IP MOBILENET TEST REPORT

FOR THE

MOBILE DATA RADIO, M64800-25

FCC PART 90, PART 15 SUBPART C SECTION 15.209 AND SUBPART B SECTIONS 15.109 CLASS B & 15.111

COMPLIANCE

DATE OF ISSUE: AUGUST 1, 2006

PREPARED FOR:

IP MobileNet
16842 Von Karman Aveneu, STE 200
Irvine, CA 92606

P.O. No.: 004844-00
W.O. No.: 85420

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5046 Sierra Pines Drive
Mariposa, CA 95338

Date of test: June 27 - July 31, 2006

Report No.: FC06-041

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	June 27 - July 31, 2006
DATE OF RECEIPT:	June 27, 2006
FREQUENCY RANGE TESTED:	9 kHz - 9 GHz
MANUFACTURER:	IP MobileNet 16842 Von Karman Aveneu, STE 200 Irvine, CA 92606
REPRESENTATIVE:	Eric Tanner
TEST LOCATION:	CKC Laboratories, Inc. 110 Olinda Place Brea, CA 92823
TEST METHOD:	ANSI C63.4 (2003) and FCC Part 90
PURPOSE OF TEST:	To demonstrate the compliance of the Mobile Data Radio, M64800-25 with the requirements for FCC Part 90, Part 15 Subpart C Section 15.209 and Subpart B Sections 15.109 Class B and 15.111 devices.

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:	TEST PERSONNEL:
	
Joyce Walker, Quality Assurance Administrative Manager	Eddie Wong, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

The customer declares the EUT tested by CKC Laboratories was representative of a production unit.

EQUIPMENT UNDER TEST

Mobile Data Radio
Manuf: IPMobileNet
Model: M64800-25
Serial: NA
FCC ID: pending

PERIPHERAL DEVICES

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

High Power Termination
Manuf: Weinschel Corporation
Model: 45-40-43
Serial: MN216

Laptop Computer
Manuf: Dell Corporation
Model: PP01L Inspiron 4100
Serial: 05D481

GPS Antenna
Manuf: San Jose Navigation, Inc.
Model: SM-25
Serial: 2533961

DC Power Supply
Manuf: HP
Model: 6652ASEC 1223
Serial: 3235A-00835

TEMPERATURE AND HUMIDITY DURING TESTING
The temperature during testing was within +15°C and + 35°C.
The relative humidity was between 20% and 75%.

FCC 2.1033(c)(3) USER'S MANUAL
The necessary information is contained in a separate document.

FCC 2.1033 (c)(4) TYPE OF EMISSIONS
20K0F1D

FCC 2.1033 (c)(5) FREQUENCY RANGE
806 MHz – 824 MHz

FCC 2.1033 (c)(6) OPERATING POWER
23.8 Watts

FCC 2.1033 (c)(7) MAXIMUM POWER RATING
100 Watts

FCC 2.1033 (c)(8) DC VOLTAGES
The necessary information is contained in a separate document.

FCC 2.1033 (c)(9) TUNE-UP PROCEDURE
The necessary information is contained in a separate document.

FCC 2.1033(c)(10) SCHEMATICS AND CIRCUITRY DESCRIPTION
The necessary information is contained in a separate document.

FCC 2.1033(c)(11) LABEL AND PLACEMENT
The necessary information is contained in a separate document.

FCC 2.1033(c)(12) SUBMITTAL PHOTOS
The necessary information is contained in a separate document.

FCC 2.1033 (c)(13) MODULATION INFORMATION
Frequency

FCC 2.1033(c)(14)/2.1046/90.635(d) - RF POWER OUTPUT

90.205(j) 764-776 MHz, 794-824 MHz, 851-869 MHz, 896-901 MHz and 935-940 MHz. Power and height limitations are specified in Sec. 90.635. 90.635 (d) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

Test Conditions: The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx 90.205(j) 764-776 MHz, 794-824 MHz, 851-869 MHz, 896-901 MHz and 935-940 MHz. Power and height limitations are specified in Sec. 90.635. 90.635 (d) The maximum output power of the transmitter for mobile stations is 100 watts (20 dBw).

The EUT is located on the wooden table top. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connect to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable.

The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. RF Output Power measured at the TX antenna port with a RF Power meter.

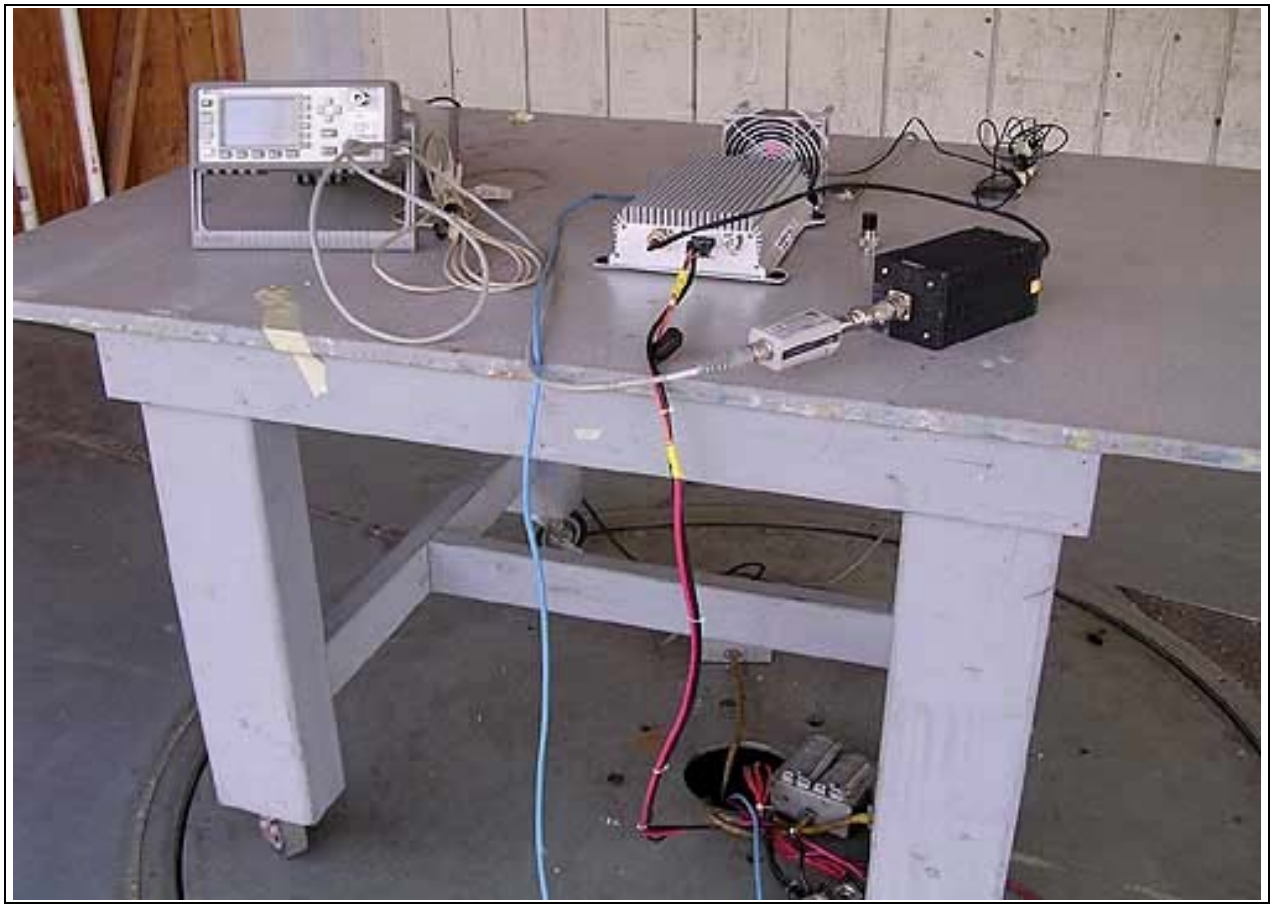
	11.7 Vdc	**13.8 Vdc (nominal)**	15.9 Vdc
806 MHz	15.5	**23.8 W**	28.6
815 MHz	12.7	**22.3 W**	21.5
824 MHz	12.3	**21.3 W**	21.9

The result satisfies the requirement by demonstrating the measured power is below 100 watts.

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
RF Power meter	02778	HP	EPM-441A	GB37170458	012706	012708
Power Sensor	02777	HP	E4412A	MY41499662	012706	012708

RF POWER OUTPUT



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

Not applicable to this unit.

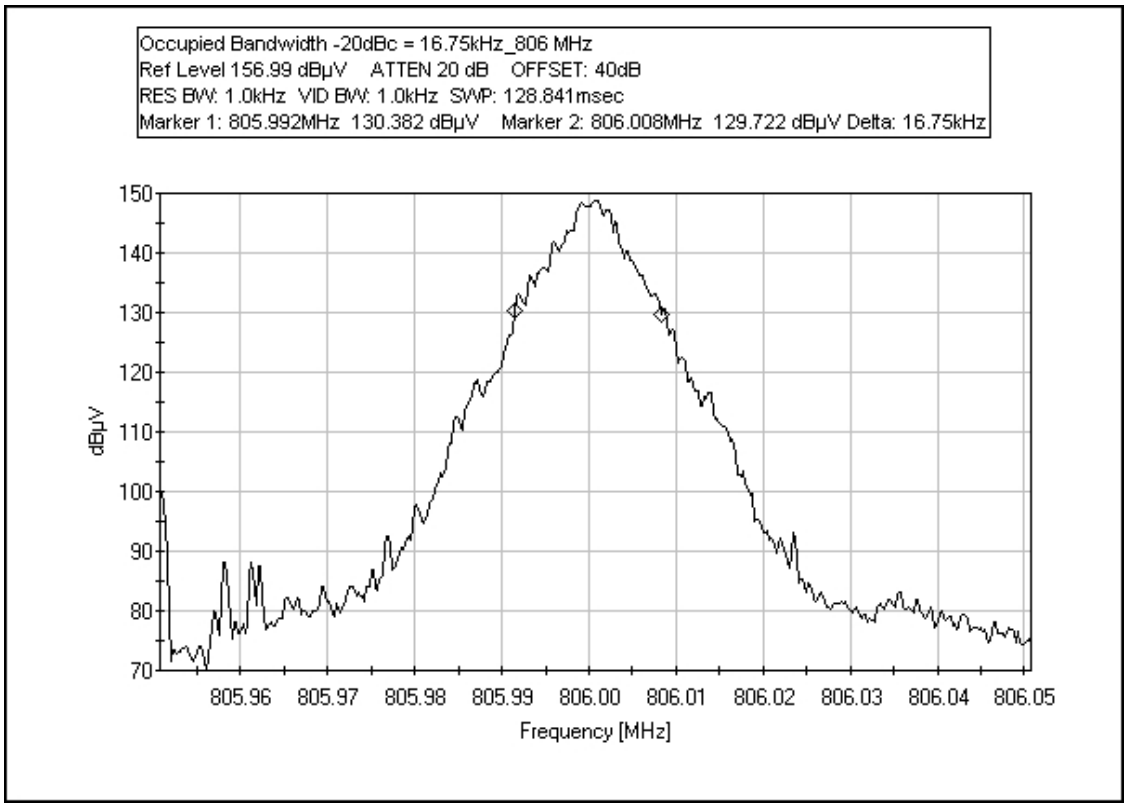
FCC 2.1033(c)(14)/2.1047(b) MODULATION CHARACTERISTICS– Modulation Limiting Response

Not applicable to this unit.

