

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 : SBUFGPXBT01

REPORT NO. : E940027

RFI / EMI TEST REPORT

APPLICANT : ftech Corporation

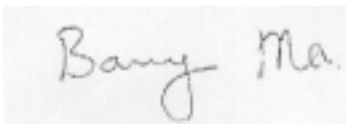
E U T Type : GPS Bluetooth Receiver

MODEL NO. : FGPXBT01

FCC ID : SBUFGPXBT01

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

TEST SITE : PEP Testing Laboratory

TEST ENGINEER : 

TEST DATE : JAN. 20, 2005

ISSUED DATE : FEB. 03, 2005

REPORT NO. : E940027

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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 : ftech Corporation
PRODUCT : GPS Bluetooth Receiver
FCC ID : SBUFGPXBT01
MODEL : FGPXBT01

M. Y. Tsui

M. Y. TSUI / President

PEP Testing Laboratory

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I . General Information

The equipment under test (EUT) is GPS Bluetooth Receiver, FCC ID: SBUFGPXBT01, model FGPXBT01. 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 5V 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. 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	:	GPS Bluetooth Receiver
FCC ID	:	SBUFGPXBT01
EUT Model No.	:	FGPXBT01
Frequency Range	:	2.402~2.480GHz
Support Channel	:	79 channels
Modulation	:	GFSK
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)	Model No. : STD-0501
		Input : AC 100-240V 47-63Hz 0.15A
		Output : DC 5V, 1A
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

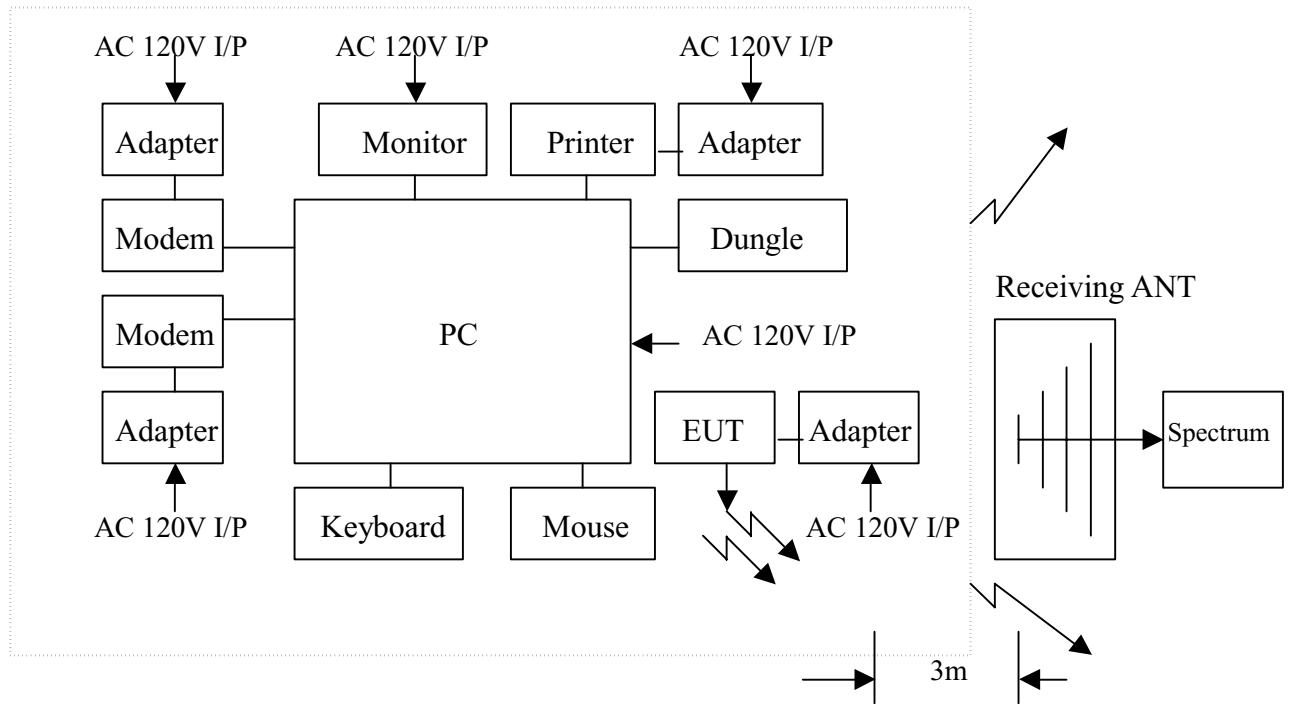
Data Cable : 1 > Shielded , Non-detachable,1.8m

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 : GPS Bluetooth Receiver

b. EUT Model : FGPXBT01

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 :

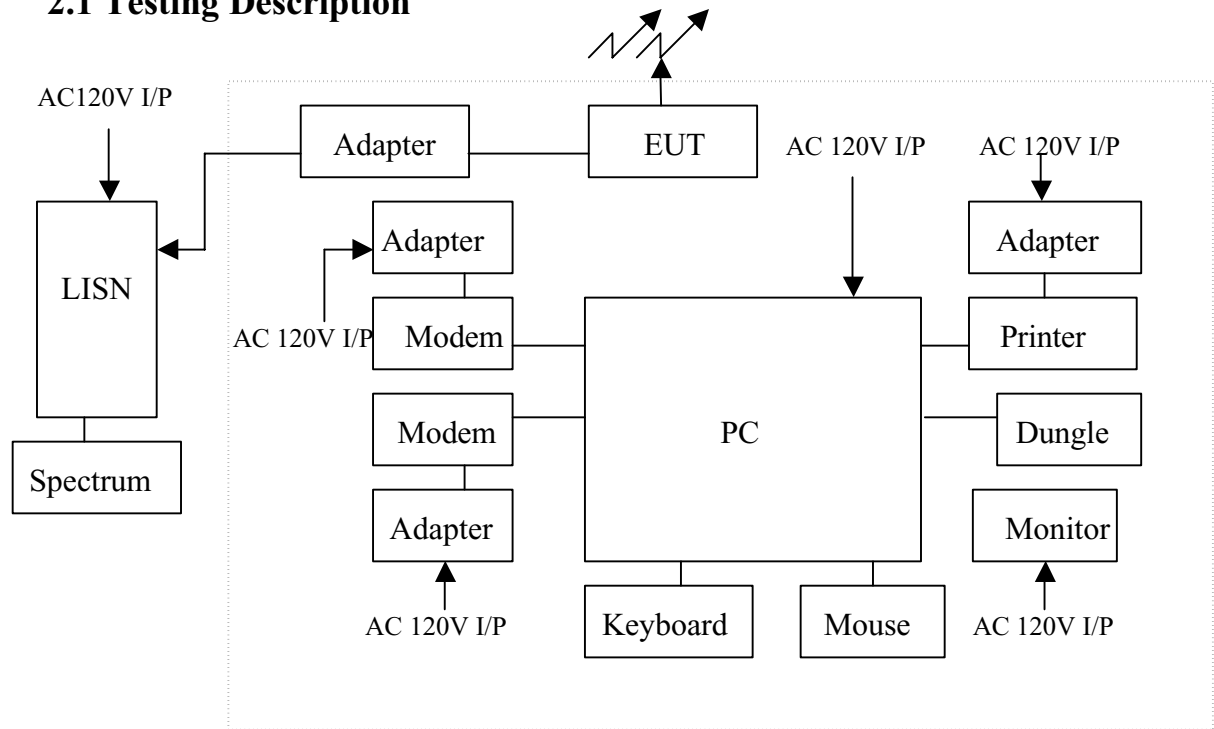
2.4 GHz --- 2.4835 GHz ☒ Yes ☐ No

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

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2.3 Test Result

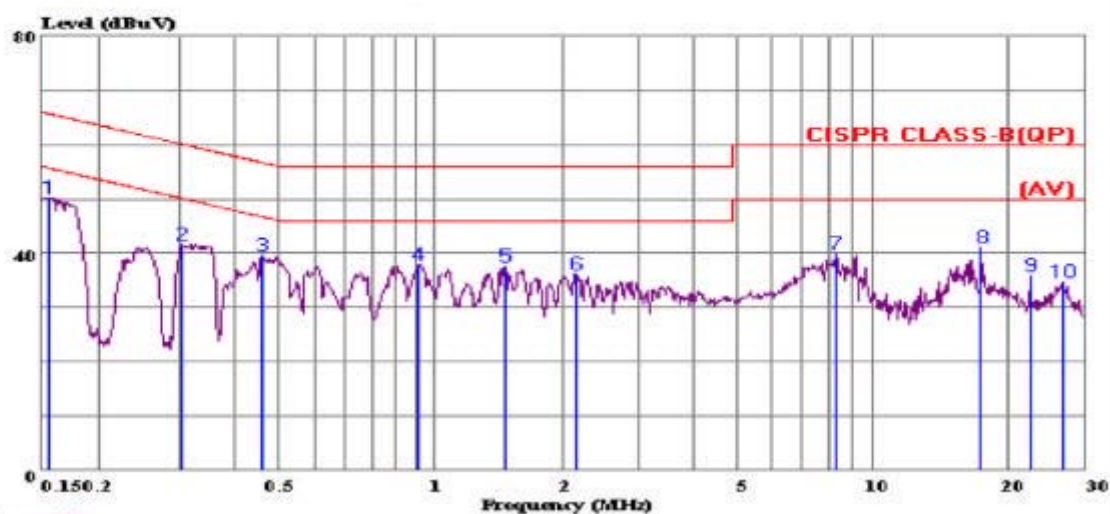
EUT Model No. FGPXBT01 (LINE)

Detector : Peak Value



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Data#: 634 File#: EN55022-B(QP).EMI Date: 2005-01-20 Time: 18:39:13



Trace: 633

Site : Shih-Chi : Conduction No.1(Gene)
Condition: CISPR CLASS-B(QP) LISN.L(16A) LINE
eut : E940027
power : AC 120V 60Hz
memo : Peak Value
: Final Test

Page: 1

	Freq	Level	Over	Limit	Read	Probe	Cable	Remark
	MHz	dBuV	Limit	Line	Level	Factor	Loss	
			dB	dBuV	dBuV	dB	dB	
1	0.156	50.25	-15.44	65.69	49.95	0.20	0.10	
2	0.307	41.63	-18.43	60.06	41.33	0.20	0.10	
3	0.456	39.43	-17.33	56.76	39.11	0.20	0.12	
4	1.016	37.81	-18.19	56.00	37.41	0.20	0.20	
5	1.577	37.42	-18.58	56.00	37.02	0.20	0.20	
6	2.273	36.23	-19.77	56.00	35.83	0.20	0.20	
7	8.456	39.77	-20.23	60.00	39.19	0.28	0.30	
8	17.661	41.01	-18.99	60.00	40.15	0.56	0.30	
9	22.655	35.89	-24.11	60.00	34.78	0.71	0.40	
10	26.699	34.60	-25.40	60.00	33.32	0.80	0.48	

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FCC ID : SBUFGPXBT01

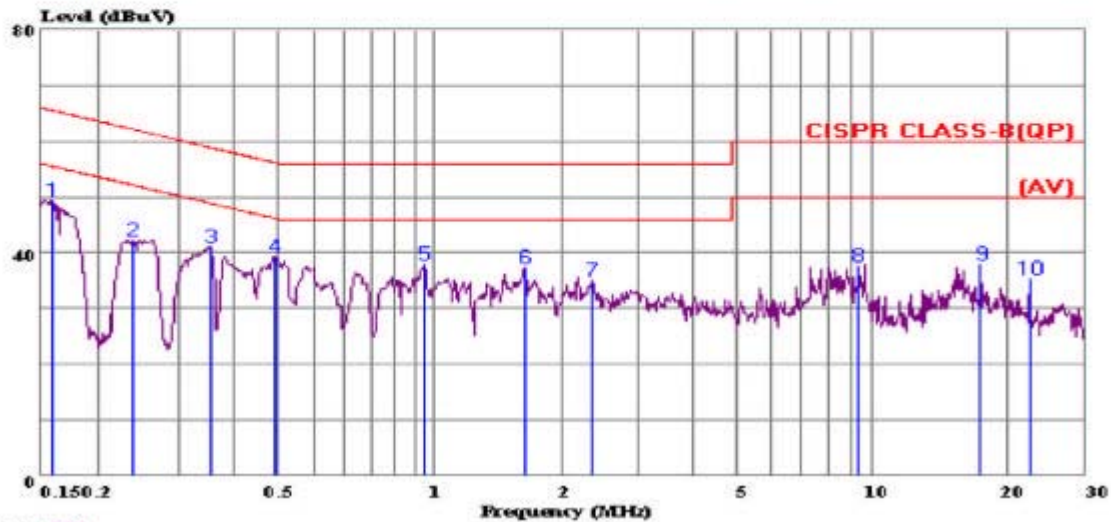
REPORT NO. : E940027

EUT Model No.: FGPXBT01 (NEUTRAL)



