EMI TEST REPORT

Test Report No. : 25LE0207-HO-9

Applicant	:	**FUJITSU LIMITED**
Type of Equipment	:	**Personal Computer**
Model No.	:	**P1510**
FCC ID	:	**EJE-WB0036**
Test standard	:	**FCC Part 15 Subpart C Section 15.207, Section 15.247 : 2005**
Test Result	:	**Complied**

1. This test report shall not be reproduced in full or partial, without the written approval of UL Apex Co., Ltd.
2. The results in this report apply only to the sample tested.
3. This equipment is in compliance with the above regulation. We hereby certify that the data contain a true representation of the EMC profile.
4. The test results in this report are traceable to the national or international standards.

Date of test: July 25 to 27, 2005

Tested by:

Makoto Kosaka
EMC Service

Kenichi Adachi
EMC Service

Approved by :

Naoki Sakamoto
Group Leader of
EMC Service

UL Apex Co., Ltd.
Head Office EMC Lab.
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SECTION 1: Client information

Company Name	:	FUJITSU LIMITED
Address	:	1-1, Kamikodanaka 4-chome, Nakahara-ku, Kawasaki 211-8588 Japan
Telephone Number	:	+81-44-754-3885
Facsimile Number	:	+81-44-754-3769
Contact Person	:	Tsuyoshi Uchihara

SECTION 2: Equipment under test (E.U.T.)

2.1 Identification of E.U.T.

Type of Equipment	:	Personal Computer
Model No.	:	P1510
Serial No.	:	R5100030
Country of Manufacture	:	Japan
Condition of EUT	:	Engineering prototype (Not for Sale: This sample is equivalent to mass-produced items.)
Rating	:	AC100-240V, 50/60Hz DC out 16V/2.5A (AC Adapter)
Receipt Date of Sample	:	July 21, 2005

2.2 Product Description

This EUT has IEEE802.11 a/b/g module which consists of 2.4GHz and 5GHz in the same chip, and the other module is Bluetooth.

Standards	Test Report No.			
	IEEE802.11 a/b/g		Bluetooth	Bluetooth + IEEE802.11a/b/g
FCC	25LE0207-HO-1 (15.247)	25LE0207-HO-2 (15.407)	25LE0207-HO-9 *	25LE0207-HO-10
RSS-210	25LE0207-HO-3	25LE0207-HO-4	25LE0207-HO-11	25LE0207-HO-12

*This mark stands for This report.

< IEEE802.11 a/b/g >

Equipment Type : Transceiver
Frequency of operation : 11bg: 2412-2462MHz
11a: 5150-5350MHz/5745 - 5825MHz
Channel Spacing : 5MHz(11bg), 20MHz (11a)
Duty Cycle : over 90%
Type of Modulation : DSSS, OFDM
Mode of operation : Duplex
Antenna Type : Monopole Antenna (M/N: YCE-5008)
Antenna Gain : IEEE802.11b/g: Main -4.78 dBi /AUX -1.49 dBi
IEEE802.11a: Main Antenna: 0.90dBi, AUX Antenna -0.97 dBi
(This antenna gain are values in which antenna was mounted to the PC)
Antenna Connector Type : U-FL
Operating voltage : DC3.3V
Operating temperature range : 0-+70 deg.C.

<Bluetooth>

Equipment Type : Transceiver
Frequency of operation : 2402-2480MHz
Type of Modulation : FHSS
Antenna Type : Monopole Antenna (M/N: YCE-5008)
Antenna Gain : AUX-1.49 dBi
(This antenna gain are values in which antenna was mounted to the PC)
Antenna Connector Type : U-FL
Operating voltage : DC3.3V
Operating temperature range : 0-+70 deg.C.

FCC 15.31 (e)

This EUT provides stable voltage (DC3.3V) constantly to RF Modules regardless of input voltage. Therefore, this EUT complies with the requirement.

FCC Part 15.203 Antenna requirement

These modules have the external (particular) antenna connector, and the installation is to be done by the professionals. Therefore, the equipment complies with the antenna requirement of Section 15.203.

SECTION 3: Test specification, procedures & results

3.1 Test Specification

Test Specification : FCC Part15 Subpart C : 2005
Title : FCC 47CFR Part15 Radio Frequency Device Subpart C Intentional Radiators
Section 15.207 Conducted limits : 2005
Section 15.247 Operation within the bands 902-928MHz, 2400-2483.5MHz, and 5725-5850MHz : 2005

3.2 Procedures and results

[FHSS]

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst Margin*0)	Results
1	Conducted emission	ANSI C63.4:2003 7. AC powerline conducted emission measurements	Section 15.207 RSS-210 6.6	-	N/A	10.7dB 0.42891MHz QP, L	Complied
2	Carrier Frequency Separation	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1) RSS-210 6.2.2 (o)(a)(a1)	Conducted	N/A	*See data.	Complied
3	20dB Bandwidth	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1) RSS-210 6.2.2 (o)(a)(a1)	Conducted	N/A		Complied
4	Number of Hopping Frequency	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(a)(1)(iii) RSS-210 6.2.2 (o)(ii)	Conducted	N/A		Complied
5	Dwell time	ANSI C63.4:2003 13.Measurement of intentional radiators	Section15.247(a)(1)(iii) RSS-210 6.2.2 (o)(ii)	Conducted	N/A		Complied
6	Maximum Peak Output Power	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(b)(1) RSS-210 6.2.2(o)(iv)	Conducted	N/A		Complied
7	Band Edge Compliance	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d) RSS-210 6.2.2(o)(e)(e1) and 6.3	Conducted	N/A		Complied
8	Spurious Emission	ANSI C63.4:2003 13. Measurement of intentional radiators	Section15.247(d) RSS-210 6.2.2(o)(e)(e1) and 6.3	Conducted/ Radiated	N/A	1.3dB 65.999MHz QP, Horizontal	Complied

Note: UL Apex's EMI Work Procedures No.QPM05 and QPM15.
*0) The result is rounded off to the second decimal place. Therefore, there may be 0.1 difference for the result.

Uncertainty:

Conducted Emission
The measurement uncertainty (with a 95% confidence level) for this test is ±1.3dB.
The data listed in this test report has enough margin, more than the site margin.
Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test using Biconical antenna is ±4.5dB(3m)/ ±4.7dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Logperiodic antenna is ±5.2dB(3m)/ ±3.8dB(10m).
The measurement uncertainty (with a 95% confidence level) for this test using Horn antenna is ±6.6dB.
The data listed in this report meets the limits unless the uncertainty is taken into consideration.
Other test except Conducted Emission and Spurious Emission (Radiated)
The measurement uncertainty (with a 95% confidence level) for this test is ±3.0dB.

*These tests were also referred to FCC Public Notice DA 00-705 "Guidance on Measurement for Frequency Hopping Spread Spectrum Systems".
*These tests were performed without any deviations from test procedure except for additions or exclusions.

3.3 Addition to standards

No.	Item	Test Procedure	Specification	Remarks	Deviation	Worst margin	Results
1	99% Occupied Band Width	RSS-210(issue 5): 2001 + Amendment:2002 + Amendment2:2003 + Amendment3:2004 + Amendment4: 2004	RSS-210(issue 5): 2001 + Amendment:2002 + Amendment2:2003 + Amendment3:2004 + Amendment4: 2004	Conducted	N/A	N/A	N/A

3.4 Test Location

UL Apex Co., Ltd. Head Office EMC Lab. *NVLAP Lab. code: 200572-0
4383-326 Asama-cho, Ise-shi, Mie-ken 516-0021 JAPAN
Telephone : +81 596 24 8116 Facsimile : +81 596 24 8124

	FCC Registration Number	IC Registration Number	Width x Depth x Height (m)	Size of reference ground plane (m) / horizontal conducting plane	Other rooms
No.1 semi-anechoic chamber	313583	IC4247A	19.2 x 11.2 x 7.7m	7.0 x 6.0m	Preparation room
No.2 semi-anechoic chamber	846015	IC4247A-2	7.5 x 5.8 x 5.2m	4.0 x 4.0m	-
No.3 shielded room	-	-	4.7 x 7.5 x 2.7m	4.7 x 7.5m	-
No.4 measurement room	-	-	3.1 x 5.0 x 2.7m	N/A	-

* Size of vertical conducting plane (for Conducted Emission test) : 2.0 x 2.0m for No.1 and No.2 semi-anechoic and No.3 shielded room.

3.5 Test set up, Test instruments and Data of EMI

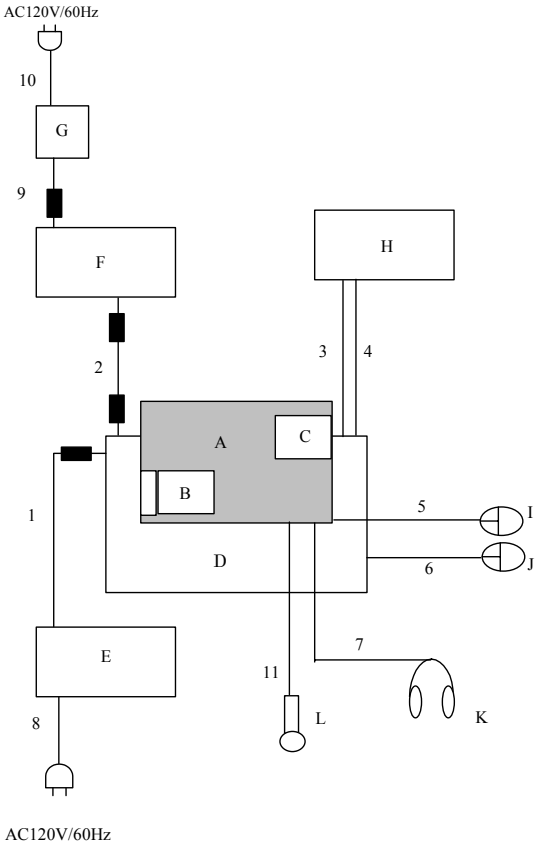
Refer to APPENDIX 1 to 3.

SECTION 4: Operation of E.U.T. during testing

4.1 Operating Modes

Operation : -Transmitting mode
Low Channel :2402MHz
Mid Channel :2441MHz
High channel :2480MHz
Inquiry

4.2 Configuration and peripherals



* Cabling was taken into consideration and test data was taken under worse case conditions.

Description of EUT and Support equipment

No.	Item	Model number	Serial number	Manufacturer	FCC ID	Remarks
A	Personal Computer	P1510	R5100030	FUJITSU LIMITED	EJE-WB0036	EUT
B	PC Card	-	-	IO DATA	-	-
C	SD Card	-	-	IO DATA	-	-
D	Port Replicator	-	30	FUJITSU LIMITED	-	-
E	AC Adapter	CA01007-0730	01208879C	FUJITSU LIMITED	-	-
F	LCD Monitor	PLE430-B1S	05205G4538698	Iiyama	-	-
G	AC Adapter	ADPC12416BB	12416B042126921	Iiyama	-	-
H	Personal Computer	PGMJ140M	09632777	SHARP	-	-
I	Mouse	M-UB48	LZE02650788	Logitech	-	-
J	Mouse	M-UB48	LZE02601001	Logitech	-	-
K	Headset	LT-100	0010D	Panasonic	-	-
L	Microphone	-	-	Fujitsu	-	-

List of cables used

No.	Name	Length (m)	Shield	Backshell Material
1	DC Cable	1.8	N	Polyvinyl chloride
2	Monitor Cable	1.8	Y	Polyvinyl chloride
3	LAN Cable	2.9	N	Polyvinyl chloride
4	TEL Line	2.0	N	Polyvinyl chloride
5	Mouse Cable	0.7	N	Polyvinyl chloride
6	Mouse Cable	0.7	N	Polyvinyl chloride
7	Headset Cable	3.0	N	Polyvinyl chloride
8	AC Cable	2.0	N	Polyvinyl chloride
9	DC Cable	1.2	N	Polyvinyl chloride
10	AC Cable	1.8	N	Polyvinyl chloride
11	Microphone Cable	1.6	N	Polyvinyl chloride

SECTION 5: Conducted Emission

Test Procedure and conditions

EUT was placed on a platform of nominal size, 1m by 1.5m, raised 80cm above the conducting ground plane.
The rear of tabletop was located 40cm to the vertical conducting plane. The rear of EUT, including peripherals aligned and flushed with rear of tabletop. All other surfaces of tabletop were at least 80cm from any other grounded conducting surface. EUT was located 80cm from a Line Impedance Stabilization Network (LISN)/ Artificial mains Network (AMN) and excess AC cable was bundled in center.

1) For the tests on EUT with other peripherals (as a whole system)
I/O cable and AC cables that were connected to the peripherals were bundled in center. They were folded back and forth forming a bundle 30cm to 40cm long and were hanged at a 40cm height to the ground plane.

2) For the tests on EUT itself (as a stand alone equipment)
Each EUT current-carrying power lead, except the ground (safety) lead, was individually connected through a LISN /(AMN) to the input power source. All unused 50ohm connectors of the LISN(AMN) were resistivity terminated in 50ohm when not connected to the measuring equipment.

The AC Mains Terminal Continuous disturbance Voltage has been measured with the EUT in a Semi Anechoic Chamber or a Measurement Room.
The EUT was connected to a LISN (AMN).
An overview sweep with peak detection has been performed.

