683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
Tel: +82-31-321-2664 Fax: +82-31-321-1664
http://www.digitalemc.com

CERTIFICATE OF COMPLIANCE
FCC Part 22 & 24 Certification

Dates of Tests: August 31 ~ September 6, 2006
Test Report S/N:DR50110609B
Test Site : DIGITAL EMC CO., LTD.

FCC ID. **R2NSGP-1036**

APPLICANT **SUNGIL TELECOM CO., LTD.**

Classification	:	**Licensed Portable Transmitter Held to Ear (PCE)**
FCC Rule Part(s)	:	**§22(H), §24(E), §2**
EUT Type	:	**GSM850 / PCS1900 Dual Band Terminal Equipment**
Model name	:	**SGP-1036**
Serial number	:	**Identical prototype**
TX Frequency Range	:	**824.2 ~ 848.8 MHz (GSM850) / 1850.2 ~ 1909.8 MHz (PCS1900)**
RX Frequency Range	:	**869.2 ~ 893.8 MHz (GSM850) / 1930.2 ~ 1989.8 MHz (PCS1900)**
Max. RF Output Power	:	**1.205 W ERP GSM850**
	:	**0.454 W EIRP PCS1900**
Max. SAR Measurement	:	**0.640W/kg GSM850 Body SAR**
	:	**0.062W/kg PCS1900 Body SAR**
Date of Issue	:	**September 12, 2006**

TABLE OF CONTENTS

MEASUREMENT REPORT

1. Scope

Measurement and determination of electromagnetic emissions (EME) of radio frequency devices including intentional and/or unintentional radiators for compliance with the technical rules and regulations of the Federal Communications Commission.

§2.1033 General Information

Applicant: SUNGIL TELECOM CO., LTD.
Address: Lordland EZ Tower #511, 153, Gumi-Dong, Bundang-Gu,
SEONGNAMCITY, GYUNGGI, KOREA
Attention: Woo Won Choung

- FCC ID: **R2NSGP-1036**
- Quantity: The mass product
- Tx Freq. Range: 824.2 ~ 848.8 MHz (GSM850) / 1850.2 ~ 1909.8 MHz (PCS1900)
- Rx Freq. Range: 869.2 ~ 893.8 MHz (GSM850) / 1930.2 ~ 1989.8 MHz (PCS1900)
- Max. Power Rating: 1.205W ERP GSM850
  0.454W EIRP PCS1900
- FCC Classification(s): Licensed Portable Transmitter Held to Ear (PCE)
- Equipment (EUT) Type: GSM850 / PCS1900 Dual Band Terminal Equipment
- Modulation(s): GMSK
- Frequency Tolerance: ± 0.00025 % (2.5ppm)
- FCC Rule Part(s): §22(H), §24(E), §2
- Dates of Tests: August 31 ~ September 6, 2006
- Place of Tests: DIGITAL EMC
- Test Report S/N: DR50110609B

2. General Information

This report contains the result of tests performed by:

DIGITAL EMC CO., LTD.
Address : 683-3, Yubang-Dong, Yongin-Si, Kyunggi-Do, Korea. 449-080
http://www.digitalemc.com E-mail : demc@unitel.co.kr
Tel: +82-31-321-2664 Fax: +82-31-321-1664

Quality control in the testing laboratory is implemented as per ISO/IEC 17025 which is the "General requirements for the competents of calibration and testing laboratory".
This laboratory is accredited by NVLAP for NVLAP Lab. Code : 200559-0.

Test operator: engineer

Data	Name	Signature
September 12, 2006	Won-Jung LEE	

Report Reviewed By: manager

Data	Name	Signature
September 12, 2006	Harvey Sung	

Ordering party:

Company name	:	SUNGIL TELECOM CO., LTD.
Address	:	Roadland EZ Tower #511, 513, Gumi-dong, Bundang-Gu,
Zipcode	:	463-500
City/town	:	SEONGNAM-CITY, KYUNGGI
Country	:	KOREA
Date of order	:	August 22, 2006

3. Test Report

3.1 Summary of test

FCC Part Section(s)	Parameter	Status (note 1)
22.913(a) / 24.232(b), 2.1046	Power Output	C
22.917 / 24.238, 2.1049(h)(i)	Occupied Bandwidth	C
22.917(b) / 24.238(b)	Emission Bandwidth	C
22.917 / 24.238 2.1051	Emission Limits Transmitter	C
2.1053 (a)	Field Strength of Spurious Radiation	C
2.1055	Frequency Stability	C
Note 1: C= Complies NC=Not Complies NT=Not Tested NA=Not Applicable		

The sample was tested according to the following specification:

FCC Parts §22(H), §24(E), §2; ANSI C-63.4-2003

3.2 Power Output

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 2.1046 (a)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850 1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900

Measurement Procedure:

- During the process of testing, the EUT was controlled via Radio Communication tester to ensure max. Power transmission and proper modulation.
- Power output was measured at the RF output terminals when the transmitter is adjusted in accordance with Communication tester (or the tune-up procedure).

Measurement Data:

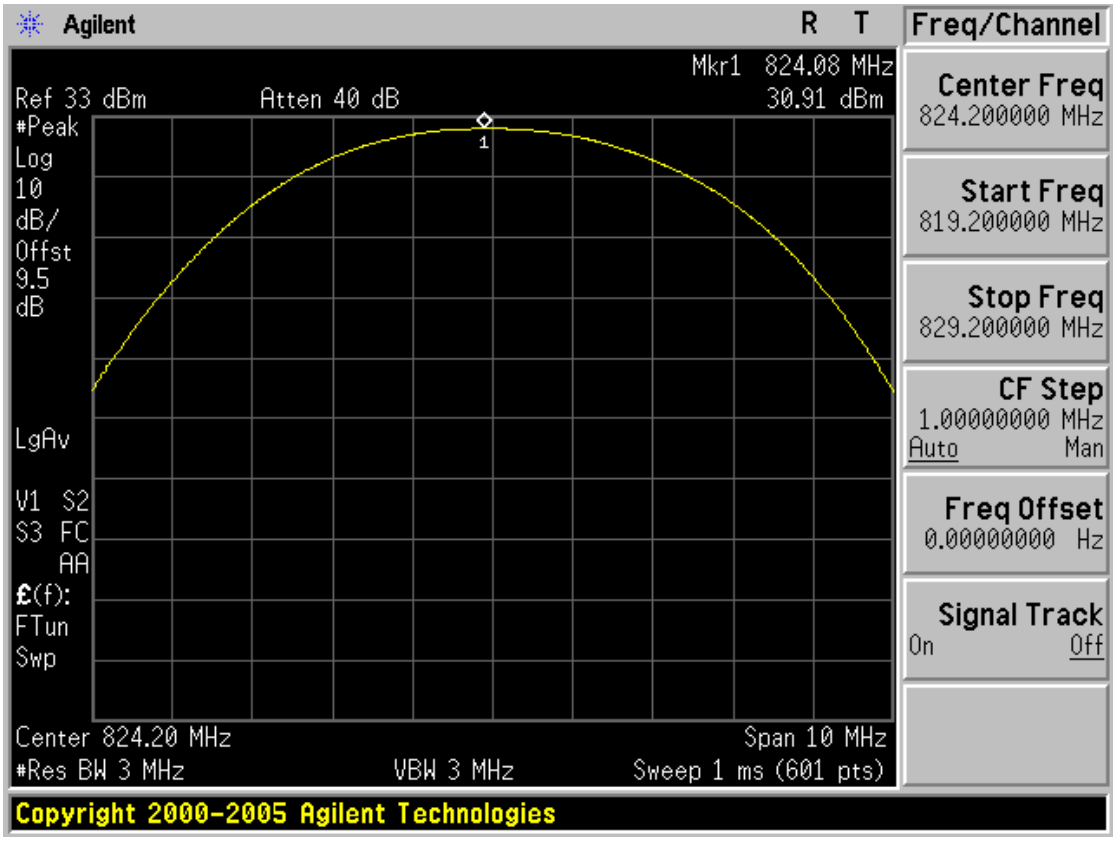
GSM850

Channel	Frequency (MHz)	TEST CONDITIONS Power Step: 5
		(dBm)
128	824.2	**30.91**
190	836.6	**31.21**
251	848.8	**31.99**

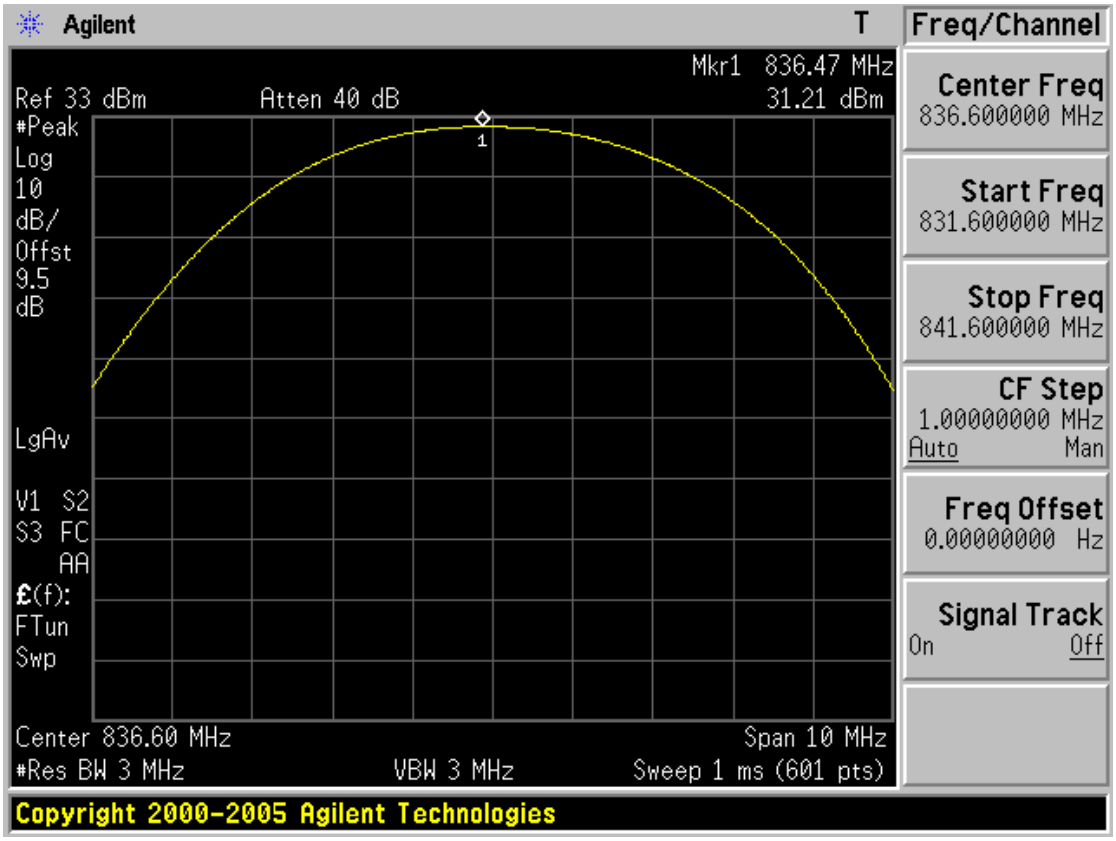
PCS1900

Channel	Frequency (MHz)	TEST CONDITIONS Power Step: 0
		(dBm)
512	1850.2	**29.66**
661	1880.0	**29.18**
810	1909.8	**29.01**

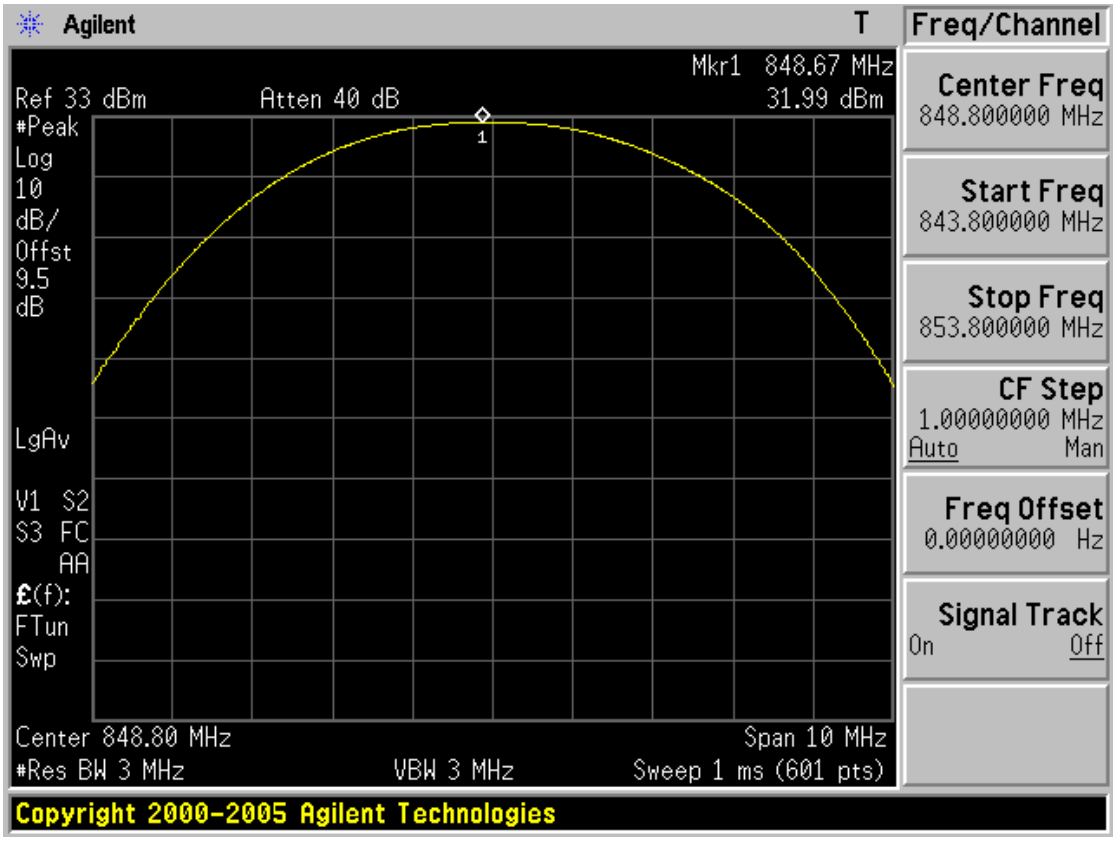
POWER OUT. GSM850 Ch.128



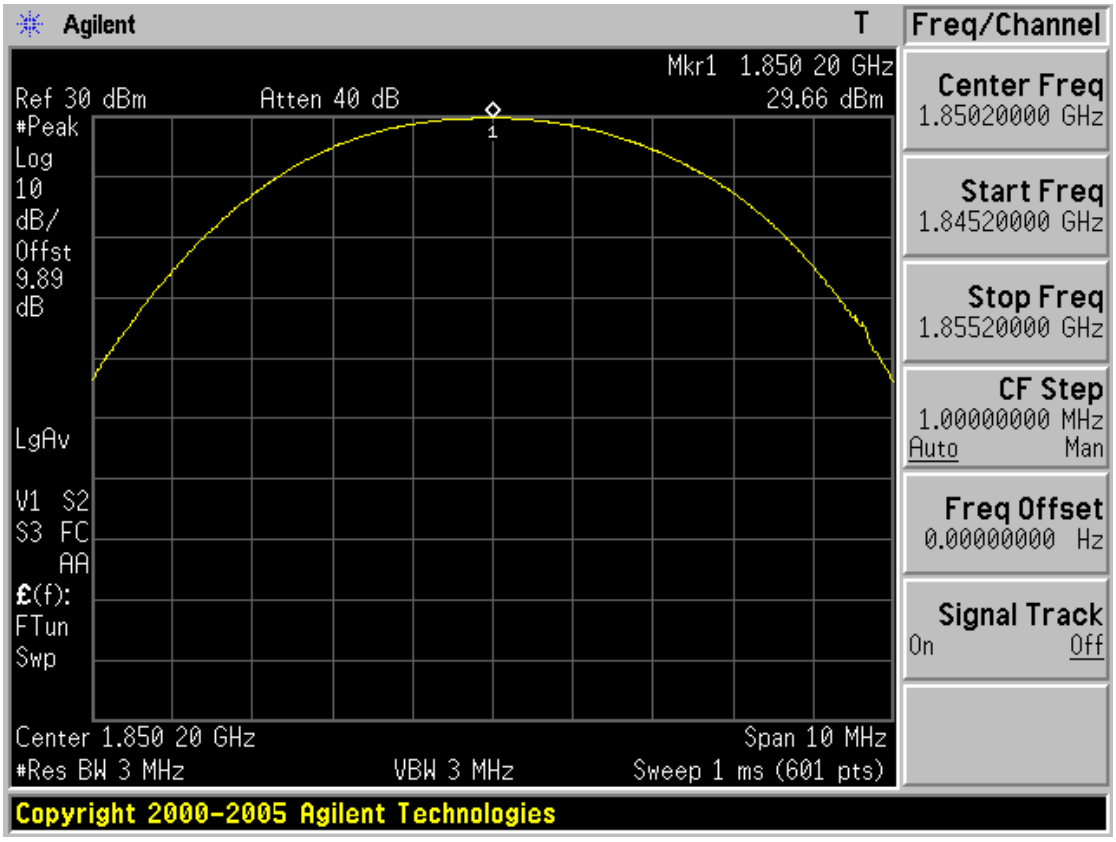
POWER OUT. GSM850 Ch.190



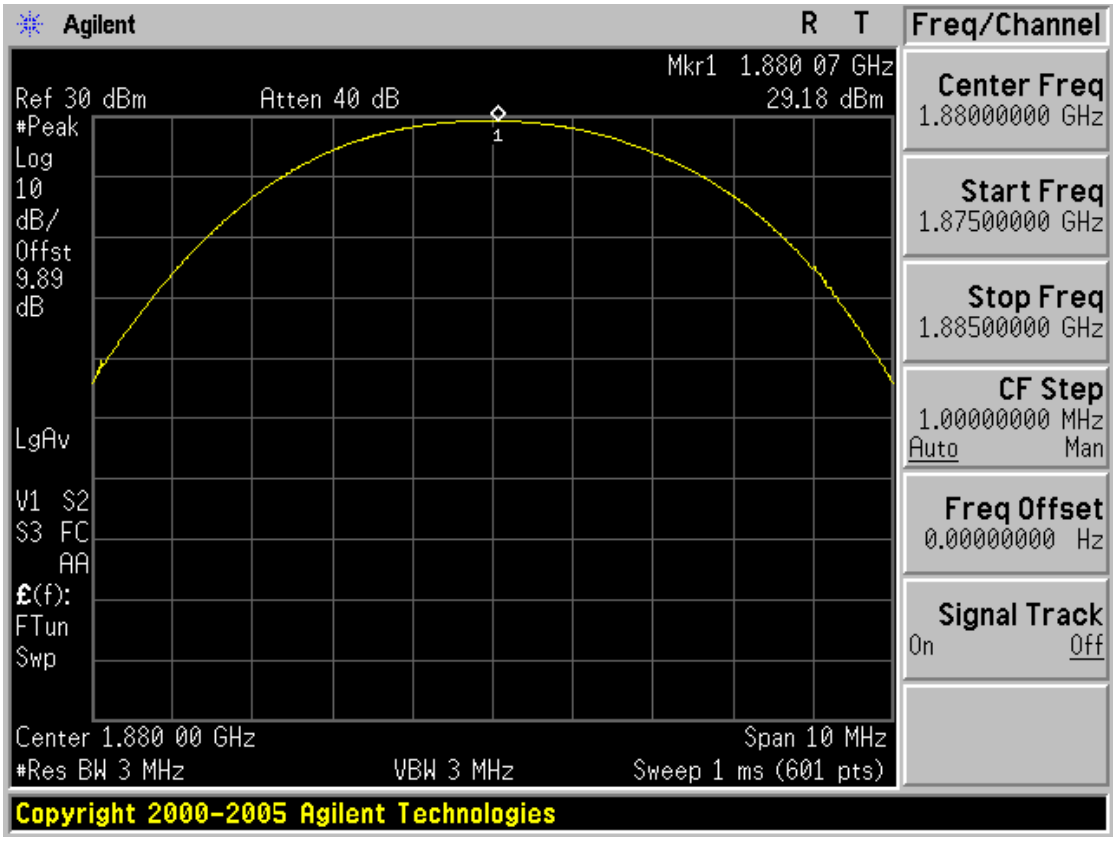
POWER OUT. GSM850 Ch.251



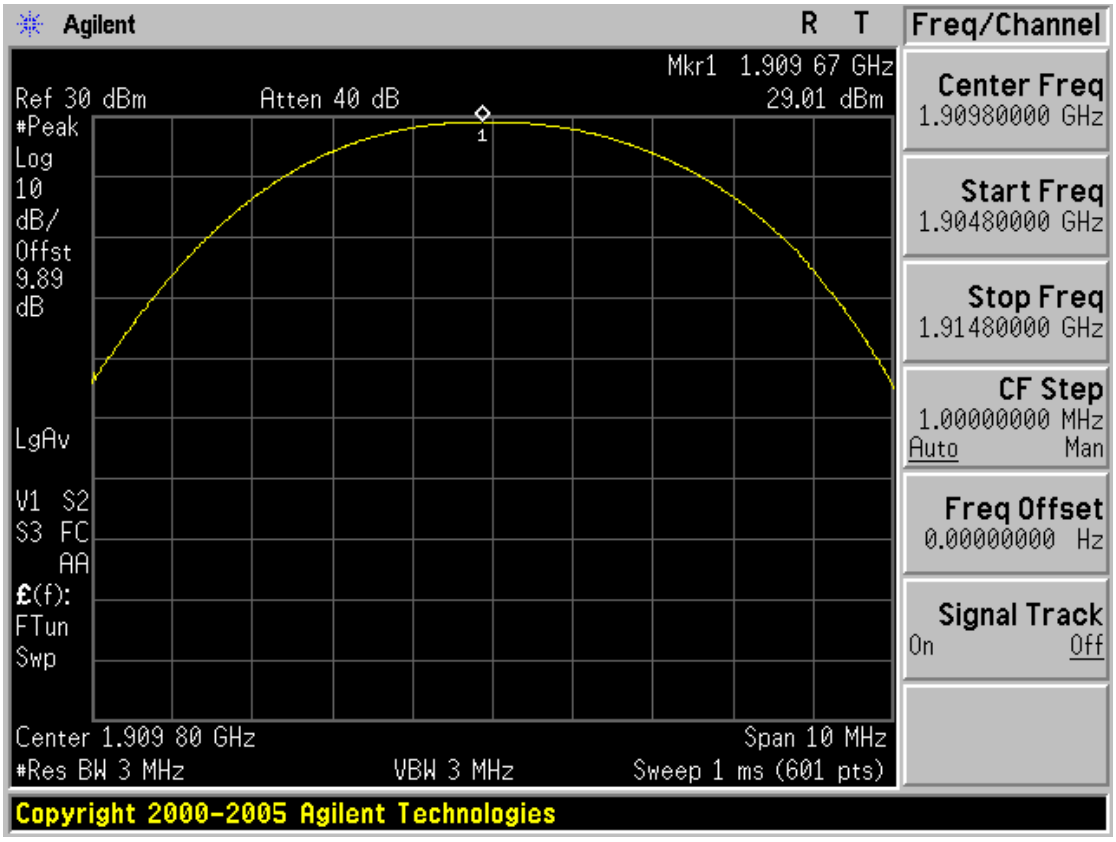
POWER OUT. PCS1900 Ch.512



POWER OUT. PCS1900 Ch.661



POWER OUT. PCS1900 Ch.810



ERP (GSM850)

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 22.913(a)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850
RBW=VBW	:	3MHz

Measurement Procedure:

Effective Radiated Power Output Measurements by Substitution Method

according to ANSI/TIA/EIA-603-C 2004

The EUT was placed on a wooden turntable 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the dipole is measured. The ERP is recorded.