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Data#: 636 File#: EN55022-B(QP).EMI Date: 2005-01-20 Time: 18:40:27



Trace: 635
Site : Shih-Chi : Conduction No.1(Gene)
Condition: CISPR CLASS-B(QP) LISN.N(16A) NEUTRAL
eut : E940027
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	0.158	49.31	-16.25	65.56	49.01	0.20	0.10	
2	0.238	42.24	-19.93	62.17	41.86	0.20	0.18	
3	0.354	40.99	-17.88	58.87	40.69	0.20	0.10	
4	0.491	39.22	-16.92	56.14	38.84	0.20	0.18	
5	1.054	37.95	-18.05	56.00	37.55	0.20	0.20	
6	1.753	37.23	-18.77	56.00	36.83	0.20	0.20	
7	2.461	35.00	-21.00	56.00	34.60	0.20	0.20	
8	9.502	37.58	-22.42	60.00	36.99	0.29	0.30	
9	17.661	37.89	-22.11	60.00	37.03	0.56	0.30	
10	22.655	35.33	-24.67	60.00	34.22	0.71	0.40	

2.4 Conducted Emission Test Photo

EUT Model No. FGPXBT01

< FRONT VIEW >



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

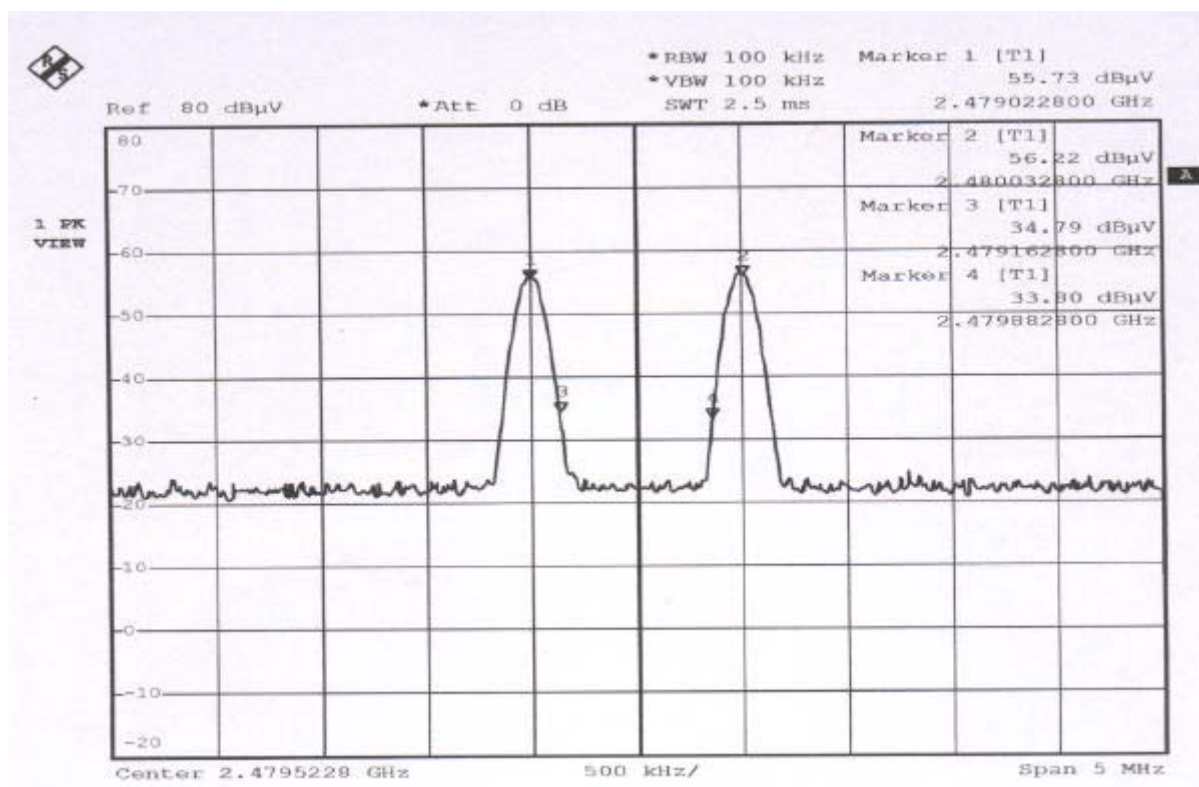
3.1 Test Procedure

- (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

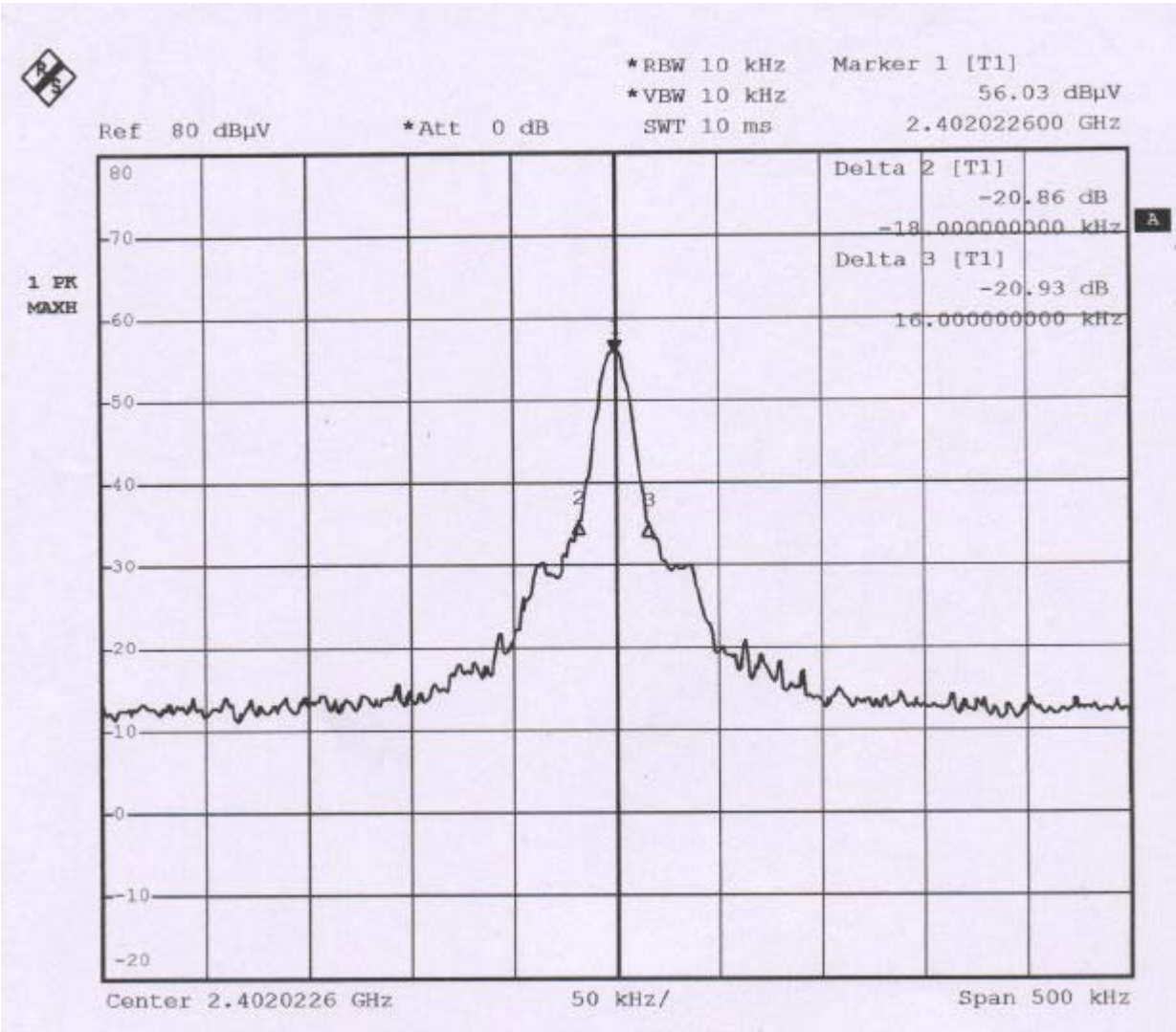
EUT Model No. FGPXB01

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

4.3 Spectrum Plot Data

Channel : CH LOW

Polarity : Horizontal



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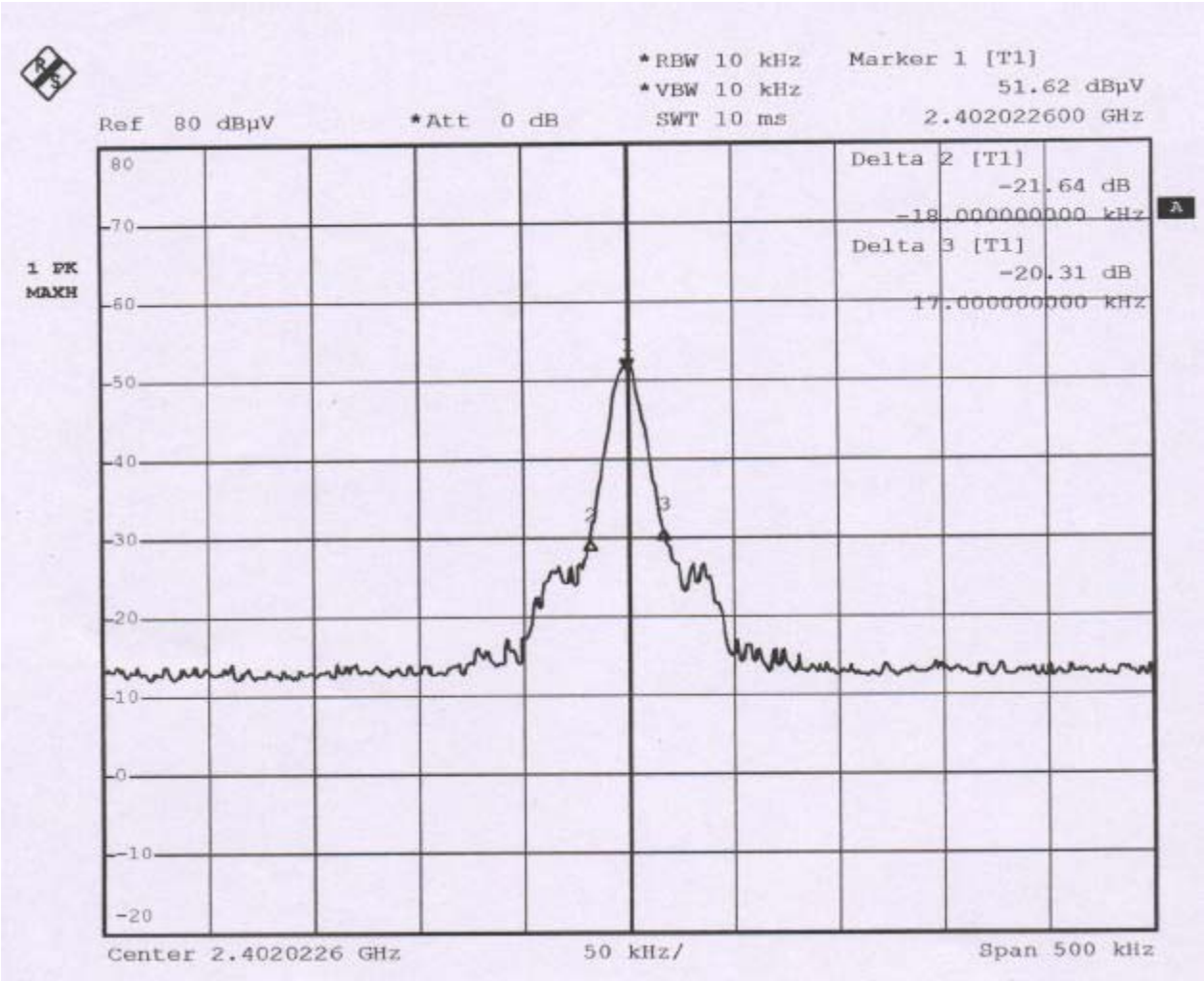
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FCC ID : SBUFGPXB01

