

**ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT****INTENTIONAL RADIATOR CERTIFICATION TO  
FCC PART 22 SUBPART H, PART 24 SUBPART E***OF*

**Product Name:** PDA Phone  
**Brand Name:** Sony  
**Model No.:** C1905  
**Type No.:** PM-0490-BV  
**Model Difference:** N/A  
**FCC ID:** PY7PM-0490  
**Report No.:** EH/2013/40024  
**Issue Date:** Jun. 06, 2013  
**FCC Rule Part:** 2 , 22H & 24E  
**Prepared for:** Sony Mobile Communications AB  
Nya Vattentornet 22188 Lund/SWEDEN  
**Prepared by:** SGS Taiwan Ltd.  
Electronics & Communication Laboratory  
No.134, Wu Kung Road, New Taipei Industrial Park,  
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## VERIFICATION OF COMPLIANCE

**Applicant:** Sony Mobile Communications AB  
 Nya Vattentornet 22188 Lund/SWEDEN

**Product Name:** PDA Phone

**Brand Name:** Sony

**Model No.:** C1905

**Type No.:** PM-0490-BV

**Model Difference:** N/A

**FCC ID:** PY7PM-0490

**File Number:** EH/2013/40024

**Date of test:** Apr. 01, 2013 ~ May. 26, 2013

**Date of EUT Received:** Apr. 01, 2013

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. Electronics & Communication Laboratory. The test data, data evaluation, test procedures, and equipment configurations shown in this report were made in accordance with the procedures given in TIA/EIA-603-C-2004 and the energy emitted by the sample EUT tested as described in this report is in compliance with conducted and radiated emission limits of FCC Rule PART 22 subpart H, PART 24 subpart E.

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

**Test By:** Marcus Tseng **Date:** Jun. 06, 2013

*Marcus Tseng / Engineer*

**Prepared By:** Violetta Tang **Date:** Jun. 06, 2013

*Violetta Tang / Clerk*

**Approved By:** Jim Chang **Date:** Jun. 06, 2013

*Jim Chang / Supervisor*

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## Revision History

Report Number	Revision	Description	Issue Date
EH/2013/40024	Rev.01	Initial creation of document	May. 27, 2013
EH/2013/40024	Rev.02	1. Update Product Description "Marketing Name" into "Model No." and update "Model No." into "Type No." on Page 1, 2 and 6.	Jun. 06, 2013

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# 1. GENERAL PRODUCT INFORMATION

## 1.1. Product Description

General:

Product Name:	PDA Phone	
Brand Name:	Sony	
Model No.:	C1905	
Type No.:	PM-0490-BV	
Model Difference:	N/A	
Data Cable (USB):	Model No.: EC450, Supplier: K-one Part No.: 1242-6715.3, Length: 100 cm	
Simple Hands-Free (SHF-White):	Model No.: MH410c, Supplier: Foster Electric Type No.: AG-1100	
Simple Hands-Free (SHF-Black):	Model No.: MH410c, Supplier: Foster Electric Type No.: CCA-0004017	
Car Charger:	Model No.: AN400, Supplier: Salcomp Type No.: CAA-0003013	
Hi-Fi Wireless Headset:	Model No.: MW600, Supplier: BALDA Type No.: DDA-0002029.B coupling with Simple Hands Free (Model No.: MH755, Supplier: BALDA Type No.: AG-0502)	
Hardware Version:	A	
Software Version:	15.1.A.1.3	
Power Supply:	3.7Vdc	
	Battery:	Model No.: BA900, Supplier: Sony Type No.: AB-0500
	Adapter:	Model No.: EP800, Supplier: Salcomp Type No.: CAA-0002016-US

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Bluetooth\_BR+EDR:

Bluetooth Version:	V3.0+HS
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	9.22dBm
Frequency Range:	2.402GHz – 2.480GHz
Dwell Time:	<= 0.4s
Antenna Designation:	PIFA Antenna, Gain: 2.55dBi

Bluetooth Low Energy:

Frequency Range:	2402 – 2480MHz
Bluetooth Version:	V4.0 Dual mode
Channel number:	40 channels
Modulation type:	GFSK
Transmit Power:	1.46dBm (Peak)
Antenna Designation:	PIFA Antenna, Gain: 2.55dBi

NFC:

Operating Frequency	13.56MHz
Transmit Power	< 123dBuV/m at 3m.
Number of Channels	1
Antenna Type	Loop Antenna
Modulation Type	ASK, BPSK

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WLAN 2.4GHz+5.7GHz:

Wi-Fi	Frequency Range	Channels	Rated Power	Modulation Technology
11b/g	2412-2462	11	b: 17.61dBm g: 21.00dBm	DSSS, OFDM
11n	HT20 2412-2462	11	HT20: 21.11dBm	OFDM
11a	5725-5850	5	a: 20.12dBm	OFDM
11n (5GHz)	HT20 5725-5850	5	HT20: 20.13dBm	
11n (5GHz)	HT40 5725-5850	2	HT40: 19.66dBm	
Antenna Designation:		PIFA Antenna, 2.4GHz Gain: 2.55dBi 5GHz Gain: 1.66dBi (5725MHz-5850MHz)		
Modulation type:		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM		
Transition Rate:		802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 b: 1/2/5.5/11 Mbps 802.11 g: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 65.0Mbps 802.11 n_40MHz: 13.5 – 135.0Mbps		

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WLAN 5GHz:

Wi-Fi	Frequency Range	Channels	Rated Power (Avg)	Modulation Technology
11a	5150~5250	4	12.85dBm	OFDM
	5250~5350	4	12.81dBm	
	5470~5725	11	12.94dBm	
11n	HT20 5150~5250	4	HT20: 12.87dBm	OFDM
	HT20 5250~5350	4	HT20: 12.87dBm	
	HT20 5470~5725	8	HT20: 12.94dBm	
11n	HT40 5150~5250	2	HT40: 11.77dBm	OFDM
	HT40 5250~5350	2	HT40: 11.83dBm	
	HT40 5470~5725	3	HT40: 11.88dBm	
Antenna Designation		PIFA Antenna, 5GHz Gain: -0.74dBi (5150MHz-5250MHz) 5GHz Gain: 1.01dBi (5250MHz-5350MHz) 5GHz Gain: 2.70dBi (5470MHz-5725MHz)		
Modulation type		CCK, DQPSK, DBPSK for DSSS 64QAM, 16QAM, QPSK, BPSK for OFDM		
Transition Rate:		802.11 a: 6/9/12/18/24/36/48/54 Mbps 802.11 n_20MHz: 6.5 – 65.0Mbps 802.11 n_40MHz: 13.5 – 135.0Mbps		

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GSM / WCDMA:

Cellular Phone Standards Frequency Range and Power.	Operating Frequency		Rated Power
	GSM/GPRS 850, Class 12	824.2 MHz– 848.8 MHz	33dBm
	EDGE 850, Class 12	824.2 MHz– 848.8 MHz	27dBm
	GSM/GPRS 1900, Class 12	1850.2MHz – 1909.8MHz	30dBm
	EDGE 1900, Class 12	1850.2MHz – 1909.8MHz	26dBm
Type of Emission:	GSM 850: 248KGXW, GSM 1900: 247KGXW GPRS 850: 246KGXW, GPRS 1900: 247KGXW EDGE 850: 249KG7W, EDGE 1900: 248KG7W		
IMEI:	004402146593334		

This test report applies for 850 /1900 GSM / GPRS / EDGE.

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Final Amplifier Voltage and Current Information:

Test Mode	DC voltage (V)	DC current (mA)
GSM 850	3.7	230
GSM 1900	3.7	180
GPRS 850	3.7	210
GPRS 1900	3.7	160
EDGE 850	3.7	130
EDGE 1900	3.7	120

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## 1.2. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for **FCC ID: PY7PM-0490** filing to comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules.

## 1.3. Test Methodology

Both conducted and radiated testing were performed according to the procedures document of TIA/EIA 603C and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

TS 151 010-1 is used to set, and measure the output power.

KDB971168 D01 Power Meas license Digital System v01 as the supplemental guideline to conduct the measurement, including Peak to Power Average Ratio, and Signal Bandwidth.

## 1.4. Test Facility

The measurement facilities used to collect the 3m Radiated Emission and AC power line conducted data are located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No.134, Wu Kung Road, Wuku Industrial Zone, Taipei County, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4:2009. & ANSI C63.10:2009. FCC Registration Number are: 990257, Canada Registration Number: 4620A-4.

The 10 m Open Area Test Sites located on the address of SGS Taiwan Ltd. Electronics & Communication Laboratory No. 29, Pau-Tou-Tsuo Valley Chia-Pau Tsuen, Linkou Hsiang, Taipei county, which is constructed and calibrated to meet the CISPR 22/EN 55022 requirements. SGS Site No. 1(3 &10 meters) and FCC Registration Number: 94644.

All equipment is calibrated externally and traceable to SI (International System of Unit).

## 1.5. Special Accessories

No special accessories were used during testing.

## 1.6. Equipment Modifications

There were no modifications incorporated into the EUT.

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## 2. SYSTEM TEST CONFIGURATION

### 2.1. EUT Configuration

The EUT configuration for testing is installed on RF field strength measurement to meet the Commissions requirement and operating in a manner which intends to maximize its emission characteristics in a continuous normal application.

### 2.2. EUT Exercise

The EUT (Transmitter) was operated in the continuous transmission mode employed with the simulator of the Base Station that fixates at test default channels to fix the Tx frequency which was for the purpose of the measurements.

### 2.3. Test Procedure

#### 2.3.1 Conducted Measurement at Antenna Port:

According to measurement procured TIA/EIA 603C, the EUT is placed on a turn table which is 0.8 m above ground plane. A low loss of RF cable was used to connect the antenna port of EUT to measurement equipment.

#### 2.3.2 Radiated Emissions (ERP/EIRP):

According to measurement procured TIA/EIA 603C, The EUT is a placed on as turn table which is 0.8 m above ground plane. The turn table shall rotate 360 degrees to determine the position of maximum emission level. EUT is set 3m away from the receiving antenna which varied from 1m to 4m to find out the highest emission. And also, each emission was to be maximized by changing the polarization of receiving antenna both Horizontal and Vertical. In order to find out the max. emission, the relative positions of this hand-held transmitter (EUT) was rotated through three orthogonal axes and measurement procedures for electric field radiated emissions above 1 GHz the EUT measurement is to be made "while keeping the antenna in the 'cone of radiation' from that area and pointed at the area both in azimuth and elevation, with polarization oriented for maximum response." is still within the 3dB illumination BW of the measurement antenna according to the requirements in Section 8 and 13 of ANSI C63.4:2009 & ANSI C63.10:2009.

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**2.4. Measurement Equipment Used:**

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Power Sensor	Anritsu	ML2495A	1005007	02/08/2012	02/07/2014
Power Meter	Anritsu	MA2411B	917032	02/08/2012	02/07/2014
Spectrum Analyzer	Agilent	E4446A	MY51100003	04/15/2013	04/14/2014
Spectrum Analyzer	Agilent	E4440A	US41160416	03/17/2012	03/16/2014
Radio Communication Analyzer	R & S	CMU200	102189	08/12/2012	08/11/2014
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/17/2012	10/16/2013
Temperature Chamber	TERCHY	MHG-120LF	911009	04/16/2012	04/15/2014
DC Block	Mini-Circuits	BLK-18-S+	1	02/28/2013	02/27/2014
Attenuator	Mini-Circuit	BW-S10W2+	002	02/28/2013	02/27/2014
Splitter	Agilent	11636B	N/A	02/28/2013	02/27/2014
DC Power Supply	Agilent	E3640A	MY40005907	07/15/2011	07/14/2013

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ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY51100003	04/15/2013	04/14/2014
EXA Spectrum Analyzer	Agilent	N9010A	MY50420195	02/06/2013	02/07/2014
Spectrum Analyzer	R&S	FSV-30	101398	10/18/2011	10/17/2013
Bilog Antenna	SCHWAZBECK	VULB9168	378	01/10/2012	01/09/2014
Bilog Antenna	SCHWAZBECK	VULB9160	3158	11/24/2011	11/23/2013
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/17/2010	07/16/2013
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/17/2010	07/16/2013
Horn antenna	ETS.LINDGREN	3117	123995	05/19/2013	05/18/2014
Horn antenna	ETS.LINDGREN	3117	123991	01/21/2013	01/20/2015
Horn Antenna	Schwarzbeck	BBHA9170	184	01/17/2012	01/17/2014
Horn Antenna	Schwarzbeck	BBHA9170	185	07/11/2011	07/10/2013
RF amplifier	Miteq	AMF-6F-2600 400-40-8P	971576	01/29/2013	01/28/2014
Signal Generator	R&S	SMR40	100210	02/02/2012	02/01/2014
Signal Generator	Agilent	E4438C	MY45093613	07/15/2011	07/14/2013
Pre-Amplifier	Agilent	8447D	1937A02834	01/04/2013	01/03/2014
Pre-Amplifier	EMC Instruments Corp.	EMC0126530	980038	01/04/2013	01/03/2014
Attenuator	Mini-Circuit	BW-S10W2+	004	02/28/2013	02/27/2014
Radio Communication Analyzer	R & S	CMU200	102189	08/12/2012	08/11/2014
Radio Communication Analyzer	Anritsu	MT8820C	6200995019	10/17/2012	10/16/2013
Turn Table	HD	DT420	N/A	N.C.R	N.C.R
Antenna Tower	HD	MA240-N	240/657	N.C.R	N.C.R
Controller	HD	HD100	N/A	N.C.R	N.C.R
Low Loss Cable	HUBER+SUHNER	966_Tx	10m	01/04/2013	01/03/2014
Low Loss Cable	HUBER+SUHNER	966_Rx	3m	01/04/2013	01/03/2014
Filter 800-1000	Micro-Tronics	EWT	M2	02/28/2013	02/28/2014
Filter 1800-2000	Micro-Tronics	EWT	M2	02/28/2013	02/28/2014
1GHz High Pass Filter	Micro-Tronics	HPM50108	32	02/28/2013	02/28/2014
2GHz High Pass Filter	Micro-Tronics	HPM50110	36	02/28/2013	02/28/2014
3m Site NSA	SGS	966 chamber	N/A	07/15/2012	07/14/2013

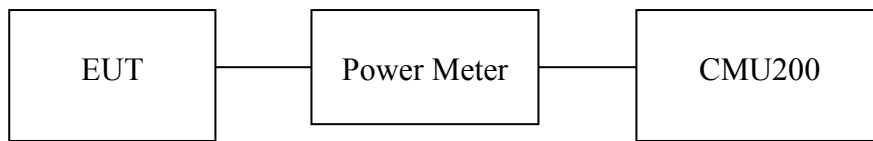
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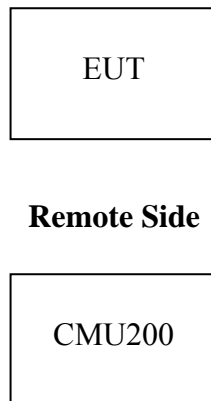
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## 2.5. Configuration of Tested System

**Fig. 2-1 Configuration of Tested System (Fixed Channel-Conducted)**



**Fig. 2-2 Configuration of Tested System (Fixed Channel-Radiated)**



**Table 2-1 Equipment Used in**

Item	Equipment	Mfr/Brand	Model/ Type No.	Series No.	Data Cable	Power Cord
1.	Universal Radio Communication Tester	R&S	CMU200	102189	shielded	Un-shielded
2.	Power Meter	Anritsu	ML2495A	1005007	shielded	Un-shielded

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### 3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a) §22.913(a)(2) §24.232(c)	RF Power Output	Compliant
§2.1046(a) §22.913(a)(2) §24.232(c)§27.50(d)(4)	ERP/ EIRP measurement	Compliant
§2.1049(h)	99% Occupied Bandwidth	Compliant
§2.1051 §22.917(a) §24.238(a)	Out of Band Emissions at Antenna Terminals and Band Edge	Compliant
§2.1053 §22.917(a) §24.238(a)	Field Strength of Spurious Radiation	Compliant
§24.232(d)	Peak to Average Ratio	Compliant
§2.1055(a)(1) §22.355 §24.235	Frequency Stability vs. Temperature	Compliant
§2.1055(d)(2) §22.355 §24.235	Frequency Stability vs. Voltage	Compliant

Max ERP/EIRP measurement result:

	dBm		W
GSM 850 Band	26.45	ERP	0.442
GSM 1900 Band	30.95	EIRP	1.245
GPRS 850 Band	26.47	ERP	0.444
GPRS 1900 Band	30.82	EIRP	1.208
EDGE 850 Band	24.28	ERP	0.268
EDGE 1900 Band	29.58	EIRP	0.908

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#### 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

EUT was staying in continuous transmitting mode. Channel Low, Mid and High for each type band with rated data rate were chosen for full testing.

The list of channel selected to conduct the measurements

GSM/GPRS/EDGE 850:

Channel Low: AFRCN 128 at 824.2MHz, Channel Mid: AFRCN 190 at 836.6MHz, Channel High: AFRCN 251 at 848.8MHz.

GSM/GPRS/EDGE 1900:

Channel Low: AFRCN 512 at 1850.2MHz, Channel Mid: AFRCN 661 at 1880.0MHz, Channel High AFRCN 810 at 1909.8MHz

The field strength of spurious radiation emission was measured as EUT stand-up position (H mode) and lie down position (E1, E2 mode) for GSM/EDGE. The worst-case of H position for GSM 850, E1 position for GSM 1900 band were reported.

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## 5. MEASUREMENT UNCERTAINTY

Test Items	Uncertainty
RF Power Output	+/- 1.42 dB
ERP/ EIRP measurement	Vertical Polarization = +/- 4.74dB Horizontal Polarization = +/- 4.62dB
99% Occupied Bandwidth	+/- 123.36 Hz
Out of Band Emissions at Antenna Terminals and Band Edge	+/- 1.55 dB
Peak to Average Ratio	+/- 1.55 dB
Frequency Stability vs. Temperature	+/- 123.36 Hz
Frequency Stability vs. Voltage	+/- 123.36 Hz
Temperature	+/- 0.8 °C
Humidity	+/- 4.7 %
DC / AC Power Source	DC= +/- 1%, AC= +/- 0.2%

### Radiated Spurious Emission:

Measurement uncertainty (Polarization : <b>Vertical</b> )	30MHz - 180MHz: +/- 3.37dB
	180MHz - 417MHz: +/- 3.19dB
	0.417GHz-1GHz: +/- 3.19dB
	1GHz - 18GHz: +/- 4.04dB
	18GHz - 40GHz: +/- 4.04dB

Measurement uncertainty (Polarization : <b>Horizontal</b> )	30MHz - 167MHz: +/- 4.22dB
	167MHz - 500MHz: +/- 3.44dB
	0.5GHz-1GHz: +/- 3.39dB
	1GHz - 18GHz: +/- 4.08dB
	18GHz - 40GHz: +/- 4.08dB

This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of k=2.

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## 6. RF POWER OUTPUT MEASUREMENT

### 6.1. Standard Applicable:

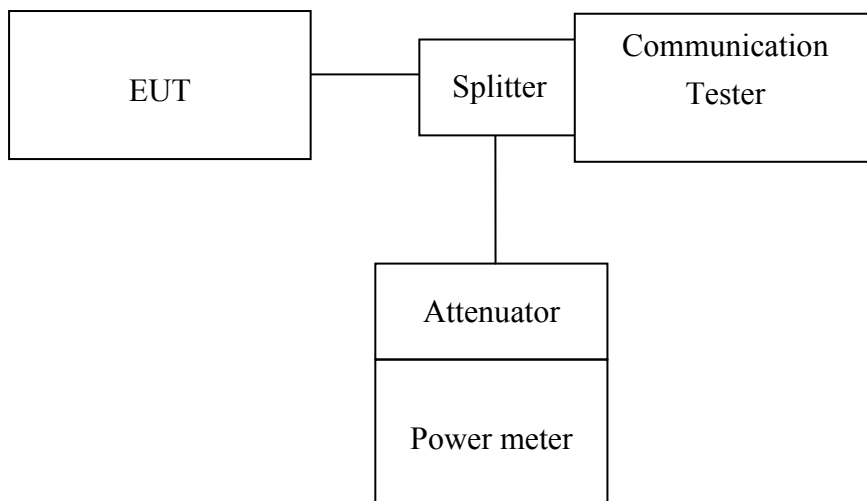
According to FCC §2.1046.

FCC 22.913(a) Mobile station is limited to 7W.

FCC 24.232(c) Peak Power Measurement limited to 2W

FCC 24.232(c) Equipment must employ means to limit the power to the minimum necessary for successful communication.

### 6.2. Test Set-up:



*Note: Measurement setup for testing on Antenna connector*

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### 6.3. Measurement Procedure:

The transmitter output was connected to a calibrated attenuator, the other end of which was connected to a power meter. Transmitter output was read off the power meter in dBm. The power output at the transmitter antenna port was determined by adding the value of the attenuator to the power meter reading. TS 151 010-1 is reference to conduct the test measurement of output power.

The Procedure of KDB 971168 D01 Power Meas License Digital System as the supplemental test methodology to adjust the proper setting obtaining the measurement results

Necessary Communication complying with 24.232 (c) and 27.5(d)(4)

Set CMU200 (base-station simulator) MS Signal with packet data submenu; SLOT Configuration

Set appropriate level to verify if or not power on mobile station's link with simulator still exists.

### 6.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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6.5. Measurement Result:

6.5.1. RF Conducted Output Power

6.5.1.1.: GSM/GPRS/EDGE (GMSK; 8-PSK)

Result:

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Averager Burst Power (dBm)
GSM 850	824.2	128	33.20	33.00
	836.6	190	33.20	32.90
	848.8	251	33.20	33.00

EUT Mode	Frequency (MHz)	CH	Peak Power (dBm)	Averager Burst Power (dBm)
GSM 1900	1850.2	512	30.30	30.00
	1880.0	661	30.20	29.90
	1909.8	810	30.30	30.00

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
GPRS 850	824.2	128	33.20	33.00	29.80	29.60
	836.6	190	33.20	32.90	29.80	29.70
	848.8	251	33.20	32.90	29.80	29.60

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 3UP) Class 12 (dBm)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
GPRS 850	824.2	128	28.40	28.20	27.70	27.50
	836.6	190	28.40	28.20	27.70	27.50
	848.8	251	28.30	28.20	27.70	27.50

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EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
GPRS 1900	1850.2	512	30.20	30.00	30.00	29.80
	1880.0	661	30.20	29.80	30.00	29.70
	1909.8	810	30.30	30.10	29.80	29.40

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 3UP) Class 12 (dBm)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
GPRS 1900	1850.2	512	28.10	28.00	28.00	27.80
	1880.0	661	28.10	27.90	27.70	27.50
	1909.8	810	28.00	27.70	27.60	27.40

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (4DN 2UP) Class 10 (dBm)	Average Burst Power (4DN 2UP) Class 10 (dBm)
EDGE 850	824.2	128	29.70	26.40	29.40	26.30
	836.6	190	29.40	26.30	29.40	26.30
	848.8	251	29.50	26.40	29.50	26.30

EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 3UP) Class 12 (dBm)	Average Burst Power (4DN 3UP) Class 12 (dBm)	Peak Power (4DN 4UP) Class 12 (dBm)	Average Burst Power (4DN 4UP) Class 12 (dBm)
EDGE 850	824.2	128	29.30	26.10	29.30	26.00
	836.6	190	29.20	26.00	29.00	26.10
	848.8	251	29.10	26.00	29.30	26.00

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EUT Mode	Frequency (MHz)	CH	Peak Power (4DN 1UP) Class 8 (dBm)	Average Burst Power (4DN 1UP) Class 8 (dBm)	Peak Power (1DN 2UP) Class 10 (dBm)	Average Burst Power (1DN 2UP) Class 10 (dBm)
EDGE 1900	1850.2	512	28.80	25.60	28.60	25.40
	1880.0	661	28.70	25.40	28.40	25.20
	1909.8	810	28.50	25.30	28.30	25.10

EUT Mode	Frequency (MHz)	CH	Peak Power (1DN 3UP) Class 12 (dBm)	Average Burst Power (1DN 3UP) Class 12 (dBm)	Peak Power (1DN 4UP) Class 12 (dBm)	Average Burst Power (1DN 4UP) Class 12 (dBm)
EDGE 1900	1850.2	512	28.40	25.30	28.10	25.00
	1880.0	661	28.10	25.00	27.80	24.70
	1909.8	810	28.00	24.80	27.70	24.50

Cable loss offset Low Band: 13.7dB

Cable loss offset High Band: 13.9dB

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**6.5.1.2.: Minimum Communications Power Measurement**

**PCS 1900 band**

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	29.3	28.1	25.1	24.0	22.1	20.0	17.9	16.0	14.0

PCL	9	10	11	12	13	14	15
Output power (dBm)	12.0	10.0	8.0	5.9	4.0	2.0	-0.1

Note: The EUT output power was controlled by simulator. Set Communication Tester CMU200 PCL as above, and get the mobile phone output power reading.

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## 7. ERP, EIRP MEASUREMENT

### 7.1. Standard Applicable:

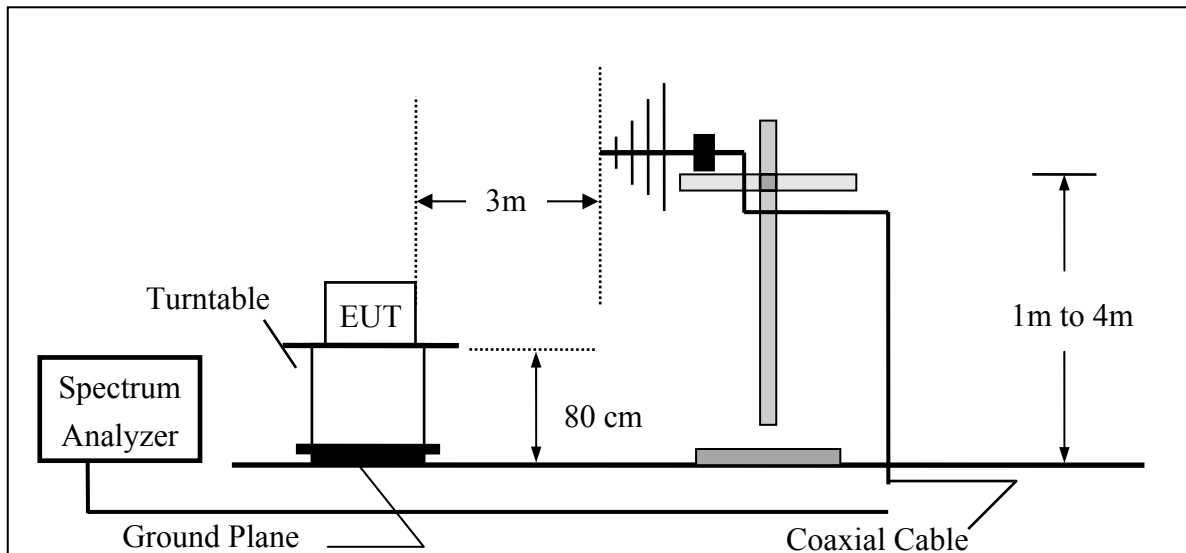
According to FCC §2.1046

FCC 22.913(a) Mobile station is limited to 7W ERP.

FCC 24.232(b) Mobile station is limited to 2W EIRP.

### 7.2. Test SET-UP (Block Diagram of Configuration):

(A) Radiated Power Test Set-Up, Frequency Below 1000MHz

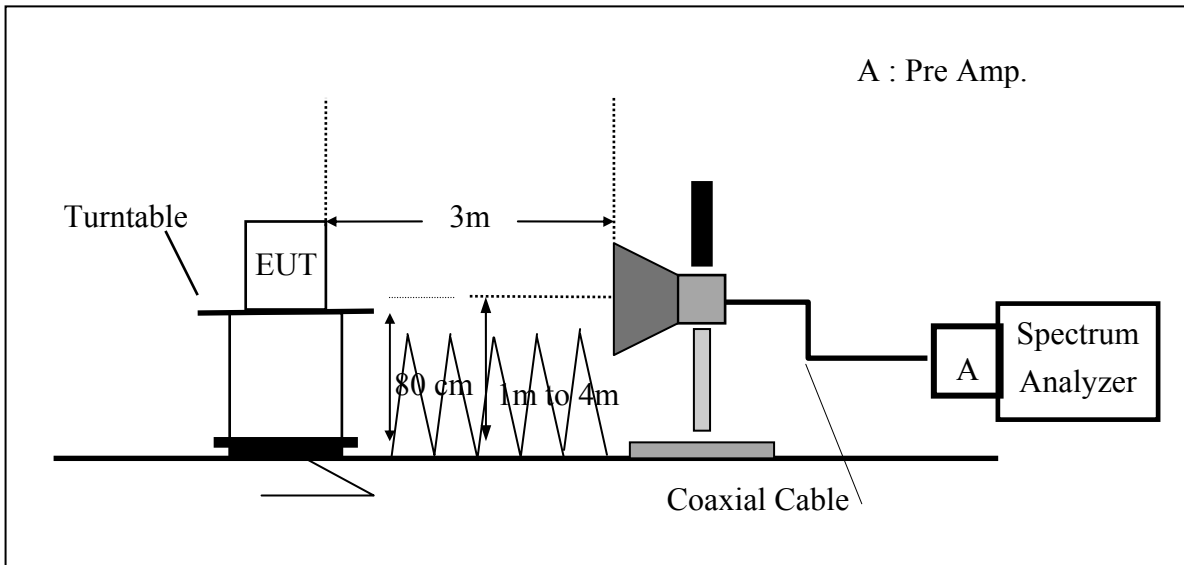


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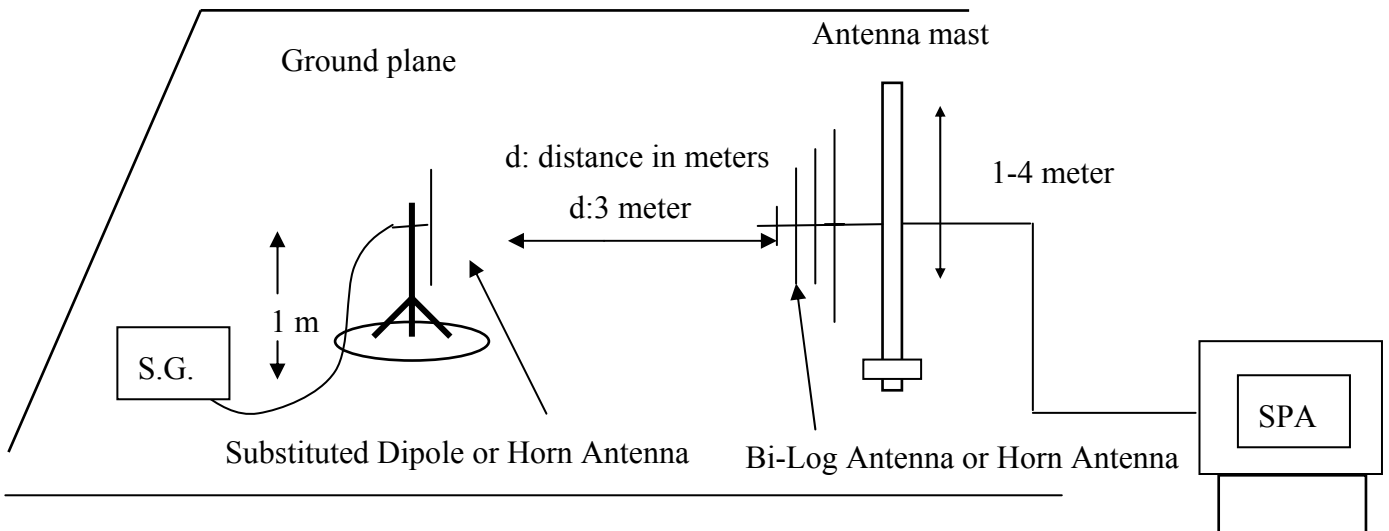
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(B) Radiated Power Test Set-UP Frequency Over 1 GHz



(C) Substituted Method Test Set-UP



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### 7.3. Measurement Procedure:

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

During the measurement, the EUT was in communication with the station. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna from 4m to 1m. The reading was recorded and the field strength (E in dBuV/m) was calculated.

ERP in frequency band 824.2 –848.80MHz were measured using a substitution method. The EUT was replaced by a dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1850.2 –1909.8MHz were measured using a substitution method. The EUT was replaced by a horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

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

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

Spectrum setting:

1. Detector = Peak, marker the highest value of the detector by maximum hold, set RBW wide enough to capture the entire signal of emission, and  $\text{VBW} \geq 3 \times \text{RBW}$ .

Or,

2. KDB 971168 D01 Power Meas License Digital Systems v01 is adopted, and the procedure as listed under item 4, Measurement of the Average Power over the Fundamental Signal Bandwidth, is followed to set correspondingly for the acquisition of proper measurement data.

Set frequency = nominal signal center frequency;

Set span = 2 X occupied BW;

Set RBW  $\approx$  1~5% of the span, not to exceed 1 MHz

Set VBW = 3 x RBW;

Select average power (RMS) detector

Set sweep time and number of measurement points to achieve a minimum of 1 millisecond/pt integration time (ex. Point = 601 points, then sweep time =  $601 * 10^{-3} = 6\text{s}$ ).

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Activate trace averaging routine over a minimum of 10 sweeps;  
Activate marker/span pair and set span = signal or channel bandwidth;  
Activate the band/interval power marker function;  
Record the band power level;

Record adjusted value as the average signal power level. Then activate the occupied bandwidth measurement function.

#### 7.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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**7.5. Measurement Result: (Peak) –using option of peak measurement**

EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
GSM 850	H	824.20	128	V	24.58	3.96	-2.8	25.74	38.45
				H	22.45	3.96	-2.8	23.62	38.45
		836.60	190	V	25	4	-2.82	26.18	38.45
				H	22.17	4	-2.82	23.35	38.45
		848.80	251	V	25.26	4.03	-2.84	<b>26.45</b>	38.45
				H	21.88	4.03	-2.84	23.07	38.45
	E1	824.20	128	V	19.46	3.96	-2.8	20.63	38.45
				H	23.1	3.96	-2.8	24.26	38.45
		836.60	190	V	19.32	4	-2.82	20.49	38.45
				H	23.09	4	-2.82	24.26	38.45
		848.80	251	V	20.61	4.03	-2.84	21.8	38.45
				H	22.84	4.03	-2.84	24.03	38.45
	E2	824.20	128	V	20.69	3.96	-2.8	21.86	38.45
				H	24.35	3.96	-2.8	25.51	38.45
		836.60	190	V	19.7	4	-2.82	20.88	38.45
				H	24.54	4	-2.82	25.72	38.45
		848.80	251	V	19.51	4.03	-2.84	20.7	38.45
				H	24.52	4.03	-2.84	25.7	38.45

**Remark :**

- (1) The RBW,VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
GSM 1900	H	1850.20	512	V	11.48	4.17	-4.29	29.31	33.00
				H	9.56	4.51	-4.29	28.96	33.00
		1880.00	661	V	11.78	4.13	-4.33	29.19	33.00
				H	9.8	4.44	-4.33	28.67	33.00
		1909.80	810	V	12.08	4.09	-4.37	28.86	33.00
				H	10.04	4.36	-4.37	26.6	33.00
	E1	1850.20	512	V	11.48	4.17	-4.29	27.26	33.00
				H	9.56	4.51	-4.29	21.16	33.00
		1880.00	661	V	11.78	4.13	-4.33	<b>30.95</b>	33.00
				H	9.8	4.44	-4.33	23.23	33.00
		1909.80	810	V	12.08	4.09	-4.37	28.22	33.00
				H	10.04	4.36	-4.37	21.77	33.00
	E2	1850.20	512	V	11.48	4.17	-4.29	26.36	33.00
				H	9.56	4.51	-4.29	27	33.00
		1880.00	661	V	11.78	4.13	-4.33	28.34	33.00
				H	9.8	4.44	-4.33	29.31	33.00
		1909.80	810	V	12.08	4.09	-4.37	28.18	33.00
				H	10.04	4.36	-4.37	28.35	33.00

**Remark :**

- (1) The RBW,VBW of SPA for measurement RBW=300K, VBW=1MHz

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EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
GPRS 850	H	824.20	128	V	24.58	3.96	-2.8	25.74	38.45
				H	22.38	3.96	-2.8	23.55	38.45
		836.60	190	V	24.98	4	-2.82	26.15	38.45
				H	22.23	4	-2.82	23.4	38.45
		848.80	251	V	25.28	4.03	-2.84	<b>26.47</b>	38.45
				H	21.9	4.03	-2.84	23.08	38.45
	E1	824.20	128	V	19.49	3.96	-2.8	20.66	38.45
				H	23.16	3.96	-2.8	24.32	38.45
		836.60	190	V	19.15	4	-2.82	20.33	38.45
				H	23.14	4	-2.82	24.31	38.45
		848.80	251	V	20.49	4.03	-2.84	21.68	38.45
				H	22.91	4.03	-2.84	24.09	38.45
	E2	824.20	128	V	20.68	3.96	-2.8	21.85	38.45
				H	24.4	3.96	-2.8	25.57	38.45
		836.60	190	V	19.76	4	-2.82	20.94	38.45
				H	24.54	4	-2.82	25.72	38.45
		848.80	251	V	19.56	4.03	-2.84	20.75	38.45
				H	24.51	4.03	-2.84	25.7	38.45

**Remark :**

- (1) The RBW,VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
GPRS 1900	H	1850.20	512	V	11.48	4.17	-4.29	29.26	33.00
				H	9.56	4.51	-4.29	29.03	33.00
		1880.00	661	V	11.78	4.13	-4.33	28.9	33.00
				H	9.8	4.44	-4.33	28.75	33.00
		1909.80	810	V	12.08	4.09	-4.37	28.86	33.00
				H	10.04	4.36	-4.37	26.86	33.00
	E1	1850.20	512	V	11.48	4.17	-4.29	27.28	33.00
				H	9.56	4.51	-4.29	20.91	33.00
		1880.00	661	V	11.78	4.13	-4.33	<b>30.82</b>	33.00
				H	9.8	4.44	-4.33	23.11	33.00
		1909.80	810	V	12.08	4.09	-4.37	28.4	33.00
				H	10.04	4.36	-4.37	21.53	33.00
	E2	1850.20	512	V	11.48	4.17	-4.29	27.45	33.00
				H	9.56	4.51	-4.29	28.55	33.00
		1880.00	661	V	11.78	4.13	-4.33	28.4	33.00
				H	9.8	4.44	-4.33	29.06	33.00
		1909.80	810	V	12.08	4.09	-4.37	27.26	33.00
				H	10.04	4.36	-4.37	28.13	33.00

**Remark :**

- (1) The RBW,VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	ERP	Limit
		MHz		V/H	dBm	dBd	dB	dBm	dBm
EDGE 850	H	824.20	128	V	21.82	3.96	-2.8	22.99	38.45
				H	18.84	3.96	-2.8	20.01	38.45
		836.60	190	V	22.56	4	-2.82	23.74	38.45
				H	18.71	4	-2.82	19.88	38.45
		848.80	251	V	23.1	4.03	-2.84	<b>24.28</b>	38.45
				H	18.59	4.03	-2.84	19.78	38.45
	E1	824.20	128	V	15.44	3.96	-2.8	16.6	38.45
				H	19.93	3.96	-2.8	21.1	38.45
		836.60	190	V	15.57	4	-2.82	16.75	38.45
				H	20.14	4	-2.82	21.32	38.45
		848.80	251	V	17.37	4.03	-2.84	18.56	38.45
				H	20.14	4.03	-2.84	21.33	38.45
	E2	824.20	128	V	17.18	3.96	-2.8	18.34	38.45
				H	21.95	3.96	-2.8	23.11	38.45
		836.60	190	V	16.4	4	-2.82	17.58	38.45
				H	22.5	4	-2.82	23.67	38.45
		848.80	251	V	16.47	4.03	-2.84	17.65	38.45
				H	22.42	4.03	-2.84	23.61	38.45

**Remark :**

- (1) The RBW,VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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EUT				Measurement					
Operation Band	Pol.	Fundamental Frequency	CH	Antenna Pol.	S.G. Output	Antenna Gain	Cable Loss	EIRP	Limit
		MHz		V/H	dBm	dBi	dB	dBm	dBm
EDGE 1900	H	1850.20	512	V	11.48	4.17	-4.29	28.02	33.00
				H	9.56	4.51	-4.29	27.81	33.00
		1880.00	661	V	11.78	4.13	-4.33	27.68	33.00
				H	9.8	4.44	-4.33	27.57	33.00
		1909.80	810	V	12.08	4.09	-4.37	27.58	33.00
				H	10.04	4.36	-4.37	25.38	33.00
	E1	1850.20	512	V	11.48	4.17	-4.29	25.96	33.00
				H	9.56	4.51	-4.29	19.4	33.00
		1880.00	661	V	11.78	4.13	-4.33	<b>29.58</b>	33.00
				H	9.8	4.44	-4.33	21.78	33.00
		1909.80	810	V	12.08	4.09	-4.37	26.84	33.00
				H	10.04	4.36	-4.37	20.34	33.00
	E2	1850.20	512	V	11.48	4.17	-4.29	26.16	33.00
				H	9.56	4.51	-4.29	27.19	33.00
		1880.00	661	V	11.78	4.13	-4.33	27.15	33.00
				H	9.8	4.44	-4.33	27.74	33.00
		1909.80	810	V	12.08	4.09	-4.37	26.82	33.00
				H	10.04	4.36	-4.37	27.23	33.00

**Remark :**

- (1) The RBW,VBW of SPA for measurement RBW=300 KHz, VBW=1MHz

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## 8. OCCUPIED BANDWIDTH MEASUREMENT

### 8.1. Standard Applicable:

According to §FCC 2.1049.

### 8.2. Test Set-up:

Refer to section 6.2 in this report

### 8.3. Measurement Procedure:

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW was set to about 1% of emission BW, VBW= 3 times RBW, -20dBc display line was placed on the screen (or 20dB bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace. Then set RBW to 99% bandwidth, RBW= 1%, VBW= 3 RBW, with span  $> 2 * \text{Signal BW}$ , set % Power = 99%.

*NOTE: For the plot of bandwidth measurement, the marker of the 99% bandwidth is diamond-shape while the marker of the 20dB BW is arrow-mark*

### 8.4. Measurement Equipment Used:

Refer to section 2.4 in this report

### 8.5. Measurement Result:

Refer to next pages.

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EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GSM 850	824.20	128	0.248
	836.60	190	0.243
	848.80	251	0.247

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GSM 1900	1850.20	512	0.242
	1880.00	661	0.247
	1909.80	810	0.245

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GPRS 850	824.20	128	0.244
	836.60	190	0.242
	848.80	251	0.246

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GPRS 1900	1850.20	512	0.246
	1880.00	661	0.246
	1909.80	810	0.247

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EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
EDGE 850	824.20	128	0.248
	836.60	190	0.249
	848.80	251	0.246

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
EDGE 1900	1850.20	512	0.248
	1880.00	661	0.247
	1909.80	810	0.247

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Figure 8-1: GSM 850 Channel Low

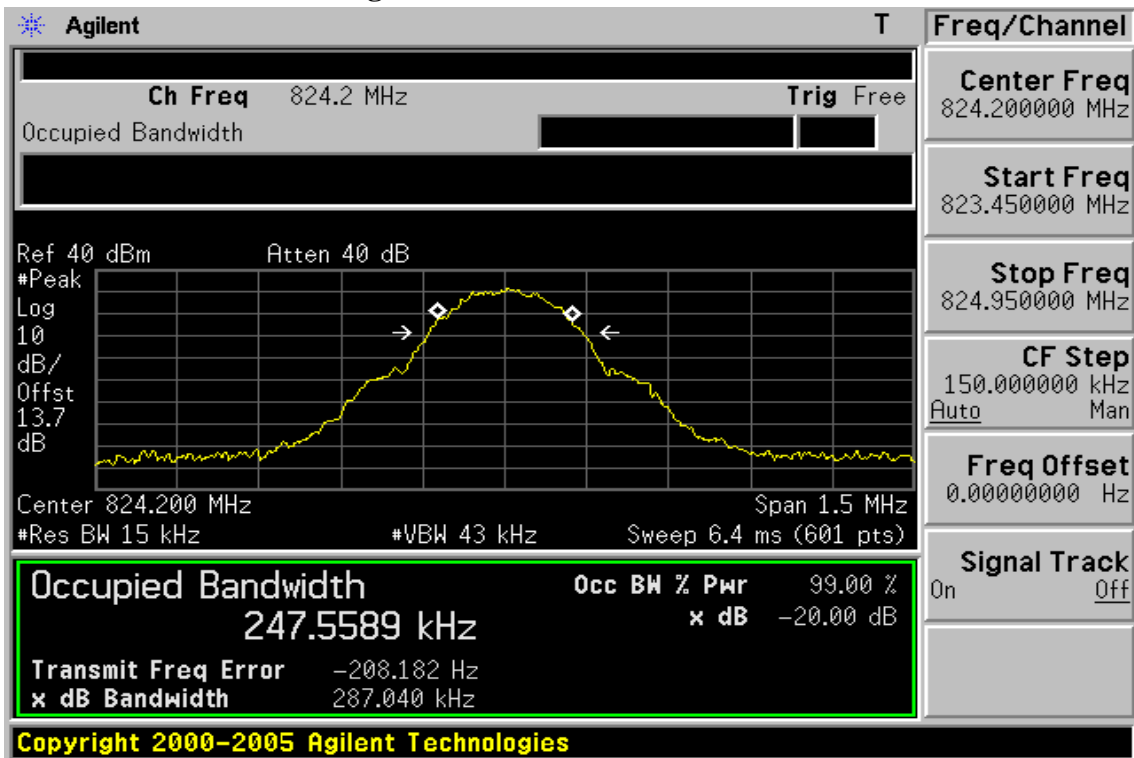
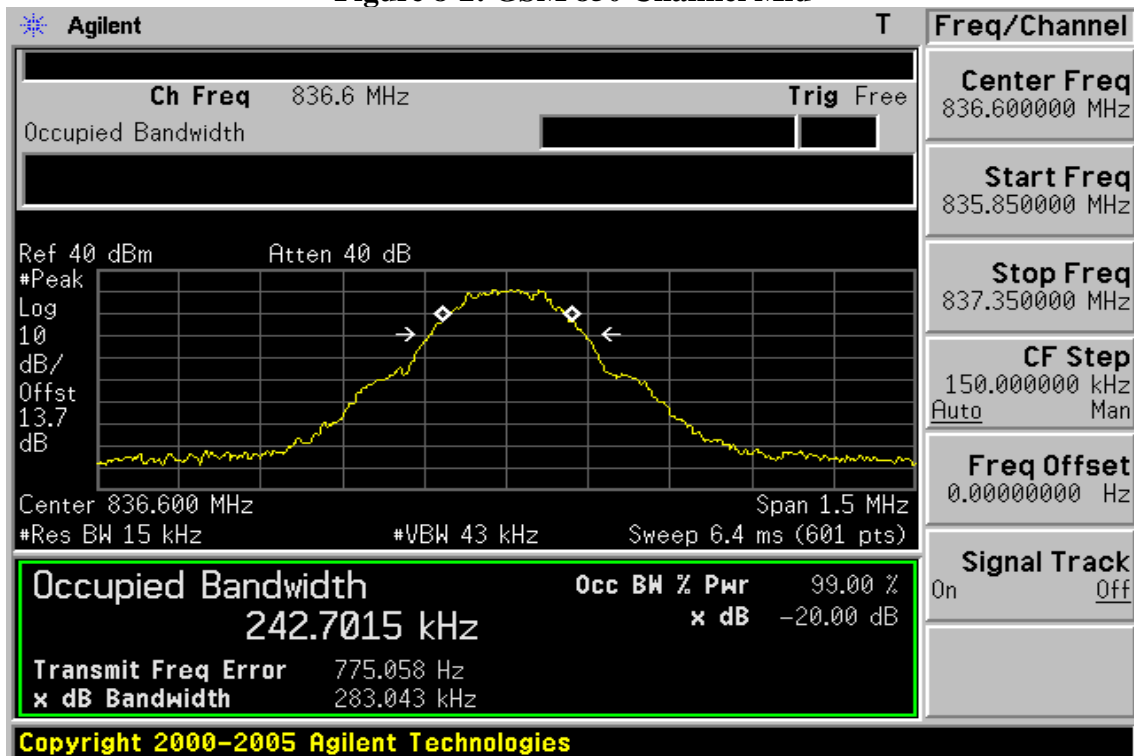


Figure 8-2: GSM 850 Channel Mid



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Figure 8-3: GSM 850 Channel High

