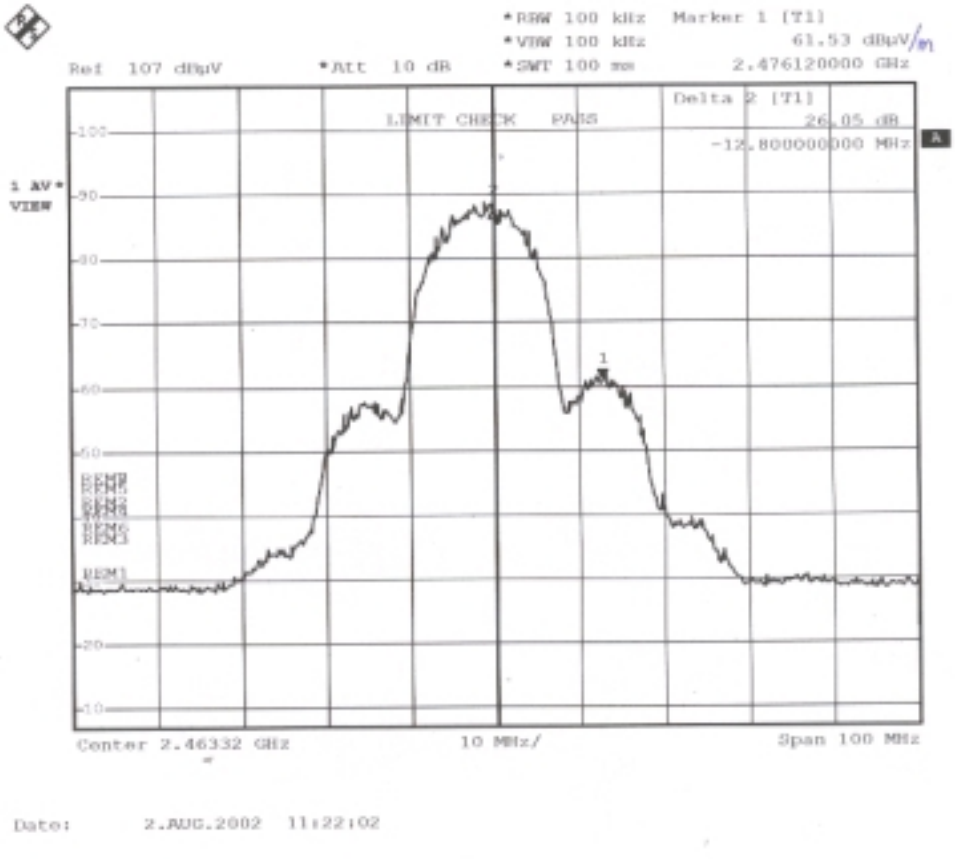
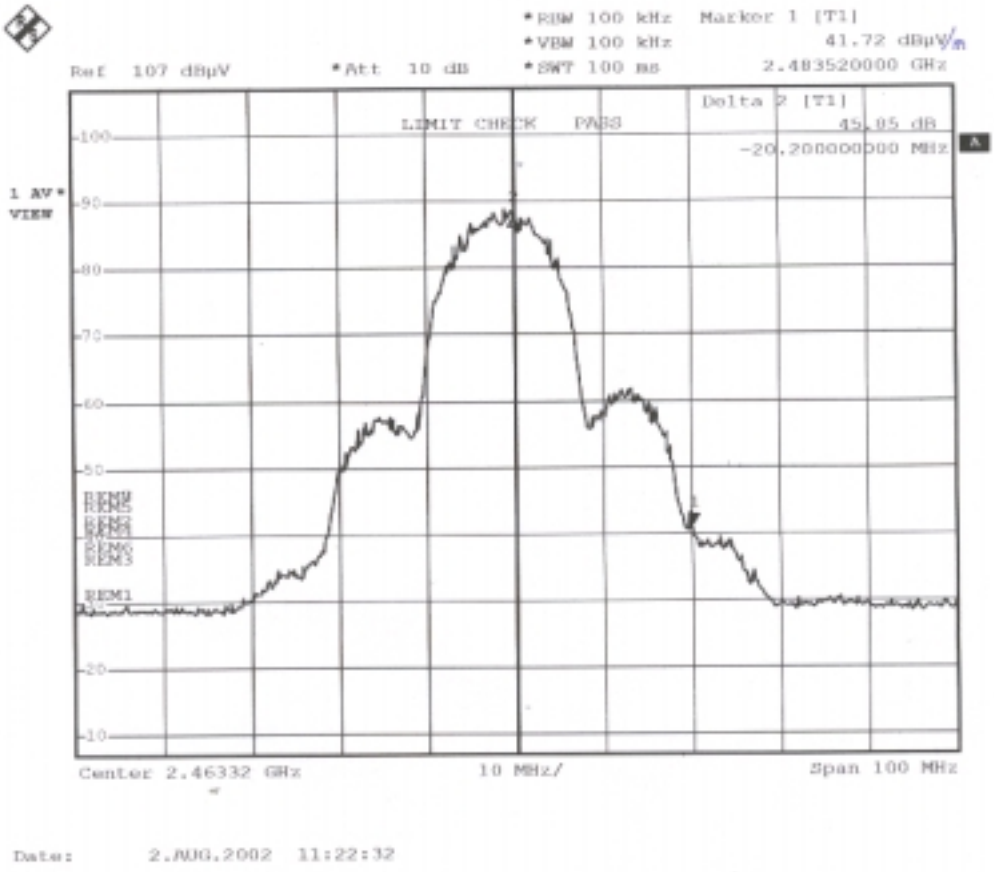


ANT. Polarity : Horizontal

Marker	Freq. (GHz)	Read (dBuV/m)	Factor (dB)	Emission (dBuV/m)	Remark
1.	2.4761	61.53	/	/	Outside Band
2.	2.4634	87.58	/	/	Channel 1

