

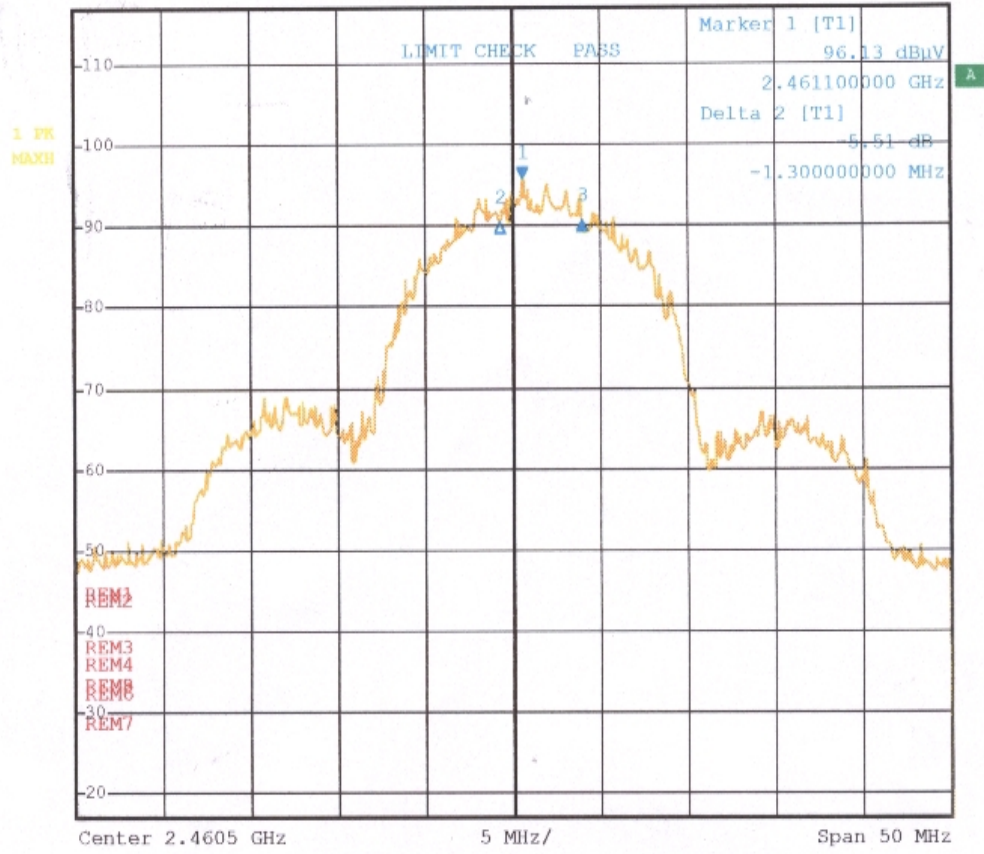
6dB Bandwidth Plot



Ref 117 dBuV *Att 20 dB SWT 10 ms

*RBW 100 kHz Delta 3 [T1] -5.29 dB

*VBW 100 kHz 3.400000000 MHz



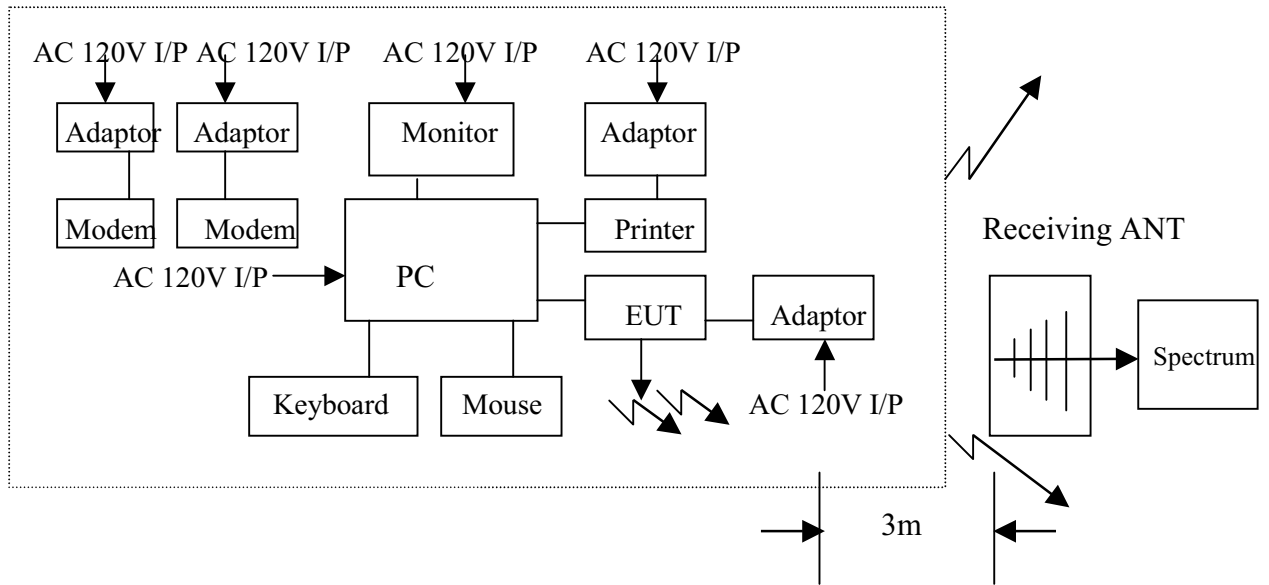
Date: 18.JUN.2002 02:53:49

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

4.1 Testing Description

FCC ID : JVPAWL500

Charging Mode



Three channels were tested : CH01, CH06 AND CH11 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.

