

RF TEST REPORT

Test item : Handheld Terminal
Model No. : D3-POS
Order No. : 1006-00266
Date of receipt : 2010-06-21
Test duration : 2010-07-22 ~ 2010-07-30
Date of issue : 2010-09-17
Use of report : FCC Original Grant

Applicant : Partner Tech Corporation
10F, No. 233-2, Pao Chiao Road, Shin Tien, Taipei, Taiwan

Test laboratory : Digital EMC Co., Ltd.
683-3, Yubang-Dong, Cheoin-Gu, Yongin-Si, Kyunggi-Do, 449-080, Korea

Test specification : §2, §22(H), §24(E)
ANSI C63.4-2003

Test environment : See appended test report

Test result : Pass Fail

The test results presented in this test report are limited only to the sample supplied by applicant and the use of this test report is inhibited other than its purpose. This test report shall not be reproduced except in full, without the written approval of DIGITAL EMC CO., LTD.

Tested by:



Engineer
S.K. Ryu

Witnessed by:

N/A

Reviewed by:



Manager
W.J. Lee

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1. Equipment information

1.1 Equipment description

FCC Equipment Class	Licensed Non-Broadcast Station Transmitter(PCB)
Equipment type	Handheld Terminal
Modulation(s):	GMSK
Equipment model name	D3-POS
Equipment add model name	MF-2350
Equipment serial no.	Identical prototype
Tx Freq. Range	GSM850 Band: 824.2 ~ 848.8 MHz PCS1900 Band: 1850.2 ~ 1909.8 MHz
Rx Freq. Range	GSM850 Band: 869.2 ~ 893.8 MHz PCS1900 Band: 1930.2 ~ 1989.8 MHz
Max. Power Rating	GSM850 Band: 0.693W ERP(28.41dBm) PCS1900 Band: 0.407W EIRP(26.10dBm)
Emission Designators	GSM850 Band: 245KGXW PCS1900 Band: 246KGXW
Frequency Tolerance	± 0.00025 % (2.5ppm)
Power	Li-ion polymer Battery: DC 7.4 V AC-DC Adaptor: AC 120 V 60 Hz

1.2 Ancillary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
Cradle	Cradle	AT10CIG00102	(☞) ATID	-
Adaptor	KSAH0950300T1M2	N/A	Kuan tech(Shenzhen) Co., Ltd.	-

2. Information about test items

2.1 Test mode

This Device was tested in a transmitting mode at maximum power.

2.2 Auxiliary equipment

Equipment	Model No.	Serial No.	Manufacturer	Note
				-
				-

2.3 Tested environment

Temperature	:	21 ~ 28 °C
Relative humidity content	:	48 ~ 53 % R.H.
Details of power supply	:	Battery: DC 7.4 V AC 120V 60Hz

2.4 EMI Suppression Device(s)/Modifications

EMI suppression device(s) added and/or modifications made during testing

- The manufacturer carried out modifications to the EUT in order to meet the requirements of the standard applied.
1. Below ferrites fitted to adapter cable.(refer to external photo.)
 - HFA187102-0A2
 - LFB259128-000

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
<p>Note 1: C=Comply NC=Not Comply NT=Not Tested NA=Not Applicable</p>		

The sample was tested according to the following specification:
ANSI C-63.4-2003

3.2 Power Output

FCC ID : **NDPD3POS**
 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

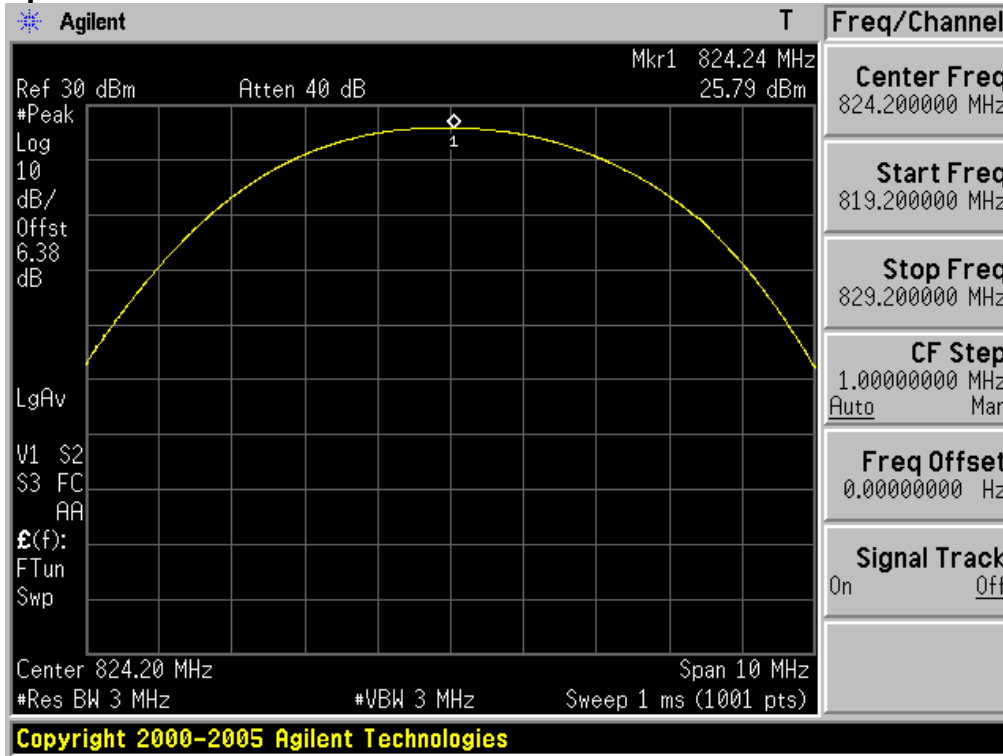
Channel	Frequency (MHz)	Power Output(dBm) Power Step: 5
128	824.2	25.79
190	836.6	25.55
251	848.8	25.42

PCS1900

Channel	Frequency (MHz)	Power Output(dBm) Power Step: 0
512	1850.2	25.02
661	1880.0	25.76
810	1909.8	26.01

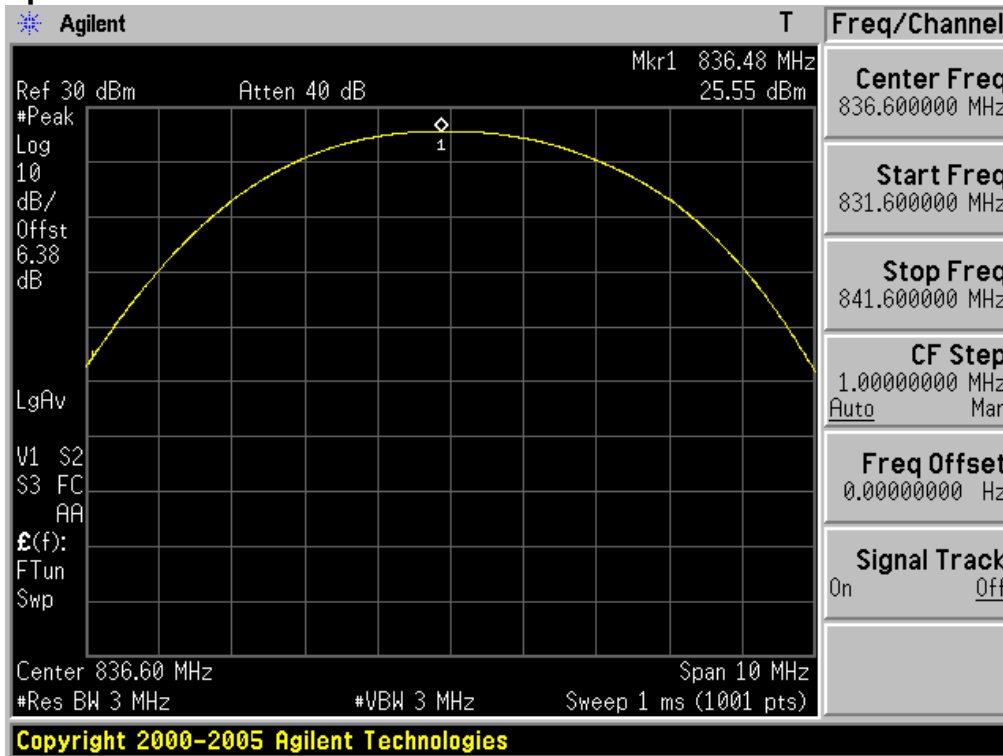
Power Output

GSM850 & Channel: 128



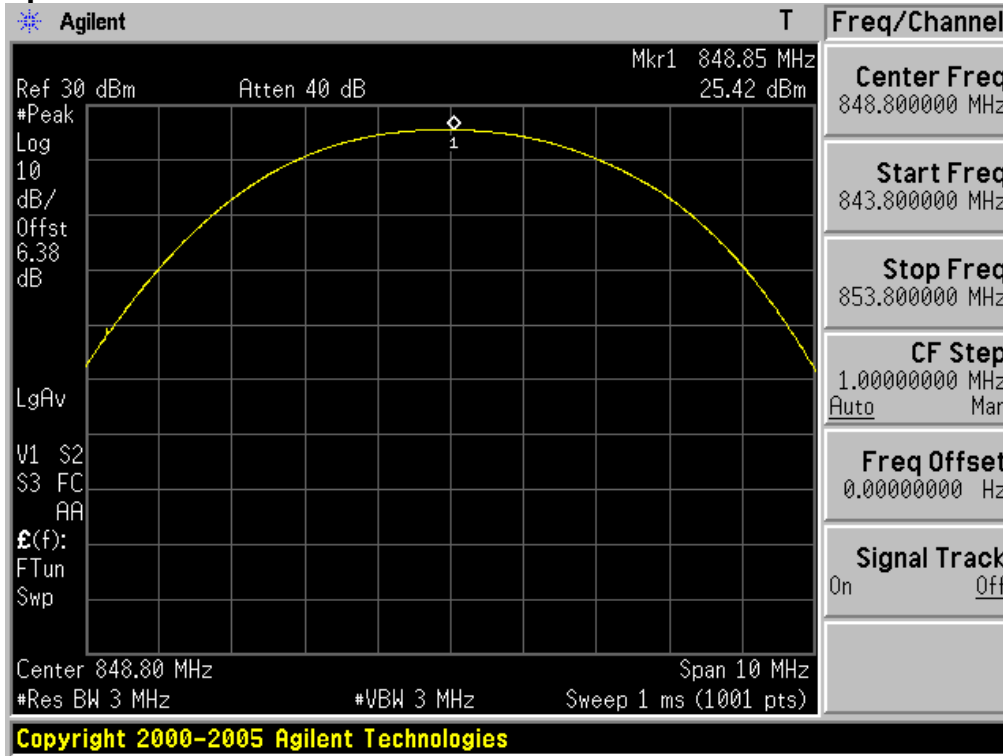
Power Output

GSM850 & Channel: 190



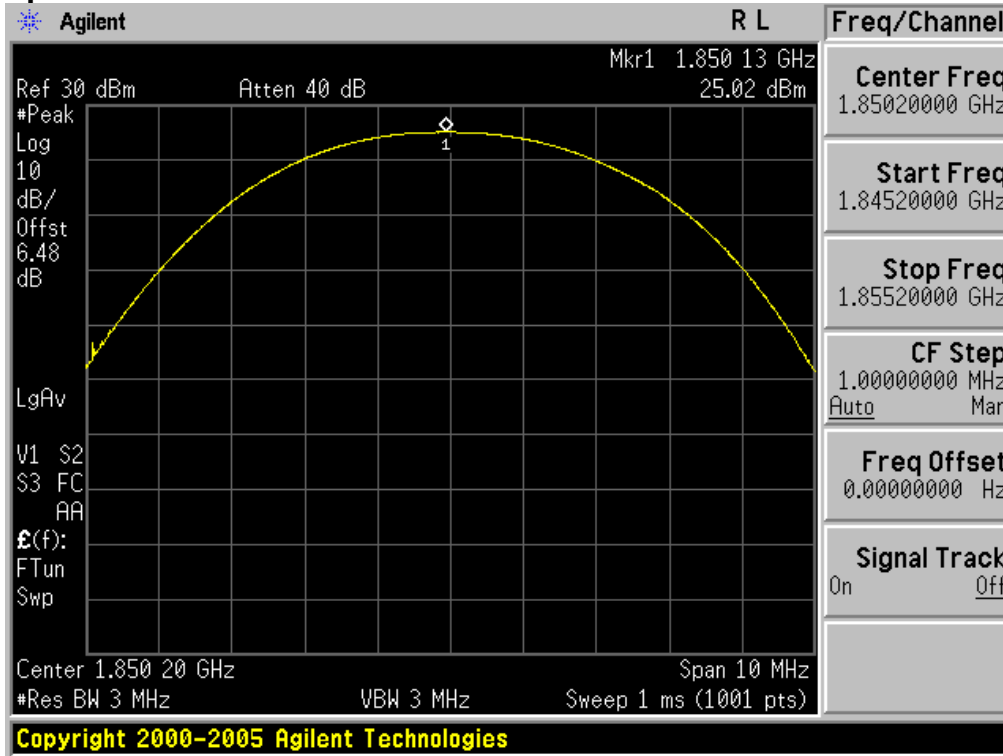
Power Output

GSM850 & Channel: 251



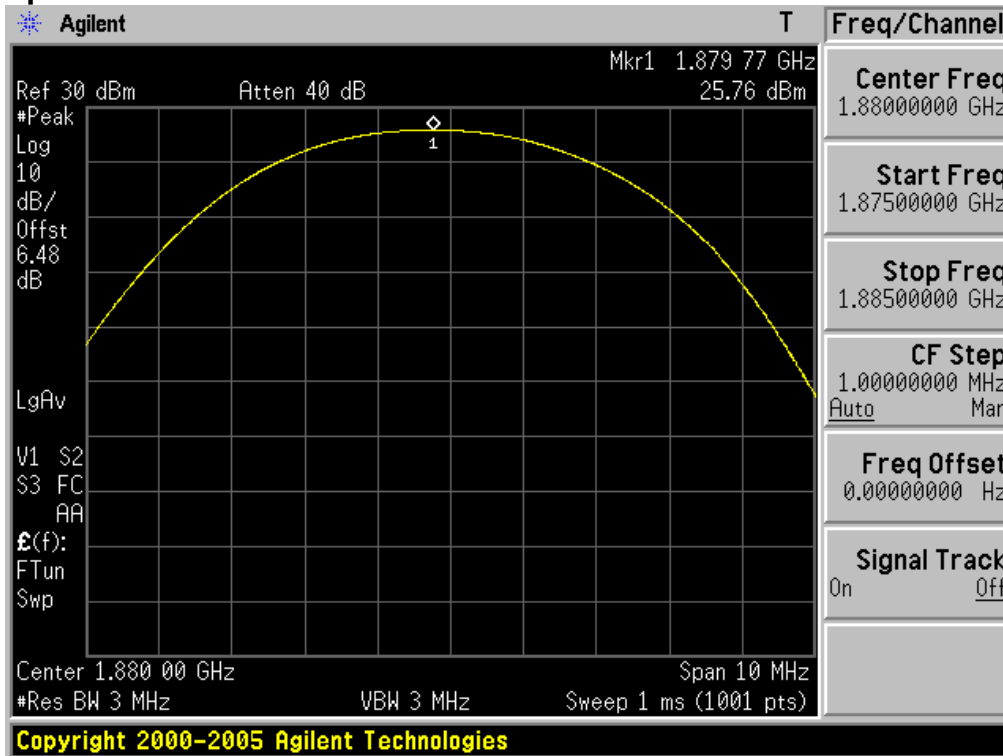
Power Output

PCS1900 & Channel: 512



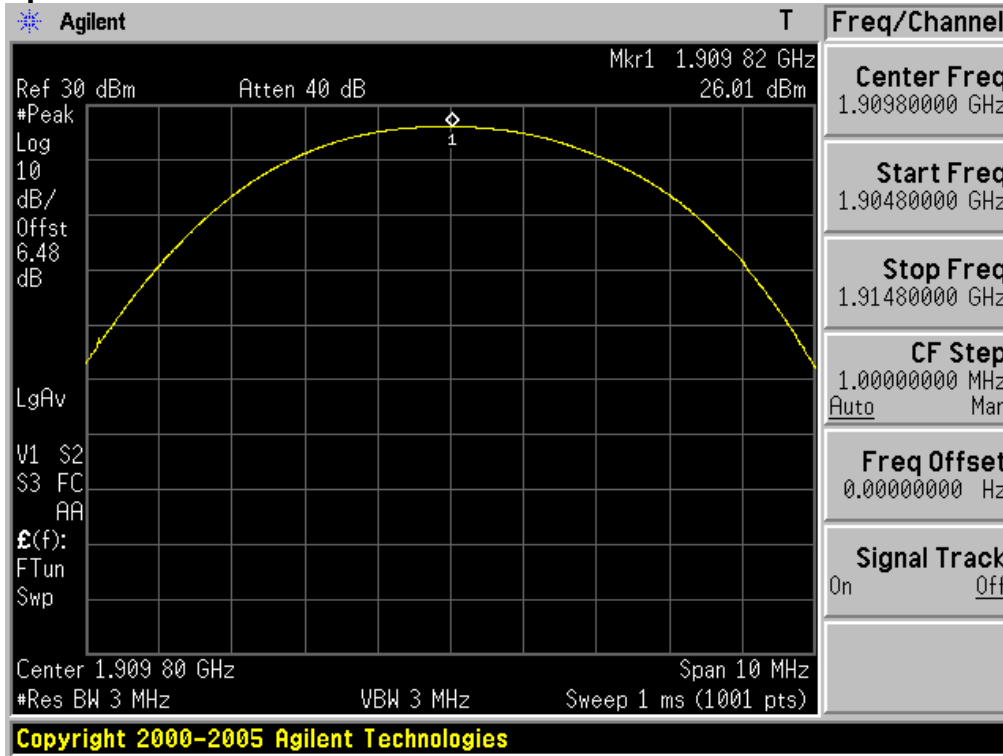
Power Output

PCS1900 & Channel: 661



Power Output

PCS1900 & Channel: 810



ERP (GSM850)

FCC ID : **NDPD3POS**
 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:

Channel	Frequency (MHz)	TEST CONDITIONS			Power Step: 5		
		Ref. level (dBm)	Pol. (H/V)	ERP (dBm)	ERP (W)	Power Supply	Note.
128	824.2	-10.77	H	28.04	0.637	Battery	-
190	836.6	-10.32	H	28.33	0.681	Battery	-
251	848.8	-10.84	H	28.41	0.693	Battery	-

Note 1. The Battery was charged fully.

