

**APPENDIX 2: Data of EMI test**

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

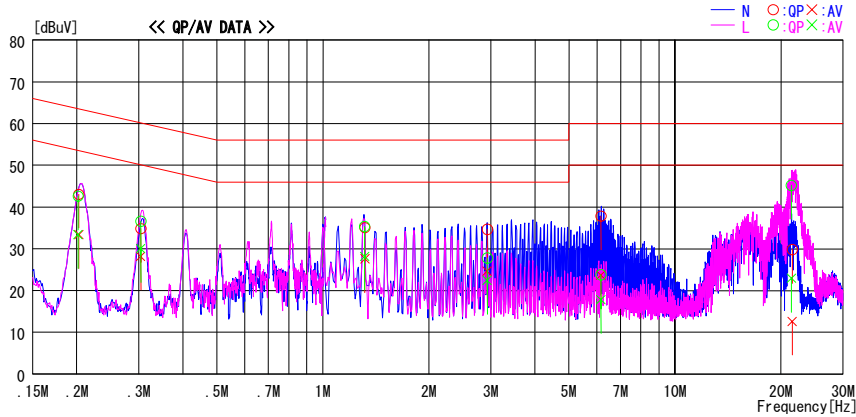
**DATA OF CONDUCTED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber  
Date : 2009/03/25

Company : Panasonic Corporation  
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 001  
Report No. : 29GE0129-HO-01  
Power : AC 120V / 60Hz  
Temp./Humi. : 21deg.C / 35%  
Engineer : Motoya Imura

Mode / Remarks : Tx 2412MHz ANT1

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]		
0.20250	42.9	33.2	0.2	43.1	33.4	63.5	53.5	20.4	20.1	N	
0.30360	34.6	28.0	0.2	34.8	28.2	60.1	50.1	25.3	21.9	N	
1.31528	34.8	27.3	0.3	35.1	27.6	56.0	46.0	20.9	18.4	N	
2.92968	34.3	24.2	0.4	34.7	24.6	56.0	46.0	21.3	21.4	N	
6.16156	37.3	23.2	0.5	37.8	23.7	60.0	50.0	22.2	26.3	N	
21.53200	28.9	11.7	0.9	29.8	12.6	60.0	50.0	30.2	37.4	N	
0.20150	42.4	33.2	0.2	42.6	33.4	63.5	53.5	20.9	20.1	L	
0.30363	36.4	29.8	0.2	36.6	30.0	60.1	50.1	23.5	20.1	L	
1.31352	35.0	27.9	0.3	35.3	28.2	56.0	46.0	20.7	17.8	L	
2.92936	27.4	22.0	0.4	27.8	22.4	56.0	46.0	28.2	23.6	L	
6.15820	23.3	17.3	0.5	23.8	17.8	60.0	50.0	36.2	32.2	L	
21.40600	44.3	22.0	0.9	45.2	22.9	60.0	50.0	14.8	27.1	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.

**UL Japan, Inc.**  
**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

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

**DATA OF CONDUCTED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
 Date : 2009/03/25

Company	: Panasonic Corporation	Report No.	: 29GE0129-HO-01
Kind of EUT	: Home theater audio system (Wireless Audio Transmitter)	Power	: AC 120V / 60Hz
Model No.	: SU-ZT1	Temp./Humi.	: 21deg. C / 35%
Serial No.	: 001	Engineer	: Motoya Imura

Mode / Remarks : Tx 2438MHz ANT1

LIMIT : FCC15.207 QP  
 FCC15.207 AV

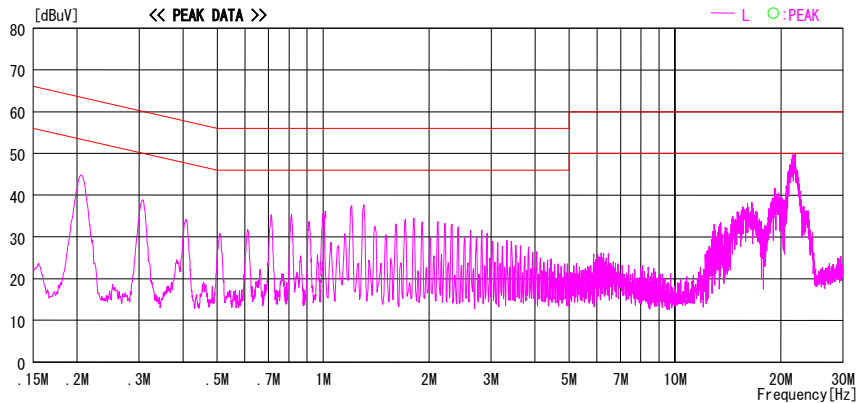
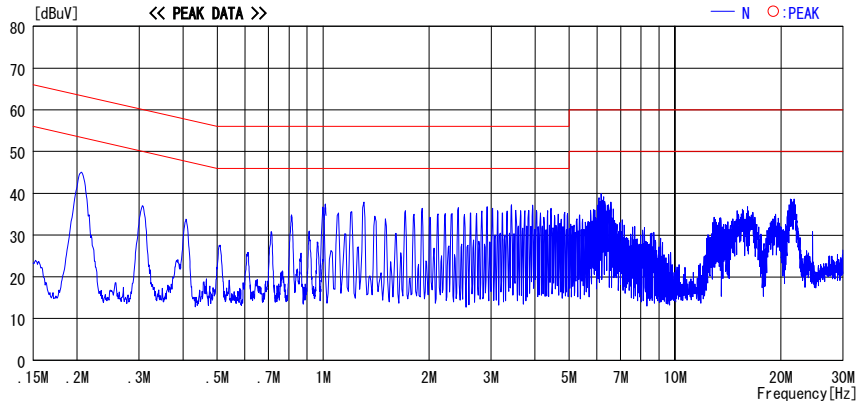


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT[dBuV]=READING[dBuV]+C. F[dB] (LISN LOSS+CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

## Conducted Emission

### Tx, Ch: High

### DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2009/03/25

Company : Panasonic Corporation	Report No. : 29GE0129-HO-01
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)	Power : AC 120V / 60Hz
Model No. : SU-ZT1	Temp./Humi. : 21deg. C / 35%
Serial No. : 001	Engineer : Motoya Imura

Mode / Remarks : Tx 2462MHz ANT1

LIMIT : FCC15.207 QP  
FCC15.207 AV

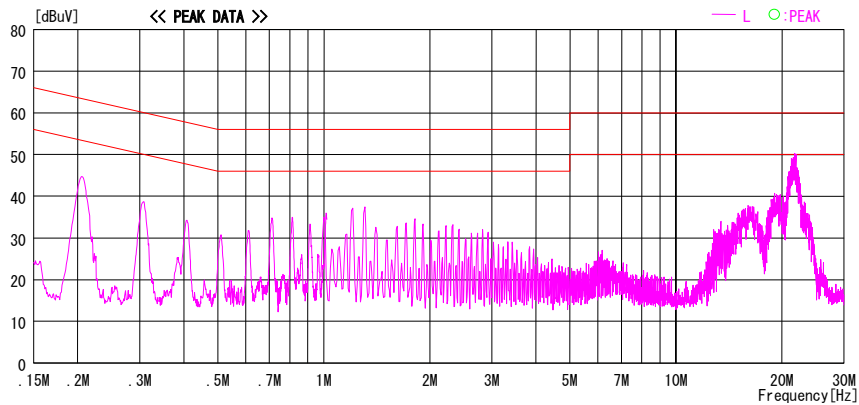
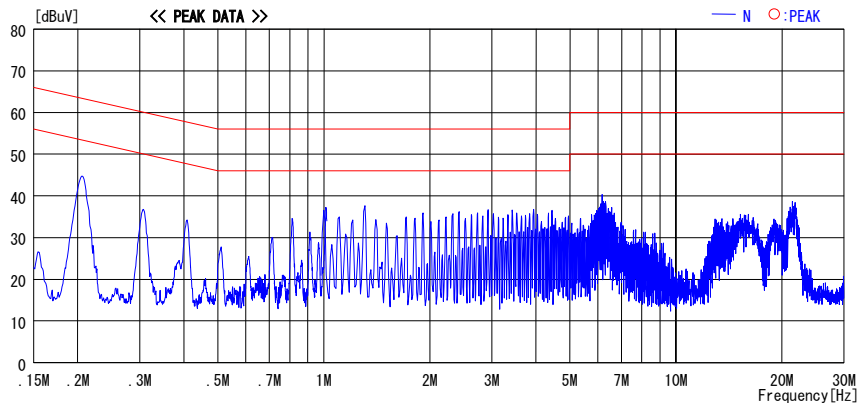


CHART: WITH FACTOR, Peak hold data. CALCURATION: RESULT [dBuV] = READING [dBuV] + C. F [dB] (LISN LOSS + CABLE LOSS)  
 Except for the above table : adequate margin data below the limits.