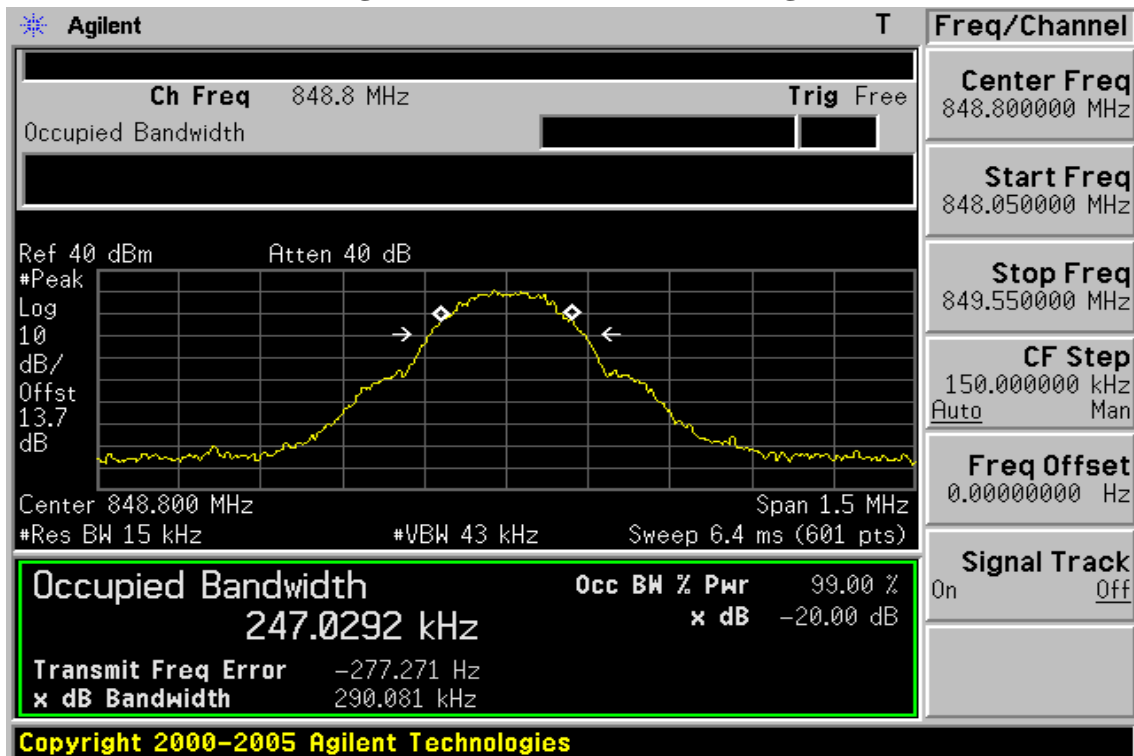
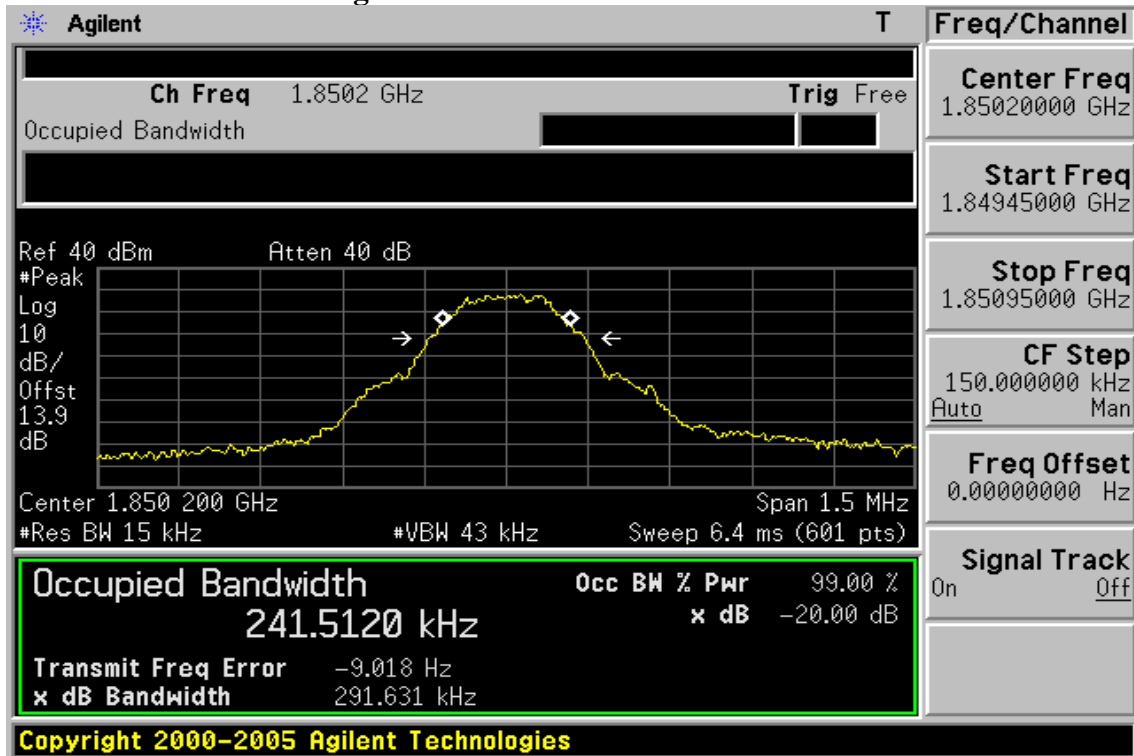


Figure 8-4: GSM 1900 Channel Low



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Figure 8-5: GSM 1900 Channel Mid

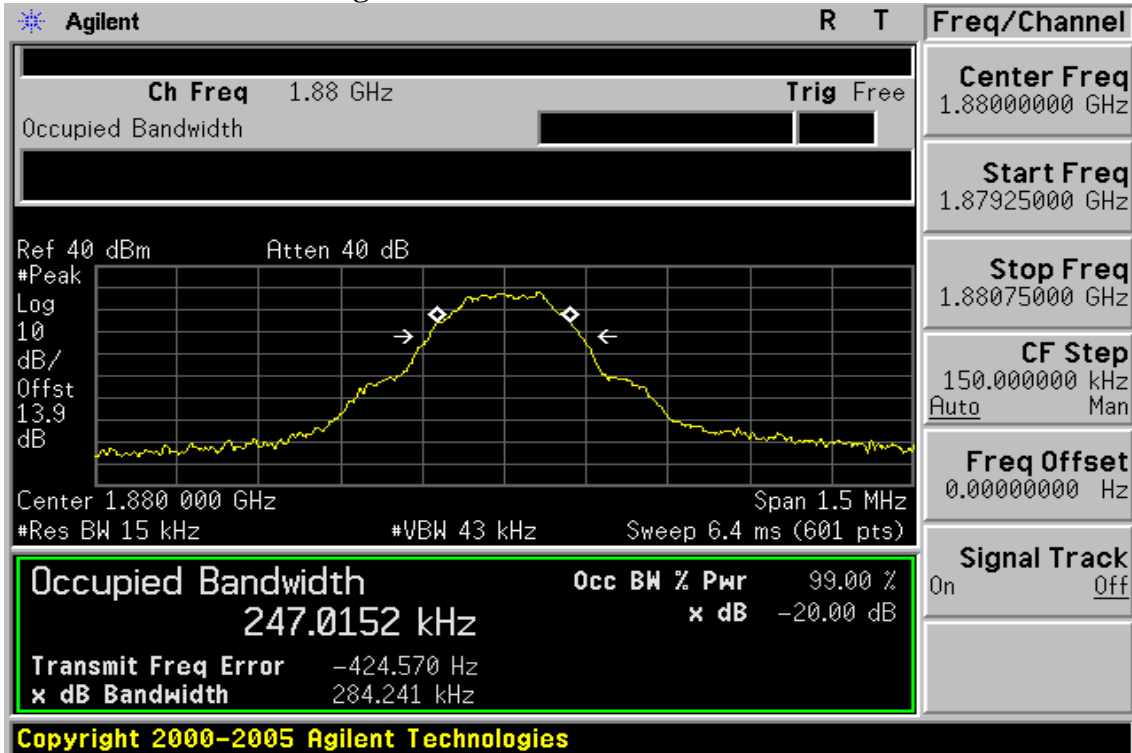
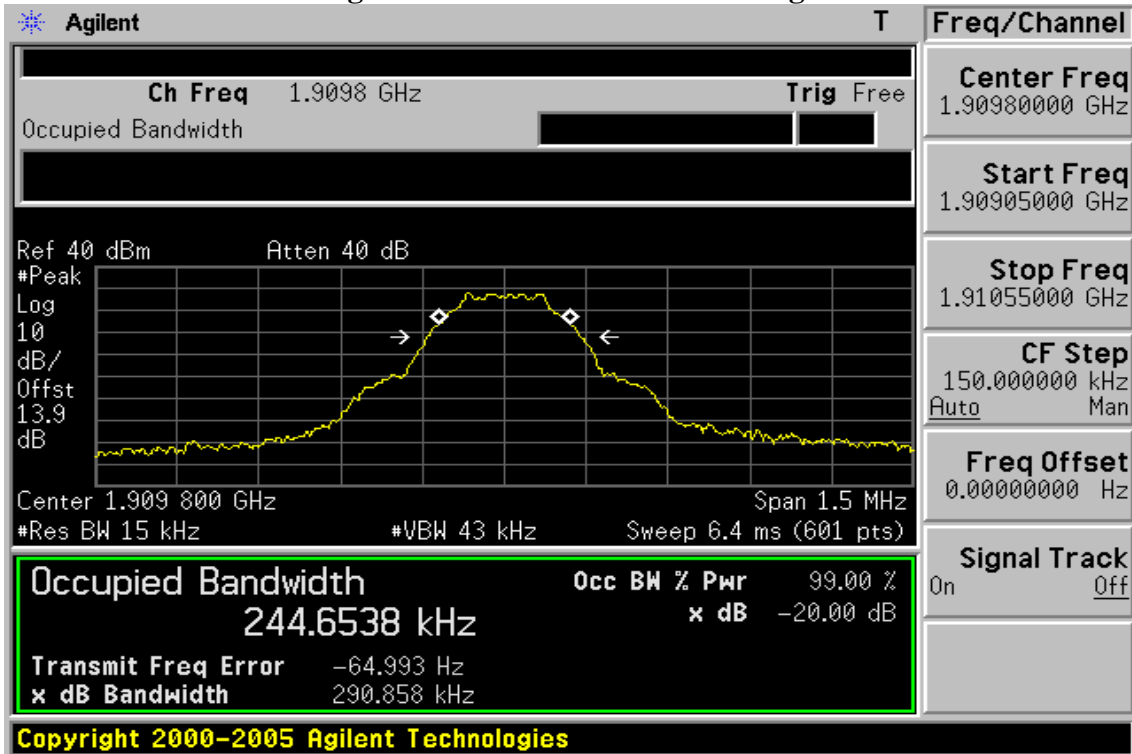


Figure 8-6: GSM 1900 Channel High



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Figure 8-7: GPRS 850 Channel Low

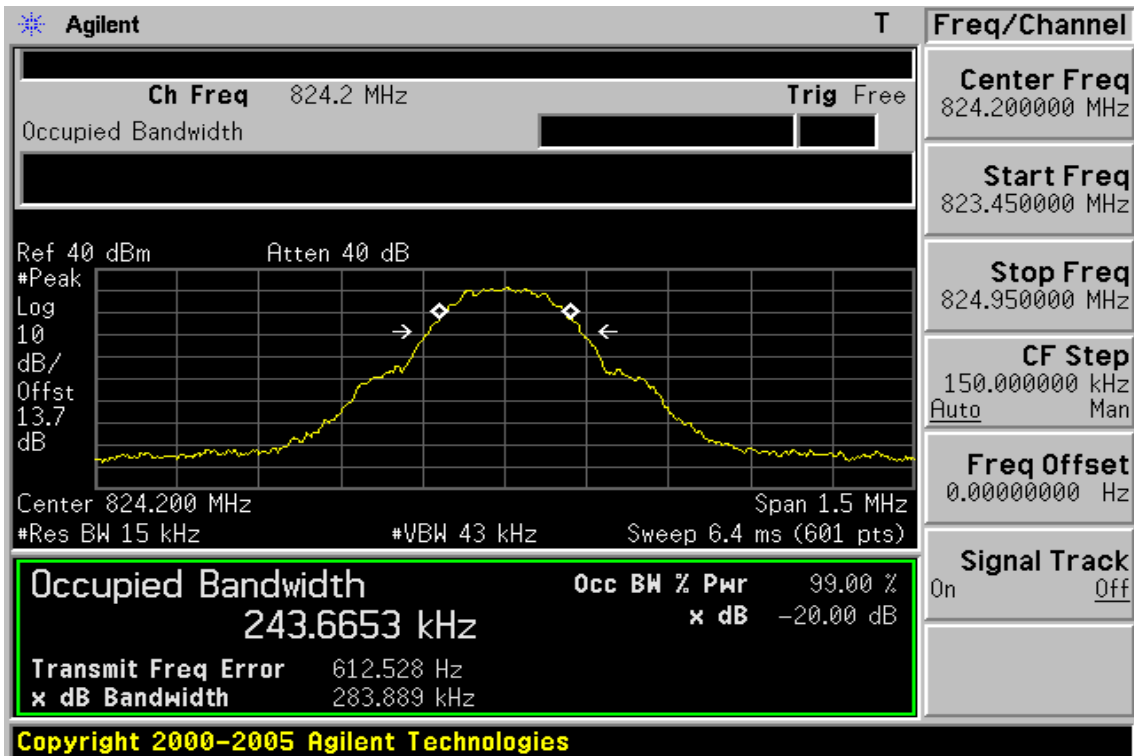
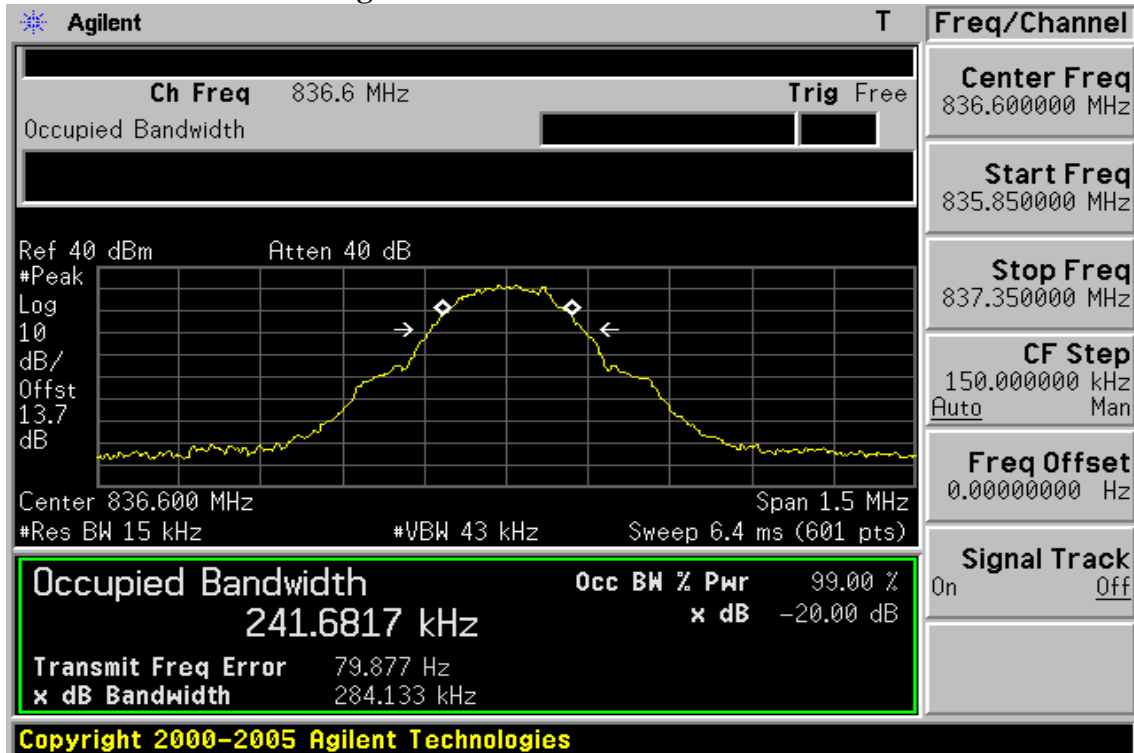


Figure 8-8: GPRS 850 Channel Mid



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GPRS Figure 8-9: GPRS 850 Channel High

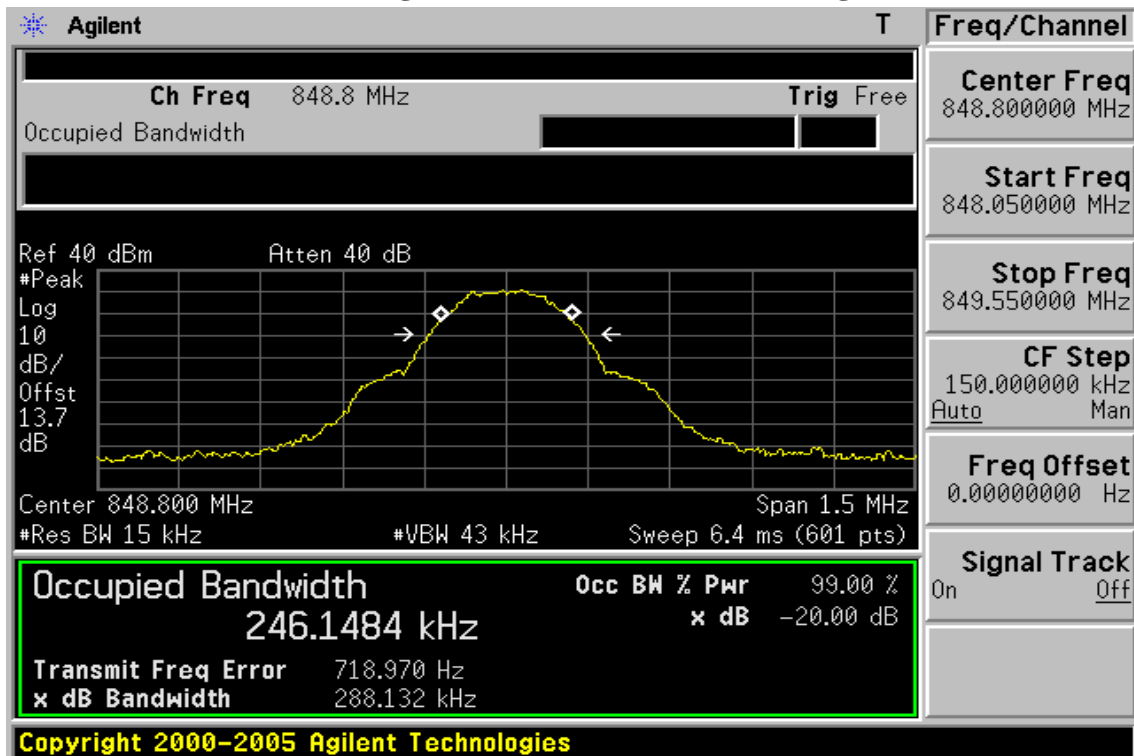
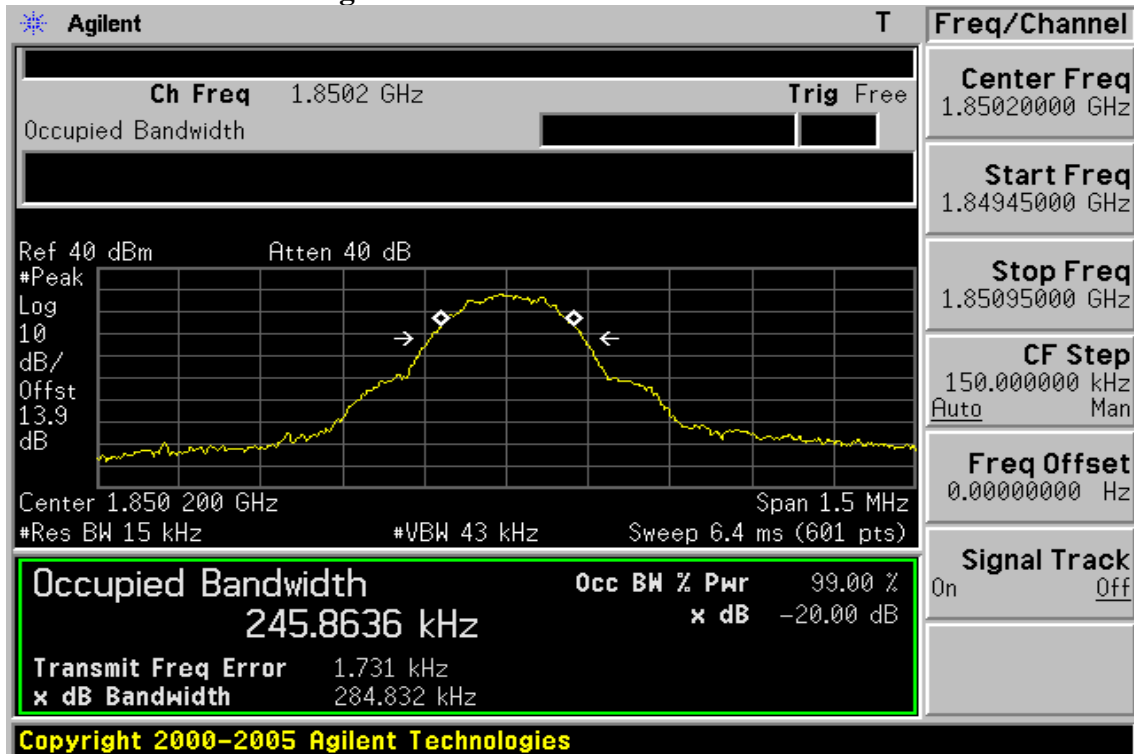


Figure 8-10: GPRS 1900 Channel Low



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Figure 8-11: GPRS 1900 Channel Mid

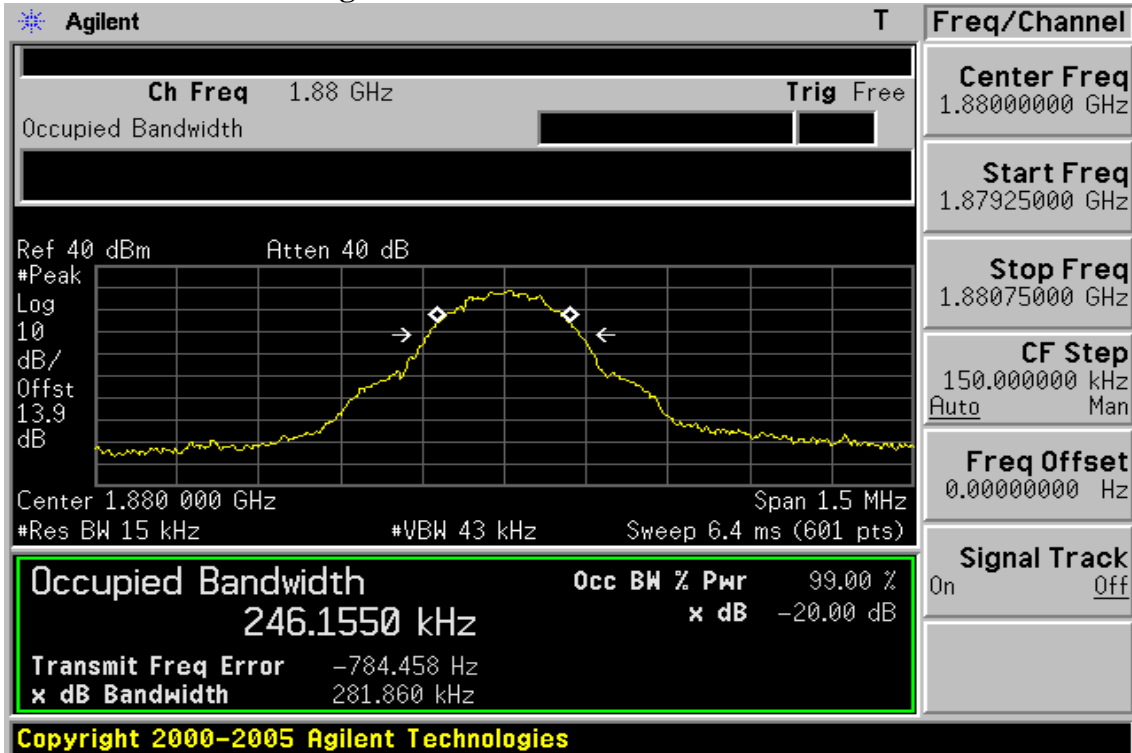
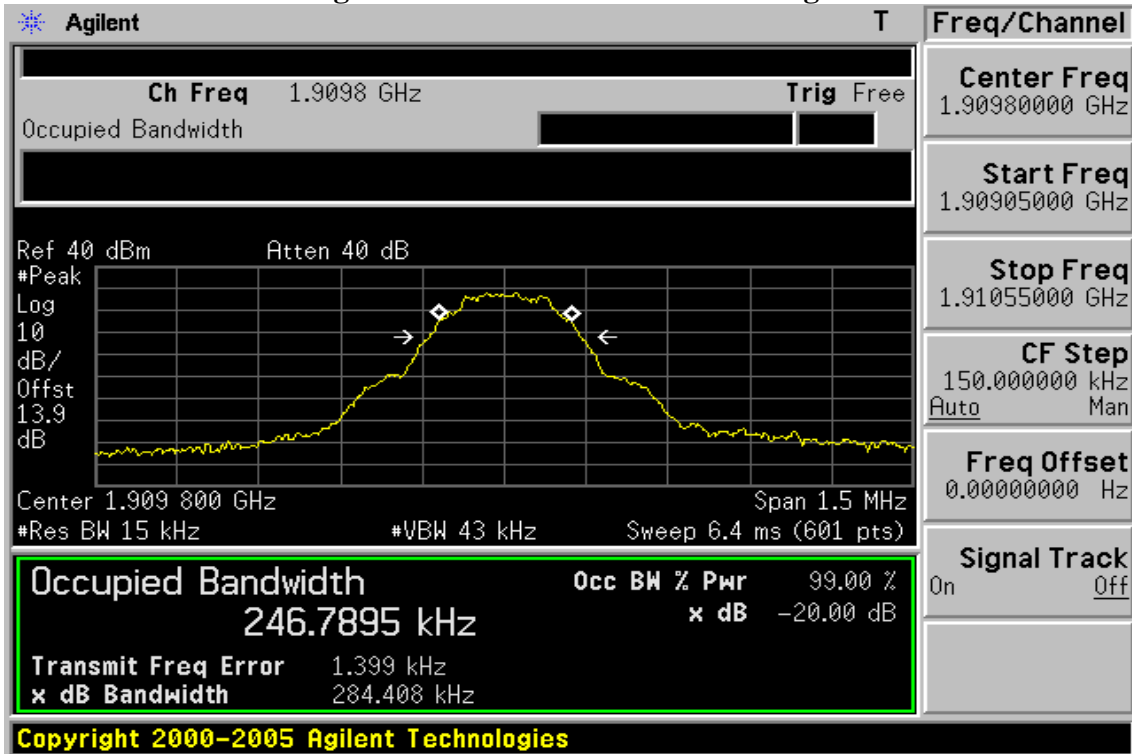


Figure 8-12: GPRS 1900 Channel High



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Figure 8-13: EDGE 850 Channel Low

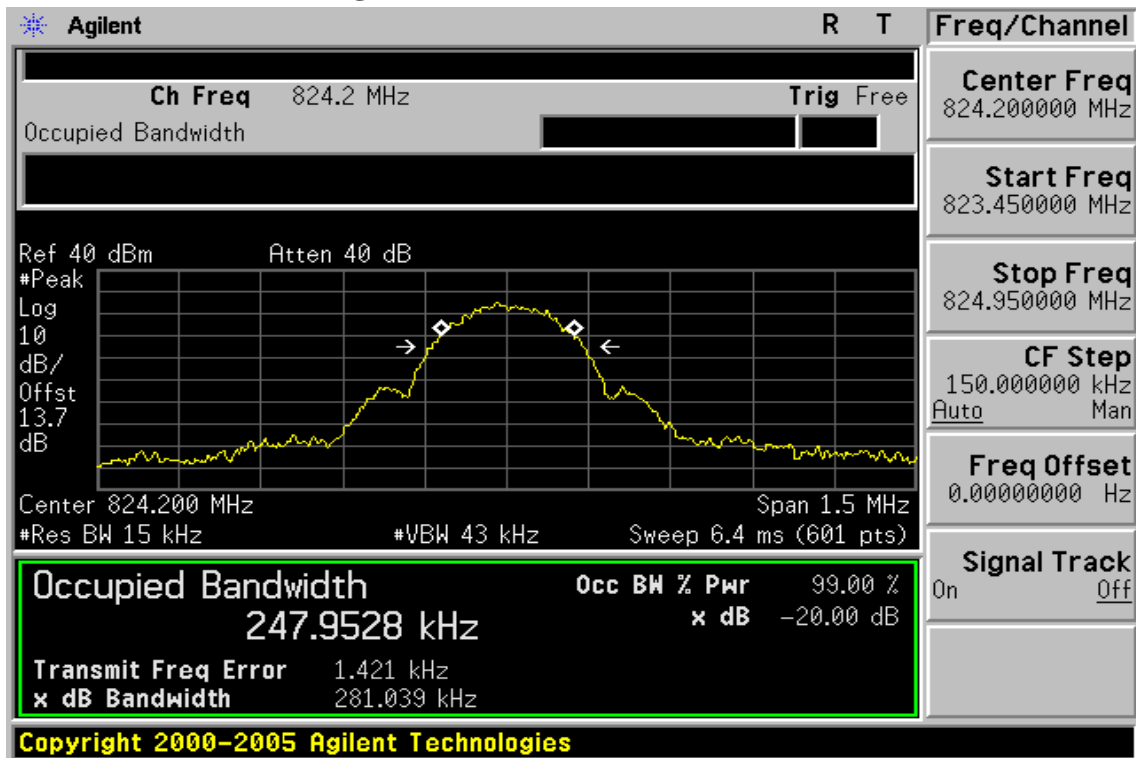
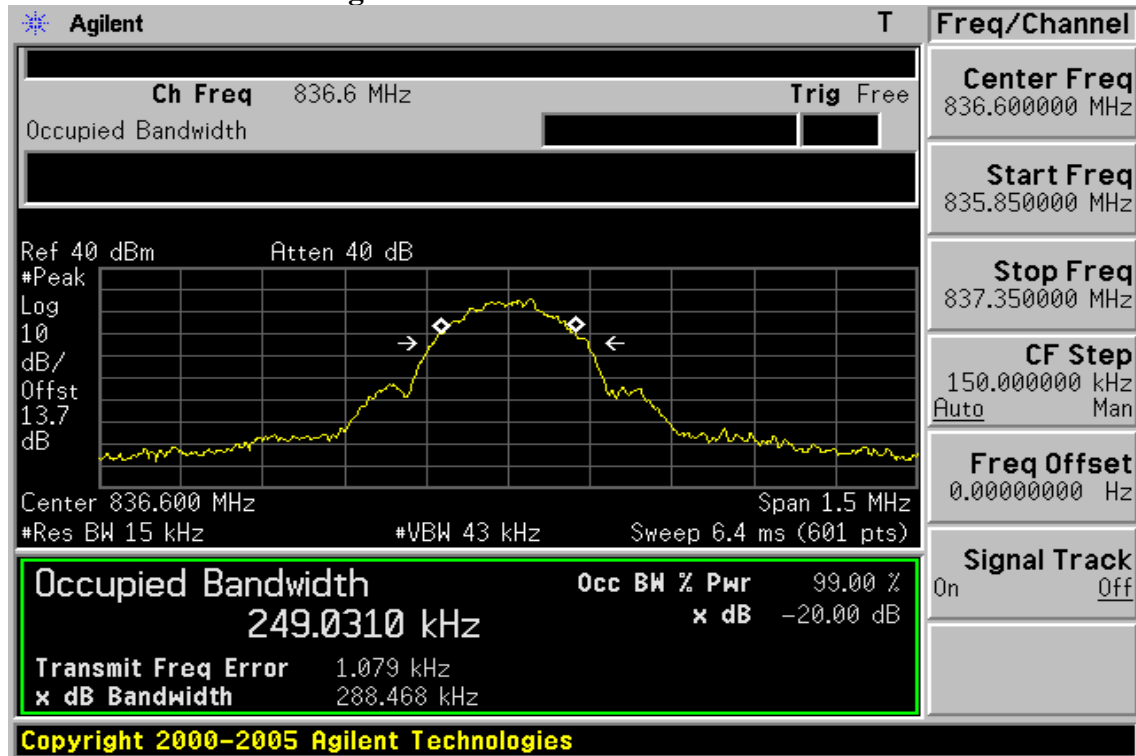


Figure 8-14: EDGE 850 Channel Mid



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GPRS Figure 8-15: EDGE 850 Channel High

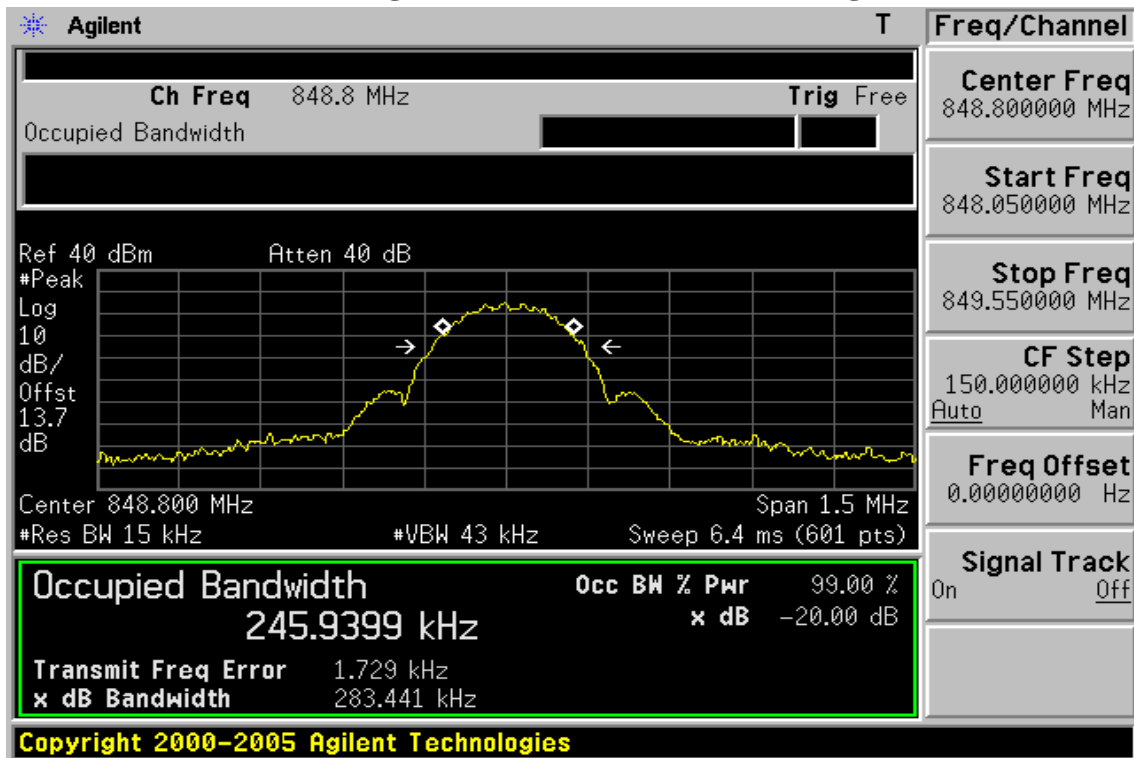
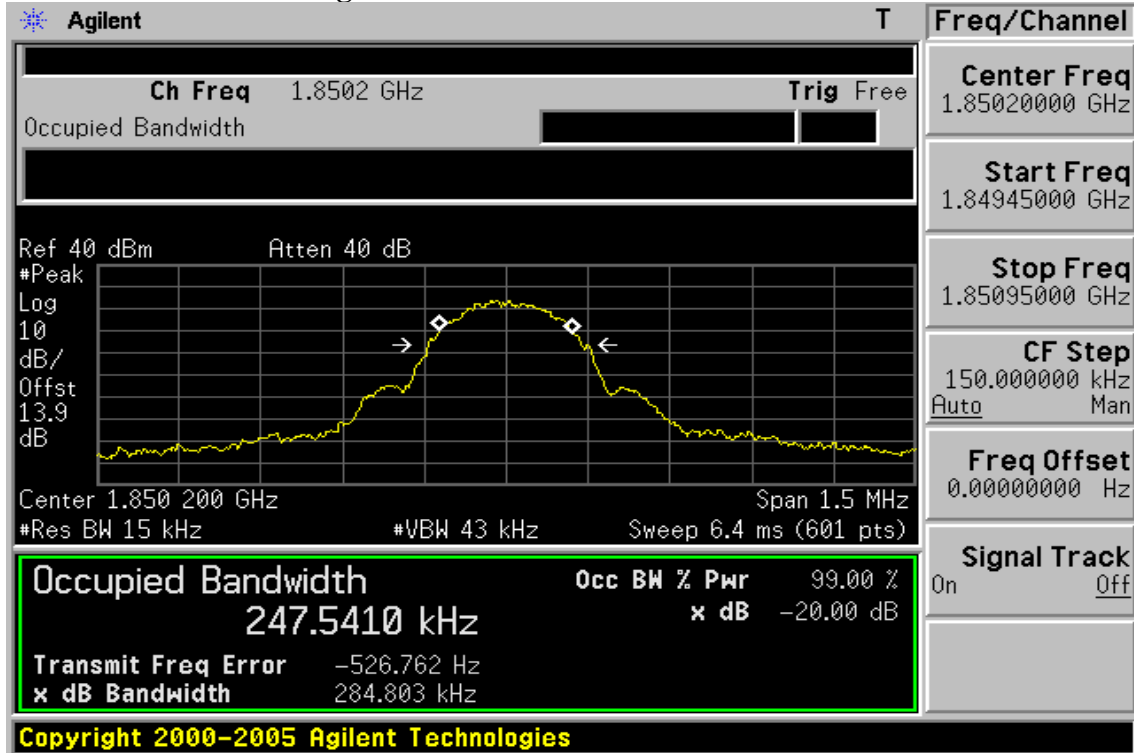


Figure 8-16: EDGE 1900 Channel Low



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Figure 8-17: EDGE 1900 Channel Mid

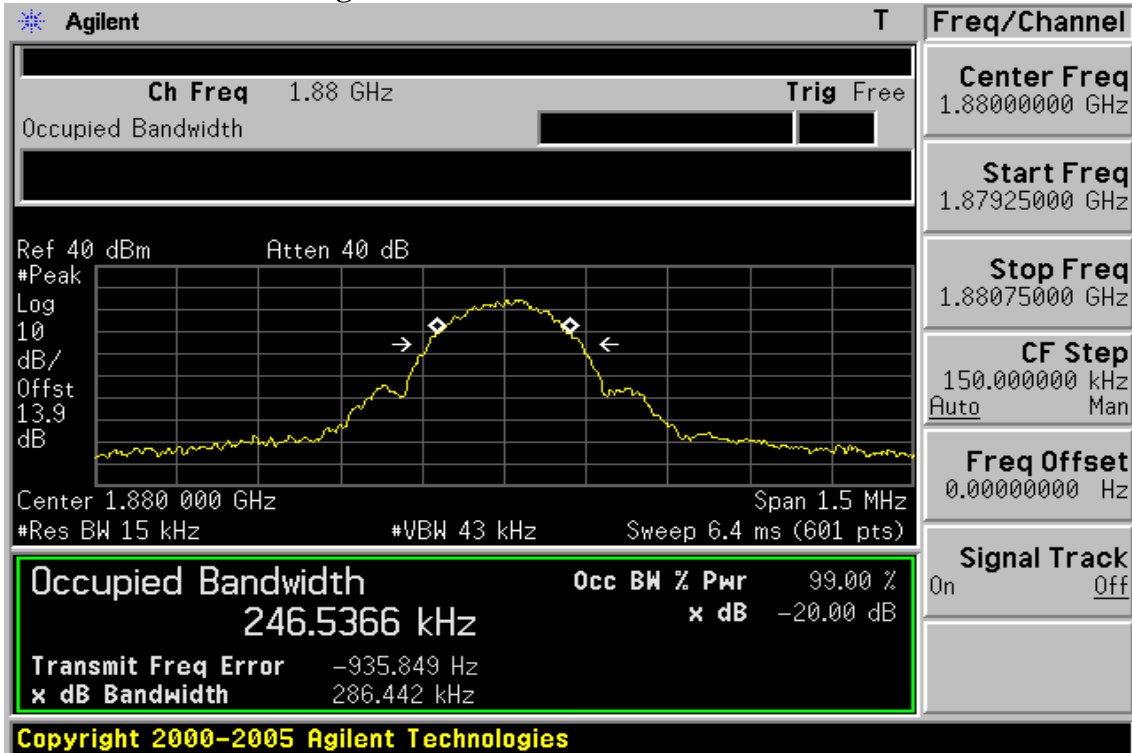
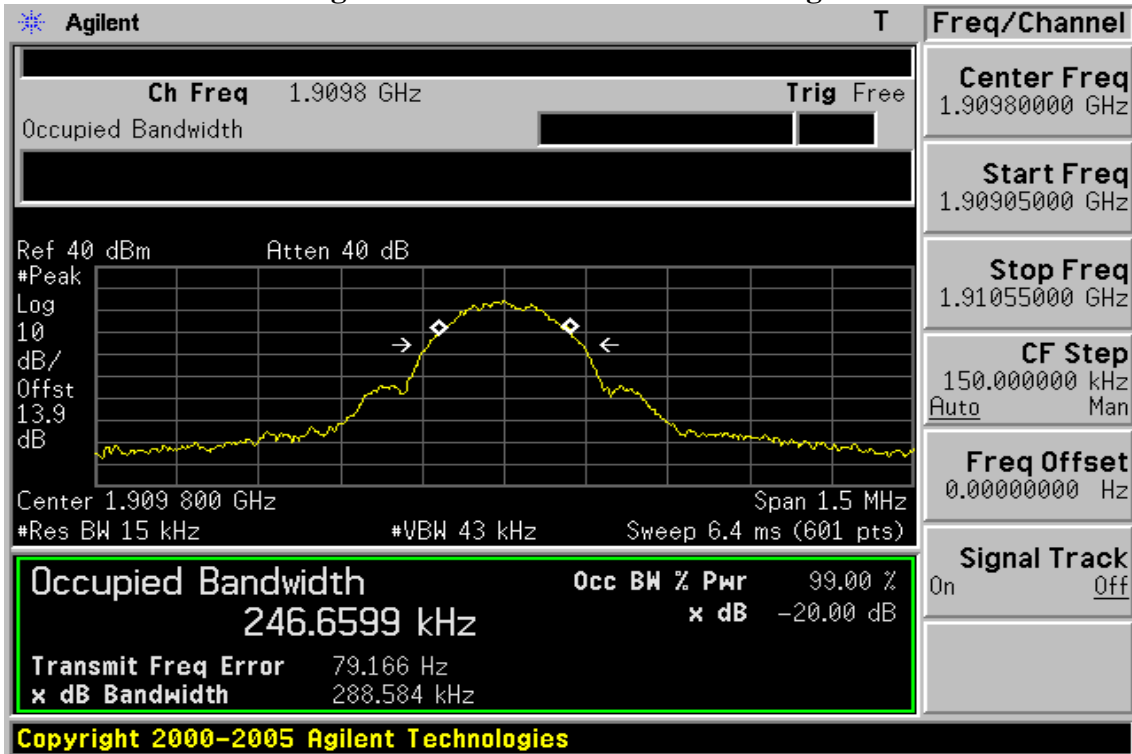


Figure 8-18: EDGE 1900 Channel High



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## 9. OUT OF BAND EMISSION AT ANTENNA TERMINALS

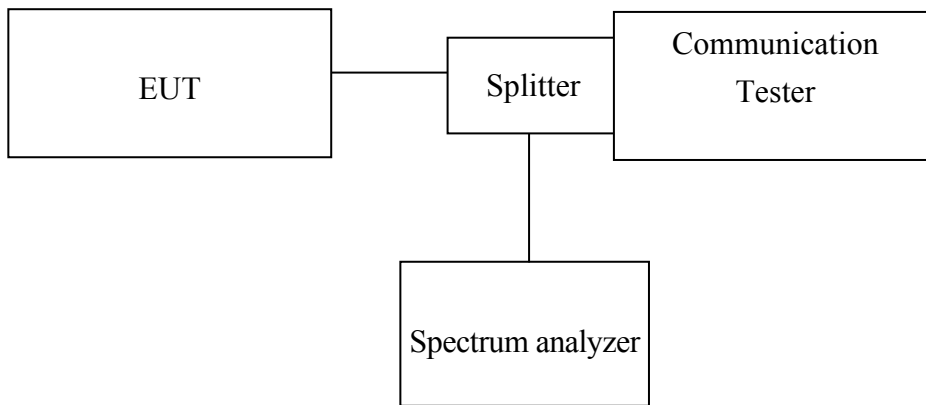
### 9.1. Standard Applicable:

According to FCC §2.1051.

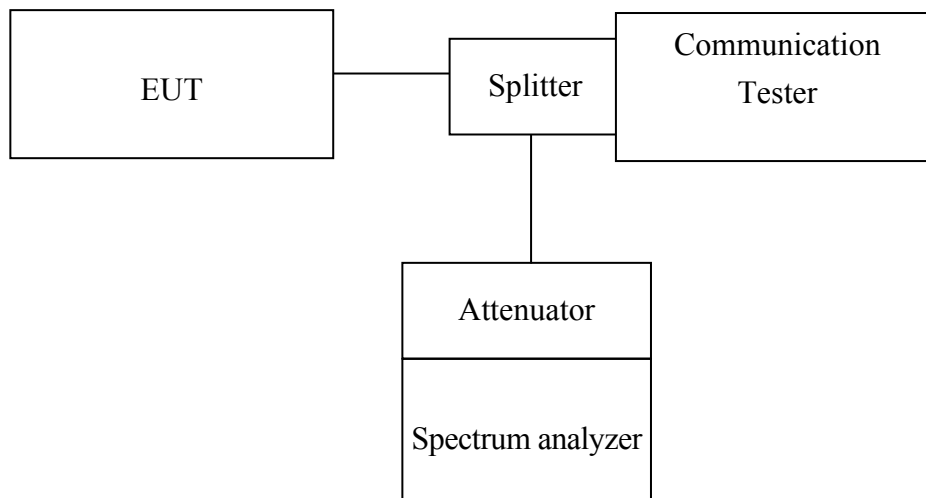
FCC §22.917(a), §24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm).

### 9.2. Test SET-UP:

#### Out of band emission



#### Band Edge



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### 9.3. Measurement Procedure:

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

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

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

(1) Compliance with this provision is based on the use of measurement instrumentation employing a resolution bandwidth of 1 megahertz or greater. Limit, -13dBm

### Conducted Emission:

- 1、 To connect Antenna Port of EUT to Spectrum.
- 2、 Set RBW = 1MHz & VBW = 1MHz on Spectrum.
- 3、 Sweep the frequency to determine spurious emission as seen on spectrum from span of 30 to 1G, 1G to 2.5G, 2.5G to 7.5G, 7.5G to 10G ,10G to 15G and 15G to 20GHz
- 4、 Via Software, combine 6 spans of frequency range into one plot

### 9.4. Measurement Equipment Used:

Refer to section 2.4 in this report

### 9.5. Measurement Result:

Refer to next pages.

