APPENDIX 2: Data of EMI test

Conducted Emission
External Antenna, Tx, Ch. Low

DATA OF CONDUCTED EMISSION TEST

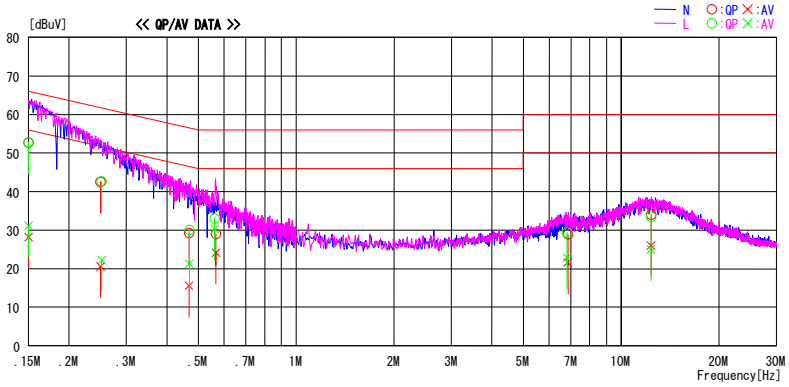
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001800

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 24deg.C / 32%
Operator : Takayuki Shimada

Mode / Remarks : Tx, ch:001(5725.809328MHz), External Antenna

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]	
0.15000	52.4	27.9	0.3	52.7	28.2	66.0	56.0	13.3	27.8	N
0.24980	42.2	20.3	0.3	42.5	20.6	61.8	51.8	19.3	31.2	N
0.46784	29.0	15.3	0.3	29.3	15.6	56.6	46.6	27.3	31.0	N
0.56641	28.7	23.8	0.3	29.0	24.1	56.0	46.0	27.0	21.9	N
6.86183	28.0	20.7	0.9	28.9	21.6	60.0	50.0	31.1	28.4	N
12.33884	32.7	24.7	1.3	34.0	26.0	60.0	50.0	26.0	24.0	N
0.15000	52.5	30.9	0.3	52.8	31.2	66.0	56.0	13.2	24.8	L
0.25188	42.4	21.9	0.3	42.7	22.2	61.7	51.7	19.0	29.5	L
0.46910	29.8	21.0	0.3	30.1	21.3	56.5	46.5	26.4	25.2	L
0.56133	32.8	30.0	0.3	33.1	30.3	56.0	46.0	22.9	15.7	L
6.80086	28.5	21.9	0.9	29.4	22.8	60.0	50.0	30.6	27.2	L
12.34012	32.2	23.7	1.3	33.5	25.0	60.0	50.0	26.5	25.0	L

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.

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

Conducted Emission
External Antenna, Tx, Ch. Mid

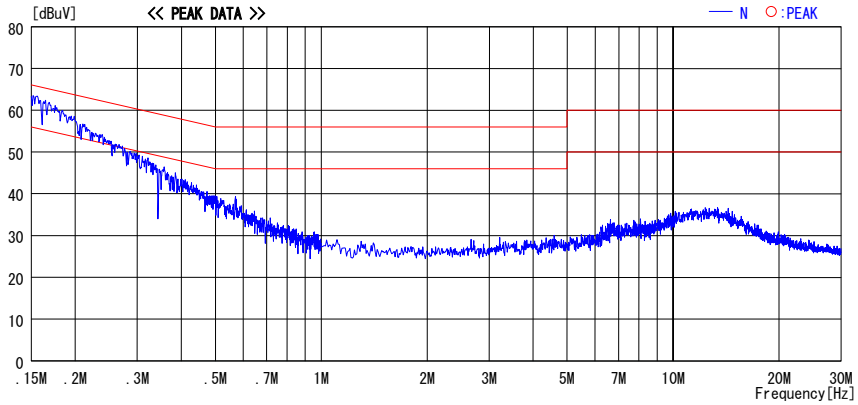
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 24deg.C / 32%
Serial No.	: 999999B8F001800	Operator	: Takayuki Shimada

Mode / Remarks : Tx, ch:071(5788.240269MHz), External Antenna

LIMIT : FCC15.207 QP
FCC15.207 AV



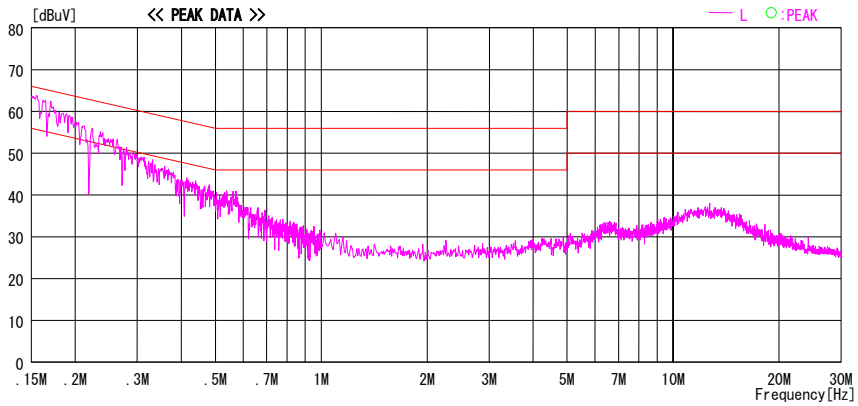


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission
External Antenna, Tx, Ch. High

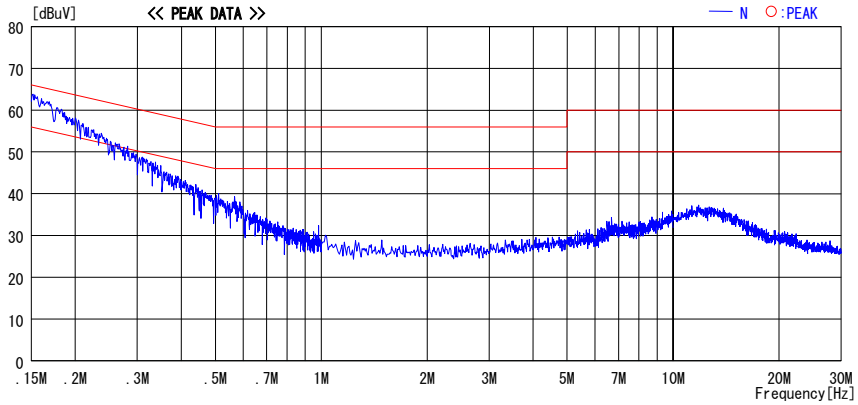
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 24deg.C / 32%
Serial No.	: 999999B8F001800	Operator	: Takayuki Shimada

Mode / Remarks : Tx, ch:139(5848.889420MHz), External Antenna

LIMIT : FCC15.207 QP
FCC15.207 AV



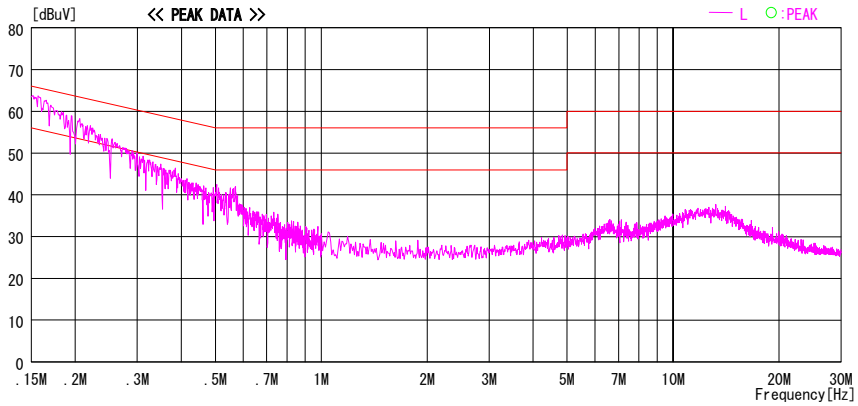


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

UL Japan, Inc.
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Conducted Emission
External Antenna, Rx, Ch. Mid

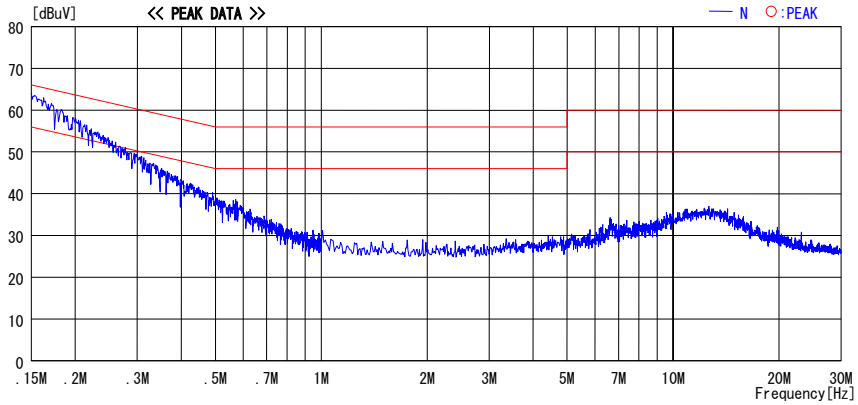
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 24deg.C / 32%
Serial No.	: 999999B8F001800	Operator	: Takayuki Shimada

Mode / Remarks : Rx, ch:071(5788.240269MHz), External Antenna

LIMIT : FCC15.207 QP
FCC15.207 AV



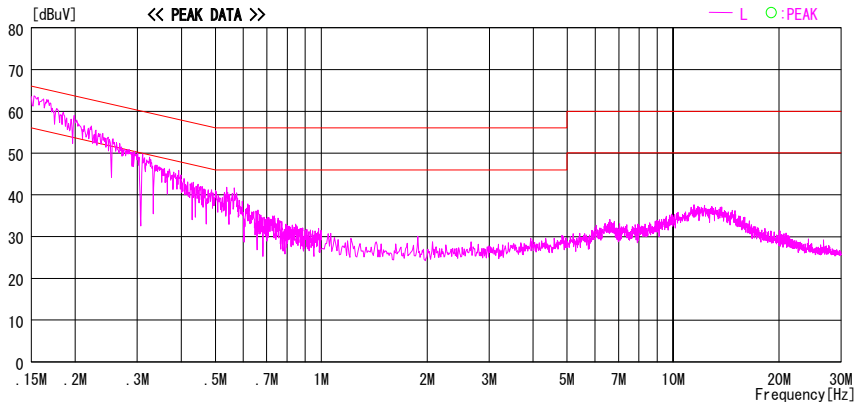


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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Conducted Emission
Internal Antenna, Tx, Ch. Low

DATA OF CONDUCTED EMISSION TEST

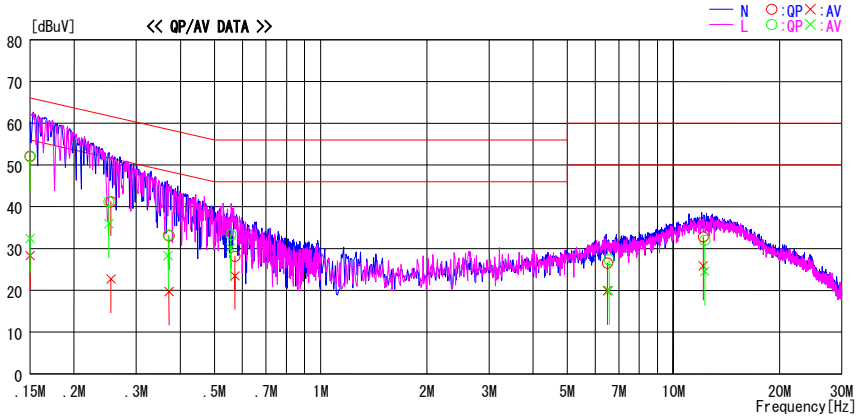
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001728

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 22deg.C / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx, ch:001(5725.809328MHz), Internal Antenna

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]	
0.15000	51.8	28.0	0.3	52.1	28.3	66.0	56.0	13.9	27.7	N
0.15000	51.7	32.1	0.3	52.0	32.4	66.0	56.0	14.0	23.6	L
0.25086	40.9	35.6	0.3	41.2	35.9	61.7	51.7	20.5	15.8	L
0.25420	40.9	22.4	0.3	41.2	22.7	61.6	51.6	20.4	28.9	N
0.36967	32.9	28.0	0.3	33.2	28.3	58.5	48.5	25.3	20.2	L
0.37178	32.8	19.4	0.3	33.1	19.7	58.5	48.5	25.4	28.8	N
0.55615	33.0	29.9	0.3	33.3	30.2	56.0	46.0	22.7	15.8	L
0.57124	27.8	23.2	0.3	28.1	23.5	56.0	46.0	27.9	22.5	N
6.49250	25.6	19.0	0.9	26.5	19.9	60.0	50.0	33.5	30.1	N
6.56650	26.4	19.0	0.9	27.3	19.9	60.0	50.0	32.7	30.1	L
12.15460	31.5	24.5	1.3	32.8	25.8	60.0	50.0	27.2	24.2	N
12.28262	30.7	23.2	1.3	32.0	24.5	60.0	50.0	28.0	25.5	L

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.

