

**APPENDIX 2: Data of EMI test**

**Conducted Emission**

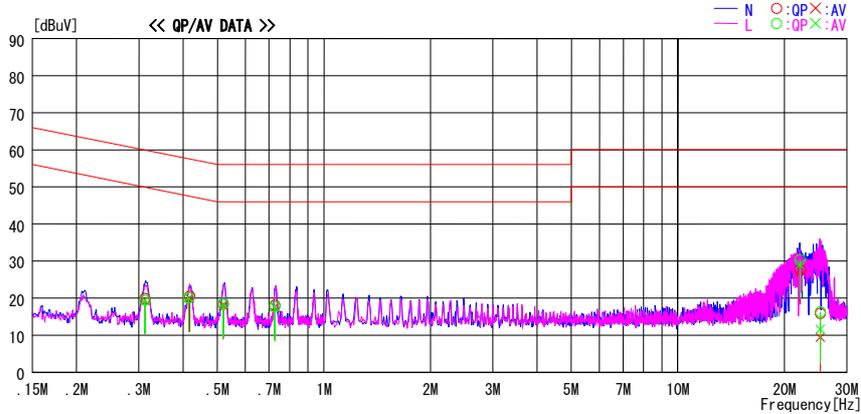
**DATA OF CONDUCTED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2007/04/26

Company : Sony Corporation  
Kind of EUT : Personal Audio System  
Model No. : ZS-BT1  
Serial No. : 1  
Report No. : 27HE0356-HO-A  
Power : AC120V / 60Hz  
Temp./Humi. : 26deg. C / 35%  
Operator : Yutaka Yoshida

Mode / Remarks : Bluetooth Transmitting Mode / Low channel (2402MHz), DH5 Packet / Normal Position

LIMIT : FCC15.207 QP  
FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.31192	19.6	19.1	0.3	19.9	19.4	59.9	49.9	40.0	30.5	N	
0.31173	19.2	19.2	0.3	19.5	19.5	59.9	49.9	40.4	30.4	L	
0.41775	20.2	19.8	0.3	20.5	20.1	57.5	47.5	37.0	27.4	N	
0.41505	19.8	19.8	0.3	20.1	20.1	57.5	47.5	37.4	27.4	L	
0.51947	18.2	18.2	0.3	18.5	18.5	56.0	46.0	37.5	27.5	L	
0.51949	18.1	17.7	0.3	18.4	18.0	56.0	46.0	37.6	28.0	N	
0.72694	17.8	17.3	0.3	18.1	17.6	56.0	46.0	37.9	28.4	N	
0.72636	17.4	17.4	0.3	17.7	17.7	56.0	46.0	38.3	28.3	L	
22.11381	25.9	25.8	1.7	27.6	27.5	60.0	50.0	32.4	22.5	N	
22.11459	28.7	27.4	1.7	30.4	29.1	60.0	50.0	29.6	20.9	L	
25.22861	14.5	9.8	1.8	16.3	11.6	60.0	50.0	43.7	38.4	L	
25.24676	14.1	7.6	1.8	15.9	9.4	60.0	50.0	44.1	40.6	N	

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

## Conducted Emission

### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2007/04/27

Company : Sony Corporation  
Kind of EUT : Personal Audio System  
Model No. : ZS-BT1  
Serial No. : 1  
Report No. : 27HE0356-HO-A  
Power : AC120V / 60Hz  
Temp./Humi. : 26deg.C / 35%  
Operator : Yutaka Yoshida

Mode / Remarks : Bluetooth Transmitting Mode / Mid channel (2441MHz), DH5 Packet / Normal Position

LIMIT : FCC15.207 QP  
FCC15.207 AV

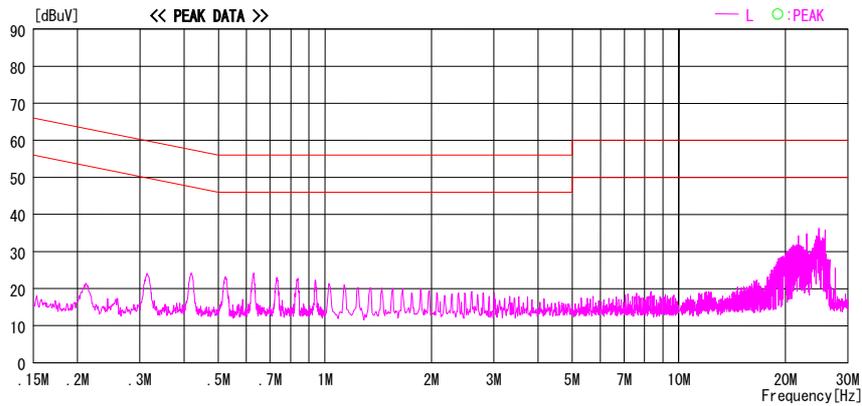
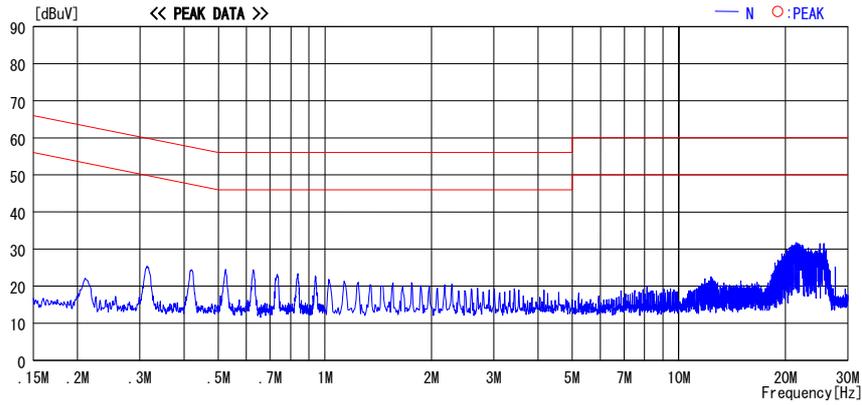


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT[dBuA]=READING[dBuV]+C.F[dB] (Probe factor+CABLE LOSS)  
Except for the above table : adequate margin data below the limits.

## Conducted Emission

### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2007/04/27

Company	: Sony Corporation	Report No.	: 27HE0356-HO-A
Kind of EUT	: Personal Audio System	Power	: AC120V / 60Hz
Model No.	: ZS-BT1	Temp./Humi.	: 26deg.C / 35%
Serial No.	: 1	Operator	: Yutaka Yoshida

Mode / Remarks : Bluetooth Transmitting Mode / High channel (2480MHz), DH5 Packet / Normal Position

LIMIT : FCC15.207 QP  
FCC15.207 AV

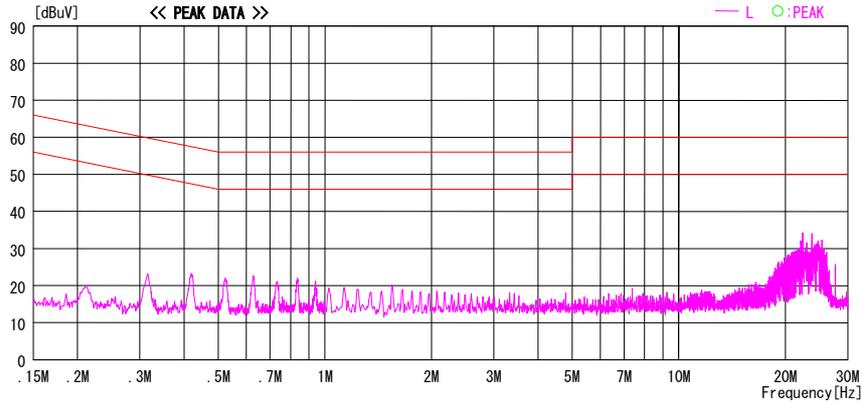
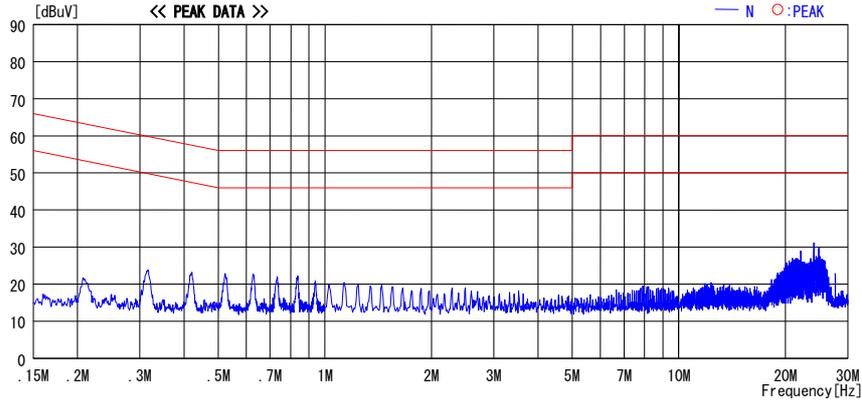


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT[dBuA]=READING[dBuV]+C.F[dB] (Probe factor+CABLE LOSS)  
Except for the above table : adequate margin data below the limits.

