



EMI TEST REPORT

Test Report No. : 24EE0086-HO

Applicant : Sharp Corporation,
Communication Systems Group.

Type of Equipment : Quad-band GSM Mobile phone

Model No. : GX30

Test standard : FCC Part 15 Subpart C
Section 15.207, Section 15.247

FCC ID : APYHO00033

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 above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.
5. This test report does not constitute an endorsement by NIST/NVLAP or U.S. Government.

Date of test : December 23, 24 and 25, 2003 and January 05, 2004

Tested by :

M. Fujimura

Mitsuru Fujimura
EMC Service

K. Adachi

Kenichi Adachi
EMC Service

Approved by :

Hironobu Shimoji

Hironobu Shimoji
Group Leader of EMC Service

UL Apex Co., Ltd.

Head Office EMC Lab.

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MF060b(10.04.03)

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SECTION 1: Client information

Company Name : Sharp Corporation, Communication Systems Group.
Brand name : SHARP
Address : 2-13-1 Iida Hachihonmatsu HigashiHiroshima-City, Hiroshima,
739-0192 Japan.
Telephone Number : +81-824-20-1817
Facsimile Number : +81-824-20-1654
Contact Person : Masatsugu Daijuh

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

2.1 Identification of E.U.T.

Type of Equipment : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390
Country of Manufacture : Japan
Receipt Date of Sample : December 23, 2003
Condition of EUT : Production prototype

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2.2 Product Description

Sharp Corporation, Communication Systems Group. Model No: GX30 is the Quad-band GSM Mobile phone.
The system is mainly used as a Bluetooth Headset and Car – Kit.
The clock frequency of EUT is 26MHz as the reference clock.

Equipment Type	:	Transceiver
Frequency band	:	2400-2483.5MHz
Frequency operation	:	2402-2480MHz
Type of modulation	:	GFSK
Bandwidth & Channel spacing	:	1MHz & 79channel
Antenna Type	:	Chip Antenna
Antenna Gain	:	0dBi
Antenna connector Type	:	MM8430-2600RB3
Power Supply	:	DC3.0V, AC120V 60Hz (AC Adaptor)
Temperature of operation	:	-10 deg. C. -+55 deg. C.

FCC 15.31 (e)

This EUT provides stable voltage(DC3.0V) constantly to RF Module regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

Since Quad-band GSM Mobile phone uses a transmitting antenna that is an integral part of the equipment, it is impossible for end users to replace the antenna without use of a special tool. Therefore, the equipment complies with the requirement of 15.203.

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SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C

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

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	Conducted emission	ANSI C63.4:2001	Section 15.207	-	N/A	7.6dB 9.2749MHz, L1	Complied
2	Carrier Frequency Separation	ANSI C63.4:2001	Section15.247(a)(1)	Conducted	N/A	-	Complied
3	20dB Bandwidth	ANSI C63.4:2001	Section15.247(a)(1)	Conducted	N/A	-	Complied
4	Number of Hopping Frequency	ANSI C63.4:2001	Section15.247(a)(1)(iii)	Conducted	N/A	-	Complied
5	Dwell time	ANSI C63.4:2001	Section15.247(a)(1)(iii)	Conducted	N/A	-	Complied
6	Maximum Peak Output Power	ANSI C63.4:2001	Section15.247(b)(1)	Conducted	N/A	-	Complied
7	Band Edge Compliance	ANSI C63.4:2001	Section15.247(c)	Conducted	N/A	-	Complied
8	Spurious Emission	ANSI C63.4:2001	Section15.247(c)	Conducted/ Radiated	N/A	2.3dB 17360.0MHz Horizontal/ Vertical	Complied

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

*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 Confirmation

UL Apex Co., Ltd. hereby confirms that E.U.T., in the configuration tested, complies with the specifications FCC Part 15 Subpart C Section 15.207 and 15.247.

3.4 Uncertainty

Conducted Emission

The measurement uncertainty (with a 95% confidence level) for this test is $\pm 1.3\text{dB}$.
The data listed in this test report has enough margin.

Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is $\pm 4.5\text{dB}(3\text{m})$.
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is $\pm 5.2\text{dB}(3\text{m})$.
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is $\pm 6.6\text{dB}$.
The result is within Head Office EMC Lab's uncertainty.

Other test except Conducted Emission and Spurious Emission (Radiated)

The measurement uncertainty (with a 95% confidence level) for this test is $\pm 3.0\text{dB}$.
The data listed in this test report has enough margin.

3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab.
No.2 semi anechoic chamber.
No.3 measurement room
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
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No.2 semi anechoic chamber has been fully described in a report submitted to FCC office, and listed on June 05, 2002 (Registration number: No.2:846015 Industry Canada: No.2: IC4247-2)

*NVLAP Lab. code: 200572-0

3.6 Test set up, Test instruments and Data of EMI

Refer to APPENDIX 1 to 3.

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

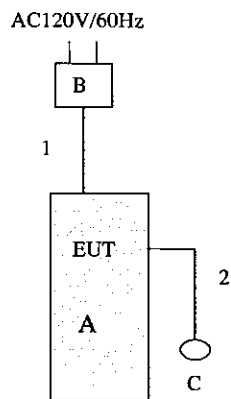
4.1 Operating Modes

The EUT exercise program used during radiated and conducted testing was designed to exercise the various system components in a manner similar to typical use.

The sequence is used : Transmitting mode(Bluetooth)
Low Channel :2402MHz
Mid Channel :2441MHz
High channel :2480MHz
Inquiry

Justification: The system was configured in typical fashion (as a customer would normally use it) for testing.

4.2 Configuration and peripherals



* Cabling was taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID
A	Quad-band GSM Mobile phone	GX30	PP2-390	SHARP	APYHO00033
B	AC Charger	XN-1QC34	N/A	HOSHIDEN	N/A
C*	Earphone	N/A	N/A	N/A	N/A

List of cables used

No.	Name	Length (m)	Shield	Backshell Material
1	DC Power Cable	1.5	N	Polyvinyl chloride
2*	Earphone Cable	1.0	N	Polyvinyl chloride

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SECTION 5: Conducted Emission, Section 15.207

Test Procedure

EUT was placed on a platform 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 LISN and excess AC cable was 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 were resistively terminated in 50ohm when not connected to the measuring equipment. The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT on a reference ground plane 7.5 x 5.8 x 5.2m in a No.2 semi anechoic chamber. The EUT was connected to a Line Impedance Stabilization Network (LISN). An overview sweep with peak detection has been performed. The measurements have been performed with a CISPR quasi-peak detector (IF BW 9 kHz). Measurement range: 0.15-30MHz

Test data : APPENDIX 3
Test result : Pass

SECTION 6: Carrier Frequency Separation, Section15.247(a)(1)

Test Procedure

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

Test data : APPENDIX 3
Test result : Pass

SECTION 7: 20dB Bandwidth, Section 15.247(a)(1)

Test Procedure

The 20dB bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 8: Number of Hopping Frequency, Section 15.247(a)(1)(iii)

Test Procedure

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

Test data : APPENDIX 3
Test result : Pass

SECTION 9: Dwell time, Section 15.247(a)(1)(iii)

Test Procedure

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

Test data : APPENDIX 3
Test result : Pass

SECTION 10: Maximum Peak Output Power, Section 15.247(b)(1)

Test Procedure

The Maximum Peak Output Power was measured with a power meter connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 11: Band Edge Compliance, Section 15.247(c)

Test Procedure

The Band Edge Compliance was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 12: Spurious Emission, Section 15.247(c)

[Conducted]

Test Procedure

The Spurious Emission (Conducted) was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

[Radiated]

Test Procedure

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.

Test was made with the antenna positioned in both the horizontal and vertical planes of polarization.

The Radiated Electric Field Strength intensity has been measured in No.2 semi anechoic chamber (7.5 x 5.8 x 5.2m) with a ground plane at a distance of 3m.

The measuring antenna height was varied between 1 to 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.

The result was also satisfied the general limits specified in section 15.209(a).

- The carrier level (or, noise levels) was (or were) measured at each position of all three axes X, Y and Z, and the position that has the maximum noise was determined.

With the position, the noise levels of all the frequencies was measured.

Test data : APPENDIX 3
Test result : Pass

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APPENDIX 1: Photographs of test setup

Conducted Emission

Front



Rear



Spurious Emission (Radiated)

Front



Rear



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

X-axis



Y-axis



Z-axis



APPENDIX 2:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	1, 3	2003/04/11 * 12
MRENT-06	Spectrum Analyzer	Advantest	R3273	1, 3	2003/10/31 * 12
MCC-04	Microwave Cable	Storm	421-011	3	2003/01/14 * 12
MCC-24	Microwave Cable	Storm	-	3	2003/04/30 * 12
MCC-25	Microwave Cable	Suhner	SUCOFLEX104	3	2003/06/30 * 12
MHF-02	High Pass Filter	Tokimec	TF323DCA	3	2003/09/19 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	3	2003/01/11 * 12
MPA-01	Pre Amplifier	Agilent	8449B	3	2003/02/08 * 12
MHA-02	Horn Antenna	EMCO	3160-09	3	2003/01/11 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	1, 3	2003/01/31 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	3	2003/05/08 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	3	2003/12/16 * 12
MPA-02	Pre Amplifier	Agilent	87405A	3	2003/04/17 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	3	2003/04/28 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	3	2003/04/28 * 12
MRENT-08	Spectrum Analyzer	Advantest	R3272	4	2003/12/14 * 12
MCC-21	Microwave Cable	Storm	-	4	2003/04/30 * 12
MAT-22	Attenuator	Orient Microwave	BX10-0476-00	2, 4	2003/03/31 * 12
MPM-04	Power Meter	Agilent	E4416A	2	2003/03/13 * 12
MPSE-04	Power sensor	Agilent	E9327A	2	2003/03/18 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	1	2003/05/08 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	1	2003/03/18 * 12

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

Test Item:

- 1: Conducted emission
- 2: Maximum peak output power
- 3: Spurious emission Radiated
- 4: Except for Item 1,2 and 3

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APPENDIX 3: Data of EMI test

Conducted Emission

2402MHz

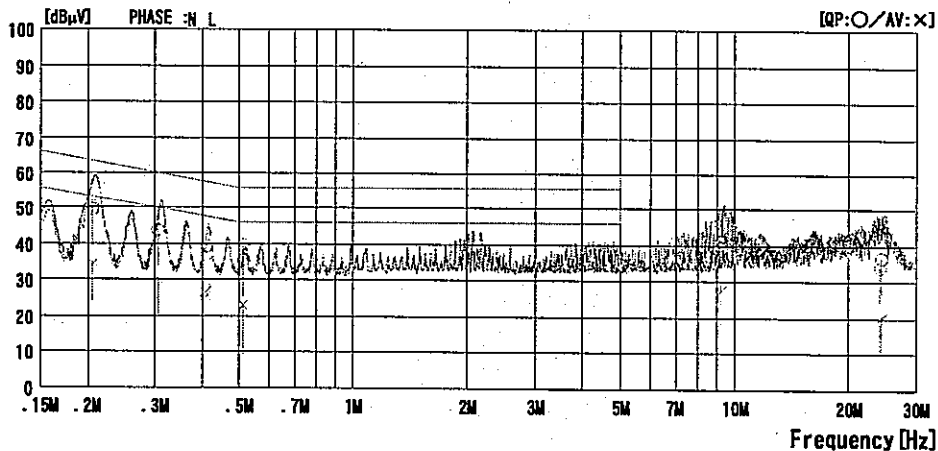
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic
Date : 2004/01/05

