EMI TEST REPORT

Test Report No. : 26EE0220-HO-3a

Applicant	:	**Sharp Corporation**
Type of Equipment	:	**GSM 900/1800/1900 GPRS phone**
Model No.	:	**GX29**
FCC ID	:	**APYHRO00046**
Test standard	:	**FCC Part 15 Subpart C** **Section 15.207, Section 15.247: 2005**
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. 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.

Date of test:

January 26 to February 01, 2006

Tested by:

Kenichi Adachi
EMC Services

Hiroka Umeyama
EMC Services

Approved by :

Hironobu Shimoji
Group Leader of EMC Services

UL Apex Co., Ltd.
Head Office EMC Lab.
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

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SECTION 1: Client information

Company Name	:	Sharp Corporation
Brand Name	:	SHARP
Address	:	2-13-1 Iida Hachihonmatsu HigashiHiroshima-City,Hiroshima 739-0192 Japan
Telephone Number	:	+81-82-420-1817
Facsimile Number	:	+81-82-420-1654
Contact Person	:	Masatsugu daijyu

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

2.1 Identification of E.U.T.

Type of Equipment	:	GSM900/1800/1900 GPRS phone
Model No.	:	GX29
Serial No.	:	004401/11/008179/7, 004401/11/008174/8
Country of Manufacture	:	Japan
Condition of EUT	:	Production prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Receipt Date of Sample	:	January 23, 2006

2.2 Product Description

Model: GX29 (referred to as the EUT in this report) is GSM 900/1800/1900 GPRS phone.
The EUT has the function of Bluetooth wireless technology interfaces for establishing contact and transmitting data with certain device.

Clock frequency(ies) in the system	:	26MHz
Equipment Type	:	Transceiver
Frequency band	:	Lower limit: 2402MHz Upper limit: 2480MHz
Bandwidth & Channel spacing	:	1MHz & 1MHz
Modulation	:	GFSK, FHSS
Mode of Operation	:	Duplex
ITU code	:	F1D/F1E/F1W
Power Supply	:	DC3.7-4.2V (EUT input) DC 3.0V (BT RF Module input)
Antenna Type	:	Internal Antenna
Antenna Connector Type	:	Spring connector
Antenna Gain	:	3dBi(max)
Method of Frequency Generation	:	Synthesizer

FCC 15.31 (e)
The stable voltage (DC3.7-4.2V) is provided to the EUT and it is converted to DC3.0V and then constantly supplied to RF module part. 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.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C : 2005
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits : 2005
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz : 2005

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin*0)	Results
1	Conducted Emission *1)	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207	-	N/A	4.8dB (0.36025MHz, AV, L)	Complied
2	Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)	Conducted	N/A	*See data.	Complied
3	20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)	Conducted	N/A		Complied
4	Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)(iii)	Conducted	N/A		Complied
5	Dwell time	ANSI C63.4:2003 13.Measurement of intentional radiators	Section15.247(a)(1)(iii)	Conducted	N/A		Complied
6	Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(b)(1)	Conducted	N/A		Complied
7	Band Edge Compliance	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d)	Conducted	N/A		Complied
8	Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d)	Conducted/ Radiated	N/A	6.5dB (38.984MHz, QP, Ver.)	Complied

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.
*1) There is no difference in output levels of 3 Channels (Low/Mid/High) at both QP/AV data, and all the levels complied with the limit. Therefore, only the representative channel (Low: 2402MHz) was tested.

*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.

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 ±1.3dB.
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 ±4.5dB(3m)/ ±4.7dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ±5.2dB(3m)/ ±3.8dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ±6.6dB.
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 ±3.0dB.

3.5 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116
Facsimile : +81 596 24 8124

	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	846015	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 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 and No.2 semi-anechoic and No.3 shielded room.

3.6 Test set up, Test instruments and Data of EMI

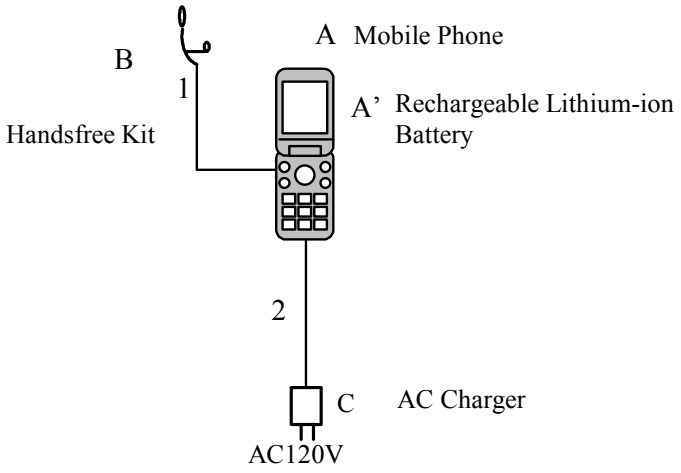
Refer to APPENDIX 1 to 3.

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

4.1 Operating Modes

The mode is used : Transmitting mode (PRBS9/Packet size DH5)
Low Channel :2402MHz
Mid Channel :2441MHz
High channel :2480MHz
Inquiry

4.2 Configuration and peripherals



*Cabling and test setup were 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/Remarks
A	GSM 900/1800/1900 GPRS Phone	GX29	004401/11/008174/8 *1) 004401/11/008179/7 *2)	Sharp Corporation	APYHRO00046 (EUT)
A'	Rechargeable Lithium-ion Battery	XN-1BT30	-	SANYO	A' is inside of A
B	Handsfree Kit	RUITZA006AF	-	FOSTER	-
C	AC Charger	XN-1QC43	-	HOSIDEN	-

*1) for Antenna Terminal tests
*2) for Radiated Emission and Conducted Emission

List of cables used

No.	Name	Length (m)	Shield
1	Handsfree Kit	1.2	Y
2	AC Charger	1.8	N

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1m 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 itself (as a stand alone equipment)
Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN /(AMN) to the input power source. 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 3
Test result : Pass

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 3
Test result : Pass

[Radiated]
Test Procedure
EUT was placed on a platform of nominal size, 0.5m by 1.0m, 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.

***Delta Marker Method (Measurement for Band-edge)**
STEP 1) Perform an in-band field strength measurement of the fundamental emission using the RBW table below.
STEP 2) Choose a spectrum analyzer span that encompasses both the peak of the fundamental emission and the band-edge emission under investigation. Set the analyzer RBW to 1% of the total span, and measure the amplitude delta between the peak of the fundamental and the peak of the band-edge emission.
STEP 3) Subtract the delta measured in STEP 2) from the field strengths measured in STEP 1). The result is the field strength of band-edge.

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 15.205.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz(T/R) 20dBc : RBW: 100kHz VBW: 300kHz (S/A)	PK: RBW:1MHz/VBW: 1MHz 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 3
Test result : Pass

SECTION 7: Bandwidth

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

Test data : **APPENDIX 3**
Test result : **Pass**

SECTION 8: Maximum Peak Output Power

Test Procedure
The Maximum Peak Output Power was measured with a spectrum analyzer connected to the antenna port.

Test data : **APPENDIX 3**
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 3**
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 3**
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 3**
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 (Y-axis:Horizontal / Z-axis:Vertical)

Below 1GHz(Horizontal: Z-axis/ Vertical:Z-axis)
Above 1GHz(Horizontal: Y-axis/ Vertical:Z-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MSA-03	Spectrum Analyzer	Agilent	E4448A	AT	2005/09/16 * 12
MCC-25	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	AT	2005/08/30 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE /CE	2005/11/10 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2005/10/10 * 12
MLA-01	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2005/10/14 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent/ TSJ	-	RE	2005/12/18 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2005/12/16 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2005/05/24 * 12
MHA-05	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2005/08/30 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2005/02/03 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2005/02/05 * 12
MHA-01	Horn Antenna	EMCO	Sep-60	RE	2006/01/09 * 12
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE /CE	2005/11/14 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/ Agilent/TSJ	-	CE	2005/12/18 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2005/11/09 * 12
MOS-01	Digital Humidity Indicator	N.T	NT-1800	RE/CE	2004/11/25 * 24

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

Test Item:

CE: Conducted emission
RE: Radiated emission,
AT: Antenna terminal tests

APPENDIX 3: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

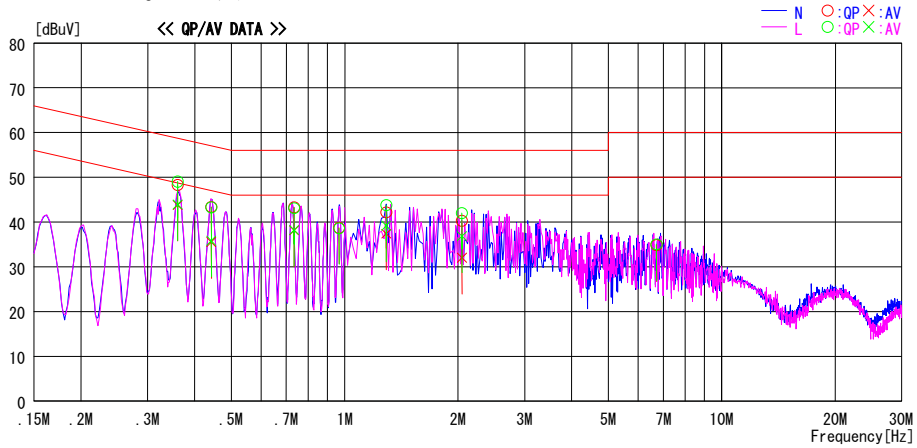
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/02/01 15:39:42

Applicant : Sharp Corporation
Kind of EUT : GSM900/1800/1900GPRS Phone
Model No. : GX29
Serial No. : IMEI: 004401/11/008179/7

Report No. : 26EE0220-HO
Power : DC3.7V (Adapter:AC120V)
Temp./Humi. : 25deg.C / 30%
Operator : Hiroka Umeyama

Mode / Remarks : Bluetooth Tx2402MHz DH5

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.36025	48.1	43.6	0.2	48.3	43.8	58.7	48.7	10.4	4.9	N
0.36025	48.8	43.7	0.2	49.0	43.9	58.7	48.7	9.7	4.8	L
0.44238	43.2	35.3	0.2	43.4	35.5	57.0	47.0	13.6	11.5	N
0.44238	43.1	35.6	0.2	43.3	35.8	57.0	47.0	13.7	11.2	L
0.73450	43.0	37.8	0.3	43.3	38.1	56.0	46.0	12.7	7.9	N
0.73450	42.8	37.9	0.3	43.1	38.2	56.0	46.0	12.9	7.8	L
0.96573	38.4	-----	0.3	38.7	-----	56.0	-----	17.3	-----	N
0.96573	38.3	-----	0.3	38.6	-----	56.0	-----	17.4	-----	L
1.28857	43.4	38.8	0.4	43.8	39.2	56.0	46.0	12.2	6.8	L
1.28857	41.8	37.0	0.4	42.2	37.4	56.0	46.0	13.8	8.6	N
2.04730	41.5	36.3	0.5	42.0	36.8	56.0	46.0	14.0	9.2	L
2.04730	39.8	31.5	0.5	40.3	32.0	56.0	46.0	15.7	14.0	N
6.71110	33.9	-----	1.1	35.0	-----	60.0	-----	25.0	-----	L
6.71110	33.7	-----	1.1	34.8	-----	60.0	-----	25.2	-----	N

