

APPENDIX 2: Data of EMI test

Carrier Frequency Separation

Company	FUJITSU TEN LIMITED	UL Japan, Inc.	
Equipment	Car navigation	Head Office EMC Lab. No.6 & 11 Measurement room	
Model	FT0005A	Regulation	FCC15.247(a)(1) / RSS-210 A8.1(b)
S/N	1	Test Distance	-
Power	DC 13.2V	Date	01/09/2009 01/15/2009
Mode	Bluetooth Tx Hopping On / Inquiry	Temperature	24 deg.C. 21 deg.C.
		Humidity	37 % 28 %
		Engineer	Kazufumi Nakai Kazufumi Nakai

Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.000	0.577 [MHz] (two-thirds of 20dB Bandwidth (0.865 [MHz])) or 25[kHz] (whichever is grater)
Mid	2441.0	1.000	0.575 [MHz] (two-thirds of 20dB Bandwidth (0.863 [MHz])) or 25[kHz] (whichever is grater)
High	2480.0	1.000	0.578 [MHz] (two-thirds of 20dB Bandwidth (0.867 [MHz])) or 25[kHz] (whichever is grater)
Inquiry	2441.0	2.000	0.496 [MHz] (two-thirds of 20dB Bandwidth (0.744 [MHz])) or 25[kHz] (whichever is grater)

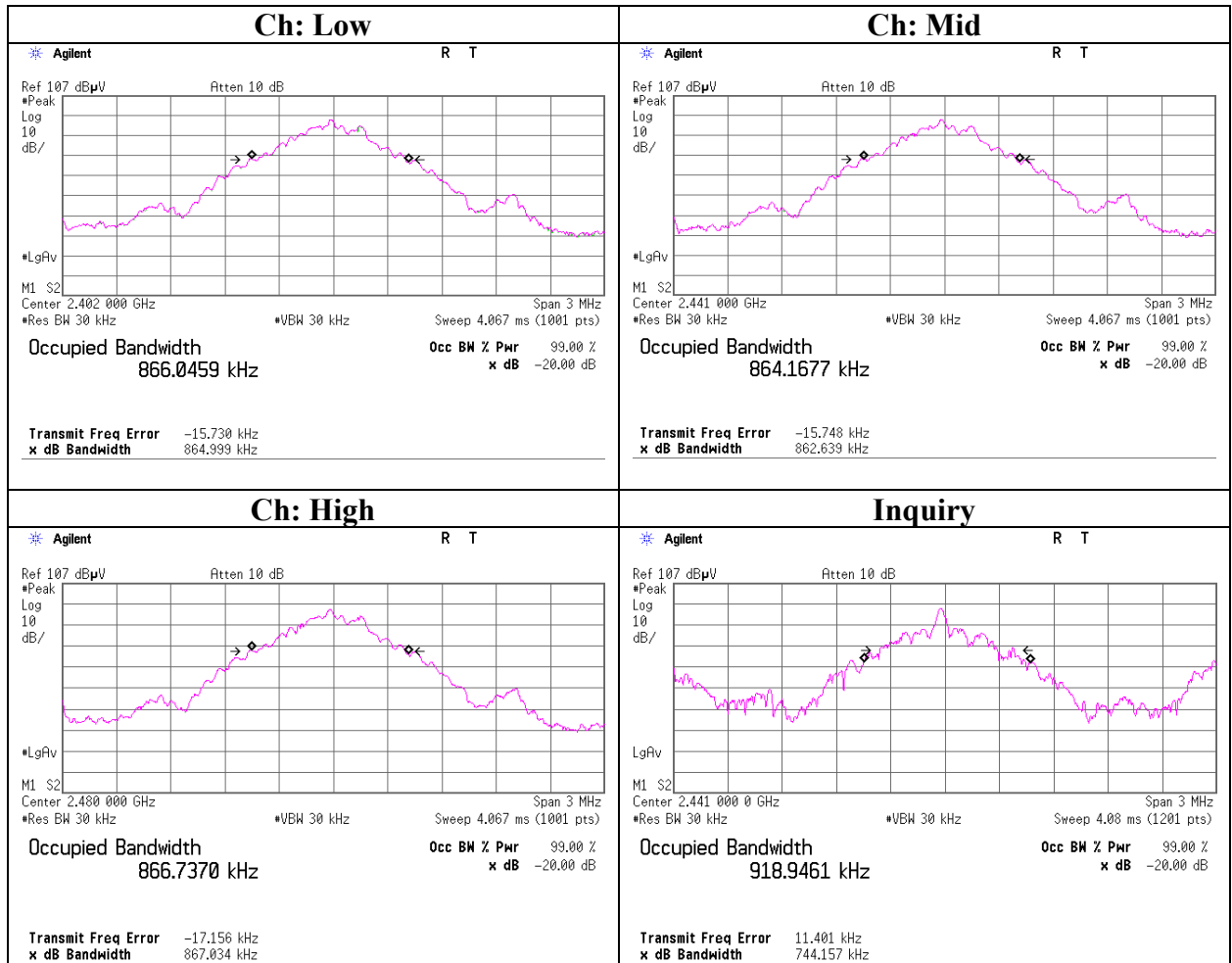
20dB Bandwidth

UL Japan, Inc.
Head Office EMC Lab. No.6 & 11 Measurement room

Company	FUJITSU TEN LIMITED	Regulation	FCC15.247(a)(1) / RSS-210 A8.1(a)
Equipment	Car navigation	Test Distance	-
Model	FT0005A	Date	01/09/2009 01/15/2009
S/N	1	Temperature	24 deg.C. 22 deg.C.
Power	DC 13.2V	Humidity	37 % 28 %
Mode	Bluetooth Tx Hopping Off / Inquiry	Engineer	Kazufumi Nakai Kazufumi Nakai

Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.865	-
Mid	2441.0	0.863	-
High	2480.0	0.867	-
Inquiry	2441.0	0.744	-

20dB Bandwidth



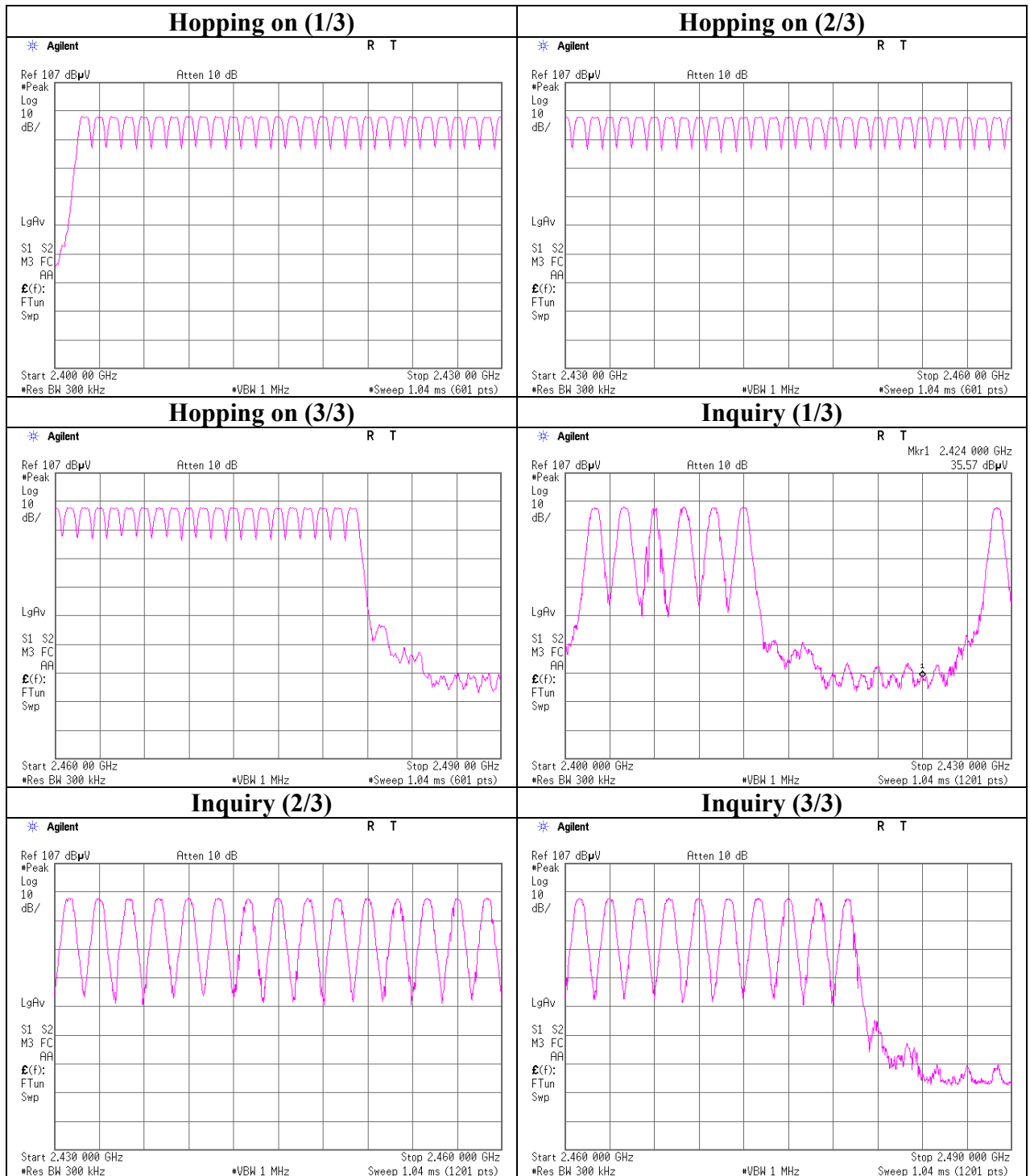
Number of Hopping Frequency

Company	FUJITSU TEN LIMITED	UL Japan, Inc.
Equipment	Car navigation	Head Office EMC Lab. No.6 & 11 Measurement room
Model	FT0005A	Regulation FCC15.247(a)(1)(iii) / RSS-210 A8.1(d)
S/N	1	Test Distance -
Power	DC 13.2V	Date 01/09/2009 01/15/2009
Mode	Bluetooth Tx Hopping On / Inquiry	Temperature 24 deg.C. 22 deg.C.
		Humidity 37 % 28 %
		Engineer Kazufumi Nakai Kazufumi Nakai