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Channel : CH LOW

Polarity : Vertical



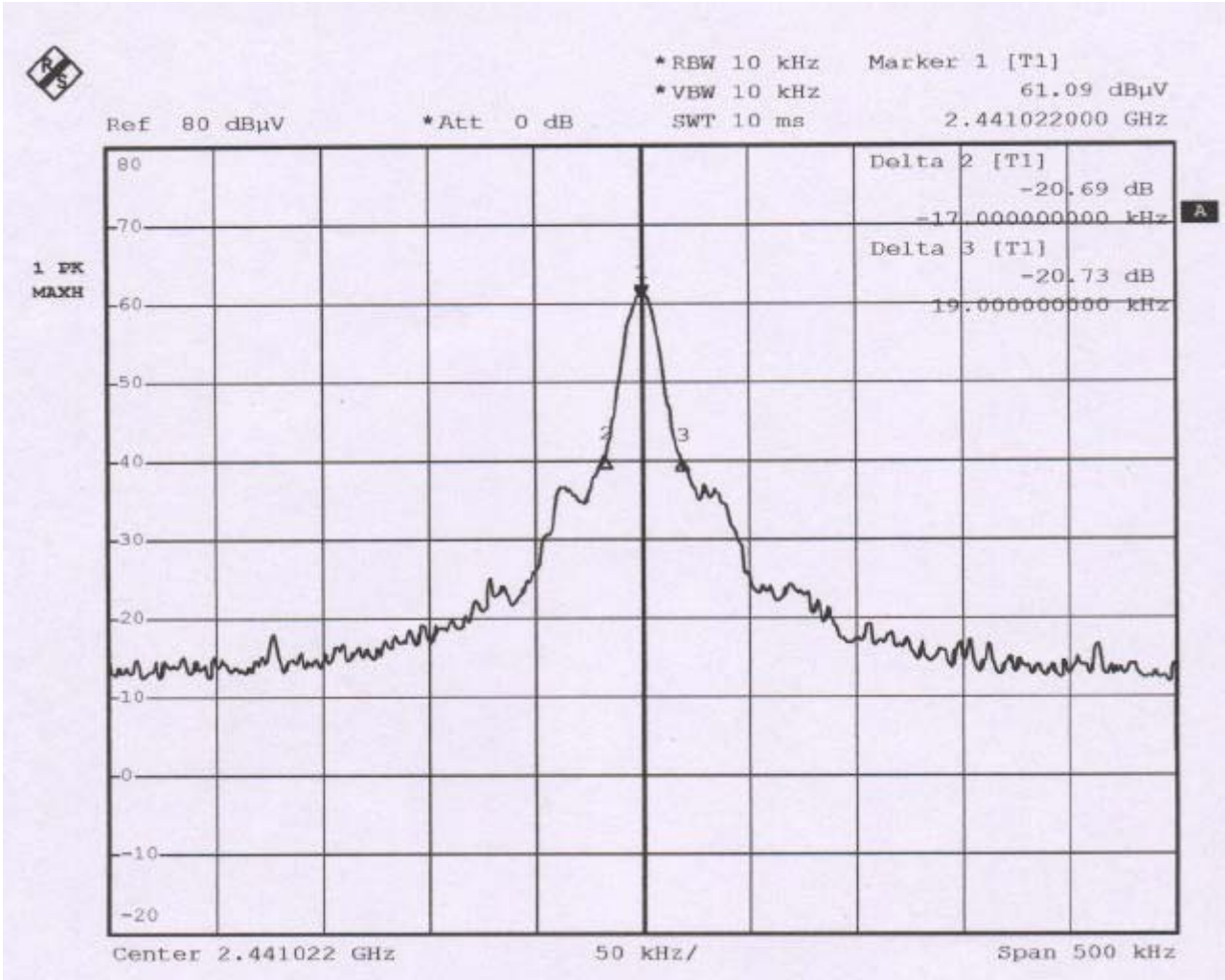
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FCC ID : SBUFGPXB01

REPORT NO. : E940027

Channel : CH MID
Polarity : Horizontal



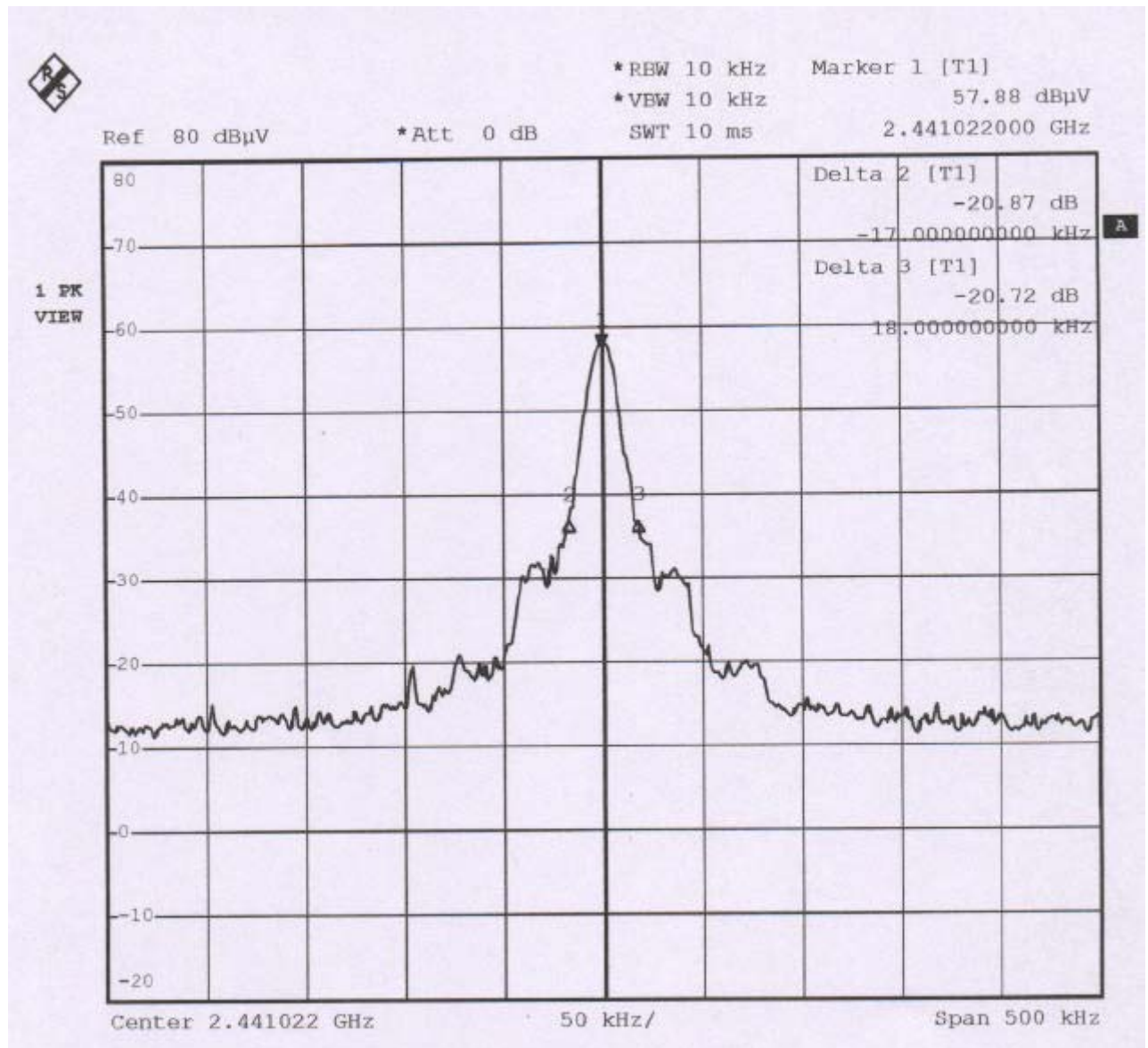
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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

Channel : CH MID

Polarity : Vertical



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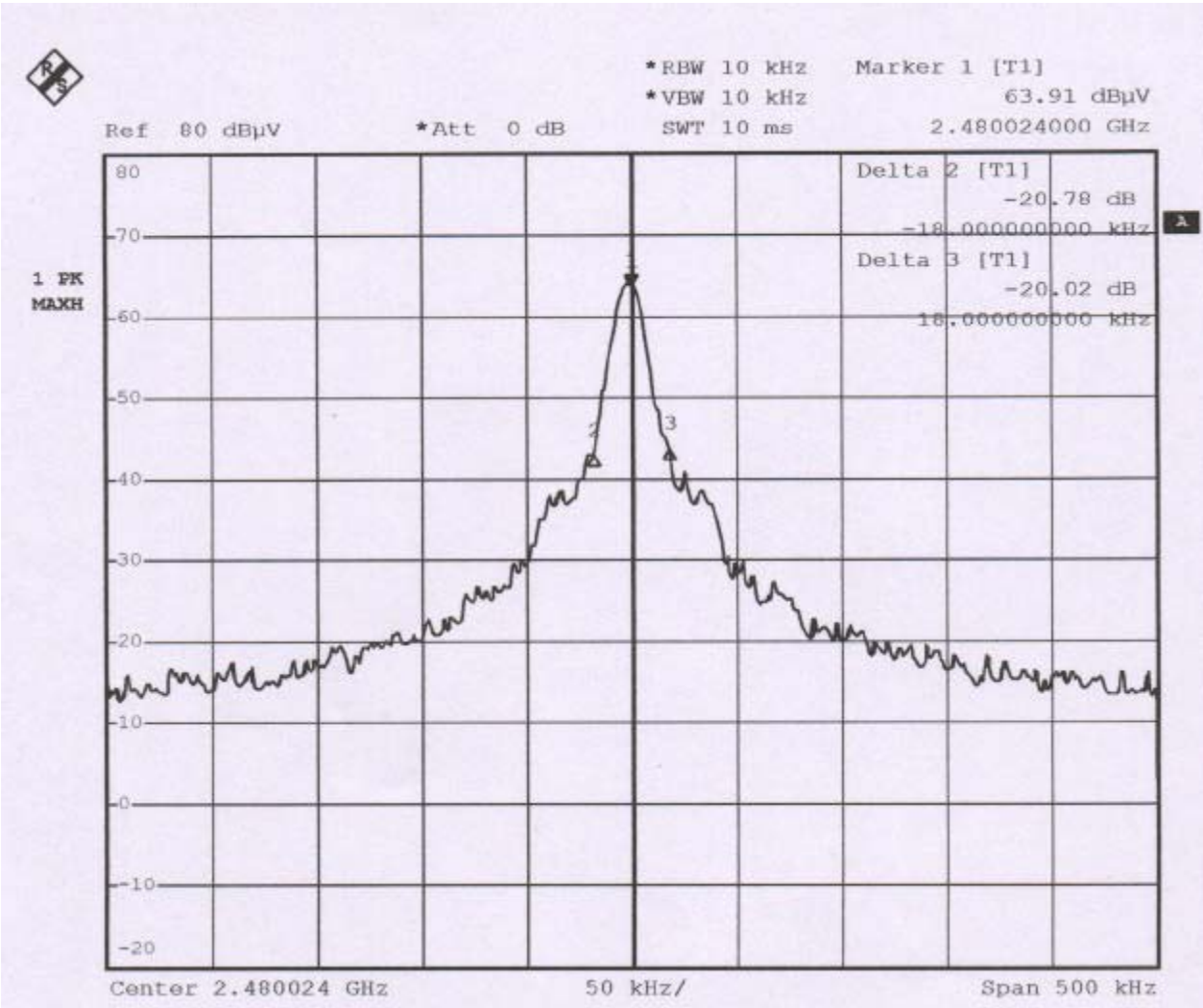
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FCC ID : SBUFGPXB01