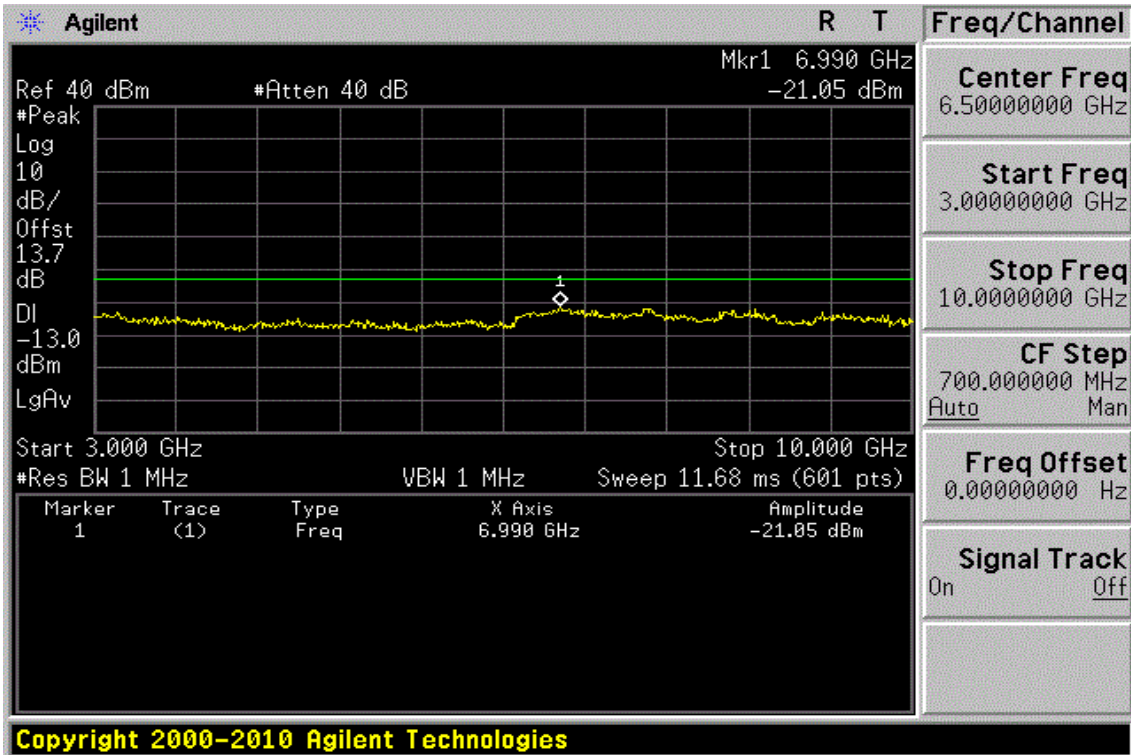
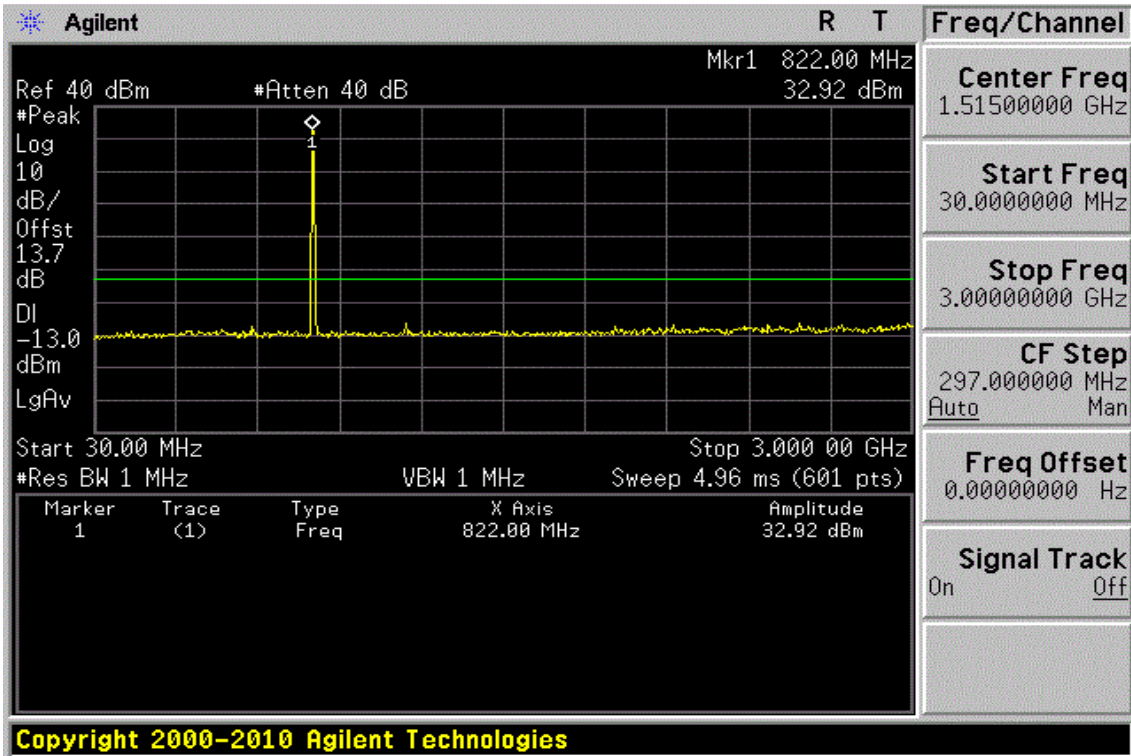
**NOTE: the occurrence of the spike on the conducted emission is the signal of the fundamental emission.**

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Figure 9-1: Out of Band emission at antenna terminals – GSM 850 Channel Lowest

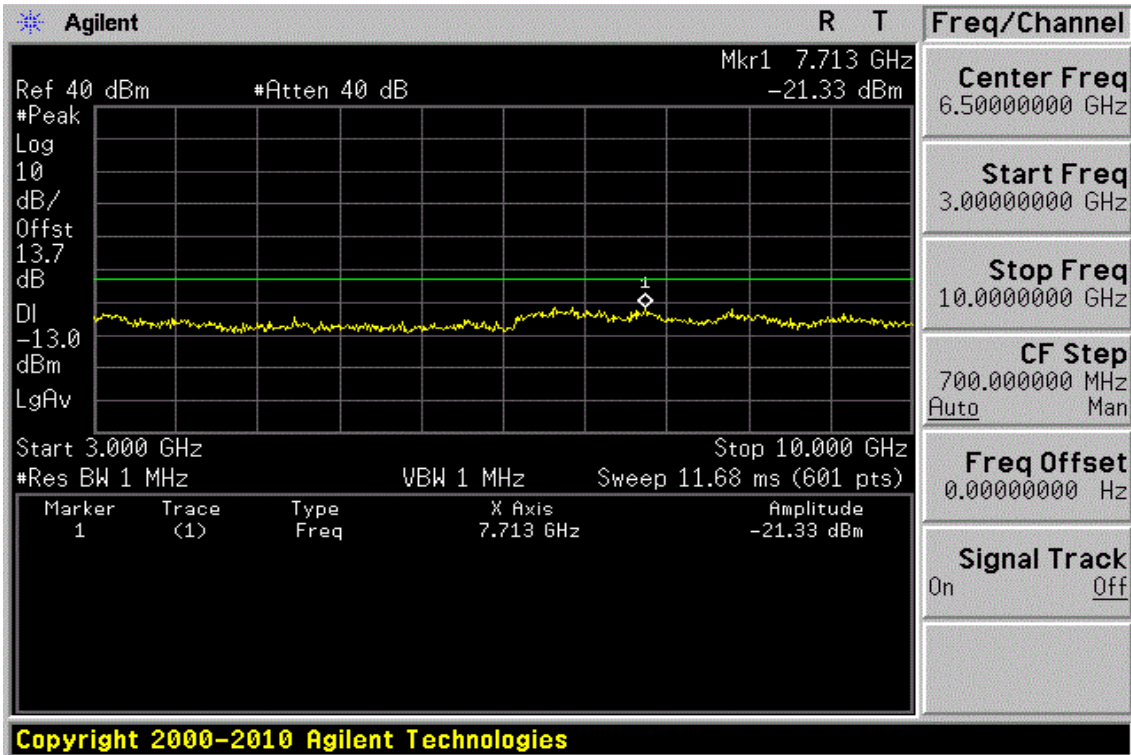
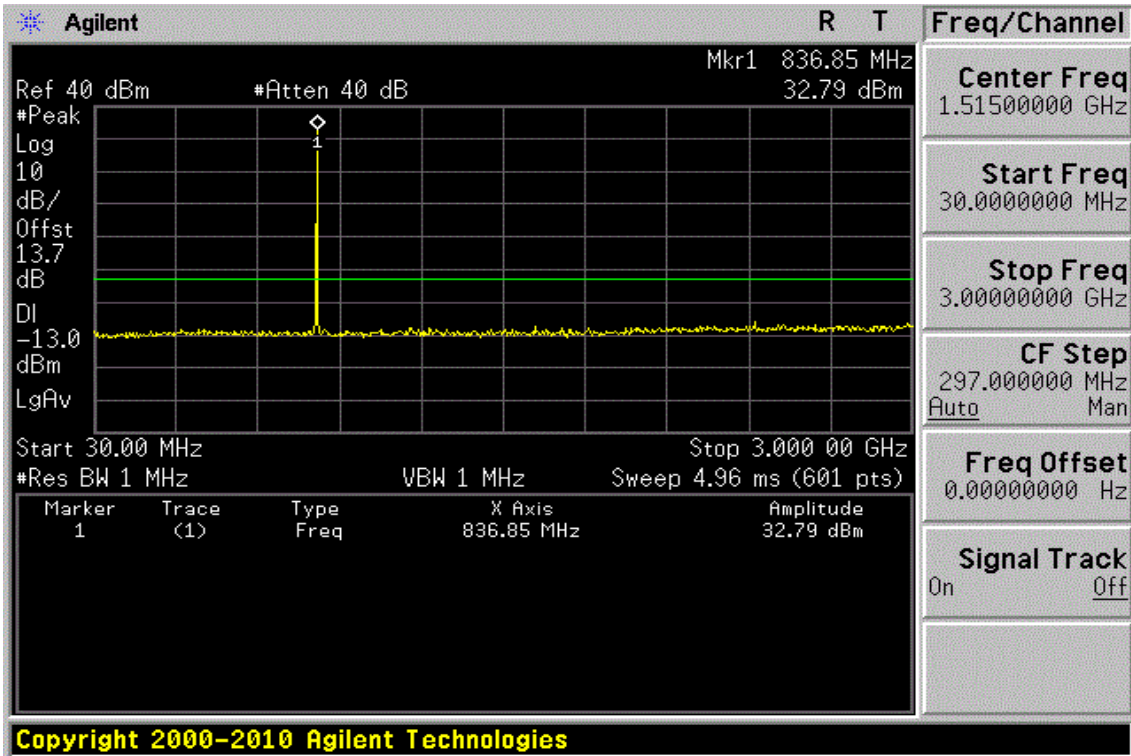


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**Figure 9-2: Out of Band emission at antenna terminals – GSM 850 Channel Mid**



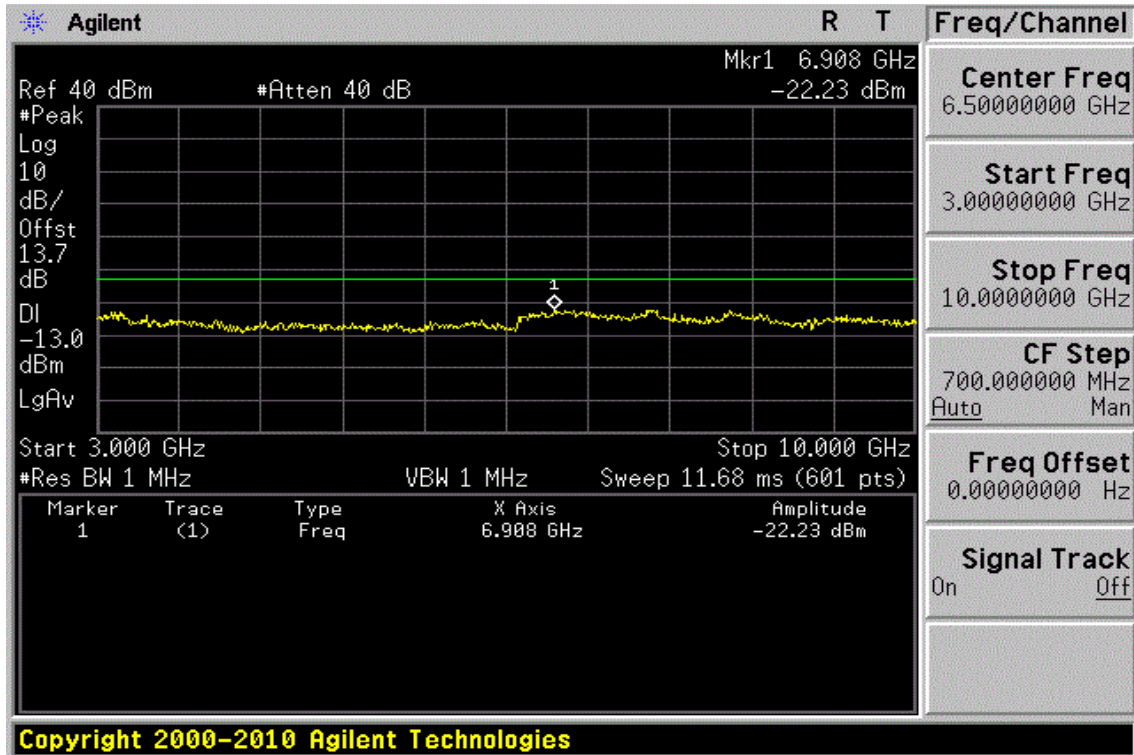
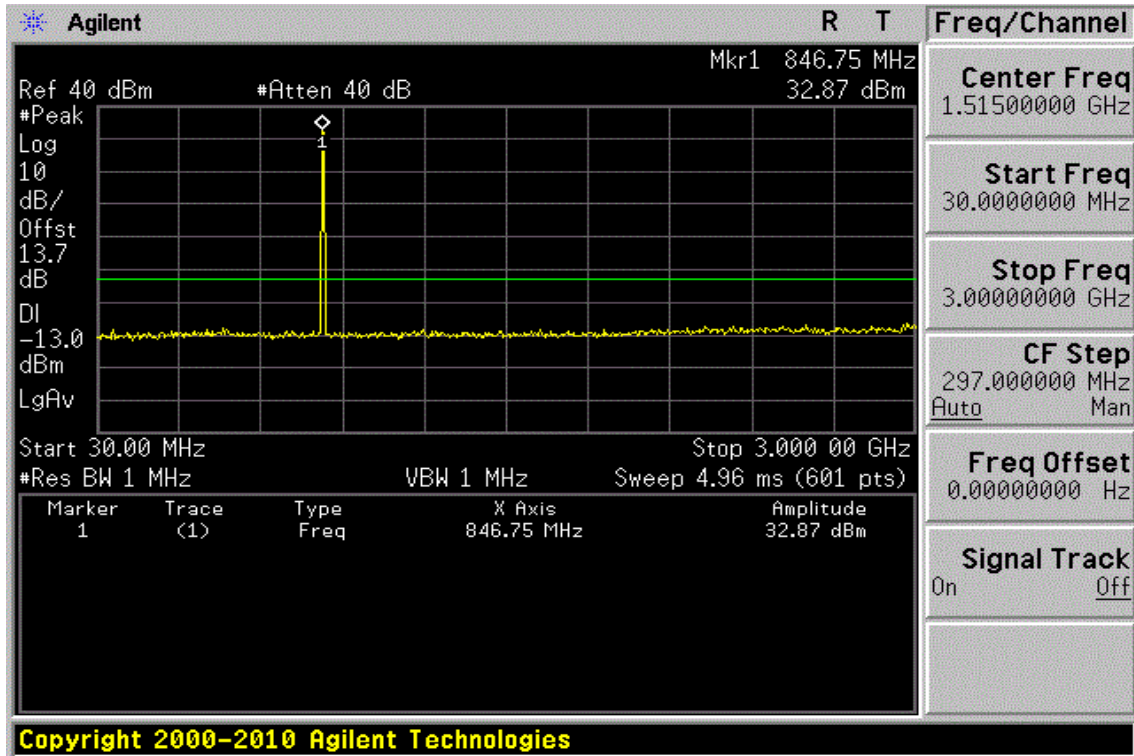
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Figure 9-3: Out of Band emission at antenna terminals – GSM 850 Channel Highest



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**Out of Band emission at antenna terminals – GSM 850**

Fundamental Frequency :824.2 MHz Engineer :Nick  
 Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1648.40	H	---	-13.00	---
2472.60	H	---	-13.00	---
3296.80	H	---	-13.00	---
4121.00	H	---	-13.00	---
4945.20	H	---	-13.00	---
5769.40	H	---	-13.00	---
6593.60	H	---	-13.00	---
6990.00	S	-21.05	-13.00	8.05
7417.80	H	---	-13.00	---
8242.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :836.6 MHz Engineer :Nick  
 Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1673.20	H	---	-13.00	---
2509.80	H	---	-13.00	---
3346.40	H	---	-13.00	---
4183.00	H	---	-13.00	---
5019.60	H	---	-13.00	---
5856.20	H	---	-13.00	---
6692.80	H	---	-13.00	---
7529.40	H	---	-13.00	---
7713.00	S	-21.33	-13.00	8.33
8366.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :848.8MHz Engineer :Nick  
 Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1697.60	H	---	-13.00	---
2546.40	H	---	-13.00	---
3395.20	H	---	-13.00	---
4244.00	H	---	-13.00	---
5092.80	H	---	-13.00	---
5941.60	H	---	-13.00	---
6790.40	H	---	-13.00	---
6908.00	S	-22.23	-13.00	9.23
7639.20	H	---	-13.00	---
8488.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Figure 9-4: Band edge emission at antenna terminals – GSM 850 Channel Lowest

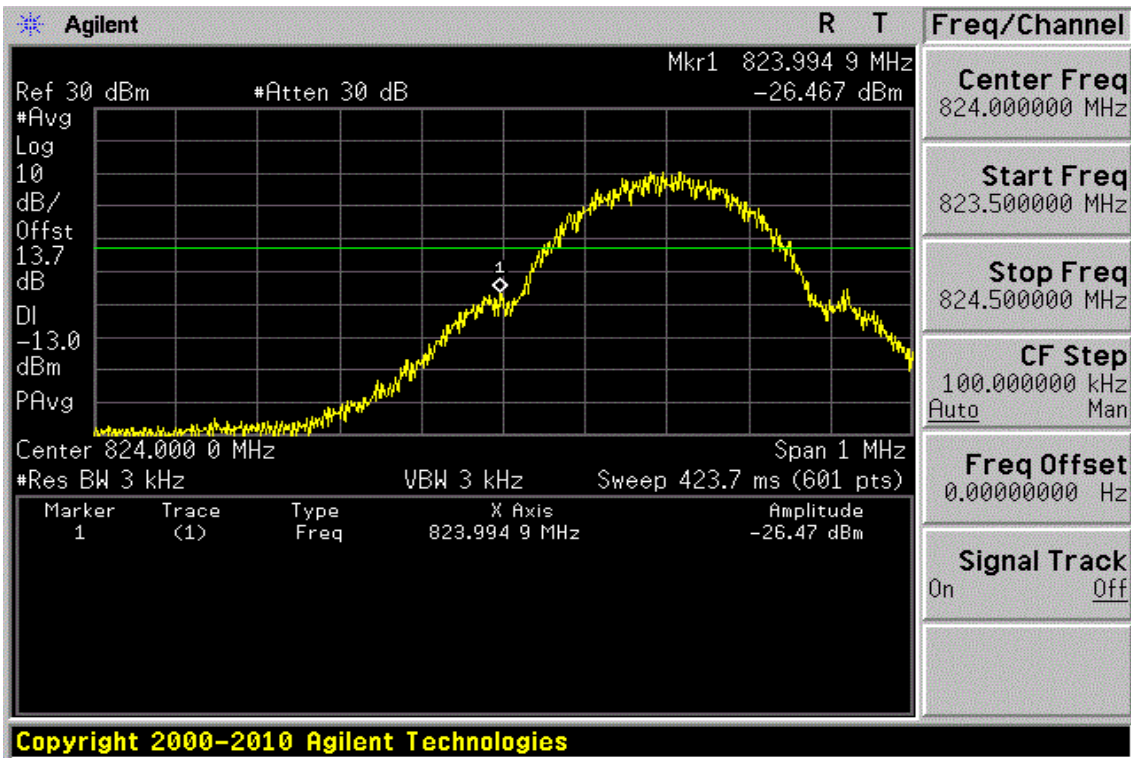
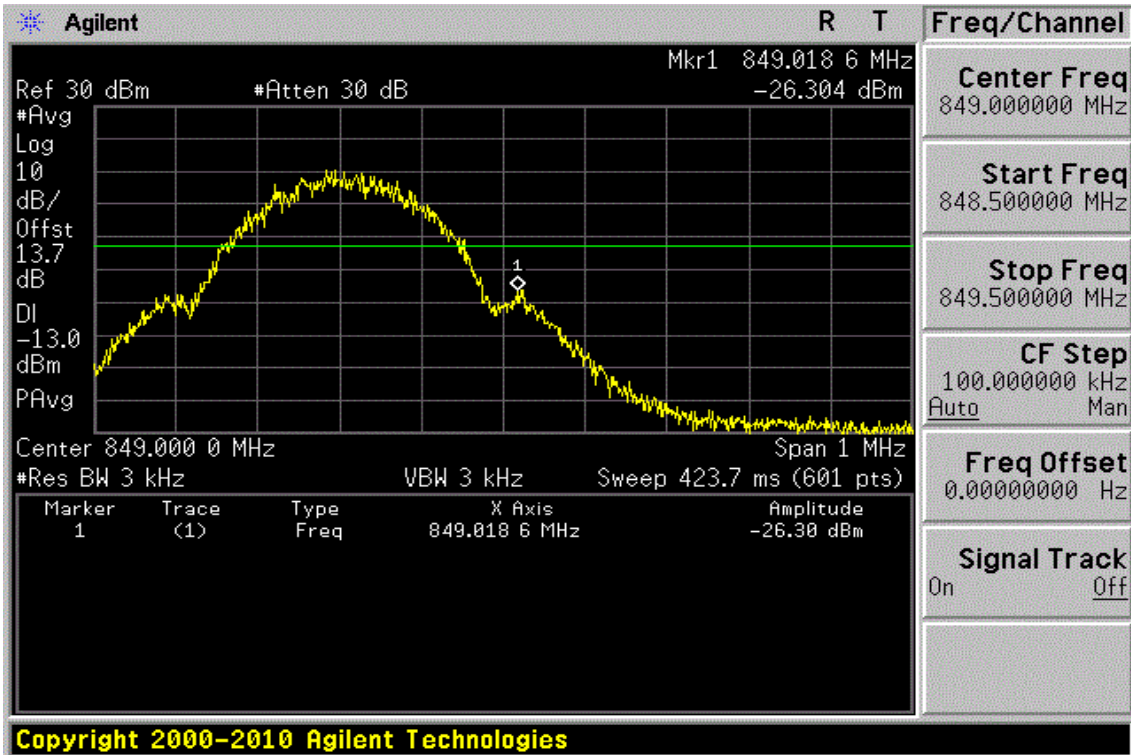


Figure 9-5: Band edge emission at antenna terminals – GSM 850 Channel Highest



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**Band edge emission at antenna terminals – GSM 850 Low & High**

Test Mode GSM 850 Engineer :Nick

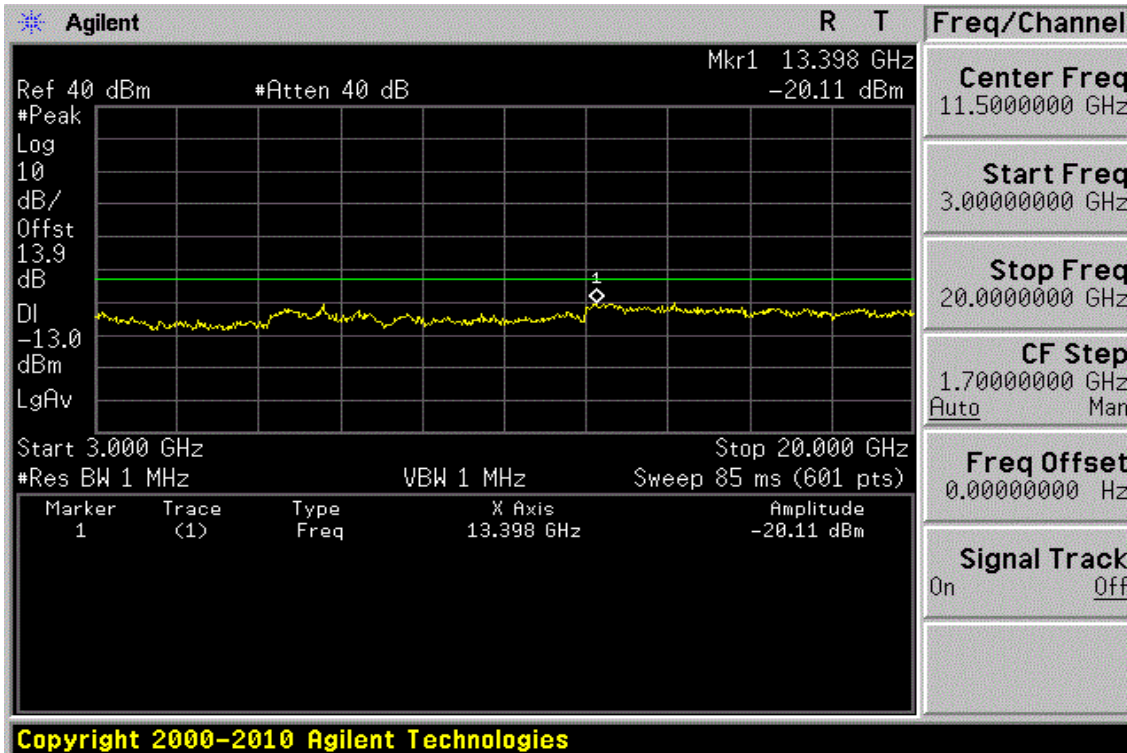
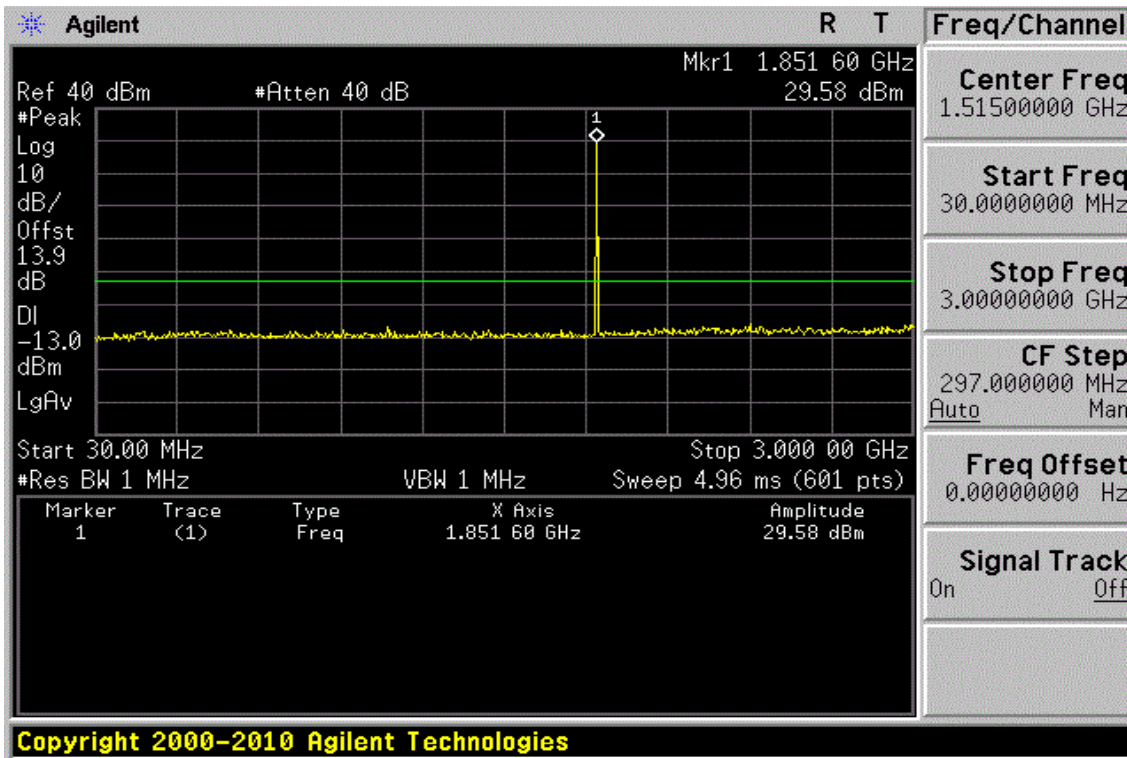
Freq. MHz	Reading dBm	Limit dBm	Safe Margin dB
823.994	-26.47	-13.00	13.47
849.018	-26.30	-13.00	13.30

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Figure 9-6: Out of Band emission at antenna terminals – GSM 1900 Channel Lowest

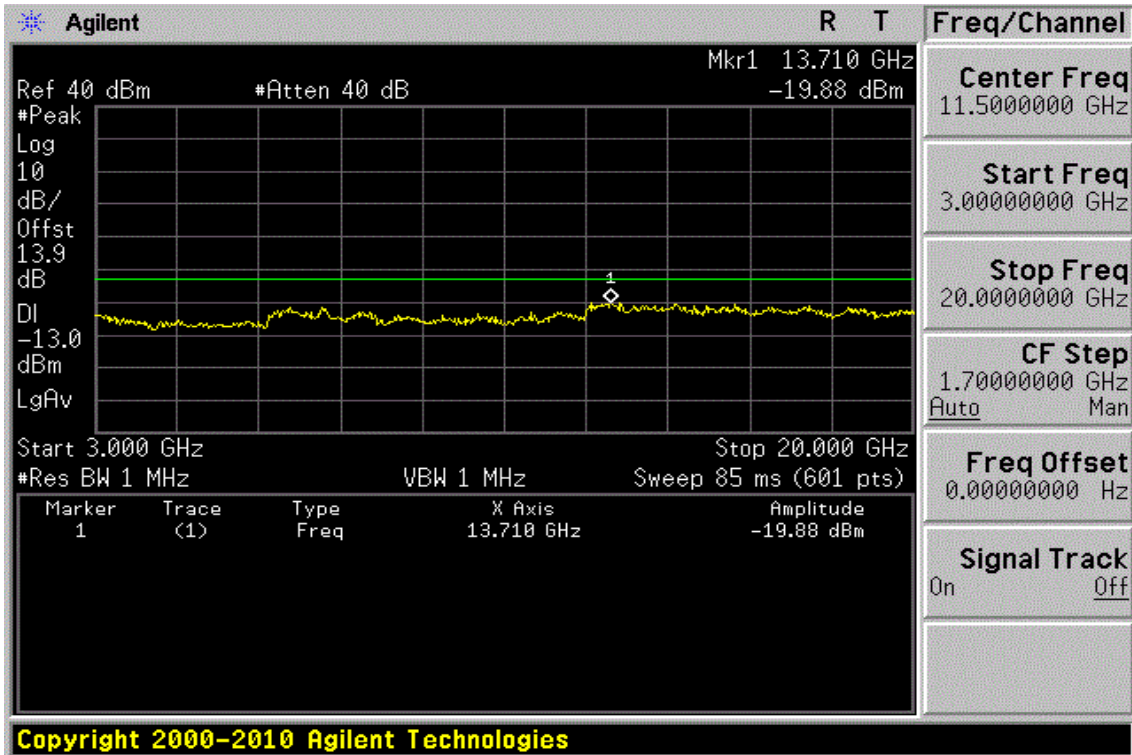
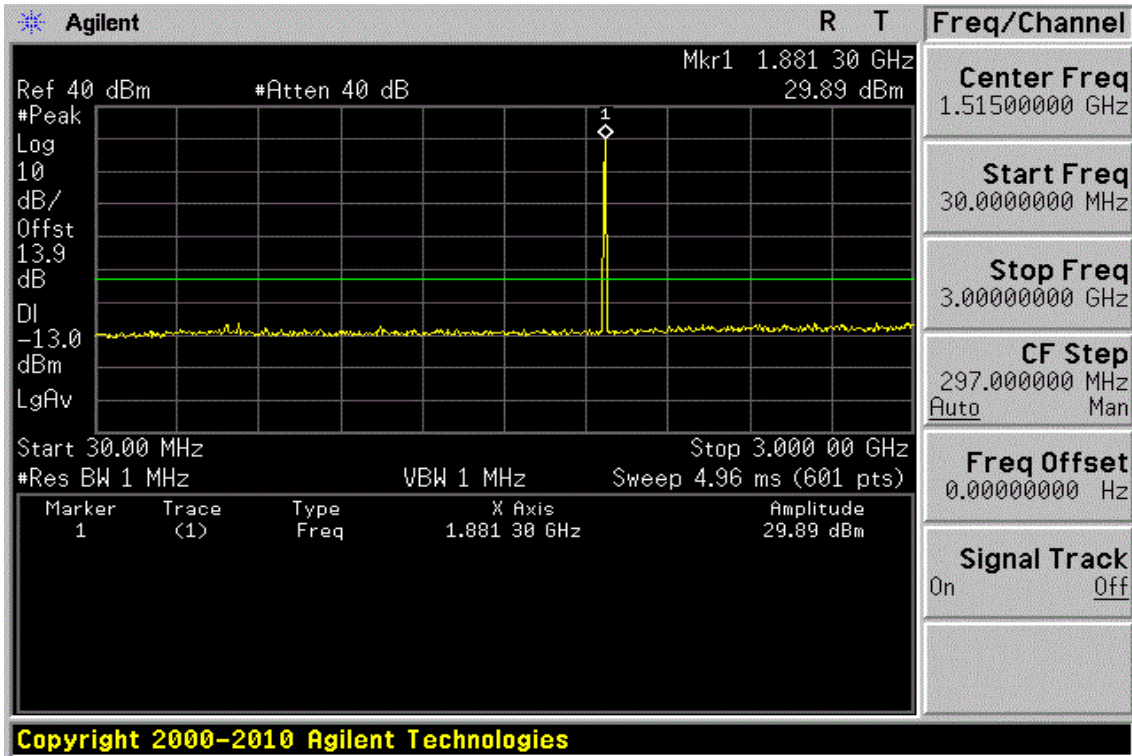


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Figure 9-7: Out of Band emission at antenna terminals – GSM 1900 Channel Mid



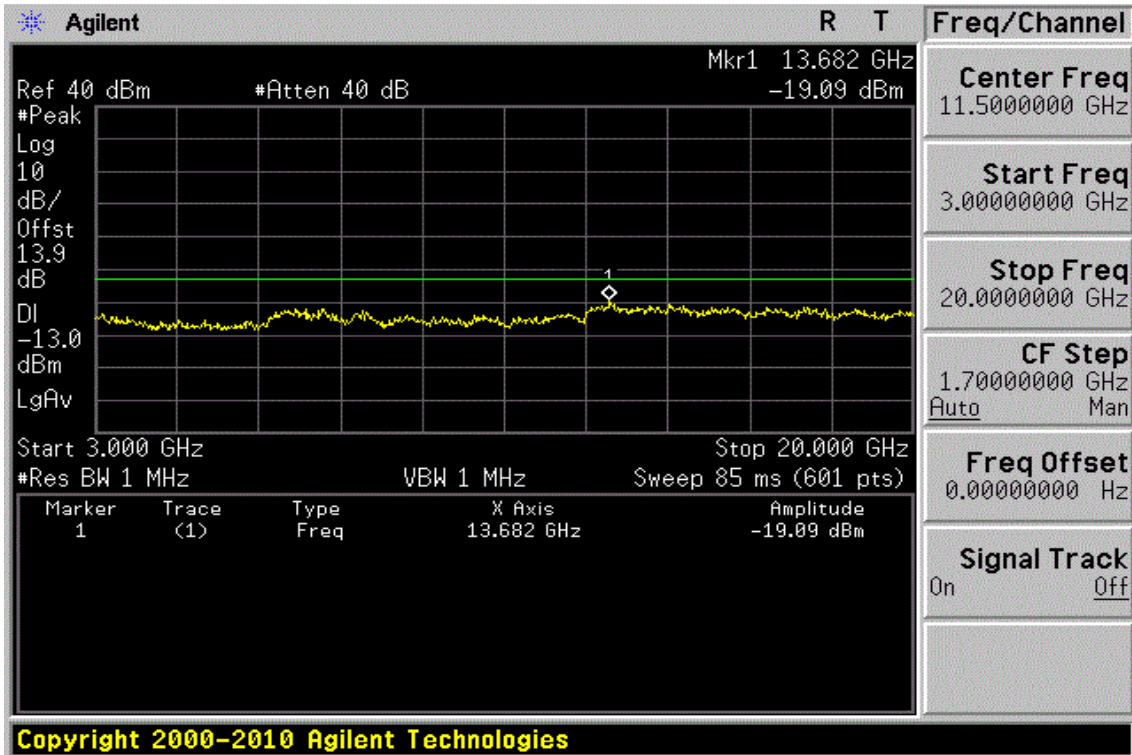
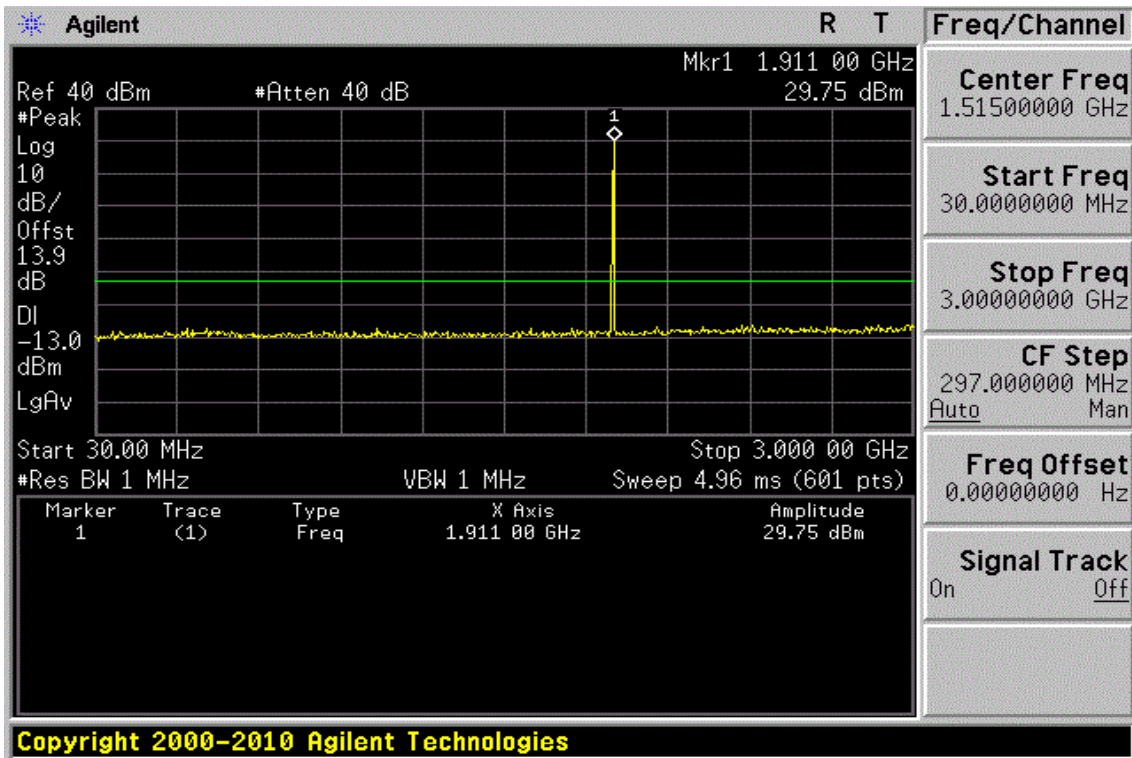
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Figure 9-8: Out of Band emission at antenna terminals – GSM 1900 Channel Highest



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**Out of Band emission at antenna terminals – GSM 1900**

Fundamental Frequency :1850.2 MHz Engineer :Nick  
 Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3700.40	H	---	-13.00	---
5550.60	H	---	-13.00	---
7400.80	H	---	-13.00	---
9251.00	H	---	-13.00	---
11101.20	H	---	-13.00	---
12951.40	H	---	-13.00	---
13398.00	S	-20.11	-13.00	7.11
14801.60	H	---	-13.00	---
16651.80	H	---	-13.00	---
18502.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :1880.0 MHz Engineer :Nick  
 Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3760.00	H	---	-13.00	---
5640.00	H	---	-13.00	---
7520.00	H	---	-13.00	---
9400.00	H	---	-13.00	---
11280.00	H	---	-13.00	---
13160.00	H	---	-13.00	---
13710.00	S	-19.88	-13.00	6.88
15040.00	H	---	-13.00	---
16920.00	H	---	-13.00	---
18800.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :1909.8 MHz Engineer :Nick  
 Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3819.60	H	---	-13.00	---
5729.40	H	---	-13.00	---
7639.20	H	---	-13.00	---
9549.00	H	---	-13.00	---
11458.80	H	---	-13.00	---
13368.60	H	---	-13.00	---
13682.00	S	-19.09	-13.00	6.09
15278.40	H	---	-13.00	---
17188.20	H	---	-13.00	---
19098.00	H	---	-13.00	---

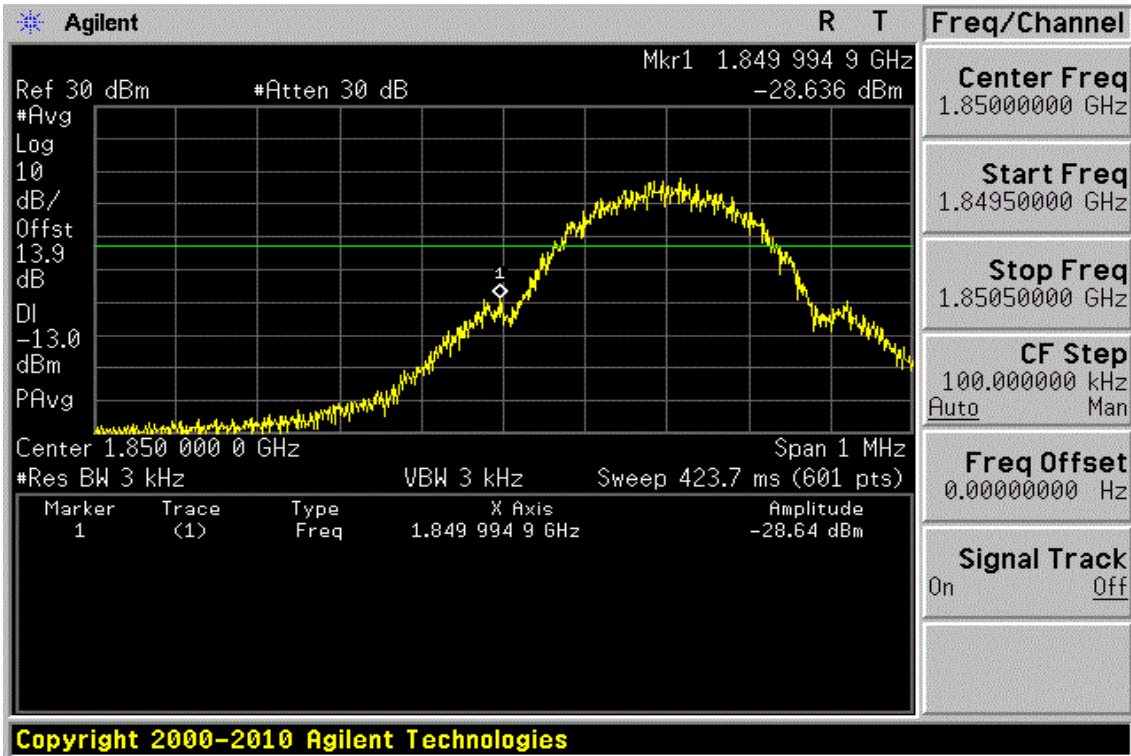
Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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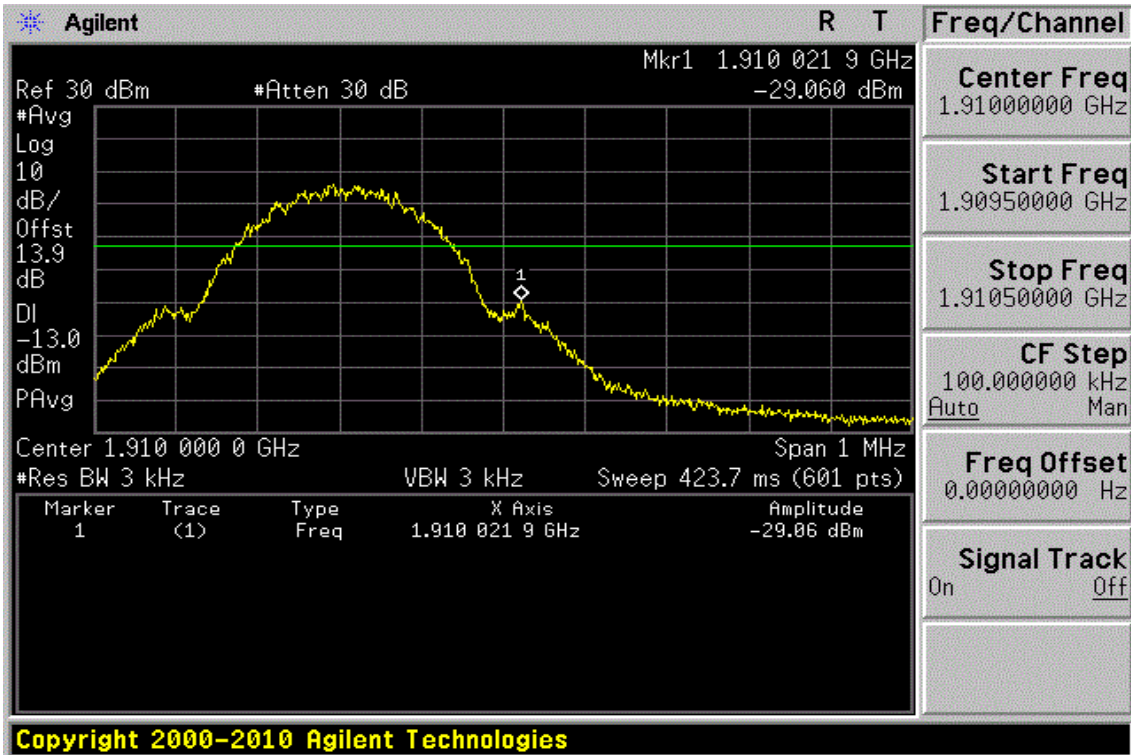
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**Figure 9-9: Band edge emission at antenna terminals – GSM 1900 Channel Lowest**



**Figure 9-10: Band edge emission at antenna terminals – GSM 1900 Channel Highest**



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**Band edge emission at antenna terminals – GSM 1900 Low & High**

Test Mode GSM 1900 Engineer :Nick

Freq. MHz	Reading dBm	Limit dBm	Safe Margin dB
1849.994	-28.64	-13.00	15.64
1910.021	-29.06	-13.00	16.06

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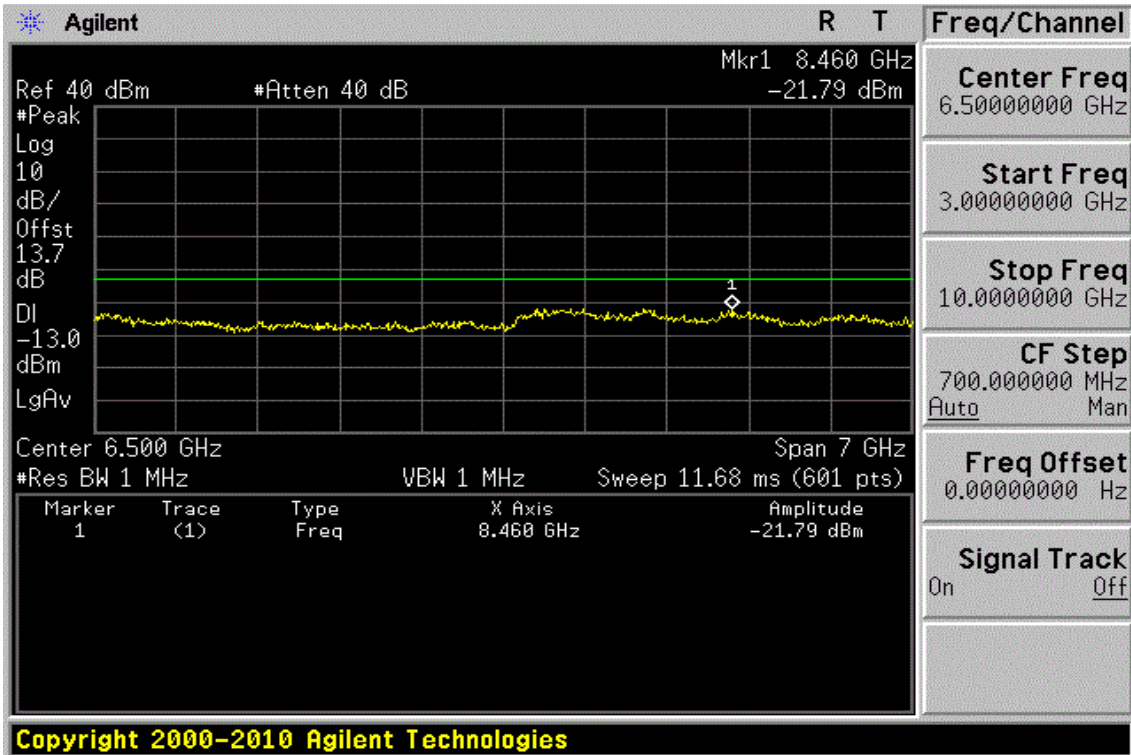
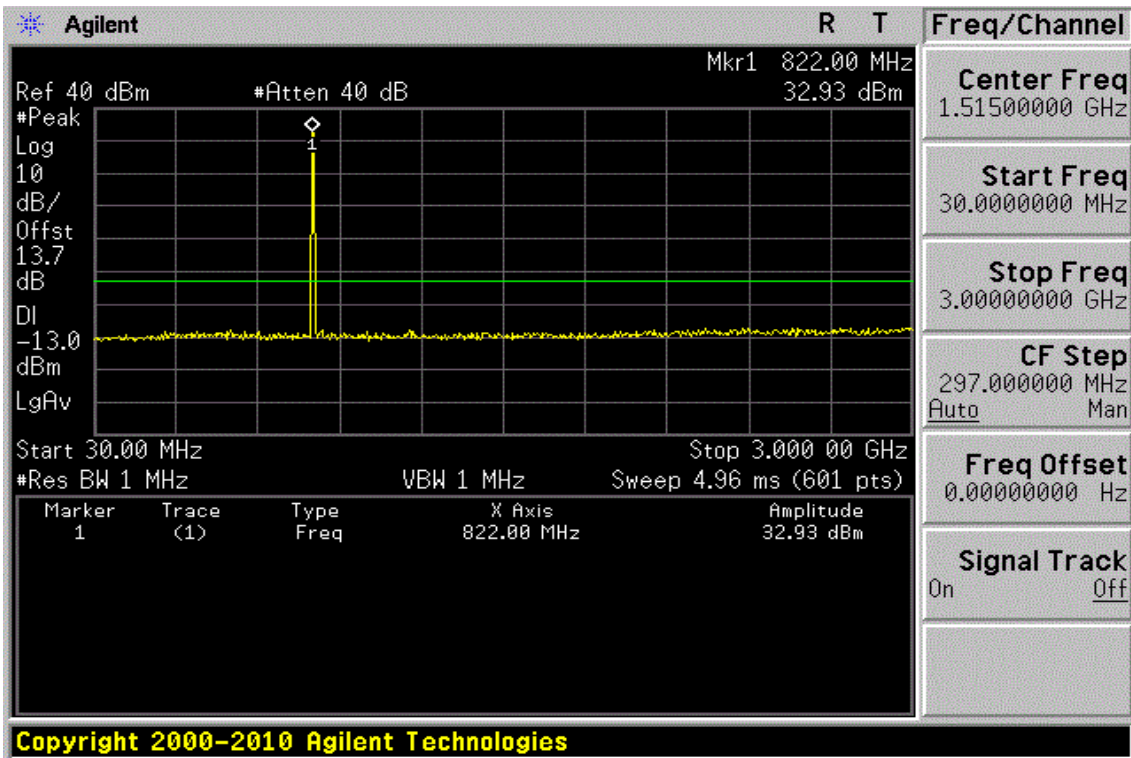
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Figure 9-11: Out of Band emission at antenna terminals – GPRS850 Channel Lowest

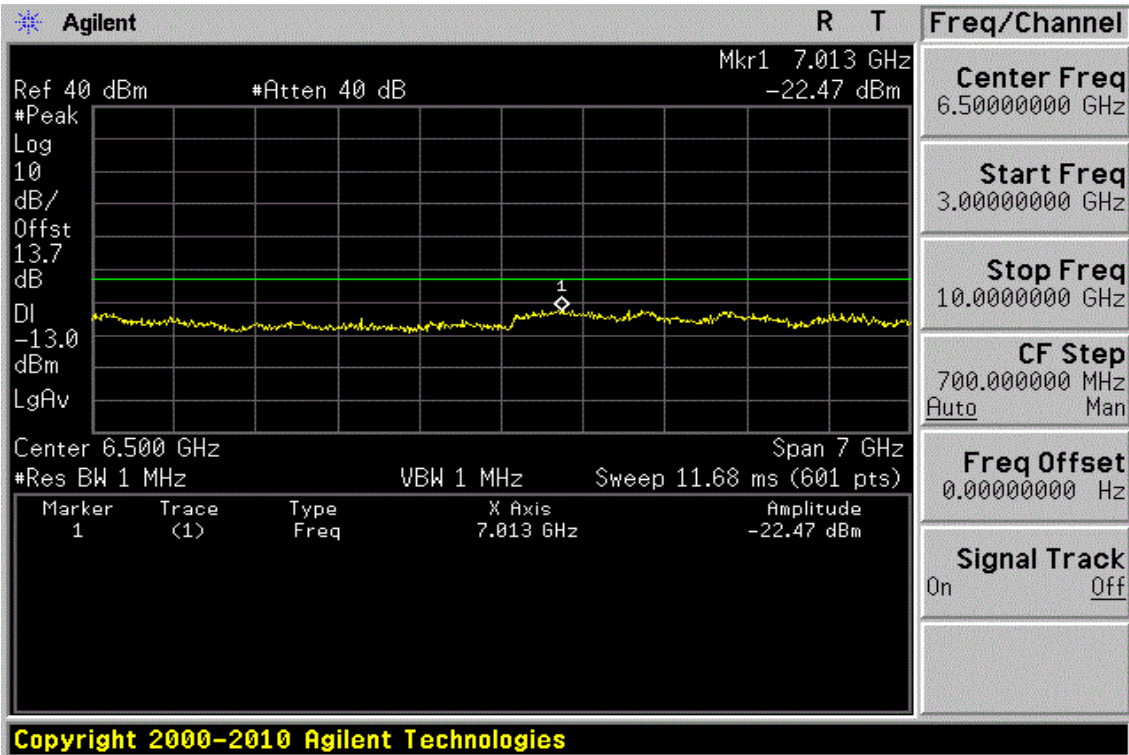
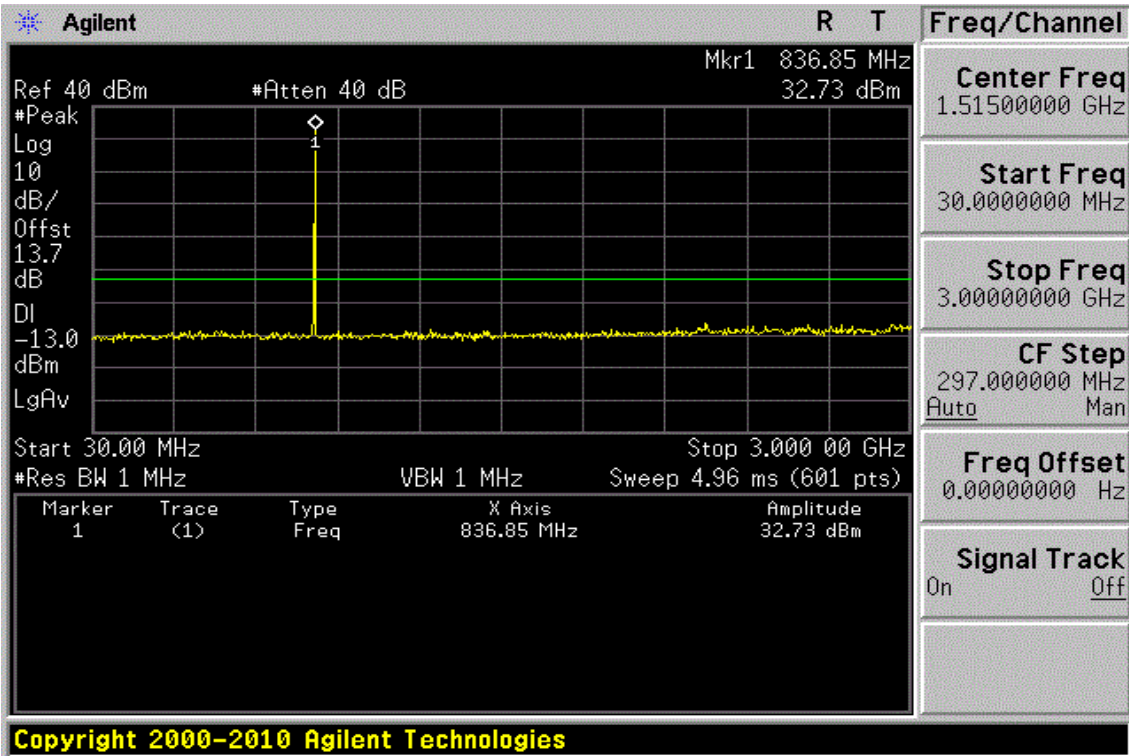


