

FCC/IC TEST REPORT

for

47 CFR, Part 15 Subpart E and RSS-210

Equipment : Notebook Computer

Trade Name : Fujitsu Siemens Computers, Fujitsu Limited

Model No. : Kedron + BT E8310

FCC ID : EJE-WB0048

IC ID : 337J-WB0048

Filing Type : Certification

Applicant : Fujitsu Limited
: 4-1-1 Kamikodanaka, Nakahara-ku, Kawasaki-shi, Kanagawa,
211-8588, Japan

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- The data shown in this test report were carried out on Jun. 08, 2007 at **Sporton International Inc. LAB.**
- Report No.: FR6D2906-B, Report Version: 07.



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Report Version: 07

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History of this test report

Report Issue Date: Jun. 28, 2007

Report No.	Description

1. General Description of Equipment under Test

1.1 Applicant

Fujitsu Limited

4-1-1 Kamikodanaka, Nakahara-ku, Kawasaki-shi, Kanagawa, 211-8588, Japan

1.2 Manufacturer

Fujitsu Siemens Computers GmbH

Buergermeister-Ulrich-Str. 100, 86199 Augsburg, Germany

1.3 Basic Description of Equipment under Test

Equipment	: Notebook Computer
Trade Name	: Fujitsu Siemens Computers, Fujitsu Limited
Model No.	: Kedron + BT E8310
FCC ID	: EJE-WB0048
IC ID	: 337J-WB0048
AC Power Cord	: AC 120V, 2 meter, 2 pin

1.4 Feature of Equipment under Test

Product Feature & Specification				
1. DUT Type	Notebook Computer			
2. Trade Name	Fujitsu Siemens Computers, Fujitsu Limited			
3. Model Name	Kedron + BT E8310			
4. FCC ID	EJE-WB0048			
5. IC ID	337J-WB0048			
6. Freq. Range/Carrier Freqs.	802.11a : 5150 ~ 5350MHz (Band I,II) / 5725MHz ~ 5850MHz (Band III) 802.11b/g : 2400MHz ~ 2483.5MHz BT : 2400MHz ~ 2483.5MHz			
7. Number of Channels	802.11a : 8 (Band I and II) / 5 (Band III) 802.11b/g : 11 BT : 79			
8. Carrier Frequency of each channel	802.11a Band I : 5000+n*5 MHz, n=36, 40, 44, 48 802.11a Band II : 5000+n*5 MHz, n=52, 56, 60, 64 802.11a Band III : 5000+n*5 MHz, n=149, 153, 157, 161, 165 802.11b/g : 2412MHz+(n-1)*5MHz, n=1~11 BT : 2402MHz+n*1MHz, n=0~78			
9. Channel Spacing	802.11a : 20MHz 802.11b/g : 5MHz BT : 1MHz			
10. Type of Antenna Connector	I-PEX			
11. Antenna Type	PIFA Antenna			
12. Antenna Gain	3 dBi			
13. Maximum Output Power to Antenna (Normal condition)	802.11a : 16.50 dBm (Band I) / 15.60 dBm (Band II) / 19.20 dBm (Band III) 802.11b : 20.68 dBm / 802.11g: 22.28 dBm BT : 0.49 dBm (Normal) / 1.27 dBm (EDR)			
14. Modulation Type/Data Rate	802.11a : OFDM 802.11b/g : DSSS / OFDM BT : GFSK / ¼DQPSK / 8DPSK			
15. Function Type	Transmitter		Transceiver	V

2. Test Configuration of Equipment under Test

2.1 Test Manner

- a. The EUT has been associated with peripherals pursuant to ANSI C63.4-2003 and configuration operated in a manner tended to maximize its emission characteristics in a typical application.
- b. Power Table as below:

Channel		Frequency(MHz)	Data Rate							
			6M bps	9M bps	12M bps	18M bps	24M bps	36M bps	48M bps	54M bps
Normal mode	CH 036	5180 MHz	16.11	15.96	15.64	15.63	15.62	15.81	15.61	15.59
	CH 048	5240 MHz	15.72	15.71	15.46	15.15	15.22	15.32	15.42	15.25
	CH052	5260 MHz	15.22	15.19	15.1	15.64	15.73	15.68	15.89	15.77
	CH064	5320 MHz	15.6	15.31	15.55	15.41	15.51	15.55	15.29	15.44

- c. The data rates, 6Mbps, was chosen to being tested in normal mode, due to the highest RF output power.
- d. The complete test system refers to section 2.2 and EUT for EMI test.
- e. The EUT can operate on 5150MHz to 5250MHz, 5250MHz to 5350MHz and 5725MHz to 5850MHz as listed in section 1.4.
- f. Test Mode for radiated emission and conducted emission:

Radiated Emission	Mode 1: 11a_Tx_Ch036_5180 MHz Mode 2: 11a_Tx_CH048_5240 MHz Mode 3: 11a_Tx_CH052_5260 MHz Mode 4: 11a_Tx_CH064_5320 MHz
Conducted Emission	Mode 1: BT Link + WLAN Link + Adapter

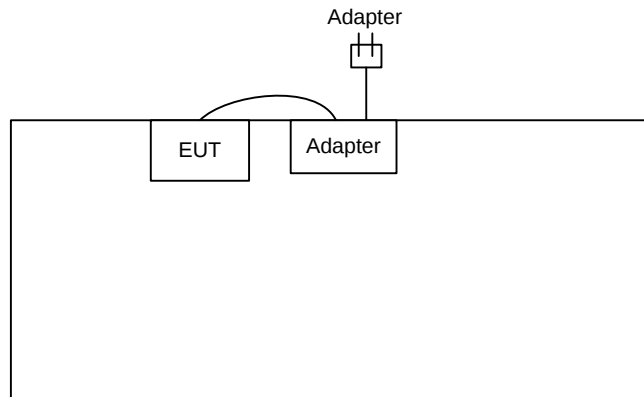
- g. Frequency range investigated: conduction 150 KHz to 30 MHz, radiation 30 MHz to 40000MHz.

2.2 Description of Test System

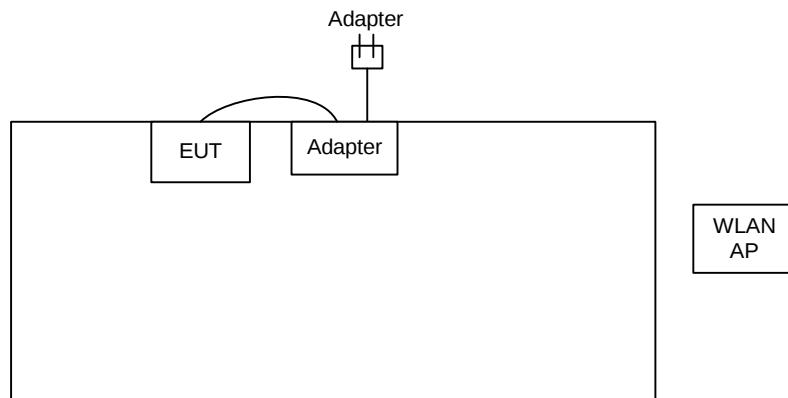
Item	Asset	Model Name	FCC ID	Power Cord
1.	WLAN AP (SMC)	SMC-100	HEDWG4005ACC	1.8m
2.	Bluetooth Earphone	ET-BH111	PQY471087	N/A

2.3 Connection Diagram of Test System

<Radiated Emission>



<Conducted Emission>



3. Operation of Equipment under Test

During the test, the following programs on WINXP were executed:

one self test program "CRTU" to keep transmitting signals to WLAN, and "Bluetset3" to keep transmitting signal to Bluetooth.

4. General Information of Test

Test Site Location : No. 52, Hwa Ya 1st Rd., Hwa Ya Technology Park,
Kwei-Shan Hsiag, Tao Yuan Hsien, Taiwan, R.O.C.
TEL : 886-3-327-3456
FAX : 886-3-318-0055
Test Site No : CO04-HY, 03CH06-HY

4.1 Test Voltage

120V/ 60Hz

4.2 Standard for Methods of Measurement

ANSI C63.4-2003

4.3 Test in Compliance with

FCC Part 15, Subpart E and IC RSS-210 Issued 6

4.4 Frequency Range Investigated

- a. Conduction: from 150 kHz to 30 MHz
- b. Radiation: from 9KHz to 40GHz

4.5 Test Distance

The test distance of radiated emission from antenna to EUT is 3 M.

5. Report of Measurements and Examinations

5.1 List of Measurements and Examinations

FCC Rule	Description of Test	Result
15.407(b)(5)	Conducted Emission	Pass
15.407(a)(1)(2)	Peak Transmit Power	Pass
15.407(b)(1)(2)(5)	Radiated Emission	Pass
15.407(a)(1)(2)	Power Spectral Density	Pass
15.407(b)(1)(2)	Band Edges Measurement	Pass
15.407(a)(1)(2)	Antenna Requirement	Pass
15.407(a)(6)	Peak Excursion Ratio Measurement	Pass
15.407(c)	Automatically Discontinue Transmission	Pass

5.2 Emission Bandwidth

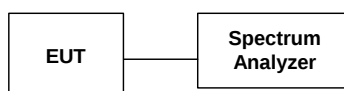
5.2.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.2.2 Test Procedure :

The transmitter output is connected to the spectrum analyzer. For these tests, the resolution bandwidth is 1 MHz, video bandwidth is 3MHz, peak detection and view function is used. The 26 dB bandwidth is defined as the frequency range where the power is higher than the peak power minus 26 dB.

Test Setup Layout :



5.2.3 Test Result :

- Temperature : 27
- Relative Humidity :58%

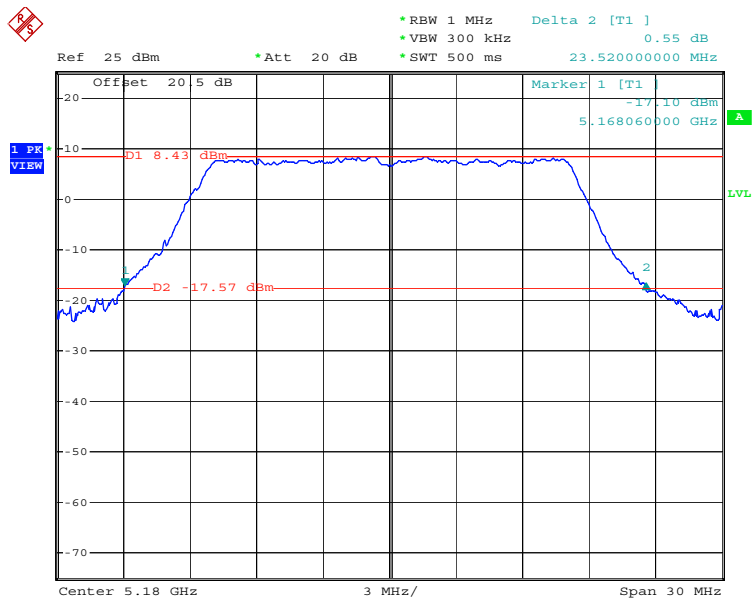
➤ Application: 802.11a

Channel	Frequency (MHz)	26dB Emission bandwidth (MHz)	Mode Ref. No.
36	5180	23.52	1
44	5220	23.94	2
48	5240	24.42	3
52	5260	22.72	4
64	5320	22.56	5

5.2.4 Test Data

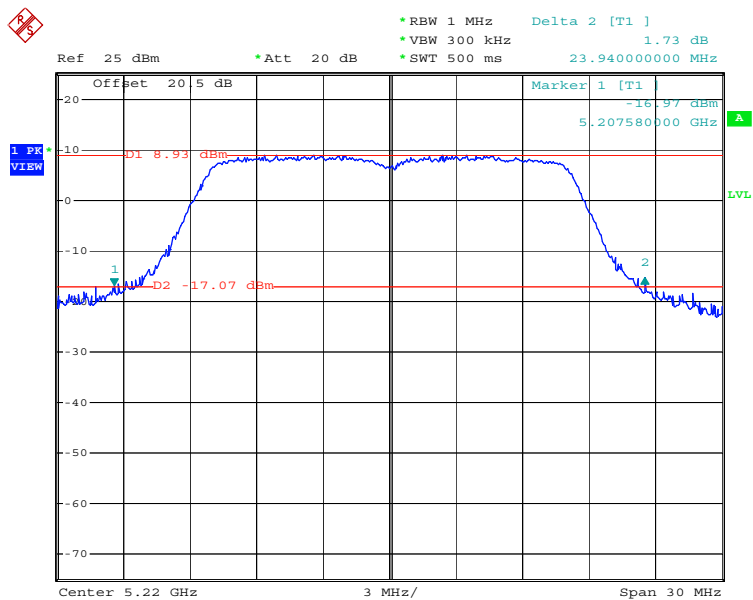
Mode Ref. No.

1



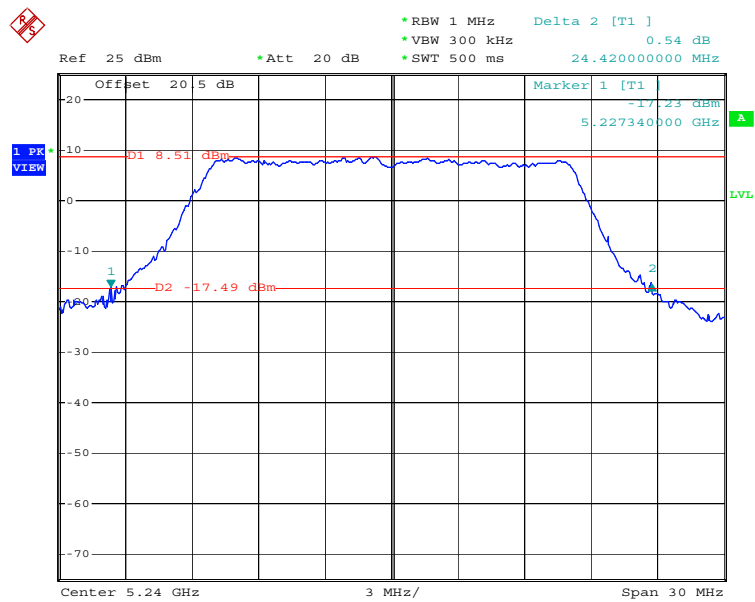
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2



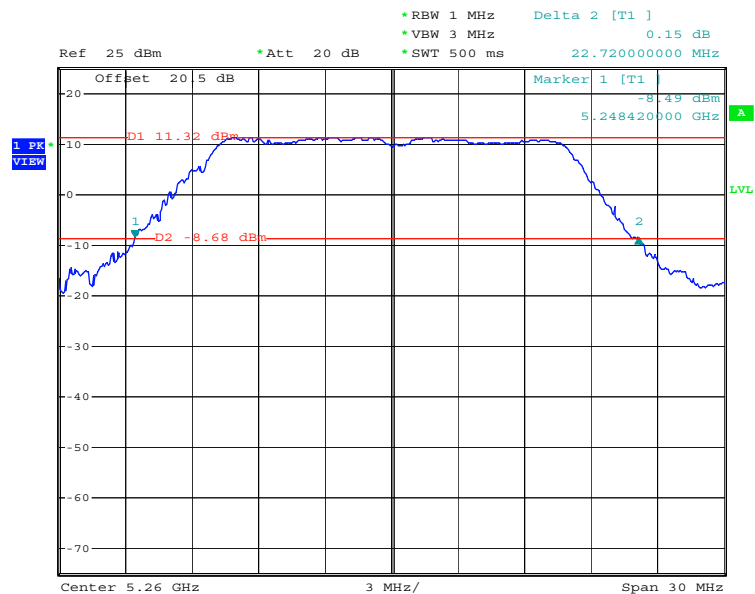
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3

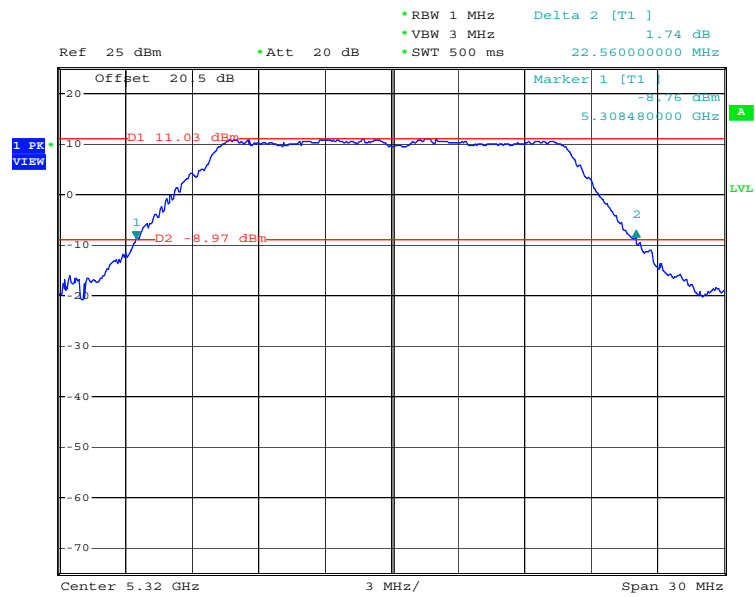


Date: 30.APR.2007 15:32:04

4



Date: 6.JUN.2007 17:21:10



5

Date: 6.JUN.2007 17:22:52

5.3 Peak Transmit Power

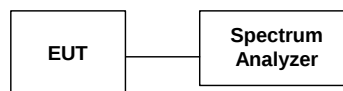
5.3.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.3.2 Test Procedure :

The transmitter output is connected to the spectrum analyzer. According to the method 3 of DA-02-2138, the resolution bandwidth is set to 1 MHz, video bandwidth is 1MHz, max hold to run for 60 seconds, and sample detection is used. The peak power is measured by channel power integration over the previously measured emissions bandwidth..

5.3.3 Test Setup Layout :



5.3.4 Test Result :

- Temperature : 27
- Relative Humidity :58%

➤ Application: 802.11a

Channel	Frequency (MHz)	Measured Output Power (dBm)	Limits (dBm)	Mode Ref. No.
36	5180	16.50	17.00	1
44	5220	16.19	17.00	2
48	5240	16.07	17.00	3
52	5260	15.22	24.00	4
64	5320	15.60	24.00	5

Comments : The peak transmit power shall not exceed the lesser of 17dBm or 4dBm+10logB in 5150~5250 band.
24dBm+10logB in 5250~5350 band

5180MHz 4dBm + 10log(23.52 MHz) = 17.71 dBm

5220MHz 4dBm + 10log(23.94 MHz) = 17.79 dBm

5240MHz 4dBm + 10log(24.42 MHz) = 17.88 dBm

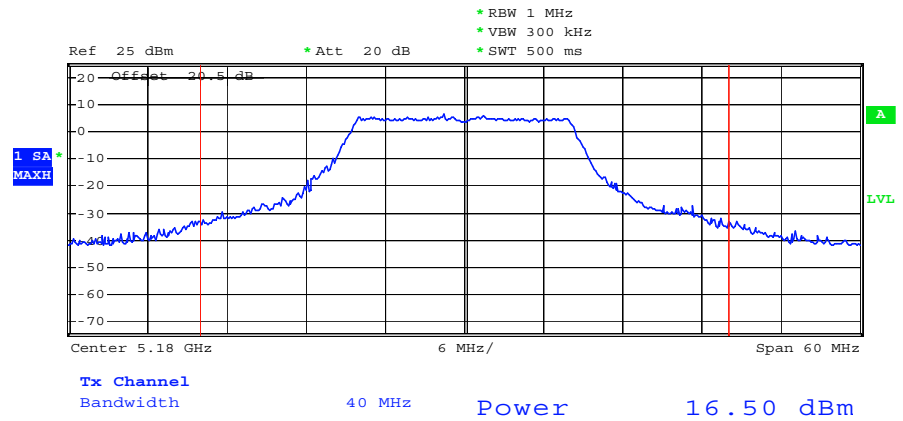
5260MHz 11dBm + 10log(22.27 MHz) = 24.48 dBm

5320MHz 11dBm + 10log(22.56 MHz) = 24.53 dBm

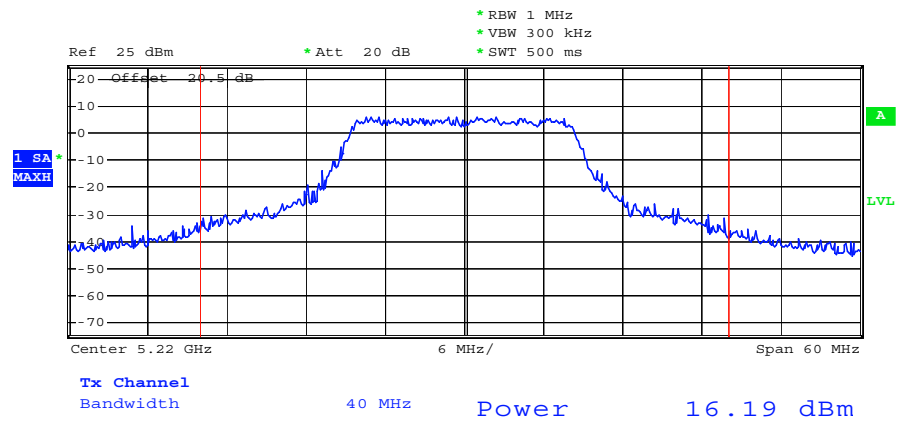
5.3.5 Test Data

Mode Ref. No.