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

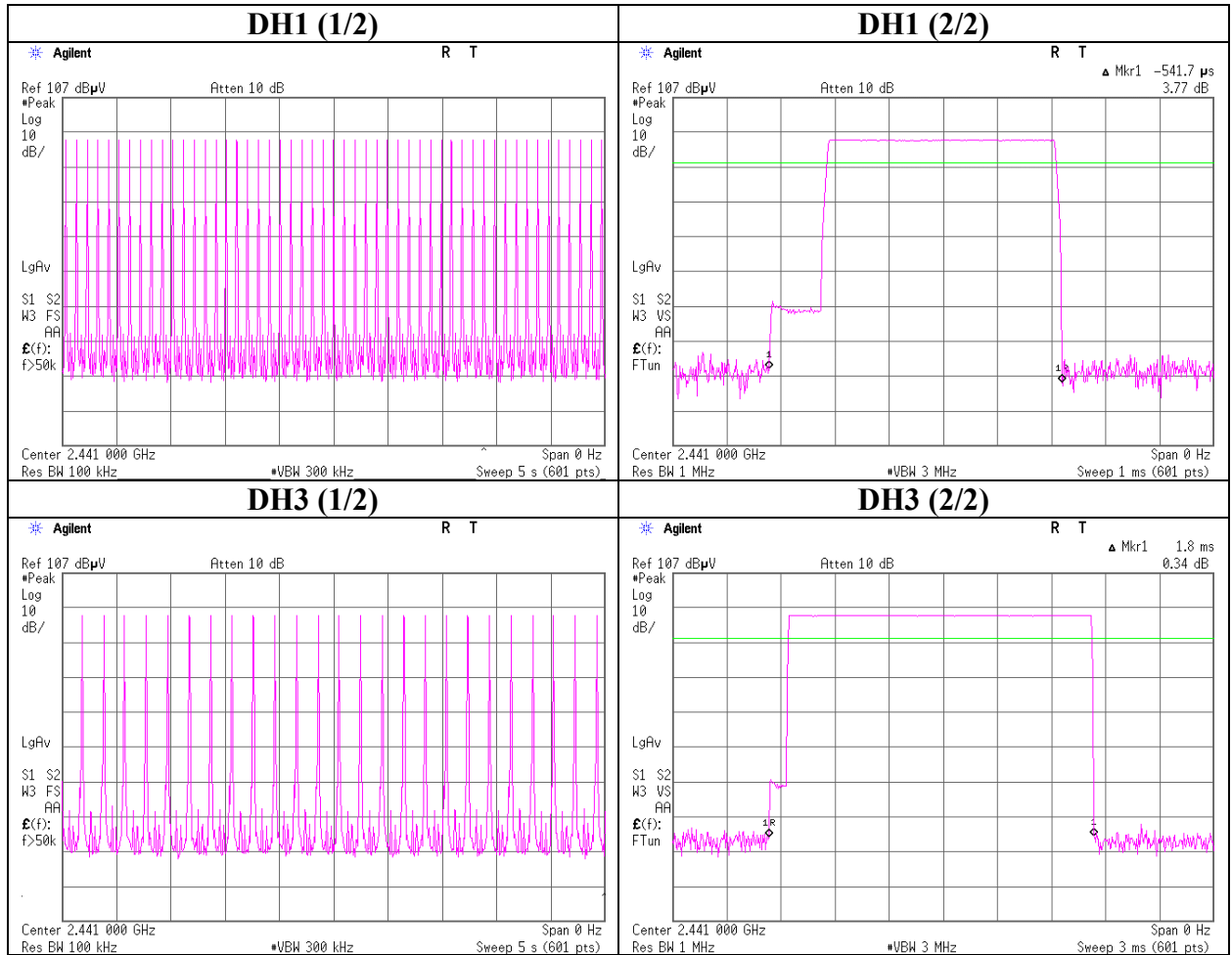


Dwell time

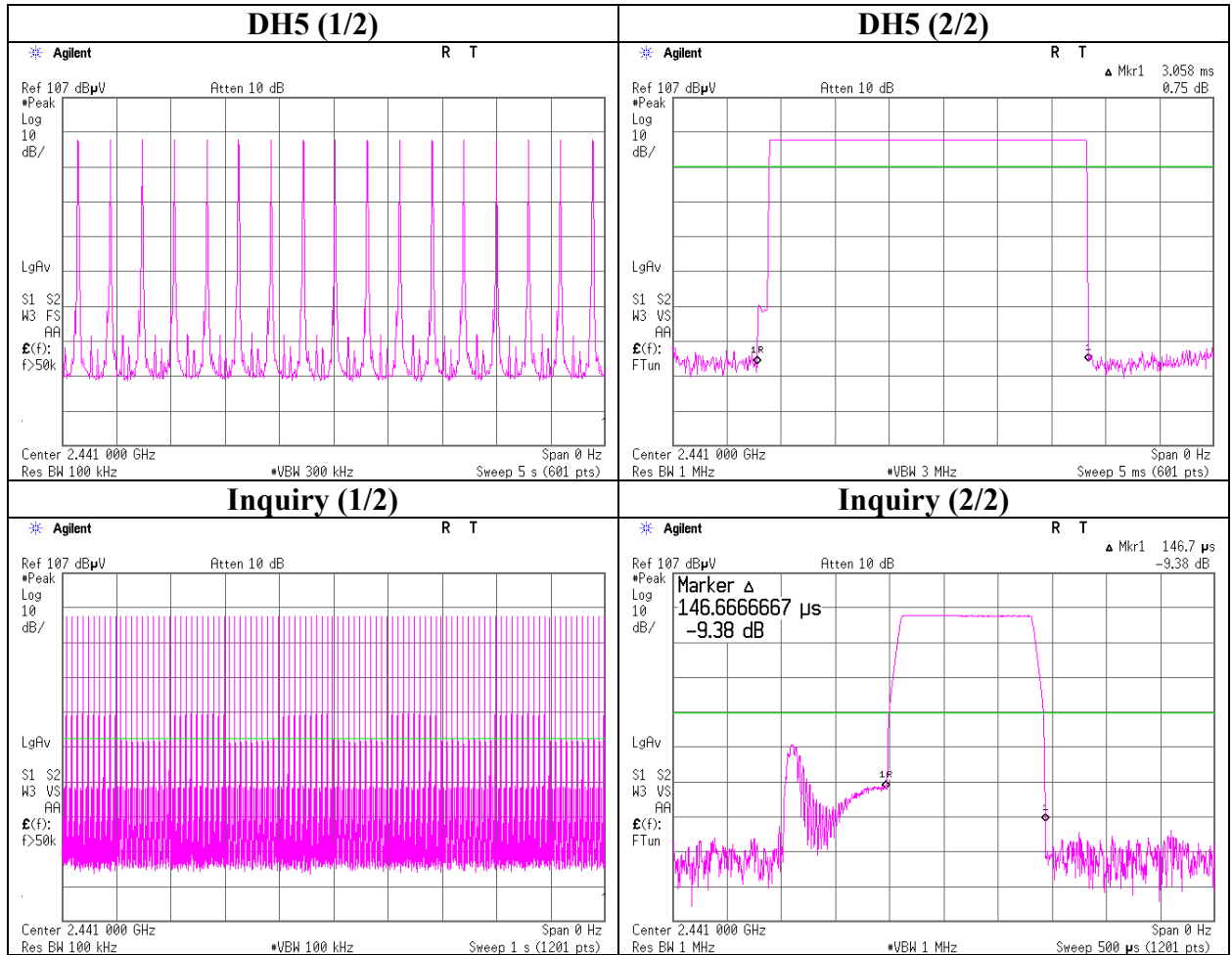
		UL Japan, Inc.
Company	FUJITSU TEN LIMITED	Head Office EMC Lab. No.6 & 11 Measurement room
Equipment	Car navigation	Regulation FCC15.247(a)(1)(iii) / RSS-210 A8.1(d)
Model	FT0005A	Test Distance -
S/N	1	Date 01/09/2009 01/15/2009
Power	DC 13.2V	Temperature 24 deg.C. 22 deg.C.
Mode	Bluetooth Tx Hopping On / Inquiry	Humidity 37 % 28 %
		Engineer Kazufumi Nakai Kazufumi Nakai

