ELECTROMAGNETIC EMISSIONS COMPLIANCE REPORT

INTENTIONAL RADIATOR CERTIFICATION TO FCC PART 24 SUBPART E REQUIREMENT AND INDUSTRY CANADA RSS-133

OF

Product Name:	**SEKITO**
Brand Name:	**FOMA N600i**
Model Name:	**FOMA N600i**
FCC ID:	**A98-FOMA-N600I**
IC:	**140K-N600I**
Report No.:	**EH/2005/A0005~6**
Issue Date:	**Dec. 23, 2005**
Rule Part:	**2 & 24E/ RSS 133, Issue 3**
Prepared for	**NEC America Inc** **Wireless Engineering Division** **6535 N. State Highway 161** **Irving, TX 75039, United States**
Prepared by	**SGS Taiwan Ltd.** **No. 134, Wu Kung Rd., Wuku Industrial Zone, Taipei County, Taiwan.**

VERIFICATION OF COMPLIANCE

Applicant:	NEC America Inc Wireless Engineering Division 6535 N. State Highway 161 Irving, TX 75039, United States
Equipment Under Test:	SEKITO
FCC ID Number:	A98-FOMA-N600I
IC Number:	140K-N600I
Brand Name:	FOMA N600i
Model No.:	FOMA N600i
Model Difference:	N/A
File Number:	EH/2005/A0005~6
Date of test:	Oct. 18, 2005 ~ Nov. 01, 2005
Date of EUT Received:	Oct. 15, 2005

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 and Issue 3 of RSS-133.

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

Test By:	Willis Chen	***Date***	Dec. 23, 2005
	Willis Chen		
Prepared By:	Gigi yeh	***Date***	Dec. 23, 2005
	Gigi Yeh		
Approved By	Vincent Su	***Date***	Dec. 23, 2005
	Vincent Su		

Version

Version No.	Date
00	Nov. 22, 2005
01	Dec. 23, 2005

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1. GENERAL INFORMATION

1.1 Product Description

Product	SEKITO	
Model Name	FOMA N600i	
Model Difference:	N/A	
Trade Name	FOMA N600i	
Cellular Phone Standards	GSM 900, 1800,1900 and WCDMA Band I Mobile Phone	
Frequency Range and Power	GSM 900, TX: 890.2 MHz – 914.8MHz	33 dBm
	GSM 1800, TX:1710.2MHz-1784.8MHz	30 dBm
	GSM 1900, TX: 1850.2MHz –1909.8MHz	30 dBm
	WCDMA Band I: TX:1920MHz - 1980MHz	24 dBm
Hardware Version	EP1.5/EP2.2	
Software Version	0A00/0D00	
Power Supply	3.8 Vdc re-chargeable battery or 5Vdc by AC/DC power adapter	
	Model	N/A

1.2 Related Submittal(s) / Grant (s)

This submittal(s) (test report) is intended for FCC ID:**A98-FOMA-N600I** filing to comply with Section Part 24 subpart E of the FCC CFR 47 Rules and IC:**140K-N600I** filing to comply with issue 3 of RSS-133.

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 CNLA(0513) and NVLAP (200704-0).

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

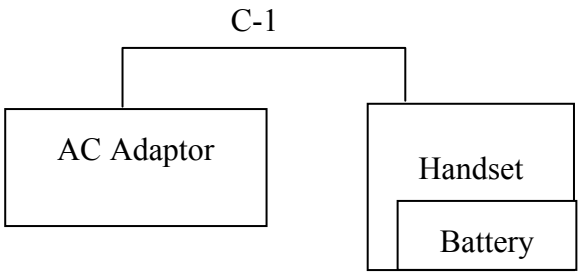


Table 2-1 Equipment Used in Tested System

Item	Equipment	Mfr/Brand	Model/Type No.	Series No.	Data Cable	Power Cord
1.	Handset	NEC	FOMA N600i	004400014985913	N/A	N/A
2.	Battery	DoCoMo	N12	TS018-BT020	N/A	N/A
3.	AC Adaptor	NEC	MAY-BH0008-D001	OFA01068S1	N/A	1.8m, Un-shielded
4.						

3. SUMMARY OF TEST RESULTS

FCC/IC Rules	Description Of Test	Result
§2.1046 §6.4 (RSS-133)	RF Power Output	Compliant
§2.1046 §24.232(a) §6.4(RSS-133)	EIRP measurement	Compliant
§2.1049	Occupied Bandwidth	No Limit
§2.1051 §24.238(a) §6.5(RSS-133)	Out of Band Emissions at Antenna Terminals	Compliant
§2.1053 §24.238(a) §6.5(RSS-133)	Field Strength of Spurious Radiation(TX)	Compliant
§2.1055, §24.235 §6.3(RSS-133)	Frequency Stability vs. Temperature	Compliant
§2.1055, §24.235 §6.3(RSS-133)	Frequency Stability vs. Voltage	Compliant
§6.7(RSS-133)	Receiver Spurious Emissions	Compliant
§15.107;§15.207	AC Power Line Conducted Emission	Compliant

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 and band with rated data rate are 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 both GSM and GPRS six modes. The worst-case E2 mode for channel Low, Mid and High at GSM mode was reported.

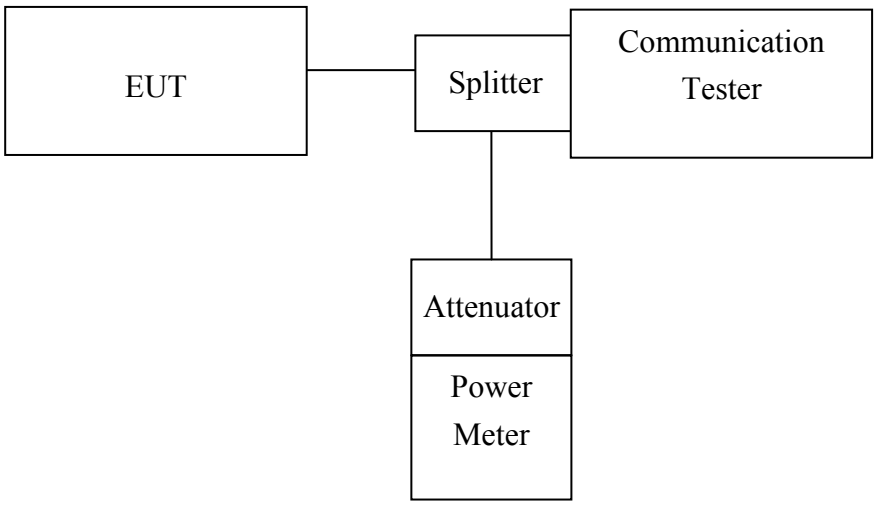
The worst case of RX spurious emission of channel mid was reported.

RF POWER OUTPUT MEASUREMENT

4.1 Standard Applicable

According to FCC §2.1046.

4.2 Test Set-up:



Note: *Measurement setup for testing on Antenna connector*

4.3 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.

4.4 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2005	10/13/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2005	09/22/2006
Splitter	Agilent	11636B	51728	09/23/2005	09/22/2006
AC Power Supply	APW-105N	887592	All Power	12/15/2004	12/14/2005

4.5 Measurement Result

Frequency (MHz)	CH	Power Meter Reading (dBm)	Offset (dB)	Average Power (dBm)
1850.20	512	2.33	27.00	29.33
1880.00	661	2.32	27.00	29.32
1909.80	810	2.05	27.00	29.05

5. ERP, EIRP MEASUREMENT

5.1 Standard Applicable

According to FCC §2.1046

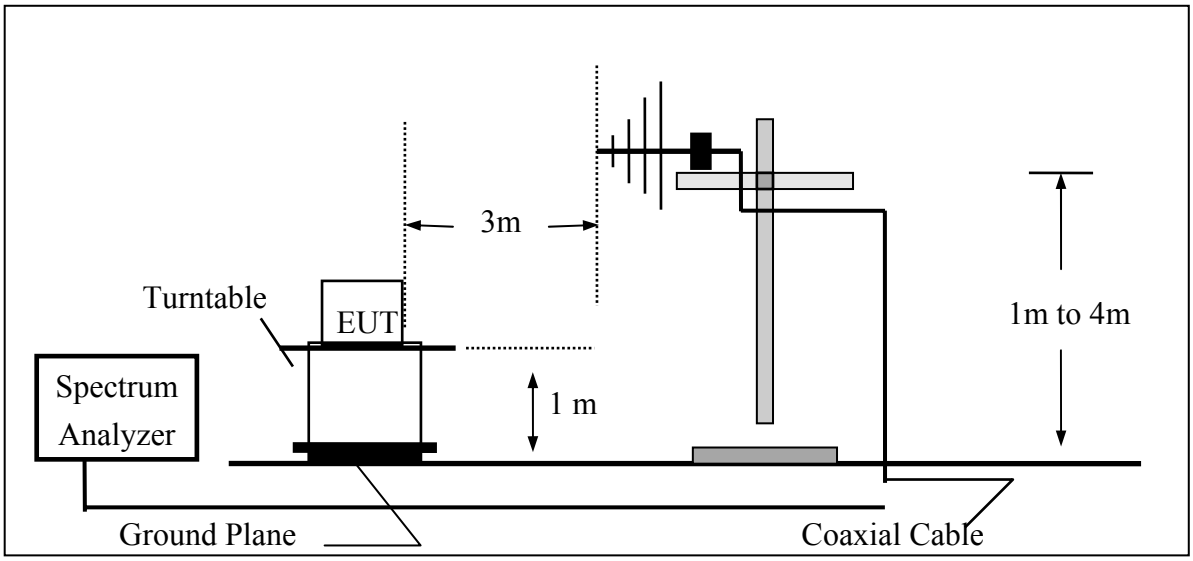
FCC 24.232(b) Mobile station are limited to 2W EIRP.

According to IC RSS-133 §6.4

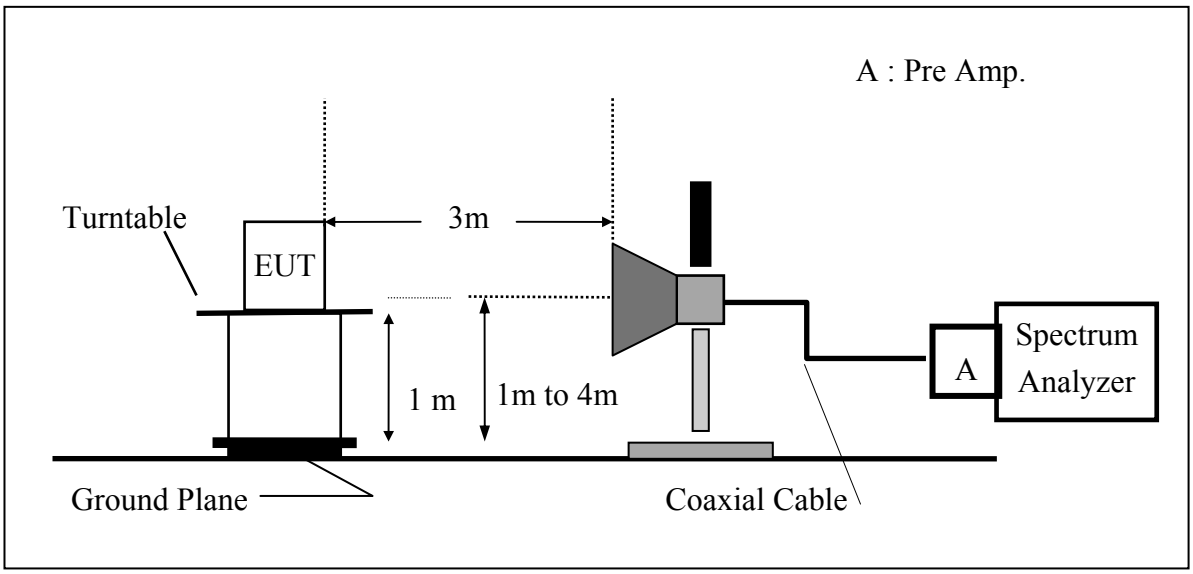
The peak e.i.r.p. for transmitters operating in the band 1850-1910 MHz shall not exceed the limits 2W which given in SRSP-510.

