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EMC/SAFETY

IPWIRELESS, INC. TEST REPORT

FOR THE

BROADBAND MODEM, MODEL AP

FCC PART 21 SUBPART K AND
FCC PART 15 SUBPART B SECTIONS 15.107 & 15.109 CLASS B

COMPLIANCE

DATE OF ISSUE: AUGUST 2, 2001

PREPARED FOR:

IPWireless, Inc.
1250 Bayhill Drive Suite 113
San Bruno, Ca 94066

P.O. No.: 1009
W.O. No.: 77097

PREPARED BY:

Joyce Walker
CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

Date of test: June 18 - July 13, 2001

Report No.: FC01-047

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A2LA (USA); DATech (Germany); BSMI (Taiwan); Nemko (Norway); and GOST (Russia).
CKC Laboratories, Inc has received test site Registration Acceptance from the following agencies:
FCC (USA); VCCI (Japan); and Industry Canada.
CKC Laboratories, Inc. has received Letters of Acceptance through an MRA for the following agencies:
ACA/NATA (Australia); SABS (South Africa); SWEDAC (Sweden); Radio Communications Agency (RA); HOKLAS (Hong Kong); Bakom (Swiss); BIPT (Belgium); Denmark Telestyrelsen; RvA (Netherlands); SEE (Luxembourg) SITTEL (Bolivia); and UKAS (UK).

ADMINISTRATIVE INFORMATION

DATE OF TEST:	June 18 - July 13, 2001
DATE OF RECEIPT:	June 18, 2001
PURPOSE OF TEST:	To demonstrate the compliance of the Broadband Modem, Model AP with the requirements for FCC Part 21 Subpart K and FCC Part 15 Subpart B Sections 15.107 & 15.109 Class B devices.
TEST METHOD:	ANSI C63.4 (1992)
MANUFACTURER:	IPWireless, Inc. 1250 Bayhill Drive Suite 113 San Bruno, Ca 94066
REPRESENTATIVE:	Roger Quayle
TEST LOCATION:	CKC Laboratories, Inc. 1653 Los Vibros Road, Hollister, CA 95023 b 5473A Clouds Rest, Mariposa, CA 95338

SUMMARY OF RESULTS

As received, the IPWireless, Inc. Broadband Modem, Model AP was found to be fully compliant with the following standards and specifications:

United States

- FCC Part 15 Subpart B Section 15.107 and 15.109 Class B
- FCC Part 21 Subpart K
- FCC Part 74 Subpart I, using FCC Part 21 Subpart K
- ANSI C63.4 (1992) method

The results in this report apply only to the items tested, as identified herein.

MODIFICATIONS REQUIRED FOR COMPLIANCE

Production EMI gasketing added to periphery of EUT enclosure.

TEMPERATURE AND HUMIDITY DURING TESTING

The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

APPROVALS

QUALITY ASSURANCE:

Dennis Ward, Quality Manager

Christine Nicklas, EMC/Lab Manager

TEST PERSONNEL:

Randy Clark, EMC Engineer

Conan T. Boyle, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The EUT is a wireless broadband modem. The EUT tested by CKC Laboratories represented a production unit.

EQUIPMENT UNDER TEST

Broadband Modem
Manuf: IP Wireless, Inc.
Model: AP
Serial: AE1F1A-000003
FCC ID: PKTP1BAP

AC Adapter
Manuf: Friwo
Model: SPA15U-05
Serial: None
FCC ID: DoC

PERIPHERAL DEVICES

The EUT was tested with the following peripheral device(s):

Notebook PC
Manuf: Dell
Model: PPX (Inspiron 3800)
Serial: 329-634-27
FCC ID: DoC

AC Adapter
Manuf: Dell
Model: AA20031
Serial: CN-09364U-12671-0BH-4902
FCC ID: DoC

AC Adapter
Manuf: HP
Model: C2175A
Serial: 220995 (Date)
FCC ID: DoC

Keyboard
Manuf: Compaq
Model: RT101
Serial: 1114X877X
FCC ID: AQ6-MTN4X215

Mouse
Manuf: Microsoft
Model: X04-72167
Serial: None
FCC ID: DoC

Printer
Manuf: HP
Model: C2184A
Serial: MY63J1T1K2
FCC ID: 894C2184X

Monitor
Manuf: Micron
Model: RMD5L11CM
Serial: 8205C1127500
FCC ID: DoC

2.1033(c)(3) USER'S MANUAL

The necessary information is contained in a separate document.

2.1033(c)(4) TYPE OF EMISSIONS

The emission is QPSK using a 12 MHz radio channel, consequently the emission designator is 12M0G7D.

2.1033(c)(5) FREQUENCY RANGE

For the US the device operates in the frequency range of 2.500 GHz to 2.686 GHz.

2.1033(c)(6) OPERATING POWER

The unit is capable of operating with a single orthogonal spreading code at +22 dBm of PA output power, or with 2 simultaneous codes at +18 dBm of PA output power each, for a composite output power of +21 dBm. The two code case is the more severe case for testing the emission mask and thus is used for the emissions measurements.

The transmit power may be decreased from the above values in 2 dB steps on software control from the controlling base station. The range of output power decrease available by software control is 80 dB.

2.1033(c)(7) MAXIMUM POWER RATING

This unit is being qualified under the low power response station rules contained in both 47CFR21.908 (d) and 47CFR74.936 (f), which define the maximum power limit of –6 dBW EIRP in a 6 MHz channel.

This device operates in a 12 MHz channel and as such, the maximum EIRP allowed is –6 dBW + 3 dB = -3 dBW EIRP.

The design EIRP using the integrated antenna is as follows:

EIRP = +22 dBm + 2 dB (ant. gain)
= +24 dBm
= -6 dBW

Therefore the EIRP is 4 dB below the –3 dBW limit allowed for a 12 MHz bandwidth emission.

This device operates below the EIRP limit for a low power response station and is thus qualified using the emission mask defined for the lower power response station in both 47CFR74.936 (f) and 47CFR21.908 (d).

2.1033(c)(8) DC VOLTAGES

The necessary information is contained in a separate confidential document.

2.1033(c)(9) TUNE-UP PROCEDURE

This device does not have any tune up procedure, as it is a subscriber modem device that is configured at the factory to operate within the stated frequency and power limits.

2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION

The schematics are included as confidential exhibits to the application. The complete description of the EUT circuitry and devices for determining and stabilizing frequency, for suppression of spurious radiation, for limiting modulation and for limiting power are given in the confidential exhibit titled "IPWireless" User Equipment Requirements and Architecture Document UERAD-V02.06 Model AP.

2.1033(c)(11) LABEL AND PLACEMENT

The necessary information is contained in a separate document.

2.1033(c)(12) SUBMITTAL PHOTOS

The necessary information is contained in a separate document.

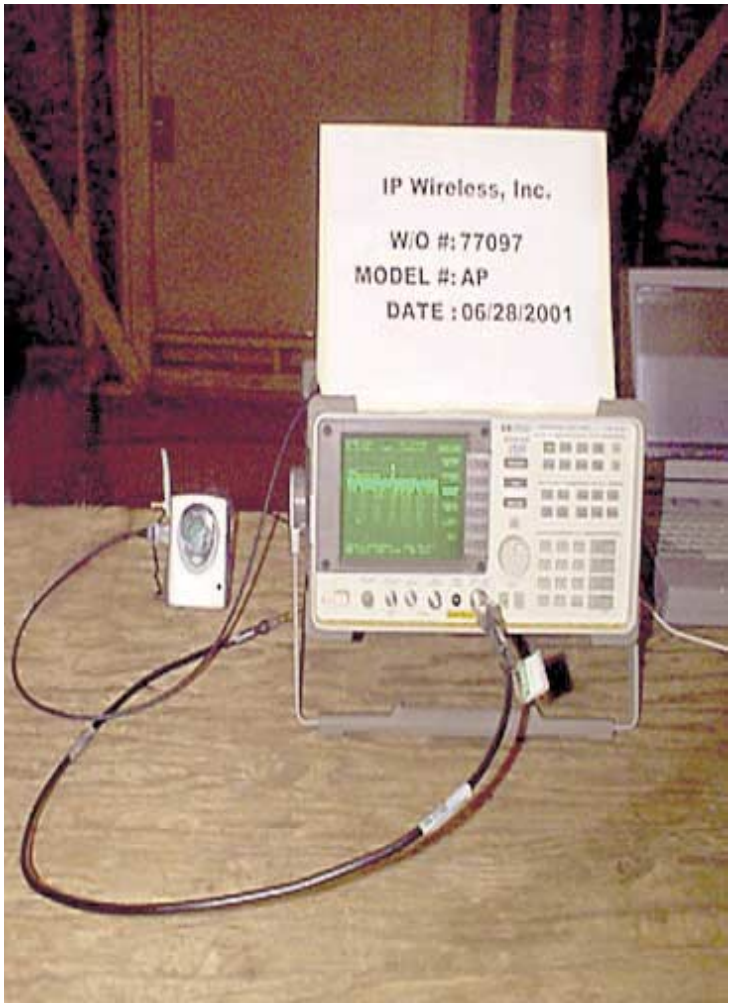
2.1033(c)(13) MODULATION INFORMATION

Detailed information related to the digital modulation characteristics of the EUT are included in the confidential exhibit titled "IPWireless" User Equipment Requirements and Architecture Document UERAD-V02.06 Model AP.

2.1033(c)(14)/2.1046/21.904(e) - RF POWER OUTPUT & 2.1033(c)(14)/2.1049(i)//21.908(d) - OCCUPIED BANDWIDTH

Test Conditions:

The HP-8564E Spectrum Analyzer was connected directly to the transmitter antenna terminal with a 3-foot Heliax cable with .8dB loss across all three channel frequencies.



