

# ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

## INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 24 SUBPART E REQUIREMENT

OF

**Product Name:** GSM mobile phone

**Brand Name:** HEDY

**FCC ID:** UZSHEDY666777

**Model Name:** M881

**Market Name:** A2

**Report No.:** ER/2007/10003

**Issue Date:** Feb. 01, 2007

**Rule Part:** 2 & 24E

**Prepared for** HEDY HOLDING CO., LTD  
NO.63 PUNAN ROAD, HUANGPU  
DISTRICT, GUANGZHOU, China

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## VERIFICATION OF COMPLIANCE

**Applicant:** HEDY HOLDING CO., LTD  
NO.63 PUNAN ROAD, HUANGPU DISTRICT, GUANGZHOU, China

**Equipment Under Test:** GSM mobile phone

**Brand Name:** HEDY

**FCC ID:** UZSHEDY666777

**Model No.:** M881

**Market Name:** A2

**Model Difference:** N/A

**File Number:** ER/2007/10003

**Date of test:** Jan. 15, 2007 ~ Jan. 31, 2007

**Date of EUT Received:** Jan. 15, 2007

**We hereby certify that:**

The above equipment was tested by SGS Taiwan Ltd. 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-603-1-1998 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 PART 24 subpart E.

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

**Test By:**

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**Date**

Feb. 01, 2007

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Feb. 01, 2007

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## Version

Version No.	Date
00	Feb. 01, 2007

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## 1. GENERAL INFORMATION

### 1.1 Product Description

Product	GSM mobile phone
Brand Name	HEDY
Model Name	M881
Market name:	A2
Model Difference:	N/A
Power Supply	3.7 Vdc re-chargeable battery, or 5.2Vdc by AC/DC power adapters, model PA06MC11, Supplier: HEDY

#### GSM:

Frequency Range and Power	GSM 1900: 1850MHz –1910MHz	30 dBm
Type of Emission	300KGXW	
Software Version	N/A	
Hardware Version	N/A	
IMEI	N/A	

#### Bluetooth:

Frequency Range	2402 – 2480MHz
Channel number	79 channels
Rated Power	-0.92 dBm
Modulation type	Frequency Hopping Spread Spectrum (FHSS)(FGSK)
Antenna Designation	Chip Antenna, 1dBi

The EUT is compliance with Bluetooth Standard.

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

This submittal(s) (test report) is intended for FCC ID: UZSHEDY666777 filing to comply with Section 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 on chapter 13 of ANSI C63.4 (2003) and FCC CFR 47.1046, 2.1047, 2.1049, 2.1051, 2.1053, 2.1055, 2.1057 and issue 3 of RSS-133.

## 1.4 Test Facility

The open area test site and conducted measurement facility used to collect the radiated data is located on the address of SGS Taiwan Ltd. No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei Country, Taiwan. The Open Area Test Sites and the Line Conducted labs are constructed and calibrated to meet the FCC requirements in documents ANSI C63.4: 2003 and CISPR 22/EN 55022 requirements. Site No. 1(3 & 10 meters) Registration Number: 94644, Both OATS and Anechoic chamber (3 meters) was accredited by TAF (0513). Canada Registration Number: 4620A-1

## 1.5 Special Accessories

Not available for this EUT intended for grant.

## 1.6 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 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 Radiated Emissions

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 in Section 8 and 13 of ANSI C63.4-2003.



## 2.4 Configuration of Tested System

Fig. 2-1 Configuration of Tested System

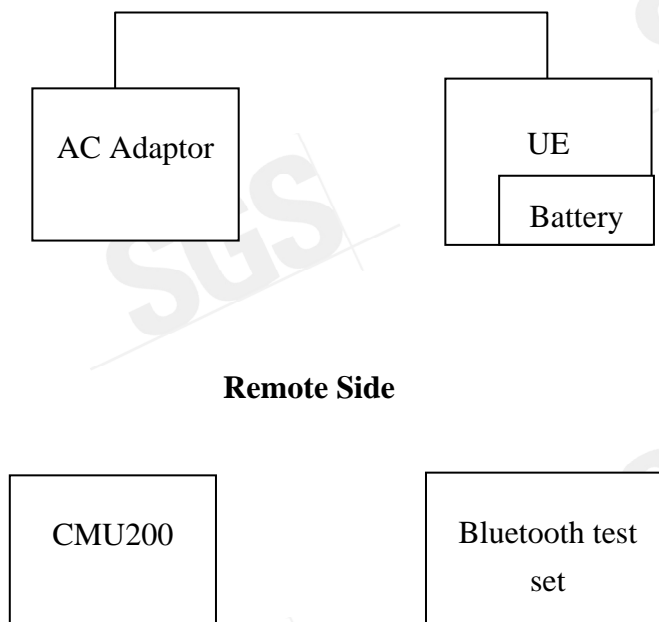


Table 2-1 Equipment Used in Tested System

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
2	Bluetooth test set	Anritsu	MT8852A	6K00001436	shielded	Un-shielded

### 3. SUMMARY OF TEST RESULTS

FCC/IC Rules	Description Of Test	Result
§2.1046	RF Power Output	Compliant
§2.1046 §24.232(a)	EIRP measurement	Compliant
§2.1049	Occupied Bandwidth	No Limit
§2.1051 §24.238(a)	Out of Band Emissions at Antenna Terminals	Compliant
§2.1053 §24.238(a)	Field Strength of Spurious Radiation (TX)	Compliant
§2.1055, §24.235	Frequency Stability vs. Temperature	Compliant
§2.1055, §24.235	Frequency Stability vs. Voltage	Compliant
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

### 4. DESCRIPTION OF TEST MODES

The EUT has been tested under operating condition.

Test program used to control the EUT for staying in continuous transmitting and receiving mode is programmed.

Channel Low, Mid and High with highest 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 Bluetooth Transmitter for channel Low, Mid and High the worst case H mode was reported.

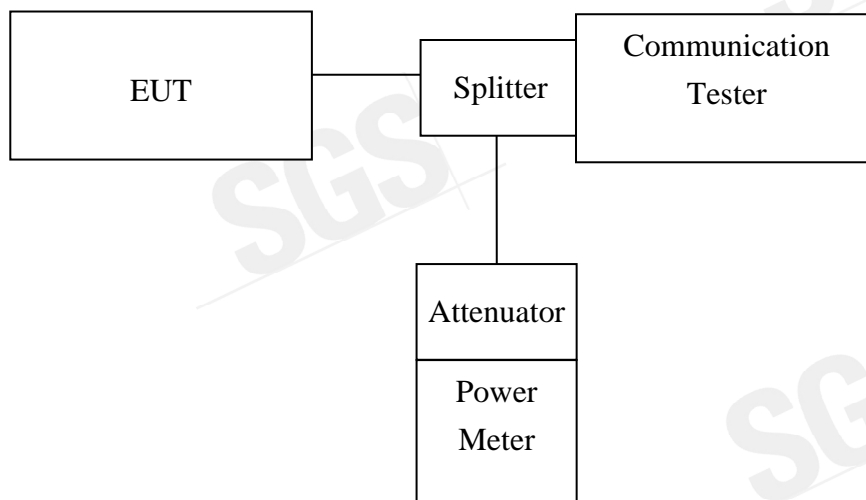
The field strength of co-located spurious radiation emission was measured as worst case of EUT at H position at Bluetooth with GSM 1900 at channel High mode was reported.

## 5. RF POWER OUTPUT MEASUREMENT

### 5.1 Standard Applicable

According to FCC §2.1046.

### 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 attenuator to the power meter reading.

### 5.4 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2006	06/29/2007
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2006	06/29/2007
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Attenuator	Mini-Circuit	BW-S6W5	N/A	09/23/2006	09/22/2007
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007
AC Power Supply	APW-105N	887592	All Power	12/15/2006	12/14/2007

### 5.5 Measurement Result

Frequency (MHz)	CH	Power Meter Reading (dBm)	Offset (dB)	Power (dBm)
1850.20	512	1.74	27.50	29.24
1880.00	661	2.02	27.50	29.52
1909.80	810	1.46	27.50	28.96

## 6. ERP, EIRP MEASUREMENT

### 6.1 Standard Applicable

According to FCC §2.1046

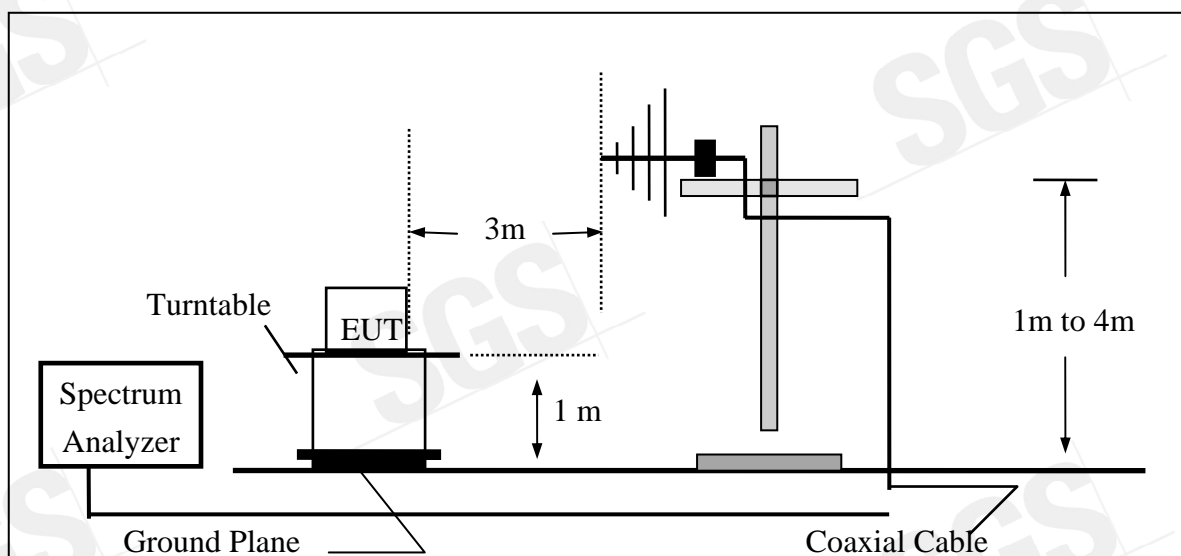
FCC 24.232(b) Mobile station are limited to 2W EIRP.

According to IC RSS-133 §6.4

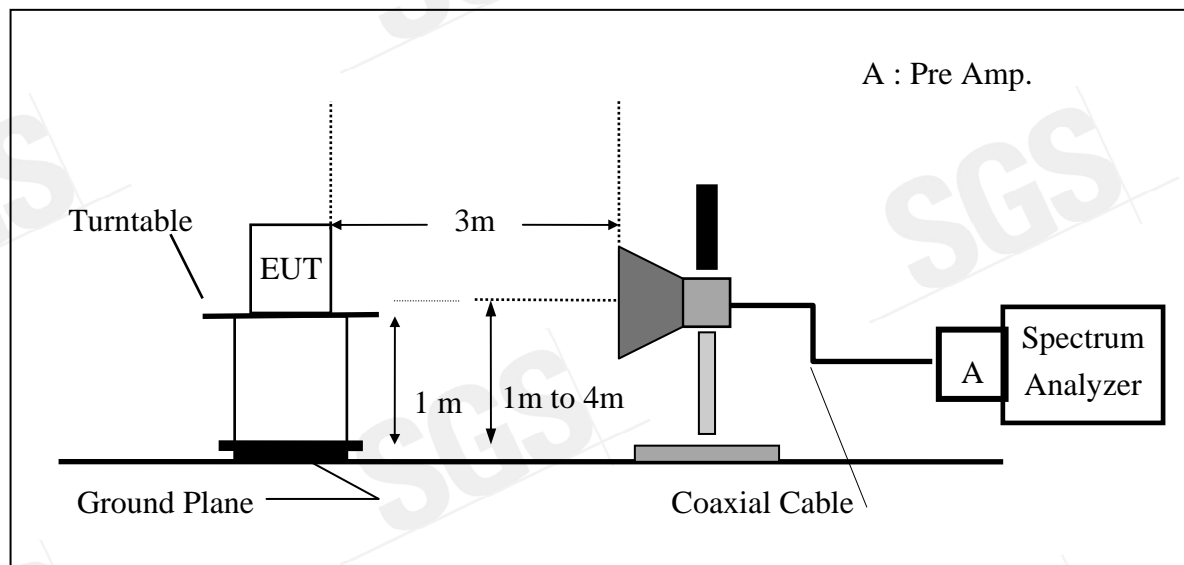
The peak e.i.r.p. for transmitters operating in the band 1850-1910 MHz shall not exceed the limits 2W which given in SRSP-510.