**Conducted Emission**  
**Rx, Ch: Mid**

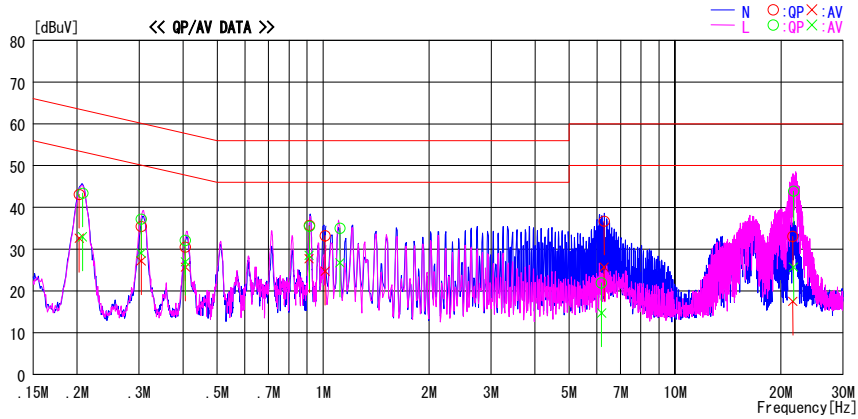
**DATA OF CONDUCTED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2009/04/07

Company : Panasonic Corporation  
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 001  
Report No. : 29GE0129-H0-01  
Power : AC 120V / 60Hz  
Temp./Humi. : 24deg.C / 35%  
Engineer : Tomohisa Nakagawa

Mode / Remarks : Rx 2438MHz ANT1

LIMIT : FCC15.207 QP  
FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor [dB]	Results		Limit		Margin		Phase	Comment
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]		
0.20295	42.8	32.3	0.3	43.1	32.6	63.5	53.5	20.4	20.9	N	
0.30437	35.1	26.9	0.3	35.4	27.2	60.1	50.1	24.7	22.9	N	
0.40596	30.2	25.4	0.3	30.5	25.7	57.7	47.7	27.2	22.0	N	
0.91312	35.4	27.4	0.3	35.7	27.7	56.0	46.0	20.3	18.3	N	
1.01463	32.9	24.4	0.3	33.2	24.7	56.0	46.0	22.8	21.3	N	
6.29044	35.9	24.9	0.8	36.7	25.7	60.0	50.0	23.3	24.3	N	
21.61104	31.4	15.8	1.7	33.1	17.5	60.0	50.0	26.9	32.5	N	
0.20742	43.1	32.6	0.3	43.4	32.9	63.3	53.3	19.9	20.4	L	
0.30451	36.9	28.8	0.3	37.2	29.1	60.1	50.1	22.9	21.0	L	
0.40601	31.8	26.7	0.3	32.1	27.0	57.7	47.7	25.6	20.7	L	
0.91353	35.2	28.2	0.3	35.5	28.5	56.0	46.0	20.5	17.5	L	
1.11665	34.6	26.3	0.4	35.0	26.7	56.0	46.0	21.0	19.3	L	
6.18231	21.1	13.9	0.8	21.9	14.7	60.0	50.0	38.1	35.3	L	
21.72172	42.2	24.0	1.7	43.9	25.7	60.0	50.0	16.1	24.3	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.

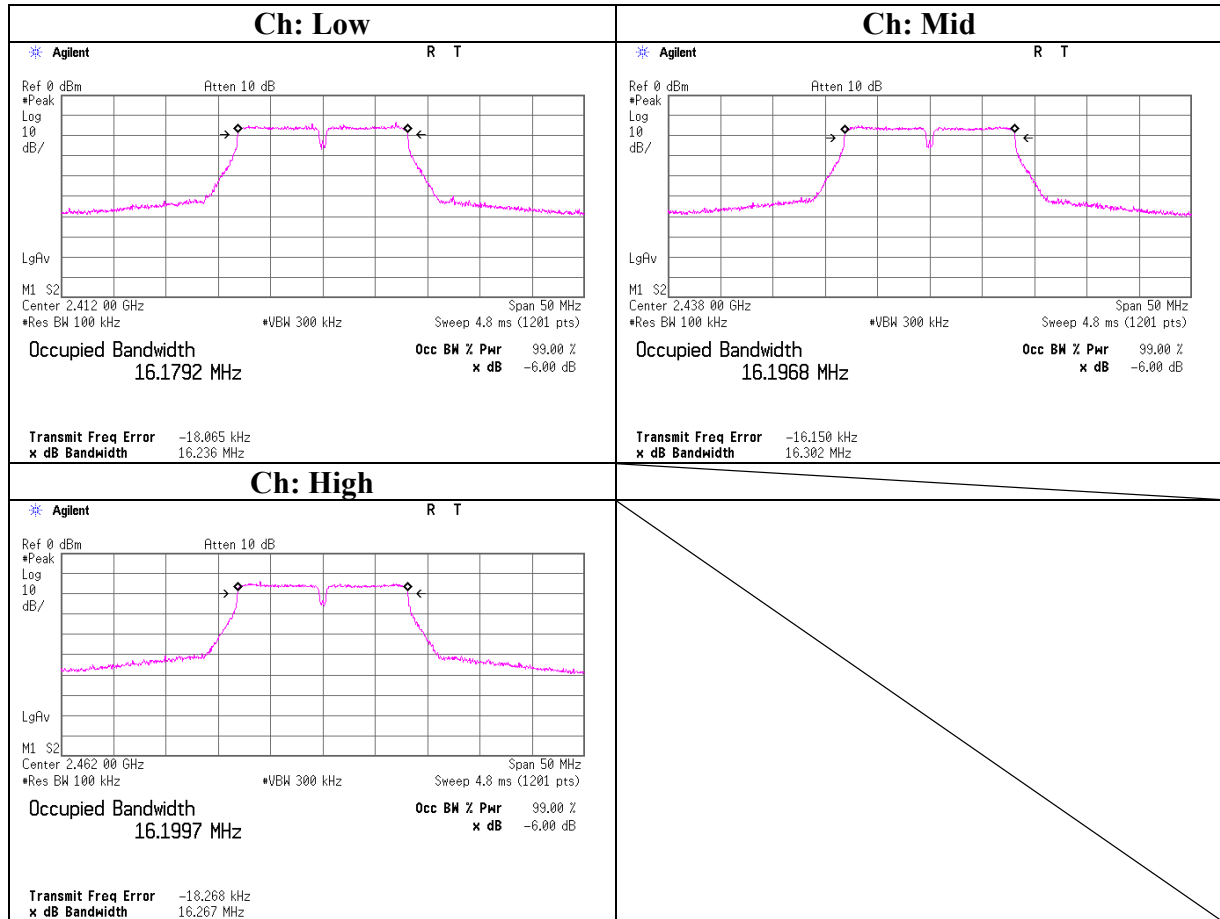
### 6dB Bandwidth

UL Japan, Inc.  
Head Office EMC Lab. No.11 Measurement Room

Company	: Panasonic Corporation	Test Report No.	: 29GE0129-HO-01
Equipment	: Home theater audio system (Wireless Audio Transmitter)	Regulation	: FCC15.247(a)(2)/RSS-210A8.2(a)
Model No.	: SU-ZT1	Test distance	: -
Serial No.	: 002	Date	: 03/24/2009
Power	: AC120V/60Hz	Temperature	: 21deg.C.
Mode	: Tx Mode, ANT 1	Humidity	: 38%
		Engineer	: Takeshi Choda

Ch	Freq. [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
Low	2412.0	16.236	>500
Mid	2438.0	16.302	>500
High	2462.0	16.267	>500

### 6dB Bandwidth



### Maximum Peak Output Power

UL Japan, Inc.  
Head Office EMC Lab. No.11 Measurement Room

Company : Panasonic Corporation  
Equipment : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 002  
Power : AC120V/60Hz  
Mode : Tx Mode, ANT 1

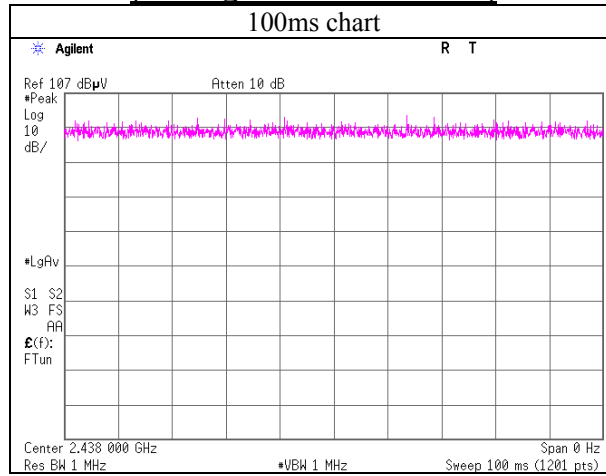
Test Report No. : 29GE0129-HO-01  
Regulation : FCC15.247(b)(3)/RSS-210A8.4(4)  
Test distance : -  
Date : 03/24/2009  
Temperature : 21deg.C.  
Humidity : 38%  
Engineer : Takeshi Choda

