

FCC TEST REPORT

Authorized under **D**eclaration of **C**onformity

according to

47 CFR Part 2 Part 15 Subpart B

Equipment : GSM 900 / 1800/ 1900 GPRS PEN PHONE

Model No. : P7 / Puccini

FCC ID : SG70408000P7

Filing Type : Declaration of Conformity

Applicant : Haier Telecom (Qingdao) Co., Ltd.
No. 1 Haier Raod, Hi-tech Zone, Qingdao,
266101, PRC

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SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of this test report

Original Report Issue Date: Aug. 05, 2004

☒ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description
	Sep. 15, 2004	Additional Tests for PC Peripheral and PCS Rx Mode

CERTIFICATE OF COMPLIANCE
Authorized under Declaration of Conformity
according to

47 CFR Part 2 and Part 15 Subpart B Class B

Equipment : GSM 900 / 1800/ 1900 GPRS PEN PHONE
Model No. : P7 / Puccini
FCC ID : SG70408000P7
Filing Type : Declaration of Conformity
Applicant : Haier Telecom (Qingdao) Co., Ltd.
No. 1 Haier Raod, Hi-tech Zone, Qingdao, 266101,
PRC

HEREBY CERTIFY THAT:

The measurements shown in this test report were made in accordance with the procedures given in **ANSI C63.4 - 2001** and the energy emitted by this equipment was **passed FCC Part 15 B** in both radiated and conducted emission class B limits. Testing was carried out on Aug. 15, 2004 at **SPORTON International Inc. LAB.**


Daniel Lee
Manager

SPORTON International Inc.

6F, No.106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

1. General Description of Equipment under Test

1.1 Applicant

Chi Mei Communication Systems, Inc.

11F, No. 39, Chung Hua RD. Sec. 1, Taipei 100, Taiwan

1.2 Manufacturer

Chi Mei Communication Systems, Inc.

No. 128, Sheng-Li Rd., Jen Te Shiang, Tainan County, Taiwan 717

1.3 Basic Description of Equipment under Test

Equipment	: GSM 900 / 1800 / 1900 GPRS PEN PHONE
Trade Name	: Haier / CMCS
Model No.	: P7 / Puccini
FCC ID	: SG70408000P7
Power Supply Type.	: Switching
Charger Power Input	: AC 120V, Wall-mount, 1 meter, 2pin

1.4 Feature of Equipment under Test

Product Feature & Specification	
1. DUT Type :	GSM 900 / 1800 / 1900 GPRS PEN PHONE
2. Trade Name :	Haier / CMCS
3. Model Name :	P7 / Puccini
4. Tx Frequency :	1850-1910 MHz (PCS)
5. Rx Frequency :	1930-1990MHz (PCS)
6. Channel Spacing	200 KHz
7. Maximum Output Power to Antenna :	29 dBm
9. HW Version :	V0.1
10. SW Version :	V0.04
11. Type of Modulation :	GMSK
12. DUT Stage :	Identical Prototype
13. Application Type :	Certification

2. Test Configuration of Equipment under Test

2.1 Test Manner

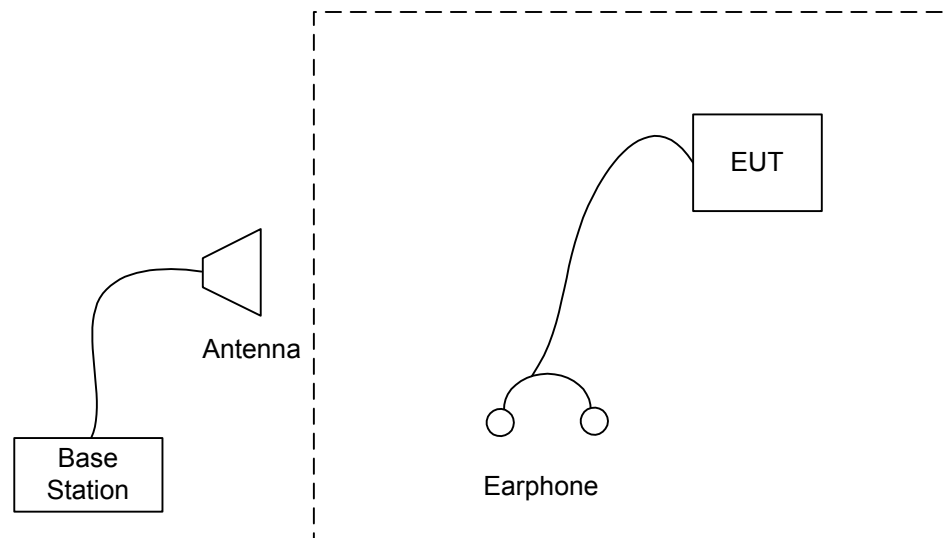
- a. The EUT has been setup pursuant to ANSI C63.4-2001 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included Earphone and EUT for EMI test.
- c. The following test modes were performed for conduction test:
Mode 1:PCS Link Mode
Mode 2:PCS Idle Mode
Mode 3: USB Link Mode
- d. The following test modes were performed for radiation test:
Mode 1: PCS Idle Mode
Mode 2: USB Link Mode
- e. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 1000MHz.

2.2 Description of Test System

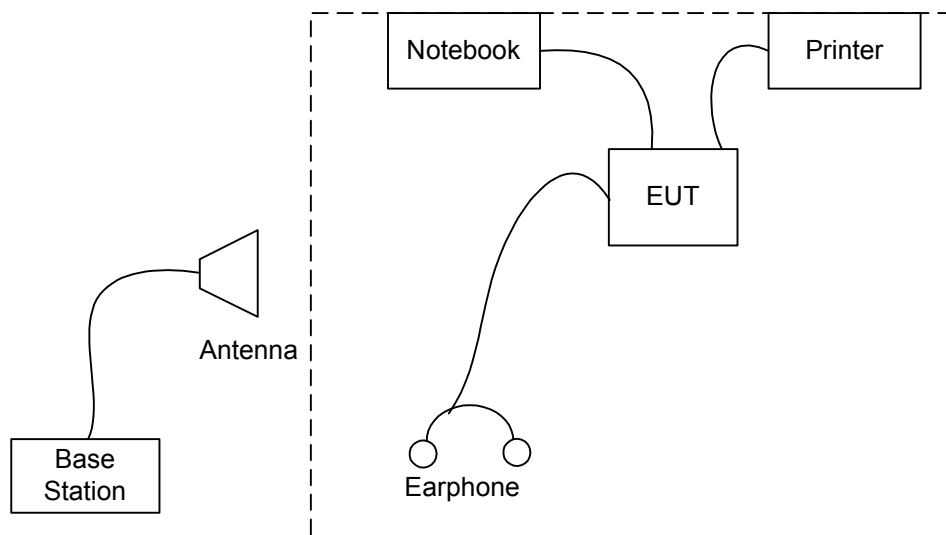
Item	Asset	Model Name	Power Cord	S/N
1.	Earphone (NEC)	N/A	N/A	N/A
2.	Notebook (DELL)	PP05L	N/A	SP0005
3.	Printer (EPSON)	STYLUS COLOR C61	N/A	SP0012

2.3 Connection Diagram of Test System

EUT Only



EUT + PC:



3. Test Software

The EUT is in GSM 1900 Idle mode controlled by CMU200.

There is no other test software in the testing.

4. General Information of Test

4.1 Test Facility

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-318-0055
Test Site No. : CO01-HY, 03CH06-HY

4.2 Test Voltage

120V/60Hz

4.3 Standard for Methods of Measurement

ANSI C63.4-2001

4.4 Test in Compliance with

FCC Part 15, Subpart B

4.5 Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 30 MHz to 1000MHz

4.6 Test Distance

The test distance of radiated emission from antenna to EUT is 3m.

5. Test of Conducted Powerline

Conducted Emissions were measured from 150 kHz to 30 MHz with a bandwidth of 9 kHz and return leads of the EUT according to the methods defined in ANSI C63.4-2001 Section 3.1. The EUT was placed on a nonmetallic stand in a shielded room 0.8 meters above the ground plane as shown in section 5.3. The interface cables and equipment positioning were varied within limits of reasonable applications to determine the position produced maximum conducted emissions.

