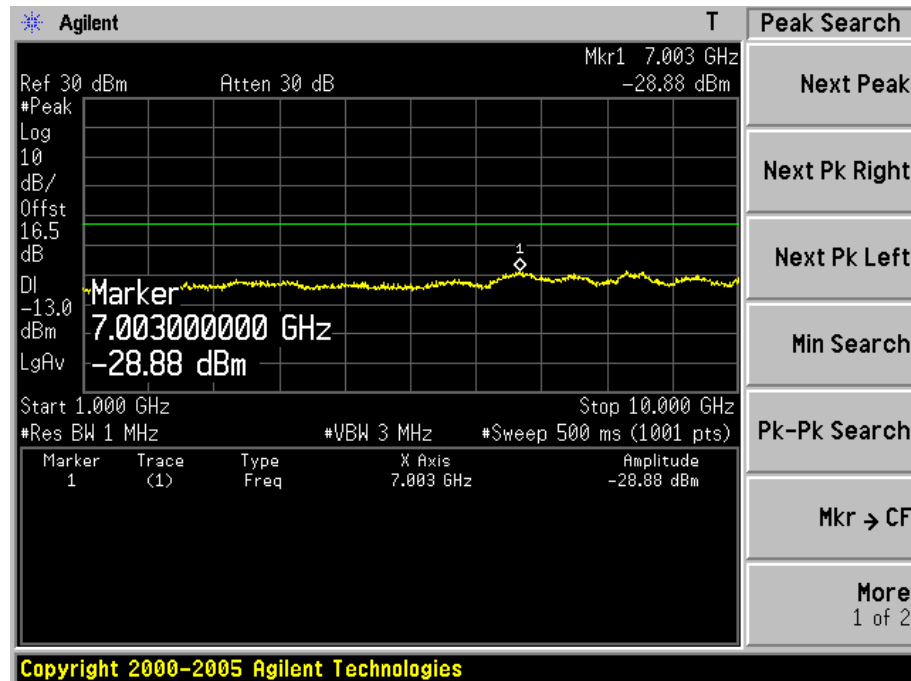
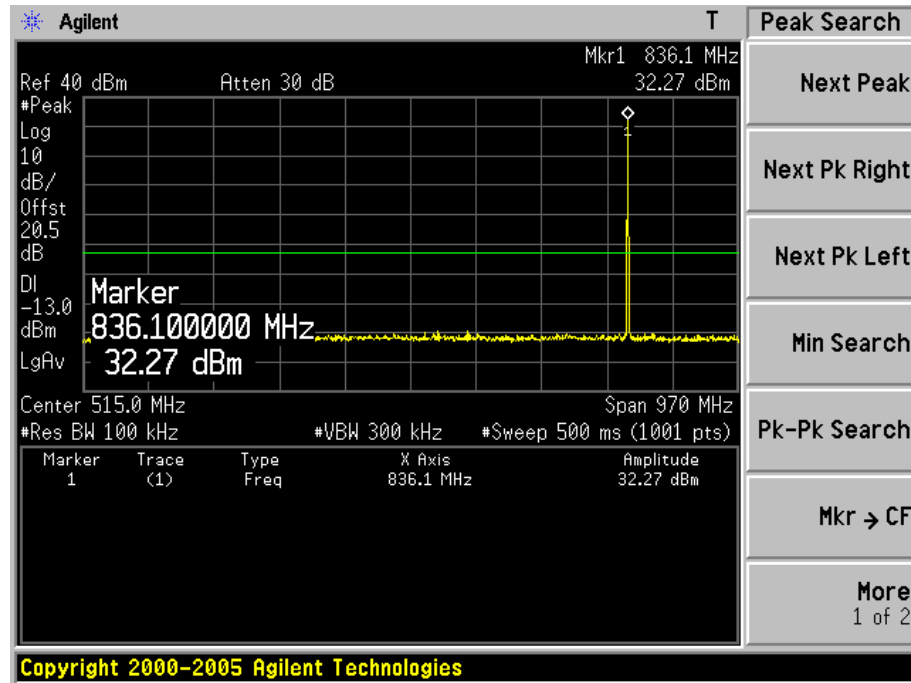
Instrument	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date.
EMI Test Receiver	R&S	ESCI	100563	2015.03.24	2016.03.23
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
Spectrum Analyzer	Agilent	E4407B	MY44211883	2014.09.12	2015.09.11
H64 Preamplifier	HP	8447F	3113A05582	2015.03.24	2016.03.23
Preamplifier	Agilent	8449B	3008A02342	2015.03.24	2016.03.23
Ultra Broadband Antenna	R&S	HL562	100362	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9120D	9120D-619	2015.05.24	2016.05.23
Broad-Band Horn Antenna	Schwarzbeck	BBHA9170	9170-348	2015.05.24	2016.05.23
Spectrum Analyzer	R&S	FSP40	100324	2015.03.23	2016.03.24
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30



7.5. Test Result and Data

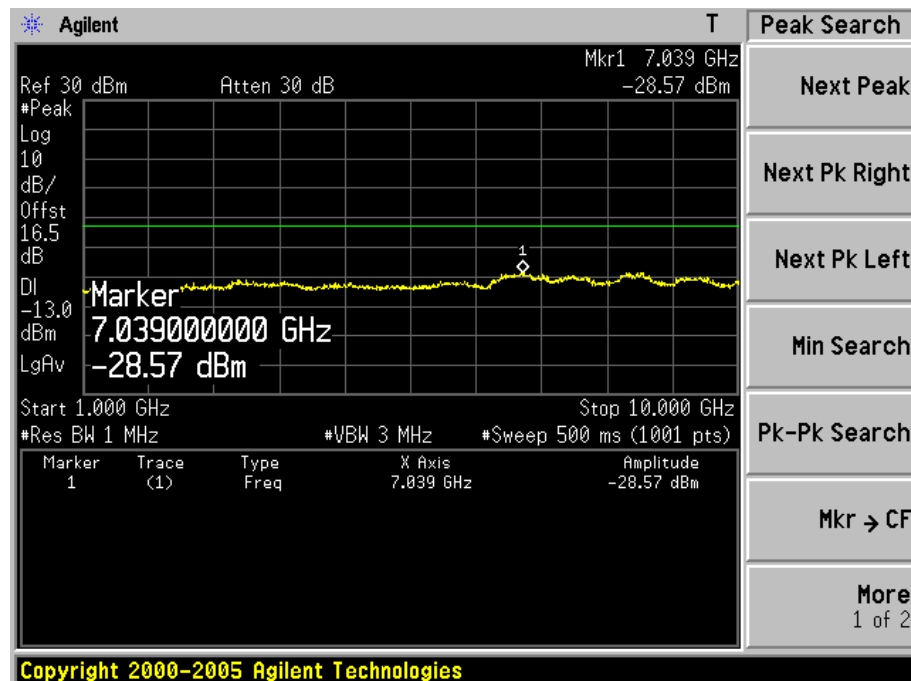
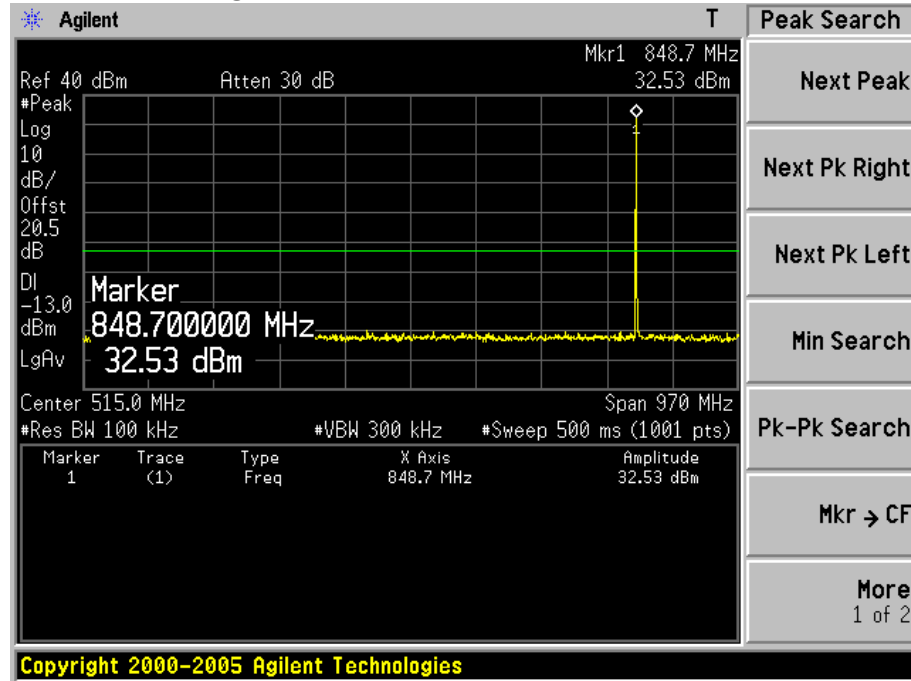
Test Item	Conducted spurious emissions, 30MHz - 20GHz
Test Mode	GSM 850
Test Date	2015-06-19

