

**Application for Certification
For a Mobile Radio Base Station**

**IPMobileNet Inc
16842 Von Karman Avenue, Suite 200
Irvine, Ca. 92606**

Mobile Radio Base Station:

**Part # IP Series
(Diversity – Base Station)**

REPORT # RV38106A

This report was prepared in accordance with the requirements of the FCC Rules and Regulations Part 2, Subpart J, 2.1031 through 2.1057, and Part 90 and other applicable sections of the rules as indicated herein.

Prepared By:

C. L. Payne III

**DNB Engineering, Inc.
5969 Robinson Avenue
Riverside, Ca 92503-8620**

23 July 2003

TABLE OF CONTENTS

Section Sheet

Title

1.0	ADMINISTRATIVE DATA	3
1.1	Certifications and Qualifications	3
1.2	Measurements and Repeatability Information	3

Note:

Paragraph numbers in this report follow the application section numbers found in the FEDERAL COMMUNICATIONS COMMISSION Rules and Regulations, Part 2, Subpart J for Certification of electronic equipment.

2.1033 (C) (1)	Application for Certification	4
2.1033 (C) (2)	FCC Identifier	5
2.1033 (C) (3)	Installation and Operating Instructions	6
2.1033 (C) (4)	Type of Emissions	7
2.1033 (C) (5)	Frequency Range	8
2.1033 (C) (6)	Operating Power	9
2.1033 (C) (7)	Maximum Power Allowed in Applicable part(s) of the Rules	10
2.1033 (C) (8)	Final Mobile Radio Input Power Characteristics	11
2.1033 (C) (9)	Tune Up Procedure	12
2.1033 (C) (10)	Schematic Diagram and Circuit Description	13
2.1033 (C) (11)	Equipment Identification Plate	14
2.1033 (C) (12)	Equipment Photographs (Internal)	15-20
2.1033 (C) (12)	Equipment Photographs (External)	21
2.1033 (C) (13)	Digital Modulation Techniques	22
2.1033 (C) (14)	Test Data	23
	Test Set-Up	24-25
2.1046	Measurement of RF Power Output	26-27
2.1049	Measurement of Occupied Bandwidth	28-29
2.1051	Spurious Emissions at Antenna Terminals	30-32
2.1053	Measurement of Field Strength of Spurious Radiation	33-35
2.1055	Measurement of Frequency Stability	36-41
2.1057	Frequency Spectrum to be Investigated	42
	RF Exposure	43
	Test Equipment Log	44

1.0 ADMINISTRATIVE DATA

1.1 Certifications and Qualifications

I certify that DNB Engineering, Inc conducted the tests performed in order to obtain the technical data presented in this application.

1.2 Measurement Repeatability Information

The test data presented in this report has been acquired using the guidelines set forth in FCC Part 2.1031 through 2.1057, and Part 90. The test results presented in this document are valid only for the equipment identified herein under the test conditions described. Repeatability of these test results will only be achieved with identical measurement conditions. These conditions include: The same test distance, EUT Height, Measurement Site Characteristics, and the same EUT System Components. The system must have the same Interconnecting Cables arranged in identical placement to that in the test set-up, with the system and/or EUT functioning in the identical mode of operation (i.e. software and so on) as on the date of the test. Any deviation from the test conditions and the environment on the date of the test may result in measurement repeatability difficulties.

All changes made to the EUT during the course of testing as identified in this test report must be incorporated into the EUT or identical models to ensure compliance with the FCC regulations.



C. L. Payne III (Para. 1.1)
Manager, Commercial Products.
DNB Engineering, Inc.
Tel. (909) 637-2630
Fax (909) 637-2704
E-mail Les@dnbenginc.com

2.1033 (C) (1) Application for Certification

Name of Applicant:	IPMobileNet Inc. 16842 Von Karman Avenue, Suite 200 Irvine, Ca 92606
FRN:	0004971503
Applicant is:	☒ Manufacturer ☐ Vendor ☐ Licensee ☐ Prospective Licensee ☐ Other
Name of Manufacturer	IPMobileNet Inc.
Description:	Mobile Radio
Part Number:	Diversity – Base Station
Anticipated Production Quantity:	Multiple Units
Applicable FCC Parts:	90
FCC ID No:	MI7-IPB1317
FCC Emissions Designator:	20K0F1D
Frequency Range:	138 - 174 MHz
Rated Output Power:	60W

2.1033 (C) (2) FCC Identifier

FCC ID:

MI7-IPB1317

2.1033 (C) 3) Installation and Operating Instructions

Reference attached owners manual

2.1033 (C) (4) Type of Emission

FSK

Emission Designator: 20K0F1D

2.1033 (C) (5) Frequency Range

138 – 174 MHz

2.1033 (C) (6) Operating Power

60 Watts

2.1033 (C) (7) Maximum Power Allowed in Applicable Part(s) of the Rules

RULES PART

MAXIMUM POWER (WATTS)

Part 90.205(q)

72

2.1033 (C) (8) Final Mobile Radio Input Power Characteristics

Reference attached owners manual

2.1033 (C) (9) Tune Up Procedure

Reference attached owners manual

2.1033 (C) (10) Schematic Diagram and Circuit Description

Reference attached owners manual

2.1033 (C) (11) Equipment Identification Plate

NOTES:

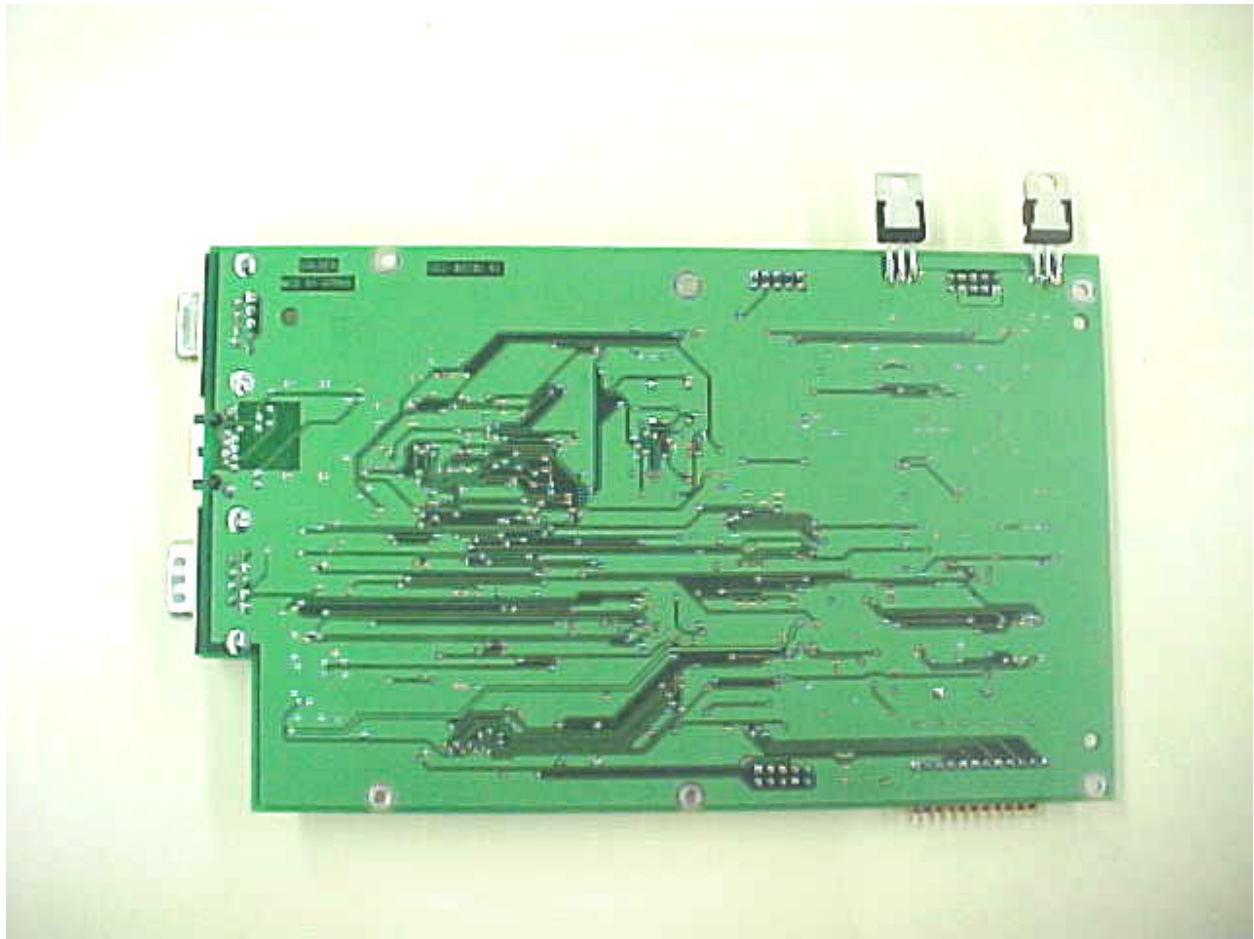
Label will be as shown on the equipment with permanent adhesive.

All information on the label will be etched or stamped. Both methods will exceed the expected lifetime of the equipment.

The label will be large enough to allow all information to be legible.

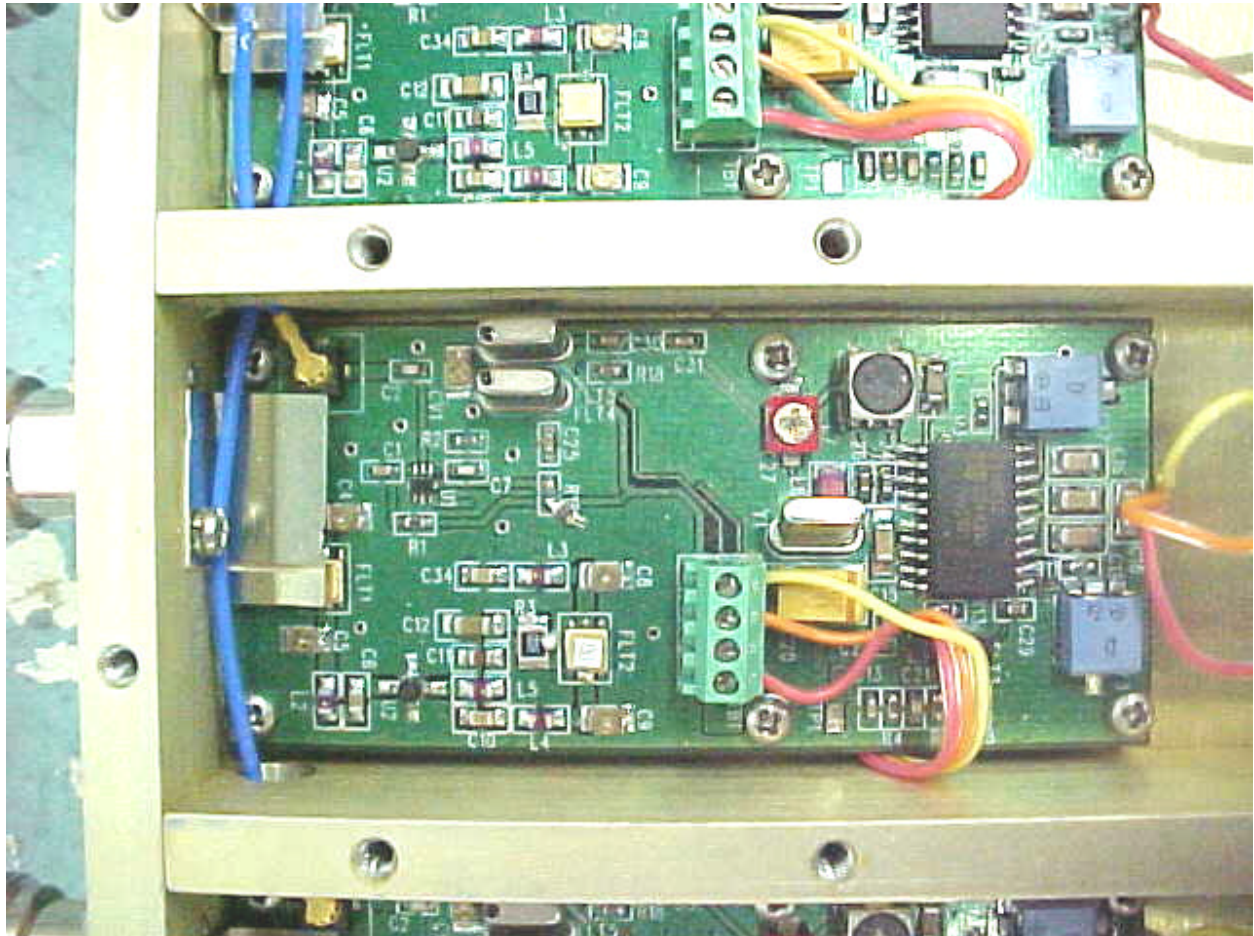
2.1033 (C) (12) Equipment Photographs - Internal

