ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 22 SUBPART H, PART 24 SUBPART E

OF

Product Name:	**Pocket PC Phone**
Brand Name:	**HTC**
Model Name:	**RHOD100**
Model Difference:	**N/A**
FCC ID:	**NM8RHOD100**
Report No.:	**EH/2009/10017**
Issue Date:	**Feb. 11, 2009**
FCC Rule Part:	**2 , 22H & 24E**
Prepared for:	**HTC Corporation** **No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan, R.O.C**
Prepared by:	**SGS Taiwan Ltd.** **Electronics & Communication Laboratory** **No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei County, Taiwan.**

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VERIFICATION OF COMPLIANCE

Applicant:	HTC Corporation No.23, Xinghua Rd., Taoyuan City, Taoyuan County 330, Taiwan, R.O.C
Product Name:	Pocket PC Phone
Brand Name:	HTC
Model No.:	RHOD100
Model Difference:	N/A
FCC ID:	NM8RHOD100
File Number:	EH/2009/10017
Date of test:	Jan. 23, 2009 ~ Feb. 09, 2009
Date of EUT Received:	Jan. 23, 2009

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 FCC 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:	Jazz Huang	***Date:***	Feb. 11, 2009
	Jazz Huang / Engineer		
Prepared By:	Eva Kao	***Date:***	Feb. 11, 2009
	Eva Kao / Asst. Supervisor		
Approved By:	Vincent Su	***Date:***	Feb. 11, 2009
	Vincent Su / Manager		

Version

Version No.	Date	Description
00	Feb. 11, 2009	Initial creation of document

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1. GENERAL PRODUCT INFORMATION

General:

Product Name:	Pocket PC Phone	
Brand Name:	HTC	
Model Name:	RHOD100	
Model Difference:	N/A	
Simple Hands-Free (SHF):	1. Model: HS S300 , Supplier: Cotron 2. Model: HS S300 , Supplier: Merry 3. Model: HS S300 , Supplier: Kingstate 4. Model: HS S200 , Supplier: Cotron	
Data Cable (USB):	1. Model No.: DC U200, Supplier: MEC 2. Model No.: DC U200, Supplier: ACON	
Power Supply:	3.7 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter	
	Battery:	1. Model: RHOD160, Supplier: HT 2. Model: RHOD160, Supplier: Formosa 3. Model: RHOD160, Supplier: Simplo
	Adapter:	1. Model: TC P300, Supplier: CHENG UEI 2. Model: TC P300, Supplier: Delta

GSM and WCDMA:

	Operating Frequency		Rated Power
Cellular Phone Standards Frequency Range and Power:	GSM/GPRS/EDGE, 850, Class 12	824.2 MHz– 848.8 MHz	33 dBm
	GSM/GPRS/EDGE, 900, Class 12	880.2MHz – 914.8MHz	33 dBm
	GSM/GPRS/EDGE, 1800, Class 12	1710.2MHz-1784.8MHz	30 dBm
	GSM/GPRS/EDGE, 1900, Class 12	1850.2MHz – 1909.8MHz	30 dBm
	WCDMA/HSUPA/HSDPA Band I	1922.4MHz – 1977.6MHz	24 dBm
	WCDMA/HSUPA/HSDPA Band VIII	880.4MHz – 914.6MHz	24dBm
	HSUPA data rate: uplink up to 2Mbps HSDPA data rate: downlink up to 7.2Mbps		
Type of Emission:	GSM850: 253KGXW, GSM1900: 249KGXW EDGE850: 247KG7W, EDGE1900: 245KG7W		
IMEI:	35884502		

WLAN: 802.11 b/g

Frequency Range:	2412 – 2462 MHz
Channel number:	11 channels
Transmit Power:	☒802.11 b: 18.32 dBm EIRP ☒802.11 g: 13.33 dBm EIRP
Modulation Technology:	☒DSSS, ☒OFDM
Modulation type:	CCK, DQPSK, DBPSK for DSSS 64QAM. 16QAM, QPSK, BPSK for OFDM
Transition Rate:	802.11 b: 1/2/5.5/11 Mbps; 802.11 g: 6/9/12/18/24/36/48/54 Mbps
Antenna Designation:	PIFA Antenna, 0.36dBi.
Type of Emission:	16M4D1D

Bluetooth:

Frequency Range:	2402 – 2480MHz
Bluetooth Version:	☐ V1.1 (GFSK) ☐ V1.2 (GFSK) ☐ V2.0 (GFSK) ☒ V2.0 + EDR (GFSK + π/4DQPSK + 8DPSK) ☐ V2.1 + EDR (GFSK + π/4DQPSK + 8DPSK)
Channel number:	79 channels
Modulation type:	Frequency Hopping Spread Spectrum
Transmit Power:	0 dBm EIRP
Dwell Time:	<= 0.4s
Operating Mode:	Point-to-Point
Antenna Designation:	PIFA Antenna, 0.36dBi.
Type of Emission:	1M20F1D

GPS:

Receiver Frequency	L1 Band, 1575.42MHz
Frequency Conversion oscillator	19.2MHz
Antenna Designation	mono pole

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

1.1. Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID: **NM8RHOD100** filing to comply with Section Part 22 subpart H, Part 24 subpart E of the FCC CFR 47 Rules.

1.2. Test Methodology

Both conducted and radiated testing were performed according to the procedures document on chapter 13 of ANSI C63.4 (2003) and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055 and 2.1057.

1.3. 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 Rd., Wuku Industrial Zone, Taipei Country, Taiwan which are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003. FCC Registration Number are: 990257 and 236194, Canada Registration Number: 4620A-1

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.

1.4. Special Accessories

Not available for this EUT intended for grant.

1.5. Equipment Modifications

Not available for this EUT intended for grant.

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 engineering mode to fix the Tx frequency which was for the purpose of the measurements.

2.3. Test Procedure

2.3.1 AC Power Line Conducted Emissions

The EUT is placed on a turn table which is 0.8 m above ground plane. According to the requirements in Section 7 and 13 of ANSI C63.4: 2003. Conducted emissions from the EUT measured in the frequency range between 0.15 MHz and 30MHz using CISPR Quasi-Peak and Average detector mode.

2.3.2 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 con- nect the antenna port of EUT to measurement equipment.

2.3.3 Radiated Emissions (ERP/EIRP):

According to measurement procured TIA/EIA 603C, issue 2 of RSS-Gen and TIA/EIA IS-98 for Mobile stations. The EUT is placed on a turn table which is 1.0 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 according to the requirements.

A standard antenna was used to replace the EUT and connect to the SG. Adjust the SG output level to reach the max emission level which were measured above.

2.4. Measurement Equipment Used:

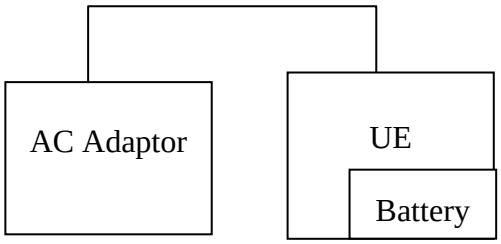
AC POWER LINE CONDUCTED EMISSION EQUIPMENT List					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMI Test Receiver	R&S	ESCS30	828985/004	09/16/2008	09/15/2009
LISN	Rolf-Heine	NNB-2/16Z	99012	04/28/2008	04/27/2009
LISN	FCC	FCC-LISN-50 /250-25-2-01	04034	04/28/2008	04/27/2009
Coaxial Cables	N/A	WK CE Cable	N/A	10/30/2008	10/29/2009

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	04/19/2008	04/18/2010
Spectrum Analyzer	Agilent	E4440A	US41160416	01/23/2008	01/22/2010
Radio Communication Analyzer	R&S	CMU200	102189	05/13/208	05/13/2010
800 – 1000MHz Filter	Micro-Tronics	BRM13462	001	01/05/2009	01/04/2010
1800 – 2000MHz Filter	Micro-Tronics	BRM13463	001	01/05/2009	01/04/2010
Temperature Chamber	TERCHY	MHG-120LF	911009	04/14/2008	04/13/2010
Temperature Chamber	GIANT FORCE	GTH-150-40-CP-AR	MAA0512-018	02/05/2008	02/04/2010
DC Block	Agilent	BLK-18	155452	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S20W5	N/A	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	N/A	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S6W5	N/A	07/05/2008	07/04/2009
Splitter	Agilent	11636B	N/A	07/05/2008	07/04/2009
DC Power Supply	HP	6038A	2929A-07548	06/27/2007	06/26/2009
DC Power Supply	Topward	3303D	981327	10/26/2007	10/25/2009

ERP, EIRP MEASUREMENT EQUIPMENT List 966 Chamber					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	R&S	FSP 40	100034	02/22/2008	02/21/2009
Bilog Antenna	SCHWAZBECK	VULB9160	9160-3136	11/15/2008	11/14/2009
Dipole Antenna	SCHWAZBECK	VHAP	908/909	07/10/2008	07/09/2010
Dipole Antenna	SCHWAZBECK	UHAP	891/892	07/10/2008	07/09/2010
Hor.n antenna	SCHWAZBECK	BBHA 9120D	309	05/09/2008	05/10/2010
Horn antenna	SCHWAZBECK	BBHA 9120D	9120D-320	03/14/2008	03/13/2009
Signal Generator	R&S	SMR40	100210	01/22/2008	01/21/2010
Signal Generator	Agilent	E4438C	MY45093613	05/22/2008	05/21/2009
Pre-Amplifier	Agilent	8447D	1937A02834	11/30/2008	11/29/2009
Pre-Amplifier	Agilent	8449B	3008A01973	01/05/2009	01/04/2010
Attenuator	Mini-Circuit	BW-S20W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S10W5	001	07/05/2008	07/04/2009
Attenuator	Mini-Circuit	BW-S6W5	001	07/05/2008	07/04/2009
Radio Communication Analyzer	R&S	CMU200	102189	05/13/208	05/13/2010
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	SUCOFLEX 104PEA-10M	10m	01/05/2009	01/04/2010
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	01/05/2009	01/04/2010
3m Site	SGS	966 chamber	N/A	11/08/2008	11/09/2009

2.5. Configuration of Tested System

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



Remote Side

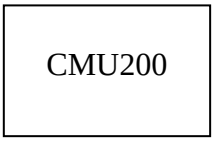


Table 2-1 Equipment Used in Tested System

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

3. SUMMARY OF TEST RESULTS

FCC Rules	Description Of Test	Result
§2.1046(a) §22.913(a) §24.232(c)(d)	RF Peak Power Output, Maximum Power Reduction	Compliant
§2.1046(a) §22.913(a)(2) §24.232(c)	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
§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
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

Max ERP/EIRP measurement result:

	dBm		W
GSM 850 Band	32.34	ERP	1.714
GSM 1900 Band	27.08	EIRP	0.511
EDGE 850 Band	27.47	ERP	0.558
EDGE 1900 Band	22.69	EIRP	0.186

4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

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

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 with power adaptor. The worst-case of E2 position for GSM 850 band and PCS 1900 band were reported.

5. RF POWER OUTPUT MEASUREMENT / MAXMUM POWER REDUCTION MEASUREMENT

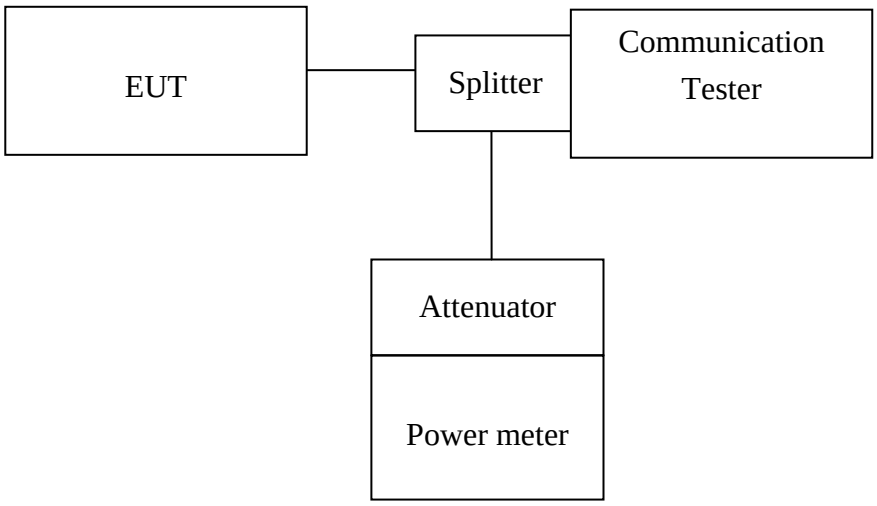
5.1. Standard Applicable:

According to FCC §2.1046.

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

FCC 24.232(d) Peak Power Measurement, FCC 24.232(c) Maximum Power Reduction.

5.2. Test Set-up:



Note: *Measurement setup for testing on Antenna connector*

5.3. 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 attenu- ator to the power meter reading. was used for EUT and Base station setting.

5.4. Measurement Equipment Used:

Refer to section 2.4 in this report

5.5. Measurement Result:

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Peak Power (dBm)	Avg. Power (dBm)
GSM 850	824.2	128	1.0	33.2	33.2
	836.6	190	1.0	33.3	33.1
	848.8	251	1.0	33.2	33.1

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
GPRS 850	824.2	128	1.0	33.2	33	33	32.9
	836.6	190	1.0	33.3	33.1	33	32.9
	848.8	251	1.0	33.2	33.1	33	32.9

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
GPRS 850	824.2	128	1.0	33.1	32.9	32.8	32.8
	836.6	190	1.0	33.1	32.9	32.9	32.8
	848.8	251	1.0	33.1	32.9	32.9	32.8

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
EDGE 850	824.2	128	1.0	26.8	26.6	26.5	26.5
	836.6	190	1.0	26.8	26.6	26.6	26.55
	848.8	251	1.0	26.8	26.6	26.6	26.6

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
EDGE 850	824.2	128	1.0	26.6	26.4	26.4	26.3
	836.6	190	1.0	26.6	26.4	26.4	26.4
	848.8	251	1.0	26.7	26.5	26.4	26.4

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Peak Power (dBm)	Avg. Power (dBm)
GSM1900	1850.2	128	1.0	30.2	30.0
	1880.0	190	1.0	30.2	30.0
	1909.8	251	1.0	30.1	29.9

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
GPRS 1900	1850.2	512	1.0	30.2	30	29.9	29.8
	1880.0	661	1.0	30.2	30	29.9	29.8
	1909.8	810	1.0	30.1	29.8	29.7	29.6

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
GPRS 1900	1850.2	512	1.0	30	29.8	29.8	29.7
	1880.0	661	1.0	30	29.8	29.8	28.7
	1909.8	810	1.0	29.8	29.6	29.6	28.5

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Peak Power (1TS) (dBm)	Peak Power (2TS) (dBm)	Peak Power (3TS) (dBm)	Peak Power (4TS) (dBm)
EDGE 1900	1850.2	512	1.0	25.6	25.4	25.4	25.2
	1880.0	661	1.0	25.6	25.4	25.4	25.4
	1909.8	810	1.0	25.5	25.3	25.3	25.25

EUT Mode	Frequency (MHz)	CH	Path Loss (dB)	Average Power (1TS) (dBm)	Average Power (2TS) (dBm)	Average Power (3TS) (dBm)	Average Power (4TS) (dBm)
EDGE 1900	1850.2	512	1.0	25.5	25.3	25.25	25.2
	1880.0	661	1.0	25.5	25.3	25.2	25.2
	1909.8	810	1.0	24.25	25.15	25.1	25.1

Maximum Power Reduction: PCS1900 band

PCL	0	1	2	3	4	5	6	7	8
Output power (dBm)	30.2	27.8	25.3	23.8	22.3	20.3	18.3	16.3	14.3
PCL	**9**	**10**	**11**	**12**	**13**	**14**	**15**	**16**	**17**
Output power (dBm)	12.3	10.2	8.2	6.2	4.3	2.2	0.2	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.

