

Federal Communications Commission
Authorization and Evaluation Division

Confidentiality Request

FCC ID: SRKWPBT74S

Pursuant to Sections 0.457 and 0.459 of the Commission's Rules, the Applicant hereby requests confidential treatment of information accompanying this Application as outlined below:

- Schematics
- Block Diagram

The above materials contain trade secrets and proprietary information not customarily released to the public.

The public disclosure of these matters might be harmful to the Applicant and provide unjustified benefits to its competitors.

The Applicant understands that pursuant to Rule 0.457, disclosure of this Application and all accompanying documentation will not be made before the date of the Grant for this application.

Sincerely yours,

Oliver Chen / R&D Engineer

Signer / Title

E-mail: *Oliver@wondeproud.com*

RFI / EMI TEST REPORT

APPLICANT : **WONDE PROUD TECHNOLOGY CO., LTD.**

E U T Type : **Bluetooth GPS Receiver**

MODEL NO. : **GPS BT-74S**

FCC ID : **SRKWPB74S**

REGULATION : **CFR 47 , Part 15 Subpart C , Class B**

TEST SITE : **PEP Testing Laboratory**

TEST ENGINEER : **JASON KUNG**

TEST DATE : **MAR. 28, 2006**

ISSUED DATE : **APR. 28, 2006**

REPORT NO. : **E950157**

PEP Testing Laboratory

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Taipei Hsien, Taiwan, R. O. C.
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FCC ID : SRKWPB74S

REPORT NO. : E950157

VERIFICATION

WE HEREBY VERIFY THAT:

The EUT listed below has completed RFI testing by PEP Testing Laboratory and it does comply with the limitation of FCC Part 15, Section 15.247 limitations .

The tested configurations and the facility complies with the radiated and AC line conducted test site criteria in ANSI C63 . 4 - 2003 .

Any data in this RFI report is “ reference “ only .

APPLICANT : WONDE PROUD TECHNOLOGY CO., LTD.
PRODUCT : Bluetooth GPS Receiver
FCC ID : SRKWPB74S
MODEL : GPS BT-74S



M. Y. TSUI / President

PEP Testing Laboratory

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I . General Information

The equipment under test (EUT) is Bluetooth GPS Receiver, FCC ID: SRKWPB74S, model GPS BT-74S. The EUT can be used to work for the applications such as car navigation purpose. The working frequency is 2.402GHz-2.480GHz. DC 3.7V from battery or DC 5.3V from AC-DC adaptor is required to operate EUT. For more detail specification about EUT, please refer to the user's manual.

Setup Method: According to the major function designed, the EUT and PC system were set to proceed with test. The test was respectively carried out on EUT operational condition and the worst-case test result was recorded and provided in this report.

At the frequencies where the peak values of the emission exceeded the quasi-peak limit, the emissions were also measured with the quasi-peak detectors. The average detector also measured the emission either (A) quasi-peak values were under quasi-peak limit but exceeded average limit, or (B) peak values were under quasi-peak limit but exceeded average limit.

1.1 Description of EUT

EUT Type	:	Bluetooth GPS Receiver
FCC ID	:	SRKWPB74S
EUT Model No.	:	GPS BT-74S
Frequency Range	:	2.402~2.480GHz
Support Channel	:	79 channels
Modulation	:	QBSK
Antenna Type	:	Comply with FCC Part 15, Section 15.203;
Build-in PCB trace type, can't be removed by the user		
Power Supply	:	1) Manufacturer : DVE
		Model No. : DSA-0051-05C FUS 53050F
		Input : AC 100~240V, 0.2A
		Output : DC 5.3V, 0.5A
Power Cord	:	N/A

1.2 Supporting Devices for EUT testing

1. Personal Computer (PC3)

CPU : Intel P4 Socket 478 1.6GHz

FCC ID : Declaration of Conformity(DoC)

Manufacturer : LEMEL

Model Number : LMIH1A2

Power Supply : Switching

Power Cord : Non-Shielded, Detachable, 1.8m

Data Cable : N/A

2. Keyboard (KBS1 PS/2)

FCC ID : E5XKB5121WTH0110

Manufacturer : BTC

Model Number : 5121W

Power Supply : +5Vdc from PS2 of PC

Power Cord : N/A

Data Cable : 1 > Shielded , Non-detachable,1.6m

2 > Back Shell : Metal

3. Monitor (MON1 15")

FCC ID : Declaration of Conformity(DoC)

Manufacturer : SAMSUNG

Model Number : 550S

Power Supply : Switching

Power Cord : Non-Shielded, Detachable, 1.8m

Data Cable : 1 > Shielded , Non-detachable,1.2m

2 > Back Shell : Metal

4. Printer (PRN1)

FCC ID : B94C2642X

Manufacturer : Hewlett-Packard

Model Number : C2642E

Power Supply : Linear, 30Vdc O/P

Power Cable : Non-Shielded , Detachable,1.8m

Data Cable : 1 > Shielded , Detachable,1.2m

2 > Back Shell : Metal

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5. Modem (MOD1)

FCC ID : IFAXDM1414

Manufacturer : ACEEX

Model Number : 1414

Power Supply : Linear, 9Vac O/P

Power Cable : Non-Shielded , Detachable,1.7m

Data Cable : 1 > Shielded , Detachable,1m

2 > Back Shell : Metal

6. Mouse (MOUS/1 PS/2)

FCC ID : DZL211106

Manufacturer : LOGITECH

Model Number : M-S43

Power Supply : +5Vdc from PS2 of PC

Power Cord : N/A

Data Cable : 1 > Shielded , Non-detachable,1.8m

2 > Back Shell : Metal

7. DUNGL

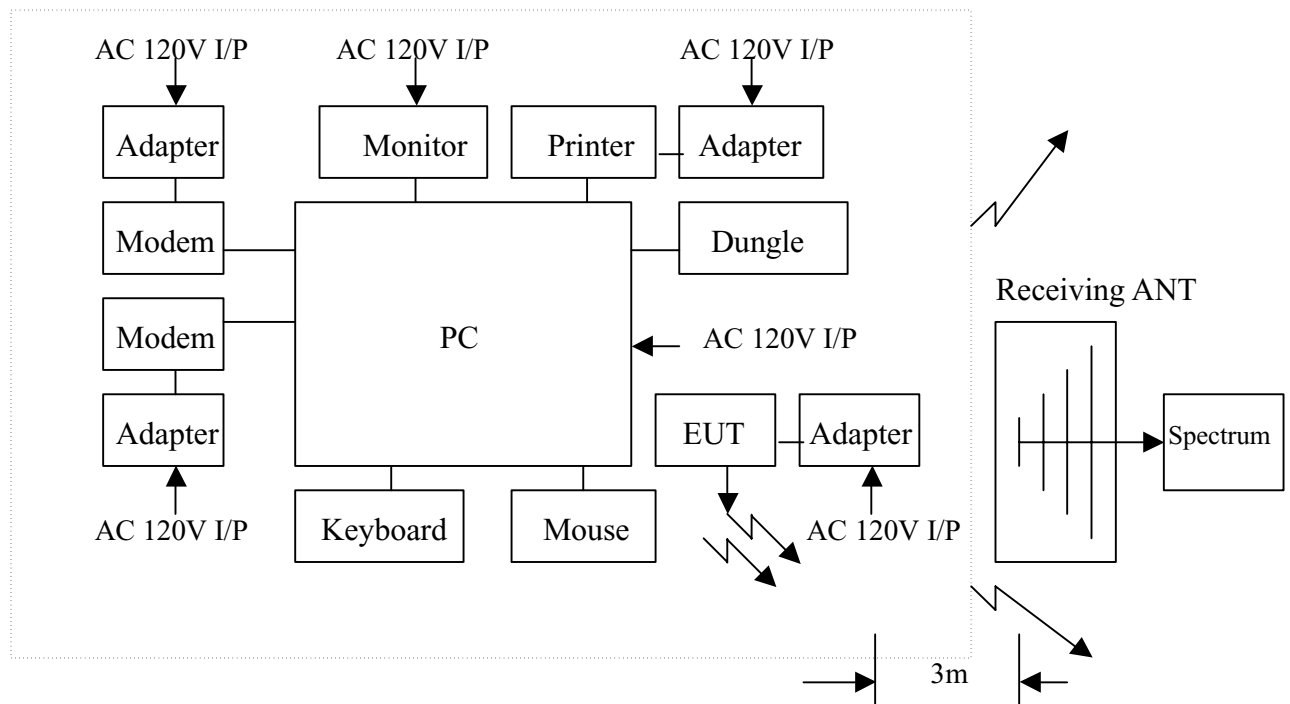
Manufacturer : Bluetooth-SIG. Inc, USA

Model Number : UBTCR3C1E-N

1.3 EUT Test Setup Configuration

- (A)Test Procedure: As required by ANSI C63.4 (2003)
- (B)Channel Verification: In order to force selection of the typical channels for testing, Dungle was connected PC through USB interface and using the driver “CSR BlueSuite”, under WinXP to force the channel selection by control PC, then set the EUT in high power and continuously transmitting mode for detecting the operating frequency, the test result for 79 channels is operating within 2.402~2.480GHz band.
- (C)Measurement Procedure: As required by FCC Part15, Section 15.31(m) measurements on intentional radiators or receiver should be performed at three frequencies for operating frequency over 10MHz, one near top, one near middle and one near bottom.
- (D)Test Channel: Due to the support channels are 79 channels, the selected three frequencies for testing would be 2.402GHz near top for CH LOW, 2.441GHz near middle for CH MID and 2.480GHz near bottom for CH HIGH.
- (E) At the frequencies where the peak values of the emission exceeded the quasi-peak limit, the emissions were also measured with the quasi-peak detectors. The average detector also measured the emission either (a) quasi-peak values were under quasi-peak limit but exceeded average limit, or (b) peak values were under quasi-peak limit but exceeded average limit.
- (F) In this RFI test report, we provided the worst case conducted emission test data and radiated emission test data. The entire testing data was recorded and provided in this report.

1.4 Channels Verification



FCC ID : SRKWPB74S

REPORT NO. : E950157

a. EUT Type : Bluetooth GPS Receiver

b. EUT Model : GPS BT-74S

c. TX Channel No. : 79

Channel 01: 2402 MHz

Channel 02: 2403 MHz

Channel 03: 2404 MHz

Channel 04: 2405 MHz

Channel 05: 2406 MHz

Channel 06: 2407 MHz

Channel 07: 2408 MHz

Channel 08: 2409 MHz

Channel 09: 2410 MHz

Channel 10: 2411 MHz

Channel 11: 2412 MHz

Channel 12: 2413 MHz

Channel 13: 2414 MHz

Channel 14: 2415 MHz

Channel 15: 2416 MHz

Channel 16: 2417 MHz

Channel 17: 2418 MHz

Channel 18: 2419 MHz

Channel 19: 2420 MHz

Channel 20: 2421 MHz

Channel 21: 2422 MHz

Channel 22: 2423 MHz

Channel 23: 2424 MHz

Channel 24: 2425 MHz

Channel 25: 2426 MHz

Channel 26: 2427 MHz

Channel 27: 2428 MHz

Channel 28: 2429 MHz

Channel 29: 2430 MHz

Channel 30: 2431 MHz

Channel 31: 2432 MHz

Channel 32: 2433 MHz

Channel 33: 2434 MHz

Channel 34: 2435 MHz

Channel 35: 2436 MHz

Channel 36: 2437 MHz

Channel 37: 2438 MHz

Channel 38: 2439 MHz

Channel 39: 2440 MHz

Channel 40: 2441 MHz

Channel 41: 2442 MHz

Channel 42: 2443 MHz

Channel 43: 2444 MHz

Channel 44: 2445 MHz

Channel 45: 2446 MHz

Channel 46: 2447 MHz

Channel 47: 2448 MHz

Channel 48: 2449 MHz

Channel 49: 2450 MHz

Channel 50: 2451 MHz

Channel 51: 2452 MHz

Channel 52: 2453 MHz

Channel 53: 2454 MHz

Channel 54: 2455 MHz

Channel 55: 2456 MHz

Channel 56: 2457 MHz

Channel 57: 2458 MHz

Channel 58: 2459 MHz

Channel 59: 2460 MHz

Channel 60: 2461 MHz

Channel 61: 2462 MHz

Channel 62: 2463 MHz

Channel 63: 2464 MHz

Channel 64: 2465 MHz

Channel 65: 2466 MHz

Channel 66: 2467 MHz

Channel 67: 2468 MHz

Channel 68: 2469 MHz

Channel 69: 2470 MHz

Channel 70: 2471 MHz

Channel 71: 2472 MHz

Channel 72: 2473 MHz

Channel 73: 2474 MHz

Channel 74: 2475 MHz

Channel 75: 2476 MHz

Channel 76: 2477 MHz

Channel 77: 2478 MHz

Channel 78: 2479 MHz

Channel 79: 2480 MHz

Frequency Range : 2.402 GHz to 2.480 GHz

Note :