Note 2. The worst case data were reported.

EIRP (PCS1900)

FCC ID : **NDPD3POS**
 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:

Channel	Frequency (MHz)	TEST CONDITIONS Power Step: 0						Note
		Ref. level (dBm)	Pol. (H/V)	Ant Gain (dBi)	EIRP (dBm)	EIRP (W)	Power Supply	
512	1850.2	-12.29	V	7.68	26.10	0.407	Battery	-
661	1880.0	-13.20	V	7.77	25.60	0.363	Battery	-
810	1909.8	-13.15	V	7.86	25.06	0.321	Battery	-

Note 1. The Battery was charged fully.

Note 2. The worst case data were reported.

3.3 Occupied Bandwidth

FCC ID : **NDPD3POS**
 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:

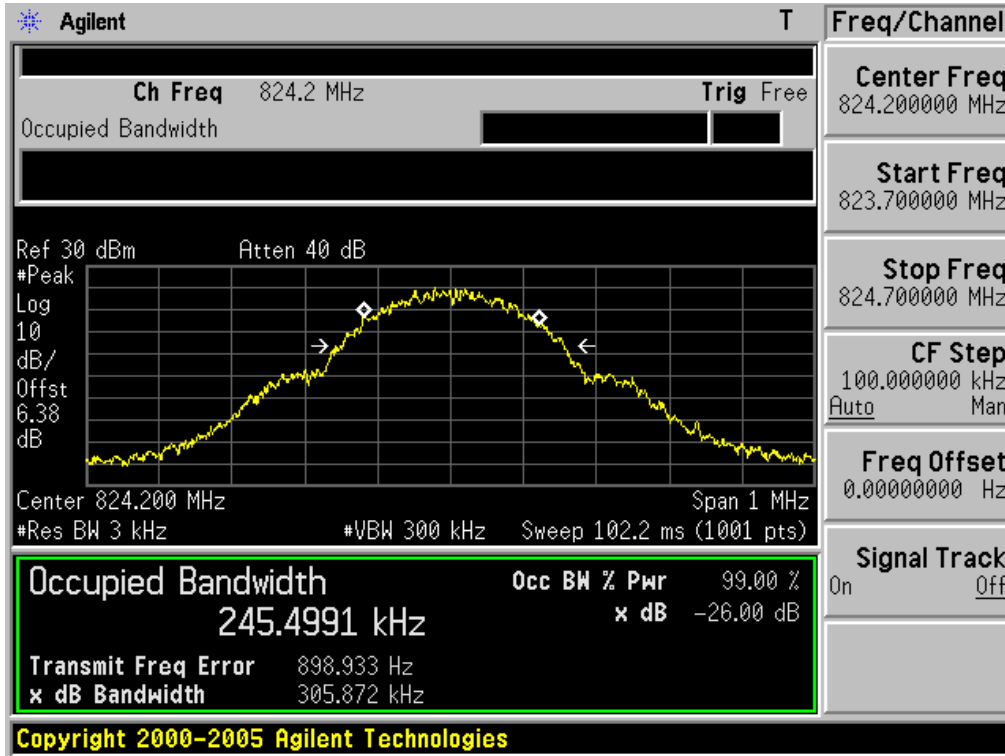
GSM850

Channel	Frequency (MHz)	99% Bandwidth
		(kHz)
128	824.2	245.4991
190	836.6	245.0163
251	848.8	241.5449

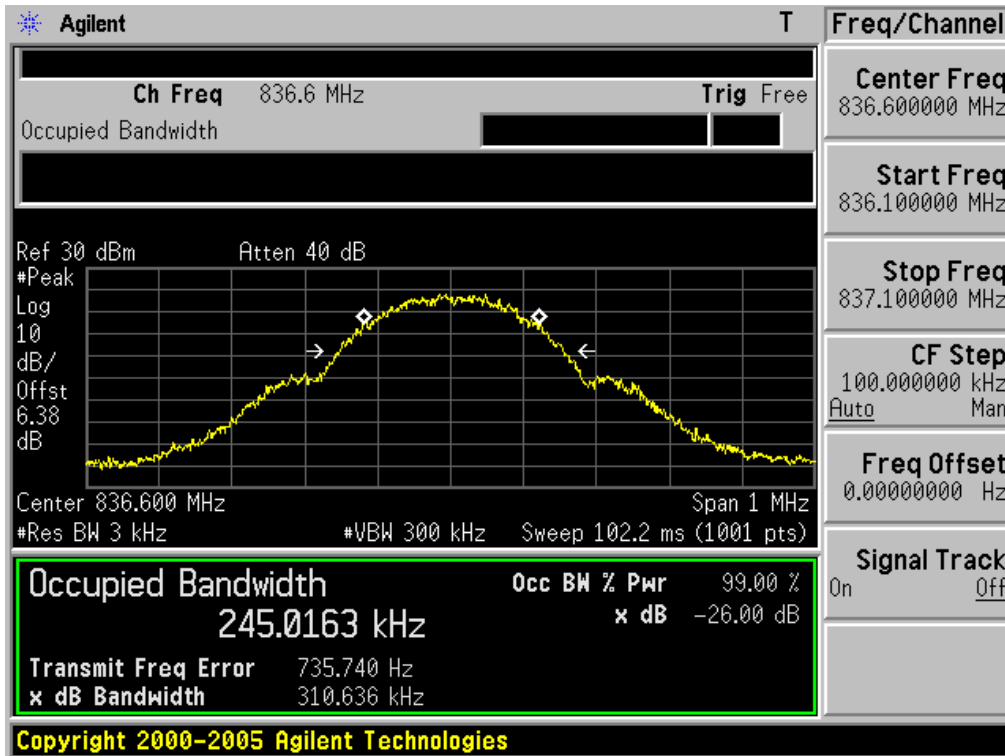
PCS1900

Channel	Frequency (MHz)	99% Bandwidth
		(kHz)
512	1850.2	244.5022
661	1880.0	246.0658
810	1909.8	246.0652

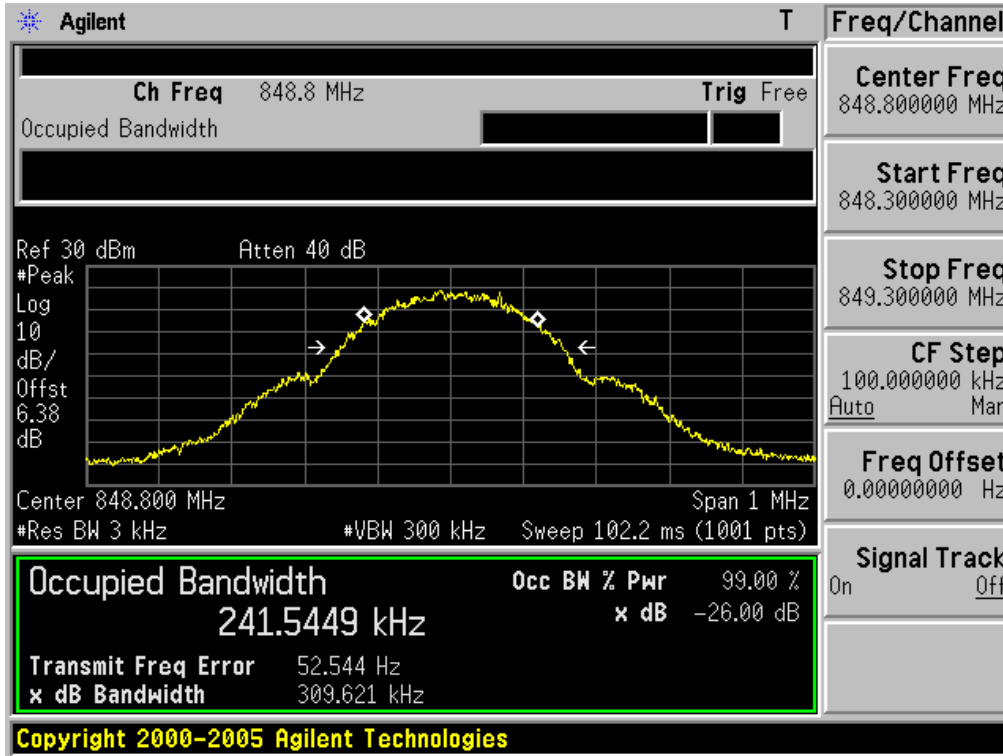
Occupied Bandwidth 99 % Bandwidth GSM850 & Channel: 128



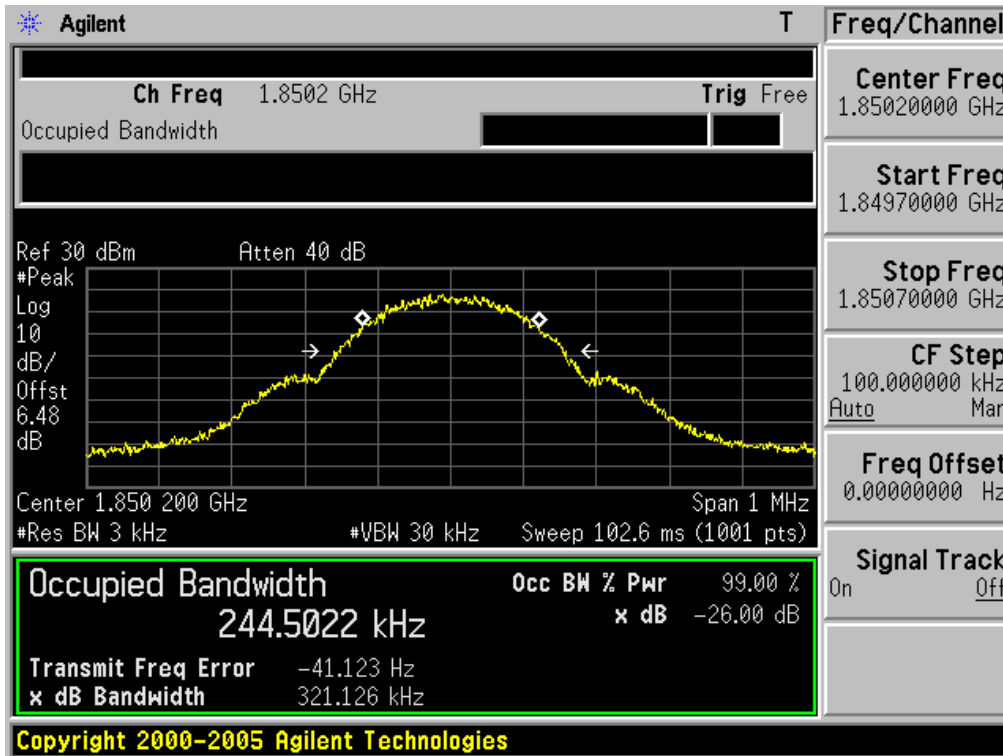
Occupied Bandwidth 99 % Bandwidth GSM850 & Channel: 190



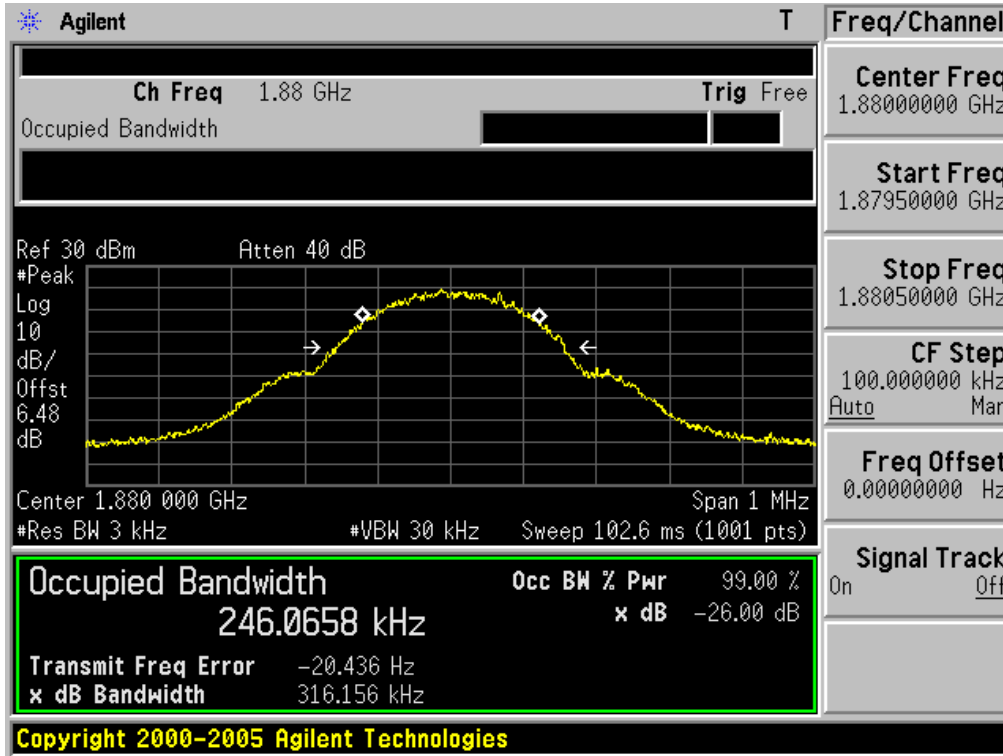
Occupied Bandwidth 99 % Bandwidth GSM850 & Channel: 251



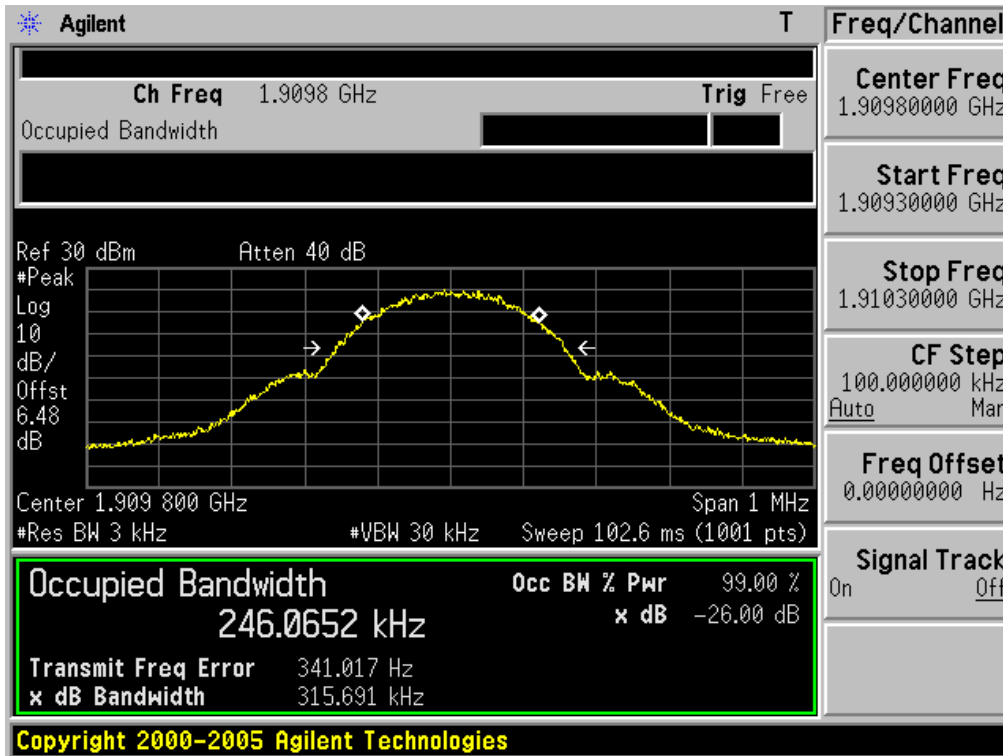
Occupied Bandwidth 99 % Bandwidth PCS1900 & Channel: 512



