APPENDIX 2: Data of EMI test

Conducted emission

DATA OF CONDUCTED EMISSION TEST

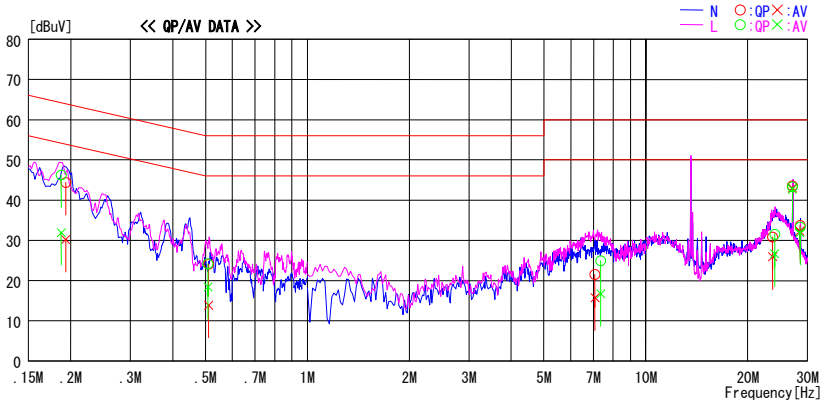
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001

Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V / 60Hz)
Temp./Humi. : 25deg.C / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx with Tag and Communication

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.19309	44.2	30.0	0.2	44.4	30.2	63.9	53.9	19.5	23.7	N
0.51074	23.8	13.6	0.3	24.1	13.9	56.0	46.0	31.9	32.1	N
7.07415	20.6	14.8	0.9	21.5	15.7	60.0	50.0	38.5	34.3	N
23.70230	28.9	24.0	1.9	30.8	25.9	60.0	50.0	29.2	24.1	N
27.11954	41.7	41.1	1.9	43.6	43.0	60.0	50.0	16.4	7.0	N
28.56848	31.7	30.3	2.0	33.7	32.3	60.0	50.0	26.3	17.7	N
0.18741	46.0	31.7	0.2	46.2	31.9	64.2	54.2	18.0	22.3	L
0.50862	23.9	18.1	0.3	24.2	18.4	56.0	46.0	31.8	27.6	L
7.35846	23.9	15.7	1.0	24.9	16.7	60.0	50.0	35.1	33.3	L
24.04541	29.6	24.7	1.9	31.5	26.6	60.0	50.0	28.5	23.4	L
27.12036	41.4	40.8	1.9	43.3	42.7	60.0	50.0	16.7	7.3	L
28.56873	31.3	29.9	2.0	33.3	31.9	60.0	50.0	26.7	18.1	L

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

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

Conducted emission

DATA OF CONDUCTED EMISSION TEST

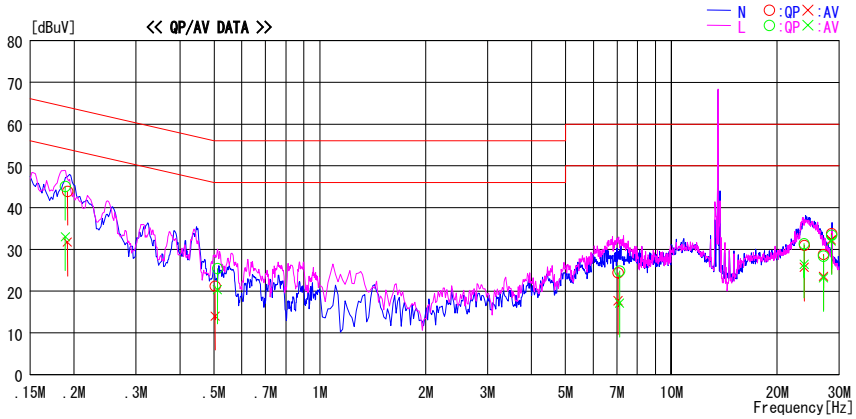
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001

Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V / 60Hz)
Temp./Humi. : 25deg.C / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx without Tag and Communication

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
0.19142	43.7	31.5	0.2	43.9	31.7	64.0	54.0	20.1	22.3	N
0.50412	20.9	13.7	0.3	21.2	14.0	56.0	46.0	34.8	32.0	N
7.05421	23.5	16.8	0.9	24.4	17.7	60.0	50.0	35.6	32.3	N
23.86841	29.1	23.8	1.9	31.0	25.7	60.0	50.0	29.0	24.3	N
27.12000	26.9	21.7	1.9	28.8	23.6	60.0	50.0	31.2	26.4	N
28.56835	31.8	30.3	2.0	33.8	32.3	60.0	50.0	26.2	17.7	N
0.18874	44.9	32.8	0.2	45.1	33.0	64.1	54.1	19.0	21.1	L
0.51141	25.1	20.0	0.3	25.4	20.3	56.0	46.0	30.6	25.7	L
7.12541	23.9	16.2	0.9	24.8	17.1	60.0	50.0	35.2	32.9	L
23.85746	29.5	24.5	1.9	31.4	26.4	60.0	50.0	28.6	23.6	L
27.12000	26.5	21.3	1.9	28.4	23.2	60.0	50.0	31.6	26.8	L
28.56941	31.4	30.0	2.0	33.4	32.0	60.0	50.0	26.6	18.0	L