Direct Connect Setup Photo

Emissions Mask FCC 21.904(e) and Occupied Bandwidth FCC 2.1049

Model: **AP** **S/N: AE1F1A-000003**

Test Equipment:

Asset No.	Description	Model	Cal Date	Cal Due
0	Cable, HF	HF 971	9/17/01	9/17/02
1401	Spectrum Analyzer	HP-8564E	12/12/01	12/12/01

Channel **2506** MHz

Power measured in 12MHz			**Power normalized to 6MHz band**	
Ch Pwr	20.60 dBm	**-9.4** dBW	**-12.4** dBw	
Pwr (100k)	-11.87 dBm		Occupied BW	8.20 **MHz**

	(-3MHz)	(-250kHz)	Band edge	Center Ch	Band Edge	(+250kHz)	(+3MHz)
	2497.00	**2499.75**	**2500.00**	**2506.00**	**2512.00**	**2512.25**	**2515.00**
Measured Value in 100kHz (dBm)	-56.20	-49.53	-50.2		-52.37	-52.03	-59.03
Calculated dBc limit from Channel Power	**-30.60**	**-20.60**	**(-25dB)**		**(-25dB)**	**-20.60**	**-30.60**
LIMIT [Pwr - Calculated dBc] (dBm)	**-42.47**	**-32.47**	**-36.87**		**-36.87**	**-32.47**	**-42.47**
MARGIN	**-13.73**	**-17.06**	**-13.33**		**-15.50**	**-19.56**	**-16.56**
Pass/Fail	**Pass**	**Pass**	**Pass**		**Pass**	**Pass**	**Pass**

Channel **2596** MHz

Power measured in 12MHz			**Power normalized to 6MHz band**	
Ch Pwr	20.70 dBm	**-9.3** dBW	**-12.3** dBw	
Pwr (100k)	-11.37 dBm		Occupied BW	8.13 **MHz**

	(-3MHz)	(-250kHz)	Band edge	Center Ch	Band Edge	(+250kHz)	(+3MHz)
	2587.00	**2589.75**	**2590.00**	**2596.00**	**2602.00**	**2602.25**	**2605.00**
Measured Value in 100kHz (dBm)	-57.87	-50.53	-50.03		-52.87	-53.20	-59.87
Calculated dBc point from Channel Power	**-30.70**	**-20.70**	**(-25dB)**		**(-25dB)**	**-20.70**	**-30.70**
LIMIT [Pwr - Calculated dBc] (dBm)	**-42.07**	**-32.07**	**-36.37**		**-36.37**	**-32.07**	**-42.07**
MARGIN	**-15.80**	**-18.46**	**-13.66**		**-16.50**	**-21.13**	**-17.80**
Pass/Fail	**Pass**	**Pass**	**Pass**		**Pass**	**Pass**	**Pass**

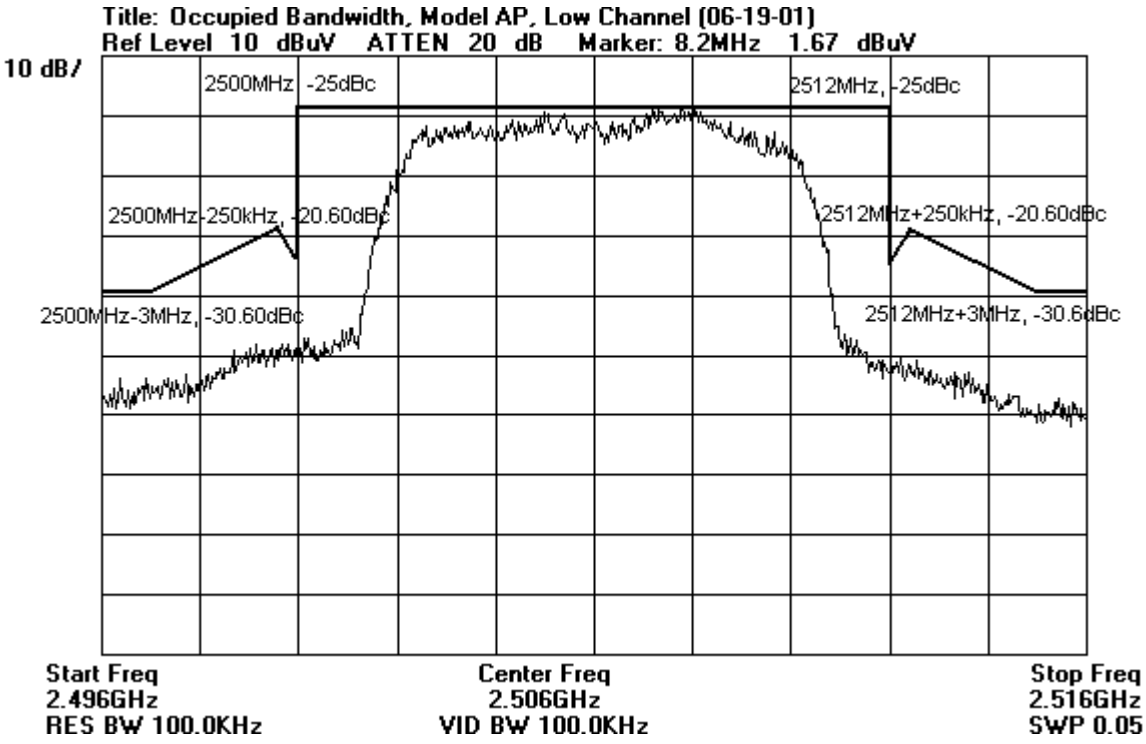
Channel **2680** MHz

Power measured in 12MHz			**Power normalized to 6MHz band**	
Ch Pwr	20.90 dBm	**-9.1** dBW	**-12.1** dBw	
Pwr (100k)	-11.03 dBm		Occupied BW	8.13 **MHz**

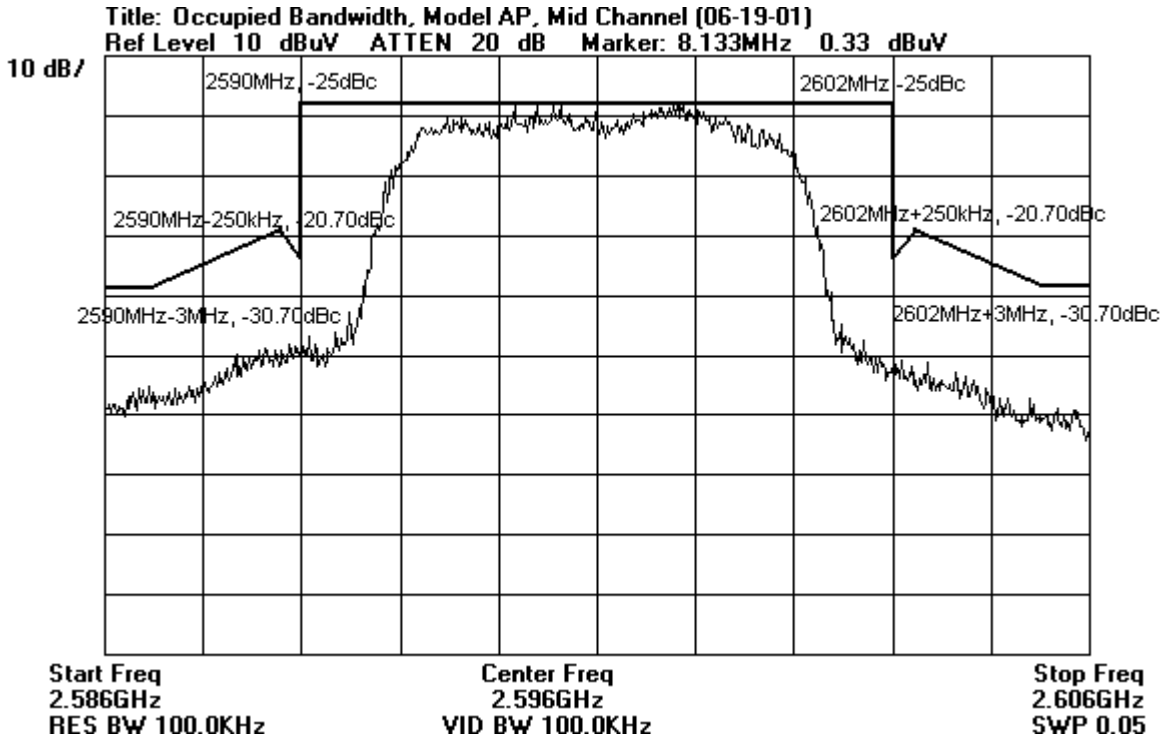
	(-3MHz)	(-250kHz)	Band edge	Center Ch	Band Edge	(+250kHz)	(+3MHz)
	2671	**2673.75**	**2674**	**2680**	**2686**	**2686.25**	**2689**
Measured Value in 100kHz (dBm)	-58.53	-51.03	-51.03		-51.20	-51.70	-59.53
Calculated dBc point from Channel Power	**-30.90**	**-20.90**	**(-25dB)**		**(-25dB)**	**-20.90**	**-30.90**
LIMIT [Pwr - Calculated dBc] (dBm)	**-41.93**	**-31.93**	**-36.03**		**-36.03**	**-31.93**	**-41.93**
MARGIN	**-16.60**	**-19.10**	**-15.00**		**-15.17**	**-19.77**	**-17.60**
Pass/Fail	**Pass**	**Pass**	**Pass**		**Pass**	**Pass**	**Pass**

The emissions mask for low power response stations was used to show compliance to 21.908(d) and 74.936(f). The output power of this device is less than the -6dBW requirement and therefore can be used. All measurements were made with a RBW=100kHz and using the relative method as specified in section 21.908(e).