Applicant : Sharp
Kind of EUT : Quad-band GSM Mobile
Model No. : GX30
Serial No. : PP2-390 (AC adapter+cable: 7)
Report No. : 24EE0086-HO
Power : AC120V / 60Hz
Temp/C/HumiX : 25 / 43
Operator : Kenichi Adachi

Mode / Remarks: Bluetooth Tx2402MHz mode X-axis

LIMIT : FCC15C §15.207
FCC15C §15.207



NO	FREQ [MHz]	READING		C.F	RESULT		LIMIT		MARGIN		
		QP [dBμV]	AV [dBμV]		QP [dBμV]	AV [dBμV]	QP [dBμV]	AV [dBμV]	QP [dB]	AV [dB]	
1	0.2060	49.6	34.1	0.1	49.7	34.2	63.4	53.4	13.7	19.2	N
2	0.3065	44.1	30.2	0.1	44.2	30.3	60.1	50.1	15.9	19.8	N
3	0.4100	39.9	26.5	0.1	39.4	26.6	57.6	47.6	18.2	21.0	N
4	0.5134	35.7	22.8	0.1	35.8	22.9	56.0	46.0	20.2	23.1	N
5	0.2383	40.2	35.3	1.3	41.5	36.6	60.0	50.0	18.5	13.4	N
6	24.3889	35.1	18.4	1.9	37.0	20.3	60.0	50.0	23.0	29.7	N
7	0.2055	50.3	35.2	0.1	50.4	35.3	63.4	53.4	13.0	18.1	N
8	0.2058	50.3	35.1	0.1	50.4	35.2	63.4	53.4	13.0	18.2	N
9	0.3076	43.7	30.1	0.1	43.8	30.2	60.0	50.0	16.2	19.8	L
10	0.4106	37.3	25.1	0.1	37.4	25.2	57.6	47.6	20.2	22.4	L
11	0.5133	39.7	19.0	0.1	39.8	19.1	56.0	46.0	16.2	26.9	L
12	9.2411	38.4	26.3	1.3	39.7	27.6	60.0	50.0	20.3	22.4	L
13	24.1609	32.6	18.0	1.8	34.4	19.8	60.0	50.0	25.6	30.2	L

CHART:WITHOUT FACTOR. Peak hold data. Data is
Except for the above table : adequate margin data below the limits.

Conducted Emission

2441MHz

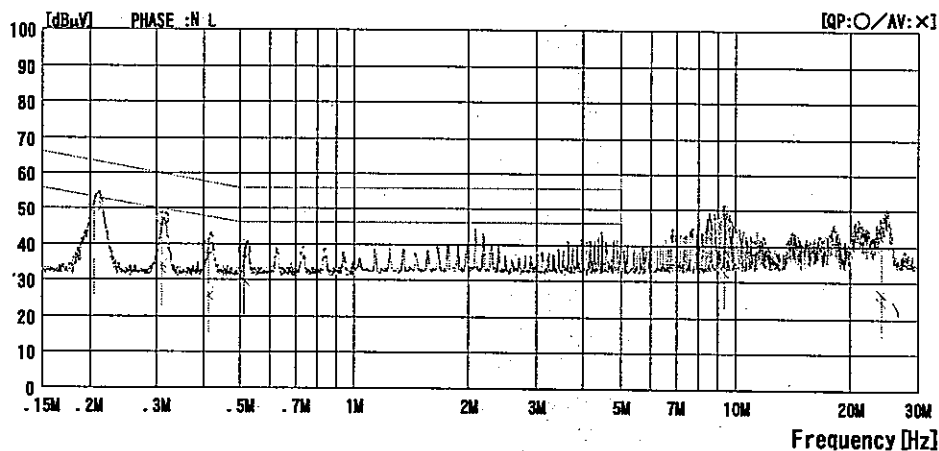
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic
Date : 2004/01/05

Applicant : Sharp
Kind of EUT : Quad-band GSM Mobile
Model No. : GX30
Serial No. : PP2-390 (AC adapter/cable: 7)
Report No. : 24EE0086-HO
Power : AC120V / 60Hz
Temp/C/HumiX : 25 / 43
Operator : Kenichi Adachi

Mode / Remarks : Bluetooth Tx2441MHz mode X-axis

LIMIT : FCC15C §15.207
FCC15C §15.207



NO	FREQ [MHz]	READING		C.F	RESULT		LIMIT		MARGIN		
		QP [dBμV]	AV [dBμV]		QP [dBμV]	AV [dBμV]	QP [dBμV]	AV [dBμV]	QP [dB]	AV [dB]	
1	0.2060	50.6	35.7	0.1	50.7	35.8	63.4	53.4	12.7	17.6	N
2	0.3114	47.1	34.3	0.1	47.2	34.4	59.9	49.9	12.7	15.5	N
3	0.4126	39.1	26.4	0.1	39.2	26.5	57.6	47.6	18.4	21.1	N
4	0.5144	38.3	29.6	0.1	38.4	29.7	56.0	46.0	17.6	16.3	N
5	9.3850	45.2	31.3	1.3	46.5	32.6	60.0	50.0	13.5	17.4	N
6	24.1194	38.4	25.1	1.8	40.2	26.9	60.0	50.0	19.8	23.1	N
7	0.2061	50.8	35.7	0.1	50.9	35.8	63.4	53.4	12.5	17.6	N
8	0.3114	47.3	32.7	0.1	47.4	32.8	59.9	49.9	12.5	17.1	L
9	0.4126	39.5	25.5	0.1	39.6	25.6	57.6	47.6	18.0	22.0	L
10	0.5144	39.4	29.4	0.1	39.5	29.5	56.0	46.0	16.5	16.5	L
11	9.3776	46.3	37.8	1.3	47.6	39.1	60.0	50.0	12.4	10.9	L
12	24.1212	38.3	22.8	1.8	40.1	24.6	60.0	50.0	19.9	25.4	L

CHART: WITHOUT FACTOR. Peak hold data. Data is
Except for the above table : adequate margin data below the limits.

Conducted Emission

2480MHz

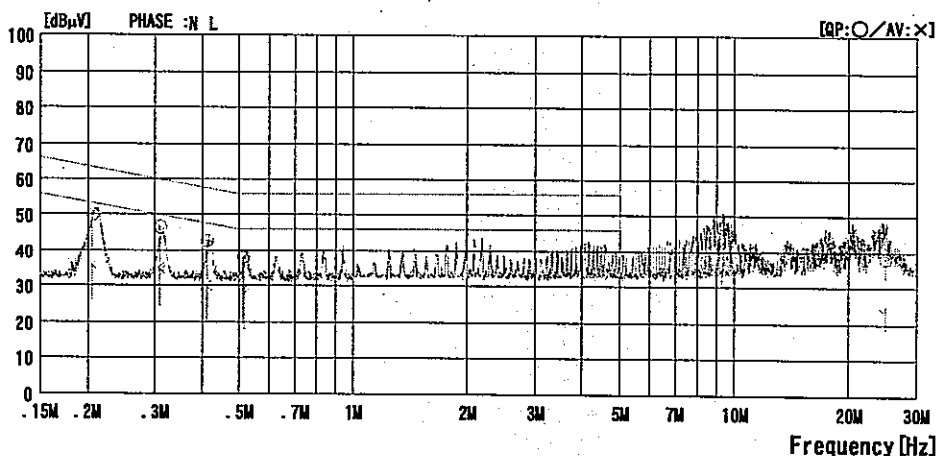
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Report No. : 24EE0086-HO
Power : AC120V / 60Hz
Temp/C/HumiX : 25 / 43
Operator : Kenichi Adachi

Mode / Remarks: Bluetooth Tx2480MHz mode X-axis

LIMIT : FCC15C §15.207
FCC15C §15.207



NO	FREQ [MHz]	READING		C. F	RESULT		LIMIT		MARGIN		
		QP [dBμV]	AV [dBμV]		QP [dBμV]	AV [dBμV]	QP [dBμV]	AV [dBμV]	QP [dB]	AV [dB]	
1	0.2060	50.1	35.6	0.1	50.2	35.7	63.4	53.4	13.2	17.7	N
2	0.3115	46.6	34.2	0.1	46.7	34.3	59.9	49.9	13.2	15.6	N
3	0.4104	42.7	29.8	0.1	42.8	29.9	57.6	47.6	14.8	17.7	N
4	0.5151	37.8	29.0	0.1	37.9	29.1	55.0	46.0	18.1	16.9	N
5	0.2998	45.9	40.2	1.3	47.2	41.5	60.0	50.0	12.8	8.5	N
6	24.9516	36.5	22.9	1.9	38.4	24.8	60.0	50.0	21.6	25.2	N
7	0.2060	50.2	35.6	0.1	50.3	35.7	63.4	53.4	13.1	17.7	L
8	0.3090	47.2	34.9	0.1	47.3	35.0	60.0	50.0	12.7	15.0	L
9	0.4130	41.3	29.8	0.1	41.4	29.9	57.6	47.6	16.2	17.7	L
10	0.5163	35.9	27.7	0.1	36.0	27.8	56.0	46.0	20.0	18.2	L
11	0.2749	47.0	41.1	1.3	48.3	42.4	60.0	50.0	11.7	7.6	L
12	24.9304	35.9	21.4	1.9	37.8	23.3	60.0	50.0	22.2	26.7	L

CHART: WITHOUT FACTOR. Peak hold data. Data is
Except for the above table : adequate margin data below the limits.

Conducted Emission Inquiry mode

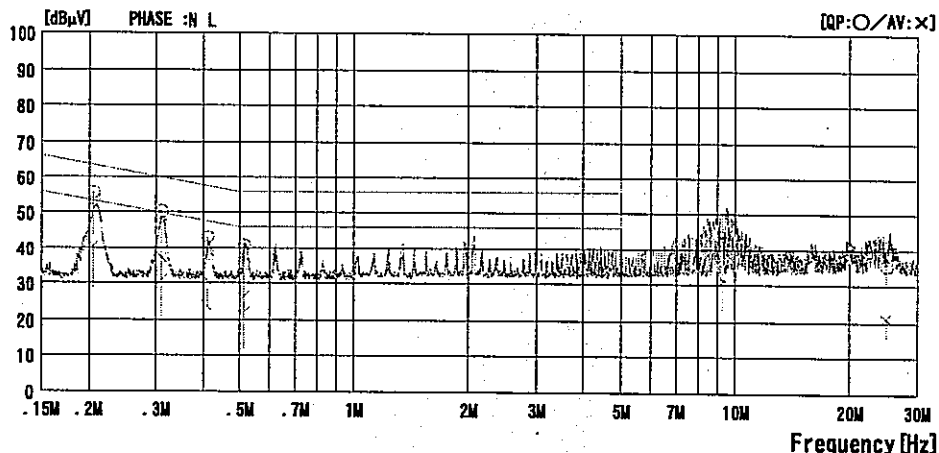
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Power : AC120V / 60Hz
Temp/C/Humi% : 25 / 43
Operator : Kenichi Adachi

Mode / Remarks: Bluetooth Tx Inquiry mode X-axis

LIMIT : FCC15C §15.207
FCC15C §15.207



NO	FREQ [MHz]	READING		C.F	RESULT		LIMIT		MARGIN		
		QP [dBμV]	AV [dBμV]		QP [dBμV]	AV [dBμV]	QP [dBμV]	AV [dBμV]	QP [dB]	AV [dB]	
1	0.2060	55.6	40.6	0.1	55.7	40.7	63.4	53.4	7.7	12.7	N
2	0.3115	50.4	36.9	0.1	50.5	37.0	59.9	49.9	9.4	12.9	N
3	0.4104	43.4	30.8	0.1	43.5	30.9	57.6	47.6	14.1	16.7	N
4	0.5151	40.9	26.3	0.1	41.0	26.4	56.0	46.0	15.0	19.6	N
5	9.3186	41.4	30.0	1.3	42.7	31.3	60.0	50.0	17.3	18.7	N
6	24.9330	34.0	19.1	1.9	35.9	21.0	60.0	50.0	24.1	29.0	N
7	0.2060	53.9	38.4	0.1	54.0	38.5	63.4	53.4	9.4	14.9	N
8	0.3115	46.5	30.8	0.1	46.6	30.9	59.9	49.9	13.3	19.0	L
9	0.4104	38.2	23.7	0.1	38.3	23.8	57.6	47.6	19.3	23.8	L
10	0.5151	35.7	22.0	0.1	35.8	22.1	56.0	46.0	20.2	23.9	L
11	9.3185	40.8	30.4	1.3	42.1	31.7	60.0	50.0	17.9	18.3	L
12	24.9330	34.1	18.7	1.9	36.0	20.6	60.0	50.0	24.0	29.4	L

CHART:WITHOUT FACTOR. Peak hold data. Data is
Except for the above table : adequate margin data below the limits.