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

Conducted Emission
Internal Antenna, Tx, Ch. Mid

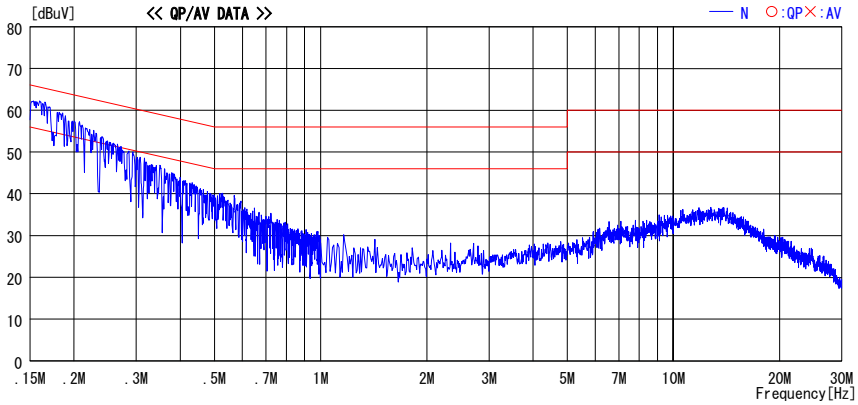
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 22deg.C / 36%
Serial No.	: 999999B8F001728	Operator	: Kazufumi Nakai

Mode / Remarks : Tx, ch:071(5788.240269MHz), Internal Antenna

LIMIT : FCC15.207 QP
FCC15.207 AV



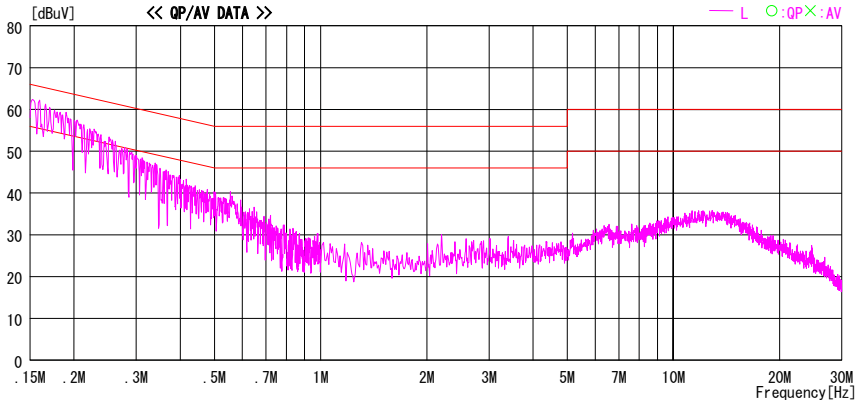


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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Conducted Emission
Internal Antenna, Tx, Ch. High

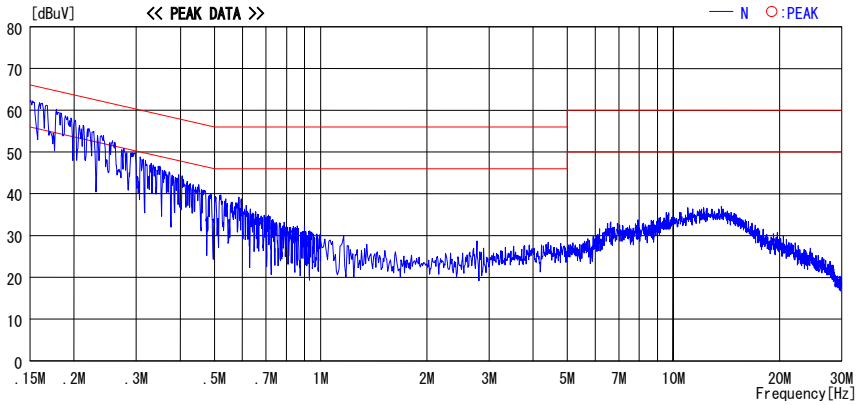
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 22deg.C / 36%
Serial No.	: 999999B8F001728	Operator	: Kazufumi Nakai

Mode / Remarks : Tx, ch:139(5848.889420MHz), Internal Antenna

LIMIT : FCC15.207 QP
FCC15.207 AV



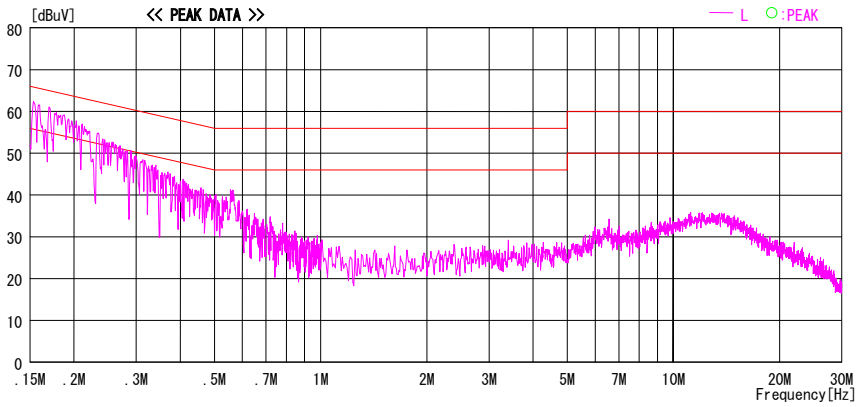


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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Conducted Emission
Internal Antenna, Rx, Ch. Mid

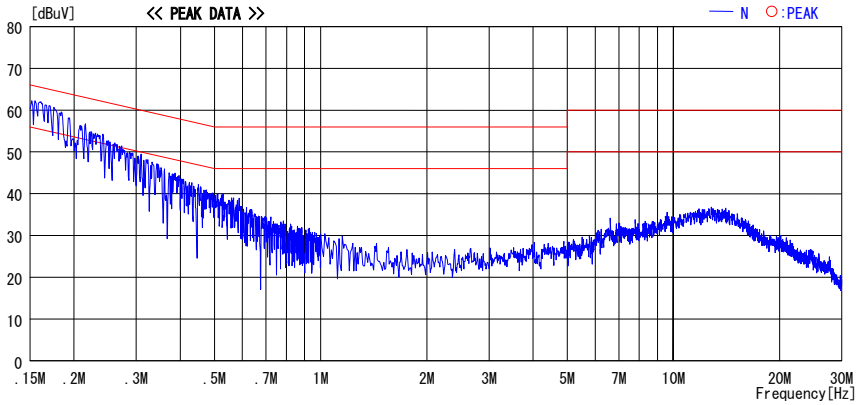
DATA OF CONDUCTED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 22deg.C / 36%
Serial No.	: 999999B8F001728	Operator	: Kazufumi Nakai

Mode / Remarks : Rx, ch:071(5788.240269MHz), Internal Antenna

LIMIT : FCC15.207 QP
FCC15.207 AV



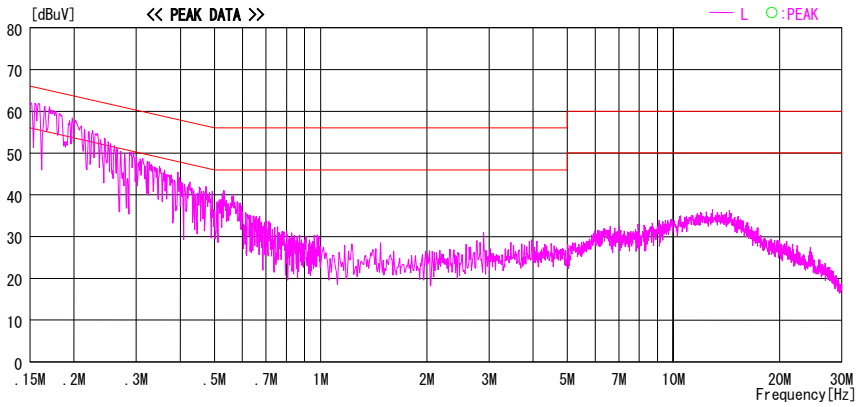


CHART:WITH FACTOR,Peak hold data. CALCURATION:RESULT[dBuV]=READING[dBuV]+C.F[dB](LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

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Carrier Frequency Separation

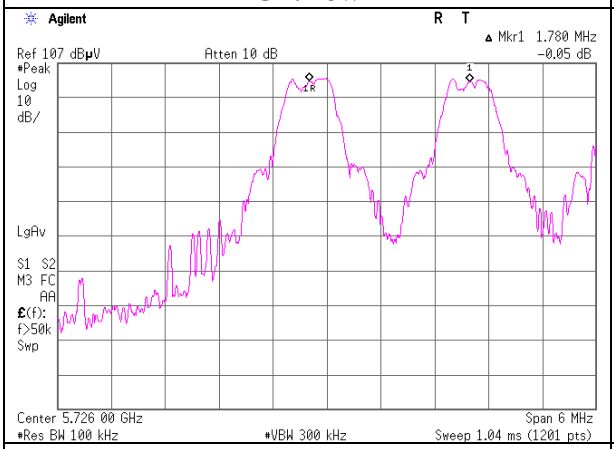
UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

Company	:	Brother Industries, Ltd.	Regulation	:	FCC15.247(a)(1)/RSS-210A8.1(b)
Equipment	:	Multi-Function Center	Test distance	:	-
Model No.	:	MFC-990CW	Date	:	03/25/2008
Serial No.	:	999999B8F001800	Temperature	:	21deg.C
Power	:	AC120V / 60Hz	Humidity	:	42%
Mode	:	Tx(Hopping on)	Engineer	:	Akio Hayashi

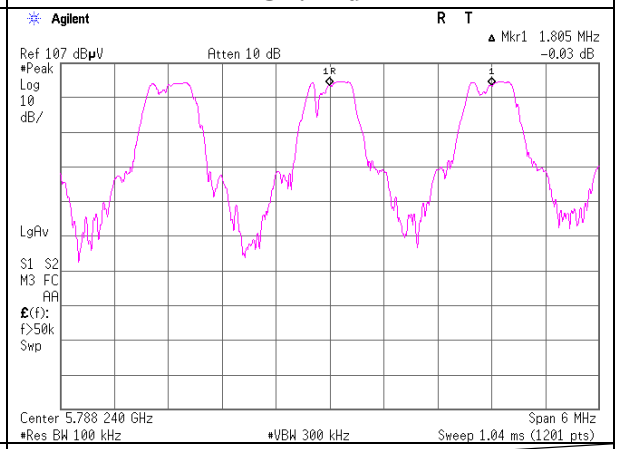
Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	5725.809328	1.780	>20dB Bandwidth(0.691MHz) or 25[kHz](whichever is greater)
Mid	5788.240269	1.805	>20dB Bandwidth(0.671MHz) or 25[kHz](whichever is greater)
High	5848.889420	0.907	>20dB Bandwidth(0.709MHz) or 25[kHz](whichever is greater)

Carrier Frequency Separation

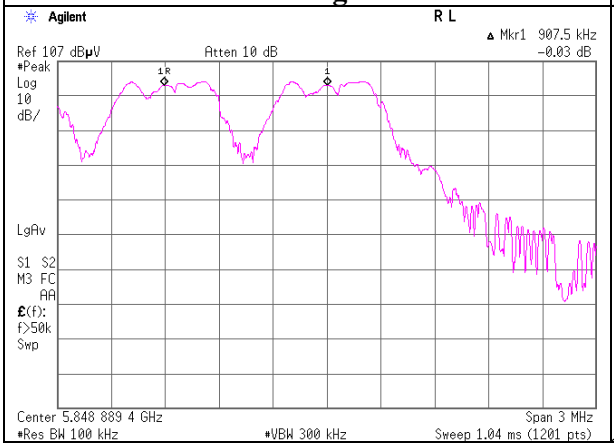
Ch:Low



Ch:Mid



Ch:High



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20dB Bandwidth

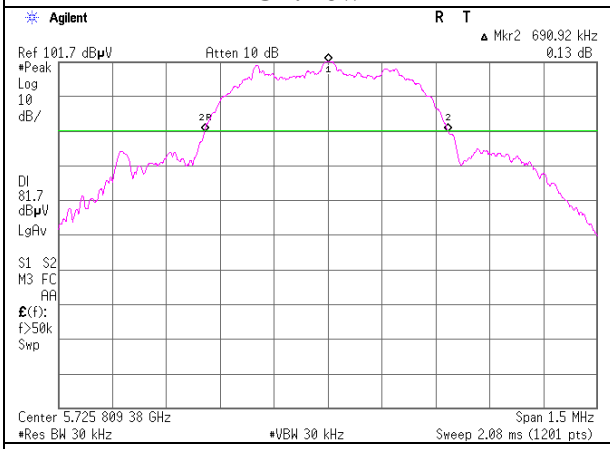
UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

Company	:	Brother Industries, Ltd.	Regulation	:	FCC15.247(a)(1)(ii)/RSS-210A8.1(a)(e)
Equipment	:	Multi-Function Center	Test distance	:	-
Model No.	:	MFC-990CW	Date	:	03/25/2008
Serial No.	:	999999B8F001800	Temperature	:	21deg.C
Power	:	AC120V / 60Hz	Humidity	:	42%
Mode	:	Tx (Hopping off)	Engineer	:	Akio Hayashi

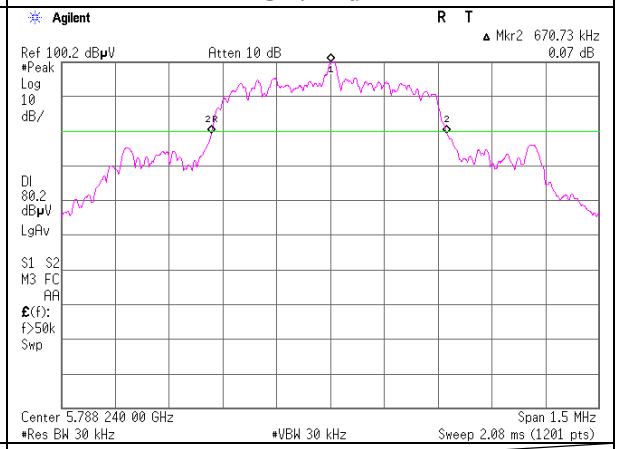
Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	5725.809328	0.691	≦1
Mid	5788.240269	0.671	≦1
High	5848.889420	0.709	≦1

20dB Bandwidth

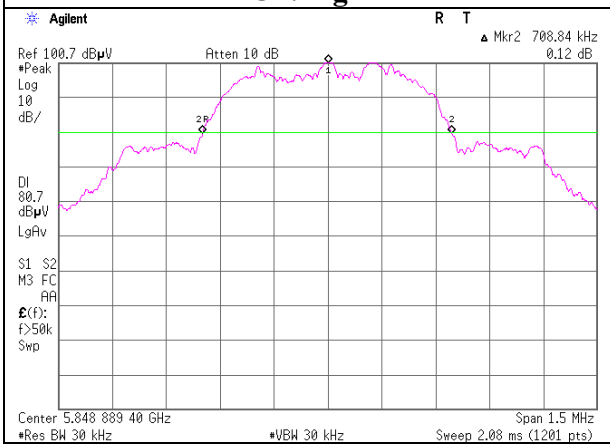
Ch:Low



Ch:Mid



Ch:High



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Number of Hopping Frequency

UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

Company	:	Brother Industries, Ltd.	Regulation	:	FCC15.247(a)(1)(ii)/RSS-210A8.1(e)
Equipment	:	Multi-Function Center	Test distance	:	-
Model No.	:	MFC-990CW	Date	:	03/25/2008
Serial No.	:	999999B8F001800	Temperature	:	21deg.C
Power	:	AC120V / 60Hz	Humidity	:	42%
Mode	:	Tx (Hopping on)	Engineer	:	Akio Hayashi

Mode	Number of channel [number]	Limit [time]
Tx(Hopping on)	75	≧15

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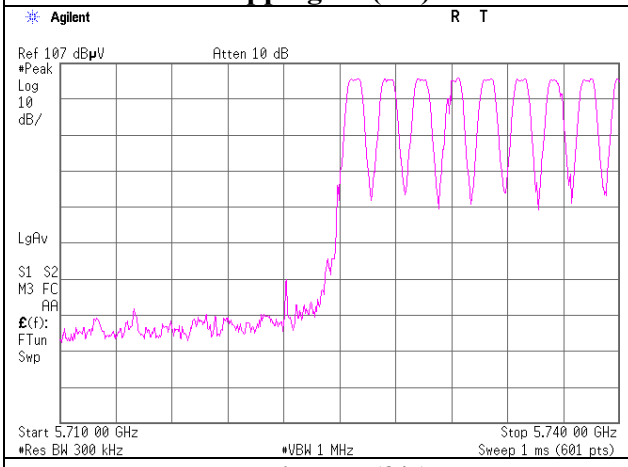
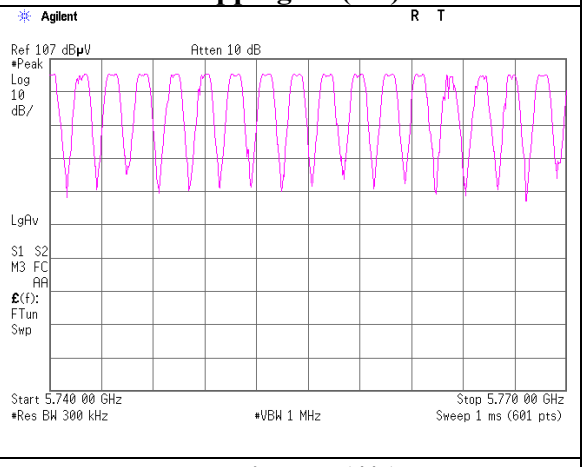
Number of Hopping Frequency