**Mid Channel 189(836.40MHz)**





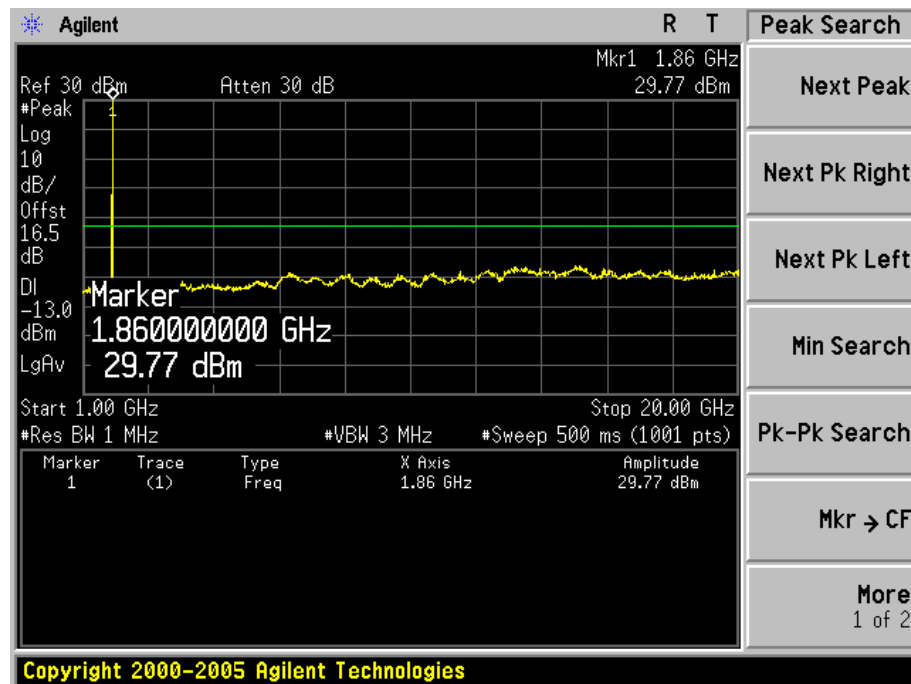
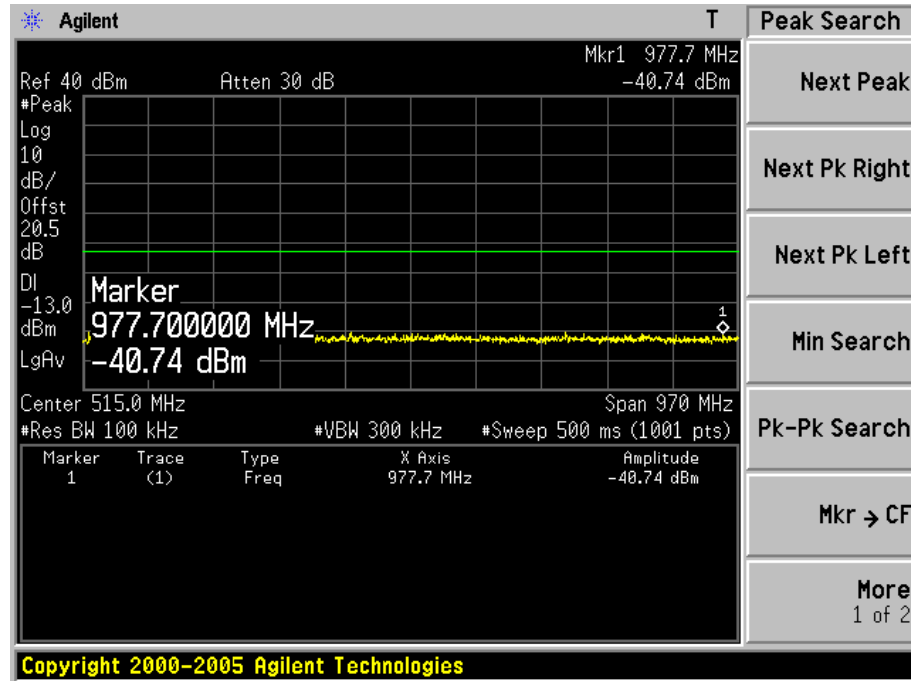
High Channel 251(848.80MHz)





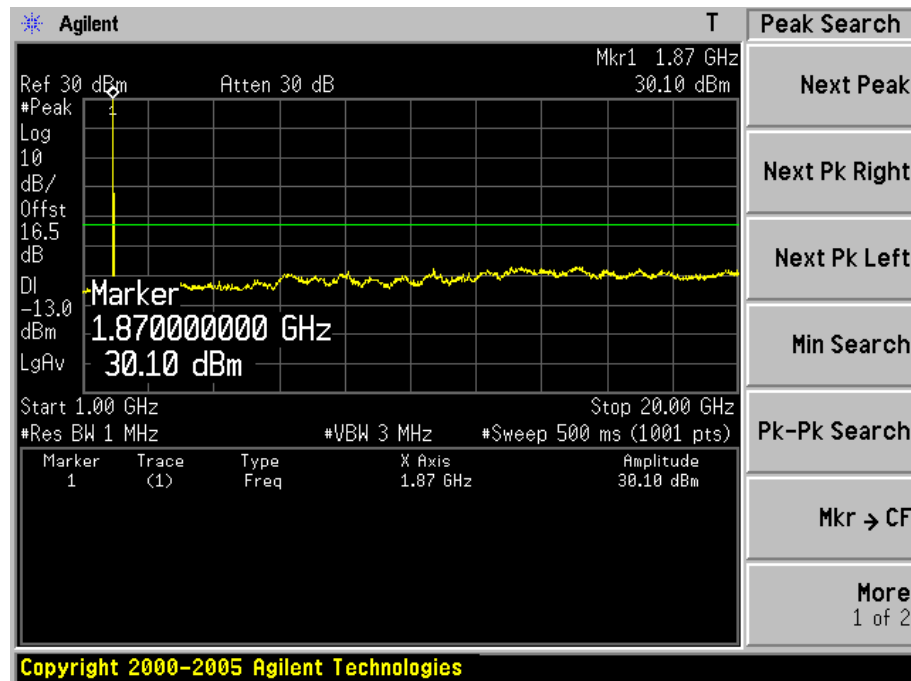
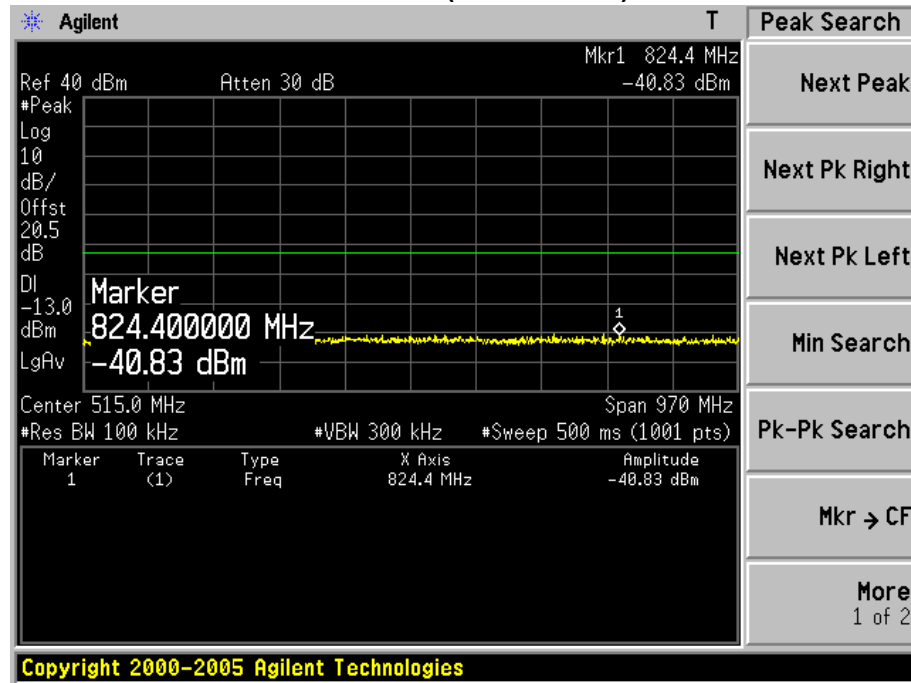
Test Item	Conducted spurious emissions, 30MHz - 20GHz
Test Mode	GSM 1900
Test Date	2015-06-19

Low Channel 512(1850.20MHz)



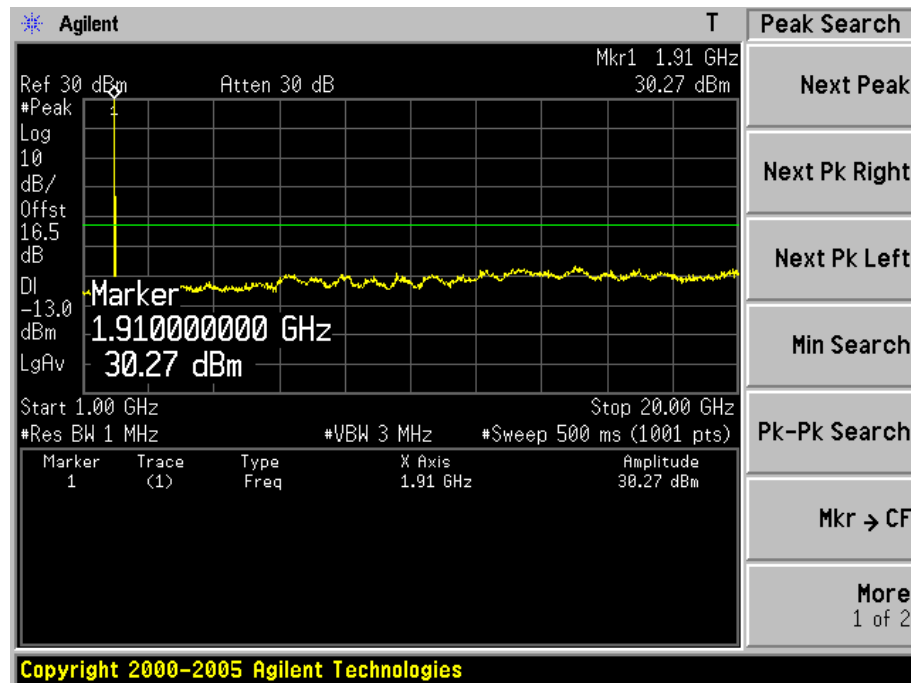
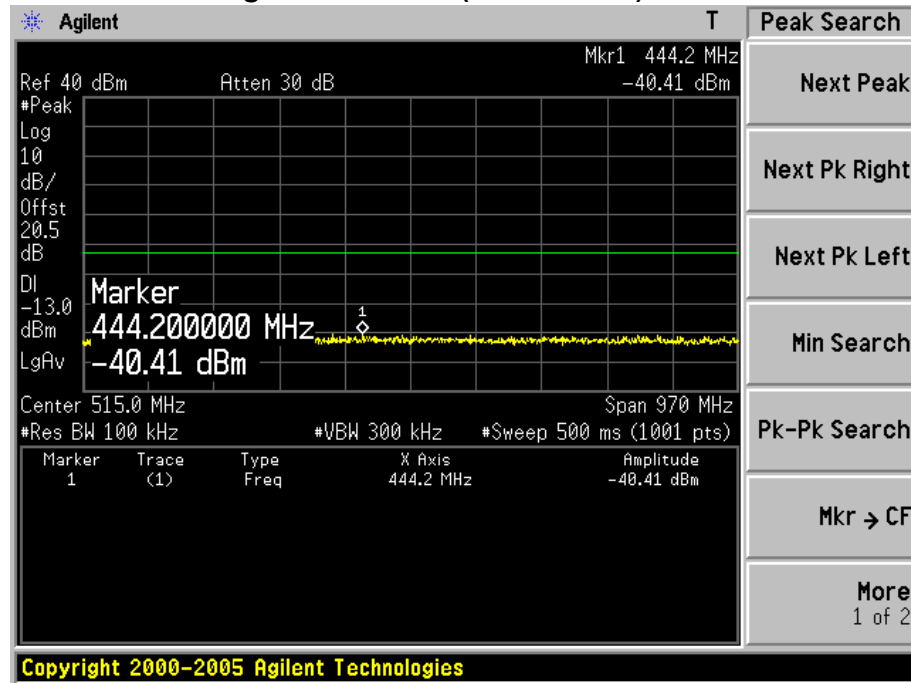