Carrier Frequency Separation

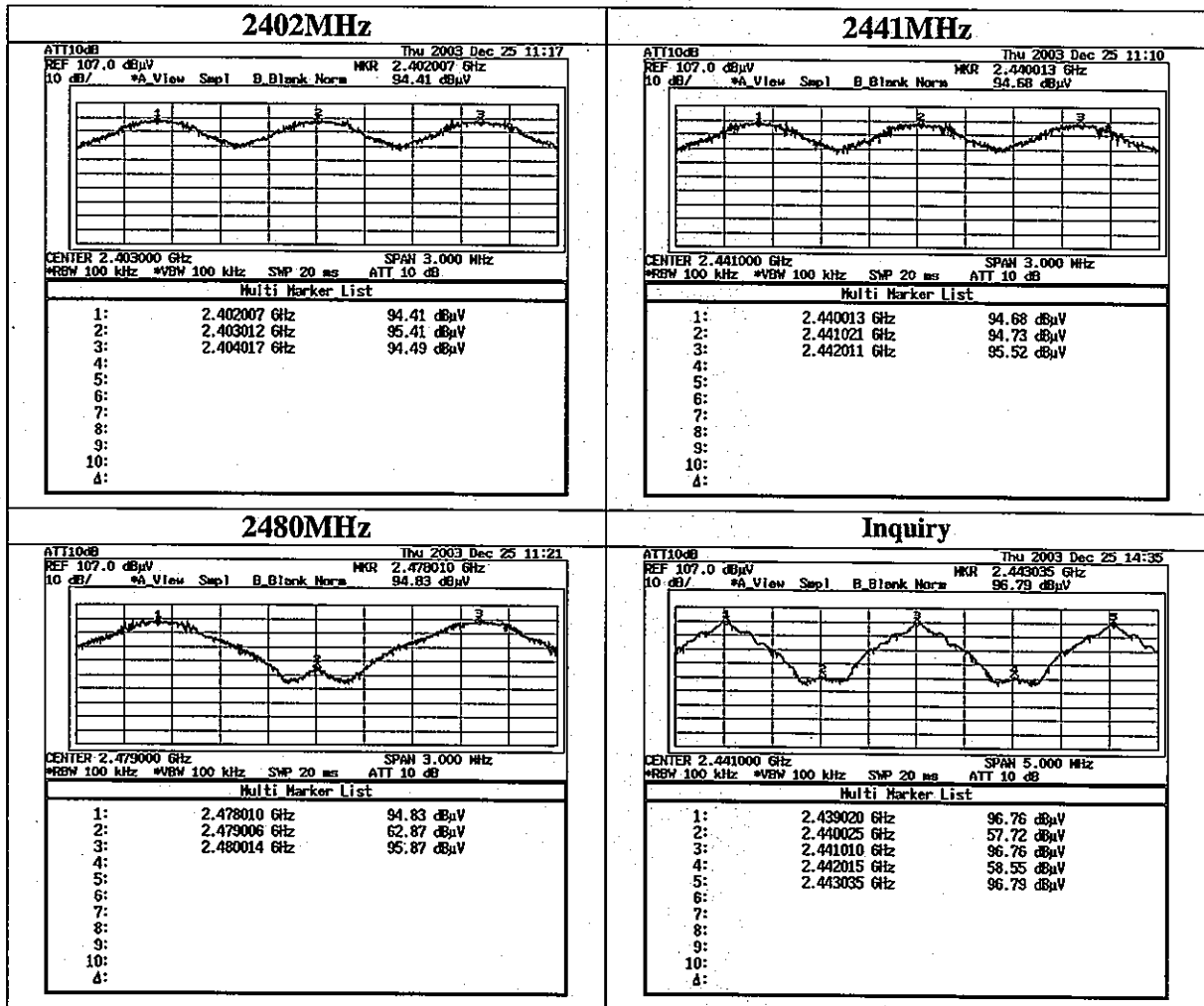
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Quad-band GSM Mobile Phone	TEST DISTANCE	: -
MODEL	: GX30	DATE	: 12/25/2003
S/N	: PP2-390	TEMPERATURE	: 22deg.C
POWER	: DC3.9V	HUMIDITY	: 38%
MODE	: Tx (Hopping on) /Inquiry	Engineer	: Mitsuru Fujimura

PK DETECT(S/A :span 3MHz, RBW 100kHz, VBW 100kHz, sweep time AUTO)

CH	FREQ [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.000	>20dB Bandwidth and 25[kHz]
Mid	2441.0	1.000	>20dB Bandwidth and 25[kHz]
High	2480.0	1.000	>20dB Bandwidth and 25[kHz]
Inquiry	2441.0	1.000	>20dB Bandwidth and 25[kHz]

Carrier Frequency Separation



20dB Bandwidth

DATA OF 20dB BANDWIDTH

UL Apex Co., Ltd.

Head Office EMC Lab. No.3 Measurement Room

COMPANY : Sharp Corporation
EQUIPMENT : Quad-band GSM Mobile Phone
MODEL : GX30
S/N : PP2-390
POWER : DC3.9V
MODE : Tx (Hopping off) /Inquiry

REGULATION : FCC Part15 Subpart C 15.247(b)(1)
TEST DISTANCE : -
DATE : 12/25/2003
TEMPERATURE : 22deg.C
HUMIDITY : 38%
Engineer : Mitsuru Fujimura

PK DETECT(S/A: span 3MHz, RBW 30kHz, VBW 30kHz, sweep time AUTO)

CH	FREQ	20dB Bandwidth	Limit
	[MHz]	[MHz]	[MHz]
Low	2402.0	0.819	1.0
Mid	2441.0	0.819	1.0
High	2480.0	0.819	1.0
Inquiry	2441.0	0.675	1.0

UL Apex Co., Ltd.

Head Office EMC Lab.

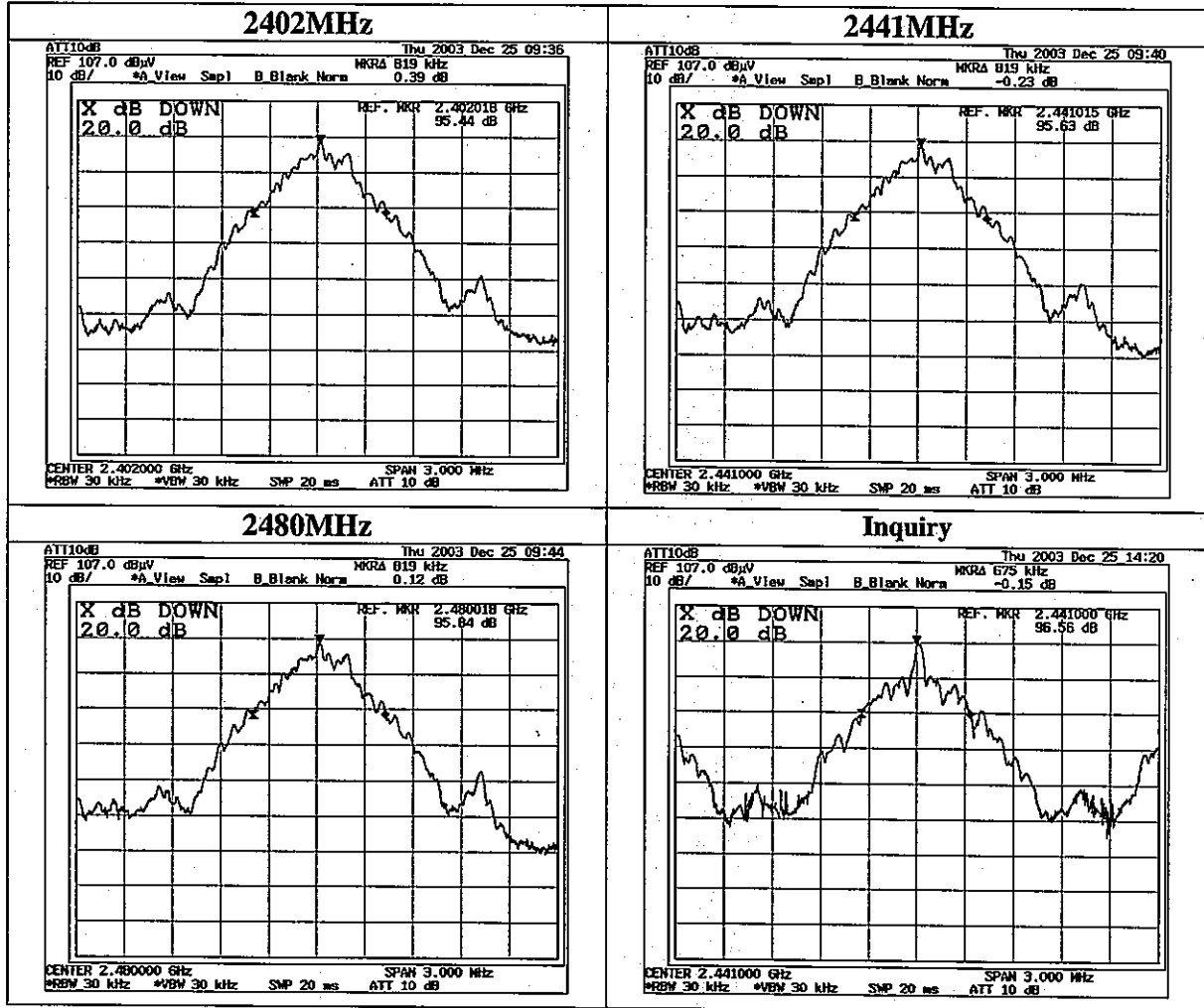
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Facsimile : +81 596 24 8124

MF060b(10.04.03)