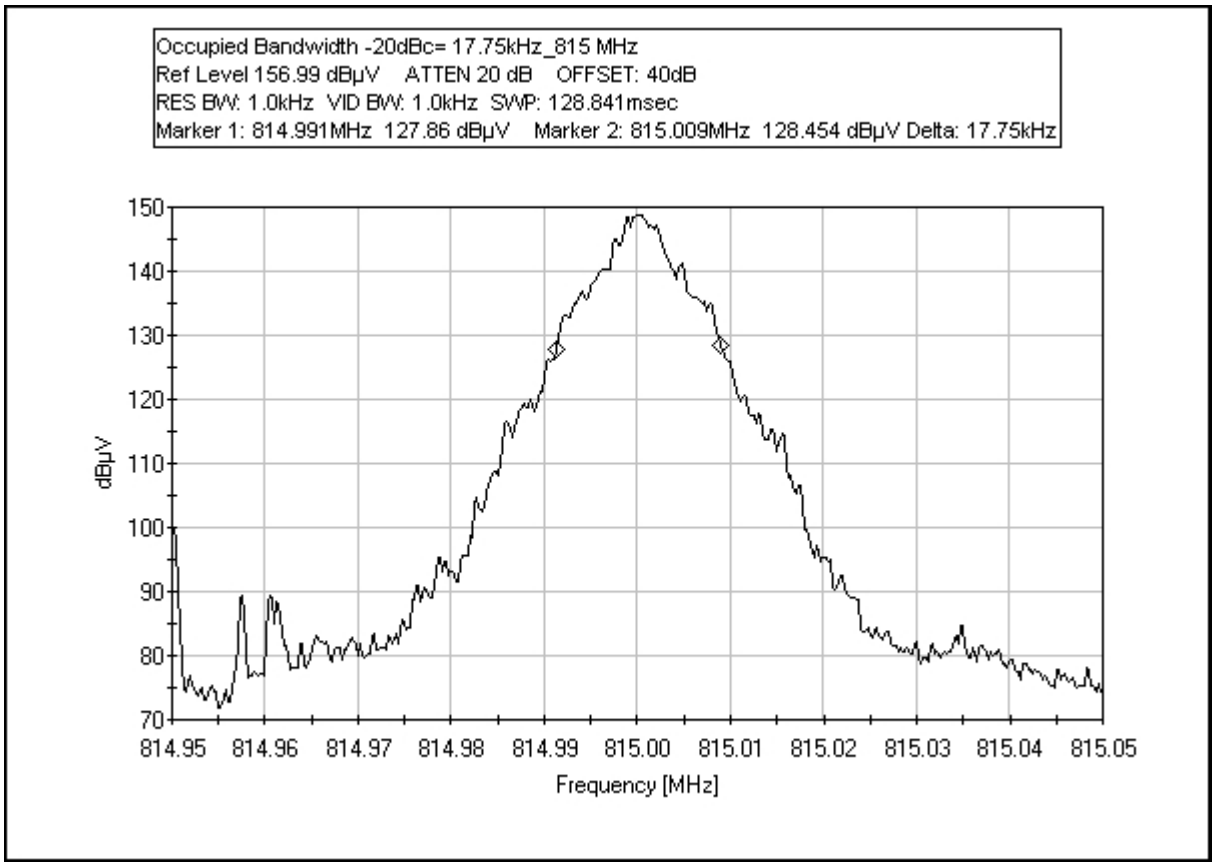
FCC 2.1033(c)(14)/2.1049(i)- OCCUPIED BANDWIDTH

OCCUPIED BANDWIDTH -20dBc - 806 MHz

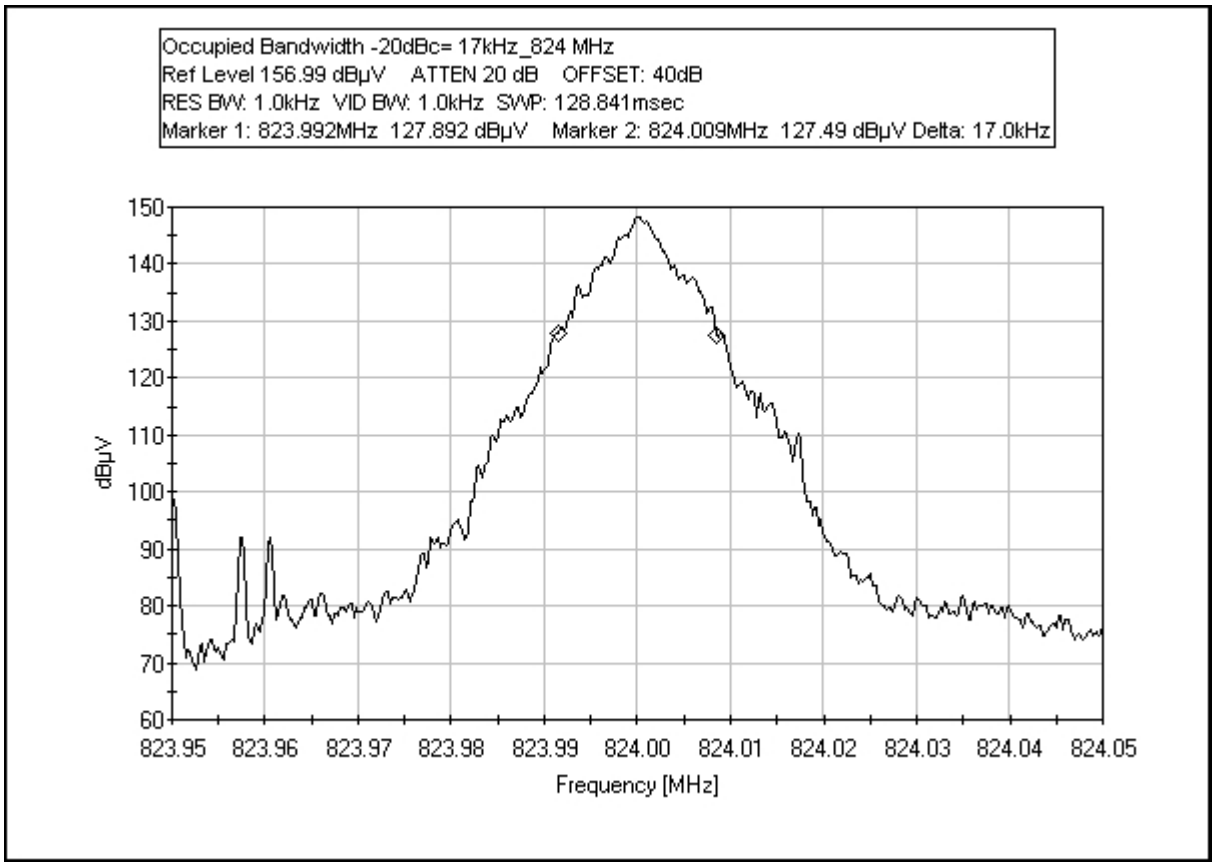
Test Conditions: The EUT is located on the wooden table top. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connect to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. OBW and Emission mask evaluated at the antenna port. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz.