Mid Channel 661(1880.00MHz)





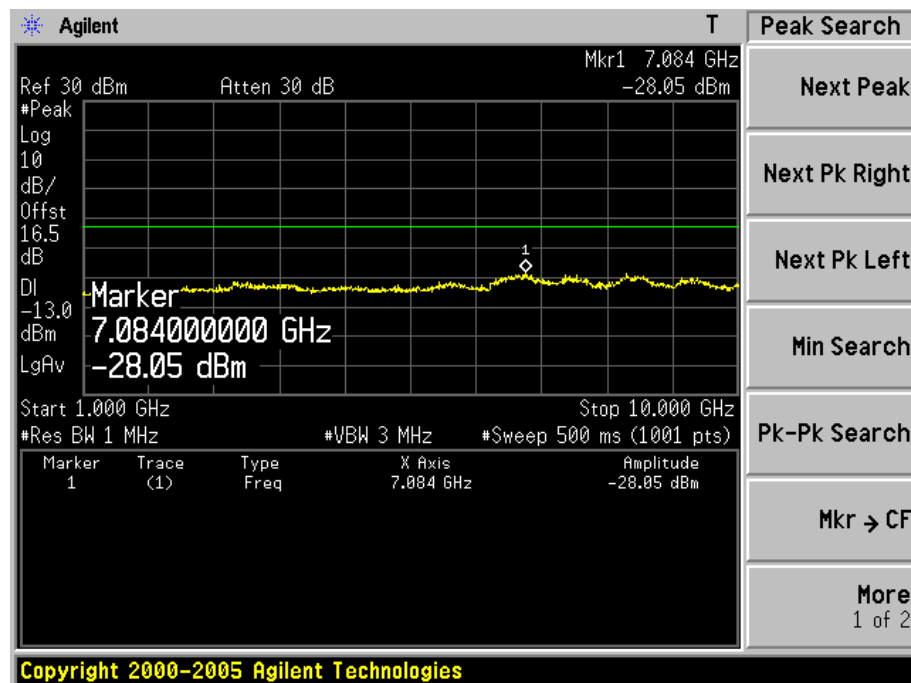
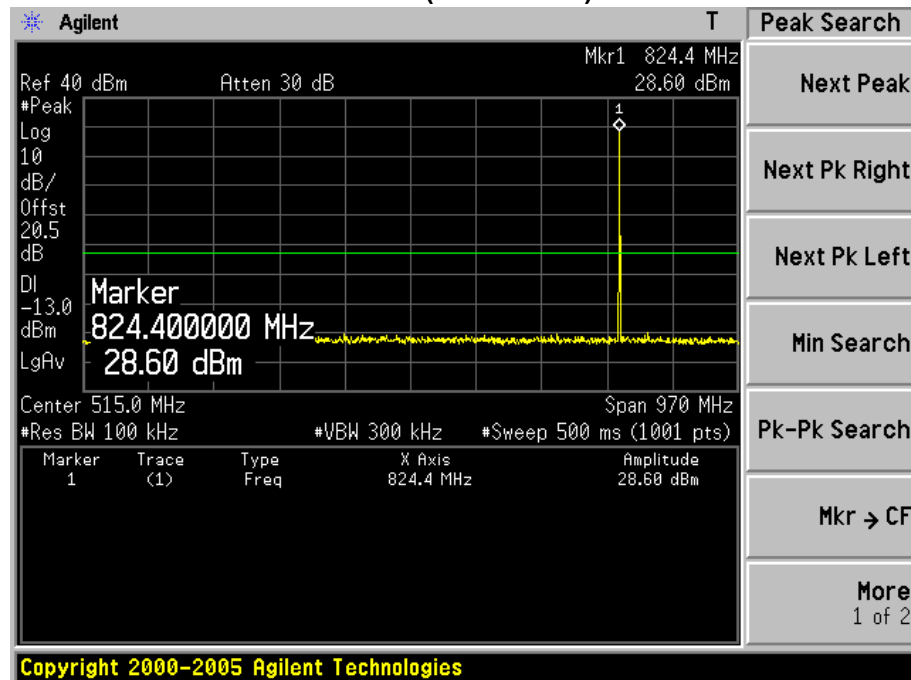
High Channel 810(1909.80MHz)





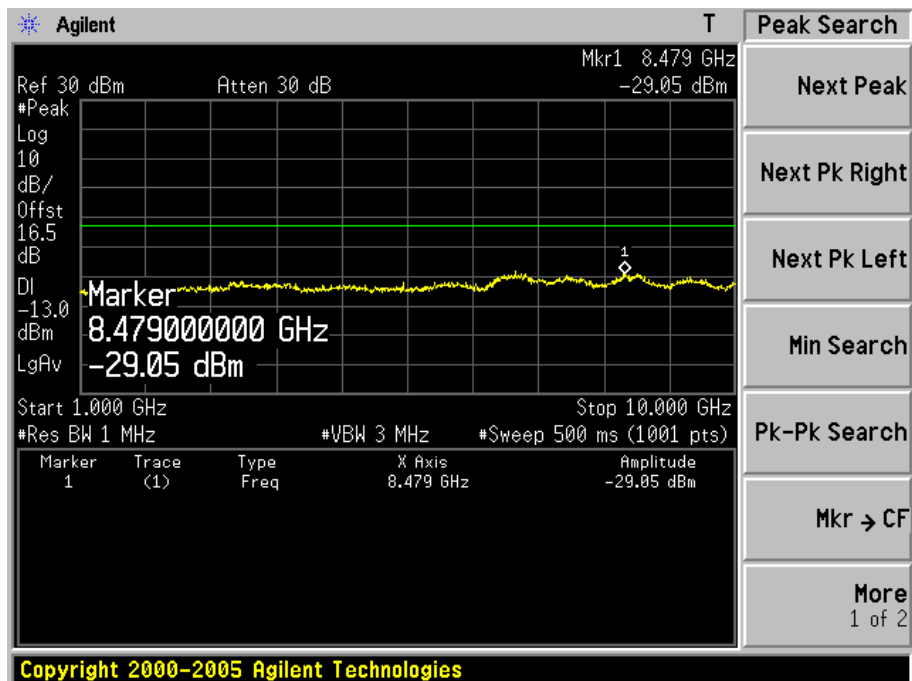
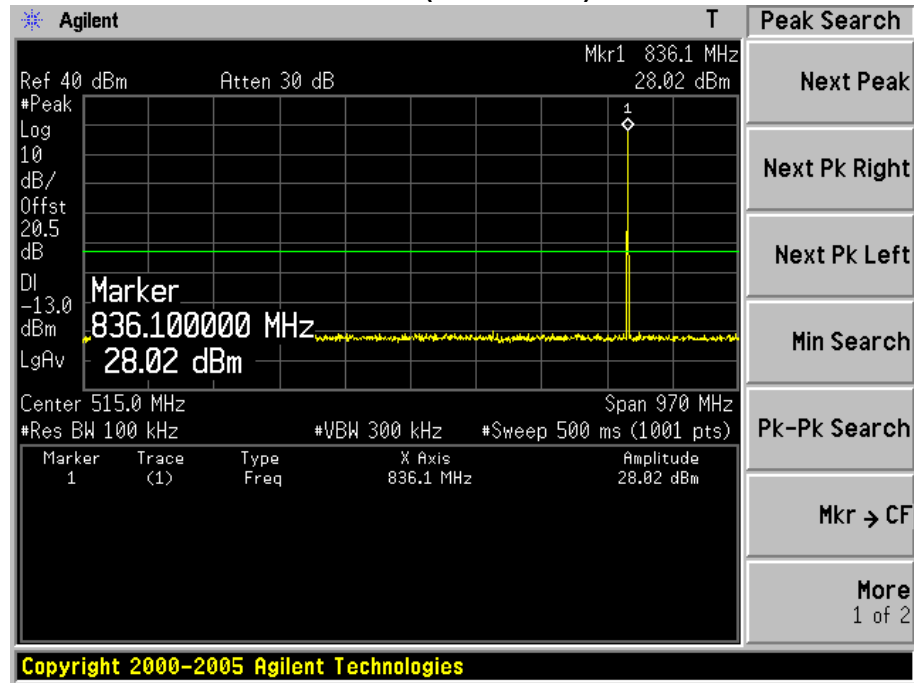
Test Item	Conducted spurious emissions, 30MHz - 20GHz
Test Mode	GPRS 850
Test Date	2015-06-19

Low Channel 128(824.20MHz)