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	0.542	175	400
DH3	25 times / 5 sec. x 31.6 sec. = 158 times	1.800	284	400
DH5	17 times / 5 sec. x 31.6 sec. = 108 times	3.058	330	400
Inquiry	100 times / 1 sec. x 12.8 sec. = 1280 times	0.147	188	400

Dwell time



Dwell time



Maximum Peak Output Power

		UL Japan, Inc.	
Company	FUJITSU TEN LIMITED	Head Office EMC Lab. No.2 Measurements Room	
Equipment	Car navigation	Regulation	FCC15.247(b)(1) / RSS-210 A8.4(2)
Model	FT0005A	Test Distance	-
S/N	1	Date	01/14/2008
Power	DC 13.2V	Temperature	20 deg.C.
Mode	Bluetooth Tx Hopping Off / Inquiry	Humidity	31 %
		Engineer	Takeshi Choda

Ch	Freq. [MHz]	P/M (PK) Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result		Limit		Margin [dB]
					[dBm]	[mW]	[dBm]	[mW]	
Low	2402.0	-11.56	2.07	10.22	0.73	1.18	20.96	125	20.23
Mid	2441.0	-11.58	2.08	10.22	0.72	1.18	20.96	125	20.24
High	2480.0	-11.66	2.09	10.22	0.65	1.16	20.96	125	20.31
Inquiry	2441.0	-11.83	2.08	10.22	0.47	1.11	20.96	125	20.49

Sample Calculation:

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

*The limit is rounded down to two decimal place.

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

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

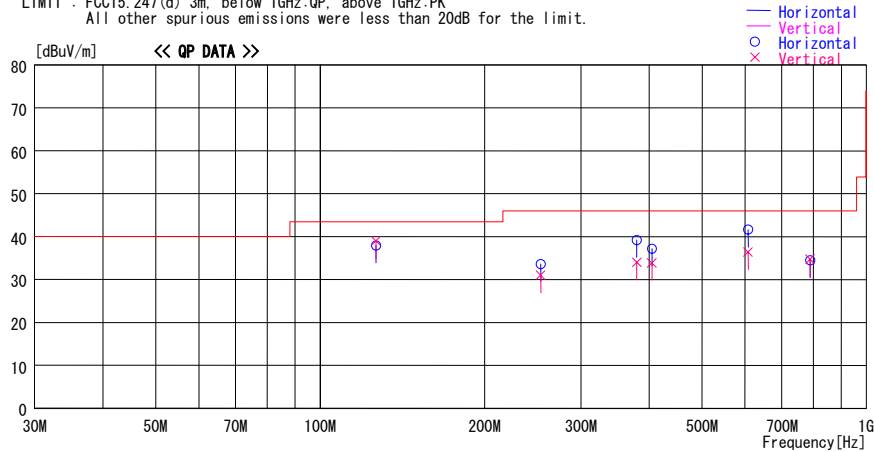
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber
Date : 2009/01/18

Company : FUJITSU TEN LIMITED
Kind of EUT : Car navigation
Model No. : FT0005A
Serial No. : 2
Report No. : 29BE0265-HO-01
Power : DC 13.2V
Temp./Humi. : 20deg.C / 33%
Engineer : Takayuki Shimada

Mode / Remarks : BT DHS Tx 2402MHz, Normal-axis

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
126.618	48.2	QP	13.2	-23.5	37.9	236	151	Hori.	43.5	5.6
126.598	49.3	QP	13.2	-23.5	39.0	278	100	Vert.	43.5	4.5
253.180	38.9	QP	17.1	-22.4	33.6	279	130	Hori.	46.0	12.4
253.180	36.3	QP	17.1	-22.4	31.0	22	100	Vert.	46.0	15.0
379.843	43.1	QP	17.7	-21.6	39.2	117	100	Hori.	46.0	6.8
379.883	37.9	QP	17.7	-21.6	34.0	156	118	Vert.	46.0	12.0
404.674	40.7	QP	17.9	-21.4	37.2	126	100	Hori.	46.0	8.8
404.719	37.4	QP	17.9	-21.4	33.9	345	126	Vert.	46.0	12.1
607.471	41.7	QP	20.1	-20.2	41.6	31	100	Hori.	46.0	4.4
607.471	36.5	QP	20.1	-20.2	36.4	351	121	Vert.	46.0	9.6
788.776	30.4	QP	23.0	-18.9	34.5	53	116	Hori.	46.0	11.5
788.771	30.6	QP	23.0	-18.9	34.7	0	100	Vert.	46.0	11.3

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

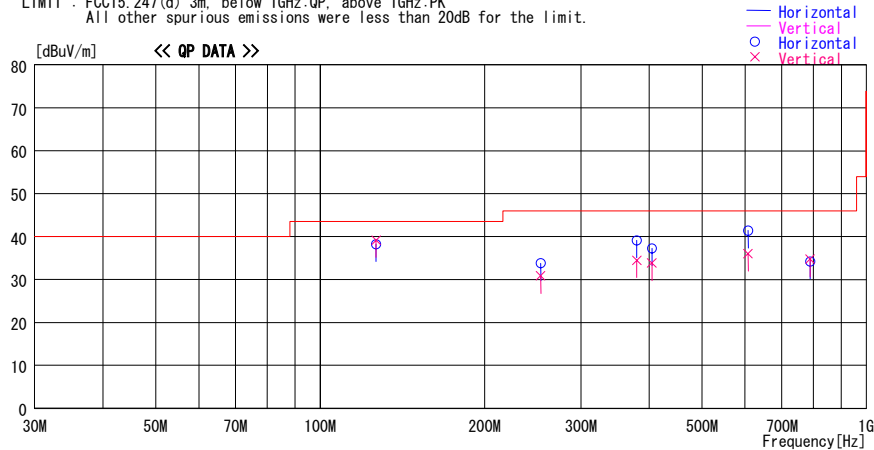
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No. 4 Semi Anechoic Chamber
Date : 2009/01/18

Company : FUJITSU TEN LIMITED
Kind of EUT : Car navigation
Model No. : FT0005A
Serial No. : 2
Report No. : 29BE0265-HO-01
Power : DC 13.2V
Temp./Humi. : 20deg.C / 33%
Engineer : Takayuki Shimada

Mode / Remarks : BT DHS Tx 2441MHz, Normal-axis

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
126.642	48.5	QP	13.2	-23.5	38.2	247	154	Hori.	43.5	5.3
126.638	49.5	QP	13.2	-23.5	39.2	277	100	Vert.	43.5	4.3
253.226	39.1	QP	17.1	-22.4	33.8	276	137	Hori.	46.0	12.2
253.226	36.1	QP	17.1	-22.4	30.8	21	100	Vert.	46.0	15.2
379.908	43.0	QP	17.7	-21.6	39.1	134	100	Hori.	46.0	6.9
379.916	38.4	QP	17.7	-21.6	34.5	160	116	Vert.	46.0	11.5
404.672	40.8	QP	17.9	-21.4	37.3	121	100	Hori.	46.0	8.7
404.668	37.3	QP	17.9	-21.4	33.8	346	122	Vert.	46.0	12.2
607.472	41.5	QP	20.1	-20.2	41.4	30	100	Hori.	46.0	4.6
607.472	36.1	QP	20.1	-20.2	36.0	351	126	Vert.	46.0	10.0
788.767	30.1	QP	23.0	-18.9	34.2	52	115	Hori.	46.0	11.8
788.770	30.6	QP	23.0	-18.9	34.7	0	100	Vert.	46.0	11.3

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

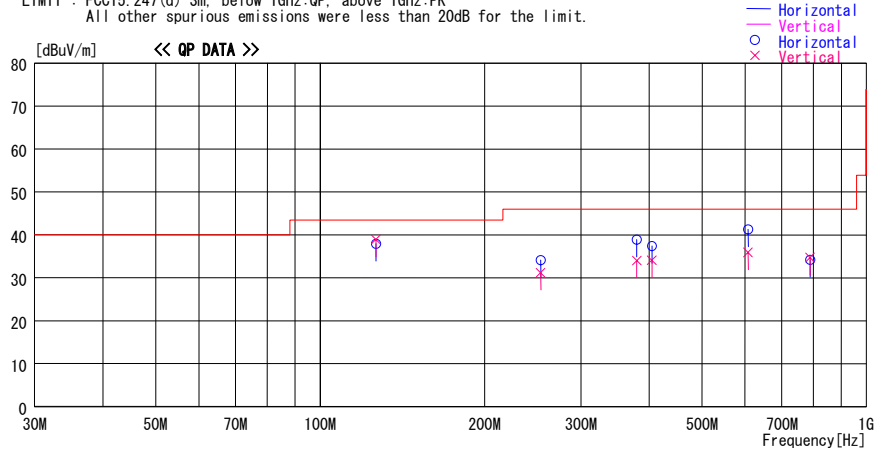
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.4 Semi Anechoic Chamber
Date : 2009/01/18