6. ERP, EIRP MEASUREMENT

6.1. Standard Applicable:

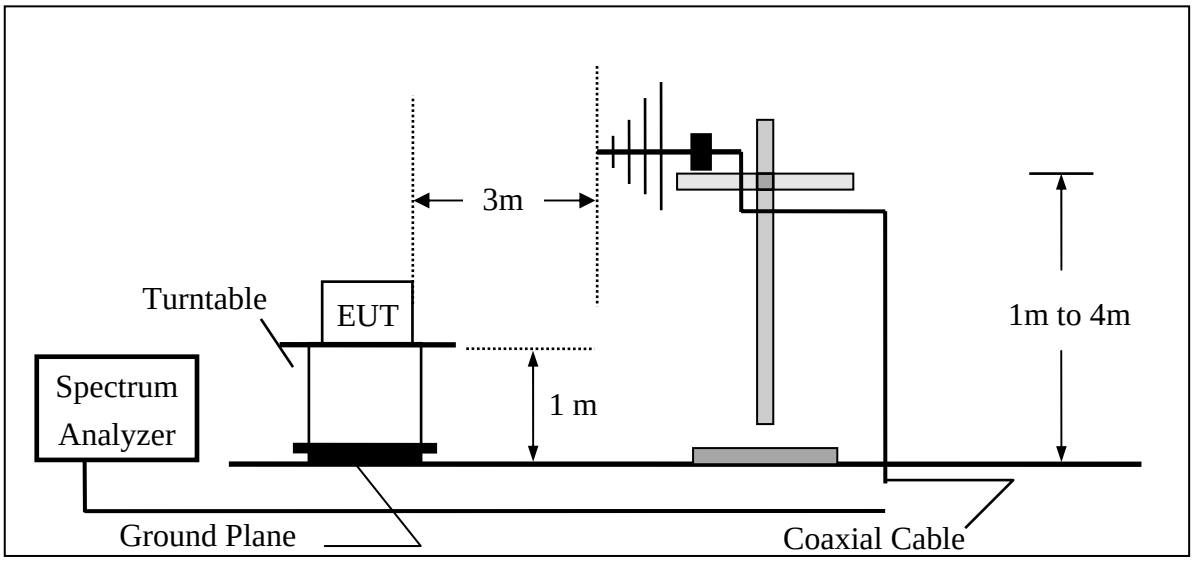
According to FCC §2.1046

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

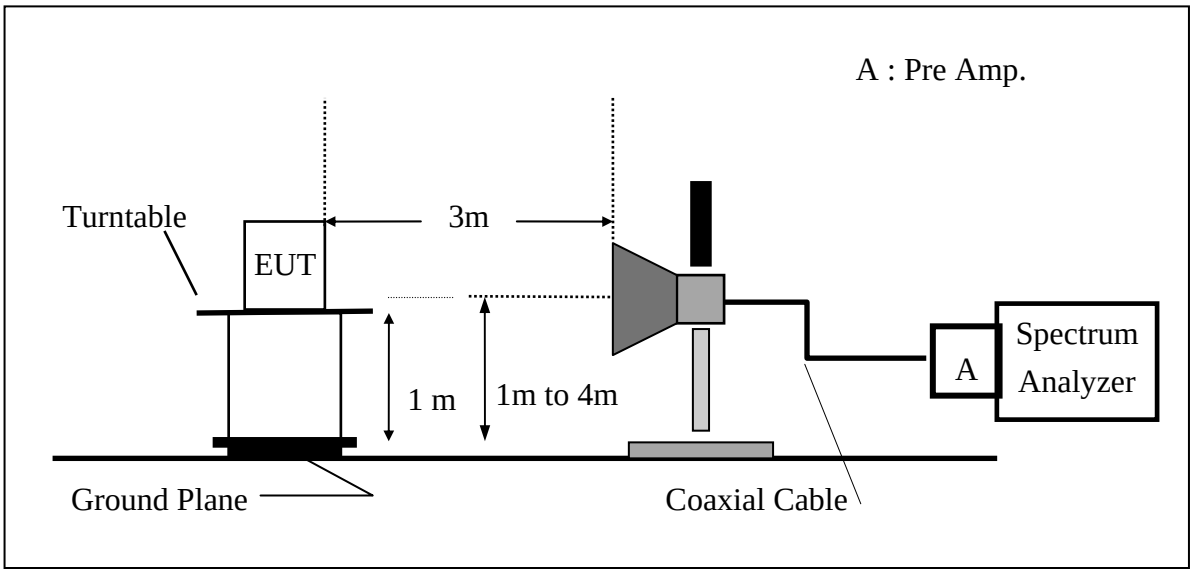
FCC 24.232(b) Mobile station are limited to 2W EIRP.

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

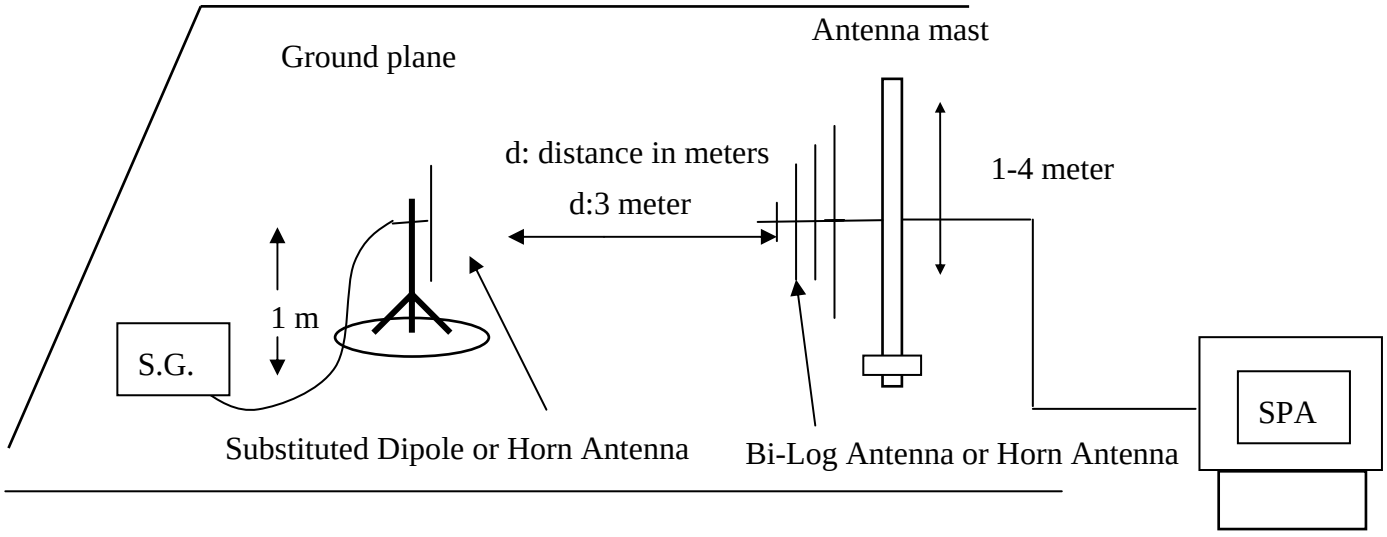
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



(C) Substituted Method Test Set-UP



6.3. Measurement Procedure:

The EUT was placed on an 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 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 dipole antenna connected, the S.G. output was recorded and ERP was calculated as follows:

EIRP in frequency band 1710-1755MHz and 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:

ERP = S.G. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain (dBi) – Cable Loss (dB)

6.4. Measurement Equipment Used:

Refer to section 2.4 in this report

6.5. Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
GSM 850	824.20	128	H	V	123.23	36.84	-7.87	3.62	25.34	38.45
				H	129.02	42.75	-7.87	3.62	31.25	38.45
			E1	V	128.85	42.46	-7.87	3.62	30.96	38.45
				H	127.53	41.26	-7.87	3.62	29.76	38.45
			E2	V	125.08	38.69	-7.87	3.62	27.19	38.45
				H	130.11	43.84	-7.87	3.62	**32.34**	38.45
	836.60	190	H	V	123.05	36.80	-7.88	3.65	25.27	38.45
				H	128.49	42.26	-7.88	3.65	30.73	38.45
			E1	V	128.88	42.63	-7.88	3.65	31.10	38.45
				H	127.25	41.02	-7.88	3.65	29.49	38.45
			E2	V	125.16	38.91	-7.88	3.65	27.38	38.45
				H	130.01	43.78	-7.88	3.65	32.25	38.45
	848.80	251	H	V	121.35	35.23	-7.88	3.68	23.67	38.45
				H	127.67	41.48	-7.88	3.68	29.92	38.45
			E1	V	128.15	42.03	-7.88	3.68	30.47	38.45
				H	126.75	40.56	-7.88	3.68	29.00	38.45
			E2	V	123.89	37.77	-7.88	3.68	26.21	38.45
				H	129.23	43.04	-7.88	3.68	31.48	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

Below 1GHz was RBW=300 KHz, VBW=1MHz,

Above 1GHz was RBW= 1MHz , VBW= 3MHz

Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
PCS 1900	1850.20	512	H	V	118.21	13.82	9.90	5.56	18.16	33.00
				H	126.08	21.90	9.90	5.56	26.24	33.00
			E1	V	125.72	21.33	9.90	5.56	25.67	33.00
				H	124.80	20.62	9.90	5.56	24.96	33.00
			E2	V	127.13	22.74	9.90	5.56	**27.08**	33.00
				H	120.08	15.90	9.90	5.84	19.96	33.00
	1880.00	661	H	V	118.84	14.48	9.99	5.61	18.86	33.00
				H	125.31	21.17	9.99	5.61	25.54	33.00
			E1	V	125.85	21.49	9.99	5.61	25.87	33.00
				H	124.73	20.59	9.99	5.61	24.96	33.00
			E2	V	126.70	22.34	9.99	5.61	26.72	33.00
				H	119.47	15.33	9.99	5.61	19.70	33.00
	1909.80	810	H	V	117.82	13.49	10.08	5.66	17.91	33.00
				H	124.68	20.57	10.08	5.66	24.99	33.00
			E1	V	124.55	20.22	10.08	5.66	24.64	33.00
				H	123.39	19.28	10.08	5.66	23.70	33.00
			E2	V	125.24	20.91	10.08	5.66	25.33	33.00
				H	118.43	14.32	10.08	5.66	18.74	33.00

Remark：

(1) The RBW,VBW of SPA for frequency

Below 1GHz was RBW=300 KHz, VBW=1MHz,

Above 1GHz was RBW= 1MHz , VBW= 3MHz

Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	ERP (dBm)	Limit (dBm)
EDGE 850	824.20	128	H	V	112.54	25.22	-7.87	3.64	13.70	38.45
				H	119.37	31.71	-7.87	3.64	20.20	38.45
			E1	V	123.24	35.92	-7.87	3.64	24.40	38.45
				H	116.10	28.44	-7.87	3.64	16.93	38.45
			E2	V	112.42	25.10	-7.87	3.64	13.58	38.45
				H	124.13	36.47	-7.87	3.64	24.96	38.45
	836.60	190	H	V	115.70	28.67	-7.88	3.70	17.10	38.45
				H	120.48	33.14	-7.88	3.70	21.57	38.45
			E1	V	124.69	37.66	-7.88	3.70	26.09	38.45
				H	117.44	30.10	-7.88	3.70	18.53	38.45
			E2	V	113.67	26.64	-7.88	3.70	15.07	38.45
				H	125.38	38.04	-7.88	3.70	26.47	38.45
	848.80	251	H	V	118.14	31.40	-7.88	3.75	19.77	38.45
				H	123.34	36.32	-7.88	3.75	24.69	38.45
			E1	V	125.72	38.98	-7.88	3.75	27.35	38.45
				H	117.15	30.13	-7.88	3.75	18.50	38.45
			E2	V	116.19	29.45	-7.88	3.75	17.82	38.45
				H	126.12	39.10	-7.88	3.75	**27.47**	38.45

Remark：

(1) The RBW,VBW of SPA for frequency

Below 1GHz was RBW=300 KHz, VBW=1MHz,

Above 1GHz was RBW= 1MHz , VBW= 3MHz

Measurement Result:

EUT Mode	Frequency (MHz)	CH	EUT Pol.	Antenna Pol.	SPA Reading (dBuV)	S.G. Output (dBm)	Antenna Gain (dBi)	Cable Loss (dB)	EIRP (dBm)	Limit (dBm)
EDGE 1900	1850.20	512	H	V	110.18	3.22	9.90	5.41	7.71	33.00
				H	125.09	18.20	9.90	5.41	**22.69**	33.00
			E1	V	121.01	14.05	9.90	5.41	18.54	33.00
				H	118.84	11.95	9.90	5.41	16.44	33.00
			E2	V	121.68	14.72	9.90	5.41	19.21	33.00
				H	118.26	11.37	9.90	5.84	15.43	33.00
	1880.00	661	H	V	108.93	1.98	9.99	5.46	6.51	33.00
				H	124.10	17.23	9.99	5.46	21.76	33.00
			E1	V	120.26	13.31	9.99	5.46	17.84	33.00
				H	118.00	11.13	9.99	5.46	15.66	33.00
			E2	V	121.42	14.47	9.99	5.46	19.00	33.00
				H	117.57	10.70	9.99	5.46	15.23	33.00
	1909.80	810	H	V	106.11	-0.83	10.08	5.51	3.74	33.00
				H	121.44	14.59	10.08	5.51	19.15	33.00
			E1	V	119.16	12.22	10.08	5.51	16.79	33.00
				H	116.81	9.96	10.08	5.51	14.52	33.00
			E2	V	120.94	14.00	10.08	5.51	18.57	33.00
				H	116.84	9.99	10.08	5.51	14.55	33.00

Remark：

(1) The RBW,VBW of SPA for frequency

Below 1GHz was RBW=300 KHz, VBW=1MHz,

Above 1GHz was RBW= 1MHz , VBW= 3MHz

7. 99% OCCUPIED BANDWIDTH MEASUREMENT

7.1. Standard Applicable:

According to §FCC 2.1049.

7.2. Test Set-up:

Refer to section 5.2 in this report

7.3. Measurement Procedure:

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10/30KHz) was set to about 1% of emission BW, VBW= 3 times RBW(30/100KHz), -26dBc display line was placed on the screen (or 99% bandwidth), the occupied bandwidth is the delta frequency between the two points where the display line intersects the signal trace.

7.4. Measurement Equipment Used:

Refer to section 2.4 in this report

7.5. Measurement Result:

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
GSM 850	824.20	128	0.242
	836.60	190	0.247
	848.80	251	0.252

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
PCS 1900	1850.20	512	0.248
	1880.00	661	0.240
	1909.80	810	0.245

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
EDGE 850	824.20	128	0.240
	836.60	190	0.245
	848.80	251	0.246

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
EDGE 1900	1850.20	512	0.244
	1880.00	661	0.243
	1909.80	810	0.240