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

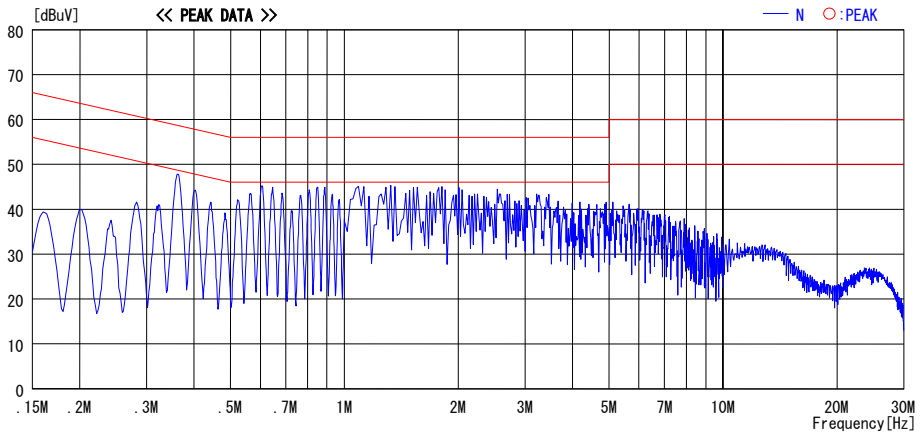
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/02/01 15:19:07

Applicant	: Sharp Corporation	Report No.	: 26EE0220-HO
Kind of EUT	: GSM900/1800/1900GPRS Phone	Power	: DC3.7V (Adapter:AC120V)
Model No.	: GX29	Temp./Humi.	: 25deg.C / 30%
Serial No.	: IMEI: 004401/11/008179/7	Operator	: Hiroka Umeyama

Mode / Remarks : Bluetooth Tx2441MHz DH5

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



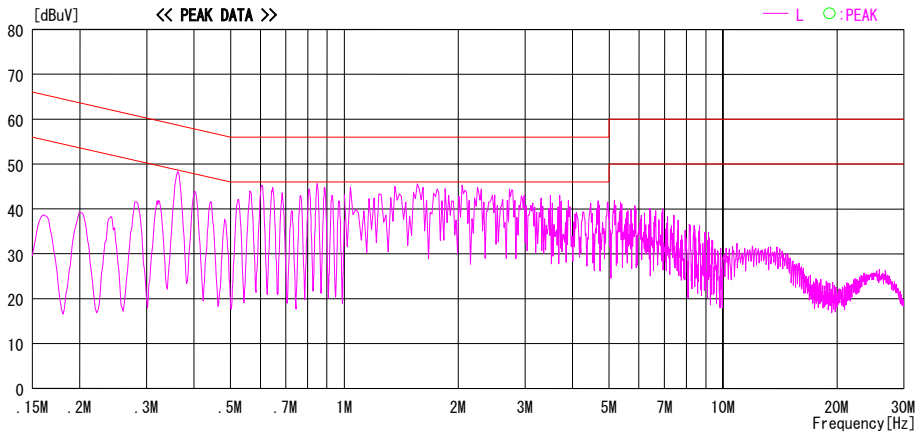


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

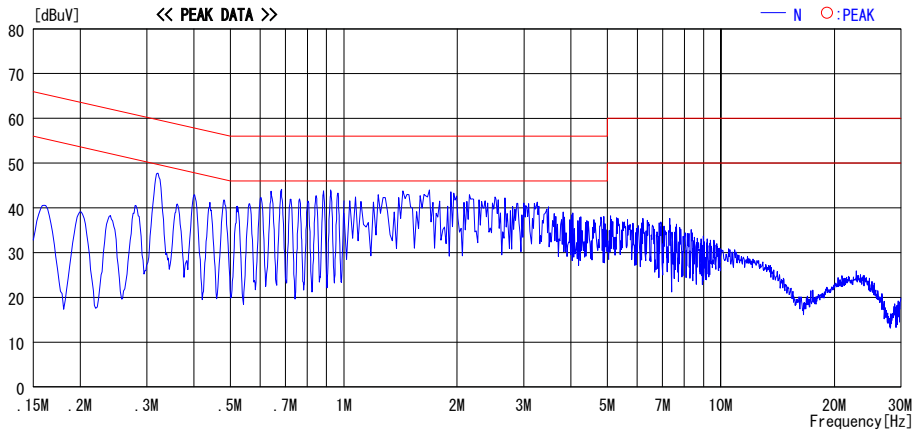
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/02/01 15:32:49

Applicant : Sharp Corporation
Kind of EUT : GSM900/1800/1900GPRS Phone
Model No. : GX29
Serial No. : IMEI: 004401/11/008179/7

Report No. : 26EE0220-HO
Power : DC3.7V (Adapter:AC120V)
Temp./Humi. : 25deg.C / 30%
Operator : Hiroka Umeyama

Mode / Remarks : Bluetooth Tx2480MHz DH5

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



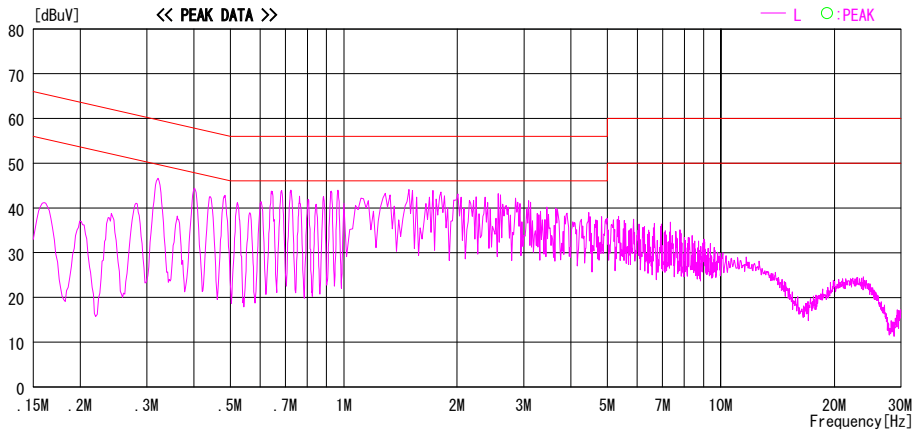


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Carrier Frequency Separation

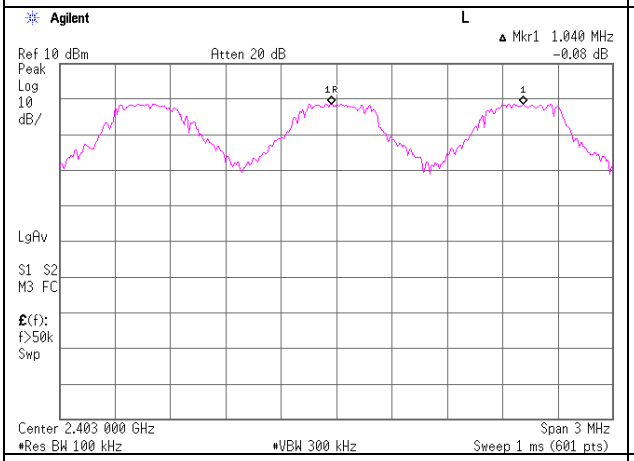
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(a)(1)
EQUIPMENT	: GSM900/1800/1900 GPRS phone	TEST DISTANCE	: -
MODEL	: GX29	DATE	: 01/26/2006
S/ N	: 004401/11/008174/8	TEMPERATURE	: 20deg.C
POWER	: DC3.7V	HUMIDITY	: 36%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Kenichi Adachi

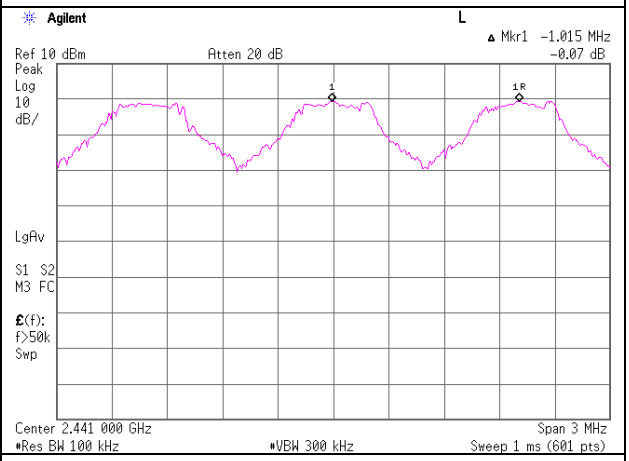
Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.040	>20dB Bandwidth and 25[kHz]
Mid	2441.0	1.015	>20dB Bandwidth and 25[kHz]
High	2480.0	1.010	>20dB Bandwidth and 25[kHz]
Inquiry	2441.0	2.008	>20dB Bandwidth and 25[kHz]

Carrier Frequency Separation

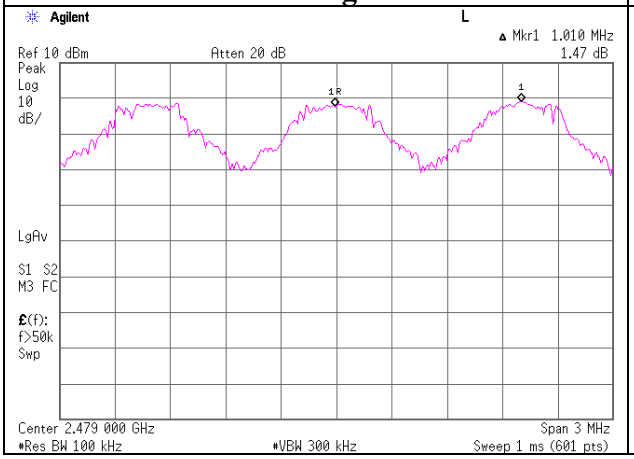
Ch:Low



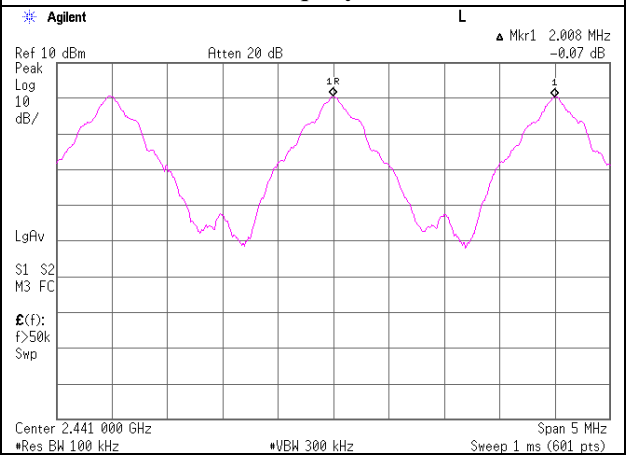
Ch:Mid



Ch:High



Inquiry



20dB Bandwidth

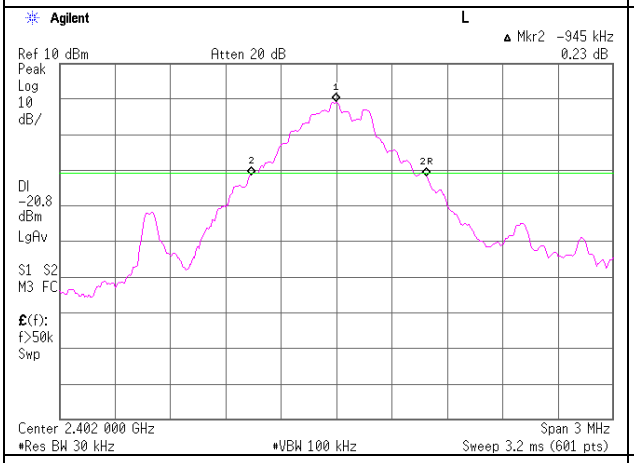
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(a)(1)
EQUIPMENT	: GSM900/1800/1900 GPRS phone	TEST DISTANCE	: -
MODEL	: GX29	DATE	: 01/26/2006
S/ N	: 004401/11/008174/8	TEMPERATURE	: 20deg.C
POWER	: DC3.7V	HUMIDITY	: 36%
MODE	: Tx (Hopping off) /Inquiry	ENGINEER	: Kenichi Adachi