Company : FUJITSU TEN LIMITED
Kind of EUT : Car navigation
Model No. : FT0005A
Serial No. : 2
Report No. : 29BE0265-HO-01
Power : DC 13.2V
Temp./Humi. : 20deg. C / 33%
Engineer : Takayuki Shimada

Mode / Remarks : BT DH5 Tx 2480MHz, Normal-axis

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna		Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Loss& Gain [dB]						
126.598	48.2	OP	13.2	-23.5	37.9	241	160	Hori.	43.5	5.6
126.594	49.2	OP	13.2	-23.5	38.9	273	100	Vert.	43.5	4.6
253.188	39.4	OP	17.1	-22.4	34.1	283	138	Hori.	46.0	11.9
253.186	36.5	OP	17.1	-22.4	31.2	22	100	Vert.	46.0	14.8
379.821	42.8	OP	17.7	-21.6	38.9	117	100	Hori.	46.0	7.1
379.857	37.9	OP	17.7	-21.6	34.0	155	124	Vert.	46.0	12.0
404.667	40.9	OP	17.9	-21.4	37.4	122	100	Hori.	46.0	8.6
404.667	37.6	OP	17.9	-21.4	34.1	347	124	Vert.	46.0	11.9
607.475	41.4	OP	20.1	-20.2	41.3	34	100	Hori.	46.0	4.7
607.476	36.0	OP	20.1	-20.2	35.9	348	126	Vert.	46.0	10.1
788.774	30.1	OP	23.0	-18.9	34.2	53	115	Hori.	46.0	11.8
788.771	30.6	OP	23.0	-18.9	34.7	0	100	Vert.	46.0	11.3

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)
Rx, Ch: Mid

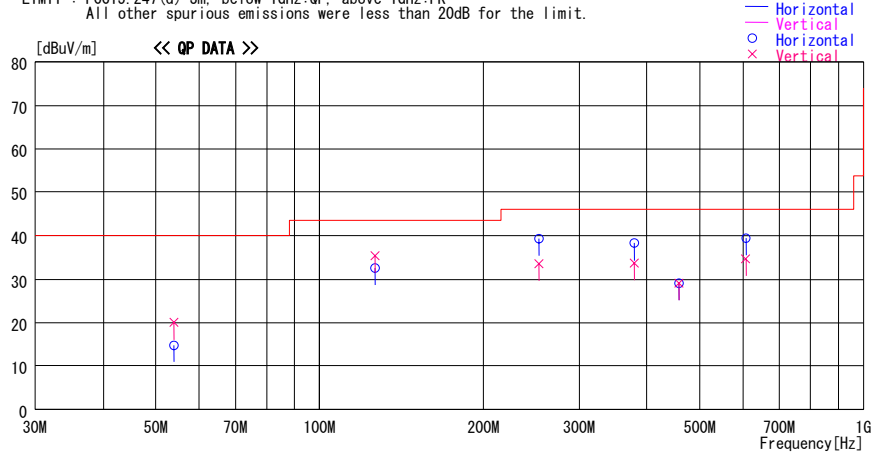
DATA OF RADIATED EMISSION TEST

UL Japan, Inc. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2009/01/08

Company : FUJITSU TEN LIMITED
Kind of EUT : Car navigation
Model No. : FT0005A
Serial No. : 2
Report No. : 29BE0265-HO-01
Power : DC 13.2V
Temp./Humi. : 23deg.C / 45%
Engineer : Takeshi Choda

Mode / Remarks : BT Rx 2441MHz, Normal-axis

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



Frequency [MHz]	Reading [dBuV]	DET	Antenna	Loss&	Level [dBuV/m]	Polar.	Limit [dBuV/m]	Margin [dB]
			Factor [dB/m]	Gain [dB]				
54.001	27.1	QP	9.5	-21.7	14.9	Hori.	40.0	25.1
53.999	32.3	QP	9.5	-21.7	20.1	Vert.	40.0	19.9
126.580	39.8	QP	13.5	-20.7	32.6	Hori.	43.5	10.9
126.638	42.6	QP	13.5	-20.7	35.4	Vert.	43.5	8.1
253.180	41.2	QP	17.4	-19.3	39.3	Hori.	46.0	6.7
253.240	35.5	QP	17.4	-19.3	33.6	Vert.	46.0	12.4
379.957	36.2	QP	16.6	-19.1	33.7	Vert.	46.0	12.3
379.717	40.8	QP	16.6	-19.1	38.3	Hori.	46.0	7.7
458.517	30.3	QP	18.1	-19.3	29.1	Hori.	46.0	16.9
458.517	30.3	QP	18.1	-19.3	29.1	Vert.	46.0	16.9
607.476	34.1	QP	19.3	-18.7	34.7	Vert.	46.0	11.3
607.470	38.9	QP	19.3	-18.7	39.5	Hori.	46.0	6.5

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.

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

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

Company	: FUJITSU TEN LIMITED	REPORT NO	: 29BE0265-HO-01
Equipment	: Car navigation	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: FT0005A	TEST DISTANCE	: 3/1m
Sample No.	: 2	DATE	: 01/18/2009
Power	: DC 13.2V	TEMPERATURE	: 20deg.C.
Mode	: Bluetooth, Tx 2402MHz(DH5)	HUMIDITY	: 33%
Remarks	: Normal Axis	ENGINEER	: Takayuki Shimada

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1519.5	55.5	50.9	25.7	33.3	2.3	0.0	50.2	45.6	73.9	23.7	28.3
2	1575.4	42.3	42.4	25.8	33.2	2.3	0.0	37.2	37.3	73.9	36.7	36.6
3	2390.0	42.0	41.9	27.2	32.2	2.8	0.0	39.8	39.7	73.9	34.1	34.2
4	2400.0	50.0	50.0	27.2	32.2	2.8	0.0	47.8	47.8	73.9	26.1	26.1
5	4804.0	39.3	39.2	31.5	30.9	3.8	0.0	43.7	43.6	73.9	30.2	30.3
6	7206.0	40.0	40.2	36.0	32.0	4.2	0.0	48.2	48.4	73.9	25.7	25.5
7	9608.0	39.7	39.8	38.3	32.4	4.9	0.0	50.5	50.6	73.9	23.4	23.3
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	12010.0	NS	NS	-	-	-	-	-	-	73.9	-	-
9	14412.0	NS	NS	-	-	-	-	-	-	73.9	-	-
10	16814.0	NS	NS	-	-	-	-	-	-	73.9	-	-
11	19216.0	NS	NS	-	-	-	-	-	-	73.9	-	-
12	21618.0	NS	NS	-	-	-	-	-	-	73.9	-	-
13	24020.0	44.8	44.6	38.4	31.0	8.4	0.0	51.1	50.9	73.9	22.8	23.0

AV DETECT (RBW: 1MHz, VBW: 270Hz or 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 ^{*)}	1519.5	42.8	38.7	25.7	33.3	2.3	0.0	37.5	33.4	53.9	16.4	20.5
2 ^{*)}	1575.4	29.3	29.2	25.8	33.2	2.3	0.0	24.2	24.1	53.9	29.7	29.8
3	2390.0	29.3	29.3	27.2	32.2	2.8	0.0	27.1	27.1	53.9	26.8	26.8
4	2400.0	38.6	38.6	27.2	32.2	2.8	0.0	36.4	36.4	53.9	17.5	17.5
5	4804.0	26.5	26.5	31.5	30.9	3.8	0.0	30.9	30.9	53.9	23.0	23.0
6	7206.0	27.3	27.1	36.0	32.0	4.2	0.0	35.5	35.3	53.9	18.4	18.6
7	9608.0	26.7	26.8	38.3	32.4	4.9	0.0	37.5	37.6	53.9	16.4	16.3
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
8	12010.0	NS	NS	-	-	-	-	-	-	53.9	-	-
9	14412.0	NS	NS	-	-	-	-	-	-	53.9	-	-
10	16814.0	NS	NS	-	-	-	-	-	-	53.9	-	-
11	19216.0	NS	NS	-	-	-	-	-	-	53.9	-	-
12	21618.0	NS	NS	-	-	-	-	-	-	53.9	-	-
13	24020.0	32.1	32.1	38.4	31.0	8.4	0.0	38.4	38.4	53.9	15.5	15.5

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 second 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.