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

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

Conducted emission

DATA OF CONDUCTED EMISSION TEST

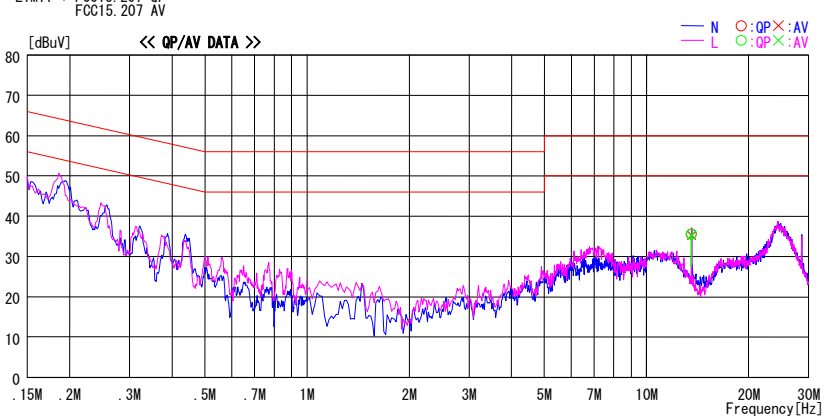
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001

Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V / 60Hz)
Temp./Humi. : 25deg.C / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx without Tag and Communication, Antenna 50 ohm Terminated

LIMIT : FCC15.207 QP
FCC15.207 AV



Frequency	Reading Level		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dB]	[dB]	
13.55906	34.2	33.8	1.4	35.6	35.2	60.0	50.0	24.4	14.8	N
13.55904	34.2	34.0	1.4	35.6	35.4	60.0	50.0	24.4	14.6	L

CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN+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.

Radiated emission (Fundamental emission and Spectrum Mask)

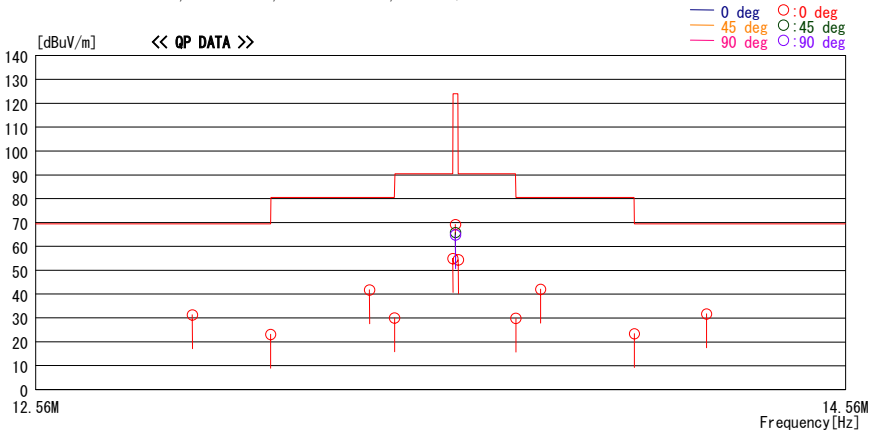
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001
Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V/ 60Hz)
Temp./ Humi. : 22deg.C. / 58%
Operator : Takayuki Shimada

Mode / Remarks : Tx without Tag and Communication, Max-axis(Z)

LIMIT : FCC15.225 3m, 9-90kHz:PK, 110-490kHz:PK, other:QP



Freq. [MHz]	Reading [dBuV]	DET	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna	Table [deg]	Comment
12.92476	42.3	QP	20.2	0.8	32.1	31.2	69.5	38.3	0deg	168	
13.11000	34.2	QP	20.2	0.8	32.1	23.1	69.5	46.4	0deg	168	
13.34860	52.9	QP	20.2	0.8	32.1	41.8	80.5	38.7	0deg	168	
13.41000	41.1	QP	20.2	0.8	32.1	30.0	80.5	50.5	0deg	168	
13.55300	66.0	QP	20.2	0.8	32.1	54.9	90.4	35.5	0deg	168	
13.55994	80.3	QP	20.2	0.8	32.1	69.2	123.9	54.7	0deg	168	Worst
13.55994	76.9	QP	20.2	0.8	32.1	65.8	123.9	58.1	45deg	342	
13.55994	75.9	QP	20.2	0.8	32.1	64.8	123.9	59.1	90deg	232	
13.56700	65.4	QP	20.2	0.8	32.1	54.3	90.4	36.1	0deg	168	
13.71000	41.0	QP	20.2	0.8	32.1	29.9	80.5	50.6	0deg	168	
13.77160	53.1	QP	20.2	0.8	32.1	42.0	80.5	38.5	0deg	168	
14.01000	34.3	QP	20.3	0.8	32.1	23.3	69.5	46.2	0deg	168	
14.19540	42.7	QP	20.3	0.8	32.1	31.7	69.5	37.8	0deg	168	