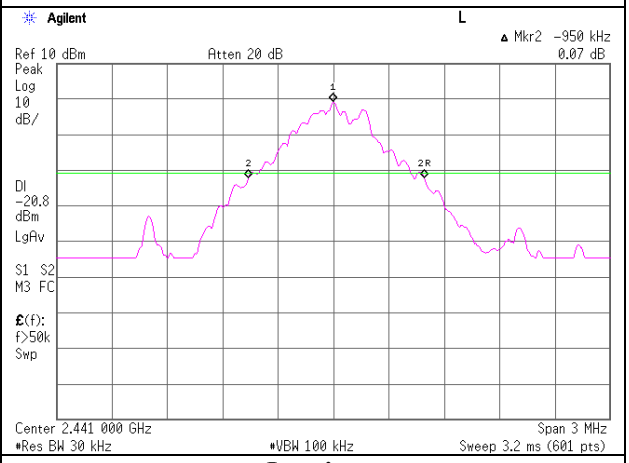
Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.945	-
Mid	2441.0	0.950	-
High	2480.0	0.945	-
Inquiry	2441.0	0.835	-

20dB Bandwidth

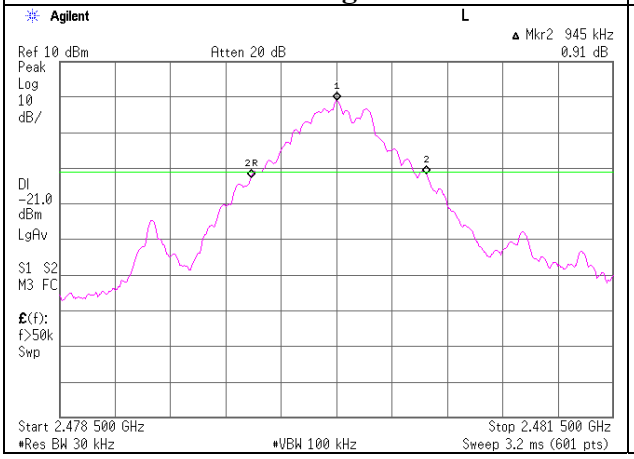
Ch:Low



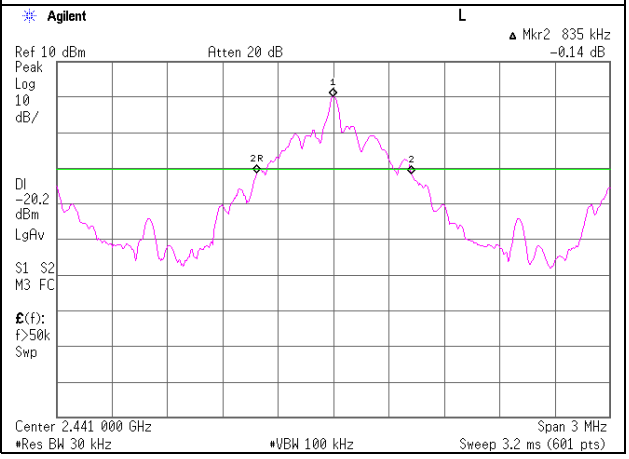
Ch:Mid



Ch:High



Inquiry



Number of Hopping Frequency

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

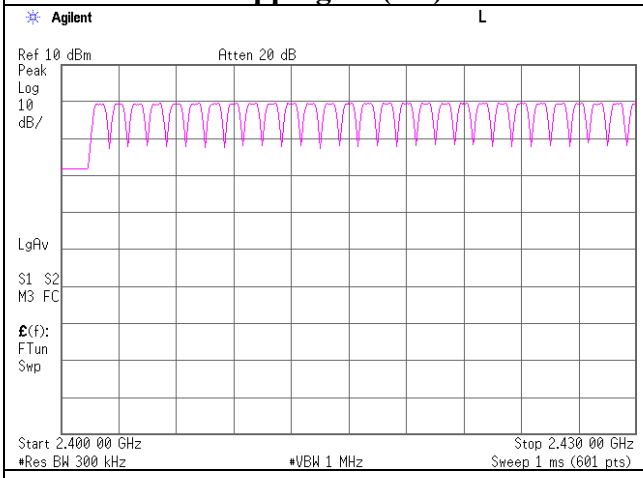
COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(a)(1)(iii)
EQUIPMENT	: GSM900/1800/1900 GPRS phone	TEST DISTANCE	: -
MODEL	: GX29	DATE	: 01/26/2006
S/ N	: 004401/11/008174/8	TEMPERATURE	: 20deg.C
POWER	: DC3.7V	HUMIDITY	: 36%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Kenichi Adachi

Mode	Number of channel [time]	Limit [time]
Tx(Hoppng on)	79	≧15

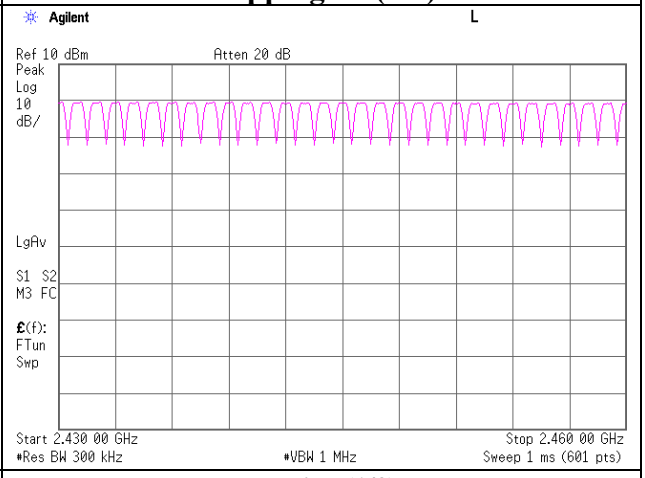
Mode	Number of channel [time]	Limit [time]
Inquiry	32	≧15

Number of Hopping Frequency

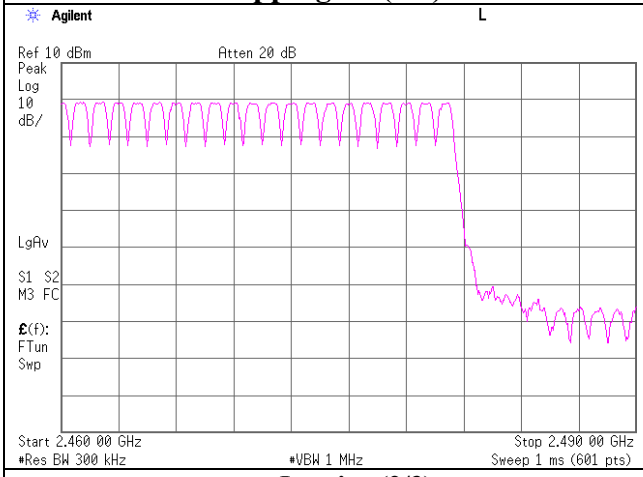
Hopping on (1/3)



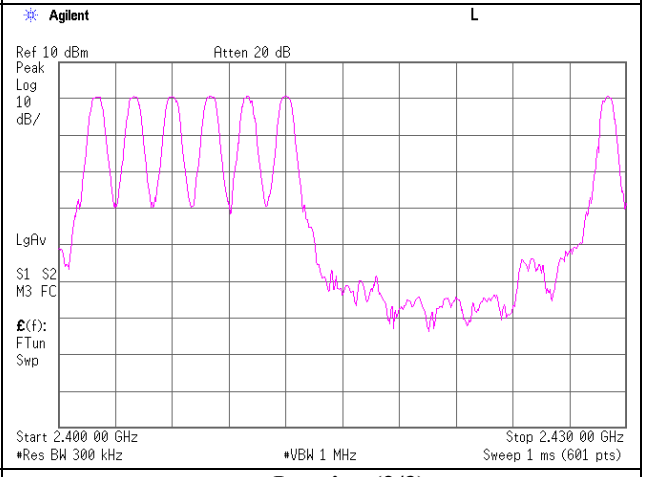
Hopping on (2/3)



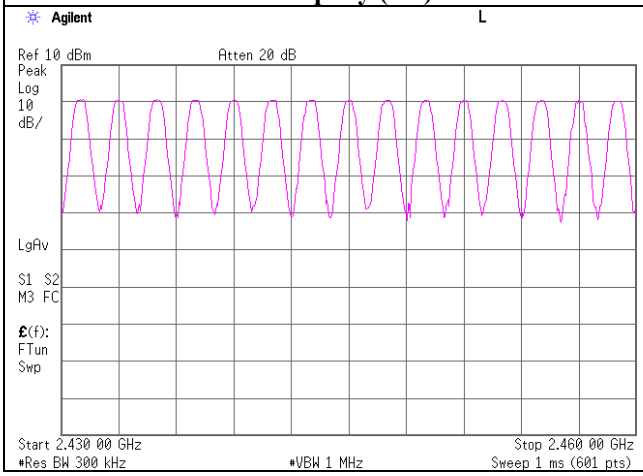
Hopping on (3/3)



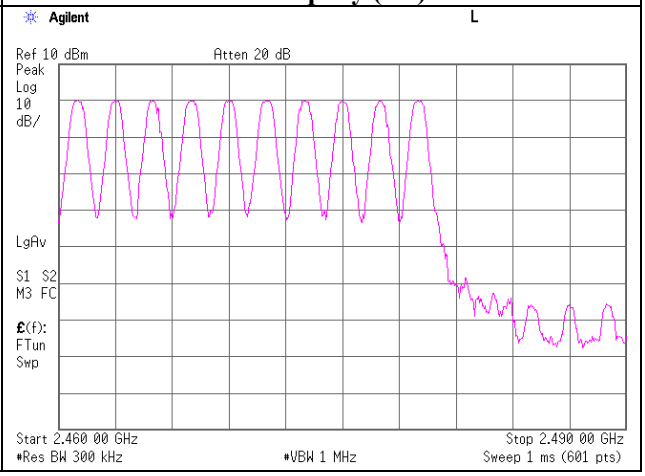
Inquiry (1/3)