*1) VBW : 10Hz

Radiated Spurious Emission (above 1GHz)
Tx, Ch: Mid

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

Company	: FUJITSU TEN LIMITED	REPORT NO	: 29BE0265-HO-01
Equipment	: Car navigation	REGULATION	: FCC 15.247(d)/RSS-210A8.5
Model No.	: FT0005A	TEST DISTANCE	: 3/1m
Sample No.	: 2	DATE	: 01/18/2009
Power	: DC 13.2V	TEMPERATURE	: 20deg.C.
Mode	: Bluetooth, Tx 2441MHz(DH5)	HUMIDITY	: 33%
Remarks	: Normal Axis	ENGINEER	: Takayuki Shimada

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1519.5	56.0	50.5	25.7	33.3	2.3	0.0	50.7	45.2	73.9	23.2	28.7
2	1575.4	42.2	42.4	25.8	33.2	2.3	0.0	37.1	37.3	73.9	36.8	36.6
3	4882.0	39.6	39.4	31.7	30.9	3.9	0.0	44.3	44.1	73.9	29.6	29.8
4	7323.0	40.1	40.1	36.1	32.1	4.2	0.0	48.3	48.3	73.9	25.6	25.6
5	9764.0	40.0	39.8	38.5	32.4	5.0	0.0	51.1	50.9	73.9	22.8	23.0
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12205.0	NS	NS	-	-	-	-	-	-	73.9	-	-
7	14646.0	NS	NS	-	-	-	-	-	-	73.9	-	-
8	17087.0	NS	NS	-	-	-	-	-	-	73.9	-	-
9	19528.0	NS	NS	-	-	-	-	-	-	73.9	-	-
10	21969.0	NS	NS	-	-	-	-	-	-	73.9	-	-
11	24410.0	43.7	43.6	38.6	31.0	8.4	0.0	50.2	50.1	73.9	23.7	23.8

AV DETECT (RBW: 1MHz, VBW: 270Hz or 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 ^{*1)}	1519.5	42.0	37.0	25.7	33.3	2.3	0.0	36.7	31.7	53.9	17.2	22.2
2 ^{*1)}	1575.4	29.0	29.1	25.8	33.2	2.3	0.0	23.9	24.0	53.9	30.0	29.9
3	4882.0	26.4	26.4	31.7	30.9	3.9	0.0	31.1	31.1	53.9	22.8	22.8
4	7323.0	26.9	26.9	36.1	32.1	4.2	0.0	35.1	35.1	53.9	18.8	18.8
5	9764.0	26.5	26.5	38.5	32.4	5.0	0.0	37.6	37.6	53.9	16.3	16.3
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12205.0	NS	NS	-	-	-	-	-	-	53.9	-	-
7	14646.0	NS	NS	-	-	-	-	-	-	53.9	-	-
8	17087.0	NS	NS	-	-	-	-	-	-	53.9	-	-
9	19528.0	NS	NS	-	-	-	-	-	-	53.9	-	-
10	21969.0	NS	NS	-	-	-	-	-	-	53.9	-	-
11	24410.0	31.4	31.4	38.6	31.0	8.4	0.0	37.9	37.9	53.9	16.0	16.0

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 second 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.

*1) VBW : 10Hz

Radiated Spurious Emission (above 1GHz)
Tx, Ch: High

UL Japan, Inc.
Head Office EMC Lab. No.4 Semi Anechoic Chamber

Company	: FUJITSU TEN LIMITED	REPORT NO	: 29BE0265-HO-01
Equipment	: Car navigation	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: FT0005A	TEST DISTANCE	: 3/1m
Sample No.	: 2	DATE	: 01/18/2009
Power	: DC 13.2V	TEMPERATURE	: 20deg.C.
Mode	: Bluetooth, Tx 2480MHz(DH5)	HUMIDITY	: 33%
Remarks	: Normal Axis	ENGINEER	: Takayuki Shimada

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1519.7	54.8	52.5	25.7	33.3	2.3	0.0	49.5	47.2	73.9	24.4	26.7
2	1575.4	42.3	42.4	25.8	33.2	2.3	0.0	37.2	37.3	73.9	36.7	36.6
3	2483.5	46.4	46.0	27.3	32.1	2.8	0.0	44.4	44.0	73.9	29.5	29.9
4	4960.0	39.2	39.2	31.8	30.8	3.9	0.0	44.1	44.1	73.9	29.8	29.8
5	7440.0	41.2	41.5	36.3	32.2	4.3	0.0	49.6	49.9	73.9	24.3	24.0
6	9920.0	40.8	40.9	38.6	32.4	5.0	0.0	52.0	52.1	73.9	21.9	21.8
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	12400.0	NS	NS	-	-	-	-	-	-	73.9	-	-
8	14880.0	NS	NS	-	-	-	-	-	-	73.9	-	-
9	17360.0	NS	NS	-	-	-	-	-	-	73.9	-	-
10	19840.0	NS	NS	-	-	-	-	-	-	73.9	-	-
11	22320.0	NS	NS	-	-	-	-	-	-	73.9	-	-
12	24800.0	45.1	45.0	38.9	31.0	8.5	0.0	52.0	51.9	73.9	21.9	22.0

AV DETECT (RBW: 1MHz, VBW: 270Hz or 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 ^{*1)}	1519.7	41.1	39.1	25.7	33.3	2.3	0.0	35.8	33.8	53.9	18.1	20.1
2 ^{*1)}	1575.4	29.1	29.1	25.8	33.2	2.3	0.0	24.0	24.0	53.9	29.9	29.9
3	2483.5	34.3	33.7	27.3	32.1	2.8	0.0	32.3	31.7	53.9	21.6	22.2
4	4960.0	25.9	26.0	31.8	30.8	3.9	0.0	30.8	30.9	53.9	23.1	23.0
5	7440.0	27.8	27.9	36.3	32.2	4.3	0.0	36.2	36.3	53.9	17.7	17.6
6	9920.0	27.8	27.9	38.6	32.4	5.0	0.0	39.0	39.1	53.9	14.9	14.8
Test distance 1meter RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
7	12400.0	NS	NS	-	-	-	-	-	-	53.9	-	-
8	14880.0	NS	NS	-	-	-	-	-	-	53.9	-	-
9	17360.0	NS	NS	-	-	-	-	-	-	53.9	-	-
10	19840.0	NS	NS	-	-	-	-	-	-	53.9	-	-
11	22320.0	NS	NS	-	-	-	-	-	-	53.9	-	-
12	24800.0	33.1	33.1	38.9	31.0	8.5	0.0	40.0	40.0	53.9	13.9	13.9

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 second 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 Filter was not used for factor 0.0dB of the above table.

*1) VBW : 10Hz

Radiated Spurious Emission (above 1GHz)
Rx, Ch: Mid

UL Japan, Inc.
Head Office EMC Lab. No.2 Semi Anechoic Chamber

Company	: FUJITSU TEN LIMITED	REPORT NO	: 29BE0265-HO-01
Equipment	: Car navigation	REGULATION	: FCC15.247(d)/RSS-210A8.5
Model No.	: FT0005A	TEST DISTANCE	: 3/1m
Sample No.	: 2	DATE	: 01/07/2009
Power	: DC 13.2V	TEMPERATURE	: 23deg.C.
Mode	: Bluetooth, Rx 2441MHz(DH5)	HUMIDITY	: 45%
Remarks	: Normal Axis	ENGINEER	: Takeshi Choda

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit PK [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]		[dB]		
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1139.5	55.7	54.5	24.7	33.9	2.0	0.0	48.5	47.3	73.9	25.4	26.6
2	1519.1	53.1	54.4	25.2	33.3	2.2	0.0	47.2	48.5	73.9	26.7	25.4
3	1626.5	46.0	52.1	25.3	33.2	2.3	0.0	40.4	46.5	73.9	33.5	27.4
4	2441.0	42.7	43.6	26.9	32.4	2.6	0.0	39.8	40.7	73.9	34.1	33.2

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

No.	FREQ [MHz]	S/A READING		ANT Factor [dB/m]	AMP GAIN [dB]	CABLE LOSS [dB]	Hi-Pass Filter [dB]	RESULT		Limit AV [dBuV/m]	MARGIN	
		HOR	VER					HOR	VER		HOR	VER
		[dBuV]						[dBuV/m]		[dB]		
Test distance 3meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss												
1	1139.5	46.2	43.0	24.7	33.9	2.0	0.0	39.0	35.8	53.9	14.9	18.1
2	1519.1	40.5	41.6	25.2	33.3	2.2	0.0	34.6	35.7	53.9	19.3	18.2
3	1626.5	36.3	36.3	25.3	33.2	2.3	0.0	30.7	30.7	53.9	23.2	23.2
4	2441.0	30.1	30.2	26.9	32.4	2.6	0.0	27.2	27.3	53.9	26.7	26.6

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

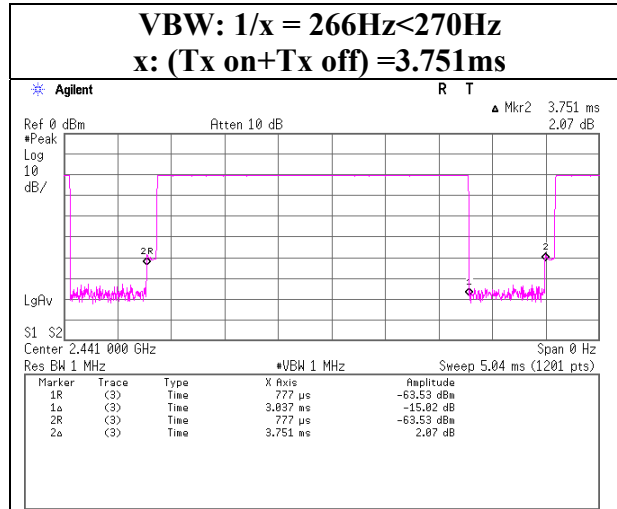
*The test result is rounded off to one or two decimal places, so some differences might be observed.

