



RADIO TEST REPORT

Test Report No. : 29AE0089-HO

Applicant : Sharp Corporation, Communication Systems Group.
Type of Equipment : Cellular Phone
Model No. : DM003SH
FCC ID : APYHRO00079
Test regulation : FCC Part 15 Subpart C 2008
Section 15.207, Section 15.247
Test Result : Complied

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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.
5. This test report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Date of test: September 4 and 5, 2008

Tested by:

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NVLAP LAB CODE: 200572-0

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*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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SECTION 1: Customer information

Company Name : Sharp Corporation, Communication Systems Group.
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739-0192, Japan
Telephone Number : +81-82-420-1936
Facsimile Number : +81-82-420-1852
Contact Person : Kazushi Okada

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

2.1 Identification of E.U.T.

Type of Equipment : Cellular Phone
Model No. : DM003SH
Serial No. : 004401/11/157125/9 (Antenna Terminal conducted test)
004401/11/157124/2 (Conducted Emission test and Radiated Emission test)
Rating : DC4.0V (AC Charger 120V/60Hz)
Receipt Date of Sample : August 26, 2008
Country of Mass-production : Japan
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: DM003SH (referred to as the EUT in this report) is the Cellular Phone
Clock frequency(ies) in the system : CPU: 26MHz, RTC: 32.768kHz

[Bluetooth (Ver. 2.0 without EDR function)]

Equipment Type : Transceiver
Frequency of Operation : 2402-2480MHz
Bandwidth & Channel Spacing : 1MHz & 1MHz / CH
Modulation : FHSS
Power Supply (inner) : DC 2.9V
Antenna Type : Internal Antenna
Antenna Gain : 0dBi
Operating temperature range : -10 to +55 deg. C.

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SECTION 3: Test specification, procedure & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C: 2008, final revised on May 19, 2008

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 and Radiated Emission test was performed with the New Battery. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

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

3.2 Procedures and results

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin	Results
1	Conducted emission	FCC: ANSI C63.4:2003 7. AC powerline conducted emission measurements	FCC: Section 15.207	-	N/A	[Tx] QP 22.1dB, 1.64578MHz, L AV 25.2dB, 0.18506MHz, N [Rx] QP 23.1dB, 0.19802MHz, N AV 23.0dB, 0.19802MHz, N	Complied
		IC: RSS-Gen 7.2.2	IC: RSS-Gen 7.2.2				
2	Carrier Frequency Separation	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)	Conducted	N/A	See data.	Complied
		IC: -	IC: RSS-210 A8.1 (b)				
3	20dB Bandwidth	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (a)				
4	Number of Hopping Frequency	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (d)				
5	Dwell time	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(a)(1)(iii)	Conducted	N/A		Complied
		IC: -	IC: RSS-210 A8.1 (d)				
6	Maximum Peak Output Power	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(b)(1)	Conducted	N/A	Complied	
		IC: RSS-Gen 4.8	IC: RSS-210 A8.4 (2)				
7	Band Edge Compliance	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(d)	Conducted	N/A	Complied	
		IC: -	IC: RSS-210 A8.5				
8	Spurious Emission	FCC: FCC Public Notice DA 00-705	FCC: Section 15.247(d)	Conducted/ Radiated	N/A	[Tx] 14.6dB 9608.00MHz, PK Vert. [Rx] 16.4dB 844.814MHz, QP, Hori. 845.634MHz, QP, Vert.	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 performed without any deviations from test procedure except for additions or exclusions.

* In case any questions arise about test procedure, ANSI C63.4: 2003 is also referred.

3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	IC: RSS-Gen 4.6.1	IC: RSS-Gen 4.6.1	Conducted	N/A	N/A	N/A

3.4 Uncertainty

EMI

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

Test room	Conducted emission	Radiated emission (10m*)			Radiated emission (3m*)			Radiated emission (3m*)	
	150kHz-30MHz	9kHz-30MHz	30MHz-300MHz	300MHz-1GHz	9kHz-30MHz	30MHz-300MHz	300MHz-1GHz	1GHz-18GHz	18GHz-40GHz
No.1 semi-anechoic Chamber (±)	3.7dB	3.1dB	4.4dB	4.2dB	3.2dB	3.8dB	3.9dB	5.9dB	6.1dB
No.2 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.4dB	4.0dB	5.9dB	6.1dB
No.3 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	4.6dB	4.0dB	5.9dB	6.1dB
No.4 semi-anechoic chamber (±)	3.7dB	-	-	-	3.2dB	3.9dB	3.9dB	5.9dB	6.1dB

*10m/3m = Measurement distance

Conducted emission test

The data listed in this test report has enough margin, more than the site margin.

Radiated emission test(3m)

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 3.0dB.

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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	2973C-1	19.2 x 11.2 x 7.7m	7.0 x 6.0m	No.1 Power source room
No.2 semi-anechoic chamber	655103	2973C-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 semi-anechoic chamber	148738	2973C-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	2973C-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	-
No.9 measurement room	-	-	8.0 x 4.5 x 2.8m	2.0 x 2.0m	-
No.10 measurement room	-	-	2.6 x 2.8 x 2.5m	2.4 x 2.4m	-
No.11 measurement room	-	-	3.1 x 3.4 x 3.0m	2.4 x 3.4m	-

* 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.

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

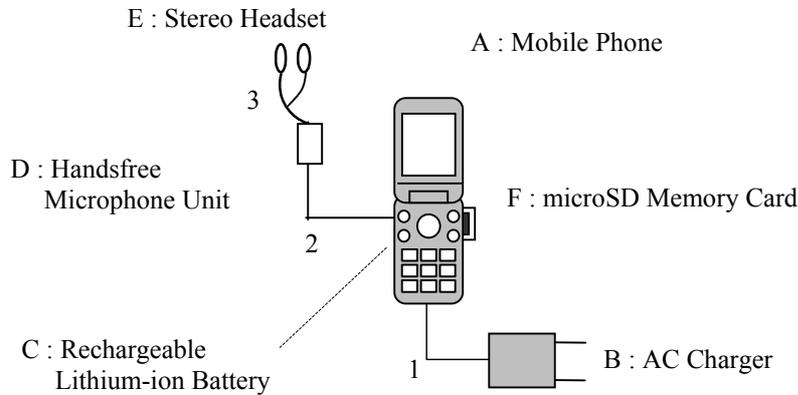
4.1 Operating Mode(s)

Test	Mode	Tested frequency
Conducted Emission	Bluetooth (BT), Transmitting (Tx), DH5, Payload: PRBS9	2402MHz 2441MHz 2480MHz
	Bluetooth (BT), Receiving (Rx)	2441MHz
Carrier Frequency Separation	Bluetooth (BT), Transmitting (Tx) (Hopping ON)/Inquiry, DH5 Payload: PRBS9	2402MHz 2441MHz 2480MHz
20dB Bandwidth	Bluetooth (BT), Transmitting (Tx) (Hopping Off)/Inquiry, DH5 Payload: PRBS9	2402MHz 2441MHz 2480MHz
Number of Hopping Frequency	Bluetooth (BT), Transmitting (Tx) (Hopping ON)/Inquiry, DH5 Payload: PRBS9	-
Dwell time	Bluetooth (BT), Transmitting (Tx) (Hopping ON)/Inquiry, Payload: PRBS9 -DH1 -DH3 -DH5	-
Maximum Peak Output Power	Bluetooth (BT), Transmitting (Tx) (Hopping Off)/Inquiry, Payload: PRBS9 -DH5	2402MHz 2441MHz 2480MHz
Spurious Emission (Conducted/Radiated)	Bluetooth (BT), Transmitting (Tx), DH5, Payload: PRBS9	2402MHz 2441MHz 2480MHz
	Bluetooth(BT), Receiving (Rx)	2441MHz
Band Edge Compliance (Conducted)	Bluetooth(BT), Transmitting (Tx), DH5, Payload: PRBS9 -Hopping ON -Hopping OFF	2402MHz 2480MHz
99% Occupied Bandwidth	Bluetooth (BT), Transmitting (Tx), DH5, Payload: PRBS9 -Hopping ON -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 for the test.

4.2 Configuration and peripherals



* Cabling and setup(s) 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	Remarks
A	Cellular Phone	DM003SH	004401/11/157125/9 *1) 004401/11/157124/2 *2)	SHARP	EUT
B	AC Charger	ZTDAA1	-	SHARP	EUT
C	Rechargeable Lithium-ion Battery	SHBBX1	-	SHARP	-
D	Handsfree Microphone Unit	XN-1HU90	01	SMK	-
E	Stereo Headset	XN-1HS90	01	SMK	-
F	microSD Memory Card	-	37289024845	SanDisk	-

*1) Used for Antenna Terminal conducted test

*2) Used for Conducted Emission test and Radiated Emission test

List of cables used

No.	Name	Length (m)	Shield	
			Cable	Connector
1	AC Charger Cable	1.5	Unshielded	Unshielded
2	Handsfree Microphone Unit Cable	0.8	Unshielded	Unshielded
3	Stereo Headset Cable	0.9	Unshielded	Unshielded

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SECTION 5: Conducted Emission

Test Procedure and conditions

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

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

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

The EUT was connected to a LISN (AMN).

An overview sweep with peak detection has been performed.

Detector	: 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. The following spectrum analyzer setting was used:

- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

[Radiated]

Test Procedure

EUT was placed on urethane 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.

In any 100kHz bandwidth outside the restricted 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 or RBW:1MHz/VBW:270Hz *1) 20dBc : RBW:100kHz/VBW:300kHz

*1) Used for the band edge of the carrier and the harmonics that can be measured. The VBW is based on the inverse of the duty cycle (see page 42).

- 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

20dB Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.
The following spectrum analyzer setting was used:

- Span: 3MHz
- RBW: 30kHz
- VBW: 100kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

Test data : APPENDIX 2
Test result : Pass

99% Occupied Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.
The following spectrum analyzer setting was used:

- Span: Enough width to display 20dB Bandwidth
- RBW: 1 to 3% of Span
- VBW: Three times of RBW
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

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. The following spectrum analyzer setting was used:

- Span: 3MHz and 5MHz
- RBW: 100kHz
- VBW: 300kHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

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.
The following spectrum analyzer setting was used:

- Span: 30MHz
- RBW: 300kHz
- VBW: 1MHz
- Sweep: Auto
- Detector: Peak
- Trace: Max Hold

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.
The following spectrum analyzer setting was used:

- Span: Zero Span
- RBW: 1MHz
- VBW: 3MHz
- Sweep: as necessary to capture the entire dwell time per hopping channel
- Detector: Peak
- Trace: Max Hold

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: Z-axis/ Vertical:Y-axis)

This page has been submitted for a separate exhibit.