20dB Bandwidth



Number of Hopping Frequency

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Quad-band GSM Mobile Phone	TEST DISTANCE	: -
MODEL	: GX30	DATE	: 12/25/2003
S/N	: PP2-390	TEMPERATURE	: 22deg.C
POWER	: DC3.9V	HUMIDITY	: 38%
MODE	: Tx (Hopping on) /Inquiry	Engineer	: Mitsuru Fujimura

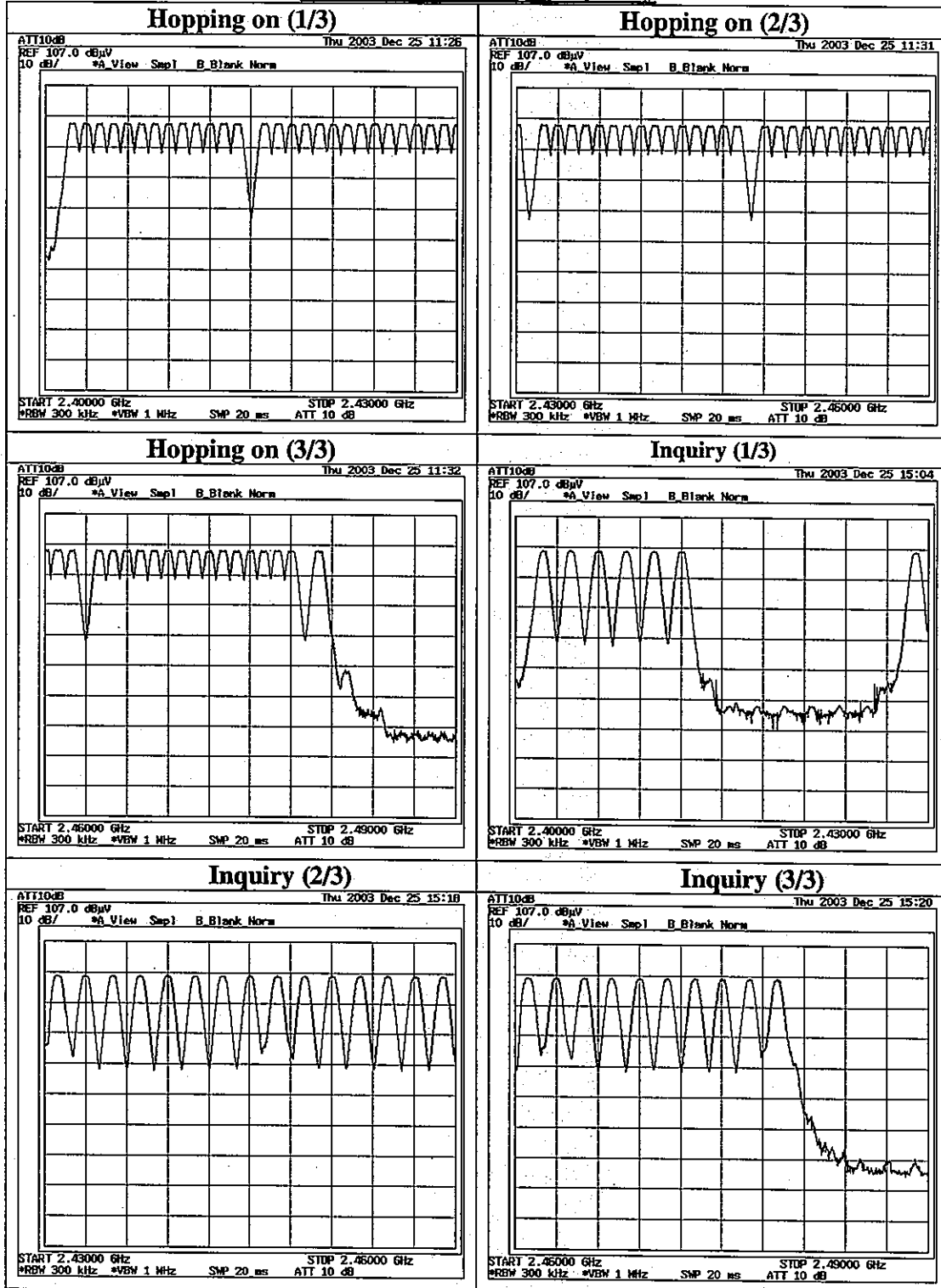
PK DETECT(S/A : RBW 300kHz, VBW 1MHz, sweep time AUTO)

Mode	Number of channel	Limit
	[time]	[time]
Tx(Hoppng on)	74	≥ 15

PK DETECT(S/A : RBW 300kHz, VBW 1MHz, sweep time AUTO)

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

Number of Hopping Frequency



Dwell time

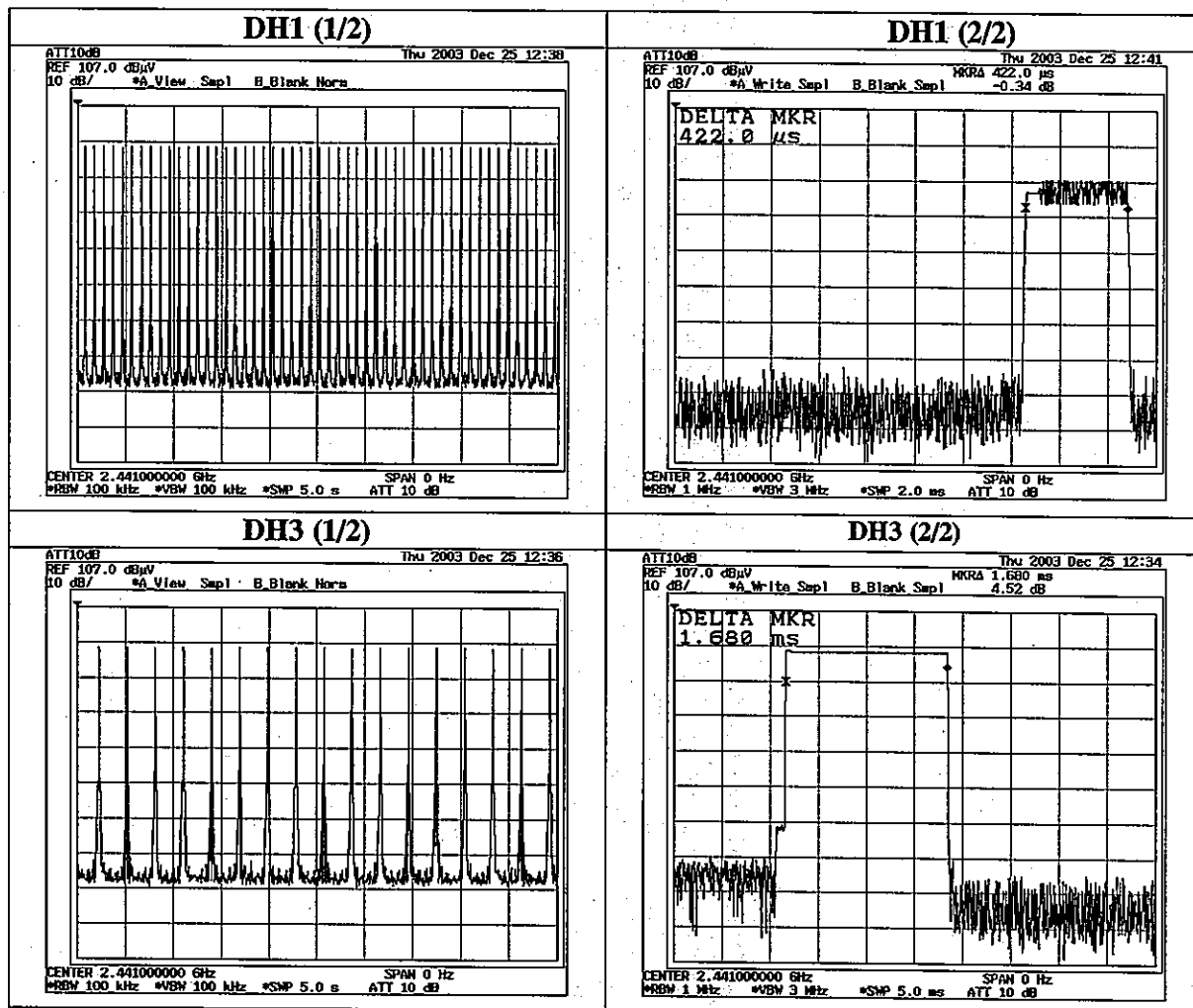
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Sharp Corporation	REGULATION	: Fcc Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Quad-band GSM Mobile Phone	TEST DISTANCE	: -
MODEL	: GX30	DATE	: 12/25/2003
S/N	: PP2-390	TEMPERATURE	: 22deg.C
POWER	: DC3.9V	HUMIDITY	: 38%
MODE	: Tx (Hopping on) /Inquiry	Engineer	: Mitsuru Fujimura

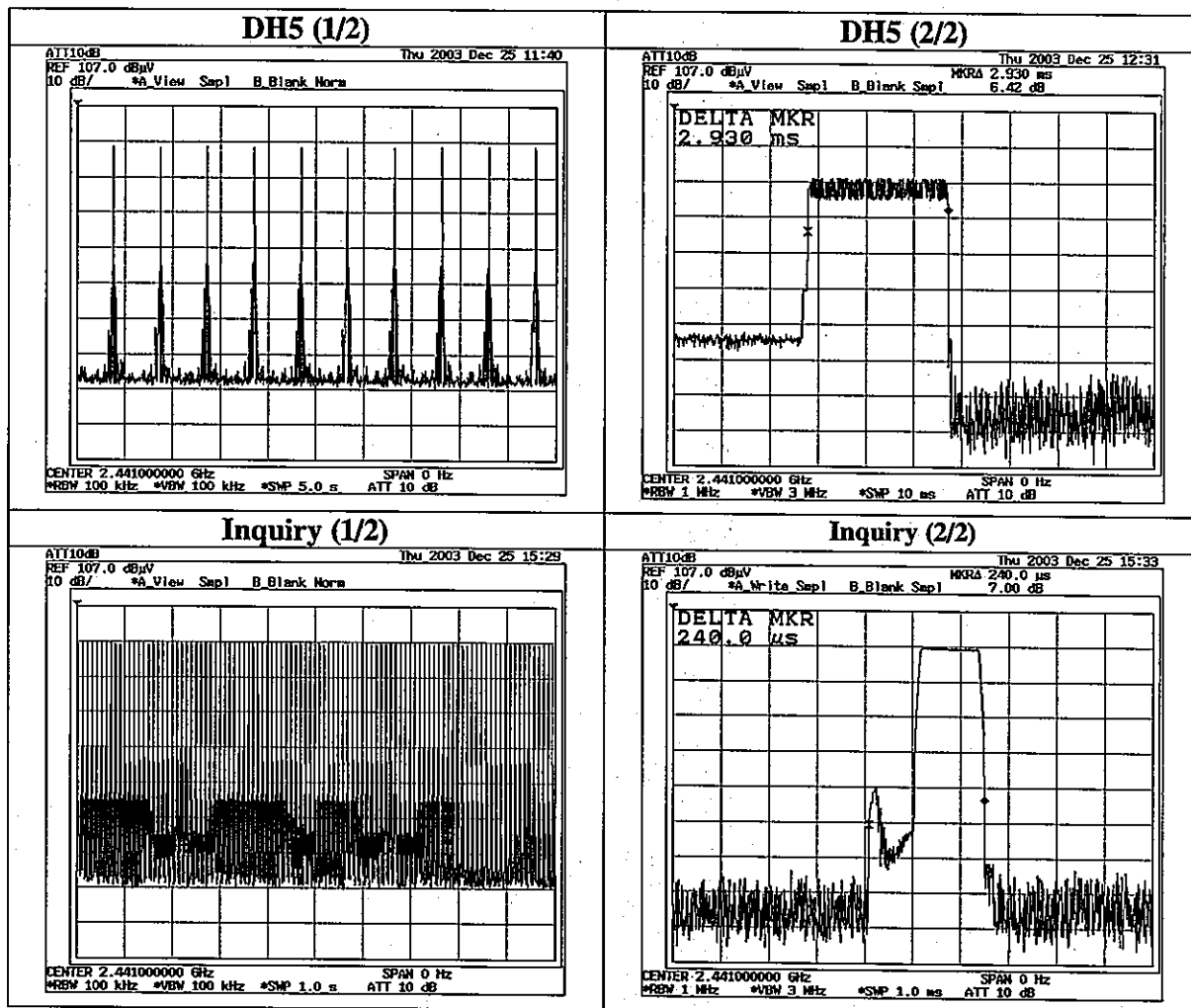
PK DETECT(S/A :span ZERO, RBW 1MHz, VBW 3MHz, sweep time 1ms-10ms)