Detector : CISPR quasi-peak and average detector (IF BW 9 kHz)
Measurement range : 0.15-30MHz
Test data : APPENDIX 3
Test result : Pass

SECTION 6: Spurious Emission

[Conducted]

Test Procedure
The Out of Band Emission was measured with a spectrum analyzer connected to the antenna port.
Test data : APPENDIX 3
Test result : Pass

[Radiated]

Test Procedure
EUT was placed on a platform of nominal size, 1.0m by 1.0m, raised 80cm above the conducting ground plane.
The Radiated Electric Field Strength intensity has been measured in a Semi Anechoic Chamber with a ground plane and at a distance of 3m(Below 10GHz) and 1m(Upper 10GHz).
The height of the measuring varied between 1 and 4m and EUT was rotated a full revolution in order to obtain the maximum value of the electric field intensity.
The measurements were performed for both vertical and horizontal antenna polarization with the Test Receiver, or the Spectrum Analyzer (in linear mode).
The test was made with the detector (RBW/VBW) in the following table.
When using Spectrum analyzer, the test was made with adjusting span to zero by using peak hold.

In any 100kHz bandwidth outside the frequency band in which the spread spectrum intentional radiator is operating, the radio frequency power that is produced by the intentional radiator confirmed 20dB below that in the 100kHz bandwidth within the band that contains the highest level of the desired power, based on a radiated measurement.

20dBc was applied to the frequency over the limit of FCC 15.209 and outside the restricted band of 15.205.

Frequency	Below 1GHz	Above 1GHz
Instrument used	Test Receiver / Spectrum Analyzer	Spectrum Analyzer
Detector IF Bandwidth	QP: BW 120kHz(T/R) 20dBc : RBW: 100kHz VBW: 300kHz (S/A)	PK: RBW:1MHz/VBW: 1MHz AV: RBW:1MHz/VBW:10Hz 20dBc : RBW:100kHz/VBW:300kHz

Test data : APPENDIX 3
Test result : Pass

- The carrier level and noise levels were confirmed at each position of X, Y and Z axes of EUT to see the position of maximum noise, and the test was made at the position that has the maximum noise.

SECTION 7: Bandwidth

Test Procedure

The bandwidth was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 8: Maximum Peak Output Power

Test Procedure
The test was made with the spectrum analyzer that has a function of channel-power measurements.
The Maximum Peak Output Power was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 9: Carrier Frequency Separation

Test Procedure

The carrier frequency separation was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 10: Number of Hopping Frequency

Test Procedure

The Number of Hopping Frequency was measured with a spectrum analyzer connected to the antenna port.

Test data : APPENDIX 3
Test result : Pass

SECTION 11: Dwell time

Test Procedure

The Dwell time was measured with a spectrum analyzer connected to the antenna port.

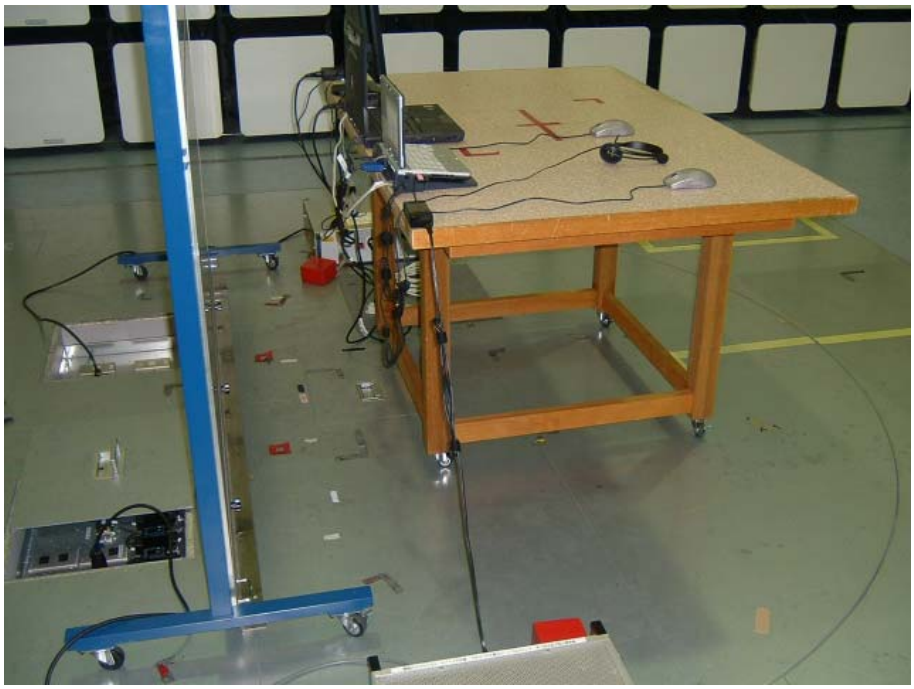
Test data : APPENDIX 3
Test result : Pass

APPENDIX 1: Photographs of test setup

Conducted Emission

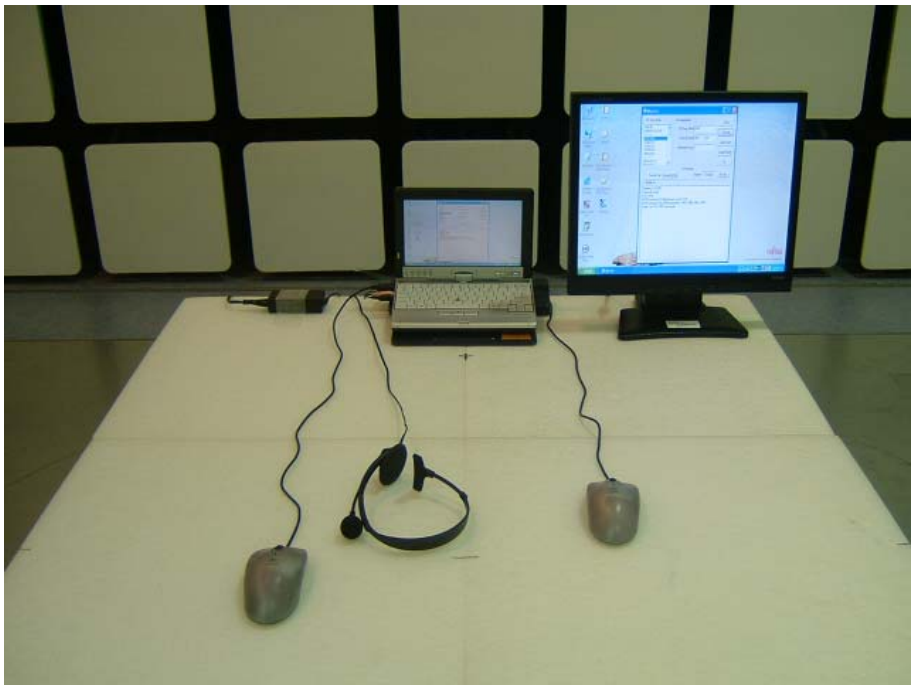
Front

Rear

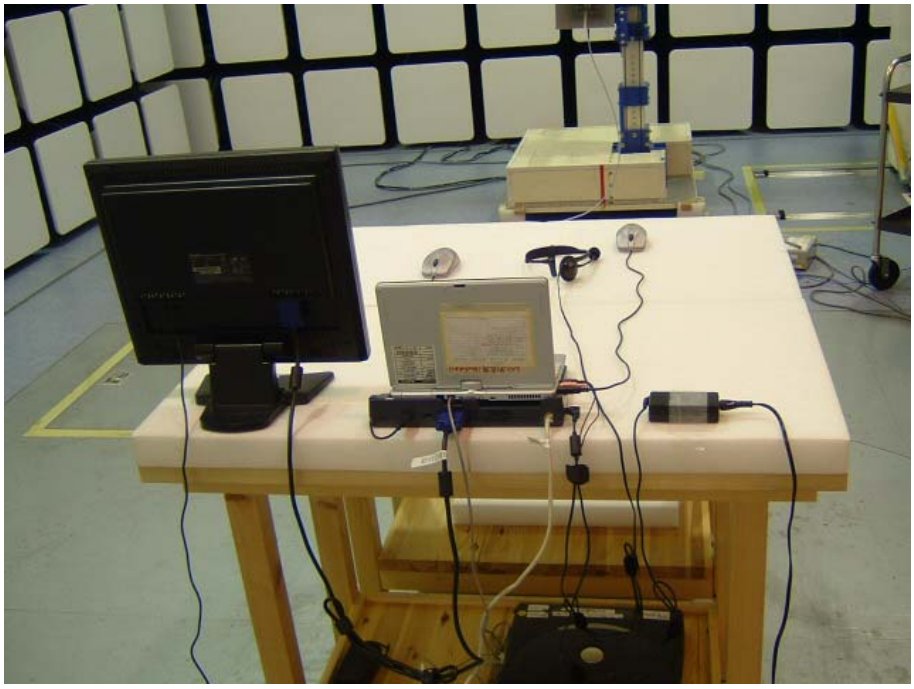


Spurious Emission (Radiated)

Front



Rear

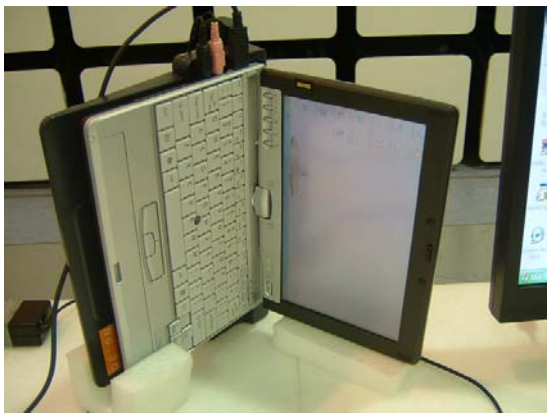


Worst Case Position (Z-axis:Horizontal / X-axis:Vertical)

X-axis

Y-axis

Z-axis



APPENDIX 2:Test instruments

EMI test equipment

Control No.	Instrument	Manufacturer	Model No	Test Item	Calibration Date * Interval(month)
MAEC-02	Anechoic Chamber	TDK	Semi Anechoic Chamber 3m	RE	2005/04/11 * 12
MSA-03	Spectrum Analyzer	Agilent	E4448A	RE	2005/06/03 * 12
MTR-02	Test Receiver	Rohde & Schwarz	ESCS30	RE	2005/02/02 * 12
MBA-02	Biconical Antenna	Schwarzbeck	BBA9106	RE	2004/10/14 * 12
MLA-02	Logperiodic Antenna	Schwarzbeck	USLP9143	RE	2004/10/14 * 12
MAT-07	Attenuator(6dB)	Weinschel Corp	2	RE	2004/12/16 * 12
MCC-12	Coaxial Cable	Fujikura/Agilent	-	RE	2005/02/24 * 12
MPA-06	Pre Amplifier	Hewlett Packard	8447D	RE	2004/08/29 * 12
MHA-02	Horn Antenna	EMCO	3160-09	RE	2005/01/10 * 12
MHA-06	Horn Antenna	Schwarzbeck	BBHA9120D	RE	2005/01/10 * 12
MCC-04	Microwave Cable 1G-50GHz	Storm	421-011 (90-1394-079)	RE	2005/01/05 * 12
MCC-19	Microwave Cable 1G-26.5GHz	Suhner	SUCOFLEX 104	RE	2005/02/03 * 12
MPA-05	Pre Amplifier	TSJ	TSJ 1-26.5GHz PreAmp	RE	2005/07/08 * 12
MHF-02	High Pass Filter	Tokimec	TF323DCA	RE	2004/09/18 * 12
MHA-04	Horn Antenna	EMCO	3160-10	RE	2005/01/10 * 12
MCC-17	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX 101	RE	2005/02/03 * 12
MCC-27	Microwave Cable 1G-50GHz	Suhner	SUCOFLEX101	RE	2004/08/26 * 12
MPA-03	Microwave System Power Amplifier	Agilent	83050A	RE	2005/05/11 * 12
MTA-02	Termination	TME	CT-01	CE	2005/02/03 * 12
MCC-13	Coaxial Cable	Fujikura/Agilent	-	CE	2005/02/24 * 12
MLS-06	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2005/02/04 * 12
MLS-07	LISN(AMN)	Schwarzbeck	NSLK8127	CE	2005/02/04 * 12
MSA-04	Spectrum Analyzer	Agilent	E4448A	AT	2005/05/19 * 12
MAT-18	Attenuator(3dB)(above1GHz)	HIROSE ELECTRIC CO.,LTD.	AT-103	AT	2005/01/11 * 12
MCC-37	Microwave Cable	Hirose Electric	U.FL-2LP-066-A-(200)	AT	2005/07/22 * 12

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

Test Item:

CE: Conducted emission,
RE: Radiated emission,
AT: Antenna terminal disturbance voltage.