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2412.0	8.81	2.87	10.08	21.76	149.97	30.00	1000	8.24
Mid	2438.0	8.98	2.87	10.08	21.93	155.96	30.00	1000	8.07
High	2462.0	9.06	2.88	10.08	22.02	159.22	30.00	1000	7.98

Sample Calculation:

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

**VBW setting to use of the radiated emission**  
**(Average detector function)**



--- VBW Setting ---

$VBW = 1 / (1 \text{ cycle time}) = 1 / 100 \text{ ms} = 10 \text{ Hz}$  -> Therefore, we use VBW=10Hz for Spurious Emission Test (Average)

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

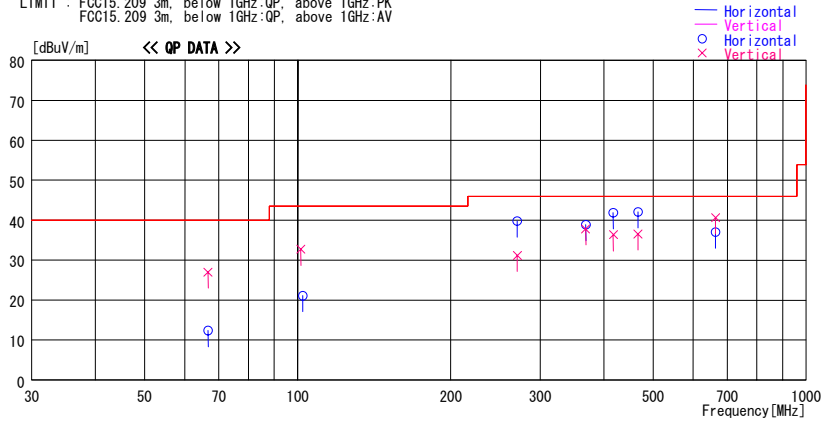
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2009/03/25

Company : Panasonic Corporation  
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 001  
Report No. : 29GE0129-HO-01  
Power : AC 120V / 60Hz  
Temp./Humi. : 21deg. C / 35%  
Engineer : Motoya Imura

Mode / Remarks : Tx 2412MHz ANT1

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
FCC15.209 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit		Comment
			Factor [dB/m]	Loss & Gain [dB]					[dBuV/m]	[dB]	
66.669	30.2	QP	6.6	-24.4	12.4	253	299	Hori.	40.0	27.6	
66.672	44.8	QP	6.6	-24.4	27.0	252	141	Vert.	40.0	13.0	
102.220	35.1	QP	9.9	-23.9	21.1	248	308	Hori.	43.5	22.4	
101.430	46.9	QP	9.7	-23.9	32.7	20	100	Vert.	43.5	10.8	
270.249	43.9	QP	18.1	-22.2	39.8	351	120	Hori.	46.0	6.2	
270.251	35.3	QP	18.1	-22.2	31.2	273	100	Vert.	46.0	14.8	
368.544	42.8	QP	16.5	-21.5	37.8	230	170	Vert.	46.0	8.2	
368.545	43.9	QP	16.5	-21.5	38.9	312	100	Hori.	46.0	7.1	
417.680	40.0	QP	17.5	-21.2	36.3	207	208	Vert.	46.0	9.7	
417.680	45.6	QP	17.5	-21.2	41.9	310	108	Hori.	46.0	4.1	
466.821	44.8	QP	18.2	-20.9	42.1	166	100	Hori.	46.0	3.9	
466.823	39.2	QP	18.2	-20.9	36.5	30	100	Vert.	46.0	9.5	
663.370	36.8	QP	20.0	-19.8	37.0	162	150	Hori.	46.0	9.0	
663.372	40.4	QP	20.0	-19.8	40.6	62	100	Vert.	46.0	5.4	

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 limit is rounded down to one decimal place.  
\*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**

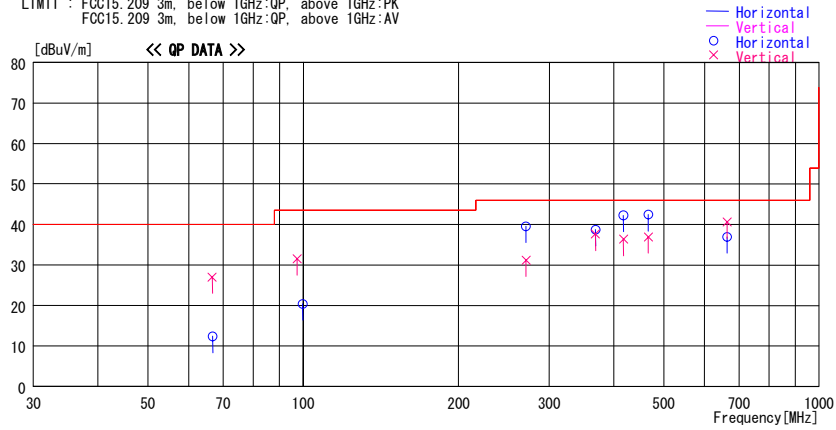
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber  
Date : 2009/03/25

Company : Panasonic Corporation  
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 001  
Report No. : 29GE0129-HO-01  
Power : AC 120V / 60Hz  
Temp./Humi. : 21deg. C / 35%  
Engineer : Motoya Imura

Mode / Remarks : Tx 2438MHz ANT1

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
FCC15.209 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
			Factor [dB/m]	Gain [dB]							
66.794	30.2	QP	6.6	-24.4	12.4	256	311	Hori.	40.0	27.6	
66.676	44.8	QP	6.6	-24.4	27.0	247	135	Vert.	40.0	13.0	
99.800	34.9	QP	9.4	-23.9	20.4	249	312	Hori.	43.5	23.1	
97.340	46.4	QP	9.0	-23.9	31.5	15	100	Vert.	43.5	12.0	
270.263	43.6	QP	18.1	-22.2	39.5	352	117	Hori.	46.0	6.5	
270.268	35.3	QP	18.1	-22.2	31.2	288	100	Vert.	46.0	14.8	
368.542	42.6	QP	16.5	-21.5	37.6	224	169	Vert.	46.0	8.4	
368.550	43.7	QP	16.5	-21.5	38.7	330	100	Hori.	46.0	7.3	
417.676	40.0	QP	17.5	-21.2	36.3	202	202	Vert.	46.0	9.7	
417.680	46.0	QP	17.5	-21.2	42.3	311	100	Hori.	46.0	3.7	
466.818	45.1	QP	18.2	-20.9	42.4	162	100	Hori.	46.0	3.6	
466.820	39.6	QP	18.2	-20.9	36.9	31	100	Vert.	46.0	9.1	
663.373	36.7	QP	20.0	-19.8	36.9	159	150	Hori.	46.0	9.1	
663.389	40.4	QP	20.0	-19.8	40.6	307	100	Vert.	46.0	5.4	

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 limit is rounded down to one decimal place.

\*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: High**

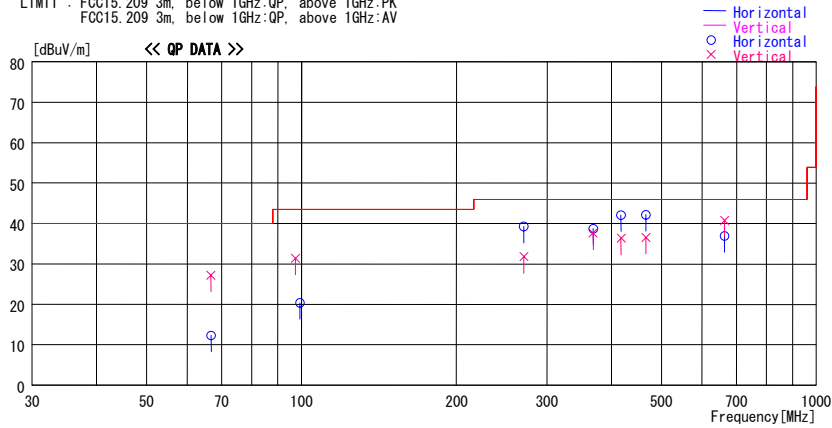
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber  
Date : 2009/03/25

Company : Panasonic Corporation  
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 001  
Report No. : 29GE0129-HO-01  
Power : AC 120V / 60Hz  
Temp./Humi. : 21deg.C / 35%  
Engineer : Motoya Imura

Mode / Remarks : Tx 2462MHz ANT1

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
FCC15.209 3m, below 1GHz:QP, above 1GHz:AV