APPENDIX 2: Data of EMI test

Conducted Emission
Tx, Ch:Low (DH5)

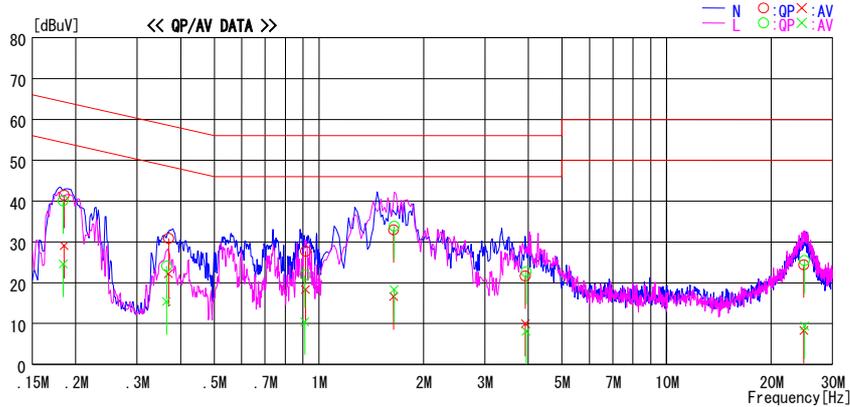
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/04

Company : Sharp Corporation
Kind of EUT : Cellular Phone
Model No. : DM003SH
Serial No. : 004401/11/157124/2
Report No. : 29AE0089-HO
Power : DC 4.0V(AC Charger 120V / 60Hz)
Temp./Humi. : 23deg.C / 68%
Engineer : Takeshi Choda

Mode / Remarks : BT DH5 Transmitting 2402MHz

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.18506	41.3	28.9	0.2	41.5	29.1	64.3	54.3	22.8	25.2	N
0.36962	30.6	21.9	0.3	30.9	22.2	58.5	48.5	27.6	26.3	N
0.91494	27.3	17.9	0.4	27.7	18.3	56.0	46.0	28.3	27.7	N
1.64019	32.5	16.1	0.5	33.0	16.6	56.0	46.0	23.0	29.4	N
3.92456	20.9	9.2	0.8	21.7	10.0	56.0	46.0	34.3	36.0	N
24.81939	21.9	5.8	2.5	24.4	8.3	60.0	50.0	35.6	41.7	N
0.18381	39.9	24.4	0.2	40.1	24.6	64.3	54.3	24.2	29.7	L
0.36467	23.8	15.1	0.3	24.1	15.4	58.6	48.6	34.5	33.2	L
0.91102	21.5	10.0	0.4	21.9	10.4	56.0	46.0	34.1	35.6	L
1.64578	33.4	17.8	0.5	33.9	18.3	56.0	46.0	22.1	27.7	L
3.94274	21.9	7.3	0.8	22.7	8.1	56.0	46.0	33.3	37.9	L
24.92860	23.0	6.9	2.5	25.5	9.4	60.0	50.0	34.5	40.6	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 rounded off to one or two decimal places, so some differences might be observed.

Conducted Emission
Tx, Ch:Mid (DH5)

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
 Date : 2008/09/04

Company	: Sharp Corporation	Report No.	: 29AE0089-HO
Kind of EUT	: Cellular Phone	Power	: DC 4.0V (AC Charger 120V / 60Hz)
Model No.	: DM003SH	Temp./Humi.	: 23deg. C / 68%
Serial No.	: 004401/11/157124/2	Engineer	: Takeshi Choda

Mode / Remarks : BT DH5 Transmitting 2441MHz

LIMIT : FCC15.207 QP
 FCC15.207 AV

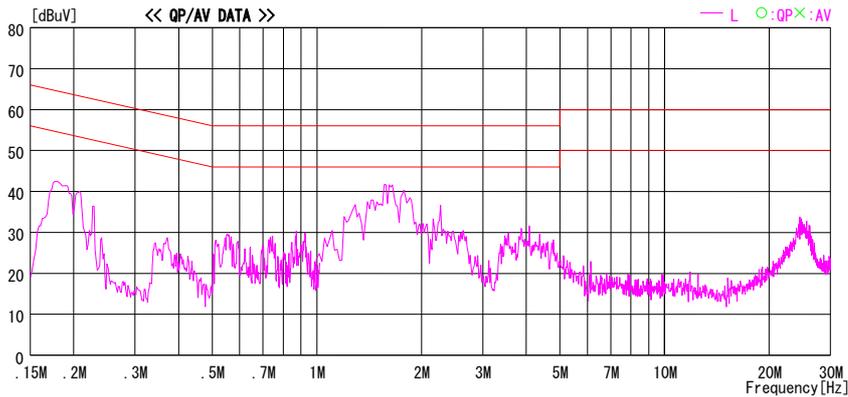
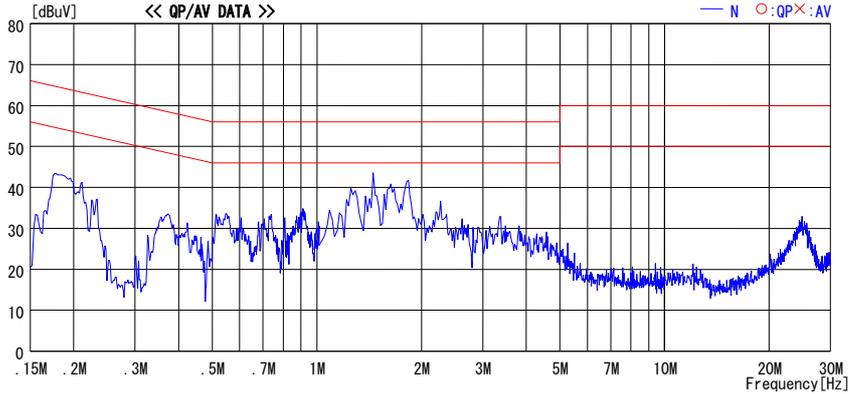


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission Tx, Ch:High (DH5)

DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/04

Company : Sharp Corporation
Kind of EUT : Cellular Phone
Model No. : DM003SH
Serial No. : 004401/11/157124/2
Report No. : 29AE0089-HO
Power : DC 4.0V (AC Charger 120V / 60Hz)
Temp./Humi. : 23deg. C / 68%
Engineer : Takeshi Choda

Mode / Remarks : BT DH5 Transmitting 2480MHz

LIMIT : FCC15.207 QP
FCC15.207 AV

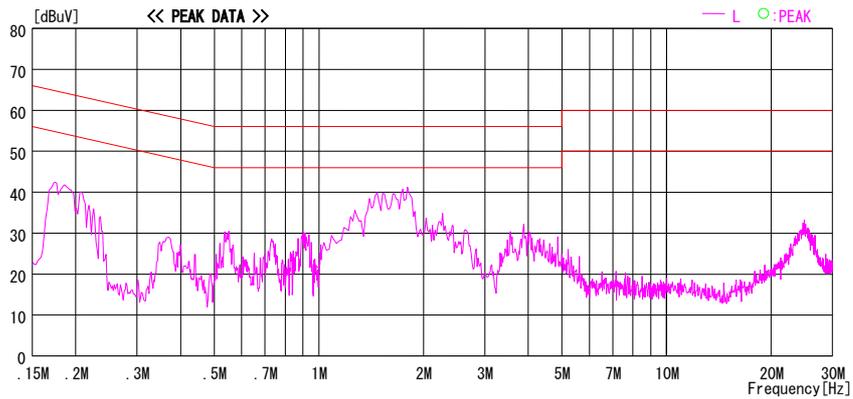
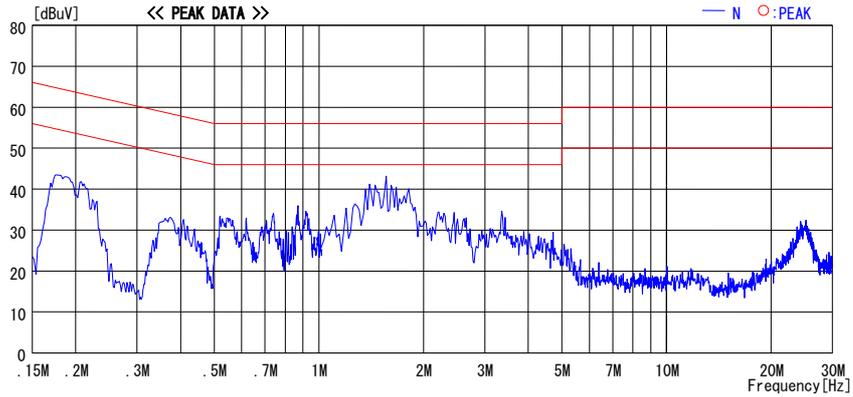


CHART: WITH FACTOR, Peak hold data. CALCULATION: RESULT[dBuV]=READING[dBuV]+C.F[dB] (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission Rx, Ch:Mid (DH5)

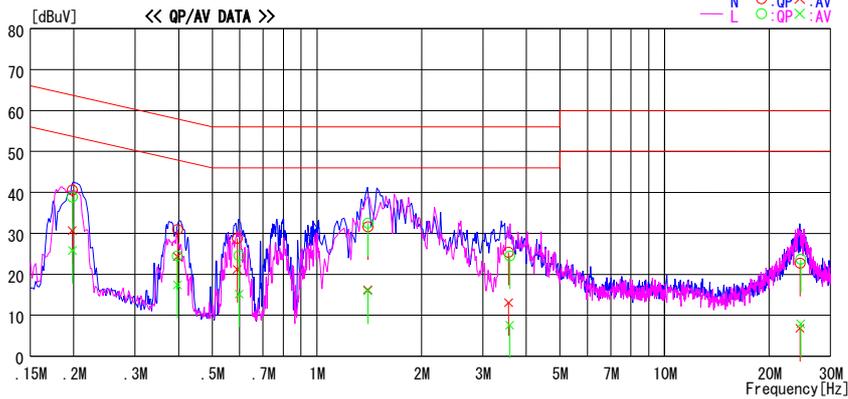
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/04

Company : Sharp Corporation
Kind of EUT : Cellular Phone
Model No. : DM003SH
Serial No. : 004401/11/157124/2
Report No. : 29AE0089-HO
Power : DC 4.0V (AC Charger 120V / 60Hz)
Temp./Humi. : 23deg. C / 68%
Engineer : Takeshi Choda

Mode / Remarks : BT Receiving 2441MHz

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]	
0.19802	40.4	30.5	0.2	40.6	30.7	63.7	53.7	23.1	23.0	N
0.39750	30.7	24.0	0.3	31.0	24.3	57.9	47.9	26.9	23.6	N
0.59004	28.5	20.9	0.3	28.8	21.2	56.0	46.0	27.2	24.8	N
1.40096	31.1	15.7	0.5	31.6	16.2	56.0	46.0	24.4	29.8	N
3.56159	24.6	12.3	0.8	25.4	13.1	56.0	46.0	30.6	32.9	N
24.51103	20.2	4.3	2.5	22.7	6.8	60.0	50.0	37.3	43.2	N
0.19812	38.7	25.6	0.2	38.9	25.8	63.7	53.7	24.8	27.9	L
0.39687	24.2	17.1	0.3	24.5	17.4	57.9	47.9	33.4	30.5	L
0.59712	24.3	14.9	0.3	24.6	15.2	56.0	46.0	31.4	30.8	L
1.40127	32.0	15.4	0.5	32.5	15.9	56.0	46.0	23.5	30.1	L
3.58634	23.7	6.8	0.8	24.5	7.6	56.0	46.0	31.5	38.4	L
24.64451	21.2	5.4	2.5	23.7	7.9	60.0	50.0	36.3	42.1	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.

