



243 Jubug-Ri, Yangji-Myeon, Yongin-Si, Gyeonggi-Do, Korea 449-822  
 Tel: +82-31-323-6008 Fax: +82-31-323-6010  
<http://www.ltalab.com>



Dates of Tests: June 05 ~ June 30, 2009  
 Test Report S/N: LR500190907B  
 Test Site : LTA CO., LTD.

## CERTIFICATION OF COMPLIANCE

FCC ID.

**WVB-AV2300**

APPLICANT

**Brightstar Corporation**

**Classification** : PCS Licensed Transmitter Held to Ear (PCE)  
**Manufacturing Description** : Dual band GSM Phone  
**Manufacturer** : Jurong Hi-Tech Industries (M) Sdn. Bhd,  
**Model name** : AVVIO2300  
**Test Device Serial No.:** : Identification  
**FCC Rule Part(s)** : §24(E), §22(H), §2  
**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** : 1.002 W ERP GSM850 (30.01dBm)  
 0.899 W EIRP PCS1900 (29.54dBm)  
**Emission Designators:** : 245KGXW (GSM850) / 245KGXW (PCS1900)  
**Data of issue** : JULY 02, 2009

This test report is issued under the authority of:

Dong -Min JUNG, Technical Manager

The test was supervised by:

Kyung-Taek LEE, Test Engineer

**This test result only responds to the tested sample. It is not allowed to copy this report even partly without the allowance of the test laboratory. This report must not be used by the applicant to claim product endorsement by any agency.**



NVLAP LAB Code.: 200723-0

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## 1. General information's

### 1-1 Test Performed

Company name : LTA Co., Ltd.  
 Address : 243, Jubug-ri, Yangji-Myeon, Youngin-Si, Kyunggi-Do, Korea. 449-822  
 Web site : <http://www.ltalab.com>  
 E-mail : [chahn@ltalab.com](mailto:chahn@ltalab.com)  
 Telephone : +82-31-323-6008  
 Facsimile : +82-31-323-6010

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”.

### 1-2 Accredited agencies

LTA Co., Ltd. is approved to perform EMC testing by the following agencies:

Agency	Country	Accreditation No.	Validity	Reference
NVLAP	U.S.A	200723-0	2009-09-30	ECT accredited Lab.
RRL	KOREA	KR0049	2011-06-20	EMC accredited Lab.
FCC	U.S.A	610755	2011-04-22	FCC filing
VCCI	JAPAN	R2133, C2307	2011-06-21	VCCI registration
IC	CANADA	IC5799	2010-05-03	IC filing

## 2. Information's about test item

### 2-1 Client & Manufacturer

Company name : Brightstar Corporation  
 Address : 9725 NW 117<sup>th</sup> Ave #300  
 Miami – FL , USA  
 Tel / Fax : +82 1 305 421-6000/ +82 1 305 421-6000

### 2-2 Equipment Under Test (EUT)

Classification : Dual band GSM Phone  
 Model name : AV2300  
 Serial number : Identification  
 Date of receipt : June 01, 2009  
 EUT condition : Pre-production, not damaged  
 Antenna type : Fixed Internal Antenna  
 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)  
 RF output power Range : 1.002 W ERP GSM850 (30.01dBm)  
 0.899 W EIRP PCS1900 (29.54dBm)  
 Frequency Tolerance :  $\pm 0.00025\%$  (2.5ppm)  
 Modulation(s) : GMSK  
 Emission Designators : 245KGXW(GSM850) / 245KGXW(PCS1900)  
 Power Source : Li-ion battery 3.7V

### 2-3 Tested frequency

	GSM 850		PCS 1900	
	Channel	Frequency (MHz)	Channel	Frequency (MHz)
<b>LOW</b>	128	824.2	512	1850.2
<b>MID</b>	190	836.6	661	1880.0
<b>HIGH</b>	251	848.8	810	1909.8

### 3. Test Report

#### 3.1 Summary of tests

Parameter	Status
<b>Transmitter Requirements</b>	
Output Power	C
Occupied Bandwidth	C
Field Strength of Spurious Radiation	C
Spurious Radiation at Antenna Terminal	C
Frequency Stability	C

*Note 1:* C=Complies NC=Not Complies NT=Not Tested NA=Not Applicable

*Note 2:* The data in this test report are traceable to the national or international standards.

#### A sample calculation:

COR. F (correction factor)= Antenna factor + Cable loss- Amp.gain- Distance correction

Emission Level= meter reading + COR.F

#### Emission Designator: - GSM850

EMISSION Designator = 245KGXW

GSM BW = 245KHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

#### Emission Designator: - PCS1900

EMISSION Designator = 245KGXW

GSM BW = 245KHz

G = Phase Modulation

X = Cases not otherwise covered

W = Combination (Audio/Data)

(Measured at the 99.75% power bandwidth)

## **3.2 DESCRIPTION OF TESTS**

### **3.2.1 Effective Radiated Power Output**

#### **Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 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. For GSM signals, an average detector is used, with RBW=VBW=3MHz, SPAN=10MHz. 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.

### **3.2.2 Radiation Spurious and Harmonic Emissions**

#### **Effective Radiated Power Output Measurements by Substitution Method according to ANSI/TIA/EIA-603-C-2004, Aug. 17, 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. The Spectrum was investigated from 30MHz to the 10<sup>th</sup> Harmonic of the fundamental. A peak detector is used. With RBW=VBW=1MHz. The value that we could measure was only reported. 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.

### 3.2.3 Occupied Bandwidth

The 99% power bandwidth was measured with a calibrated spectrum analyzer.

### 3.2.4 Spurious Emission at Antenna Terminal

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 GHz.

### 3.2.5 Occupied Bandwidth Emission Limits

- (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) 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.

### 3.2.6 Frequency Stability/Temperature Variation

The frequency stability of the transmitter is measured by:

- a) **Temperature** :The temperature is varied from  $-30^{\circ}\text{C}$  to  $+60^{\circ}\text{C}$  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  $\pm 0.00025\%$  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 ( $25^{\circ}\text{C}$  to  $27^{\circ}\text{C}$  to provide a reference)
2. The equipment is subjected to an overnight “soak” at  $-30^{\circ}\text{C}$  without any power applied.
3. After the overnight ”soak” at  $-30^{\circ}\text{C}$ (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  $10^{\circ}\text{C}$  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  $-30^{\circ}\text{C}$  up to  $+60^{\circ}\text{C}$  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.