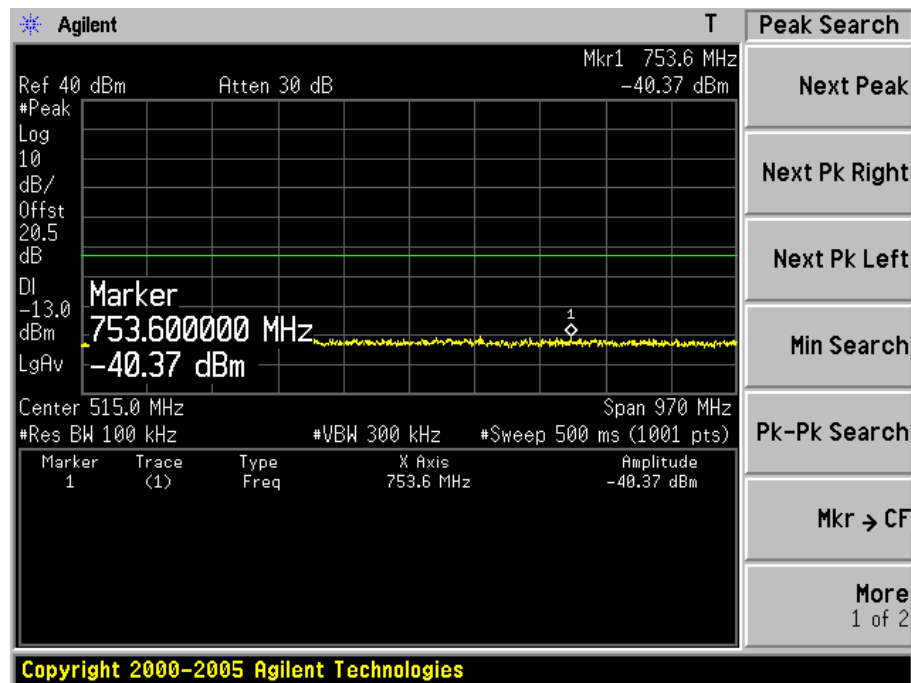
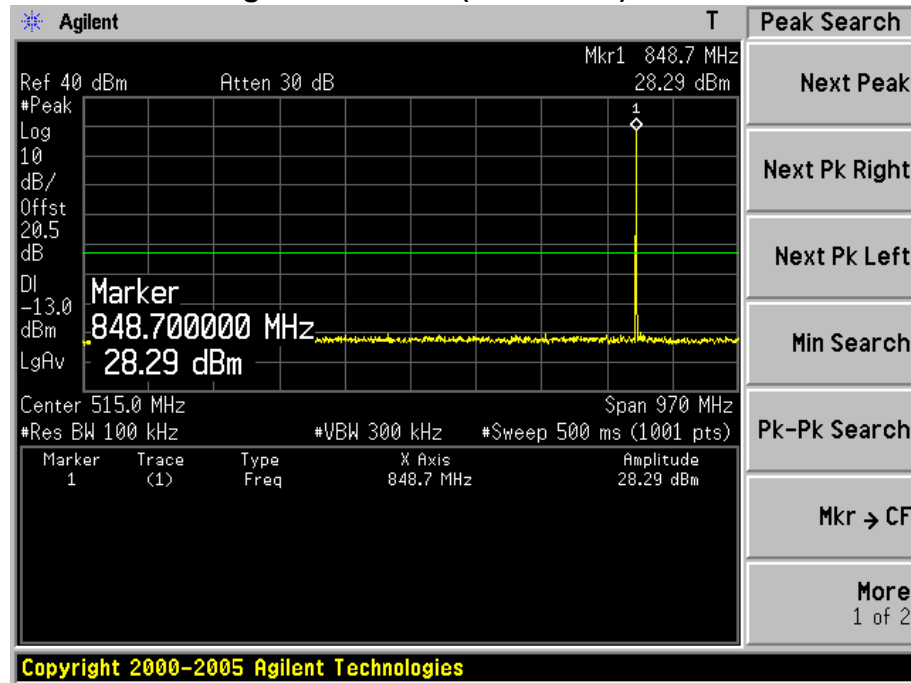


Mid Channel 189(836.40MHz)





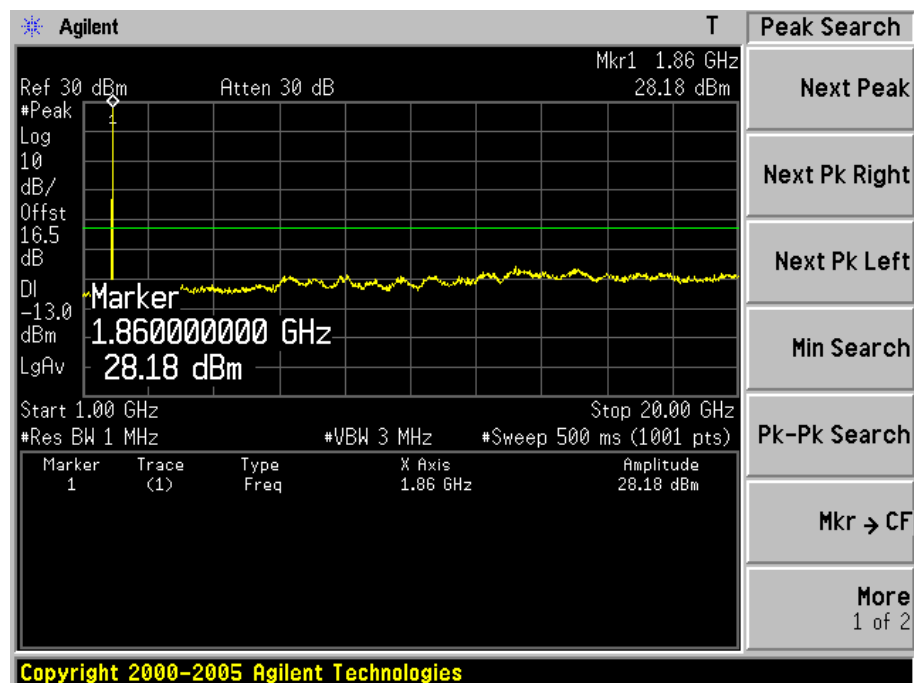
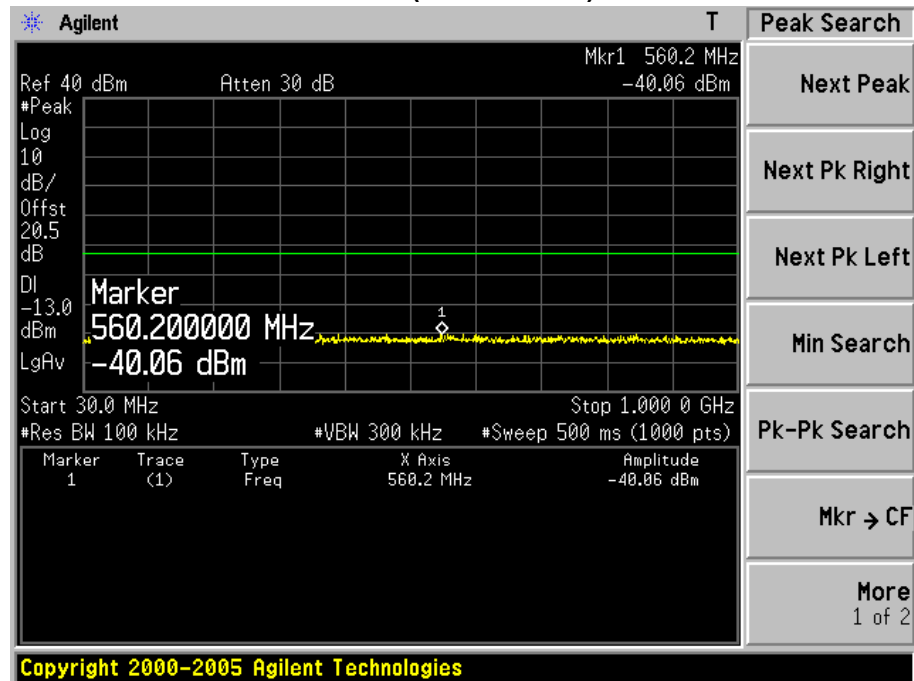
High Channel 251(848.80MHz)





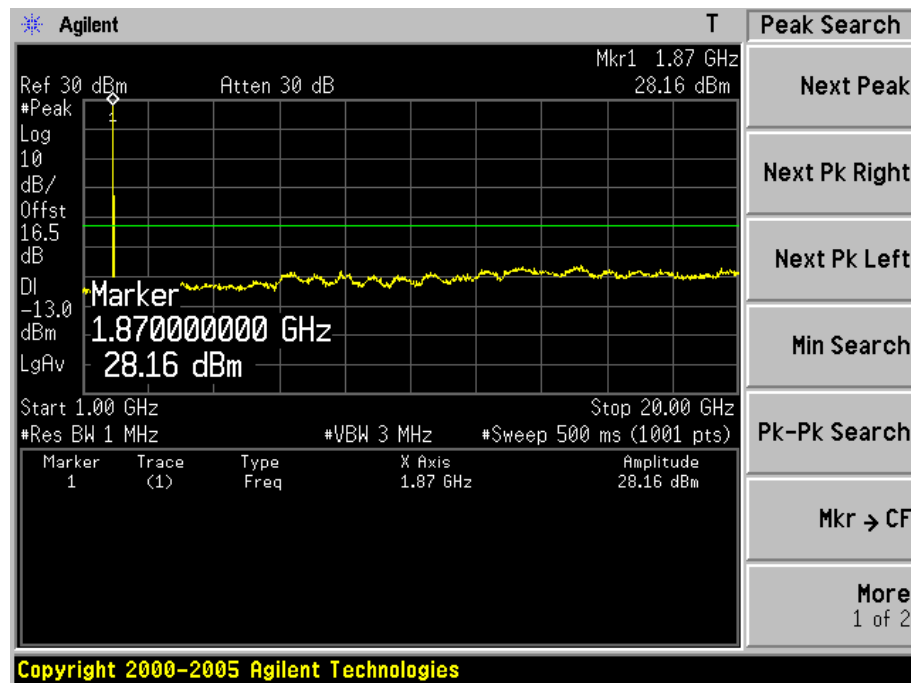
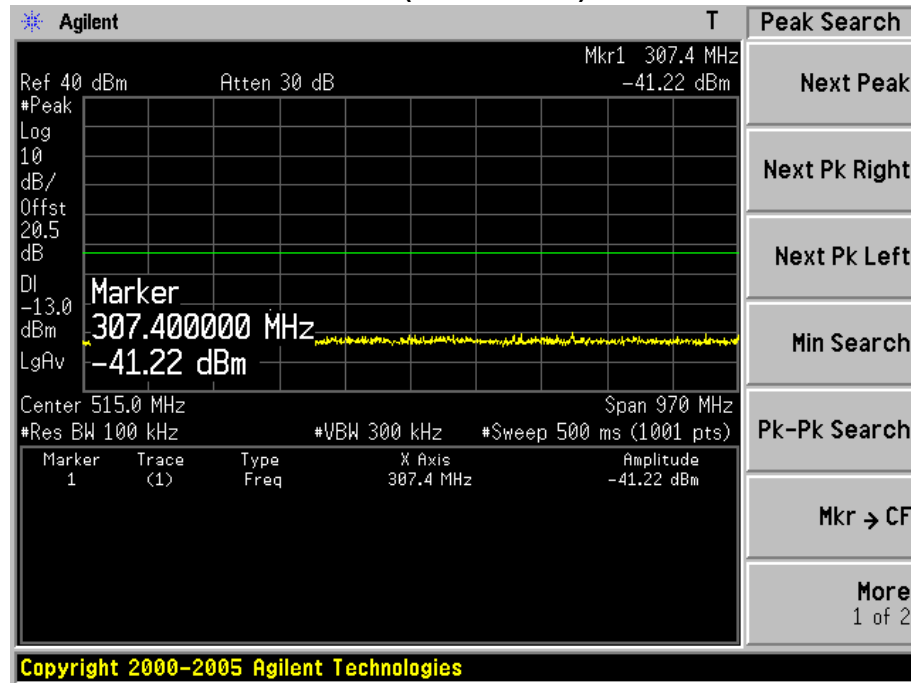
Test Item	Conducted spurious emissions, 30MHz - 20GHz
Test Mode	GPRS 1900
Test Date	2015-06-19

