

FCC TEST REPORT

according to

47 CFR Part 2 Part 15 Subpart B

Equipment : GSM900/DCS1800/PCS1900 Tri Band Mobile Phone
Trade Name : Arima
Model No. : 2716
FCC ID : PJO-KMP6J1CB
Filing Type : Certification
Applicant : Arima Communications Corporation
No. 16, Lane 658, Ying Tao Road, Yingko Taipei Hsien,
Taiwan

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Dr. Daniel Lee
EMC / SAR Manager

SPORTON International Inc.

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

SPORTON International Inc.

TEL : 886-2-2696-2468

FAX : 886-2-2696-2255

Rev. 01

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History of this test report

Report No. : FD572116-03

Report Issue Date: Sep. 26, 2005

Original Report Issue Date	Description

1. General Description of Equipment under Test

1.1 Applicant

Arima Communications Corporation

No. 16, Lane 658, Ying Tao Road, Yingko Taipei Hsien, Taiwan

1.2 Manufacture

Arima Communications Corporation

No. 16, Lane 658, Ying Tao Road, Yingko Taipei Hsien, Taiwan

1.3 Basic Description of Equipment under Test

Equipment : GSM900/DCS1800/PCS1900 Tri Band Mobile Phone
 Trade Name : Arima
 Model No. : 2716
 FCC ID : PJO-KMP6J1CB
 Power Supply Type : Switching
 AC Power Cord : AC 120V, Non-Shielded, Wall-mount, 1.8 meter, 2 pin
 Earphone : Viking Design Tech , EE-610-51EN
 Car Charger : SEMDICAR , IC-2600-YT1B
 Adapter 1 : LEADER, MU03-5053055-B2
 Adapter 2 : MU03-5053055-C5
 Battery : SANYO, 1UF463450F-ARCC-2

1.4 Feature of Equipment under Test

Product Feature & Specification	
1. DUT Type :	GSM900/DCS1800/PCS1900 Tri Band Mobile Phone
2. Trade Name :	Arima
3. Model Name :	2716
4. FCC ID :	PJO-KMP6J1CB
6. Tx Frequency :	1850 -1910MHz
7. Rx Frequency :	1930 -1990MHz
8. Antenna Type :	Fixed Internal
9. Maximum Output Power :	29.49 dBm
10. HW Version :	P1A
11. SW Version :	P8K
12. Type of Modulation :	GMSK
13. DUT Stage :	Production Unit
14. Power Rating (DC/AC, Voltage)	3.8V; 300mAh

2. Test Configuration of Equipment under Test

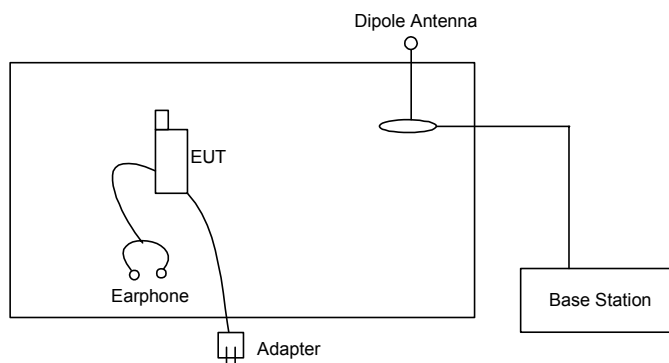
2.1 Test Manner

- a. The EUT has been setup pursuant to ANSI C63.4-2003 and configuration operated in a manner which tended to maximize its emission characteristics in a typical application.
- b. The complete test system included EUT for EMI test.
- c. The following test mode was tested for conduction:
 - Mode 1 : PCS1900 Idle Mode + Earphone + Camera + Adapter 1
 - Mode 2 : PCS1900 Idle Mode + Earphone + Camera + Adapter 2
- d. The following test modes were tested for radiation test:
 - Mode 1 : PCS1900 Idle Mode + Camera + Earphone + Adapter 1
 - Mode 2 : PCS1900 Idle Mode + Camera + Earphone + Adapter 2
- e. Frequency range investigated: conduction 150 kHz to 30 MHz, radiation 30 MHz to 13000MHz.

