



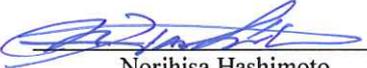
RADIO TEST REPORT

Test Report No. : 28BE0009-HO-A

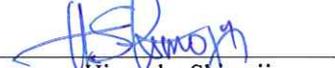
Applicant : Sharp Corporation
Type of Equipment : WCDMA & Tri-band (900/1800/1900)
GSM Dual mode Mobile Phone / Bluetooth enable
Model No. : 920SH
FCC ID : APYHRO00062
Test standard : FCC Part 15 Subpart C 2007
Section 15.207, Section 15.247
Test Result : Complied

1. This test report shall not be reproduced in full or partial, without the written approval of UL Japan, Inc.
2. The results in this report apply only to the sample tested.
3. This sample tested 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: September 11 to 16, 2007

Tested by:

Norihisa Hashimoto
EMC Services


Shinya Watanabe
EMC Services

Approved by :

Hironobu Shimoji
Assistant Manager 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://uljapan.co.jp/emc/nvlap.htm>

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Head Office EMC Lab.

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MF060b (18.06.07)

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SECTION 1: Client information

Company Name : Sharp Corporation
Brand name : SHARP
Address : 2-13-1 Iida Hachihonmatsu HigashiHiroshima-City, Hiroshima-pref.,
739-0192 Japan.
Telephone Number : +81-82-420-1592
Facsimile Number : +81-82-420-1852
Contact Person : Yasushi Kodama

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. : 920SH
Serial No. : 004401/11/076355/0 (used for Conducted emission and Radiated emission test)
004401/11/076359/2 (used for Antenna terminal conducted test)
Rating : AC120V (AC adapter), DC4.0V (Battery)
Country of Manufacture : Japan
Receipt Date of Sample : September 11, 2007
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: 920SH (referred to as the EUT in this report) is the WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable. The EUT has the function that Bluetooth wireless technology interfaces for establishing contact and transmitting data with certain devices.

Clock frequency(ies) in the system : CPU: 26MHz, RTC: 32.768kHz
Equipment Type : Transceiver
Frequency of Operation : 2402MHz-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

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C: 2007
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz

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.

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3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results			
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC: Section 15.207		N/A	27.1dB 0.27358MHz, AV, Phase: 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: Section15.247(a)(1)	Conducted	N/A	See data.	Complied			
		IC: -	IC: RSS-210 A8.1 (b)							
3	20dB Bandwidth	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)	Conducted	N/A		See data.	Complied		
		IC: -	IC: RSS-210 A8.1 (a)							
4	Number of Hopping Frequency	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)(iii)	Conducted	N/A			See data.	Complied	
		IC: -	IC: RSS-210 A8.1 (d)							
5	Dwell time	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(a)(1)(iii)	Conducted	N/A				See data.	Complied
		IC: -	IC: RSS-210 A8.1 (d)							
6	Maximum Peak Output Power	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(b)(1)	Conducted	N/A	See data.				Complied
		IC: RSS-Gen 4.8	IC: RSS-210 A8.4 (2)							
7	Band Edge Compliance	FCC: ANSI C63.4:2003 13. Measurement of intentional radiators	FCC: Section15.247(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: Section15.247(d)	Conducted/ Radiated	N/A			See data.		Complied
		IC: RSS-Gen 4.9 RSS-Gen 4.10	IC: RSS-210 A8.5 RSS-Gen 7.2.1 and 7.2.3							

Note: UL Japan, Inc.'s EMI Work Procedures No.QPM05 and QPM15.

*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 4.6.1	RSS-Gen 4.6.1	Conducted	N/A	N/A	N/A

3.4 Uncertainty

The following uncertainties have been calculated to provide a confidence level of 95% using a coverage factor k=2.

Conducted Emission

The measurement uncertainty 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 for this test using Biconical antenna is ± 4.59 dB(3m).

The measurement uncertainty for this test using Logperiodic antenna is ± 4.62 dB(3m).

The measurement uncertainty for this test using Horn antenna is ± 5.27 dB.

[Tx]The data listed in this report meets the limits unless the uncertainty is taken into consideration.

[Rx]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 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	IC4247	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	IC4247-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	IC4247-3	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.3 Preparation room
No.3 shielded room	-	-	4.0 x 6.0 x 2.7m	N/A	-
No.4 semi-anechoic chamber	134570	IC4247-4	12.0 x 8.5 x 5.9m	6.8 x 5.75m	No.4 Preparation room
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	6.0 x 6.0m	-
No.6 shielded room	-	-	4.0 x 4.5 x 2.7m	4.75 x 5.4 m	-
No.6 measurement room	-	-	4.75 x 5.4 x 3.0m	4.75 x 4.15 m	-
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.3 and No.4 shielded rooms.

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 :

Test	Operating mode	Tested Frequency
Conducted Emission; Radiated Spurious Emission	Transmitting (Tx) mode	2402MHz 2441MHz 2480MHz
	Receiving (Rx) mode	2441MHz
Carrier Frequency Separation	Transmitting (Tx) (Hopping on)	2402MHz 2441MHz 2480MHz
	Inquiry	2441MHz
20dB Bandwidth, Maximum Peak Output Power	Transmitting (Tx) (Hopping off)	2402MHz 2441MHz 2480MHz
	Inquiry	2441MHz
Number of Hopping Frequency	Transmitting (Tx) (Hopping on)/ Inquiry	-
Dwell time	Transmitting (Tx) (Hopping on) / Inquiry -DH1 -DH3 -DH5	2441MHz
Conducted Spurious Emission	Transmitting (Tx) mode	2402MHz 2441MHz 2480MHz
Conducted Spurious Emission (Band Edge compliance)	Transmitting (Tx) (Hopping on) / (Hopping off)	2402MHz 2480MHz
99% Occupied Bandwidth	Transmitting (Tx) (Hopping on)	-
	Transmitting (Tx) (Hopping off)	2402MHz 2441MHz 2480MHz

As a result of preliminary test, the formal test was performed with the above modes, which had the maximum payload (except Dwell time test)

Remarks: Test was not performed at AFH mode, because the decrease of number of channel (min: 20ch) at AFH mode does not influence on the output power and bandwidth of the EUT. However, the limit level 125mW of AFH mode was used due to the overlap of the bandwidth.

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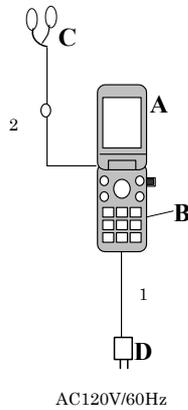
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4.2 Configuration and peripherals



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

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	Remarks
A	WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone/ Bluetooth enable	920SH	004401/11/076355/0 *1) 004401/11/076359/2 *2)	SHARP	EUT
B	Lithium-Ion Battery	SHBBG1	QGA	SHARP	EUT
C	Stereo Handsfree	RPHoHA019AFSB	1	SHARP	EUT
D	AC Charger	XN-1QC71	PBA	SHARP	EUT

*1) Used for Conducted emission and Radiated emission test.

*2) Used for Antenna conducted terminal test.

List of cables used

No.	Name	Length (m)	Shield		Remarks
			Cable	Connector	
1	DC Cable	1.5	Unshielded	Unshielded	-
2	Head phone Cable	1.8	Unshielded	Unshielded	-

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SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a urethane platform of nominal size, 1.0m by 0.5m, 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.

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.

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

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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 has been 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 / Table 2 of RSS-210 2.7 (IC) and outside the restricted band of FCC15.205 / Table 1 of RSS-210 2.7 (IC).

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

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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
Tx, Ch. Low

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2007/09/16

Company	: Sharp Corporation	Report No.	: 28BE0009-HO
Kind of EUT	: WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable	Power	: AC 120V / 60Hz
Model No.	: 920SH	Temp./Humi.	: 25deg. C / 61%
Serial No.	: 004401/11/076355/0	Operator	: Shinya Watanabe

Mode / Remarks : Transmitting mode 2402MHz

LIMIT : FCC15.207 QP
FCC15.207 AV

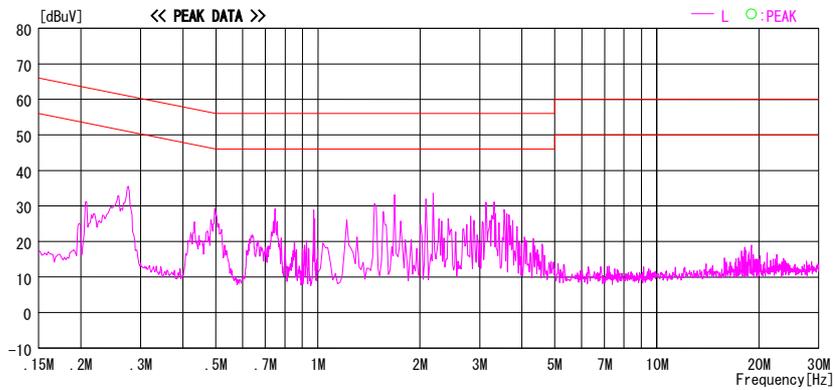
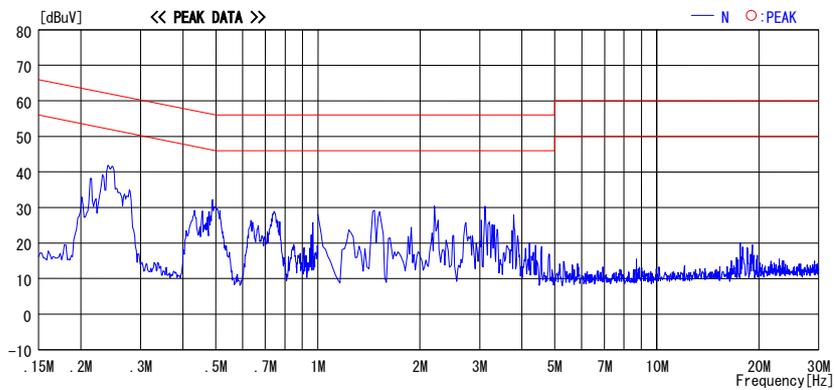


CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission
Tx, Ch. Mid

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
 Date : 2007/09/16

Company	: Sharp Corporation	Report No.	: 28BE0009-HO
Kind of EUT	: WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable	Power	: AC 120V / 60Hz
Model No.	: 920SH	Temp./Humi.	: 25deg. C / 61%
Serial No.	: 004401/11/076355/0	Operator	: Shinya Watanabe