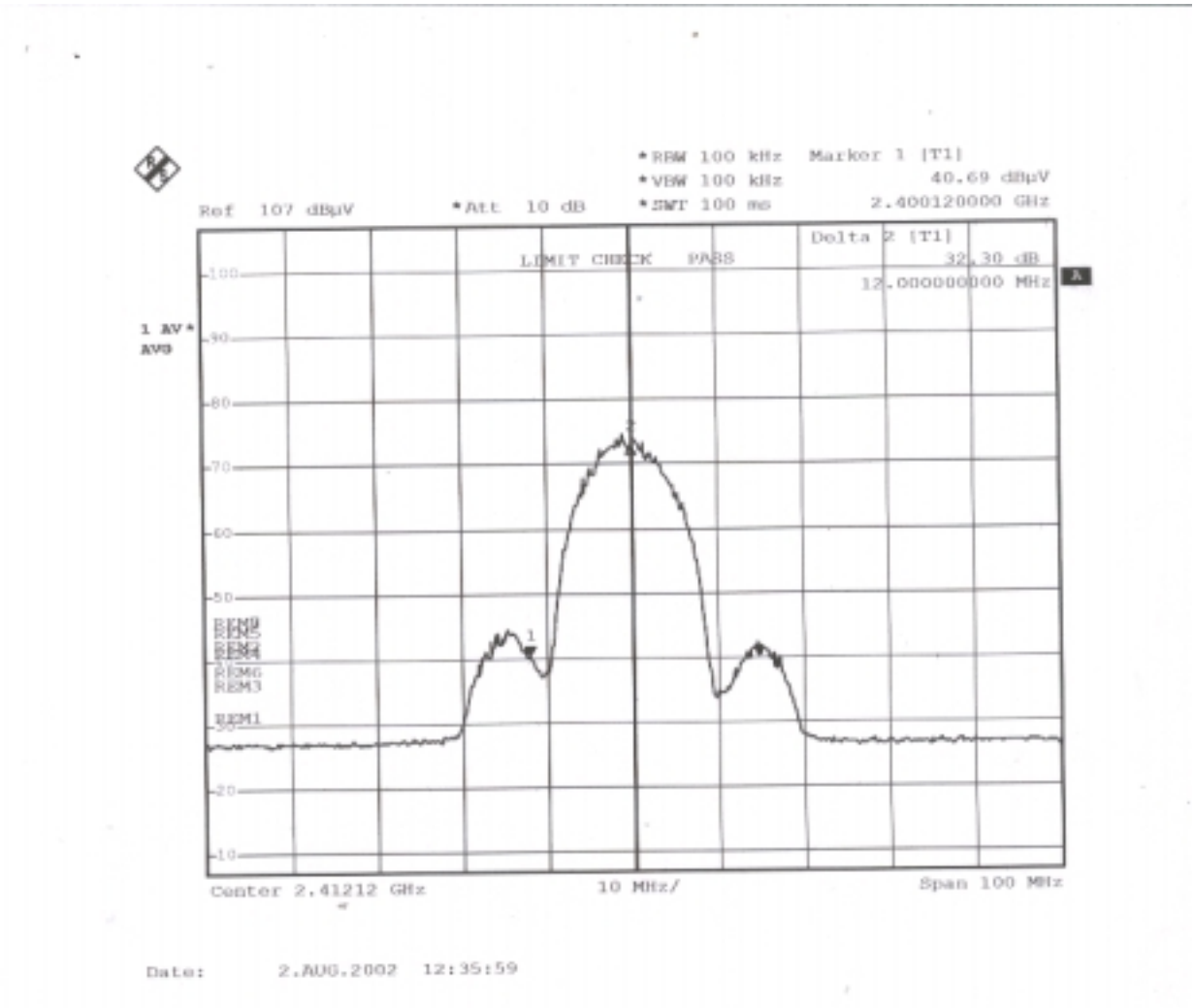
* Outside band frequency below channel 1 at least 20dB



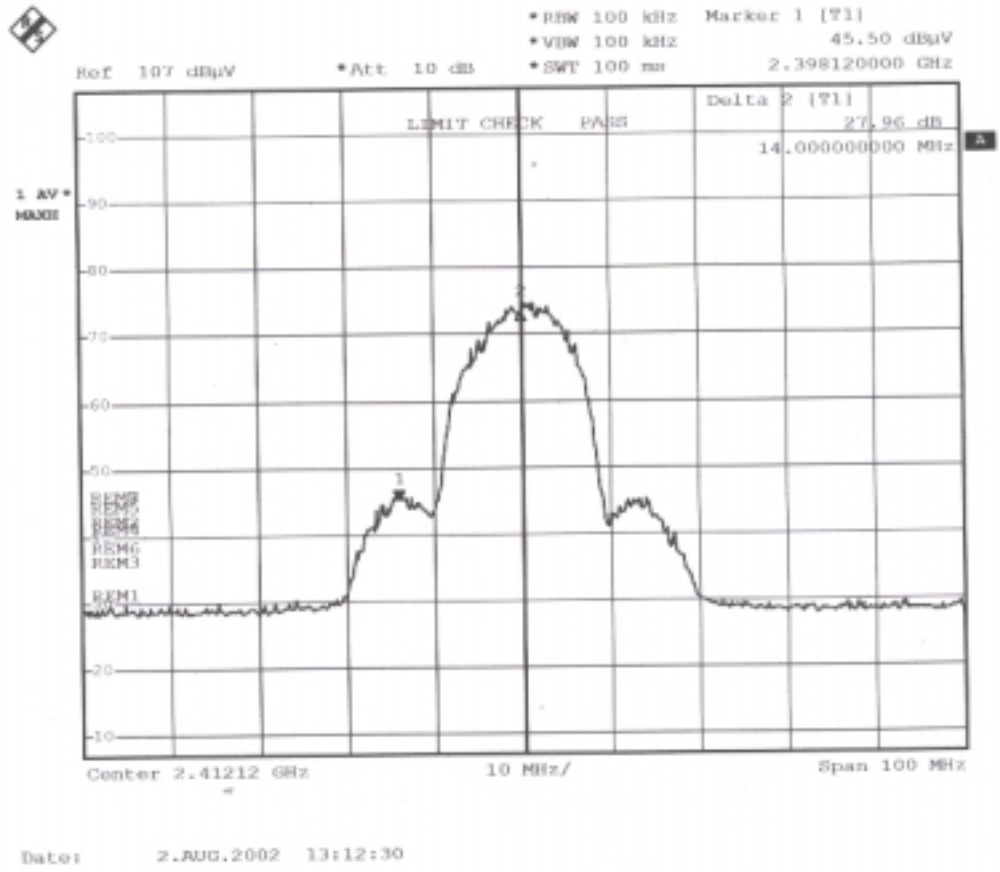
ANT. Polarity : Horizontal

Marker	Freq. (GHz)	Read (dBuV/m)	Factor (dB)	Emission (dBuV/m)	Remark
1.	2.4835	41.72	2.79	44.51	Restricted band
2.	2.4634	87.57	/	/	Channel 1