OCCUPIED BANDWIDTH -20dBc - 815 MHz



OCCUPIED BANDWIDTH -20dBc - 824 MHz



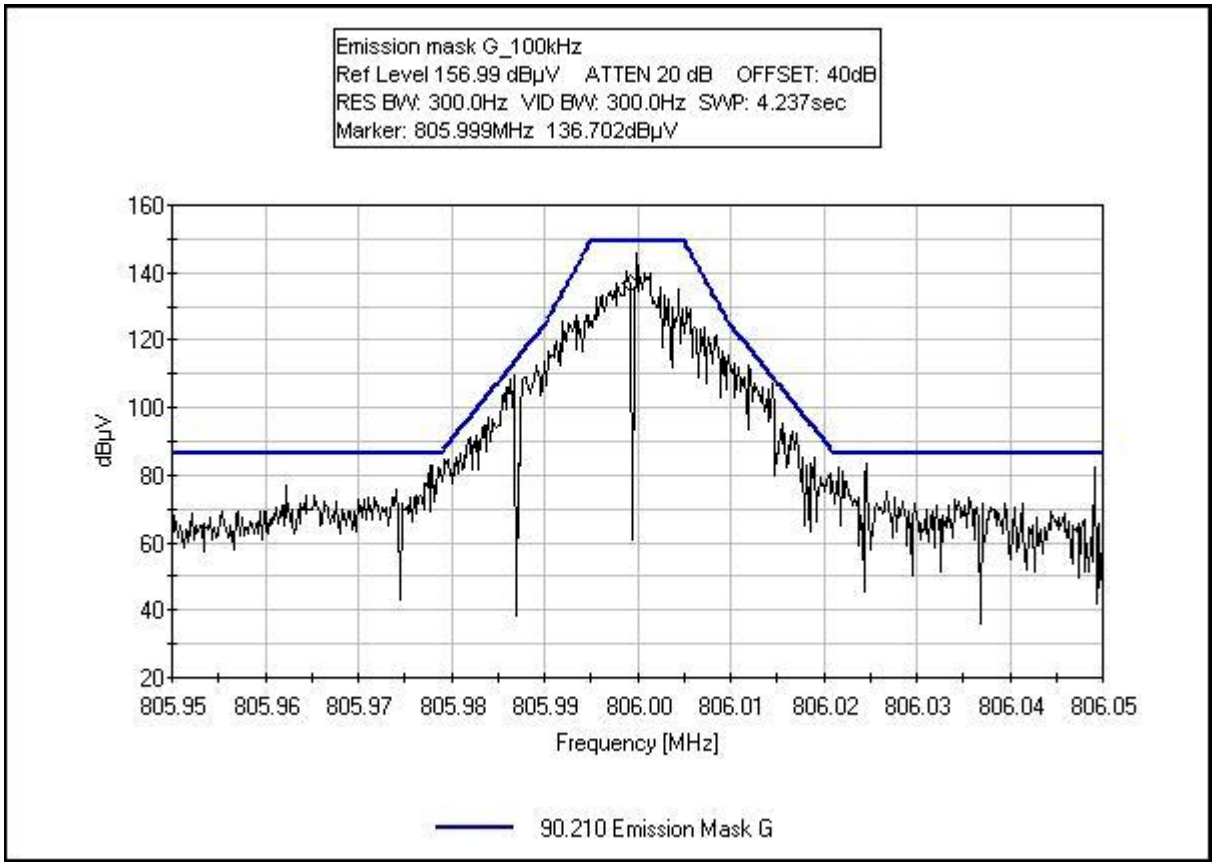
Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

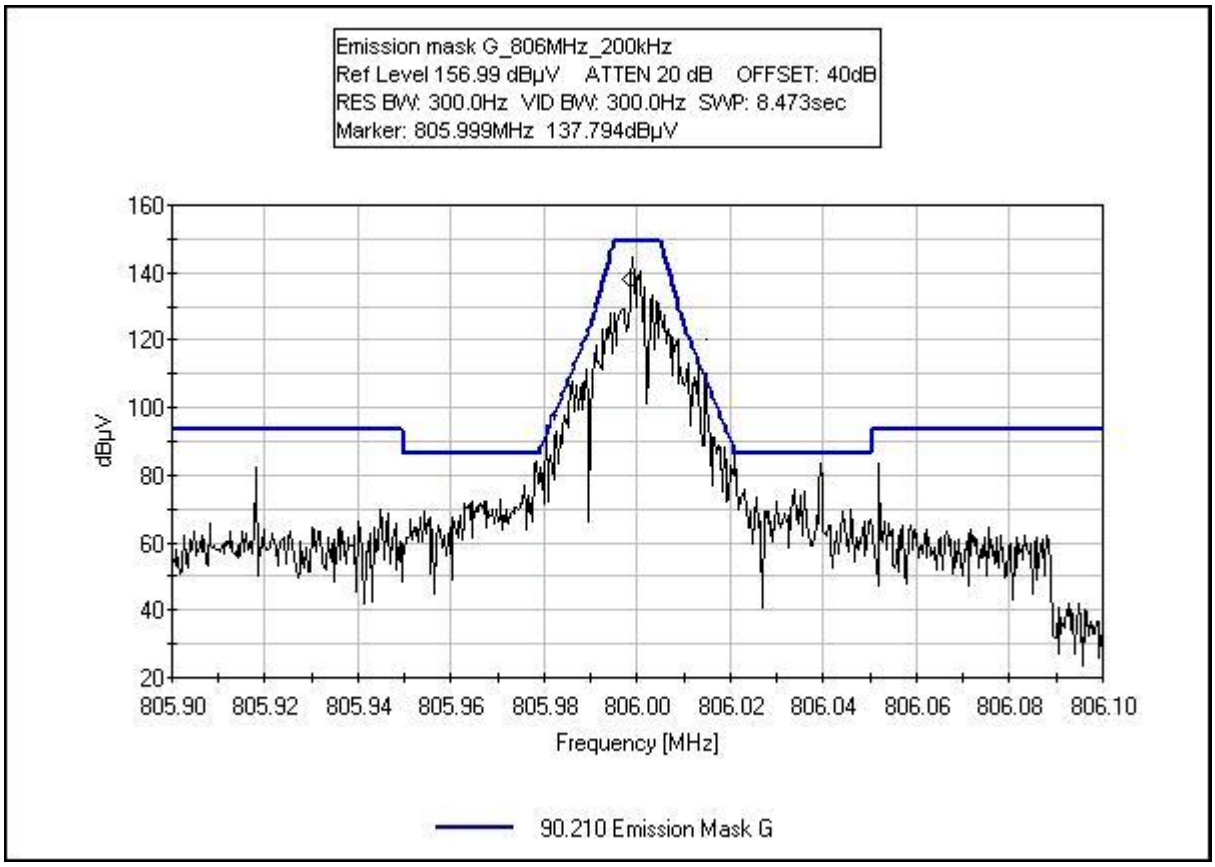
PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

FCC 90.210(g) EMISSIONS MASK - 806 MHz - 100 kHz

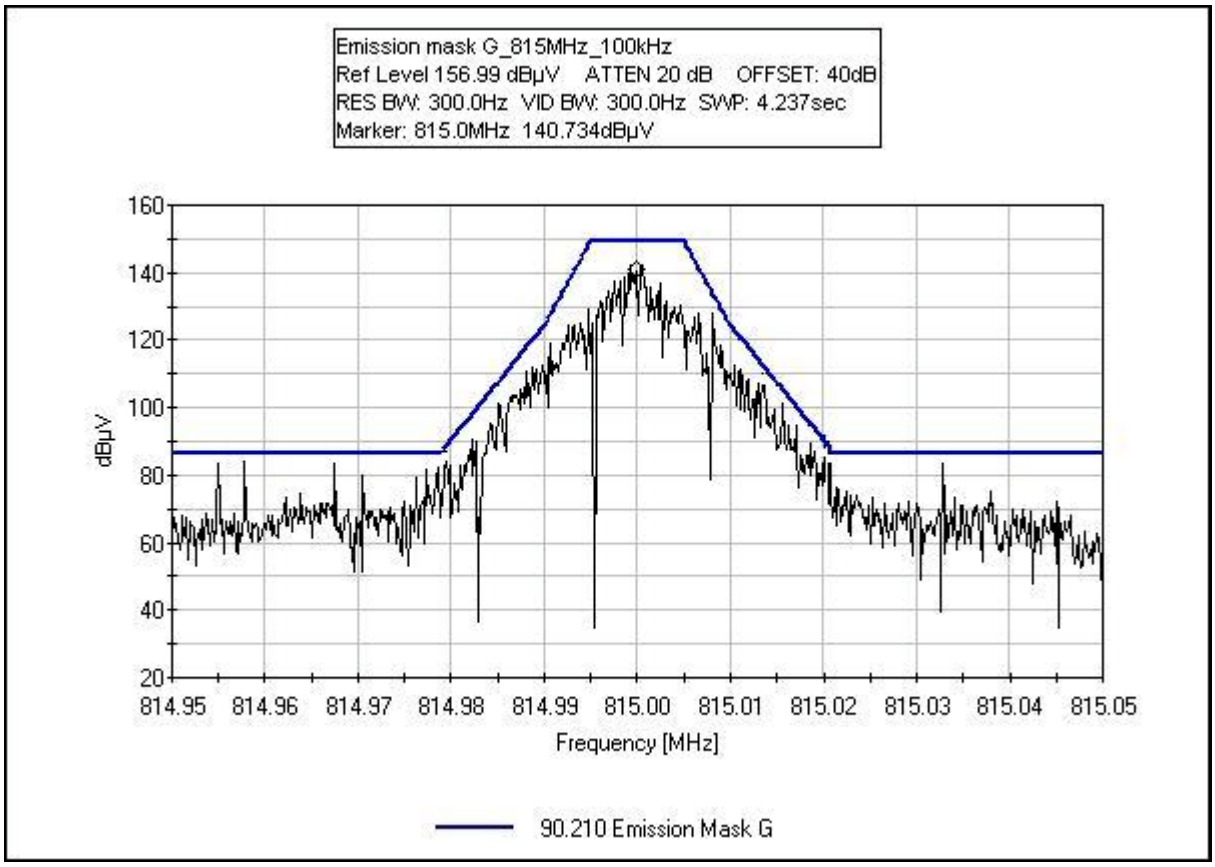
Test Conditions: The EUT is located on the wooden table top. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connect to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. OBW and Emission mask evaluated at the antenna port. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz.