Low Channel 512(1850.20MHz)



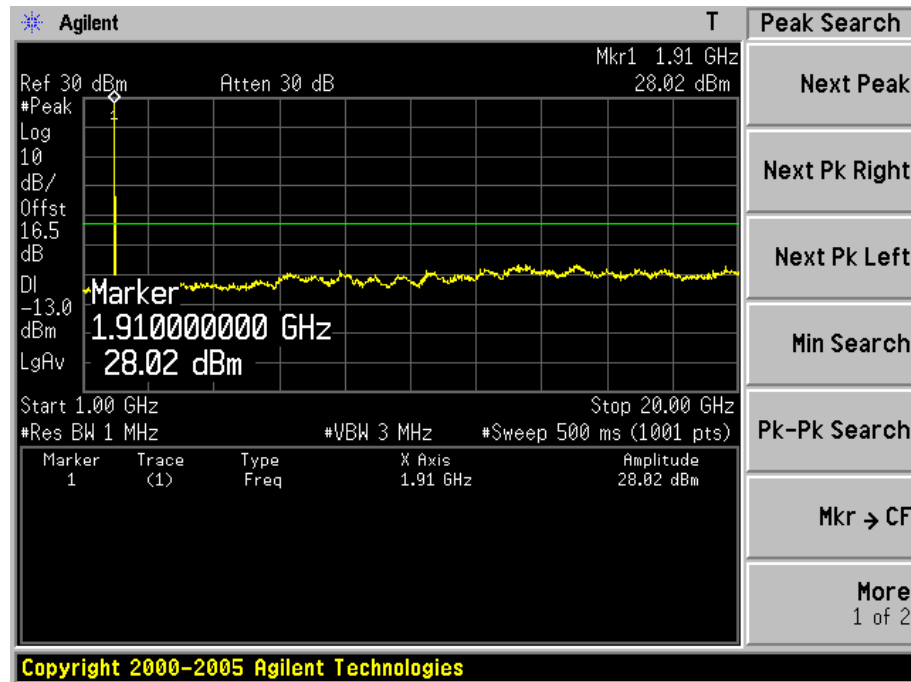
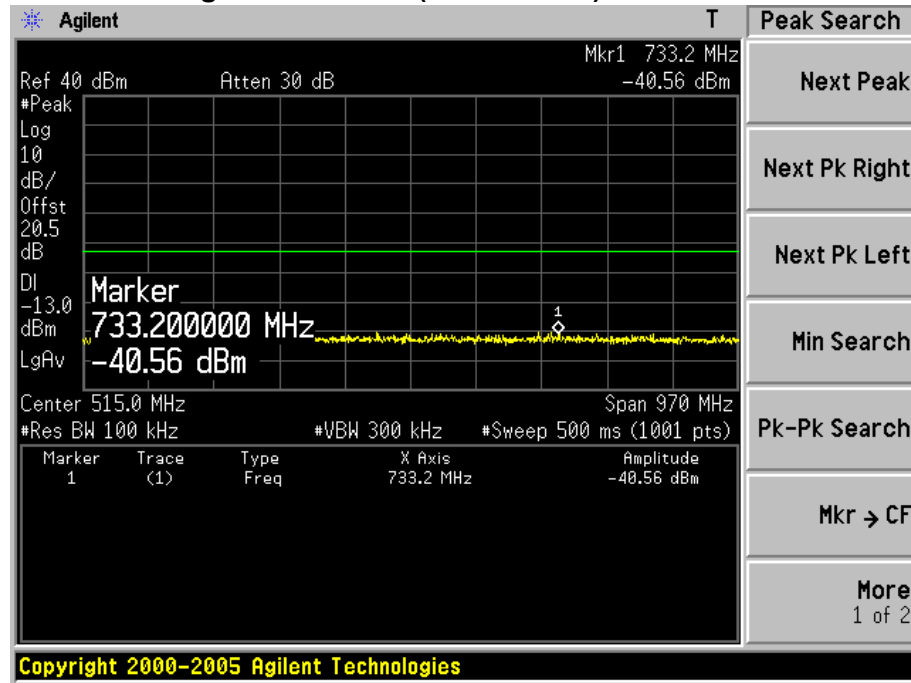


Mid Channel 661(1880.00MHz)





High Channel 810(1909.80MHz)





Test Item	Band GPRS emissions
Test Mode	GSM 850
Test Date	2015-06-19

Figure Channel 128 (824.20MHz)

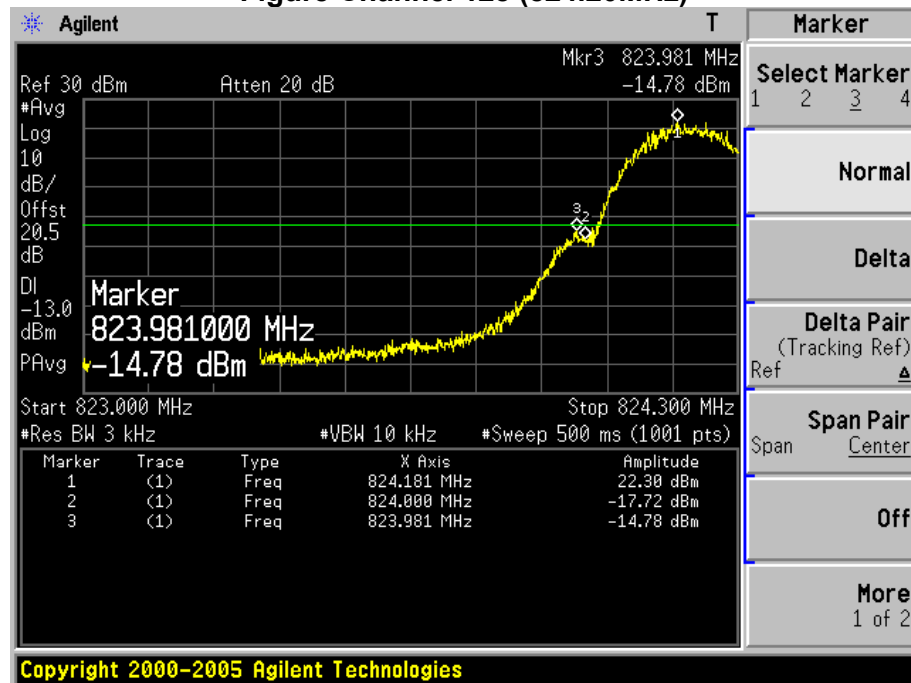
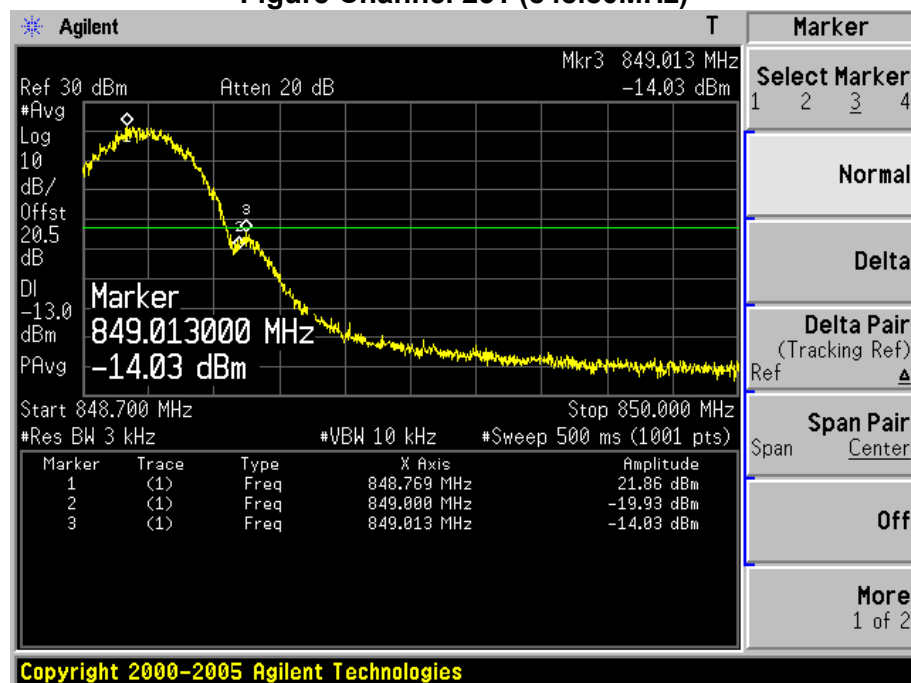


Figure Channel 251 (848.80MHz)





Test Item	Band GPRS emissions
Test Mode	GSM 1900
Test Date	2015-06/22

Figure Channel 512 (1850.20MHz)