Measurement Data:

GSM850

Channel	Frequency (MHz)	TEST CONDITIONS Power Step: 5				
		Ref. level (dBm)	Pol. (H/V)	ERP (dBm)	ERP (W)	Power Supply
128	824.2	-7.16	H	28.95	0.785	Adaptor
190	836.6	-6.22	H	30.30	1.072	Adaptor
251	**848.8**	**-5.88**	**H**	**30.81**	**1.205**	**Adaptor**

Note: Internal Battery of this phone is for backup purpose only.

EIRP (PCS1900)

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 24.232(b)
Tested Frequency	:	1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900
RBW=VBW	:	3MHz

Measurement Procedure:

Effective Radiated Power Output Measurements by Substitution Method

according to ANSI/TIA/EIA-603-C 2004

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A Horn antenna was substituted in place of the EUT. This Horn antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. The conducted power at the terminals of the Horn antenna is measured. The difference between the gain of the horn and an isotropic antenna is taken into consideration and the EIRP is recorded.

Measurement Data:

PCS1900

Channel	Frequency (MHz)	TEST CONDITIONS Power Step: 0					
		Ref. level (dBm)	Pol. (H/V)	ANT GAIN	EIRP (dBm)	EIRP (W)	Battery
512	**1850.2**	**-13.65**	**V**	**8.92**	**26.57**	**0.454**	**Adaptor**
661	1880.0	-15.49	V	8.94	24.86	0.306	Adaptor
810	1909.8	-15.18	V	8.95	24.38	0.274	Adaptor

Note: Internal Battery of this phone is for backup purpose only.

3.3 Occupied Bandwidth

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 2.1049 (h)(i)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850 1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900

Measurement Procedure:

- The 99% power bandwidth was measured with a calibrated spectrum analyzer.
- Spectrum analyzer plots are included on the following pages.

Measurement Data:

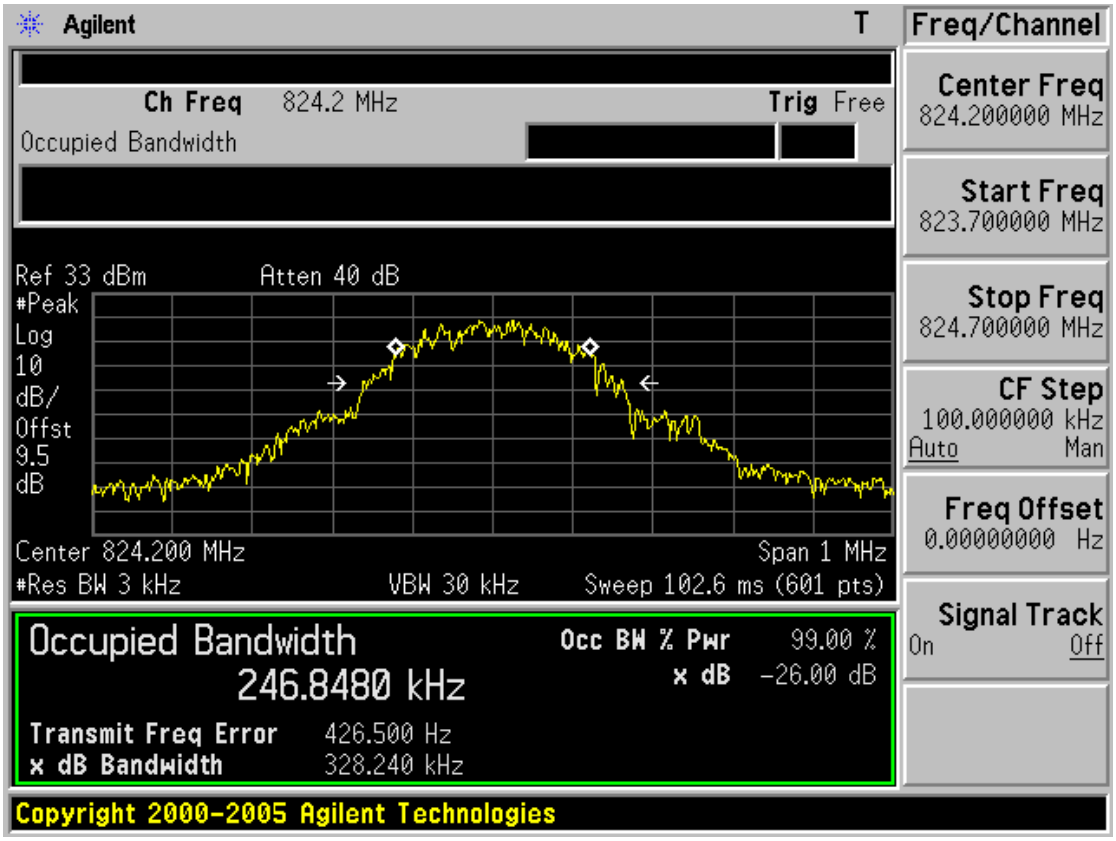
GSM850

Channel	Frequency (MHz)	99% Bandwidth (kHz)
128	824.2	**246.85**
190	836.6	**241.11**
251	848.8	**248.21**

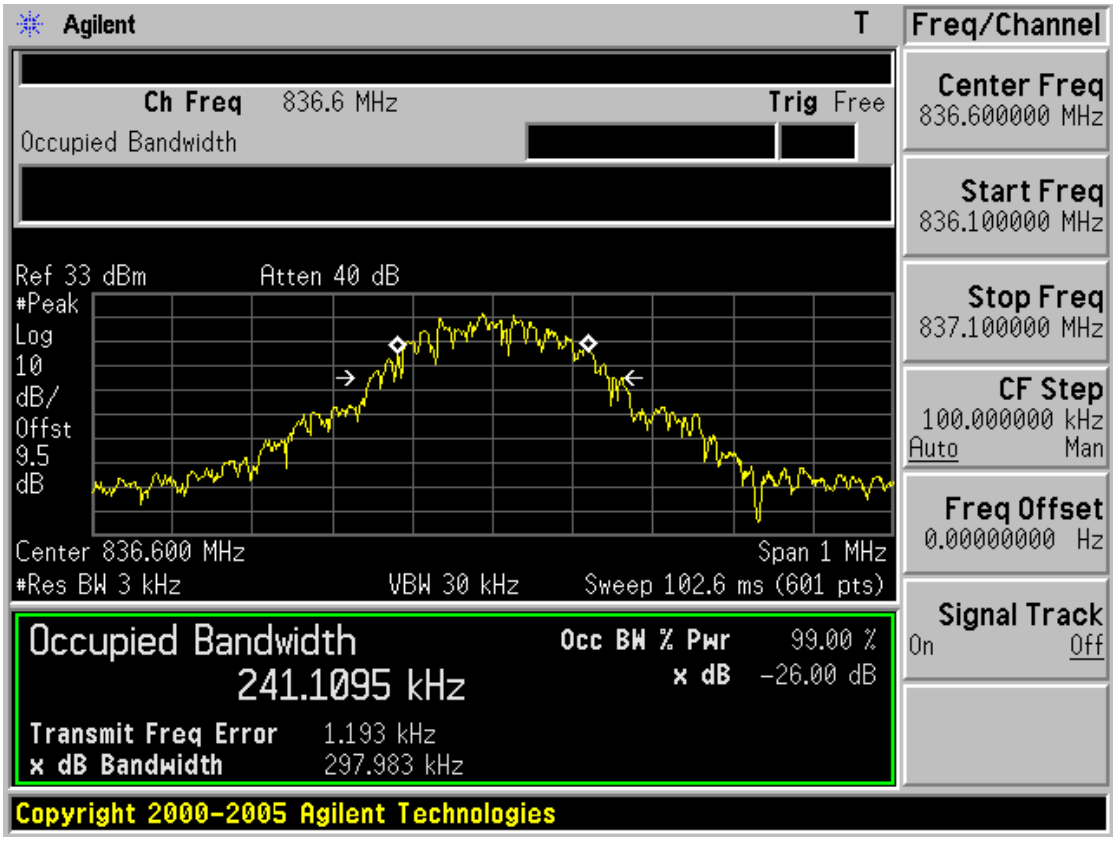
PCS1900

Channel	Frequency (MHz)	99% Bandwidth (kHz)
512	1850.2	**242.49**
661	1880.0	**238.04**
810	1909.8	**237.57**

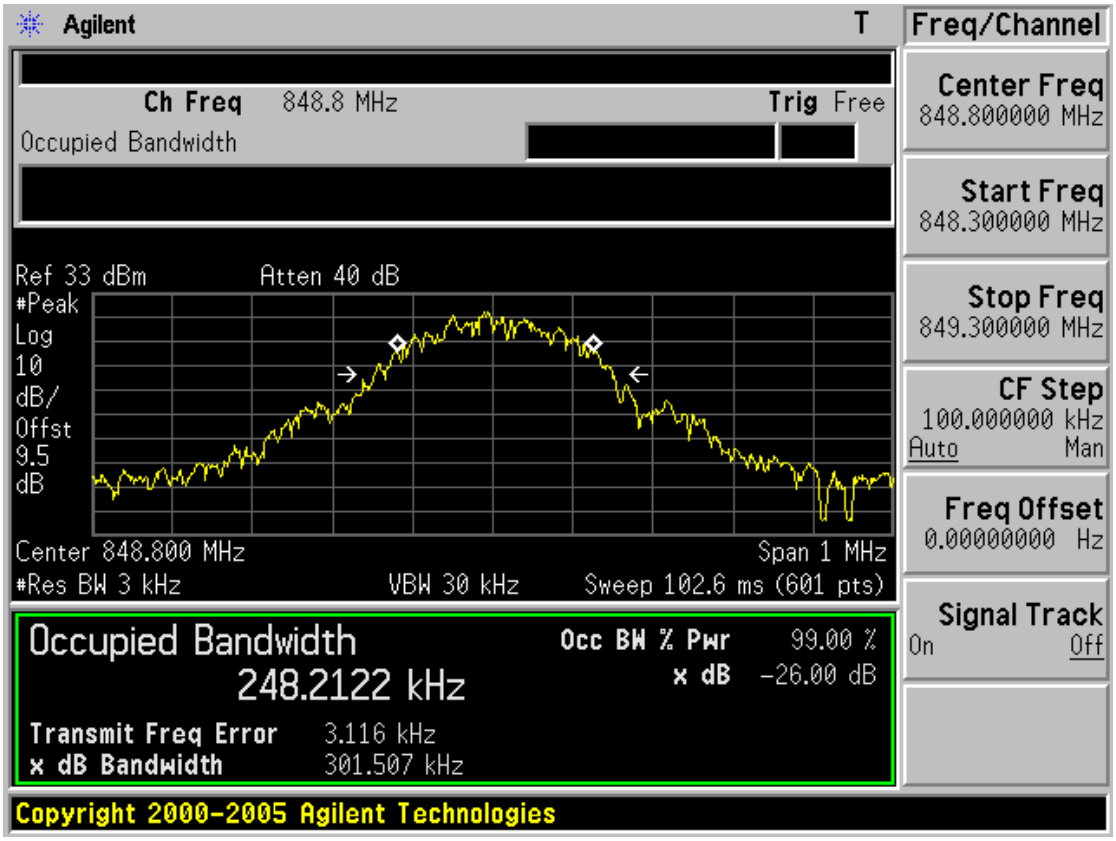
GSM850 **99 % Bandwidth Ch. 128**



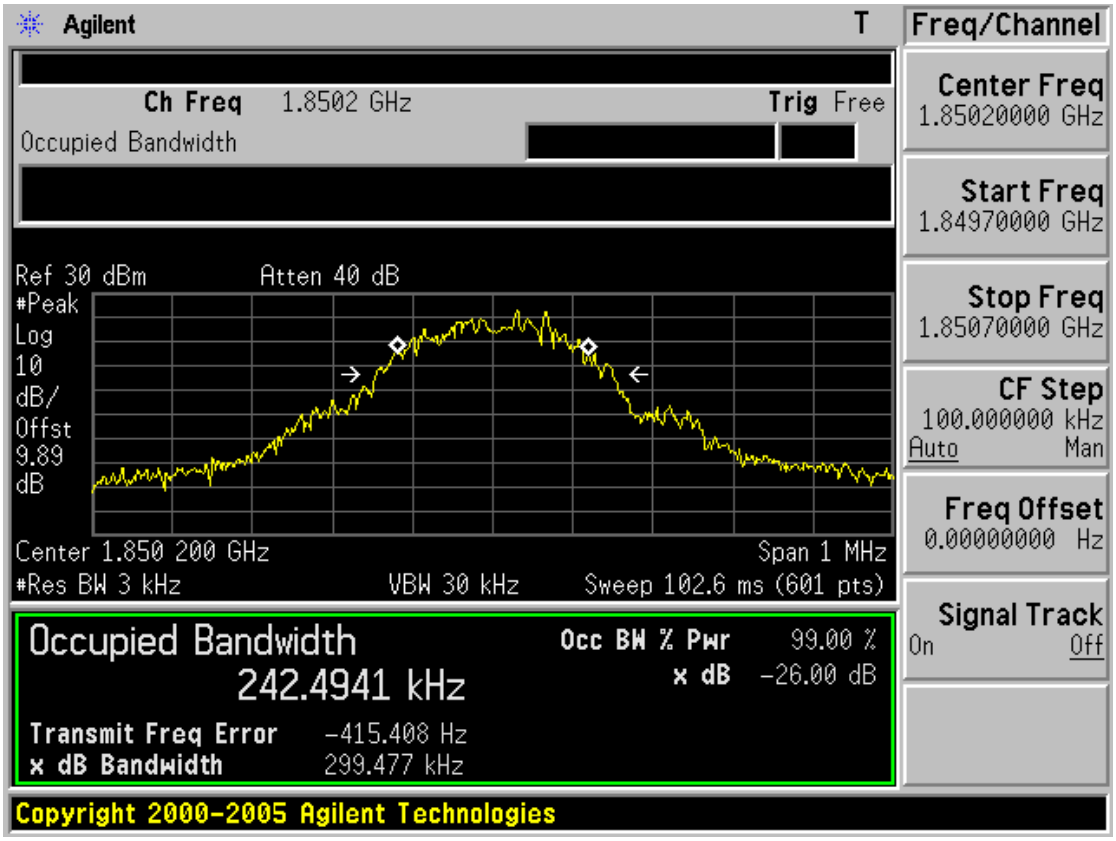
GSM850 **99 % Bandwidth Ch. 190**



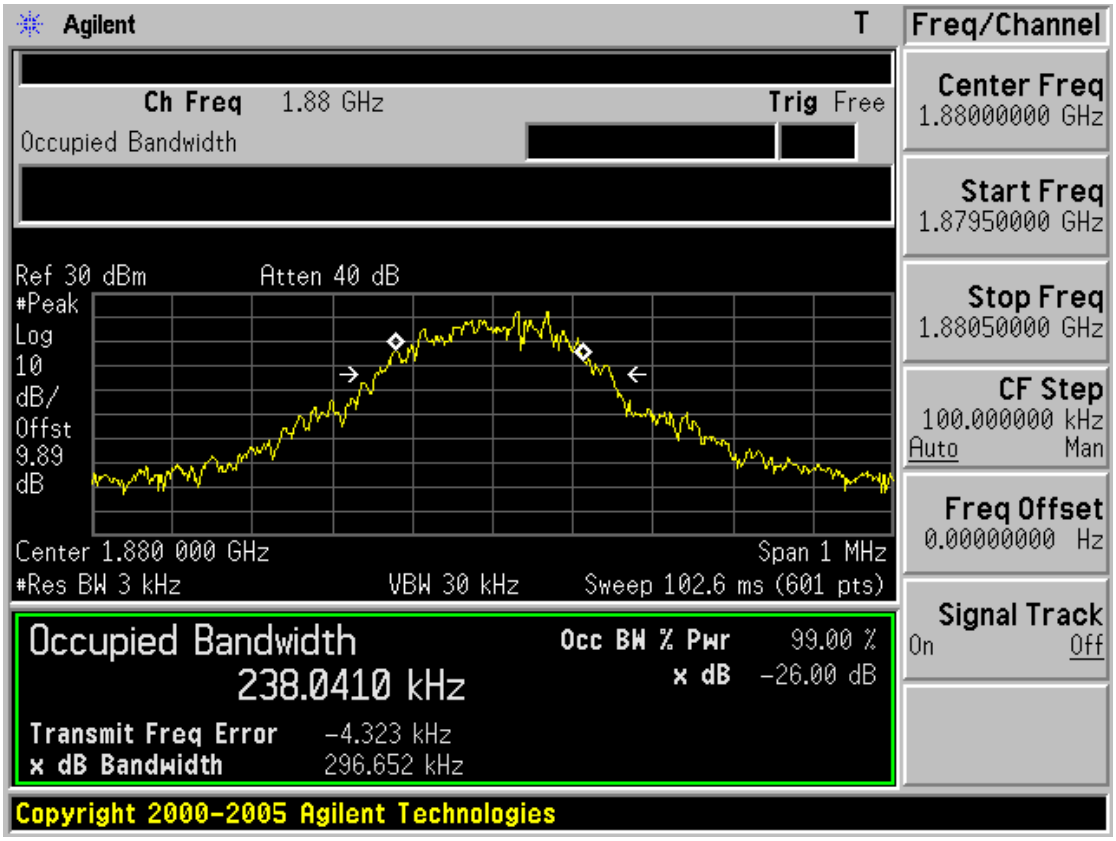
GSM850 **99 % Bandwidth Ch. 251**



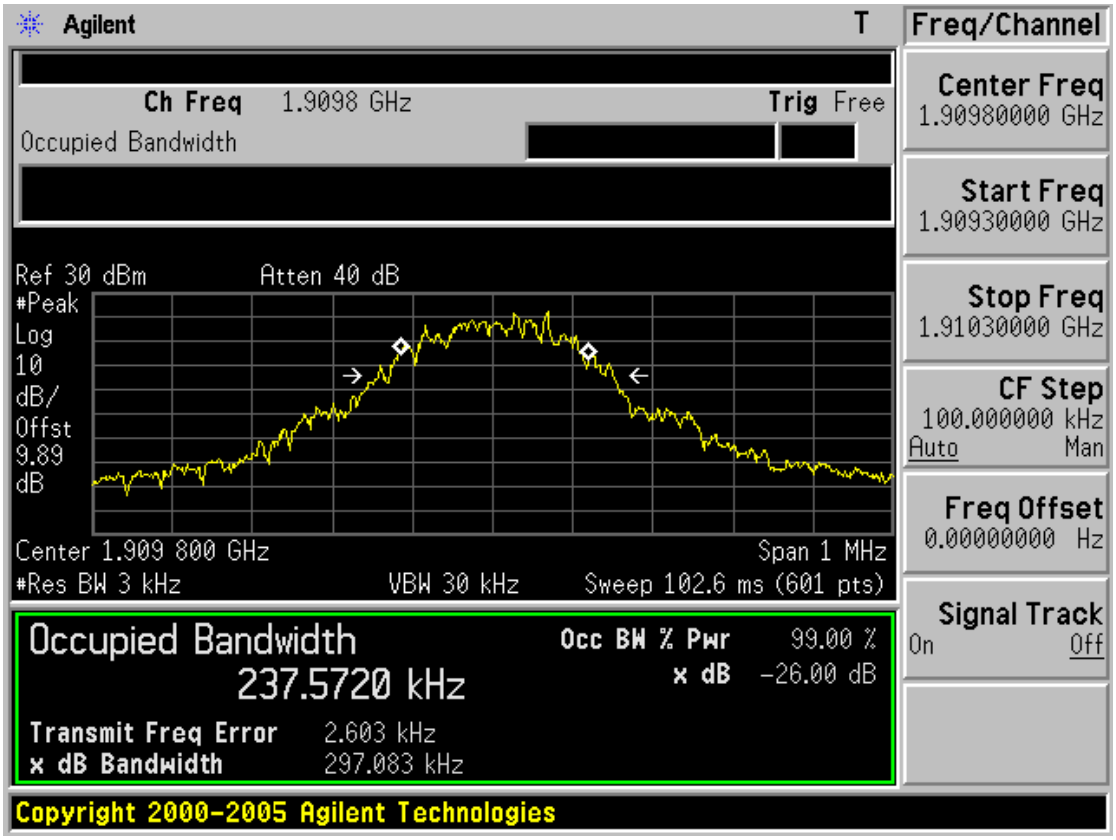
PCS1900 **99 % Bandwidth Ch. 512**



PCS1900 **99 % Bandwidth Ch. 661**



PCS1900 **99 % Bandwidth Ch. 810**



3.4 Occupied Bandwidth Emission Limit

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 24.238(b)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850 1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900

Measurement Procedure:

- (a) On any frequency outside a licensee's frequency block, the power of any emission shall be attenuated below the transmitter power (P) by at least 43+10log(P) dB.

