

RADIO TEST REPORT

Test Report No. : 26KE0014-HO-A

Applicant : **Sharp Corporation**
Type of Equipment : **WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable**
Model No. : **810SH**
FCC ID : **APYHR000050**
Test standard : **FCC Part 15 Subpart C
Section 15.207, Section 15.247: 2006**
Test Result : **Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation.
4. The test results in this report are traceable to the national or international standards.

Date of test:

August 2 to 5, 2006

Tested by:

Yasuyuki Fukui
EMC Services

Approved by :

Hironobu Shimoji
Group Leader of
EMC Services



NVLAP LAB CODE: 200572-0

This laboratory is accredited by the NVLAP LAB CODE 200572-0, U.S.A. The tests reported herein have been performed in accordance with its terms of accreditation.
*As for the range of Accreditation in NVLAP, you may refer to the WEB address, <http://ulapex.jp/emc/nvlap.htm>

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CONTENTS	PAGE
SECTION 1: Client information	3
SECTION 2: Equipment under test (E.U.T.).....	3
SECTION 3: Test specification, procedures & results.....	4
SECTION 4: Operation of E.U.T. during testing	8
SECTION 5: Conducted Emission.....	10
SECTION 6: Spurious Emission	11
SECTION 7: Bandwidth.....	12
SECTION 8: Maximum Peak Output Power	12
SECTION 9: Carrier Frequency Separation	12
SECTION 10: Number of Hopping Frequency	12
SECTION 11: Dwell time	12
APPENDIX 1: Photographs of test setup	13
Conducted Emission.....	13
Spurious Emission (Radiated).....	14
Worst Case Position (Horizontal: X-axis/ Vertical:Y-axis)	15
APPENDIX 2: Data of EMI test.....	16
Conducted Emission.....	16
Carrier Frequency Separation	21
20dB Bandwidth	23
Number of Hopping Frequency	25
Dwell time	27
Maximum Peak Output Power	30
Radiated Spurious Emission.....	31
Conducted Spurious Emission	39
99% Occupied Bandwidth.....	43
APPENDIX 3:Test instruments	44

SECTION 1: Client information

Company Name : Sharp Corporation
Address : 2-13-1 Iida Hachihonmatsu HigashiHiroshima-City, Hiroshima,
739-0192 Japan
Telephone Number : +81-82-420-1592
Facsimile Number : +81-82-420-1852
Contact Person : Kazushi Okada

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone
/ Bluetooth enable
Model No. : 810SH
Serial No. : 004401/11/0020466/2, 004401/11020463/9
Rating : AC120V/60Hz
Country of Manufacture : Japan
Receipt Date of Sample : August 1, 2006
Condition of EUT : Production prototype,
(Not for Sale: This sample is equivalent to mass-produced items.)
Modification of EUT : No modification by the test lab.

2.2 Product Description

Model No: 810SH (referred to as the EUT in this report) is WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone.

The EUT has the function that Bluetooth wireless technology interface for establishing contact and transmitting data with certain device.

Clock frequency(ies) in the system : 13MHz (CPU), 32.768MHz (RTC)
Equipment Type : Transceiver
Frequency of Operation : 2402-2480MHz
Bandwidth & Channel spacing : 1MHz & 1MHz
Modulation : FHSS
Power Supply (inner) : DC 2.9V
Antenna Type : Internal Antenna
Antenna Connector Type : N/A
Antenna Gain : 0 dBi max

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C : 2006
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits : 2006
Section 15.247 Operation within the bands 902-928MHz,
2400-2483.5MHz, and 5725-5850MHz : 2006

FCC 15.31 (e)

This EUT provides stable voltage(DC2.9V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

It is impossible for end users to replace the antenna, because the antenna is mounted inside of the EUT. Therefore, the equipment complies with the antenna requirement of Section 15.203.

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin*0)	Results			
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC: Section 15.207	-	N/A	23.0 dB 0.3975MHz AV/N	Complied			
		IC: RSS-Gen 7.2.2	IC: RSS-Gen 7.2.2							
2	Carrier Frequency Separation	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(a)(1)	Conducted	N/A	See data.	Complied			
		IC: -	IC: RSS-210 A8.1 (2)							
3	20dB Bandwidth	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(a)(1)	Conducted	N/A		See data.	Complied		
		IC: -	IC: RSS-210 A8.1 (1)							
4	Number of Hopping Frequency	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(a)(1)(iii)	Conducted	N/A			See data.	Complied	
		IC: -	IC: RSS-210 A8.1 (4)							
5	Dwell time	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(a)(1)(iii)	Conducted	N/A				See data.	Complied
		IC: -	IC: RSS-210 A8.1 (4)							
6	Maximum Peak Output Power	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(b)(1)	Conducted	N/A	See data.				Complied
		IC: RSS-Gen 4.6	IC: RSS-210 A8.4 (2)							
7	Band Edge Compliance	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(d)	Conducted	N/A		See data.			Complied
		IC: -	IC: RSS-210 A8.5							
8	Spurious Emission	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section 15.247(d)	Conducted/ Radiated	N/A			See data.		Complied
		IC: RSS-Gen 4.7 RSS-Gen 4.8	IC: RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3							

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.

*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*These tests were also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".

*These tests were performed without any deviations from test procedure except for additions or exclusions.

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3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS-Gen 4.4.1	-	Conducted	N/A	N/A	N/A

3.4 Uncertainty

Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is ± 2.66 dB.
The data listed in this test report has enough margin, more than the site margin.

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ± 4.59 dB(3m)/
 ± 4.58 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ± 4.62 dB(3m)/
 ± 4.60 dB(10m).

The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ± 5.27 dB.
The data listed in this test report has enough margin, more than the site margin.

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is ± 3.0 dB.

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3.5 Test Location

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	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	655103	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	IC4247A-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	IC4247A-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	-
No.4 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.5 semi anechoic chamber	-	-	6.0 x 6.0 x 3.9m	N/A	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	2.0 x 2.0m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 5.4m	-
No.7 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.8 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1, No.2, No.3 and No.4 semi-anechoic chambers and No.7 shielded room.

3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

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SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

The mode used for test : Transmitting mode (Packet size DH5, Data packet: PRBS9)

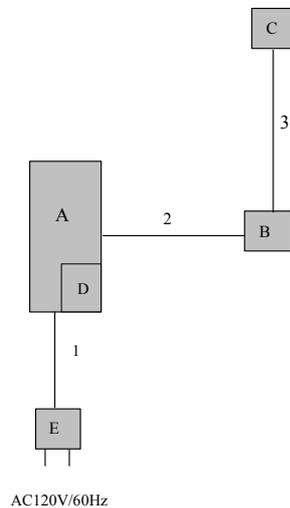
- Low Channel : 2402MHz
- Mid Channel : 2441MHz
- High Channel : 2480MHz

Receiving mode

- Mid Channel : 2441MHz

Inquiry mode

4.2 Configuration and peripherals



* Cabling and setup were taken into consideration and test data was taken under worst case conditions.

Description of Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	WCDMA & Tri-band GSM Dual mode Mobile Phone/ Bluetooth enable	810SH	004401/11/0020466/2 *1), 004401/11020463/9 *2)	SHARP Corporation	EUT
B	Hands free Microphone Unit	XN-1HU90	-	SHARP Corporation	EUT
C	Stereo Headset	XN-1HS90	-	SHARP Corporation	EUT
D	Lithium-Ion Battery	SHBAR1	-	SHARP Corporation	EUT
E	AC Adapter	SHCAA1	-	HOSIDEN	EUT

*1) Used for Antenna Terminal tests

*2) Used for Conducted and Radiated emission tests

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List of cables used

No.	Name	Length (m)	Shield	
			Cable	Connector
1	DC Cable	1.5	Unshielded	Unshielded
2	Cable for Hands free Microphone Unit	0.9	Unshielded	Unshielded
3	Stereo Headset Cable	0.75	Unshielded	Unshielded

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a wooden table of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane. The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

1) For the tests on EUT with other peripherals (as a whole system)

I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber or a Measurement Room.

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

Detector : CISPR quasi-peak and average detector (IF BW 9 kHz)
Measurement range : 0.15-30MHz
Test data : APPENDIX 2
Test result : Pass

Date: August 4, 2006

Test engineer: Yasuyuki Fukui

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SECTION 6: Spurious Emission

[Conducted]

Test Procedure

The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 2

Test result : Pass

[Radiated]

Test Procedure

EUT was placed on a urethane platform of nominal size, 1.0m by 0.5m, raised 80cm above the conducting ground plane. The Radiated Electric Field Strength intensity was measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).

The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.

The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer (in linear mode).

The test was made with the detector (RBW/VBW) in the following table.

When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

20dBc was applied to the frequency over the limit of FCC 15.209 and outside the restricted band of FCC15.205.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector	QP: BW 120kHz(T/R)	PK: RBW:1MHz/VBW: 1MHz
IF Bandwidth	20dBc : RBW: 100kHz VBW: 300kHz (S/A)	AV: RBW:1MHz/VBW:10Hz 20dBc : RBW:100kHz/VBW:300kHz

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

Test data : APPENDIX 2

Test result : Pass

Date: August 3 and 4, 2006

Test engineer: Yasuyuki Fukui

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SECTION 7: Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 2
Test result : Pass

SECTION 8: Maximum Peak Output Power

Test Procedure

The Maximum Peak Output Power was measured with a power meter (tested bandwidth: 50MHz) connected to the antenna port.

Test data : APPENDIX 2
Test result : Pass

SECTION 9: Carrier Frequency Separation

Test Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 2
Test result : Pass

SECTION 10: Number of Hopping Frequency

Test Procedure

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 2
Test result : Pass

SECTION 11: Dwell time

Test Procedure

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 2
Test result : Pass

APPENDIX 1: Photographs of test setup

Conducted Emission

This page has been submitted for a separate exhibit.

Spurious Emission (Radiated)

This page has been submitted for a separate exhibit.

