

## APPENDIX 2: Data of EMI test

### 6dB Bandwidth 11b/g

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

Company	: FURUNO SYSTEMS CO., LTD.	Regulation	: FCC Part15 Subpart C 15.247(a)(2) / RSS-210 A8.2(a)
Equipment	: Handy Terminal	Test Distance	: -
Model	: PI-13700-W	Date	: December 12, 2008
S/N	: 7059-1899	Temperature	: 21deg.C.
Power	: DC3.7V	Humidity	: 42%
Mode	: Tx, IEEE802.11b, 11Mbps	Engineer	: Hisayoshi Sato
	: Tx, IEEE802.11g, 6Mbps		

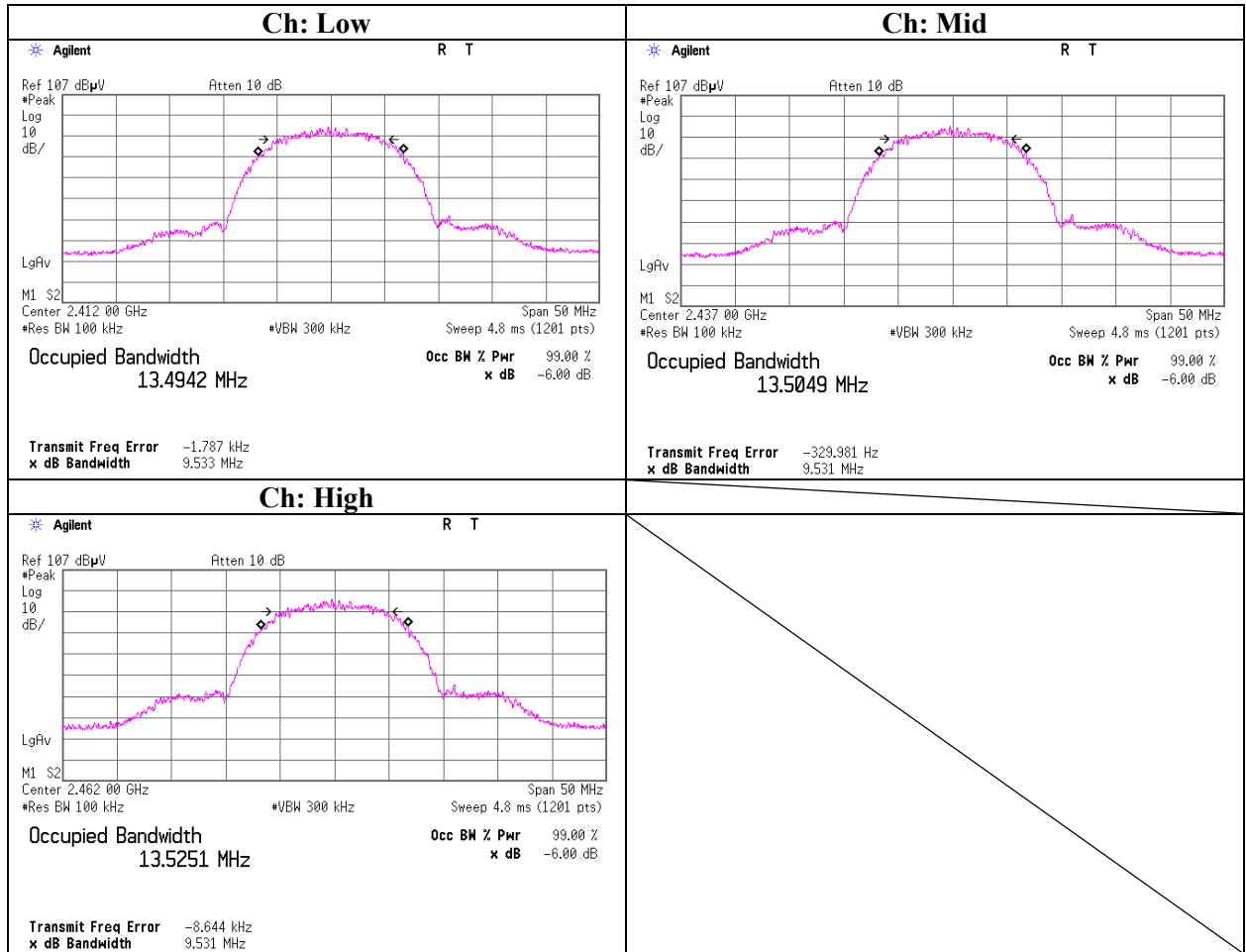
#### [IEEE802.11b]

Ch	Freq. [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
Low	2412.0	9.533	>500
Mid	2437.0	9.531	>500
High	2462.0	9.531	>500

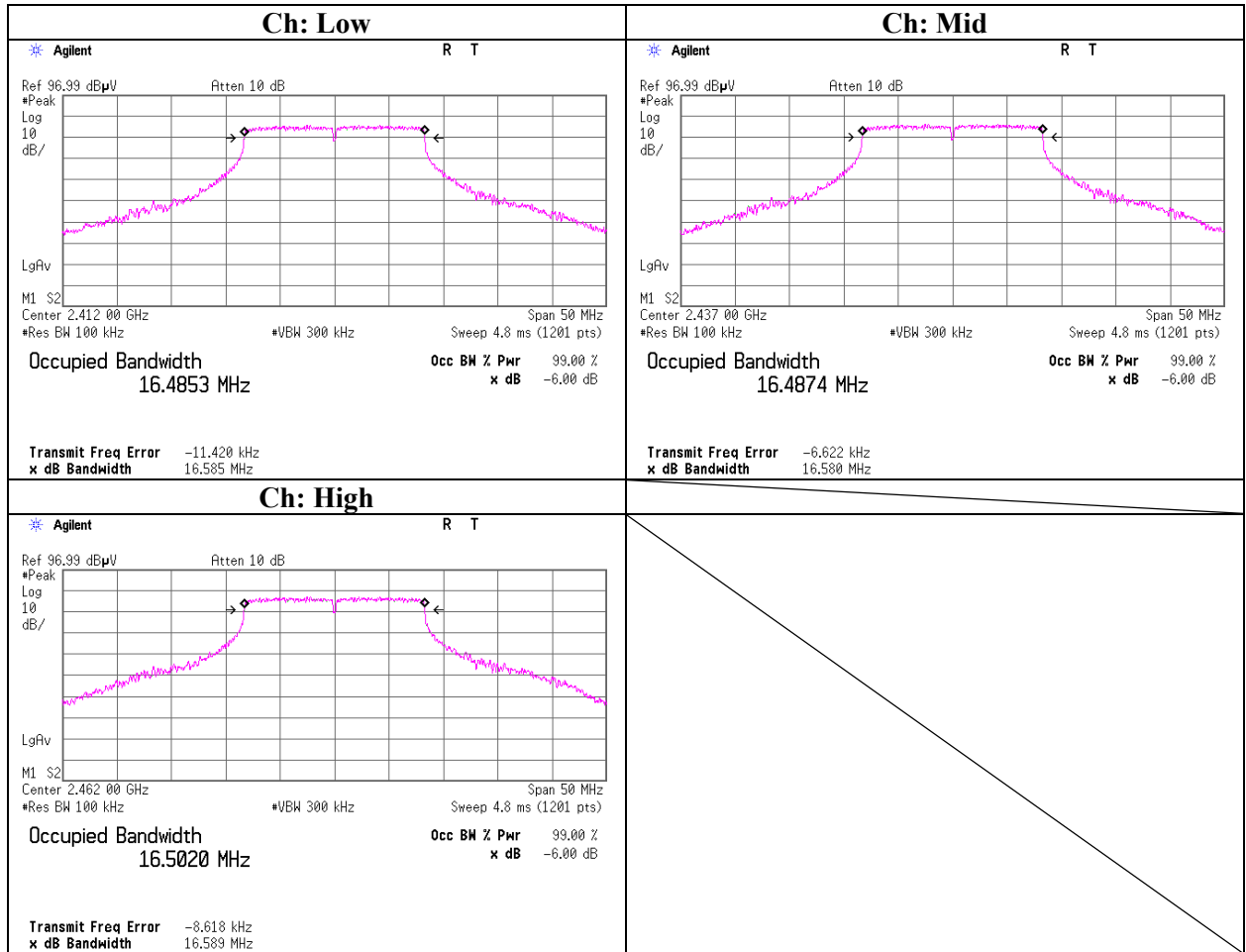
#### [IEEE802.11g]

Ch	Freq. [MHz]	6dB Bandwidth [MHz]	Limit [kHz]
Low	2412.0	16.585	>500
Mid	2437.0	16.580	>500
High	2462.0	16.589	>500

**6dB Bandwidth**  
**11b**



**6dB Bandwidth**  
**11g**



## Maximum Peak Output Power

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

Company	: FURUNO SYSTEMS CO., LTD.	Regulation	: FCC15.247(b)(3)/RSS-210A8.4(4)
Equipment	: Handy Terminal	Test distance	: -
Model No.	: PI-13700-W	Date	: December 12, 2008
Serial No.	: 7059-1899	Temperature	: 21 deg.C.
Power	: DC3.7V	Humidity	: 42%
Mode	: Tx, IEEE802.11b, 11Mbps	Engineer	: Hisayoshi Sato
	: Tx, IEEE802.11g, 6Mbps		

### [IEEE802.11b]

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2412.0	-4.09	0.80	19.94	16.65	46.24	30.00	1000	13.35
Mid	2437.0	-2.68	0.80	19.94	18.06	63.97	30.00	1000	11.94
High	2462.0	-2.85	0.80	19.94	17.89	61.52	30.00	1000	12.11

Sample Calculation:

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

### [IEEE802.11g]

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2412.0	-1.40	0.80	19.94	19.34	85.90	30.00	1000	10.66
Mid	2437.0	-0.79	0.80	19.94	19.95	98.86	30.00	1000	10.05
High	2462.0	-0.72	0.80	19.94	20.02	100.46	30.00	1000	9.98

Sample Calculation:

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

## Maximum Peak Output Power

### IEEE802.11b/g Worst data rate (Conducted)

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

Company	: FURUNO SYSTEMS CO., LTD.	Regulation	: FCC15.247(b)(3)/RSS-210A8.4(4)
Equipment	: Handy Terminal	Test distance	: -
Model No.	: PI-13700-W	Date	: December 12, 2008
Serial No.	: 7059-1899	Temperature	: 21deg.C.
Power	: DC3.7V	Humidity	: 42%
Mode	: Tx, IEEE802.11b/g	Engineer	: Hisayoshi Sato

#### [IEEE802.11b ]

Data rate	Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Remarks
						[dBm]	[mW]	
1	Mid	2437.0	-2.79	0.80	19.94	17.95	62.37	
2	Mid	2437.0	-2.74	0.80	19.94	18.00	63.10	
5.5	Mid	2437.0	-3.30	0.80	19.94	17.44	55.46	
11	Mid	2437.0	-2.68	0.80	19.94	18.06	63.97	Worst

Sample Calculation:

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

#### [IEEE802.11g ]

Data rate	Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Remarks
						[dBm]	[mW]	
6	Mid	2437.0	-0.79	0.80	19.94	19.95	98.86	Worst
9	Mid	2437.0	-1.05	0.80	19.94	19.69	93.11	
12	Mid	2437.0	-0.80	0.80	19.94	19.94	98.63	
18	Mid	2437.0	-1.19	0.80	19.94	19.55	90.16	
24	Mid	2437.0	-0.90	0.80	19.94	19.84	96.38	
36	Mid	2437.0	-0.82	0.80	19.94	19.92	98.17	
48	Mid	2437.0	-0.91	0.80	19.94	19.83	96.16	
54	Mid	2437.0	-0.93	0.80	19.94	19.81	95.72	

Sample Calculation:

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

**UL Japan, Inc.**

**Head Office EMC Lab.**

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**Radiated Spurious Emission (below 1GHz)**  
**11b, 11Mbps, Tx, Ch: Low**  
**(Model No.: PI-13700-W)**

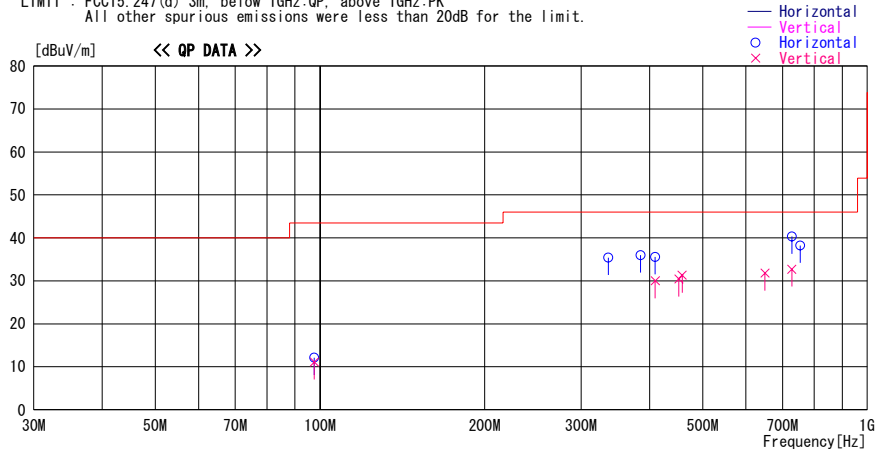
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Date : 2008/12/17

Company : FURUNO SYSTEMS CO.,LTD. Report No. : 29CE0014-HO-01  
Kind of EUT : Handy Terminal Power : DC 3.7V  
Model No. : PI-13700-W Temp./Humi. : 20deg.C / 40%  
Serial No. : 7059-1901 Engineer : Takeshi Choda