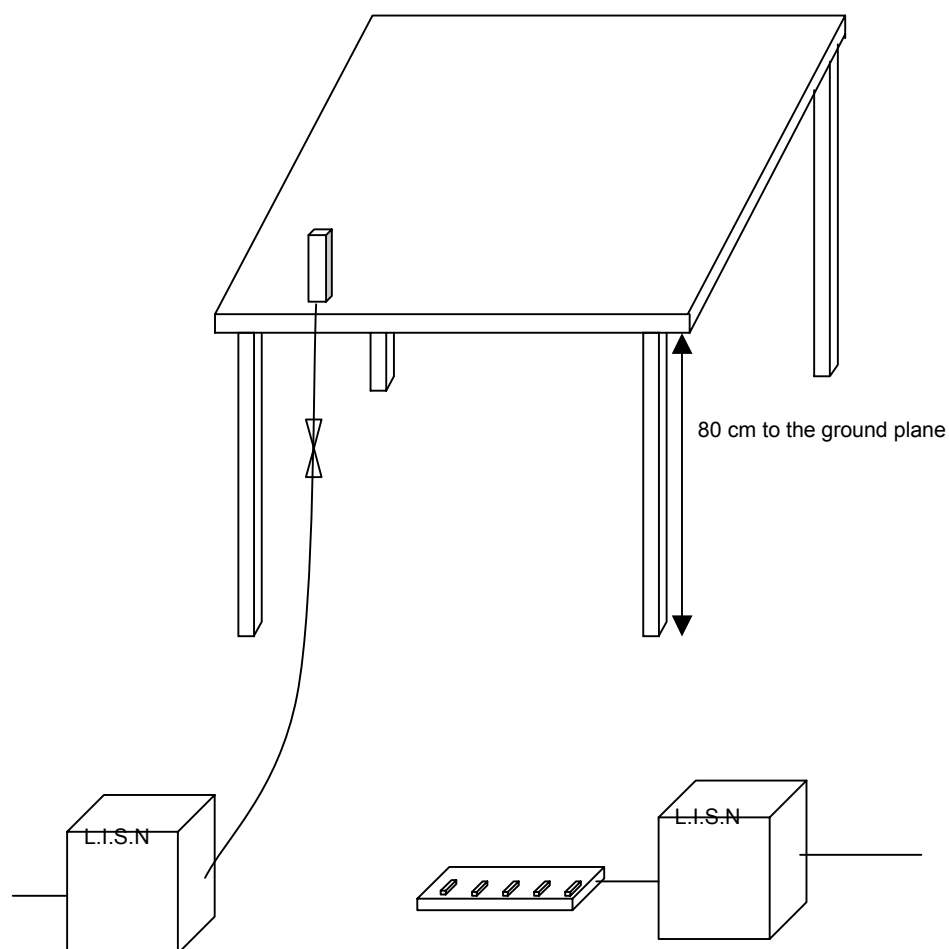
5.1 Major Measuring Instruments

● Test Receiver	(R&S ESCS 30)
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 kHz

5.2 Test Procedures

- a. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
- b. Connect EUT to the power mains through a line impedance stabilization network (LISN).
- c. All the support units are connect to the other LISN.
- d. The LISN provides 50 ohm coupling impedance for the measuring instrument.
- e. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
- f. Both sides of AC line were checked for maximum conducted interference.
- g. The frequency range from 150 kHz to 30 MHz was searched.
- h. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.3 Typical Test Setup Layout of Conducted Powerline

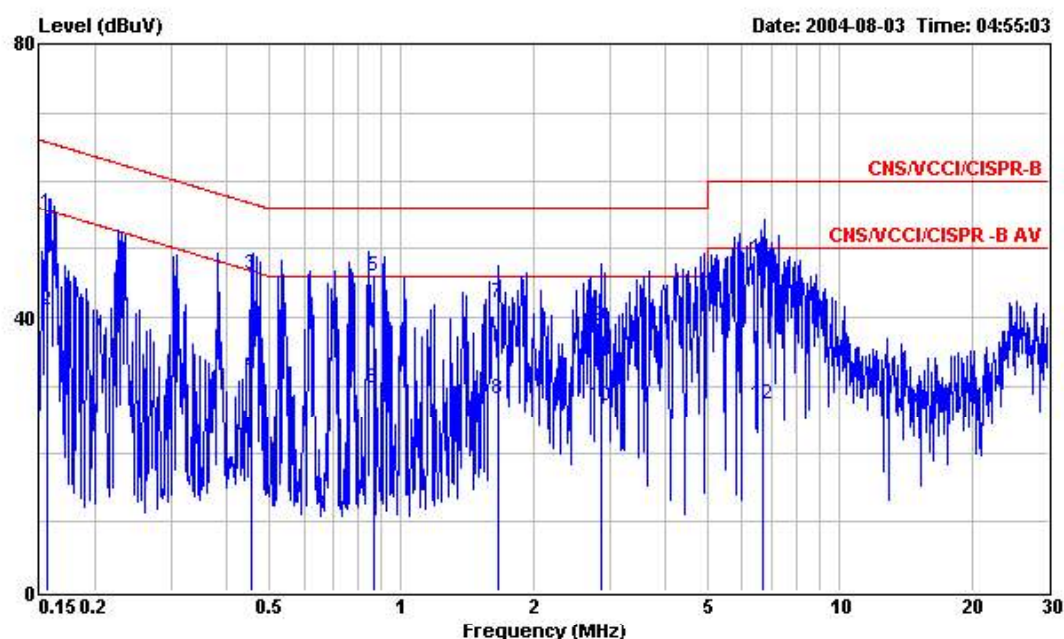


5.4 Test Result of AC Powerline Conducted Emission

5.4.1 Test Mode: Mode 1

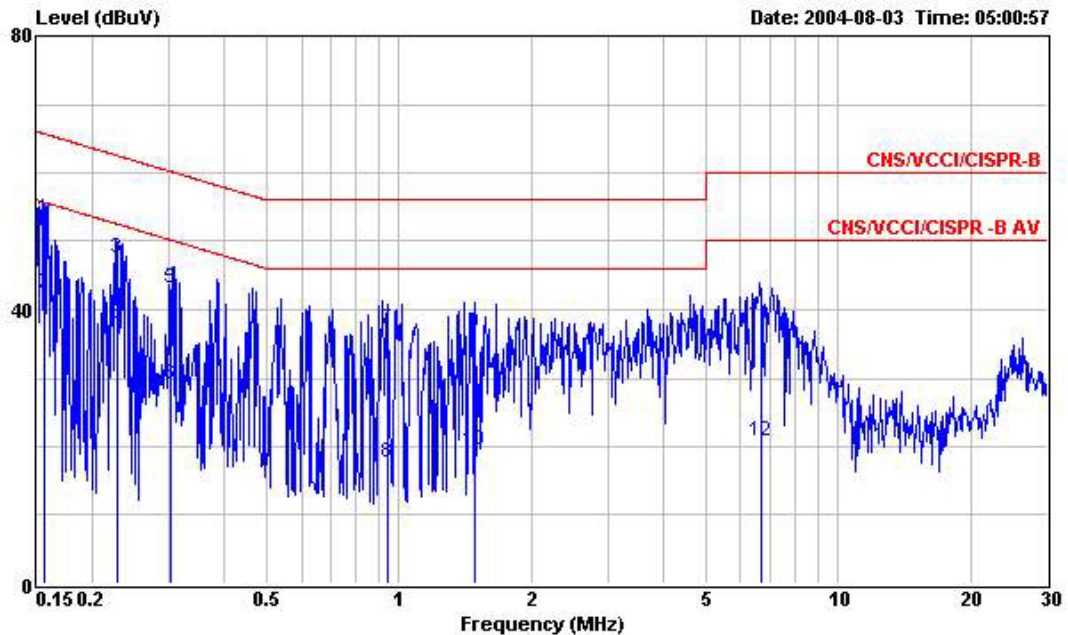
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 31°C
- Relative Humidity: 53 %
- All emissions not reported here are more than 10 dB below the prescribed limit.

The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Link Mode

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.156	55.30	-10.36	65.66	55.19	0.10	0.01	QP
2	0.156	41.01	-14.65	55.66	40.90	0.10	0.01	Average
3	0.453	46.21	-10.60	56.81	46.08	0.10	0.03	QP
4	0.453	31.62	-15.19	46.81	31.49	0.10	0.03	Average
5	0.864	45.91	-10.09	56.00	45.77	0.10	0.04	QP
6	0.864	29.62	-16.38	46.00	29.48	0.10	0.04	Average
7	1.662	42.01	-13.99	56.00	41.84	0.10	0.07	QP
8	1.662	28.18	-17.82	46.00	28.01	0.10	0.07	Average
9	2.855	38.61	-17.39	56.00	38.41	0.10	0.10	QP
10	2.855	27.12	-18.88	46.00	26.92	0.10	0.10	Average
11	6.675	48.52	-11.48	60.00	48.26	0.16	0.10	QP
12	6.675	27.40	-22.60	50.00	27.14	0.16	0.10	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Link Mode

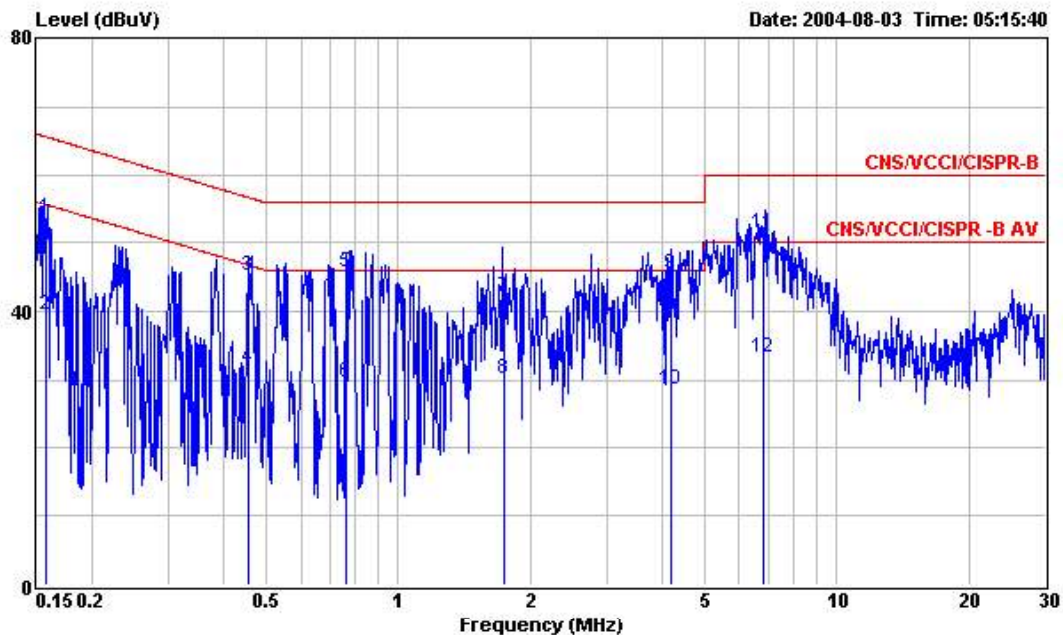
	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.156	53.21	-12.46	65.67	53.10	0.10	0.01	QP
2	0.156	42.25	-13.42	55.67	42.14	0.10	0.01	Average
3	0.228	47.42	-15.11	62.53	47.31	0.10	0.01	QP
4	0.228	37.52	-15.01	52.53	37.41	0.10	0.01	Average
5	0.302	43.05	-17.14	60.19	42.93	0.10	0.02	QP
6	0.302	29.20	-20.99	50.19	29.08	0.10	0.02	Average
7	0.942	37.02	-18.98	56.00	36.88	0.10	0.04	QP
8	0.942	17.71	-28.29	46.00	17.57	0.10	0.04	Average
9	1.490	36.70	-19.30	56.00	36.54	0.10	0.06	QP
10	1.490	19.37	-26.63	46.00	19.21	0.10	0.06	Average
11	6.676	37.79	-22.21	60.00	37.49	0.20	0.10	QP
12	6.676	20.76	-29.24	50.00	20.46	0.20	0.10	Average