### **3.3 DESCRIPTION OF TESTS**

#### **3.3.1 Output Power**

##### **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:**

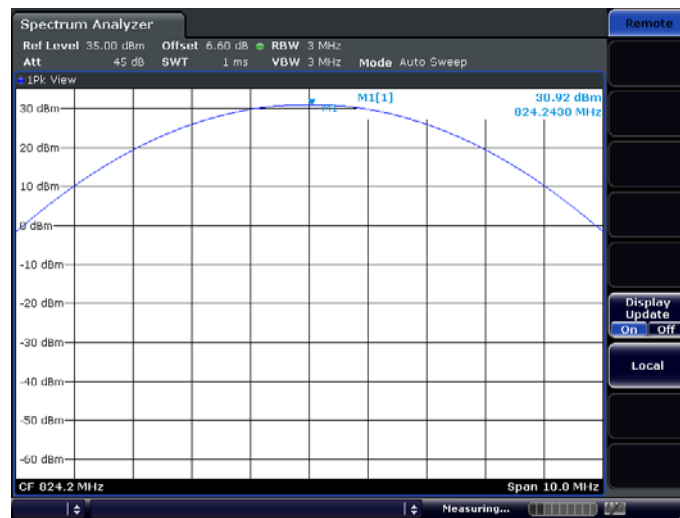
##### **GSM850**

Channel	Frequency (MHz)	TEST CONDITIONS	Power Step: 5
		(dBm)	
128	824.2	30.92	
190	836.6	30.71	
251	848.8	31.14	

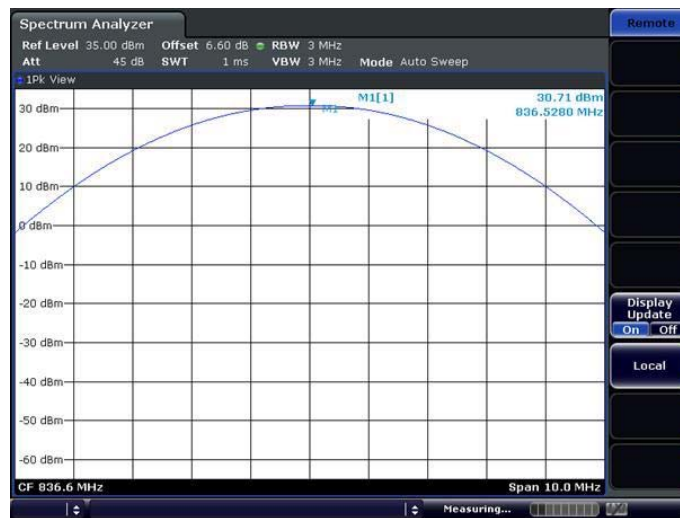
##### **PCS1900**

Channel	Frequency (MHz)	TEST CONDITIONS	Power Step: 0
		(dBm)	
512	1850.2	28.98	
661	1880.0	28.43	
810	1909.8	28.12	

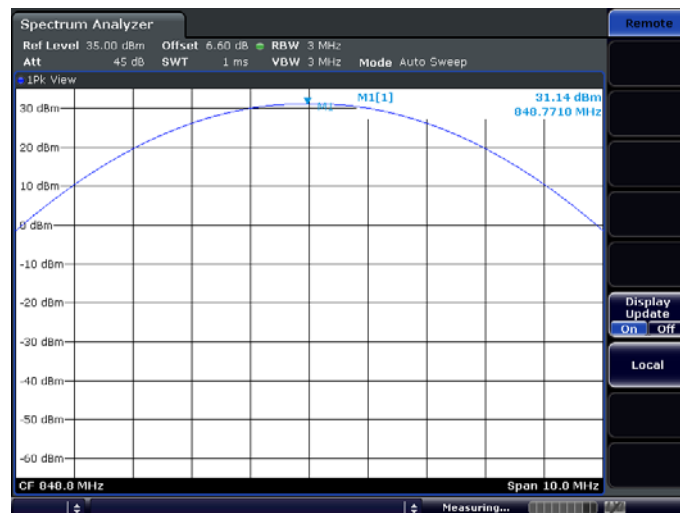
**POWER OUT. GSM850 Ch.128**



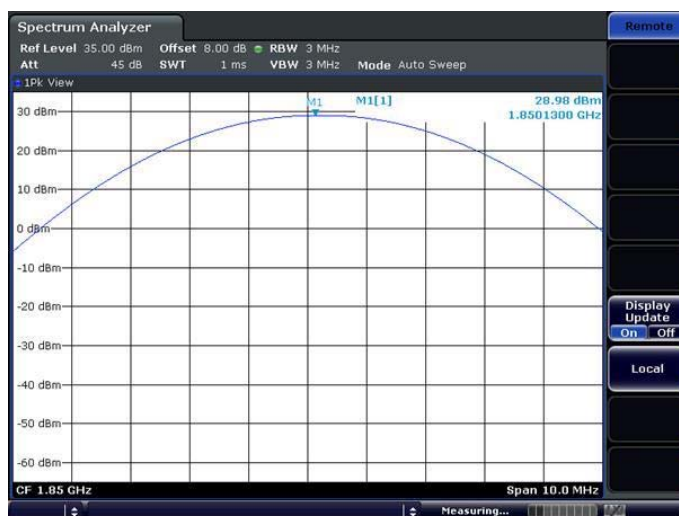
**POWER OUT. GSM850 Ch.190**



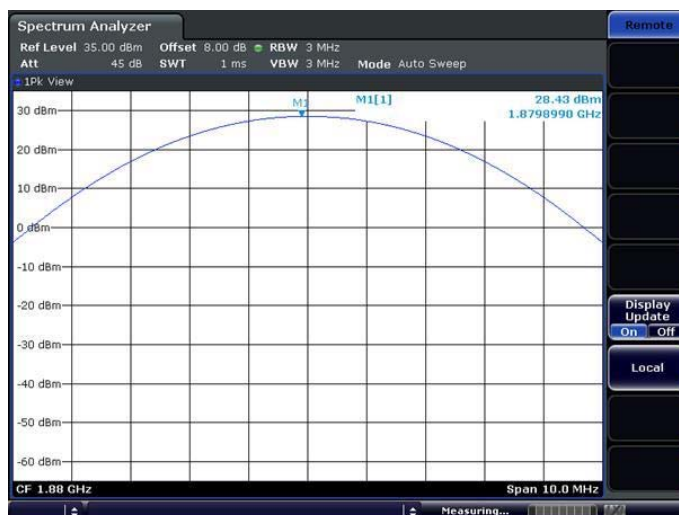
**POWER OUT. GSM850 Ch.251**



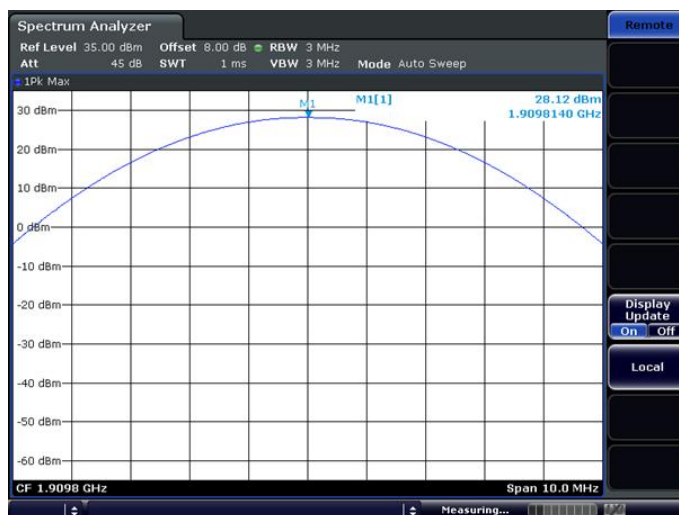
**POWER OUT. PCS1900 Ch.512**



**POWER OUT. PCS1900 Ch.661**



**POWER OUT. PCS1900 Ch.810**



**Effective Radiated Power Output (GSM850)**

Measurement Data:

**GSM850**

Channel	Frequency (MHz)	TEST CONDITIONS				Battery
		Ref. level (dBm)	Pol. (H/V)	ERP (dBm)	ERP (W)	
128	824.2	-10.33	V	29.88	0.972	Li-ion 3.7V
190	836.6	-10.15	V	29.76	0.946	Li-ion 3.7V
251	848.8	-9.94	V	30.01	1.002	Li-ion 3.7V

*Note 1:* Radiated measurements at 3 meters by Substitution Method.**Equivalent Isotropic Radiated Power (PCS1900)**

Measurement Data:

**PCS1900**

Channel	Frequency (MHz)	TEST CONDITIONS				Battery
		Ref. level (dBm)	Pol. (H/V)	EIRP (dBm)	EIRP (W)	
512	1850.2	-11.92	V	29.54	0.899	Li-ion 3.7V
661	1880.0	-11.53	V	29.12	0.817	Li-ion 3.7V
810	1909.8	-11.25	V	28.87	0.771	Li-ion 3.7V

*Note 2:* Radiated measurements at 3 meters by Substitution Method.

### 3.3.2 Field Strength of spurious Radiation

OPERATING FREQUENCY : 824.2 MHz

CHANNEL : 128(Low)

MEASURED OUTPUT POWER : 30.01 dBm = 1.002 W

MODULATION : GSM(Internal)

DISTANCE : 3 meters

LIMIT :  $43 + 10 \log_{10} (W) =$  43.01 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

*Note1:* Radiated measurements at 3 meters by Substitution Method.

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## 3.3.2 Field Strength of spurious Radiation

--- Continue

OPERATING FREQUENCY : 836.6 MHz

CHANNEL : 190(Mid)

MEASURED OUTPUT POWER : 30.01 dBm = 1.002 W

MODULATION : GSM(Internal)

DISTANCE : 3 meters

LIMIT :  $43 + 10 \log_{10}(W) =$  43.01 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

*Note1:* Radiated measurements at 3 meters by Substitution Method.

--- Blank ---

## 3.3.2 Field Strength of spurious Radiation

--- Continue

OPERATING FREQUENCY : 848.8 MHz

CHANNEL : 251(High)

MEASURED OUTPUT POWER : 30.01 dBm = 1.002 W

MODULATION : GSM(Internal)

DISTANCE : 3 meters

LIMIT :  $43 + 10 \log_{10}(W) =$  43.01 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

*Note1:* Radiated measurements at 3 meters by Substitution Method.

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## 3.3.2 Field Strength of spurious Radiation

--- Continue

OPERATING FREQUENCY : 1850.2 MHz  
 CHANNEL : 512(Low)  
 MEASURED OUTPUT POWER : 29.54 dBm = 0.899 W  
 MODULATION : GSM(Internal)  
 DISTANCE : 3 meters  
 LIMIT :  $43 + 10 \log_{10} (W) =$  42.54 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

*Note1:* Radiated measurements at 3 meters by Substitution Method.

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## 3.3.2 Field Strength of spurious Radiation

--- Continue

OPERATING FREQUENCY : 1880.0 MHz  
 CHANNEL : 661(Mid)  
 MEASURED OUTPUT POWER : 29.54 dBm = 0.899 W  
 MODULATION : GSM(Internal)  
 DISTANCE : 3 meters  
 LIMIT :  $43 + 10 \log_{10} (W) =$  42.54 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

*Note1:* Radiated measurements at 3 meters by Substitution Method.

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## 3.3.2 Field Strength of spurious Radiation

--- Continue

OPERATING FREQUENCY : 1909.8 MHz  
 CHANNEL : 810(High)  
 MEASURED OUTPUT POWER : 29.54 dBm = 0.899 W  
 MODULATION : GSM(Internal)  
 DISTANCE : 3 meters  
 LIMIT :  $43 + 10 \log_{10} (W) =$  42.54 dBc

Freq. (MHz)	LEVEL@ ANTENNA TERMINALS (dBm)	SUBSTITUTE ANTENNA GAIN (dBi)	CORRECT GENERATOR LEVEL (dBm)	POL (H/V)	(dBc)
-	-	-	-	-	-
No emissions were detected are a level greater than 20dB below limit.					
-	-	-	-	-	-

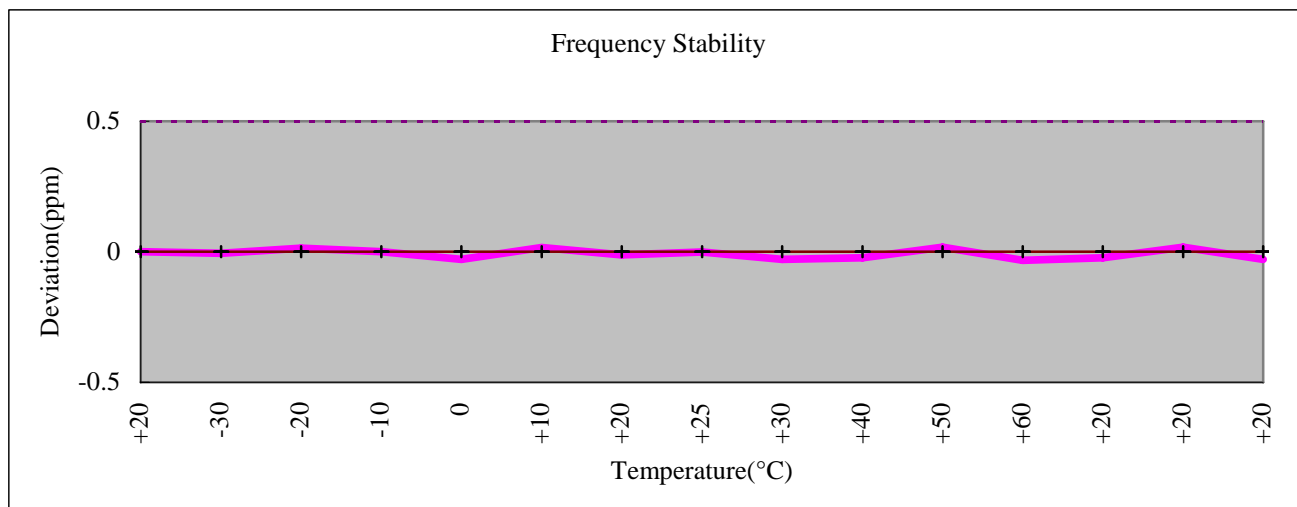
*Note1:* Radiated measurements at 3 meters by Substitution Method.