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
			[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
66.788	30.1	QP	6.6	-24.4	12.3	248	313	Hori.	40.0	27.7	
66.692	45.0	QP	6.6	-24.4	27.2	252	140	Vert.	40.0	12.8	
99.377	35.0	QP	9.3	-23.9	20.4	251	308	Hori.	43.5	23.1	
97.376	46.3	QP	9.0	-23.9	31.4	352	102	Vert.	43.5	12.1	
270.260	43.4	QP	18.1	-22.2	39.3	27	100	Hori.	46.0	6.7	
270.262	35.9	QP	18.1	-22.2	31.8	280	100	Vert.	46.0	14.2	
368.484	42.6	QP	16.5	-21.5	37.6	240	173	Vert.	46.0	8.4	
368.538	43.7	QP	16.5	-21.5	38.7	342	100	Hori.	46.0	7.3	
417.680	40.0	QP	17.5	-21.2	36.3	153	198	Vert.	46.0	9.7	
417.680	45.8	QP	17.5	-21.2	42.1	300	100	Hori.	46.0	3.9	
466.818	44.9	QP	18.2	-20.9	42.2	161	100	Hori.	46.0	3.8	
466.820	39.2	QP	18.2	-20.9	36.5	30	100	Vert.	46.0	9.5	
663.391	36.7	QP	20.0	-19.8	36.9	158	144	Hori.	46.0	9.1	
663.387	40.6	QP	20.0	-19.8	40.8	306	100	Vert.	46.0	5.2	

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 limit is rounded down to one decimal place.  
\*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**

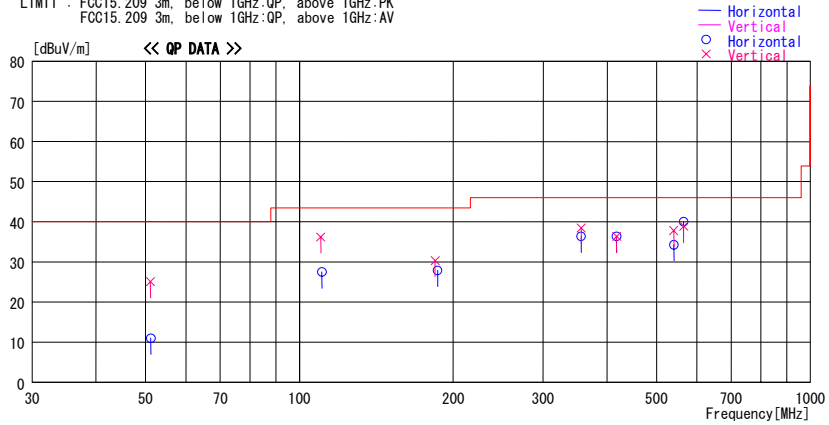
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No. 3 Semi Anechoic Chamber  
Date : 2009/04/07

Company : Panasonic Corporation  
Kind of EUT : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 001  
Report No. : 29GE0129-HO-01  
Power : AC 120V / 60Hz  
Temp./Humi. : 26deg. C / 28%  
Engineer : Katsunori Okai

Mode / Remarks : Rx 2438MHz ANT1

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK  
FCC15.209 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]							
51.132	39.7	QP	10.0	-24.6	25.1	11	100	Vert.	40.0	14.9	
51.184	25.7	QP	9.9	-24.6	11.0	181	300	Hori.	40.0	29.0	
110.181	48.6	QP	11.4	-23.8	36.2	0	100	Vert.	43.5	7.3	
110.621	39.8	QP	11.5	-23.8	27.5	234	300	Hori.	43.5	16.0	
184.279	37.4	QP	15.9	-23.0	30.3	7	100	Vert.	43.5	13.2	
186.372	34.9	QP	16.0	-23.0	27.9	38	300	Hori.	43.5	15.6	
356.261	41.8	QP	16.2	-21.6	36.4	52	100	Hori.	46.0	9.6	
356.263	43.8	QP	16.2	-21.6	38.4	6	100	Vert.	46.0	7.6	
417.684	40.1	QP	17.5	-21.2	36.4	311	100	Hori.	46.0	9.6	
417.693	40.0	QP	17.5	-21.2	36.3	10	100	Vert.	46.0	9.7	
540.532	35.7	QP	19.1	-20.5	34.3	334	144	Hori.	46.0	11.7	
540.534	39.2	QP	19.1	-20.5	37.8	12	100	Vert.	46.0	8.2	
565.096	39.7	QP	19.4	-20.3	38.8	1	100	Vert.	46.0	7.2	
565.099	40.9	QP	19.4	-20.3	40.0	315	132	Hori.	46.0	6.0	

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)

\*The limit is rounded down to one decimal place.  
\*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**

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

Company Panasonic Corporation  
Equipment Home theater audio system  
(Wireless Audio Transmitter)

Model SU-ZT1  
S/N 001  
Power AC 120V / 60Hz  
Mode Tx 2412MHz, ANT 1

Regulation FCC15.247(d) / RSS-210 A8.5  
Test Distance 3m (1G-10GHz) / 1m (above 10GHz)

Date 03/23/2009  
Temperature 24 deg.C.  
Humidity 24 %  
Engineer Keisuke Kawamura

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	1105.65	51.9	62.1	24.7	37.0	1.6	0.0	41.2	51.4	73.9	32.7	22.5
2	1968.83	62.4	51.8	26.2	36.4	2.1	0.0	54.3	43.7	73.9	19.6	30.2
3	2390.00	64.1	59.2	27.1	35.9	2.3	0.0	57.6	52.7	73.9	16.3	21.2
4	2400.00	68.3	64.7	27.1	35.9	2.3	0.0	61.8	58.2	73.9	12.1	15.7
5	2473.33	64.2	56.0	27.3	35.9	2.3	0.0	57.9	49.7	73.9	16.0	24.2
6	4824.00	43.5	42.9	31.3	35.7	3.6	0.9	43.6	43.0	73.9	30.3	30.9
7	7236.00	43.2	42.6	35.6	36.0	4.4	0.7	47.9	47.3	73.9	26.0	26.6
8	9648.00	43.6	44.1	38.4	36.5	5.5	0.8	51.8	52.3	73.9	22.1	21.6
<b>Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
9	12060.00	NS	NS	-	-	-	-	-	-	73.9	-	-
10	14472.00	NS	NS	-	-	-	-	-	-	73.9	-	-
11	16884.00	NS	NS	-	-	-	-	-	-	73.9	-	-
12	19296.00	NS	NS	-	-	-	-	-	-	73.9	-	-
13	21708.00	NS	NS	-	-	-	-	-	-	73.9	-	-
14	24120.00	49.0	49.0	40.4	35.1	8.2	0.0	53.0	53.0	73.9	20.9	20.9

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	1105.65	47.1	60.7	24.7	37.0	1.6	0.0	36.4	50.0	53.9	17.5	3.9
2	1968.83	49.3	38.2	26.2	36.4	2.1	0.0	41.2	30.1	53.9	12.7	23.8
3	2390.00	50.2	45.9	27.1	35.9	2.3	0.0	43.7	39.4	53.9	10.2	14.5
4	2400.00	54.5	51.0	27.1	35.9	2.3	0.0	48.0	44.5	53.9	5.9	9.4
5	2473.33	50.5	41.4	27.3	35.9	2.3	0.0	44.2	35.1	53.9	9.7	18.8
6	4824.00	30.2	30.2	31.3	35.7	3.6	0.9	30.3	30.3	53.9	23.6	23.6
7	7236.00	29.6	29.5	35.6	36.0	4.4	0.7	34.3	34.2	53.9	19.6	19.7
8	9648.00	30.2	30.1	38.4	36.5	5.5	0.8	38.4	38.3	53.9	15.5	15.6
<b>Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
9	12060.00	NS	NS	-	-	-	-	-	-	53.9	-	-
10	14472.00	NS	NS	-	-	-	-	-	-	53.9	-	-
11	16884.00	NS	NS	-	-	-	-	-	-	53.9	-	-
12	19296.00	NS	NS	-	-	-	-	-	-	53.9	-	-
13	21708.00	NS	NS	-	-	-	-	-	-	53.9	-	-
14	24120.00	35.1	35.1	40.4	35.1	8.2	0.0	39.1	39.1	53.9	14.8	14.8

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.

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

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

\*NS: No detect Signal.