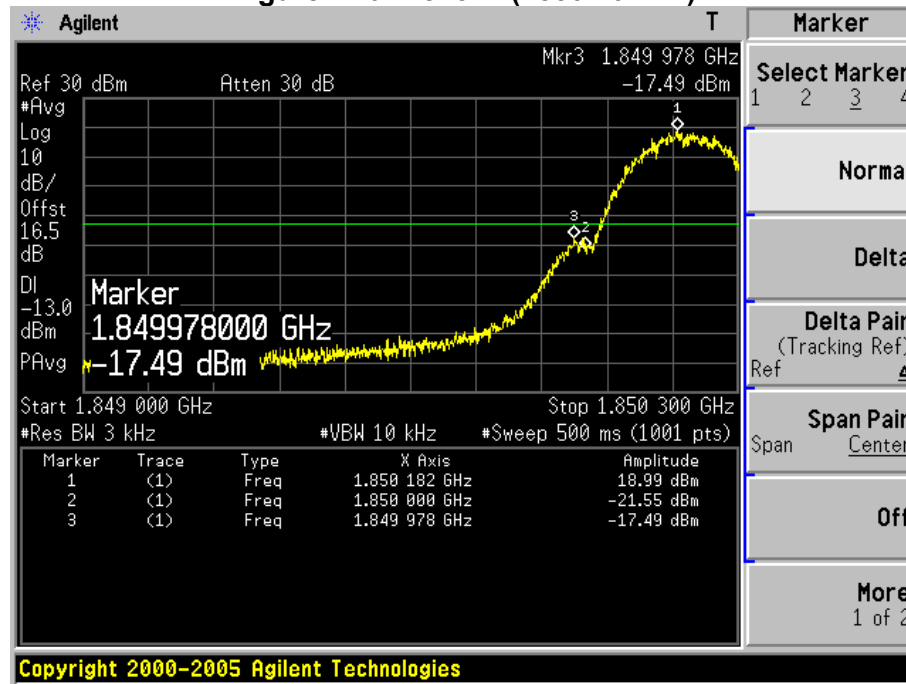
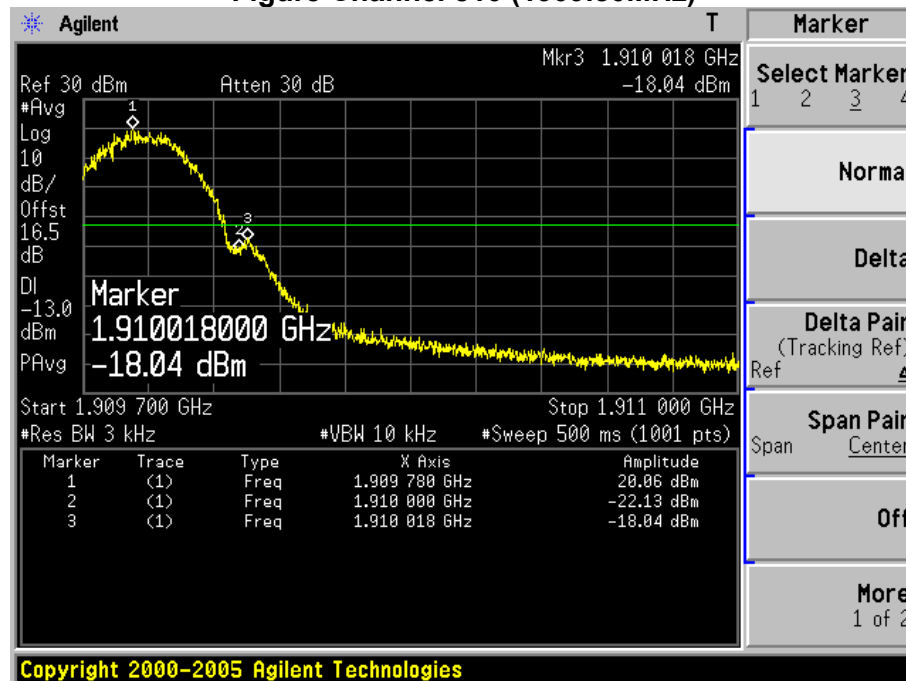


Figure Channel 810 (1909.80MHz)





Test Item	Band GPRS emissions
Test Mode	GPRS 850
Test Date	2015-06/22

Figure Channel 128 (824.20MHz)

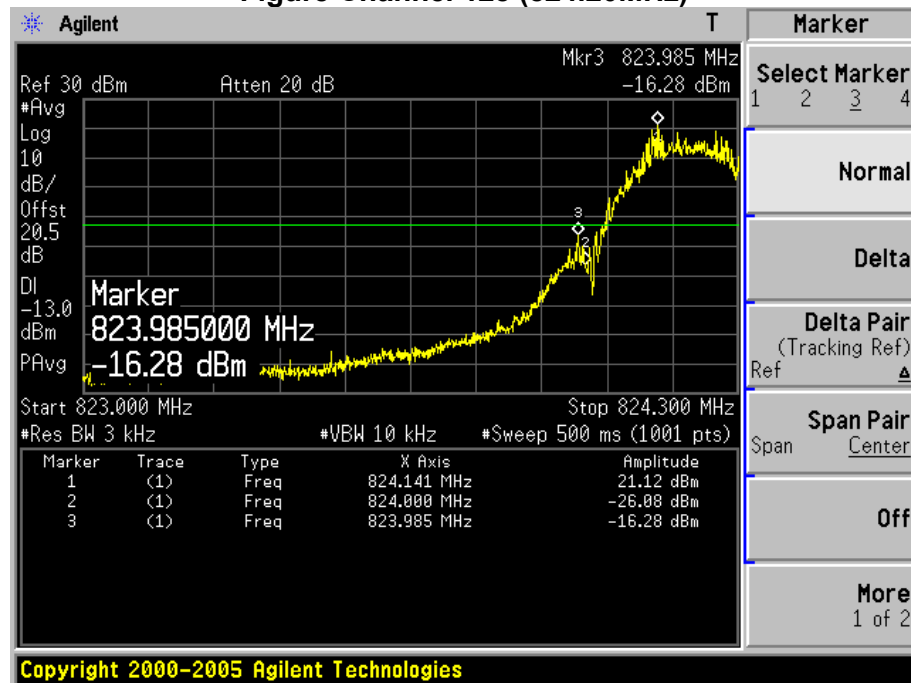
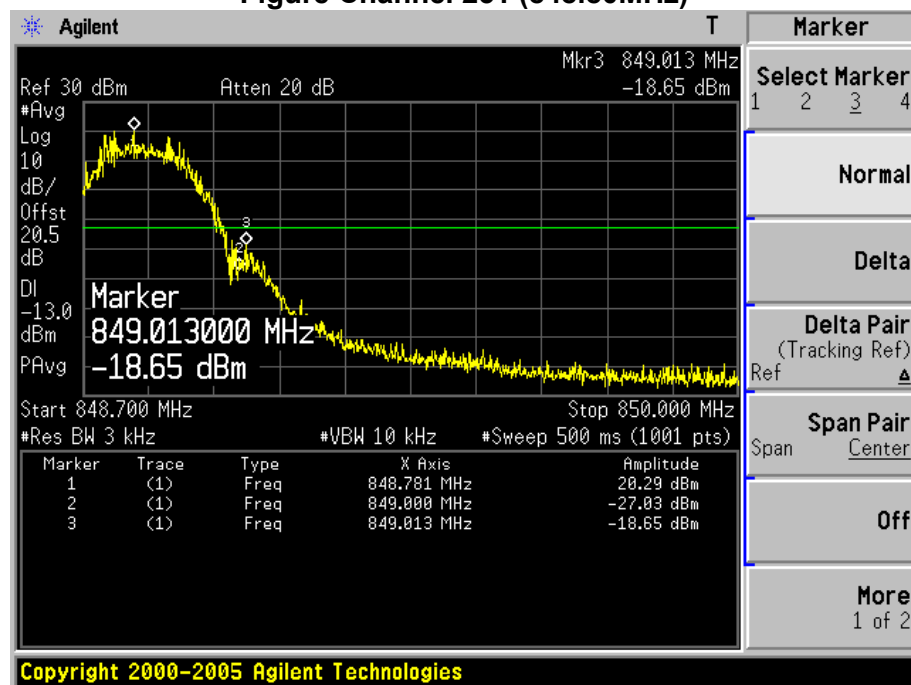


Figure Channel 251 (848.80MHz)





Test Item	Band GPRS emissions
Test Mode	GPRS 1900
Test Date	2015-06/22

Figure Channel 512 (1850.20MHz)

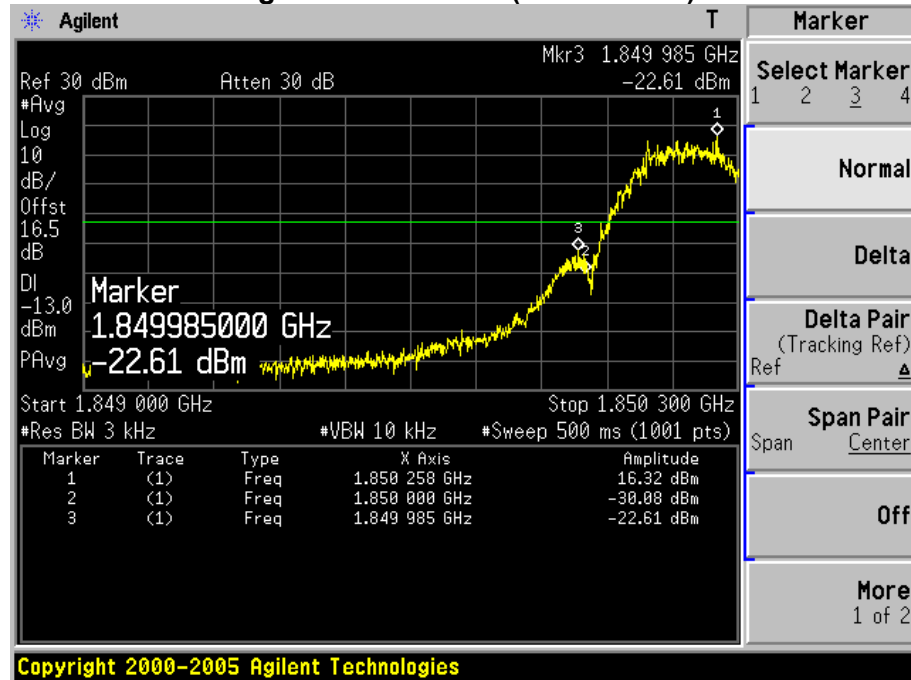
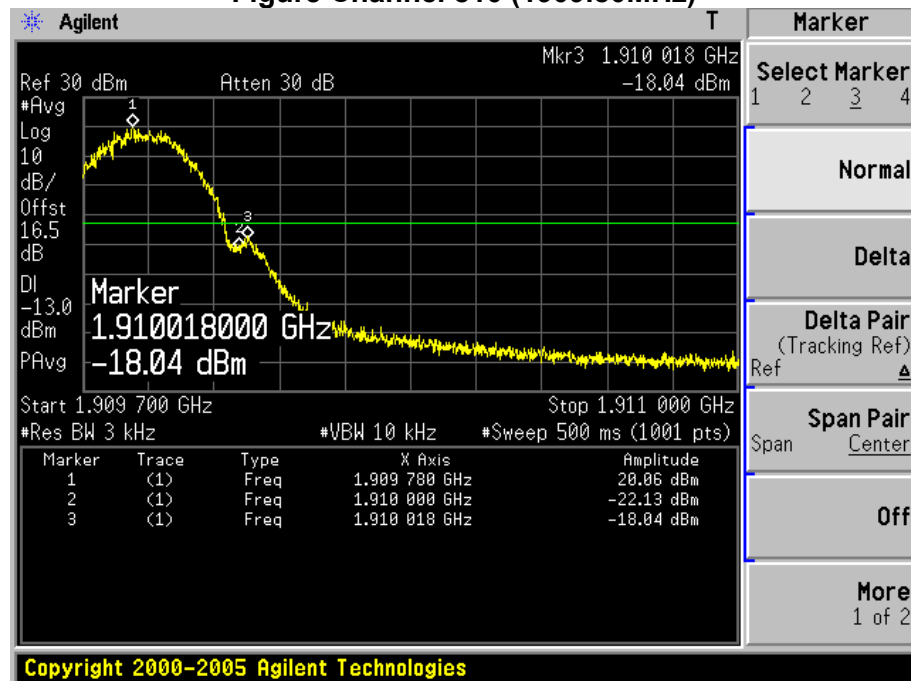