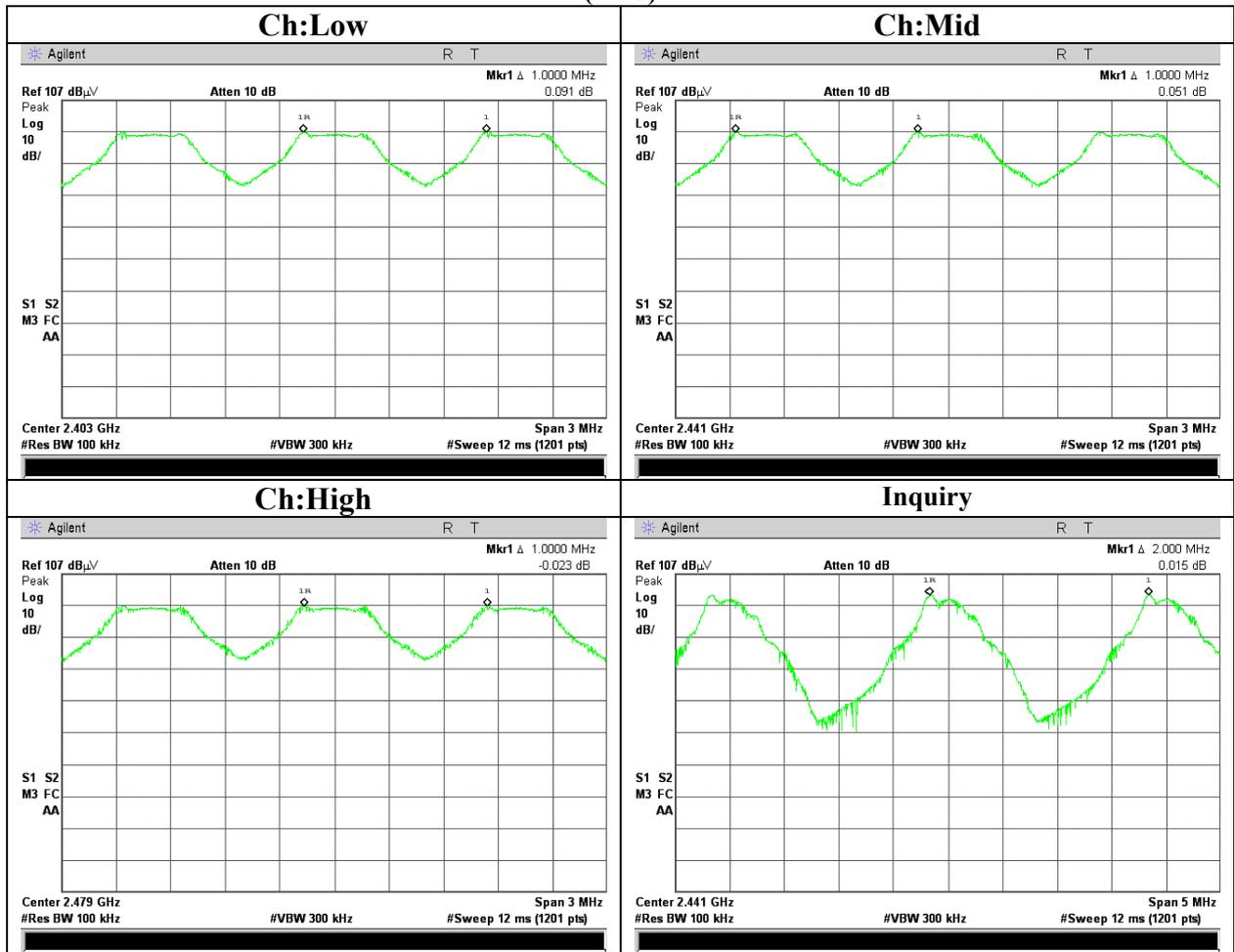
*The test result is rounded off to one or two decimal places, so some differences might be observed.

Carrier Frequency Separation
(DH5)

COMPANY : Sharp Corporation EQUIPMENT : Cellular Phone MODEL : DM003SH S/ N : 004401/11/157125/9 POWER : DC 4.0V (AC Charger 120V/60Hz) MODE : BT, Tx(Hopping on)/Inquiry, DH5	UL Japan, Inc. Head Office EMC Lab. No.5 semi-anechoic chamber Test Report No. : 29AE0089-HO REGULATION : FCC15.247(a)(1)/RSS-210A8.1(b) TEST DISTANCE : - DATE : 09/04/2008 TEMPERATURE : 24deg.C HUMIDITY : 58% ENGINEER : Kazuya Yoshioka
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Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.000	0.635 [MHz] (two-thirds of 20dB Bandwidth 0.953 [MHz])) or 25[kHz] (whichever is grater)
Mid	2441.0	1.000	0.630 [MHz] (two-thirds of 20dB Bandwidth 0.945 [MHz])) or 25[kHz] (whichever is grater)
High	2480.0	1.000	0.633 [MHz] (two-thirds of 20dB Bandwidth 0.950 [MHz])) or 25[kHz] (whichever is grater)
Inquiry	2441.0	2.000	0.558 [MHz] (two-thirds of 20dB Bandwidth 0.838 [MHz])) or 25[kHz] (whichever is grater)

**Carrier Frequency Separation
(DH5)**



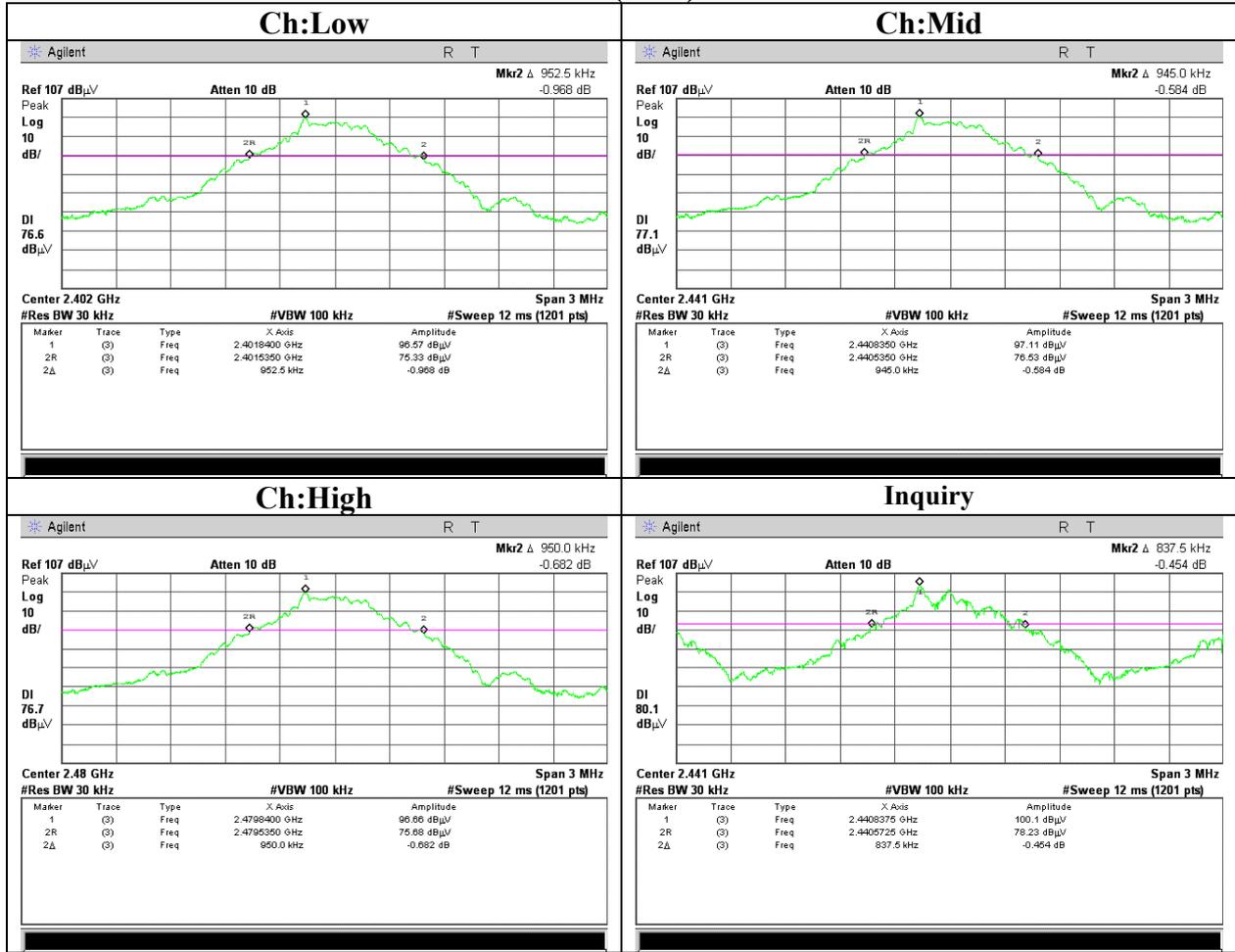
20dB Bandwidth
(DH5)

Company : Sharp Corporation
Equipment : Cellular Phone
Model No. : DM003SH
Serial No. : 004401/11/157125/9
Power : DC 4.0V (AC Charger 120V/60Hz)
Mode : BT, Tx (Hopping off) /Inquiry, DH5

UL Japan, Inc.
Head Office EMC Lab. No.5 semi-anechoic chamber
Test Report No. : 29AE0089-HO
Regulation : FCC15.247(a)(1)/RSS-210A8.1(a)
Test distance : -
Date : 09/04/2008
Temperature : 24deg.C
Humidity : 58%
Engineer : Kazuya Yoshioka

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.953	-
Mid	2441.0	0.945	-
High	2480.0	0.950	-
Inquiry	2441.0	0.837	-

20dB Bandwidth (DH5)



Number of Hopping Frequency

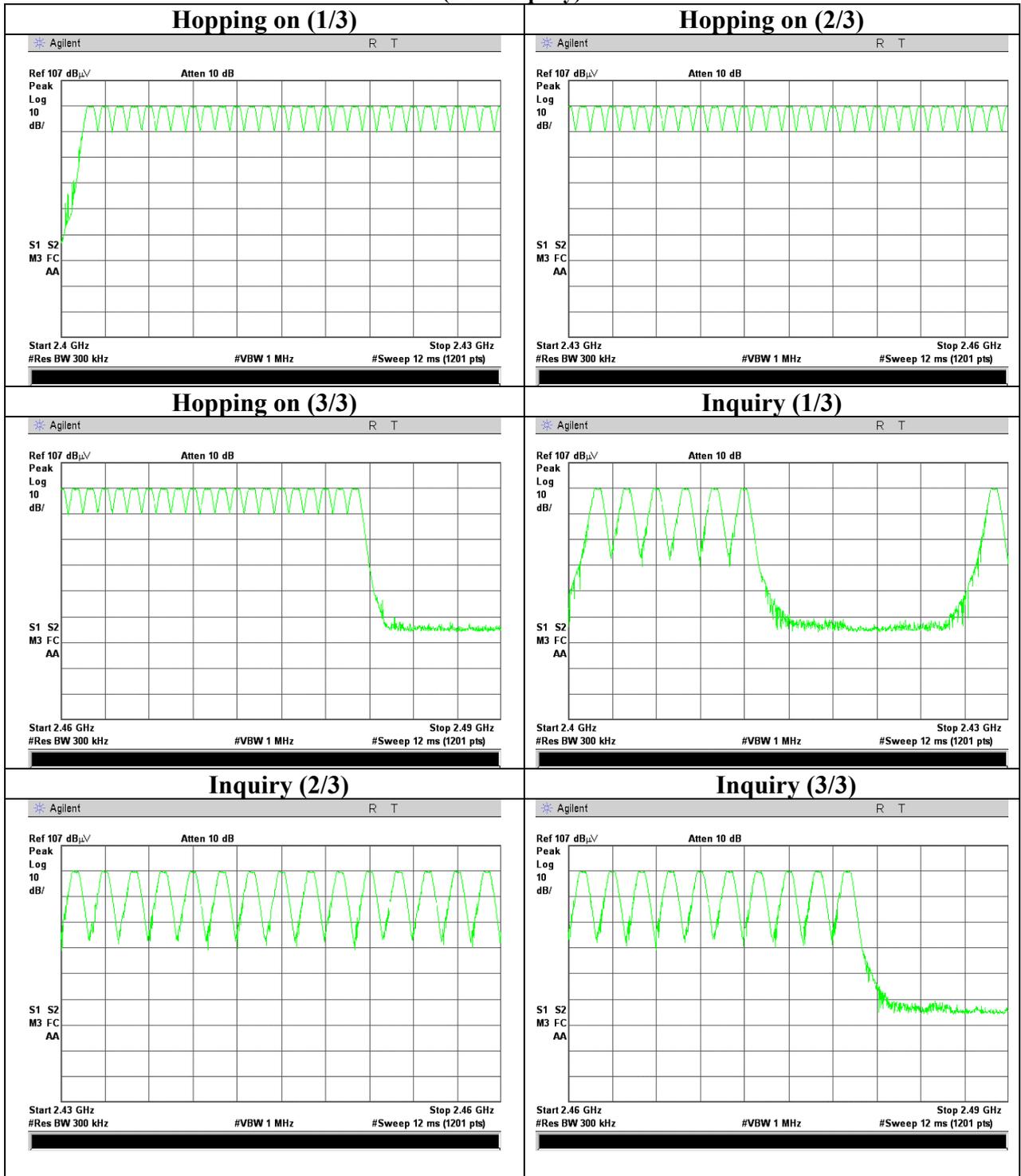
Company : Sharp Corporation
Equipment : Cellular Phone
Model No. : DM003SH
Serial No. : 004401/11/157125/9
Power : DC 4.0V (AC Charger 120V/60Hz)
Mode : BT, Tx (Hopping on)/Inquiry, DH5