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Figure 9-12: Out of Band emission at antenna terminals – GPRS 850 Channel Mid



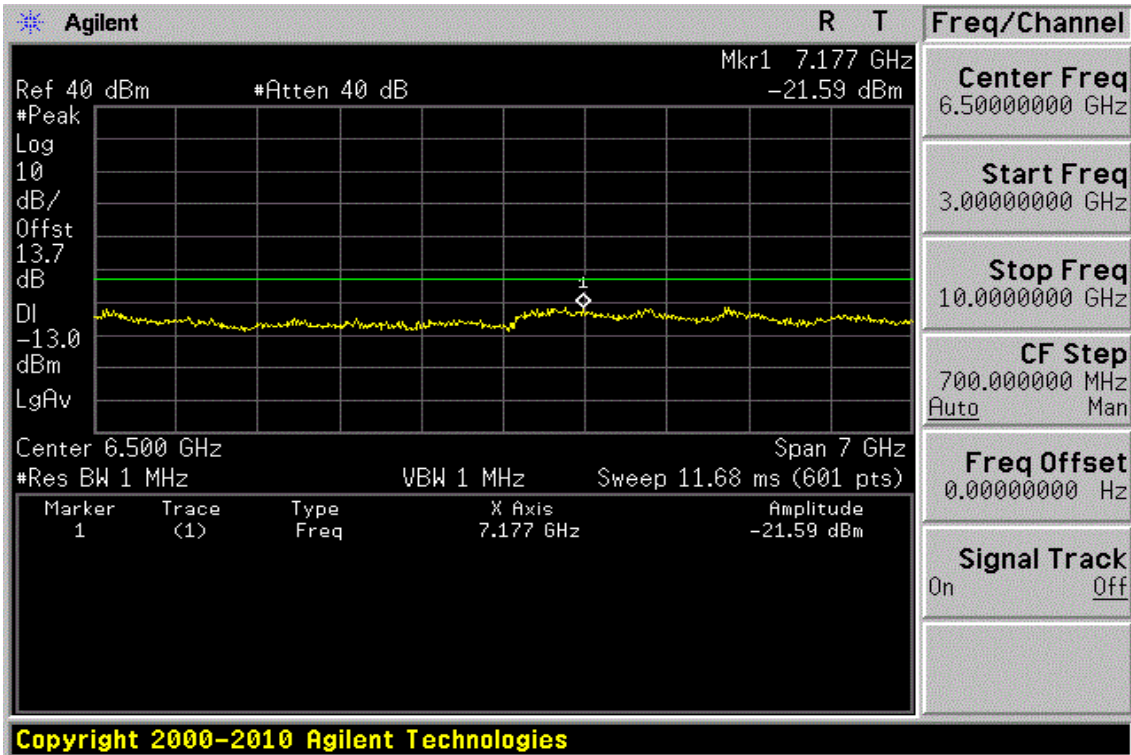
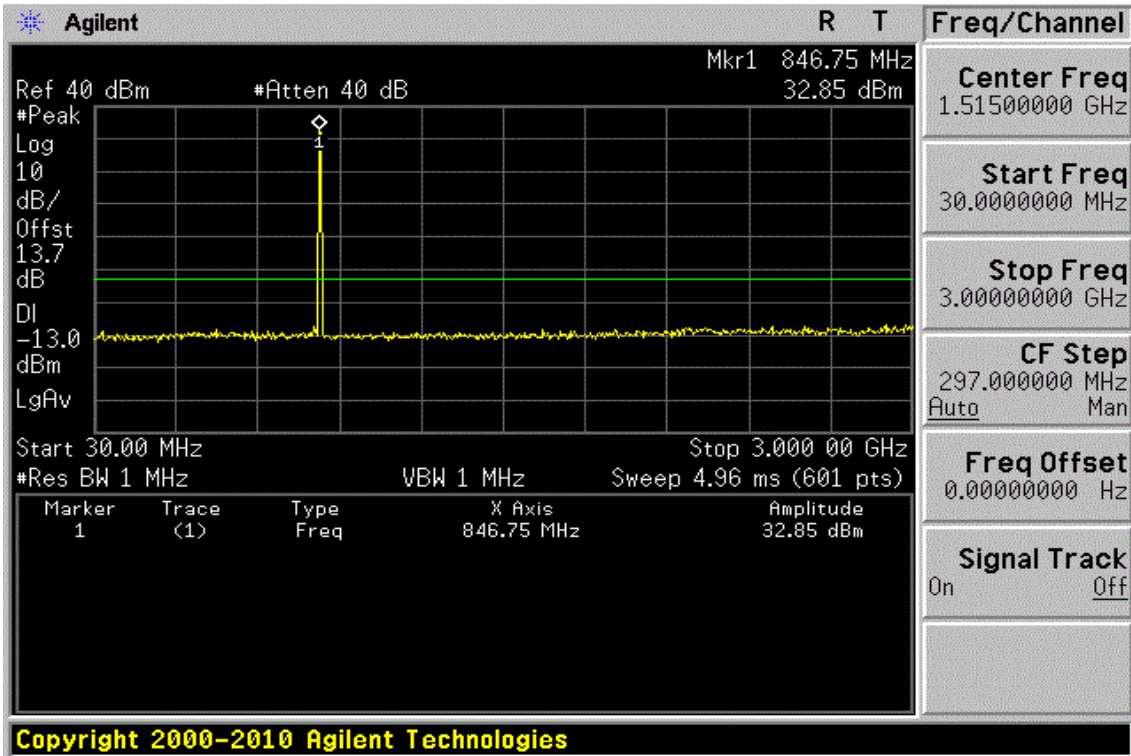
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Figure 9-13: Out of Band emission at antenna terminals – GPRS 850 Channel Highest



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**Out of Band emission at antenna terminals – GPRS 850**

Fundamental Frequency :824.2 MHz Engineer :Nick  
 Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1648.40	H	---	-13.00	---
2472.60	H	---	-13.00	---
3296.80	H	---	-13.00	---
4121.00	H	---	-13.00	---
4945.20	H	---	-13.00	---
5769.40	H	---	-13.00	---
6593.60	H	---	-13.00	---
7417.80	H	---	-13.00	---
8242.00	H	---	-13.00	---
8460.00	S	-21.79	-13.00	8.79

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :836.6 MHz Engineer :Nick  
 Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1673.20	H	---	-13.00	---
2509.80	H	---	-13.00	---
3346.40	H	---	-13.00	---
4183.00	H	---	-13.00	---
5019.60	H	---	-13.00	---
5856.20	H	---	-13.00	---
6692.80	H	---	-13.00	---
7013.00	S	-22.47	-13.00	9.47
7529.40	H	---	-13.00	---
8366.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :848.8MHz Engineer :Nick  
 Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1697.60	H	---	-13.00	---
2546.40	H	---	-13.00	---
3395.20	H	---	-13.00	---
4244.00	H	---	-13.00	---
5092.80	H	---	-13.00	---
5941.60	H	---	-13.00	---
6790.40	H	---	-13.00	---
7177.00	S	-21.59	-13.00	8.59
7639.20	H	---	-13.00	---
8488.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Figure 9-14: Band edge emission at antenna terminals – GPRS 850 Channel Lowest

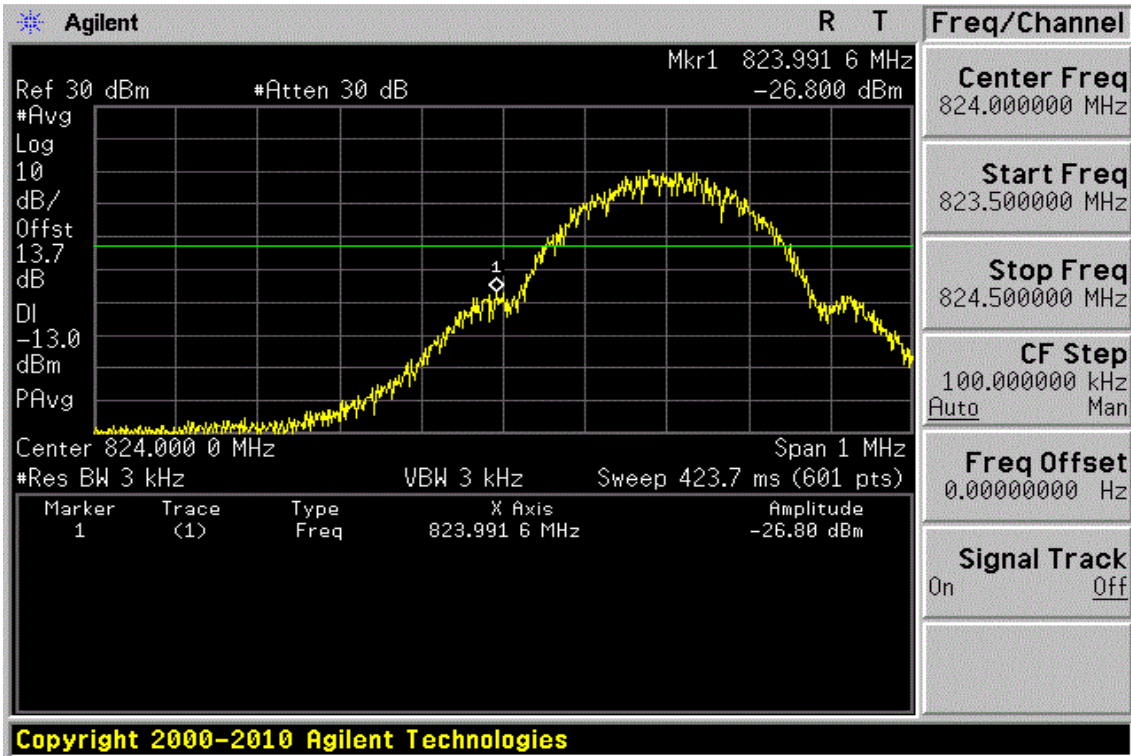
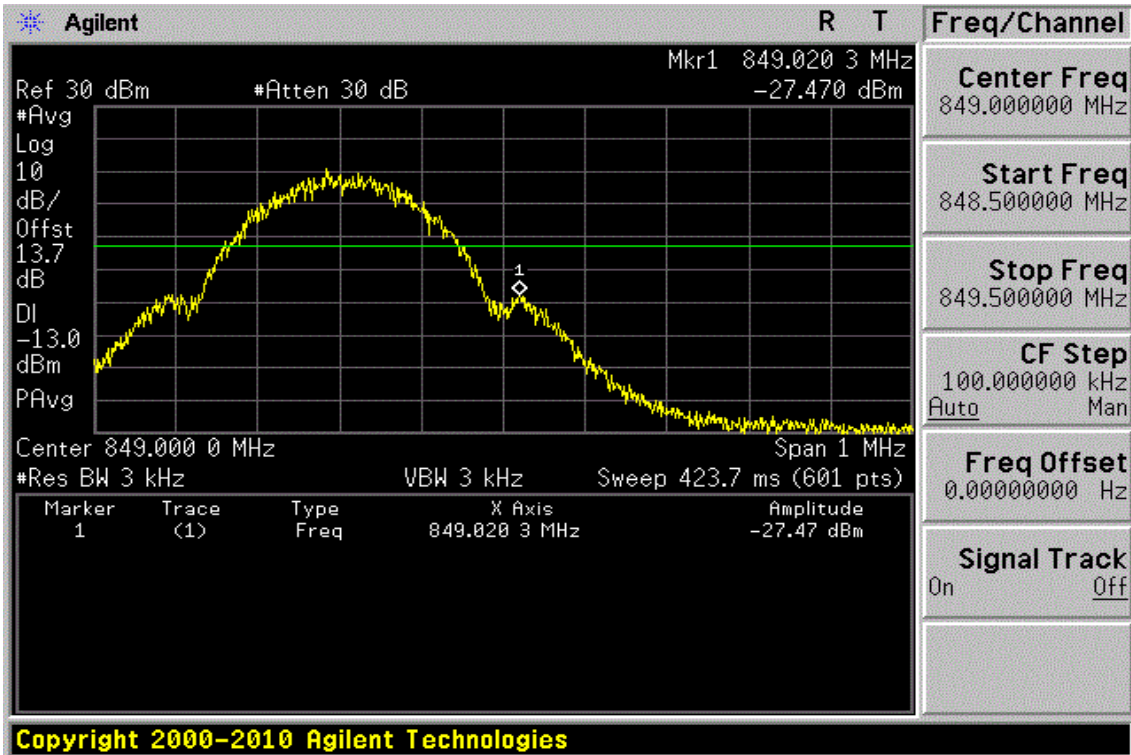


Figure 9-15: Band edge emission at antenna terminals – GPRS 850 Channel Highest



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**Band edge emission at antenna terminals – GPRS 850 Low & High**

Test Mode                      GPRS 850                      Engineer                      :Nick

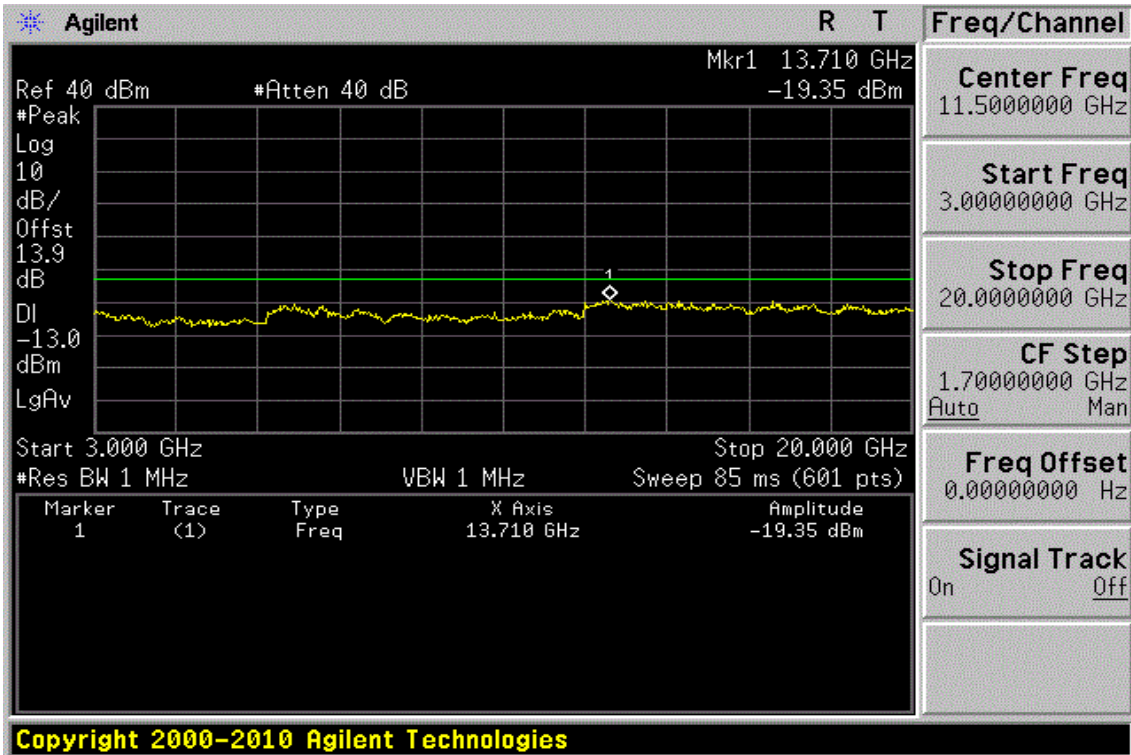
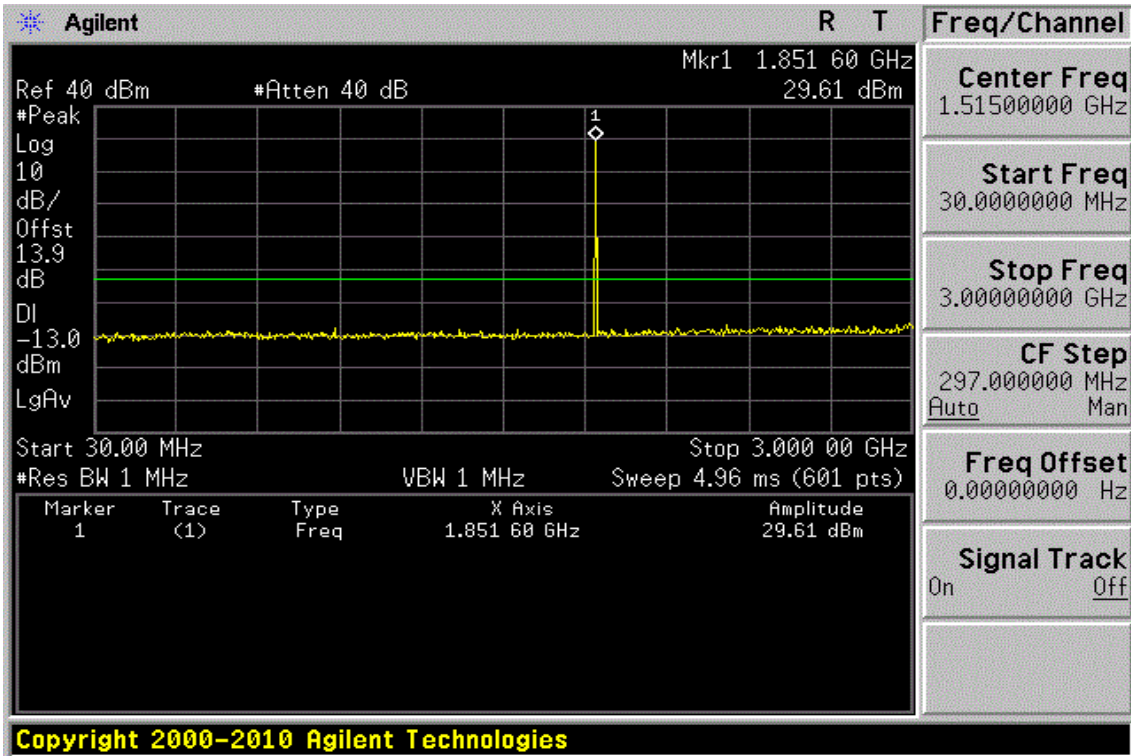
Freq. MHz	Reading dBm	Limit dBm	Safe Margin dB
823.991	-26.80	-13.00	13.80
849.020	-27.47	-13.00	14.47

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Figure 9-16: Out of Band emission at antenna terminals – GPRS 1900 Channel Lowest

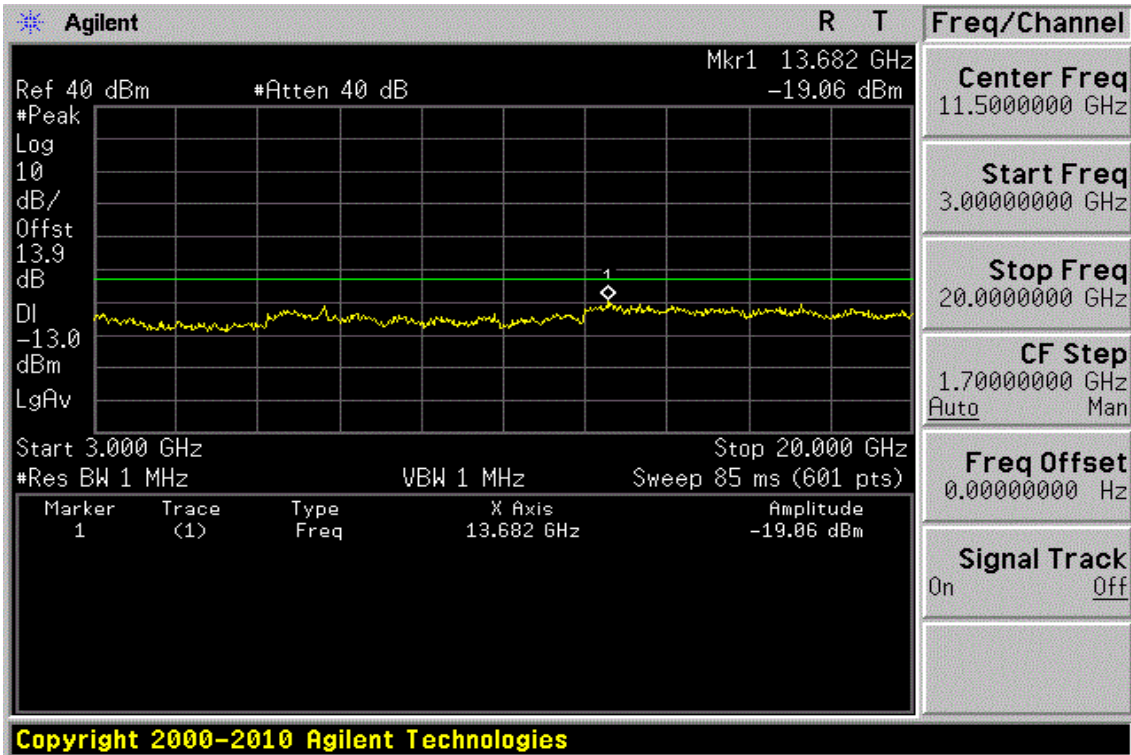
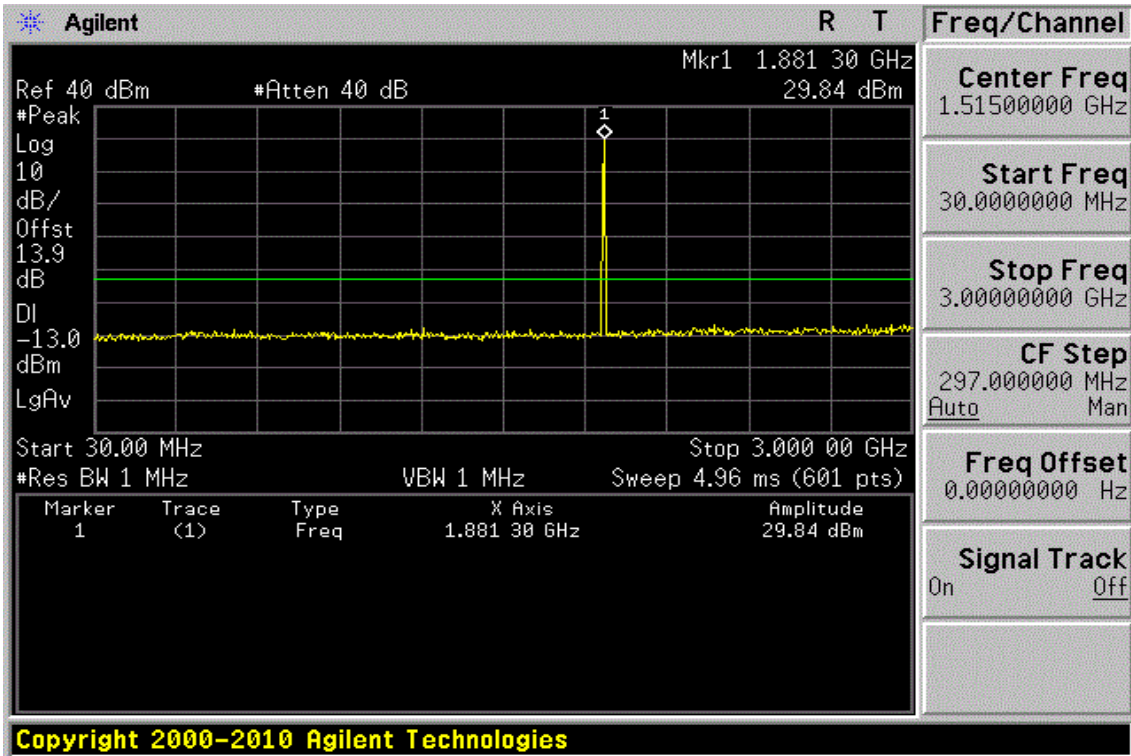


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Figure 9-17: Out of Band emission at antenna terminals – GPRS 1900 Channel Mid



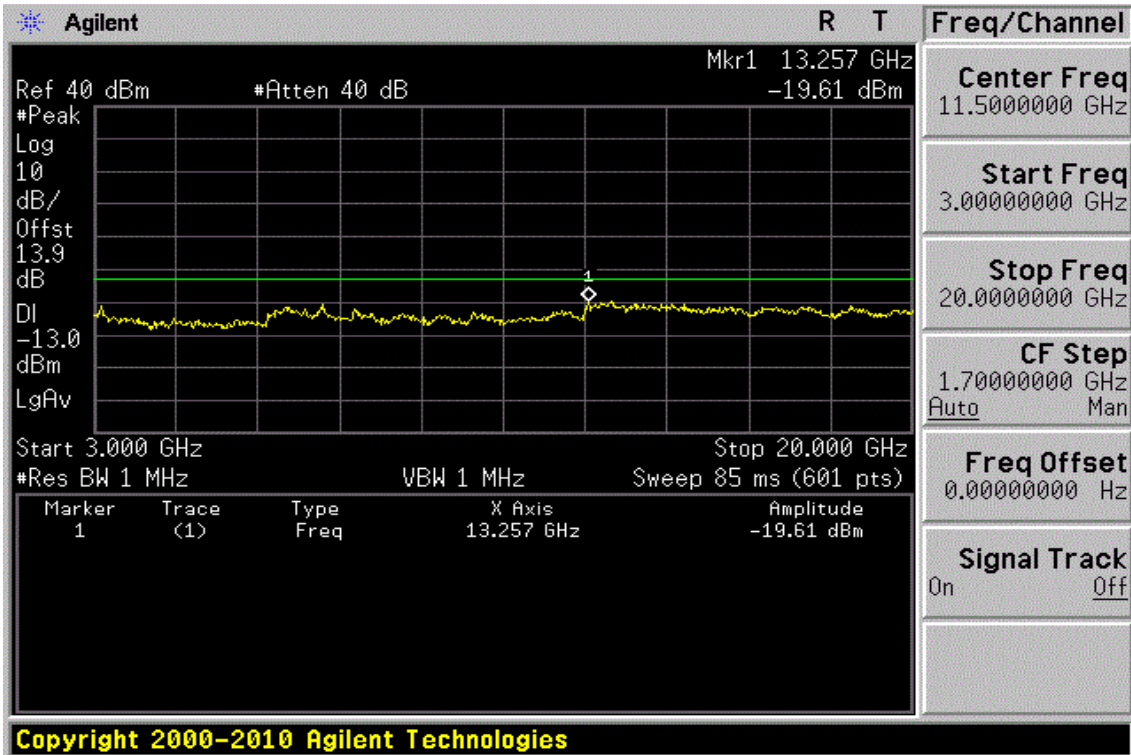
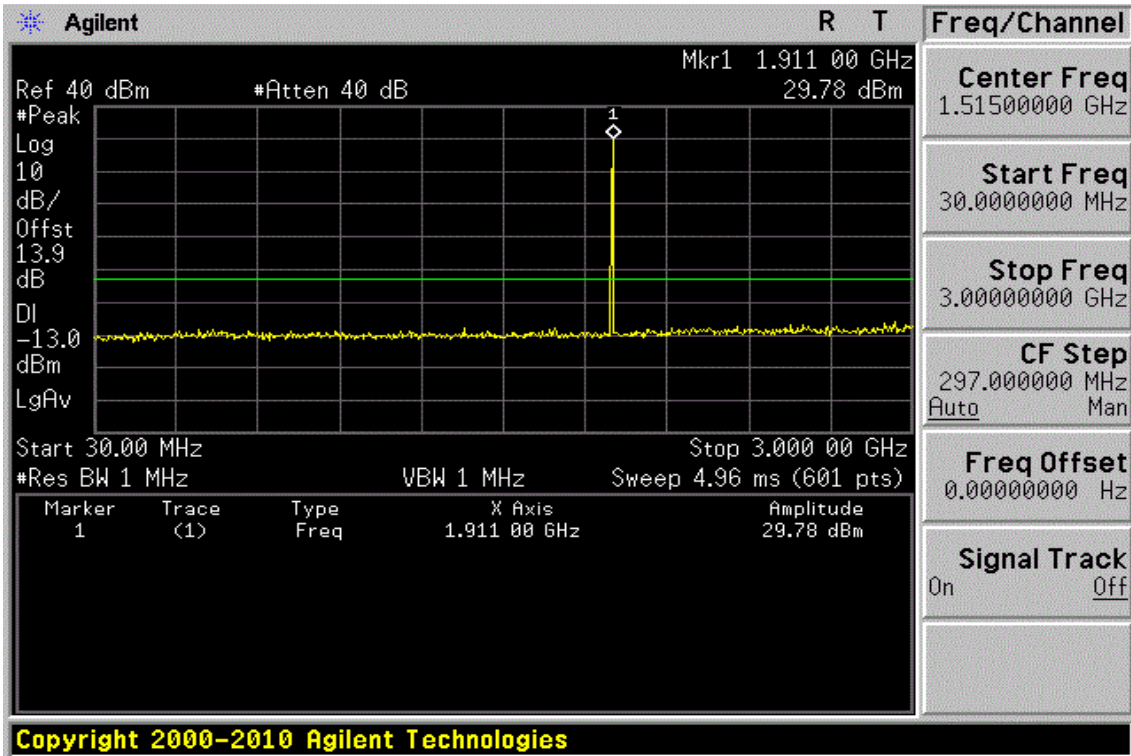
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Figure 9-18: Out of Band emission at antenna terminals – GPRS 1900 Channel Highest



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**Out of Band emission at antenna terminals – GPRS 1900**

Fundamental Frequency :1850.2 MHz Engineer :Nick  
 Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3700.40	H	---	-13.00	---
5550.60	H	---	-13.00	---
7400.80	H	---	-13.00	---
9251.00	H	---	-13.00	---
11101.20	H	---	-13.00	---
12951.40	H	---	-13.00	---
13710.00	S	-19.35	-13.00	6.35
14801.60	H	---	-13.00	---
16651.80	H	---	-13.00	---
18502.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :1880.0 MHz Engineer :Nick  
 Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3760.00	H	---	-13.00	---
5640.00	H	---	-13.00	---
7520.00	H	---	-13.00	---
9400.00	H	---	-13.00	---
11280.00	H	---	-13.00	---
13160.00	H	---	-13.00	---
13682.00	S	-19.06	-13.00	6.06
15040.00	H	---	-13.00	---
16920.00	H	---	-13.00	---
18800.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :1909.8 MHz Engineer :Nick  
 Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3819.60	H	---	-13.00	---
5729.40	H	---	-13.00	---
7639.20	H	---	-13.00	---
9549.00	H	---	-13.00	---
11458.80	H	---	-13.00	---
13257.00	S	-19.61	-13.00	6.61
13368.60	H	---	-13.00	---
15278.40	H	---	-13.00	---
17188.20	H	---	-13.00	---
19098.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Figure 9-19: Band edge emission at antenna terminals – GPRS 1900 Channel Lowest

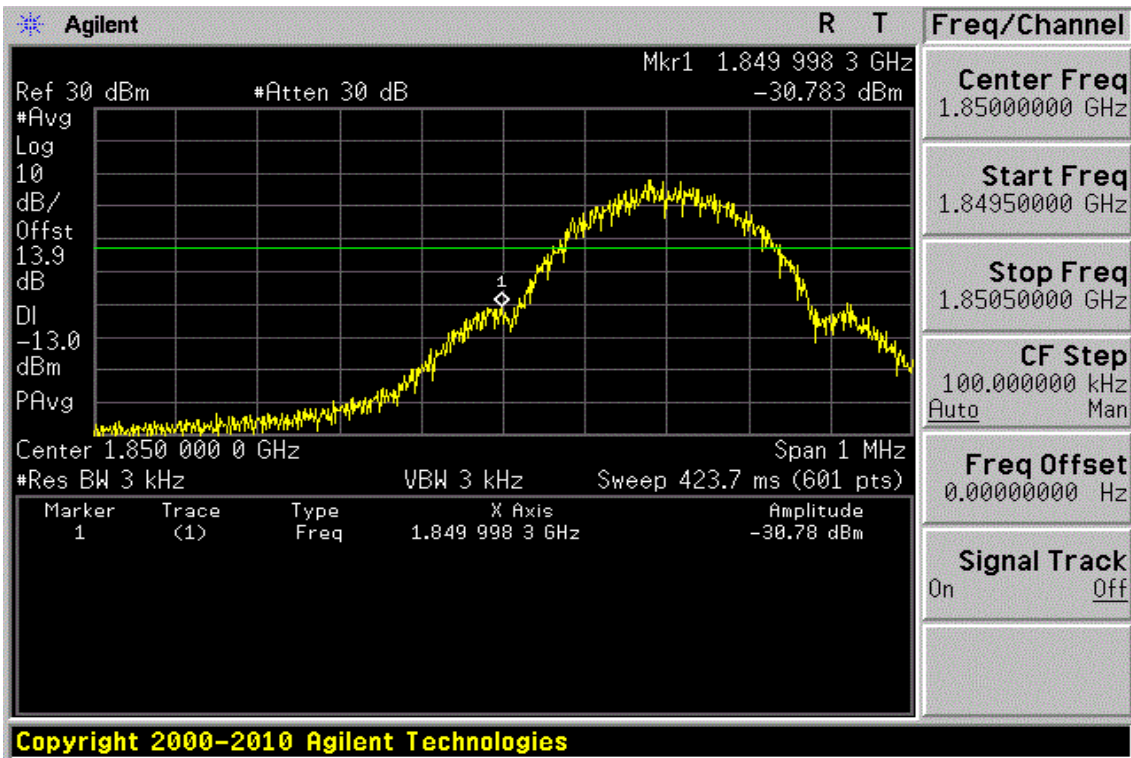
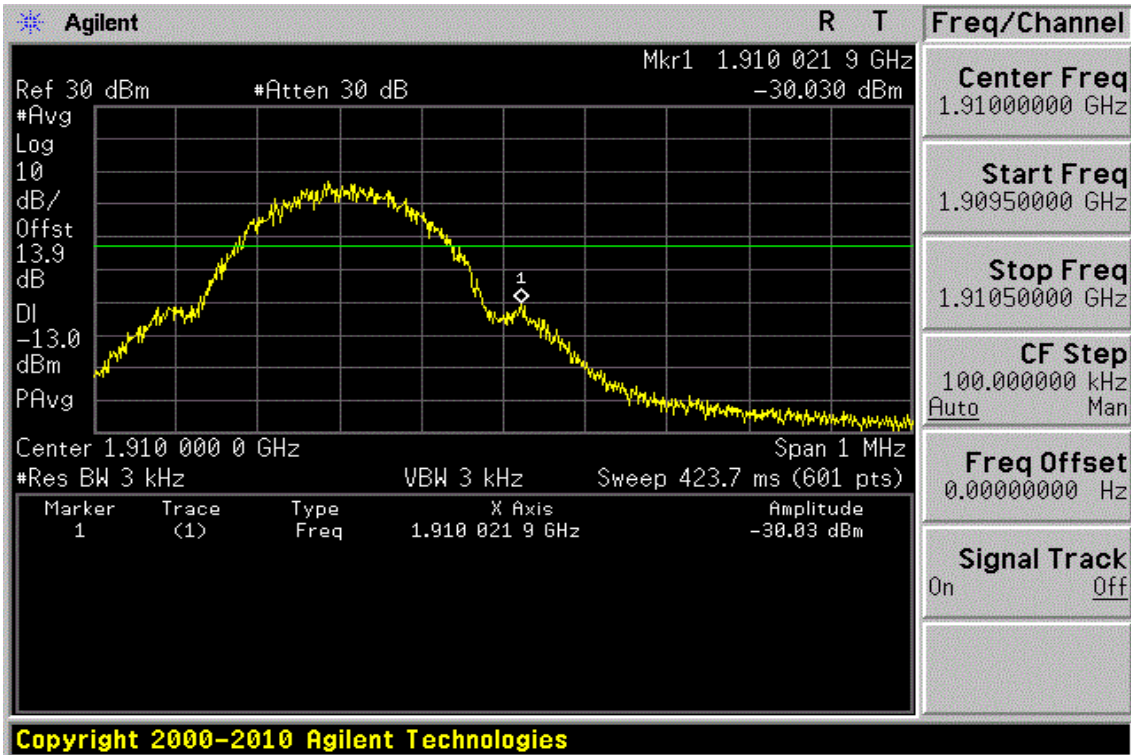


Figure 9-20: Band edge emission at antenna terminals – GPRS 1900 Channel Highest



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**Band edge emission at antenna terminals – GPRS 1900 Low & High**

Test Mode                      GPRS 1900                      Engineer                      :Nick

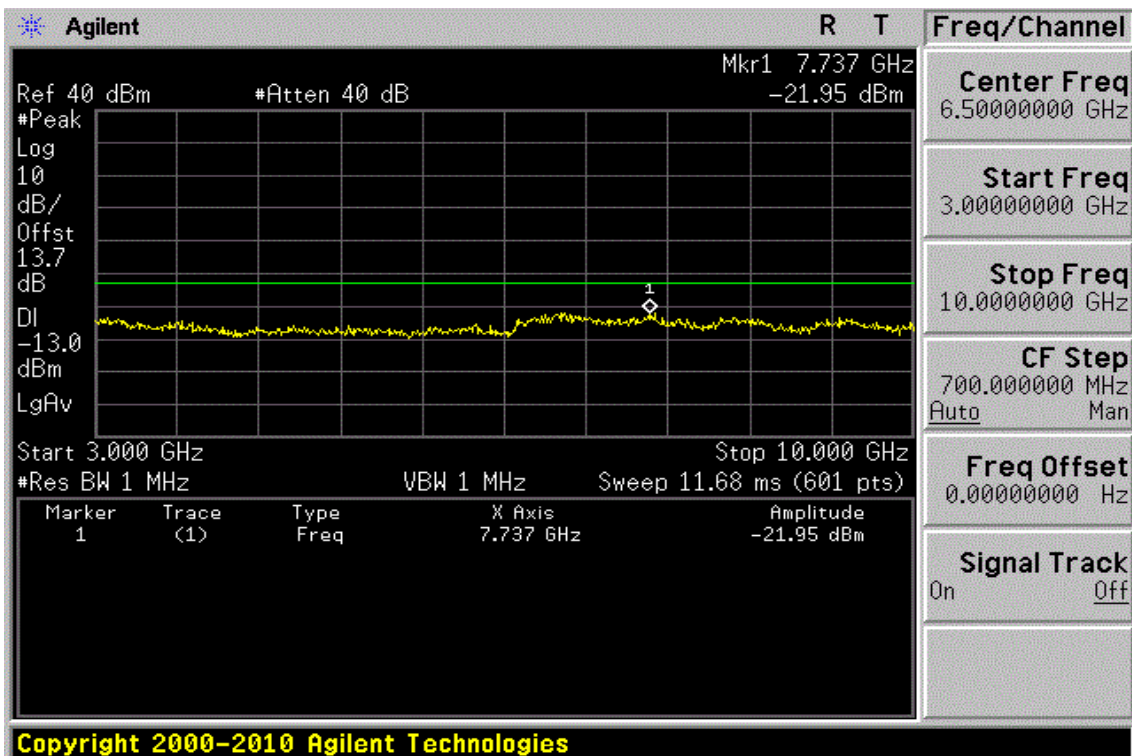
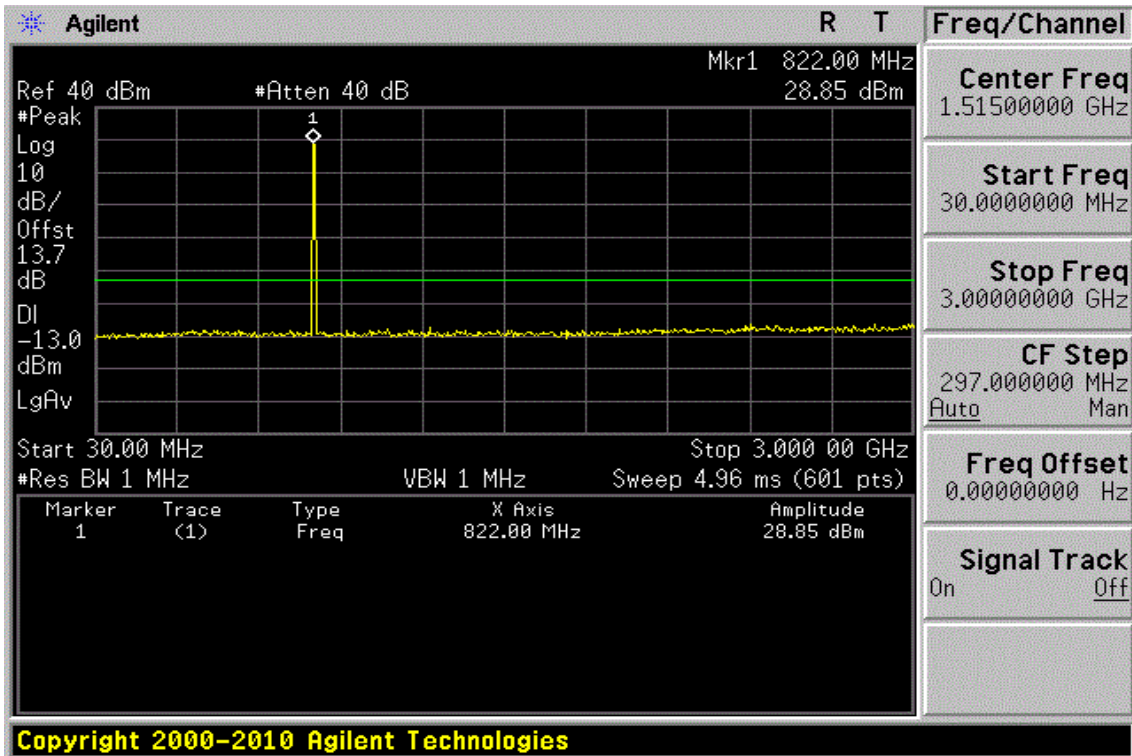
Freq. MHz	Reading dBm	Limit dBm	Safe Margin dB
1849.998	-30.78	-13.00	17.78
1910.021	-30.03	-13.00	17.03

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Figure 9-21: Out of Band emission at antenna terminals – EDGE 850 Channel Lowest



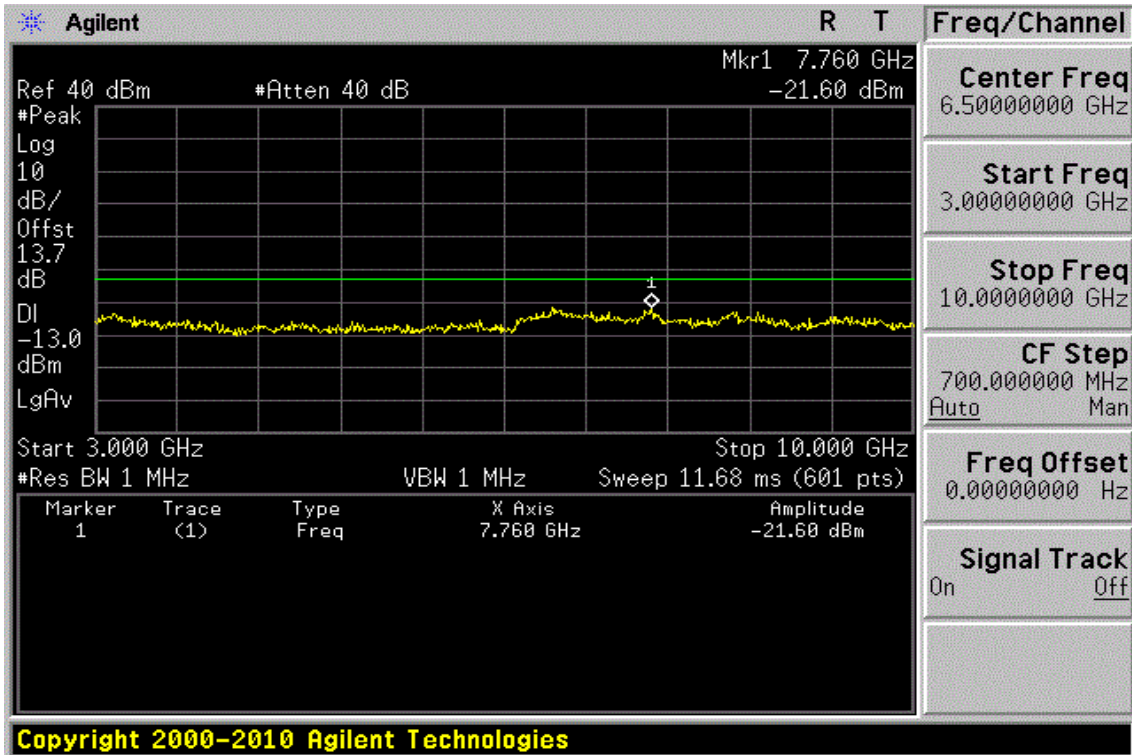
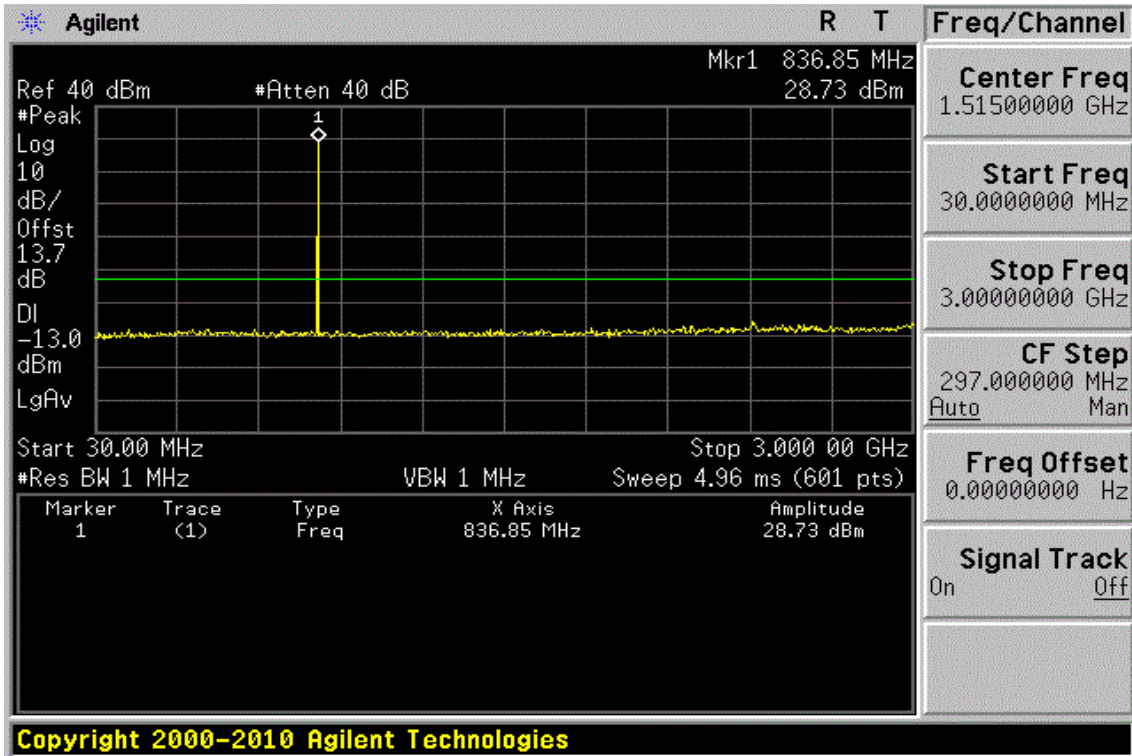
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Figure 9-22: Out of Band emission at antenna terminals – EDGE 850 Channel Mid

