

Wonde Proud Technology Co.,Ltd.

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Federal Communications Commission
Authorization and Evaluation Division

Confidentiality Request

FCC ID : SRKWPBT55X

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,



Signer / Title

E-mail :

PEP Testing Laboratory

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 : SRKWPBT55X

REPORT NO. : E940252

RFI / EMI TEST REPORT

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

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

MODEL NO. : **GPS BT-55**

FCC ID : **SRKWPBT55X**

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

TEST SITE : **PEP Testing Laboratory**

TEST ENGINEER : **JASON KUNG**

TEST DATE : **JULY 06, 2005**

ISSUED DATE : **JULY 21, 2005**

REPORT NO. : **E940252**

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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 - 2001 .

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

APPLICANT : WONDE PROUD TECHNOLOGY CO., LTD.
PRODUCT : Bluetooth GPS Receiver
FCC ID : SRKWPBT55X
MODEL : GPS BT-55



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: SRKWPBT55X, model GPS BT-55. The EUT can be used to work for the applications such as car navigation purpose. The working frequency is 2.402GHz-2.480GHz. DC 3.6V 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.

Test method: According to the major function designed, the EUT placement on test table was arranged alone to proceed with test. The test was carried out on EUT operational condition of Tx-On mode: continuous transmission state and battery charging mode. The worst-case test result of each test mode 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	:	SRKWPBT55X
EUT Model No.	:	GPS BT-55
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) × 2

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

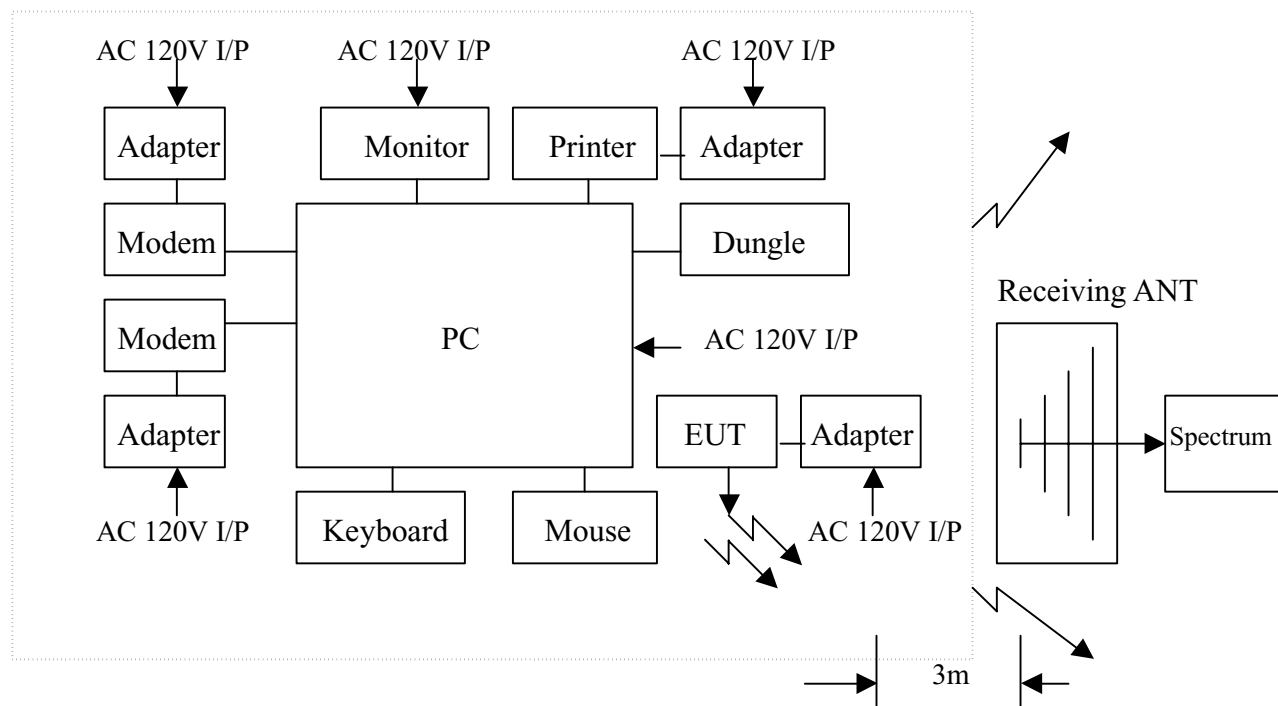
Data Cable : 1 > Shielded , Non-detachable,1.8m

2 > Back Shell : Metal

1.3 EUT Test Setup Configuration

- (A) Test Procedure: As required by ANSI C63.4 (2001)
- (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



a. EUT Type : Bluetooth GPS Receiver

b. EUT Model : GPS BT-55

c. TX Channel No. : 79

Channel 01: 2402 MHz	Channel 28: 2429 MHz	Channel 55: 2456 MHz
Channel 02: 2403 MHz	Channel 29: 2430 MHz	Channel 56: 2457 MHz
Channel 03: 2404 MHz	Channel 30: 2431 MHz	Channel 57: 2458 MHz
Channel 04: 2405 MHz	Channel 31: 2432 MHz	Channel 58: 2459 MHz
Channel 05: 2406 MHz	Channel 32: 2433 MHz	Channel 59: 2460 MHz
Channel 06: 2407 MHz	Channel 33: 2434 MHz	Channel 60: 2461 MHz
Channel 07: 2408 MHz	Channel 34: 2435 MHz	Channel 61: 2462 MHz
Channel 08: 2409 MHz	Channel 35: 2436 MHz	Channel 62: 2463 MHz
Channel 09: 2410 MHz	Channel 36: 2437 MHz	Channel 63: 2464 MHz
Channel 10: 2411 MHz	Channel 37: 2438 MHz	Channel 64: 2465 MHz
Channel 11: 2412 MHz	Channel 38: 2439 MHz	Channel 65: 2466 MHz
Channel 12: 2413 MHz	Channel 39: 2440 MHz	Channel 66: 2467 MHz
Channel 13: 2414 MHz	Channel 40: 2441 MHz	Channel 67: 2468 MHz
Channel 14: 2415 MHz	Channel 41: 2442 MHz	Channel 68: 2469 MHz
Channel 15: 2416 MHz	Channel 42: 2443 MHz	Channel 69: 2470 MHz
Channel 16: 2417 MHz	Channel 43: 2444 MHz	Channel 70: 2471 MHz
Channel 17: 2418 MHz	Channel 44: 2445 MHz	Channel 71: 2472 MHz
Channel 18: 2419 MHz	Channel 45: 2446 MHz	Channel 72: 2473 MHz
Channel 19: 2420 MHz	Channel 46: 2447 MHz	Channel 73: 2474 MHz
Channel 20: 2421 MHz	Channel 47: 2448 MHz	Channel 74: 2475 MHz
Channel 21: 2422 MHz	Channel 48: 2449 MHz	Channel 75: 2476 MHz
Channel 22: 2423 MHz	Channel 49: 2450 MHz	Channel 76: 2477 MHz
Channel 23: 2424 MHz	Channel 50: 2451 MHz	Channel 77: 2478 MHz
Channel 24: 2425 MHz	Channel 51: 2452 MHz	Channel 78: 2479 MHz
Channel 25: 2426 MHz	Channel 52: 2453 MHz	Channel 79: 2480 MHz
Channel 26: 2427 MHz	Channel 53: 2454 MHz	
Channel 27: 2428 MHz	Channel 54: 2455 MHz	

Frequency Range : 2.402 GHz to 2.480 GHz

Note :