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 times /5sec. x 31.6 = 322.32 times	0.422	136	400
DH3	17 times / 5sec. x 31.6 = 107.44 times	1.680	180	400
DH5	10 times / 5 sec. x 31.6 = 63.2 times	2.930	185	400
Inquiry	101 times / 1sec. x 12.8 = 1292.8 times	0.240	310	400

Dwell time



Dwell time



Maximum Peak Output Power

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Measurement Room

COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Quad-band GSM Mobile Phone	TEST DISTANCE	: -
MODEL	: GX30	DATE	: 12/25/2003
S/ N	: PP2-390	TEMPERATURE	: 22deg.C
POWER	: DC3.9V	HUMIDITY	: 38%
MODE	: Tx (Hopping off) /Inquiry	Engineer	: Mitsuru Fujimura

CH	FREQ [MHz]	P/M Reading [dBm]	Attenuator Loss [dB]	Result [dBm]	Limit [dBm]
Low	2402.0	-10.7	10.0	-0.7	30.0
Mid	2441.0	-10.4	10.0	-0.4	30.0
High	2480.0	-10.3	10.0	-0.3	30.0
Inquiry	2441.0	-9.5	10.0	0.5	21.0

Sample Calculation:

Result = P/M Reading + Cable Loss + Attenuator

UL Apex Co., Ltd.

Head Office EMC Lab.

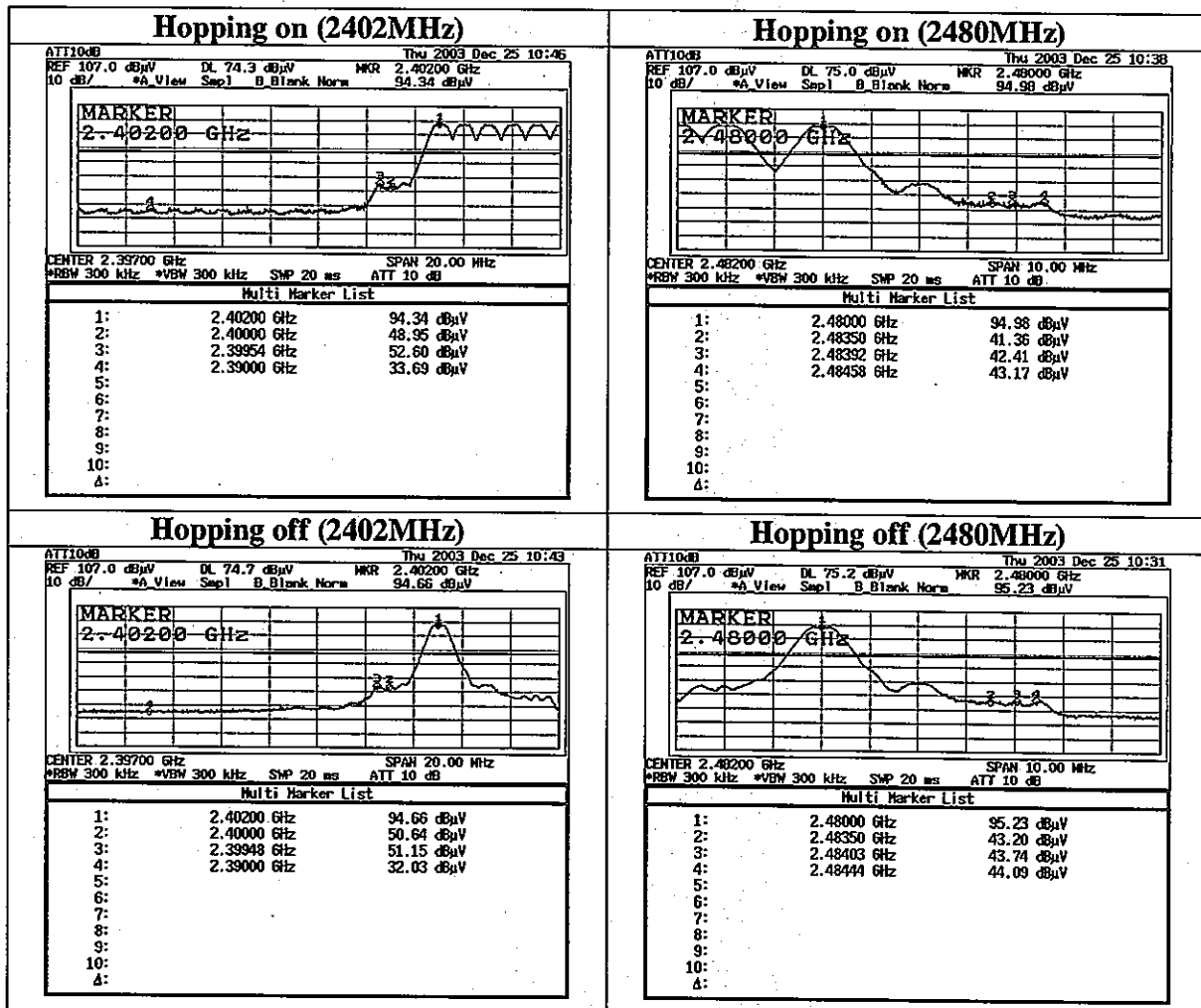
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MF060b(10.04.03)

Band Edge compliance



Spurious Emission(Radiated)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2003/12/24 14:07:43

Applicant : Sharp Corporation
Kind of EUT : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390

Report No. : 24EE0086-HO
Power : AC120V/60Hz
Temp/Humid : 23 / 35%
Operator : Mitsuru Fujimura

Mode / Remarks : Bluetooth Tx 2402MHz Hor:X-axis Ver:Y-axis

LIMIT : FCC15C §15.247(c) 3a

Except for the data below : adequate margin data below the limits.

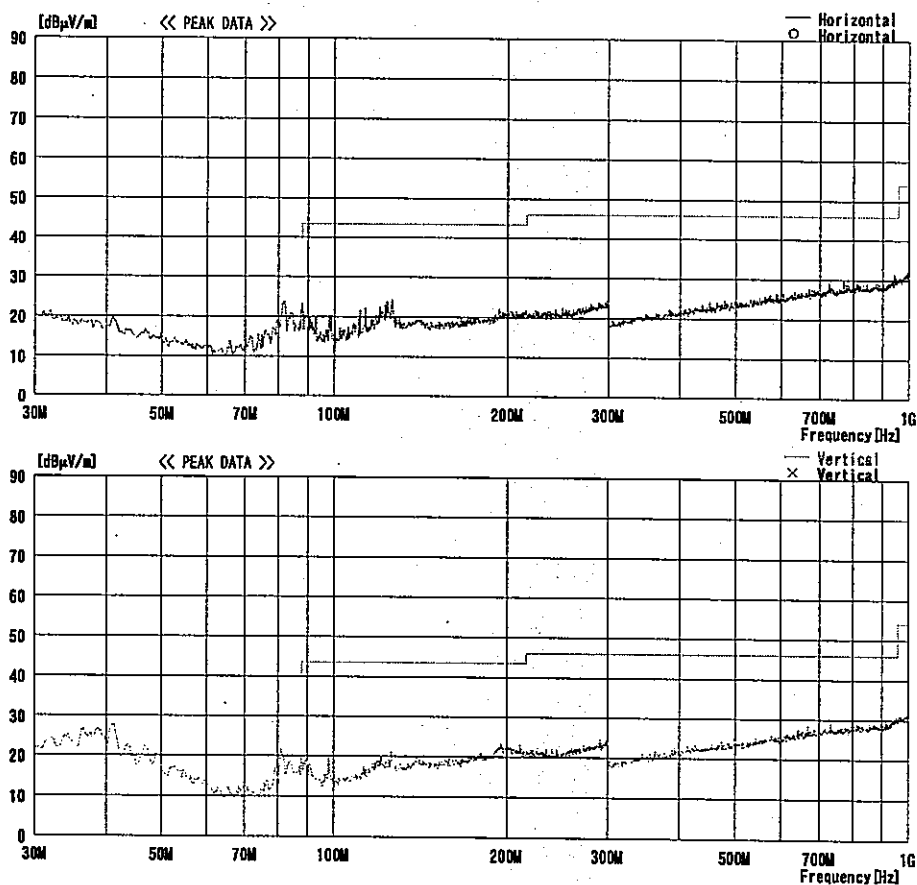


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

UL Apex Co., Ltd.

Head Office EMC Lab.

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MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2003/12/24 14:07:43

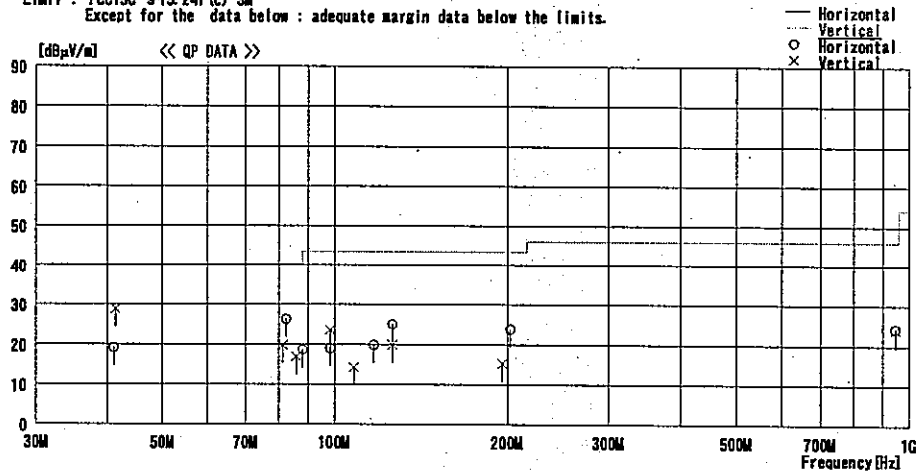
Applicant : Sharp Corporation
Kind of EUT : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390

Report No. : 24EE0086-HO
Power : AC120V/60Hz
Temp/C/Humid : 23 / 35%
Operator : Mitsuru Fujimura