### 6.2 Test SET-UP (Block Diagram of Configuration)

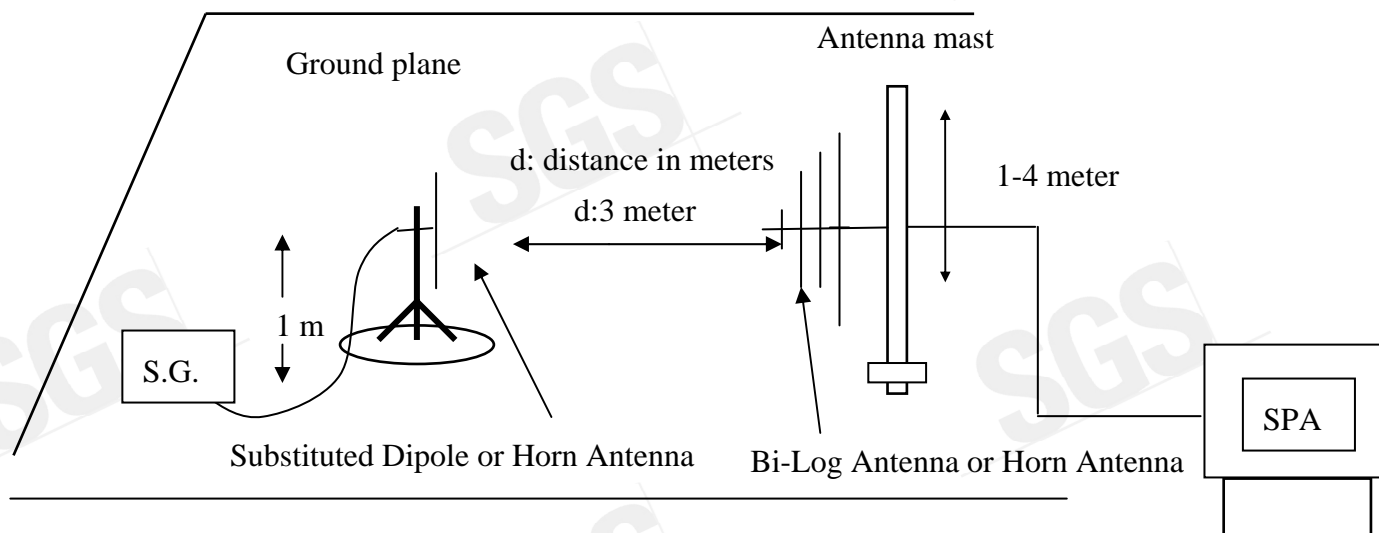
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



## (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 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 of the EUT, the resolution bandwidth was set to 1MHz and the average bandwidth was set to 1MHz. The highest emission was recorded with the rotation of the turntable and the lowering of the test antenna. The reading was recorded and the field strength (E in dBuV/m) was calculated.

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:

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



#### 6.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2006	06/02/2007
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2006	08/15/2007
Pre-Amplifier	HP	8447D	2944A09469	07/19/2006	07/18/2007
Pre-Amplifier	HP	8494B	3008A00578	02/26/2006	02/25/2007
Signal Generator	R&S	SMR40	100210	02/09/2006	02/10/2007
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	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2006	10/08/2007
Site NSA	SGS	966 chamber	N/A	11/17/2006	11/16/2007
Site NSA	SGS	10m Open-Site	N/A	11/17/2006	11/16/2007
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2006	06/11/2007
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2006	06/11/2008
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2006	08/15/2008

## 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)	EIRP (dBm)	Limit (dBm)
PCS 1900	1850.20	512	H	V	126.53	22.14	9.90	5.56	26.48	33.00
				H	130.94	26.76	9.90	5.56	31.10	33.00
			E1	V	128.58	24.19	9.90	5.56	28.53	33.00
				H	128.09	23.91	9.90	5.56	28.25	33.00
			E2	V	127.57	23.18	9.90	5.56	27.52	33.00
				H	127.63	23.45	9.90	5.84	27.51	33.00
	1880.00	661	H	V	124.62	20.26	9.99	5.61	24.64	33.00
				H	130.08	25.94	9.99	5.61	30.31	33.00
			E1	V	127.94	23.58	9.99	5.61	27.96	33.00
				H	124.67	20.53	9.99	5.61	24.90	33.00
			E2	V	126.65	22.29	9.99	5.61	26.67	33.00
				H	129.64	25.50	9.99	5.61	29.87	33.00
	1909.80	810	H	V	122.63	18.30	10.08	5.66	22.72	33.00
				H	130.56	26.45	10.08	5.66	30.87	33.00
			E1	V	127.29	22.96	10.08	5.66	27.38	33.00
				H	126.56	22.45	10.08	5.66	26.87	33.00
			E2	V	128.46	24.13	10.08	5.66	28.55	33.00
				H	128.43	24.32	10.08	5.66	28.74	33.00

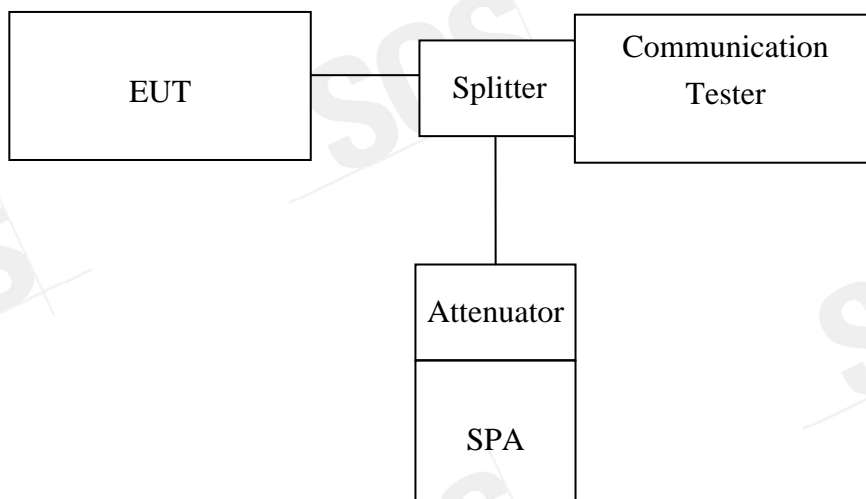
## 7. 99% OCCUPIED BANDWIDTH MEASUREMENT

### 7.1 Standard Applicable

According to FCC§2.1049.

According to IC RSS-133 §2.6

### 7.2 Test Set-up:



*Note: Measurement setup for testing on Antenna connector*

### 7.3 Measurement Procedure

The EUT's output RF connector was connected with a short cable to the spectrum analyzer, RBW (10KHz) was set to about 1% of emission BW, VBW= 30KHz, -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:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2006	06/29/2007
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2006	06/29/2007
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Attenuator	Mini-Circuit	BW-S6W5	N/A	09/23/2006	09/22/2007
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007
AC Power Supply	APW-105N	887592	All Power	12/15/2006	12/14/2007

#### 7.5 Measurement Result:

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
PCS 1900	1850.20	512	0.2499
	1880.00	661	0.2478
	1909.80	810	0.2492

Figure 7-1: PCS Channel Low

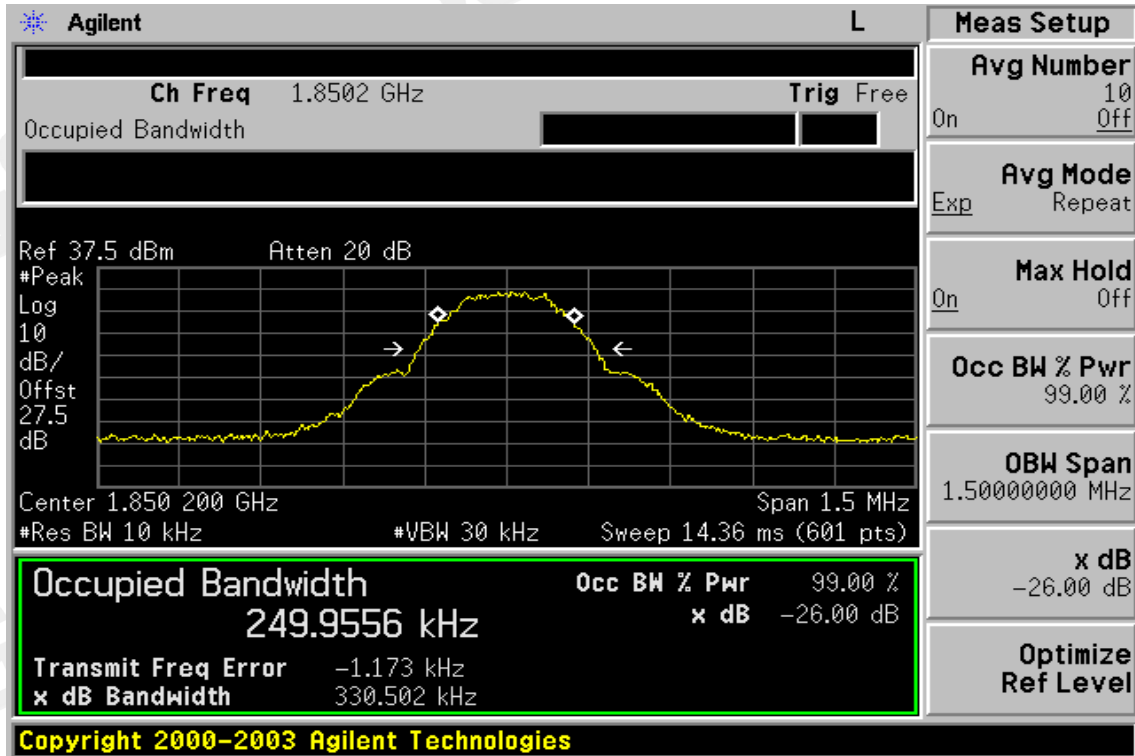


Figure 7-2 PCS Channel Mid

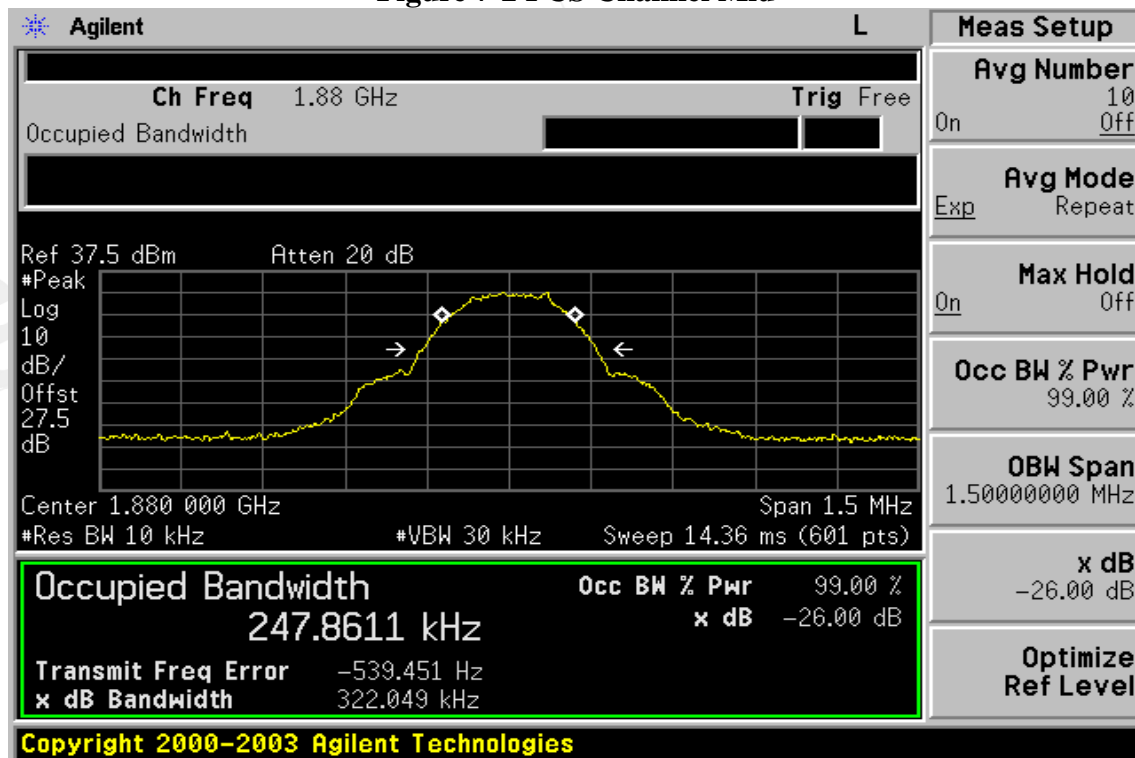
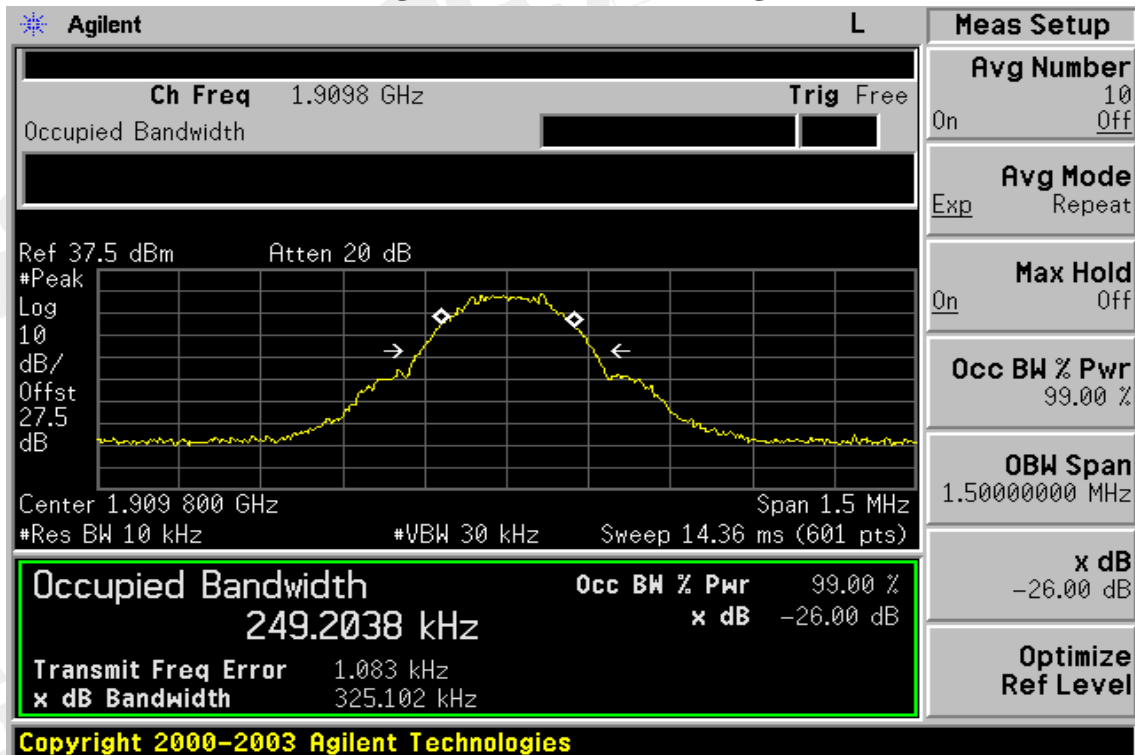


Figure 7-3: PCS Channel High





## 8. OUT OF BAND EMISSION AT ANTENNA TERMINALS(TX)

### 8.1 Standard Applicable

According to FCC §2.1051.