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### 3.3.3 Frequency Stability

OPERATING FREQUENCY : 836,599,953 Hz  
 CHANNEL : 190(Mid)  
 REFERENCE VOLTAGE : 3.7 VDC  
 DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VDC)	TEMP (dB)	FREQ (Hz)	Deviation (%)
100%	3.7	+20(Ref)	836,599,953	0.000000
100%		-30	836,599,948	0.000001
100%		-20	836,599,964	-0.000001
100%		-10	836,599,953	0.000000
100%		0	836,599,928	0.000003
100%		+10	836,599,966	-0.000002
100%		+20	836,599,943	0.000001
100%		+25	836,599,952	0.000000
100%		+30	836,599,928	0.000003
100%		+40	836,599,934	0.000002
100%		+50	836,599,967	-0.000002
100%		+60	836,599,925	0.000003
85%		3.2	+20	836,599,934
115%	4.3	+20	836,599,967	-0.000002
BATT.ENDPOINT	3.1	+20	836,599,928	0.000003

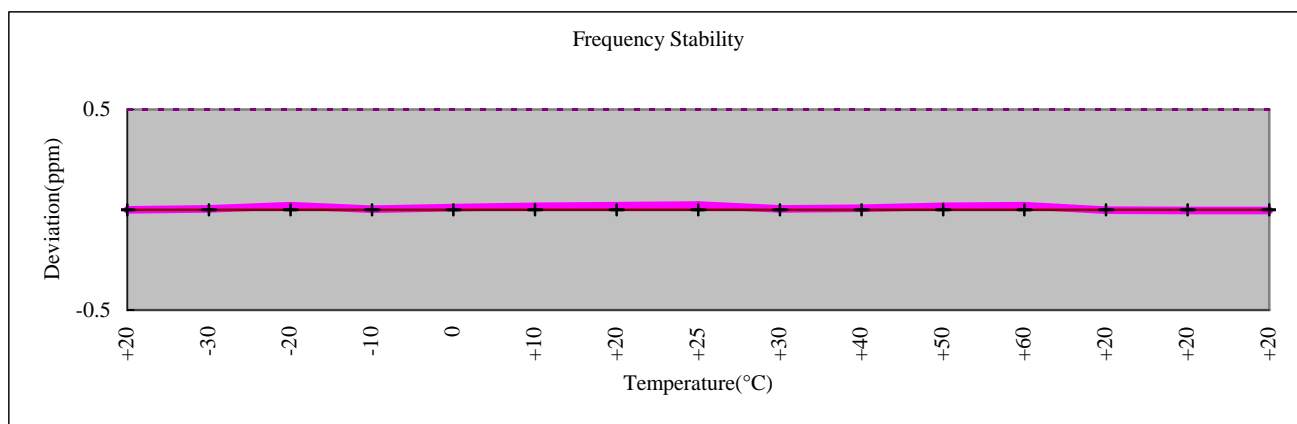


3.3.3 Frequency Stability

- Continues

OPERATING FREQUENCY : 1,879,999,728 Hz  
 CHANNEL : 0661(Mid)  
 REFERENCE VOLTAGE : 3.7 VDC  
 DEVIATION LIMIT : ± 0.00025 % or 2.5 ppm

VOLTAGE (%)	POWER (VAC)	TEMP (dB)	FREQ (Hz)	Deviation (%)
100%	3.7	+20(Ref)	1,879,999,728	0.000000
100%		-30	1,879,999,734	0.000000
100%		-20	1,879,999,766	0.000002
100%		-10	1,879,999,732	0.000000
100%		0	1,879,999,748	0.000001
100%		+10	1,879,999,759	0.000002
100%		+20	1,879,999,764	0.000002
100%		+25	1,879,999,772	0.000002
100%		+30	1,879,999,735	0.000000
100%		+40	1,879,999,742	0.000001
100%		+50	1,879,999,758	0.000002
100%		+60	1,879,999,764	0.000002
85%		3.2	+20	1,879,999,725
115%	4.3	+20	1,879,999,721	0.000000
BATT.ENDPOINT	3.1	+20	1,879,999,720	0.000000



### **3.4 CONCLUSION**

The data collected shows that the **Brightstar Corporation / Dual band GSM Phone / FCC ID: WV2300** complies with all the requirements of Parts 2, 22, 24 of the FCC Rules.

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### **3.5 TEST PLOTS**

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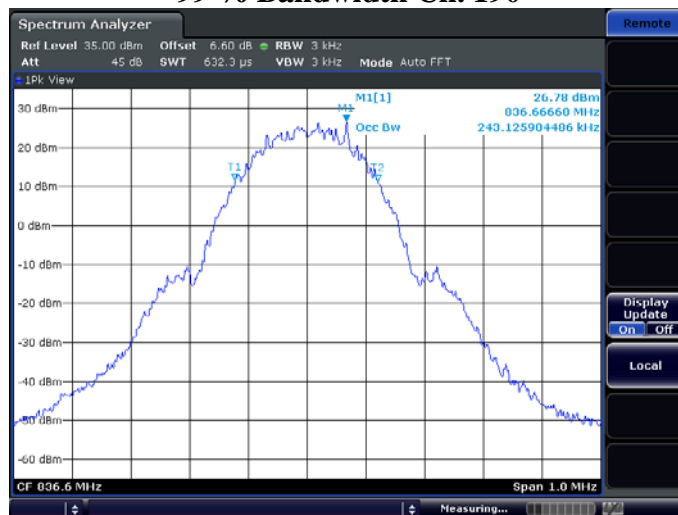
GSM850