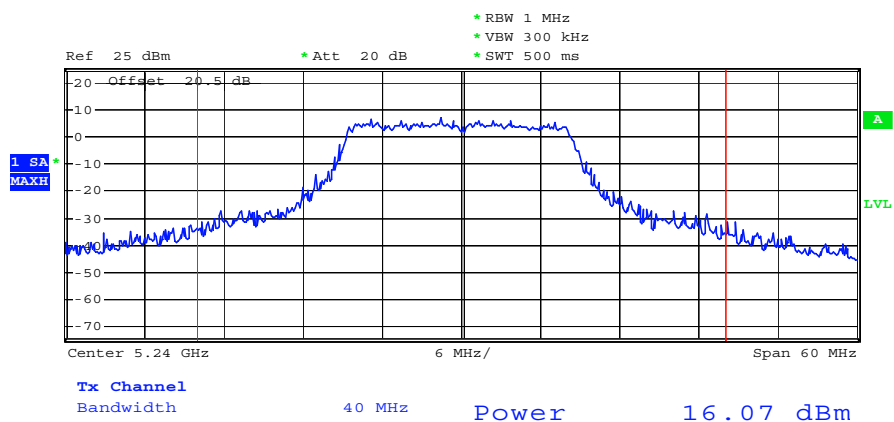
1



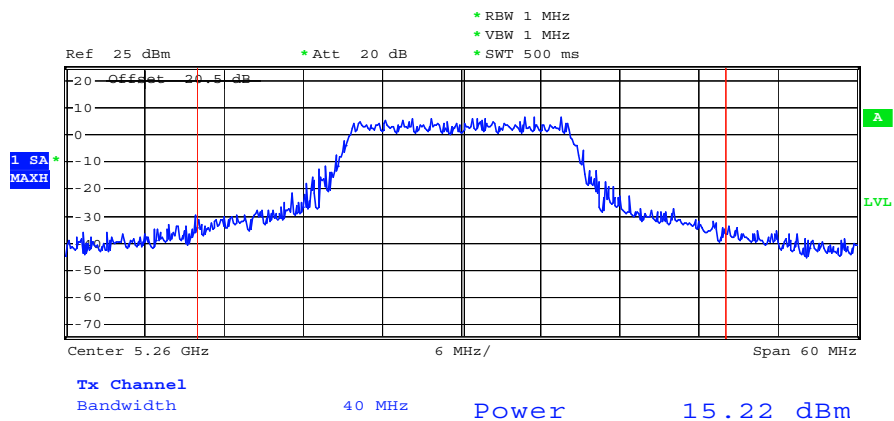
2



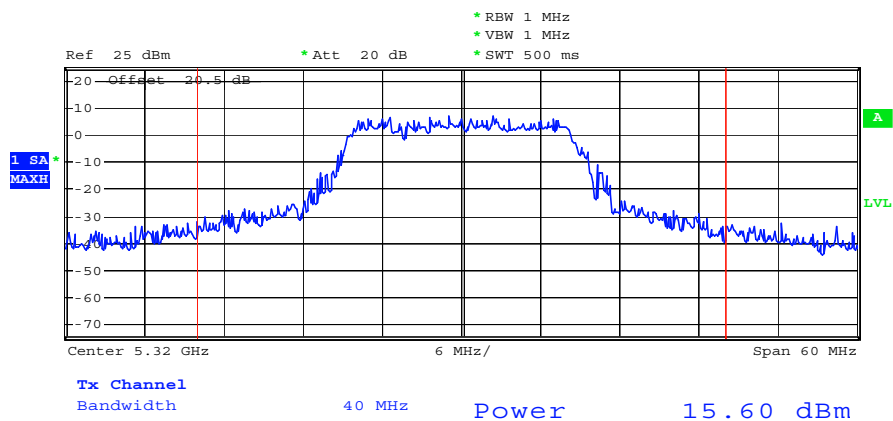
3



4



5



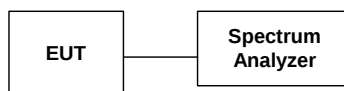
5.4 Peak Power Spectral Density

5.4.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.4.2 Test Procedure :

The transmitter output is connected to the spectrum analyzer. According to the method 3 of DA-02-2138, the resolution bandwidth is set to 1 MHz, video bandwidth is 3MHz, trace average 100 traces in power averaging mode, and sample detection is used, and the analyzer is set for video averaging.



5.4.3 Test Result :

- Temperature : 27
- Relative Humidity :58%

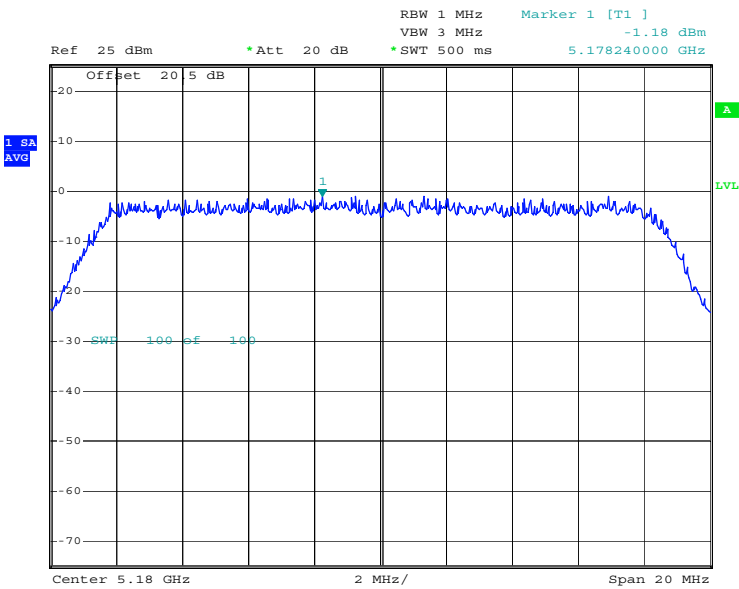
➤ Application: 802.11a

Channel	Frequency (MHz)	Power Spectral Density	Limits	Mode
		(dBm)	(dBm)	Ref. No.
36	5180	-1.18	4	1
48	5240	-0.35	4	2
52	5260	-2.38	11	3
64	5320	-1.82	11	4

5.4.4 Test Data

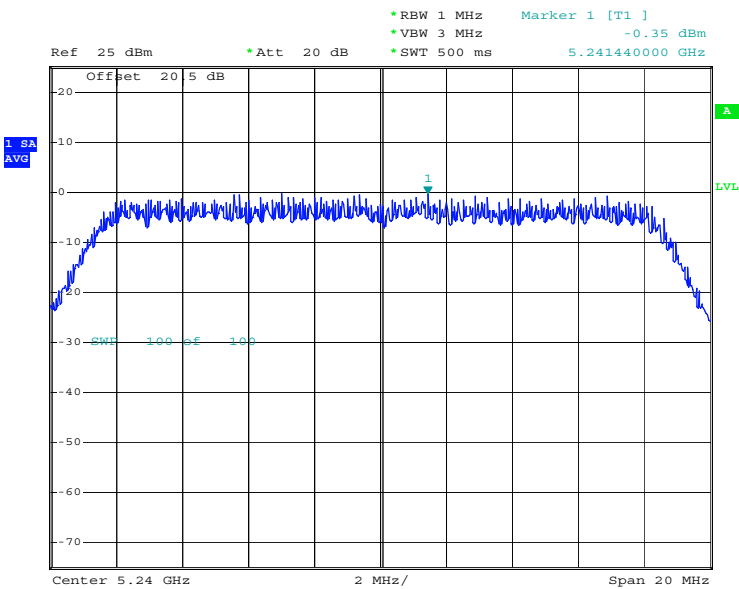
Mode Ref. No.

1



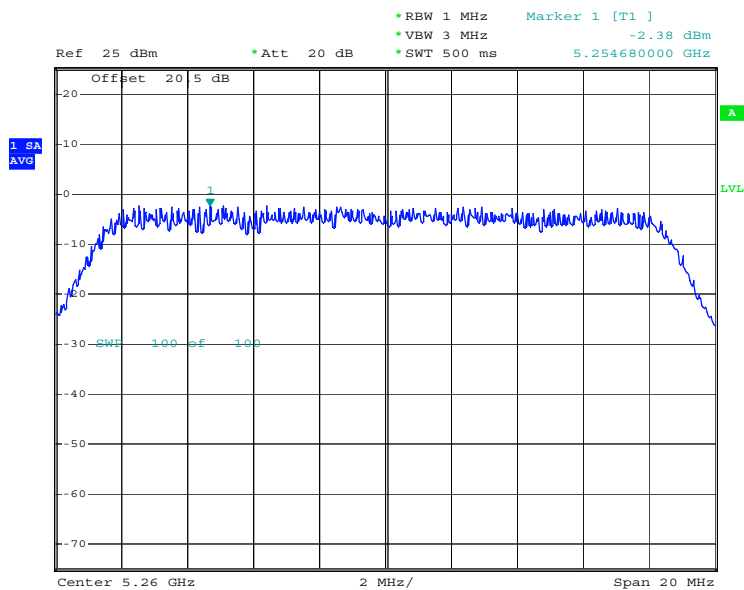
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2



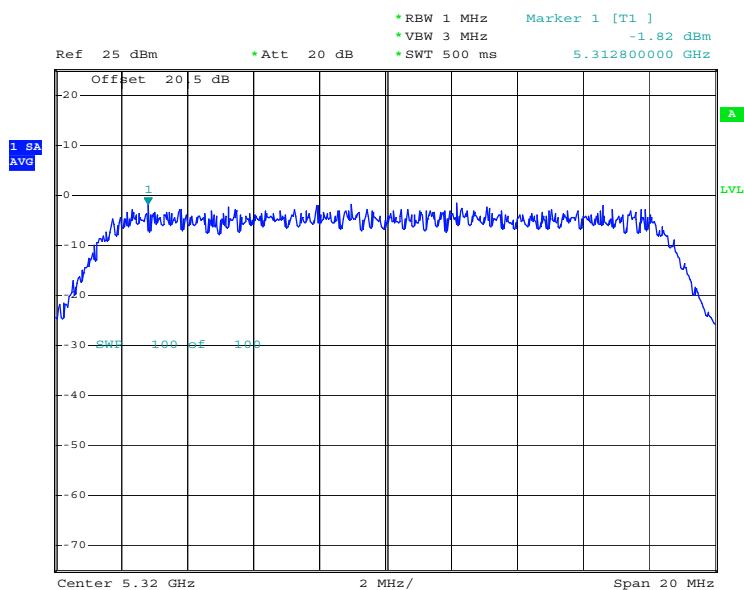
Date: 6.JUN.2007 17:32:35

3



Date: 6.JUN.2007 17:35:09

4



Date: 6.JUN.2007 17:36:50

5.5 Test of Conducted Emission

As described in chapter 6 of this test report.

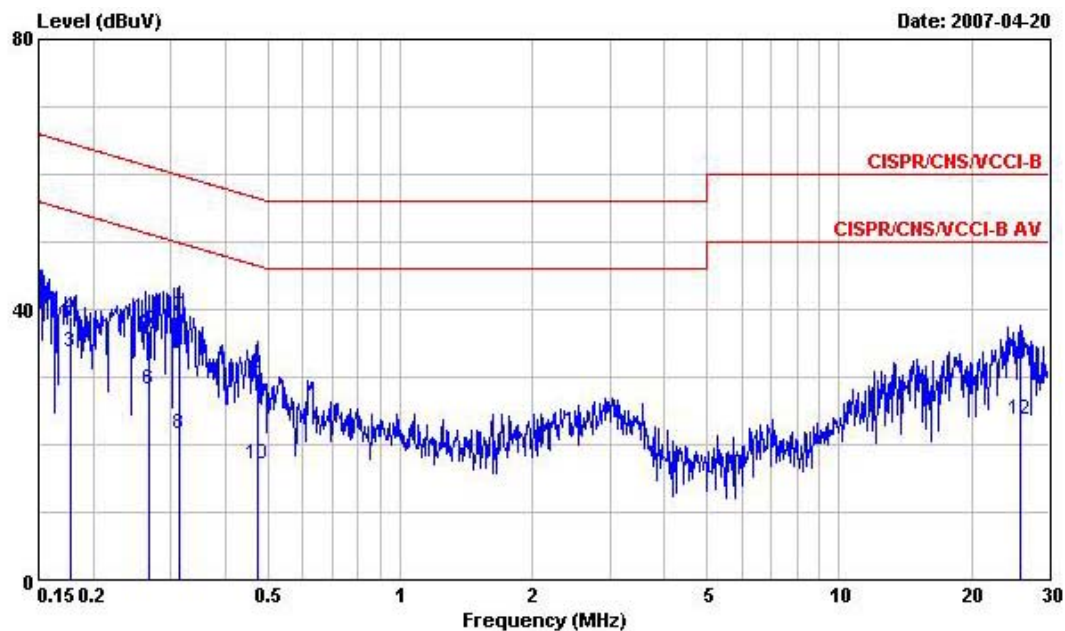
5.5.1 Test Procedures :

1. The EUT was placed 0.4 meter from the conducting wall of the shielding room was kept at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT to the power port of a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISN.
4. The LISN provides 50 ohm coupling impedance for the measuring instrument.
5. The FCC states that a 50 ohm, 50 microhenry LISN should be used.
6. Both sides of AC line were checked for maximum conducted interference.
7. The frequency range from 150 kHz to 30 MHz was searched.
8. Set the test-receiver system to Peak Detect Function and specified bandwidth with Maximum Hold Mode.

5.5.2 Test Data

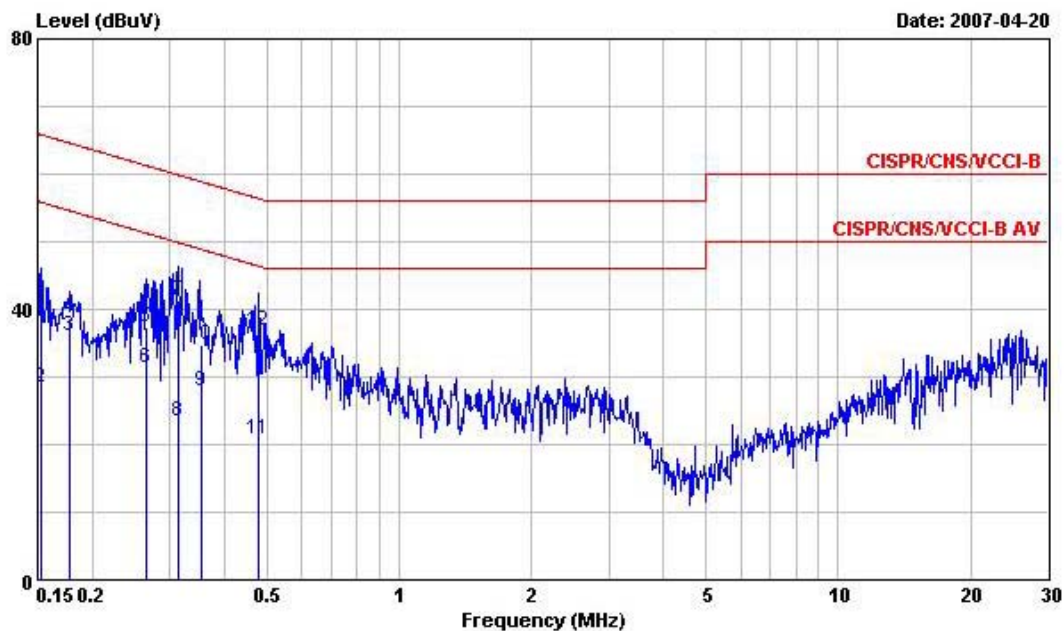
- Frequency Range of Test : 150kHz to 30 MHz
- Test Mode : Mode 1
- Temperature : 23 °C
- Relative Humidity : 47 %
- Test Engineer : James

■ The test that passed at minimum margin was marked by the frame in the following table.



Site : CO04-HY
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 LINE
 EUT : Notebook
 POWER: AC 120V/60Hz
 Model : FR6D2906
 Memo : BT Link + WLAN Link + Adapter

	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150000	29.02	-26.98	56.00	28.22	0.10	0.70	Average
2	0.150000	42.06	-23.94	66.00	41.26	0.10	0.70	QP
3	0.177396	33.77	-20.84	54.61	33.09	0.10	0.58	Average
4	0.177396	38.96	-25.65	64.61	38.28	0.10	0.58	QP
5	0.266727	36.89	-24.33	61.22	36.33	0.10	0.46	QP
6	0.266727	28.09	-23.13	51.22	27.53	0.10	0.46	Average
7	0.314946	38.94	-20.90	59.84	38.44	0.10	0.40	QP
8	0.314946	21.65	-28.19	49.84	21.15	0.10	0.40	Average
9	0.473603	30.63	-25.82	56.45	30.08	0.10	0.45	QP
10	0.473603	17.15	-29.30	46.45	16.60	0.10	0.45	Average
11	25.730	32.15	-27.85	60.00	30.91	0.32	0.92	QP
12	25.730	23.71	-26.29	50.00	22.47	0.32	0.92	Average



Site : CO04-HY
 Condition : CISPR/CNS/VCCI-B LISN 200604 99041 NEUTRAL
 EUT : Notebook
 POWER: AC 120V/60Hz
 Model : FR6D2906
 Memo : BT Link + WLAN Link + Adapter

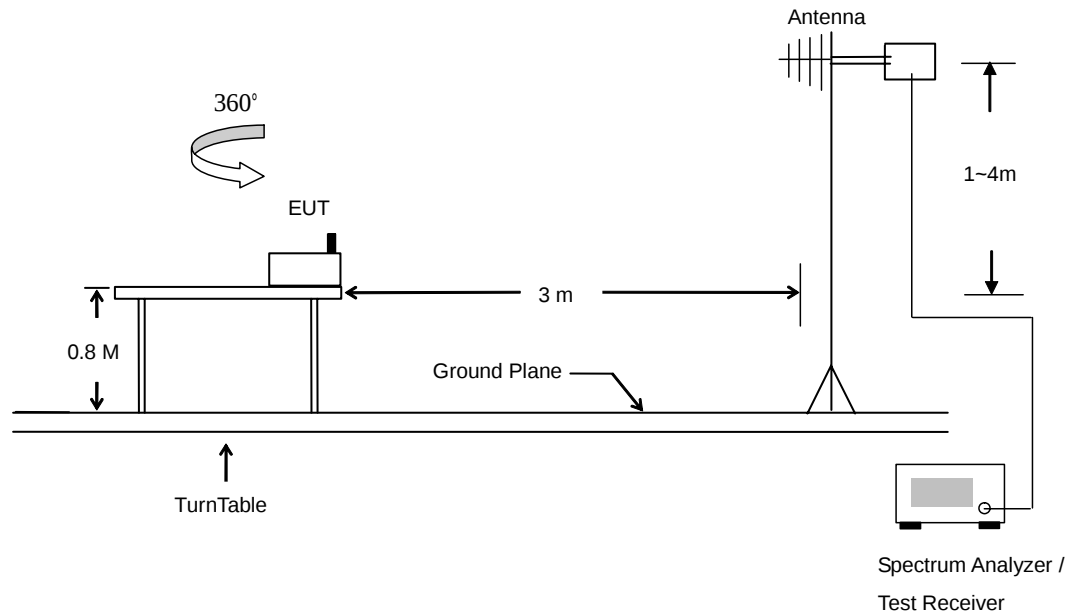
	Freq	Level	Over Limit	Limit Line	Read Level	LISN Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.1524030	41.38	-24.49	65.87	40.59	0.10	0.69	QP
2	0.1524030	28.46	-27.41	55.87	27.67	0.10	0.69	Average
3	0.1767760	36.11	-18.53	54.64	35.42	0.10	0.59	Average
4	0.1767760	38.65	-25.99	64.64	37.96	0.10	0.59	QP
5	0.2658290	37.24	-24.01	61.25	36.67	0.10	0.47	QP
6	0.2658290	31.44	-19.81	51.25	30.87	0.10	0.47	Average
7	0.3149460	41.36	-18.48	59.84	40.86	0.10	0.40	QP
8	0.3149460	23.33	-26.51	49.84	22.83	0.10	0.40	Average
9	0.3558320	27.81	-21.02	48.83	27.31	0.10	0.40	Average
10	0.3558320	34.86	-23.97	58.83	34.36	0.10	0.40	QP
11	0.4761190	20.88	-25.53	46.41	20.34	0.10	0.44	Average
12	0.4761190	36.94	-19.47	56.41	36.40	0.10	0.44	QP

5.6 Test of Radiated Emission

As described in chapter 6 of this test report.