Occupied Bandwidth 99 % Bandwidth PCS1900 & Channel: 661



Occupied Bandwidth 99 % Bandwidth PCS1900 & Channel: 810



3.4 Occupied Bandwidth Emission Limit

FCC ID : **NDPD3POS**
 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 $43+10\log(P)$ dB.
- (b) Compliance with these provisions is based on the use of measurement instrumentation employing a resolution bandwidth of 1MHz or greater. However, in the 1MHz 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:

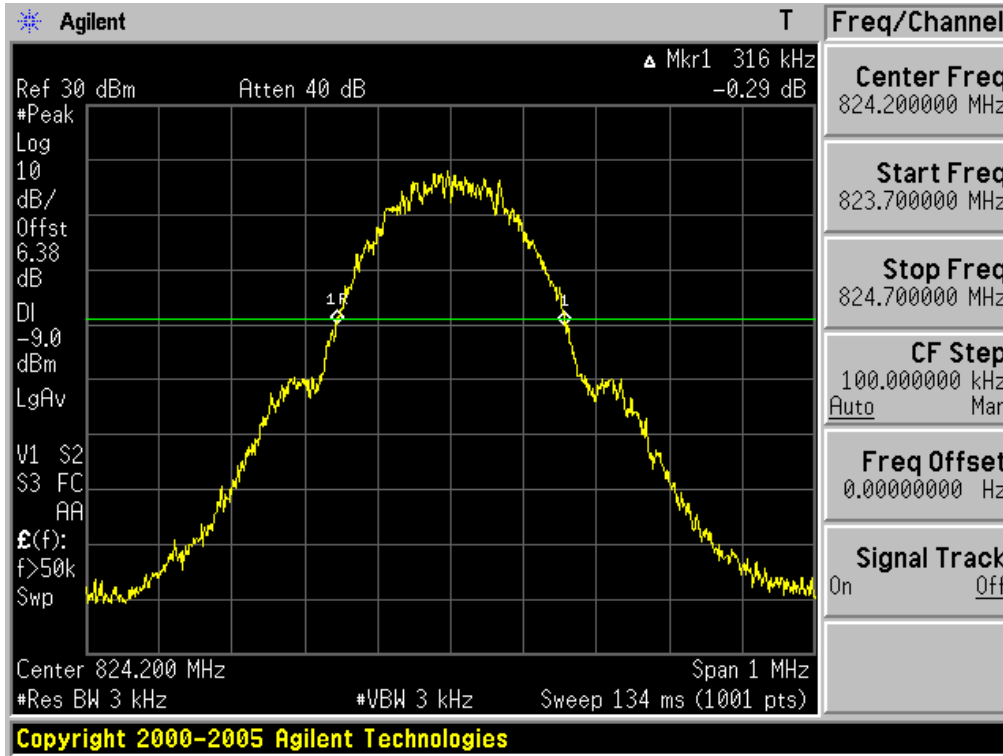
GSM850

Channel	Frequency (MHz)	-26dBc Bandwidth
		(kHz)
128	824.2	316
190	836.6	311
251	848.8	312

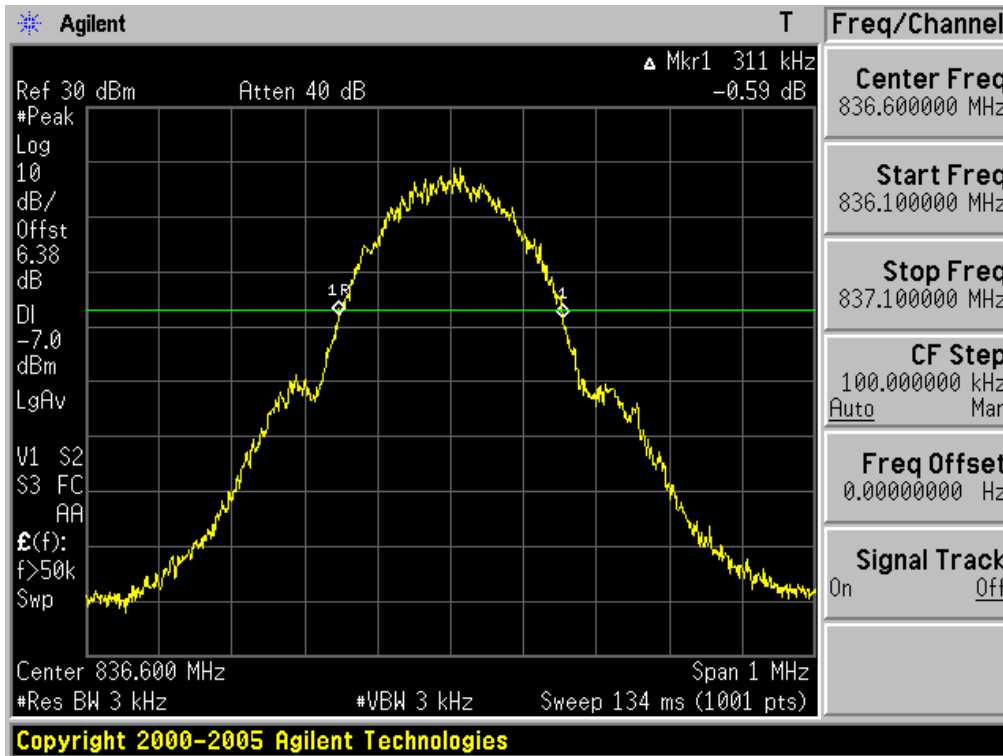
PCS1900

Channel	Frequency (MHz)	-26dBc Bandwidth
		(kHz)
512	1850.2	314
661	1880.0	309
810	1909.8	312

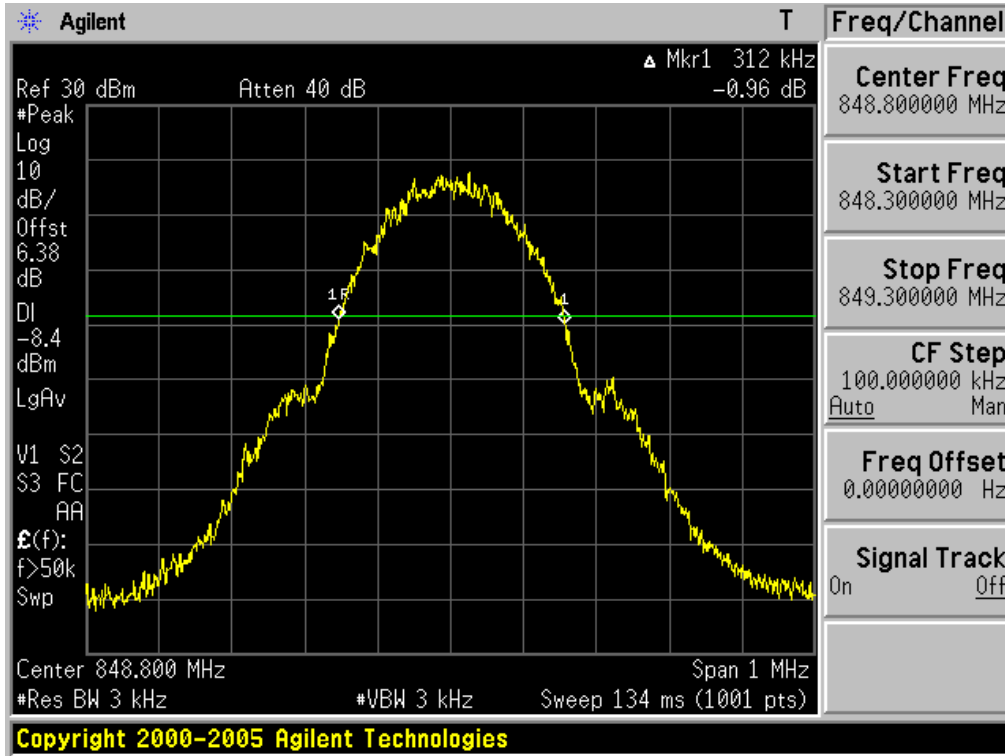
Occupied Bandwidth 26dBc Bandwidth GSM850 & Channel: 128



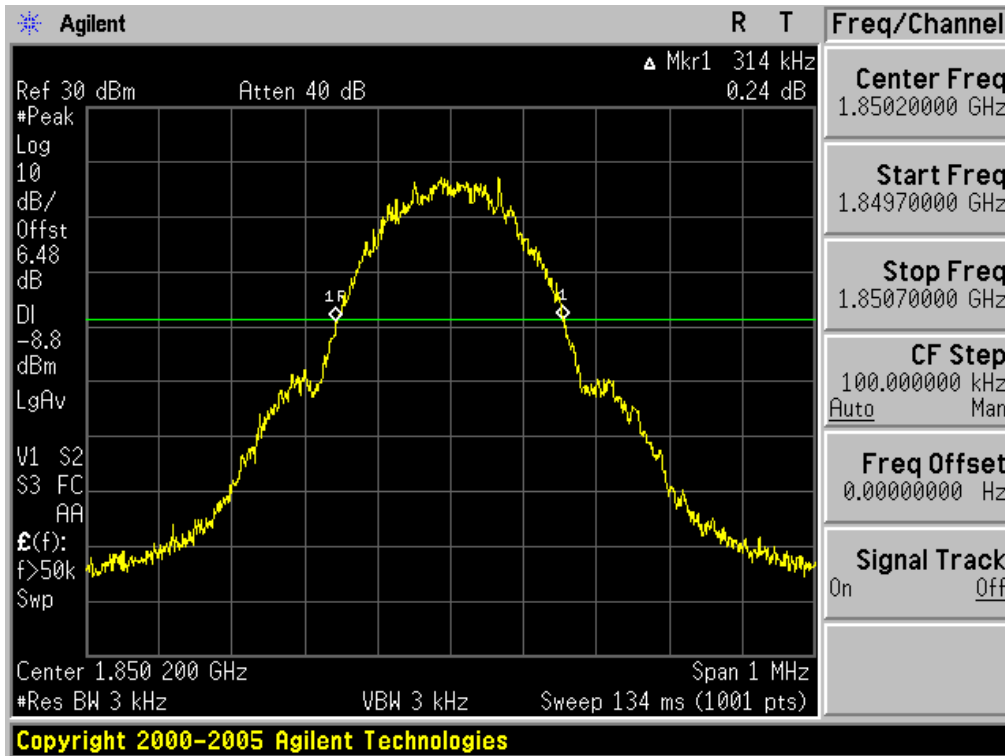
Occupied Bandwidth 26dBc Bandwidth GSM850 & Channel: 190



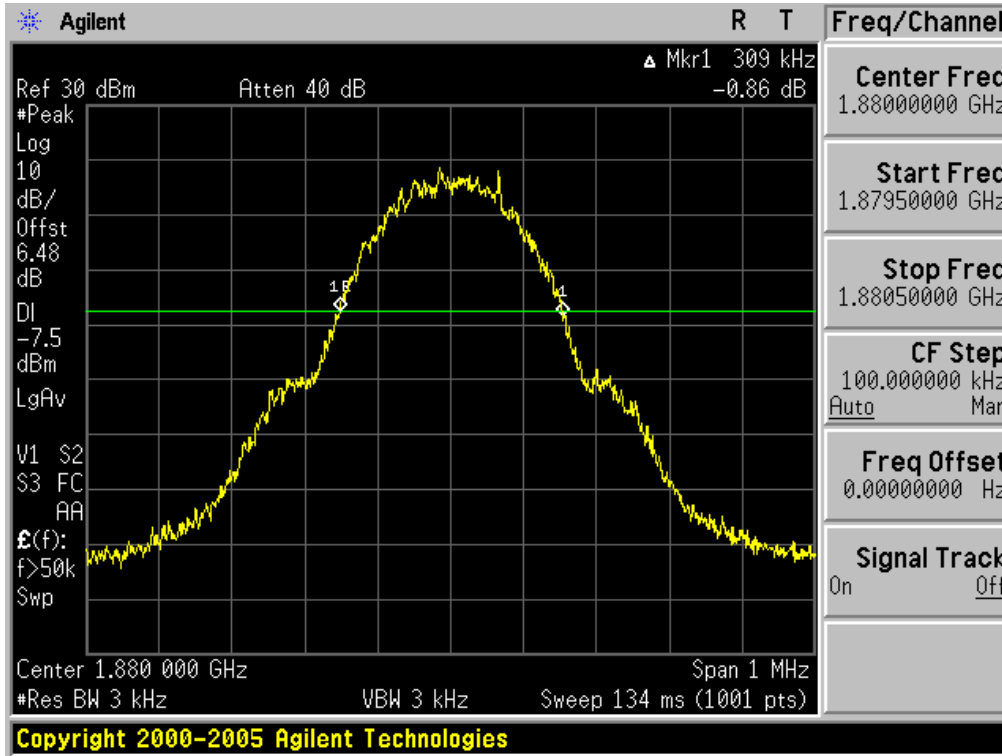
Occupied Bandwidth 26dBc Bandwidth GSM850 & Channel: 251



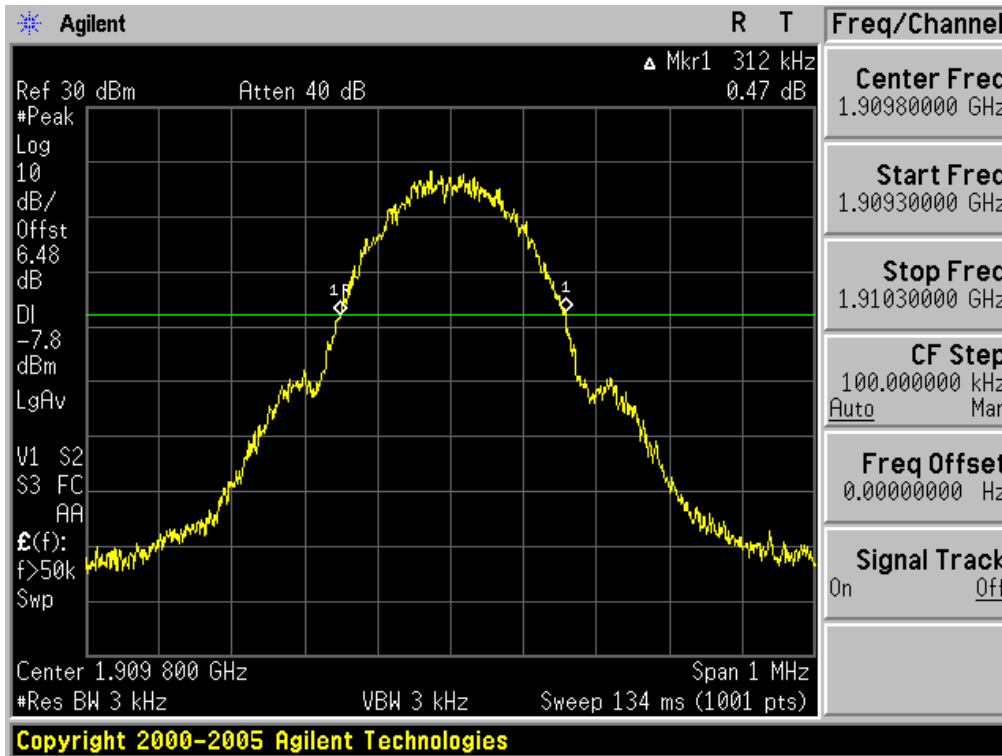
Occupied Bandwidth 26dBc Bandwidth PCS1900 & Channel: 512