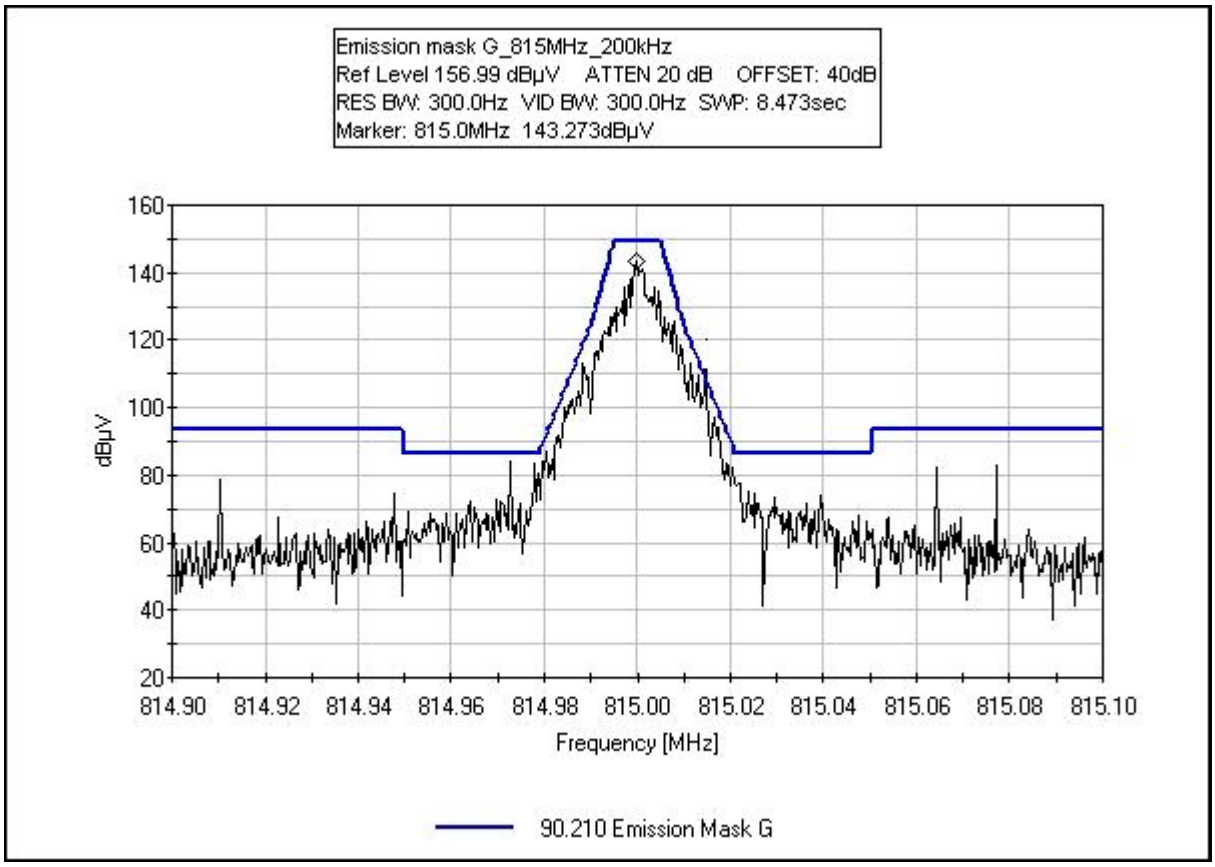
FCC 90.210G EMISSIONS MASK - 806 MHz - 200 kHz



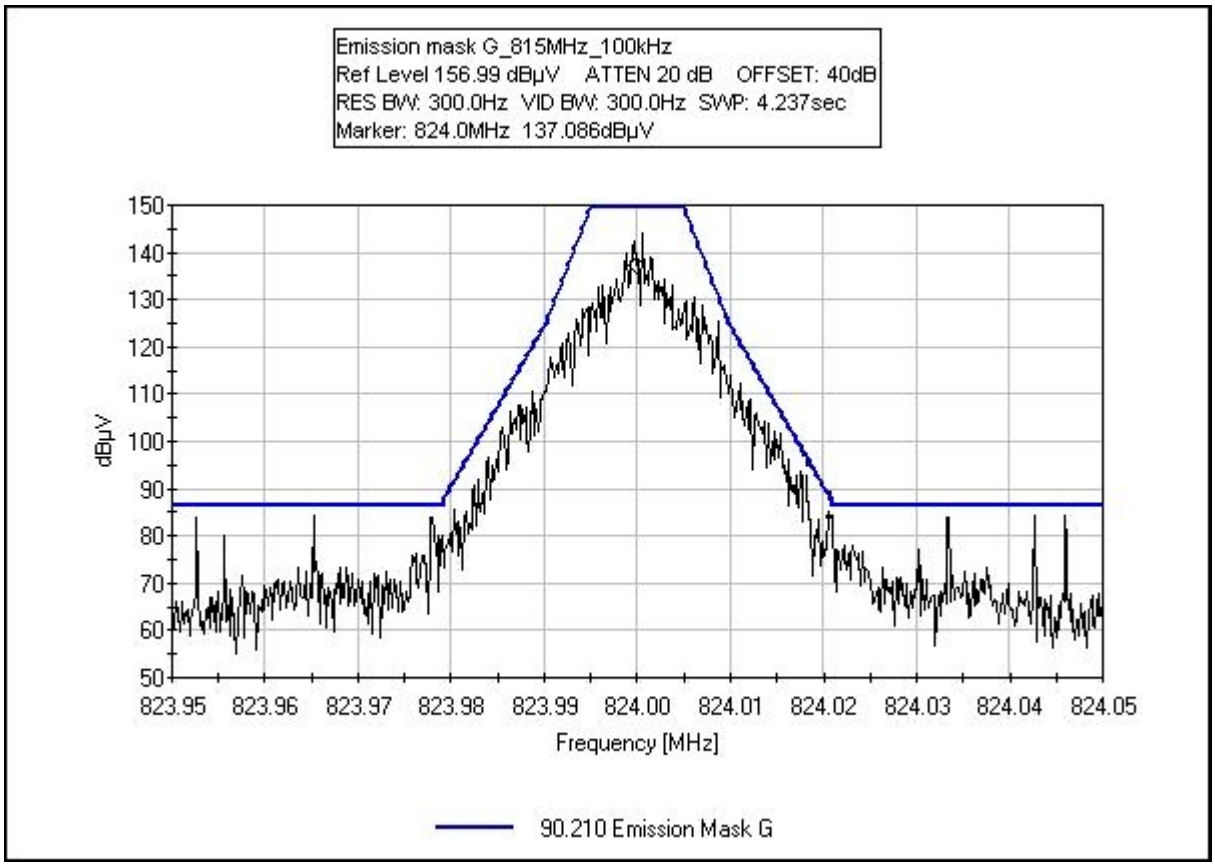
FCC 90.210G EMISSIONS MASK - 815 MHz - 100 kHz



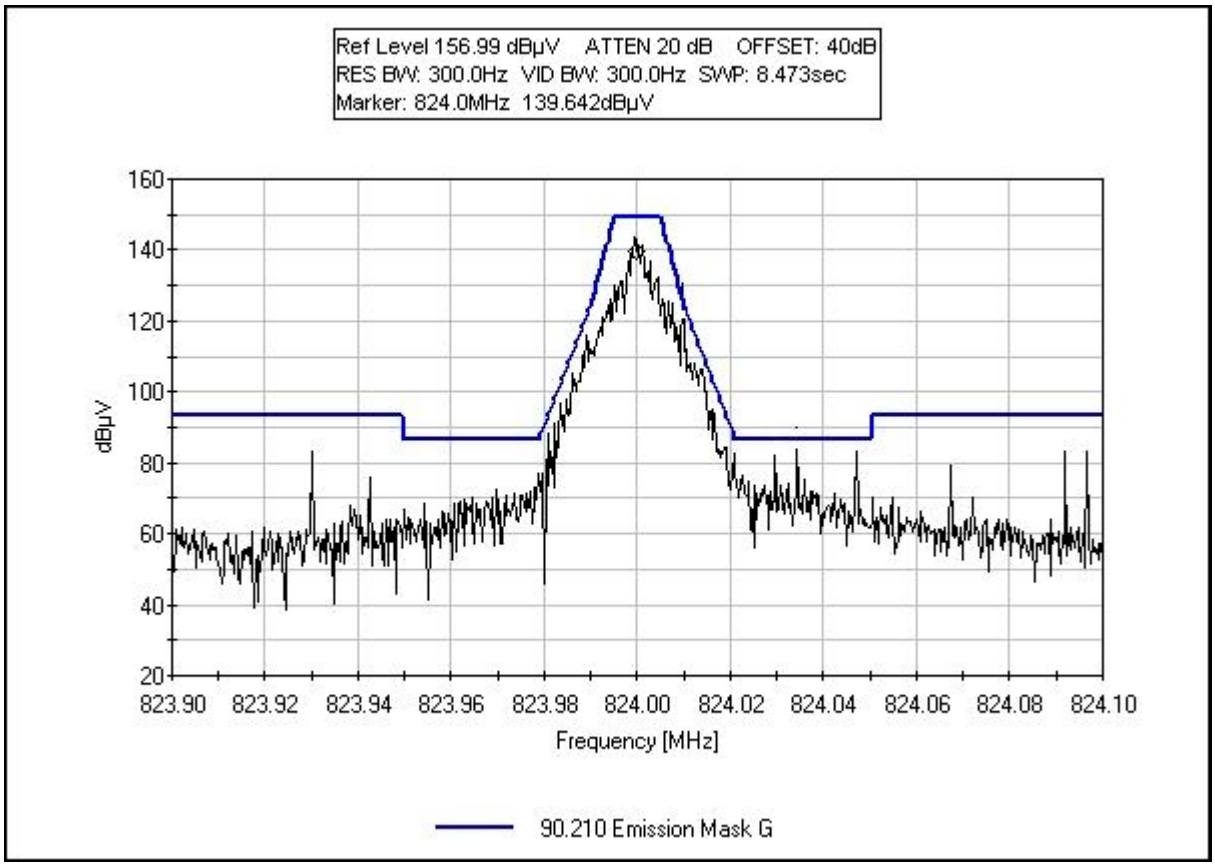
FCC 90.210G EMISSIONS MASK - 815 MHz - 200 kHz



FCC 90.210G EMISSIONS MASK - 824 MHz - 100 kHz



FCC 90.210G EMISSIONS MASK - 824 MHz - 200 kHz



Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

FCC 2.1033(c)(14)/2.1051/90.210 - SPURIOUS EMISSIONS AT ANTENNA TERMINAL

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 90.210 Conducted Spurious Emission**
Work Order #: **85420** Date: 7/26/2006
Test Type: **Conducted Emissions** Time: 14:05:26
Equipment: **Mobile Data Radio** Sequence#: 4
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25 13.8 Vdc
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. Conducted spurious emission evaluated at the antenna port. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz. Frequency range of measurement = 9 kHz – 9 GHz. Frequency 9 kHz – 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz – 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=1-40 GHz Cable_020807	T2=Filter 1GHz HP AN02749

Measurement Data: Reading listed by margin. Test Lead: Antenna Terminal

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	5641.970M	83.3	+1.5	+0.2			+0.0	85.0	94.0	-9.0	Anten
2	1610.500M	83.4	+0.8	+0.5			+0.0	84.7	94.0	-9.3	Anten
3	8059.700M	75.6	+1.9	+0.2			+0.0	77.7	94.0	-16.3	Anten
4	7198.700M	74.9	+1.8	+0.1			+0.0	76.8	94.0	-17.2	Anten
5	4835.500M	74.3	+1.4	+0.1			+0.0	75.8	94.0	-18.2	Anten

