FCC RADIO TEST REPORT

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment	:	**FLYBOOK**
Model No.	:	**V5W1BBHA**
Brand Name	:	**DIALOGUE**
Filing Type	:	**New Application**
Applicant	:	**Dialogue Technology Corp.** 10F, No. 196, Sec.2, Jungshing Rd., Shindian City, Taipei 231, Taiwan, R.O.C.
FCC ID	:	**JYV-V5W1BBHA**
Manufacturer	:	**Dialogue Technology Corp.** 10F, No. 196, Sec.2, Jungshing Rd., Shindian City, Taipei 231, Taiwan, R.O.C.
Received Date	:	Jab. 22, 2007
Test Date	:	Mar. 13, 2007

Statement

Test result included is only for the Bluetooth part of the product (collocated with 802.11b/g).

The test result in this report refers exclusively to the presented test model / sample.

Without written approval of SPORTON International Inc., the test report shall not be reproduced except in full.

The measurements and test results shown in this test report were made in accordance with the procedures and found in compliance with the limit given in **ANSI C63.4-2003** and **47 CFR FCC Part 15 Subpart C**.

The test equipment used to perform the test is calibrated and traceable to NML/ROC.

Lab Code: 200079-0

SPORTON International Inc.

6F, No. 106, Sec. 1, Hsin Tai Wu Rd., Hsi Chih, Taipei Hsien, Taiwan, R.O.C.

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History of This Test Report

Original Issue Date: Mar. 20, 2007

Report No.: FR6O2516AD

■ No additional attachment.

☐ Additional attachment were issued as following record:

Attachment No.	Issue Date	Description

CERTIFICATE OF COMPLIANCE

according to

47 CFR FCC Part 15 Subpart C § 15.247

Equipment	:	FLYBOOK
Model No.	:	V5W1BBHA
Brand Name	:	DIALOGUE
Applicant	:	**Dialogue Technology Corp.** 10F, No. 196, Sec.2, Jungshing Rd., Shindian City, Taipei 231, Taiwan, R.O.C.

Sporton International as requested by the applicant to evaluate the EMC performance of the product sample received on Jab. 22, 2007 would like to declare that the tested sample has been evaluated and found to be in compliance with the tested rule parts. The data recorded as well as the test configuration specified is true and accurate for showing the sample's EMC nature.

Roger Sheng / Manager

Reviewed Data: Mar. 20, 2007

1. SUMMARY OF THE TEST RESULT

Applied Standard: 47 CFR FCC Part 15 Subpart C				
Part	**Rule Section**	**Description of Test**	**Result**	**Under Limit**
3.1	15.207	AC Power Line Conducted Emissions	Complies	9.90 dB
3.2	15.247(b)(1)	Maximum Peak Conducted Output Power	Complies	26.34 dB
3.3	15.247(a)(1)	Hopping Channel Separation	Complies	-
3.4	15.247(b)(1)	Number of Hopping Frequency	Complies	-
3.5	15.247(a)(1)	Dwell Time	Complies	-
3.6	15.247(d)	Radiated Emissions	Complies	5.41 dB
3.7	15.247(d)	Band Edge Emissions	Complies	7.51 dB
3.8	15.203	Antenna Requirements	Complies	-

Test Items	Uncertainty	Remark
AC Power Line Conducted Emissions	±2.3dB	Confidence levels of 95%
Maximum Peak Conducted Output Power	±0.8dB	Confidence levels of 95%
Hopping Channel Separation	$\pm 8.5 \times 10^{-8}$	Confidence levels of 95%
Radiated Emissions (9kHz~30MHz)	±0.8dB	Confidence levels of 95%
Radiated Emissions (30MHz~1000MHz)	±1.9dB	Confidence levels of 95%
Radiated / Band Edge Emissions (1GHz~18GHz)	±1.9dB	Confidence levels of 95%
Radiated Emissions (18GHz~40GHz)	±1.9dB	Confidence levels of 95%
Temperature	±0.7℃	Confidence levels of 95%
Humidity	±3.2%	Confidence levels of 95%
DC / AC Power Source	±1.4%	Confidence levels of 95%

2. GENERAL INFORMATION

2.1. Product Details

EUT is a FLYBOOK with IEEE 802.11a/b/g, Bluetooth, 3G and GPS radio functions. Only the radio detail of Bluetooth is shown in the table below. For more detailed features description, please refer to the manufacturer's specifications or user's manual.

Items	Description
Power Type	19V DC from adapter; 11.1V DC from battery
Modulation	FHSS (GFSK)
Data Rate (Mbps)	1
Frequency Range	2400 ~ 2483.5MHz
Channel Number	79
Channel Band Width (99%)	918 kHz
Conducted Output Power	3.66 dBm

2.2. Accessories

Power	Brand	Model	Rating
Adapter 1	DIALOGUE	ADP-50HH A	INPUT: 100-240V AC OUTPUT: 19V DC
Li-Ion Battery	DIALOGUE	FB-B5634	11.1 V DC 3400mAh
Others			
Stylus / Power cord			

2.3. Table for Filed Antenna

Ant.	Antenna Type	Connector	Gain (dBi)	Remark
1	PIFA Antenna	NA	-4.78	Bluetooth

2.4. Table for Carrier Frequencies

Frequency Band	Channel No.	Frequency
2400~2483.5MHz	0	2402 MHz
	1	2403 MHz
	:	:
	38	2440 MHz
	39	2441 MHz
	40	2442 MHz
	:	:
	77	2479 MHz
	78	2480 MHz

2.5. Table for Test Modes

Preliminary tests were performed in different data rate to find the worst radiated emission. The data rate shown in the table below is the worst-case rate with respect to the specific test item. Investigation has been done on all the possible configurations for searching the worst cases. The following table is a list of the test modes shown in this test report.

Test Items	Mode	Data Rate	Channel	Antenna
AC Power Conducted Emissions	Mode 4	1 Mbps	Hopping 0~78	1
Max. Conducted Output Power	GFSK	1 Mbps	0/39/78	NA
Hopping Channel Separation	GFSK	1 Mbps	0~1/39~40/77~78	NA
Number of Hopping Frequency	GFSK	1 Mbps	0~78	NA
Dwell Time	DH1/DH3/DH5	1 Mbps	0/39/78	NA
Radiated Emissions Below 1GHz	BT on 802.11g on	1 Mbps 6 Mbps	39 6	1
Radiated Emissions Above 1GHz	BT on 802.11b on	1 Mbps 11 Mbps	0/39/78 1/6/11	1
Band Edge Emissions	BT on 802.11b on	1 Mbps 11 Mbps	0/78 1/11	1

Note:

For EMI test, the following modes were tested:

Mode 1. GSM850 Idle+BT Idle+WLAN Idle+Earphone+Adapter

Mode 2. EDGE Idle+BT Idle+WLAN Idle+Earphone+Adapter

Mode 3. WCDMA Idle+BT Idle+WLAN Idle+Earphone+Adapter

Mode 4. HSDPA Idle+BT Idle+WLAN Idle+Earphone+Adapter

Because ”mode 4” generated the worst test result, it was reported as final data.

2.6. Table for Testing Locations

Test Site No.	Site Category	Location	FCC Reg. No.	IC File No.	VCCI Reg. No
03CH03-HY	SAC	Hwa Ya	101377	IC 4088	-
CO01-NH	Conduction	Hwa Ya	90960	IC 4086	-
TH01-HY	OVEN Room	Hwa Ya	-	-	-

Open Area Test Site (OATS); Semi Anechoic Chamber (SAC); Fully Anechoic Chamber (FAC).

Please refer section 6 for Test Site Address.

2.7. Table for Supporting Units

Support Unit	Brand	Model	FCC ID
Base Station	R&S	CMU 200	-
Bluetooth Earphone	Free Style	JD-100	-
WLAN AP	SMC	SMC-100	-
LCD Monitor	DELL	2405FPE	DoC
MIC+Headset	HAWK	03-MSB301	DoC
IPod x2	Apple	A1051	R33057
Express Card	APIOTEK	EC-0001	-
Notebook (Remote Workstation)	DELL	D400	DoC
Central Office (Remote Workstation)	Easy Switch	SMS-4 PLUS	-

2.8. Table for Parameters of Test Software Setting

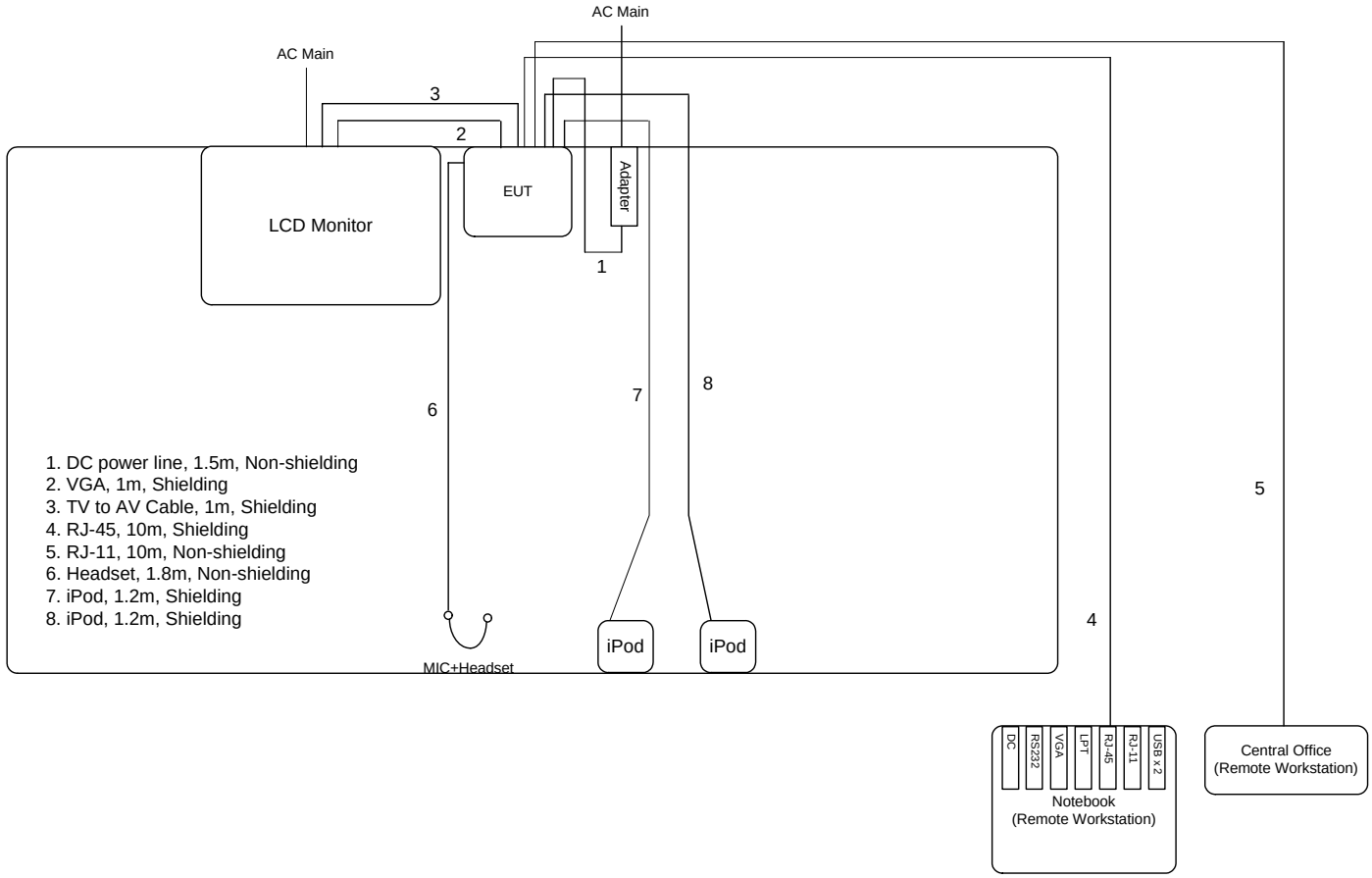
During testing, Channel & Power Controlling Software provided by the customer was used to control the operating channel as well as the output power level. The RF output power selection is for the setting of RF output power expected by the customer and is going to be fixed on the firmware of the final end product.

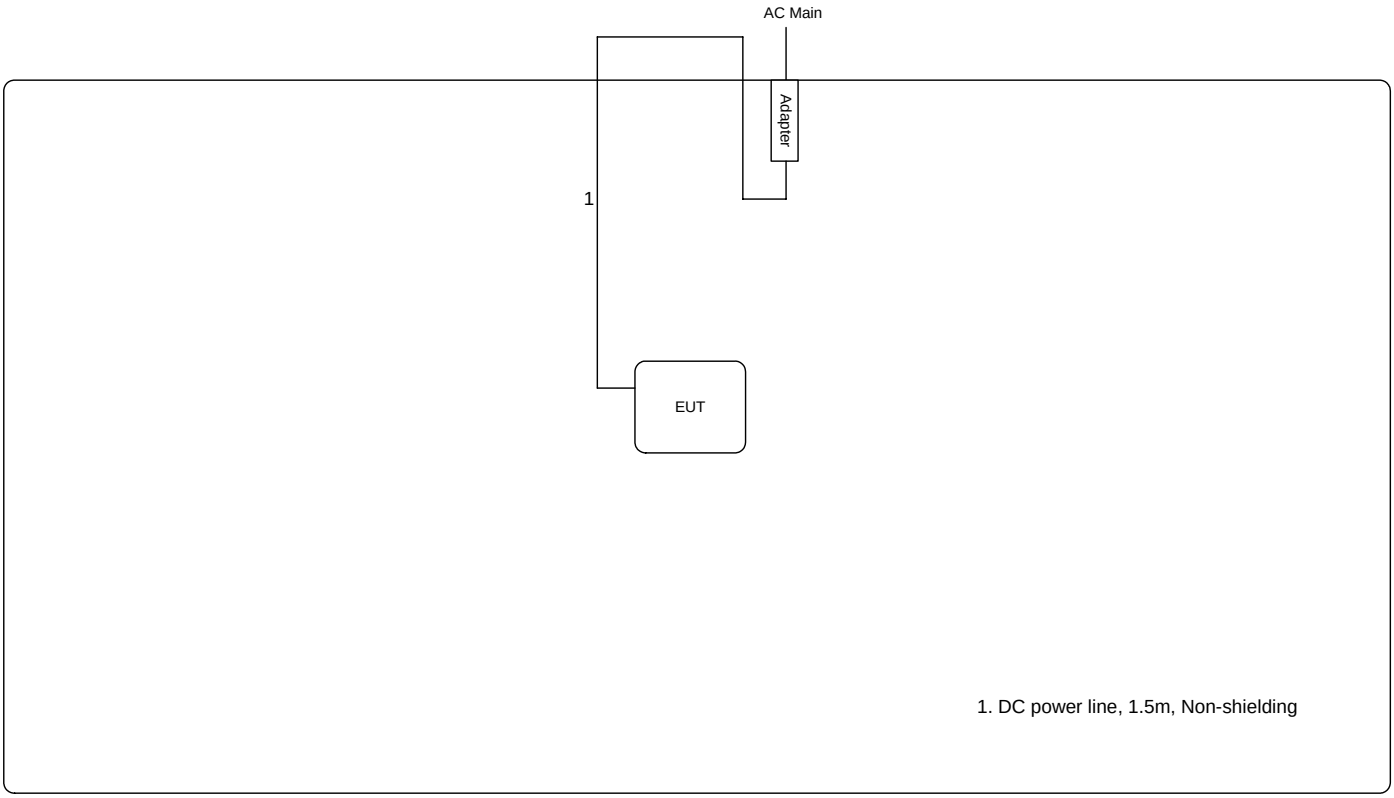
Power Parameters of Bluetooth

Test Software Version	Bluetest		
Frequency	2402 MHz	2441 MHz	2480 MHz
Power Parameters	63	63	63

2.9. Test Configurations

2.9.1. Radiation Emissions Test Configuration




AC Main
Adapter
1
EUT
1. DC power line, 1.5m, Non-shielding

3. TEST RESULT

3.1. AC Power Line Conducted Emissions Measurement

3.1.1. Limit

For a Low-power Radio-frequency device which is designed to be connected to the AC power line, the radio frequency voltage that is conducted back onto the AC power line on any frequency or frequencies within the band 150 kHz to 30 MHz shall not exceed below limits table.

Frequency (MHz)	QP Limit (dBuV)	AV Limit (dBuV)
0.15~0.5	66~56	56~46
0.5~5	56	46
5~30	60	50

3.1.2. Measuring Instruments and Setting

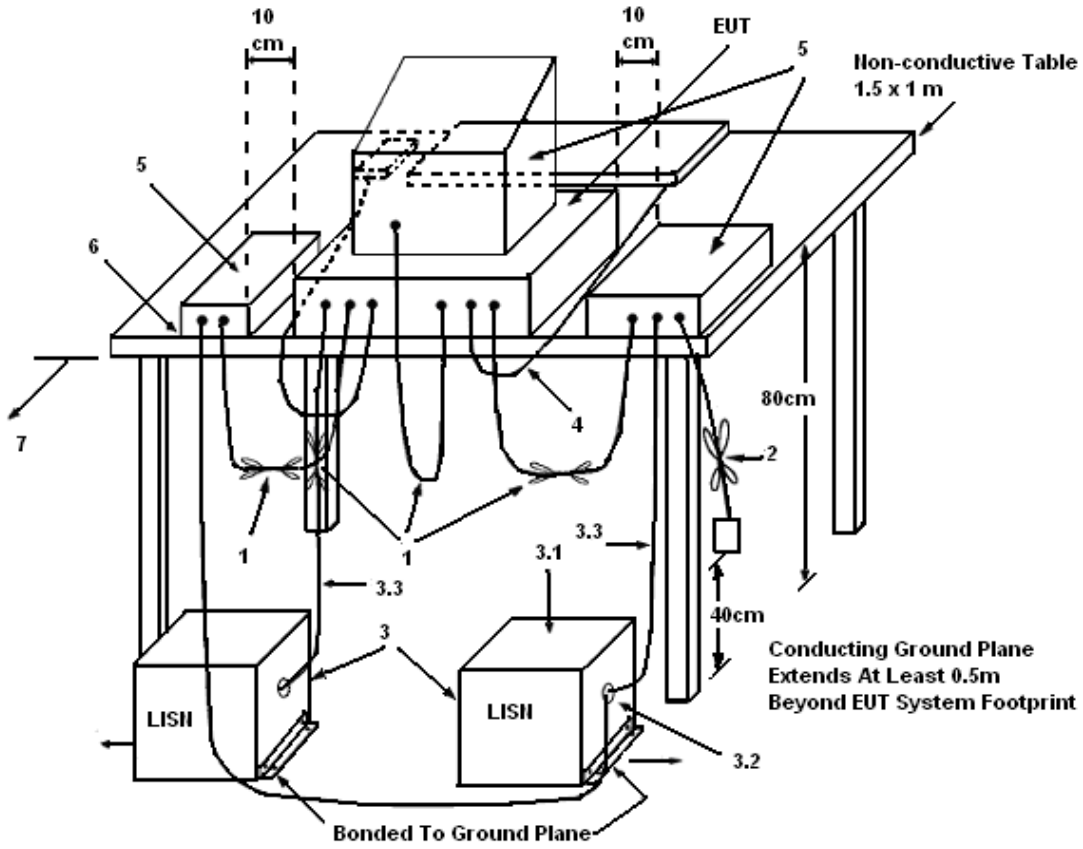
Please refer to section 4 of equipments list in this report. The following table is the setting of the receiver.

Receiver Parameters	Setting
Attenuation	10 dB
Start Frequency	0.15 MHz
Stop Frequency	30 MHz
IF Bandwidth	9 KHz

3.1.3. Test Procedures

1. Configure the EUT according to ANSI C63.4. The EUT or host of EUT has to be placed 0.4 meter far from the conducting wall of the shielding room and at least 80 centimeters from any other grounded conducting surface.
2. Connect EUT or host of EUT to the power mains through a line impedance stabilization network (LISN).
3. All the support units are connected to the other LISNs. The LISN should provide 50uH/50ohms coupling impedance.
4. The frequency range from 150 KHz to 30 MHz was searched.
5. Set the test-receiver system to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode.
6. The measurement has to be done between each power line and ground at the power terminal.

3.1.4. Test Setup Layout



LEGEND:

(1) Interconnecting cables that hang closer than 40 cm to the ground plane shall be folded back and forth in the center forming a bundle 30 to 40 cm long.

(2) I/O cables that are not connected to a peripheral shall be bundled in the center. The end of the cable may be terminated, if required, using the correct terminating impedance. The overall length shall not exceed 1 m.

(3) EUT connected to one LISN. Unused LISN measuring port connectors shall be terminated in 50 Ω. LISN can be placed on top of, or immediately beneath, reference ground plane.

(3.1) All other equipment powered from additional LISN(s).

(3.2) Multiple outlet strip can be used for multiple power cords of non-EUT equipment.

(3.3) LISN at least 80 cm from nearest part of EUT chassis.

(4) Cables of hand-operated devices, such as keyboards, mice, etc., shall be placed as for normal use.

(5) Non-EUT components of EUT system being tested.

(6) Rear of EUT, including peripherals, shall all be aligned and flush with rear of tabletop.

(7) Rear of tabletop shall be 40 cm removed from a vertical conducting plane that is bonded to the ground plane.

3.1.5. Test Deviation

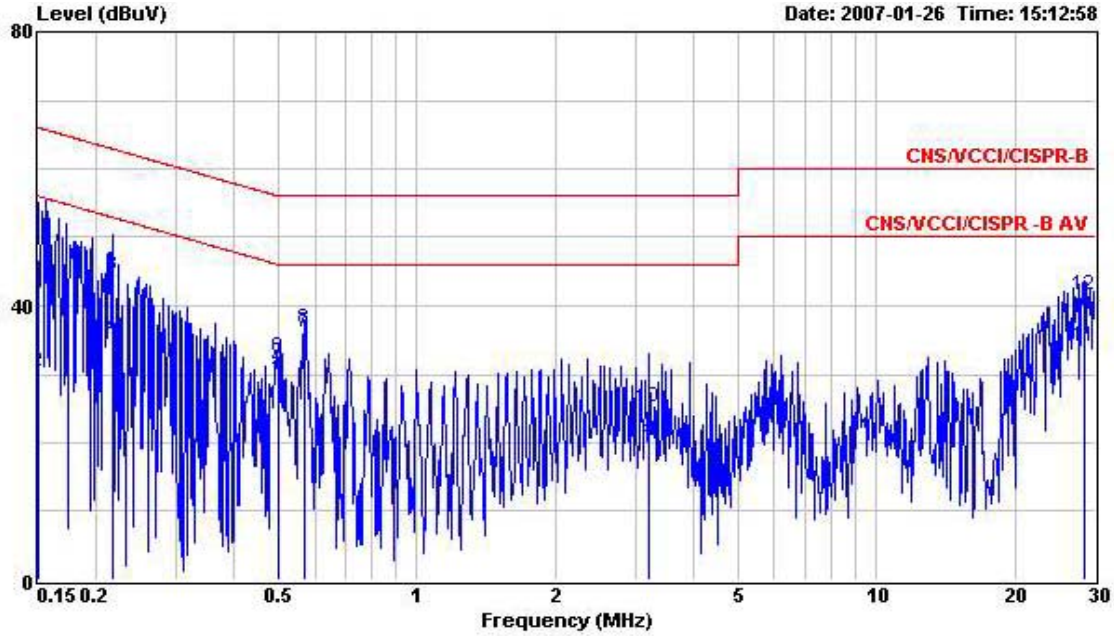
There is no deviation with the original standard.

3.1.6. EUT Operation during Test

The EUT was placed on the test table and programmed in normal function.

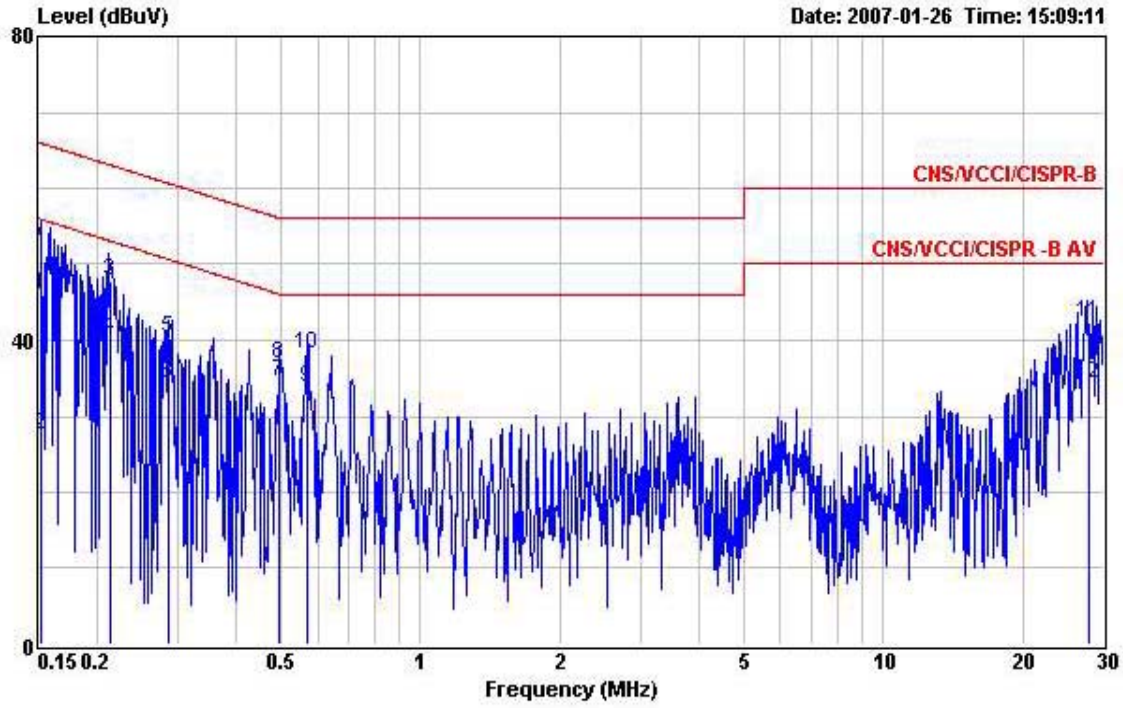
3.1.7. Results of AC Power Line Conducted Emissions Measurement

Temperature	24℃	**Humidity**	51%
Test Engineer	James	**Phase**	Line
Configuration	Mode 4		



	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.150	46.64	-19.36	66.00	46.49	0.10	0.05	QP
2	0.150	30.43	-25.57	56.00	30.28	0.10	0.05	Average
3	0.217	44.41	-18.52	62.93	44.27	0.10	0.04	QP
4	0.217	35.21	-17.72	52.93	35.07	0.10	0.04	Average
5	0.499	30.37	-15.64	46.01	30.20	0.10	0.07	Average
6	0.499	32.34	-23.67	56.01	32.17	0.10	0.07	QP
7	0.570	36.10	-9.90	46.00	35.92	0.10	0.08	Average
8	0.570	36.70	-19.30	56.00	36.52	0.10	0.08	QP
9	3.210	20.72	-25.28	46.00	20.48	0.17	0.07	Average
10	3.210	25.29	-30.71	56.00	25.05	0.17	0.07	QP
11	28.408	34.12	-15.88	50.00	33.40	0.57	0.15	Average
12	28.408	41.55	-18.45	60.00	40.83	0.57	0.15	QP

Temperature	24℃	**Humidity**	51%
Test Engineer	James	**Phase**	Neutral
Configuration	Mode 4		



	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.151	45.94	-20.00	65.94	45.79	0.10	0.05	QP
2	0.151	27.66	-28.28	55.94	27.51	0.10	0.05	Average
3	0.213	47.70	-15.39	63.09	47.56	0.10	0.04	QP
4	0.213	40.14	-12.95	53.09	40.00	0.10	0.04	Average
5	0.286	40.32	-20.32	60.64	40.17	0.10	0.05	QP
6	0.286	34.20	-16.44	50.64	34.05	0.10	0.05	Average
7	0.497	34.46	-11.59	46.05	34.29	0.10	0.07	Average
8	0.497	36.88	-19.17	56.05	36.71	0.10	0.07	QP
9	0.568	33.81	-12.19	46.00	33.63	0.10	0.08	Average
10	0.568	38.28	-17.72	56.00	38.10	0.10	0.08	QP
11	27.965	42.35	-17.65	60.00	41.51	0.69	0.15	QP
12	27.965	34.41	-15.59	50.00	33.57	0.69	0.15	Average

Note:

Level = Read Level + LISN Factor + Cable Loss.