Worst Case Position (Horizontal: X-axis/ Vertical:Y-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2006/08/04 02:52:48

Applicant	: Sharp Corporation	Report No.	: 26KE0014-HO
Kind of EUT	: WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable	Power	: DC4.0V (AC Adapter : AC120V/60Hz)
Model No.	: 810SH	Temp°C/Humi%	: 22.5deg.C / 62%
Serial No.	: 004401/11/020463/9	Operator	: Yasuyuki Fukui
Mode / Remarks	: Bluetooth Tx 2402MHz , DH5		
LIMIT	: FCC15C § 15.207 (QP) / RSS-Gen		
	: FCC15C § 15.207 (AV) / RSS-Gen		

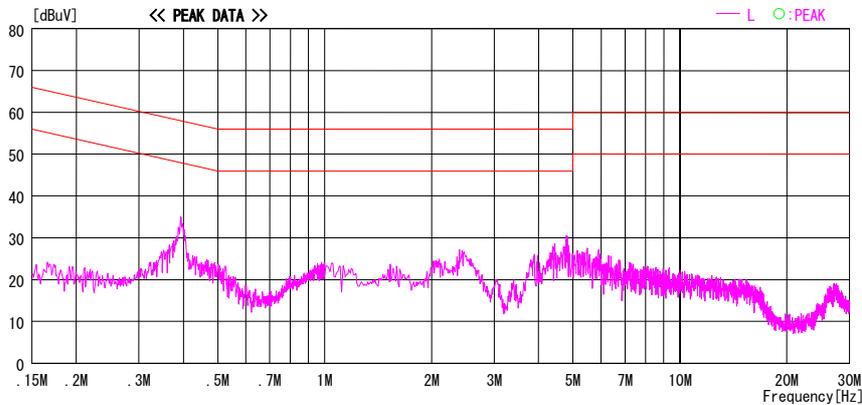
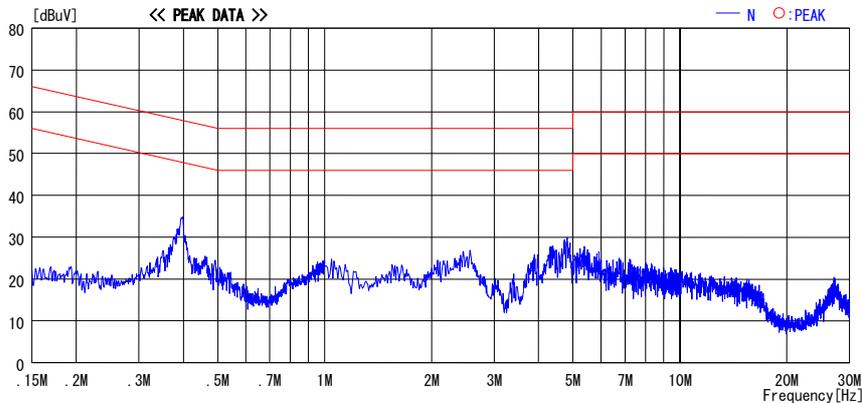


CHART:WITH FACTOR, Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
 Date : 2006/08/04 02:49:46

Applicant : Sharp Corporation
 Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual
 mode Mobile Phone/ Bluetooth enable
 Model No. : 810SH
 Serial No. : 004401/11/020463/9
 Mode / Remarks : Bluetooth Tx 2441MHz , DH5
 Report No. : 26KE0014-HO
 Power : DC4.0V (AC Adapter : AC120V/60Hz)
 Temp°C/Humi% : 22.5deg. C / 62%
 Operator : Yasuyuki Fukui
 LIMIT : FCC15C § 15.207 (QP) / RSS-Gen
 FCC15C § 15.207 (AV) / RSS-Gen

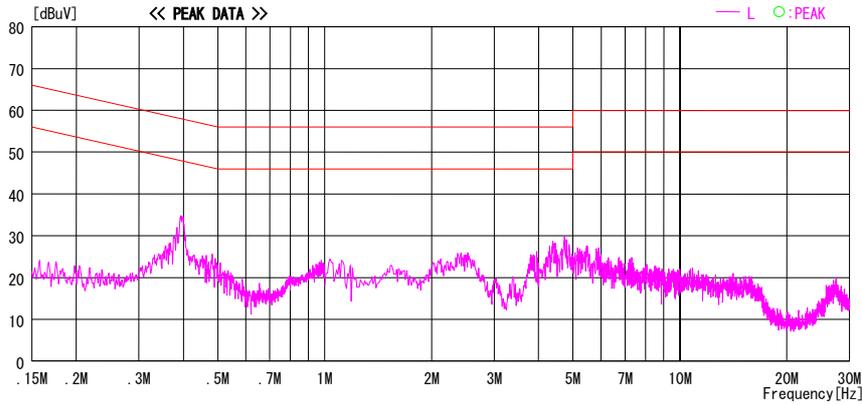
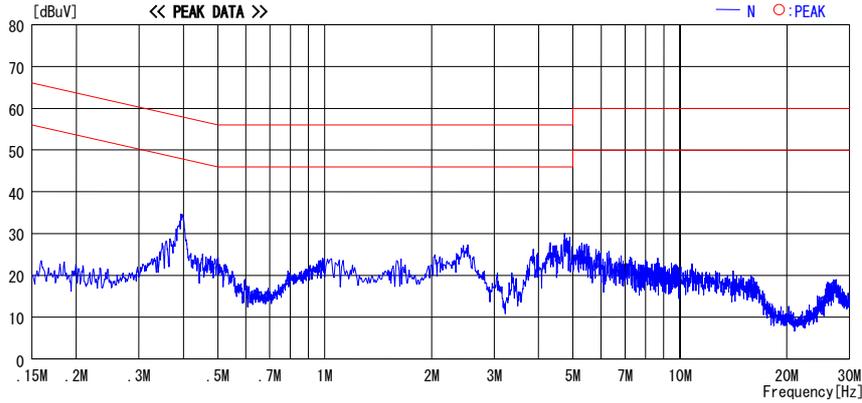


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

		UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
		Date : 2006/08/04 02:40:43
Applicant	: Sharp Corporation	Report No.
Kind of EUT	: WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable	Power
		Temp/C/Humi%
Model No.	: 810SH	Operator
Serial No.	: 004401/11/020463/9	
Mode / Remarks	: Bluetooth Tx 2480MHz , DH5	
LIMIT : FCC15C § 15.207 (QP) / RSS-Gen		
FCC15C § 15.207 (AV) / RSS-Gen		

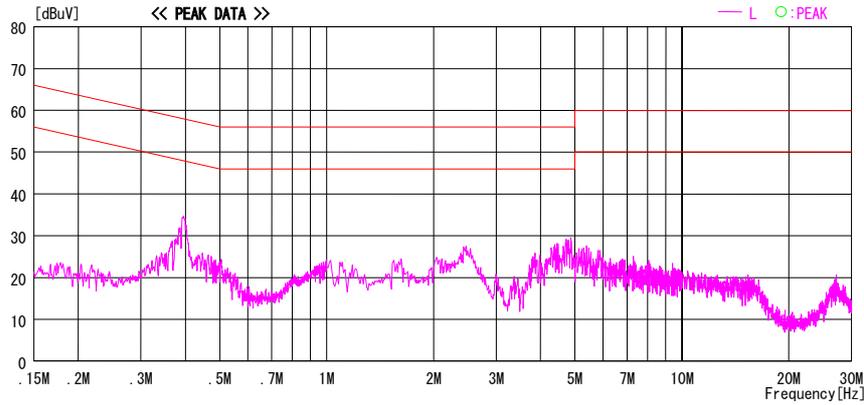
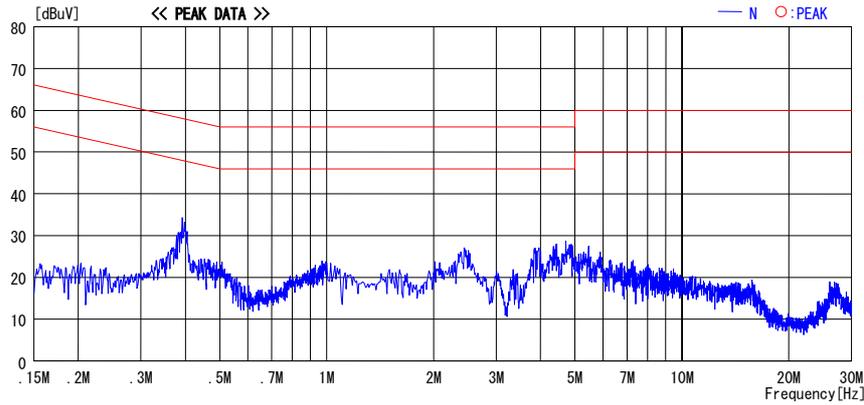


CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 3 Semi Anechoic Chamber
Date : 2006/08/04 02:55:39

Applicant : Sharp Corporation Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable	Report No. : 26KE0014-H0 Power : DC4.0V (AC Adapter : AC120V/60Hz) Temp°C/Humi% : 22.5deg. C / 62% Operator : Yasuyuki Fukui
Model No. : 810SH Serial No. : 004401/11/020463/9 Mode / Remarks : Bluetooth Rx 2441MHz , DH5	
LIMIT : FCC15C § 15.207 (QP) / RSS-Gen FCC15C § 15.207 (AV) / RSS-Gen	

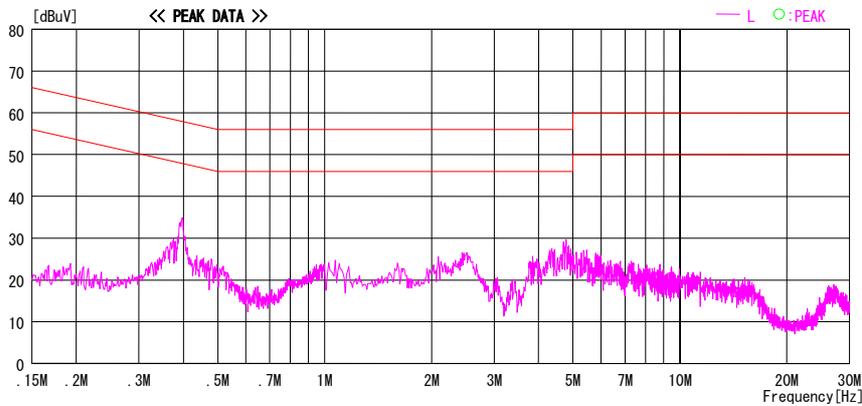
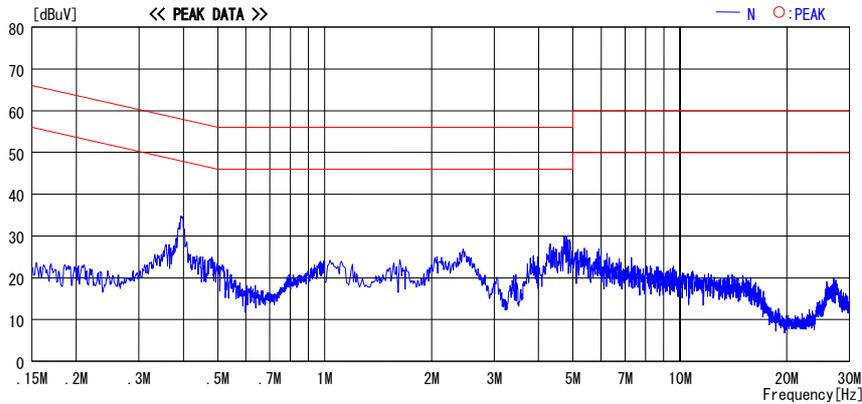


CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission

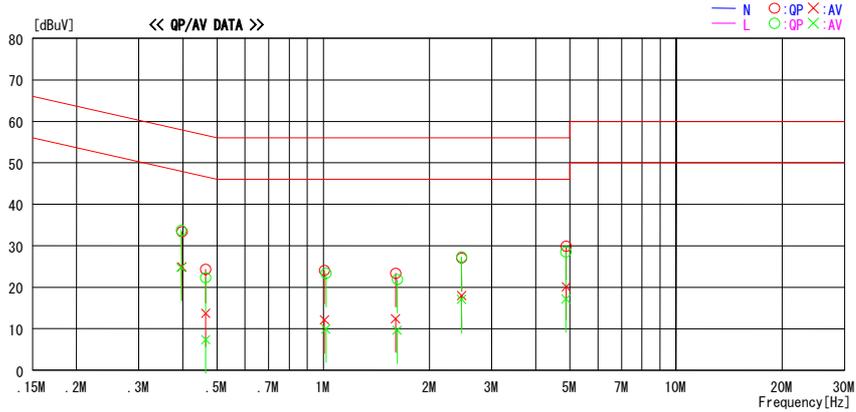
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 3Semi Anechoic Chamber
Date : 2006/08/04 02:40:43