Photo 1 Detail View – Internal – A



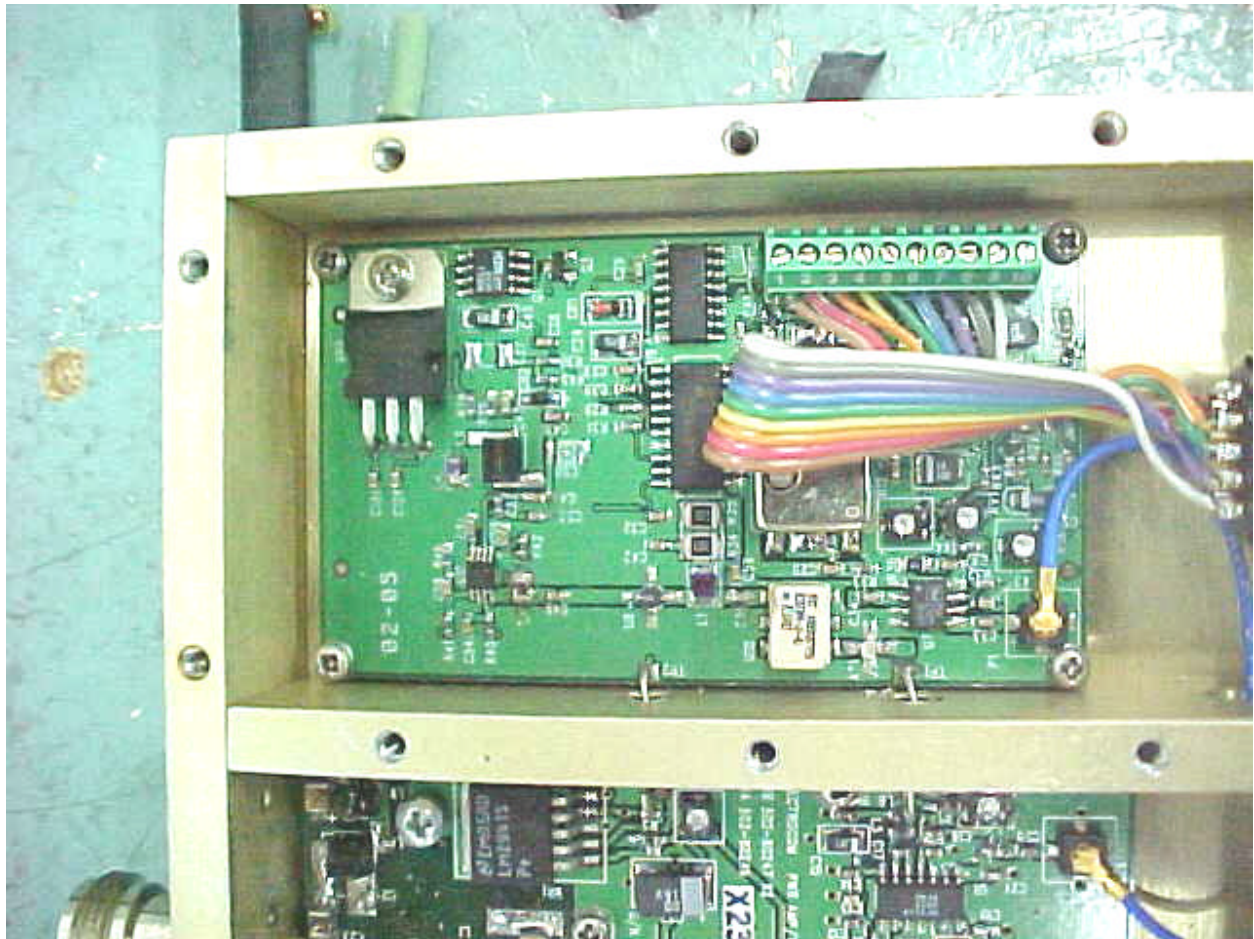
2.1033 (C) (12) Equipment Photographs - Internal

Photo 2 Detail View – Internal – B



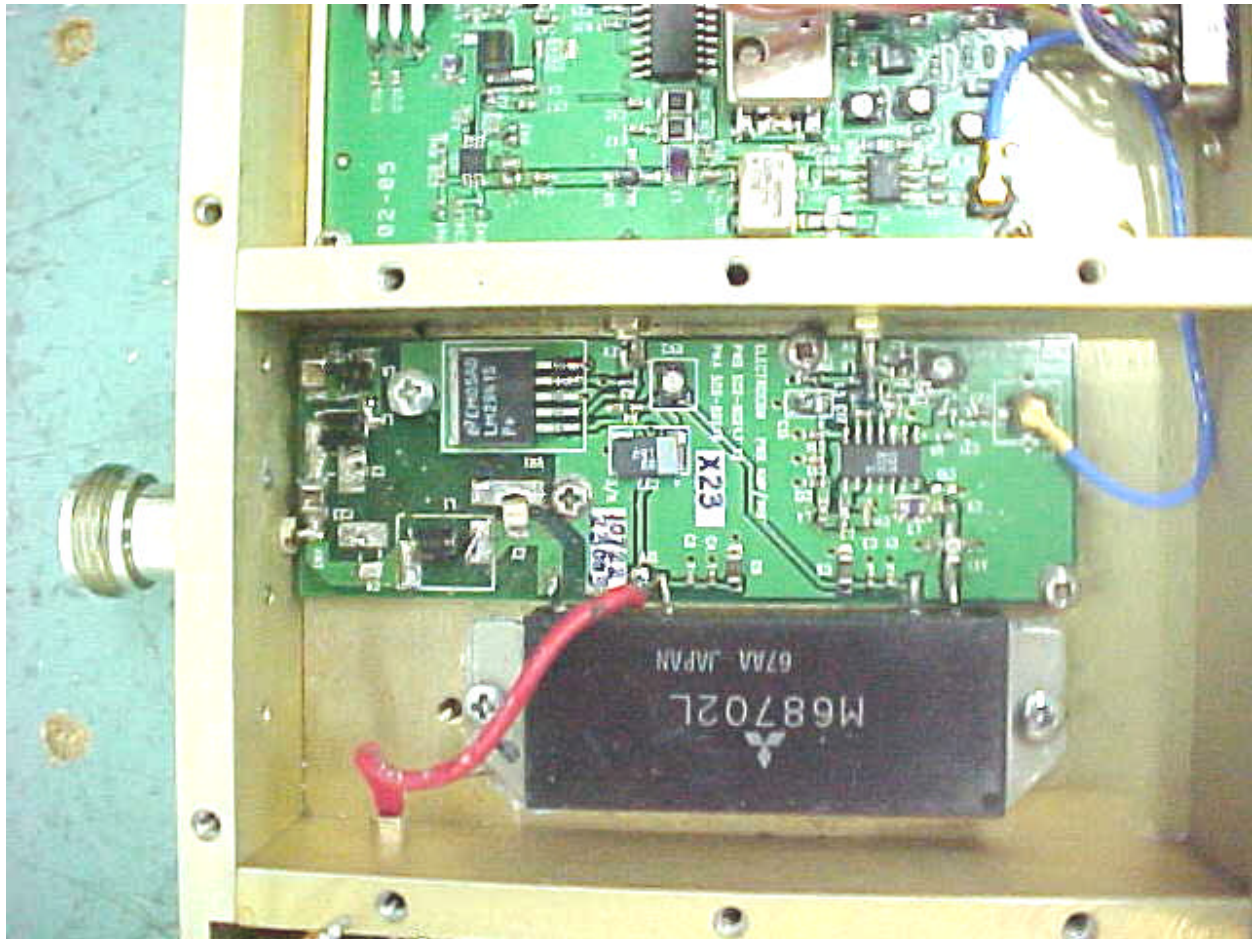
2.1033 (C) (12) Equipment Photographs - Internal

Photo 3 Detail View – Internal – C



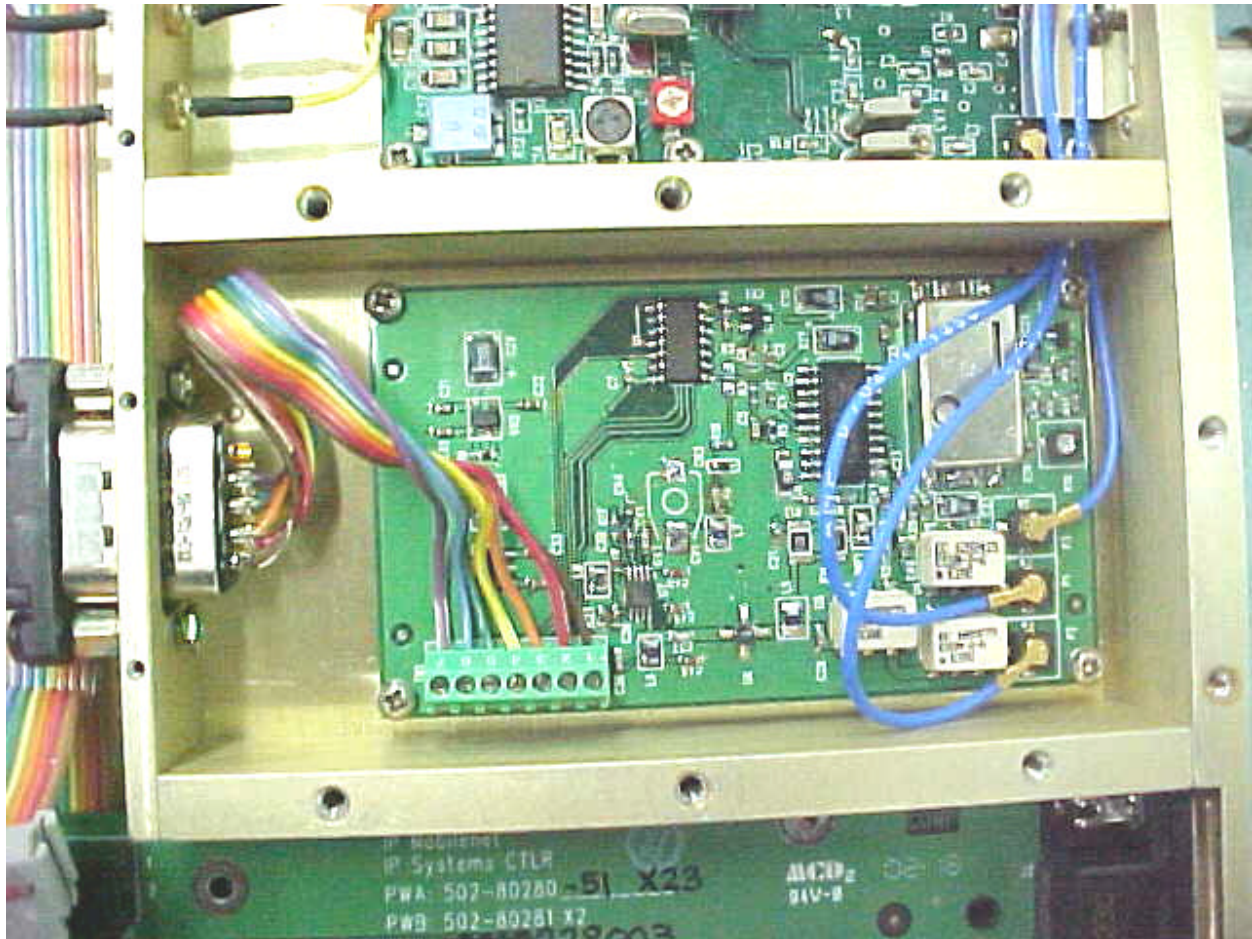
2.1033 (C) (12) Equipment Photographs - Internal