Inquiry (2/3)



Inquiry (2/3)



Dwell time

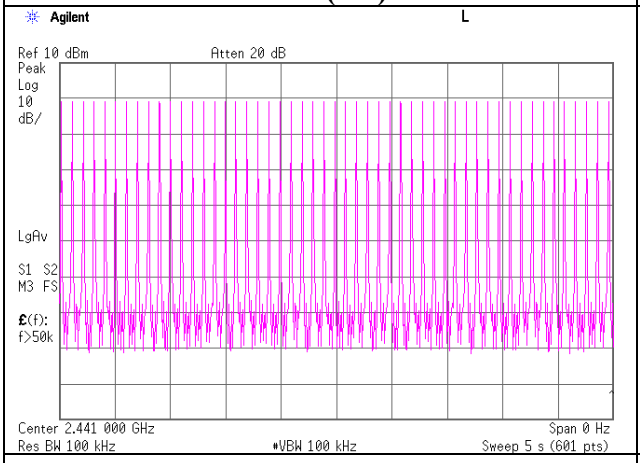
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	:	Sharp Corportion	REGULATION	:	FCC Part15 Subpart C 15.247(a)(1)(iii)
EQUIPMENT	:	GSM900/1800/1900 GPRS phone	TEST DISTANCE	:	-
MODEL	:	GX29	DATE	:	01/26/2006
S/ N	:	004401/11/008174/8	TEMPERATURE	:	20deg.C
POWER	:	DC3.7V	HUMIDITY	:	36%
MODE	:	Tx (Hopping on) /Inquiry	ENGINEER	:	Kenichi Adachi

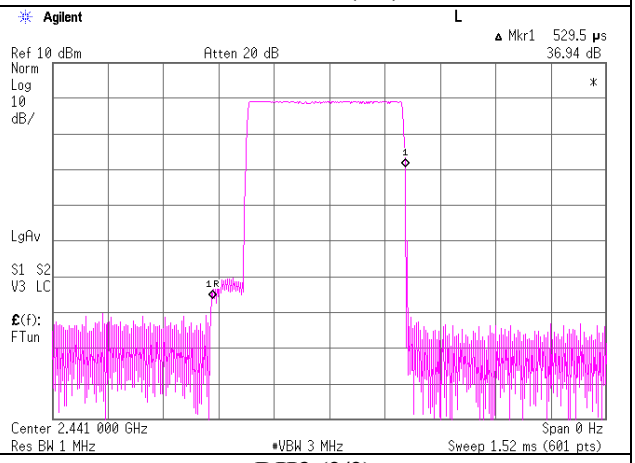
Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	51 times /5sec. x 31.6 = 323 times	0.530	171	400
DH3	16 times / 5sec. x 31.6 = 101 times	1.783	180	400
DH5	10 times / 5 sec. x 31.6 = 63 times	3.046	192	400
Inquiry	100 times / 1sec. x 12.8 = 1280 times	0.265	339	400

Dwell time

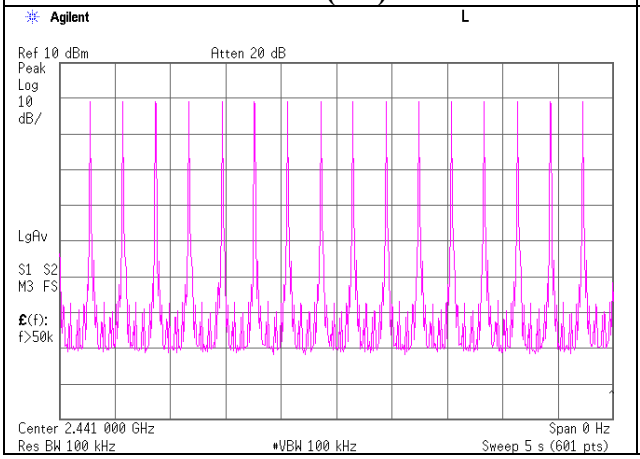
DH1 (1/2)



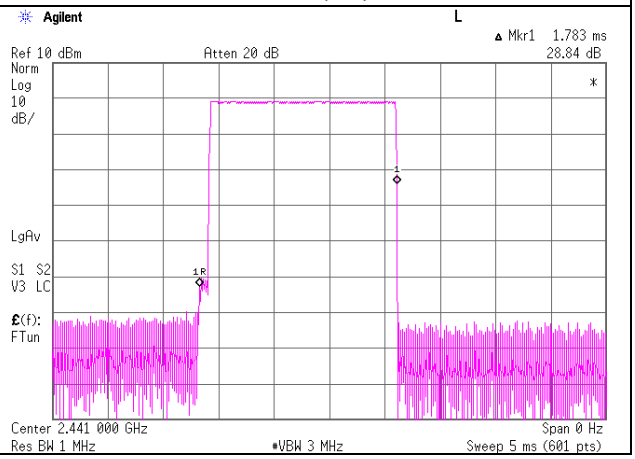
DH1 (2/2)



DH3 (1/2)

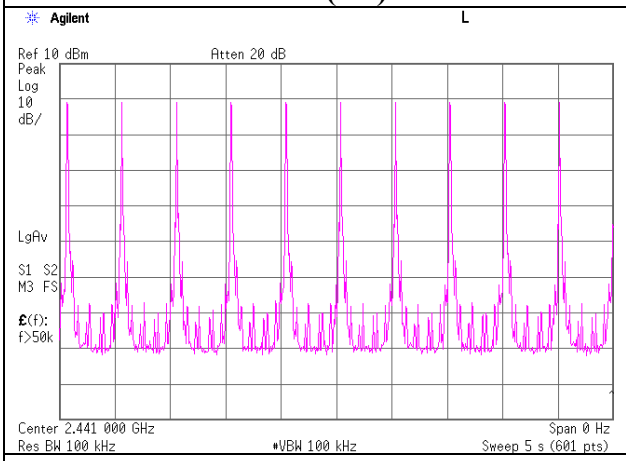


DH3 (2/2)

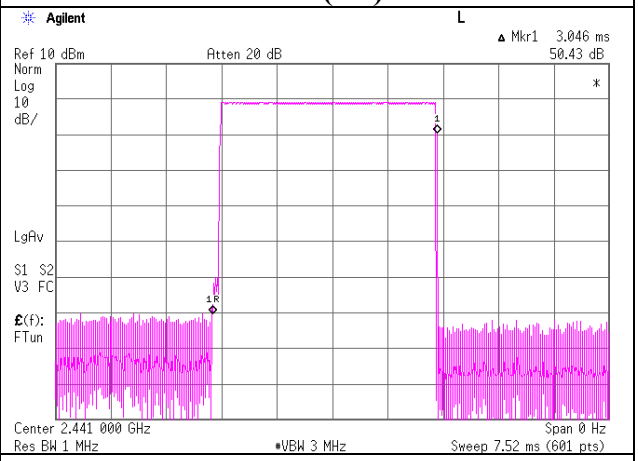


Dwell time

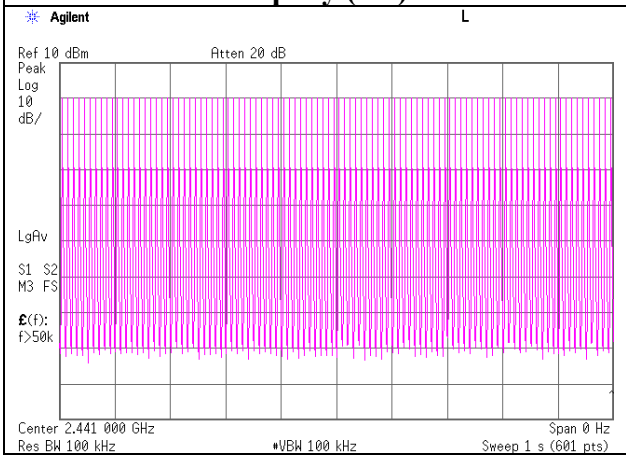
DH5 (1/2)



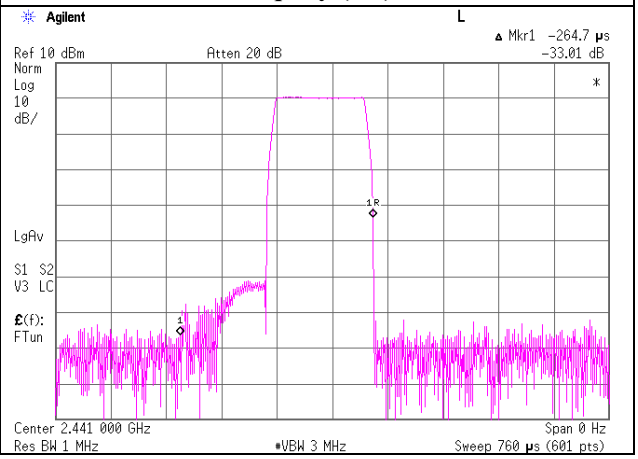
DH5 (2/2)



Inquiry (1/2)



Inquiry (2/2)



Maximum Peak Output Power

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

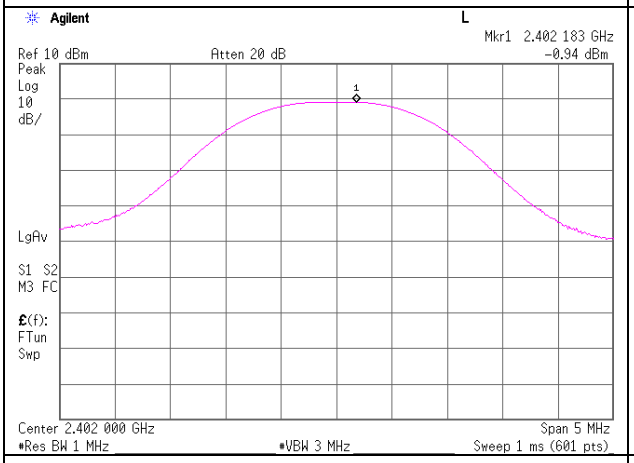
COMPANY	: Sharp Corporation	REGULATION	: FCC Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: GSM900/1800/1900 GPRS phone	TEST DISTANCE	: -
MODEL	: GX29	DATE	: 01/26/2006
S/ N	: 004401/11/008174/8	TEMPERATURE	: 22deg.C
POWER	: DC 3.7V	HUMIDITY	: 36%
MODE	: Tx(Hopping Off)/Inquiry	ENGINEER	: Kenichi Adachi

Ch	Freq.	S/A Reading	Cable Loss	Atten.	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	2402.0	-0.94	0.35	0.00	-0.59	0.87	30.00	1000	30.59
Mid	2441.0	-0.88	0.22	0.00	-0.66	0.86	30.00	1000	30.66
High	2480.0	-1.18	0.28	0.00	-0.90	0.81	30.00	1000	30.90
Inquiry	2441.0	0.35	0.22	0.00	0.57	1.14	20.97	125	20.40