Applicant : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable
Model No. : 810SH
Serial No. : 004401/11/020463/9
Mode / Remarks : Bluetooth Tx 2480MHz , DH5

Report No. : 26KE0014-HO
Power : DC4.0V (AC Adapter : AC120V/60Hz)
Temp°C/Humi% : 22.5deg. C / 62%
Operator : Yasuyuki Fukui

LIMIT : FCC15C § 15.207 (QP) / RSS-Gen
FCC15C § 15.207 (AV) / RSS-Gen



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.39750	33.2	24.7	0.2	33.4	24.9	57.9	47.9	24.5	23.0	N
0.46450	24.1	13.5	0.2	24.3	13.7	56.6	46.6	32.3	32.9	N
1.00760	23.8	11.9	0.3	24.1	12.2	56.0	46.0	31.9	33.8	N
1.60300	23.1	12.1	0.3	23.4	12.4	56.0	46.0	32.6	33.6	N
2.46700	26.7	17.6	0.4	27.1	18.0	56.0	46.0	28.9	28.0	N
4.87899	29.2	19.4	0.7	29.9	20.1	56.0	46.0	26.1	25.9	N
0.39565	33.5	24.6	0.2	33.7	24.8	57.9	47.9	24.2	23.1	L
0.46450	22.1	7.2	0.2	22.3	7.4	56.6	46.6	34.3	39.2	L
1.01800	23.1	9.7	0.3	23.4	10.0	56.0	46.0	32.6	36.0	L
1.62100	21.6	9.4	0.3	21.9	9.7	56.0	46.0	34.1	36.3	L
2.46554	26.9	16.7	0.4	27.3	17.1	56.0	46.0	28.7	28.9	L
4.86770	27.8	16.5	0.7	28.5	17.2	56.0	46.0	27.5	28.8	L

CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Carrier Frequency Separation

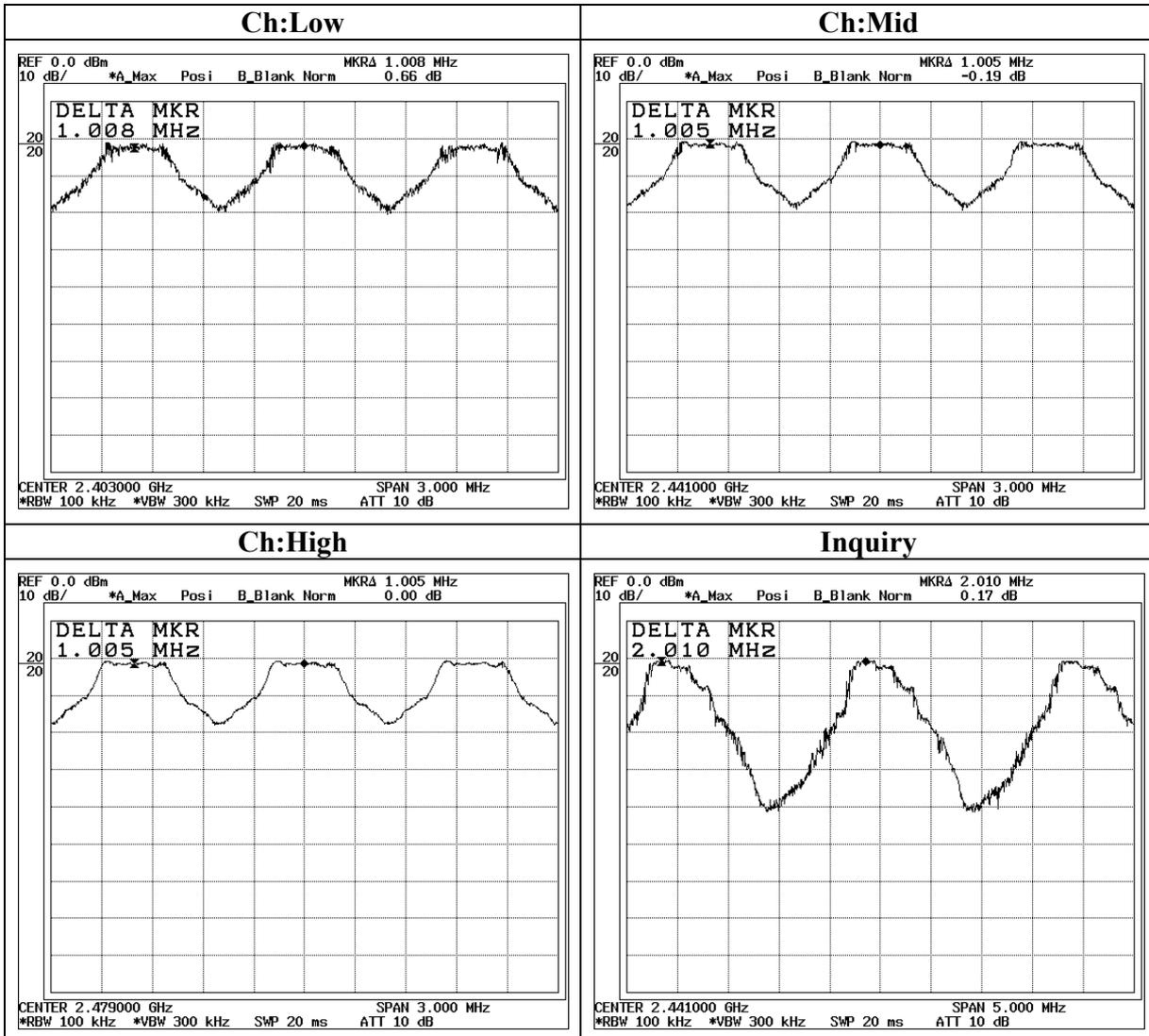
UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
 GSM Dual mode Mobile Phone / Bluetooth enable
MODEL : 810SH
S/N : 004401/11/0020466/2
POWER : DC4.0V
MODE : Transmitting mode (Hopping On)/Inquiry mode

REGULATION : FCC Part15 Subpart C 15.247(a)(1)
TEST DISTANCE : -
DATE : 08/02/2006
TEMPERATURE : 25deg.C
HUMIDITY : 55%
ENGINEER : Yasuyuki Fukui

Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.008	>0.891 (20dB Bandwidth or 25[kHz])(whichever is greater))
Mid	2441.0	1.005	>0.891 (20dB Bandwidth or 25[kHz])(whichever is greater))
High	2480.0	1.005	>0.891 (20dB Bandwidth or 25[kHz])(whichever is greater))
Inquiry	2441.0	2.010	>0.729 (20dB Bandwidth or 25[kHz])(whichever is greater))

Carrier Frequency Separation



20dB Bandwidth

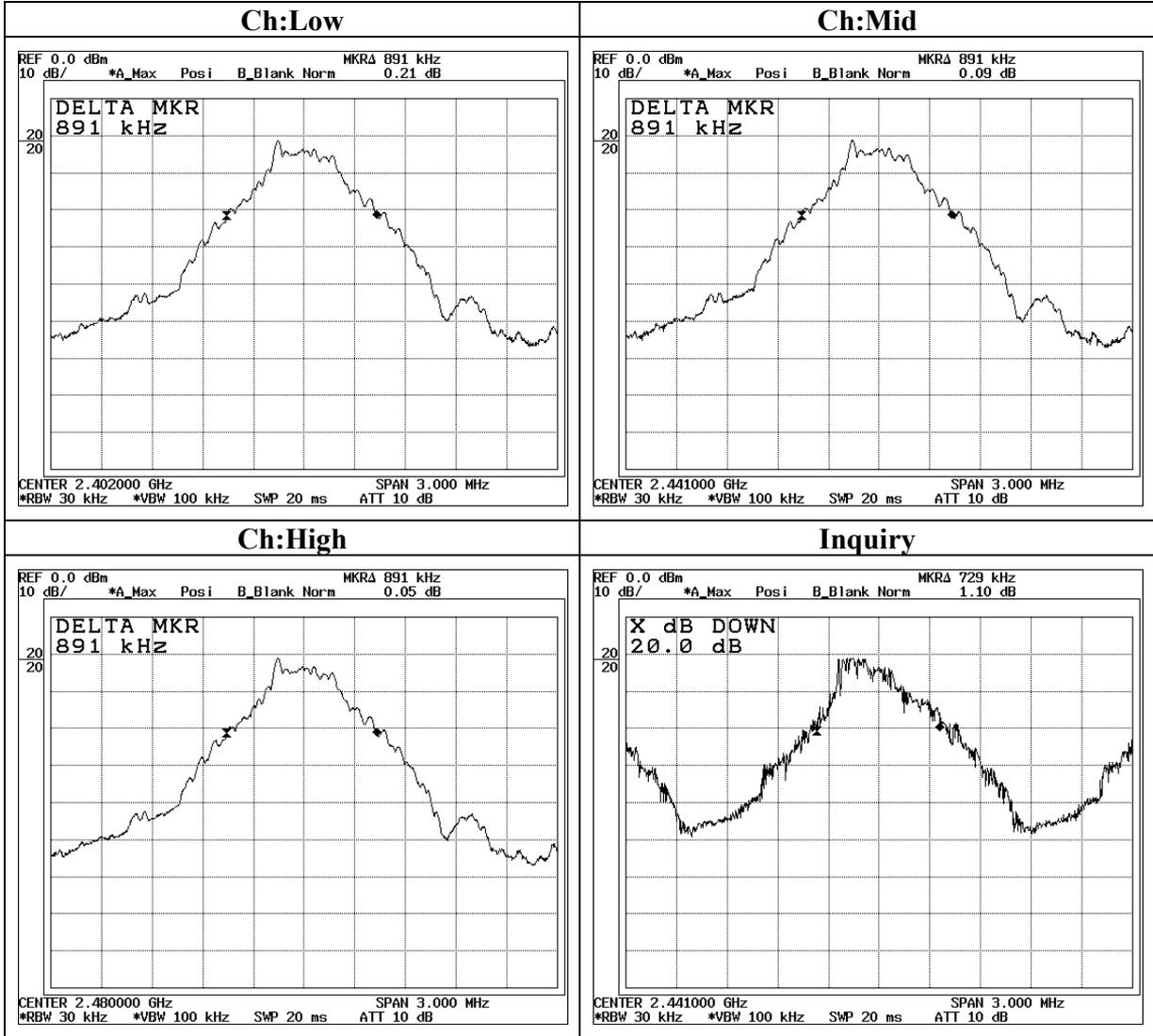
UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
 GSM Dual mode Mobile Phone / Bluetooth enable
MODEL : 810SH
S/ N : 004401/11/0020466/2
POWER : DC4.0V
MODE : Transmitting mode (Hopping Off)/Inquiry mode

REGULATION : FCC Part15 Subpart C 15.247(a)(1)
TEST DISTANCE : -
DATE : 08/02/2006
TEMPERATURE : 25deg.C
HUMIDITY : 55%
ENGINEER : Yasuyuki Fukui