4.2 Software Using

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

4.3 Test Result of Fundamental Emissions

FCC ID : JVPAWL500
EUT Model No. AWL500

| channel | Frequency (MHz) | A.P. (H/V) | S.P. Read (dBuV/m) | C.F. (dB) | Level (dBuV/m) | E.I.R.P. (W) |
|---------|-------------------|------------|--------------------|-----------|----------------|--------------|
| Top | 2412.0 | H | 110.26 | 2.81 | 113.07 | 0.0608 |
| | | V | 97.52 | 2.81 | 100.33 | 0.00323 |
| Middle | 2438.2 | H | 109.26 | 2.81 | 112.07 | 0.0483 |
| | | V | 96.30 | 2.81 | 99.11 | 0.00244 |
| Bottom | 2463.4 | H | 109.21 | 2.80 | 109.21 | 0.04765 |
| | | V | 95.34 | 2.80 | 98.14 | 0.00195 |

Note :

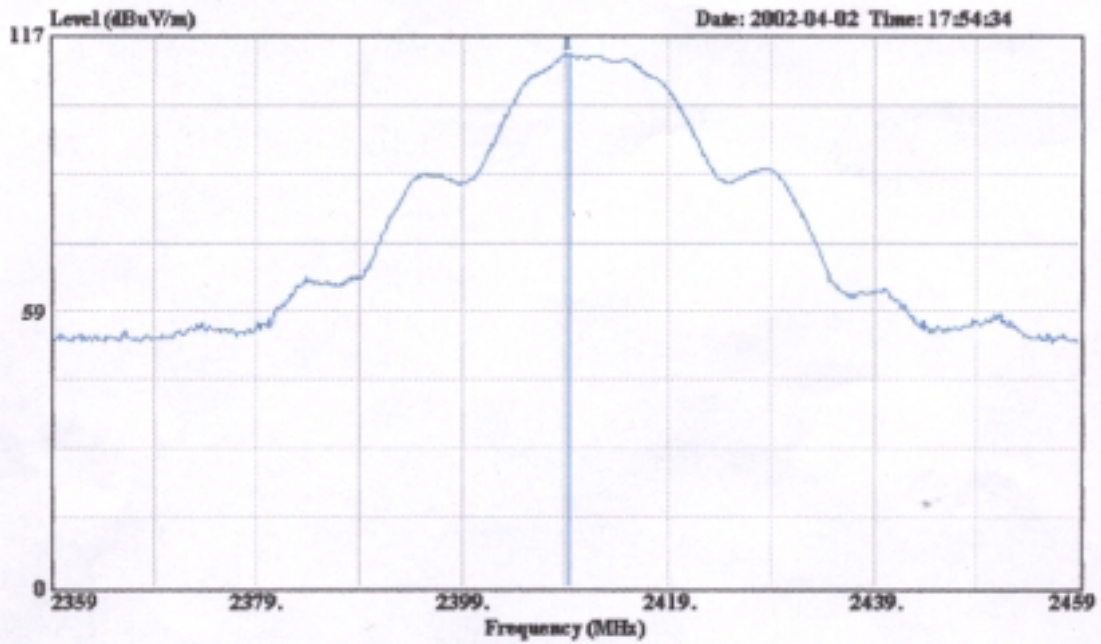
1. "A.P." means antenna polarity .
2. "S.P." Read means amplitude read by spectrum analyzer .
3. "C.F." means corrected factor = antenna factor + cable loss
Preamplifier Gain .
4. Level means emission amplitude = S.P. + C.F. + duty cycle factor
5. Conducted output power : $P = (E d)^2 / 30G$
where $E (V) = \text{Level} (V)$
 $d (m) = \text{measurement distance} = 3m$
 $G = 1$ (the gain of the transmitting antenna over isotropic antenna)
 $P = \text{E.I.R.P.}$
6. Example :
If $\text{Level} = 120 \text{ dBuV/m}$
 $10^{(120 / 20)} \times 10^{-6} = 1 \text{ V}$
 $\text{E.I.R.P.} = (1 \times 3)^2 / 30 = 300 \text{ mW}$

FCC ID : JVPAWL500
 EUT Model No. : AWL500



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 PEP Testing Laboratory

Date#: 174 File#: C:\e3\300 328 R&TTE\明基.emi



Site : site
 Condition : 3m HORN ANTENNA H.3 HORIZONTAL
 EUT : AWL500
 Power : AC 120V/60Hz (FCC)
 Memo : CHANNEL 1