1. All channels located in the frequency range as below :

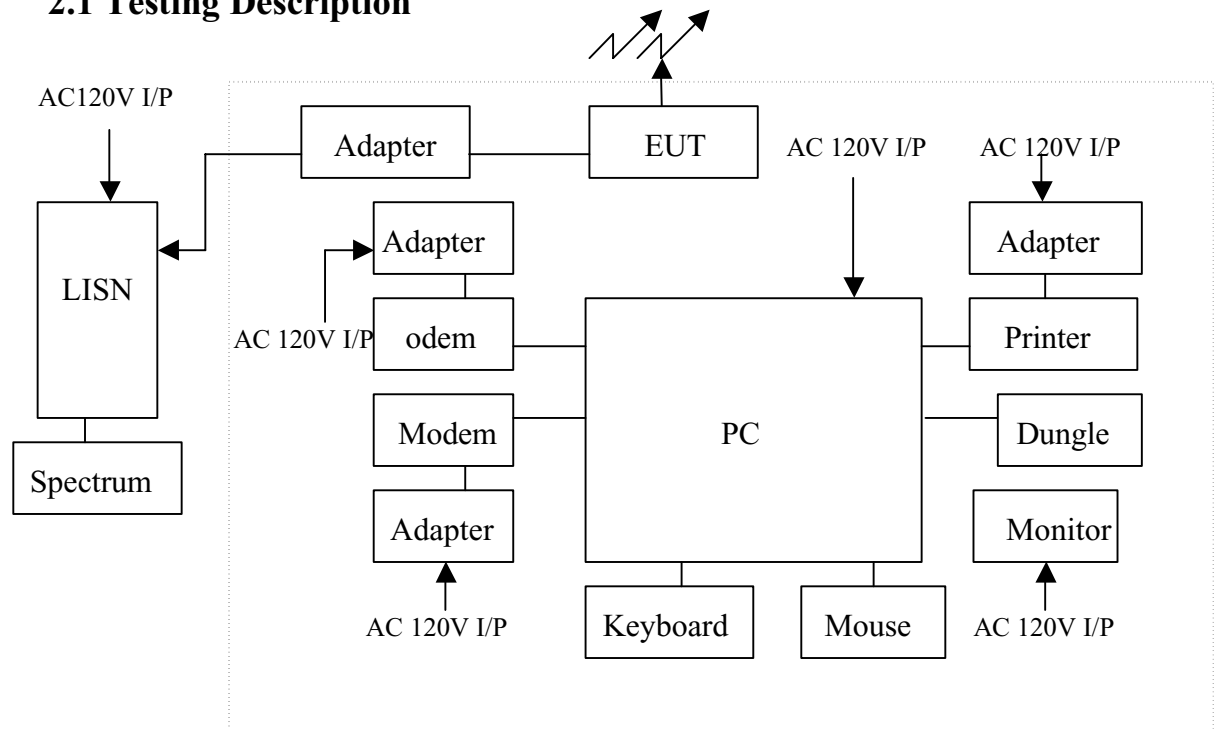
2.4 GHz --- 2.4835 GHz ☒ Yes ☐ No

Typical Channel for testing :

Channel	Channel Number	Frequency (GHz)
LOW	1	2.402
MID	40	2.441
HIGH	79	2.480

II . 15.207 Power Line Conducted Emission Test

2.1 Testing Description



2.2 Software Using

The driver of “CSR BlueSuite” is used to select the support channel as mentioned on section 1.3 (b) listed above

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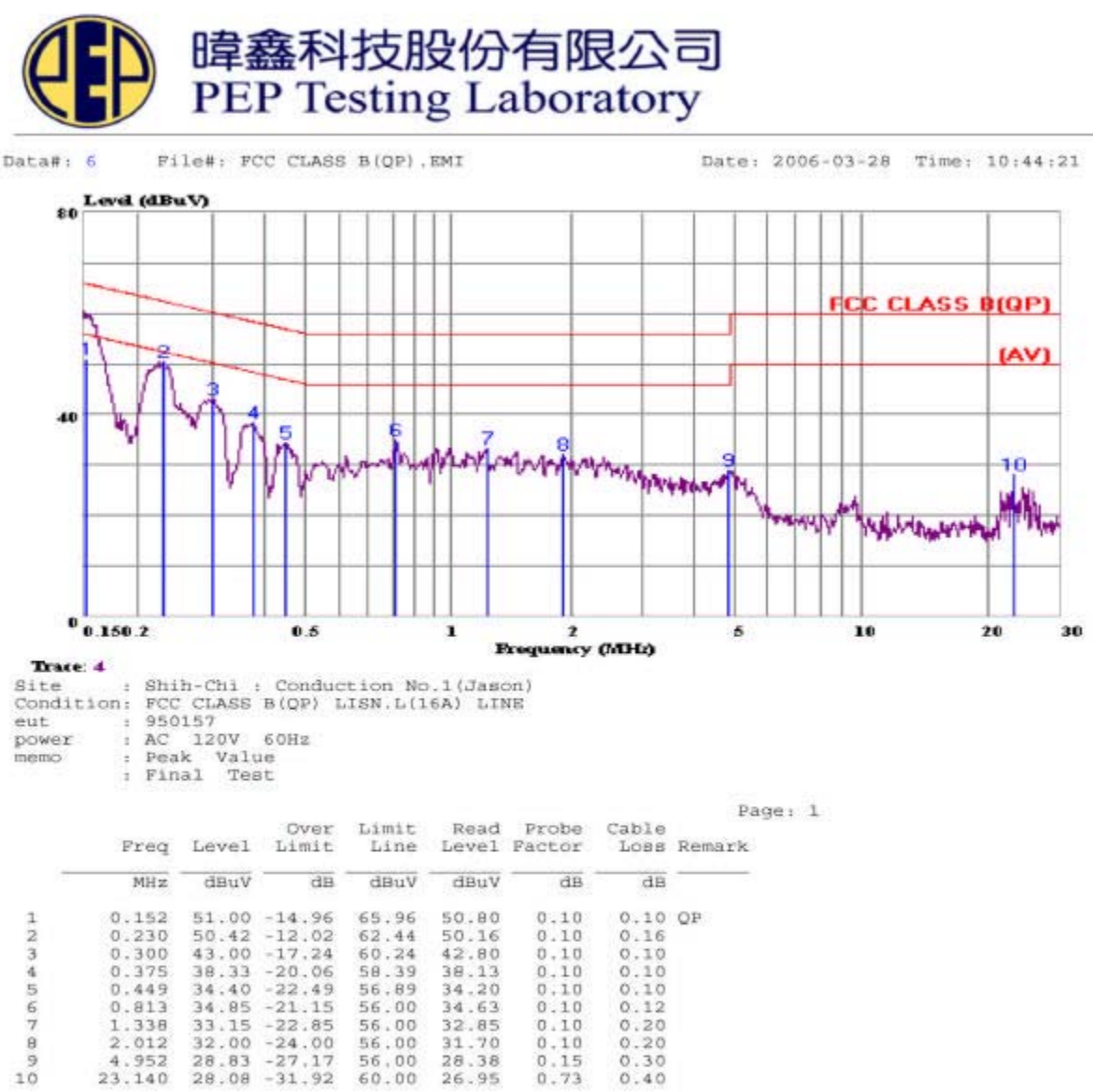
FCC ID : SRKWPB74S

REPORT NO. : E950157

2.3 Test Result

EUT Model No. GPS BT-74S (LINE)

Detector : Peak Value



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FCC ID : SRKWPB74S

REPORT NO. : E950157

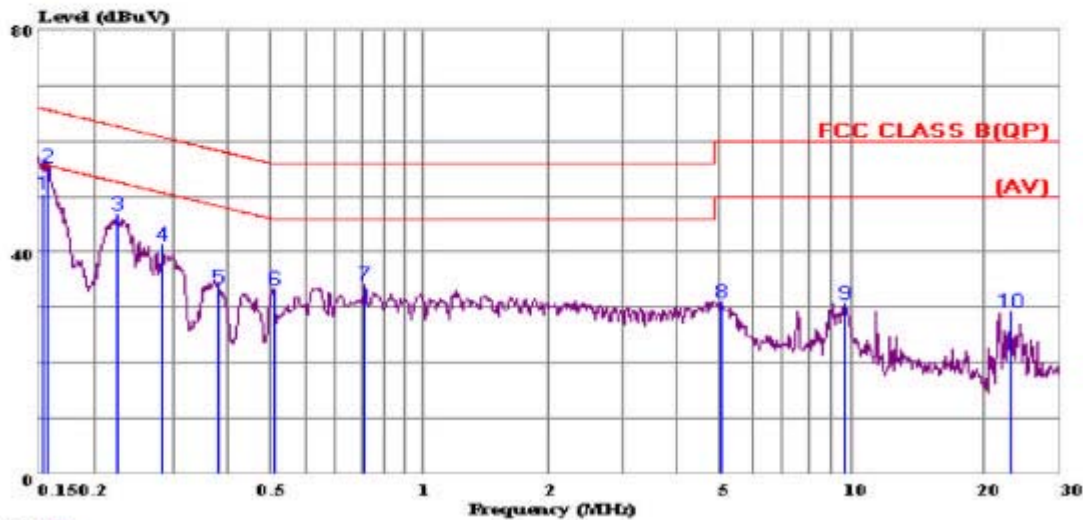
EUT Model No.: GPS BT-74S (NEUTRAL)

Detector : Peak Value



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Data#: 12 File#: FCC CLASS B(QP).EMI Date: 2006-03-28 Time: 10:52:13



Trace: 10
Site : Shih-Chi : Conduction No.1(Jason)
Condition: FCC CLASS B(QP) LISN,N(16A) NEUTRAL
eut : 950157
power : AC 120V 60Hz
memo : Peak Value
: Final Test

Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.153	50.41	-15.59	66.00	50.21	0.10	0.10	QP
2	0.157	55.21	-10.39	65.60	55.01	0.10	0.10	
3	0.226	46.84	-15.77	62.61	46.59	0.10	0.15	
4	0.285	41.34	-19.34	60.68	41.11	0.10	0.13	
5	0.381	33.41	-24.84	58.25	33.21	0.10	0.10	
6	0.507	33.18	-22.82	56.00	32.89	0.10	0.19	
7	0.813	34.01	-21.99	56.00	33.79	0.10	0.12	
8	5.166	30.98	-29.02	60.00	30.55	0.15	0.28	
9	9.757	30.64	-29.36	60.00	30.05	0.29	0.30	
10	23.140	29.33	-30.67	60.00	28.37	0.56	0.40	

2.4 Conducted Emission Test Photo

EUT Model No. GPS BT-74S

< FRONT VIEW >



III. §15.247(a)(1) : Hopping Channel Frequency Separation

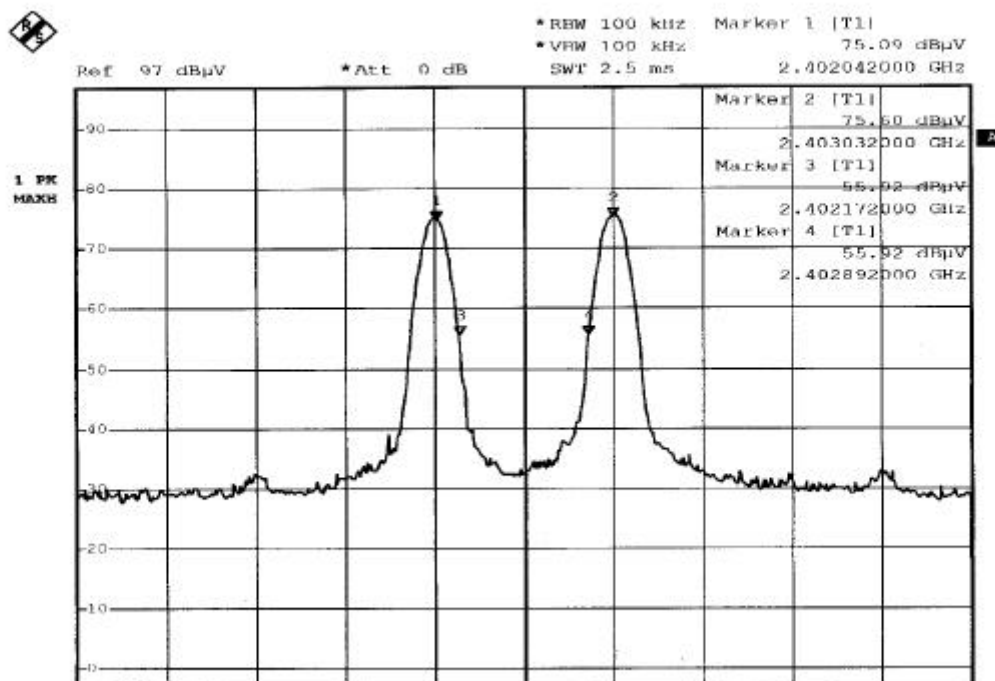
3.1 Test Procedure

- (1)The Hopping Channel Frequency Separation was measured in max hold analyzer mode with span wide enough to capture the peaks of two adjacent channels.
- (2)Set the Spectrum as RBW=VBW=100KHz
- (3) 3.3 Spectrum Plot Data show the Frequency Separation test results.

3.2 Test result of Frequency Separation

	Measured Separation (KHz)	Limit (KHz)	Pass/Fail
Channel Separation	990	25	Pass
Separation at -20dB	720	25	Pass

3.3 Spectrum Plot Data



IV. §15.247(a)(1) : 20dB Bandwidth

4.1 Test Procedure

- (1)The 20dB bandwidth was measured at the EUT antenna terminal in max hold analyzer mode with span wide enough to capture the hopping channel emissions.
- (2)Set the Spectrum as RBW=VBW=10KHz
- (3) 4.2 Spectrum Plot Data show the 20dB Bandwidth test results.