99 % Bandwidth Ch. 128



GSM850

99 % Bandwidth Ch. 190



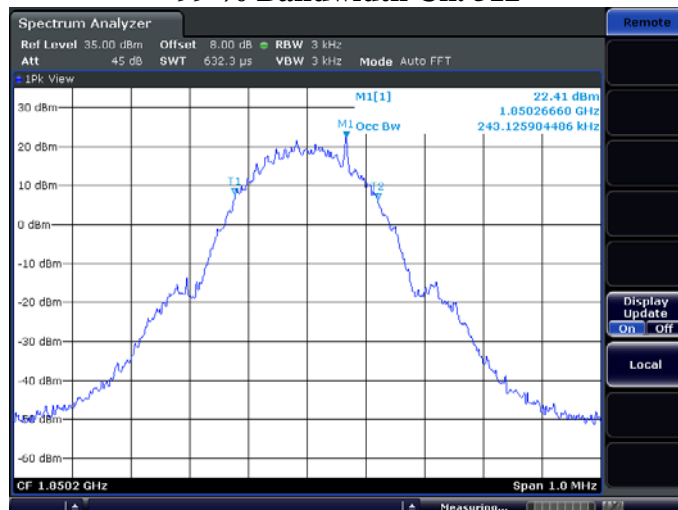
GSM850

99 % Bandwidth Ch. 251



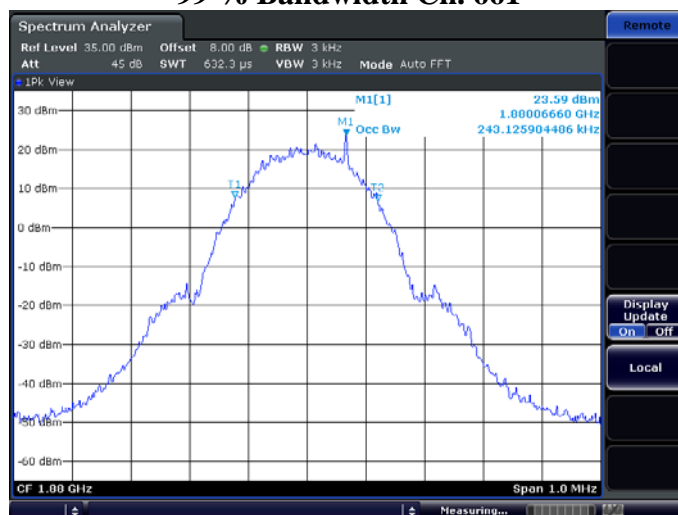
PCS1900

99 % Bandwidth Ch. 512



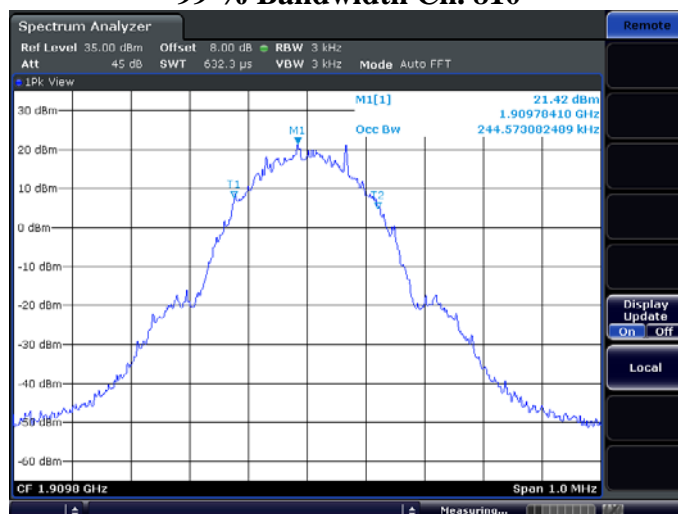
PCS1900

99 % Bandwidth Ch. 661



PCS1900

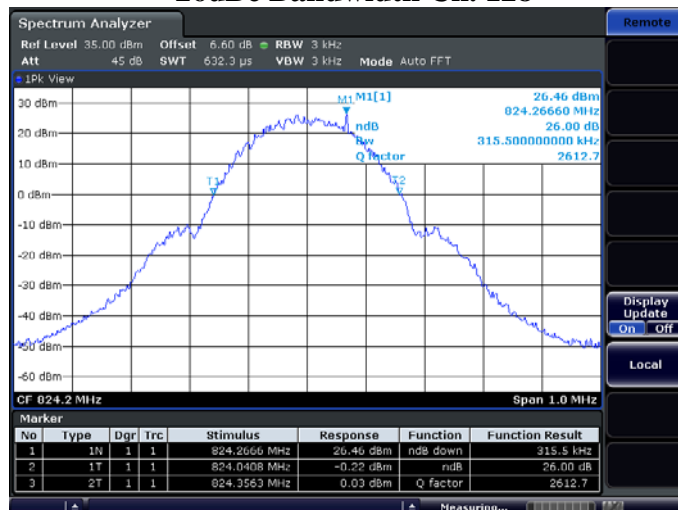
99 % Bandwidth Ch. 810





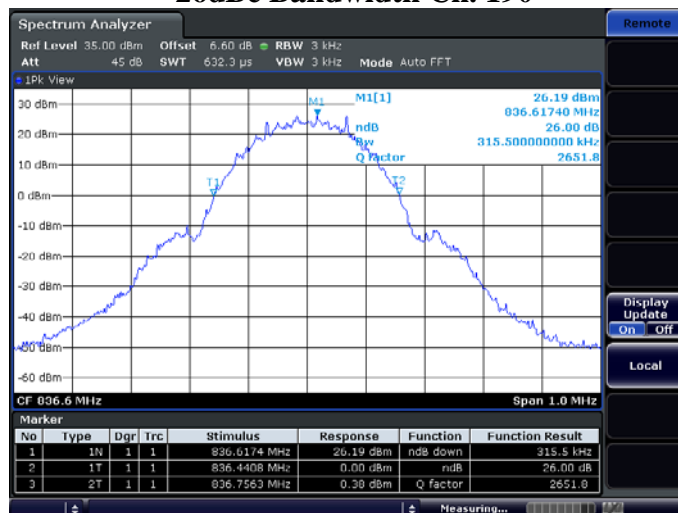
GSM850

-26dBc Bandwidth Ch. 128



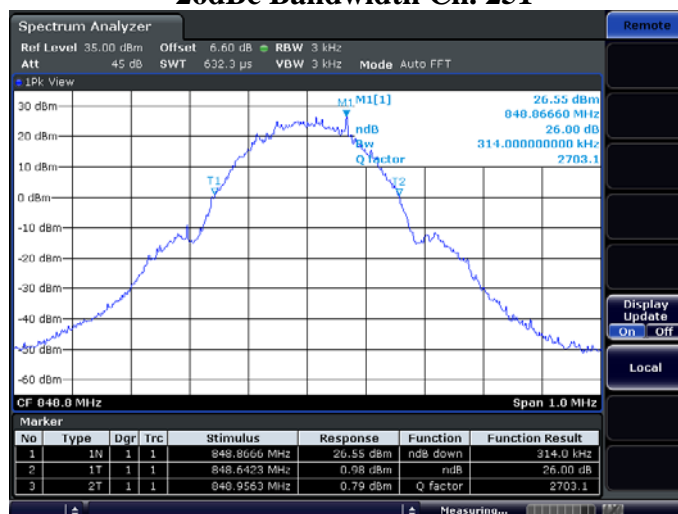
GSM850

-26dBc Bandwidth Ch. 190



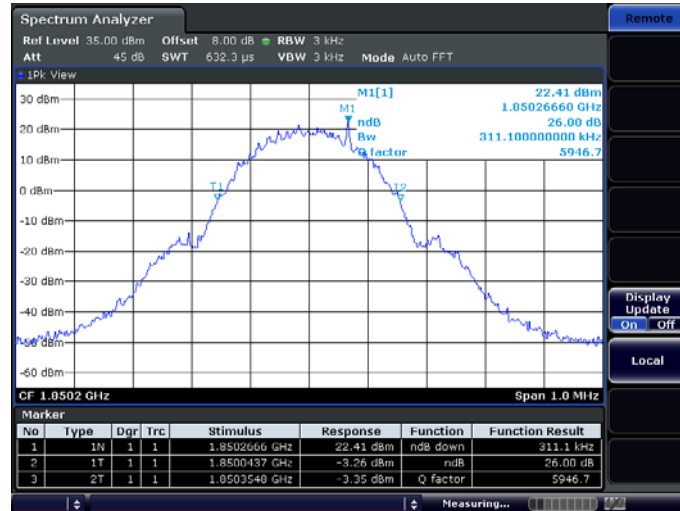
GSM850

-26dBc Bandwidth Ch. 251