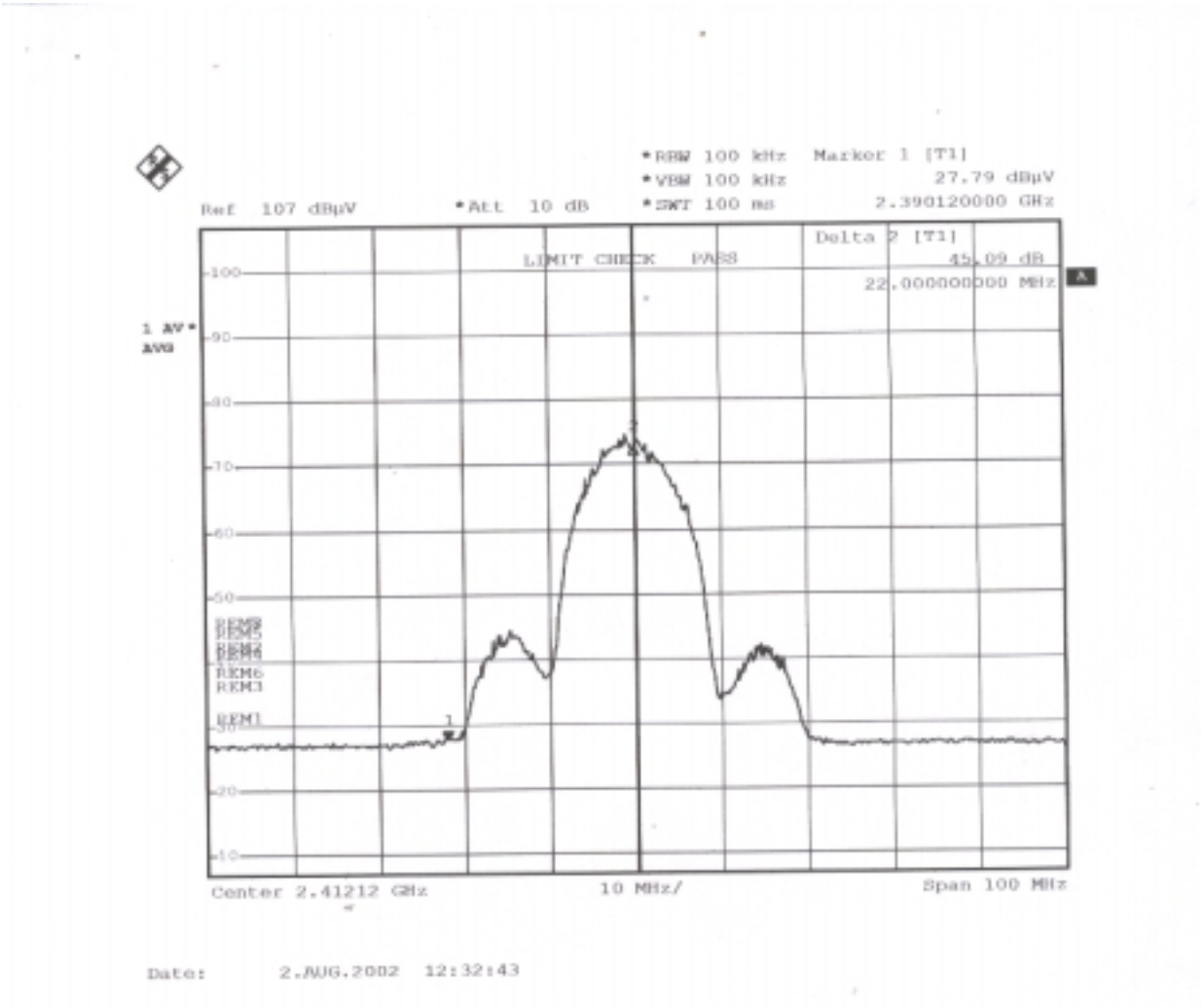
* Frequency in restricted band should be under 54dBuV/m