5.6.1 Test Procedures

- a. The EUT was placed on a rotatable table top 0.8 meter above ground.
- b. The EUT was set 3 meters from the interference receiving antenna which was mounted on the top of a variable height antenna tower.
- c. The table was rotated 360 degrees to determine the position of the highest radiation.
- d. The antenna is a broadband antenna and its height is varied between one meter and four meters above ground to find the maximum value of the field strength for both horizontal polarization and vertical polarization of the antenna.
- e. For each suspected emission, the EUT was arranged to its worst case and then tune the antenna tower (from 1 m to 4 m) and turntable (from 0 degree to 360 degrees) to find the maximum reading.
- f. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function and specified bandwidth with Maximum Hold Mode.
- g. For testing below 1GHz, If the emission level of the EUT in peak mode was 3 dB lower than the limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be repeated one by one using the quasi-peak method and reported.
- h. For testing above 1GHz, the emission level of the EUT in peak mode was 20dB lower than average limit (that means the emission level in average mode also complies with the limit in average mode), then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions will be measured in average mode again and reported.

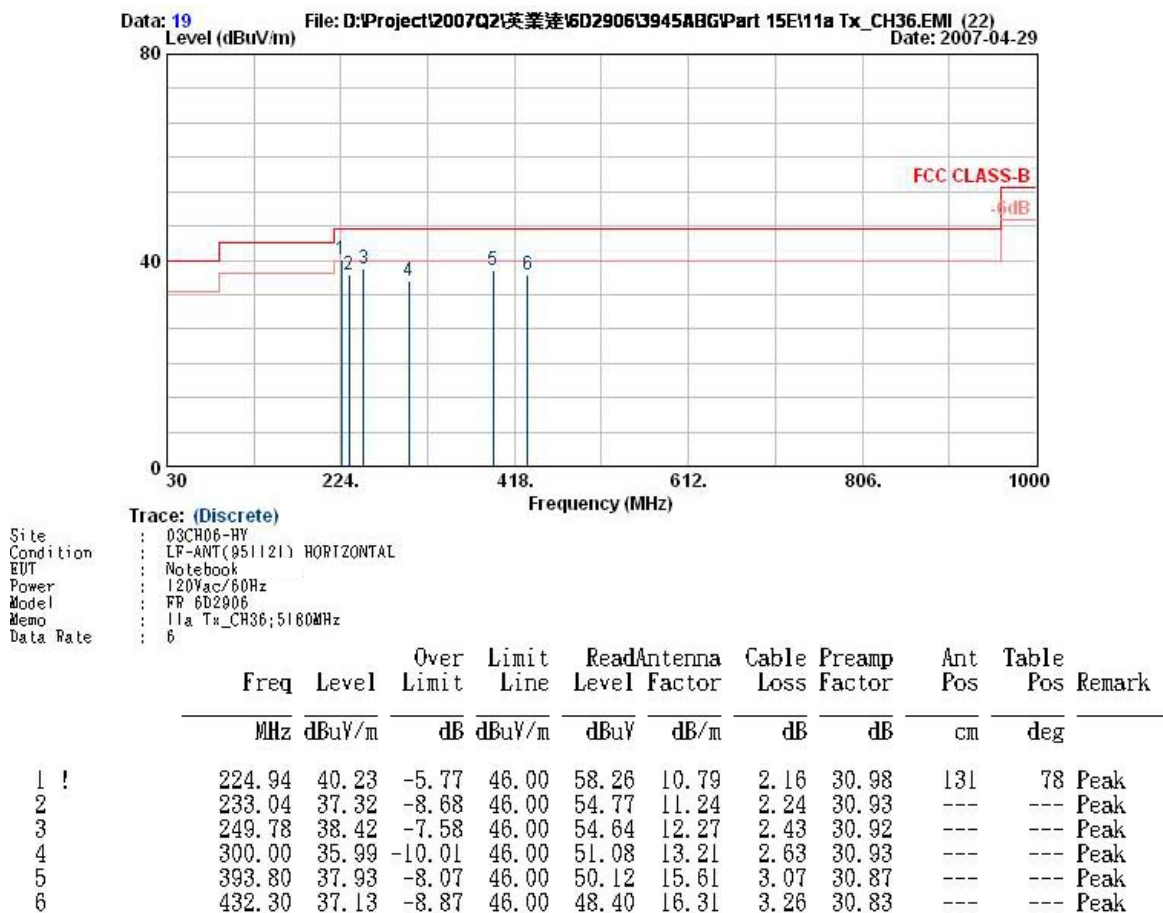
5.6.2 Typical Test Setup Layout of Radiated Emission

5.6.3 Test Data

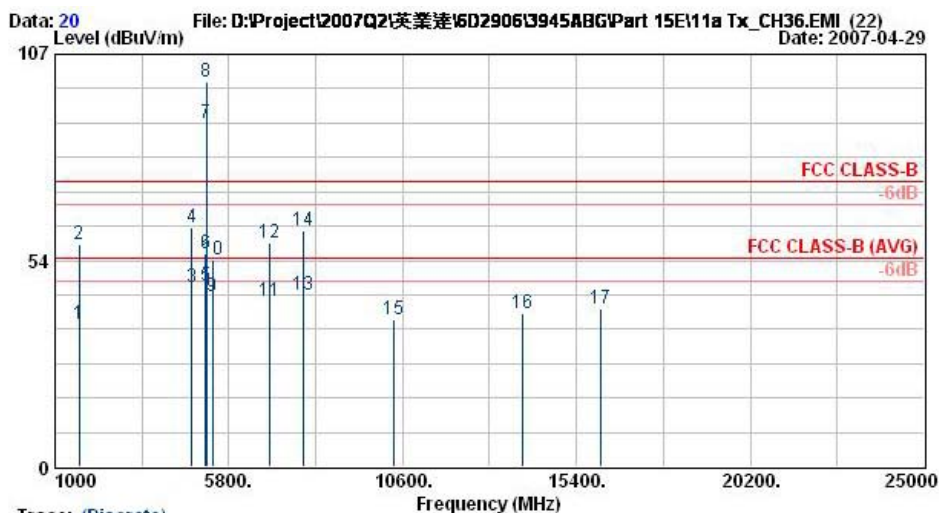
➤ Test Mode : Mode 1

- Temperature : 24
- Relative Humidity : 53%
- Test Engineer : Andrew
- Polarization : Horizontal

■ The test that passed at minimum margin was marked by the boldface in the following table.



Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Site : 03CH06-HY
 Condition : HF-ANT(8-1R)-060918 HORIZONTAL
 EUT : Notebook
 Power : 120Vac/60Hz
 Model : FR 6D2906
 Memo : 11a Tx_CH36;5180MHz
 Data Rate : 6

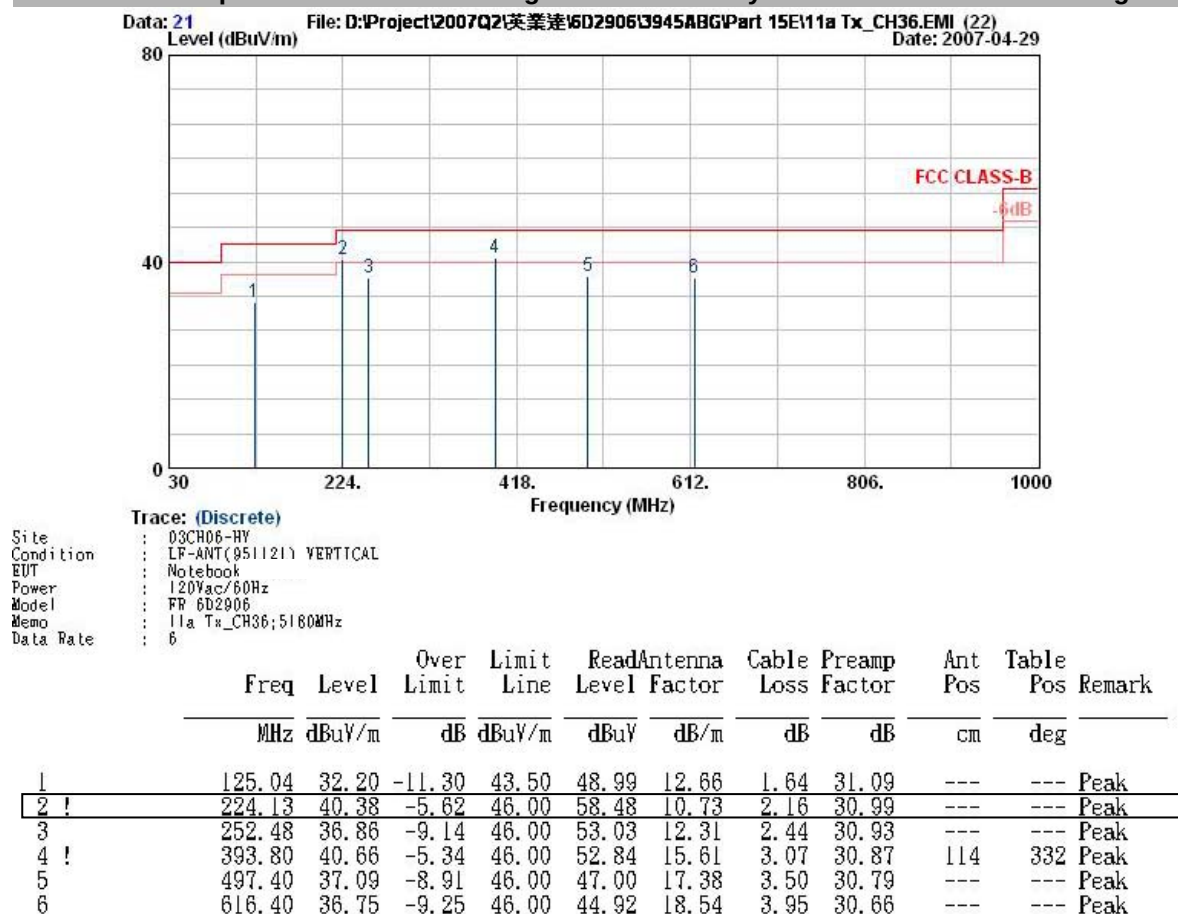
	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1658.00	37.03	-16.97	54.00	42.10	27.43	3.03	35.53	100	81 Average
2	1658.00	57.51	-16.49	74.00	62.58	27.43	3.03	35.53	100	360 Peak
3	4778.00	46.61	-7.39	54.00	44.12	32.75	5.81	36.07	100	281 Average
4	4778.00	61.93	-12.07	74.00	59.45	32.75	5.81	36.07	100	360 Peak
5	5150.00	46.82	-7.18	54.00	43.20	33.60	6.21	36.19	100	225 Average
6	5150.00	55.10	-18.90	74.00	51.48	33.60	6.21	36.19	100	0 Peak
7 @	5180.00	89.20			85.50	33.60	6.28	36.18	113	297 Average
8 X	5180.00	99.91			96.20	33.60	6.28	36.18	100	0 Peak
9	5350.00	44.20	-9.80	54.00	40.09	33.60	6.59	36.08	100	259 Average
10	5350.00	53.53	-20.47	74.00	49.41	33.60	6.59	36.08	100	0 Peak
11	6928.00	42.91	-11.09	54.00	33.41	37.43	7.81	35.74	100	176 Average
12	6928.00	57.98	-16.02	74.00	48.48	37.43	7.81	35.74	100	0 Peak
13	7858.00	44.57	-9.43	54.00	33.34	39.39	7.74	35.90	100	156 Average
14	7858.00	61.34	-12.66	74.00	50.11	39.39	7.74	35.90	100	360 Peak
15	10362.00	38.11	-35.89	74.00	74.01	-8.72	9.42	36.59	---	---
16	13926.00	39.78	-34.22	74.00	69.27	-6.56	11.55	34.48	---	---
17	16086.00	40.92	-33.08	74.00	69.38	-5.02	11.79	35.24	---	---

Remark: #7 and #8 Fundamental Signal

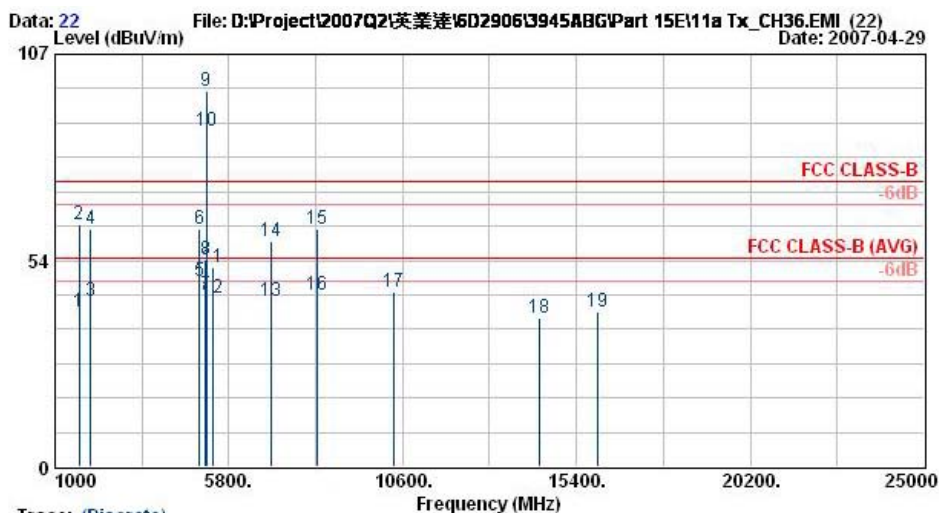
Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

Polarization : Vertical

■ The test that passed at minimum margin was marked by the boldface in the following table.



Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Site : 03CH06-HY
 Condition : HF-ANT(8-1R)-060918 VERTICAL
 EUT : Notebook
 Power : 120Vac/60Hz
 Model : FR 6D2906
 Memo : 11a Tx_CH36;5180MHz
 Data Rate : 6

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	Remark
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1658.00	40.24	-13.76	54.00	45.31	27.43	3.03	35.53	100	245 Average
2	1658.00	62.91	-11.09	74.00	67.99	27.43	3.03	35.53	100	360 Peak
3	1994.00	42.99	-11.01	54.00	44.89	29.97	3.30	35.17	100	195 Average
4	1994.00	61.83	-12.17	74.00	63.73	29.97	3.30	35.17	100	360 Peak
5 !	4994.00	48.25	-5.75	54.00	44.97	33.60	5.96	36.28	100	289 Average
6	4994.00	61.71	-12.29	74.00	58.43	33.60	5.96	36.28	100	360 Peak
7	5150.00	44.47	-9.53	54.00	40.85	33.60	6.21	36.19	100	284 Average
8	5150.00	53.52	-20.48	74.00	49.90	33.60	6.21	36.19	100	0 Peak
9 X	5180.00	97.52			93.82	33.60	6.28	36.18	100	0 Peak
10 @	5180.00	87.23			83.53	33.60	6.28	36.18	100	284 Average
11	5350.00	51.65	-22.35	74.00	47.54	33.60	6.59	36.08	100	0 Peak
12	5350.00	43.66	-10.34	54.00	39.55	33.60	6.59	36.08	100	284 Average
13	6984.00	42.95	-11.05	54.00	33.10	37.71	7.89	35.75	100	175 Average
14	6984.00	58.50	-15.50	74.00	48.65	37.71	7.89	35.75	100	0 Peak
15	8218.00	61.64	-12.36	74.00	50.15	39.42	8.04	35.97	100	360 Peak
16	8218.00	44.60	-9.40	54.00	33.11	39.42	8.04	35.97	100	161 Average
17	10362.00	45.53	-28.47	74.00	81.43	-8.72	9.42	36.59	---	---
18	14367.00	38.75	-35.25	74.00	68.76	-6.47	11.70	35.24	---	---
19	16002.00	40.18	-33.82	74.00	68.73	-3.90	11.77	36.42	---	---

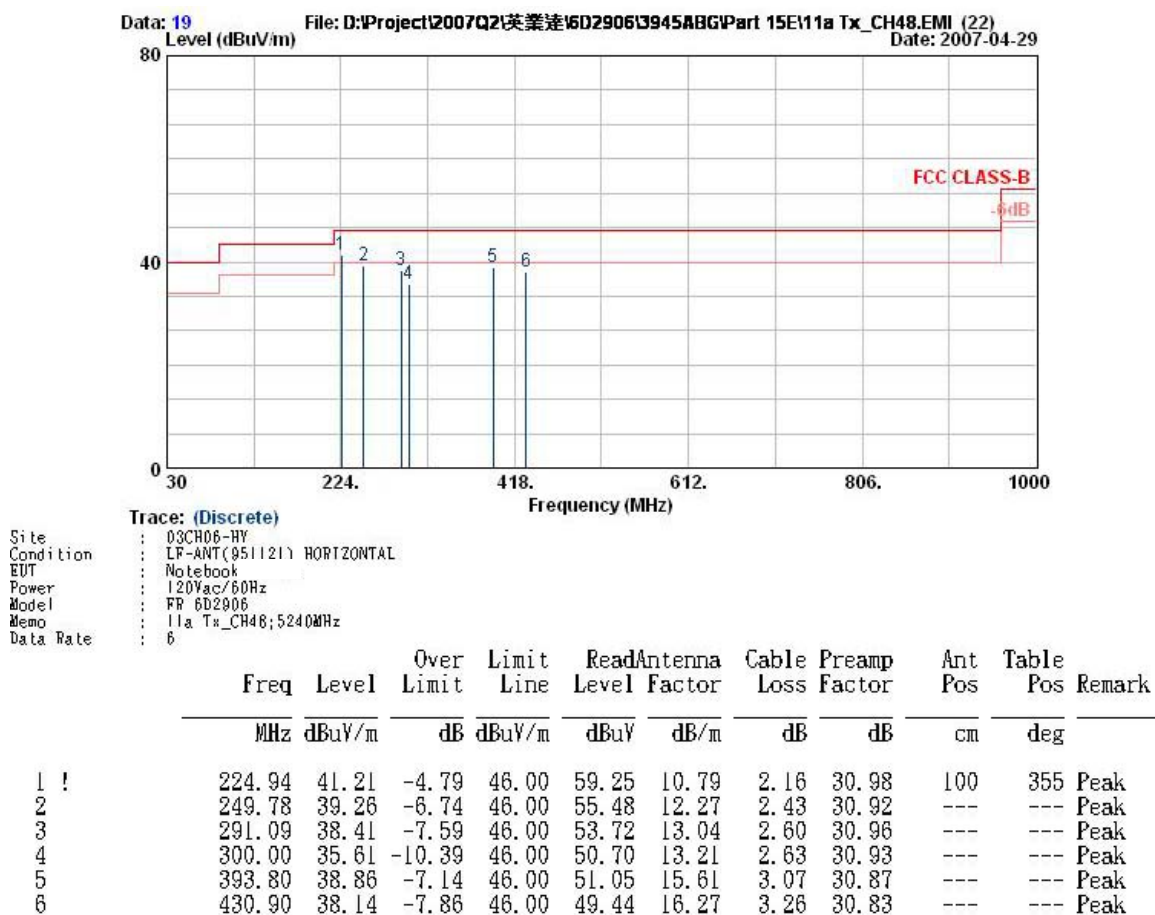
Remark: #9 and #10 Fundamental Signal

Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

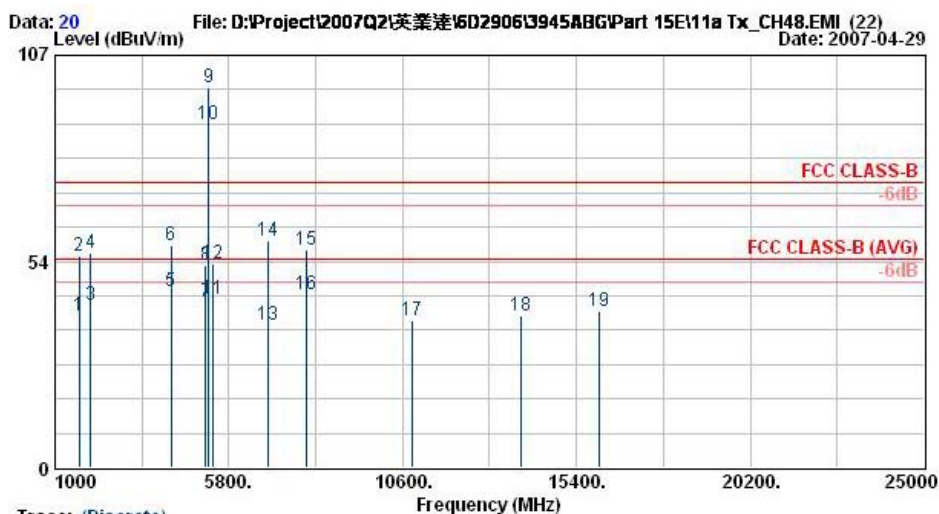
Test Mode : Mode 2

- Temperature : 24
- Relative Humidity : 53%
- Test Engineer : Andrew
- Polarization : Horizontal

■ The test that passed at minimum margin was marked by the boldface in the following table.



Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Trace: (Discrete)

Site : 03CH06-HY
Condition : HF-ANT(8-18)-060918 HORIZONTAL
EUT : Notebook
Power : 120Vac/60Hz
Model : FR 6D2906
Memo : 11a Tx_CH48;5240MHz
Data Rate : 6

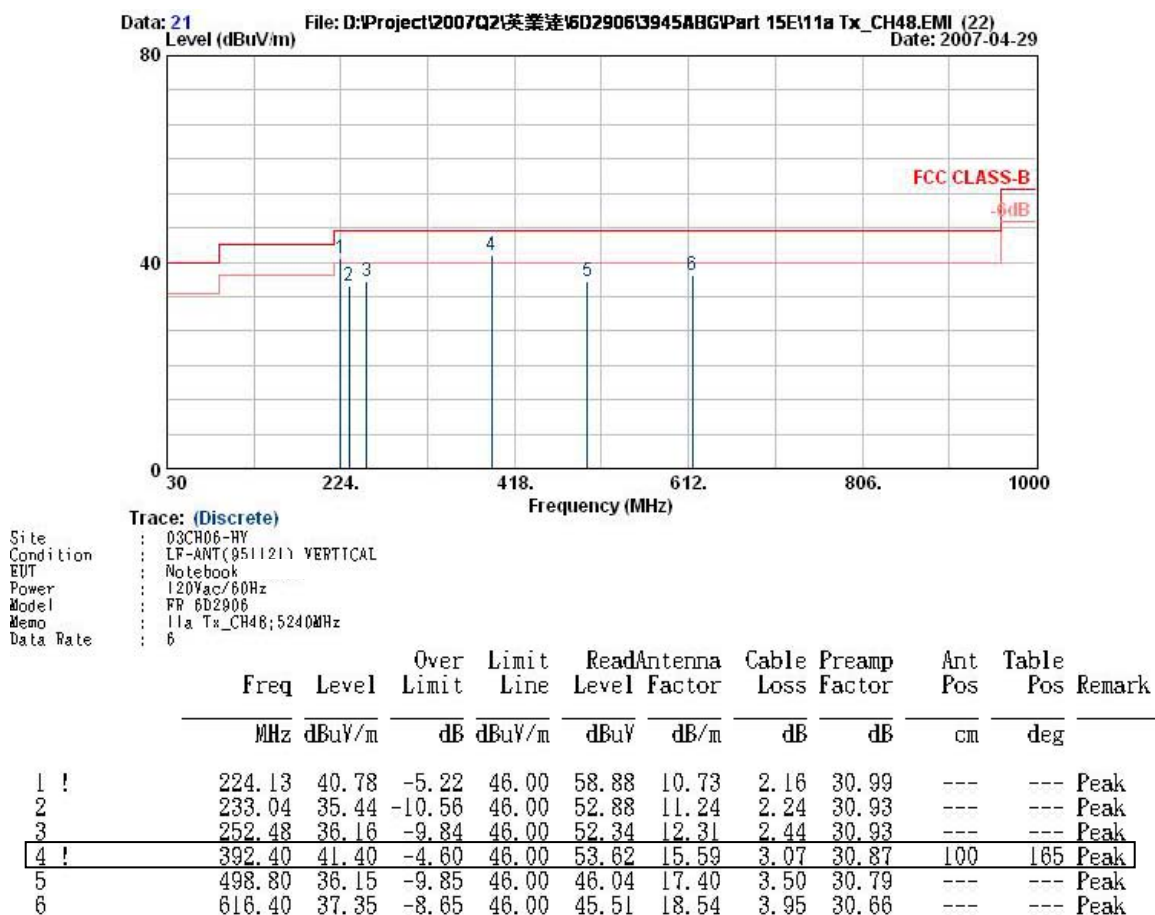
	Freq	Level	Over	Limit	Read	Antenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	1658.00	39.44	-14.56	54.00	44.51	27.43	3.03	35.53	100	356	Average
2	1658.00	54.97	-19.03	74.00	60.04	27.43	3.03	35.53	100	360	Peak
3	1994.00	42.08	-11.92	54.00	43.98	29.97	3.30	35.17	100	61	Average
4	1994.00	55.69	-18.31	74.00	57.59	29.97	3.30	35.17	100	360	Peak
5	4214.00	45.63	-8.37	54.00	44.72	31.30	5.33	35.73	100	276	Average
6	4214.00	57.51	-16.49	74.00	56.61	31.30	5.33	35.73	100	360	Peak
7	5150.00	43.01	-10.99	54.00	39.39	33.60	6.21	36.19	124	294	Average
8	5150.00	52.42	-21.58	74.00	48.80	33.60	6.21	36.19	100	360	Peak
9 X	5238.00	98.64			94.80	33.60	6.39	36.15	100	360	Peak
10 @	5240.00	89.19			85.35	33.60	6.39	36.15	124	294	Average
11	5350.00	43.73	-10.27	54.00	39.62	33.60	6.59	36.08	124	294	Average
12	5350.00	52.92	-21.08	74.00	48.81	33.60	6.59	36.08	100	360	Peak
13	6864.00	37.10	-16.90	54.00	33.48	33.60	6.21	36.19	100	184	Average
14	6864.00	58.88	-15.12	74.00	49.85	37.06	7.73	35.76	100	360	Peak
15	7954.00	56.56	-17.44	74.00	45.11	39.53	7.78	35.86	100	360	Peak
16	7954.00	44.86	-9.14	54.00	33.41	39.53	7.78	35.86	100	256	Average
17	10881.00	38.35	-35.65	74.00	73.05	-8.35	9.78	36.14	---	---	Peak
18	13866.00	39.47	-34.53	74.00	69.41	-6.96	11.50	34.48	---	---	Peak
19	16047.00	40.51	-33.49	74.00	69.07	-4.52	11.78	35.83	---	---	Peak

Remark: #9 and #10 Fundamental Signal

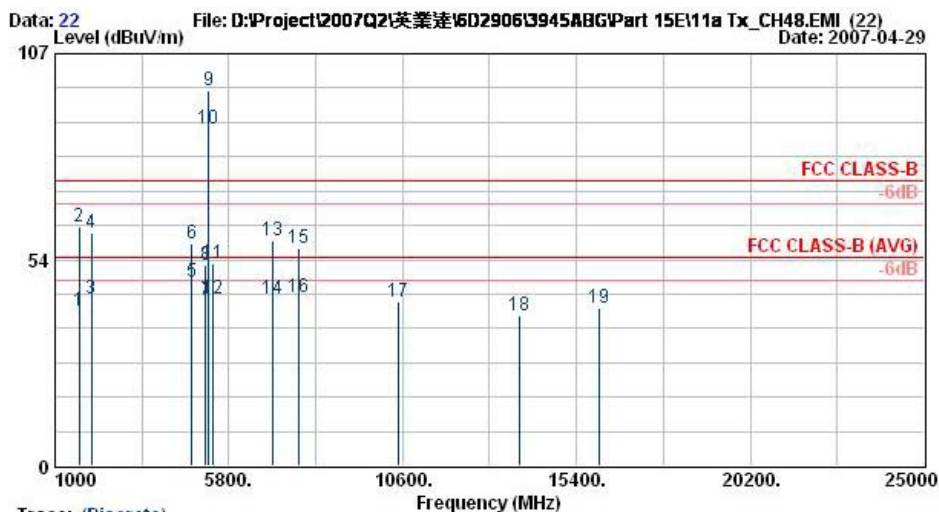
Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

- Polarization : Vertical

■ The test that passed at minimum margin was marked by the boldface in the following table.



Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Trace: (Discrete)

Site : 03CH06-HY

Condition : HF-ANT(8-18)-060918 VERTICAL

EUT : Notebook

Power : 120Vac/60Hz

Model : FR 6D2906

Memo : 11a Tx_CH48;5240MHz

Data Rate : 6

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Loss	Factor	Pos	Pos	Remark
			dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1664.00	40.06	-13.94	54.00	45.13	27.43	3.03	35.53	100	243 Average
2	1664.00	61.88	-12.12	74.00	66.96	27.43	3.03	35.53	100	360 Peak
3	1998.00	43.46	-10.54	54.00	45.21	30.10	3.32	35.17	100	185 Average
4	1998.00	60.55	-13.45	74.00	62.30	30.10	3.32	35.17	100	360 Peak
5	4778.00	47.61	-6.39	54.00	45.12	32.75	5.81	36.07	100	305 Average
6	4778.00	57.48	-16.52	74.00	54.99	32.75	5.81	36.07	---	--- Peak
7	5150.00	43.04	-10.96	54.00	39.42	33.60	6.21	36.19	102	320 Average
8	5150.00	52.19	-21.81	74.00	48.57	33.60	6.21	36.19	100	0 Peak
9 X	5238.00	97.36			93.52	33.60	6.39	36.15	100	0 Peak
10 @	5240.00	87.62			83.78	33.60	6.39	36.15	102	320 Average
11	5350.00	52.46	-21.54	74.00	48.35	33.60	6.59	36.08	100	0 Peak
12	5350.00	43.25	-10.75	54.00	39.14	33.60	6.59	36.08	102	320 Average
13	6998.00	58.50	-15.50	74.00	48.53	37.80	7.92	35.75	100	0 Peak
14	6998.00	43.51	-10.49	54.00	33.54	37.80	7.92	35.75	100	146 Average
15	7744.00	56.44	-17.56	74.00	45.45	39.25	7.70	35.96	100	360 Peak
16	7744.00	43.89	-10.11	54.00	32.90	39.25	7.70	35.96	100	160 Average
17	10476.00	42.46	-31.54	74.00	78.15	-8.53	9.48	36.64	---	--- Peak
18	13836.00	39.05	-34.95	74.00	69.21	-7.16	11.48	34.48	---	--- Peak
19	16026.00	40.97	-33.03	74.00	69.59	-4.27	11.78	36.13	---	--- Peak

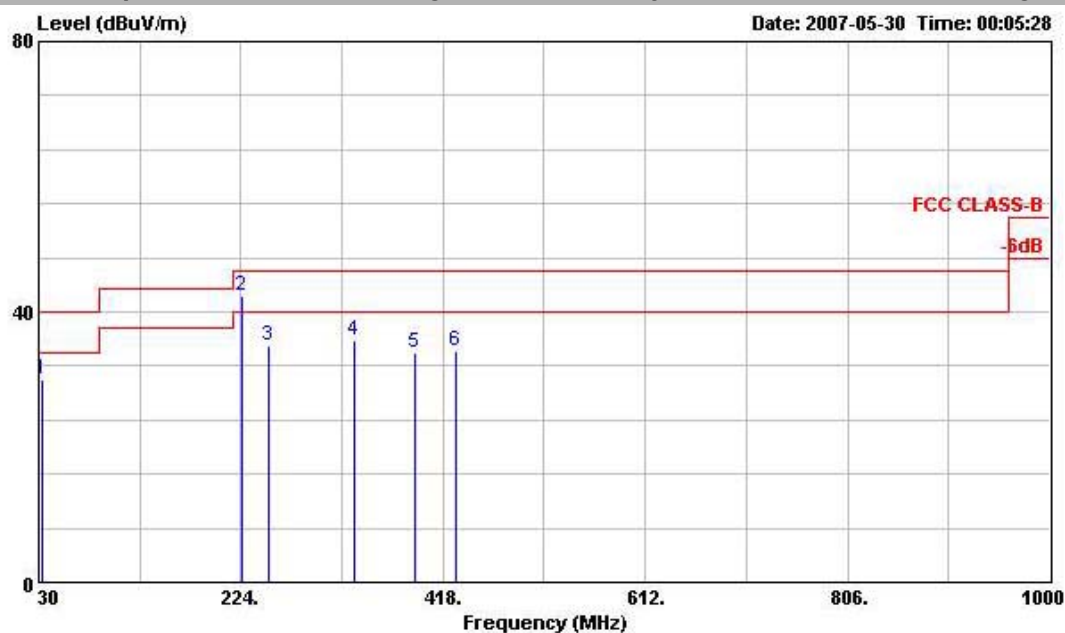
Remark: #9 and #10 Fundamental Signal

Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

➤ Test Mode : Mode 3

- Temperature : 27
- Relative Humidity :58%
- Test Engineer : Andrew
- Polarization : Horizontal (30MHz-1GHz)

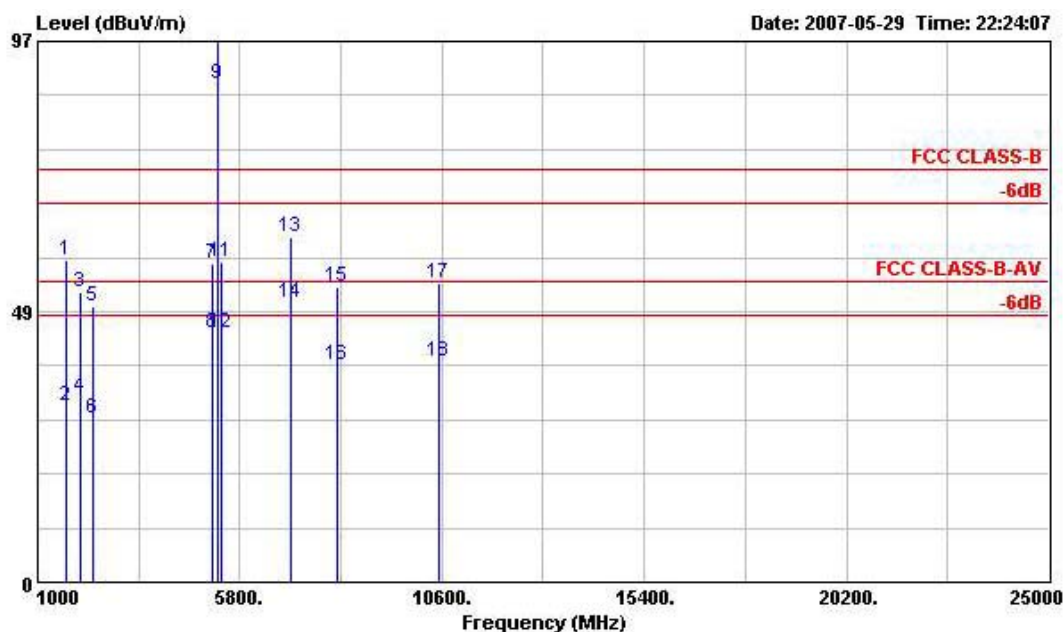
■ The test that passed at minimum margin was marked by the boldface in the following table.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m ANT2724 HORIZONTAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH52_5260MHz

	Freq	Level	Over Limit	Limit	ReadAntenna	Cable	Preamp	Ant	Table		
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	32.700	30.09	-9.91	40.00	46.12	16.33	0.66	33.02	---	---	Peak
2	224.940	42.24	-3.76	46.00	62.66	10.65	1.75	32.82	107	231	Peak
3	250.050	34.90	-11.10	46.00	53.31	12.57	1.90	32.88	---	---	Peak
4	332.200	35.80	-10.20	46.00	53.08	13.45	2.09	32.82	---	---	Peak
5	391.700	34.04	-11.96	46.00	49.12	15.48	2.30	32.86	---	---	Peak
6	430.900	34.24	-11.76	46.00	48.49	16.11	2.43	32.78	---	---	Peak

Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m HF-ANT HORIZONTAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH52_5260MHz

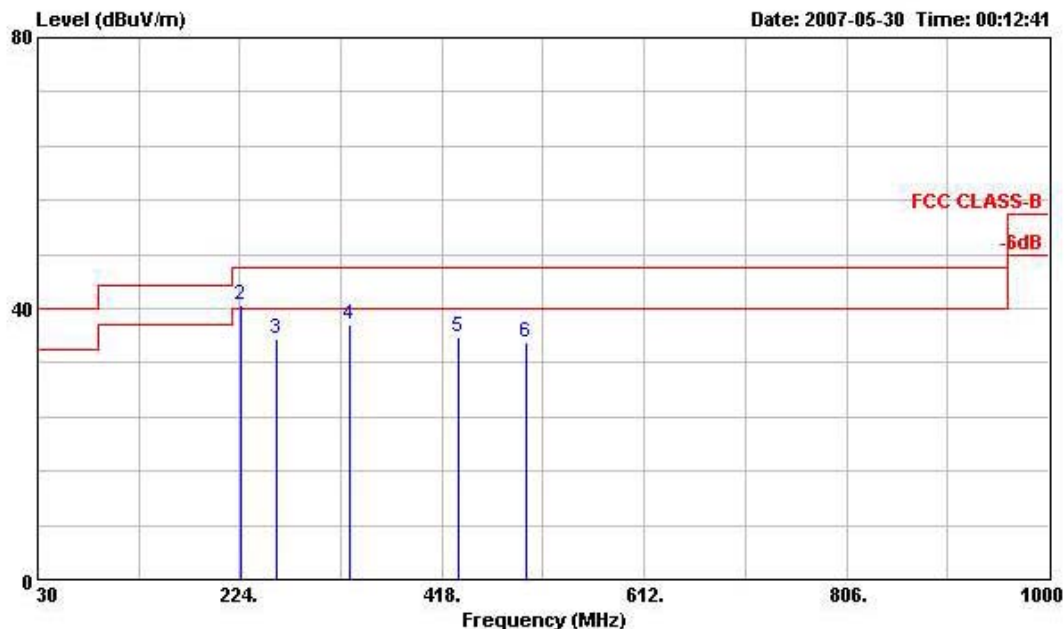
	Freq	Level	Over Limit	Limit Line	ReadAntenna Level	Cable Factor	Preamplifier Loss	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	1660.000	57.81	-16.19	74.00	59.97	28.57	2.97	33.70	100	0 Peak
2	1660.000	31.54	-22.46	54.00	33.70	28.57	2.97	33.70	100	31 Average
3	1998.000	51.91	-22.09	74.00	50.97	31.30	3.34	33.70	100	0 Peak
4	1998.000	33.24	-20.76	54.00	32.30	31.30	3.34	33.70	100	173 Average
5	2332.000	49.53	-24.47	74.00	48.90	30.71	3.69	33.77	100	0 Peak
6	2332.000	29.24	-24.76	54.00	28.61	30.71	3.69	33.77	100	238 Average
7	5150.000	57.21	-16.79	74.00	51.49	33.96	6.00	34.24	100	0 Peak
8	5150.000	44.80	-9.20	54.00	39.08	33.96	6.00	34.24	100	27 Average
9 @	5260.000	89.49			83.68	34.01	6.00	34.19	100	27 Average
10 X	5260.000	100.57			94.75	34.01	6.00	34.19	100	0 Peak
11	5350.000	57.42	-16.58	74.00	51.53	34.04	6.00	34.15	100	0 Peak
12	5350.000	44.71	-9.29	54.00	38.82	34.04	6.00	34.15	100	27 Average
13	6998.000	61.91	-12.09	74.00	50.35	37.70	6.36	32.50	100	0 Peak
14 !	6998.000	50.07	-3.93	54.00	38.51	37.70	6.36	32.50	100	241 Average
15	8118.000	53.07	-20.93	74.00	40.56	39.45	6.82	33.77	100	0 Peak
16	8118.000	39.03	-14.97	54.00	26.52	39.45	6.82	33.77	100	46 Average
17	10521.000	53.49	-20.51	74.00	88.68	-8.49	7.80	34.50	100	0 Peak
18	10521.000	39.52	-14.48	54.00	74.71	-8.49	7.80	34.50	100	324 Average

Remark: #9 and #10 Fundamental Signal

Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

- Polarization : Vertical

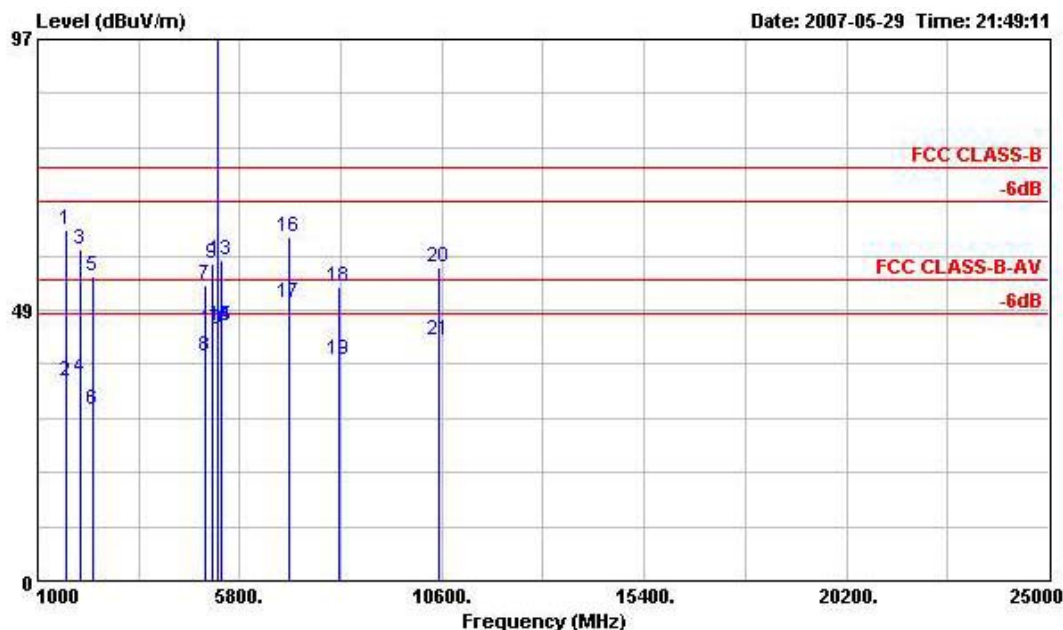
■ The test that passed at minimum margin was marked by the boldface in the following table.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m ANT2724 VERTICAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH52_5260MHz