4.2 Test result of Bandwidth

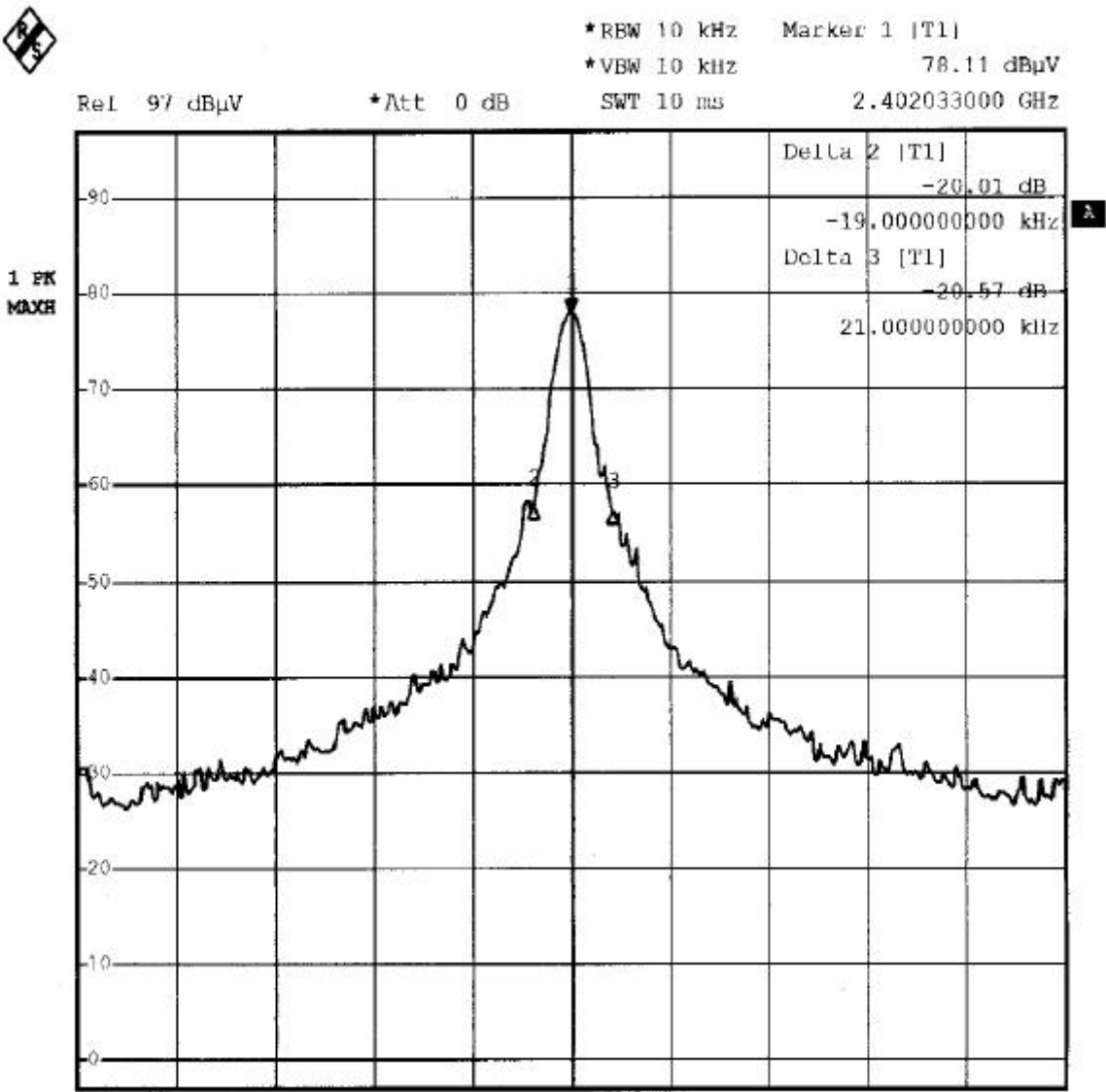
EUT Model No. GPS BT-74S

Channel	Antenna Polarity	Bandwidth (KHz)	Limit (KHz)	Pass/Fail
LOW	H	40	1000	Pass
	V	37	1000	Pass
MID	H	41	1000	Pass
	V	38	1000	Pass
HIGH	H	39	1000	Pass
	V	36	1000	Pass

4.3 Spectrum Plot Data

Channel : CH LOW

Polarity : Horizontal



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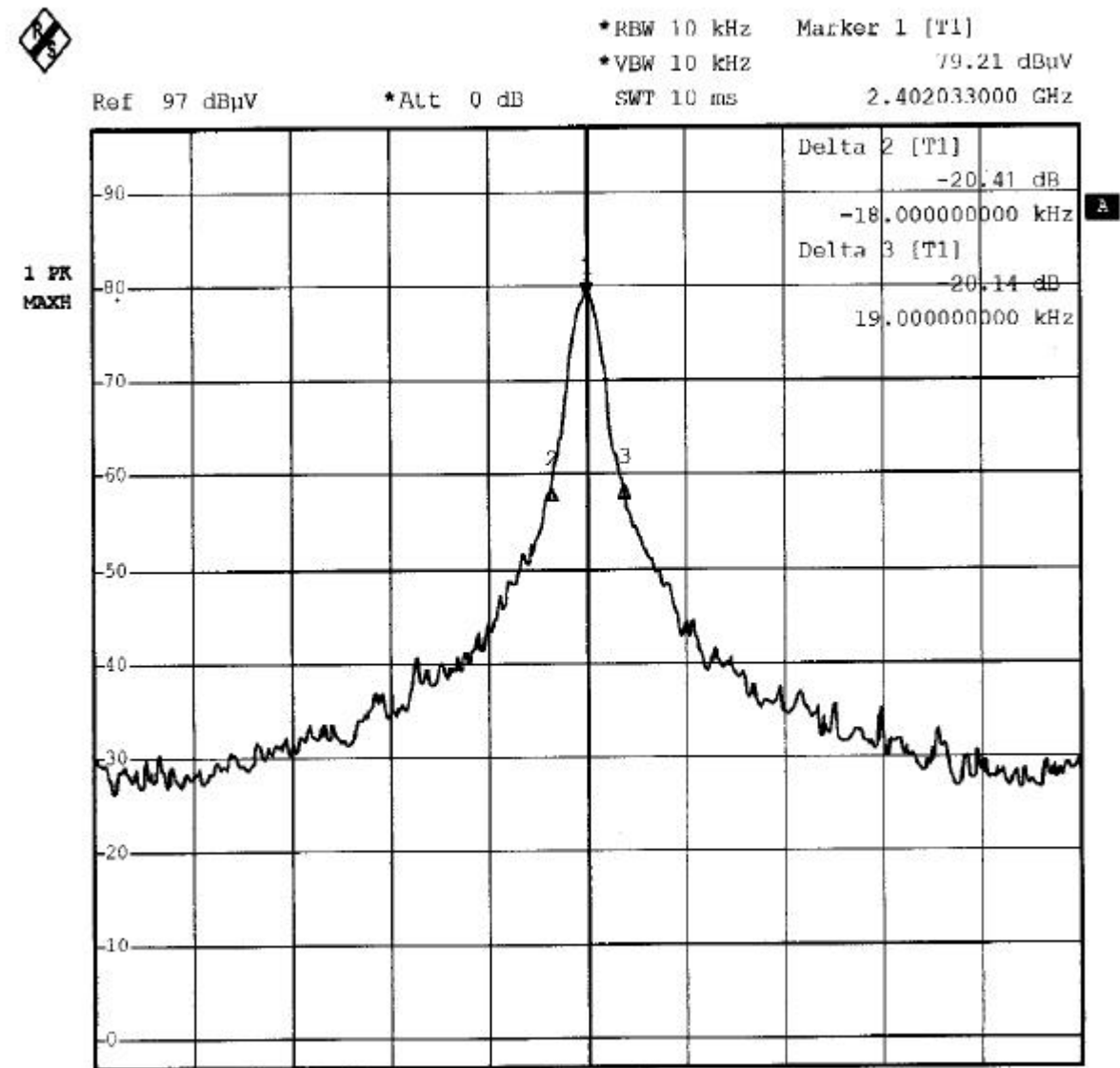
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REPORT NO. : E950157

Channel : CH LOW

Polarity : Vertical



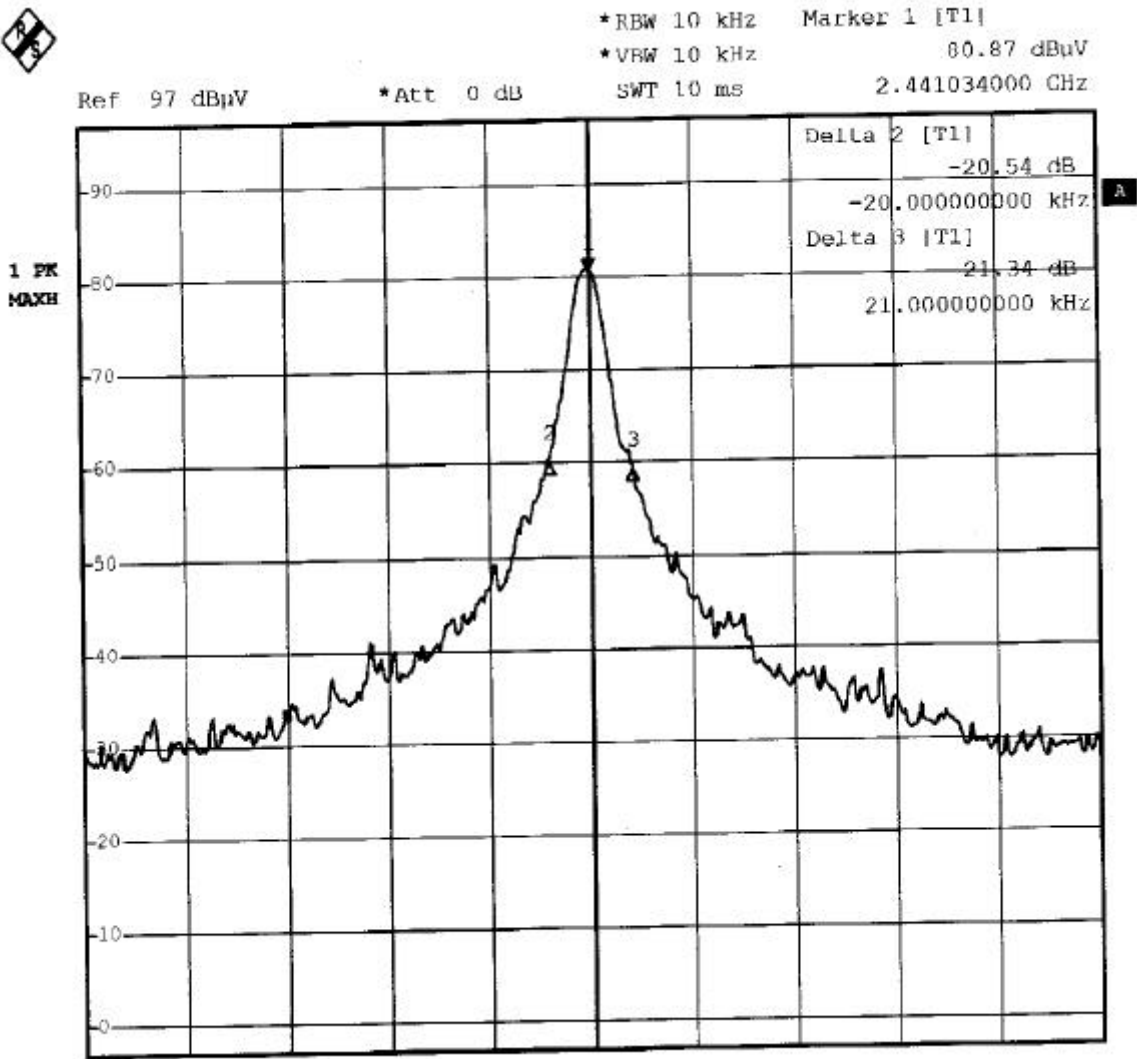
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FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH MID
Polarity : Horizontal



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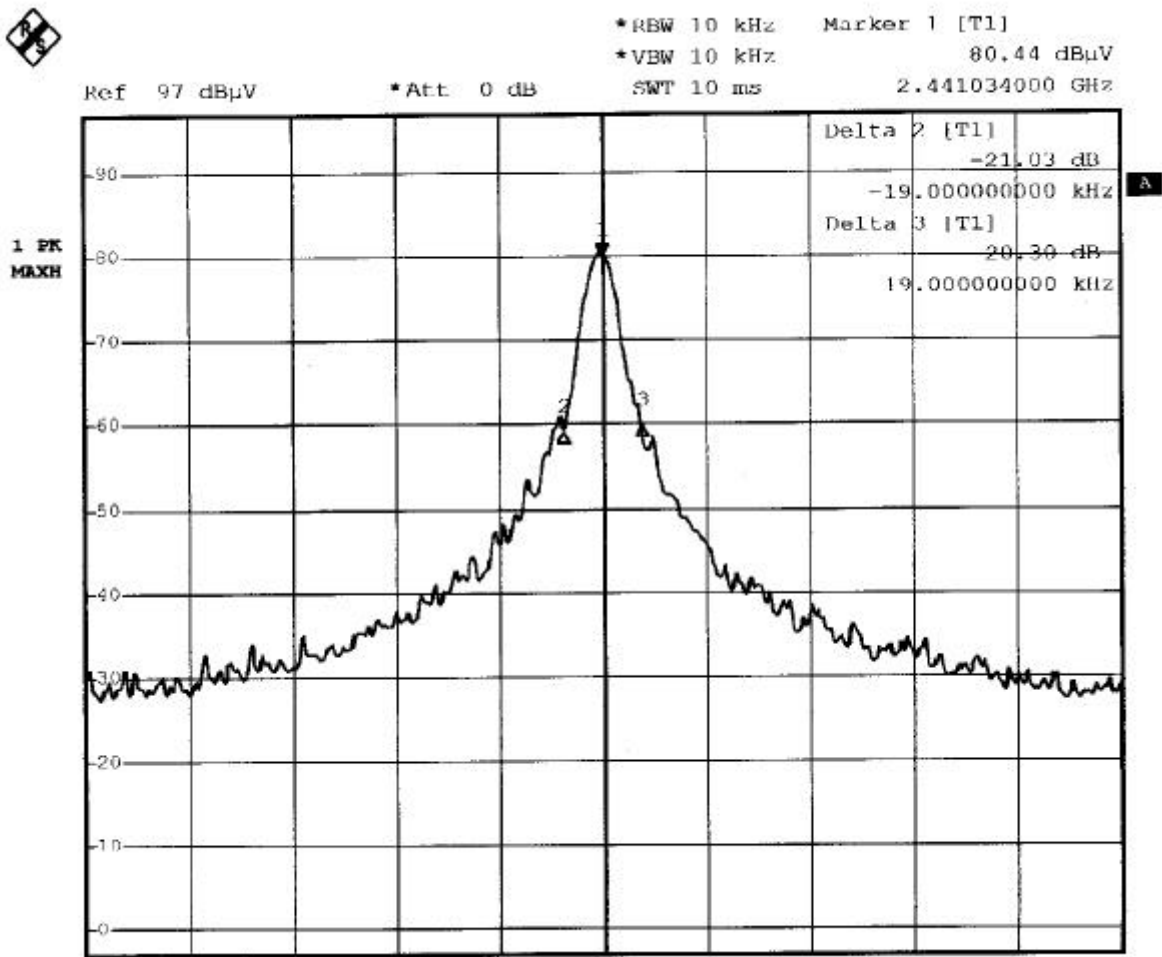
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TEL: 886-2-26922097 FAX: 886-2-26956236

FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH MID

Polarity : Vertical



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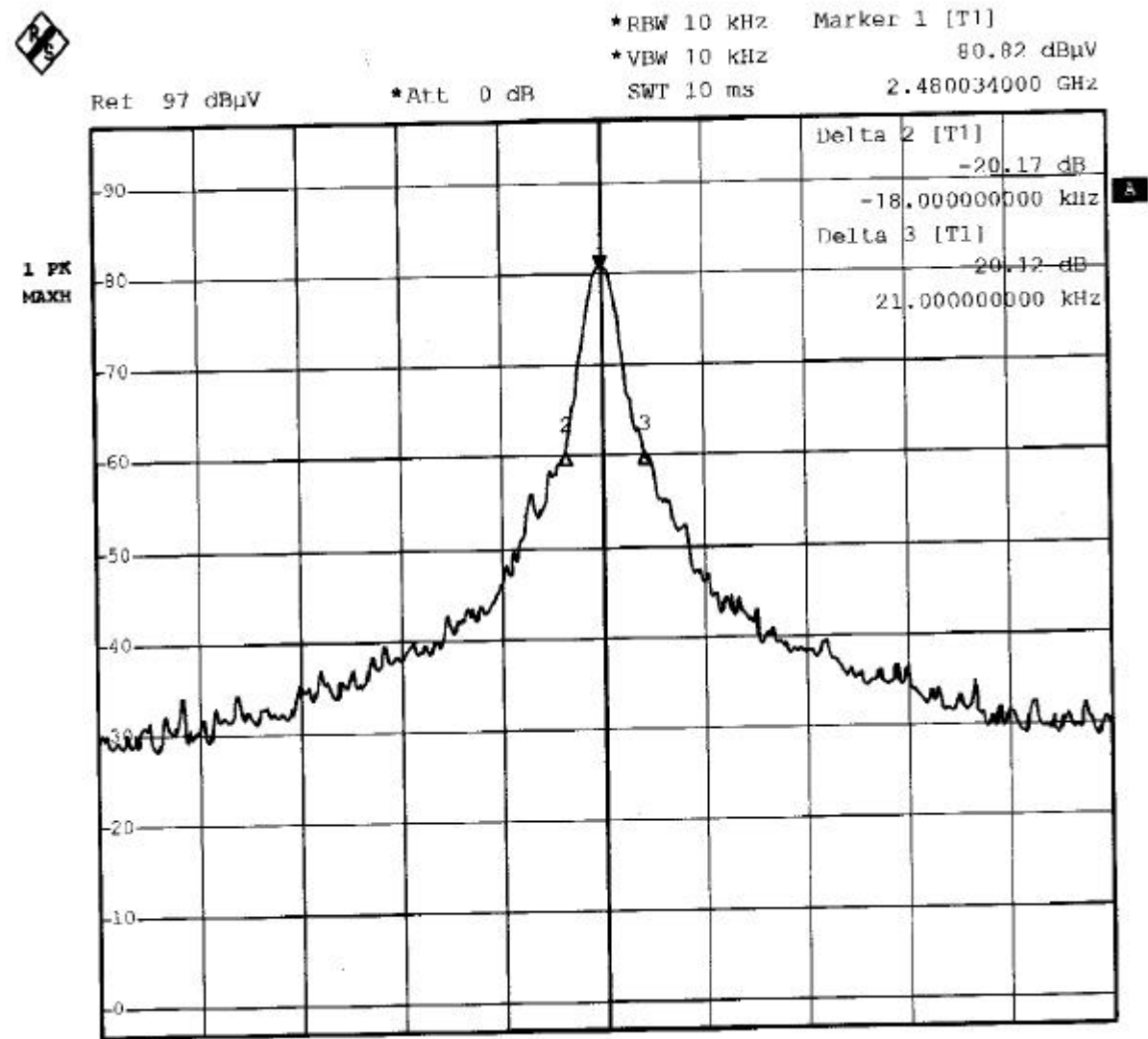
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FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH HIGH

Polarity : Horizontal



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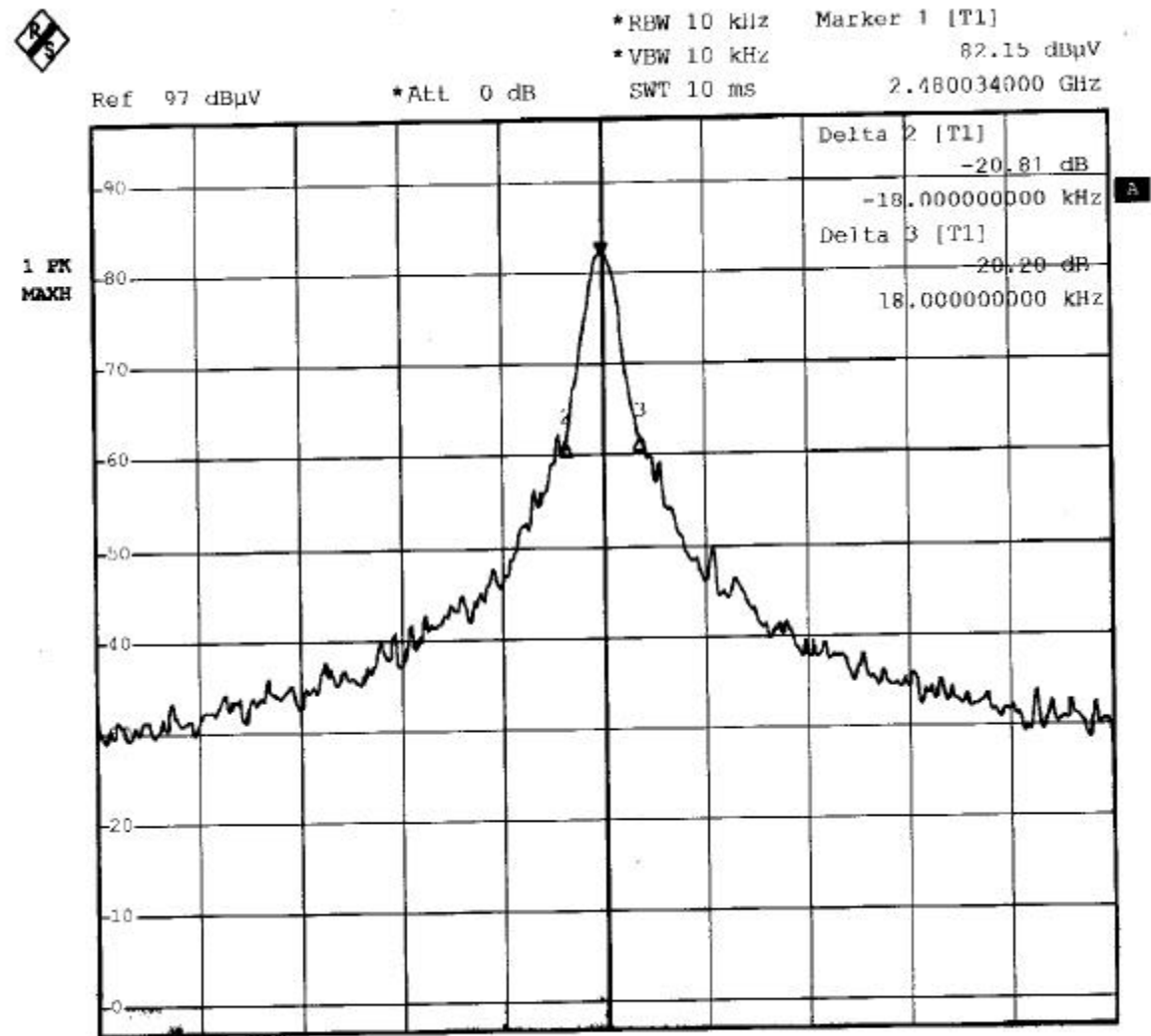
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FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH HIGH

Polarity : Vertical



V. §15.247(a) (1): Time of Occupancy(Dwell Time)

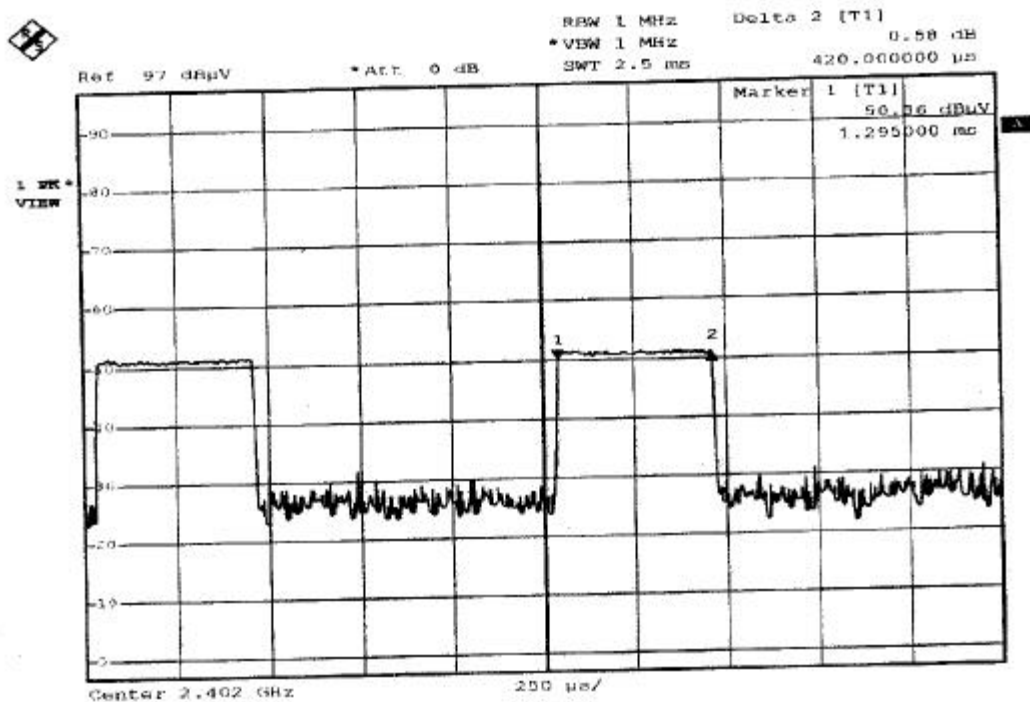
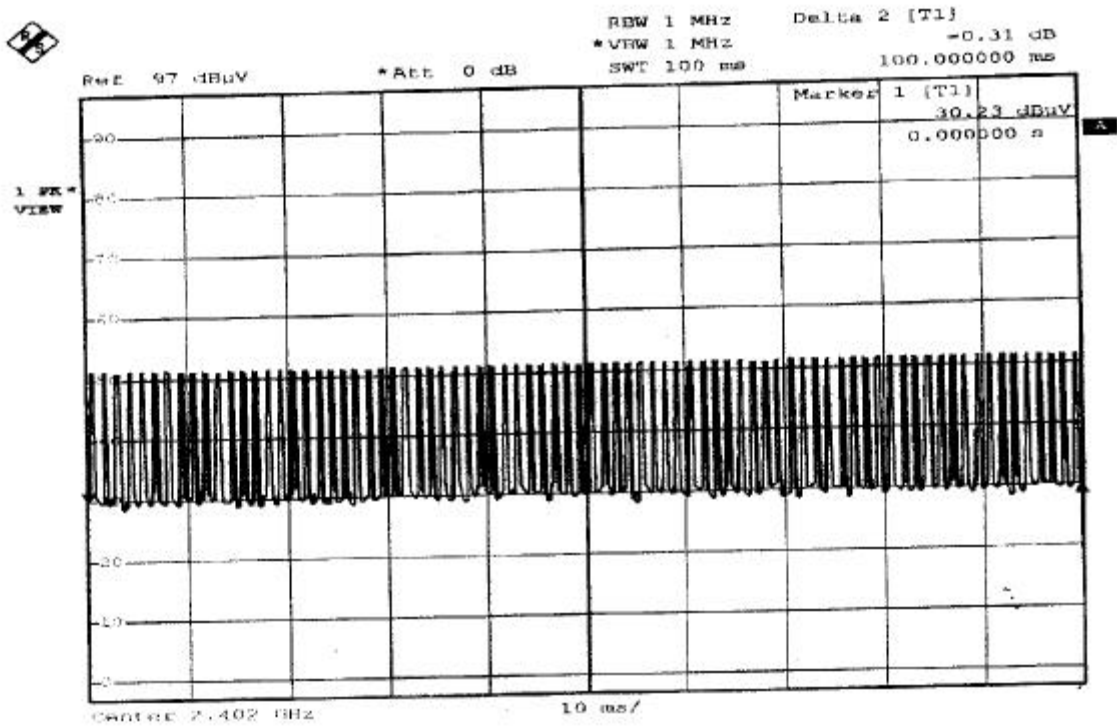
5.1 Test Procedure

- (1)The Time of Occupancy was measured in “max hold” analyzer mode with zero span and different sweep time to calculate the Time of Occupancy.
- (2)Set the Spectrum as RBW=VBW=1MHz
- (3)5.3 Spectrum Plot Data show the Time of Occupancy test results.