Mode / Remarks : Transmitting mode 2441MHz

LIMIT : FCC15.207 OP
 FCC15.207 AV

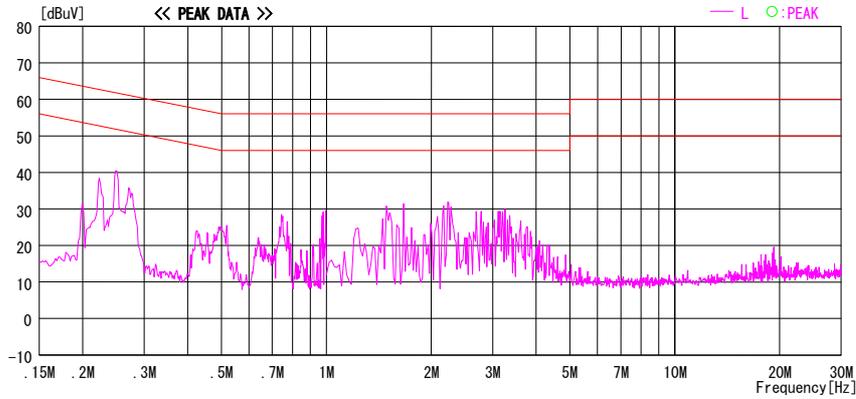
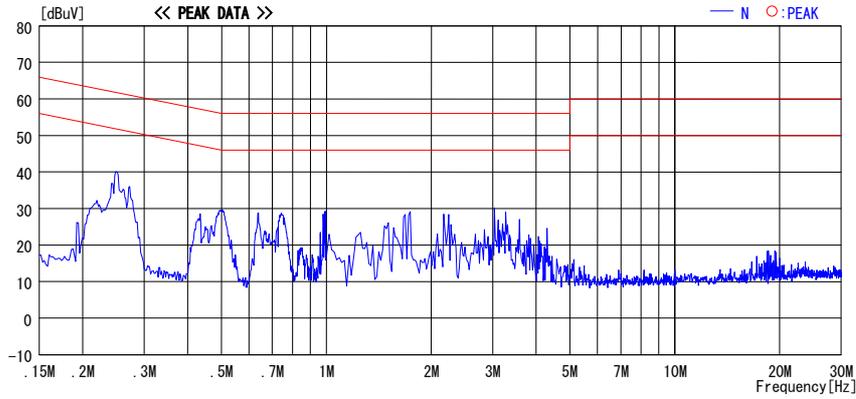


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT [dBuV]=READING[dBuV]+C. F [dB] (LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission Tx, Ch. High

DATA OF CONDUCTED EMISSION TEST

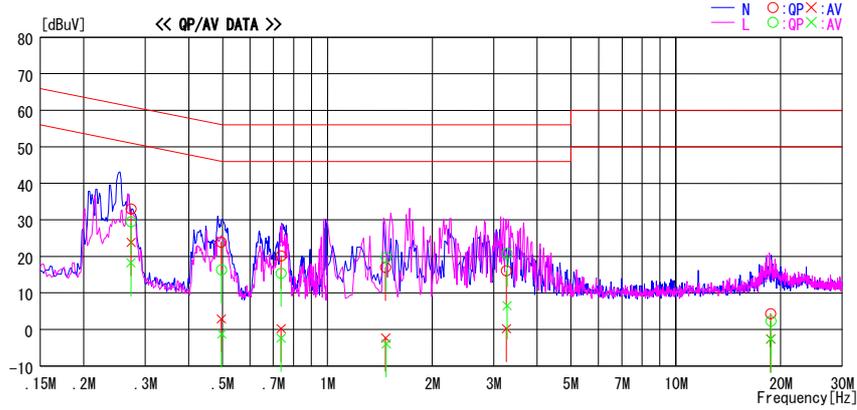
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Date : 2007/09/16

Company : Sharp Corporation
 Kind of EUT : WCDMA & Tri-band(900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable
 Model No. : 920SH
 Serial No. : 004401/11/076355/0

Report No. : 28BE0009-HO
 Power : AC 120V / 60Hz
 Temp./Humi. : 25deg.C / 61%
 Operator : Shinya Watanabe

Mode / Remarks : Transmitting mode 2480MHz

LIMIT : FCC15.207 QP
 FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.27358	32.7	23.5	0.4	33.1	23.9	61.0	51.0	28.0	27.1	N
0.49609	23.5	2.5	0.4	23.9	2.9	56.1	46.1	32.2	43.2	N
0.73685	19.7	-0.3	0.5	20.2	0.3	56.0	46.0	35.8	45.8	N
1.46991	16.4	-2.9	0.6	17.0	-2.3	56.0	46.0	39.0	48.3	N
3.26769	15.3	-0.6	0.8	16.1	0.2	56.0	46.0	39.9	45.8	N
18.71832	2.0	-4.9	2.3	4.3	-2.6	60.0	50.0	55.7	52.6	N
0.27317	29.1	17.8	0.4	29.5	18.2	61.0	51.0	31.5	32.8	L
0.49712	16.0	-1.7	0.4	16.4	-1.3	56.0	46.0	39.7	47.3	L
0.73693	14.9	-2.9	0.5	15.4	-2.4	56.0	46.0	40.6	48.4	L
1.47590	19.2	-4.5	0.6	19.8	-3.9	56.0	46.0	36.3	49.9	L
3.28107	20.0	5.7	0.8	20.8	6.5	56.0	46.0	35.2	39.5	L
18.74380	0.0	-5.0	2.3	2.3	-2.7	60.0	50.0	57.7	52.7	L

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

*The test result is round off to one or two decimal places, so some differences might be observed.

Conducted Emission Rx, Ch. Mid

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2007/09/16

Company : Sharp Corporation Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable Model No. : 920SH Serial No. : 004401/11/076355/0	Report No. : 28BE0009-HO Power : AC 120V / 60Hz Temp./Humi. : 25deg. C / 61% Operator : Shinya Watanabe
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Mode / Remarks : Receiving mode 2441MHz

LIMIT : FCC15.207 QP
FCC15.207 AV

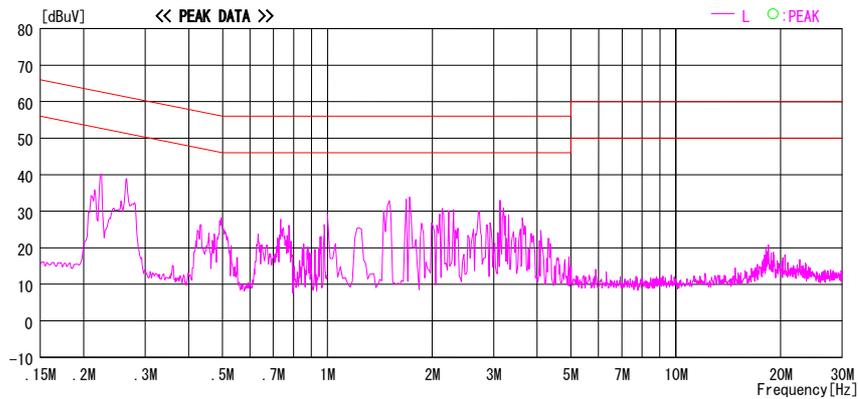
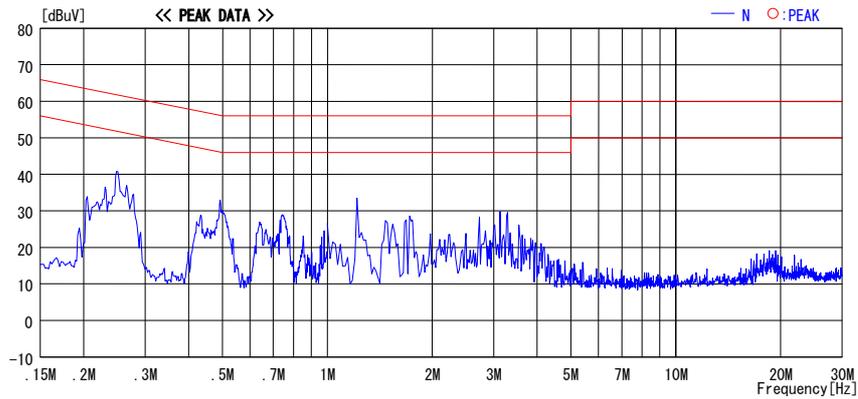


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (LISN LOSS + CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

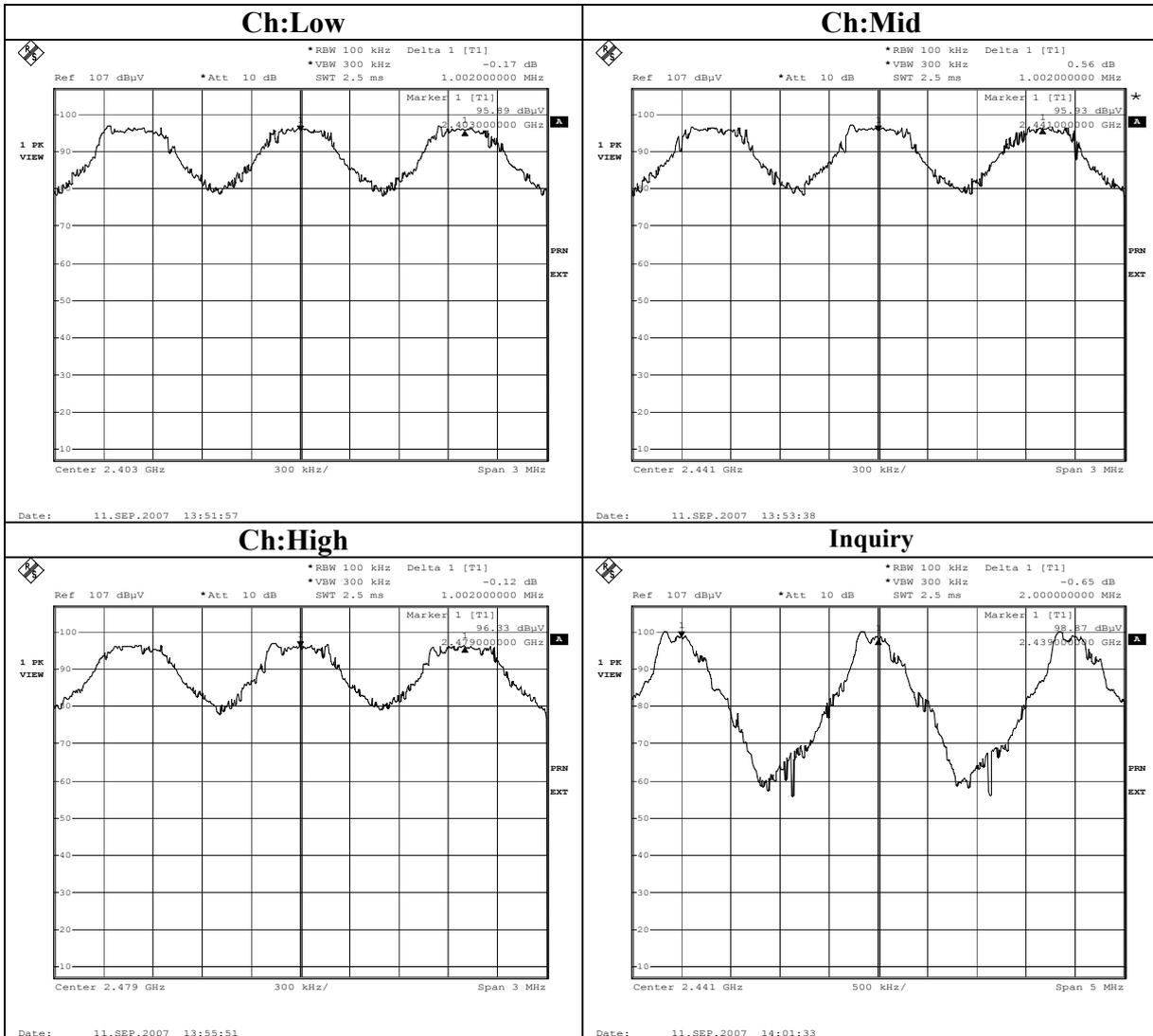
Carrier Frequency Separation

UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

COMPANY	: Sharp Corporation	REGULATION	: FCC15.247(a)(1)/RSS-210A8.1(b)
EQUIPMENT	: WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable	TEST DISTANCE	: -
MODEL	: 920SH	DATE	: 11/09/2007
S/N	: 004401/11/076359/2	TEMPERATURE	: 25deg.C
POWER	: DC 4.0V	HUMIDITY	: 58%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Norihisa Hashimoto

Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.002	>two-thirds of the 20dB Bandwidth (0.822MHz) or 25[kHz](whichever is greater)
Mid	2441.0	1.002	>two-thirds of the 20dB Bandwidth (0.822MHz) or 25[kHz](whichever is greater)
High	2480.0	1.002	>two-thirds of the 20dB Bandwidth (0.822MHz) or 25[kHz](whichever is greater)
Inquiry	2441.0	2.000	>two-thirds of the 20dB Bandwidth (0.798MHz) or 25[kHz](whichever is greater)

Carrier Frequency Separation



20dB Bandwidth

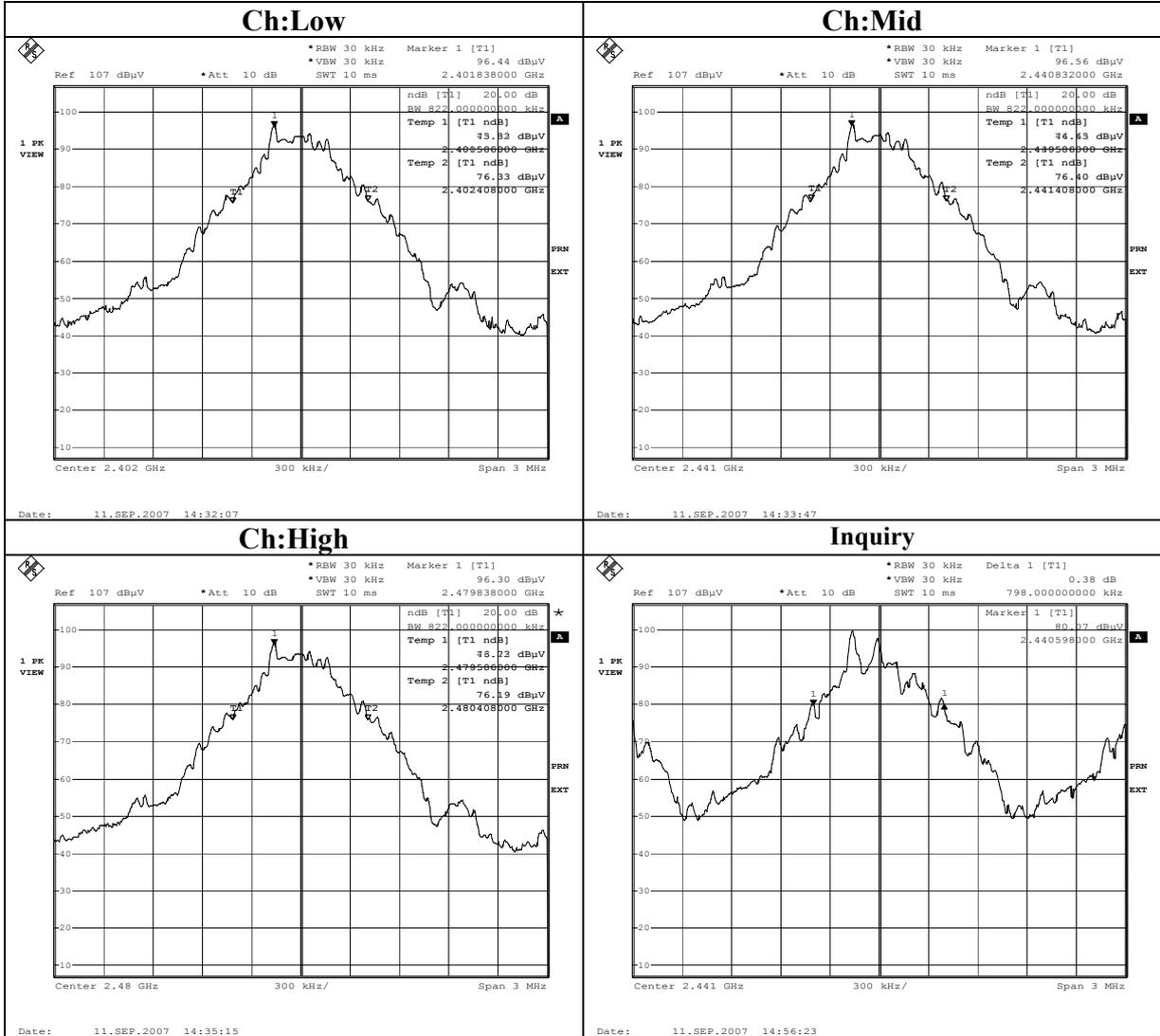
UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
MODEL : 920SH
S/N : 004401/11/076359/2
POWER : DC 4.0V
MODE : Tx (Hopping off) /Inquiry

REGULATION : FCC15.247(a)(1)/RSS-210A8.1(a)
TEST DISTANCE : -
DATE : 11/09/2007
TEMPERATURE : 25deg.C
HUMIDITY : 58%
ENGINEER : Norihisa Hashimoto

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.822	-
Mid	2441.0	0.822	-
High	2480.0	0.822	-
Inquiry	2441.0	0.798	-

20dB Bandwidth



Number of Hopping Frequency

UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

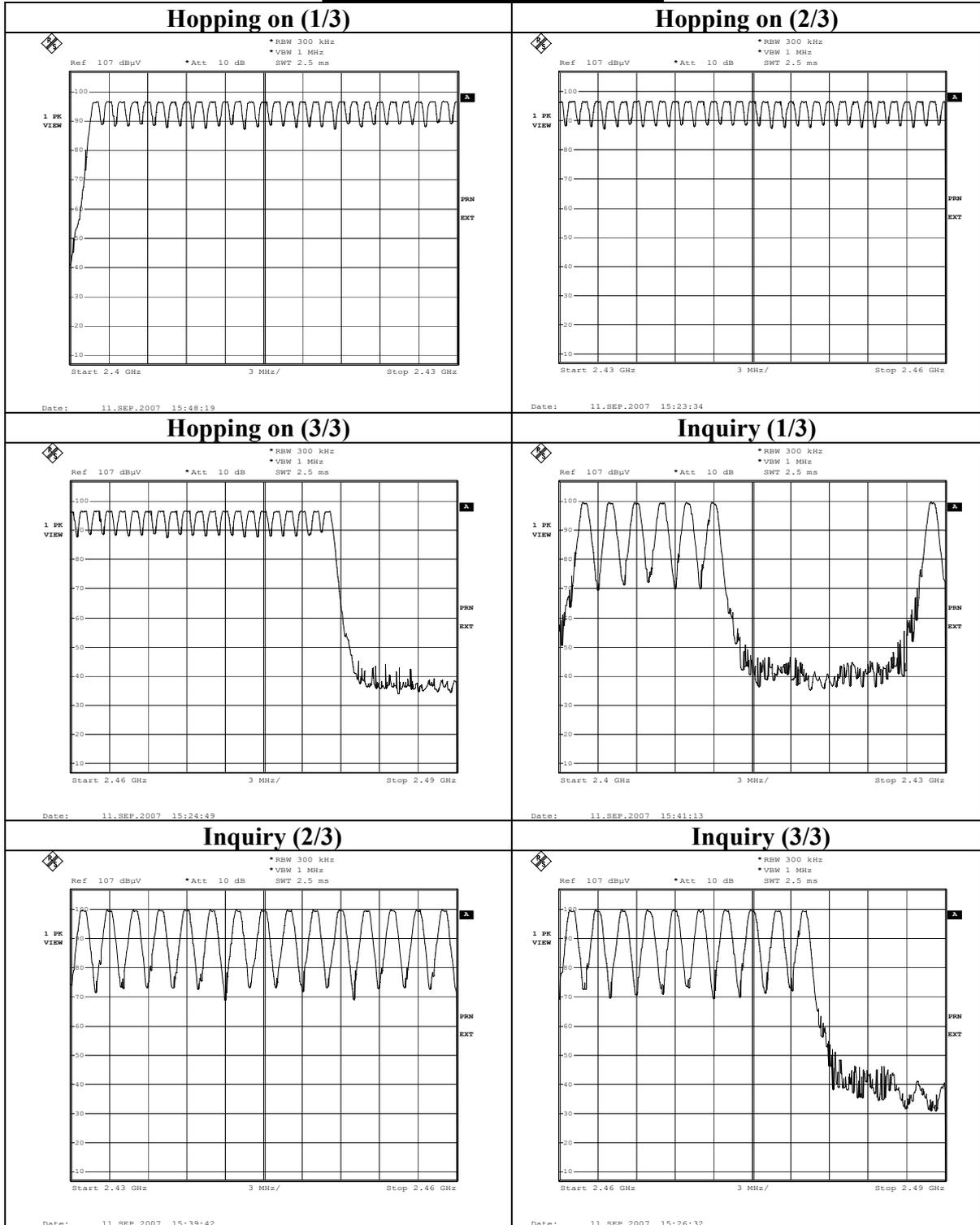
COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable
MODEL : 920SH
S/ N : 004401/11/076359/2
POWER : DC 4.0V
MODE : Tx (Hopping on) /Inquiry

REGULATION : FCC15.247(a)(1)(iii)/RSS-210A8.1(d)
TEST DISTANCE : -
DATE : 11/09/2007
TEMPERATURE : 25deg.C
HUMIDITY : 58%
ENGINEER : Norihisa Hashimoto