5.2 Test SET-UP (Block Diagram of Configuration)

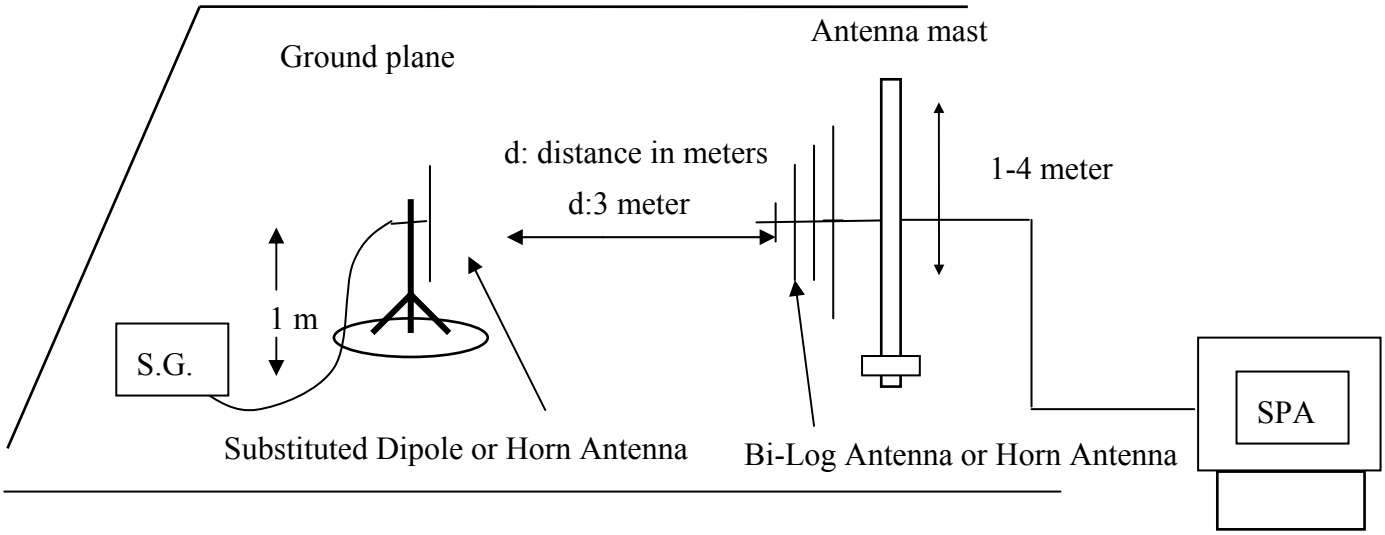
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



(C) Substituted Method Test Set-UP



5.3 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 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 or horn antenna connected, the S.G. output was recorded and EIRP was calculated as follows:

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

5.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2005	06/02/2006
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2005	08/15/2006
Pre-Amplifier	HP	8447D	2944A09469	07/19/2005	07/18/2006
Pre-Amplifier	HP	8494B	3008A00578	02/26/2005	02/25/2006
Signal Generator	R&S	SMR40	100210	02/09/2005	02/10/2006
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	10/09/2005	10/08/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2005	10/08/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2005	10/08/2006
Site NSA	SGS	966 chamber	N/A	11/17/2005	11/16/2006
Site NSA	SGS	10m Open-Site	N/A	11/17/2005	11/16/2006
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2004	06/11/2006
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2004	06/11/2006
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2004	08/15/2006

5.5 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	123.01	16.05	9.90	5.41	20.54	33.00
				H	126.32	19.43	9.90	5.41	23.92	33.00
			E1	V	129.20	22.24	9.90	5.41	26.73	33.00
				H	122.36	15.47	9.90	5.41	19.96	33.00
			E2	V	123.60	16.64	9.90	5.41	21.13	33.00
				H	128.98	22.09	9.90	5.84	26.15	33.00
	1880.00	661	H	V	121.01	14.06	9.99	5.46	18.59	33.00
				H	129.44	22.57	9.99	5.46	27.10	33.00
			E1	V	129.62	22.67	9.99	5.46	27.20	33.00
				H	123.76	16.89	9.99	5.46	21.42	33.00
			E2	V	129.62	22.67	9.99	5.46	27.20	33.00
				H	129.72	22.85	9.99	5.46	27.38	33.00
	1909.80	810	H	V	120.79	13.85	10.08	5.51	18.42	33.00
				H	128.70	21.85	10.08	5.51	26.41	33.00
			E1	V	128.65	21.71	10.08	5.51	26.28	33.00
				H	126.24	19.39	10.08	5.51	23.95	33.00
			E2	V	123.10	16.16	10.08	5.51	20.73	33.00
				H	124.05	21.30	10.08	5.51	25.86	33.00

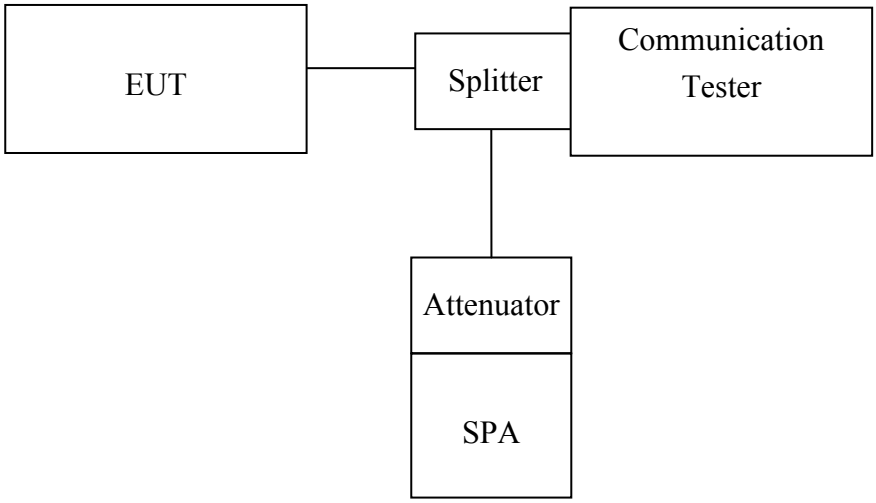
6. 99% OCCUPIED BANDWIDTH MEASUREMENT

6.1 Standard Applicable

According to FCC§2.1049.

According to IC RSS-133 §2.6

6.2 Test Set-up:



Note: *Measurement setup for testing on Antenna connector*

6.3 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.

6.4 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2005	06/29/2006

Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2005	10/13/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2005	09/22/2006
Splitter	Agilent	11636B	51728	09/23/2005	09/22/2006
AC Power Supply	APW-105N	887592	All Power	12/15/2004	12/14/2005

6.5 Measurement Result:

EUT Mode	Frequency (MHz)	CH	99% Bandwidth (MHz)
PCS 1900	1850.20	512	0.2443
	1880.00	661	0.2457
	1909.80	810	0.2490