: TX ON
 : 11M bps
 : The Maximum Peak Power
 : RBW:3MHz ; VBW:3MHz

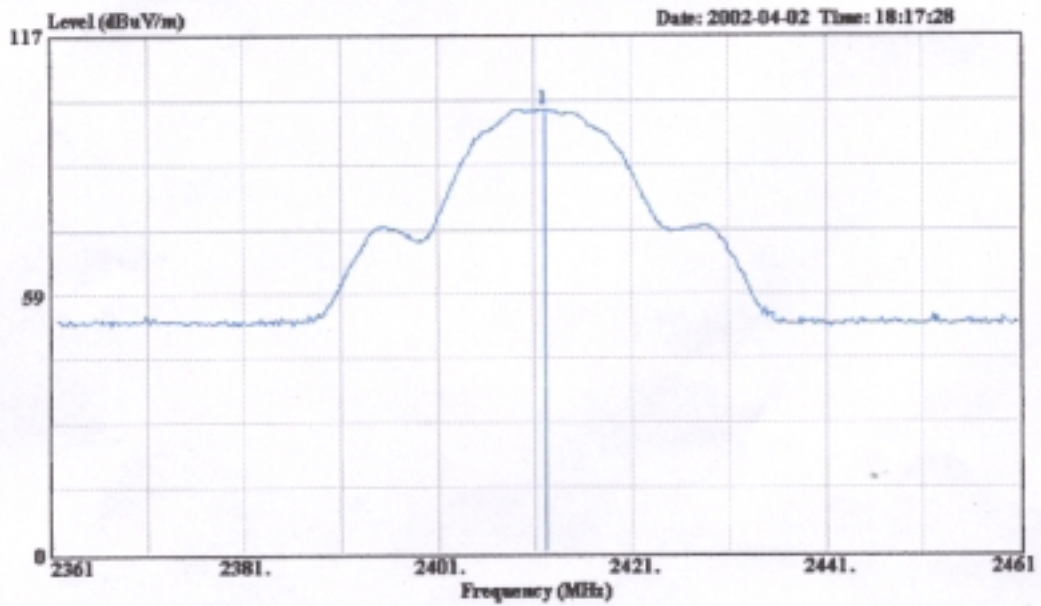
| Over | Limit | Read | Probe | Cable | Preamp |
|------|----------|--------|--------|--------|--------|
| Freq | Level | Limit | Line | Level | Factor |
| MHz | dBuV/m | dB | dBuV/m | dBuV | dB |
| 1 | 2409.400 | 113.07 | ----- | 110.26 | 27.98 |
| | | | ----- | | 3.83 |
| | | | | | 29.00 |



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PEP Testing Laboratory

Data#: 179 File#: C:\e3\300 328 R&TTE\明基.emi



Site : site
 Condition : 3m HORN ANTENNA V.3 VERTICAL
 EUT : ANL500
 Power : AC 120V/60Hz (PCC)
 Memo : CHANNEL 1

: TX ON
 : 11M bps
 : The Maximum Peak Power
 : RBW:3MHz ; VBW:3MHz

| Over | Limit | Read | Probe | Cable | Preamp | | |
|-------|----------|--------|--------|-------|--------|------|--------|
| Level | Line | Level | Factor | Loss | Factor | | |
| Freq | Level | Limit | Line | Level | Factor | Loss | Factor |
| MHz | dBuV/m | dB | dBuV/m | dBuV | dB | dB | dB |
| 1 | 2412.000 | 100.33 | ----- | 97.52 | 27.98 | 3.83 | 29.00 |



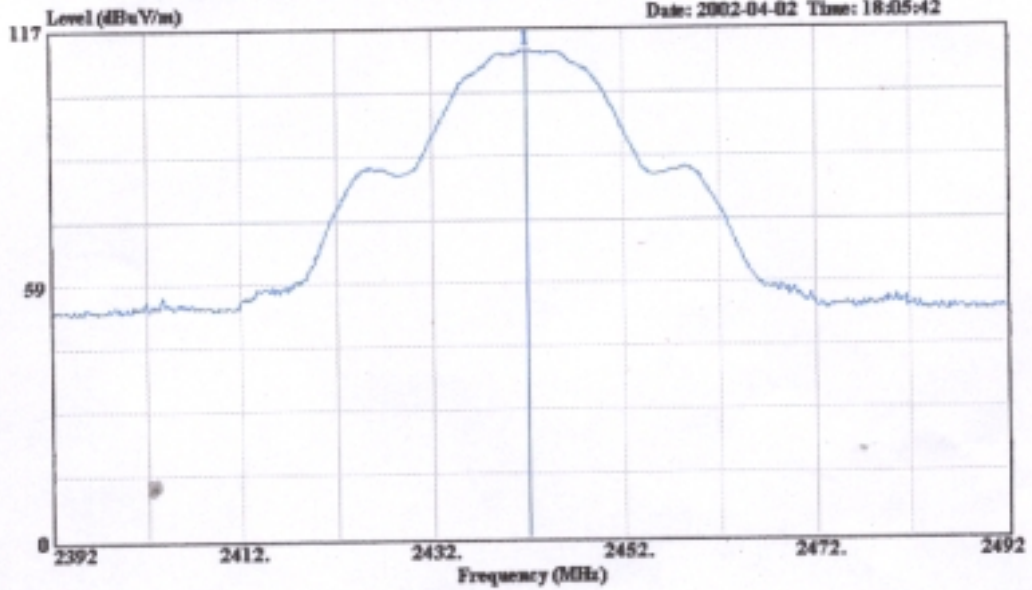
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PEP Testing Laboratory

Data#: 175

File#: C:\e3\300 328 R4TTE\明基.emi

Date: 2002-04-02 Time: 18:05:42



Site : site
 Condition : 3m HORN ANTENNA H.3 HORIZONTAL
 EUT : AWL500
 Power : AC 120V/60Hz (PCC)
 Memo : CHANNEL 6
 : TX ON
 : 11M bps
 : The Maximum Peak Power
 : RBW:3MHz ; VBW:3MHz

