

APPENDIX 2: Data of EMI test

Conducted Emission

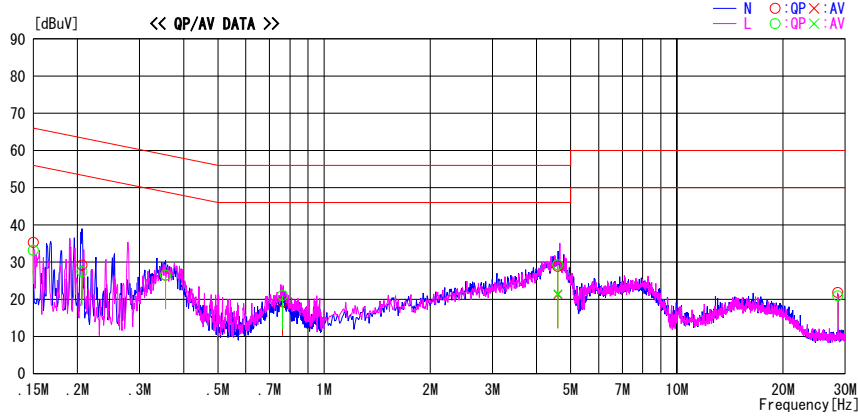
DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 4 Semi Anechoic Chamber
Date : 2007/02/08

Company : DENSO WAVE INCORPORATED
 Kind of EUT : Barcode Handy Terminal
 Model No. : BHT-470BWB-CE
 Serial No. : 5496310346600007
 Report No. : 27DE0137-HO
 Power : AC120V / 60Hz
 Temp./Humi. : 23deg. C / 29%
 Operator : Makoto Kosaka

Mode / Remarks : Tx BT DH5 Low(with CU-421 (USB))

LIMIT : FCC15.207 QP
 FCC15.207 AV



Frequency [MHz]	Reading Level		Corr. Factor	Results		Limit		Margin		Phase
	QP [dBuV]	AV [dBuV]		QP [dBuV]	AV [dBuV]	QP [dBuV]	AV [dBuV]	QP [dB]	AV [dB]	
0.15000	35.1	---	0.2	35.3	---	66.0	---	30.7	---	N
0.20600	29.0	---	0.2	29.2	---	63.4	---	34.2	---	N
0.35500	26.3	---	0.2	26.5	---	58.8	---	32.3	---	N
0.76300	19.0	---	0.3	19.3	---	56.0	---	36.7	---	N
4.60000	28.1	20.6	0.7	28.8	21.3	56.0	46.0	27.2	24.7	N
28.59000	19.9	---	1.9	21.8	---	60.0	---	38.2	---	N
0.15000	33.0	---	0.2	33.2	---	66.0	---	32.8	---	L
0.20600	27.3	---	0.2	27.5	---	63.4	---	35.9	---	L
0.35500	26.3	---	0.2	26.5	---	58.8	---	32.3	---	L
0.76300	20.7	---	0.3	21.0	---	56.0	---	35.0	---	L
4.60000	28.6	20.8	0.7	29.3	21.5	56.0	46.0	26.7	24.5	L
28.59000	19.0	---	1.9	20.9	---	60.0	---	39.1	---	L

CHART: WITH FACTOR, Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.4 Semi Anechoic Chamber
 Date : 2007/02/08

Company : DENSO WAVE INCORPORATED	Report No. : 27DE0137-HO
Kind of EUT : Barcode Handy Terminal	Power : AC120V / 60Hz
Model No. : BHT-470BWB-CE	Temp./Humi. : 23deg. C / 29%
Serial No. : 5496310346600007	Operator : Makoto Kosaka

Mode / Remarks : Tx BT DH5 Mid(with CU-421 (USB))

LIMIT : FCC15.207 QP
FCC15.207 AV

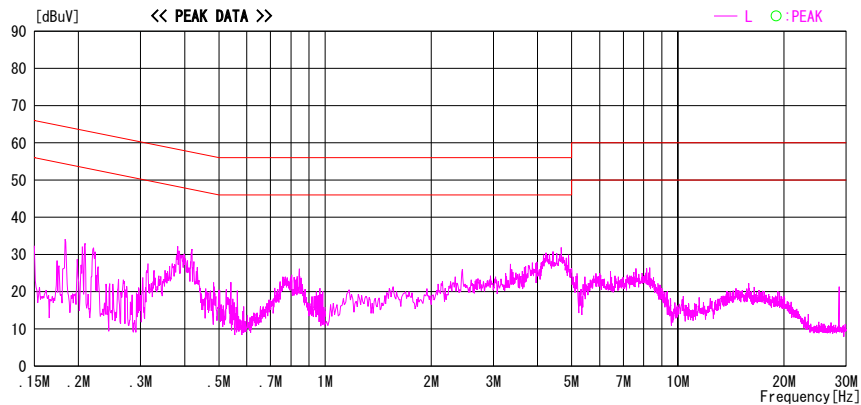
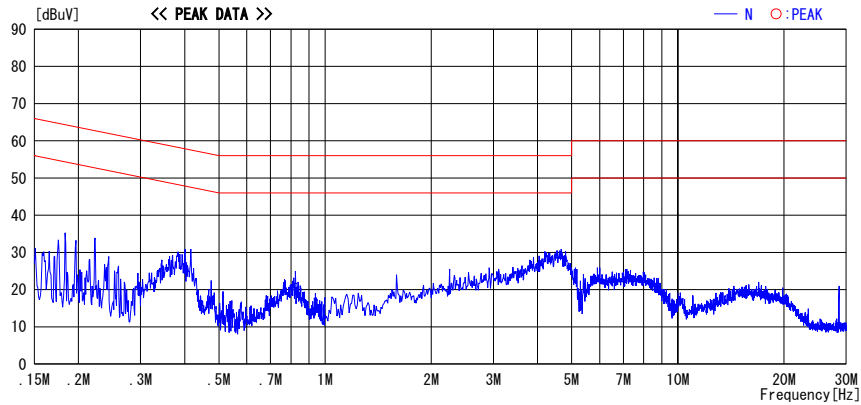


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 4 Semi Anechoic Chamber
Date : 2007/02/08

Company	: DENSO WAVE INCORPORATED	Report No.	: 27DE0137-HO
Kind of EUT	: Barcode Handy Terminal	Power	: AC120V / 60Hz
Model No.	: BHT-470BWB-CE	Temp./Humi.	: 23deg. C / 29%
Serial No.	: 5496310346600007	Operator	: Makoto Kosaka

Mode / Remarks : Tx BT DH5 High(with CU-421(USB))

LIMIT : FCC15.207 QP
FCC15.207 AV

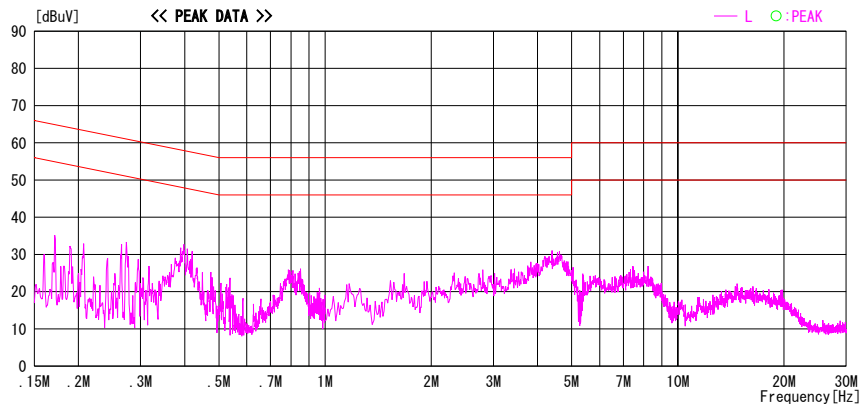
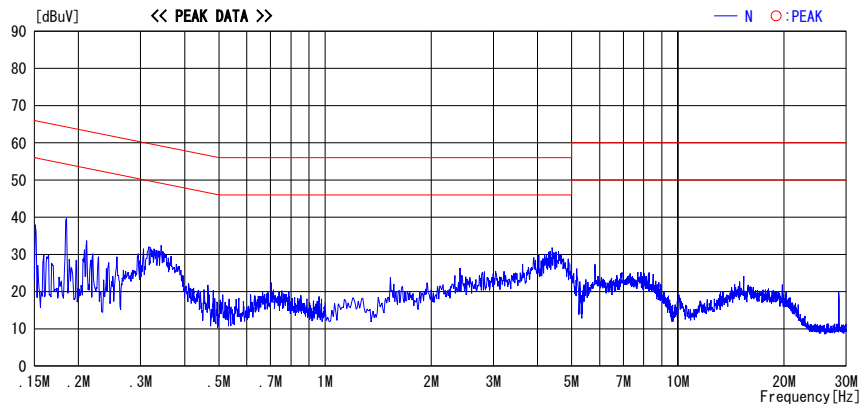


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.4 Semi Anechoic Chamber
 Date : 2007/02/09

Company	: DENSO WAVE INCORPORATED	Report No.	: 27DE0137-HO
Kind of EUT	: Barcode Handy Terminal	Power	: AC120V / 60Hz
Model No.	: BHT-470BWB-CE	Temp./Humi.	: 23deg. C / 29%
Serial No.	: 5496310346600007	Operator	: Makoto Kosaka

Mode / Remarks : Rx BT Mid(with CU-421 (USB))