Mode / Remarks : Bluetooth Tx 2402MHz Hor:X-axis Ver:Y-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dBμV]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dBμV/m]	LIMIT [dBμV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
Horizontal										
1	41.053	22.1	14.3	6.5	23.7	19.2	40.0	20.8	300	250
2	82.360	36.2	6.5	7.1	23.5	26.3	40.0	13.7	187	241
3	88.033	27.6	7.4	7.1	23.4	18.7	43.5	24.8	204	232
4	98.314	25.8	9.5	7.2	23.4	19.1	43.5	24.4	178	-1
5	116.996	22.9	12.9	7.4	23.3	19.9	43.5	23.6	214	354
6	126.092	27.2	13.7	7.5	23.3	25.1	43.5	18.4	100	125
7	202.226	22.8	16.5	7.9	23.3	23.9	43.5	19.6	160	92
8	945.411	13.8	22.4	10.9	22.9	24.2	46.0	21.8	100	0
Vertical										
9	41.369	31.7	14.2	6.6	23.7	28.8	40.0	11.2	100	360
10	81.302	29.8	6.4	7.1	23.5	19.8	40.0	20.2	100	228
11	85.837	26.3	7.1	7.1	23.5	17.0	40.0	23.0	100	204
12	98.312	30.3	9.5	7.2	23.4	23.6	43.5	19.9	303	-1
13	108.080	19.0	11.3	7.3	23.3	14.3	43.5	29.2	100	-1
14	126.090	22.1	13.7	7.5	23.3	20.0	43.5	23.5	100	250
15	195.660	14.4	16.3	7.9	23.3	15.3	43.5	28.2	400	-1
16	946.811	13.6	22.4	10.9	22.9	24.0	46.0	22.0	100	343

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN Page:

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2003/12/24 15:40:21

Applicant : Sharp Corporation
Kind of EUT : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390

Report No. : 24EE0086-HO
Power : AC120V/60Hz
Temp/C/Humid% : 23 / 35%
Operator : Mitsuru Fujimura

Mode / Remarks : Bluetooth Tx 2441MHz Hor:X-axis Ver:Y-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

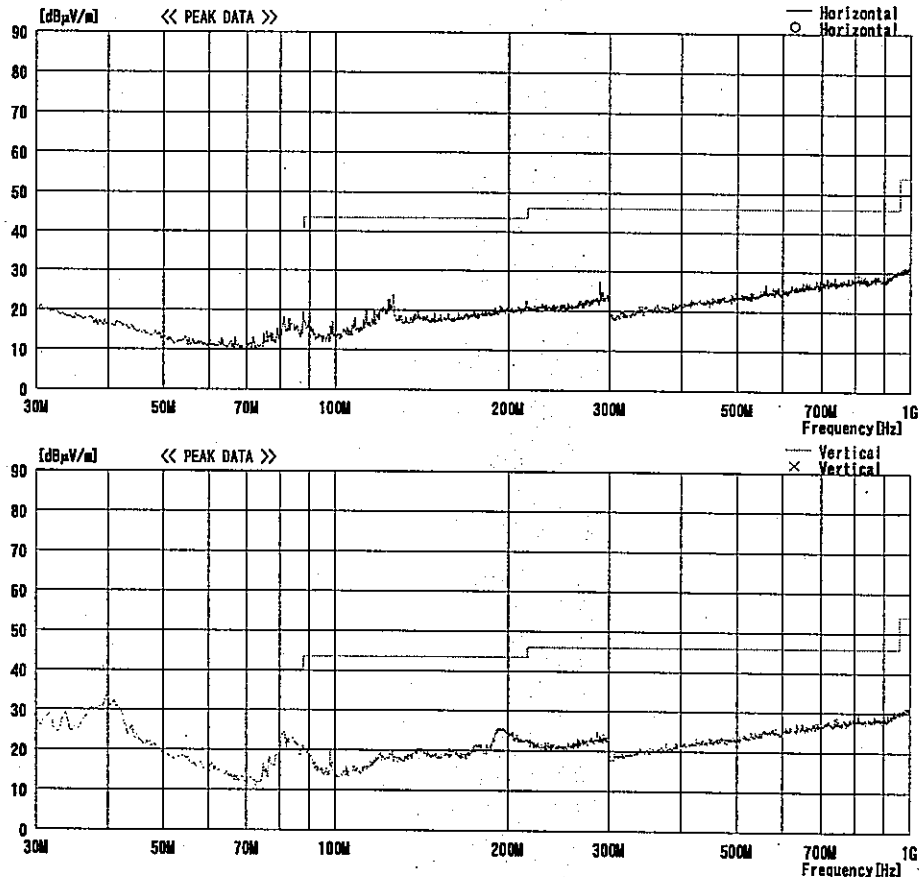


CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2003/12/24 15:40:21

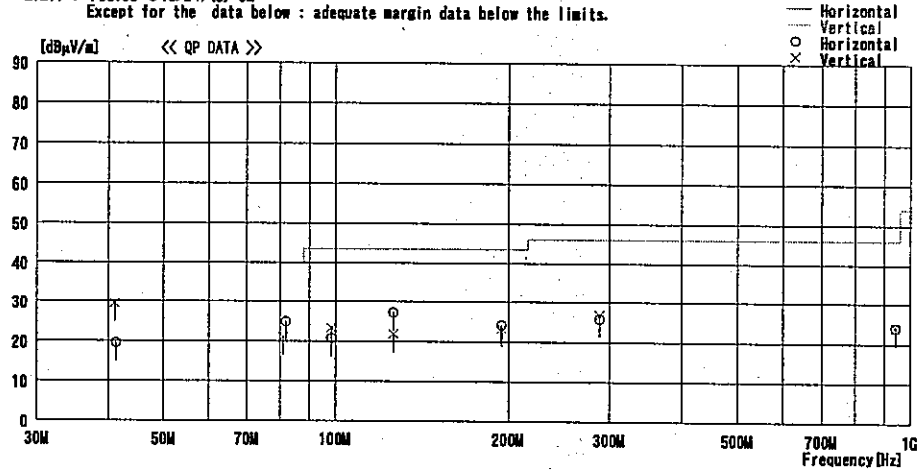
Applicant : Sharp Corporation
Kind of EUT : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390

Report No. : 24EE0086-HO
Power : AC120V/60Hz
Temp/Humid : 23 / 35%
Operator : Mitsuru Fujimura

Mode / Remarks : Bluetooth Tx 2441MHz Hor:X-axis Ver:Y-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dBμV]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dBμV/m]	LIMIT [dBμV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
Horizontal										
1	41.255	22.5	14.2	6.6	23.7	19.6	40.0	20.4	341	253
2	81.945	34.9	6.5	7.1	23.5	25.0	40.0	15.0	204	241
3	98.311	27.4	9.5	7.2	23.4	20.7	43.5	22.8	143	360
4	126.096	29.4	13.7	7.5	23.3	27.3	43.5	16.2	137	306
5	194.400	23.3	16.3	7.9	23.3	24.2	43.5	19.3	169	95
6	288.002	21.7	19.0	8.3	23.1	25.9	46.0	20.1	400	-1
7	941.211	13.7	22.3	10.9	22.9	24.0	46.0	22.0	100	360
Vertical										
8	41.008	32.3	14.3	6.5	23.7	29.4	40.0	10.6	100	214
9	80.981	31.1	6.3	7.1	23.5	21.0	40.0	19.0	100	146
10	98.313	30.1	9.5	7.2	23.4	23.4	43.5	20.1	291	360
11	126.094	24.0	13.7	7.5	23.3	21.9	43.5	21.6	255	285
12	194.588	22.4	16.3	7.9	23.3	23.3	43.5	20.2	100	360
13	288.008	22.6	19.0	8.3	23.1	26.8	46.0	19.2	400	360
14	941.211	13.8	22.3	10.9	22.9	24.1	46.0	21.9	100	114

CHART:WITHOUT FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN Page:

UL Apex Co., Ltd.

Head Office EMC Lab.

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MF060b(10.04.03)

Test report No. : 24EE0086-HO
Page : 34 of 41
Issued date : January 8, 2004
FCC ID : APYHO00033

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2003/12/24 16:38:23

Applicant : Sharp Corporation
Kind of EUT : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390

Report No. : 24EE0086-HO
Power : AC120V/60Hz
Temp/C/Humid% : 23 / 35%
Operator : Mitsuru Fujimura

Mode / Remarks : Bluetooth Tx 2480MHz Hor:X-axis Ver:Y-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.

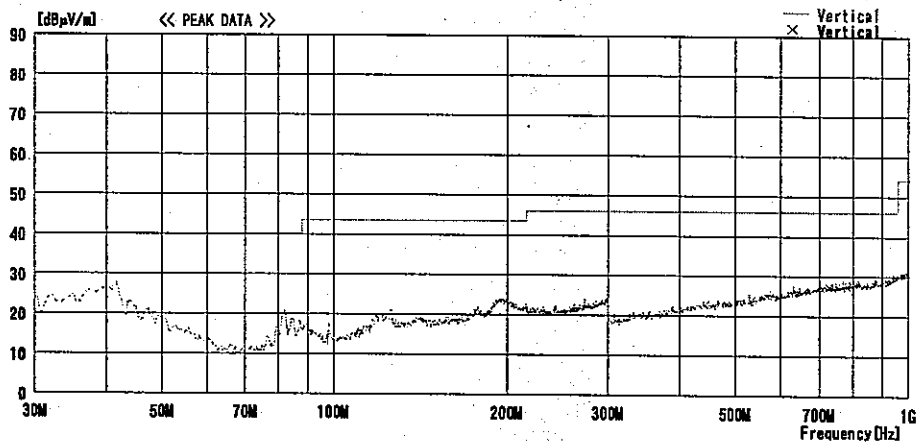
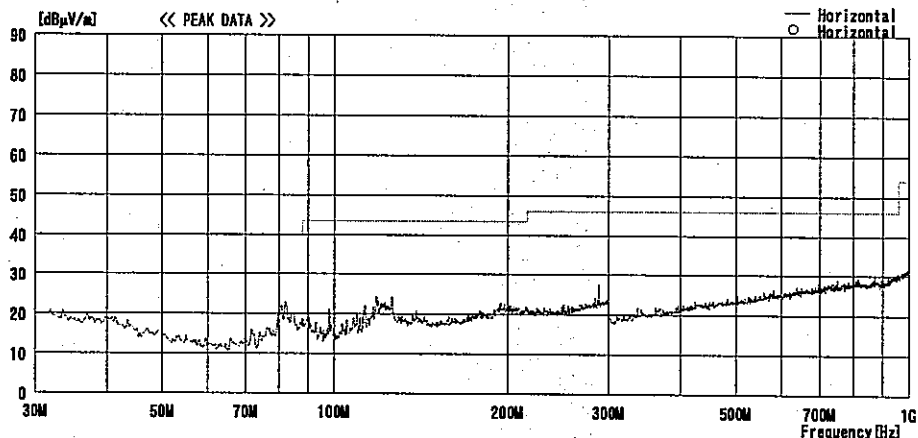


CHART:WITHOUT FACTOR ANT TYPE : 30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

UL Apex Co., Ltd.

Head Office EMC Lab.