Figure Channel 810 (1909.80MHz)





Engineer : Wind	Time : 2015-06-18
Site : EMC Lab AC 102	Margin : 6
Limit : FCC_Part22&24 and RSS 133 Clause 6.5&6.6	Probe : VERTICAL/ HORIZONTAL
EUT :CX502E	Note : GSM 850 link

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
1646.00	-50.43	V	-53.06	2.50	9.75	-45.81	-13.00	-32.81
2470.50	-58.96	V	-57.87	3.12	10.48	-50.51	-13.00	-37.51
1646.00	-52.32	H	-54.87	2.50	9.75	-47.62	-13.00	-34.62
2470.50	-61.46	H	-60.53	3.12	10.48	-53.17	-13.00	-40.17
Middle Channel 189 (836.40MHz)								
1671.50	-52.28	V	-54.67	2.52	9.95	-47.24	-13.00	-34.24
2513.00	-57.07	V	-56.07	3.18	10.62	-48.63	-13.00	-35.63
1671.50	-57.10	H	-59.77	2.52	9.95	-52.34	-13.00	-39.34
2513.00	-59.23	H	-58.61	3.18	10.62	-51.17	-13.00	-38.17
High Channel 251 (848.80MHz)								
1697.00	-56.38	V	-58.38	2.54	10.06	-50.86	-13.00	-37.86
2547.00	-59.14	V	-57.34	3.14	10.68	-49.80	-13.00	-36.80
1697.00	-57.52	H	-60.25	2.54	10.06	-52.73	-13.00	-39.73
2547.00	-59.13	H	-57.58	3.14	10.68	-50.04	-13.00	-37.04

Engineer : Wind	Time : 2015-06-18
Site : EMC Lab AC 102	Margin : 6
Limit : FCC_Part22&24 and RSS 133 Clause 6.5&6.6	Probe : VERTICAL/ HORIZONTAL
EUT :CX502E	Note : GSM 1900 link

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
3700.00	-64.29	V	-60.92	3.84	12.69	-52.07	-13.00	-39.07
5550.00	-66.39	V	-58.51	4.82	13.15	-50.18	-13.00	-37.18
3700.00	-64.31	H	-60.87	3.84	12.69	-52.02	-13.00	-39.02
5550.00	-66.46	H	-57.96	4.82	13.15	-49.63	-13.00	-36.63
Middle Channel 661 (1880.00MHz)								
3760.00	-62.02	V	-58.75	3.73	12.72	-49.76	-13.00	-36.76
5640.00	-55.20	V	-47.58	4.93	13.14	-39.37	-13.00	-26.37
3760.00	-61.94	H	-58.73	3.73	12.72	-49.74	-13.00	-36.74
5640.00	-52.59	H	-44.65	4.93	13.14	-36.44	-13.00	-23.44
High Channel 810 (1909.80MHz)								
3818.00	-57.57	V	-53.69	4.02	12.73	-44.98	-13.00	-31.98
5727.00	-57.21	V	-48.95	4.87	13.11	-40.71	-13.00	-27.71
3818.00	-57.77	H	-54.05	4.02	12.73	-45.34	-13.00	-32.34
5727.00	-50.80	H	-42.13	4.87	13.11	-33.89	-13.00	-20.89



Engineer : Wind	Time : 2015-06-18
Site : EMC Lab AC 102	Margin : 6
Limit : FCC_Part22&24 and RSS 133 Clause 6.5&6.6	Probe : VERTICAL/ HORIZONTAL
EUT :CX502E	Note : GPRS 850

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 128 (824.20MHz)								
1646.00	-58.91	V	-61.54	2.50	9.75	-54.29	-13.00	-41.29
2470.50	-61.59	V	-60.50	3.12	10.48	-53.14	-13.00	-40.14
1646.00	-61.26	H	-63.82	2.50	9.75	-56.57	-13.00	-43.57
2470.50	-64.64	H	-63.72	3.12	10.48	-56.36	-13.00	-43.36
Middle Channel 189 (836.40MHz)								
1671.50	-61.29	V	-63.82	2.52	9.95	-56.39	-13.00	-43.39
2513.00	-52.68	V	-55.08	3.18	10.62	-47.64	-13.00	-34.64
1671.50	-61.19	H	-64.89	2.52	9.95	-57.46	-13.00	-44.46
2513.00	-55.26	H	-57.93	3.18	10.62	-50.49	-13.00	-37.49
High Channel 251 (848.80MHz)								
1697.00	-62.50	V	-64.50	2.54	10.06	-56.98	-13.00	-43.98
2547.00	-63.86	V	-62.05	3.14	10.68	-54.51	-13.00	-41.51
1697.00	-61.42	H	-64.15	2.54	10.06	-56.63	-13.00	-43.63
2547.00	-63.88	H	-62.33	3.14	10.68	-54.79	-13.00	-41.79

Engineer : Wind	Time : 2015-06-18
Site : EMC Lab AC 102	Margin : 6
Limit : FCC_Part22&24 and RSS 133 Clause 6.5&6.6	Probe : VERTICAL/ HORIZONTAL
EUT :CX502E	Note : GPRS 1900

Frequency (MHz)	SA Reading (dBm)	Ant.Pol. (H/V)	SG Reading (dBm)	Cable Loss (dB)	Gain (dBi)	EIRP (dBm)	Limit (dBm)	Margin (dB)
Low Channel 512 (1850.20MHz)								
3700.00	-61.54	V	-58.18	3.84	12.69	-49.33	-13.00	-36.33
5550.00	-56.40	V	-48.51	4.82	13.15	-40.18	-13.00	-27.18
3700.00	-61.51	H	-58.08	3.84	12.69	-49.23	-13.00	-36.23
5550.00	-54.95	H	-46.44	4.82	13.15	-38.11	-13.00	-25.11
Middle Channel 661 (1880.00MHz)								
3760.00	-63.15	V	-59.87	3.73	12.72	-50.88	-13.00	-37.88
5640.00	-63.52	V	-55.89	4.93	13.14	-47.68	-13.00	-34.68
3760.00	-62.11	H	-58.91	3.73	12.72	-49.92	-13.00	-36.92
5640.00	-53.82	H	-45.88	4.93	13.14	-37.67	-13.00	-24.67
High Channel 810 (1909.80MHz)								
3818.00	-60.74	V	-56.86	4.02	12.73	-48.15	-13.00	-35.15
5727.00	-59.69	V	-51.43	4.87	13.11	-43.19	-13.00	-30.19
3818.00	-57.17	H	-53.45	4.02	12.73	-44.74	-13.00	-31.74
5727.00	-56.96	H	-48.29	4.87	13.11	-40.05	-13.00	-27.05



8. Peak-Average Ratio

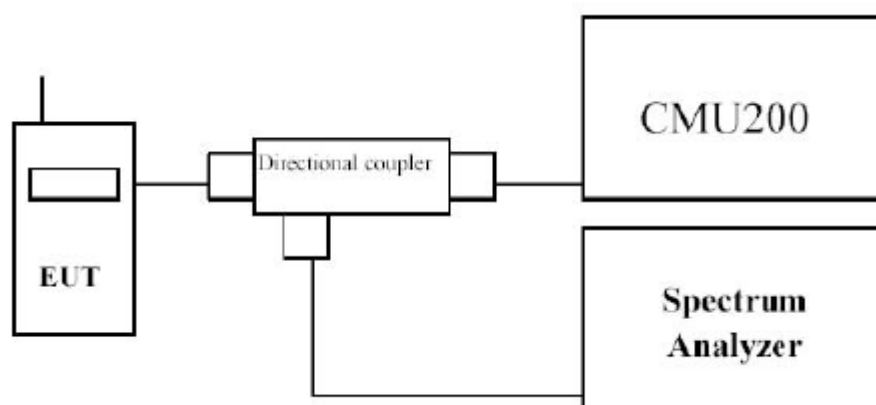
8.1. Test Limit

The transmitter's peak-to-average power ratio (PAPR) shall not exceed 13 dB for more than 0.1% of the time using a signal corresponding to the highest PAPR during periods of continuous transmission.