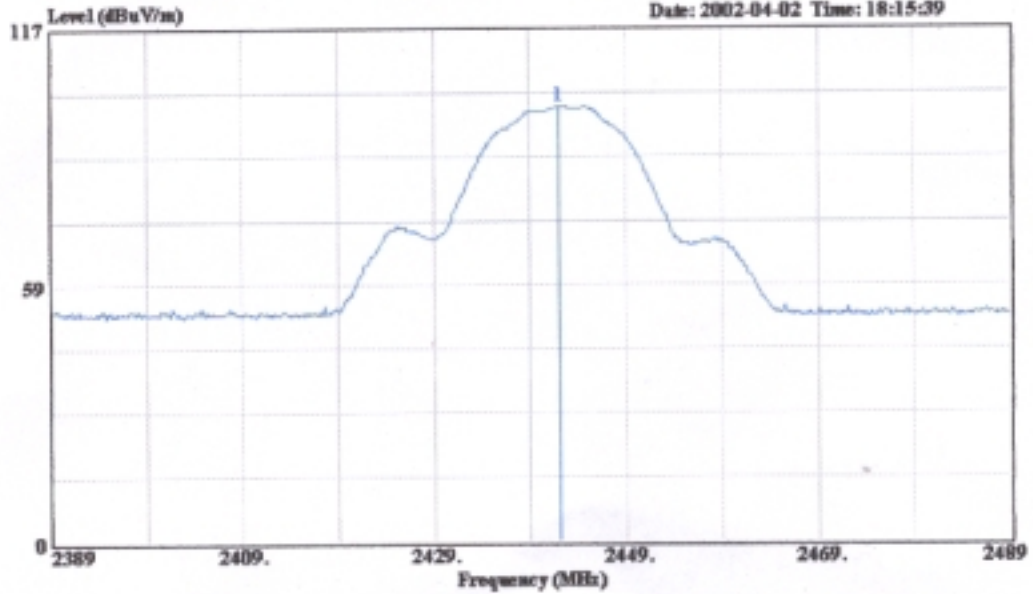
| | Over | Limit | Read | Probe | Cable | Preamp |
|------------|--------|-------|--------|--------|--------|------------|
| Freq | Level | Limit | Line | Level | Factor | Loss |
| MHz | dBuV/m | dB | dBuV/m | dBuV | dB | dB |
| 1 2438.200 | 112.07 | ----- | ----- | 109.26 | 27.95 | 3.86 29.00 |



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Data#: 178 File#: C:\e3\300 328 R&TTE\明基.emi

Date: 2002-04-02 Time: 18:15:39



Site : site
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : AWL500
Power : AC 120V/60Hz (PCC)
Memo : CHANNEL 6

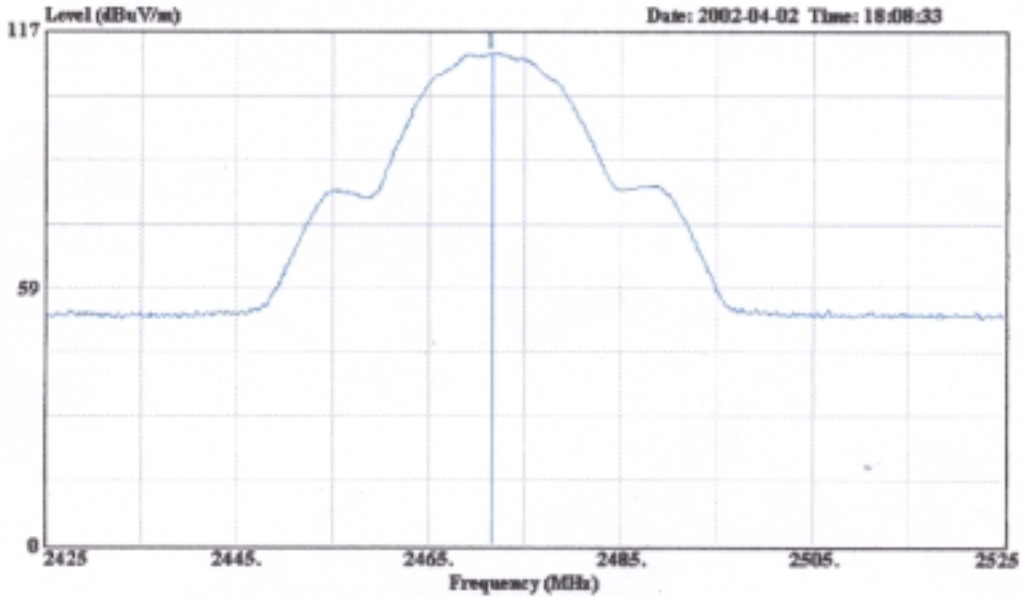
: TX ON
: 11M bps
: The Maximum Peak Power
: RBW:3MHz ; VBW:3MHz

| | Over | Limit | Read | Probe | Cable | Preamp |
|------------|--------|-------|--------|--------|-------|------------|
| Freq | Level | Limit | Level | Factor | Loss | Factor |
| MHz | dBuV/m | dB | dBuV/m | dBuV | dB | dB |
| 1 2438.200 | 99.11 | ----- | ----- | 96.30 | 27.95 | 3.86 29.00 |



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PEP Testing Laboratory

Data#: 176 File#: C:\e3\300 328 R&TTE\明基.emi



Site : site
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : AWL500
Power : AC 120V/60Hz (FCC)
Memo : CHANNEL 11
: TX ON
: 11M bps
: The Maximum Peak Power
: RBW:3MHz ; VBW:3MHz