OCCUPIED BANDWIDTH PLOT



OCCUPIED BANDWIDTH PLOT



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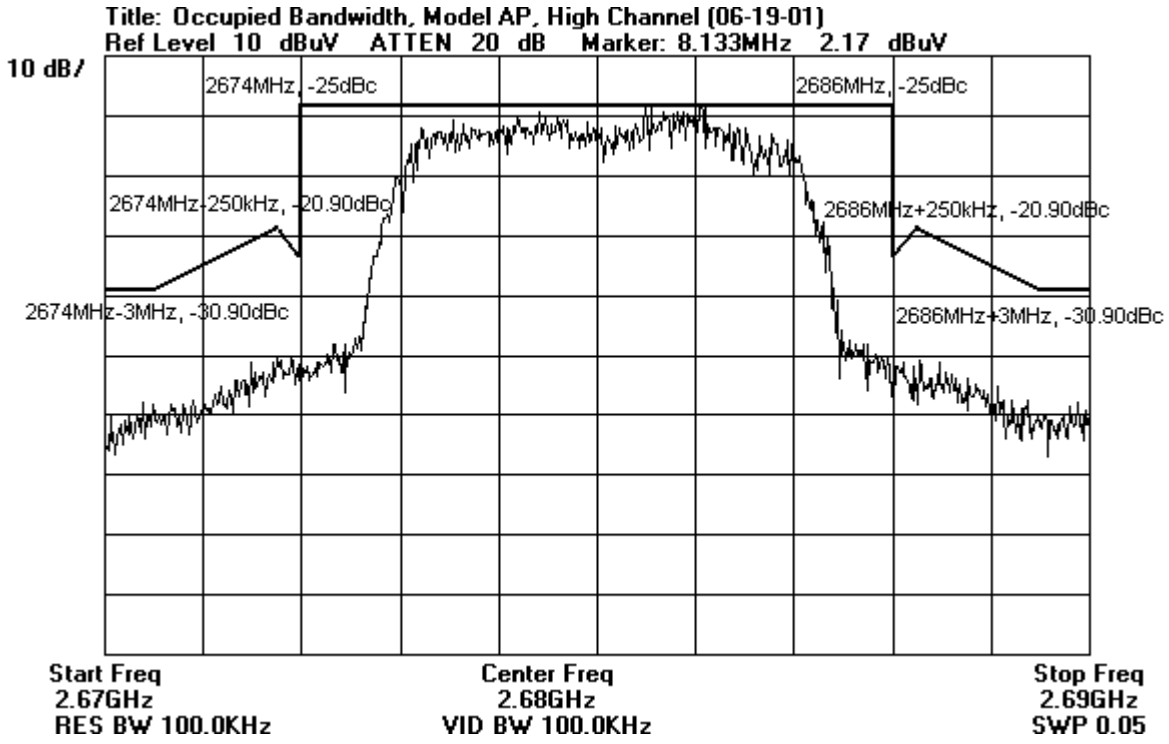
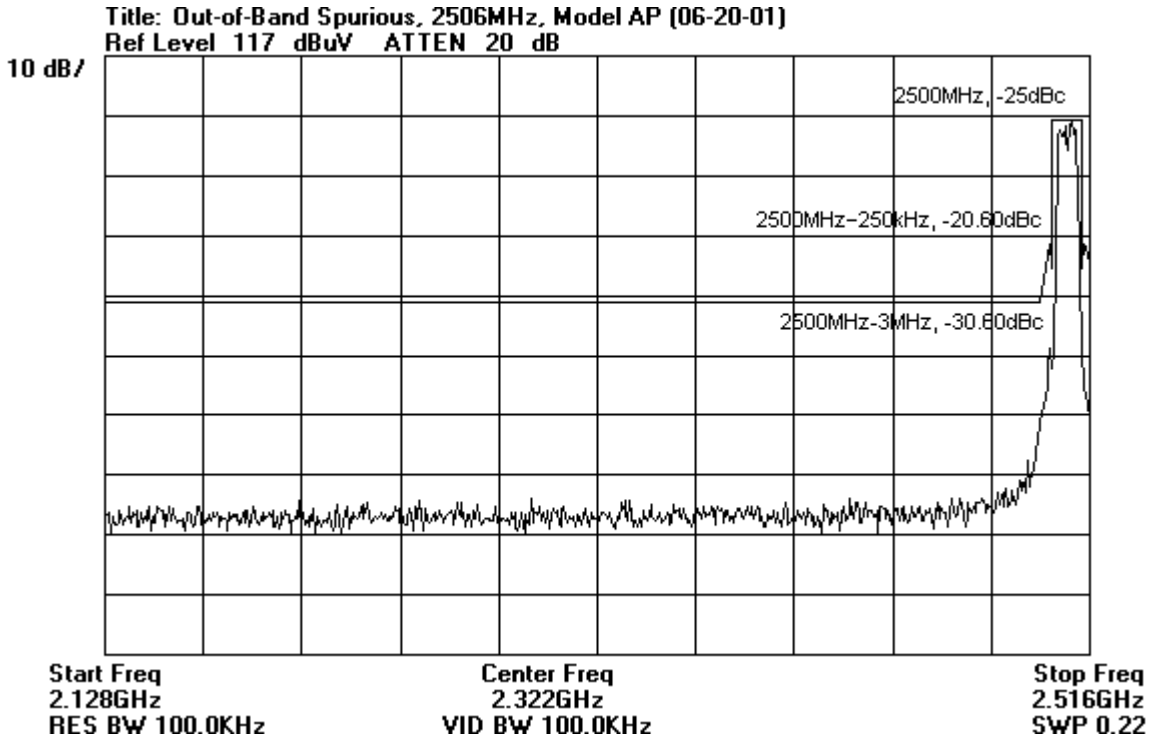
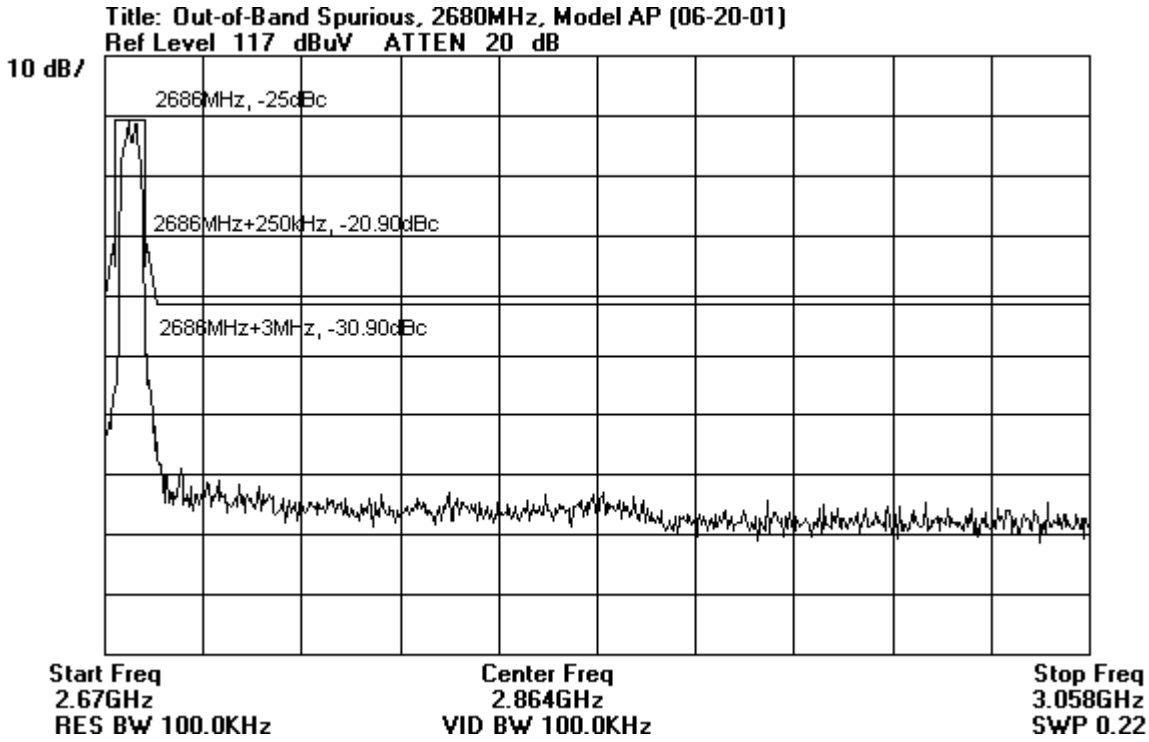


OUT OF BAND PLOT



Low Frequency

OUT OF BAND PLOT



High Frequency

2.1033(c)(14)/2.1047(a) - MODULATION CHARACTERISTICS - AUDIO FREQUENCY RESPONSE

Not applicable to this unit.

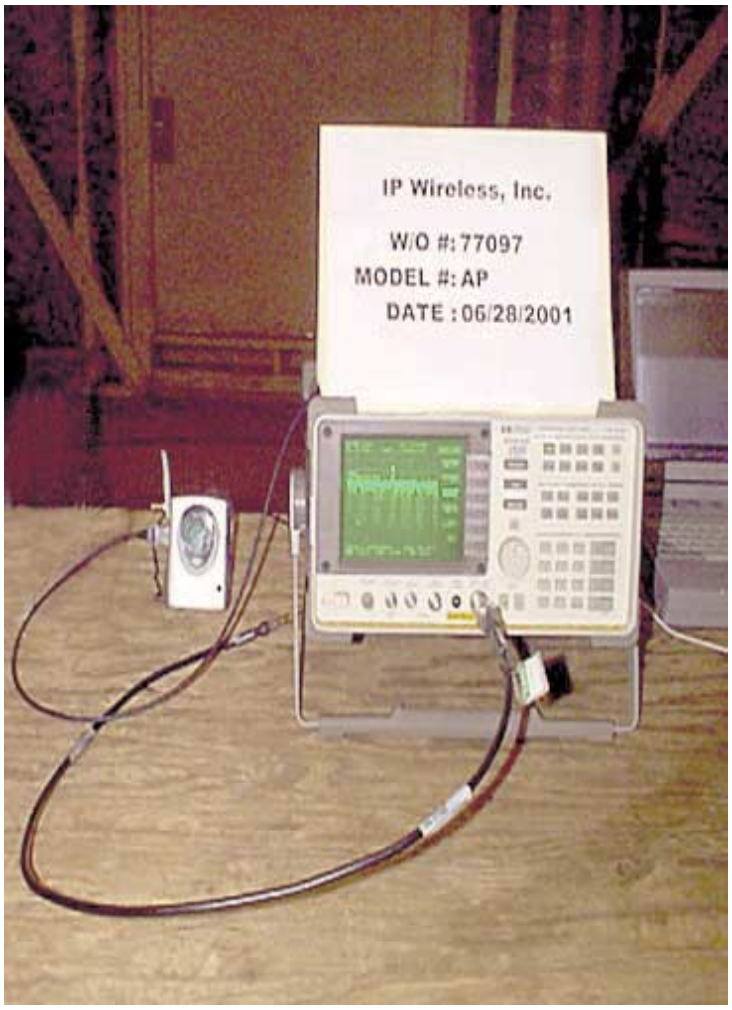
2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS – Modulation Limiting Response

Not applicable to this unit.

2.1033(c)(14)/2.1051/21.908(d) - SPURIOUS EMISSIONS AT ANTENNA TERMINAL

VIDEO BANDWIDTH AND RESOLUTION BANDWIDTH SETTINGS:

Frequency Range	Signal Analyzer VBW & RBW Setting
1 MHz – 30 MHz	9 kHz
30 MHz – 1000 MHz	120 kHz
1 GHz – 26.5 GHz	1 MHz



Direct Connect Setup Photo

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1051 Model AP SE**
Work Order #: **77097** Date: 6/20/2001
Test Type: **Spurious Emissions Ant Term** Time: 14:00:57
Equipment: **Wireless Modem** Sequence#: 1
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, HF, 4-ft	HF 971	09/17/2000	09/17/2001	971

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is operating at 2.506GHz (low channel) and the RF output is directly connected to the spectrum analyzer RF input port. Test is spurious emissions at antenna terminals from 1MHz-26.5GHz (FCC 2.1051).