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.891	-
Mid	2441.0	0.891	-
High	2480.0	0.891	-
Inquiry	2441.0	0.729	-

20dB Bandwidth



Number of Hopping Frequency

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

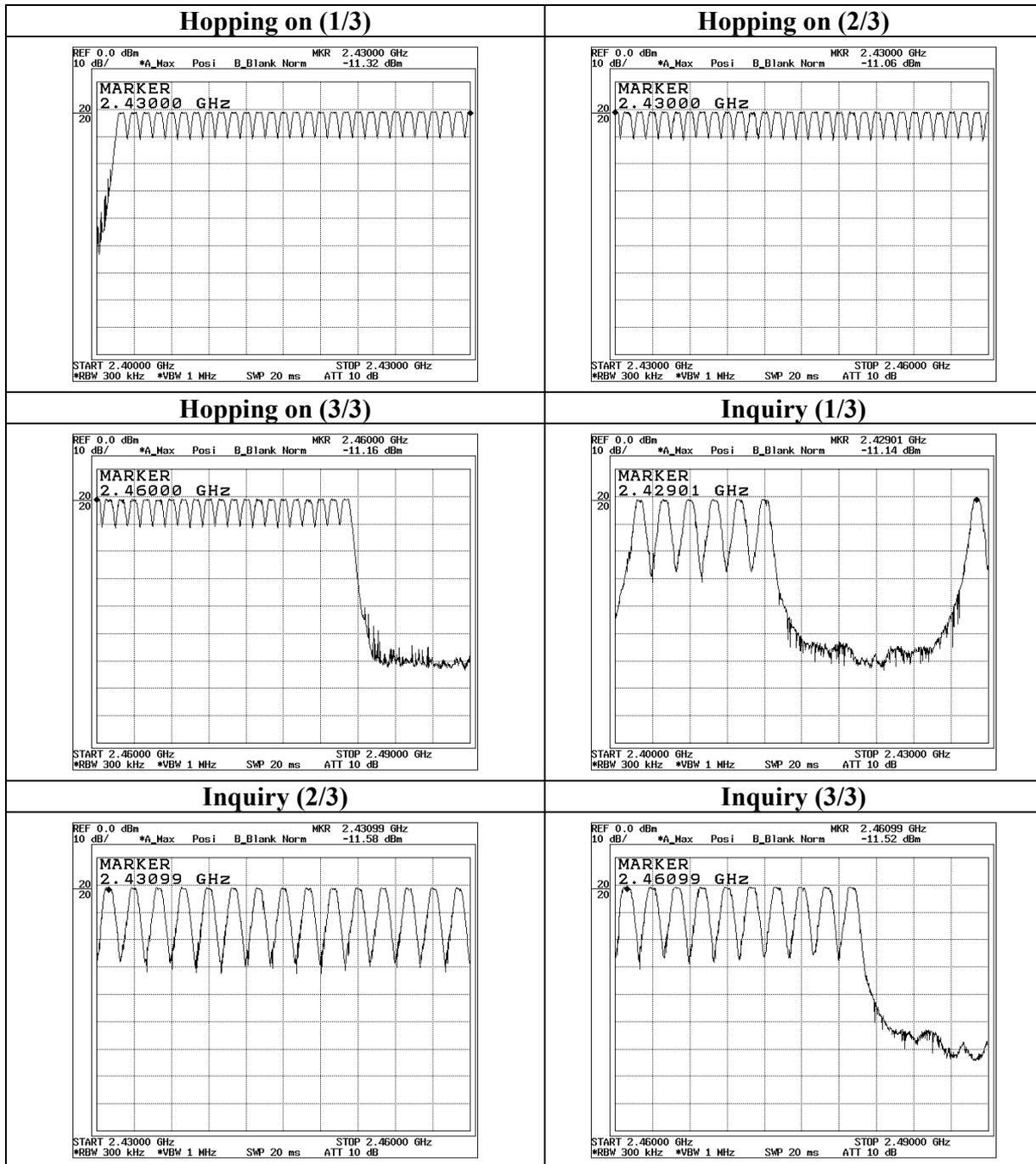
COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
 GSM Dual mode Mobile Phone / Bluetooth enable
MODEL : 810SH
S/ N : 004401/11/0020466/2
POWER : DC4.0V
MODE : Transmitting mode (Hopping On)/Inquiry mode

REGULATION : FCC Part15 Subpart C 15.247(a)(1)(iii)
TEST DISTANCE : -
DATE : 08/02/2006
TEMPERATURE : 25deg.C
HUMIDITY : 55%
ENGINEER : Yasuyuki Fukui

Mode	Number of channel [time]	Limit [time]
Tx(Hopping on)	79	≥ 15

Mode	Number of channel [time]	Limit [time]
Inquiry	32	≥ 15

Number of Hopping Frequency



Dwell time

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

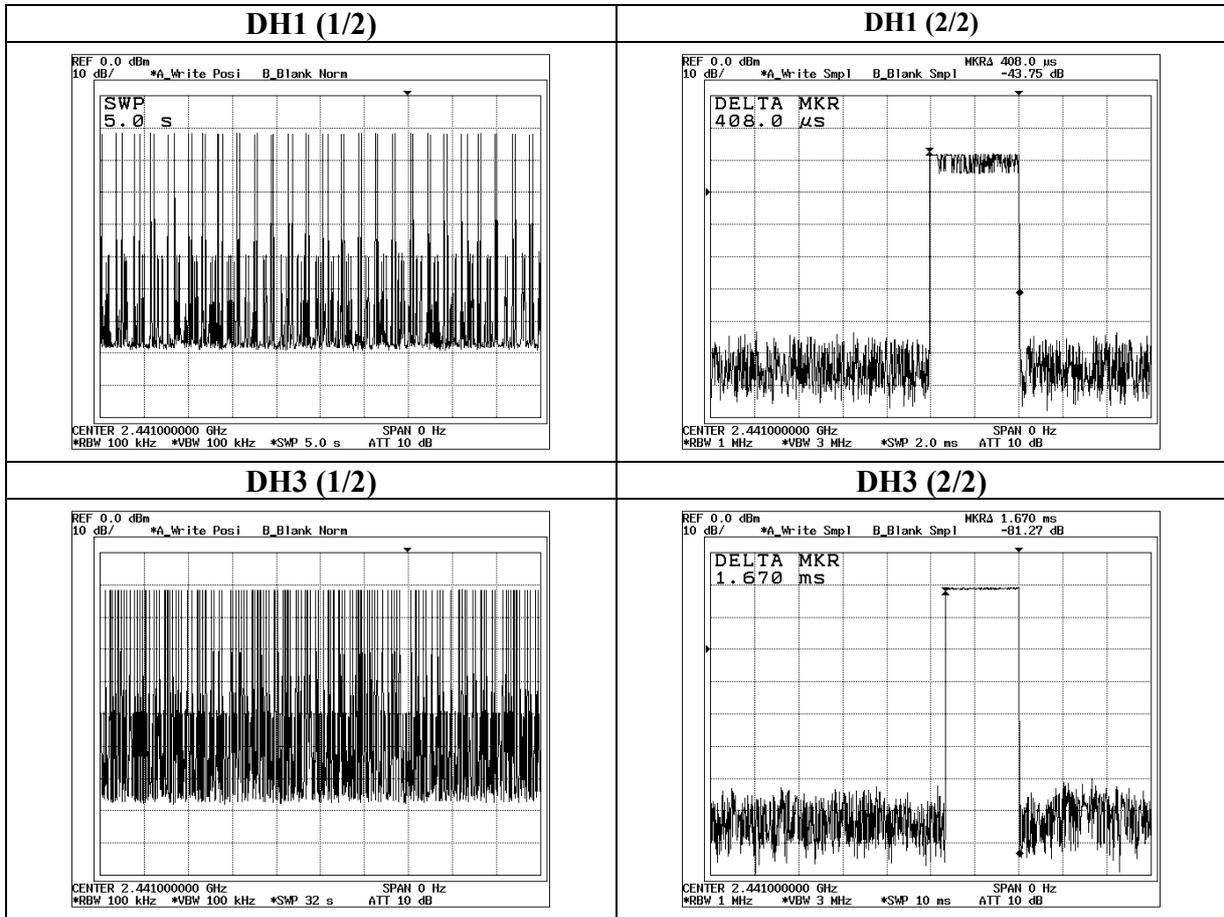
COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
 GSM Dual mode Mobile Phone / Bluetooth enable
MODEL : 810SH
S/N : 004401/11/0020466/2
POWER : DC4.0V
MODE : Transmitting mode (Hopping On)/Inquiry mode

REGULATION : FCC Part15 Subpart C 15.247(a)(1)(iii)
TEST DISTANCE : -
DATE : 08/02/2006
TEMPERATURE : 25deg.C
HUMIDITY : 55%
ENGINEER : Yasuyuki Fukui

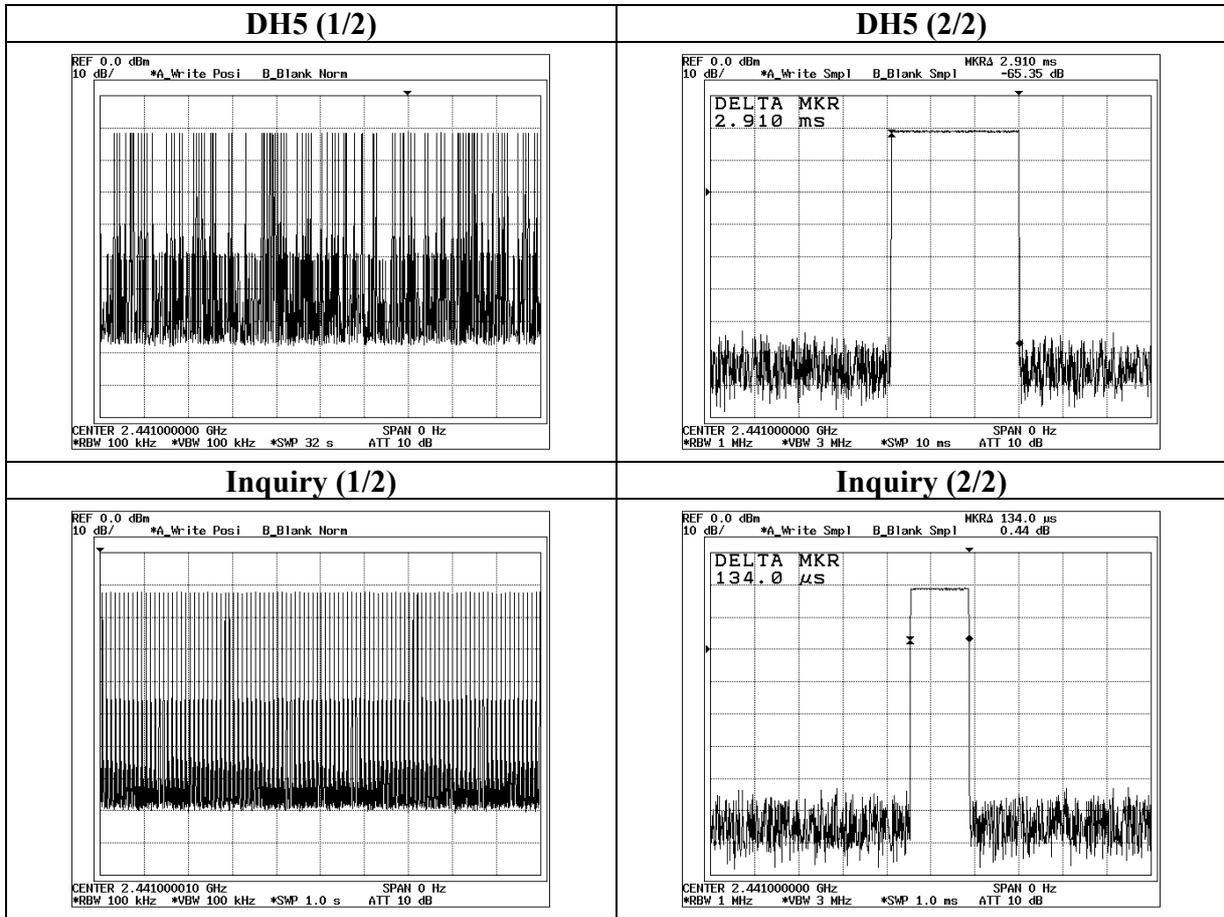
Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	51.0times /5sec. x 31.6 = 322times *	0.408	131	400
DH3	120times*	1.670	200	400
DH5	88 times *	2.910	256	400
Inquiry	101times / 1sec. x 12.8 = 1293times	0.134	173	400