APPENDIX 3: Data of EMI test

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

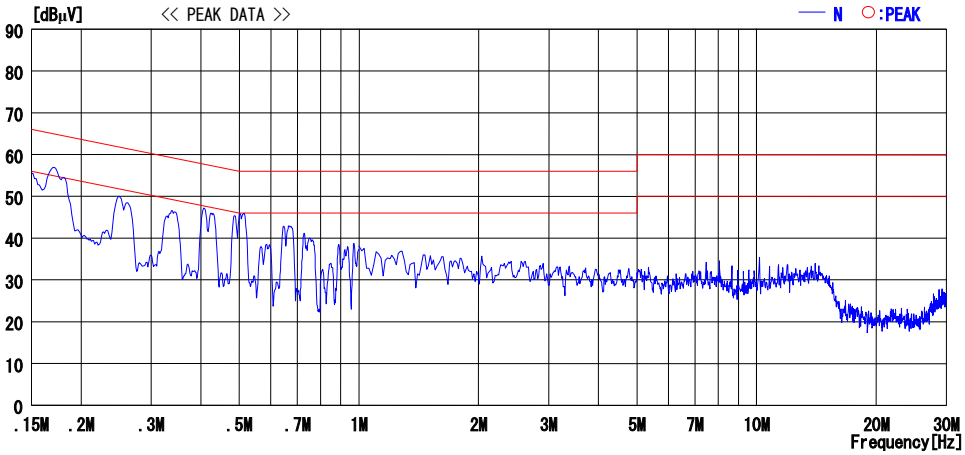
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/07/27 02:58:23

Applicant : Fujitsu Limited
Kind of EUT : Personal Computer
Model No. : P1510
Serial No. : R5100030

Report No. : 25LE0207-HO
Power : AC120V/60Hz
Temp℃/Humi% : 23deg.C / 65%
Operator : Makoto Kosaka

Mode / Remarks : BT 2402MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



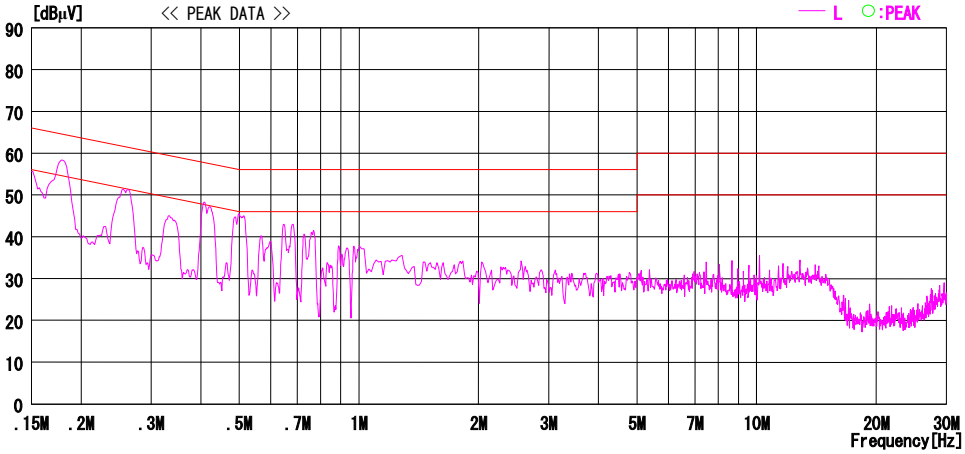


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Conducted Emission

DATA OF CONDUCTED EMISSION TEST

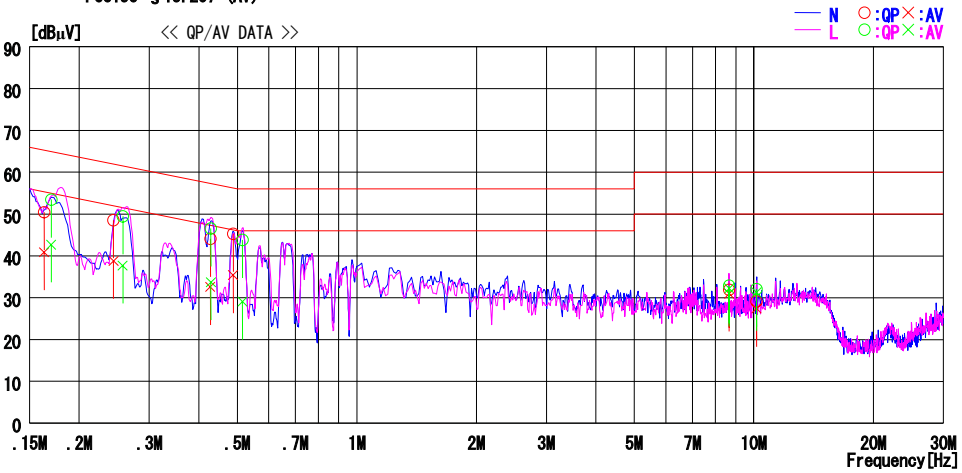
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Fujitsu Limited
Kind of EUT : Personal Computer
Model No. : P1510
Serial No. : R5100030

Report No. : 25LE0207-HO
Power : AC120V/60Hz
Temp℃/Humi% : 23deg.C / 65%
Operator : Makoto Kosaka

Mode / Remarks : BT 2441MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



Frequency	Reading		Corr.	Results		Limit		Margin		Phase
	QP	AV	Factor	QP	AV	QP	AV	QP	AV	
[MHz]	[dBuV]	[dBuV]	[dB]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	[dBuV]	
0.16297	50.4	40.8	0.1	50.5	40.9	65.3	55.3	14.8	14.4	N
0.24370	48.5	38.7	0.1	48.6	38.8	62.0	52.0	13.4	13.2	N
0.42766	44.0	32.5	0.1	44.1	32.6	57.3	47.3	13.2	14.7	N
0.48780	45.2	35.3	0.1	45.3	35.4	56.2	46.2	10.9	10.8	N
8.66239	30.9	30.0	1.0	31.9	31.0	60.0	50.0	28.1	19.0	N
10.15641	27.9	26.2	1.2	29.1	27.4	60.0	50.0	30.9	22.6	N
0.17006	53.4	42.6	0.1	53.5	42.7	65.0	55.0	11.5	12.3	L
0.25745	49.4	37.6	0.1	49.5	37.7	61.5	51.5	12.0	13.8	L
0.42891	46.5	33.6	0.1	46.6	33.7	57.3	47.3	10.7	13.6	L
0.51510	43.6	28.9	0.2	43.8	29.1	56.0	46.0	12.2	16.9	L
8.66502	31.9	31.2	1.0	32.9	32.2	60.0	50.0	27.1	17.8	L
10.15966	30.9	30.0	1.2	32.1	31.2	60.0	50.0	27.9	18.8	L

CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION: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

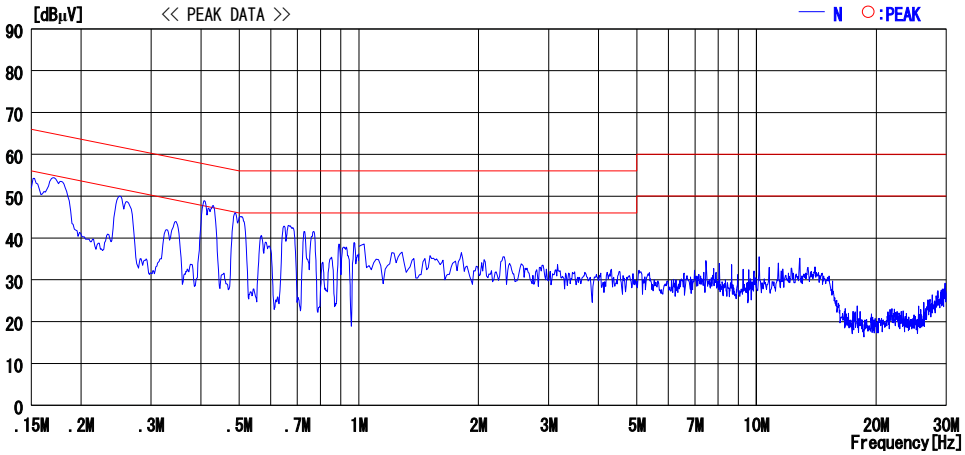
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber
Date : 2005/07/27 03:02:38

Applicant : Fujitsu Limited
Kind of EUT : Personal Cpmputer
Model No. : P1510
Serial No. : R5100030

Report No. : 25LE0207-HO
Power : AC120V/60Hz
Temp℃/Humi% : 23deg.C / 65%
Operator : Makoto Kosaka

Mode / Remarks : BT 2480MHz

LIMIT : FCC15C §15.207 (QP)
FCC15C §15.207 (AV)



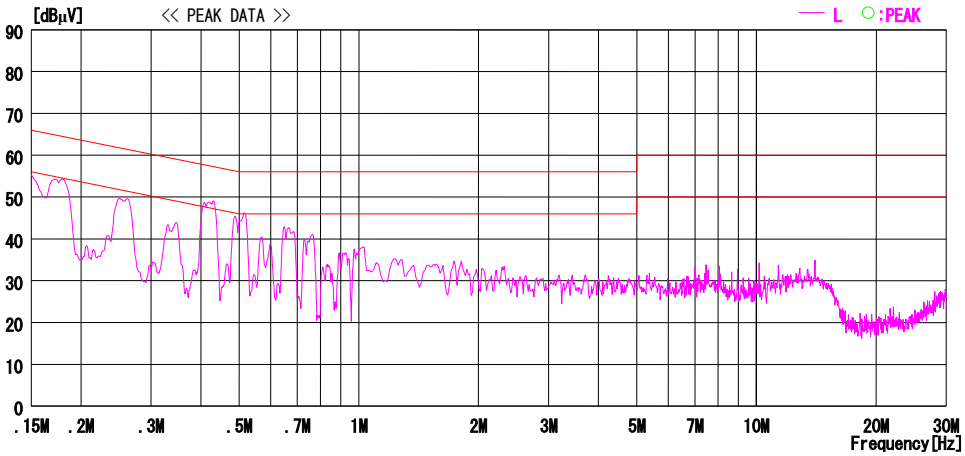


CHART:WITH FACTOR,Peak hold data.Data is uncorrected. CALCURATION:RESULT=READING+C.F(LISN LOSS+CABLE LOSS)
Except for the above table : adequate margin data below the limits.

Carrier Frequency Separation(FHSS)

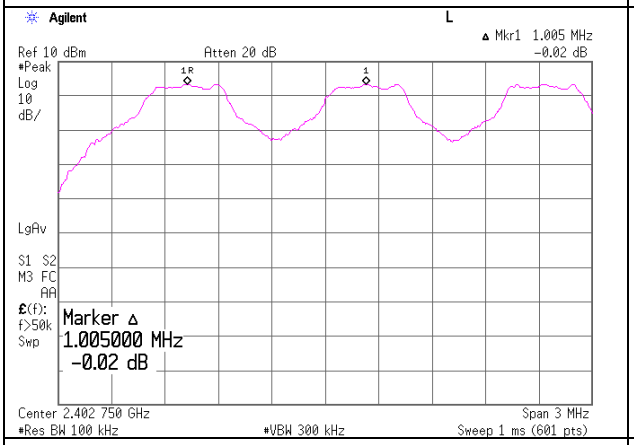
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Fujitsu Limited	REGULATION	: Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	: Personal Computer	TEST DISTANCE	: -
MODEL	: P1510	DATE	: 07/27/2005
S/ N	: R5100030	TEMPERATURE	: 24deg.C
POWER	: AC 120V /60Hz	HUMIDITY	: 57%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Kenichi Adachi

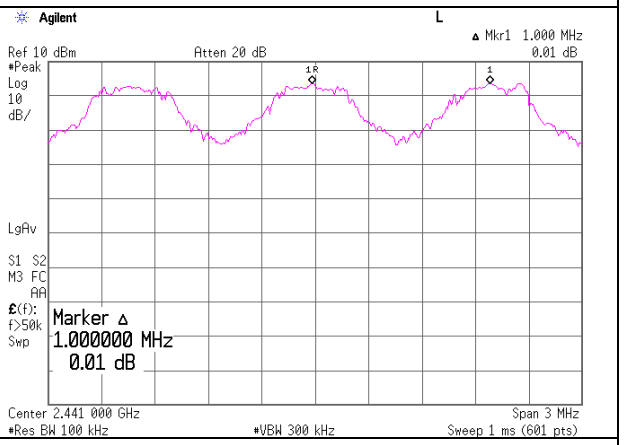
Ch	Freq. [MHz]	Channel separation [MHz]	Limit
Low	2402.0	1.005	>20dB Bandwidth and 25[kHz]
Mid	2441.0	1.000	>20dB Bandwidth and 25[kHz]
High	2480.0	1.000	>20dB Bandwidth and 25[kHz]
Inquiry	2441.0	2.008	>20dB Bandwidth and 25[kHz]

Carrier Frequency Separation(FHSS)

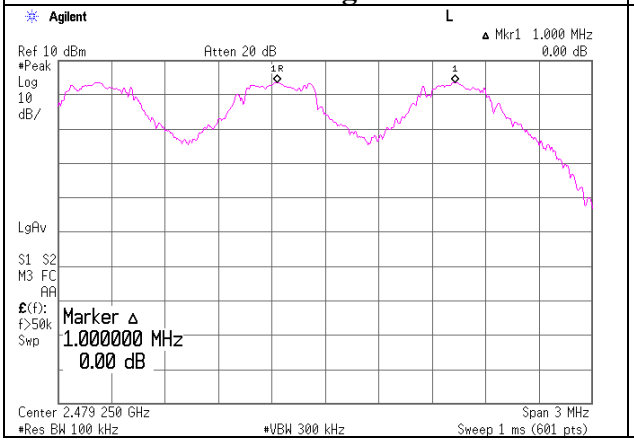
Ch:Low



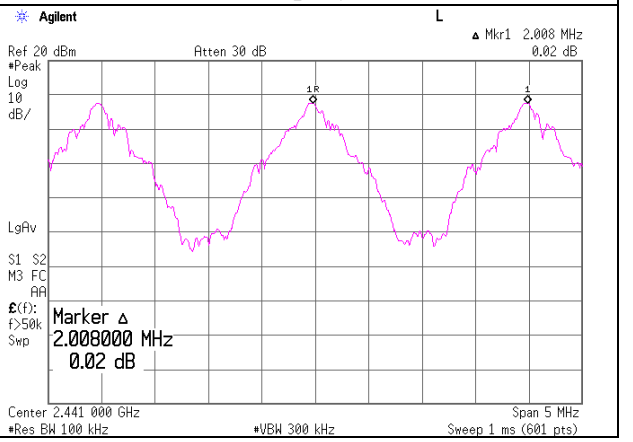
Ch:Mid



Ch:High



Inquiry



20dB Bandwidth(FHSS)