Occupied Bandwidth 26dBc Bandwidth PCS1900 & Channel: 661

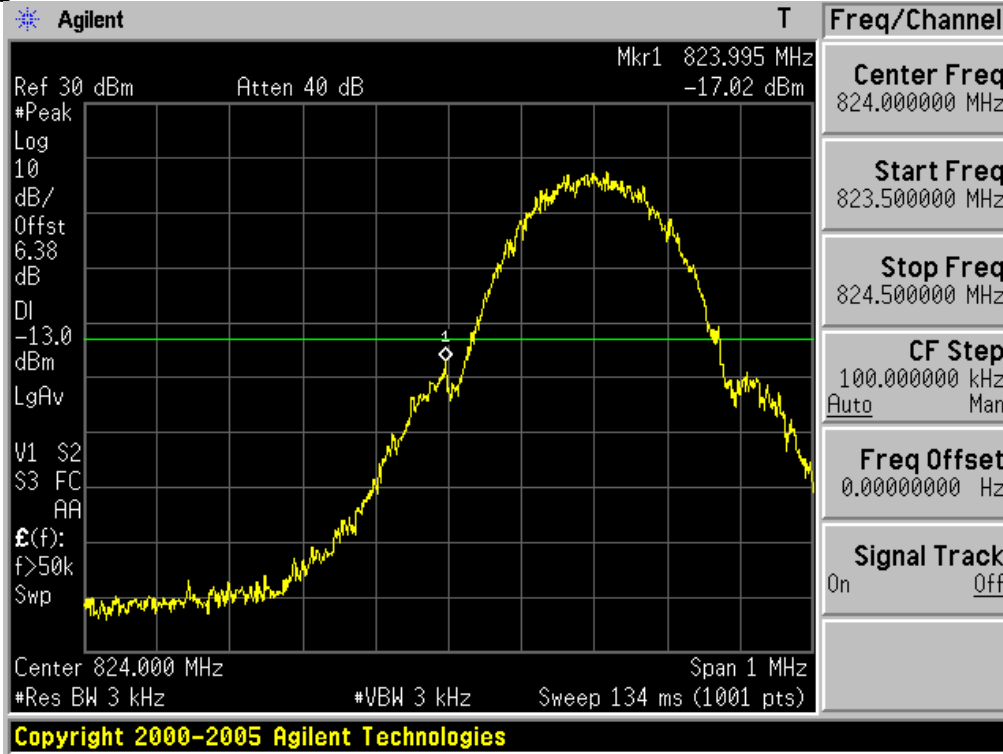


Occupied Bandwidth 26dBc Bandwidth PCS1900 & Channel: 810



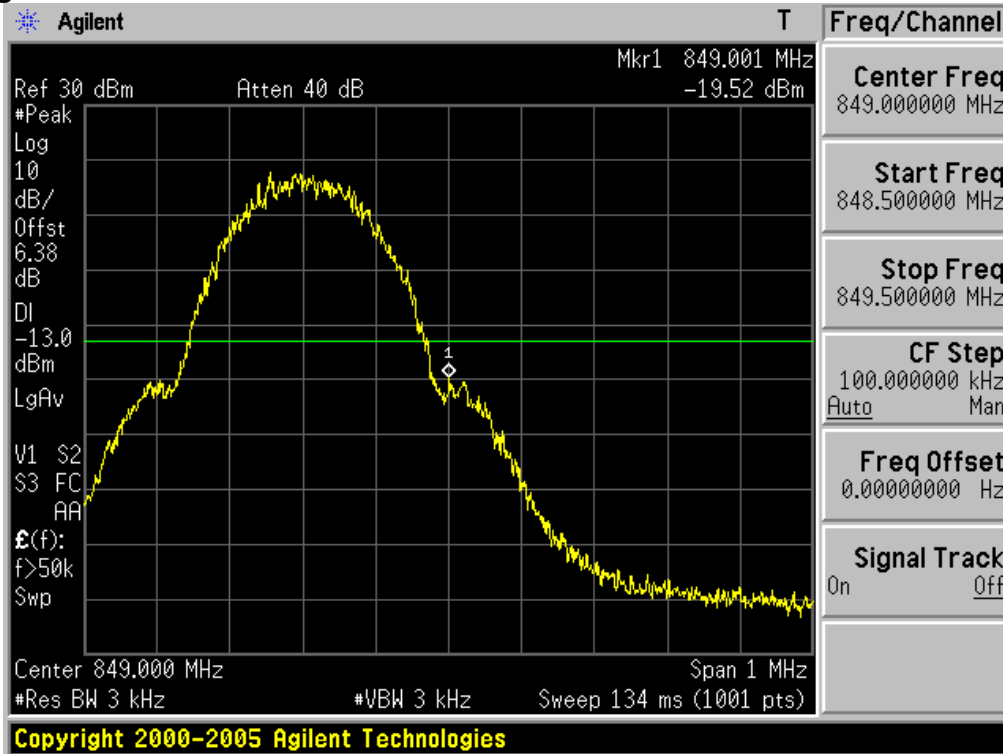
Band Edge

GSM850 & Channel: 128



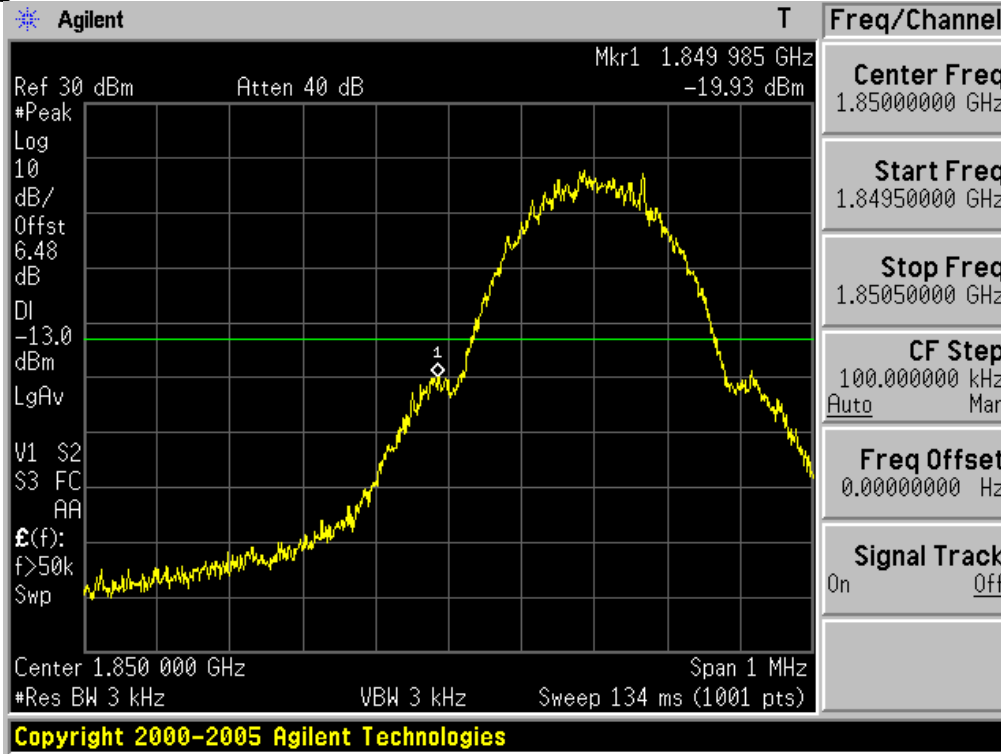
Band Edge

GSM850 & Channel: 251



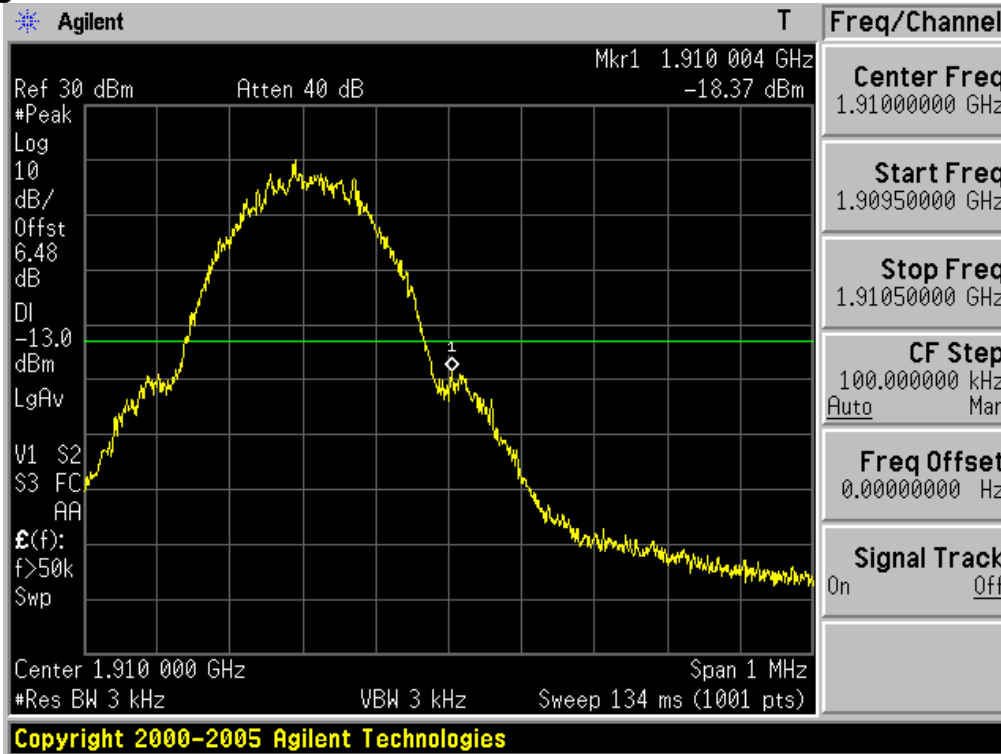
Band Edge

PCS1900 & Channel: 512



Band Edge

PCS1900 & Channel: 810



3.5 Spurious and Harmonic Emissions at Antenna Terminal

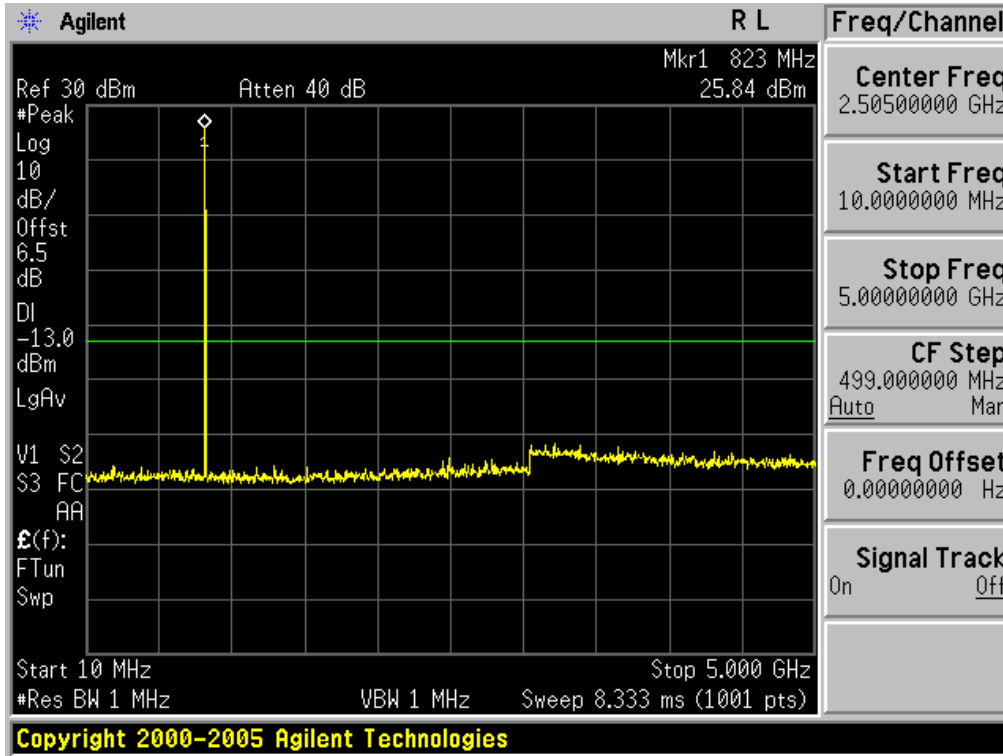
FCC ID	:	NDPD3POS
Specification	:	47 CFR 2.1051, 24.238(a)
Tested Frequency	:	824.2MHz, 836.6MHz and 848.8MHz for GSM850 1850.2MHz, 1880.0MHz and 1909.8MHz for PCS1900

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.