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamplifier Factor	Ant Pos	Table Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	cm	deg	
1	30.000	30.93	-9.07	40.00	46.81	16.38	0.63	32.89	---	Peak
2	224.940	40.55	-5.45	46.00	60.97	10.65	1.75	32.82	112	303 Peak
3	258.690	35.54	-10.46	46.00	53.96	12.52	1.92	32.87	---	Peak
4	330.100	37.62	-8.38	46.00	55.01	13.35	2.09	32.82	---	Peak
5	433.000	35.92	-10.08	46.00	50.13	16.13	2.43	32.78	---	Peak
6	498.100	34.90	-11.10	46.00	48.06	16.89	2.60	32.64	---	Peak

Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m HF-ANT VERTICAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH52_5260MHz

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	1660.000	62.96	-11.04	74.00	65.12	28.57	2.97	33.70	100	0 Peak
2	1660.000	35.71	-18.29	54.00	37.87	28.57	2.97	33.70	100	122 Average
3	1996.000	59.28	-14.72	74.00	58.34	31.30	3.34	33.70	100	0 Peak
4	1996.000	36.50	-17.50	54.00	35.56	31.30	3.34	33.70	100	323 Average
5	2326.000	54.59	-19.41	74.00	53.98	30.71	3.66	33.77	100	0 Peak
6	2326.000	30.75	-23.25	54.00	30.14	30.71	3.66	33.77	100	119 Average
7	4982.000	52.83	-21.17	74.00	47.30	33.86	5.98	34.30	100	0 Peak
8	4982.000	40.08	-13.92	54.00	34.55	33.86	5.98	34.30	100	2 Average
9	5150.000	56.72	-17.28	74.00	51.00	33.96	6.00	34.24	100	0 Peak
10	5150.000	44.87	-9.13	54.00	39.15	33.96	6.00	34.24	102	2 Average
11 @	5260.000	96.02			90.21	34.01	6.00	34.19	102	2 Average
12 X	5260.000	107.96			102.15	34.01	6.00	34.19	100	0 Peak
13	5350.000	57.55	-16.45	74.00	51.66	34.04	6.00	34.15	100	0 Peak
14	5350.000	45.64	-8.36	54.00	39.75	34.04	6.00	34.15	102	2 Average
15	5350.000	45.67	-8.33	54.00	39.78	34.04	6.00	34.15	102	2 Average
16	6948.000	61.66	-12.34	74.00	50.46	37.40	6.34	32.54	100	0 Peak
17 !	6948.000	49.87	-4.13	54.00	38.67	37.40	6.34	32.54	100	162 Average
18	8140.000	52.73	-21.27	74.00	40.26	39.44	6.83	33.81	100	0 Peak
19	8140.000	39.51	-14.49	54.00	27.04	39.44	6.83	33.81	100	223 Average
20	10518.000	56.13	-17.87	74.00	91.32	-8.49	7.80	34.50	100	0 Peak
21	10518.000	42.99	-11.01	54.00	78.18	-8.49	7.80	34.50	100	193 Average

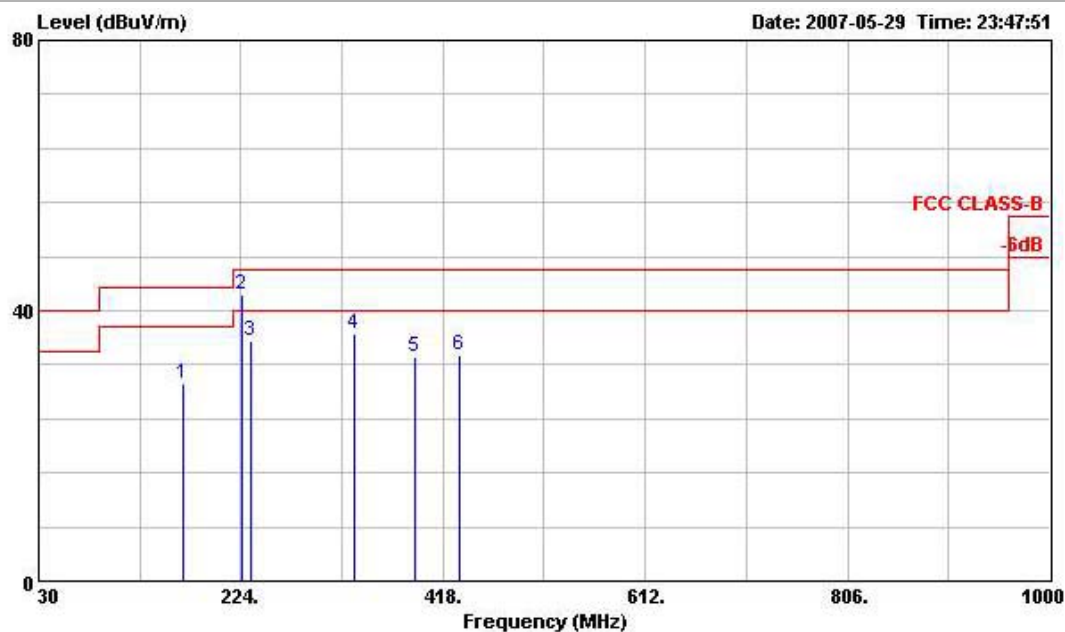
Remark: #11 ~ #12 Fundamental Signal

Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

Test Mode : Mode 3

- Temperature : 27
- Relative Humidity :58%
- Test Engineer : Andrew
- Polarization : Horizontal (30MHz-1GHz)

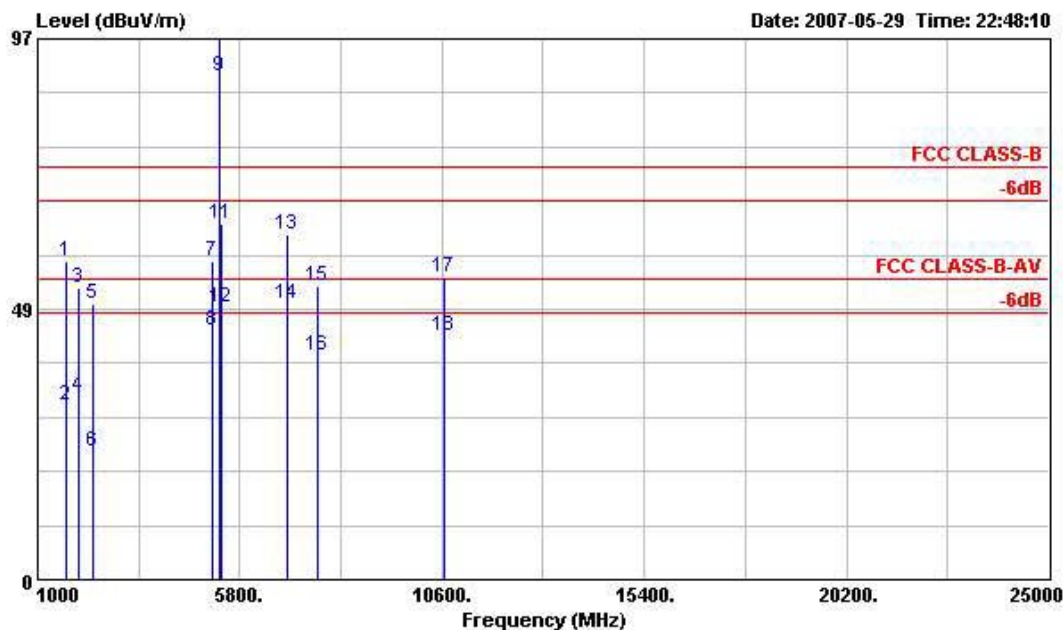
■ The test that passed at minimum margin was marked by the boldface in the following table.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m ANT2724 HORIZONTAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH64_5320MHz

			Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table		
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	167.970	29.20	-14.30	43.50	51.88	8.76	1.49	32.93	---	---	Peak
2	224.940	42.24	-3.76	46.00	62.66	10.65	1.75	32.82	112	226	Peak
3	232.770	35.52	-10.48	46.00	55.32	11.24	1.80	32.84	---	---	Peak
4	332.200	36.45	-9.55	46.00	53.73	13.45	2.09	32.82	---	---	Peak
5	391.700	33.11	-12.89	46.00	48.19	15.48	2.30	32.86	---	---	Peak
6	433.000	33.41	-12.59	46.00	47.62	16.13	2.43	32.78	---	---	Peak

Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m HF-ANT HORIZONTAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH64_5320MHz

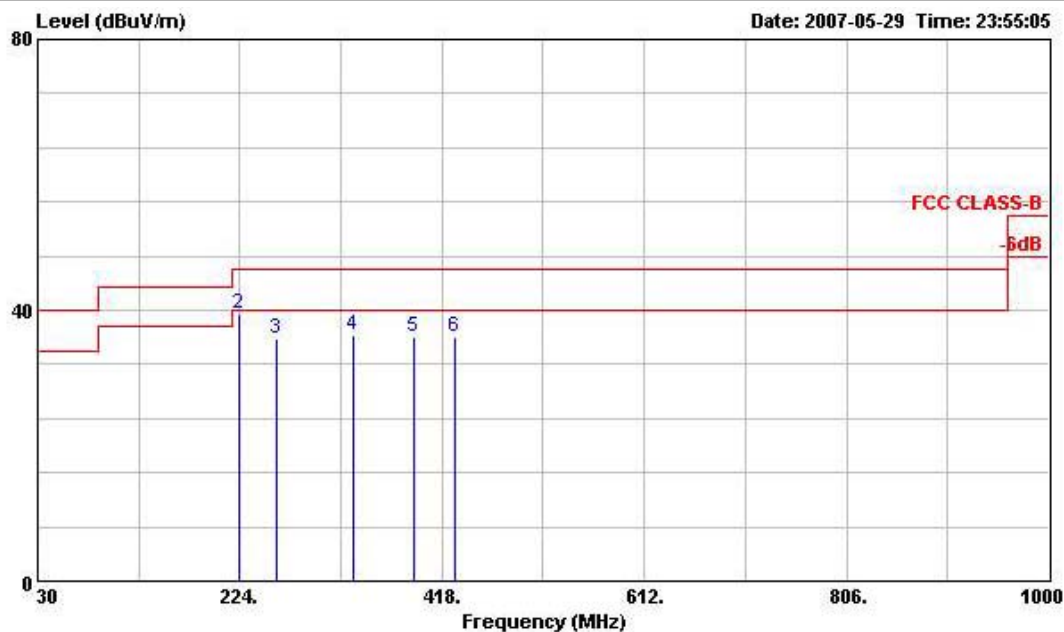
	Freq	Level	Over Limit	Limit Line	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	dB	dBuV/m	Level	Factor	Loss	Factor	Pos	Pos Remark
					dBuV	dB/m	dB	dB	cm	deg
1	1660.000	57.17	-16.83	74.00	59.33	28.57	2.97	33.70	100	0 Peak
2	1660.000	31.22	-22.78	54.00	33.38	28.57	2.97	33.70	100	38 Average
3	1990.000	52.18	-21.82	74.00	51.40	31.16	3.31	33.70	100	0 Peak
4	1990.000	32.87	-21.13	54.00	32.09	31.16	3.31	33.70	100	165 Average
5	2332.000	49.34	-24.66	74.00	48.71	30.71	3.69	33.77	100	0 Peak
6	2332.000	23.08	-30.92	54.00	22.45	30.71	3.69	33.77	100	246 Average
7	5150.000	57.08	-16.92	74.00	51.36	33.96	6.00	34.24	100	0 Peak
8	5150.000	44.82	-9.18	54.00	39.10	33.96	6.00	34.24	100	357 Average
9 X	5320.000	90.17			84.31	34.03	6.00	34.17	100	357 Average
10 X	5320.000	102.70			96.84	34.03	6.00	34.17	100	0 Peak
11	5350.000	63.75	-10.25	74.00	57.86	34.04	6.00	34.15	100	0 Peak
12 !	5350.000	48.82	-5.18	54.00	42.93	34.04	6.00	34.15	100	357 Average
13	6940.000	61.87	-12.13	74.00	50.77	37.30	6.34	32.54	100	0 Peak
14 !	6940.000	49.60	-4.40	54.00	38.50	37.30	6.34	32.54	100	78 Average
15	7654.000	52.75	-21.25	74.00	40.65	39.22	6.62	33.74	100	0 Peak
16	7654.000	40.06	-13.94	54.00	27.96	39.22	6.62	33.74	100	311 Average
17	10641.000	54.38	-19.62	74.00	89.44	-8.44	7.80	34.42	100	0 Peak
18	10641.000	43.65	-10.35	54.00	78.71	-8.44	7.80	34.42	100	324 Average

Remark: #9 and #10 Fundamental Signal

Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

- Polarization : Vertical

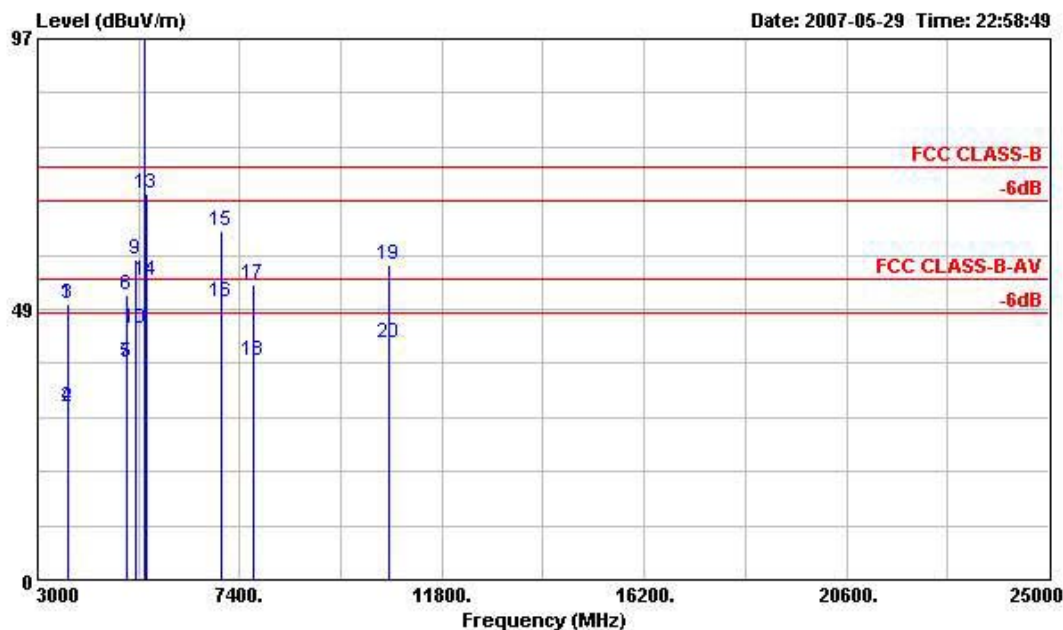
■ The test that passed at minimum margin was marked by the boldface in the following table.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m ANT2724 VERTICAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 MOME : 11a TX_CH64_5320MHz

	Freq	Level	Over Limit	Limit Line	ReadAntenna Level Factor	Cable Loss	Preamp Factor	Ant Pos	Table Pos	Remark	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg	
1	30.000	30.46	-9.54	40.00	46.34	16.38	0.63	32.89	---	---	Peak
2	224.130	39.41	-6.59	46.00	59.90	10.57	1.75	32.81	110	302	Peak
3	258.690	35.79	-10.21	46.00	54.21	12.52	1.92	32.87	---	---	Peak
4	332.200	36.38	-9.62	46.00	53.66	13.45	2.09	32.82	---	---	Peak
5	391.700	35.95	-10.05	46.00	51.03	15.48	2.30	32.86	---	---	Peak
6	430.900	36.07	-9.93	46.00	50.32	16.11	2.43	32.78	---	---	Peak

Remark: Frequency from 9KHz to 30MHz, the emission emitted by the EUT is too low to be measured.



Site : 03CH04-HY
 Condition: FCC CLASS-B 3m HF-ANT VERTICAL
 EUT : Notebook
 POWER : 120Vac/60Hz
 MODEL : FR 6D2906
 NOME : 11a TX_CH64_5320MHz

	Freq	Level	Over	Limit	ReadAntenna	Cable	Preamp	Ant	Table	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Pos	Pos Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB	cm	deg
1	3654.000	49.54	-24.46	74.00	47.98	30.68	5.05	34.17	100	0 Peak
2	3654.000	30.86	-23.14	54.00	29.30	30.68	5.05	34.17	100	108 Average
3	3654.000	49.54	-24.46	74.00	47.98	30.68	5.05	34.17	100	0 Peak
4	3654.000	30.86	-23.14	54.00	29.30	30.68	5.05	34.17	100	108 Average
5	4956.000	39.00	-15.00	54.00	33.53	33.81	5.96	34.30	100	5 Average
6	4956.000	51.17	-22.83	74.00	45.70	33.81	5.96	34.30	100	0 Peak
7	4956.000	39.00	-15.00	54.00	33.53	33.81	5.96	34.30	100	5 Average
8	4956.000	51.17	-22.83	74.00	45.70	33.81	5.96	34.30	100	0 Peak
9	5150.000	57.29	-16.71	74.00	51.57	33.96	6.00	34.24	100	0 Peak
10	5150.000	44.86	-9.14	54.00	39.14	33.96	6.00	34.24	100	5 Average
11 X	5320.000	110.87			105.01	34.03	6.00	34.17	100	0 Peak
12 @	5320.000	96.79			90.93	34.03	6.00	34.17	100	5 Average
13 !	5350.000	69.25	-4.75	74.00	63.36	34.04	6.00	34.15	100	0 Peak
14 !	5350.000	53.50	-0.50	54.00	47.61	34.04	6.00	34.15	100	5 Average
15	6982.000	62.53	-11.47	74.00	51.08	37.60	6.35	32.50	100	0 Peak
16 !	6982.000	49.89	-4.11	54.00	38.44	37.60	6.35	32.50	100	226 Average
17	7676.000	52.81	-21.19	74.00	40.67	39.25	6.63	33.73	100	0 Peak
18	7676.000	39.28	-14.72	54.00	27.14	39.25	6.63	33.73	100	284 Average
19	10641.000	56.38	-17.62	74.00	91.44	-8.44	7.80	34.42	100	0 Peak
20	10641.000	42.41	-11.59	54.00	77.47	-8.44	7.80	34.42	100	316 Average

Remark: #11 ~ #12 Fundamental Signal

Remark: Frequency from 25GHz to 40GHz, the emission emitted by the EUT is too low to be measured.

5.6.4 E.I.R.P. Power

Frequency (MHz)	Field Strength (dBuV/m)	EIRP (dBm)	Over Limit (dB)	Limit (EIPR dBm)
5150.00 MHz	55.10 dBuV/m	-44.90	-17.90	-27.00
5150.00 MHz	53.52 dBuV/m	-46.48	-19.48	-27.00
5350.00 MHz	63.75 dBuV/m	-36.25	-9.25	-27.00
5350.00 MHz	69.25 dBuV/m	-30.75	-3.75	-27.00

Remark: $EIRP = 10 * \log\left(\frac{10^{[(Field\ Strength - 120)/20]} * distance^2}{30 * 10^{(Antenna\ Gain/10)}}\right) / 0.001$

5.7 Band Edges Measurement

5.7.1 Measuring Instruments :

As described in chapter 6 of this test report.

5.7.2 Test Procedure :

1. Set both RBW and VBW of spectrum analyzer to 1MHz with convenient frequency span including 1MHz bandwidth from band edge.
2. The band edges was measured and recorded.