3.2. Maximum Peak Output Power Measurement

3.2.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels, the limit for peak output power is 30dBm. The limited has to be reduced by the amount in dB that the gain of the antenna exceed 6dBi. In case of point-to-point operation, the limit has to be reduced by 1dB for every 3dB that the directional gain of the antenna exceeds 6dBi.

3.2.2. Measuring Instruments and Setting

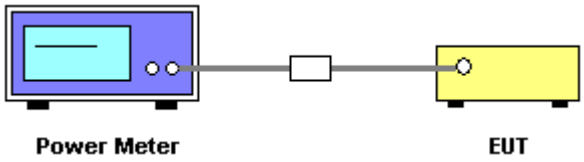
Please refer to section 4 of equipments list in this report. The following table is the setting of the power meter.

Power Meter Parameter	Setting
Filter No.	Auto
Measurement time	0.135 s ~ 26 s
Used Peak Sensor	NRV-Z32 (model 04)

3.2.3. Test Procedures

1. The transmitter output (antenna port) was connected to the power meter.
2. Turn on the EUT and power meter and then record the peak power value.
3. Repeat above procedures on all channels needed to be tested.

3.2.4. Test Setup Layout



3.2.5. Test Deviation

There is no deviation with the original standard.

3.2.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.2.7. Test Result of Maximum Peak Output Power

Temperature	26.8℃	**Humidity**	54%
Test Engineer	Murphy Lin	**Configurations**	GFSK

Channel	**Frequency**	**Conducted Power (dBm)**	**Max. Limit (dBm)**	**Result**
0	2402 MHz	0.94	30.00	**Complies**
39	2441 MHz	2.55	30.00	**Complies**
78	2480 MHz	3.66	30.00	**Complies**

3.3. Hopping Channel Separation Measurement

3.3.1. Limit

Frequency hopping systems shall have hopping channel carrier frequencies separated by a minimum of 25 kHz or the 20 dB bandwidth of the hopping channel, whichever is greater. Alternatively, frequency hopping systems operating in the 2400-2483.5 MHz band may have hopping channel carrier frequencies that are separated by 25 kHz or two-thirds of the 20 dB bandwidth of the hopping channel, whichever is greater.

3.3.2. Measuring Instruments and Setting

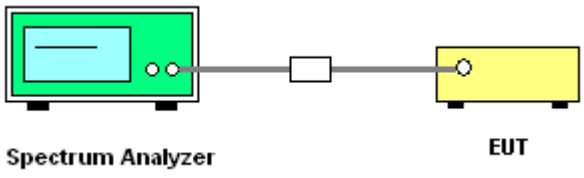
Please refer to section 4 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	> Measurement Bandwidth or Channel Separation
RB	30 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
VB	100 kHz (20dB Bandwidth) / 100 kHz (Channel Separation)
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.3.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 30 kHz and the video bandwidth of 100 kHz were utilised for 20 dB bandwidth measurement.
3. The resolution bandwidth of 100 kHz and the video bandwidth of 300 kHz were utilised for channel separation measurement.

3.3.4. Test Setup Layout



3.3.5. Test Deviation

There is no deviation with the original standard.

3.3.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

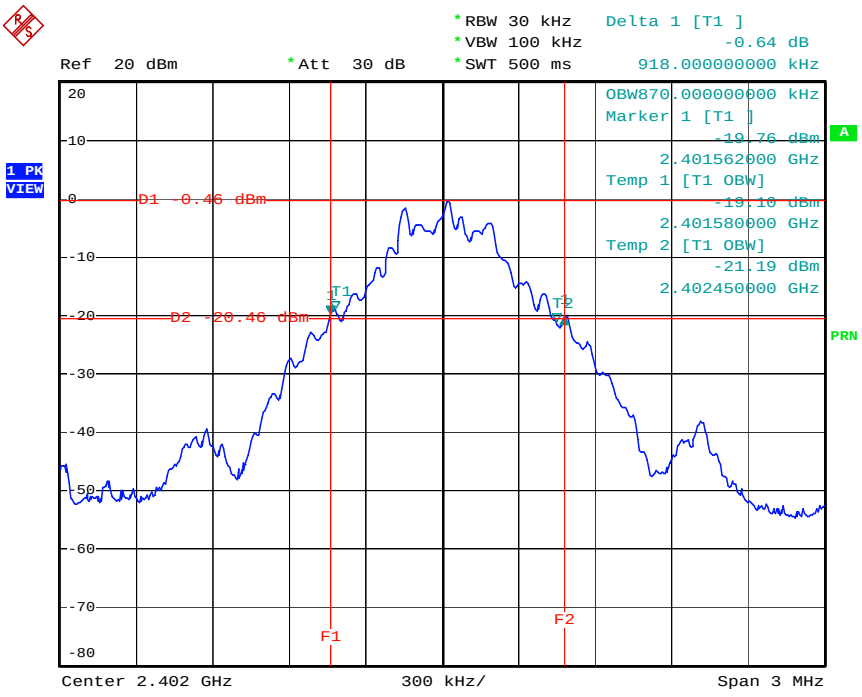
3.3.7. Test Result of Hopping Channel Separation

Temperature	26.8℃	**Humidity**	54%
Test Engineer	Murphy Lin	**Configurations**	GFSK

Frequency	Ch. Separation (MHz)	20dB Bandwidth (kHz)	99% Occupied Bandwidth (kHz)	Result
2402 MHz	1.00	918.00	870.00	**Complies**
2441 MHz	1.00	834.00	852.00	**Complies**
2480 MHz	1.00	828.00	852.00	**Complies**

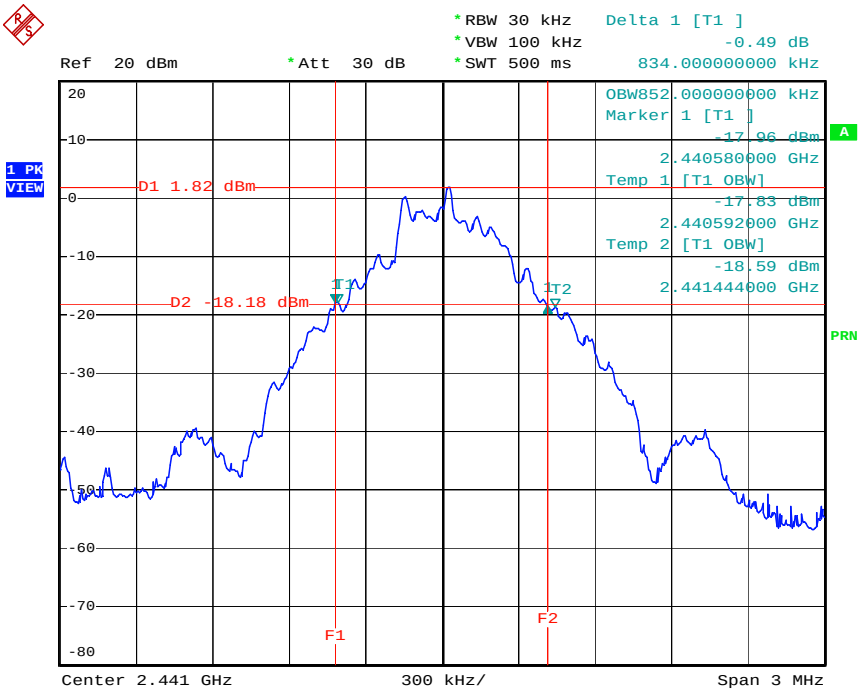
Ch. Separation Limits: >20dB bandwidth

20 dB Bandwidth Plot on Channel 0 / 2402 MHz



Date: 22.JAN.2007 16:46:44

20 dB Bandwidth Plot on Channel 39 / 2441 MHz



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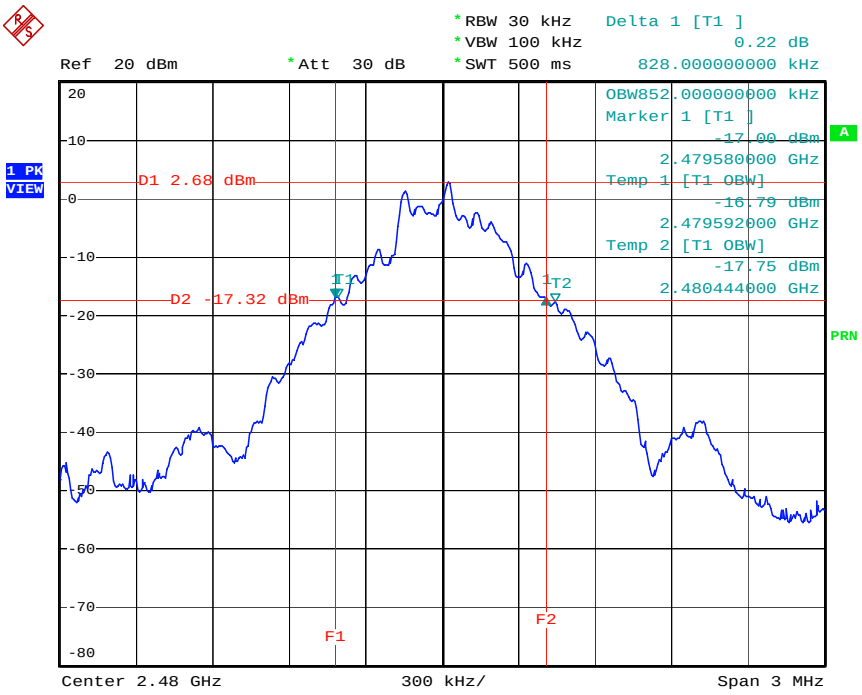
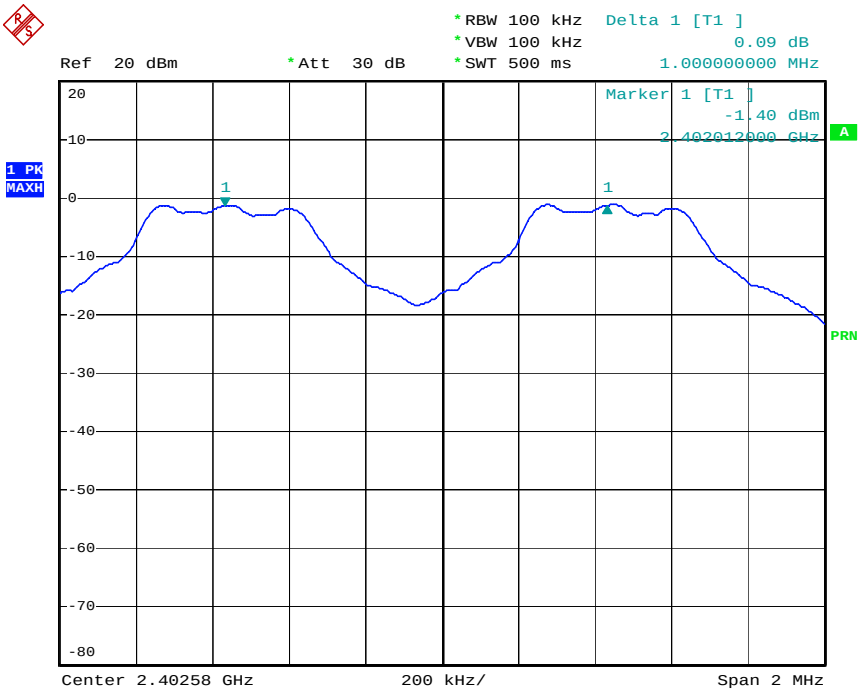
20 dB Bandwidth Plot on Channel 78 / 2480 MHz



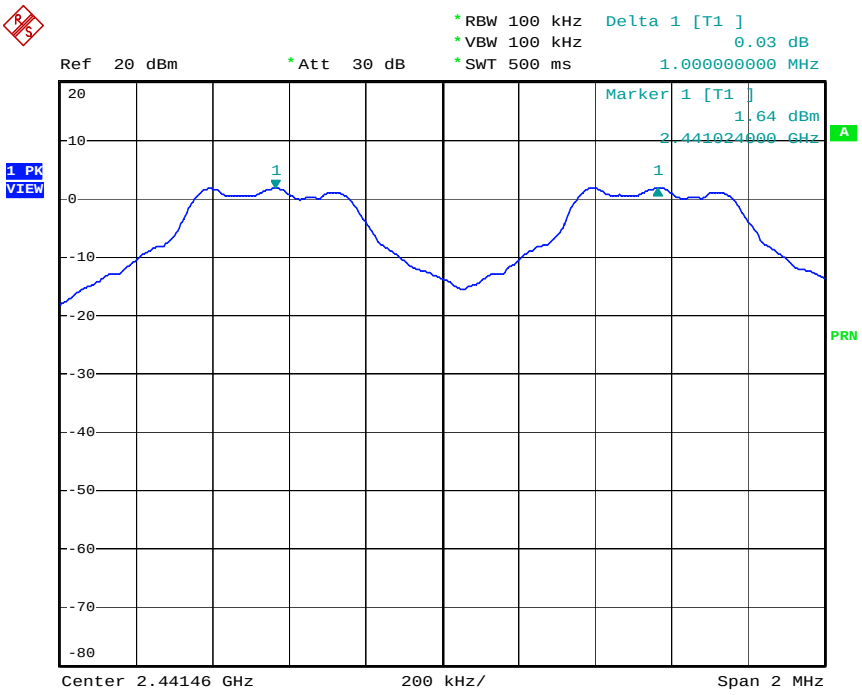
Date: 23.JAN.2007 08:27:21

Channel Separation Plot on Channel 0~1 / 2402 MHz ~ 2403 MHz



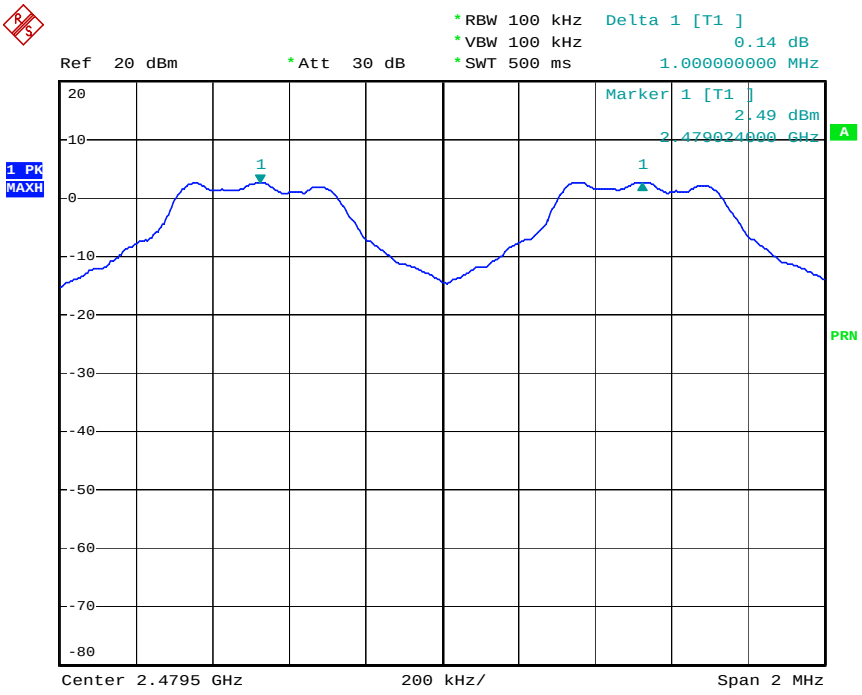
Date: 23.JAN.2007 08:54:32

Channel Separation Plot on Channel 39~40 / 2441 MHz ~ 2442 MHz



Date: 23.JAN.2007 08:52:59

Channel Separation Plot on Channel 77~78 / 2479 MHz ~ 2480 MHz



Date: 23.JAN.2007 08:40:30

3.4. Number of Hopping Frequency Measurement

3.4.1. Limit

For frequency hopping systems operating in the 2400-2483.5 MHz band employing at least 75 non-overlapping hopping channels.

3.4.2. Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameters	Setting
Attenuation	Auto
Span Frequency	> Operating Frequency Range
RB	100 kHz
VB	100 kHz
Detector	Peak
Trace	Max Hold
Sweep Time	Auto

3.4.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser in peak hold mode.
2. The resolution bandwidth of 100 kHz and the video bandwidth of 100 kHz were utilised.
3. Observe frequency hopping in 2400MHz~2483.5MHz, there are at least 75 non-overlapping channels.

3.4.4. Test Setup Layout

3.4.5. Test Deviation

There is no deviation with the original standard.

3.4.6. EUT Operation during Test

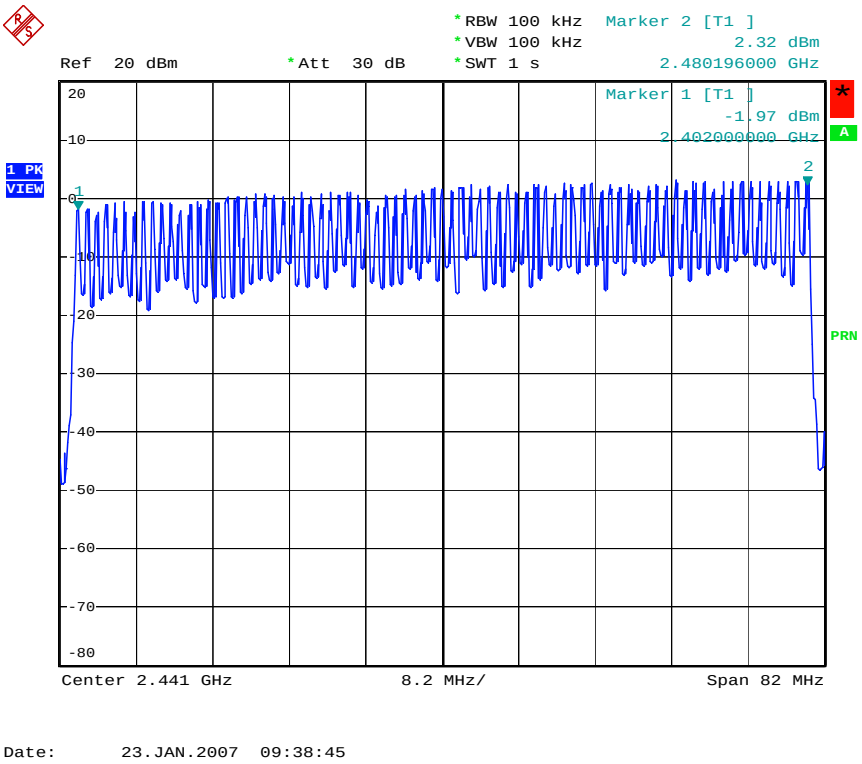
The EUT was programmed to be in continuously transmitting mode.

3.4.7. Test Result of Number of Hopping Frequency

Temperature	26.8℃	**Humidity**	54%
Test Engineer	Murphy Lin	**Configurations**	GFSK

Modulation Type	Channel No.	Frequency (MHz)	Hopping Ch. (Channels)	Min. Limit (Channels)	Test Result
GFSK	0 ~ 78	2402 ~ 2480	79	75	**Complies**

Number of Hopping Channel Plot on Channel 0~78 / 2402 MHz ~ 2480 MHz



3.5. Dwell Time Measurement

3.5.1. Limit

Frequency hopping systems in the 2400-2483.5 MHz band shall use at least 15 channels. The average time of occupancy on any channel shall not be greater than 0.4 seconds within a period of 0.4 seconds multiplied by the number of hopping channels employed.

3.5.2. Measuring Instruments and Setting

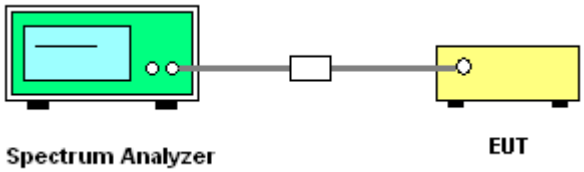
Please refer to section 4 of equipments list in this report. The following table is the setting of spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	0 MHz
RB	1000 kHz
VB	1000 kHz
Detector	Peak
Trace	Single Trigger

3.5.3. Test Procedures

1. The transmitter output (antenna port) was connected to the spectrum analyser
2. Set RBW of spectrum analyzer to 1000kHz and VBW to 1000kHz.
3. Use a video trigger with the trigger level set to enable triggering only on full pulses.
4. Sweep Time is more than once pulse time.
5. Set the center frequency on any frequency would be measure and set the frequency span to zero span.
6. Measure the maximum time duration of one single pulse.
7. Set the EUT for DH5, DH3 and DH1 packet transmitting.
8. Measure the maximum time duration of one single pulse.
9. DH5 Packet permit maximum 1600/ 79 / 6 = 3.37 hops per second in each channel (5 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 3.37 x 31.6 = 106.6 within 31.6 seconds
10. DH3 Packet permit maximum 1600 / 79 / 4 = 5.06 hops per second in each channel (3 time slots RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 5.06 x 31.6 = 160 within 31.6 seconds.
11. DH1 Packet permit maximum 1600 / 79 /2 = 10.12 hops per second in each channel (1 time slot RX, 1 time slot TX). So, the dwell time is the time duration of the pulse times 10.12 x 31.6 = 320 within 31.6 seconds.

3.5.4. Test Setup Layout



3.5.5. Test Deviation

There is no deviation with the original standard.

3.5.6. EUT Operation during Test

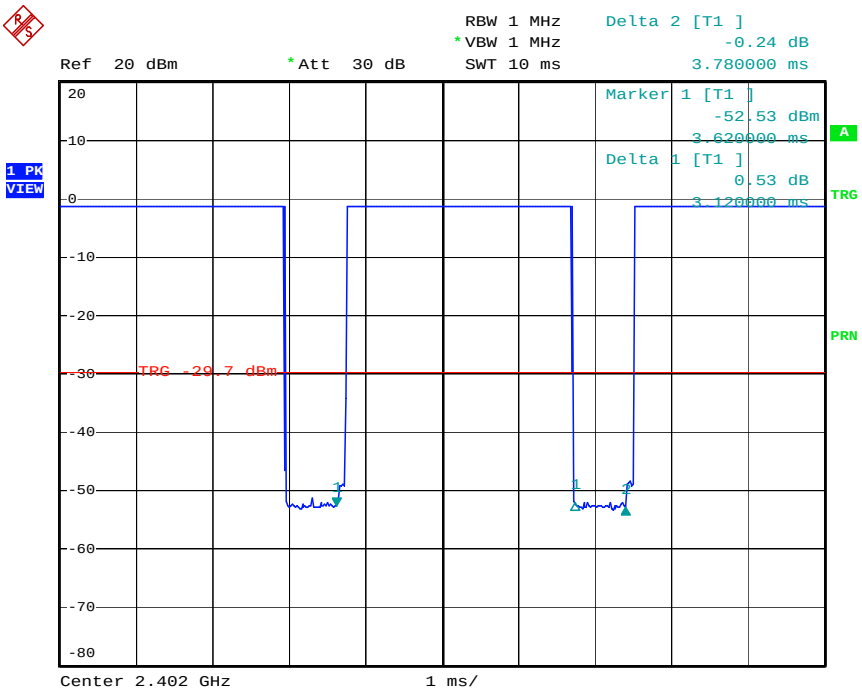
The EUT was programmed to be in continuously transmitting mode.