UL Japan, Inc.
Head Office EMC Lab. No.5 semi-anechoic chamber
Test Report No. : 29AE0089-HO
Regulation : FCC15.247(a)(1)(iii)/RSS-210A8.1(d)
Test distance : -
Date : 09/04/2008
Temperature : 24deg.C
Humidity : 58%
Engineer : Kazuya Yoshioka

Mode	Number of channel [number]	Limit [time]
DH5	79	≥15

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

**Number of Hopping Frequency
(DH5/Inquiry)**



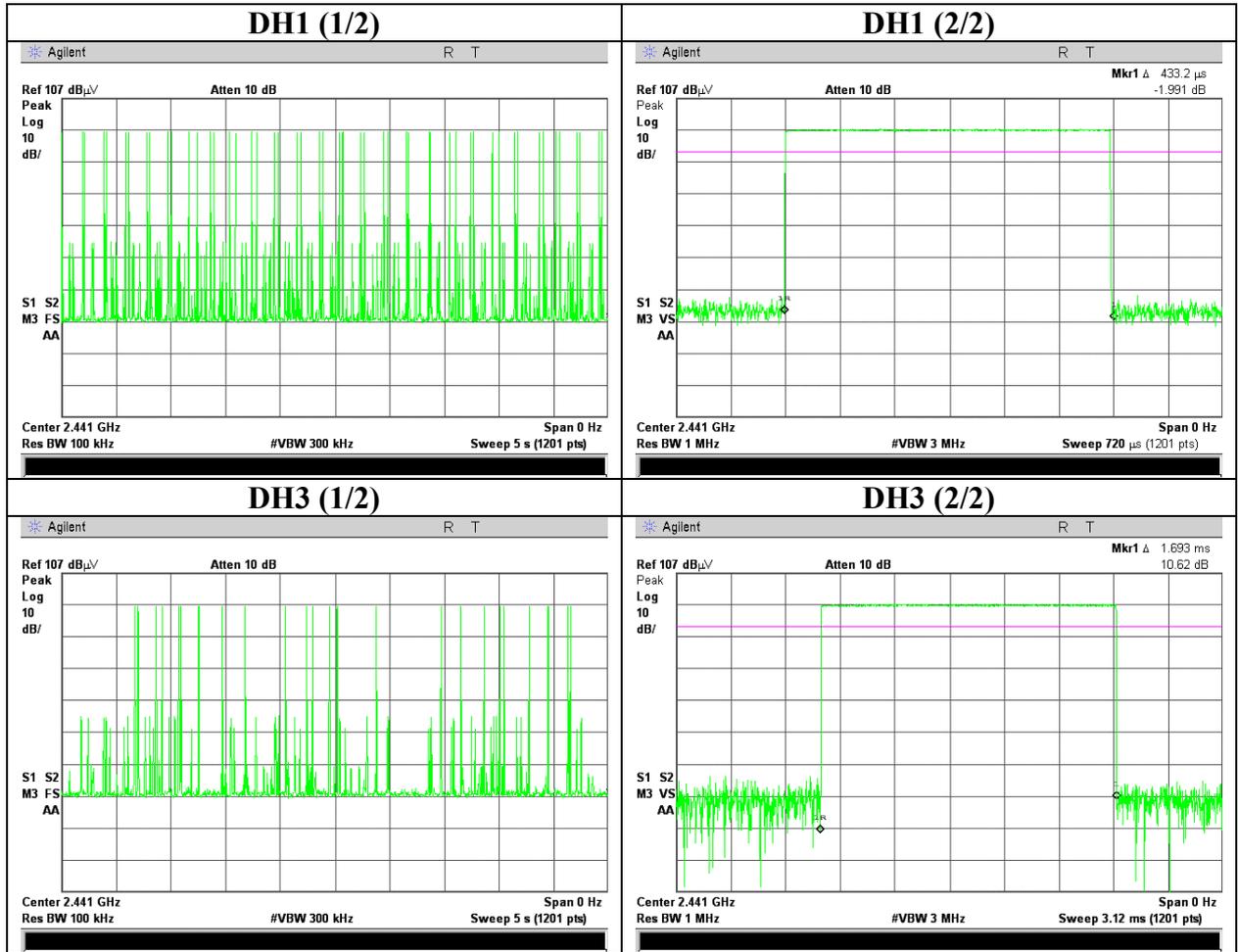
Dwell time

<p>Company : Sharp Corporation Equipment : Cellular Phone Model No. : DM003SH Serial No. : 004401/11/157125/9 Power : DC 4.0V (AC Charger 120V/60Hz) Mode : BT, Tx (Hopping on)/Inquiry</p>	<p>UL Japan, Inc. Head Office EMC Lab. No.5 semi-anechoic chamber Test Report No. : 29AE0089-HO Regulation : FCC15.247(a)(1)(iii)/RSS-210A8.1(d) Test distance : - Date : 09/04/2008 Temperature : 24deg.C Humidity : 58% Engineer : Kazuya Yoshioka</p>
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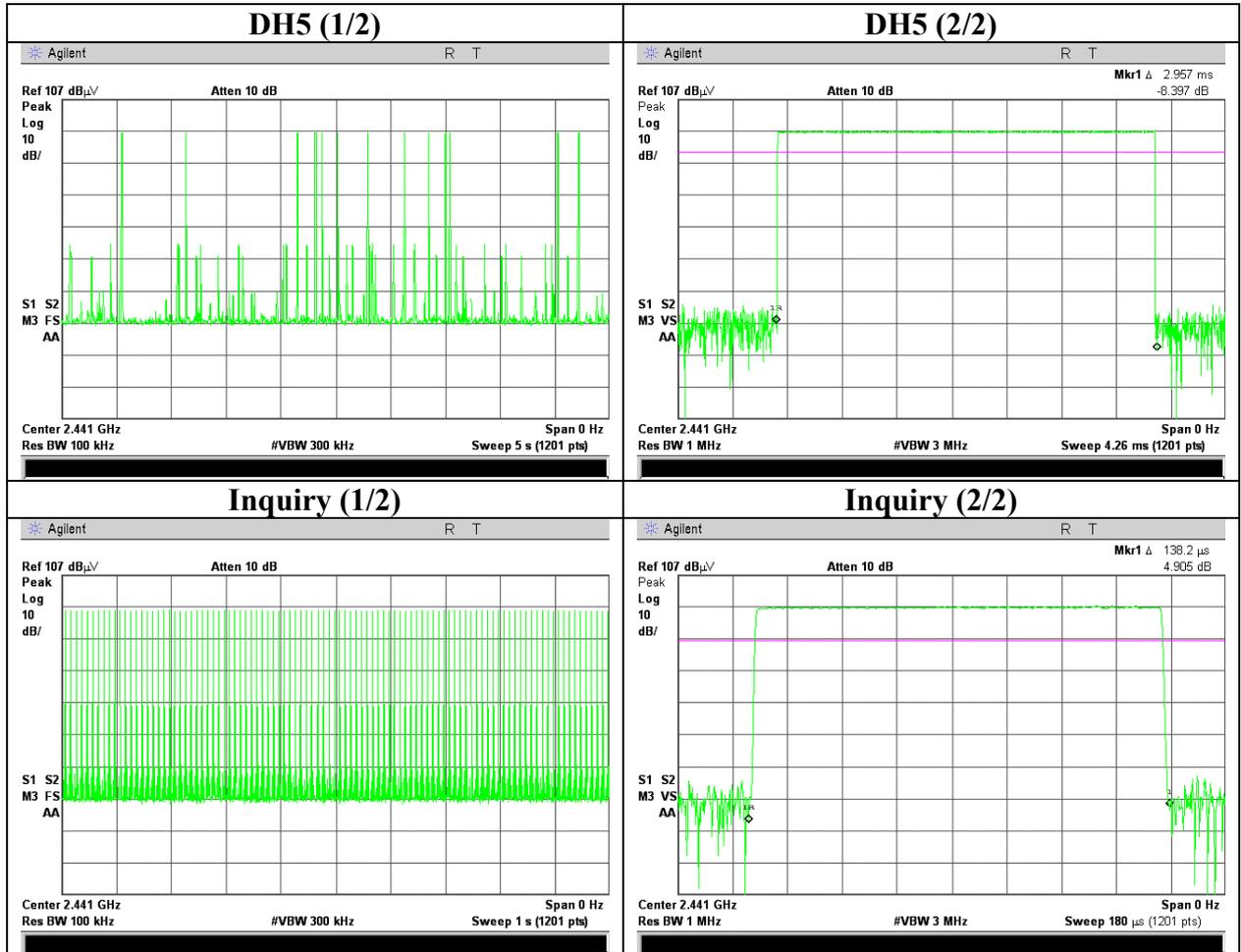
Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	51.2 times / 5 sec. x 31.6 sec. = 324 times	0.433	140	400
DH3	29.2 times / 5 sec. x 31.6 sec. = 185 times	1.693	313	400
DH5	19.4 times / 5 sec. x 31.6 sec. = 123 times	2.957	364	400
Inquiry	100.0 times / 1 sec. x 12.8 sec. = 1280 times	0.138	177	400

* Average data of 5 tests.(except Inquiry)
*DH1 / 1:51 2:51 3:51 4:52 5:51 =51.2times
*DH3 / 1:29 2:28 3:31 4:30 5:28 =29.2times
*DH5 / 1:19 2:20 3:19 4:19 5:20 =19.4times

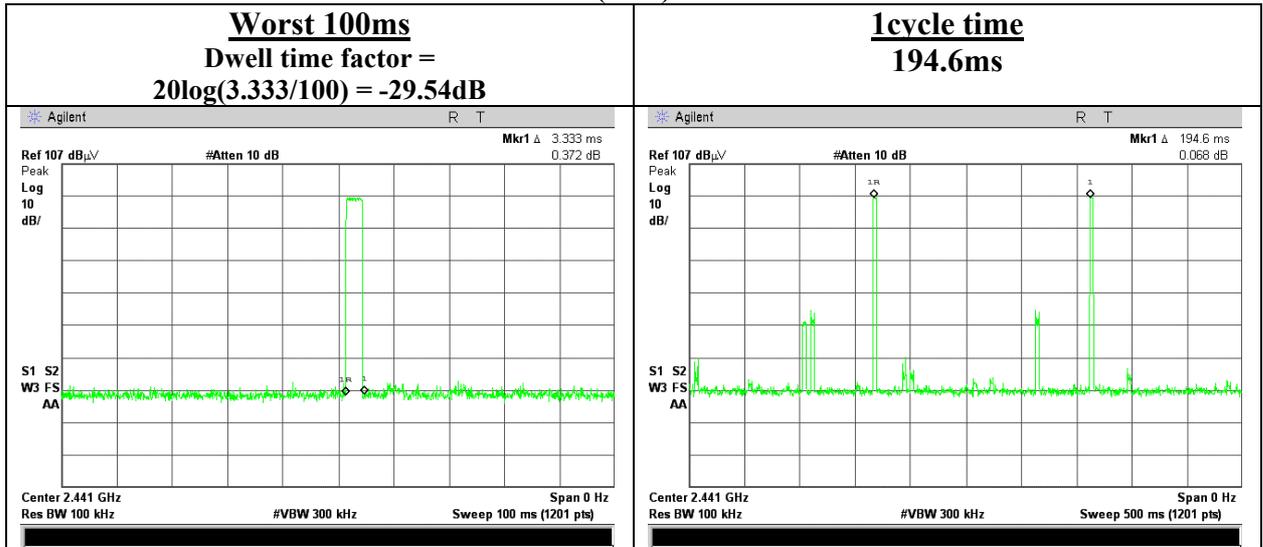
Dwell time



Dwell time



Dwell time factor
(DH5)