Figure 7-1: PCS Channel Low

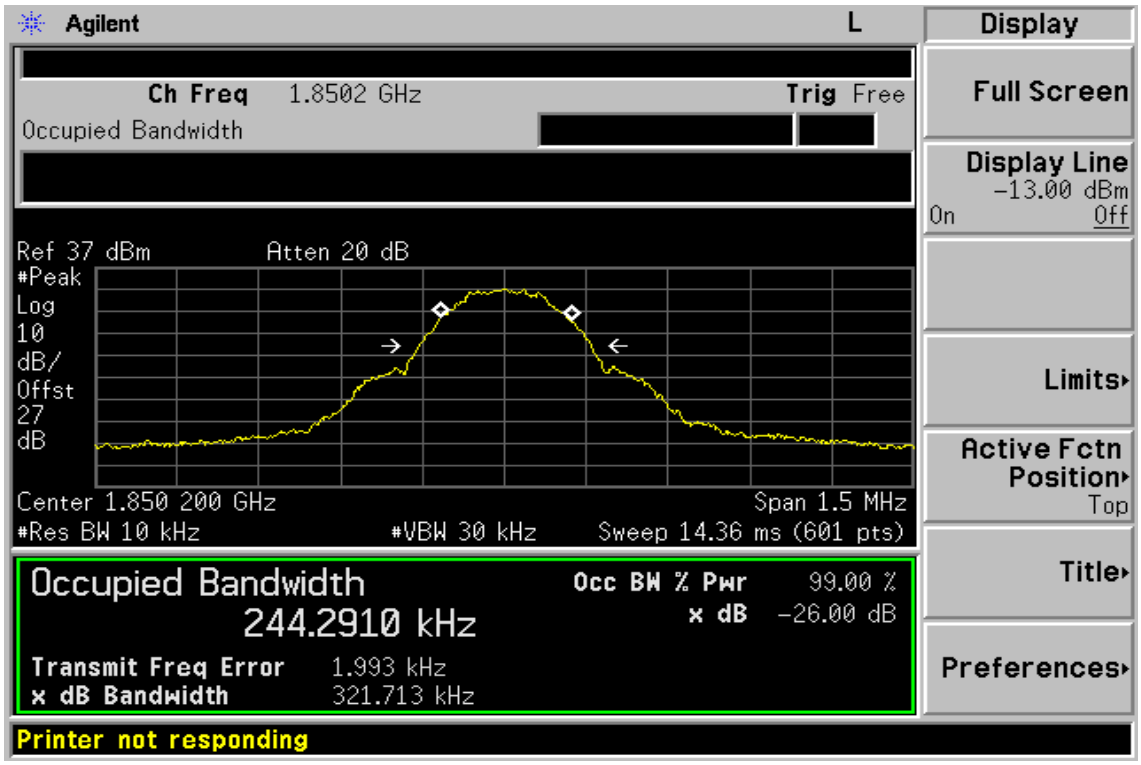


Figure 7-2 PCS Channel Mid

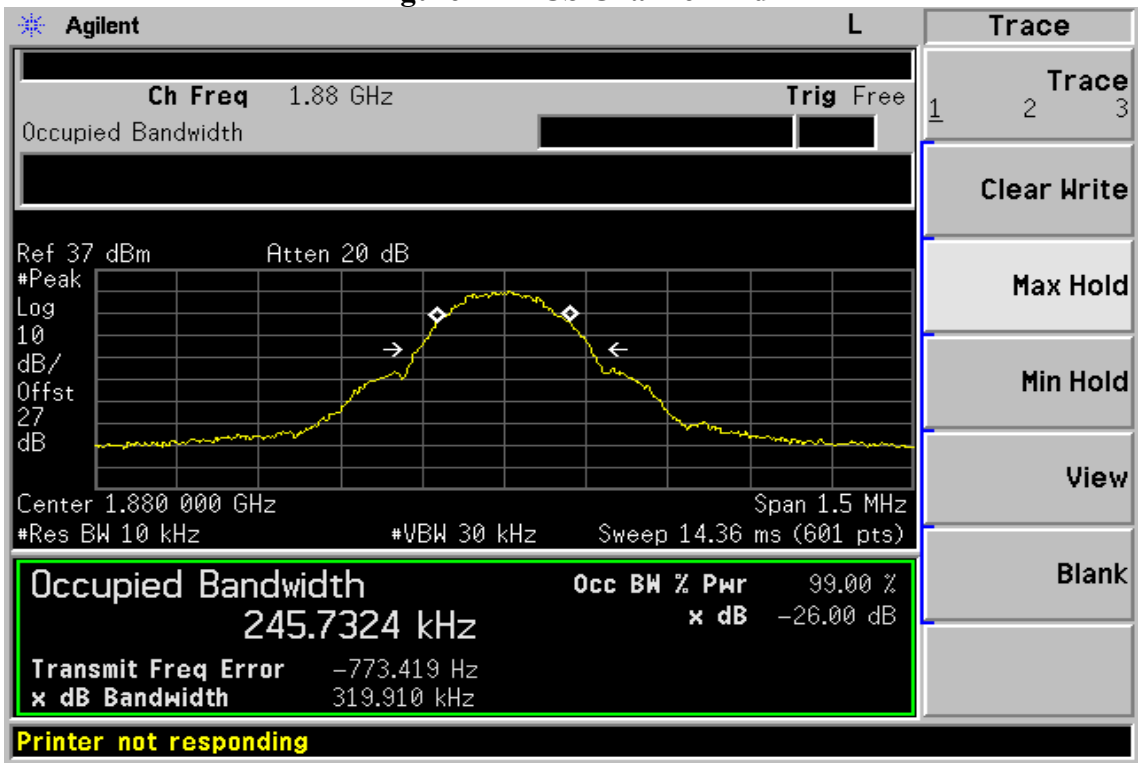
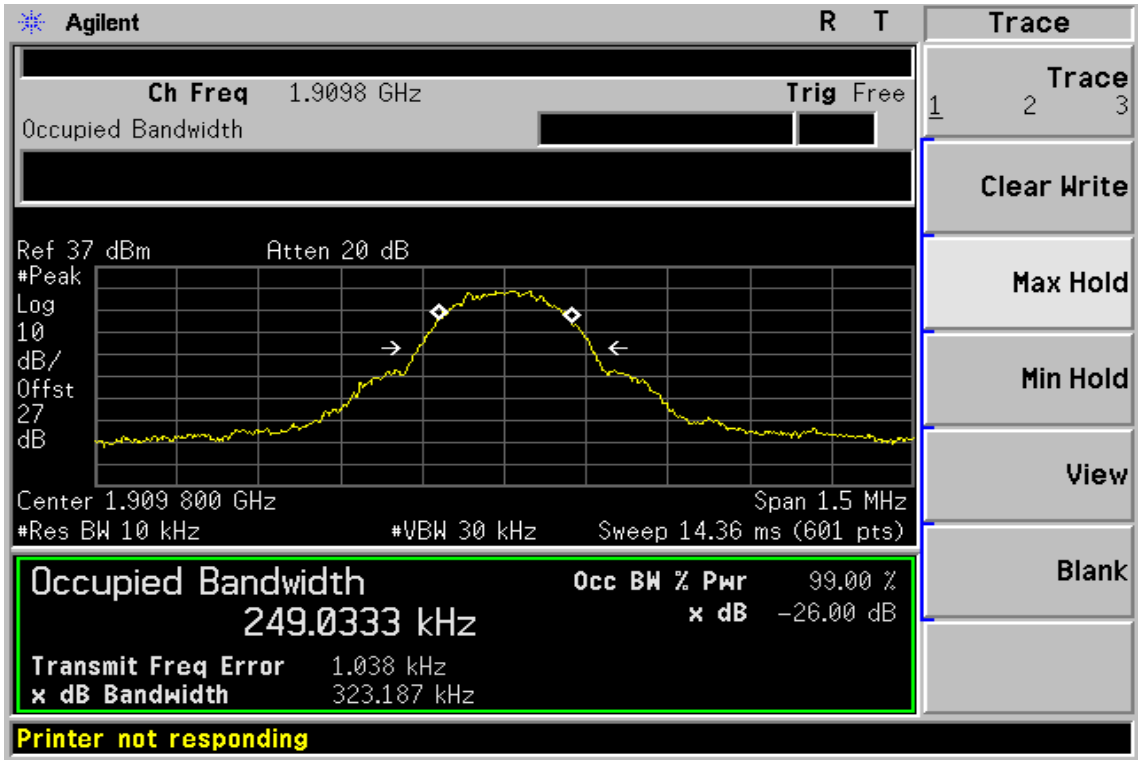


Figure 7-3: PCS Channel High



7. OUT OF BAND EMISSION AT ANTENNA TERMINALS(TX)

7.1 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.

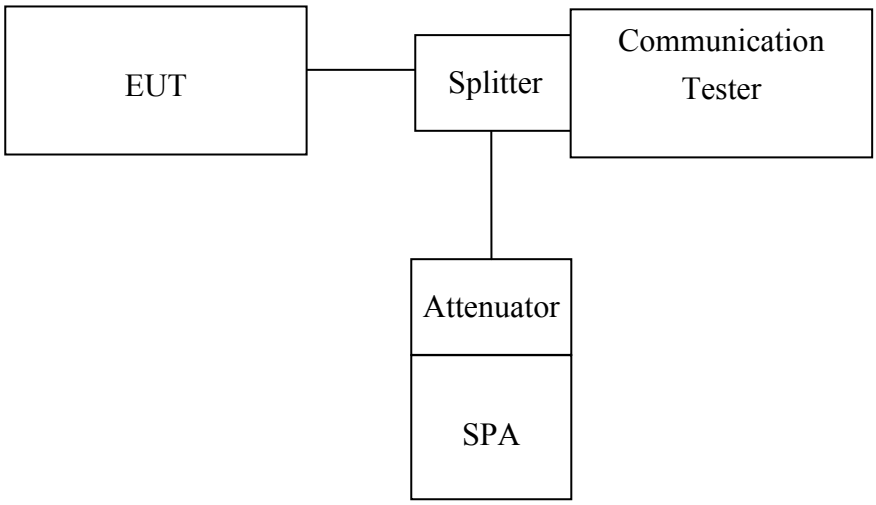
b. After the first 1.0 MHz (for equipment that complies with a.i. of this subsection) or 1.5 MHz (for equipment that complies with a.ii.of this subsection), the power of emissions shall be attenuated below the transmitter output power by at least 43 + 10 log (P), dB, per any MHz of bandwidth.

(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.

7.2 Test SET-UP



Note: *Measurement setup for testing on Antenna connector*

7.3 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.

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	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2005	10/13/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2005	09/22/2006
Splitter	Agilent	11636B	51728	09/23/2005	09/22/2006
AC Power Supply	APW-105N	887592	All Power	12/15/2004	12/14/2005