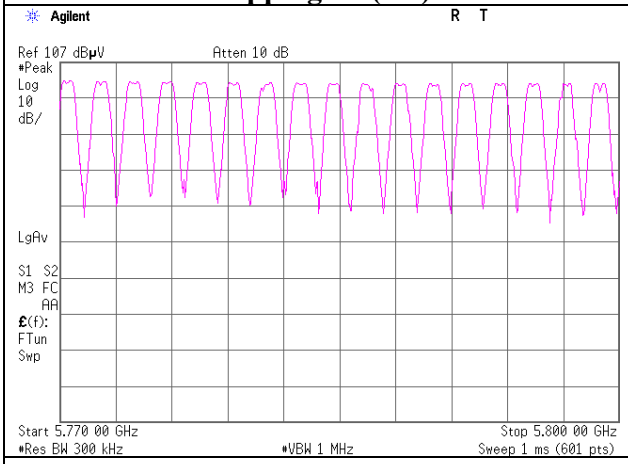
Hopping on (1/5)



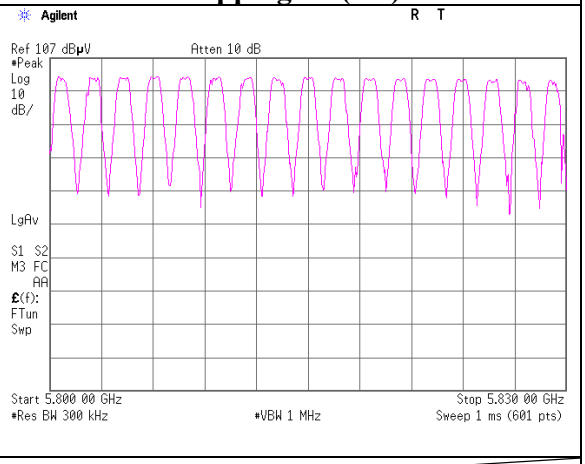
Hopping on (2/5)



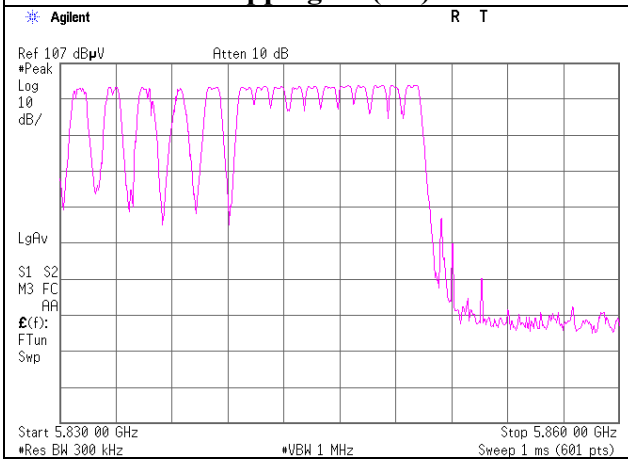
Hopping on (3/5)



Hopping on (4/5)



Hopping on (5/5)



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Dwell time

UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room
Test Report No.

Company	:	Brother Industries, Ltd.	Regulation	:	FCC15.247(a)(1)(ii)/RSS-210A8.1(e)
Equipment	:	Multi-Function Center	Test distance	:	-
Model No.	:	MFC-990CW	Date	:	03/25/2008
Serial No.	:	999999B8F001800	Temperature	:	21deg.C
Power	:	AC120V / 60Hz	Humidity	:	42%
Mode	:	Tx (Hopping on)	Engineer	:	Akio Hayashi

Mode	Number of transmission in a 30 second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
Hopping ON	95 times*	1.035	98.325	400

*Average of 5th tests.

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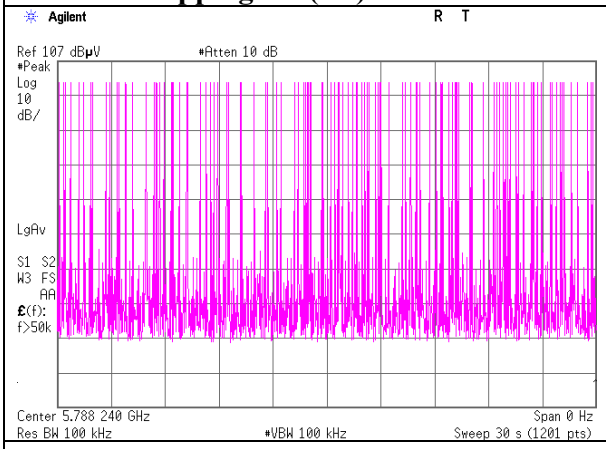
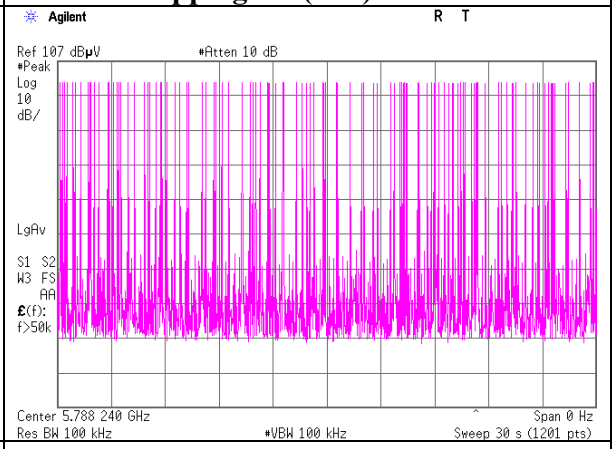
Dwell time

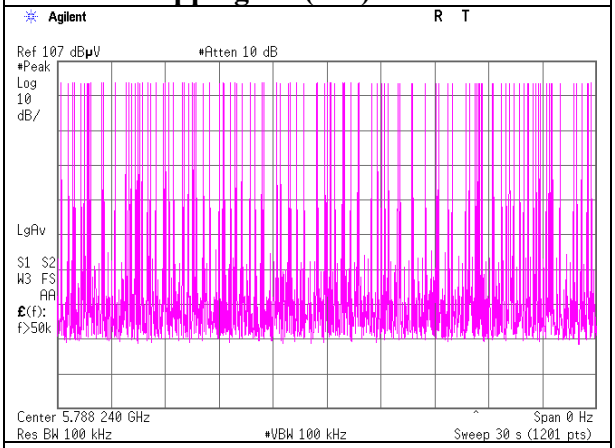
Hopping ON(1st) 97times



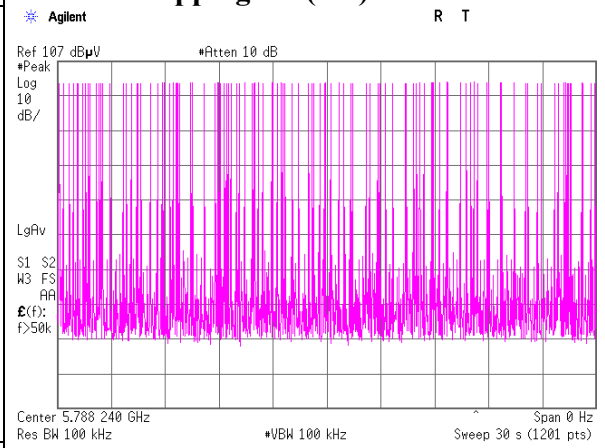
Hopping ON(2nd) 96times



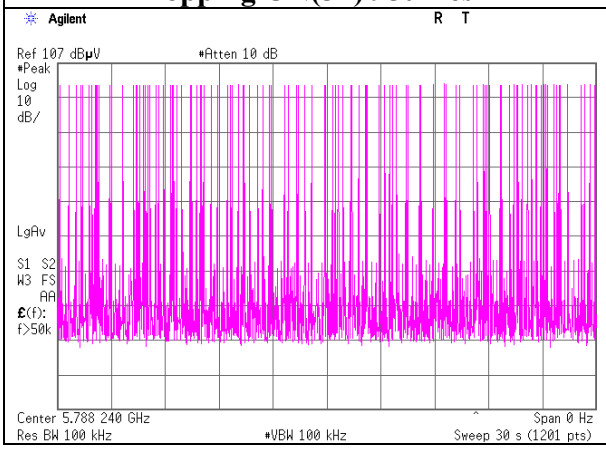
Hopping ON(3rd) 98times



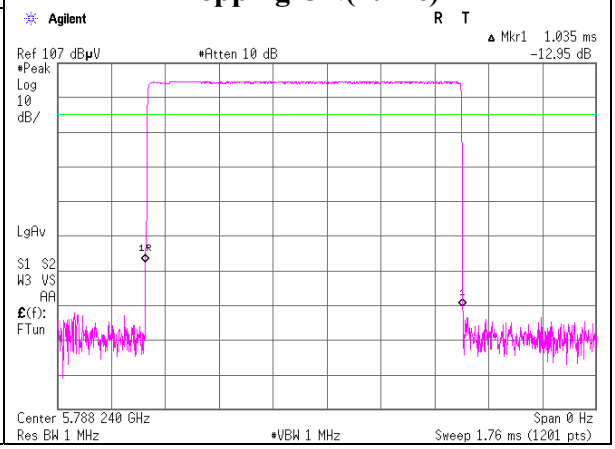
Hopping ON(4th) 88times



Hopping ON(5h) 95times



Hopping ON(1time)



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Maximum Peak Output Power

UL Japan, Inc.
Head Office EMC Lab. No.7 Shielded Room

Company	:	Brother Industries, Ltd.	Regulation	:	FCC15.247(b)(1)/RSS-210A8.4(3)
Equipment	:	Multi-Function Center	Test distance	:	-
Model No.	:	MFC-990CW	Date	:	03/25/2008
Serial No.	:	999999B8F001800	Temperature	:	21deg.C
Power	:	AC120V / 60Hz	Humidity	:	42%
Mode	:	Tx(Hopping Off)	Engineer	:	Akio Hayashi

Ch	Freq.	P/M Reading	Cable Loss	Atten.	Result		Limit		Margin
	[MHz]	[dBm]	[dB]	[dB]	[dBm]	[mW]	[dBm]	[mW]	[dB]
Low	5725.809328	-2.76	0.86	20.05	18.15	65.31	30.00	1000	11.85
Mid	5788.240269	-3.01	0.89	20.05	17.93	62.09	30.00	1000	12.07
High	5848.889420	-3.48	0.92	20.05	17.49	56.10	30.00	1000	12.51

Sample Calculation:
Result = Reading + Cable Loss (supplied by customer)+ Attenuator
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

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

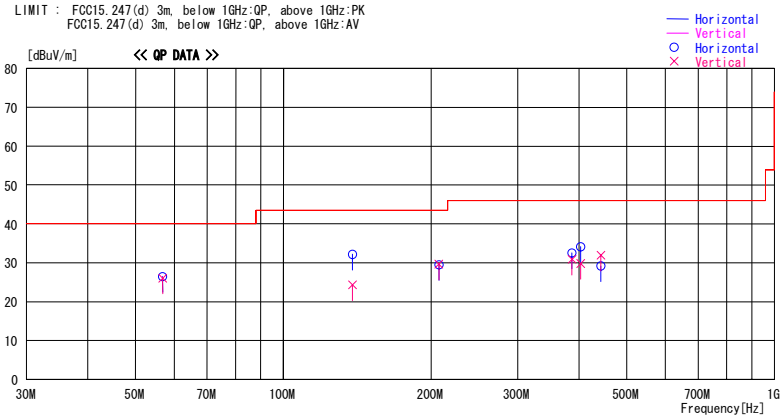
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company	: Brother Industries, Ltd.	Report No.	: 28FE0222-HO
Kind of EUT	: Multi-Function Center	Power	: AC 120V / 60Hz
Model No.	: MFC-990CW	Temp./Humi.	: 23deg.C. / 42%
Serial No.	: 999999B8F001800	Operator	: Motoya Imura

Mode / Remarks : Tx ch1_5725.809328 / Max-axis(H:0deg./V:90deg.)

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
56.812	42.0	QP	8.5	-24.5	26.0	350	229	Vert	40.0	14.0	
56.811	42.4	QP	8.5	-24.5	26.4	49	180	Hori.	40.0	13.6	
138.243	33.6	QP	14.2	-23.5	24.3	306	121	Vert	43.5	19.2	
138.243	41.5	QP	14.2	-23.5	32.2	133	243	Hori.	43.5	11.3	
207.382	36.1	QP	16.3	-22.9	29.5	143	240	Hori.	43.5	14.0	
207.373	36.2	QP	16.3	-22.9	29.6	54	130	Vert	43.5	13.9	
387.074	37.0	QP	17.0	-21.5	32.5	322	108	Hori.	46.0	13.5	
387.076	35.4	QP	17.0	-21.5	30.9	51	109	Vert	46.0	15.1	
403.219	38.1	QP	17.4	-21.4	34.1	307	100	Hori.	46.0	11.9	
403.212	33.8	QP	17.4	-21.4	29.8	319	144	Vert	46.0	16.2	
443.512	32.7	QP	17.7	-21.2	29.2	123	122	Hori.	46.0	16.8	
443.520	35.4	QP	17.7	-21.2	31.9	12	142	Vert	46.0	14.1	

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

*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

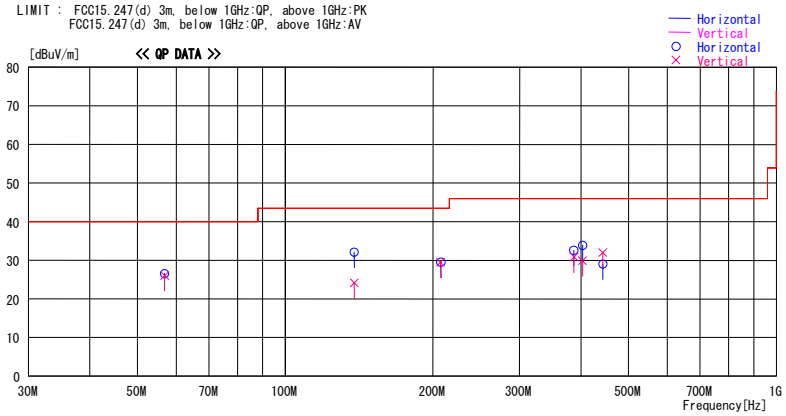
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001800

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 23deg.C. / 42%
Operator : Motoya Imura

Mode / Remarks : Tx ch71_5788.240269MHz / Max-axis(H:0deg./V:90deg.)