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

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

Number of Hopping Frequency



Dwell time

UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

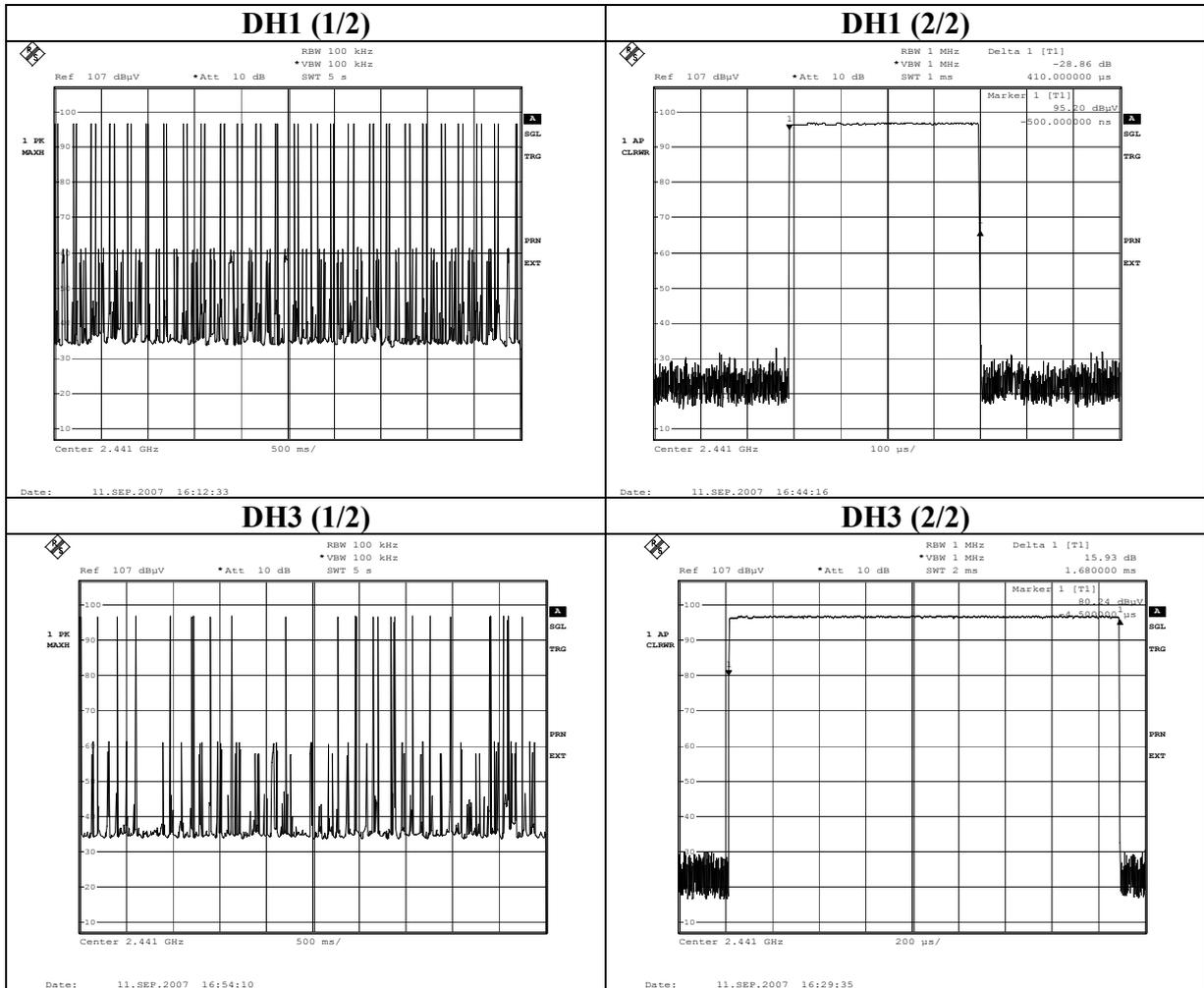
COMPANY : Sharp Corporation
EQUIPMENT : WCDMA & Tri-band (900/1800/1900)
GSM Dual mode Mobile Phone / Bluetooth enable
MODEL : 920SH
S/N : 004401/11/076359/2
POWER : DC 4.0V
MODE : Tx (Hopping on) / Inquiry

REGULATION : FCC15.247(a)(1)(iii)/RSS-210A8.1(d)
TEST DISTANCE : -
DATE : 11/09/2007
TEMPERATURE : 25deg.C
HUMIDITY : 58%
ENGINEER : Norihisa Hashimoto

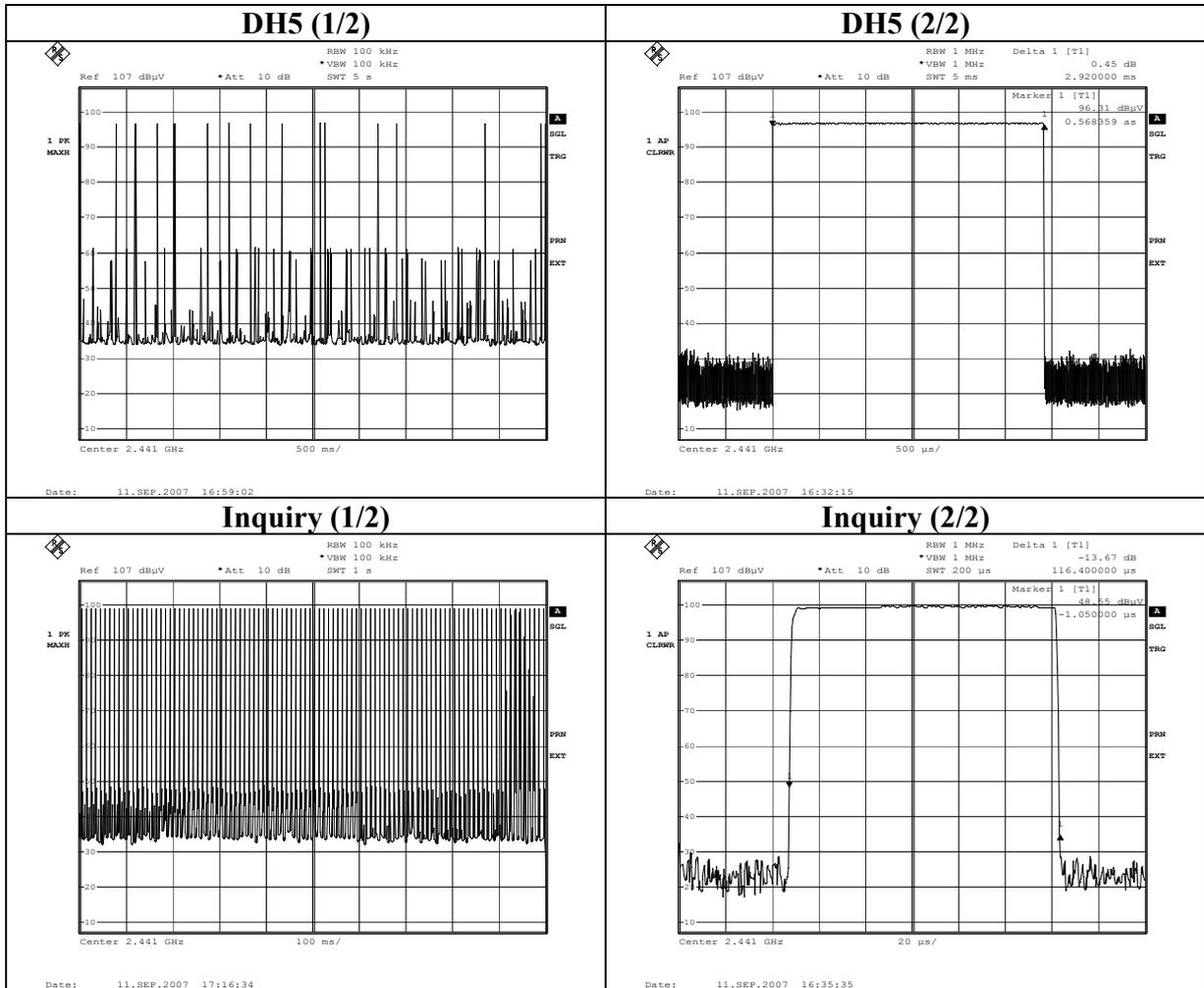
Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	50 times / 5 sec. x 31.6 sec. = 316 times	0.410	130	400
DH3	25 times / 5 sec. x 31.6 sec. = 158 times	1.680	265	400
DH5	16 times / 5 sec. x 31.6 sec. = 102 times	2.920	298	400
Inquiry	100 times / 1 sec. x 12.8 sec. = 1280 times	0.116	149	400

DH:1) 1:50 / 2:51 / 3:50 / 4:50 / 5:49
DH:3) 1:25 / 2:26 / 3:27 / 4:22 / 5:23
DH:5) 1:18 / 2:16 / 3:13 / 4:16 / 5:16

Dwell time



Dwell time



Maximum Peak Output Power

UL Japan, Inc.
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 : 920SH
S/ N : 004401/11/076359/2
POWER : DC 4.0V
MODE : Tx(Hopping Off)/Inquiry

REGULATION : FCC15.247(b)(1)/RSS-210A8.4(2)
TEST DISTANCE : -
DATE : 11/09/2007
TEMPERATURE : 25deg.C
HUMIDITY : 58%
ENGINEER : Norihisa Hashimoto

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-9.96	0.48	10.08	0.60	1.15	20.97	125	20.37
Mid	2441.0	-9.84	0.48	10.08	0.72	1.18	20.97	125	20.25
High	2480.0	-9.76	0.48	10.08	0.80	1.20	20.97	125	20.17
Inquiry	2441.0	-12.41	0.48	10.08	-1.85	0.65	20.97	125	22.82

Sample Calculation:

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

Radiated Spurious Emission (below 1GHz)
Tx, Ch. Low

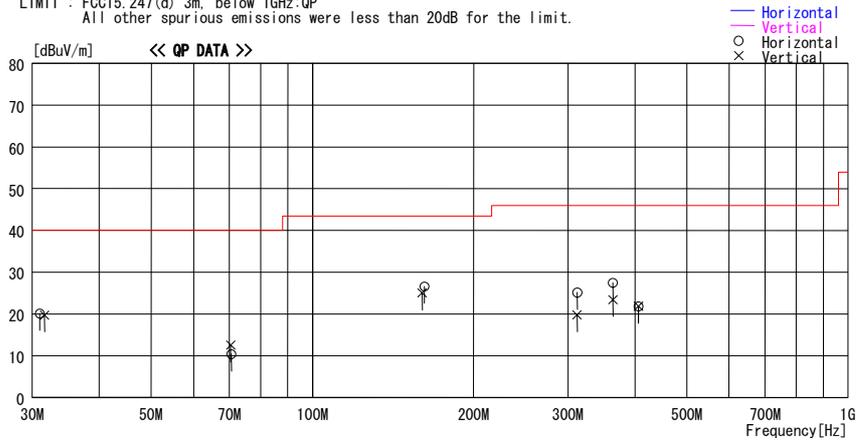
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2007/09/16

Company : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable
Model No. : 920SH
Serial No. : 004401/11/076355/0
Report No. : 28BE0009-HO
Power : AC120V / 60Hz
Temp./Humi. : 25deg. C. / 65%
Operator : Shinya Watanabe

Mode / Remarks : Transmitting mode 2402MHz

LIMIT : FCC15.247(d) 3m. below 1GHz:QP
All other spurious emissions were less than 20dB for the limit.