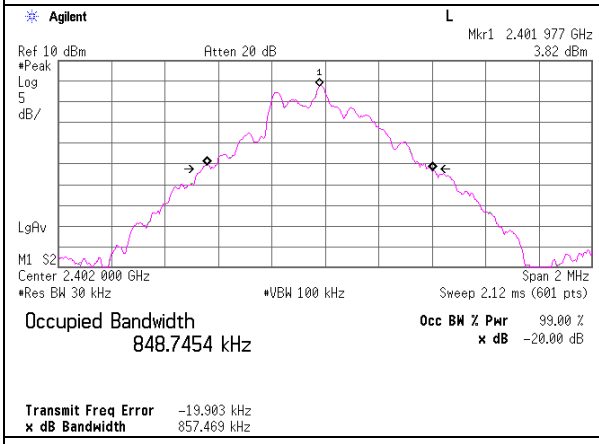
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Fujitsu Limited	REGULATION	: Fcc Part15 Subpart C 15.247(a)(1)
EQUIPMENT	: Personal Computer	TEST DISTANCE	: -
MODEL	: P1510	DATE	: 07/27/2005
S/ N	: R5100030	TEMPERATURE	: 24deg.C
POWER	: AC 120V /60Hz	HUMIDITY	: 57%
MODE	: Tx (Hopping off) /Inquiry	ENGINEER	: Kenichi Adachi

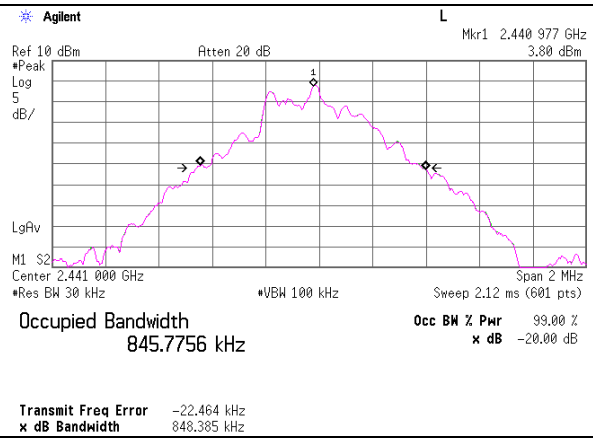
Ch	Freq. [MHz]	20dB Bandwidth [MHz]	Limit [MHz]
Low	2402.0	0.857	-
Mid	2441.0	0.848	-
High	2480.0	0.849	-
Inquiry	2441.0	0.714	-

20dB Bandwidth(FHSS)

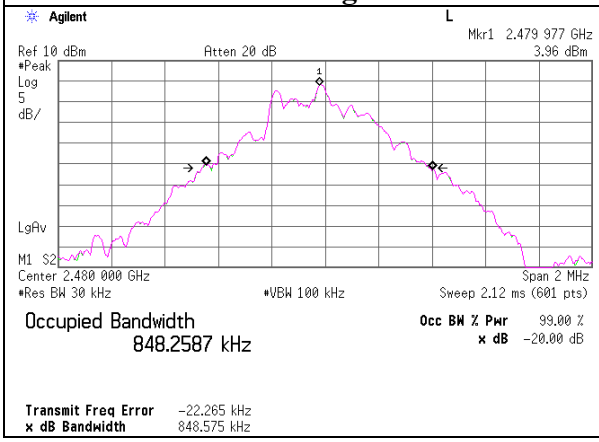
Ch:Low



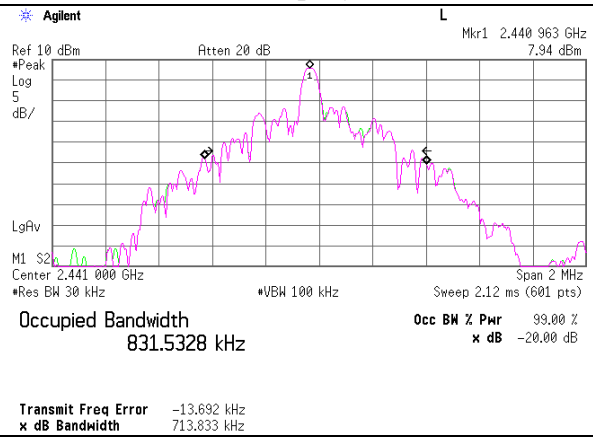
Ch:Mid



Ch:High



Inquiry



Number of Hopping Frequency(FHSS)

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

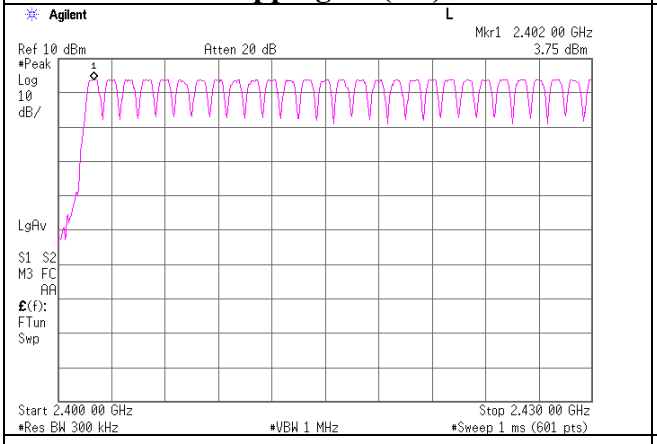
COMPANY	: Fujitsu Limited	REGULATION	: Fcc Part15 Subpart C 15.247(a)(1)(iii)
EQUIPMENT	: Personal Computer	TEST DISTANCE	: -
MODEL	: P1510	DATE	: 07/27/2005
S/ N	: R5100030	TEMPERATURE	: 24deg.C
POWER	: AC 120V /60Hz	HUMIDITY	: 57%
MODE	: Tx (Hopping on) /Inquiry	ENGINEER	: Kenichi Adachi

Mode	Number of channel [time]	Limit [time]
Tx(Hopping on)	79	≧15

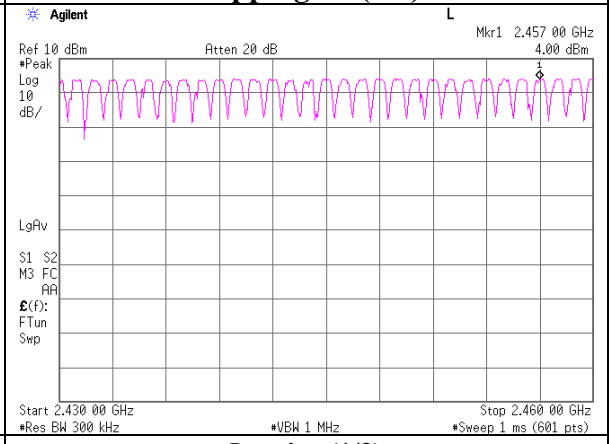
Mode	Number of channel [time]	Limit [time]
Inquiry	32	≧15

Number of Hopping Frequency(FHSS)

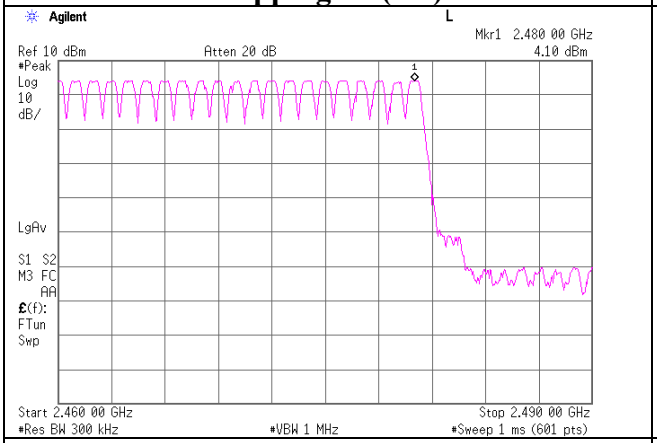
Hopping on (1/3)



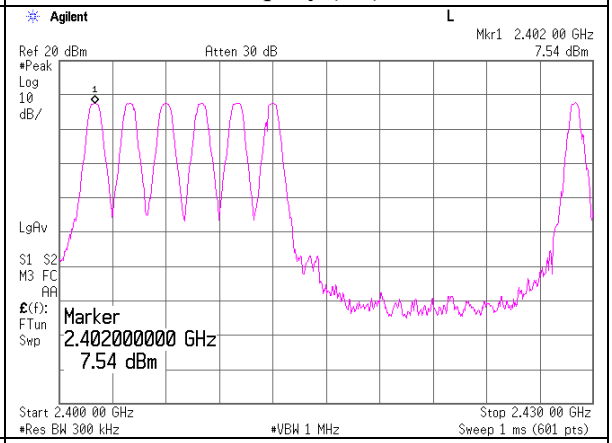
Hopping on (2/3)



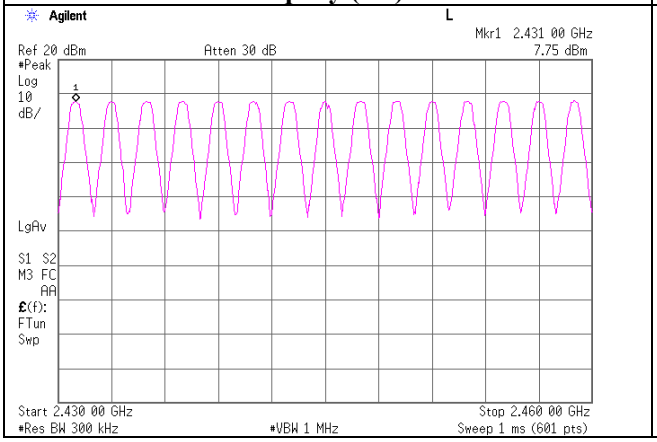
Hopping on (3/3)



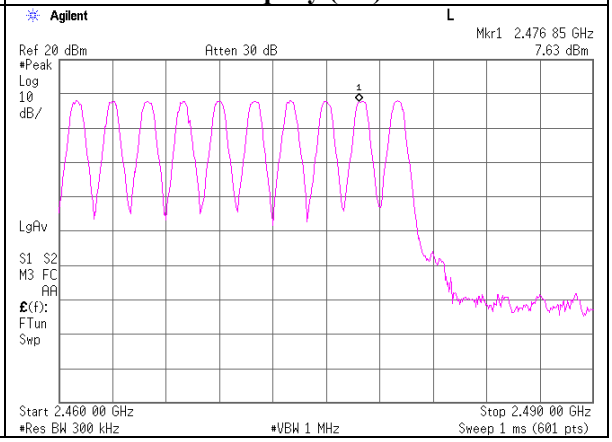
Inquiry (1/3)



Inquiry (2/3)



Inquiry (2/3)



Dwell time(FHSS)

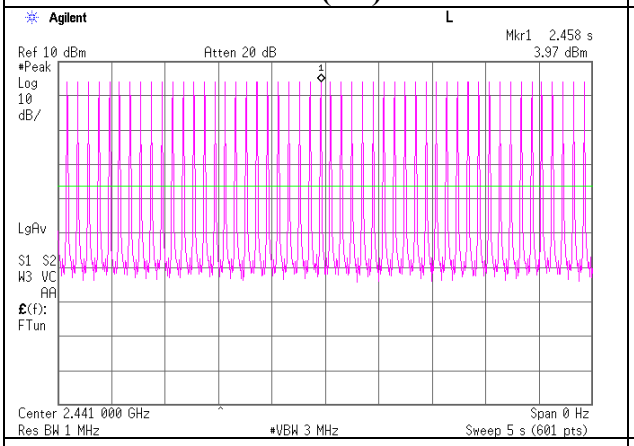
UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

COMPANY	: Fujitsu Limited	REGULATION	: Fcc Part15 Subpart C 15.247(a)(1)(iii)
EQUIPMENT	: Personal Computer	TEST DISTANCE	: -
MODEL	: P1510	DATE	: 07/27/2005
S/ N	: R5100030	TEMPERATURE	: 24deg.C
POWER	: AC 120V /60Hz	HUMIDITY	: 57%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Kenichi Adachi

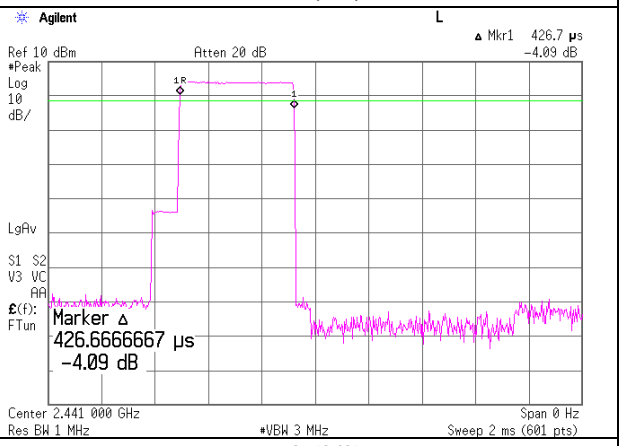
Mode	Number of transmission in a 31.6(79 Hopping x 0.4) / 12.8(32 Hopping x 0.4)second period	Length of transmission time [msec]	Result [msec]	Limit [msec]
DH1	50 times /5sec. x 31.6 = 316 times	0.427	135	400
DH3	25 times / 5sec. x 31.6 = 158 times	1.683	266	400
DH5	16 times / 5 sec. x 31.6 = 101 times	2.954	299	400
Inquiry	100 times / 1sec. x 12.8 = 1280 times	0.125	160	400

Dwell time(FHSS)

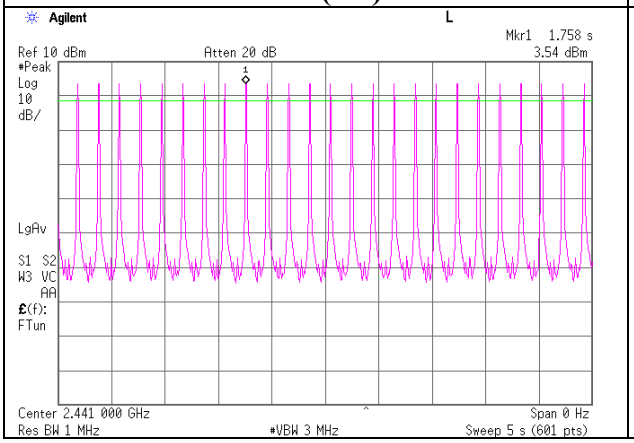
DH1 (1/2)