7.5 Measurement Result

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

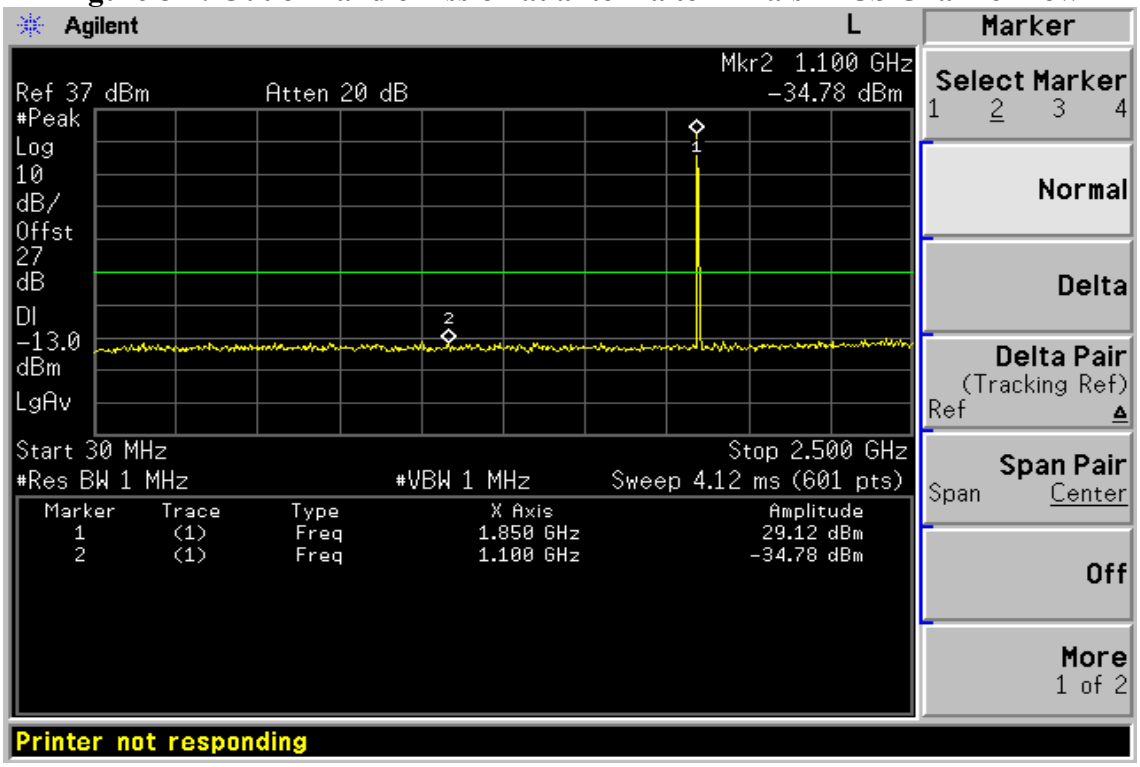


Figure 8-2: Out of Band emission at antenna terminals–PCS Channel Low

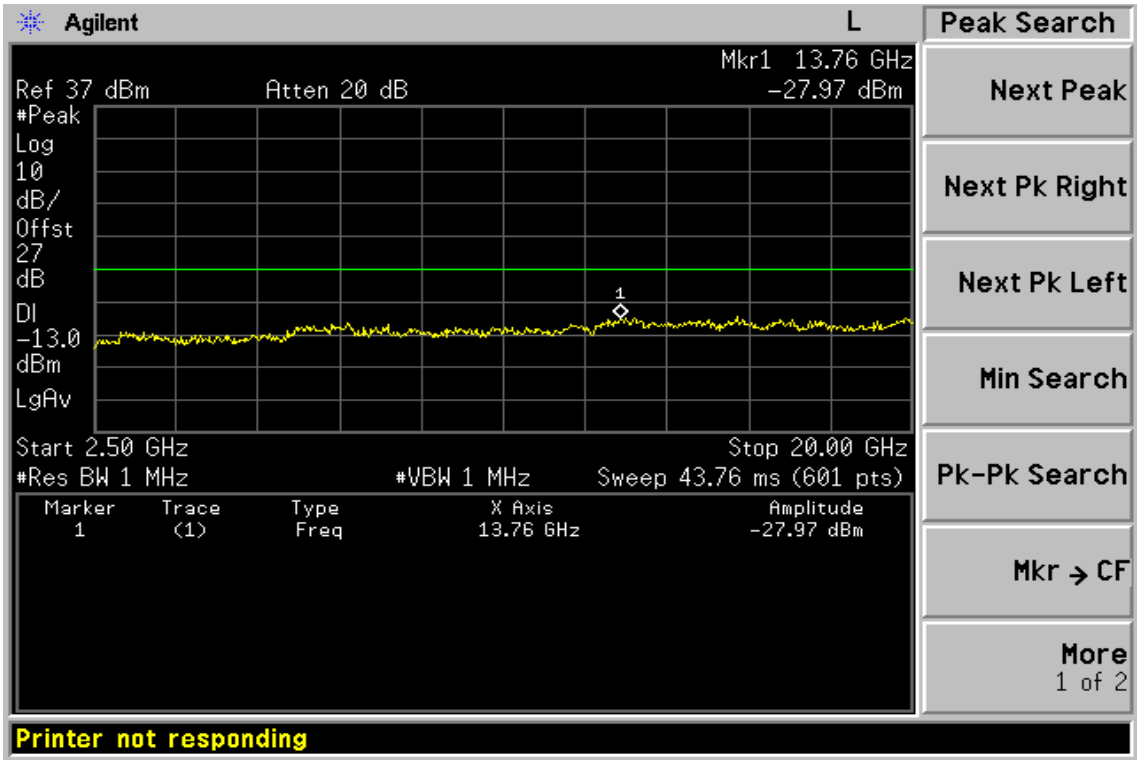


Figure 8-3: Out of Band emission at antenna terminals –PCS Channel Mid

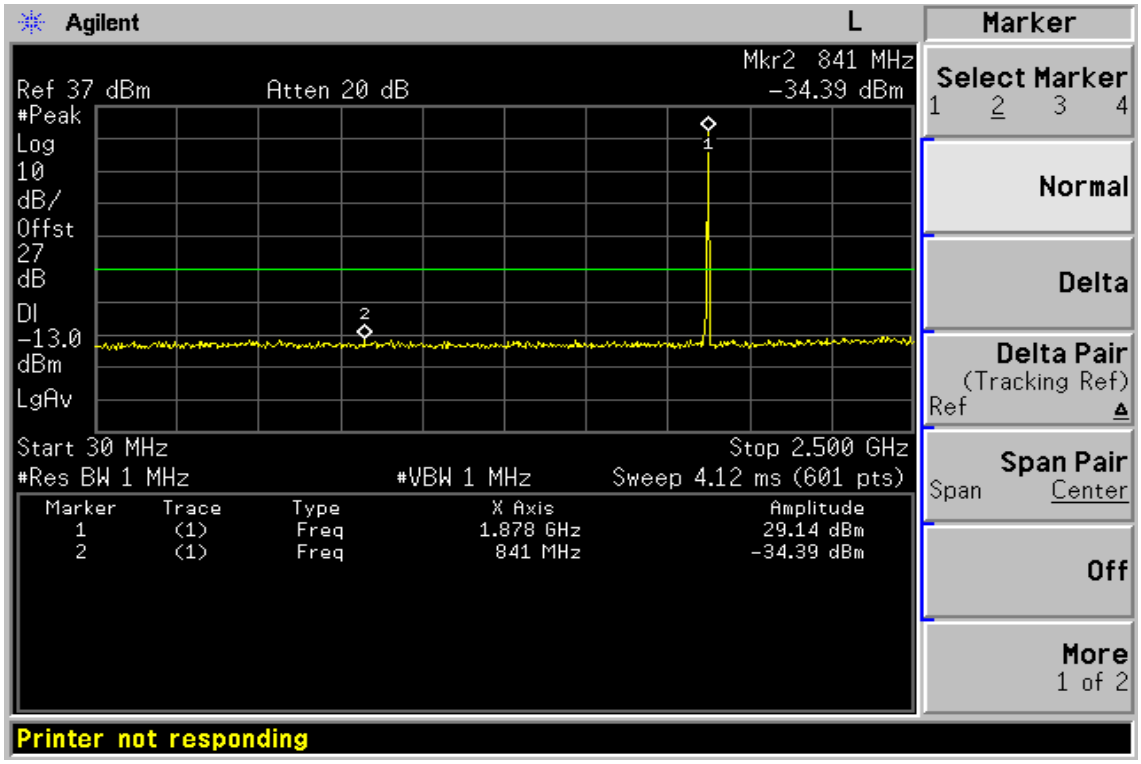


Figure 8-4: Out of Band emission at antenna terminals –PCS Channel Mid

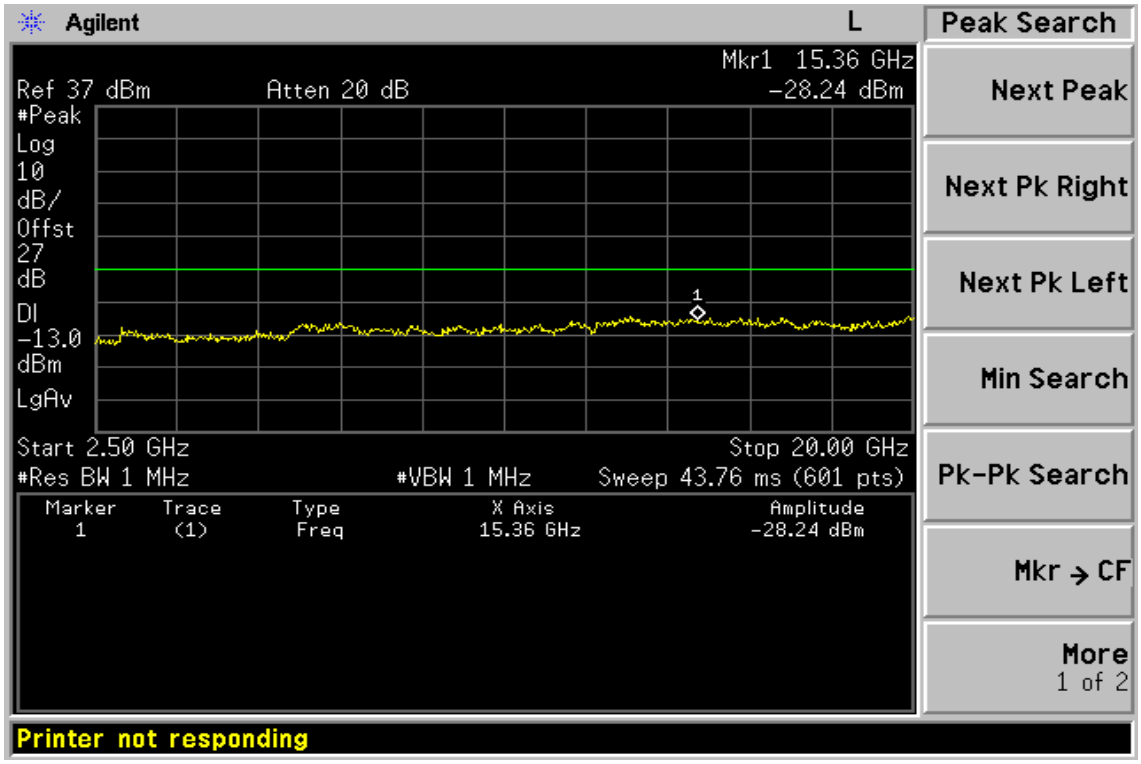


Figure 8-5: Out of Band emission at antenna terminals–PCS Channel High

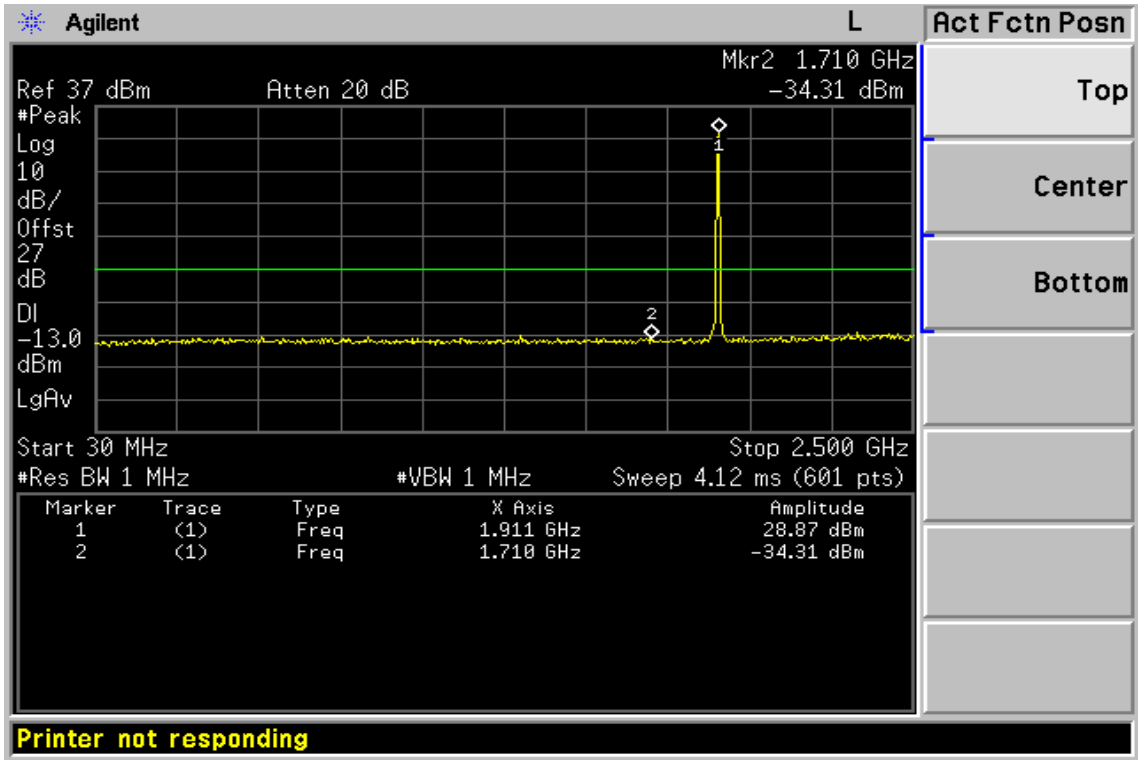


Figure 8-6: Out of Band emission at antenna terminals– PCS Channel High

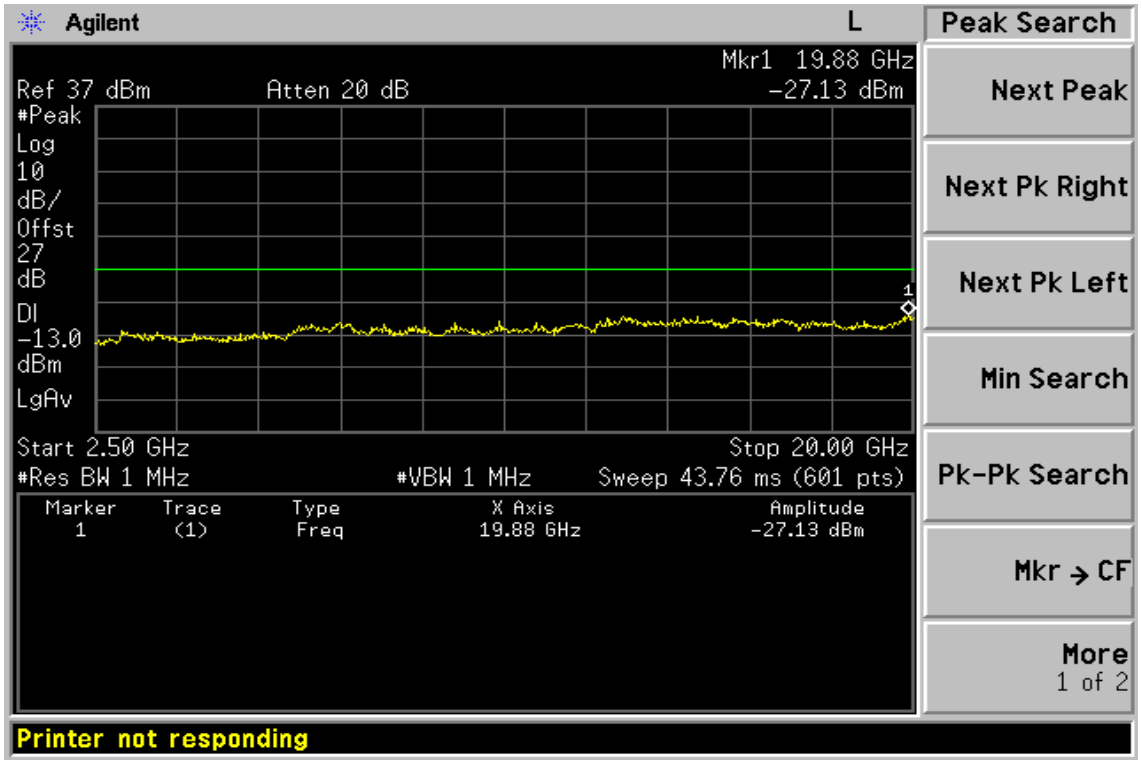


Figure 8-7: Bad edge emission at antenna terminals – PCS CH 512

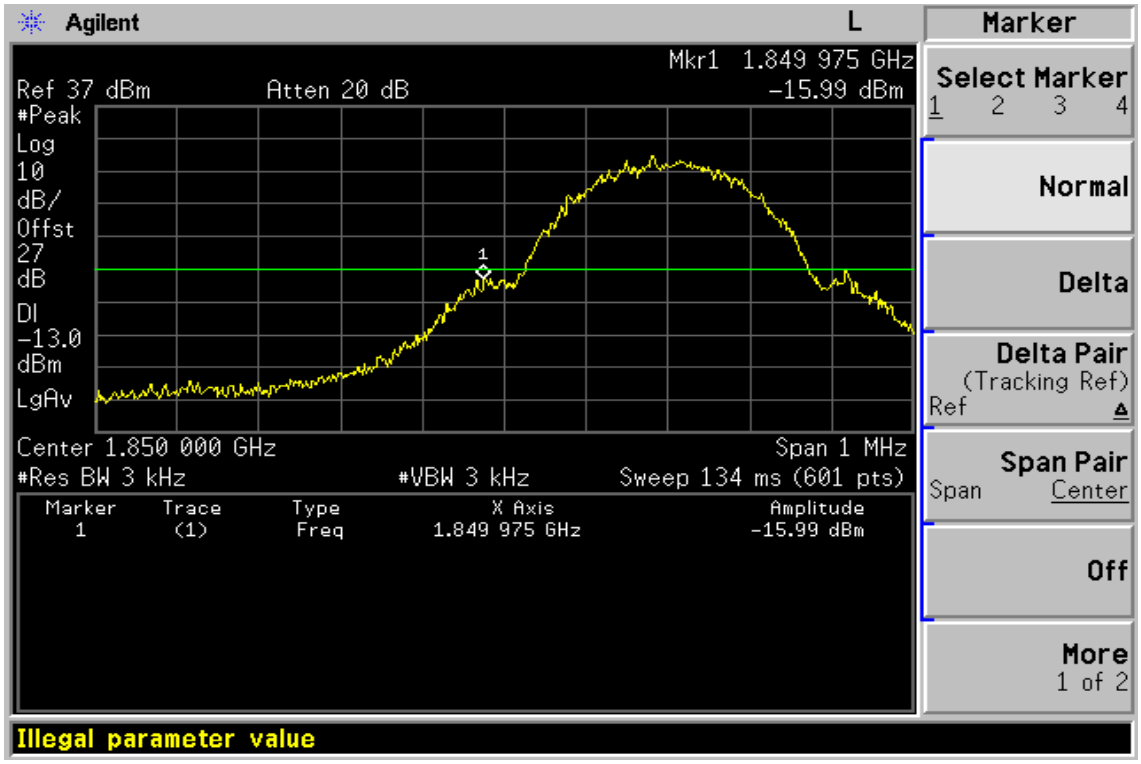
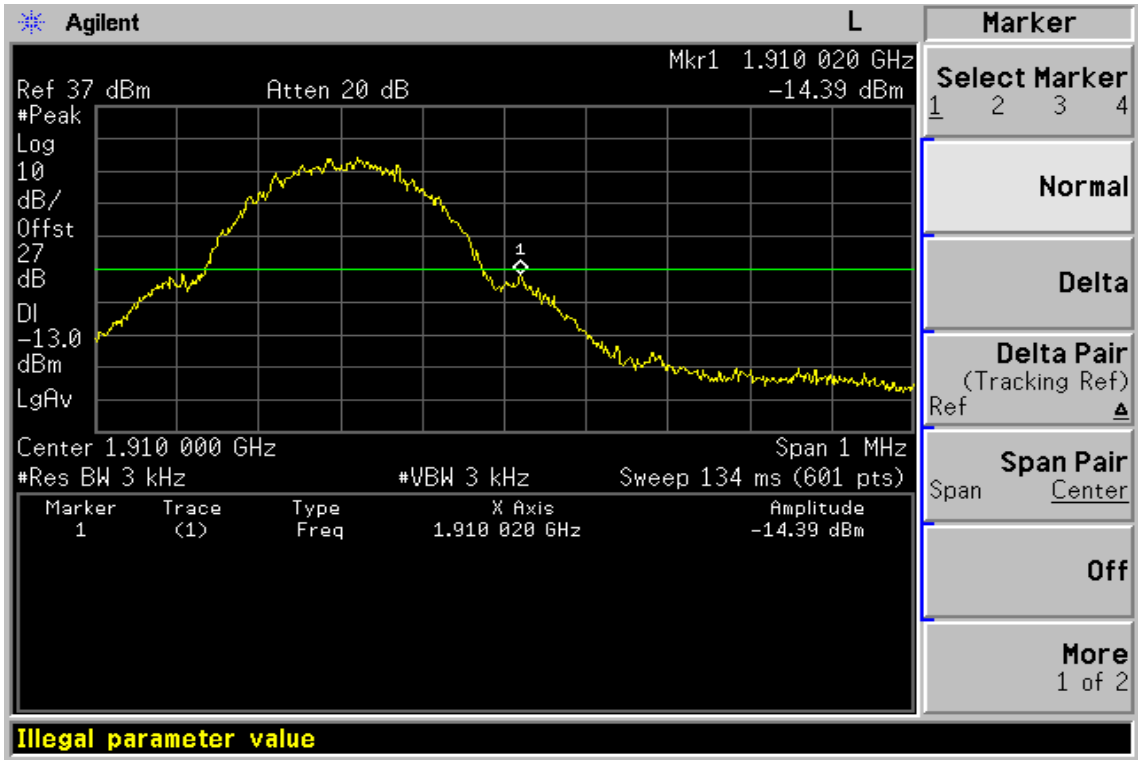


Figure 8-8: Band edge emission at antenna terminals – PCS CH 810