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

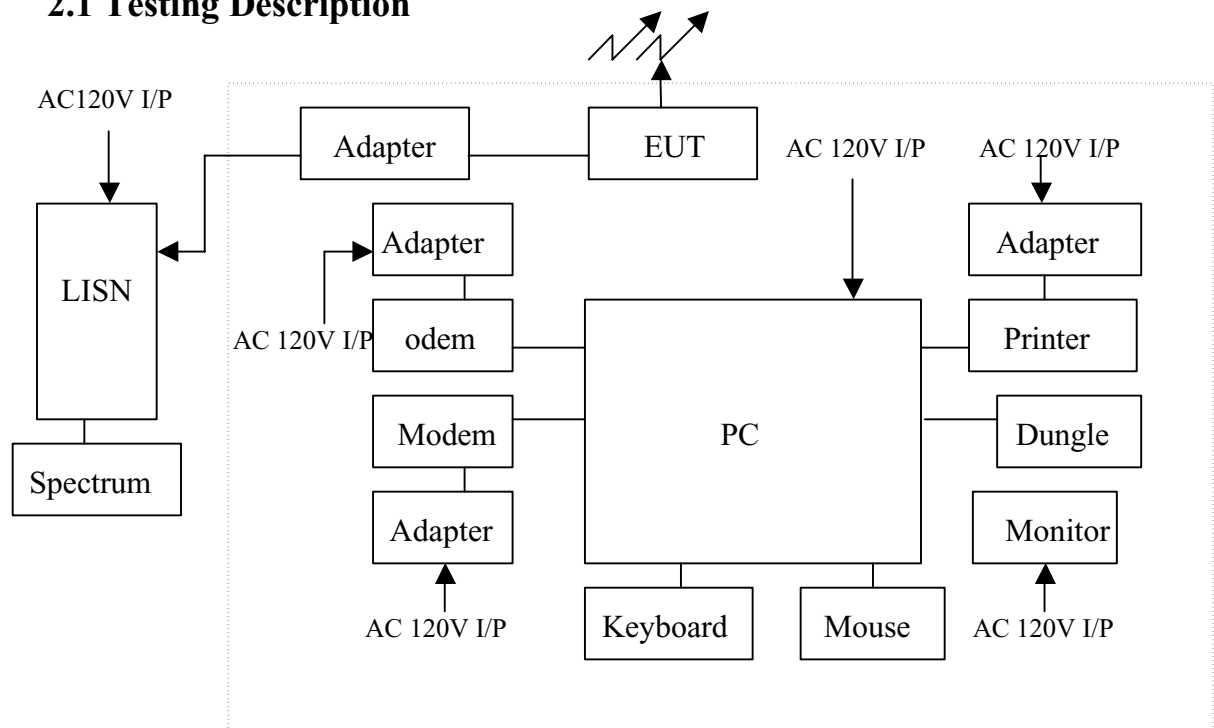
2.4 GHz --- 2.4835 GHz ☒ Yes ☐ No

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

2.3 Test Result

EUT Model No. GPS BT-55 (LINE)

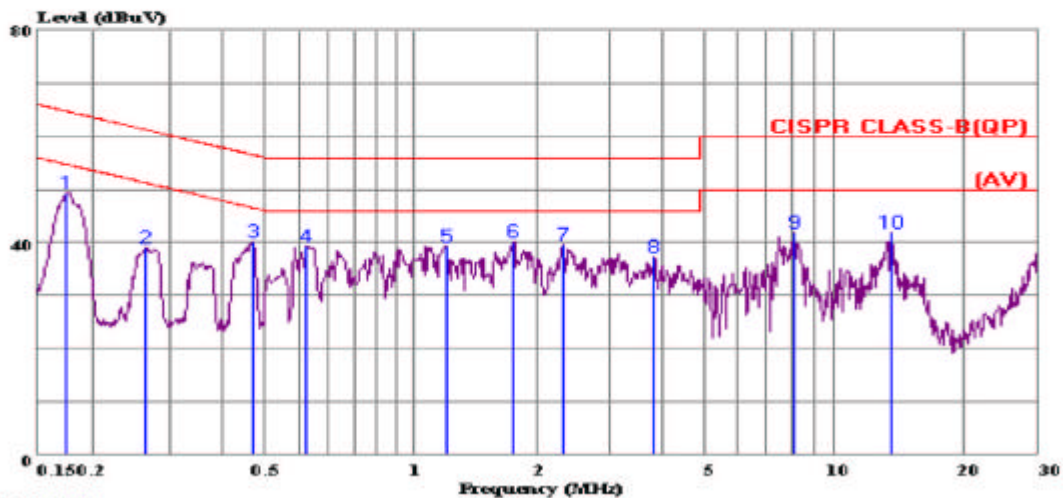
Detector : Peak Value

PC MODE



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Data#: 1483 File#: EN55022-B(QP).EMI Date: 2005-07-06 Time: 09:20:56



Trace: 1482
Site : Shih-Chi : Conduction No.1(Gene)
Condition: CISPR CLASS-B(QP) LISN.L(16A) LINE
eut : E940252
power : AC 120V 60Hz
memo : Peak Value
: Final Test
: 傳輸 Mode

Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.175	49.26	-15.46	64.72	49.06	0.10	0.10	
2	0.264	39.01	-22.28	61.29	38.74	0.10	0.17	
3	0.469	40.19	-16.35	56.54	39.95	0.10	0.14	
4	0.621	39.16	-16.84	56.00	38.96	0.10	0.10	
5	1.303	39.38	-16.62	56.00	39.08	0.10	0.20	
6	1.858	40.21	-15.79	56.00	39.91	0.10	0.20	
7	2.435	39.46	-16.54	56.00	39.16	0.10	0.20	
8	3.922	37.14	-18.86	56.00	36.75	0.10	0.29	
9	8.279	41.76	-18.24	60.00	41.20	0.26	0.30	
10	13.768	41.85	-18.15	60.00	40.99	0.46	0.40	

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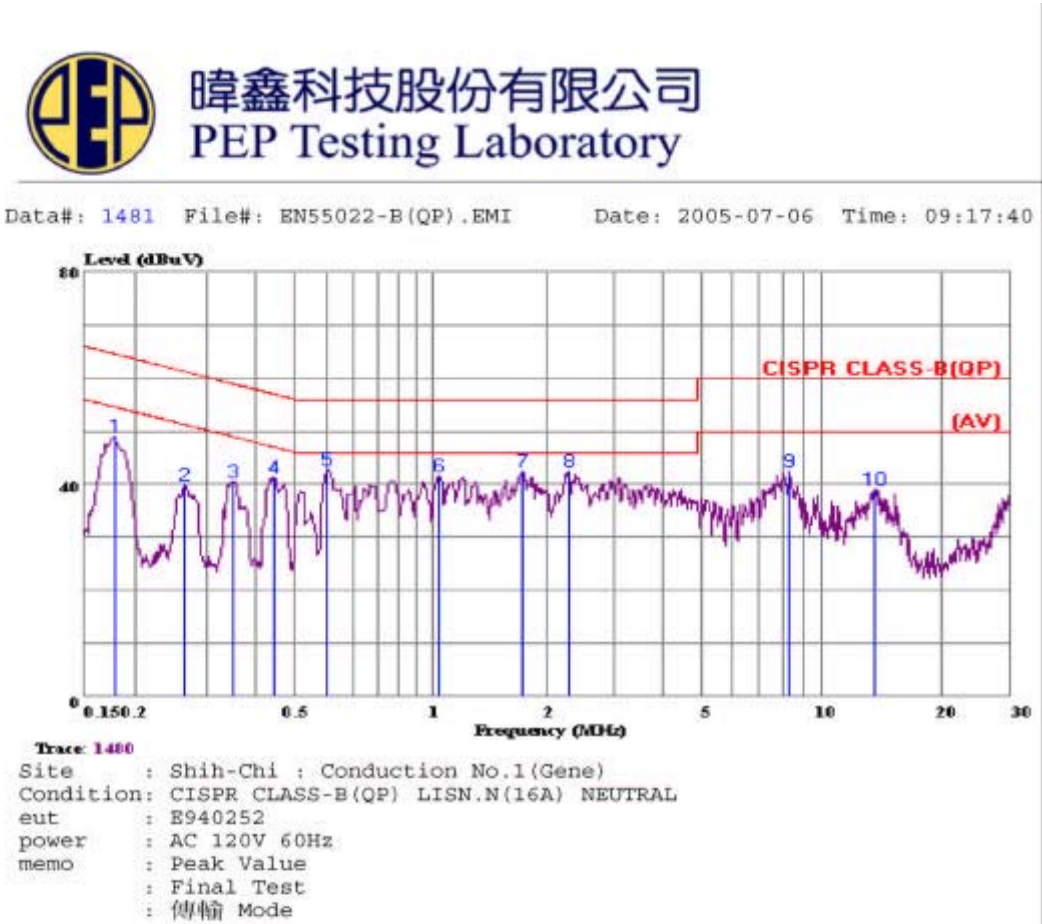
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FCC ID : SRKWPBT55X