3.5.7. Test Result of Dwell Time

Temperature	26.8℃	**Humidity**	54%
Test Engineer	Murphy Lin	**Configurations**	DH1, DH3, DH5

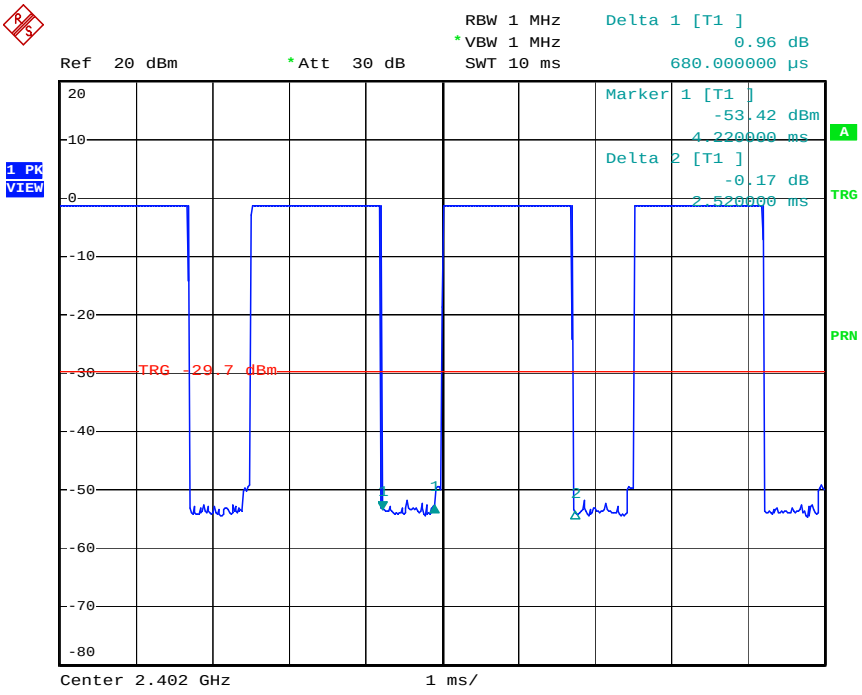
Data Packet	Frequency	Pulse Duration (ms)	Dwell Time (s)	Limits (s)	Test Result
DH5	2402 MHz	3.1200	0.3328	0.4000	**Complies**
DH3	2402 MHz	2.5200	0.4032	0.4000	**Complies**
DH1	2402 MHz	0.6000	0.1920	0.4000	**Complies**
DH5	2441 MHz	3.1200	0.3328	0.4000	**Complies**
DH3	2441 MHz	2.5200	0.4032	0.4000	**Complies**
DH1	2441 MHz	0.6000	0.1920	0.4000	**Complies**
DH5	2480 MHz	3.1000	0.3307	0.4000	**Complies**
DH3	2480 MHz	2.5200	0.4032	0.4000	**Complies**
DH1	2480 MHz	0.6000	0.1920	0.4000	**Complies**

DH5 Dwell Time Plot on Channel 0 / 2402 MHz



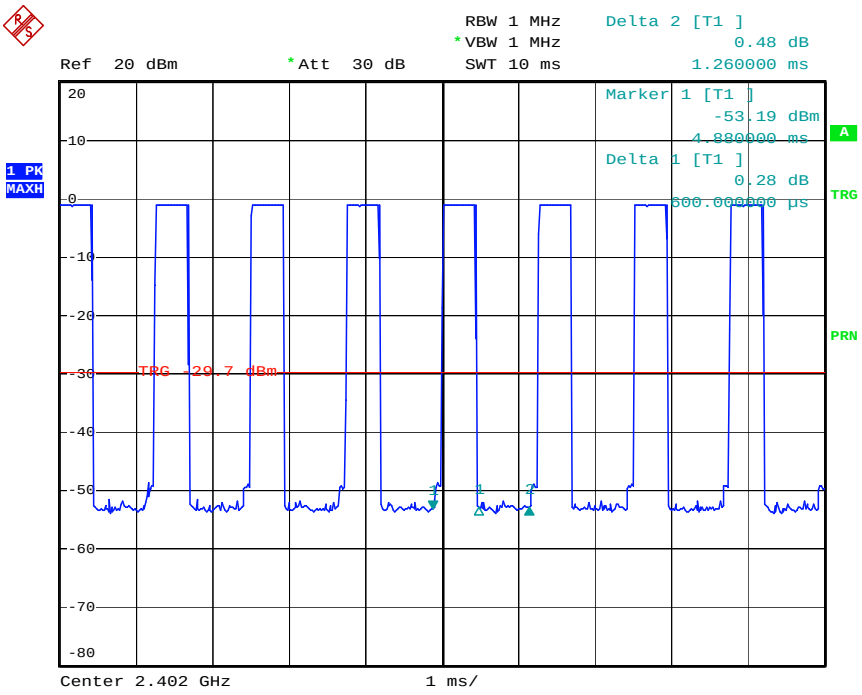
Date: 23.JAN.2007 09:18:31

DH3 Dwell Time Plot on Channel 0 / 2402 MHz



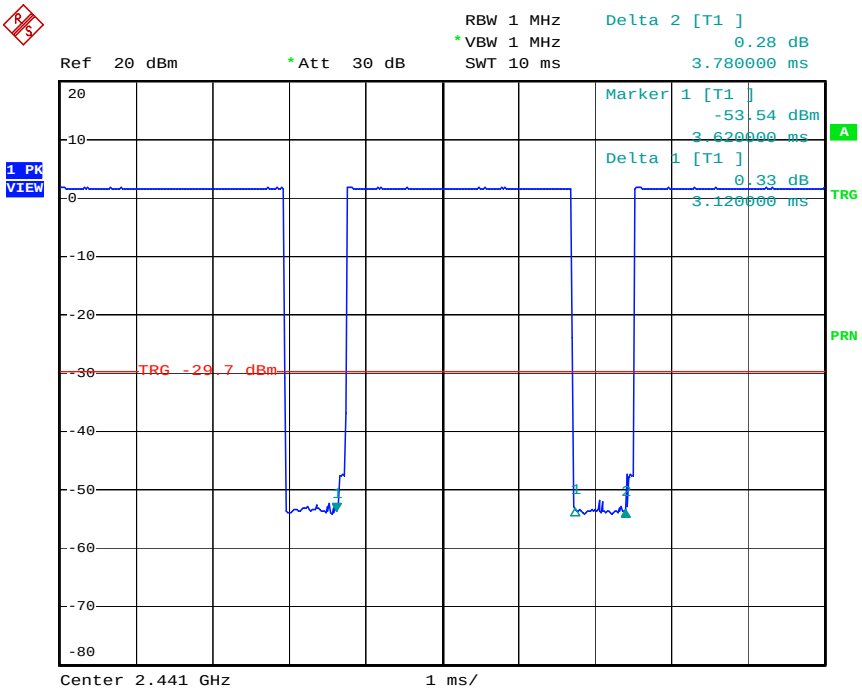
Date: 23.JAN.2007 09:09:33

DH1 Dwell Time Plot on Channel 0 / 2402 MHz



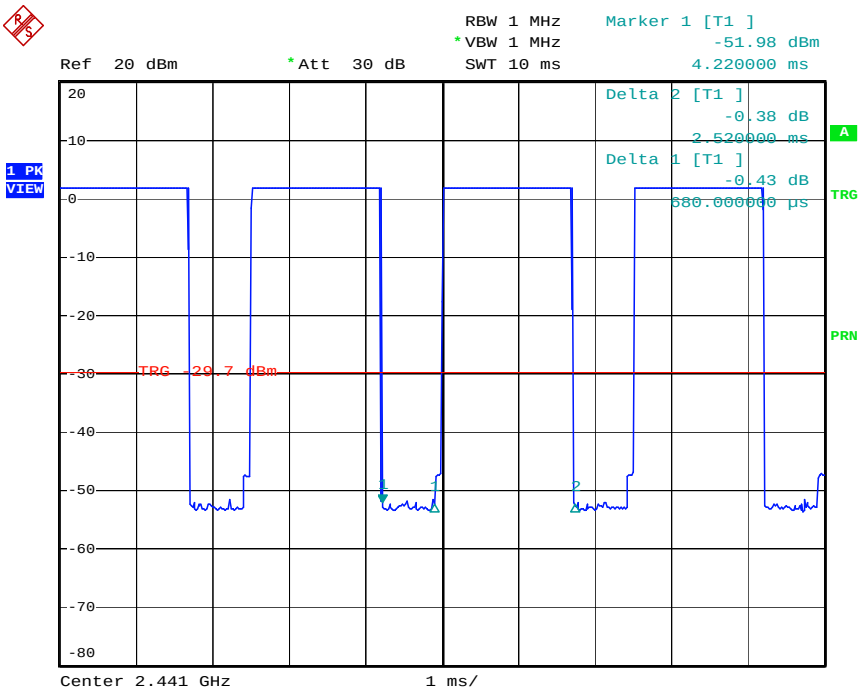
Date: 23.JAN.2007 08:59:43

DH5 Dwell Time Plot on Channel 39 / 2441 MHz



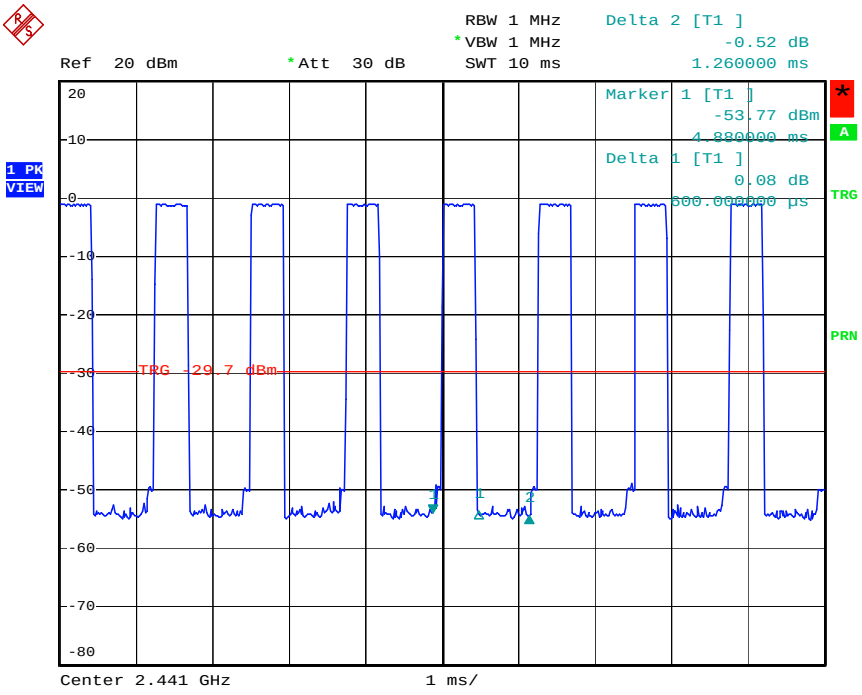
Date: 23.JAN.2007 09:20:08

DH3 Dwell Time Plot on Channel 39 / 2441 MHz



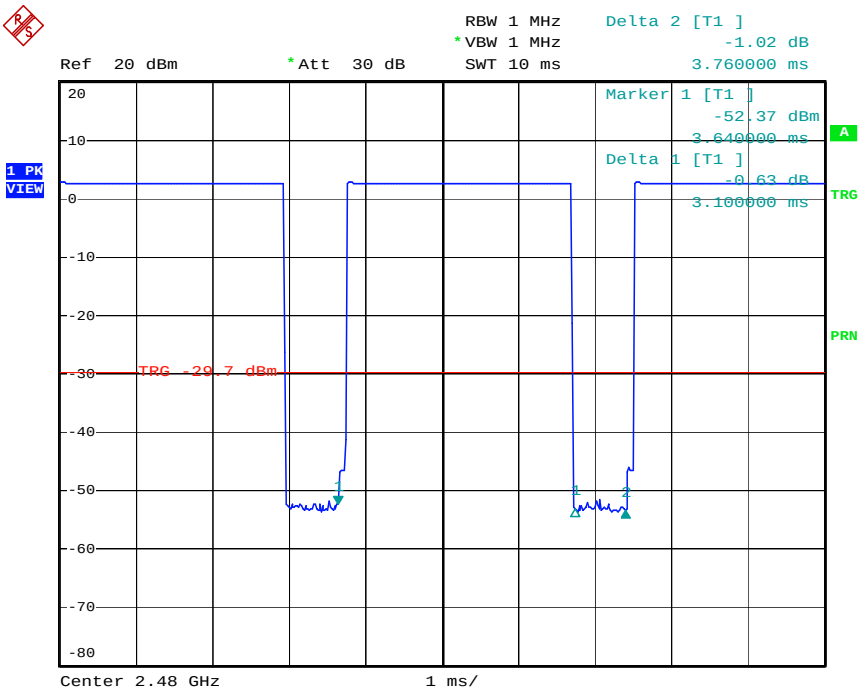
Date: 23.JAN.2007 09:08:23

DH1 Dwell Time Plot on Channel 39 / 2441 MHz



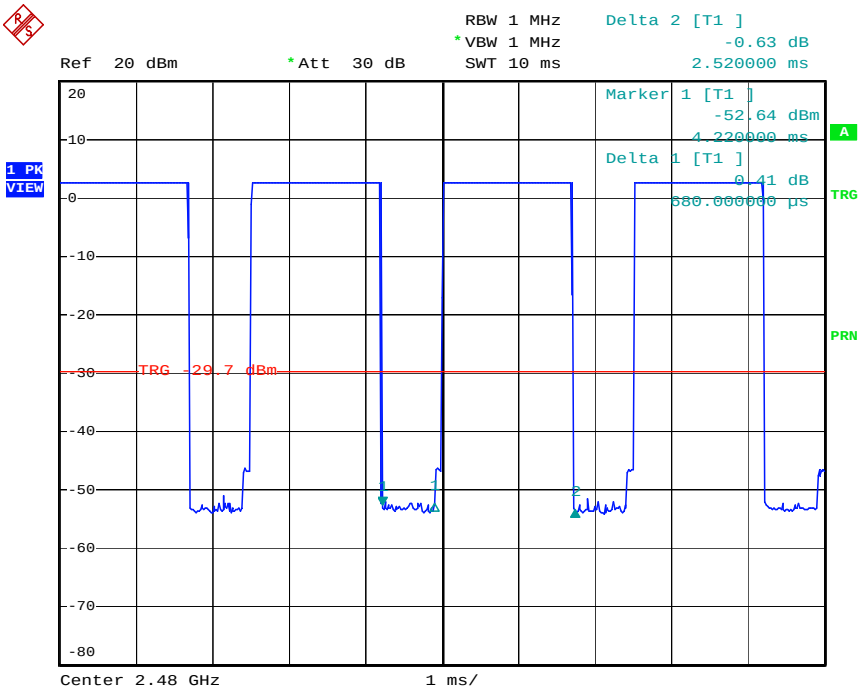
Date: 23.JAN.2007 09:00:11

DH5 Dwell Time Plot on Channel 78 / 2480 MHz



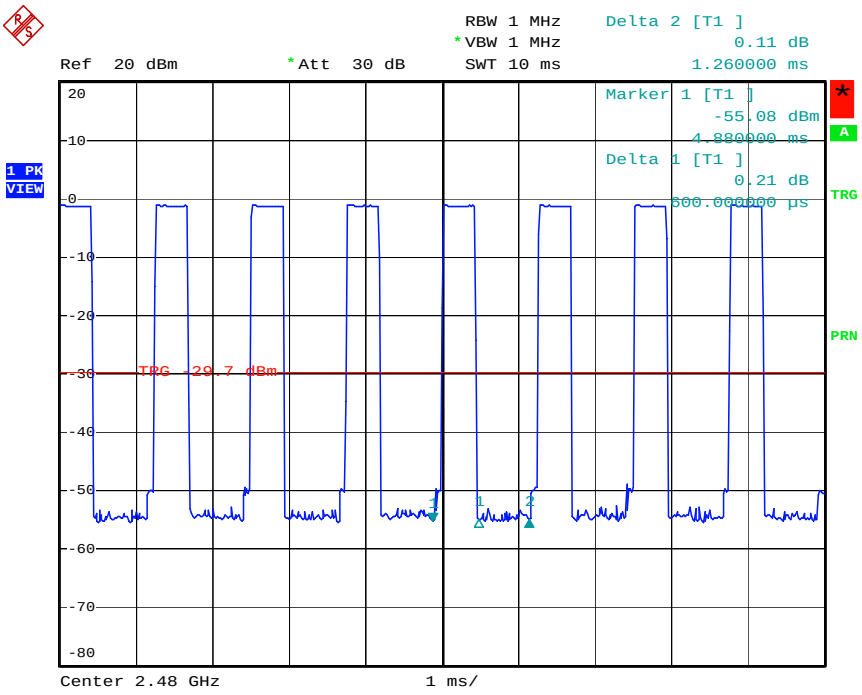
Date: 23.JAN.2007 09:21:34

DH3 Dwell Time Plot on Channel 78 / 2480 MHz



Date: 23.JAN.2007 09:05:35

DH1 Dwell Time Plot on Channel 78 / 2480 MHz



3.6. Radiated Emissions Measurement

3.6.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

3.6.2. Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of spectrum analyzer and receiver.

Spectrum Parameter	Setting
Attenuation	Auto
Start Frequency	1000 MHz
Stop Frequency	10th carrier harmonic
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	1000KHz / 1000KHz for peak

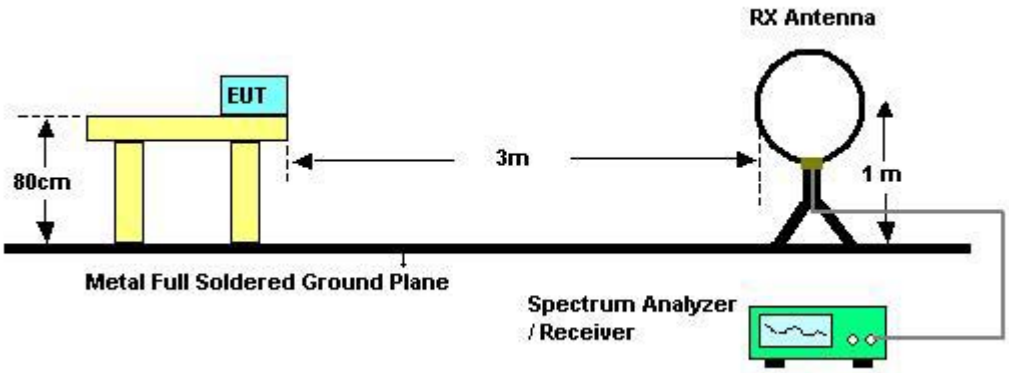
Receiver Parameter	Setting
Attenuation	Auto
Start ~ Stop Frequency	9kHz~150kHz / RB 200Hz for QP
Start ~ Stop Frequency	150kHz~30MHz / RB 9kHz for QP
Start ~ Stop Frequency	30MHz~1000MHz / RB 120kHz for QP

3.6.3. Test Procedures

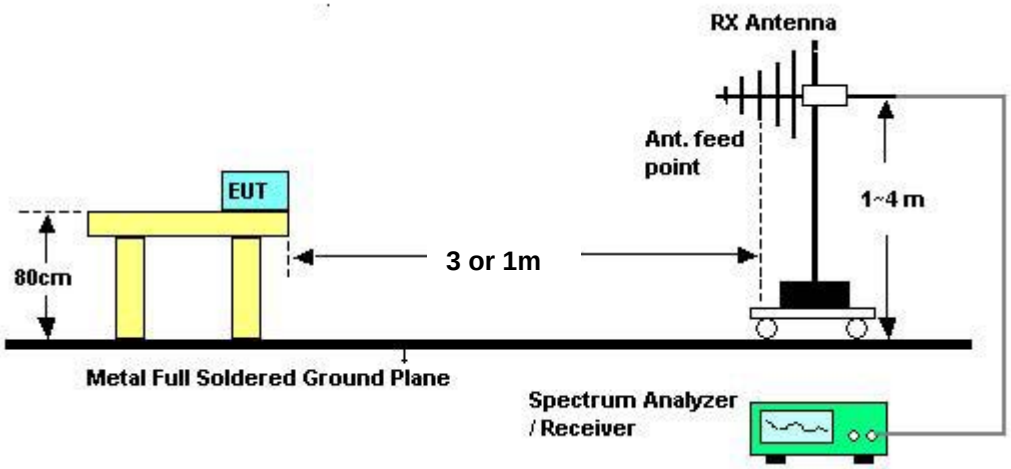
1. Configure the EUT according to ANSI C63.4. The EUT was placed on the top of the turntable 0.8 meter above ground. The phase center of the receiving antenna mounted on the top of a height-variable antenna tower was placed 3 meters far away from the turntable.
2. Power on the EUT and all the supporting units. The turntable was rotated by 360 degrees to determine the position of the highest radiation.
3. The height of the broadband receiving antenna was varied between one meter and four meters above ground to find the maximum emissions field strength of both horizontal and vertical polarization.
4. For each suspected emissions, the antenna tower was scan (from 1 M to 4 M) and then the turntable was rotated (from 0 degree to 360 degrees) to find the maximum reading.
5. Set the test-receiver system to Peak or CISPR quasi-peak Detect Function with specified bandwidth under Maximum Hold Mode.
6. For emissions above 1GHz, use 1MHz VBW and RBW for peak reading. Then 1MHz RBW and 10Hz VBW for average reading in spectrum analyzer.
7. When the radiated emissions limits are expressed in terms of the average value of the emissions, and pulsed operation is employed, the measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds. As an alternative (provided the transmitter operates for longer than 0.1 seconds) or in cases where the pulse train exceeds 0.1 seconds, the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.
8. If the emissions level of the EUT in peak mode was 3 dB lower than the average limit specified, then testing will be stopped and peak values of EUT will be reported, otherwise, the emissions which do not have 3 dB margin will be repeated one by one using the quasi-peak method for below 1GHz.
9. For testing above 1GHz, the emissions level of the EUT in peak mode was lower than average limit (that means the emissions level in peak 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.
10. In case the emission is lower than 30MHz, loop antenna has to be used for measurement and the recorded data should be QP measured by receiver. High – Low scan is not required in this case.

3.6.4. Test Setup Layout

For radiated emissions below 30MHz



For radiated emissions above 30MHz



Above 10 GHz shall be extrapolated to the specified distance using an extrapolation factor of 20 dB/decade form 3m to 1m.

Distance extrapolation factor = 20 log (specific distance [3m] / test distance [1m]) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor [9.54 dB].

3.6.5. Test Deviation

There is no deviation with the original standard.

3.6.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.6.7. Results of Radiated Emissions (9kHz~30MHz)

Temperature	24℃	**Humidity**	52%
Test Engineer	Vic Hsiao		

Freq. (MHz)	Level (dBuV)	Over Limit (dB)	Limit Line (dBuV)	Remark
-	-	-	-	See Note

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

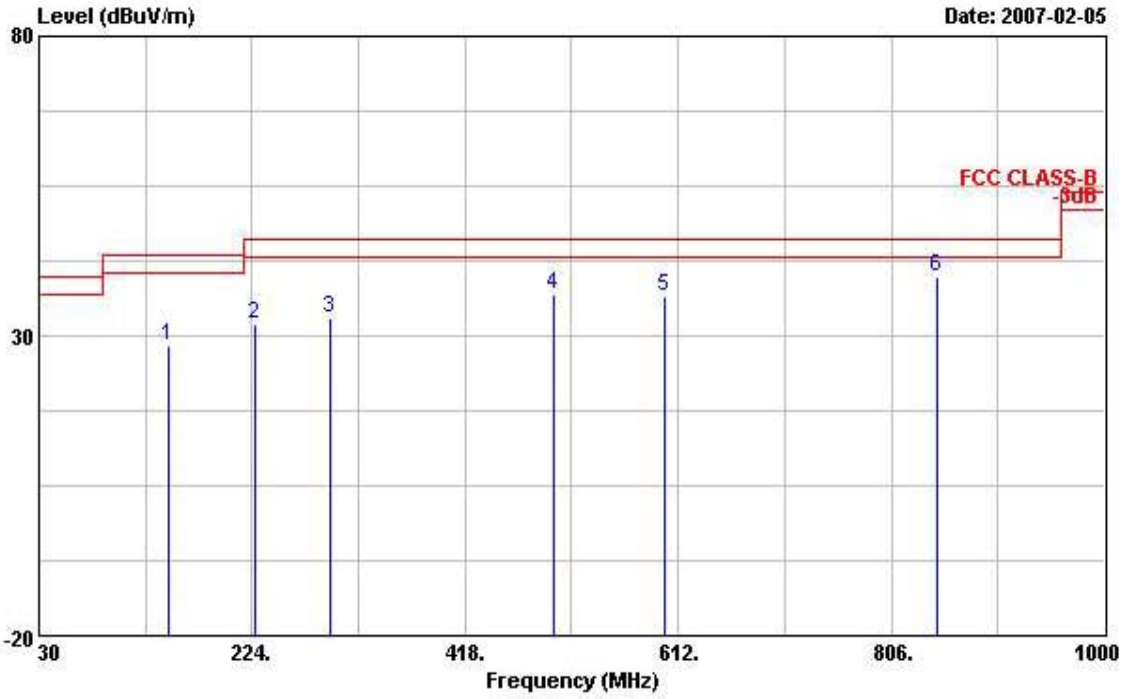
Distance extrapolation factor = 40 log (specific distance / test distance) (dB);

Limit line = specific limits (dBuV) + distance extrapolation factor.