8. FIELD STRENGTH OF SPURIOUS RADIATION MEASUREMENT(TX)

8.1 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.

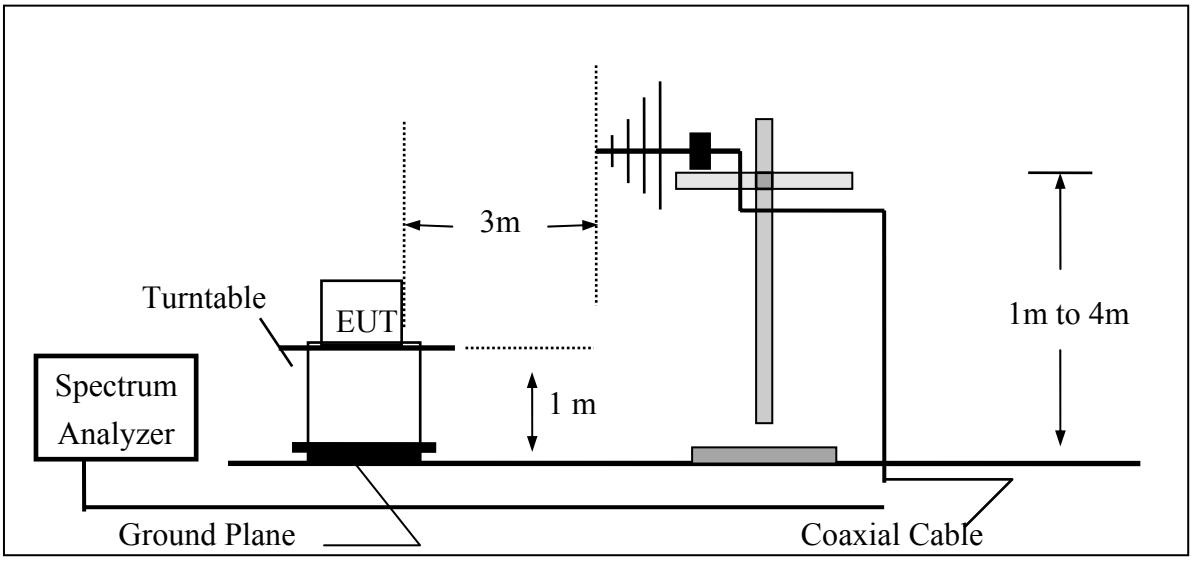
(Note: If the test result using 1% of the emission bandwidth is used, then power integration over 1.0 MHz is required; alternatively, the spectrum analyser resolution and video bandwidths can be increased to 1.0 MHz for this measurement).

6.5.2 Out-of-Sub-band Emissions

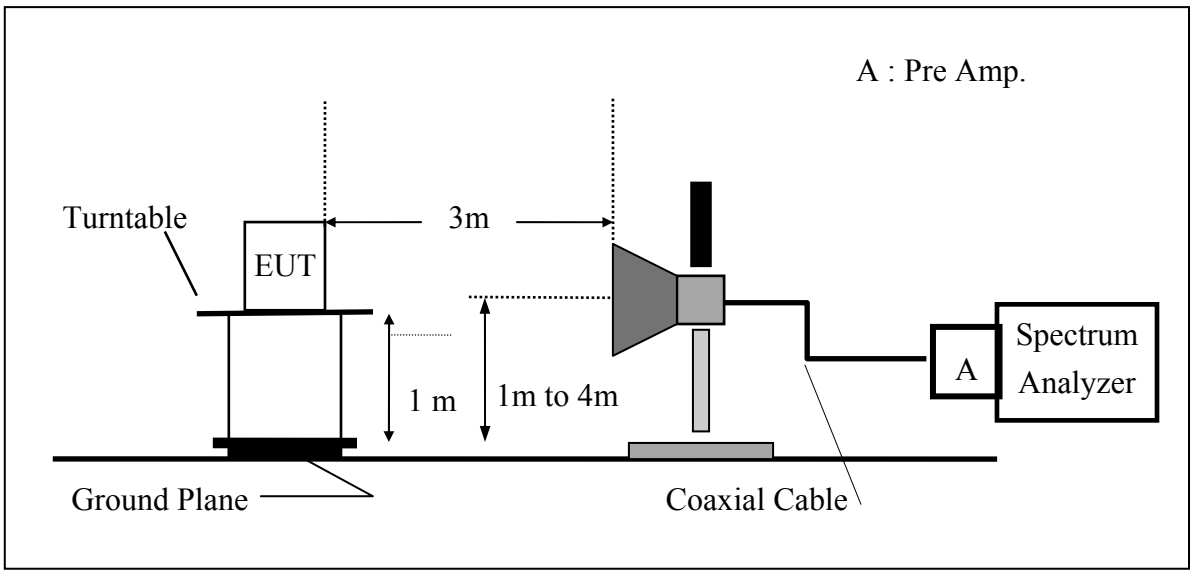
Outside the sub-bands 1850-1910 MHz and 1930-1990 MHz, the attenuation shall be equal to or greater than the out-of-block emission limits in Section 6.5.1.

8.2 EUT Setup (Block Diagram of Configuration)

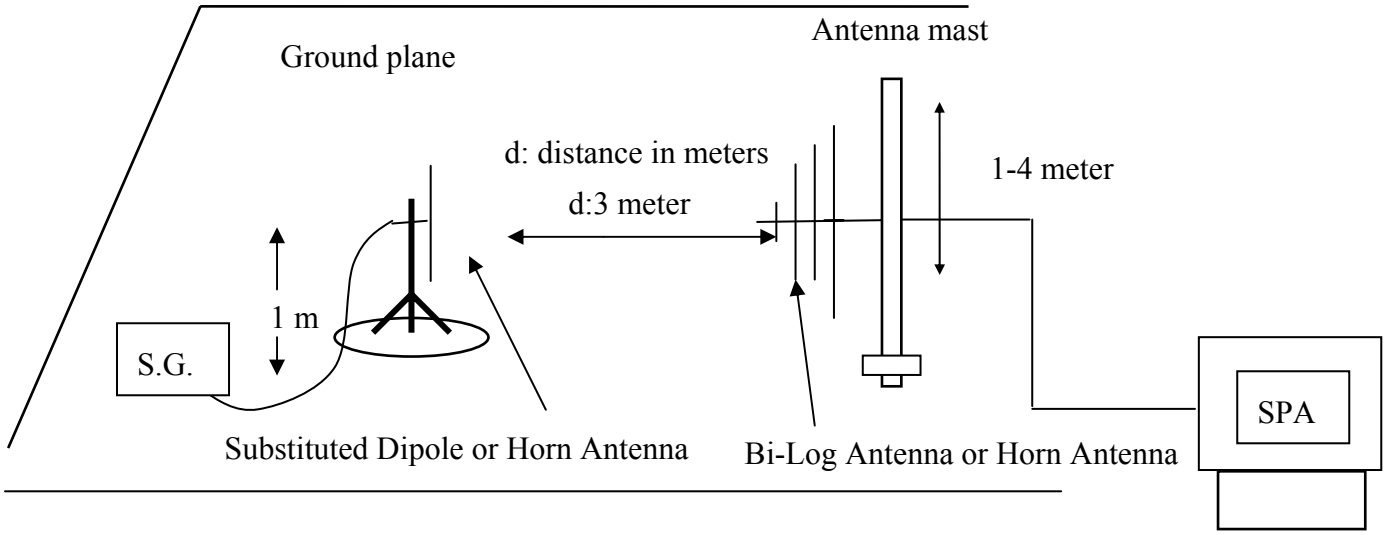
(A) Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



(C) Substituted Method Test Set-UP



8.3 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.