FCC §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)

According to RSS-133 §6.5

#### 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB.

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with a.ii. of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

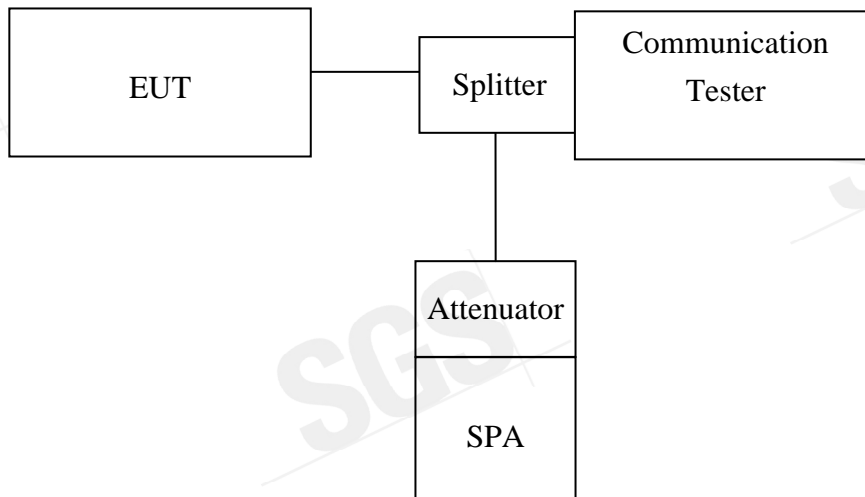
(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyser resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

#### 6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.



## 8.2 Test SET-UP



*Note: Measurement setup for testing on Antenna connector*

## 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(1850MHz and 1910MHz) : 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:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2006	06/29/2007
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2006	06/29/2007
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Attenuator	Mini-Circuit	BW-S6W5	N/A	09/23/2006	09/22/2007
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007
AC Power Supply	APW-105N	887592	All Power	12/15/2006	12/14/2007