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

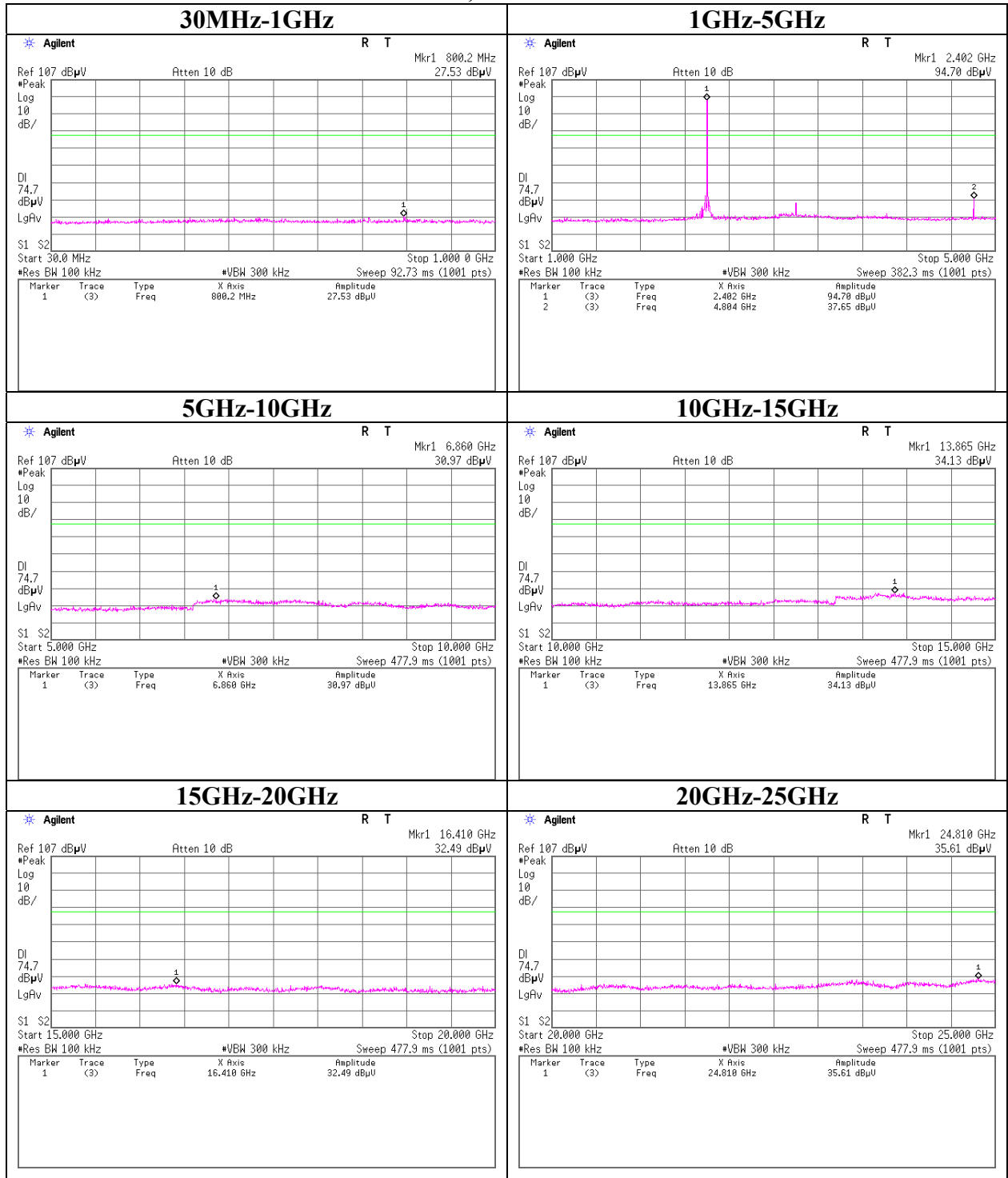
VBW (AV) Calculation

DH5

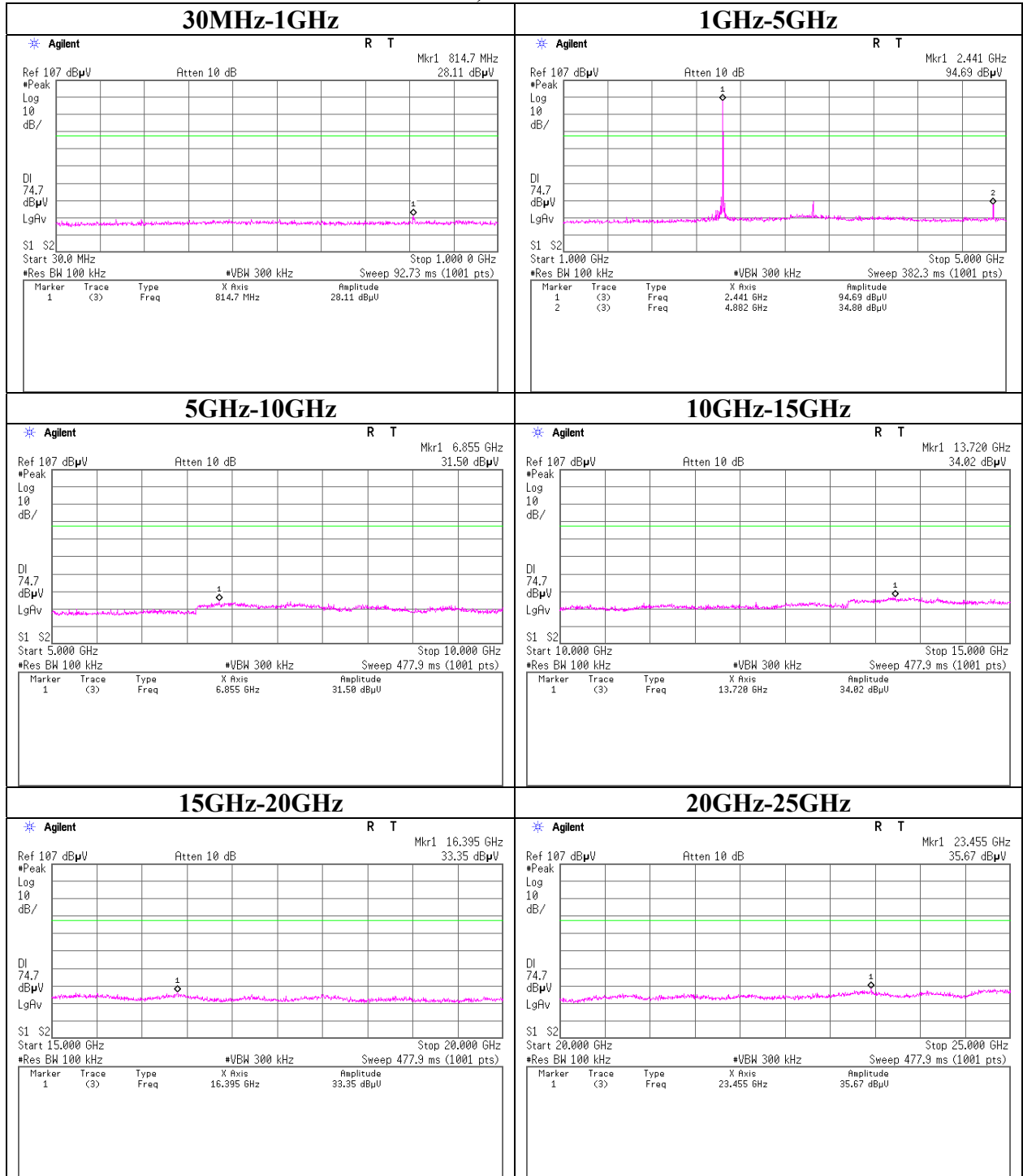
VBW: $1/x = 266\text{Hz} < 270\text{Hz}$
 $x: (\text{Tx on} + \text{Tx off}) = 3.751\text{ms}$