Photo 4 Detail View – Internal – D



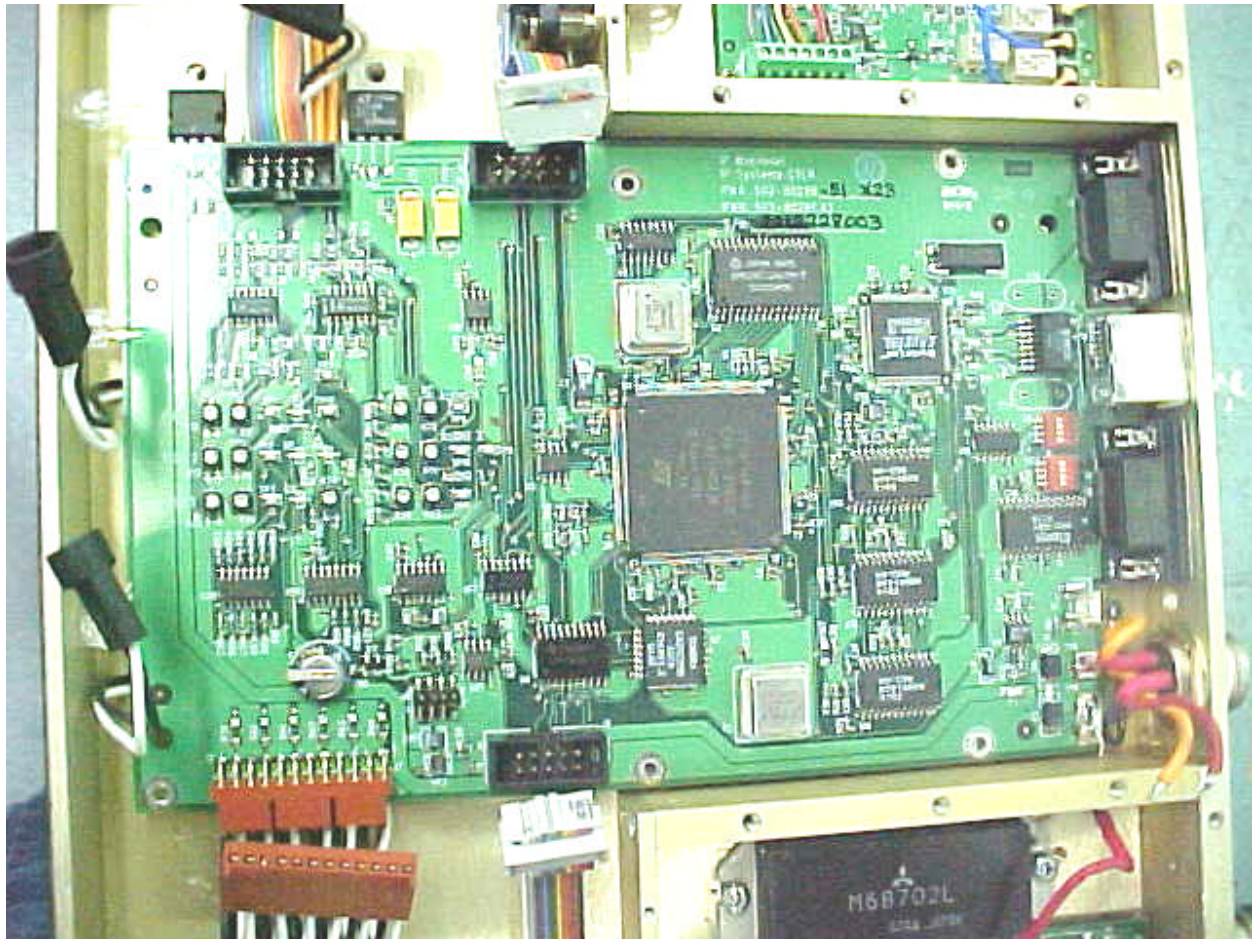
2.1033 (C) (12) Equipment Photographs - Internal

Photo 5 Detail View – Internal – E



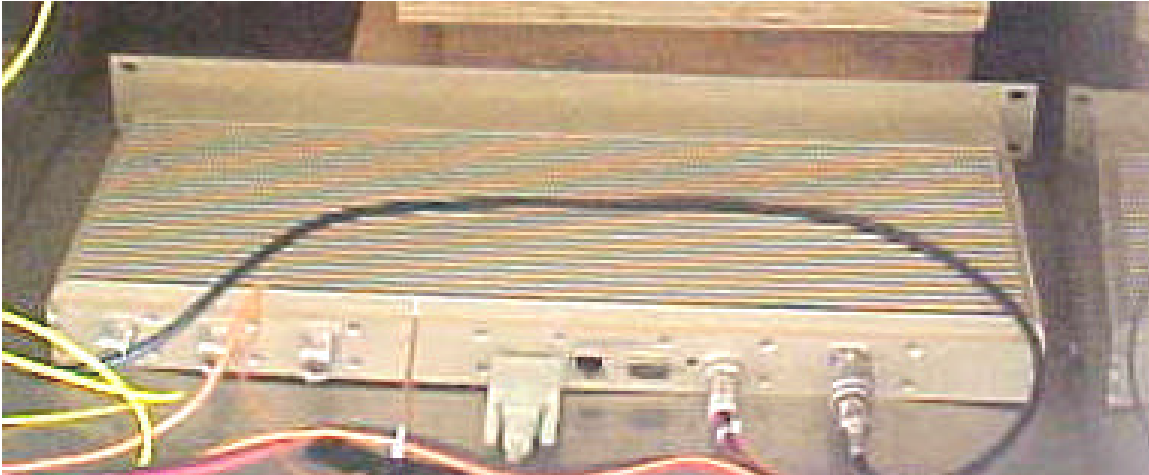
2.1033 (C) (12) Equipment Photographs - Internal

Photo 6 Detail View – Internal – F



2.1033 (C) (12) Equipment Photographs - External

Photo 7 Detail View – External



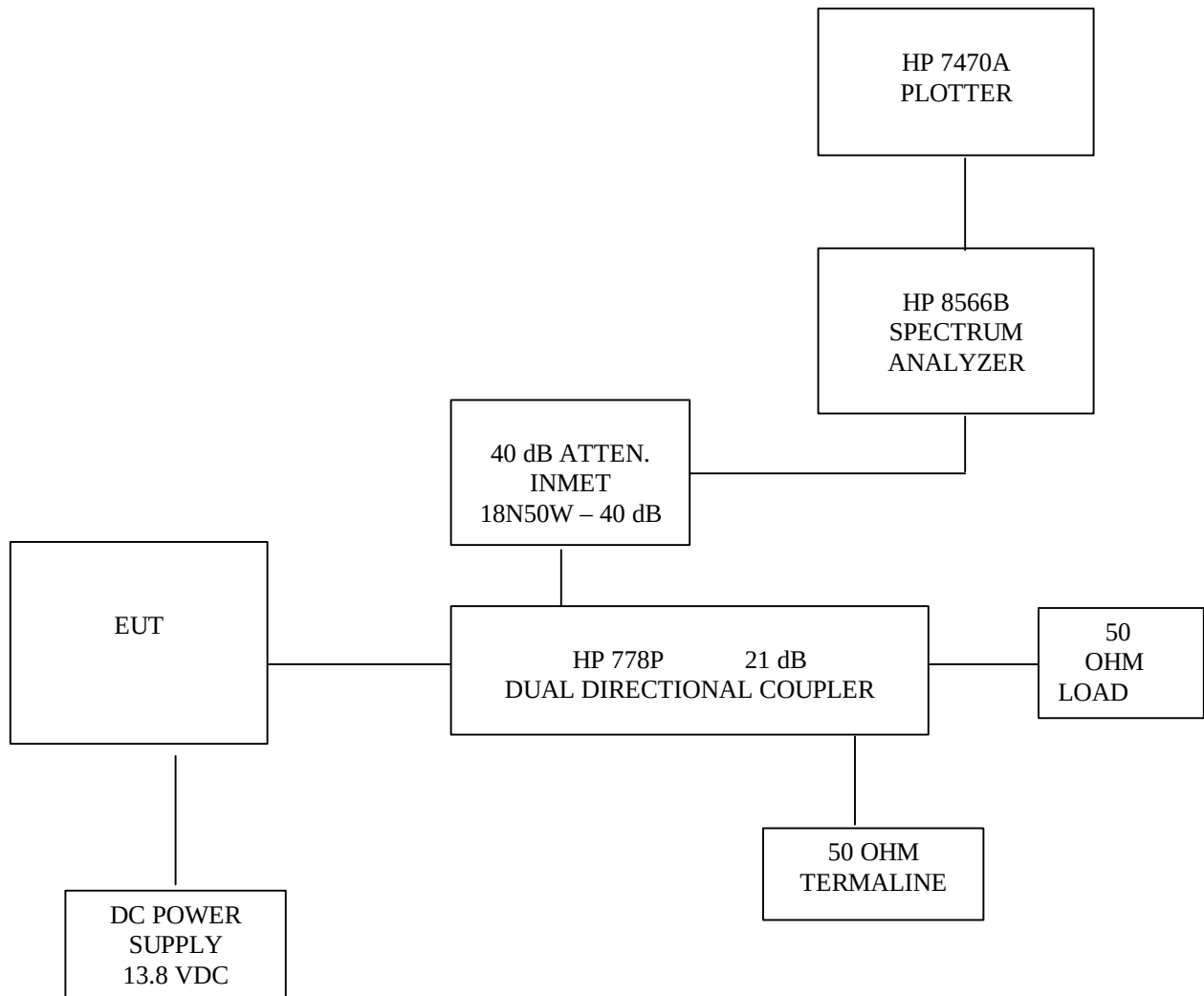
2.1033 (C) (13) Digital Modulation Techniques

Reference attached owners manual

2.1033 (c) (14) Test Data

Refer to 2.1046 through 2.1057

2.1033 (c) (14) FIGURE 1: Block Diagram



2.1033 (c) (14) Photograph of Test Set Up



2.1046 Measurement of RF Power Output

Definition: For Mobile Radios.

Test Method: See FIGURE 1.

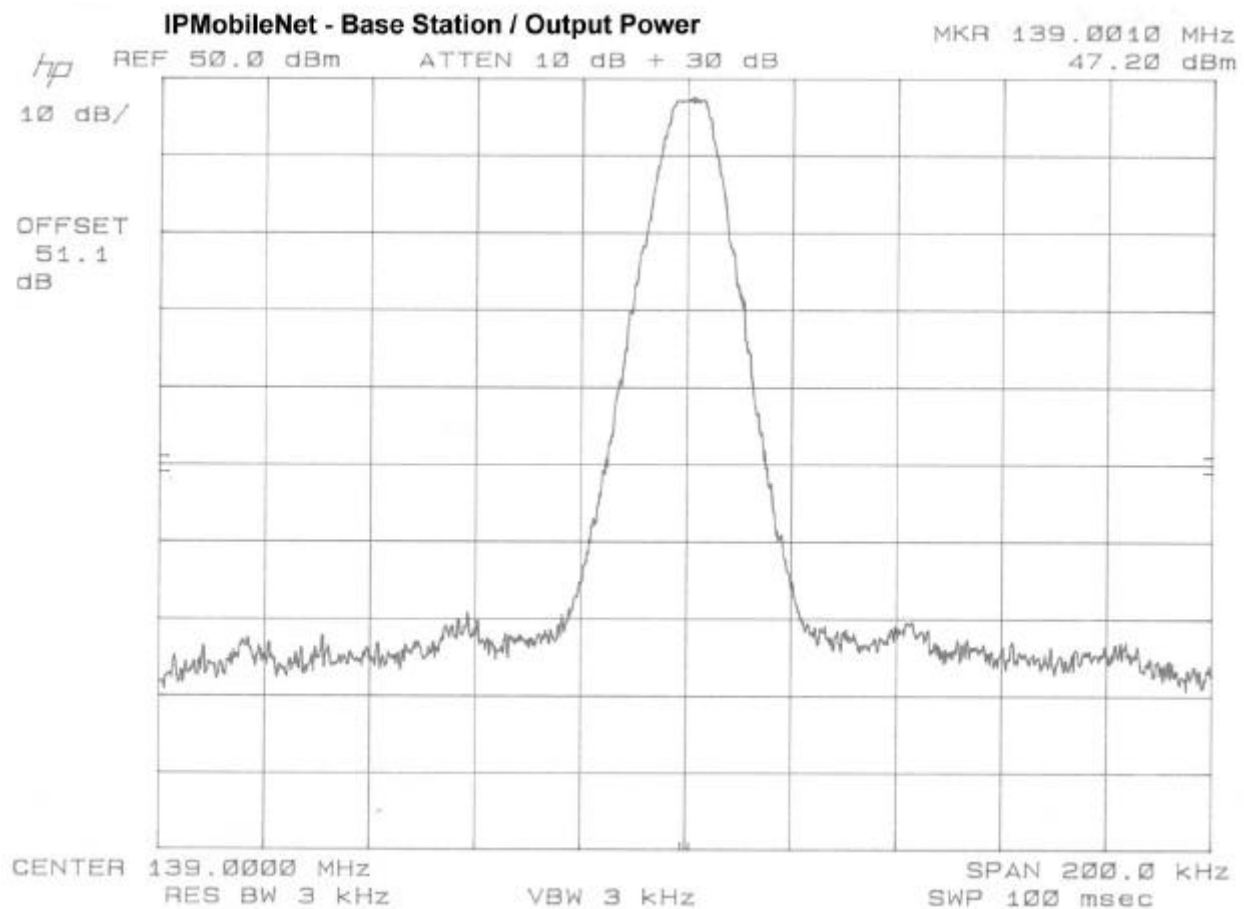
Output Power is measured across a precision 50 ohm load with a Spectrum Analyzer. For the power measurement, CW (no modulation) is used.