LIMIT : FCC15.207 QP
 FCC15.207 AV

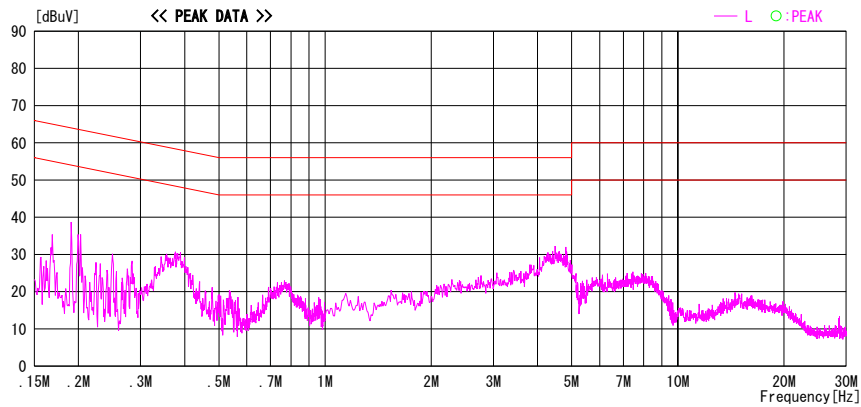
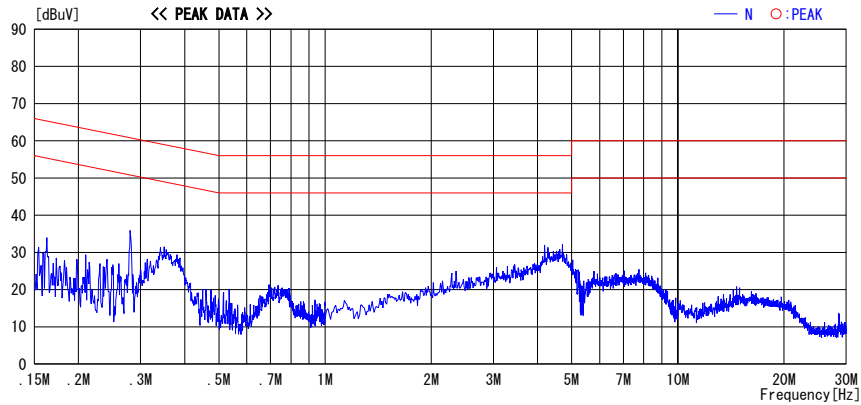


CHART: WITH FACTOR. Peak hold data. Data is uncorrected. CALCULATION: RESULT=READING+C.F (LISN LOSS+CABLE LOSS)
 Except for the above table : adequate margin data below the limits.

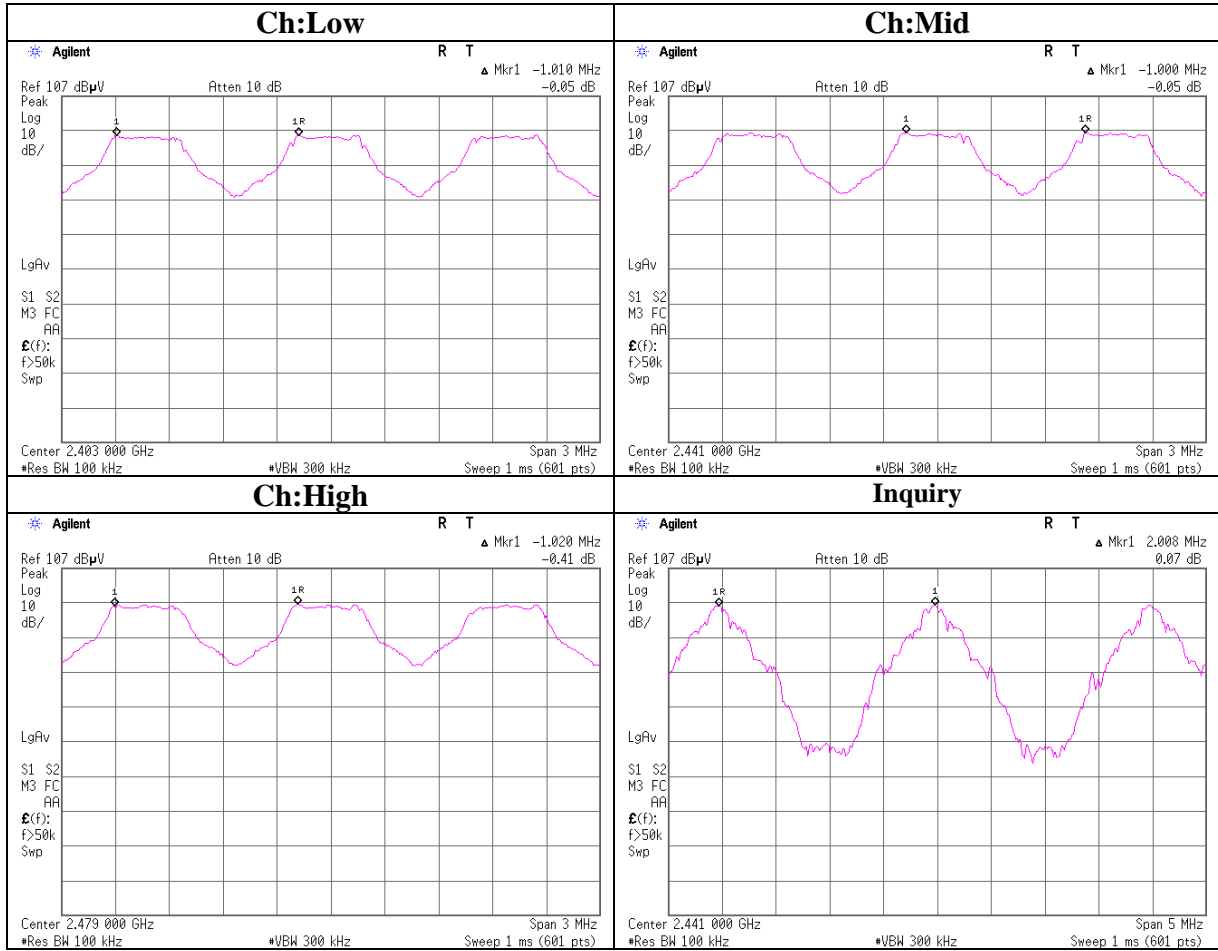
Carrier Frequency Separation

UL Apex Co., Ltd.
Head Office EMC Lab. No.7 Shielded Room

COMPANY : DENSO WAVE INCORPORATED REGULATION : FCC15.247(a)(1)/RSS-210A8.1(2)
EQUIPMENT : Barcode Handy Terminal TEST DISTANCE : -
MODEL : BHT-470BWB-CE DATE : 2006/11/27
S/N : 5496310346600007 TEMPERATURE : 24deg.C
POWER : DC3.7V HUMIDITY : 43%
MODE : Tx(Hopping on)/Inquiry ENGINEER : Makoto Kosaka

Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.010	>965[kHz] (20dB Bandwidth)
Mid	2441.0	1.000	>960[kHz] (20dB Bandwidth)
High	2480.0	1.020	>965[kHz] 20dB Bandwidth
Inquiry	2441.0	2.008	>780[kHz] 20dB Bandwidth

Carrier Frequency Separation



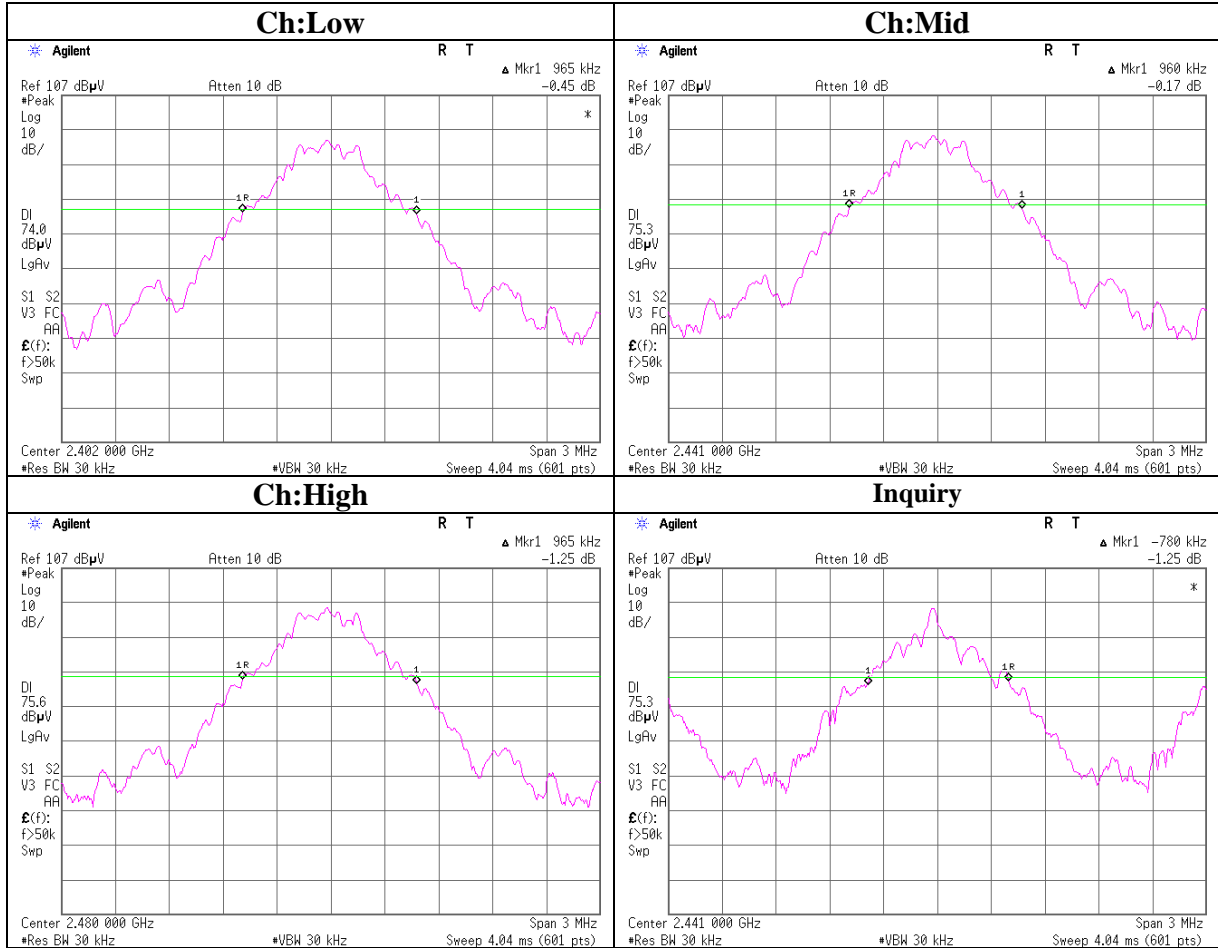
20dB Bandwidth

UL Apex Co., Ltd.
Head Office EMC Lab. No.6 Shielded Room

COMPANY : DENSO WAVE INCORPORATED REGULATION : FCC15.247(a)(1)/RSS-210A8.1(1)
EQUIPMENT : Barcode Handy Terminal TEST DISTANCE : -
MODEL : BHT-470BWB-CE DATE : 2006/11/27
S/ N : 5496310346600007 TEMPERATURE : 24deg.C.
POWER : DC3.7V HUMIDITY : 43%
MODE : Tx (Hopping off) /Inquiry ENGINEER : Makoto Kosaka