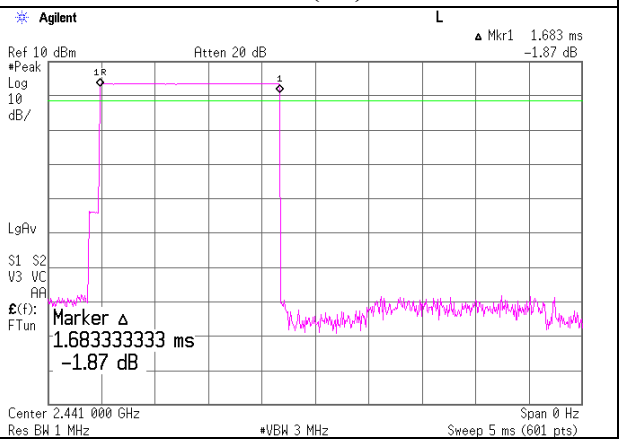
DH1 (2/2)



DH3 (1/2)

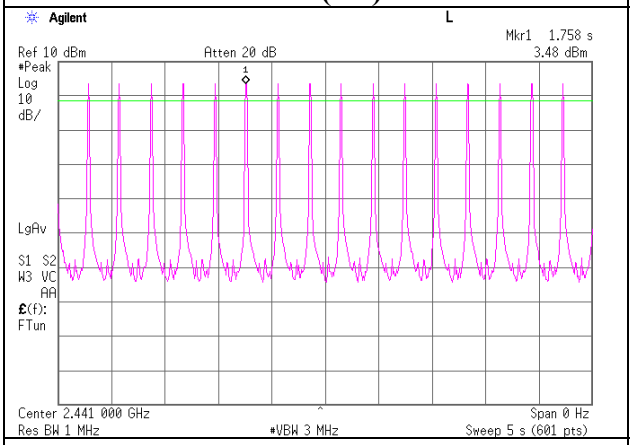


DH3 (2/2)

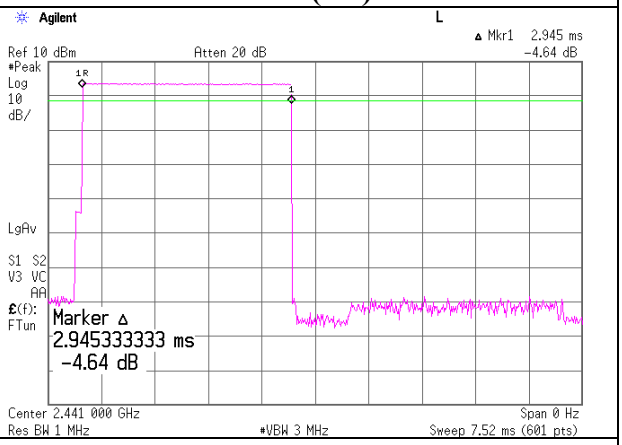


Dwell time(FHSS)

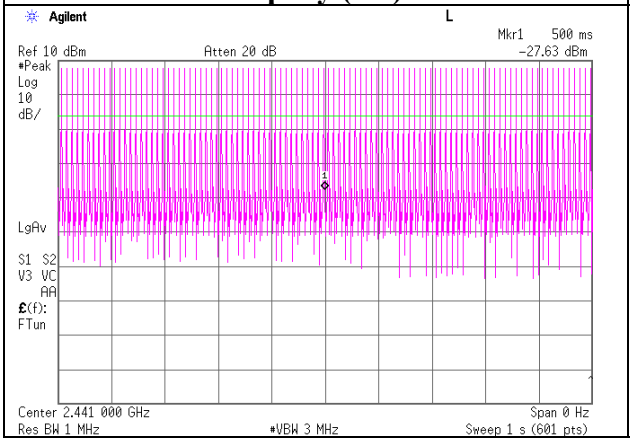
DH5 (1/2)



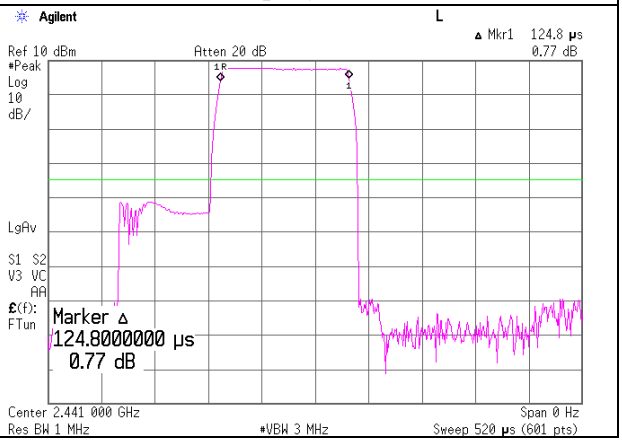
DH5 (2/2)



Inquiry (1/2)



Inquiry (2/2)



Maximum Peak Output Power(FHSS)

UL Apex Co., Ltd.
Head Office EMC Lab. No.3 Shielded Room

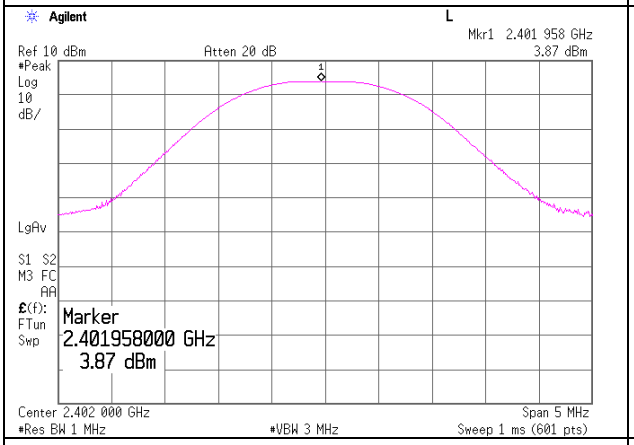
COMPANY	: Fujitsu Limited	REGULATION	: Fcc Part15 Subpart C 15.247(b)(1)
EQUIPMENT	: Personal Computer	TEST DISTANCE	: -
MODEL	: P1510	DATE	: 07/27/2005
S/ N	: R5100030	TEMPERATURE	: 24deg.C
POWER	: AC 120V /60Hz	HUMIDITY	: 57%
MODE	: Tx(Hopping on)/Inquiry	ENGINEER	: Kenichi Adachi

Ch	Freq. [MHz]	S/A Reading [dBm]	Cable Loss [dB]	Atten. [dB]	Result [dBm]	Limit [dBm]	Margin [dB]
Low	2402.0	3.87	0.37	2.93	7.17	20.96	13.79
Mid	2441.0	4.01	0.37	2.92	7.30	20.96	13.66
High	2479.9	4.26	0.37	2.88	7.51	20.96	13.45
Inquiry	2467.0	7.83	0.37	2.92	11.12	20.96	9.84

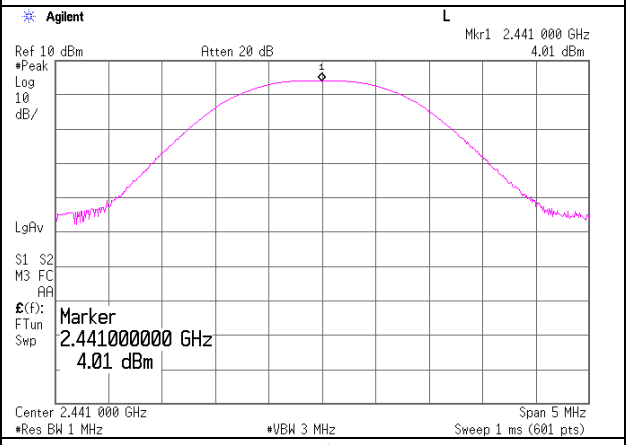
Sample Calculation:
Result = Reading + Cable Loss (supplied by customer)+ Attenuator
* In the above table, factor 0.0dB represents no use of Atten. and/or Filter.

Maximum Peak Output Power(FHSS)

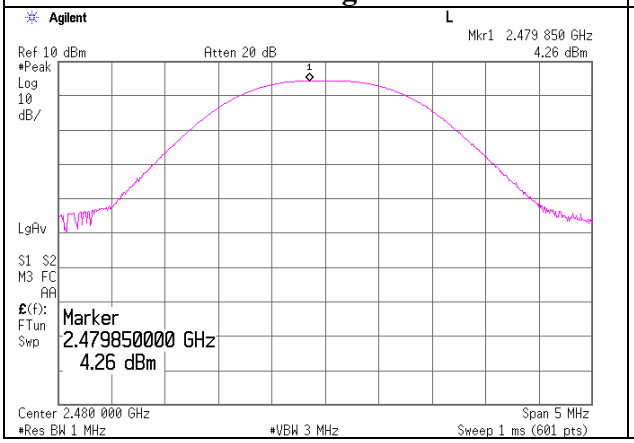
Ch:Low



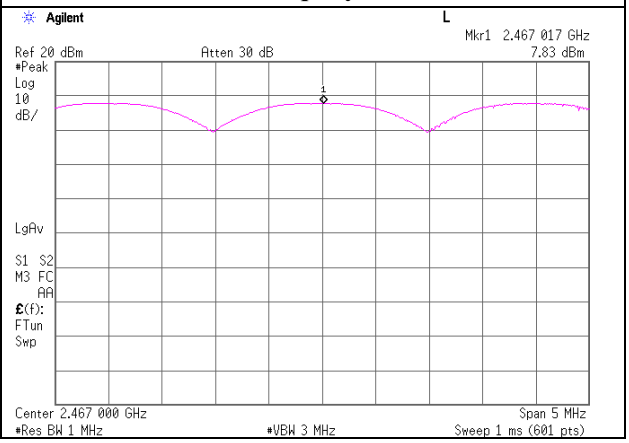
Ch:Mid



Ch:High



Inquiry



Radiated Spurious Emission(FHSS) 30MHz - 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

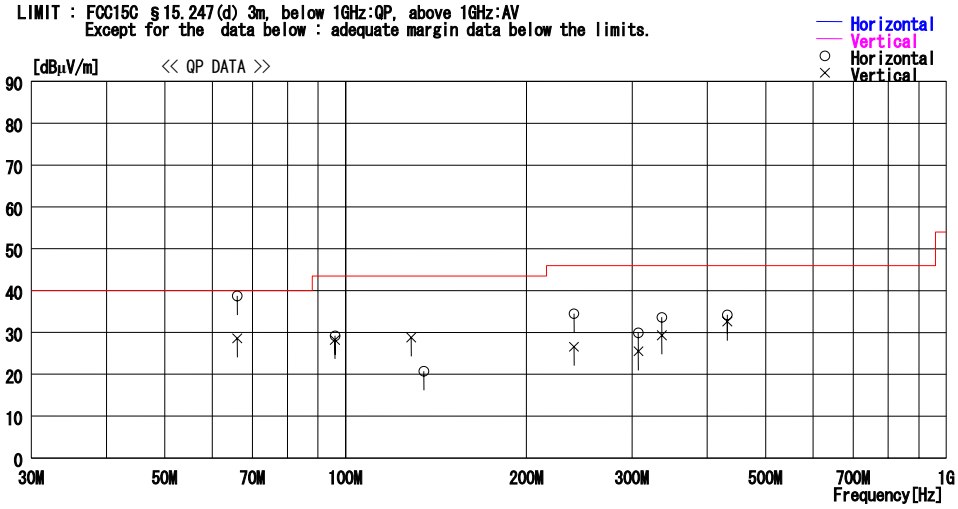
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Fujitsu Limited
Kind of EUT : Personal Computer
Model No. : P1510
Serial No. : R5100030

Report No. : 25LE0207-HO
Power : AC120V / 60Hz
Temp./Humi. : 23deg.C / 65%
Operator : Makoto Kosaka

Mode / Remarks : BT Tx2402MHz Max-axis(H:Z-axis , V:X-axis)

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar.	Limit [dBuV/m]	Margin [dB]
65.999	52.8	QP	7.4	-21.5	38.7	-1	400	Hori.	40.0	1.3
66.000	42.7	QP	7.4	-21.5	28.6	67	100	Vert.	40.0	11.4
96.001	39.5	QP	9.7	-21.0	28.2	0	128	Vert.	43.5	15.3
96.049	40.5	QP	9.7	-21.0	29.2	255	300	Hori.	43.5	14.3
135.000	26.9	QP	14.2	-20.4	20.7	360	131	Hori.	43.5	22.8
128.630	35.5	QP	13.8	-20.5	28.8	336	100	Vert.	43.5	14.7
239.996	28.8	QP	17.1	-19.3	26.6	176	100	Vert.	46.0	19.4
239.997	36.7	QP	17.1	-19.3	34.5	129	140	Hori.	46.0	11.5
307.203	33.7	QP	15.1	-18.9	29.9	230	100	Hori.	46.0	16.1
307.204	29.3	QP	15.1	-18.9	25.5	68	100	Vert.	46.0	20.5
335.993	32.0	QP	16.3	-19.0	29.3	52	100	Vert.	46.0	16.7
336.001	36.3	QP	16.3	-19.0	33.6	0	100	Hori.	46.0	12.4
431.993	33.2	QP	18.7	-19.3	32.6	243	100	Vert.	46.0	13.4
431.995	34.8	QP	18.7	-19.3	34.2	154	100	Hori.	46.0	11.8