Test Engineer : 
 Jay

5.4.2 Test Mode: Mode 2

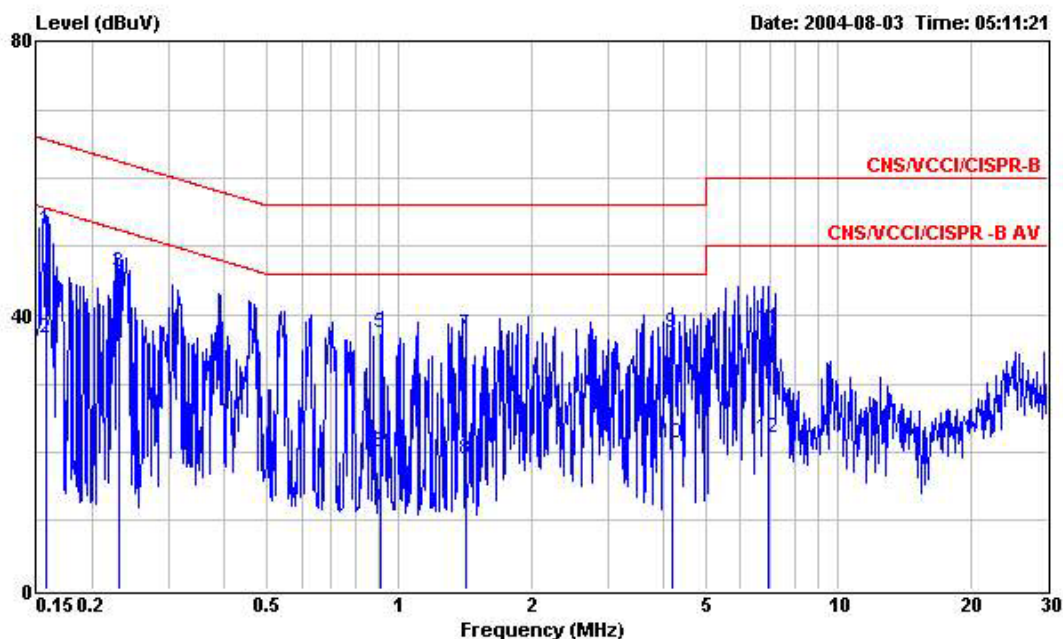
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 31°C
- Relative Humidity: 53 %
- All emissions not reported here are more than 10 dB below the prescribed limit.

The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/50Hz
 Model : Puccini
 Memo : PCS Idle Mode

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.157	53.76	-11.85	65.61	53.65	0.10	0.01	QP
2	0.157	39.36	-16.25	55.61	39.25	0.10	0.01	Average
3	0.456	45.17	-11.60	56.77	45.04	0.10	0.03	QP
4	0.456	31.67	-15.10	46.77	31.54	0.10	0.03	Average
5	0.757	45.66	-10.34	56.00	45.52	0.10	0.04	QP
6	0.757	29.62	-16.38	46.00	29.48	0.10	0.04	Average
7	1.740	42.05	-13.95	56.00	41.88	0.10	0.07	QP
8	1.740	30.22	-15.78	46.00	30.05	0.10	0.07	Average
9	4.203	45.55	-10.45	56.00	45.33	0.11	0.11	QP
10	4.203	28.54	-17.46	46.00	28.32	0.11	0.11	Average
11	6.823	51.37	-8.63	60.00	51.11	0.16	0.10	QP
12	6.823	33.28	-16.72	50.00	33.02	0.16	0.10	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 NEUTRAL
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/50Hz
 Model : Puccini
 Memo : PCS Idle Mode

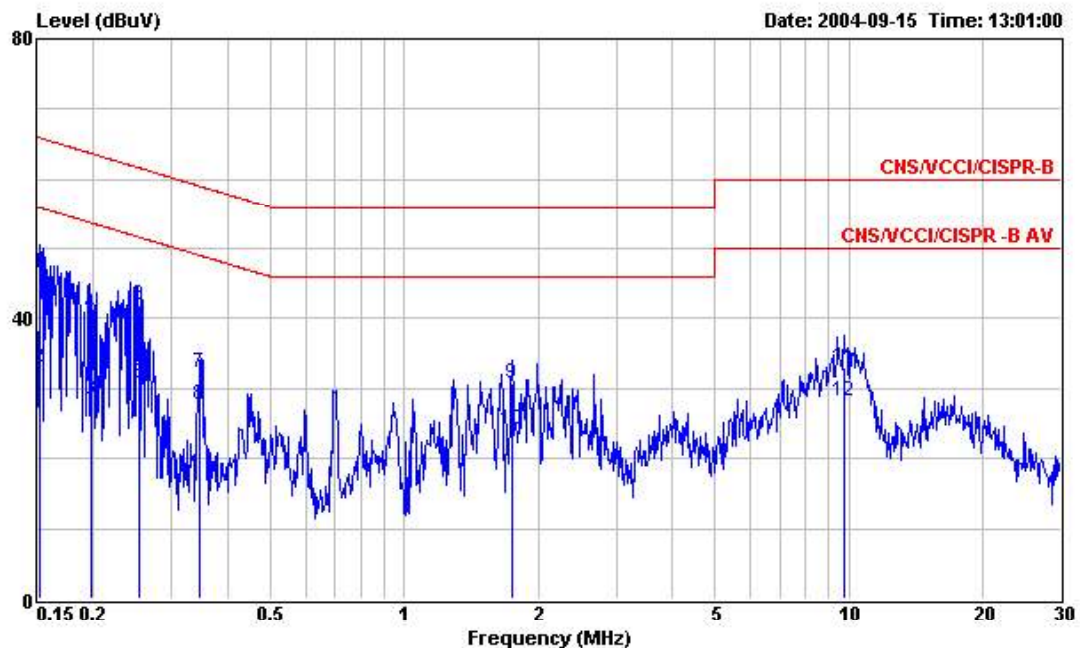
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.157	52.41	-13.20	65.61	52.30	0.10	0.01	QP
2	0.157	36.63	-18.98	55.61	36.52	0.10	0.01	Average
3	0.230	46.11	-16.36	62.47	46.00	0.10	0.01	QP
4	0.230	37.14	-15.33	52.47	37.03	0.10	0.01	Average
5	0.908	37.36	-18.64	56.00	37.22	0.10	0.04	QP
6	0.908	19.99	-26.01	46.00	19.85	0.10	0.04	Average
7	1.422	37.03	-18.97	56.00	36.87	0.10	0.06	QP
8	1.422	19.05	-26.95	46.00	18.89	0.10	0.06	Average
9	4.182	37.46	-18.54	56.00	37.15	0.20	0.11	QP
10	4.182	21.24	-24.76	46.00	20.93	0.20	0.11	Average
11	6.946	37.95	-22.05	60.00	37.65	0.20	0.10	QP
12	6.946	22.12	-27.88	50.00	21.82	0.20	0.10	Average

Test Engineer : Jay

5.4.3 Test Mode: Mode 3

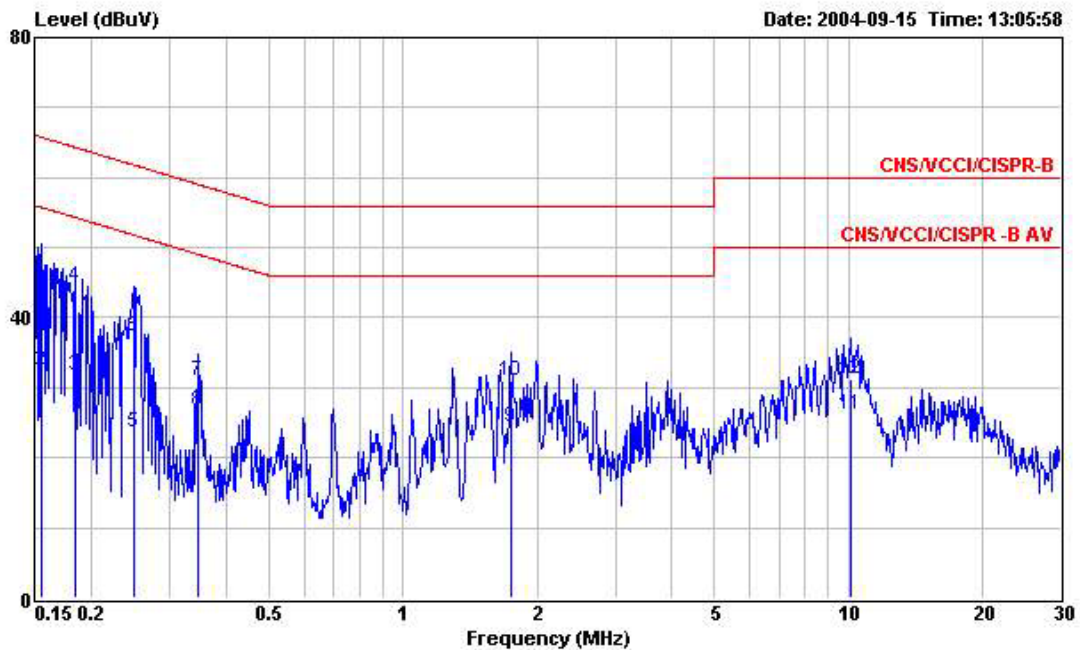
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 31°C
- Relative Humidity: 53 %
- All emissions not reported here are more than 10 dB below the prescribed limit.