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.965	-
Mid	2441.0	0.960	-
High	2480.0	0.965	-
Inquiry	2441.0	0.780	-

20dB Bandwidth



Number of Hopping Frequency

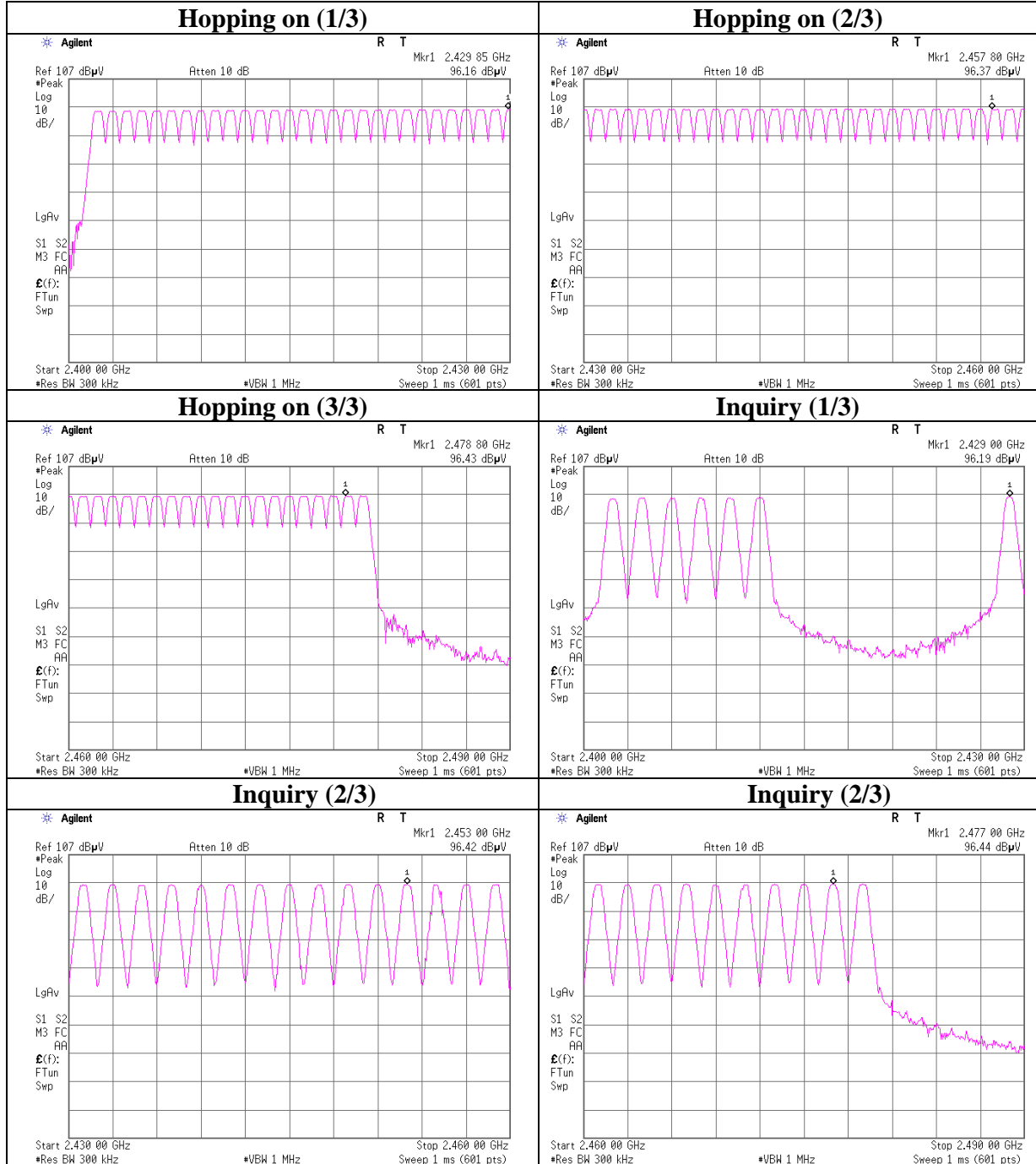
UL Apex Co., Ltd.
Head Office EMC Lab. No.6 Shielded Room

COMPANY : DENSO WAVE INCORPORATED REGULATION : FCC15.247(a)(1)(iii)/RSS-210A8.1(4)
EQUIPMENT : Barcode Handy Terminal TEST DISTANCE : -
MODEL : BHT-470BWB-CE DATE : 2006/11/27
S/N : 5496310346600007 TEMPERATURE : 24deg.C.
POWER : DC3.7V HUMIDITY : 43%
MODE : Tx (Hopping on) /Inquiry ENGINEER : Makoto Kosaka