## Conducted Emission

### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2007/04/27

Company : Sony Corporation	Report No. : 27HE0356-HO-A
Kind of EUT : Personal Audio System	Power : AC120V / 60Hz
Model No. : ZS-BT1	Temp./Humi. : 26deg.C / 35%
Serial No. : 1	Operator : Yutaka Yoshida

Mode / Remarks : Standby Mode / Normal Position

LIMIT : FCC15.207 QP  
FCC15.207 AV

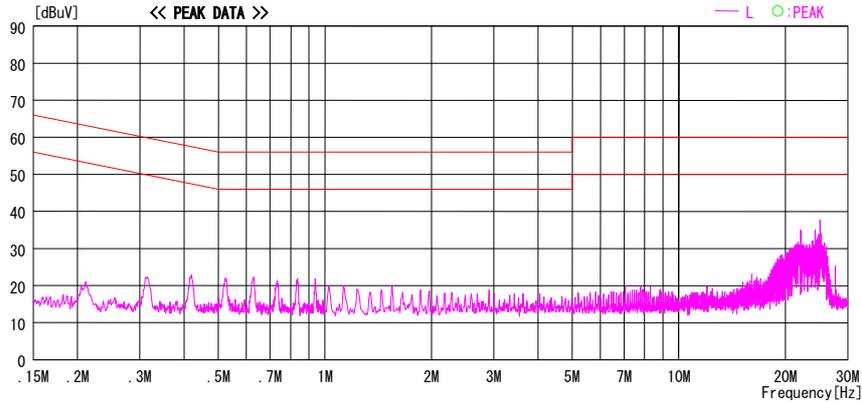
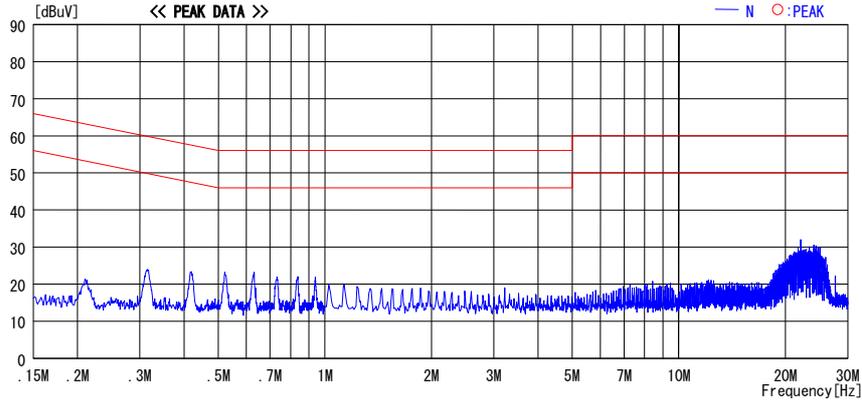


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT[dBuA]=READING[dBuV]+C.F[dB] (Probe factor+CABLE LOSS)  
Except for the above table : adequate margin data below the limits.

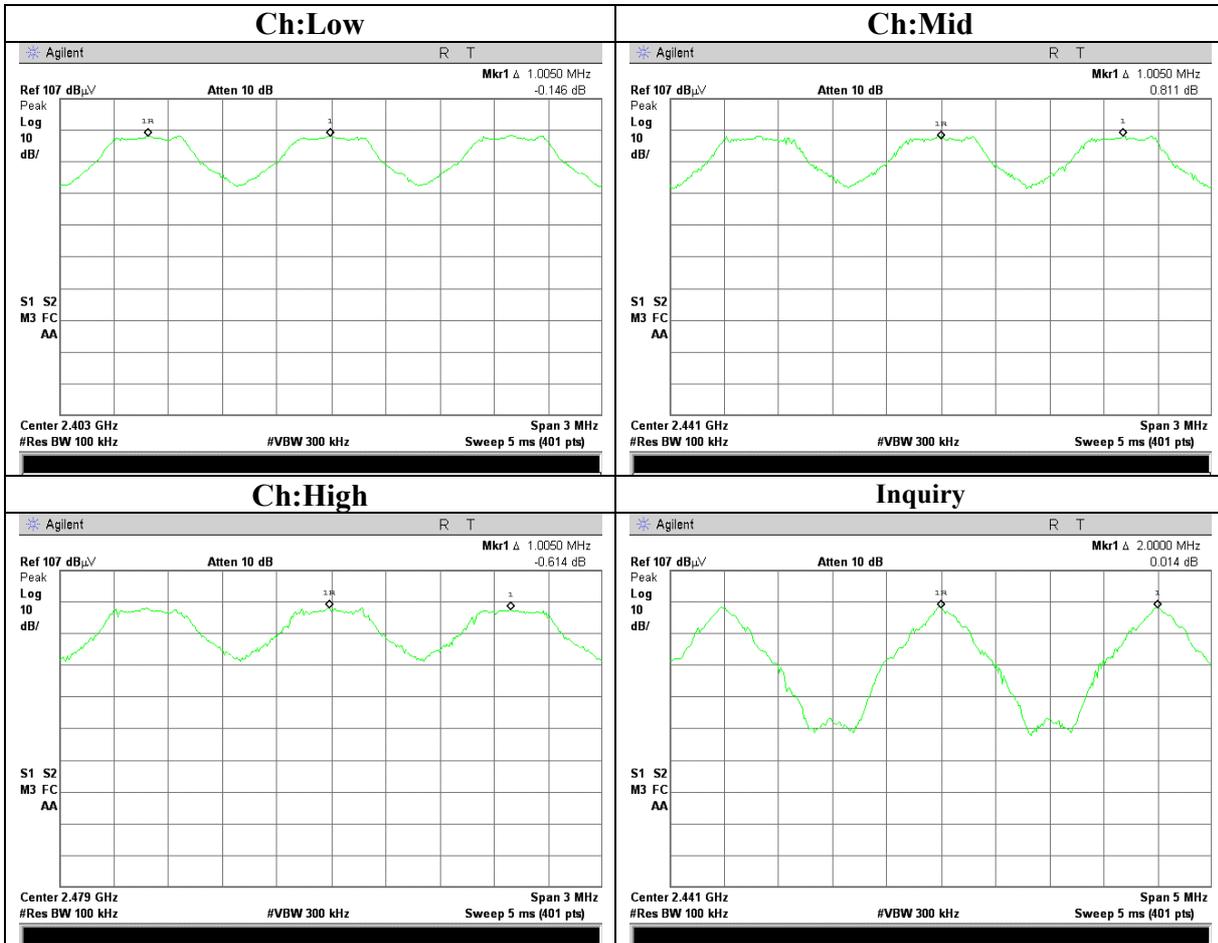
### Carrier Frequency Separation

UL Japan, Inc.  
Head Office EMC Lab. No.6 Shielded Room

COMPANY	: Sony Corporation	REGULATION	: FCC15.247(a)(1)/RSS-210A8.1(2)
EQUIPMENT	: Personal Audio System	TEST DISTANCE	: -
MODEL	: ZS-BT1	DATE	: 05/07/2007
S/N	: 1	TEMPERATURE	: 23deg.C
POWER	: AC 120V/60Hz	HUMIDITY	: 60%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Hidekazu Tanaka

Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.005	>two-thirds of 0.938[MHz](20dB Bandwidth) or 25[kHz](whichever is greater)
Mid	2441.0	1.005	>two-thirds of 0.930[MHz](20dB Bandwidth) or 25[kHz](whichever is greater)
High	2480.0	1.005	>two-thirds of 0.938[MHz](20dB Bandwidth) or 25[kHz](whichever is greater)
Inquiry	2441.0	2.000	>two-thirds of 0.810[MHz](20dB Bandwidth) or 25[kHz](whichever is greater)