*Average data of 5 tests

Dwell time



Dwell time



Maximum Peak Output Power

UL Apex Co., Ltd.
Head Office EMC Lab. No.6 Measurement Room

COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
MODEL : 810SH
S/N : 004401/11/0020466/2
POWER : DC4.0V
MODE : Transmitting mode (Hopping Off)/Inquiry mode

REGULATION : FCC Part15 Subpart C 15.247(b)(1)
TEST DISTANCE : -
DATE : 08/02/2006
TEMPERATURE : 25deg.C
HUMIDITY : 55%
ENGINEER : Yasuyuki Fukui

Ch	Freq. [MHz]	PM Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-9.89	0.50	10.15	0.76	1.19	30.00	1000	29.24
Mid	2441.0	-9.74	0.37	10.15	0.78	1.20	30.00	1000	29.22
High	2480.0	-9.75	0.43	10.15	0.83	1.21	30.00	1000	29.18
Inquiry	2441.0	-10.12	0.37	10.15	0.40	1.10	20.97	125	20.57

Sample Calculation:

Result = Reading + Cable Loss (supplied by customer)+ Attenuator

* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

Radiated Spurious Emission

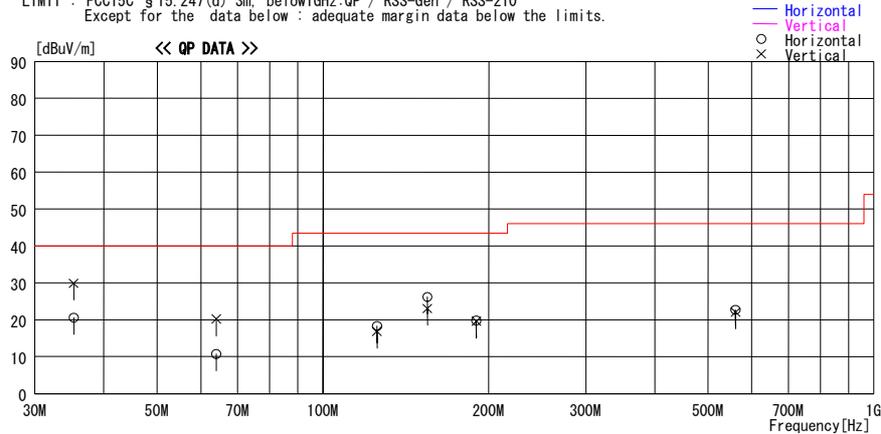
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2006/08/03 16:14:48

Applicant : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable
Model No. : 810SH
Serial No. : 004401/11/020463/9
Mode / Remarks : Bluetooth Tx 2402MHz, DH5, EUT max-axis (H:X, V:Y)
Report No. : 26KE0014-HO
Power : DC 4.0V (AC adapter: AC120V/60Hz)
Temp./Humi. : 24deg.C / 65%
Operator : Yasuyuki Fukui

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
35.270	29.0	QP	16.6	-25.0	20.6	149	294	Hori.	40.0	19.4
35.270	38.3	QP	16.6	-25.0	29.9	123	100	Vert.	40.0	10.1
64.020	27.4	QP	7.9	-24.6	10.7	177	235	Hori.	40.0	29.3
64.020	36.9	QP	7.9	-24.6	20.2	234	100	Vert.	40.0	19.8
125.309	26.6	QP	13.9	-23.6	16.9	139	100	Vert.	43.5	26.6
125.309	28.0	QP	13.9	-23.6	18.3	231	134	Hori.	43.5	25.2
154.740	34.1	QP	15.5	-23.4	26.2	201	289	Hori.	43.5	17.3
154.740	31.0	QP	15.5	-23.4	23.1	250	100	Vert.	43.5	20.4
189.840	26.0	QP	16.9	-23.1	19.8	9	181	Hori.	43.5	23.7
189.840	25.8	QP	16.9	-23.1	19.6	243	100	Vert.	43.5	23.9
561.100	24.2	QP	19.4	-20.9	22.7	307	100	Hori.	46.0	23.3
561.105	23.6	QP	19.4	-20.9	22.1	300	100	Vert.	46.0	23.9

CHART WITH FACTOR / ANT TYPE : -30MHz:LOOP, 30-300MHz:BI CONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz-:HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

Radiated Spurious Emission

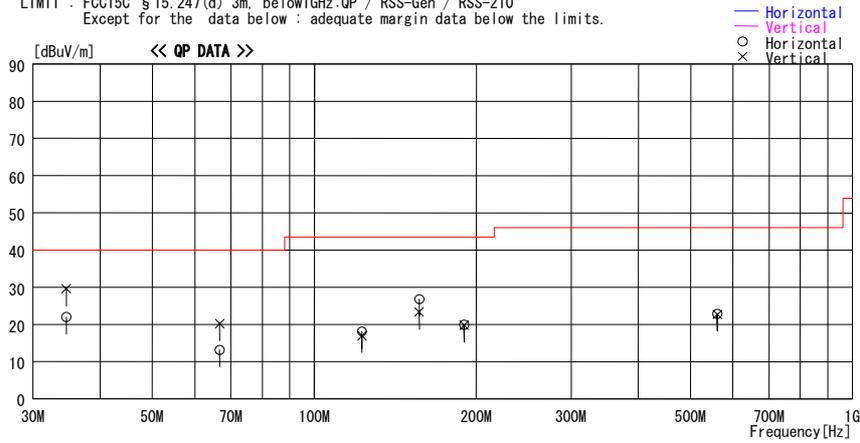
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2006/08/03 17:12:42

Applicant : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable
Model No. : 810SH
Serial No. : 004401/11/020463/9
Mode / Remarks : Bluetooth Tx 2441MHz, DH5, EUT max-axis (H:X, V:Y)
Report No. : 26KE0014-H0
Power : DC 4.0V (AC adapter: AC120V/60Hz)
Temp./Humi. : 24deg. C / 65%
Operator : Yasuyuki Fukui

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Gain [dB]						
34.590	37.6	QP	17.0	-25.0	29.6	177	100	Vert.	40.0	10.4
34.590	30.0	QP	17.0	-25.0	22.0	150	300	Hori.	40.0	18.0
66.720	30.1	QP	7.6	-24.5	13.2	27	247	Hori.	40.0	26.8
66.720	37.1	QP	7.6	-24.5	20.2	267	100	Vert.	40.0	19.8
122.609	27.0	QP	13.7	-23.7	17.0	230	100	Vert.	43.5	26.5
122.609	28.1	QP	13.7	-23.7	18.1	236	140	Hori.	43.5	25.4
156.630	34.5	QP	15.6	-23.3	26.8	223	290	Hori.	43.5	16.7
156.630	31.0	QP	15.6	-23.3	23.3	216	100	Vert.	43.5	20.2
189.840	26.0	QP	16.9	-23.1	19.8	10	100	Vert.	43.5	23.7
189.840	26.1	QP	16.9	-23.1	19.9	243	182	Hori.	43.5	23.6
561.100	24.3	QP	19.4	-20.9	22.8	300	100	Hori.	46.0	23.2
561.100	24.2	QP	19.4	-20.9	22.7	303	100	Vert.	46.0	23.3

CHART: WITH FACTOR / ANT TYPE : -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

Radiated Spurious Emission

* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

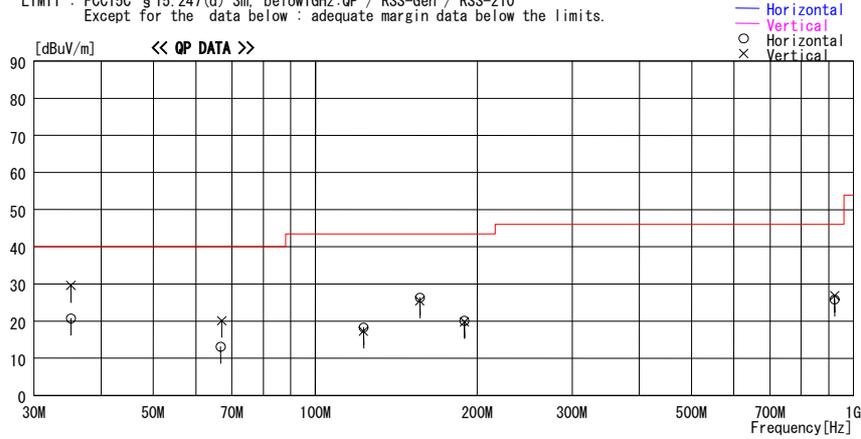
UL Apex Co., Ltd. Head Office EMC Lab. No.3 Semi Anechoic Chamber

Date : 2006/08/03 17:39:26

Applicant : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable
Model No. : 810SH
Serial No. : 004401/11/020463/9
Mode / Remarks : Bluetooth Tx 2480MHz, DH5, EUT max-axis (H:X, V:Y)

Report No. : 26KE0014-HO
Power : DC 4.0V (AC adapter: AC120V/60Hz)
Temp./Humi. : 24deg.C / 65%
Operator : Yasuyuki Fukui

LIMIT : FCC15C § 15.247(d) 3m, below 1GHz:QP / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss & Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
35.130	29.1	QP	16.6	-25.0	20.7	243	300	Hori.	40.0	19.3
35.130	38.0	QP	16.6	-25.0	29.6	123	100	Vert.	40.0	10.4
66.720	30.0	QP	7.6	-24.5	13.1	146	240	Hori.	40.0	26.9
66.990	37.1	QP	7.5	-24.5	20.1	208	100	Vert.	40.0	19.9
122.879	28.3	QP	13.7	-23.7	18.3	215	151	Hori.	43.5	25.2
122.879	27.2	QP	13.7	-23.7	17.2	122	100	Vert.	43.5	26.3
156.360	34.0	QP	15.6	-23.3	26.3	211	287	Hori.	43.5	17.2
156.360	33.1	QP	15.6	-23.3	25.4	221	100	Vert.	43.5	18.1
189.300	26.3	QP	16.9	-23.1	20.1	207	191	Hori.	43.5	23.4
189.300	26.0	QP	16.9	-23.1	19.8	6	100	Vert.	43.5	23.7
923.011	23.0	QP	22.0	-18.1	26.9	353	100	Vert.	46.0	19.1
923.011	21.9	QP	22.0	-18.1	25.8	60	100	Hori.	46.0	20.2