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]						
31.623	22.6	QP	18.2	-21.1	19.7	294	100	Vert.	40.0	20.3
30.981	22.7	QP	18.5	-21.1	20.1	260	400	Hori.	40.0	19.9
70.584	23.6	QP	6.8	-20.1	10.3	359	100	Hori.	40.0	29.7
70.415	25.9	QP	6.8	-20.1	12.6	50	100	Vert.	40.0	27.4
161.777	29.9	QP	15.3	-18.6	26.6	127	202	Hori.	43.5	16.9
160.375	28.4	QP	15.2	-18.6	25.0	73	100	Vert.	43.5	18.5
311.988	27.4	QP	14.4	-16.7	25.1	359	100	Hori.	46.0	20.9
312.007	22.1	QP	14.4	-16.7	19.8	160	100	Vert.	46.0	26.2
363.999	24.5	QP	15.5	-16.6	23.4	212	100	Vert.	46.0	22.6
363.985	28.6	QP	15.5	-16.6	27.5	345	100	Hori.	46.0	18.5
405.941	22.2	QP	16.2	-16.5	21.9	1	100	Hori.	46.0	24.1
406.123	22.2	QP	16.2	-16.5	21.9	93	100	Vert.	46.0	24.1

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)

*The test result is round off to one or two decimal places, so some differences might be observed.

Radiated Spurious Emission (below 1GHz)
Tx, Ch. Mid

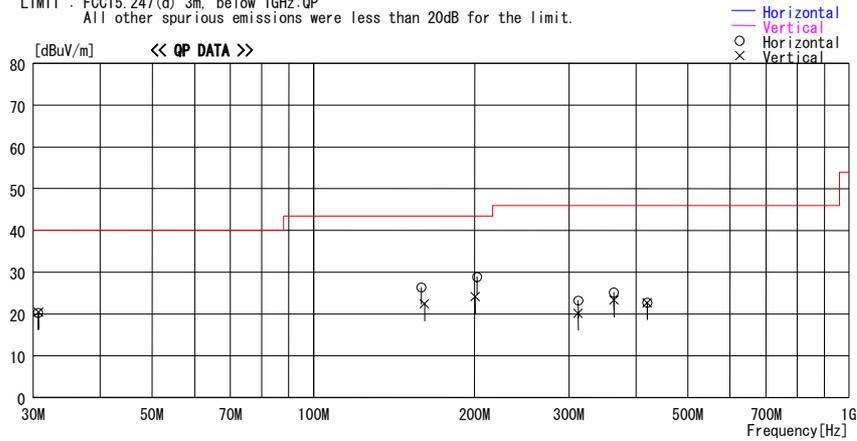
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2007/09/16

Company : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable
Model No. : 920SH
Serial No. : 004401/11/076355/0
Report No. : 28BE0009-HO
Power : AC120V / 60Hz
Temp./Humi. : 25deg. C. / 65%
Operator : Shinya Watanabe

Mode / Remarks : Transmitting mode 2441MHz

LIMIT : FCC15.247(d) 3m. below 1GHz:QP
All other spurious emissions were less than 20dB for the limit.



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]						
30.623	22.8	QP	18.6	-21.1	20.3	168	400	Hori.	40.0	19.7
30.701	22.9	QP	18.6	-21.1	20.4	281	100	Vert.	40.0	19.6
159.058	29.7	QP	15.2	-18.6	26.3	10	195	Hori.	43.5	17.2
161.283	25.7	QP	15.3	-18.6	22.4	68	100	Vert.	43.5	21.1
200.521	24.6	QP	17.5	-18.0	24.1	55	100	Vert.	43.5	19.4
202.064	29.3	QP	17.5	-18.0	28.8	199	165	Hori.	43.5	14.7
312.006	22.5	QP	14.4	-16.7	20.2	359	222	Vert.	46.0	25.8
312.010	25.5	QP	14.4	-16.7	23.2	316	100	Hori.	46.0	22.8
364.008	26.2	QP	15.5	-16.6	25.1	57	100	Hori.	46.0	20.9
363.994	24.4	QP	15.5	-16.6	23.3	311	100	Vert.	46.0	22.7
419.783	22.5	QP	16.6	-16.4	22.7	94	100	Hori.	46.0	23.3
419.742	22.5	QP	16.6	-16.4	22.7	325	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)

*The test result is round off to one or two decimal places, so some differences might be observed.

Radiated Spurious Emission (below 1GHz)
Tx, Ch. High

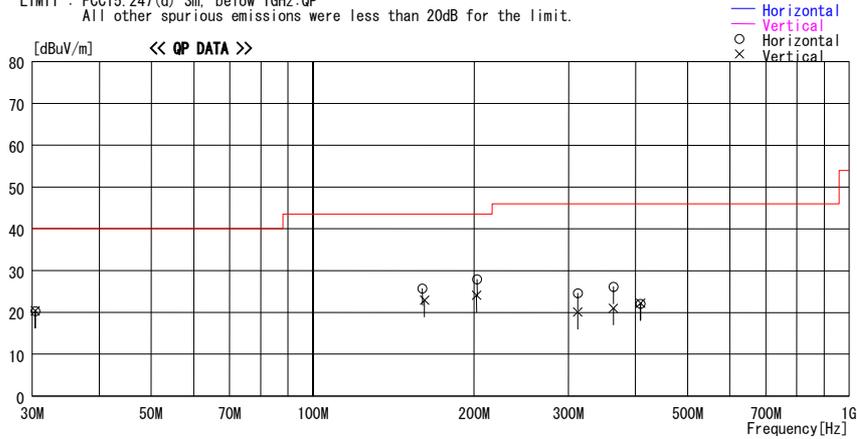
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2007/09/16

Company : Sharp Corporation
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable
Model No. : 920SH
Serial No. : 004401/11/076355/0
Report No. : 28BE0009-HO
Power : AC120V / 60Hz
Temp./Humi. : 25deg. C. / 65%
Operator : Shinya Watanabe

Mode / Remarks : Transmitting mode 2480MHz

LIMIT : FCC15.247(d) 3m. below 1GHz:QP
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit		Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]					[dBuV/m]	[dB]	
30.385	22.8	QP	18.7	-21.2	20.3	168	400	Hori.	40.0	19.7	
30.351	22.8	QP	18.7	-21.2	20.3	71	100	Vert.	40.0	19.7	
160.240	29.1	QP	15.2	-18.6	25.7	11	208	Hori.	43.5	17.8	
161.643	26.2	QP	15.3	-18.6	22.9	84	100	Vert.	43.5	20.6	
202.741	28.4	QP	17.5	-18.0	27.9	221	161	Hori.	43.5	15.6	
202.125	24.6	QP	17.5	-18.0	24.1	58	100	Vert.	43.5	19.4	
311.999	26.9	QP	14.4	-16.7	24.6	40	100	Hori.	46.0	21.4	
312.007	22.4	QP	14.4	-16.7	20.1	359	218	Vert.	46.0	25.9	
363.997	27.2	QP	15.5	-16.6	26.1	359	102	Hori.	46.0	19.9	
363.888	22.1	QP	15.5	-16.6	21.0	359	100	Vert.	46.0	25.0	
408.317	22.3	QP	16.3	-16.5	22.1	186	100	Hori.	46.0	23.9	
409.007	22.4	QP	16.3	-16.5	22.2	93	100	Vert.	46.0	23.8	

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)

*The test result is round off to one or two decimal places, so some differences might be observed.

Radiated Spurious Emission (below 1GHz)
Rx, Ch. Mid

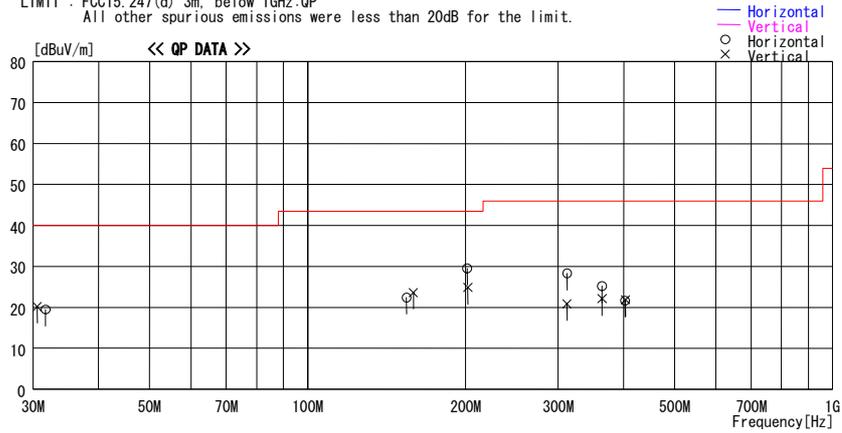
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2007/09/16

Company : Sharp Corporation Report No. : 28BE0009-HO
Kind of EUT : WCDMA & Tri-band (900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable Power : AC120V / 60Hz
Model No. : 920SH Temp./Humi. : 25deg. C. / 65%
Serial No. : 004401/11/076355/0 Operator : Shinya Watanabe

Mode / Remarks : Receiving mode 2441MHz

LIMIT : FCC15.247(d) 3m, below 1GHz:QP
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Gain [dB]						
31.707	22.5	QP	18.1	-21.1	19.5	137	400	Hori.	40.0	20.5
30.565	22.7	QP	18.6	-21.1	20.2	43	100	Vert.	40.0	19.8
154.399	26.1	QP	14.9	-18.6	22.4	130	191	Hori.	43.5	21.1
159.135	27.0	QP	15.2	-18.6	23.6	64	100	Vert.	43.5	19.9
201.555	30.0	QP	17.5	-18.0	29.5	4	159	Hori.	43.5	14.0
202.040	25.3	QP	17.5	-18.0	24.8	65	100	Vert.	43.5	18.7
311.994	30.6	QP	14.4	-16.7	28.3	272	100	Hori.	46.0	17.7
311.989	23.1	QP	14.4	-16.7	20.8	313	118	Vert.	46.0	25.2
363.997	26.3	QP	15.5	-16.6	25.2	1	100	Hori.	46.0	20.8
364.018	23.2	QP	15.5	-16.6	22.1	203	100	Vert.	46.0	23.9
402.725	22.2	QP	16.1	-16.6	21.7	184	100	Hori.	46.0	24.3
403.677	22.2	QP	16.2	-16.5	21.9	188	100	Vert.	46.0	24.1

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)

*The test result is round off to one or two decimal places, so some differences might be observed.