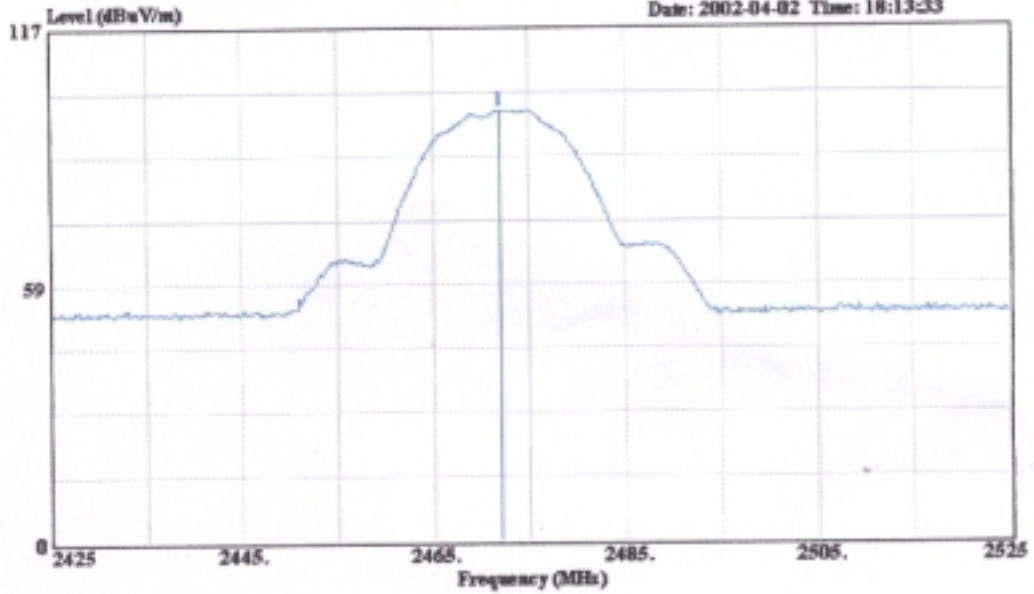
| | Over | Limit | Read | Probe | Cable | Preamp |
|------------|--------|-------|--------|--------|-------|------------|
| Freq | Level | Limit | Level | Factor | Loss | Factor |
| MHz | dBuV/m | dB | dBuV/m | dBuV | dB | dB |
| 1 2463.400 | 112.01 | ----- | ----- | 109.21 | 27.92 | 3.88 29.00 |



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PEP Testing Laboratory

Data#: 177 File#: C:\e3\300 328 R&TTE\明基.emi

Date: 2002-04-02 Time: 18:13:33



Site : site
 Condition : 3m HORN ANTENNA V.3 VERTICAL
 EUT : AWL500
 Power : AC 120V/60Hz (PCC)
 Memo : CHANNEL 11
 : TX ON
 : 11M bps
 : The Maximum Peak Power
 : RBW:3MHz ; VBW:3MHz

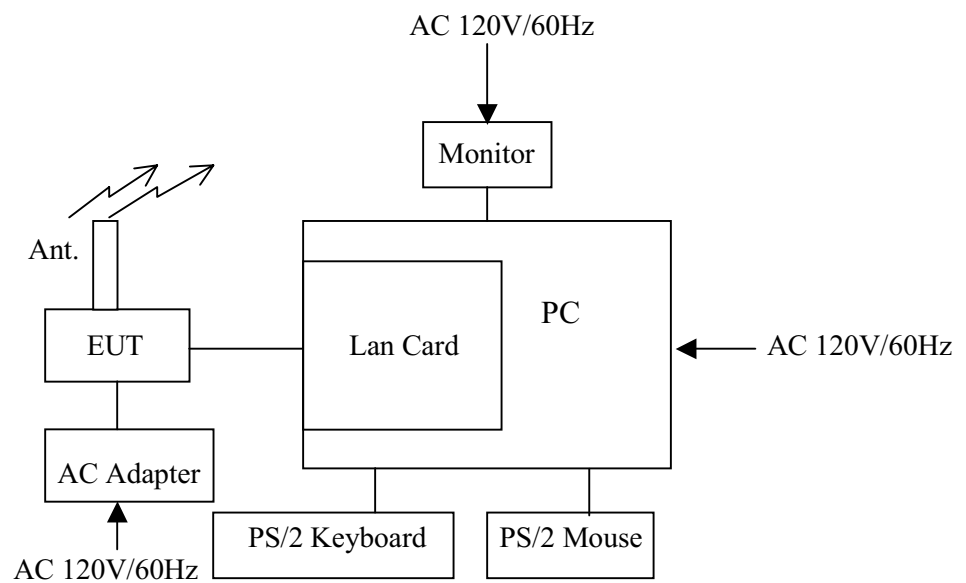
| | Freq | Level | Over Limit | Limit Line | Read Level | Probe Factor | Cable Loss | Preamp Factor |
|---|----------|--------|------------|------------|------------|--------------|------------|---------------|
| | MHz | dBuV/m | dB | dBuV/m | dBuV | dB | dB | dB |
| 1 | 2463.400 | 98.14 | ----- | ----- | 95.34 | 27.92 | 3.88 | 29.00 |

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

5.1 MPE distance calculation

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

5.2 Device operating configurations exposure conditions



5.3 Calculate the minimum separation distance : (20cm)

FCC ID : JVPAWL500
EUT Model No. AWL500

| 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) |
|---------|-------------------|------------|--------------------|-----------|----------------|---|
| Top | 2409.4 | H | 110.26 | 2.81 | 113.07 | 0.2703 |
| | | V | 97.52 | 2.81 | 100.33 | 0.0144 |
| Middle | 2438.2 | H | 109.26 | 2.81 | 112.07 | 0.2147 |
| | | V | 96.30 | 2.81 | 99.11 | 0.0109 |
| Bottom | 2463.4 | H | 109.21 | 2.80 | 109.21 | 0.1111 |
| | | V | 95.34 | 2.80 | 98.14 | 0.0087 |

Note :

7. "A.P." means antenna polarity .
8. "S.P." Read means amplitude read by spectrum analyzer .
9. "C.F." means corrected factor = antenna factor + cable loss
Preamplifier Gain .
10. Level means emission amplitude = S.P. + C.F. + duty cycle factor
11. Conducted output power : $P = (E d)^2 / 30G$
where E (V) = Level (V)
d (m) = distance = 20 cm
G = 1 (the gain of the transmitting antenna over isotropic antenna)
P = E.I.R.P.
12. Example :
If Level = 120 dBuV/m
 $10^{(120/20)} \times 10^{-6} = 1 \text{ V}$
E.I.R.P. = $(1 \times 3)^2 / 30 = 300 \text{ mW}$