The test that passed at the minimum margin was marked by a frame in the following data



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE
EUT : GSM 900/1800/1900 GPRS PEN Phone
Power : 120Vac/60Hz
Model : Puccini
Memo : USB Link mode

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.152	46.58	-19.31	65.89	46.47	0.10	0.01	QP
2	0.152	33.02	-22.87	55.89	32.91	0.10	0.01	Average
3	0.197	28.35	-25.39	53.74	28.24	0.10	0.01	Average
4	0.197	40.70	-23.04	63.74	40.59	0.10	0.01	QP
5	0.253	30.62	-21.02	51.64	30.50	0.10	0.02	Average
6	0.253	41.91	-19.73	61.64	41.79	0.10	0.02	QP
7	0.348	32.17	-26.84	59.01	32.04	0.10	0.03	QP
8	0.348	27.75	-21.26	49.01	27.62	0.10	0.03	Average
9	1.750	30.62	-25.38	56.00	30.45	0.10	0.07	QP
10	1.750	24.03	-21.97	46.00	23.86	0.10	0.07	Average
11	9.760	33.05	-26.95	60.00	32.75	0.20	0.10	QP
12	9.760	28.27	-21.73	50.00	27.97	0.20	0.10	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2003 2001/008 LINE
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/50Hz
 Model : Puccini
 Memo : USB Link mode

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.154	46.25	-19.53	65.78	46.14	0.10	0.01	QP
2	0.154	32.55	-23.23	55.78	32.44	0.10	0.01	Average
3	0.184	31.79	-32.51	64.30	31.68	0.10	0.01	QP
4	0.184	44.43	-19.87	64.30	44.32	0.10	0.01	QP
5	0.248	23.60	-28.22	51.82	23.48	0.10	0.02	Average
6	0.248	37.39	-24.43	61.82	37.27	0.10	0.02	QP
7	0.346	30.99	-28.07	59.06	30.86	0.10	0.03	QP
8	0.346	26.63	-22.43	49.06	26.50	0.10	0.03	Average
9	1.750	24.46	-21.54	46.00	24.29	0.10	0.07	Average
10	1.750	31.04	-24.96	56.00	30.87	0.10	0.07	QP
11	10.130	26.28	-23.72	50.00	25.98	0.20	0.10	Average
12	10.130	31.36	-28.64	60.00	31.06	0.20	0.10	QP

Test Engineer : 
 Jay

5.5 Photographs of Conducted Powerline Test Configuration

- The photographs show the configuration that generates the maximum emission.

EUT Only

Front View



Rear View



Side View

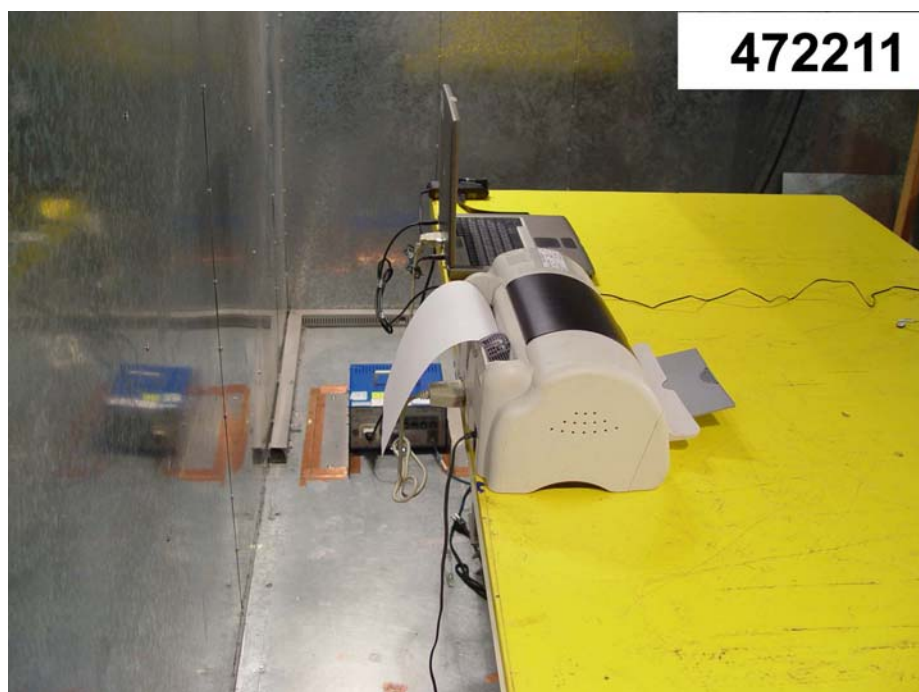


EUT + PC

Front View



Rear View



Side View



472211

6. Test of Radiated Emission

Radiated emissions from 30 MHz to 1000 MHz were measured with a bandwidth of 120 kHz and 1MHz according to the methods defines in ANSI C63.4-2001. The EUT was placed on a nonmetallic stand, 0.8 meter above the ground plane, as shown in section 6.3. The interface cables and equipment positions were varied within limits of reasonable applications to determine the positions producing maximum radiated emissions.

6.1 Major Measuring Instruments

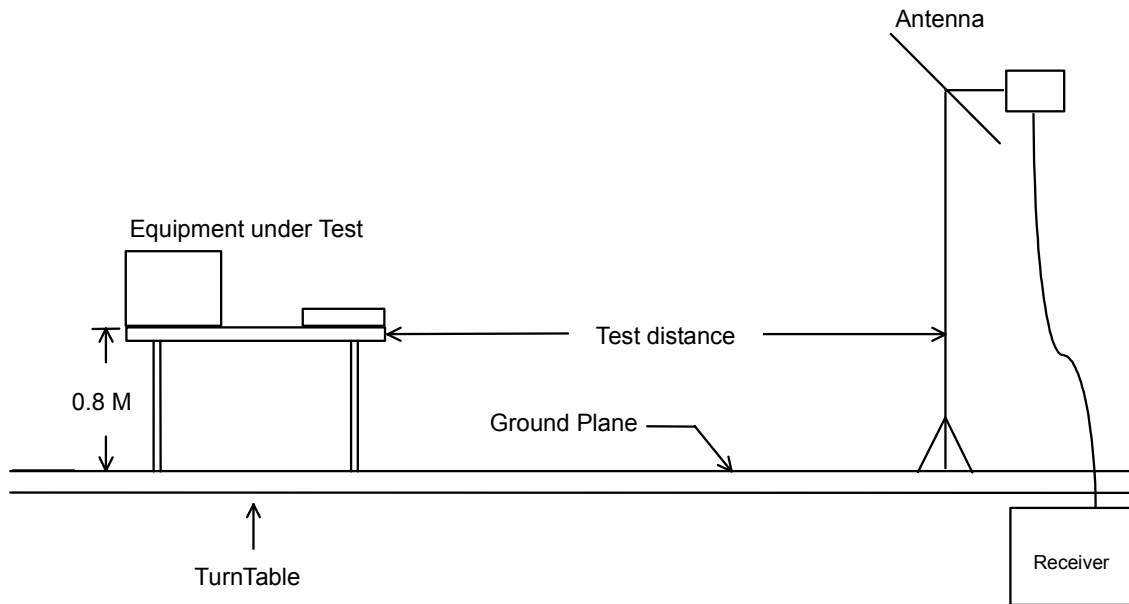
- Amplifier (PA-103)
 - RF Gain 30 dB
 - Signal Input 100 kHz to 1 GHz

- Spectrum analyzer (R&S FSP40)
 - Attenuation 10 dB
 - Start Frequency 1 GHz
 - Stop Frequency 25 GHz
 - Resolution Bandwidth 120 kHz
 - Video Bandwidth 300 kHz
 - Signal Input 9 kHz to 40 GHz

6.2 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a half wave dipole and its height is varied between one meter and four meters above ground to find the maximum value of the field strength both for horizontal polarization and vertical polarization of the antenna.
- e. For each suspected emission the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.