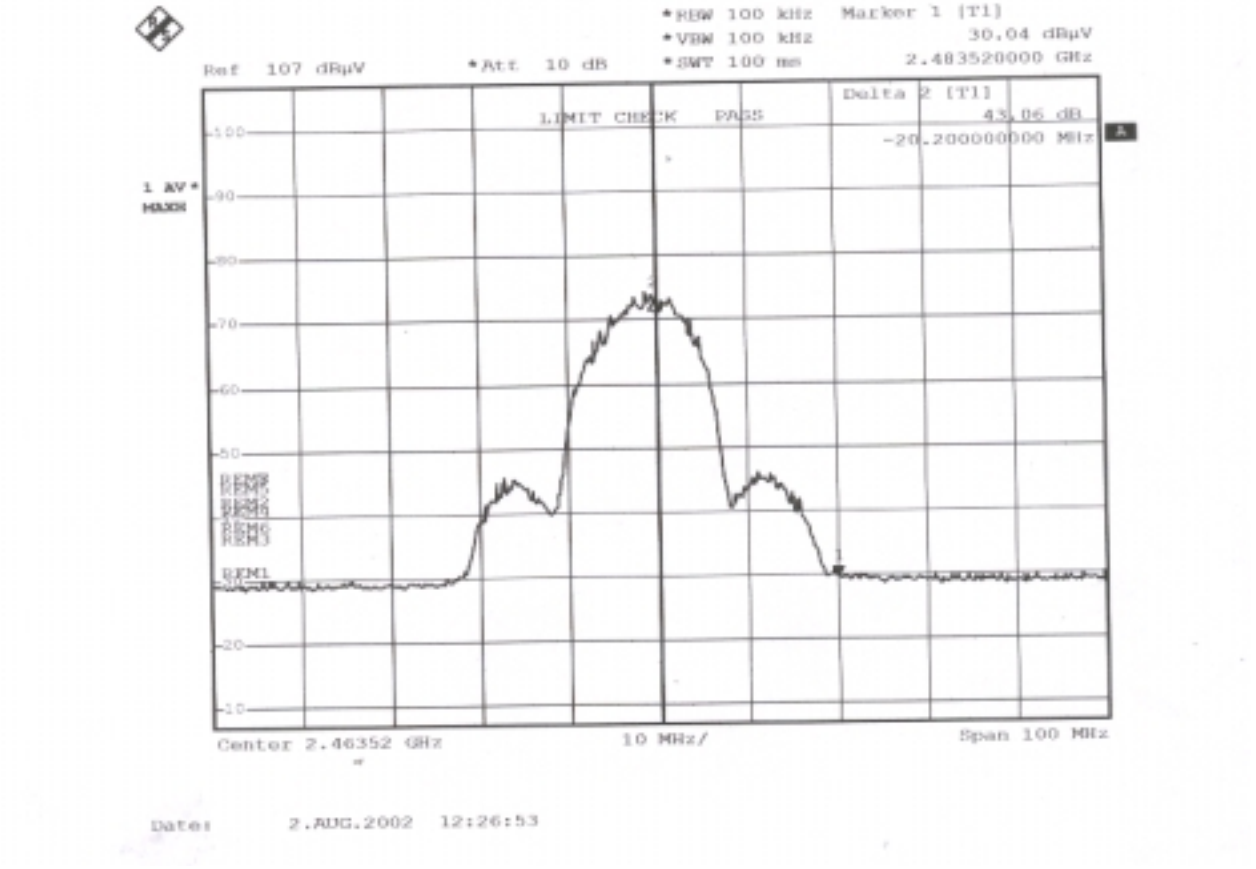
ANT. Polarity : Vertical



ANT. Polarity : Vertical



ANT. Polarity : Vertical



ANT. Polarity : Vertical

Radiate Emission Testing Photo.

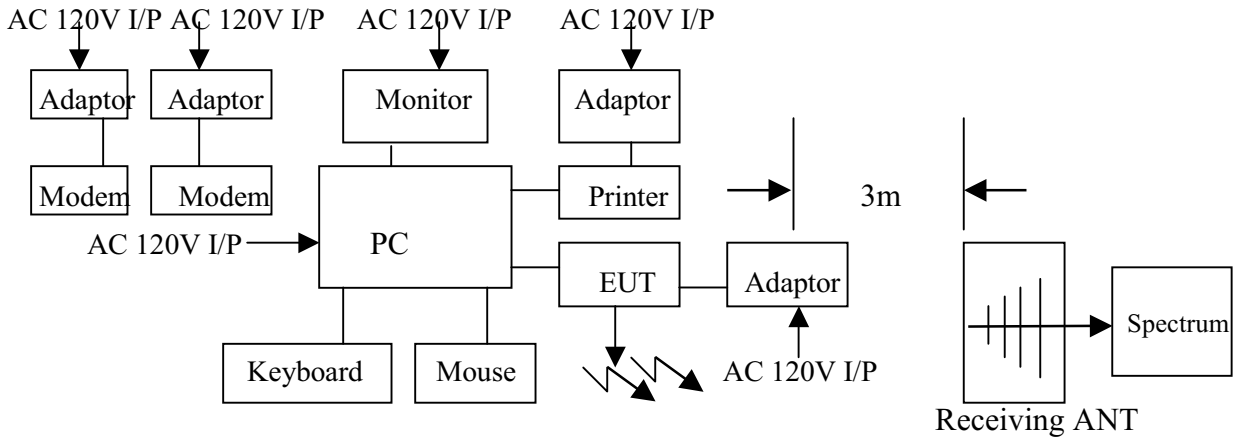
FCC ID : JVPAWL500

< FRONT VIEW >

< REAR VIEW >

FCC ID : JVPAWL500

EUT Model No. AWL500



Ⅷ. §15.247(d) : Power Spectral Density

FCC ID ：JVPAWL500

The summary below is the highest power spectral density of the EUT Model No. AWL500

RBW = 3KHz VBW = 10KHz Auto sweep time : 5.6S

Channel	Polarity (H/V)	Frequency (MHz)	Level (dBm)	Limit (dBm)
Top	(H)	2413.2	-10.82	8
	(V)	2412.6	-23.70	8
Middle	(H)	2435.4	-10.52	8
	(V)	2437.6	-24.86	8
Bottom	(H)	2460.4	- 11.41	8
	(V)	2460.4	-23.49	8

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 :