  (b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1㎒ or greater. However, in the 1㎒ bands immediately outside and adjacent to the frequency block a resolution bandwidth of at least one percent of the emission bandwidth of the fundamental emission of the transmitter may be employed. The emission bandwidth is defined as the width of the signal between two points, one below the carrier center frequency and one above the carrier center frequency, outside of which all emission are attenuated at least 26dB below the transmitter power.

  (c) When measuring the emission limits, the nominal carrier frequency shall be adjusted as close to the licensee's frequency block edges, both upper and lower, as the design permits.

- The measurement of emission power can be expressed in peak or average values, provided they are expressed in the same parameters as the transmitter power.
- Spectrum analyzer plots are included on the following pages.

Measurement Data:

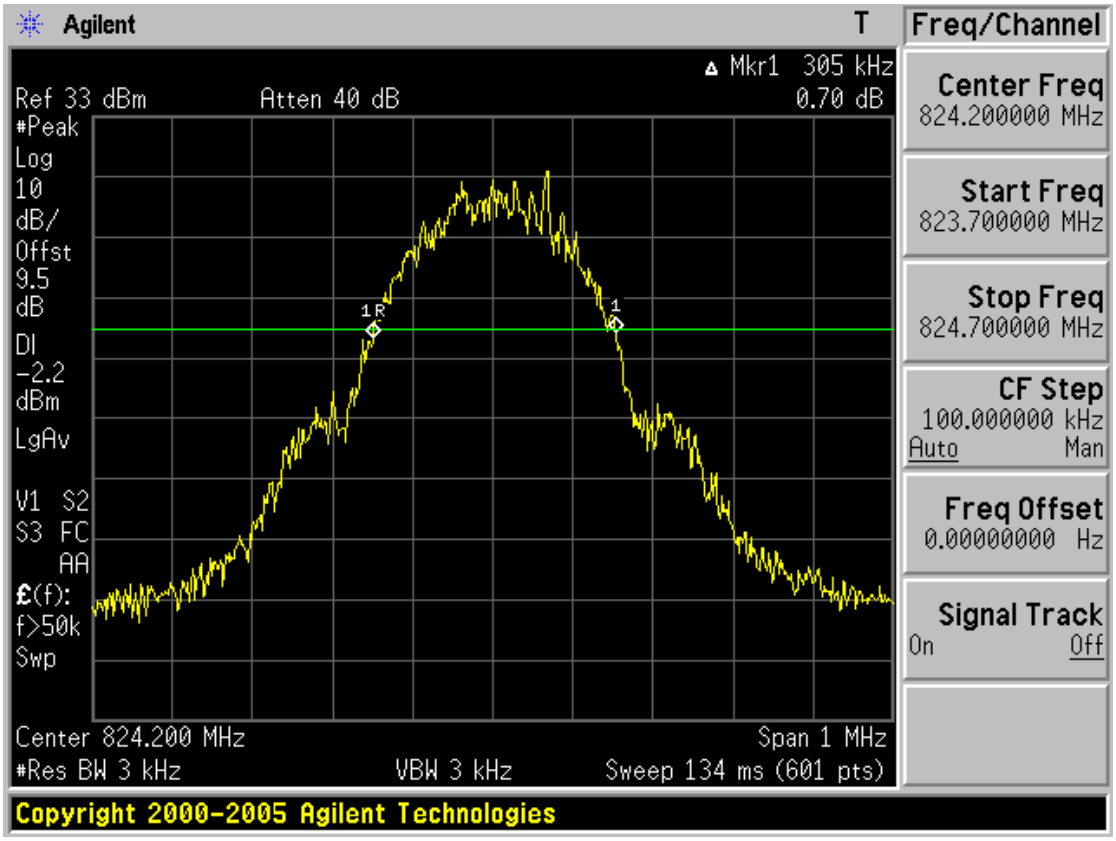
GSM850

Channel	Frequency (MHz)	-26dBc Bandwidth (kHz)
128	824.2	**305**
190	836.6	**317**
251	848.8	**314**

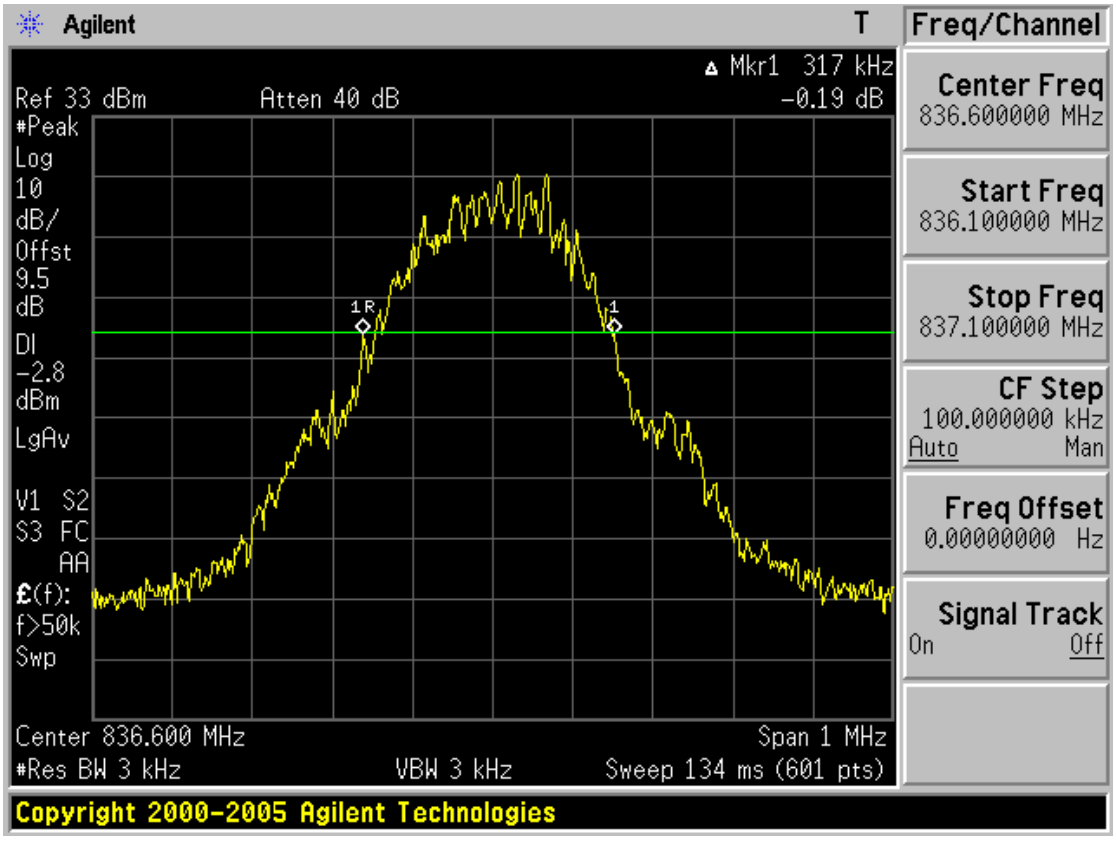
PCS1900

Channel	Frequency (MHz)	-26dBc Bandwidth (kHz)
512	1850.2	**300**
661	1880.0	**298**
810	1909.8	**301**