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	HF 97 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2126.333M	54.5	+0.8				+0.0	55.3	64.5	-9.2	None
2	2642.175M	51.0	+0.8				+0.0	51.8	64.5	-12.7	None
3	2538.927M Ave	50.7	+0.8				+0.0	51.5	64.5	-13.0	None
^	2538.927M	58.8	+0.8				+0.0	59.6	64.5	-4.9	None

5	1500.000M	42.5	+1.0	+0.0	43.5	64.5	-21.0	None
6	5012.000M	40.5	+1.4	+0.0	41.9	64.5	-22.6	None
7	750.000M	41.2	+0.0	+0.0	41.2	64.5	-23.3	None

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1051 Model AP SE**
Work Order #: **77097** Date: 6/20/2001
Test Type: **Spurious Emissions Ant Term** Time: 15:37:18
Equipment: **Wireless Modem** Sequence#: 2
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, HF, 4-ft	HF 971	09/17/2000	09/17/2001	971

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is operating at 2.596GHz (mid channel) and the RF output is directly connected to the spectrum analyzer RF input port. Test is spurious emissions at antenna terminals from 1MHz-26.5GHz (FCC 2.1051).

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	HF 97 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2628.935M	56.5	+0.8				+0.0	57.3	64.5	-7.2	None
2	2215.996M Ave	55.7	+0.8				+0.0	56.5	64.5	-8.0	None
^	2215.996M	57.8	+0.8				+0.0	58.6	64.5	-5.9	None
4	2525.696M Ave	54.7	+0.8				+0.0	55.5	64.5	-9.0	None
^	2525.696M	60.0	+0.8				+0.0	60.8	64.5	-3.7	None

6	2554.475M	54.0	+0.8		+0.0	54.8	64.5	-9.7	None
7	2493.475M	47.8	+0.8		+0.0	48.6	64.5	-15.9	None
8	777.273M	46.3	+0.0		+0.0	46.3	64.5	-18.2	None

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1051 Model AP SE**
Work Order #: **77097** Date: 6/20/2001
Test Type: **Spurious Emissions Ant Term** Time: 17:10:52
Equipment: **Wireless Modem** Sequence#: 3
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, HF, 4-ft	HF 971	09/17/2000	09/17/2001	971

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is operating at 2.680GHz (high channel) and the RF output is directly connected to the spectrum analyzer RF input port. Test is spurious emissions at antenna terminals from 1MHz-26.5GHz (FCC 2.1051).

Measurement Data: Reading listed by margin. Test Distance: None

#	Freq MHz	Rdng dBµV	HF 97 dB	dB	dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2609.694M Ave	59.8	+0.8				+0.0	60.6	64.5	-3.9	None
^	2609.694M	63.0	+0.8				+0.0	63.8	64.5	-0.7	None
3	2665.978M	56.2	+0.8				+0.0	57.0	64.5	-7.5	None
4	2299.995M	50.2	+0.8				+0.0	51.0	64.5	-13.5	None

5	2545.750M	49.7	+0.8		+0.0	50.5	64.5	-14.0	None
6	72.333M	45.3	+0.0		+0.0	45.3	64.5	-19.2	None
7	215.167M	44.2	+0.0		+0.0	44.2	64.5	-20.3	None
8	750.000M	43.3	+0.0		+0.0	43.3	64.5	-21.2	None

2.1033(c)(14)/2.1053/21.908(d) - FIELD STRENGTH OF SPURIOUS RADIATION

VIDEO BANDWIDTH AND RESOLUTION BANDWIDTH SETTINGS:

Frequency Range	Signal Analyzer VBW & RBW Setting
1 MHz – 30 MHz	9 kHz
30 MHz – 1000 MHz	120 kHz
1 GHz – 26.5 GHz	1 MHz

Radiated Emissions - Front View

Radiated Emissions - Front View Close-up

Radiated Emissions - Back View

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1053 Model AP Field Strength SE**
Work Order #: **77097** Date: 6/28/2001
Test Type: **Maximized Emissions** Time: 12:32:23
Equipment: **Wireless Modem** Sequence#: 12
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, 3m	cabl 3m Hol A 01	01/04/2001	01/04/2002	0
Cable, 30m	cabl 30m Hol A 01	01/03/2001	01/03/2002	0
HP 85650A QP Adaptor	2430A00541	06/14/2001	06/14/2002	0
HP-85650A Display	2112A02174	06/14/2001	06/14/2002	0
HP-8568A	2049A01408	06/14/2001	06/14/2002	313
HP 8447F Preamp	2944A03850	04/09/2001	04/09/2002	501
Log Periodic, A.H. SAS200/510	318	05/16/2001	05/16/2002	0
Bicon, Emco 3110	9205-1522	10/30/2000	10/30/2001	503
Loop Ant, Emco 6502	2078	08/17/2000	08/17/2001	432

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The PC has an external keyboard, mouse, monitor and printer. The EUT is operating in transmit mode at 2506 MHz. Tested for field strength of spurious emissions from 1-1000MHz (FCC 2.1053).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	cabl dB	8447F dB	Bicon dB	Log31 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	333.304M	54.4	+2.7	-26.3	+0.0	+17.9	+0.0	48.7	64.5	-15.8	Vert
2	333.296M	51.4	+2.7	-26.3	+0.0	+17.9	+0.0	45.7	64.5	-18.8	Horiz
3	266.638M	49.8	+2.3	-26.0	+19.2	+0.0	+0.0	45.3	64.5	-19.2	Horiz

4	266.639M	48.7	+2.3	-26.0	+19.2	+0.0	+0.0	44.2	64.5	-20.3	Vert
5	366.627M	51.4	+2.9	-26.6	+0.0	+15.4	+0.0	43.1	64.5	-21.4	Vert
6	299.960M	45.8	+2.5	-26.2	+20.6	+0.0	+0.0	42.7	64.5	-21.8	Vert
7	299.965M	45.6	+2.5	-26.2	+20.6	+0.0	+0.0	42.5	64.5	-22.0	Horiz
8	366.615M	50.5	+2.9	-26.6	+0.0	+15.4	+0.0	42.2	64.5	-22.3	Horiz
9	199.926M	47.8	+2.1	-26.4	+17.5	+0.0	+0.0	41.0	64.5	-23.5	Horiz
10	666.559M	41.8	+4.1	-27.8	+0.0	+21.8	+0.0	39.9	64.5	-24.6	Horiz
11	380.396M	46.7	+2.9	-26.8	+0.0	+15.6	+0.0	38.4	64.5	-26.1	Horiz
12	291.865M	40.5	+2.5	-26.1	+20.3	+0.0	+0.0	37.2	64.5	-27.3	Vert
13	199.978M	43.4	+2.1	-26.4	+17.5	+0.0	+0.0	36.6	64.5	-27.9	Vert
14	240.016M	41.3	+2.2	-26.0	+18.2	+0.0	+0.0	35.7	64.5	-28.8	Vert
15	340.383M	42.0	+2.7	-26.4	+0.0	+16.7	+0.0	35.0	64.5	-29.5	Vert
16	240.020M	40.6	+2.2	-26.0	+18.2	+0.0	+0.0	35.0	64.5	-29.5	Horiz
17	280.034M	38.4	+2.4	-26.0	+19.8	+0.0	+0.0	34.6	64.5	-29.9	Horiz
18	320.029M	37.4	+2.6	-26.3	+0.0	+20.1	+0.0	33.8	64.5	-30.7	Horiz
19	291.870M	36.9	+2.5	-26.1	+20.3	+0.0	+0.0	33.6	64.5	-30.9	Horiz
20	380.417M	41.4	+2.9	-26.8	+0.0	+15.6	+0.0	33.1	64.5	-31.4	Vert
21	384.034M	40.8	+2.9	-26.8	+0.0	+15.7	+0.0	32.6	64.5	-31.9	Vert
22	39.792M	43.1	+0.8	-26.8	+15.3	+0.0	+0.0	32.4	64.5	-32.1	Vert
23	309.685M	33.0	+2.6	-26.2	+0.0	+21.9	+0.0	31.3	64.5	-33.2	Vert
24	39.878M	40.1	+0.8	-26.8	+15.3	+0.0	+0.0	29.4	64.5	-35.1	Horiz
25	280.038M	32.6	+2.4	-26.0	+19.8	+0.0	+0.0	28.8	64.5	-35.7	Vert

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1053 Model AP Field Strength SE**
Work Order #: **77097** Date: 6/28/2001
Test Type: **Radiated Scan/maximized** Time: 12:39:39
Equipment: **Wireless Modem** Sequence#: 13
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, 3m	cabl 3m Hol A 01	01/04/2001	01/04/2002	0
Cable, 30m	cabl 30m Hol A 01	01/03/2001	01/03/2002	0
HP 85650A QP Adaptor	2430A00541	06/14/2001	06/14/2002	0
HP-85650A Display	2112A02174	06/14/2001	06/14/2002	0
HP-8568A	2049A01408	06/14/2001	06/14/2002	313
HP 8447F Preamp	2944A03850	04/09/2001	04/09/2002	501
Log Periodic, A.H. SAS200/510	318	05/16/2001	05/16/2002	0
Bicon, Emco 3110	9205-1522	10/30/2000	10/30/2001	503
Loop Ant, Emco 6502	2078	08/17/2000	08/17/2001	432

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The PC has an external keyboard, mouse, monitor and printer. The EUT is operating in transmit mode at 2596 MHz. Tested for field strength of spurious emissions from 1-1000MHz (FCC 2.1053).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	cabl dB	8447F dB	Bicon dB	Log31 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	333.290M	53.9	+2.7	-26.3	+0.0	+17.9	+0.0	48.2	64.5	-16.3	Vert
2	333.295M	51.0	+2.7	-26.3	+0.0	+17.9	+0.0	45.3	64.5	-19.2	Horiz
3	366.610M	52.2	+2.9	-26.6	+0.0	+15.4	+0.0	43.9	64.5	-20.6	Vert