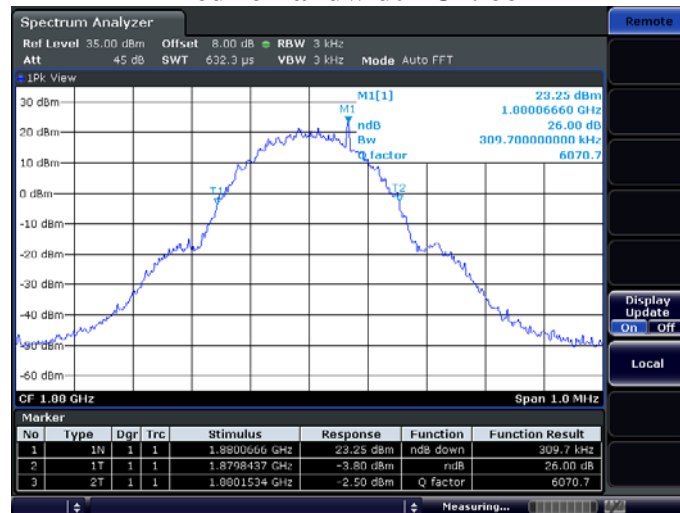
PCS1900

-26dBc Bandwidth Ch. 512



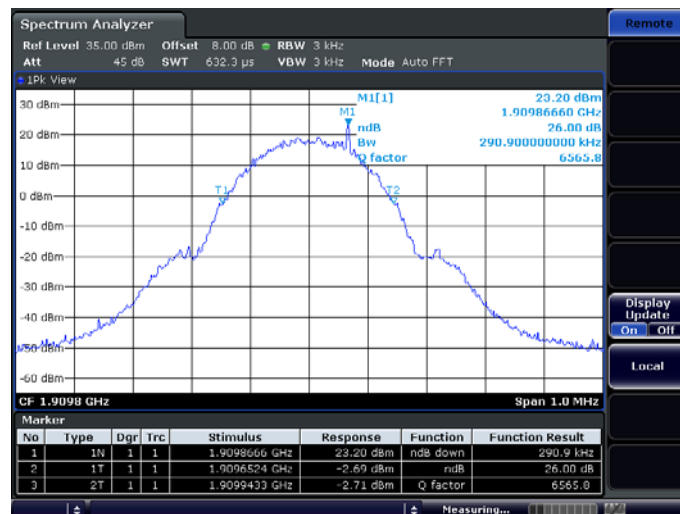
PCS1900

-26dBc Bandwidth Ch. 661



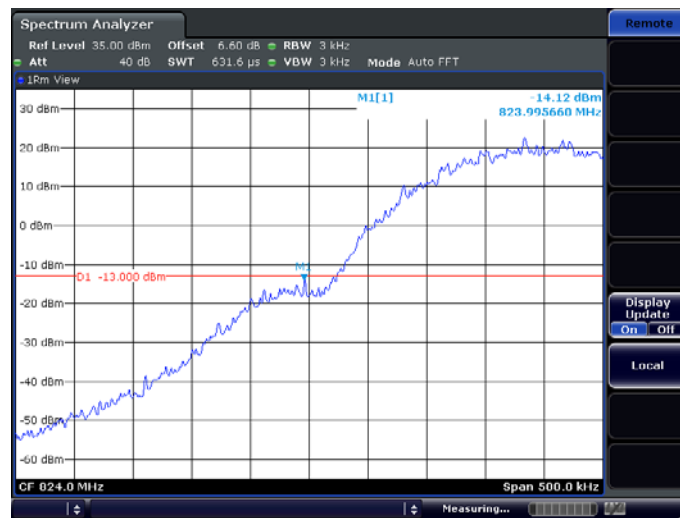
PCS1900

-26dBc Bandwidth Ch. 810



GSM850

Band Edge Ch. 128



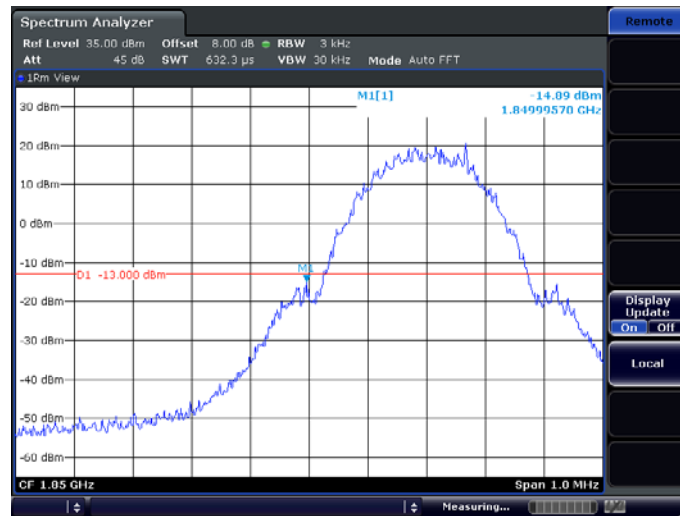
GSM850

Band Edge Ch. 251



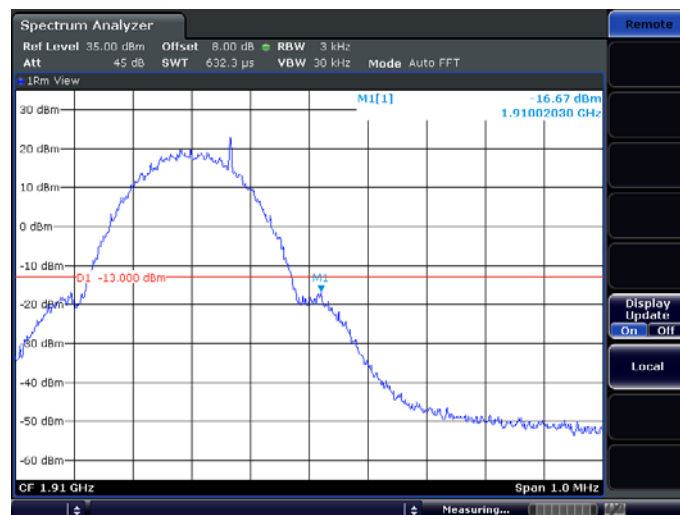
PCS1900

Band Edge Ch. 512



PCS1900

Band Edge Ch. 810



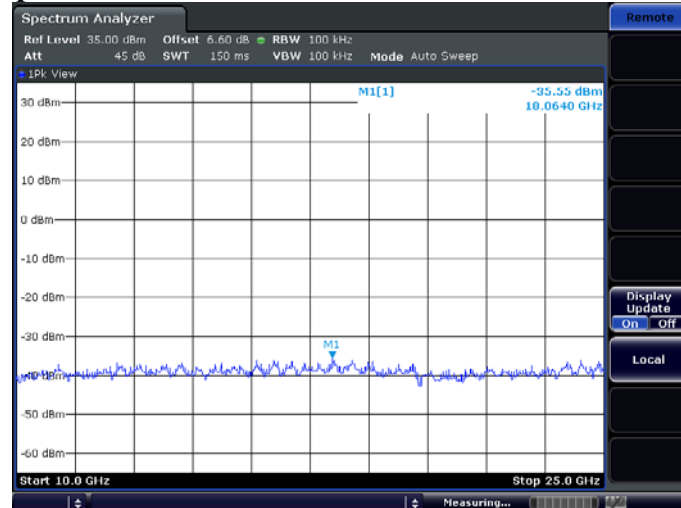
GSM850

Spurious Emissions at Antenna Terminal / Ch.128-1



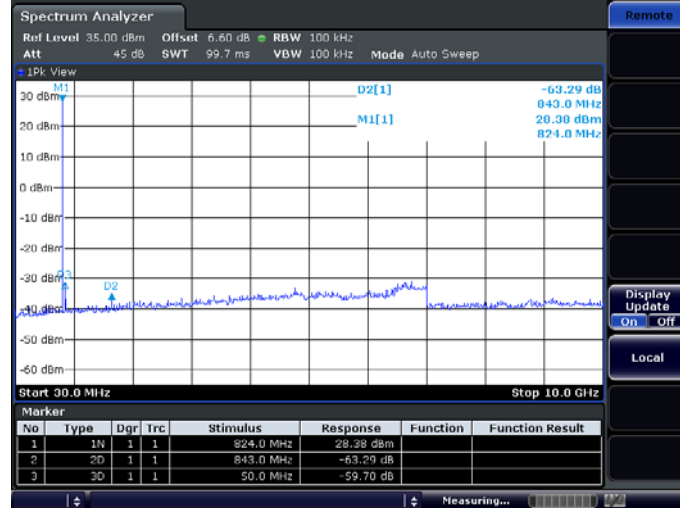
GSM850