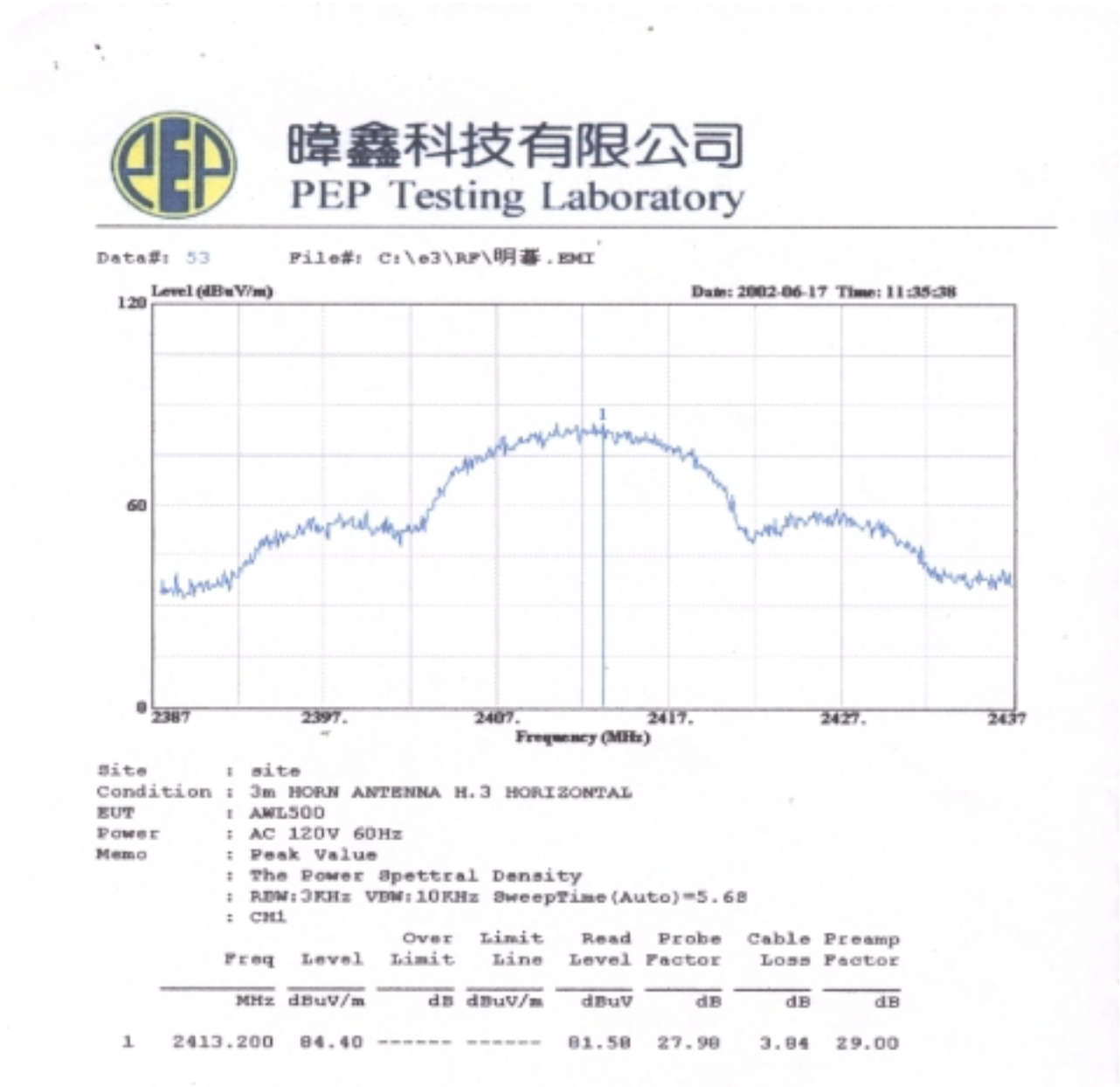
   If Level = 120 dBuV/m

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

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

   = 24.77dBm

Spectrum of Power Spectral Density



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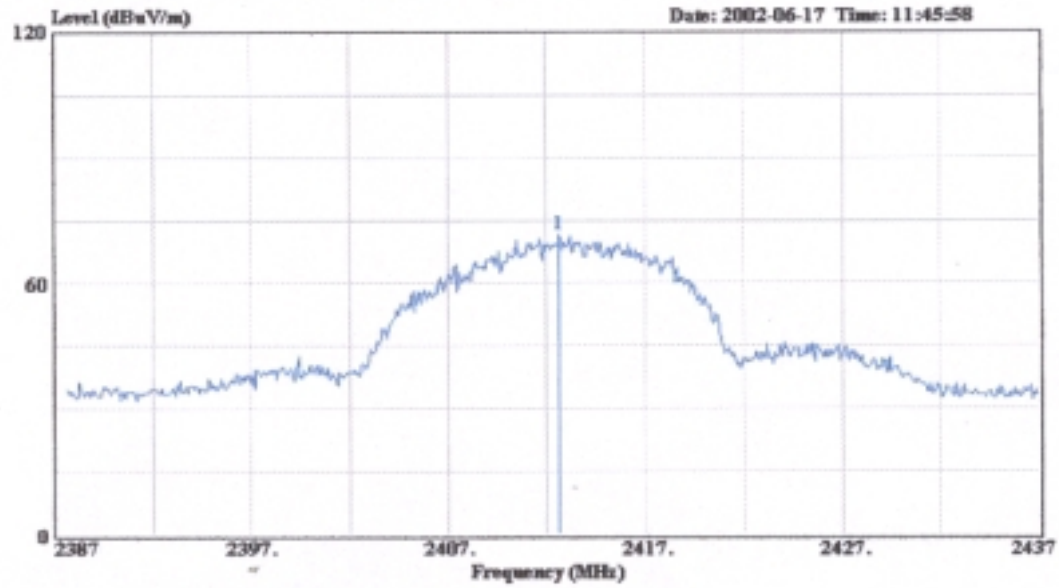
Data#: 58 File#: C:\e3\RF\明基.EMI



Site : site
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : AWL500
Power : AC 120V 60Hz
Memo : Peak Value
: The Power Spettral Density
: RBW:3KHz VBW:10KHz SweepTime(Auto)=5.68
: CH1

	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	2412.650	71.52	------	------	68.70	27.90	3.84	29.00

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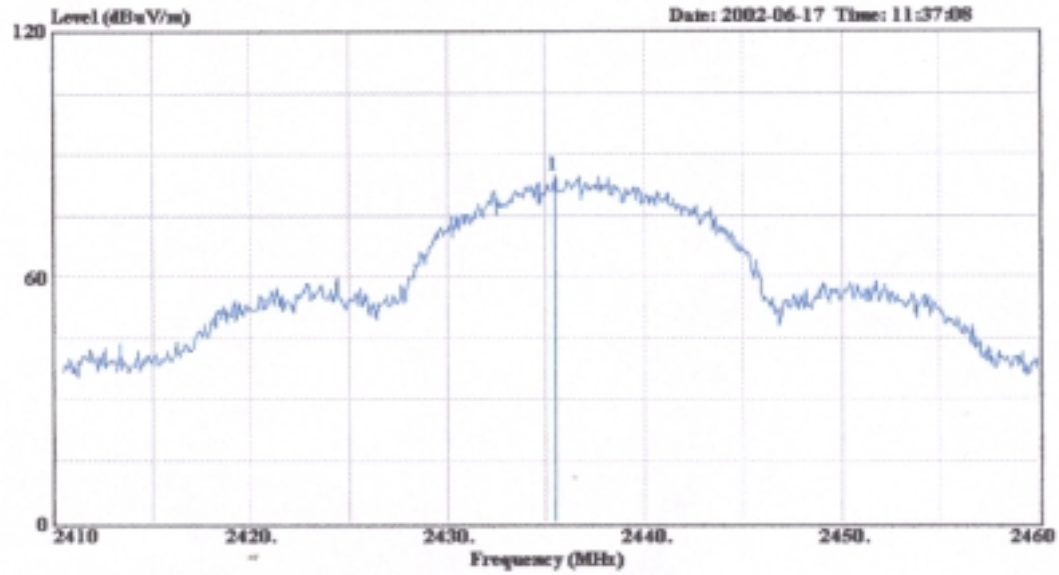
Data#: 54 File#: C:\e3\RF\明基.EMI