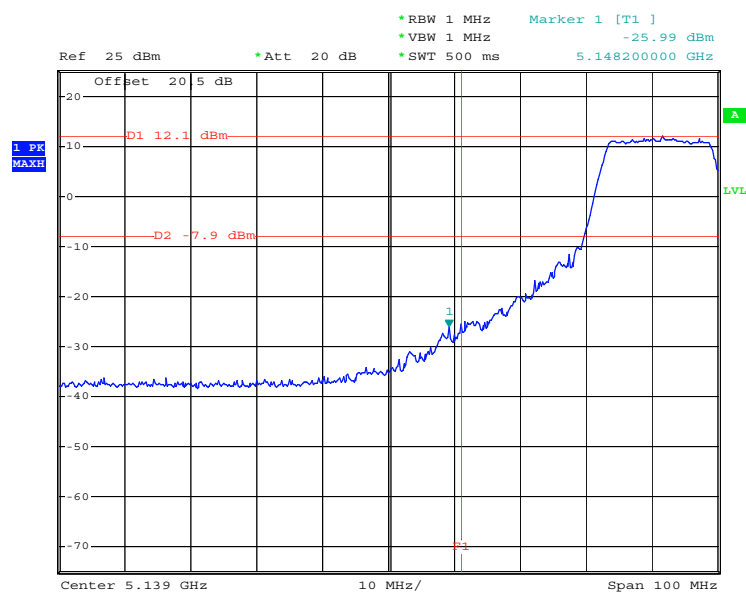
5.7.3 Test Result :

- Temperature : 27
- Relative Humidity :58%

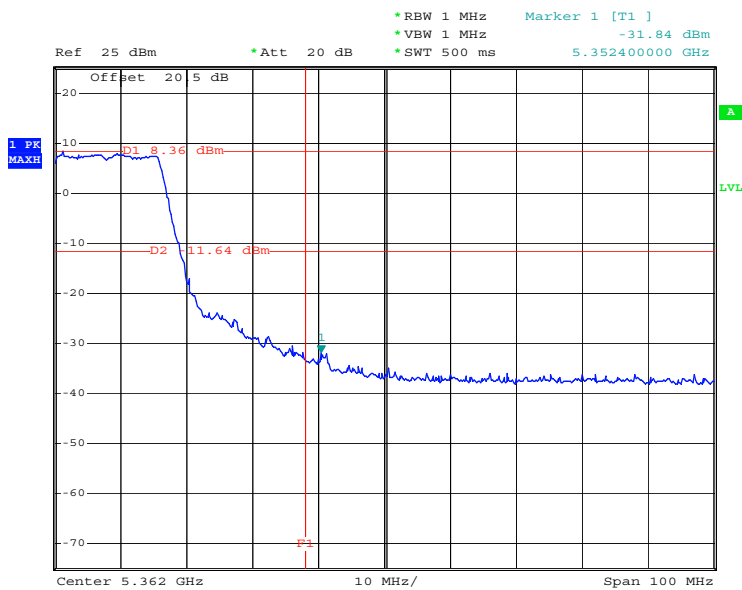
Test Result Mode
Test Result for 802.11a band I,II

Verdict
PASS

5.7.4 Test Data



802.11a CH36



802.11a CH64

5.8 Peak Excursion Ratio Measurement

5.8.1 Measuring Instruments :

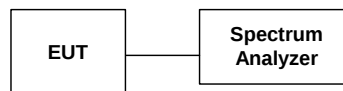
As described in chapter 6 of this test report.

5.8.2 Test Procedure :

The transmitter output is connected to the spectrum analyzer. The resolution bandwidth is set to and maintained at 1 MHz. The video bandwidth is set to 3 MHz. Trace A is set peak detector and to Max Hold, then to View. Then the detector is readjusted to sample detector, max hold to run for 60 seconds, and the signal under this measurement condition is captured in Trace B in Accordance with the method 3 of DA-02-2138.

The difference between the traces is investigated. The marker is placed at the frequency which shows the largest difference. The amplitude delta between the traces at this frequency is the peak excursion.

5.8.3 Test Setup Layout :



5.8.4 Test Result :

- Temperature : 27
- Relative Humidity :58%

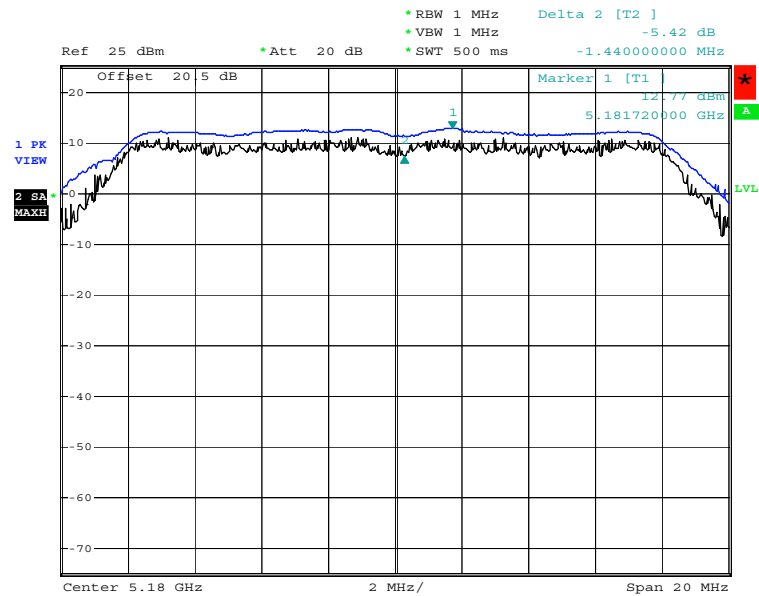
➤ Application: 802.11a

Channel	Frequency (MHz)	Peak Excursion (dB)	Limits (dB)	Mode Ref. No.
36	5180	5.42	13	1
48	5240	4.92	13	2
52	5260	4.33	13	3
64	5320	4.04	13	4

5.8.5 Test Data

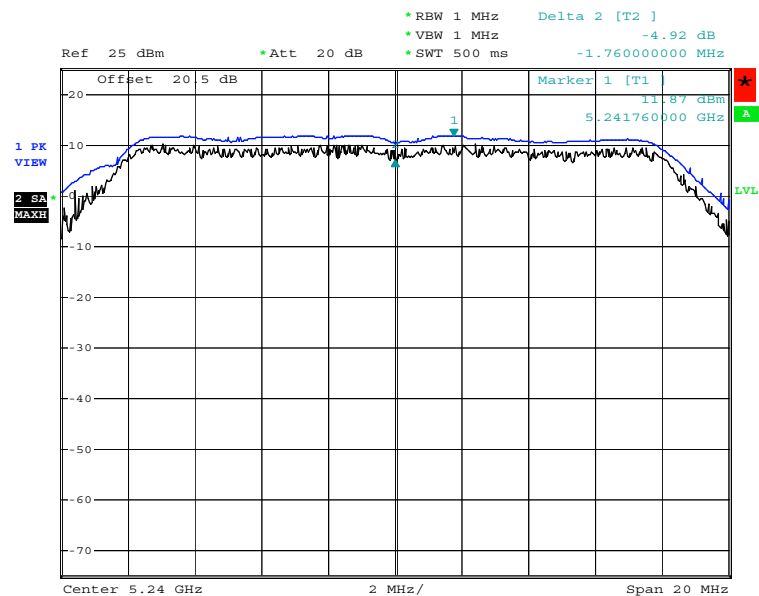
Mode Ref. No.

1



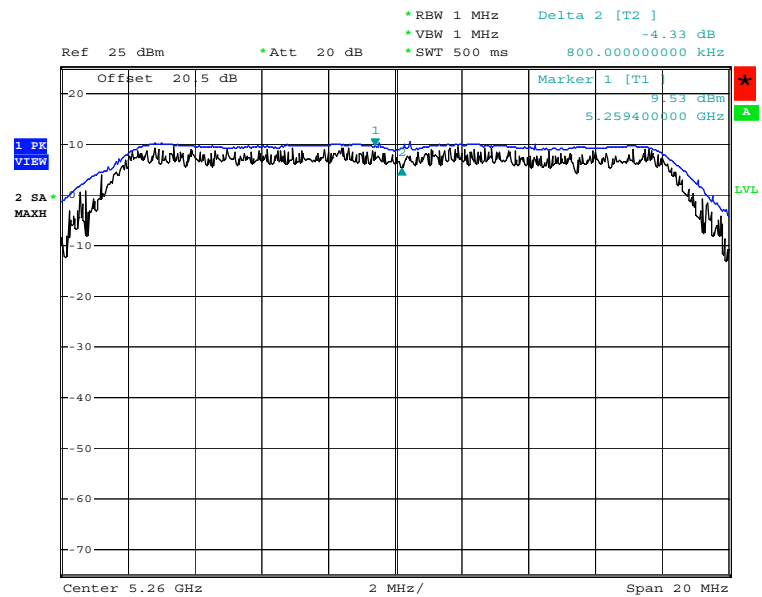
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2



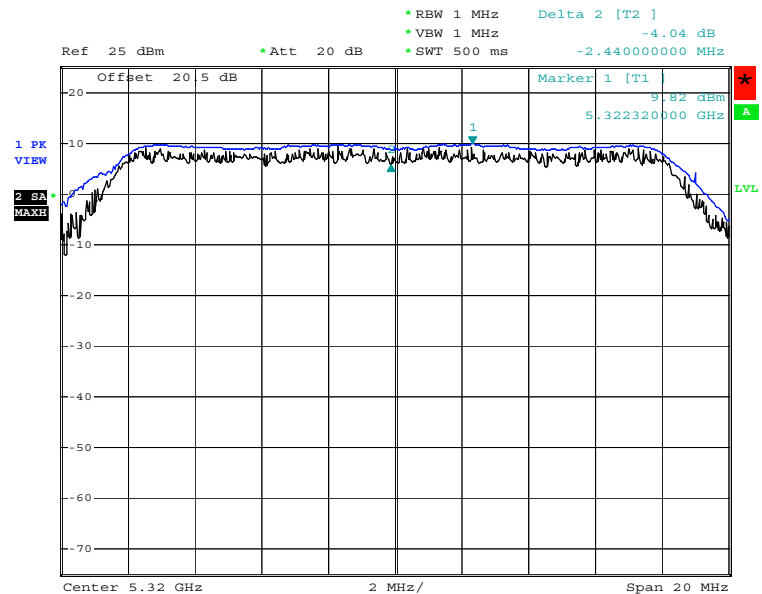
Date: 6.JUN.2007 19:50:32

3



Date: 6.JUN.2007 18:08:41

4



Date: 6.JUN.2007 18:06:03

5.9 Frequency Stability

To ensure emission at the band edge is maintained within the authorized band, those values shall be measured by radiation emissions at upper and lower frequency points, and finally compensated by frequency deviation as procedures below.

The EUT was operated at the maximum output power, and connected to the spectrum analyzer which is set to maximum hold function and peak detector. The peak value of the power envelope was measured and noted. The upper and lower frequency points were respectively measured relatively 10dB lower than the measured peak value. The frequency deviation was calculated by adding the upper frequency point and the lower frequency point divided by two. Those detailed values of frequency deviation are provided in table below.

Frequency(MHz)	Low Frequency (Fl)	High Frequency (Fh)	Center Frequency (Fc)	Frequency Staility (ppm)
5180	5170.68	5189	5179.84	-0.16
5240	5230.64	5249	5239.82	-0.18
5260	5250.84	5268.96	5259.9	-0.10
5320	5310.72	5329	5319.86	-0.14

5.10 Automatically discontinue transmission

During no any information transmission, the EUT can automatically discontinue transmission and become standby mode for power saving .The EUT can detect the controlling signal of ACK message transmitting from remote device and verify whether it shall resend or discontinue transmission .

5.11 Antenna Requirements

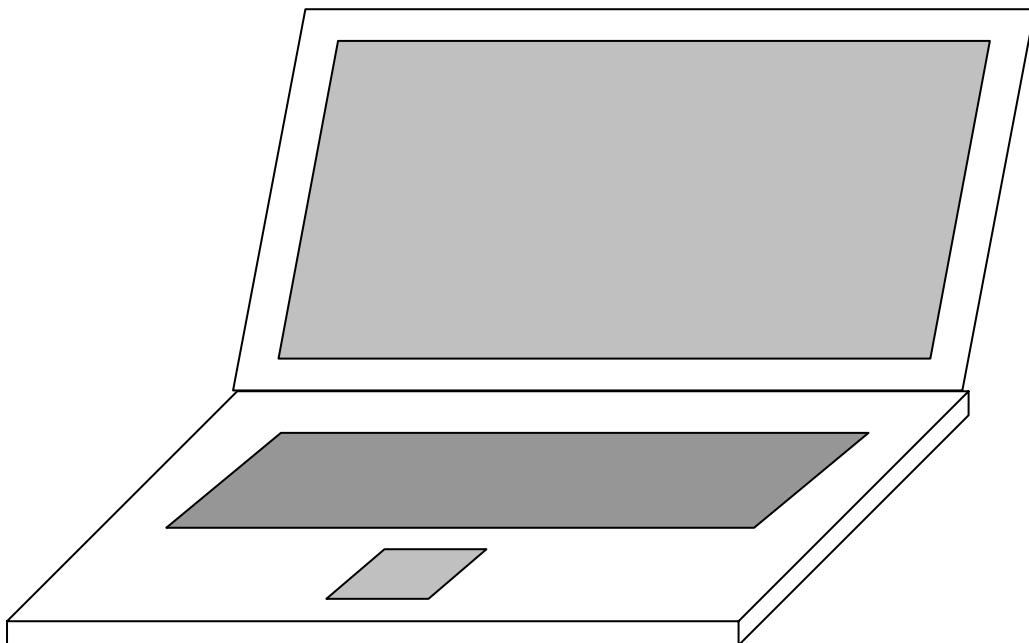
The EUT meets antenna requirement of FCC for the following reasons.

5.11.1 Standard Applicable

According to FCC 47 CFR Section 15.407(a)(1)(2), if transmitting antennas of directional gain greater than 6 dBi are used, both the peak transmit power and the peak power spectral density shall be reduced by the amount in dB that the directional gain of the antenna exceeds 6 dBi.

5.11.2 Antenna Connected Construction

The antenna used in this product is PIFA for both WLAN and BT. The connector is I-PEX on antenna port and it is considered to meet antenna requirement of FCC.



5 List of Measuring Equipments Used

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Due Date	Remark
EMC Receiver	R&S	ESCS 30	100359	9kHz – 2.75GHz	Mar. 01, 2007	Mar. 01, 2008	Conduction (CO04-HY)
LISN	MessTec	NNB-2/16Z	99079	9kHz – 30MHz	Mar. 31, 2007	Mar. 31, 2008	Conduction (CO04-HY)
LISN (Support Unit)	EMCO	3810/2NM	9703-1839	9kHz – 30MHz	Mar. 22, 2007	Mar. 22, 2008	Conduction (CO04-HY)
RF Cable-CON	UTIFLEX	3102-26886-4	CB049	9kHz – 30MHz	Apr. 20, 2007	Apr. 20, 2008	Conduction (CO04-HY)
EMI Filter	LINDGREN	LRE-2030	2651	< 450 Hz	N/A	N/A	Conduction (CO04-HY)
Isolation Transformer	Erika Fiedler OHG	D-65396 Walluf	58	45MHz-2.15GHz	N/A	N/A	Conduction (CO04-HY)
Spectrum analyzer	Agilent	E4408B	MY44211030	9KHz-26.5GHz	Oct. 05, 2006	Oct. 04, 2007	Radiation (03CH06-HY)
EMI Test Receiver	R&S	ESCS30	100356	9KHz-2.75GHz	Jul. 13, 2006	Jul. 12, 2007	Radiation (03CH06-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2885	30MHz -2GHz	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)
Double Ridge Horn Antenna	Com-Power	AH118	10094	1G~18G	Dec. 26, 2006	Dec. 25, 2007	Radiation (03CH06-HY)
SHF-EHF Horn	SCHWARZBECK	BBHA 9170	9170-249	14G - 40G	Nov. 20, 2006	Nov. 19, 2008	Radiation (03CH06-HY)
Pre Amplifier	Agilent	8449B	3008A01917	1G - 26.5G	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)
Pre Amplifier	Mini Circuits	ZKL-2	D092004-1	10~2500MHz	Nov. 15, 2006	Nov. 14, 2007	Radiation (03CH06-HY)
Base Station Simulator	R & S	CMU200	106656	WCDMA	Nov. 20, 2006	Nov. 19, 2007	Radiation (03CH06-HY)
Amplifier	MITEQ	AMF-6F-260400	923364	26.5GHz - 40GHz	Jan. 22, 2007	Jan. 22, 2008	Radiation (03CH06-HY)
Spectrum	R&S	FSP40	100055	9KHz – 40GHz	Jun. 23, 2006	Jun. 23, 2007	Radiation (03CH06-HY)

3m Semi Anechoic	TDK	SAC-3M	03CH04-HY	30 MHz - 1 GHz 3m	Oct. 30, 2006	Oct. 30, 2007	Radiation (03CH04-HY)
Amplifier	Schaffner	CPA9231A	3564	9 kHz - 2 GHz	Aug.31, 2006	Aug.31, 2007	Radiation (03CH04-HY)
Spectrum Analyzer	R&S	FSP7	100641	9 kHz – 7GHz	Sep. 08, 2006	Sep. 08, 2007	Radiation (03CH04-HY)
Bilog Antenna	SCHAFFNER	CBL6112B	2724	30 MHz - 1 GHz	Aug. 14, 2006	Aug. 14, 2007	Radiation (03CH04-HY)
Turn Table	HD	Deis HD 2000	420/610	0 - 360 degree	N/A	N/A	Radiation (03CH04-HY)
Antenna Mast	Chaintek	3000		1 m - 4 m	N/A	N/A	Radiation (03CH04-HY)
RF Cable-R03m	Suhner Switzerland +	RG223/U +RG8/U	CB024	30 MHz - 1 GHz	Sep. 21, 2006	Sep. 21, 2007	Radiation (03CH04-HY)

6 Uncertainty of Test Site

Uncertainty of Conducted Emission Measurement (150kHz ~ 30MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.10	Normal(k=2)	0.05
Cable loss	0.10	Normal(k=2)	0.05
AMN insertion loss	2.50	Rectangular	0.63
Receiver Spec	1.50	Rectangular	0.43
Site imperfection	1.39	Rectangular	0.80
Mismatch	+0.34/-0.35	U-shape	0.24
combined standard uncertainty Uc(y)	1.13		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.26		

Uncertainty of Radiated Emission Measurement (30MHz ~ 1000MHz)

Contribution	Uncertainty of x_i		$u(x_i)$
	dB	Probability Distribution	
Receiver reading	0.41	Normal(k=2)	0.21
Antenna factor calibration	0.83	Normal(k=2)	0.42
Cable loss calibration	0.25	Normal(k=2)	0.13
Pre Amplifier Gain calibration	0.27	Normal(k=2)	0.14
RCV/SPA specification	2.50	Rectangular	0.72
Antenna Factor Interpolation for Frequency	1.00	Rectangular	0.29
Site imperfection	1.43	Rectangular	0.83
Mismatch	+0.39/-0.41	U-shaped	0.28
combined standard uncertainty Uc(y)	1.27		
Measuring uncertainty for a level of confidence of 95% U=2Uc(y)	2.54		

Uncertainty of Radiated Emission Measurement (1GHz ~ 40GHz)

Contribution	Uncertainty of x_i		$u(x_i)$	C_i	$C_i * u(x_i)$
	dB	Probability Distribution			
Receiver reading	±0.10	Normal(k=1)	0.10	1	0.10
Antenna factor calibration	±1.70	Normal(k=2)	0.85	1	0.85
Cable loss calibration	±0.50	Normal(k=2)	0.25	1	0.25
Receiver Correction	±2.00	Rectangular	1.15	1	1.15
Antenna Factor Directional	±1.50	Rectangular	0.87	1	0.87
Site imperfection	±2.80	Triangular	1.14	1	1.14
Mismatch Receiver VSWR $\Gamma_1 = 0.197$ Antenna VSWR $\Gamma_2 = 0.194$ Uncertainty = $20 \log(1 - \Gamma_1 * \Gamma_2 * \Gamma_3)$	+0.34/-0.35	U-shaped	0.244	1	0.244
Combined standard uncertainty Uc(y)	2.36				
Measuring uncertainty for a level of confidence of 95% U=2Ue(y)	4.72				