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

8.4 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2005	06/02/2006
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2005	08/15/2006
Pre-Amplifier	HP	8447D	2944A09469	07/19/2005	07/18/2006
Pre-Amplifier	HP	8494B	3008A00578	02/26/2005	02/25/2006
Signal Generator	R&S	SMR40	100210	02/09/2005	02/10/2006
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	10/09/2005	10/08/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2005	10/08/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2005	10/08/2006
Site NSA	SGS	966 chamber	N/A	11/17/2005	11/16/2006
Site NSA	SGS	10m Open-Site	N/A	11/17/2005	11/16/2006
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Dipole Antenna	Schwarzbeck	VHAP	908/909	06/10/2004	06/11/2006
Dipole Antenna	Schwarzbeck	UHAP	891/892	06/10/2004	06/11/2006
Horn antenna	Schwarzbeck	BBHA 9120D	N/A	08/16/2004	08/15/2006

8.5 Measurement Result

Refer to attach tabular data sheets.

Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Low E2 Mode
Fundamental Frequency : 1850.20MHz
Temperature : 25℃
Humidity : 65%

Test Date : Oct. 19, 2005
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)
67.83	43.21	V	-68.48	-0.95	1.00	-70.42	-13.00	-57.42
153.19	34.69	V	-63.21	-7.80	1.47	-72.48	-13.00	-59.48
322.94	35.06	V	-63.77	-7.79	2.21	-73.77	-13.00	-60.77
1588.00	60.91	V	-46.15	9.11	4.95	-42.00	-13.00	-29.00
1849.98	83.10	V	-23.86	9.90	5.41	-19.37	-13.00	-6.37
2414.00	59.62	V	-44.80	10.11	6.22	-40.91	-13.00	-27.91
3128.00	57.30	V	-45.35	11.80	7.13	-40.68	-13.00	-27.68
3688.00	58.10	V	-43.54	12.61	7.71	-38.64	-13.00	-25.64
5543.00	60.74	V	-34.49	13.21	9.68	-30.95	-13.00	-17.95
7398.00	61.64	V	-24.36	11.50	11.28	-24.14	-13.00	-11.14
9251.00	--	V	--	--	--	--	-13.00	--
11101.20	--	V	--	--	--	--	-13.00	--
12951.40	--	V	--	--	--	--	-13.00	--
14801.60	--	V	--	--	--	--	-13.00	--
16651.80	--	V	--	--	--	--	-13.00	--
18502.00	--	V	--	--	--	--	-13.00	--

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 (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Low E2 Mode
Fundamental Frequency : 1850.20MHz
Temperature : 25℃
Humidity : 65%

Test Date : Oct. 19, 2005
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)
67.83	45.56	H	-66.50	-0.95	1.00	-68.44	-13.00	-55.44
182.29	34.92	H	-65.74	-7.83	1.53	-75.09	-13.00	-62.09
293.84	34.43	H	-65.34	-7.92	1.99	-75.24	-13.00	-62.24
1850.00	77.11	H	-29.78	9.90	5.41	-25.29	-13.00	-12.29
2953.00	57.11	H	-45.61	11.38	6.96	-41.19	-13.00	-28.19
3688.00	56.96	H	-44.45	12.61	7.71	-39.55	-13.00	-26.55
5543.00	56.18	H	-38.97	13.21	9.68	-35.43	-13.00	-22.43
7398.00	59.81	H	-26.26	11.50	11.28	-26.04	-13.00	-13.04
9251.00	--	H	--	--	--	--	-13.00	--
11101.20	--	H	--	--	--	--	-13.00	--
12951.40	--	H	--	--	--	--	-13.00	--
14801.60	--	H	--	--	--	--	-13.00	--
16651.80	--	H	--	--	--	--	-13.00	--
18502.00	--	H	--	--	--	--	-13.00	--

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 (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Mid E2 Mode
Fundamental Frequency : 1880MHz
Temperature : 25℃
Humidity : 65%

Test Date : Oct. 19, 2005
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)
53.28	41.11	V	-67.30	-0.55	0.92	-68.77	-13.00	-55.77
153.19	34.69	V	-63.21	-7.80	1.47	-72.48	-13.00	-59.48
322.94	35.06	V	-63.77	-7.79	2.21	-73.77	-13.00	-60.77
3009.00	57.86	V	-44.84	11.54	7.04	-40.33	-13.00	-27.33
3128.00	58.32	V	-44.33	11.80	7.13	-39.66	-13.00	-26.66
3758.00	64.94	V	-36.37	12.60	7.82	-31.59	-13.00	-18.59
5634.00	61.66	V	-33.31	13.35	9.73	-29.69	-13.00	-16.69
7524.00	58.03	V	-27.57	11.45	11.34	-27.46	-13.00	-14.46
9400.00	--	V	--	--	--	--	-13.00	--
11280.00	--	V	--	--	--	--	-13.00	--
13160.00	--	V	--	--	--	--	-13.00	--
15040.00	--	V	--	--	--	--	-13.00	--
16920.00	--	V	--	--	--	--	-13.00	--
18800.00	--	V	--	--	--	--	-13.00	--

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 (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result

Operation Mode : TX CH Mid E2 Mode
Fundamental Frequency : 1880MHz
Temperature : 25℃
Humidity : 65%

Test Date : Oct. 19, 2005
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)
43.58	43.27	H	-61.07	-1.92	0.83	-63.81	-13.00	-50.81
67.83	45.83	H	-66.23	-0.95	1.00	-68.17	-13.00	-55.17
182.29	35.11	H	-65.55	-7.83	1.53	-74.90	-13.00	-61.90
324.88	35.02	H	-63.38	-7.78	2.23	-73.39	-13.00	-60.39
1588.00	56.39	H	-50.66	9.11	4.95	-46.50	-13.00	-33.50
3009.00	58.04	H	-44.55	11.54	7.04	-40.05	-13.00	-27.05
3758.00	60.99	H	-40.13	12.60	7.82	-35.34	-13.00	-22.34
5634.00	59.63	H	-35.28	13.35	9.73	-31.65	-13.00	-18.65
7524.00	54.61	H	-31.07	11.45	11.34	-30.96	-13.00	-17.96
9400.00	--	H	--	--	--	--	-13.00	--
11280.00	--	H	--	--	--	--	-13.00	--
13160.00	--	H	--	--	--	--	-13.00	--
15040.00	--	H	--	--	--	--	-13.00	--
16920.00	--	H	--	--	--	--	-13.00	--
18800.00	--	H	--	--	--	--	-13.00	--

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 (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result

Operation Mode : TX CH High E2 Mode
Fundamental Frequency : 1909.8 MHz
Temperature : 25℃
Humidity : 65%

Test Date : Oct. 19, 2005
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)
46.49	43.57	V	-61.60	-1.32	0.86	-63.78	-13.00	-50.78
182.29	35.16	V	-65.35	-7.83	1.53	-74.70	-13.00	-61.70
1588.00	64.70	V	-42.36	9.11	4.95	-38.21	-13.00	-25.21
1910.02	83.07	V	-23.87	10.08	5.51	-19.30	-13.00	-6.30
2414.00	57.80	V	-46.62	10.11	6.22	-42.73	-13.00	-29.73
3184.00	58.86	V	-43.77	11.92	7.17	-39.02	-13.00	-26.02
3814.00	65.88	V	-35.18	12.60	7.91	-30.48	-13.00	-17.48
5718.00	63.52	V	-31.22	13.48	9.77	-27.51	-13.00	-14.51
7629.00	53.32	V	-31.88	11.41	11.47	-31.95	-13.00	-18.95
9549.00	--	V	--	--	--	--	-13.00	--
11458.80	--	V	--	--	--	--	-13.00	--
13368.60	--	V	--	--	--	--	-13.00	--
15278.40	--	V	--	--	--	--	-13.00	--
17188.20	--	V	--	--	--	--	-13.00	--
19098.00	--	V	--	--	--	--	-13.00	--

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 (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) – Cable loss (dB)

Radiated Spurious Emission Measurement Result

Operation Mode : TX CH High E2 Mode
Fundamental Frequency : 1909.8 MHz
Temperature : 25℃
Humidity : 65%

Test Date : Oct. 19, 2005
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)
67.83	43.95	H	-68.11	-0.95	1.00	-70.05	-13.00	-57.05
182.29	35.57	H	-65.09	-7.83	1.53	-74.44	-13.00	-61.44
870.99	32.89	H	-53.60	-7.91	3.78	-65.28	-13.00	-52.28
1903.00	60.39	H	-46.47	10.06	5.50	-41.91	-13.00	-28.91
1910.02	77.39	H	-29.46	10.08	5.51	-24.90	-13.00	-11.90
2988.00	55.63	H	-47.00	11.48	7.01	-42.53	-13.00	-29.53
3814.00	59.37	H	-41.51	12.60	7.91	-36.81	-13.00	-23.81
5718.00	58.86	H	-35.82	13.48	9.77	-32.12	-13.00	-19.12
7629.00	53.79	H	-31.53	11.41	11.47	-31.59	-13.00	-18.59
9549.00	--	H	--	--	--	--	-13.00	--
11458.80	--	H	--	--	--	--	-13.00	--
13368.60	--	H	--	--	--	--	-13.00	--
15278.40	--	H	--	--	--	--	-13.00	--
17188.20	--	H	--	--	--	--	-13.00	--
19098.00	--	H	--	--	--	--	-13.00	--

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 (dBm) = SG Setting(dBm) + Antenna Gain (dBd/dBi) – Cable loss (dB)

9. FREQUENCY STABILITY V.S. TEMPERATURE MEASUREMENT

9.1 Standard Applicable

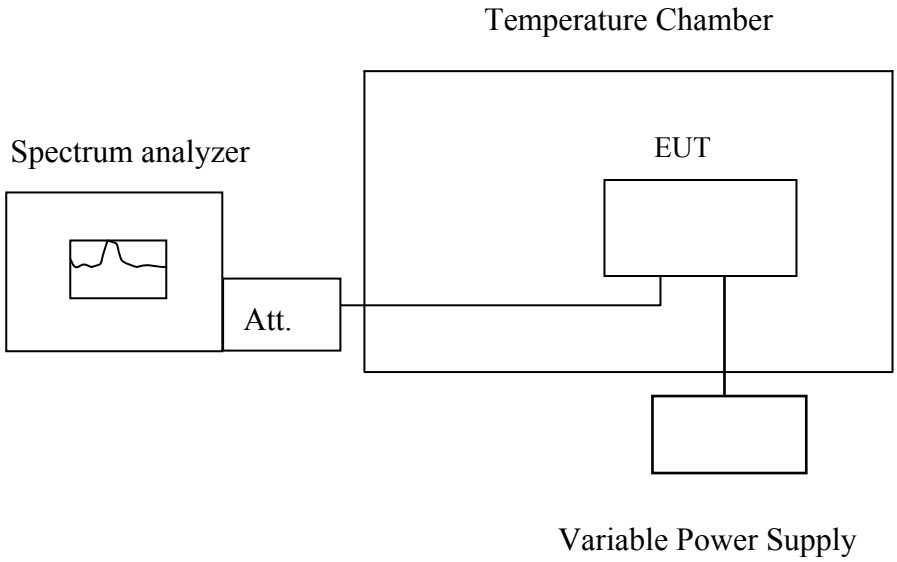
According to FCC §2.1055, FCC §24.235.

Frequency Tolerance: 2.5 ppm

According to RSS-133 §6.3

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

9.2 Test Set-up:



Note : Measurement setup for testing on Antenna connector

9.3 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.