Mode / Remarks : Tx, 11b, 2412MHz, 11Mbps, Worst-axis(Hor:X, Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Loss& Gain							
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
97.635	21.3	QP	9.8	-20.0	11.1	50	100	Vert.	43.5	32.4	
409.851	30.4	QP	16.7	-17.1	30.0	183	197	Vert.	46.0	16.0	
452.666	29.9	QP	17.5	-17.0	30.4	338	108	Vert.	46.0	15.6	
458.786	30.7	QP	17.6	-17.0	31.3	255	193	Vert.	46.0	14.7	
649.979	28.0	QP	20.0	-16.2	31.8	94	100	Vert.	46.0	14.2	
727.955	27.3	QP	21.0	-15.6	32.7	100	100	Vert.	46.0	13.3	
97.635	22.3	QP	9.8	-20.0	12.1	108	200	Hori.	43.5	31.4	
336.447	38.7	QP	13.9	-17.2	35.4	69	107	Hori.	46.0	10.6	
385.381	37.0	QP	16.0	-17.0	36.0	75	107	Hori.	46.0	10.0	
409.819	36.0	QP	16.7	-17.1	35.6	92	100	Hori.	46.0	10.4	
727.956	34.9	QP	21.0	-15.6	40.3	98	100	Hori.	46.0	5.7	
753.967	32.2	QP	21.3	-15.3	38.2	97	110	Hori.	46.0	7.8	

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)

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

**Radiated Spurious Emission (below 1GHz)**  
**11b, 11Mbps, Tx, Ch: Mid**  
**(Model No.: PI-13700-W)**

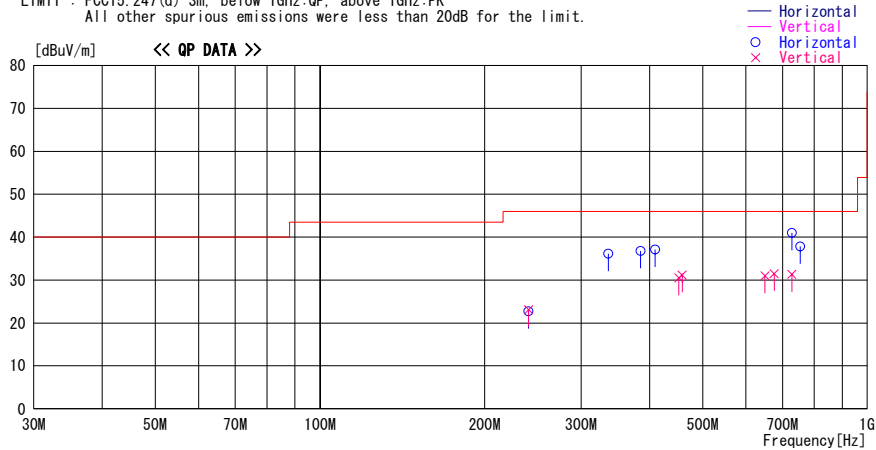
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Date : 2008/12/17

Company : FURUNO SYSTEMS CO.,LTD. Report No. : 29CE0014-HO-01  
Kind of EUT : Handy Terminal Power : DC 3.7V  
Model No. : PI-13700-W Temp./Humi. : 20deg.C. / 40%  
Serial No. : 7059-1901 Engineer : Takeshi Choda

Mode / Remarks : Tx, 11b, 2437MHz, 11Mbps, Worst-axis(Hor:X, Ver:Z)

LIMIT : FCC15.247(d) 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	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Gain							
			[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
240.480	23.6	QP	17.1	-18.0	22.7	322	258	Hori.	46.0	23.3	
240.480	24.0	QP	17.1	-18.0	23.1	16	100	Vert.	46.0	22.9	
336.440	39.4	QP	13.9	-17.2	36.1	78	100	Hori.	46.0	9.9	
385.380	37.8	QP	16.0	-17.0	36.8	94	100	Hori.	46.0	9.2	
409.855	37.5	QP	16.7	-17.1	37.1	74	100	Hori.	46.0	8.9	
452.678	30.0	QP	17.5	-17.0	30.5	90	232	Vert.	46.0	15.5	
458.797	30.6	QP	17.6	-17.0	31.2	62	207	Vert.	46.0	14.8	
649.959	27.2	QP	20.0	-16.2	31.0	269	100	Vert.	46.0	15.0	
675.961	27.2	QP	20.3	-16.0	31.5	281	100	Vert.	46.0	14.5	
727.955	35.6	QP	21.0	-15.6	41.0	262	120	Hori.	46.0	5.0	
727.995	25.9	QP	21.0	-15.6	31.3	288	100	Vert.	46.0	14.7	
753.967	31.8	QP	21.3	-15.3	37.8	86	114	Hori.	46.0	8.2	

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

**Radiated Spurious Emission (below 1GHz)**  
**11b, 11Mbps, Tx, Ch: High**  
**(Model No.: PI-13700-W)**

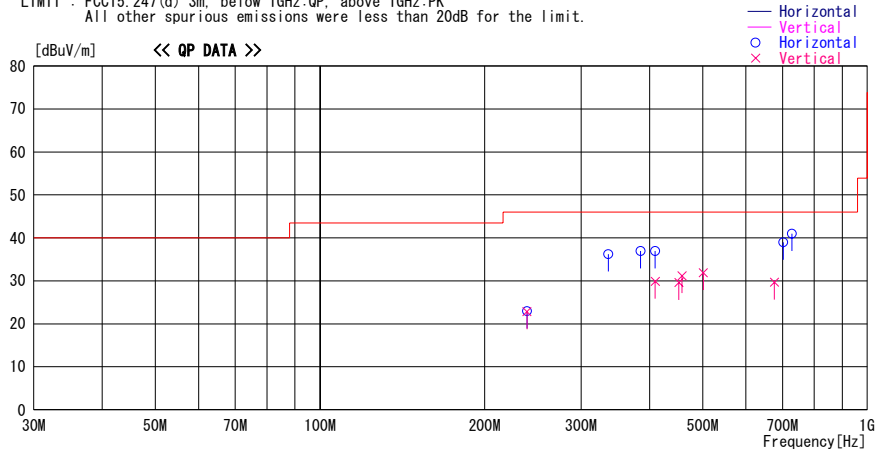
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Date : 2008/12/17

Company : FURUNO SYSTEMS CO.,LTD. Report No. : 29CE0014-HO-01  
Kind of EUT : Handy Terminal Power : DC 3.7V  
Model No. : PI-13700-W Temp./Humi. : 20deg.C / 40%  
Serial No. : 7059-1901 Engineer : Takeshi Choda

Mode / Remarks : Tx, 11b, 2462MHz, 11Mbps, Worst-axis(Hor:X, Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Loss& Gain							
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
238.857	23.8	QP	17.0	-18.0	22.8	349	100	Vert.	46.0	23.2	
238.857	24.0	QP	17.0	-18.0	23.0	16	300	Hori.	46.0	23.0	
336.442	39.5	QP	13.9	-17.2	36.2	90	100	Hori.	46.0	9.8	
385.383	37.9	QP	16.0	-17.0	36.9	91	100	Hori.	46.0	9.1	
409.848	37.3	QP	16.7	-17.1	36.9	105	100	Hori.	46.0	9.1	
409.866	30.3	QP	16.7	-17.1	29.9	80	214	Vert.	46.0	16.1	
452.645	29.1	QP	17.5	-17.0	29.6	72	243	Vert.	46.0	16.4	
458.707	30.6	QP	17.6	-17.0	31.2	50	221	Vert.	46.0	14.8	
501.616	30.5	QP	18.3	-16.9	31.9	88	202	Vert.	46.0	14.1	
676.012	25.4	QP	20.3	-16.0	29.7	259	100	Vert.	46.0	16.3	
701.983	34.1	QP	20.7	-15.8	39.0	90	122	Hori.	46.0	7.0	
727.968	35.6	QP	21.0	-15.6	41.0	91	123	Hori.	46.0	5.0	

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



**Radiated Spurious Emission (below 1GHz)**  
**11g, 6Mbps, Tx, Ch: Low**  
**(Model No.: PI-13700-W)**

**DATA OF RADIATED EMISSION TEST**

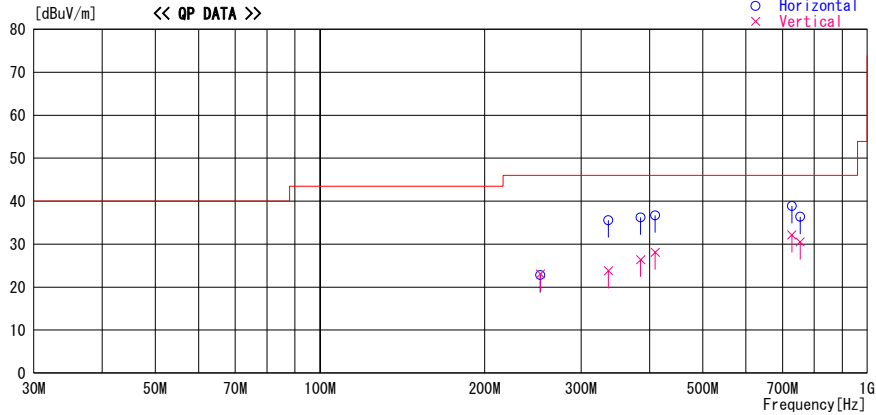
UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Date : 2008/12/17

Company : FURUNO SYSTEMS CO.,LTD.  
Kind of EUT : Handy Terminal  
Model No. : PI-13700-W  
Serial No. : 7059-1901

Report No. : 29CE0014-HO-01  
Power : DC 3.7V  
Temp./Humi. : 20deg.C. / 40%  
Engineer : Takeshi Choda

Mode / Remarks : Tx, 11g, 2412MHz, 6Mbps, Worst-axis(Hor:X, Ver:Z)

LIMIT : FCC15.247(d) 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]	
252.513	23.3	QP	17.3	-17.8	22.8	351	300	Hori.	46.0	23.2	
252.925	23.5	QP	17.4	-17.8	23.1	112	100	Vert.	46.0	22.9	
336.462	38.9	QP	13.9	-17.2	35.6	83	100	Hori.	46.0	10.4	
336.462	27.1	QP	13.9	-17.2	23.8	242	128	Vert.	46.0	22.2	
385.401	37.2	QP	16.0	-17.0	36.2	75	100	Hori.	46.0	9.8	
385.402	27.4	QP	16.0	-17.0	26.4	259	100	Vert.	46.0	19.6	
409.872	28.5	QP	16.7	-17.1	28.1	256	100	Vert.	46.0	17.9	
409.872	37.1	QP	16.7	-17.1	36.7	93	100	Hori.	46.0	9.3	
727.982	26.7	QP	21.0	-15.6	32.1	282	100	Vert.	46.0	13.9	
727.982	33.5	QP	21.0	-15.6	38.9	100	100	Hori.	46.0	7.1	
753.981	24.5	QP	21.3	-15.3	30.5	267	100	Vert.	46.0	15.5	
753.981	30.4	QP	21.3	-15.3	36.4	81	116	Hori.	46.0	9.6	

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)

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**Radiated Spurious Emission (below 1GHz)**  
**11g, 6Mbps, Tx, Ch: Mid**  
**(Model No.: PI-13700-W)**

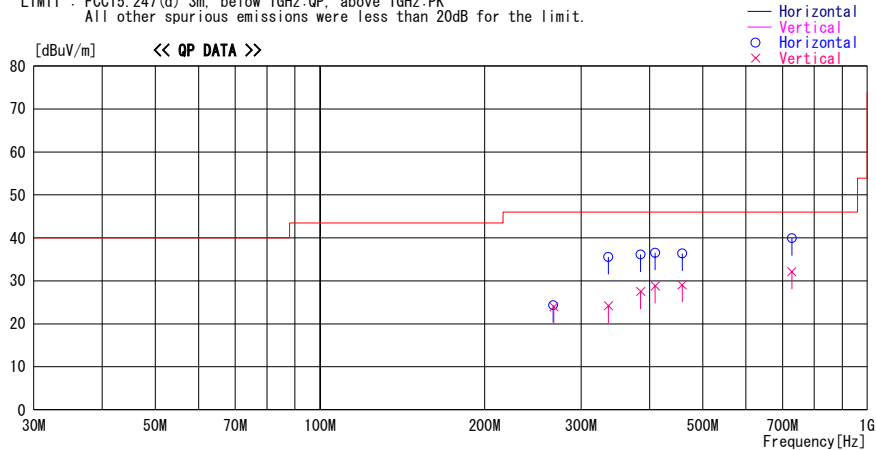
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Model No. : PI-13700-W Temp./Humi. : 20deg.C. / 40%  
Serial No. : 7059-1901 Engineer : Takeshi Choda

Mode / Remarks : Tx, 11g, 2437MHz, 6Mbps, Worst-axis(Hor:X, Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



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]							
266.452	23.7	QP	18.3	-17.7	24.3	284	300	Hori.	46.0	21.7	
267.534	23.4	QP	18.3	-17.7	24.0	8	100	Vert.	46.0	22.0	
336.462	38.9	QP	13.9	-17.2	35.6	86	100	Hori.	46.0	10.4	
336.462	27.5	QP	13.9	-17.2	24.2	244	122	Hori.	46.0	21.8	
385.402	37.1	QP	16.0	-17.0	36.1	102	100	Hori.	46.0	9.9	
385.401	28.5	QP	16.0	-17.0	27.5	252	178	Vert.	46.0	18.5	
409.872	36.9	QP	16.7	-17.1	36.5	82	100	Hori.	46.0	9.5	
409.872	29.2	QP	16.7	-17.1	28.8	255	245	Vert.	46.0	17.2	
458.812	35.8	QP	17.6	-17.0	36.4	95	204	Hori.	46.0	9.6	
458.812	28.5	QP	17.6	-17.0	29.1	231	217	Vert.	46.0	16.9	
727.981	34.5	QP	21.0	-15.6	39.9	272	115	Hori.	46.0	6.1	
727.981	26.7	QP	21.0	-15.6	32.1	267	100	Vert.	46.0	13.9	

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)

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**Radiated Spurious Emission (below 1GHz)**  
**11g,6Mbps, Tx, Ch: High**  
**(Model No.: PI-13700-W)**

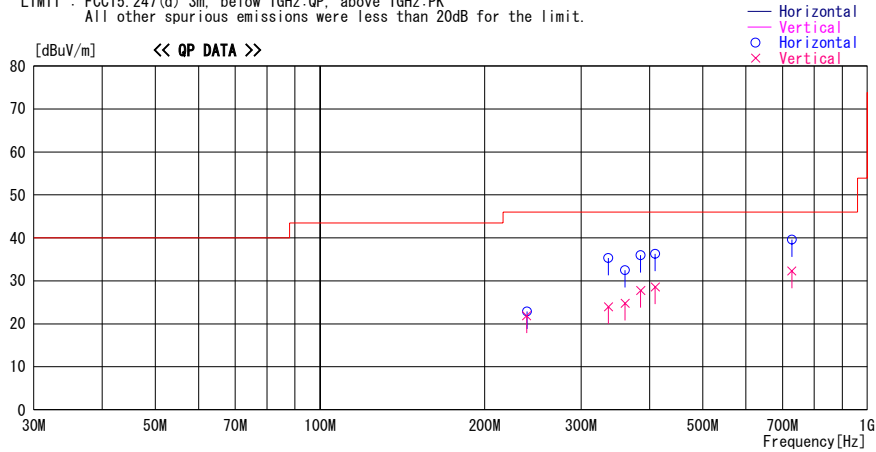
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Kind of EUT : Handy Terminal Power : DC 3.7V  
Model No. : PI-13700-W Temp./Humi. : 20deg.C. / 40%  
Serial No. : 7059-1901 Engineer : Takeshi Choda

Mode / Remarks : Tx, 11g, 2462MHz, 6Mbps, Worst-axis(Hor:X, Ver:Z)

LIMIT : FCC15.247(d) 3m, below 1GHz:QP, above 1GHz:PK  
All other spurious emissions were less than 20dB for the limit.