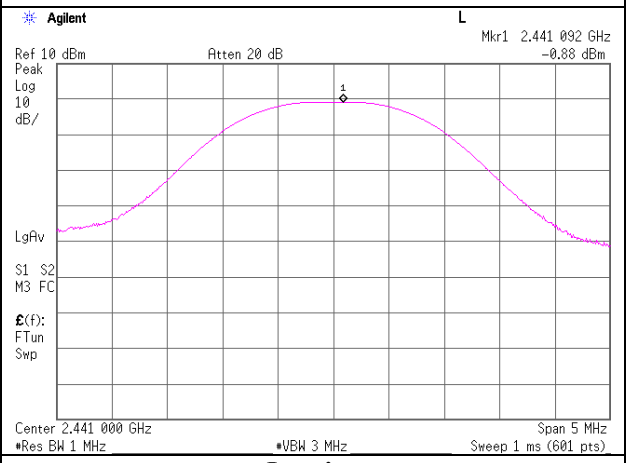
Sample Calculation:
Result = Reading + Cable Loss
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

Maximum Peak Output Power

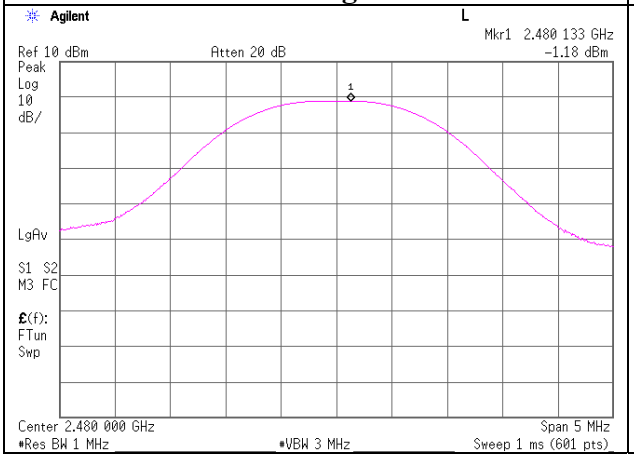
Ch:Low



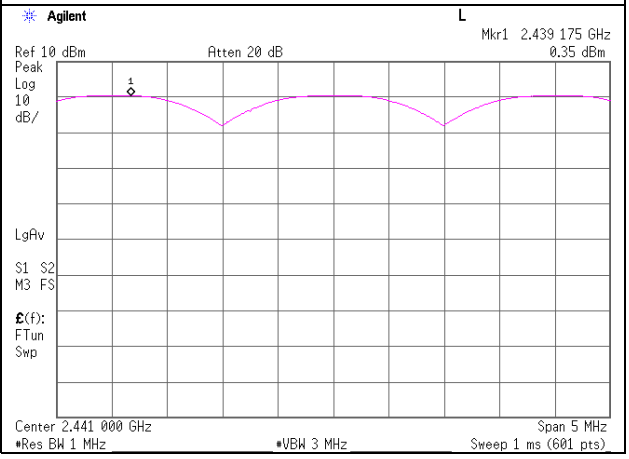
Ch:Mid



Ch:High



Inquiry



Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

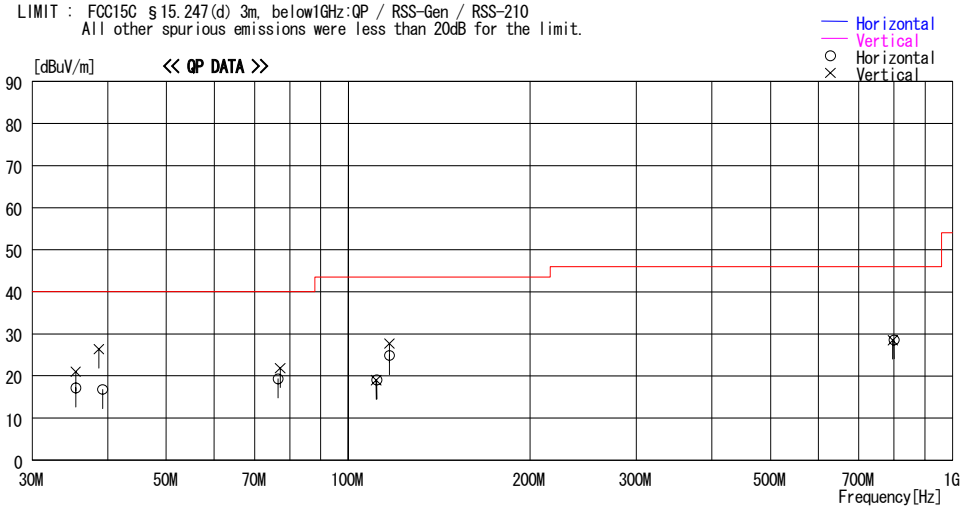
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/01/28 13:03:12

Applicant : Sharp Corporation
Kind of EUT : GSM900/1800/1900GPRS Phone
Model No. : GX29
Serial No. : IMEI: 004401/11/008179/7

Report No. : 26EE0220-HO
Power : DC3.7V (Adapter:AC120V)
Temp./Humi. : 27deg.C / 33%
Operator : Hiroka Umeyama

Mode / Remarks : Bluetooth Tx2402MHz DH5 / Max Axis (H: Z-axis, V: Z-axis)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
All other spurious emissions were less than 20dB for the limit.



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]	Comment
35.411	25.5	QP	16.2	-20.7	21.0	0	100	Vert.	40.0	19.0	
38.657	32.3	QP	14.6	-20.5	26.4	7	100	Vert.	40.0	13.6	
77.144	34.7	QP	6.9	-19.8	21.8	125	124	Vert.	40.0	18.2	
111.162	26.4	QP	12.0	-19.4	19.0	206	116	Vert.	43.5	24.5	
116.976	34.4	QP	12.7	-19.4	27.7	245	100	Vert.	43.5	15.8	
796.598	22.6	QP	21.6	-15.7	28.5	345	100	Vert.	46.0	17.5	
35.411	21.7	QP	16.2	-20.7	17.2	0	100	Hori.	40.0	22.8	
39.198	22.8	QP	14.4	-20.4	16.8	0	100	Hori.	40.0	23.2	
76.533	32.2	QP	6.9	-19.8	19.3	359	269	Hori.	40.0	20.7	
111.474	26.4	QP	12.0	-19.4	19.0	229	120	Hori.	43.5	24.5	
116.980	31.6	QP	12.7	-19.4	24.9	325	166	Hori.	43.5	18.6	
800.806	22.7	QP	21.6	-15.7	28.6	126	100	Hori.	46.0	17.4	

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
Except for the data below : adequate margin data below the limits.

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

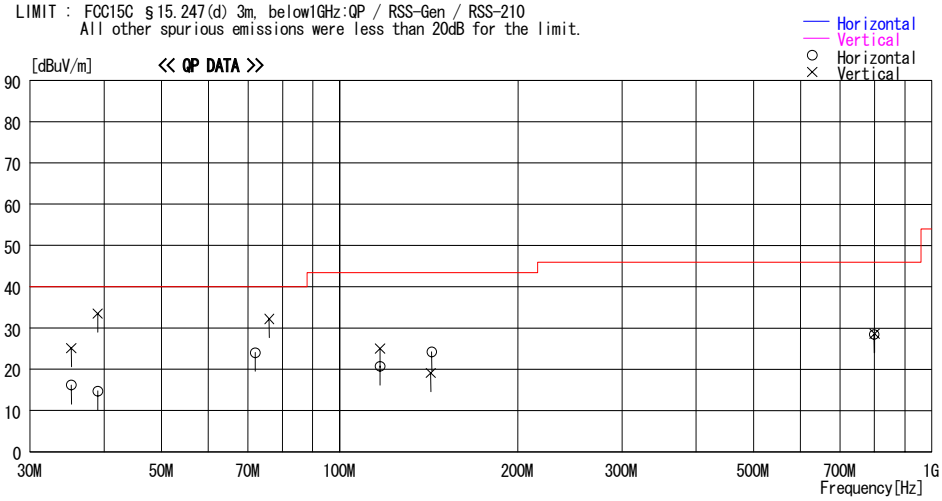
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/01/28 10:49:19

Applicant : Sharp Corporation
Kind of EUT : GSM900/1800/1900GPRS Phone
Model No. : GX29
Serial No. : IMEI: 004401/11/008179/7

Report No. : 26EE0220-HO
Power : DC3.7V (Adapter:AC120V)
Temp./Humi. : 27deg.C / 33%
Operator : Hiroka Umeyama

Mode / Remarks : Bluetooth Tx2441MHz DH5 / Max Axis (H: Z-axis, V: Z-axis)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
All other spurious emissions were less than 20dB for the limit.



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]	Comment
35.210	29.5	QP	16.3	-20.7	25.1	0	100	Vert.	40.0	14.9	
35.210	20.6	QP	16.3	-20.7	16.2	105	300	Hori.	40.0	23.8	
38.984	39.4	QP	14.5	-20.4	33.5	236	100	Vert.	40.0	6.5	
39.011	20.7	QP	14.4	-20.4	14.7	105	300	Hori.	40.0	25.3	
72.000	37.0	QP	7.0	-20.0	24.0	359	257	Hori.	40.0	16.0	
76.012	45.1	QP	6.9	-19.8	32.2	129	100	Vert.	40.0	7.8	
116.973	31.7	QP	12.7	-19.4	25.0	261	100	Vert.	43.5	18.5	
116.997	27.5	QP	12.7	-19.4	20.8	301	273	Hori.	43.5	22.7	
142.545	23.0	QP	14.9	-18.8	19.1	286	100	Vert.	43.5	24.4	
142.980	28.1	QP	14.9	-18.8	24.2	317	225	Hori.	43.5	19.3	
799.404	22.6	QP	21.6	-15.7	28.5	0	100	Hori.	46.0	17.5	
800.806	22.7	QP	21.6	-15.7	28.6	355	100	Vert.	46.0	17.4	

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
Except for the data below : adequate margin data below the limits.