3.6.8. Results of Radiated Emissions (30MHz~1GHz)

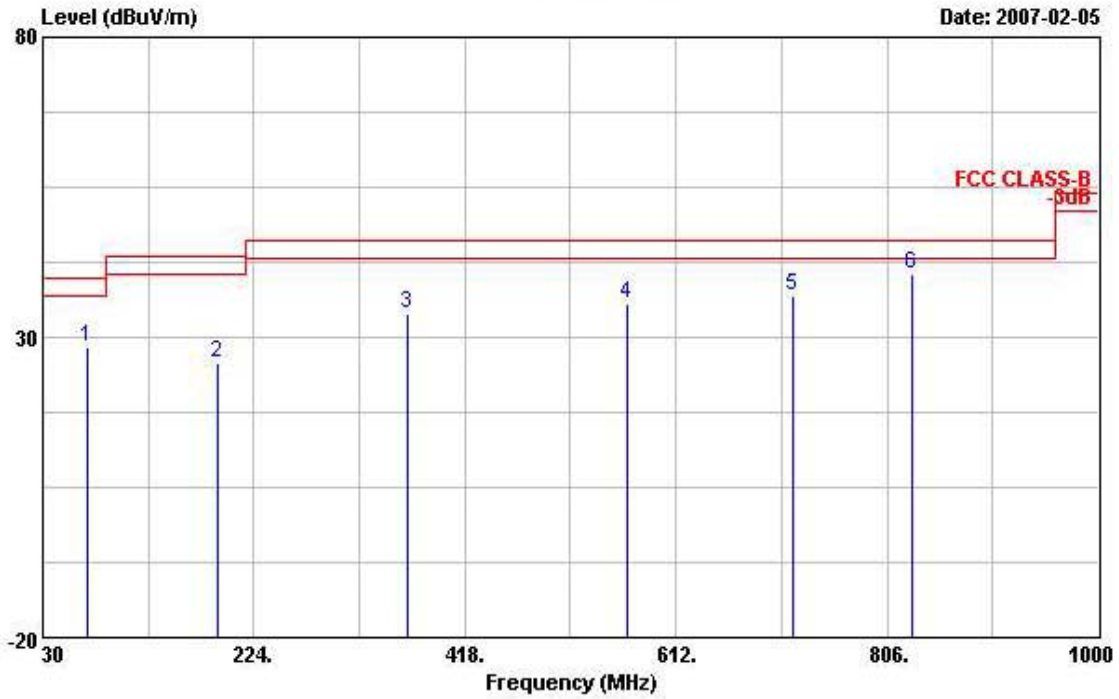
Temperature	24℃	**Humidity**	52%
Test Engineer	Vic Hsiao	**Configurations**	Channel 39 (BT+ 802.11g)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	148.340	28.32	-15.18	43.50	46.23	10.60	1.81	30.31	Peak	---	---
2	225.940	31.83	-14.17	46.00	49.87	9.87	2.36	30.28	Peak	---	---
3	295.780	33.09	-12.91	46.00	47.17	13.51	2.80	30.39	Peak	---	---
4	498.510	36.76	-9.24	46.00	45.07	18.09	3.81	30.21	Peak	---	---
5	599.390	36.56	-9.44	46.00	42.87	19.30	4.47	30.07	Peak	---	---
6	847.710	39.92	-6.08	46.00	43.69	20.84	5.41	30.02	Peak	---	---

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	70.740	28.21	-11.79	40.00	51.00	6.10	1.38	30.26	Peak	---	---
2	191.020	25.75	-17.75	43.50	44.43	9.25	2.32	30.24	Peak	---	---
3	365.620	33.88	-12.12	46.00	45.52	15.38	3.32	30.34	Peak	---	---
4	567.380	35.69	-10.31	46.00	42.33	19.30	4.19	30.14	Peak	---	---
5	719.670	37.03	-8.97	46.00	42.03	20.25	4.71	29.96	Peak	---	---
6 @	828.310	40.59	-5.41	46.00	44.40	20.80	5.36	29.97	Peak	---	---

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

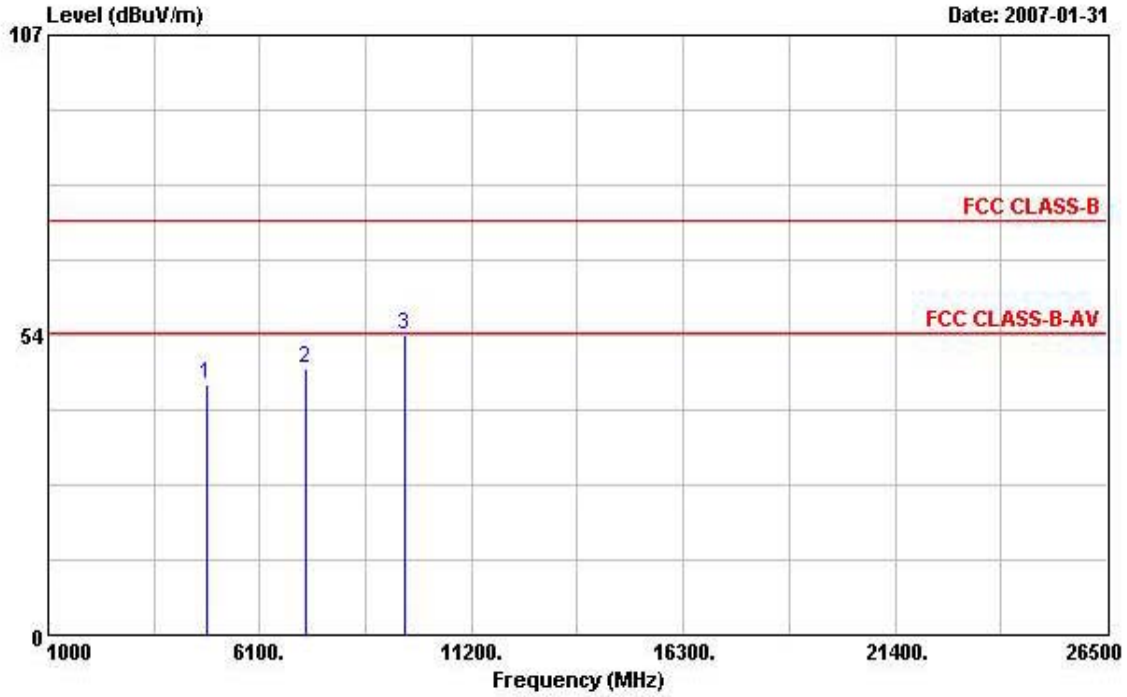
Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.6.9. Results for Radiated Emissions (1GHz~10th Harmonic)

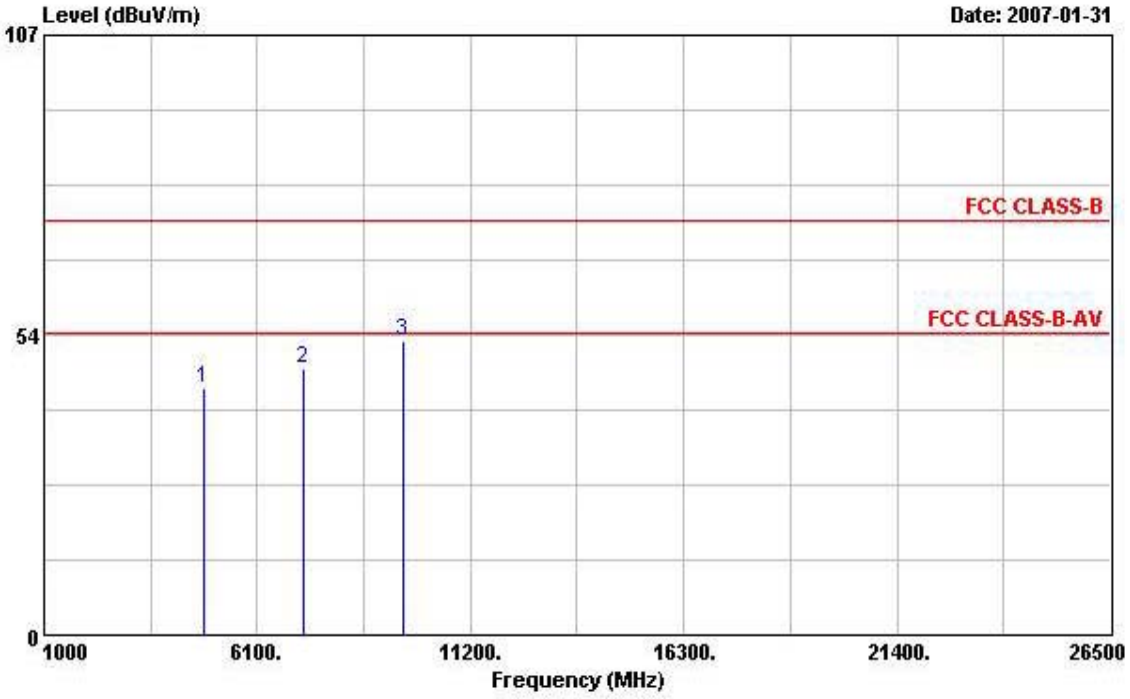
Temperature	24℃	**Humidity**	52%
Test Engineer	Vic Hsiao	**Configurations**	Channel 0 (BT+ 802.11b)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4808.000	44.56	-29.44	74.00	41.19	33.06	2.65	32.34	PEAK	---	---
2	7210.000	47.47	-26.53	74.00	40.80	35.90	3.32	32.55	PEAK	---	---
3 @	9604.000	53.41	-20.59	74.00	43.20	38.49	4.52	32.80	PEAK	---	---

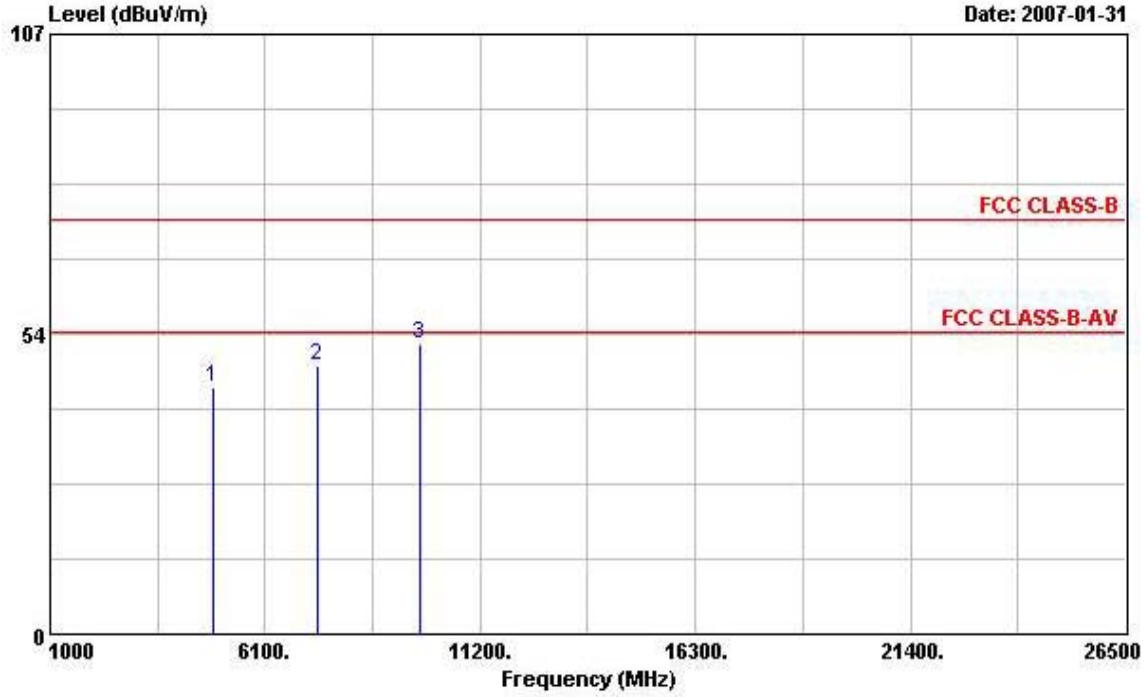
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4808.000	43.94	-30.06	74.00	40.57	33.06	2.65	32.34	PEAK	---	---
2	7210.000	47.60	-26.40	74.00	40.93	35.90	3.32	32.55	PEAK	---	---
3 @	9612.000	52.35	-21.65	74.00	42.11	38.52	4.52	32.80	PEAK	---	---

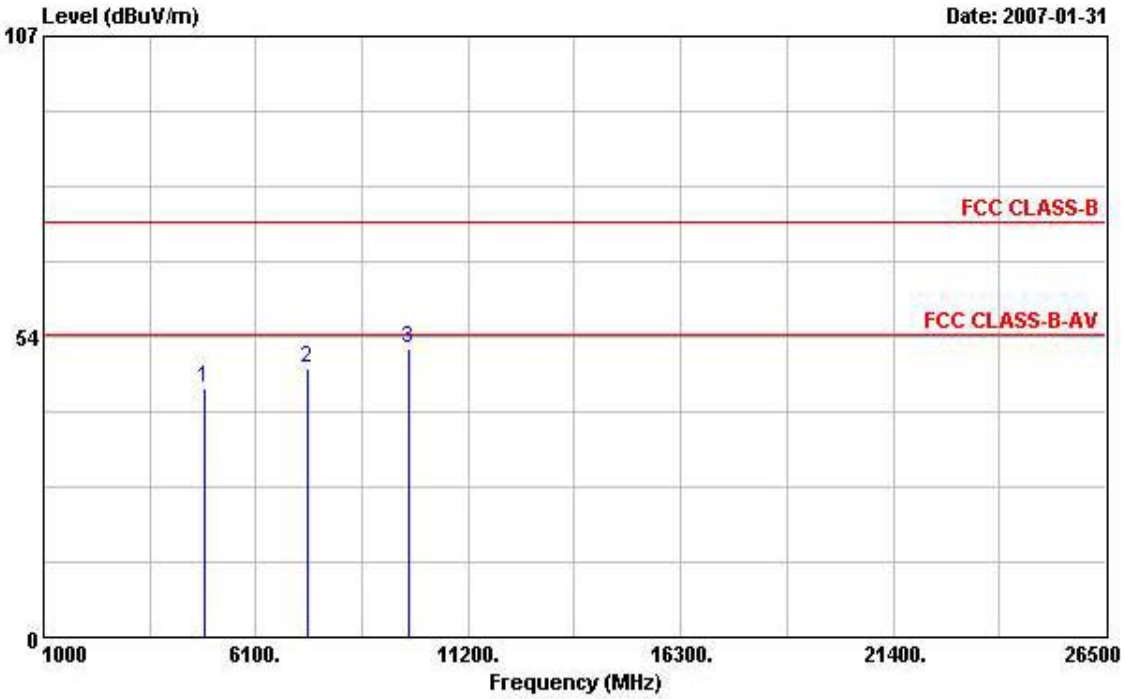
Temperature	24℃	**Humidity**	52%
Test Engineer	Vic Hsiao	**Configurations**	Channel 39 (BT+ 802.11b)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4882.000	43.91	-30.09	74.00	40.34	33.18	2.69	32.30	PEAK	---	---
2	7319.000	47.72	-26.28	74.00	40.75	36.19	3.38	32.61	PEAK	---	---
3 @	9756.000	51.70	-22.30	74.00	41.15	38.77	4.59	32.80	PEAK	---	---

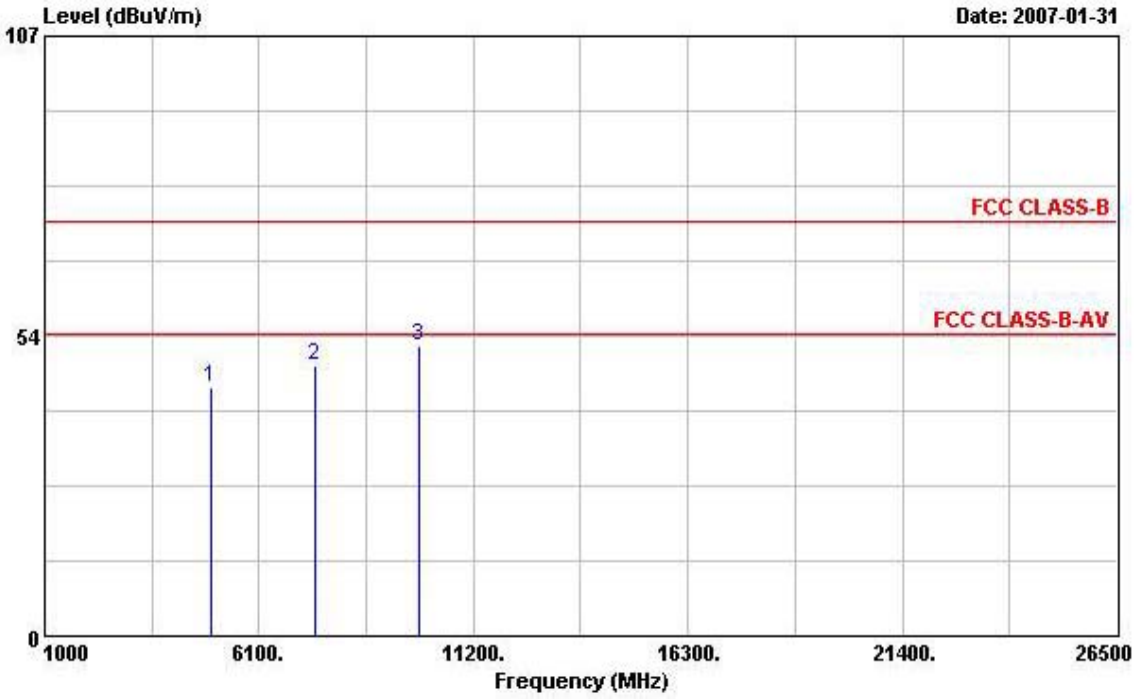
Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4886.000	44.48	-29.52	74.00	40.87	33.21	2.69	32.30	PEAK	---	---
2	7319.000	47.74	-26.26	74.00	40.77	36.19	3.38	32.61	PEAK	---	---
3	9760.000	51.29	-22.71	74.00	40.74	38.77	4.59	32.79	PEAK	---	---

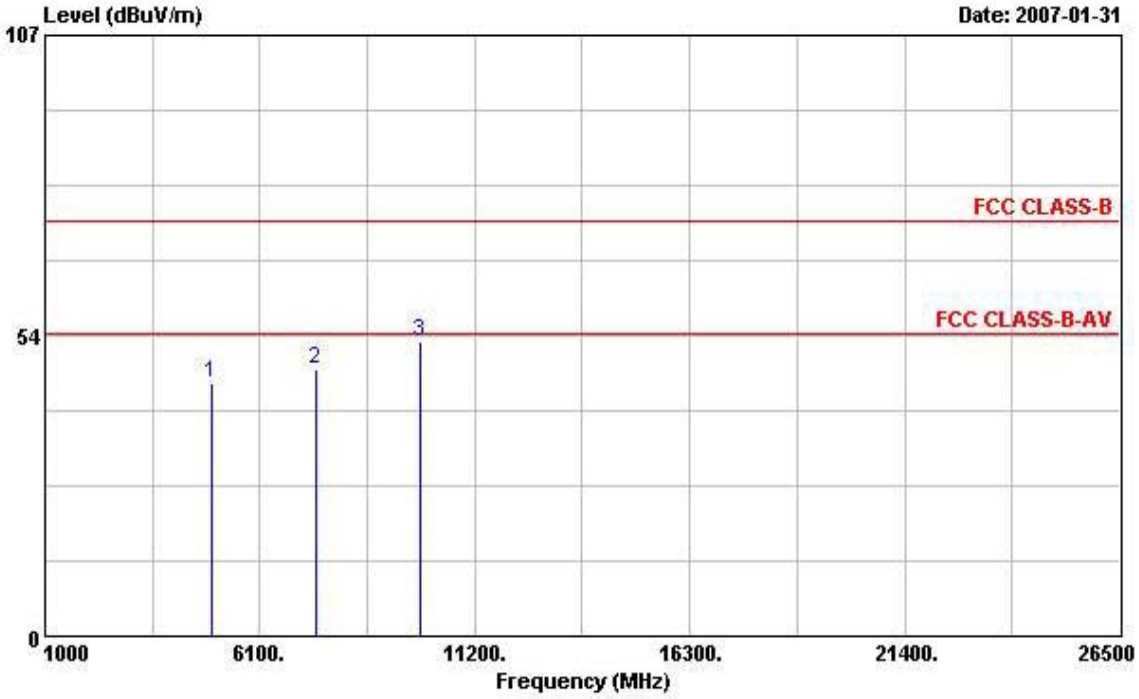
Temperature	24℃	**Humidity**	52%
Test Engineer	Vic Hsiao	**Configurations**	Channel 78 (BT+ 802.11b)

Horizontal



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4964.000	44.52	-29.48	74.00	40.72	33.34	2.73	32.26	PEAK	---	---
2	7444.000	48.16	-25.84	74.00	40.86	36.48	3.50	32.67	PEAK	---	---
3 @	9916.000	51.82	-22.18	74.00	40.92	39.04	4.65	32.79	PEAK	---	---

Vertical



	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1	4960.000	45.13	-28.87	74.00	41.33	33.34	2.73	32.26	PEAK	---	---
2	7440.000	47.49	-26.51	74.00	40.19	36.48	3.50	32.67	PEAK	---	---
3 @	9924.000	52.59	-21.41	74.00	41.65	39.08	4.65	32.79	PEAK	---	---

Note:

The amplitude of spurious emissions which are attenuated by more than 20dB below the permissible value has no need to be reported.

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

3.7. Band Edge Emissions Measurement

3.7.1. Limit

20dBc in any 100 kHz bandwidth outside the operating frequency band. In case the emission fall within the restricted band specified on 15.205(a), then the 15.209(a) limit in the table below has to be followed.

Frequencies (MHz)	Field Strength (micorvolts/meter)	Measurement Distance (meters)
0.009~0.490	2400/F(KHz)	300
0.490~1.705	24000/F(KHz)	30
1.705~30.0	30	30
30~88	100	3
88~216	150	3
216~960	200	3
Above 960	500	3

3.7.2. Measuring Instruments and Setting

Please refer to section 4 of equipments list in this report. The following table is the setting of the spectrum analyzer.

Spectrum Parameter	Setting
Attenuation	Auto
Span Frequency	100 MHz
RB / VB (Emission in restricted band)	1MHz / 1MHz for Peak, 1 MHz / 10Hz for Average
RB / VB (Emission in non-restricted band)	100 KHz /100 KHz for Peak

3.7.3. Test Procedures

1. The test procedure is the same as section 3.5.3, only the frequency range investigated is limited to 100MHz around bandedges.
2. In case the emission is fail due to the used RB/VB is too wide, marker-delta method of FCC Public Notice DA00-705 will be followed.

3.7.4. Test Setup Layout

This test setup layout is the same as that shown in section 3.6.4.

3.7.5. Test Deviation

There is no deviation with the original standard.

3.7.6. EUT Operation during Test

The EUT was programmed to be in continuously transmitting mode.

3.7.7. Test Result of Band Edge and Fundamental Emissions

Temperature	24℃	**Humidity**	52%
Test Engineer	Vic Hsiao	**Configurations**	Channel 0, 78 (BT+ 802.11b)

Channel 0

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2390.000	53.75	-20.25	74.00	23.82	28.29	1.64	0.00	Peak	---	---
2 @	2401.770	90.42				28.29	1.64	0.00	Peak	---	---
1 @	2390.000	42.50	-11.50	54.00	12.57	28.29	1.64	0.00	Average	---	---
2 @	2401.770	71.28				28.29	1.64	0.00	Average	---	---

Channel 78

	Freq	Level	Over Limit	Limit Line	Read Level	Antenna Factor	Cable Loss	Preamp Factor	Remark	Ant Pos	Table Pos
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB/m	dB	dB		cm	deg
1 @	2479.860	87.98				28.47	1.68	0.00	Peak	---	---
2 @	2483.500	55.22	-18.78	74.00	25.07	28.47	1.68	0.00	Peak	---	---
1 @	2479.860	69.59				28.47	1.68	0.00	Average	---	---
2 @	2483.500	46.49	-7.51	54.00	16.34	28.47	1.68	0.00	Average	---	---

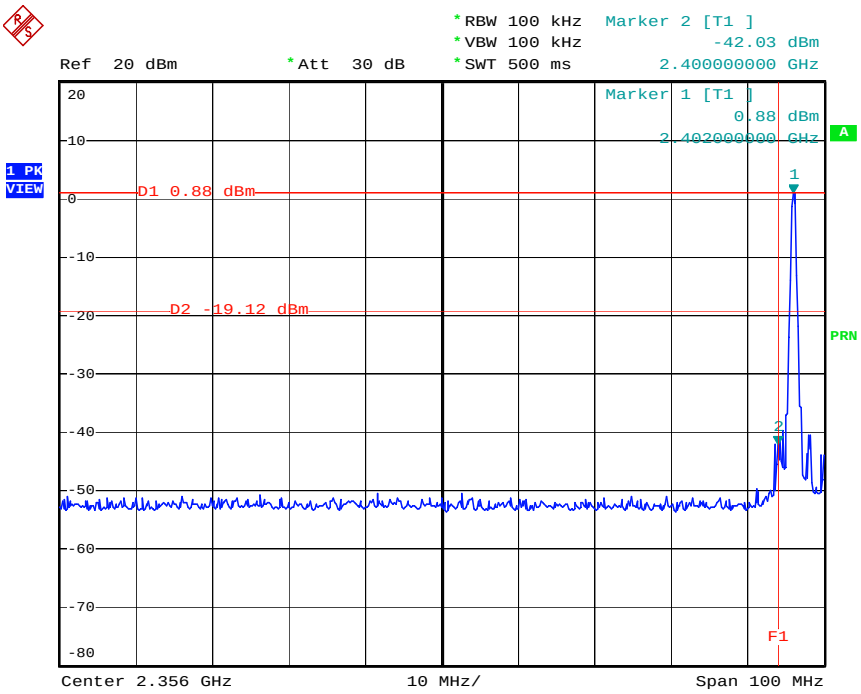
Note:

Emission level (dBuV/m) = 20 log Emission level (uV/m).

Corrected Reading: Antenna Factor + Cable Loss + Read Level - Preamp Factor = Level.

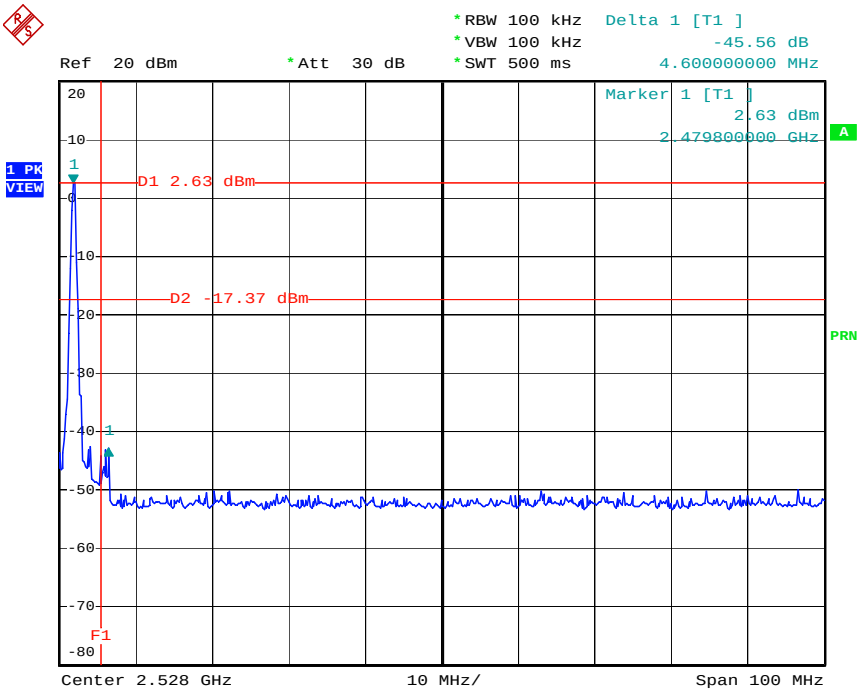
For Emission not in Restricted Band

Low Band Edge Plot on Channel 0 / 2402 MHz



Date: 23.JAN.2007 15:38:08

High Band Edge Plot on Channel 78 / 2480 MHz



Date: 23.JAN.2007 08:30:43

3.8. Antenna Requirements

3.8.1. Limit

Except for special regulations, the Low-power Radio-frequency Devices must not be equipped with any jacket for installing an antenna with extension cable. An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator shall be considered sufficient to comply with the provisions of this Section. The manufacturer may design the unit so that the user can replace a broken antenna, but the use of a standard antenna jack or electrical connector is prohibited. Further, this requirement does not apply to intentional radiators that must be professionally installed.

3.8.2. Antenna Connector Construction

Please refer to section 2.3 in this test report, antenna connector complied with the requirements.

4. LIST OF MEASURING EQUIPMENTS

Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
EMC Receiver	R&S	ESCS 30	100132	9kHz – 2.75GHz	July. 04, 2006	Conduction (CO01-HY)
LISN	MessTec	NNB-2/16Z	2001/004	9kHz – 30MHz	Apr. 28, 2006	Conduction (CO01-HY)
LISN (Support Unit)	MessTec	NNB-2/16Z	2001/009	9kHz – 30MHz	Apr. 19, 2006	Conduction (CO01-HY)
EMI Filter	LINDGREN	LRE-2060	1004	< 450Hz	N/A	Conduction (CO01-HY)
EMI Filter	LINDGREN	N6006	201052	0 – 60Hz	N/A	Conduction (CO01-HY)
RF Cable-CON	Suhner Switzerland	RG223/U	CB029	9kHz – 30MHz	Dec. 21, 2006	Conduction (CO01-HY)
3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	30 MHz - 1 GHz 3m	Jun. 15, 2006	Radiation (03CH03-HY)
Amplifier	SCHAFFNER	CPA9231A	1886	9 kHz - 2 GHz	Jan. 22, 2007	Radiation (03CH03-HY)
Amplifier	Agilent	8449B	3008A02120	1 GHz - 26.5 GHz	May 29, 2006	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP40	100004/040	9 kHz - 40 GHz	Sep. 21, 2006	Radiation (03CH03-HY)
Bilog Antenna	SCHAFFNER	CBL 6112D	22237	30 MHz – 1 GHz	Jul. 24, 2006	Radiation (03CH03-HY)
Horn Antenna	EMCO	3115	6741	1GHz ~ 18GHz	Apr. 27, 2006	Radiation (03CH03-HY)
Horn Antenna	SCHWARZBECK	BBHA9170	BBHA9170154	15 GHz - 40 GHz	NCR	Radiation (03CH03-HY)
RF Cable-R03m	Jye Bao	RG142	CB021	30 MHz - 1 GHz	Dec. 02, 2006	Radiation (03CH03-HY)
RF Cable-HIGH	SUHNER	SUCOFLEX 106	03CH03-HY	1 GHz - 40 GHz	Dec. 02, 2006	Radiation (03CH03-HY)
Turn Table	HD	DS 420	420/650/00	0 – 360 degree	N/A	Radiation (03CH03-HY)
Antenna Mast	HD	MA 240	240/560/00	1 m - 4 m	N/A	Radiation (03CH03-HY)
Spectrum Analyzer	R&S	FSP30	100023	9kHz ~ 30GHz	Dec. 17, 2006	Conducted (TH01-HY)
Power Meter	R&S	NRVS	100764	DC ~ 40GHz	Jul. 20, 2006	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z51	100666	DC ~ 40GHz	Jul. 20, 2006	Conducted (TH01-HY)
Power Sensor	R&S	NRV-Z32	100057	30MHz ~ 6GHz	Jun. 10, 2006	Conducted (TH01-HY)
DC Power Source	G.W.	GPC-6030D	C671845	DC 1V ~ 60V	Mar. 03, 2007	Conducted (TH01-HY)
Temp. and Humidity Chamber	KSON	THS-C3L	612	N/A	Oct. 02, 2006	Conducted (TH01-HY)
RF CABLE-1m	Jye Bao	RG142	CB034-1m	20MHz ~ 7GHz	Dec. 01, 2006	Conducted (TH01-HY)
RF CABLE-2m	Jye Bao	RG142	CB035-2m	20MHz ~ 1GHz	Dec. 01, 2006	Conducted (TH01-HY)
Oscilloscope	Tektronix	TDS1012	CO38515	100MHz / 1GS/s	Jun. 20, 2006	Conducted (TH01-HY)
Signal Generator	R&S	SMR40	100116	10MHz ~ 40GHz	Mar. 07, 2007	Conducted (TH01-HY)
Data Generator	Tektronix	DG2030	063-2920-50	0.1Hz~400MHz	Jun. 16, 2006	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is one year. NCR: Non-Calibration required.