Figure 7-1: GSM Channel Low

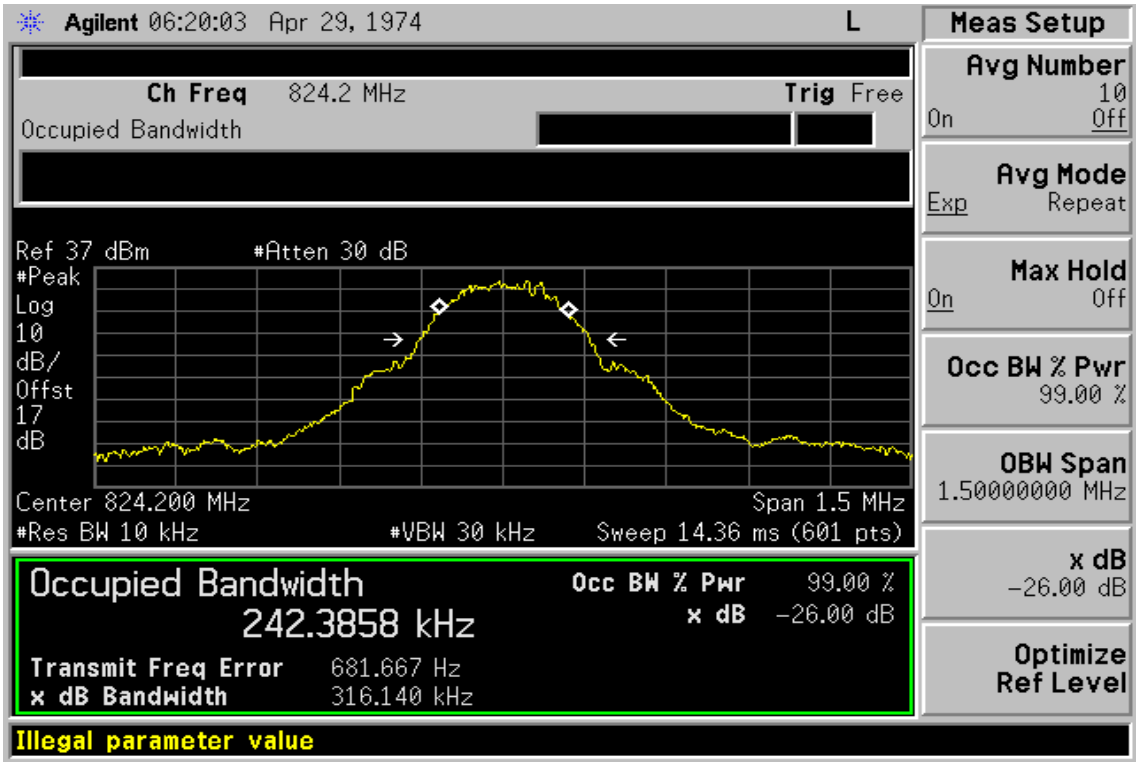


Figure 7-2 GSM Channel Mid

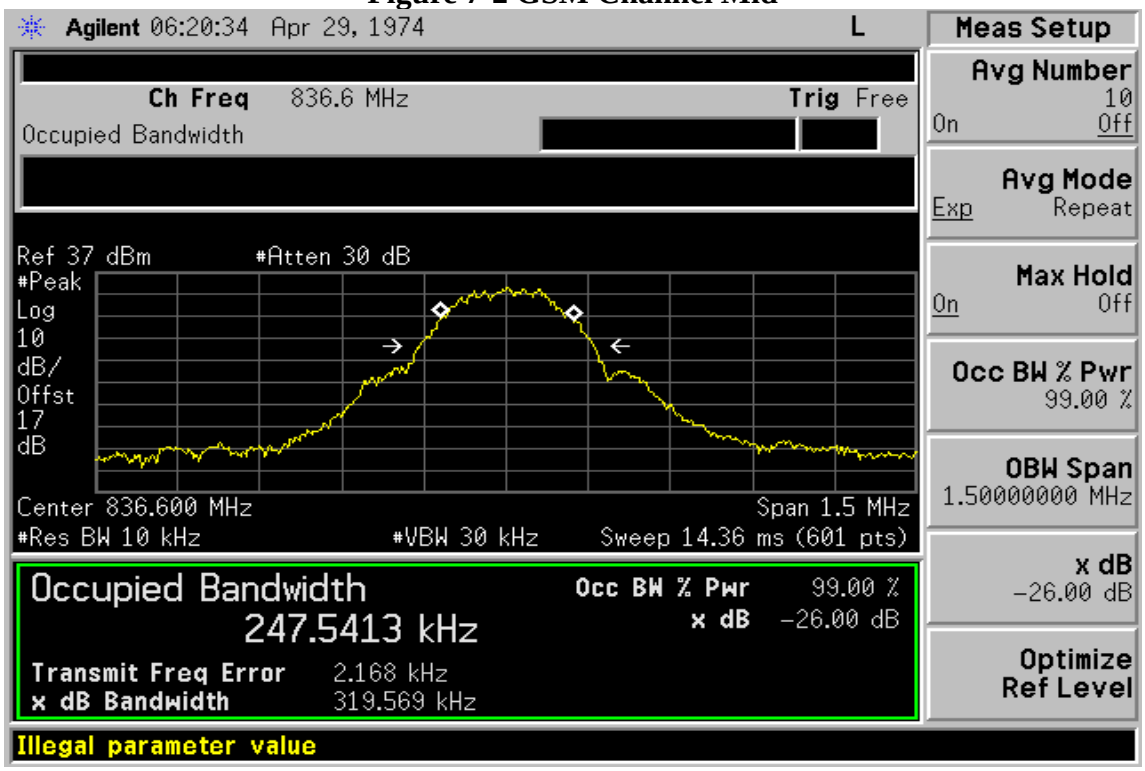


Figure 7-3: GSM Channel High

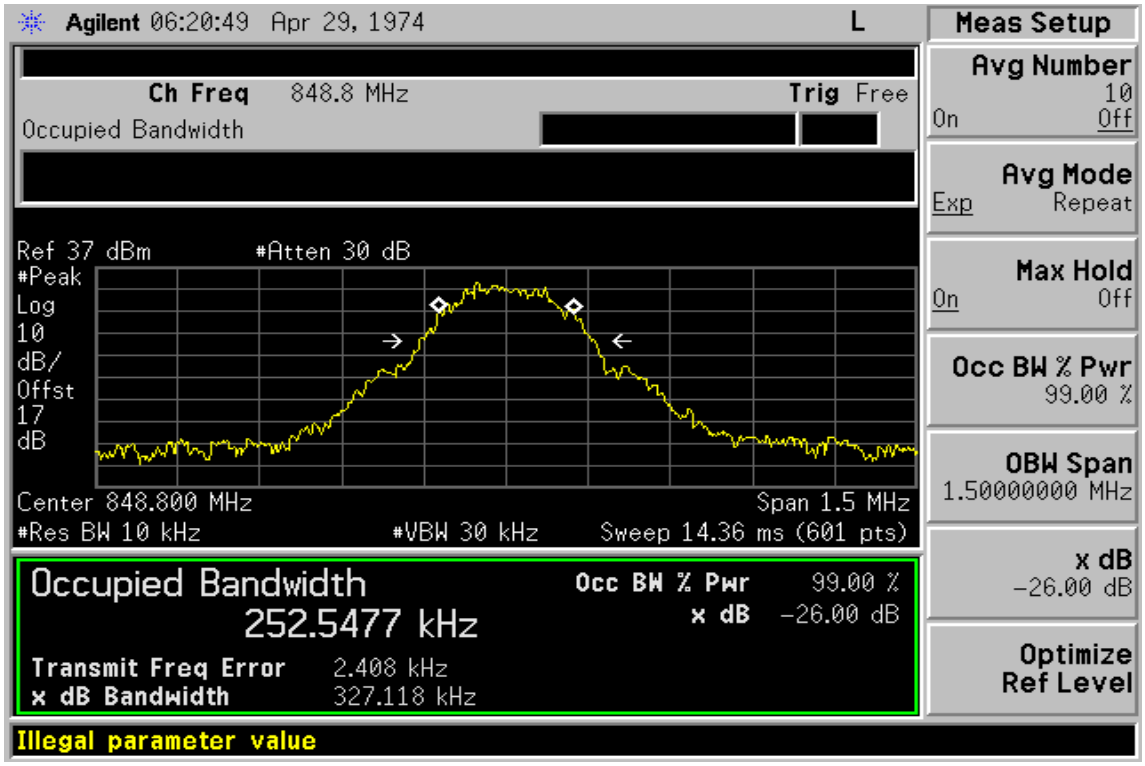


Figure 7-4: PCS Channel Low

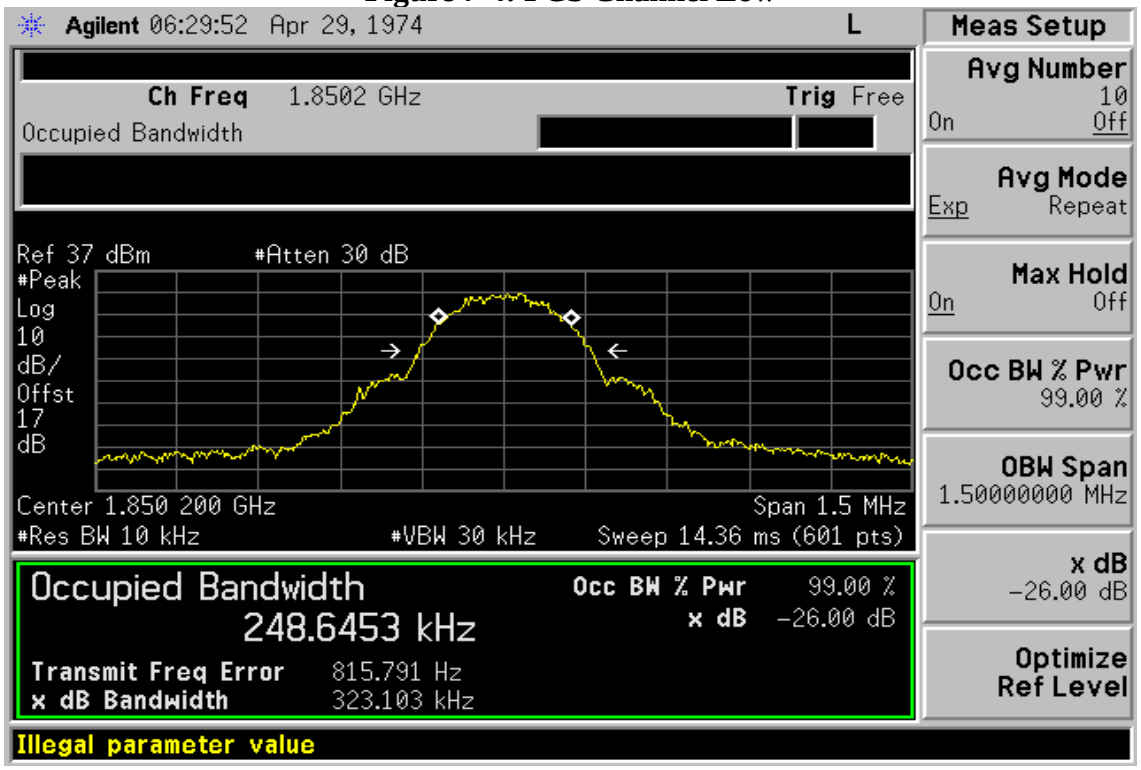


Figure 7-5 PCS Channel Mid

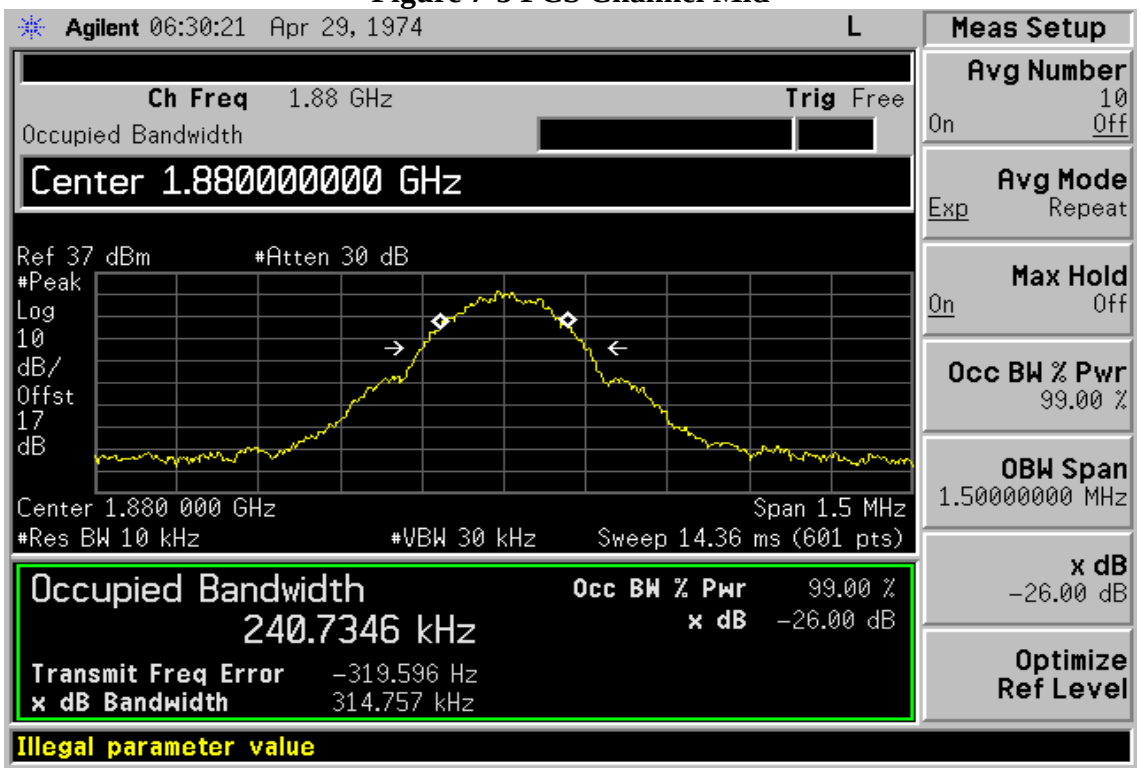


Figure 7-6: PCS Channel High

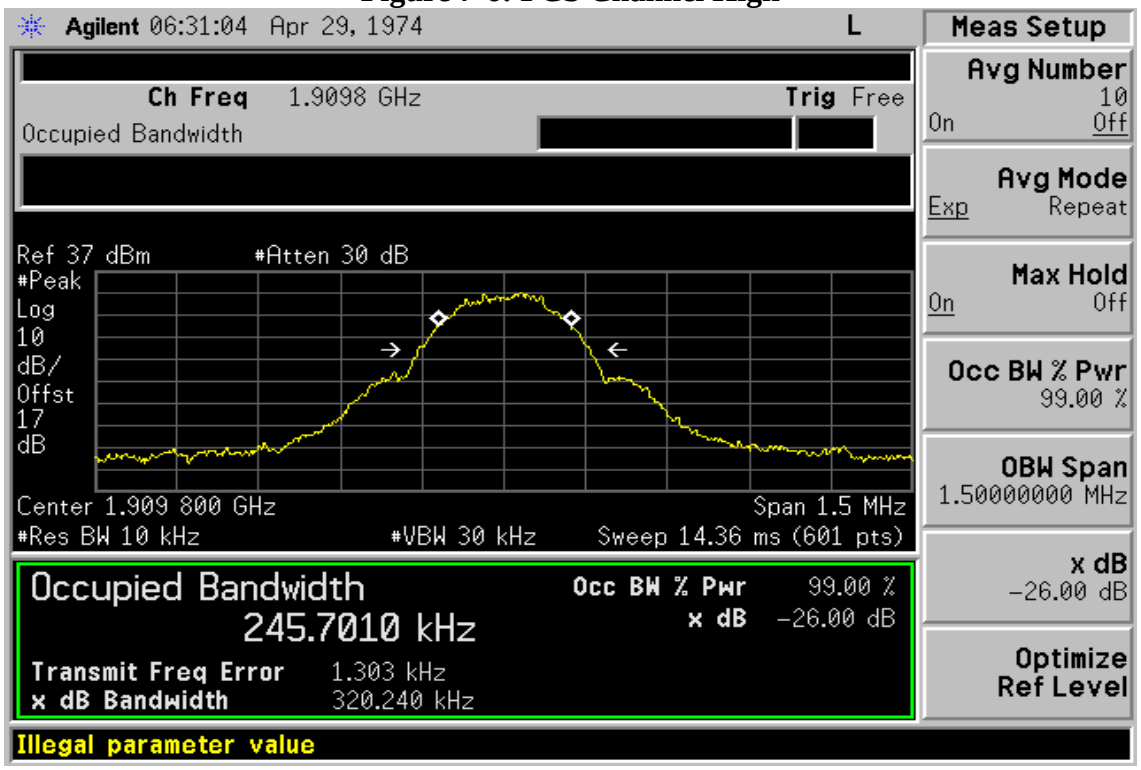


Figure 7-7: EDGE 850 Channel Low

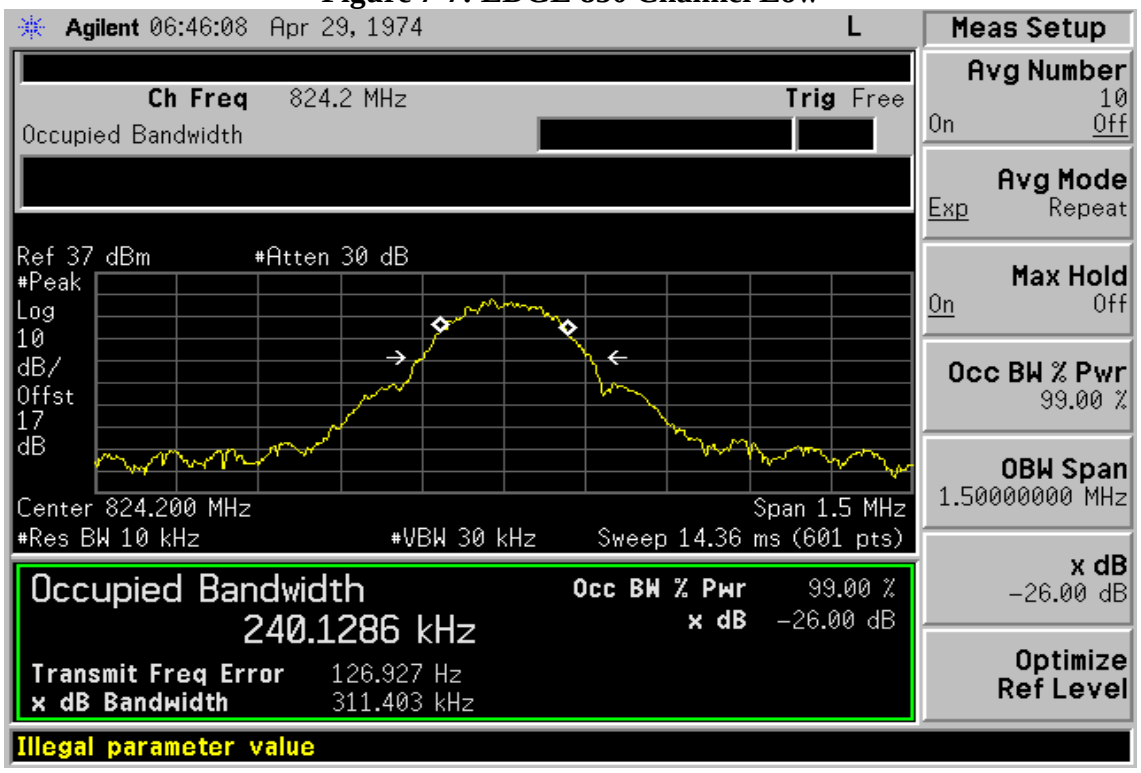


Figure 7-8 EDGE 850 Channel Mid

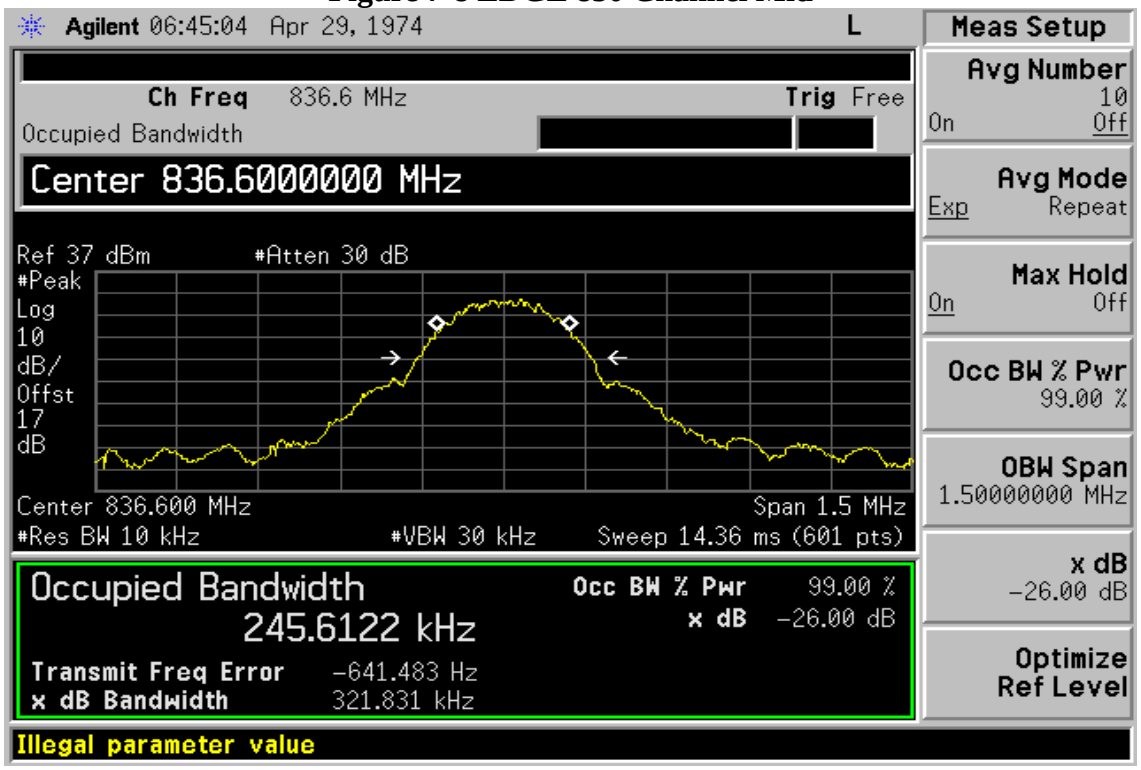


Figure 7-9: EDGE 850 Channel High

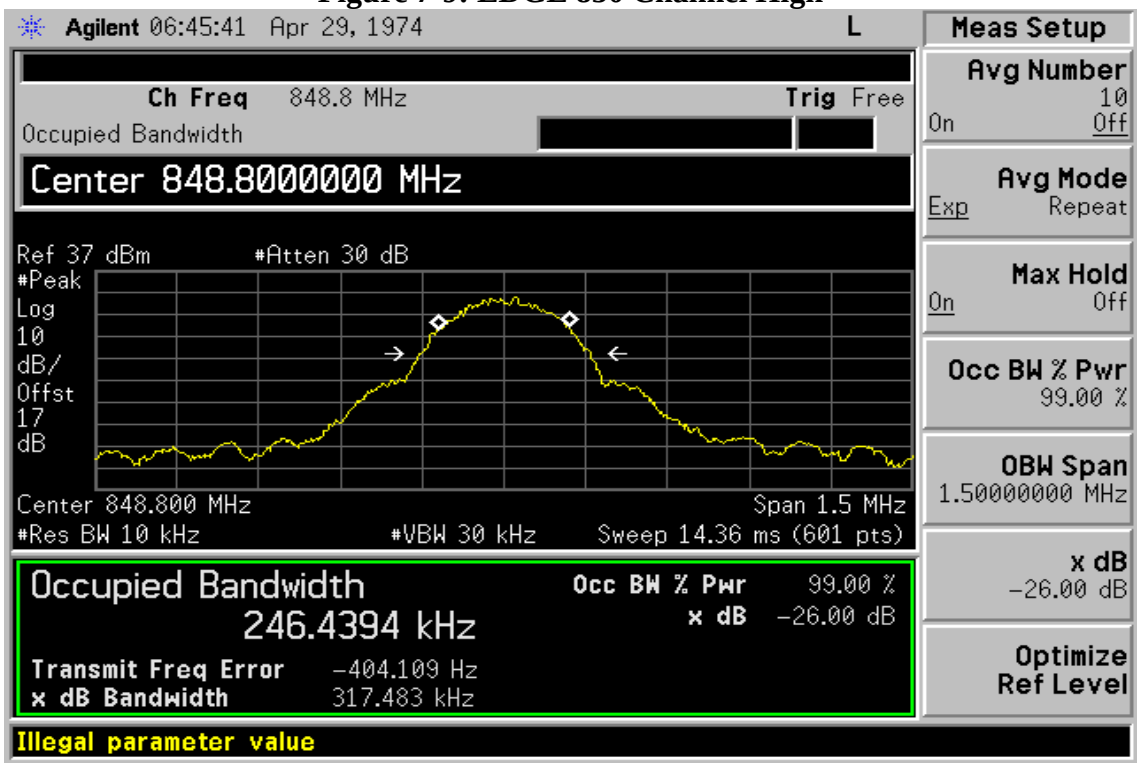


Figure 7-10: EDGE 1900 Channel Low

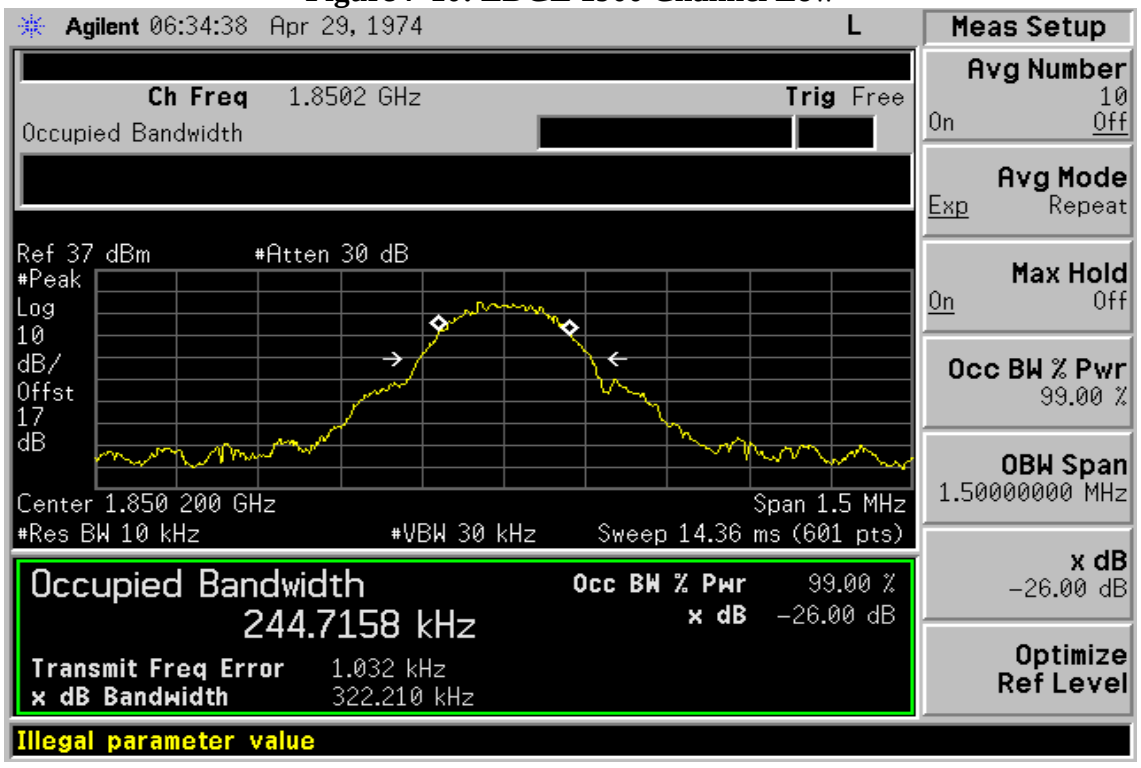