Test Results:

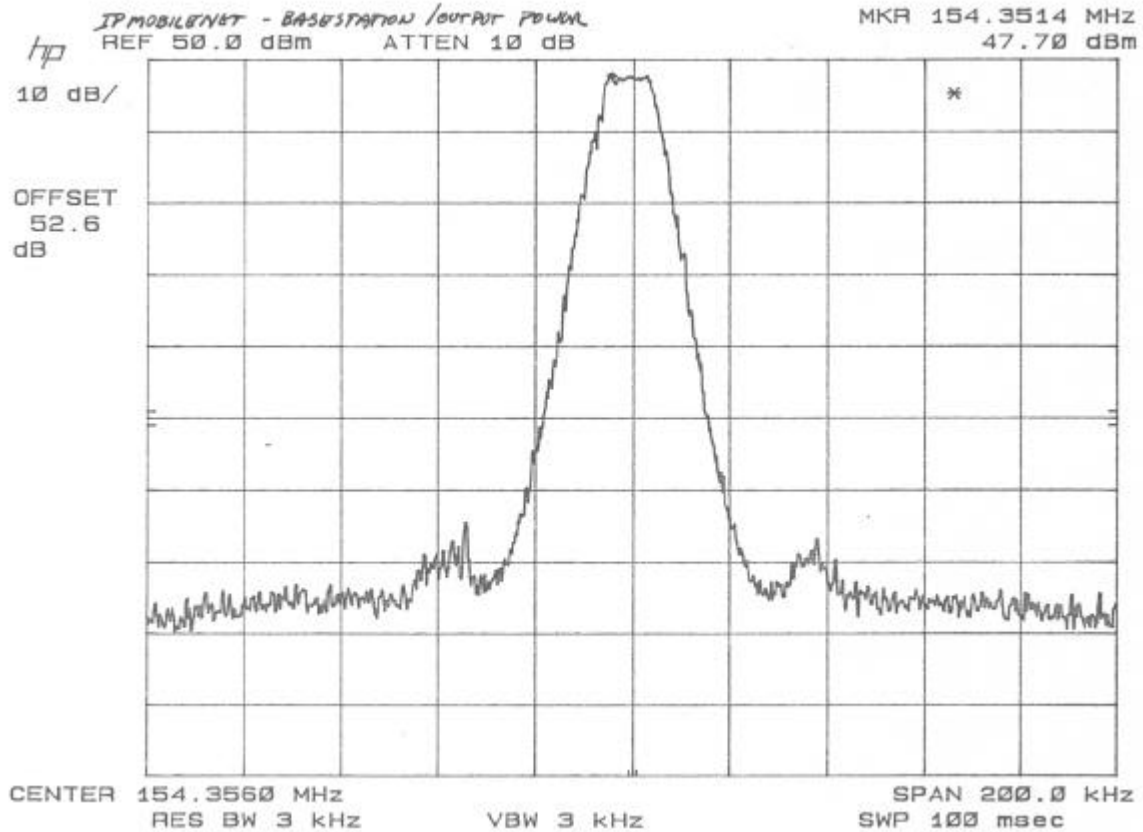
POWER OUTPUT MEASURED AT NOMINAL VOLTAGE WAS:

Channel	Frequency (MHz)	Power (dBm)	Power (W)
Lower	139.001	47.20	52.48
Middle	154.351	47.70	58.88
Upper	175.000	47.80	60.26

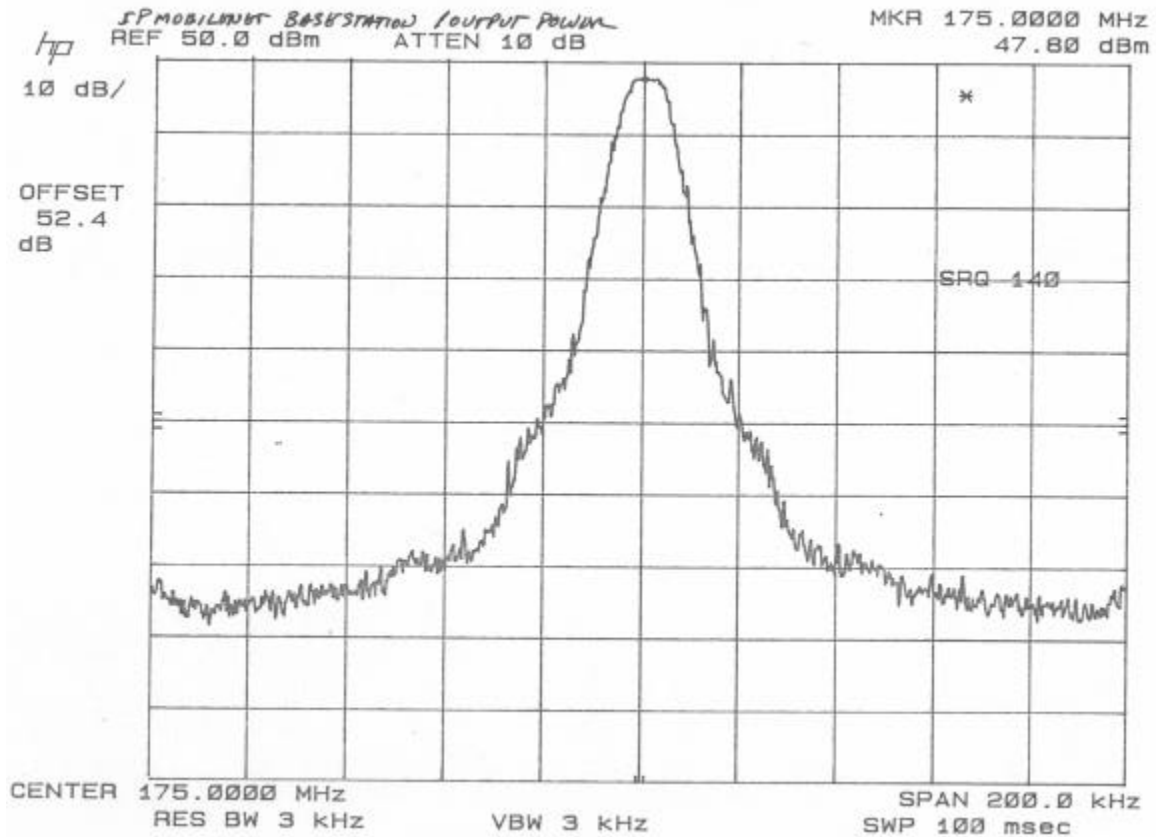
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Output Power		
DNR Job Number:	38016	Date:	29 Jan 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Lower Channel			



	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Output Power		
DNB Job Number:	38016	Date:	26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Middle Channel			



	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Output Power		
DNR Job Number:	38016	Date:	26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Upper Channel			



2.1049 Measurement of Occupied Bandwidth

Definition:

Occupied Bandwidth, that is the frequency bandwidth such that, below its lower and above its upper frequency limits, the mean powers radiated are equal to 0.5 percent of the total mean power radiated by a given emission.

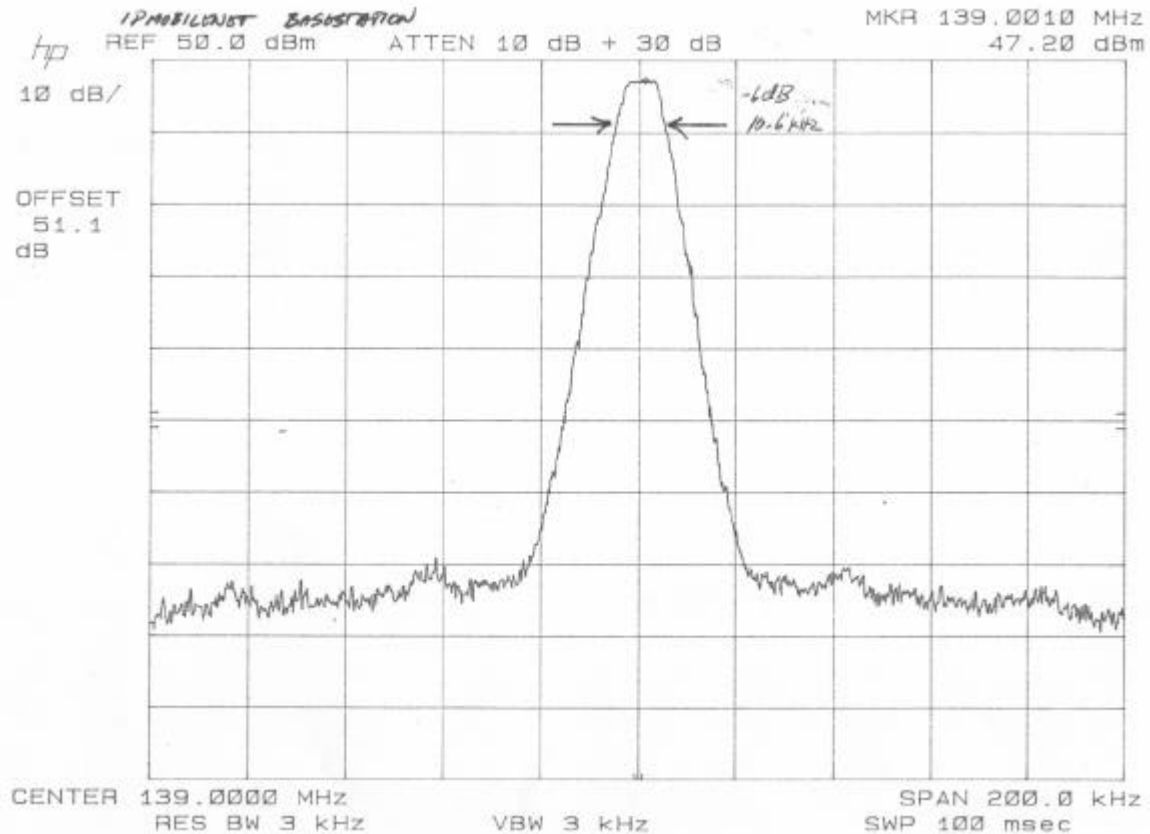
Test Method: Connect the Equipment per FIGURE 1.

Measurements were made while modulation the driving source with a FM signal.