8.2. Test Procedure

KDB 971168 D01v02r01 - Section 5.7 & ANSI/TIA-603-D-2010

8.3. Test Setup

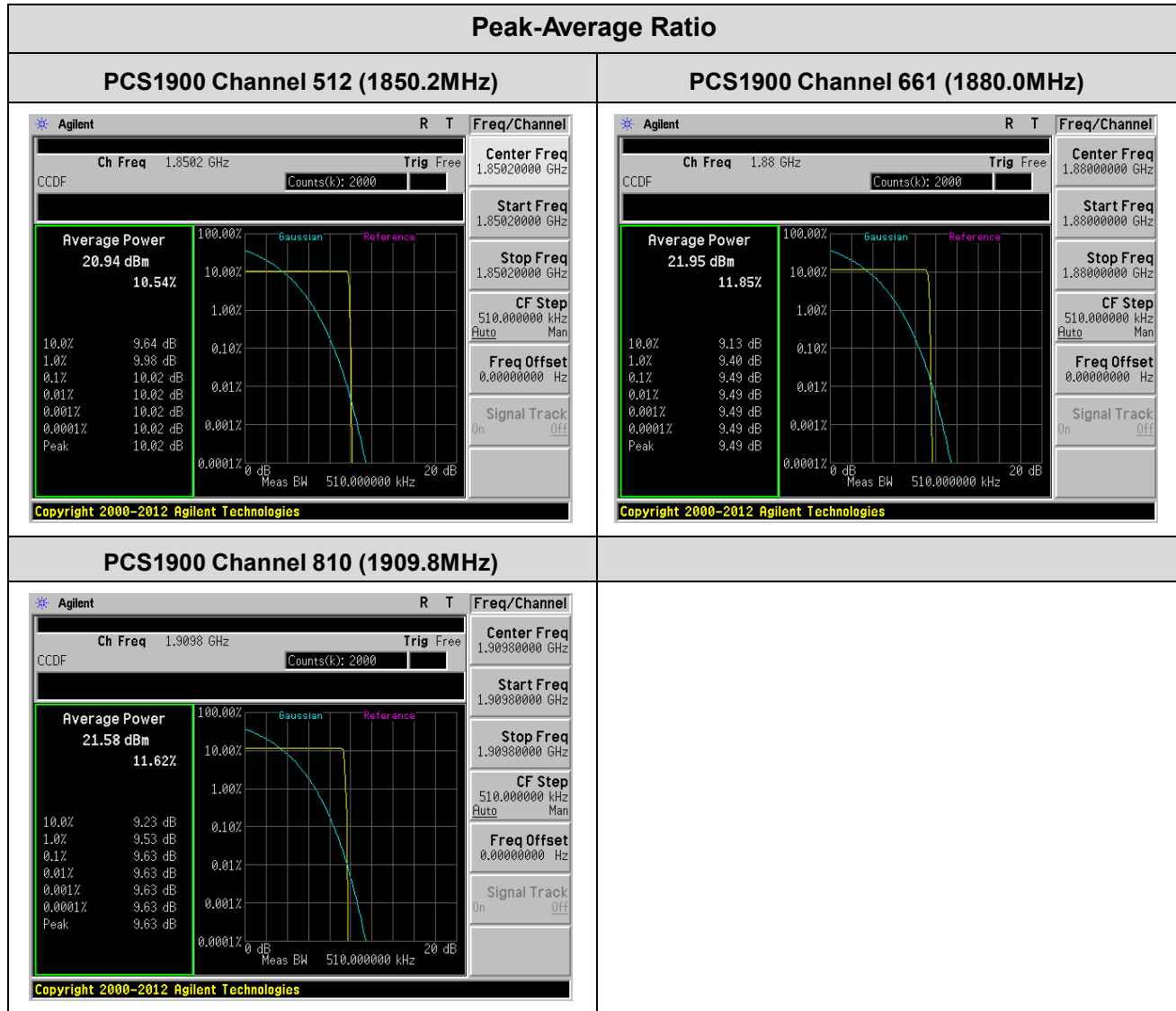


8.4. Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	Agilent	E4407B	MY44211883	2015.09.12	2016.09.11
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30



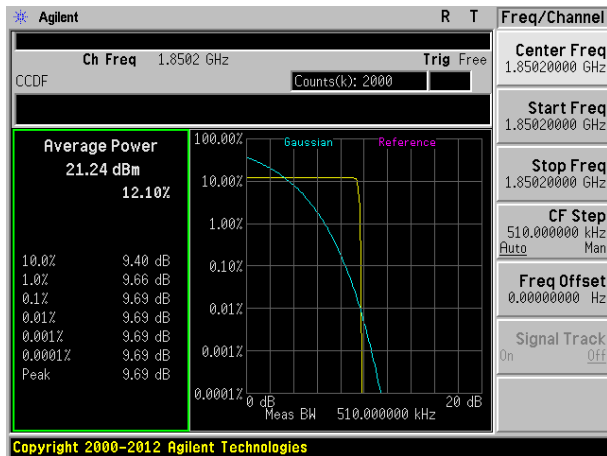
8.5. Test Result



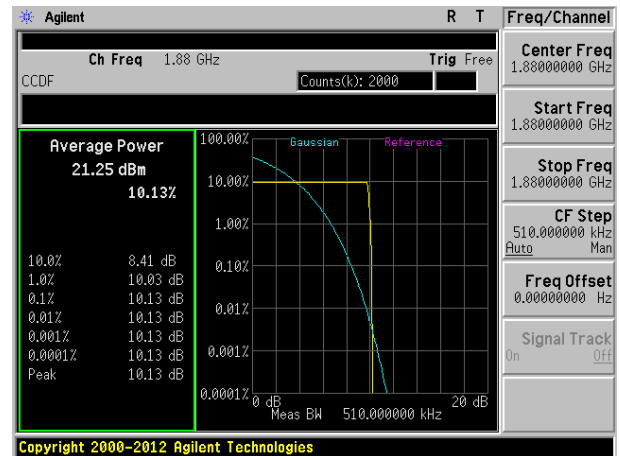


Peak-Average Ratio

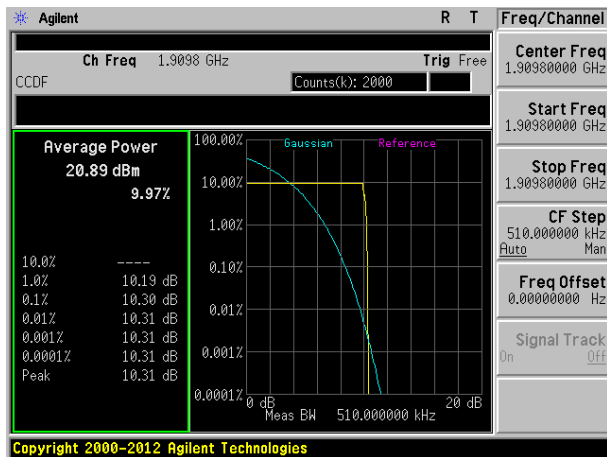
EDGE1900 Channel 512 (1850.2MHz)



EDGE1900 Channel 661 (1880.0MHz)



EDGE1900 Channel 810 (1909.8MHz)





9. Frequency Stability Under Temperature & Voltage Variations

9.1. Test Limit

According to FCC §2.1055, FCC §22.355, .FCC §24.235.

Frequency Tolerance: 2.5 ppm

9.2. Test Procedure

Frequency Stability Under Temperature Variations:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 20oC operating frequency as reference frequency. Turn EUT off and set the chamber temperature to –30oC. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10oC increased per stage until the highest temperature of +50oC reached.

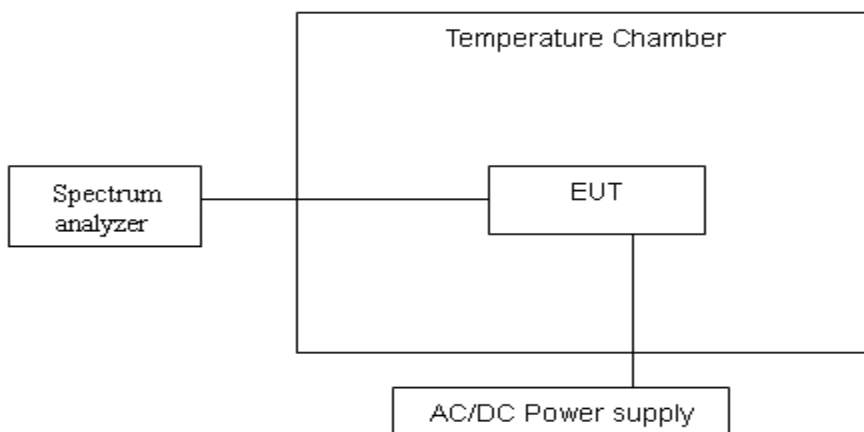
Frequency Stability Under Voltage Variations:

Set chamber temperature to 20°C. Use a variable AC power supply / DC power source to power the EUT and set the voltage to rated voltage. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and recorded the frequency.

Reduce the input voltage to specify extreme voltage variation ($\pm 10\%$) and endpoint, record the maximum frequency change.



9.3. Test Setup Layout



9.4. Measurement Equipment

Instrument/Ancillary	Model No.	Manufacturer	Serial No.	Calibration Date	Valid Date
Spectrum Analyzer	Agilent	E4407B	MY44211883	2014.09.12	2015.09.11
Universal Radio Communication Tester	CMU200	R&S	108823	2015.03.29	2016.03.28
Temperature/ Humidity Meter	Zhicheng	ZC1-11	CEP-TH-002	2015.03.31	2016.03.30



9.5. Test Result and Data

Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 1: GSM 850 Link		
Date of Test	2015/06/19	Test Site	AC104

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-30	836.40	61	± 2091
-20	836.40	-14	± 2091
-10	836.40	44	± 2091
0	836.40	33	± 2091
10	836.40	49	± 2091
20	836.40	23	± 2091
30	836.40	63	± 2091
40	836.40	55	± 2091
50	836.40	-58	± 2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
3.4	836.40	33	± 2091
3.7	836.40	52	± 2091
4.2	836.40	-19	± 2091



Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 2: PCS1900 Link		
Date of Test	2014/12/29	Test Site	AC104

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-30	1880.00	43	± 4700
-20	1880.00	57	± 4700
-10	1880.00	32	± 4700
0	1880.00	36	± 4700
10	1880.00	44	± 4700
20	1880.00	39	± 4700
30	1880.00	59	± 4700
40	1880.00	-23	± 4700
50	1880.00	50	± 4700

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
3.4	1880.00	62	± 4700
3.7	1880.00	-32	± 4700
4.2	1880.00	-47	± 4700



Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 3: GPRS 850 Link		
Date of Test	2014/12/29	Test Site	AC104

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-30	836.40	40	± 2091
-20	836.40	30	± 2091
-10	836.40	34	± 2091
0	836.40	62	± 2091
10	836.40	-31	± 2091
20	836.40	15	± 2091
30	836.40	33	± 2091
40	836.40	-13	± 2091
50	836.40	34	± 2091

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
3.4	836.40	29	± 2091
3.7	836.40	-18	± 2091
4.2	836.40	43	± 2091



Test Item	Frequency Stability Under Temperature & Voltage Variations		
Test Mode	Mode 4: GPRS 1900 Link		
Date of Test	2014/12/29	Test Site	AC104

Frequency Stability under Temperature

Temperature Interval (°C)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
-30	1880.00	11	± 4700
-20	1880.00	-20	± 4700
-10	1880.00	43	± 4700
0	1880.00	50	± 4700
10	1880.00	-44	± 4700
20	1880.00	-10	± 4700
30	1880.00	74	± 4700
40	1880.00	30	± 4700
50	1880.00	-29	± 4700

Frequency Stability under Voltage

DC Voltage (V)	Test Frequency (MHz)	Deviation (Hz)	Limit (Hz)
3.4	1880.00	-32	± 4700
3.7	1880.00	43	± 4700
4.2	1880.00	-36	± 4700