Mode	Number of channel [time]	Limit [time]
Tx(Hoppng on)	79	≥ 15

Mode	Number of channel [time]	Limit [time]
Inquiry	32	≥ 15

Number of Hopping Frequency



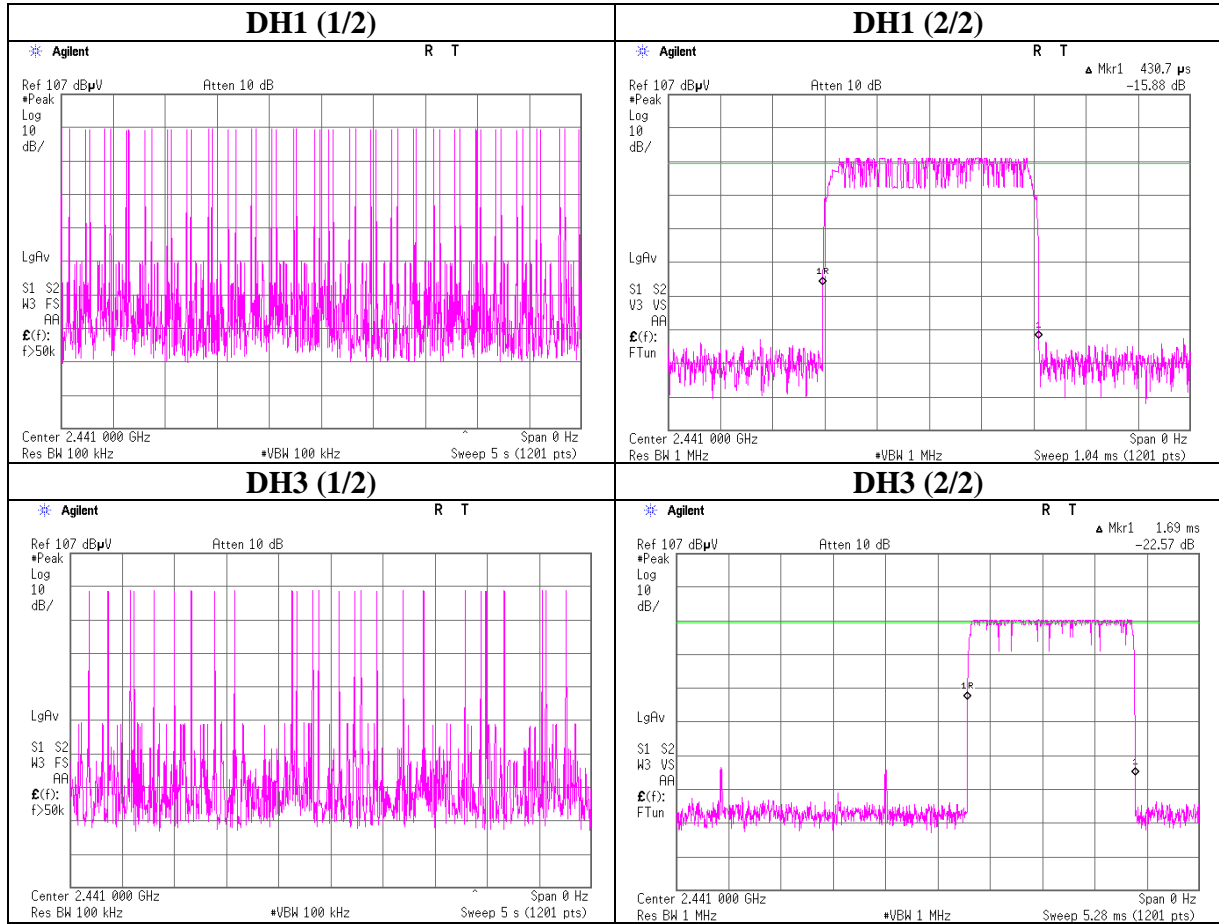
Dwell time

UL Apex Co., Ltd.
Head Office EMC Lab. No.6 Shielded Room

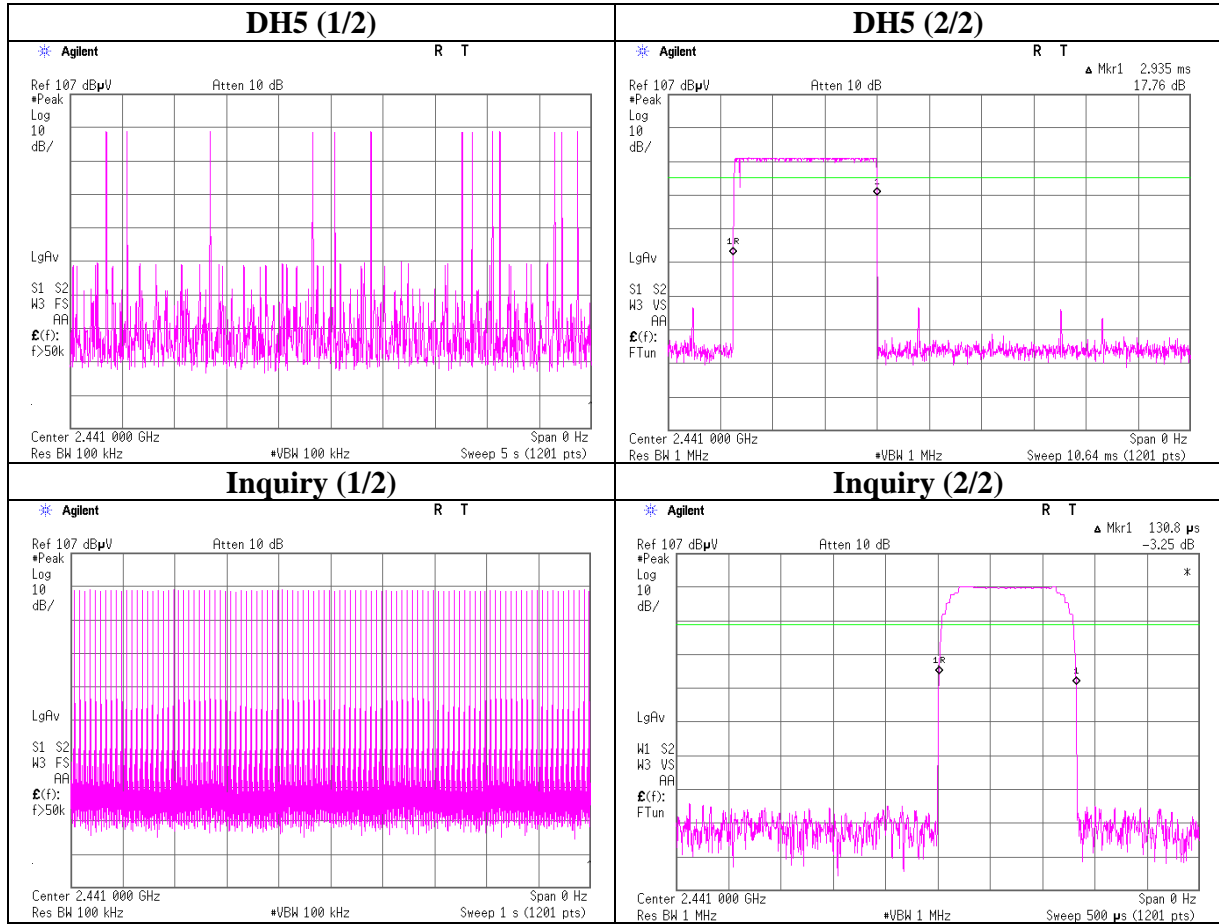
COMPANY : DENSO WAVE INCORPORATED REGULATION : FCC15.247(a)(1)(iii)/RSS-210A8.1(4)
EQUIPMENT : Barcode Handy Terminal TEST DISTANCE : -
MODEL : BHT-470BWB-CE DATE : 2006/11/27
S/N : 5496310346600007 TEMPERATURE : 24deg.C.
POWER : DC3.7V HUMIDITY : 43%
MODE : Tx (Hopping on) /Inquiry ENGINEER : Makoto Kosaka

Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	51 times / 5 sec. x 31.6 sec. = 323 times	0.431	139	400
DH3	26 times / 5 sec. x 31.6 sec. = 165 times	1.690	279	400
DH5	13 times / 5 sec. x 31.6 sec. = 83 times	2.935	244	400
Inquiry	101 times / 1 sec. x 12.8 sec. = 1293 times	0.131	169	400

Dwell time



Dwell time



Maximum Peak Output Power

UL Apex Co., Ltd.
Head Office EMC Lab. No.6 Shielded Room

COMPANY : DENSO WAVE INCORPORATED REGULATION : FCC15.247(b)(1)/RSS-210A8.4(2)
EQUIPMENT : Barcode Handy Terminal TEST DISTANCE : -
MODEL : BHT-470BWB-CE DATE : 12/29/2006
S/ N : 5496310346600007 TEMPERATURE : 23deg.C
POWER : DC 3.7V(Li-ion battery) HUMIDITY : 32%
MODE : Tx(Hopping Off)/Inquiry ENGINEER : Makoto Kosaka

Ch	Freq. [MHz]	P/M Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-11.74	1.25	10.14	-0.35	0.92	20.97	125	21.32
Mid	2441.0	-11.05	1.25	10.14	0.34	1.08	20.97	125	20.63
High	2480.0	-10.91	1.00	10.14	0.23	1.05	20.97	125	20.74
Inquiry	2441.0	-11.09	1.25	10.14	0.30	1.07	20.97	125	20.67

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)

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

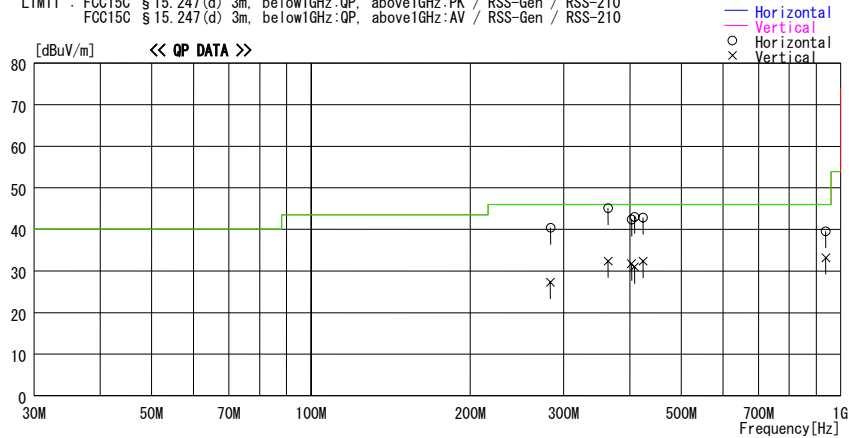
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
 Date : 2006/11/28 22:49:31

Company : DENSO WAVE INCORPORATED Report No. : 27DE0137-HO
 Kind of EUT : Barcode Handy Terminal Power : DC3.7V
 Model No. : BHT-470BWB-CE Temp./Humi. : 26deg. C. / 46%
 Serial No. : 549631034660007 Operator : Makoto Kosaka

Mode / Remarks : Tx BT 2402MHz (DH5) worst axis Hor(Z) Ver(Y)

LIMIT : FCC15C § 15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
 FCC15C § 15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
283.200	27.6	QP	19.0	-19.3	27.3	273	150	Vert.	46.0	18.7
283.408	40.7	QP	19.0	-19.3	40.4	359	150	Hori.	46.0	5.6
363.988	35.3	QP	16.8	-19.7	32.4	289	100	Vert.	46.0	13.6
363.988	48.0	QP	16.8	-19.7	45.1	196	100	Hori.	46.0	0.9
408.185	44.9	QP	18.0	-19.9	43.0	353	100	Hori.	46.0	3.0
408.192	32.9	QP	18.0	-19.9	31.0	0	100	Vert.	46.0	15.0
402.987	44.2	QP	17.9	-19.8	42.3	359	100	Hori.	46.0	3.7
402.988	33.6	QP	17.9	-19.8	31.7	58	100	Vert.	46.0	14.3
423.786	44.6	QP	18.1	-19.9	42.8	359	100	Hori.	46.0	3.2
423.788	34.2	QP	18.1	-19.9	32.4	0	100	Vert.	46.0	13.6
937.230	34.2	QP	22.6	-17.3	39.5	359	100	Hori.	46.0	6.5
937.650	27.9	QP	22.6	-17.3	33.2	169	100	Vert.	46.0	12.8

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

Radiated Spurious Emission (below 1GHz)

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

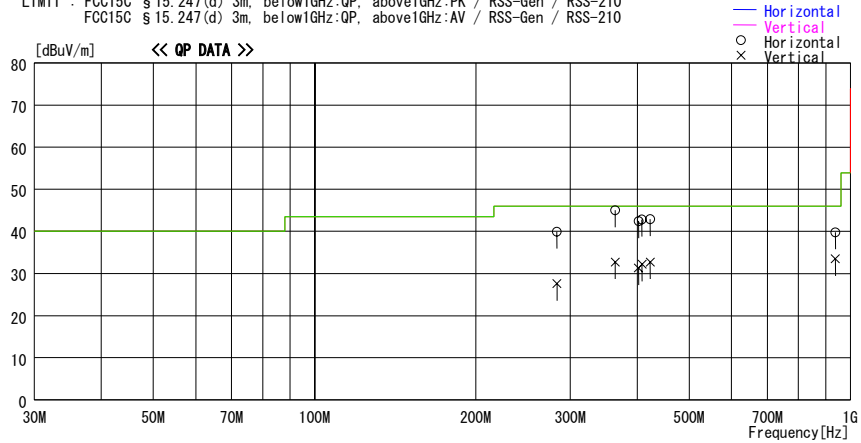
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
 Date : 2006/11/28 23:40:51

Company : DENSO WAVE INCORPORATED Report No. : 27DE0137-HO
 Kind of EUT : Barcode Handy Terminal Power : DC3.7V
 Model No. : BHT-470BWB-0E Temp./Humi. : 26deg.C / 46%
 Serial No. : 549631034660007 Operator : Makoto Kosaka

Mode / Remarks : Tx BT 2441MHz (DH5) worst axis Hor(Z) Ver(Y)

LIMIT : FCC15C § 15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
 FCC15C § 15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



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]
283.200	40.2	QP	19.0	-19.3	39.9	359	150	Hori.	46.0	6.1
283.441	27.9	QP	19.0	-19.3	27.6	273	149	Vert.	46.0	18.4
363.878	47.9	QP	16.8	-19.7	45.0	359	100	Hori.	46.0	1.0
363.988	35.6	QP	16.8	-19.7	32.7	289	100	Vert.	46.0	13.3
402.340	44.3	QP	17.9	-19.8	42.4	343	100	Hori.	46.0	3.6
402.440	33.2	QP	17.9	-19.8	31.3	339	100	Vert.	46.0	14.7
408.123	44.7	QP	18.0	-19.9	42.8	4	100	Hori.	46.0	3.2
408.662	34.1	QP	18.0	-19.9	32.2	0	100	Vert.	46.0	13.8
423.202	44.7	QP	18.1	-19.9	42.9	353	100	Hori.	46.0	3.1
423.202	34.5	QP	18.1	-19.9	32.7	0	100	Vert.	46.0	13.3
937.011	34.5	QP	22.6	-17.3	39.8	242	100	Hori.	46.0	6.2
937.223	28.2	QP	22.6	-17.3	33.5	0	100	Vert.	46.0	12.5