Site : site
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : AWL500
Power : AC 120V 60Hz
Memo : Peak Value
: The Power Spettral Density
: RBW:3KHz VBW:10KHz SweepTime(Auto)=5.68
: CH6

	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	2435.450	84.67	------	------	81.87	27.95	3.85	29.00

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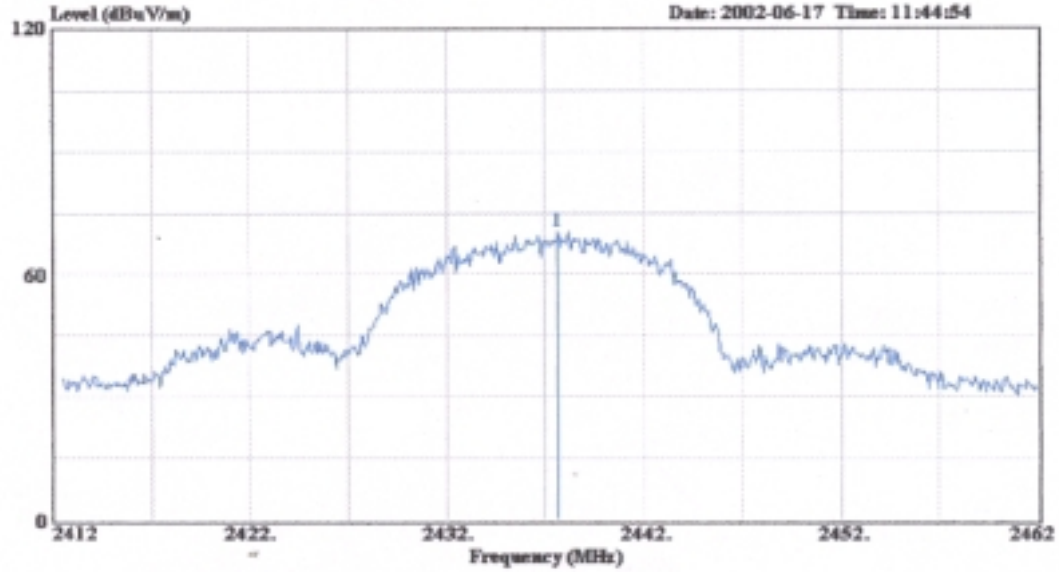
Data#: 57 File#: C:\e3\RF\明春.EMI



Site : site
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : AWL500
Power : AC 120V 60Hz
Memo : Peak Value
: The Power Spettral Density
: RBW:3KHz VBW:10KHz SweepTime(Auto)=5.68
: CH6

	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	2437.650	70.36	------	------	67.55	27.95	3.86	29.00

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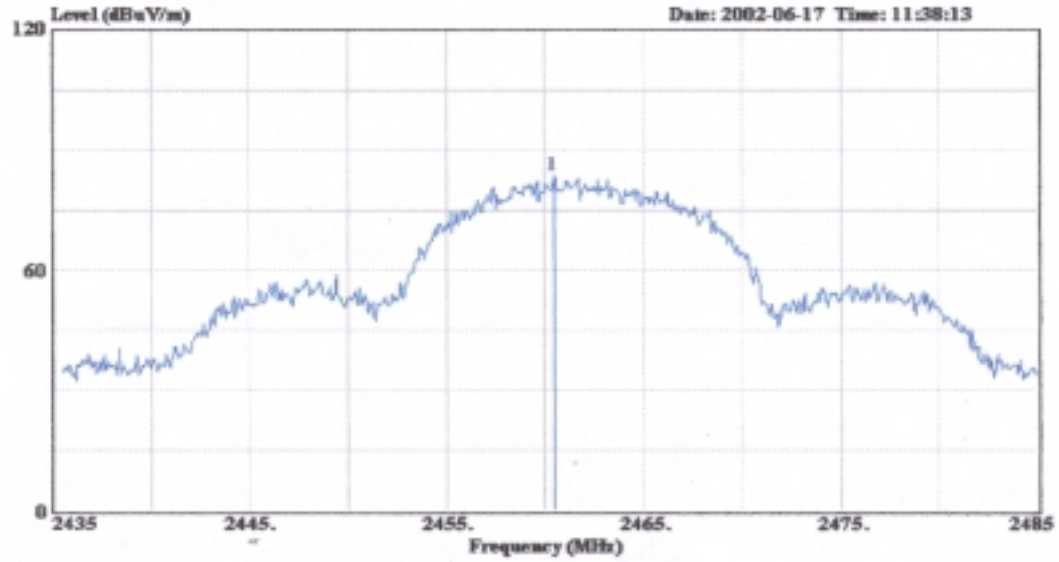
Data#: 55 File#: C:\e3\RF\明基.EMI