CHART: WITH FACTOR / ANT TYPE : -30MHz: LOOP, 30-300MHz: BICONICAL, 300MHz-1000MHz: LOGPERIODIC, 1000MHz-: HORN
CALCULATION: RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

Radiated Spurious Emission

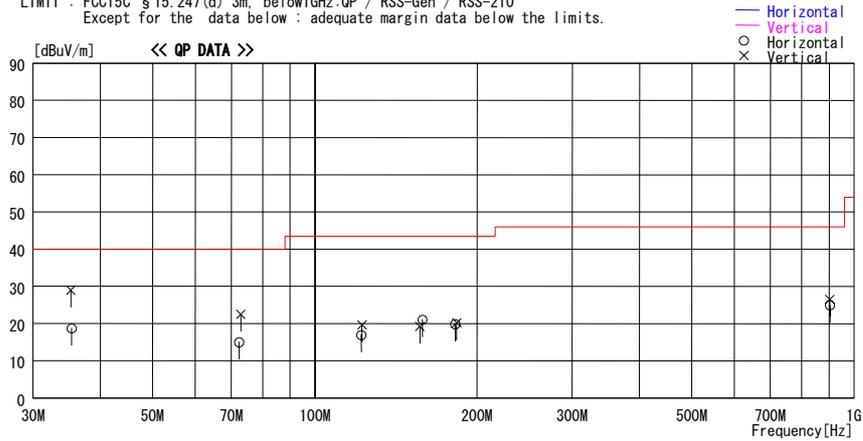
* The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 3 Semi Anechoic Chamber
Date : 2006/08/03 19:47:11

Applicant : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable
Model No. : 810SH
Serial No. : 004401/11/020463/9
Mode / Remarks : Bluetooth Rx 2441MHz, DH5, EUT max-axis (H:X, V:Y)
Report No. : 26KE0014-H0
Power : DC 4.0V (AC adapter: AC120V/60Hz)
Temp./Humi. : 24deg. C / 65%
Operator : Yasuyuki Fukui

LIMIT : FCC15C §15.247(d) 3m. below1GHz:QP / RSS-Gen / RSS-210
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBUV]	DET	Antenna		Level [dBUV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBUV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
35.400	27.2	QP	16.5	-25.0	18.7	120	300	Hori.	40.0	21.3
35.250	37.4	QP	16.6	-25.0	29.0	10	100	Vert.	40.0	11.0
72.880	39.7	QP	7.2	-24.4	22.5	235	100	Vert.	40.0	17.5
72.390	32.2	QP	7.2	-24.4	15.0	183	300	Hori.	40.0	25.0
122.240	29.7	QP	13.7	-23.7	19.7	189	100	Vert.	43.5	23.8
121.799	26.9	QP	13.7	-23.7	16.9	61	300	Hori.	43.5	26.6
158.411	28.6	QP	15.7	-23.3	21.0	223	300	Hori.	43.5	22.5
156.630	26.9	QP	15.6	-23.3	19.2	145	100	Vert.	43.5	24.3
183.261	26.5	QP	16.8	-23.1	20.2	220	100	Vert.	43.5	23.3
182.010	26.2	QP	16.7	-23.1	19.8	121	300	Hori.	43.5	23.7
902.300	21.6	QP	21.6	-18.3	24.9	52	100	Hori.	46.0	21.1
902.400	23.2	QP	21.6	-18.3	26.5	102	100	Vert.	46.0	19.5

CHART WITH FACTOR / ANT TYPE : -30MHz:LOOP, 30-300MHz:BI CONICAL, 300MHz-1000MHz:LOGPERIODIC, 1000MHz--HORN
CALCULATION:RESULT = READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - GAIN (AMP)

Radiated Spurious Emission

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.3Semi Anechoic Chamber

Company : Sharp Corporation	REPORT NO : 26KE0014-HO
Equipment : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable	REGULATION : Fcc Part15 Subpart C 15.247(d)
Model : 810SH	TEST DISTANCE : 3/1m
Sample No. : 004401/11/020463/9	DATE : 08/04/2006
Power : DC4.0V (AC 120 V / 60 Hz)	TEMPERATURE : 23deg.C
Mode : Bluetooth Hopping Off Tx 2402MHz	HUMIDITY : 61%
Remarks : Hor X , Ver Y-axis	ENGINEER : Yasuyuki Fukui

PK DETECT (RBW: 1MHz, VBW: 1MHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2042.0	43.4	41.9	31.3	33.0	2.1	0.0	43.8	42.3	74.0	30.2	31.7
2	2390.0	41.9	42.8	30.6	32.8	2.2	0.0	41.9	42.8	74.0	32.1	31.2
3	4804.0	46.5	46.7	35.7	31.6	3.5	0.4	54.5	54.7	74.0	19.5	19.3
4	7206.0	42.8	41.5	37.5	32.1	4.3	0.3	52.8	51.5	74.0	21.2	22.5
5	9608.0	43.2	43.9	36.6	33.1	5.0	0.7	52.4	53.1	74.0	21.6	20.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	24020.0	43.2	42.9	39.1	31.6	8.1	0.0	49.3	49.0	74.0	24.7	25.0

AV DETECT (RBW: 1MHz, VBW: 10Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2042.0	32.2	31.0	31.3	33.0	2.1	0.0	32.6	31.4	54.0	21.4	22.6
2	2390.0	31.4	31.9	30.6	32.8	2.2	0.0	31.4	31.9	54.0	22.6	22.1
3	4804.0	36.3	36.1	35.7	31.6	3.5	0.4	44.3	44.1	54.0	9.7	9.9
4	7206.0	30.7	30.3	37.5	32.1	4.3	0.3	40.7	40.3	54.0	13.3	13.7
5	9608.0	30.3	30.2	36.6	33.1	5.0	0.7	39.5	39.4	54.0	14.5	14.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	24020.0	32.6	33.1	39.1	31.6	8.1	0.0	38.7	39.2	54.0	15.3	14.8

* Reference data

20dBc(Fundamental 2402MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2402.0	92.3	89.6	30.6	32.8	2.2	0.0	92.3	89.6	-	-	-
2	2400.0	39.9	38.1	30.6	32.8	2.2	0.0	39.9	38.1	Funda-20dB	32.4	31.5

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*Hi-Pass Filter was not used for factor 0.0dB of the above table.

UL Apex Co., Ltd.

Head Office EMC Lab.

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Facsimile : +81 596 24 8124

MF060b(14.06.06)

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.3Semi Anechoic Chamber

Company : Sharp Corporation	REPORT NO : 26KE0014-HO
Equipment : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable	REGULATION : Fcc Part15 Subpart C 15.247(d)
Model : 810SH	TEST DISTANCE : 3/1m
Sample No. : 004401/11/020463/9	DATE : 08/04/2006
Power : DC4.0V (AC 120 V / 60 Hz)	TEMPERATURE : 23deg.C
Mode : Bluetooth Hopping Off Tx 2441MHz	HUMIDITY : 61%
Remarks : Hor X , Ver Y-axis	ENGINEER : Yasuyuki Fukui

PK DETECT (RBW: 1MHz, VBW: 1MHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2041.0	41.8	41.9	31.3	33.0	2.1	0.0	42.2	42.3	74.0	31.8	31.7
2	4882.0	40.9	41.1	36.2	31.6	3.5	0.4	49.4	49.6	74.0	24.6	24.4
3	7323.0	42.1	42.3	37.9	32.2	4.3	0.5	52.6	52.8	74.0	21.4	21.2
4	9764.0	42.4	42.1	36.6	33.2	5.0	0.7	51.5	51.2	74.0	22.5	22.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	24410.0	44.9	45.2	39.1	31.1	8.2	0.0	51.6	51.9	74.0	22.4	22.1

AV DETECT (RBW: 1MHz, VBW: 10Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2041.0	31.8	31.9	31.3	33.0	2.1	0.0	32.2	32.3	54.0	21.8	21.7
2	4882.0	27.8	29.8	36.2	31.6	3.5	0.4	36.3	38.3	54.0	17.7	15.7
3	7323.0	29.9	30.1	37.9	32.2	4.3	0.5	40.4	40.6	54.0	13.6	13.4
4	9764.0	30.9	31.3	36.6	33.2	5.0	0.7	40.0	40.4	54.0	14.0	13.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	24410.0	33.1	32.8	39.1	31.1	8.2	0.0	39.8	39.5	54.0	14.2	14.5

* Reference data

20dBc(Fundamental 2441MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2441.0	92.4	88.6	30.5	32.7	2.2	0.0	92.4	88.6	-	-	-

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.

*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*Hi-Pass Filter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.3Semi Anechoic Chamber

Company : Sharp Corporation	REPORT NO : 26KE0014-HO
Equipment : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enabled	REGULATION : Fcc Part15 Subpart C 15.247(d)
Model : 810SH	TEST DISTANCE : 3/1m
Sample No. : 004401/11/020463/9	DATE : 08/04/2006
Power : DC4.0V (AC 120 V / 60 Hz)	TEMPERATURE : 23deg.C
Mode : Bluetooth Hopping Off Tx 2480MHz	HUMIDITY : 61%
Remarks : Hor X , Ver Y-axis	ENGINEER : Yasuyuki Fukui

PK DETECT (RBW: 1MHz, VBW: 1MHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2039.0	42.9	42.8	31.3	33.0	2.1	0.0	43.3	43.2	74.0	30.7	30.8
2	2483.5	53.1	52.9	30.4	32.7	2.3	0.0	53.1	52.9	74.0	20.9	21.1
3	4960.0	42.2	42.1	36.6	31.6	3.5	0.4	51.1	51.0	74.0	22.9	23.0
4	7440.0	42.9	43.0	38.2	32.3	4.3	0.7	53.8	53.9	74.0	20.2	20.1
5	9920.0	44.3	42.9	36.5	33.2	5.1	0.7	53.4	52.0	74.0	20.6	22.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	24800.0	45.2	44.9	39.3	30.6	8.3	0.0	52.7	52.4	74.0	21.3	21.6

AV DETECT (RBW: 1MHz, VBW: 10Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2039.0	31.9	32.1	31.3	33.0	2.1	0.0	32.3	32.5	54.0	21.7	21.5
2	2483.5	45.9	44.3	30.4	32.7	2.3	0.0	45.9	44.3	54.0	8.1	9.7
3	4960.0	29.8	30.1	36.6	31.6	3.5	0.4	38.7	39.0	54.0	15.3	15.0
4	7440.0	30.2	29.8	38.2	32.3	4.3	0.7	41.1	40.7	54.0	12.9	13.3
5	9920.0	29.8	29.7	36.5	33.2	5.1	0.7	38.9	38.8	54.0	15.1	15.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	24800.0	32.1	31.9	39.3	30.6	8.3	0.0	39.6	39.4	54.0	14.4	14.6

* Reference data

20dBc(Fundamental 2480MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2480.0	89.2	86.4	30.4	32.7	2.3	0.0	89.2	86.4	-	-	-