CHART: WITH FACTOR , ANT TYPE: LOOP , Except for the data below : adequate margin data below the limits.
CALCULATION : RESULT[dBuV] = READING[dBuV] + ANT FACTOR[dB] + LOSS[dB](CABLE + ATTEN.) - GAIN(AMP)

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

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Radiated emission(Fundamental emission and Spectrum Mask)

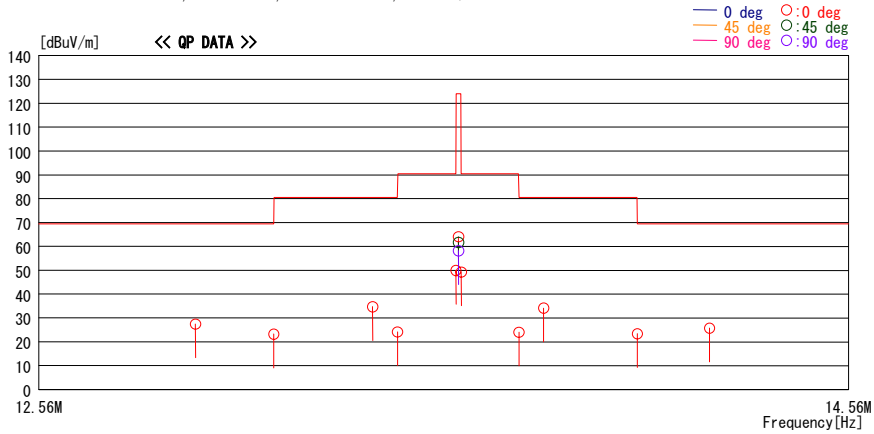
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001
Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V/ 60Hz)
Temp./ Humi. : 22deg.C. / 58%
Operator : Takayuki Shimada

Mode / Remarks : Tx with Tag and Communication, Max-axis(Z)

LIMIT : FCC15.225 3m, 9-90kHz:PK, 110-490kHz:PK, other:QP



Freq. [MHz]	Reading [dBuV]	DET	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna	Table [deg]	Comment
12.92476	38.6	QP	20.2	0.8	32.1	27.5	69.5	42.0	0deg	168	
13.11000	34.3	QP	20.2	0.8	32.1	23.2	69.5	46.3	0deg	168	
13.34880	45.7	QP	20.2	0.8	32.1	34.6	80.5	45.9	0deg	168	
13.41000	35.3	QP	20.2	0.8	32.1	24.2	80.5	56.3	0deg	168	
13.55300	61.0	QP	20.2	0.8	32.1	49.9	90.4	40.5	0deg	168	
13.55994	75.2	QP	20.2	0.8	32.1	64.1	123.9	59.8	0deg	168	Worst
13.55994	72.8	QP	20.2	0.8	32.1	61.7	123.9	62.2	45deg	147	
13.55994	69.2	QP	20.2	0.8	32.1	58.1	123.9	65.8	90deg	245	
13.56700	60.4	QP	20.2	0.8	32.1	49.3	90.4	41.1	0deg	168	
13.71000	35.2	QP	20.2	0.8	32.1	24.1	80.5	56.4	0deg	168	
13.77180	45.2	QP	20.2	0.8	32.1	34.1	80.5	46.4	0deg	168	
14.01000	34.3	QP	20.3	0.8	32.1	23.3	69.5	46.2	0deg	168	
14.19540	36.8	QP	20.3	0.8	32.1	25.8	69.5	43.7	0deg	168	

CHART: WITH FACTOR , ANT TYPE: LOOP , Except for the data below : adequate margin data below the limits.
CALCULATION : RESULT[dBuV] = READING[dBuV] + ANT FACTOR[dB] + LOSS[dB](CABLE + ATTEN.) - GAIN[dB](AMP)

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

Radiated emission (Spurious emission : below 30MHz)

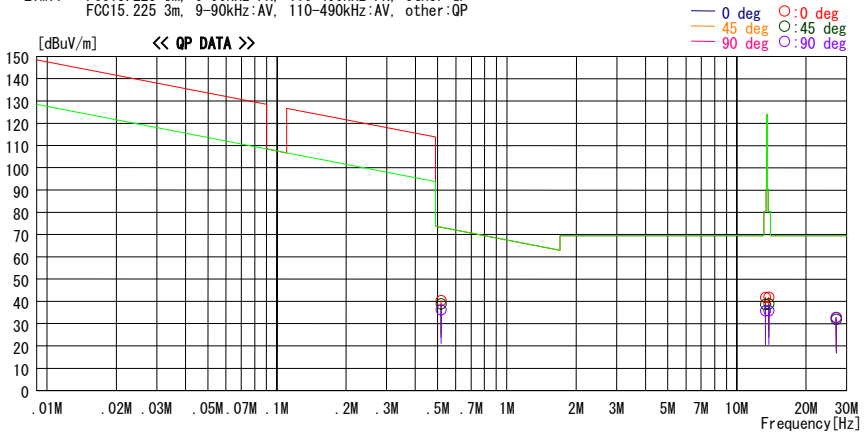
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company	: Matsushita Electric Industrial Co., Ltd.	Report No.	: 28GE0207-HO-01
Kind of EUT	: Contactless IC Card Reader	Power	: DC 24.0V(AC 120V/ 60Hz)
Model No.	: JT-R210CR-50	Temp./ Humi.	: 22deg.C. / 58%
Serial No.	: ES001	Operator	: Takayuki Shimada