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)

Radiated Spurious Emission (below 1GHz)

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

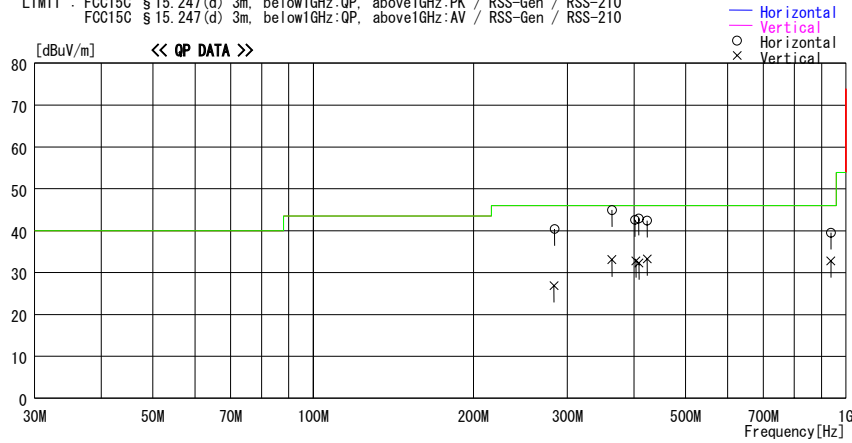
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No. 2 Semi Anechoic Chamber
 Date : 2006/11/28 23:48:11

Company : DENSO WAVE INCORPORATED Report No. : 27DE0137-HO
 Kind of EUT : Barcode Handy Terminal Power : DC3.7V
 Model No. : BHT-470BWB-CE Temp./Humi. : 26deg.C / 46%
 Serial No. : 549631034660007 Operator : Makoto Kosaka

Mode / Remarks : Tx BT 2480MHz (DH5) worst axis Hor (Z) Ver (Y)

LIMIT : FCC15C § 15.247 (d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
 FCC15C § 15.247 (d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency [MHz]	Reading [dBUV]	DET	Antenna		Level [dBUV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBUV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
283.800	40.6	QP	19.1	-19.3	40.4	355	150	Hori.	46.0	5.6
283.200	27.2	QP	19.0	-19.3	26.9	0	150	Vert.	46.0	19.1
363.890	47.8	QP	16.8	-19.7	44.9	197	100	Hori.	46.0	1.1
363.776	36.0	QP	16.8	-19.7	33.1	0	100	Vert.	46.0	12.9
402.202	44.5	QP	17.9	-19.8	42.6	359	100	Hori.	46.0	3.4
403.602	34.7	QP	17.9	-19.8	32.8	31	100	Vert.	46.0	13.2
408.230	44.8	QP	18.0	-19.9	42.9	353	100	Hori.	46.0	3.1
408.760	34.2	QP	18.0	-19.9	32.3	261	100	Vert.	46.0	13.7
423.453	44.2	QP	18.1	-19.9	42.4	359	100	Hori.	46.0	3.6
423.776	35.1	QP	18.1	-19.9	33.3	235	100	Vert.	46.0	12.7
937.233	34.2	QP	22.6	-17.3	39.5	319	100	Hori.	46.0	6.5
937.011	27.5	QP	22.6	-17.3	32.8	0	100	Vert.	46.0	13.2

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)

Radiated Spurious Emission (below 1GHz)

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

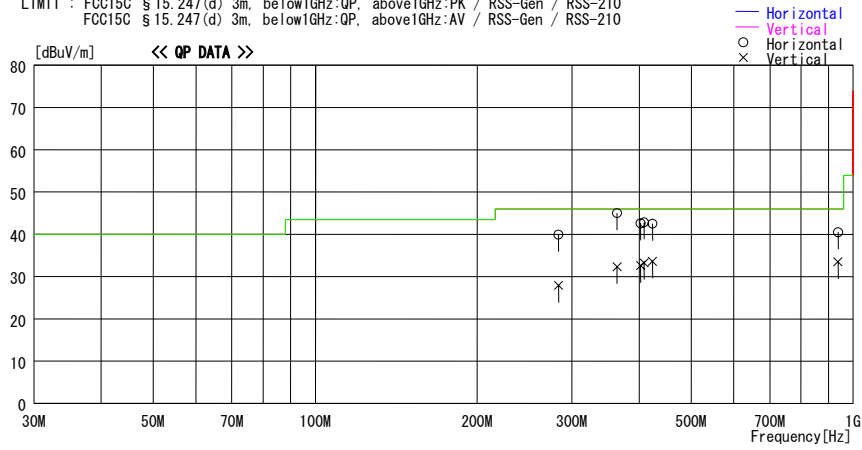
DATA OF RADIATED EMISSION TEST

UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
 Date : 2006/11/29 00:08:44

Company : DENSO WAVE INCORPORATED
 Kind of EUT : Barcode Handy Terminal
 Model No. : BHT-470BWB-CE
 Serial No. : 5496310346600007
 Report No. : 27DE0137-HO
 Power : DC3.7V
 Temp./Humi. : 26deg.C. / 46%
 Operator : Makoto Kosaka

Mode / Remarks : Rx BT 2441MHz (DH5) worst axis Hor (Z) Ver (Y)

LIMIT : FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:PK / RSS-Gen / RSS-210
 FCC15C §15.247(d) 3m, below1GHz:QP, above1GHz:AV / RSS-Gen / RSS-210



Frequency	Reading	DET	Antenna Factor	Loss & Gain	Level	Angle	Height	Polar.	Limit	Margin
[MHz]	[dBuV]		[dB/m]	[dB]	[dBuV/m]	[Deg]	[cm]		[dBuV/m]	[dB]
283.450	28.2	QP	19.0	-19.3	27.9	0	150	Vert.	46.0	18.1
283.230	40.2	QP	19.0	-19.3	39.9	359	150	Hori.	46.0	6.1
363.997	35.2	QP	16.8	-19.7	32.3	59	100	Vert.	46.0	13.7
363.778	47.9	QP	16.8	-19.7	45.0	359	100	Hori.	46.0	1.0
402.340	44.5	QP	17.9	-19.8	42.6	342	100	Hori.	46.0	3.4
402.554	34.5	QP	17.9	-19.8	32.6	0	100	Vert.	46.0	13.4
408.230	44.7	QP	18.0	-19.9	42.8	359	100	Hori.	46.0	3.2
408.445	35.2	QP	18.0	-19.9	33.3	346	100	Vert.	46.0	12.7
423.340	35.4	QP	18.1	-19.9	33.6	0	100	Vert.	46.0	12.4
423.554	44.3	QP	18.1	-19.9	42.5	0	100	Hori.	46.0	3.5
937.230	35.2	QP	22.6	-17.3	40.5	359	100	Hori.	46.0	5.5
936.998	28.2	QP	22.6	-17.3	33.5	0	100	Vert.	46.0	12.5

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)

Radiated Spurious Emission (above 1GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2Semi Anechoic Chamber

Company	: DENSO WAVE INCORPORATED	REPORT NO	: 27DE0137-HO
Equipment	: Barcode Handy Terminal	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model	: BHT-470BWB-CE	TEST DISTANCE	: 3/1m
Sample No.	: 5496310346600007	DATE	: 11/28/2006
Power	: DC3.7 V	TEMPERATURE	: 26deg.C
Mode	: Bluetooth Tx 2402MHz	HUMIDITY	: 46%
Remarks	: Hor Z , Ver Y-axis	ENGINEER	: Makoto Kosaka

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2390.0	49.8	48.3	30.6	32.3	3.5	0.0	51.6	50.1	74.0	22.4	23.9
2	2400.0	74.9	72.4	30.6	32.3	3.6	0.1	76.9	74.4	-	-	-
3	4804.0	45.1	44.9	35.7	31.6	4.8	0.1	54.1	53.9	74.0	19.9	20.1
4	7206.0	36.9	37.2	35.7	31.4	5.5	0.3	47.0	47.3	74.0	27.0	26.7
5	9608.0	34.9	33.1	38.5	31.9	6.4	0.7	48.6	46.8	74.0	25.4	27.2
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	24020.0	40.9	40.8	39.1	30.7	10.6	0.0	50.4	50.3	74.0	23.6	23.7

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2390.0	29.8	29.9	30.6	32.3	3.5	0.0	31.6	31.7	54.0	22.4	22.3
2	2400.0	62.7	61.3	30.6	32.3	3.6	0.1	64.7	63.3	-	-	-
3	4804.0	36.9	35.4	35.7	31.6	4.8	0.1	45.9	44.4	54.0	8.1	9.6
4	7206.0	28.9	27.9	35.7	31.4	5.5	0.3	39.0	38.0	54.0	15.0	16.0
5	9608.0	24.9	25.2	38.5	31.9	6.4	0.7	38.6	38.9	54.0	15.4	15.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	24020.0	32.3	32.1	39.1	30.7	10.6	0.0	41.8	41.6	54.0	12.2	12.4

20dBc(Fundamental 2412MHz) (RBW: 100kHz, VBW: 300kHz)

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit 20dBc [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2402.0	99.3	96.6	30.6	32.3	3.6	0.0	101.2	98.5	-	-	-
2	2400.0	53.1	50.9	30.6	32.3	3.5	0.0	54.9	52.7	Funda-20dB	26.3	25.8

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.