**Carrier Frequency Separation**



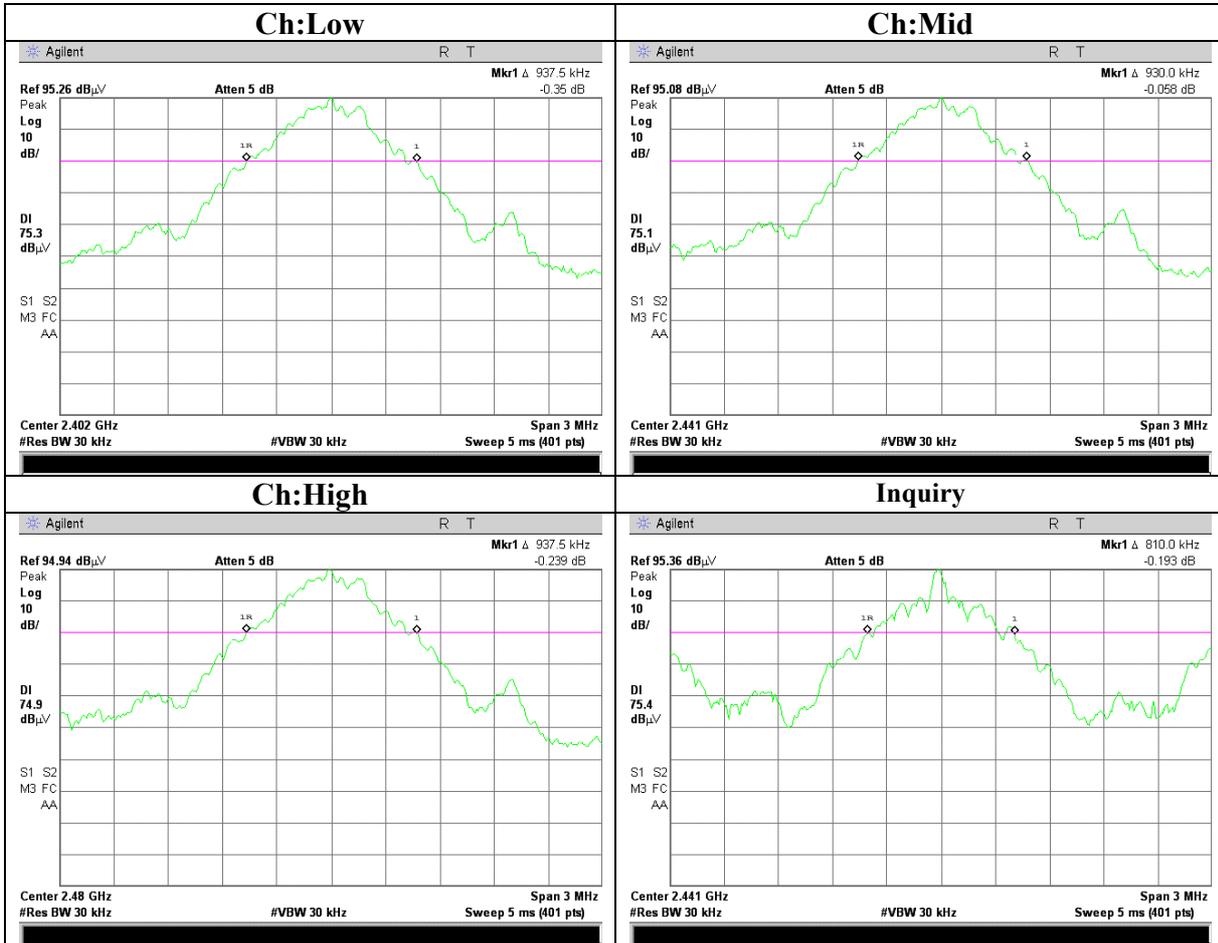
## 20dB Bandwidth

UL Japan, Inc.  
Head Office EMC Lab. No.6 Shielded Room

COMPANY	: Sony Corporation	REGULATION	: FCC15.247(a)(1)/RSS-210A8.1(1)
EQUIPMENT	: Personal Audio System	TEST DISTANCE	: -
MODEL	: ZS-BT1	DATE	: 05/07/2007
S/N	: 1	TEMPERATURE	: 23deg.C
POWER	: AC 120V/60Hz	HUMIDITY	: 60%
MODE	:Tx (Hopping off) /Inquiry	ENGINEER	: Hidekazu Tanaka

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.938	-
Mid	2441.0	0.930	-
High	2480.0	0.938	-
Inquiry	2441.0	0.810	-

**20dB Bandwidth**



## Number of Hopping Frequency

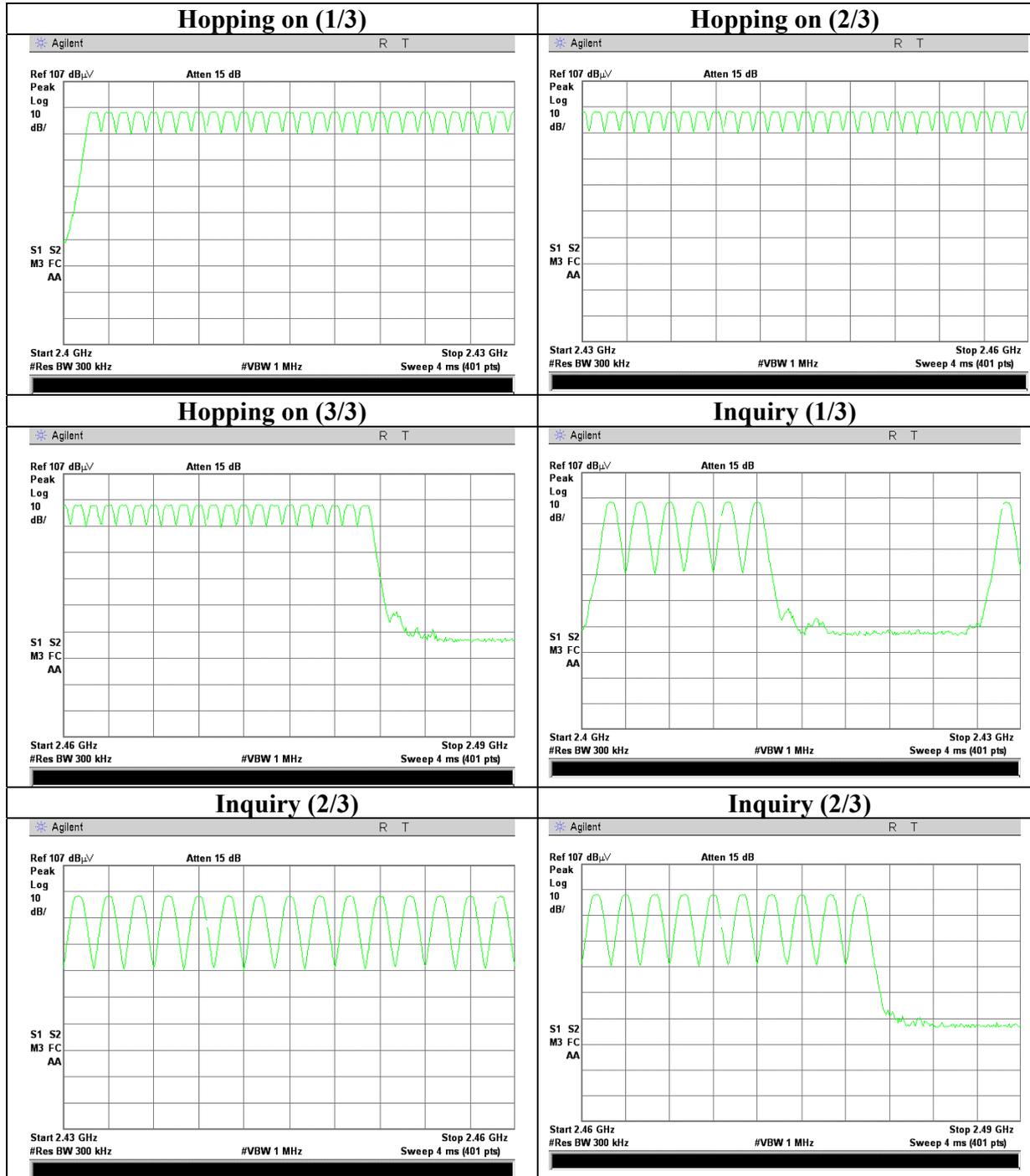
UL Japan, Inc.  
Head Office EMC Lab. No.6 Shielded Room

COMPANY	: Sony Corporation	REGULATION	: FCC15.247(a)(1)(iii)/RSS-210A8.1(4)
EQUIPMENT	: Personal Audio System	TEST DISTANCE	: -
MODEL	: ZS-BT1	DATE	: 05/07/2007
S/ N	: 1	TEMPERATURE	: 23deg.C
POWER	: AC 120V/60Hz	HUMIDITY	: 60%
MODE	: Tx (Hopping on) /Inquiry	ENGINEER	: Hidekazu Tanaka