6	2418.000M	73.6	+1.0	+0.4	+0.0	75.0	94.0	-19.0	Anten
7	4029.700M	70.0	+1.3	+0.4	+0.0	71.7	94.0	-22.3	Anten
8	7254.000M	65.8	+1.8	+0.2	+0.0	67.8	94.0	-26.2	Anten
9	8005.500M	63.5	+1.9	+0.2	+0.0	65.6	94.0	-28.4	Anten

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 90.210 Conducted Spurious Emission**
Work Order #: **85420** Date: 7/26/2006
Test Type: **Conducted Emissions** Time: 14:14:25
Equipment: **Mobile Data Radio** Sequence#: 5
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25 13.8 Vdc
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. Conducted spurious emission evaluated at the antenna port. TX =815 MHz, RX = 860 MHz, Inj = 815 MHz. Frequency range of measurement = 9 kHz – 9 GHz. Frequency 9 kHz – 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz – 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=1-40 GHz Cable_020807	T2=Filter 1GHz HP AN02749

Measurement Data: Reading listed by margin. Test Lead: Antenna Terminal

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	1630.000M	87.2	+0.8	+0.5			+0.0	88.5	94.0	-5.5	Anten
2	5705.000M	85.9	+1.6	+0.3			+0.0	87.8	94.0	-6.2	Anten
3	7335.000M	75.3	+1.8	+0.2			+0.0	77.3	94.0	-16.7	Anten
4	7187.500M	73.1	+1.8	+0.1			+0.0	75.0	94.0	-19.0	Anten
5	8150.000M	72.3	+1.9	+0.2			+0.0	74.4	94.0	-19.6	Anten

6	2445.000M	72.1	+1.0	+0.4	+0.0	73.5	94.0	-20.5	Anten
7	4890.000M	67.4	+1.5	+0.1	+0.0	69.0	94.0	-25.0	Anten
8	4075.000M	64.9	+1.3	+0.4	+0.0	66.6	94.0	-27.4	Anten
9	8002.500M	63.0	+1.9	+0.2	+0.0	65.1	94.0	-28.9	Anten

Test Location:	CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112		
Customer:	**IP MobileNet**		
Specification:	**FCC 90.210 Conducted Spurious Emission**		
Work Order #:	**85420**	Date:	7/26/2006
Test Type:	**Conducted Emissions**	Time:	14:21:23
Equipment:	**Mobile Data Radio**	Sequence#:	6
Manufacturer:	IPMobileNet	Tested By:	E. Wong
Model:	M64800-25		13.8 Vdc
S/N:	NA		

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

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Transducer Legend:

T1=1-40 GHz Cable_020807	T2=Filter 1GHz HP AN02749

Measurement Data: Reading listed by margin. Test Lead: Antenna Terminal

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	5768.050M	88.2	+1.6	+0.3			+0.0	90.1	94.0	-3.9	Anten
2	1648.333M	88.2	+0.8	+0.5			+0.0	89.5	94.0	-4.5	Anten
3	8240.100M	80.8	+1.9	+0.2			+0.0	82.9	94.0	-11.1	Anten
4	7184.420M	73.2	+1.8	+0.1			+0.0	75.1	94.0	-18.9	Anten

5	7415.900M	72.1	+1.8	+0.2		+0.0	74.1	94.0	-19.9	Anten
6	2472.500M	65.3	+1.0	+0.4		+0.0	66.7	94.0	-27.3	Anten
7	4120.000M	63.5	+1.3	+0.4		+0.0	65.2	94.0	-28.8	Anten

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

FCC 2.1033(c)(14)/2.1053/ 90.210- FIELD STRENGTH OF SPURIOUS RADIATION

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer:	**IP MobileNet**		
Specification:	**FCC 90.210 Radiated Spurious Emission**		
Work Order #:	**85420**	Date:	7/25/2006
Test Type:	**Maximized Emissions**	Time:	13:53:38
Equipment:	**Mobile Data Radio**	Sequence#:	3
Manufacturer:	IPMobileNet	Tested By:	E. Wong
Model:	M64800-25		
S/N:	NA		

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz, TX = 815 MHz, RX = 860 MHz, Inj = 815 MHz, TX = 824 MHz, RX = 869 MHz Inj = 824 MHz. Frequency range of measurement = 9 kHz – 9 GHz. Frequency 9 kHz – 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz – 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz – 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz – 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Operating Frequency: 806 MHz - 824 MHz
Channels: Low, Mid and High
Highest Measured Output Power: 43.77 ERP(dBm)= 23.8 ERP(Watts)
Distance: 3 meters
Limit: 43+10Log(P) 56.77 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
2,418.08	-13.5	Vert	57.27
2,417.83	-15.8	Horiz	59.57
7,208.18	-20.2	Horiz	63.97
4,835.83	-24.8	Vert	68.57
4,030.00	-26.2	Vert	69.97
3,224.17	-27.4	Vert	71.17
5,641.97	-27.6	Horiz	71.37
7,208.50	-28.2	Vert	71.97
3,224.27	-29.4	Horiz	73.17
4,835.83	-30.2	Horiz	73.97
5,641.67	-32.6	Vert	76.37
7,254.03	-33	Vert	76.77
7,254.17	-33.2	Horiz	76.97
8,060.13	-34.5	Horiz	78.27
8,060.17	-35.3	Vert	79.07
1,611.67	-36.5	Horiz	80.27
1,612.07	-37.1	Vert	80.87
4,030.00	-38.3	Horiz	82.07
6,403.33	-44.9	Horiz	88.67
6,448.50	-46	Vert	89.77
6,448.25	-50.4	Horiz	94.17
2,445.07	-14.4	Vert	58.17
2,445.25	-17.4	Horiz	61.17
7,198.25	-21.7	Horiz	65.47
4,889.92	-26.9	Horiz	70.67
5,704.92	-27.7	Horiz	71.47
4,075.00	-27.8	Vert	71.57
7,198.58	-29.4	Vert	73.17
7,335.03	-30	Vert	73.77
4,890.00	-30.6	Vert	74.37

7,334.95	-30.7	Horiz	74.47
1,629.93	-31.2	Horiz	74.97
1,630.00	-31.4	Vert	75.17
3,260.00	-31.9	Vert	75.67
8,149.92	-32.7	Horiz	76.47
3,260.00	-33.4	Horiz	77.17
5,705.00	-34	Vert	77.77
8,150.00	-36.3	Vert	80.07
4,074.92	-36.8	Horiz	80.57
6,520.00	-42.5	Vert	86.27
6,519.92	-43.9	Horiz	87.67
2,472.05	-16.4	Vert	60.17
7,196.33	-18.1	Horiz	61.87
2,471.95	-18.1	Horiz	61.87
7,415.98	-22.3	Horiz	66.07
7,416.00	-25	Vert	68.77
4,944.17	-27.4	Vert	71.17
7,197.33	-28.7	Vert	72.47
5,767.93	-28.8	Vert	72.57
4,944.17	-29.9	Horiz	73.67
5,768.00	-30.6	Horiz	74.37
1,647.95	-31.1	Vert	74.87
4,120.00	-31.9	Vert	75.67
8,240.00	-32.7	Horiz	76.47
8,239.90	-33.5	Vert	77.27
1,648.03	-34.9	Horiz	78.67
3,296.02	-35.6	Horiz	79.37
4,120.00	-36.5	Horiz	80.27
6,592.10	-41.2	Vert	84.97
6,592.50	-43.5	Horiz	87.27

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
9kHz-30MHz						
Loop Antenna	00314	EMCO	6502	2014	061406	061408
30 -1oooMHz						
Bilog Antenna	01995	Chase	CBL6111C	2451	020206	020208
Pre-amp	00309	HP	8447D	1937A02548	060106	060108
Antenna cable	P05198	Belden	8268 (RG-214)	Cable#15	010305	010307
Pre-amp to SA cable	P05050	Pasternack	RG223/U	Cable#10	051605	051607
1-9GHz						
Horn Antenna	00849	EMCO	3115	6246	062906	062908
Microwave Pre-amp	00786	HP	83017A	3123A00281	071906	071908
Heliax Antenna cable	P04384	Andrew	LDF1-50	Cable#20	091604	091606
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View

FCC 2.1033(c)(14)/2.1055/90.213(a)- FREQUENCY STABILITY

Test Conditions: The EUT is placed in the temperature chamber. DC power is supplied from a support power supply, ethernet port is connected to a remote support laptop. The frequency stability of the RF signal is evaluated with a spectrum analyzer by direct connection to the RF output port.

Customer: IP MobileNet
WO#: 85420
Date: 1-Aug-06
Test Engineer: E. Wong

Device Model #: M64800-25
Operating Voltage: 13.8 **VDC**
Frequency Limit: 1.5 **PPM/%**

Temperature Variations

		Channel 1 (MHz)	Dev. (MHz)	Channel 2 (MHz)	Dev. (MHz)	Channel 3 (MHz)	Dev. (MHz)
Channel Frequency:		805.999780		814.999760		823.999760	
Temp (C)	Voltage						
-30	13.8	805.999600	0.00018	815.000000	0.00024	823.998930	0.00083
-20	13.8	805.999200	0.00058	814.999130	0.00063	823.999300	0.00046
-10	13.8	805.998800	0.00098	814.998600	0.00116	823.998600	0.00116
0	13.8	805.999170	0.00061	814.998730	0.00103	823.998670	0.00109
10	13.8	805.998670	0.00111	814.998600	0.00116	823.998670	0.00109
20	13.8	805.999780	0.00000	814.999760	0.00000	823.999760	0.00000
30	13.8	805.998730	0.00105	814.998630	0.00113	823.998570	0.00119
40	13.8	805.998730	0.00105	814.998570	0.00119	823.998830	0.00093
50	13.8	805.998930	0.00085	814.998600	0.00116	823.998730	0.00103

Voltage Variations (±15%)

20	11.7	805.999767	0.00001	814.999757	0.00000	823.999757	0.00000
20	13.8	805.999780	0.00000	814.999760	0.00000	823.999760	0.00000
20	15.9	805.999753	0.00003	814.999750	0.00001	823.999743	0.00002