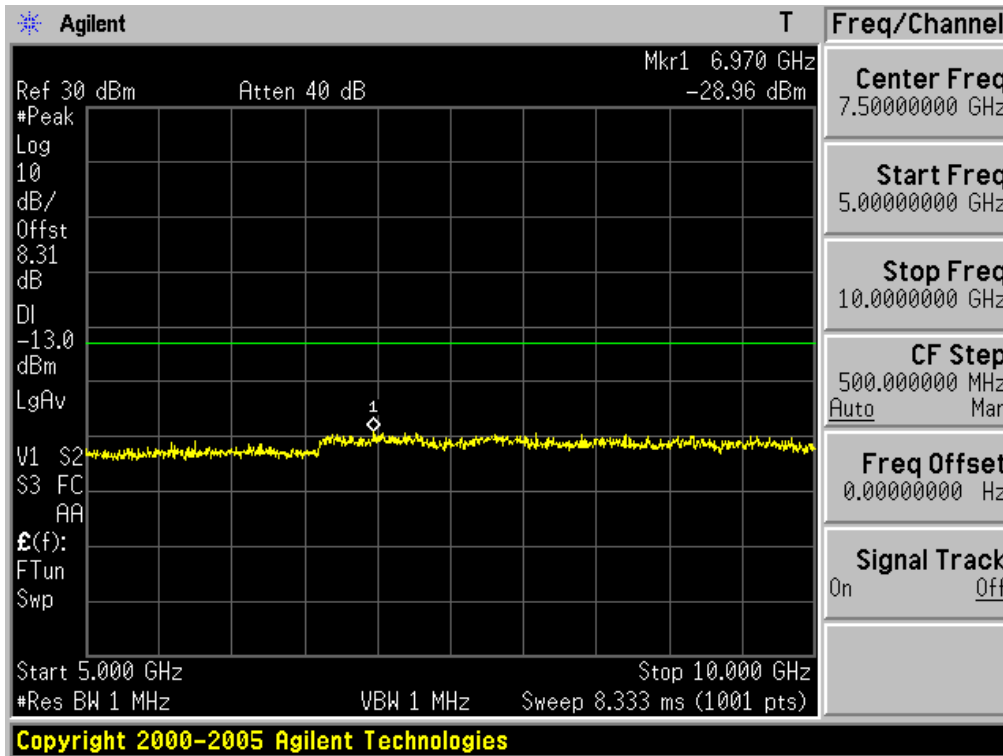
Spurious Emissions at Antenna Terminal

GSM850 & Channel: 128

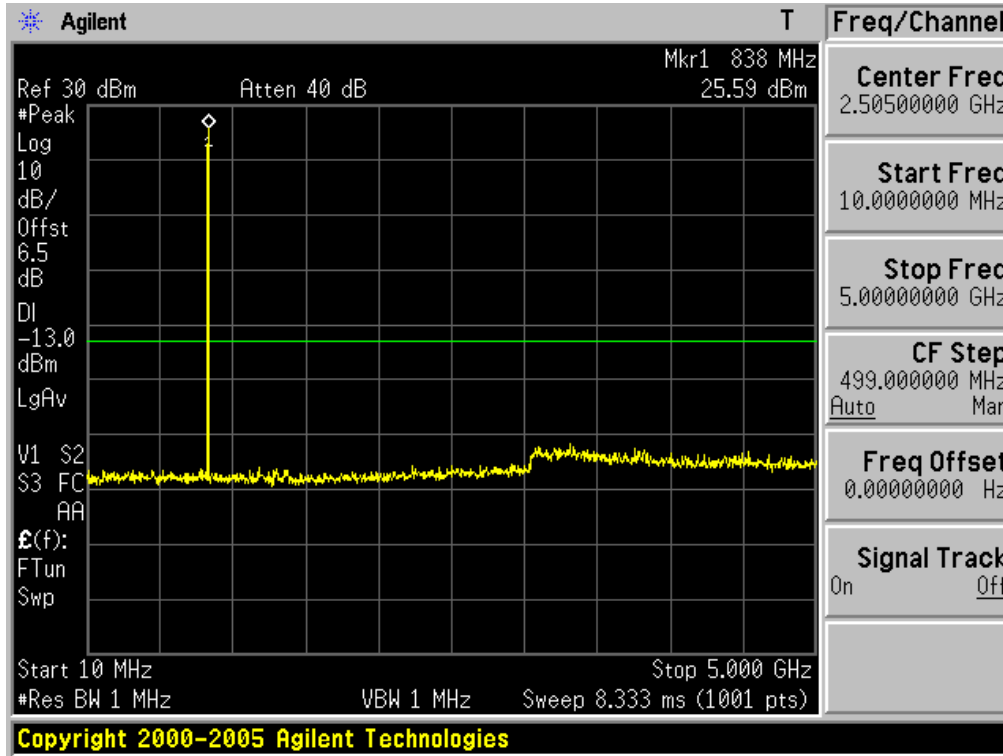


Spurious Emissions at Antenna Terminal

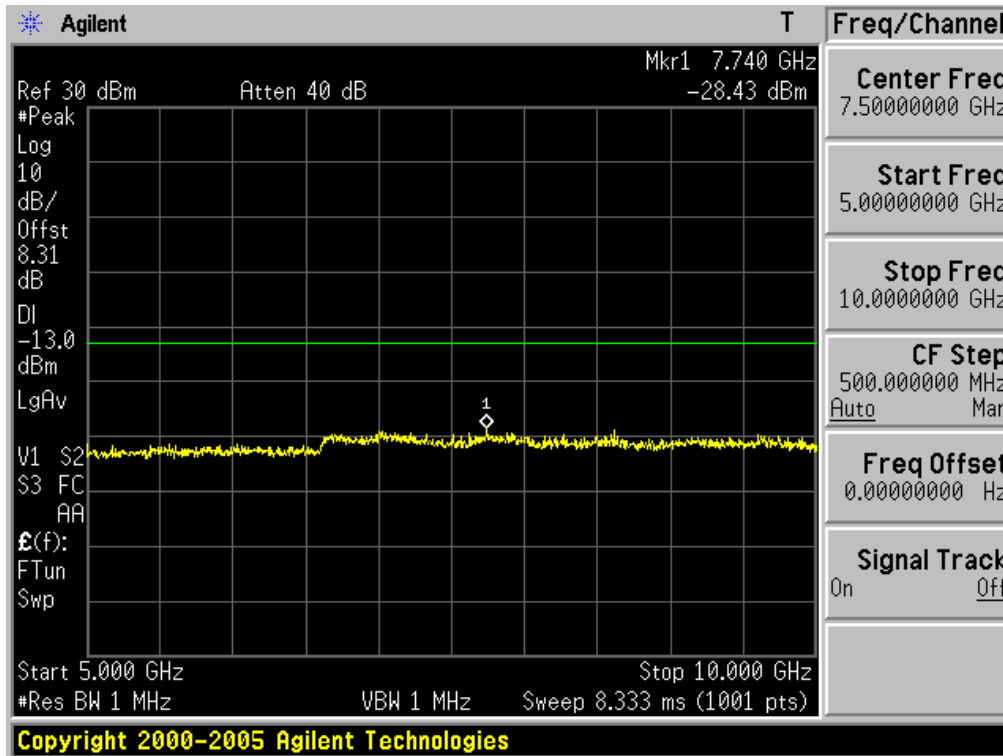
GSM850 & Channel: 128



Spurious Emissions at Antenna Terminal GSM850 & Channel: 190

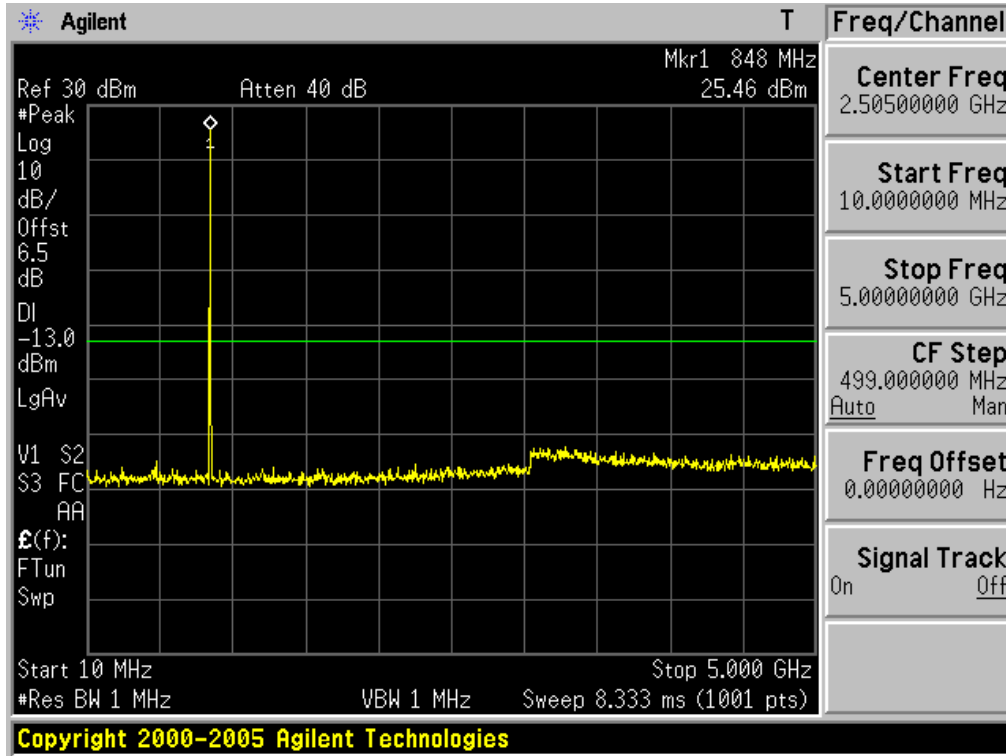


Spurious Emissions at Antenna Terminal GSM850 & Channel: 190



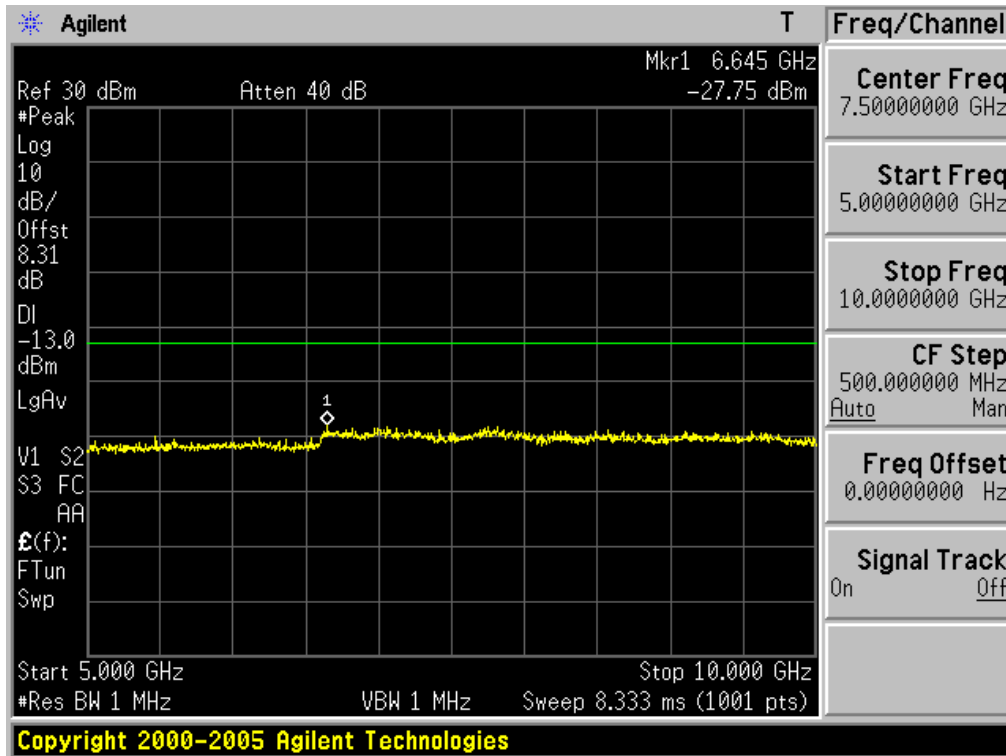
Spurious Emissions at Antenna Terminal

GSM850 & Channel: 251

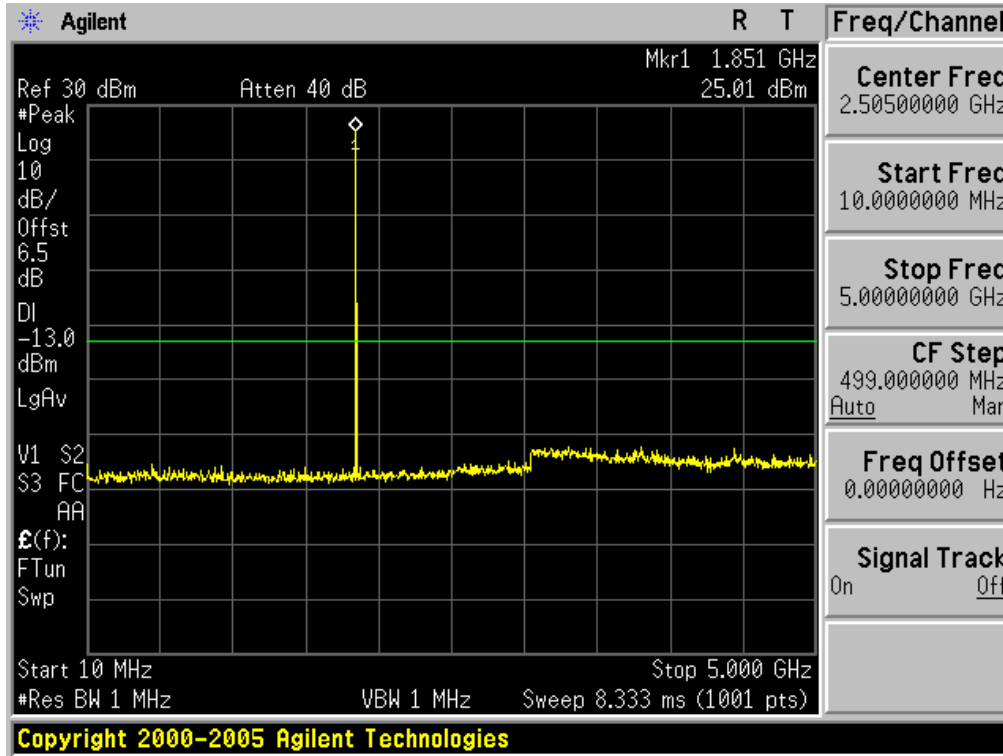


Spurious Emissions at Antenna Terminal

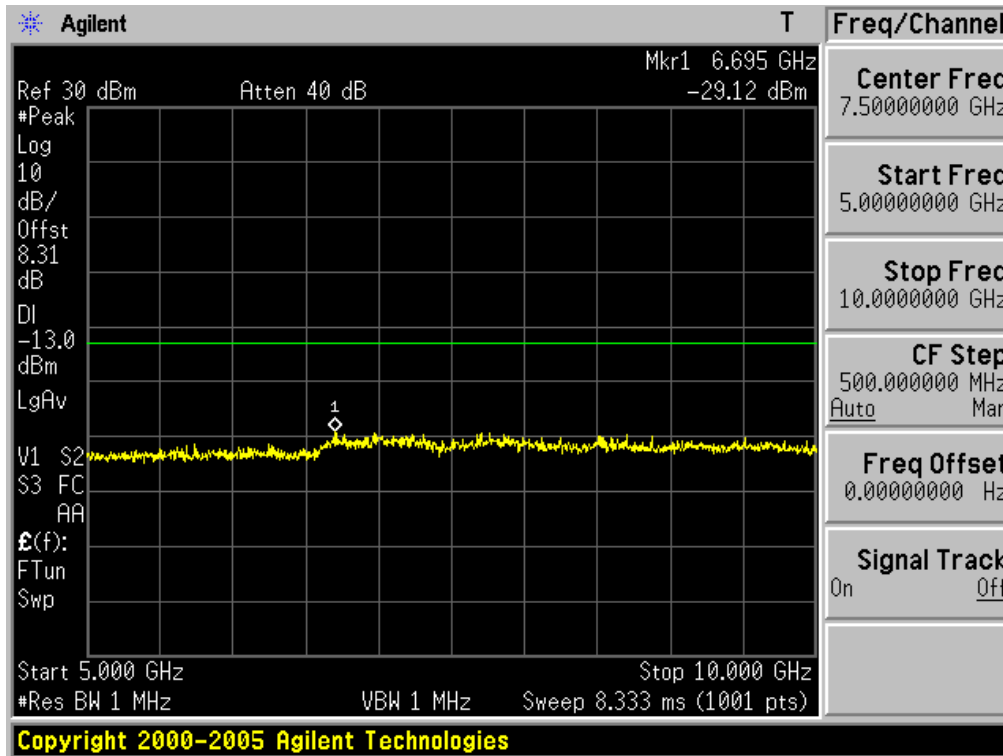
GSM850 & Channel: 251



Spurious Emissions at Antenna Terminal PCS1900 & Channel: 512

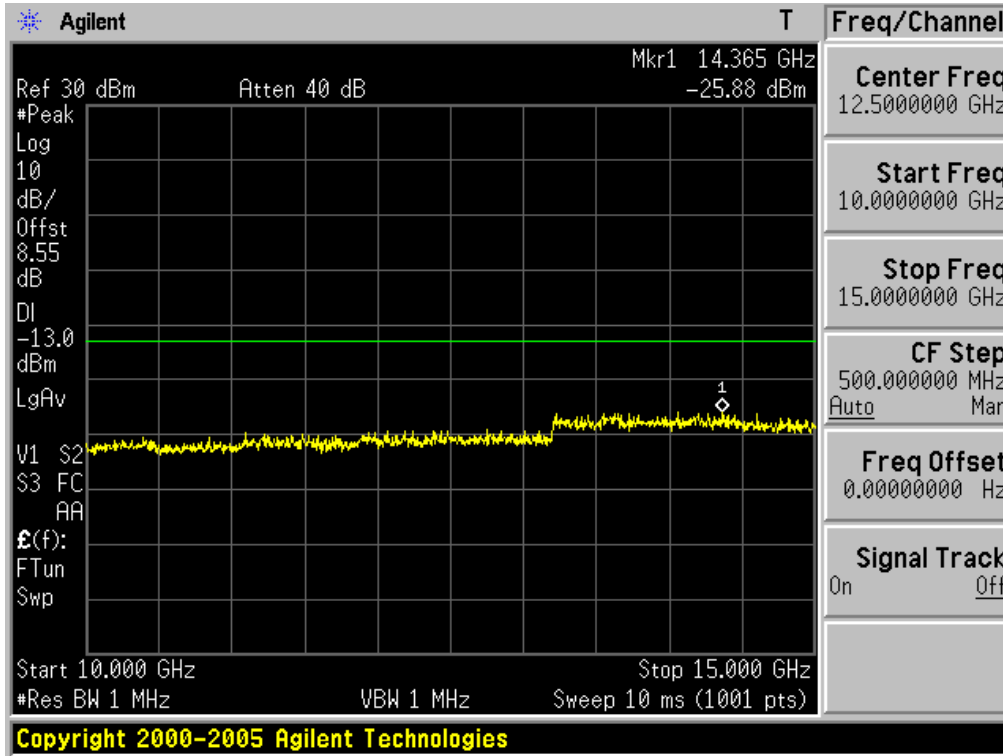


Spurious Emissions at Antenna Terminal PCS1900 & Channel: 512



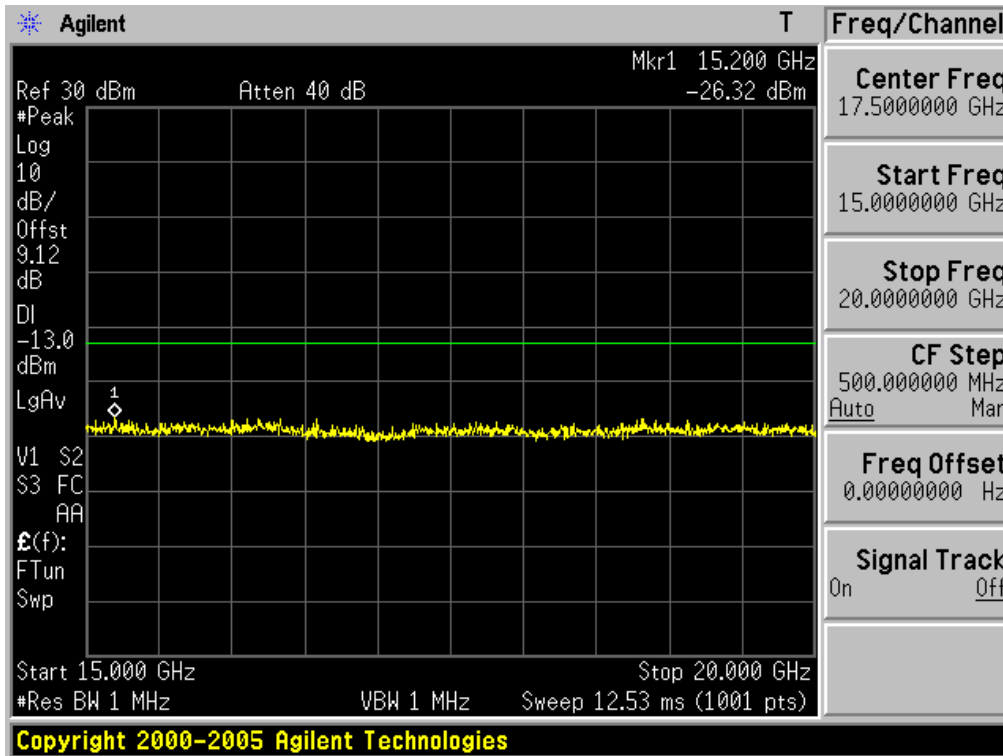
Spurious Emissions at Antenna Terminal

PCS1900 & Channel: 512

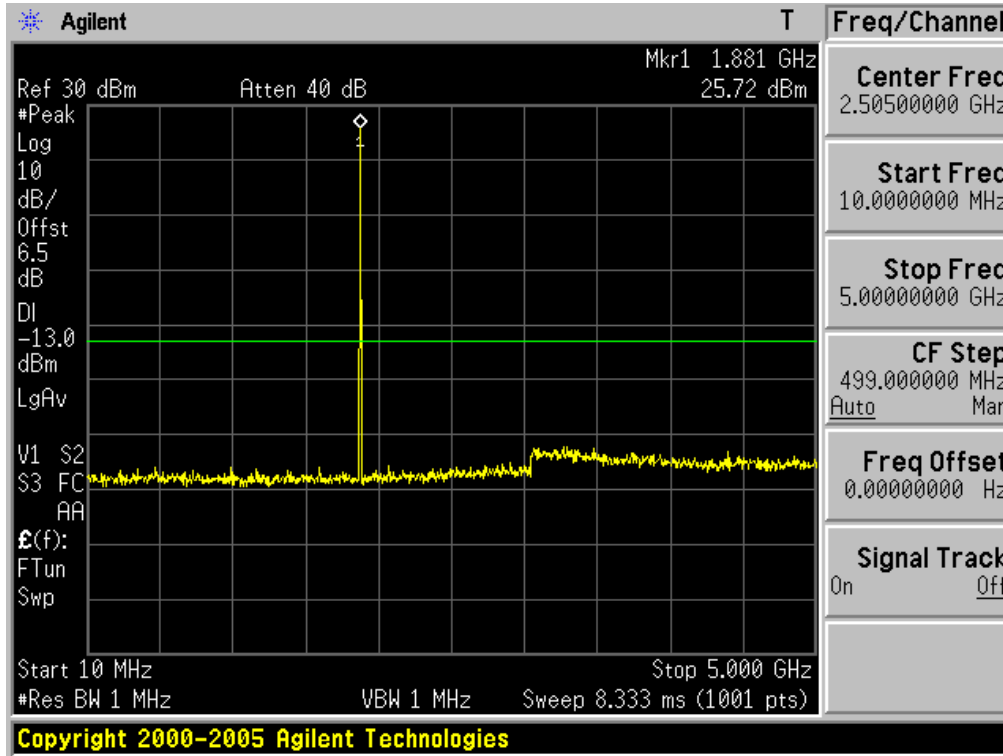


Spurious Emissions at Antenna Terminal

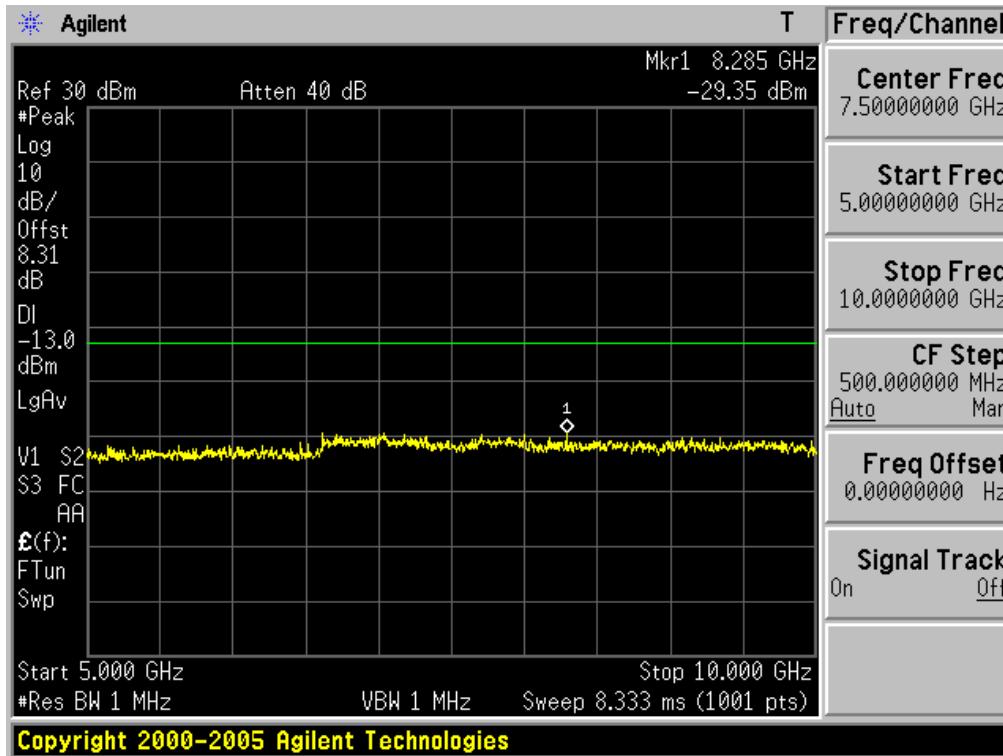
PCS1900 & Channel: 512



Spurious Emissions at Antenna Terminal PCS1900 & Channel: 661

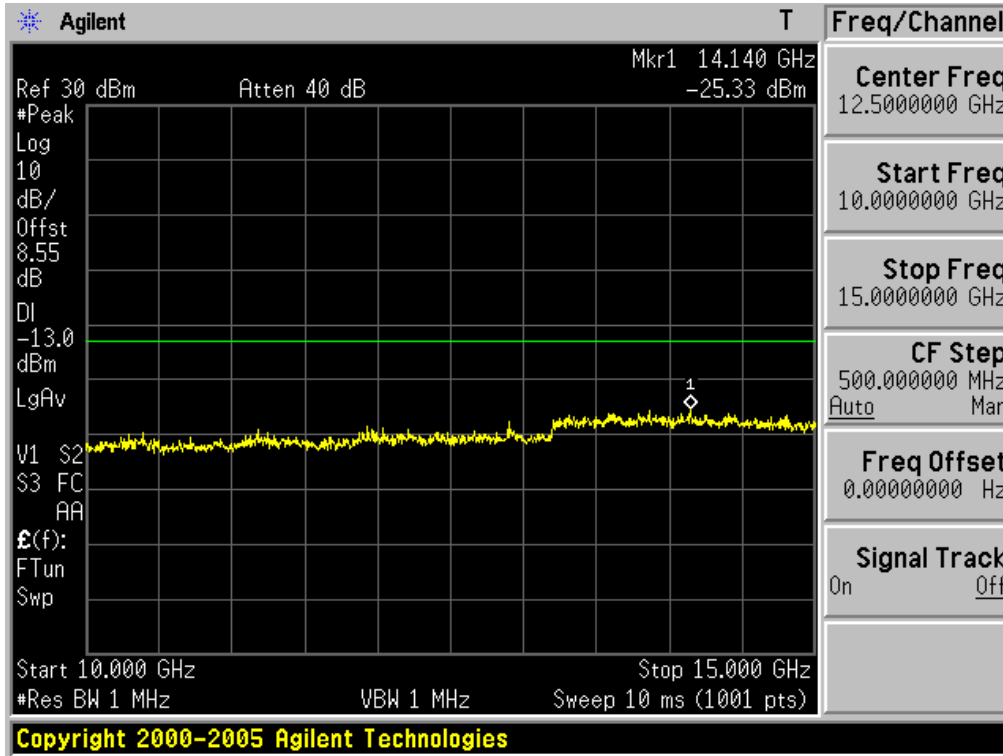


Spurious Emissions at Antenna Terminal PCS1900 & Channel: 661



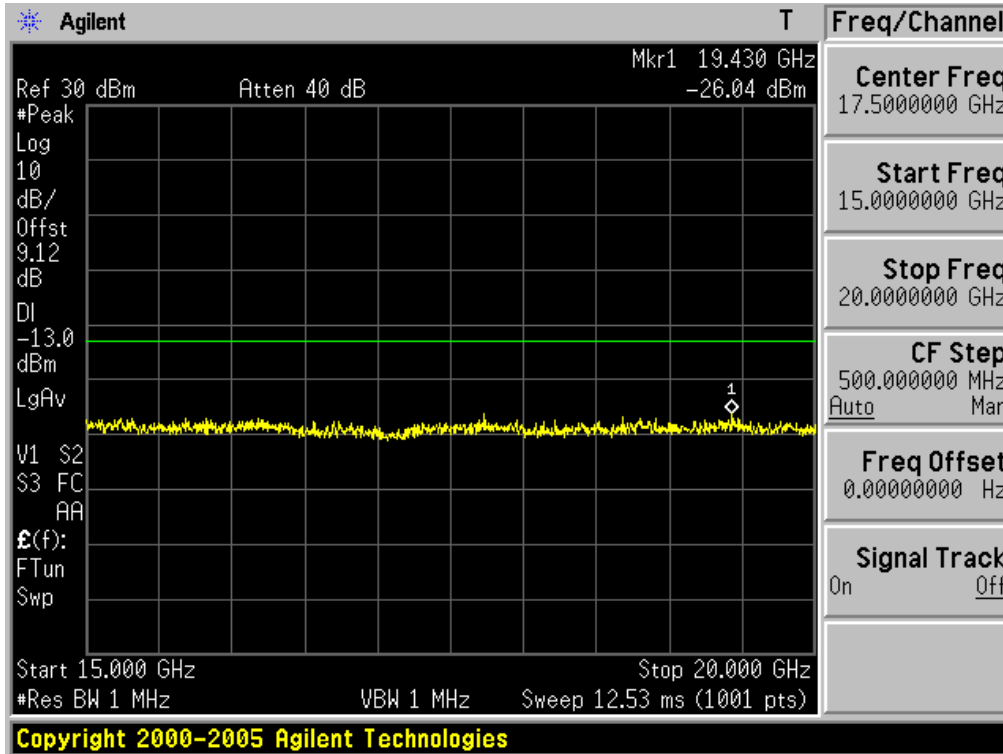
Spurious Emissions at Antenna Terminal

PCS1900 & Channel: 661



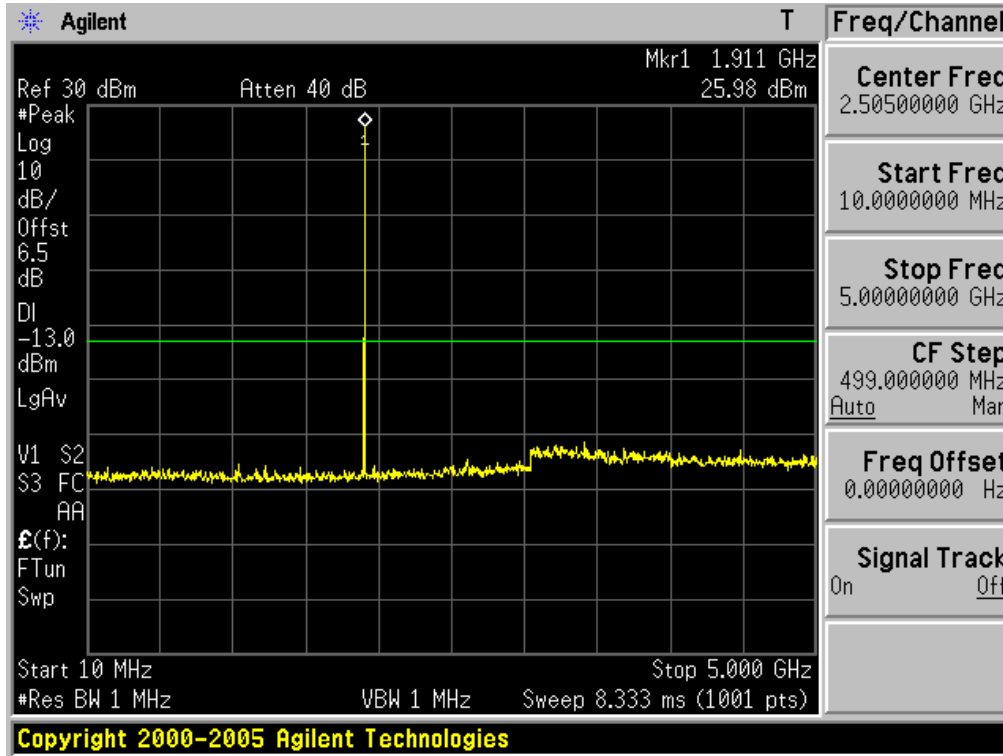
Spurious Emissions at Antenna Terminal

PCS1900 & Channel: 661



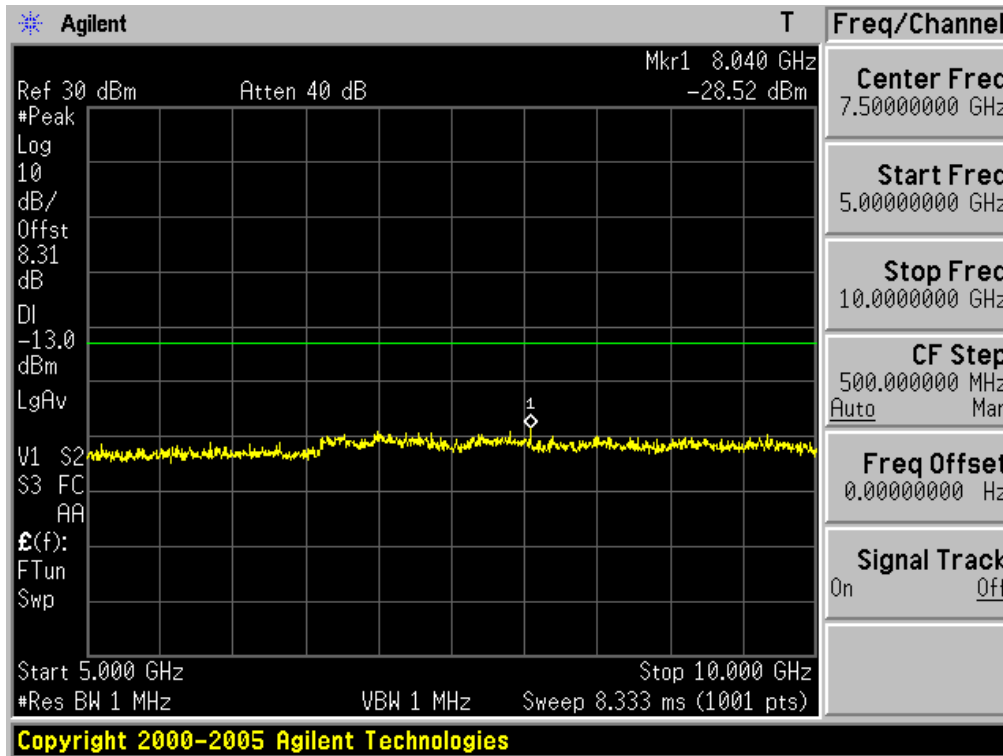
Spurious Emissions at Antenna Terminal

PCS1900 & Channel: 810

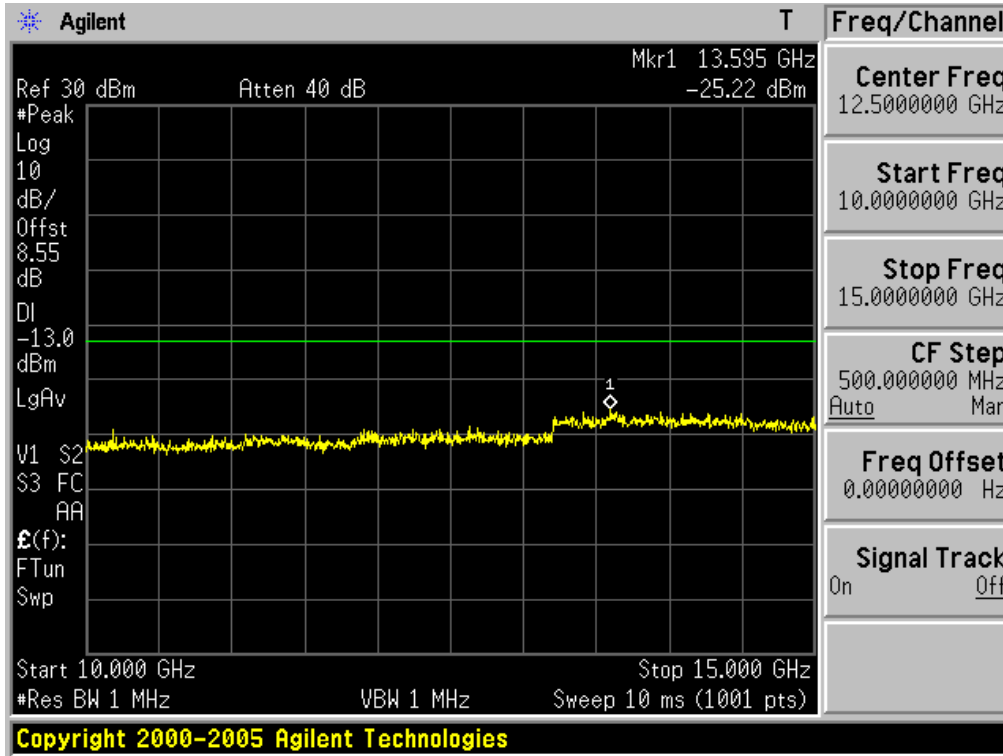


Spurious Emissions at Antenna Terminal

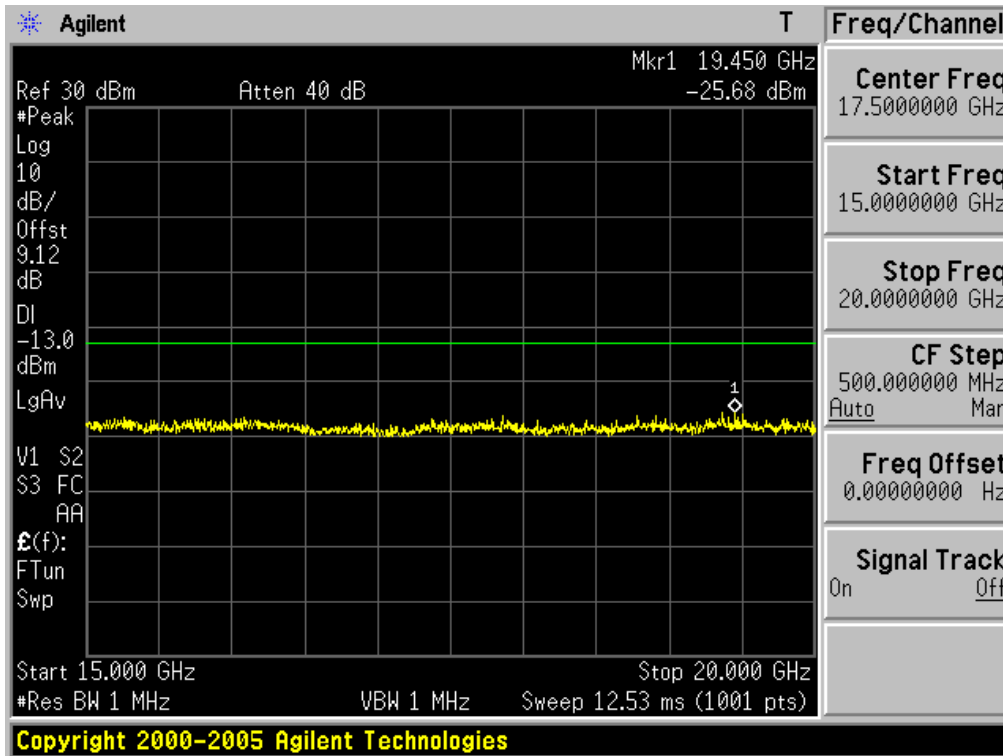
PCS1900 & Channel: 810



Spurious Emissions at Antenna Terminal PCS1900 & Channel: 810



Spurious Emissions at Antenna Terminal PCS1900 & Channel: 810



3.6 Field Strength of Spurious Radiation

FCC ID : **NDPD3POS**
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:Radiated Spurious Emission Measurements by Substitution Method according to ANSI/TIA/EIA-603-C 2004:

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.