Mode	Number of channel [time]	Limit [time]
Tx(Hoppng on)	79	$\geq 15$

Mode	Number of channel [time]	Limit [time]
Inquiry	32	$\geq 15$

**Number of Hopping Frequency**



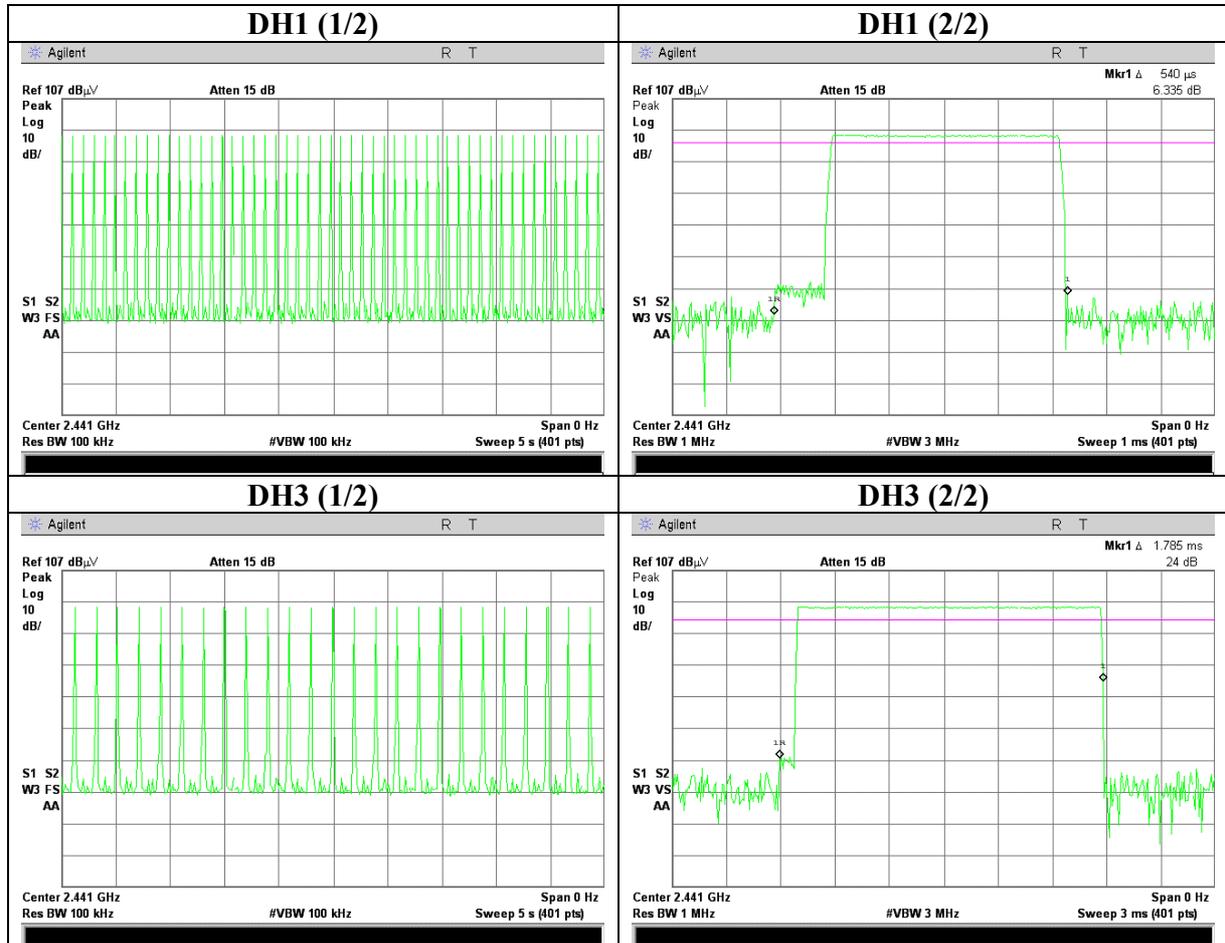
## Dwell time

UL Japan, Inc.  
Head Office EMC Lab. No.6 Shielded Room

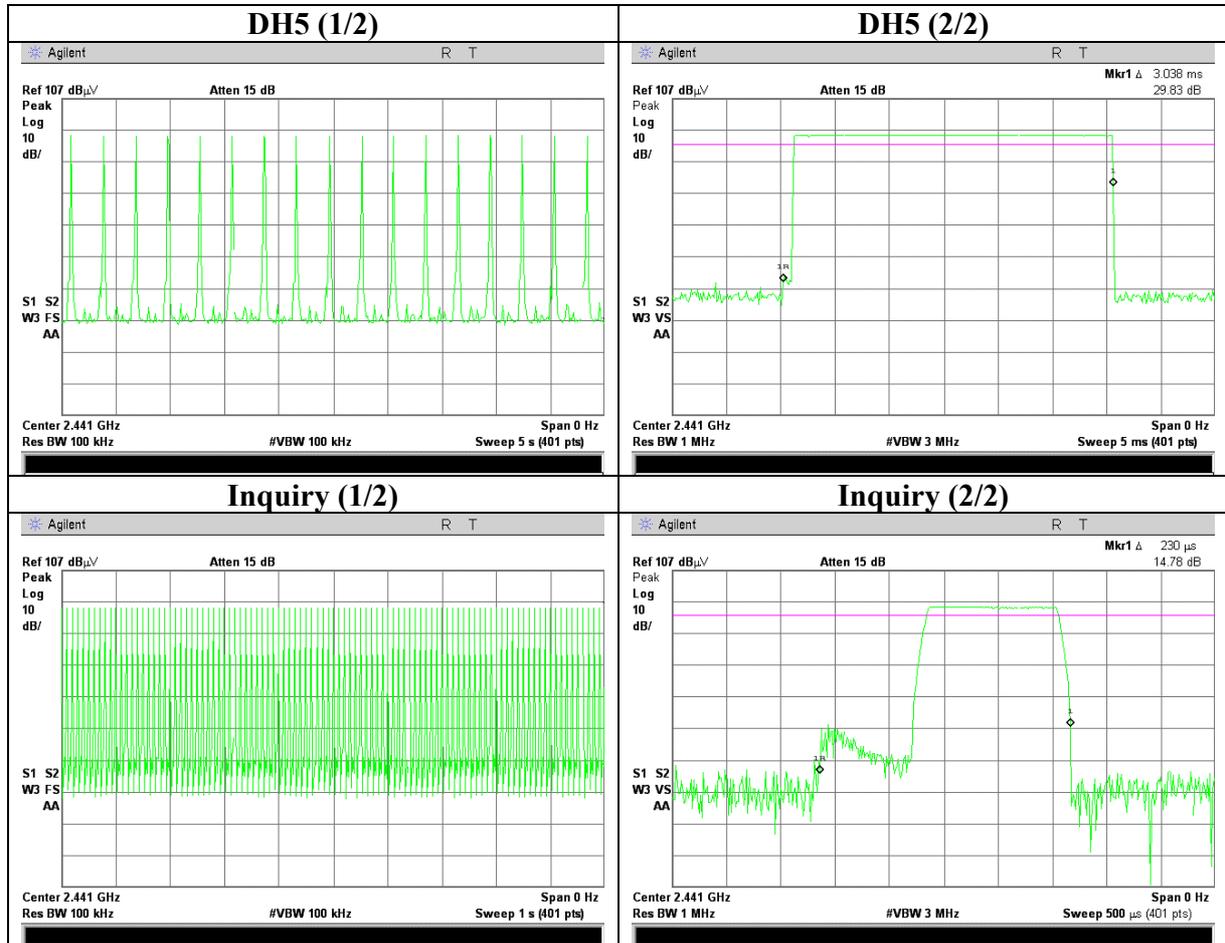
COMPANY	: Sony Corporation	REGULATION	: FCC15.247(a)(1)(iii)/RSS-210A8.1(4)
EQUIPMENT	: Personal Audio System	TEST DISTANCE	: -
MODEL	: ZS-BT1	DATE	: 05/07/2007
S/N	: 1	TEMPERATURE	: 23deg.C
POWER	: AC 120V/60Hz	HUMIDITY	: 60%
MODE	: Tx (Hopping on) /Inquiry	ENGINEER	: Hidekazu Tanaka

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 / 5 sec. x 31.6 sec. = 323 times	0.540	174	400
DH3	25 times / 5 sec. x 31.6 sec. = 158 times	1.785	282	400
DH5	17 times / 5 sec. x 31.6 sec. = 108 times	3.038	328	400
Inquiry	100 times / 1 sec. x 12.8 sec. = 1280 times	0.230	294	400

**Dwell time**



**Dwell time**



### Maximum Peak Output Power

UL Japan, Inc.  
Head Office EMC Lab. No.6 Shielded Room

COMPANY : Sony Corporation  
EQUIPMENT : Personal Audio System  
MODEL : ZS-BT1  
S/N : 1  
POWER : AC 120V/60Hz  
MODE : Tx(Hopping Off)/Inquiry

REGULATION : FCC15.247(b)(1)/RSS-210A8.4(2)  
TEST DISTANCE : -  
DATE : 05/07/2007  
TEMPERATURE : 23deg.C  
HUMIDITY : 60%  
ENGINEER : Hidekazu Tanaka

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-10.74	0.87	10.22	0.35	1.08	20.97	125	20.62
Mid	2441.0	-10.81	0.88	10.22	0.29	1.07	20.97	125	20.68
High	2480.0	-11.01	0.89	10.22	0.10	1.02	20.97	125	20.87
Inquiry	2441.0	-10.74	0.88	10.22	0.36	1.09	20.97	125	20.61

Sample Calculation:

Result = Reading + Cable Loss + Attenuator

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

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

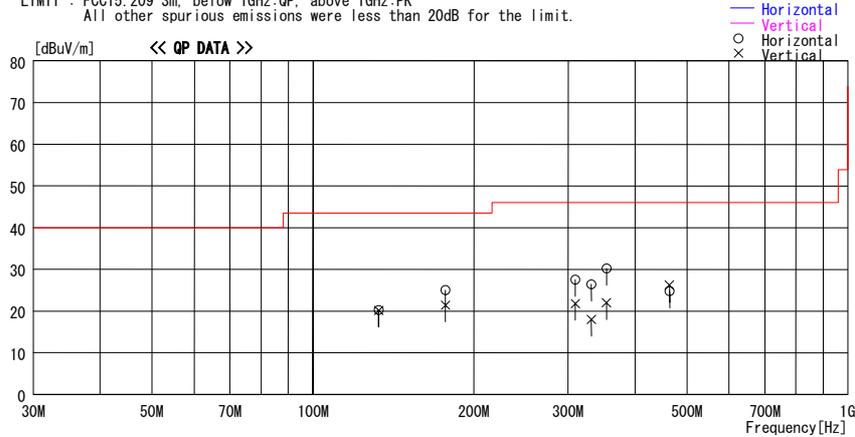
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2007/04/26