Figure 7-11 EDGE 1900 Channel Mid

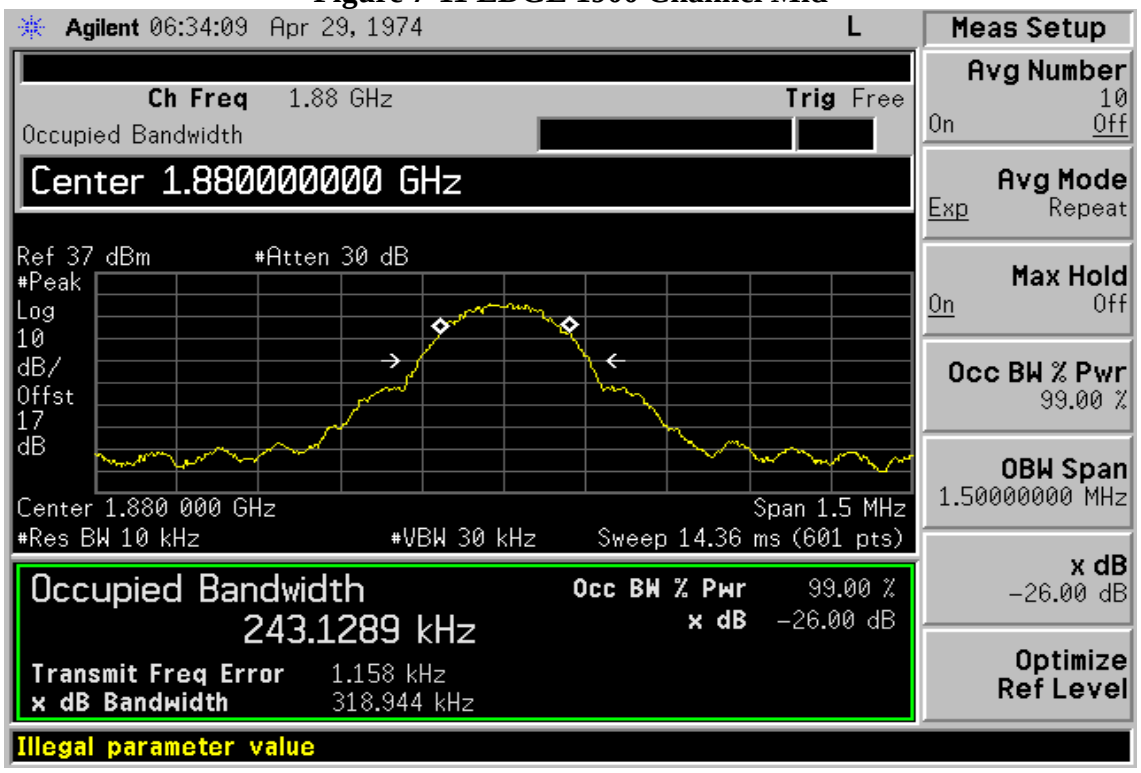
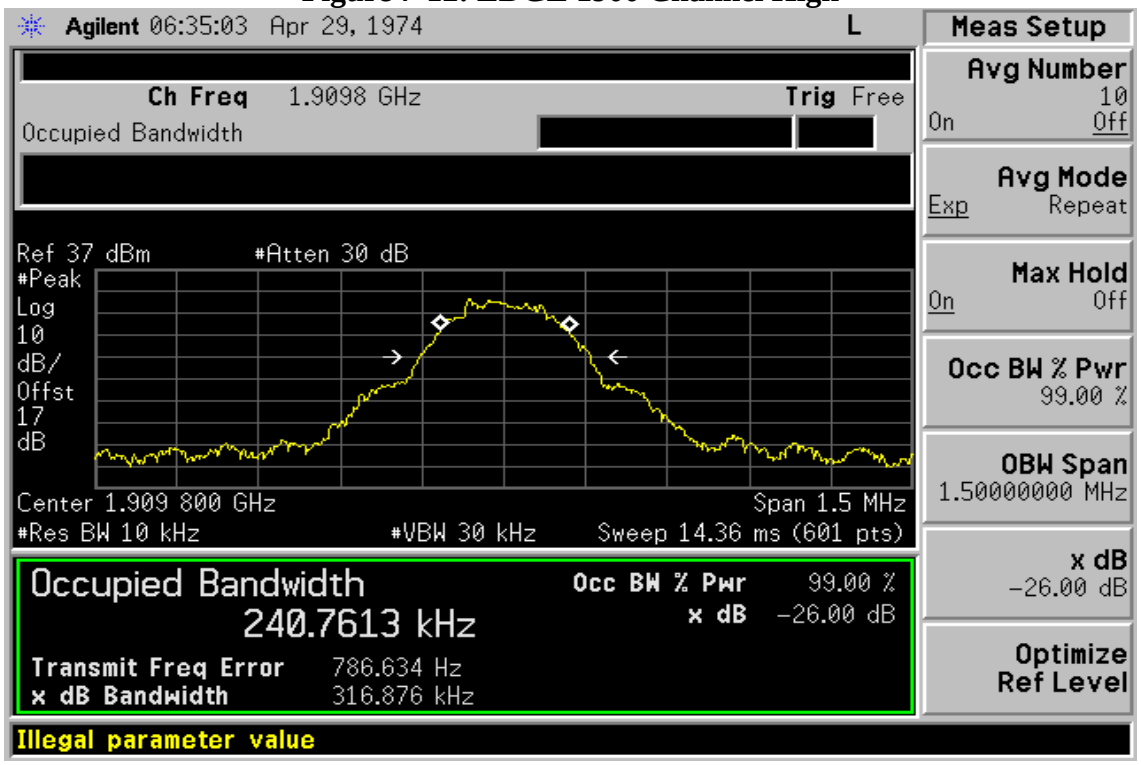


Figure 7-12: EDGE 1900 Channel High



8. OUT OF BAND EMISSION AT ANTENNA TERMINALS

8.1. 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)

8.2. Test SET-UP:

Refer to section 5.2 in this report

8.3. 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

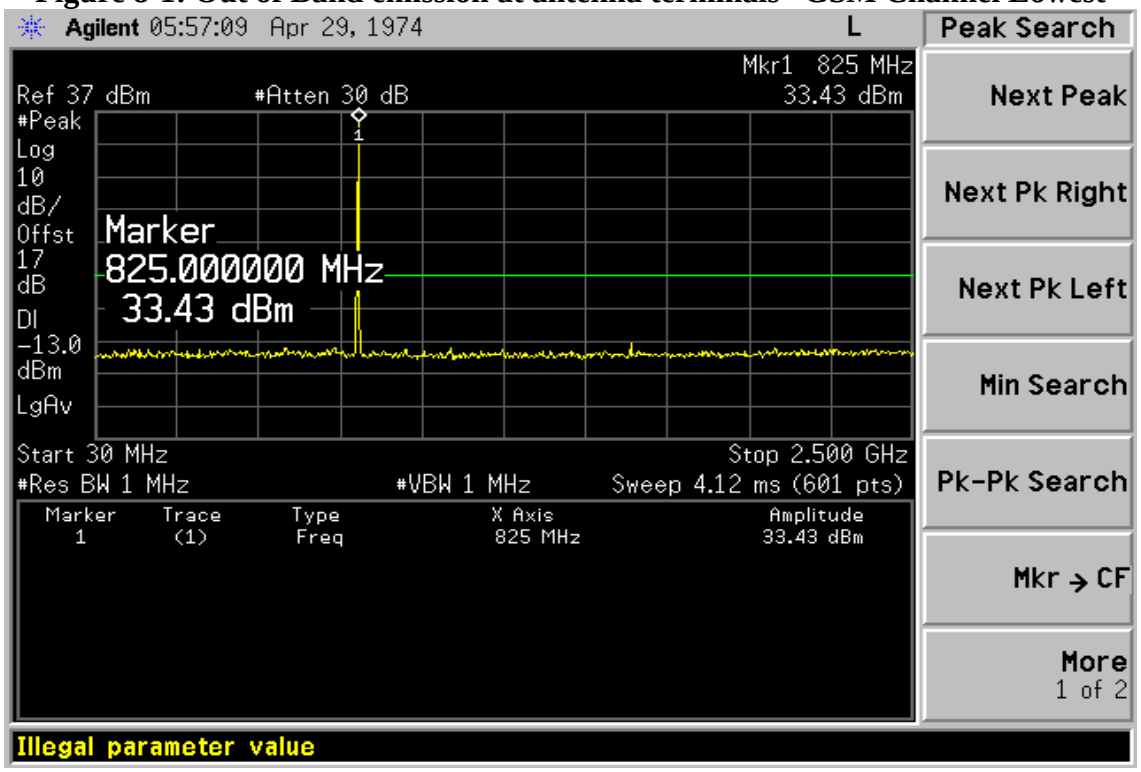
Band Edge Requirements: In the 1 MHz bands immediately outside and adjacent to the frequency block, a resolution bandwidth of at least 1 percent of the emission bandwidth of the fundamental emission of the transmitter may be employed to measure the out of band Emissions. Limit, -13dBm.