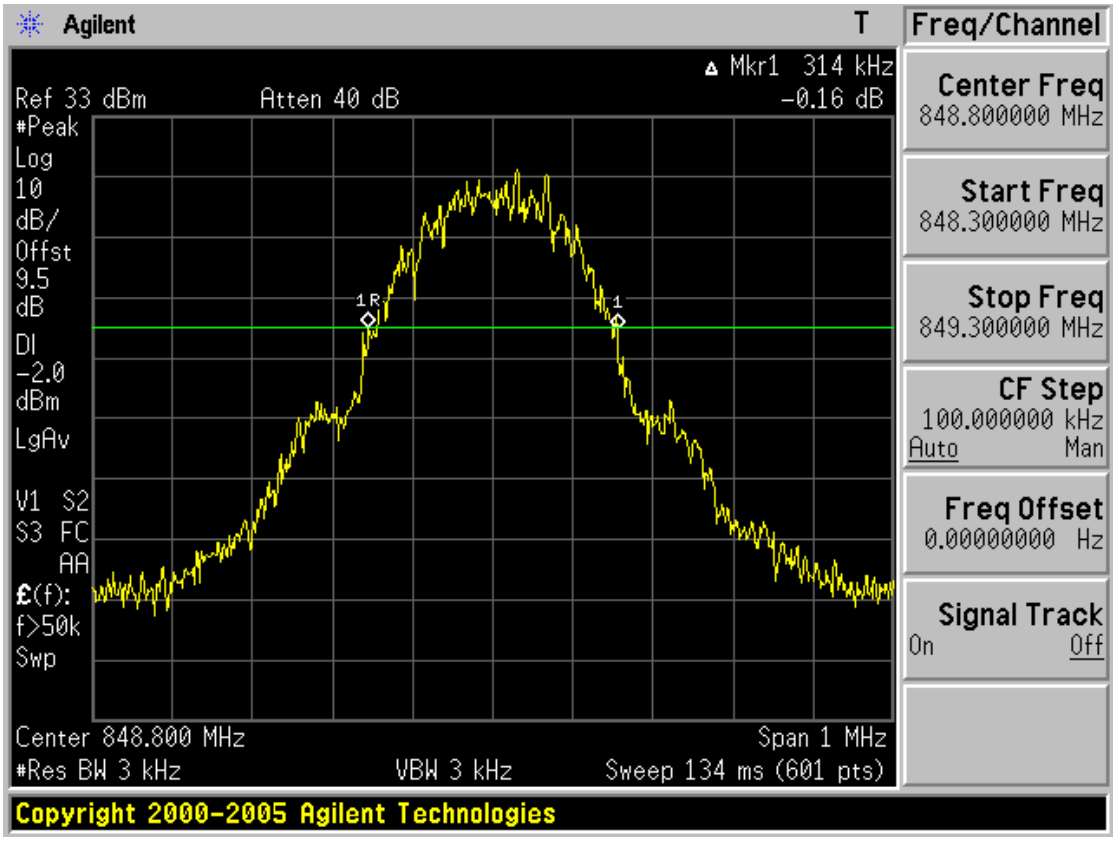
GSM850 **-26dBc Bandwidth Ch. 128**



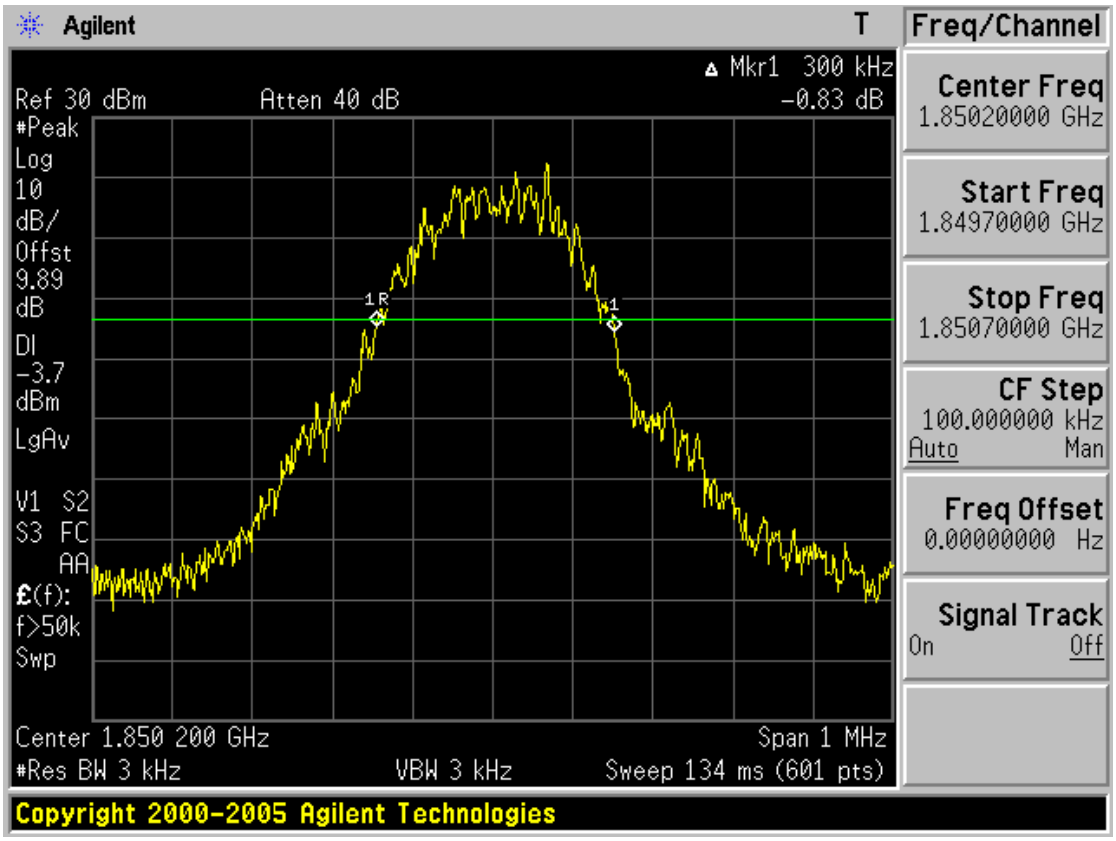
GSM850 **-26dBc Bandwidth Ch. 190**



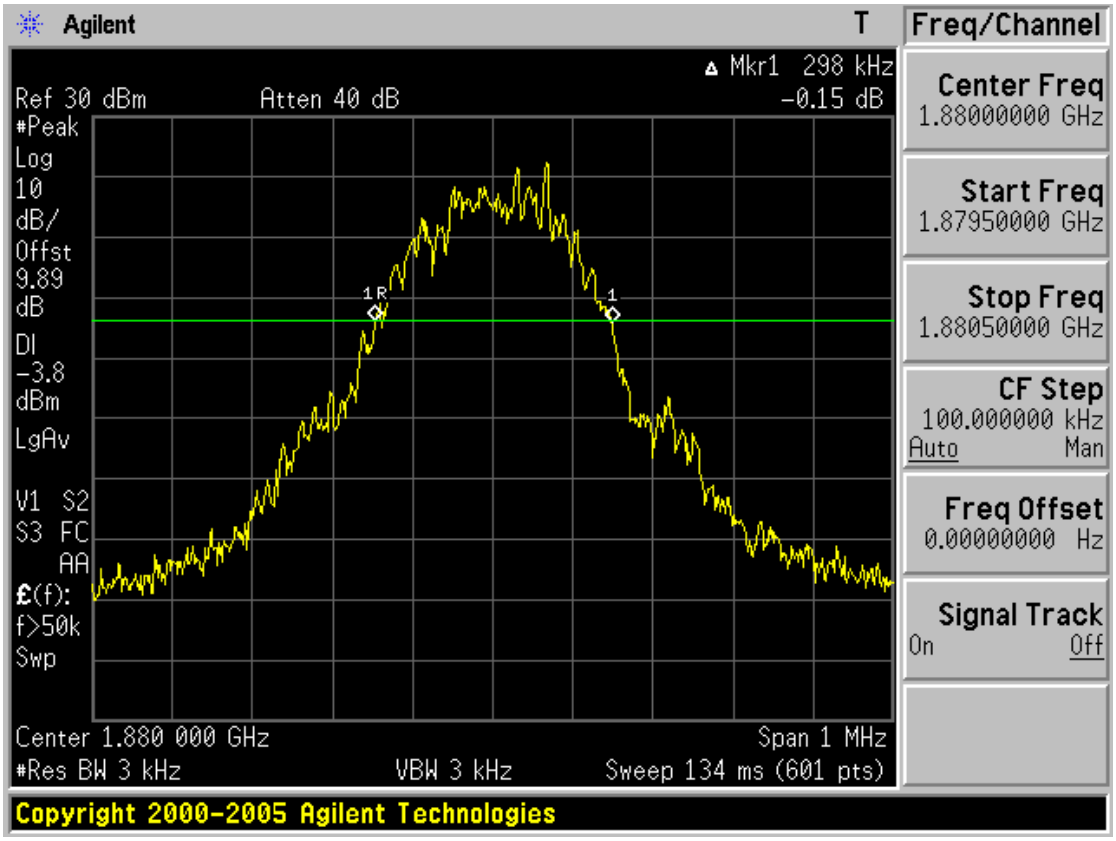
GSM850 **-26dBc Bandwidth Ch. 251**



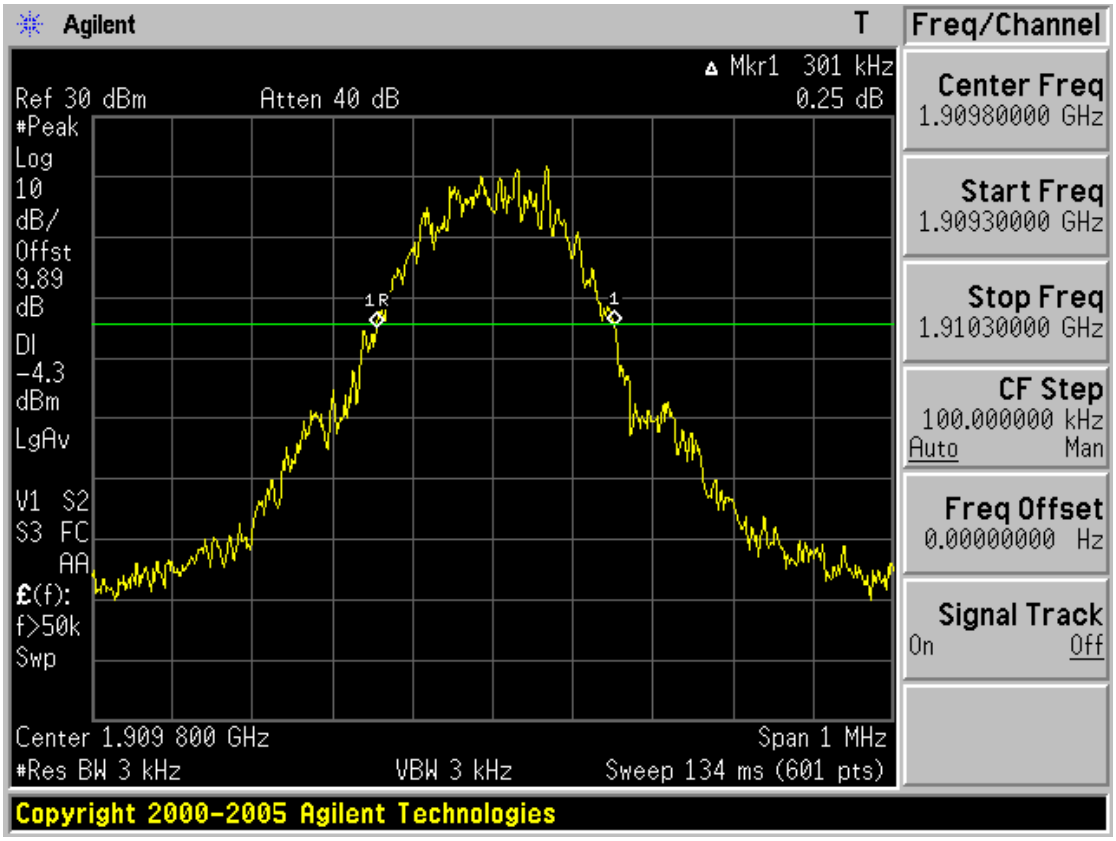
PCS1900 **-26dBc Bandwidth Ch. 512**



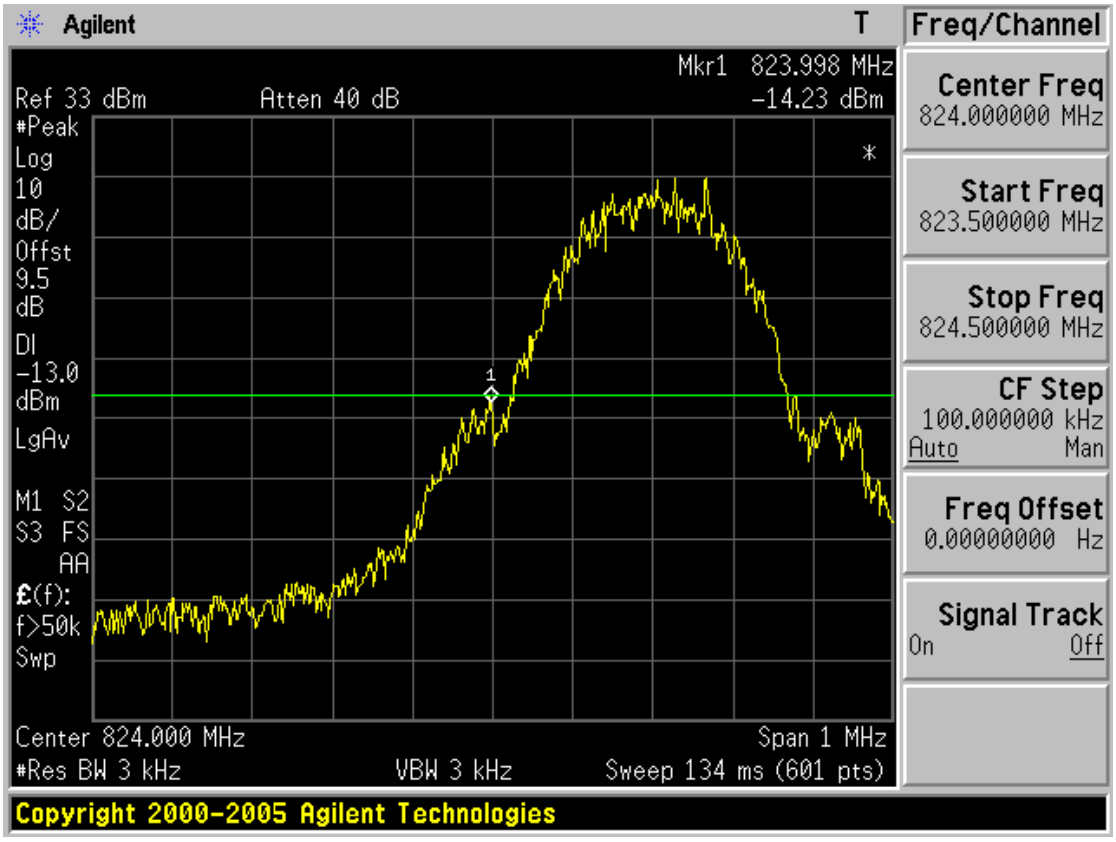
PCS1900 **-26dBc Bandwidth Ch. 661**



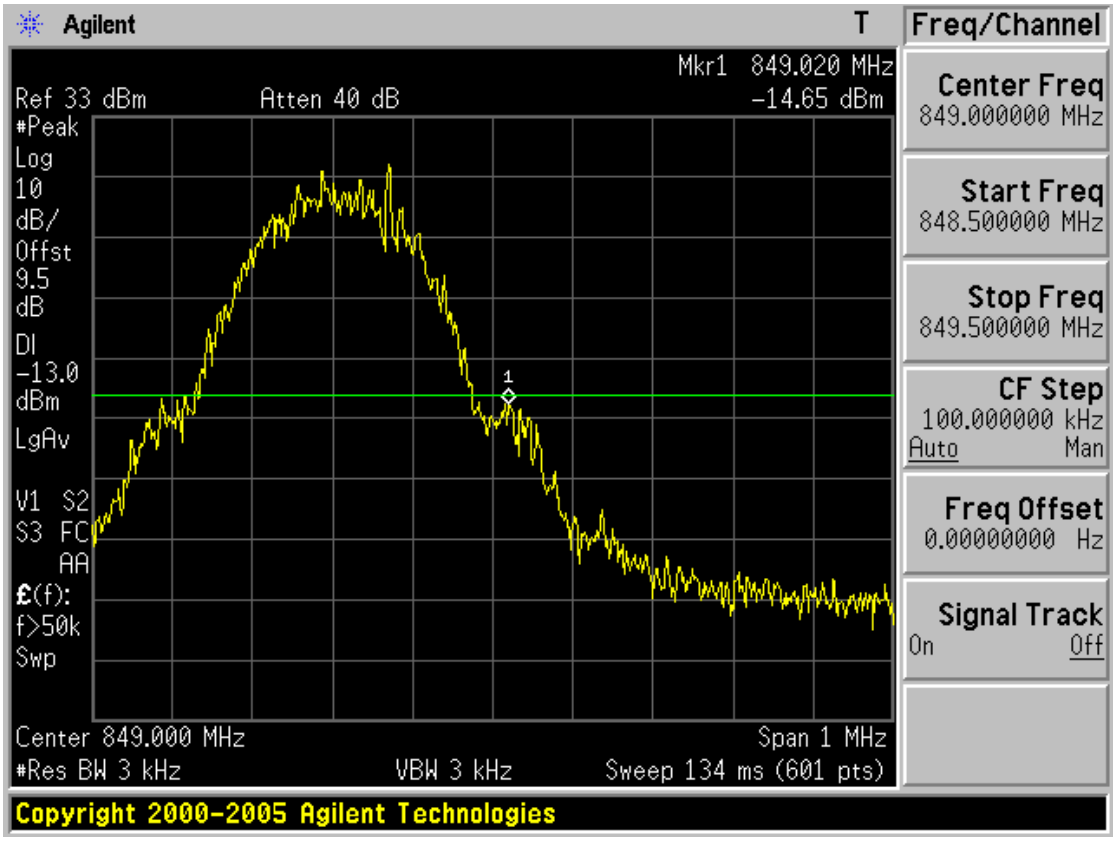
PCS1900 **-26dBc Bandwidth Ch. 810**



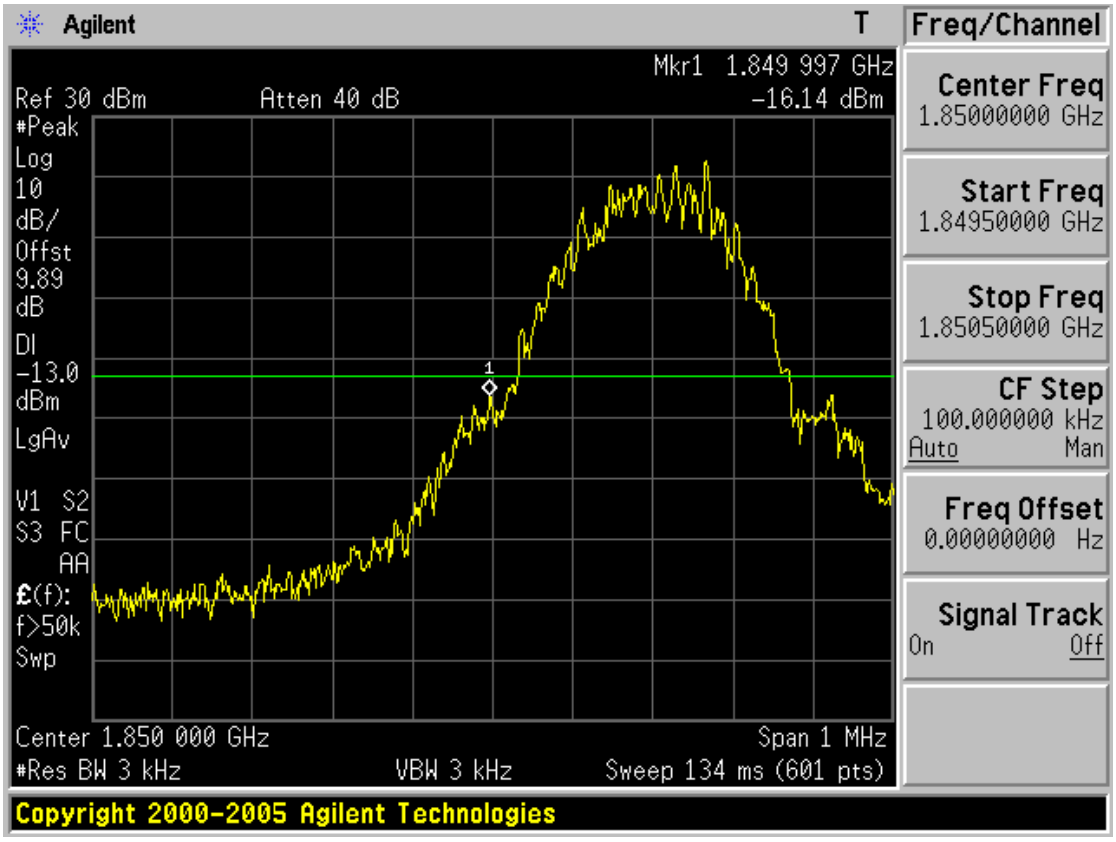
GSM850 **Band Edge Ch. 128**



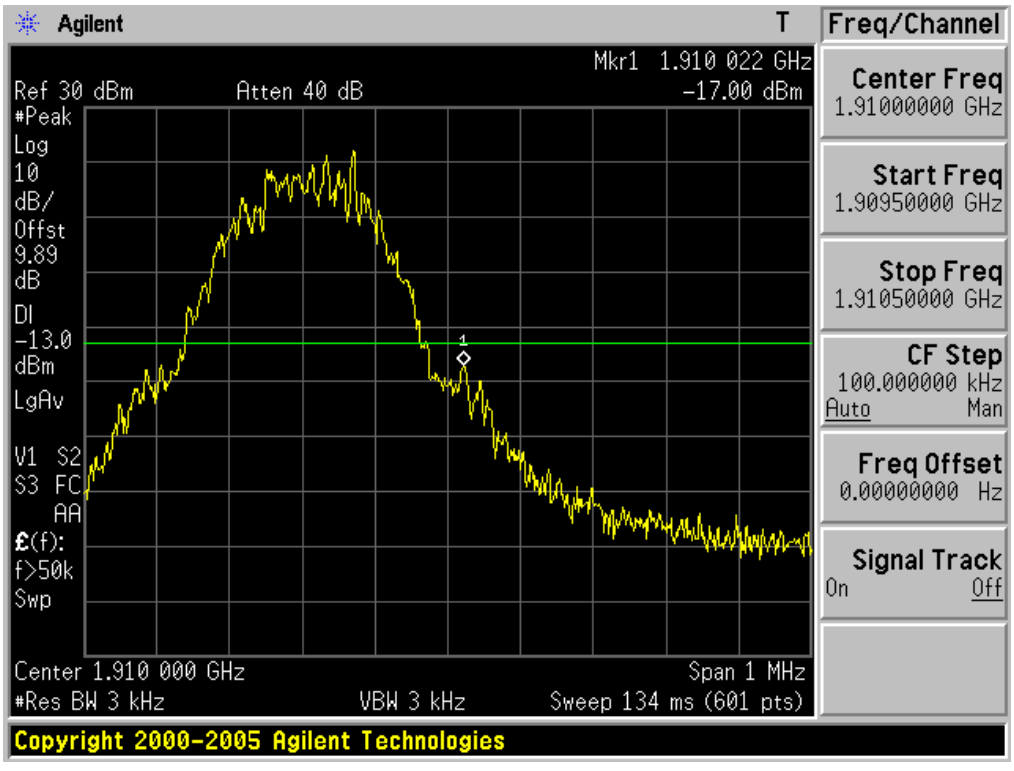
GSM850 **Band Edge Ch. 251**



PCS1900 **Band Edge Ch. 512**



PCS1900 **Band Edge Ch. 810**



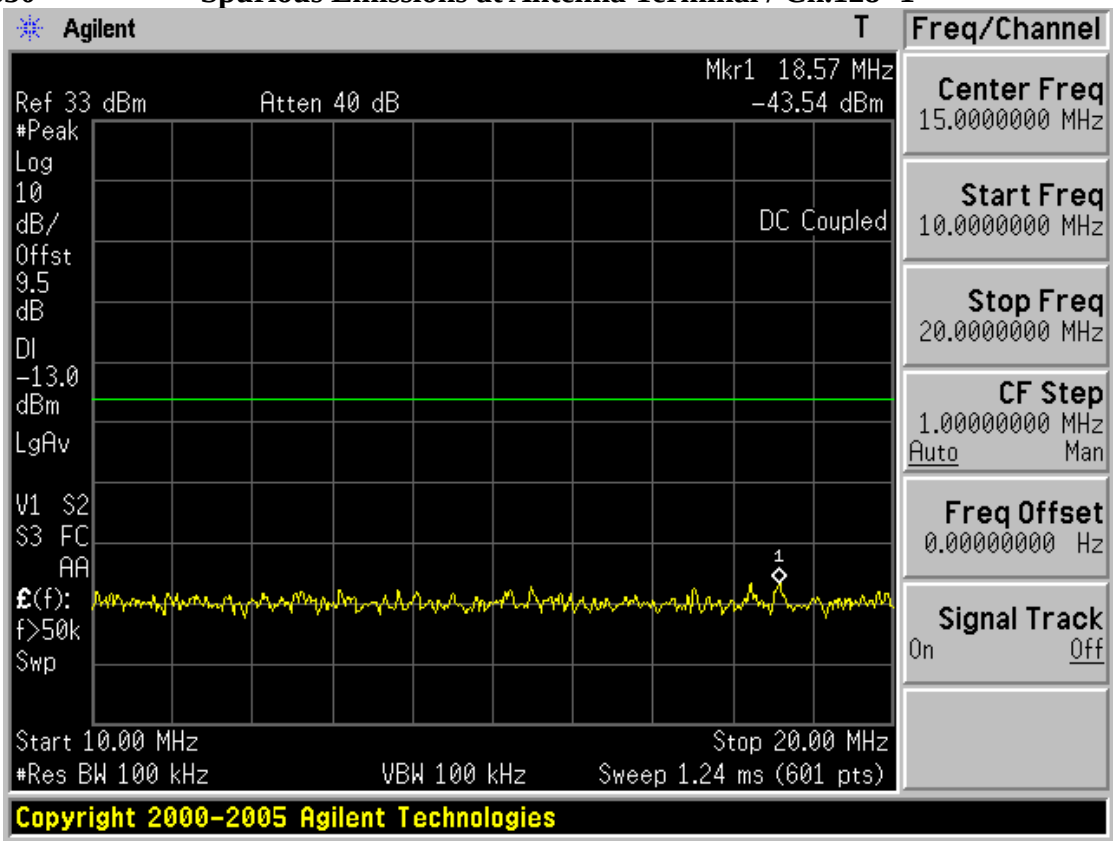
3.5 Spurious and Harmonic Emissions at Antenna Terminal

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 2.1051, 24.238(a)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850 1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900

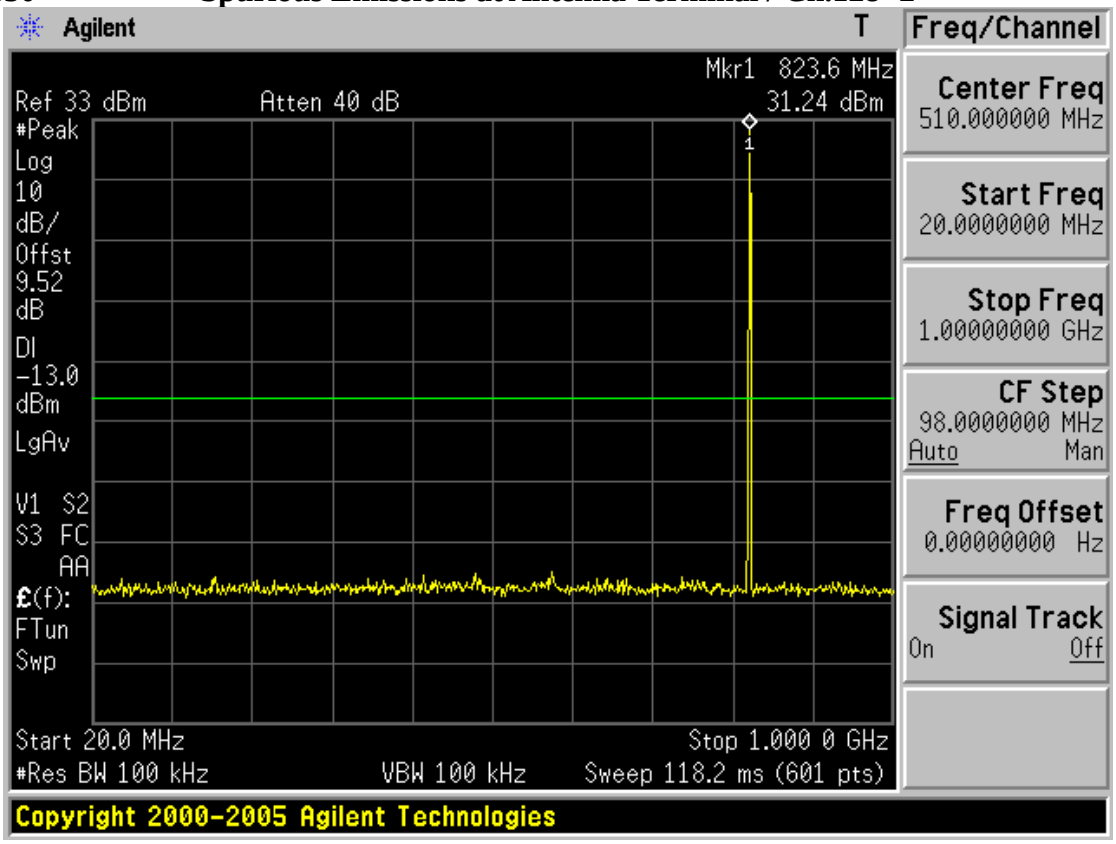
Measurement Procedure:

- The level of the carrier and the various conducted spurious and harmonic frequencies is measured by means of a calibrated spectrum analyzer.
- The spectrum is scanned from the lowest frequency generated in the equipment up to 10'th harmonics of the highest frequency.
- Spectrum analyzer plots are included on the following pages.

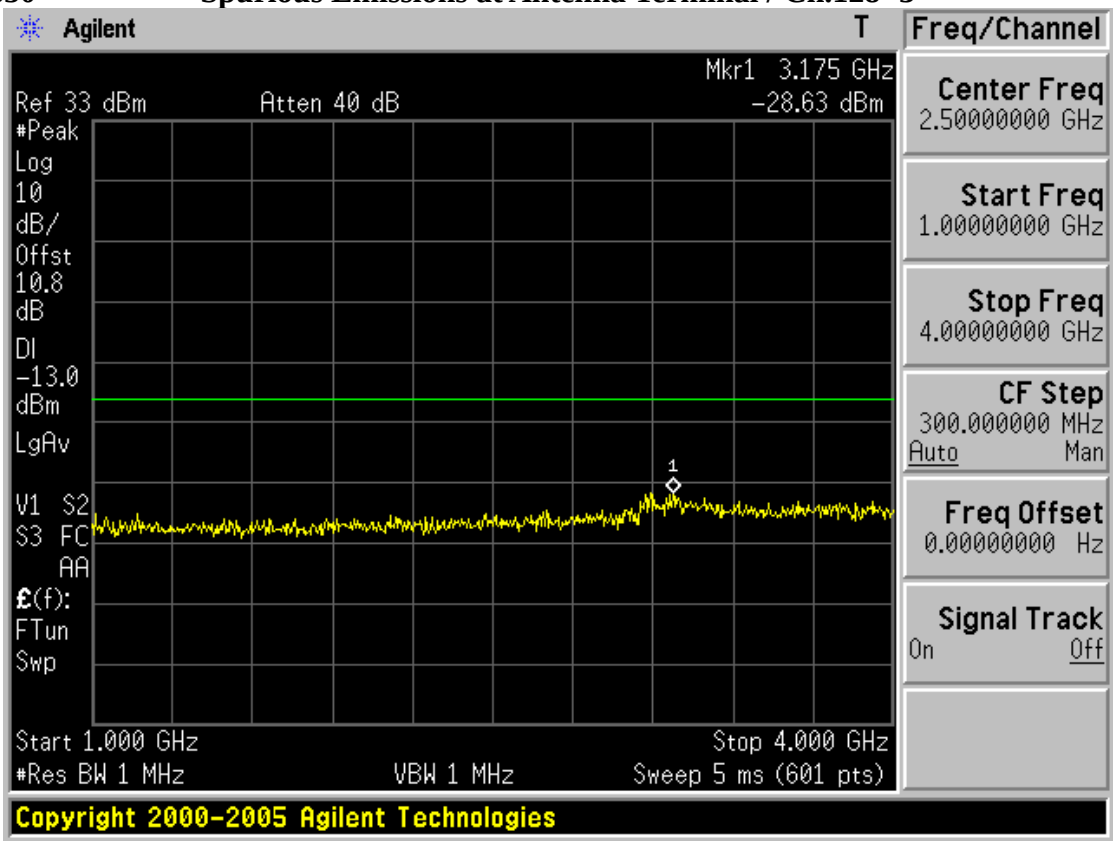
GSM850 Spurious Emissions at Antenna Terminal / Ch.128 -1