Spurious Emissions at Antenna Terminal / Ch.128-2



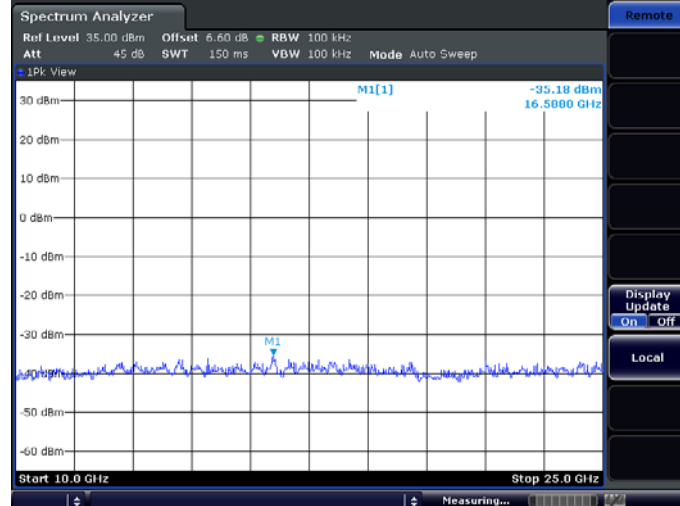
GSM850

Spurious Emissions at Antenna Terminal / Ch.190-1



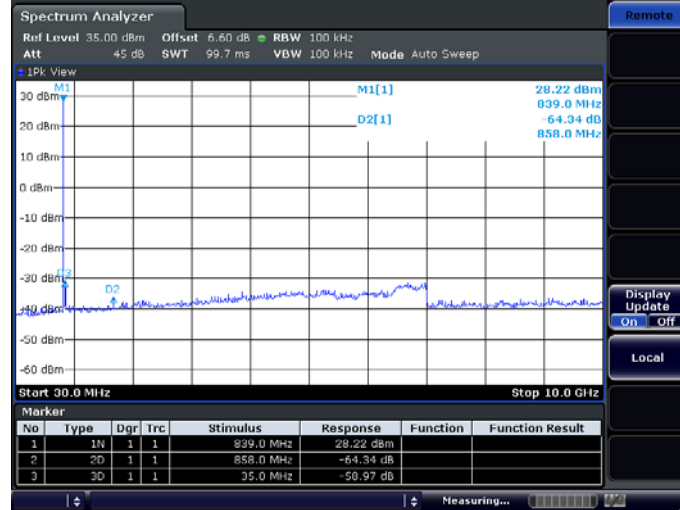
GSM850

Spurious Emissions at Antenna Terminal / Ch.190-2



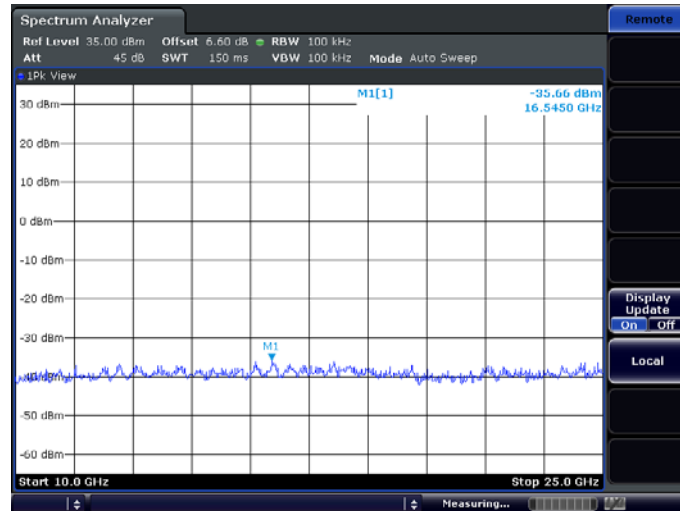
GSM850

Spurious Emissions at Antenna Terminal / Ch.251-1



GSM850

Spurious Emissions at Antenna Terminal / Ch.251-2



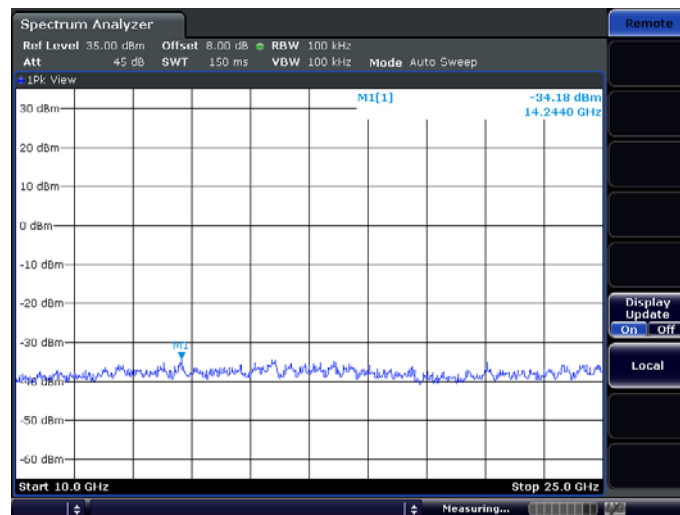
PCS1900

Spurious Emissions at Antenna Terminal / Ch.512 -1



PCS1900

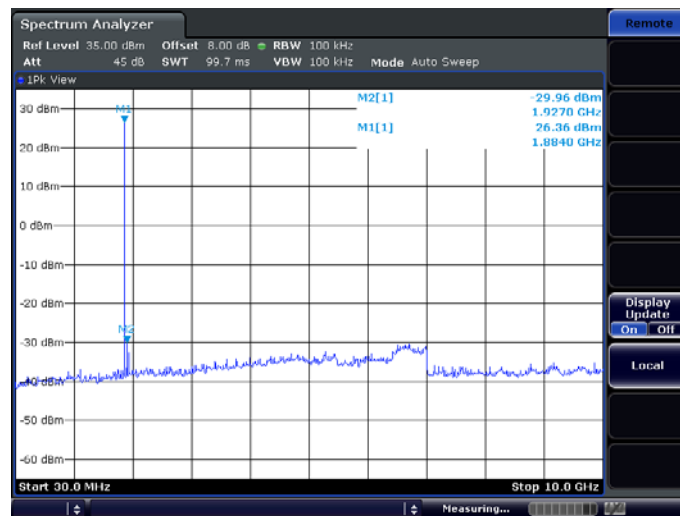
Spurious Emissions at Antenna Terminal / Ch.512 -2