The worst case data were reported.

Measurement result: refer to next page.

GSM850 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 824.2 MHz
 CHANNEL : 128(Low)
 MEASURED OUTPUT POWER : 28.04 dBm = 0.637 W
 MODULATION SIGNAL : GSM (Internal)
 DISTANCE : 3 meters
 LIMIT : $43 + 10 \log_{10}(W) =$ 41.04 dBc

Freq. (MHz)	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Note
1648.43	H	-25.15	4.93	-20.22	48.26	-
1648.17	V	-29.11	4.92	-24.19	52.23	-
2472.62	H	-42.88	6.79	-36.09	64.13	-
2472.52	V	-49.72	6.79	-42.93	70.97	-
3296.85	H	-48.12	7.66	-40.46	68.50	-
3296.93	V	-45.51	7.66	-37.85	65.89	-

GSM850 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 836.6 MHz
 CHANNEL : 190(Mid)
 MEASURED OUTPUT POWER : 28.33 dBm = 0.681 W
 MODULATION SIGNAL : GSM (Internal)
 DISTANCE : 3 meters
 LIMIT : $43 + 10 \log_{10} (W) =$ 41.33 dBc

Freq. (MHz)	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Note
1673.05	H	-25.94	5.00	-20.94	49.27	-
1673.15	V	-29.18	5.00	-24.18	52.51	-
2509.83	H	-46.88	6.86	-40.02	68.35	-
2510.08	V	-49.17	6.86	-42.31	70.64	-
3346.28	H	-47.47	7.66	-39.81	68.14	-
3346.40	V	-45.54	7.66	-37.88	66.21	-

GSM850 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 848.8 MHz
 CHANNEL : 251(High)
 MEASURED OUTPUT POWER : 28.41 dBm = 0.693 W
 MODULATION SIGNAL : GSM (Internal)
 DISTANCE : 3 meters
 LIMIT : $43 + 10 \log_{10}(W) =$ 41.41 dBc

Freq. (MHz)	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBd)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Note
1697.60	H	-24.73	5.07	-19.66	48.07	-
1697.60	V	-28.58	5.07	-23.51	51.92	-
2546.33	H	-42.33	6.92	-35.41	63.82	-
2545.80	V	-44.49	6.92	-37.57	65.98	-
3394.73	H	-47.89	7.65	-40.24	68.65	-
3395.25	V	-43.65	7.65	-36.00	64.41	-

GSM1900 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 1850.2 MHz
 CHANNEL : 512(Low)
 MEASURED OUTPUT POWER : 26.10 dBm = 0.407 W
 MODULATION SIGNAL : GSM (Internal)
 DISTANCE : 3 meters
 LIMIT : $43 + 10 \log_{10}(W) = \underline{39.10}$ dBc

Freq. (MHz)	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Note
3700.48	H	-58.71	9.77	-48.94	75.04	-
3701.02	V	-53.24	9.77	-43.47	69.57	-
5550.60	H	-61.18	11.21	-49.97	76.07	-