Radiated Spurious Emission

DATA OF RADIATED EMISSION TEST

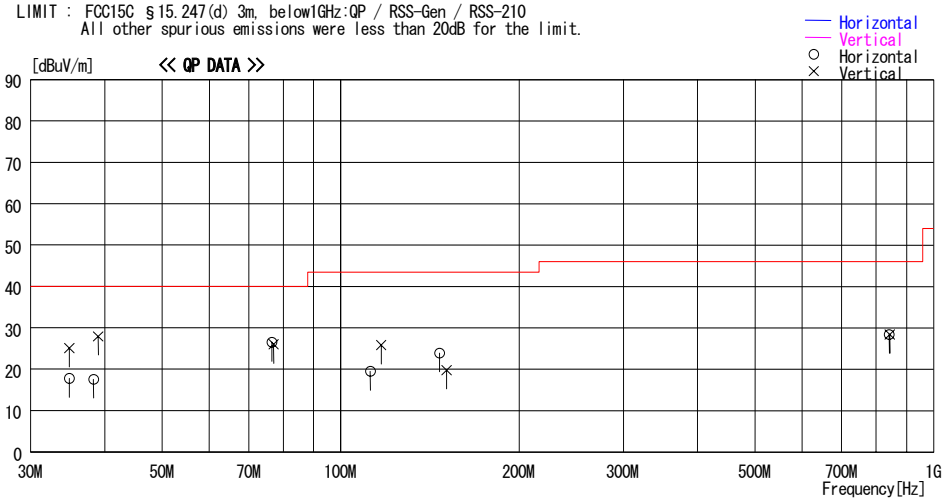
UL Apex Co., Ltd. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2006/01/28 14:05:15

Applicant : Sharp Corporation
Kind of EUT : GSM900/1800/1900GPRS Phone
Model No. : GX29
Serial No. : IMEI: 004401/11/008179/7

Report No. : 26EE0220-HO
Power : DC3.7V (Adapter:AC120V/60Hz)
Temp./Humi. : 27deg.C / 33%
Operator : Hiroka Umeyama

Mode / Remarks : Bluetooth Tx2480MHz DH5 / Max Axis (H: Z-axis, V: Z-axis)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP / RSS-Gen / RSS-210
All other spurious emissions were less than 20dB for the limit.



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]	Comment
34.870	22.0	QP	16.5	-20.7	17.8	105	300	Hori.	40.0	22.2	
34.870	29.3	QP	16.5	-20.7	25.1	336	100	Vert.	40.0	14.9	
39.003	33.9	QP	14.5	-20.4	28.0	6	100	Vert.	40.0	12.0	
38.296	23.3	QP	14.8	-20.5	17.6	68	300	Hori.	40.0	22.4	
76.533	39.4	QP	6.9	-19.8	26.5	0	251	Hori.	40.0	13.5	
77.074	38.9	QP	6.9	-19.8	26.0	196	100	Vert.	40.0	14.0	
117.114	32.4	QP	12.8	-19.4	25.8	356	100	Vert.	43.5	17.7	
112.204	26.8	QP	12.1	-19.4	19.5	136	300	Hori.	43.5	24.0	
146.874	27.6	QP	15.1	-18.8	23.9	337	224	Hori.	43.5	19.6	
150.874	23.2	QP	15.4	-18.8	19.8	176	100	Vert.	43.5	23.7	
841.489	22.5	QP	21.3	-15.4	28.4	2	100	Hori.	46.0	17.6	
844.294	22.5	QP	21.3	-15.4	28.4	130	100	Vert.	46.0	17.6	

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
Except for the data below : adequate margin data below the limits.

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Sharp Corporation	REPORT NO	: 26EE0220-HO
Equipment	: GSM900/1800/1900 GPRS phone	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: GX29	TEST DISTANCE	: 3/1m
Sample No.	: 004401/11/008179/7	DATE	: 01/28/2006
Power	: DC 3.7V (Adapter: AC120V/60Hz)	TEMPERATURE	: 27deg.C
Mode	: Bluetooth, Tx 2402MHz	HUMIDITY	: 33%
Remarks	: Hor Y-axis/Ver Z-axis	ENGINEER	: Umeyama Hiroka

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1529.1	46.5	43.5	24.8	36.7	2.8	0.0	37.4	34.4	74.0	36.6	39.6
2	2390.0	46.0	45.9	30.5	36.4	3.1	0.0	43.2	43.1	74.0	30.8	30.9
3*	2400.0	76.4	78.5	30.5	36.4	3.1	0.0	73.6	75.7	74.0	0.4	-1.7
4	4803.9	49.0	50.1	35.3	36.0	4.3	0.0	52.6	53.7	74.0	21.4	20.3
5	7206.0	43.7	43.7	37.6	36.1	5.1	0.0	50.3	50.3	74.0	23.7	23.7
6	9608.0	45.3	42.6	36.6	30.4	6.1	0.0	57.6	54.9	74.0	16.4	19.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	24020.0	43.5	46.7	39.7	35.5	9.4	0.0	47.6	50.8	74.0	26.4	23.2

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1529.1	33.8	33.0	24.8	36.7	2.8	0.0	24.7	23.9	54.0	29.3	30.1
2	2390.0	34.1	33.3	30.5	36.4	3.1	0.0	31.3	30.5	54.0	22.7	23.5
3*	2400.0	62.1	64.6	30.5	36.4	3.1	0.0	59.3	61.8	54.0	-5.3	-7.8
4	4803.9	41.1	42.2	35.3	36.0	4.3	0.0	44.7	45.8	54.0	9.3	8.2
5	7206.0	31.3	31.2	37.6	36.1	5.1	0.0	37.9	37.8	54.0	16.1	16.2
6	9608.0	32.1	32.2	36.6	30.4	6.1	0.0	44.4	44.5	54.0	9.6	9.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	24020.0	33.4	33.3	39.7	35.5	9.4	0.0	37.5	37.4	54.0	16.5	16.6

*Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	ATT or	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter Loss	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	2402.0	103.8	103.3	30.5	36.4	3.2	0.0	101.1	100.6	-	-	-
3	2400.0	75.0	72.6	30.5	36.4	3.1	0.0	72.2	69.8	Funda-20dB	8.9	10.8

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 Fiter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Sharp Corporation	REPORT NO	: 26EE0220-HO
Equipment	: GSM900/1800/1900 GPRS phone	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: GX29	TEST DISTANCE	: 3/1m
Sample No.	: 004401/11/008179/7	DATE	: 01/28/2006
Power	: DC 3.7V (Adapter: AC120V/60Hz)	TEMPERATURE	: 27deg.C
Mode	: Bluetooth, Tx 2441MHz	HUMIDITY	: 33%
Remarks	: Hor Y-axis/Ver Z-axis	ENGINEER	: Umeyama Hiroka

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	4882.1	49.0	48.5	35.6	36.0	4.3	0.0	52.9	52.4	74.0	21.1	21.6
2	7323.0	44.4	44.3	37.7	36.0	5.2	0.0	51.3	51.2	74.0	22.7	22.8
3	9764.0	43.9	44.6	36.5	36.4	6.2	0.0	50.2	50.9	74.0	23.8	23.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	24410.0	45.4	46.1	39.8	35.8	9.3	0.0	49.2	49.9	74.0	24.8	24.1

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	4882.1	37.7	37.7	35.6	36.0	4.3	0.0	41.6	41.6	54.0	12.4	12.4
2	7323.0	31.5	31.3	37.7	36.0	5.2	0.0	38.4	38.2	54.0	15.6	15.8
3	9764.0	31.6	31.6	36.5	36.4	6.2	0.0	37.9	37.9	54.0	16.1	16.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	24410.0	33.8	33.7	39.8	35.8	9.3	0.0	37.6	37.5	54.0	16.4	16.5

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 Fiter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission

UL Apex Co., Ltd.
Head Office EMC Lab. No.1 Semi Anechoic Chamber

Company	: Sharp Corporation	REPORT NO	: 26EE0220-HO
Equipment	: GSM900/1800/1900 GPRS phone	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: GX29	TEST DISTANCE	: 3/1m
Sample No.	: 004401/11/008179/7	DATE	: 01/28/2006
Power	: DC 3.7V (Adapter: AC120V/60Hz)	TEMPERATURE	: 27deg.C
Mode	: Bluetooth, Tx 2480MHz	HUMIDITY	: 33%
Remarks	: Hor Y-axis/Ver Z-axis	ENGINEER	: Umeyama Hiroka

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2483.5	53.8	56.5	30.3	36.4	3.1	0.0	50.8	53.5	74.0	23.2	20.5
2	4960.0	49.0	49.9	35.9	35.9	4.3	0.0	53.3	54.2	74.0	20.7	19.8
3	7440.0	43.8	43.3	37.8	35.9	5.3	0.0	51.0	50.5	74.0	23.0	23.5
4	9920.0	43.9	44.3	36.3	36.5	6.3	0.0	50.0	50.4	74.0	24.0	23.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	24800.0	45.9	45.4	40.0	35.1	9.4	0.0	50.7	50.2	74.0	23.3	23.8

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

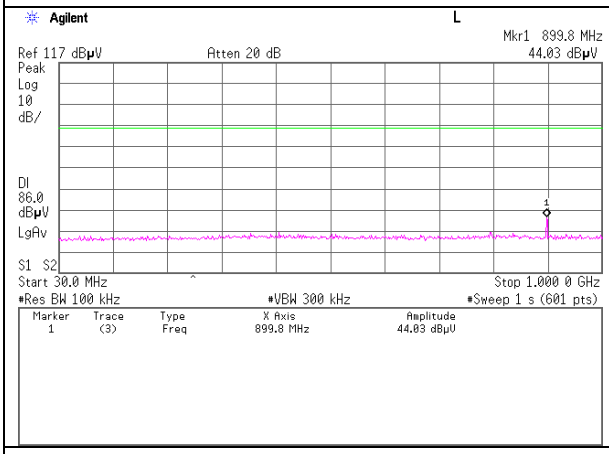
No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2483.5	41.0	42.1	30.3	36.4	3.1	0.0	38.0	39.1	54.0	16.0	14.9
2	4960.0	37.5	37.8	35.9	35.9	4.3	0.0	41.8	42.1	54.0	12.2	11.9
3	7440.0	31.6	31.9	37.8	35.9	5.3	0.0	38.8	39.1	54.0	15.2	14.9
4	9920.0	31.9	31.5	36.3	36.5	6.3	0.0	38.0	37.6	54.0	16.0	16.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	24800.0	34.0	33.9	40.0	35.1	9.4	0.0	38.8	38.7	54.0	15.2	15.3

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 Fiter was not used for factor 0.0dB of the above table.