REPORT NO. : E940027

Channel : CH HIGH

Polarity : Horizontal



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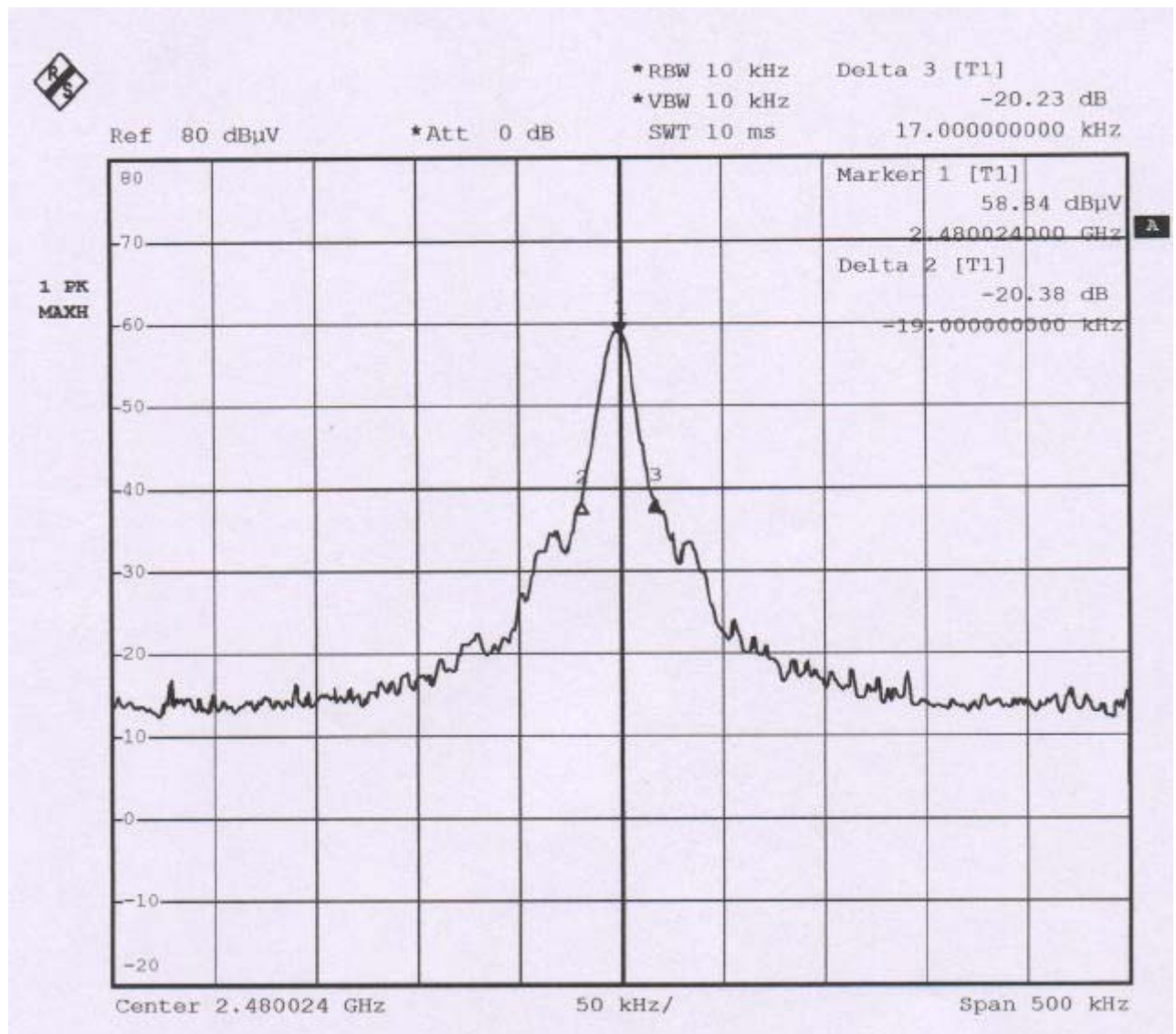
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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

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

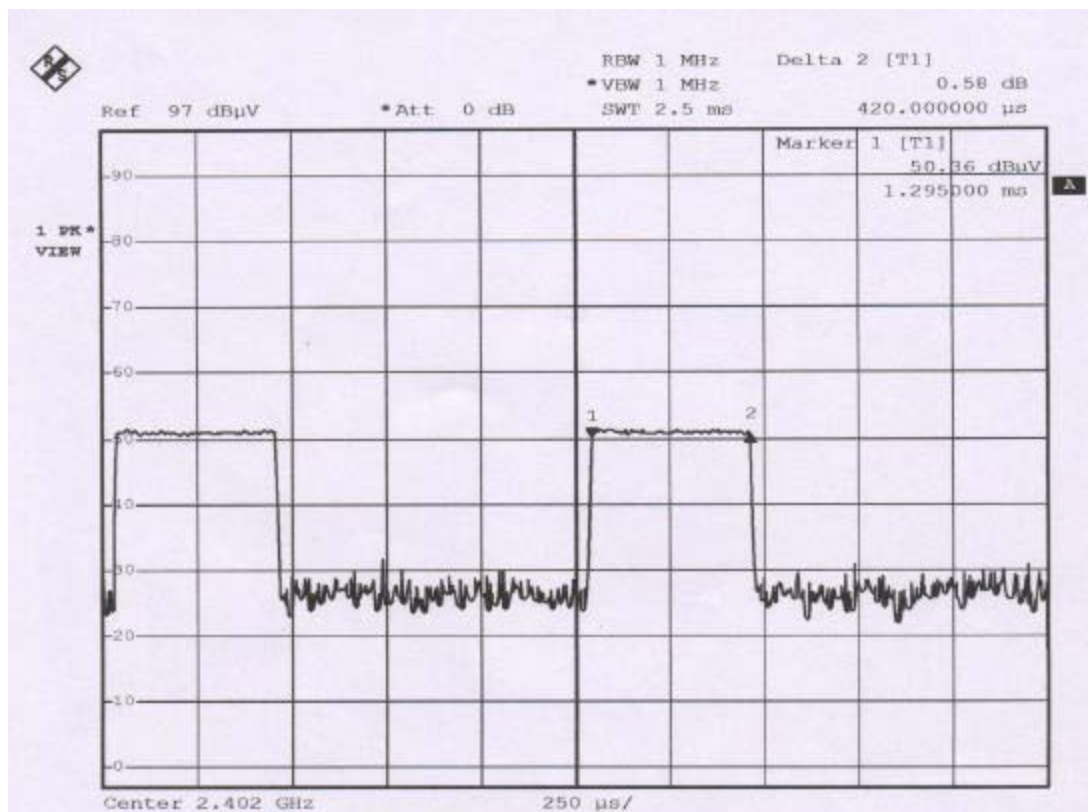
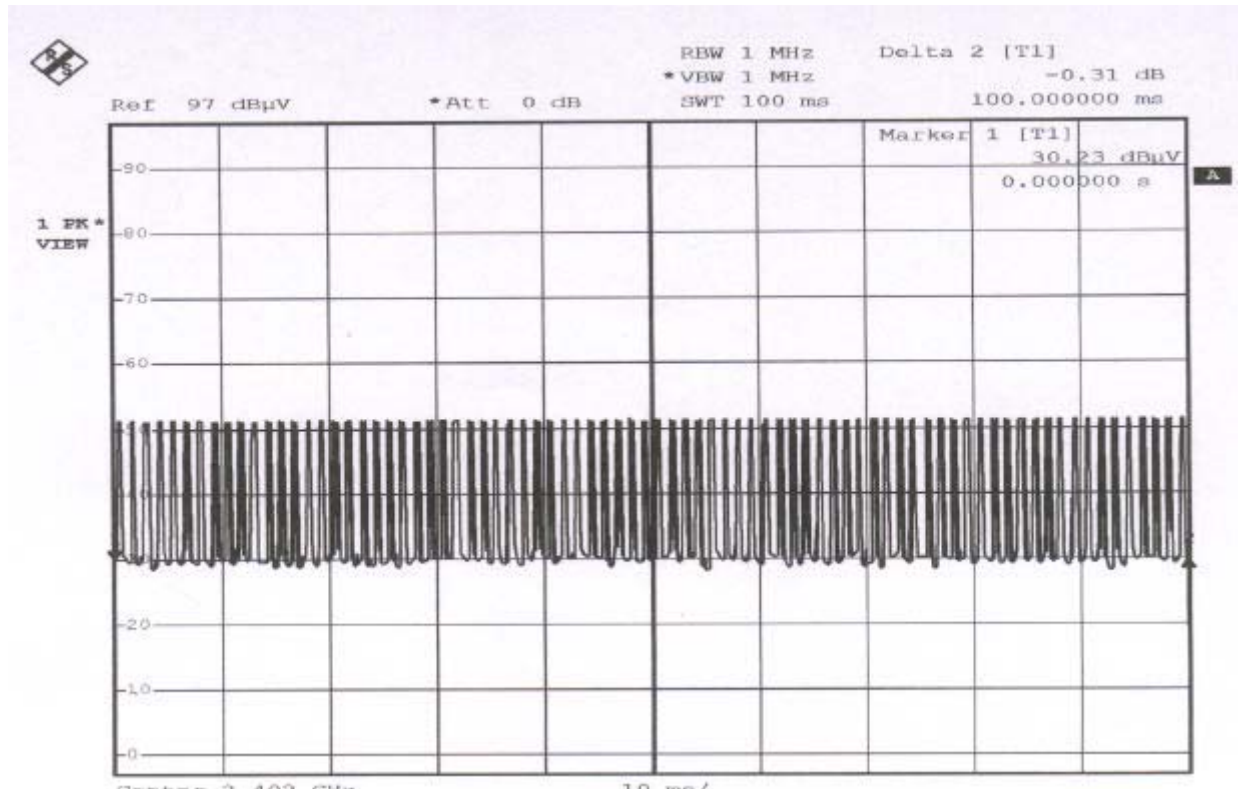
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FCC ID : SBUFGPXB01