## 8.5 Measurement Result

Figure 8-1: Out of Band emission at antenna terminals– PCS Channel Low

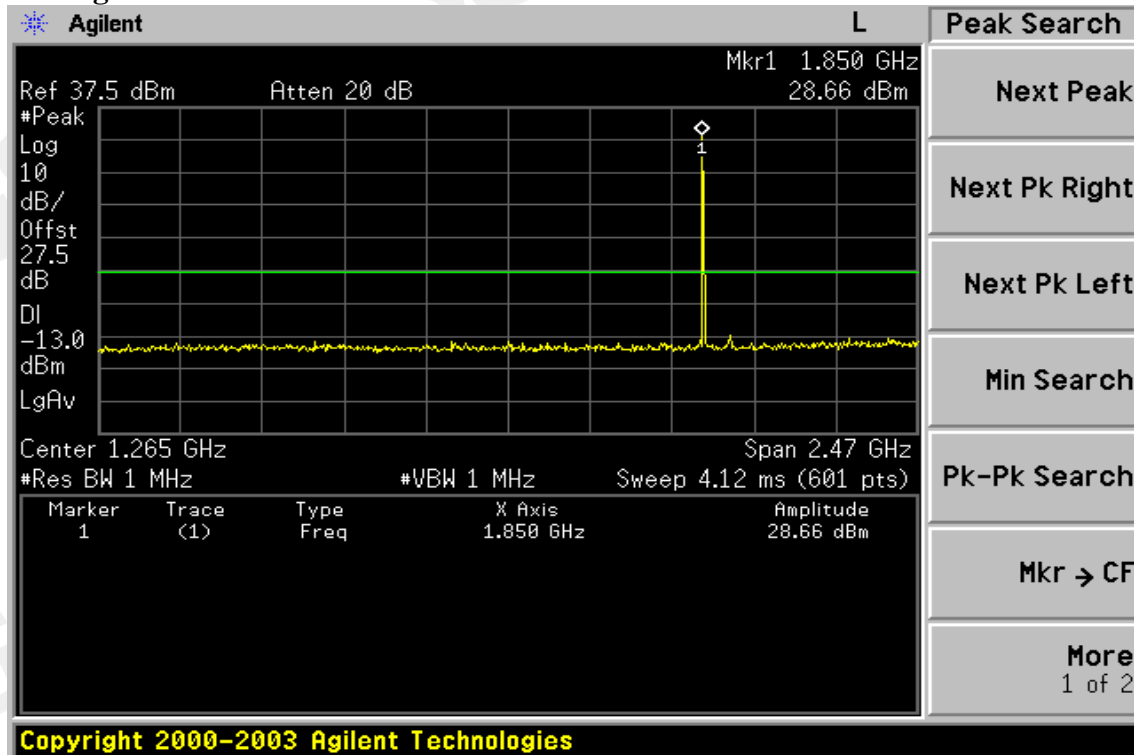


Figure 8-2: Out of Band emission at antenna terminals–PCS Channel Low

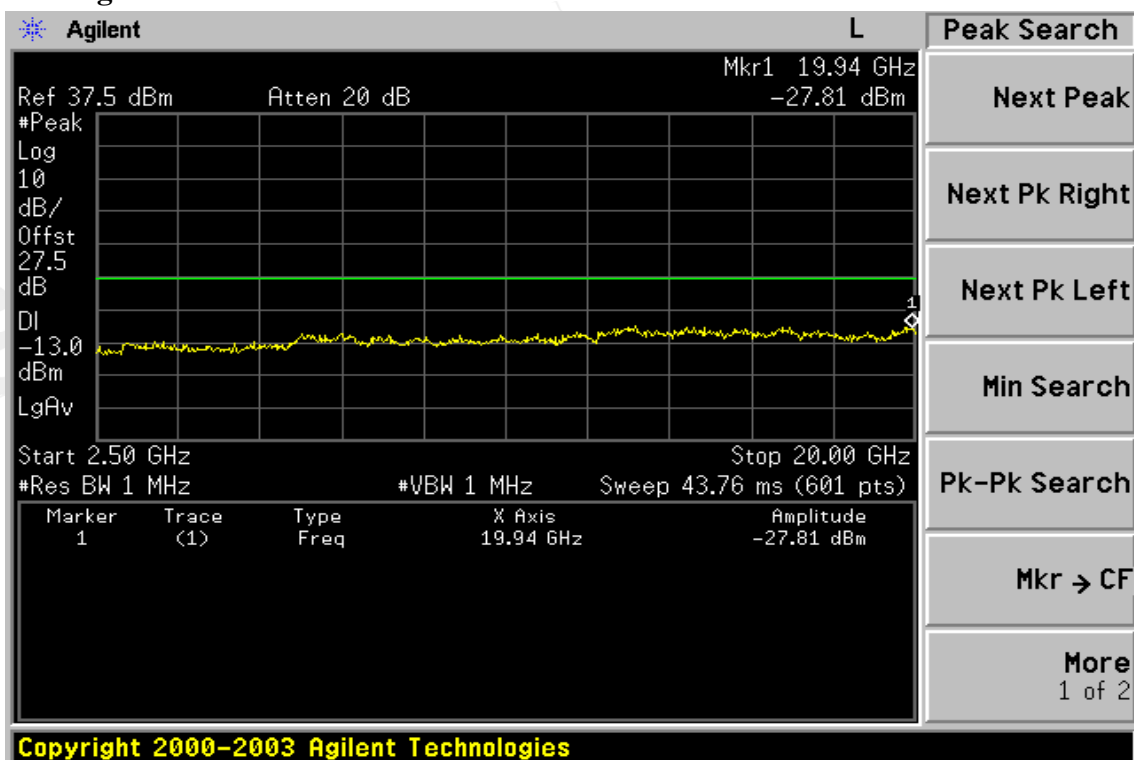


Figure 8-3: Out of Band emission at antenna terminals –PCS Channel Mid

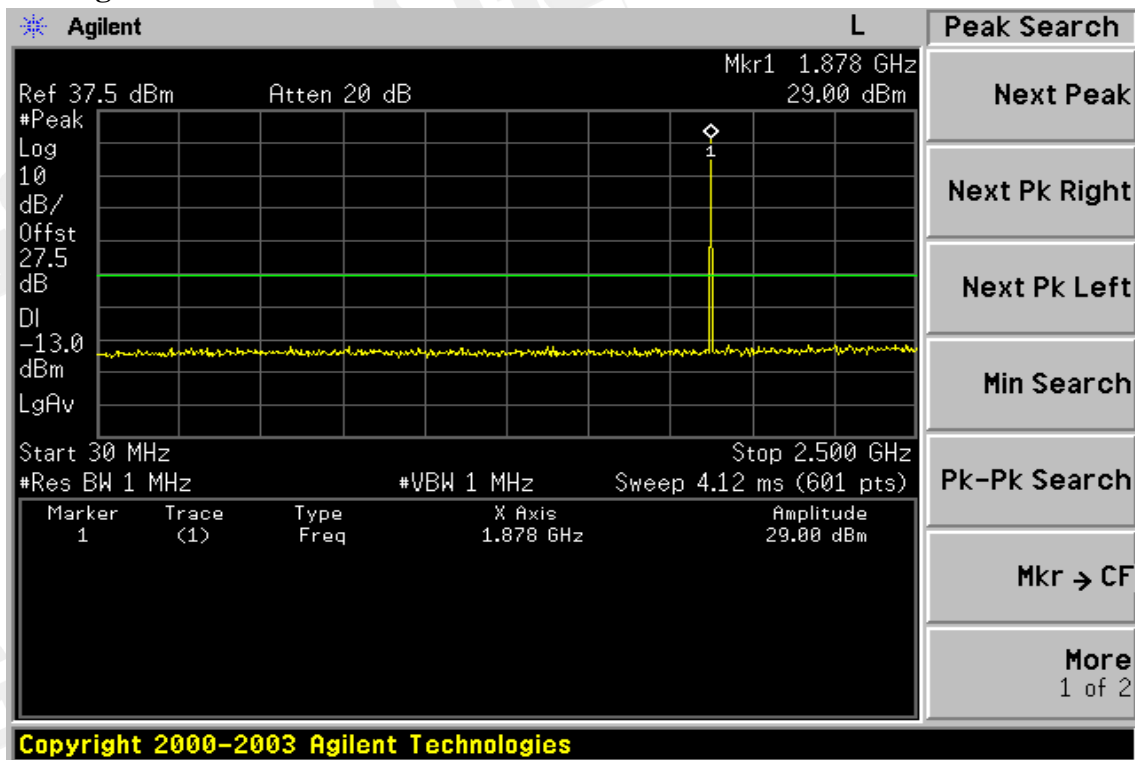


Figure 8-4: Out of Band emission at antenna terminals –PCS Channel Mid

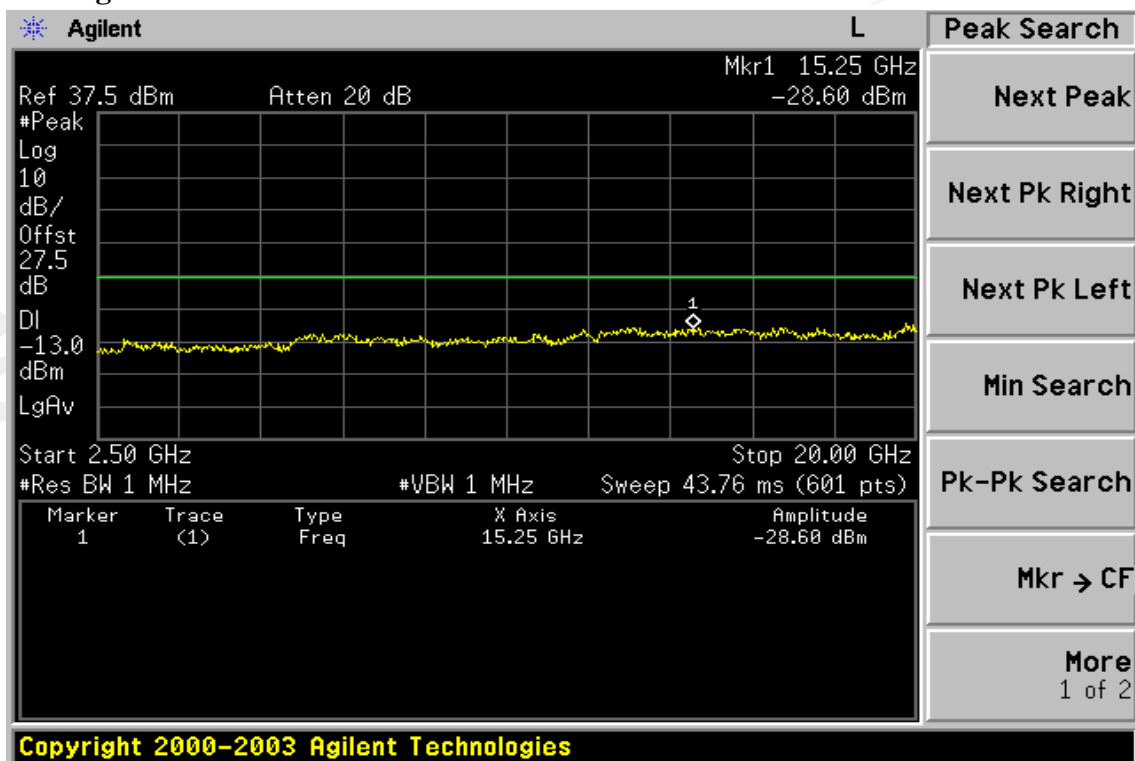


Figure 8-5: Out of Band emission at antenna terminals–PCS Channel High

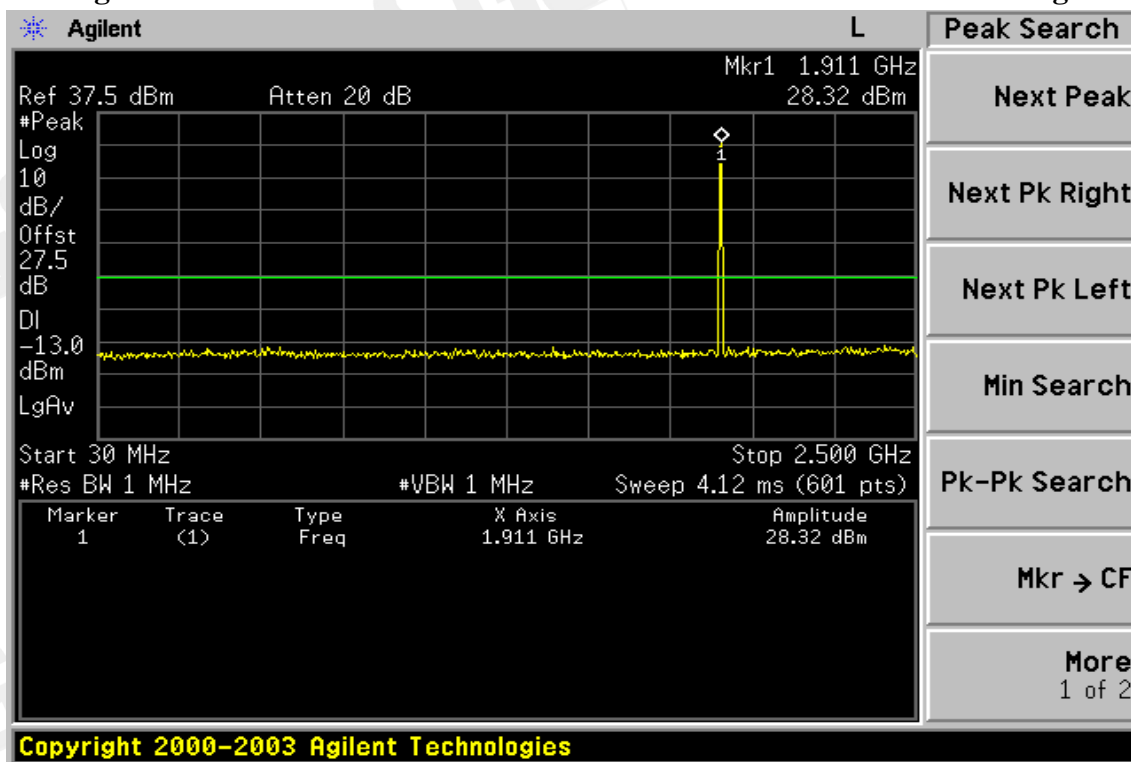


Figure 8-6: Out of Band emission at antenna terminals– PCS Channel High

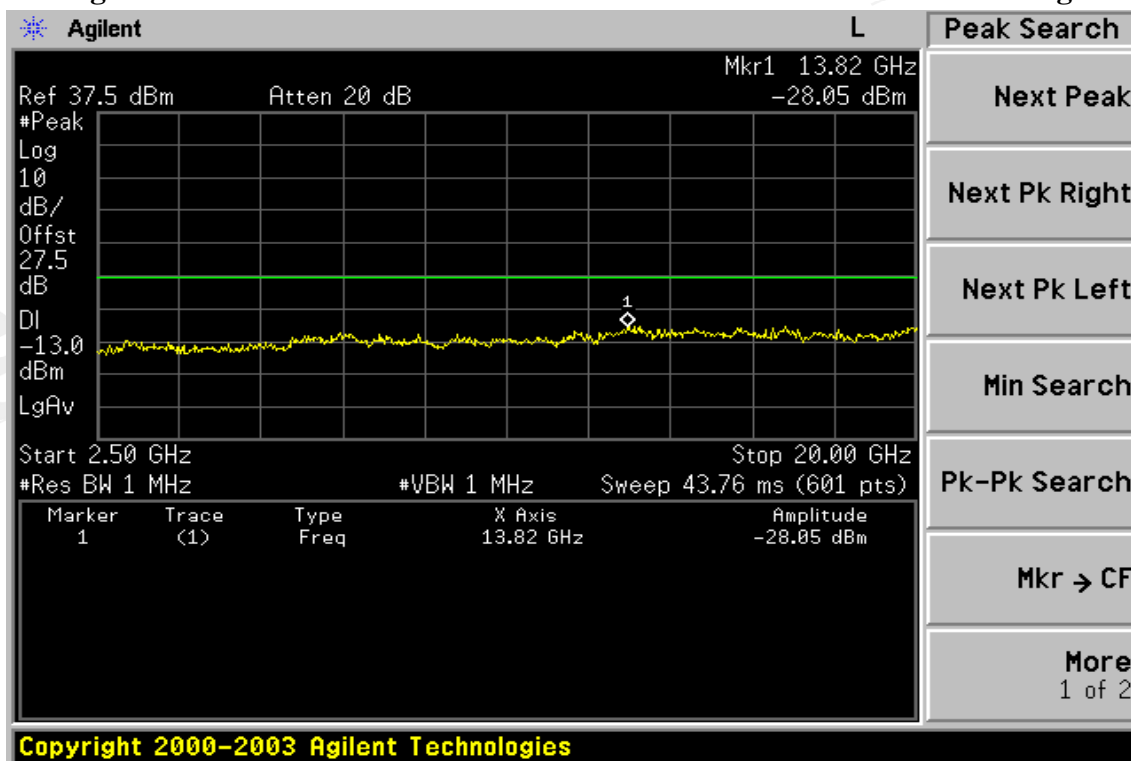


Figure 8-7: Bad edge emission at antenna terminals – PCS CH 512

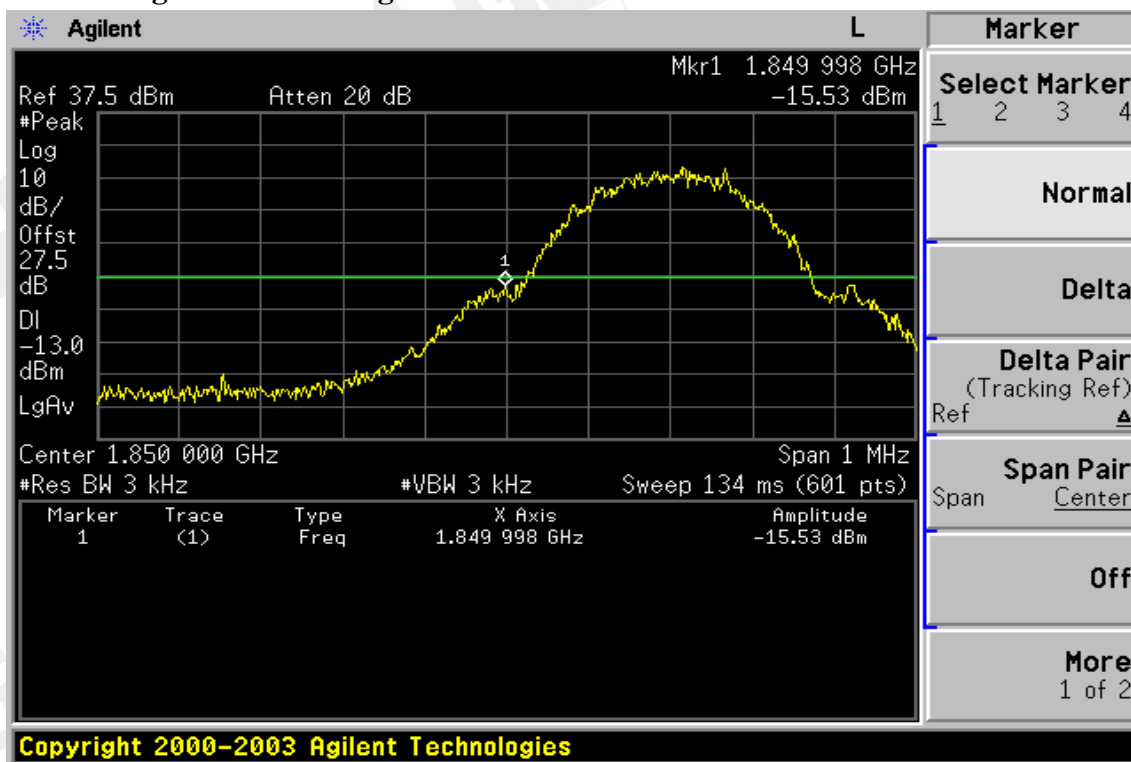
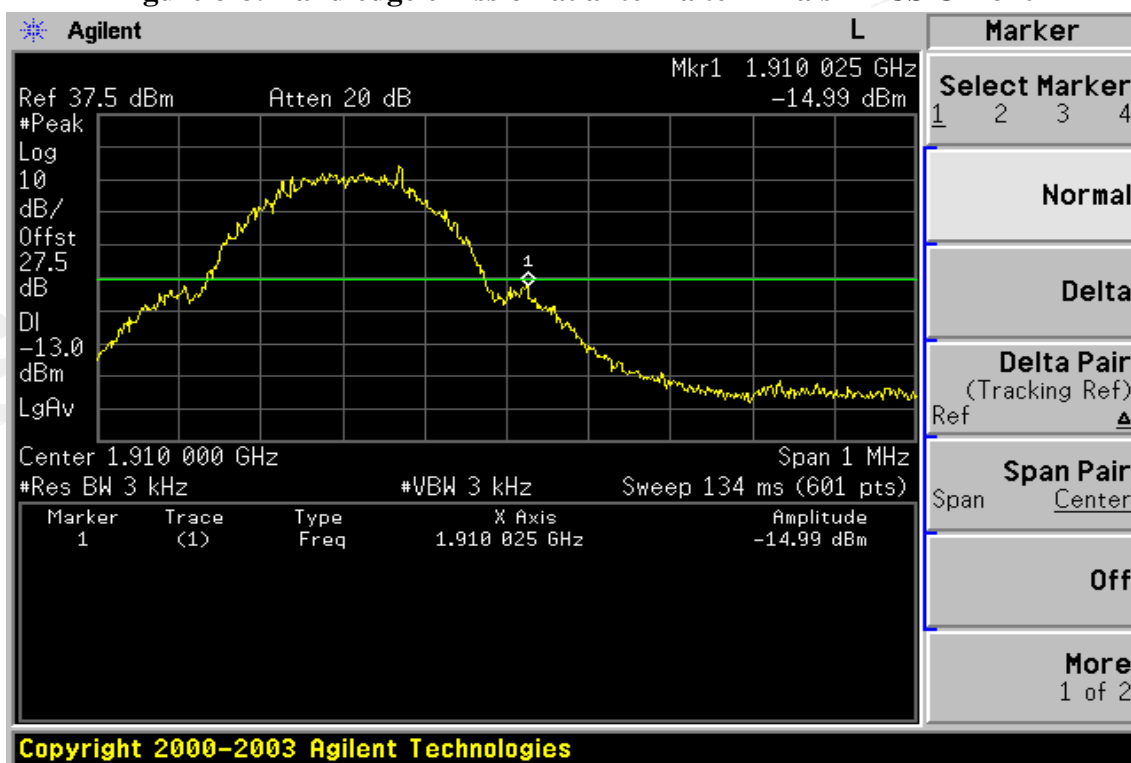


Figure 8-8: Band edge emission at antenna terminals – PCS CH 810



## 9. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT(TX)

### 9.1 Standard Applicable

According to FCC §2.1053,

FCC §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)

According to RSS-133 §6.5

#### 6.5.1 Out-of-Block Emissions

a. Mobile stations must comply with subsection i. below.

In the first 1.0MHz band immediately outside and adjacent to the licensee's frequency block, the power of emissions per any 1% of the emission bandwidth shall be attenuated below the transmitter output power P (in watts) by at least  $43 + 10 \log (P)$ , dB.

b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with a.ii. of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least  $43 + 10 \log (P)$ , dB, per any MHz of bandwidth.