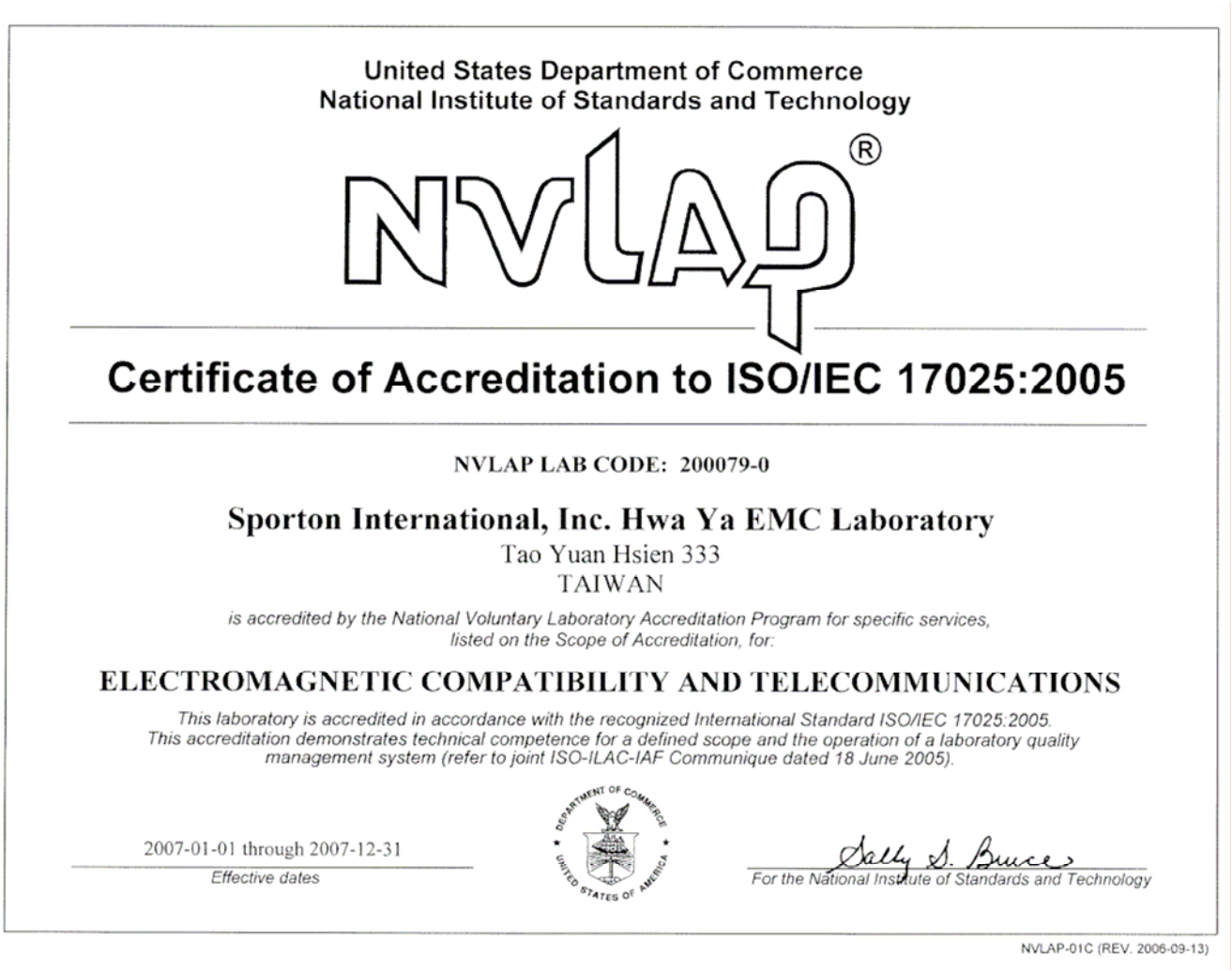
Instrument	Manufacturer	Model No.	Serial No.	Characteristics	Calibration Date	Remark
Amplifier	MITEQ	AMF-6F-260400	923364	26.5 GHz - 40 GHz	Jan. 22, 2007*	Radiation (03CH03-HY)
Loop Antenna	R&S	HFH2-Z2	860004/001	9 kHz - 30 MHz	May 23, 2006*	Radiation (03CH03-HY)
AC Power Source	HPC	HPA-500W	HPA-9100024	AC 0 ~ 300V	Apr. 21, 2005*	Conducted (TH01-HY)

Note: Calibration Interval of instruments listed above is two year.

5. TEST LOCATION

SHIJR	ADD	: 6Fl., No. 106, Sec. 1, Shintai 5th Rd., Shijr City, Taipei, Taiwan 221, R.O.C.
	TEL	: 886-2-2696-2468
	FAX	: 886-2-2696-2255
HWA YA	ADD	: No. 52, Hwa Ya 1st Rd., Kwei-Shan Hsiang, Tao Yuan Hsien, Taiwan, R.O.C.
	TEL	: 886-3-327-3456
	FAX	: 886-3-318-0055
LINKOU	ADD	: No. 30-2, Dingfu Tsuen, Linkou Shiang, Taipei, Taiwan 244, R.O.C
	TEL	: 886-2-2601-1640
	FAX	: 886-2-2601-1695
DUNGHU	ADD	: No. 3, Lane 238, Kangle St., Neihu Chiu, Taipei, Taiwan 114, R.O.C.
	TEL	: 886-2-2631-4739
	FAX	: 886-2-2631-9740
JUNGHE	ADD	: 7Fl., No. 758, Jungjeng Rd., Junghe City, Taipei, Taiwan 235, R.O.C.
	TEL	: 886-2-8227-2020
	FAX	: 886-2-8227-2626
NEIHU	ADD	: 4Fl., No. 339, Hsin Hu 2nd Rd., Taipei 114, Taiwan, R.O.C.
	TEL	: 886-2-2794-8886
	FAX	: 886-2-2794-9777
JHUBEI	ADD	: No.8, Lane 728, Bo-ai St., Jhubei City, HsinChu County 302, Taiwan, R.O.C.
	TEL	: 886-3-656-9065
	FAX	: 886-3-656-9085

6. NVLAP CERTIFICATE OF ACCREDITATION



United States Department of Commerce
National Institute of Standards and Technology

NVLAP®

Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 200079-0

Sporton International, Inc. Hwa Ya EMC Laboratory
Tao Yuan Hsien 333
TAIWAN

is accredited by the National Voluntary Laboratory Accreditation Program for specific services, listed on the Scope of Accreditation, for:

ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005. This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communique dated 18 June 2005).

2007-01-01 through 2007-12-31
Effective dates

DEPARTMENT OF COMMERCE * UNITED STATES OF AMERICA *

Sally S. Bruce
For the National Institute of Standards and Technology

NVLAP-01C (REV. 2006-09-13)

Appendix A. Maximum Permissible Exposure

1. Maximum Permissible Exposure

1.1. Applicable Standard

Systems operating under the provisions of this section shall be operated in a manner that ensures that the public is not exposed to radio frequency energy levels in excess limit for maximum permissible exposure. In accordance with 47 CFR FCC Part 2 Subpart J, section 2.1091 this device has been defined as a mobile device whereby a distance of 0.2 m normally can be maintained between the user and the device.

(A) Limits for Occupational / Controlled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842 / f	4.89 / f	(900 / f)*	6
30-300	61.4	0.163	1.0	6
300-1500			F/300	6
1500-100,000			5	6

(B) Limits for General Population / Uncontrolled Exposure

Frequency Range (MHz)	Electric Field Strength (E) (V/m)	Magnetic Field Strength (H) (A/m)	Power Density (S) (mW/ cm^2)	Averaging Time $\|E\|^2$,$\|H\|^2$ or S (minutes)
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	(180/f)*	30
30-300	27.5	0.073	0.2	30
300-1500			F/1500	30
1500-100,000			1.0	30

Note: f = frequency in MHz ; *Plane-wave equivalent power density

1.2. MPE Calculation Method

E (V/m) $= \frac{\sqrt{30 \times P \times G}}{d}$ Power Density: *Pd* (W/m^2) $= \frac{E^2}{377}$

E = Electric field (V/m)

P = Peak RF output power (W)

G = EUT Antenna numeric gain (numeric)

d = Separation distance between radiator and human body (m)

The formula can be changed to

Pd $= \frac{30 \times P \times G}{377 \times d^2}$

From the peak EUT RF output power, the minimum mobile separation distance, d=0.2m, as well as the gain of the used antenna, the RF power density can be obtained.

1.3. Calculated Result and Limit

Antenna Type : PIFA

Max Conducted Power for IEEE 802.11a : 9.81dBm (802.11a- 5150~5250 MHz)

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
3.49	2.2336	9.8100	9.5719	0.004255	1	**Complies**

Antenna Type : PIFA

Max Conducted Power for IEEE 802.11a : 18.09dBm (802.11a- 5725 ~ 5850MHz)

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
3.49	2.2336	18.0900	64.4169	0.028639	1	**Complies**

Antenna Type : PIFA

Max Conducted Power for IEEE 802.11b/g : 19.55dBm

Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
0.1	1.0233	19.5500	90.1571	0.018363	1	**Complies**

Antenna Type : PIFA

Max Conducted Power for IEEE Bluetooth : 3.66dBm

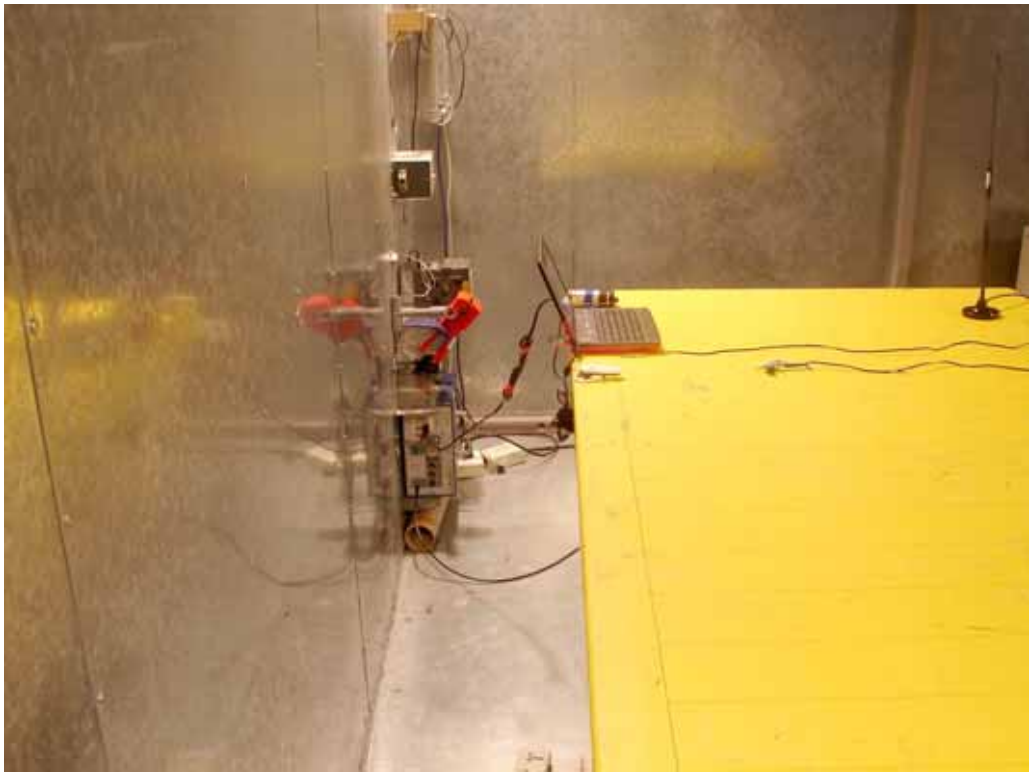
Antenna Gain (dBi)	Antenna Gain (numeric)	Peak Output Power (dBm)	Peak Output Power (mW)	Power Density (S) (mW/cm^2)	Limit of Power Density (S) (mW/cm^2)	Test Result
-4.78	0.3327	3.6600	2.3227	0.000154	1	**Complies**