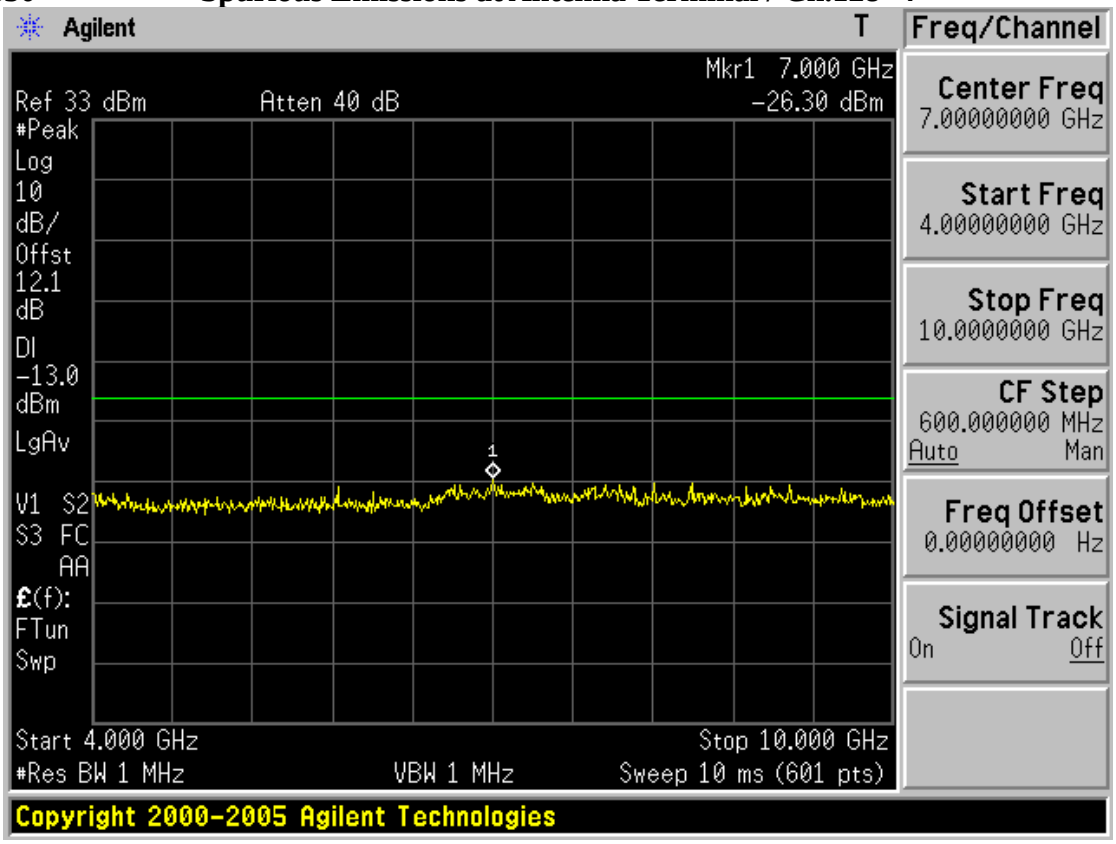
GSM850 Spurious Emissions at Antenna Terminal / Ch.128 -2



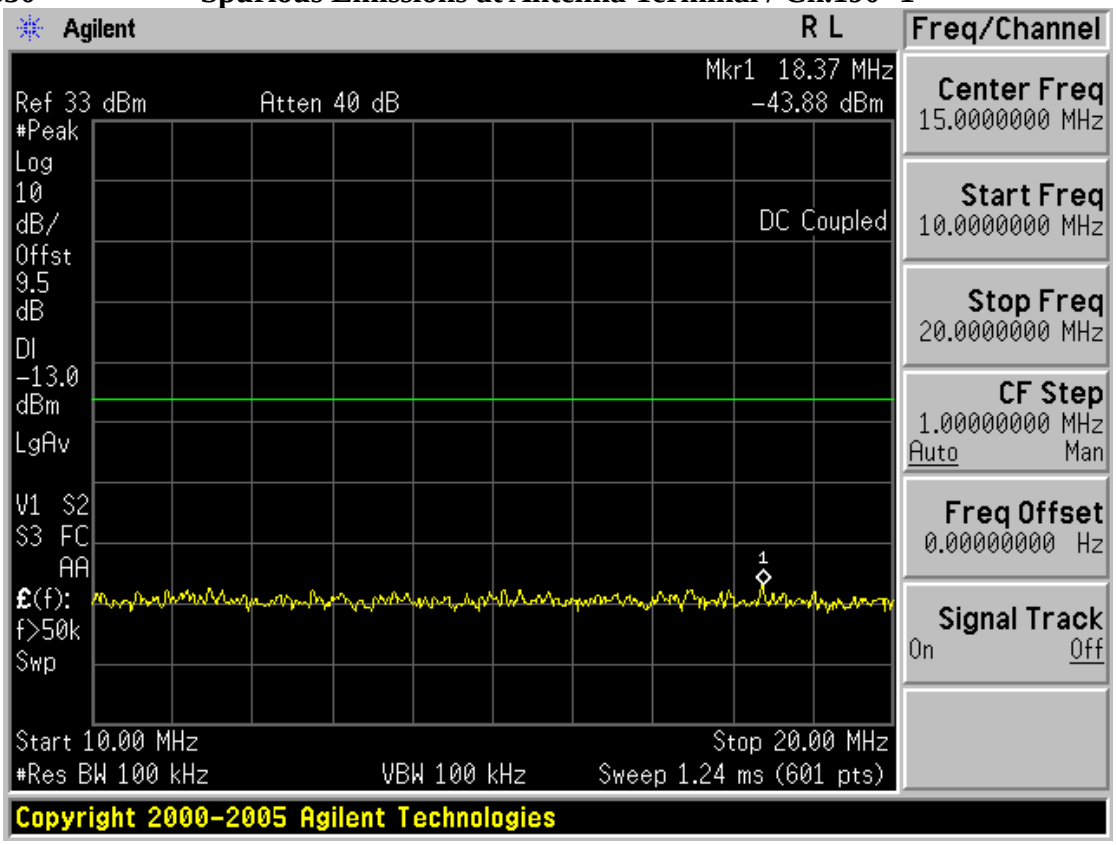
GSM850 Spurious Emissions at Antenna Terminal / Ch.128 -3



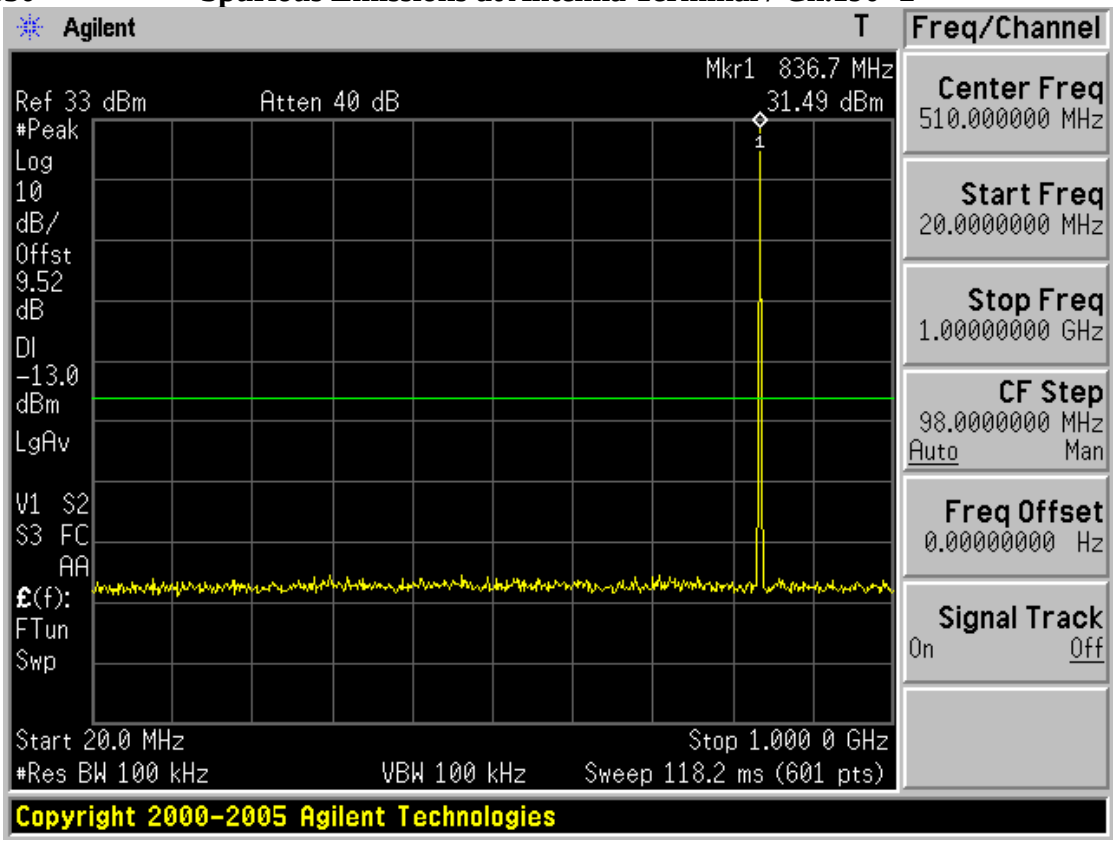
GSM850 Spurious Emissions at Antenna Terminal / Ch.128 -4



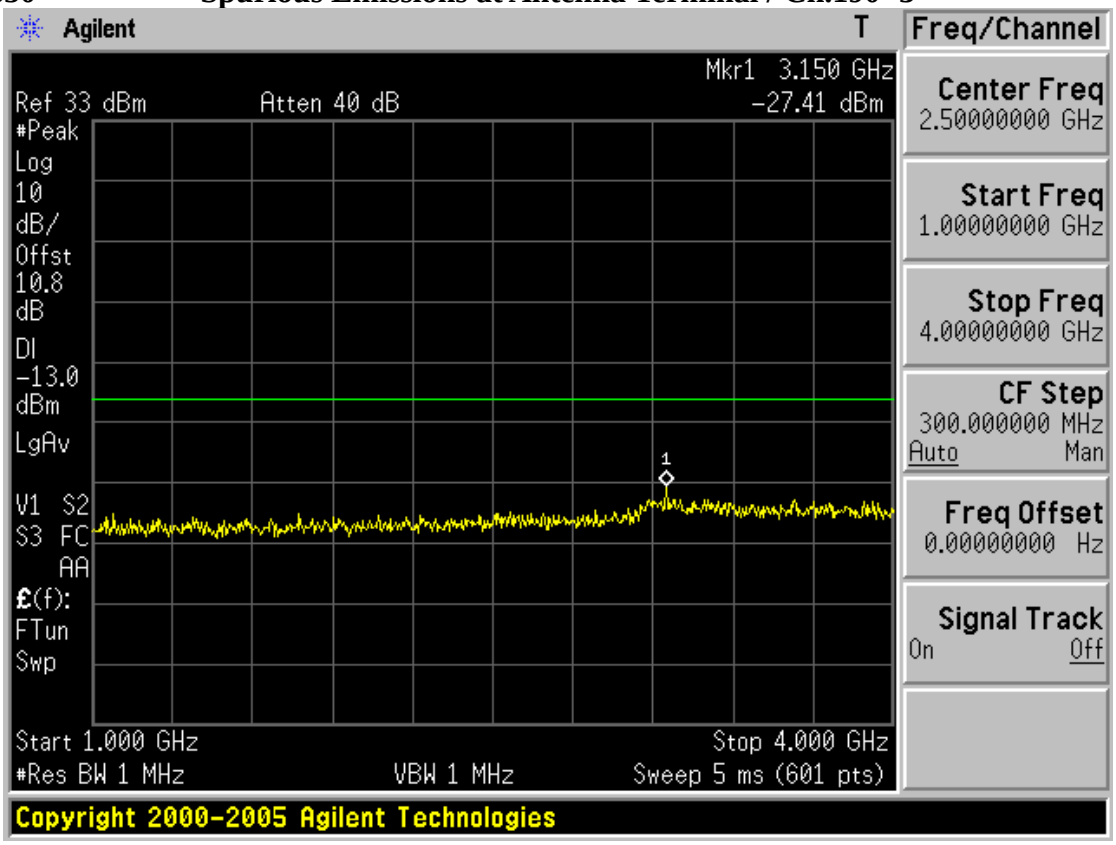
GSM850 Spurious Emissions at Antenna Terminal / Ch.190 -1



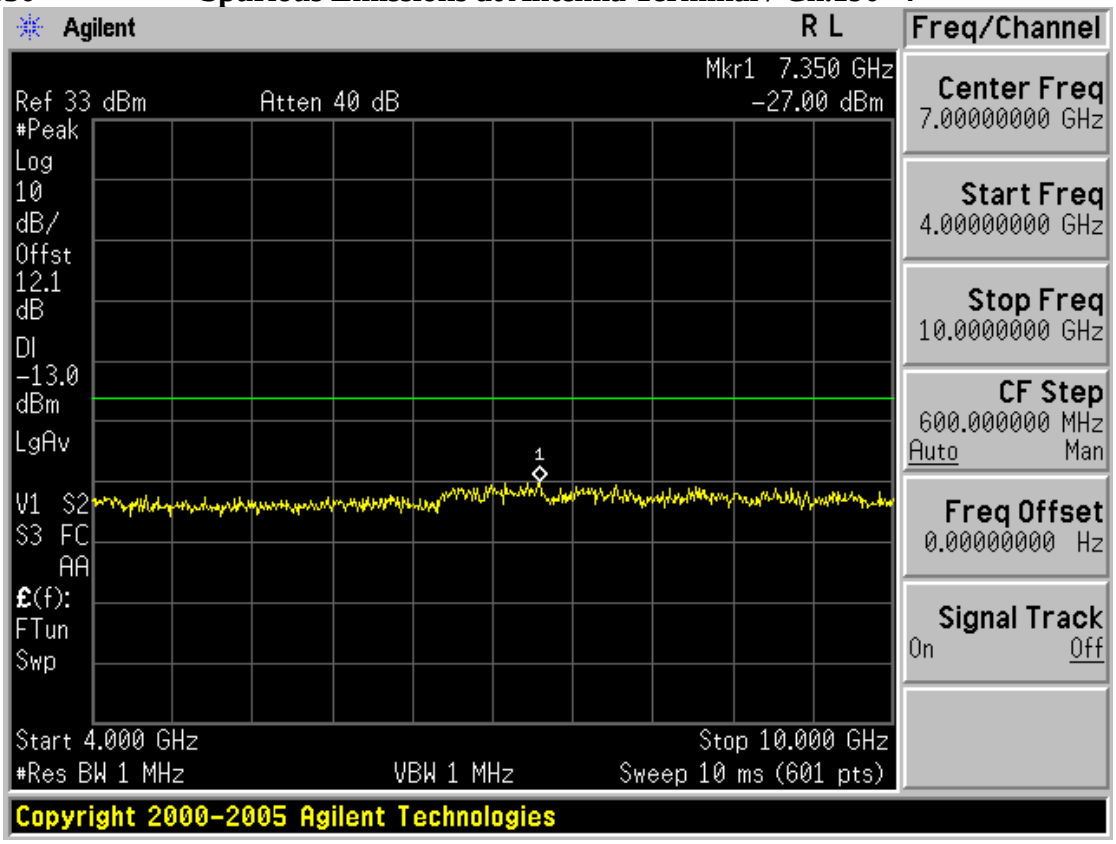
GSM850 Spurious Emissions at Antenna Terminal / Ch.190 -2



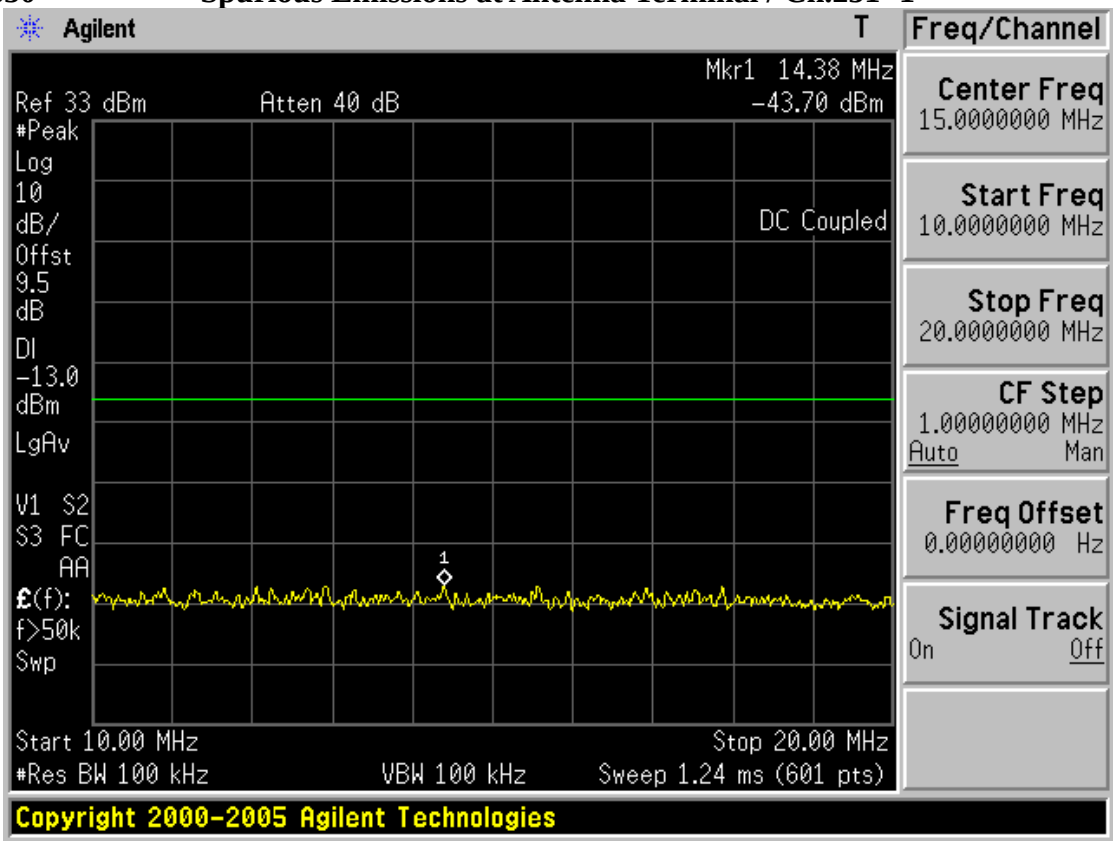
GSM850 Spurious Emissions at Antenna Terminal / Ch.190 -3



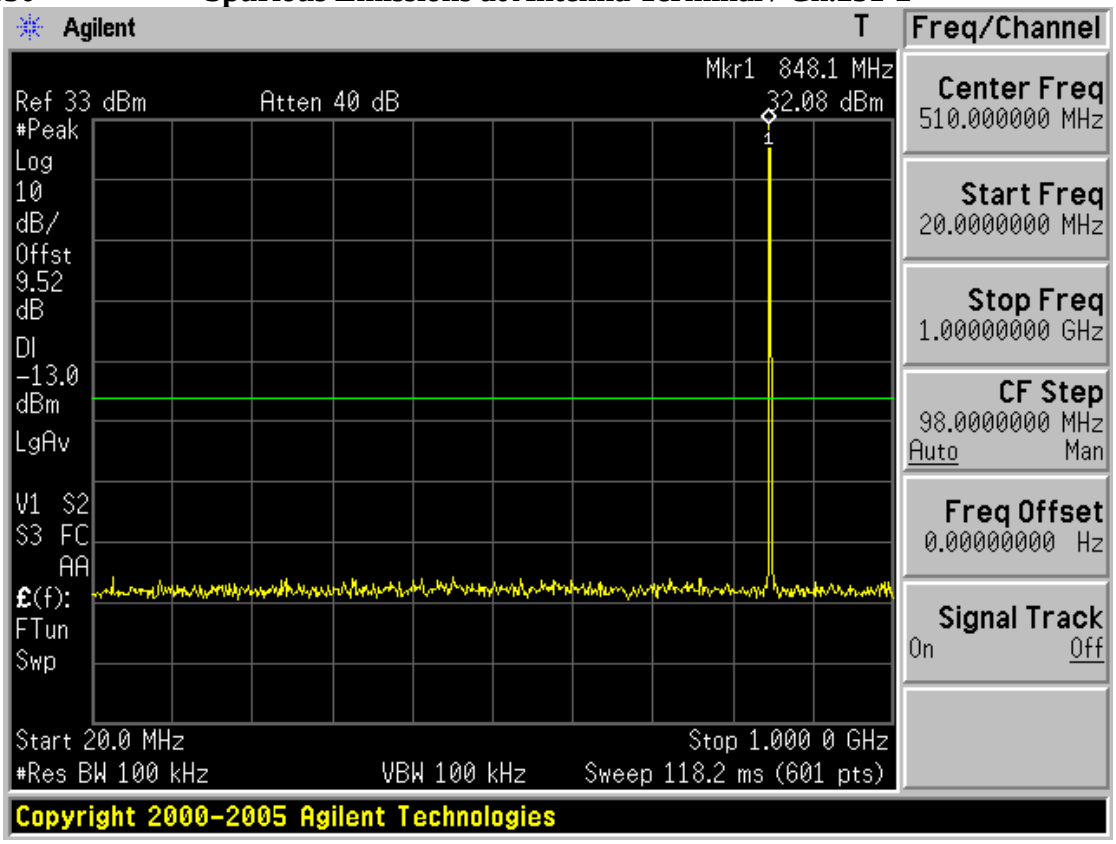
GSM850 Spurious Emissions at Antenna Terminal / Ch.190 -4