6.3 Typical Test Setup Layout of Radiated Emission

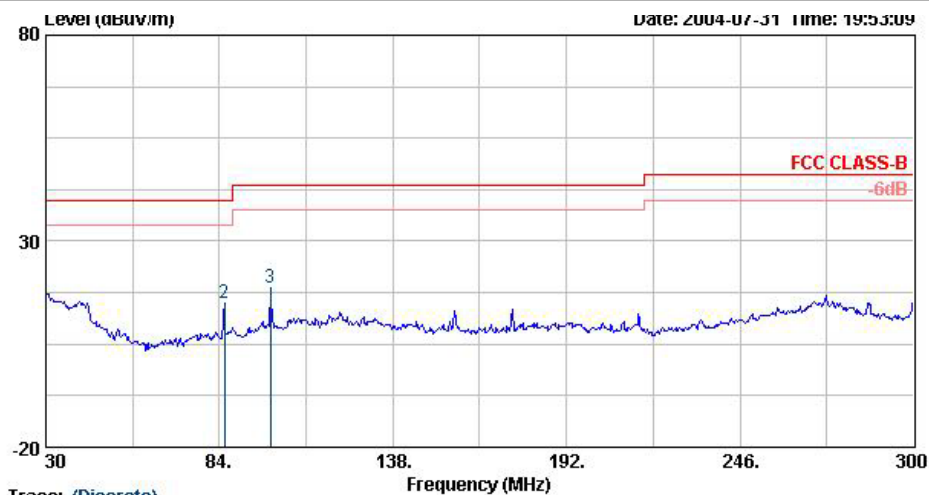


6.4 Test Result of Radiated Emission

6.4.1 Test Mode: Mode 1

- Frequency Range of Test: from 30 MHz to 13000 MHz
- Test Distance: 3m
- Temperature: 32°C
- Relative Humidity: 57 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

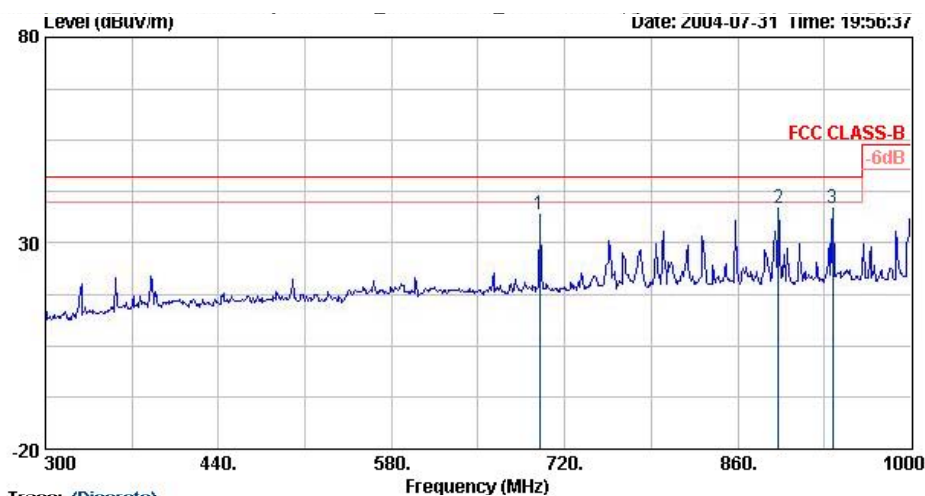
The test that passed at the minimum margin was marked by a frame in the following data



Trace: (Discrete)

Site : 03CH06
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode

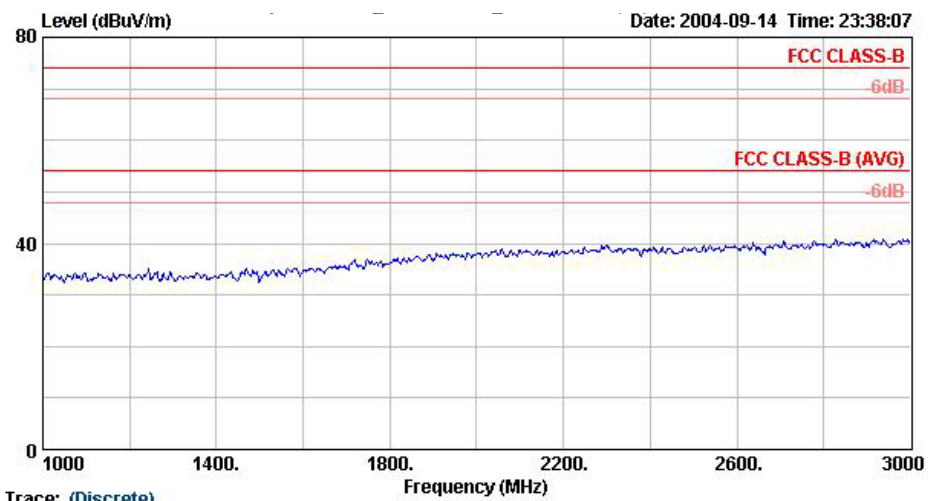
	Freq	Level	Over	Limit	Antenna	Preamp	Cable		Ant	Table
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	Remark	Pos	Pos
1	30.00	17.45	-22.55	40.00	17.90	32.12	0.50	Peak	---	---
2	85.62	14.97	-25.03	40.00	7.90	32.23	0.82	Peak	---	---
3	99.93	18.52	-24.98	43.50	10.40	32.30	0.89	Peak	---	---



Trace: (Discrete)

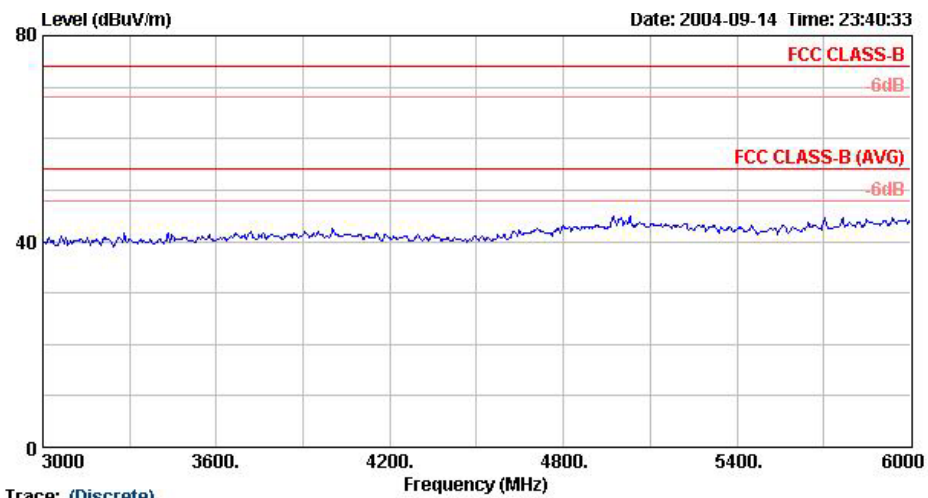
Site : 03CH06
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode

	Freq	Level	Over	Limit	Antenna	Preamp	Cable		Ant	Table
	MHz	dBuV/m	dB	dBuV/m	dB/m	dB	dB	Remark	Pos	Pos
1 @	699.70	36.86	-9.14	46.00	19.10	31.45	2.57	Peak	---	---
2 @	892.90	38.21	-7.79	46.00	20.57	30.86	2.96	Peak	---	---
3 @	937.00	38.43	-7.57	46.00	20.77	31.03	3.09	Peak	---	---



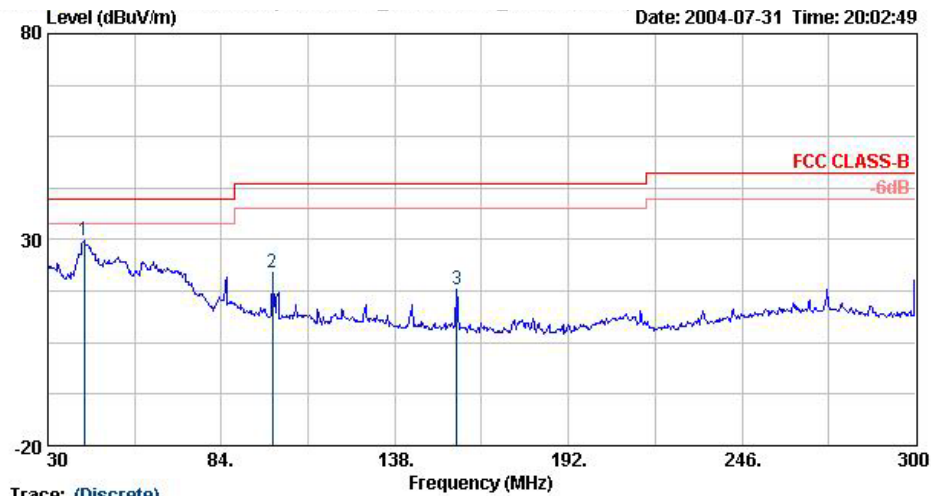
Trace: (Discrete)

Site : 03CH06-HY
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL 114cm 360deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode



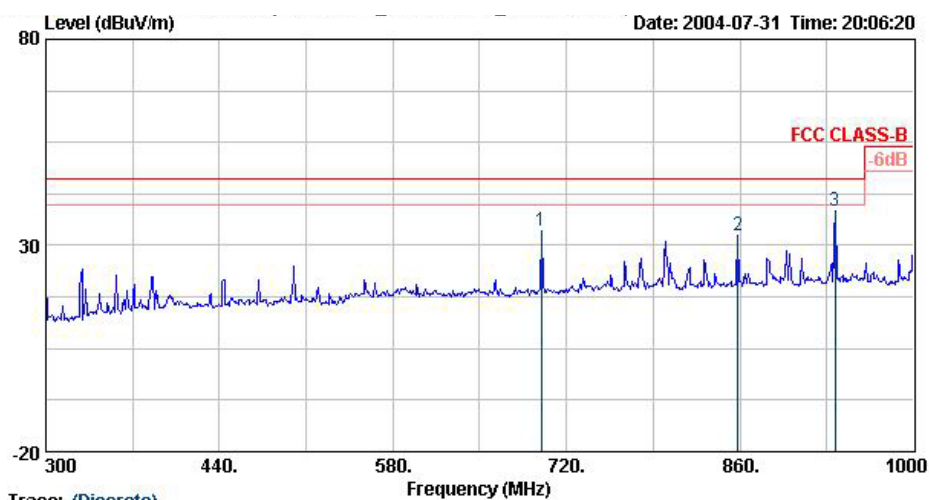
Trace: (Discrete)