5.2 Test Result of Dwell Time

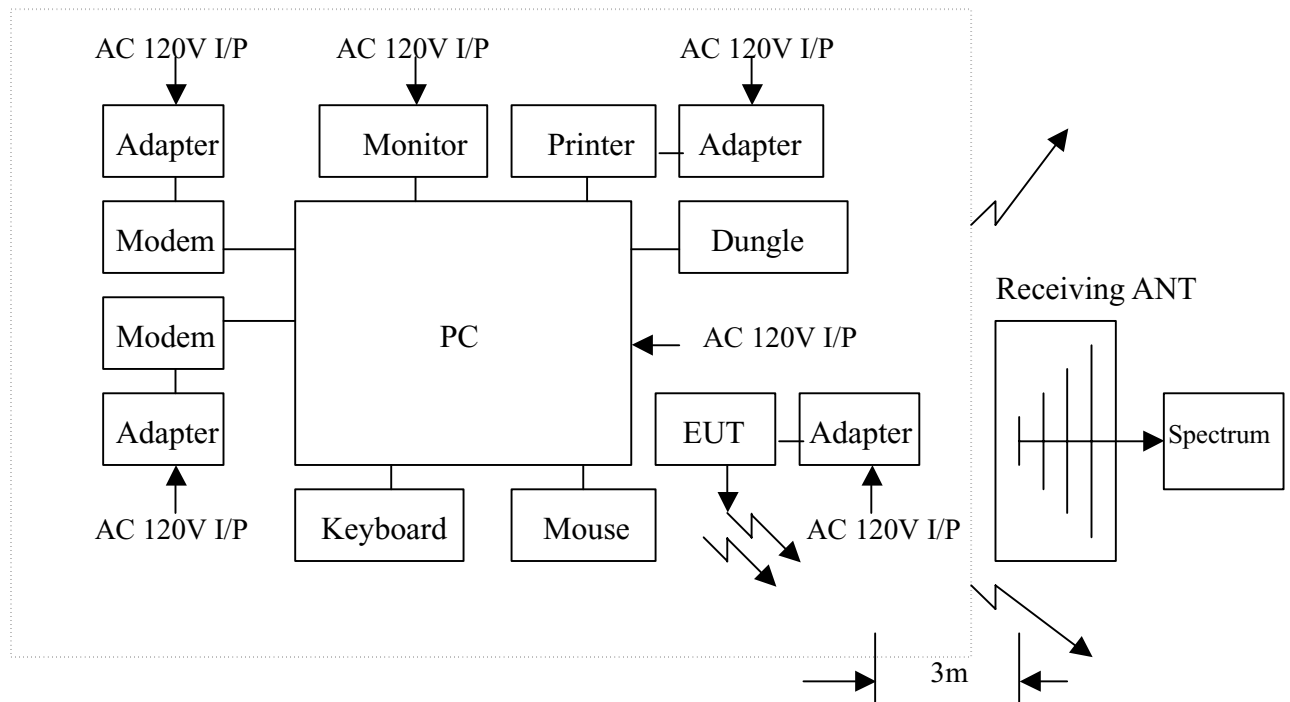
Dwell Time= $0.42 \times 80 = 33.6\text{ms} < 0.4\text{s}$

5.3 Spectrum Plot Data



VI. §15.247(b) : The maximum peak output power ($\leq 1\text{watt}$)

6.1 Testing Description



Three channels were tested : CH LOW, CH MID AND CH HIGH Measurements were taken by using both horizontal and vertical antenna polarization, and the antenna was raised and lowered from one to four meters to find the worst emission levels.

6.2 Software Using

The driver of “CSR BlueSuite” is used to select the support channel as mentioned on section 1.3 (b) listed above

6.3 Test Result of Fundamental Emissions

EUT Model No. GPS BT-74S

Channel	Frequency (MHz)	Antenna Polarity (H/V)	Level (dBuV/m)	E.I.R.P. (W)
LOW	2402.02	H	76.31	1.28×10^{-5}
	2402.08	V	76.26	1.27×10^{-5}
MID	2440.98	H	77.58	1.72×10^{-5}
	2441.04	V	78.69	2.22×10^{-5}
HIGH	2480.08	H	78.76	2.25×10^{-5}
	2480.02	V	80.57	3.42×10^{-5}

Note :

1. Level means emission amplitude = S.P. + C.F. + duty cycle factor
2. Conducted output power : $P = (E d)^2 / 30G$
where $E (V) = \text{Level (V)}$
 $d (m) = \text{measurement distance} = 3m$
 $G = 1$ (the gain of the transmitting antenna over isotropic antenna)
 $P = \text{E.I.R.P.}$
3. Example :
If Level = 120 dBuV/m
 $10^{(120/20)} \times 10^{-6} = 1 \text{ V}$
 $\text{E.I.R.P.} = (1 \times 3)^2 / 30 = 300 \text{ mW}$

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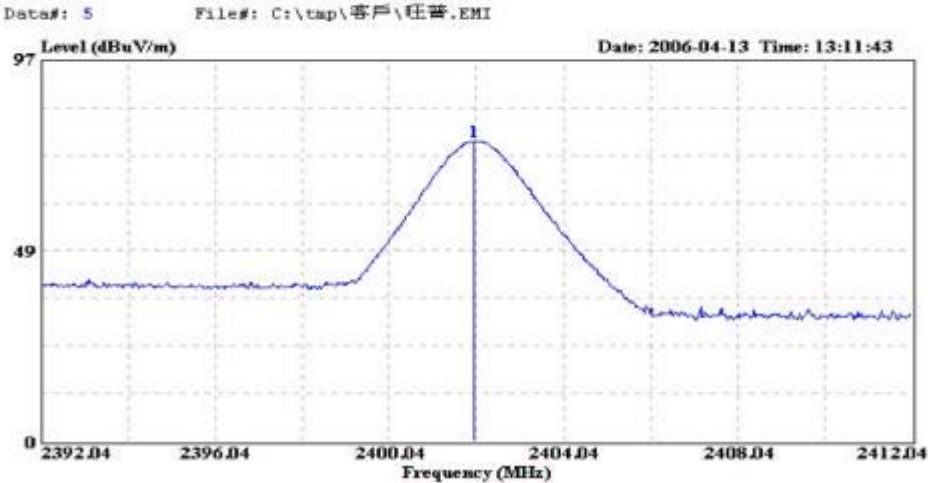
EUT Model No. GPS BT-74S

Channel : CH LOW

Polarity : Horizontal



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Site : Shih-Chi : Chamber No.1
Condition : 3m HORN.3H HORIZONTAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : LOW

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark
			dB	dBuV/m	dBuV	dB	dB	dB	
1	2402.000	76.42	-----	-----	76.53	28.48	4.08	34.67	

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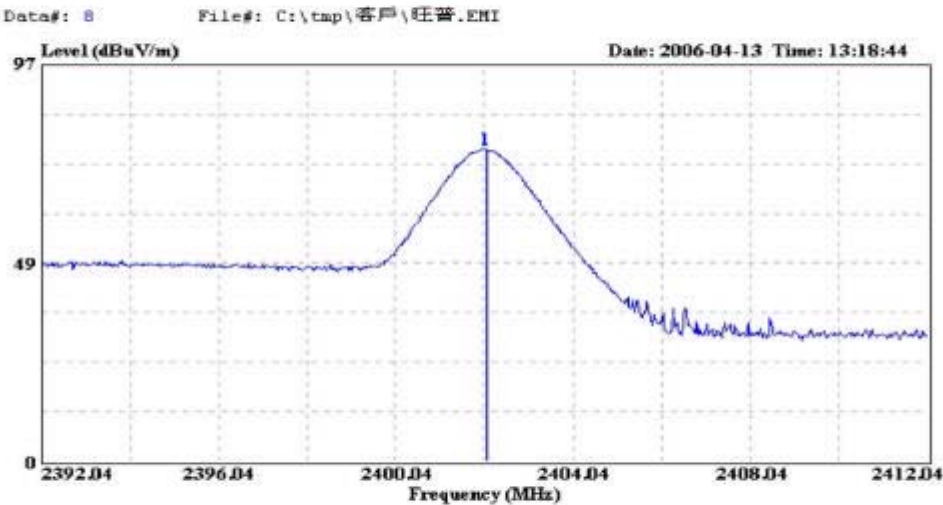
REPORT NO. : E950157

Channel : CH LOW

Polarity : Vertical



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Site : Shih-Chi : Chamber No.1
Condition : 3m HORN, 3V VERTICAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : LOW

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark
			dB	dBuV/m	dBuV	dB	dB	dB	
1	2402.080	76.26	-----	-----	78.37	28.48	4.08	34.67	

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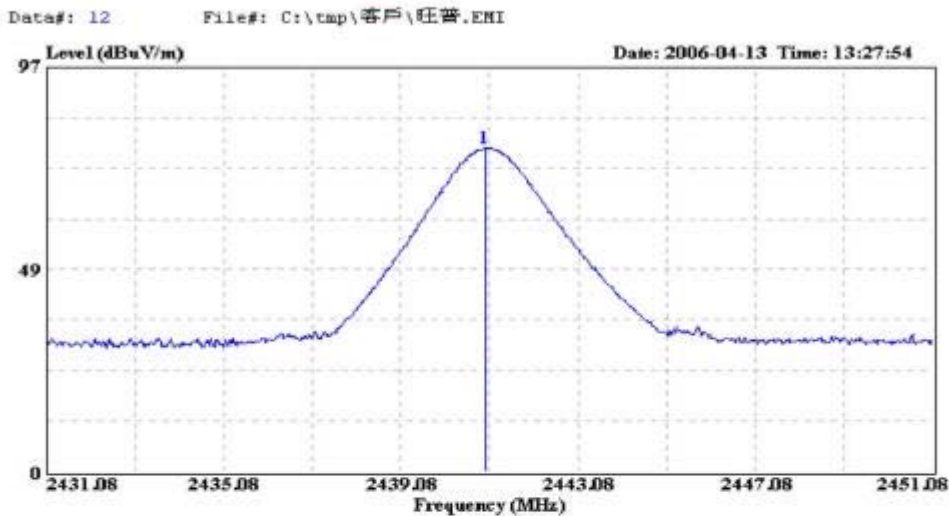
FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH MID
Polarity : Horizontal



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Site : Shih-Chi : Chamber No.1
Condition : 3m HORN, 3H HORIZONTAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : MID

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark
		dB	dBuV/m	dBuV	dB	dB	dB	
1	2440.980	77.58		79.59	28.53	4.14	34.68	

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FCC ID : SRKWPB74S

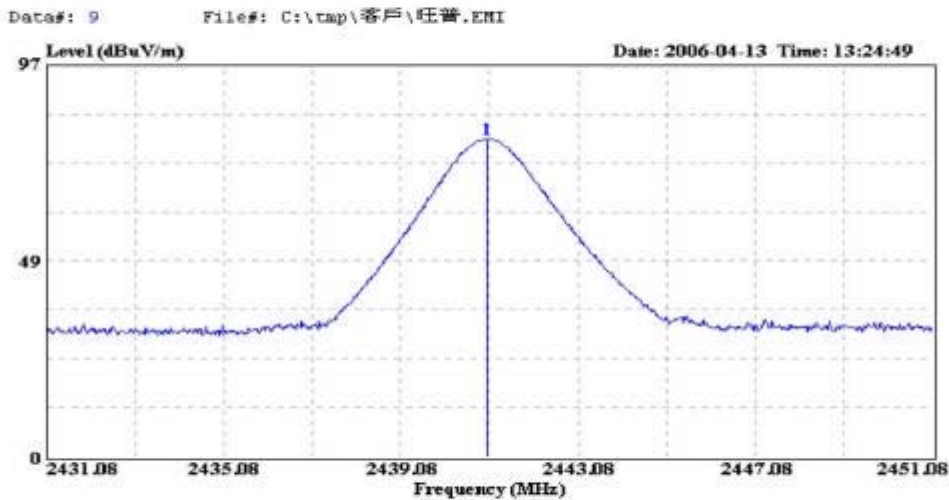
REPORT NO. : E950157

Channel : CH MID

Polarity : Vertical



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PEP Testing Laboratory



Site : Shih-Chi : Chamber No.1
Condition : 3m HORN.3V VERTICAL
EUT : E950157
Power : AC 120V 60Hz
Meno : TX ON
Meno : MID

Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark
		Limit	Line					
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1 2441.040	78.69	-----	-----	80.70	28.53	4.14	34.68	

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FCC ID : SRKWPB74S

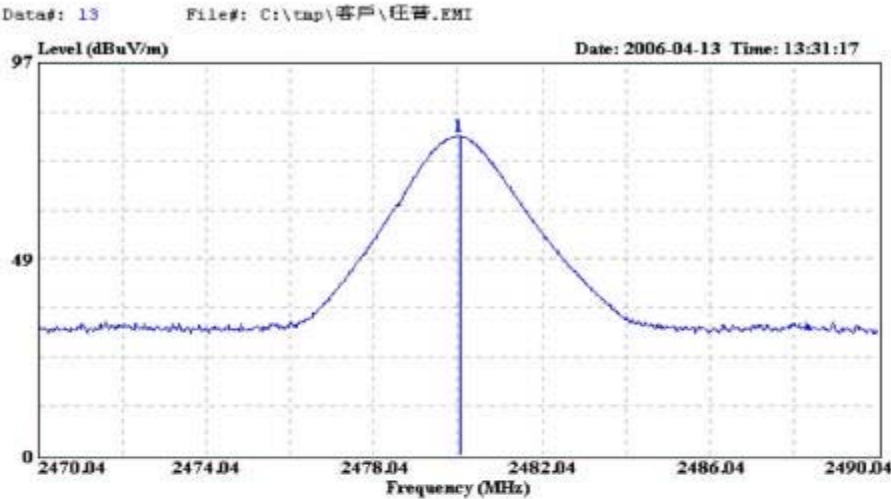
REPORT NO. : E950157

Channel : CH HIGH

Polarity : Horizontal



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Site : Shih-Chi : Chamber No.1
Condition : 3m HORN.3H HORIZONTAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : HIGH

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark
			dB	dBuV/m	dBuV	dB	dB	dB	
1	2480.080	78.76	-----	-----	80.70	28.59	4.17	34.70	

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REPORT NO. : E950157

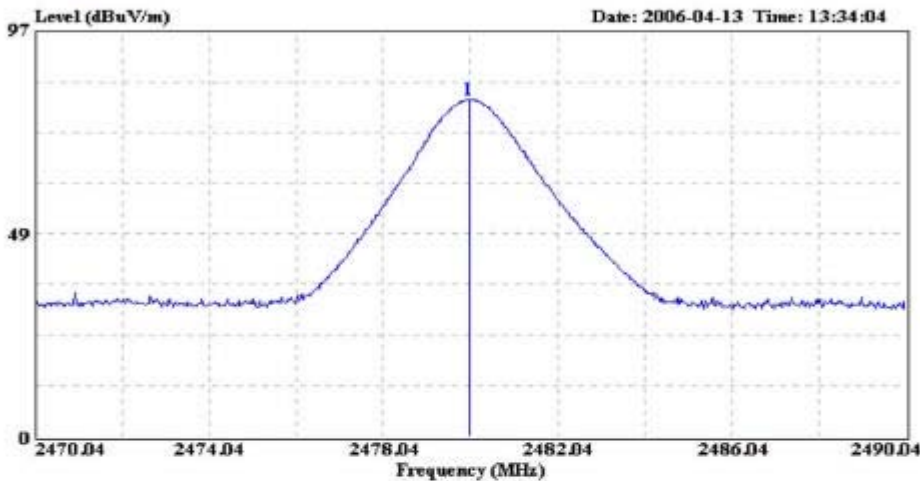
Channel : CH HIGH

Polarity : Vertical



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Data#: 16 File#: C:\tap\客戶\旺普.EMI