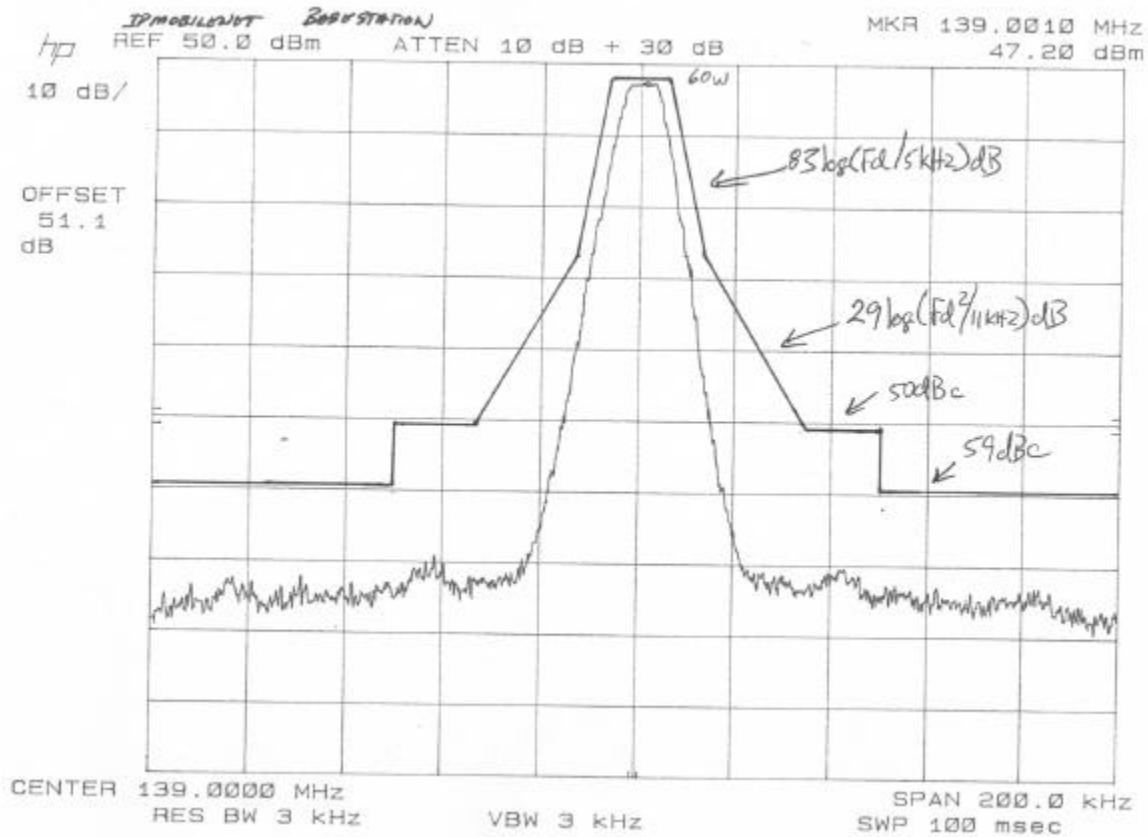
Test Results: See Plots

The center frequency of the signal did not shift with modulation. The Spectrum Bandwidth was well within the limits specified in the FCC Regulations.

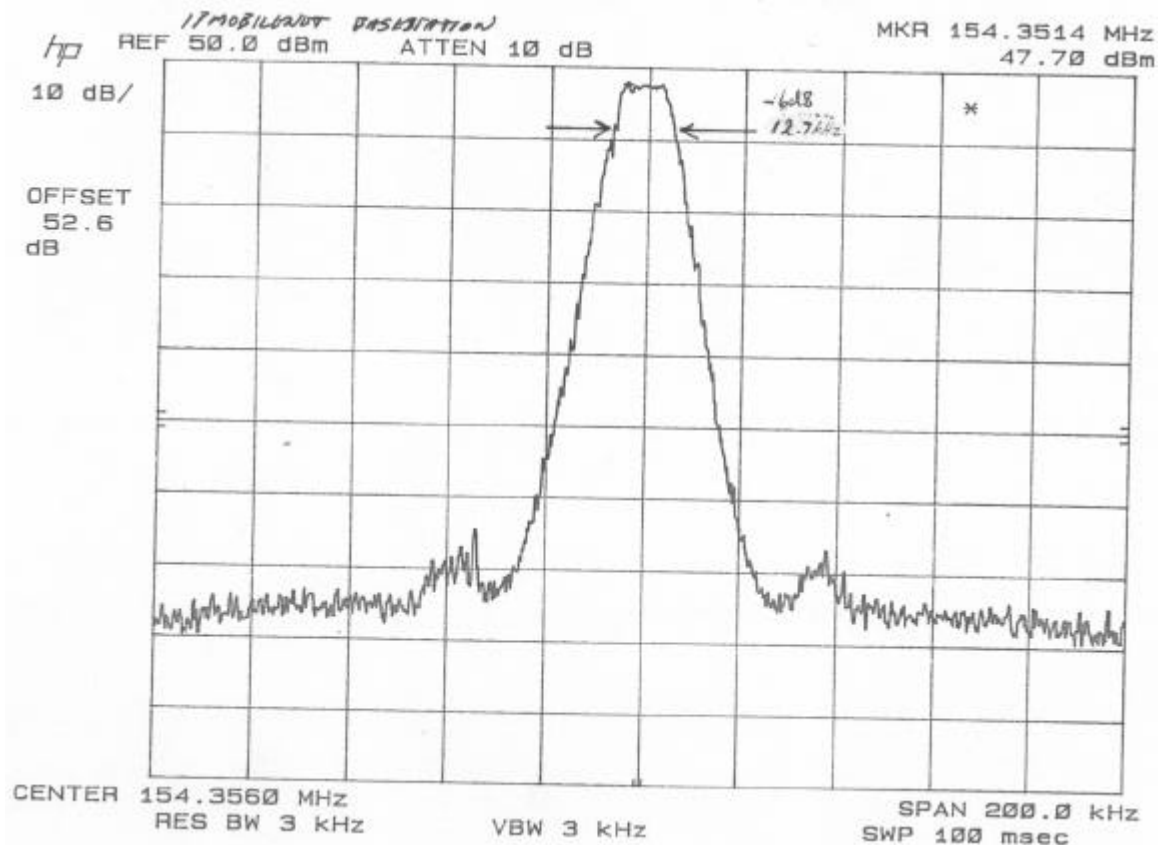
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Occupied Bandwidth		
DNB Job Number:	38016	Date:	6 Feb 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Lower Channel			



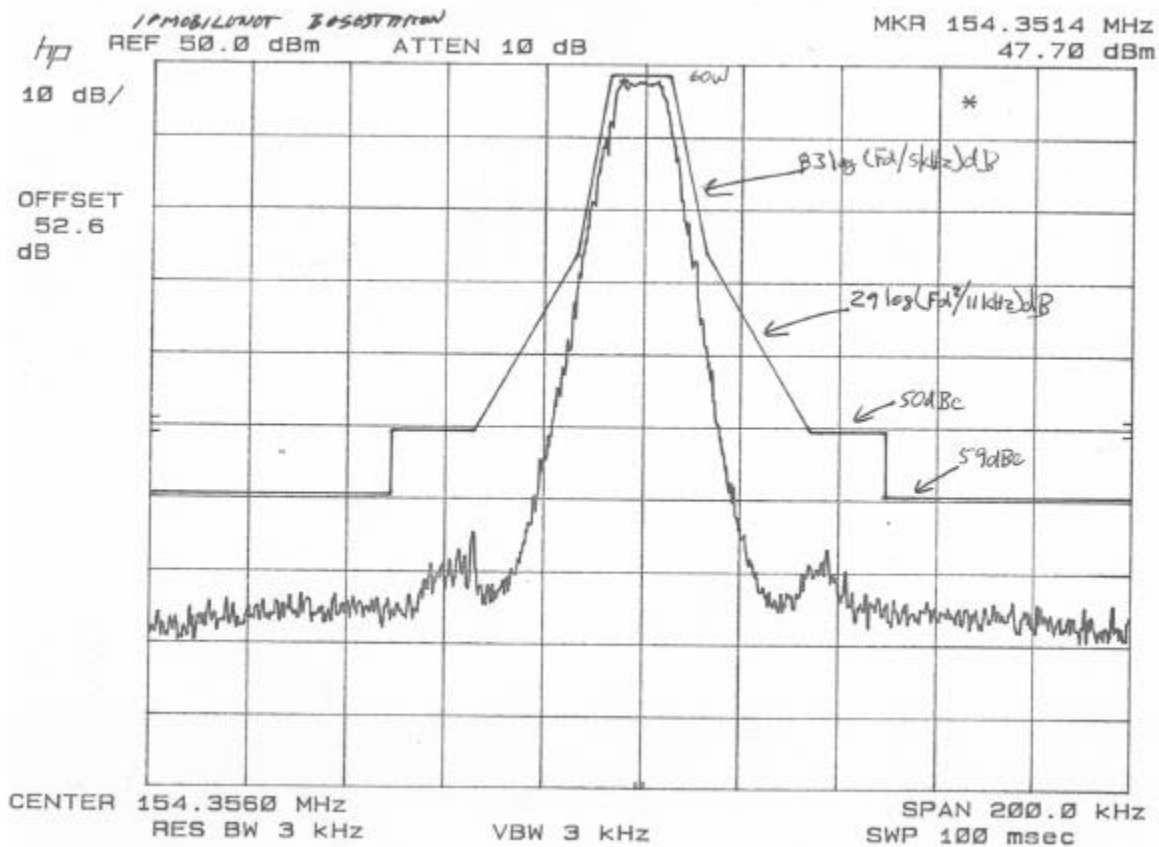
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Occupied Bandwidth		
DNB Job Number:	38016	Date:	6 Feb 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Lower Channel			



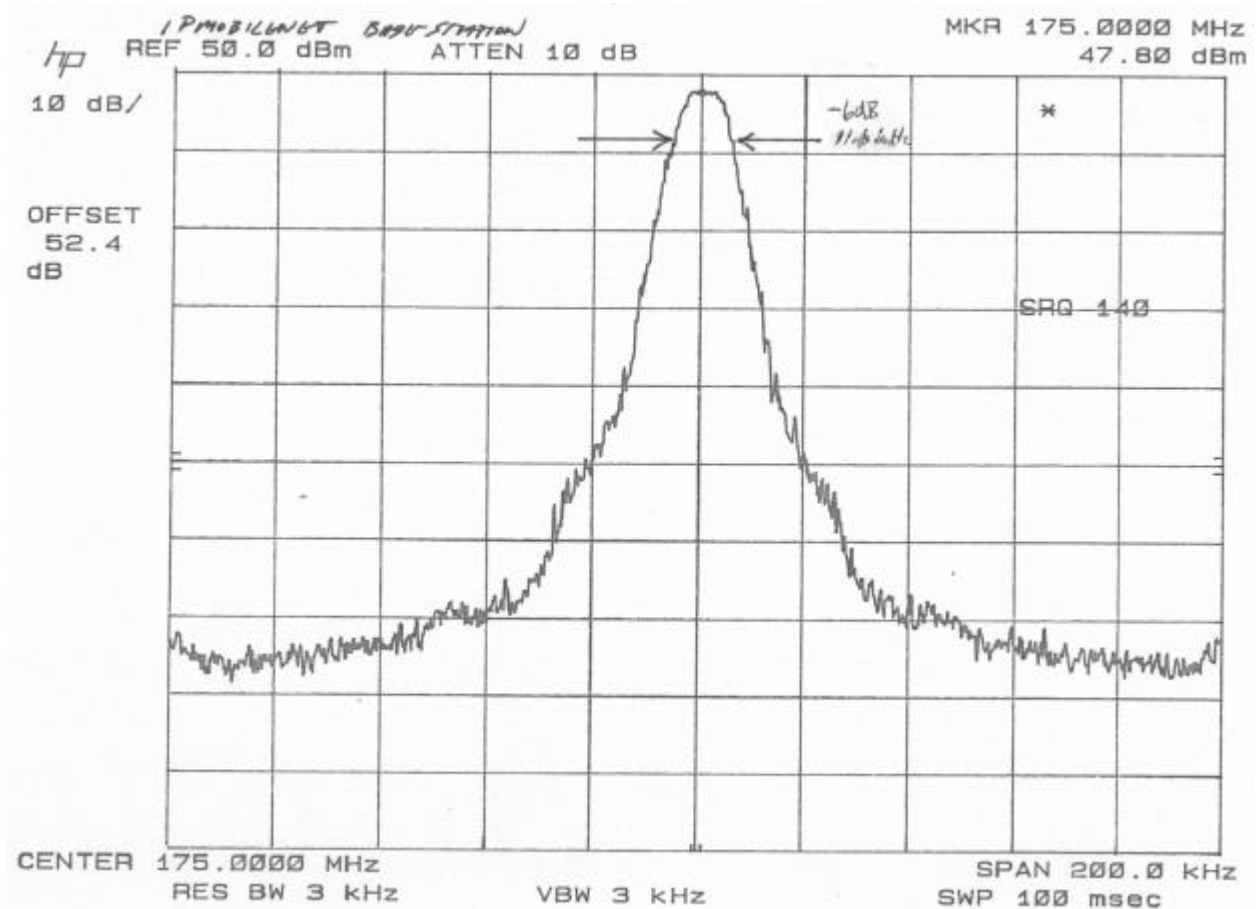
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Occupied Bandwidth		
DNB Job Number:	38016	Date:	26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Middle Channel			