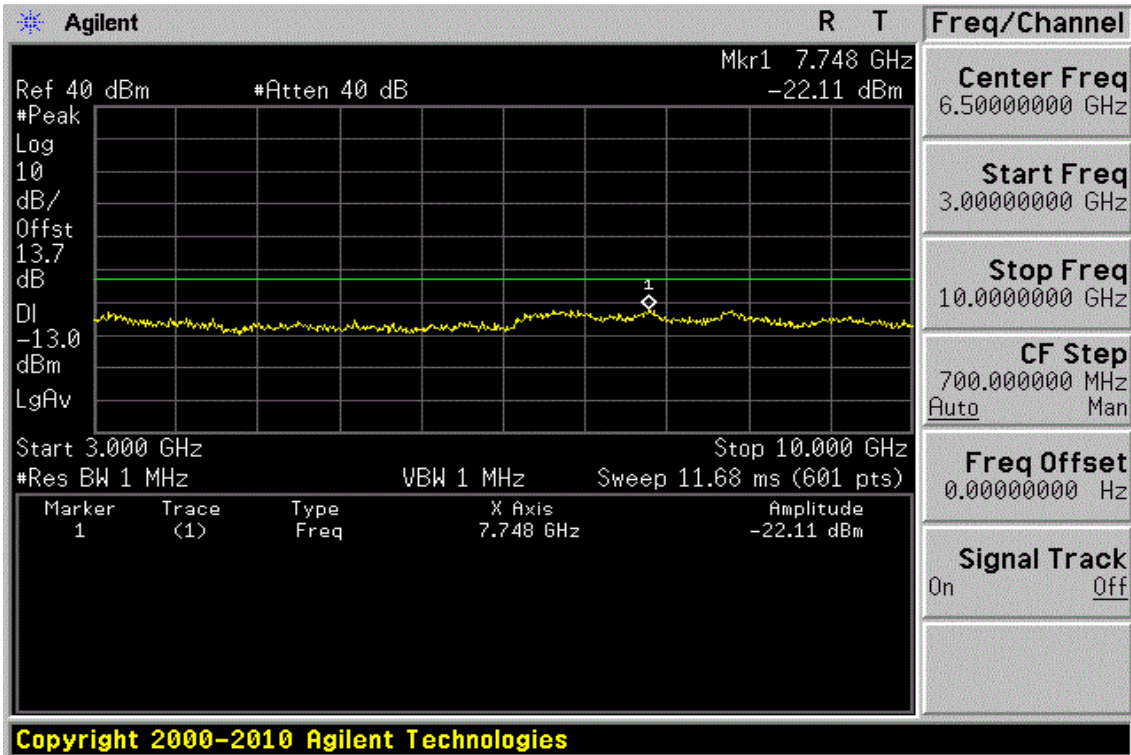
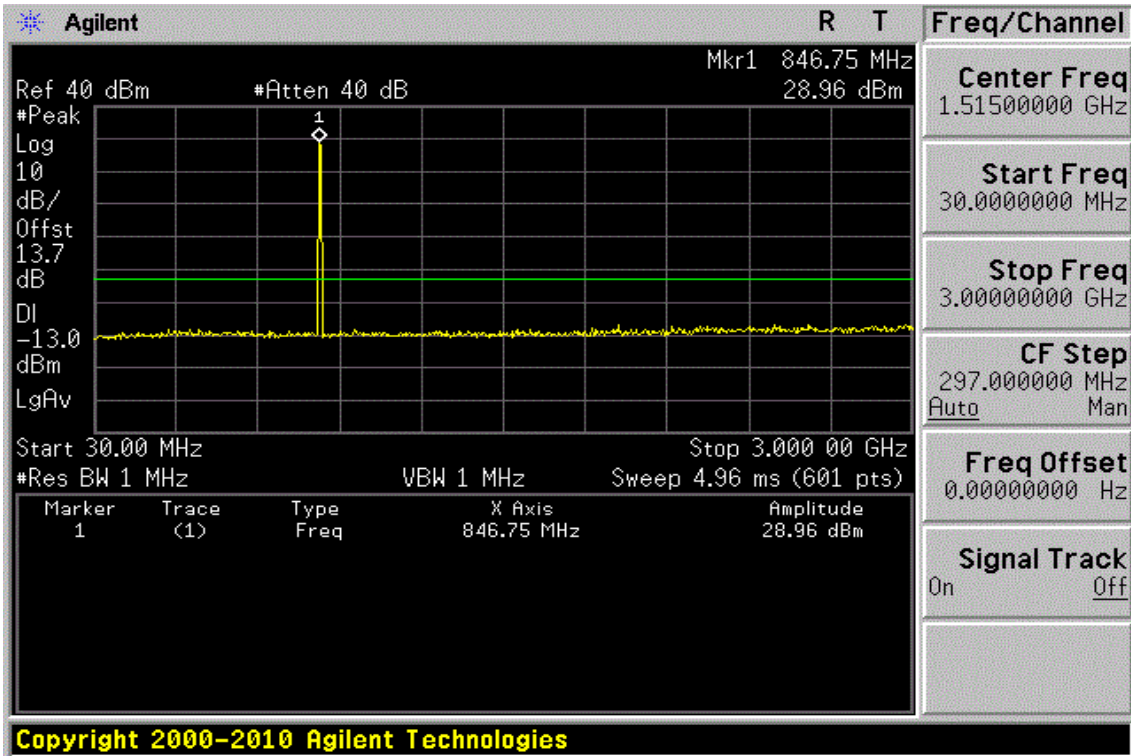


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Figure 9-23: Out of Band emission at antenna terminals – EDGE 850 Channel Highest



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**Out of Band emission at antenna terminals – EDGE 850**

Fundamental Frequency :824.2 MHz Engineer :Nick  
 Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1648.40	H	---	-13.00	---
2472.60	H	---	-13.00	---
3296.80	H	---	-13.00	---
4121.00	H	---	-13.00	---
4945.20	H	---	-13.00	---
5769.40	H	---	-13.00	---
6593.60	H	---	-13.00	---
7417.80	H	---	-13.00	---
7737.00	S	-21.95	-13.00	8.95
8242.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :836.6 MHz Engineer :Nick  
 Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1673.20	H	---	-13.00	---
2509.80	H	---	-13.00	---
3346.40	H	---	-13.00	---
4183.00	H	---	-13.00	---
5019.60	H	---	-13.00	---
5856.20	H	---	-13.00	---
6692.80	H	---	-13.00	---
7529.40	H	---	-13.00	---
7760.00	S	-21.60	-13.00	8.60
8366.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :848.8MHz Engineer :Nick  
 Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
1697.60	H	---	-13.00	---
2546.40	H	---	-13.00	---
3395.20	H	---	-13.00	---
4244.00	H	---	-13.00	---
5092.80	H	---	-13.00	---
5941.60	H	---	-13.00	---
6790.40	H	---	-13.00	---
7639.20	H	---	-13.00	---
7748.00	S	-22.11	-13.00	9.11
8488.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Figure 9-24: Band edge emission at antenna terminals – EDGE 850 Channel Lowest

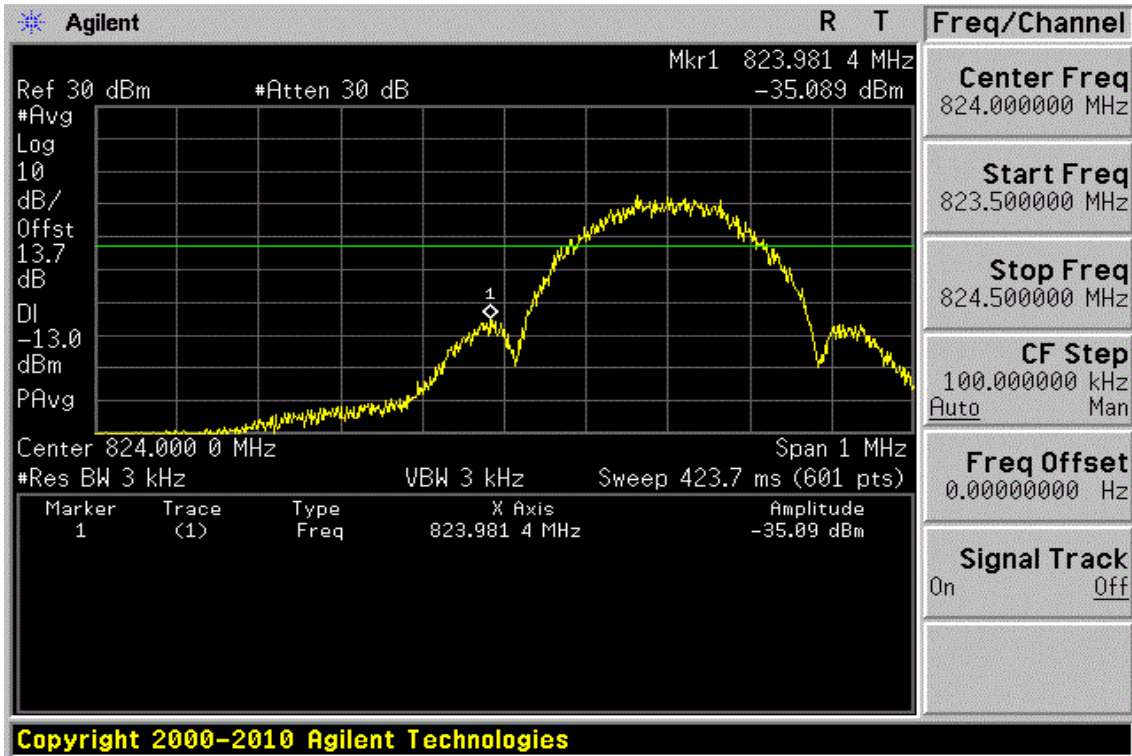
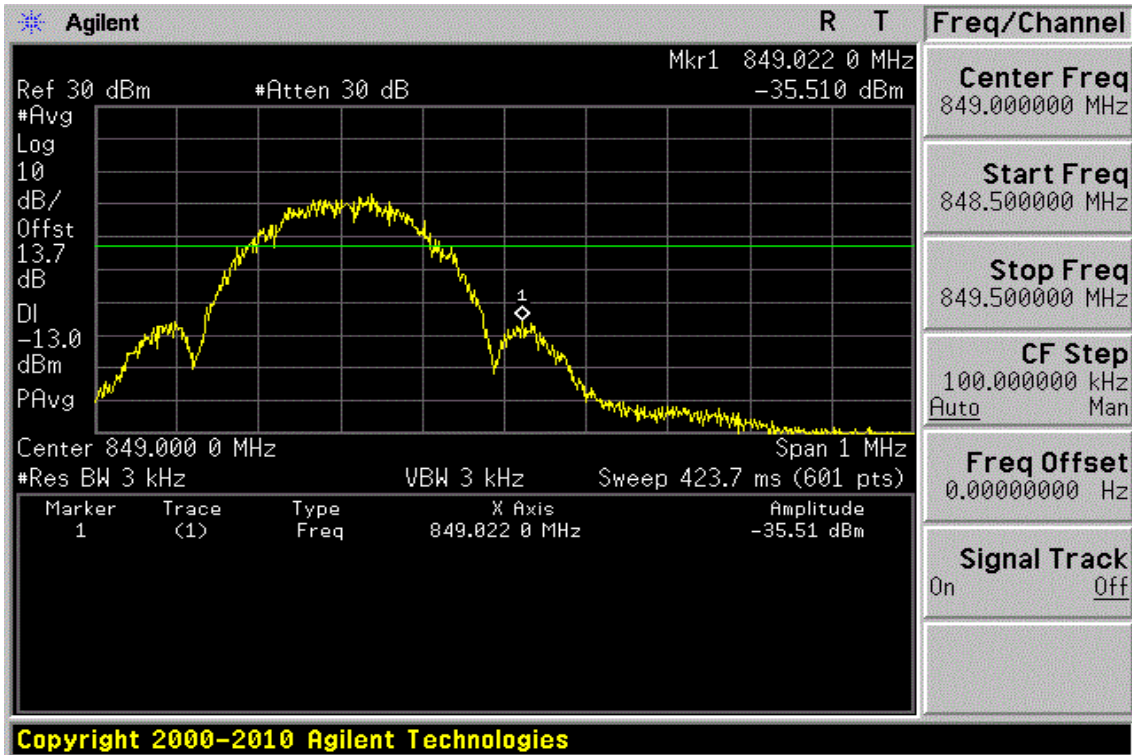


Figure 9-25: Band edge emission at antenna terminals – EDGE 850 Channel Highest



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**Band edge emission at antenna terminals – EDGE 850 Low & High**

Test Mode                      EDGE 850                      Engineer                      :Nick

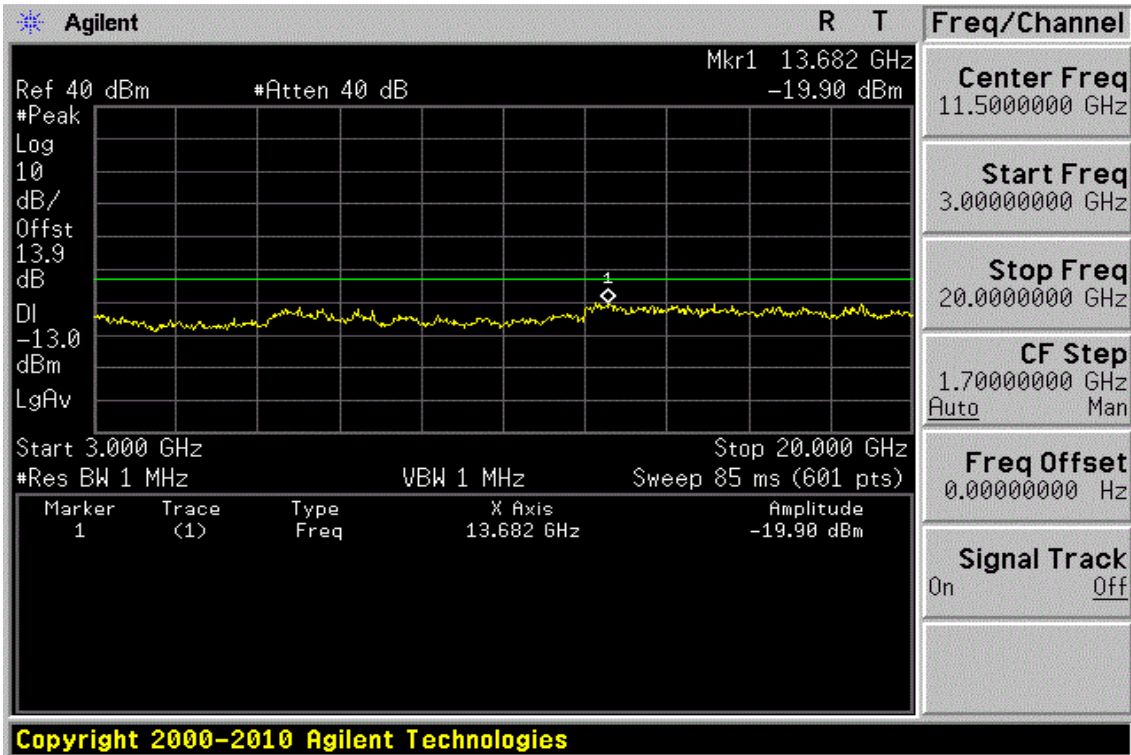
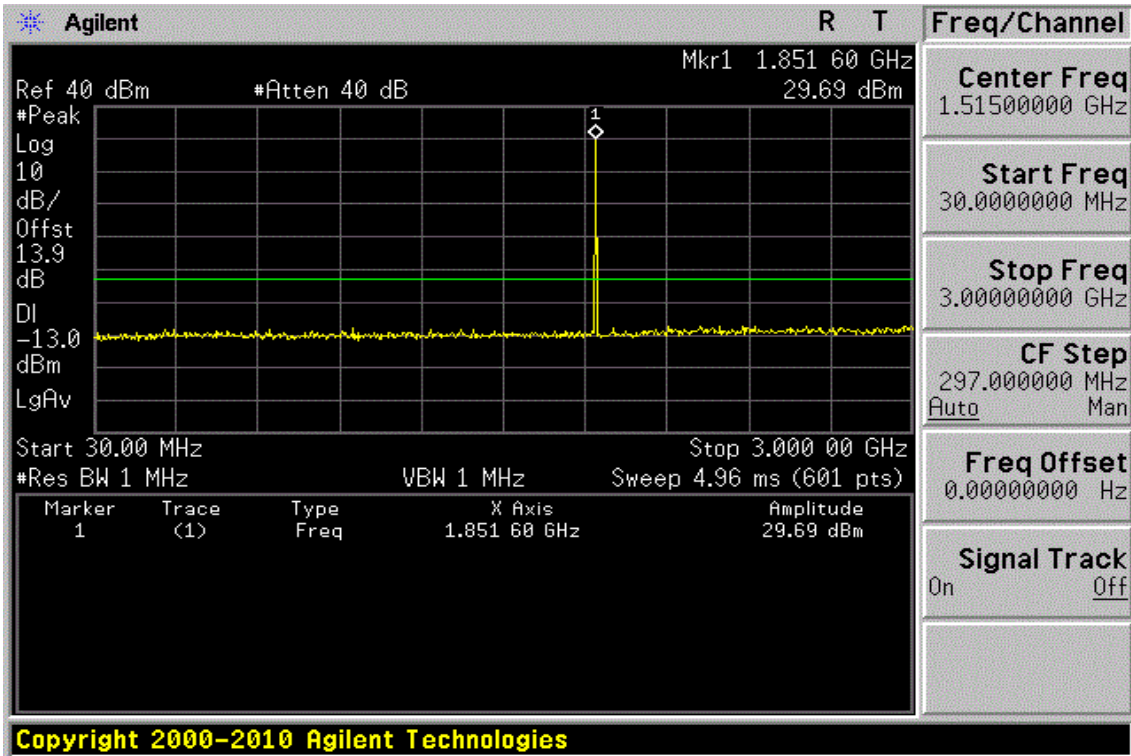
Freq. MHz	Reading dBm	Limit dBm	Safe Margin dB
823.981	-35.09	-13.00	22.09
849.022	-35.51	-13.00	22.51

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Figure 9-26: Out of Band emission at antenna terminals – EDGE 1900 Channel Lowest



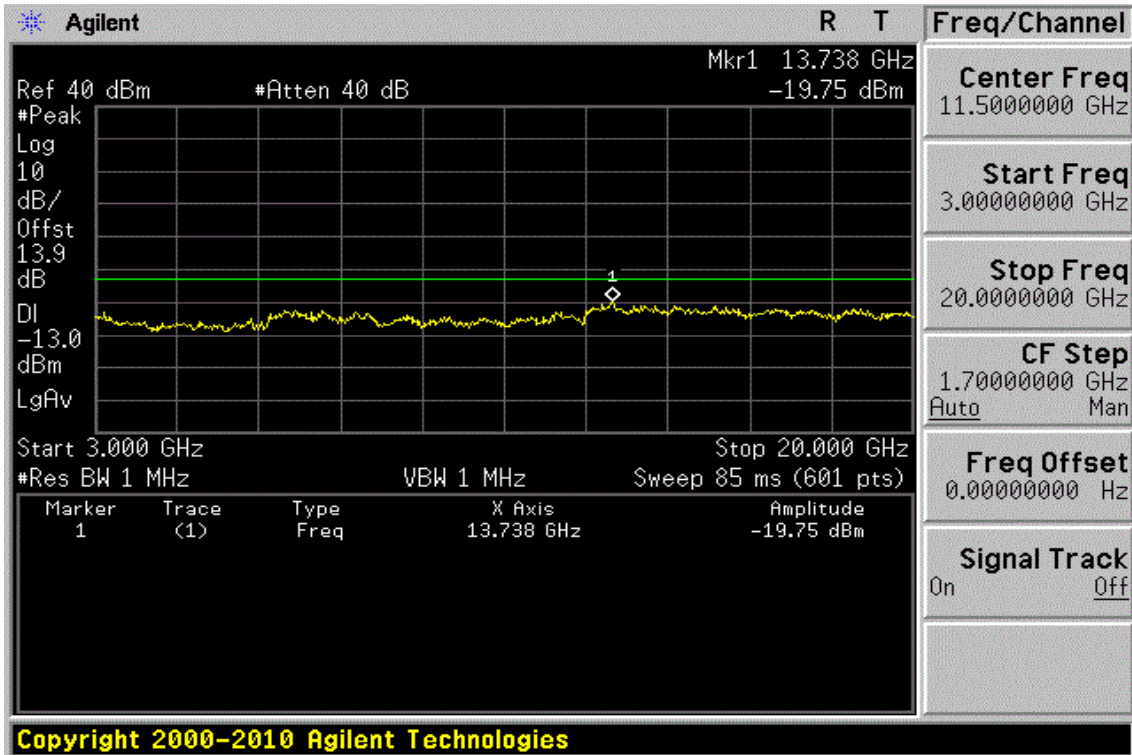
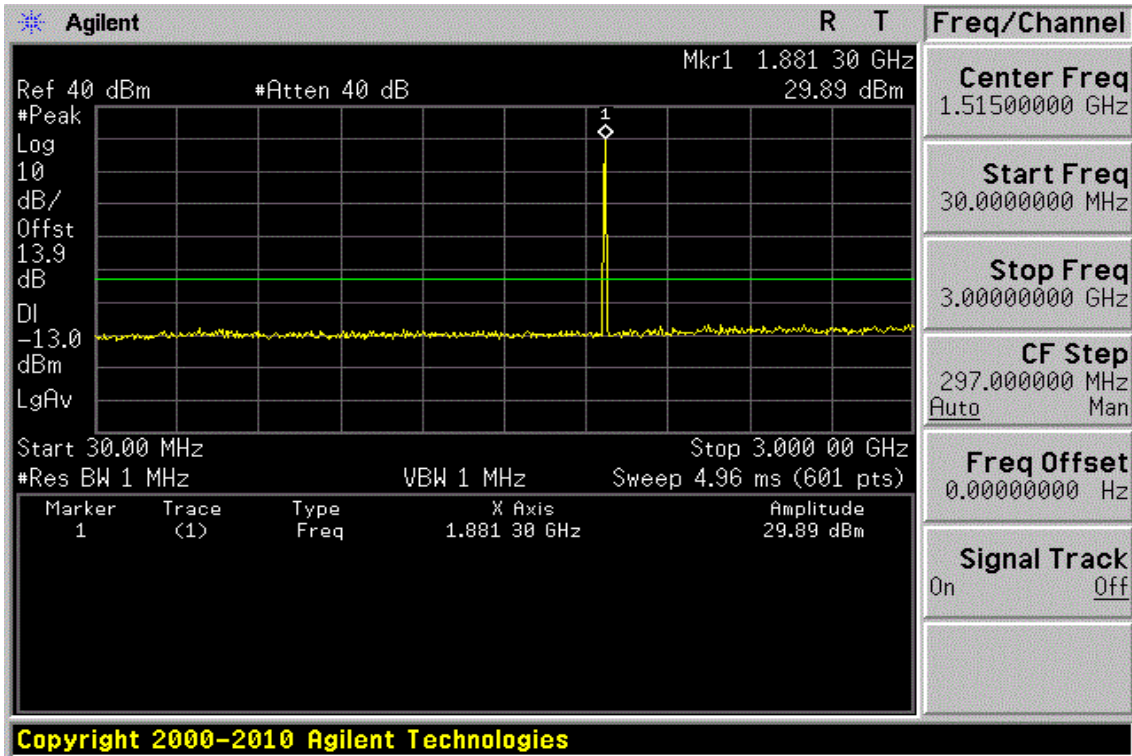
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Figure 9-27: Out of Band emission at antenna terminals – EDGE 1900 Channel Mid

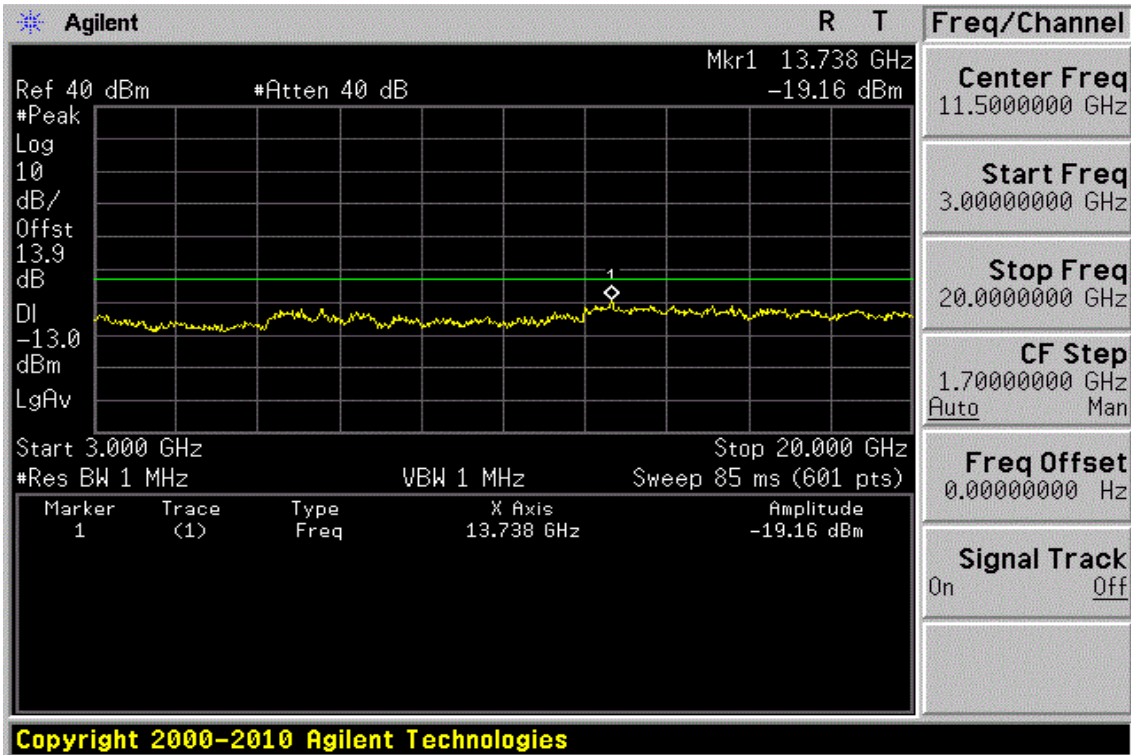
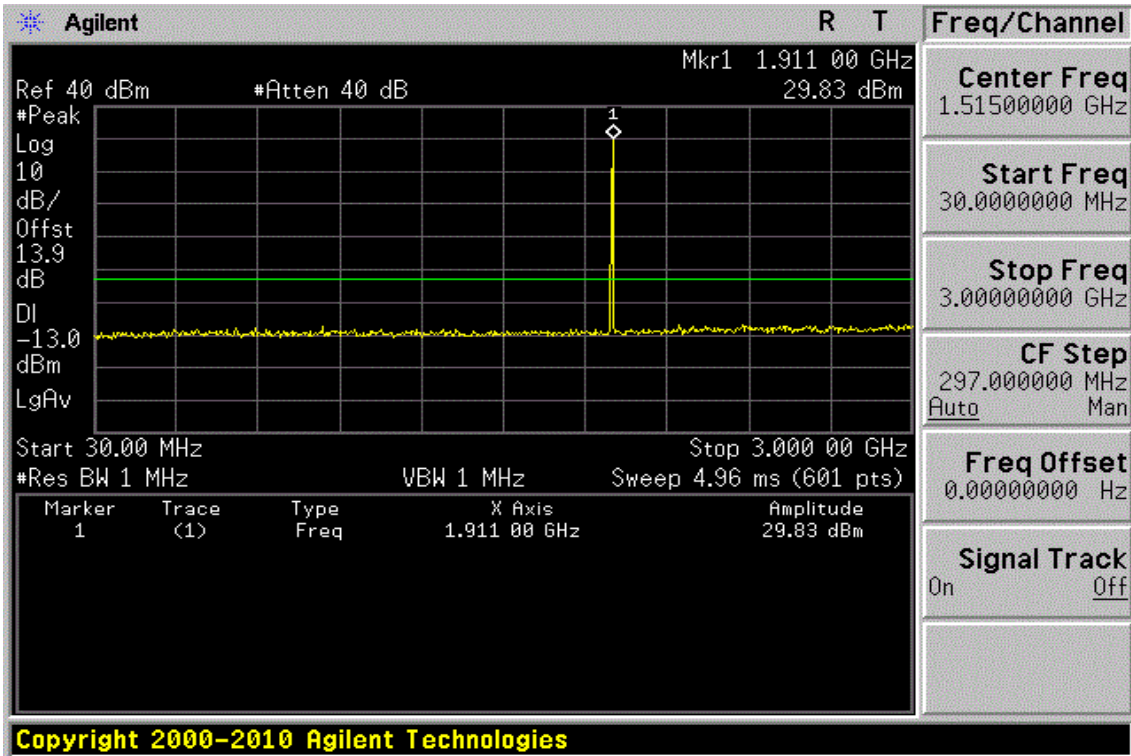


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Figure 9-28: Out of Band emission at antenna terminals – EDGE 1900 Channel Highest



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**Out of Band emission at antenna terminals – EDGE 1900**

Fundamental Frequency :1850.2 MHz Engineer :Nick  
 Operation Mode :TX Low

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3700.40	H	---	-13.00	---
5550.60	H	---	-13.00	---
7400.80	H	---	-13.00	---
9251.00	H	---	-13.00	---
11101.20	H	---	-13.00	---
12951.40	H	---	-13.00	---
13682.00	S	-19.90	-13.00	6.90
14801.60	H	---	-13.00	---
16651.80	H	---	-13.00	---
18502.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :1880.0 MHz Engineer :Nick  
 Operation Mode :TX Mid

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3760.00	H	---	-13.00	---
5640.00	H	---	-13.00	---
7520.00	H	---	-13.00	---
9400.00	H	---	-13.00	---
11280.00	H	---	-13.00	---
13160.00	H	---	-13.00	---
13738.00	S	-19.75	-13.00	6.75
15040.00	H	---	-13.00	---
16920.00	H	---	-13.00	---
18800.00	H	---	-13.00	---

Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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Fundamental Frequency :1909.8 MHz Engineer :Nick  
 Operation Mode :TX High

Freq. (MHz)	Note F/H/E/S	Reading dBm	Limit dBm	Safe Margin dB
<30	S	---	-13.00	---
30-1000	S	---	-13.00	---
3819.60	H	---	-13.00	---
5729.40	H	---	-13.00	---
7639.20	H	---	-13.00	---
9549.00	H	---	-13.00	---
11458.80	H	---	-13.00	---
13368.60	H	---	-13.00	---
13738.00	S	-19.16	-13.00	6.16
15278.40	H	---	-13.00	---
17188.20	H	---	-13.00	---
19098.00	H	---	-13.00	---

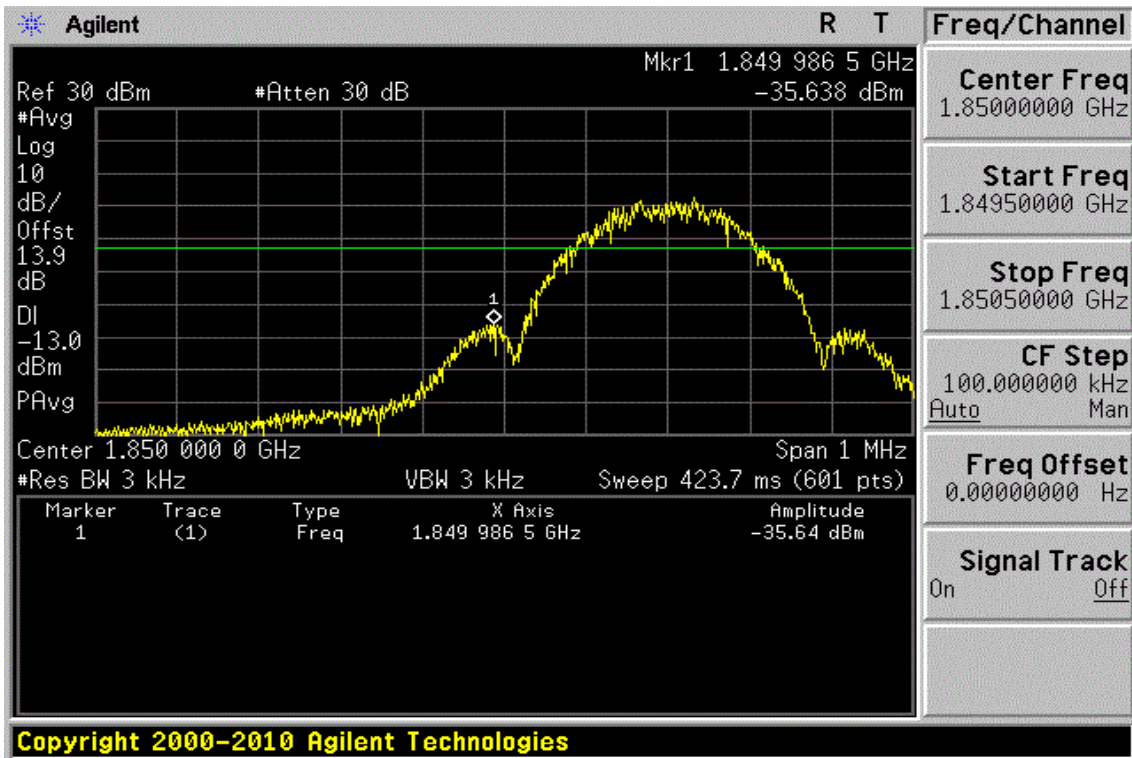
Note : “H” : denotes Harmonic Frequency. “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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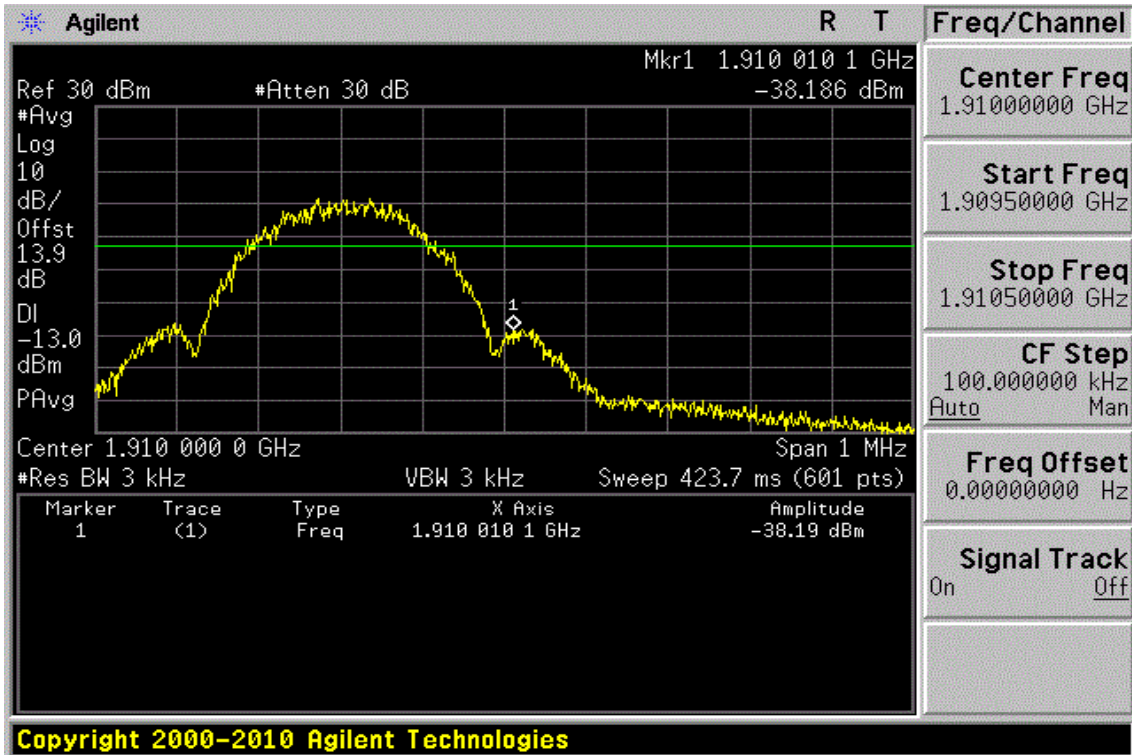
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**Figure 9-29: Band edge emission at antenna terminals – EDGE 1900 Channel Lowest**



**Figure 9-30: Band edge emission at antenna terminals – EDGE 1900 Channel Highest**



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**Band edge emission at antenna terminals – EDGE 1900 Low & High**

Test Mode                      EDGE 1900:                      Engineer                      :Nick

Freq. MHz	Reading dBm	Limit dBm	Safe Margin dB
1849.986	-35.64	-13.00	22.64
1910.010	-38.19	-13.00	25.19

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## 10. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

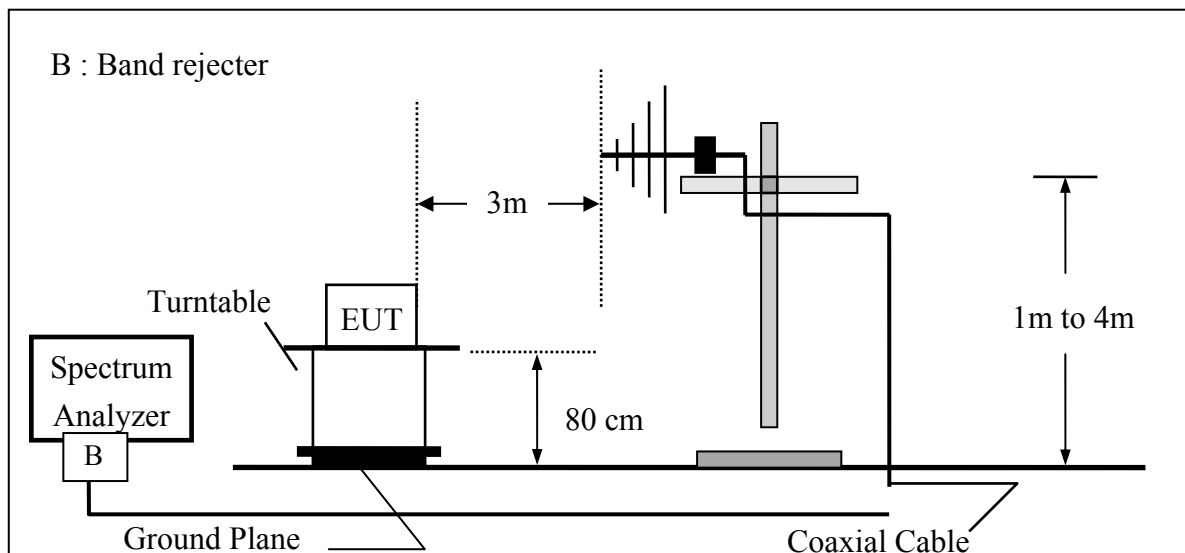
### 10.1. Standard Applicable:

According to FCC §2.1053,

FCC §22.917(a), §24.238(a) the magnitude of each spurious and harmonic emission that can be detected when the equipment is operated under the conditions specified in the instruction manual and/ or alignment procedure, shall not be less than  $43 + 10 \log$  (mean output power in watts) dBc below the mean power output outside a license's frequency block (-13dBm).

### 10.2. EUT Setup (Block Diagram of Configuration):

Radiated Emission Test Set-Up, Frequency Below 1000MHz

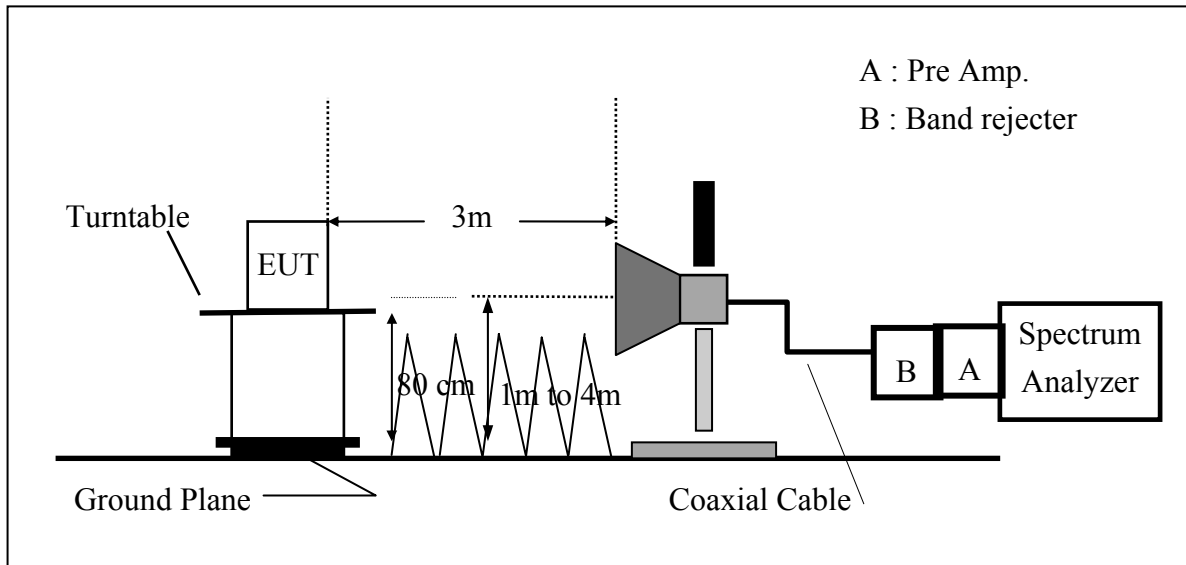


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Radiated Emission Test Set-UP Frequency Over 1 GHz



**10.3. Measurement Procedure:**

The EUT was placed on a non-conductive; the measurement antenna was placed at a distance of 3 meters from the EUT. During the tests, the antenna height and the EUT azimuth were varied in order to identify the maximum level of emissions from the EUT. This maximization process was repeated with the EUT positioned in each of its three orthogonal orientations.

The frequency range up to tenth harmonic was investigated for each of three fundamental frequencies (low, middle and high channels). Once spurious emission was identified, the power of the emission was determined using the substitution method.

The spurious emissions attenuation was calculated as the difference between radiated power at the fundamental frequency and the spurious emissions frequency.

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

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

**10.4. Measurement Equipment Used:**

Refer to section 2.4 in this report

**10.5. Measurement Result:**

Refer to attach tabular data sheets.

For radiated plot of test data, please refer to Appendix 1, page 130

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**Radiated Spurious Emission Measurement Result: GPRS 850 Mode**

Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 128	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:824.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:VERTICAL

Freq. MHz	Note F/H/E/S	ERP dBm	SG Output Level dBm	Antenna Gain dBd	Cable Loss dB	Limit dBm	Margin dB
114.39	S	-78.55	-76.23	-1.20	-1.11	-13.00	-65.55
286.08	S	-82.50	-85.33	4.50	-1.67	-13.00	-69.50
600.36	S	-76.52	-78.18	4.03	-2.37	-13.00	-63.52
682.81	S	-77.18	-78.79	4.14	-2.53	-13.00	-64.18
770.11	S	-76.62	-77.60	3.68	-2.70	-13.00	-63.62
915.61	S	-74.63	-75.29	3.64	-2.98	-13.00	-61.63
1648.40	H	-50.04	-48.38	2.39	-4.05	-13.00	-37.04
2472.60	H	-40.22	-38.33	3.14	-5.03	-13.00	-27.22
3288.00	H	---					
4121.00	H	---					
4945.20	H	---					
5769.40	H	---					
6593.60	H	---					
7417.80	H	---					
8242.00	H	---					

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 128	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:824.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
158.04	S	-86.80	-84.87	-0.67	-1.26	-13.00	-73.80
290.93	S	-70.92	-73.79	4.56	-1.68	-13.00	-57.92
548.95	S	-76.37	-78.69	4.58	-2.26	-13.00	-63.37
696.39	S	-78.48	-80.07	4.15	-2.55	-13.00	-65.48
777.87	S	-77.66	-78.68	3.74	-2.71	-13.00	-64.66
945.68	S	-76.12	-76.71	3.63	-3.05	-13.00	-63.12
1648.40	H	-48.52	-47.14	2.68	-4.05	-13.00	-35.52
2472.60	H	-47.37	-45.86	3.52	-5.03	-13.00	-34.37
3288.00	H	---					
4121.00	H	---					
4945.20	H	---					
5769.40	H	---					
6593.60	H	---					
7417.80	H	---					
8242.00	H	---					

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 190	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
114.39	S	-78.69	-76.37	-1.20	-1.11	-13.00	-65.69
240.49	S	-82.90	-85.77	4.40	-1.53	-13.00	-69.90
371.44	S	-82.12	-84.87	4.63	-1.88	-13.00	-69.12
600.36	S	-75.86	-77.51	4.03	-2.37	-13.00	-62.86
697.36	S	-77.19	-78.78	4.15	-2.55	-13.00	-64.19
910.76	S	-73.81	-74.49	3.65	-2.96	-13.00	-60.81
1673.20	H	-53.17	-51.42	2.33	-4.08	-13.00	-40.17
2509.80	H	-39.77	-37.90	3.19	-5.07	-13.00	-26.77
3346.40	H	---					
4183.00	H	---					
5019.60	H	---					
5856.20	H	---					
6692.80	H	---					
7529.40	H	---					
8366.00	H	---					

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 190	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
141.55	S	-86.40	-83.89	-1.30	-1.21	-13.00	-73.40
229.82	S	-81.04	-84.16	4.62	-1.50	-13.00	-68.04
288.02	S	-77.29	-80.14	4.52	-1.68	-13.00	-64.29
604.24	S	-80.32	-81.97	4.04	-2.38	-13.00	-67.32
784.66	S	-76.51	-77.57	3.79	-2.73	-13.00	-63.51
949.56	S	-75.30	-75.87	3.63	-3.06	-13.00	-62.30
1673.20	H	-52.29	-50.87	2.66	-4.08	-13.00	-39.29
2509.80	H	-46.18	-44.67	3.56	-5.07	-13.00	-33.18
3346.40	H	---					
4183.00	H	---					
5019.60	H	---					
5856.20	H	---					
6692.80	H	---					
7529.40	H	---					
8366.00	H	---					

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

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Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 215	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:848.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:VERTICAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
114.39	S	-79.22	-76.90	-1.20	-1.11	-13.00	-66.22
286.08	S	-82.21	-85.04	4.50	-1.67	-13.00	-69.21
402.48	S	-82.01	-84.82	4.76	-1.95	-13.00	-69.01
600.36	S	-76.36	-78.02	4.03	-2.37	-13.00	-63.36
734.22	S	-77.17	-78.27	3.72	-2.62	-13.00	-64.17
924.34	S	-74.45	-75.09	3.64	-3.00	-13.00	-61.45
1697.60	H	-54.22	-52.38	2.28	-4.12	-13.00	-41.22
2546.40	H	-39.14	-37.33	3.30	-5.11	-13.00	-26.14
3395.20	H	---					
4244.00	H	---					
5092.80	H	---					
5941.60	H	---					
6790.40	H	---					
7639.20	H	---					
8488.00	H	---					

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 215	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:848.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq.	Note	ERP	SG	Antenna	Cable	Limit	Margin
MHz	F/H/E/S	dBm	Output Level dBm	Gain dBd	Loss dB	dBm	dB
167.74	S	-84.80	-84.04	0.54	-1.30	-13.00	-71.80
374.35	S	-83.09	-85.82	4.61	-1.89	-13.00	-70.09
502.39	S	-81.85	-84.40	4.71	-2.17	-13.00	-68.85
569.32	S	-74.07	-76.13	4.36	-2.30	-13.00	-61.07
709.97	S	-78.65	-80.10	4.02	-2.57	-13.00	-65.65
942.77	S	-75.83	-76.42	3.63	-3.04	-13.00	-62.83
1697.60	H	-53.64	-52.17	2.65	-4.12	-13.00	-40.64
2546.40	H	-47.12	-45.67	3.65	-5.11	-13.00	-34.12
3395.20	H	---					
4244.00	H	---					
5092.80	H	---					
5941.60	H	---					
6790.40	H	---					
7639.20	H	---					
8488.00	H	---					

ERP (dBm) = SG Level(dBm) + Antenna Gain(dBd) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 512	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1850.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:VERTICAL

Freq. MHz	Note F/H/E/S	EIRP dBm	SG Output Level dBm	Antenna Gain dBi	Cable Loss dB	Limit dBm	Margin dB
114.39	S	-76.60	-76.43	0.95	-1.11	-13.00	-63.60
226.91	S	-77.22	-82.57	6.84	-1.49	-13.00	-64.22
342.34	S	-78.99	-84.06	6.89	-1.81	-13.00	-65.99
431.58	S	-76.61	-81.29	6.70	-2.01	-13.00	-63.61
600.36	S	-70.83	-74.63	6.18	-2.37	-13.00	-57.83
871.96	S	-72.35	-75.48	6.01	-2.88	-13.00	-59.35
3700.40	H	-51.09	-52.27	7.40	-6.23	-13.00	-38.09
5550.60	H	-44.04	-45.23	8.99	-7.80	-13.00	-31.04
7400.80	H	---					
9251.00	H	---					
11101.20	H	---					
12951.40	H	---					
14801.60	H	---					
16651.80	H	---					
18502.00	H	---					

$EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)$

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 512	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1850.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq. MHz	Note F/H/E/S	EIRP dBm	SG Output Level dBm	Antenna Gain dBi	Cable Loss dB	Limit dBm	Margin dB
139.61	S	-84.22	-83.85	0.83	-1.21	-13.00	-71.22
418.97	S	-81.03	-85.83	6.78	-1.99	-13.00	-68.03
557.68	S	-79.13	-83.49	6.64	-2.28	-13.00	-66.13
727.43	S	-75.76	-79.11	5.95	-2.61	-13.00	-62.76
870.99	S	-73.54	-76.68	6.02	-2.88	-13.00	-60.54
3700.40	S	-52.17	-52.86	6.91	-6.23	-13.00	-39.17
5550.60	H	-47.37	-47.85	8.27	-7.80	-13.00	-34.37
7400.80	H	---					
9251.00	H	---					
11101.20	H	---					
12951.40	H	---					
14801.60	H	---					
16651.80	H	---					
18502.00	H	---					

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.  
 “E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.  
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Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 661	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:VERTICAL

Freq. MHz	Note F/H/E/S	EIRP dBm	SG Output Level dBm	Antenna Gain dBi	Cable Loss dB	Limit dBm	Margin dB
99.84	S	-77.02	-77.13	1.16	-1.05	-13.00	-64.02
114.39	S	-77.01	-76.84	0.95	-1.11	-13.00	-64.01
528.58	S	-76.57	-81.14	6.79	-2.22	-13.00	-63.57
600.36	S	-75.62	-79.43	6.18	-2.37	-13.00	-62.62
797.27	S	-74.30	-77.58	6.03	-2.75	-13.00	-61.30
917.55	S	-72.77	-75.58	5.79	-2.98	-13.00	-59.77
3760.00	H	-51.10	-52.20	7.42	-6.32	-13.00	-38.10
5640.00	H	-45.82	-46.95	9.01	-7.89	-13.00	-32.82
7520.00	H	---					
9400.00	H	---					
11280.00	H	---					
13160.00	H	---					
15040.00	H	---					
16920.00	H	---					
18800.00	H	---					

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : "F" : denotes Fundamental Frequency. ; "H" : denotes Harmonic Frequency.  
 "E" : denotes Band Edge Frequency. ; "S" : denotes Spurious Frequency.  
 "---" : denotes Noise Floor.

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Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 661	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq. MHz	Note F/H/E/S	EIRP dBm	SG Output Level dBm	Antenna Gain dBi	Cable Loss dB	Limit dBm	Margin dB
140.58	S	-84.20	-83.81	0.82	-1.21	-13.00	-71.20
373.38	S	-81.04	-85.93	6.77	-1.88	-13.00	-68.04
602.30	S	-79.23	-83.04	6.18	-2.38	-13.00	-66.23
769.14	S	-75.67	-78.80	5.82	-2.70	-13.00	-62.67
871.96	S	-73.31	-76.44	6.01	-2.88	-13.00	-60.31
994.18	S	-72.53	-75.54	6.11	-3.10	-13.00	-59.53
3760.00	H	-53.72	-54.24	6.85	-6.32	-13.00	-40.72
5640.00	H	-45.86	-46.27	8.30	-7.89	-13.00	-32.86
7520.00	H	---					
9400.00	H	---					
11280.00	H	---					
13160.00	H	---					
15040.00	H	---					
16920.00	H	---					
18800.00	H	---					

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 810	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1909.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:VERTICAL

Freq. MHz	Note F/H/E/S	EIRP dBm	SG Output Level dBm	Antenna Gain dBi	Cable Loss dB	Limit dBm	Margin dB
114.39	S	-76.66	-76.49	0.95	-1.11	-13.00	-63.66
425.76	S	-79.64	-84.37	6.73	-2.00	-13.00	-66.64
600.36	S	-74.80	-78.60	6.18	-2.37	-13.00	-61.80
727.43	S	-75.08	-78.42	5.95	-2.61	-13.00	-62.08
870.99	S	-72.23	-75.38	6.02	-2.88	-13.00	-59.23
940.83	S	-70.95	-73.69	5.78	-3.04	-13.00	-57.95
3819.60	H	-50.61	-51.73	7.51	-6.39	-13.00	-37.61
5729.40	H	-47.94	-49.05	9.03	-7.92	-13.00	-34.94
7639.20	H	---					
9549.00	H	---					
11458.80	H	---					
13368.60	H	---					
15278.40	H	---					
17188.20	H	---					
19098.00	H	---					

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.

“E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.

“---“ : denotes Noise Floor.