Radiated Spurious Emission (above 1GHz)
Tx, Ch. Low

UL Japan, Inc.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company	: Sharp Corporation	REPORT NO	: 28BE0009-HO
Equipment	: WCDMA & Tri-band(900/1800/1900) GSM	REGULATION	: FCC15.247(d)/RSS-210A8.5
	: Dual mode Mobile Phone / Bluetooth enable	TEST DISTANCE	: 3/m
Model	: 920SH	DATE	: 09/11/2007
Sample No.	: 004401/11/076355/0	TEMPERATURE	: 26deg.C
Power	: AC 120 V / 60 Hz	HUMIDITY	: 65%
Mode	: Transmitting mode 2402MHz	ENGINEER	: Shinya Watanabe
Remarks	: Hor X , Ver Y-axis		

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	2390.0	41.2	42.4	27.3	31.5	3.0	0.0	40.0	41.2	73.9	33.9	32.7
2*	2400.0	68.9	77.5	27.3	31.5	3.0	0.0	67.7	76.3	73.9	-	-
3	4804.0	42.1	45.5	31.5	30.8	3.9	0.9	47.6	51.0	73.9	26.3	22.9
4	7206.0	39.4	39.7	35.8	31.3	4.5	0.7	49.1	49.4	73.9	24.8	24.5
5	9608.0	40.1	40.9	38.2	31.9	5.4	0.5	52.3	53.1	73.9	21.6	20.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12010.0	40.8	41.2	38.9	32.4	6.7	0.0	44.5	44.9	73.9	29.4	29.0
7	14412.0	NS	NS	-	-	-	-	-	-	73.9	-	-
8	16814.0	NS	NS	-	-	-	-	-	-	73.9	-	-
9	19216.0	NS	NS	-	-	-	-	-	-	73.9	-	-
10	21618.0	NS	NS	-	-	-	-	-	-	73.9	-	-
11	24020.0	41.5	40.7	38.7	30.5	9.3	0.0	49.5	48.7	73.9	24.4	25.2

* Reference data

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	2390.0	30.8	32.6	27.3	31.5	3.0	0.0	29.6	31.4	53.9	24.3	22.5
2*	2400.0	57.7	64.6	27.3	31.5	3.0	0.0	56.5	63.4	53.9	-	-
3	4804.0	33.4	37.5	31.5	30.8	3.9	0.9	38.9	43.0	53.9	15.0	10.9
4	7206.0	28.1	28.3	35.8	31.3	4.5	0.7	37.8	38.0	53.9	16.1	15.9
5	9608.0	28.9	28.9	38.2	31.9	5.4	0.5	41.1	41.1	53.9	12.8	12.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12010.0	30.0	30.0	38.9	32.4	6.7	0.0	33.7	33.7	53.9	20.2	20.2
7	14412.0	NS	NS	-	-	-	-	-	-	53.9	-	-
8	16814.0	NS	NS	-	-	-	-	-	-	53.9	-	-
9	19216.0	NS	NS	-	-	-	-	-	-	53.9	-	-
10	21618.0	NS	NS	-	-	-	-	-	-	53.9	-	-
11	24020.0	29.8	29.8	38.7	30.5	9.3	0.0	37.8	37.8	53.9	16.1	16.1

* 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	91.2	99.7	27.3	31.5	3.0	0.0	90.0	98.5	-	-	-
2	2400.0	42.3	49.5	27.3	31.5	3.0	0.0	41.1	48.3	Funda-20dB	28.9	30.2

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 test result is round off to one or two decimal places, so some differences might be observed.

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

NS: Non Signal

Radiated Spurious Emission (above 1GHz)
Tx, Ch. Mid

UL Japan, Inc.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company	: Sharp Corporation	REPORT NO	: 28BE0009-HO
Equipment	: WCDMA & Tri-band(900/1800/1900) GSM	REGULATION	: FCC15.247(d)/RSS-210A8.5
	: Dual mode Mobile Phone / Bluetooth enable	TEST DISTANCE	: 3/1m
Model	: 920SH	DATE	: 09/11/2007
Sample No.	: 004401/11/076355/0	TEMPERATURE	: 26deg.C
Power	: AC 120 V / 60 Hz	HUMIDITY	: 65%
Mode	: Transmitting mode 2441MHz	ENGINEER	: Shinya Watanabe
Remarks	: Hor X , Ver Y-axis		

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	4882.0	46.2	45.5	31.7	30.7	3.9	1.0	52.1	51.4	73.9	21.8	22.5
2	7323.0	39.3	39.4	35.9	31.3	4.6	0.7	49.2	49.3	73.9	24.7	24.6
3	9764.0	42.0	41.3	38.2	32.1	5.4	0.5	54.0	53.3	73.9	19.9	20.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	12205.0	40.9	40.1	39.0	32.2	6.7	0.0	44.9	44.1	73.9	29.0	29.8
5	14646.0	NS	NS	-	-	-	-	-	-	73.9	-	-
6	17087.0	NS	NS	-	-	-	-	-	-	73.9	-	-
7	19528.0	NS	NS	-	-	-	-	-	-	73.9	-	-
8	21969.0	NS	NS	-	-	-	-	-	-	73.9	-	-
9	24410.0	40.3	40.3	38.8	30.3	9.4	0.0	48.7	48.7	73.9	25.2	25.2

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	4882.0	38.3	36.6	31.7	30.7	3.9	1.0	44.2	42.5	53.9	9.7	11.4
2	7323.0	28.3	28.4	35.9	31.3	4.6	0.7	38.2	38.3	53.9	15.7	15.6
3	9764.0	29.6	29.5	38.2	32.1	5.4	0.5	41.6	41.5	53.9	12.3	12.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	12205.0	29.3	29.3	39.0	32.2	6.7	0.0	33.3	33.3	53.9	20.6	20.6
5	14646.0	NS	NS	-	-	-	-	-	-	53.9	-	-
6	17087.0	NS	NS	-	-	-	-	-	-	53.9	-	-
7	19528.0	NS	NS	-	-	-	-	-	-	53.9	-	-
8	21969.0	NS	NS	-	-	-	-	-	-	53.9	-	-
9	24410.0	29.4	29.5	38.8	30.3	9.4	0.0	37.8	37.9	53.9	16.1	16.0

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 test result is round off to one or two decimal places, so some differences might be observed.

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

NS:Non Signal

Radiated Spurious Emission (above 1GHz)
Tx, Ch. High

UL Japan, Inc.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company	: Sharp Corporation	REPORT NO	: 28BE0009-HO
Equipment	: WCDMA & Tri-band(900/1800/1900) GSM	REGULATION	: FCC15.247(d)/RSS-210A8.5
	: Dual mode Mobile Phone / Bluetooth enable	TEST DISTANCE	: 3/1m
Model	: 920SH	DATE	: 09/11/2007
Sample No.	: 004401/11/076355/0	TEMPERATURE	: 26deg.C
Power	: AC 120 V / 60 Hz	HUMIDITY	: 65%
Mode	: Transmitting mode 2480MHz	ENGINEER	: Shinya Watanabe
Remarks	: Hor X , Ver Y-axis		

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	2483.5	56.1	59.4	27.4	31.5	3.1	0.0	55.1	58.4	73.9	18.8	15.5
2	4960.0	47.1	46.7	31.8	30.7	4.0	1.0	53.2	52.8	73.9	20.7	21.1
3	7440.0	40.8	40.2	36.1	31.3	4.7	0.7	51.0	50.4	73.9	22.9	23.5
4	9920.0	41.4	41.0	38.2	32.2	5.4	0.5	53.3	52.9	73.9	20.6	21.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	12400.0	41.5	41.0	39.1	32.2	6.7	0.0	45.6	45.1	73.9	28.3	28.8
6	14880.0	NS	NS	-	-	-	-	-	-	73.9	-	-
7	17360.0	NS	NS	-	-	-	-	-	-	73.9	-	-
8	19840.0	NS	NS	-	-	-	-	-	-	73.9	-	-
9	22320.0	NS	NS	-	-	-	-	-	-	73.9	-	-
10	24800.0	41.6	41.0	38.9	30.1	9.4	0.0	50.3	49.7	73.9	23.6	24.2

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	2483.5	49.7	52.7	27.4	31.5	3.1	0.0	48.7	51.7	53.9	5.2	2.2
2	4960.0	39.7	37.0	31.8	30.7	4.0	1.0	45.8	43.1	53.9	8.1	10.8
3	7440.0	29.0	29.0	36.1	31.3	4.7	0.7	39.2	39.2	53.9	14.7	14.7
4	9920.0	29.7	29.7	38.2	32.2	5.4	0.5	41.6	41.6	53.9	12.3	12.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	12400.0	29.4	29.4	39.1	32.2	6.7	0.0	33.5	33.5	53.9	20.4	20.4
6	14880.0	NS	NS	-	-	-	-	-	-	53.9	-	-
7	17360.0	NS	NS	-	-	-	-	-	-	53.9	-	-
8	19840.0	NS	NS	-	-	-	-	-	-	53.9	-	-
9	22320.0	NS	NS	-	-	-	-	-	-	53.9	-	-
10	24800.0	29.4	29.5	38.9	30.1	9.4	0.0	38.1	38.2	53.9	15.8	15.7

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 test result is round off to one or two decimal places, so some differences might be observed.