**UL Japan, Inc.**  
**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

**Radiated Spurious Emission**

**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 (1G-10GHz) / 1m (above 10GHz)

Company Panasonic Corporation  
Equipment Home theater audio system  
(Wireless Audio Transmitter)  
Model SU-ZT1  
S/N 001  
Power AC 120V / 60Hz  
Mode Tx 2438MHz, ANT 1

Date 03/23/2009  
Temperature 24 deg.C.  
Humidity 24 %  
Engineer Keisuke Kawamura

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	1105.65	50.3	62.1	24.7	37.0	1.6	0.0	39.6	51.4	73.9	34.3	22.5
2	1968.83	62.8	52.5	26.2	36.4	2.1	0.0	54.7	44.4	73.9	19.2	29.5
3	2373.33	62.9	52.5	27.3	35.9	2.3	0.0	56.6	46.2	73.9	17.3	27.7
4	4876.00	44.9	44.0	31.3	35.7	3.6	0.9	45.0	44.1	73.9	28.9	29.8
5	7314.00	43.3	42.7	35.8	36.0	4.3	0.7	48.1	47.5	73.9	25.8	26.4
6	9752.00	43.6	43.1	38.5	36.6	5.6	0.8	51.9	51.4	73.9	22.0	22.5
<b>Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
7	12190.00	NS	NS	-	-	-	-	-	-	73.9	-	-
8	14628.00	NS	NS	-	-	-	-	-	-	73.9	-	-
9	17066.00	NS	NS	-	-	-	-	-	-	73.9	-	-
10	19504.00	NS	NS	-	-	-	-	-	-	73.9	-	-
11	21942.00	NS	NS	-	-	-	-	-	-	73.9	-	-
12	24380.00	48.1	48.2	40.4	35.1	8.2	0.0	52.1	52.2	73.9	21.8	21.7

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	1105.65	44.3	60.8	24.7	37.0	1.6	0.0	33.6	50.1	53.9	20.3	3.8
2	1968.83	49.0	39.3	26.2	36.4	2.1	0.0	40.9	31.2	53.9	13.0	22.7
3	2373.33	49.5	39.5	27.3	35.9	2.3	0.0	43.2	33.2	53.9	10.7	20.7
4	4876.00	30.6	30.6	31.3	35.7	3.6	0.9	30.7	30.7	53.9	23.2	23.2
5	7314.00	29.7	29.6	35.8	36.0	4.3	0.7	34.5	34.4	53.9	19.4	19.5
6	9752.00	29.8	29.8	38.5	36.6	5.6	0.8	38.1	38.1	53.9	15.8	15.8
<b>Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
7	12190.00	NS	NS	-	-	-	-	-	-	53.9	-	-
8	14628.00	NS	NS	-	-	-	-	-	-	53.9	-	-
9	17066.00	NS	NS	-	-	-	-	-	-	53.9	-	-
10	19504.00	NS	NS	-	-	-	-	-	-	53.9	-	-
11	21942.00	NS	NS	-	-	-	-	-	-	53.9	-	-
12	24380.00	34.5	34.5	40.4	35.1	8.2	0.0	38.5	38.5	53.9	15.4	15.4

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.

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

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

\*NS: No detect Signal.

**Radiated Spurious Emission**

**Tx, Ch: High**

UL Japan, Inc.

Head Office EMC Lab. No.3 Semi Anechoic Chamber

Company Panasonic Corporation  
Equipment Home theater audio system  
(Wireless Audio Transmitter)

Regulation FCC15.247(d) / RSS-210 A8.5  
Test Distance 3m (1G-10GHz) / 1m (above 10GHz)

Model SU-ZT1  
S/N 001  
Power AC 120V / 60Hz  
Mode Tx 2462MHz, ANT 1

Date 03/23/2009  
Temperature 24 deg.C.  
Humidity 24 %  
Engineer Keisuke Kawamura

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	1105.65	51.4	62.0	24.7	37.0	1.6	0.0	40.7	51.3	73.9	33.2	22.6
2	1968.83	62.3	53.3	26.2	36.4	2.1	0.0	54.2	45.2	73.9	19.7	28.7
3	2483.50	65.3	60.8	27.3	35.9	2.3	0.0	59.0	54.5	73.9	14.9	19.4
4	4924.00	43.5	44.8	31.4	35.7	3.6	0.9	43.7	45.0	73.9	30.2	28.9
5	7386.00	44.3	43.7	35.9	36.0	4.3	0.7	49.2	48.6	73.9	24.7	25.3
6	9848.00	44.8	43.8	38.7	36.7	5.7	0.8	53.3	52.3	73.9	20.6	21.6
<b>Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
7	12310.00	NS	NS	-	-	-	-	-	-	73.9	-	-
8	14772.00	NS	NS	-	-	-	-	-	-	73.9	-	-
9	17234.00	NS	NS	-	-	-	-	-	-	73.9	-	-
10	19696.00	NS	NS	-	-	-	-	-	-	73.9	-	-
11	22158.00	NS	NS	-	-	-	-	-	-	73.9	-	-
12	24620.00	48.6	49.0	40.4	35.1	8.3	0.0	52.7	53.1	73.9	21.2	20.8

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	1105.65	46.5	60.6	24.7	37.0	1.6	0.0	35.8	49.9	53.9	18.1	4.0
2	1968.83	48.3	39.8	26.2	36.4	2.1	0.0	40.2	31.7	53.9	13.7	22.2
3	2483.50	51.3	46.8	27.3	35.9	2.3	0.0	45.0	40.5	53.9	8.9	13.4
4	4924.00	30.7	30.8	31.4	35.7	3.6	0.9	30.9	31.0	53.9	23.0	22.9
5	7386.00	30.0	29.9	35.9	36.0	4.3	0.7	34.9	34.8	53.9	19.0	19.1
6	9848.00	30.4	30.3	38.7	36.7	5.7	0.8	38.9	38.8	53.9	15.0	15.1
<b>Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
7	12310.00	NS	NS	-	-	-	-	-	-	53.9	-	-
8	14772.00	NS	NS	-	-	-	-	-	-	53.9	-	-
9	17234.00	NS	NS	-	-	-	-	-	-	53.9	-	-
10	19696.00	NS	NS	-	-	-	-	-	-	53.9	-	-
11	22158.00	NS	NS	-	-	-	-	-	-	53.9	-	-
12	24620.00	35.0	35.0	40.4	35.1	8.3	0.0	39.1	39.1	53.9	14.8	14.8

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.

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

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

\*NS: No detect Signal.

**UL Japan, Inc.**

**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

**Radiated Spurious Emission**

**Rx, 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

Company Panasonic Corporation  
Equipment Home theater audio system  
(Wireless Audio Transmitter)  
Model SU-ZT1  
S/N 001  
Power AC 120V / 60Hz  
Mode Rx 2438MHz, ANT 1

Date 04/07/2009  
Temperature 26 deg.C.  
Humidity 28 %  
Engineer Katsunori Okai

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

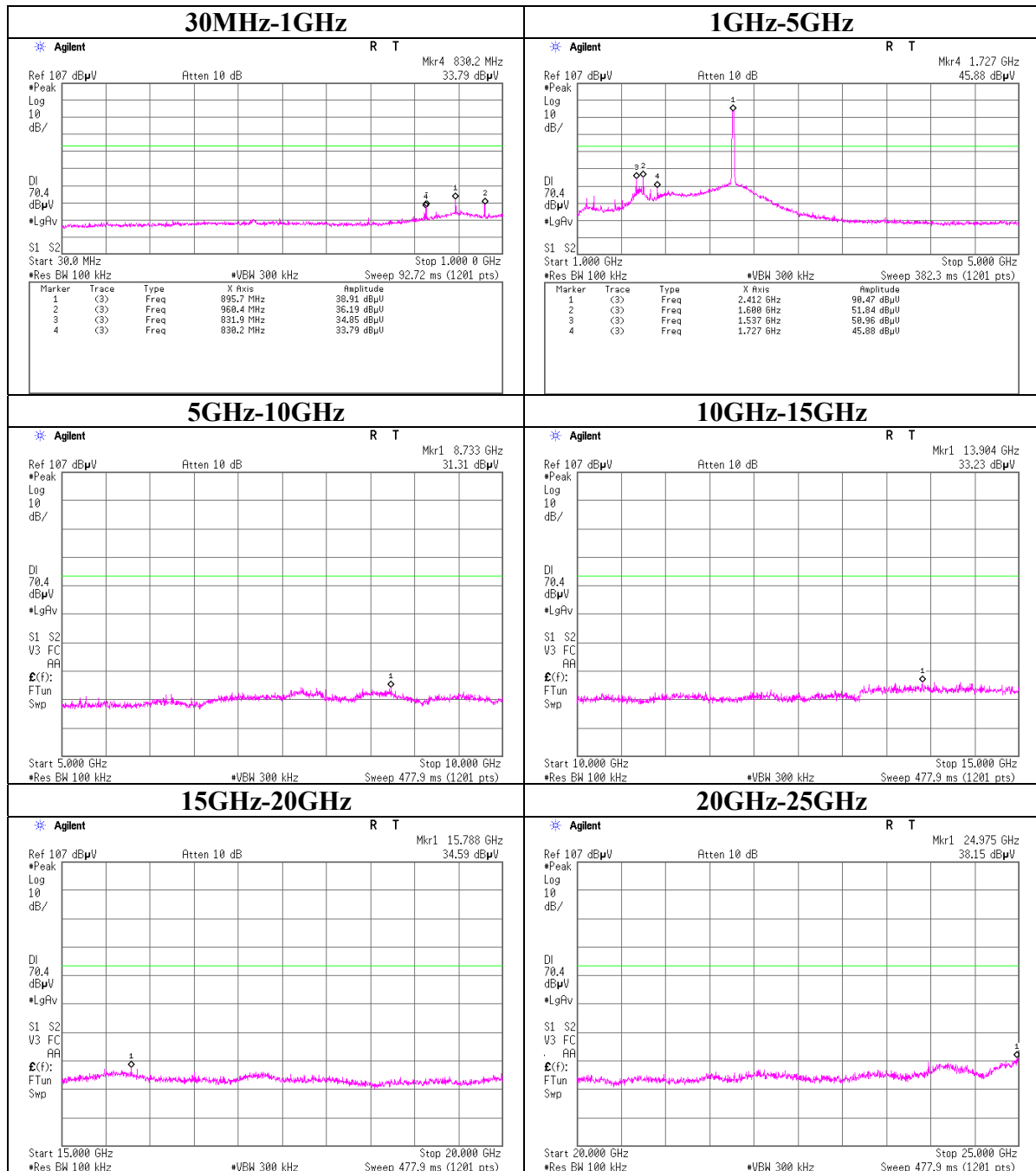
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1056.55	46.6	58.2	24.3	34.8	2.0	0.0	38.1	49.7	73.9	35.8	24.2
2	1105.64	45.4	59.7	24.5	34.7	2.0	0.0	37.2	51.5	73.9	36.7	22.4
3	1154.78	46.8	58.3	24.7	34.5	2.0	0.0	39.0	50.5	73.9	34.9	23.4
4	2432.40	39.9	42.1	26.8	32.3	2.7	0.0	37.1	39.3	73.9	36.8	34.6
5	2438.00	39.3	39.8	26.8	32.3	2.8	0.0	36.6	37.1	73.9	37.3	36.8
6	4876.00	38.5	38.9	31.3	31.4	3.4	0.0	41.8	42.2	73.9	32.1	31.7
7	7314.00	38.4	38.3	35.8	31.9	4.2	0.0	46.5	46.4	73.9	27.4	27.5