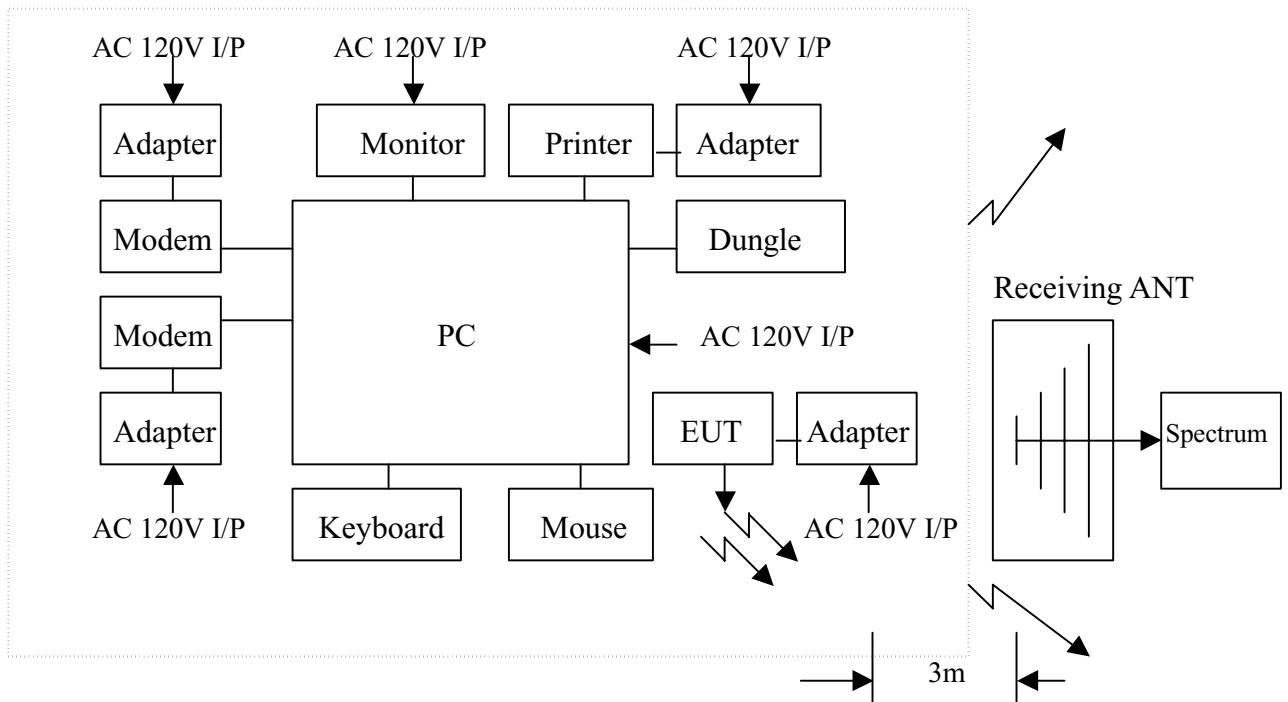
REPORT NO. : E940027

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. FGPXBT01**

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

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

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

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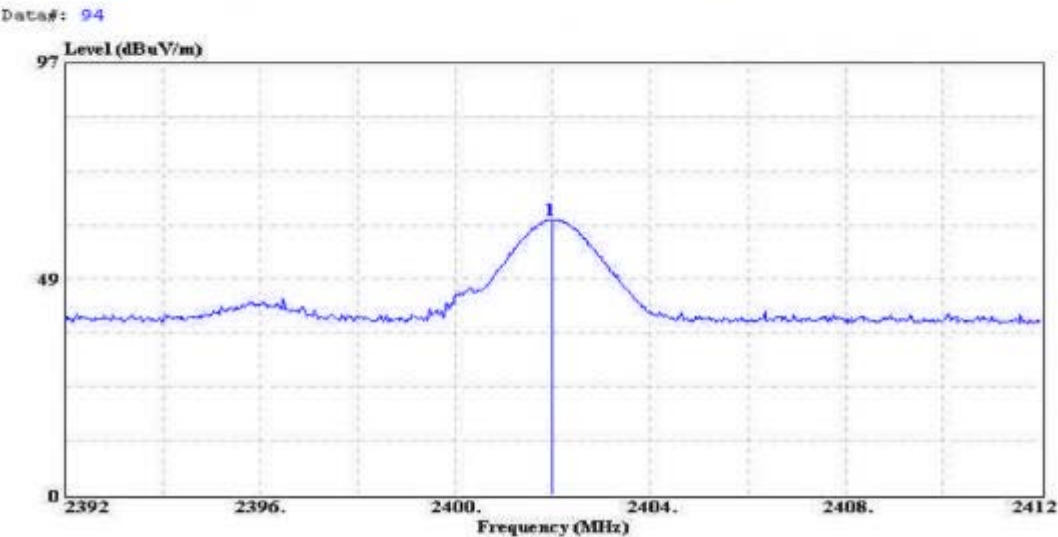
EUT Model No. FGPXBT01

Channel : CH LOW

Polarity : Horizontal



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Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : F940027
Power : AC 120V 60Hz
Memo : TX ON
Memo : LOW
Channel :

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
			Limit	Line					
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark
1	2401.980	61.80	-----	-----	63.91	28.48	4.08	34.67	

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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

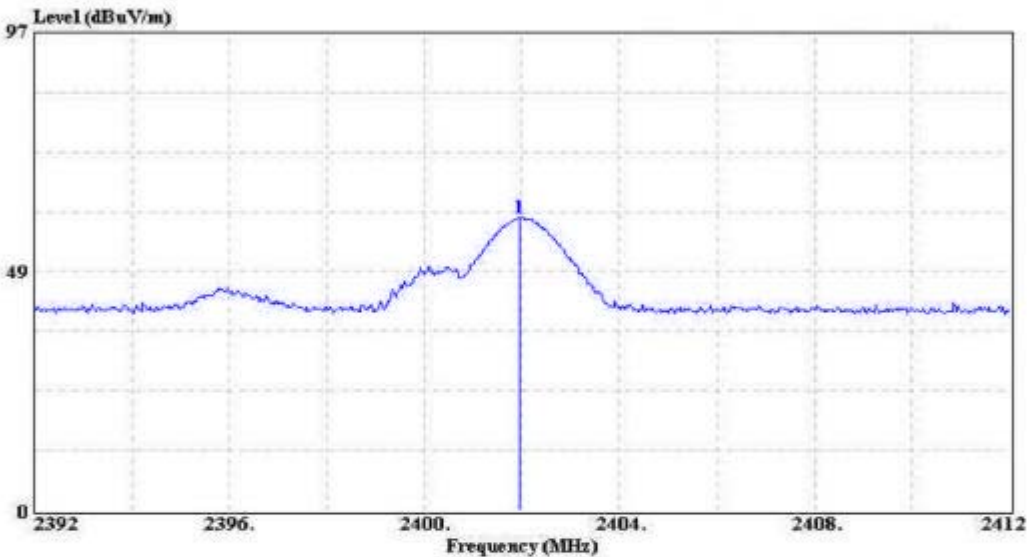
Channel : CH LOW

Polarity : Vertical



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Data#: 93



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : E940027
Power : AC 120V 60Hz
Memo : TX ON
Memo : LOW
Channel :

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
			Limit	Line					
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark
1	2401.960	59.44	-----	-----	61.55	28.48	4.08	34.67	

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FCC ID : SBUFGPXBT01

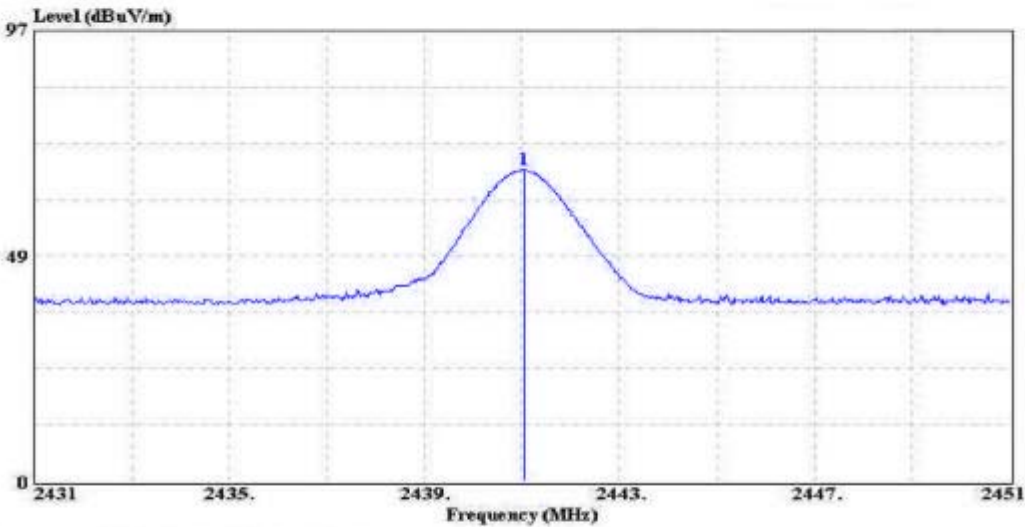
REPORT NO. : E940027

Channel : CH MID
Polarity : Horizontal



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PEP Testing Laboratory

Data# : 95



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : E940027
Power : AC 120V 60Hz
Memo : TX ON
Memo : MID
Channel :

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark
1	2441.060	66.99	-----	-----	69.00	28.53	4.14	34.68	

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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

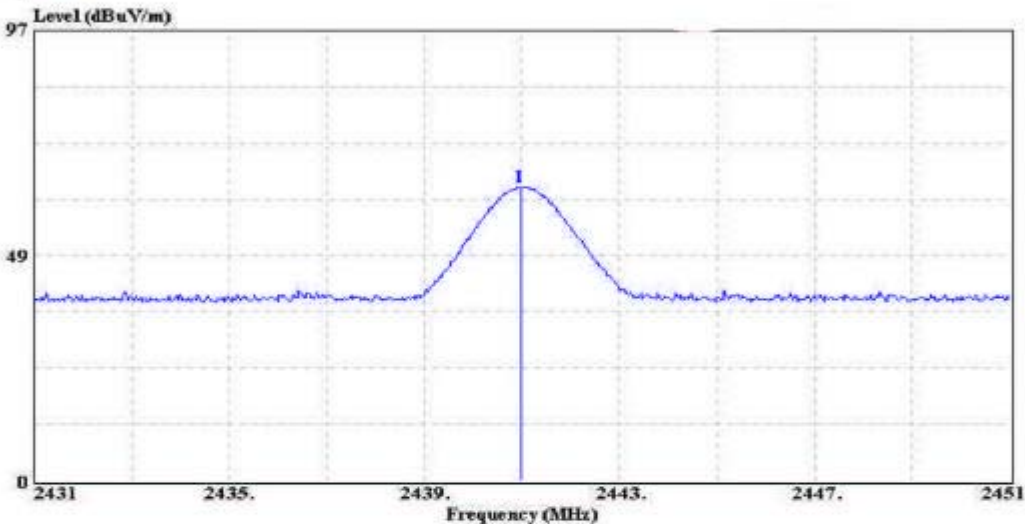
Channel : CH MID

Polarity : Vertical



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PEP Testing Laboratory

Data#: 96



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : E940027
Power : AC 120V 60Hz
Memo : TX ON
Memo : MID
Channel :

	Freq	Level	Over	Limit	Read	Probe	Cable		Preamp	Remark
			Limit	Line			Loss	Factor		
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB		dB	
1	2440.980	63.32	-----	-----	65.33	26.53	4.14		34.68	

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FCC ID : SBUFGPXBT01

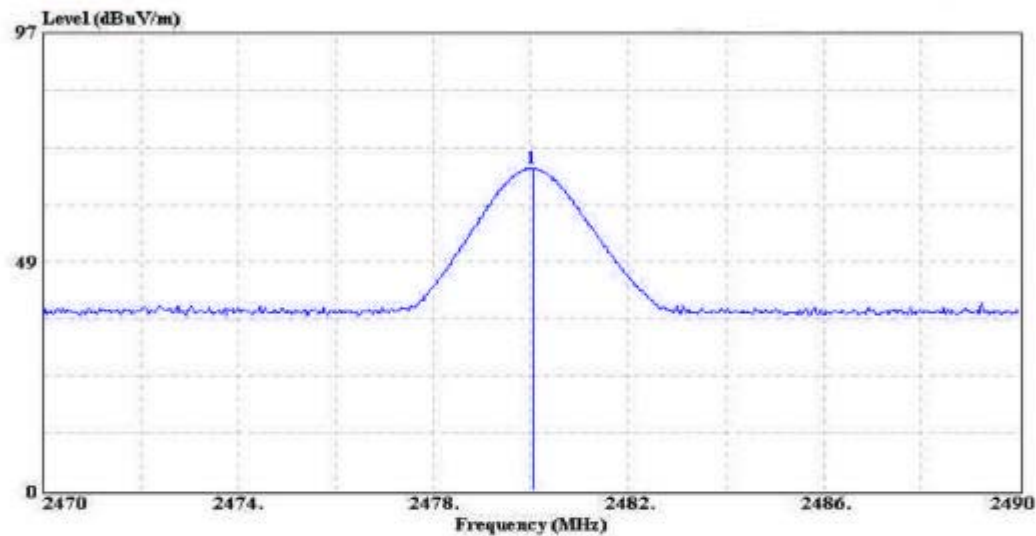
REPORT NO. : E940027

Channel : CH HIGH

Polarity : Horizontal



Data#: 97



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : E940027
Power : AC 120V 60Hz
Memo : TX ON
Memo : HIGH
Channel :

	Freq	Level	Over Limit		Read Level	Probe Factor	Cable Preamp		Remark
			Limit	Line			Loss	Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	2480.040	68.30	-----	-----	70.24	28.59	4.17	34.70	