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Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 810	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1909.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:HORIZONTAL

Freq. MHz	Note F/H/E/S	EIRP dBm	SG Output Level dBm	Antenna Gain dBi	Cable Loss dB	Limit dBm	Margin dB
139.61	S	-83.87	-83.49	0.83	-1.21	-13.00	-70.87
383.08	S	-80.73	-85.65	6.82	-1.90	-13.00	-67.73
520.82	S	-79.19	-83.79	6.81	-2.20	-13.00	-66.19
718.70	S	-77.19	-80.66	6.06	-2.59	-13.00	-64.19
870.99	S	-74.25	-77.39	6.02	-2.88	-13.00	-61.25
949.56	S	-73.72	-76.44	5.78	-3.06	-13.00	-60.72
3819.60	H	-51.10	-51.76	7.05	-6.39	-13.00	-38.10
5729.40	H	-44.71	-45.11	8.32	-7.92	-13.00	-31.71
7639.20	H	---					
9549.00	H	---					
11458.80	H	---					
13368.60	H	---					
15278.40	H	---					
17188.20	H	---					
19098.00	H	---					

EIRP (dBm) = SG Level(dBm) + Antenna Gain(dBi) + Cable Loss(dB)

Note : “F” : denotes Fundamental Frequency. ; “H” : denotes Harmonic Frequency.  
 “E” : denotes Band Edge Frequency. ; “S” : denotes Spurious Frequency.  
 “---” : denotes Noise Floor.

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## 11. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

### 11.1. Standard Applicable:

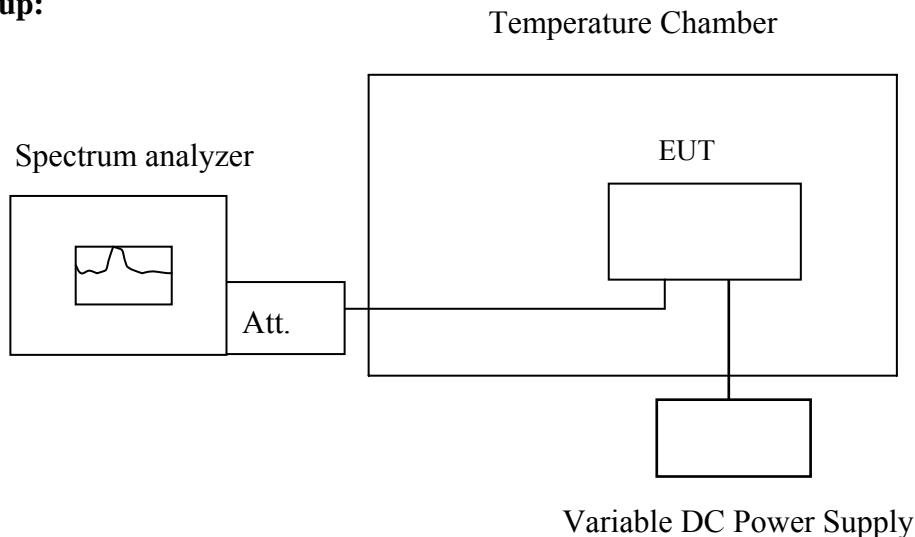
According to FCC §2.1055(a) (1)

Frequency Tolerance: +/-2.5ppm for 850MHz band

+/-2.5ppm for 1900MHz band

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

### 11.2. Test Set-up:



**Note :** Measurement setup for testing on Antenna connector

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### 11.3. Measurement Procedure:

The equipment under test was connected to an external AC or DC power supply and input rated voltage. RF output was connected to a frequency counter or spectrum analyzer via feed through attenuators. The EUT was placed inside the temperature chamber. Set the spectrum analyzer RBW low enough to obtain the desired frequency resolution and measure EUT 25°C operating frequency as reference frequency. Turn EUT off and set the chamber temperature to -30°C. After the temperature stabilized for approximately 30 minutes recorded the frequency. Repeat step measure with 10°C increased per stage until the highest temperature of +50°C reached.

### 11.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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**11.5. Measurement Result:**

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature ( )	(MHz)		
3.7	-30	836.600008	3.00	2091
3.7	-20	836.600007	2.00	2091
3.7	-10	836.600006	1.00	2091
3.7	0	836.600005	0.00	2091
3.7	10	836.600003	-2.00	2091
3.7	20	836.600005	0.00	2091
3.7	30	836.600008	3.00	2091
3.7	40	836.600007	2.00	2091
3.7	50	836.600006	1.00	2091

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature ( )	(MHz)		
3.7	-30	1880.000003	-2.00	4700
3.7	-20	1879.999994	-11.00	4700
3.7	-10	1880.000004	-1.00	4700
3.7	0	1879.999997	-8.00	4700
3.7	10	1879.999989	-16.00	4700
3.7	20	1880.000005	0.00	4700
3.7	30	1879.999992	-13.00	4700
3.7	40	1880.000007	2.00	4700
3.7	50	1879.999994	-11.00	4700

**Note: The battery is rated 3.7V dc.**

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## 12. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

### 12.1. Standard Applicable:

According to FCC §2.1055(d) (2)

Frequency Tolerance: +/-2.5ppm for 850MHz band

+/-2.5ppm for 1900MHz band

The carrier frequency shall not depart from the reference frequency in excess of  $\pm 2.5$  ppm for mobile stations.

### 12.2. Test Set-up:

Refer to section 11.2 in this report

### 12.3. Measurement Procedure:

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

Reduce the input voltage to specify extreme voltage variation (+/- 15%) and endpoint as declared by the manufacturer, record the maximum frequency change.

### 12.4. Measurement Equipment Used:

Refer to section 2.4 in this report

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**12.5. Measurement Result:**

Reference Frequency: GPRS 850 Mid Channel 836.6 MHz				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature ( )	(MHz)		
4.20	20	836.600002	-5.00	2091
3.70	20	836.600007	0.00	2091
3.45	20	836.600006	-1.00	2091
2.90 (End point)	20	836.600004	-3.00	2091

Reference Frequency: GPRS 1900 Mid Channel 1880 MHz				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature ( )	(MHz)		
4.20	20	1880.000011	7.00	2091
3.70	20	1880.000004	0.00	2091
3.45	20	1879.999998	-6.00	2091
2.90 (End point)	20	1880.000006	2.00	2091

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## 13. PEAK TO AVERAGE RATIO

### 13.1. Standard Applicable:

According FCC 24.232(d) – The peak-to-average ration (PAR) of the transmission may not exceed 13dB.

### 13.2. Test SET-UP (Block Diagram of Configuration):

Refer to section 2.4 in this report

### 13.3. Measurement Procedure:

KDB 971168 D01 is employed as the following procedure is proper adjusted accordingly:

Set resolution/measurement bandwidth  $\geq$  signal's occupied bandwidth; & internal = 1ms

Set the number of counts to a value that stabilizes the measured CCDF curve.

### 13.4. Measurement Equipment Used:

Refer to section 2.4 in this report

### 13.5. Measurement Result:

Refer to next page for tabular, and plot results

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**13.5.1 Tabular Results:**

TEST CONDITIONS	Peak-to-Average Ratio					
	Channel 128(L)		Channel 190(M)		Channel 251(H)	
	824.2MHz		836.6MHz		848.8MHz	
	dB		dB		dB	
Tnom / Vnom	Measured	Limit	Measured	Limit	Measured	Limit
GSM 850	9.79	13	11.79	13	11.36	13
GPRS 850	10.93	13	10.78	13	11.37	13
EDGE 850	10.90	13	10.39	13	10.04	13

TEST CONDITIONS	Peak-to-Average Ratio					
	Channel 512(L)		Channel 661(M)		Channel 810(H)	
	1850.2MHz		1880.0MHz		1909.8MHz	
	dB		dB		dB	
Tnom / Vnom	Measured	Limit	Measured	Limit	Measured	Limit
GSM 1900	10.75	13	11.37	13	11.47	13
GPRS 1900	11.50	13	10.46	13	10.89	13
EDGE 1900	12.78	13	12.49	13	12.21	13

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13.5.2 Measurement Results:

Figure 13-1: GSM 850 Channel Low

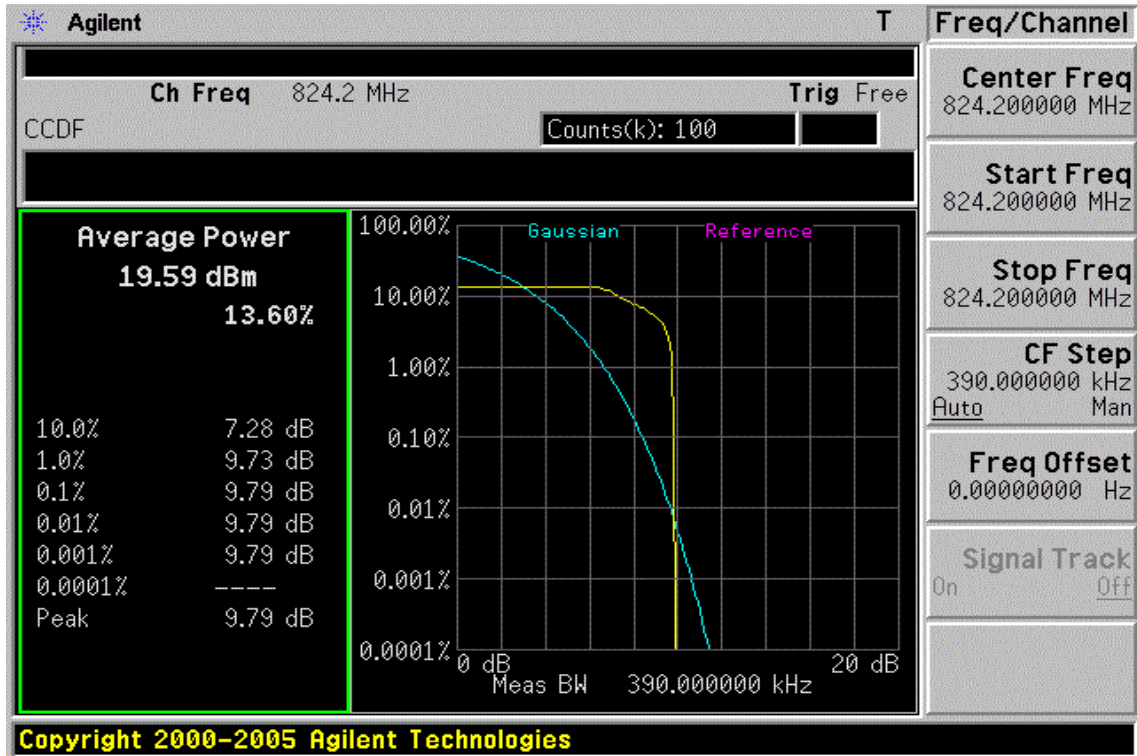
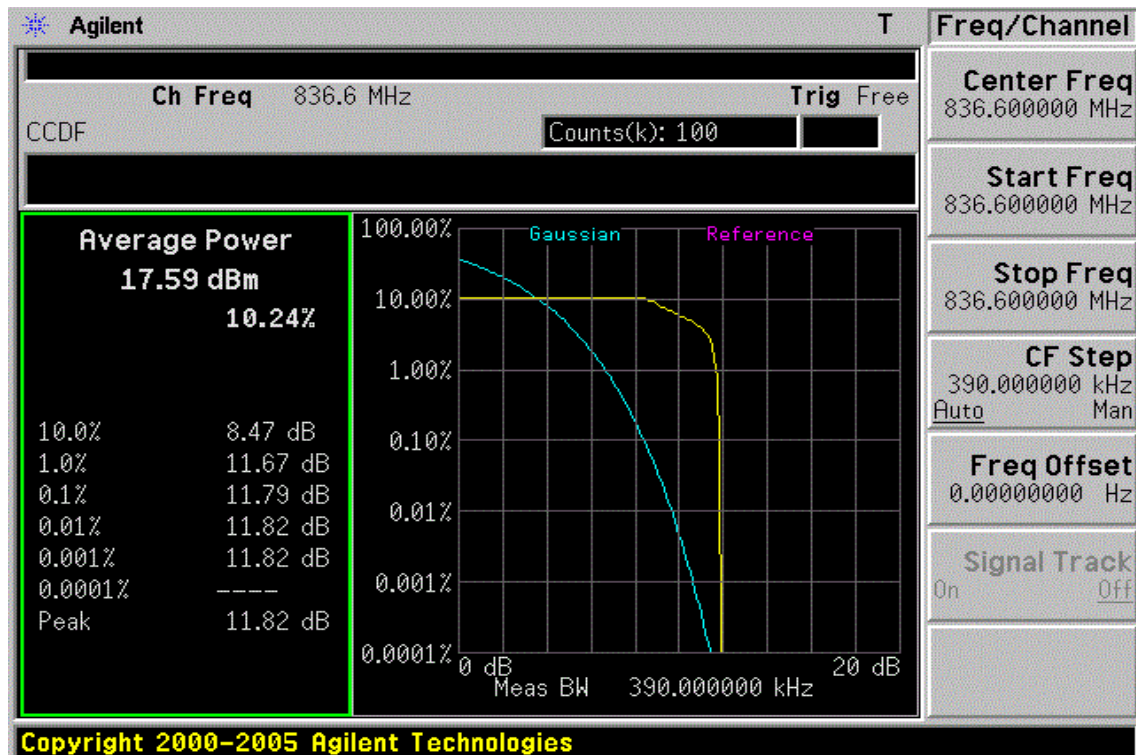


Figure 13-2: GSM 850 Channel Mid



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Figure 13-3: GSM 850 Channel High

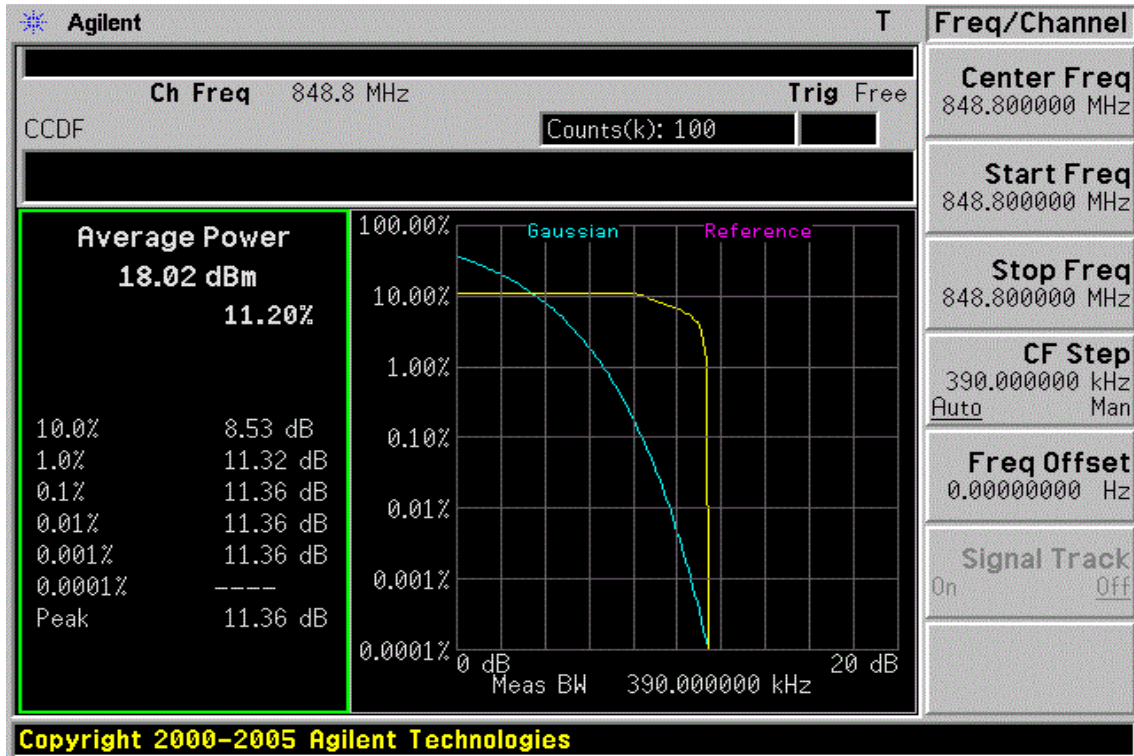
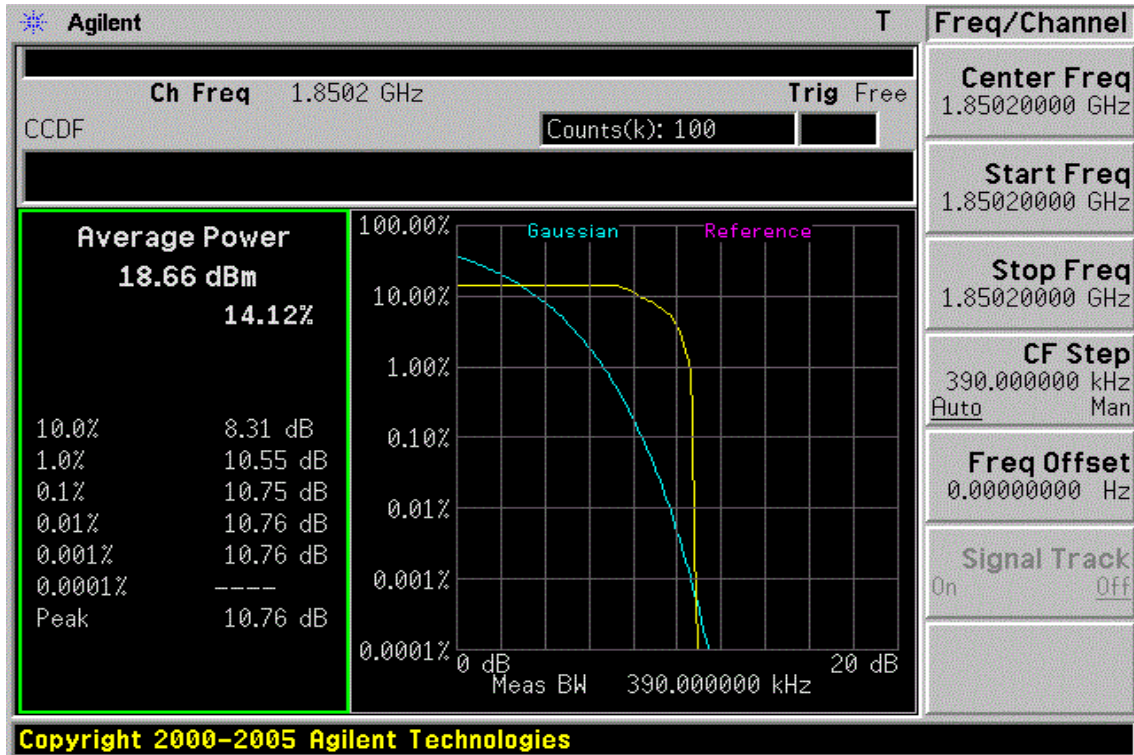


Figure 13-4: GSM 1900 Channel Low



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Figure 13-5: GSM 1900 Channel Mid

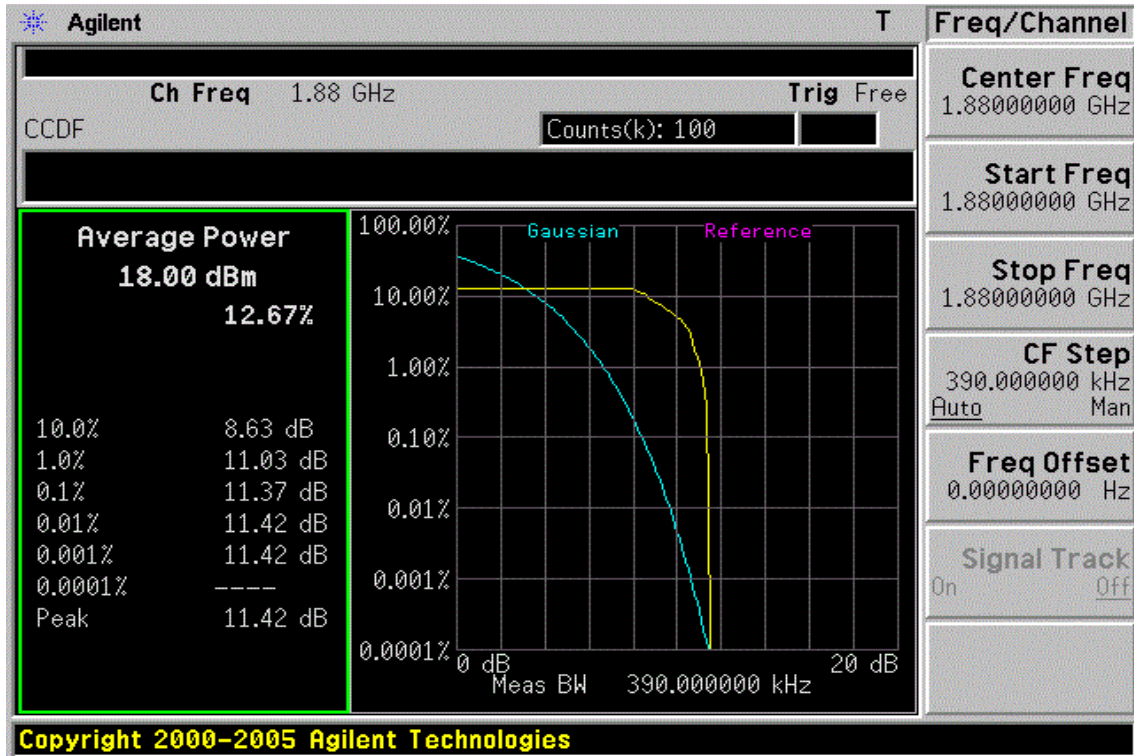
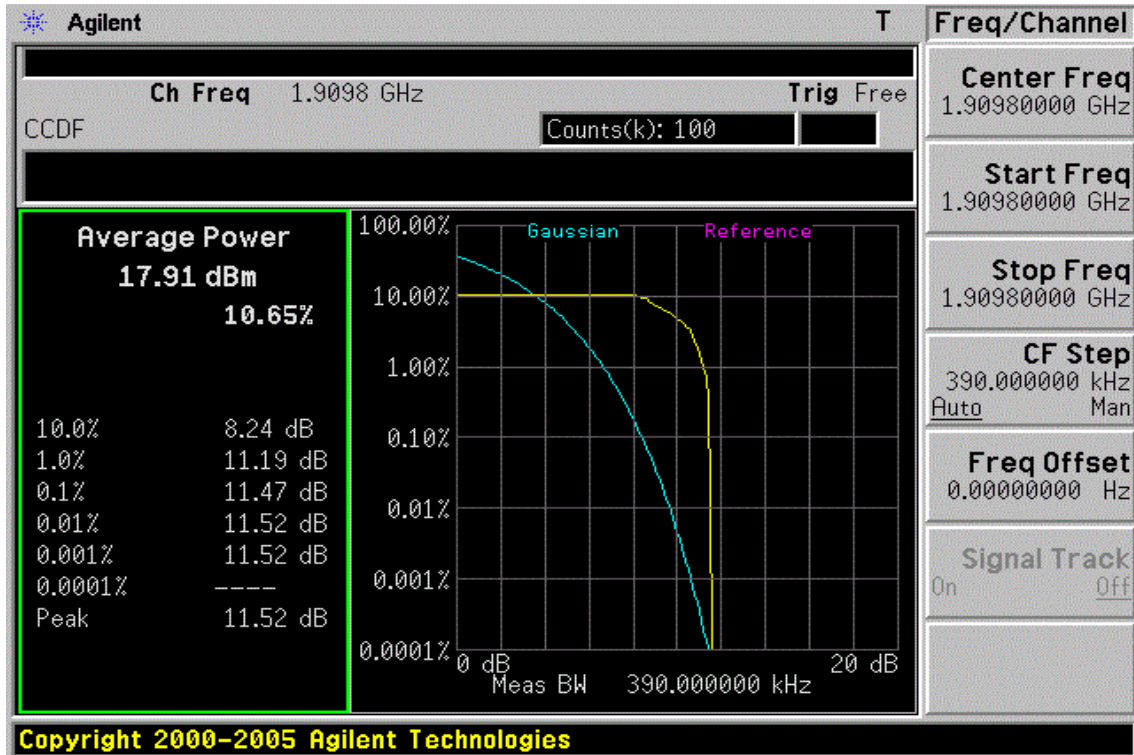


Figure 13-6: GSM 1900 Channel High



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Figure 13-7: GPRS 850 Channel Low

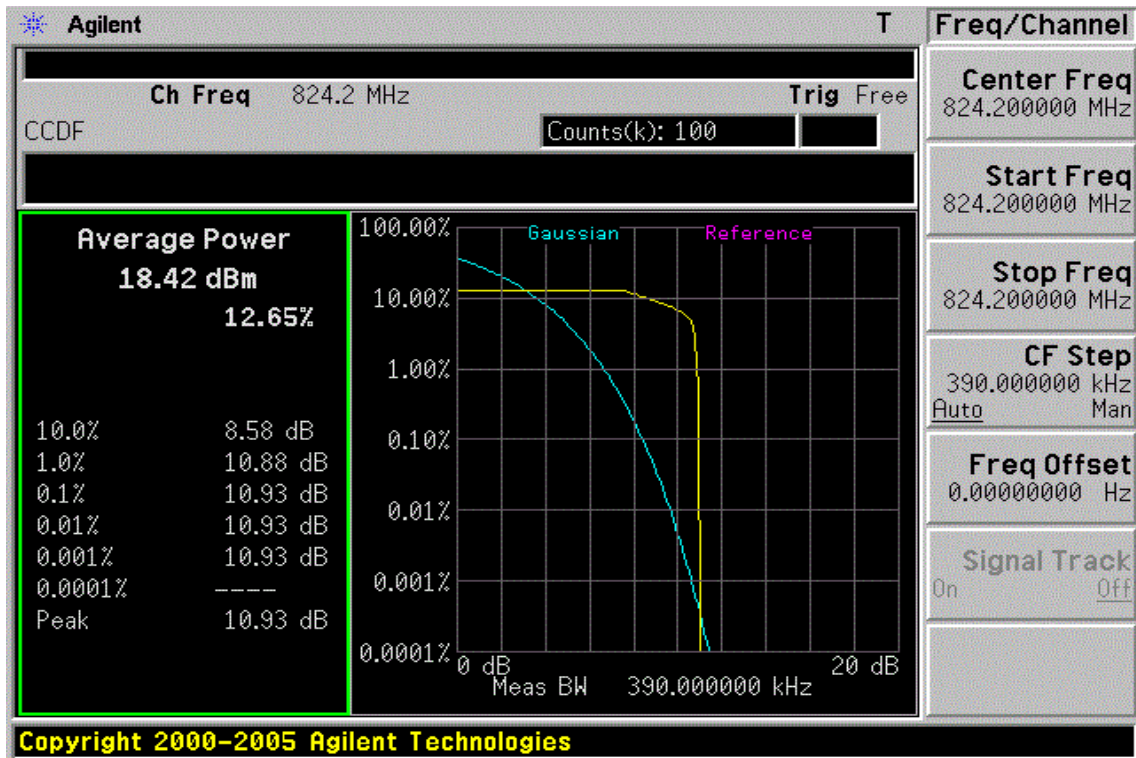
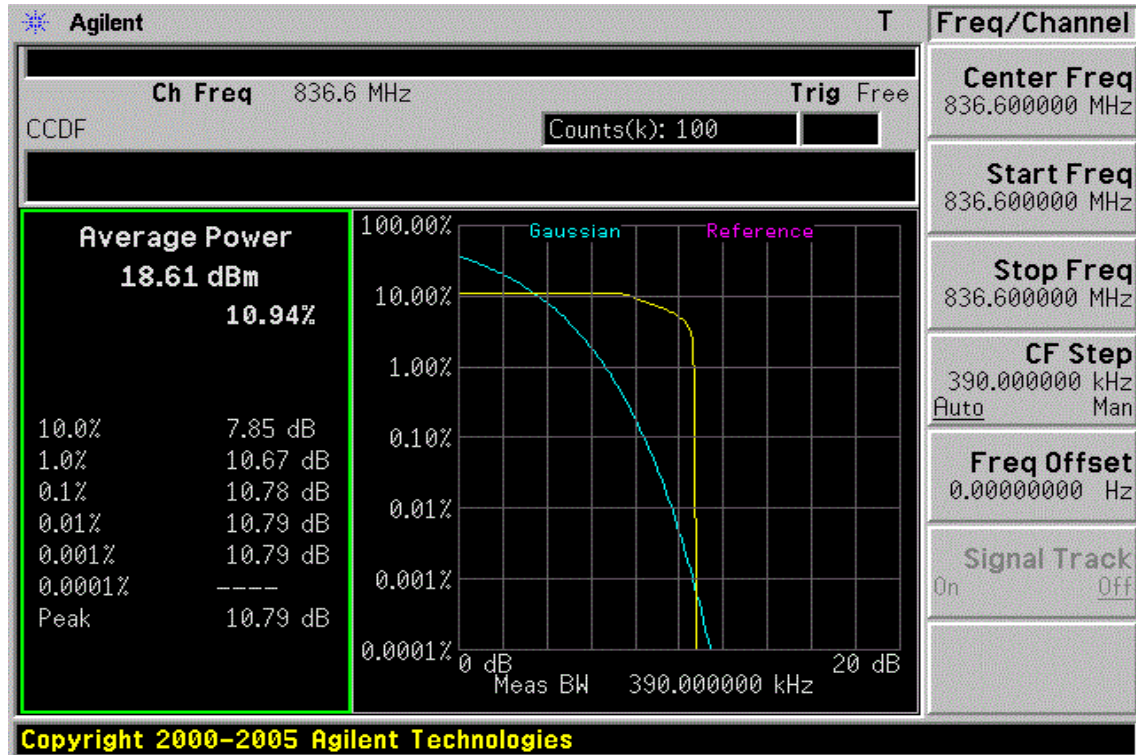


Figure 13-8: GPRS 850 Channel Mid



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Figure 13-9: GPRS 850 Channel High

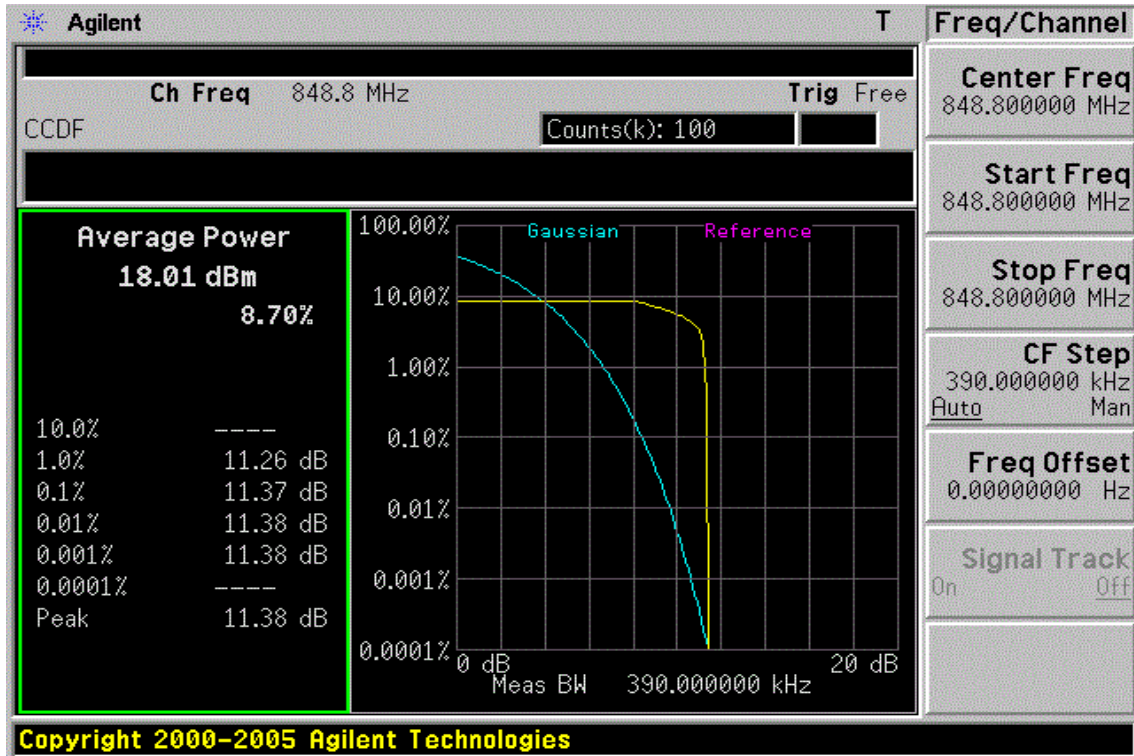
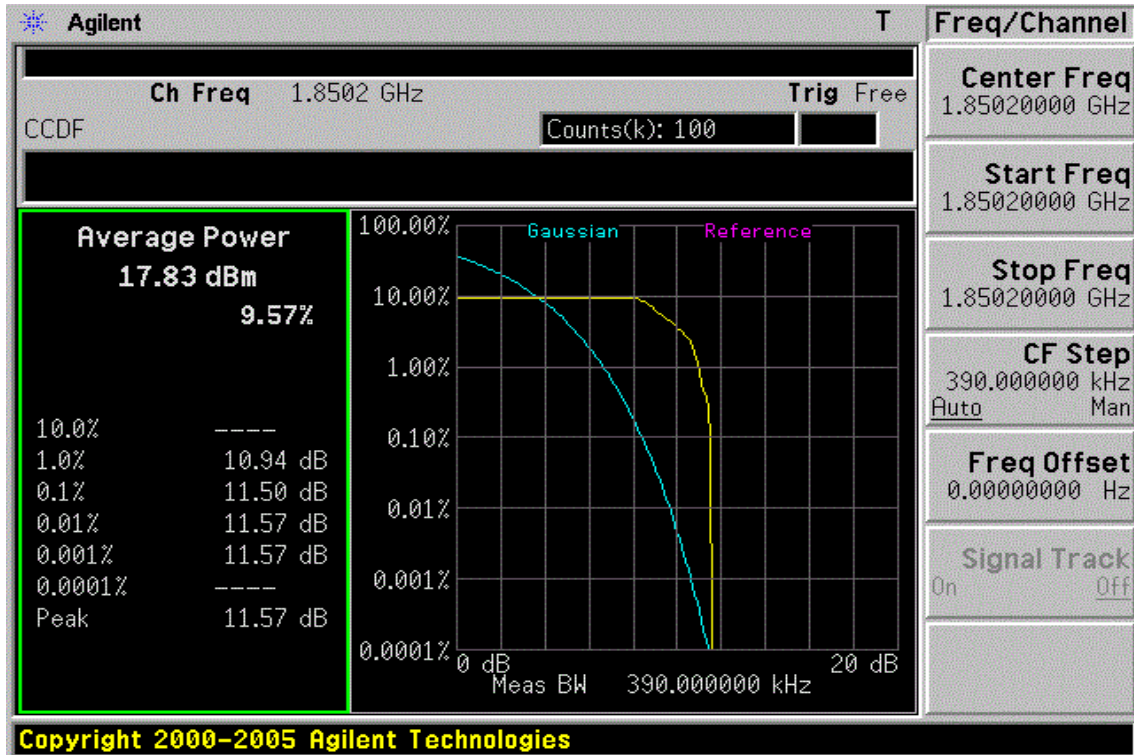


Figure 13-10: GPRS 1900 Channel Low



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Figure 13-11 GPRS 1900 Channel Mid

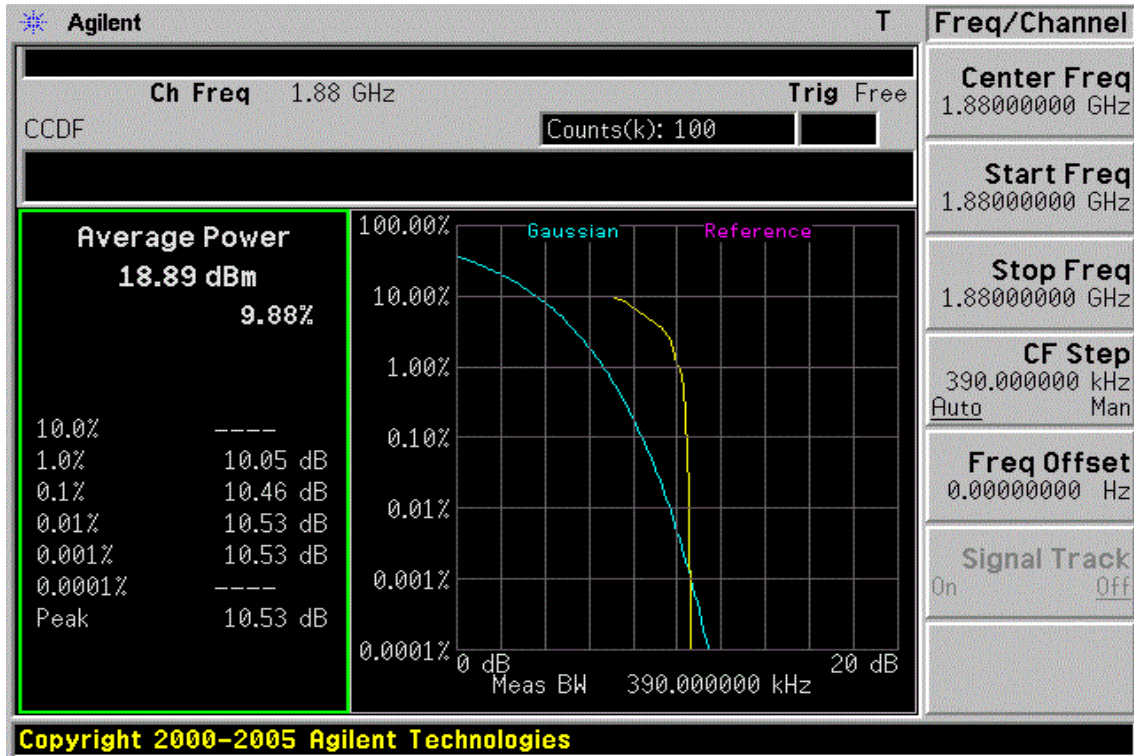
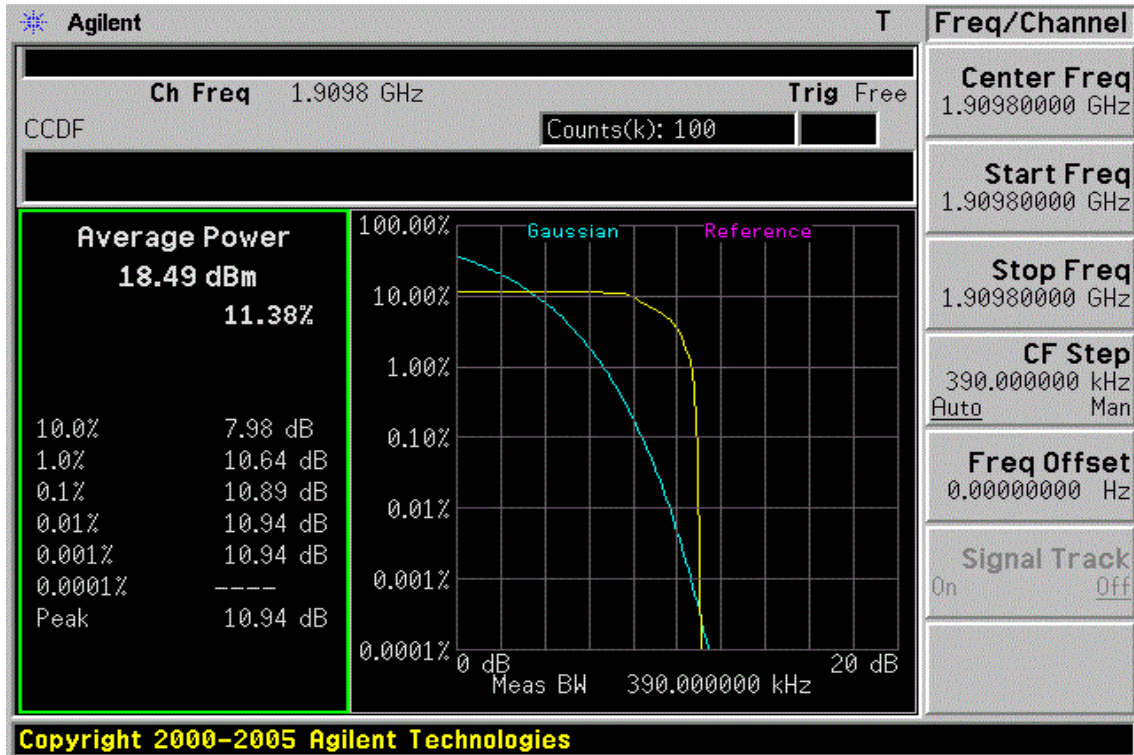


Figure 13-12: GPRS 1900 Channel High



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Figure 13-13: EDGE 850 Channel Low

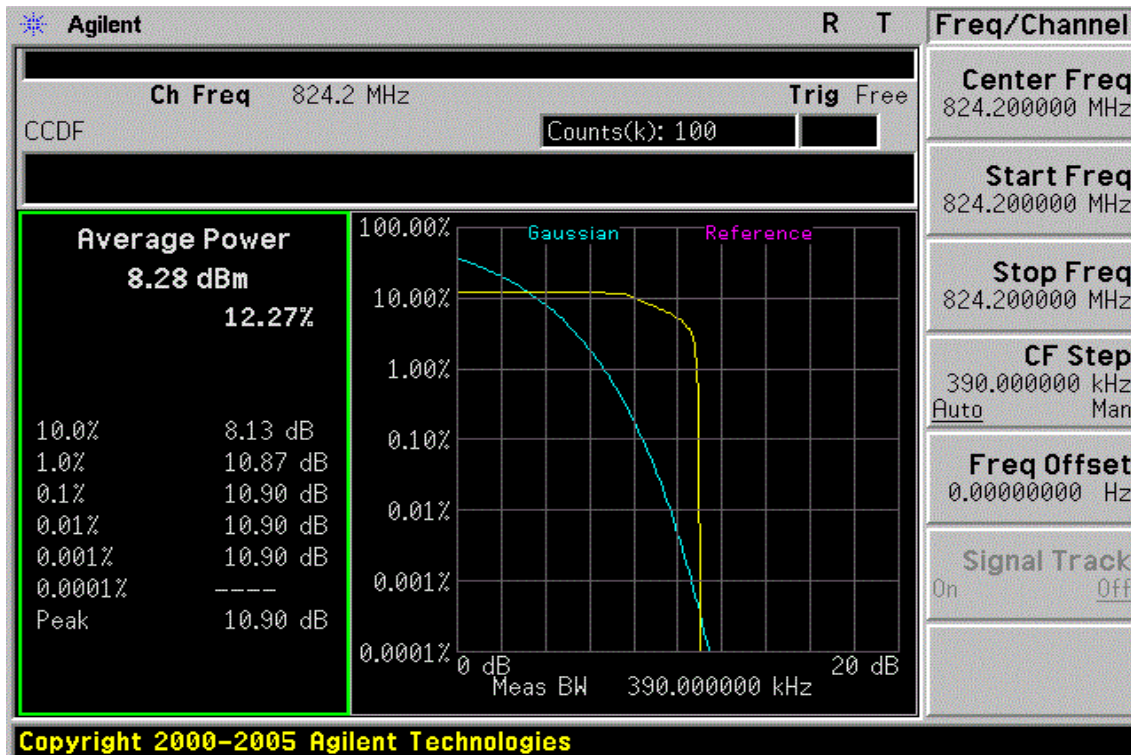
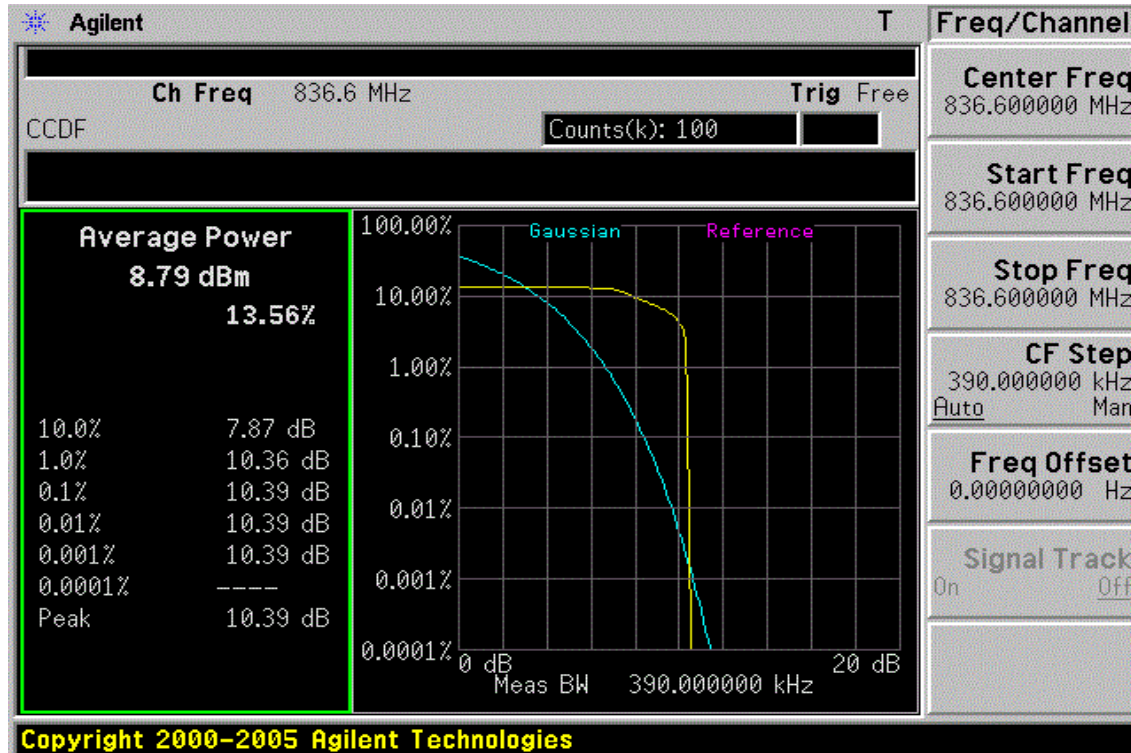


Figure 13-14 EDGE 850 Channel Mid



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Figure 13-15: EDGE 850 Channel High

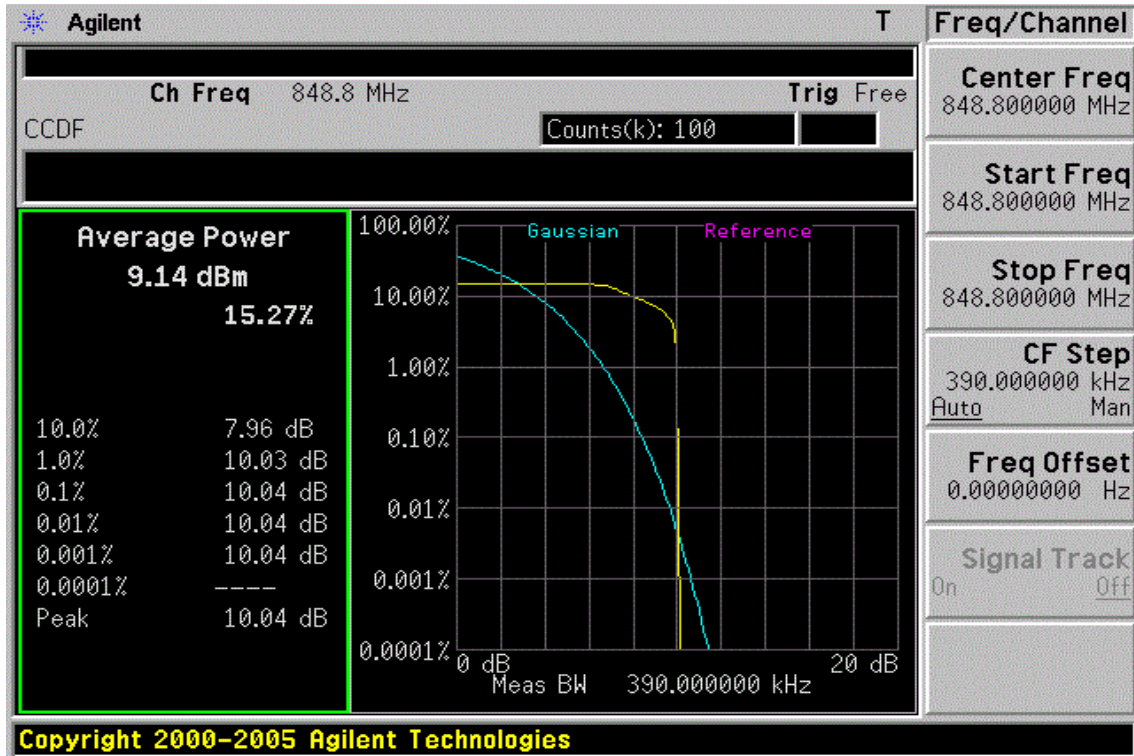
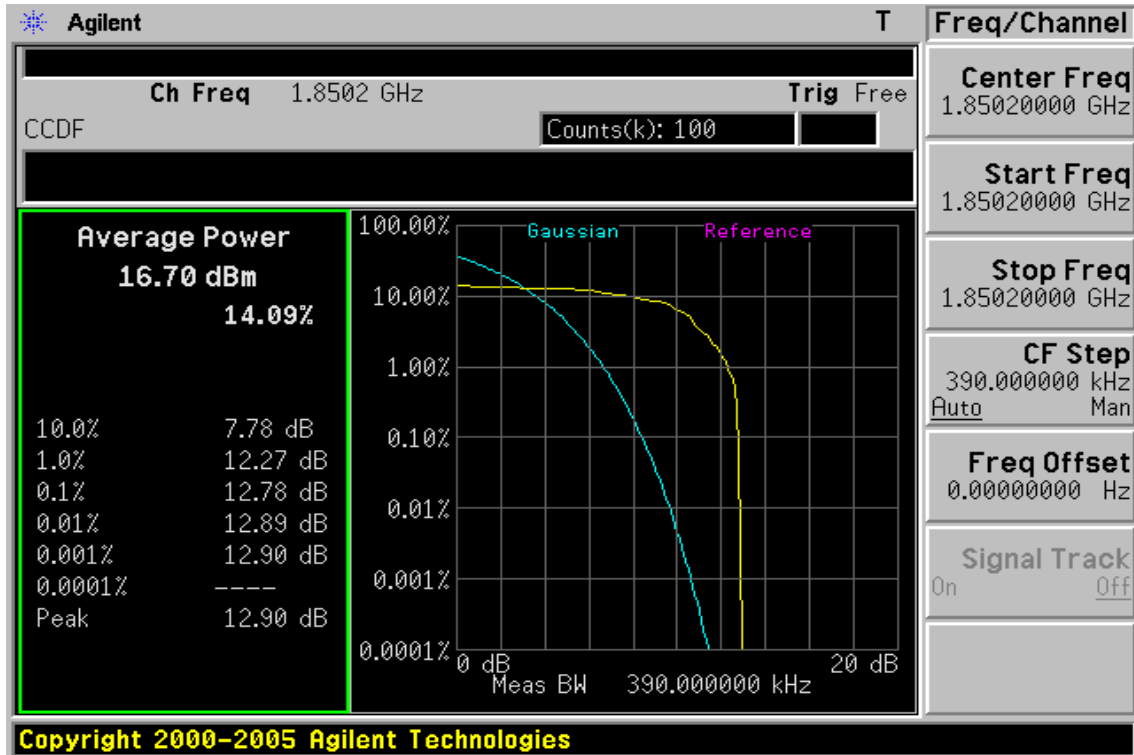