9.4 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2005	10/13/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2005	09/22/2006
Splitter	Agilent	11636B	51728	09/23/2005	09/22/2006
AC Power Supply	APW-105N	887592	All Power	12/15/2004	12/14/2005

9.5 Measurement Result

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)		
3.8	25	1880.06460	20.00	4700
3.8	-30	1880.06472	-100.00	4700
3.8	-20	1880.06471	-90.00	4700
3.8	-10	1880.06458	40.00	4700
3.8	0	1880.06457	50.00	4700
3.8	10	1880.06468	-60.00	4700
3.8	20	1880.06462	0.00	4700
3.8	30	1880.06460	20.00	4700
3.8	40	1880.06459	30.00	4700
3.8	50	1880.06467	-50.00	4700

Note: The battery is rated 3.8V dc.

10. FREQUENCY STABILITY V.S. VOLTAGE MEASUREMENT

10.1 Standard Applicable

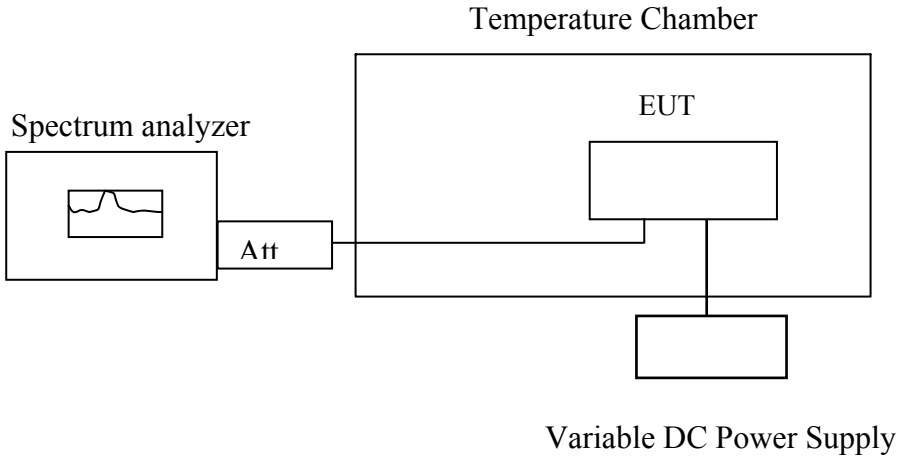
According to FCC §2.1055, FCC §24.235,

Frequency Tolerance: 2.5 ppm

According to RSS-133 §6.3

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

10.2 Test Set-up:



Note: *Measurement setup for testing on Antenna connector*

10.3 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.

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	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	E7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Power Sensor	Anritsu	MA2490A	31431	06/28/2005	06/29/2006
Power Meter	Anritsu	ML2487A	6K00002070	06/28/2005	06/29/2006
Temperature Chamber	TERCHY	MHG-120LF	911009	10/14/2005	10/13/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA	N/A	N/A	N/A
Attenuator	Mini-Circult	BW-S10W5	N/A	09/23/2005	09/22/2006
Attenuator	Mini-Circult	BW-S6W5	N/A	09/23/2005	09/22/2006
Splitter	Agilent	11636B	51728	09/23/2005	09/22/2006
AC Power Supply	APW-105N	887592	All Power	12/15/2004	12/14/2005

10.5 Measurement Result

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)		
4.18	25	1880.06463	-30.00	4700
3.80	25	1880.06460	0.00	4700
3.42	25	1880.06461	-10.00	4700
3.1 (End Point)	25	1880.06472	-120.00	4700

Note: The battery is rated 3.8V dc.

11. AC POWER LINE CONDUCTED EMISSION TEST

11.1 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.		

11.2 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.

11.3 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.

11.4 Measurement Equipment Used:

Conducted Emission Test Site					
EQUIPMENT TYPE	**MFR**	**MODEL NUMBER**	**SERIAL NUMBER**	**LAST CAL.**	**CAL DUE.**
EMC Analyzer	HP	8594EM	3624A00203	09/02/2005	09/03/2006
EMI Test Receiver	R&S	ESCS30	828985/004	06/09/2005	06/10/2006
Transient Limiter	HP	11947A	3107A02062	09/02/2005	09/03/2006
LISN	Rolf-Heine	NNB-2/16Z	99012	12/31/2004	12/30/2005
LISN	Rolf-Heine	NNB-2/16Z	99013	12/24/2004	12/23/2005
Coaxial Cables	N/A	No. 3, 4	N/A	12/24/2004	12/23/2005

11.5 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:	Normal Operating			Test Date :	Oct. 20, 2005
Temperature :	24 ℃	Humidity :	57%	Test By:	Willis

FREQ MHz	Q.P. Raw dBuV	AVG Raw dBuV	Q.P. Limit dBuV	AVG Limit dBuV	Q.P. Margin dB	AVG Margin dB	NOTE
0.165	51.10	31.70	65.21	55.21	-14.11	-23.51	L1
0.425	35.01	---	57.35	47.35	-22.34	---	L1
0.755	35.63	---	56.00	46.00	-20.37	---	L1
1.370	39.99	---	56.00	46.00	-16.01	---	L1
1.865	36.39	---	56.00	46.00	-19.61	---	L1
2.270	35.83	---	56.00	46.00	-20.17	---	L1
0.165	51.02	---	65.21	55.21	-14.19	---	L2
0.595	32.97	---	56.00	46.00	-23.03	---	L2
0.750	35.66	---	56.00	46.00	-20.34	---	L2
1.370	39.91	---	56.00	46.00	-16.09	---	L2
1.790	36.33	---	56.00	46.00	-19.67	---	L2
24.000	35.88	---	60.00	50.00	-24.12	---	L2

Remark：

(1) Measuring frequencies from 0.15 MHz to 30MHz。

(2) The emissions measured in frequency range from 0.15 MHz to 30MHz were made with an instrument using Qusia-Peak detector and Average detector.

(3) "---" denotes the emission level was or more than 2dB below the Average limit, so no re-check anymore.

(4) The IF bandwidth of SPA between 0.15MHz to 30MHz was 10KHz;
The IF bandwidth of Test Receiver between 0.15MHz to 30MHz was 9KHz;

(5) L1 = Line One (Hot side) / L2 = Line Two (Neutral side)

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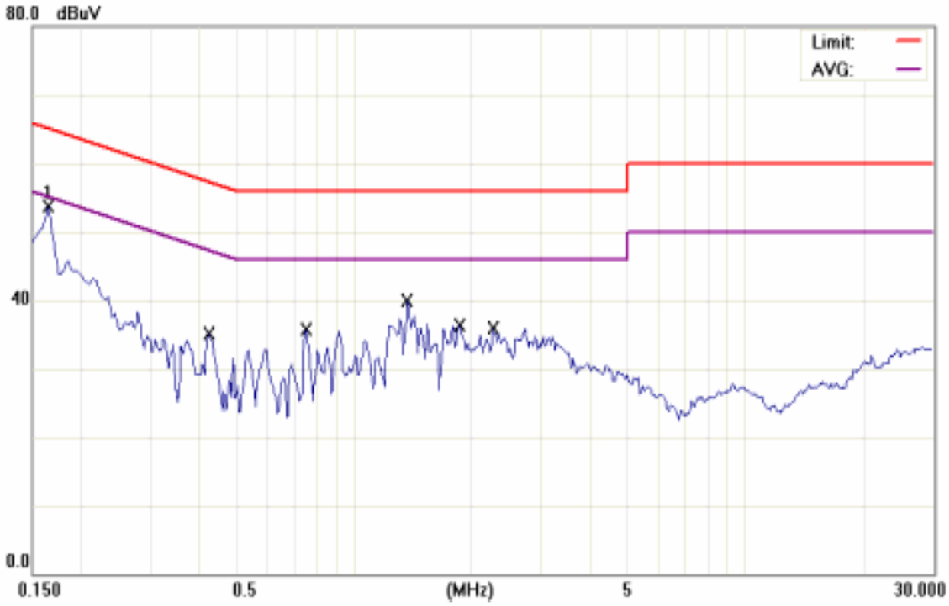
台北縣五股工業區五工路134號
電話：（02）22993279 傳真：（02）22982698

Conducted Emission Measurement

Data :#4 Date: 2005/10/20 Time: 下午 06:23:43



Site SGS CONDUCTED #1 Phase: *L1* Temperature: 24 ℃
Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 57 %
EUT: NEC MOBILE PHONE Distance: Air Pressure: hpa
M/N: N600i

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1650	53.03	0.60	53.63	65.21	-11.58	peak	
2		0.1650	50.50	0.60	51.10	65.21	-14.11	QP	
3		0.1650	31.10	0.60	31.70	55.21	-23.51	AVG	
4		0.4250	34.40	0.61	35.01	57.35	-22.34	QP	
5		0.7550	35.01	0.62	35.63	56.00	-20.37	QP	
6		1.3700	39.36	0.63	39.99	56.00	-16.01	QP	
7		1.8600	35.74	0.65	36.39	56.00	-19.61	QP	
8		2.2700	35.17	0.66	35.83	56.00	-20.17	QP	

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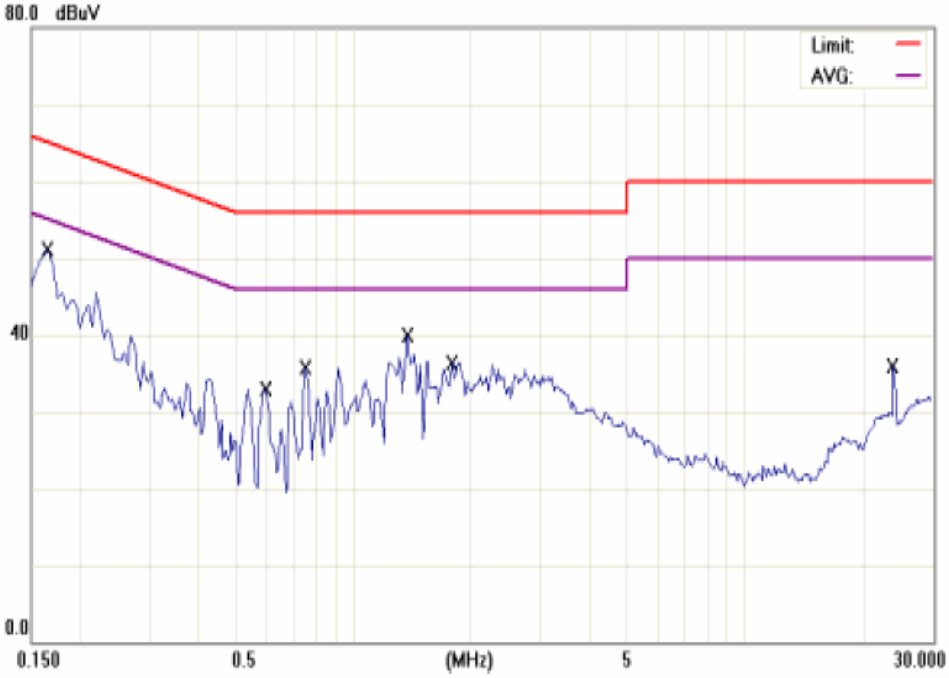
Conducted Emission Measurement

Data :#5 Date: 2005/10/20 Time: 下午 06:28:03



Site SGS CONDUCTED #1 Phase: N Temperature: 24 ℃
Limit: CISPR22 Class B Conduction(QP) Power: AC 120V/60Hz Humidity: 57 %
EUT: NEC MOBILE PHONE Distance: Air Pressure: hpa
M/N: N600i

No.	Mk.	Freq.	Reading Level	Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1	*	0.1650	50.42	0.60	51.02	65.21	-14.19	QP	
2		0.5950	32.36	0.61	32.97	56.00	-23.03	QP	
3		0.7500	35.05	0.61	35.66	56.00	-20.34	QP	
4		1.3750	39.28	0.63	39.91	56.00	-16.09	QP	
5		1.7900	35.69	0.64	36.33	56.00	-19.67	QP	
6		24.0000	34.57	1.31	35.88	60.00	-24.12	QP	

12. SPURIOUS RADIATED EMISSION TEST (RX)

12.1 Standard Applicable

According to §6.7,all spurious emissions shall comply with the limits of Table 2. The resolution bandwidth of the spectrum analyzer shall be 100 kHz for spurious emissions measurements below 1.0 GHz, and 1.0 MHz for measurements above 1.0 GHz.