Site : 03CH06-HY
 Condition : FCC CLASS-B 3m HF-HORN AH-118 HORIZONTAL 114cm 0deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode



Site : 03CH06
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode

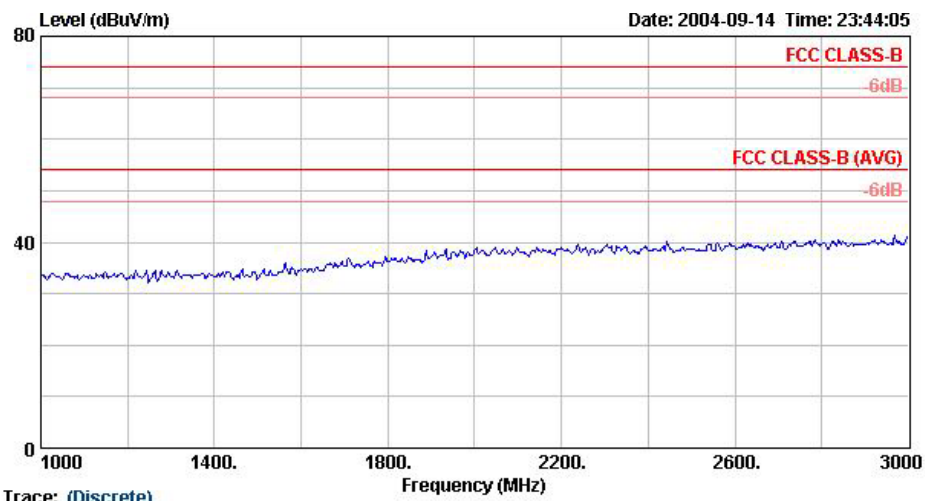
	Freq	Level	Over	Limit	Antenna	Preamp	Cable		Ant	Table
	MHz	dBuV/m	Limit	Line	Factor	Factor	Loss	Remark	Pos	Pos
			dB	dBuV/m	dB/m	dB	dB		cm	deg
1 @	41.34	29.99	-10.01	40.00	11.49	32.22	0.56	Peak	---	---
2	99.93	22.09	-21.41	43.50	10.40	32.30	0.89	Peak	---	---
3	157.17	18.03	-25.47	43.50	9.65	32.18	1.08	Peak	---	---



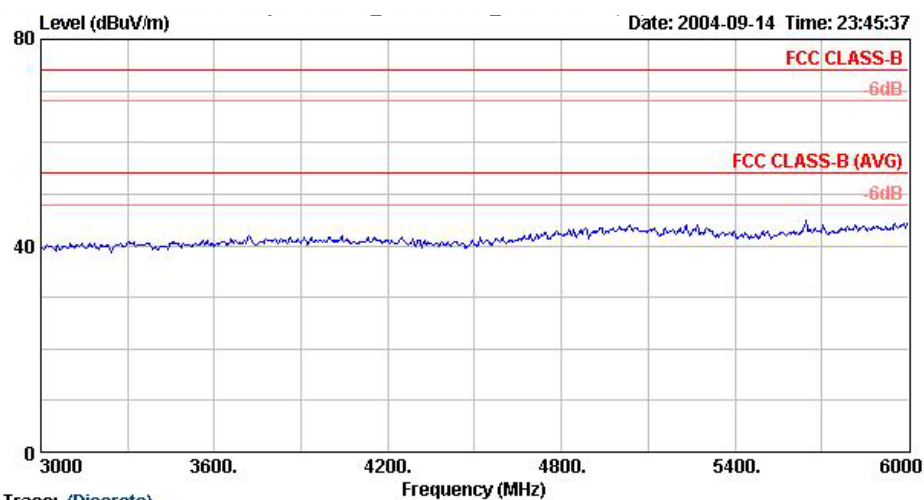
Trace: (Discrete)

Site : 03CH06
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode

	Freq	Level	Over	Limit	Antenna	Preamp	Cable		Ant	Table
	MHz	dBuV/m	Limit	Line	Factor	Factor	Loss	Remark	Pos	Pos
			dB	dBuV/m	dB/m	dB	dB		cm	deg
1	699.70	33.64	-12.36	46.00	19.10	31.45	2.57	Peak	---	---
2	858.60	32.46	-13.54	46.00	20.44	31.63	3.02	Peak	---	---
3 @	937.00	38.29	-7.71	46.00	20.77	31.03	3.09	Peak	---	---



Site : 03CH06-HY
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL 114cm 0deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode



Trace: (Discrete)
 Site : 03CH06-HY
 Condition : FCC CLASS-B 3m HF-HORN AH-118 VERTICAL 114cm 0deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : PCS Idle Mode

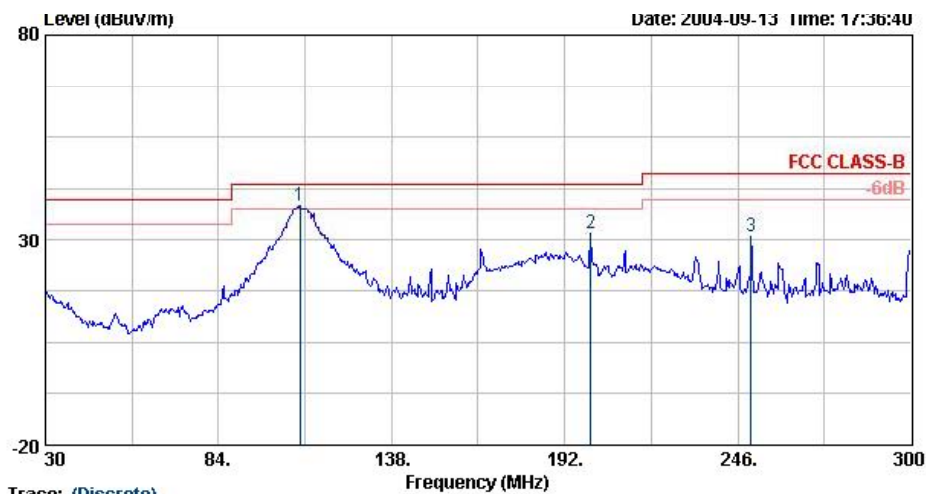
- Mark:
 Frequency from 6GHz to 13GHz, the emission emitted by the EUT is too low to be measured.

Test Engineer : Jay
 Jay

6.4.2 Test Mode: Mode 2

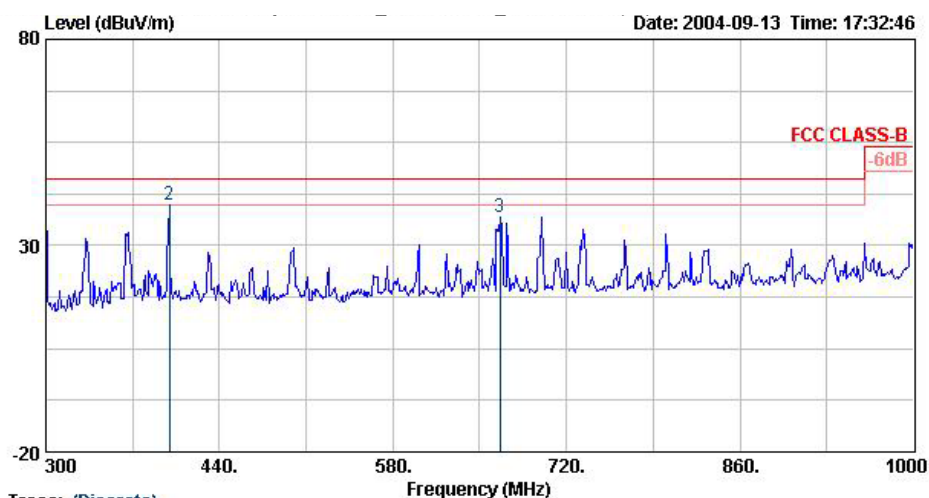
- Frequency Range of Test: from 30 MHz to 13000 MHz
- Test Distance: 3m
- Temperature: 32°C
- Relative Humidity: 57 %
- Emission level (dBuV/m) = 20 log Emission level (uV/m)
- Corrected Reading: Probe Factor + Cable Loss + Read Level - Preamp Factor = Level

The test that passed at the minimum margin was marked by a frame in the following data



Site : 03CH06-HY
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL 214cm 360deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : USB mode

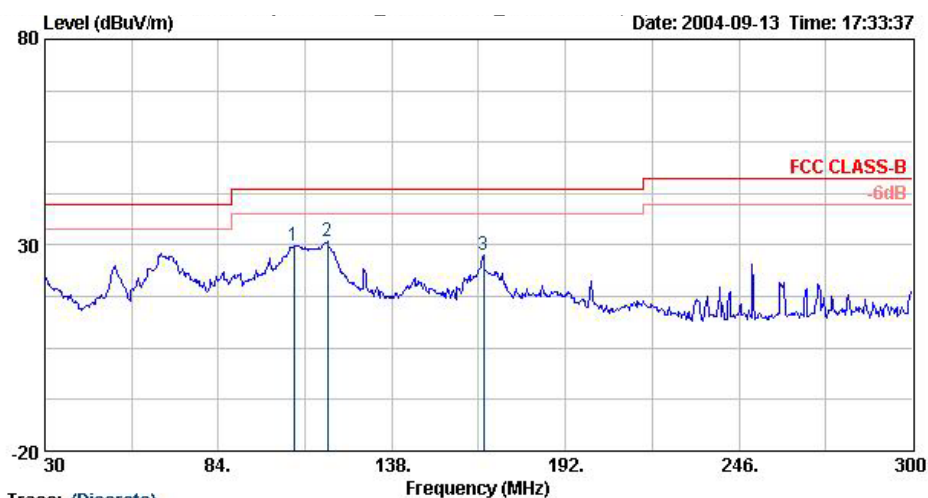
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Preamp Factor	Cable Loss	Ant Pos	Table Pos	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1 @	109.38	38.46	-5.04	43.50	58.26	11.39	32.11	0.92	154	312
2	200.10	31.62	-11.88	43.50	53.73	8.70	32.05	1.24	---	---
3	250.05	30.98	-15.02	46.00	49.41	12.00	31.83	1.40	---	---