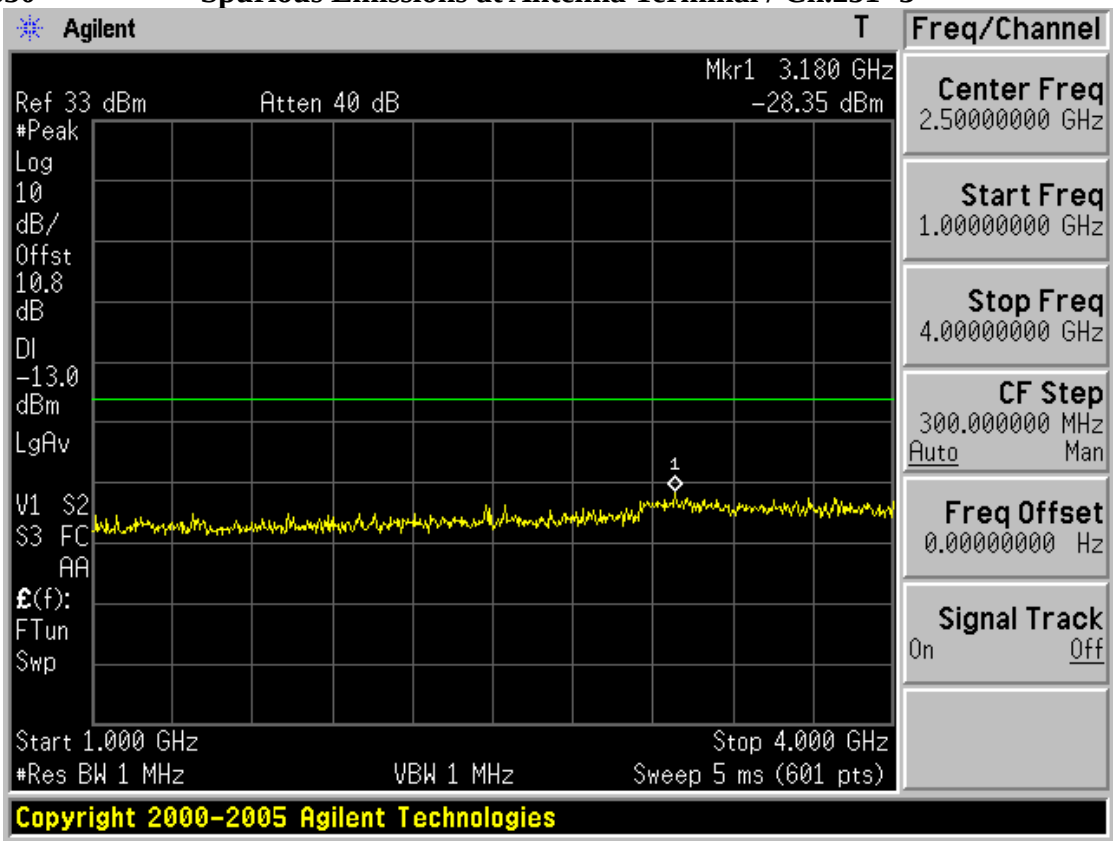
GSM850 Spurious Emissions at Antenna Terminal / Ch.251 -1



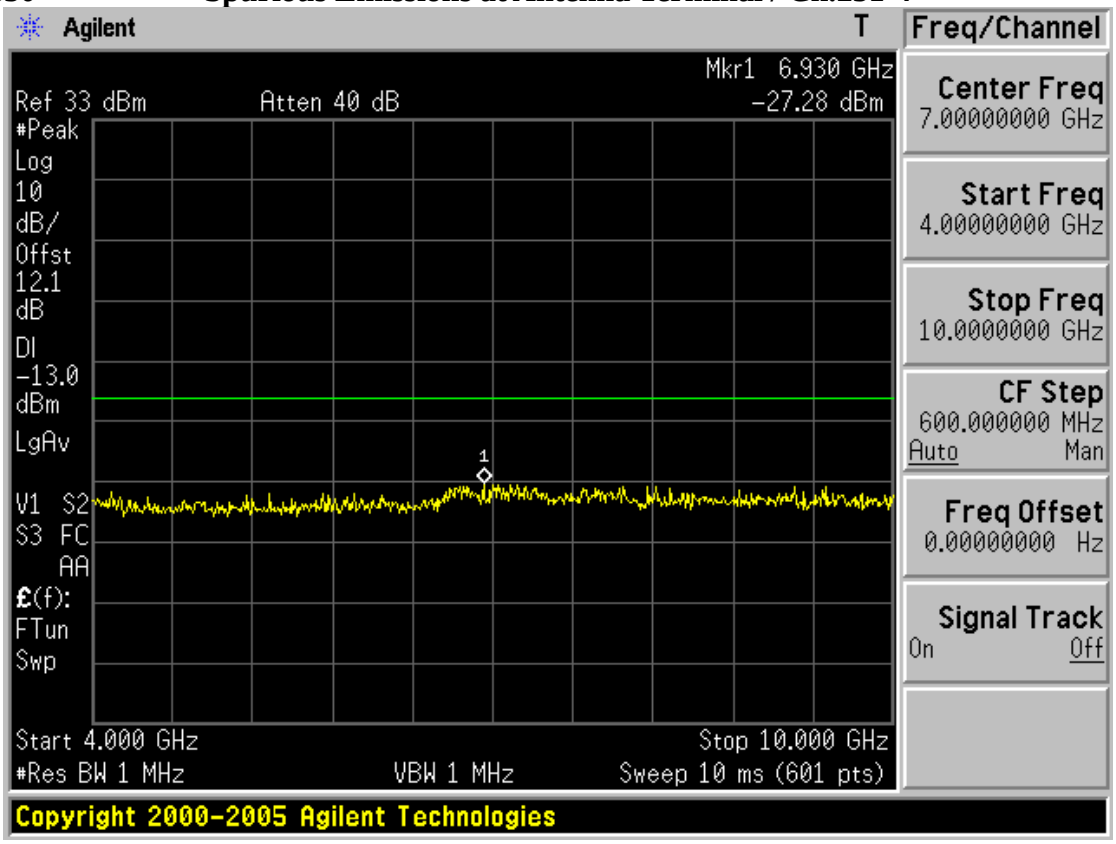
GSM850 Spurious Emissions at Antenna Terminal / Ch.251-2



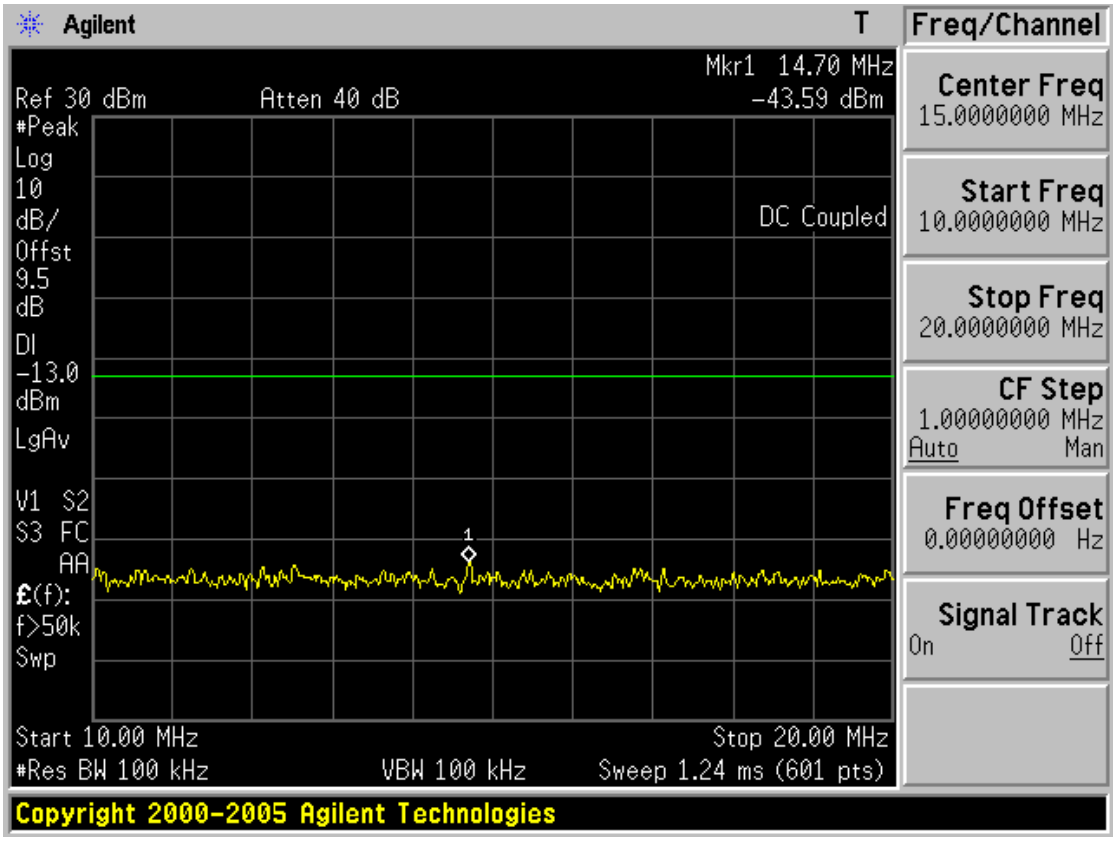
GSM850 Spurious Emissions at Antenna Terminal / Ch.251 -3



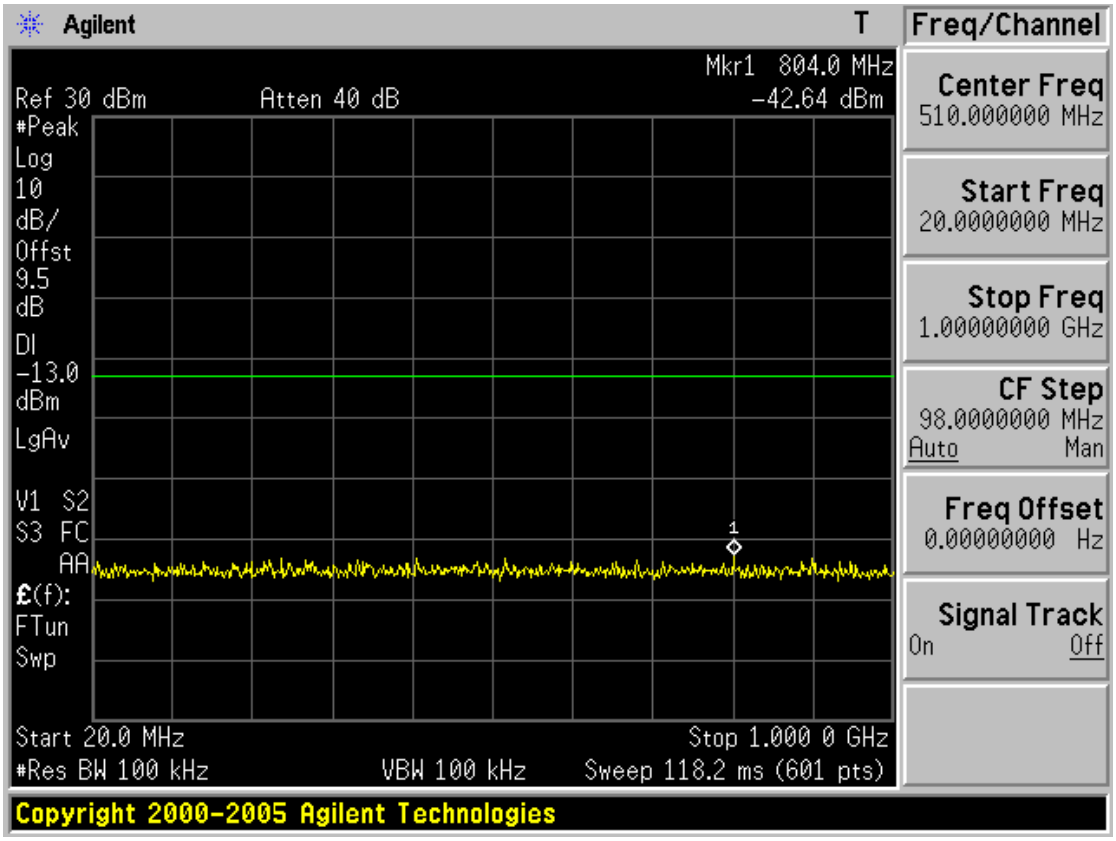
GSM850 Spurious Emissions at Antenna Terminal / Ch.251-4



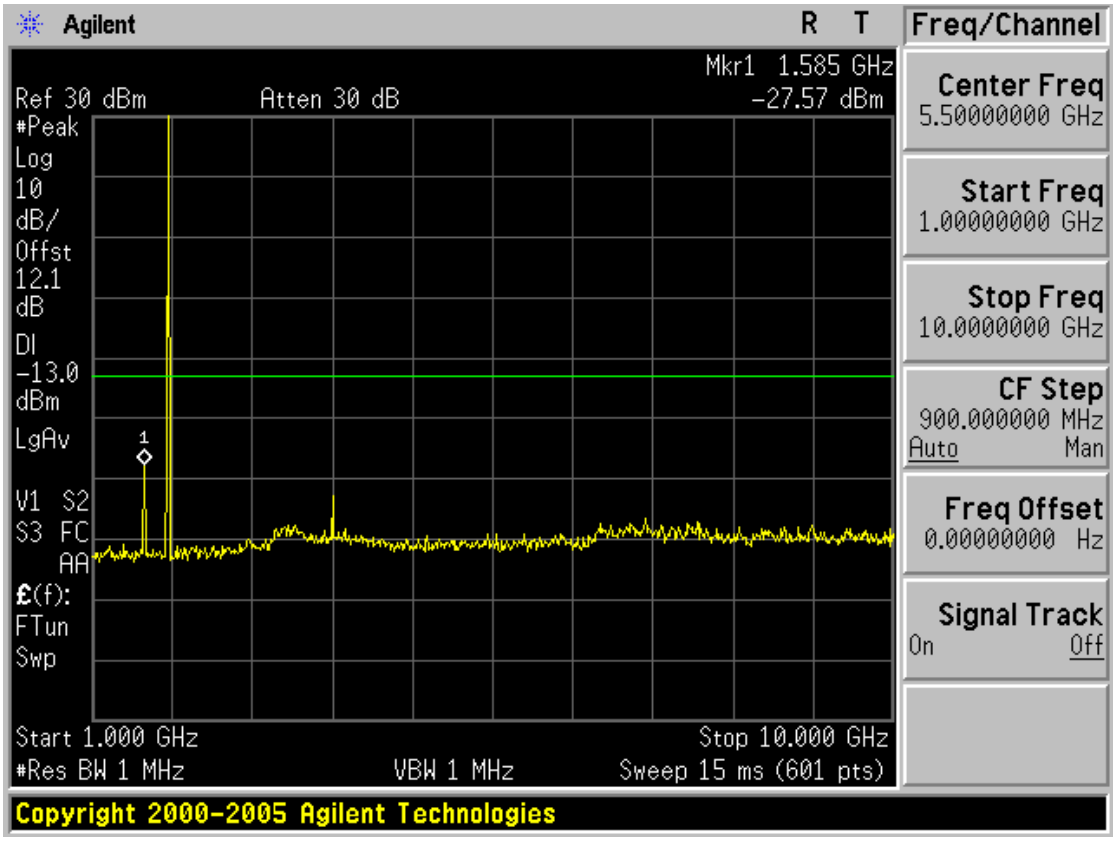
PCS1900 **Spurious Emissions at Antenna Terminal / Ch.512 -1**



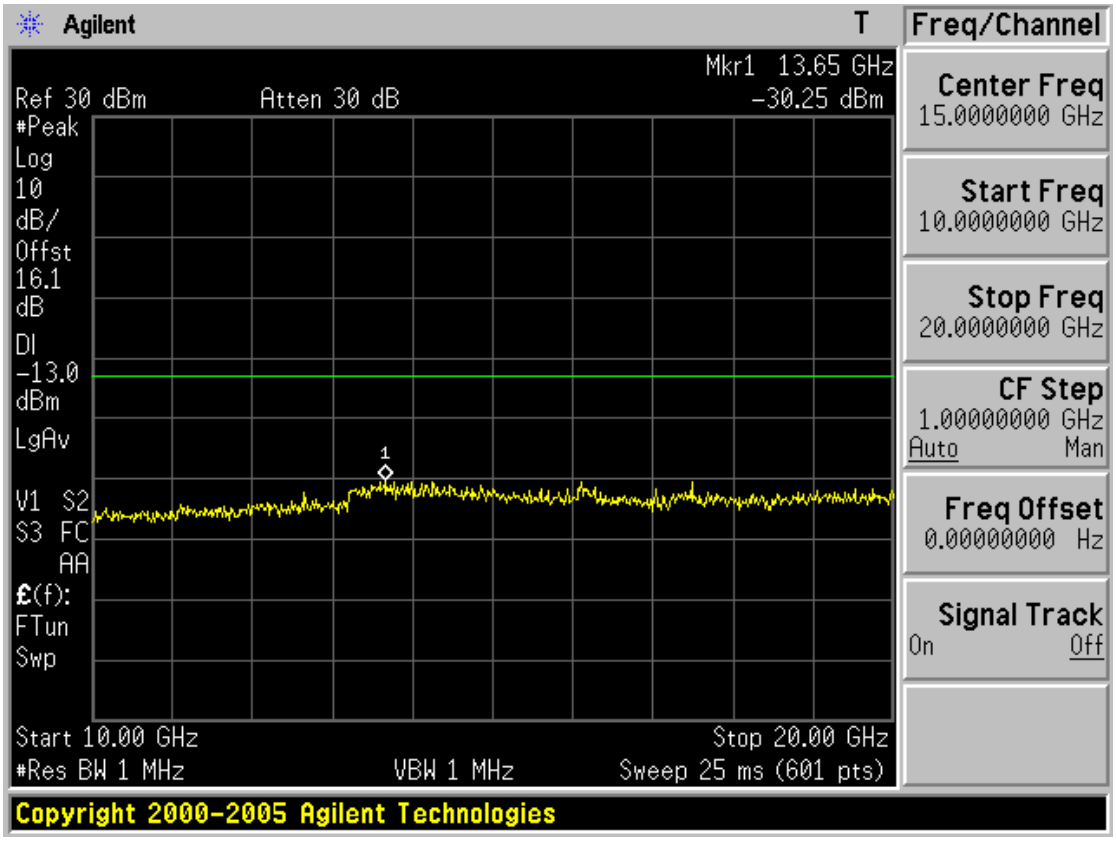
PCS1900 **Spurious Emissions at Antenna Terminal / Ch.512 -2**



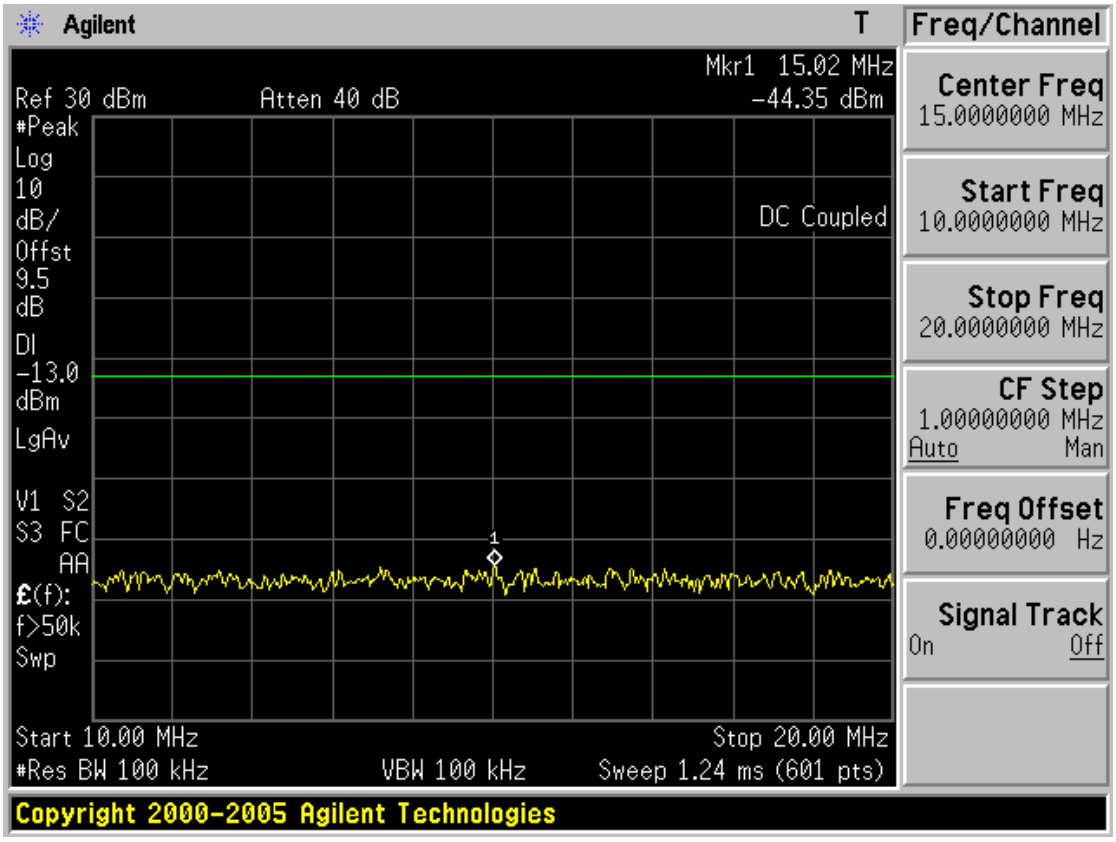
PCS1900 Spurious Emissions at Antenna Terminal / Ch.512 -3