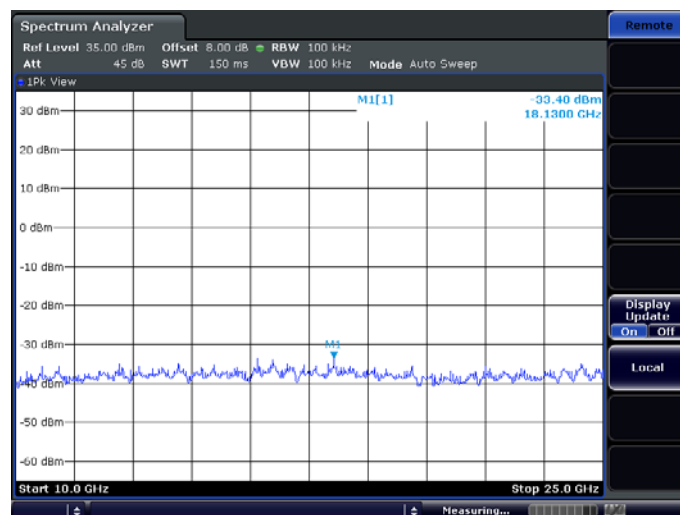
PCS1900

Spurious Emissions at Antenna Terminal / Ch.661 -1



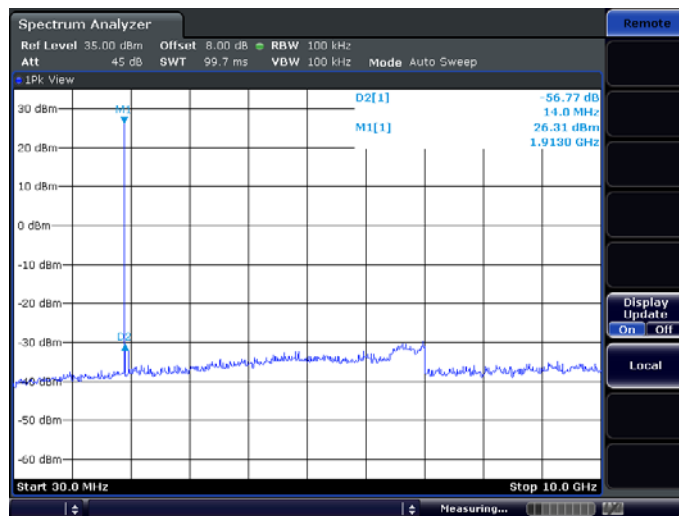
PCS1900

Spurious Emissions at Antenna Terminal / Ch.661 -2



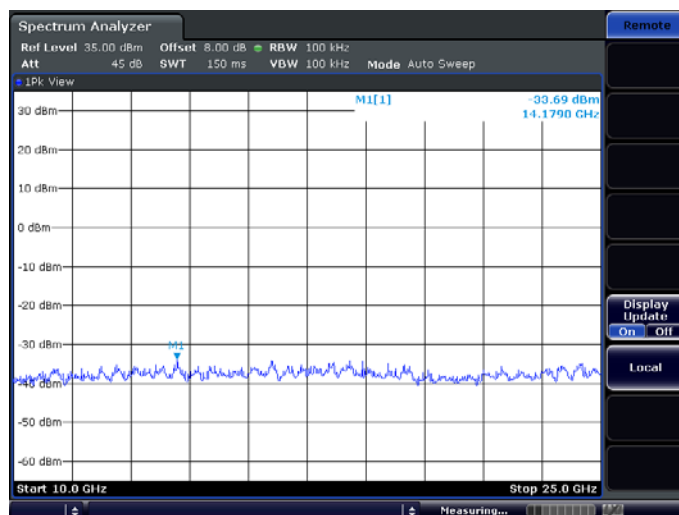
PCS1900

Spurious Emissions at Antenna Terminal / Ch.810 -1



PCS1900

Spurious Emissions at Antenna Terminal / Ch.810 -2



APPENDIX 1

**TEST EQUIPMENT USED FOR TESTS**

	Description	Model No.	Serial No.	Manufacturer	Next Cal. Date
1	Spectrum Analyzer	FSV-30	100757	R&S	Feb-10
2	Spectrum Analyzer	8563E	3425A02505	HP	Apr-10
3	Spectrum Analyzer	8594E	3710A04074	HP	Oct-09
4	Signal Generator	8648C	3623A02597	HP	Apr-10
5	Signal Generator	83711B	US34490456	HP	Apr-10
6	Attenuator (3dB)	8491A	37822	HP	Oct-09
7	Attenuator (10dB)	8491A	63196	HP	Oct-09
8	Attenuator (30dB)	8498A	1801A06689	HP	Oct-09
9	EMI Test Receiver	ESVD	843748/001	R&S	Apr-10
10	Horn Antenna(18 ~ 40GHz)	SAS-574	154	Schwarzbeck	Nov-10
11	Horn Antenna(18 ~ 40GHz)	SAS-574	155	Schwarzbeck	Nov-10
12	RF Amplifier	8447D	2949A02670	HP	Oct-10
13	RF Amplifier	8449B	3008A02126	HP	Apr-10
14	Test Receiver	ESHS10	828404/009	R&S	Apr-10
15	TRILOG Antenna	VULB 9160	9160-3212	SCHWARZBECK	Apr-11
16	Log.-Per. Antenna	VULP 9118	9118 A 401	SCHWARZBECK	Apr-11
17	Biconical Antenna	BBA 9106	VHA 9103-2315	SCHWARZBECK	Apr-11
18	Horn Antenna	3115	00055005	ETS LINDGREN	Mar-11
19	Horn Antenna	BBHA 9120D	9120D122	SCHWARZBECK	Dec-11
20	Dipole Antenna	VHA9103	2116	SCHWARZBECK	Nov-09
21	Dipole Antenna	VHA9103	2117	SCHWARZBECK	Nov-09
22	Dipole Antenna	VHA9105	2261	SCHWARZBECK	Nov-09
23	Dipole Antenna	VHA9105	2262	SCHWARZBECK	Nov-09
24	Hygro-Thermograph	THB-36	0041557-01	ISUZU	Apr-10
25	Splitter (SMA)	ZFSC-2-2500	SF617800326	Mini-Circuits	-
26	RF Switch	MP59B	6200414971	ANRITSU	-
27	Power Divider	11636A	6243	HP	Oct-09
28	DC Power Supply	6622A	3448A03079	HP	Oct-09
29	Frequency Counter	5342A	2826A12411	HP	Apr-10
30	Power Meter	EPM-441A	GB32481702	HP	Apr-10
31	Power Sensor	8481A	2702A64048	HP	Apr-10
32	Audio Analyzer	8903B	3729A18901	HP	Oct-09
33	Modulation Analyzer	8901B	3749A05878	HP	Oct-09
34	TEMP & HUMIDITY Chamber	YJ-500	LTAS06041	JinYoung Tech	Oct-09
35	LOOP-ANTENNA	FMZB 1516	151602/94	SCHWARZBECK	Mar-11
36	Stop Watch	HS-3	601Q09R	CASIO	Apr-10
37	LISN	ENV216	100408	R&S	Oct-09