Frequency	Reading	DET	Antenna		Level	Angle	Height	Polar.	Limit	Margin	Comment
			Factor	Loss& Gain							
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
238.857	23.9	QP	17.0	-18.0	22.9	154	300	Hori.	46.0	23.1	
238.573	22.9	QP	17.0	-18.0	21.9	183	100	Vert.	46.0	24.1	
336.463	38.6	QP	13.9	-17.2	35.3	80	100	Hori.	46.0	10.7	
336.463	27.3	QP	13.9	-17.2	24.0	238	126	Hori.	46.0	22.0	
360.932	34.7	QP	14.9	-17.1	32.5	100	100	Hori.	46.0	13.5	
360.932	27.0	QP	14.9	-17.1	24.8	265	280	Vert.	46.0	21.2	
385.402	37.0	QP	16.0	-17.0	36.0	81	100	Hori.	46.0	10.0	
385.402	28.8	QP	16.0	-17.0	27.8	244	274	Vert.	46.0	18.2	
409.419	36.7	QP	16.7	-17.1	36.3	89	100	Hori.	46.0	9.7	
409.873	29.0	QP	16.7	-17.1	28.6	248	247	Vert.	46.0	17.4	
727.981	34.2	QP	21.0	-15.6	39.6	272	115	Hori.	46.0	6.4	
727.982	26.9	QP	21.0	-15.6	32.3	264	100	Vert.	46.0	13.7	

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)**  
**11b, 11Mbps, Tx, Ch: High**  
**(Model No.: PI-13703-W)**

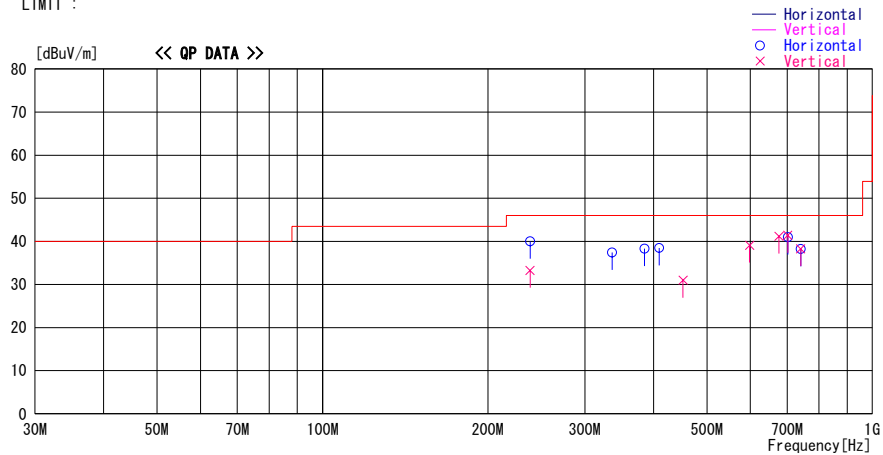
**DATA OF RADIATED EMISSION TEST**

UL Japan, Inc. Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Date : 2008/12/18

Company : FURUNO SYSTEMS CO.,LTD. Report No. : 29CE0014-HO-01  
Kind of EUT : Handy Terminal Power : DC 3.7V  
Model No. : PI-13703-W Temp./Humi. : 18deg.C / 38%  
Serial No. : 7060-0320 Engineer : Kenichi Adachi

Mode / Remarks : Tx, 11b, 2462MHz, 11Mbps, Worst-axis (Hor:X, Ver:Z)

LIMIT :



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]	
238.584	41.0	QP	17.0	-18.0	40.0	73	142	Hori.	46.0	6.0	
238.588	34.3	QP	17.0	-18.0	33.3	139	194	Vert.	46.0	12.7	
336.462	40.7	QP	13.9	-17.2	37.4	80	100	Hori.	46.0	8.6	
385.399	39.3	QP	16.0	-17.0	38.3	99	100	Hori.	46.0	7.7	
409.880	38.9	QP	16.7	-17.1	38.5	92	100	Hori.	46.0	7.5	
452.702	30.5	QP	17.5	-17.0	31.0	268	233	Vert.	46.0	15.0	
597.991	36.3	QP	19.3	-16.5	39.1	342	144	Vert.	46.0	6.9	
675.992	36.9	QP	20.3	-16.0	41.2	153	121	Vert.	46.0	4.8	
701.983	36.1	QP	20.7	-15.8	41.0	280	123	Hori.	46.0	5.0	
701.990	36.5	QP	20.7	-15.8	41.4	147	121	Vert.	46.0	4.6	
740.981	32.6	QP	21.1	-15.5	38.2	281	115	Hori.	46.0	7.8	
740.985	32.7	QP	21.1	-15.5	38.3	160	116	Vert.	46.0	7.7	

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)**  
**11b, 11Mbps, Tx, Ch: Low**  
**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11b, Tx 2412MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab, No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/16/2008  
Temperature : 19deg.C.  
Humidity : 38%  
Engineer : Akio Hayashi

**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	56.8	55.7	26.8	36.0	2.3	0.0	49.9	48.8	73.9	24.0	25.1
2**	2400.00	72.1	72.1	26.8	36.0	2.3	0.0	65.2	65.2	-	-	-
3	4824.00	59.3	64.8	31.2	35.5	3.5	0.9	59.4	64.9	73.9	14.5	9.0
4	7236.00	42.8	42.4	35.5	35.5	4.2	0.7	47.7	47.3	73.9	26.2	26.6
5	9648.00	42.9	43.5	38.6	36.2	5.5	0.8	51.6	52.2	73.9	22.3	21.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12060.00	NS	NS	-	-	-	-	-	-	73.9	-	-
7	14472.00	NS	NS	-	-	-	-	-	-	73.9	-	-
8	16884.00	NS	NS	-	-	-	-	-	-	73.9	-	-
9	19296.00	NS	NS	-	-	-	-	-	-	73.9	-	-
10	21708.00	NS	NS	-	-	-	-	-	-	73.9	-	-
11	24120.00	46.1	46.8	39.9	34.8	8.2	0.0	49.9	50.6	73.9	24.0	23.3

\*\* 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]	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	45.9	44.7	26.8	36.0	2.3	0.0	39.0	37.8	53.9	14.9	16.1
2**	2400.00	62.6	62.6	26.8	36.0	2.3	0.0	55.7	55.7	-	-	-
3	4824.00	44.6	50.7	31.2	35.5	3.5	0.9	44.7	50.8	53.9	9.2	3.1
4	7236.00	29.1	29.3	35.5	35.5	4.2	0.7	34.0	34.2	53.9	19.9	19.7
5	9648.00	29.8	29.5	38.6	36.2	5.5	0.8	38.5	38.2	53.9	15.4	15.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12060.00	NS	NS	-	-	-	-	-	-	53.9	-	-
7	14472.00	NS	NS	-	-	-	-	-	-	53.9	-	-
8	16884.00	NS	NS	-	-	-	-	-	-	53.9	-	-
9	19296.00	NS	NS	-	-	-	-	-	-	53.9	-	-
10	21708.00	NS	NS	-	-	-	-	-	-	53.9	-	-
11	24120.00	34.1	34.2	39.9	34.8	8.2	0.0	37.9	38.0	53.9	16.0	15.9

\*\* Reference data

**20dBc (Fundamental 2412.0 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	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	2412.00	110.4	110.5	26.9	36.0	2.3	0.0	103.6	103.7	-	-	-
2	2400.00	63.2	63.3	26.8	36.0	2.3	0.0	56.3	56.4	Funda-20dB	27.3	27.3

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11b, 11Mbps, Tx, Ch: Mid**  
**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11b, Tx 2437MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/16/2008  
Temperature : 19deg.C.  
Humidity : 38%  
Engineer : Akio Hayashi

**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	4874.00	59.9	63.9	31.3	35.5	3.5	0.9	60.1	64.1	73.9	13.8	9.8
2	7311.00	42.5	43.2	35.7	35.5	4.2	0.7	47.6	48.3	73.9	26.3	25.6
3	9748.00	42.4	42.8	38.7	36.1	5.6	0.8	51.4	51.8	73.9	22.5	22.1
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
4	12185.00	NS	NS	-	-	-	-	-	-	73.9	-	-
5	14622.00	NS	NS	-	-	-	-	-	-	73.9	-	-
6	17059.00	NS	NS	-	-	-	-	-	-	73.9	-	-
7	19496.00	NS	NS	-	-	-	-	-	-	73.9	-	-
8	21933.00	NS	NS	-	-	-	-	-	-	73.9	-	-
9	24370.00	47.9	46.7	40.1	34.9	8.2	0.0	51.8	50.6	73.9	22.1	23.3

**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	4874.00	45.2	52.3	31.3	35.5	3.5	0.9	45.4	52.5	53.9	8.5	1.4
2	7311.00	29.2	30.1	35.7	35.5	4.2	0.7	34.3	35.2	53.9	19.6	18.7
3	9748.00	29.3	30.4	38.7	36.1	5.6	0.8	38.3	39.4	53.9	15.6	14.5
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
4	12185.00	NS	NS	-	-	-	-	-	-	53.9	-	-
5	14622.00	NS	NS	-	-	-	-	-	-	53.9	-	-
6	17059.00	NS	NS	-	-	-	-	-	-	53.9	-	-
7	19496.00	NS	NS	-	-	-	-	-	-	53.9	-	-
8	21933.00	NS	NS	-	-	-	-	-	-	53.9	-	-
9	24370.00	34.2	34.1	40.1	34.9	8.2	0.0	38.1	38.0	53.9	15.8	15.9

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11b, 11Mbps, Tx, Ch: High**  
**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11b, Tx 2462MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/16/2008  
Temperature : 19deg.C.  
Humidity : 38%  
Engineer : Akio Hayashi

**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	2483.50	58.8	59.9	27.0	36.0	2.3	0.0	52.1	53.2	73.9	21.8	20.7
2	4924.00	58.5	62.3	31.4	35.5	3.5	0.9	58.8	62.6	73.9	15.1	11.3
3	7386.00	41.5	42.2	35.9	35.5	4.2	0.7	46.8	47.5	73.9	27.1	26.4
4	9848.00	43.1	42.7	38.8	36.1	5.7	0.8	52.3	51.9	73.9	21.6	22.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	12310.00	NS	NS	-	-	-	-	-	-	73.9	-	-
6	14772.00	NS	NS	-	-	-	-	-	-	73.9	-	-
7	17234.00	NS	NS	-	-	-	-	-	-	73.9	-	-
8	19696.00	NS	NS	-	-	-	-	-	-	73.9	-	-
9	22158.00	NS	NS	-	-	-	-	-	-	73.9	-	-
10	24620.00	45.8	47.3	40.3	34.9	8.3	0.0	50.0	51.5	73.9	23.9	22.4

**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]	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	2483.50	48.3	48.8	27.0	36.0	2.3	0.0	41.6	42.1	53.9	12.3	11.8
2	4924.00	44.2	47.8	31.4	35.5	3.5	0.9	44.5	48.1	53.9	9.4	5.8
3	7386.00	29.1	29.1	35.9	35.5	4.2	0.7	34.4	34.4	53.9	19.5	19.5
4	9848.00	30.3	30.4	38.8	36.1	5.7	0.8	39.5	39.6	53.9	14.4	14.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	12310.00	NS	NS	-	-	-	-	-	-	53.9	-	-
6	14772.00	NS	NS	-	-	-	-	-	-	53.9	-	-
7	17234.00	NS	NS	-	-	-	-	-	-	53.9	-	-
8	19696.00	NS	NS	-	-	-	-	-	-	53.9	-	-
9	22158.00	NS	NS	-	-	-	-	-	-	53.9	-	-
10	24620.00	33.3	33.3	40.3	34.9	8.3	0.0	37.5	37.5	53.9	16.4	16.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**

**11g, 6Mbps, Tx, Ch: Low**

**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11g, Tx 2412MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/16/2008  
Temperature : 19deg.C.  
Humidity : 38%  
Engineer : Akio Hayashi

**PK DETECT**

(RBW: 1MHz, VBW: 1MHz)

No.	FREQ [MHz]	S/A READING [dBuV]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT [dBuV/m]		Limit PK [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2390.00	65.7	63.8	26.8	36.0	2.3	0.0	58.8	56.9	73.9	15.1	17.0
2**	2400.00	84.3	83.1	26.8	36.0	2.3	0.0	77.4	76.2	-	-	-
3	4824.00	57.5	58.9	31.2	35.5	3.5	0.9	57.6	59.0	73.9	16.3	14.9
4	7236.00	41.6	42.3	35.5	35.5	4.2	0.7	46.5	47.2	73.9	27.4	26.7
5	9648.00	42.6	42.7	38.6	36.2	5.5	0.8	51.3	51.4	73.9	22.6	22.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12060.00	NS	NS	-	-	-	-	-	-	73.9	-	-
7	14472.00	NS	NS	-	-	-	-	-	-	73.9	-	-
8	16884.00	NS	NS	-	-	-	-	-	-	73.9	-	-
9	19296.00	NS	NS	-	-	-	-	-	-	73.9	-	-
10	21708.00	NS	NS	-	-	-	-	-	-	73.9	-	-
11	24120.00	46.8	46.4	39.9	34.8	8.2	0.0	50.6	50.2	73.9	23.3	23.7