REPORT NO. : E940252

EUT Model No.: GPS BT-55 (NEUTRAL)

Detector : Peak Value



Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.178	48.92	-15.67	64.59	48.72	0.10	0.10	
2	0.266	39.79	-21.46	61.25	39.52	0.10	0.17	
3	0.350	40.48	-18.48	58.96	40.28	0.10	0.10	
4	0.444	41.29	-15.69	56.98	41.09	0.10	0.10	
5	0.598	42.65	-13.35	56.00	42.45	0.10	0.10	
6	1.141	41.61	-14.39	56.00	41.31	0.10	0.20	
7	1.829	42.58	-13.42	56.00	42.28	0.10	0.20	
8	2.396	42.38	-13.62	56.00	42.08	0.10	0.20	
9	8.456	42.47	-17.53	60.00	41.91	0.26	0.30	
10	13.695	39.12	-20.88	60.00	38.34	0.38	0.40	

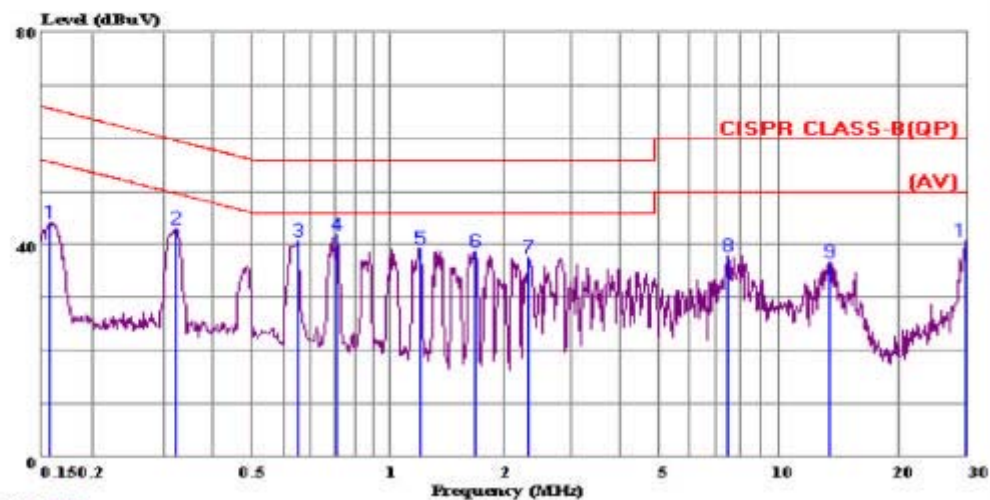
EUT Model No. GPS BT-55 (LINE)

Detector : Peak Value

CHARGE MODE



Data#: 1514 File#: EN55022-B(QP).EMI Date: 2005-07-06 Time: 09:55:02



Trace: 1513
Site : Shih-Chi : Conduction No.1(Gene)
Condition: CISPR CLASS-B(QP) LISN.L(16A) LINE
eut : E940252
power : AC 120V 60Hz
memo : Peak Value
: Final Test
: Charge Mode

Page: 1

	Freq	Level	Over Limit	Limit Line	Read Level	Probe Factor	Cable Loss	Remark
	MHz	dBuV	dB	dBuV	dBuV	dB	dB	
1	0.156	44.22	-21.43	65.65	44.02	0.10	0.10	
2	0.322	42.90	-16.76	59.66	42.70	0.10	0.10	
3	0.654	40.79	-15.21	56.00	40.59	0.10	0.10	
4	0.813	41.79	-14.21	56.00	41.57	0.10	0.12	
5	1.303	39.40	-16.60	56.00	39.10	0.10	0.20	
6	1.790	38.60	-17.40	56.00	38.30	0.10	0.20	
7	2.435	37.48	-18.52	56.00	37.18	0.10	0.20	
8	7.566	37.80	-22.20	60.00	37.26	0.24	0.30	
9	13.551	36.72	-23.28	60.00	35.87	0.45	0.40	
10	29.527	40.70	-19.30	60.00	39.40	0.80	0.50	

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REPORT NO. : E940252

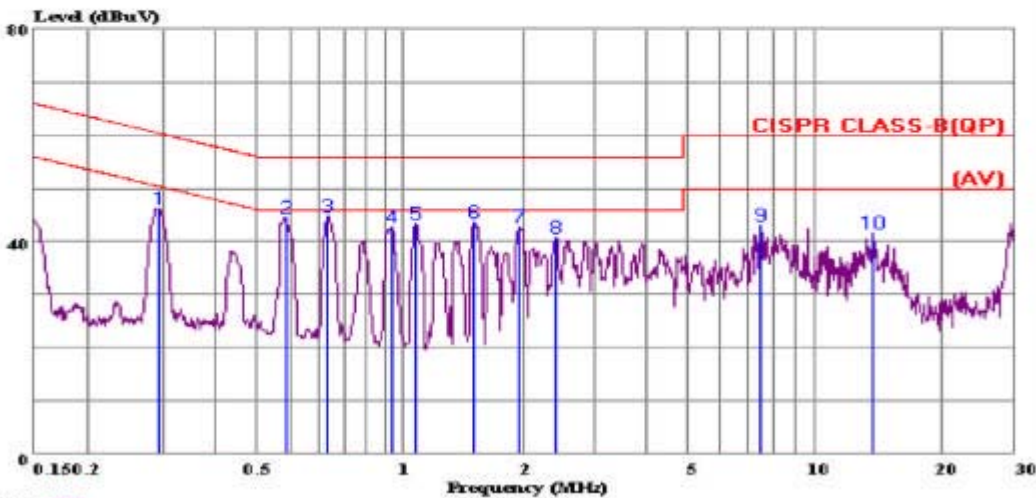
EUT Model No.: GPS BT-55 (NEUTRAL)

Detector : Peak Value



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PEP Testing Laboratory

Data#: 1508 File#: EN55022-B(QP).EMI Date: 2005-07-06 Time: 09:53:22



Trace: 1507
Site : Shih-Chi : Conduction No.1(Gene)
Condition: CISPR CLASS-B(QP) LISN.N(16A) NEUTRAL
eut : E940252
power : AC 120V 60Hz
memo : Peak Value
: Final Test
: Charge Mode

Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	
	MHz	dBuV	Limit	Line	Level	Factor	Loss	Remark
			dB	dBuV	dBuV	dB	dB	
1	0.296	46.28	-14.09	60.37	46.07	0.10	0.11	
2	0.585	44.58	-11.42	56.00	44.36	0.10	0.12	
3	0.727	44.85	-11.15	56.00	44.65	0.10	0.10	
4	1.032	42.74	-13.26	56.00	42.44	0.10	0.20	
5	1.178	43.42	-12.58	56.00	43.12	0.10	0.20	
6	1.610	43.50	-12.50	56.00	43.20	0.10	0.20	
7	2.066	42.65	-13.35	56.00	42.35	0.10	0.20	
8	2.513	40.86	-15.14	56.00	40.56	0.10	0.20	
9	7.566	42.97	-17.03	60.00	42.43	0.24	0.30	
10	13.989	41.51	-18.49	60.00	40.73	0.38	0.40	

2.4 Conducted Emission Test Photo

EUT Model No. GPS BT-55

PC MODE

< FRONT VIEW >



EUT Model No. GPS BT-55

CHARGE MODE

< FRONT VIEW >



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

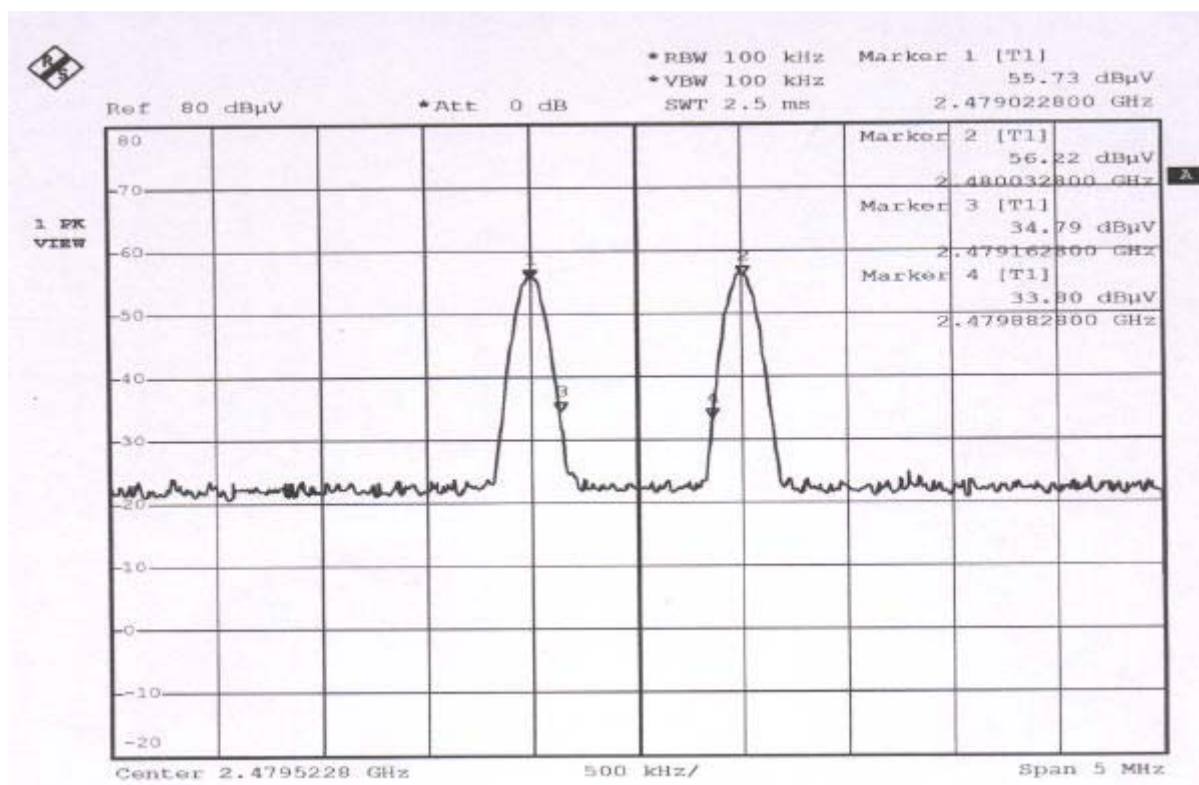
3.1 Test Procedure

- (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	1010	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-55

Channel	Antenna Polarity	Bandwidth (KHz)	Limit (KHz)	Pass/Fail
LOW	H	34	1000	Pass
	V	35	1000	Pass
MID	H	36	1000	Pass
	V	35	1000	Pass
HIGH	H	36	1000	Pass
	V	36	1000	Pass

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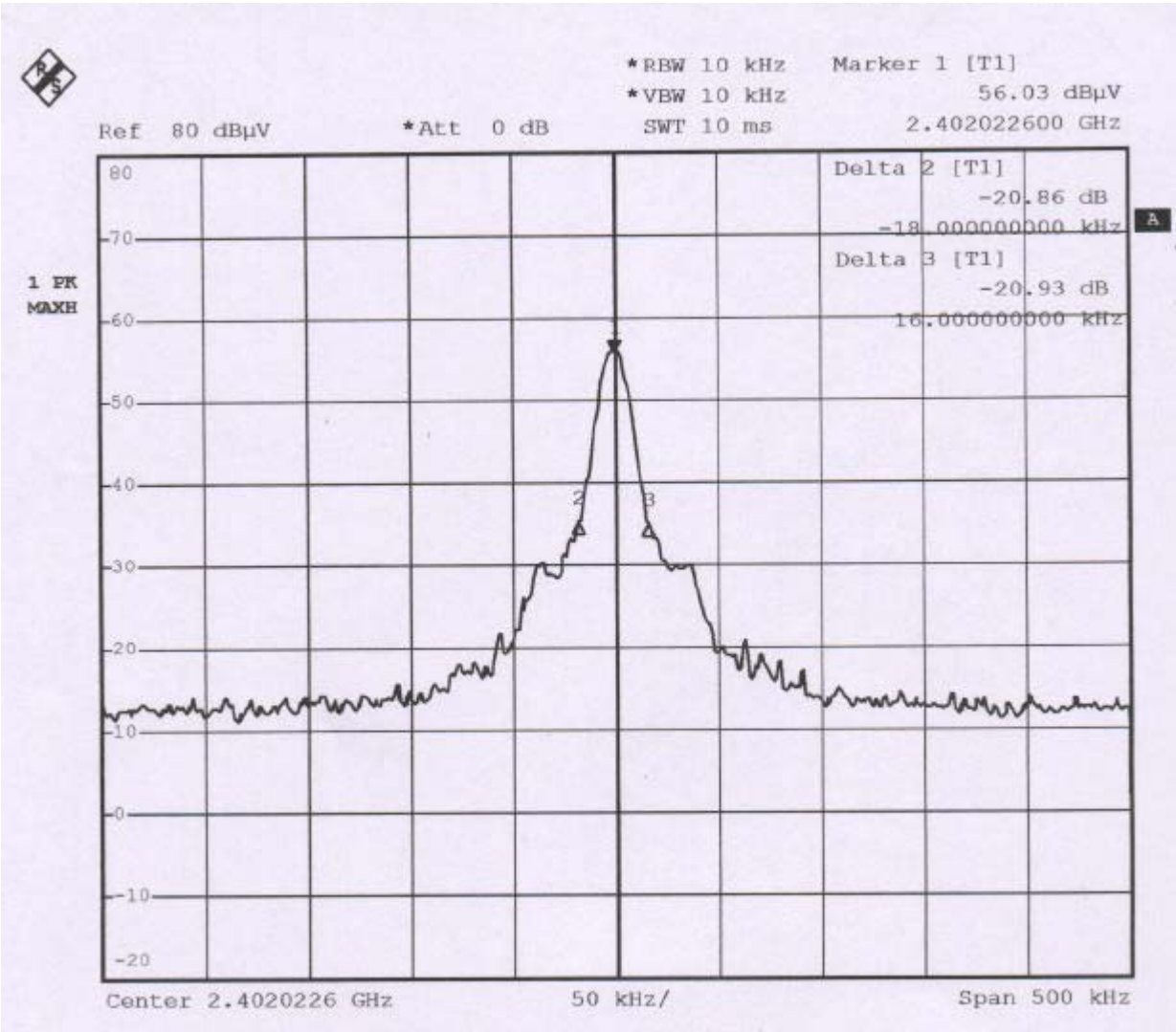
FCC ID : SRKWPBT55X