Maximum Peak Output Power
(DH5)

UL Japan, Inc.
Head Office EMC Lab. No.5 semi-anechoic chamber

Company	: Sharp Corporation	Test Report No.	: 29AE0089-HO
Equipment	: Cellular Phone	Regulation	: FCC15.247(b)(1)/RSS-210A8.4(2)
Model No.	: DM003SH	Test distance	: -
Serial No.	: 004401/11/157125/9	Date	: 09/04/2008
Power	: DC 4.0V (AC Charger 120V/60Hz)	Temperature	: 24deg.C
Mode	: BT, Tx(Hopping Off)/Inquiry, DH5	Humidity	: 58%
		Engineer	: Kazuya Yoshioka

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-8.33	0.15	9.98	1.80	1.51	20.97	125	19.17
Mid	2441.0	-8.36	0.15	9.98	1.77	1.50	20.97	125	19.20
High	2480.0	-8.38	0.15	9.98	1.75	1.50	20.97	125	19.22
Inquiry	2441.0	-8.41	0.15	9.98	1.72	1.49	20.97	125	19.25

Sample Calculation:

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

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

Radiated Spurious Emission (below 1GHz)
Tx, Ch:Low (DH5)

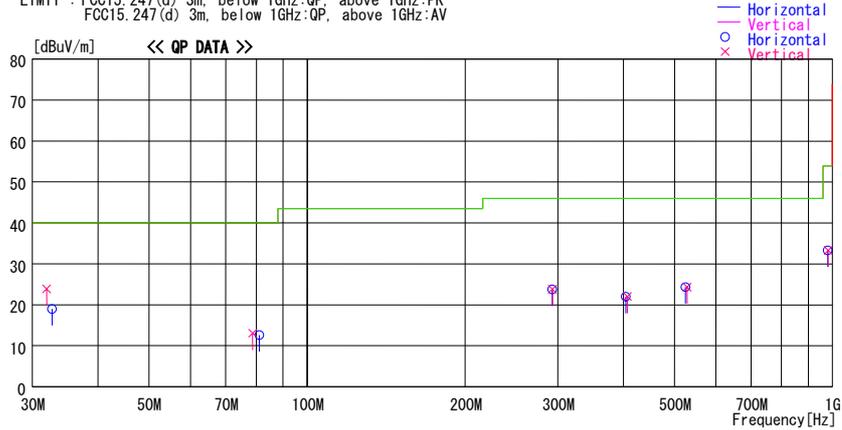
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/04

Company : Sharp Corporation Report No. : 29AE0089-HO
Kind of EUT : Cellular Phone Power : DC 4.0V (AC Charger 120V / 60Hz)
Model No. : DM003SH Temp./Humi. : 23deg. C / 68%
Serial No. : 004401/11/157124/2 Engineer : Takeshi Choda

Mode / Remarks : BT DH5 Transmitting 2402MHz, Worst-axis (Hor:Y Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss& Gain [dB]							
31.918	27.4	QP	17.9	-21.4	23.9	225	100	Vert.	40.0	16.1	
32.705	22.9	QP	17.5	-21.4	19.0	154	204	Hori.	40.0	21.0	
78.775	27.0	QP	6.4	-20.4	13.0	231	100	Vert.	40.0	27.0	
81.059	26.3	QP	6.6	-20.3	12.6	214	250	Hori.	40.0	27.4	
292.697	21.6	QP	19.6	-17.4	23.8	0	100	Hori.	46.0	22.2	
293.007	21.6	QP	19.6	-17.4	23.8	0	100	Vert.	46.0	22.2	
404.465	22.3	QP	16.7	-17.0	22.0	166	100	Hori.	46.0	24.0	
407.141	22.3	QP	16.7	-17.0	22.0	359	100	Vert.	46.0	24.0	
524.700	22.8	QP	18.4	-16.9	24.3	0	100	Hori.	46.0	21.7	
529.268	22.7	QP	18.5	-16.9	24.3	332	100	Vert.	46.0	21.7	
980.078	23.2	QP	23.8	-13.7	33.3	359	100	Hori.	53.9	20.6	
981.271	23.2	QP	23.8	-13.7	33.3	0	100	Vert.	53.9	20.6	

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 rounded off to one or two decimal places, so some differences might be observed.

Radiated Spurious Emission (below 1GHz)
Tx, Ch:Mid (DH5)

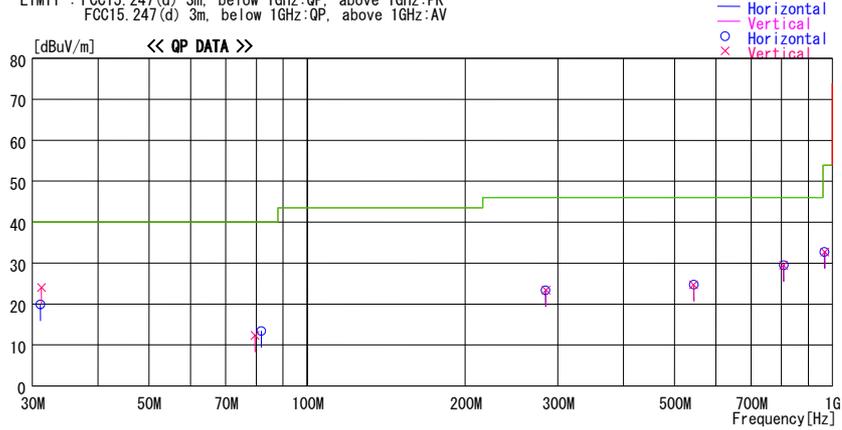
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/05

Company : Sharp Corporation
Kind of EUT : Cellular Phone
Model No. : DMO03SH
Serial No. : 004401/11/157124/2
Report No. : 29AE0089-HO
Power : DC 4.0V (AC Charger 120V / 60Hz)
Temp./Humi. : 23deg. C / 68%
Engineer : Takeshi Choda

Mode / Remarks : BT DH5 Transmitting 2441MHz, Worst-axis (Hor:Y Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss & Gain [dB]							
31.082	23.0	QP	18.3	-21.4	19.9	343	326	Hori.	40.0	20.1	
31.215	27.2	QP	18.2	-21.4	24.0	265	100	Vert.	40.0	16.0	
79.597	26.3	QP	6.4	-20.4	12.3	341	100	Vert.	40.0	27.7	
81.798	27.0	QP	6.7	-20.3	13.4	225	228	Hori.	40.0	26.6	
284.492	21.6	QP	19.2	-17.4	23.4	0	100	Hori.	46.0	22.6	
284.848	21.6	QP	19.2	-17.4	23.4	336	100	Vert.	46.0	22.6	
544.526	22.8	QP	18.7	-16.8	24.7	0	100	Vert.	46.0	21.3	
544.233	22.8	QP	18.7	-16.8	24.7	358	100	Hori.	46.0	21.3	
808.026	23.0	QP	21.5	-15.0	29.5	0	100	Hori.	46.0	16.5	
807.023	23.0	QP	21.5	-15.0	29.5	359	100	Vert.	46.0	16.5	
965.925	23.2	QP	23.3	-13.8	32.7	359	100	Hori.	53.9	21.2	
967.899	23.1	QP	23.4	-13.8	32.7	0	100	Vert.	53.9	21.2	

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

*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 (DH5)

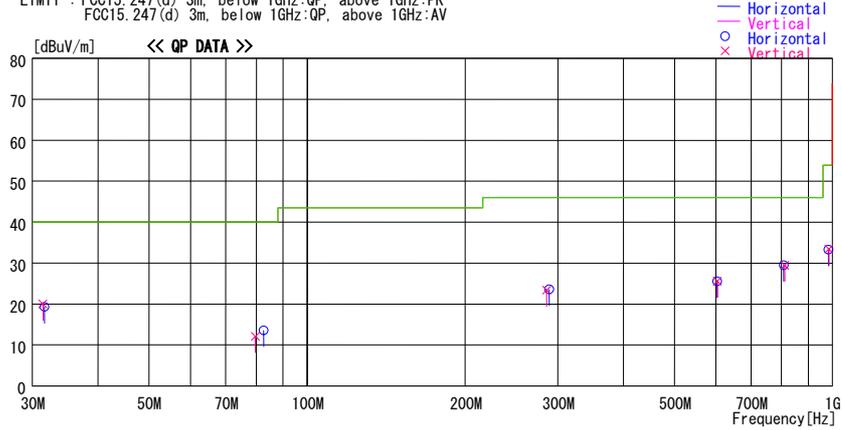
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/05

Company : Sharp Corporation
Kind of EUT : Cellular Phone
Model No. : DMO03SH
Serial No. : 004401/11/157124/2
Report No. : 29AE0089-HO
Power : DC 4.0V (AC Charger 120V / 60Hz)
Temp./Humi. : 23deg. C / 68%
Engineer : Takeshi Choda

Mode / Remarks : BT DH5 Transmitting 2480MHz, Worst-axis (Hor:Y Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency	Reading	DET	Antenna Factor	Loss & Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
31.428	23.3	QP	18.1	-21.4	20.0	135	0	Vert.	40.0	20.0	
31.631	22.7	QP	18.0	-21.4	19.3	0	100	Hori.	40.0	20.7	
79.734	26.1	QP	6.4	-20.4	12.1	357	100	Vert.	40.0	27.9	
82.668	27.0	QP	6.9	-20.3	13.6	283	223	Hori.	40.0	26.4	
285.775	21.6	QP	19.2	-17.4	23.4	42	100	Vert.	46.0	22.6	
289.022	21.6	QP	19.4	-17.4	23.6	358	100	Hori.	46.0	22.4	
603.079	22.9	QP	19.2	-16.6	25.5	359	100	Hori.	46.0	20.5	
603.653	23.0	QP	19.2	-16.6	25.6	359	100	Vert.	46.0	20.4	
807.575	23.0	QP	21.5	-15.0	29.5	0	100	Hori.	46.0	16.5	
811.207	23.0	QP	21.5	-15.0	29.5	359	100	Vert.	46.0	16.5	
984.817	23.2	QP	23.9	-13.7	33.4	0	100	Vert.	53.9	20.5	
982.782	23.2	QP	23.8	-13.7	33.3	359	100	Hori.	53.9	20.6	

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 rounded off to one or two decimal places, so some differences might be observed.