(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyser resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

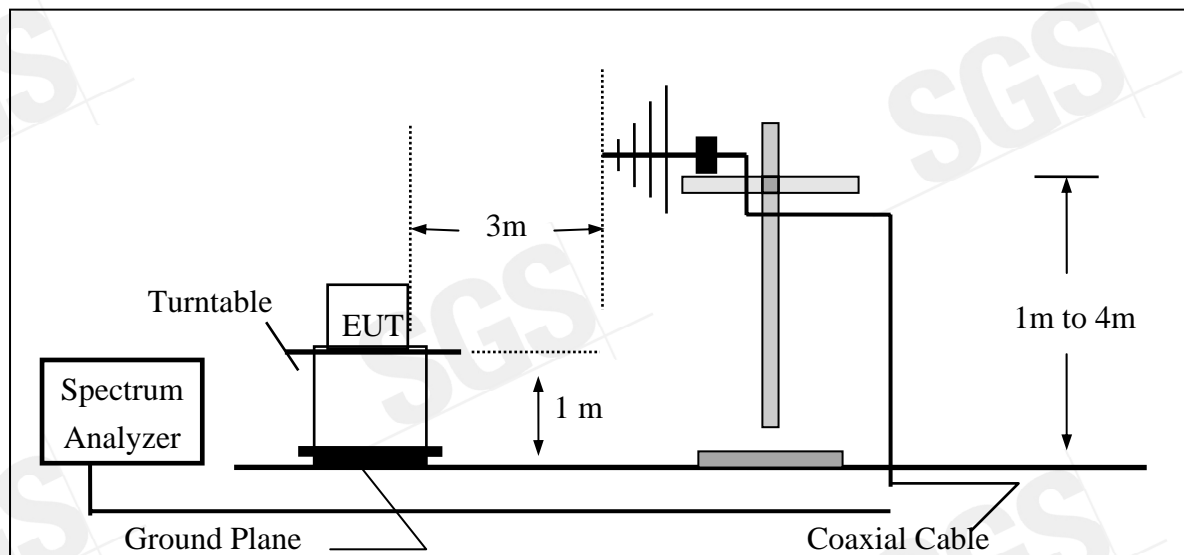
#### 6.5.2 Out-of-Sub-band Emissions

Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

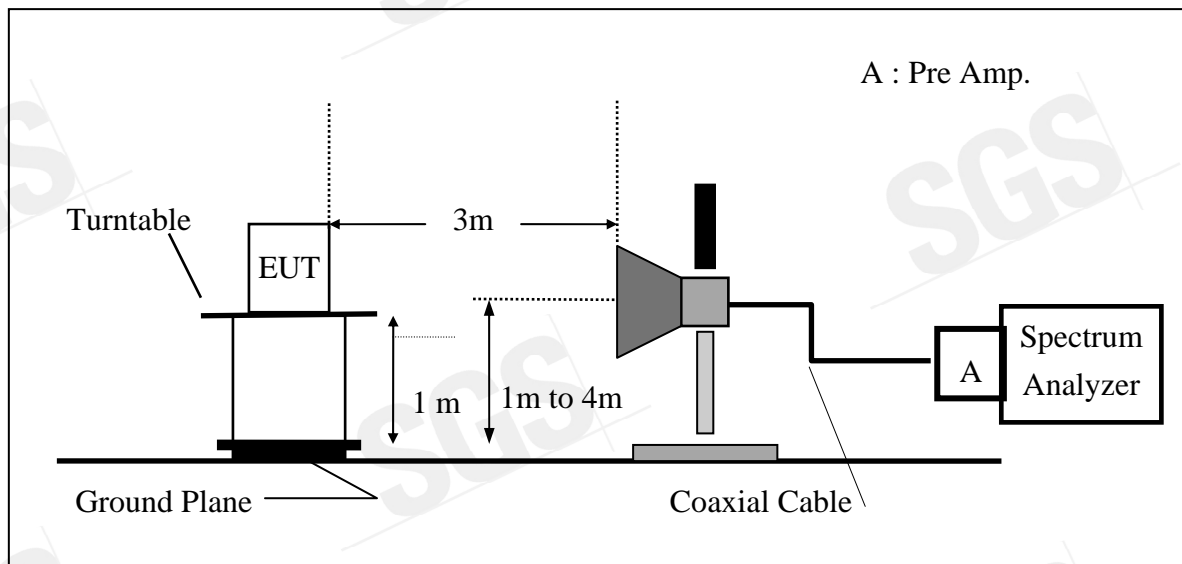


## 9.2 EUT Setup (Block Diagram of Configuration)

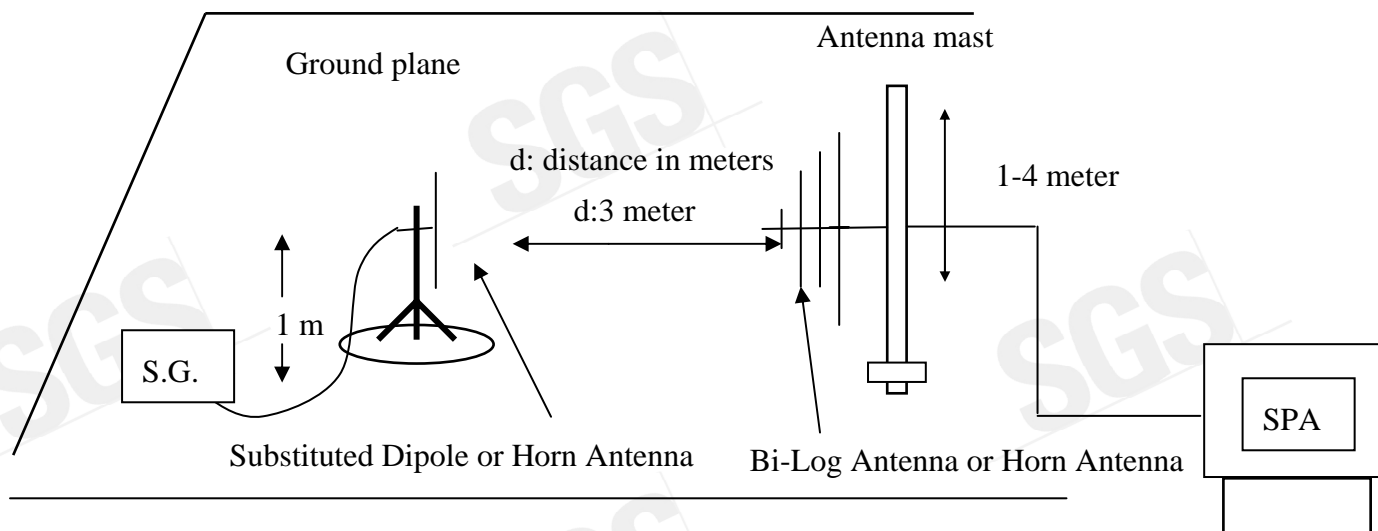
### (A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



## (C) Substituted Method Test Set-UP



### 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.

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

## 9.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2006	06/02/2007
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2006	08/15/2007
Pre-Amplifier	HP	8447D	2944A09469	07/19/2006	07/18/2007
Pre-Amplifier	HP	8494B	3008A00578	02/26/2006	02/25/2007
Signal Generator	R&S	SMR40	100210	02/09/2006	02/10/2007
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	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2006	10/08/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2006	10/08/2007
Site NSA	SGS	966 chamber	N/A	11/17/2006	11/16/2007
Site NSA	SGS	10m Open-Site	N/A	11/17/2006	11/16/2007
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2006	06/11/2008
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2006	06/11/2008
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2006	08/15/2008

## 9.5 Measurement Result

Refer to attach tabular data sheets.

## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Low H Mode  
Fundamental Frequency : 1850.20MHz  
Temperature : 25°C  
Humidity : 65%

Test Date: Jan. 22, 2007  
Test By: Alex  
Pol: Ver.

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
31.94	51.49	V	-52.65	-6.43	0.94	-60.02	-13.00	-47.02
101.78	48.86	V	-52.90	-7.76	1.37	-62.02	-13.00	-49.02
1838.50	62.82	V	-41.58	9.86	5.54	-37.26	-13.00	-24.26
1850.00	79.96	V	-24.43	9.90	5.56	-20.09	-13.00	-7.09
3700.40	---	V		12.61	8.31		-13.00	
5550.60	---	V		13.23	10.33		-13.00	
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 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  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

# Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Low H Mode  
 Fundamental Frequency : 1850.20MHz  
 Temperature : 25°C  
 Humidity : 65%

Test Date Jan. 22, 2007  
 Test By: Alex  
 Pol Hor.

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
72.68	46.48	H	-65.85	-1.45	1.18	-68.47	-13.00	-55.47
101.78	44.22	H	-58.59	-7.76	1.37	-67.72	-13.00	-54.72
1838.50	70.73	H	-33.46	9.86	5.54	-29.14	-13.00	-16.14
1849.98	85.70	H	-18.48	9.90	5.56	-14.14	-13.00	-1.14
3700.40	---	H		12.61	8.31		-13.00	
5550.60	---	H		13.23	10.33		-13.00	
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 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  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain } (dBd/dBi) - Cable \text{ loss } (dB)$

# Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Mid H Mode  
 Fundamental Frequency : 1880MHz  
 Temperature : 25°C  
 Humidity : 65%

Test Date: Jan. 22, 2007  
 Test By: Alex  
 Pol: Ver.

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
30.00	47.04	V	-57.66	-7.34	0.95	-65.95	-13.00	-52.95
101.78	48.16	V	-53.60	-7.76	1.37	-62.72	-13.00	-49.72
174.53	41.09	V	-58.40	-7.82	1.65	-67.87	-13.00	-54.87
1871.00	68.58	V	-35.79	9.96	5.60	-31.42	-13.00	-18.42
3760.00	---	V		12.60	8.39		-13.00	
5640.00	---	V		13.36	10.41		-13.00	
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 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  $ERP/EIRP\ (dBm) = SG\ Setting(dBm) + Antenna\ Gain\ (dBd/dBi) - Cable\ loss\ (dB)$



# Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Mid H Mode  
 Fundamental Frequency : 1880MHz  
 Temperature : 25°C  
 Humidity : 65%

Test Date Jan. 22, 2007  
 Test By: Alex  
 Pol Hor.

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
41.64	40.25	H	-63.26	-2.31	0.93	-66.50	-13.00	-53.50
116.33	43.13	H	-58.16	-7.77	1.44	-67.37	-13.00	-54.37
227.88	42.20	H	-58.10	-7.87	1.87	-67.83	-13.00	-54.83
1871.00	73.95	H	-30.20	9.96	5.60	-25.84	-13.00	-12.84
3760.00	---	H		12.60	8.39		-13.00	
5640.00	---	H		13.36	10.41		-13.00	
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 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  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

# Radiated Spurious Emission Measurement Result

Operation Mode : TX CH High H Mode  
 Fundamental Frequency : 1909.8 MHz  
 Temperature : 25°C  
 Humidity : 65%

Test Date: Jan. 22, 2007  
 Test By: Alex  
 Pol: Ver.

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
30.00	46.66	V	-58.04	-7.34	0.95	-66.33	-13.00	-53.33
101.78	48.89	V	-52.87	-7.76	1.37	-61.99	-13.00	-48.99
1903.50	60.17	V	-44.16	10.06	5.65	-39.76	-13.00	-26.76
1910.02	77.33	V	-27.00	10.08	5.66	-22.58	-13.00	-9.58
3981.60	---	V		12.60	8.69		-13.00	
5972.40	---	V		13.86	10.73		-13.00	
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 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  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain} (dBd/dBi) - Cable \text{ loss} (dB)$

## Radiated Spurious Emission Measurement Result

Operation Mode : TX CH High H Mode  
Fundamental Frequency : 1909.8 MHz  
Temperature : 25°C  
Humidity : 65%

Test Date Jan. 22, 2007  
Test By: Alex  
Pol Hor.

Freq.	SPA. Reading	Ant.Pol.	S.G Output	Antenna Gain	Cable Loss	ERP/ EIRP	Limit	Safe Margin
(MHz)	(dBuV)	H/V	(dBm)	(dB/dBi)	(dB)	(dBm)	(dBm)	(dBm)
101.78	43.43	H	-59.38	-7.76	1.37	-68.51	-13.00	-55.51
237.58	40.87	H	-58.95	-7.88	1.92	-68.75	-13.00	-55.75
1903.50	65.27	H	-38.85	10.06	5.65	-34.44	-13.00	-21.44
1910.01	86.01	H	-18.10	10.08	5.66	-13.68	-13.00	-0.68
3981.60	---	H		12.60	8.69		-13.00	
5972.40	---	H		13.86	10.73		-13.00	
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	
17188.20	---	H		14.47	19.52		-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  $ERP/EIRP (dBm) = SG \text{ Setting}(dBm) + Antenna \text{ Gain } (dBd/dBi) - Cable \text{ loss } (dB)$

# Radiated Spurious Emission Measurement Result: Co-Location Mode

Operation Mode : GSM1900 TX Ch High H / BT Ch Low      Test Date: Jan. 22, 2007  
 Fundamental Frequency : 1850.20 MHz / 2480MHz      Test By: Alex  
 Temperature : 25°C      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)
640.13	41.19	V	-47.86	-7.81	3.13	-58.80	-13.00	-45.80
766.23	41.26	V	-45.70	-7.87	3.50	-57.07	-13.00	-44.07
1910.00	81.65	V	-22.68	10.08	5.66	-18.26	-13.00	-5.26
3821.00	60.40	V	-36.99	12.60	8.47	-32.85	-13.00	-19.85
3981.60	---	V		12.60	8.69		-13.00	
4783.00	38.88	V	-54.40	12.65	9.58	-51.32	-13.00	-38.32
5725.50	53.63	V	-36.70	13.49	10.50	-33.71	-13.00	-20.71
5972.40	---	V		13.86	10.73		-13.00	
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 behaviour 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  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

# Radiated Spurious Emission Measurement Result: Co-Location Mode

Operation Mode : GSM1900 TX Ch High H / BT Ch Low      Test Date: Jan. 22, 2007  
 Fundamental Frequency : 1850.20 MHz / 2480MHz      Test By: Alex  
 Temperature : 25°C      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)
678.93	41.11	H	-47.40	-7.84	3.24	-58.47	-13.00	-45.47
919.49	41.12	H	-43.48	-7.97	3.83	-55.28	-13.00	-42.28
1910.00	84.29	H	-19.82	10.08	5.66	-15.40	-13.00	-2.40
3821.00	62.21	H	-35.29	12.60	8.47	-31.16	-13.00	-18.16
3981.60	---	H		12.60	8.69		-13.00	
5725.50	51.50	H	-38.96	13.49	10.50	-35.97	-13.00	-22.97
5972.40	---	H		13.86	10.73		-13.00	
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 behaviour 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  $ERP/EIRP \text{ (dBm)} = SG \text{ Setting (dBm)} + Antenna \text{ Gain (dB/dBi)} - Cable \text{ loss (dB)}$

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

### 10.1 Standard Applicable

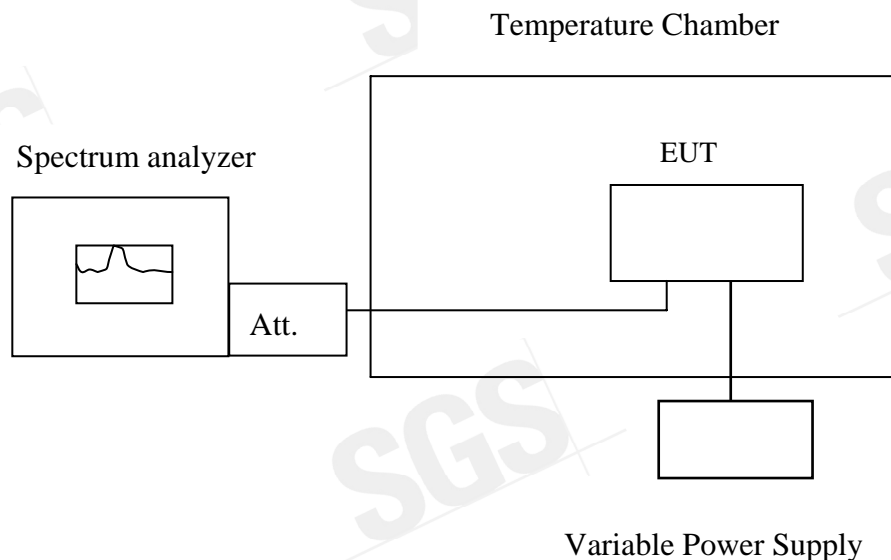
According to FCC §2.1055, FCC §24.235.