Mode / Remarks : Tx without Tag and Communication, Max-axis(Z)

LIMIT : FCC15.225 3m, 9-90kHz:PK, 110-490kHz:PK, other:QP
FCC15.225 3m, 9-90kHz:AV, 110-490kHz:AV, other:QP



Freq. [MHz]	Reading [dBuV]	DET	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna	Table [deg]	Comment
0.51658	52.8	QP	19.6	0.2	32.1	40.5	73.3	32.8	0deg	173	
0.51658	51.3	QP	19.6	0.2	32.1	39.0	73.3	34.3	45deg	147	
0.51658	48.5	QP	19.6	0.2	32.1	36.2	73.3	37.1	90deg	106	
13.34860	52.9	QP	20.2	0.8	32.1	41.8	80.5	38.7	0deg	168	
13.34860	49.8	QP	20.2	0.8	32.1	38.7	80.5	41.8	45deg	145	
13.34860	46.9	QP	20.2	0.8	32.1	35.8	80.5	44.7	90deg	237	
13.77160	53.1	QP	20.2	0.8	32.1	42.0	80.5	38.5	0deg	168	
13.77160	50.0	QP	20.2	0.8	32.1	38.9	80.5	41.6	45deg	145	
13.77160	47.1	QP	20.2	0.8	32.1	36.0	80.5	44.5	90deg	237	
27.12040	43.2	QP	20.6	1.2	32.1	32.9	69.5	36.6	0deg	163	
27.12040	42.3	QP	20.6	1.2	32.1	32.0	69.5	37.5	45deg	359	
27.12040	43.0	QP	20.6	1.2	32.1	32.7	69.5	36.8	90deg	230	

CHART: WITH FACTOR , ANT TYPE: LOOP , Except for the data below : adequate margin data below the limits.
CALCULATION : RESULT[dBuV] = READING[dBuV] + ANT FACTOR[dB] + LOSS[dB](CABLE + ATTEN.) - GAIN[dB](AMP)

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

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Radiated emission (Spurious emission : below 30MHz)

DATA OF RADIATED EMISSION TEST

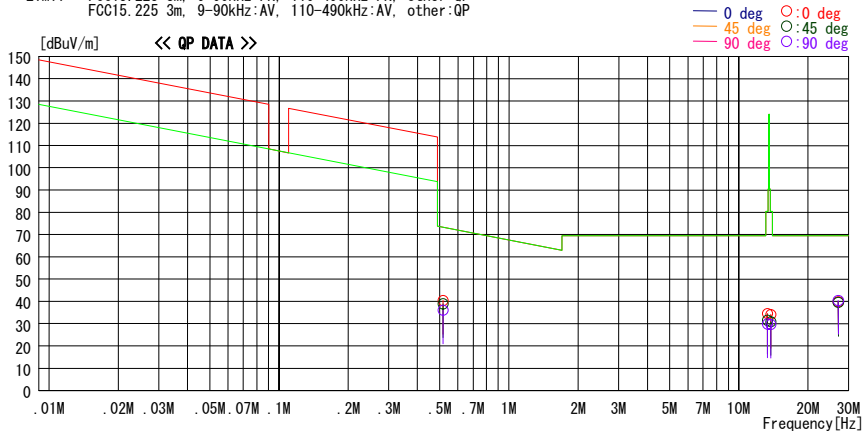
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001

Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V/ 60Hz)
Temp./ Humi. : 22deg.C. / 58%
Operator : Takayuki Shimada

Mode / Remarks : Tx with Tag and Communication, Max-axis(Z)

LIMIT : FCC15.225 3m, 9-90kHz:PK, 110-490kHz:PK, other:QP
FCC15.225 3m, 9-90kHz:AV, 110-490kHz:AV, other:QP



Freq. [MHz]	Reading [dBuV]	DET	Ant.Fac [dB/m]	Loss [dB]	Gain [dB]	Result [dBuV/m]	Limit [dBuV/m]	Margin [dB]	Antenna	Table [deg]	Comment
0.51658	52.8	QP	19.6	0.2	32.1	40.5	73.3	32.8	0deg	172	
0.51658	51.3	QP	19.6	0.2	32.1	39.0	73.3	34.3	45deg	148	
0.51658	48.4	QP	19.6	0.2	32.1	36.1	73.3	37.2	90deg	108	
13.34860	45.7	QP	20.2	0.8	32.1	34.6	80.5	45.9	0deg	168	
13.34860	42.6	QP	20.2	0.8	32.1	31.5	80.5	49.0	45deg	147	
13.34860	41.0	QP	20.2	0.8	32.1	29.9	80.5	50.6	90deg	245	
13.77180	45.2	QP	20.2	0.8	32.1	34.1	80.5	46.4	0deg	168	
13.77180	42.0	QP	20.2	0.8	32.1	30.9	80.5	49.6	45deg	147	
13.77180	40.8	QP	20.2	0.8	32.1	29.7	80.5	50.8	90deg	245	
27.12040	50.1	QP	20.6	1.2	32.1	39.8	69.5	29.7	0deg	161	
27.12040	49.9	QP	20.6	1.2	32.1	39.6	69.5	29.9	45deg	359	
27.12040	50.7	QP	20.6	1.2	32.1	40.4	69.5	29.1	90deg	222	