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



Frequency	Reading	DET	Antenna Factor	Loss & Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
56.811	42.0	QP	8.5	-24.5	26.0	352	131	Vert.	40.0	14.0	
56.812	42.5	QP	8.5	-24.5	26.5	44	181	Hori.	40.0	13.5	
138.254	33.4	QP	14.2	-23.5	24.1	299	100	Vert.	43.5	19.4	
138.250	41.4	QP	14.2	-23.5	32.1	113	242	Hori.	43.5	11.4	
207.381	36.1	QP	16.3	-22.9	29.5	162	241	Hori.	43.5	14.0	
207.381	36.1	QP	16.3	-22.9	29.5	51	100	Vert.	43.5	14.0	
387.073	37.1	QP	17.0	-21.5	32.6	319	100	Hori.	46.0	13.4	
387.081	35.3	QP	17.0	-21.5	30.8	49	131	Vert.	46.0	15.2	
403.222	37.9	QP	17.4	-21.4	33.9	307	100	Hori.	46.0	12.1	
403.201	33.9	QP	17.4	-21.4	29.9	42	143	Vert.	46.0	16.1	
443.512	32.5	QP	17.7	-21.2	29.0	120	118	Hori.	46.0	17.0	
443.519	35.5	QP	17.7	-21.2	32.0	352	144	Vert.	46.0	14.0	

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)
Tx, Ch. High

DATA OF RADIATED EMISSION TEST

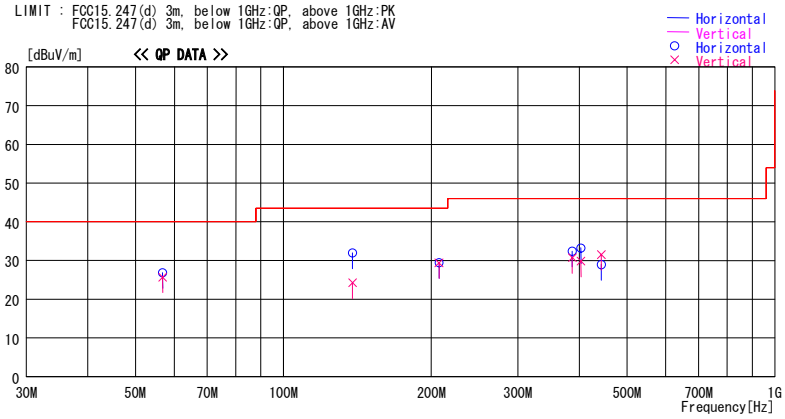
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001800

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 23deg.C. / 42%
Operator : Motoya Imura

Mode / Remarks : Tx ch139_5848.889420MHz / Max-axis(H:0deg./V:90deg.)

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]	Comment
56.803	41.7	QP	8.5	-24.5	25.7	350	121	Vert.	40.0	14.3	
56.810	42.8	QP	8.5	-24.5	26.8	39	178	Hori.	40.0	13.2	
138.255	33.5	QP	14.2	-23.5	24.2	291	100	Vert.	43.5	19.3	
138.254	41.2	QP	14.2	-23.5	31.9	102	227	Hori.	43.5	11.6	
207.379	36.0	QP	16.3	-22.9	29.4	159	220	Hori.	43.5	14.1	
207.380	36.0	QP	16.3	-22.9	29.4	46	100	Vert.	43.5	14.1	
387.072	36.9	QP	17.0	-21.5	32.4	321	100	Hori.	46.0	13.6	
387.075	35.2	QP	17.0	-21.5	30.7	302	125	Vert.	46.0	15.3	
403.215	37.2	QP	17.4	-21.4	33.2	305	100	Hori.	46.0	12.8	
403.199	33.8	QP	17.4	-21.4	29.8	49	138	Vert.	46.0	16.2	
443.506	32.4	QP	17.7	-21.2	28.9	105	110	Hori.	46.0	17.1	
443.510	35.0	QP	17.7	-21.2	31.5	350	137	Vert.	46.0	14.5	

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

DATA OF RADIATED EMISSION TEST

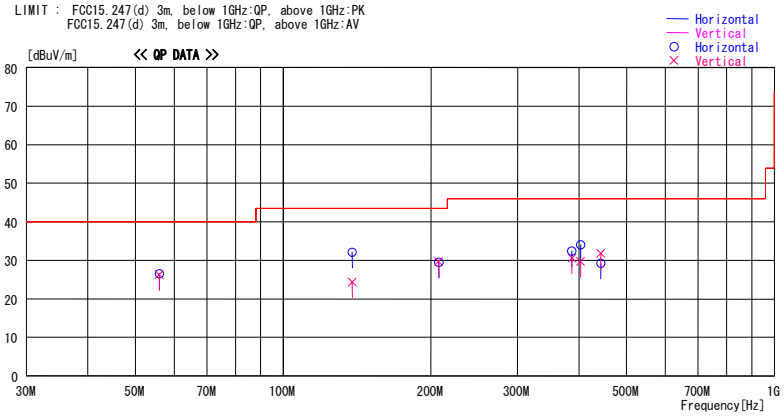
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/22

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001800

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 23deg.C. / 42%
Operator : Motoya Imura

Mode / Remarks : Rx ch71_5788.240269MHz / Max-axis(H:0deg./V:90deg.)

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



Frequency	Reading	DET	Antenna Factor	Loss & Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg.]	[cm]		[dBuV/m]	[dB]	
55.925	42.1	QP	8.7	-24.5	26.3	353	230	Vert.	40.0	13.7	
55.921	42.3	QP	8.7	-24.5	26.5	66	188	Hori.	40.0	13.5	
138.249	33.7	QP	14.2	-23.5	24.4	308	115	Vert.	43.5	19.1	
138.244	41.4	QP	14.2	-23.5	32.1	141	243	Hori.	43.5	11.4	
207.392	36.1	QP	16.3	-22.9	29.5	145	243	Hori.	43.5	14.0	
207.368	36.3	QP	16.3	-22.9	29.7	54	122	Vert.	43.5	13.8	
387.071	36.9	QP	17.0	-21.5	32.4	322	110	Hori.	46.0	13.6	
387.078	35.1	QP	17.0	-21.5	30.6	61	100	Vert.	46.0	15.4	
403.220	38.0	QP	17.4	-21.4	34.0	310	100	Hori.	46.0	12.0	
403.210	33.7	QP	17.4	-21.4	29.7	320	100	Vert.	46.0	16.3	
443.520	32.8	QP	17.7	-21.2	29.3	132	132	Hori.	46.0	16.7	
443.521	35.3	QP	17.7	-21.2	31.8	22	144	Vert.	46.0	14.2	

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.

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

DATA OF RADIATED EMISSION TEST

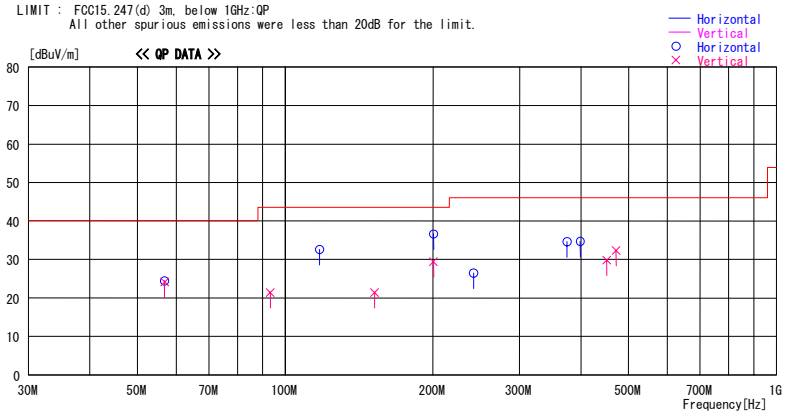
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001728

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 22deg.C. / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx 5725.809328MHz / Normal-axis / With Internal antenna

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



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
56.808	40.1	QP	8.5	-24.5	24.1	170	100	Vert.	40.0	15.9	
56.824	40.4	QP	8.5	-24.5	24.4	35	266	Hori.	40.0	15.6	
93.232	36.7	QP	8.7	-24.0	21.4	302	100	Vert.	43.5	22.1	
117.520	44.0	QP	12.3	-23.7	32.6	229	400	Hori.	43.5	10.9	
152.081	29.8	QP	15.0	-23.4	21.4	1	100	Vert.	43.5	22.1	
200.472	43.4	QP	16.2	-23.0	36.6	334	157	Hori.	43.5	6.9	
200.476	36.2	QP	16.2	-23.0	29.4	67	110	Vert.	43.5	14.1	
241.936	32.6	QP	16.4	-22.6	26.4	222	139	Hori.	46.0	19.6	
374.978	39.5	QP	16.7	-21.6	34.6	311	100	Hori.	46.0	11.4	
399.172	38.8	QP	17.3	-21.4	34.7	312	100	Hori.	46.0	11.3	
451.584	33.2	QP	17.7	-21.1	29.8	283	127	Vert.	46.0	16.2	
471.752	35.4	QP	17.9	-21.0	32.3	294	115	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)
Internal Antenna Tx, Ch. Mid

DATA OF RADIATED EMISSION TEST

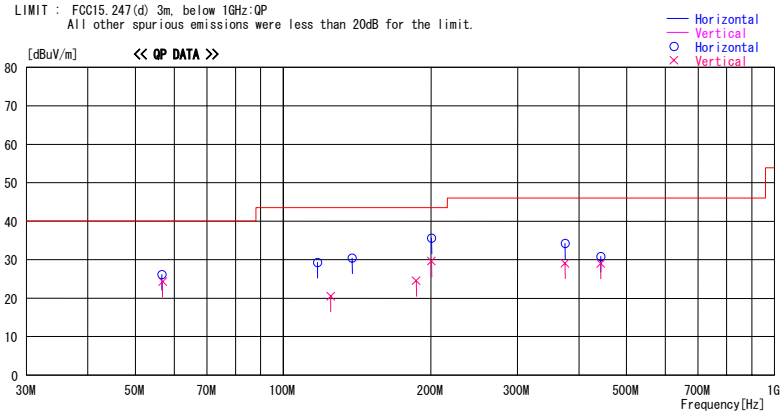
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001728

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 22deg.C. / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx 5788.240269MHz / Normal-axis / With Internal antenna

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



Frequency	Reading	DET	Antenna Factor	Loss & Gain	Level	Angle	Height	Polar.	Limit	Margin	Comment
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]	
56.645	42.1	QP	8.5	-24.5	26.1	247	400	Hori.	40.0	13.9	
56.798	40.3	QP	8.5	-24.5	24.3	167	100	Vert.	40.0	15.7	
117.523	40.7	QP	12.3	-23.7	29.3	114	245	Hori.	43.5	14.2	
125.012	31.0	QP	13.1	-23.6	20.5	176	100	Vert.	43.5	23.0	
138.252	39.7	QP	14.2	-23.5	30.4	149	225	Hori.	43.5	13.1	
186.638	31.2	QP	16.4	-23.1	24.5	297	100	Vert.	43.5	19.0	
200.460	42.4	QP	16.2	-23.0	35.6	332	170	Hori.	43.5	7.9	
200.471	36.4	QP	16.2	-23.0	29.6	62	100	Vert.	43.5	13.9	
374.983	39.1	QP	16.7	-21.6	34.2	314	100	Hori.	46.0	11.8	
374.985	34.0	QP	16.7	-21.6	29.1	149	120	Vert.	46.0	16.9	
443.517	32.5	QP	17.7	-21.2	29.0	359	128	Vert.	46.0	17.0	
443.523	34.3	QP	17.7	-21.2	30.8	308	100	Hori.	46.0	15.2	

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)
Internal Antenna Tx, Ch. High

DATA OF RADIATED EMISSION TEST

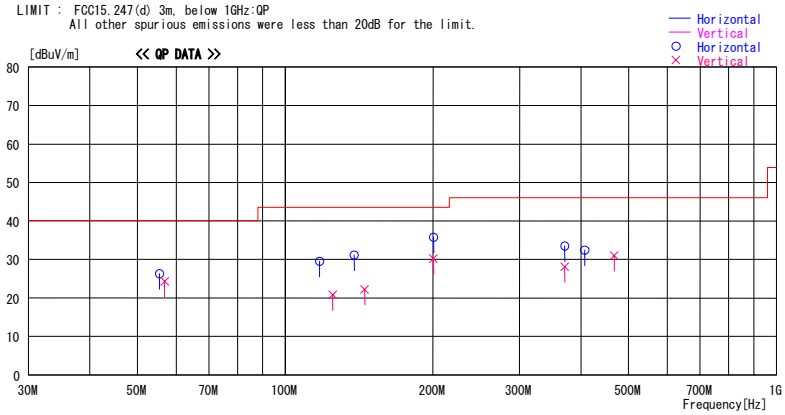
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001728

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 22deg.C. / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Tx 5848.889420MHz / Normal-axis / With Internal antenna

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



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
55.445	42.0	QP	8.8	-24.5	26.3	229	400	Hori.	40.0	13.7	
56.818	40.3	QP	8.5	-24.5	24.3	161	100	Vert.	40.0	15.7	
117.517	40.9	QP	12.3	-23.7	29.5	107	276	Hori.	43.5	14.0	
125.005	31.3	QP	13.1	-23.6	20.8	48	100	Vert.	43.5	22.7	
138.251	40.4	QP	14.2	-23.5	31.1	126	213	Hori.	43.5	12.4	
145.172	30.9	QP	14.7	-23.4	22.2	11	100	Vert.	43.5	21.3	
200.472	37.0	QP	16.2	-23.0	30.2	278	143	Vert.	43.5	13.3	
200.473	42.5	QP	16.2	-23.0	35.7	332	300	Hori.	43.5	7.8	
370.939	38.5	QP	16.6	-21.6	33.5	316	100	Hori.	46.0	12.5	
370.951	33.1	QP	16.6	-21.6	28.1	140	123	Vert.	46.0	17.9	
407.232	36.4	QP	17.4	-21.4	32.4	310	100	Hori.	46.0	13.6	
467.706	34.2	QP	17.8	-21.0	31.0	300	124	Vert.	46.0	15.0	

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)
Internal Antenna Rx, Ch. Mid

DATA OF RADIATED EMISSION TEST

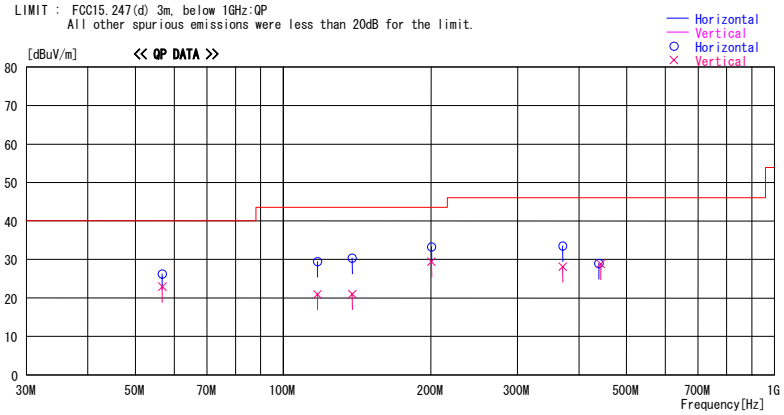
UL Japan, Inc. Head Office EMC Lab. No.3 Semi Anechoic Chamber
Date : 2008/03/27

Company : Brother Industries, Ltd.
Kind of EUT : Multi-Function Center
Model No. : MFC-990CW
Serial No. : 999999B8F001728

Report No. : 28FE0222-HO
Power : AC 120V / 60Hz
Temp./Humi. : 22deg.C. / 36%
Operator : Kazufumi Nakai