Frequency Tolerance:  $\pm 2.5$  ppm

According to RSS-133 §6.3

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

### 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 re-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:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2006	06/29/2007
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2006	06/29/2007
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Attenuator	Mini-Circuit	BW-S6W5	N/A	09/23/2006	09/22/2007
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007
AC Power Supply	APW-105N	887592	All Power	12/15/2006	12/14/2007



## 10.5 Measurement Result

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	-30	1880.000008	-29.00	4700
3.7	-20	1880.000004	-25.00	4700
3.7	-10	1879.999996	-17.00	4700
3.7	0	1879.999990	-11.00	4700
3.7	10	1879.999986	-7.00	4700
3.7	20	1879.999979	0.00	4700
3.7	30	1879.999984	-5.00	4700
3.7	40	1879.999991	-12.00	4700
3.7	50	1880.000002	-23.00	4700

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

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

### 11.1 Standard Applicable

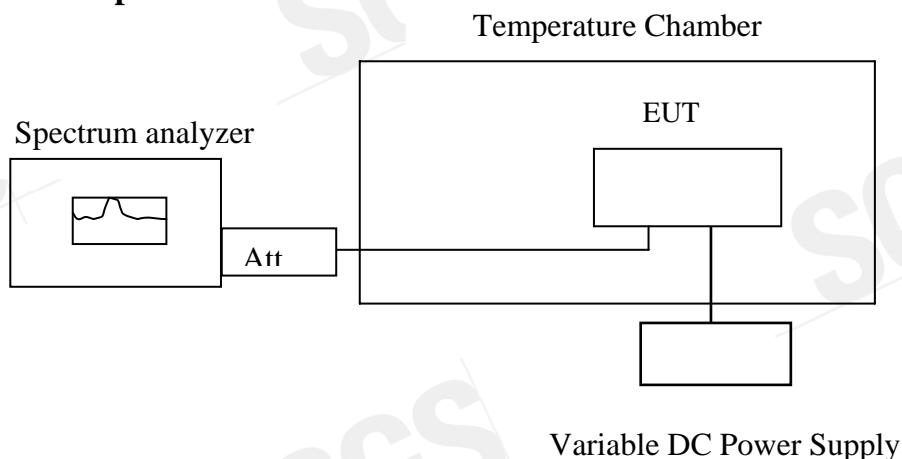
According to FCC §2.1055, FCC §24.235,

Frequency Tolerance:  $\pm 2.5$  ppm

According to RSS-133 §6.3

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*

### 11.3 Measurement Procedure

Set chamber temperature to 25°C. 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:

Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2006	03/28/2007
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2006	06/29/2007
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2006	11/10/2007
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2006	06/29/2007
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2006	06/29/2007
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2006	10/13/2007
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circuit	BW-S10W5	N/A	09/23/2006	09/22/2007
Attenuator	Mini-Circuit	BW-S6W5	N/A	09/23/2006	09/22/2007
Splitter	Agilent	11636B	51728	09/23/2006	09/22/2007
AC Power Supply	APW-105N	887592	All Power	12/15/2006	12/14/2007

## 11.5 Measurement Result

Reference Frequency: PCS Mid Channel 1880 MHz @ 25°C				
Limit: +/- 2.5 ppm = 4700 Hz				
Power Supply	Environment	Frequency	Delta (Hz)	Limit (Hz)
Vdc	Temperature (°C)	(MHz)		
3.7	25	1879.999977	0.00	4700
3.6	25	1879.999981	-4.00	4700
3.4	25	1879.999983	-6.00	4700
3.3 (Endpoint)	25	1879.999980	-3.00	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 adaptor 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:

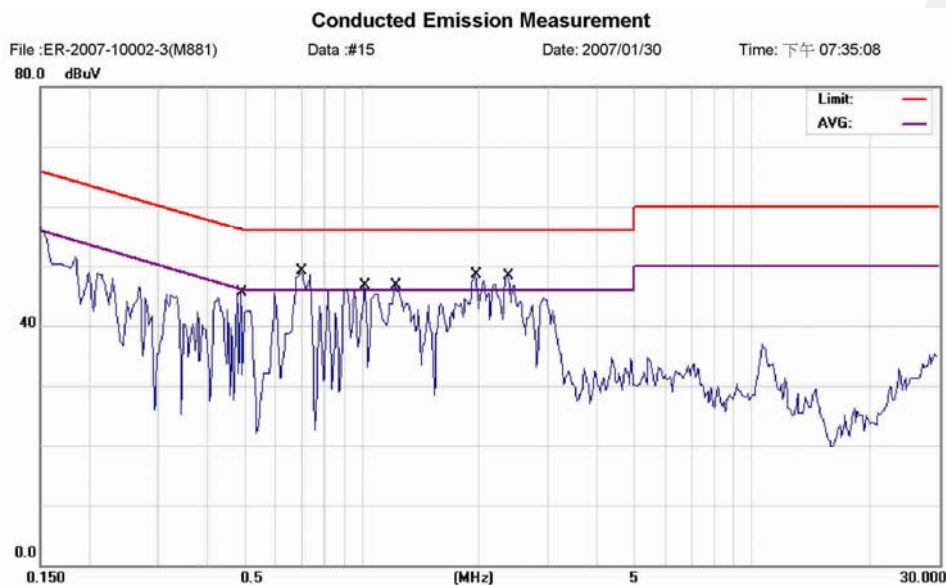
Conducted Emission Test Site					
EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
EMC Analyzer	HP	8594EM	3624A00203	09/02/2006	09/03/2007
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2006	06/10/2007
Transient Limiter	HP	11947A	3107A02062	09/02/2006	09/03/2007
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2006	12/30/2007
LISN	Rolf-Heine	NNB-2/16Z	99013	12/24/2006	12/23/2007
Coaxial Cables	N/A	No. 3, 4	N/A	12/24/2006	12/23/2007

## 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 1900 Link + BT			Test Date :	Jan. 30, 2007
Temperature :	25 °C	Humidity :	62%	Test By:	Alex
IF band	9KHz	Detector	QP/AV	Pol.	Line



Site SGS CONDUCTED#1

Limit: CISPR22 Class B Conduction(QP)

EUT: MOBILE PHONE

M/N: M881

Note: GSM 1900 LINK + BT(美規)(NEW adaptor)

Phase: **L1**

Power: AC 120V/60Hz

Distance:

Temperature: 25 °C

Humidity: 62 %

Air Pressure: hpa

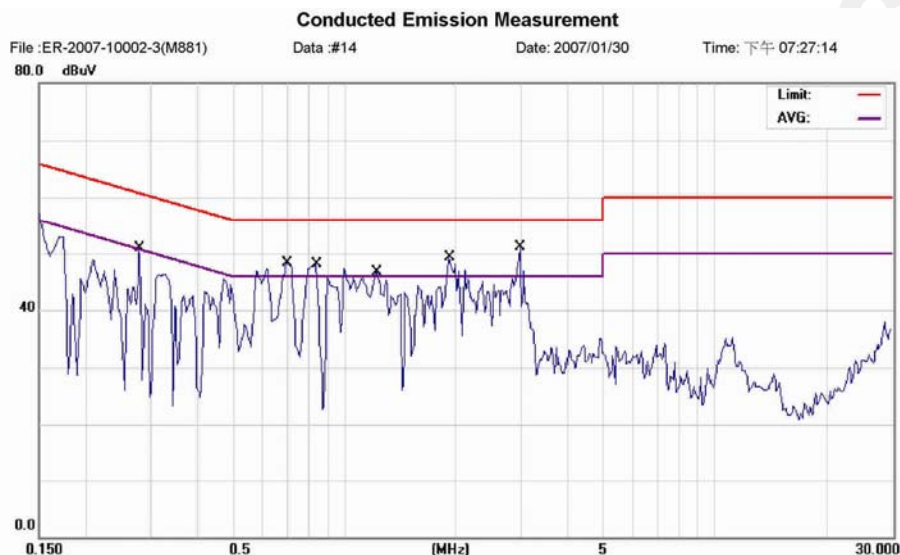
No.	Mk.	Freq.	Reading Level	Factor	Measurement	Limit	Over	Detector	Comment
		MHz	dBuV	dB	dBuV	dBuV	dB		
1		0.4900	42.50	0.65	43.15	56.17	-13.02	QP	
2		0.4900	23.00	0.65	23.65	46.17	-22.52	AVG	
3	*	0.7000	46.10	0.72	46.82	56.00	-9.18	QP	
4		0.7000	28.40	0.72	29.12	46.00	-16.88	AVG	
5		1.0200	43.00	0.81	43.81	56.00	-12.19	QP	
6		1.0200	22.80	0.81	23.61	46.00	-22.39	AVG	
7		1.2200	42.10	0.82	42.92	56.00	-13.08	QP	
8		1.2200	21.40	0.82	22.22	46.00	-23.78	AVG	
9		1.9600	43.50	0.84	44.34	56.00	-11.66	QP	
10		1.9600	23.80	0.84	24.64	46.00	-21.36	AVG	
11		2.3800	44.80	0.87	45.67	56.00	-10.33	QP	
12		2.3800	25.50	0.87	26.37	46.00	-19.63	AVG	

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## AC POWER LINE CONDUCTED EMISSION TEST DATA

Operation Mode:	GSM 1900 Link + BT			Test Date :	Jan. 30, 2007
Temperature :	25 °C	Humidity :	62%	Test By:	Alex
IF band	9KHz	Detector	QP/AV	Pol.	Neutral



Site SGS CONDUCTED #1

Limit: CISPR22 Class B Conduction(QP)

EUT: MOBILE PHONE

M/N: M881

Note: GSM 1900 LINK + BT(美規)(NEW adaptor)

Phase: **N**

Power: AC 120V/60Hz

Distance:

Temperature: 25 °C

Humidity: 62 %

Air Pressure: hpa

No. Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over	Detector	Comment
	MHz	dBuV	dB	dBuV	dBuV	dB		
1	0.2800	37.70	0.56	38.26	60.82	-22.56	QP	
2	0.2800	20.70	0.56	21.26	50.82	-29.56	AVG	
3	0.2800	25.90	0.56	26.46	50.82	-24.36	AVG	
4 *	0.7000	45.40	0.72	46.12	56.00	-9.88	QP	
5	0.7000	28.80	0.72	29.52	46.00	-16.48	AVG	
6	0.8400	42.40	0.76	43.16	56.00	-12.84	QP	
7	0.8400	22.50	0.76	23.26	46.00	-22.74	AVG	
8	1.2200	44.40	0.82	45.22	56.00	-10.78	QP	
9	1.2200	27.70	0.82	28.52	46.00	-17.48	AVG	
10	1.9200	43.60	0.84	44.44	56.00	-11.56	QP	
11	1.9200	24.10	0.84	24.94	46.00	-21.06	AVG	
12	2.9800	44.40	0.91	45.31	56.00	-10.69	QP	
13	2.9800	26.90	0.91	27.81	46.00	-18.19	AVG	

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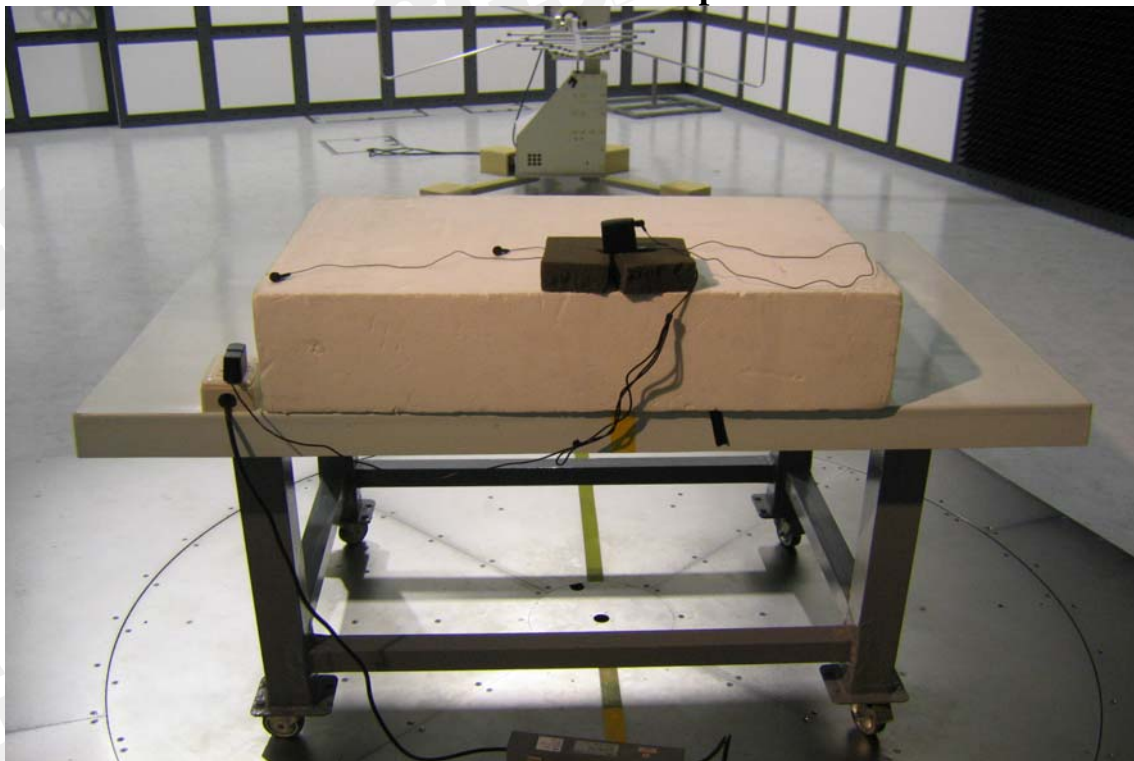