2.2 Description of Test System

Item	Asset	Model Name	Power Cord
1.	Base Station (R&S)	CMU200	N/A

2.3 Connection Diagram of Test System



3. Test Software

The EUT is in PCS 1900 Idle mode controlled by Base Station Simulator.

4. General Information of Test

4.1 Test Facility

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiang, 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 C63.4-2003

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 13000MHz

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 C63.4-2003 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

As described in Chapter 7.

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.

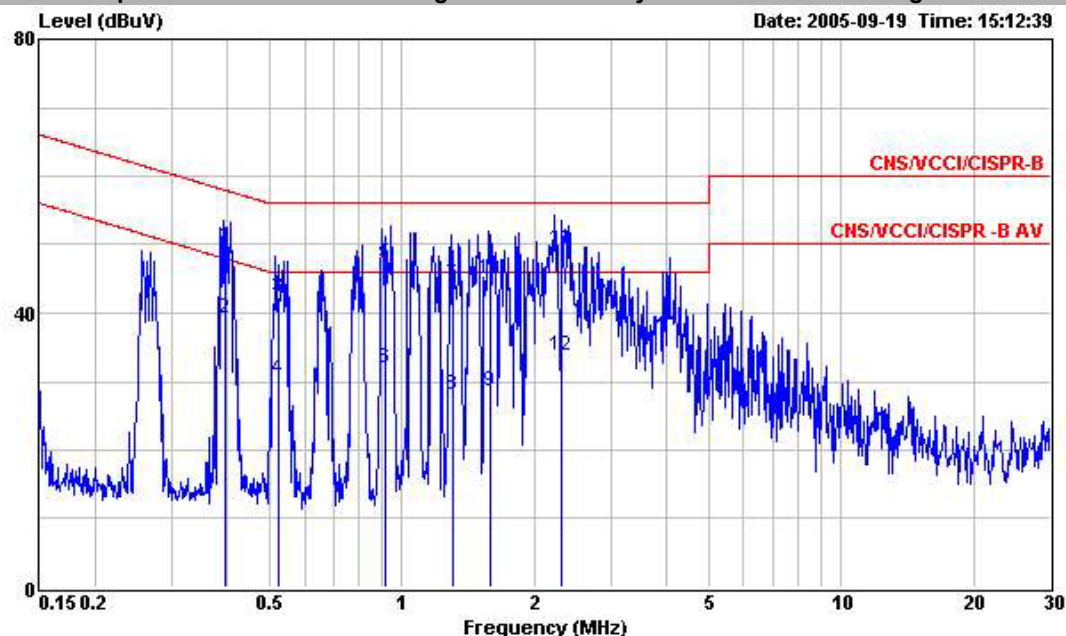
The diagram illustrates the experimental setup for measuring the radiation pattern of a mobile phone antenna. A mobile phone is placed on a table, with its antenna labeled "Antenna". A "Base Station" is connected to the phone via a cable. The distance from the table surface to the ground plane is indicated as "80 cm to the ground plane". A "L.I.S.N." (Line Impedance Stabilization Network) is connected to the phone's charging port. Another "L.I.S.N." is connected to the Base Station. A small electronic device, possibly a signal generator or analyzer, is connected to the Base Station via a cable.