Company : Sony Corporation Report No. : 27HE0356-HO-A  
Kind of EUT : Personal Audio System Power : AC 120V / 60Hz  
Model No. : ZS-BT1 Temp./Humi. : 26deg. C. / 35%  
Serial No. : 1 Operator : Yutaka Yoshida

Mode / Remarks : Bluetooth Transmitting Mode / Low channel (2402MHz), DH5 Packet / Normal Position

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBuV/m]	[dB]	
132.669	29.8	QP	14.1	-23.6	20.3	78	228	Hori.	43.5	23.2	
132.669	29.7	QP	14.1	-23.6	20.2	34	100	Vert.	43.5	23.3	
176.892	31.7	QP	16.4	-23.0	25.1	253	184	Hori.	43.5	18.4	
176.892	28.0	QP	16.4	-23.0	21.4	142	100	Vert.	43.5	22.1	
309.560	35.2	QP	14.4	-22.0	27.6	90	100	Hori.	46.0	18.4	
309.558	29.4	QP	14.4	-22.0	21.8	118	141	Vert.	46.0	24.2	
331.670	33.1	QP	15.2	-21.9	26.4	196	100	Hori.	46.0	19.6	
331.669	24.7	QP	15.2	-21.9	18.0	281	105	Vert.	46.0	28.0	
353.783	36.0	QP	15.9	-21.7	30.2	194	100	Hori.	46.0	15.8	
353.779	27.8	QP	15.9	-21.7	22.0	63	254	Vert.	46.0	24.0	
464.340	27.6	QP	18.1	-20.9	24.8	247	100	Hori.	46.0	21.2	
464.334	29.0	QP	18.1	-20.9	26.2	189	111	Vert.	46.0	19.8	

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

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

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

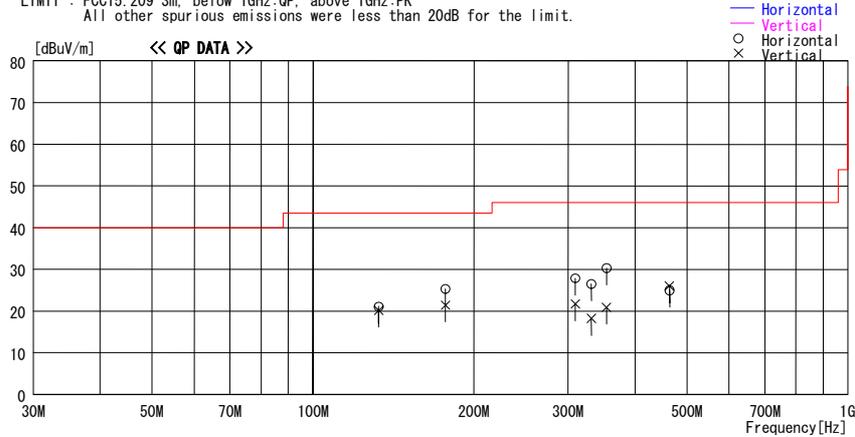
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber  
Date : 2007/04/26

Company : Sony Corporation Report No. : 27HE0356-HO-A  
Kind of EUT : Personal Audio System Power : AC 120V / 60Hz  
Model No. : ZS-BT1 Temp./Humi. : 26deg. C. / 35%  
Serial No. : 1 Operator : Yutaka Yoshida

Mode / Remarks : Bluetooth Transmitting Mode / Mid channel (2441MHz), DH5 Packet / Normal Position

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBuV/m]	[dB]	
132.670	30.6	QP	14.1	-23.6	21.1	232	143	Hori.	43.5	22.4	
132.670	29.7	QP	14.1	-23.6	20.2	28	100	Vert.	43.5	23.3	
176.894	31.9	QP	16.4	-23.0	25.3	244	176	Hori.	43.5	18.2	
176.894	28.0	QP	16.4	-23.0	21.4	147	100	Vert.	43.5	22.1	
309.567	35.5	QP	14.4	-22.0	27.9	90	100	Hori.	46.0	18.1	
309.569	29.3	QP	14.4	-22.0	21.7	119	166	Vert.	46.0	24.3	
331.678	33.2	QP	15.2	-21.9	26.5	191	100	Hori.	46.0	19.5	
331.680	24.9	QP	15.2	-21.9	18.2	282	109	Vert.	46.0	27.8	
353.792	36.1	QP	15.9	-21.7	30.3	195	100	Hori.	46.0	15.7	
353.792	26.7	QP	15.9	-21.7	20.9	43	257	Vert.	46.0	25.1	
464.350	27.8	QP	18.1	-20.9	25.0	245	100	Hori.	46.0	21.0	
464.352	28.8	QP	18.1	-20.9	26.0	197	106	Vert.	46.0	20.0	

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

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

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

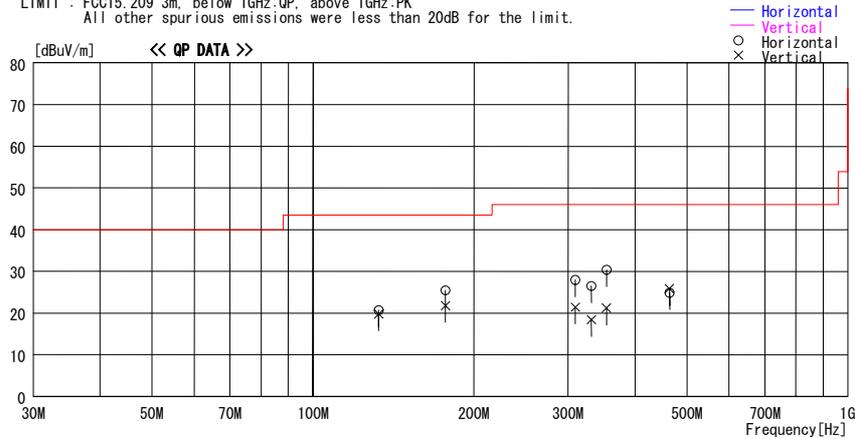
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2007/04/26

Company : Sony Corporation Report No. : 27HE0356-HO-A  
Kind of EUT : Personal Audio System Power : AC 120V / 60Hz  
Model No. : ZS-BT1 Temp./Humi. : 26deg. C. / 35%  
Serial No. : 1 Operator : Yutaka Yoshida

Mode / Remarks : Bluetooth Transmitting Mode / High channel (2480MHz), DH5 Packet / Normal Position

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit	Margin	Comment
			Factor [dB/m]	Gain [dB]					[dBuV/m]	[dB]	
132.675	30.2	QP	14.1	-23.6	20.7	227	149	Hori.	43.5	22.8	
132.675	29.3	QP	14.1	-23.6	19.8	44	100	Vert.	43.5	23.7	
176.900	32.1	QP	16.4	-23.0	25.5	245	176	Hori.	43.5	18.0	
176.900	28.4	QP	16.4	-23.0	21.8	146	100	Vert.	43.5	21.7	
309.571	35.6	QP	14.4	-22.0	28.0	89	100	Hori.	46.0	18.0	
309.571	29.0	QP	14.4	-22.0	21.4	118	163	Vert.	46.0	24.6	
331.683	33.2	QP	15.2	-21.9	26.5	193	100	Hori.	46.0	19.5	
331.684	25.1	QP	15.2	-21.9	18.4	282	120	Vert.	46.0	27.6	
353.796	36.2	QP	15.9	-21.7	30.4	198	100	Hori.	46.0	15.6	
353.795	27.0	QP	15.9	-21.7	21.2	49	270	Vert.	46.0	24.8	
464.356	27.7	QP	18.1	-20.9	24.9	245	100	Hori.	46.0	21.1	
464.356	28.7	QP	18.1	-20.9	25.9	191	121	Vert.	46.0	20.1	

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

**Radiated Spurious Emission (above 1GHz)**

**Tx, Ch. Low**

UL Japan, Inc.

Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company : Sony Corporation  
Equipment : Personal Audio System  
Model : ZS-BT1  
S/N : 1  
Power : AC 120V/60Hz  
Mode : Tx 2402MHz  
Position : Normal

Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m / 1m  
Date : 04/26/2007  
Temperature : 23deg.C.  
Humidity : 44%  
Engineer : Hidekazu Tanaka

**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]	Dwell Factor [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor													
1	1602.0	50.7	51.8	26.0	32.5	2.3	0.0	-	46.5	47.6	73.9	27.4	26.3
2	2386.0	50.0	44.1	27.3	31.5	3.0	0.0	-	48.8	42.9	73.9	25.1	31.0
3	2390.0	45.0	42.0	27.3	31.5	3.0	0.0	-	43.8	40.8	73.9	30.1	33.1
4*	2400.0	76.5	64.6	27.3	31.5	3.0	0.0	-	75.3	63.4	73.9	-	-
5	3204.0	44.9	42.8	28.6	31.2	3.4	0.0	-	45.7	43.6	73.9	28.2	30.3
6	4804.0	40.2	39.1	31.5	30.8	3.9	0.8	-	45.6	44.5	73.9	28.3	29.4
7	7206.0	40.9	40.6	35.8	31.3	4.5	0.5	-	50.4	50.1	73.9	23.5	23.8
8	9608.0	41.4	40.5	38.2	31.9	5.4	0.5	-	53.6	52.7	73.9	20.3	21.2
Test distance 1meters RESULT=Reading - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor - Dfac													
9	12010.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
10	14412.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
11	16814.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
12	19216.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
13	21618.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
14	24020.0	46.2	46.4	38.7	30.5	9.3	0.0	-	54.2	54.4	73.9	19.7	19.5

\*Reference data

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	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 + Hi Pass + Dwell Factor													
1	1602.0	46.8	48.7	26.0	32.5	2.3	0.0	0.0	42.6	44.5	53.9	11.3	9.4
2	2386.0	41.6	33.2	27.3	31.5	3.0	0.0	0.0	40.4	32.0	53.9	13.5	21.9
3	2390.0	32.5	29.8	27.3	31.5	3.0	0.0	-24.3	7.0	4.3	53.9	46.9	49.6
4*	2400.0	64.8	54.9	27.3	31.5	3.0	0.0	0.0	63.6	53.7	53.9	-	-
5	3204.0	36.3	32.6	28.6	31.2	3.4	0.0	0.0	37.1	33.4	53.9	16.8	20.5
6	4804.0	28.1	27.6	31.5	30.8	3.9	0.8	-24.3	9.2	8.7	53.9	44.7	45.2
7	7206.0	29.3	29.2	35.8	31.3	4.5	0.5	-24.3	14.5	14.4	53.9	39.4	39.5
8	9608.0	30.0	29.8	38.2	31.9	5.4	0.5	-24.3	17.9	17.7	53.9	36.0	36.2
Test distance 1meters RESULT=Reading - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor - Dfac													
9	12010.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
10	14412.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
11	16814.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
12	19216.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
13	21618.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
14	24020.0	34.8	34.7	38.7	30.5	9.3	0.0	-24.3	18.5	18.4	53.9	35.4	35.5

\*Reference data

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor													
0	2402.0	101.1	88.7	27.3	31.5	3.0	0.0	0.0	99.9	87.5	-	-	-
4	2400.0	48.7	38.8	27.3	31.5	3.0	0.0	0.0	47.5	37.6	Funda-20dB	32.4	29.9

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

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

\*Dwell time factor = 20log ( Dwell time / 100ms ) = 20log ( 2\*( 3.04\*10<sup>-3</sup>) / 100\*10<sup>-3</sup> ) = -24.3dB

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

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

\*NS:Non Signal

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MF060b(14.06.06)

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

UL Japan, Inc.  
Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Regulation: FCC15.247(d) / RSS-210 A8.5  
Test Distance: 3m / 1m  
Date : 04/26/2007  
Temperature: 23deg.C.  
Humidity : 44%  
Engineer : Hidekazu Tanaka

Company : Sony Corporation  
Equipment: Personal Audio System  
Model : ZS-BT1  
S/N : 1  
Power : AC 120V/60Hz  
Mode : Tx 2441MHz  
Position : Normal

**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]	Dwell Factor [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor</b>													
1	1628.0	48.3	48.7	26.1	32.4	2.3	0.0	-	44.3	44.7	73.9	29.6	29.2
2	3256.0	45.6	42.9	28.6	31.2	3.4	0.0	-	46.4	43.7	73.9	27.5	30.2
3	4882.0	39.3	38.7	31.7	30.7	3.9	0.7	-	44.9	44.3	73.9	29.0	29.6
4	7323.0	39.7	40.3	35.9	31.3	4.6	0.5	-	49.4	50.0	73.9	24.5	23.9
5	9764.0	42.7	42.3	38.2	32.1	5.4	0.4	-	54.6	54.2	73.9	19.3	19.7
<b>Test distance 1meters RESULT=Reading - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor - Dfac</b>													
6	12205.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
7	14646.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
8	17087.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
9	19528.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
10	21969.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
11	24410.0	45.9	46.4	38.8	30.3	9.4	0.0	-	54.3	54.8	73.9	19.6	19.1

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor</b>													
1	1628.0	41.6	44.1	26.1	32.4	2.3	0.0	0.0	37.6	40.1	53.9	16.3	13.8
2	3256.0	37.7	33.0	28.6	31.2	3.4	0.0	0.0	38.5	33.8	53.9	15.4	20.1
3	4882.0	27.5	27.4	31.7	30.7	3.9	0.7	-24.3	8.8	8.7	53.9	45.1	45.2
4	7323.0	28.8	28.8	35.9	31.3	4.6	0.5	-24.3	14.2	14.2	53.9	39.7	39.7
5	9764.0	30.6	30.6	38.2	32.1	5.4	0.4	-24.3	18.2	18.2	53.9	35.7	35.7
<b>Test distance 1meters RESULT=Reading - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor - Dfac</b>													
6	12205.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
7	14646.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
8	17087.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
9	19528.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
10	21969.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
11	24410.0	34.6	34.6	38.8	30.3	9.4	0.0	-24.3	18.7	18.7	53.9	35.2	35.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5 dB  
\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*Dwell time factor = 20log ( Dwell time / 100ms ) = 20log ( 2\*( 3.04\*10<sup>-3</sup>) / 100\*10<sup>-3</sup> ) = -24.3dB  
\*Hi-Pass Filter was not used for factor 0.0dB of the above table.  
\*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*NS:Non Signal

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

Company : Sony Corporation  
Equipment : Personal Audio System  
Model : ZS-BT1  
S/N : 1  
Power : AC 120V/60Hz  
Mode : Tx 2480MHz  
Position : Normal

UL Japan, Inc.  
Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Regulation: FCC15.247(d) / RSS-210 A8.5  
Test Distance: 3m / 1m  
Date : 04/26/2007  
Temperature: 23deg.C.  
Humidity : 44%  
Engineer : Hidekazu Tanaka

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

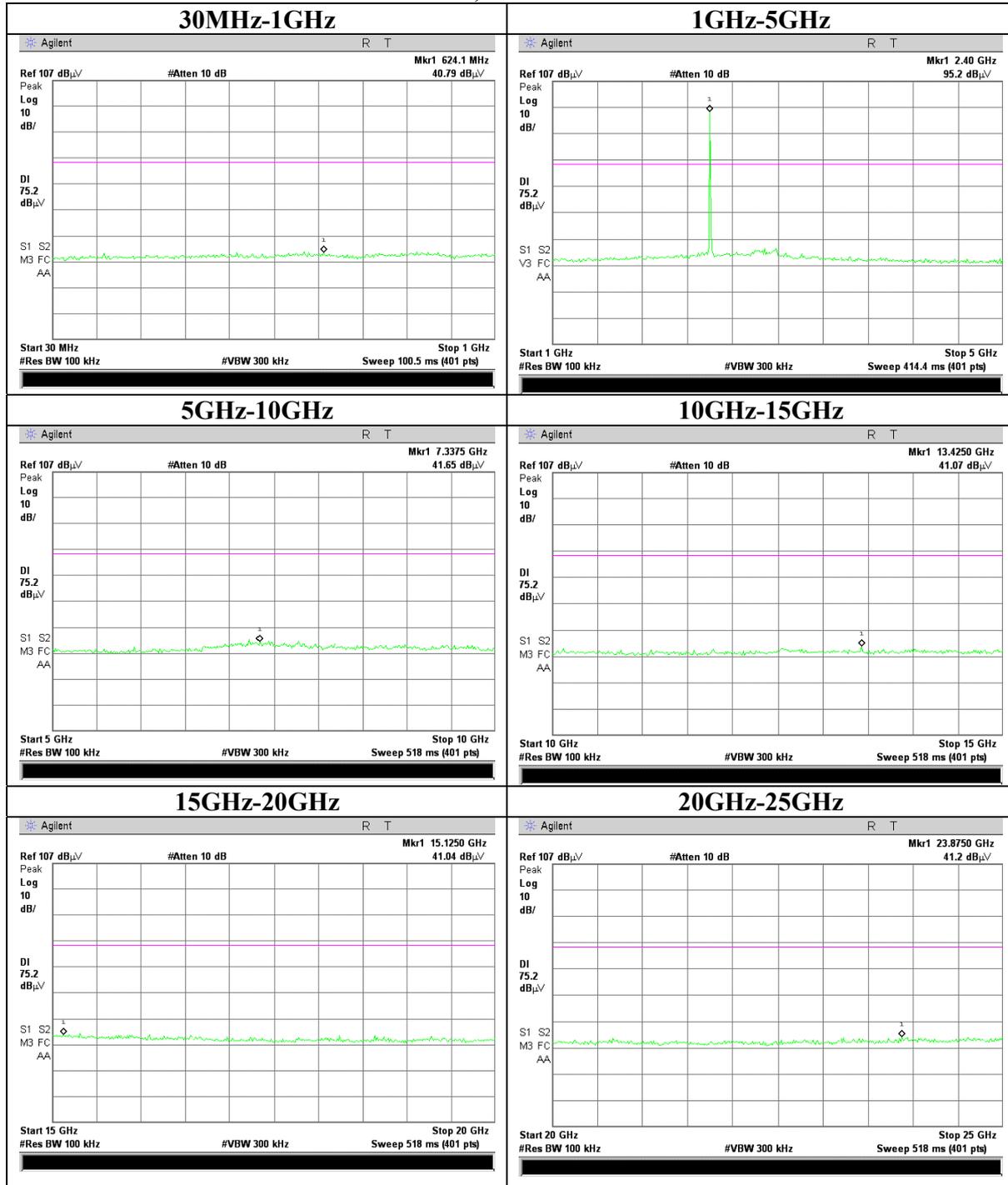
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor</b>													
1	1654.0	51.1	52.6	26.1	32.4	2.4	0.0	-	47.2	48.7	73.9	26.7	25.2
2	2483.5	60.4	51.1	27.4	31.5	3.1	0.0	-	59.4	50.1	73.9	14.5	23.8
3	2496.0	46.3	41.9	27.5	31.5	3.1	0.0	-	45.4	41.0	73.9	28.5	32.9
4	3308.0	46.2	43.8	28.7	31.2	3.4	0.0	-	47.1	44.7	73.9	26.8	29.2
5	4960.0	39.8	39.5	31.8	30.7	4.0	0.7	-	45.6	45.3	73.9	28.3	28.6
6	7440.0	39.9	41.0	36.1	31.3	4.7	0.6	-	50.0	51.1	73.9	23.9	22.8
7	9920.0	42.7	42.0	38.2	32.2	5.4	0.3	-	54.4	53.7	73.9	19.5	20.2
<b>Test distance 1meters RESULT=Reading - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor - Dfac</b>													
8	12400.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
9	14880.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
10	17360.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
11	19840.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
12	22320.0	NS	NS	-	-	-	-	-	-	-	73.9	-	-
13	24800.0	46.4	46.8	38.9	30.1	9.4	0.0	-	55.1	55.5	73.9	18.8	18.4