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FCC ID : SBUFGPXB01

REPORT NO. : E940027

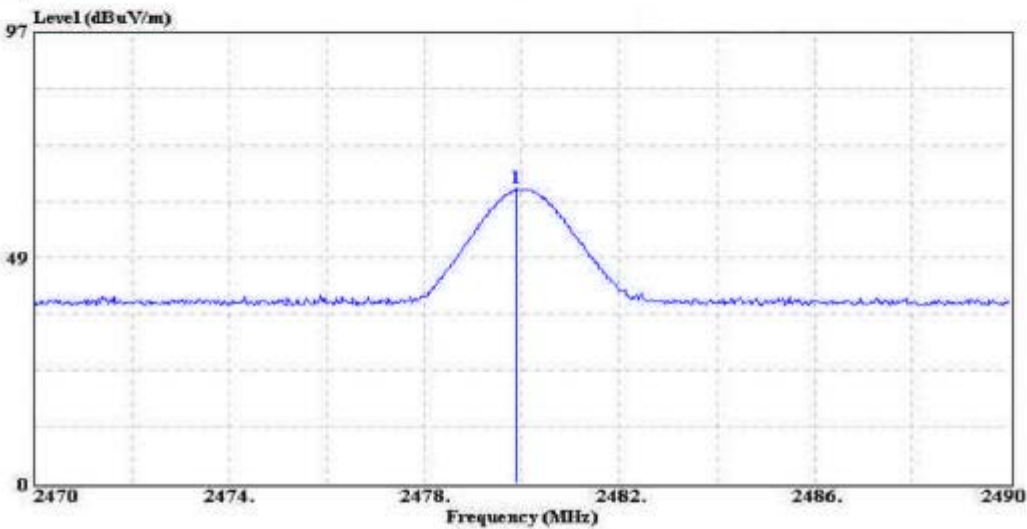
Channel : CH HIGH

Polarity : Vertical



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Date# : 98



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : E940027
Power : AC 120V 60Hz
Memo : TX ON
Memo : HIGH
Channel :

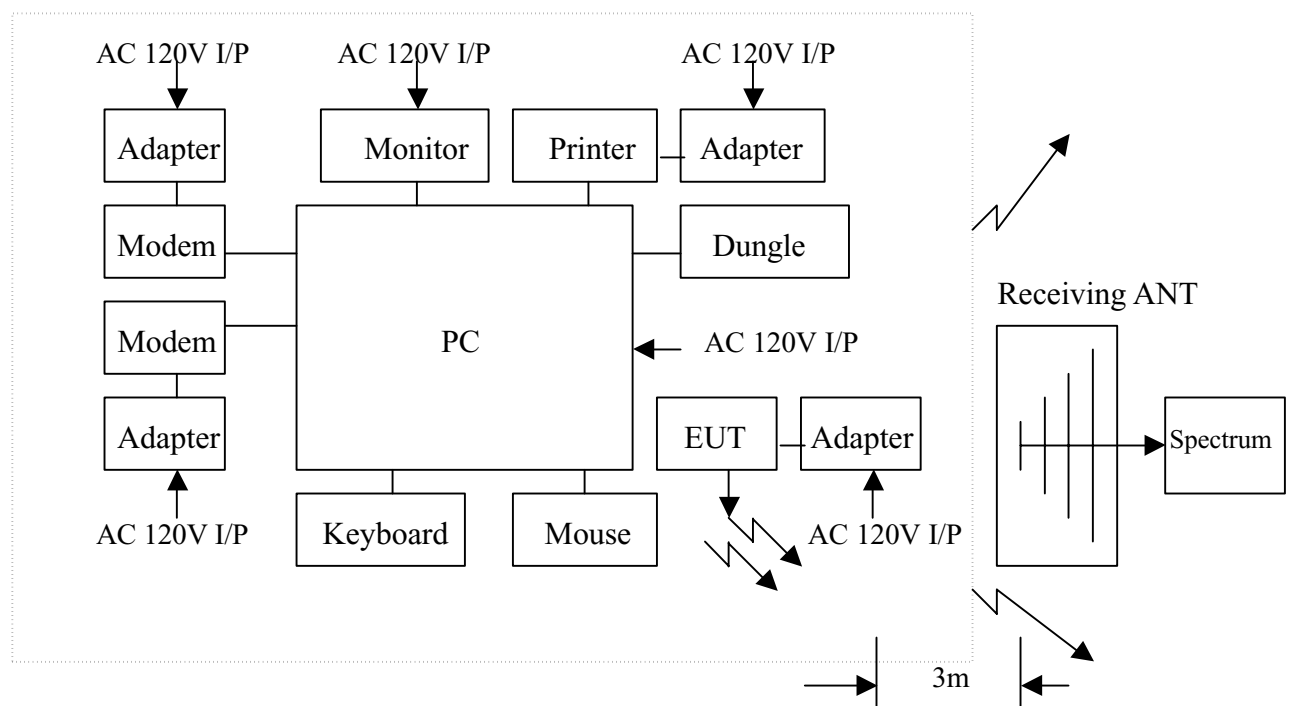
	Freq	Level	Over Limit		Read Level	Probe Factor	Cable Preamp		Remark
			Limit	Line			Loss Factor	Factor	
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1	2479.900	63.36	-----	-----	65.30	28.59	4.17	34.70	

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. FGPXBT01**

Channel	Frequency (MHz)	A.P. (H/V)	S.P. Read (dBuV/m)	C.F. (dB)	Level (dBuV/m)	Power density at 20cm (m W / cm ²)
LOW	2401.98	H	63.91	-2.11	61.80	2.02×10^{-6}
	2401.96	V	61.55	-2.11	59.44	1.17×10^{-6}
MID	2441.06	H	69.00	-2.01	66.99	6.67×10^{-6}
	2440.98	V	65.33	-2.01	63.32	2.86×10^{-6}
HIGH	2480.04	H	70.24	-1.94	68.30	9.01×10^{-6}
	2479.90	V	65.30	-1.94	63.36	2.89×10^{-6}

Note :

5. "A.P." means antenna polarity .
6. "S.P." Read means amplitude read by spectrum analyzer .
7. "C.F." means corrected factor = antenna factor + cable loss - Preamplifier Gain .
8. Level means emission amplitude = S.P. + C.F. + duty cycle factor
9. 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) $P = \text{E.I.R.P.}$

10. Example :

If Level = 120 dBuV/m

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

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

VIII. §15.247(c) : Spurious Radiated Emissions**8.1 Out side band below 1GHz****Test Results :****Model No. : FGPXBT01****Frequency range : 30MHz - 1GHz****Detector : Quasi-Peak Value****Temperature : 26° C****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
103.98	29.74	-13.76	43.5	28.59	10.64	1.26	10.75	
200.10	27.89	-15.61	43.5	31.95	8.81	1.93	14.80	
255.45	27.20	-18.80	46.0	28.60	12.64	2.26	16.30	
500.20	39.01	-6.99	46.0	33.45	17.30	3.01	14.75	
638.10	39.67	-6.94	46.0	35.07	19.09	3.62	18.72	
825.00	36.67	-9.33	46.0	27.39	20.33	4.08	15.13	

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
83.46	37.21	-2.79	40.0	37.95	7.63	1.13	9.50	
123.69	30.13	-13.37	43.5	27.92	11.36	1.44	10.59	
207.93	31.13	-12.37	43.5	29.37	7.77	1.99	8.00	
500.20	34.39	-11.61	46.0	29.20	17.30	3.01	15.12	
533.80	35.42	-10.58	46.0	32.50	18.21	3.14	18.43	
749.40	37.42	-8.58	46.0	29.99	19.90	3.91	16.38	
825.70	36.99	-9.01	46.0	27.74	20.33	4.08	15.16	

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 : SBUFGPXBT01

REPORT NO. : E940027

8.2 Out side band above 1GHz

Test Results :

Model No. : FGPXBT01

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	Line	Level	Factor	Loss	Factor	Remark
		(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	
4803	49.48	-24.52	74	44.87	32.79	5.93	34.11	PK
4803	42.14	-11.86	54	37.53	32.79	5.93	34.11	AV

Antenna polarization : VERTICAL ; Test distance : 3 m ;

Freq.	Level	Over	Limit	Read	Probe	Cable	Preamp	
(MHz)	(dBuV/m)	Limit	Line	Level	Factor	Loss	Factor	Remark
		(dB)	(dBuV/m)	(dBuV)	(dB/m)	(dB)	(dB)	
4803	44.72	-29.28	74	40.11	32.79	5.93	34.11	PK
4803	36.16	-17.84	54	31.55	32.79	5.93	34.11	AV

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 : SBUFGPXB01

REPORT NO. : E940027

Model No. : FGPXB01

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	50.71	-23.29	74	45.71	33.10	5.96	34.06	PK
4882	40.97	-13.03	54	35.97	33.10	5.96	34.06	AV

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	46.53	-27.47	74	41.53	33.10	5.96	34.06	PK
4882	38.43	-15.57	54	33.43	33.10	5.96	34.06	AV

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

FCC ID : SBUFGPXB01

REPORT NO. : E940027

Model No. : FGPXB01

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)	
4962	49.92	-24.08	74	44.55	33.40	5.99	34.02	PK
4962	41.19	-12.81	54	35.82	33.40	5.99	34.02	AV

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)	
4962	45.89	-28.11	74	40.52	33.40	5.99	34.02	PK
4962	38.24	-15.76	54	32.87	33.40	5.99	34.02	AV

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 : SBUFGPXBT01

REPORT NO. : E940027

8.3 Spurious Radiate Emission Testing Photos

EUT Model No. FGPXBT01

< FRONT VIEW >



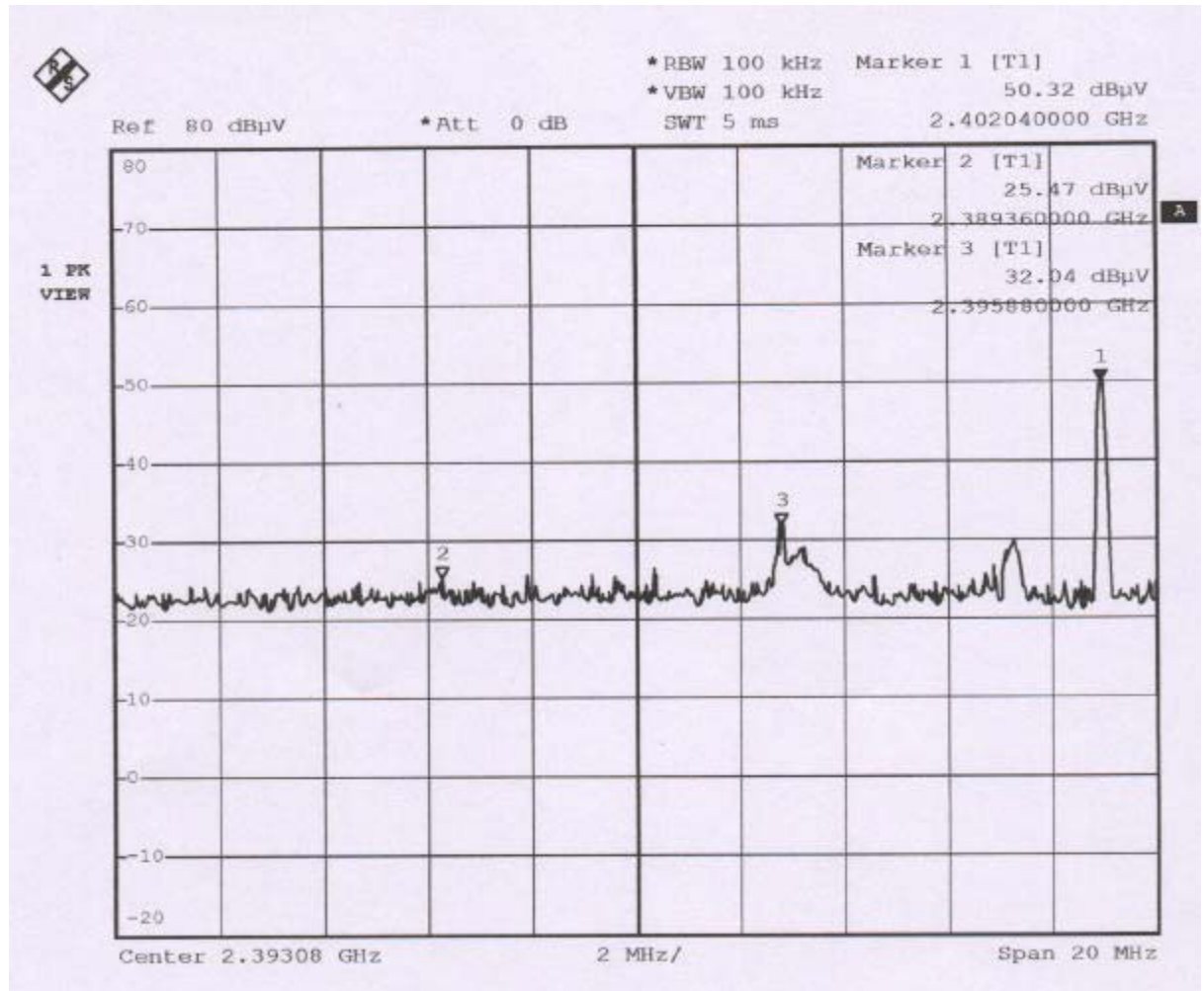
< REAR VIEW >



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

Channel : CH LOW

Polarity : Horizontal



Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

50.32dBuV/m-25.47 dBuV/m =24.85dBuV/m

61.80 dBuV/m-24.85 dBuV/m=36.95 dBuV/m

*36.95dBuV/m<Average Limit (54dBuV/m)