Mode / Remarks : Rx 5788.240269MHz / Normal-axis / With Internal antenna

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



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
56.676	42.2	QP	8.5	-24.5	26.2	218	400	Hori.	40.0	13.8	
56.706	38.9	QP	8.5	-24.5	22.9	142	257	Vert.	40.0	17.1	
117.507	32.3	QP	12.3	-23.7	20.9	286	100	Vert.	43.5	22.6	
117.526	40.8	QP	12.3	-23.7	29.4	292	273	Hori.	43.5	14.1	
138.253	39.6	QP	14.2	-23.5	30.3	310	228	Hori.	43.5	13.2	
138.263	30.3	QP	14.2	-23.5	21.0	271	100	Vert.	43.5	22.5	
200.461	36.2	QP	16.2	-23.0	29.4	273	169	Vert.	43.5	14.1	
200.471	40.0	QP	16.2	-23.0	33.2	241	170	Hori.	43.5	10.3	
370.938	38.5	QP	16.6	-21.6	33.5	308	100	Hori.	46.0	12.5	
370.943	33.1	QP	16.6	-21.6	28.1	130	116	Vert.	46.0	17.9	
439.481	32.5	QP	17.6	-21.2	28.9	215	100	Hori.	46.0	17.1	
443.517	32.3	QP	17.7	-21.2	28.8	2	128	Vert.	46.0	17.2	

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 (above 1GHz)
External Antenna, Tx, Ch. Low

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

Company	: Brother Industries, Ltd.	REPORT NO	: 28FE0222-HO
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m
Sample No.	: 999999B8F001800	DATE	: 03/21/2008 : 03/21/2008
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C : 23deg.C
Mode	: Tx 5725.809328MHz	HUMIDITY	: 44% : 42%
Remarks	: Hor:0deg., Y:90deg., External Antenna	ENGINEER	: Takahiro Hatakeda : Motoya Imura

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2400.0	51.7	54.2	27.3	31.5	2.7	0.0	50.2	52.7	73.9	23.7	21.2
2	3325.8	46.8	49.7	28.7	31.2	3.0	0.0	47.3	50.2	73.9	26.6	23.7
3	4800.0	49.1	50.4	31.5	30.8	3.3	0.0	53.1	54.4	73.9	20.8	19.5
4	5177.6	46.8	46.3	31.9	30.7	3.4	0.0	51.4	50.9	73.9	22.5	23.0
5	5399.5	46.8	46.3	32.0	30.7	3.6	0.0	51.7	51.2	73.9	22.2	22.7
6*	5725.0	106.3	105.0	32.4	30.6	3.7	0.0	111.8	110.5	73.9	-	-
7	6273.7	47.0	46.1	33.6	30.8	4.1	0.0	53.9	53.0	73.9	20.0	20.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	11451.6	61.8	59.7	39.7	32.4	6.1	1.2	66.9	64.8	73.9	7.0	9.1
9*	17177.4	60.2	58.7	41.9	31.1	7.2	2.3	71.0	69.5	73.9	-	-
10	22903.2	50.8	54.2	38.6	31.4	8.6	0.0	57.1	60.5	73.9	16.8	13.4
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
11	28629.1	44.9	44.7	39.6	25.0	14.8	0.0	58.7	58.5	73.9	15.2	15.4
12	34354.9	38.5	38.7	40.4	25.2	16.5	0.0	54.6	54.8	73.9	19.3	19.1

* Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2400.0	35.3	36.9	27.3	31.5	2.7	0.0	33.8	35.4	53.9	20.1	18.5
2	3325.8	41.3	45.8	28.7	31.2	3.0	0.0	41.8	46.3	53.9	12.1	7.6
3	4800.0	31.9	31.6	31.5	30.8	3.3	0.0	35.9	35.6	53.9	18.0	18.3
4	5177.6	30.2	30.1	31.9	30.7	3.4	0.0	34.8	34.7	53.9	19.1	19.2
5	5399.5	29.9	30.2	32.0	30.7	3.6	0.0	34.8	35.1	53.9	19.1	18.8
6*	5725.0	37.2	37.2	32.4	30.6	3.7	0.0	42.7	42.7	53.9	-	-
7	6273.7	29.8	29.5	33.6	30.8	4.1	0.0	36.7	36.4	53.9	17.2	17.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	11451.6	32.9	32.4	39.7	32.4	6.1	1.2	38.0	37.5	53.9	15.9	16.4
9*	17177.4	39.4	36.5	41.9	31.1	7.2	2.3	50.2	47.3	53.9	-	-
10	22903.2	32.4	34.5	38.6	31.4	8.6	0.0	38.7	40.8	53.9	15.2	13.1
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
11	28629.1	23.3	23.2	39.6	25.0	14.8	0.0	37.1	37.0	53.9	16.8	16.9
12	34354.9	24.7	24.8	40.4	25.2	16.5	0.0	40.8	40.9	53.9	13.1	13.0

* Reference data

20dBc(Fundamental 5725.809328MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5725.8	111.3	109.5	32.4	30.6	3.7	0.0	116.8	115.0	-	-	-
6	5725.0	74.3	72.8	32.4	30.6	3.7	0.0	79.8	78.3	Funda-20dB	17.0	16.7
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	17177.4	51.7	56.3	41.9	31.1	9.5	0.0	62.5	67.1	Funda-20dB	34.3	27.9

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*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 rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

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

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

Company	: Brother Industries, Ltd.	REPORT NO	: 28FE0222-HO
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m
Sample No.	: 999999B8F001800	DATE	: 03/21/2008 : 03/21/2008
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C : 23deg.C
Mode	: Tx 5788.240269MHz	HUMIDITY	: 44% : 42%
Remarks	: Hor:0deg., Y:90deg., External Antenna	ENGINEER	: Takahiro Hatakeda : Motoya Imura

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2428.4	53.0	55.6	27.4	31.5	2.7	0.0	51.6	54.2	73.9	22.3	19.7
2	3359.7	47.2	46.4	28.7	31.1	3.0	0.0	47.8	47.0	73.9	26.1	26.9
3	4857.5	52.0	51.4	31.6	30.7	3.3	0.0	56.2	55.6	73.9	17.7	18.3
4	5222.3	51.6	49.8	32.0	30.7	3.5	0.0	56.4	54.6	73.9	17.5	19.3
5	6353.8	46.1	46.1	33.9	30.8	4.1	0.0	53.3	53.3	73.9	20.6	20.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	11576.5	59.9	58.0	39.6	32.4	6.2	1.3	65.1	63.2	73.9	8.8	10.7
7*	17364.7	60.9	56.8	43.4	31.0	7.4	2.2	73.4	69.3	73.9	-	-
8	23153.0	51.5	53.2	38.7	31.3	8.6	0.0	58.0	59.7	73.9	15.9	14.2
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	28941.2	42.7	43.5	39.9	25.0	14.9	0.0	56.9	57.7	73.9	17.0	16.2
10	34729.4	39.4	39.8	40.6	25.1	16.5	0.0	55.8	56.2	73.9	18.1	17.7

* Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2428.4	34.4	38.2	27.4	31.5	2.7	0.0	33.0	36.8	53.9	20.9	17.1
2	3359.7	41.5	39.4	28.7	31.1	3.0	0.0	42.1	40.0	53.9	11.8	13.9
3	4857.5	32.3	32.3	31.6	30.7	3.3	0.0	36.5	36.5	53.9	17.4	17.4
4	5222.3	30.6	30.5	32.0	30.7	3.5	0.0	35.4	35.3	53.9	18.5	18.6
5	6353.8	29.7	29.4	33.9	30.8	4.1	0.0	36.9	36.6	53.9	17.0	17.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	11576.5	31.6	31.8	39.6	32.4	6.2	1.3	36.8	37.0	53.9	17.1	16.9
7*	17364.7	33.6	32.5	43.4	31.0	7.4	2.2	46.1	45.0	53.9	7.8	8.9
8	23153.0	33.5	33.6	38.7	31.3	8.6	0.0	40.0	40.1	53.9	13.9	13.8
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	28941.2	22.5	22.5	39.9	25.0	14.9	0.0	36.7	36.7	53.9	17.2	17.2
10	34729.4	24.6	24.7	40.6	25.1	16.5	0.0	41.0	41.1	53.9	12.9	12.8

* Reference data

20dBc(Fundamental 5788.240269MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5788.2	113.0	111.1	32.4	30.6	3.8	0.0	118.6	116.7	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	17364.7	53.7	49.1	43.4	31.0	7.4	2.2	66.2	61.6	Funda-20dB	32.4	35.1

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*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 rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

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

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

Company	: Brother Industries, Ltd.	REPORT NO	: 28FE0222-HO
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m
Sample No.	: 999999B8F001800	DATE	: 03/21/2008 : 03/21/2008
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C : 23deg.C
Mode	: Tx 5848.889420MHz	HUMIDITY	: 44% : 42%
Remarks	: Hor:0deg., Y:90deg., External Antenna	ENGINEER	: Takahiro Hatakeda : Motoya Imura

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2489.3	56.7	55.5	27.4	31.5	2.7	0.0	55.3	54.1	73.9	18.6	19.8
2	3359.7	46.5	49.6	28.7	31.1	3.0	0.0	47.1	50.2	73.9	26.8	23.7
3	4978.1	52.1	54.4	31.8	30.7	3.3	0.0	56.5	58.8	73.9	17.4	15.1
4	5433.2	49.7	52.1	32.1	30.7	3.6	0.0	54.7	57.1	73.9	19.2	16.8
5*	5850.0	102.5	102.5	32.5	30.6	3.8	0.0	108.2	108.2	73.9	-	-
6	6719.3	54.4	53.2	34.9	31.1	4.3	0.0	62.5	61.3	73.9	11.4	12.6
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	11697.8	61.6	59.5	39.4	32.4	6.3	1.3	66.7	64.6	73.9	7.2	9.3
8*	17546.7	62.4	60.0	44.9	31.0	7.4	2.0	76.2	73.8	73.9	-	-
9	23395.6	52.8	52.1	38.7	31.1	8.6	1.1	60.6	59.9	73.9	13.3	14.0
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	29244.5	37.3	38.7	40.0	24.9	15.0	0.0	51.8	53.2	73.9	22.1	20.7
11	35093.3	38.7	39.3	40.8	25.0	16.6	0.0	55.5	62.2	73.9	18.4	11.7

* Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2489.3	39.1	36.8	27.4	31.5	2.7	0.0	37.7	35.4	53.9	16.2	18.5
2	3359.7	40.3	45.9	28.7	31.1	3.0	0.0	40.9	46.5	53.9	13.0	7.4
3	4978.1	31.2	31.6	31.8	30.7	3.3	0.0	35.6	36.0	53.9	18.3	17.9
4	5433.2	30.5	31.0	32.1	30.7	3.6	0.0	35.5	36.0	53.9	18.4	17.9
5*	5850.0	37.0	35.9	32.5	30.6	3.8	0.0	42.7	41.6	53.9	-	-
6	6719.3	31.8	31.3	34.9	31.1	4.3	0.0	39.9	39.4	53.9	14.0	14.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	11697.8	33.7	33.5	39.4	32.4	6.3	1.3	38.8	38.6	53.9	15.1	15.3
8*	17546.7	33.6	33.1	44.9	31.0	7.4	2.0	47.4	46.9	53.9	-	-
9	23395.6	33.6	33.9	38.7	31.1	8.6	1.1	41.4	41.7	53.9	12.5	12.2
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
10	29244.5	21.3	22.0	40.0	24.9	15.0	0.0	35.8	36.5	53.9	18.1	17.4
11	35093.3	25.0	25.0	40.8	25.0	16.6	0.0	41.8	41.8	53.9	12.1	12.1

* Reference data

20dBc(Fundamental 5848.889420MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5848.9	111.2	111.3	32.5	30.6	3.8	0.0	116.9	117.0	-	-	-
5	5850.0	64.0	63.5	32.5	30.6	3.8	0.0	69.7	69.2	Funda-20dB	27.2	27.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	17546.7	55.3	53.0	44.9	31.0	7.4	2.0	69.1	66.8	Funda-20dB	27.8	30.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*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 rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission (above 1GHz)
External Antenna, Rx, Ch. Mid

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

Company	: Brother Industries, Ltd.	REPORT NO	: 28FE0222-HO		
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5		
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1m		
Sample No.	: 999999B8F001800	DATE	: 03/21/2008	: 03/21/2008	
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C	: 23deg.C	
Mode	: Rx 5788.240269MHz	HUMIDITY	: 44%	: 42%	
Remarks	: Hor:0deg., Y:90deg., External Antenna	ENGINEER	: Takahiro Hatakeda	: Motoya Imura	

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2426.6	44.4	44.1	27.4	31.5	2.7	0.0	43.0	42.7	73.9	30.9	31.2
2	3359.6	45.9	48.7	28.7	31.1	3.0	0.0	46.5	49.3	73.9	27.4	24.6
3	5788.2	40.5	39.9	32.4	30.6	3.8	0.0	46.1	45.5	73.9	27.8	28.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	11576.5	40.8	40.8	39.6	32.4	5.5	0.0	44.0	44.0	73.9	29.9	29.9
5	17364.7	42.9	43.1	43.4	31.0	6.6	0.0	52.4	52.6	73.9	21.5	21.3

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2426.6	35.8	35.3	27.4	31.5	2.7	0.0	34.4	33.9	53.9	19.5	20.0
2	3359.6	39.7	44.4	28.7	31.1	3.0	0.0	40.3	45.0	53.9	13.6	8.9
3	5788.2	27.6	27.4	32.4	30.6	3.8	0.0	33.2	33.0	53.9	20.7	20.9
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	11576.5	28.9	28.8	39.6	32.4	5.5	0.0	32.1	32.0	53.9	21.8	21.9
5	17364.7	29.7	29.6	43.4	31.0	6.6	0.0	39.2	39.1	53.9	14.7	14.8

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission (above 1GHz)

Internal Antenna, Tx, Ch. Low

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

Company	: BROTHER INDUSTRIES,LTD.	REPORT NO	: 28FE0222-HO		
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5		
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m		
Sample No.	: 999999B8F001728	DATE	: 03/25/2008	03/27/2008	
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 24deg.C	22deg.C	
Mode	: Tx 5725.809328MHz	HUMIDITY	: 38%	36%	
Remarks	: Internal Antenna	ENGINEER	: Hisayoshi Sato	Kazufumi Nakai	

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2402.7	57.6	56.4	26.8	36.0	2.9	0.0	51.3	50.1	73.9	22.6	23.8
2	2862.9	61.4	65.2	27.8	36.2	3.2	0.0	56.2	60.0	73.9	17.7	13.9
3	3225.8	47.9	51.7	28.5	36.1	3.4	0.0	43.7	47.5	73.9	30.2	26.4
4*	5725.0	105.5	108.0	31.8	35.4	4.6	0.0	105.5	109.0	73.9	-	-
5	6274.8	49.3	47.9	33.3	35.5	4.9	0.0	52.0	50.6	73.9	21.9	23.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	11451.6	64	63.7	39.8	35.8	6.5	1.0	66.0	65.7	73.9	7.9	8.2
7*	17177.4	62.3	58.4	41.6	35.2	8.6	1.1	68.9	65.0	73.9	-	-
8	22903.2	47.8	48.8	38.6	31.4	7.7	0.0	53.2	54.2	73.9	20.7	19.7
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	28629.1	41.3	41.0	39.6	25.0	14.7	0.0	55.0	54.7	73.9	18.9	19.2
10	34354.9	38.9	38.5	40.4	25.2	16.4	0.0	54.9	54.5	73.9	19.0	19.4

* Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2402.7	40.8	40.5	26.8	36.0	2.9	0.0	34.5	34.2	53.9	19.4	19.7
2	2862.9	32.2	32.1	27.8	36.2	3.2	0.0	27.0	26.9	53.9	26.9	27.0
3	3225.8	40.6	45.8	28.5	36.1	3.4	0.0	36.4	41.6	53.9	17.5	12.3
4*	5725.0	40.8	40.9	31.8	35.4	4.6	0.0	41.8	41.9	53.9	-	-
5	6274.8	35.0	33.8	33.3	35.5	4.9	0.0	37.7	36.5	53.9	16.2	17.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	11451.6	35.6	35.2	39.8	35.8	6.5	1.0	37.6	37.2	53.9	16.3	16.7
7*	17177.4	35.6	35.1	41.6	35.2	8.6	1.1	42.2	41.7	53.9	-	-
8	22903.2	31.6	31.6	38.6	31.4	7.7	0.0	37.0	37.0	53.9	16.9	16.9
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	28629.1	21.5	21.5	39.6	25.0	14.7	0.0	35.2	35.2	53.9	18.7	18.7
10	34354.9	26.1	26.0	40.4	25.2	16.4	0.0	42.1	42.0	53.9	11.8	11.9

* Reference data

20dBc(Fundamental 5725.809328MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5725.8	111.9	112.4	31.8	35.4	4.6	0.0	112.9	113.4	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	5725.0	67.8	71.0	31.8	35.4	4.6	0.0	68.8	72.0	Funda-20dB	24.1	21.4
7	17177.4	61.3	57.6	41.6	35.2	8.6	1.1	67.9	64.2	Funda-20dB	25.0	29.2

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*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 rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

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

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

Company	: BROTHER INDUSTRIES,LTD.	REPORT NO	: 28FE0222-HO		
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5		
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m		
Sample No.	: 999999B8F001728	DATE	: 03/25/2008	03/27/2008	
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 24deg.C	22deg.C	
Mode	: Tx 5788.240269MHz	HUMIDITY	: 38%	36%	
Remarks	: Internal Antenna	ENGINEER	: Hisayoshi Sato	Kazufumi Nakai	

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2426.7	57.1	58.9	26.9	36.0	3.0	0.0	51.0	52.8	73.9	22.9	21.1
2	3359.8	49.1	52.3	28.5	36.0	3.4	0.0	45.1	48.3	73.9	28.8	25.6
3	5221.6	52.7	54.3	31.5	35.4	4.4	0.0	53.2	54.8	73.9	20.7	19.1
4	6353.8	48.2	47.0	33.5	35.5	4.9	0.0	51.1	49.9	73.9	22.8	24.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	11576.4	64.4	62.3	39.6	35.8	6.3	1.2	66.2	64.1	73.9	7.7	9.8
6*	17364.8	64.0	63.7	43.3	35.2	8.8	1.2	72.6	72.3	73.9	-	-
7	23153.0	46.1	46.3	38.7	31.3	7.7	0.0	51.7	51.9	73.9	22.2	22.0
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	28941.2	42.2	42.5	39.9	25.0	14.7	0.0	56.2	56.5	73.9	17.7	17.4
9	34729.4	40.2	40.0	40.6	25.1	16.5	0.0	56.6	56.4	73.9	17.3	17.5

* Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2426.7	40.1	41.8	26.9	36.0	3.0	0.0	34.0	35.7	53.9	19.9	18.2
2	3359.8	42.1	46.4	28.5	36.0	3.4	0.0	38.1	42.4	53.9	15.8	11.5
3	5221.6	33.7	34.0	31.5	35.4	4.4	0.0	34.2	34.5	53.9	19.7	19.4
4	6353.8	35.0	31.0	33.5	35.5	4.9	0.0	37.9	33.9	53.9	16.0	20.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	11576.4	36.3	35.9	39.6	35.8	6.3	1.2	38.1	37.7	53.9	15.8	16.2
6*	17364.8	36.0	36.1	43.3	35.2	8.8	1.2	44.6	44.7	53.9	-	-
7	23153.0	33.4	33.1	38.7	31.3	7.7	0.0	39.0	38.7	53.9	14.9	15.2
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	28941.2	21.6	21.6	39.9	25.0	14.7	0.0	35.6	35.6	53.9	18.3	18.3
9	34729.4	27.1	27.1	40.6	25.1	16.5	0.0	43.5	43.5	53.9	10.4	10.4

* Reference data

20dBc(Fundamental 5788.240269MI(RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5788.2	113.0	111.1	32.4	30.6	3.8	0.0	118.6	116.7	-	-	-
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	17364.8	63.9	58.5	43.3	35.2	8.8	1.2	72.5	67.1	Funda-20dB	26.1	29.6

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*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 rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

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

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

Company	: BROTHER INDUSTRIES,LTD.	REPORT NO	: 28FE0222-HO
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m
Sample No.	: 999999B8F001728	DATE	: 03/25/2008 03/27/2008
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 24deg.C 22deg.C
Mode	: Tx 5848.889420MHz	HUMIDITY	: 38% 36%
Remarks	: Internal Antenna	ENGINEER	: Hisayoshi Sato Kazufumi Nakai

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2491.0	57.6	57.6	27.1	36.0	3.0	0.0	51.7	51.7	73.9	22.3	22.3
2	3356.7	53.1	54.5	28.5	36.0	3.4	0.0	49.1	50.5	73.9	24.8	23.4
3	4984.0	45.2	54.0	31.6	35.6	4.3	0.0	45.5	54.3	73.9	28.4	19.6
4*	5850.0	93.9	101.1	32.1	35.4	4.7	0.0	95.2	102.4	73.9	-	-
5	6719.2	45.8	43.0	34.4	35.4	4.9	0.0	49.7	46.9	73.9	24.2	27.0
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	11697.8	66.2	63.8	39.3	35.8	6.7	1.0	67.9	65.5	73.9	6.0	8.4
7*	17546.8	67.5	55.1	45.0	35.1	8.9	1.2	78.0	65.6	73.9	-	-
8	23395.6	45.7	46.0	38.7	31.1	7.7	0.0	51.5	51.8	73.9	22.4	22.1
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	29244.5	42.5	42.8	40.0	24.9	14.8	0.0	56.8	57.1	73.9	17.1	16.8
10	35093.3	40.3	40.2	40.8	25.0	16.6	0.0	57.1	57.0	73.9	16.8	16.9

* Reference data

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2491.0	42.6	43.7	27.1	36.0	3.0	0.0	36.7	37.8	53.9	17.3	16.2
2	3356.7	45.6	47.0	28.5	36.0	3.4	0.0	41.6	43.0	53.9	12.3	10.9
3	4984.0	34.0	36.0	31.6	35.6	4.3	0.0	34.3	36.3	53.9	19.6	17.6
4*	5850.0	73.7	80.2	32.1	35.4	4.7	0.0	75.0	81.5	53.9	-	-
5	6719.2	33.2	30.9	34.4	35.4	4.9	0.0	37.1	34.8	53.9	16.8	19.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	11697.8	36.6	36.3	39.3	35.8	6.7	1.0	38.3	38.0	53.9	15.6	15.9
7*	17546.8	37.1	35.3	45.0	35.1	8.9	1.2	47.6	45.8	53.9	-	-
8	23395.6	33.3	33.3	38.7	31.1	7.7	0.0	39.1	39.1	53.9	14.8	14.8
Test distance 0.5meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
9	29244.5	21.8	21.9	40.0	24.9	14.8	0.0	36.1	36.2	53.9	17.8	17.7
10	35093.3	27.4	27.4	40.8	25.0	16.6	0.0	44.2	44.2	53.9	9.7	9.7

* Reference data

20dBc(Fundamental 5848.889420MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	20dBc	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	[dB]
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
0	5848.9	109.9	109.4	32.5	30.6	3.8	0.0	115.6	115.1	-	-	-
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
4	5850.0	48.4	56.7	32.1	35.4	4.7	0.0	49.7	58.0	Funda-20dB	45.9	37.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	17546.8	67.3	53.3	45.0	35.1	8.9	1.2	77.8	63.8	Funda-20dB	17.8	31.3

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
Test Distance 0.5m : Distance Factor(Dfac) = 20log(3/0.5) = 15.56dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*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 rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission (above 1GHz)
Internal Antenna, Rx, Ch. Mid

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

Company	: BROTHER INDUSTRIES,LTD.	REPORT NO	: 28FE0222-HO
Equipment	: Multi-Function Center	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: MFC-990CW	TEST DISTANCE	: 3/1/0.5m
Sample No.	: 999999B8F001728	DATE	: 03/25/2008
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 24deg.C
Mode	: Rx 5788.240269MHz	HUMIDITY	: 38%
Remarks	: Internal Antenna	ENGINEER	: Hisayoshi Sato

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

No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	PK	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2426.8	47.6	49.1	26.9	36.0	3.0	0.0	41.5	43.0	73.9	32.5	31.0
2	3359.7	49.6	52.1	28.5	36.0	3.4	0.0	45.6	48.1	73.9	28.3	25.8
3	5788.2	44.8	45.2	32.0	35.4	4.7	0.0	46.0	46.4	73.9	27.9	27.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	11576.5	44.0	43.1	39.6	35.8	5.8	0.0	44.1	43.2	73.9	29.8	30.7
5	17364.7	45.4	44.0	43.3	35.2	8.0	0.0	52.0	50.6	73.9	21.9	23.3

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

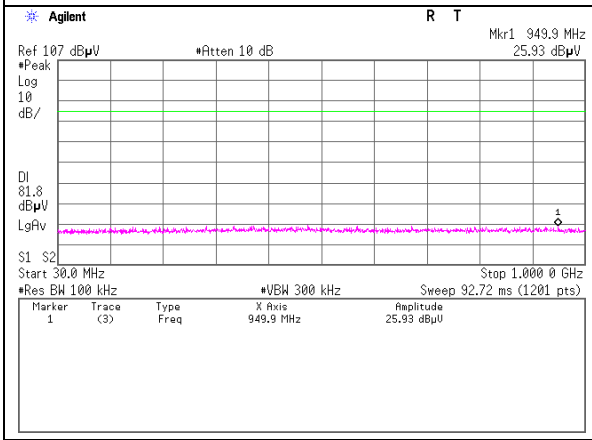
No.	FREQ	S/A READING		ANT	AMP	CABLE	Hi-Pass	RESULT		Limit	MARGIN	
		HOR	VER	Factor	GAIN	LOSS	Filter	HOR	VER	AV	HOR	VER
	[MHz]	[dBuV]		[dB/m]	[dB]	[dB]	[dB]	[dBuV/m]		[dBuV/m]	[dB]	
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2426.8	34.2	40.0	26.9	36.0	3.0	0.0	28.1	33.9	53.9	25.9	20.1
2	3359.7	43.5	47.9	28.5	36.0	3.4	0.0	39.5	43.9	53.9	14.4	10.0
3	5788.2	31.7	31.6	32.0	35.4	4.7	0.0	32.9	32.8	53.9	21.0	21.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	11576.5	32.4	32.4	39.6	35.8	5.8	0.0	32.5	32.5	53.9	21.4	21.4
5	17364.7	32.9	32.9	43.3	35.2	8.0	0.0	39.5	39.5	53.9	14.4	14.4

Test Distance 1.0m : Distance Factor(Dfac) = 20log(3/1.0) = 9.5dB
*Except for the above table : All other spurious emissions were less than 20dB for the limit.
*The test result is rounded off to one or two decimal places, so some differences might be observed.
*Hi-Pass Fiter was not used for factor 0.0dB of the above table.

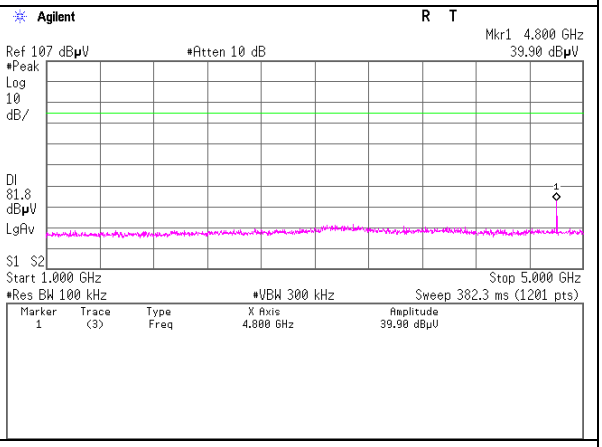
Conducted Spurious Emission

Tx, Ch:Low

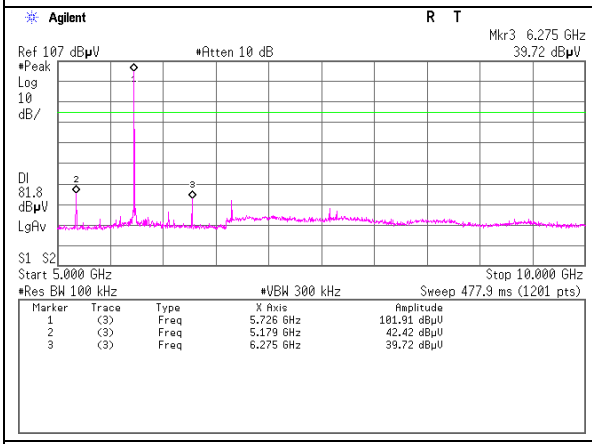
30MHz-1GHz



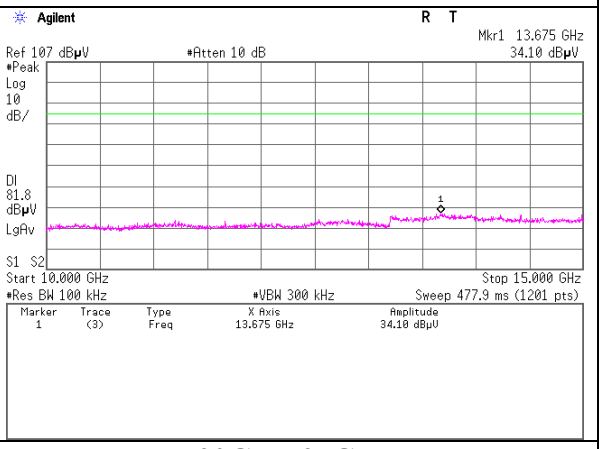
1GHz-5GHz



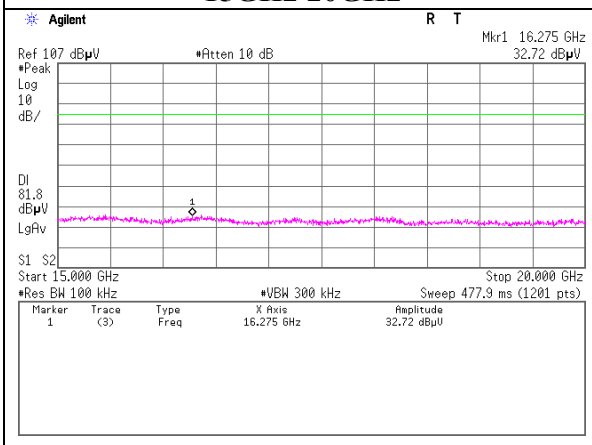
5GHz-10GHz



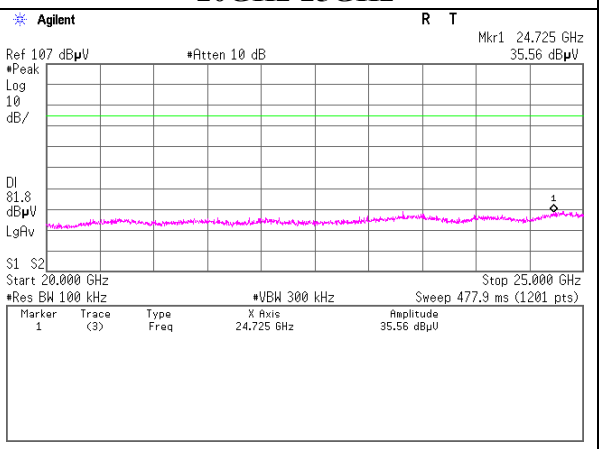
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