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

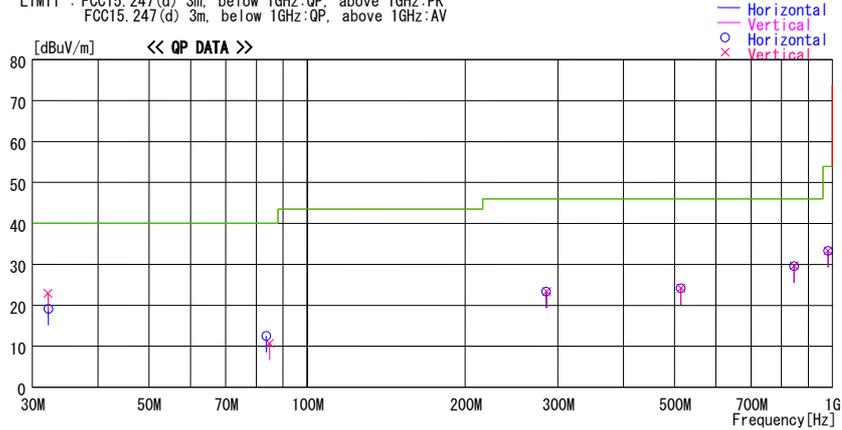
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber
Date : 2008/09/05

Company : Sharp Corporation Report No. : 29AE0089-HO
Kind of EUT : Cellular Phone Power : DC 4.0V (AC Charger 120V / 60Hz)
Model No. : DM003SH Temp./Humi. : 23deg. C / 68%
Serial No. : 004401/11/157124/2 Engineer : Takeshi Choda

Mode / Remarks : BT Receiving 2441MHz, Worst-axis (Hor:Y Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK
FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Loss& Gain [dB]							
32.117	26.5	QP	17.8	-21.4	22.9	5	100	Vert.	40.0	17.1	
32.164	22.8	QP	17.8	-21.4	19.2	286	300	Hori.	40.0	20.8	
83.567	25.8	QP	7.0	-20.3	12.5	236	226	Hori.	40.0	27.5	
84.846	23.7	QP	7.3	-20.3	10.7	198	100	Vert.	40.0	29.3	
285.033	21.6	QP	19.2	-17.4	23.4	359	100	Hori.	46.0	22.6	
285.847	21.6	QP	19.2	-17.4	23.4	359	100	Vert.	46.0	22.6	
514.312	22.9	QP	18.3	-17.0	24.2	359	100	Hori.	46.0	21.8	
514.642	22.9	QP	18.3	-17.0	24.2	359	100	Vert.	46.0	21.8	
844.814	23.0	QP	21.4	-14.8	29.6	0	100	Hori.	46.0	16.4	
845.634	23.0	QP	21.4	-14.8	29.6	0	100	Vert.	46.0	16.4	
981.370	23.2	QP	23.8	-13.7	33.3	359	100	Hori.	53.9	20.6	
980.682	23.2	QP	23.8	-13.7	33.3	0	100	Vert.	53.9	20.6	

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 rounded off to one or two decimal places, so some differences might be observed.

Radiated Spurious Emission (above 1GHz)
Tx, Ch:Low (DH5)

Company	: Sharp Corporation	UL Japan, Inc.	
Equipment	: Cellular Phone	Head Office EMC Lab. No.1 Semi Anechoic Chamber	
Model	: DM003SH	Regulation	: FCC15.247(d) / RSS-210 A8.5
S/N	: 004401/11/157124/2	Test Distance	: 3m (1G-10GHz) / 1m (above10GHz)
Power	: DC 4.0V (AC Charger 120 V / 60 Hz)	Date	: 09/04/2008
Mode	: Transmitting 2402 MHz	Temperature	: 23 deg.C.
Position	: Hor Y-axis, Ver Z-axis	Humidity	: 68 %
		Engineer	: Takeshi Choda

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	2390.00	50.4	50.0	26.8	36.0	2.7	0.0	-	43.9	43.5	73.9	30.0	30.4
2**	2400.00	74.7	76.5	26.8	36.0	2.7	0.0	-	68.2	70.0	73.9	-	-
3	4804.00	55.7	57.8	31.2	35.5	3.5	0.7	-	55.6	57.7	73.9	18.3	16.2
4	7206.00	45.8	51.0	35.5	35.5	4.9	0.6	-	51.3	56.5	73.9	22.6	17.4
5	9608.00	46.2	50.4	38.6	36.2	5.6	0.9	-	55.1	59.3	73.9	18.8	14.6
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12010.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
7	14412.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
8	16814.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
9	19216.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
10	21618.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
11	24020.00	50.6	50.4	39.8	34.8	7.8	0.0	-	53.9	53.7	73.9	20.0	20.2

** Reference data (Refer to next page(20dBc data sheet))

AV DETECT (RBW: 1MHz, VBW: 270Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [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	2390.00	37.4	38.1	26.8	36.0	2.7	0.0	-	30.9	31.6	53.9	23.0	22.3
2**	2400.00	50.6	52.2	26.8	36.0	2.7	0.0	-29.5	14.6	16.2	53.9	-	-
3	4804.00	50.2	51.9	31.2	35.5	3.5	0.7	-29.5	20.6	22.3	53.9	33.3	31.6
4	7206.00	32.6	37.8	35.5	35.5	4.9	0.6	-29.5	8.6	13.8	53.9	45.3	40.1
5	9608.00	33.2	37.7	38.6	36.2	5.6	0.9	-29.5	12.6	17.1	53.9	41.3	36.8
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
6	12010.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
7	14412.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
8	16814.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
9	19216.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
10	21618.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
11	24020.00	36.8	36.8	39.8	34.8	7.8	0.0	-29.5	10.6	10.6	53.9	43.3	43.3

** Reference data (Refer to next page(20dBc data sheet))

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3.0/1.0) = 9.5 dB

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

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

*Dwell time factor = 20log (Dwell time / 100ms) = 20log (3.333*10^-3 / 100*10^-3) = -29.5 dB (Refer to dwell time data sheet)

*In the frequency over the 6th harmonic, the noise from the EUT was not seen.The data above is its base noise.

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

*NS: No detect Signal.

Radiated Spurious Emission (above 1GHz)

**Tx, Ch:Low (DH5)
(20dBc data sheet)**

Company	: Sharp Corporation	UL Japan, Inc.
Equipment	: Cellular Phone	Head Office EMC Lab. No.1 Semi Anechoic Chamber
Model	: DM003SH	Regulation : FCC15.247(d) / RSS-210 A8.5
S/N	: 004401/11/157124/2	Test Distance : 3m (1G-10GHz)
Power	: DC 4.0V (AC Charger 120 V / 60 Hz)	Date : 09/04/2008
Mode	: Transmitting 2402 MHz	Temperature : 23 deg.C.
Position	: Hor Y-axis, Ver Z-axis	Humidity : 68 %
		Engineer : Takeshi Choda

20dBc (Fundamental 2402.0 MHz) (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 [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2402.00	102.8	104.5	26.8	36.0	2.7	0.0	96.3	98.0	-	-	-
2	2400.00	53.0	54.6	26.8	36.0	2.7	0.0	46.5	48.1	Funda-20dB	29.8	29.9

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

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

Radiated Spurious Emission (above 1GHz)
Tx, Ch:Mid (DH5)

Company : Sharp Corporation
Equipment : Cellular Phone
Model : DM003SH
S/N : 004401/11/157124/2
Power : DC 4.0V (AC Charger 120 V / 60 Hz)
Mode : Transmitting 2441 MHz
Position : Hor Y-axis, Ver Z-axis

UL Japan, Inc.
Head Office EMC Lab. No.1 Semi Anechoic Chamber
Regulation : FCC15.247(d) / RSS-210 A8.5
Test Distance : 3m (1G-10GHz) / 1m (above10GHz)
Date : 09/04/2008
Temperature : 23 deg.C.
Humidity : 68 %
Engineer : Takeshi Choda

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 [dBuV]	VER [dBuV]						HOR [dB]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4882.00	52.7	54.6	31.4	35.5	3.5	0.6	-	52.7	54.6	73.9	21.2	19.3
2	7323.00	46.2	45.9	35.7	35.5	4.9	0.6	-	51.9	51.6	73.9	22.0	22.3
3	9764.00	45.6	45.7	38.7	36.1	5.6	0.9	-	54.7	54.8	73.9	19.2	19.1
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
4	12205.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
5	14646.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
6	17087.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
7	19528.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
8	21969.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
9	24410.00	50.1	49.9	40.1	34.9	7.9	0.0	-	53.7	53.5	73.9	20.2	20.4

AV DETECT (RBW: 1MHz, VBW: 270Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV]	VER [dBuV]						HOR [dB]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	4882.00	45.7	48.1	31.4	35.5	3.5	0.6	-29.5	16.2	18.6	53.9	37.7	35.3
2	7323.00	33.3	33.4	35.7	35.5	4.9	0.6	-29.5	9.5	9.6	53.9	44.4	44.3
3	9764.00	32.8	32.8	38.7	36.1	5.6	0.9	-29.5	12.4	12.4	53.9	41.5	41.5
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
4	12205.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
5	14646.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
6	17087.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
7	19528.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
8	21969.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
9	24410.00	36.7	36.6	40.1	34.9	7.9	0.0	-29.5	10.8	10.7	53.9	43.1	43.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3.0/1.0) = 9.5 dB

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

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

*Dwell time factor = 20log (Dwell time / 100ms) = 20log (3.333*10^-3 / 100*10^-3) = -29.5 dB (Refer to dwell time data sheet)

*In the frequency over the 6th harmonic, the noise from the EUT was not seen.The data above is its base noise.

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

*NS: No detect Signal.

Radiated Spurious Emission (above 1GHz)
Tx, Ch:High (DH5)

Company : Sharp Corporation
Equipment : Cellular Phone
Model : DM003SH
S/N : 004401/11/157124/2
Power : DC 4.0V (AC Charger 120 V / 60 Hz)
Mode : Transmitting 2480 MHz
Position : Hor Y-axis, Ver Z-axis

UL Japan, Inc.
Head Office EMC Lab. No.1 Semi Anechoic Chamber
Regulation : FCC15.247(d) / RSS-210 A8.5
Test Distance : 3m (1G-10GHz) / 1m (above10GHz)
Date : 09/04/2008 : 09/05/2008
Temperature : 23 deg.C. : 25 deg.C.
Humidity : 68 % : 69 %
Engineer : Takeshi Choda : Takeshi Choda

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 [dBuV]	VER						HOR [dBuV/m]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2483.50	60.0	59.3	27.0	36.0	2.7	0.0	-	53.7	53.0	73.9	20.2	20.9
2	4960.00	49.7	52.7	31.5	35.5	3.5	0.6	-	49.8	52.8	73.9	24.1	21.1
3	7440.00	45.3	45.8	36.0	35.5	5.0	0.6	-	51.4	51.9	73.9	22.5	22.0
4	9920.00	45.3	45.3	38.9	36.1	5.6	0.9	-	54.6	54.6	73.9	19.3	19.3
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12400.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
6	14880.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
7	17360.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
8	19840.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
9	22320.00	NS	NS	-	-	-	-	-	-	-	73.9	-	-
10	24800.00	51.3	50.9	40.4	34.9	8.0	0.0	-	55.3	54.9	73.9	18.6	19.0

AV DETECT (RBW: 1MHz, VBW: 270Hz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV]	VER						HOR [dBuV/m]	VER [dB]			
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss													
1	2483.50	40.6	37.7	27.0	36.0	2.7	0.0	-29.5	4.8	1.9	53.9	49.1	52.0
2	4960.00	39.6	45.4	31.5	35.5	3.5	0.6	-29.5	10.2	16.0	53.9	43.7	37.9
3	7440.00	32.5	33.3	36.0	35.5	5.0	0.6	-29.5	9.1	9.9	53.9	44.8	44.0
4	9920.00	32.6	32.5	38.9	36.1	5.6	0.9	-29.5	12.4	12.3	53.9	41.5	41.6
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac													
5	12400.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
6	14880.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
7	17360.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
8	19840.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
9	22320.00	NS	NS	-	-	-	-	-29.5	-	-	53.9	-	-
10	24800.00	37.4	37.4	40.4	34.9	8.0	0.0	-29.5	11.9	11.9	53.9	42.0	42.0

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3.0/1.0) = 9.5 dB

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

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

*Dwell time factor = 20log (Dwell time / 100ms) = 20log (3.333*10^-3 / 100*10^-3) = -29.5 dB (Refer to dwell time data sheet)

*In the frequency over the 6th harmonic, the noise from the EUT was not seen.The data above is its base noise.

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

*NS: No detect Signal.