PEP Testing Laboratory

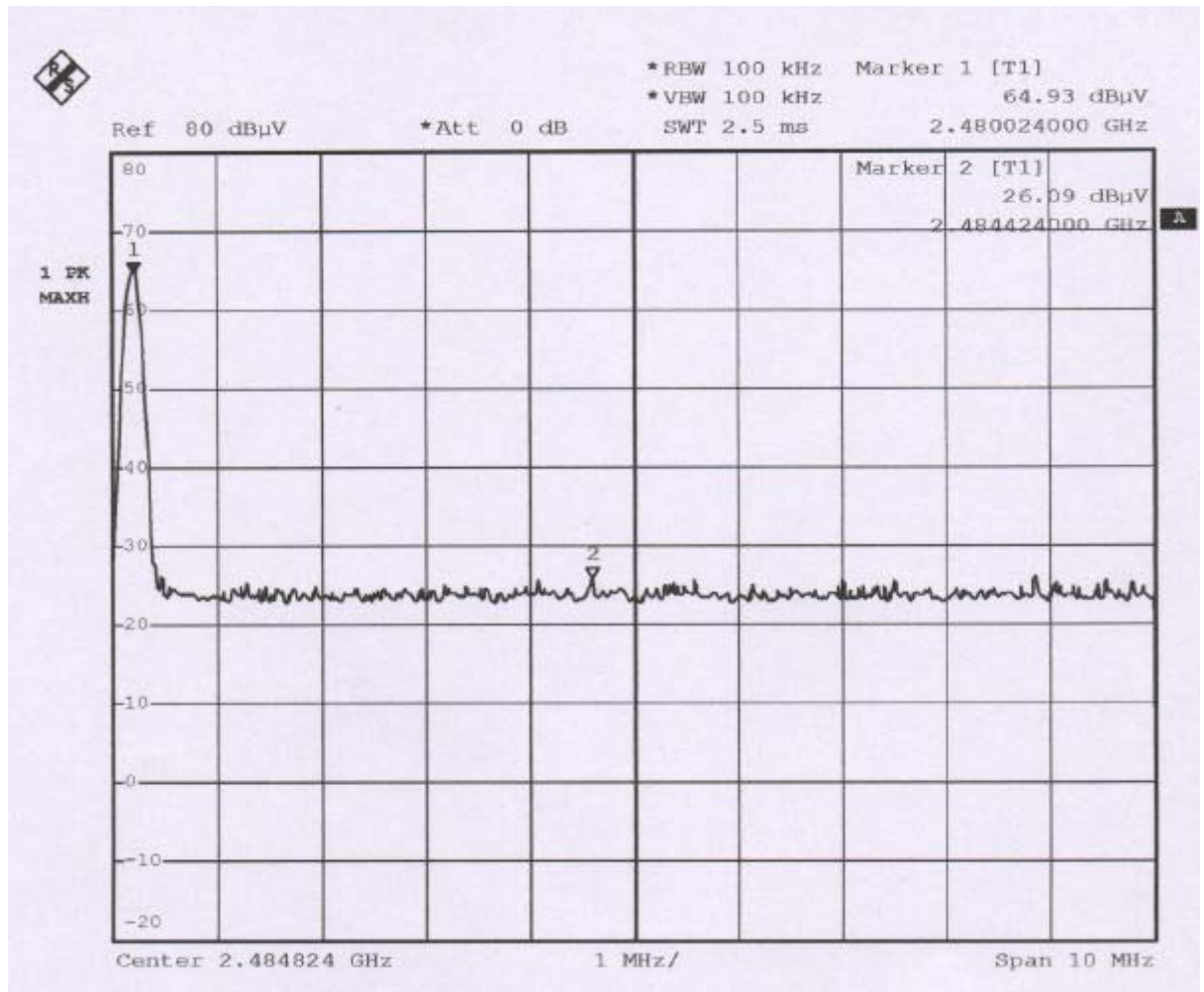
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
Taipei Hsien, Taiwan, R. O. C.
TEL: 886-2-26922097 FAX: 886-2-26956236

FCC ID : SBUFGPXBT01

REPORT NO. : E940027

Channel : CH HIGH

Polarity : Horizontal



Test method : Public Notice DA 00-705

Detect : Peak Value

Marker-Delta method :

$64.93\text{dB}\mu\text{V}/\text{m} - 26.09\text{ dB}\mu\text{V}/\text{m} = 38.84\text{dB}\mu\text{V}/\text{m}$

$68.30\text{ dB}\mu\text{V}/\text{m} - 38.84\text{ dB}\mu\text{V}/\text{m} = 29.46\text{ dB}\mu\text{V}/\text{m}$

$*29.46\text{dB}\mu\text{V}/\text{m} < \text{Average Limit } (54\text{dB}\mu\text{V}/\text{m})$

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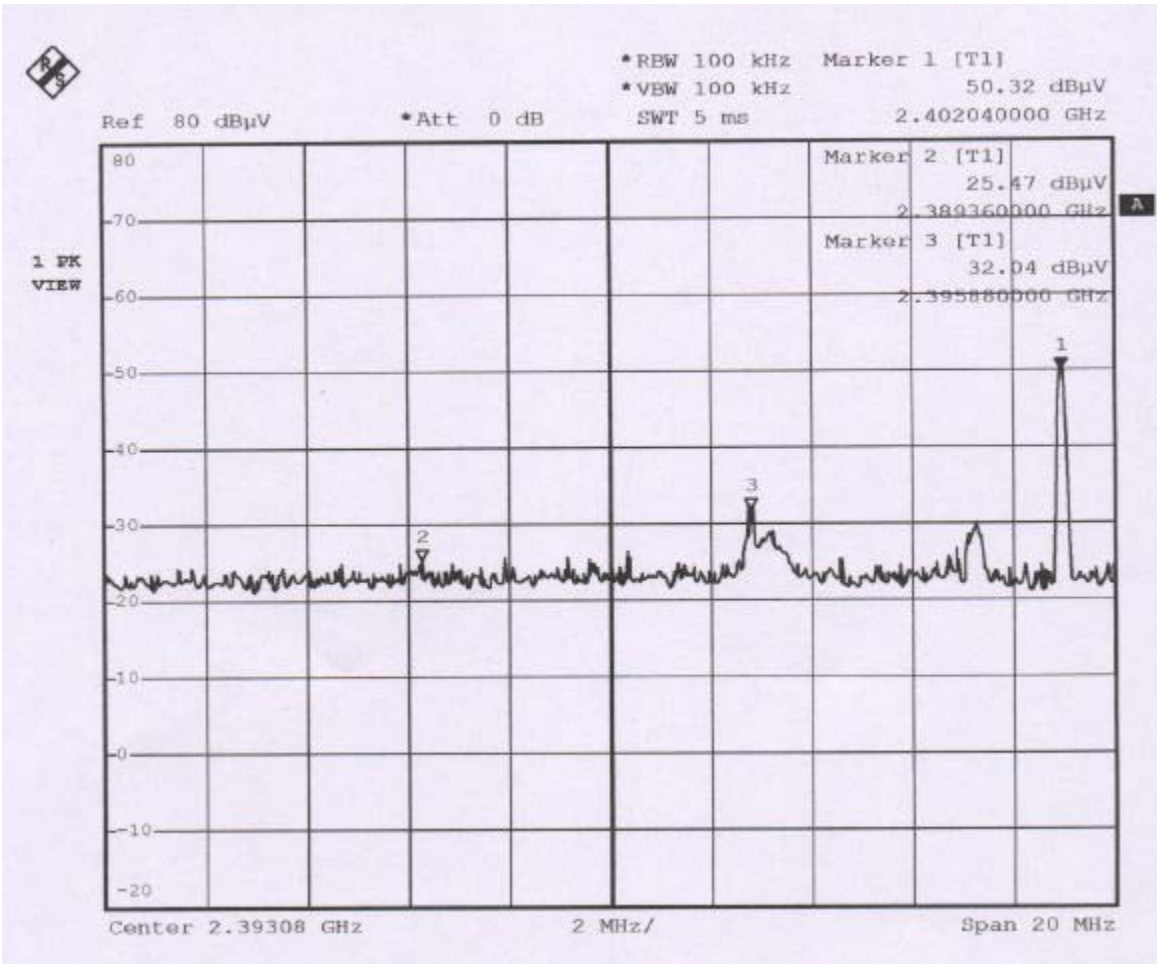
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

Channel : CH LOW

Polarity : Vertical



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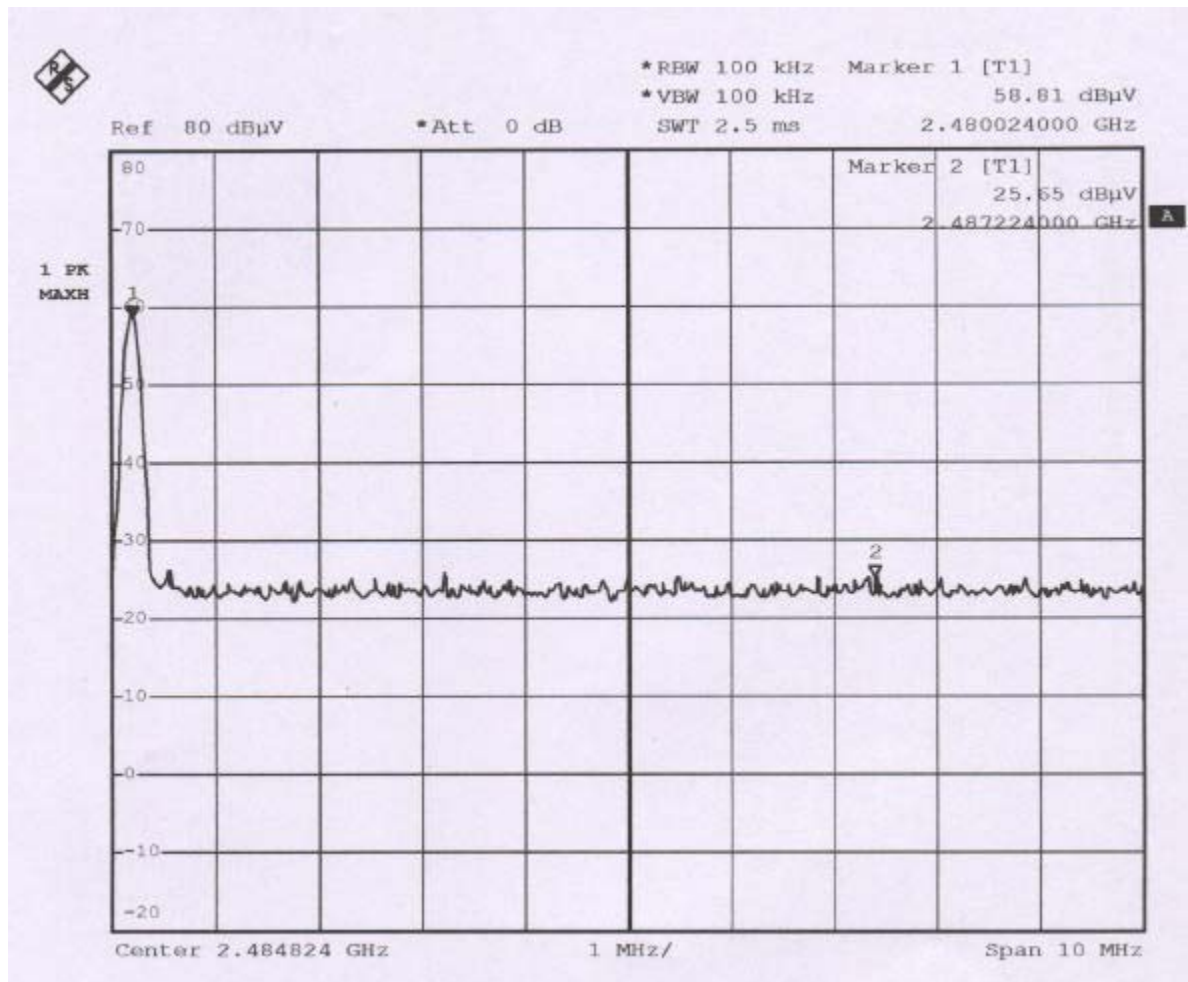
12-3Fl, No. 27-1, Lane 169, Kang-Ning St., Hsi-Chih,
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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