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

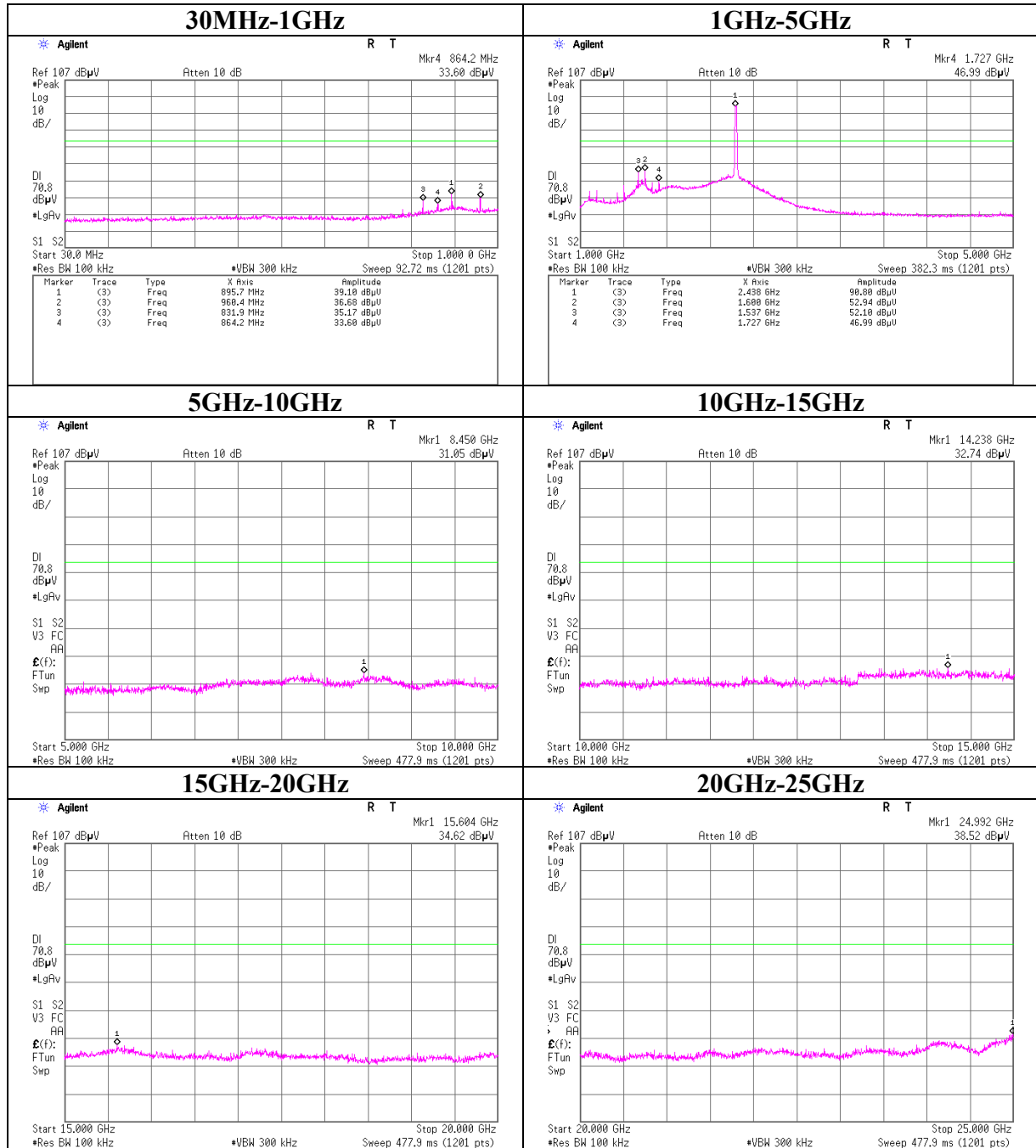
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1056.55	40.9	56.7	24.3	34.8	2.0	0.0	32.4	48.2	53.9	21.5	5.7
2	1105.64	38.3	58.6	24.5	34.7	2.0	0.0	30.1	50.4	53.9	23.8	3.5
3	1154.78	40.5	56.9	24.7	34.5	2.0	0.0	32.7	49.1	53.9	21.2	4.8
4	2432.40	27.3	28.6	26.8	32.3	2.7	0.0	24.5	25.8	53.9	29.4	28.1
5	2438.00	27.4	27.4	26.8	32.3	2.8	0.0	24.7	24.7	53.9	29.2	29.2
6	4876.00	26.6	26.1	31.3	31.4	3.4	0.0	29.9	29.4	53.9	24.0	24.5
7	7314.00	25.9	25.9	35.8	31.9	4.2	0.0	34.0	34.0	53.9	19.9	19.9

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.  
\*In the frequency over the fifth harmonic, the noise from the EUT was not seen.The data above is its base noise.  
\*The test result is round off to one or two decimal places, so some differences might be observed.  
\*NS: No detect Signal.

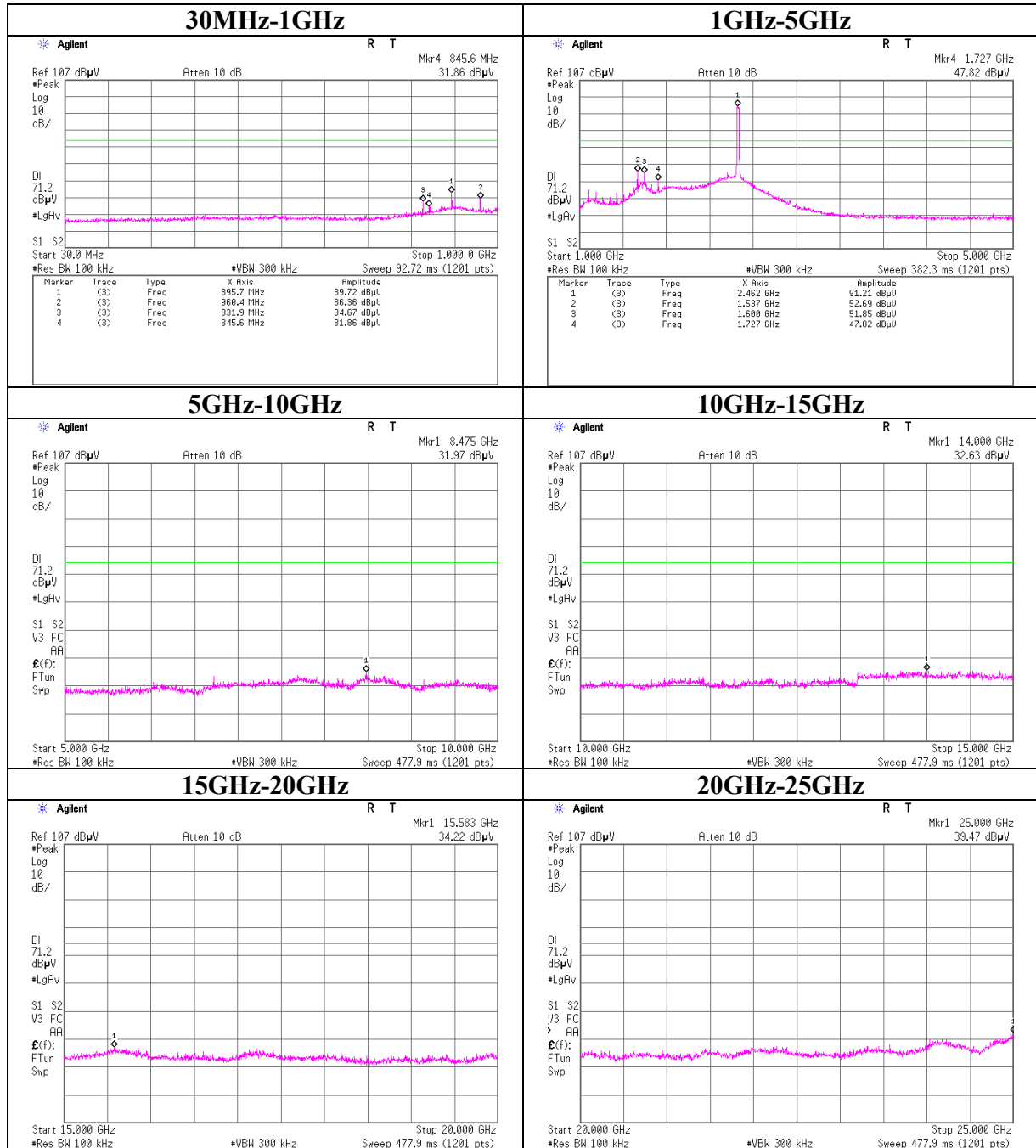
**Conducted Spurious Emission**  
**Tx, ANT 1, Ch: Low**