Trace: (Discrete)

Site : 03CH06-HY
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 HORIZONTAL 115cm 360deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : USB mode

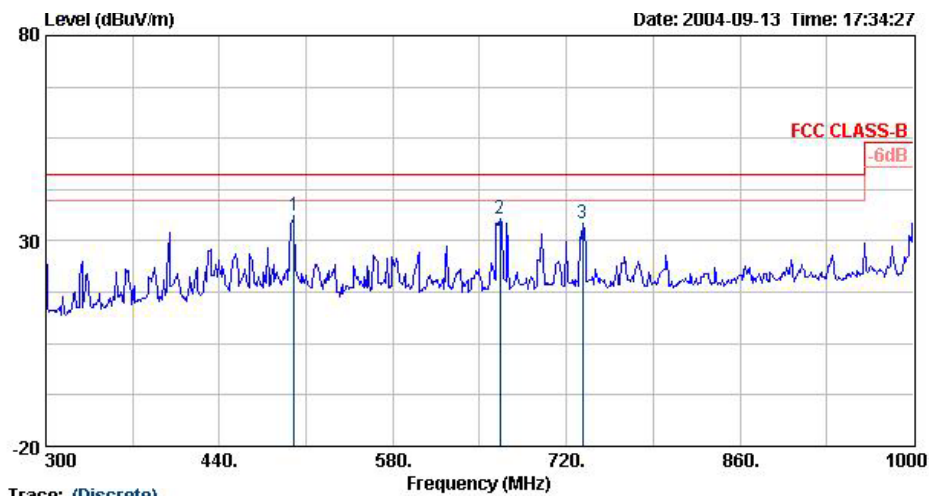
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Preamp Factor	Cable Loss	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg
1	300.00	39.53	-6.47	46.00	56.94	13.00	31.91	1.50	---
2	399.40	39.73	-6.27	46.00	53.56	15.85	31.50	1.83	---
3	666.10	36.88	-9.12	46.00	47.04	18.93	31.57	2.49	---



Trace: (Discrete)

Site : 03CH06-HY
 Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL 115cm 0deg
 EUT : GSM 900/1800/1900 GPRS PEN Phone
 Power : 120Vac/60Hz
 Model : Puccini
 Memo : USB mode

	Freq	Level	Over	Limit	ReadAntenna	Preamp	Cable	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Pos	Pos
			dB	dBuV/m	dBuV	dB/m	dB	cm	deg
1	107.49	29.93	-13.57	43.50	50.00	11.17	32.15	0.91	---
2	118.02	30.87	-12.63	43.50	50.21	11.66	31.95	0.95	---
3	166.62	27.72	-15.78	43.50	49.49	9.15	32.04	1.12	---



Site : 03CH06-HY
Condition : FCC CLASS-B 3m BI LOG 2004 0629 VERTICAL 115cm 360deg
EUT : GSM 900/1800/1900 GPRS PEN Phone
Power : 120Vac/60Hz
Model : Puccini
Memo : USB mode

	Freq	Level	Over	Limit	ReadAntenna	Preampl	Cable	Ant	Table
	MHz	dBuV/m	Limit	Line	Level	Factor	Factor	Loss	Pos
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm
1	500.20	36.09	-9.91	46.00	48.12	17.30	31.42	2.09	---
2	666.10	35.28	-10.72	46.00	45.44	18.93	31.57	2.49	---
3	733.30	34.37	-11.63	46.00	43.56	19.60	31.38	2.60	---

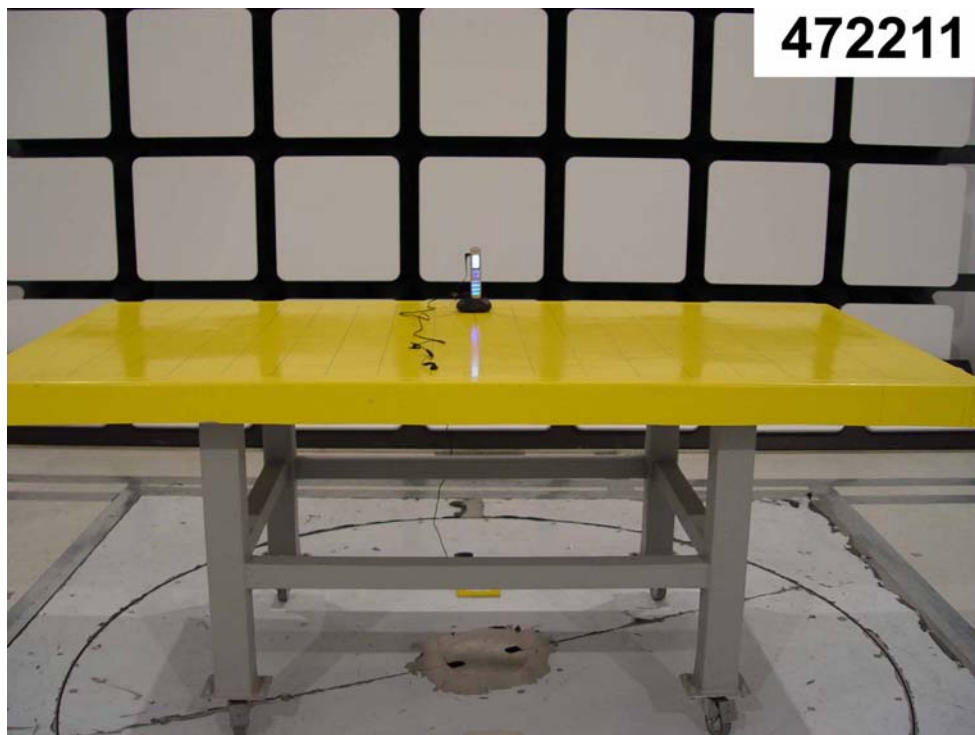
Test Engineer : 

Jay

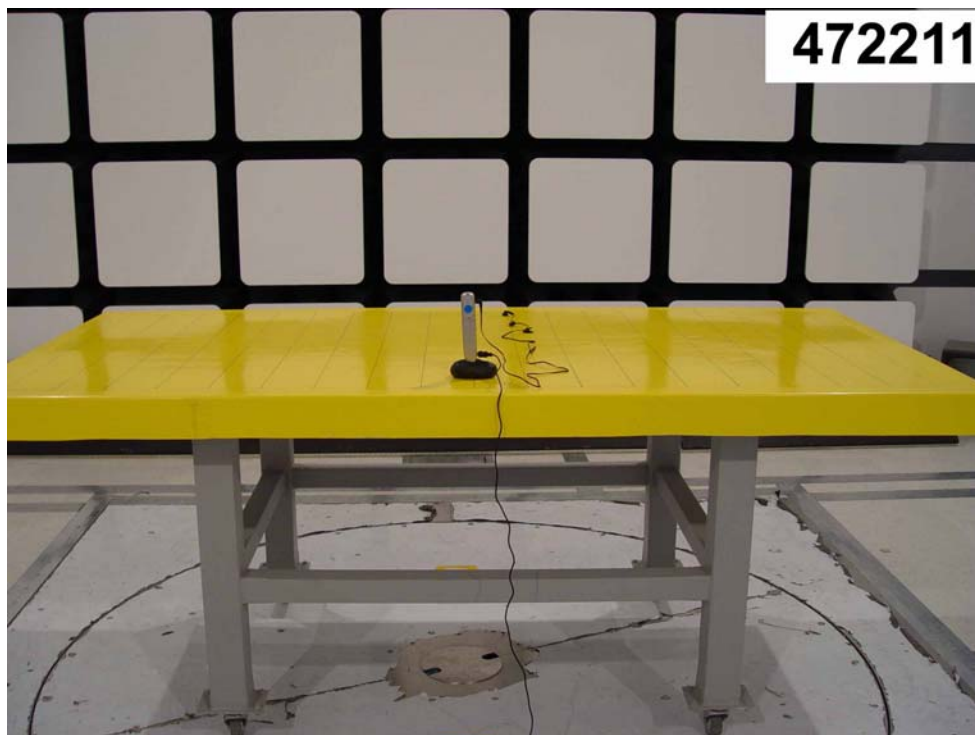
6.4 Photographs of Radiated Emission Test Configuration

- The photographs show the configuration that generates the maximum emission.
EUT Only