CHART: WITH FACTOR , ANT TYPE: LOOP , Except for the data below : adequate margin data below the limits.
CALCULATION : RESULT[dBuV] = READING[dBuV] + ANT FACTOR[dB] + LOSS[dB](CABLE + ATTEN.) - GAIN[dB](AMP)

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

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Facsimile : +81 596 24 8124

Radiated emission (Spurious emission : above 30MHz)

DATA OF RADIATED EMISSION TEST

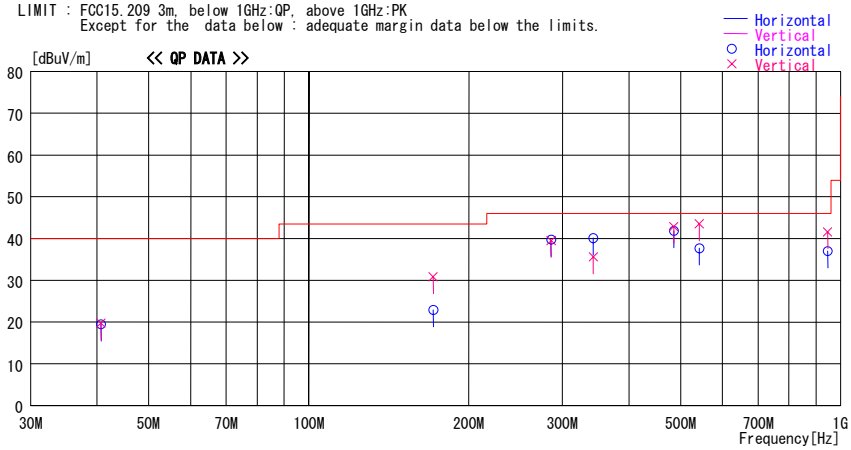
UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001

Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V/ 60Hz)
Temp./Humi. : 22deg.C. / 58%
Operator : Takayuki Shimada

Mode / Remarks : Tx without Tag and Communication, Max-axis(Z)

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
40.680	30.8	QP	13.4	-24.7	19.5	275	208	Hori.	40.0	20.5	
40.680	31.0	QP	13.4	-24.7	19.7	0	100	Vert.	40.0	20.3	
171.415	30.0	QP	16.1	-23.2	22.9	172	196	Hori.	43.5	20.6	
171.415	37.9	QP	16.1	-23.2	30.8	195	100	Vert.	43.5	12.7	
285.692	42.5	QP	19.5	-22.2	39.8	171	284	Hori.	46.0	6.2	
285.692	42.2	QP	19.5	-22.2	39.5	176	100	Vert.	46.0	6.5	
342.830	44.7	QP	17.2	-21.8	40.1	140	100	Hori.	46.0	5.9	
342.830	40.2	QP	17.2	-21.8	35.6	16	100	Vert.	46.0	10.4	
485.676	43.6	QP	19.2	-20.9	41.9	194	100	Hori.	46.0	4.1	
485.677	44.6	QP	19.2	-20.9	42.9	197	100	Vert.	46.0	3.1	
542.815	38.6	QP	19.7	-20.7	37.6	309	126	Hori.	46.0	8.4	
542.815	44.5	QP	19.7	-20.7	43.5	187	100	Vert.	46.0	2.5	
945.298	29.4	QP	25.1	-17.5	37.0	249	100	Hori.	46.0	9.0	
945.298	34.0	QP	25.1	-17.5	41.6	141	114	Vert.	46.0	4.4	

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 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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Radiated emission (Spurious emission: above 30MHz)

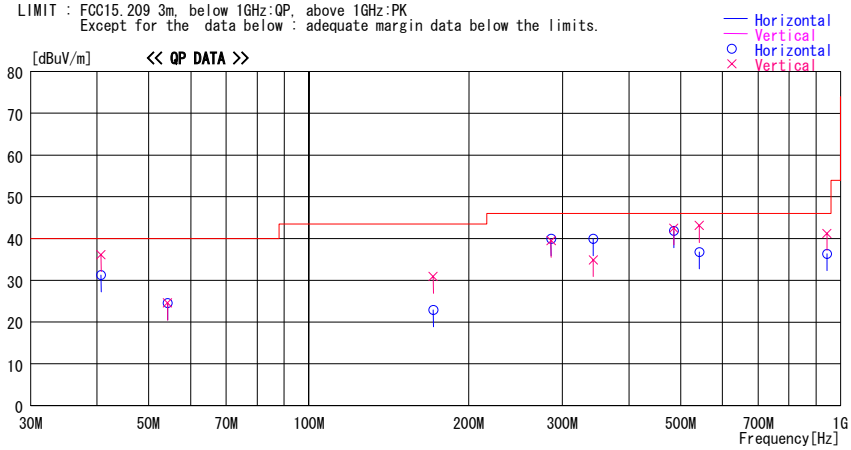
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2008/04/14