\*\* Reference data

**AV DETECT**

(RBW: 1MHz, VBW: 10Hz)

No.	FREQ [MHz]	S/A READING [dBuV]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT [dBuV/m]		Limit AV [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2390.00	49.6	47.8	26.8	36.0	2.3	0.0	42.7	40.9	53.9	11.2	13.0
2**	2400.00	64.2	65.2	26.8	36.0	2.3	0.0	57.3	58.3	-	-	-
3	4824.00	44.2	45.5	31.2	35.5	3.5	0.9	44.3	45.6	53.9	9.6	8.3
4	7236.00	41.6	42.3	35.5	35.5	4.2	0.7	34.3	34.1	53.9	19.6	19.8
5	9648.00	42.6	42.7	38.6	36.2	5.5	0.8	38.7	38.6	53.9	15.2	15.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12060.00	NS	NS	-	-	-	-	-	-	53.9	-	-
7	14472.00	NS	NS	-	-	-	-	-	-	53.9	-	-
8	16884.00	NS	NS	-	-	-	-	-	-	53.9	-	-
9	19296.00	NS	NS	-	-	-	-	-	-	53.9	-	-
10	21708.00	NS	NS	-	-	-	-	-	-	53.9	-	-
11	24120.00	34.2	34.1	39.9	34.8	8.2	0.0	38.0	37.9	53.9	15.9	16.0

\*\* Reference data

**20dBc (Fundamental**

**2412.0 MHz)**

(RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING [dBuV]		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT [dBuV/m]		Limit 20dBc [dBuV/m]	MARGIN [dB]	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	2412.00	101.7	100.8	26.9	36.0	2.3	0.0	94.9	94.0	-	-	-
2	2400.00	70.8	69.5	26.8	36.0	2.3	0.0	63.9	62.6	Funda-20dB	11.0	11.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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.

**UL Japan, Inc.**

**Head Office EMC Lab.**

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Facsimile : +81 596 24 8124



**Radiated Spurious Emission(above 1GHz)**  
**11g, 6Mbps, Tx, Ch: Mid**  
**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11g, Tx 2437MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/16/2008  
Temperature : 19deg.C.  
Humidity : 38%  
Engineer : Akio Hayashi

**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	4874.00	53.5	60.4	31.3	35.5	3.5	0.9	53.7	60.6	73.9	20.2	13.3
2	7311.00	41.9	42.0	35.7	35.5	4.2	0.7	47.0	47.1	73.9	26.9	26.8
3	9748.00	42.7	43.5	38.7	36.1	5.5	0.8	51.7	52.5	73.9	26.9	26.8
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
4	12185.00	NS	NS	-	-	-	-	-	-	-	-	-
5	14622.00	NS	NS	-	-	-	-	-	-	-	-	-
6	17059.00	NS	NS	-	-	-	-	-	-	-	-	-
7	19496.00	NS	NS	-	-	-	-	-	-	-	-	-
8	21933.00	NS	NS	-	-	-	-	-	-	-	-	-
9	24370.00	47.4	47.5	40.1	34.9	8.2	0.0	51.3	51.4	73.9	22.6	22.5

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	4874.00	40.8	47.9	31.3	35.5	3.5	0.9	41.0	48.1	53.9	12.9	5.8
2	7311.00	29.5	29.0	35.7	35.5	4.2	0.7	34.6	34.1	53.9	19.3	19.8
3	9748.00	29.3	29.4	38.7	36.1	5.5	0.8	38.3	38.4	53.9	15.6	15.5
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
4	12185.00	NS	NS	-	-	-	-	-	-	-	-	-
5	14622.00	NS	NS	-	-	-	-	-	-	-	-	-
6	17059.00	NS	NS	-	-	-	-	-	-	-	-	-
7	19496.00	NS	NS	-	-	-	-	-	-	-	-	-
8	21933.00	NS	NS	-	-	-	-	-	-	-	-	-
9	24370.00	33.8	33.7	40.1	34.9	8.2	0.0	37.7	37.6	53.9	16.2	16.3

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11g, 6Mbps, Tx, Ch: High**  
**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11g, Tx 2462MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/16/2008  
Temperature : 19deg.C.  
Humidity : 38%  
Engineer : Akio Hayashi

**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	2483.50	78.9	78.2	27.0	36.0	2.3	0.0	72.2	71.5	73.9	1.7	2.4
2	4924.00	52.3	58.5	31.4	35.5	3.5	0.9	52.6	58.8	73.9	21.3	15.1
3	7386.00	42.5	43.0	35.9	35.5	4.2	0.7	47.8	48.3	73.9	26.1	25.6
4	9848.00	43.4	42.7	38.8	36.1	5.7	0.8	52.6	51.9	73.9	21.3	22.0
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
5	12310.00	NS	NS	-	-	-	-	-	-	-	-	-
6	14772.00	NS	NS	-	-	-	-	-	-	-	-	-
7	17234.00	NS	NS	-	-	-	-	-	-	-	-	-
8	19696.00	NS	NS	-	-	-	-	-	-	-	-	-
9	22158.00	NS	NS	-	-	-	-	-	-	-	-	-
10	24620.00	46.1	46.0	40.3	34.9	8.3	0.0	50.3	50.2	73.9	23.6	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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	2483.50	59.3	58.5	27.0	36.0	2.3	0.0	52.6	51.8	53.9	1.3	2.1
2	4924.00	39.6	45.5	31.4	35.5	3.5	0.9	39.9	45.8	53.9	14.0	8.1
3	7386.00	29.1	30.0	35.9	35.5	4.2	0.7	47.8	48.3	73.9	19.5	18.6
4	9848.00	30.4	30.4	38.8	36.1	5.7	0.8	52.6	51.9	73.9	14.3	14.3
<b>Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac</b>												
5	12310.00	NS	NS	-	-	-	-	-	-	-	-	-
6	14772.00	NS	NS	-	-	-	-	-	-	-	-	-
7	17234.00	NS	NS	-	-	-	-	-	-	-	-	-
8	19696.00	NS	NS	-	-	-	-	-	-	-	-	-
9	22158.00	NS	NS	-	-	-	-	-	-	-	-	-
10	24620.00	33.3	33.3	40.3	34.9	8.3	0.0	37.5	37.5	53.9	16.4	16.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11b, 11Mbps, Tx, Ch: Low**  
**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11b, Tx 2412MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/18/2008  
Temperature : 18deg.C.  
Humidity : 38%  
Engineer : Kenichi Adachi

**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	55.6	53.5	26.8	36.0	2.3	0.0	48.7	46.6	73.9	25.2	27.3
2**	2400.00	71.7	71.1	26.8	36.0	2.3	0.0	64.8	64.2	-	-	-
3	4824.00	52.5	54.3	31.2	35.5	3.5	0.9	52.6	54.4	73.9	21.3	19.5
4	7236.00	43.0	43.6	35.5	35.5	4.2	0.7	47.9	48.5	73.9	26.0	25.4
5	9648.00	43.2	42.3	38.6	36.2	5.5	0.8	51.9	51.0	73.9	22.0	22.9

\*\* 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]	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	44.0	43.3	26.8	36.0	2.3	0.0	37.1	36.4	53.9	16.8	17.5
2**	2400.00	62.5	61.4	26.8	36.0	2.3	0.0	55.6	54.5	-	-	-
3	4824.00	37.3	39.3	31.2	35.5	3.5	0.9	37.4	39.4	53.9	16.5	14.5
4	7236.00	29.3	29.3	35.5	35.5	4.2	0.7	34.2	34.2	53.9	19.7	19.7
5	9648.00	29.8	28.9	38.6	36.2	5.5	0.8	38.5	37.6	53.9	15.4	16.3

\*\* Reference data

**20dBc (Fundamental) 2412.0 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	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	2412.00	109.2	108.6	26.9	36.0	2.3	0.0	102.4	101.8	-	-	-
2	2400.00	60.8	60.5	26.8	36.0	2.3	0.0	53.9	53.6	Funda-20dB	28.5	28.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11b, 11Mbps, Tx, Ch: Mid**  
**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11b, Tx 2437MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/18/2008  
Temperature : 18deg.C.  
Humidity : 38%  
Engineer : Kenichi Adachi

**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	4874.00	49.0	56.1	31.3	35.5	3.5	0.9	49.2	56.3	73.9	24.7	17.6
2	7311.00	43.1	43.3	35.7	35.5	4.2	0.7	48.2	48.4	73.9	25.7	25.5
3	9748.00	43.8	43.3	38.7	36.1	5.6	0.8	52.8	52.3	73.9	21.1	21.6

**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	4874.00	35.8	41.1	31.3	35.5	3.5	0.9	36.0	41.3	53.9	17.9	12.6
2	7311.00	29.2	31.0	35.7	35.5	4.2	0.7	34.3	36.1	53.9	19.6	17.8
3	9748.00	30.1	30.2	38.7	36.1	5.6	0.8	39.1	39.2	53.9	14.8	14.7

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11b, 11Mbps, Tx, Ch: High**  
**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11b, Tx 2462MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/18/2008  
Temperature : 18deg.C.  
Humidity : 38%  
Engineer : Kenichi Adachi

**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	2483.50	55.5	55.1	27.0	36.0	2.3	0.0	48.8	48.4	73.9	25.1	25.5
2	4924.00	52.5	54.0	31.4	35.5	3.5	0.9	52.8	54.3	73.9	21.1	19.6
3	7386.00	42.6	42.7	35.9	35.5	4.2	0.7	47.9	48.0	73.9	26.0	25.9
4	9848.00	43.4	43.1	38.8	36.1	5.7	0.8	52.6	52.3	73.9	21.3	21.6

**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	2483.50	47.0	44.7	27.0	36.0	2.3	0.0	40.3	38.0	53.9	13.6	15.9
2	4924.00	37.3	39.2	31.4	35.5	3.5	0.9	37.6	39.5	53.9	16.3	14.4
3	7386.00	29.0	29.1	35.9	35.5	4.2	0.7	34.3	34.4	53.9	19.6	19.5
4	9848.00	29.3	29.2	38.8	36.1	5.7	0.8	38.5	38.4	53.9	15.4	15.5

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)

### 11g, 6Mbps, Tx, Ch: Low (Model No.: PI-13703-W)

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11g, Tx 2412MHz, 6 Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/18/2008  
Temperature : 18deg.C.  
Humidity : 38%  
Engineer : Kenichi Adachi

**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]		
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	2390.00	65.1	62.3	26.8	36.0	2.3	0.0	58.2	55.4	73.9	15.7	18.5
2**	2400.00	82.9	81.7	26.8	36.0	2.3	0.0	76.0	74.8	-	-	-
3	4824.00	49.8	50.0	31.2	35.5	3.5	0.9	49.9	50.1	73.9	24.0	23.8
4	7236.00	43.0	42.6	35.5	35.5	4.2	0.7	47.9	47.5	73.9	26.0	26.4
5	9648.00	43.5	43.6	38.6	36.2	5.5	0.8	52.2	52.3	73.9	21.7	21.6

\*\* 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]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]		[dB]		
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	2390.00	49.1	46.6	26.8	36.0	2.3	0.0	42.2	39.7	53.9	11.7	14.2
2**	2400.00	64.9	61.1	26.8	36.0	2.3	0.0	58.0	54.2	-	-	-
3	4824.00	35.4	35.8	31.2	35.5	3.5	0.9	35.5	35.9	53.9	18.4	18.0
4	7236.00	29.3	29.3	35.5	35.5	4.2	0.7	34.2	34.2	53.9	19.7	19.7
5	9648.00	30.1	30.1	38.6	36.2	5.5	0.8	38.8	38.8	53.9	15.1	15.1

\*\* Reference data

**20dBc (Fundamental 2412.0 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	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]		[dB]		
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
0	2412.00	100.2	98.4	26.9	36.0	2.3	0.0	93.4	91.6	-	-	-
2	2400.00	68.9	65.2	26.8	36.0	2.3	0.0	62.0	58.3	Funda-20dB	11.4	13.3

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11g, 6Mbps, Tx, Ch: Mid**  
**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11g, Tx 2437MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/18/2008  
Temperature : 18deg.C.  
Humidity : 38%  
Engineer : Kenichi Adachi

**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	4874.00	49.4	50.2	31.3	35.5	3.5	0.9	49.6	50.4	73.9	24.3	23.5
2	7311.00	43.2	42.3	35.7	35.5	4.2	0.7	48.3	47.4	73.9	25.6	26.5
3	9748.00	43.5	43.8	38.7	36.1	5.6	0.8	52.5	52.8	73.9	21.4	21.1

**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]	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	4874.00	34.8	36.3	31.3	35.5	3.5	0.9	35.0	36.5	53.9	18.9	17.4
2	7311.00	29.2	29.1	35.7	35.5	4.2	0.7	34.3	34.2	53.9	19.6	19.7
3	9748.00	30.2	30.2	38.7	36.1	5.6	0.8	39.2	39.2	53.9	14.7	14.7

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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)**  
**11g, 6Mbps, Tx, Ch: High**  
**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11g, Tx 2462MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.1 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m(below 10GHz) / 1m(above10GHz)  
Date : 12/18/2008  
Temperature : 18deg.C.  
Humidity : 38%  
Engineer : Kenichi Adachi

**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	2483.50	77.9	77.3	27.0	36.0	2.3	0.0	71.2	70.6	73.9	2.7	3.3
2	4924.00	48.3	48.4	31.4	35.5	3.5	0.9	48.6	48.7	73.9	25.3	25.2
3	7386.00	42.8	43.4	35.9	35.5	4.2	0.7	48.1	48.7	73.9	25.8	25.2
4	9848.00	43.2	43.2	38.8	36.1	5.7	0.8	52.4	52.4	73.9	21.5	21.5

**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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	2483.50	58.4	57.4	27.0	36.0	2.3	0.0	51.7	50.7	53.9	2.2	3.2
2	4924.00	34.4	34.3	31.4	35.5	3.5	0.9	34.7	34.6	53.9	19.2	19.3
3	7386.00	29.1	29.0	35.9	35.5	4.2	0.7	34.4	34.3	53.9	19.5	19.6
4	9848.00	29.3	29.3	38.8	36.1	5.7	0.8	38.5	38.5	53.9	15.4	15.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.54 dB

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

\*Hi-Pass Filter 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 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.