Max Deviation (MHz)			**0.00111**		**0.00119**		**0.00119**
Max Deviation (PPM)			**1.37717**		**1.46012**		**1.44418**
			PASS		**PASS**		**PASS**

Max Deviation (MHz)			**0.00111**		**0.00119**		**0.00119**
Max Deviation (%)			**0.00014**		**0.00015**		**0.00014**
			PASS		**PASS**		**PASS**

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Temperature Chamber	01878	Thermaltron	S1.2	NA	060106	060108

PHOTOGRAPH SHOWING TEMPERATURE TESTING

FCC 15.209 – RADIATED EMISSIONS

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 15.209**
Work Order #: **85420** Date: 7/25/2006
Test Type: **Maximized Emissions** Time: 15:19:25
Equipment: **Mobile Data Radio** Sequence#: 1
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz. Frequency range of measurement = 9 kHz – 9 GHz. Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=Preamp 8447D 060108	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Pre amp 1- 26GHz 071908	

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	300.003M	51.5	-27.6	+13.2	+0.3	+3.2	+0.0	40.6	46.0	-5.4	Horiz
2	144.029M	51.1	-27.7	+11.2	+0.2	+2.2	+0.0	37.0	43.5	-6.5	Vert
3	142.042M	49.4	-27.7	+11.2	+0.2	+2.1	+0.0	35.2	43.5	-8.3	Vert
4	126.030M	48.9	-27.6	+11.5	+0.1	+2.0	+0.0	34.9	43.5	-8.6	Vert

5	374.980M	45.9	-27.7	+15.2	+0.3	+3.7	+0.0	37.4	46.0	-8.6	Horiz
6	80.024M	49.5	-27.8	+7.6	+0.1	+1.6	+0.0	31.0	40.0	-9.0	Vert
7	120.015M	48.3	-27.6	+11.3	+0.1	+2.0	+0.0	34.1	43.5	-9.4	Vert
8	150.040M	48.1	-27.7	+11.0	+0.2	+2.2	+0.0	33.8	43.5	-9.7	Vert
9	130.030M	47.8	-27.6	+11.4	+0.1	+2.0	+0.0	33.7	43.5	-9.8	Vert
10	300.002M	47.1	-27.6	+13.2	+0.3	+3.2	+0.0	36.2	46.0	-9.8	Vert
11	145.991M	47.7	-27.7	+11.1	+0.2	+2.2	+0.0	33.5	43.5	-10.0	Vert
12	135.094M	47.4	-27.6	+11.4	+0.1	+2.1	+0.0	33.4	43.5	-10.1	Vert
13	145.376M	47.5	-27.7	+11.1	+0.2	+2.2	+0.0	33.3	43.5	-10.2	Vert
14	138.042M	46.8	-27.7	+11.3	+0.2	+2.1	+0.0	32.7	43.5	-10.8	Vert
15	125.002M	46.7	-27.6	+11.5	+0.1	+2.0	+0.0	32.7	43.5	-10.8	Vert
16	148.020M	46.8	-27.7	+11.1	+0.2	+2.2	+0.0	32.6	43.5	-10.9	Vert
17	136.010M	46.5	-27.6	+11.4	+0.1	+2.1	+0.0	32.5	43.5	-11.0	Vert
18	140.057M	45.4	-27.7	+11.3	+0.2	+2.1	+0.0	31.3	43.5	-12.2	Vert
19	480.000M	38.7	-27.6	+17.7	+0.4	+4.2	+0.0	33.4	46.0	-12.6	Horiz
20	816.030M	31.7	-27.1	+22.4	+0.6	+5.7	+0.0	33.3	46.0	-12.7	Horiz
21	400.000M	41.0	-27.8	+15.8	+0.3	+3.7	+0.0	33.0	46.0	-13.0	Horiz
22	593.250M	35.2	-27.4	+19.8	+0.5	+4.8	+0.0	32.9	46.0	-13.1	Horiz
23	132.809M	44.0	-27.6	+11.4	+0.1	+2.1	+0.0	30.0	43.5	-13.5	Vert
24	530.950M	35.9	-27.5	+19.1	+0.5	+4.4	+0.0	32.4	46.0	-13.6	Horiz
25	485.580M	37.2	-27.6	+17.8	+0.4	+4.2	+0.0	32.0	46.0	-14.0	Vert
26	349.980M	41.1	-27.6	+14.5	+0.3	+3.6	+0.0	31.9	46.0	-14.1	Horiz
27	144.407M	43.3	-27.7	+11.2	+0.2	+2.2	+0.0	29.2	43.5	-14.3	Vert
28	398.030M	39.7	-27.8	+15.8	+0.3	+3.7	+0.0	31.7	46.0	-14.3	Vert

29	56.120M	44.7	-27.7	+7.3	+0.1	+1.3	+0.0	25.7	40.0	-14.3	Vert
30	176.004M	44.6	-27.7	+9.3	+0.2	+2.5	+0.0	28.9	43.5	-14.6	Vert
31	539.020M	34.1	-27.4	+19.4	+0.5	+4.5	+0.0	31.1	46.0	-14.9	Horiz
32	168.003M	43.8	-27.7	+9.8	+0.2	+2.4	+0.0	28.5	43.5	-15.0	Vert
33	288.017M	42.0	-27.6	+13.0	+0.3	+3.2	+0.0	30.9	46.0	-15.1	Vert
34	70.043M	45.0	-27.7	+6.0	+0.1	+1.5	+0.0	24.9	40.0	-15.1	Vert
35	122.902M	42.4	-27.6	+11.4	+0.1	+2.0	+0.0	28.3	43.5	-15.2	Vert
36	224.986M	44.7	-27.6	+10.8	+0.2	+2.7	+0.0	30.8	46.0	-15.2	Vert
37	120.866M	42.3	-27.6	+11.3	+0.1	+2.0	+0.0	28.1	43.5	-15.4	Vert
38	140.824M	42.0	-27.7	+11.3	+0.2	+2.1	+0.0	27.9	43.5	-15.6	Vert
39	126.993M	41.8	-27.6	+11.5	+0.1	+2.0	+0.0	27.8	43.5	-15.7	Vert
40	160.027M	42.8	-27.7	+10.2	+0.2	+2.3	+0.0	27.8	43.5	-15.7	Vert
41	129.029M	41.7	-27.6	+11.4	+0.1	+2.0	+0.0	27.6	43.5	-15.9	Vert
42	57.772M	43.6	-27.7	+6.8	+0.1	+1.3	+0.0	24.1	40.0	-15.9	Vert
43	146.037M	41.3	-27.7	+11.1	+0.2	+2.2	+0.0	27.1	43.5	-16.4	Vert
44	381.970M	37.9	-27.7	+15.4	+0.3	+3.7	+0.0	29.6	46.0	-16.4	Horiz
45	440.320M	36.1	-27.6	+16.9	+0.3	+3.9	+0.0	29.6	46.0	-16.4	Horiz
46	546.170M	32.4	-27.4	+19.6	+0.5	+4.5	+0.0	29.6	46.0	-16.4	Vert
47	192.040M	42.8	-27.6	+8.9	+0.2	+2.6	+0.0	26.9	43.5	-16.6	Vert
48	150.040M	41.0	-27.7	+11.0	+0.2	+2.2	+0.0	26.7	43.5	-16.8	Vert
49	147.045M	40.6	-27.7	+11.1	+0.2	+2.2	+0.0	26.4	43.5	-17.1	Vert
50	178.013M	42.1	-27.7	+9.2	+0.2	+2.5	+0.0	26.3	43.5	-17.2	Vert
51	271.123M	40.1	-27.7	+12.8	+0.3	+3.1	+0.0	28.6	46.0	-17.4	Vert
52	351.480M	37.3	-27.6	+14.5	+0.3	+3.6	+0.0	28.1	46.0	-17.9	Vert

53	142.475M	39.8	-27.7	+11.2	+0.2	+2.1	+0.0	25.6	43.5	-17.9	Vert
54	329.350M	37.7	-27.6	+14.0	+0.3	+3.4	+0.0	27.8	46.0	-18.2	Vert
55	158.361M	39.3	-27.7	+10.3	+0.2	+2.3	+0.0	24.4	43.5	-19.1	Vert
56	208.008M	39.4	-27.6	+9.5	+0.2	+2.6	+0.0	24.1	43.5	-19.4	Vert
57	272.014M	38.1	-27.7	+12.8	+0.3	+3.1	+0.0	26.6	46.0	-19.4	Vert
58	196.065M	39.7	-27.6	+8.8	+0.2	+2.6	+0.0	23.7	43.5	-19.8	Vert
59	375.670M	34.3	-27.7	+15.2	+0.3	+3.7	+0.0	25.8	46.0	-20.2	Vert
60	992.080M	29.2	-27.2	+24.6	+0.6	+6.4	+0.0	33.6	54.0	-20.4	Horiz
61	279.077M	37.0	-27.7	+12.9	+0.3	+3.1	+0.0	25.6	46.0	-20.4	Vert
62	283.068M	36.6	-27.7	+13.0	+0.3	+3.1	+0.0	25.3	46.0	-20.7	Vert
63	359.530M	34.2	-27.6	+14.8	+0.3	+3.6	+0.0	25.3	46.0	-20.7	Horiz
64	274.080M	36.2	-27.7	+12.9	+0.3	+3.1	+0.0	24.8	46.0	-21.2	Vert
65	975.370M	28.0	-27.2	+24.6	+0.6	+6.3	+0.0	32.3	54.0	-21.7	Horiz

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 15.209**
Work Order #: **85420** Date: 7/25/2006
Test Type: **Maximized Emissions** Time: 14:34:37
Equipment: **Mobile Data Radio** Sequence#: 2
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator.. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX = 815 MHz, RX = 860 MHz, Inj = 815 MHz. Frequency range of measurement = 9 kHz - 9 GHz. Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=Preamp 8447D 060108	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Pre amp 1- 26GHz 071908	