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*Hi-Pass Filter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.3Semi Anechoic Chamber

Company : Sharp Corporation Equipment : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable Model : 810SH Sample No. : 004401/11/020463/9 Power : DC4.0V (AC 120 V / 60 Hz) Mode : Bluetooth Hopping Off Rx 2441MHz Remarks : Hor X , Ver Y-axis	REPORT NO : 26KE0014-HO REGULATION : Fcc Part15 Subpart C 15.247(d) TEST DISTANCE : 3/1m DATE : 08/04/2006 TEMPERATURE : 23deg.C HUMIDITY : 61% ENGINEER : Yasuyuki Fukui
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PK DETECT (RBW: 1MHz, VBW: 1MHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2036.2	42.1	41.9	31.3	33.0	2.1	0.0	42.5	42.3	74.0	31.5	31.7
2	7023.1	42.1	41.9	37.0	32.0	4.2	0.0	51.3	51.1	74.0	22.7	22.9

AV DETECT (RBW: 1MHz, VBW: 10Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2036.2	30.9	31.9	31.3	33.0	2.1	0.0	31.3	32.3	54.0	22.7	21.7
2	7023.1	31.2	30.2	37.0	32.0	4.2	0.0	40.4	39.4	54.0	13.6	14.6

* Reference data

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB

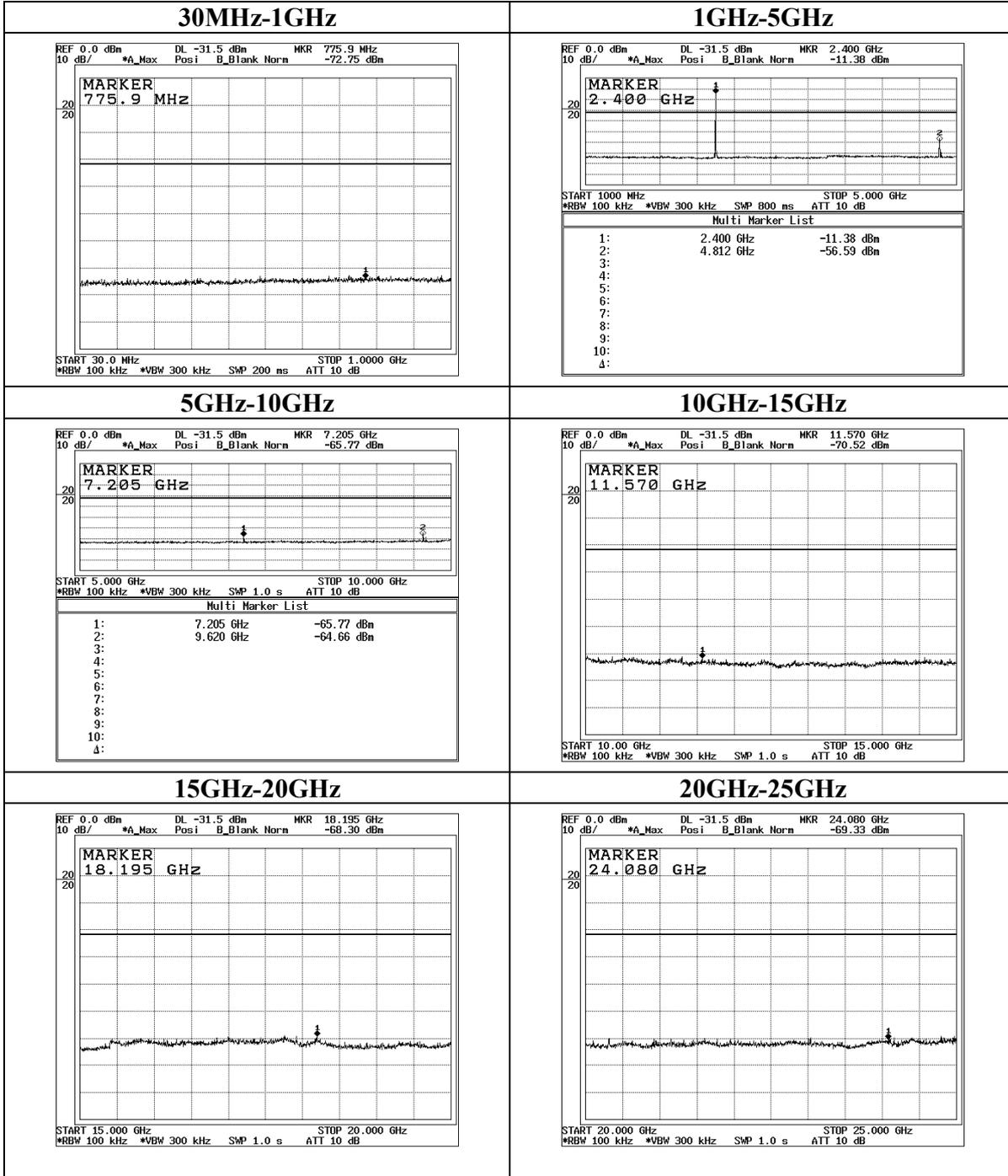
*Except for the above table : All other spurious emissions were less than 20dB for the limit.

*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.

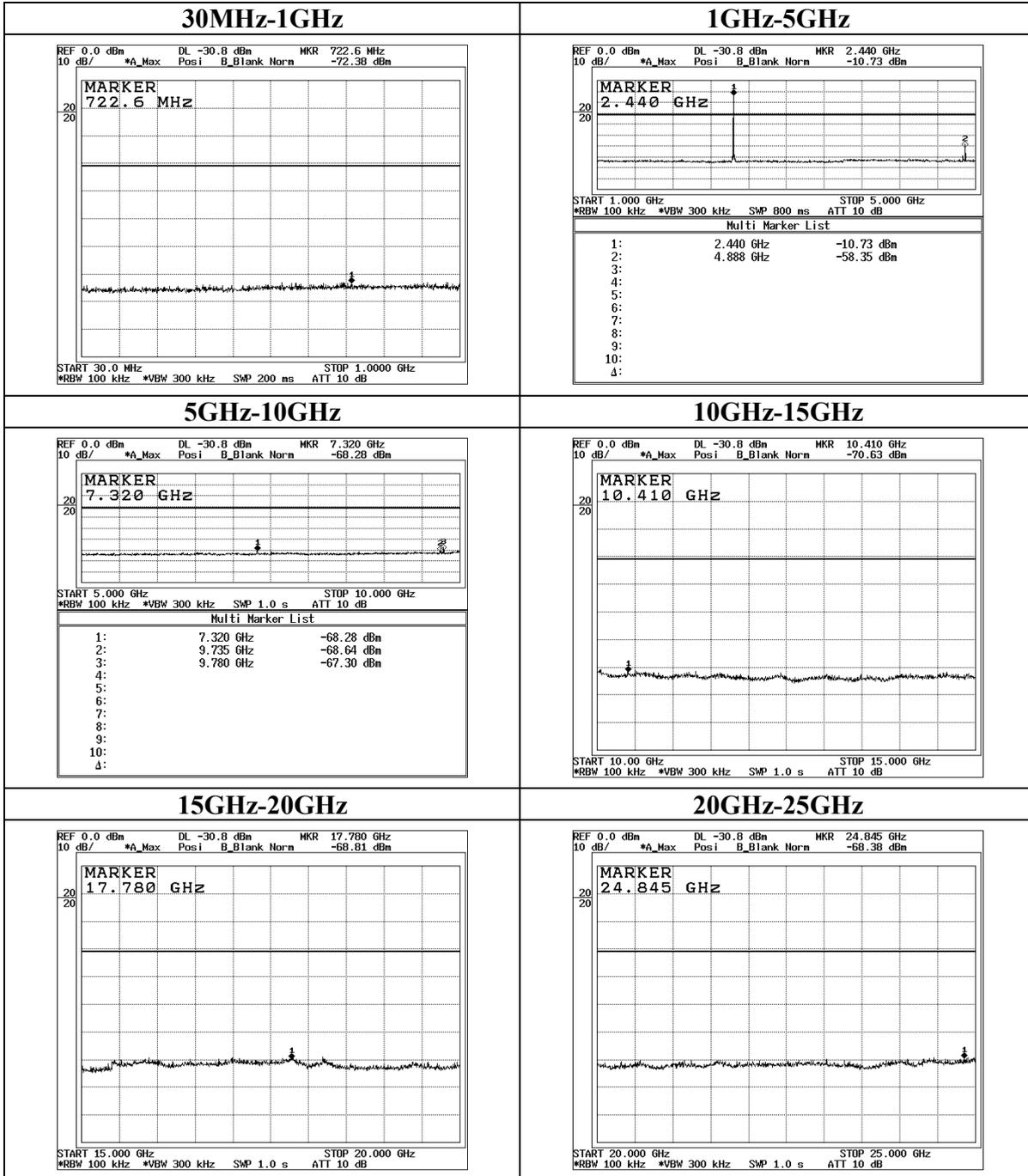
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

*Hi-Pass Filter was not used for factor 0.0dB of the above table.