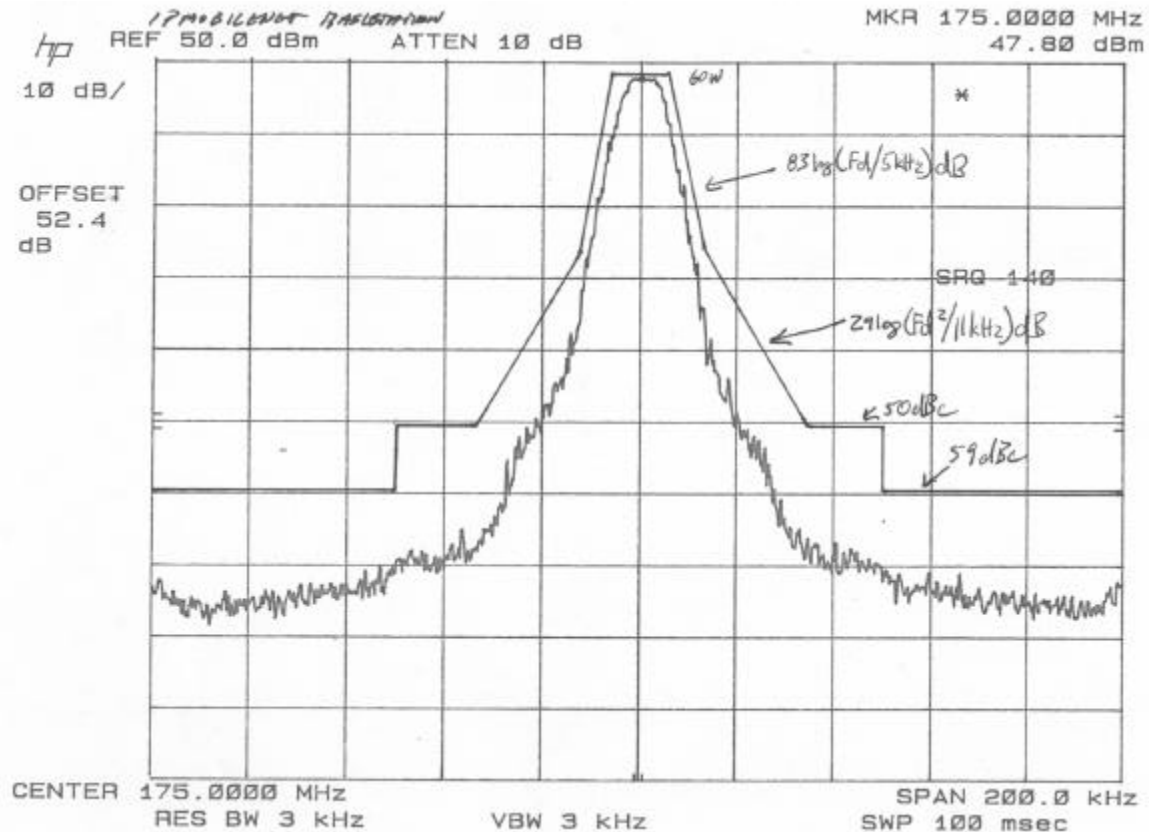
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Occupied Bandwidth		
DNB Job Number:	38016	Date:	26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Middle Channel			



	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Occupied Bandwidth		
DNB Job Number:	38016	Date:	26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Upper Channel			



	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Occupied Bandwidth		
DNB Job Number:	38016	Date:	26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet			
Model Number:	DIVERSITY (BASE STATION)	Serial Number:		
Description:	Mobile Radio			
	Upper Channel			



2.1051 Spurious Emissions at Antenna Terminals

Definition:

Conducted Spurious Emissions are emissions at the antenna terminals on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communication desired. The reduction in the level of these spurious emissions will not affect the quality of the information being transmitted.

Conducted Spurious Emissions shall be attenuated below the maximum level of the carrier frequency in accordance with the following formula:

$$\text{Spurious attenuation in dB} = 43 + 10 \log_{10} P_o$$

Where P_o = Output in Watts (CW)

$$= 43 + 10 \log_{10} (60)$$

$$= 60.8 \text{ dB}$$

Test Method: Per EIA RS 152-B, Paragraph 4 as modified below.

Connect the equipment as shown in FIGURE 1.

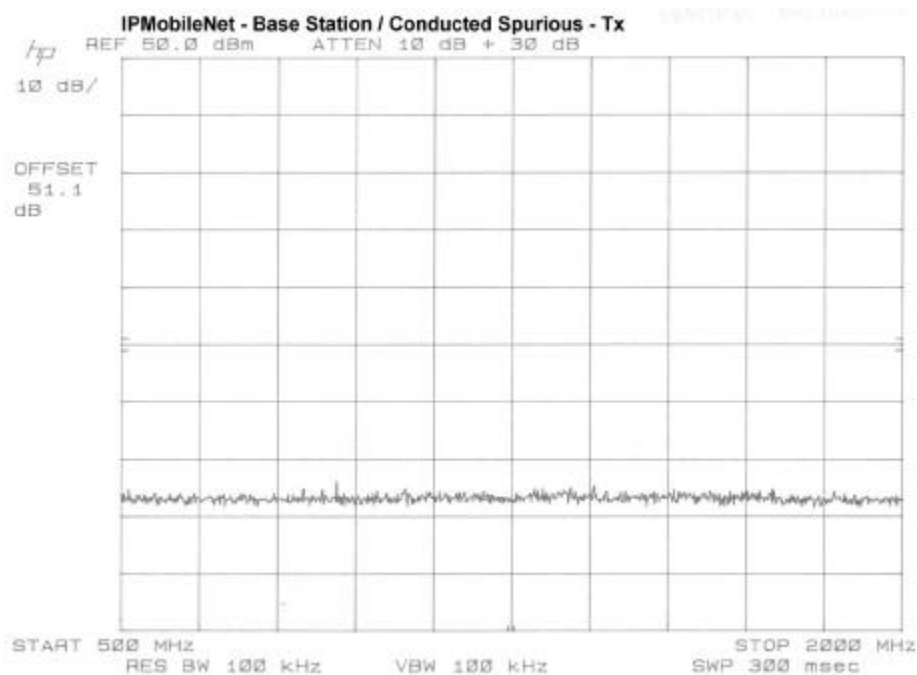
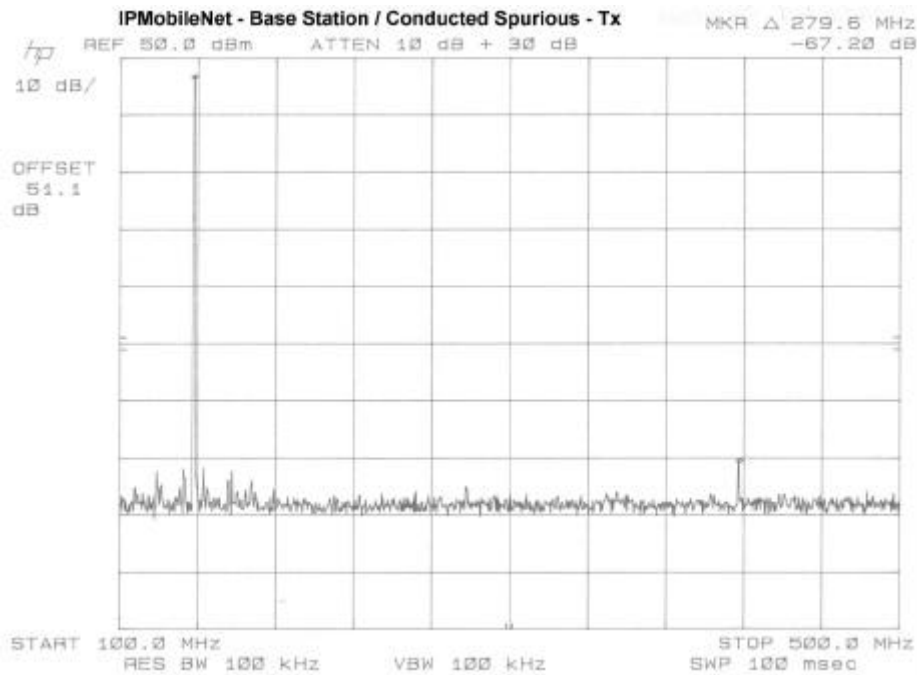
Adjust the drive source to produce FM modulation. Adjust the Spectrum Analyzer to display the Modulated Carrier.

Scan the frequency spectrum from the lowest radio frequency generated in the equipment through the 10th harmonic of the carrier frequency.

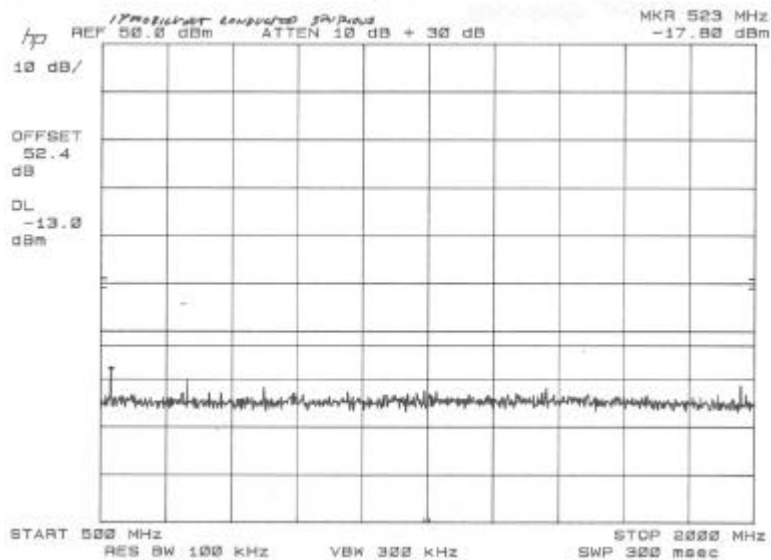
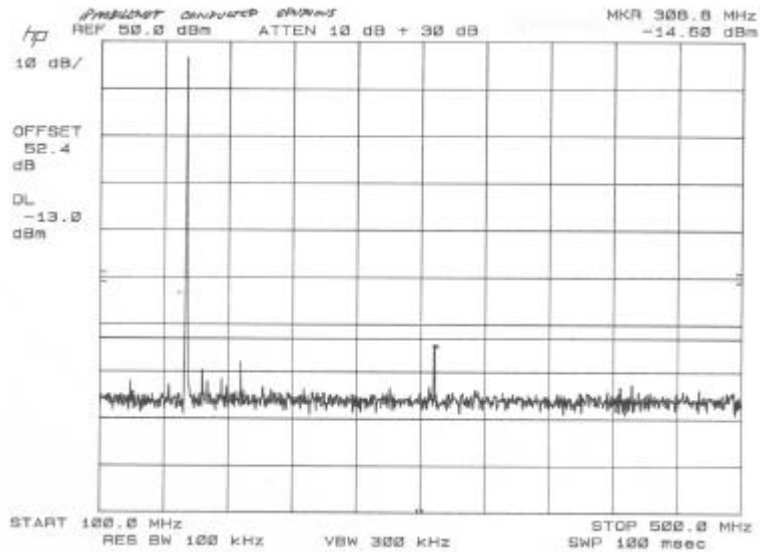
Test Results: See Plots

All spurious emissions at the antenna terminals are below the FCC specifications

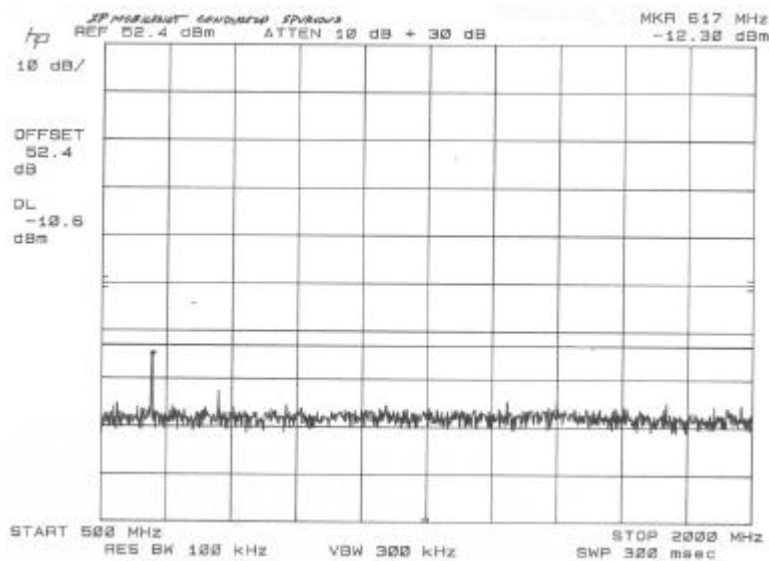
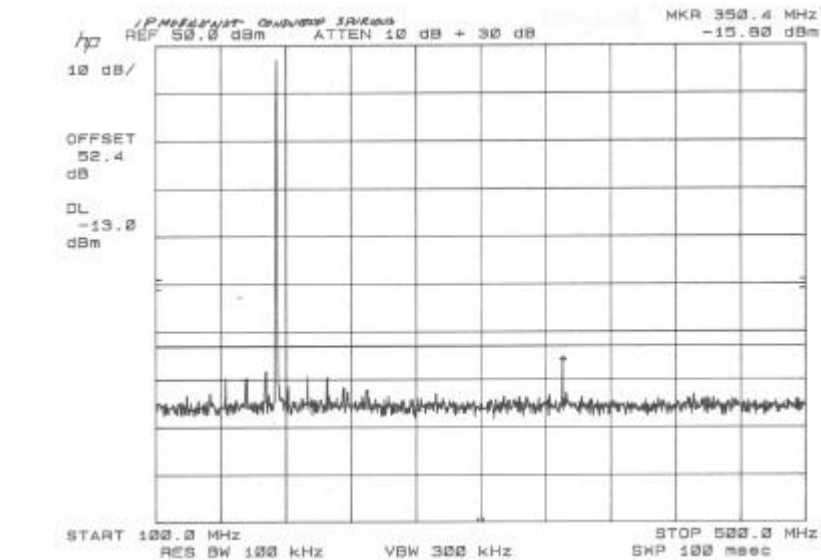
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Antenna Conducted Spurious	
DNB Job Number:	38016	Date: 29 Jan 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number: 1000	
Description:	Mobile Radio		
	Transmitter		
	Lower Channel		