8.4. Measurement Equipment Used:

Refer to section 2.4 in this report

8.5. Measurement Result:

Figure 8-1: Out of Band emission at antenna terminals– GSM Channel Lowest



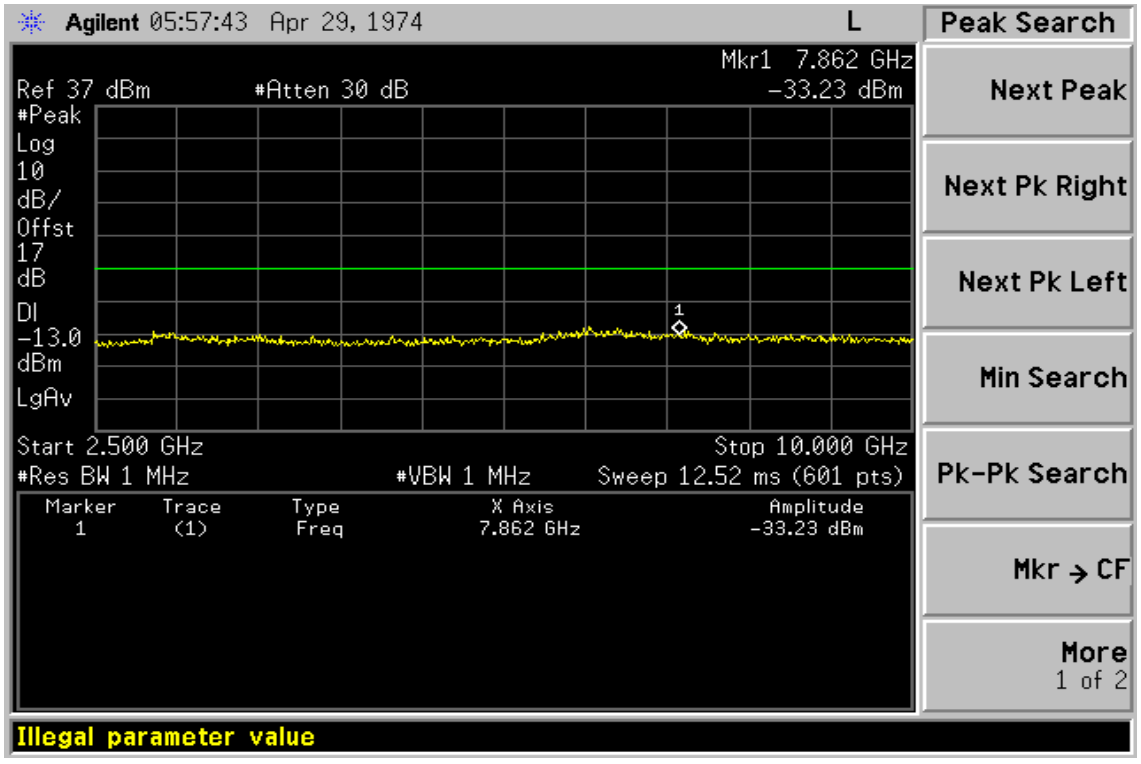
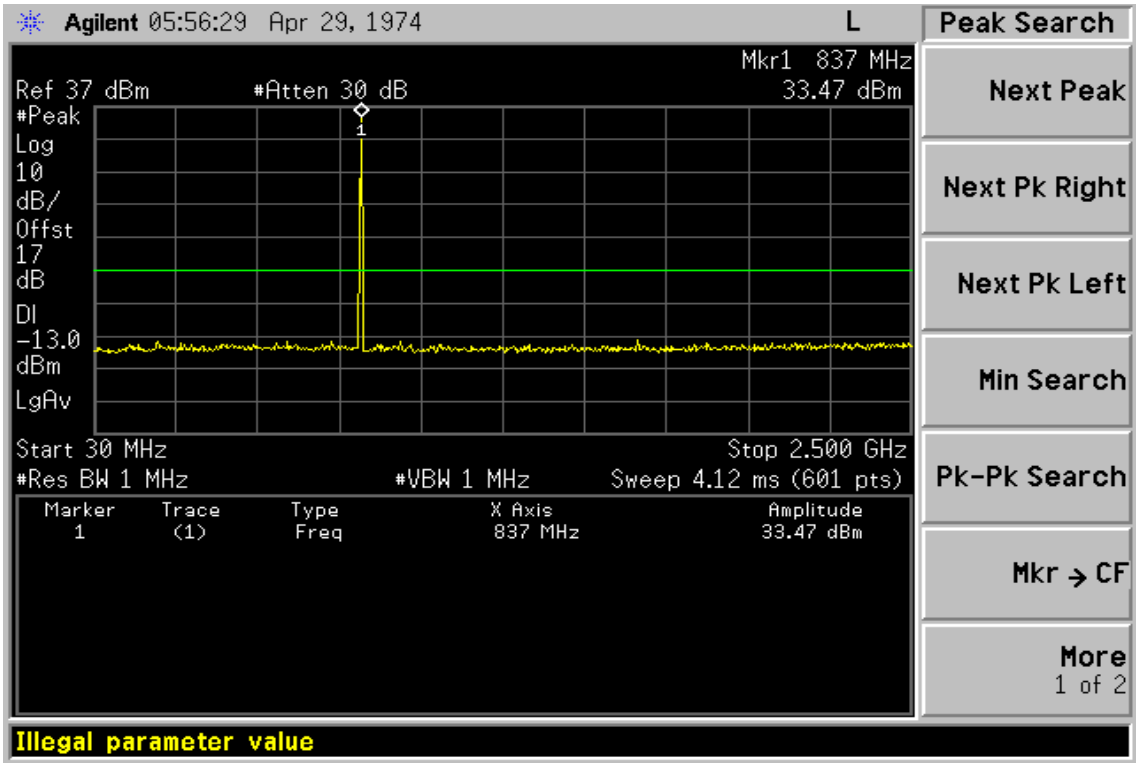


Figure 8-2: Out of Band emission at antenna terminals –GSM Channel Mid



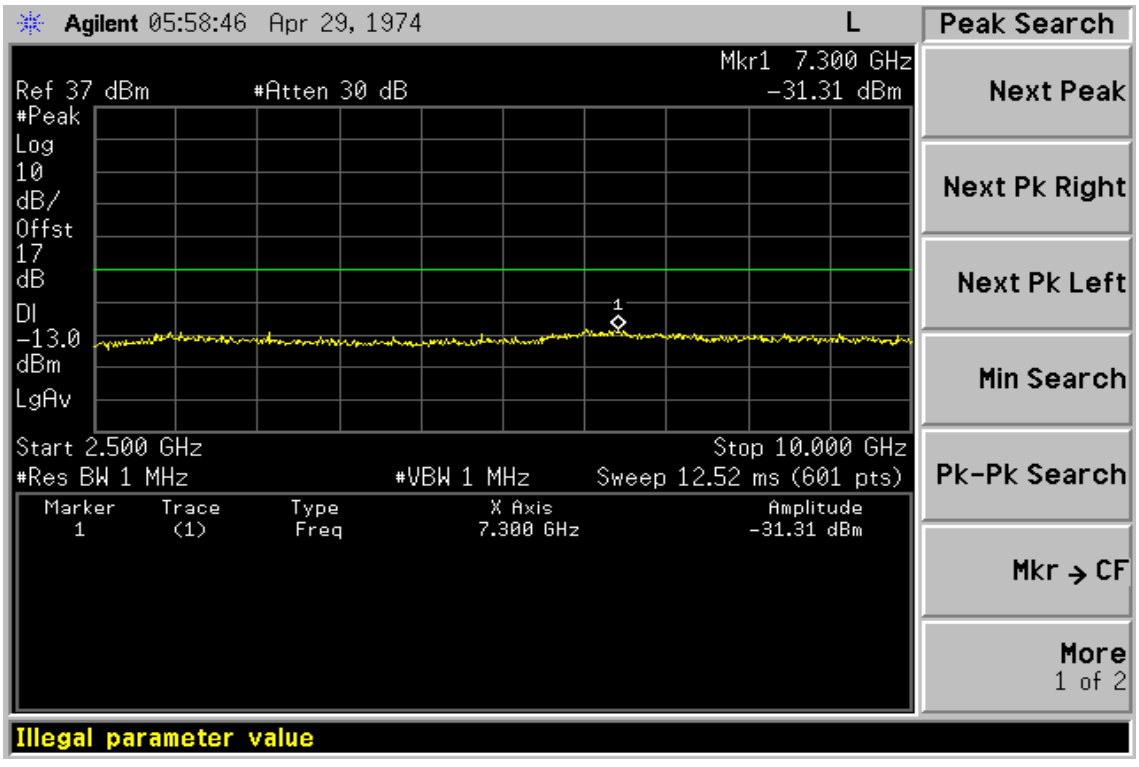
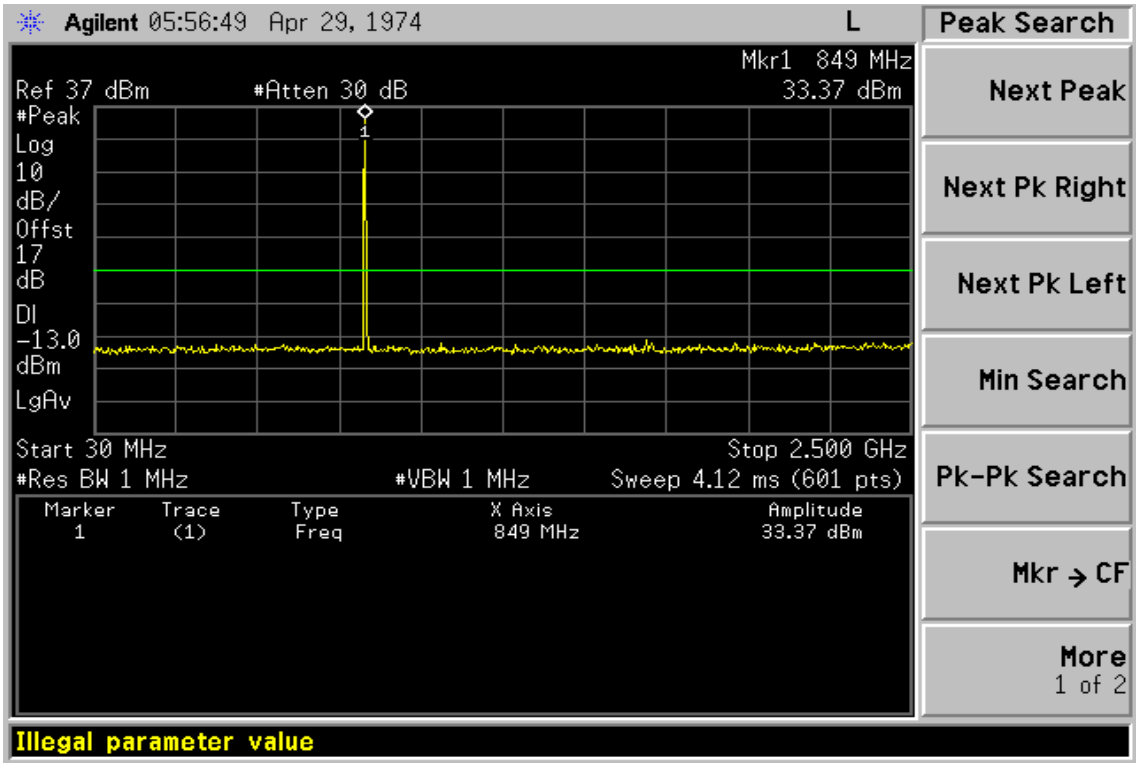