FRONT VIEW

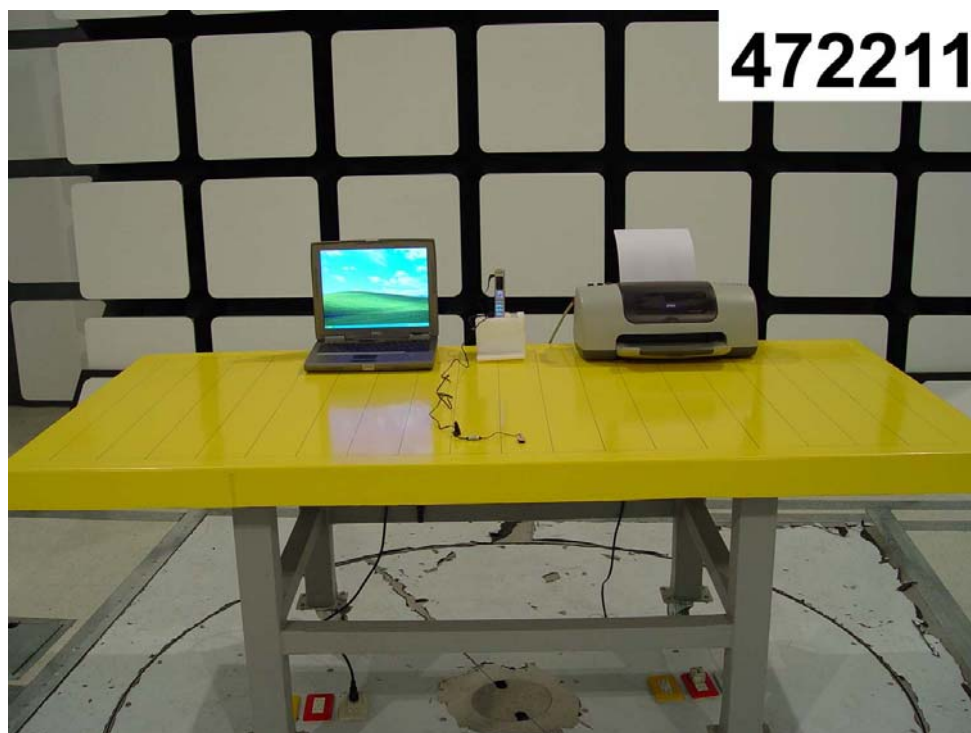


REAR VIEW

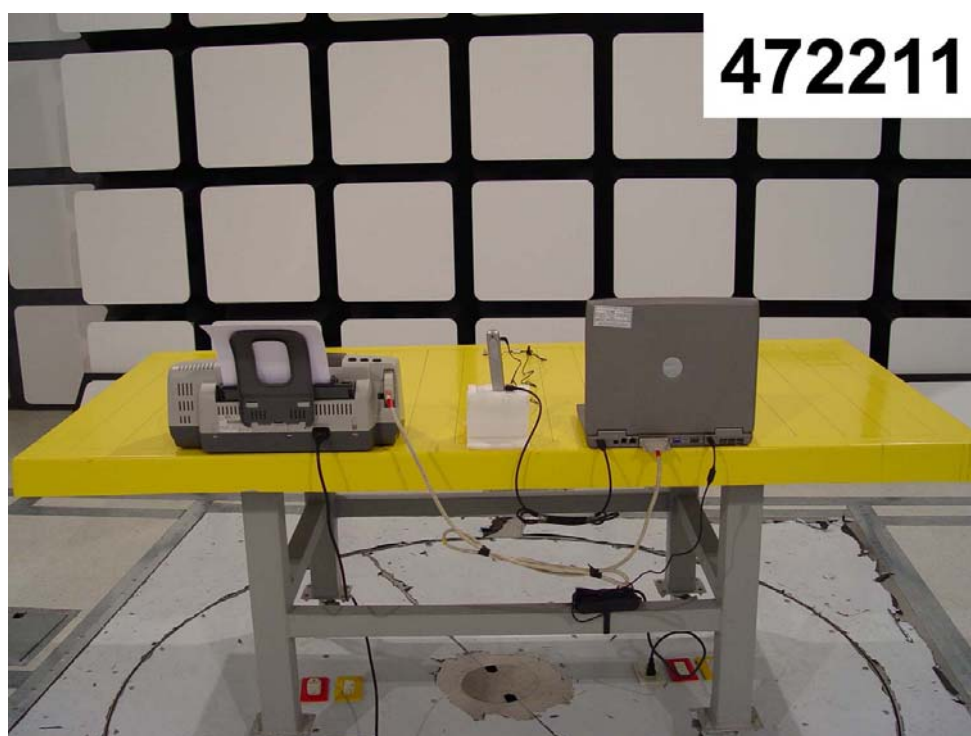


EUT + PC

FRONT VIEW



REAR VIEW



7. Antenna Factor & Cable Loss

Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)	Frequency (MHz)	Antenna Factor (dB)	Cable Loss (dB)
30	15.35	4.50	1000	24.10	3.92
35	13.63	1.13	2000	27.40	5.66
40	11.11	1.18	3000	30.00	7.20
45	10.59	1.26	4000	32.60	9.36
50	6.47	1.31	5000	33.40	9.16
55	5.83	1.34	6000	34.20	10.70
60	5.18	1.43	7000	35.30	12.16
65	4.81	1.52	8000	36.90	13.12
70	4.43	1.56	9000	38.10	13.81
75	5.10	1.57	10000	39.00	14.83
80	5.91	1.60	11000	38.60	15.83
85	7.33	1.66	12000	39.50	17.11
90	8.74	1.75	13000	39.30	17.62
95	9.05	1.76	14000	41.60	18.37
100	9.36	1.83	15000	40.60	19.10
110	9.65	1.86	16000	37.20	19.72
120	9.97	1.92	17000	40.20	21.98
130	10.51	2.00	18000	48.90	21.22
140	10.32	2.11	19000	37.60	23.90
150	9.42	2.18	20000	37.30	24.07
160	8.09	2.22	21000	37.00	25.49
170	7.43	2.26	22000	38.00	24.92
180	7.60	2.31	23000	38.70	25.60
190	7.43	2.37	24000	38.60	25.70
200	7.26	2.43	25000	24.10	3.92
220	9.11	2.56	14000	27.40	5.66
240	10.88	2.70	15000	30.00	7.20
260	11.75	2.83	16000	32.60	9.36
280	11.55	2.93	17000	33.40	9.16
300	11.36	3.03	18000	34.20	10.70
320	12.03	3.13	19000	35.30	12.16
340	12.69	3.23	20000	36.90	13.12
360	13.33	3.32	21000	38.10	13.81
380	14.00	3.41	22000	39.00	14.83
400	14.63	3.48	23000	38.60	15.83
450	15.33	3.71	24000	39.50	17.11
500	16.03	3.85	25000	39.30	17.62
550	16.65	4.03			
600	17.29	4.32			
650	17.64	4.51			
700	18.00	4.54			
750	18.39	4.90			
800	18.79	5.04			
850	19.10	5.04			
900	19.42	5.20			
950	19.58	5.28			
1000	19.75	5.58			

8. List of Measuring Equipment Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9 KHz – 2.75 GHz	Jun. 23, 2004	Jun. 23, 2005	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/008	9 KHz – 30 MHz	May 03, 2004	May 03, 2005	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9 KHz – 30 MHz	Apr. 19, 2004	Apr. 19, 2005	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450 Hz	N/A	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 ~ 60 Hz	N/A	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9KHz~30MHz	Dec. 24, 2003	Dec. 24, 2004	Conduction (CO01-HY)

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
Spectrum analyzer	R&S	FSP40	100057	9KHz-40GHz	Feb. 26, 2004	Feb. 26, 2005	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Dec. 18, 2003	Dec. 18, 2004	Radiation (03CH06-HY)
Horn Antenna	Com-Power	AH118	071025	1G-18G	Feb. 11, 2004	Feb. 11, 2005	Radiation (03CH06-HY)
PreAmplifier	Com-Power	PA-103	161055	1MHz - 1000MHz	Apr. 26, 2004	Apr. 26, 2005	Radiation (03CH06-HY)
HF Amplifier	MITEQ	AFS44	973248	0.1G - 26.5G	May. 20, 2004	May. 20, 2005	Radiation (03CH06-HY)

9. Uncertainty of Test Site

Uncertainty of Conducted Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch Receiver VSWR Γ_1 = LISN VSWR Γ_2 = Uncertainty= $20\log(1-\Gamma_1\Gamma_2)$	+0.34/-0.3 5	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch Receiver VSWR Γ_1 = 0.20 Antenna VSWR Γ_2 = 0.23 Uncertainty= $20\log(1-\Gamma_1\Gamma_2)$	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 0.5^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.2$ for 10m test distance

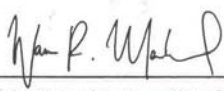
$U = \sqrt{\{(1/2)^2 + (0.3/2)^2 + (2^2 + 3^2 + 2^2 + 0.25^2 + 2^2)/3 + (0.54)^2/2\}} = 2.7$ for 3m test distance

Uncertainty of Conducted Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	± 0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	± 1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	± 0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	± 2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	± 1.50	Rectangular	0.87	1	0.87
Site imperfection	± 2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 \Gamma_2 \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	4.72				

$$U = \sqrt{\{(0.3/2)^2 + (2^2 + 1.5^2 + 0.2^2)/3 + (0.2)^2/2\}} = 1.66$$

10. Certificate of NVLAP Accreditation

United States Department of Commerce National Institute of Standards and Technology	
NVLAP [®]	
ISO/IEC 17025:1999 ISO 9002:1994	Certificate of Accreditation
SPORTON INTERNATIONAL, INC. TAIPEI HSIEN 221 TAIWAN	
<i>is recognized by the National Voluntary Laboratory Accreditation Program for satisfactory compliance with criteria set forth in NIST Handbook 150:2001, all requirements of ISO/IEC 17025:1999, and relevant requirements of ISO 9002:1994. Accreditation is awarded for specific services, listed on the Scope of Accreditation, for:</i>	
ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS	
December 31, 2004 Effective through	 For the National Institute of Standards and Technology NVLAP Lab Code: 200079-0

NVLAP-01C (06-01)