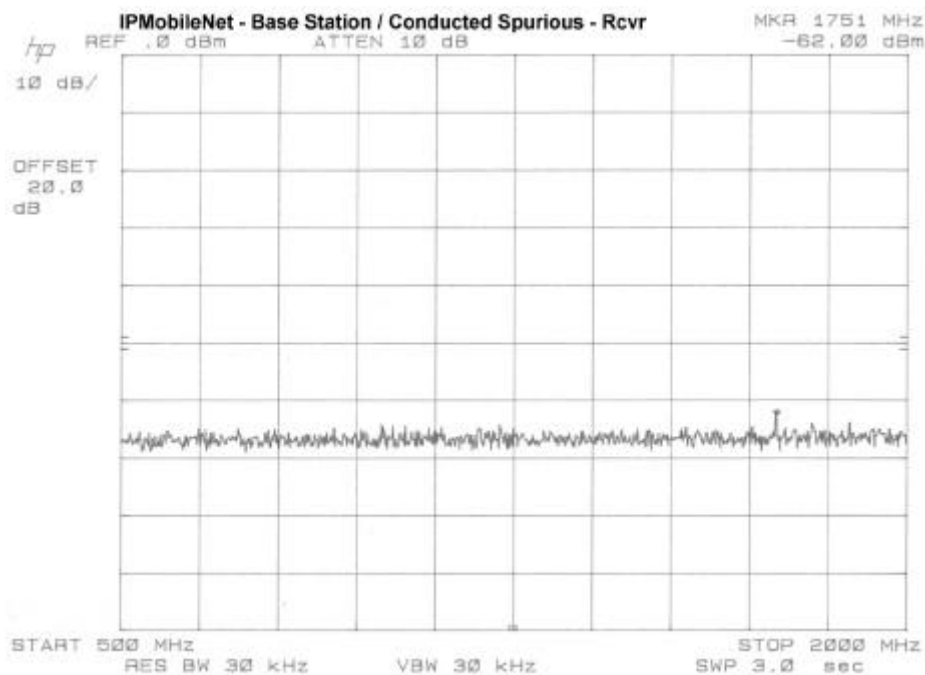
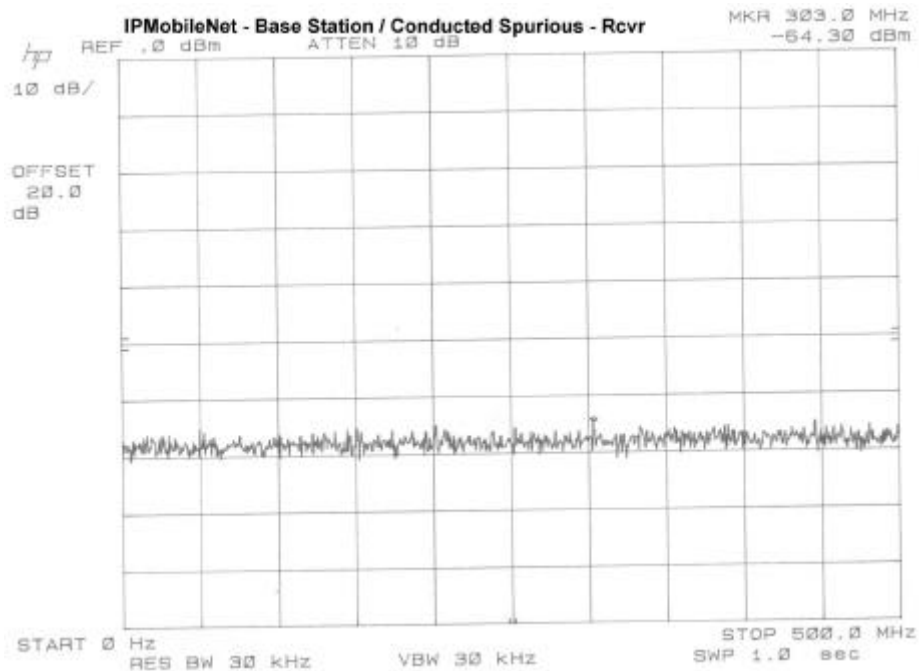
	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Antenna Conducted Spurious	
DNR Job Number:	38016	Date: 26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number: 1000	
Description:	Mobile Radio		
	Transmitter		
	Middle Channel		



	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Antenna Conducted Spurious	
DNR Job Number:	38016	Date: 26 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number: 1000	
Description:	Mobile Radio		
	Transmitter		
	Upper Channel		



	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Antenna Conducted Spurious	
DNB Job Number:	38016	Date: 29 Jan 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
Description:	Mobile Radio		
	Receiver		



2.1053 Field Strength of Spurious Radiation

Definition:

Emissions from the equipment when connected into a non-radiating load on a frequency or frequencies which are outside an occupied band sufficient to ensure transmission of information of required quality for the class of communication desired. The reduction in the level of these spurious emissions will not affect the quality of the information being transmitted.

Test Method: Per TIA /EIA 603.

Connect the equipment and follow the procedure described in paragraph 2.2.1.1 and paragraph 5.0. Measure the amplitude of each spurious radiated signal through the 10th harmonic. The spurious signals are then measured on the 3 meter range. First the EUT is measured using a tuned reference dipole below 1GHz and a double ridge guide Horn antenna above 1GHz. If the DRG antenna is used the appropriate gain factor for the antenna is subtracted from the final measurement. Then a dipole to dipole (or drg to drg) measurement is conducted to determine the actual power at each harmonic being generated by the EUT. If no noticeable emission can be observed the ground floor is recorded in the data sheets.

Test Results: All readings were at the spectrum analyzer ground floor above the fundamental.

All radiated spurious emissions are below the FCC Specifications.

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704		Radiated Spurious	
	DNB Job Number:	38016	Date:	7 Feb 2003
	Customer:	IPMobileNet		
	Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
	Description:	Mobile Radio Lower Channel		
				Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90

Fundamental Freq In MHz	Rated Output Power In Watts	Channel Spacing In kHz	Modulation
139.0	60	25	FM

Freq (MHz)	Antenna	Ant Polar	Horn Gain	Meter	Power	Corrected	Limit (dBm)
278.0	Dipole	Horz	N/a	-20.8	-21.5	-21.5	-13
417.0	Dipole	Horz	N/a	-84.9	--86.9	-86.9	-13
556.0	Dipole	Horz	N/a	-88.9	-87.9	-87.9	-13
695.0	Dipole	Vert	N/a	-95.0*	-90.0	-90.0	-13
834.0	Dipole	Horz	N/a	-95.0*	-90.0	-90.0	-13
973.0	Dipole	Horz	N/a	-95.0*	-90.0	-90.0	-13
1112.0	DRG	Horz	5.8	-95.0*	-90.0	-95.8	-13
1251.0	DRG	Horz	6.2	-95.0*	-90.0	-96.2	-13
1390.0	DRG	Horz	7.3	-95.0*	-90.0	-97.3	-13

* = Ground Floor

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Radiated Spurious	
DNB Job Number:	38016	Date: 27 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
Description:	Mobile Radio		
	Middle Channel		

Fundamental Freq In MHz	Rated Output Power In Watts	Channel Spacing In kHz	Modulation
154.4	60	25	FM

Freq (MHz)	Antenna	Ant Polar	Horn Gain	Meter	Power	Corrected	Limit (dBm)
308.71	Dipole	Vert	N/a	-25.3	-27.4	-27.4	-13
463.07	Dipole	Horz	N/a	-71.5	-73.9	-73.9	-13
617.42	Dipole	Vert	N/a	-71.6	-72.5	-72.5	-13
771.78	Dipole	Vert	N/a	-80.4	-81.0	-81.0	-13
926.13	Dipole	Horz	N/a	-90.0*	-82.0	-82.0	-13
1080.49	DRG	Horz	5.9	-90.0*	-82.0	-87.9	-13
1234.84	DRG	Horz	6.9	-90.0*	-82.0	-88.9	-13
1389.20	DRG	Horz	7.6	-90.0*	-82.0	-89.6	-13
1543.35	DRG	Horz	7.9	-90.0*	-82.0	-89.9	-13

*** = Ground floor**

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Radiated Spurious	
DNB Job Number:	38016	Date: 27 Mar 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
Description:	Mobile Radio		
	Upper Channel		

Fundamental Freq In MHz	Rated Output Power In Watts	Channel Spacing In kHz	Modulation
175.0	60	25	FM

Freq (MHz)	Antenna	Ant Polar	Horn Gain	Meter	Power	Corrected	Limit (dBm)
350.0	Dipole	Horz	N/a	-36.3	-38.4	-38.4	-13
525.0	Dipole	Vert	N/a	-69.7	-71.6	-71.6	-13
700.0	Dipole	Vert	N/a	-74.8	-76.8	-76.8	-13
875.0	Dipole	Vert	N/a	-94.0*	-86.0	-86.0	-13
1050.0	DRG	Vert	5.9	-94.0*	-86.0	-91.9	-13
1225.0	DRG	Horz	6.7	-94.0*	-86.0	-92.7	-13
1400.0	DRG	Horz	7.5	-94.0*	-86.0	-93.5	-13
1575.0	DRG	Horz	7.9	-94.0*	-86.0	-93.9	-13
1750.0	DRG	Horz	7.8	-94.0*	-86.0	-93.8	-13

2.1055 Measurement of Frequency Stability

EUT was tested between –30 degrees C and + 50 degrees C and no frequency drift was observed. Please review Plots.

EUT Power was reduced until either frequency instability was observed or until the signal ceased to transmit.

No frequency instability was observed.

EUT ceased to transmit when EUT power drops below 4.4Vdc.