Figure 8-3: Out of Band emission at antenna terminals–GSM Channel Highest



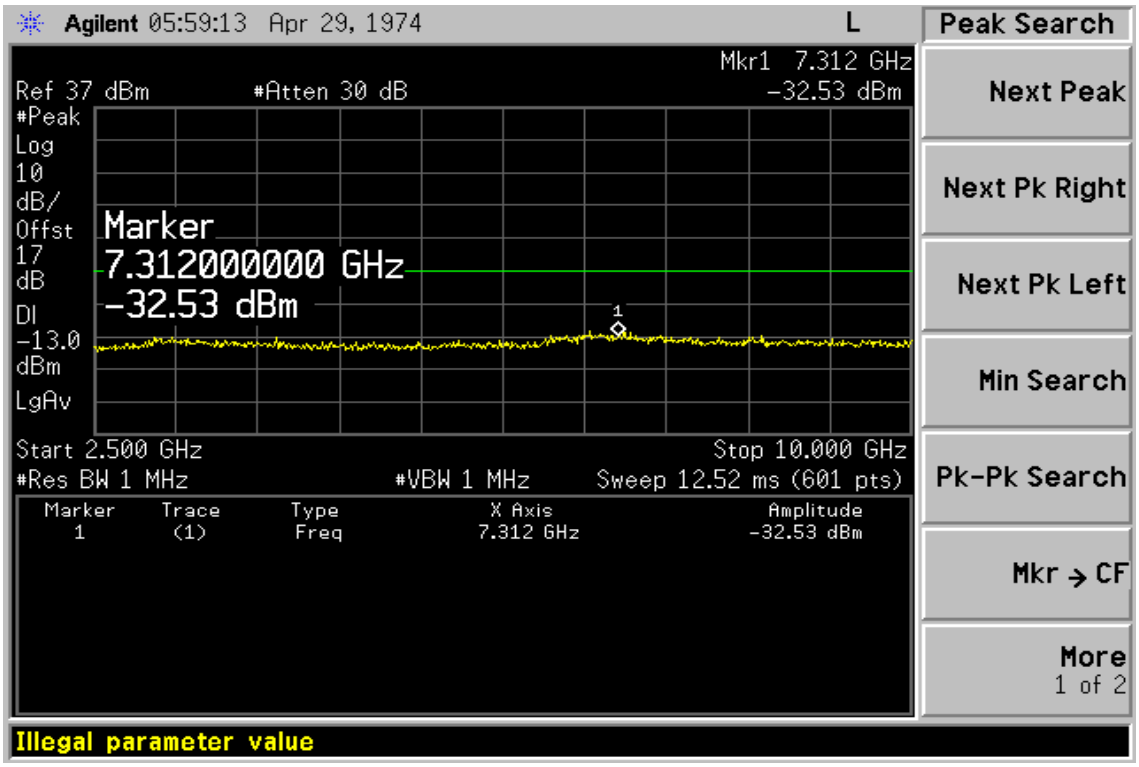


Figure 8-4: Band edge emission at antenna terminals – GSM Channel Lowest

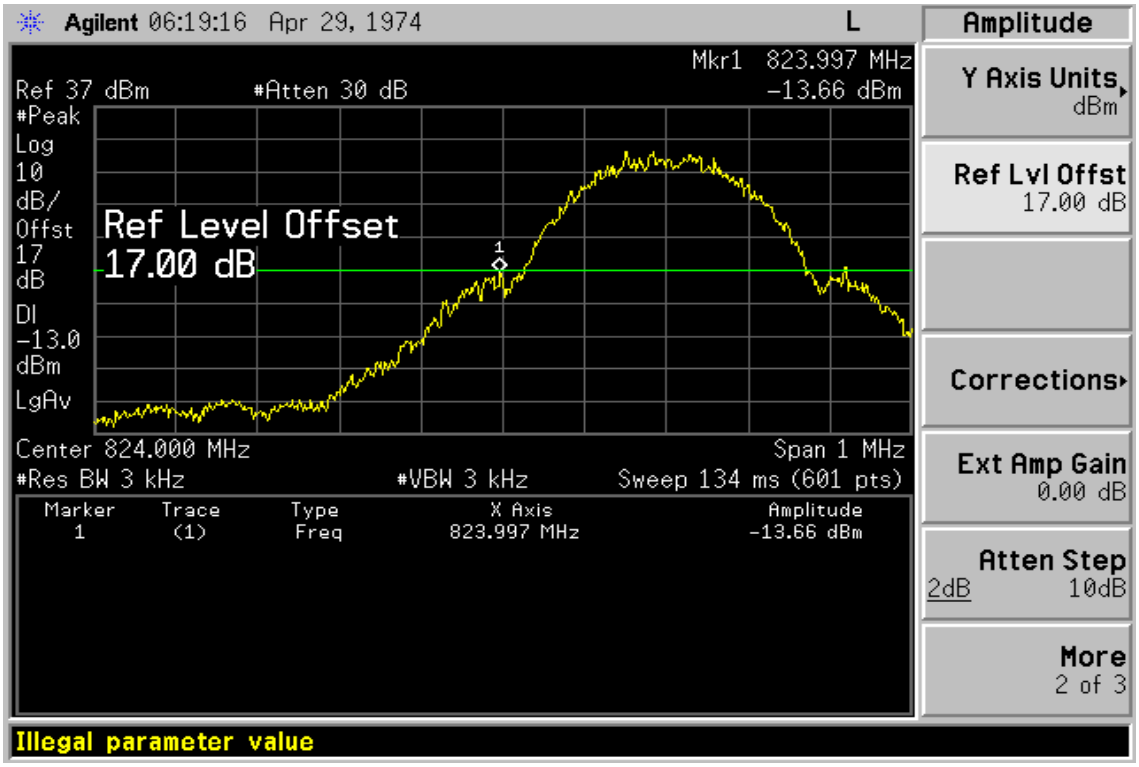


Figure 8-5: Band edge emission at antenna terminals – GSM Channel Highest

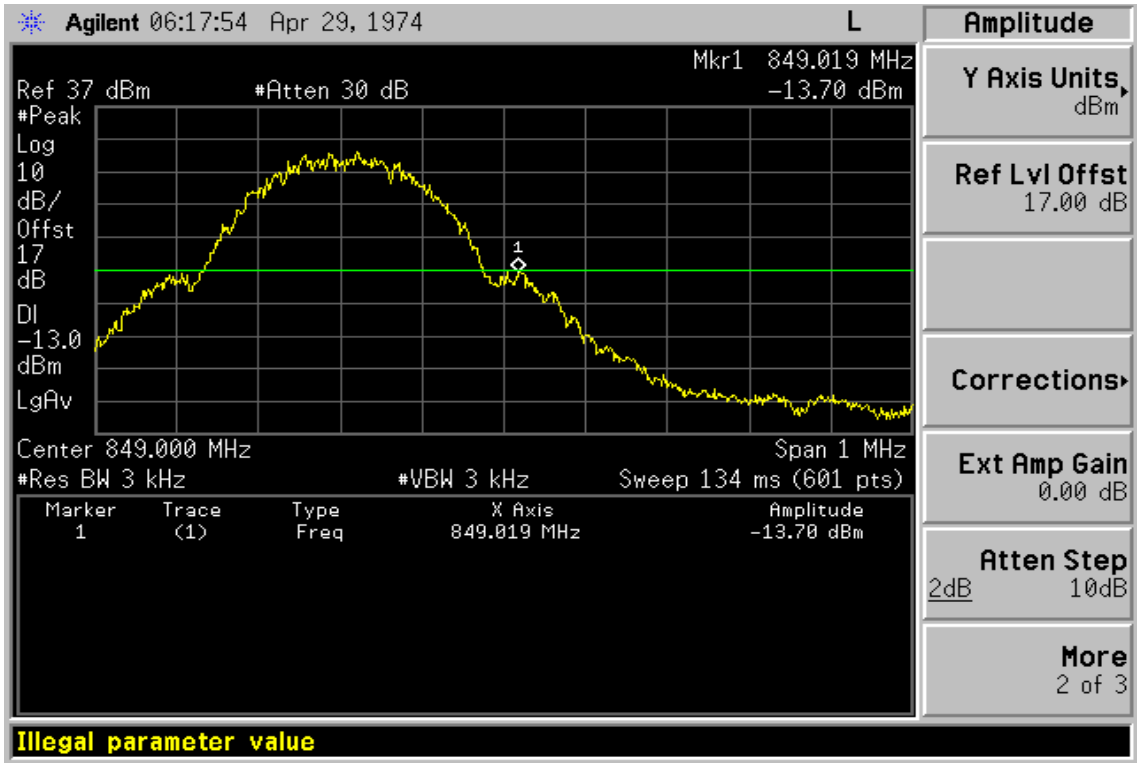
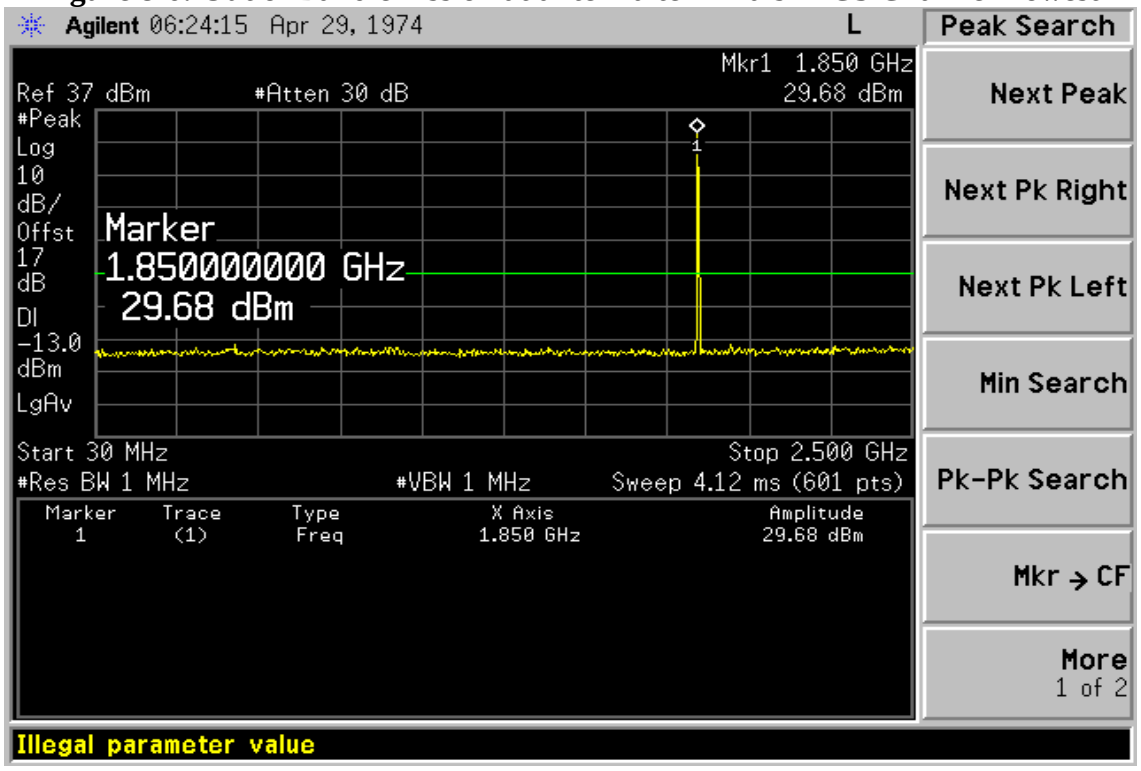


Figure 8-6: Out of Band emission at antenna terminals– PCS Channel Lowest



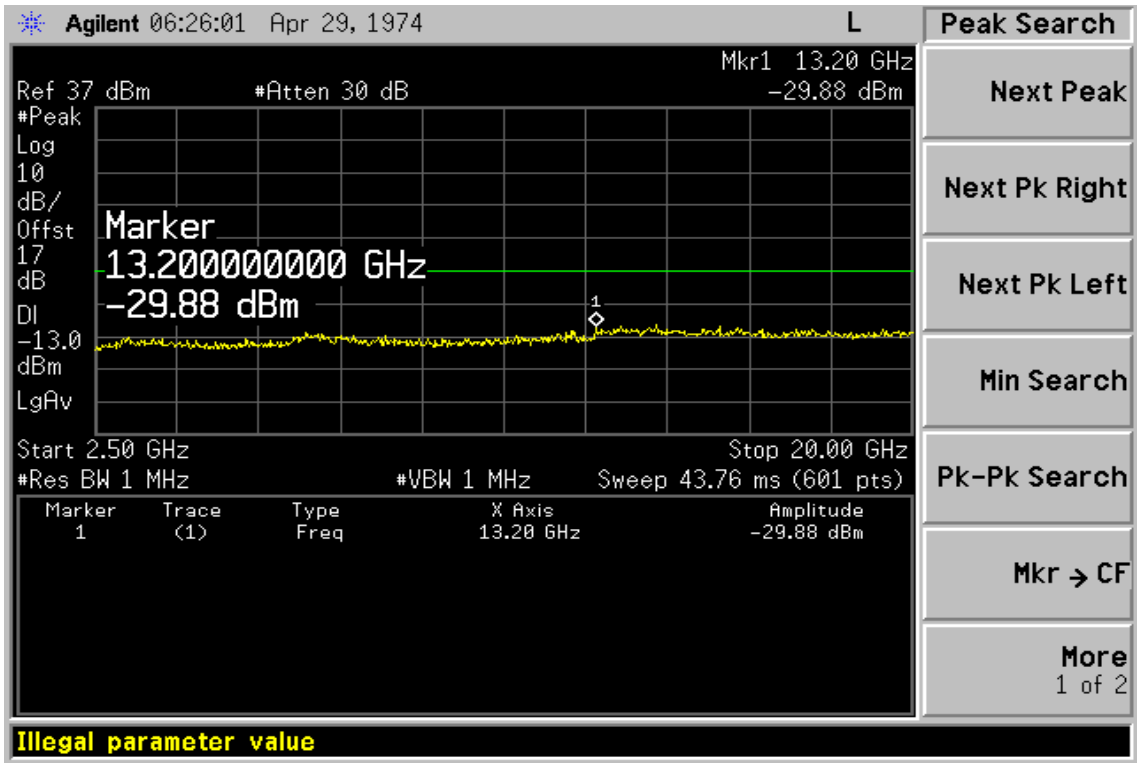
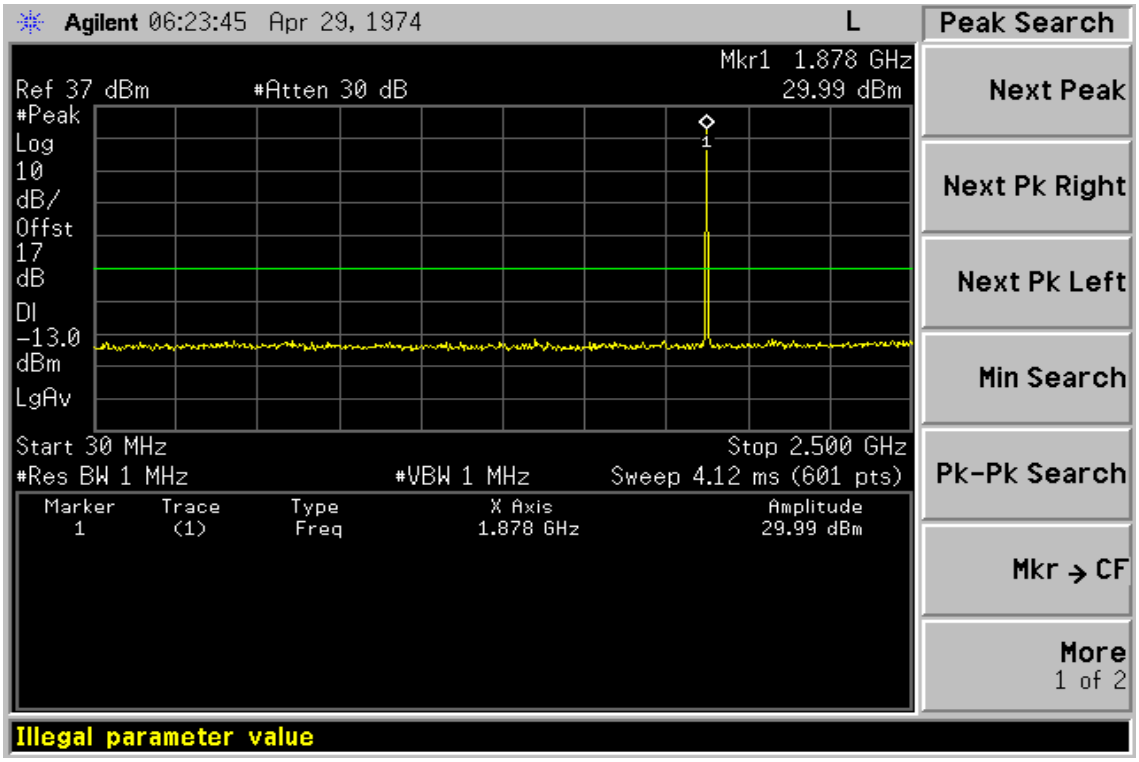


Figure 8-7: Out of Bandd emission at antenna terminals –PCS Channel Mid



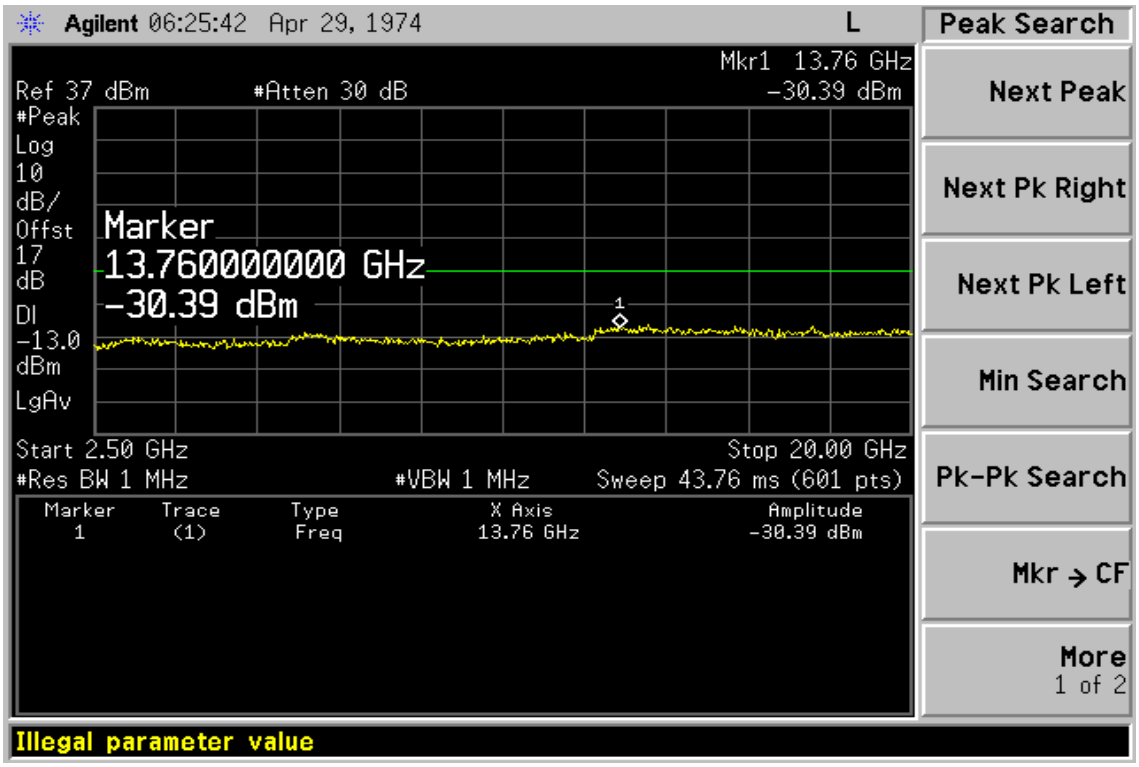
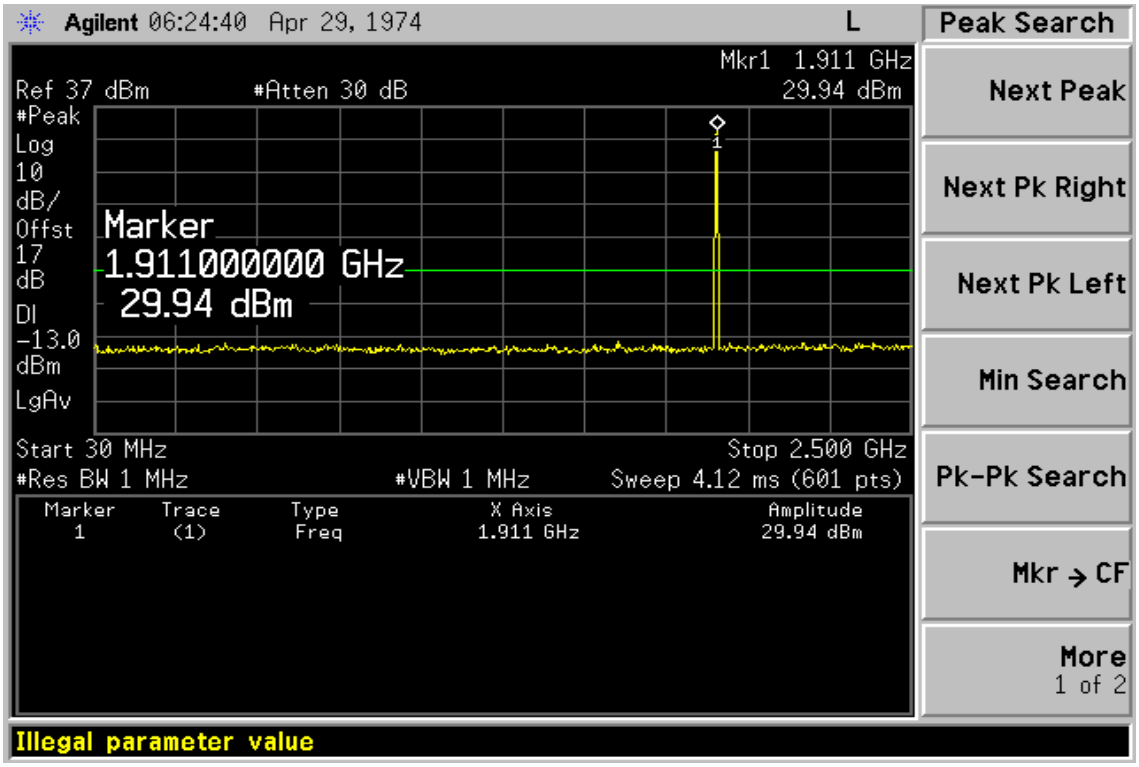