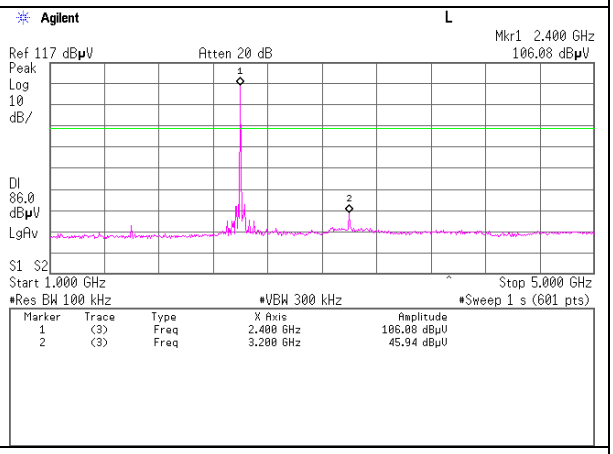
Conducted Spurious Emission

Ch:Low

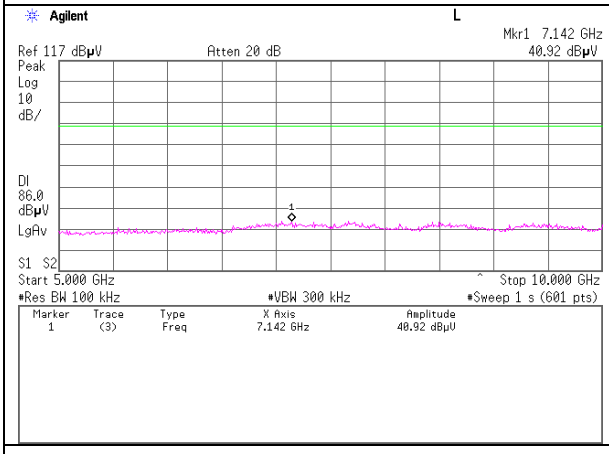
30MHz-1GHz



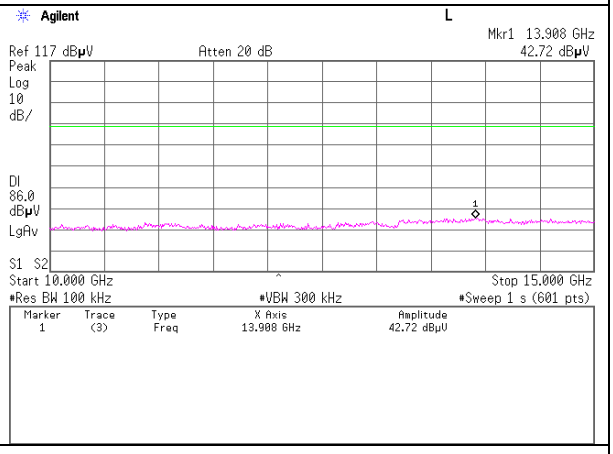
1GHz-5GHz



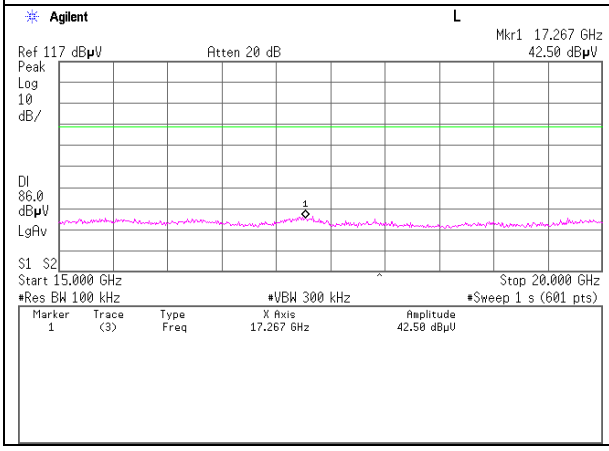
5GHz-10GHz



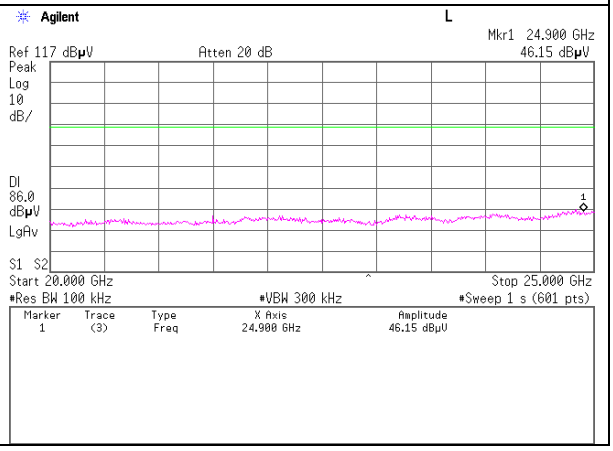
10GHz-15GHz



15GHz-20GHz



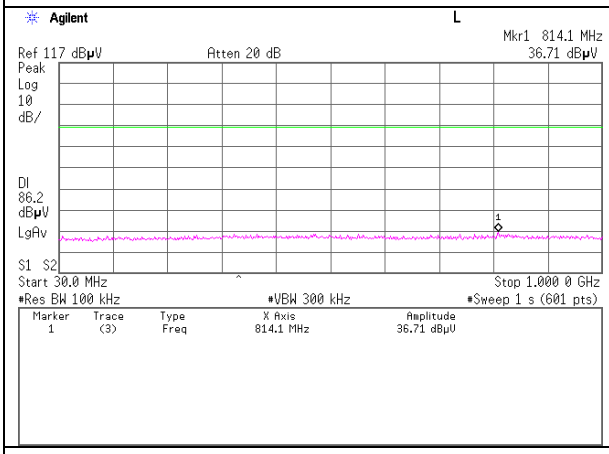
20GHz-25GHz



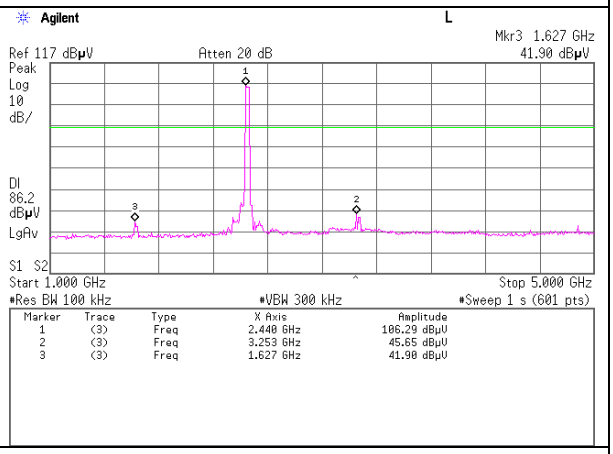
Conducted Spurious Emission

Ch:Mid

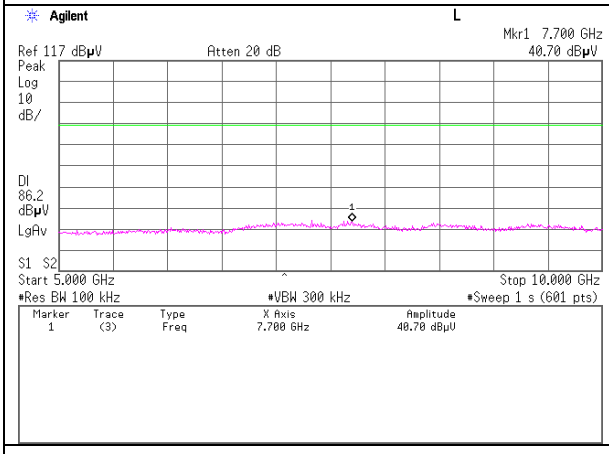
30MHz-1GHz



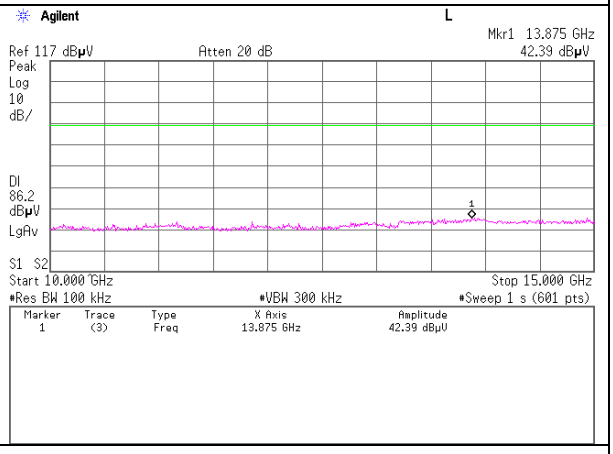
1GHz-5GHz



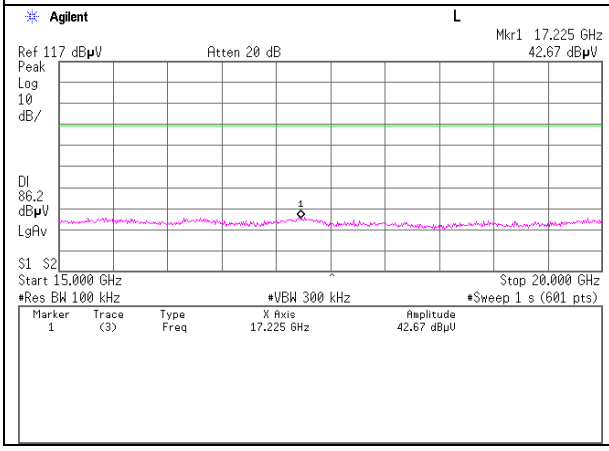
5GHz-10GHz



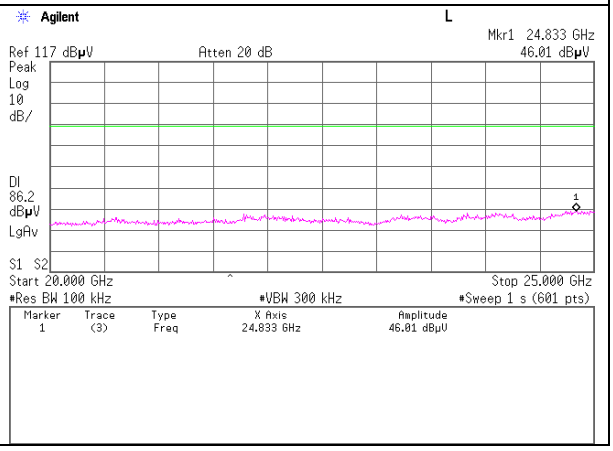
10GHz-15GHz



15GHz-20GHz



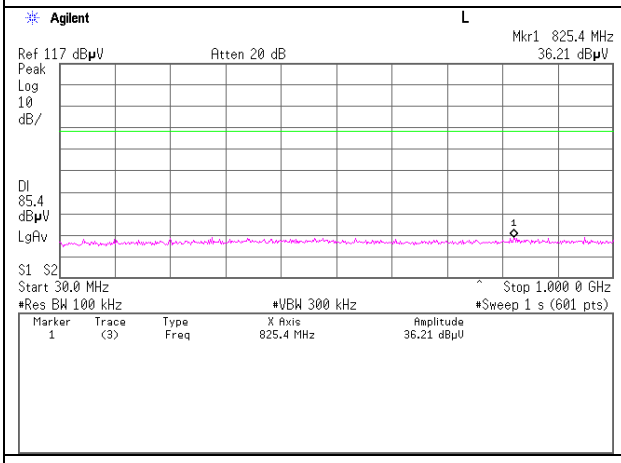
20GHz-25GHz



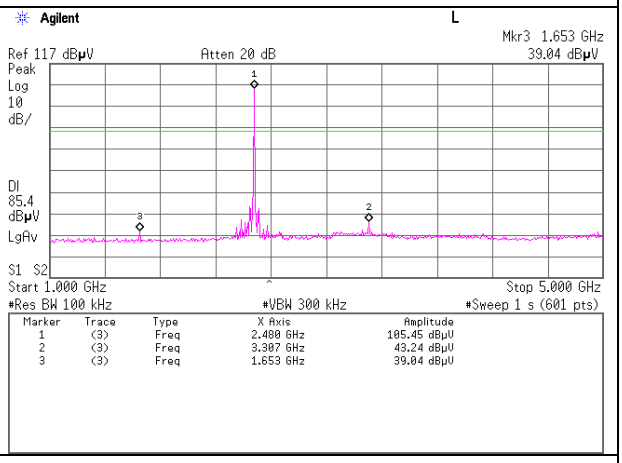
Conducted Spurious Emission