4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

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Facsimile : +81 596 24 8124

MF060b(10.04.03)

DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
Date : 2003/12/24 16:38:23

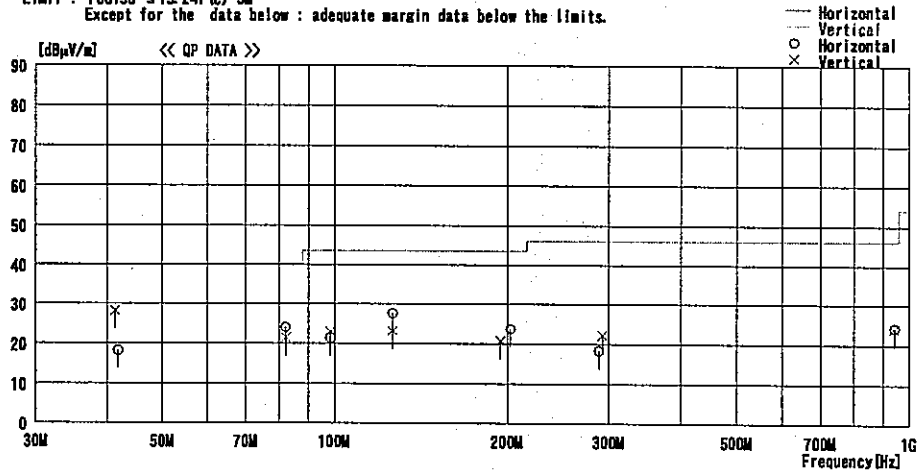
Applicant : Sharp Corporation
Kind of EUT : Quad-band GSM Mobile phone
Model No. : GX30
Serial No. : PP2-390

Report No. : 24EE0086-HO
Power : AC120V/60Hz
Temp/HumiX : 23 / 35%
Operator : Mitsuru Fujimura

Mode / Remarks : Bluetooth Tx 2480MHz Hor:X-axis Ver:Y-axis

LIMIT : FCC15C §15.247(c) 3m

Except for the data below : adequate margin data below the limits.



No.	FREQ [MHz]	READING QP [dBμV]	ANT FACTOR [dB/m]	LOSS [dB]	GAIN [dB]	RESULT [dBμV/m]	LIMIT [dBμV/m]	MARGIN [dB]	ANTENNA [cm]	TABLE [DEG]
Horizontal										
1	41.813	21.3	14.0	6.6	23.7	18.2	40.0	21.8	294	276
2	82.124	34.0	6.5	7.1	23.5	24.1	40.0	15.9	205	217
3	98.304	28.1	9.5	7.2	23.4	21.4	43.5	22.1	159	250
4	125.078	29.7	13.7	7.5	23.3	27.6	43.5	15.9	156	123
5	202.379	22.7	16.5	7.9	23.3	23.8	43.5	19.7	168	87
6	288.428	14.1	19.1	8.3	23.1	18.4	46.0	27.6	100	-1
7	542.511	13.9	22.3	10.9	22.9	24.2	46.0	21.8	100	-1
Vertical										
8	41.353	31.0	14.2	6.6	23.7	28.1	40.0	11.9	100	-1
9	82.304	31.3	6.5	7.1	23.5	21.4	40.0	18.6	100	121
10	98.305	29.7	9.5	7.2	23.4	23.0	43.5	20.5	243	222
11	125.090	25.3	13.7	7.5	23.3	23.2	43.5	20.3	100	241
12	194.411	19.8	16.3	7.9	23.3	20.7	43.5	22.8	100	360
13	292.501	17.7	19.3	8.3	23.1	22.2	46.0	23.8	203	360
14	941.211	13.7	22.3	10.9	22.9	24.0	46.0	22.0	100	-1

CHART: WITHOUT FACTOR ANT TYPE : ~30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
CALCULATION : READING + ANT FACTOR + LOSS (CABLE+ATTEN.) - AMP. GAIN

Page:

Data of Spurious Radiated Emissions (1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company : Sharp Corporation	REPORT NO : 24EE0086-HO
Equipment : Quad-band GSM Mobile phone	REGULATION : Fcc Part15 Subpart C 15.247(b)(3)
Model : GX30	TEST DISTANCE : 3m
Sample No. : PP2-390	DATE : 12/23,24/2003
Power : AC120V/60Hz	TEMPERATURE : 25/23deg.C
Mode : Transmitting (2402MHz)	HUMIDITY : 30/35%
	ENGINEER : Mitsuru Fujimura

PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]				[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass)											
1	1201.0	46.5	45.9	22.6	37.6	4.5	36.0	35.4	74.0	38.0	38.6
2	1482.4	48.5	47.9	24.1	37.3	5.1	40.4	39.8	74.0	33.6	34.2
3	2390.0	44.8	43.2	30.5	36.9	6.3	44.7	43.1	74.0	29.3	30.9
4	2400.0	67.4	68.3	30.5	36.9	6.3	67.3	68.2	75.8	8.5	7.6
5	3603.7	44.2	44.4	30.8	36.9	7.8	45.9	46.1	74.0	28.1	27.9
6	4804.0	48.1	47.3	35.5	36.8	11.0	57.8	57.0	74.0	16.2	17.0
7	7206.0	42.1	43.8	37.6	36.5	12.6	55.8	57.5	74.0	18.2	16.5
8	9608.0	42.8	43.1	37.3	37.2	14.7	57.6	57.9	74.0	16.4	16.1
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass) - Dfac											
9	12010.0	42.6	41.8	40.1	36.8	16.4	52.8	52.0	74.0	21.2	22.0
10	14412.0	41.3	42.0	42.9	35.3	18.0	57.4	58.1	74.0	16.6	15.9
11	16814.0	44.8	44.2	44.7	36.5	19.5	63.0	62.4	74.0	11.0	11.6
12	19216.0	43.4	44.2	41.0	35.8	18.5	57.6	58.4	74.0	16.4	15.6
13	21618.0	44.4	44.0	40.5	36.8	19.6	58.2	57.8	74.0	15.8	16.2
14	24020.0	44.2	43.6	40.2	36.4	20.9	59.4	58.8	74.0	14.6	15.2

AV DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]				[dBuV/m]	[dBuV/m]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass)											
1	1201.0	34.0	33.4	22.6	37.6	4.5	23.5	22.9	54.0	30.5	31.1
2	1482.4	37.7	38.5	24.1	37.3	5.1	29.6	30.4	54.0	24.4	23.6
3	2390.0	31.7	31.6	30.5	36.9	6.3	31.6	31.5	54.0	22.4	22.5
4	2400.0	56.7	57.8	30.5	36.9	6.3	56.6	57.7	63.2	6.6	5.5
5	3603.7	31.1	31.4	30.8	36.9	7.8	32.8	33.1	54.0	21.2	20.9
6	4804.0	39.9	38.6	35.5	36.8	11.0	49.6	48.3	54.0	4.4	5.7
7	7206.0	29.6	29.7	37.6	36.5	12.6	43.3	43.4	54.0	10.7	10.6
8	9608.0	30.6	30.6	37.3	37.2	14.7	45.4	45.4	54.0	8.6	8.6
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass) - Dfac											
9	12010.0	29.9	29.9	40.1	36.8	16.4	40.1	40.1	54.0	13.9	13.9
10	14412.0	28.8	28.8	42.9	35.3	18.0	44.9	44.9	54.0	9.1	9.1
11	16814.0	31.9	31.9	44.7	36.5	19.5	50.1	50.1	54.0	3.9	3.9
12	19216.0	30.5	31.8	41.0	35.8	18.5	44.7	46.0	54.0	9.3	8.0
13	21618.0	30.7	30.7	40.5	36.8	19.6	44.5	44.5	54.0	9.5	9.5
14	24020.0	31.2	31.2	40.2	36.4	20.9	46.4	46.4	54.0	7.6	7.6

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 limit values at frequencies excepting restricted bands indicated in 15.205 are values 20dB below lower

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MF060b(10.04.03)

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company : Sharp Corporation Equipment : Quad-band GSM Mobile phone Model : GX30 Sample No. : PP2-390 Power : AC120V/60Hz Mode : Transmitting (2441MHz) FCC ID : APYHO00033	REPORT NO : 24EE0086-HO REGULATION : Fcc Part15 Subpart C 15.247(b)(3) TEST DISTANCE : 3m DATE : 12/23,24/2003 TEMPERATURE : 25/23deg.C HUMIDITY : 30/35% ENGINEER : Mitsuru Fujimura
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PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]				[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass)											
1	1220.5	46.2	46.4	22.7	37.6	4.6	35.9	36.1	74.0	38.1	37.9
2	1482.5	47.7	47.1	24.1	37.3	5.1	39.6	39.0	74.0	34.4	35.0
3	4882.0	48.4	47.0	36.0	36.8	11.0	58.6	57.2	74.0	15.4	16.8
4	7323.0	41.6	41.7	37.8	36.6	12.7	55.5	55.6	74.0	18.5	18.4
5	9764.0	43.2	42.2	36.9	37.2	14.9	57.8	56.8	74.0	16.2	17.2
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass) - Dfac											
6	12205.0	41.9	42.2	41.1	36.7	16.5	53.3	53.6	74.0	20.7	20.4
7	14646.0	41.7	42.5	43.2	35.5	18.2	58.1	58.9	74.0	15.9	15.1
8	17087.0	44.3	44.4	44.9	36.2	19.7	63.2	63.3	74.0	10.8	10.7
9	19528.0	44.3	44.1	40.5	36.0	18.7	58.0	57.8	74.0	16.0	16.2
10	21969.0	43.4	43.5	40.6	36.0	19.8	58.3	58.4	74.0	15.7	15.6
11	24410.0	45.1	44.2	40.4	36.9	21.0	60.1	59.2	74.0	13.9	14.8

AV DETECT

No.	FREQ [MHz]	T/R READING HOR VER [dBuV/m]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	RESULT HOR VER [dBuV/m]		Limit AV [dBuV/m]	MARGIN HOR VER [dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass)											
1	1220.5	33.5	33.7	22.7	37.6	4.6	23.2	23.4	54.0	30.8	30.6
2	1482.5	39.0	38.3	24.1	37.3	5.1	30.9	30.2	54.0	23.1	23.8
3	4882.0	36.6	34.8	36.0	36.8	11.0	46.8	45.0	54.0	7.2	9.0
4	7323.0	29.6	29.8	37.8	36.6	12.7	43.5	43.7	54.0	10.5	10.3
5	9764.0	30.5	30.6	36.9	37.2	14.9	45.1	45.2	54.0	8.9	8.8
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass) - Dfac											
6	12205.0	29.6	29.6	41.1	36.7	16.5	41.0	41.0	54.0	13.0	13.0
7	14646.0	29.0	29.0	43.2	35.5	18.2	45.4	45.4	54.0	8.6	8.6
8	17087.0	31.9	31.9	44.9	36.2	19.7	50.8	50.8	54.0	3.2	3.2
9	19528.0	31.2	31.2	40.5	36.0	18.7	44.9	44.9	54.0	9.1	9.1
10	21969.0	30.3	30.3	40.6	36.0	19.8	45.2	45.2	54.0	8.8	8.8
11	24410.0	32.1	32.1	40.4	36.9	21.0	47.1	47.1	54.0	6.9	6.9

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.