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
Except for the data below : adequate margin data below the limits.
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP.GAIN

Radiated Spurious Emission(FHSS) 30MHz - 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

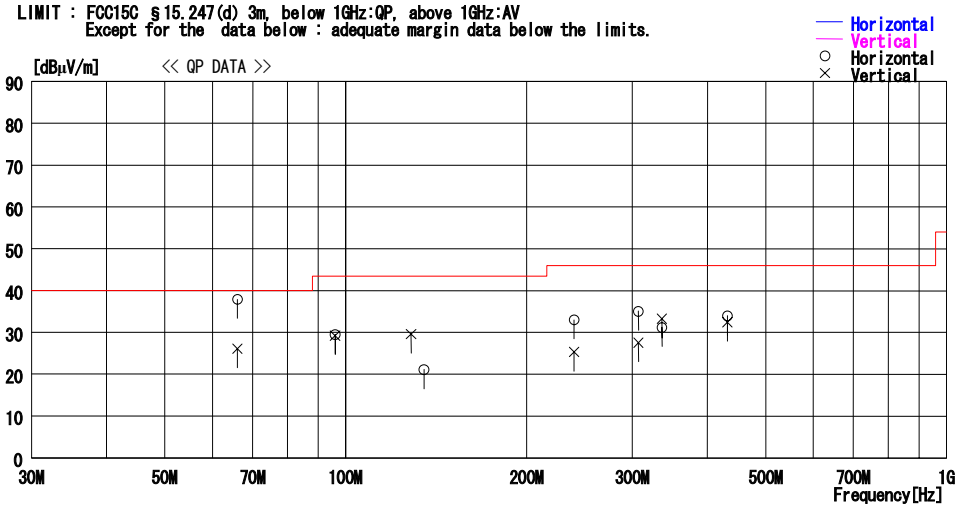
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Fujitsu Limited
Kind of EUT : Personal Computer
Model No. : P1510
Serial No. : R5100030

Report No. : 25LE0207-HO
Power : AC120V / 60Hz
Temp./Humi. : 23deg.C / 65%
Operator : Makoto Kosaka

Mode / Remarks : BT Tx2441MHz Max-axis(H:Z-axis , V:X-axis)

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar	Limit [dBuV/m]	Margin [dB]
66.000	52.0	QP	7.4	-21.5	37.9	1	400	Hori	40.0	2.1
66.026	40.2	QP	7.4	-21.5	26.1	253	100	Vert.	40.0	13.9
96.045	40.8	QP	9.7	-21.0	29.5	270	300	Hori	43.5	14.0
96.043	40.5	QP	9.7	-21.0	29.2	332	145	Vert.	43.5	14.3
128.583	36.3	QP	13.8	-20.5	29.6	224	100	Vert.	43.5	13.9
135.000	27.3	QP	14.2	-20.4	21.1	151	129	Hori	43.5	22.4
239.996	35.2	QP	17.1	-19.3	33.0	327	139	Hori	46.0	13.0
239.994	27.5	QP	17.1	-19.3	25.3	159	100	Vert.	46.0	20.7
307.202	31.3	QP	15.1	-18.9	27.5	289	194	Vert.	46.0	18.5
307.204	38.9	QP	15.1	-18.9	35.1	38	100	Hori	46.0	10.9
335.995	33.9	QP	16.3	-19.0	31.2	360	134	Hori	46.0	14.8
335.993	35.9	QP	16.3	-19.0	33.2	186	153	Vert.	46.0	12.8
431.994	34.6	QP	18.7	-19.3	34.0	152	100	Hori	46.0	12.0
431.992	33.0	QP	18.7	-19.3	32.4	150	100	Vert.	46.0	13.6

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP,30-300MHz BICONICAL,300MHz-1000MHz LOGPERIODIC,1000MHz- HORN
Except for the data below : adequate margin data below the limits.
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP.GAIN

Radiated Spurious Emission(FHSS) 30MHz - 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

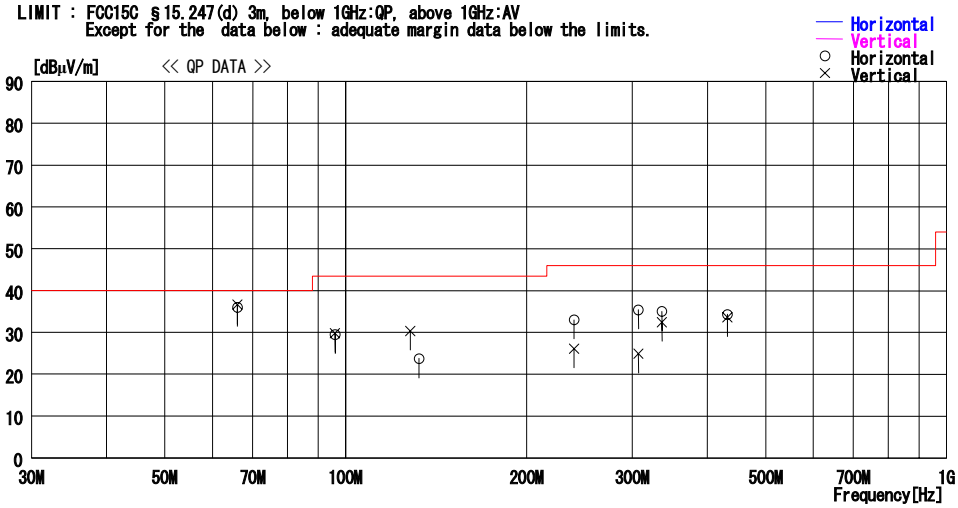
UL Apex Co., Ltd. Head Office EMC Lab. No.2 Semi Anechoic Chamber

Applicant : Fujitsu Limited
Kind of EUT : Personal Computer
Model No. : P1510
Serial No. : R5100030

Report No. : 25LE0207-HO
Power : AC120V / 60Hz
Temp./Humi. : 23deg.C / 65%
Operator : Makoto Kosaka

Mode / Remarks : BT Tx2480MHz Max-axis(H:Z-axis , V:X-axis)

LIMIT : FCC15C §15.247(d) 3m, below 1GHz:QP, above 1GHz:AV
Except for the data below : adequate margin data below the limits.



Frequency [MHz]	Reading [dBuV]	DET	Antenna Factor [dB/m]	Loss& Gain [dB]	Level [dBuV/m]	Angle [Deg]	Height [cm]	Polar	Limit [dBuV/m]	Margin [dB]
65.998	50.1	QP	7.4	-21.5	36.0	360	400	Hori	40.0	4.0
65.996	50.7	QP	7.4	-21.5	36.6	253	274	Vert.	40.0	3.4
96.041	40.8	QP	9.7	-21.0	29.5	250	300	Hori	43.5	14.0
96.035	41.1	QP	9.7	-21.0	29.8	0	133	Vert.	43.5	13.7
128.103	37.1	QP	13.7	-20.5	30.3	318	100	Vert.	43.5	13.2
132.417	30.1	QP	14.1	-20.5	23.7	1	299	Hori	43.5	19.8
239.996	35.2	QP	17.1	-19.3	33.0	125	150	Hori	46.0	13.0
239.996	28.3	QP	17.1	-19.3	26.1	190	100	Vert.	46.0	19.9
307.202	28.7	QP	15.1	-18.9	24.9	221	157	Vert.	46.0	21.1
307.200	39.2	QP	15.1	-18.9	35.4	29	100	Hori	46.0	10.6
335.996	37.7	QP	16.3	-19.0	35.0	360	100	Hori	46.0	11.0
335.996	35.1	QP	16.3	-19.0	32.4	172	142	Vert.	46.0	13.6
431.994	34.9	QP	18.7	-19.3	34.3	198	100	Hori	46.0	11.7
431.994	34.2	QP	18.7	-19.3	33.6	152	100	Vert.	46.0	12.4

CHART:WITH FACTOR ANT TYPE : -30MHz LOOP, 30-300MHz BICONICAL, 300MHz-1000MHz LOGPERIODIC, 1000MHz- HORN
Except for the data below : adequate margin data below the limits.
CALCULATION : READING + ANT FACTOR + LOSS(CABLE+ATTEN.) - AMP.GAIN

Radiated Spurious Emission (FHSS) Above 1GHz

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

								UL Apex Co., Ltd.				
								Head Office EMC Lab. No.2Semi Anechoic Chamber				
Company		: Fujitsu Limited				REPORT NO		: 25LE0207-HO				
Equipment		: Personal Computer				REGULATION		: Fcc Part15 Subpart C 15.247(d)				
Model		: P1510				TEST DISTANCE		: 3/1m				
Sample No.		: R5100030				DATE		: 07/25/2005				
Power		: AC 120 V / 60 Hz				TEMPERATURE		: 23deg.C				
Mode		: Bluetooth Tx2402MHz				HUMIDITY		: 65%				
Remarks		: Hor Z , Ver X-axis				ENGINEER		: Makoto Kosaka				

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	2390.0	58.8	61.4	30.5	41.2	3.7	0.0	51.8	54.4	74.0	22.2	19.6
2*	2400.0	78.8	81.4	30.5	41.2	3.7	0.0	71.8	74.4	74.0	2.2	-0.4
3	4804.0	50.9	51.3	35.2	42.5	5.3	1.0	49.9	50.3	74.0	24.1	23.7
4	7206.0	50.8	51.6	37.7	41.8	6.6	0.4	53.7	54.5	74.0	20.3	19.5
5	9608.0	50.2	50.5	37.0	40.8	7.9	0.1	54.4	54.7	74.0	19.6	19.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12010.0	45.6	45.6	41.6	40.3	0.1	0.1	47.1	47.1	74.0	26.9	26.9
7	14412.0	45.4	46.5	41.7	42.1	0.2	0.2	45.4	46.5	74.0	28.6	27.5
8	16814.0	46.0	44.9	45.1	41.8	1.2	1.1	51.6	50.5	74.0	22.4	23.5
9	19216.0	43.5	43.6	40.1	40.2	2.5	0.0	45.9	46.0	74.0	28.1	28.0
10	21618.0	44.2	44.0	39.8	40.2	2.5	0.0	46.3	46.1	74.0	27.7	27.9
11	24020.0	45.8	46.1	40.4	39.1	4.4	0.0	51.5	51.8	74.0	22.5	22.2

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	2390.0	38.9	40.8	30.5	41.2	3.7	0.0	31.9	33.8	54.0	22.1	20.2
2*	2400.0	47.0	48.7	30.5	41.2	3.7	0.0	40.0	41.7	54.0	14.0	12.3
3	4804.0	38.3	38.4	35.2	42.5	5.3	1.0	37.3	37.4	54.0	16.7	16.6
4	7206.0	38.4	38.3	37.7	41.8	6.6	0.4	41.3	41.2	54.0	12.7	12.8
5	9608.0	37.0	37.0	37.0	40.8	7.9	0.1	41.2	41.2	54.0	12.8	12.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
6	12010.0	32.3	32.6	41.6	40.3	0.1	0.1	33.8	34.1	54.0	20.2	19.9
7	14412.0	32.6	32.9	41.7	42.1	0.2	0.2	32.6	32.9	54.0	21.4	21.1
8	16814.0	32.8	32.4	45.1	41.8	1.2	1.1	38.4	38.0	54.0	15.6	16.0
9	19216.0	30.5	30.6	40.1	40.2	2.5	0.0	32.9	33.0	54.0	21.1	21.0
10	21618.0	31.5	31.5	39.8	40.2	2.5	0.0	33.6	33.6	54.0	20.4	20.4
11	24020.0	32.8	32.6	40.4	39.1	4.4	0.0	38.5	38.3	54.0	15.5	15.7

* Reference data

20dBc(Fundamental 2402MHz) (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	2402.0	113.6	115.6	30.5	41.2	3.7	0.0	106.6	108.6	-	-	-
2	2400.0	66.8	69.3	30.5	41.2	3.7	0.0	59.8	62.3	Funda-20dB	26.8	26.3

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

Radiated Spurious Emission (FHSS) Above 1GHz

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

UL Apex Co., Ltd.
Head Office EMC Lab. No.1Semi Anechoic Chamber

Company	: Fujitsu Limited	REPORT NO	: 25LE0207-HO
Equipment	: Personal Computer	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: P1510	TEST DISTANCE	: 3/1m
Sample No.	: R5100030	DATE	: 07/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C
Mode	: Bluetooth Tx2441MHz	HUMIDITY	: 65%
Remarks	: Hor Z , Ver X-axis	ENGINEER	: Makoto Kosaka

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	4882.0	56.3	56.6	35.6	42.5	5.3	1.0	55.7	56.0	74.0	18.3	18.0
2	7323.0	46.3	47.1	37.9	41.8	6.6	0.5	49.5	50.3	74.0	24.5	23.7
3	9764.0	45.4	44.9	36.8	40.7	8.1	0.2	49.8	49.3	74.0	24.3	24.8
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	12205.0	46.3	44.4	41.6	40.6	0.0	0.3	47.6	45.7	74.0	26.4	28.3
5	14646.0	46.0	45.1	42.2	41.8	0.3	0.3	47.0	46.1	74.0	27.0	27.9
6	17087.0	46.5	45.0	45.2	41.8	1.4	1.1	52.4	50.9	74.0	21.6	23.1
7	19528.0	44.7	43.9	40.3	40.1	2.6	0.0	47.5	46.7	74.0	26.5	27.3
8	21969.0	45.9	45.5	39.8	40.1	2.5	0.0	48.1	47.7	74.0	25.9	26.3
9	24410.0	46.6	46.1	40.4	39.7	4.5	0.0	51.8	51.3	74.0	22.2	22.7