VI § 15.247(c) : Out side band below 1GHz**Test result of spurious radiated emissions**

FCC ID : JVPAWL500

RADIATED EMISSIONS TEST DATAAntenna polarization : HORIZONTAL ; Test distance : 3 m ;

| Freq. (MHz) | Level (dBuV/m) | Over Limit (dB) | Limit Line (dBuV/m) | Read Level (dBuV) | Probe Factor (dB) | Cable Loss (dB) | Preamp Factor (dB) |
|----------------|-------------------|-----------------------|---------------------------|-------------------------|-------------------------|-----------------------|--------------------------|
| 125.000 | 29.68 | -13.82 | 43.50 | 36.45 | 11.53 | 1.30 | 19.60 |
| 150.000 | 35.32 | - 8.18 | 43.50 | 43.92 | 9.70 | 1.60 | 19.90 |
| 225.000 | 31.22 | -14.78 | 46.00 | 39.42 | 9.20 | 2.30 | 19.70 |
| 250.000 | 40.60 | - 5.40 | 46.00 | 44.60 | 12.70 | 2.90 | 19.60 |
| 400.000 | 38.83 | - 7.17 | 46.00 | 38.83 | 16.10 | 3.80 | 19.90 |
| 600.000 | 40.68 | - 5.32 | 46.00 | 37.03 | 18.10 | 5.63 | 20.08 |
| 650.001 | 39.17 | - 6.83 | 46.00 | 33.46 | 19.20 | 6.61 | 20.10 |
| 800.001 | 40.64 | - 5.36 | 46.00 | 33.78 | 20.30 | 6.35 | 19.79 |

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

RADIATED EMISSIONS TEST DATA**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) | Cable Loss (dB) | Preamp Factor (dB) |
|----------------|-------------------|-----------------------|---------------------------|-------------------------|-------------------------|-----------------------|--------------------------|
| 71.669 | 35.97 | - 4.03 | 40.00 | 49.83 | 5.44 | 0.83 | 20.13 |
| 125.000 | 38.16 | - 5.34 | 43.50 | 44.93 | 11.53 | 1.30 | 19.60 |
| 200.000 | 36.97 | - 6.53 | 43.50 | 45.67 | 9.20 | 2.10 | 20.00 |
| 250.000 | 37.15 | - 8.85 | 46.00 | 41.15 | 12.70 | 2.90 | 19.60 |
| 500.001 | 36.46 | - 9.54 | 46.00 | 34.14 | 17.60 | 5.11 | 20.39 |
| 625.001 | 36.84 | - 9.16 | 46.00 | 31.32 | 19.10 | 6.13 | 19.71 |
| 700.000 | 39.33 | - 6.67 | 46.00 | 32.67 | 19.20 | 7.45 | 19.99 |
| 800.001 | 38.68 | - 7.32 | 46.00 | 31.82 | 20.30 | 6.35 | 19.79 |

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

§ 15.247(c)

Channel 1 : 2412MHz

| Frequency (MHz) | PEAK LEVEL in 100KHz BW (dBuV/m) | Antenna Polarity (H / V) |
|-----------------|----------------------------------|--------------------------|
| 2412.0 | 108.26 | H |
| | 97.31 | V |
| 2037.73 | 52.16 | H |
| | 53.24 | V |
| * 4075.44 | 40.16 | H |
| | 45.33 | V |
| * 4823.4 | 51.46 | H |
| | 52.33 | V |
| 6113.19 | 35.22 | H |
| | 34.23 | V |
| 7227.7 | 52.33 | H |
| | 50.17 | V |
| * 8150.93 | 47.56 | H |
| | 46.98 | V |

* Use FCC Limit @ 15.209 for frequency in restricted bands.

Channel 6 : 2438.2MHz

| Frequency (MHz) | PEAK LEVEL in 100KHz BW (dBuV/m) | Antenna Polarity (H/V) |
|-----------------|----------------------------------|------------------------|
| 2438.2 | 108.35 | H |
| | 97.63 | V |
| 2062.73 | 51.33 | H |
| | 52.45 | V |
| * 4149.54 | 37.55 | H |
| | 41.89 | V |
| * 4876.4 | 51.58 | H |
| | 51.98 | V |
| 6188.19 | 36.47 | H |
| | 35.77 | V |
| * 7314.6 | 51.45 | H |
| | 50.33 | V |
| * 8250.92 | 44.58 | H |
| | 45.87 | V |