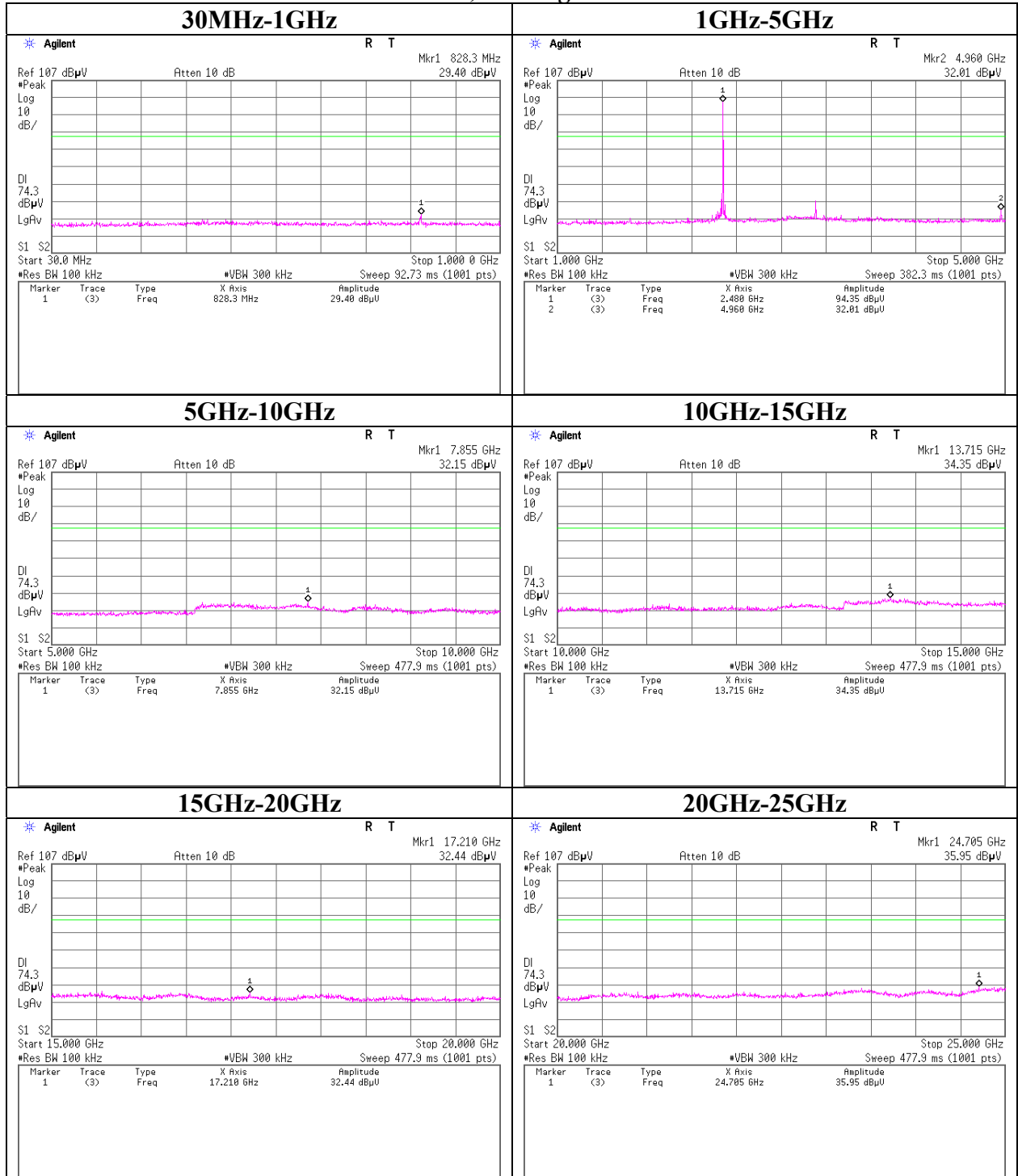
Conducted Spurious Emission
Tx, Ch: Low



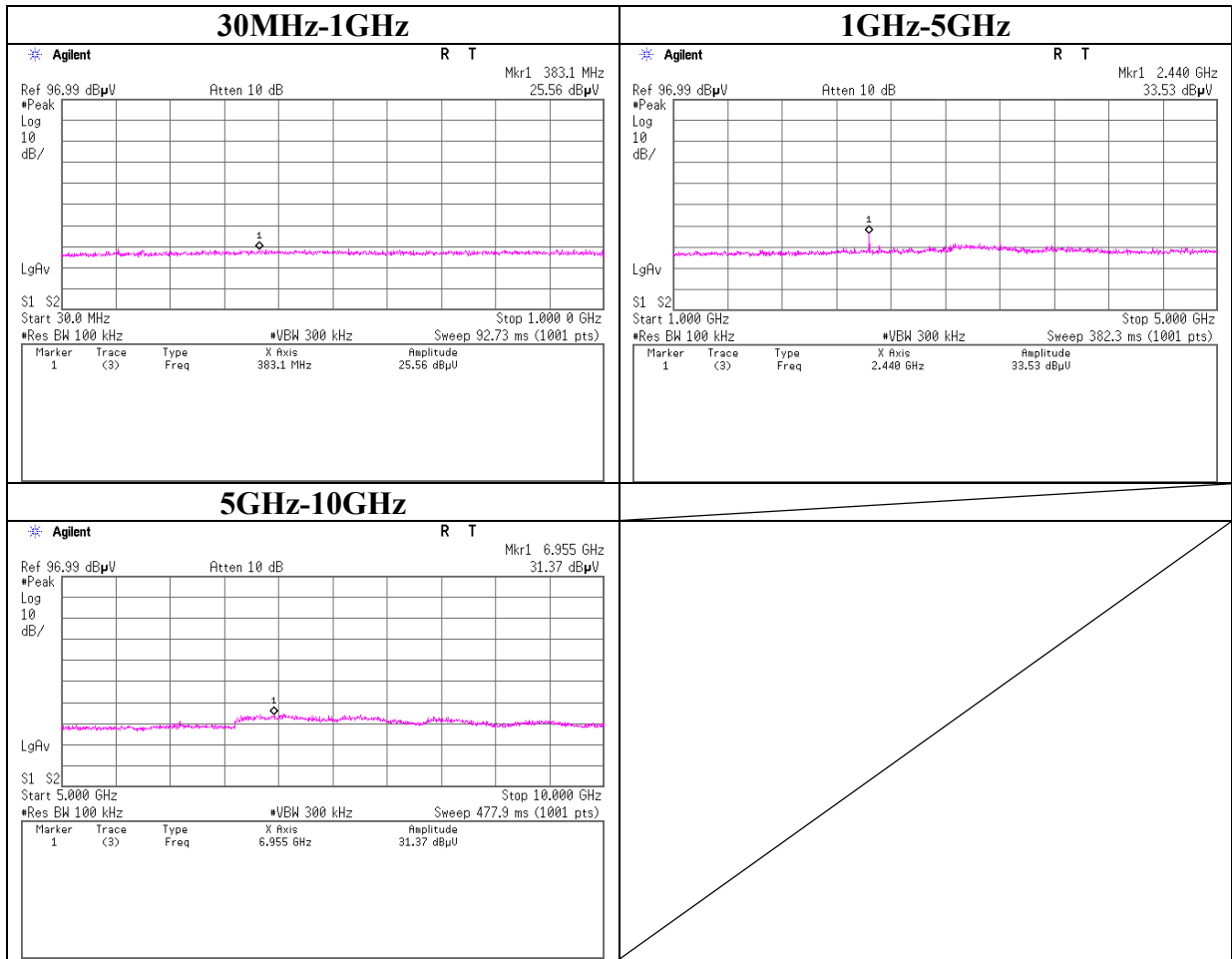
Conducted Spurious Emission
Tx, Ch: Mid



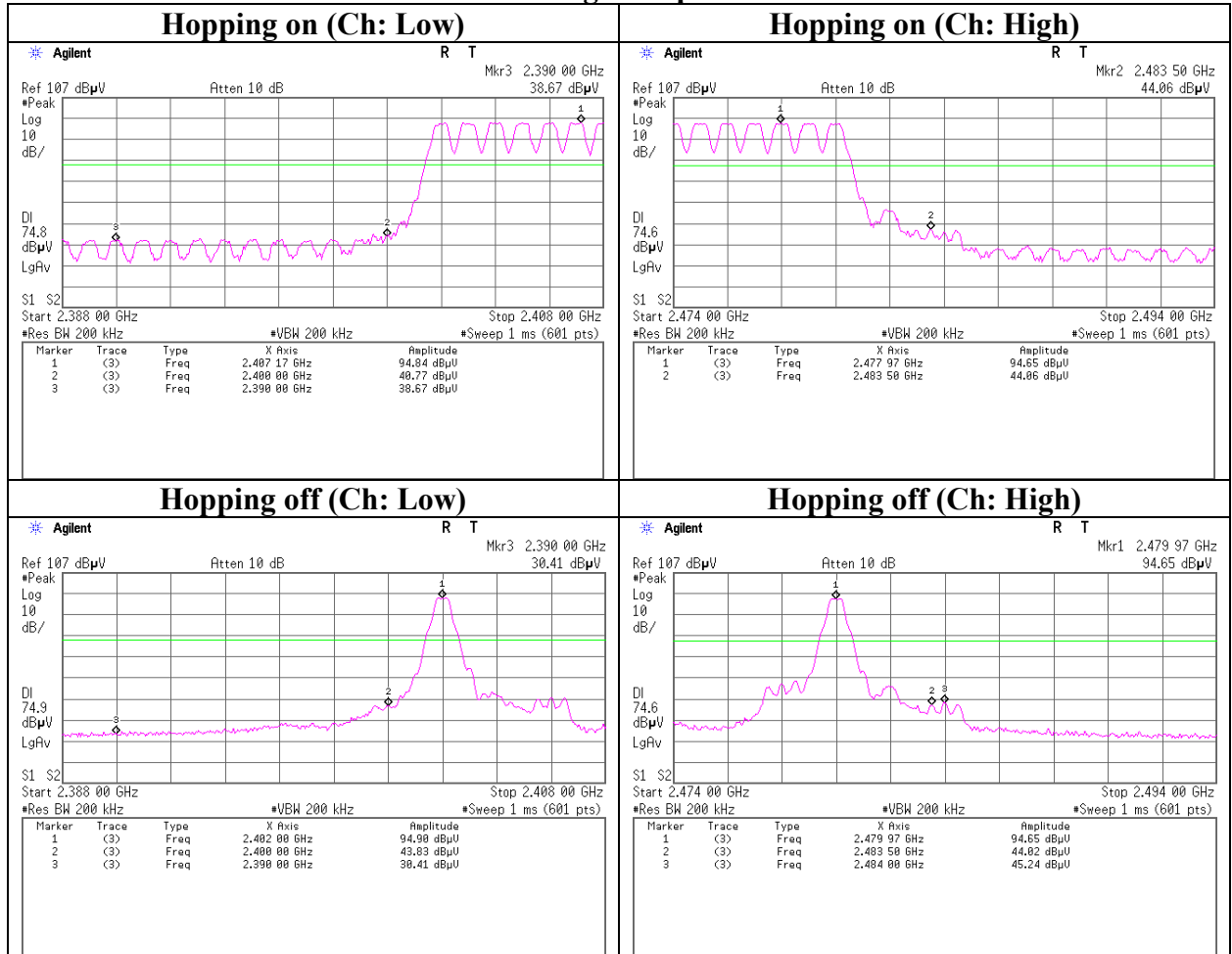
Conducted Spurious Emission
Tx, Ch: High