REPORT NO. : E940252

4.3 Spectrum Plot Data

Channel : CH LOW

Polarity : Horizontal



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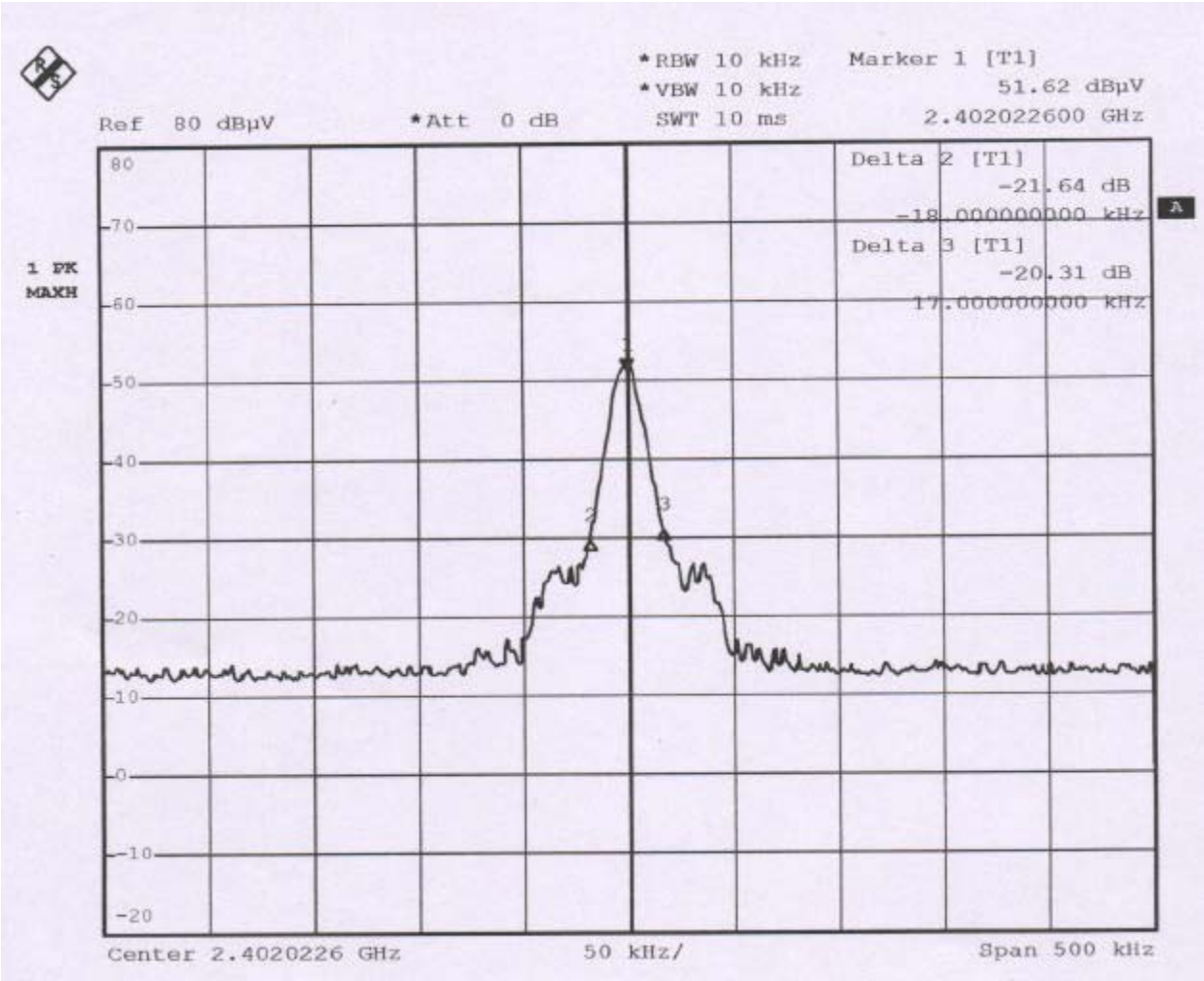
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Channel : CH LOW

Polarity : Vertical



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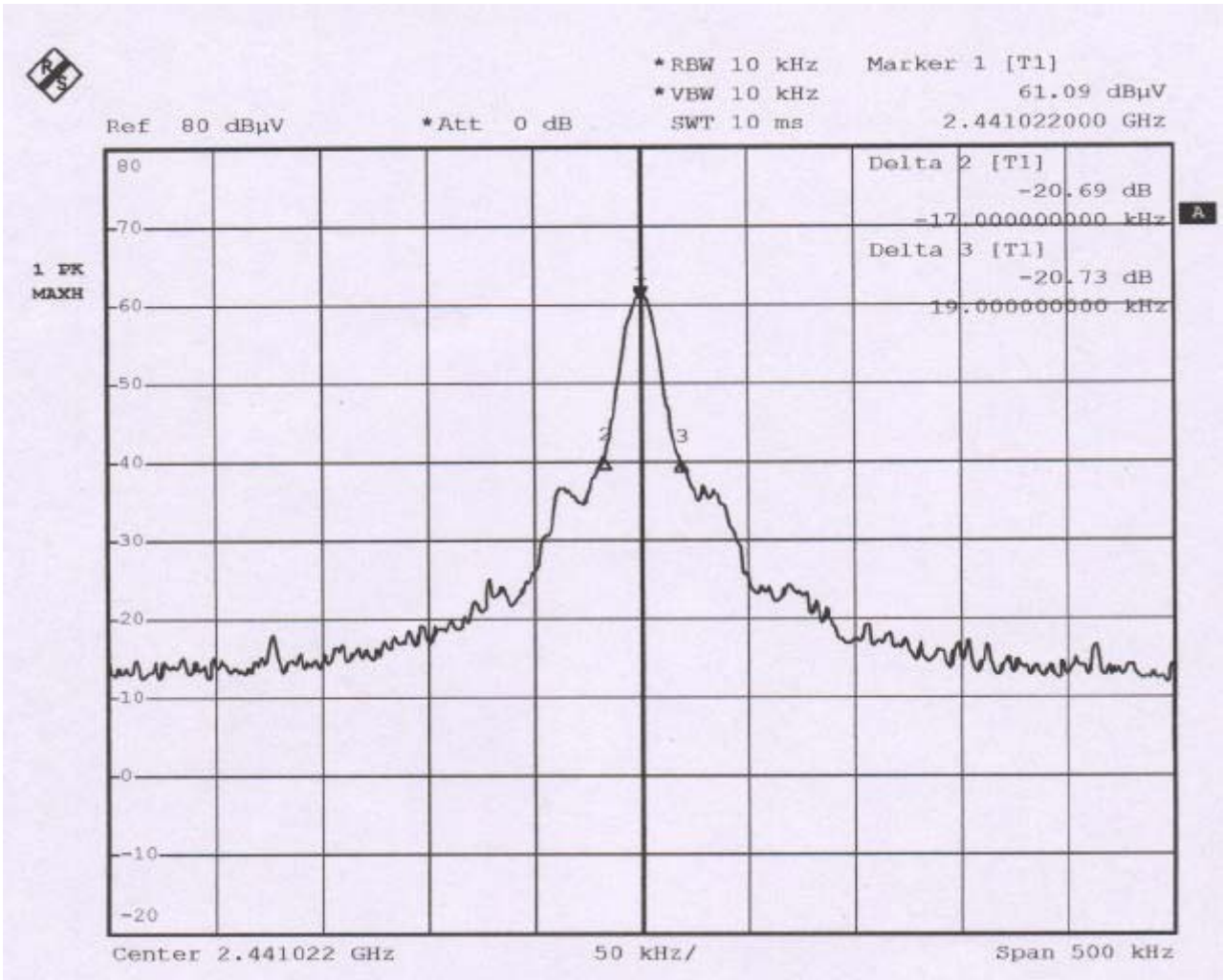
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FCC ID : SRKWPBT55X