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	809.800M QP	38.9	-27.1	+22.2	+0.6	+5.6	+0.0	40.2	46.0	-5.8	Horiz
^	809.800M	43.9	-27.1	+22.2	+0.6	+5.6	+0.0	45.2	46.0	-0.8	Horiz
3	300.017M	50.8	-27.6	+13.2	+0.3	+3.2	+0.0	39.9	46.0	-6.1	Horiz
4	375.000M	45.8	-27.7	+15.2	+0.3	+3.7	+0.0	37.3	46.0	-8.7	Horiz
5	300.001M	48.0	-27.6	+13.2	+0.3	+3.2	+0.0	37.1	46.0	-8.9	Vert

6	250.020M	48.3	-27.7	+12.5	+0.2	+3.0	+0.0	36.3	46.0	-9.7	Vert
7	613.100M	38.1	-27.3	+20.0	+0.5	+4.9	+0.0	36.2	46.0	-9.8	Vert
8	628.920M	36.6	-27.2	+20.2	+0.5	+4.9	+0.0	35.0	46.0	-11.0	Vert
9	608.570M	36.1	-27.3	+19.9	+0.5	+4.8	+0.0	34.0	46.0	-12.0	Vert
10	539.020M	36.6	-27.4	+19.4	+0.5	+4.5	+0.0	33.6	46.0	-12.4	Vert
11	432.000M	39.9	-27.7	+16.6	+0.3	+3.9	+0.0	33.0	46.0	-13.0	Vert
12	629.980M	34.5	-27.2	+20.2	+0.5	+4.9	+0.0	32.9	46.0	-13.1	Horiz
13	610.077M	34.9	-27.3	+19.9	+0.5	+4.8	+0.0	32.8	46.0	-13.2	Vert
14	609.793M	34.9	-27.3	+19.9	+0.5	+4.8	+0.0	32.8	46.0	-13.2	Vert
15	480.050M	37.8	-27.6	+17.7	+0.4	+4.2	+0.0	32.5	46.0	-13.5	Horiz
16	608.370M	34.5	-27.3	+19.9	+0.5	+4.8	+0.0	32.4	46.0	-13.6	Vert
17	362.480M	41.2	-27.7	+14.8	+0.3	+3.6	+0.0	32.2	46.0	-13.8	Horiz
18	432.000M	39.1	-27.7	+16.6	+0.3	+3.9	+0.0	32.2	46.0	-13.8	Horiz
19	612.280M	34.0	-27.3	+20.0	+0.5	+4.9	+0.0	32.1	46.0	-13.9	Vert
20	375.030M	40.4	-27.7	+15.2	+0.3	+3.7	+0.0	31.9	46.0	-14.1	Vert
21	350.000M	40.9	-27.6	+14.5	+0.3	+3.6	+0.0	31.7	46.0	-14.3	Horiz
22	336.000M	40.9	-27.6	+14.2	+0.3	+3.5	+0.0	31.3	46.0	-14.7	Vert
23	628.616M	32.7	-27.2	+20.1	+0.5	+4.9	+0.0	31.0	46.0	-15.0	Vert
24	144.020M	41.9	-27.7	+11.2	+0.2	+2.2	+0.0	27.8	43.5	-15.7	Horiz
25	540.200M	33.3	-27.4	+19.4	+0.5	+4.5	+0.0	30.3	46.0	-15.7	Horiz
26	325.020M	40.1	-27.6	+13.9	+0.3	+3.4	+0.0	30.1	46.0	-15.9	Vert
27	400.020M	38.0	-27.8	+15.8	+0.3	+3.7	+0.0	30.0	46.0	-16.0	Vert
28	288.010M	40.6	-27.6	+13.0	+0.3	+3.2	+0.0	29.5	46.0	-16.5	Horiz
29	128.050M	40.9	-27.6	+11.5	+0.1	+2.0	+0.0	26.9	43.5	-16.6	Vert

30	325.070M	38.9	-27.6	+13.9	+0.3	+3.4	+0.0	28.9	46.0	-17.1	Horiz
31	409.520M	36.1	-27.8	+16.1	+0.3	+3.8	+0.0	28.5	46.0	-17.5	Horiz
32	487.680M	33.2	-27.6	+17.9	+0.4	+4.2	+0.0	28.1	46.0	-17.9	Horiz
33	810.168M	24.9	-27.1	+22.2	+0.6	+5.6	+0.0	26.2	46.0	-19.8	Vert
34	273.120M	37.6	-27.7	+12.8	+0.3	+3.1	+0.0	26.1	46.0	-19.9	Vert
35	404.050M	33.5	-27.8	+15.9	+0.3	+3.7	+0.0	25.6	46.0	-20.4	Horiz
36	389.320M	33.7	-27.8	+15.5	+0.3	+3.7	+0.0	25.4	46.0	-20.6	Horiz
37	344.030M	34.2	-27.6	+14.4	+0.3	+3.6	+0.0	24.9	46.0	-21.1	Horiz

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 15.209**
Work Order #: **85420** Date: 7/25/2006
Test Type: **Maximized Emissions** Time: 13:53:38
Equipment: **Mobile Data Radio** Sequence#: 3
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX = 824 MHz, RX = 869 MHz, Inj = 824 MHz. Frequency range of measurement = 9 kHz - 9 GHz. Frequency 9 kHz - 150 kHz RBW=200 Hz, VBW=200 Hz; 150 kHz - 30 MHz RBW=9 kHz, VBW=9 kHz; 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=Preamp 8447D 060108	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Pre amp 1- 26GHz 071908	

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	300.000M	51.9	-27.6	+13.2	+0.3	+3.2	+0.0	41.0	46.0	-5.0	Horiz
2	40.680M	47.3	-27.8	+13.8	+0.1	+1.1	+0.0	34.5	40.0	-5.5	Vert
3	375.000M	48.0	-27.7	+15.2	+0.3	+3.7	+0.0	39.5	46.0	-6.5	Horiz
4	335.970M	46.0	-27.6	+14.2	+0.3	+3.5	+0.0	36.4	46.0	-9.6	Horiz
5	612.980M	38.1	-27.3	+20.0	+0.5	+4.9	+0.0	36.2	46.0	-9.8	Horiz

6	299.993M	45.0	-27.6	+13.2	+0.3	+3.2	+0.0	34.1	46.0	-11.9	Vert
7	321.980M	43.9	-27.6	+13.8	+0.3	+3.4	+0.0	33.8	46.0	-12.2	Horiz
8	611.770M	35.8	-27.3	+19.9	+0.5	+4.8	+0.0	33.7	46.0	-12.3	Vert
9	533.070M	37.0	-27.5	+19.2	+0.5	+4.4	+0.0	33.6	46.0	-12.4	Vert
10	368.000M	41.6	-27.7	+15.0	+0.3	+3.6	+0.0	32.8	46.0	-13.2	Horiz
11	403.270M	40.6	-27.8	+15.9	+0.3	+3.7	+0.0	32.7	46.0	-13.3	Horiz
12	531.170M	36.1	-27.5	+19.1	+0.5	+4.4	+0.0	32.6	46.0	-13.4	Horiz
13	288.000M	43.5	-27.6	+13.0	+0.3	+3.2	+0.0	32.4	46.0	-13.6	Horiz
14	455.170M	37.9	-27.6	+17.2	+0.3	+4.0	+0.0	31.8	46.0	-14.2	Horiz
15	547.780M	34.1	-27.4	+19.6	+0.5	+4.5	+0.0	31.3	46.0	-14.7	Horiz
16	441.700M	37.7	-27.6	+16.9	+0.3	+4.0	+0.0	31.3	46.0	-14.7	Vert
17	660.830M	31.7	-27.1	+20.4	+0.5	+5.0	+0.0	30.5	46.0	-15.5	Horiz
18	351.180M	39.3	-27.6	+14.5	+0.3	+3.6	+0.0	30.1	46.0	-15.9	Horiz
19	474.030M	35.4	-27.6	+17.6	+0.3	+4.1	+0.0	29.8	46.0	-16.2	Horiz
20	398.450M	37.5	-27.8	+15.8	+0.3	+3.7	+0.0	29.5	46.0	-16.5	Vert
21	478.150M	34.7	-27.6	+17.7	+0.4	+4.2	+0.0	29.4	46.0	-16.6	Vert
22	424.050M	36.6	-27.7	+16.4	+0.3	+3.8	+0.0	29.4	46.0	-16.6	Horiz
23	176.970M	42.6	-27.7	+9.2	+0.2	+2.5	+0.0	26.8	43.5	-16.7	Horiz
24	387.200M	37.5	-27.8	+15.5	+0.3	+3.7	+0.0	29.2	46.0	-16.8	Horiz
25	305.070M	39.9	-27.6	+13.3	+0.3	+3.2	+0.0	29.1	46.0	-16.9	Horiz
26	480.720M	34.1	-27.6	+17.7	+0.4	+4.2	+0.0	28.8	46.0	-17.2	Horiz
27	485.330M	33.9	-27.6	+17.8	+0.4	+4.2	+0.0	28.7	46.0	-17.3	Horiz
28	354.680M	36.8	-27.6	+14.6	+0.3	+3.6	+0.0	27.7	46.0	-18.3	Vert
29	435.430M	34.4	-27.7	+16.7	+0.3	+3.9	+0.0	27.6	46.0	-18.4	Horiz

30	414.120M	35.0	-27.7	+16.2	+0.3	+3.8	+0.0	27.6	46.0	-18.4	Horiz
31	504.970M	32.0	-27.6	+18.3	+0.4	+4.3	+0.0	27.4	46.0	-18.6	Vert
32	459.250M	32.9	-27.6	+17.3	+0.3	+4.1	+0.0	27.0	46.0	-19.0	Vert
33	232.030M	40.0	-27.6	+11.3	+0.2	+2.8	+0.0	26.7	46.0	-19.3	Horiz
34	376.620M	35.1	-27.7	+15.2	+0.3	+3.7	+0.0	26.6	46.0	-19.4	Vert
35	515.530M	30.5	-27.5	+18.6	+0.4	+4.4	+0.0	26.4	46.0	-19.6	Horiz
36	226.750M	36.6	-27.6	+10.9	+0.2	+2.7	+0.0	22.8	46.0	-23.2	Horiz
37	254.030M	33.2	-27.7	+12.6	+0.2	+3.0	+0.0	21.3	46.0	-24.7	Horiz