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

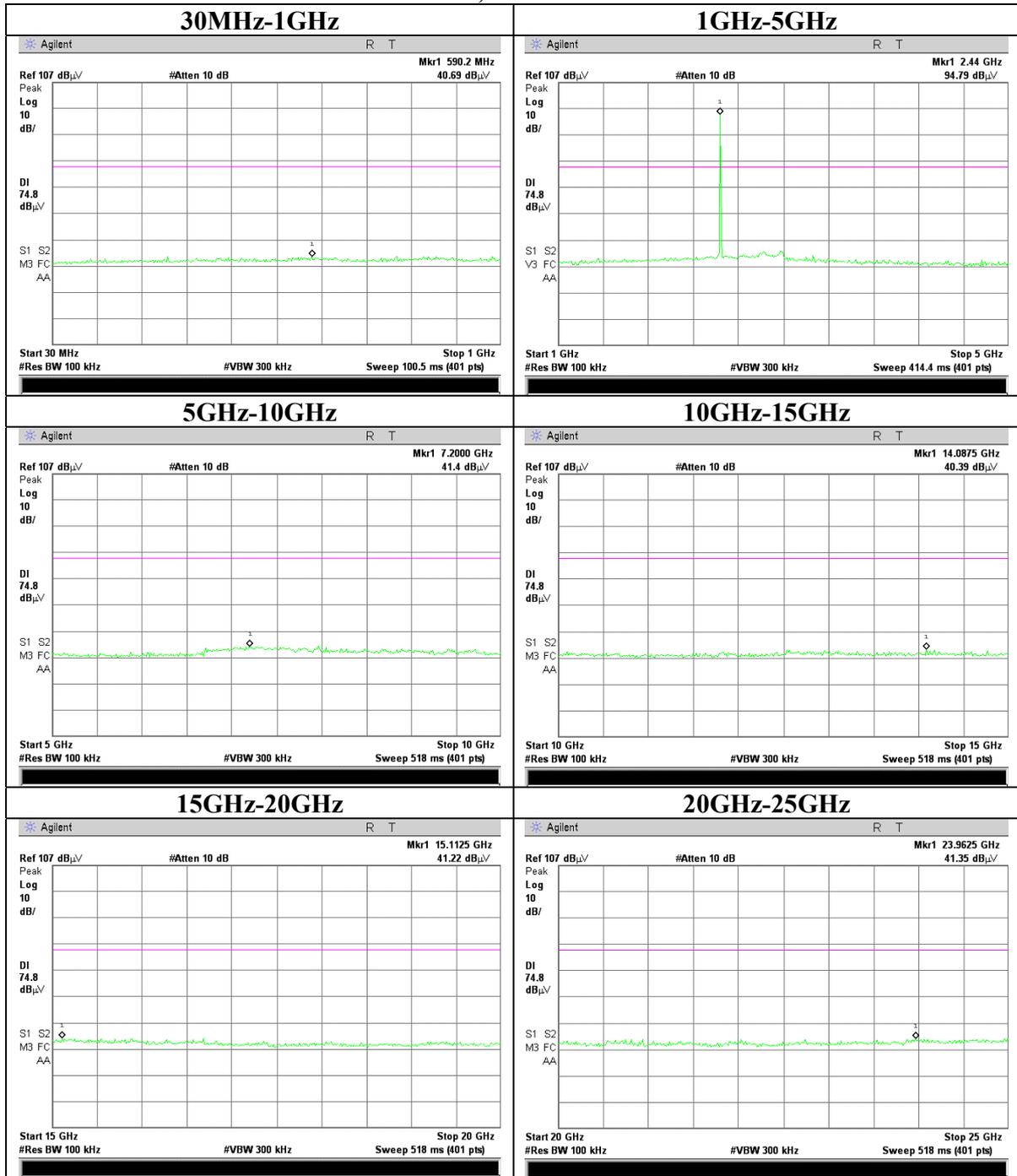
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	Dwell Factor [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER						HOR	VER		HOR	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor</b>													
1	1654.0	47.5	49.7	26.1	32.4	2.4	0.0	0.0	43.6	45.8	53.9	10.3	8.1
2	2483.5	51.7	44.6	27.4	31.5	3.1	0.0	-24.3	26.4	19.3	53.9	27.5	34.6
3	2496.0	36.5	29.8	27.5	31.5	3.1	0.0	0.0	35.6	28.9	53.9	18.3	25.0
4	3308.0	38.0	33.9	28.7	31.2	3.4	0.0	0.0	38.9	34.8	53.9	15.0	19.1
5	4960.0	27.9	27.8	31.8	30.7	4.0	0.7	-24.3	9.4	9.3	53.9	44.5	44.6
6	7440.0	29.4	29.4	36.1	31.3	4.7	0.6	-24.3	15.2	15.2	53.9	38.7	38.7
7	9920.0	30.9	30.8	38.2	32.2	5.4	0.3	-24.3	18.3	18.2	53.9	35.6	35.7
<b>Test distance 1meters RESULT=Reading - Amp Gain + CABLE LOSS + Hi Pass + Dwell Factor - Dfac</b>													
8	12400.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
9	14880.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
10	17360.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
11	19840.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
12	22320.0	NS	NS	-	-	-	-	-	-	-	53.9	-	-
13	24800.0	35.4	35.3	38.9	30.1	9.4	0.0	-24.3	19.8	19.7	53.9	34.1	34.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5 dB  
\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*Dwell time factor = 20log ( Dwell time / 100ms ) = 20log ( 2\*( 3.04\*10<sup>-3</sup> ) / 100\*10<sup>-3</sup> ) = -24.3dB  
\*Hi-Pass Fiter was not used for factor 0.0dB of the above table.  
\*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.  
\*NS:Non Signal