Figure 8-8: Out of Band emission at antenna terminals–PCS Channel Highest



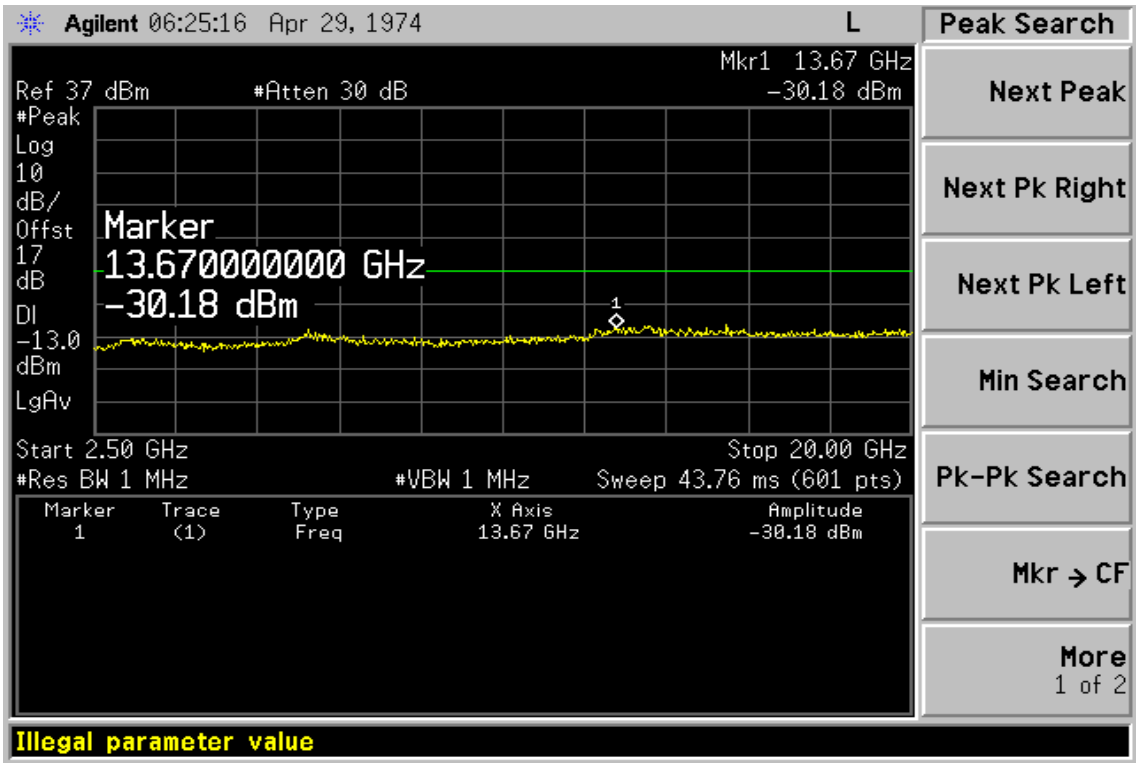


Figure 8-9: Bad edge emission at antenna terminals – PCS Channel Lowest

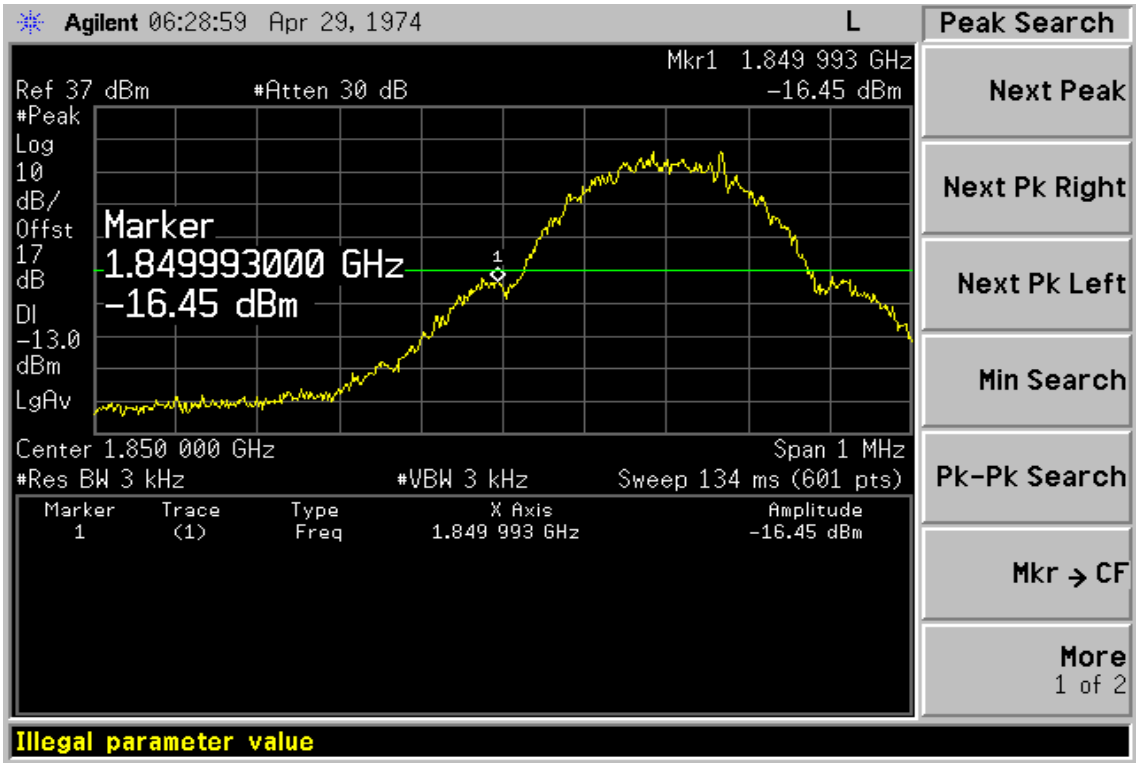
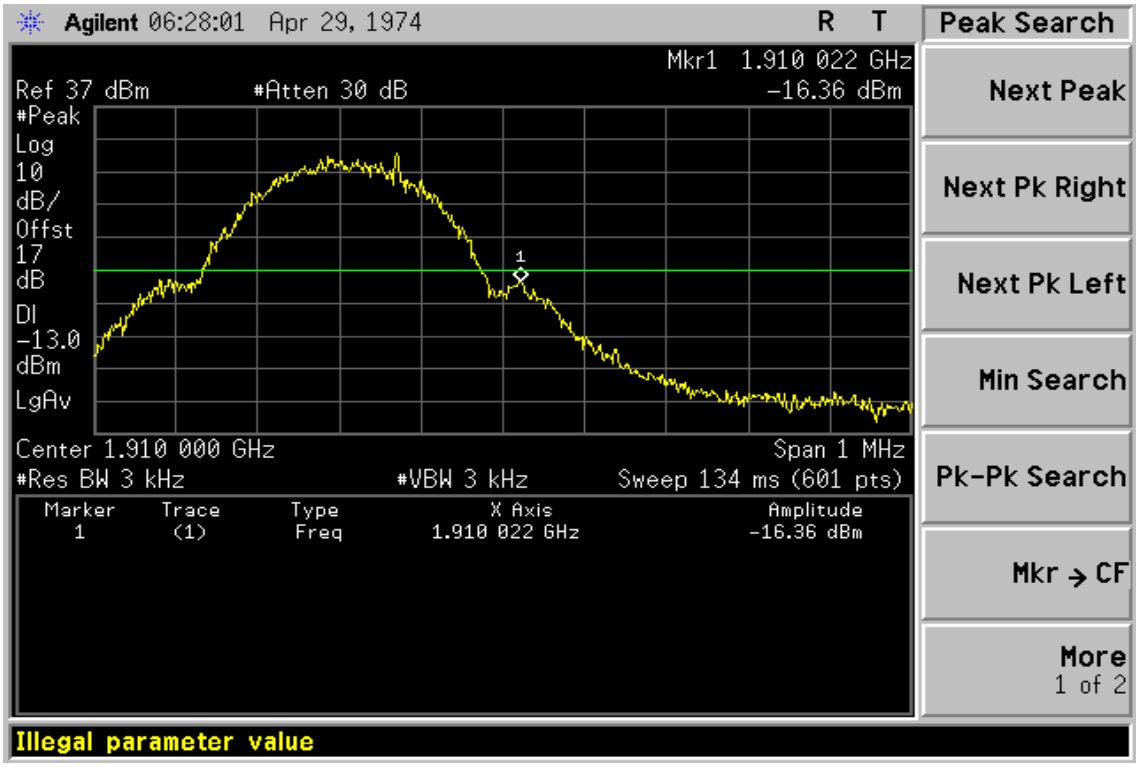


Figure 8-10: Band edge emission at antenna terminals – PCS Channel Highest



9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT

9.1. 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)

9.2. EUT Setup (Block Diagram of Configuration):

Refer to section 6.2 in this report

9.3. 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 frequency (low, middle and high channels). Once spurious emission were 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. output (dBm) + Antenna Gain (dBd) – Cable Loss (dB)

EIRP = S.G. output (dBm) + Antenna Gain(dBi) – Cable Loss (dB)

9.4. Measurement Equipment Used:

Refer to section 2.4 in this report

9.5. Measurement Result:

Refer to attach tabular data sheets.

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 824.20 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	52.11	V	-50.06	-3.25	0.90	-54.20	-13.00	-41.20
104.69	51.14	V	-50.35	-7.76	1.38	-59.49	-13.00	-46.49
824.00	77.69	V	-8.70	-7.87	3.62	-20.20	-13.00	-7.20
1648.40	63.23	V	-41.35	9.29	5.23	-37.29	-13.00	-24.29
2472.60	61.00	V	-40.01	10.08	6.53	-36.46	-13.00	-23.46
3296.80	40.47	V	-58.40	12.17	7.71	-53.95	-13.00	-40.95
4121.00	42.69	V	-53.43	12.61	8.86	-49.68	-13.00	-36.68
4945.20	40.27	V	-52.20	12.65	9.74	-49.29	-13.00	-36.29
5769.40	---	V		13.55	10.54		-13.00	
6593.60	---	V		12.05	11.30		-13.00	
7417.80	---	V		11.49	12.10		-13.00	
8242.00	---	V		11.48	12.71		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode	: TX CH Low E2 Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 824.20 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.49	H	-55.70	-3.25	0.90	-59.85	-13.00	-46.85
104.69	47.82	H	-54.69	-7.76	1.38	-63.83	-13.00	-50.83
824.00	82.80	H	-3.47	-7.87	3.62	-14.97	-13.00	-1.97
1648.40	67.17	H	-37.23	9.29	5.23	-33.17	-13.00	-20.17
2472.60	61.60	H	-39.31	10.08	6.53	-35.76	-13.00	-22.76
3296.80	43.66	H	-55.44	12.17	7.71	-50.98	-13.00	-37.98
4121.00	37.79	H	-58.46	12.61	8.86	-54.71	-13.00	-41.71
4945.20	38.29	H	-54.35	12.65	9.74	-51.43	-13.00	-38.43
5769.40	---	H		13.55	10.54		-13.00	
6593.60	---	H		12.05	11.30		-13.00	
7417.80	---	H		11.49	12.10		-13.00	
8242.00	---	H		11.48	12.71		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 836.60 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
92.08	50.97	V	-51.96	-7.75	1.29	-61.00	-13.00	-48.00
104.69	50.47	V	-51.02	-7.76	1.38	-60.16	-13.00	-47.16
1673.20	66.92	V	-37.64	9.36	5.27	-33.54	-13.00	-20.54
2509.80	63.97	V	-36.81	10.09	6.58	-33.31	-13.00	-20.31
3346.40	---	V		12.28	7.79		-13.00	
4183.00	39.22	V	-56.67	12.62	8.93	-52.98	-13.00	-39.98
5019.60	37.18	V	-54.97	12.67	9.81	-52.11	-13.00	-39.11
5856.20	---	V		13.68	10.62		-13.00	
6692.80	40.20	V	-44.82	11.95	11.39	-44.26	-13.00	-31.26
7529.40	---	V		11.45	12.20		-13.00	
8366.00	---	V		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belongs to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode	: TX CH Mid E2 Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 836.60 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	46.55	H	-56.64	-3.25	0.90	-60.79	-13.00	-47.79
106.63	43.42	H	-58.89	-7.77	1.39	-68.04	-13.00	-55.04
1673.20	72.44	H	-31.94	9.36	5.27	-27.84	-13.00	-14.84
2509.80	63.68	H	-37.02	10.09	6.58	-33.52	-13.00	-20.52
3346.40	---	H		12.28	7.79		-13.00	
4183.00	39.35	H	-56.68	12.62	8.93	-52.99	-13.00	-39.99
5019.60	36.55	H	-55.77	12.67	9.81	-52.90	-13.00	-39.90
5856.20	---	H		13.68	10.62		-13.00	
6692.80	---	H		11.95	11.39		-13.00	
7529.40	---	H		11.45	12.20		-13.00	
8366.00	---	H		11.59	12.81		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 848.80 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
75.59	48.87	V	-62.65	-1.85	1.19	-65.70	-13.00	-52.70
104.69	50.11	V	-51.38	-7.76	1.38	-60.52	-13.00	-47.52
850.00	74.70	V	-11.41	-7.88	3.68	-22.97	-13.00	-9.97
1697.60	65.46	V	-39.08	9.44	5.31	-34.95	-13.00	-21.95
2546.40	60.09	V	-40.55	10.20	6.63	-36.99	-13.00	-23.99
3395.20	41.20	V	-57.65	12.38	7.87	-53.14	-13.00	-40.14
4244.00	42.10	V	-53.56	12.63	9.00	-49.93	-13.00	-36.93
5092.80	---	V		12.74	9.88		-13.00	
5941.60	---	V		13.81	10.70		-13.00	
6790.40	---	V		11.86	11.48		-13.00	
7639.20	---	V		11.40	12.27		-13.00	
8488.00	---	V		11.70	12.91		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: GSM 850 Mode

Operation Mode	: TX CH High E2 Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 848.80 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
104.69	47.29	H	-55.22	-7.76	1.38	-64.36	-13.00	-51.36
850.00	82.35	H	-3.84	-7.88	3.68	-15.40	-13.00	-2.40
1697.60	70.10	H	-34.25	9.44	5.31	-30.12	-13.00	-17.12
2546.40	61.76	H	-38.84	10.20	6.63	-35.28	-13.00	-22.28
3395.20	41.71	H	-57.32	12.38	7.87	-52.80	-13.00	-39.80
4244.00	38.04	H	-57.77	12.63	9.00	-54.15	-13.00	-41.15
5092.80	---	H		12.74	9.88		-13.00	
5941.60	---	H		13.81	10.70		-13.00	
6790.40	---	H		11.86	11.48		-13.00	
7639.20	---	H		11.40	12.27		-13.00	
8488.00	---	H		11.70	12.91		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode	: TX CH Low H Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 1850.20MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
101.78	49.21	V	-52.55	-7.76	1.37	-61.67	-13.00	-48.67
1850.00	81.50	V	-22.89	9.90	5.56	-18.55	-13.00	-5.55
3700.40	---	V		12.61	8.31		-13.00	
5550.60	48.62	V	-42.22	13.23	10.33	-39.32	-13.00	-26.32
7400.80	---	V		11.50	12.08		-13.00	
9251.00	---	V		11.92	13.50		-13.00	
11101.20	---	V		11.66	15.11		-13.00	
12951.40	---	V		13.63	16.60		-13.00	
14801.60	---	V		12.76	17.95		-13.00	
16651.80	---	V		15.92	19.14		-13.00	
18502.00	---	V		18.75	10.40		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode	: TX CH Low H Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 1850.20MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.62	H	-55.57	-3.25	0.90	-59.72	-13.00	-46.72
101.78	45.80	H	-57.01	-7.76	1.37	-66.14	-13.00	-53.14
1850.00	75.67	H	-28.51	9.90	5.56	-24.17	-13.00	-11.17
3700.40	39.94	H	-58.10	12.61	8.31	-53.80	-13.00	-40.80
5550.60	46.17	H	-44.88	13.23	10.33	-41.98	-13.00	-28.98
7400.80	---	H		11.50	12.08		-13.00	
9251.00	---	H		11.92	13.50		-13.00	
11101.20	---	H		11.66	15.11		-13.00	
12951.40	---	H		13.63	16.60		-13.00	
14801.60	---	H		12.76	17.95		-13.00	
16651.80	---	H		15.92	19.14		-13.00	
18502.00	---	H		18.75	10.40		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode	: TX CH Mid H Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 1880MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
101.78	50.48	V	-51.28	-7.76	1.37	-60.40	-13.00	-47.40
3760.00	39.73	V	-57.93	12.60	8.39	-53.71	-13.00	-40.71
5640.00	43.79	V	-46.79	13.36	10.41	-43.84	-13.00	-30.84
7520.00	---	V		11.45	12.19		-13.00	
9400.00	---	V		11.93	13.61		-13.00	
11280.00	---	V		11.92	15.27		-13.00	
13160.00	---	V		13.33	16.71		-13.00	
15040.00	---	V		13.76	18.15		-13.00	
16920.00	---	V		15.27	19.32		-13.00	
18800.00	---	V		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode	: TX CH Mid H Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 1880MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.20	H	-55.99	-3.25	0.90	-60.14	-13.00	-47.14
101.78	45.66	H	-57.15	-7.76	1.37	-66.28	-13.00	-53.28
3760.00	---	H		12.60	8.39		-13.00	
5640.00	46.10	H	-44.65	13.36	10.41	-41.70	-13.00	-28.70
7520.00	---	H		11.45	12.19		-13.00	
9400.00	---	H		11.93	13.61		-13.00	
11280.00	---	H		11.92	15.27		-13.00	
13160.00	---	H		13.33	16.71		-13.00	
15040.00	---	H		13.76	18.15		-13.00	
16920.00	---	H		15.27	19.32		-13.00	
18800.00	---	H		18.68	16.58		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode	: TX CH High H Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 1909.8 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Ver
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
36.79	48.11	V	-54.62	-4.16	0.91	-59.69	-13.00	-46.69
101.78	50.79	V	-50.97	-7.76	1.37	-60.09	-13.00	-47.09
1910.00	80.87	V	-23.46	10.08	5.66	-19.04	-13.00	-6.04
3981.60	40.00	V	-56.66	12.60	8.69	-52.76	-13.00	-39.76
5972.40	41.26	V	-48.34	13.86	10.73	-45.22	-13.00	-32.22
7963.20	---	V		11.27	12.49		-13.00	
9954.00	---	V		12.08	14.24		-13.00	
11944.80	---	V		13.08	15.87		-13.00	
13935.60	---	V		11.82	17.21		-13.00	
15926.40	---	V		17.08	18.70		-13.00	
17917.20	---	V		9.63	19.97		-13.00	
19908.00	---	V		18.88	21.24		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result: PCS 1900 Mode

Operation Mode	: TX CH High H Mode	Test Date:	Feb. 03, 2009
Fundamental Frequency	: 1909.8 MHz	Test By:	Jazz
Temperature	: 25℃	Pol:	Hor
Humidity	: 65%		

Freq. (MHz)	SPA. Reading (dBuV)	Ant.Pol. H/V	S.G Out-put (dBm)	Antenna Gain (dB/dBi)	Cable Loss (dB)	ERP/ EIRP (dBm)	Limit (dBm)	Safe Margin (dBm)
38.73	47.61	H	-55.58	-3.25	0.90	-59.73	-13.00	-46.73
101.78	45.52	H	-57.29	-7.76	1.37	-66.42	-13.00	-53.42
1910.00	72.39	H	-31.72	10.08	5.66	-27.30	-13.00	-14.30
3981.60	39.74	H	-57.03	12.60	8.69	-53.13	-13.00	-40.13
5972.40	42.38	H	-47.25	13.86	10.73	-44.13	-13.00	-31.13
7963.20	---	H		11.27	12.49		-13.00	
9954.00	---	H		12.08	14.24		-13.00	
11944.80	---	H		13.08	15.87		-13.00	
13935.60	---	H		11.82	17.21		-13.00	
15926.40	---	H		17.08	18.70		-13.00	
17917.20	---	H		9.63	19.97		-13.00	
19908.00	---	H		18.88	21.24		-13.00	

Measurement uncertainty	30MHz - 80MHz: 5.04dB
	80MHz -1000MHz: 3.76dB
	1GHz - 13GHz: 4.45dB

Remark:

1 The emission behaviors belong to narrowband spurious emission.

2 Remark"---" means that the emission level is too low to be measured

3 The result basic equation calculation is as follows:

4 ERP/EIRP (dBm) = SG Setting(dBm) + Antenna Gain (dB/dBi) – Cable loss (dB)

10. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

10.1. Standard Applicable:

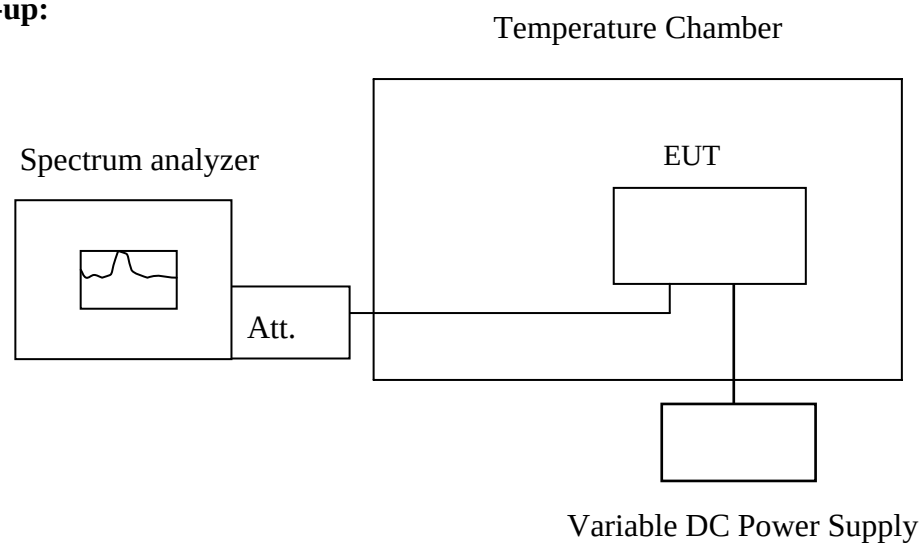
According to FCC §2.1055(a) (1)

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

+/-2.5ppm for 1900MHz band

§27.54: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

10.2. Test Set-up:



Note : Measurement setup for testing on Antenna connector

10.3. 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.