DATA OF SPURIOUS EMISSIONS(1GHz to 26GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company : Sharp Corporation Equipment : Quad-band GSM Mobile phone Model : GX30 Sample No. : PP2-390 Power : AC120V/60Hz Mode : Transmitting (2480MHz) FCC ID : APYHO00033	REPORT NO : 24EE0086-HO REGULATION : Fcc Part15 Subpart C 15.247(b)(3) TEST DISTANCE : 3m DATE : 12/23,24/2003 TEMPERATURE : 25/23deg.C HUMIDITY : 30/35% ENGINEER : Mitsuru Fujimura
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PK DETECT

No.	FREQ [MHz]	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]	[dBuV/m]				[dB]	[dB]		[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass)											
1	1240.0	45.7	46.6	22.8	37.6	4.6	35.5	36.4	74.0	38.5	37.6
2	1482.6	48.8	47.8	24.1	37.3	5.1	40.7	39.7	74.0	33.3	34.3
3	2483.5	54.0	52.0	30.6	36.9	6.4	54.1	52.1	74.0	19.9	21.9
4	4960.2	48.0	48.3	36.5	36.8	11.1	58.8	59.1	74.0	15.2	14.9
5	7440.0	41.6	42.7	37.9	36.7	12.7	55.5	56.6	74.0	18.5	17.4
6	9920.0	42.6	43.6	36.4	37.3	15.1	56.8	57.8	74.0	17.2	16.2
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS(Band Pass) - Dfac											
7	12400.0	42.8	42.1	42.1	36.6	16.5	55.3	54.6	74.0	18.7	19.4
8	14880.0	41.9	41.7	43.4	35.7	18.3	58.4	58.2	74.0	15.6	15.8
9	17360.0	43.9	44.2	45.9	36.2	19.7	63.8	64.1	74.0	10.2	9.9
10	19840.0	44.1	46.4	40.7	36.1	18.8	58.0	60.3	74.0	16.0	13.7
11	22320.0	44.7	44.2	40.7	35.5	20.0	60.4	59.9	74.0	13.6	14.1
12	24800.0	46.0	45.9	40.4	36.7	21.1	61.3	61.2	74.0	12.7	12.8

AV DETECT

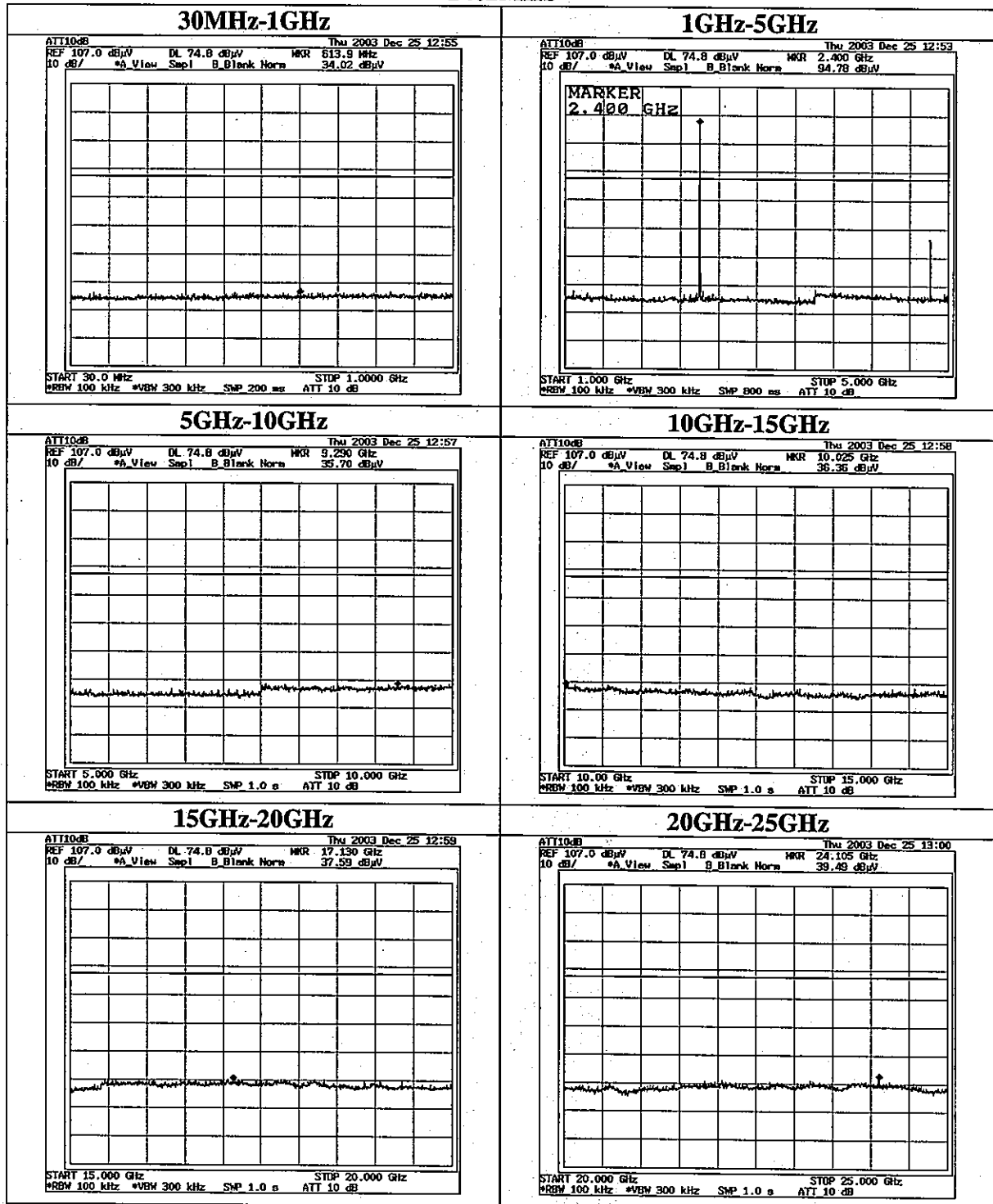
No.	FREQ	T/R READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
	[MHz]	HOR	VER				HOR	VER		HOR	VER
		[dBuV/m]						[dBuV/m]			[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain+ CABLE LOSS(Band Pass)											
1	1240.0	33.7	33.7	22.8	37.6	4.6	23.5	23.5	54.0	30.5	30.5
2	1482.6	38.5	38.1	24.1	37.3	5.1	30.4	30.0	54.0	23.6	24.0
3	2483.5	41.3	40.4	30.6	36.9	6.4	41.4	40.5	54.0	12.6	13.5
4	4960.2	36.9	36.4	36.5	36.8	11.1	47.7	47.2	54.0	6.3	6.8
5	7440.0	29.8	29.9	37.9	36.7	12.7	43.7	43.8	54.0	10.3	10.2
6	9920.0	31.0	31.0	36.4	37.3	15.1	45.2	45.2	54.0	8.8	8.8
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain+ CABLE LOSS(Band Pass) - Dfac											
7	12400.0	30.0	29.3	42.1	36.6	16.5	42.5	41.8	54.0	11.5	12.2
8	14880.0	29.4	29.4	43.4	35.7	18.3	45.9	45.9	54.0	8.1	8.1
9	17360.0	31.8	31.8	45.9	36.2	19.7	51.7	51.7	54.0	2.3	2.3
10	19840.0	31.6	33.2	40.7	36.1	18.8	45.5	47.1	54.0	8.5	6.9
11	22320.0	31.7	31.2	40.7	35.5	20.0	47.4	46.9	54.0	6.6	7.1
12	24800.0	33.2	33.1	40.4	36.7	21.1	48.5	48.4	54.0	5.5	5.6

Test Distance 1.0m : Distance Factor(Dfac) = $20\log(3/1.0) = 9.5\text{dB}$

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

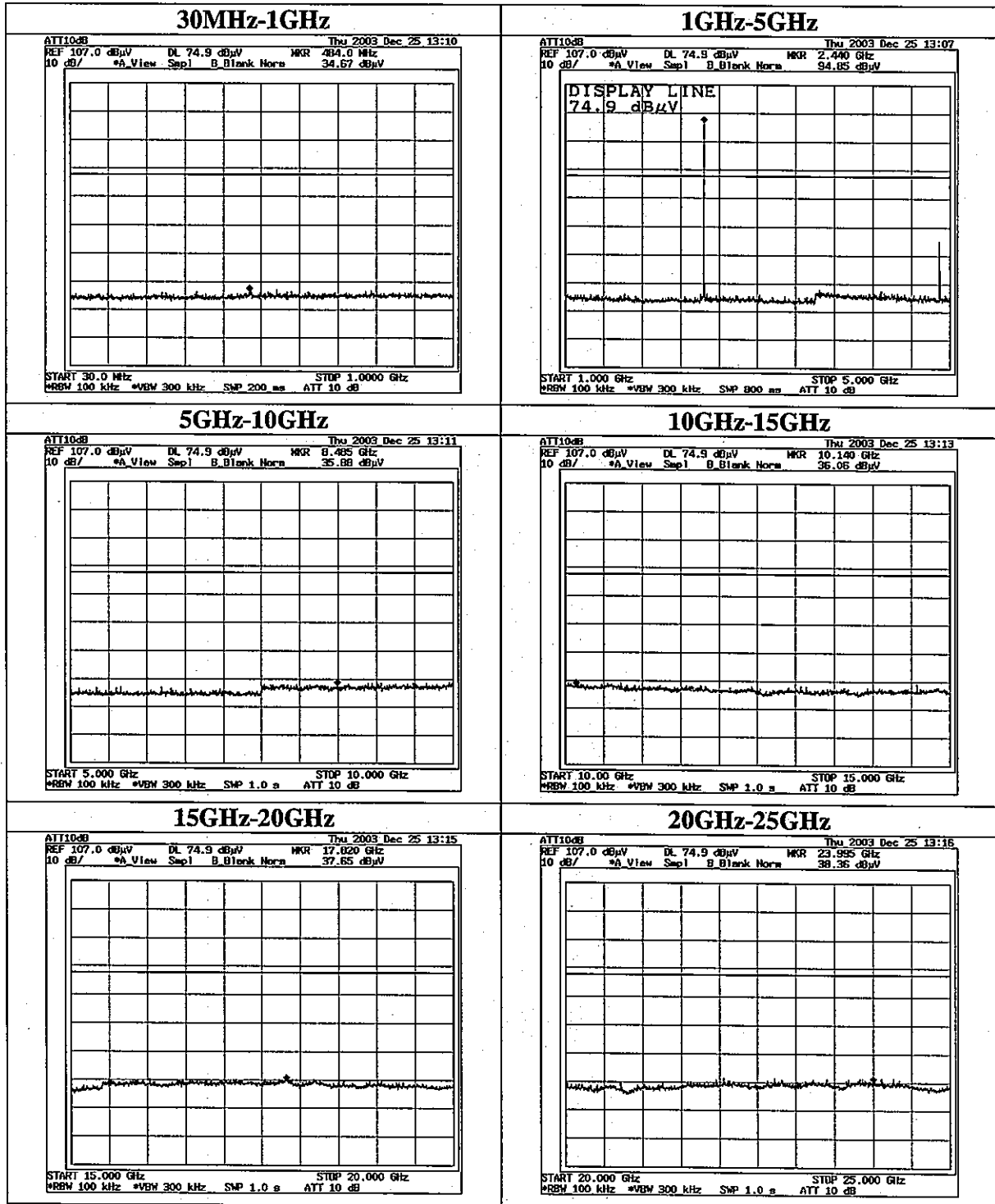
*In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.

Spurious Emission(Conducted)
2402MHz



Spurious Emission(Conducted)

2441MHz



Spurious Emission(Conducted)
2480MHz