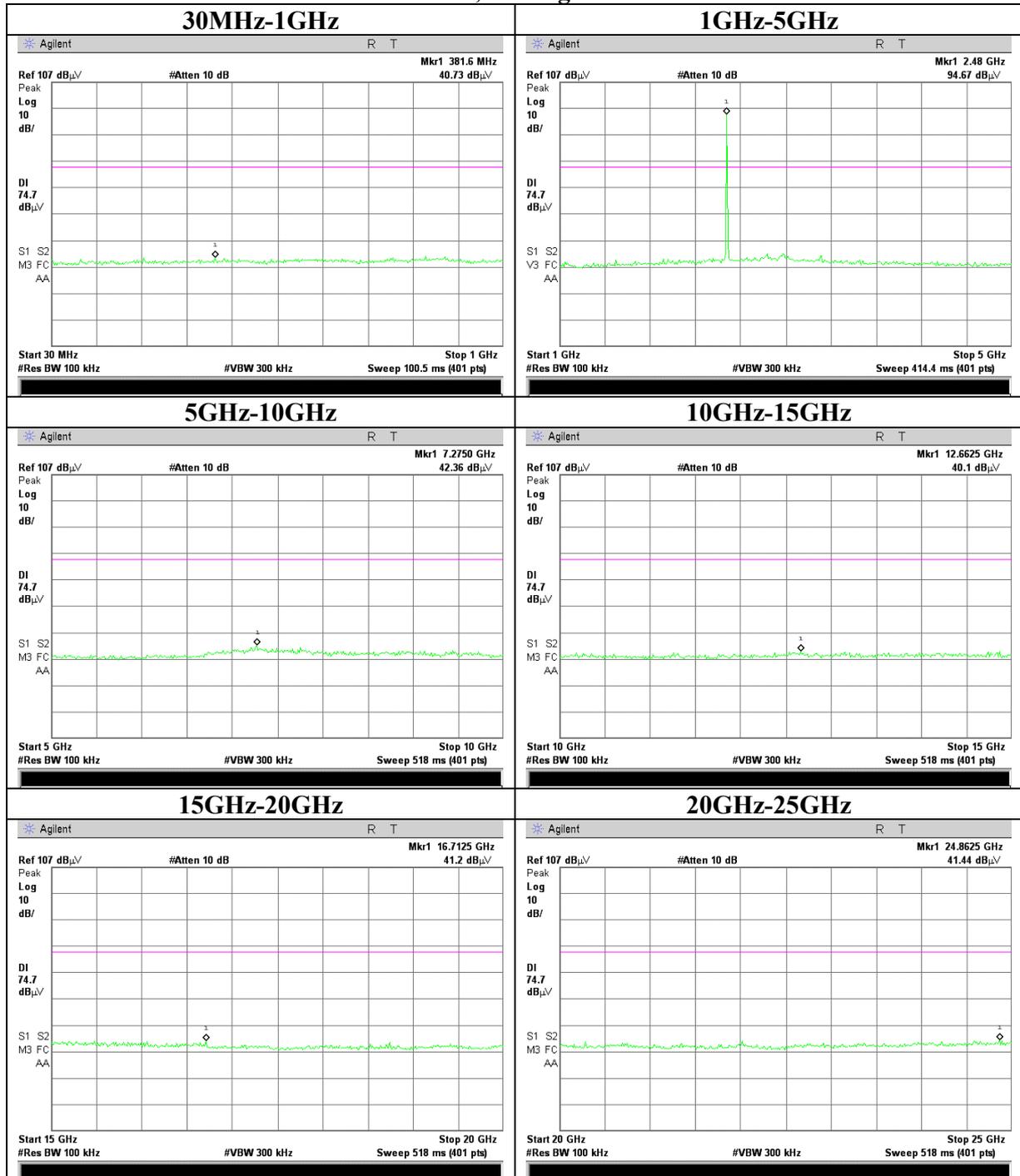
**Conducted Spurious Emission**  
**Tx, Ch:Low**



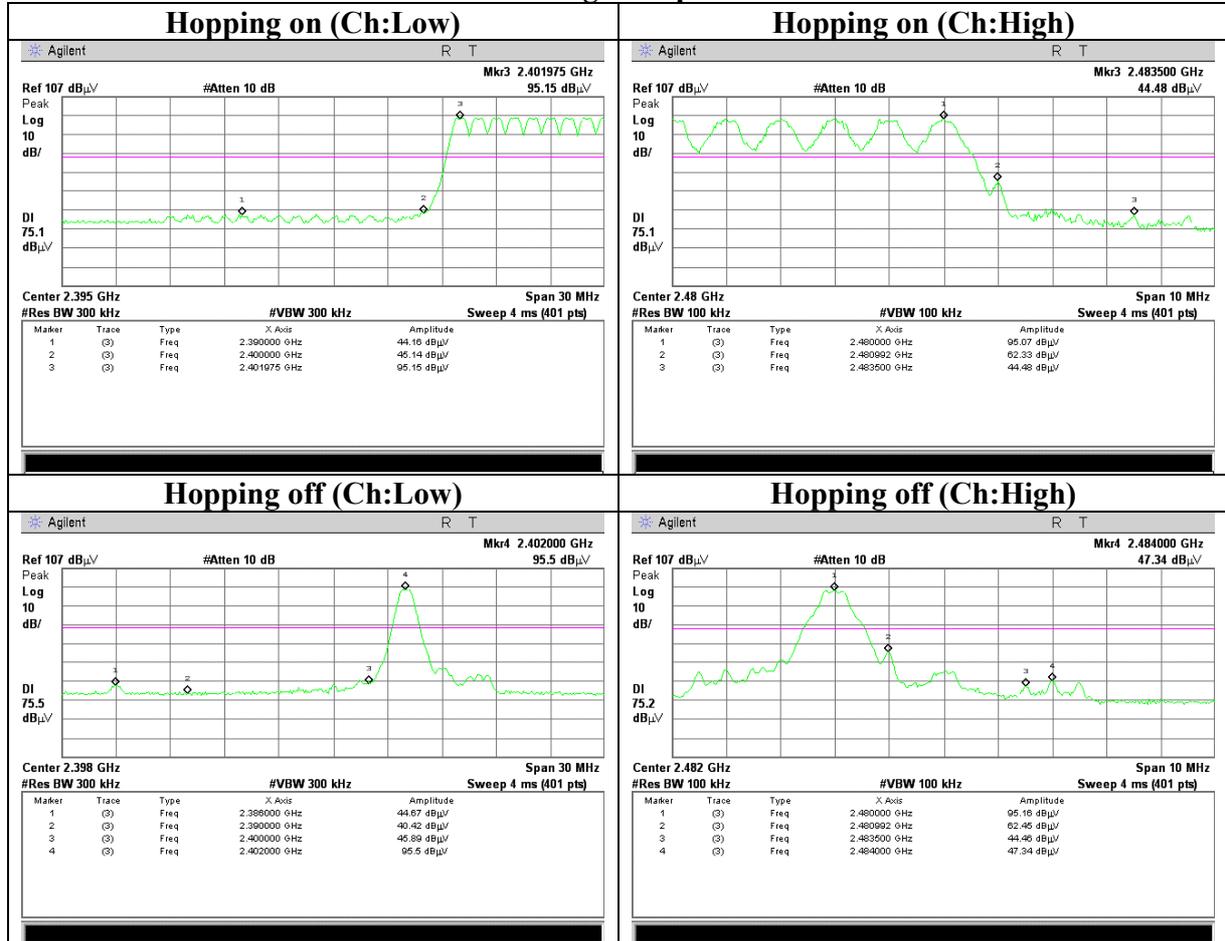
**Conducted Spurious Emission**  
**Tx, Ch:Mid**



**Conducted Spurious Emission**  
**Tx, Ch:High**



### Conducted Spurious Emission Band Edge compliance



### **APPENDIX 3:Test instruments**

#### **EMI test equipment**

<b>Control No.</b>	<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Test Item</b>	<b>Calibration Date * Interval(month)</b>
MAEC-03	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2007/03/05 * 12
MOS-12	Thermo-Hygrometer	Custom	CTH-180	RE/CE	2006/01/19 * 24
MJM-06	Measure	PROMART	SEN1955	RE/CE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MSA-09	Spectrum Analyzer	Advantest	R3273	RE/CE	2006/12/08 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2007/04/14 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2007/03/29 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	RE	2007/03/02 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	RE	2007/04/06 * 12
MHF-12	High Pass Filter 3.5-18GHz	TOKIMEC	TF323DCA	RE	2006/12/18 * 12
MPSU-08	Power Supply	NF	ES6000W	RE/CE	Pre Check
MMM-08	DIGITAL HiTESTER	Hioki	3805	RE/CE	2007/01/12 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2007/01/19 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2007/01/19 * 12
MCC-51	Coaxial cable	UL Apex	-	RE/CE	2007/03/05 * 12
MAT-30	Attenuator(6dB)	TME	UFA-01	RE	2007/03/05 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2007/03/16 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE/CE	2007/02/03 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE (EUT)	2007/02/22 * 12
MPM-08	Power Meter	Anritsu	ML2495A	AT	2006/09/20 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	AT	2006/09/20 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-180	AT	2006/01/19 * 24
MSA-06	Spectrum Analyzer	Agilent	E4407B	AT	2007/04/10 * 12
MAT-25	Attenuator(10dB)(above 1GHz)	Agilent	8493C	AT	2006/06/02 * 12
MCC-06	Microwave Cable 1G-26.5GHz 1m	Suhner	SUCOFLEX 104	AT	2007/02/26 * 12
MCC-35	Microwave Cable	Hirose Electric	U.FL-2LP-066-A-(200)	AT	2006/11/13 * 12

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MF060b(14.06.06)

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

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

Test Item: CE: Conducted Emission  
RE: Radiated Emission  
AT: Antenna Terminal Conducted test