Company : Matsushita Electric Industrial Co., Ltd.
Kind of EUT : Contactless IC Card Reader
Model No. : JT-R210CR-50
Serial No. : ES001
Report No. : 28GE0207-HO-01
Power : DC 24.0V(AC 120V/ 60Hz)
Temp./Humi. : 22deg.C. / 58%
Operator : Takayuki Shimada

Mode / Remarks : Tx with Tag and Communication, Max-axis(Z)

LIMIT : FCC15.209 3m, below 1GHz:QP, above 1GHz:PK
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
40.680	42.6	QP	13.4	-24.7	31.3	175	270	Hori.	40.0	8.7	
40.680	47.4	QP	13.4	-24.7	36.1	272	100	Vert.	40.0	3.9	
54.240	39.9	QP	9.2	-24.5	24.6	0	344	Hori.	40.0	15.4	
54.240	39.8	QP	9.2	-24.5	24.5	263	100	Vert.	40.0	15.5	
171.415	30.0	QP	16.1	-23.2	22.9	173	189	Hori.	43.5	20.6	
171.415	38.0	QP	16.1	-23.2	30.9	188	100	Vert.	43.5	12.6	
285.692	42.6	QP	19.5	-22.2	39.9	163	277	Hori.	46.0	6.1	
285.692	42.2	QP	19.5	-22.2	39.5	179	100	Vert.	46.0	6.5	
342.830	44.5	QP	17.2	-21.8	39.9	143	100	Hori.	46.0	6.1	
342.830	39.5	QP	17.2	-21.8	34.9	10	100	Vert.	46.0	11.1	
485.676	43.6	QP	19.2	-20.9	41.9	202	100	Hori.	46.0	4.1	
485.676	44.2	QP	19.2	-20.9	42.5	192	100	Vert.	46.0	3.5	
542.814	37.8	QP	19.7	-20.7	36.8	316	111	Hori.	46.0	9.2	
542.814	44.1	QP	19.7	-20.7	43.1	190	100	Vert.	46.0	2.9	
942.783	28.8	QP	25.0	-17.5	36.3	253	100	Hori.	46.0	9.7	
942.783	33.7	QP	25.0	-17.5	41.2	137	115	Vert.	46.0	4.8	

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.

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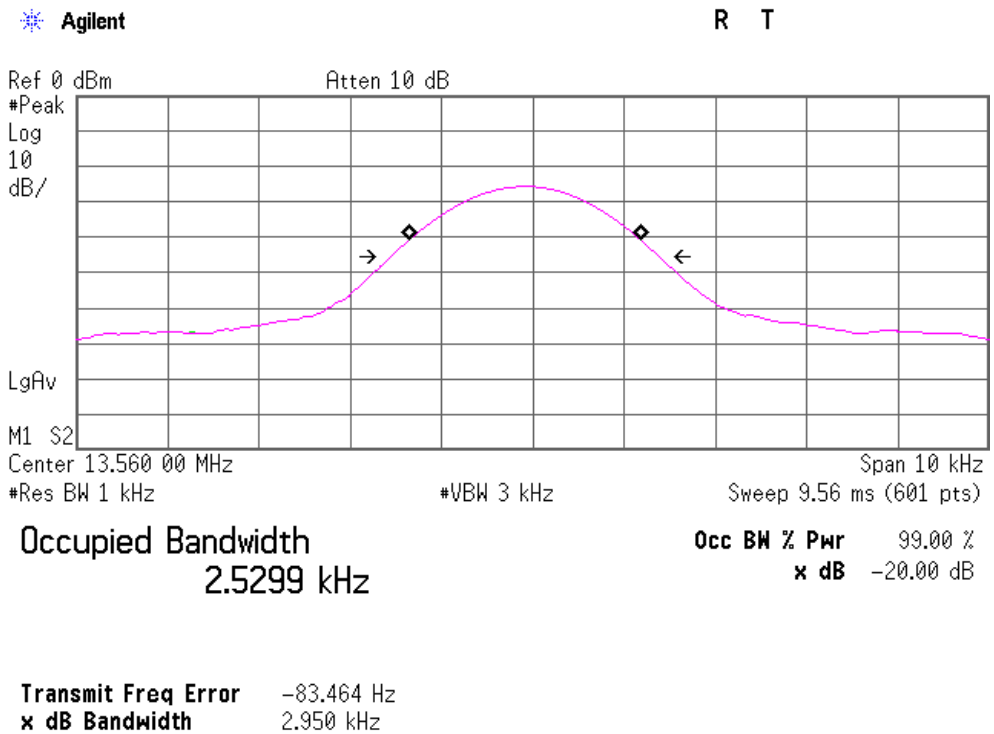
20dB Bandwidth