4	299.963M	46.8	+2.5	-26.2	+20.6	+0.0	+0.0	43.7	64.5	-20.8	Vert
5	299.970M	45.7	+2.5	-26.2	+20.6	+0.0	+0.0	42.6	64.5	-21.9	Horiz
6	266.643M	46.6	+2.3	-26.0	+19.2	+0.0	+0.0	42.1	64.5	-22.4	Horiz
7	266.640M	46.3	+2.3	-26.0	+19.2	+0.0	+0.0	41.8	64.5	-22.7	Vert
8	366.563M	48.6	+2.9	-26.6	+0.0	+15.4	+0.0	40.3	64.5	-24.2	Horiz
9	760.025M	41.0	+4.5	-27.6	+0.0	+21.6	+0.0	39.5	64.5	-25.0	Vert
10	199.993M	45.9	+2.1	-26.4	+17.5	+0.0	+0.0	39.1	64.5	-25.4	Horiz
11	233.289M	42.4	+2.2	-26.1	+18.1	+0.0	+0.0	36.6	64.5	-27.9	Vert
12	291.869M	38.6	+2.5	-26.1	+20.3	+0.0	+0.0	35.3	64.5	-29.2	Vert
13	233.279M	41.1	+2.2	-26.1	+18.1	+0.0	+0.0	35.3	64.5	-29.2	Horiz
14	337.895M	41.7	+2.7	-26.4	+0.0	+17.1	+0.0	35.1	64.5	-29.4	Horiz
15	240.013M	39.9	+2.2	-26.0	+18.2	+0.0	+0.0	34.3	64.5	-30.2	Vert
16	199.962M	41.0	+2.1	-26.4	+17.5	+0.0	+0.0	34.2	64.5	-30.3	Vert
17	240.021M	39.5	+2.2	-26.0	+18.2	+0.0	+0.0	33.9	64.5	-30.6	Horiz
18	291.872M	37.0	+2.5	-26.1	+20.3	+0.0	+0.0	33.7	64.5	-30.8	Horiz
19	320.020M	36.2	+2.6	-26.3	+0.0	+20.1	+0.0	32.6	64.5	-31.9	Horiz
20	261.135M	37.4	+2.3	-26.0	+18.9	+0.0	+0.0	32.6	64.5	-31.9	Vert
21	261.111M	37.0	+2.3	-26.0	+18.9	+0.0	+0.0	32.2	64.5	-32.3	Horiz
22	276.472M	33.3	+2.4	-26.0	+19.6	+0.0	+0.0	29.3	64.5	-35.2	Horiz
23	276.495M	32.9	+2.4	-26.0	+19.6	+0.0	+0.0	28.9	64.5	-35.6	Vert

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1053 Model AP Field Strength SE**
Work Order #: **77097** Date: 6/28/2001
Test Type: **Maximized Emissions** Time: 14:10:07
Equipment: **Wireless Modem** Sequence#: 14
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Cable, 3m	cabl 3m Hol A 01	01/04/2001	01/04/2002	0
Cable, 30m	cabl 30m Hol A 01	01/03/2001	01/03/2002	0
HP 85650A QP Adaptor	2430A00541	06/14/2001	06/14/2002	0
HP-85650A Display	2112A02174	06/14/2001	06/14/2002	0
HP-8568A	2049A01408	06/14/2001	06/14/2002	313
HP 8447F Preamp	2944A03850	04/09/2001	04/09/2002	501
Log Periodic, A.H. SAS200/510	318	05/16/2001	05/16/2002	0
Bicon, Emco 3110	9205-1522	10/30/2000	10/30/2001	503
Loop Ant, Emco 6502	2078	08/17/2000	08/17/2001	432

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The PC has an external keyboard, mouse, monitor and printer. The EUT is operating in transmit mode at 2680 MHz. Tested for field strength of spurious emissions from 1-1000MHz (FCC 2.1053).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	cabl dB	8447F dB	Bicon dB	Log31 dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	333.287M	54.3	+2.7	-26.3	+0.0	+17.9	+0.0	48.6	64.5	-15.9	Vert
2	366.621M	52.4	+2.9	-26.6	+0.0	+15.4	+0.0	44.1	64.5	-20.4	Vert
3	299.967M	46.3	+2.5	-26.2	+20.6	+0.0	+0.0	43.2	64.5	-21.3	Vert

4	299.964M	45.9	+2.5	-26.2	+20.6	+0.0	+0.0	42.8	64.5	-21.7	Horiz
5	266.644M	47.2	+2.3	-26.0	+19.2	+0.0	+0.0	42.7	64.5	-21.8	Vert
6	266.623M	46.5	+2.3	-26.0	+19.2	+0.0	+0.0	42.0	64.5	-22.5	Horiz
7	299.964M	44.6	+2.5	-26.2	+20.6	+0.0	+0.0	41.5	64.5	-23.0	Horiz
8	199.985M	45.8	+2.1	-26.4	+17.5	+0.0	+0.0	39.0	64.5	-25.5	Horiz
9	516.186M	44.3	+3.5	-27.7	+0.0	+17.8	+0.0	37.9	64.5	-26.6	Vert
10	499.939M	44.4	+3.4	-27.6	+0.0	+17.5	+0.0	37.7	64.5	-26.8	Vert
11	233.297M	43.4	+2.2	-26.1	+18.1	+0.0	+0.0	37.6	64.5	-26.9	Vert
12	199.997M	44.0	+2.1	-26.4	+17.5	+0.0	+0.0	37.2	64.5	-27.3	Vert
13	233.291M	41.1	+2.2	-26.1	+18.1	+0.0	+0.0	35.3	64.5	-29.2	Horiz
14	322.580M	38.6	+2.6	-26.3	+0.0	+19.6	+0.0	34.5	64.5	-30.0	Vert
15	280.037M	38.3	+2.4	-26.0	+19.8	+0.0	+0.0	34.5	64.5	-30.0	Horiz
16	261.151M	37.9	+2.3	-26.0	+18.9	+0.0	+0.0	33.1	64.5	-31.4	Vert
17	280.023M	36.3	+2.4	-26.0	+19.8	+0.0	+0.0	32.5	64.5	-32.0	Vert
18	261.143M	37.1	+2.3	-26.0	+18.9	+0.0	+0.0	32.3	64.5	-32.2	Horiz
19	276.519M	34.1	+2.4	-26.0	+19.6	+0.0	+0.0	30.1	64.5	-34.4	Horiz
20	166.606M	38.3	+1.7	-26.4	+16.3	+0.0	+0.0	29.9	64.5	-34.6	Horiz
21	276.507M	33.0	+2.4	-26.0	+19.6	+0.0	+0.0	29.0	64.5	-35.5	Vert
22	166.620M	33.8	+1.7	-26.4	+16.3	+0.0	+0.0	25.4	64.5	-39.1	Vert

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1053 Model AP Field Strength SE**
Work Order #: **77097** Date: 7/13/2001
Test Type: **Maximized Emissions** Time: 12:12:21
Equipment: **Wireless Modem** Sequence#: 15
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, 2 ft Andrews FSJ1P-50A-4A	hol-hf-002-01	09/29/2000	09/29/2001	0
Cable, 25 ft Andrews FSJ1P-50A-4A	hol-hf-025-06-01	05/17/2001	05/17/2002	0
Cable,100 ft Andrews FSJ1P-50A-4A	hol-hf-100-09	09/29/2001	09/29/2002	0
Preamp, HP83017A	3123A00283	05/14/2001	05/14/2002	785
HF EMCO Antenna	9901-5655	10/30/2000	10/30/2001	2157
Ant., Horn, 18-26.5GHz, HP RA42-K-F-4B-C	94126-003	07/09/2001	07/09/2002	1413

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is continuously transmitting in low channel at 2.506GHz. Tested for field strength of spurious emissions from 1-26.5GHz (FCC 2.1053).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	hol-h HP-83 dB	HOL-H dB	hol-h dB	Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2125.998M Ave	52.8	+1.0 -38.4	+2.4	+9.8	+26.2	+0.0	53.8	64.5	-10.7	Horiz
^	2125.998M	53.6	+1.0 -38.4	+2.4	+9.8	+26.2	+0.0	54.6	64.5	-9.9	Horiz

3	2125.987M Ave	52.0	+1.0 -38.4	+2.4	+9.8	+26.2	+0.0	53.0	64.5	-11.5	Vert
^	2125.987M	52.3	+1.0 -38.4	+2.4	+9.8	+26.2	+0.0	53.3	64.5	-11.2	Vert
5	1520.000M	47.3	+1.0 -38.5	+3.4	+8.9	+25.6	+0.0	47.7	64.5	-16.8	Horiz
6	1804.966M	46.7	+1.1 -38.4	+2.7	+9.4	+26.1	+0.0	47.6	64.5	-16.9	Vert
7	1744.192M	45.8	+1.1 -38.4	+2.9	+9.3	+26.0	+0.0	46.7	64.5	-17.8	Vert
8	1744.200M	45.5	+1.1 -38.4	+2.9	+9.3	+26.0	+0.0	46.4	64.5	-18.1	Horiz
9	1519.998M	42.5	+1.0 -38.5	+3.4	+8.9	+25.6	+0.0	42.9	64.5	-21.6	Vert
10	1804.783M Ave	34.8	+1.1 -38.4	+2.7	+9.4	+26.1	+0.0	35.7	64.5	-28.8	Horiz
^	1804.783M	53.2	+1.1 -38.4	+2.7	+9.3	+26.0	+0.0	53.9	64.5	-10.6	Horiz
12	5015.829M Ave	24.5	+0.1 -37.2	+3.3	+14.6	+27.6	+0.0	32.9	64.5	-31.6	Vert
^	5015.829M	46.7	+0.1 -37.2	+3.3	+14.6	+27.6	+0.0	55.1	64.5	-9.4	Vert
14	2538.919M Ave	31.0	+0.6 -38.3	+2.7	+10.6	+26.1	+0.0	32.7	64.5	-31.8	Horiz
^	2538.919M	47.2	+0.6 -38.3	+2.7	+10.6	+26.1	+0.0	48.9	64.5	-15.6	Horiz

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Customer: **IPWireless, Inc.**
Specification: **FCC 2.1053 Model AP Field Strength SE**
Work Order #: **77097** Date: 7/13/2001
Test Type: **Maximized Emissions** Time: 13:07:45
Equipment: **Wireless Modem** Sequence#: 16
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, 2 ft Andrews FSJ1P-50A-4A	hol-hf-002-01	09/29/2000	09/29/2001	0
Cable, 25 ft Andrews FSJ1P-50A-4A	hol-hf-025-06-01	05/17/2001	05/17/2002	0
Cable,100 ft Andrews FSJ1P-50A-4A	hol-hf-100-09	09/29/2001	09/29/2002	0
Preamp, HP83017A	3123A00283	05/14/2001	05/14/2002	785
HF EMCO Antenna	9901-5655	10/30/2000	10/30/2001	2157
Ant., Horn, 18-26.5GHz, HP RA42-K-F-4B-C	94126-003	07/09/2001	07/09/2002	1413