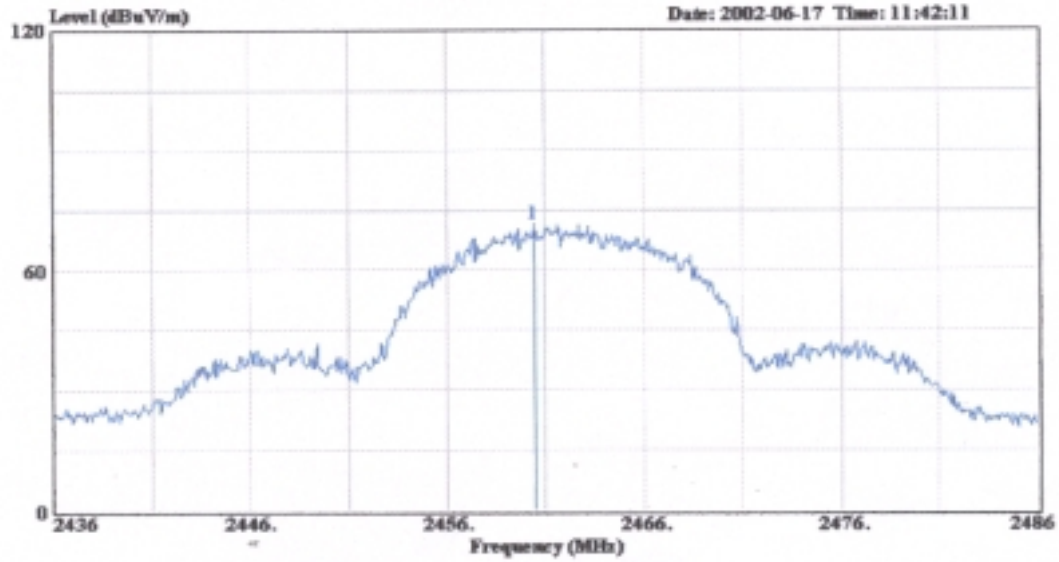


Site : site
Condition : 3m HORN ANTENNA H.3 HORIZONTAL
EUT : AWL500
Power : AC 120V 60Hz
Memo : Peak Value
: The Power Spettral Density
: RBW:3KHz VBW:10KHz SweepTime(Auto)=5.68
: CH11

	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	2460.450	83.81	------	------	81.01	27.93	3.87	29.00

瞱鑫科技有限公司
PEP Testing Laboratory

Data#: 56 File#: C:\e3\RF\明基.EMI



Site : site
Condition : 3m HORN ANTENNA V.3 VERTICAL
EUT : AWL500
Power : AC 120V 60Hz
Memo : Peak Value
: The Power Spettral Density
: RBW:3KHz VBW:10KHz SweepTime(Auto)=5.68
: CH11

	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	2460.450	71.73	------	------	68.93	27.93	3.87	29.00

Ⅸ. §15.247(e) :Processing Gain

9.1 Test Configuration : CCK,
Modulation : CCK
Data Rate or Bit Rate : 11Mb/s,
Symbol Rate : 1.375MS/s
Chip Rate : 11MC/s
Chip/Symbol Rate : 11 : 1.375 or 8

Theoretical Process Gain :

$$G_p = 18.4dB + \left\{\frac{J}{S}\right\} \geq 10dB$$

The minimum jammer to signal ratio is as follows :

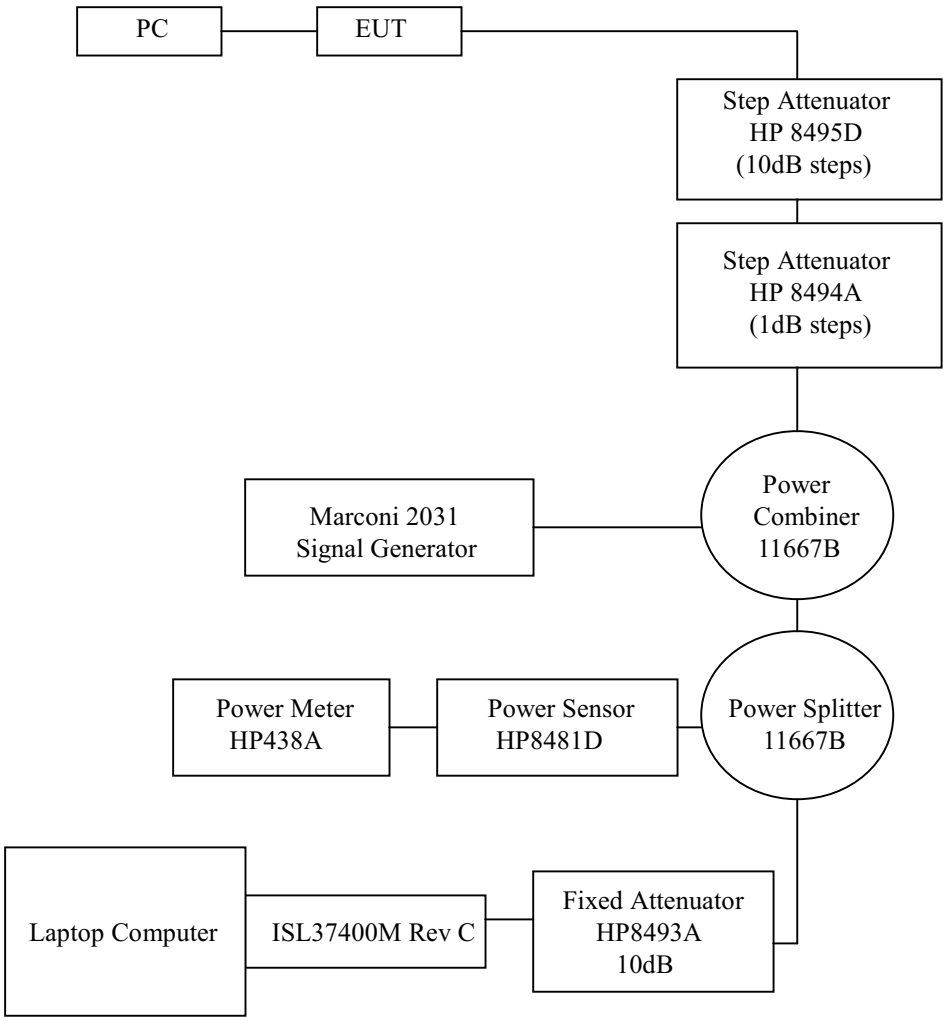
$$\left\{\frac{J}{S}\right\} \geq -8dB$$

Measured Minimum Process Gain = 12.8dB

[Processing Gain for Channel 6]