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704		Frequency Stability (Temp)	
	DNB Job Number:	38016	Date:	6 Feb 2003
	Customer:	IPMobileNet		
	Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
	Description:	Mobile Radio Lower Channel		
				Conformance Standards ☒ FCC Part 15 ☐ FCC Part 22 ☐ FCC Part 87 ☒ FCC Part 90

Temp (C)	Voltage	Frequency (MHz)	Deviation (kHz)
-30.0	13.8	139.000	0
-20.0	13.8	139.000	0
-10.0	13.8	139.000	0
0.0	13.8	139.000	0
+10.0	13.8	139.000	0
+20.0	13.8	139.000	0
+30.0	13.8	139.000	0
+40.0	13.8	139.000	0
+50.0	13.8	139.000	0

Temp (C)	Voltage	Frequency (MHz)	Deviation (kHz)
20	11.7	139.000	0
20	13.8	139.000	0
20	15.9	139.000	0

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Frequency Stability (Temp)	
DNB Job Number:	38016	Date: 21 Apr 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
Description:	Mobile Radio		
	Middle Channel		

Temp (C)	Voltage	Frequency (MHz)	Deviation (kHz)
-30.0	13.8	154.355	0
-20.0	13.8	154.355	0
-10.0	13.8	154.355	0
0.0	13.8	154.355	0
+10.0	13.8	154.355	0
+20.0	13.8	154.355	0
+30.0	13.8	154.355	0
+40.0	13.8	154.355	0
+50.0	13.8	154.355	0

Temp (C)	Voltage	Frequency (MHz)	Deviation (kHz)
20	11.7	154.355	0
20	13.8	154.355	0
20	15.9	154.355	0

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704		Frequency Stability (Temp)	
	DNB Job Number:	38016	Date:	21 Apr 2003
	Customer:	IPMobileNet		
	Model Number:	DIVERSITY (BASE STATION)	Serial Number:	
	Description:	Mobile Radio Upper Channel		
				Conformance Standards ☒ FCC Part 15 ☐ FCC Part 22 ☐ FCC Part 87 ☒ FCC Part 90

Temp (C)	Voltage	Frequency (MHz)	Deviation (kHz)
-30.0	13.8	175.000	0
-20.0	13.8	175.000	0
-10.0	13.8	175.000	0
0.0	13.8	175.000	0
+10.0	13.8	175.000	0
+20.0	13.8	175.000	0
+30.0	13.8	175.000	0
+40.0	13.8	175.000	0
+50.0	13.8	175.000	0

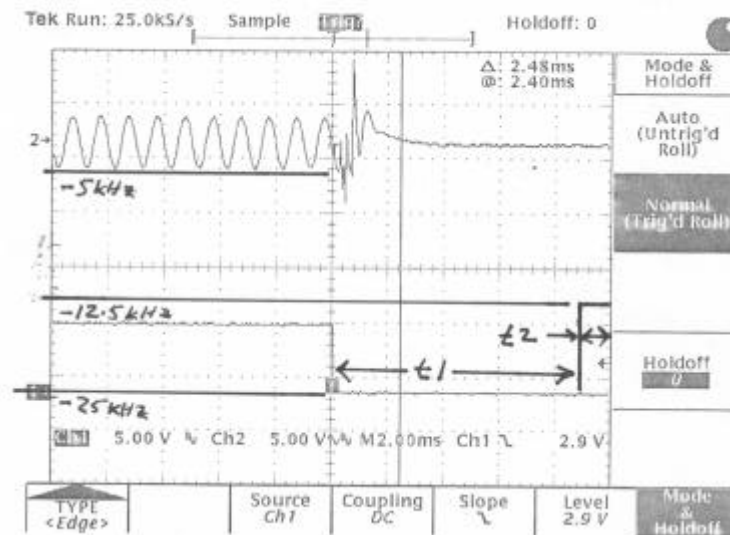
Temp (C)	Voltage	Frequency (MHz)	Deviation (kHz)
20	11.7	175.000	0
20	13.8	175.000	0
20	15.9	175.000	0

2.1057 Frequency Spectrum to be Investigated

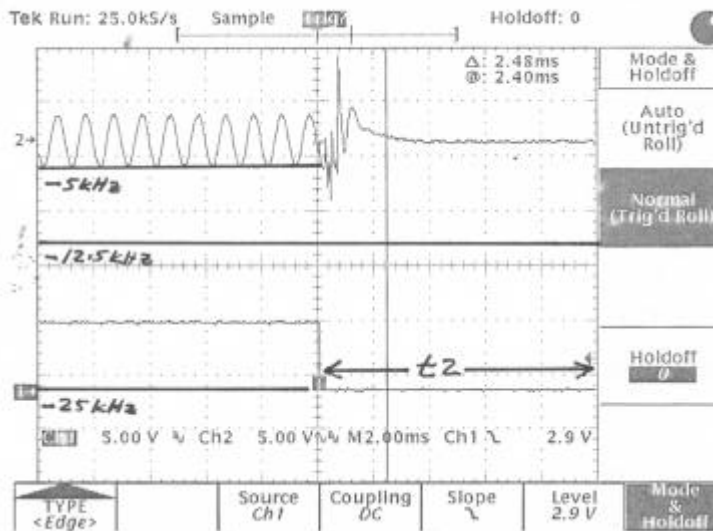
The Frequency was searched from the lowest radio frequency generated in the equipment through the 10th harmonic of the carrier frequency.

	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Transient Frequency Behavior	
DNB Job Number:	38106	Date: 3 May 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (SINGLE STATION)	Serial Number:	
Description:	Mobile Radio		

1) Transmit Key versus capture time:

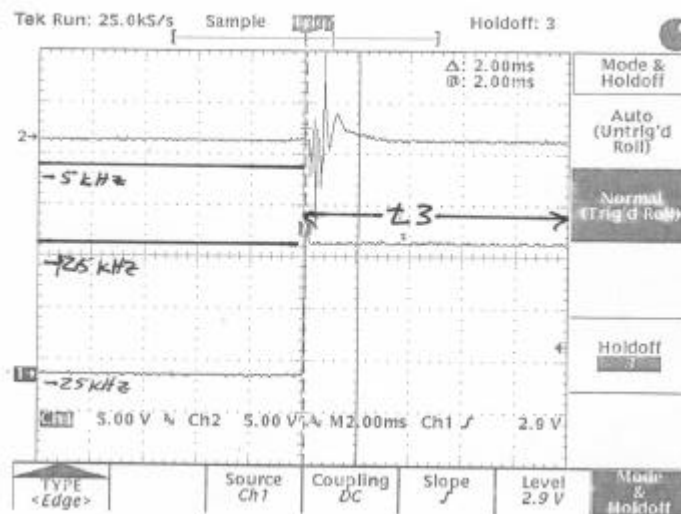


1) Transmit Key versus capture time:

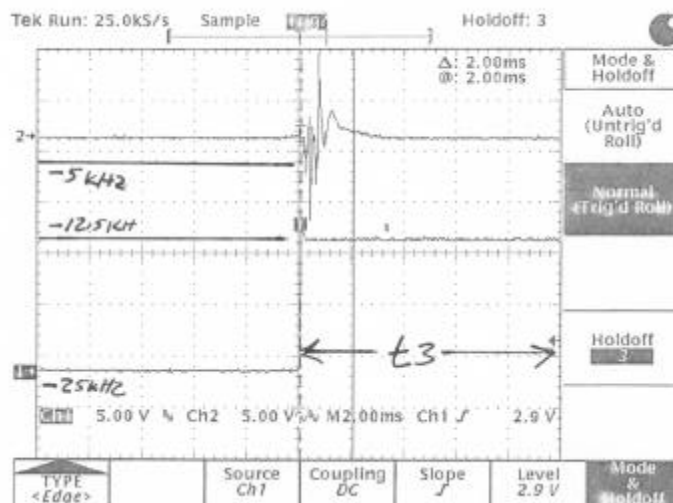


	5969 Robinson Avenue Riverside, CA 92503 (909) 637-2630 FAX (909) 637-2704	Transient Frequency Behavior	
DNB Job Number:	38106	Date: 3 May 2003	Conformance Standards [X] FCC Part 15 [] FCC Part 22 [] FCC Part 87 [X] FCC Part 90
Customer:	IPMobileNet		
Model Number:	DIVERSITY (SINGLE STATION)	Serial Number:	
Description:	Mobile Radio		

2) Transmit Un-Key versus Tone Resumption:



2) Transmit Un-Key versus Tone Resumption:



RF Exposure

The information contained in “Evaluating Compliance with FCC Guidelines for Human Exposure to Radio frequency Electromagnetic Fields”, OET Bulletin 65; August 1997 is applicable when a radiating antenna is connected to this amplifier. Paging stations that utilize this amplifier authorized under Part 22 (Subpart E) and Part 90 are subject to routine environmental evaluation for RF exposure if an antenna is located on a rooftop and if its ERP exceeds 1000 watts.

This product is certified to meet the RF exposure guidelines of OET-65 as a stand-alone RF power amplifier. The RF spurious emissions recorded when the antenna output connector is terminated into a non-radiating 50 ohm load do not exceed the 27.5 V/m limit specified for General Population/Uncontrolled Exposure in OET Bulletin 65.

Test Equipment Log

Item No:	Description	Manufacturer	M/N	S/N	Calibration Due Date	Test Equip Used On
1	Push/Pull Scale	Imada	MF	70403	5/30/03	
2	Power Analyzer	Voltech	PM3000A	1273	5/7/03	Harm / Flick
3	Digital MultiMeter	Chief Engineer	104	31220125	8/26/03	
4	Digital MultiMeter	Amprobe	AM-1250	330224	10/24/03	
5	LCR Meter	B & K Precision	878	23702237	10/24/03	
6	Digital MultiMeter	Amprobe	AM-1250	330139	8/6/03	
7	Dial Caliper	General MG	MG 6"	958	12/2/03	
8	Micrometer	General MG	1050C	959	12/2/03	
9	Impact Hammer	E.D. & D.	F22-50	9606235-3	11/6/03	
10	Process Meter	Newport	INFCP-210	4381880	4/5/03	
11	Process Meter	Newport	INFCP-210	6150730	4/5/03	
12	Oscilloscope	Tektronix	464	B133241	9/16/03	
13	Line Leakage Tester	Associated Research	510L	A130511	4/19/03	
14	Safety Compl Analyzer	Associated Research	7564SA	A100601	4/19/03	
15	AC/DC Current Probe	Amprobe	CT600	30301828	4/9/03	
16	Data Acquisition Unit	Hewlett Packard	34970A	US37017024	4/29/03	
17	Data Acquisition Unit	Hewlett Packard	34970A	US37016877	5/21/03	
18	Input Multiplexer	Hewlett Packard	34901A	US37017773	5/21/03	
19	Input Multiplexer	Hewlett Packard	34901A	US37017729	5/21/03	
20	Input Multiplexer	Hewlett Packard	34901A	US37019488	5/4/03	
21	Weather Station	Davis	7400	PC70804A01	1/29/03	All Tests
22	Safety Analyzer	Dynatech Nevada	431A	431A-1230	4/12/03	
23	SA - RF Section	Hewlett Packard	85680B	2330A02791	8/27/03	CE / RE / CS
24	SA - Display Section	Hewlett Packard	85662A	2318A05282	8/27/03	CE / RE / CS
25	RF Preselector	Hewlett Packard	85685A	2724A00659	8/26/03	CE / RE / CS
26	QP Adapter	Hewlett Packard	85650A	2811A01240	8/27/03	CE / RE / CS
27	SA - RF Section	Hewlett Packard	85680B	2049A01403	6/14/03	CE / RE / CS
28	SA - Display Section	Hewlett Packard	85662A	2112A02234	6/14/03	CE / RE / CS
29	QP Adapter	Hewlett Packard	85650A	2043A00184	6/14/03	CE / RE / CS
30	ESD Power Supply/Gun	Haefely	PSD 25 B	083 427-05	3/29/03	ESD
31	ESD Simulator	Haefely	PESD3000	H002033	6/13/03	ESD
32	Signal Source 9Khz-2Ghz	Marconi	2024	112231/034	2/2/03	RS / CS
33	Scale 300lb Capacity	Hanson	8930	1403	6/3/03	
34	Scale 25lb Capacity	Hanson	40	1402	4/26/03	
35	Precision Torque Gauge	SeeKonik	SL-12	967	7/9/03	
36	Precision Torque Wrench	Husky	39104	4980656019	7/18/03	
37	Step Attenuator 120dB	Hewlett Packard	355D	2522A43896	10/25/03	As Req'd
38	Step Attenuator 12dB	Hewlett Packard	355C	2524A42578	10/25/03	As Req'd
39	Oscilloscope	LeCroy	9400	85584	2/26/03	Surq / EFT/ ESD
40	Pressure Gauge	Ashcroft	0-30 PSI	1500	9/13/03	
41	Pressure Gauge	Ashcroft	0-30 PSI	1501	9/13/03	
42	Pressure Gauge	Ashcroft	0-30 PSI	1502	9/13/03	
43	Artificial Mains Network	Schwarzbeck	NNLA 8120	8120288	6/13/03	CE / CS
44	A.C. Leakage Current Tstr	Simpson	229-2	948	10/28/03	
45	Leakage Current tester	Simpson	228	709721	10/28/03	
46	Insulation Tester	Amprobe	AMB-1A	340055	10/28/03	
47	Hypot Tester	Beckman	P-2B	64999	10/29/03	
48	Ground Continuity Tester	Rod-I	M25	12485	10/29/03	
49	Digital MultiMeter	Di-log	DL-297T	23702237	11/13/03	
50	Probe	Omega	HX94V		4/5/03	
51	L I S N	ComPower Corp	L1-300	1331	5/13/03	CE / CS
52	L I S N	ComPower Corp	L1-300	1373	5/13/03	CE / CS

* When necessary, equivalent calibrated equipment may be substituted for the equipment listed here.