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

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

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

Radiated Spurious Emission (above 1GHz)

UL Apex Co., Ltd.
 Head Office EMC Lab. No.2Semi Anechoic Chamber

Company	: DENSO WAVE INCORPORATED	REPORT NO	: 27DE0137-HO
Equipment	: Barcode Handy Terminal	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model	: BHT-470BWB-CE	TEST DISTANCE	: 3/1m
Sample No.	: 549631034660007	DATE	: 11/28/2006
Power	: DC3.7 V	TEMPERATURE	: 26deg.C
Mode	: Bluetooth Tx 2441MHz	HUMIDITY	: 46%
Remarks	: Hor Z , Ver Y-axis	ENGINEER	: Makoto Kosaka

PK DETECT (RBW: 1MHz, VBW: 1MHz)												
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	4882.0	46.0	43.2	36.2	31.6	4.8	0.0	55.4	52.6	74.0	18.6	21.4
2	7323.0	36.2	35.1	36.0	31.4	5.6	0.4	46.8	45.7	74.0	27.2	28.3
3	9764.0	35.2	34.9	38.7	32.0	6.4	0.7	49.0	48.7	74.0	25.0	25.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	24410.0	40.2	40.8	39.1	30.6	10.8	0.0	50.0	50.6	74.0	24.0	23.4

AV DETECT (RBW: 1MHz, VBW: 10Hz)												
No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	4882.0	38.4	35.2	36.2	31.6	4.8	0.0	47.8	44.6	54.0	6.2	9.4
2	7323.0	28.9	27.2	36.0	31.4	5.6	0.4	39.5	37.8	54.0	14.5	16.2
3	9764.0	29.8	29.9	38.7	32.0	6.4	0.7	43.6	43.7	54.0	10.4	10.3
4												
4	24410.0	31.9	31.8	39.1	30.6	10.8	0.0	41.7	41.6	54.0	12.3	12.4

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.
 *In the frequency over the fifth harmonic, the noise from the EUT was not seen. The data above is its base noise.
 *The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.
 *Hi-Pass Filter was not used for factor 0.0dB of the above table.

Radiated Spurious Emission (above 1GHz)

UL Apex Co., Ltd.
Head Office EMC Lab. No.2Semi Anechoic Chamber

Company : DENSO WAVE INCORPORATED
Equipment : Barcode Handy Terminal
Model : BHT-470BWB-CE
Sample No. : 5496310346600007
Power : DC3.7 V
Mode : Bluetooth Tx 2480MHz
Remarks : Hor Z , Ver Y-axis

REPORT NO : 27DE0137-HO
REGULATION : FCC15.247(d)/RSS-210A8.5
TEST DISTANCE : 3/1m
DATE : 11/28/2006
TEMPERATURE : 26deg.C
HUMIDITY : 46%
ENGINEER : Makoto Kosaka

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2483.5	59.4	59.7	30.4	32.3	3.5	0.0	61.0	61.3	74.0	13.0	12.7
1	4960.0	42.0	43.0	36.6	31.6	4.9	0.0	51.9	52.9	74.0	22.1	21.1
2	7440.0	35.9	36.1	36.2	31.4	5.7	0.5	46.9	47.1	74.0	27.1	26.9
3	9920.0	35.8	34.9	38.9	32.0	6.4	0.7	49.8	48.9	74.0	24.2	25.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	24800.0	41.0	40.9	39.3	30.5	11.0	0.0	51.3	51.2	74.0	22.7	22.8

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR [dBuV]	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2483.5	48.7	48.9	30.4	32.3	3.5	0.0	50.3	50.5	54.0	3.7	3.5
1	4960.0	30.4	31.5	36.6	31.6	4.9	0.0	40.3	41.4	54.0	13.7	12.6
2	7440.0	28.9	27.9	36.2	31.4	5.7	0.5	39.9	38.9	54.0	14.1	15.1
3	9920.0	28.7	28.9	38.9	32.0	6.4	0.7	42.7	42.9	54.0	11.3	11.1
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	24800.0	32.3	33.2	39.3	30.5	11.0	0.0	42.6	43.5	54.0	11.4	10.5

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.

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

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

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

Radiated Spurious Emission (above 1GHz)

UL Apex Co., Ltd
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company	: DENSO WAVE INCORPORATED	REPORT NO	: 27DE0137-HO
Equipment	: Barcode Handy Terminal	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model	: BHT-470BWB-CE	TEST DISTANCE	: 3/1m
Sample No.	: 549631034660007	DATE	: 11/28/2006
Power	: DC3.7V	TEMPERATURE	: 26deg.C
Mode	: Bluetooth Rx 2441MHz	HUMIDITY	: 46%
Remarks	: H:Z, Ver Y-axis	ENGINEER	: Mikoto Kosaka

PKDETECT (RBW: 1MHz, VBW: 1MHz)

No.	FREQ [MHz]	S/READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	H-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading+ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2076.0	36.0	39.0	31.2	32.5	3.1	0.0	37.8	40.8	74.0	36.2	33.2
2	2441.0	36.7	35.9	30.5	32.3	3.6	0.0	38.5	37.7	74.0	35.5	36.3
3	7515.0	35.6	36.2	38.3	31.4	5.8	0.0	48.3	48.9	74.0	25.7	25.1

AVDETECT (RBW: 1MHz, VBW: 10Hz)

No.	FREQ [MHz]	S/READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	H-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading+ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	2076.0	24.5	24.5	31.2	32.5	3.1	0.0	26.3	26.3	54.0	27.7	27.7
2	2441.0	24.7	23.4	30.5	32.3	3.6	0.0	26.5	25.2	54.0	27.5	28.8
3	7515.0	26.2	24.2	38.3	31.4	5.8	0.0	38.9	36.9	54.0	15.1	17.1

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

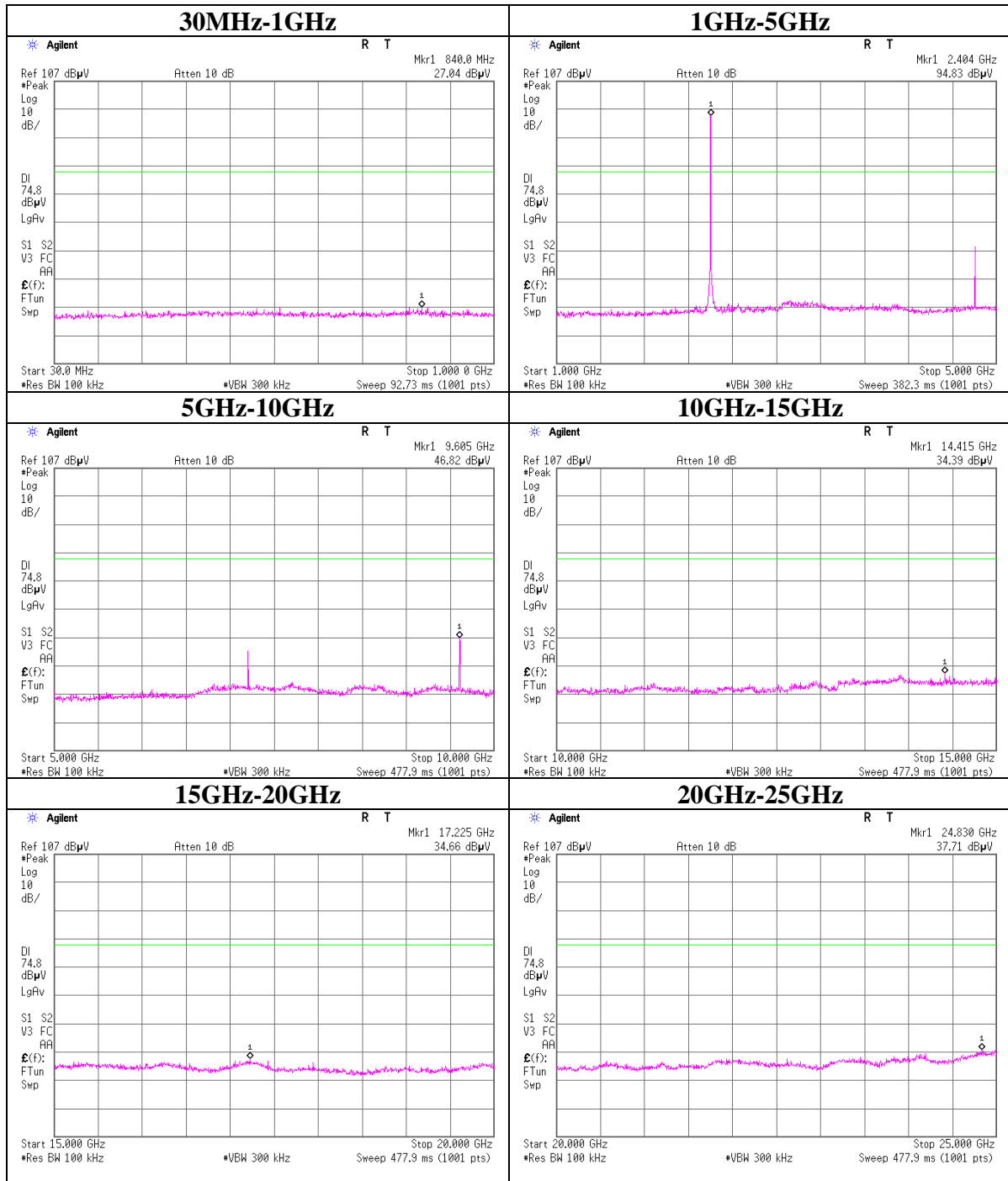
*Except for the above table: All other spurious emissions were less than 20dB for the limit.