Appendix B. Test Photos

1. Photographs of Conducted Emissions Test Configuration

FRONT VIEW

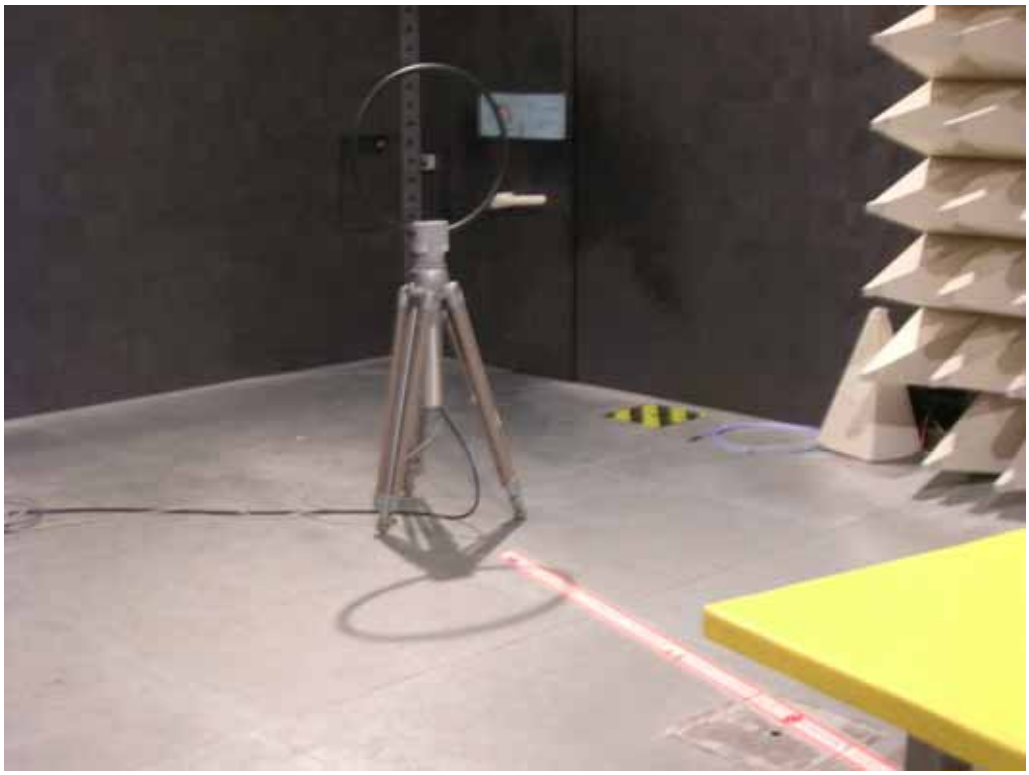
REAR VIEW



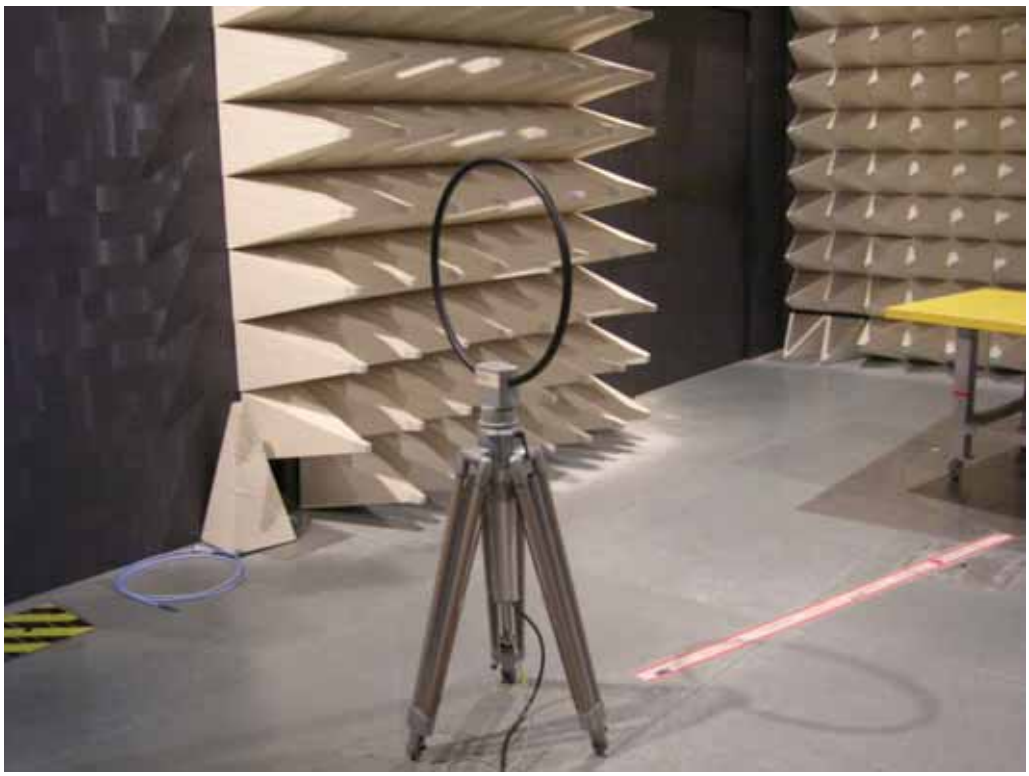
SIDE VIEW

2. Photographs of Radiated Emissions Test Configuration

FRONT VIEW

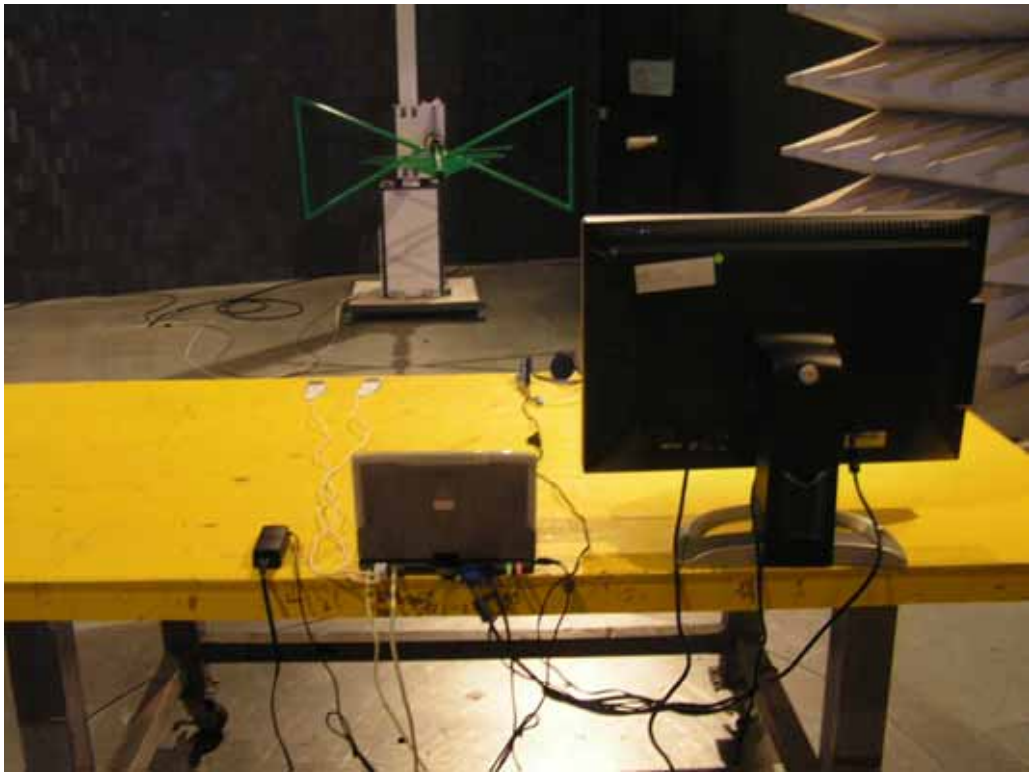


REAR VIEW

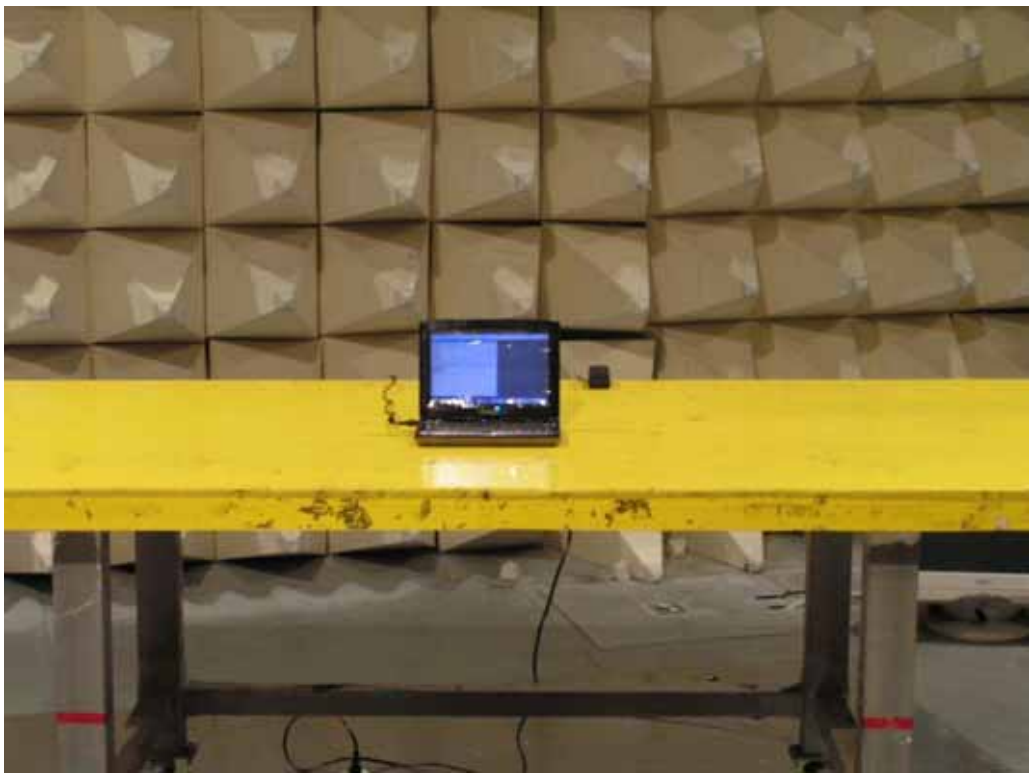


FRONT VIEW

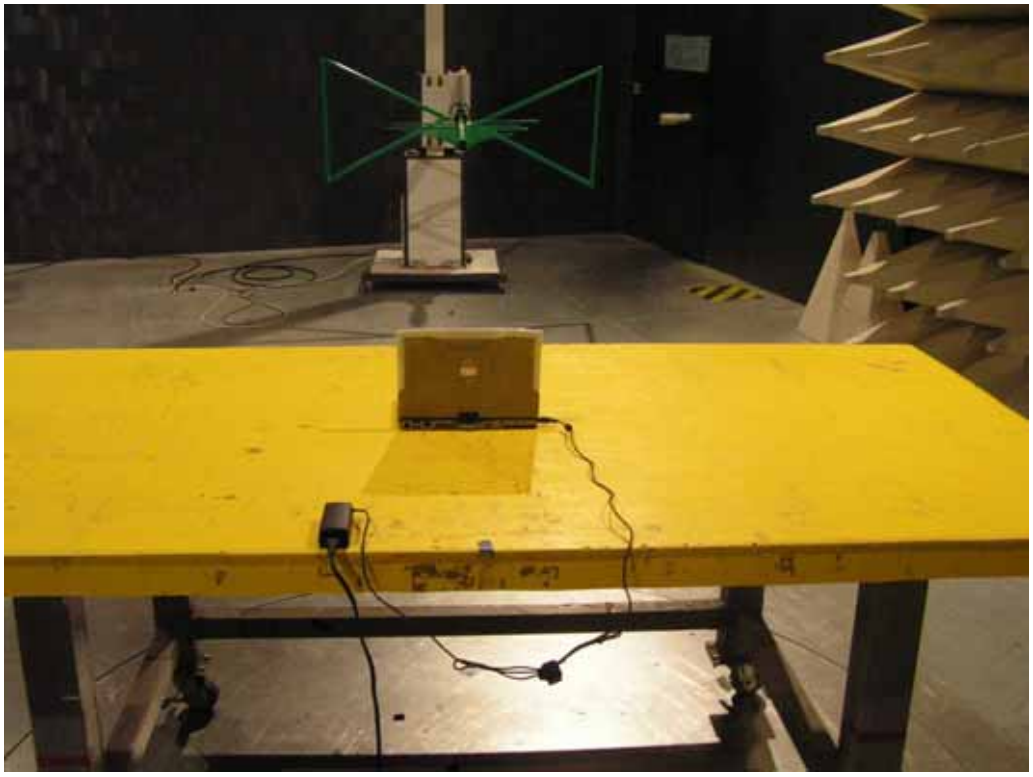
REAR VIEW



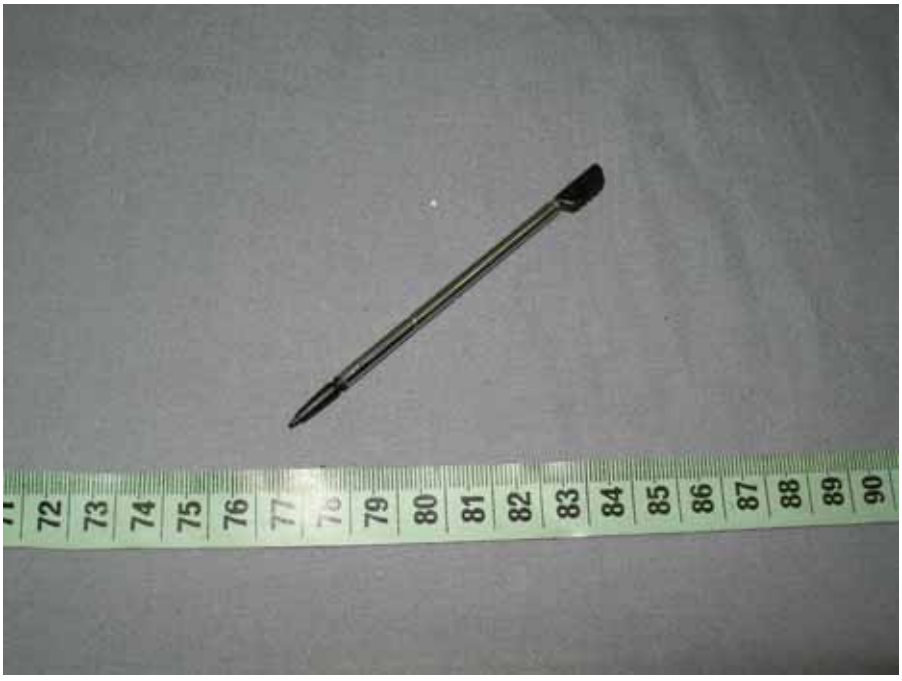
FRONT VIEW

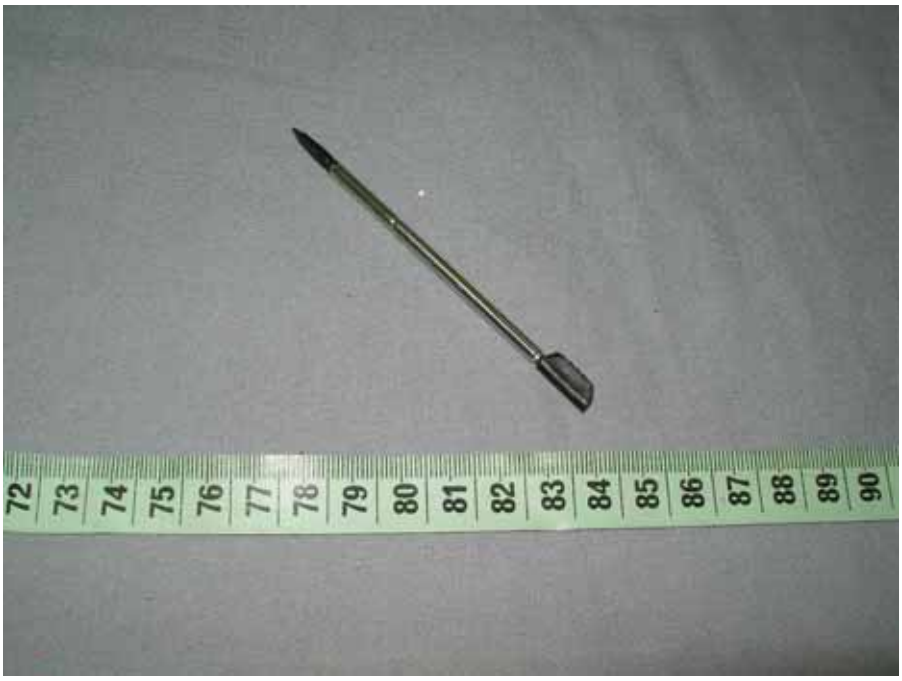


REAR VIEW



APPENDIX B. Photographs of EUT

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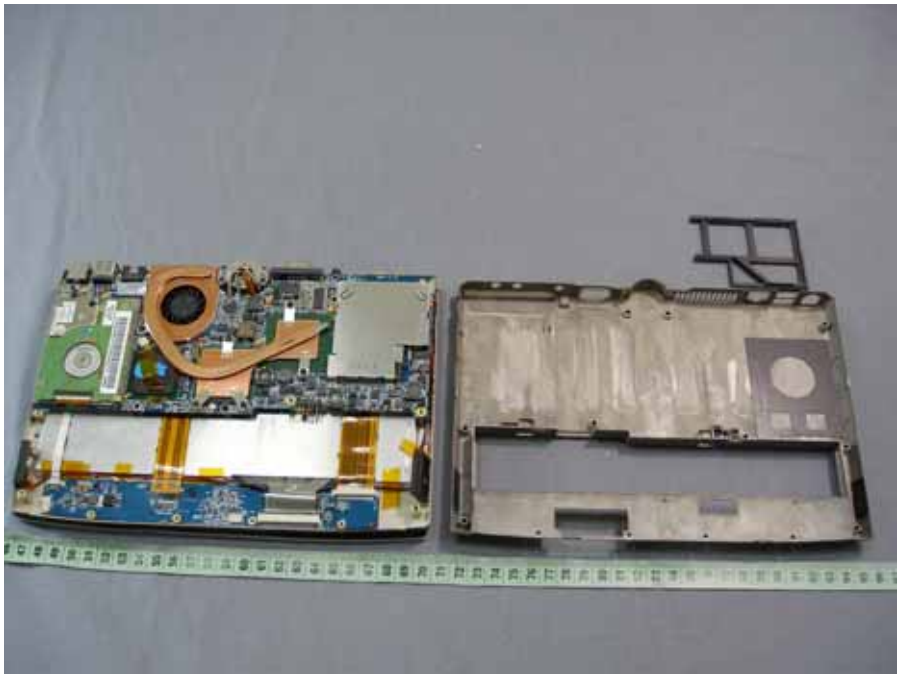

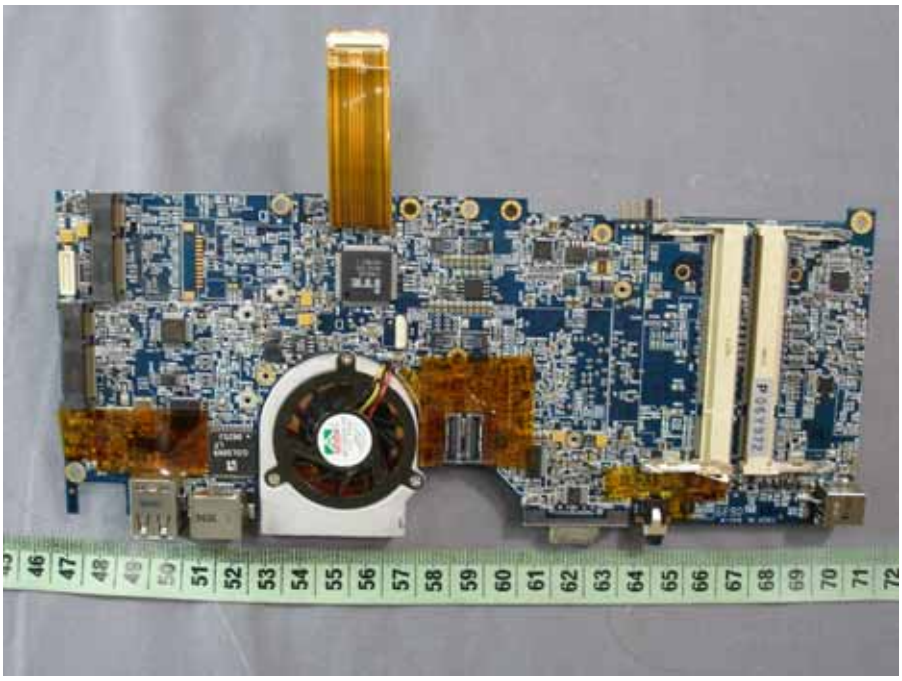

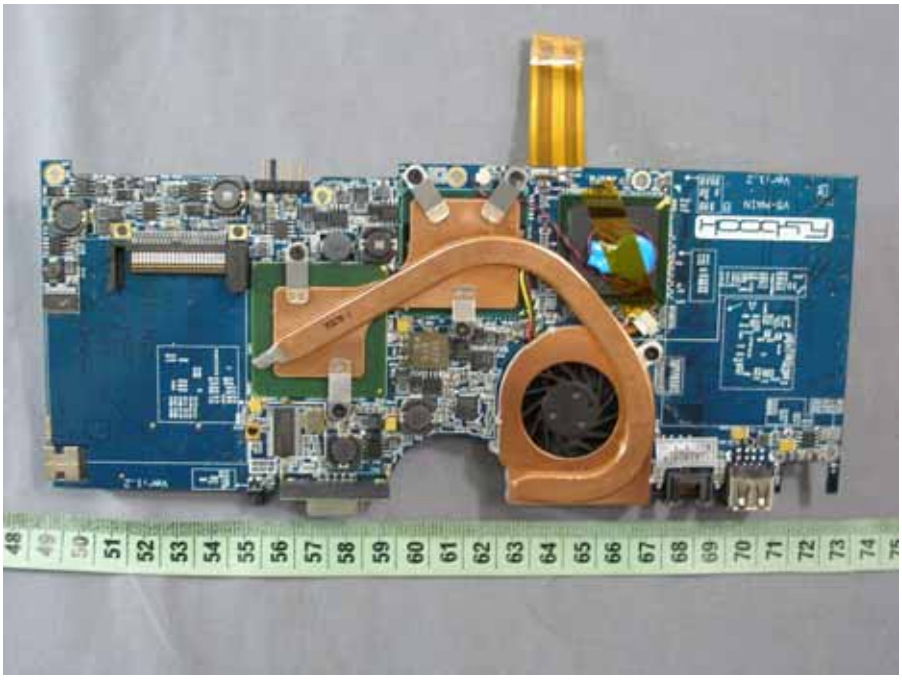

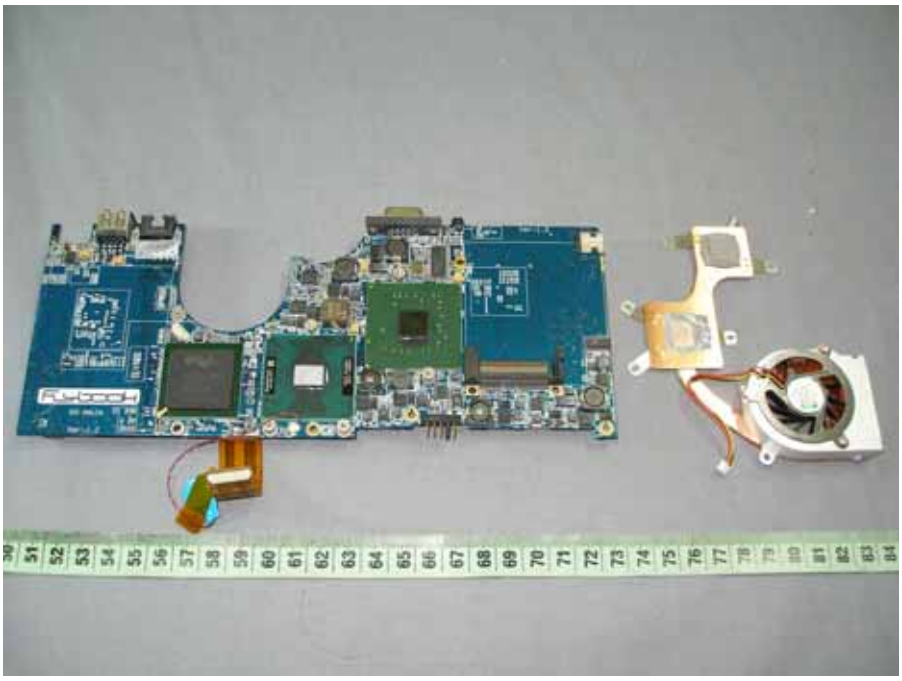

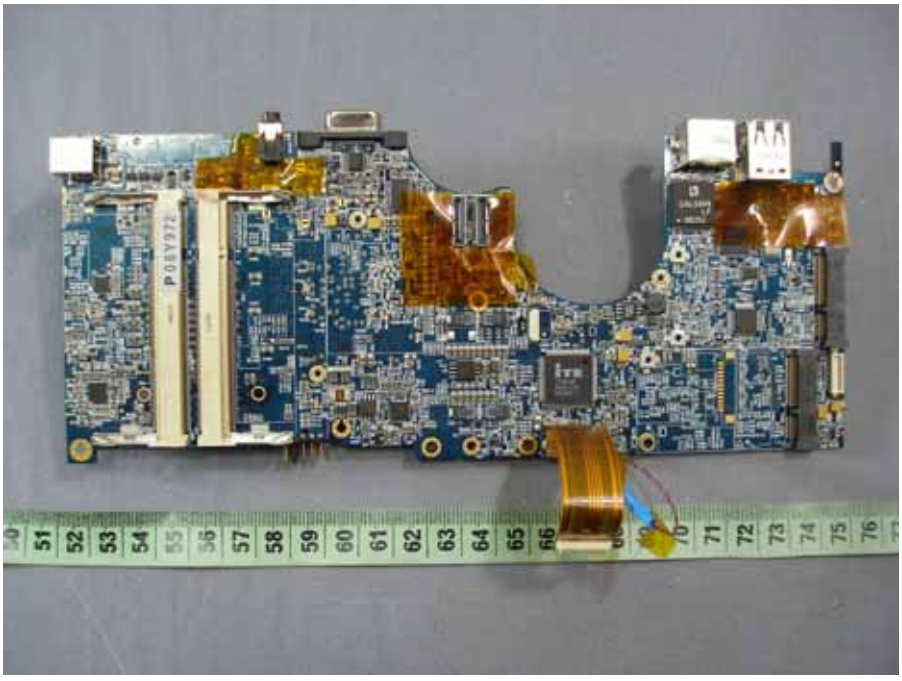


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76028738 SL8VW
1.66/2M/667
INTEL©©04


R45
N101-
1.20/2M/533
INTEL©©04


A-DATA
MEMORY EXPERT
Warranty void if removed
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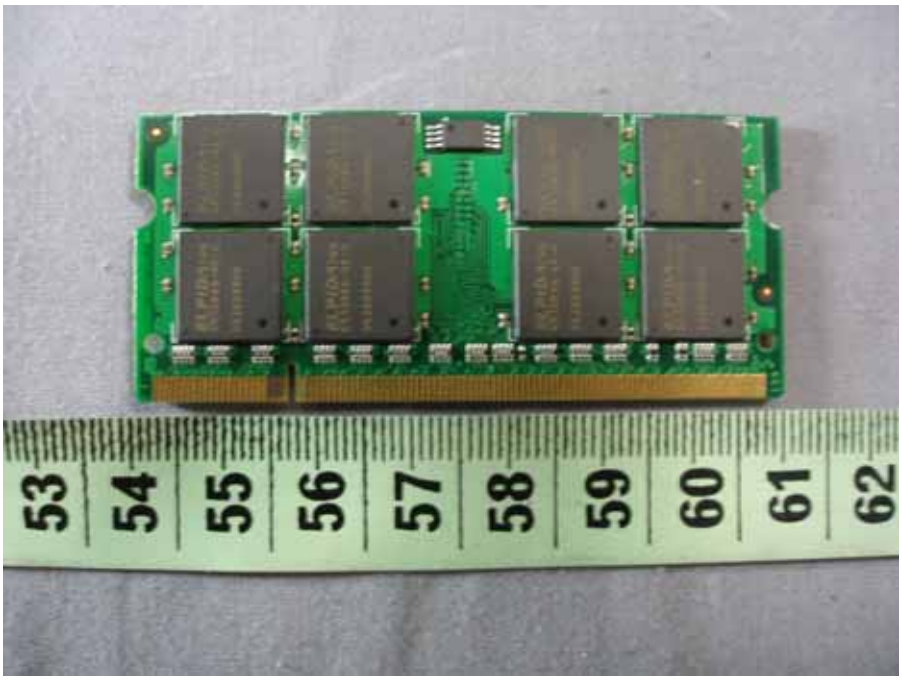
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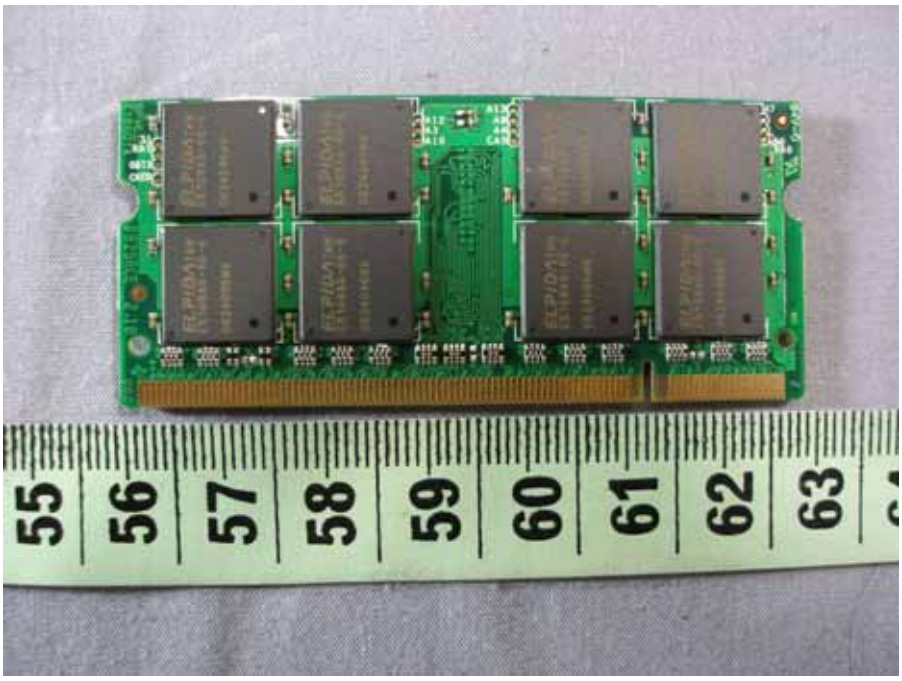
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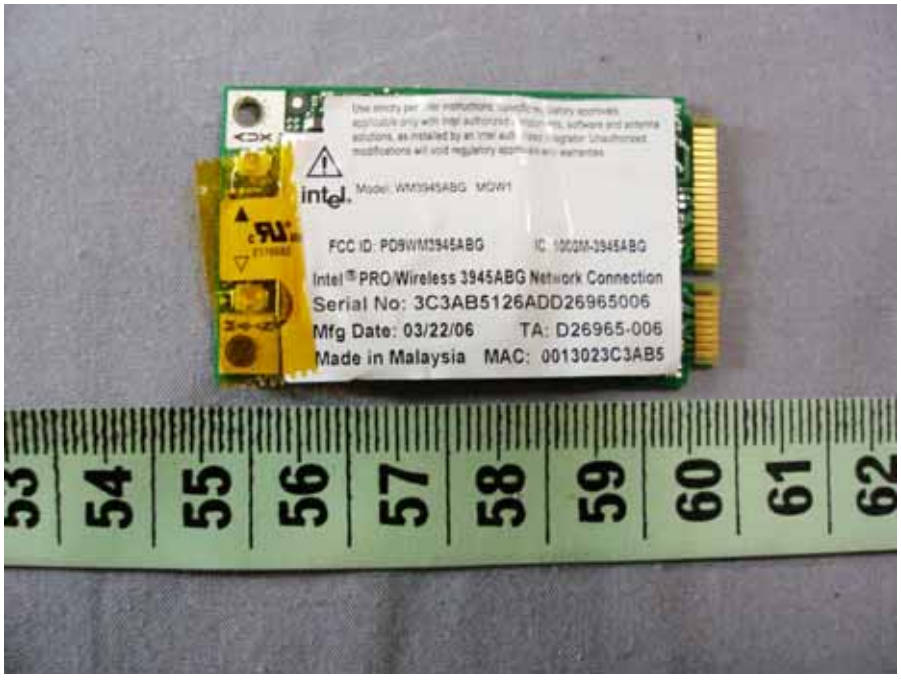
intel
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FCC ID: PD9WM3945ABG
Intel® PRO/Wireless 3945ABG Network Connection
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Mfg Date: 03/22/06 TA: D26965-006
Made in Malaysia MAC: 0013023C3AB5
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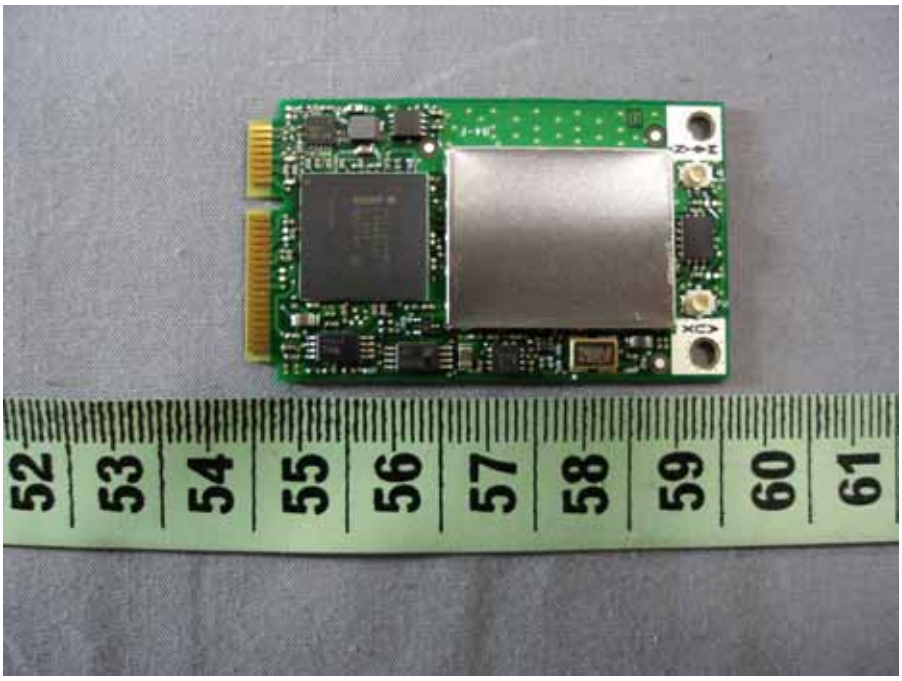
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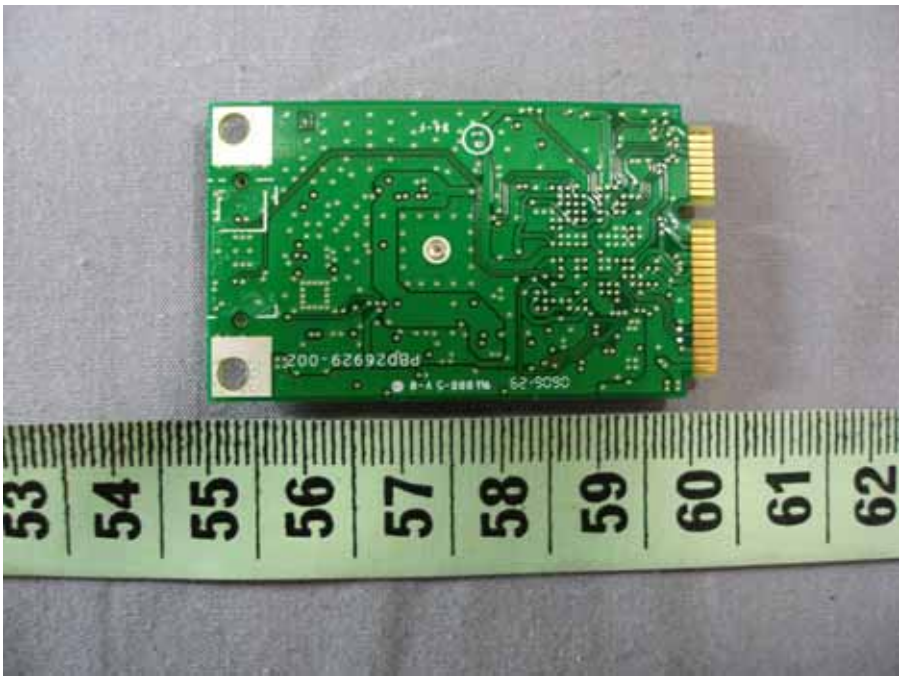