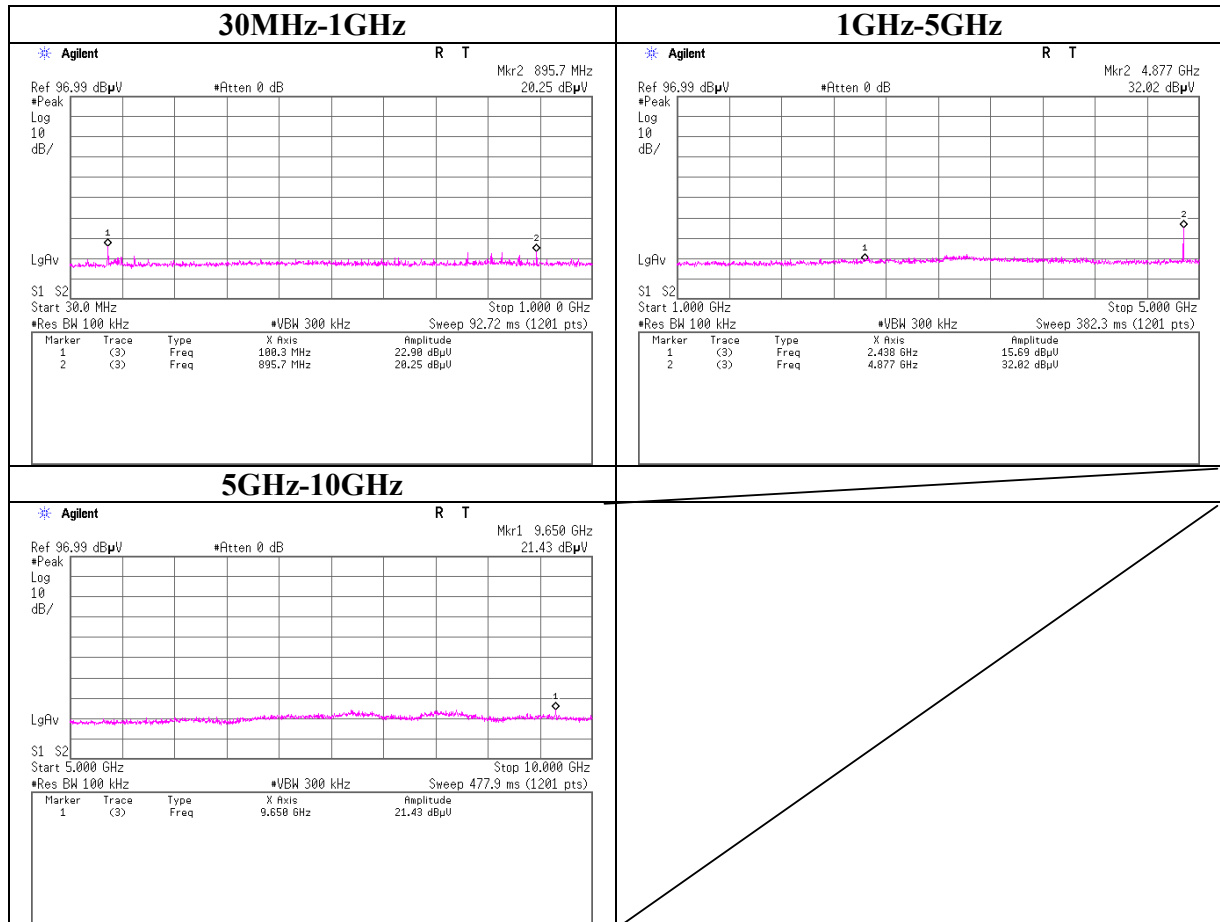
**Conducted Spurious Emission**  
**Tx, ANT 1, Ch: Mid**



**Conducted Spurious Emission**  
**Tx, ANT 1, Ch: High**

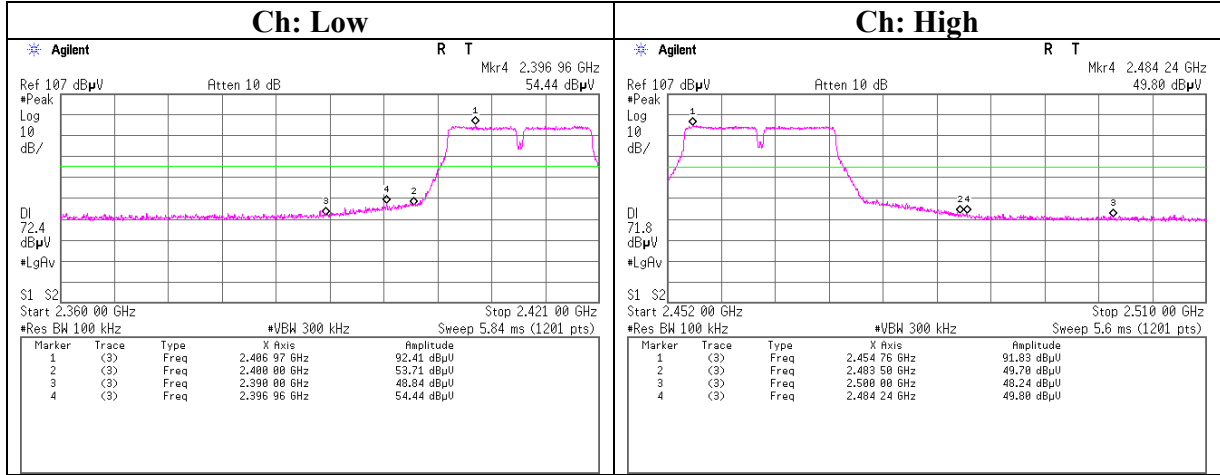


**Conducted Spurious Emission**  
**Rx, ANT 1 Ch: Mid**



**Conducted emission Band Edge compliance**

ANT 1



## Power Density

Company : Panasonic Corporation  
Equipment : Home theater audio system (Wireless Audio Transmitter)  
Model No. : SU-ZT1  
Serial No. : 002  
Power : AC120V/60Hz  
Mode : Tx Mode, ANT 1

UL Japan, Inc.  
Head Office EMC Lab. No.11 Measurement Room  
Test Report No.29GE0129-HO-01  
Regulation : FCC15.247(e)/RSS-210A8.2(b)  
Test distance : -  
Date : 03/24/2009  
Temperature : 21deg.C.  
Humidity : 38%  
Engineer : Takeshi Choda

Ch	Freq. [MHz]	Reading [dBm]	Cable [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2411.0	-17.92	2.87	10.08	-4.97	8.0	13.0
Mid	2431.0	-16.97	2.87	10.08	-4.02	8.0	12.0
High	2469.0	-17.69	2.88	10.08	-4.73	8.0	12.7

Sample Calculation:

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

---

**UL Japan, Inc.**

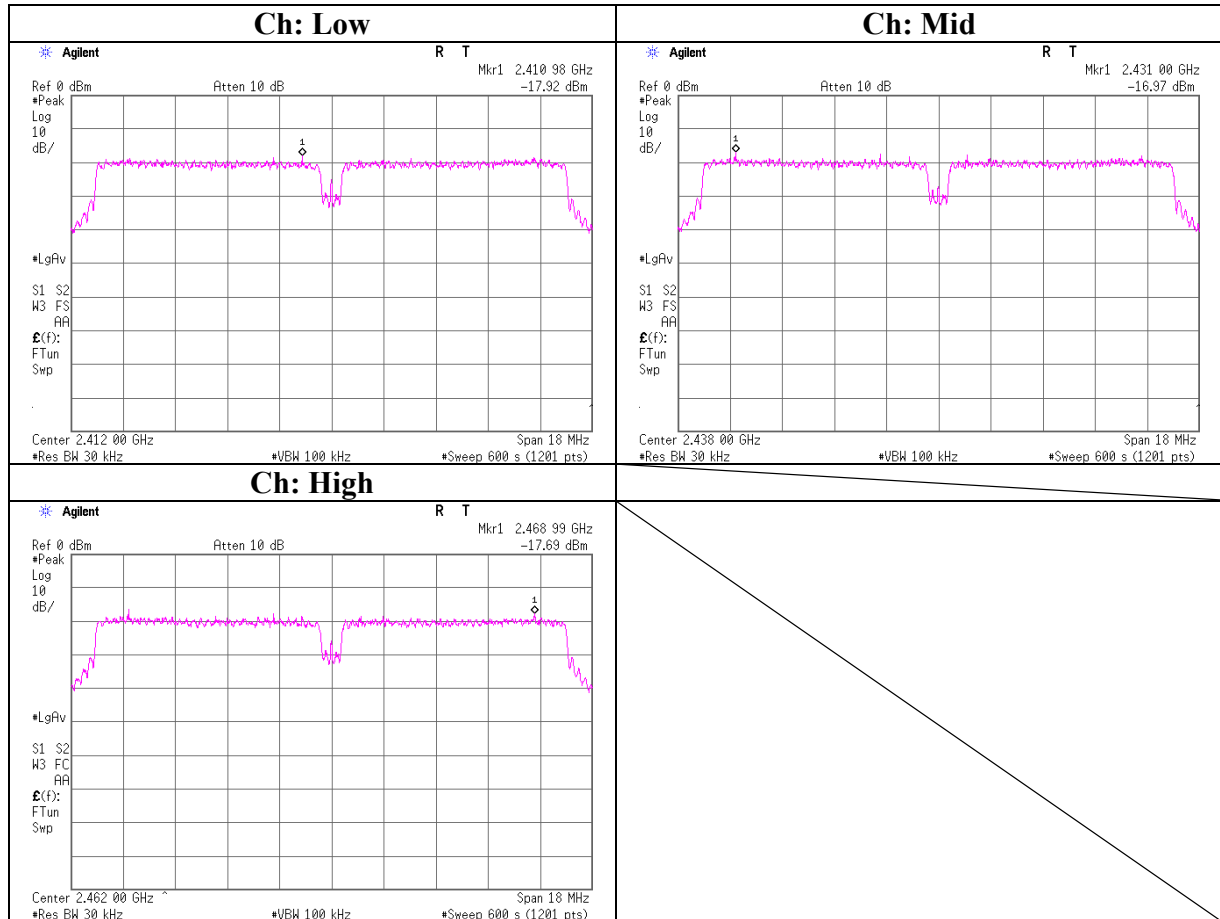
**Head Office EMC Lab.**

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

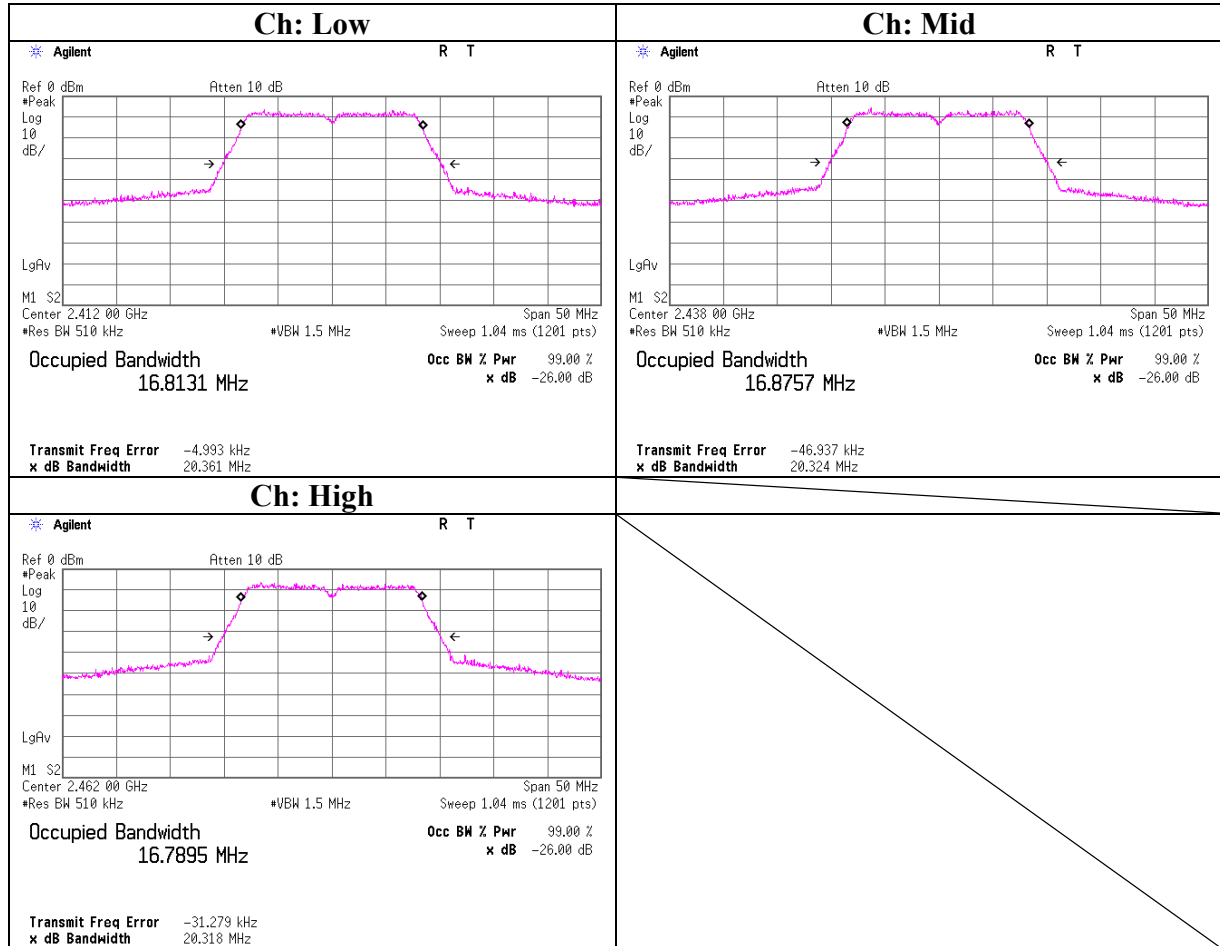
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

**Power Density**



**99% Occupied Bandwidth**



### APPENDIX 3: Test instruments

#### EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-01	Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 10m	DA-06881	RE	2008/10/29 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	253	RE	2009/01/31 * 12
MHA-01	Horn Antenna 18-26.5GHz	EMCO	3160-09	1266	RE	2009/01/31 * 12
MCC-18	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	233010(1m) / 292410(5m)	RE	2008/09/09 * 12
MPA-01	Pre Amplifier	Agilent	8449B	3008A01671	RE	2009/02/12 * 12
CUST-MSTW-14	EMI measurement program	TSJ	TEPTO-DV	-	RE/CE	-
MOS-01	Digital Humidity Indicator	N.T	NT-1800	MOS01	RE	2009/02/06 * 12
MJM-01	Measure	KDS	ES19-55	-	RE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	RE	2008/11/07 * 12
MHF-17	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	7001	RE	2008/12/15 * 12
MCC-76	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278967/4	RE	2008/12/17 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	AT	2008/08/18 * 12
MPM-12	Power Meter	Anritsu	ML2495A	0825002	AT	2008/08/13 * 12
MPSE-17	Power sensor	Anritsu	MA2411B	0738285	AT	2008/08/13 * 12
MCC-116	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290221/4	AT	2008/08/04 * 12
MAT-20	Attenuator(10dB) (above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	AT	2009/01/16 * 12
MAEC-03	Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE/CE	2009/02/02 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	-	RE/CE	2009/02/06 * 12
MJM-06	Measure	PROMART	SEN1955	-	RE/CE	-
MSA-09	Spectrum Analyzer	Advantest	R3273	95090115	RE/CE	2008/12/24 * 12
MTR-08	Test Receiver	Rohde & Schwarz	ESCI	100767	RE/CE	2008/06/12 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	1915	RE	2009/01/19 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	174	RE	2009/01/10 * 12
MCC-51	Coaxial cable	UL Japan	-	-	RE	2008/07/18 * 12
MAT-30	Attenuator(6dB)	TME	UFA-01	-	RE	2009/03/02 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	260834	RE	2009/03/18 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	8127383	CE(EUT)	2008/06/27 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	8127364	CE(AE)	2009/02/18 * 12
MTA-07	Terminator	MCL	BTRM-50	1 9944	CE	2009/02/17 * 12
MCC-112	Coaxial cable	Fujikura/Suhner/TSJ	-	-	CE	2008/07/03 * 12
MCC-114	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	290212/4	AT	2008/08/01 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-180	-	AT	2009/02/04 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	8127363	CE(EUT)	2009/02/18 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	258	RE	2008/04/23 * 12
MCC-56	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	174410(1m) / 284655(5m)	RE	2009/01/07 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	MY39500779	RE	2009/03/19 * 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

**UL Japan, Inc.**

**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