UL Japan, Inc.
Head Office EMC Lab. No.4 Measurement Room

COMPANY	: Matsushita Electric Industrial Co., Ltd.	REPORT NO	: 28GE0207-HO-01
EQUIPMENT	: Contactless IC Card Reader	REGULATION	: FCC 15.225
MODEL	: JT-R210CR-50	TEST DISTANCE	: -
S/ N	: ES001	DATE	: 04/14/2008
POWER	: DC 24.0V (AC 120V / 60Hz)	TEMPERATURE	: 22 deg.C.
MODE	: Transmitting mode	HUMIDITY	: 58 %
		ENGINEER	: Takayuki Shimada

FREQ [MHz]	20dB Bandwidth [kHz]
13.56	2.95

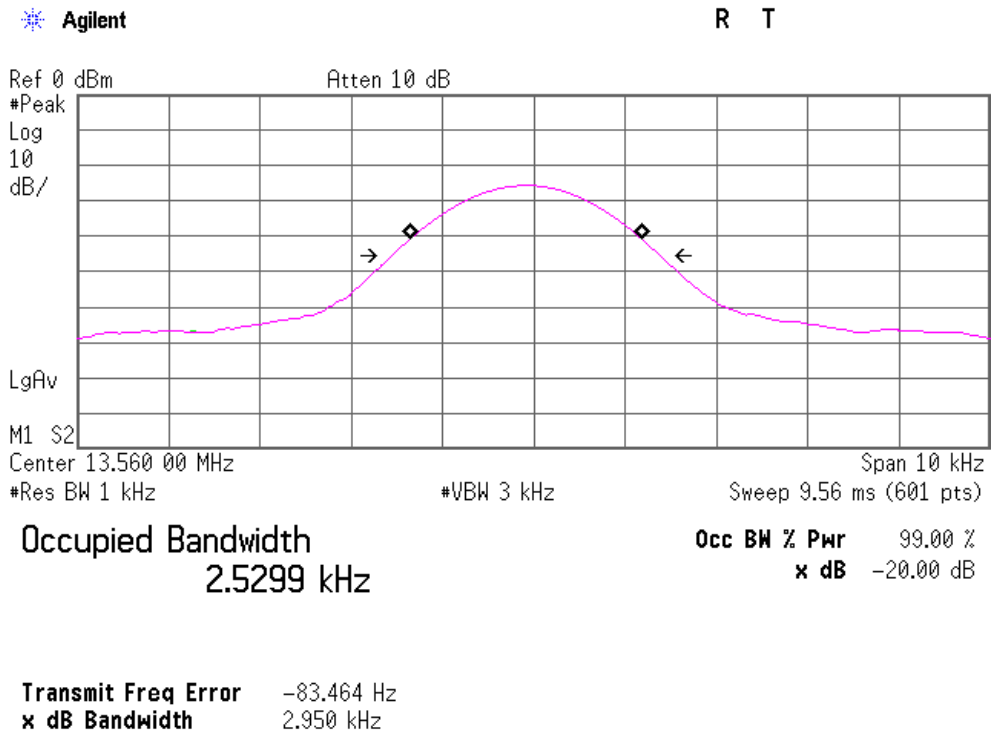


99% Occupied Bandwidth (Reference data)

UL Japan, Inc.
Head Office EMC Lab. No.4 Measurement Room

COMPANY	: Matsushita Electric Industrial Co., Ltd.	REPORT NO	: 28GE0207-HO-01
EQUIPMENT	: Contactless IC Card Reader	REGULATION	: RSS-Gen 4.6.1
MODEL	: JT-R210CR-50	TEST DISTANCE	: -
S/ N	: ES001	DATE	: 04/14/2008
POWER	: DC 24.0V (AC 120V / 60Hz)	TEMPERATURE	: 22 deg.C.
MODE	: Transmitting mode	HUMIDITY	: 58 %
		ENGINEER	: Takayuki Shimada

FREQ [MHz]	99% Occupied Bandwidth [kHz]
13.56	2.53



Frequency Tolerance

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

Company	Matsushita Electric Industrial Co., Ltd.
Equipment	Contactless IC Card Reader
Model	JT-R210CR-50
S/N	ES001
Power	DC 24.0V (AC120V / 60Hz)
Mode	Transmitting mode

Regulation	FCC15.225 (e)
Test Distance	-
Date	04/14/2008
Temperature	20 deg.C.
Humidity	41 %
Engineer	Kazufumi Nakai