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

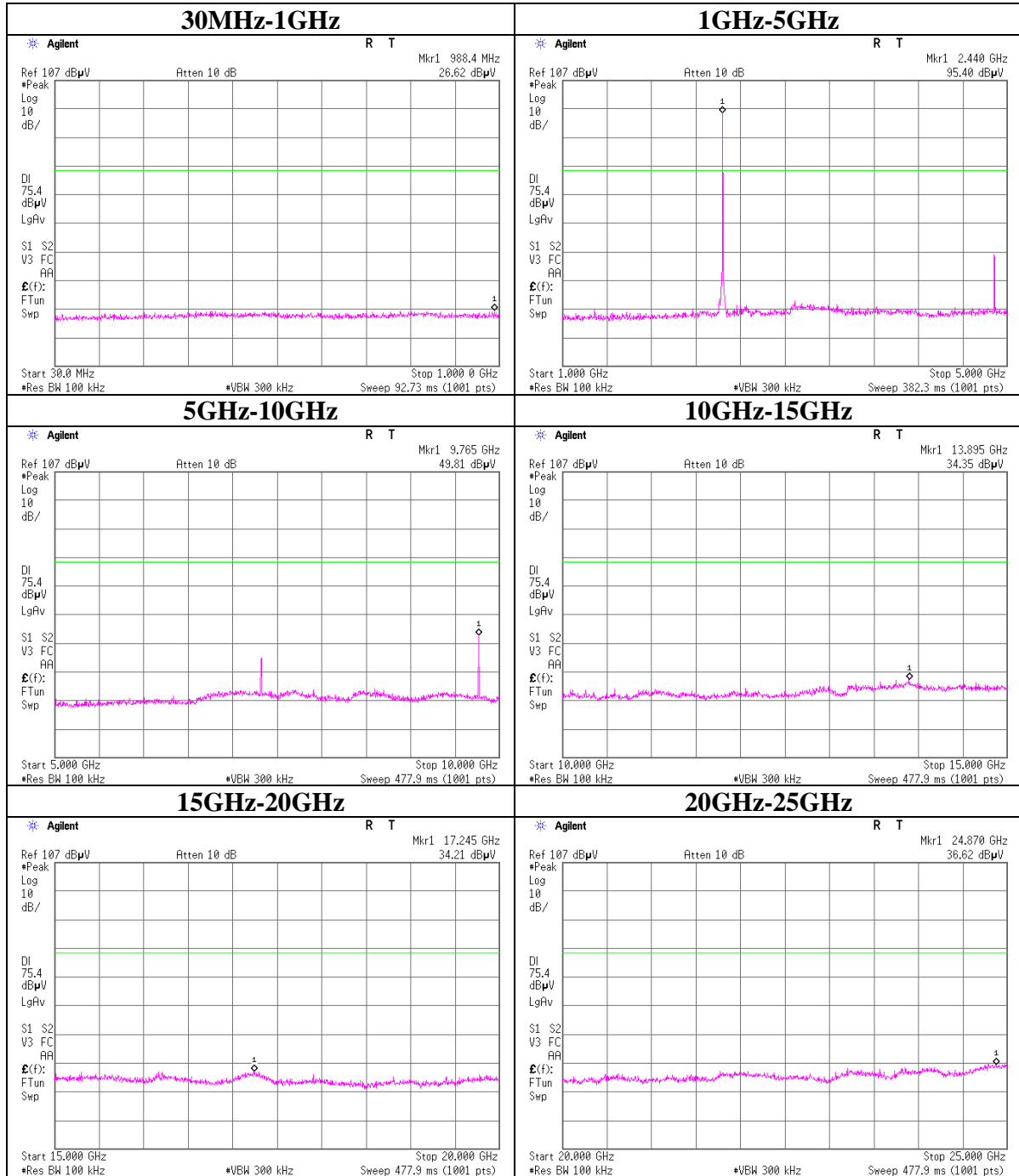
*The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