SIERRA WIRELESS
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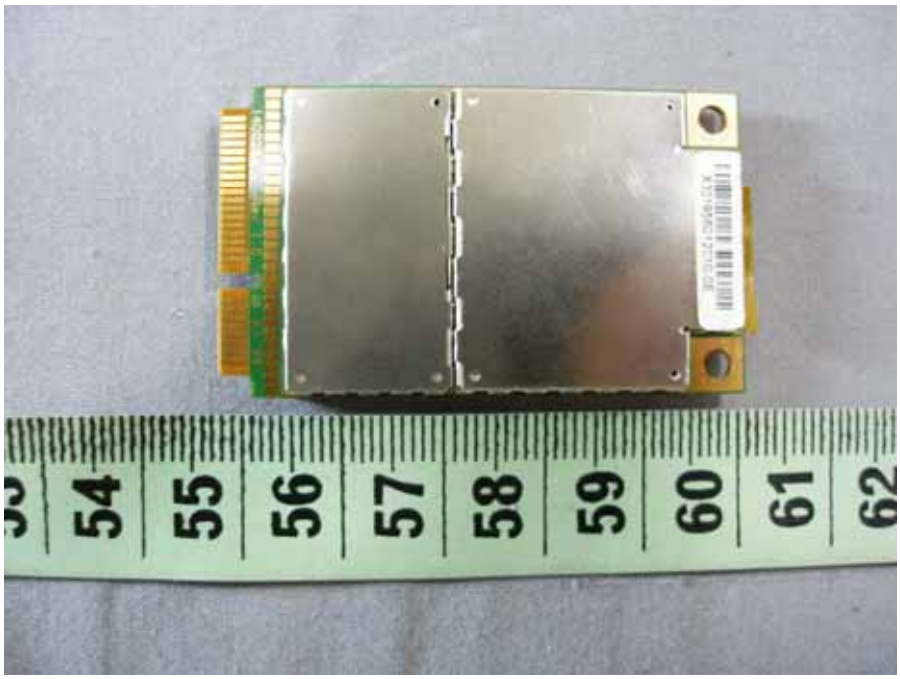
Preproduction Unit
This device has not been authorized
as required by the rules of the
Federal Communications Commission.
Made in China
MAIN
AUX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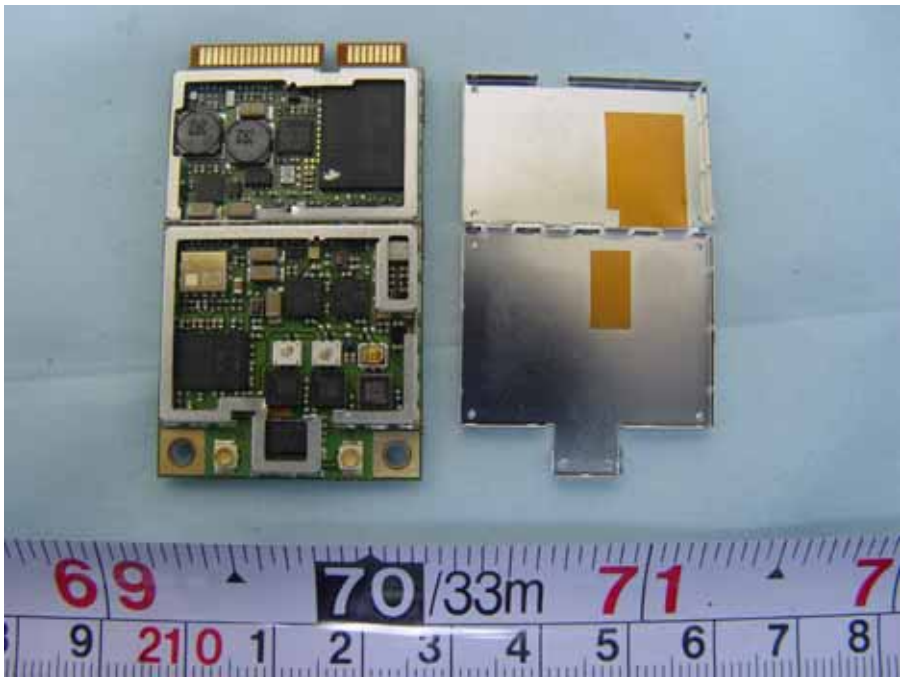
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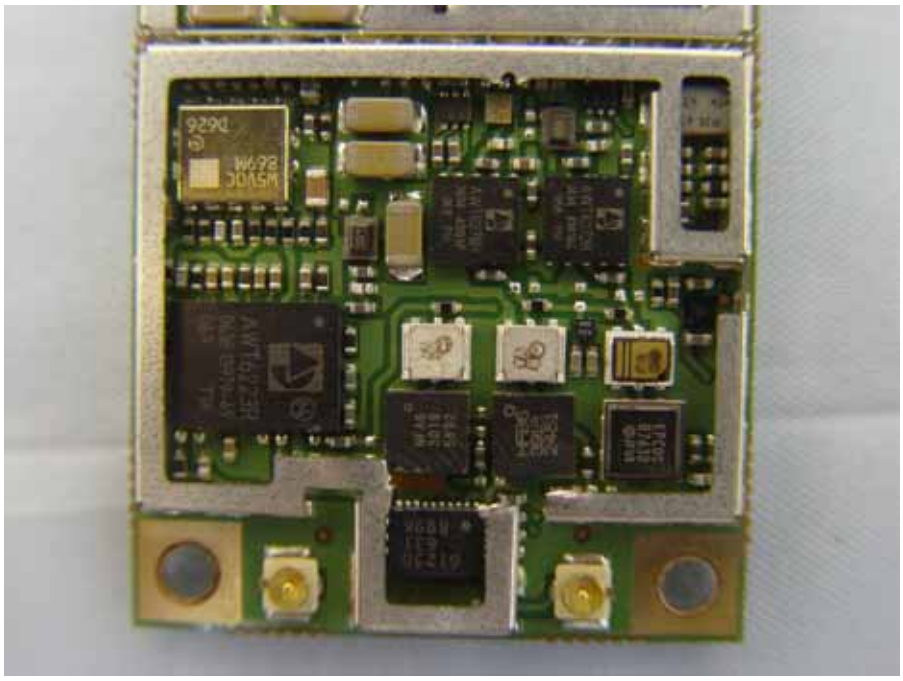

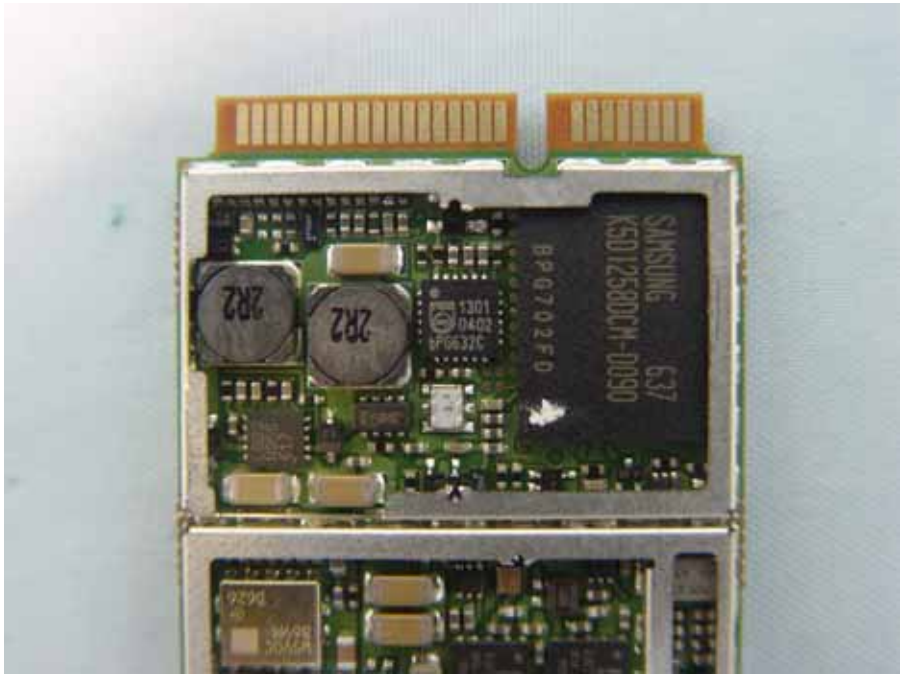
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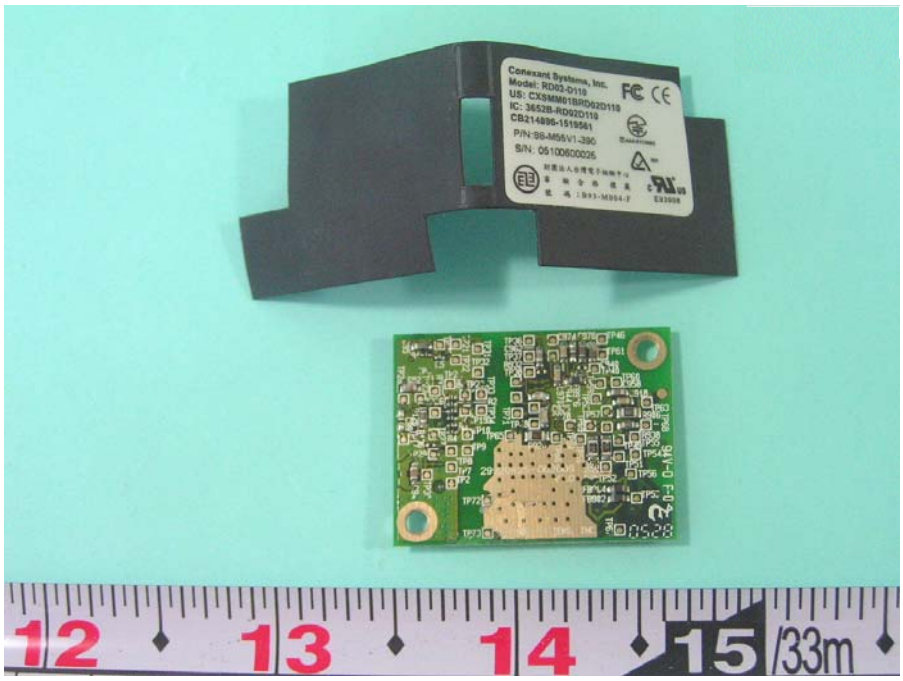
2R2
2R2


HITACHI
Travelstar
MADE IN THE PHILIPPINES




Conexant Systems, Inc.
Model: RD02-D110
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P/N:88-M55V1-390
S/N: 05100600025
財團法人台灣電子檢驗中心
審 驗 合 格 標 籤
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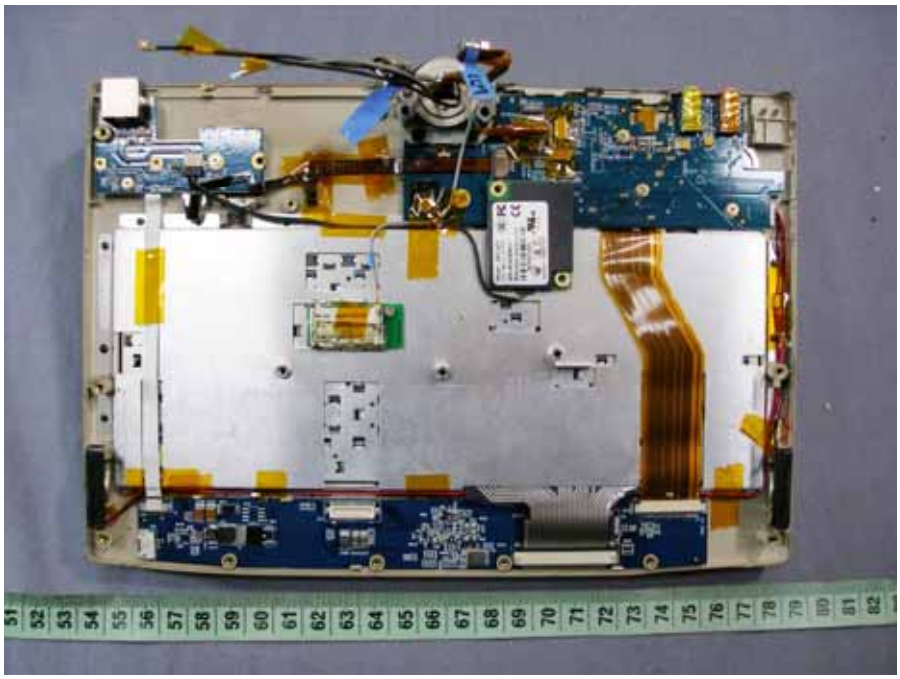
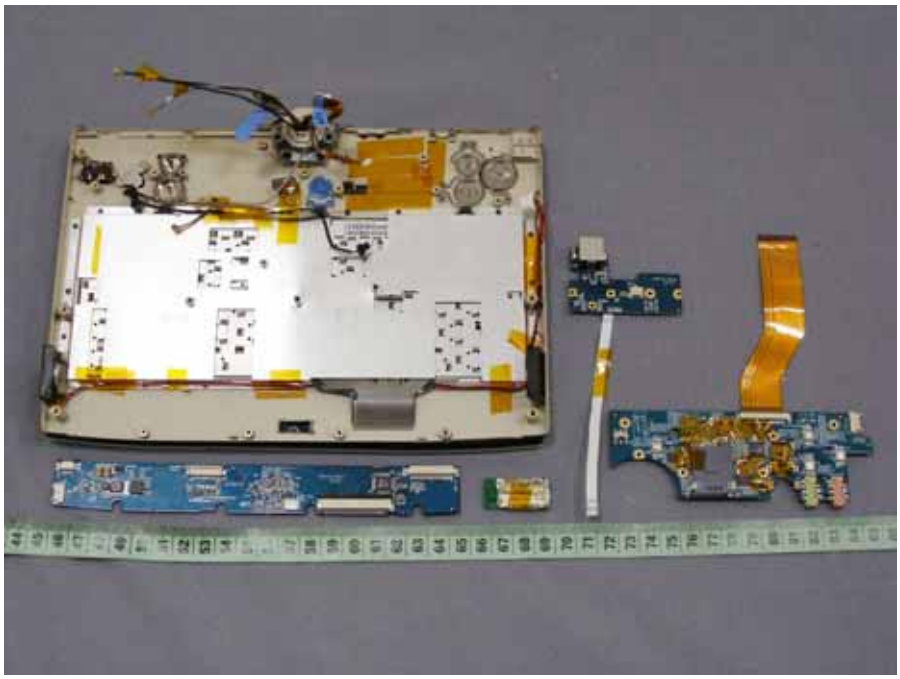
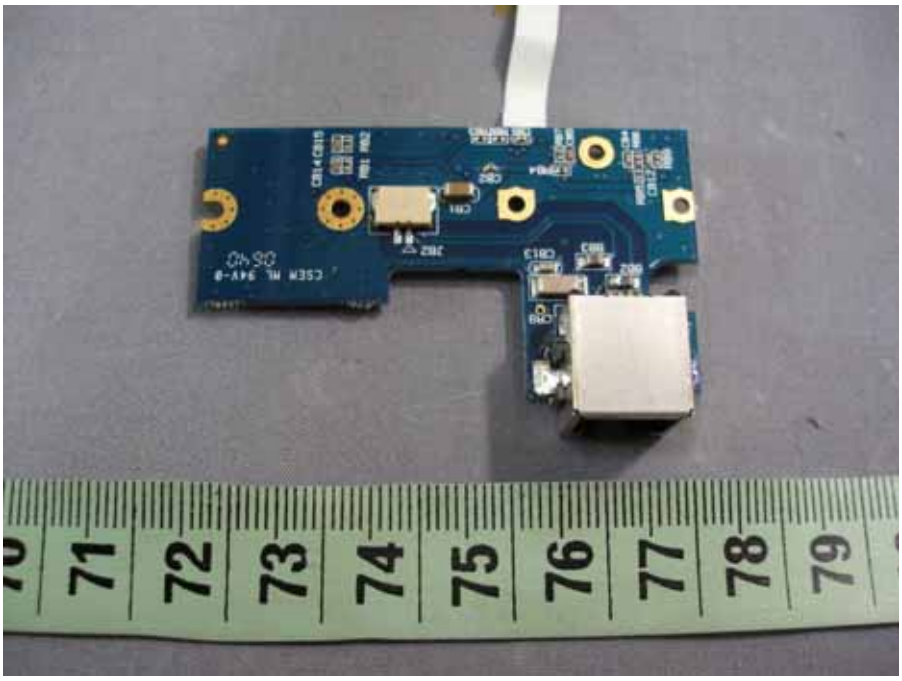
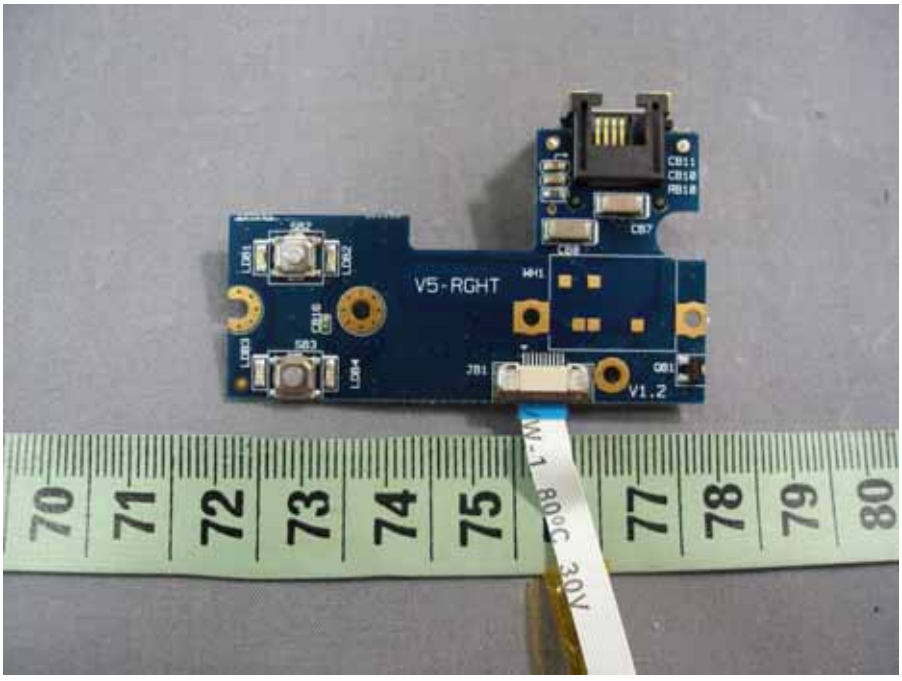
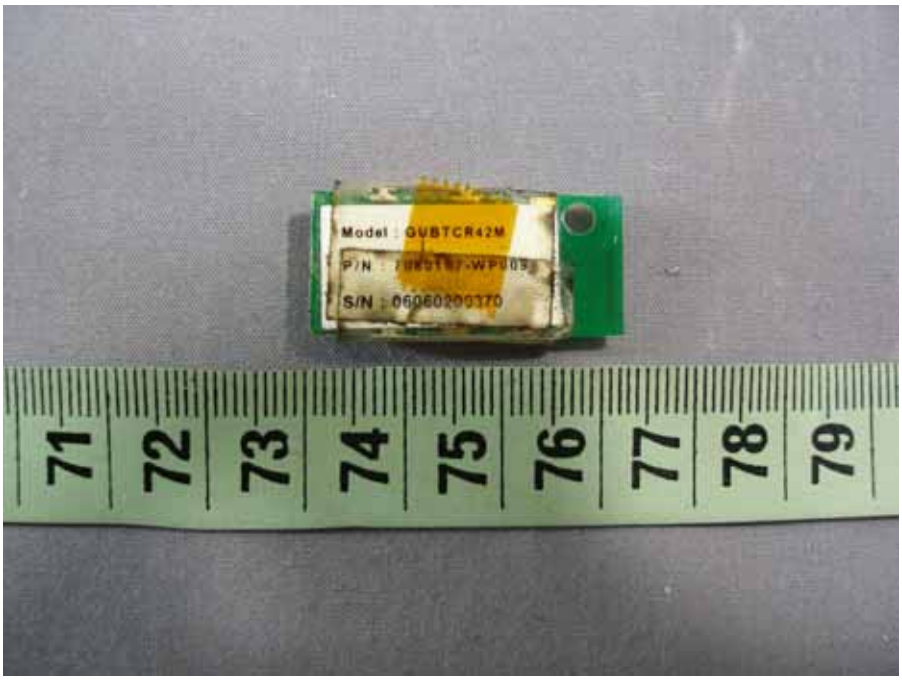
E93908








V5-RGHT
V1.2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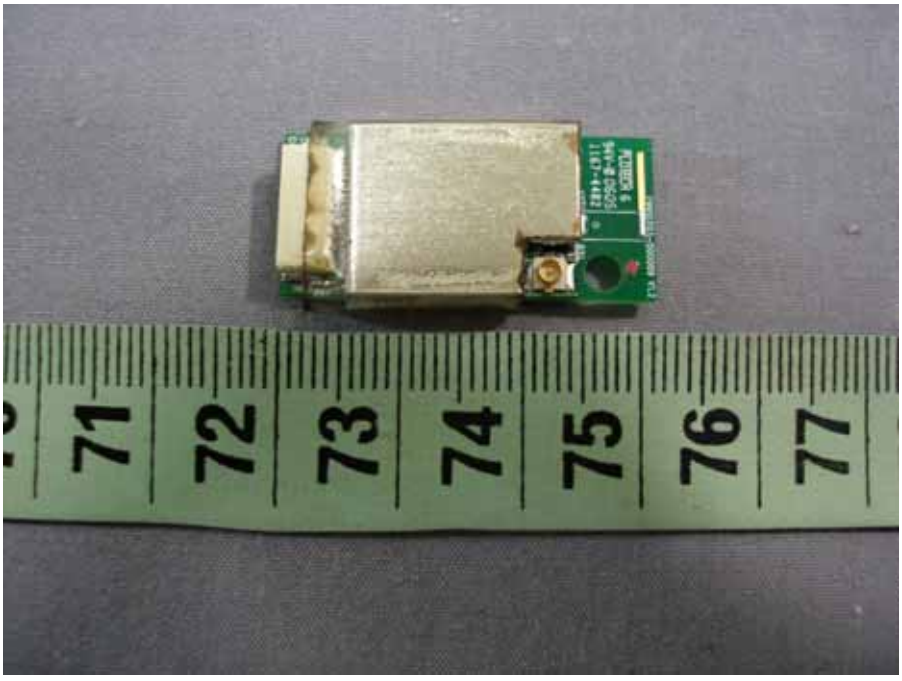
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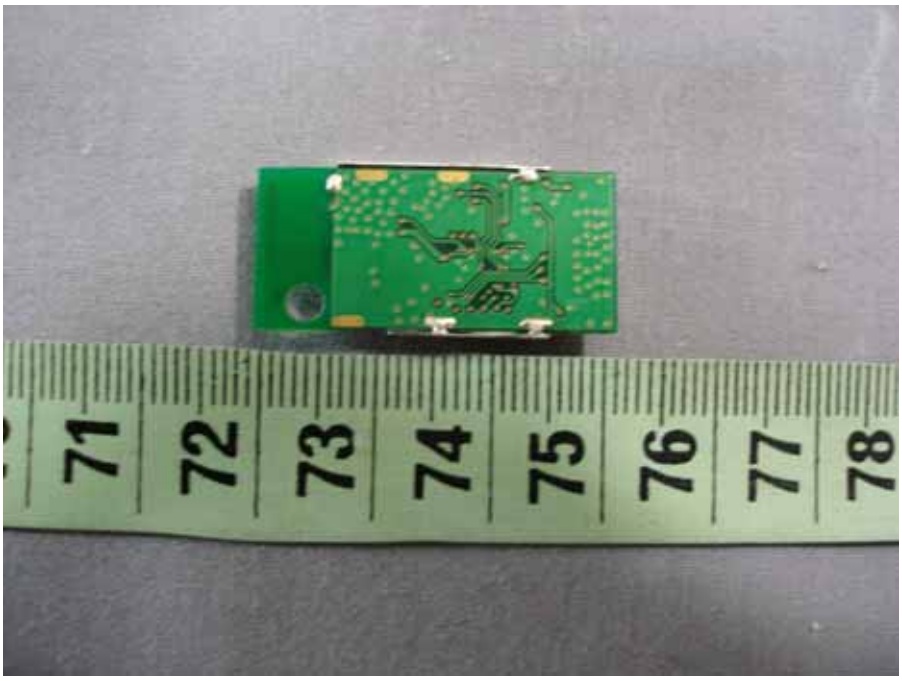
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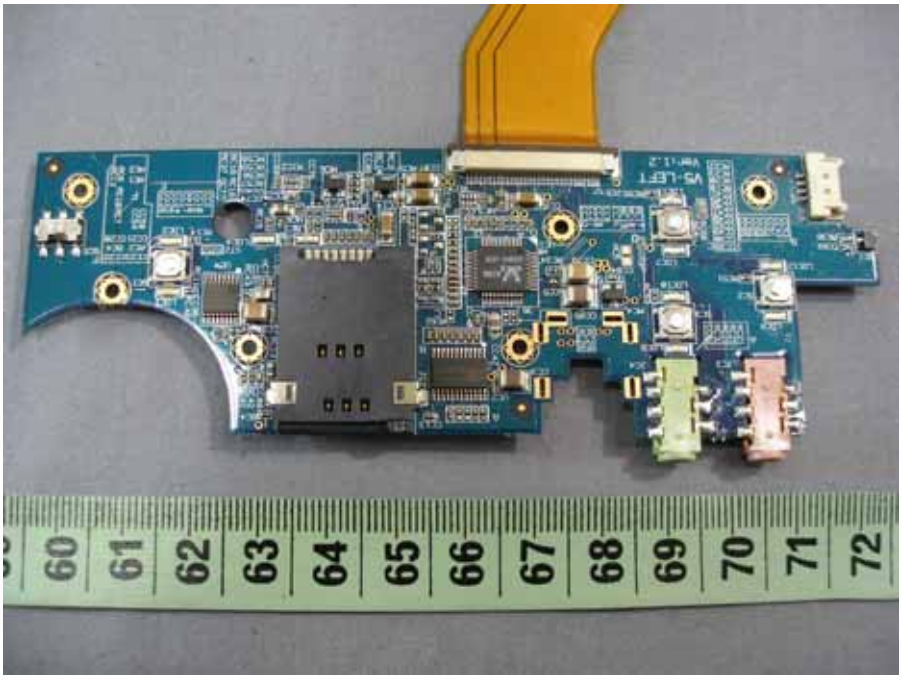
V5-LEFT
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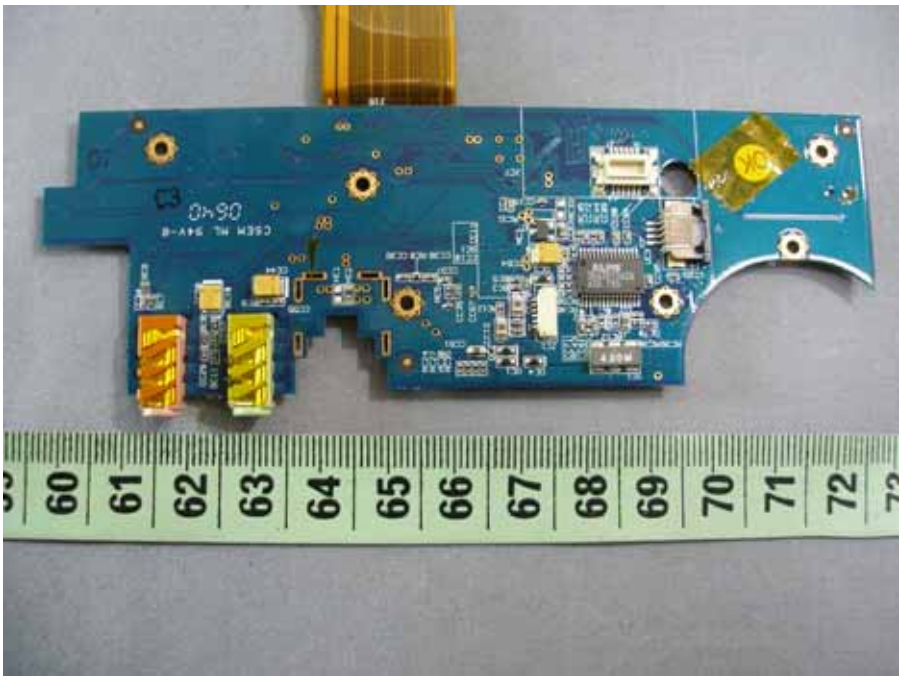