Test Condition	Test Timing	Measured freq [MHz]	Freq error [MHz]	Result [ppm]	Limit (+/- 0.01%) [+/- ppm]	Margin [ppm]
T nom 20deg.C Vmax AC138V (115%)	Power on	13.55995891	-0.00004109	-3.03	100.00	96.97
	on 2min.	13.55995716	-0.00004284	-3.16	100.00	96.84
	on 5min.	13.55994930	-0.00005070	-3.74	100.00	96.26
	on 10min.	13.55994722	-0.00005278	-3.89	100.00	96.11
T nom 20deg.C Vnom AC120V (100%)	Power on	13.55997447	-0.00002554	-1.88	100.00	98.12
	on 2min.	13.55995762	-0.00004239	-3.13	100.00	96.87
	on 5min.	13.55995335	-0.00004665	-3.44	100.00	96.56
	on 10min.	13.55995315	-0.00004685	-3.46	100.00	96.54
T nom 20deg.C Vmin AC102V (85%)	Power on	13.55996994	-0.00003006	-2.22	100.00	97.78
	on 2min.	13.55996183	-0.00003818	-2.82	100.00	97.18
	on 5min.	13.55995873	-0.00004127	-3.04	100.00	96.96
	on 10min.	13.55995594	-0.00004406	-3.25	100.00	96.75
T max 50deg.C. Vnom AC120V (100%)	Power on	13.55992958	-0.00007042	-5.19	100.00	94.81
	on 2min.	13.55992361	-0.00007639	-5.63	100.00	94.37
	on 5min.	13.55992491	-0.00007509	-5.54	100.00	94.46
	on 10min.	13.55992826	-0.00007174	-5.29	100.00	94.71
40deg.C. Vnom AC120V (100%)	Power on	13.55993014	-0.00006986	-5.15	100.00	94.85
	on 2min.	13.55992990	-0.00007010	-5.17	100.00	94.83
	on 5min.	13.55992877	-0.00007123	-5.25	100.00	94.75
	on 10min.	13.55992621	-0.00007379	-5.44	100.00	94.56
30deg.C. Vnom AC120V (100%)	Power on	13.55994761	-0.00005239	-3.86	100.00	96.14
	on 2min.	13.55994651	-0.00005349	-3.94	100.00	96.06
	on 5min.	13.55994550	-0.00005450	-4.02	100.00	95.98
	on 10min.	13.55994214	-0.00005786	-4.27	100.00	95.73
20deg.C. Vnom AC120V (100%)	Power on	13.55997447	-0.00002554	-1.88	100.00	98.12
	on 2min.	13.55995762	-0.00004239	-3.13	100.00	96.87
	on 5min.	13.55995335	-0.00004665	-3.44	100.00	96.56
	on 10min.	13.55995315	-0.00004685	-3.46	100.00	96.54
10deg.C. Vnom AC120V (100%)	Power on	13.55999654	-0.00000346	-0.26	100.00	99.74
	on 2min.	13.55998652	-0.00001348	-0.99	100.00	99.01
	on 5min.	13.55998548	-0.00001452	-1.07	100.00	98.93
	on 10min.	13.55997143	-0.00002857	-2.11	100.00	97.89
0deg.C. Vnom AC120V (100%)	Power on	13.56002503	0.00002503	1.85	100.00	98.15
	on 2min.	13.56000977	0.00000977	0.72	100.00	99.28
	on 5min.	13.56000937	0.00000937	0.69	100.00	99.31
	on 10min.	13.56000942	0.00000942	0.69	100.00	99.31
-10deg.C. Vnom AC120V (100%)	Power on	13.56000891	0.00000891	0.66	100.00	99.34
	on 2min.	13.56000709	0.00000709	0.52	100.00	99.48
	on 5min.	13.56000685	0.00000685	0.51	100.00	99.49
	on 10min.	13.56000684	0.00000684	0.50	100.00	99.50
-20deg.C Vnom AC120V (100%)	Power on	13.56010558	0.00010558	7.79	100.00	92.21
	on 2min.	13.56010035	0.00010035	7.40	100.00	92.60
	on 5min.	13.56010639	0.00010639	7.85	100.00	92.15
	on 10min.	13.56010641	0.00010641	7.85	100.00	92.15

Limit : 13.56 MHz +/-0.01 % (+/- 100ppm) = +/- 0.001356 MHz

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APPENDIX 3: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-04	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2008/03/27 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	RE/CE	2008/01/10 * 12
MJM-07	Measure	PROMART	SEN1955	RE/CE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MSA-04	Spectrum Analyzer	Agilent	E4448A	RE/CE	2007/06/20 * 12
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	RE/CE	2007/09/14 * 12
MLPA-02	Loop Antenna	Rohde & Schwarz	HFH2-Z2	RE	2007/12/12 * 12
MCC-50	Coaxial cable	UL Japan	-	RE	2008/03/17 * 12
MCC-31	Coaxial cable	UL Japan	-	RE	2007/06/04 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2008/03/06 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	RE	2008/01/12 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	RE	2008/01/12 * 12
MCC-50	Coaxial cable	UL Japan	-	RE/CE	2008/03/17 * 12
MAT-31	Attenuator(6dB)	TME	UFA-01	RE	2008/03/10 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2008/02/19 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE(AE)	2008/02/20 * 12
MTA-07	Terminator	MCL	BTRM-50	CE	2008/02/04 * 12
MCH-04	Temperature and Humidity Chamber	Espec	PL-2KP	FT	2007/08/30 * 12
MUC-01	Universal Counter	Agilent	53132A	FT	2007/05/23 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-180	FT	2008/01/10 * 12
MCC-59	Coaxial cable	Suhner	-	FT	2007/06/19 * 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
FT: Frequency Tolerance