Site : Shih-Chi : Chamber No.1
Condition : 3m HORN.3V VERTICAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : HIGH

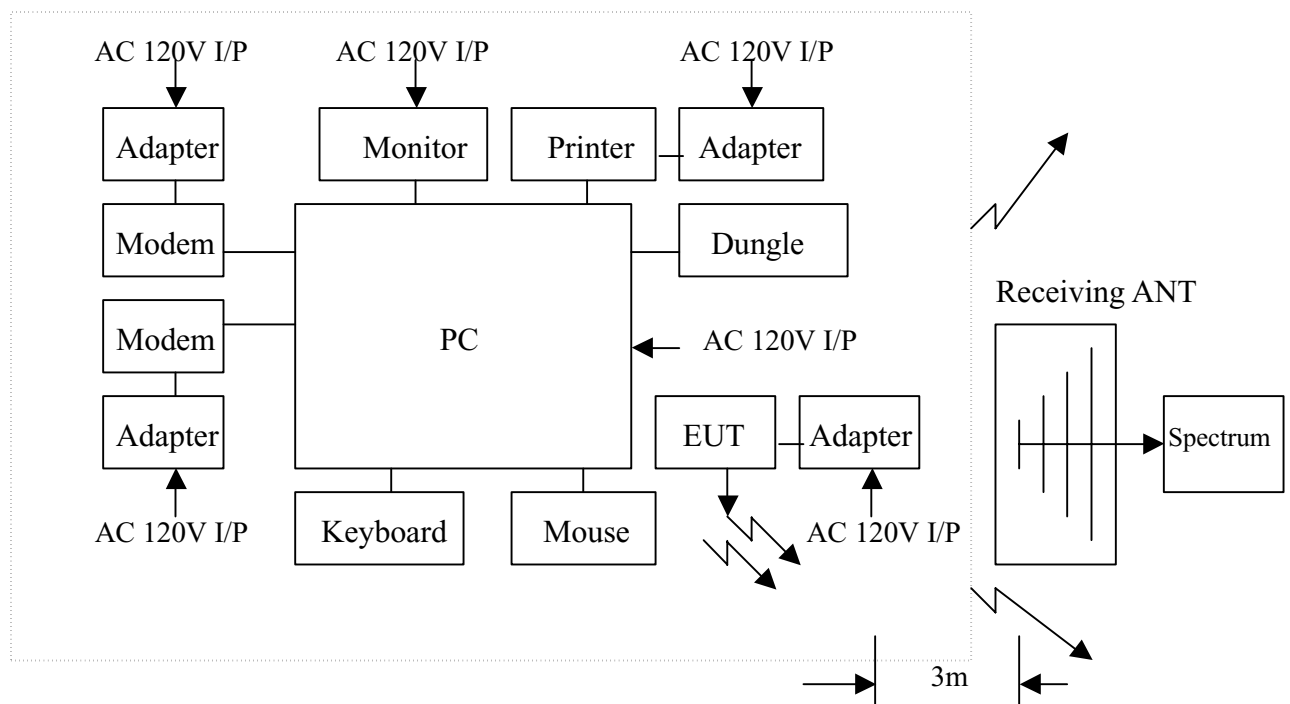
Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	Remark
		Limit	Line					
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1 2480.020	80.57	-----	-----	82.51	26.59	4.17	34.70	

VII. §15.247(b)(4) Maximum Permissible Exposure (MPE)

7.1 MPE distance calculation

$$d = \frac{\sqrt{30G \text{ EIRP}}}{E}$$

7.2 Device operating configurations exposure conditions



7.3 Maximum Permissible Exposure (MPE)**EUT Model No. GPS BT-74S**

Channel	Frequency (MHz)	A.P. (H/V)	Level (dBuV/m)	Power density at 20cm (m W / cm ²)
LOW	2402.02	H	76.31	5.70×10^{-8}
	2402.08	V	76.26	5.64×10^{-8}
MID	2440.98	H	77.58	7.64×10^{-8}
	2441.04	V	78.69	9.86×10^{-8}
HIGH	2480.08	H	78.76	1.00×10^{-7}
	2480.02	V	80.57	1.52×10^{-7}

Note :

1. P.” means antenna polarity .
2. “S.P.” Read means amplitude read by spectrum analyzer .
3. “C.F.” means corrected factor = antenna factor + cable loss - Preamplifier Gain .
4. Level means emission amplitude = S.P. + C.F. + duty cycle factor
5. Conducted output power : $P = (E d)^2 / 30G$
where $E (V) = \text{Level (V)}$
 $d (m) = \text{distance} = 20 \text{ cm}$
 $G = 1$ (the gain of the transmitting antenna over isotropic antenna)
 $P = \text{E.I.R.P.}$

6. Example :

If Level = 120 dBuV/m

$$10^{(120 / 20)} \times 10^{-6} = 1 \text{ V}$$

$$\text{E.I.R.P.} = (1 \times 3)^2 / 30 = 300 \text{ mW}$$

FCC ID : SRKWPB74S

REPORT NO. : E950157

VIII. §15.247(c) : Spurious Radiated Emissions**8.1 Out side band below 1GHz****Test Results :****Model No.** : GPS BT-74S**Frequency range** : 30MHz - 1GHz**Temperature** : 26° C**Detector** : Quasi-Peak Value**Humidity** : 54 %**Antenna polarization** : HORIZONTAL ; **Test distance** : 3 m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Remark
36.216	33.38	- 6.62	40.00	37.72	16.61	0.45	21.40	
44.651	30.73	- 9.27	40.00	38.76	12.86	0.51	21.40	
63.303	31.28	- 8.72	40.00	43.49	8.46	0.73	21.40	
134.317	26.30	-17.20	43.50	38.04	8.43	1.23	21.40	
491.871	35.66	-10.34	46.00	35.48	17.91	3.07	20.80	
503.779	37.23	- 8.77	46.00	36.81	18.10	3.11	20.79	

Antenna polarization : VERTICAL ; **Test distance** : 3 m ;

Freq. (MHz)	Level (dBuV/m)	Over Limit (dB)	Limit Line (dBuV/m)	Read Level (dBuV)	Probe Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Remark
34.939	28.06	-11.94	40.00	31.70	17.36	0.40	21.40	
79.468	32.54	- 7.46	40.00	45.04	8.09	0.81	21.40	
133.632	30.17	-13.33	43.50	41.94	8.41	1.22	21.40	
166.974	26.59	-16.91	43.50	36.77	9.72	1.50	21.40	
431.036	34.09	-11.91	46.00	35.66	16.55	2.83	20.95	
478.614	36.52	- 9.48	46.00	36.56	17.74	3.02	20.80	

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor

2. Over Limit = Level – Limit Line

3. All the other frequencies are under the limits more than 20dB

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FCC ID : SRKWPB74S

REPORT NO. : E950157

8.2 Out side band above 1GHz

Test Results :

Model No. : GPS BT-74S

Frequency range : above 1GHz

Temperature : 26° C

Channel : LOW

Detector : Peak / Average Value

Humidity : 54 %

Antenna polarization : HORIZONTAL ; Test distance : 3 m ;

Freq.	Level	Over Limit	Read	Probe	Cable	Preamp	
(MHz)	(dBuV/m)	Limit (dB)	Line (dBuV/m)	Level (dBuV)	Factor (dB/m)	Loss (dB)	Factor (dB)
4805.000	44.44	-29.56	74	39.82	32.80	5.93	34.11
							PK

Antenna polarization : VERTICAL ; Test distance : 3 m ;

Freq.	Level	Over Limit	Read	Probe	Cable	Preamp	
(MHz)	(dBuV/m)	Limit (dB)	Line (dBuV/m)	Level (dBuV)	Factor (dB/m)	Loss (dB)	Factor (dB)
4804	41.41	-32.59	74	36.79	32.80	5.93	34.11
							PK

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line
3. All the other frequencies are under the limits more than 20dB

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FCC ID : SRKWPB74S

REPORT NO. : E950157

Model No. : GPS BT-74S

Frequency range : above 1GHz

Temperature : 26° C

Channel : MID

Detector : Peak / Average Value

Humidity : 54 %

Antenna polarization : HORIZONTAL ; Test distance : 3 m ;

		Over	Limit	Read	Probe	Cable	Preamp	
Freq.	Level	Limit	Line	Level	Factor	Loss	Factor	Remark
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	
4882	45.32	-28.68	74	40.32	33.10	5.96	34.06	PK

Antenna polarization : VERTICAL ; Test distance : 3 m ;

		Over	Limit	Read	Probe	Cable	Preamp	
Freq.	Level	Limit	Line	Level	Factor	Loss	Factor	Remark
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	
4882	42.06	-31.94	74	37.06	33.10	5.96	34.06	PK

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line
3. All the other frequencies are under the limits more than 20dB

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FCC ID : SRKWPB74S

REPORT NO. : E950157

Model No. : GPS BT-74S

Frequency range : above 1GHz

Temperature : 26° C

Channel : HIGH

Detector : Peak / Average Value

Humidity : 54 %

Antenna polarization : HORIZONTAL ; Test distance : 3 m ;

		Over	Limit	Read	Probe	Cable	Preamp	
Freq.	Level	Limit	Line	Level	Factor	Loss	Factor	Remark
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	
4960	46.14	-27.86	74	40.77	33.40	5.99	34.02	PK

Antenna polarization : VERTICAL ; Test distance : 3 m ;

		Over	Limit	Read	Probe	Cable	Preamp	
Freq.	Level	Limit	Line	Level	Factor	Loss	Factor	Remark
(MHz)	(dBuV/m)	(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	
4960	41.31	-32.69	74	35.94	33.40	5.99	34.02	PK

Note :

1. Level = Read Level + Probe Factor + Cable Loss – Preamp Factor
2. Over Limit = Level – Limit Line
3. All the other frequencies are under the limits more than 20dB

8.3 Spurious Radiate Emission Testing Photos

EUT Model No. GPS BT-74S

< FRONT VIEW >



< REAR VIEW >



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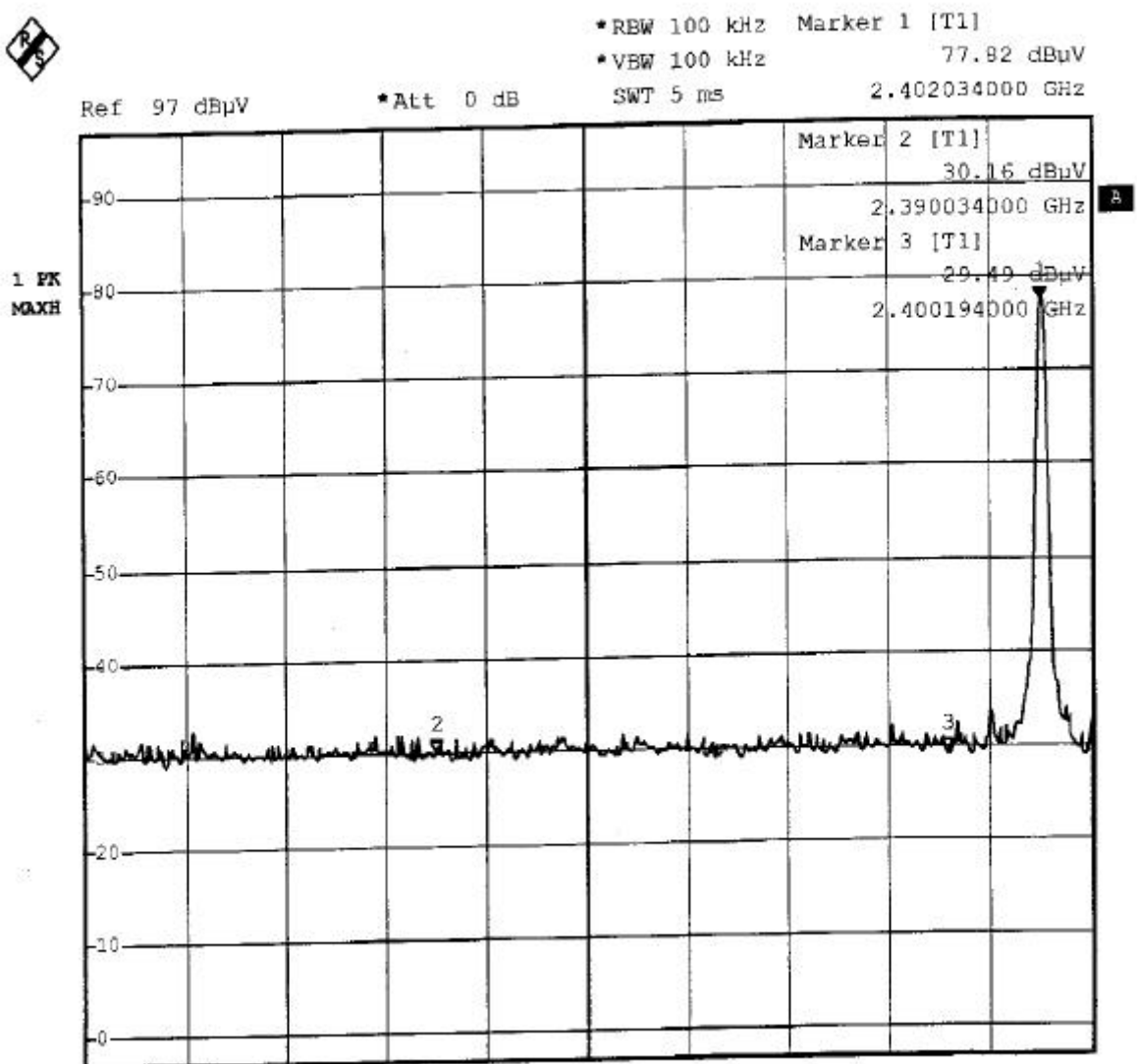
FCC ID : SRKWPB74S