**(Reference Data\*)Radiated Spurious Emission (above 1GHz)**

**11b, 11Mbps, Tx, Ch: Low**

**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11b, Tx 2412MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.2 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m  
Date : 1/ 9/2009  
Temperature : 22deg.C.  
Humidity : 38%  
Engineer : Takumi Shimada

**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		HOR [dB]	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	4824.00	57.7	60.7	31.2	31.4	3.9	1.1	62.5	65.5	73.9	11.4	8.4
2	7236.00	38.1	39.8	35.5	31.2	4.4	1.1	47.9	49.6	73.9	26.0	24.3
3	9648.00	39.8	39.8	38.6	32.0	5.2	1.3	52.9	52.9	73.9	21.0	21.0

**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 [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	4824.00	43.0	45.0	31.2	31.4	3.9	1.1	47.8	49.8	53.9	6.1	4.1
2	7236.00	26.1	26.1	35.5	31.2	4.4	1.1	35.9	35.9	53.9	18.0	18.0
3	9648.00	26.8	26.7	38.6	32.0	5.2	1.3	39.9	39.8	53.9	14.0	14.1

**(Fundamental**

**2412.0 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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
0	2412.00	106.4	108.1	26.9	32.4	2.6	0.0	103.5	105.2	-	-	-

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

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

\*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.

\*For the secondary harmonic, since big difference was found between PI-13700-W and PI-13703-W as series model, the re-test was performed with the mode which had the maximum difference, and its reproducibility was confirmed. Although the radio characteristic is identical, the difference seems to have been caused from the other configurations except RF part.

**UL Japan, Inc.**

**Head Office EMC Lab.**

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Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

**(Reference Data\*)Radiated Spurious Emission (above 1GHz)**

**11b, 11Mbps, Tx, Ch: Low**

**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11b, Tx 2412MHz, 11Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.2 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m  
Date : 1/ 9/2009  
Temperature : 22deg.C.  
Humidity : 38%  
Engineer : Takumi Shimada

**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		HOR [dB]	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	4824.00	46.2	50.2	31.2	31.4	3.9	1.1	51.0	55.0	73.9	22.9	18.9
2	7236.00	39.1	38.6	35.5	31.2	4.4	1.1	48.9	48.4	73.9	25.0	25.5
3	9648.00	39.2	39.2	38.6	32.0	5.2	1.3	52.3	52.3	73.9	21.6	21.6

**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 [dBuV]	VER					HOR [dBuV/m]	VER		HOR [dB]	VER
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
1	4824.00	31.6	35.3	31.2	31.4	3.9	1.1	36.4	40.1	53.9	17.5	13.8
2	7236.00	26.1	26.2	35.5	31.2	4.4	1.1	35.9	36.0	53.9	18.0	17.9
3	9648.00	26.8	26.7	38.6	32.0	5.2	1.3	39.9	39.8	53.9	14.0	14.1

**(Fundamental 2412.0 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
<b>Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss</b>												
0	2412.00	104.2	106.4	26.9	32.4	2.6	0.0	101.3	103.5	-	-	-

\*Except for the above table : All other spurious emissions were less than 20dB for the limit.  
\*Hi-Pass Filter was not used for factor 0.0dB of the above table.  
\*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.

\*For the secondary harmonic, since big difference was found between PI-13700-W and PI-13703-W as series model, the re-test was performed with the mode which had the maximum difference, and its reproducibility was confirmed. Although the radio characteristic is identical, the difference seems to have been caused from the other configurations except RF part.

**(Reference Data\*)Radiated Spurious Emission (above 1GHz)**

**11g, 6Mbps, Tx, Ch: Mid**

**(Model No.: PI-13700-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1901  
Power : DC3.7V  
Mode : 11g, Tx 2437MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.2 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m  
Date : 1/ 9/2009  
Temperature : 22deg.C.  
Humidity : 38%  
Engineer : Takumi Shimada

**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]		Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss										
1	4874.00	50.3	54.0	31.3	31.3	4.0	1.1	55.4	59.1	73.9	18.5	14.8		
2	7311.00	40.0	39.6	35.7	31.2	4.4	1.1	50.0	49.6	73.9	23.9	24.3		
3	9748.00	40.2	40.3	38.7	32.0	5.2	1.3	53.4	53.5	73.9	20.5	20.4		

**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]	RESULT		Limit AV [dBuV/m]	MARGIN			
		HOR	VER					HOR	VER		HOR	VER		
		[dBuV]		Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss										
1	4874.00	34.9	40.0	31.3	31.3	4.0	1.1	40.0	45.1	53.9	13.9	8.8		
2	7311.00	26.2	26.1	35.7	31.2	4.4	1.1	36.2	36.1	53.9	17.7	17.8		
3	9748.00	26.9	26.9	38.7	32.0	5.2	1.3	40.1	40.1	53.9	13.8	13.8		

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

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

\*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.

\*For the secondary harmonic, since big difference was found between PI-13700-W and PI-13703-W as series model, the re-test was performed with the mode which had the maximum difference, and its reproducibility was confirmed. Although the radio characteristic is identical, the difference seems to have been caused from the other configurations except RF part.

**UL Japan, Inc.**

**Head Office EMC Lab.**

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Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

**(Reference Data\*)Radiated Spurious Emission (above 1GHz)**

**11g, 6Mbps, Tx, Ch: Mid**

**(Model No.: PI-13703-W)**

UL Japan, Inc.

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13703-W  
S/N : 7060-0320  
Power : DC3.7V  
Mode : 11g, Tx 2437MHz, 6Mbps  
Position : H: X-axis, V: Z-axis

Head Office EMC Lab. No.2 Semi Anechoic Chamber  
Regulation : FCC15.247(d) / RSS-210 A8.5  
Test Distance : 3m  
Date : 1/ 9/2009  
Temperature : 22deg.C.  
Humidity : 38%  
Engineer : Takumi Shimada

**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]		Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss									
1	4874.00	41.9	46.0	31.3	31.3	4.0	1.1	47.0	51.1	73.9	26.9	22.8	
2	7311.00	39.8	38.8	35.7	31.2	4.4	1.1	49.8	48.8	73.9	24.1	25.1	
3	9748.00	39.6	39.9	38.7	32.0	5.2	1.3	52.8	53.1	73.9	21.1	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	
		[dBuV]		Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss									
1	4874.00	27.8	32.7	31.3	31.3	4.0	1.1	32.9	37.8	53.9	21.0	16.1	
2	7311.00	26.7	26.8	35.7	31.2	4.4	1.1	36.7	36.8	53.9	17.2	17.1	
3	9748.00	27.5	27.5	38.7	32.0	5.2	1.3	40.7	40.7	53.9	13.2	13.2	

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

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

\*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.

\*For the secondary harmonic, since big difference was found between PI-13700-W and PI-13703-W as series model, the re-test was performed with the mode which had the maximum difference, and its reproducibility was confirmed. Although the radio characteristic is identical, the difference seems to have been caused from the other configurations except RF part.

**UL Japan, Inc.**

**Head Office EMC Lab.**

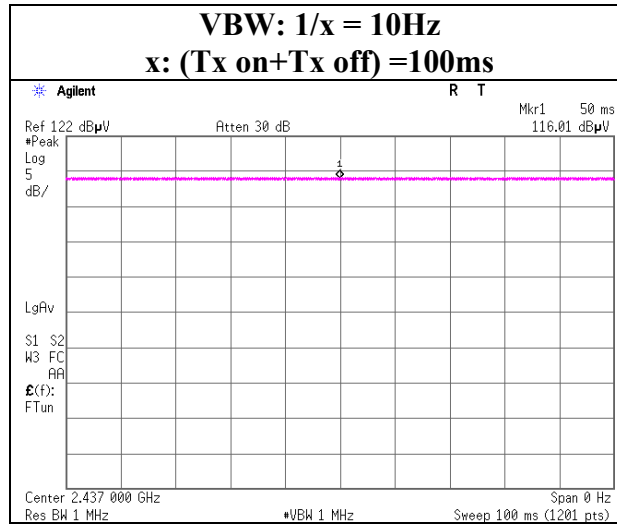
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN

Telephone : +81 596 24 8116

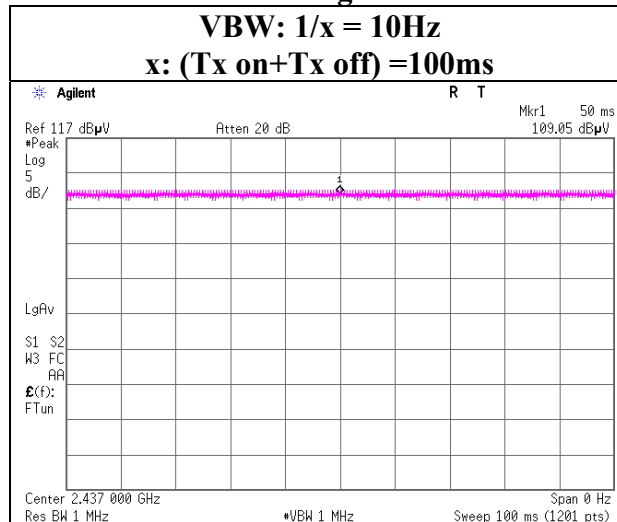
Facsimile : +81 596 24 8124

## VBW (AV) Calculation

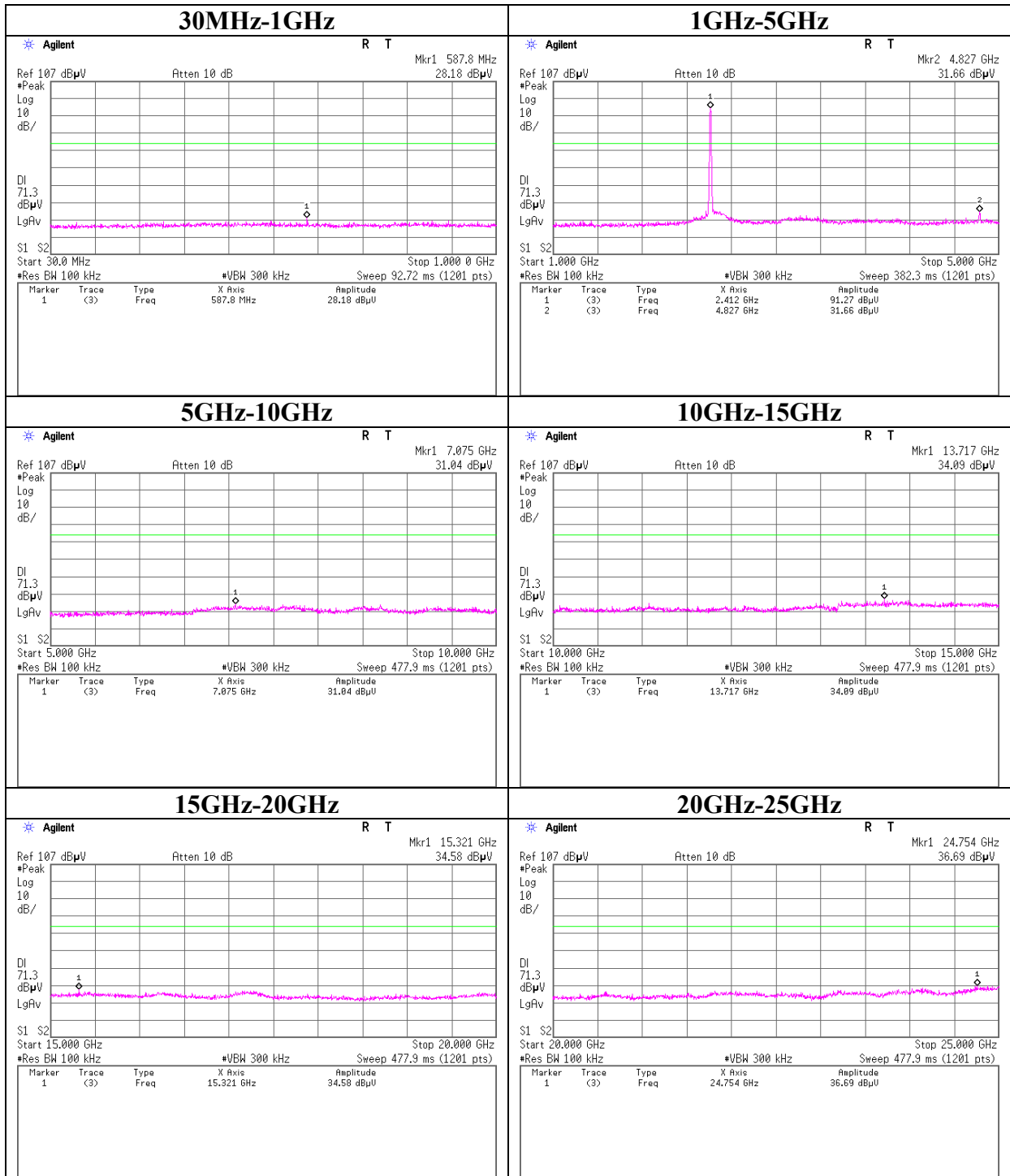
**11b**



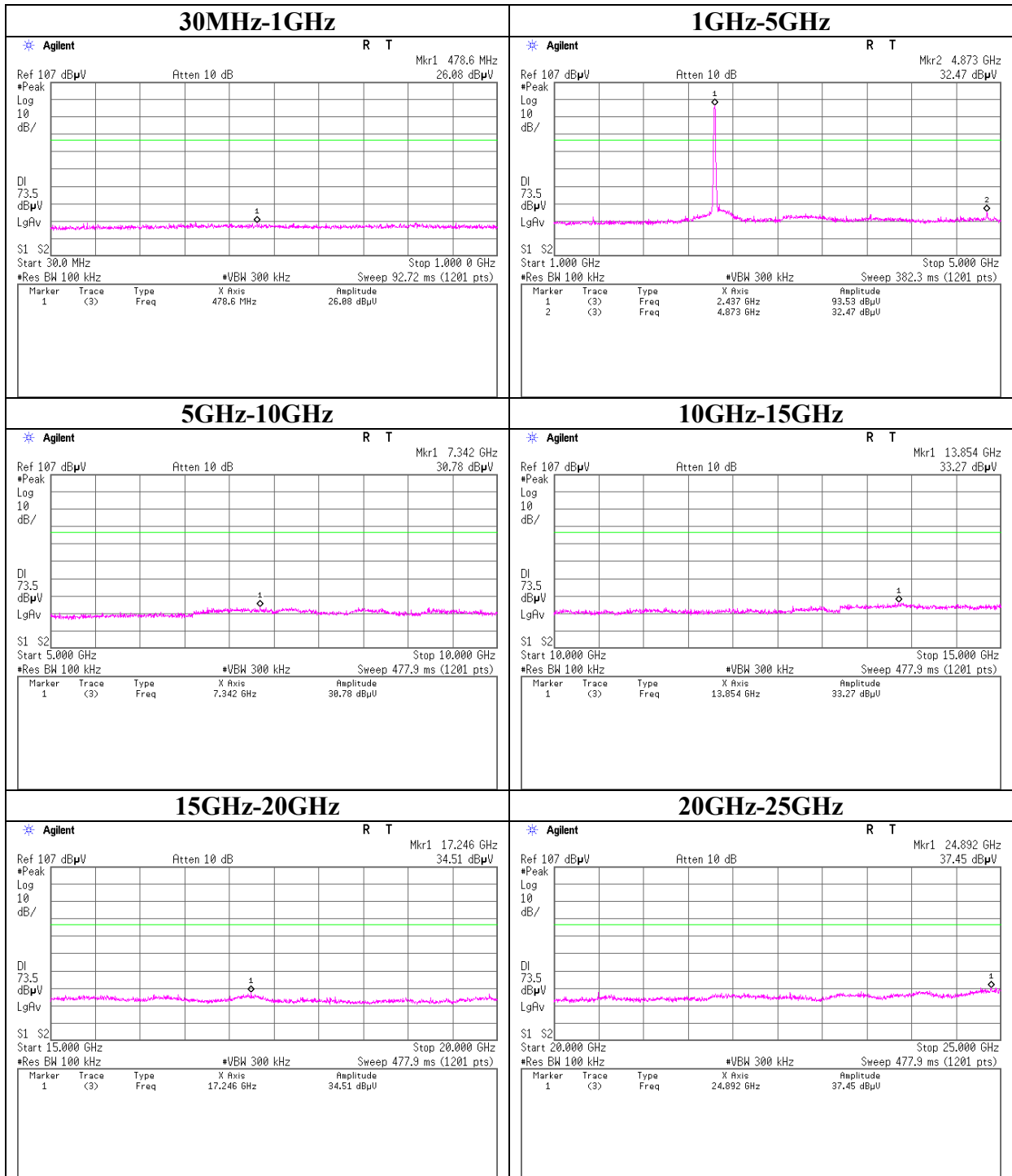
**11g**



**Conducted Spurious Emission**  
**11b, Tx, Ch: Low**

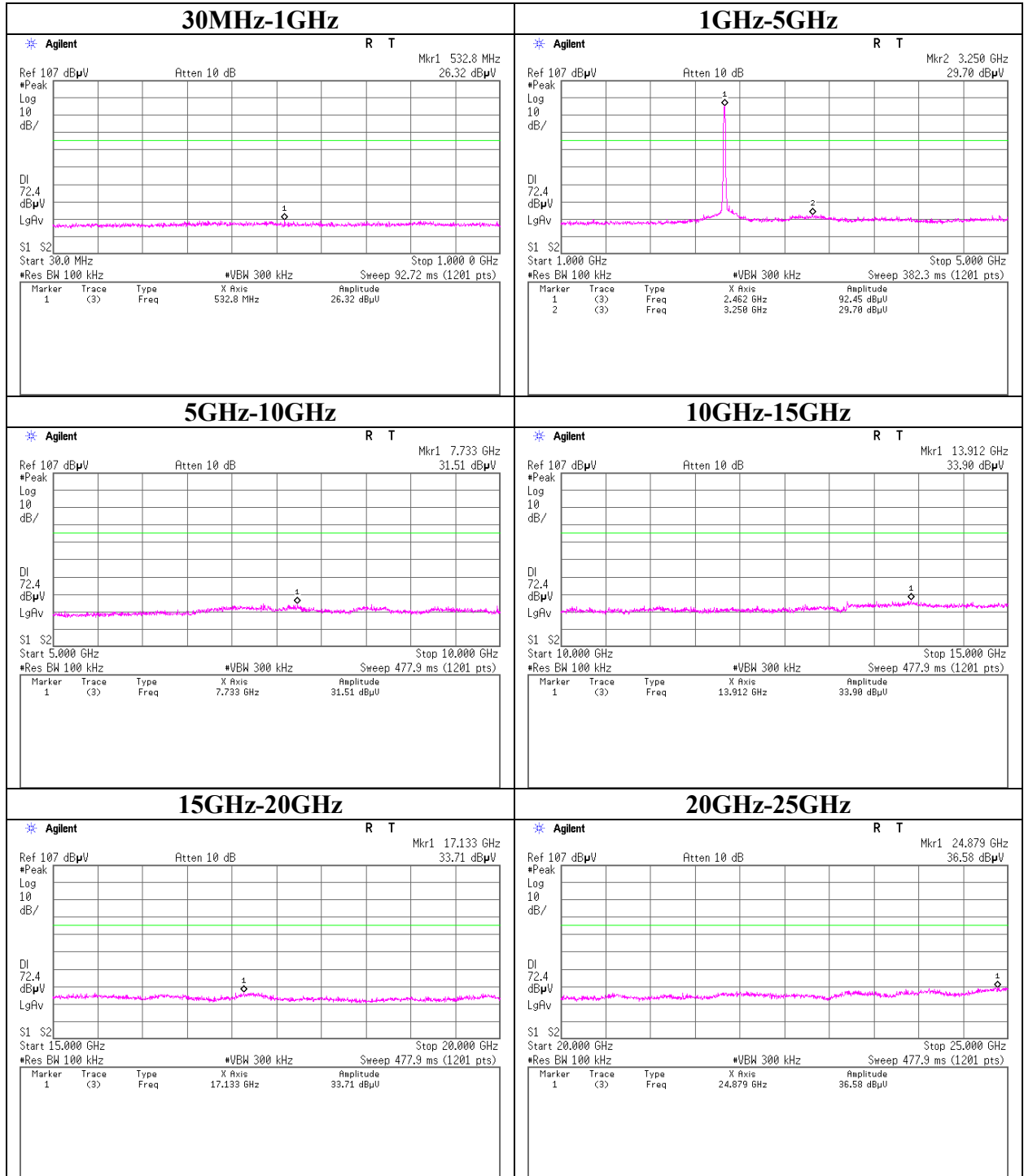


**Conducted Spurious Emission**  
**11b, Tx, Ch: Mid**



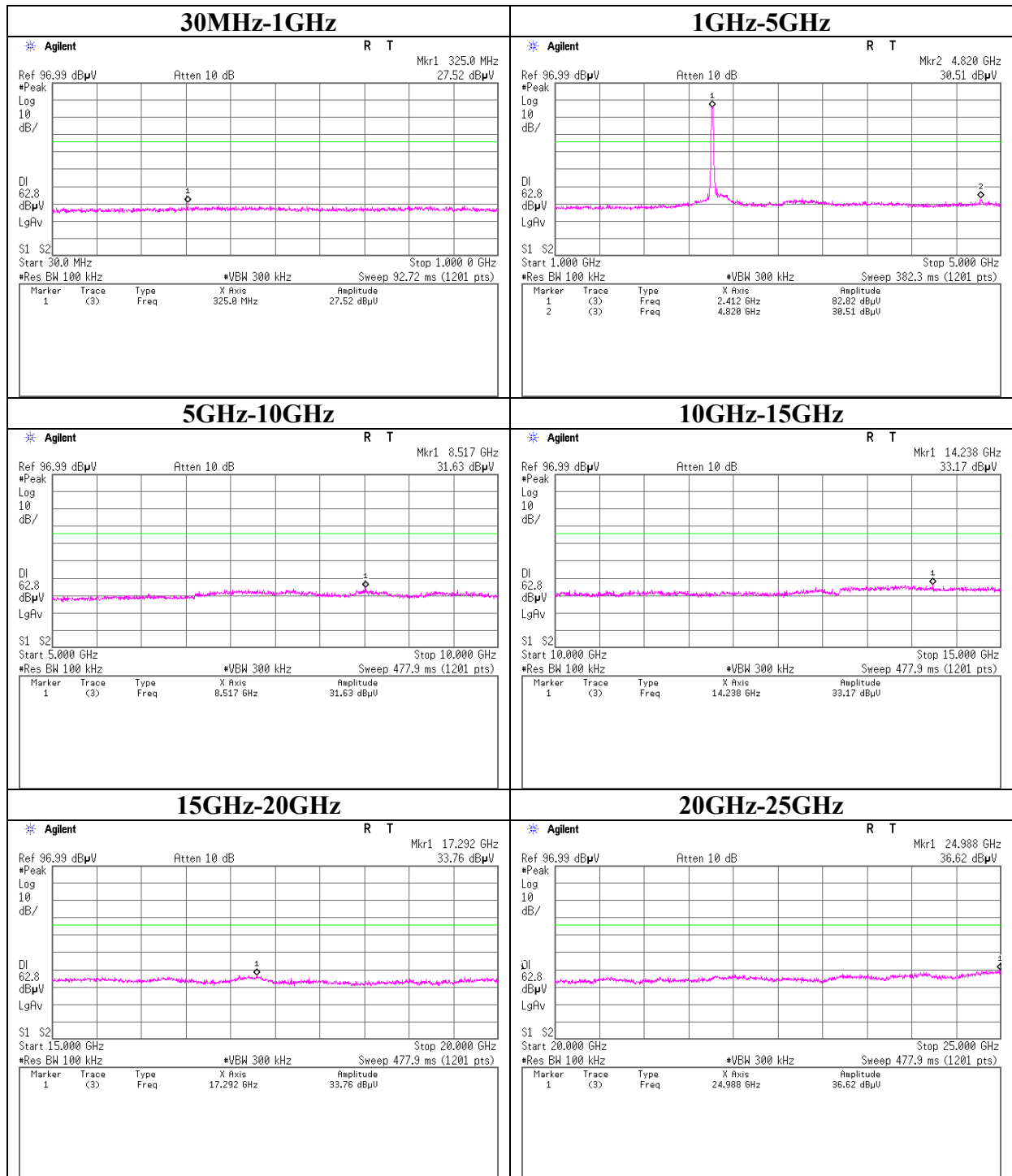
## Conducted Spurious Emission

### 11b, Tx, Ch: High

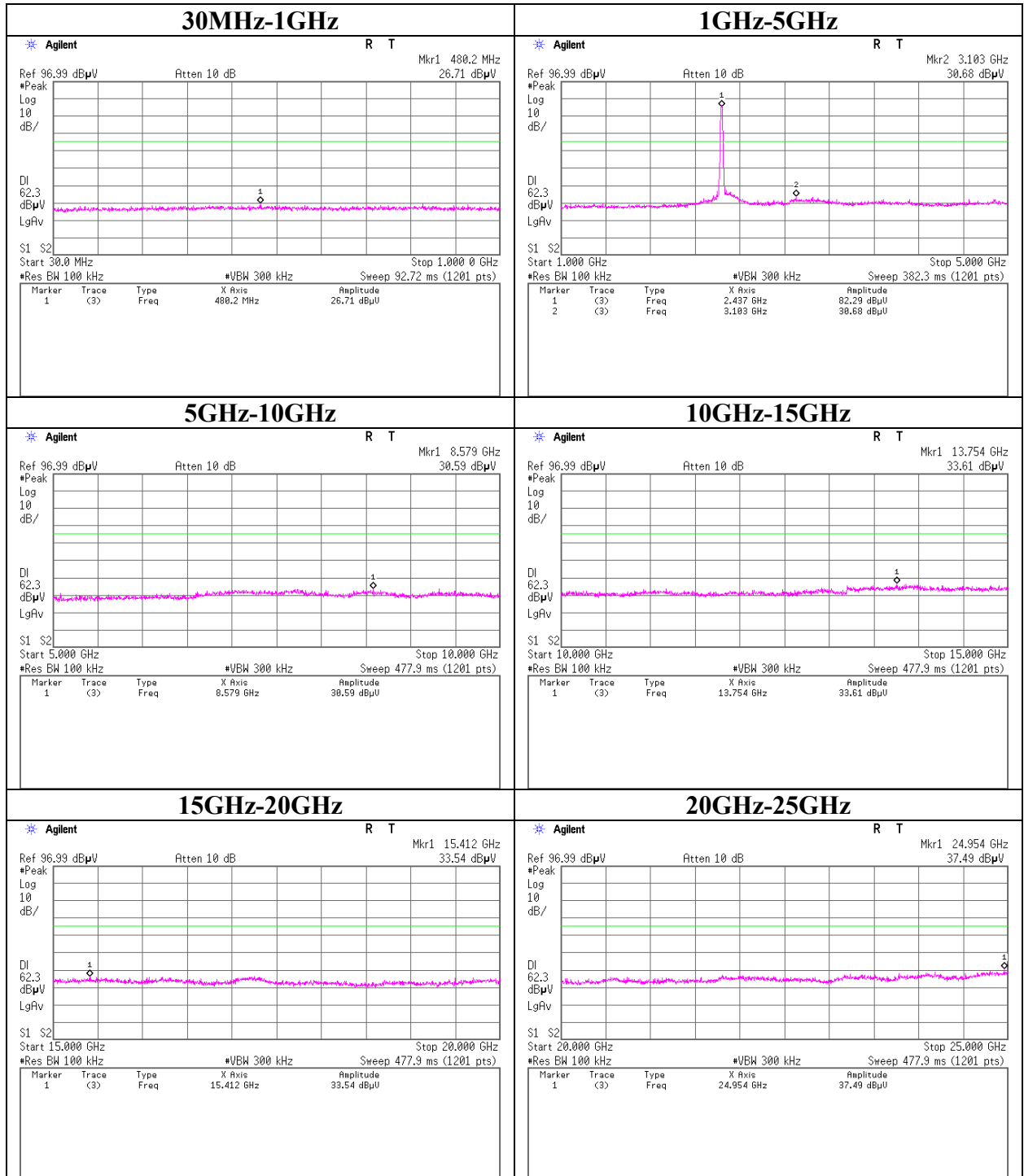




**Conducted Spurious Emission**  
**11g, Tx, Ch: Low**

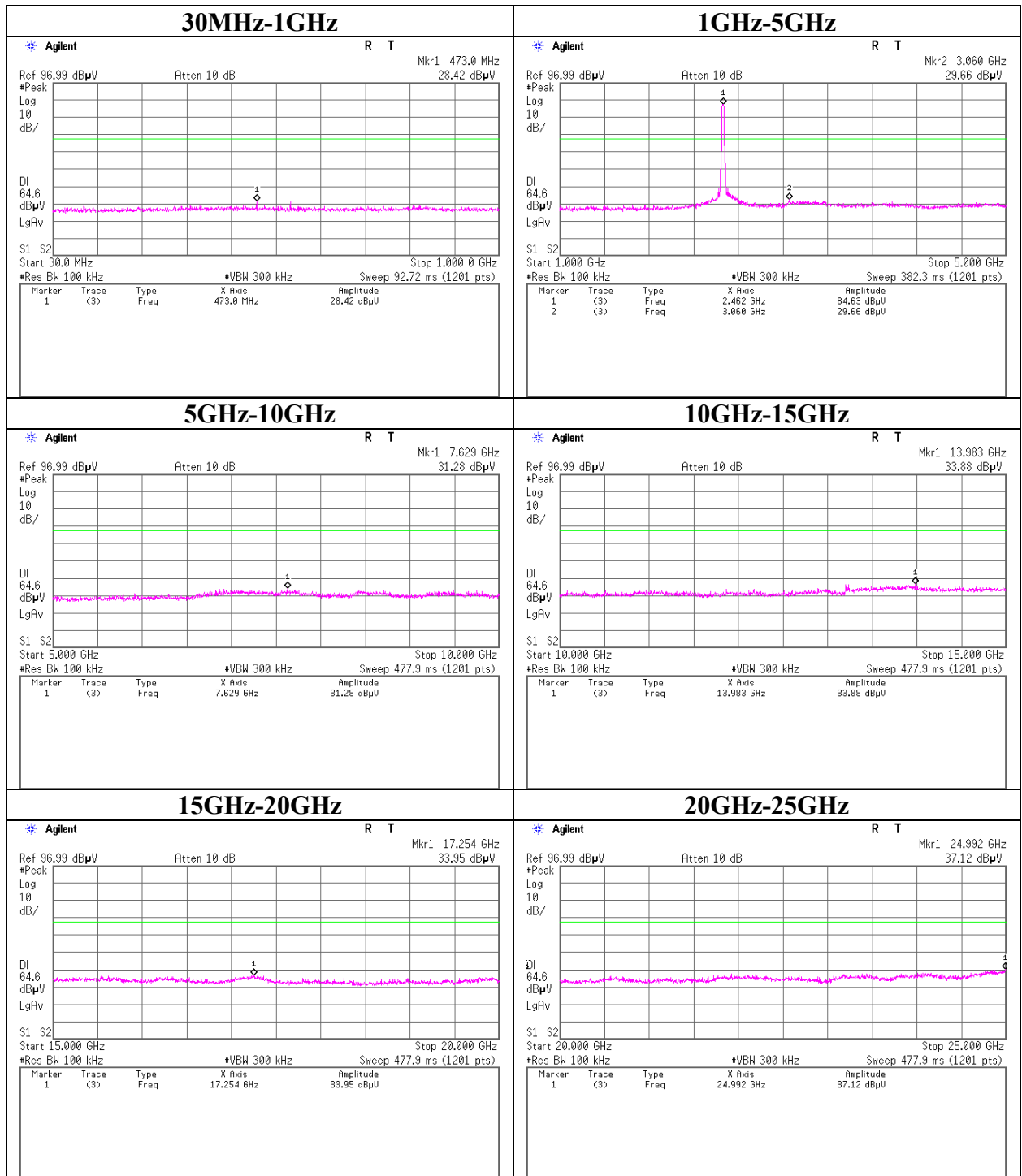


**Conducted Spurious Emission**  
**11g, Tx, Ch: Mid**



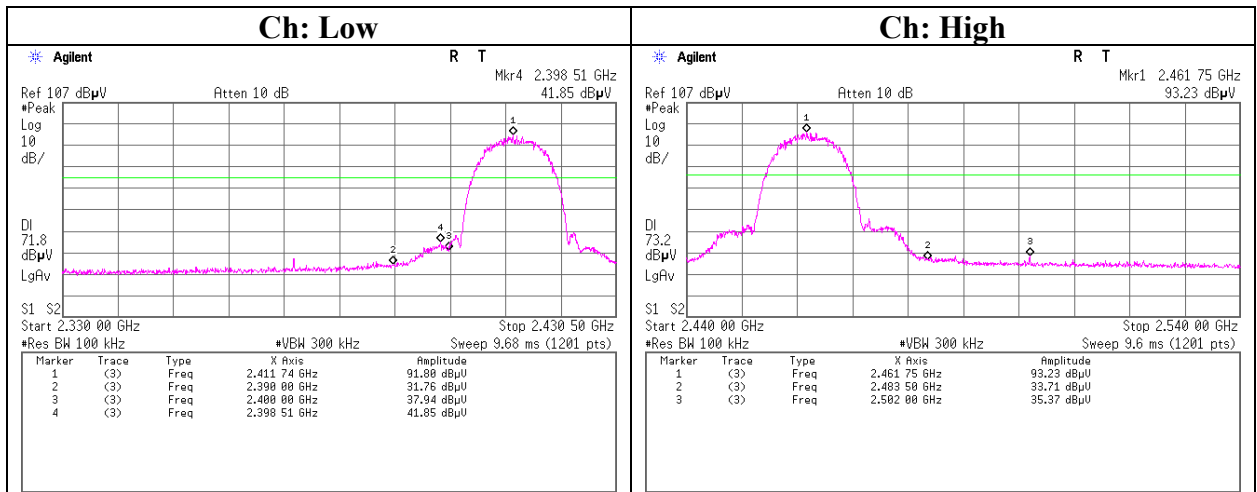
## Conducted Spurious Emission

### 11g, Tx, Ch: High

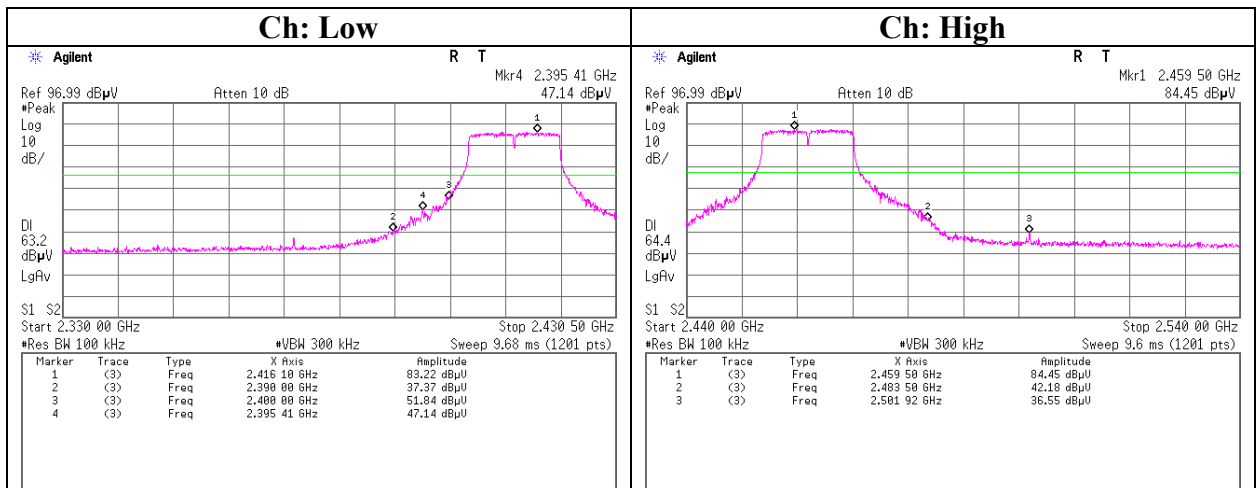


**Restricted Band Edge (Conducted)**

**11b**



**11g**



**Power Density**  
**11b/g**

UL Japan, Inc

Head Office EMC Lab. No.6 Measurement room

Company : FURUNO SYSTEMS CO., LTD.  
Equipment : Handy Terminal  
Model : PI-13700-W  
S/N : 7059-1899  
Power : DC3.7V  
Mode : Tx, IEEE802.11b, 11Mbps,  
: Tx, IEEE802.11g, 6Mbps

Regulation : FCC Part15 Subpart C 15.247(e) / RSS-210 A8.2(b)  
Test Distance : -  
Date : December 12, 2008  
Temperature : 21deg.C.  
Humidity : 42%  
Engineer : Hisayoshi Sato

[IEEE802.11b]

Ch	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2410.7	-21.17	0.80	19.94	-0.43	8.00	8.43
Mid	2435.7	-20.78	0.80	19.94	-0.04	8.00	8.04
High	2460.7	-19.23	0.80	19.94	1.51	8.00	6.49

[IEEE802.11g]

Ch	Freq. [MHz]	Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2408.9	-27.88	0.80	19.94	-7.14	8.00	15.14
Mid	2442.6	-26.60	0.80	19.94	-5.86	8.00	13.86
High	2458.9	-25.84	0.80	19.94	-5.10	8.00	13.10

Sample Calculation:

Result = Reading + Cable Loss (Including customer's cable loss)+ Attenuator

**UL Japan, Inc.**

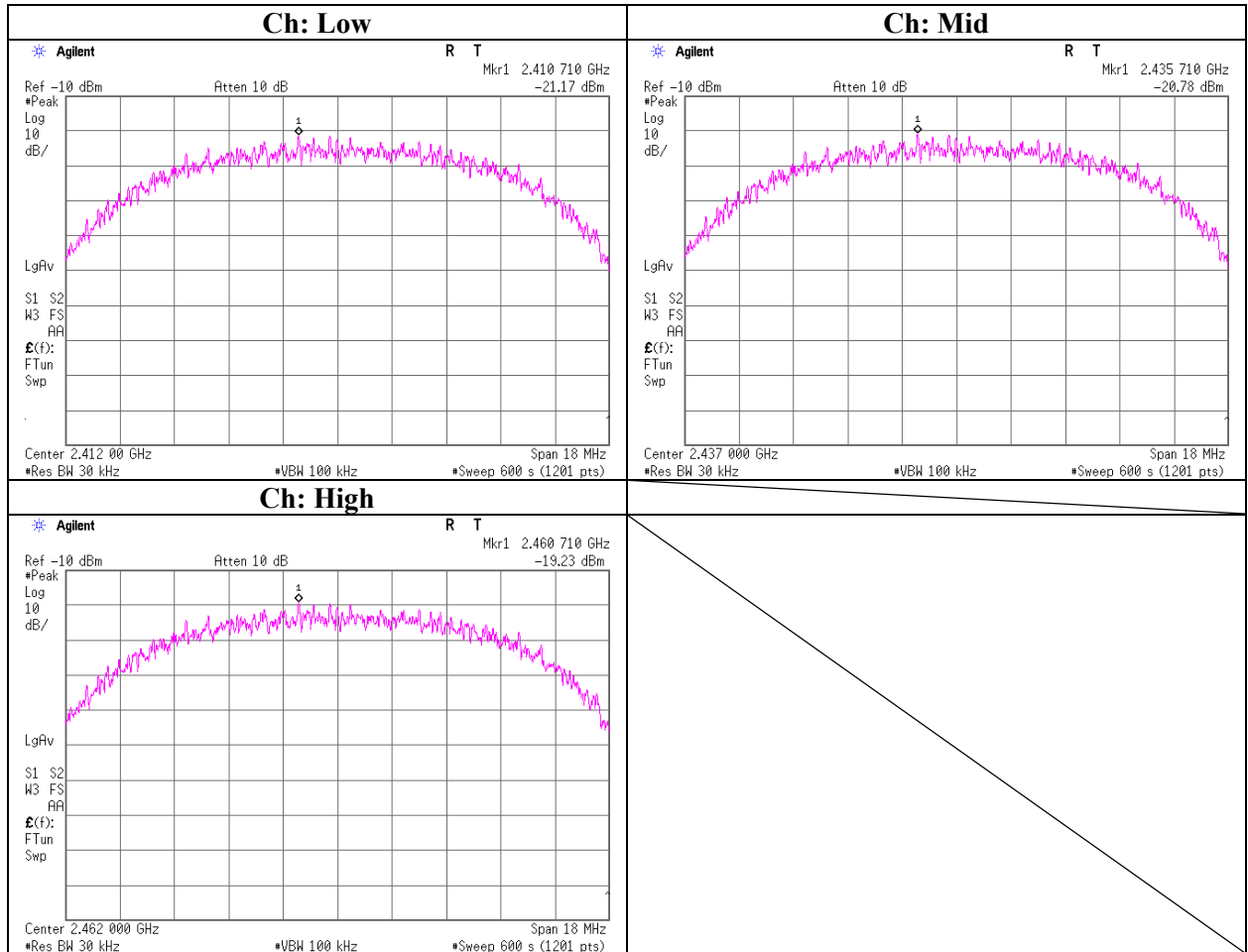
**Head Office EMC Lab.**

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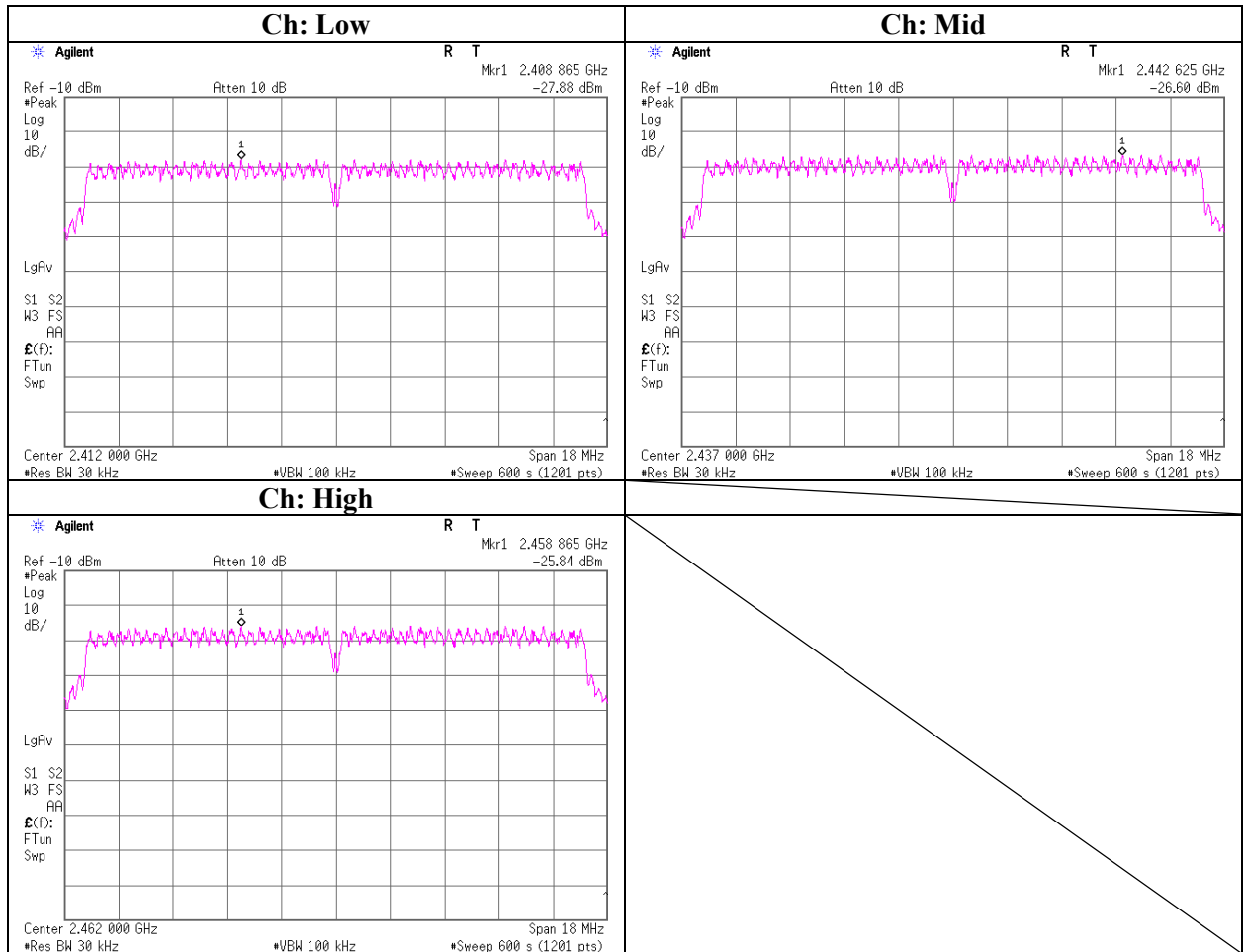
Telephone : +81 596 24 8116

Facsimile : +81 596 24 8124

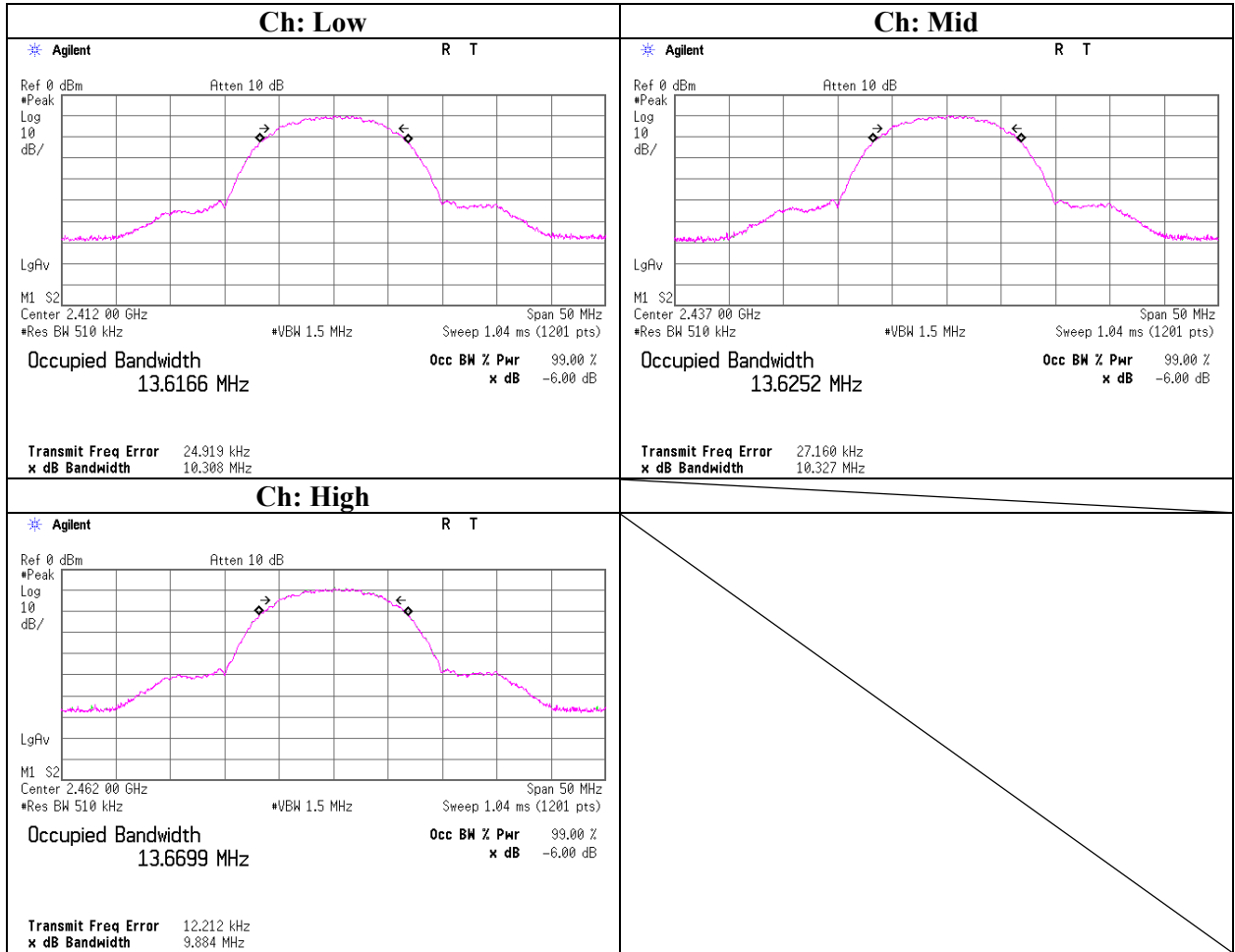
**Power Density**  
**11b**



**Power Density**  
**11g**

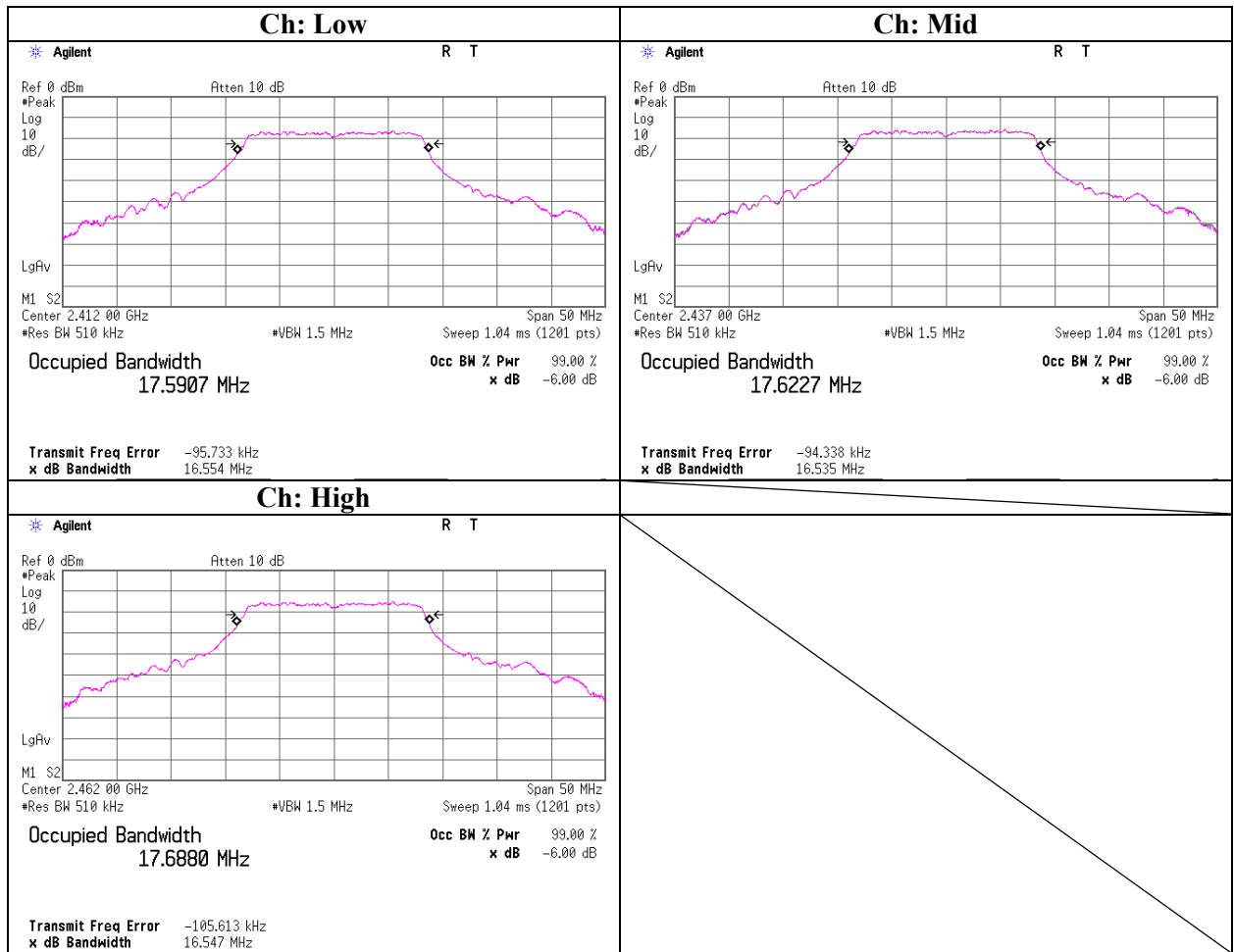


**99% Occupied Bandwidth**  
**11b**





**99% Occupied Bandwidth**  
**11g**



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

#### **EMI test equipment(1/2) ( Used at No.6 Shielded Room and No.1 Semi Anechoic Chamber)**

<b>Control No.</b>	<b>Instrument</b>	<b>Manufacturer</b>	<b>Model No</b>	<b>Serial No</b>	<b>Test Item</b>	<b>Calibration Date * Interval(month)</b>
MAT-21	Attenuator(20dB)(above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	901247	AT	2008/01/09 * 12
MOS-24	Thermo-Hygrometer	Custom	CTH-201	0005	AT	2008/12/08 * 12
MPM-13	Power Meter	Anritsu	ML2495A	0824014	AT	2008/08/13 * 12
MPSE-18	Power sensor	Anritsu	MA2411B	0738174	AT	2008/08/13 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	AT	2008/02/27 * 12
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	2008/01/19 * 12
MHA-01	Horn Antenna 18-26.5GHz	EMCO	3160-09	1266	RE	2008/01/19 * 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	2008/02/12 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	US44300523	RE	2008/08/18 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MOS-01	Digital Humidity Indicator	N.T	NT-1800	MOS01	RE	2008/11/27 * 12
MJM-01	Measure	KDS	ES19-55	-	RE	-
MHF-18	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	7002	RE	2008/12/16 * 12
MCC-76	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278967/4	RE	2007/12/26 * 12
MBA-01	Biconical Antenna	Schwarzbeck	BBA9106	VHA9103200 7	RE	2008/11/12 * 12
MLA-09	Logperiodic Antenna	Schwarzbeck	USLP9143B	9143B006	RE	2008/11/12 * 12
MAT-06	Attenuator(6dB)	Weinschel Corp	2	BL1069	RE	2008/11/14 * 12
MCC-01	Coaxial Cable 0.1-3000MHz	Suhner/storm/Agilent /TSJ	-	-	RE	2008/10/02 * 12
MPA-04	Pre Amplifier	Agilent	8447D	2944A09965	RE	2008/07/23 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	100084	RE	2008/12/01 * 12

**EMI test equipment(2/2) ( Used at No.2 Semi Anechoic Chamber)**

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2008/04/17 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	RE	2008/12/08 * 12
MJM-05	Measure	PROMART	SEN1955	-	RE	-
MRENT-62	Spectrum Analyzer	Agilent	E4448A	MY46180856	RE	2008/11/25 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2008/01/19 * 12
MCC-47	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	295123(5m) / 287573(1m)	RE	2008/11/27 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2008/09/17 * 12
MHF-18	High Pass Filter 3.5-18.0GHz	TOKIMEC	TF323DCA	7002	RE	2008/12/16 * 12
MCC-77	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	278942/4	RE	2008/12/17 * 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: RE: Radiated Emission**

**AT: Antenna Terminal Conducted test**

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