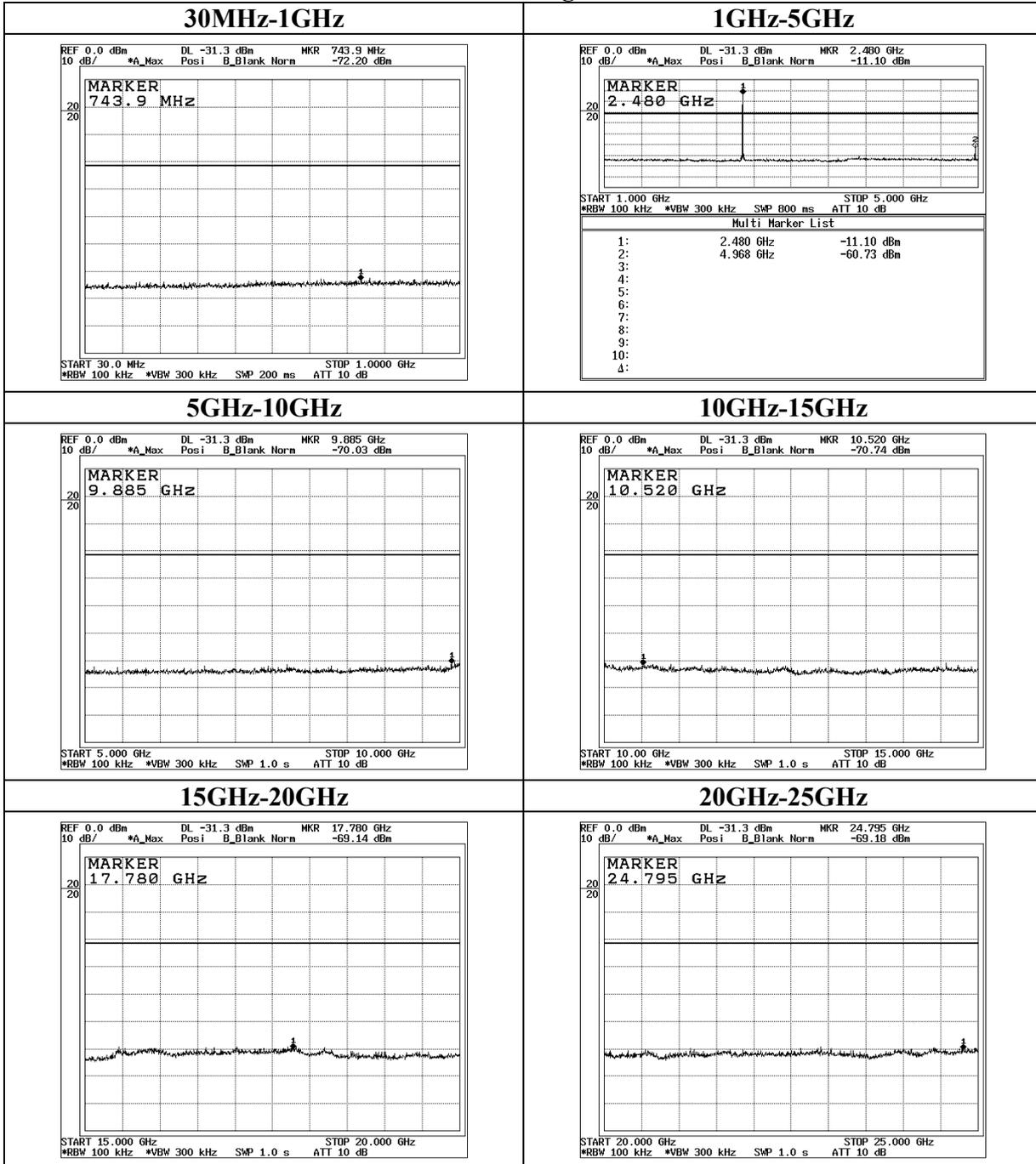
Conducted Spurious Emission
Ch:Low



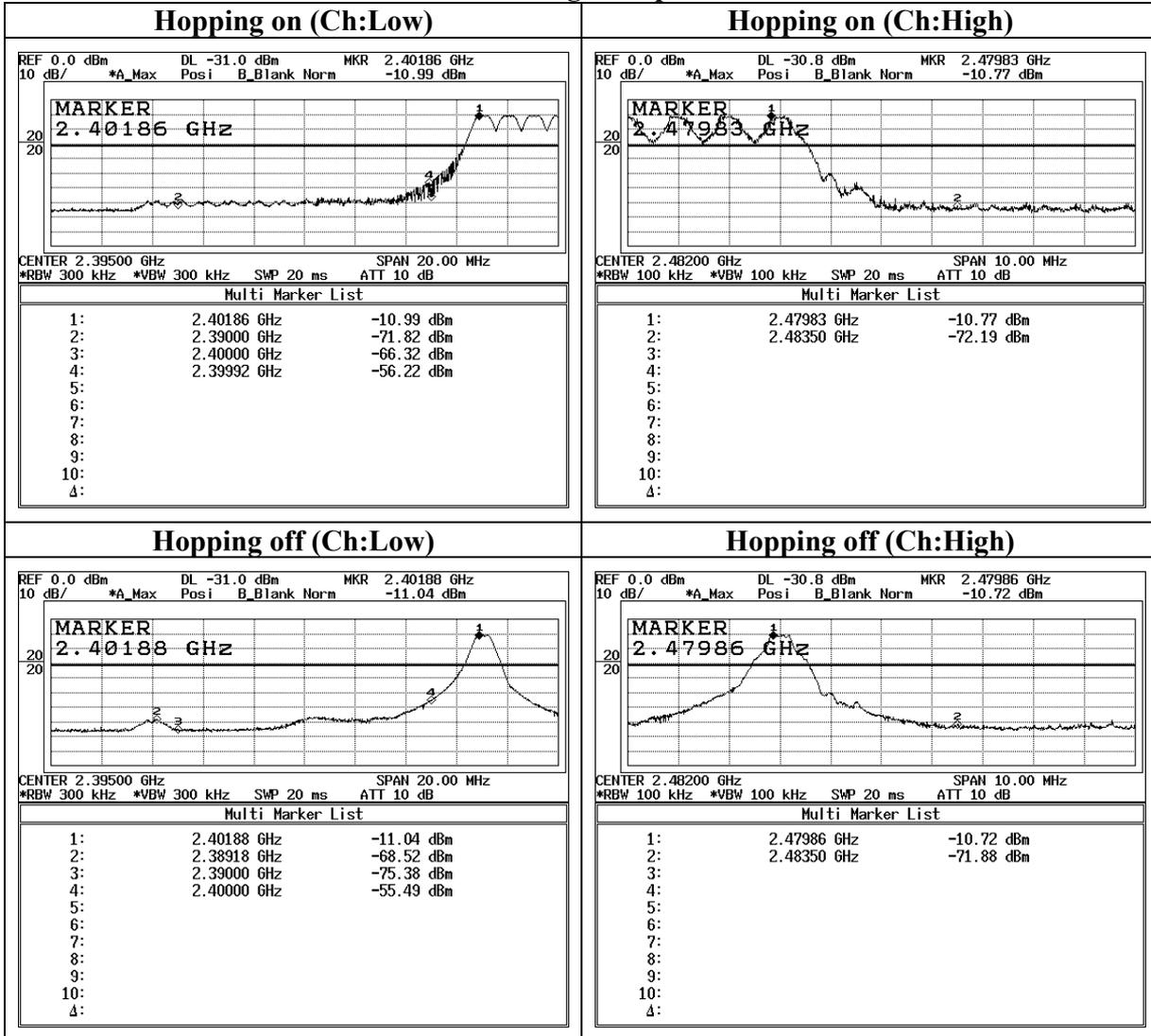
Conducted Spurious Emission
Ch:Mid



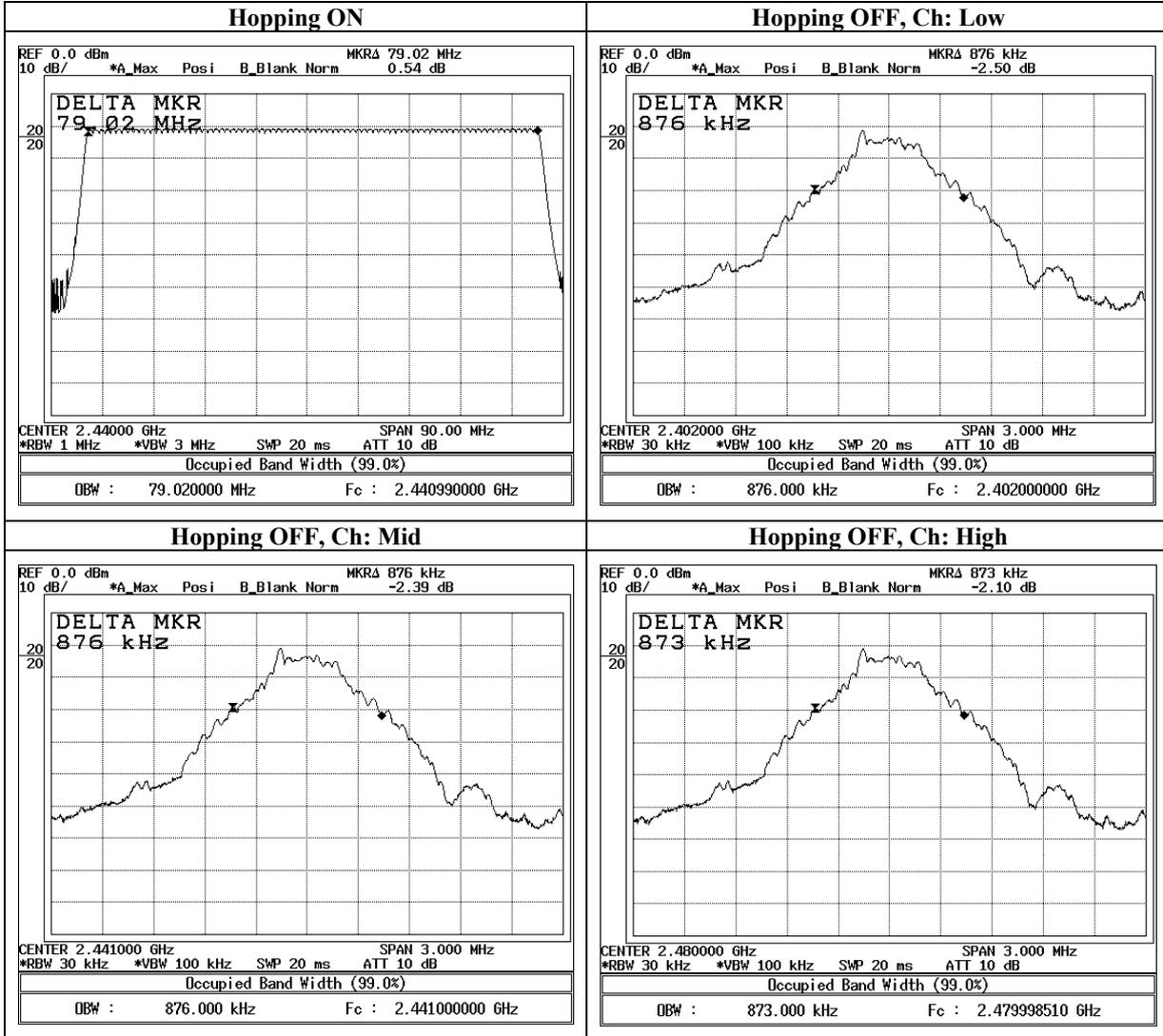
Conducted Spurious Emission
Ch:High



**Conducted Spurious Emission
Band Edge compliance**



99% Occupied Bandwidth



APPENDIX 3:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MRENT-39	Spectrum Analyzer	Advantest	R3273	AT	2006/07/25 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	AT	2005/08/30 * 12
MAT-23	Attenuator(10dB)(above1G Hz)	Orient Microwave	BX10-0476-00	AT	2006/03/18 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	AT	2004/11/25 * 24
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	RE	2006/03/27 * 12
MCC-56	Microwave Cable	Suhner	SUCOFLEX104	RE Above 1GHz	2006/04/15 * 12
MSA-06	Spectrum Analyzer	Agilent	E4407B	RE	2006/05/24 * 12
MAT-30	Attenuator(6dB)	TME	UFA-01	RE	2006/03/11 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2006/01/29 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2006/01/29 * 12
MCC-51	Coaxial cable	UL Apex	-	RE	2006/03/11 * 12
MPA-13	Pre Amplifier	SONOA INSTRUMENT	310	RE	2006/03/25 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	RE / CE	2006/01/19 * 24
MRENT-39	Spectrum Analyzer	Advantest	R3273	RE	2006/07/25 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE (EUT)	2006/02/06 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 * 12
MHA-02	Horn Antenna	EMCO	3160-09	RE(MW)	2006/01/09 * 12
MHF-07	High Pass Filter	Tokimec	TF323DCA	RE	2006/05/20 * 12
MRENT-34	Power sensor	Anritsu	MA2411B	AT	2006/04/25 * 12
MRENT-35	Power Meter	Anritsu	ML2496A	AT	2006/04/25 * 12
MAEC-03	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE / CE	2006/03/03 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE / CE	-

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

Test Item:

CE: AC Main Conducted Emission

AT: Antenna Terminal Conducted tests

RE: Radiated Spurious Emission

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