REPORT NO. : E950157

IX. §15.247(c) : Band-edges Compliance

Channel : CH LOW

Polarity : Horizontal



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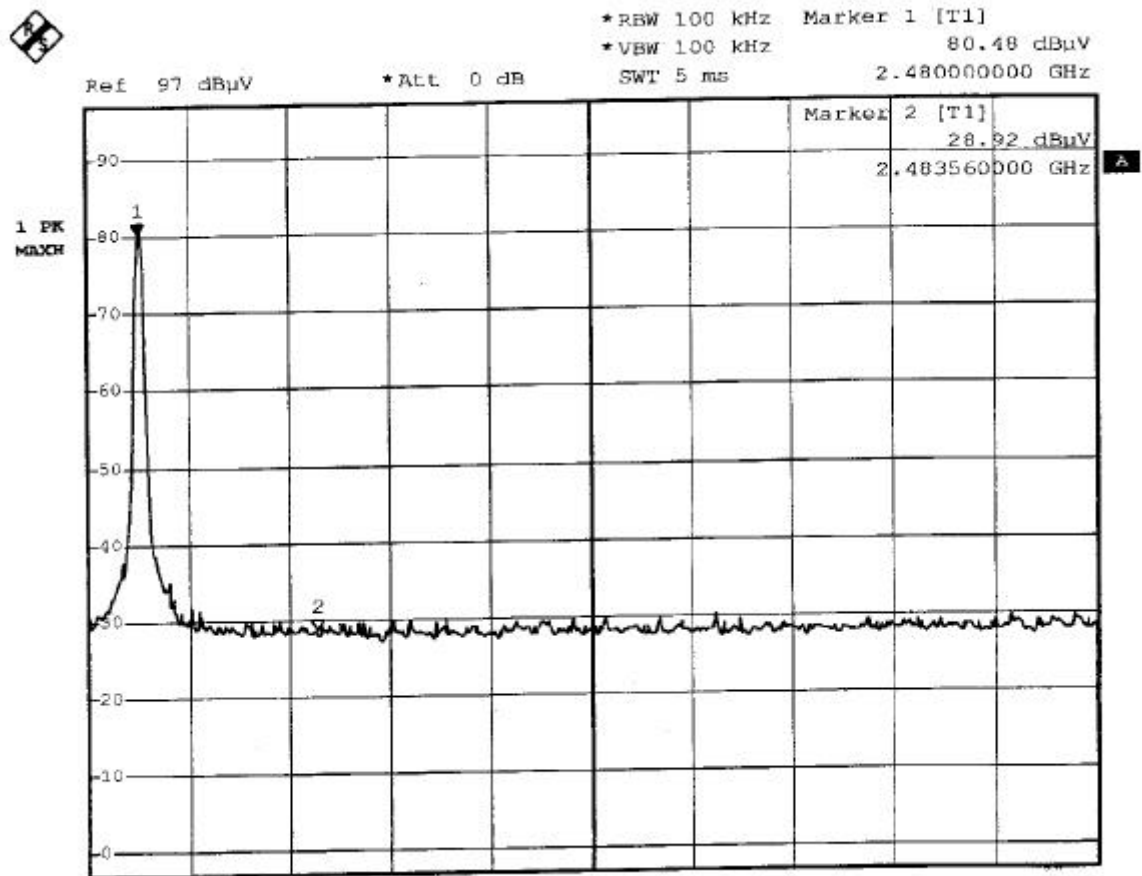
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
Taipei Hsien, Taiwan, R. O. C.
TEL: 886-2-26922097 FAX: 886-2-26956236

FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH HIGH

Polarity : Horizontal



Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

$78.31\text{dBuV/m} - 37.04\text{ dBuV/m} = 41.27\text{dBuV/m}$

$78.31\text{ dBuV/m} - 41.27\text{ dBuV/m} = 36.95\text{ dBuV/m}$

$*37.04\text{dBuV/m} < \text{Average Limit (54dBuV/m)}$

PEP Testing Laboratory

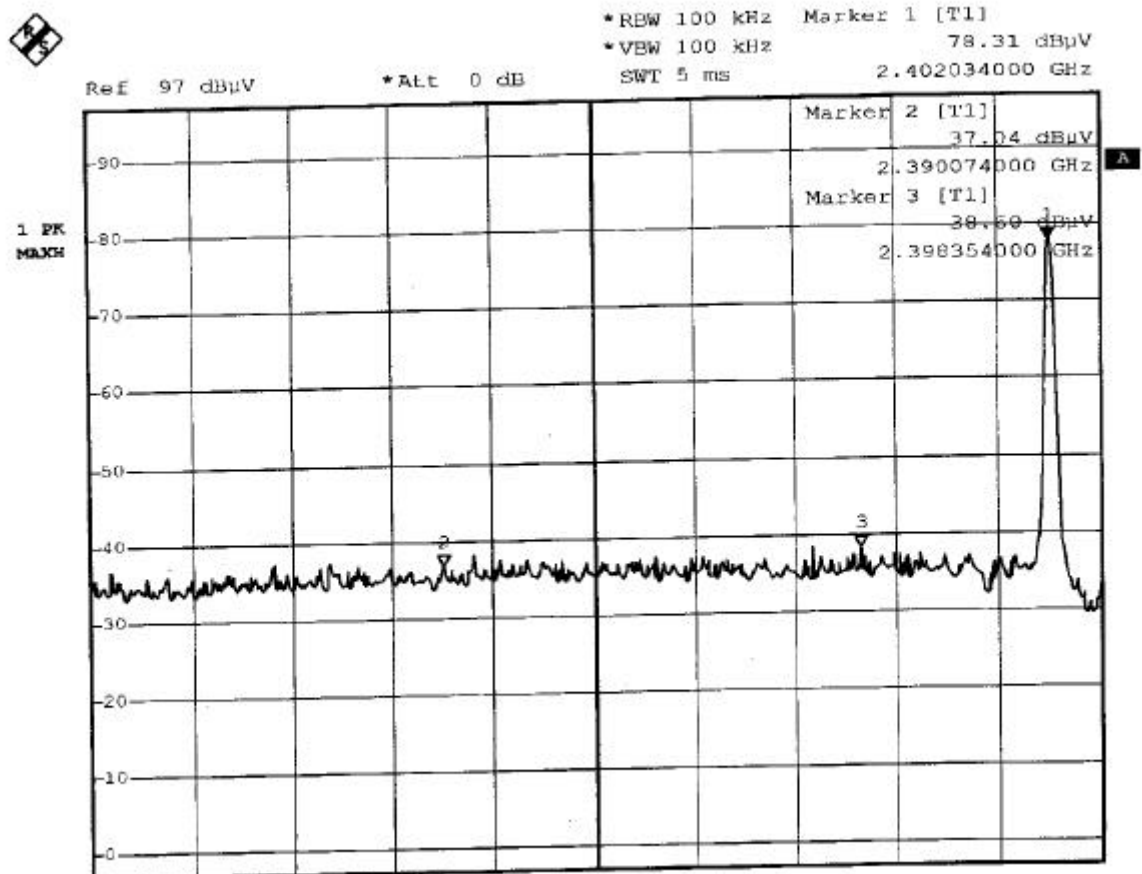
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
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FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH LOW

Polarity : Vertical



Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

$80.48\text{dBuV/m} - 28.92\text{ dBuV/m} = 51.56\text{dBuV/m}$

$80.48\text{ dBuV/m} - 51.56\text{ dBuV/m} = 28.92\text{ dBuV/m}$

$*28.92\text{dBuV/m} < \text{Average Limit (54dBuV/m)}$

PEP Testing Laboratory

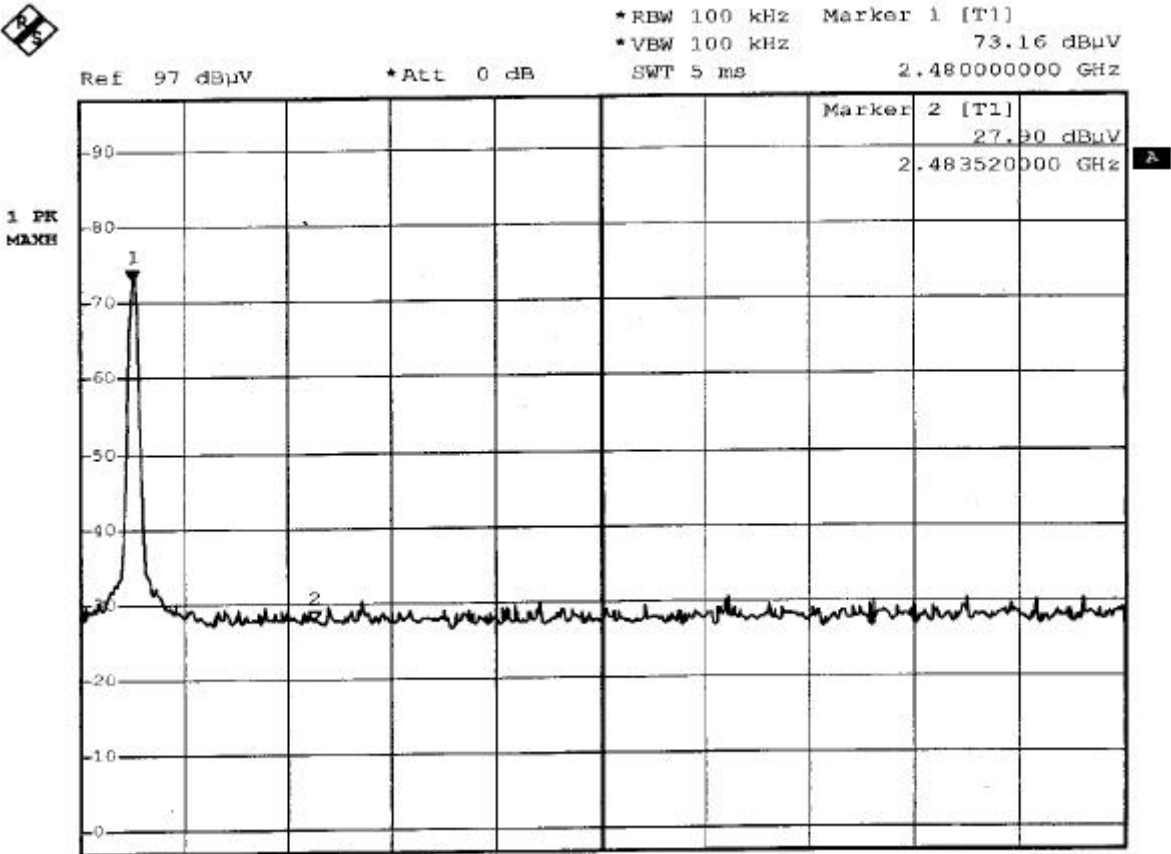
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
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FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH HIGH

Polarity : Vertical



X. §15.247(d) : Peak Power Spectral Density

10.1 Test Procedure

- (1) The Peak Power Spectral Density was measured at the EUT antenna terminal in max hold analyzer mode with span wide enough to capture the hopping channel emissions.
- (2) Set Spectrum as RBW=VBW=3KHz , Sweptime:auto.
- (3) 10.3 Spectrum Plot Data show the Peak Power Spectral Density test results.

10.2 Test result of Peak Power Spectral Density

Channel	Frequency (MHz)	Level (dBm)	Limit (dBm)	Pass/Fail
LOW	2402.030	-29.15	8	Pass
MID	2441.04	-27.41	8	Pass
HIGH	2480.03	-27.75	8	Pass

Note:

1. "S.P. read" means spectrum analyzer read power density.
2. "C.F." means correct factor = antenna factor + cable loss – Preamplifier Gain.
3. "Level" means power spectral density.

$$E.R.P. = (E d)^2 / 30G$$

where E (V) = S.P. read + C.F.

d (m) = measurement distance = 3m

G = 1 (the gain of the transmitting antenna over isotropic antenna)

Example :

If Level = 120 dBuV/m

$$10^{(120/20)} \times 10^{-6} = 1 \text{ V}$$

$$E.R.P. = (1 \times 3)^2 / 30 = 300 \text{ mW} = 10 \text{ Log } (300\text{mW}/1\text{mW}) \\ = 24.77\text{dBm}$$

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FCC ID : SRKWPB74S

REPORT NO. : E950157

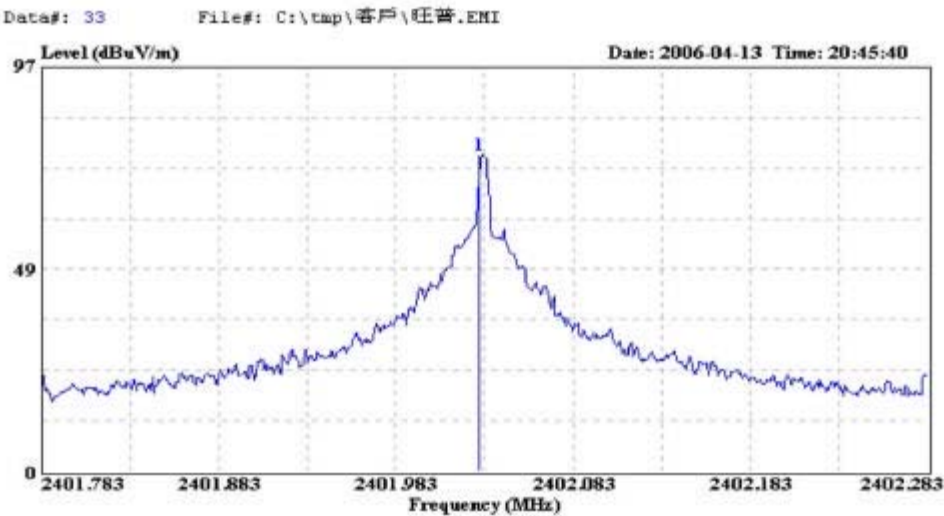
10.3 Spectrum Plot Data

Channel : CH LOW

Polarity : Horizontal



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Site : Shih-Chi : Chamber No.1
Condition : 3m HORN, 3M HORIZONTAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : LOW

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
			Limit	Line					
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark
1	2402.030	76.08	-----	-----	78.20	28.46	4.08	34.66	