REPORT NO. : E940252

Channel : CH MID

Polarity : Horizontal



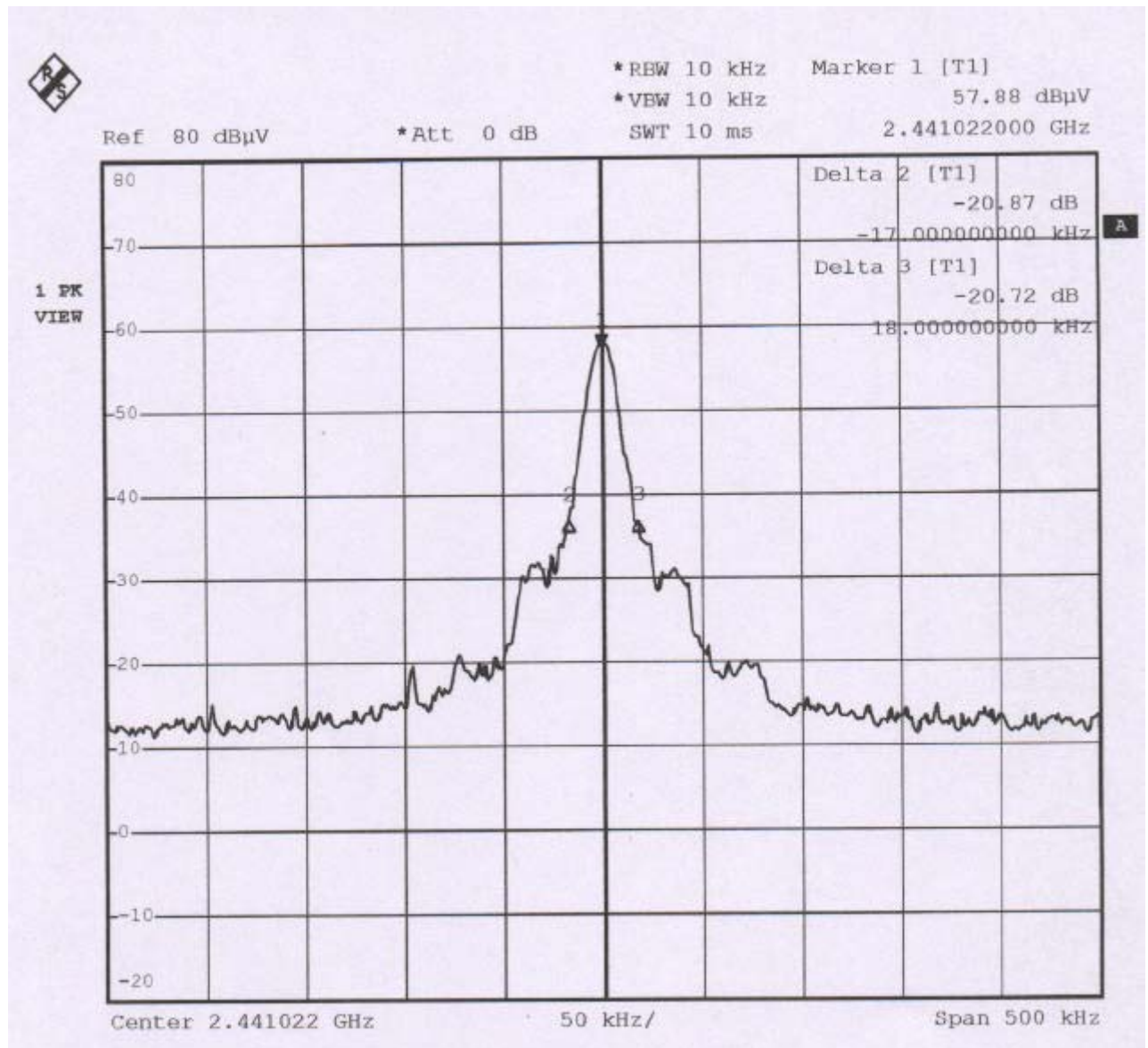
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FCC ID : SRKWPBT55X

REPORT NO. : E940252

Channel : CH MID

Polarity : Vertical



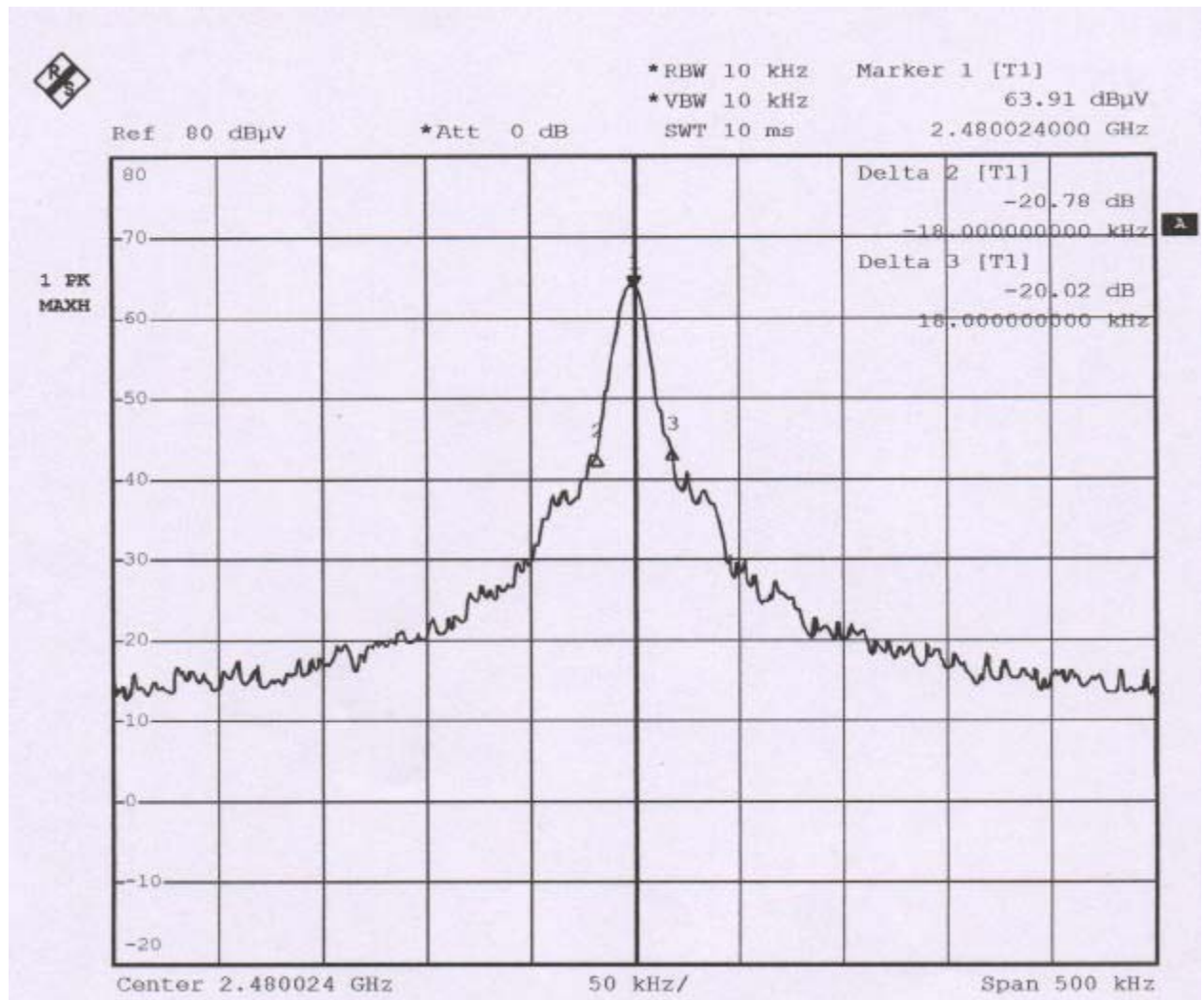
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FCC ID : SRKWPBT55X