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	4882.0	41.2	41.3	35.6	42.5	5.3	1.0	40.6	40.7	54.0	13.4	13.3
2	7323.0	33.9	33.7	37.9	41.8	6.6	0.5	37.1	36.9	54.0	16.9	17.1
3	9764.0	31.3	31.3	36.8	40.7	8.1	0.2	35.7	35.7	54.0	18.4	18.4
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
4	12205.0	32.8	31.8	41.6	40.6	0.0	0.3	34.1	33.1	54.0	19.9	20.9
5	14646.0	32.6	31.9	42.2	41.8	0.3	0.3	33.6	32.9	54.0	20.4	21.1
6	17087.0	33.3	32.8	45.2	41.8	1.4	1.1	39.2	38.7	54.0	14.8	15.3
7	19528.0	30.8	30.5	40.3	40.1	2.6	0.0	33.6	33.3	54.0	20.4	20.7
8	21969.0	32.5	32.6	39.8	40.1	2.5	0.0	34.7	34.8	54.0	19.3	19.2
9	24410.0	32.1	32.1	40.4	39.7	4.5	0.0	37.3	37.3	54.0	16.7	16.7

* Reference data
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 (FHSS) Above 1GHz

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

UL Apex Co., Ltd.
Head Office EMC Lab. No.1Semi Anechoic Chamber

Company	: Fujitsu Limited	REPORT NO	: 25LE0207-HO
Equipment	: Personal Computer	REGULATION	: Fcc Part15 Subpart C 15.247(d)
Model	: P1510	TEST DISTANCE	: 3/1m
Sample No.	: R5100030	DATE	: 07/25/2005
Power	: AC 120 V / 60 Hz	TEMPERATURE	: 23deg.C
Mode	: Bluetooth Tx2480MHz	HUMIDITY	: 65%
Remarks	: Hor Z , Ver X-axis	ENGINEER	: Makoto Kosaka

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	2483.5	66.7	67.9	30.5	41.3	3.7	0.0	59.6	60.8	74.0	14.4	13.2
2	4960.0	47.3	50.6	36.1	42.5	5.4	1.1	47.4	50.7	74.0	26.6	23.3
3	7440.0	47.8	46.5	38.1	41.8	6.8	0.7	51.6	50.3	74.0	22.4	23.7
4	9920.0	45.4	46.2	36.7	40.6	7.9	0.3	49.7	50.5	74.0	24.3	23.5
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	12400.0	45.9	45.9	41.7	41.0	0.0	0.4	47.0	47.0	74.0	27.0	27.0
6	14880.0	45.5	45.3	42.7	41.5	0.4	0.5	47.6	47.4	74.0	26.4	26.6
7	17360.0	45.3	46.2	44.7	42.0	1.5	0.9	50.4	51.3	74.0	23.6	22.7
8	19840.0	43.2	43.6	40.4	40.0	2.8	0.0	46.4	46.8	74.0	27.6	27.2
9	22320.0	44.2	44.9	39.8	39.9	2.8	0.0	46.9	47.6	74.0	27.1	26.4
10	24800.0	47.0	47.0	40.7	40.2	4.5	0.0	52.0	52.0	74.0	22.0	22.0

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	2483.5	43.9	43.2	30.5	41.3	3.7	0.0	36.8	36.1	54.0	17.2	17.9
2	4960.0	34.1	37.5	36.1	42.5	5.4	1.1	34.2	37.6	54.0	19.8	16.4
3	7440.0	34.1	33.8	38.1	41.8	6.8	0.7	37.9	37.6	54.0	16.1	16.4
4	9920.0	32.4	32.4	36.7	40.6	7.9	0.3	36.7	36.7	54.0	17.3	17.3
Test distance 1meters RESULT=Reading + ANT Factor - Amp Gain + Cable Loss + Filter Loss - Dfac												
5	12400.0	33.2	33.1	41.7	41.0	0.0	0.4	34.3	34.2	54.0	19.7	19.8
6	14880.0	32.3	32.1	42.7	41.5	0.4	0.5	34.4	34.2	54.0	19.6	19.8
7	17360.0	32.8	32.9	44.7	42.0	1.5	0.9	37.9	38.0	54.0	16.1	16.0
8	19840.0	31.0	30.9	40.4	40.0	2.8	0.0	34.2	34.1	54.0	19.8	19.9
9	22320.0	32.0	32.1	39.8	39.9	2.8	0.0	34.7	34.8	54.0	19.3	19.2
10	24800.0	33.8	33.8	40.7	40.2	4.5	0.0	38.8	38.8	54.0	15.2	15.2

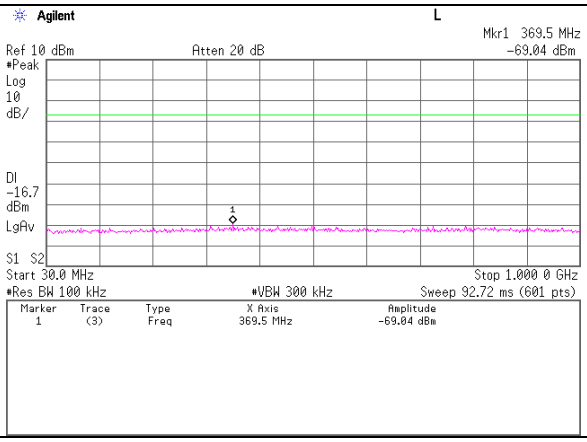
* Reference data

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.

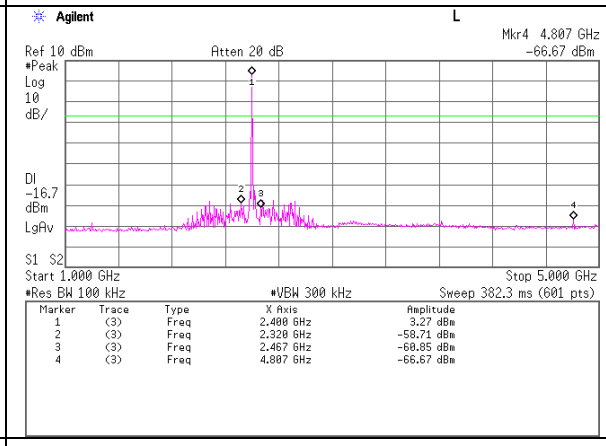
Conducted Spurious Emission (FHSS)

Ch:Low

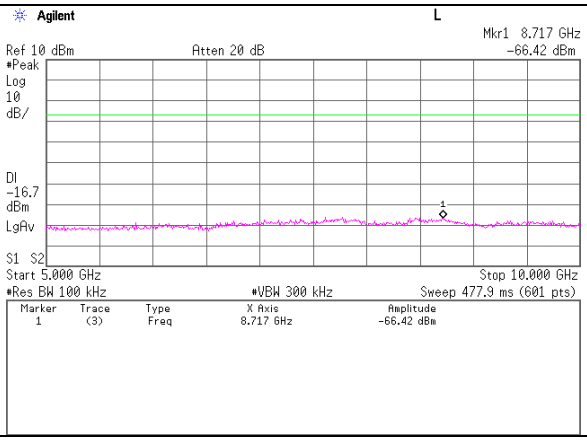
30MHz-1GHz



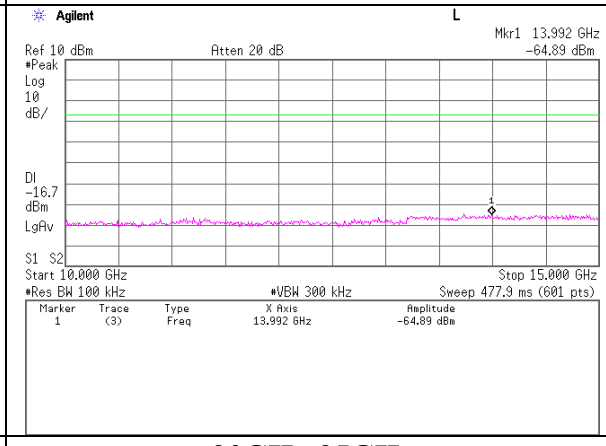
1GHz-5GHz



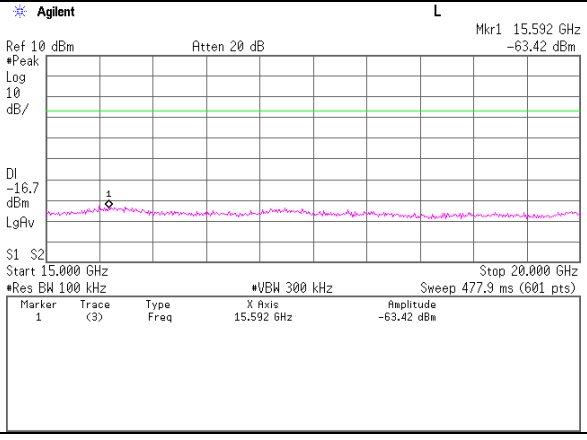
5GHz-10GHz



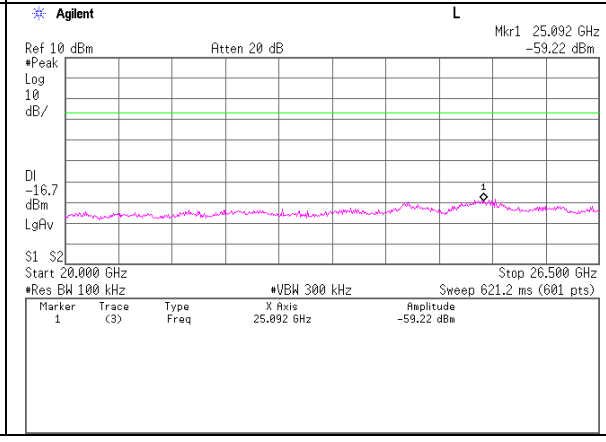
10GHz-15GHz



15GHz-20GHz



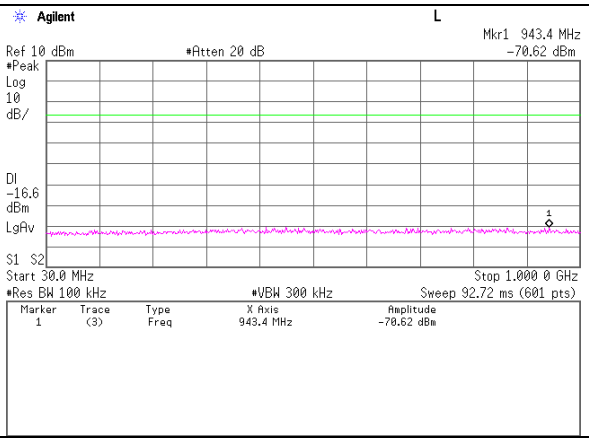
20GHz-25GHz



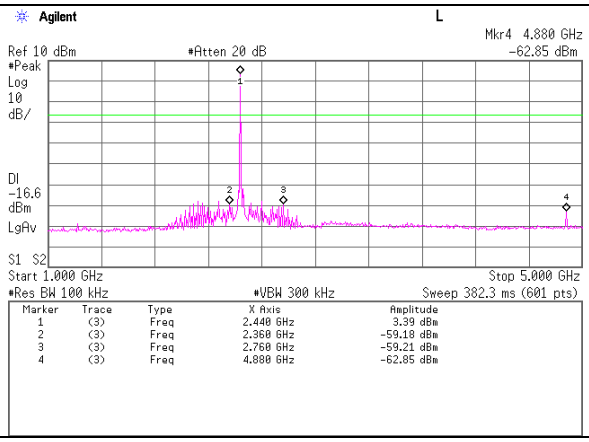
Conducted Spurious Emission (FHSS)