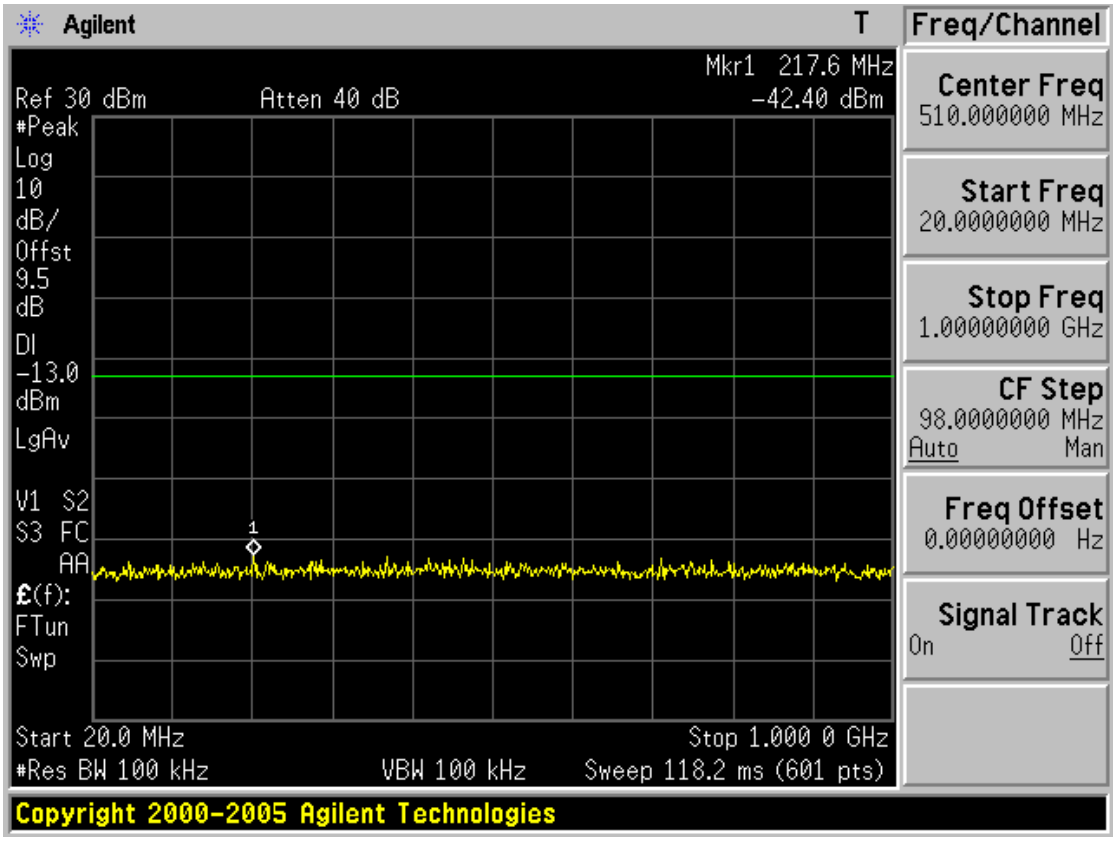
PCS1900 Spurious Emissions at Antenna Terminal / Ch.512 -4



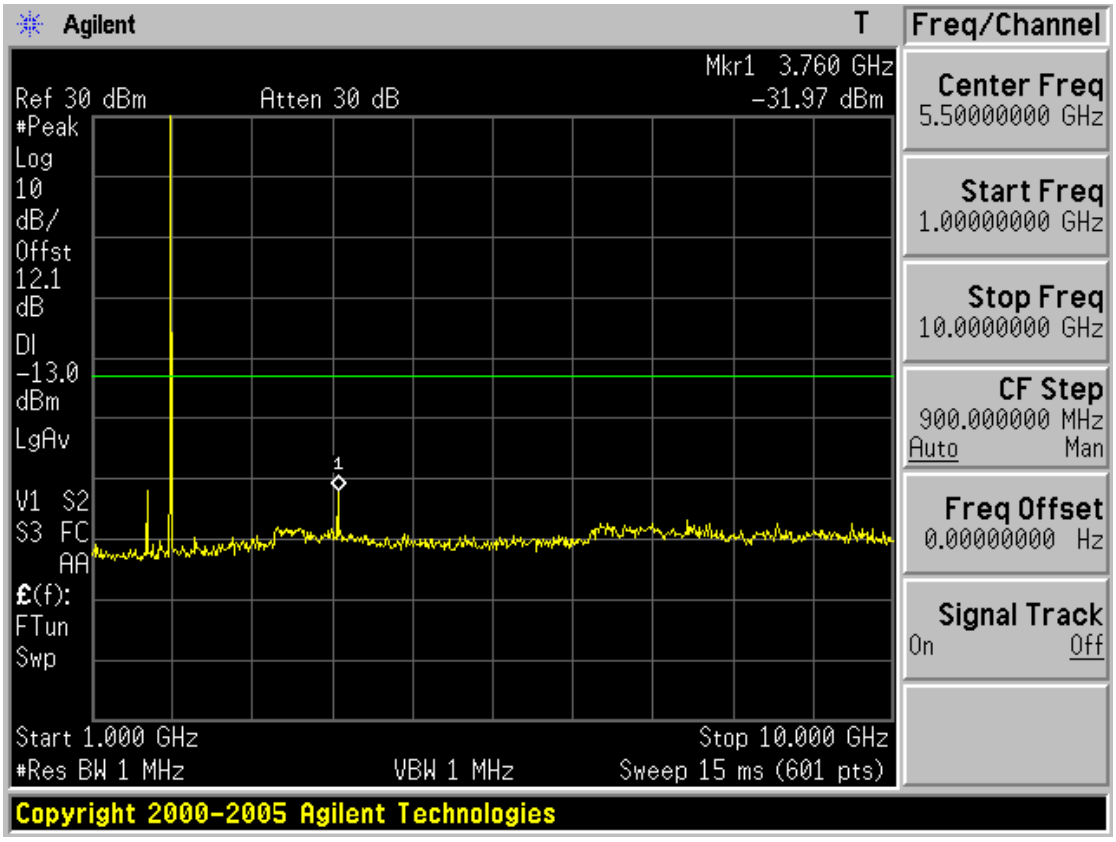
PCS1900 Spurious Emissions at Antenna Terminal / Ch.661 -1



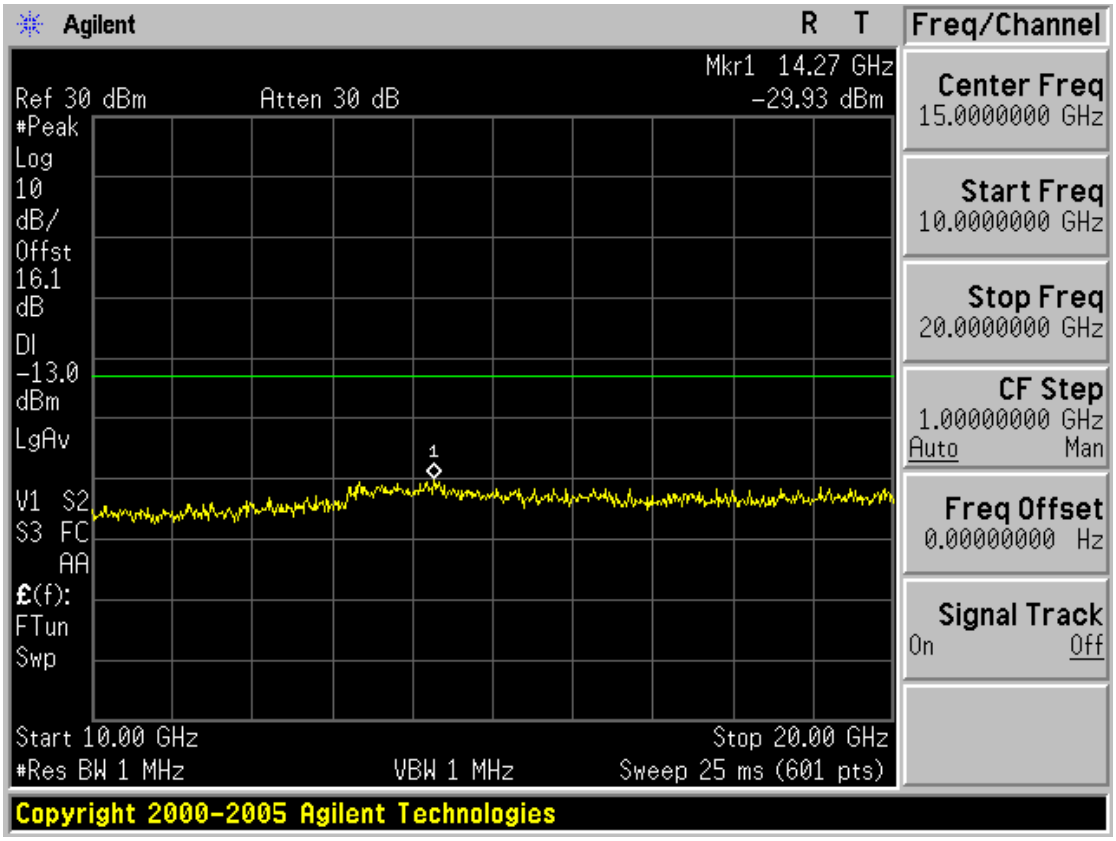
PCS1900 Spurious Emissions at Antenna Terminal / Ch.661 -2



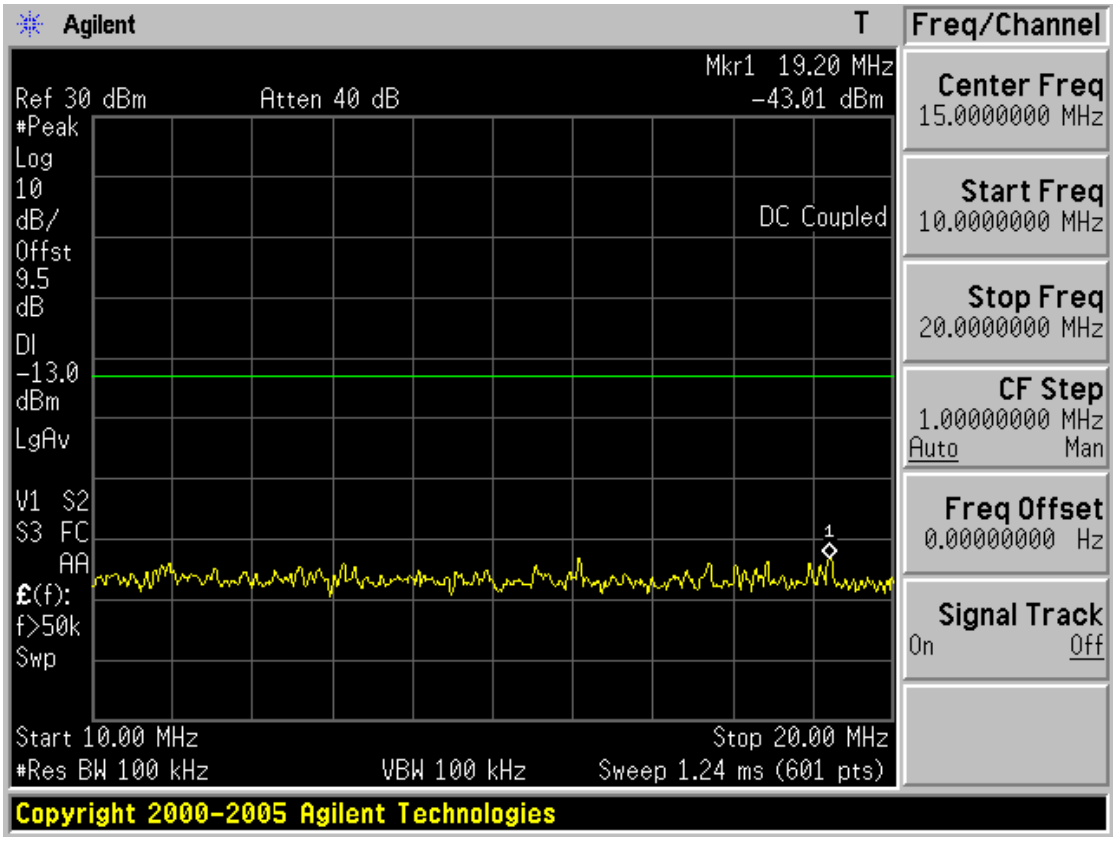
PCS1900 Spurious Emissions at Antenna Terminal / Ch.661 -3



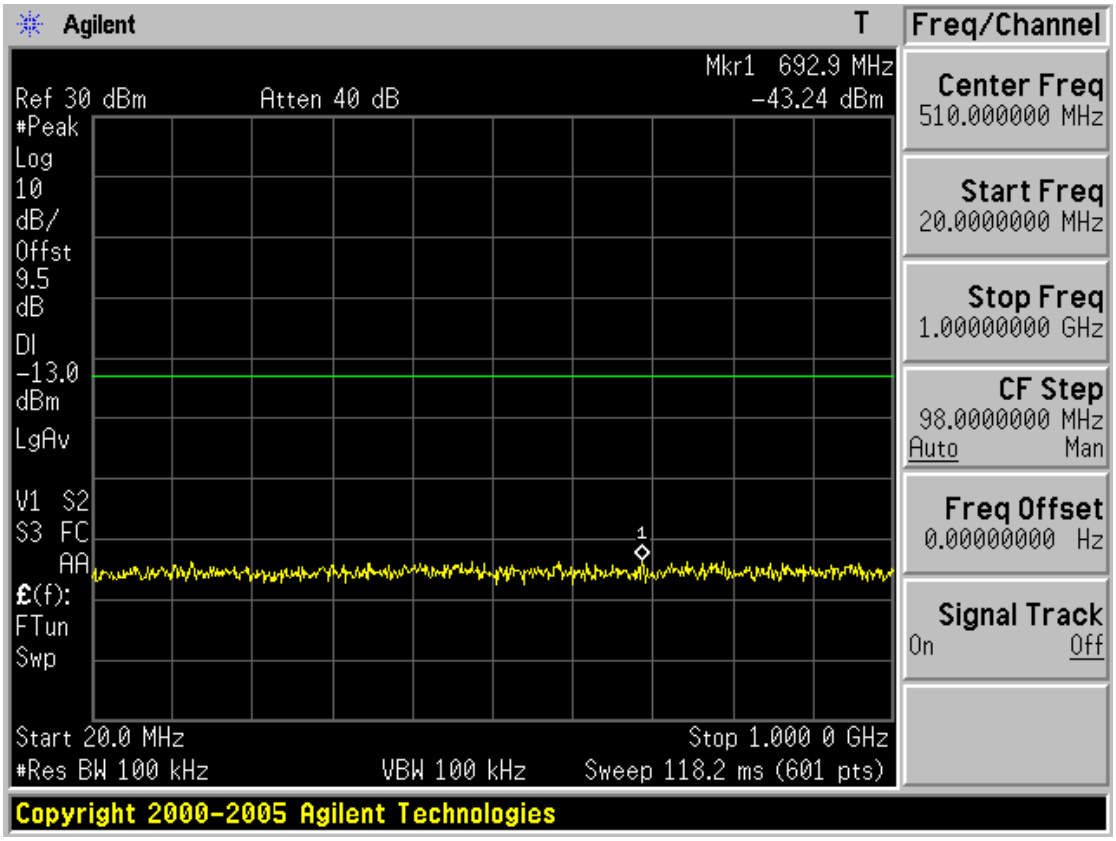
PCS1900 Spurious Emissions at Antenna Terminal / Ch.661 -4



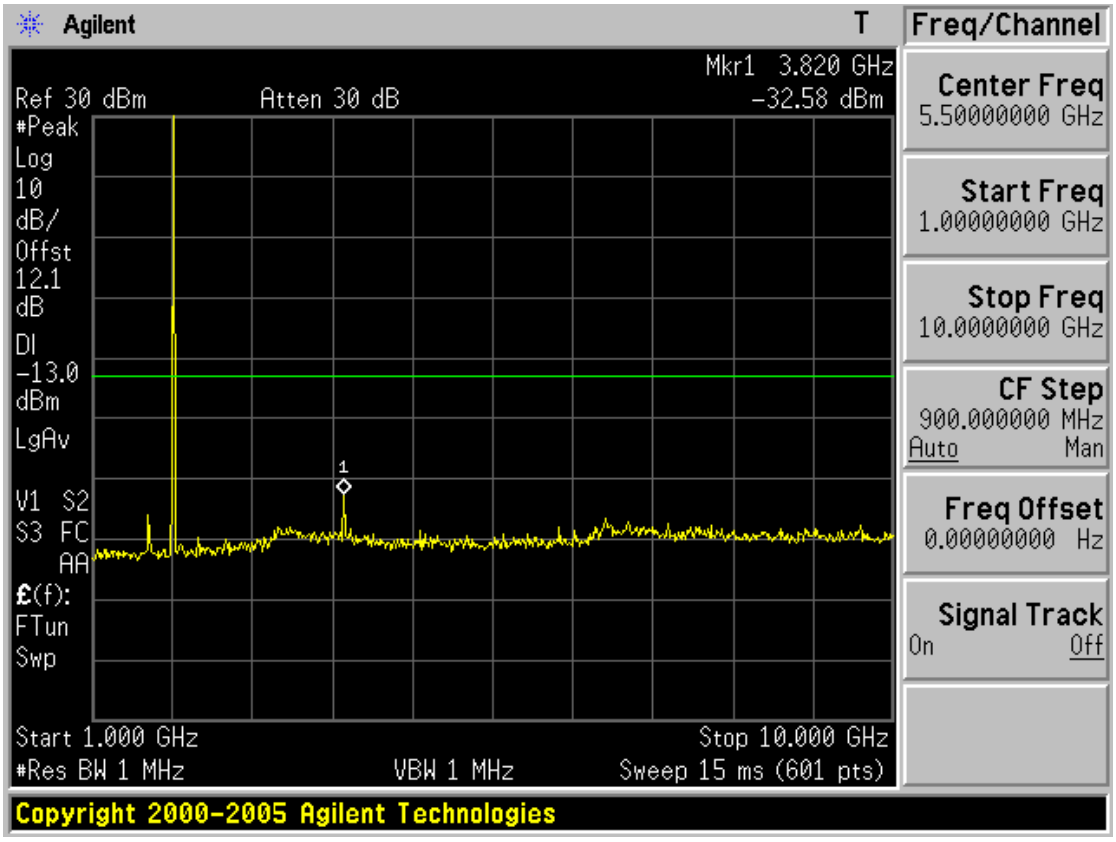
PCS1900 Spurious Emissions at Antenna Terminal / Ch.810 -1



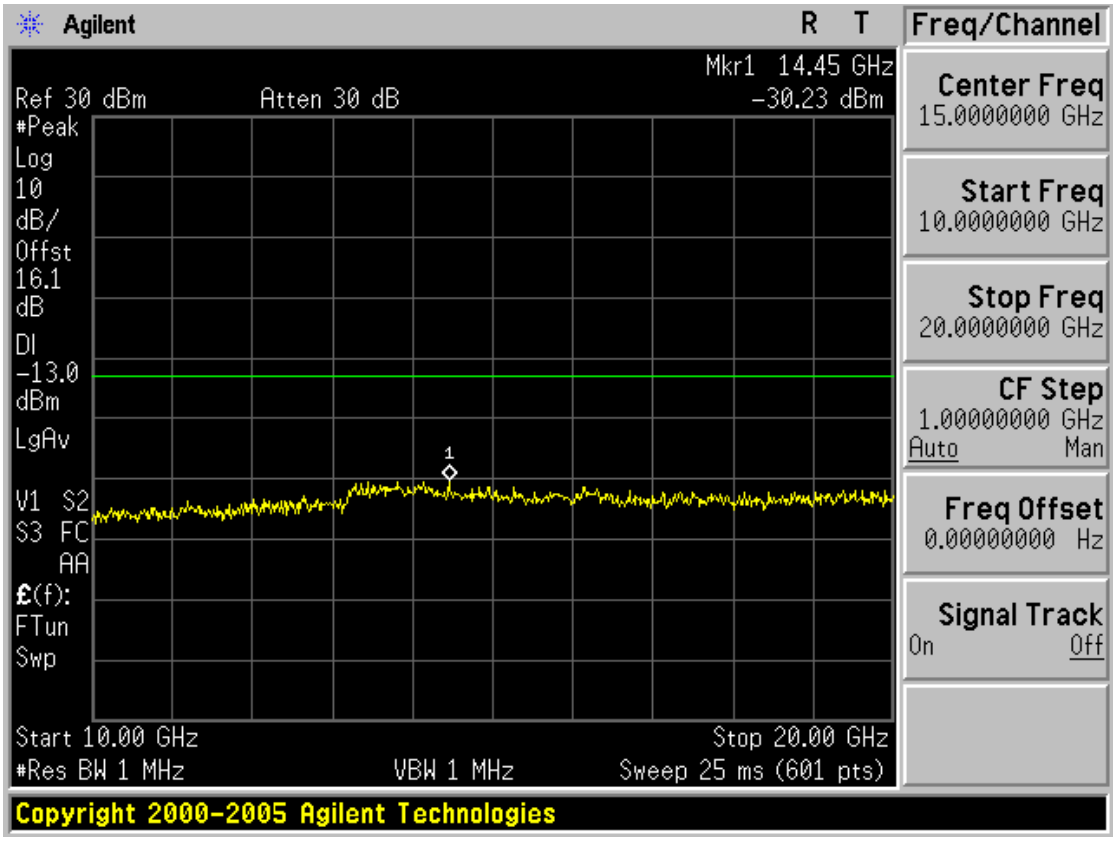
PCS1900 Spurious Emissions at Antenna Terminal / Ch.810 -2



PCS1900 Spurious Emissions at Antenna Terminal / Ch.810 -3



PCS1900 Spurious Emissions at Antenna Terminal / Ch.810 -4



3.6 Field Strength of Spurious Radiation

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 2.1053(a)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850 1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900

Measurement Procedure:

- Radiation and harmonic emissions are measured outdoors at our 3-meter test range. The equipment under test is placed on a wooden turntable 3-meters from the receive antenna.
  The receive antenna height and turntable rotations were adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator with the level of the signal generator being adjusted to obtain the same receive spectrum analyzer reading. This level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

GSM850 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 824.2 MHz

CHANNEL : 128(Low)

MEASURED OUTPUT POWER : 28.95 dBm = 0.785 W

MODULATION SIGNAL : GSM (Internal)

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 41.95 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBd)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
1648.4	-46.64	6.67	-39.97	V	69.92
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

GSM850 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 836.6 MHz

CHANNEL : 190(Mid)

MEASURED OUTPUT POWER : 30.30 dBm = 1.072 W

MODULATION SIGNAL : GSM (Internal)

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 43.30 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBd)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
1673.2	-52.04	6.68	-45.36	V	76.66
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

GSM850 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 848.8 MHz

CHANNEL : 251(High)

MEASURED OUTPUT POWER : 30.81 dBm = 1.205 W

MODULATION SIGNAL : GSM (Internal)

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 43.81 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBd)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
1697.6	-53.54	6.69	-46.85	V	78.66
-	-	-	-	-	-
-	-	-	-	-	-
-	-	-	-	-	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

PCS1900 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 1850.2 MHz

CHANNEL : 512(Low)

MEASURED OUTPUT POWER : 26.57 dBm = 0.454 W

MODULATION SIGNAL : GSM (Internal)

DISTANCE : 3 meters

LIMIT : $43 + 10 \log_{10} (W)$ = 39.57 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
1590.0	-41.14	8.79	-32.35	V	-58.92
3700.4	-36.03	9.64	-26.39	V	-52.96
5550.6	-46.13	11.09	-35.04	V	-61.61
-	-	-	-	-	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

PCS1900 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 1880.0 MHz

CHANNEL : 661(Mid)

MEASURED OUTPUT POWER : 24.86 dBm = 0.306 W

MODULATION SIGNAL : GSM (Internal)

DISTANCE : 3 meters

LIMIT : 43 + 10 $\log_{10}$ (W) = 37.86 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
1614.0	-41.84	8.80	-33.04	V	-57.90
3760.0	-31.13	9.63	-21.50	V	-46.36
5640.0	-35.17	11.14	-24.03	V	-48.89
-	-	-	-	-	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

PCS1900 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 1909.8 MHz

CHANNEL : 810(High)

MEASURED OUTPUT POWER : 24.38 dBm = 0.274 W

MODULATION SIGNAL : GSM (Internal)

DISTANCE : 3 meters

LIMIT : $43 + 10 \log_{10} (W)$ = 37.38 dBc

Freq. (MHz)	**LEVEL@ ANTENNA TERMINALS** (dBm)	**SUBSTITUTE ANTENNA GAIN** (dBi)	**CORRECT GENERATOR LEVEL** (dBm)	**POL** (H/V)	(dBc)
1640.0	-41.14	8.81	-32.33	V	-56.71
3819.6	-34.13	9.61	-24.52	V	-48.90
5729.4	-41.93	11.2	-30.73	V	-55.11
-	-	-	-	-	-

NOTE

Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

The EUT was placed on a wooden turn table 3-meters from the receive antenna. The receive antenna height and turntable rotation was adjusted for the highest reading on the receive spectrum analyzer. A half-wave dipole was substituted in place of the EUT. This dipole antenna was driven by a signal generator and the level of the signal generator was adjusted to obtain the same receive spectrum analyzer reading. This spurious level is recorded. For readings above 1GHz, the above procedure is repeated using horn antennas and the difference between the gain of the horn and an isotropic or dipole antenna are taken into consideration.