9.2 Test Equipment

- Hewlett Packard Spectrum Analyzer, Model HP8593E
- Marconi Slgnal Generator, Model 2031
- Hewlett Packard Power Meter, HP438A
- Hewlett Packard Power Sensor
- Hewlett Packard Attenuators
- Hewlett Packard Step Attenuator
- Hewlett Packard Step Attenuator
- Hewlett Packard Power Splitter



9.3 Mj Theoretical Calculations

The reference PER is specified as 8%. The corresponding Es/No (signal to noise ratio per symbol) is 16.4dB. The Es/No required to achieve the desired BER with maximum system implementation losses is 18.4dB. The minimum processing gain is again, 10dB, therefore :

$$G_p = \left(\frac{E_s}{N_o}\right)_{output} + \left(\frac{J}{S}\right) + L_{system} = 16.4dB + 2.0dB + \left(\frac{J}{S}\right) \geq 10dB$$

$$G_p = 18.4dB + \left(\frac{J}{S}\right) \geq 10dB$$

The minimum Jammer to signal ratio is as follows :

$$\left(\frac{J}{S}\right) \geq -8.4dB$$

9.4 Test Procedures :

Obtain the simplex link shown. Perform all independent instrumentation calibrations prior to this procedure. Set operating power levels using fixed and variable attenuators in system to meet the following objectives:

1. Signal Power at receiver approximately -60dBm (above thermal sensitivity such that thermal noise does not cause bit errors).
2. Signal Power at power meter between -20 and -30dBm for optimal linearity.
3. Use spectrum analyzer to monitor test.
4. Ensure that CW Jammer generator RF output is disabled and measure the power at the power meter port using the power meter. This is the relative signal power, Sr.
5. Disable Transmitter, and se CW Jammer generator RF output frequency equal to the carrier frequency and enable generator output. Set reference CW Jammer power level at power meter port 8.4dB below Sr (minimum J/S, or 10dB processing gain reference level). Note the power level setting on the generator, this is the reference CW Jammer power setting, Jr.
6. Disable CW Jammer, re-establish link. PER test should be operating essentially error-free.
7. Enable CW Jammer at the reference power level and verify that the PER test indicates a PER of less than 8%.
8. Alternatively, adjust the CW Jammer level to that which causes 8% PER and verify that the S/J is less than 8.4dB.
9. Repeat step 7 for uniform steps in frequency increments of 50 kHz across the receiver passband with the CW Jammer. In this case the receiver passband is ±8.5MHz.

The number of points where the PER fails to achieve 8% (is higher than 8%) is determined and if this is above 20% of the total, the test is failed otherwise it is passed.

9.5 Test Result of Processing Gain

[Processing Gain for Channel 6]

CHANNEL 6 Processing Gain						
Gp = (S/N)o + Mj + Lsys						
Freq. (MHz)	Gp (dB)	(S/N)o (Db)	Mj=J/S (Db)	Lsys (dB)	Jammer (dBm)	PER (%)
2428.50	25.8	16.4	7.4	2.0	-52.5	<=8.0
2428.55	25.4	16.4	7.0	2.0	-52.9	<=8.0
2428.60	25.1	16.4	6.7	2.0	-53.2	<=8.0
2428.65	24.9	16.4	6.5	2.0	-53.4	<=8.0
2428.70	25.0	16.4	6.6	2.0	-53.3	<=8.0
2428.75	25.0	16.4	6.6	2.0	-53.3	<=8.0
2428.80	25.1	16.4	6.7	2.0	-53.2	<=8.0
2428.85	25.3	16.4	6.9	2.0	-53.0	<=8.0
2428.90	25.3	16.4	6.9	2.0	-53.0	<=8.0
2428.95	25.1	16.4	6.7	2.0	-53.2	<=8.0
2429.00	24.7	16.4	6.3	2.0	-53.6	<=8.0
2429.05	24.2	16.4	5.8	2.0	-54.1	<=8.0
242910	24.0	16.4	5.6	2.0	-54.3	<=8.0
2429.15	24.1	16.4	5.7	2.0	-54.2	<=8.0
2429.20	24.1	16.4	5.7	2.0	-54.2	<=8.0
2429.25	24.5	16.4	6.1	2.0	-53.8	<=8.0
2429.30	24.9	16.4	6.5	2.0	-53.4	<=8.0
2429.35	24.8	16.4	6.4	2.0	-53.5	<=8.0
2429.40	24.3	16.4	5.9	2.0	-54.0	<=8.0
2429.45	24.2	16.4	5.8	2.0	-54.1	<=8.0
2429.50	24.2	16.4	5.8	2.0	-54.1	<=8.0
2429.55	23.8	16.4	5.4	2.0	-54.5	<=8.0
2429.60	23.5	16.4	5.1	2.0	-54.8	<=8.0
2429.65	22.4	16.4	4.0	2.0	-55.9	<=8.0
2429.70	23.0	16.4	4.6	2.0	-55.3	<=8.0
2429.75	22.8	16.4	4.4	2.0	-55.5	<=8.0
2429.80	22.7	16.4	4.3	2.0	-55.6	<=8.0
2429.85	21.6	16.4	3.2	2.0	-56.7	<=8.0
2429.90	21.9	16.4	3.5	2.0	-56.4	<=8.0
2429.95	21.9	16.4	3.5	2.0	-56.4	<=8.0
2430.00	21.6	16.4	3.2	2.0	-56.7	<=8.0
2430.05	21.3	16.4	2.9	2.0	-57.0	<=8.0
2430.10	20.8	16.4	2.4	2.0	-57.5	<=8.0
2430.15	20.2	16.4	1.8	2.0	-58.1	<=8.0
2430.20	20.2	16.4	1.8	2.0	-58.1	<=8.0
2430.25	20.2	16.4	1.8	2.0	-58.1	<=8.0
2430.30	19.8	16.4	1.4	2.0	-58.5	<=8.0
2430.35	19.8	16.4	1.8	2.0	-58.5	<=8.0
2430.40	19.3	16.4	0.9	2.0	-59.0	<=8.0
2430.45	19.3	16.4	0.9	2.0	-59.0	<=8.0
2430.50	19.4	16.4	1.0	2.0	-58.9	<=8.0