5.4 Test Result of AC Powerline Conducted Emission

5.4.1 Test Mode: Mode 1

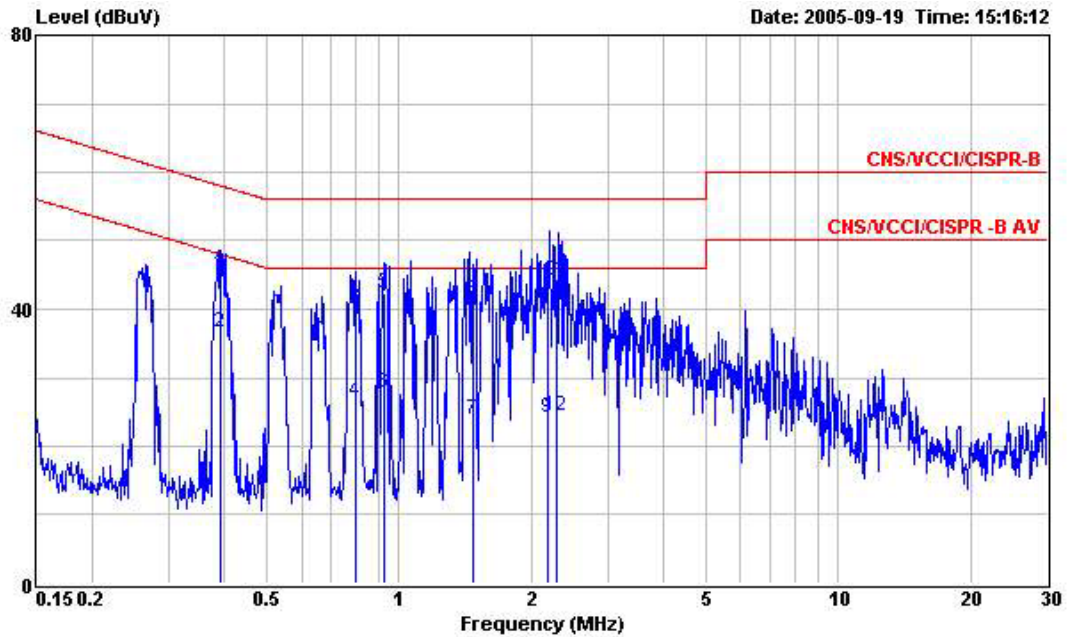
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 24C
- Relative Humidity: 52%
- All emissions not reported here are more than 10 dB below the prescribed limit.

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 2001/004 200505 LINE
EUT : GSM Tri Band Mobile Phone
Power : 120Vac/50Hz
Model : FD572116
Memo : PCS1900 IDLE+CAMERA+EARPHONE+
Memo : CHARGER 1
SN: N/A

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.394	49.61	-8.36	57.97	49.49	0.06	0.06	QP
2	0.394	39.32	-8.65	47.97	39.20	0.06	0.06	Average
3	0.525	42.21	-13.79	56.00	42.07	0.07	0.07	QP
4	0.525	30.41	-15.59	46.00	30.27	0.07	0.07	Average
5	0.919	47.14	-8.86	56.00	46.95	0.11	0.08	QP
6	0.919	31.94	-14.06	46.00	31.75	0.11	0.08	Average
7	1.303	44.08	-11.92	56.00	43.87	0.11	0.10	QP
8	1.303	27.99	-18.01	46.00	27.78	0.11	0.10	Average
9	1.581	28.58	-17.42	46.00	28.36	0.11	0.11	Average
10	1.581	45.00	-11.00	56.00	44.78	0.11	0.11	QP
11	2.310	49.32	-6.68	56.00	49.07	0.13	0.12	QP
12	2.310	33.80	-12.20	46.00	33.55	0.13	0.12	Average



Site : CO01-HY
Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL
EUT : GSM Tri Band Mobile Phone
Power : 120Vac/60Hz
Model : FD572116
Memo : PCS1900 IDLE+CAMERA+EARPHONE+
Memo : CHARGER 1
SN: N/A