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

NS:Non Signal

Radiated Spurious Emission (above 1GHz)
Rx, Ch. Mid

UL Japan, Inc.
Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company	:Sharp Corporation	REPORT NO	: 28BE0009-HO
Equipment	:WCDMA & Tri-band(900/1800/1900) GSM Dual mode Mobile Phone / Bluetooth enable	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model	: 920SH	TEST DISTANCE	: 3/1m
Sample No.	: 004401/11/076355/0	DATE	: 09/11/2007
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 26deg.C
Mode	: Receiving mode 2441MHz	HUMIDITY	: 65%
Remarks	: Hor X , Ver Y-axis	ENGINEER	: Shinya Watanabe

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	3692.0	40.4	40.4	29.2	31.0	3.6	0.0	42.2	42.2	73.9	31.7	31.7
2	2441.0	40.7	40.7	27.4	31.5	3.1	0.0	39.7	39.7	73.9	34.2	34.2

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

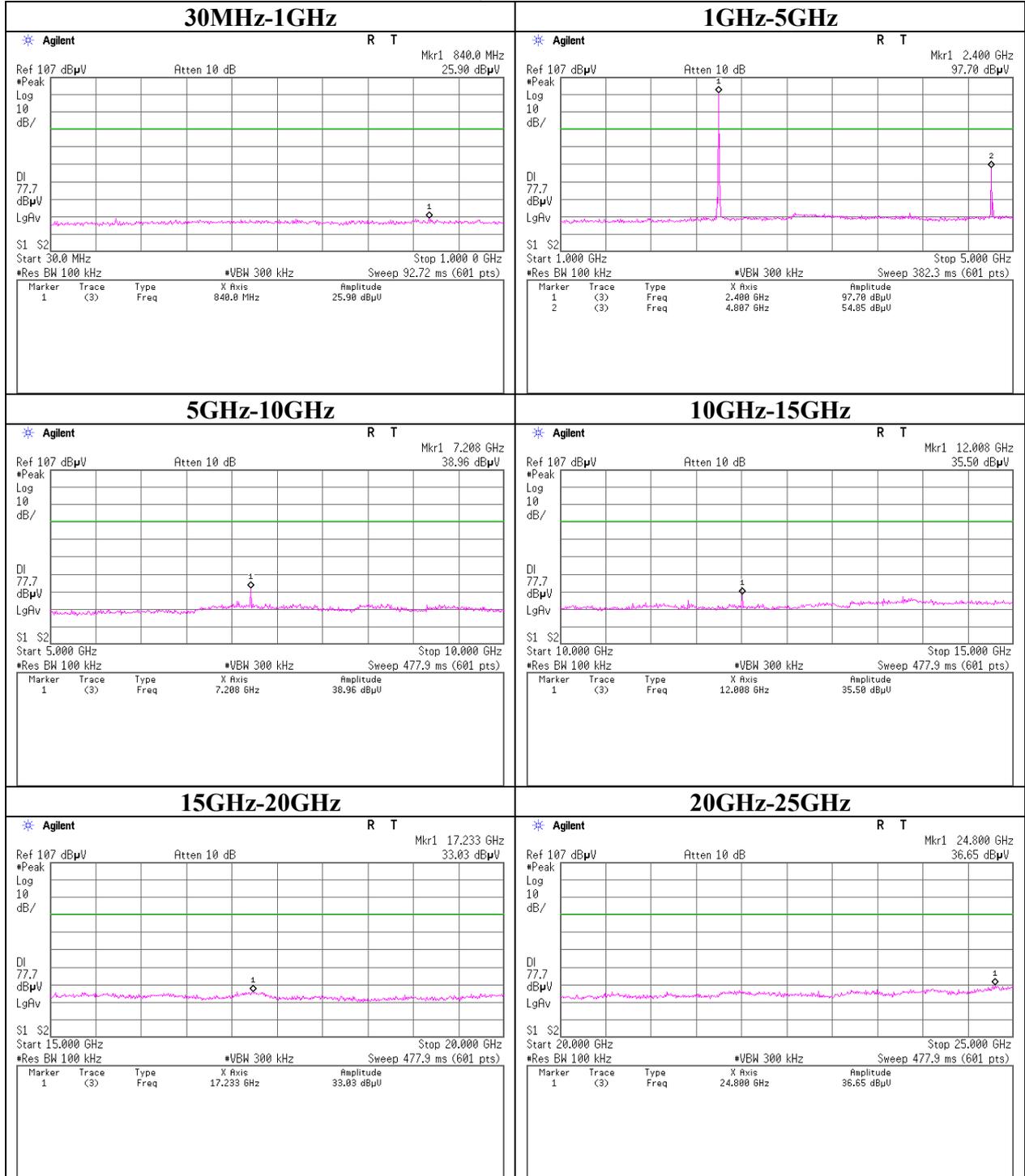
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	3692.0	29.5	29.5	29.2	31.0	3.6	0.0	31.3	31.3	53.9	22.6	22.6
2	2441.0	28.5	28.5	27.4	31.5	3.1	0.0	27.5	27.5	53.9	26.4	26.4

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

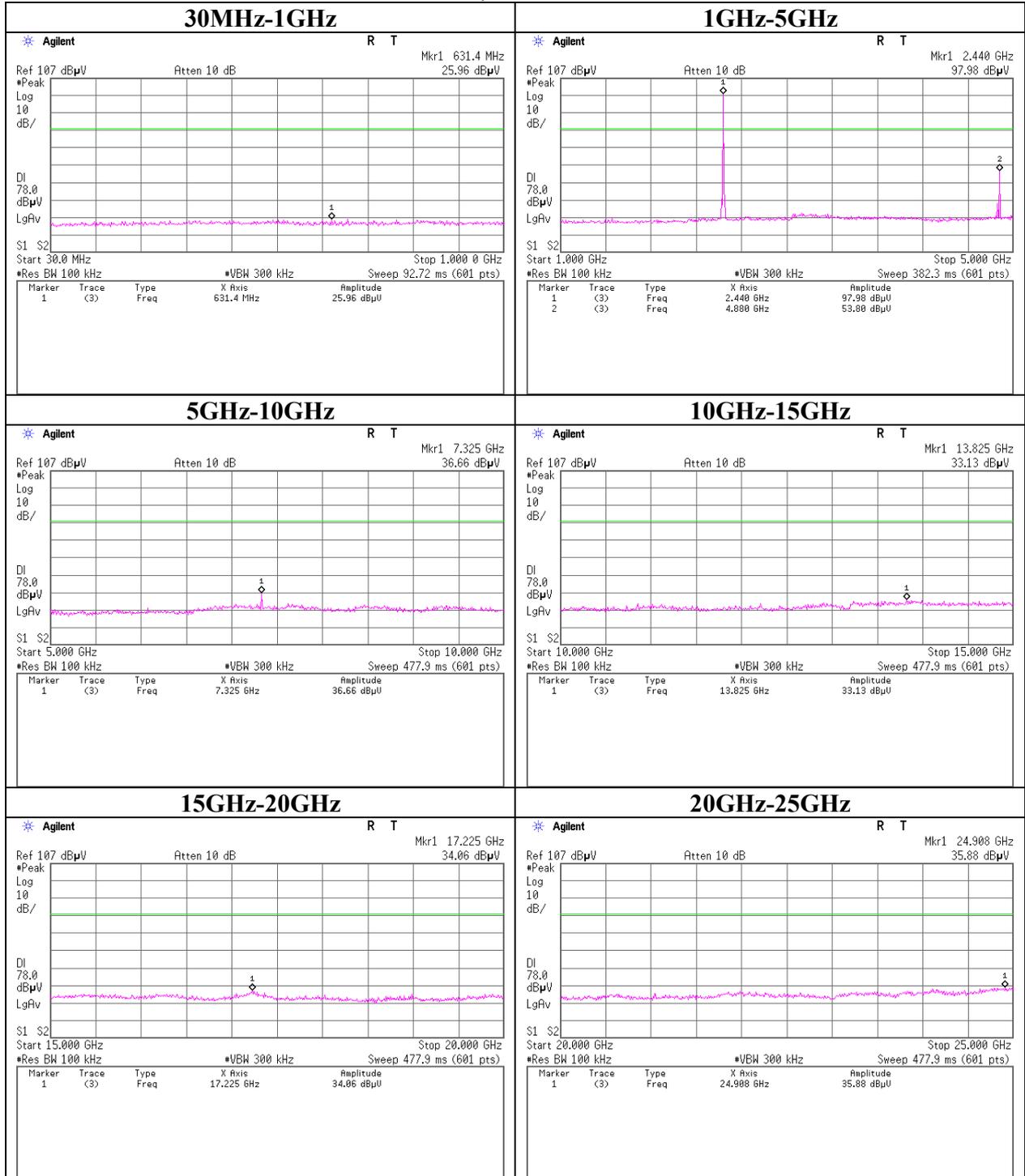
*The test result is round off to one or two decimal places, so some differences might be observed.