REPORT NO. : E940252

Channel : CH HIGH

Polarity : Horizontal



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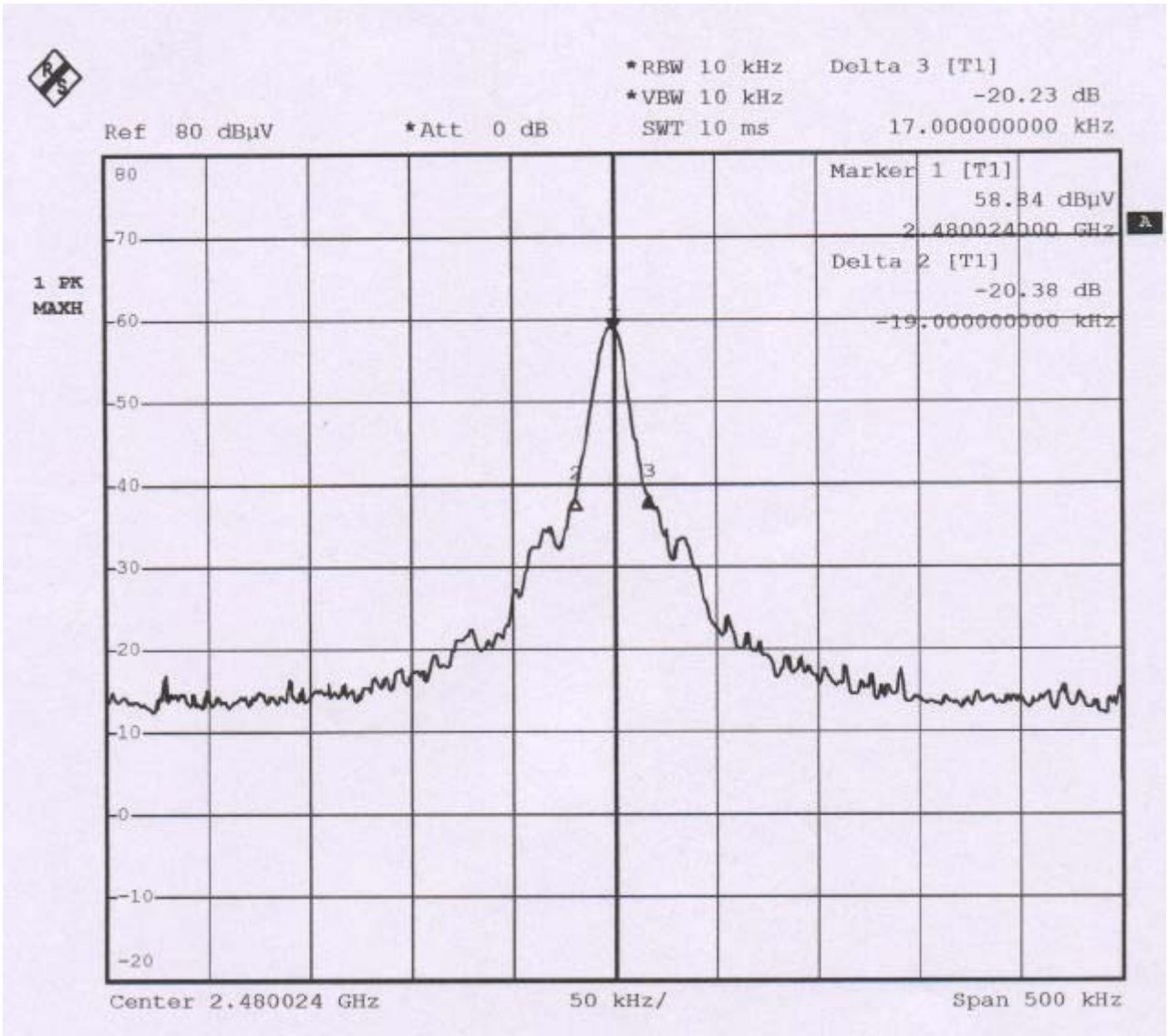
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
Taipei Hsien, Taiwan, R. O. C.
TEL: 886-2-26922097 FAX: 886-2-26956236