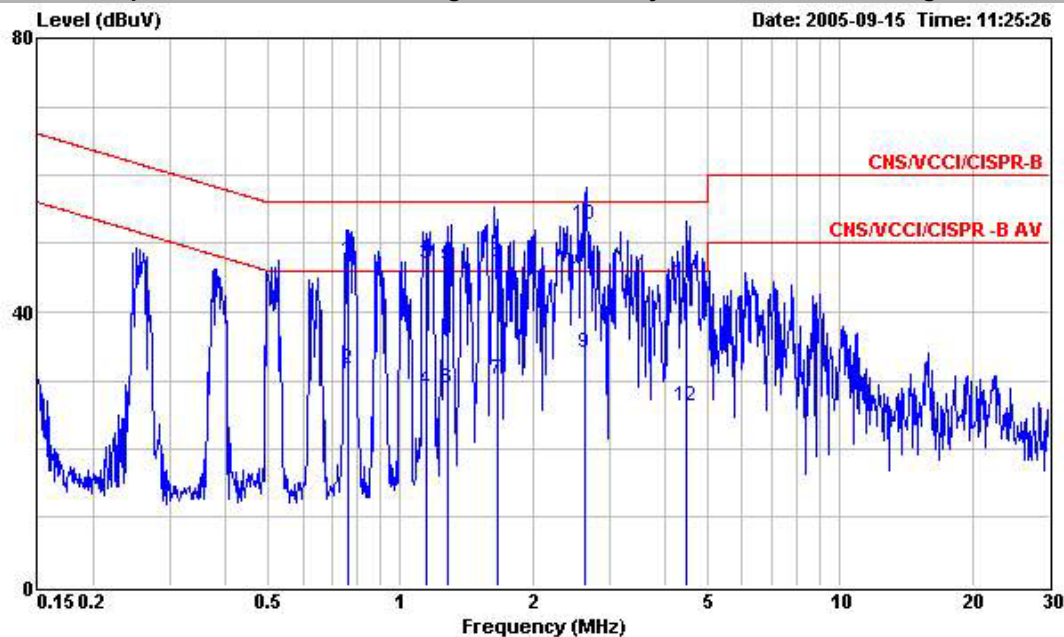
	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.393	45.09	-12.91	58.00	44.92	0.11	0.06	QP
2	0.393	36.59	-11.41	48.00	36.42	0.11	0.06	Average
3	0.793	40.16	-15.84	56.00	39.89	0.20	0.07	QP
4	0.793	26.61	-19.39	46.00	26.34	0.20	0.07	Average
5	0.923	42.38	-13.62	56.00	42.08	0.22	0.08	QP
6	0.923	27.82	-18.18	46.00	27.52	0.22	0.08	Average
7	1.469	23.93	-22.07	46.00	23.60	0.23	0.10	Average
8	1.469	41.20	-14.80	56.00	40.87	0.23	0.10	QP
9	2.177	24.09	-21.91	46.00	23.74	0.23	0.12	Average
10	2.177	44.09	-11.91	56.00	43.74	0.23	0.12	QP
11	2.290	44.36	-11.64	56.00	44.01	0.23	0.12	QP
12	2.290	24.32	-21.68	46.00	23.97	0.23	0.12	Average

Test Engineer : 
Jay

5.4.2 Test Mode: Mode 2

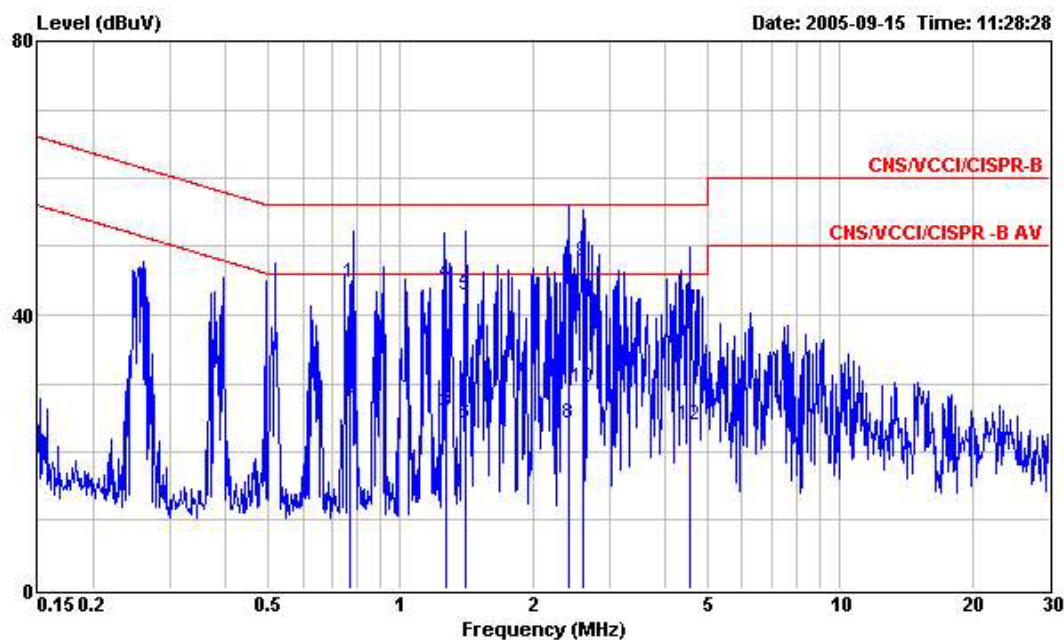
- Frequency Range of Test: from 0.15 MHz to 30 MHz
- Temperature: 24°C
- Relative Humidity: 52%
- All emissions not reported here are more than 10 dB below the prescribed limit.