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

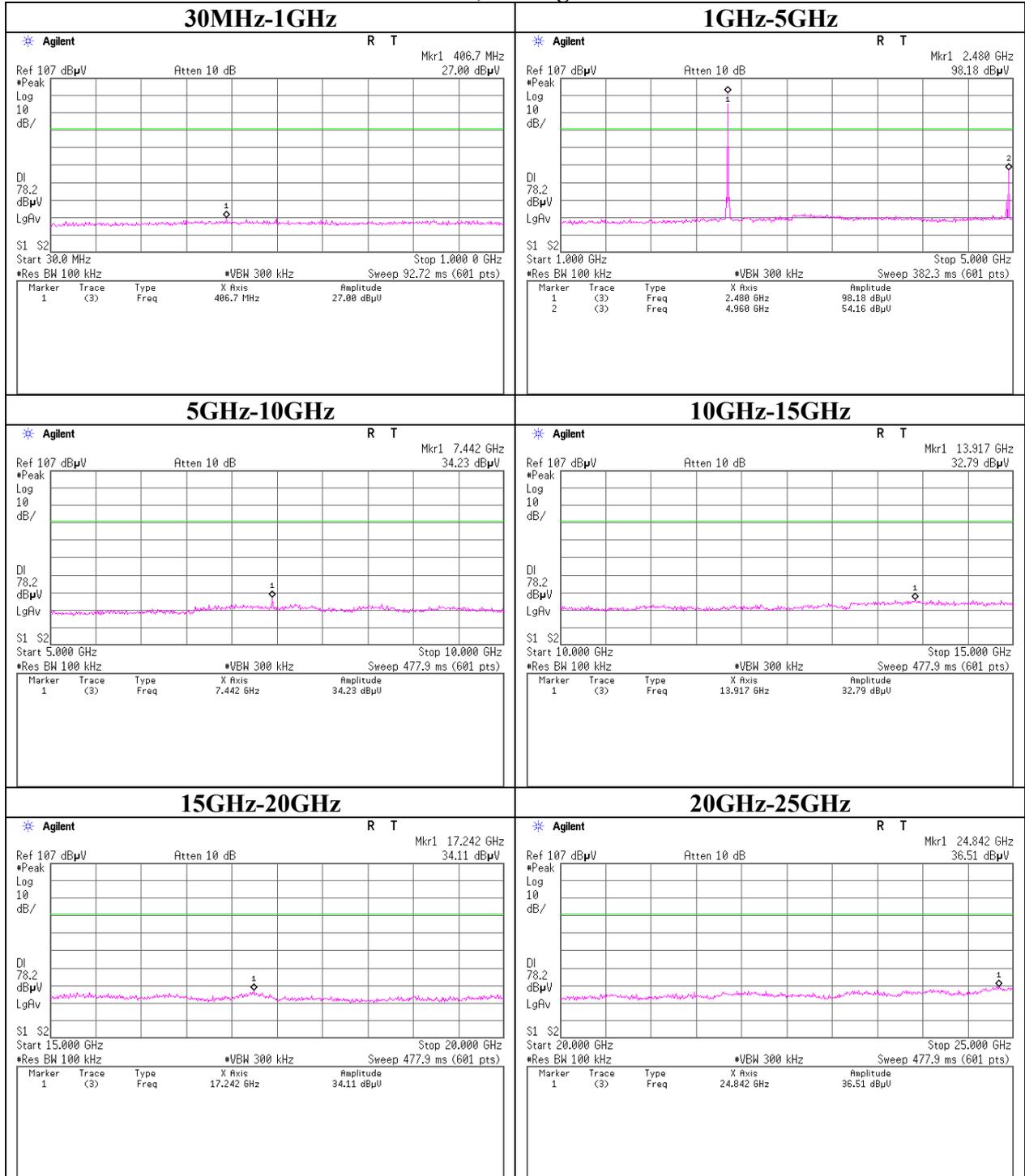
Conducted Spurious Emission
Tx, Ch:Low



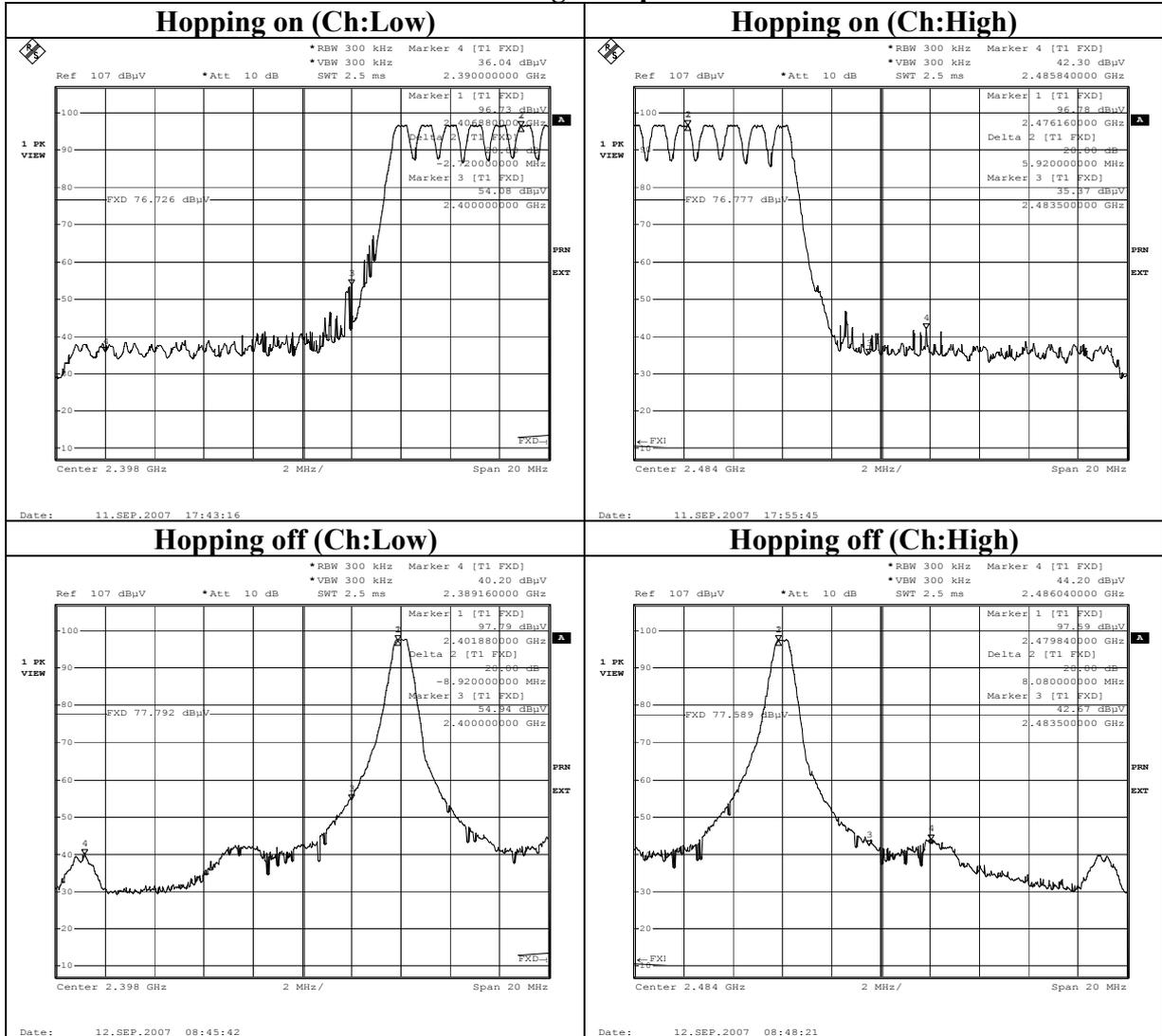
Conducted Spurious Emission
Tx, Ch:Mid



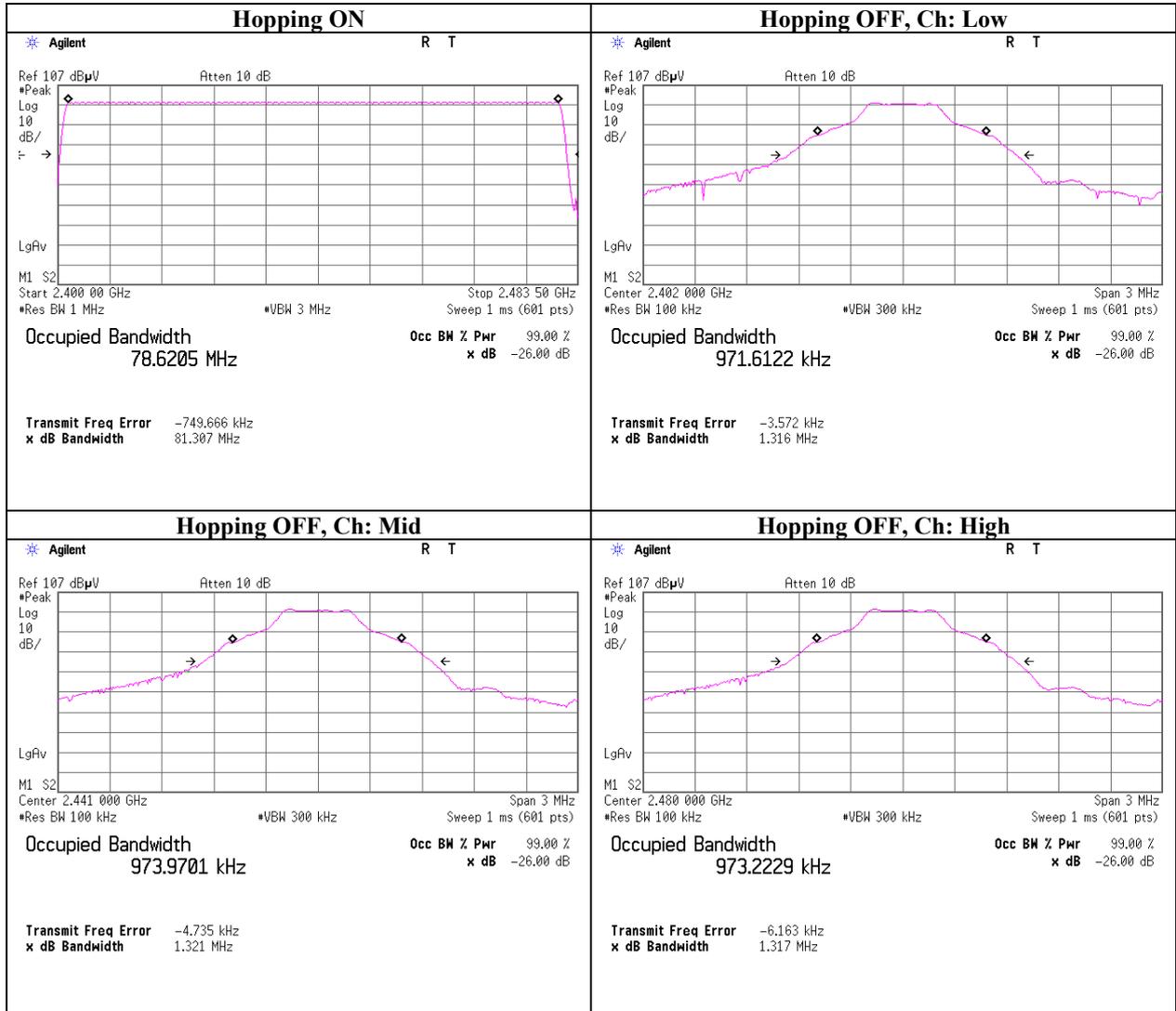
Conducted Spurious Emission
Tx, Ch:High



Conducted Spurious Emission
Band Edge compliance



99% Occupied Bandwidth



*Refer to 20dB Bandwidth for 99% Bandwidth inquiry mode

APPENDIX 3:Test instruments

EMI test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-03	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2007/03/05 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2007/04/14 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2007/03/29 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	RE	2007/03/02 * 12
MHF-05	High Pass Filter 3.5-18GHz	Tokimec	TF323DCA	RE	2007/01/16 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	RE	2007/04/06 * 12
MSA-09	Spectrum Analyzer	Advantest	R3273	RE	2006/12/08 * 12
MOS-12	Thermo-Hygrometer	Custom	CTH-180	RE	2006/01/19 * 24
MJM-06	Measure	PROMART	SEN1955	RE	-
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/TSJ	-	RE	2007/02/27 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2006/10/07 * 12
MLA-09	Logperiodic Antenna	Schwarzbeck	USLP9143B	RE	2007/01/19 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2006/12/27 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2007/07/11 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE/CE	2006/10/14 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	RE/CE	2006/11/27 * 12
MJM-01	Measure	KDS	ES19-55	RE/CE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE/CE	2006/11/01 * 12
MLS-03	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2007/06/29 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/Agilent/TSJ	-	CE	2006/12/28 * 12

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EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MOS-04	Digital Humidity Indicator	N.T	NT-1800	AT	2006/11/27 * 12
MCC-06	Microwave Cable 1G-26.5GHz 1m	Suhner	SUCOFLEX 104	AT	2007/02/26 * 12
MAT-25	Attenuator(10dB)(above 1GHz)	Agilent	8493C	AT	2007/06/28 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	AT	2007/09/05 * 12
MBTR10	Spectrum Analyzer	Rohde & Schwarz	FSP30	AT	2006/10/21 * 12
MPM-11	Power Meter	Agilent	E4419B	AT	2007/05/31 * 12
MPSE-15	Power sensor	Agilent	E9301A	AT	2007/05/31 * 12

The expiration date of the calibration is the end of the expired month.

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

Test Item:

RE: Radiated Emission

CE: Conducted Emission

AT: Antenna Terminal Conducted test

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