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	2401.88	-37.15	8	Pass
MID	2441.01	-31.33	8	Pass
HIGH	2479.88	-29.55	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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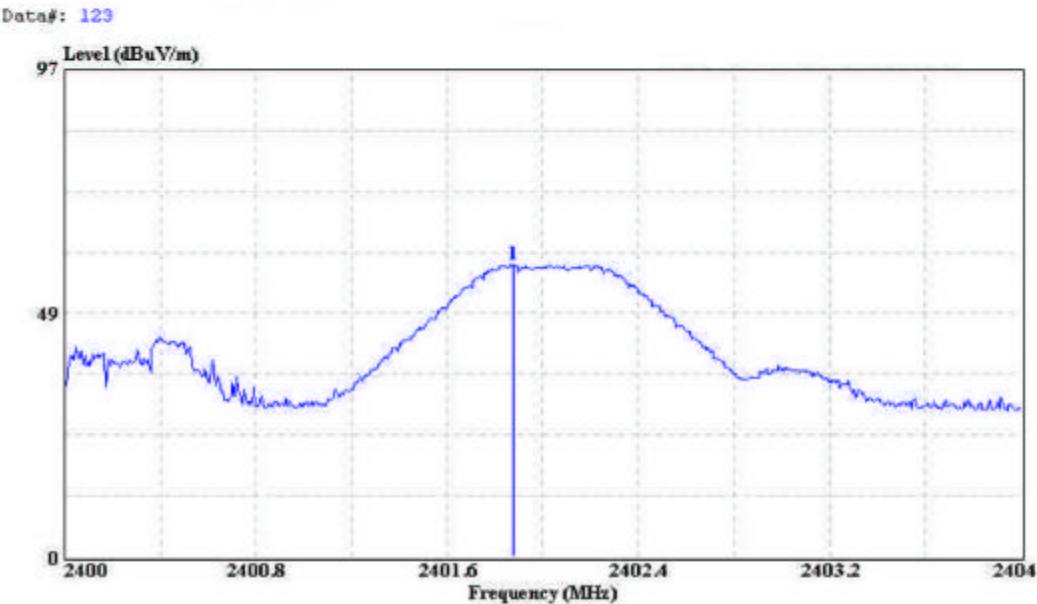
FCC ID : SBUFGPXBT01

REPORT NO. : E940027

10.3 Spectrum Plot Data

Channel : CH LOW

Polarity : Horizontal



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : E940027
Power : AC 120V 60Hz
Memo : Peak Power Spectral Density
Memo : TX ON
Channel : LOW

	Freq	Level	Over	Limit	Read	Probe	Cable	Preamp	
			Limit	Line					
	MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	Remark
1	2401.880	58.08	-----	-----	60.19	28.47	4.08	34.66	

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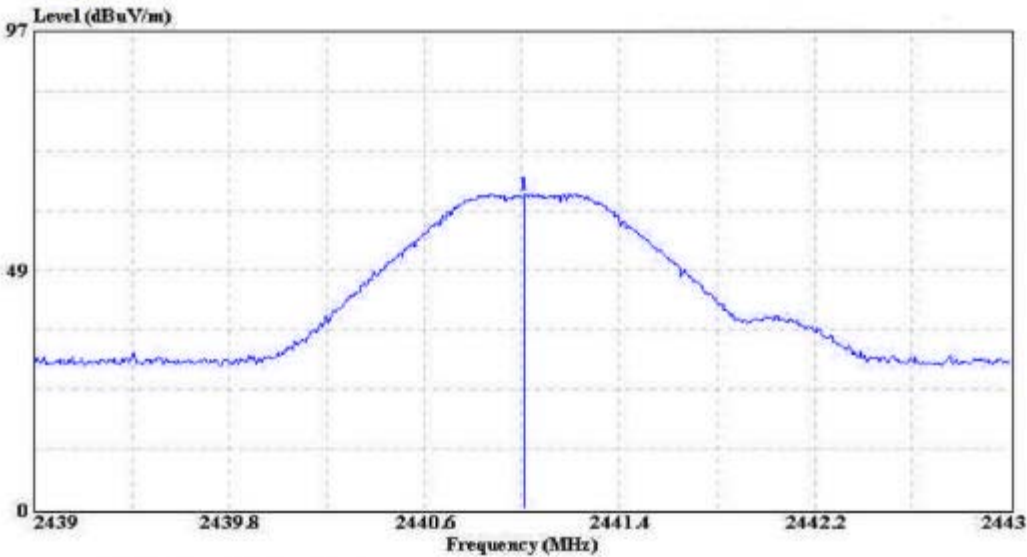
FCC ID : SBUFGPXBT01

REPORT NO. : E940027

Channel : CH MID
Polarity : Horizontal



Data#: 124



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : E940027
Power : AC 120V 60Hz
Memo : Peak Power Spectral Density
Memo : TX ON
Channel : MID

		Over Limit		Read	Probe	Cable Preamp		Remark
Freq	Level	Limit	Line	Level	Factor	Loss	Factor	
MHz	dBuV/m	dB	dBuV/m	dBuV	dB	dB	dB	
1 2441.010	63.90	-----	-----	65.91	28.53	4.14	34.68	

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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

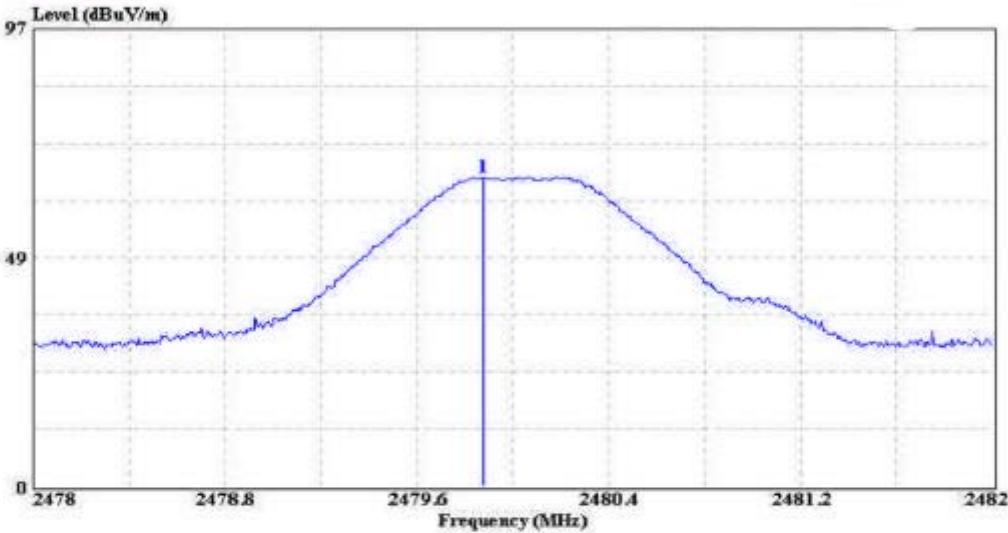
Channel : CH HIGH

Polarity : Horizontal



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PEP Testing Laboratory

Data#: 125



Site : Shih-Chi : Chamber No.3
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : E940027
Power : AC 120V 60Hz
Memo : Peak Power Spectral Density
Memo : TX ON
Channel : 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	2479.880	65.68	-----	-----	67.62	28.58	4.17	34.69	

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FCC ID : SBUFGPXBT01

REPORT NO. : E940027

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, 2005	1Year
	Rolf Heine LISN	NNB-4/63TL	98008	May 01, 2005	1Year
	R & S LISN	ESH3-Z5	844982/039	Aug. 06, 2005	1Year
	Spectrum Analyzer	R3261A	91720076	June 08, 2005	1Year
	RF Cable	Rg400	N/A	May 12, 2005	1Year
	Schaffner ISN	T411	N/A	June 29, 2005	1Year
Radiation (OP No.3)	R & S Receiver	ESBI	845658/003	July 28, 2005	1Year
	Schaffner Pre-Amp.	CPA-9232	1012	Aug. 20, 2005	1Year
	SCJWARZBECL Antenna	VULB9161	D-69250	May 19, 2005	1Year
	COM-Power Horn Ant.	AH-118 (1GHz~18GHz)	10095	May 25, 2005	1Year
	RF Cable	No.2	N/A	Feb. 19, 2005	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, 2005	2Year
Chamber (No. 3)	Spectrum Analyzer	FSP 30	100157	Aug. 30, 2005	1Year
	Pre-Amplifier	CPA-9232	1027	Feb. 24, 2005	1Year
	Antenna	VULB9160	3074	July 24, 2004	1Year
	Signal Generator	SMY02	829846/0358	Jane 29, 2005	2Year
	RF Cable	NO.3	N/A	Feb. 19, 2005	1Year
	HORN ANTENNA	AH-118	10095	May 13, 2005	1Year

XII. EUT Photos

EUT Model No. FGPXB01



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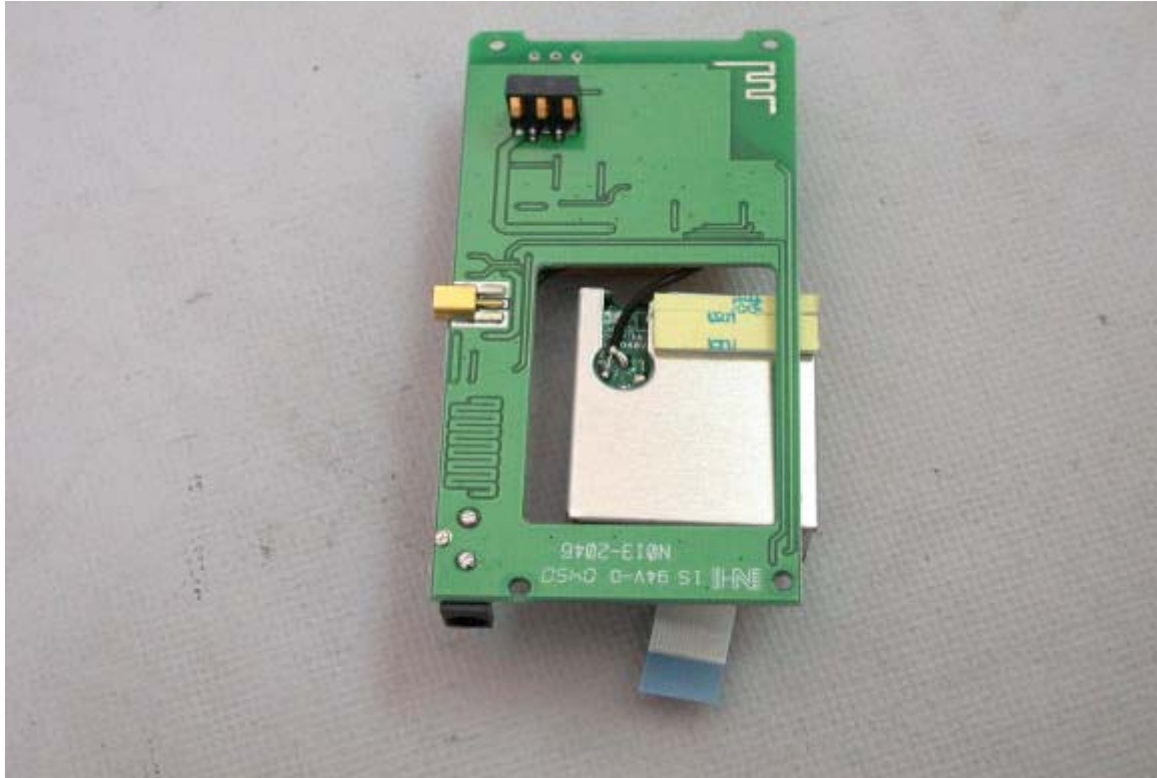
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