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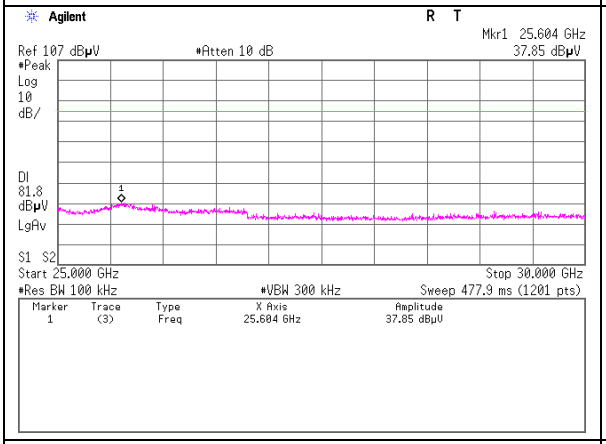
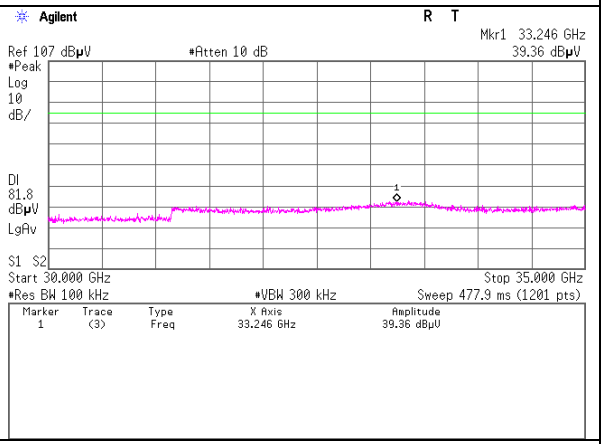
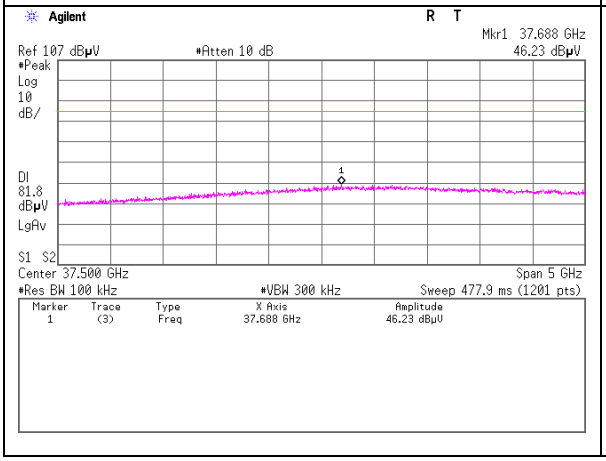
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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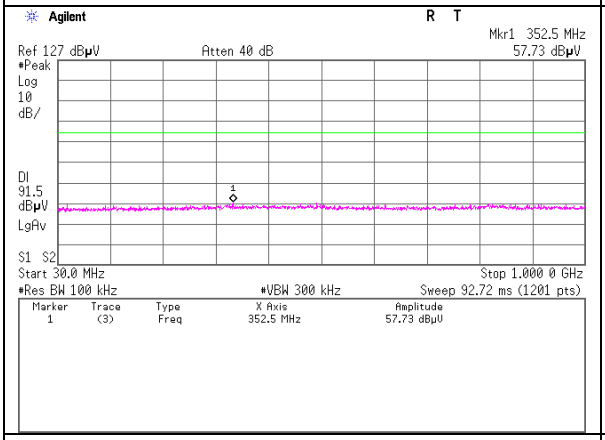
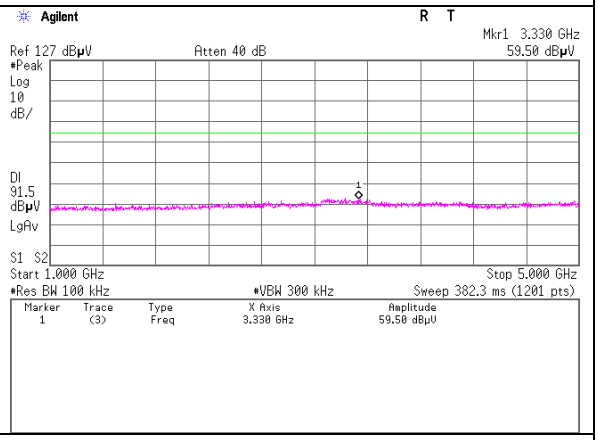
Conducted Spurious Emission

Tx, Ch:Mid

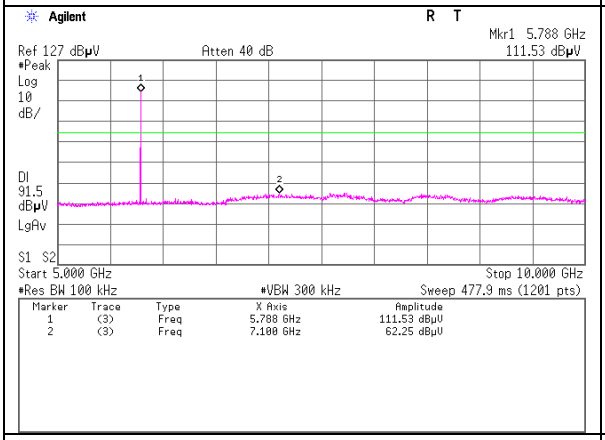
30MHz-1GHz



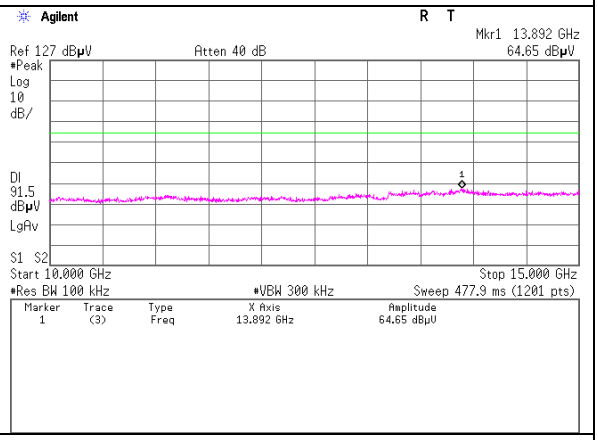
1GHz-5GHz



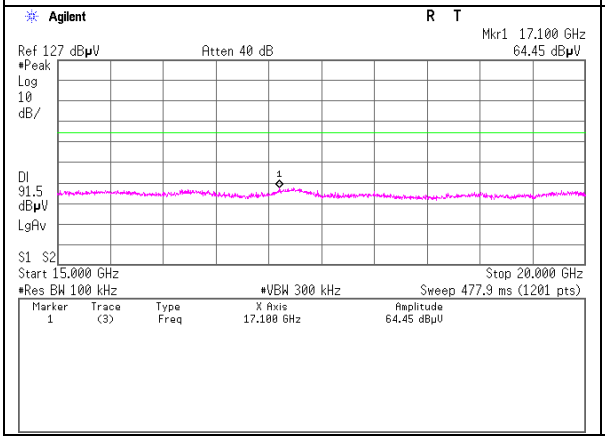
5GHz-10GHz



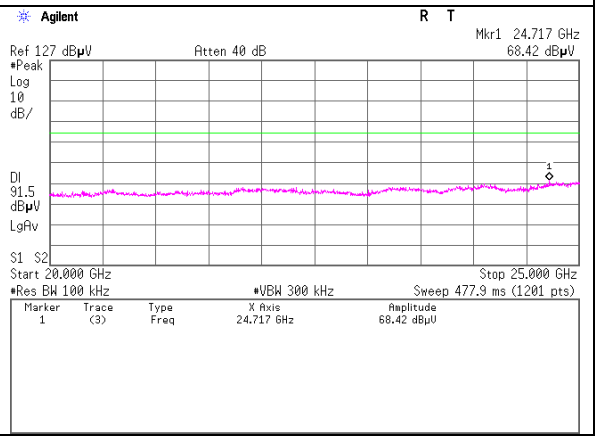
10GHz-15GHz



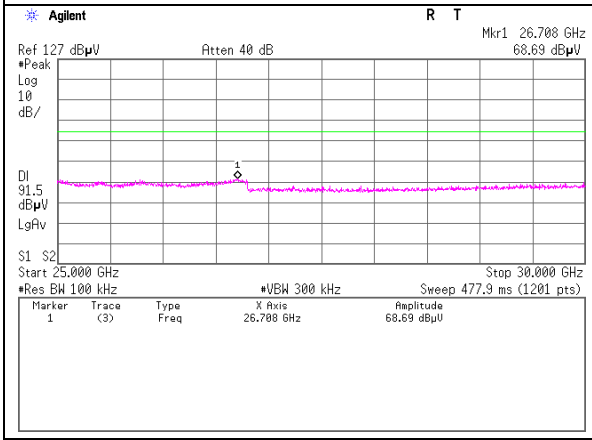
15GHz-20GHz



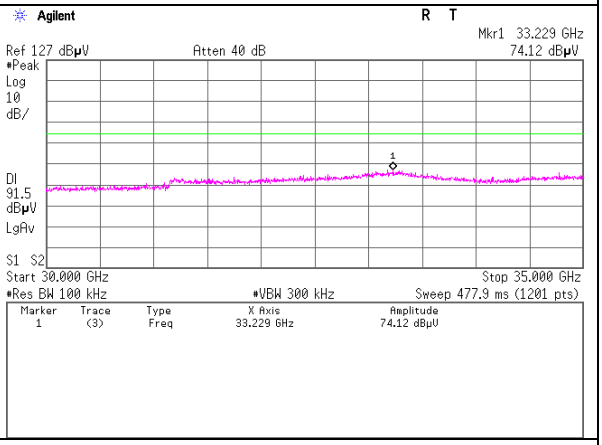
20GHz-25GHz



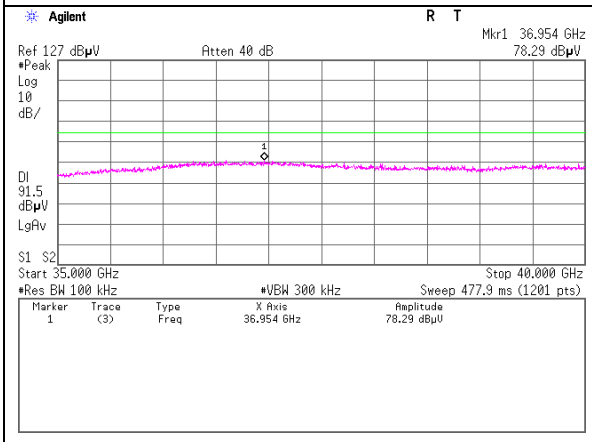
25GHz-30GHz



30GHz-35GHz



35GHz-40GHz



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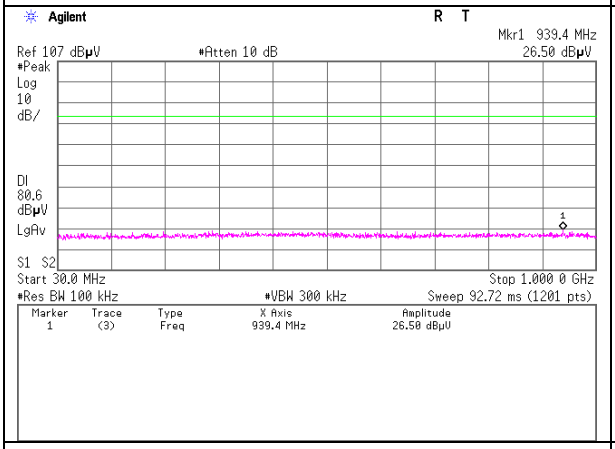
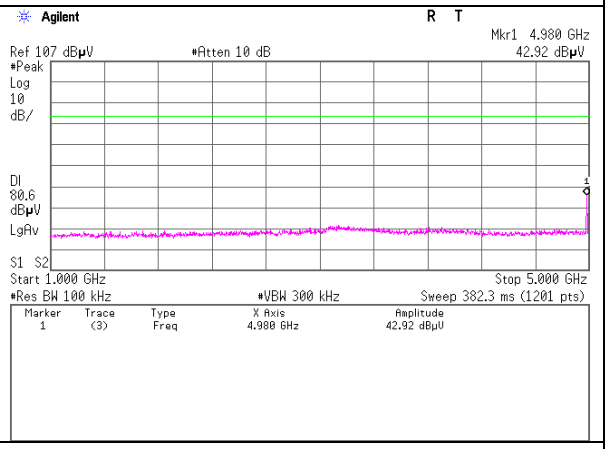
Conducted Spurious Emission