5550.73	V	-59.86	11.21	-48.65	74.75	-

GSM1900 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 1880.0 MHz
 CHANNEL : 661(Mid)
 MEASURED OUTPUT POWER : 25.60 dBm = 0.363 W
 MODULATION SIGNAL : GSM (Internal)
 DISTANCE : 3 meters
 LIMIT : $43 + 10 \log_{10}(W) =$ 38.60 dBc

Freq. (MHz)	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Note
3759.84	H	-58.87	9.76	-49.11	74.71	-
3760.24	V	-54.31	9.76	-44.55	70.15	-
5640.50	H	-60.81	11.27	-49.54	75.14	-
5640.00	V	-54.72	11.27	-43.45	69.05	-

GSM1900 Field Strength of SPURIOUS Radiation

OPERATING FREQUENCY : 1909.8 MHz
 CHANNEL : 810(High)
 MEASURED OUTPUT POWER : 25.06 dBm = 0.321 W
 MODULATION SIGNAL : GSM (Internal)
 DISTANCE : 3 meters
 LIMIT : $43 + 10 \log_{10}(W) =$ 38.07 dBc

Freq. (MHz)	POL (H/V)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	(dBc)	Note
3819.24	H	-58.24	9.75	-48.49	73.55	-
3820.75	V	-53.68	9.75	-43.93	68.99	-
5730.12	H	-60.05	11.33	-48.72	73.78	-
5729.40	V	-53.21	11.33	-41.88	66.94	-

3.7 Frequency Stability/Temperature Variation.

FCC ID	:	NDPD3POS
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 $\pm 0.00025(\pm 2.5\text{ppm})$ 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 10 intervals 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 : 836,600,014 Hz
 CHANNEL : 190(Mid)
 REFERENCE VOLTAGE : 7.40 V DC
 DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

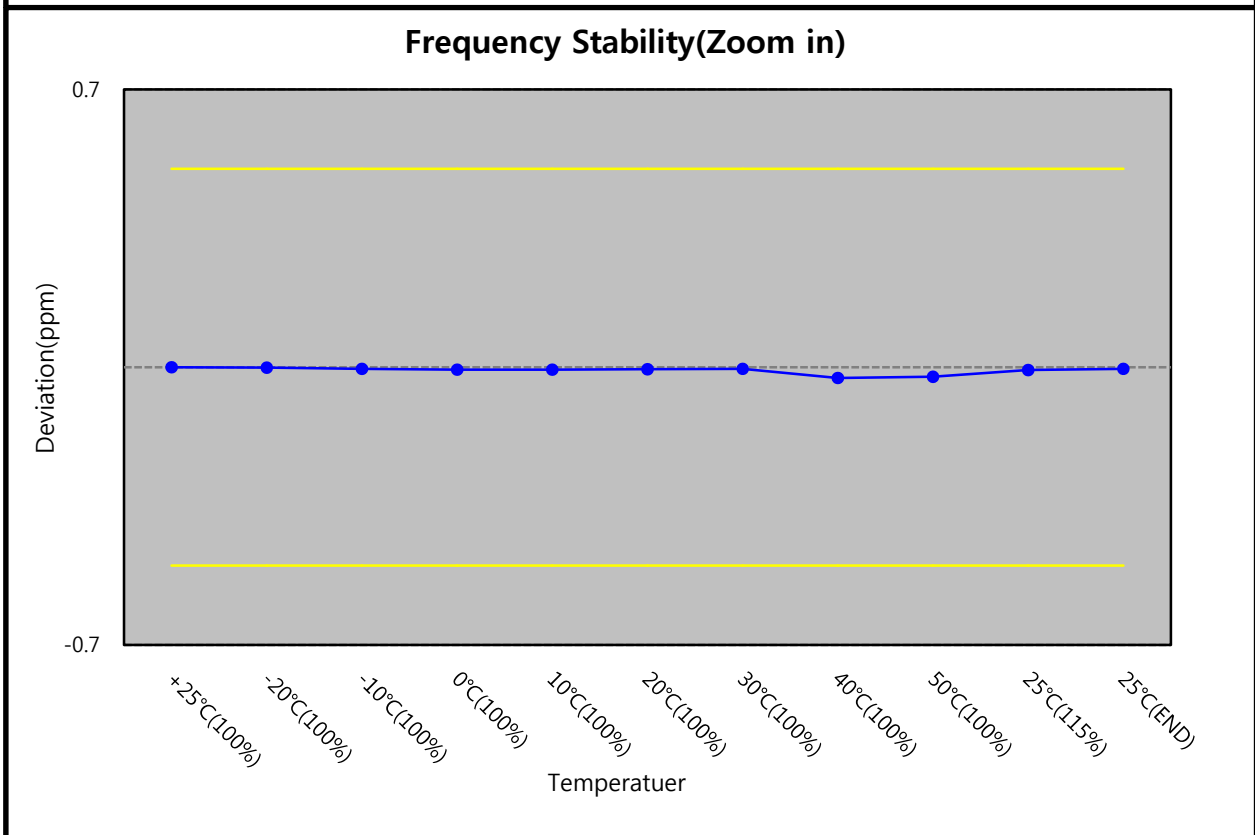
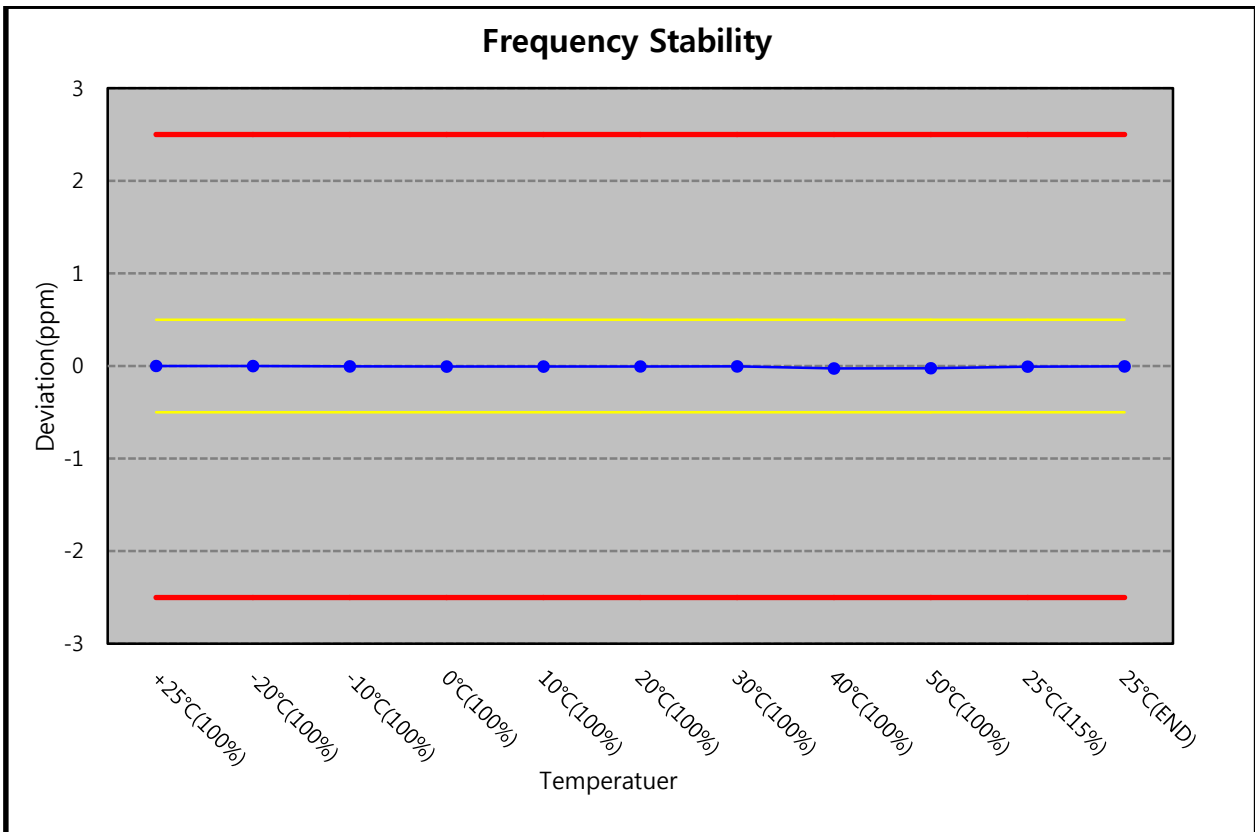
VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100%	7.40	+25(Ref)	836,600,014	0.0000000	0.000
100%		-20	836,600,013	-0.0000001	-0.001
100%		-10	836,600,011	-0.0000004	-0.004
100%		0	836,600,009	-0.0000006	-0.006
100%		+10	836,600,009	-0.0000006	-0.006
100%		+20	836,600,010	-0.0000005	-0.005
100%		+30	836,600,011	-0.0000004	-0.004
100%		+40	836,599,991	-0.0000027	-0.027
100%		+50	836,599,994	-0.0000024	-0.024
85%		6.29	+25	-	-
115%	8.51	+25	836,600,008	-0.0000007	-0.007
BATT.ENDPOINT	7.00	+25	836,600,011	-0.0000004	-0.004

Note 1: This device is not operated at 6.29 V (85%).

Note 2: Operating temperature of this device is -20 ~ 50(°C) range.

Frequency Stability (GSM850)

(Continued...)