Ch:High

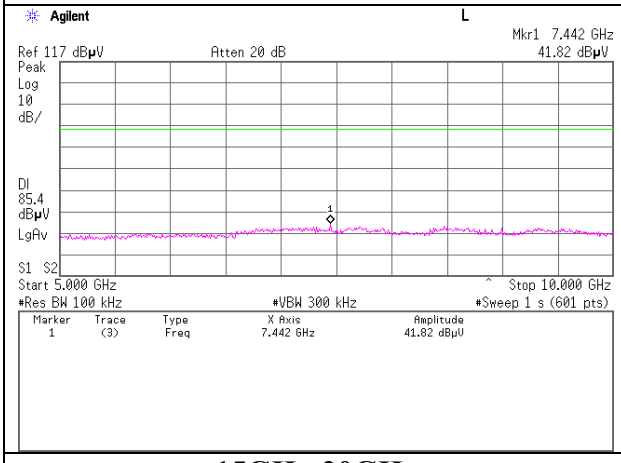
30MHz-1GHz



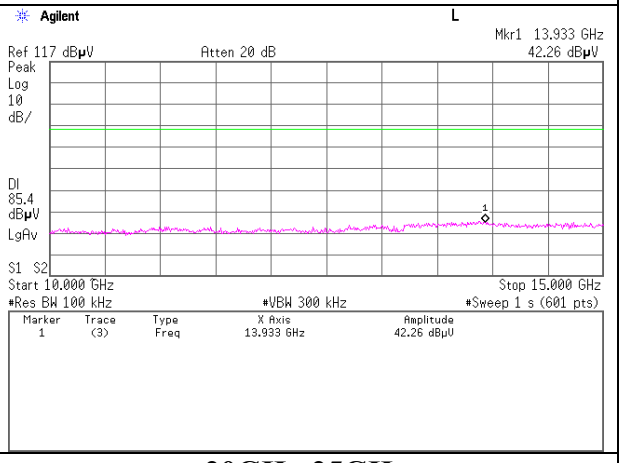
1GHz-5GHz



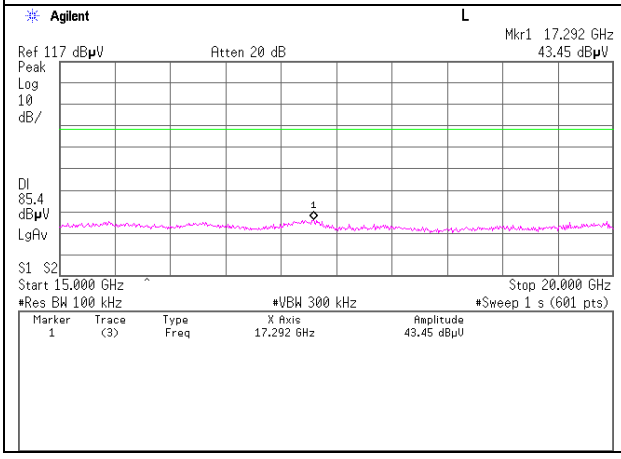
5GHz-10GHz



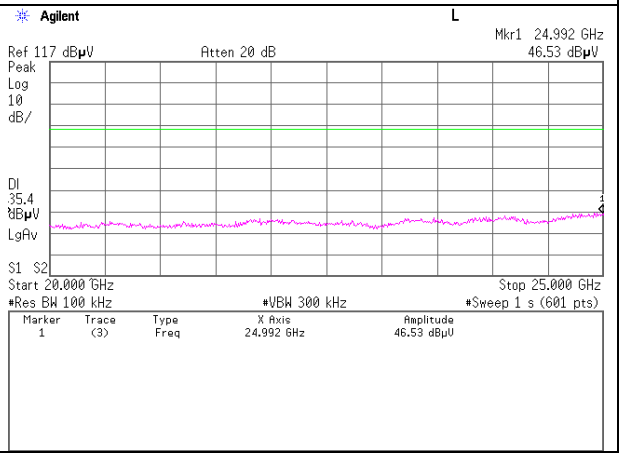
10GHz-15GHz



15GHz-20GHz



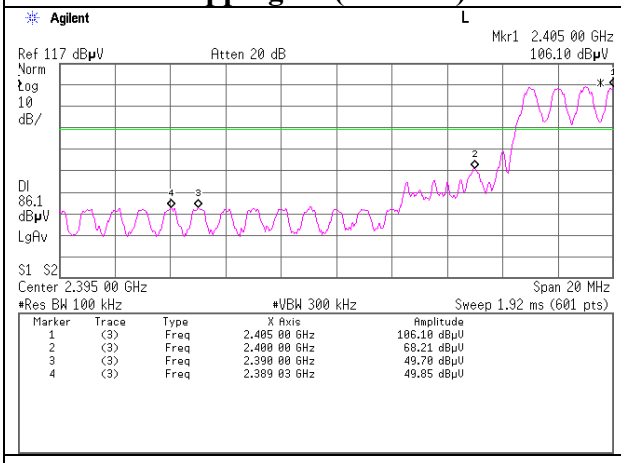
20GHz-25GHz



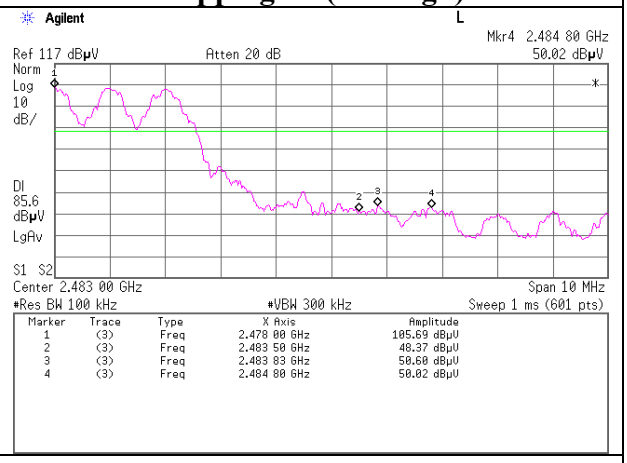
Conducted Spurious Emission

Band Edge compliance

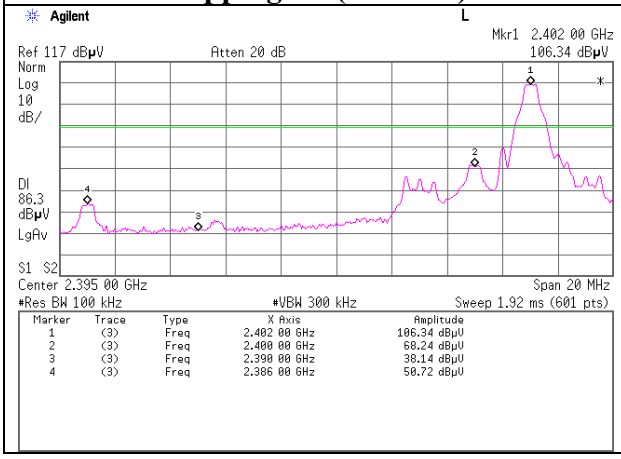
Hopping on (Ch:Low)



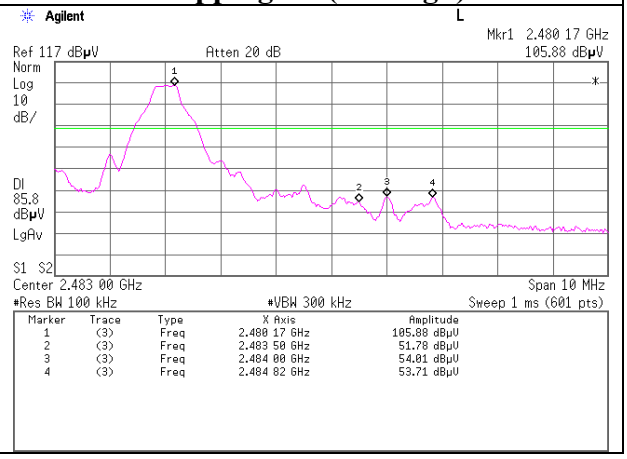
Hopping on (Ch:High)



Hopping off (Ch:Low)

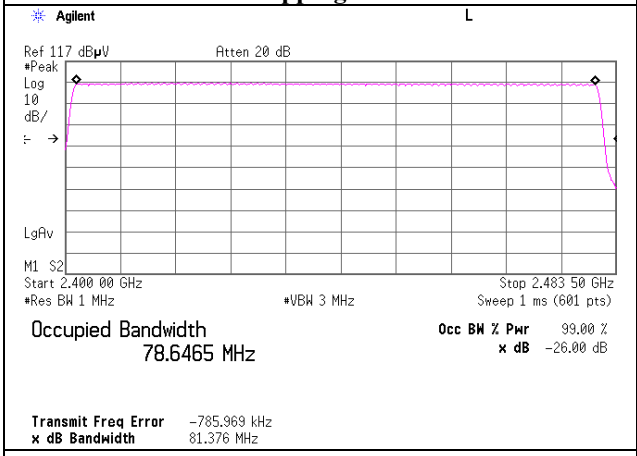


Hopping off (Ch:High)

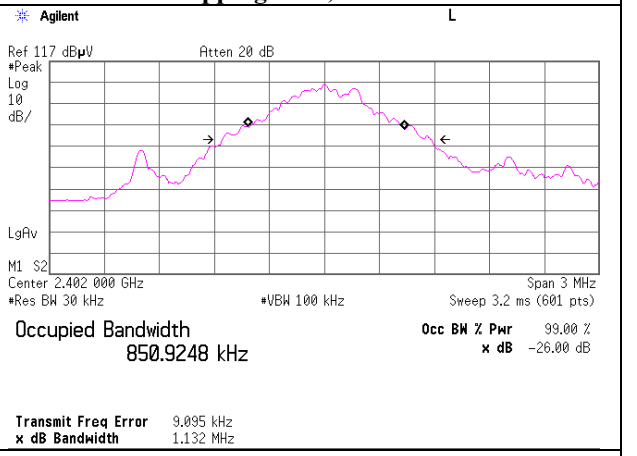


99% Occupied Bandwidth

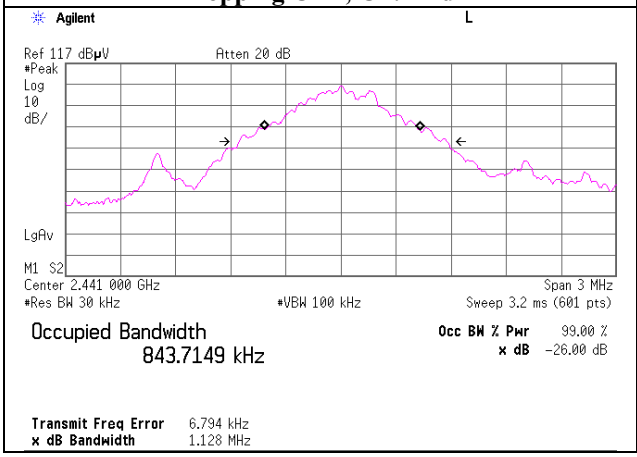
Hopping ON



Hopping OFF, Ch: Low



Hopping OFF, Ch: Mid



Hopping OFF, Ch: High