■ 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 2001/004 200505 LINE
EUT : GSM Tri Band Mobile Phone
Power : 120Vac/60Hz
Model : FD572116
Memo : PCS1900 IDLE+CAMERA+EARPHONE+
Memo : CHARGER 2

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.764	47.56	-8.44	56.00	47.39	0.10	0.07	QP
2	0.764	31.56	-14.44	46.00	31.39	0.10	0.07	Average
3	1.147	47.01	-8.99	56.00	46.81	0.11	0.09	QP
4	1.147	28.46	-17.54	46.00	28.26	0.11	0.09	Average
5	1.282	46.76	-9.24	56.00	46.56	0.11	0.09	QP
6	1.282	28.90	-17.10	46.00	28.70	0.11	0.09	Average
7	1.671	30.01	-15.99	46.00	29.79	0.11	0.11	Average
8	1.671	47.37	-8.63	56.00	47.15	0.11	0.11	QP
9	2.629	33.90	-12.10	46.00	33.63	0.15	0.12	Average
10	2.629	52.69	-3.31	56.00	52.42	0.15	0.12	QP
11	4.484	44.43	-11.57	56.00	44.09	0.21	0.13	QP
12	4.484	26.20	-19.80	46.00	25.86	0.21	0.13	Average



Site : CO01-HY
 Condition : CNS/VCCI/CISPR-B 2001/004 200505 NEUTRAL
 EUT : GSM Tri Band Mobile Phone
 Power : 120Vac/60Hz
 Model : FD572116
 Memo : PCS1900 IDLE+CAMERA+EARPHONE+
 Memo : CHARGER 2

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.768	44.65	-11.35	56.00	44.39	0.19	0.07	QP
2	0.768	27.80	-18.20	46.00	27.54	0.19	0.07	Average
3	1.271	25.73	-20.27	46.00	25.41	0.23	0.09	Average
4	1.271	44.64	-11.36	56.00	44.32	0.23	0.09	QP
5	1.411	42.88	-13.12	56.00	42.55	0.23	0.10	QP
6	1.411	24.22	-21.78	46.00	23.89	0.23	0.10	Average
7	2.417	45.08	-10.92	56.00	44.73	0.23	0.12	QP
8	2.417	24.25	-21.75	46.00	23.90	0.23	0.12	Average
9	2.616	47.68	-8.32	56.00	47.33	0.23	0.12	QP
10	2.616	29.26	-16.74	46.00	28.91	0.23	0.12	Average
11	4.574	40.66	-15.34	56.00	40.29	0.24	0.13	QP
12	4.574	23.93	-22.07	46.00	23.56	0.24	0.13	Average