3.7 Frequency Stability/Temperature Variation.

FCC ID	:	**R2NSGP-1036**
Specification	:	47 CFR 2.1055
Tested Frequency	:	836.6MHz for GSM850 1880.0MHz for PCS1900

Measurement Procedure:

The frequency stability of the transmitter is measured by:

a) **Temperature** :The temperature is varied from -30°C to + 50°C using an environmental chamber.
b) **Primary Supply Voltage** :The primary supply voltage is varied from 85% to 115% of the voltage Normally at the input to the device or at the power supply terminals if cables are not normally supplied.

Specification –The minimum frequency stability shall be +/- 0.00025% at any time during normal operation.

Specification — The frequency stability shall be sufficient to ensure that the fundamental emission stays within the authorized frequency block. The frequency stability of the transmitter shall be maintained within ±0.00025(±2.5ppm) of the center frequency.

Time Period and Procedure:

1. The carrier frequency of the transmitter and the individual oscillators is measured at room temperature (25°C to 27 °C to provide a reference)
2. The equipment is subjected to an overnight “soak” at -30°C without any power applied.
3. After the overnight ”soak” at -30°C(usually 14-16 hours),the equipment is turned on in a “standby” condition for one minute before applying power to the transmitter. Measurement of the carrier frequency to the transmitter and the individual oscillators is made within a three minute interval after applying power to the transmitter.
4. Frequency measurements is made at 10°C interval up to room temperature. At least a period of one and one half hour is provided to allow stabilization of the equipment at each temperature level.
5. Again the transmitter carrier frequency and the individual oscillators is measured at room temperature to begin measurement of the upper temperature levels.
6. Frequency were made at 10intervals starting at -30°C up to +50°C allowing at least two hours at each temperature for stabilization. In all measurements the frequency is measured within three minutes after applying power to the transmitter.
7. The artificial load is mounted external to the temperature chamber.

Frequency Stability (GSM850)

OPERATING FREQUENCY : 836,600,012 Hz

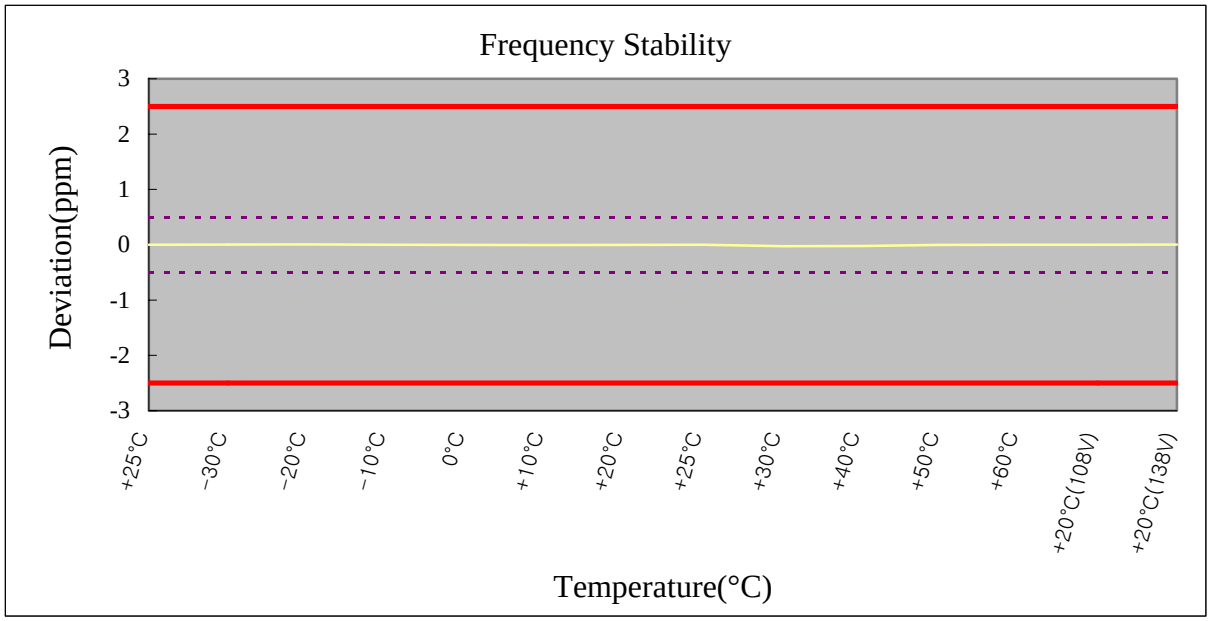
CHANNEL : 190(Mid)

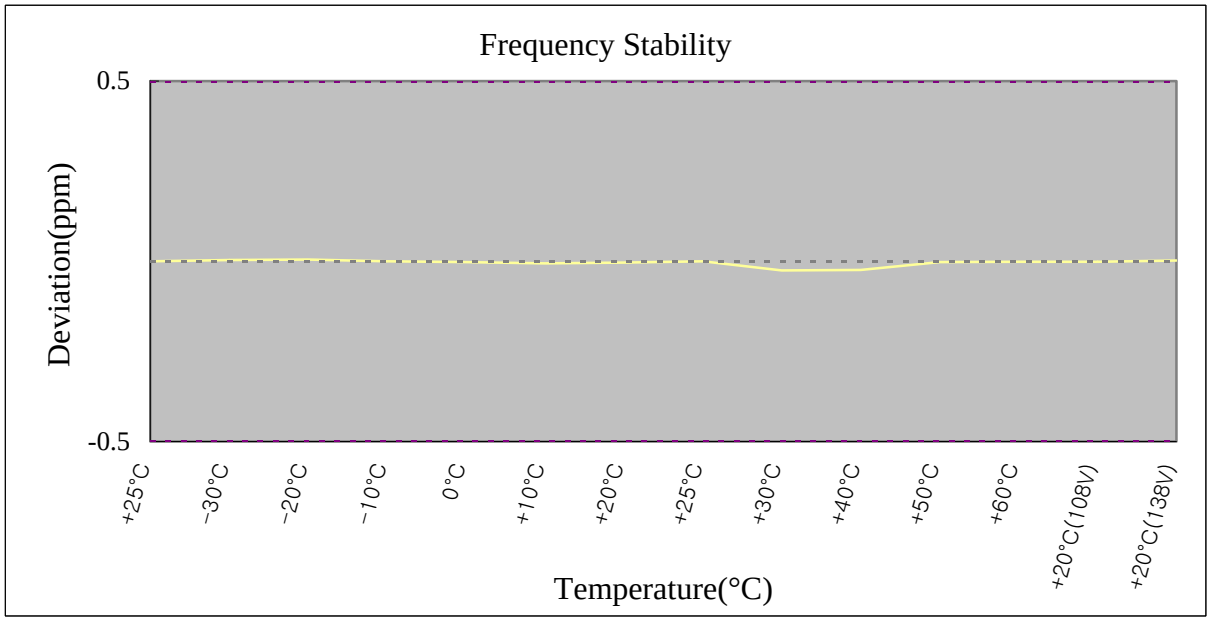
REFERENCE VOLTAGE : 120 VAC

DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VAC)	TEMP (dB)	FREQ (Hz)	Deviation (%)
100%	120	+25(Ref)	836,600,012	0.000000
100%		-30	836,600,015	0.000000
100%		-20	836,600,016	0.000000
100%		-10	836,600,012	0.000000
100%		0	836,600,010	0.000000
100%		+10	836,600,007	-0.000001
100%		+20	836,600,009	0.000000
100%		+25	836,600,012	0.000000
100%		+30	836,599,991	-0.000003
100%		+40	836,599,992	-0.000002
100%		+50	836,600,010	0.000000
100%		+60	836,600,011	0.000000
85%	102	+20	836,600,011	0.000000
115%	138	+20	836,600,014	0.000000
BATT.ENDPOINT	-	-	-	-

Frequency Stability(GSM850) **(Continued…)**





Frequency Stability (PCS1900)

OPERATING FREQUENCY : 1,880,000,032 Hz

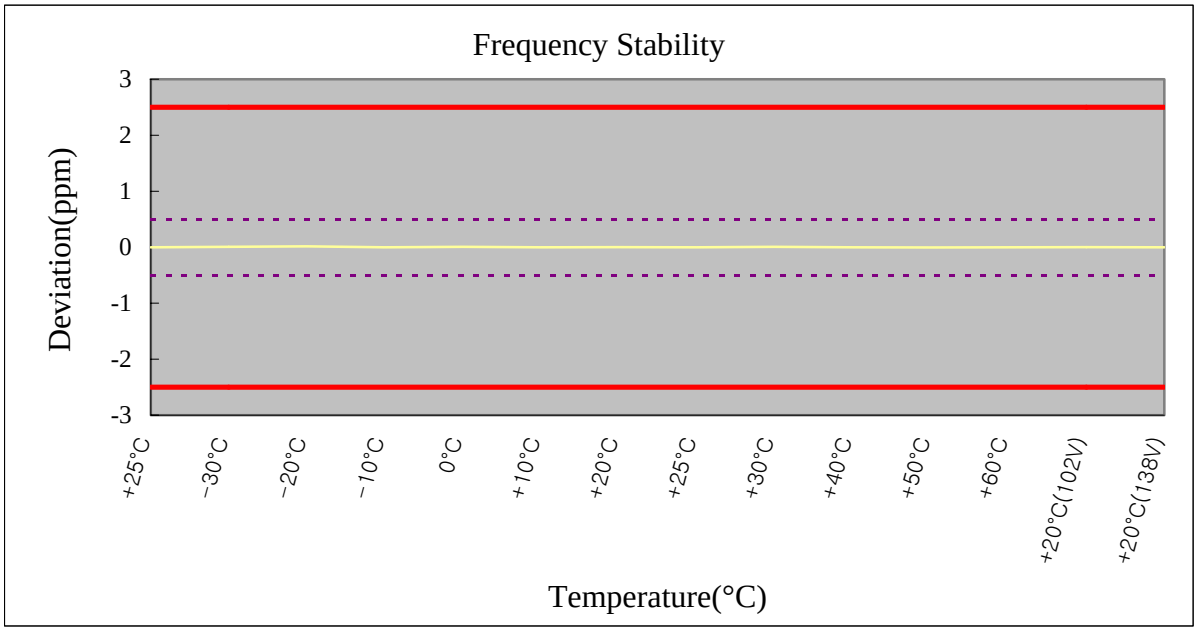
CHANNEL : 0661(Mid)

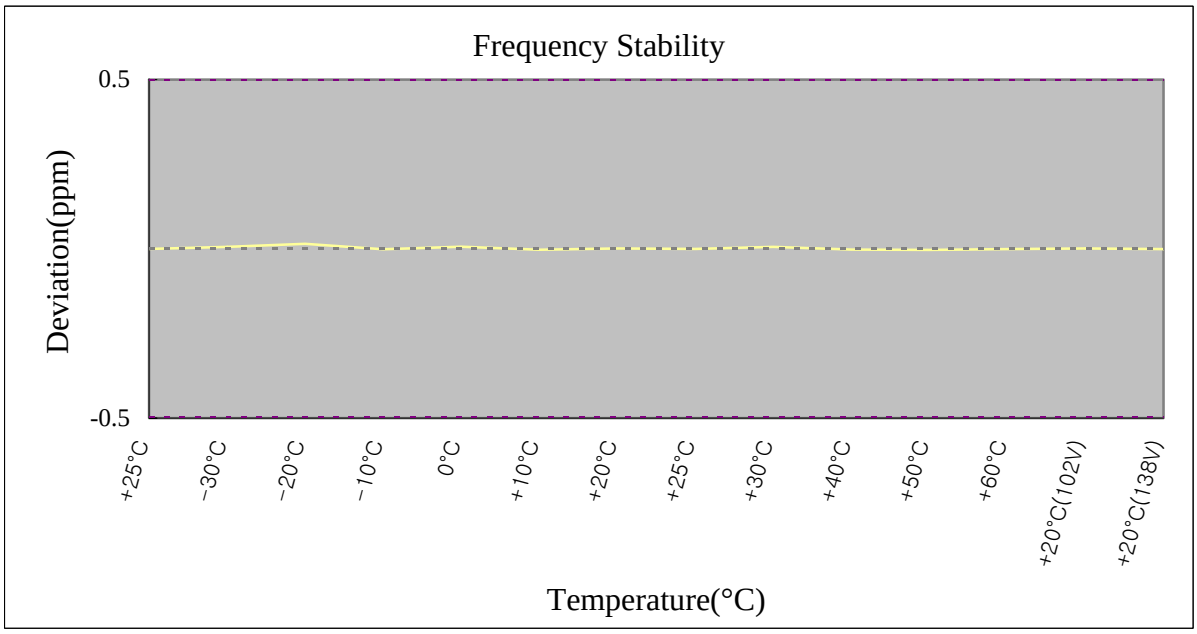
REFERENCE VOLTAGE : 120 VAC

DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	**POWER** (VDC)	TEMP (dB)	**FREQ** (Hz)	**Deviation** (%)
100%	120	+25(Ref)	1,880,000,032	0.000000
100%		-30	1,880,000,043	0.000001
100%		-20	1,880,000,060	0.000001
100%		-10	1,880,000,030	0.000000
100%		0	1,880,000,044	0.000001
100%		+10	1,880,000,027	0.000000
100%		+20	1,880,000,034	0.000000
100%		+25	1,880,000,032	0.000000
100%		+30	1,880,000,043	0.000001
100%		+40	1,880,000,028	0.000000
100%		+50	1,880,000,026	0.000000
100%		+60	1,880,000,031	0.000000
85%	102	+20	1,880,000,034	0.000000
115%	138	+20	1,880,000,031	0.000000
BATT.ENDPOINT	-	-	-	-

Frequency Stability (PCS1900) **(continued…)**





4. TEST EQUIPMENT

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
01	Spectrum Analyzer	Agilent	E4404B	21/03/07	US41061134
02	Spectrum Analyzer	Agilent	E4440A	05/10/07	MY45304199
03	Spectrum Analyzer	H.P	8563E	06/10/07	3551A04634
04	Power Meter	H.P	EMP-442A	06/07/07	GB37170413
05	Power Sensor	H.P	8481A	23/03/07	3318A96566
06	Frequency Counter	H.P	5342A	21/10/06	2119A04450
07	Multifunction Synthesizer	H.P	8904A	21/10/06	3633A08404
08	Signal Generator	Rohde Schwarz	SMR20	22/03/07	101251
09	Signal Generator	H.P	ESG-3000A	06/07/07	US37230529
10	Audio Analyzer	H.P	8903B	06/07/07	3011A09448
11	Modulation Analyzer	H.P	8901B	10/07/07	3028A03029
12	Oscilloscope	Tektronix	TDS3052	01/10/06	B016821
13	CDMA Mobile Station Test Set	H.P	8924C	21/10/06	US35360688
14	Universal Radio Communication tester	Rohde Schwarz	CMU200	21/03/07	107631
15	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	13/06/07	GB43461134
16	Bluetooth Tester	TESCOM	TC-3000A	21/10/06	3000A4A0121
17	Multisystem Ue Tester	Japan Radio Co.,Ltd	NJZ-2000	14/11/06	ET00095
18	Power Splitter	WEINSCHEL	1593	21/10/06	332
19	BAND Reject Filter	Microwave Circuits	N0308372	21/10/06	3125-01DC0312
20	BAND Reject Filter	Wainwright	WRCG1750	21/10/06	SN2
21	AC Power supply	DAEKWANG	5KVA	20/03/07	N/A
22	DC Power Supply	H.P	6622A	21/03/07	465487
23	Attenuator (30dB)	H.P	8498A	21/10/06	50101
24	Attenuator (10dB)	WEINSCHEL	23-10-34	21/10/06	BP4387
25	HORN ANT	EMCO	3115	06/03/07	6419
26	HORN ANT	EMCO	3115	25/04/07	21097
27	HORN ANT	A.H.Systems	SAS-574	09/11/06	154
28	HORN ANT	A.H.Systems	SAS-574	09/11/06	155
29	Dipole Antenna	Schwarzbeck	VHA9103	18/10/06	2116
30	Dipole Antenna	Schwarzbeck	VHA9103	18/10/06	2117
31	Dipole Antenna	Schwarzbeck	UHA9105	18/10/06	2261
32	Dipole Antenna	Schwarzbeck	UHA9105	18/10/06	2262

4. TEST EQUIPMENT (CONTINUED)

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	S/N
33	RFI/FIELD Intensity Meter	Kyorits	KNM-504D	07/07/07	SN-161-4
34	Frequency Converter	Kyorits	KCV-604C	07/07/07	4-230-3
35	TEMP & HUMIDITY Chamber	JISCO	J-RHC2	13/09/06	021031
36	Log Periodic Antenna	Schwarzbeck	UHALP9108A1	29/09/06	1098
37	Biconical Antenna	Schwarzbeck	VHA9103	04/04/07	2233
38	Digital Multimeter	H.P	34401A	20/03/07	3146A13475
39	Attenuator (10dB)	WEINSCHEL	23-10-34	21/10/06	BP4386
40	High-Pass Filter	ANRITSU	MP526D	21/10/06	MP27756
41	Attenuator (3dB)	Agilent	8491B	21/10/06	58177
42	Amplifier (25dB)	Agilent	8447D	12/04/07	2944A10144
43	Amplifier (30dB)	Agilent	8449B	21/10/06	3008A01590
44	Position Controller	TOKIN	5901T	N/A	14173
45	Driver	TOKIN	5902T2	N/A	14174
46	Spectrum Analyzer	H.P	8591E	21/03/07	3649A05889
47	RFI/FIELD Intensity Meter	Kyorits	KNW-2402	11/07/07	4N-170-3
48	LISN	Kyorits	KNW-407	19/08/07	8-317-8
49	LISN	Kyorits	KNW-242	27/09/06	8-654-15
50	CVCF	NF Electronic	4400	N/A	344536 4420064
51	Software	ToYo EMI	EP5/RE	N/A	Ver 2.0.800
52	Software	ToYo EMI	EP5/CE	N/A	Ver 2.0.801
53	Software	AUDIX	e3	N/A	Ver 3.0
54	Software	Agilent	Benchlink	N/A	A.01.09 021211

5. EMISSION DESIGNATOR

GSM850

Emission Designator = 248KGXW

GSM BW = 248KHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

PCS1900

Emission Designator = 242KGXW

GSM BW = 242 KHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

6. CONCLUSION

The data collected shows that the **SUNGIL TELECOM CO., LTD.** Dual band GSM phone **FCC ID: R2NSGP-1036** complies with all the requirements of Parts 2 , 22 and 24 of the FCC rules.