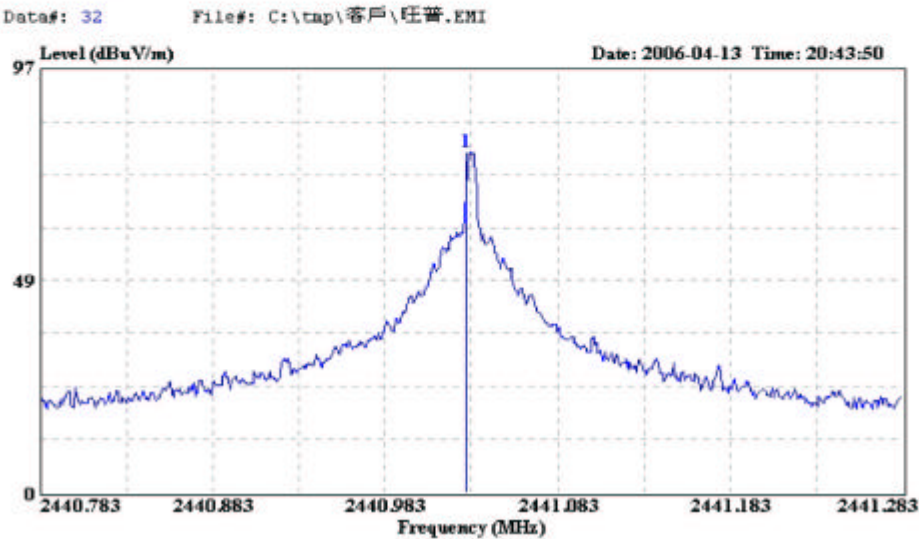
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FCC ID : SRKWPB74S

REPORT NO. : E950157

Channel : CH MID
Polarity : Horizontal



Site : Shih-Chi : Chamber No.1
Condition : 3m HORN.3H HORIZONTAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : MID

			Over	Limit	Read	Probe	Cable	Preamp	
	Freq	Level	Limit	Line	Level	Factor	Loss	Factor	Remark
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	2441.030	77.82	-----	-----	79.83	28.53	4.14	34.68	

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FCC ID : SRKWPB74S

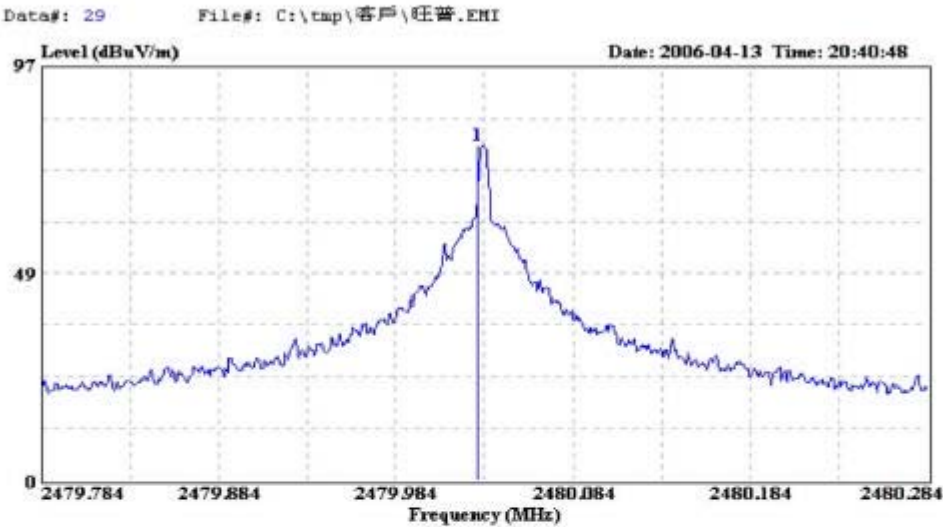
REPORT NO. : E950157

Channel : CH HIGH

Polarity : Horizontal



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PEP Testing Laboratory



Site : Shih-Chi : Chamber No.1
Condition : 3m HORN, 3H HORIZONTAL
EUT : E950157
Power : AC 120V 60Hz
Memo : TX ON
Memo : HIGH

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
	MHz	dBuV/m	Limit	Line	Level	Factor	Loss	Factor	Remark
			dB	dBuV/m	dBuV	dB	dB	dB	
1	2480.030	78.59	-----	-----	80.53	28.58	4.17	34.69	

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FCC ID : SRKWPB74S

REPORT NO. : E950157

XI. List of Test Instruments

Test Mode	Instrument	Model No.	Serial No.	Next Cal. Date	Cal. Interval
Conduction (No.1)	R & S Receiver	ESHS10	830223/008	May 22, 2006	1Year
	Rolf Heine LISN	NNB-4/63TL	98008	May 01, 2006	1Year
	R & S LISN	ESH3-Z5	844982/039	Aug. 06, 2006	1Year
	Spectrum Analyzer	R3261A	91720076	June 08, 2006	1Year
	RF Cable	Rg400	N/A	May 12, 2006	1Year
	Schaffner ISN	T411	N/A	June 29, 2006	1Year
Radiation (OP No.3)	R & S Receiver	ESBI	845658/003	July 28, 2006	1Year
	Schaffner Pre-Amp.	CPA-9232	1012	Aug. 20, 2006	1Year
	SCJWARZBECL Antenna	VULB9161	D-69250	May 19, 2006	1Year
	COM-Power Horn Ant.	AH-118 (1GHz~18GHz)	10095	May 25, 2006	1Year
	RF Cable	No.2	N/A	Feb. 19, 2007	1Year
	SCHWARZBECK Precision Dipole Ant.	VHAP (30MHz~1GHz)	970+971 953+954	June 26, 2006	3Year
	R & S Signal Generator	SMY01	829846/038	Feb. 16, 2007	2Year
Chamber (No. 3)	Spectrum Analyzer	FSP 30	100157	Aug. 30, 2006	1Year
	Pre-Amplifier	CPA-9232	1027	Feb. 24, 2007	1Year
	Antenna	VULB9160	3074	July 24, 2006	1Year
	Signal Generator	SMY02	829846/0358	Jane 29, 2007	2Year
	RF Cable	NO.3	N/A	Feb. 19, 2007	1Year
	HORN ANTENNA	AH-118	10095	May 13, 2006	1Year

XII. EUT Photos

EUT Model No. GPS BT-74S



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FCC ID : SRKWPB74S

REPORT NO. : E950157



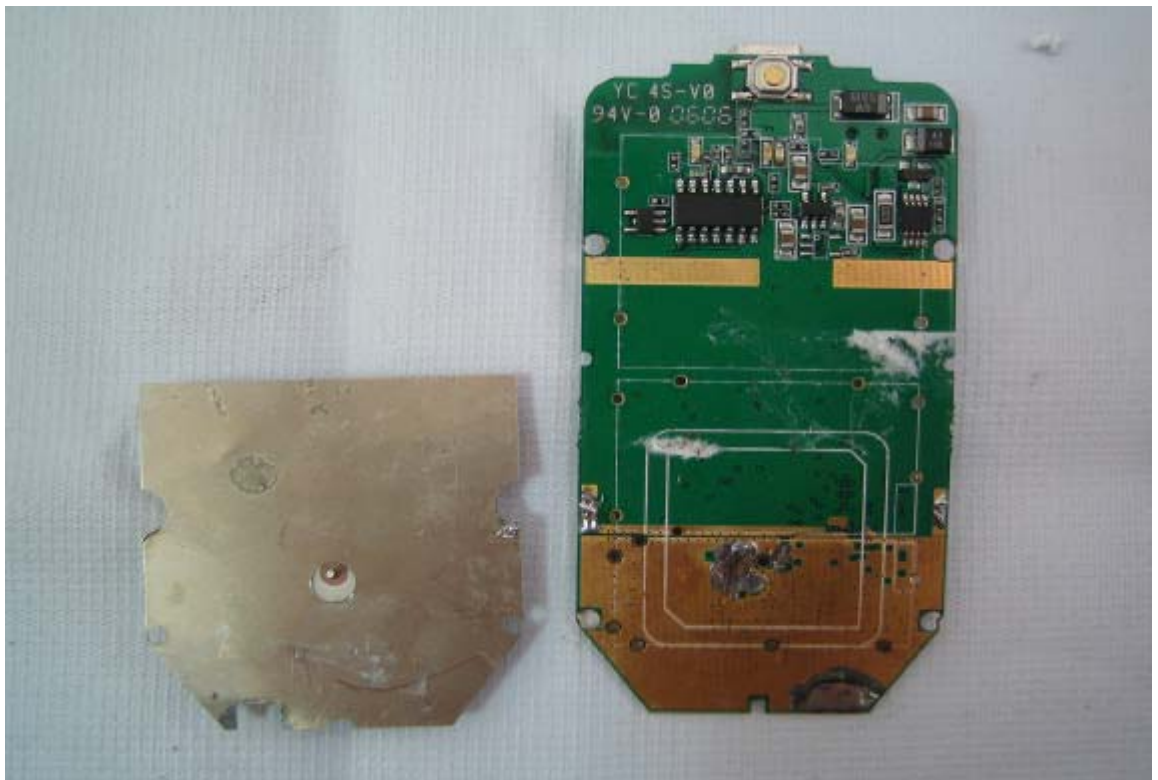
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REPORT NO. : E950157



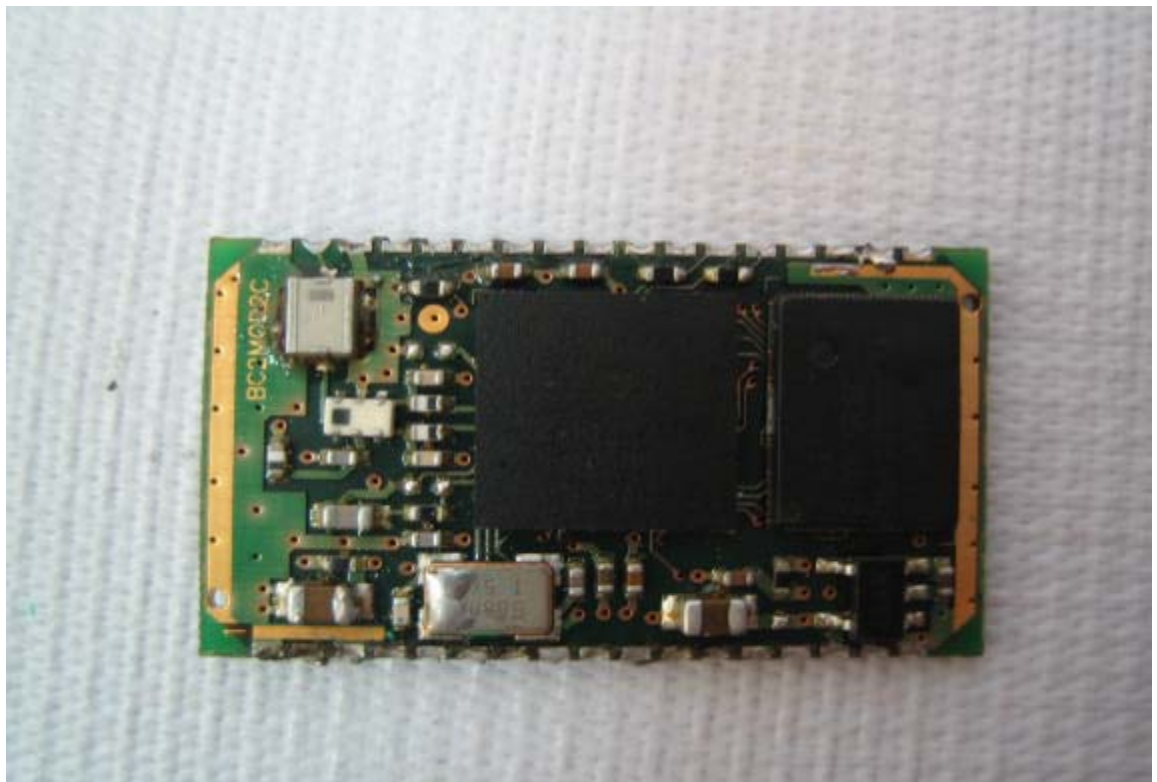
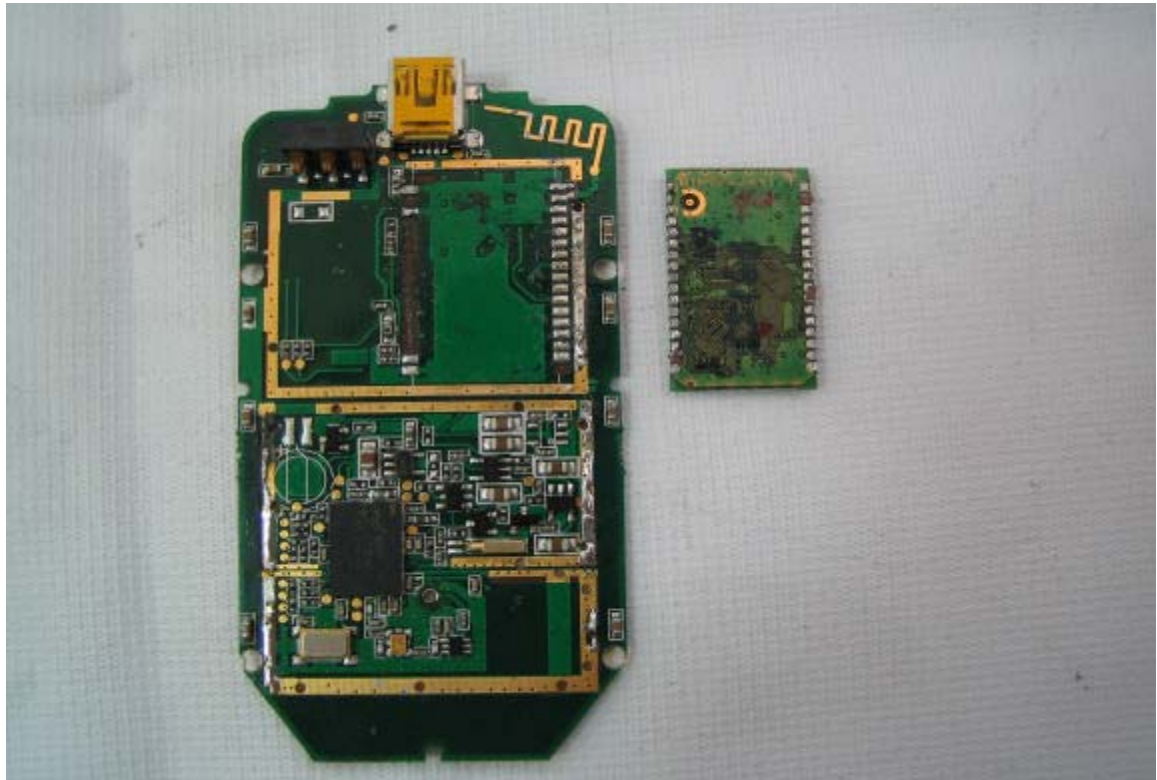
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