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is continuously transmitting in mid channel at 2.596GHz. Tested for field strength of spurious emissions from 1-26.5GHz (FCC 2.1053).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	hol-h HP-83 dB	HOL-H dB	hol-h dB	Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2216.004M Ave	52.0	+0.9 -38.4	+2.5	+10.0	+26.1	+0.0	53.1	64.5	-11.4	Horiz
^	2216.004M	54.3	+0.9 -38.4	+2.5	+10.0	+26.1	+0.0	55.4	64.5	-9.1	Horiz
3	2216.002M	45.7	+0.9 -38.4	+2.5	+10.0	+26.1	+0.0	46.8	64.5	-17.7	Vert
4	1519.994M	45.2	+1.0 -38.5	+3.4	+8.9	+25.6	+0.0	45.6	64.5	-18.9	Horiz

5	2628.928M	43.0	+0.5 -38.2	+2.7	+10.7	+26.7	+0.0	45.4	64.5	-19.1	Vert
6	2628.916M	42.8	+0.5 -38.2	+2.7	+10.7	+26.7	+0.0	45.2	64.5	-19.3	Horiz
7	1940.000M	40.2	+1.1 -38.4	+2.4	+9.5	+26.2	+0.0	41.0	64.5	-23.5	Vert
8	5195.834M Ave	31.7	-0.3 -36.8	+3.5	+14.4	+28.4	+0.0	40.9	64.5	-23.6	Horiz
^	5195.853M	50.7	-0.3 -36.8	+3.5	+14.4	+28.4	+0.0	59.9	64.5	-4.6	Horiz
10	1519.994M	40.5	+1.0 -38.5	+3.4	+8.9	+25.6	+0.0	40.9	64.5	-23.6	Vert
11	2525.694M	38.2	+0.6 -38.4	+2.7	+10.5	+26.0	+0.0	39.6	64.5	-24.9	Vert
12	2525.699M	36.3	+0.6 -38.4	+2.7	+10.5	+26.0	+0.0	37.7	64.5	-26.8	Vert

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC 2.1053 Model AP Field Strength SE**
Work Order #: **77097** Date: 7/13/2001
Test Type: **Maximized Emissions** Time: 13:50:45
Equipment: **Wireless Modem** Sequence#: 17
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, 2 ft Andrews FSJ1P-50A-4A	hol-hf-002-01	09/29/2000	09/29/2001	0
Cable, 25 ft Andrews FSJ1P-50A-4A	hol-hf-025-06-01	05/17/2001	05/17/2002	0
Cable,100 ft Andrews FSJ1P-50A-4A	hol-hf-100-09	09/29/2001	09/29/2002	0
Preamp, HP83017A	3123A00283	05/14/2001	05/14/2002	785
HF EMCO Antenna	9901-5655	10/30/2000	10/30/2001	2157
Ant., Horn, 18-26.5GHz, HP RA42-K-F-4B-C	94126-003	07/09/2001	07/09/2002	1413
Ant., Horn, 26.5-40GHz, HP RA28-K-F-4B-C	951559-008	07/09/2001	07/09/2002	1414

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is continuously transmitting in high channel at 2.680GHz. Tested for field strength of spurious emissions from 1-27GHz (FCC 2.1053).

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	hol-h HP-83 dB	HOL-H dB	hol-h dB	Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2299.997M Ave	50.7	+0.8 -38.4	+2.6	+10.2	+26.0	+0.0	51.9	64.5	-12.6	Horiz
^	2299.956M	53.5	+0.8 -38.4	+2.6	+10.2	+26.0	+0.0	54.7	64.5	-9.8	Horiz

3	2609.699M Ave	48.3	+0.5 -38.3	+2.7	+10.6	+26.6	+0.0	50.4	64.5	-14.1	Horiz
^	2609.699M	50.3	+0.5 -38.3	+2.7	+10.6	+26.6	+0.0	52.4	64.5	-12.1	Horiz
5	2744.983M	45.3	+0.2 -38.1	+2.8	+10.8	+27.4	+0.0	48.4	64.5	-16.1	Vert
6	2299.997M Ave	46.6	+0.8 -38.4	+2.6	+10.2	+26.0	+0.0	47.8	64.5	-16.7	Vert
^	2299.997M	47.8	+0.8 -38.4	+2.6	+10.2	+26.0	+0.0	49.0	64.5	-15.5	Vert
8	2873.667M	43.5	+0.0 -37.9	+2.8	+11.0	+28.2	+0.0	47.6	64.5	-16.9	Vert
9	2609.694M	45.5	+0.5 -38.3	+2.7	+10.6	+26.6	+0.0	47.6	64.5	-16.9	Vert
10	1519.994M	44.2	+1.0 -38.5	+3.4	+8.9	+25.6	+0.0	44.6	64.5	-19.9	Horiz
11	1520.009M	42.7	+1.0 -38.5	+3.4	+8.9	+25.6	+0.0	43.1	64.5	-21.4	Vert
12	5356.148M Ave	31.3	-0.6 -36.6	+3.6	+14.3	+29.1	+0.0	41.1	64.5	-23.5	Vert
^	5356.148M	48.3	-0.6 -36.6	+3.6	+14.3	+29.1	+0.0	58.1	64.5	-6.4	Vert
14	5360.958M Ave	28.2	-0.6 -36.5	+3.6	+14.3	+29.1	+0.0	38.1	64.5	-26.4	Horiz
^	5360.958M	48.3	-0.6 -36.6	+3.6	+14.3	+29.1	+0.0	58.1	64.5	-6.4	Horiz

2.1033(c)(14)/2.1055/21.101 - FREQUENCY STABILITY

Frequency Stability vs. Voltage Variation

IP Wireless, Inc.
Wireless Modem
Model AP
Serial No. AE1F1A-000003

Test Date: 6/28/01
Location: Hollister, Site A
Tested By: C. Boyle

Test Equipment:

Description	Model	Cal Date	Cal Due	Asset No.
Cable, HF	ghz#5	5/17/00	5/17/01	0
Spectrum Analyzer	HP-8564E	12/12/01	12/12/01	1401
AC Transformer	Powerstat 126	NCR	NCR	435
True RMS DVM	Fluke 87	11/9/00	11/9/01	1477

Test Conditions:

The device was placed in continous transmit mode and an Andrews Heliax shielded RF cable was connected directly to the Transmit port connector of the device and the other end to the HP-8564E spectrum analyzer RF input port. The device power supply was plugged into a variable AC transformer and a Digital Voltmeter monitored the AC input voltage to the device power supply. The voltage was varied from 85% to 115% of the nominal value of 120vac. The fundamental frequency was monitored on the spectrum analyzer. Temp: 20-deg Centigrade

Results:

Channel - Freq. (MHz)	102vac	120vac	138vac
Low - 2506	2505.996700	2505.997500	2505.995800
Mid - 2596	2595.996700	2595.996700	2595.996700
High - 2680	2679.995800	2679.995800	2679.995800

Setup Photo

Customer:	IP Wireless
WO:	77097
Model:	AP
FCC Part:	2.1055 / 21.101 / 74.761

Ambient Temperature:	74ºF	23ºC
Relative Humidity:	41%	
Authorized Band:	2500-2686 MHz	
CH1 Operating Frequency in MHz:	2506	Low Channel
CH2 Operating Frequency in MHz:		
CH3 Operating Frequency in MHz:	2680	High Channel
Frequency Limit in Hz:	6000000	**Must Stay within authorized band.**
Nominal Operating Voltage:	120.00	VAC
85% of Nominal (V-)	102.00	VAC
115% of Nominal (V+)	138.00	VAC

Chip Rate: 7.68 Mchips/sec

Channel 1

	Frequency MHz	Frequency Error Hz	Pass/Fail
-30º	2505.997	-3000	PASS
-20ºC	2506.023	23000	PASS
-10ºC	2506.019	18700	PASS
0ºC	2506.020	20300	PASS
+10ºC	2506.015	14800	PASS
+20ºC	2506.020	20000	PASS
+30ºC	2506.011	11400	PASS
+40ºC	2506.021	20500	PASS
+50ºC	2506.017	17100	PASS

Channel 2

	Frequency MHz	Frequency Error Hz	Pass/Fail
-30º			
-20ºC			
-10ºC			
0ºC			
+10ºC			
+20ºC			
+30ºC			
+40ºC			
+50ºC			

Channel 3

	Frequency MHz	Frequency Error Hz	Pass/Fail
-30º	2680.007	7000	PASS
-20ºC	2680.031	31400	PASS
-10ºC	2680.039	39000	PASS
0ºC	2680.002	2000	PASS
+10ºC	2680.012	11800	PASS
+20ºC	2680.022	22000	PASS
+30ºC	2680.026	25600	PASS
+40ºC	2680.023	22700	PASS
+50ºC	2680.029	28910	PASS

Temperature Testing Setup Photo

15.107 – AC CONDUCTED EMISSIONS

VIDEO BANDWIDTH AND RESOLUTION BANDWIDTH SETTINGS:

Frequency Range	Signal Analyzer VBW & RBW Setting
450 kHz – 30 MHz	9 kHz

Conducted Setup Photo of Front View

Conducted Setup Photo of Side View

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC B COND**
Work Order #: **77097** Date: 06/21/2001
Test Type: **Conducted Emissions** Time: 19:05:24
Equipment: **Wireless Modem** Sequence#: 7
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
LISN, Solar 8028-50-TS-24-BNC	910490	09/13/2000	09/13/2001	737
LISN, Solar 8028-50-TS-24-BNC	910489	09/13/2000	09/13/2001	736
Conducted Cable	condcabl-ha00	03/01/2001	03/01/2002	0
HP 85650A QP Adaptor	2430A00541	06/14/2001	06/14/2002	0
HP-8568A	2049A01408	06/14/2001	06/14/2002	313
HP-85650A Display	2112A02174	06/14/2001	06/14/2002	0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