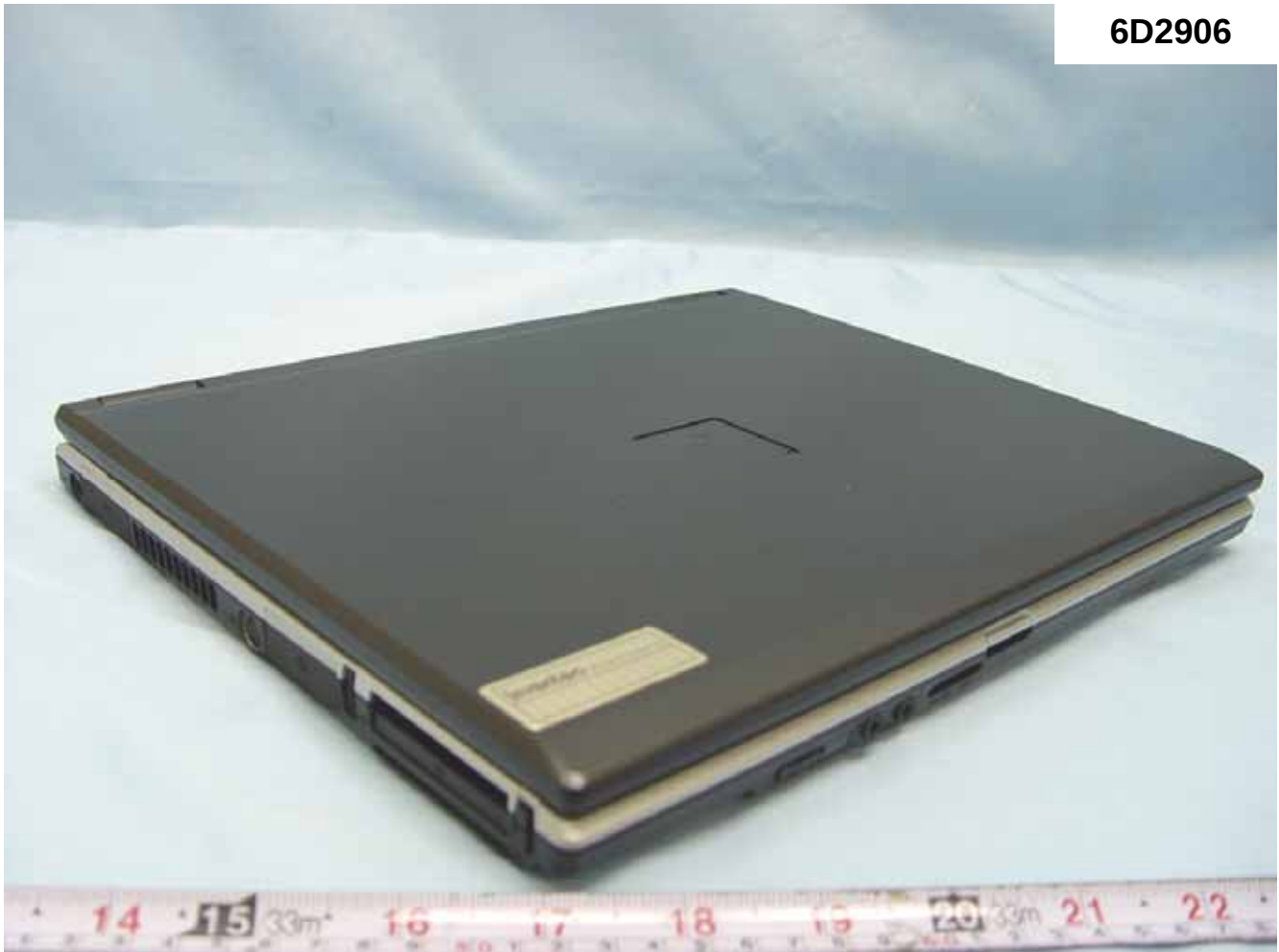
APPENDIX A. External Photographs of EUT

6D2906





6D2906





6D2906



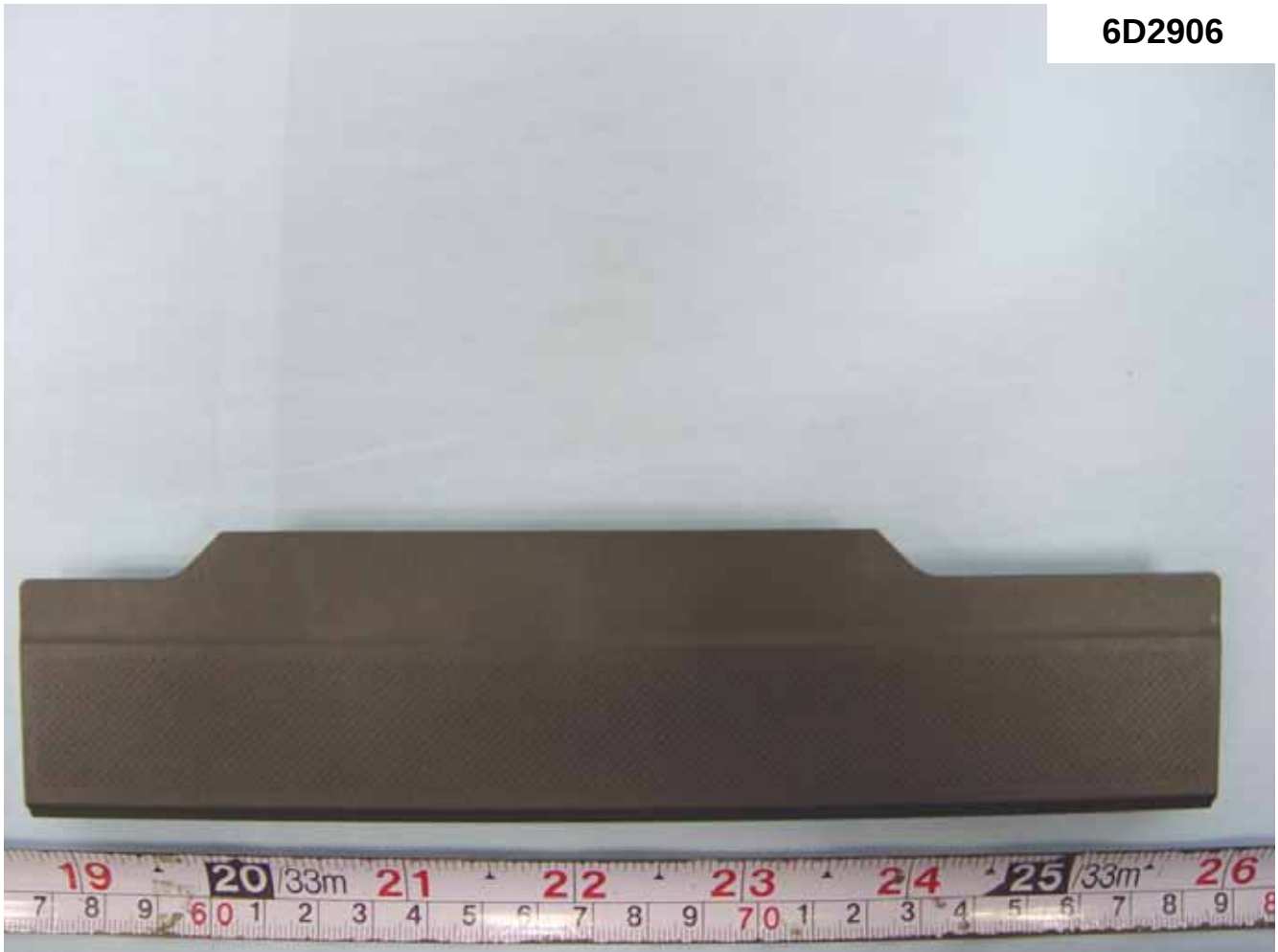


6D2906





6D2906





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APPENDIX B. Internal Photographs of EUT

6D2906





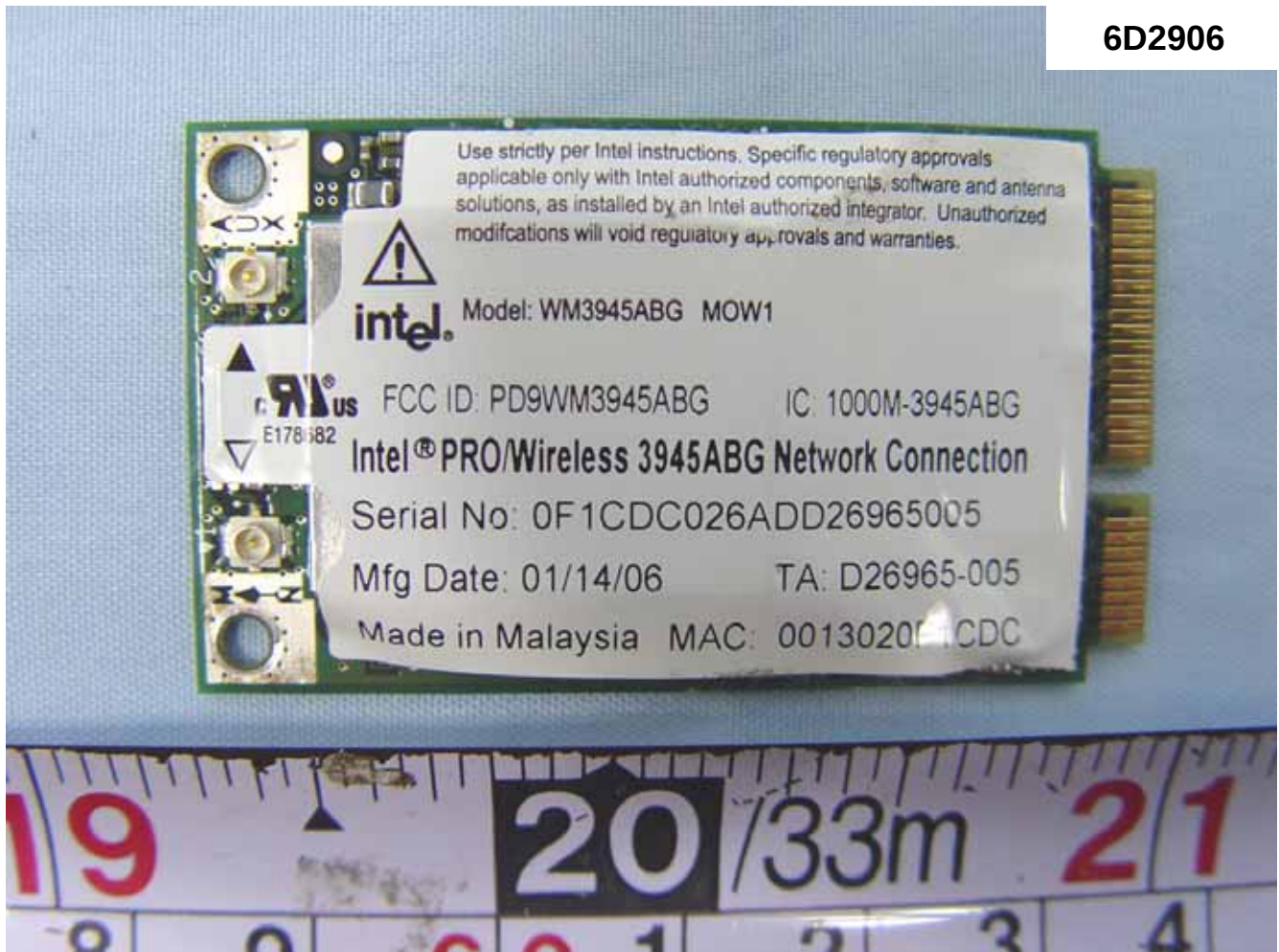
6D2906







6D2906



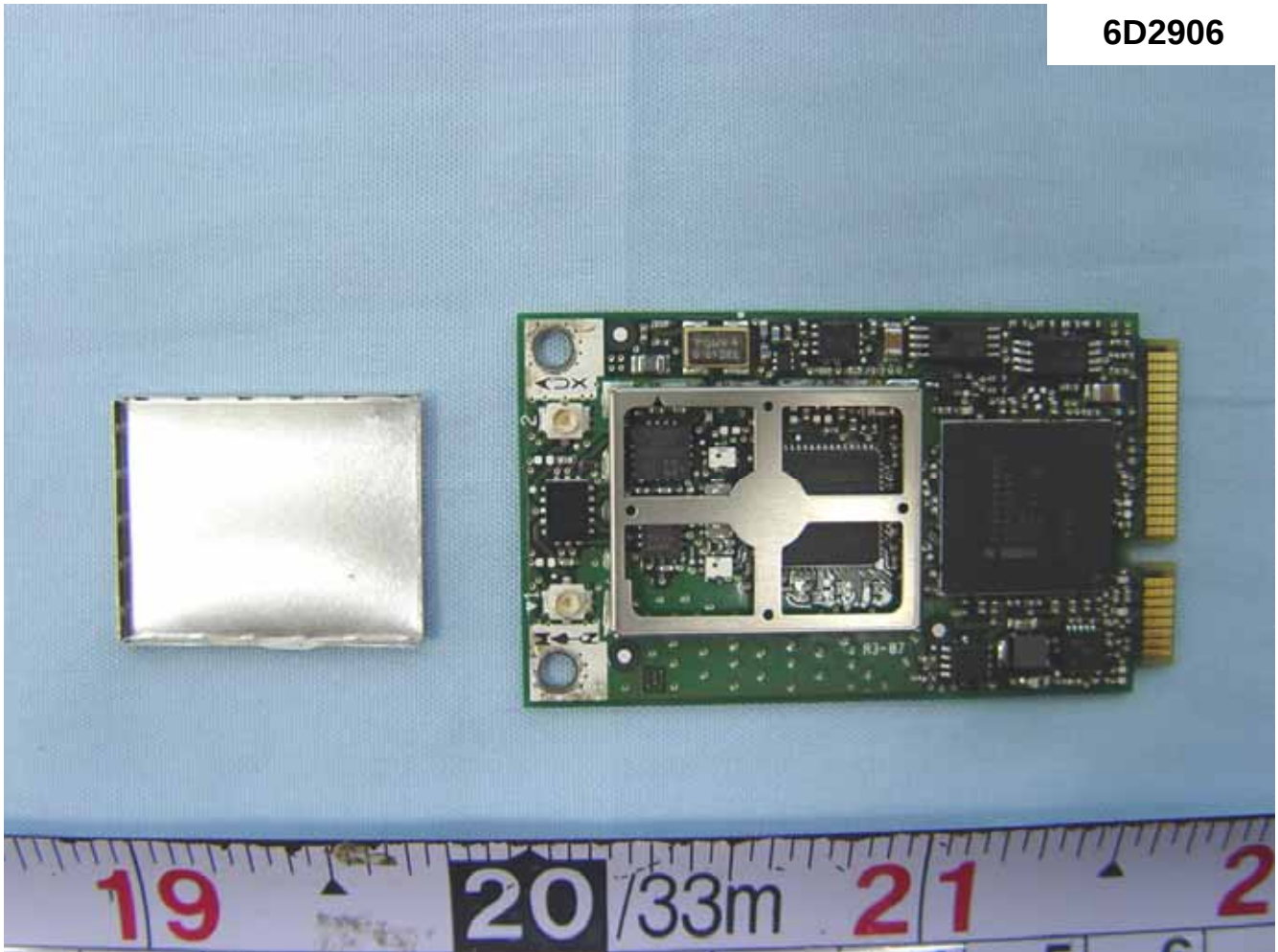


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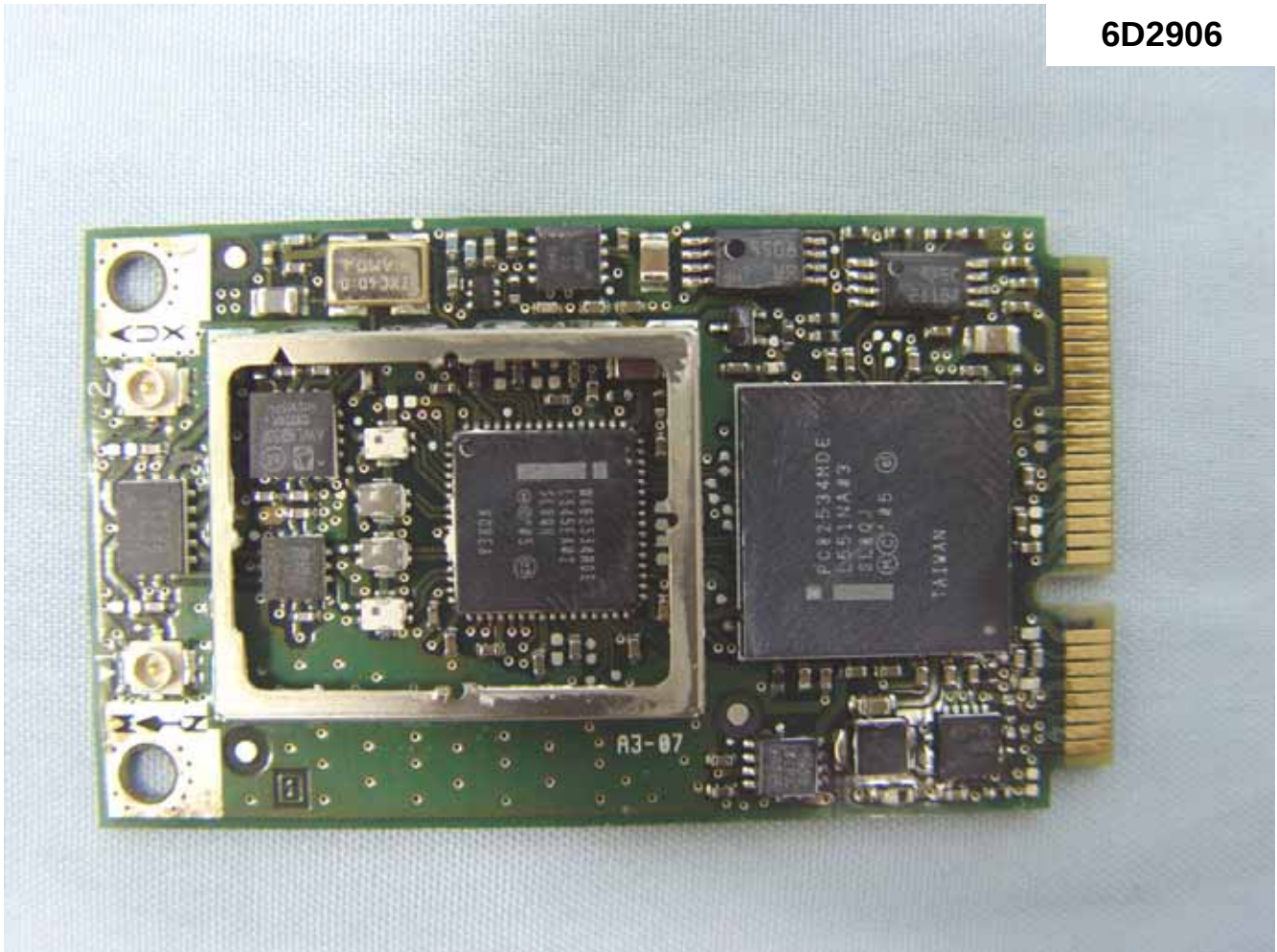