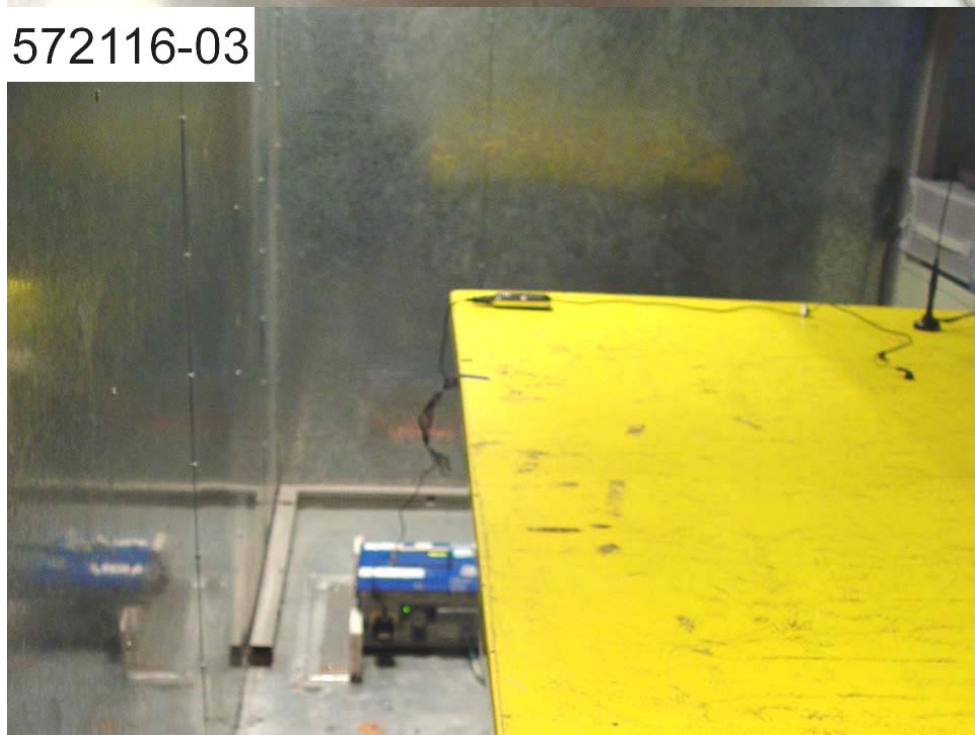
Test Engineer : 
Jay

5.5 Photographs of Conducted Powerline Test Configuration

Front View

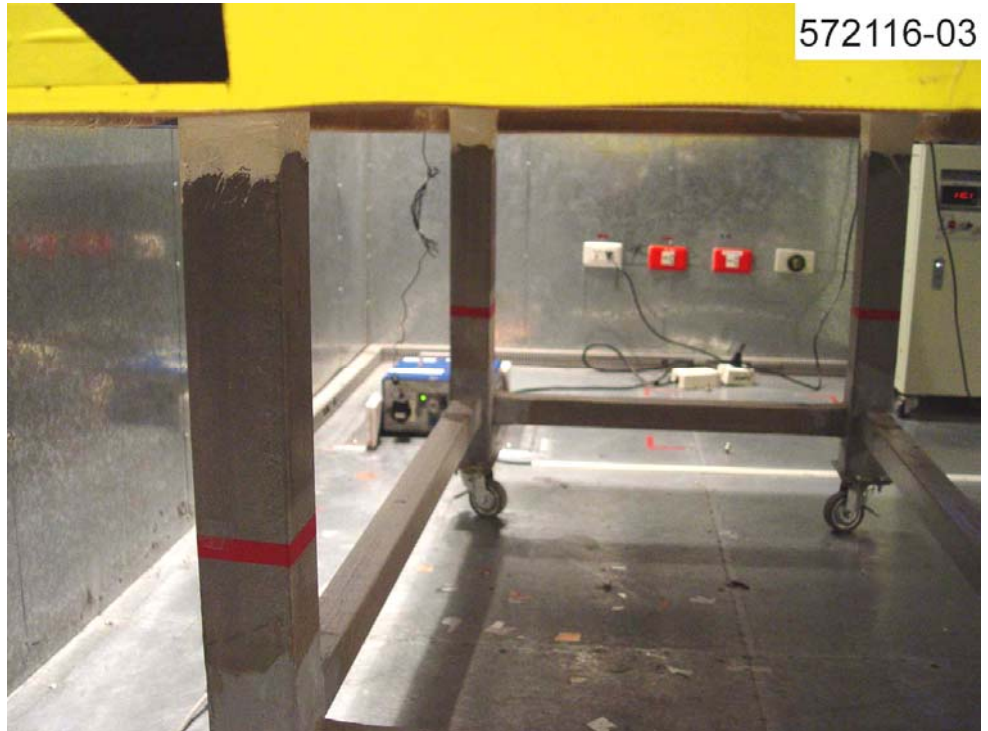


Rear View



572116-03

Side View



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 C63.4-2003. 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.