Figure 13-16: EDGE 1900 Channel Low



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Figure 13-17 EDGE 1900 Channel Mid

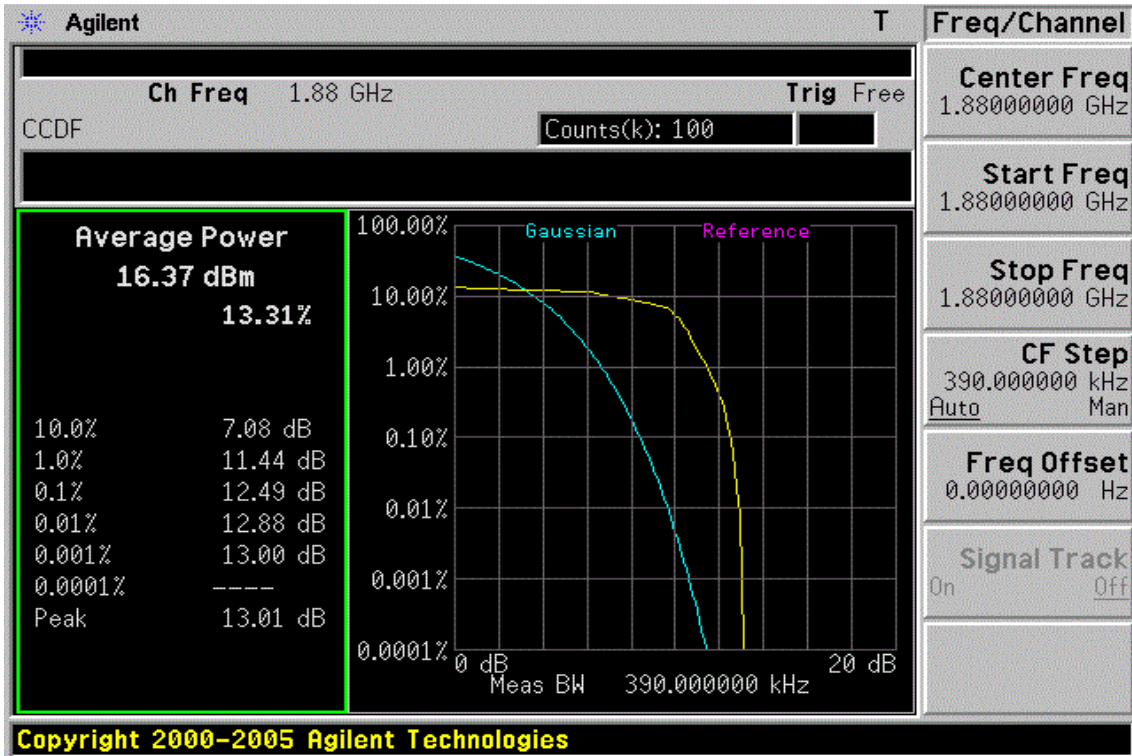
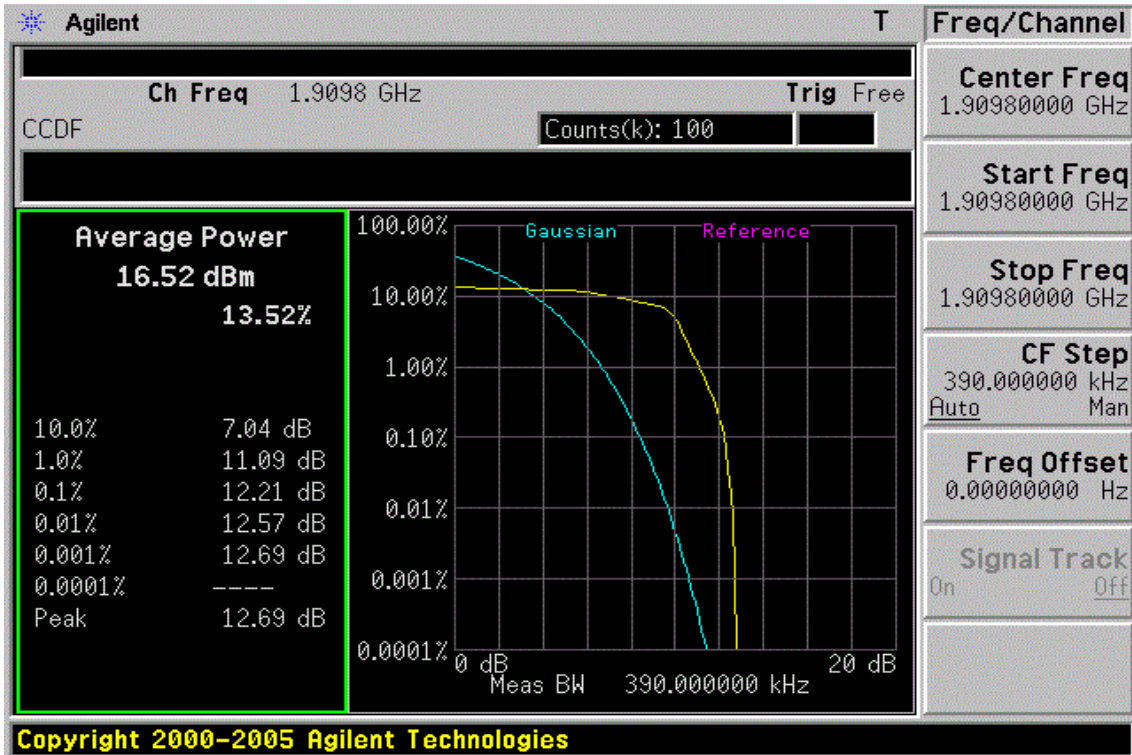


Figure 13-18: EDGE 1900 Channel High



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# APPENDIX 1

## MEASUREMENT PLOT OF RADIATED SPURIOUS EMISSION

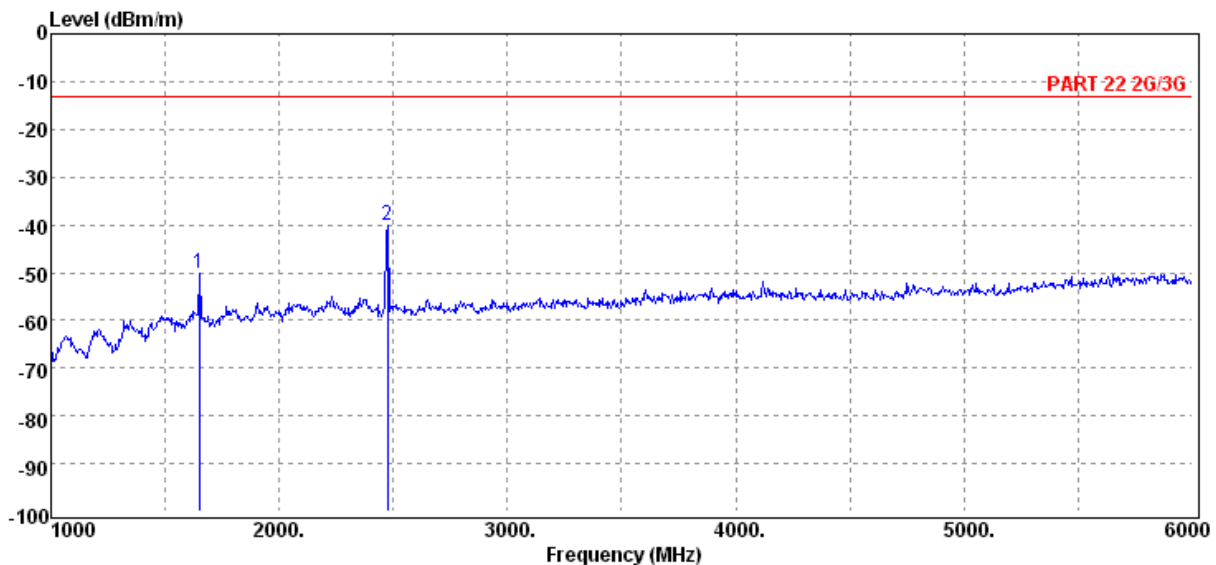
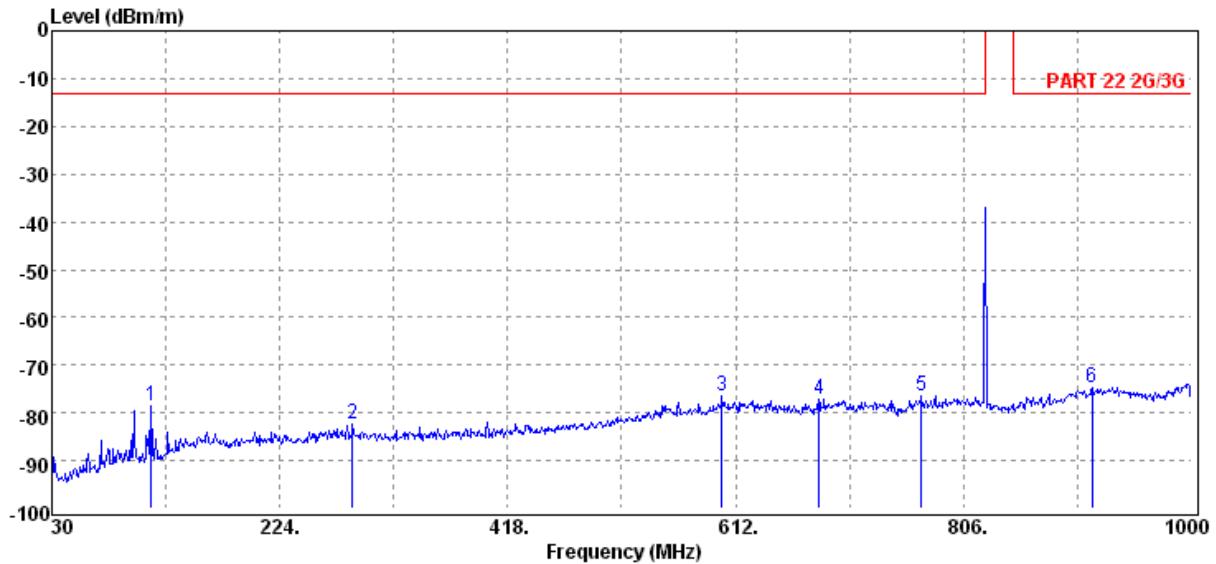
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**Radiated Spurious Emission Measurement Result: GPRS 850 Mode**

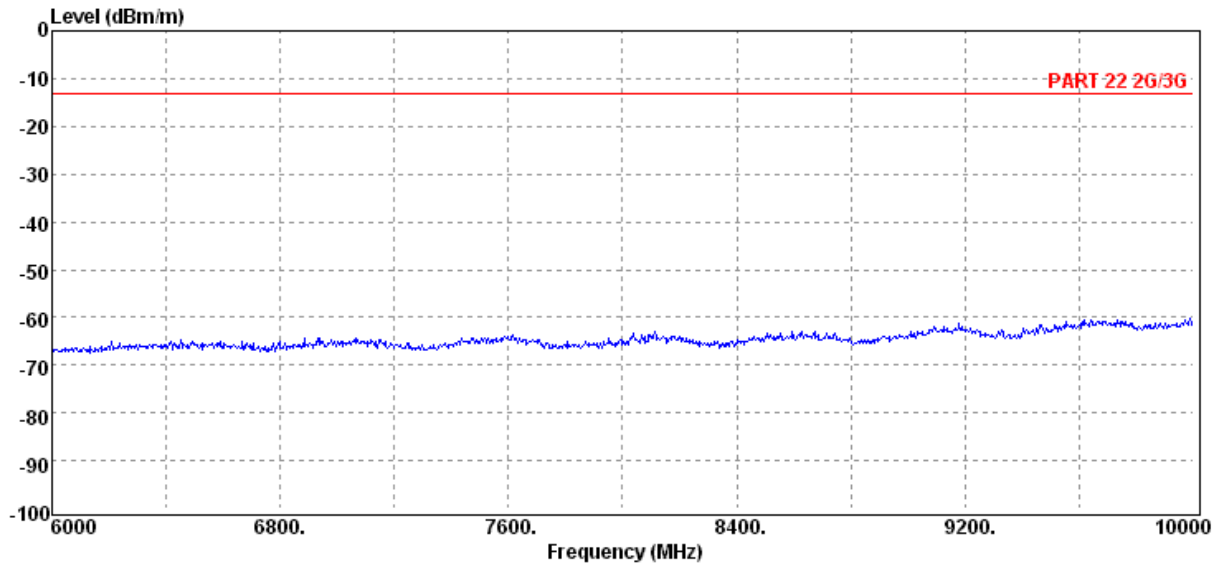
Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 128	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:824.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:H Plan	Measurement Antenna Pol.	:VERTICAL



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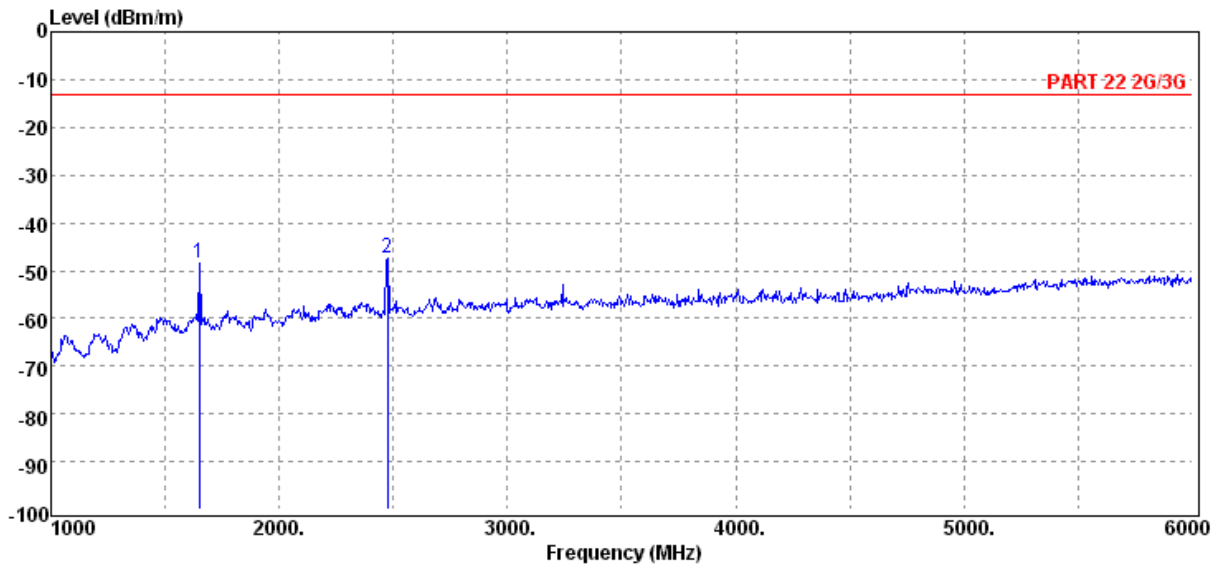
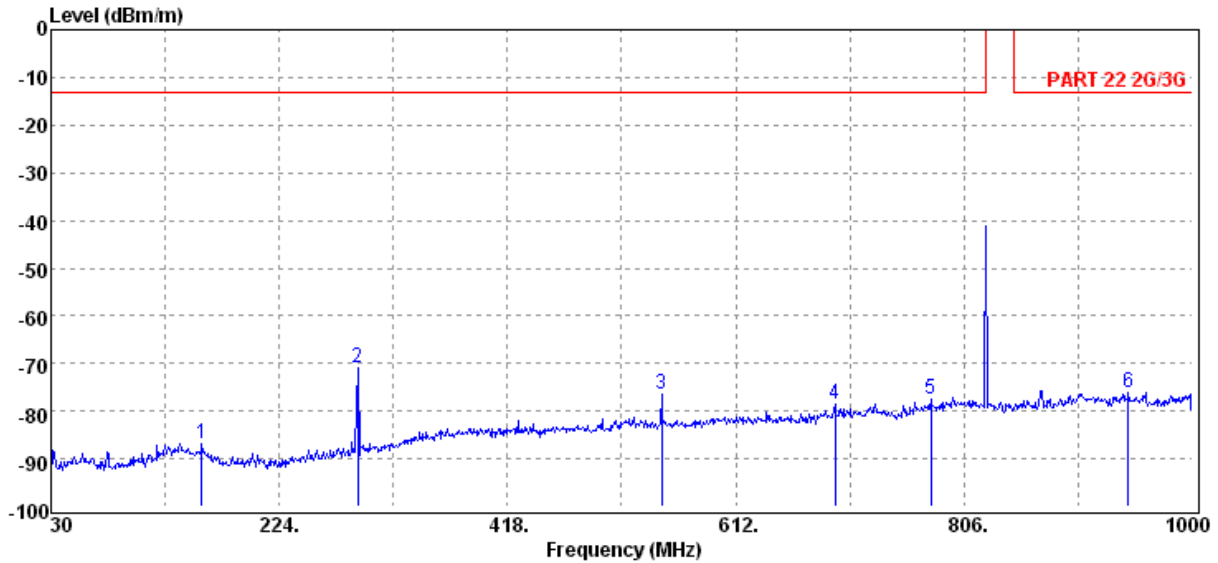
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Operation Band :GPRS 850  
 ARFCN :CH 128  
 Fundamental Frequency :824.2 MHz  
 Operation Mode :TX LOW  
 EUT Pol. :H Plan

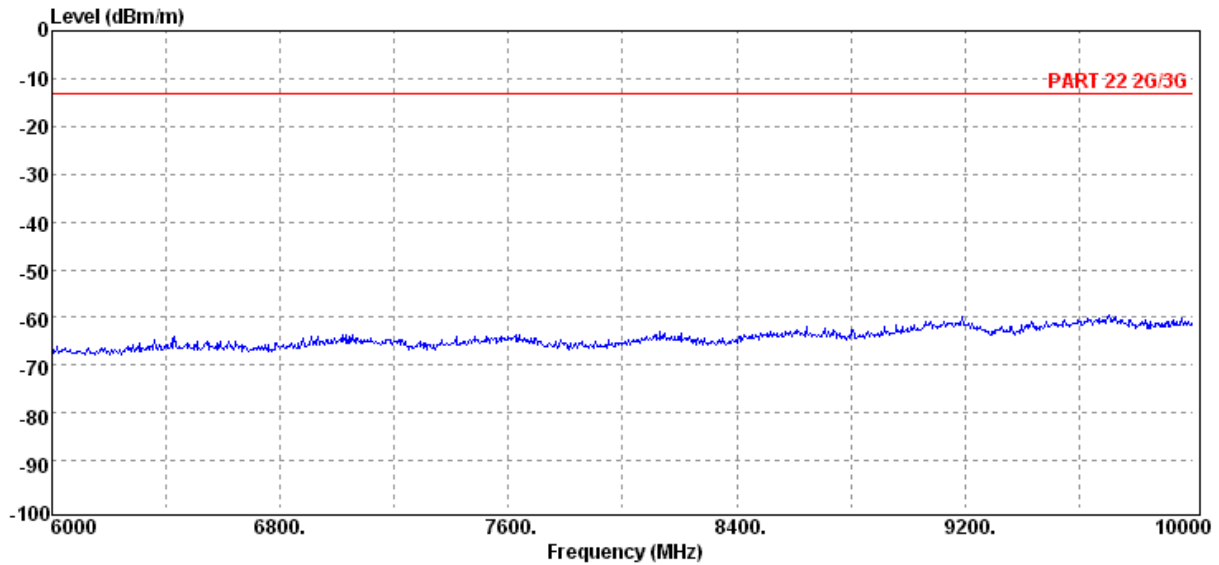
Test Date :2013-05-03  
 Temp./Humi. :24.1deg\_C / 68 RH  
 Engineer :Allen  
 Measurement Antenna Pol. :HORIZONTAL



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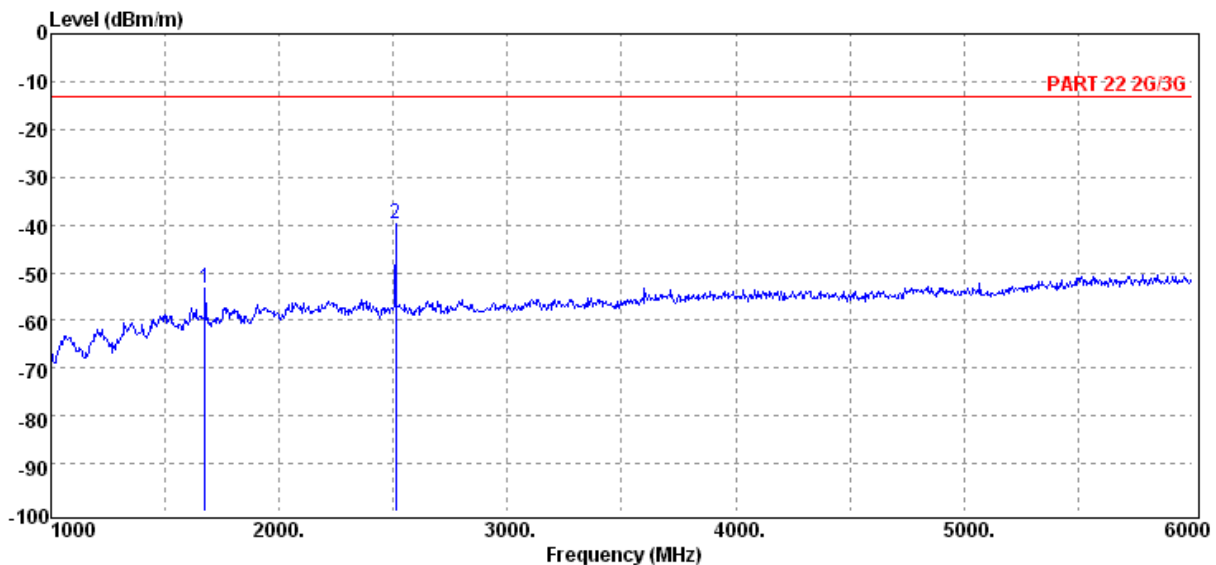
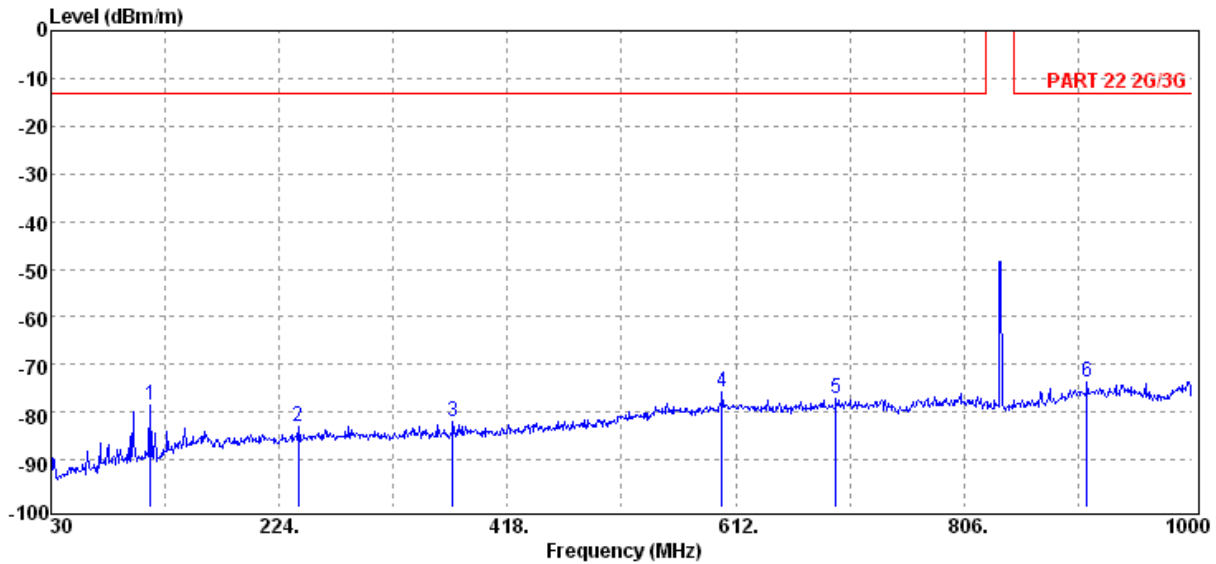
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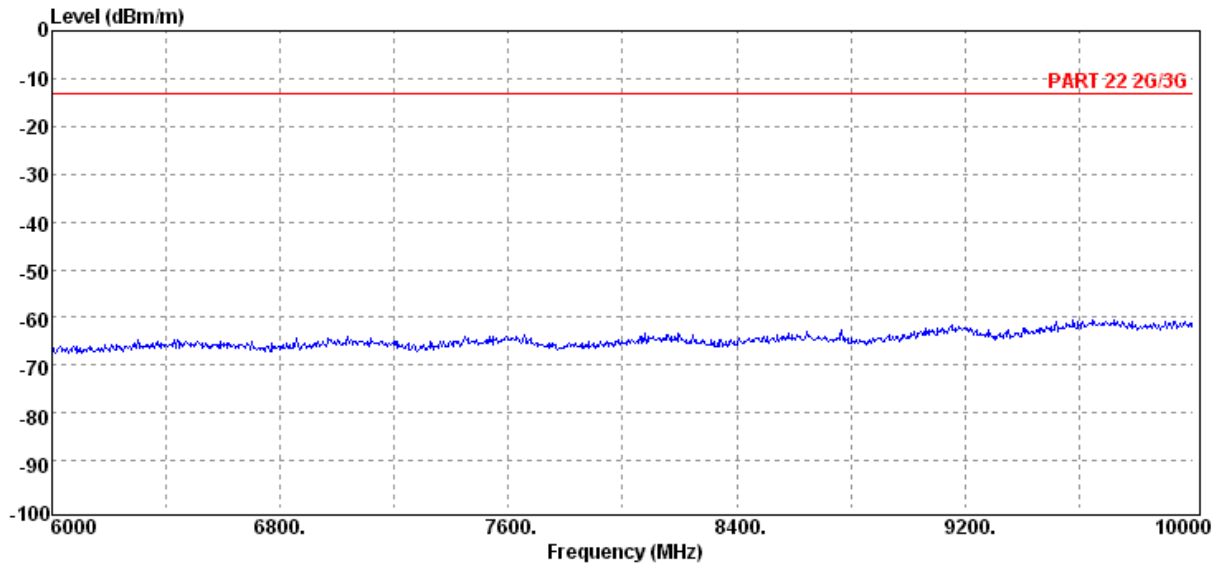
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ARFCN	:CH 190	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID	Measurement Antenna Pol.	:VERTICAL
EUT Pol.	:H Plan		



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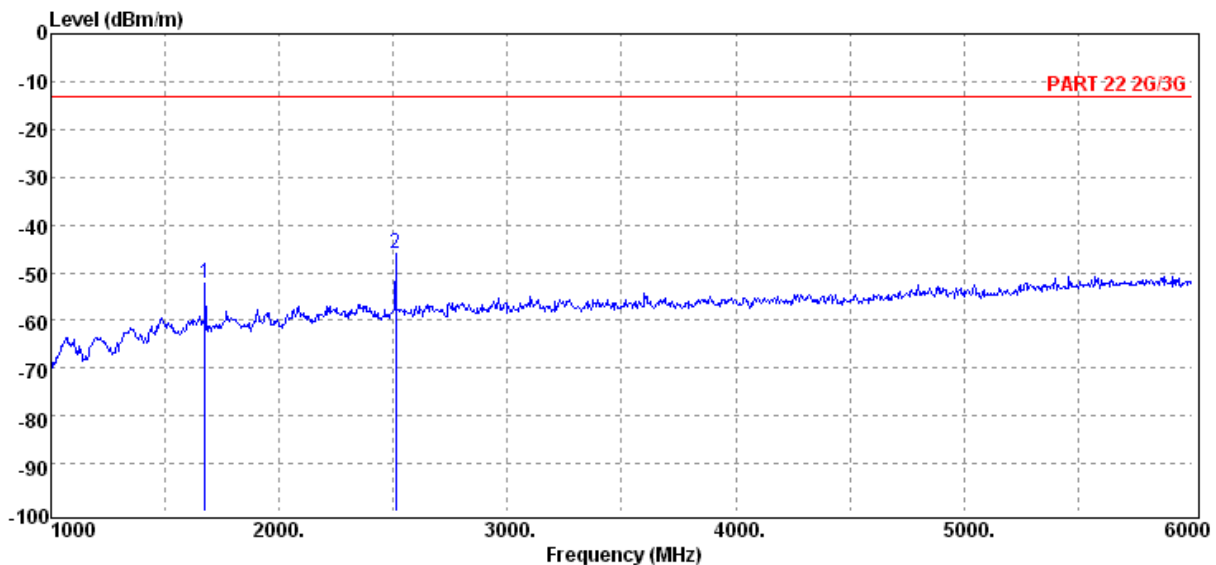
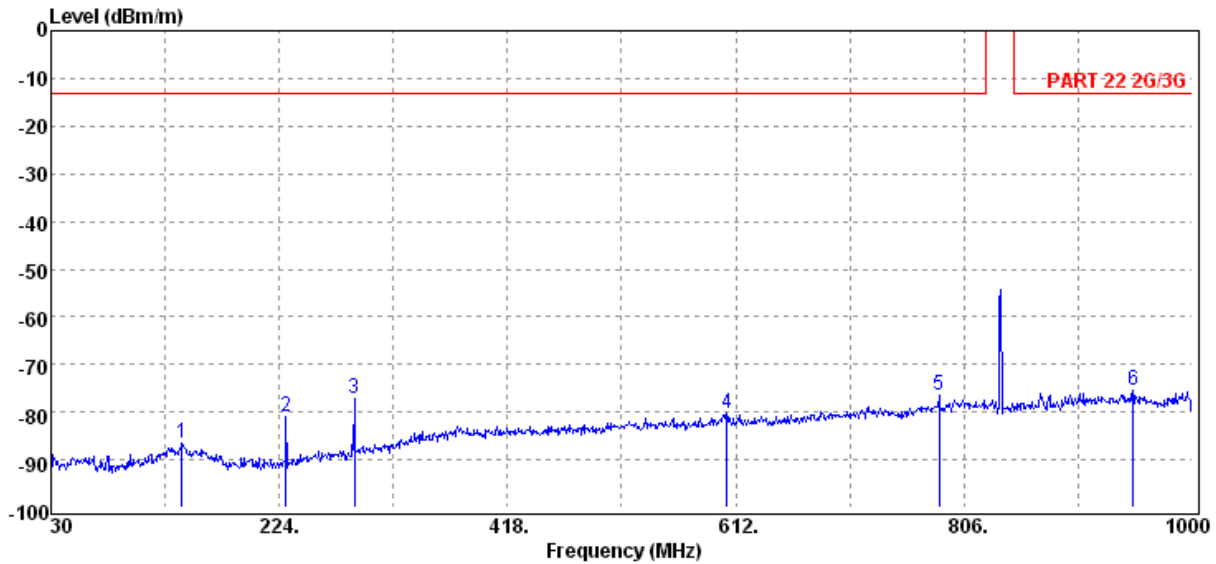


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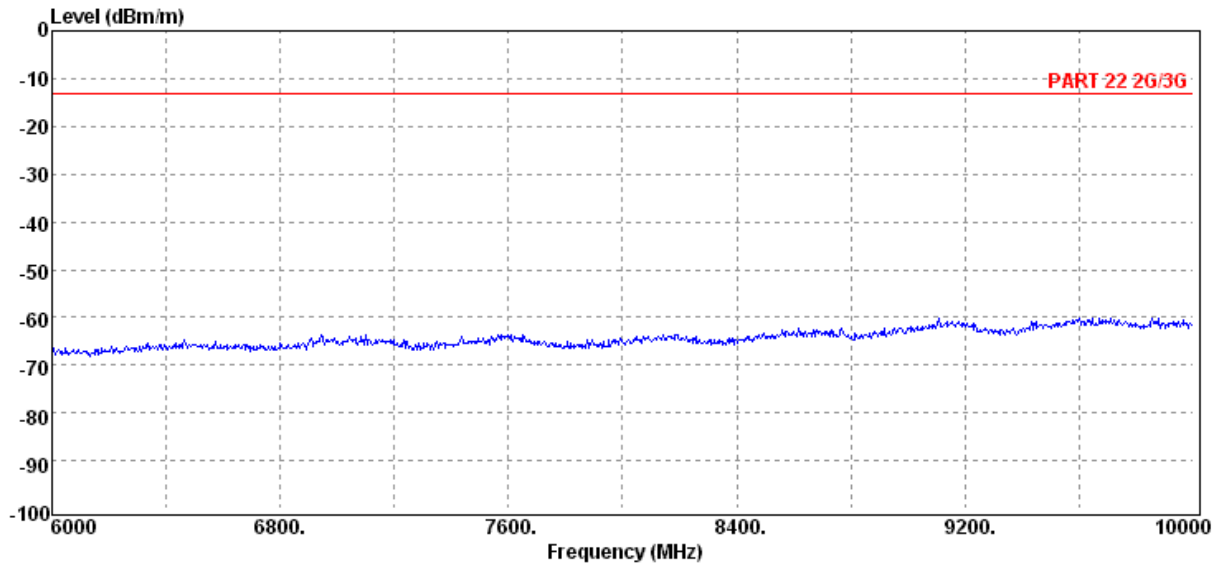
Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 190	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:836.6 MHz	Engineer	:Allen
Operation Mode	:TX MID	Measurement Antenna Pol.	:HORIZONTAL
EUT Pol.	:H Plan		



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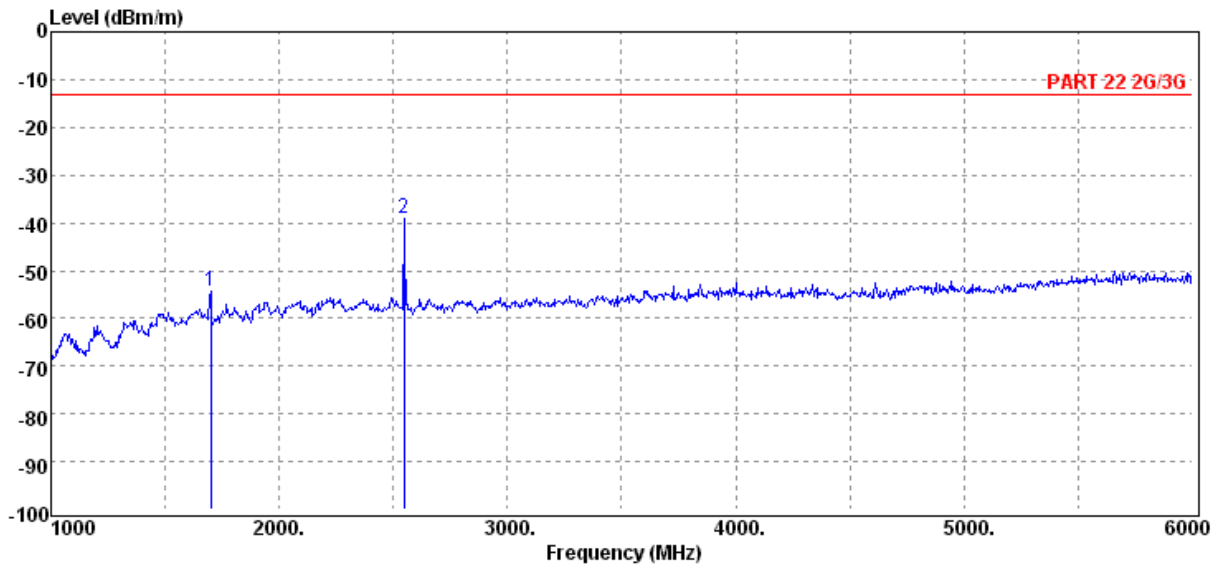
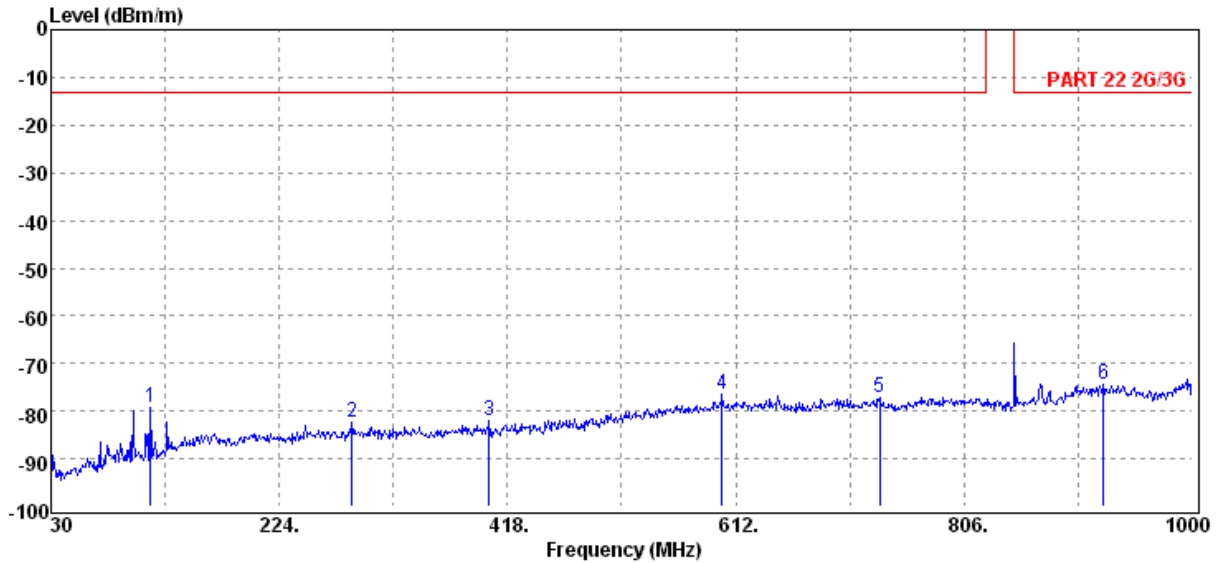


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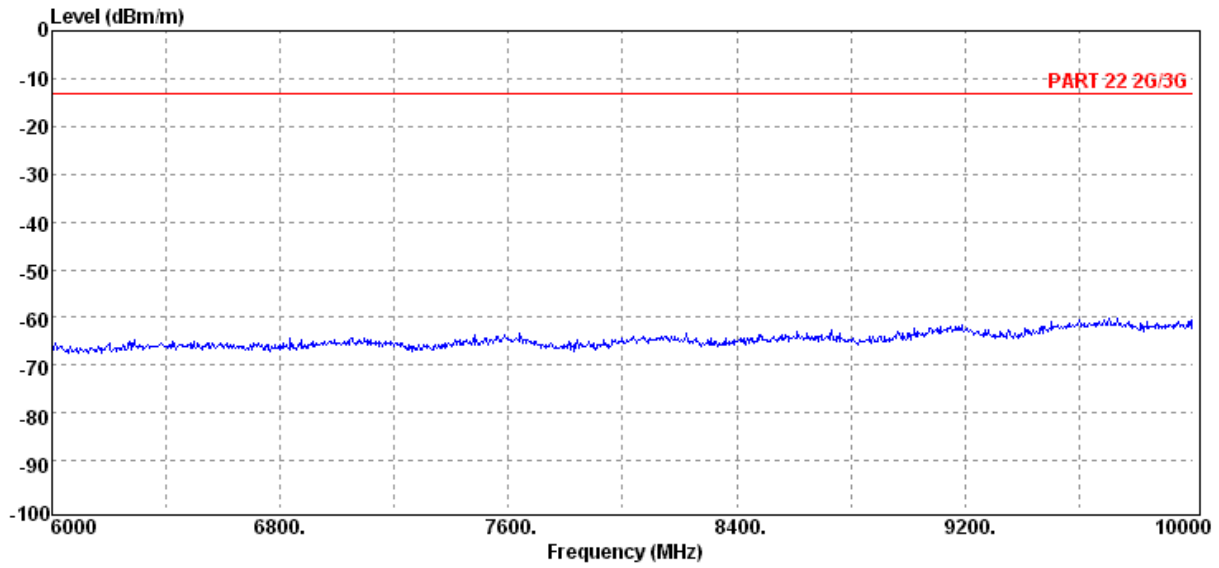
Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 215	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:848.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH	Measurement Antenna Pol.	:VERTICAL
EUT Pol.	:H Plan		



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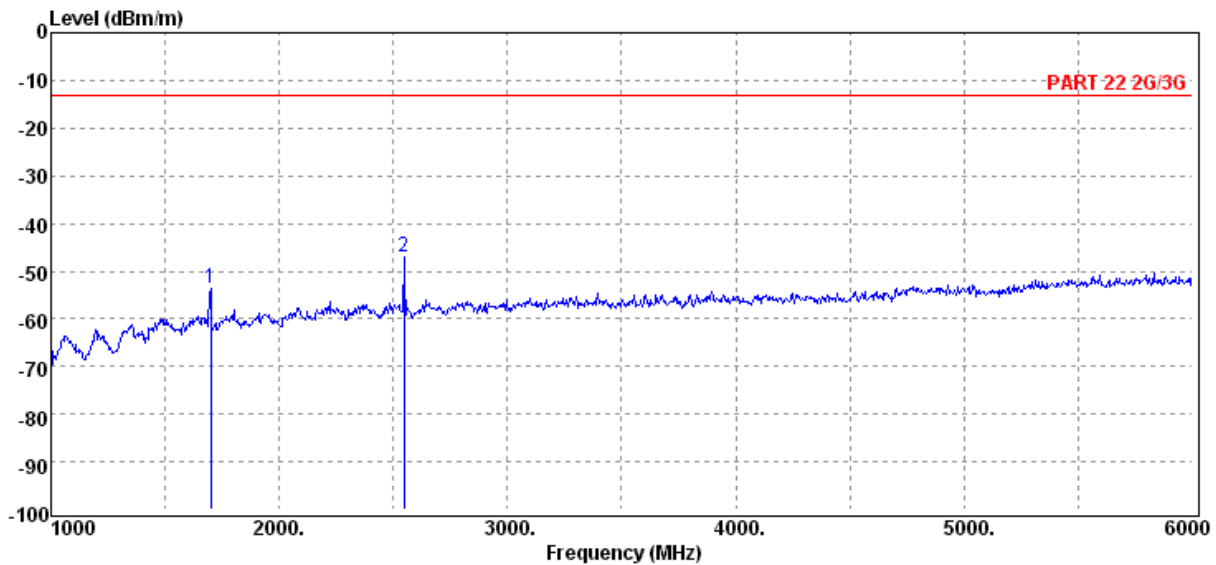
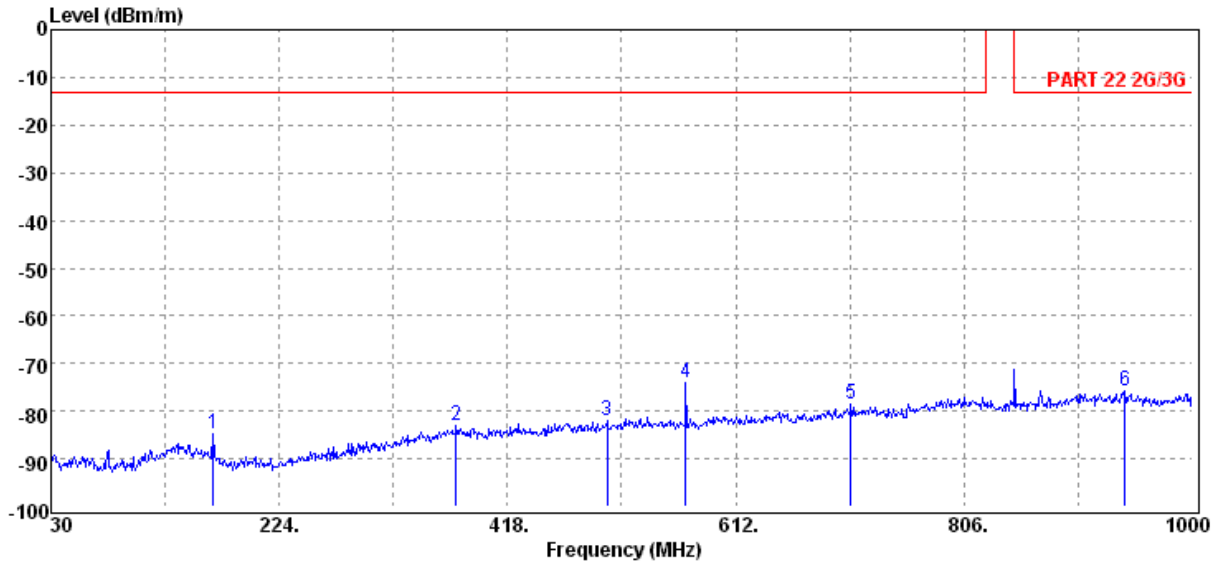
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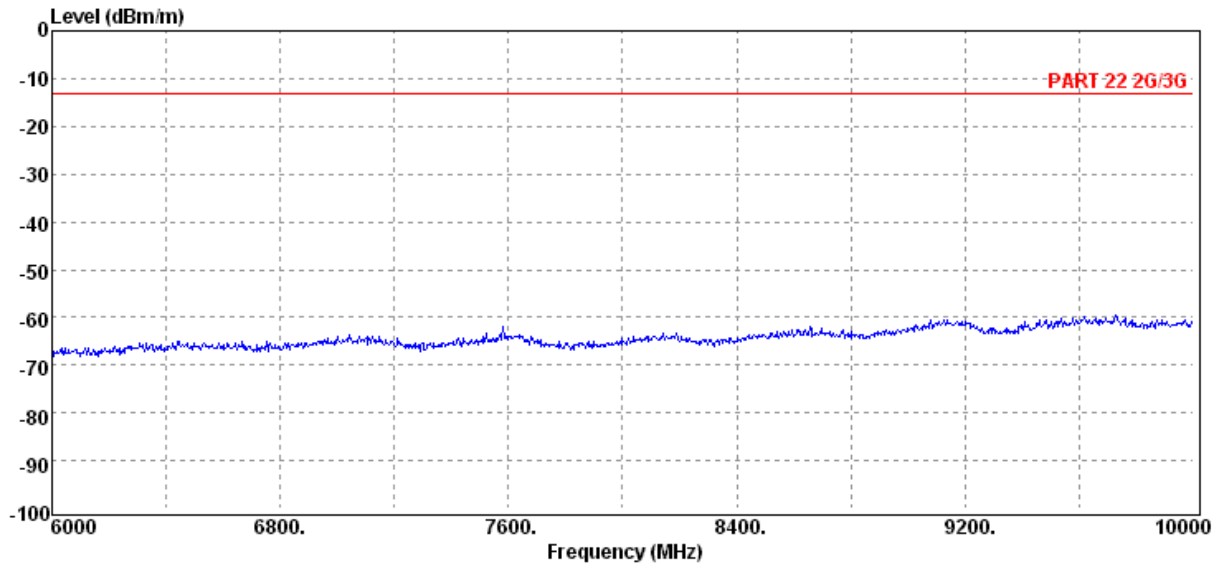
Operation Band	:GPRS 850	Test Date	:2013-05-03
ARFCN	:CH 215	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:848.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH	Measurement Antenna Pol.	:HORIZONTAL
EUT Pol.	:H Plan		