Frequency (MHz)	Field strength μV/m	Distance (m)	Field strength at 3m dBμV/m
30-88	100	3	40
88-216	150	3	43.5
216-960	200	3	46
Above 960	500	3	54

12.2 EUT Setup

1. The radiated emission tests were performed in the 3 meter open-test site, using the setup in accordance with the ANSI C63.4-2003.
2. The EUT was put in the front of the test table. The rear of the EUT and peripherals were placed flushed with the rear of the tabletop.
3. The spacing between the peripherals was 10 centimeters.
4. External I/O cables were draped along the edge of the test table and bundle when necessary.
5. The host was connected with 110Vac/60Hz power source.

12.3 Measurement Procedure

The EUT was placed on a turn table which is 0.8m 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 emissions.

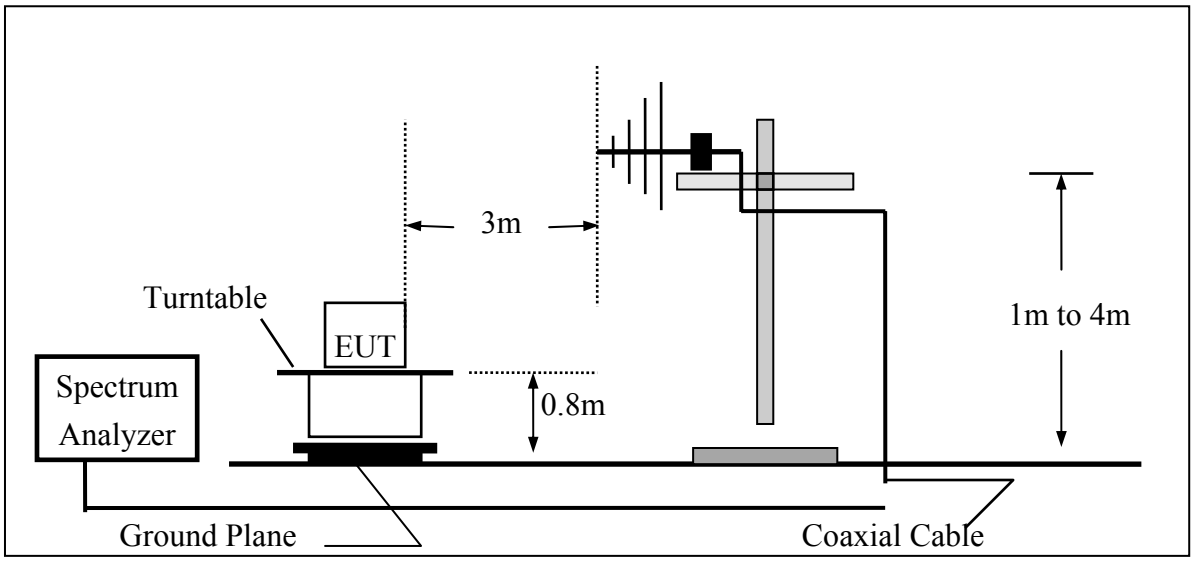
Maximum procedure was performed on the six highest emissions to ensure EUT compliance.

And also, each emission was to be maximized by changing the polarization of receiving antenna both horizontal and vertical.

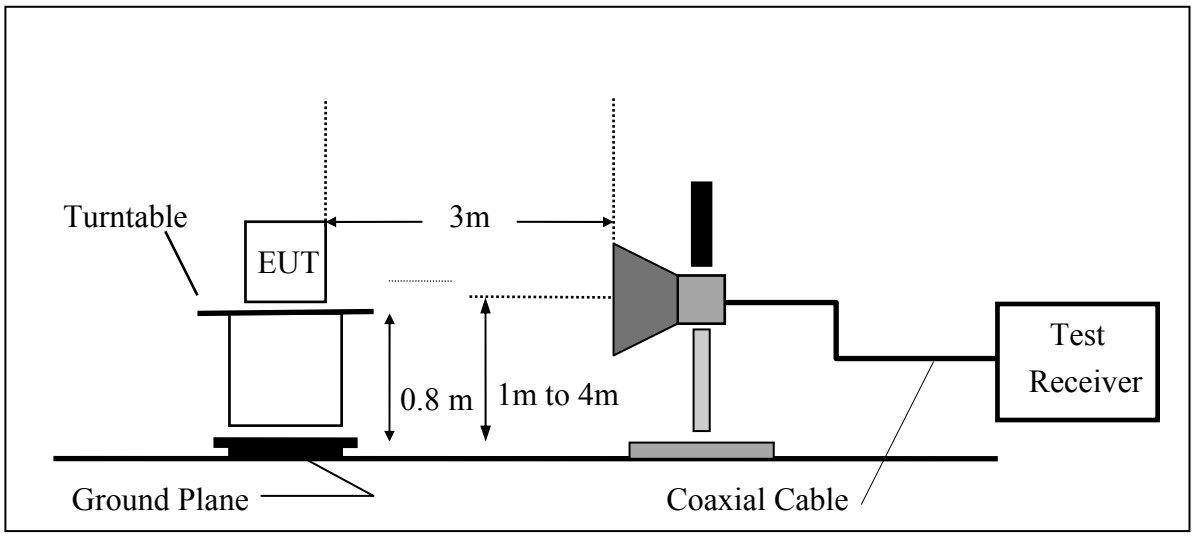
Repeat above procedures until all frequency measured were complete.

12.4 Test SET-UP (Block Diagram of Configuration)

Radiated Emission Test Set-Up, Frequency Below 1000MHz



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



12.5 Measurement Equipment Used:

EQUIPMENT TYPE	MFR	MODEL NUMBER	SERIAL NUMBER	LAST CAL.	CAL DUE.
Spectrum Analyzer	Agilent	E4446A	MY43360126	03/29/2005	03/28/2006
Spectrum Analyzer	Agilent	7405A	US41160416	06/28/2005	06/29/2006
Spectrum Analyzer	R&S	FSP 40	100034	11/09/2005	11/10/2006
Communication Test	R&S	SMU200	N/A	N/A	N/A
Bilog Antenna	SCHWAZBECK	VULB9163	152	06/03/2005	06/02/2006
Horn antenna	Schwarzbeck	BBHA 9120D	309/320	08/16/2005	08/15/2006
Pre-Amplifier	HP	8447D	2944A09469	07/19/2005	07/18/2006
Pre-Amplifier	HP	8494B	3008A00578	02/26/2005	02/25/2006
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	10/09/2005	10/08/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-3M	3m	10/09/2005	10/08/2006
Low Loss Cable	HUBER+SUHNER	SUCOFLEX 104PEA-0.5M	0.5m	10/09/2005	10/08/2006
Site NSA	SGS	966 chamber	N/A	11/17/2005	11/16/2006
Site NSA	SGS	10m Open-Site	N/A	11/17/2005	11/16/2006

12.6 Field Strength Calculation

The field strength is calculated by adding the Antenna Factor and Cable Factor and subtracting the Amplifier Gain and Duty Cycle Correction Factor(if any) from the measured reading. The basic equation with a sample calculation is as follows:

FS = RA + AF + CL - AG

Where	FS = Field Strength	CL = Cable Attenuation Factor (Cable Loss)
	RA = Reading Amplitude	AG = Amplifier Gain
	AF = Antenna Factor	

12.7 Measurement Result

Refer to attach tabular data sheets.

Radiated Spurious Emission Measurement Result (below 1GHz)

Operation Mode	RX CH MID (worst case)	Test Date	Oct. 20, 2005
Fundamental Frequency	N/A	Test By	Alex
Temperature	22 ℃	Pol	Ver./Hor
Humidity	53 %		

Freq. (MHz)	Ant.Pol. H/V	Detector Mode (PK/QP)	Reading (dBuV)	Ant./CL/ Amp. CF(dB)	Actual FS (dBuV/m)	Limit3m (dBuV/m)	Safe Margin (dB)
33.88	V	Peak	39.32	-15.13	24.19	40.00	-15.81
46.49	V	Peak	40.23	-14.63	25.60	40.00	-14.40
53.28	V	Peak	41.11	-14.91	26.20	40.00	-13.80
67.83	V	Peak	43.21	-15.88	27.33	40.00	-12.67
153.19	V	Peak	34.69	-13.67	21.02	43.50	-22.48
322.94	V	Peak	35.06	-12.71	22.35	46.00	-23.65
31.94	H	Peak	38.82	-15.21	23.61	40.00	-16.39
43.58	H	Peak	43.27	-14.64	28.63	40.00	-11.37
67.83	H	Peak	45.83	-15.88	29.95	40.00	-10.05
92.08	H	Peak	35.89	-17.77	18.12	43.50	-25.38
182.29	H	Peak	35.11	-15.35	19.76	43.50	-23.74
324.88	H	Peak	35.02	-12.66	22.36	46.00	-23.64

Remark：

(1) Measuring frequencies from 30 MHz to the 1GHz。

(2) Radiated emissions measured in frequency range from 30 MHz to 1000MHz were made with an instrument using Peak/AV detector mode.

(3) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(4) The IF bandwidth of SPA between 30MHz to 1GHz was 100KHz.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	RX CH MID (worst case)	Test Date	Oct. 20, 2005
Fundamental Frequency	N/A	Test By	Alex
Temperature	22 ℃	Pol	Ver
Humidity	53 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
1609.0	53.32	--	-6.72	46.60	--	74.00	54.00	-7.40
1651.0	50.35	--	-6.55	43.80	--	74.00	54.00	-10.20
2414.0	51.37	--	-3.35	48.02	--	74.00	54.00	-5.98
2939.0	52.64	--	-2.12	50.52	--	74.00	54.00	-3.48
3289.0	51.50	--	-1.46	50.04	--	74.00	54.00	-3.96
5424.0	45.30	--	4.86	50.16	--	74.00	54.00	-3.84
--	--							
--	--							
--	--							
--	--							
--	--							

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.

Radiated Spurious Emission Measurement Result (above 1GHz)

Operation Mode	RX CH MID (worst case)	Test Date	Oct. 20, 2005
Fundamental Frequency	N/A	Test By	Alex
Temperature	22 ℃	Pol	Hor
Humidity	53 %		

Freq. (MHz)	Peak Reading (dBuV)	AV Reading (dBuV)	Ant./CL CF(dB)	Actual FS Peak (dBuV/m)	Actual FS AV (dBuV/m)	Peak Limit (dBuV/m)	AV Limit (dBuV/m)	Margin (dB)
1588.0	56.39		-6.81	49.58	--	74.00	54.00	-4.42
2414.0	54.15		-3.35	50.80	--	74.00	54.00	-3.20
2673.0	49.90		-2.63	47.27	--	74.00	54.00	-6.73
2883.0	51.74		-2.22	49.52	--	74.00	54.00	-4.48
3128.0	52.15		-1.78	50.37	--	74.00	54.00	-3.63
3933.0	47.44		0.50	47.94	--	74.00	54.00	-6.06
--	--							
--	--							
--	--							
--	--							

Remark：

(1) Measuring frequencies from 1GHz to the 10th harmonic of highest fundamental frequency。

(2) Datas of measurement within this frequency range shown " - " in the table above means the reading of emissions are attenuated more than 20dB below the permissible limits or the field strength is too small to be measured.

(3) Radiated emissions measured in frequency above 1000MHz were made with an instrument using Peak detector mode and average detector mode of the emission shown in Actual FS column。

(4) Spectrum Peak Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 1MHz, Sweep time= 200 ms.

(5) Spectrum AV Setting : 1GHz- 13GHz, RBW= 1MHz, VBW= 10Hz, Sweep time= 200 ms.