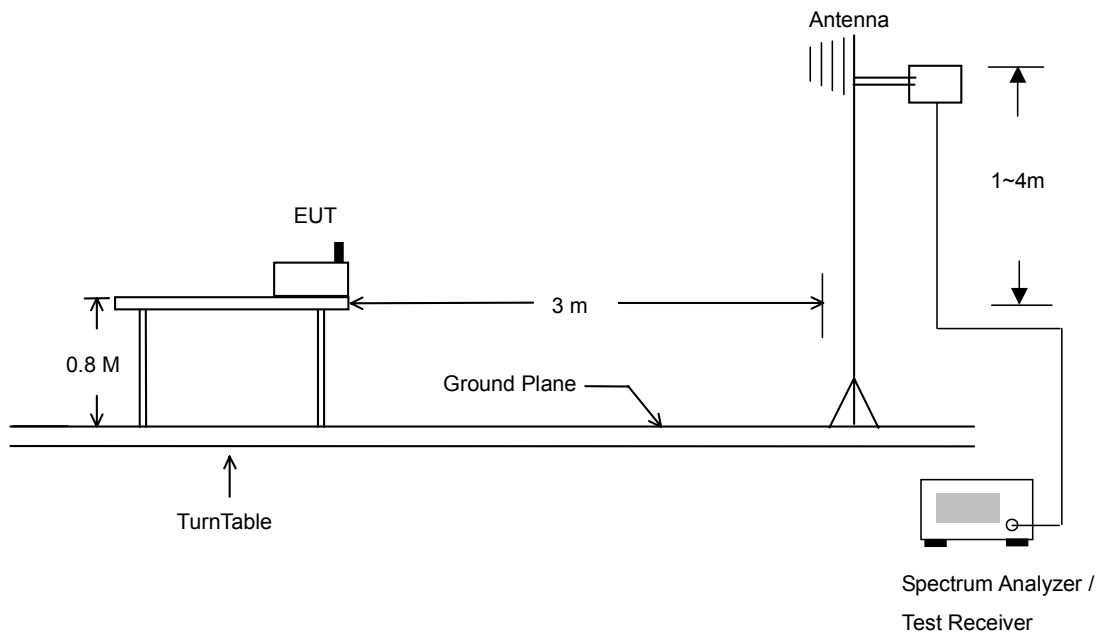
6.1 Major Measuring Instruments

As described in Chapter 7.

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 Bi-Log antenna 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

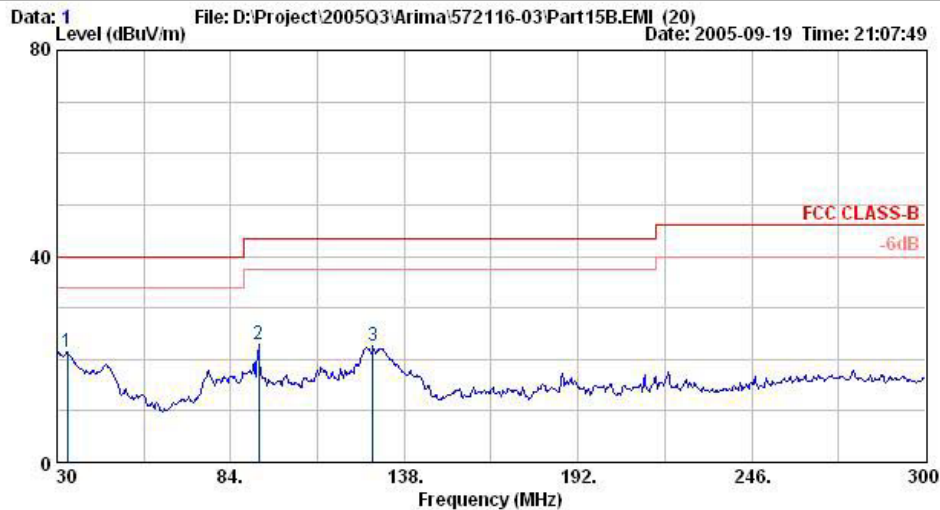


6.4 Test Result of Radiated Emission

6.4.1 Test Mode: Mode 1

- Frequency Range of Test: from 30 MHz to 25000 MHz
- Test Distance: 3m
- Temperature: 28°C
- Relative Humidity: 64%
- 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-2004-1122 HORIZONTAL 400cm 0deg
EUT : GSM Tri Band Mobile Phone
Power : 120Vac/60Hz
Model : FD 572116-03
Memo : PCS1900 Idle Mode+Camera+Earphone
: +Charger

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1 @	33.24	21.53	-18.47	40.00	34.47	17.73	0.91	31.58	400	0 Peak
2	92.64	23.03	-20.47	43.50	43.97	9.47	1.06	31.47	400	0 Peak
3	128.28	22.60	-20.90	43.50	40.87	11.78	1.55	31.59	400	0 Peak