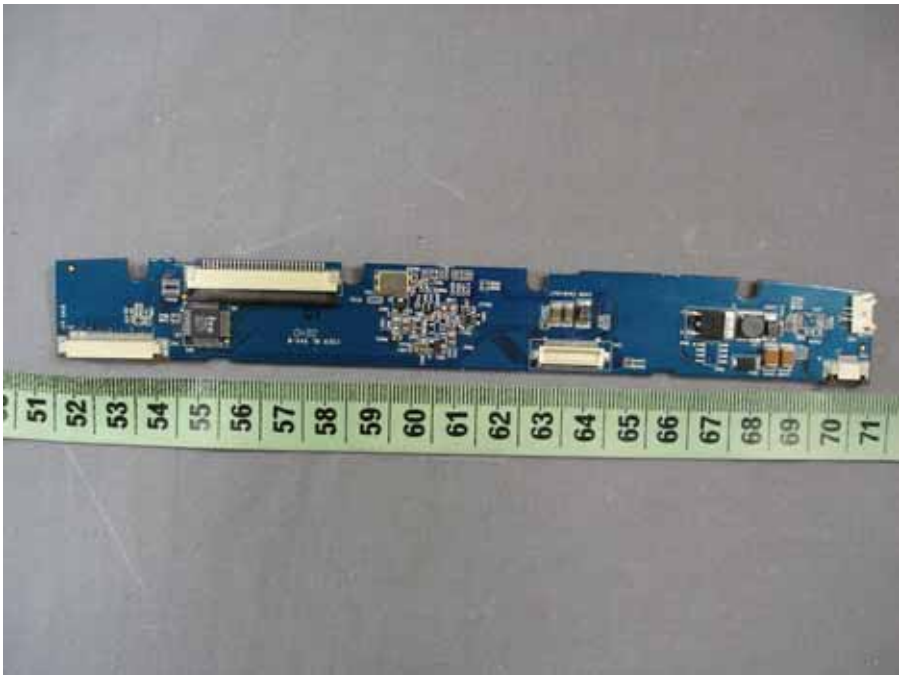

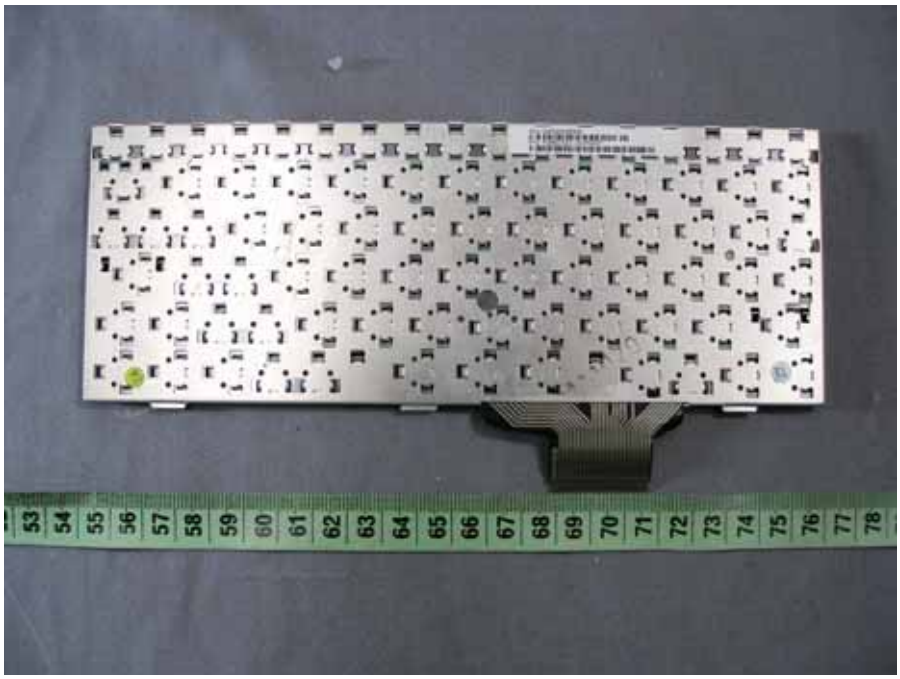

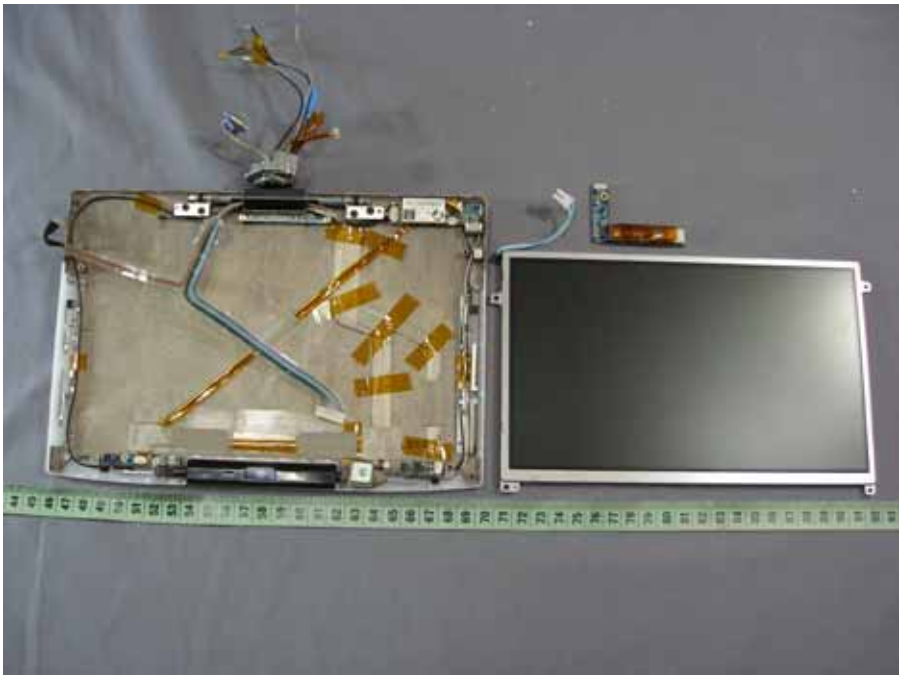

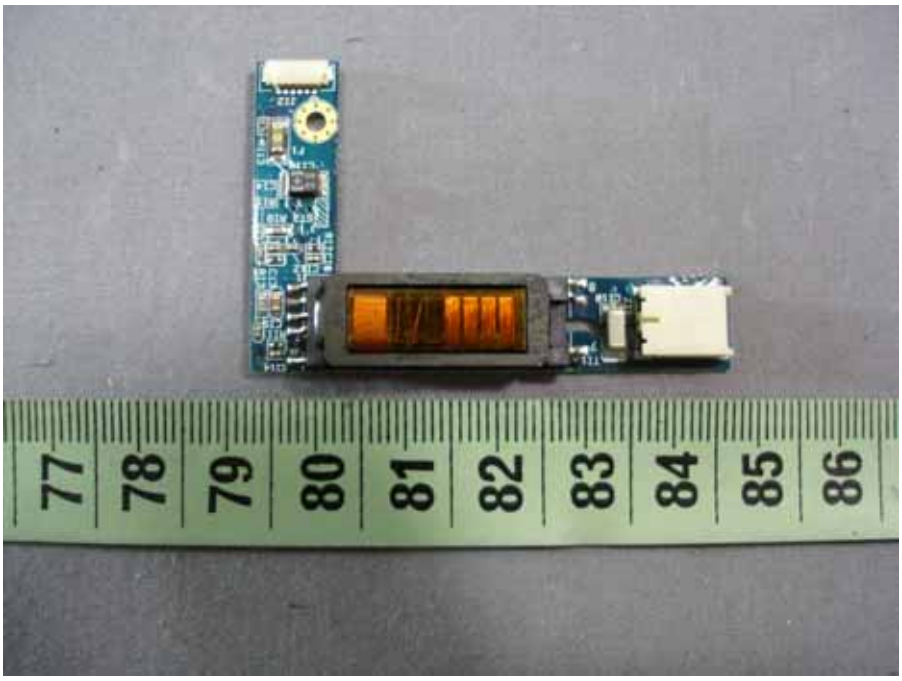
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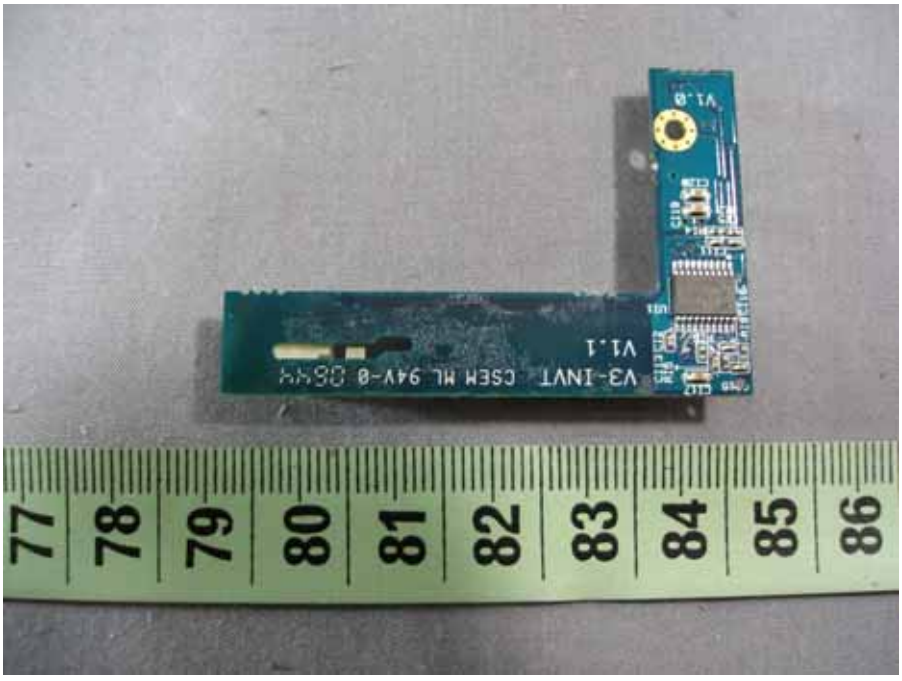
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V1.1
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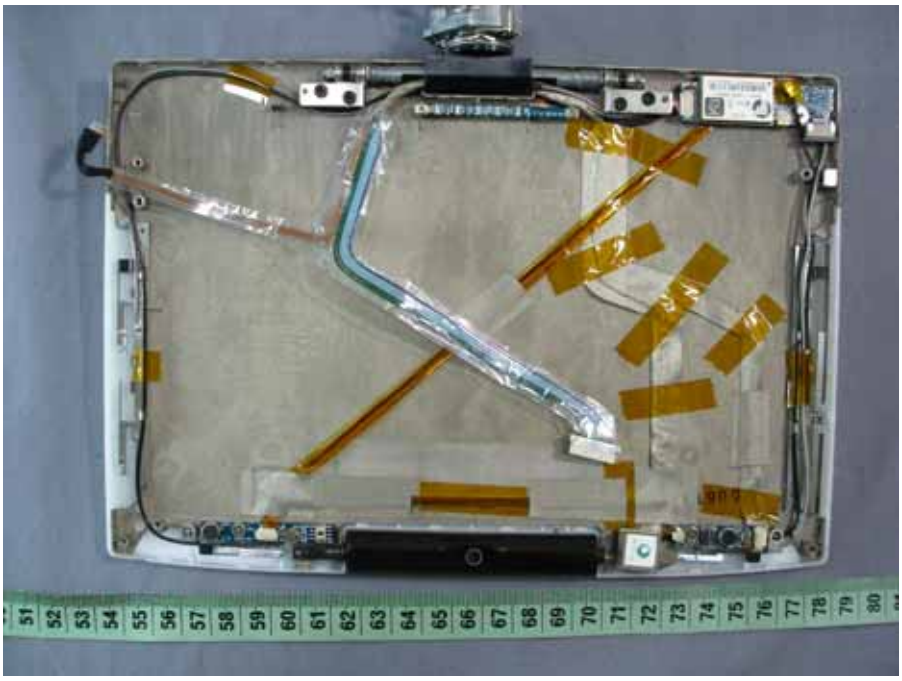

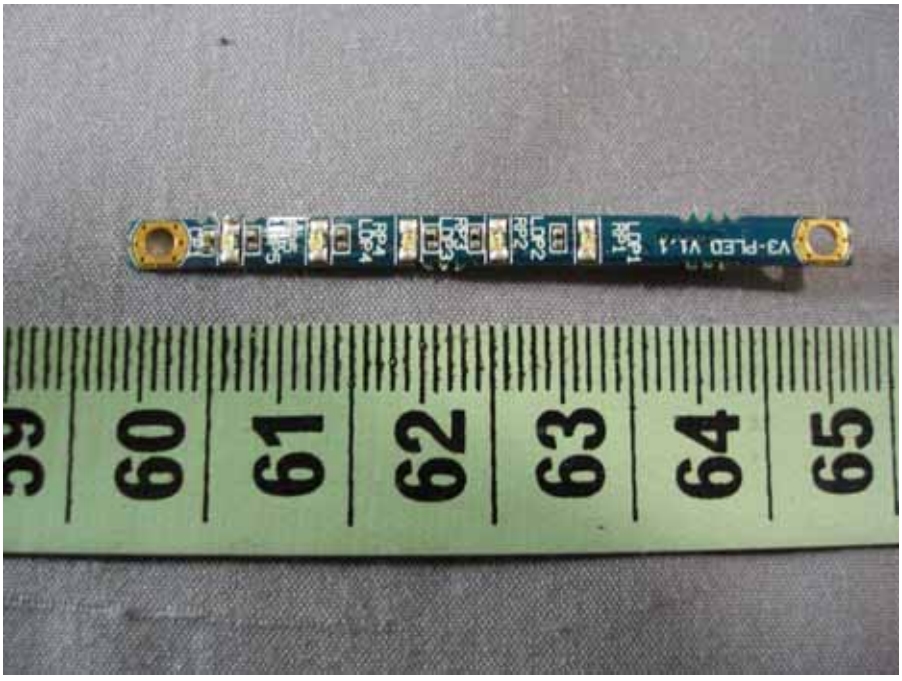
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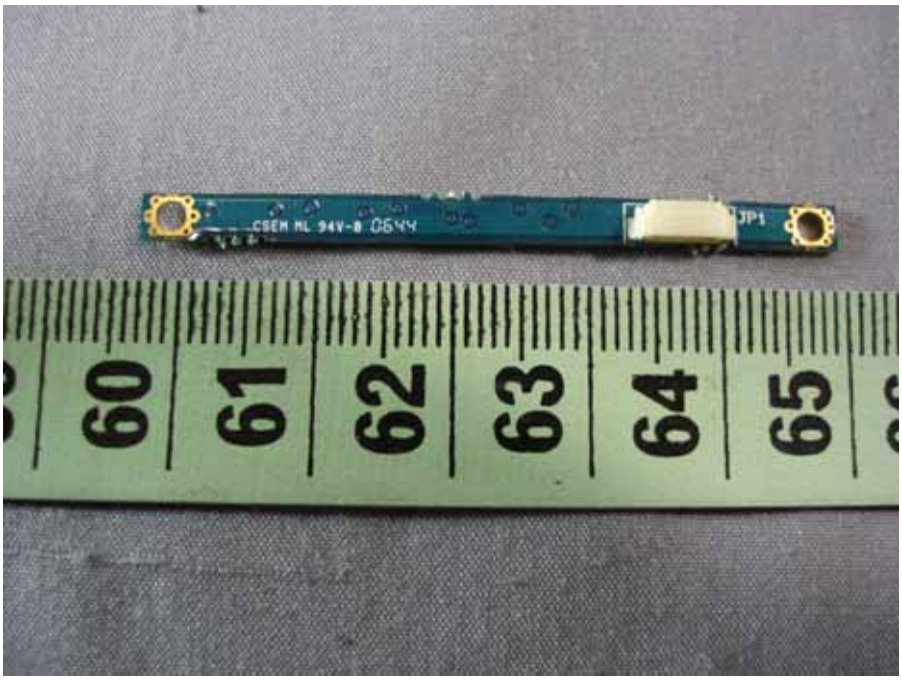
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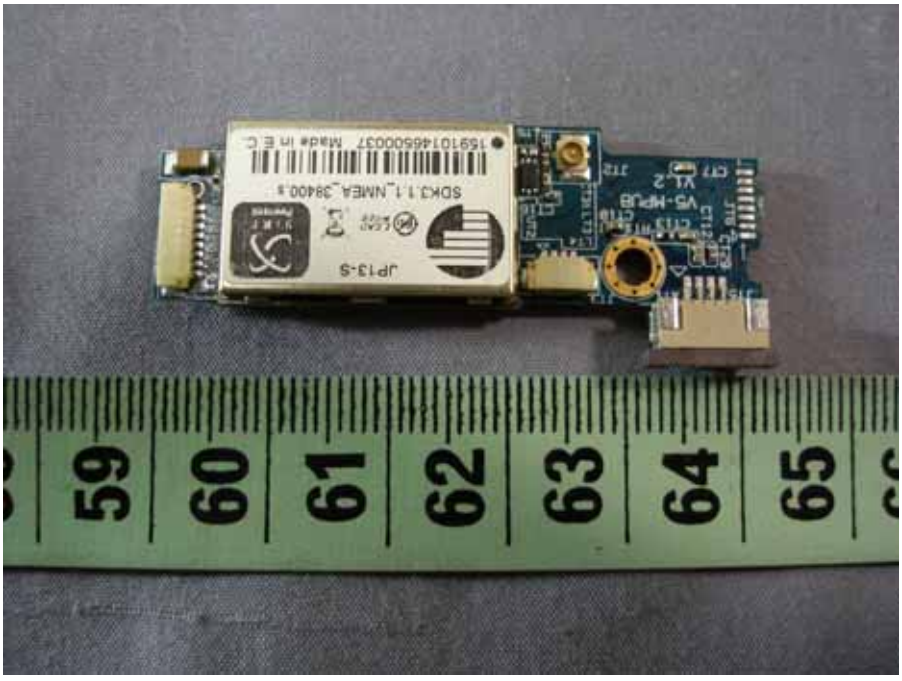
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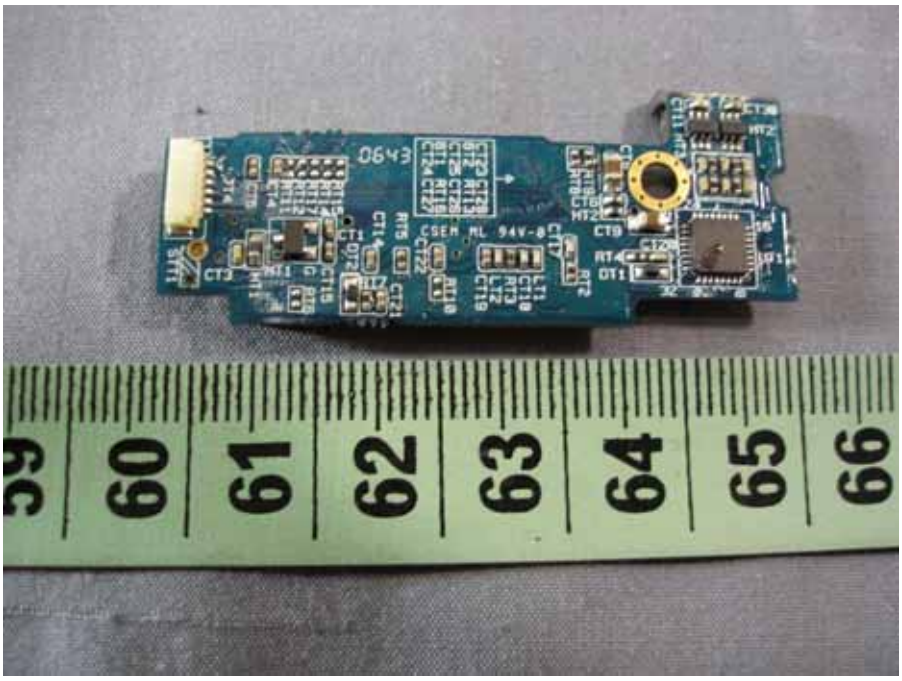

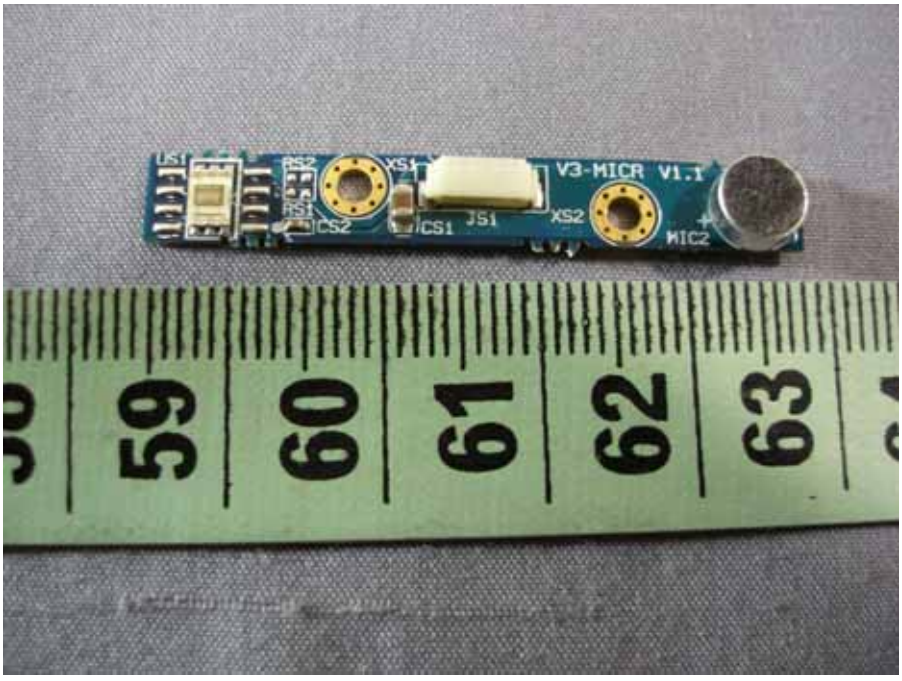
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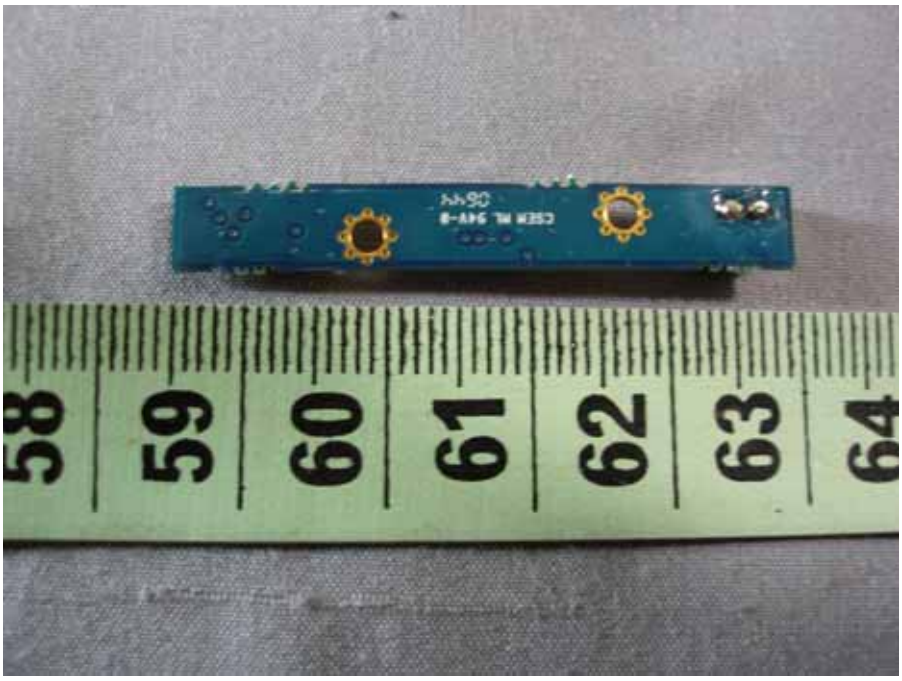
MIC2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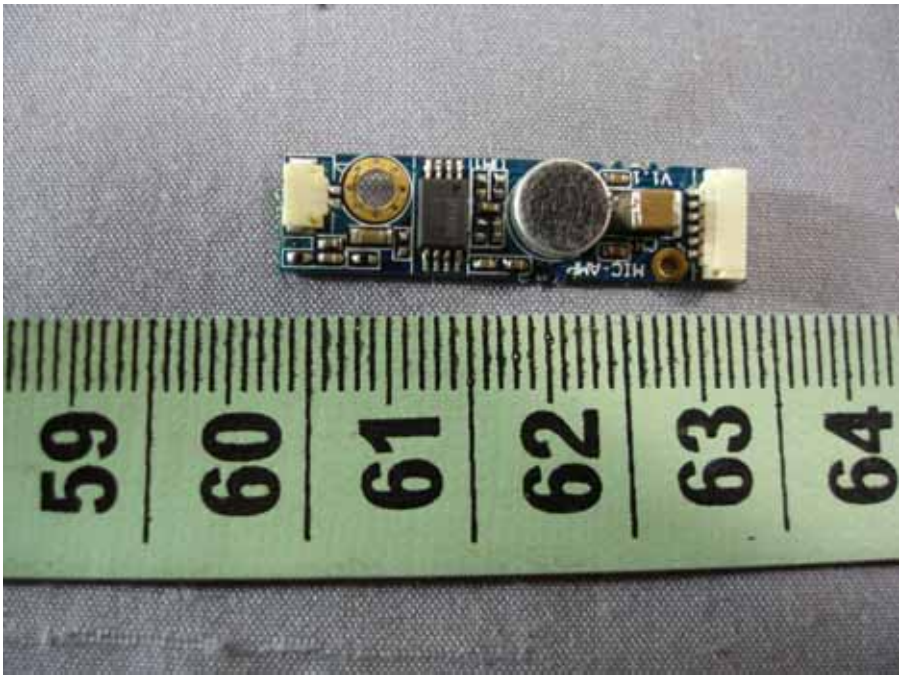
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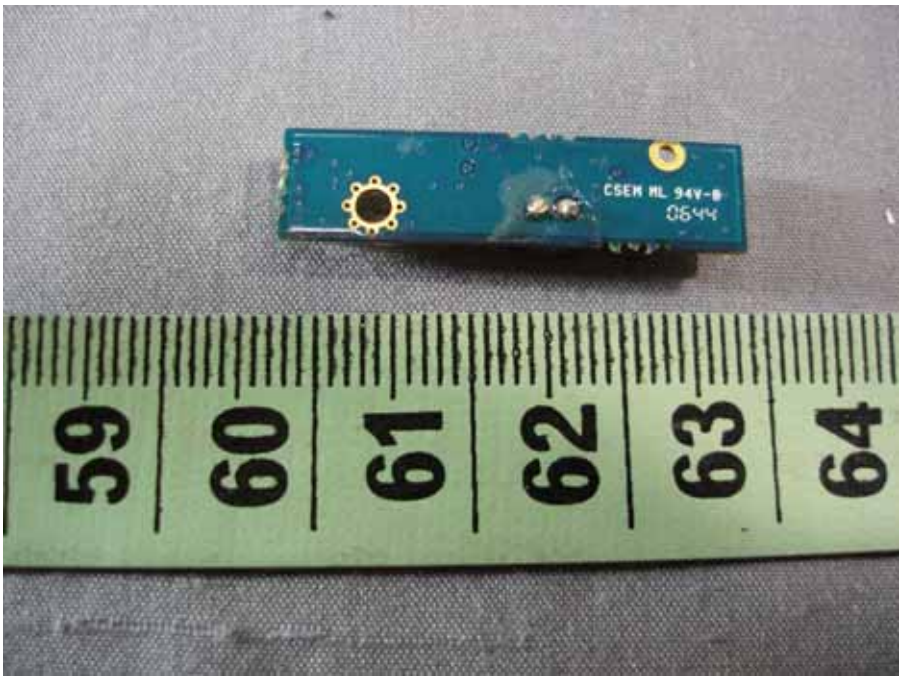
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