Frequency Stability (PCS1900)

OPERATING FREQUENCY : _____ 1,880,000,040 _____ Hz
 CHANNEL : _____ 661(Mid) _____
 REFERENCE VOLTAGE : _____ 7.40 _____ V DC
 DEVIATION LIMIT : _____ ± 0.00025 _____ % or _____ 2.5 _____ ppm

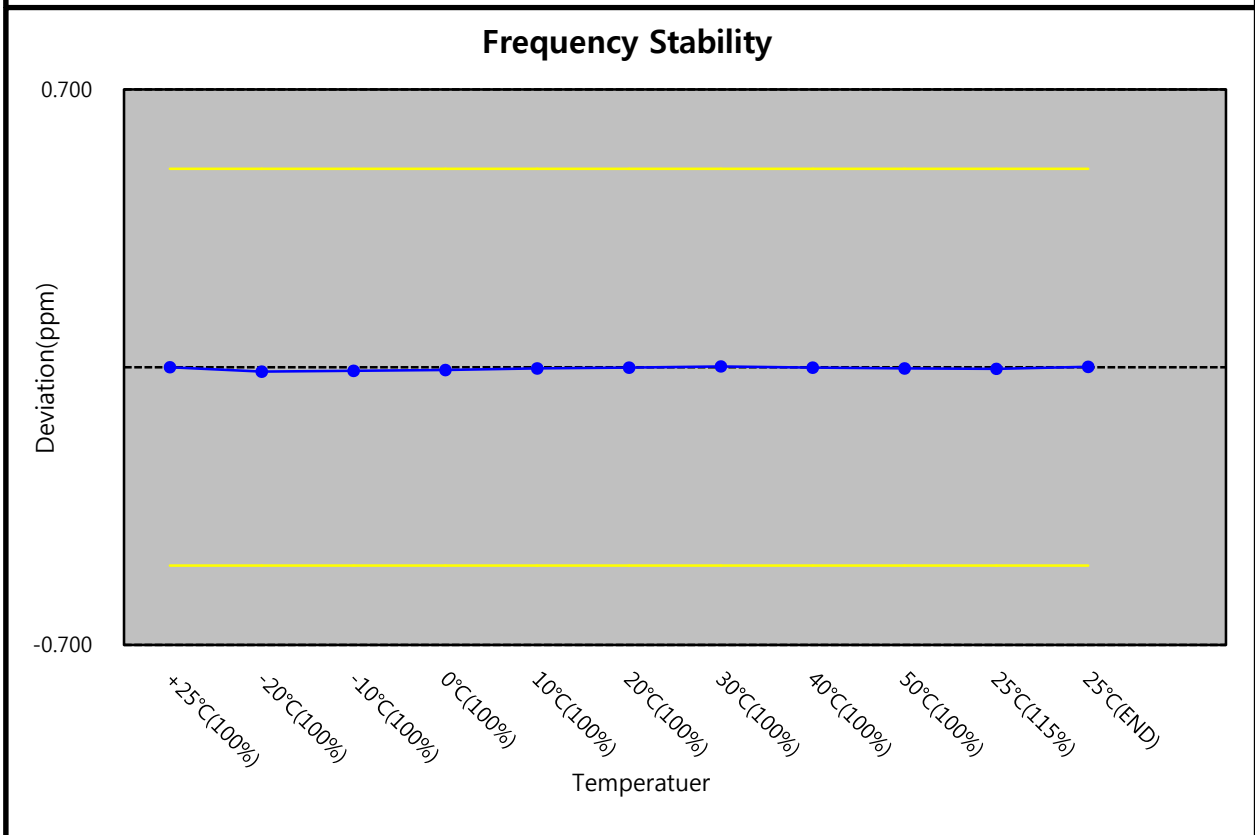
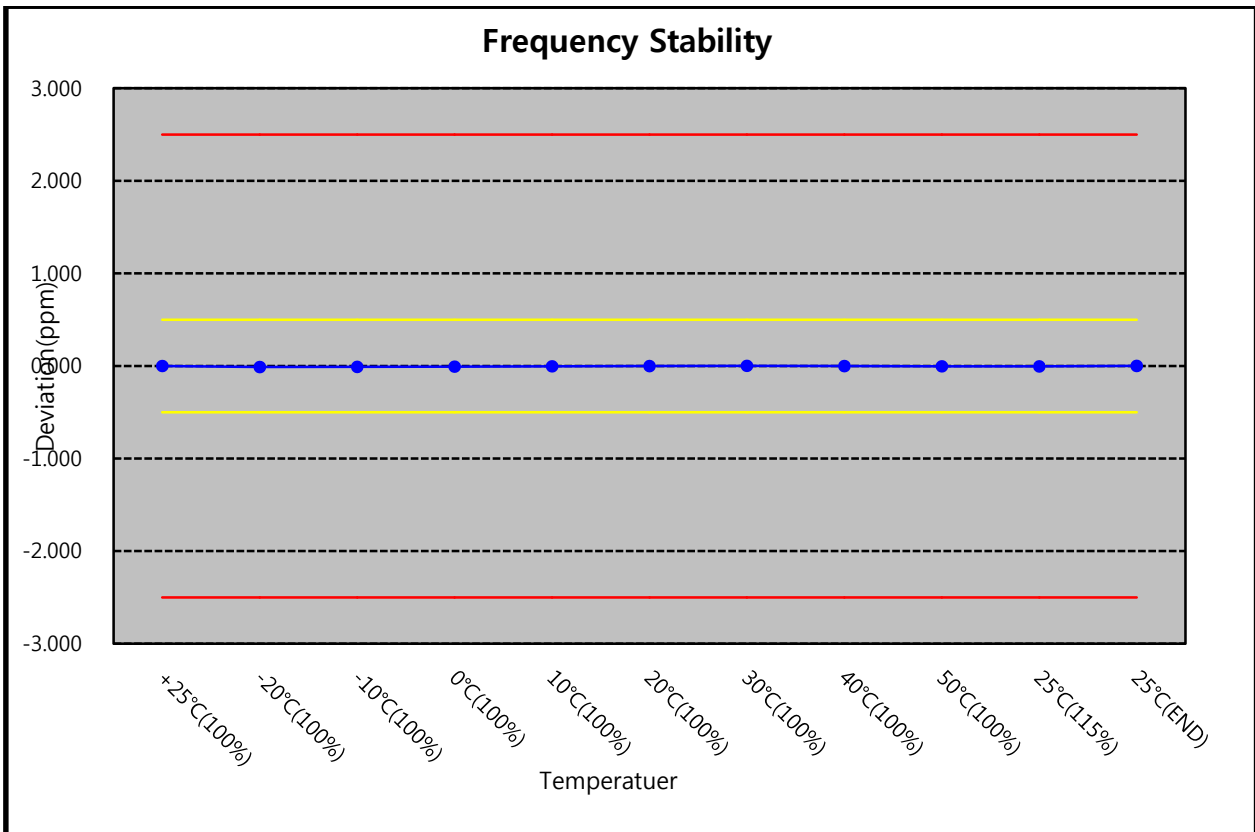
VOLTAGE (%)	POWER (V DC)	TEMP (°C)	FREQ (Hz)	Deviation	
				(%)	(ppm)
100%	7.40	+25(Ref)	1,880,000,040	0.0000000	0.000
100%		-20	1,880,000,020	-0.0000011	-0.011
100%		-10	1,880,000,024	-0.0000009	-0.009
100%		0	1,880,000,027	-0.0000007	-0.007
100%		+10	1,880,000,035	-0.0000003	-0.003
100%		+20	1,880,000,038	-0.0000001	-0.001
100%		+30	1,880,000,043	0.0000002	0.002
100%		+40	1,880,000,039	-0.0000001	-0.001
100%		+50	1,880,000,034	-0.0000003	-0.003
85%		6.29	+25	-	-
115%	8.51	+25	1,880,000,032	-0.0000004	-0.004
BATT.ENDPOINT	7.00	+25	1,880,000,041	0.0000001	0.001

Note 1: This device is not operated at 6.29 V (85%).

Note 2: Operating temperature of this device is -20 ~ 50(°C) range.

Frequency Stability (PCS1900)

(continued...)



4. EMISSION DESIGNATOR

A. Emission Designator

- GSM850 -

Emission Designator = 245KGXW

GSM BW = 245.4991 KHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

- PCS1900 -

Emission Designator = 246KGXW

GSM BW = 246.0658 KHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

APPENDIX

TEST EQUIPMENT FOR TESTS

To facilitate inclusion on each page of the test equipment used for related tests, each item of test equipment.

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
<input checked="" type="checkbox"/>	Spectrum Analyzer	Agilent	E4440A	25/09/09	25/09/10	MY45304199
<input type="checkbox"/>	Spectrum Analyzer	Rohde Schwarz	FSQ26	25/02/10	25/02/11	200445
<input type="checkbox"/>	Spectrum Analyzer(RE)	H.P	8563E	13/10/09	13/10/10	3551A04634
<input checked="" type="checkbox"/>	Power Meter	H.P	EPM-442A	01/07/10	01/07/11	GB37170413
<input checked="" type="checkbox"/>	Power Sensor	H.P	8481A	01/07/10	01/07/11	3318A96332
<input type="checkbox"/>	Power Divider	Agilent	11636B	13/10/09	13/10/10	56471
<input checked="" type="checkbox"/>	Power Splitter	Anritsu	K241B	13/10/09	13/10/10	20611
<input type="checkbox"/>	Power Splitter	Anritsu	K241B	01/07/10	01/07/11	017060
<input type="checkbox"/>	Frequency Counter	H.P	5342A	01/07/10	01/07/11	2119A04450
<input checked="" type="checkbox"/>	TEMP & HUMIDITY Chamber	JISCO	KR-100/J-RHC2	10/10/09	10/10/10	30604493/021031
<input checked="" type="checkbox"/>	Digital Multimeter	H.P	34401A	12/03/10	12/03/11	3146A13475, US36122178
<input type="checkbox"/>	Multifunction Synthesizer	HP	8904A	06/10/09	06/10/10	3633A08404
<input checked="" type="checkbox"/>	Signal Generator	Rohde Schwarz	SMR20	12/03/10	12/03/11	101251
<input checked="" type="checkbox"/>	Signal Generator	H.P	ESG-3000A	01/07/10	01/07/11	US37230529
<input type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMJ100A	11/01/10	11/01/11	100148
<input type="checkbox"/>	Vector Signal Generator	Rohde Schwarz	SMBV100A	23/02/10	23/02/11	255571
<input type="checkbox"/>	Audio Analyzer	H.P	8903B	02/07/10	02/07/11	3011A09448
<input type="checkbox"/>	Modulation Analyzer	H.P	8901B	01/07/10	01/07/11	3028A03029
<input checked="" type="checkbox"/>	8960 Series 10 Wireless Comms. Test Set	Agilent	E5515C	02/07/10	02/07/11	GB43461134
<input type="checkbox"/>	Universal Radio communication Tester	Rohde Schwarz	CMU 200	12/03/10	12/03/11	106760
<input type="checkbox"/>	Bluetooth Tester	TESCOM	TC-3000B	01/07/10	01/07/11	3000B000268
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	28/01/10	28/01/11	090205-3
<input checked="" type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	28/01/10	28/01/11	090205-2
<input type="checkbox"/>	Thermo hygrometer	BODYCOM	BJ5478	28/01/10	28/01/11	090205-4
<input type="checkbox"/>	AC Power supply	DAEKWANG	5KVA	12/03/10	12/03/11	20060321-1
<input checked="" type="checkbox"/>	DC Power Supply	HP	6622A	12/03/10	12/03/11	3448A03760
<input type="checkbox"/>	DC Power Supply	HP	6633A	12/03/10	12/03/11	3524A06634
<input type="checkbox"/>	BAND Reject Filter	Microwave Circuits	N0308372	06/10/09	06/10/10	3125-01DC0352
<input type="checkbox"/>	BAND Reject Filter	Wainwright	WRCG1750	06/10/09	06/10/10	2
<input type="checkbox"/>	High-Pass Filter	ANRITSU	MP526D	06/10/09	06/10/10	M27756
<input checked="" type="checkbox"/>	High-pass filter	Wainwright	WHNX2.1	N/A	N/A	1
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX3.0	N/A	N/A	9
<input type="checkbox"/>	High-pass filter	Wainwright	WHNX5.0	N/A	N/A	8
<input type="checkbox"/>	High-Pass Filter	Wainwright	WHKX8.5	N/A	N/A	1
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT800.0 /960.0-0.2/40-8SSK	N/A	N/A	32
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCD1700.0 /2000.0-0.2/40-10SSK	N/A	N/A	53
<input type="checkbox"/>	Tunable Notch Filter	Wainwright	WRCT1900.0/ 2200.0-5/40-10SSK	N/A	N/A	30
<input checked="" type="checkbox"/>	HORN ANT	ETS	3115	23/09/09	23/09/10	21097
<input checked="" type="checkbox"/>	HORN ANT	ETS	3115	14/07/10	14/07/11	6419
<input checked="" type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/11	154
<input checked="" type="checkbox"/>	HORN ANT	A.H.Systems	SAS-574	10/06/09	10/06/11	155

	Type	Manufacturer	Model	Cal.Due.Date (dd/mm/yy)	Next.Due.Date (dd/mm/yy)	S/N
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	06/10/09	06/10/10	2116
<input type="checkbox"/>	Dipole Antenna	Schwarzbeck	VHA9103	06/10/09	06/10/10	2117
<input checked="" type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	05/10/09	05/10/10	2261
<input checked="" type="checkbox"/>	Dipole Antenna	Schwarzbeck	UHA9105	05/10/09	05/10/10	2262
<input type="checkbox"/>	LOOP Antenna	ETS	6502	05/11/09	05/11/10	3471
<input type="checkbox"/>	Coaxial Fixed Attenuators	Agilent	8491B	01/07/10	01/07/11	MY39260700
<input type="checkbox"/>	Attenuator (3dB)	WEINSCHHEL	56-3	16/12/09	16/12/10	Y2342
<input type="checkbox"/>	Attenuator (3dB)	WEINSCHHEL	56-3	16/12/09	16/12/10	Y2370
<input checked="" type="checkbox"/>	Attenuator (10dB)	WEINSCHHEL	23-10-34	01/10/09	01/10/10	BP4386
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHHEL	23-10-34	11/01/10	11/01/11	BP4387
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHHEL	31696	06/10/09	06/10/10	446
<input type="checkbox"/>	Attenuator (10dB)	WEINSCHHEL	31696	06/10/09	06/10/10	408
<input type="checkbox"/>	Attenuator (20dB)	WEINSCHHEL	86-20-11	06/10/09	06/10/10	432
<input type="checkbox"/>	Attenuator (30dB)	JFW	50FH-030-300	12/03/10	12/03/11	060320-1
<input type="checkbox"/>	Attenuator (40dB)	WEINSCHHEL	57-40-33	01/10/09	01/10/10	NN837
<input type="checkbox"/>	Termination	H.P	HP-909D	02/07/10	02/07/11	02750
<input type="checkbox"/>	Termination	H.P	HP-909D	02/07/10	02/07/11	02702
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0088CAN	01/07/10	01/07/11	788
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0185CAN	01/07/10	01/07/11	790
<input type="checkbox"/>	Type N Coaxial CIRCULATOR	NOVA MICROWAVE	0215CAN	01/07/10	01/07/11	112
<input type="checkbox"/>	Amplifier (30dB)	Agilent	8449B	23/04/10	23/04/11	3008A01590
<input checked="" type="checkbox"/>	Amplifier (30dB)	H.P	8449B	13/05/10	13/05/11	3008A00370
<input checked="" type="checkbox"/>	Amplifier	EMPOWER	BBS3Q7ELU	02/11/09	02/11/10	1020
<input type="checkbox"/>	RF Power Amplifier	OPHIRRF	5069F	01/07/10	01/07/11	1006
<input type="checkbox"/>	EMI TEST RECEIVER	R&S	ESU	29/01/10	29/01/11	100014
<input type="checkbox"/>	BILOG ANTENNA	SCHAFFNER	CBL 6112D	28/10/09	28/10/10	22609
<input type="checkbox"/>	Amplifier (22dB)	H.P	8447E	29/01/10	29/01/11	2945A02865
<input type="checkbox"/>	EMI TEST RECEIVER	R&S	ESCI	12/05/10	12/05/11	100364
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHALP 9108 A-1	07/10/09	07/10/10	1098
<input type="checkbox"/>	BICONICAL ANT.	Schwarzbeck	VHA 9103	06/10/09	06/10/10	91031946
<input type="checkbox"/>	LOG-PERIODIC ANT.	Schwarzbeck	UHALP9108A	07/07/10	07/07/11	590
<input type="checkbox"/>	Low Noise Pre Amplifier	TSJ	MLA-100K01-B01-2	12/03/10	12/03/11	1252741
<input type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	12/03/10	12/03/11	2944A10144
<input type="checkbox"/>	Amplifier (25dB)	Agilent	8447D	01/07/10	01/07/11	2648A04922
<input type="checkbox"/>	Spectrum Analyzer(CE)	H.P	8591E	12/03/10	12/03/11	3649A05889
<input type="checkbox"/>	LISN	Kyoritsu	KNW-407	29/01/10	29/01/11	8-317-8
<input type="checkbox"/>	LISN	Kyoritsu	KNW-242	29/01/10	29/01/11	8-654-15
<input type="checkbox"/>	CVCF	NF Electronic	4420	12/03/10	12/03/11	304935/337980
<input type="checkbox"/>	50 ohm Terminator	HME	CT-01	12/01/10	12/01/11	N/A
<input type="checkbox"/>	RFI/FIELD Intensity Meter	Kyoritsu	KNM-2402	02/07/10	02/07/11	4N-170-3