## APPENDIX 1

### PHOTOGRPHS OF SET UP

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## Radiated Emission Set up Photos



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## Conducted Emission Set Up Photos



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## APPENDIX 2

### PHOTOGRPHS OF EUT

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## All of EUT



## Adaptor



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*Front View of EUT – 1*



*Front View of EUT – 2*



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*Back View of EUT - 1*



*Back View of EUT - 2*



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*Left View of EUT*



*Right View of EUT*



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## Open View of EUT - 1



## Open View of EUT - 2



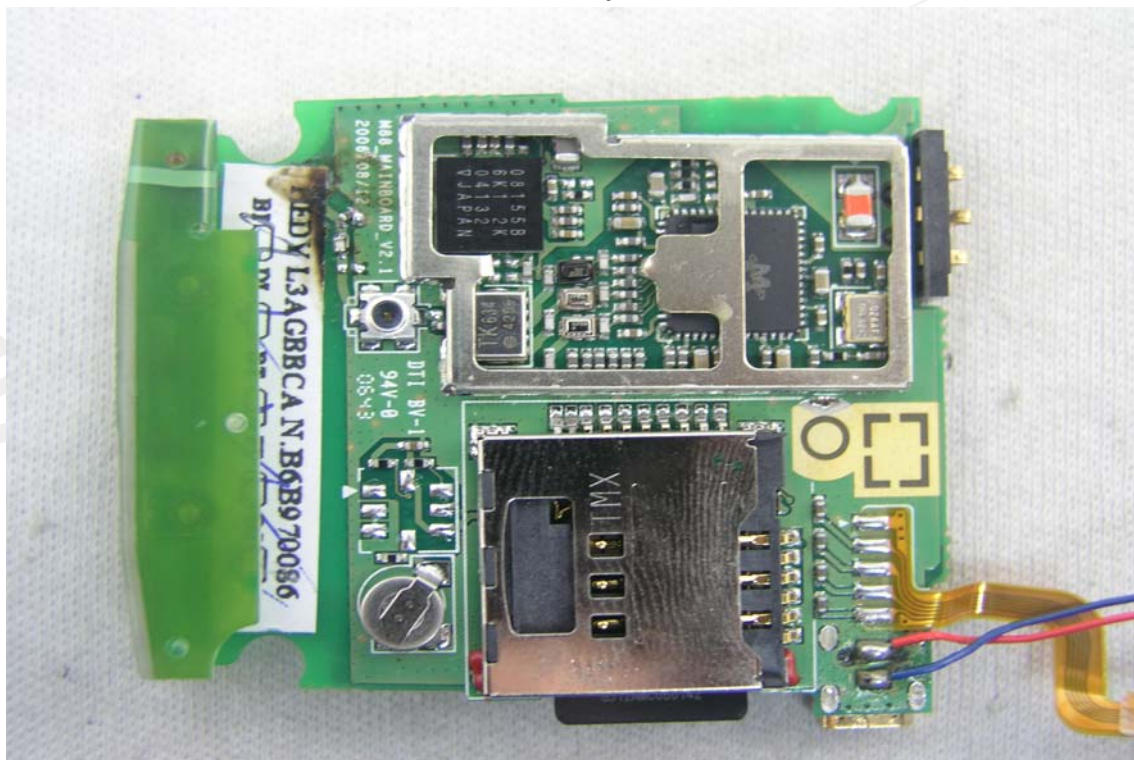
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*Internal View of EUT – 1*



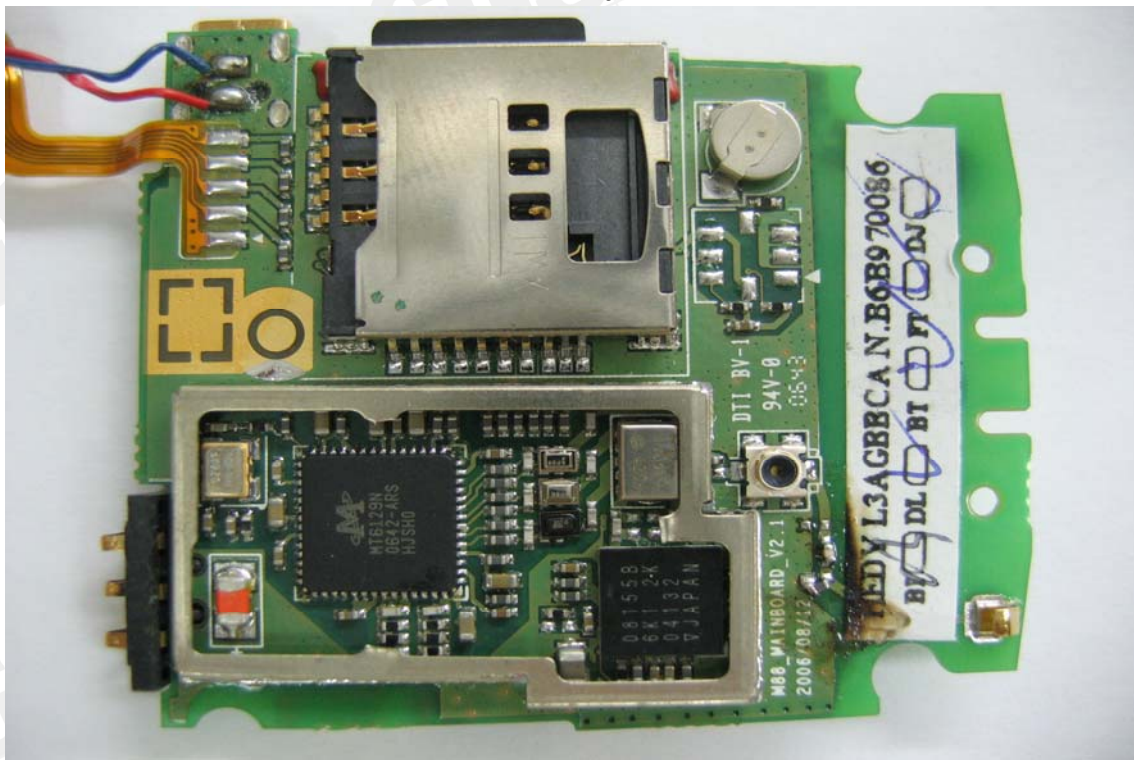
*Internal View of EUT – 2*



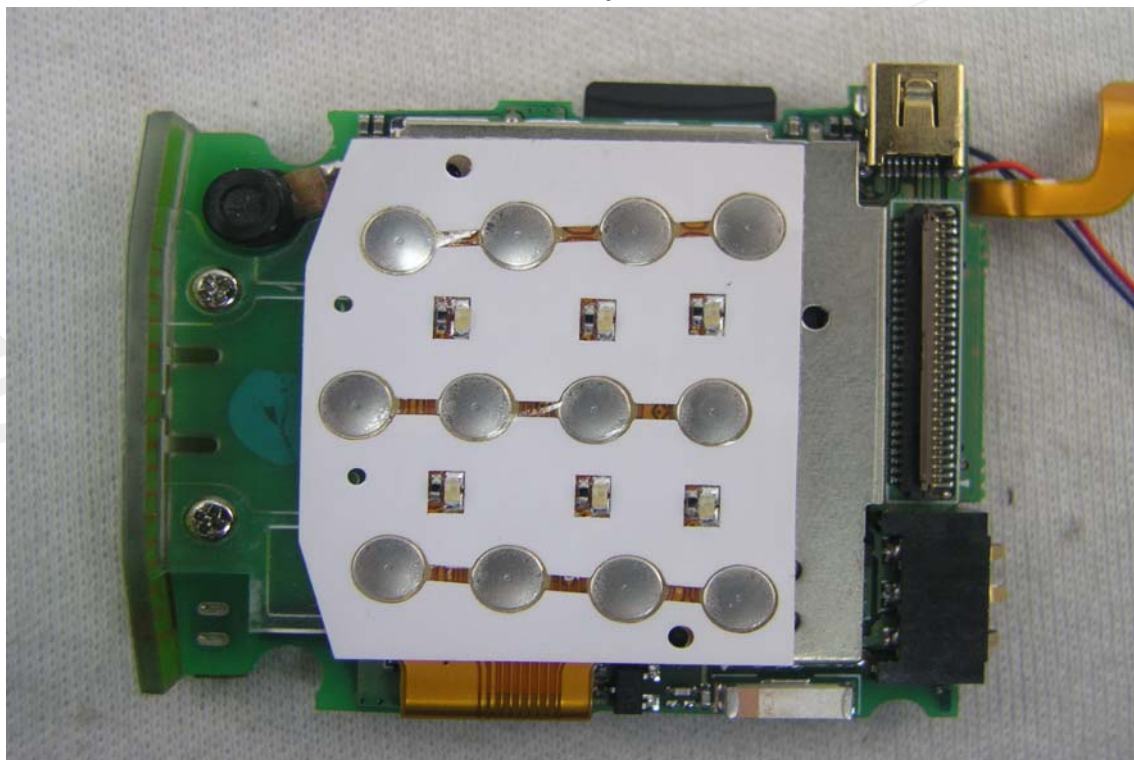
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*Internal View of EUT – 3*