Ch:Mid

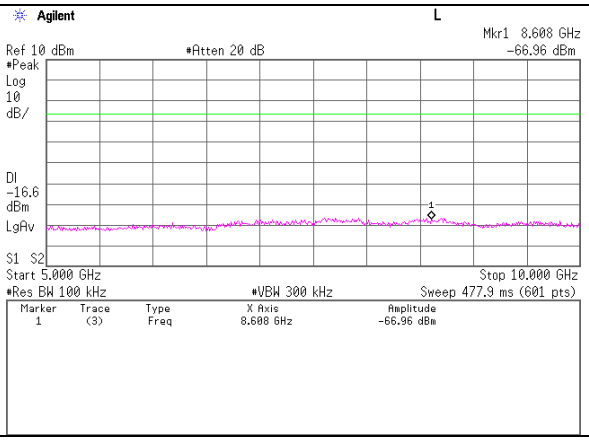
30MHz-1GHz



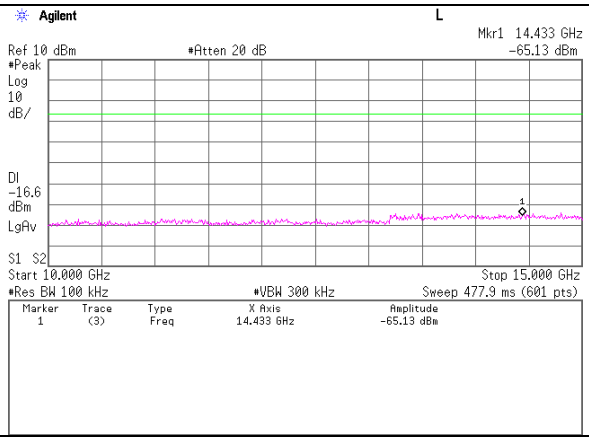
1GHz-5GHz



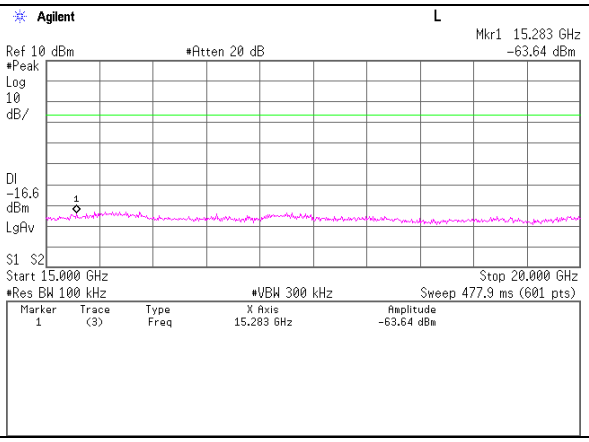
5GHz-10GHz



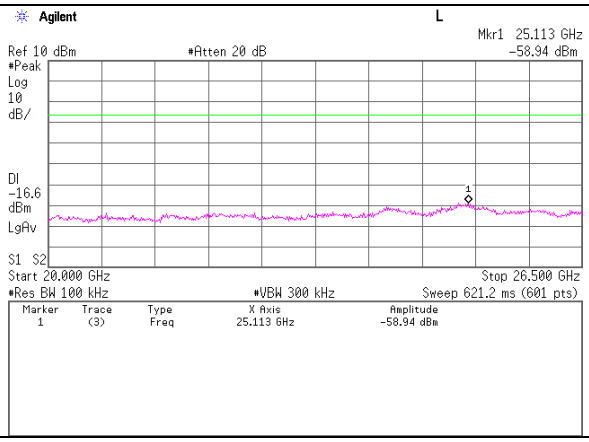
10GHz-15GHz



15GHz-20GHz



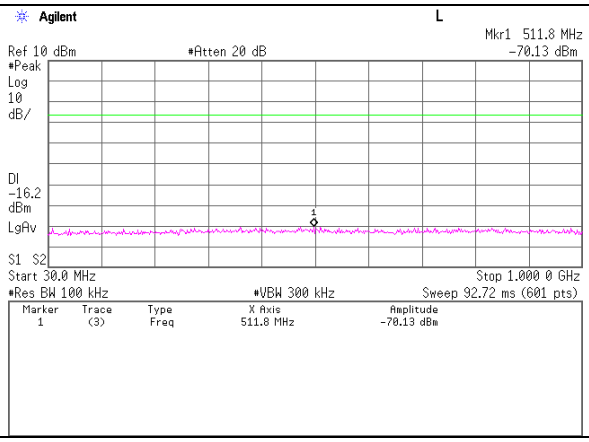
20GHz-25GHz



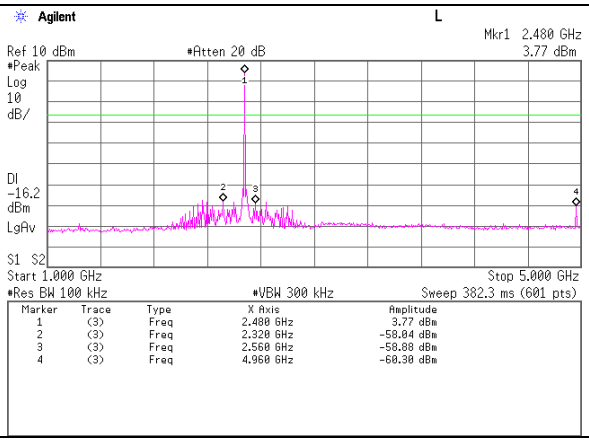
Conducted Spurious Emission (FHSS)

Ch:High

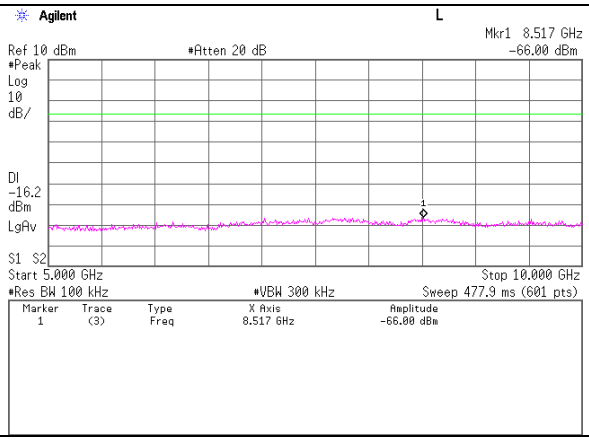
30MHz-1GHz



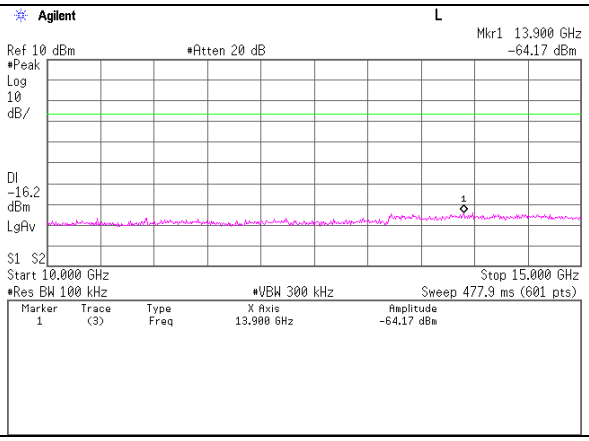
1GHz-5GHz



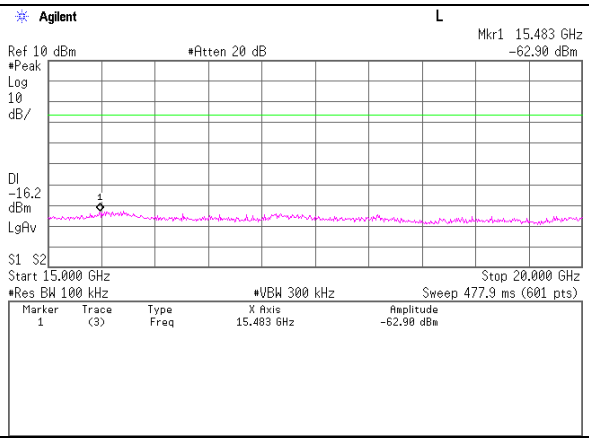
5GHz-10GHz



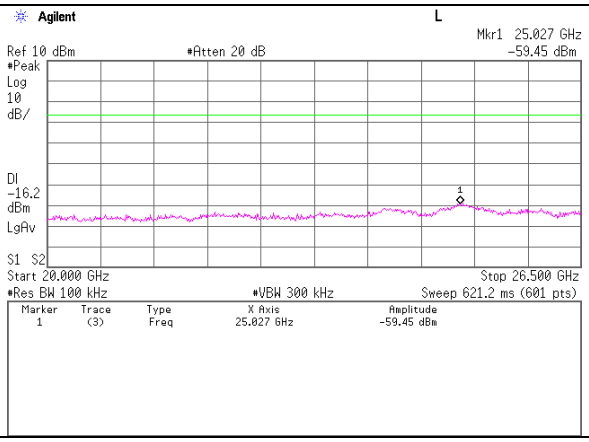
10GHz-15GHz



15GHz-20GHz



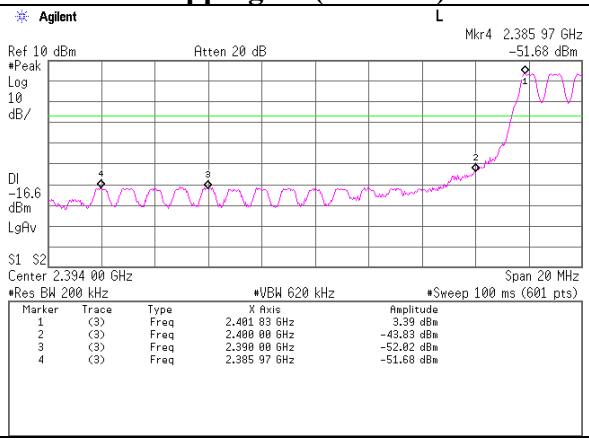
20GHz-25GHz



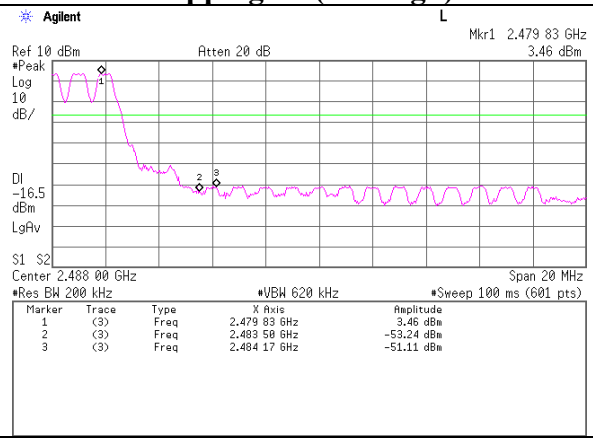
Conducted Spurious Emission (FHSS)

Band Edge compliance

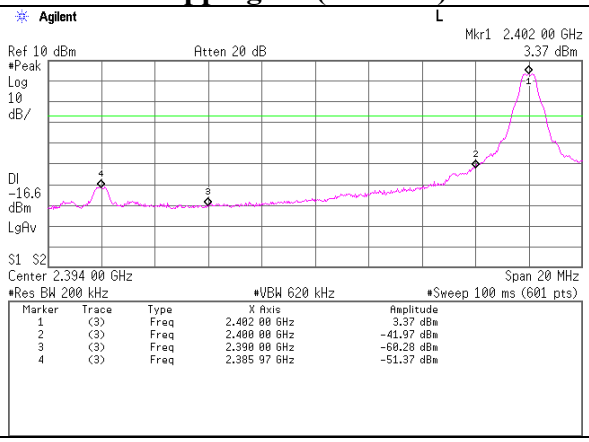
Hopping on (Ch:Low)



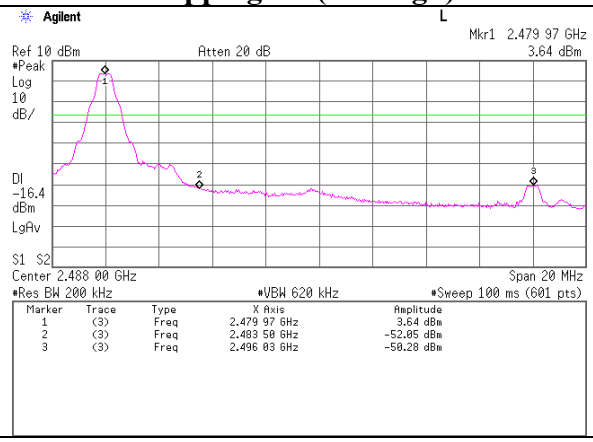
Hopping on (Ch:High)



Hopping off (Ch:Low)

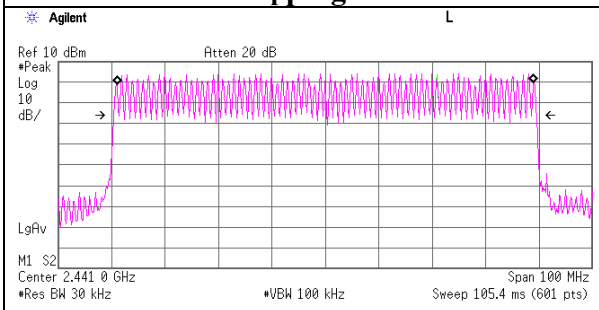


Hopping off (Ch:High)



99% Occupied Bandwidth(FHSS)

Hopping On

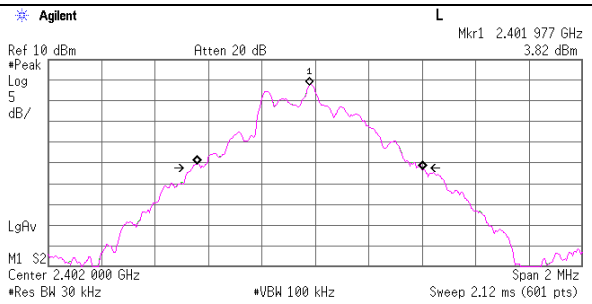


Occupied Bandwidth
77.8012 MHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error 10.603 kHz
x dB Bandwidth 78.984 MHz

Ch:Low

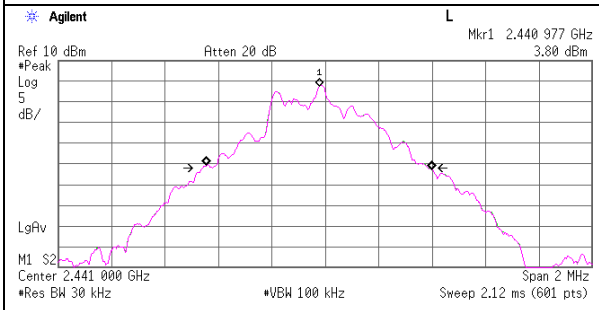


Occupied Bandwidth
848.7454 kHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error -19.903 kHz
x dB Bandwidth 857.469 kHz

Ch:Mid

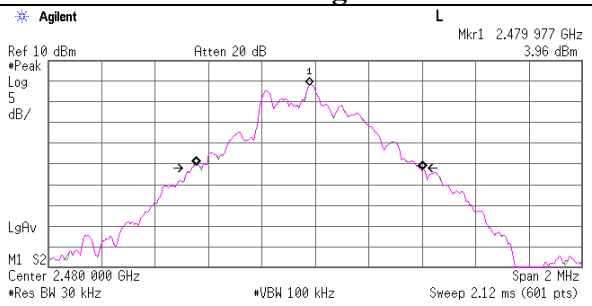


Occupied Bandwidth
845.7756 kHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error -22.464 kHz
x dB Bandwidth 848.385 kHz

Ch:High



Occupied Bandwidth
848.2587 kHz

Occ BW % Pwr 99.00 %
x dB -20.00 dB

Transmit Freq Error -22.265 kHz
x dB Bandwidth 848.575 kHz