6D2906





6D2906





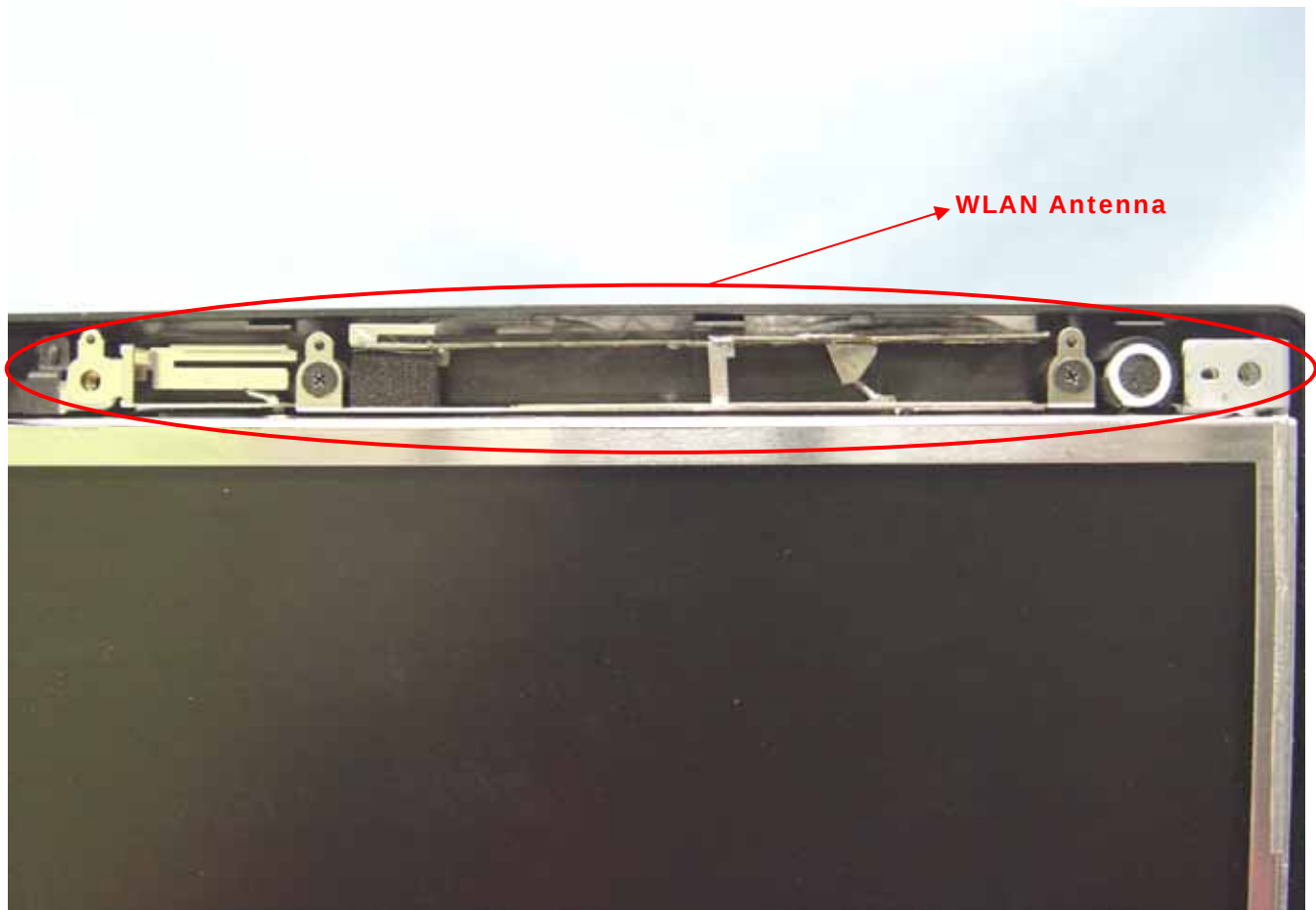


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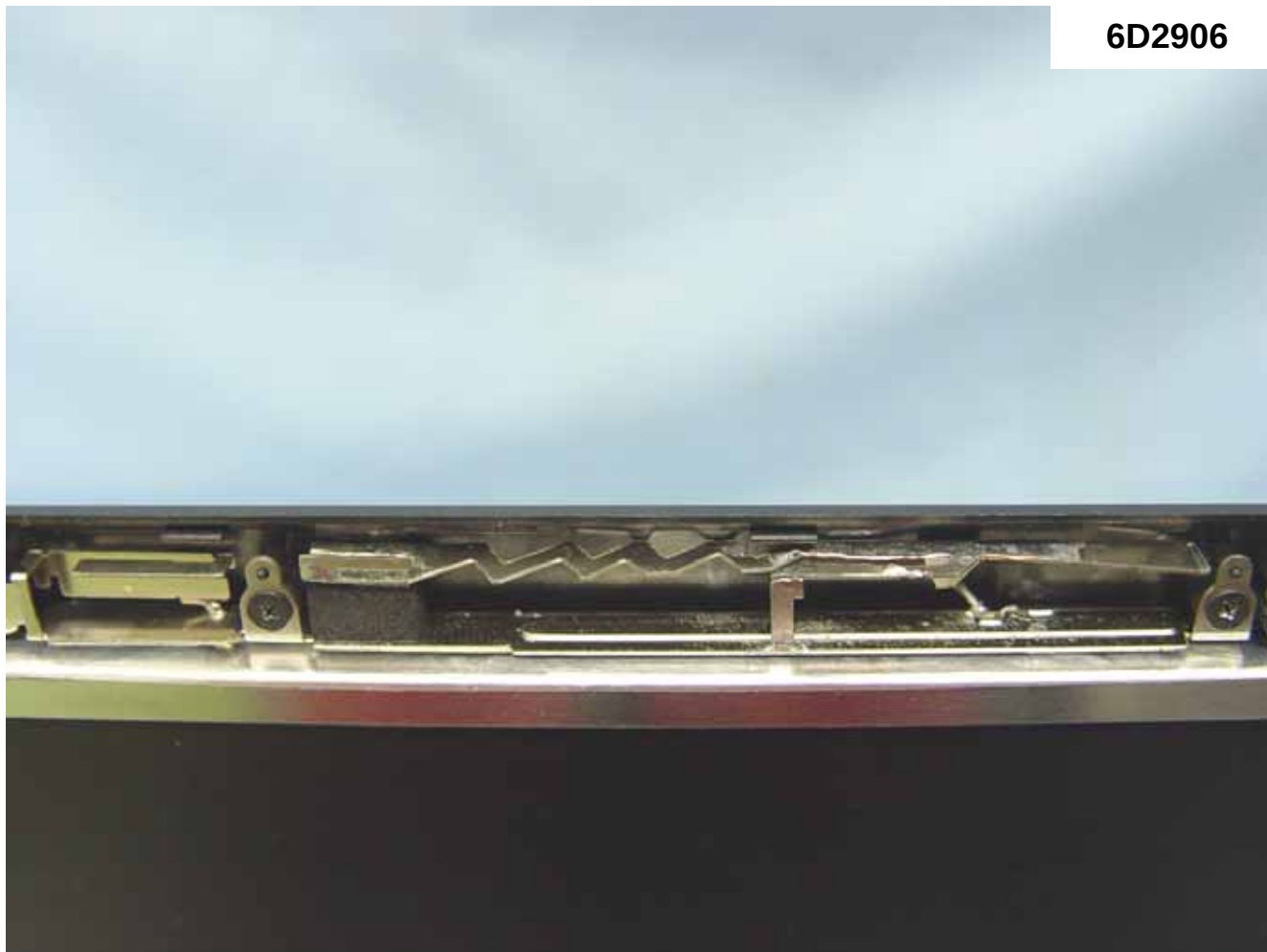


6D2906





6D2906





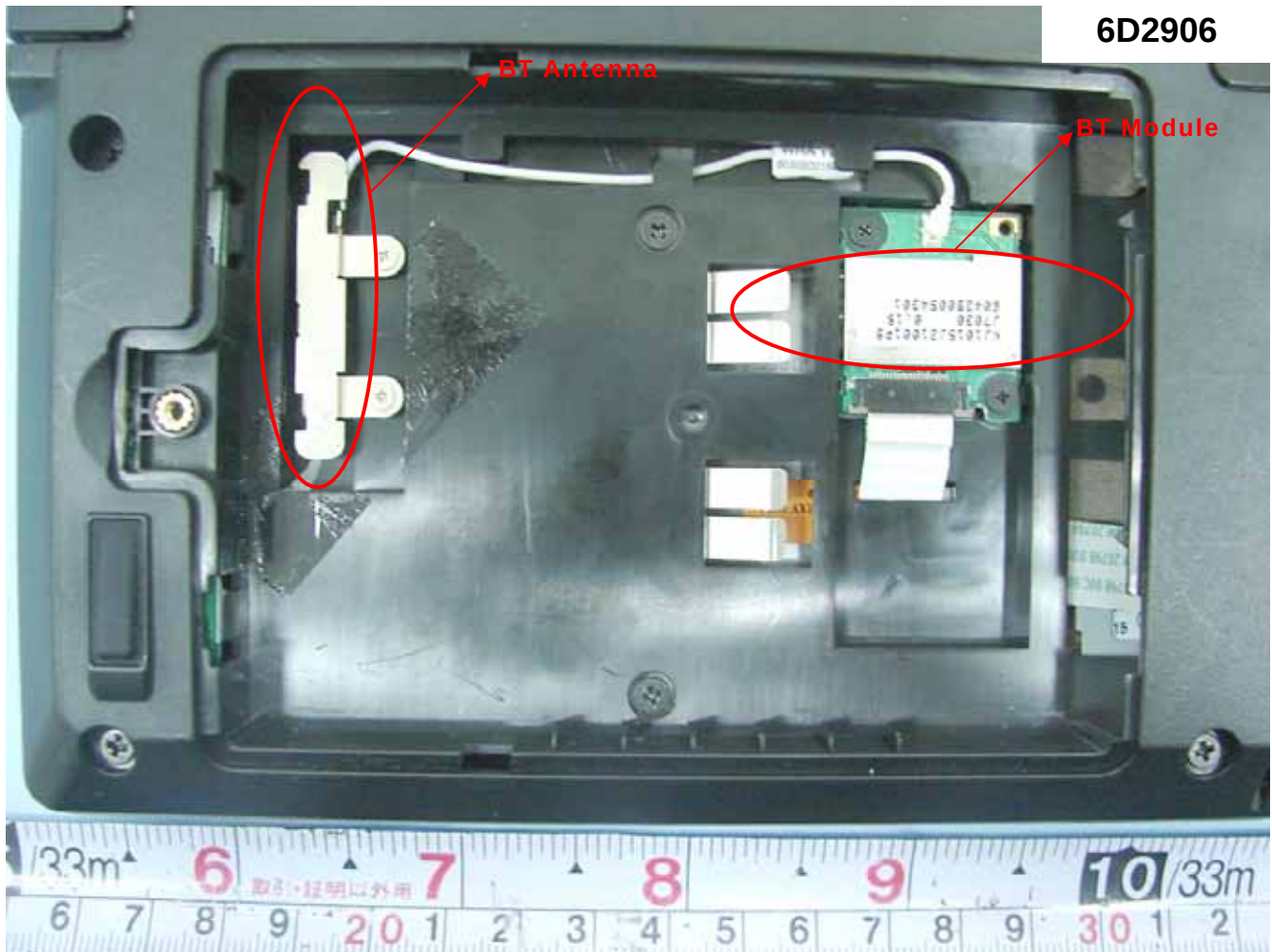
6D2906





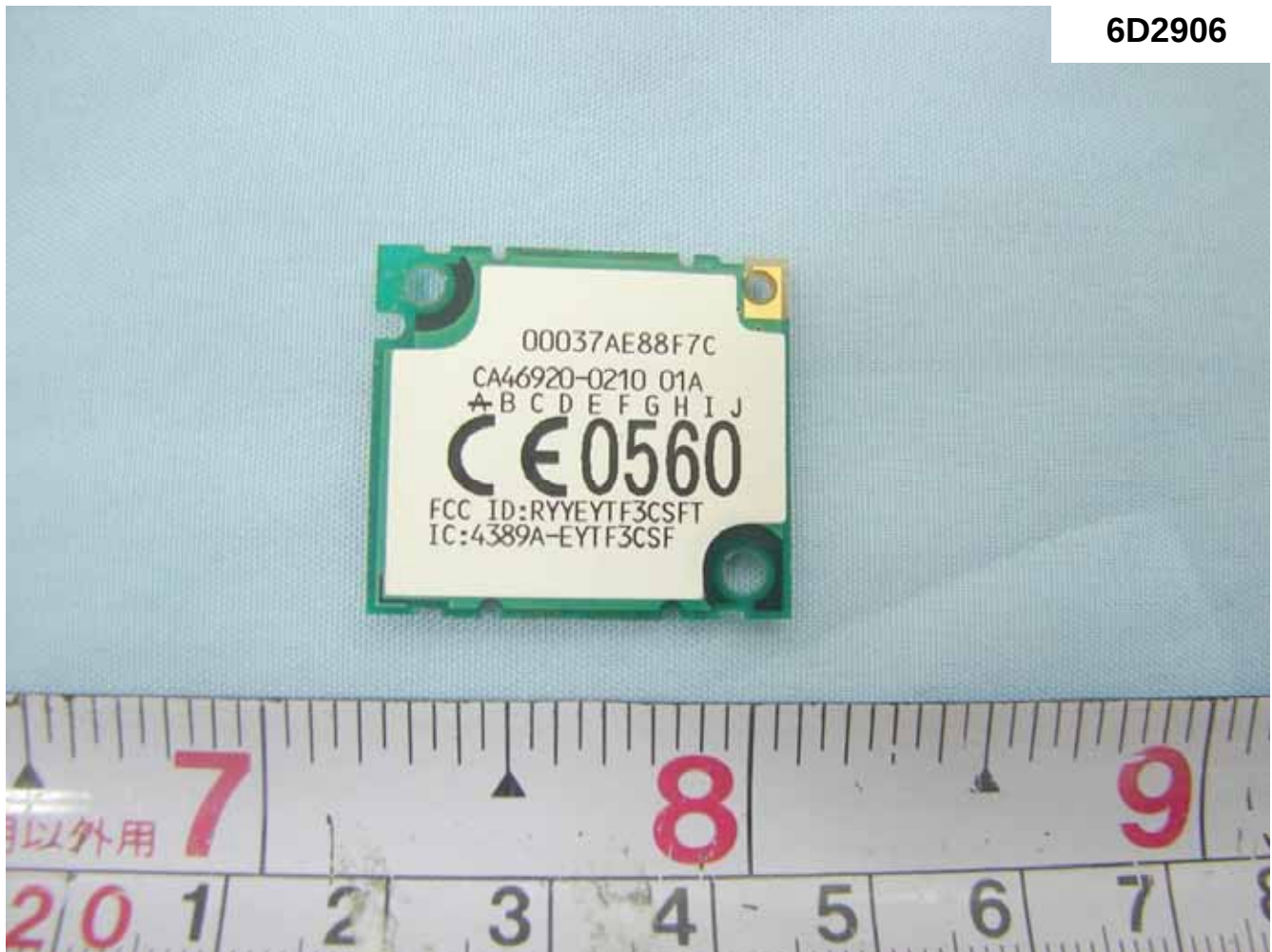
6D2906





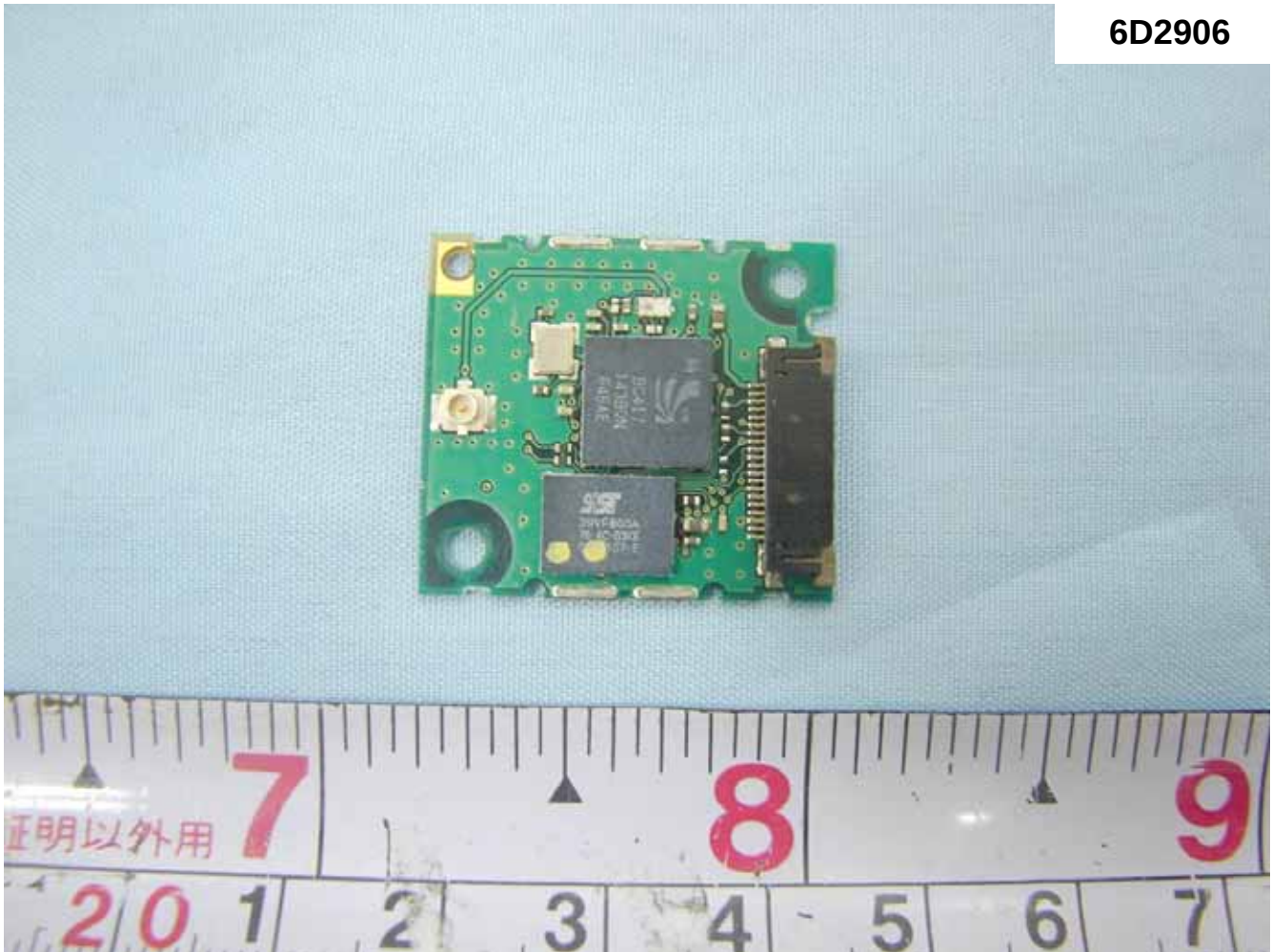


6D2906



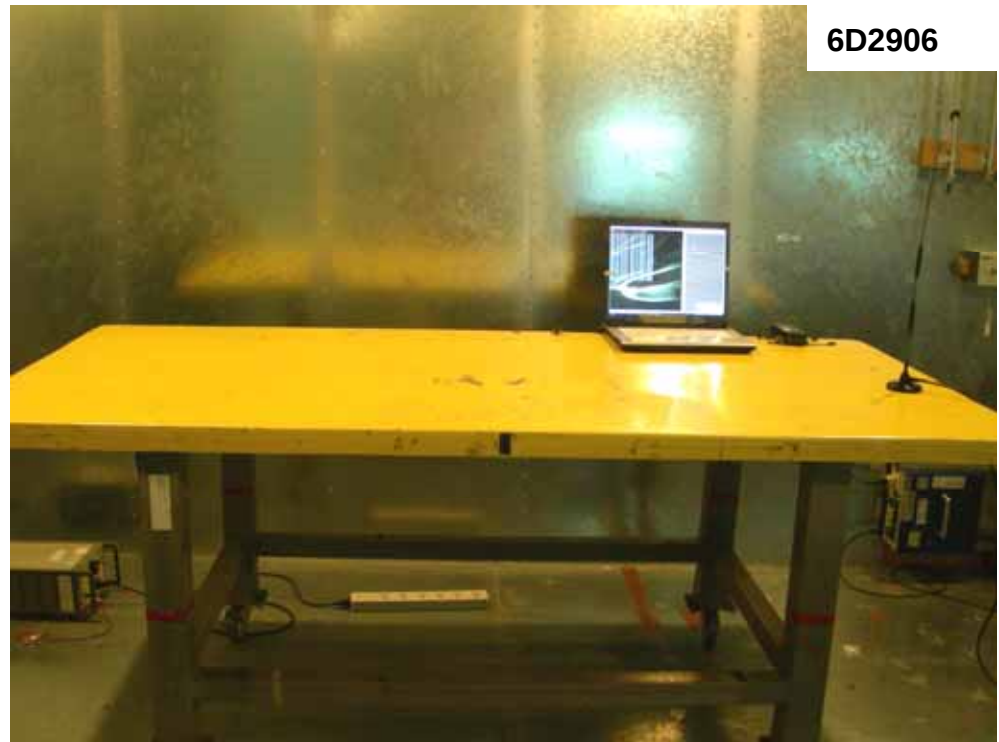


6D2906

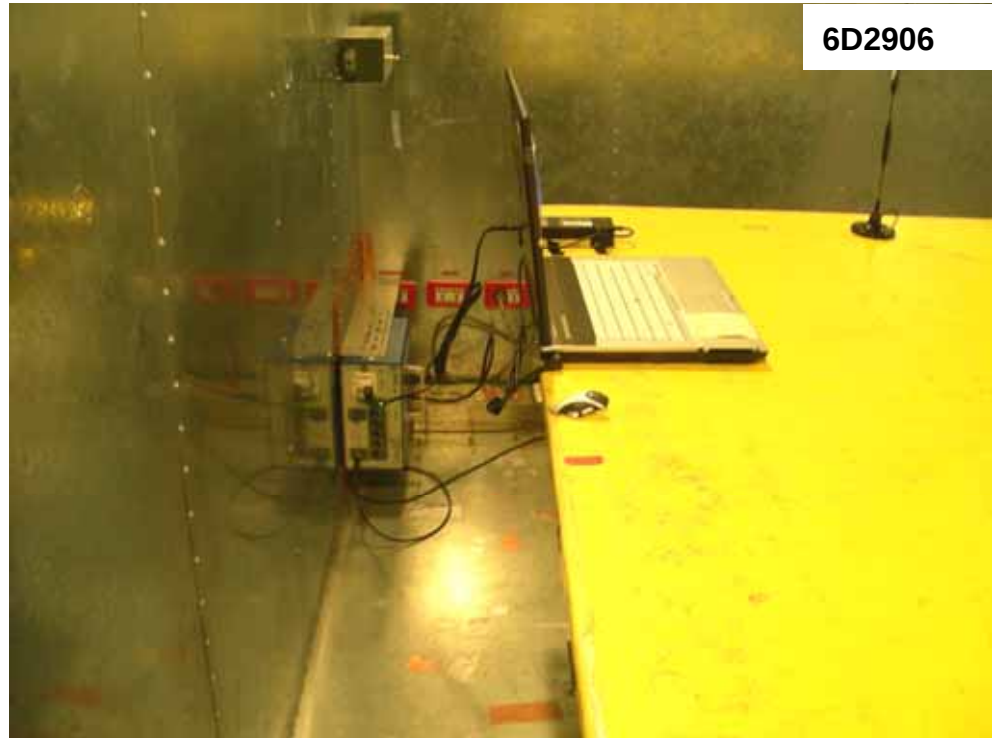


Appendix C. Set up Photograph
Conducted Emission

FRONT VIEW



REAR VIEW



SIDE VIEW



Radiation Emission

FRONT VIEW



REAR VIEW