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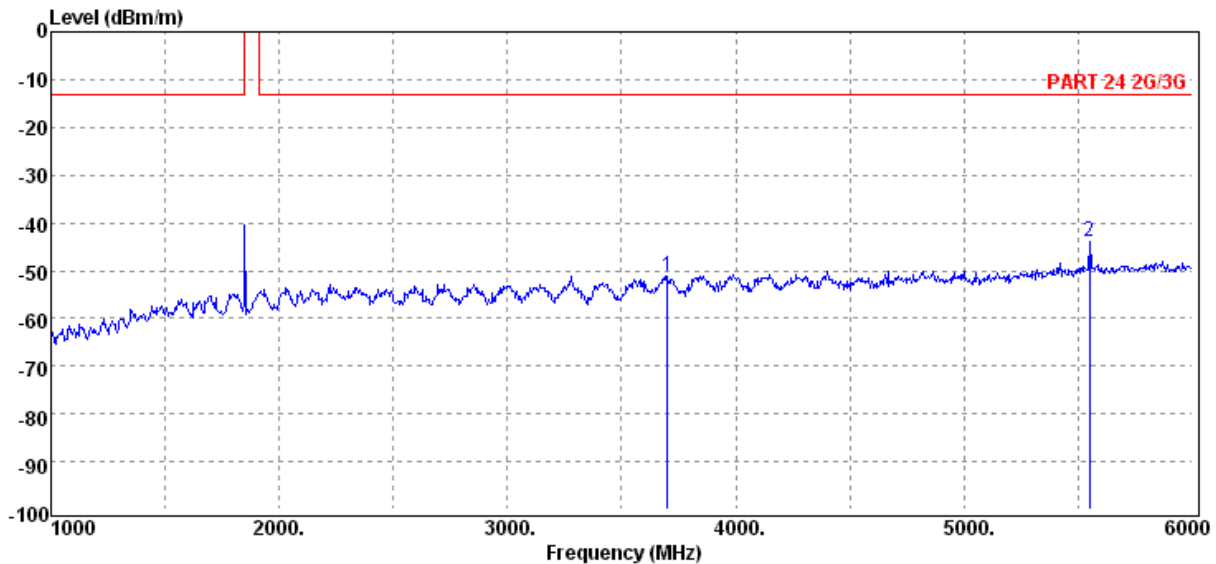
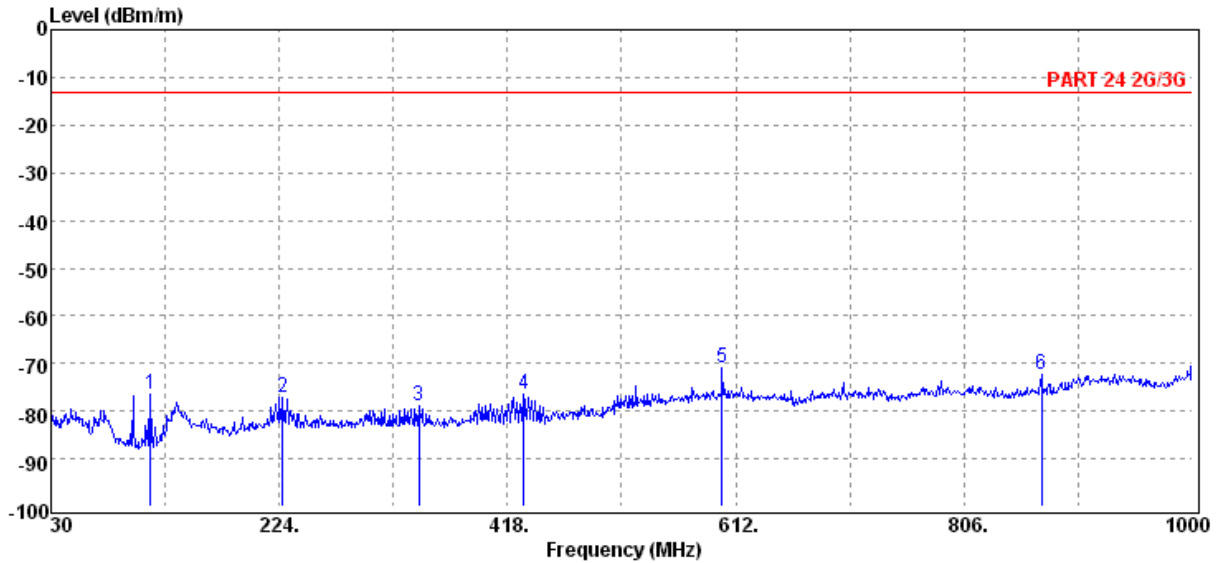
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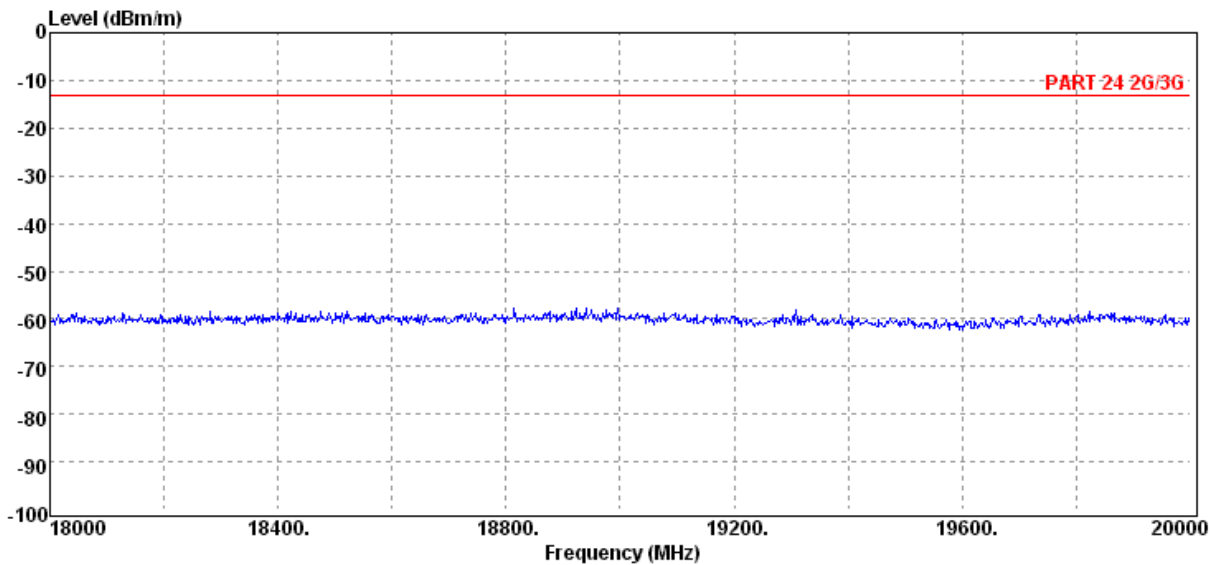
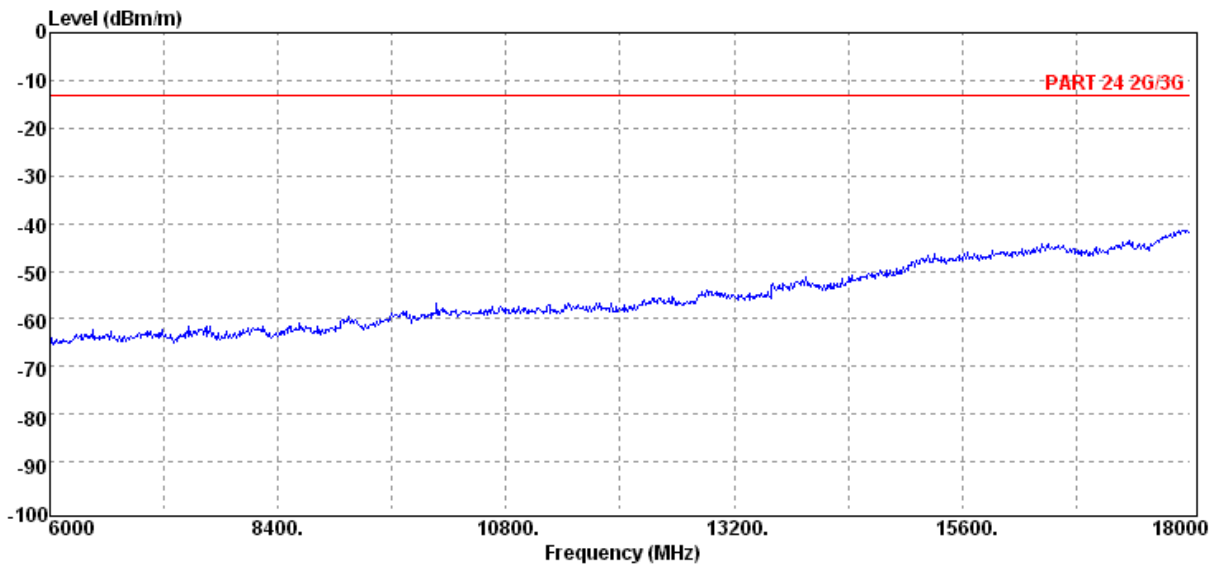
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**Radiated Spurious Emission Measurement Result: GSM 1900 Mode**

Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 512	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1850.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:VERTICAL



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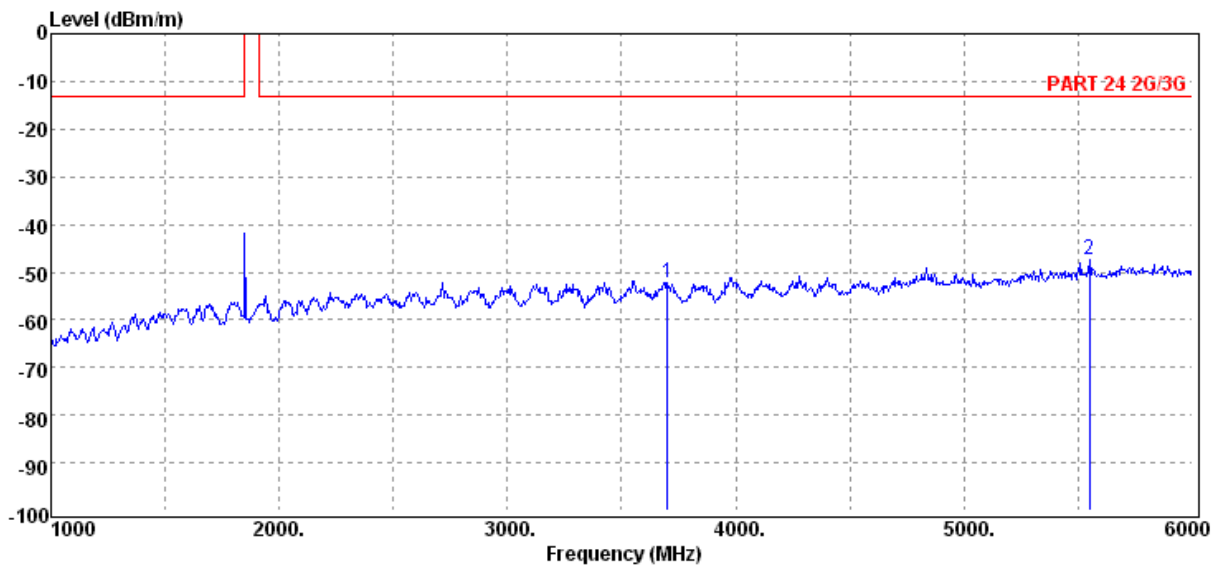
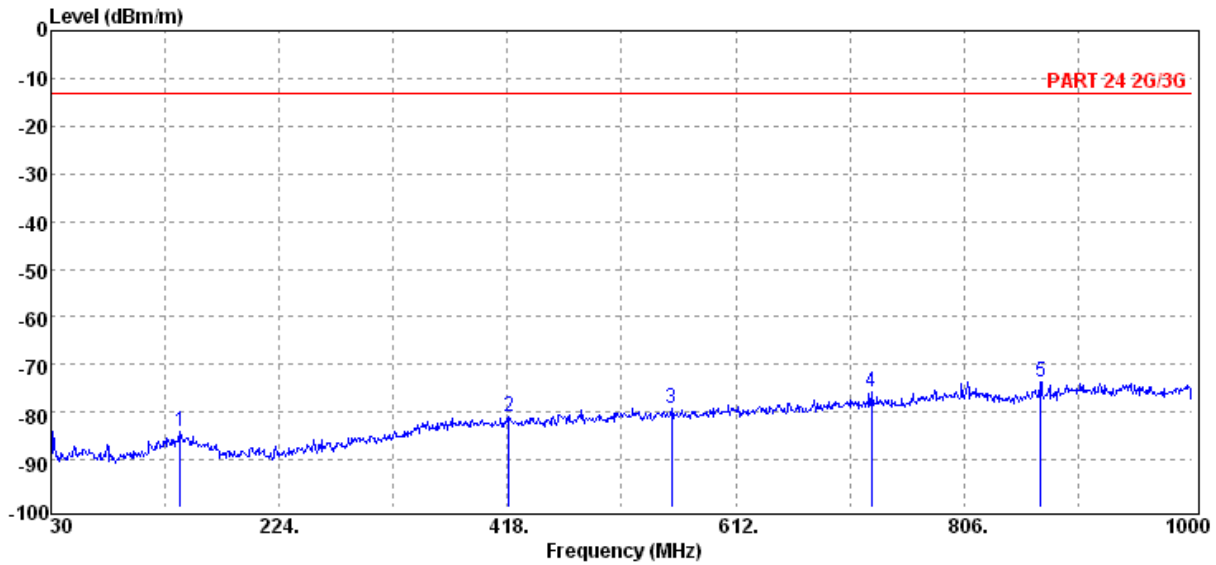


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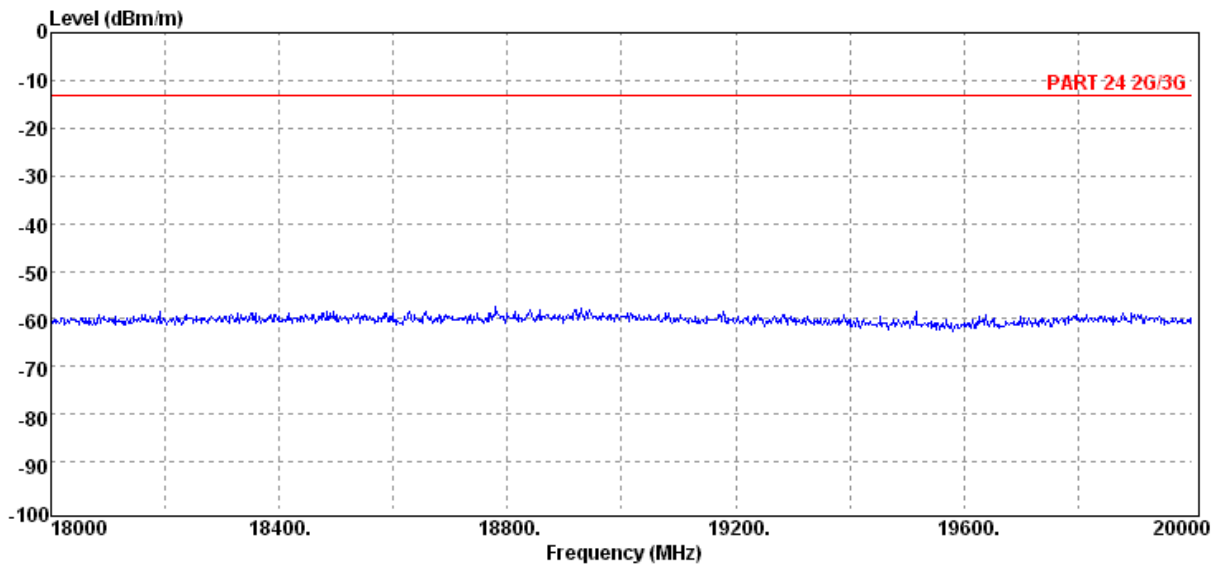
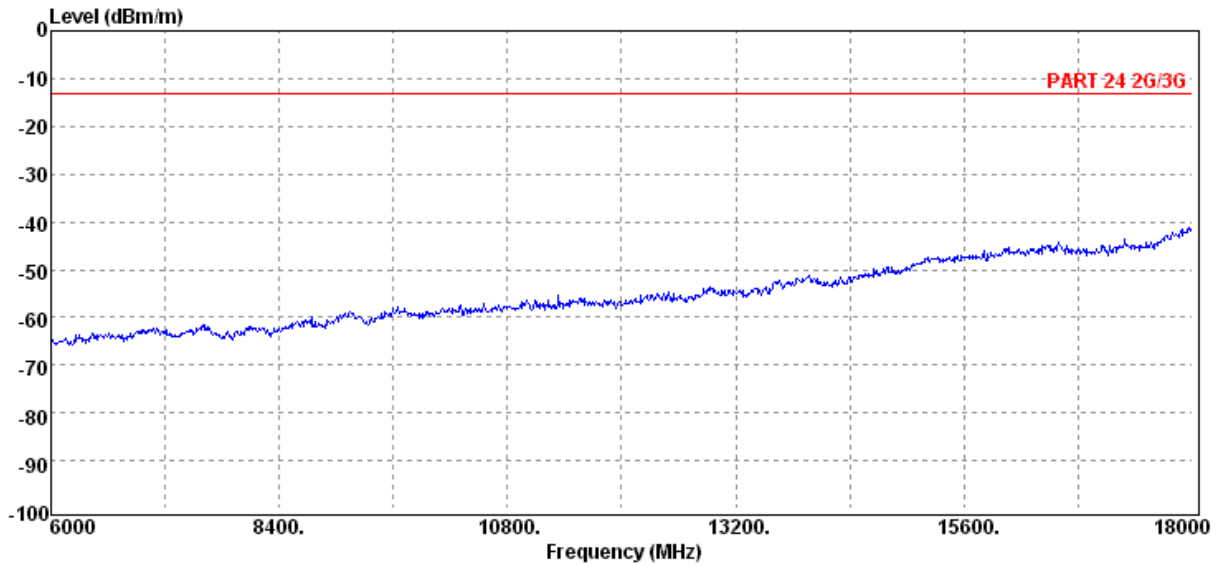
Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 512	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1850.2 MHz	Engineer	:Allen
Operation Mode	:TX LOW		
EUT Pol.	:E1 Plan	Measurement Antenna Pol.	:HORIZONTAL



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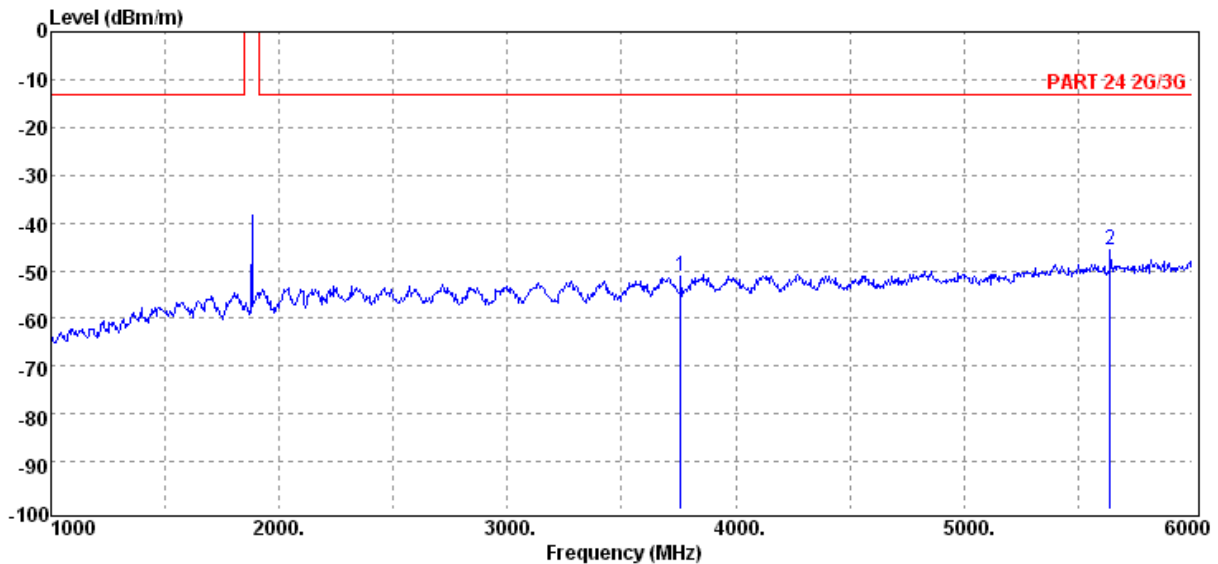
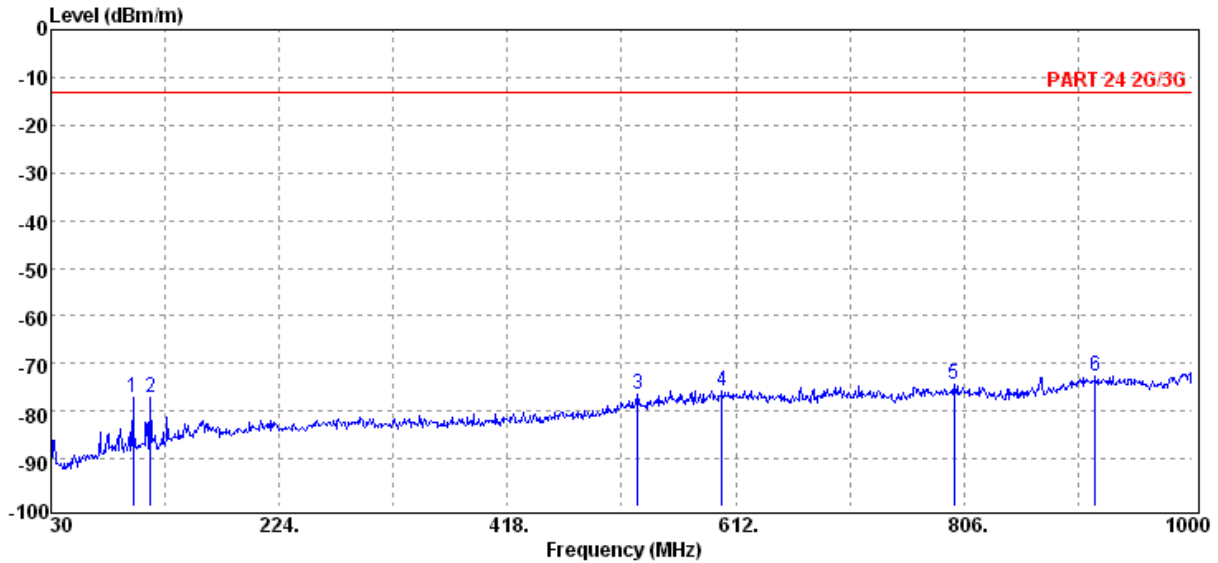
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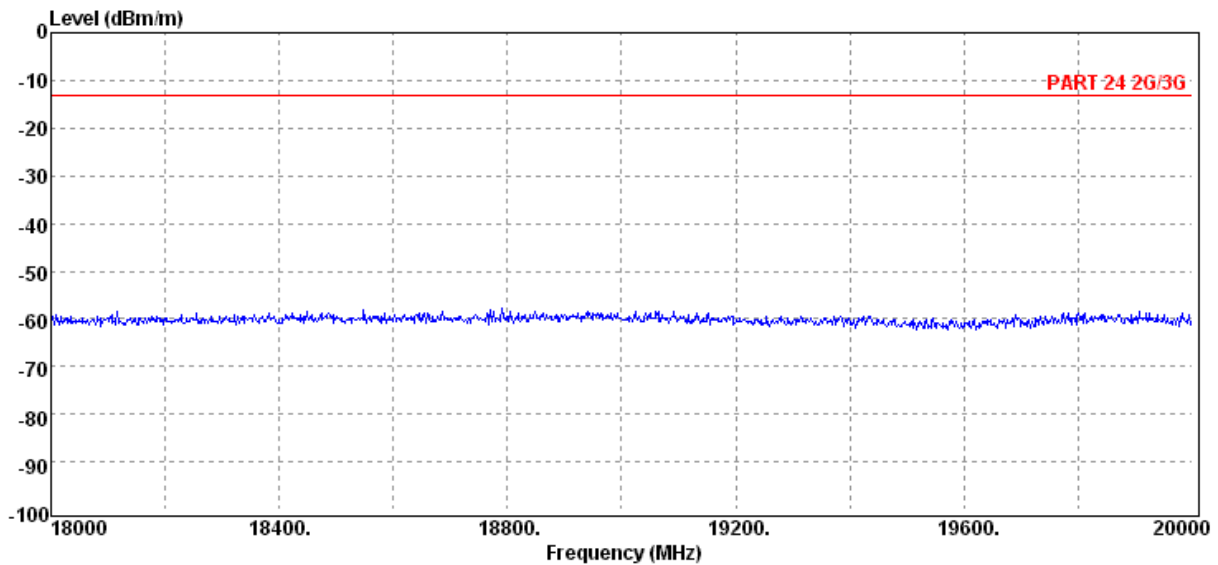
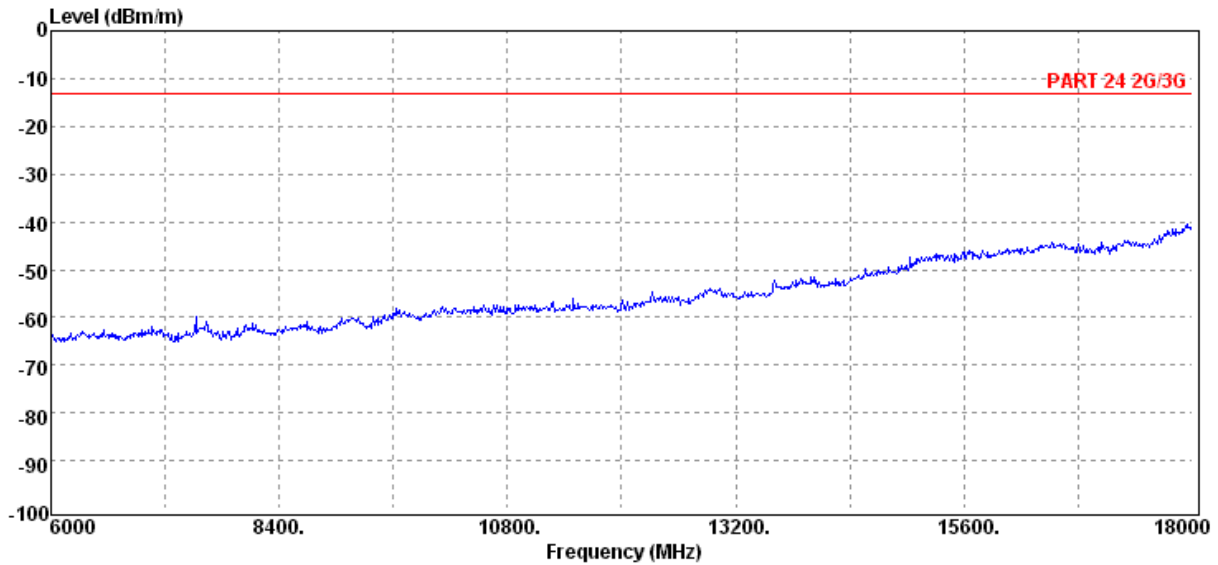
Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 661	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID	Measurement Antenna Pol.	:VERTICAL
EUT Pol.	:E1 Plan		



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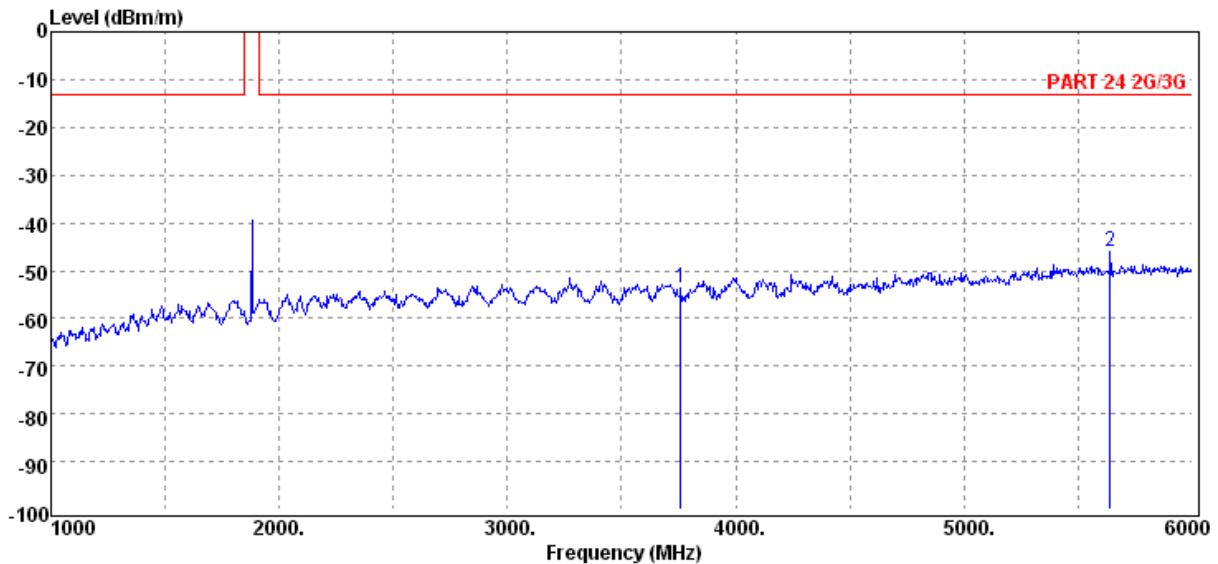
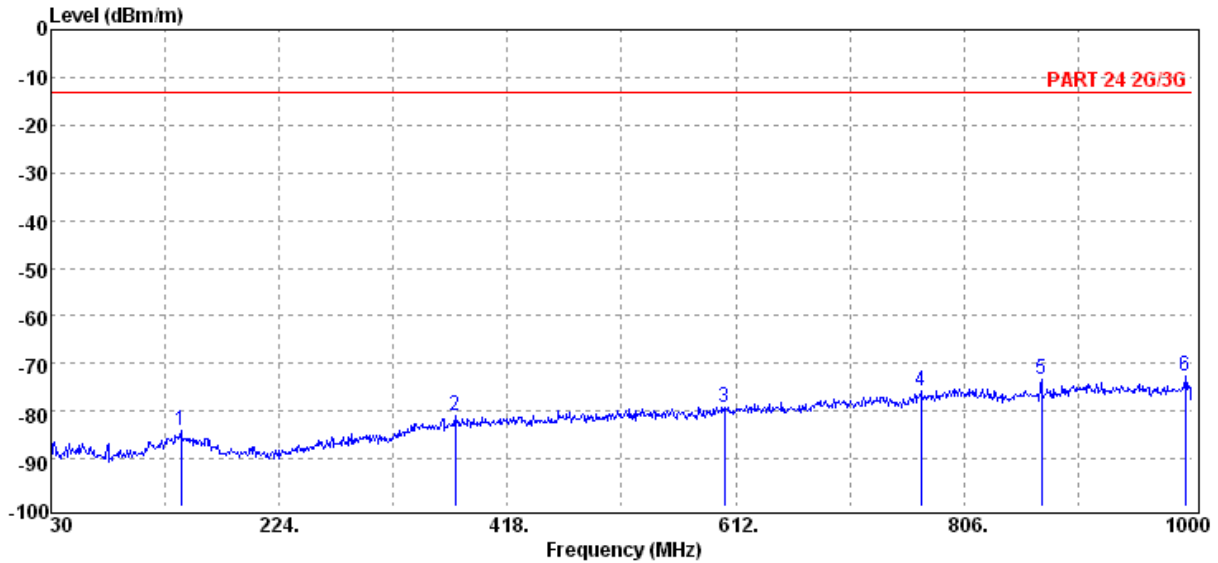


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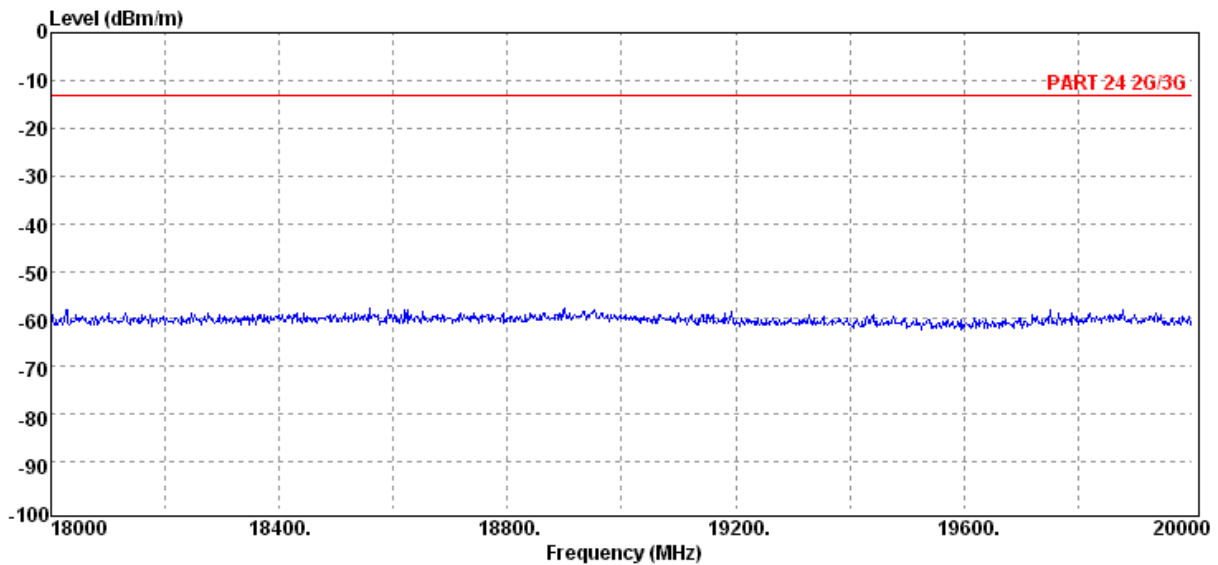
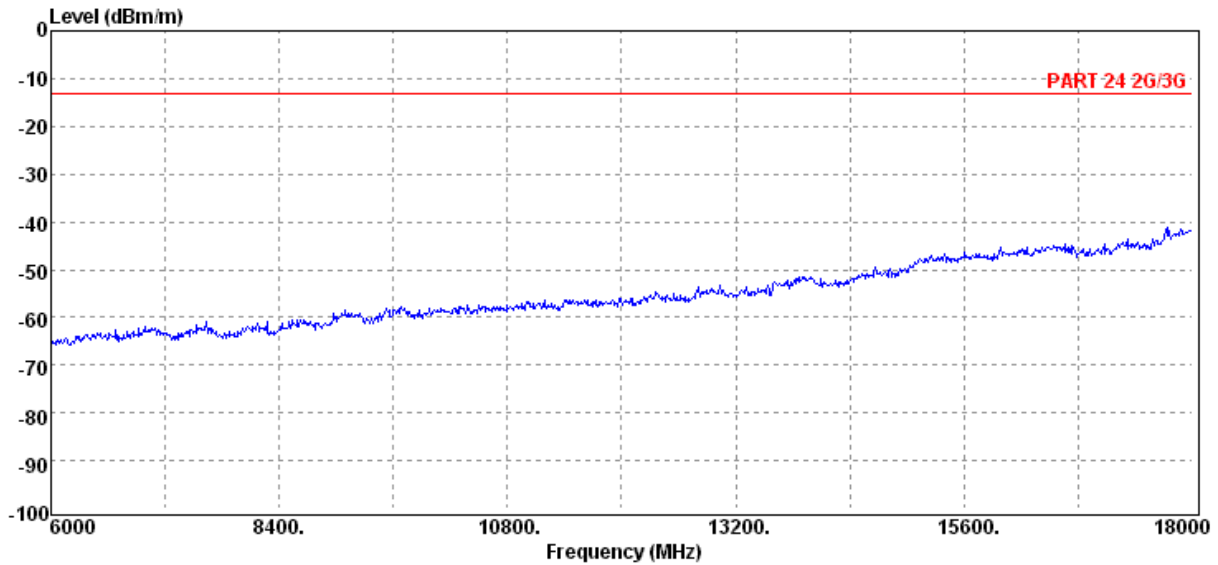
Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 661	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1880.0 MHz	Engineer	:Allen
Operation Mode	:TX MID	Measurement Antenna Pol.	:HORIZONTAL
EUT Pol.	:E1 Plan		



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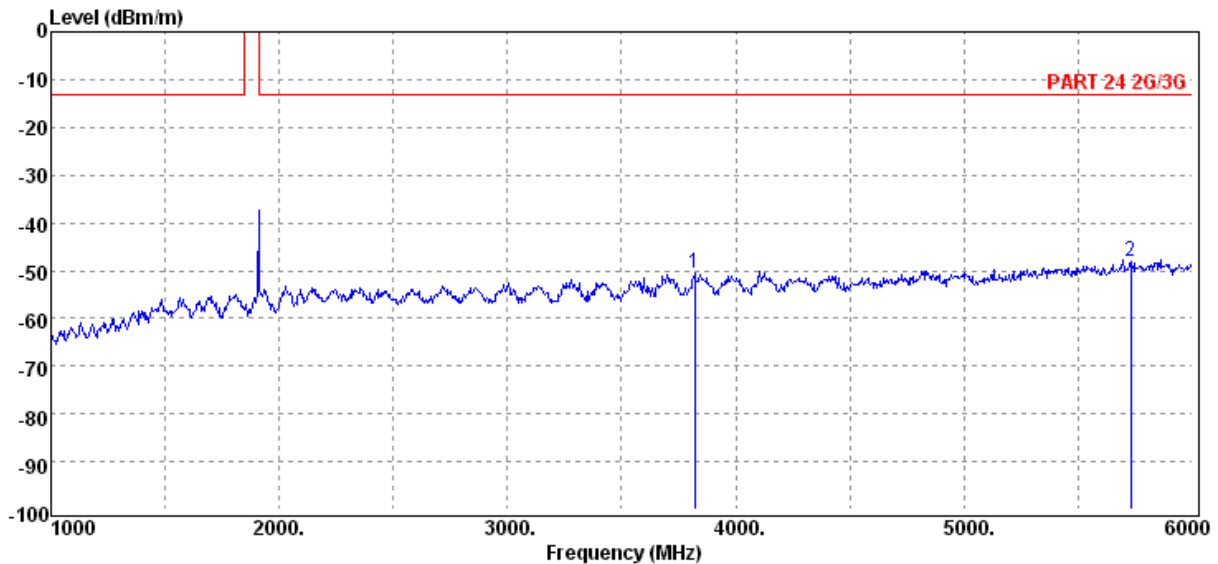
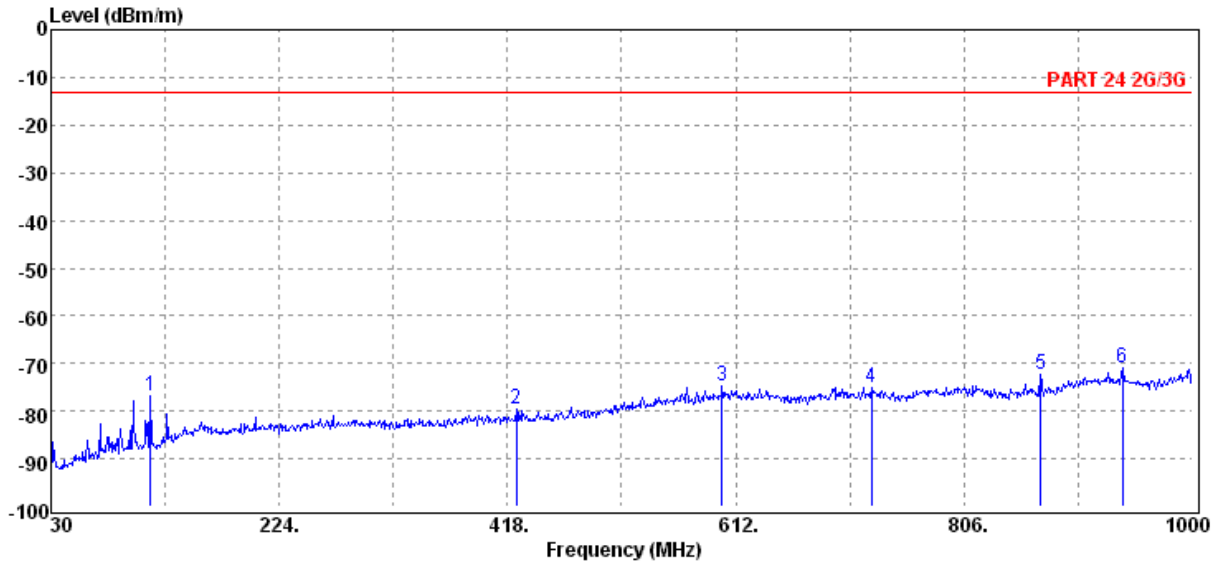


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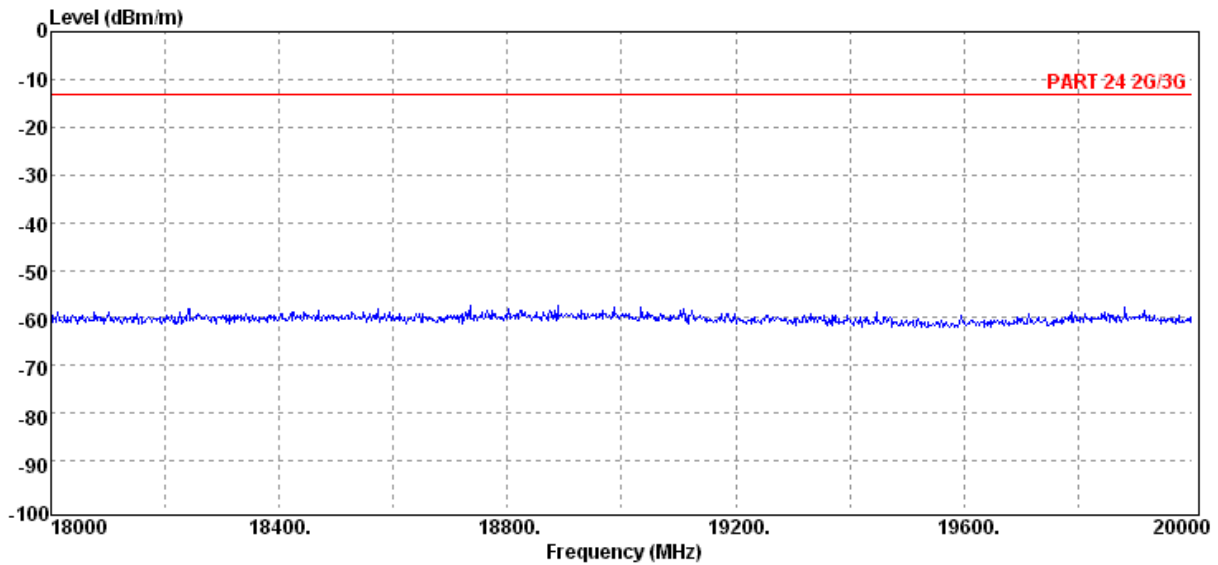
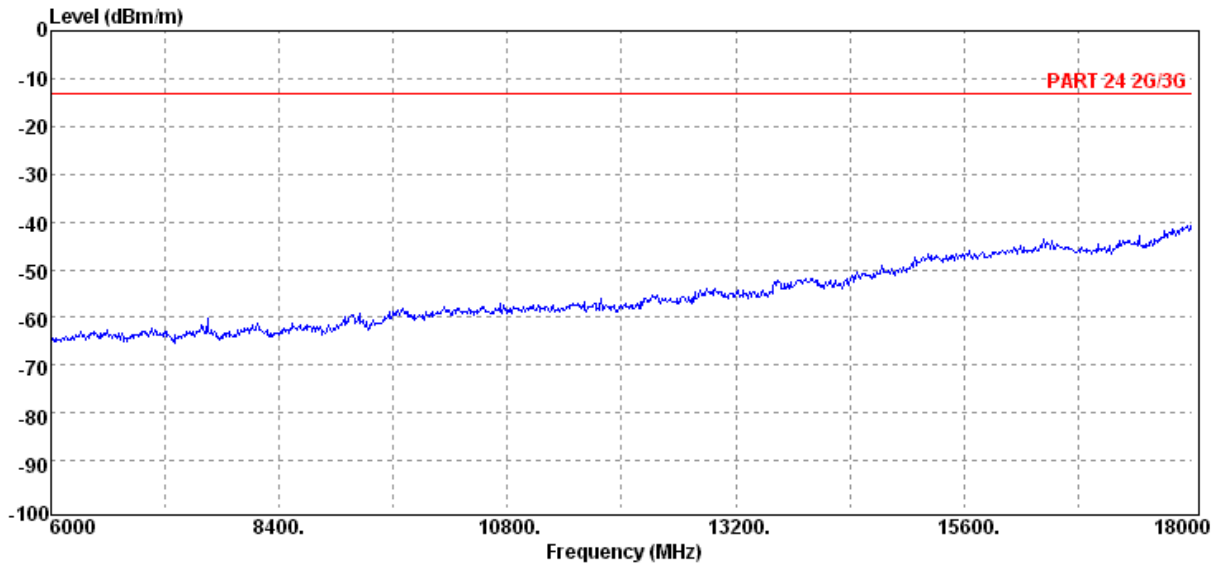
Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 810	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1909.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH	Measurement Antenna Pol.	:VERTICAL
EUT Pol.	:E1 Plan		



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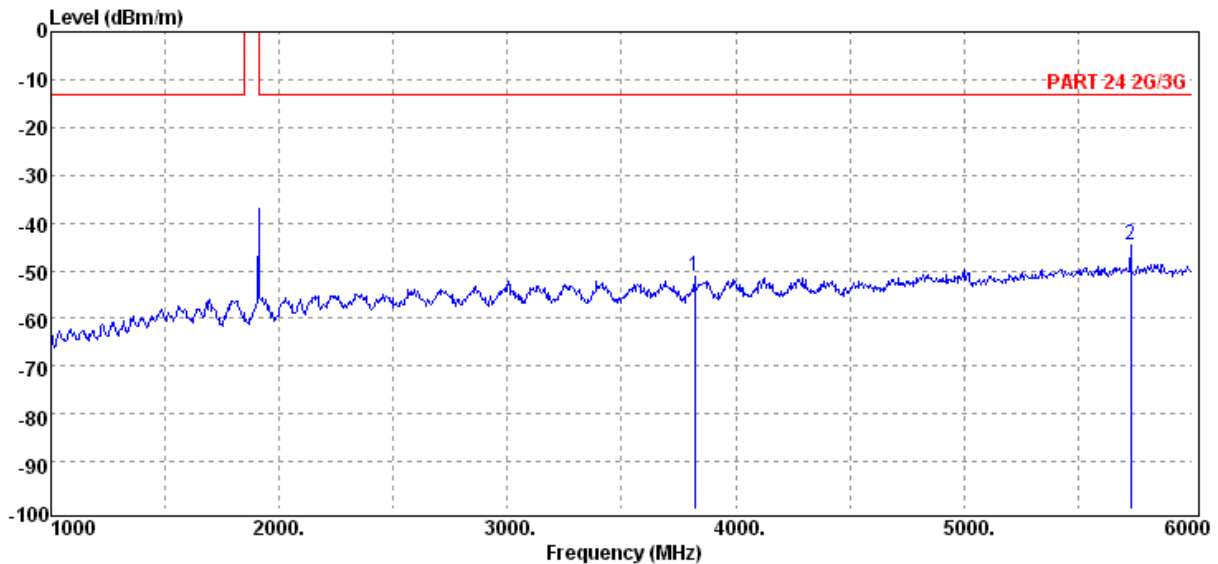
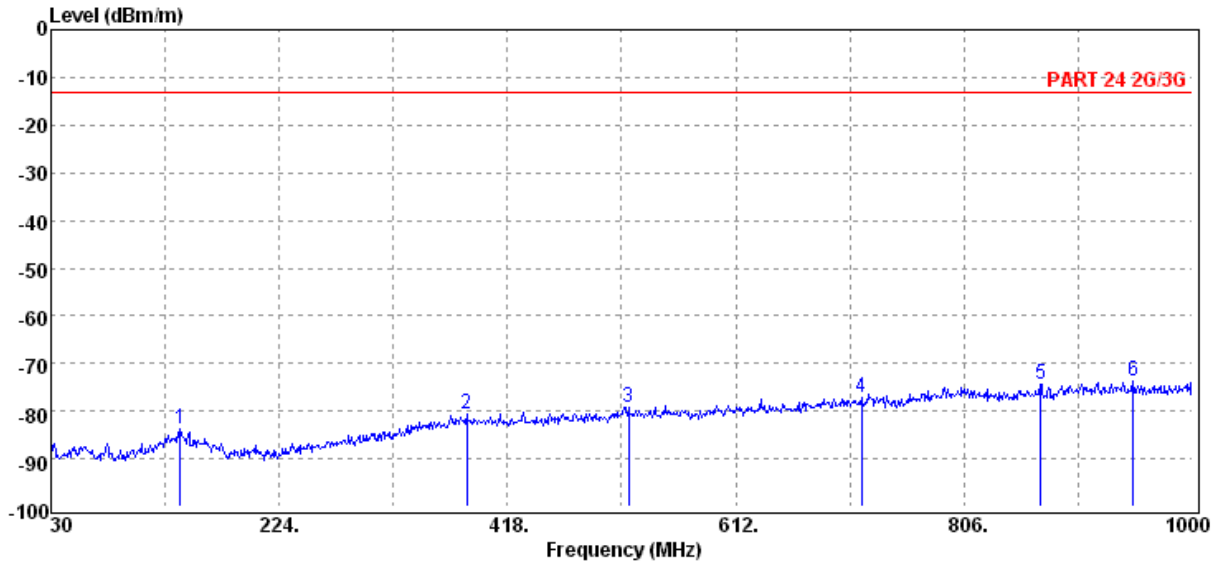
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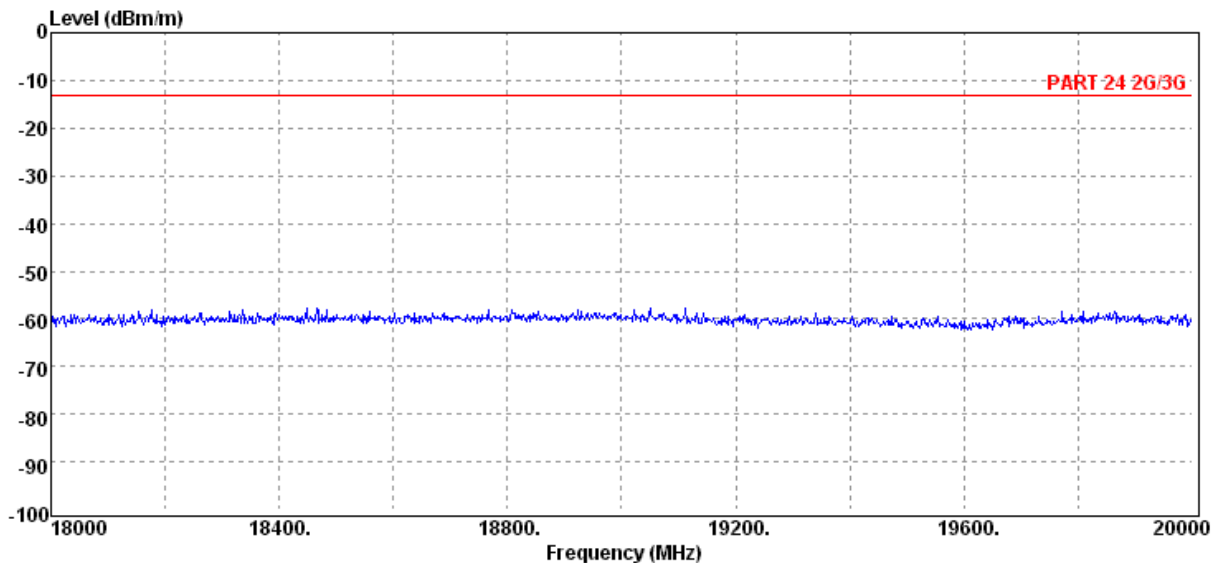
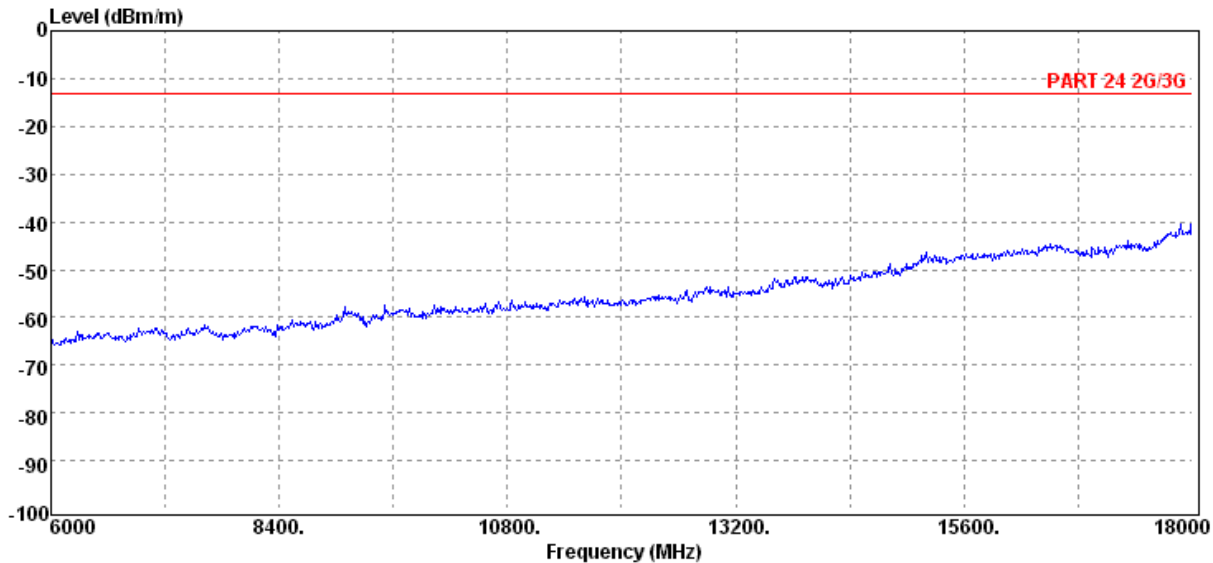
Operation Band	:GSM 1900	Test Date	:2013-05-03
ARFCN	:CH 810	Temp./Humi.	:24.1deg_C / 68 RH
Fundamental Frequency	:1909.8 MHz	Engineer	:Allen
Operation Mode	:TX HIGH	Measurement Antenna Pol.	:HORIZONTAL
EUT Pol.	:E1 Plan		



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~ End of Report ~

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