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

Company : Sharp Corporation
Equipment : Cellular Phone
Model : DM003SH
S/N : 004401/11/157124/2
Power : DC 4.0V (AC Charger 120 V / 60 Hz)
Mode : Receiving 2441 MHz
Position : Hor Y-axis, Ver Z-axis

UL Japan, Inc.
Head Office EMC Lab. No.1 Semi Anechoic Chamber
Regulation : FCC15.247(d) / RSS-210 A8.5
Test Distance : 3m (1G-10GHz)
Date : 09/04/2008
Temperature : 23 deg.C.
Humidity : 68 %
Engineer : Takeshi Choda

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
		[dBuV]						[dBuV/m]			[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2441.0	47.2	48.3	26.9	36.0	2.7	0.0	40.8	41.9	73.9	33.1	32.0
2	7323.0	44.8	45.4	35.7	35.5	4.6	0.0	49.6	50.2	73.9	24.3	23.7

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
		[dBuV]						[dBuV/m]			[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2441.0	32.9	32.9	26.9	36.0	2.7	0.0	26.5	26.5	53.9	27.4	27.4
2	7323.0	32.0	31.9	35.7	35.5	4.6	0.0	36.8	36.7	53.9	17.1	17.2

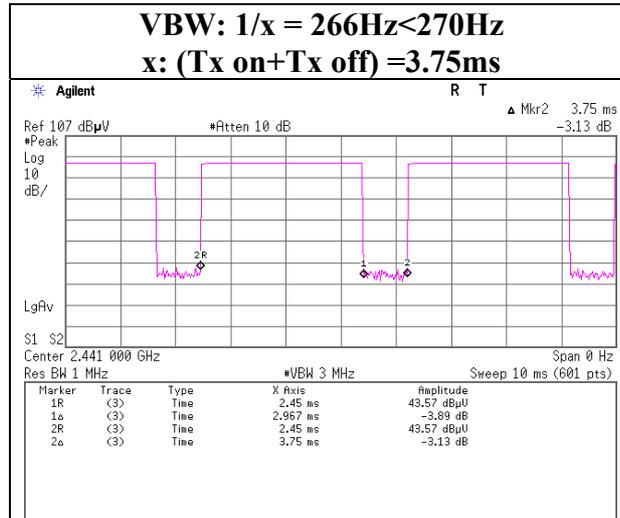
* Reference data

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

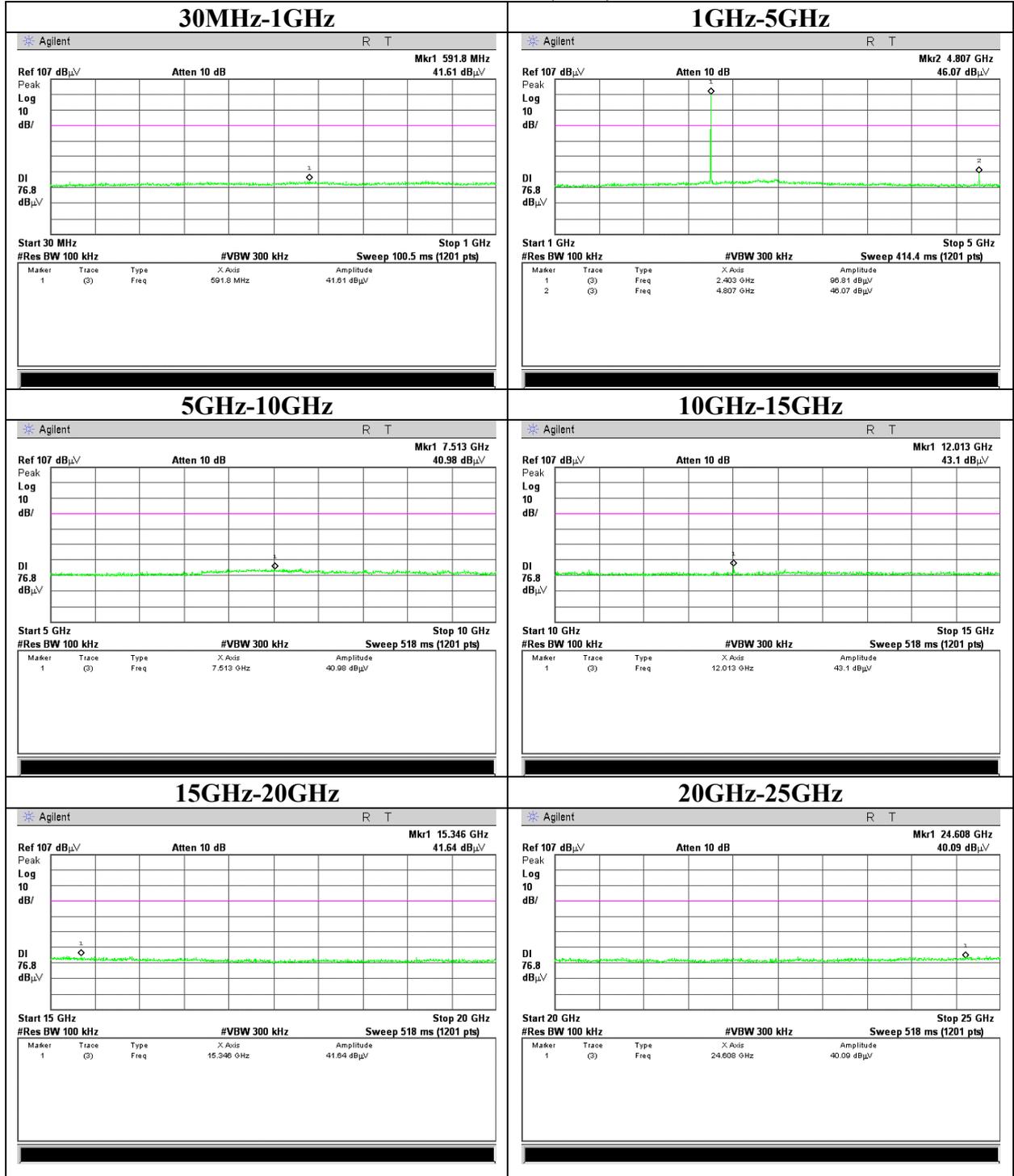
*The test result is rounded off to one or two decimal places, so some differences might be observed.