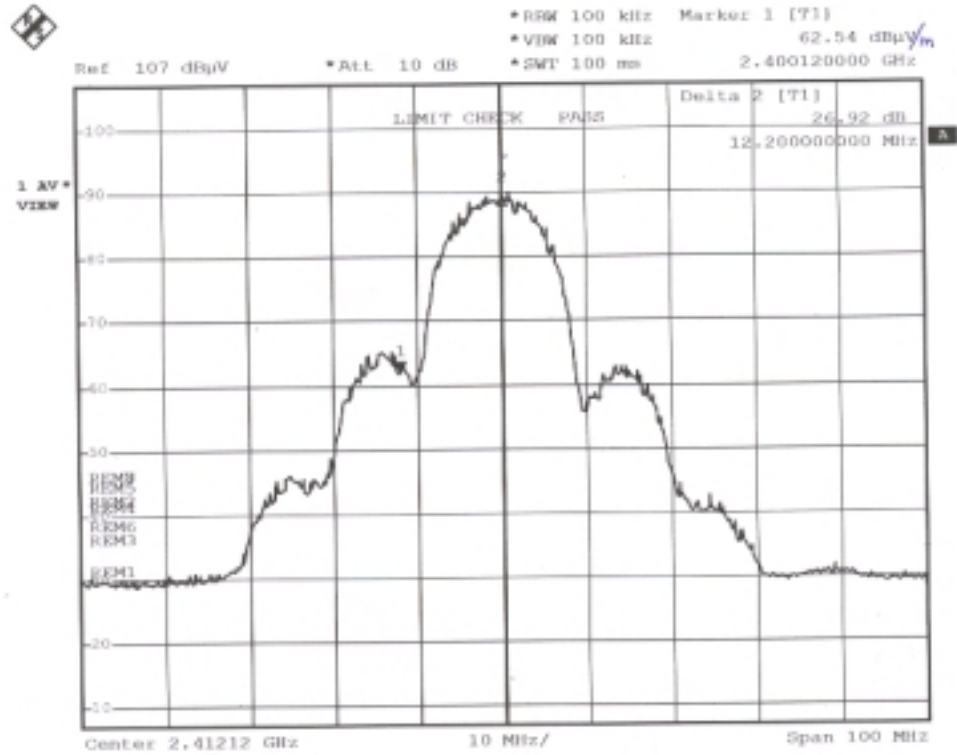
* Use FCC Limit @ 15.209 for frequency in restricted bands.

Channel 11 : 2463.4MHz

| Frequency (MHz) | PEAK LEVEL in 100KHz BW (dBuV/m) | Antenna Polarity (H/V) |
|-----------------|----------------------------------|------------------------|
| 2463.4 | 107.33 | H |
| | 95.16 | V |
| 2087.73 | 52.11 | H |
| | 48.47 | V |
| * 4175.46 | 36.55 | H |
| | 42.44 | V |
| * 4926.8 | 51.36 | H |
| | 50.87 | V |
| 6263.19 | 36.89 | H |
| | 38.51 | V |
| * 7390.2 | 51.65 | H |
| | 48.97 | V |
| * 8350.92 | 45.80 | H |
| | 44.21 | V |

* Use FCC Limit @ 15.209 for frequency in restricted bands.

VII. § Band-edge compliance/Restricted band

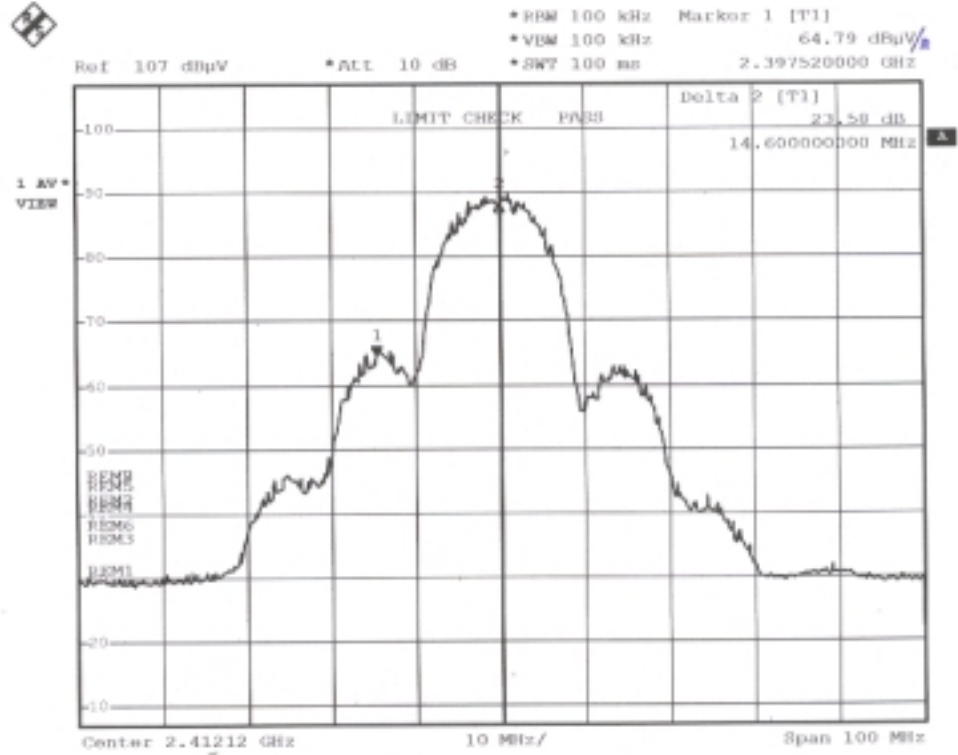


Date: 2.AUG.2002 10:59:55

ANT. Polarity : Horizontal

| Marker | Freq. (GHz) | Read (dBuV/m) | Factor (dB) | Emission (dBuV/m) | Remark |
|--------|-------------|---------------|-------------|-------------------|------------|
| 1. | 2.400 | 62.54 | / | / | Band-edge. |
| 2. | 2.412 | 84.46 | / | / | Channel 1 |