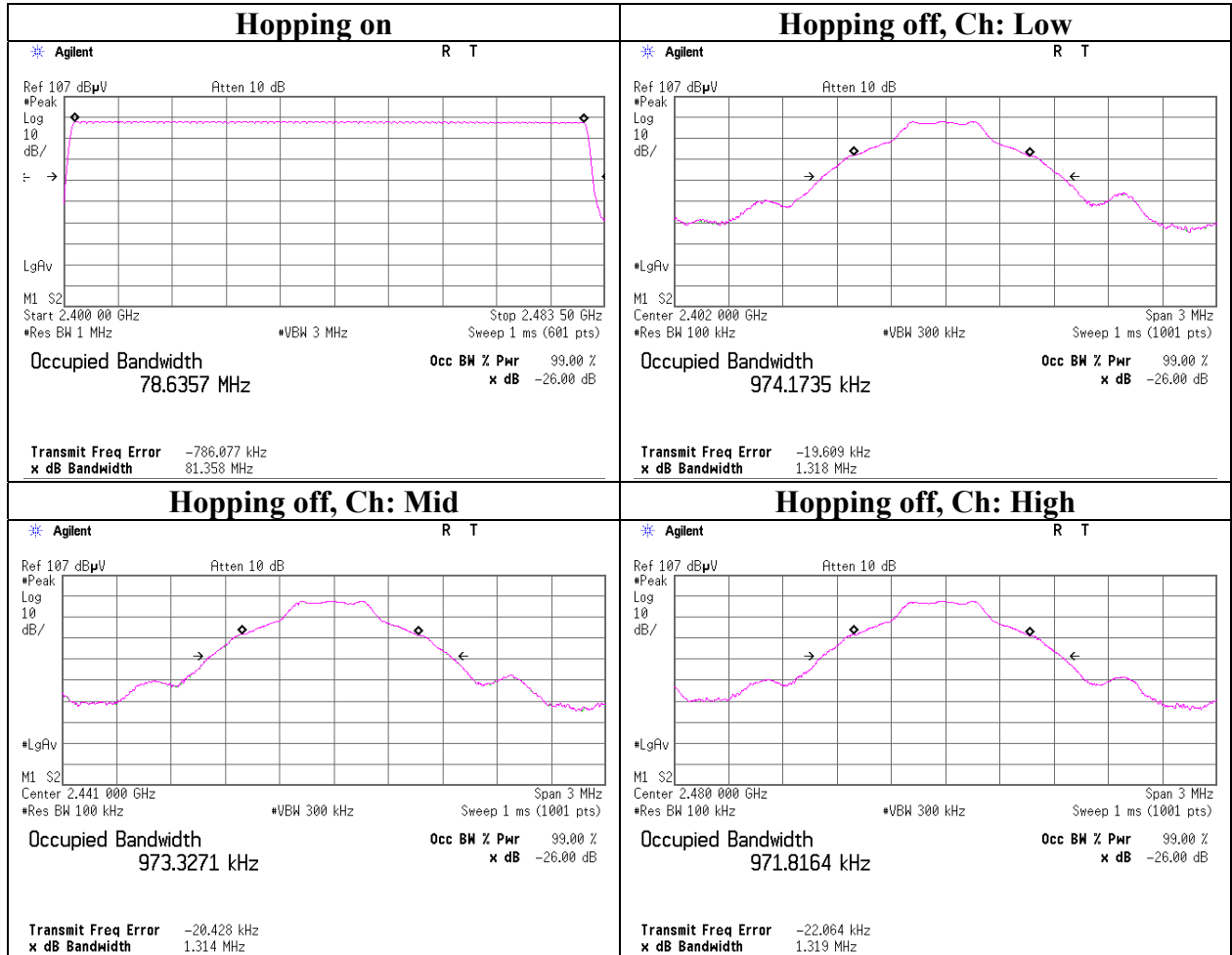
Conducted Spurious Emission
Rx Ch:Mid



Conducted Spurious Emission Band Edge compliance



99% Occupied Bandwidth



*Refer to 20dB Bandwidth for 99% Occupied Bandwidth, inquiry mode

APPENDIX 3: Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Serial No	Test Item	Calibration Date * Interval(month)
MCC-67	Microwave Cable 1G-40GHz	Schner	SUCOFLEX102	28635/2	AT	2008/04/04 * 12
MAT-20	Attenuator(10dB)(above 1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-110	-	AT	2009/01/16 * 12
MPM-08	Power Meter	Anritsu	ML2495A	6K00003338	AT	2008/09/24 * 12
MPSE-11	Power sensor	Anritsu	MA2411B	011737	AT	2008/09/24 * 12
MOS-22	Thermo-Hygrometer	Custom	CTH-201	0003	AT/RE	2008/12/08 * 12
MSA-10	Spectrum Analyzer	Agilent	E4448A	MY46180655	AT	2008/02/27 * 12
MAT-23	Attenuator(10dB) DC-18GHz	Orient Microwave	BX10-0476-00	-	AT	2008/03/05 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	MY44020357	AT/RE	2008/11/07 * 12
MOS-14	Thermo-Hygrometer	Custom	CTH-180	-	AT	2009/01/13 * 12
MOS-19	Thermo-Hygrometer	Custom	CTH-201	0001	AT	2008/12/08 * 12
MAEC-02	Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-06902	RE	2008/04/17 * 12
MJM-05	Measure	PROMART	SEN1955	-	RE	-
MSTW-14	EMI measurement program	TSJ	TEPTO-DV	-	RE	-
MRENT-62	Spectrum Analyzer	Agilent	E4448A	MY46180856	RE	2008/11/25 * 12
MHA-06	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	254	RE	2008/01/19 * 12
MCC-47	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX104	295123(5m) / 287573(1m)	RE	2008/11/27 * 12
MPA-10	Pre Amplifier	Agilent	8449B	3008A02142	RE	2008/09/17 * 12
MTR-03	Test Receiver	Rohde & Schwarz	ESCI	100300	RE	2008/04/02 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	VHA91032008	RE	2008/10/18 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	201	RE	2008/10/18 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	-	RE	2008/02/15 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	BK7970	RE	2008/11/14 * 12
MPA-09	Pre Amplifier	Agilent	8447D	2944A10845	RE	2008/09/04 * 12
MAEC-04	Anechoic Chamber(NSA)	TDK	Semi Anechoic Chamber 3m	DA-10005	RE	2008/03/27 * 12
MOS-15	Thermo-Hygrometer	Custom	CTH-180	-	RE	2009/01/13 * 12
MJM-07	Measure	PROMART	SEN1955	-	RE	-
MTR-07	Test Receiver	Rohde & Schwarz	ESCI	100635	RE	2008/10/03 * 12
MBA-05	Biconical Antenna	Schwarzbeck	BBA9106	1302	RE	2009/01/10 * 12
MLA-08	Logperiodic Antenna	Schwarzbeck	UKLP9140-A	N/A	RE	2009/01/10 * 12
MCC-50	Coaxial cable	UL Japan	-	-	RE	2008/03/17 * 12
MAT-31	Attenuator(6dB)	TME	UFA-01	-	RE	2008/03/10 * 12
MPA-14	Pre Amplifier	SONOMA INSTRUMENT	310	260833	RE	2008/03/06 * 12
MHA-21	Horn Antenna 1-18GHz	Schwarzbeck	BBHA9120D	9120D-557	RE	2008/08/11 * 12
MCC-57	Microwave Cable 1G-26.5GHz (6.0m)	Suhner	SUCOFLEX104	246769(1m) / 292411(5m)	RE	2008/11/05 * 12
MPA-12	MicroWave System Amplifier	Agilent	83017A	MY39500780	RE	2008/03/13 * 12
MHA-17	Horn Antenna 15-40GHz	Schwarzbeck	BBHA9170	BBHA9170307	RE	2008/04/30 * 12

The expiration date of the calibration is the end of the expired month.

All equipment is calibrated with traceable calibrations. Each calibration is traceable to the national or international standards.

As for some calibrations performed after the tested dates, those test equipment have been controlled by means of an unbroken chains of calibrations.

Test Item: RE: Radiated Emission

AT: Antenna Terminal Conducted test

UL Japan, Inc.

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