10.4. Measurement Equipment Used:

Refer to section 2.4 in this report

10.5. Measurement Result:

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25℃				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
3.7	-30	836.600014	-5.00	2091
3.7	-20	836.600016	-7.00	2091
3.7	-10	836.600013	-4.00	2091
3.7	0	836.600017	-8.00	2091
3.7	10	836.600008	1.00	2091
3.7	20	836.600009	0.00	2091
3.7	30	836.600011	-2.00	2091
3.7	40	836.600016	-7.00	2091
3.7	50	836.600014	-5.00	2091

Reference Frequency: PCS Mid Channel 1880 MHz @ 25℃				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
3.7	-30	1879.999982	3.00	4700
3.7	-20	1879.999981	4.00	4700
3.7	-10	1879.999984	1.00	4700
3.7	0	1879.999988	-3.00	4700
3.7	10	1879.999989	-4.00	4700
3.7	20	1879.999985	0.00	4700
3.7	30	1879.999986	-1.00	4700
3.7	40	1879.999980	5.00	4700
3.7	50	1879.999990	-5.00	4700

Note: The battery is rated 3.7V dc.

11. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

11.1. Standard Applicable:

According to FCC §2.1055(a) (1)

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

+/-2.5ppm for 1900MHz band

§27.54: The frequency stability shall be sufficient to ensure that the fundamental emissions stay within the authorized bands of operation.

11.2. Test Set-up:

Refer to section 10.2 in this report

11.3. Measurement Procedure:

Set chamber temperature to 25℃. 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 specified extreme voltage variation (+/- 15%) and endpoint, record the maximum frequency change.

11.4. Measurement Equipment Used:

Refer to section 2.4 in this report

11.5. Measurement Result:

Reference Frequency: GSM Mid Channel 836.6 MHz @ 25℃				
Limit: +/- 2.5 ppm = 2091 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
4.20	25.00	836.600011	-3.00	2091.00
3.70	25.00	836.600008	0.00	2091.00
3.60	25.00	836.600007	1.00	2091.00
3.3 (End Point)	25.00	836.599998	10.00	2091.00

Reference Frequency: PCS Mid Channel 1880 MHz @ 25℃				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (℃)	(MHz)		
4.2	25	1879.999991	-4.00	4700
3.7	25	1879.999987	0.00	4700
3.6	25	1879.999994	-7.00	4700
3.3 (Endpoint)	25	1879.999983	4.00	4700

Note: The battery is rated 3.7V dc.

12. AC POWER LINE CONDUCTED EMISSION TEST

12.1. Standard Applicable:

According to §15.207. The emission value for frequency within 150KHz to 30MHz shall not exceed criteria of below chart.

Frequency range MHz	Limits dB(uV)	
	Quasi-peak	Average
0.15 to 0.50	66 to 56	56 to 46
0.50 to 5	56	46
5 to 30	60	50
Note 1.The lower limit shall apply at the transition frequencies 2.The limit decreases linearly with the logarithm of the frequency in the range 0.15 MHz to 0.50 MHz.		

12.2. EUT Setup:

1. The conducted emission tests were performed in the test site, using the setup in accordance with the ANSI C63.4-2003.
2. The EUT was plug-in DC power adaptort and was placed on the center of the back edge on the test table. The peripherals like earphone was placed on the side of the EUT. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The Power adaptor was connected with 110Vac/60Hz power source.

12.3. Measurement Procedure:

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

12.4. Measurement Equipment Used:

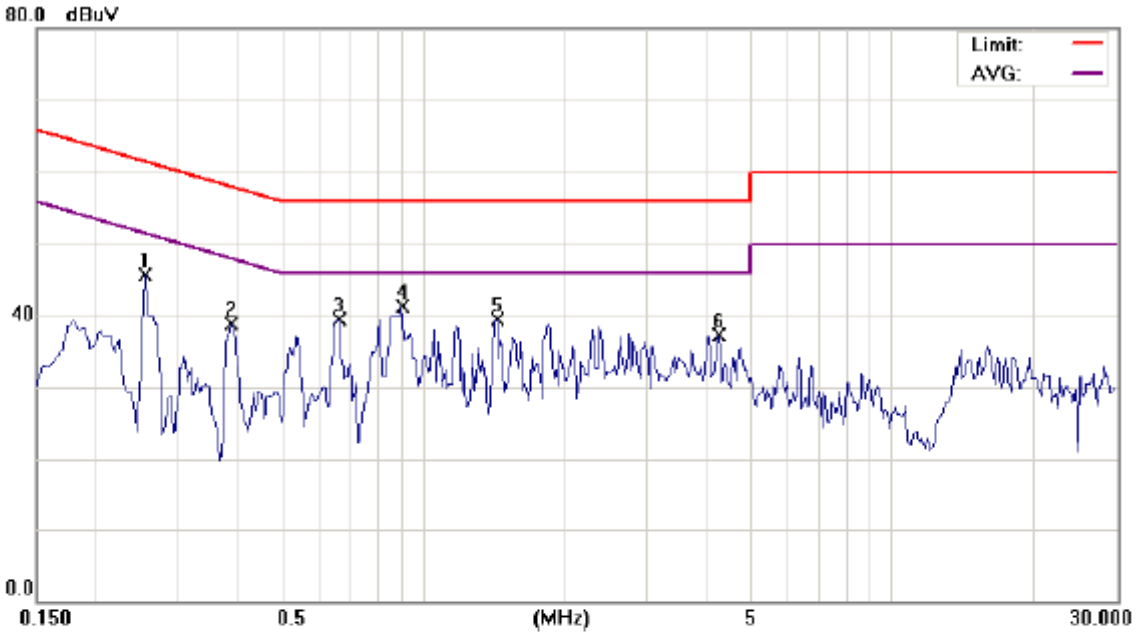
Refer to section 2.4 in this report

12.5. Measurement Result;

The initial step in collecting conducted data is a spectrum analyzer peak scan of the measurement range. Significant peaks are then marked as shown on the following data page, and these signals are then quasi-peaked.

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 850 LINK			Test Date:	Feb. 04, 2009
Temperature:	23 ℃	Humidity:	58 %	Test By:	Jazz

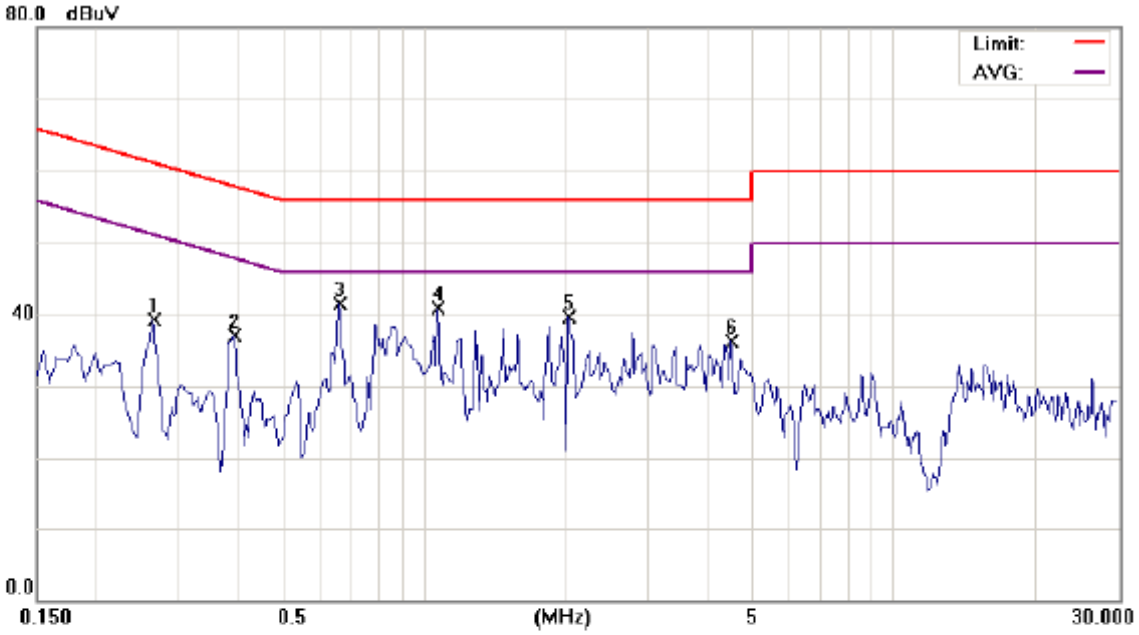


Site SGS CONDUCTED #1
Limit: CISPR22/11 Class B Conduction(QP)
EUT: Pocket PC Phone
M/N: RHOD100
Note: GSM 850 LINK MODE

Phase: L1
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 58 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2550	45.54	0.11	45.65	61.59	-15.94	peak	
2		0.3900	38.76	0.08	38.84	58.06	-19.22	peak	
3		0.6600	39.50	0.08	39.58	56.00	-16.42	peak	
4	*	0.9000	41.26	0.09	41.35	56.00	-14.65	peak	
5		1.4400	39.32	0.11	39.43	56.00	-16.57	peak	
6		4.2600	37.16	0.15	37.31	56.00	-18.69	peak	



Site SGS CONDUCTED #1
Limit: CISPR22/11 Class B Conduction(QP)
EUT: Pocket PC Phone
M/N: RHOD100
Note: GSM 850 LINK MODE

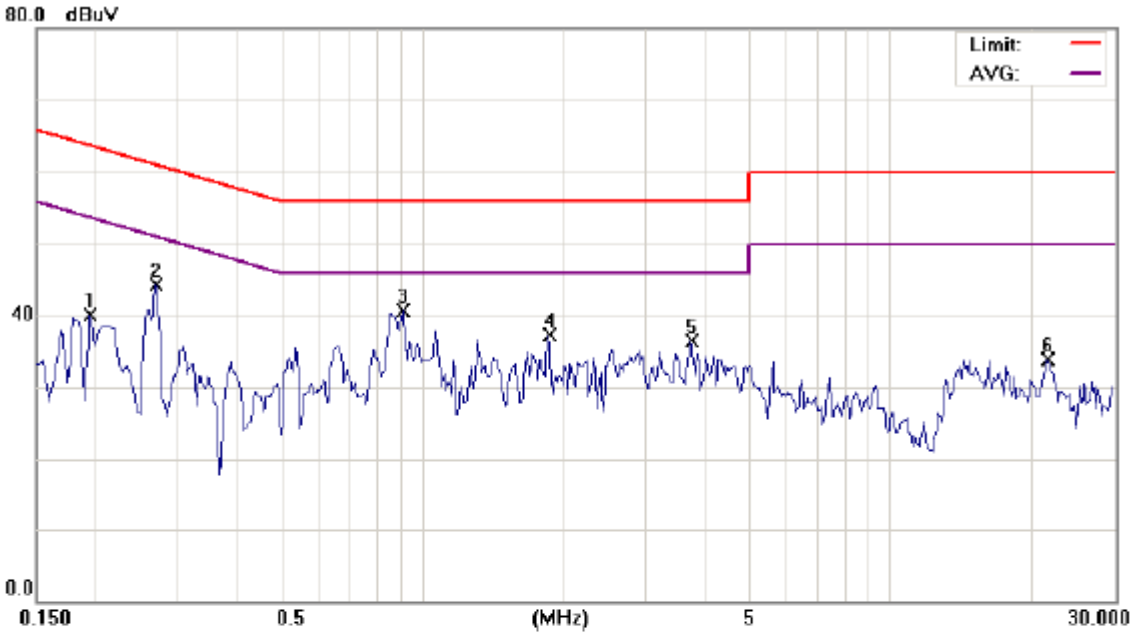
Phase: N
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 58 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2650	39.12	0.12	39.24	61.27	-22.03	peak	
2		0.3950	36.98	0.09	37.07	57.96	-20.89	peak	
3	*	0.6600	41.46	0.09	41.55	56.00	-14.45	peak	
4		1.0700	40.90	0.10	41.00	56.00	-15.00	peak	
5		2.0300	39.66	0.13	39.79	56.00	-16.21	peak	
6		4.5200	36.08	0.17	36.25	56.00	-19.75	peak	

AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 Link			Test Date:	Feb. 04, 2009
Temperature:	23 ℃	Humidity:	58 %	Test By:	Jazz

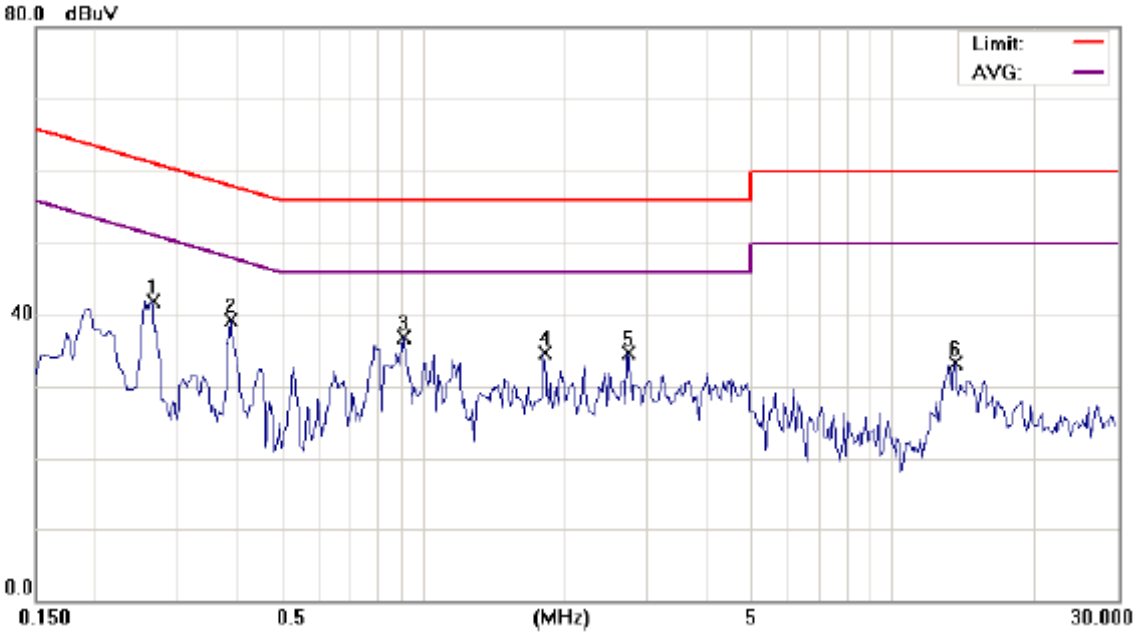


Site SGS CONDUCTED #1
Limit: CISPR22/11 Class B Conduction(QP)
EUT: Pocket PC Phone
M/N: RHOD100
Note: GSM 1900 LINK MODE

Phase: L1
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 58 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.1950	39.94	0.13	40.07	63.82	-23.75	peak	
2		0.2700	44.18	0.11	44.29	61.12	-16.83	peak	
3	*	0.9100	40.58	0.09	40.67	56.00	-15.33	peak	
4		1.8600	37.18	0.12	37.30	56.00	-18.70	peak	
5		3.7500	36.26	0.15	36.41	56.00	-19.59	peak	
6		21.6600	33.58	0.26	33.84	60.00	-26.16	peak	



Site SGS CONDUCTED #1
Limit: CISPR22/11 Class B Conduction(QP)
EUT: Pocket PC Phone
M/N: RHOD100
Note: GSM 1900 LINK MODE

Phase: N
Power: AC 120V/60Hz
Distance:

Temperature: 23 ℃
Humidity: 58 %
Air Pressure: hpa

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.2650	41.82	0.12	41.94	61.27	-19.33	peak	
2	*	0.3900	39.12	0.09	39.21	58.06	-18.85	peak	
3		0.9100	36.84	0.10	36.94	56.00	-19.06	peak	
4		1.8100	34.60	0.12	34.72	56.00	-21.28	peak	
5		2.7300	34.66	0.14	34.80	56.00	-21.20	peak	
6		13.5800	32.84	0.43	33.27	60.00	-26.73	peak	