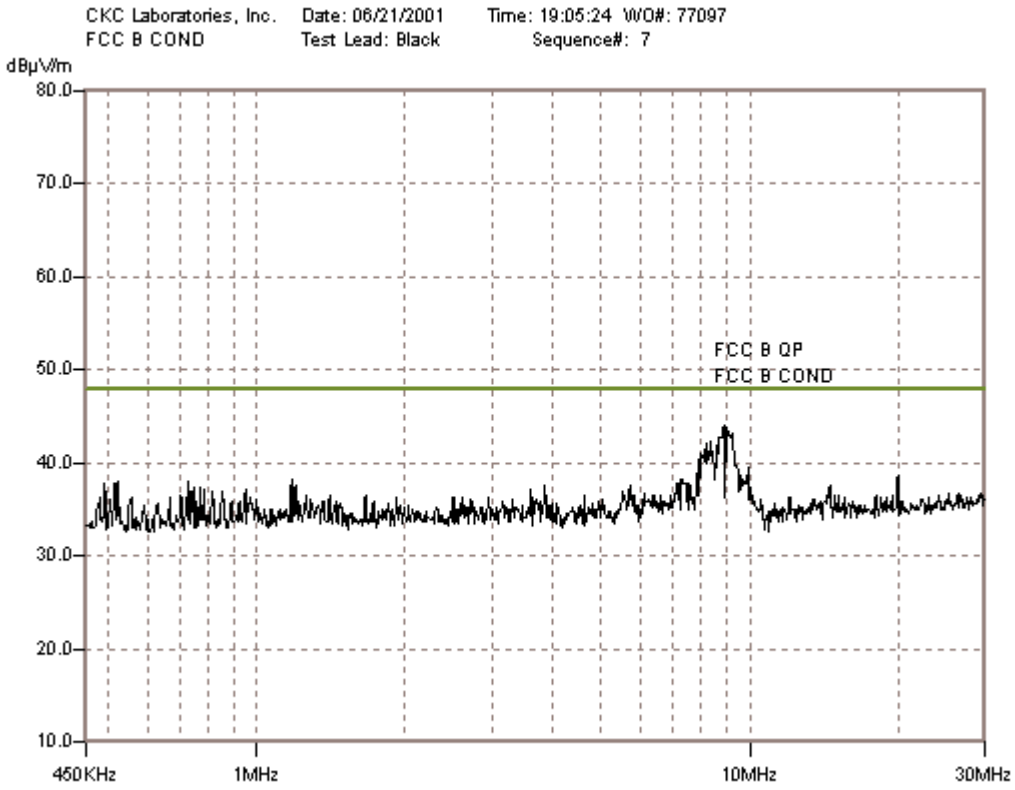
The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is set to receive mode on a frequency of 2596MHz. The notebook PC is connected to a 15-in video monitor, keyboard, mouse, and inkjet printer. Power is 120v, 60Hz. Frequency range tested is 450kHz-30MHz.

Measurement Data: Reading listed by margin. Test Lead: Black

#	Freq MHz	Rdng dBµV	Site dB	LISNl dB	dB	LISNZ dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	9.298M	41.4	+0.6	+0.3		+0.2	+0.0	42.5	48.0	-5.5	Black
2	8.383M	41.3	+0.5	+0.3		+0.2	+0.0	42.3	48.0	-5.7	Black
3	8.233M	41.0	+0.5	+0.3		+0.2	+0.0	42.0	48.0	-6.0	Black

4	8.588M	40.7	+0.6	+0.3	+0.2	+0.0	41.8	48.0	-6.2	Black
5	8.907M	40.6	+0.6	+0.3	+0.2	+0.0	41.7	48.0	-6.3	Black
QP										
^	8.907M	42.9	+0.6	+0.3	+0.2	+0.0	44.0	48.0	-4.0	Black
7	9.067M	40.3	+0.6	+0.3	+0.2	+0.0	41.4	48.0	-6.6	Black
QP										
^	9.067M	42.7	+0.6	+0.3	+0.2	+0.0	43.8	48.0	-4.2	Black
9	8.110M	40.4	+0.5	+0.3	+0.2	+0.0	41.4	48.0	-6.6	Black
10	8.001M	40.0	+0.5	+0.3	+0.2	+0.0	41.0	48.0	-7.0	Black
11	7.892M	39.3	+0.5	+0.3	+0.2	+0.0	40.3	48.0	-7.7	Black
12	9.953M	38.6	+0.5	+0.3	+0.2	+0.0	39.6	48.0	-8.4	Black
13	20.016M	36.8	+0.7	+0.4	+0.8	+0.0	38.7	48.0	-9.3	Black
14	9.584M	37.7	+0.5	+0.3	+0.2	+0.0	38.7	48.0	-9.3	Black
15	9.748M	37.2	+0.5	+0.3	+0.2	+0.0	38.2	48.0	-9.8	Black
16	7.298M	37.2	+0.5	+0.3	+0.2	+0.0	38.2	48.0	-9.8	Black
17	1.177M	37.7	+0.2	+0.5	-0.2	+0.0	38.2	48.0	-9.8	Black
18	521.879k	37.7	+0.1	+0.4	-0.1	+0.0	38.1	48.0	-9.9	Black
19	729.157k	37.6	+0.2	+0.3	-0.1	+0.0	38.0	48.0	-10.0	Black
20	515.192k	37.5	+0.1	+0.4	-0.1	+0.0	37.9	48.0	-10.1	Black
21	491.790k	37.5	+0.1	+0.4	-0.1	+0.0	37.9	48.0	-10.1	Black
22	7.148M	36.8	+0.5	+0.3	+0.2	+0.0	37.8	48.0	-10.2	Black
23	7.578M	36.7	+0.5	+0.3	+0.2	+0.0	37.7	48.0	-10.3	Black
24	14.634M	36.3	+0.6	+0.3	+0.4	+0.0	37.6	48.0	-10.4	Black
25	3.851M	37.0	+0.3	+0.2	+0.1	+0.0	37.6	48.0	-10.4	Black
26	5.735M	36.8	+0.4	+0.2	+0.1	+0.0	37.5	48.0	-10.5	Black
27	1.202M	37.0	+0.2	+0.5	-0.2	+0.0	37.5	48.0	-10.5	Black

28	14.478M	36.1	+0.6	+0.3	+0.4	+0.0	37.4	48.0	-10.6	Black
29	767.604k	36.9	+0.2	+0.4	-0.1	+0.0	37.4	48.0	-10.6	Black
30	10.062M	36.3	+0.5	+0.3	+0.2	+0.0	37.3	48.0	-10.7	Black
31	745.873k	36.9	+0.2	+0.3	-0.1	+0.0	37.3	48.0	-10.7	Black
32	951.480k	36.7	+0.2	+0.4	-0.1	+0.0	37.2	48.0	-10.8	Black


CKC Laboratories, Inc. Date: 06/21/2001 Time: 19:05:24 WO#: 77097
FCC B COND Test Lead: Black Sequence#: 7
dBµV/m
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC B QP
FCC B COND
450KHz
1MHz
10MHz
30MHz

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC B COND**
Work Order #: **77097** Date: 06/21/2001
Test Type: **Conducted Emissions** Time: 18:52:15
Equipment: **Wireless Modem** Sequence#: 8
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
LISN, Solar 8028-50-TS-24-BNC	910490	09/13/2000	09/13/2001	737
LISN, Solar 8028-50-TS-24-BNC	910489	09/13/2000	09/13/2001	736
Conducted Cable	condcabl-ha00	03/01/2001	03/01/2002	0
HP 85650A QP Adaptor	2430A00541	06/14/2001	06/14/2002	0
HP-8568A	2049A01408	06/14/2001	06/14/2002	313
HP-85650A Display	2112A02174	06/14/2001	06/14/2002	0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

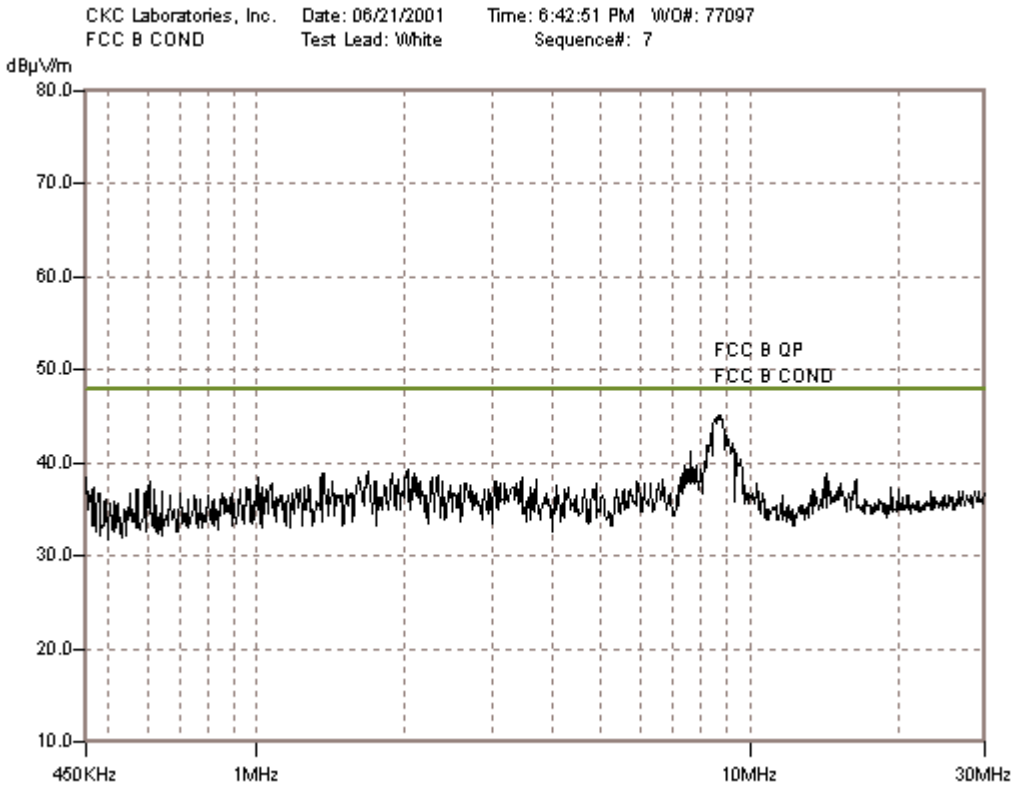
The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The EUT is set to receive mode on a frequency of 2596MHz. The notebook PC is connected to a 15-in video monitor, keyboard, mouse, and inkjet printer. Power is 120v, 60Hz. Frequency range tested is 450kHz-30MHz.

Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBµV	LISNl Site dB	dB	LISNZ dB	dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	9.230M	41.2	+0.3 +0.6		+0.1		+0.0	42.2	48.0	-5.8	White
2	8.206M	41.1	+0.3 +0.5		+0.0		+0.0	41.9	48.0	-6.1	White
3	9.298M	40.8	+0.3 +0.6		+0.1		+0.0	41.8	48.0	-6.2	White
4	8.260M	41.0	+0.3 +0.5		+0.0		+0.0	41.8	48.0	-6.2	White
5 QP	8.693M	40.5	+0.3 +0.6		+0.1		+0.0	41.5	48.0	-6.5	White

^	8.693M	44.0	+0.3 +0.6	+0.1	+0.0	45.0	48.0	-3.0	White
7	7.633M	40.5	+0.3 +0.5	+0.0	+0.0	41.3	48.0	-6.7	White
8	9.407M	40.1	+0.3 +0.6	+0.1	+0.0	41.1	48.0	-6.9	White
9	8.097M	39.3	+0.3 +0.5	+0.0	+0.0	40.1	48.0	-7.9	White
10	7.783M	39.0	+0.3 +0.5	+0.0	+0.0	39.8	48.0	-8.2	White
11	7.414M	39.0	+0.3 +0.5	+0.0	+0.0	39.8	48.0	-8.2	White
12	8.001M	38.6	+0.3 +0.5	+0.0	+0.0	39.4	48.0	-8.6	White
13	7.742M	38.6	+0.3 +0.5	+0.0	+0.0	39.4	48.0	-8.6	White
14 QP	8.547M	38.2	+0.3 +0.6	+0.1	+0.0	39.2	48.0	-8.8	White
^	8.547M	43.9	+0.3 +0.6	+0.1	+0.0	44.9	48.0	-3.1	White
16	7.578M	38.4	+0.3 +0.5	+0.0	+0.0	39.2	48.0	-8.8	White
17	2.026M	38.8	+0.4 +0.3	-0.3	+0.0	39.2	48.0	-8.8	White
18 QP	8.368M	38.3	+0.3 +0.5	+0.0	+0.0	39.1	48.0	-8.9	White
^	8.368M	42.3	+0.3 +0.5	+0.0	+0.0	43.1	48.0	-4.9	White
20	1.692M	38.8	+0.4 +0.3	-0.4	+0.0	39.1	48.0	-8.9	White
21	7.346M	38.1	+0.3 +0.5	+0.0	+0.0	38.9	48.0	-9.1	White
22	1.365M	38.7	+0.4 +0.2	-0.4	+0.0	38.9	48.0	-9.1	White
23	14.400M	37.5	+0.2 +0.6	+0.5	+0.0	38.8	48.0	-9.2	White
24	2.088M	38.4	+0.4 +0.3	-0.3	+0.0	38.8	48.0	-9.2	White
25	1.883M	38.4	+0.4 +0.3	-0.3	+0.0	38.8	48.0	-9.2	White
26	2.337M	38.3	+0.3 +0.3	-0.3	+0.0	38.6	48.0	-9.4	White
27	7.237M	37.7	+0.3 +0.5	+0.0	+0.0	38.5	48.0	-9.5	White
28	3.445M	38.1	+0.3 +0.3	-0.2	+0.0	38.5	48.0	-9.5	White

29	2.270M	38.2	+0.3 +0.3	-0.3	+0.0	38.5	48.0	-9.5	White
30	1.353M	38.2	+0.4 +0.2	-0.4	+0.0	38.4	48.0	-9.6	White
31	1.005M	38.2	+0.5 +0.2	-0.5	+0.0	38.4	48.0	-9.6	White
32	451.672k	38.5	+0.6 +0.1	-0.8	+0.0	38.4	48.0	-9.6	White


CKC Laboratories, Inc.
Date: 06/21/2001
Time: 6:42:51 PM
WO#: 77097
FCC B COND
Test Lead: White
Sequence#: 7
dBµV/m
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
FCC B QP
FCC B COND
450KHz
1MHz
10MHz
30MHz

15.109 – RADIATED EMISSIONS

VIDEO BANDWIDTH AND RESOLUTION BANDWIDTH SETTINGS:

Frequency Range	Signal Analyzer VBW & RBW Setting
1 MHz – 30 MHz	9 kHz
30 MHz – 1000 MHz	120 kHz
1 GHz – 13 GHz	1 MHz

Radiated Emissions - Front View

Radiated Emissions - Front View Close-up

Radiated Emissions - Back View

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC B RADIATED**
Work Order #: **77097** Date: 06/22/2001
Test Type: **Maximized Emissions** Time: 17:41:52
Equipment: **Wireless Modem** Sequence#: 5
Manufacturer: IP Wireless Tested By: A. Brar
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
Bicon, Emco 3110	9205-1522	10/30/2000	10/30/2001	503
Log Periodic, A.H. SAS200/510	318	05/16/2001	05/16/2002	0
HP 85650A QP Adaptor	2430A00541	06/14/2001	06/14/2002	0
HP-85650A Display	2112A02174	06/14/2001	06/14/2002	0
HP-8568A	2049A01408	06/14/2001	06/14/2002	313
HP 8447F Preamp	2944A03850	04/09/2001	04/09/2002	501
Cable, 3m	cabl 3m Hol A 01	01/04/2001	01/04/2002	0
Loop Ant, Emco 6502	2078	08/17/2000	08/17/2001	432

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The PC has external keyboard, mouse and monitor. The EUT is operating in receive mode at 2596 MHz. Frequency range is 1-1000MHz

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	Bicon Mag L dB	8447F dB	Log31 dB	cabl dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	516.201M	46.3	+0.0 +0.0	-27.7	+17.8	+3.5	+0.0	39.9	46.0	-6.1	Horiz
2	309.729M	41.6	+0.0 +0.0	-26.2	+21.9	+2.6	+0.0	39.9	46.0	-6.1	Vert
3	40.010M	44.5	+15.3 +0.0	-26.8	+0.0	+0.8	+0.0	33.8	40.0	-6.2	Vert
4	331.811M QP	44.7	+0.0 +0.0	-26.3	+18.1	+2.7	+0.0	39.2	46.0	-6.8	Vert

^	331.811M	46.7	+0.0 +0.0	-26.3	+18.1	+2.7	+0.0	41.2	46.0	-4.8	Vert
6	193.262M	42.6	+17.3 +0.0	-26.4	+0.0	+2.0	+0.0	35.5	43.5	-8.0	Horiz
7	446.971M	45.4	+0.0 +0.0	-27.2	+16.6	+3.2	+0.0	38.0	46.0	-8.0	Vert
8	309.733M	39.6	+0.0 +0.0	-26.2	+21.9	+2.6	+0.0	37.9	46.0	-8.1	Horiz
9	356.331M	46.1	+0.0 +0.0	-26.5	+15.3	+2.8	+0.0	37.7	46.0	-8.3	Vert
10	412.963M	45.5	+0.0 +0.0	-27.1	+16.1	+3.1	+0.0	37.6	46.0	-8.4	Horiz

Test Location: CKC Laboratories, Inc. • 1653 Los Viboras Rd., Site A • Hollister, Ca 95023 • (831) 637-0485

Customer: **IPWireless, Inc.**
Specification: **FCC B RADIATED**
Work Order #: **77097** Date: 7/18/2001
Test Type: **Maximized Emissions** Time: 11:08:44
Equipment: **Wireless Modem** Sequence#: 6
Manufacturer: IP Wireless Tested By: Conan T. Boyle
Model: AP
S/N: AE1F1A-000003

Test Equipment:

Function	S/N	Calibration Date	Cal Due Date	Asset #
HP 8564E Spec. An.	01984	12/12/2000	12/12/2001	1406
Cable, 25 ft Andrews FSJ1P-50A-4A	hol-hf-025-06-01	05/17/2001	05/17/2002	0
Cable,100 ft Andrews FSJ1P-50A-4A	hol-hf-100-09	09/29/2001	09/29/2002	0
Horn Ant, Emco 3115	9901-5655	10/30/2000	10/30/2001	2157
Preamp, HP83017A	3123A00283	05/14/2001	05/14/2002	785
Cable, 2 ft Andrews FSJ1P-50A-4A	HC_HF_02	05/17/2001	05/17/2002	0

***Equipment Under Test* (* = EUT):**

Function	Manufacturer	Model #	S/N
Wireless Modem*	IP Wireless	AP	AE1F1A-000003
AC Adapter	Friwo	SPA15U-05	None

Support Devices:

Function	Manufacturer	Model #	S/N
Notebook PC	Dell	PPX (Inspiron 3800)	329-634-27
AC Adapter	Dell	AA20031	CN-09364U-12671-0BH-4902
Printer	HP	C2184A	MY63J1T1K2
AC Adapter	HP	C2175A	220995 (Date)
Monitor	Micron	RMD5L11CM	8205C1127500
Keyboard	Compaq	RT101	1114X877X
Mouse	Microsoft	X04-72167	None

Test Conditions / Notes:

The EUT is a Wireless Modem referred to as a subscriber terminal. The EUT is connected to a notebook PC via an RS-232 serial cable and is powered by an AC adapter. The PC has an external keyboard, mouse and monitor. The EUT is operating in receive mode at 2596MHz. Frequency range is 1-13GHz.

Measurement Data: Reading listed by margin. Test Distance: 3 Meters

#	Freq MHz	Rdng dBµV	hol-h HP-83 dB	hol-h 18-26 dB	hol-h HC_HF dB	Horn Horn dB	Dist Table	Corr dBµV/m	Spec dBµV/m	Margin dB	Polar Ant
1	2215.998M	51.5	+0.9	+2.5	+10.0	+26.1	+0.0	52.6	54.0	-1.4	Vert
	Ave		-38.4	+0.0	+0.0	+0.0					
^	2215.998M	51.9	+0.9	+2.5	+10.0	+26.1	+0.0	53.0	54.0	-1.0	Vert
			-38.4	+0.0	+0.0	+0.0					
3	2215.994M	50.8	+0.9	+2.5	+10.0	+26.1	+0.0	51.9	54.0	-2.1	Horiz
	Ave		-38.4	+0.0	+0.0	+0.0					
^	2215.994M	51.3	+0.9	+2.5	+10.0	+26.1	+0.0	52.4	54.0	-1.6	Horiz
			-38.4	+0.0	+0.0	+0.0					
5	2975.904M	39.2	-0.2	+2.8	+11.1	+28.9	+0.0	44.0	54.0	-10.0	Vert
			-37.8	+0.0	+0.0	+0.0					

6	1836.064M	41.0	+1.1 -38.4	+2.7 +0.0	+9.4 +0.0	+26.1 +0.0	+0.0	41.9	54.0	-12.1	Vert
7	2975.819M	36.8	-0.2 -37.8	+2.8 +0.0	+11.1 +0.0	+28.9 +0.0	+0.0	41.6	54.0	-12.4	Vert
8	3356.141M	38.0	-0.6 -37.9	+2.8 +0.0	+11.7 +0.0	+27.3 +0.0	+0.0	41.3	54.0	-12.7	Vert
9	1461.984M	41.3	+0.9 -38.6	+3.4 +0.0	+8.7 +0.0	+25.4 +0.0	+0.0	41.1	54.0	-12.9	Vert
10	1080.812M	47.2	+0.4 -40.0	+1.9 +0.0	+6.3 +0.0	+23.3 +0.0	+0.0	39.1	54.0	-14.9	Vert
11	1835.838M	34.8	+1.1 -38.4	+2.7 +0.0	+9.4 +0.0	+26.1 +0.0	+0.0	35.7	54.0	-18.3	Vert