* Frequency 2.4GHz below channel 1 at least 20dB

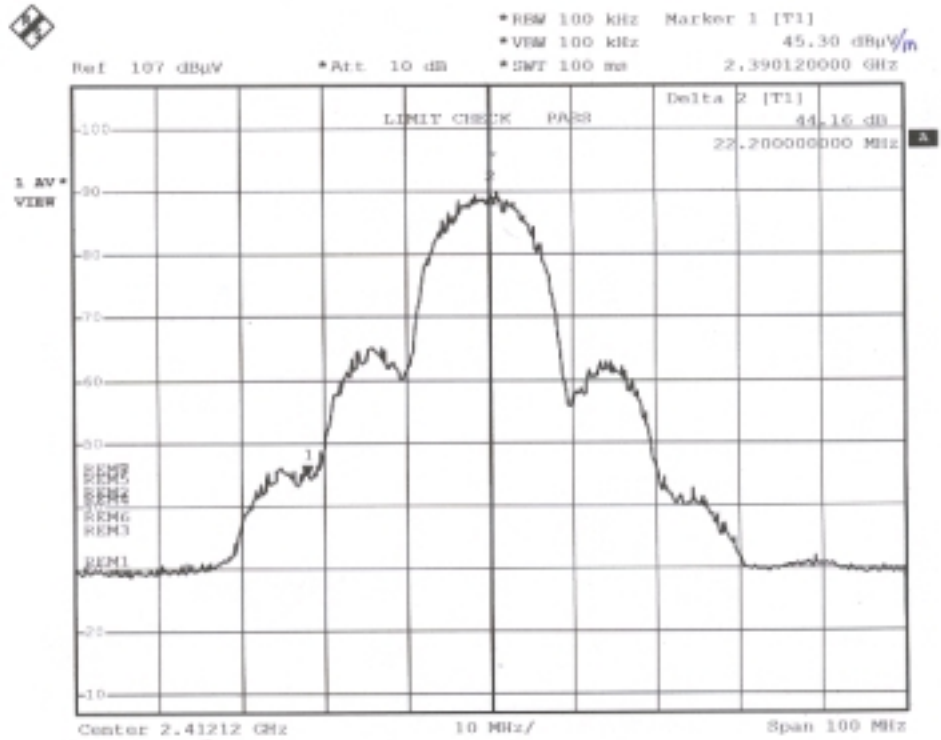


Date: 2.AUG.2002 11:07:54

ANT. Polarity : Horizontal

| Marker | Freq. (GHz) | Read (dBuV/m) | Factor (dB) | Emission (dBuV/m) | Remark |
|--------|-------------|---------------|-------------|-------------------|--------------|
| 1. | 2.3975 | 64.79 | / | / | Outside Band |
| 2. | 2.412 | 88.37 | / | / | Channel 1 |

* Outside band frequency below channel 1 at least 20dB

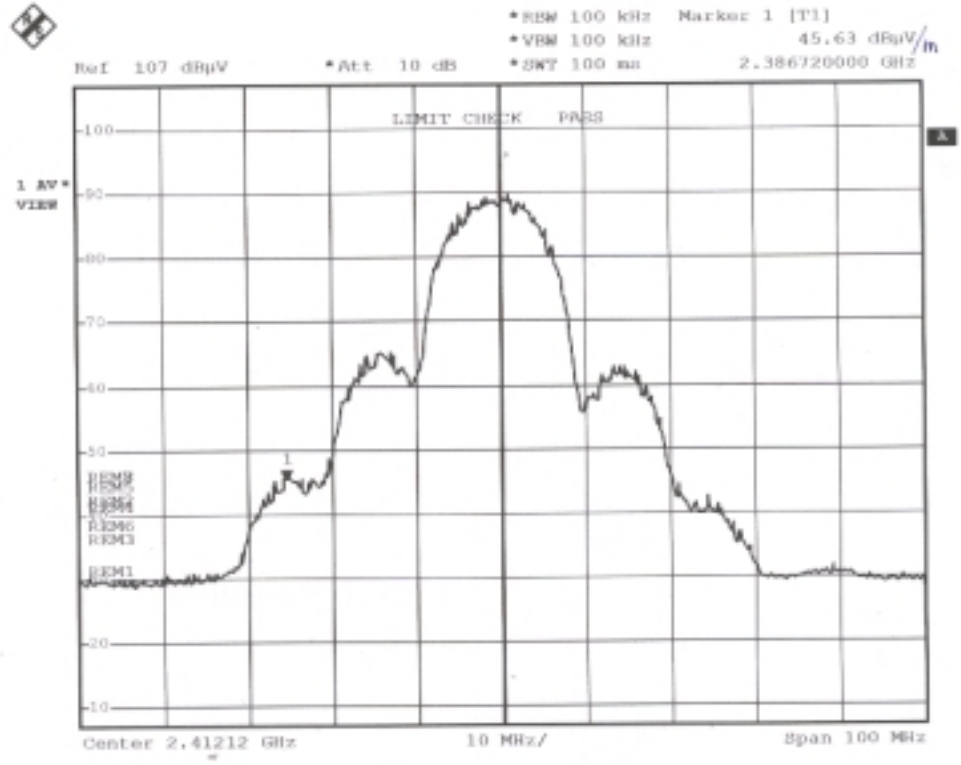


Date: 2.AUG.2002 11:02:41

ANT. Polarity : Horizontal

| Marker | Freq. (GHz) | Read (dBuV/m) | Factor (dB) | Emission (dBuV/m) | Remark |
|--------|-------------|---------------|-------------|-------------------|-----------------|
| 1. | 2.390 | 45.30 | 2.82 | 48.12 | Restricted band |
| 2. | 2.412 | 89.46 | / | / | Channel 1 |

* Frequency in restrict band should be under 54dBuV/m



Date: 2.AUG.2002 11:10:36

ANT. Polarity : Horizontal

| Marker | Freq. (GHz) | Read (dBuV/m) | Factor (dB) | Emission (dBuV/m) | Remark |
|--------|-------------|---------------|-------------|-------------------|-----------------|
| 1. | 2.3867 | 45.63 | 2.81 | 48.44 | Restricted band |

* Frequency in restrict band should be under 54dBuV/m