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

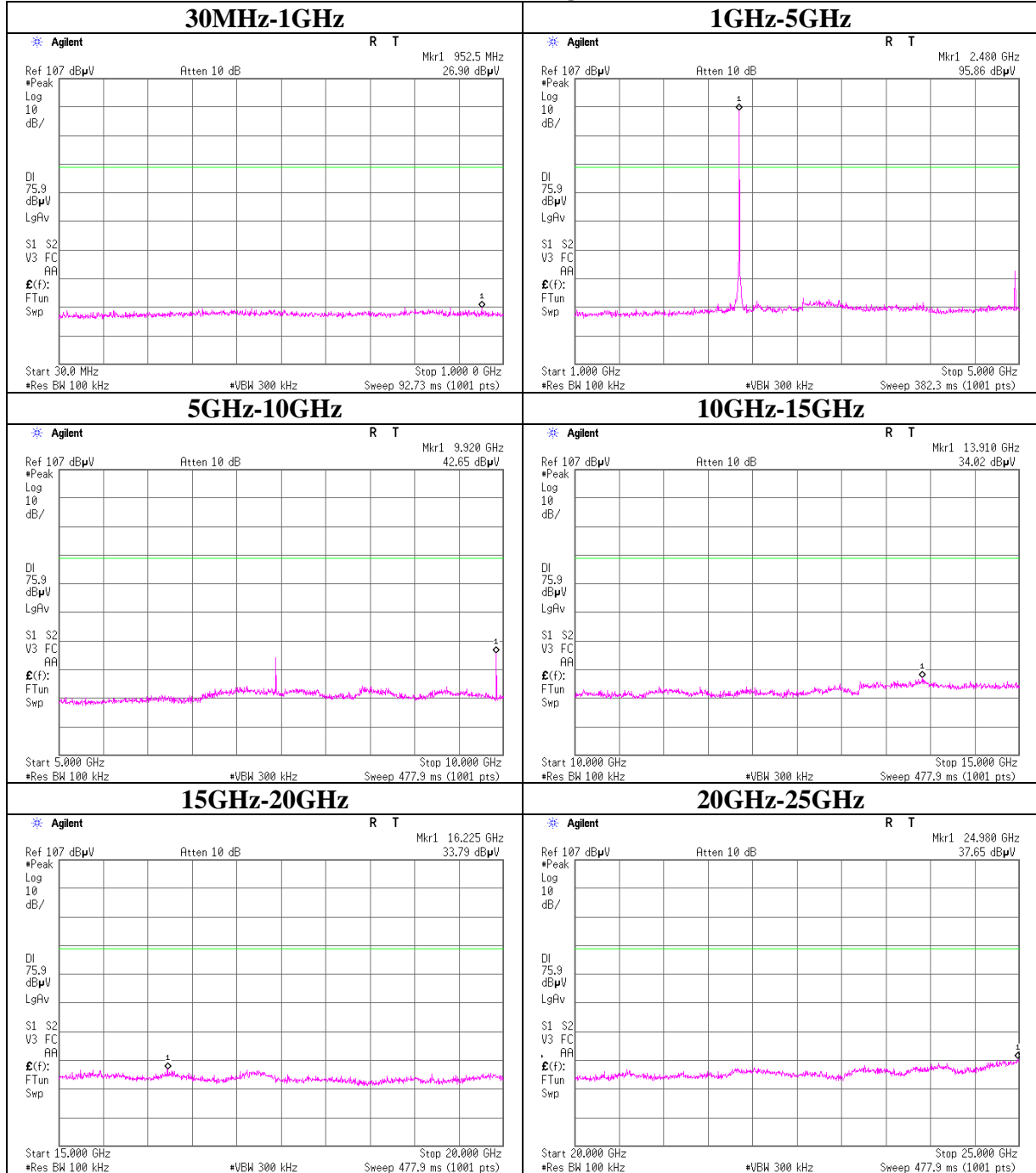
Conducted Spurious Emission
Ch:BT Low



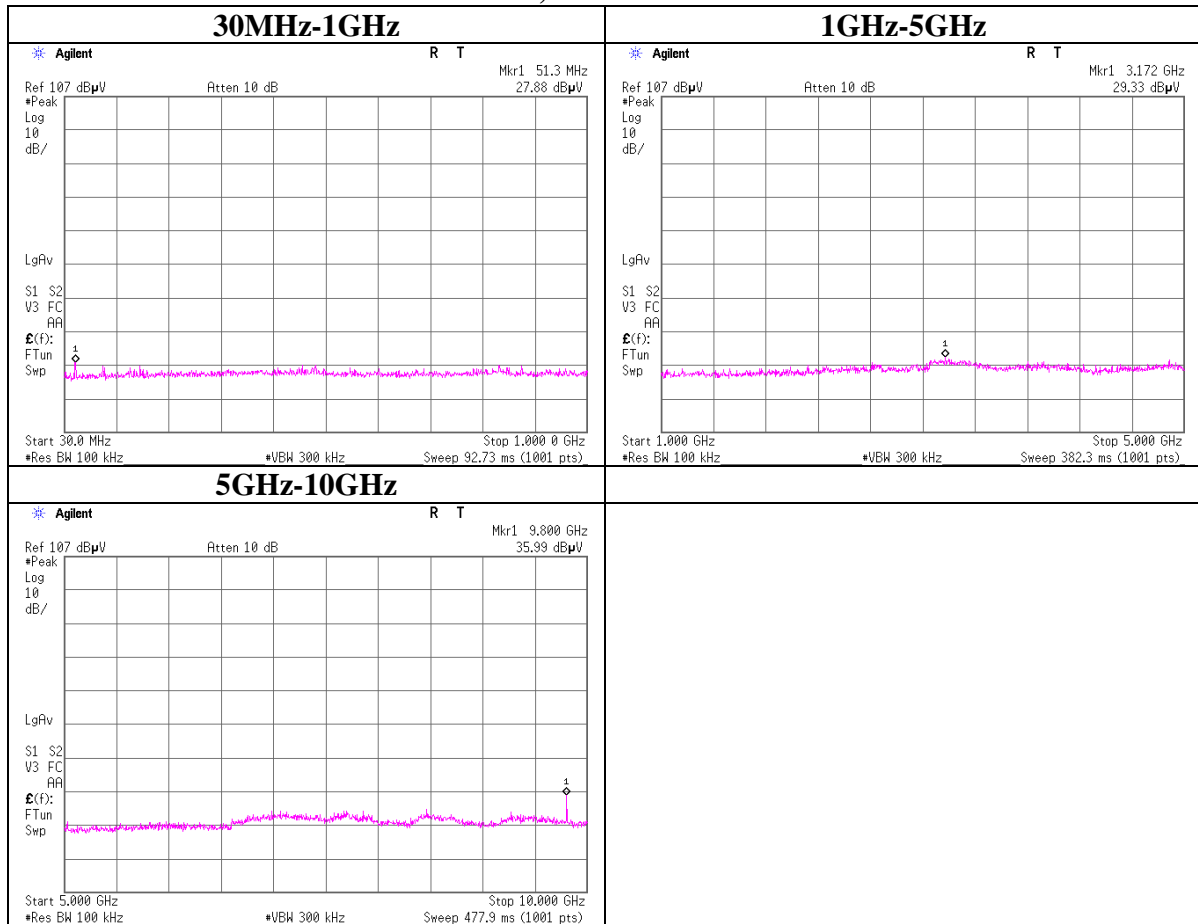
Conducted Spurious Emission
Ch:BT Mid



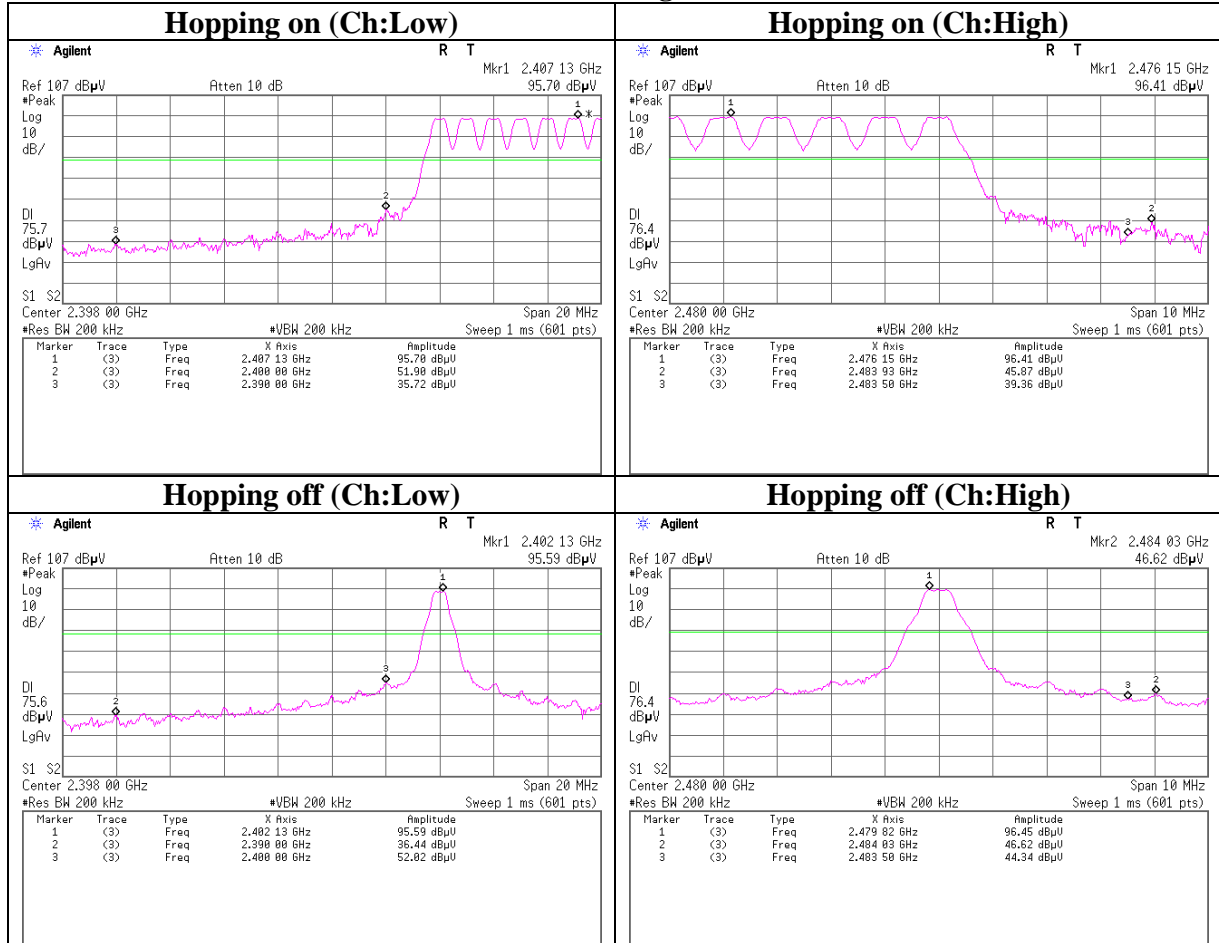
Conducted Spurious Emission
Ch:BT High



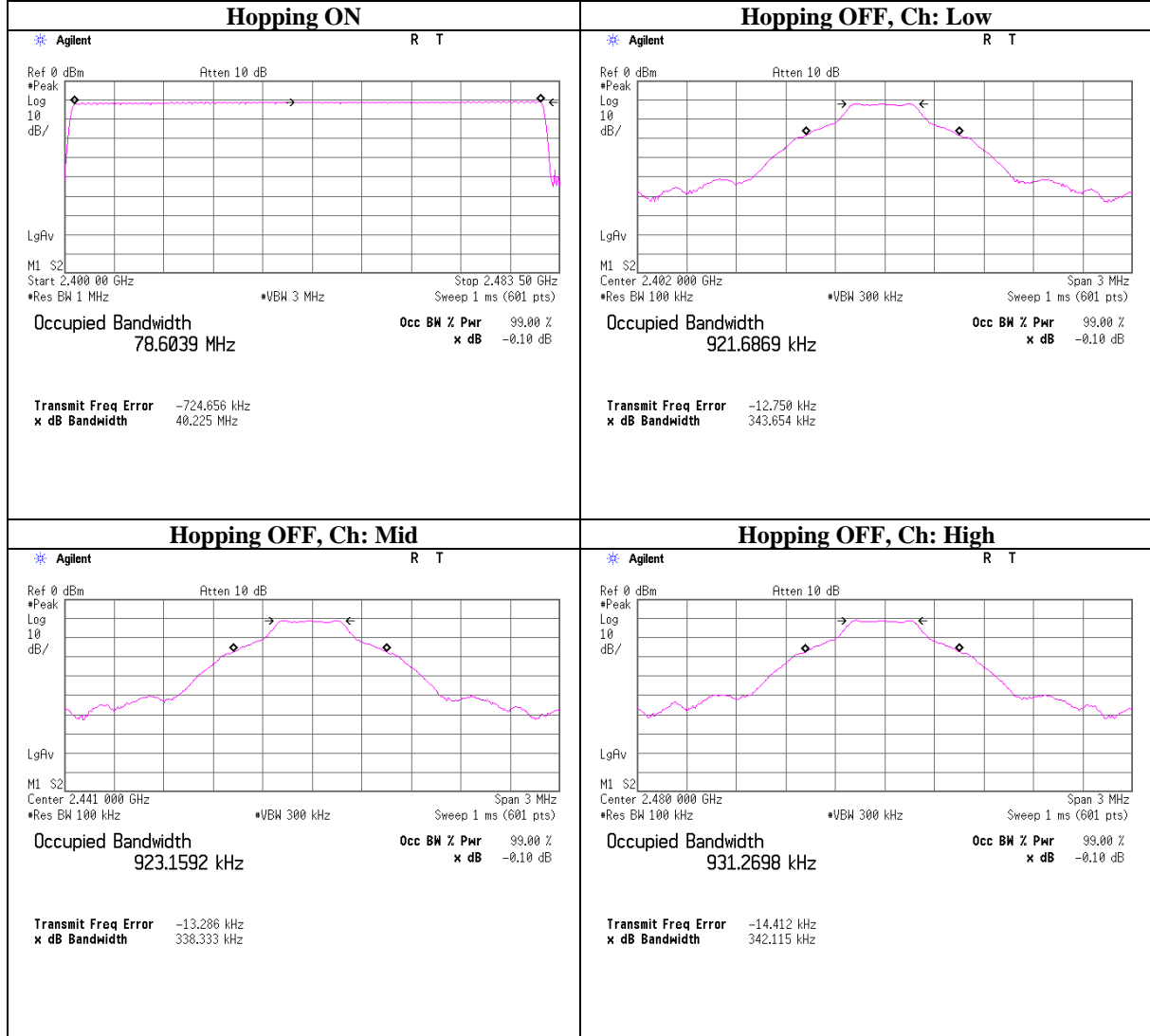
Conducted Spurious Emission
Rx, Ch:BT Mid



Conducted Spurious Emission Band Edge



99% Occupied Bandwidth(BT)



APPENDIX 3:Test instruments

EMI test equipment (1/2)

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-04	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	CE	2006/03/06 * 12
MLS-02	LISN(AMN)	Schwarzbeck	NSLK8127	CE(EUT)	2006/06/01 * 12
MLS-03	LISN(AMN)	Schwarzbeck	NSLK8127	CE(AE)	2006/06/01 * 12
MTA-02	Terminator	TME	CT-01	CE	2007/02/01 * 12
MCC-50	Coaxial cable	UL Apex	-	CE	2006/03/09 * 12
MSA-09	Spectrum Analyzer	Advantest	R3273	CE	2006/12/08 * 12
TR-07	Test Receiver	Rohde & Schwarz	ESCS30	CE	2006/09/12 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	CE	2006/01/19 * 24
MJM-07	Measure	PROMART	SEN1955	CE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	CE/RE	-
MSA-03	Spectrum Analyzer	Agilent	E4448A	RE/AT	2006/09/13 * 12
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2006/04/10 * 12
MPA-10	Pre Amplifier	Agilent	8449B	RE	2006/09/11 * 12
MCC-47	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	RE	2006/08/29 * 12
MCC-16	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2006/02/02 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2006/01/09 * 12
MHF-06	High Pass Filter 3.5-24GHz	Tokimec	TF323DCA	RE	2006/05/20 * 12
MOS-02	Digital Humidity Indicator	N.T	NT-1800	RE	2006/11/27 * 12
MRENT-39	Spectrum Analyzer	Advantest	R3273	RE	2006/07/25 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2006/02/23 * 12
MPA-09	Pre Amplifier	Agilent	8447D	RE	2006/09/07 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2005/12/16 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2006/10/07 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2006/10/07 * 12

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MF060b(14.06.06)

EMI test equipment (2/2)

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MCC-22	Microwave Cable 1G-40GHz	Storm	421-011 (90-011-080)	AT	2006/05/12 * 12
MCC-26	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	AT	2006/08/29 * 12
MAT-23	Attenuator(10dB) DC-18GHz	Orient Microwave	BX10-0476-00	AT	2006/03/18 * 12
MPM-08	Power Meter	Anritsu	ML2495A	AT	2006/09/20 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	AT	2006/09/20 * 12
MOS-12	Thermo-Hygrometer	Custom	CTH-180	AT	2006/01/19 * 24
MAT-20	Attenuator(10dB)(above1 GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	AT	2006/01/10 * 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.

Test Item:

CE: Conducted emission

RE: Spurious emission

AT: Antenna Terminal Conducted test

* Some calibrations were performed after the tested dates, however those EMI test equipment have been controlled by means of unbroken chains of calibrations.

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MF060b(14.06.06)