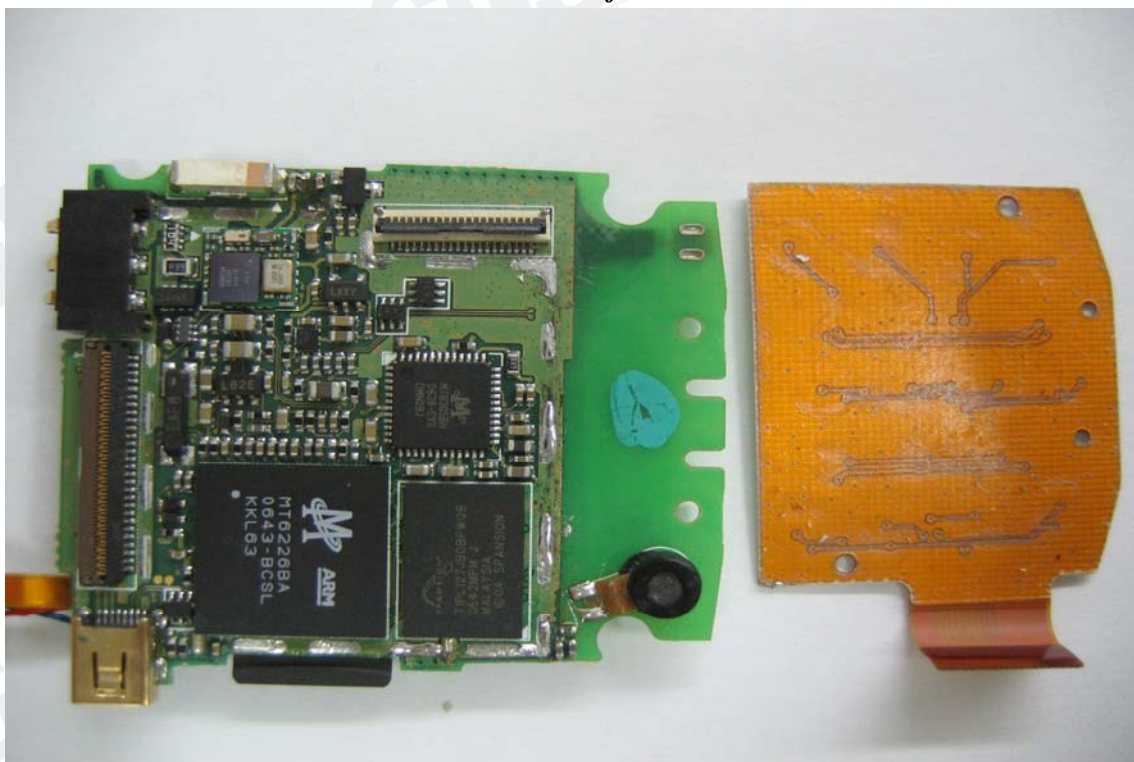


*Internal View of EUT – 4*

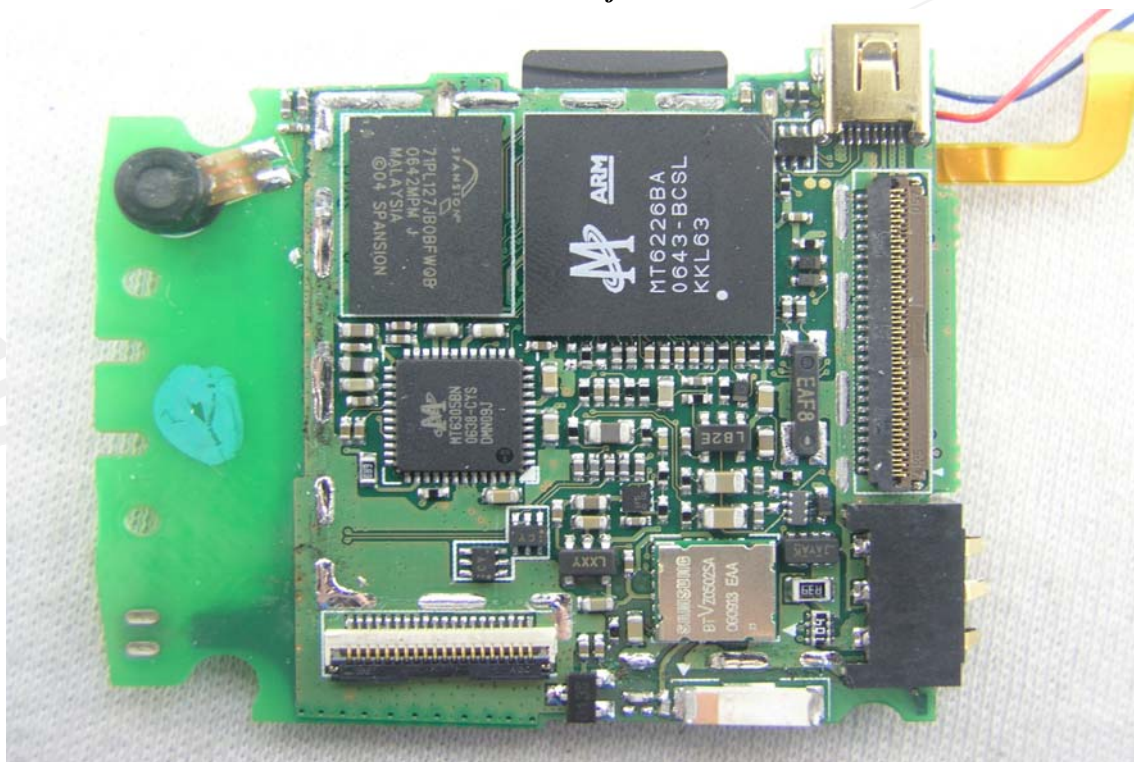


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*Internal View of EUT – 5*



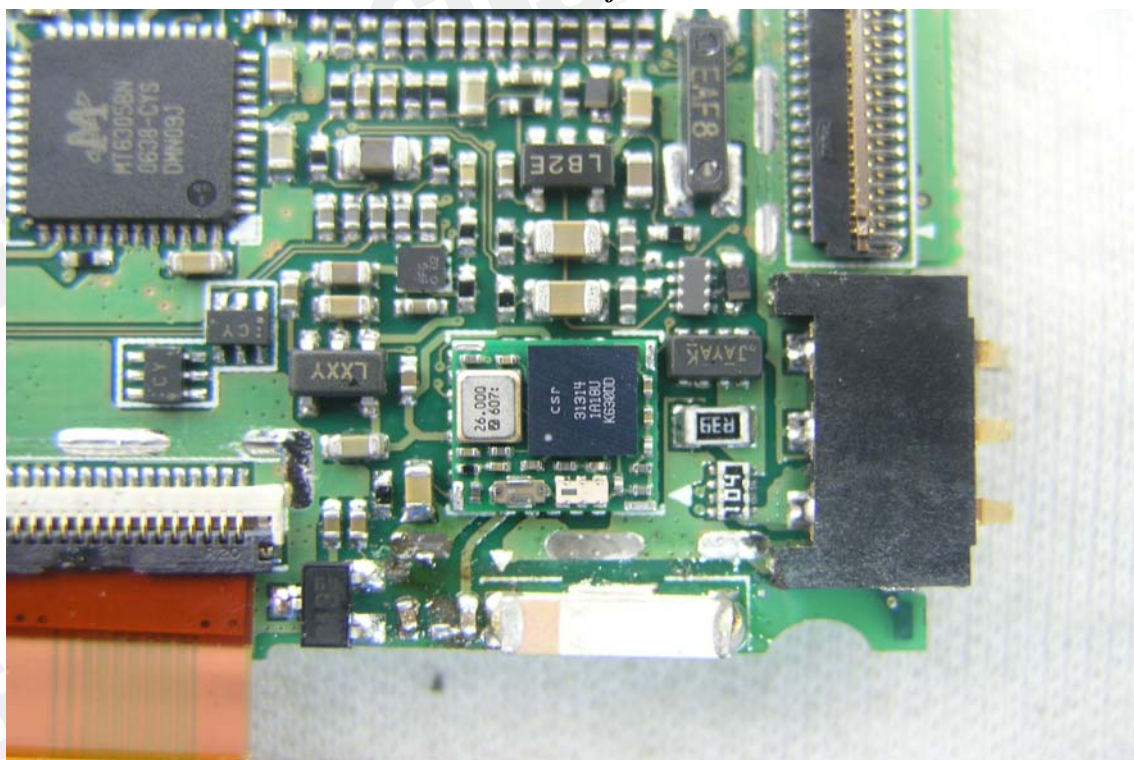
*Internal View of EUT – 6*



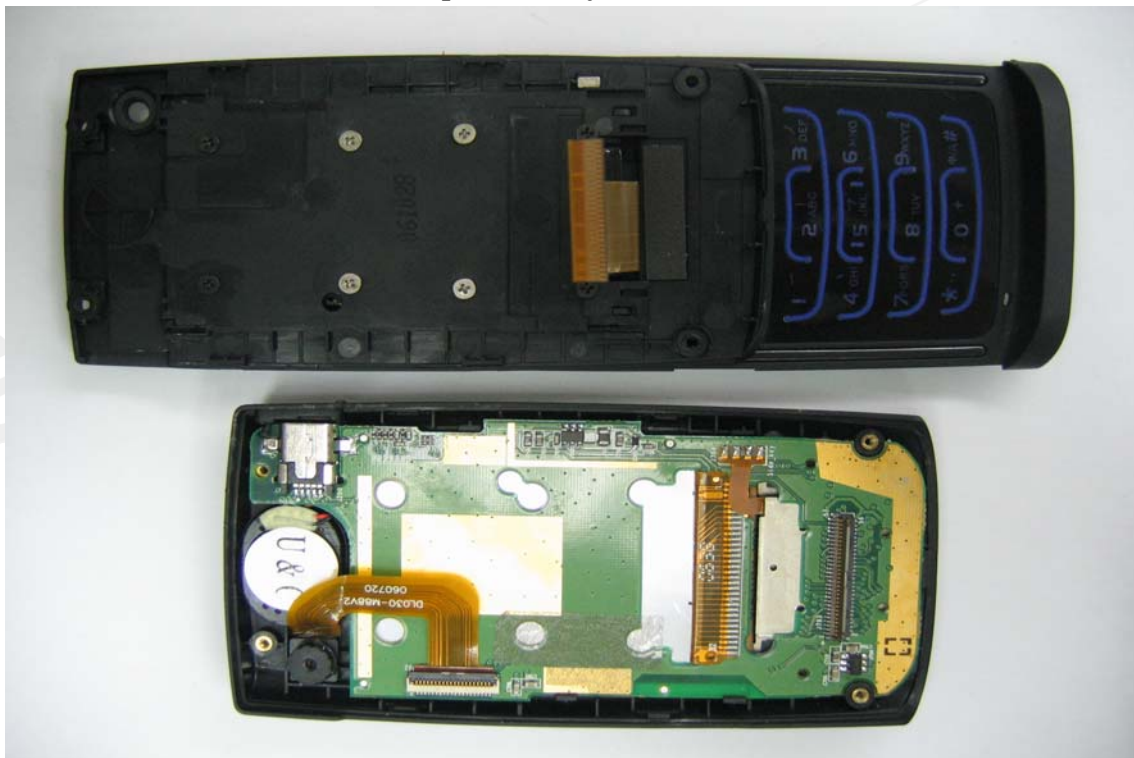
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*Internal View of EUT – 7*

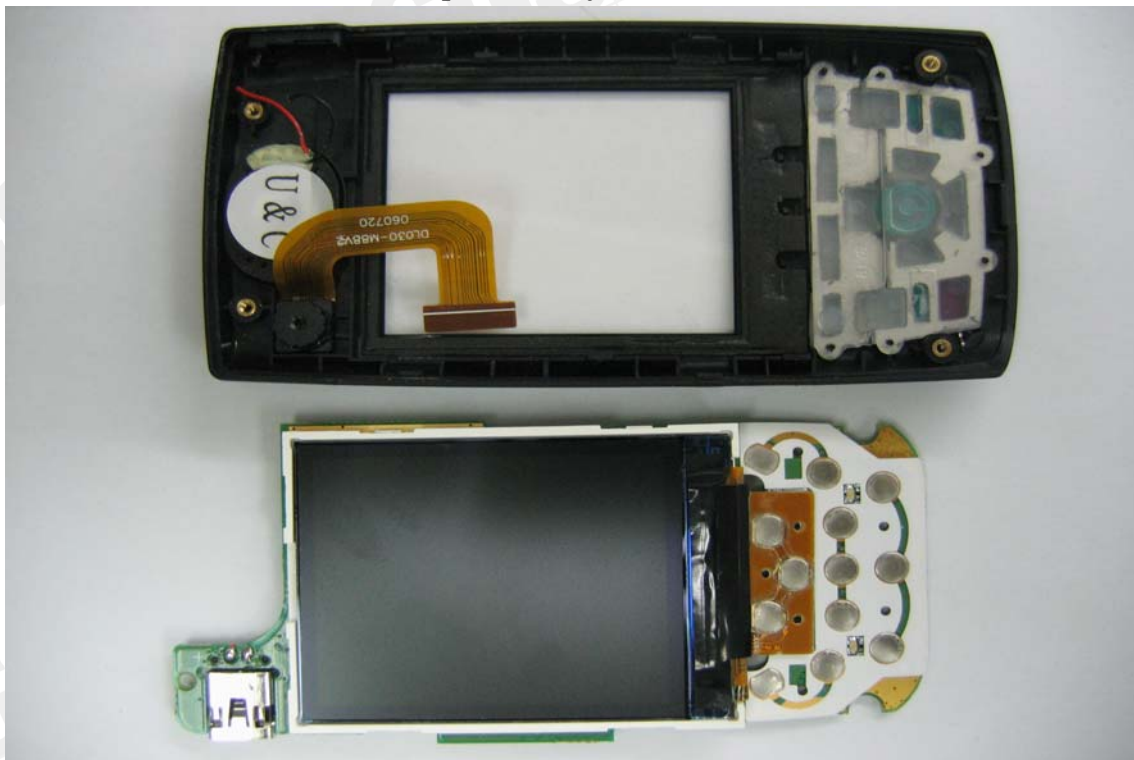


*Open View of EUT – 3*



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## Open View of EUT – 4

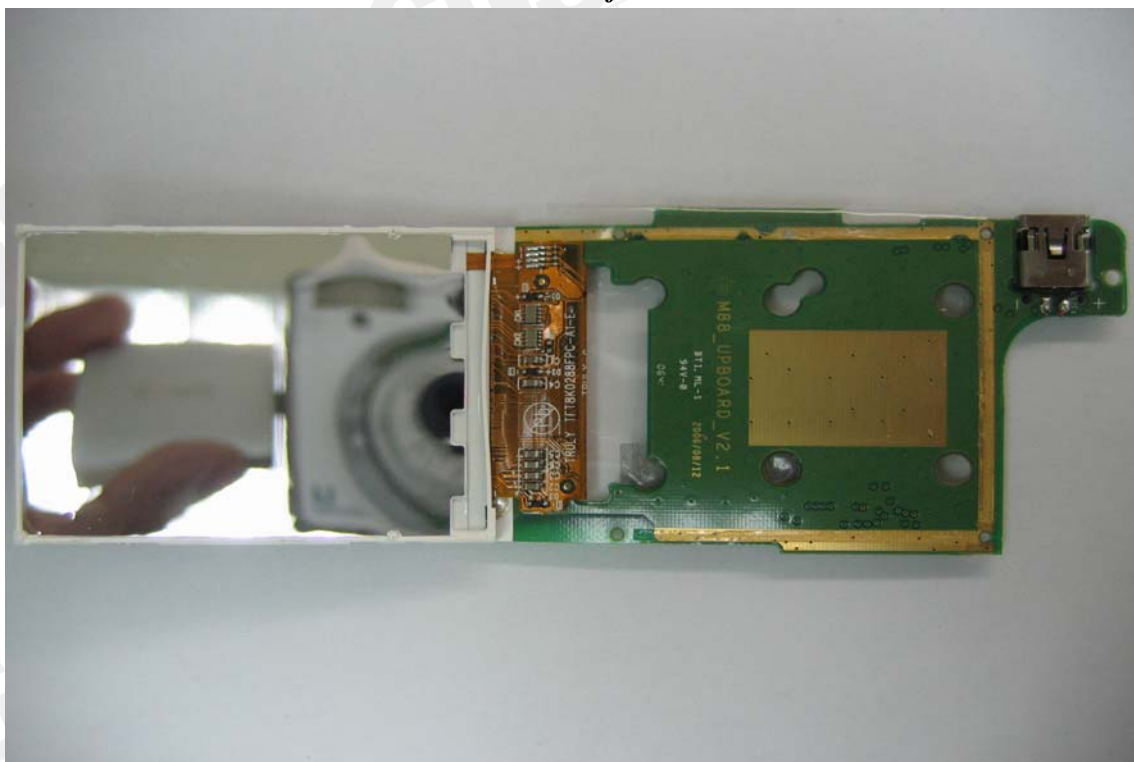


## Internal View of EUT – 8



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*Internal View of EUT – 9*

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