FCC ID : SRKWPBT55X

REPORT NO. : E940252

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

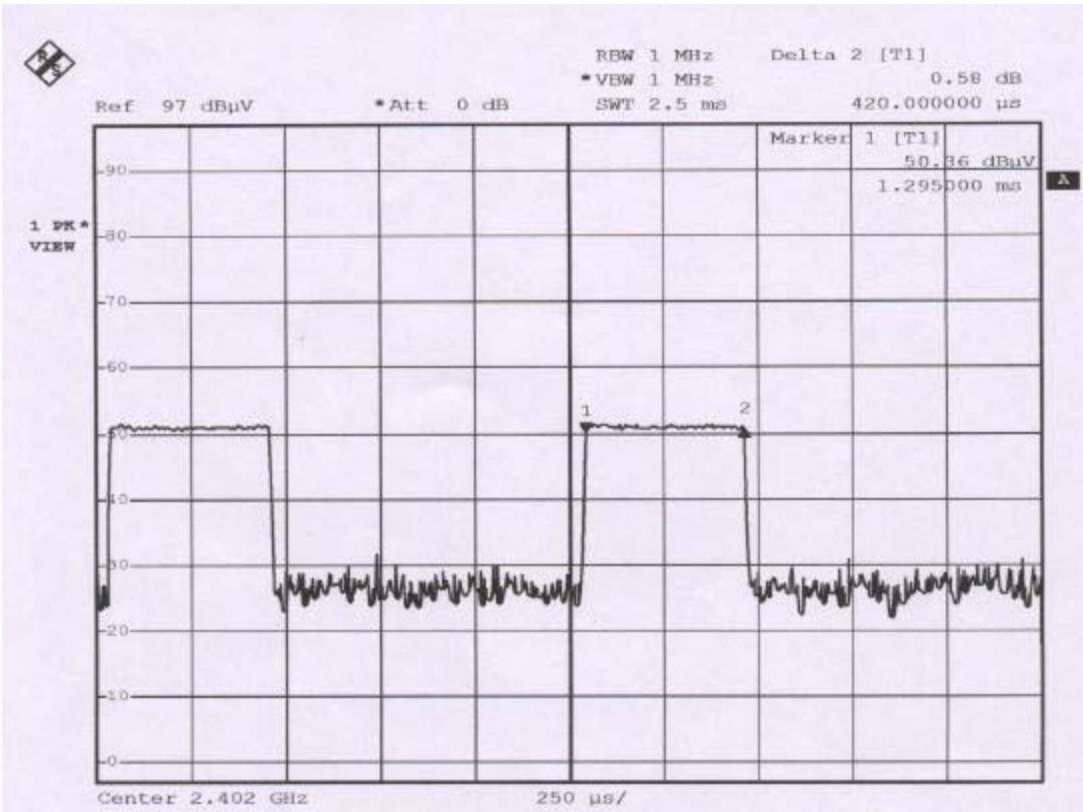
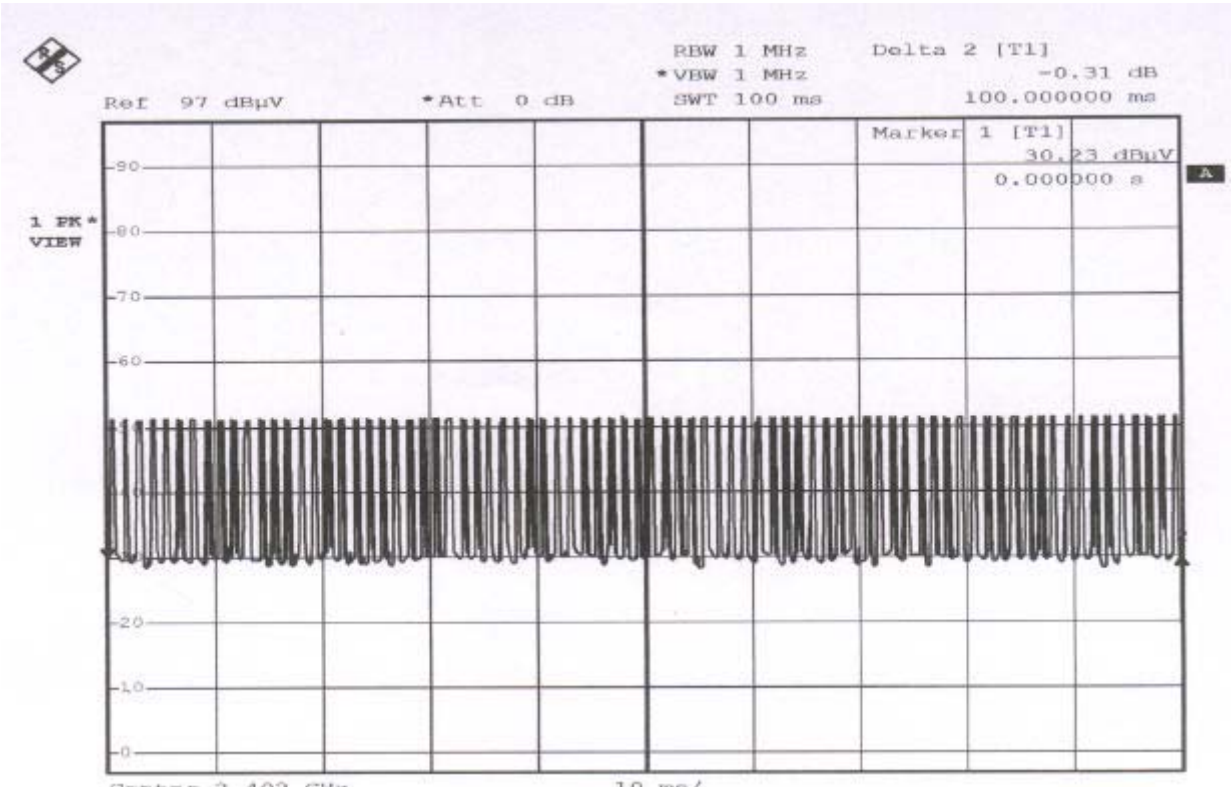
PEP Testing Laboratory

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 : SRKWPBT55X

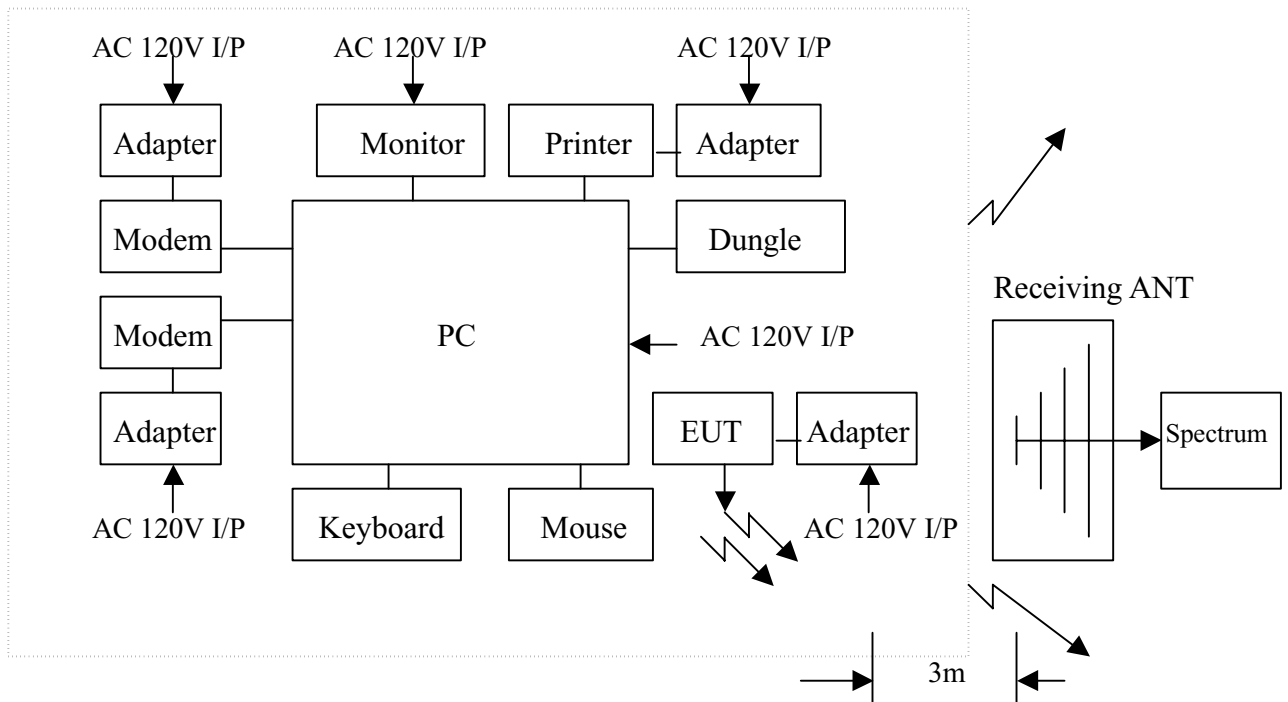
REPORT NO. : E940252

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-55**

Channel	Frequency (MHz)	Antenna Polarity (H/V)	Spectrum Read (dBuV/m)	C.F. (dB)	Level (dBuV/m)	E.I.R.P. (W)
LOW	2401.98	H	63.91	-2.11	61.80	4.54×10^{-7}
	2401.96	V	61.55	-2.11	59.44	2.64×10^{-7}
MID	2441.06	H	69.00	-2.01	66.99	1.50×10^{-6}
	2440.98	V	65.33	-2.01	63.32	6.44×10^{-7}
HIGH	2480.04	H	70.24	-1.94	68.30	2.03×10^{-6}
	2479.90	V	65.30	-1.94	63.36	6.50×10^{-7}

Note :

1. "C.F." means corrected factor = antenna factor + cable loss — Preamplifier Gain .
2. Level means emission amplitude = S.P. + C.F. + duty cycle factor
3. 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) $P = \text{E.I.R.P.}$

4. Example :

If Level = 120 dBuV/m

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

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