Tx, Ch:High

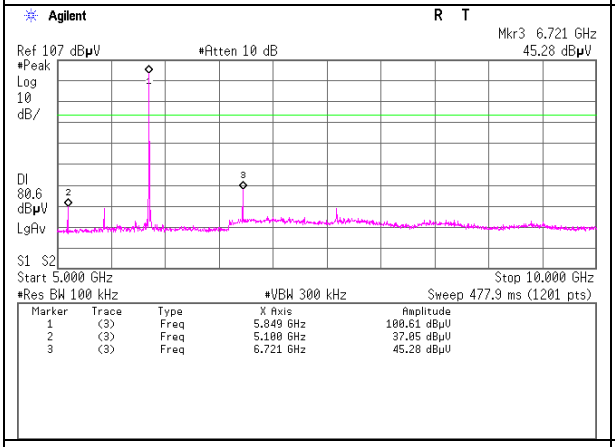
30MHz-1GHz



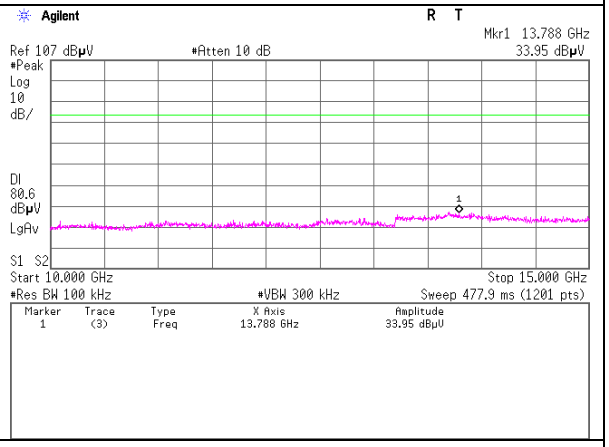
1GHz-5GHz



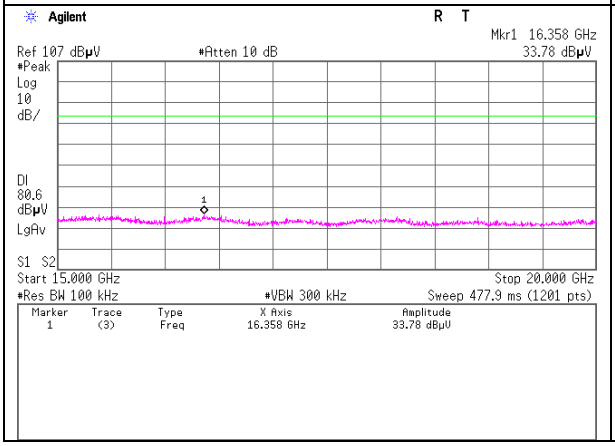
5GHz-10GHz



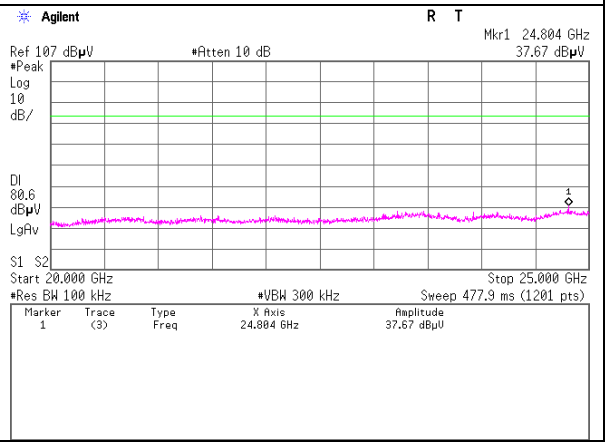
10GHz-15GHz



15GHz-20GHz



20GHz-25GHz



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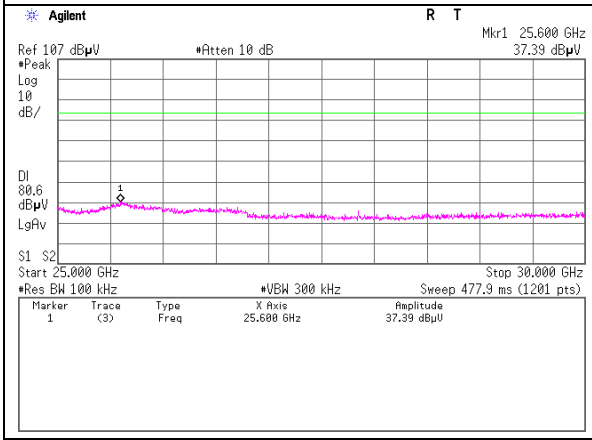
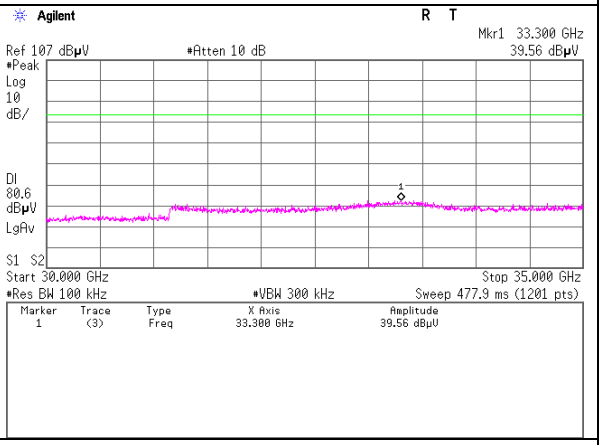
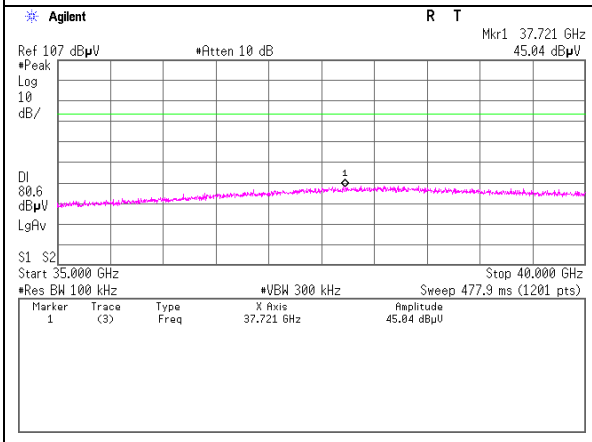
25GHz-30GHz



30GHz-35GHz

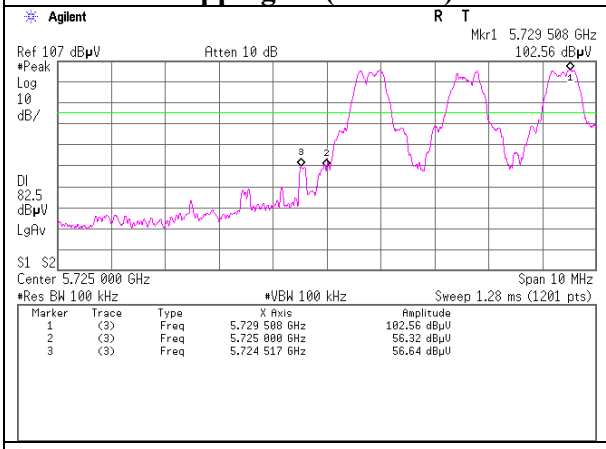


35GHz-40GHz

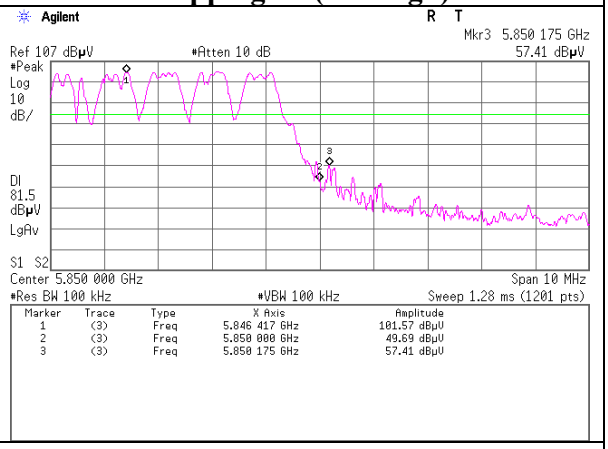


Conducted Spurious Emission(Band Edge compliance)

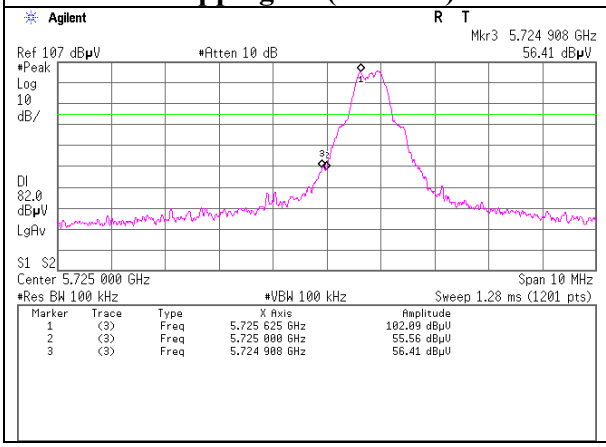
Hopping on (Ch:Low)



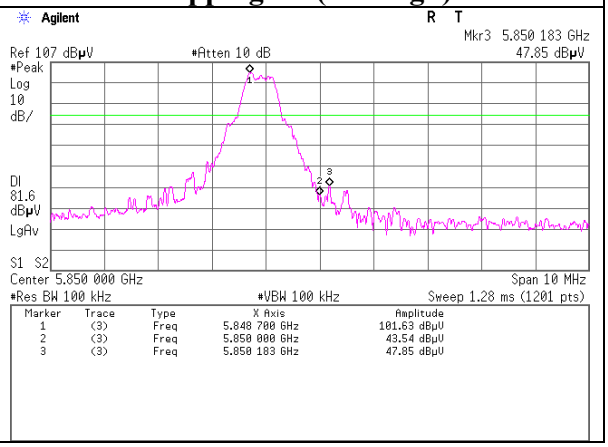
Hopping on (Ch:High)



Hopping off (Ch:Low)



Hopping off (Ch:High)



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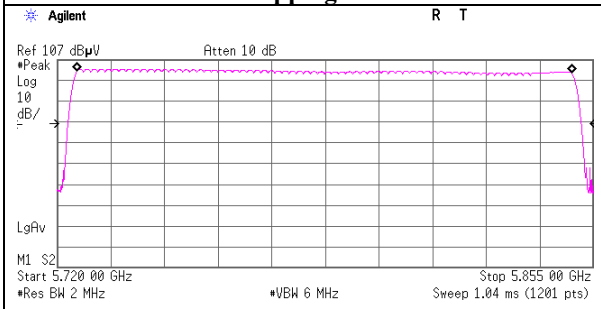
99% Occupied Bandwidth

Hopping on

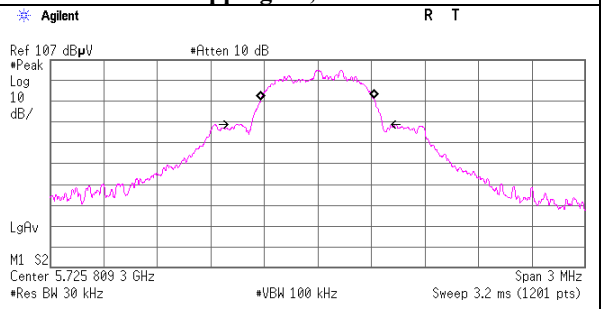


Occupied Bandwidth
124.4803 MHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -291.269 kHz
x dB Bandwidth 129.185 MHz

Hopping off, Ch: Low

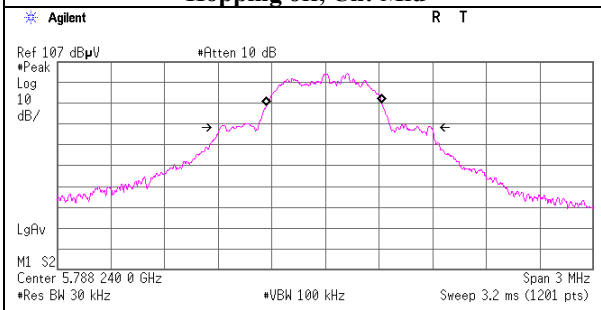


Occupied Bandwidth
634.6080 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -2.568 kHz
x dB Bandwidth 815.427 kHz

Hopping off, Ch: Mid

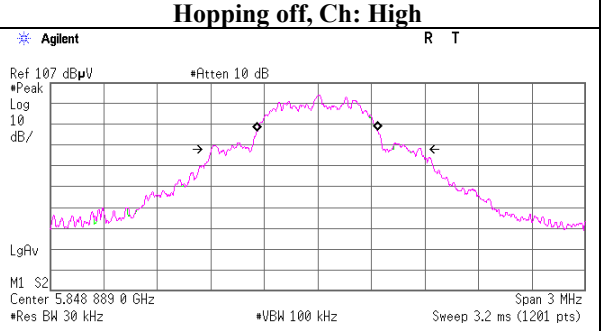


Occupied Bandwidth
647.5183 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -7.369 kHz
x dB Bandwidth 1.180 MHz

Hopping off, Ch: High



Occupied Bandwidth
674.0092 kHz

Occ BW % Pwr 99.00 %
x dB -26.00 dB

Transmit Freq Error -2.660 kHz
x dB Bandwidth 1.171 MHz

APPENDIX 3:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-03	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE/CE	2008/03/25 * 12
MHA-20	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2007/04/14 * 12
MHA-16	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	RE	2007/04/06 * 12
MLA-03	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2008/01/12 * 12
MBA-03	Biconical Antenna	Schwarzbeck	BBA9106	RE	2008/01/12 * 12
MOS-13	Thermo-Hygrometer	Custom	CTH-180	RE/CE	2008/01/10 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	RE/CE	2008/02/27 * 12
MCC-51	Coaxial cable	UL Japan	-	RE/CE	2007/07/26 * 12
MCC-55	Microwave Cable 1G-40GHz	Suhner	SUCOFLEX101	RE	2008/03/07 * 12
MCC-53	Microwave Cable 1G-40GHz	Suhner	SUCOFLEX101	RE	2008/03/07 * 12
MCC-58	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2008/03/05 * 12
MAT-30	Attenuator(6dB)	TME	UFA-01	RE	2008/03/10 * 12
MPA-13	Pre Amplifier	SONOMA INSTRUMENT	310	RE	2008/03/06 * 12
MPA-03	Microwave System Power Amplifier	Agilent	83050A	RE	2007/06/08 * 12
MPA-11	MicroWave System Amplifier	Agilent	83017A	RE	2008/03/13 * 12
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	RE/CE	-
MJM-06	Measure	PROMART	SEN1955	RE/CE	-
MHF-22	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCB	RE	2008/01/07 * 12
MCC-78	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2007/12/26 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE/CE	2008/02/20 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE (EUT)	2008/02/20 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE (AE)	2008/02/19 * 12
MTA-07	Terminator	MCL	BTRM-50	CE	2008/02/04 * 12
MAEC-01	Anechoic Chamber	TDK	Semi Anechoic Chamber 10m	RE	2007/11/23 * 12
MTR-01	Test Receiver	Rohde & Schwarz	ESI40	RE	2007/10/19 * 12
MPA-01	Pre Amplifier	Agilent	8449B	RE	2008/02/12 * 12
MHA-05	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	RE	2008/01/19 * 12
MCC-15	Microwave Cable 1G-26.5GHz 1m	Suhner	SUCOFLEX 104	RE	2008/02/08 * 12
MCC-18	Microwave Cable 1G-26.5GHz 5m	Suhner	SUCOFLEX 104	RE	2008/02/08 * 12
MHF-16	High Pass Filter 7-20GHz	TOKIMEC	TF37NCCA	RE	2007/12/11 * 12
MCC-77	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2007/12/26 * 12
MJM-01	Measure	KDS	ES19-55	RE	-
MMM-03	Digital Tester	Fluke	FLUKE 26-3	RE	2007/08/21 * 12
MOS-21	Thermo-Hygrometer	Custom	CTH-201	RE	2007/12/27 * 12
MOS-04	Digital Humidity Indicator	N.T	NT-1800	AT	2007/11/12 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	AT	2008/02/27 * 12
MPM-08	Power Meter	Anritsu	ML2495A	AT	2007/09/12 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	AT	2007/09/12 * 12
MAT-21	Attenuator(20dB)(above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-120	AT	2008/01/09 * 12
MCC-65	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	AT	2007/04/03 * 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