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

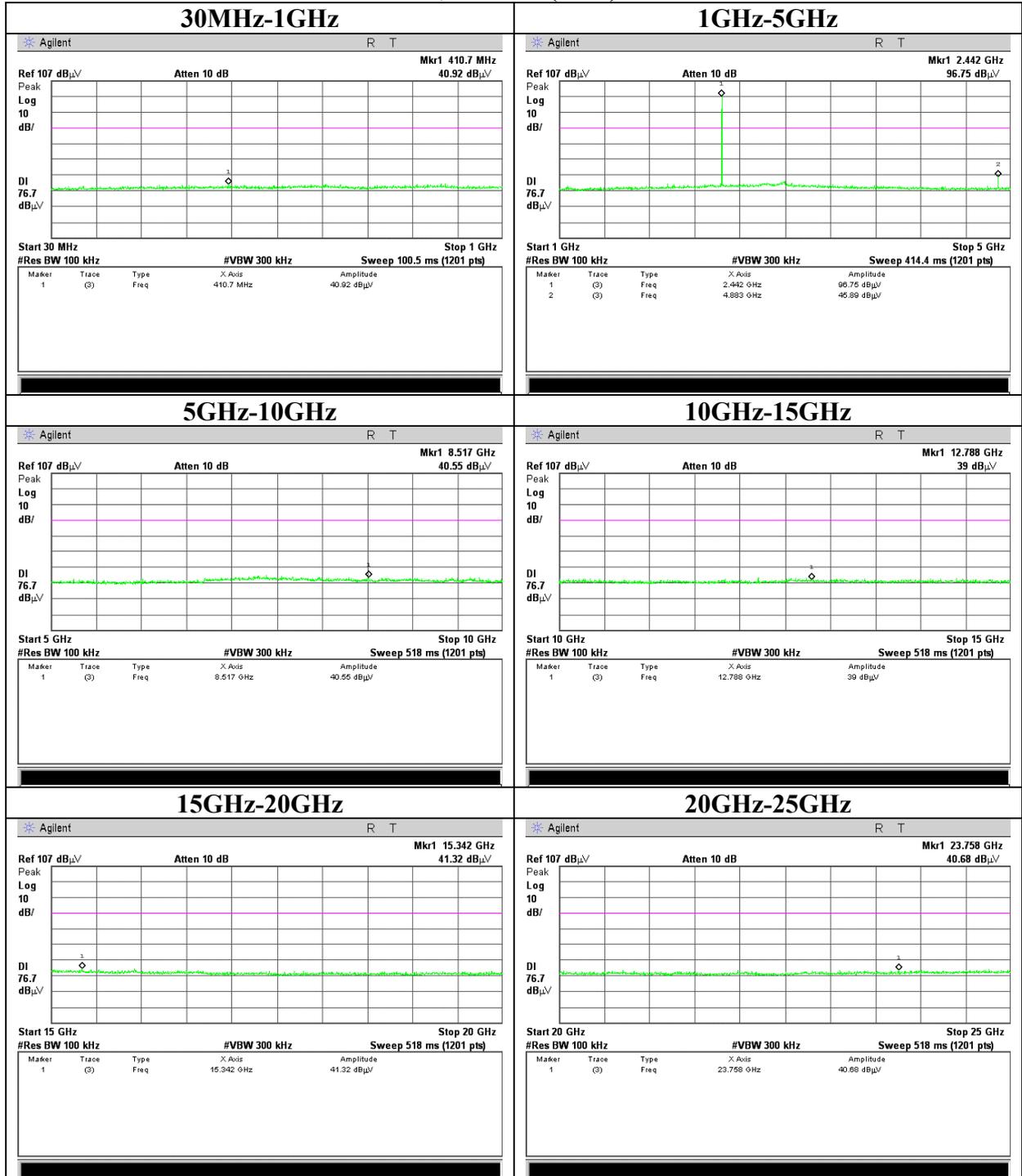
VBW (AV) Calculation



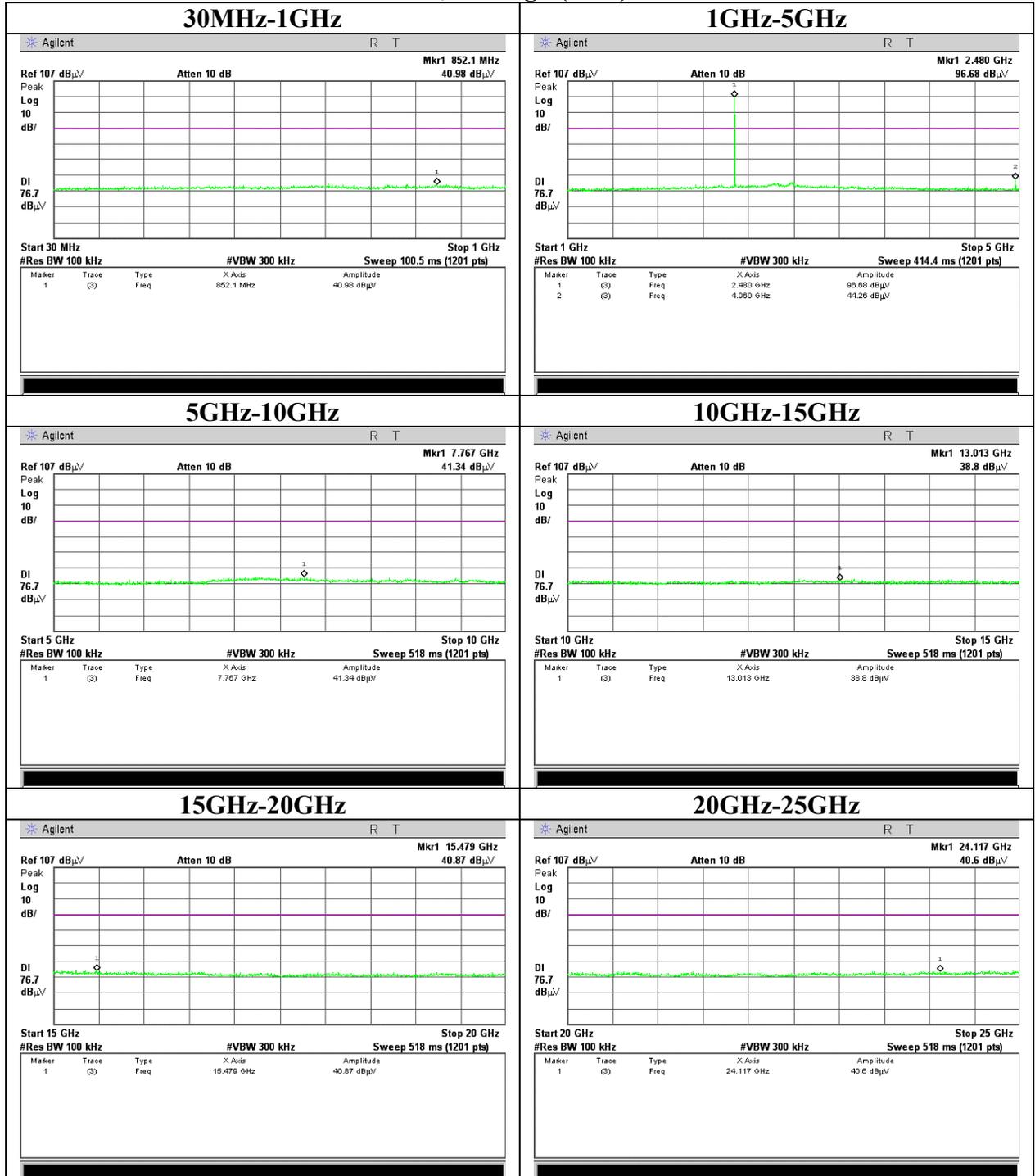
Conducted Spurious Emission
Tx, Ch:Low (DH5)



Conducted Spurious Emission
Tx, Ch:Mid (DH5)



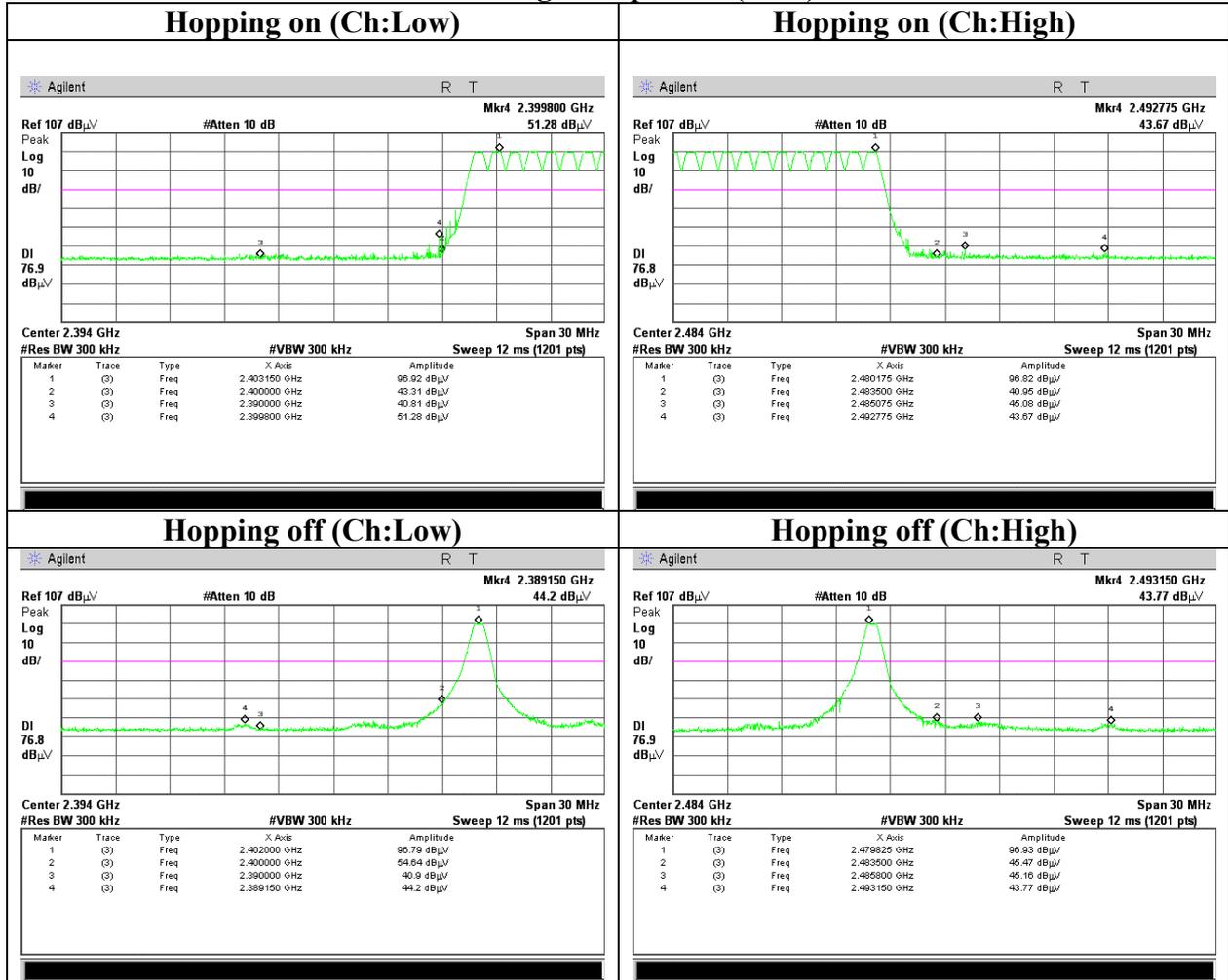
Conducted Spurious Emission
Tx, Ch:High (DH5)



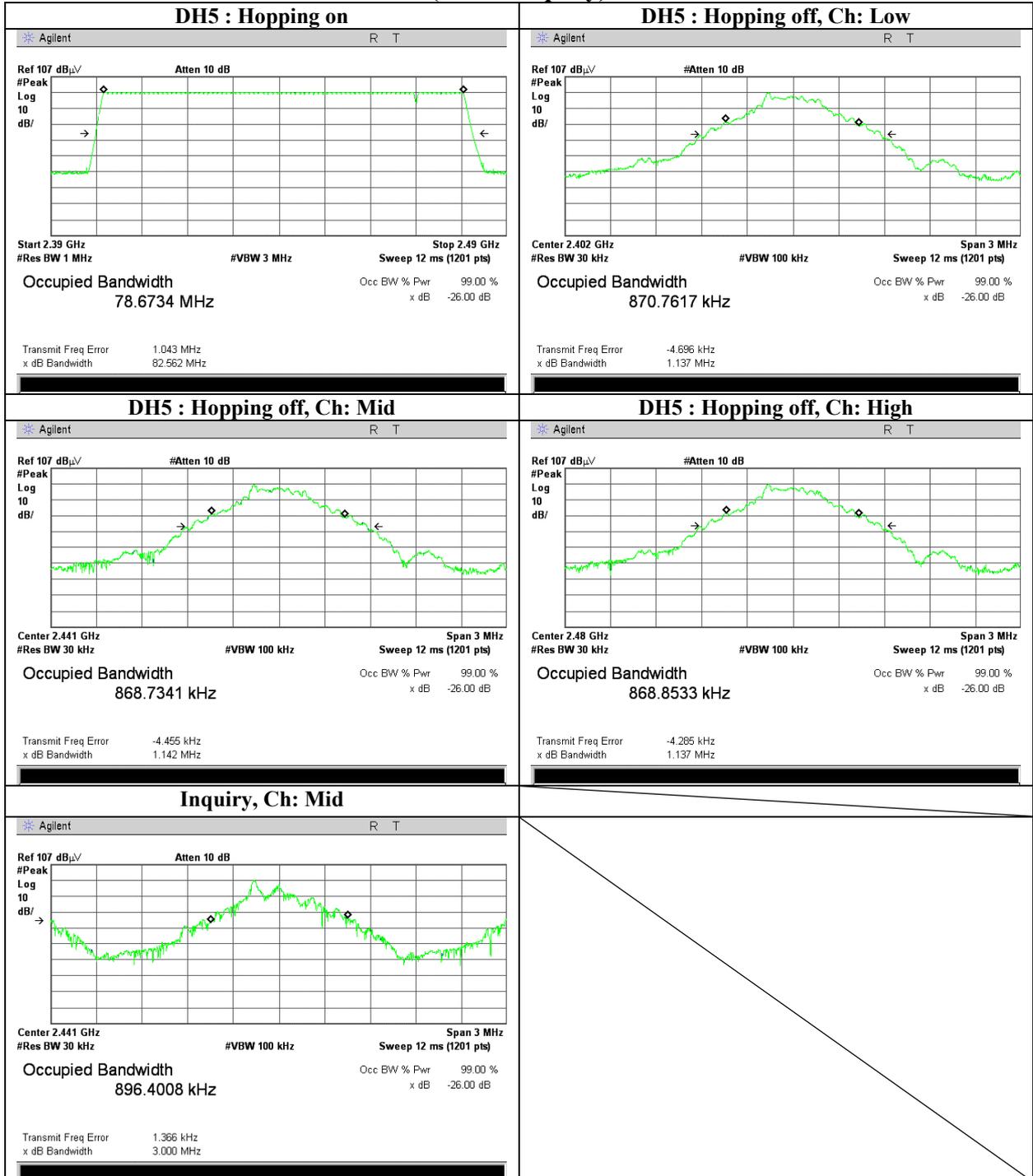
Conducted Spurious Emission
Rx, Ch:Mid



Conducted Spurious Emission Band Edge compliance (DH5)



**99% Occupied Bandwidth
(DH5 / Inquiry)**



APPENDIX 3: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE/CE	2007/11/23 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2008/01/19 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2008/01/19 * 12
MCC-58	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2008/03/05 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2008/02/12 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE/CE	2007/10/19 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MOS-01	Digital Humidity Indicator	N.T	NT-1800	RE/CE	2007/11/12 * 12
MJM-01	Measure	KDS	ES19-55	RE/CE	-
MCC-76	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2007/12/26 * 12
MHF-17	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	RE	2007/12/10 * 12
MHA-01	Horn Antenna 18-26.5G	EMCO	3160-09	RE	2008/01/19 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/10/21 * 12
MLA-09	Logperiodic Antenna	Schwarzbeck	USLP9143B	RE	2008/01/12 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	RE	2007/11/14 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent /TSJ	-	RE	2008/02/29 * 12
MPA-04	Pre Amplifier	Agilent	8447D	RE	2008/07/23 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2008/02/19 * 12
MCC-03	Coaxial Cable	Fujikura/Suhner/Agilent/TSJ	-	CE	2007/12/27 * 12
MSA-06	Spectrum Analyzer	Agilent	E4407B	AT	2008/04/21 * 12
MCC-67	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	AT	2008/04/04 * 12
MAT-24	Attenuator(10dB)(above1GHz)	Agilent	8493C	AT	2008/06/25 * 12
MPSE-18	Power sensor	Anritsu	MA2411B	AT	2008/08/13 * 12
MPM-13	Power Meter	Anritsu	ML2495A	AT	2008/08/13 * 12
MOS-17	Thermo-Hygrometer	Custom	CTH-180	AT	2008/01/10 * 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.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item: CE: Conducted Emission

RE: Radiated Emission

AT: Antenna Terminal Conducted test

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