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
9kHz-30MHz						
Loop Antenna	00314	EMCO	6502	2014	061406	061408
30 -1000MHz						
Bilog Antenna	01995	Chase	CBL6111C	2451	020206	020208
Pre-amp	00309	HP	8447D	1937A02548	060106	060108
Antenna cable	P05198	Belden	8268 (RG-214)	Cable#15	010305	010307
Pre-amp to SA cable	P05050	Pasternack	RG223/U	Cable#10	051605	051607
1-9GHz						
Horn Antenna	00849	EMCO	3115	6246	062906	062908
Microwave Pre-amp	00786	HP	83017A	3123A00281	071906	071908
Heliax Antenna cable	P04384	Andrew	LDF1-50	Cable#20	091604	091606
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View

FCC 15.109 – RADIATED EMISSIONS

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 15.109 Class B**
Work Order #: **85420** Date: 7/25/2006
Test Type: **Maximized Emissions** Time: 15:19:25
Equipment: **Mobile Data Radio** Sequence#: 1
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz. Frequency range of measurement = 30 MHz - 9 GHz. Frequency 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=Preamp 8447D 060108	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Pre amp 1- 26GHz 071908	

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	300.003M	51.5	-27.6	+13.2	+0.3	+3.2	+0.0	40.6	46.0	-5.4	Horiz
2	144.029M	51.1	-27.7	+11.2	+0.2	+2.2	+0.0	37.0	43.5	-6.5	Vert
3	142.042M	49.4	-27.7	+11.2	+0.2	+2.1	+0.0	35.2	43.5	-8.3	Vert
4	374.980M	45.9	-27.7	+15.2	+0.3	+3.7	+0.0	37.4	46.0	-8.6	Horiz

5	126.030M	48.9	-27.6	+11.5	+0.1	+2.0	+0.0	34.9	43.5	-8.6	Vert
6	80.024M	49.5	-27.8	+7.6	+0.1	+1.6	+0.0	31.0	40.0	-9.0	Vert
7	120.015M	48.3	-27.6	+11.3	+0.1	+2.0	+0.0	34.1	43.5	-9.4	Vert
8	150.040M	48.1	-27.7	+11.0	+0.2	+2.2	+0.0	33.8	43.5	-9.7	Vert
9	300.002M	47.1	-27.6	+13.2	+0.3	+3.2	+0.0	36.2	46.0	-9.8	Vert
10	130.030M	47.8	-27.6	+11.4	+0.1	+2.0	+0.0	33.7	43.5	-9.8	Vert
11	145.991M	47.7	-27.7	+11.1	+0.2	+2.2	+0.0	33.5	43.5	-10.0	Vert
12	135.094M	47.4	-27.6	+11.4	+0.1	+2.1	+0.0	33.4	43.5	-10.1	Vert
13	145.376M	47.5	-27.7	+11.1	+0.2	+2.2	+0.0	33.3	43.5	-10.2	Vert
14	138.042M	46.8	-27.7	+11.3	+0.2	+2.1	+0.0	32.7	43.5	-10.8	Vert
15	125.002M	46.7	-27.6	+11.5	+0.1	+2.0	+0.0	32.7	43.5	-10.8	Vert
16	148.020M	46.8	-27.7	+11.1	+0.2	+2.2	+0.0	32.6	43.5	-10.9	Vert
17	136.010M	46.5	-27.6	+11.4	+0.1	+2.1	+0.0	32.5	43.5	-11.0	Vert
18	140.057M	45.4	-27.7	+11.3	+0.2	+2.1	+0.0	31.3	43.5	-12.2	Vert
19	480.000M	38.7	-27.6	+17.7	+0.4	+4.2	+0.0	33.4	46.0	-12.6	Horiz
20	816.030M	31.7	-27.1	+22.4	+0.6	+5.7	+0.0	33.3	46.0	-12.7	Horiz
21	400.000M	41.0	-27.8	+15.8	+0.3	+3.7	+0.0	33.0	46.0	-13.0	Horiz
22	593.250M	35.2	-27.4	+19.8	+0.5	+4.8	+0.0	32.9	46.0	-13.1	Horiz
23	132.809M	44.0	-27.6	+11.4	+0.1	+2.1	+0.0	30.0	43.5	-13.5	Vert
24	530.950M	35.9	-27.5	+19.1	+0.5	+4.4	+0.0	32.4	46.0	-13.6	Horiz
25	485.580M	37.2	-27.6	+17.8	+0.4	+4.2	+0.0	32.0	46.0	-14.0	Vert
26	349.980M	41.1	-27.6	+14.5	+0.3	+3.6	+0.0	31.9	46.0	-14.1	Horiz
27	398.030M	39.7	-27.8	+15.8	+0.3	+3.7	+0.0	31.7	46.0	-14.3	Vert
28	144.407M	43.3	-27.7	+11.2	+0.2	+2.2	+0.0	29.2	43.5	-14.3	Vert

29	56.120M	44.7	-27.7	+7.3	+0.1	+1.3	+0.0	25.7	40.0	-14.3	Vert
30	176.004M	44.6	-27.7	+9.3	+0.2	+2.5	+0.0	28.9	43.5	-14.6	Vert
31	539.020M	34.1	-27.4	+19.4	+0.5	+4.5	+0.0	31.1	46.0	-14.9	Horiz
32	168.003M	43.8	-27.7	+9.8	+0.2	+2.4	+0.0	28.5	43.5	-15.0	Vert
33	288.017M	42.0	-27.6	+13.0	+0.3	+3.2	+0.0	30.9	46.0	-15.1	Vert
34	70.043M	45.0	-27.7	+6.0	+0.1	+1.5	+0.0	24.9	40.0	-15.1	Vert
35	224.986M	44.7	-27.6	+10.8	+0.2	+2.7	+0.0	30.8	46.0	-15.2	Vert
36	122.902M	42.4	-27.6	+11.4	+0.1	+2.0	+0.0	28.3	43.5	-15.2	Vert
37	120.866M	42.3	-27.6	+11.3	+0.1	+2.0	+0.0	28.1	43.5	-15.4	Vert
38	140.824M	42.0	-27.7	+11.3	+0.2	+2.1	+0.0	27.9	43.5	-15.6	Vert
39	160.027M	42.8	-27.7	+10.2	+0.2	+2.3	+0.0	27.8	43.5	-15.7	Vert
40	126.993M	41.8	-27.6	+11.5	+0.1	+2.0	+0.0	27.8	43.5	-15.7	Vert
41	129.029M	41.7	-27.6	+11.4	+0.1	+2.0	+0.0	27.6	43.5	-15.9	Vert
42	57.772M	43.6	-27.7	+6.8	+0.1	+1.3	+0.0	24.1	40.0	-15.9	Vert
43	440.320M	36.1	-27.6	+16.9	+0.3	+3.9	+0.0	29.6	46.0	-16.4	Horiz
44	381.970M	37.9	-27.7	+15.4	+0.3	+3.7	+0.0	29.6	46.0	-16.4	Horiz
45	546.170M	32.4	-27.4	+19.6	+0.5	+4.5	+0.0	29.6	46.0	-16.4	Vert
46	146.037M	41.3	-27.7	+11.1	+0.2	+2.2	+0.0	27.1	43.5	-16.4	Vert
47	192.040M	42.8	-27.6	+8.9	+0.2	+2.6	+0.0	26.9	43.5	-16.6	Vert
48	150.040M	41.0	-27.7	+11.0	+0.2	+2.2	+0.0	26.7	43.5	-16.8	Vert
49	147.045M	40.6	-27.7	+11.1	+0.2	+2.2	+0.0	26.4	43.5	-17.1	Vert
50	178.013M	42.1	-27.7	+9.2	+0.2	+2.5	+0.0	26.3	43.5	-17.2	Vert
51	271.123M	40.1	-27.7	+12.8	+0.3	+3.1	+0.0	28.6	46.0	-17.4	Vert
52	351.480M	37.3	-27.6	+14.5	+0.3	+3.6	+0.0	28.1	46.0	-17.9	Vert

53	142.475M	39.8	-27.7	+11.2	+0.2	+2.1	+0.0	25.6	43.5	-17.9	Vert
54	329.350M	37.7	-27.6	+14.0	+0.3	+3.4	+0.0	27.8	46.0	-18.2	Vert
55	158.361M	39.3	-27.7	+10.3	+0.2	+2.3	+0.0	24.4	43.5	-19.1	Vert
56	272.014M	38.1	-27.7	+12.8	+0.3	+3.1	+0.0	26.6	46.0	-19.4	Vert
57	208.008M	39.4	-27.6	+9.5	+0.2	+2.6	+0.0	24.1	43.5	-19.4	Vert
58	196.065M	39.7	-27.6	+8.8	+0.2	+2.6	+0.0	23.7	43.5	-19.8	Vert
59	375.670M	34.3	-27.7	+15.2	+0.3	+3.7	+0.0	25.8	46.0	-20.2	Vert
60	992.080M	29.2	-27.2	+24.6	+0.6	+6.4	+0.0	33.6	54.0	-20.4	Horiz
61	279.077M	37.0	-27.7	+12.9	+0.3	+3.1	+0.0	25.6	46.0	-20.4	Vert
62	359.530M	34.2	-27.6	+14.8	+0.3	+3.6	+0.0	25.3	46.0	-20.7	Horiz
63	283.068M	36.6	-27.7	+13.0	+0.3	+3.1	+0.0	25.3	46.0	-20.7	Vert
64	274.080M	36.2	-27.7	+12.9	+0.3	+3.1	+0.0	24.8	46.0	-21.2	Vert
65	975.370M	28.0	-27.2	+24.6	+0.6	+6.3	+0.0	32.3	54.0	-21.7	Horiz

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 15.109 Class B**
Work Order #: **85420** Date: 7/25/2006
Test Type: **Maximized Emissions** Time: 14:34:37
Equipment: **Mobile Data Radio** Sequence#: 2
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a terminated shielded coaxial cable. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX = 815 MHz, RX = 860 MHz, Inj = 815 MHz. Frequency range of measurement = 30 MHz - 9 GHz. Frequency 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=Preamp 8447D 060108	T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607	T4=Cable #15, Site A, 010307
T5=Pre amp 1- 26GHz 071908	

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	809.800M QP	38.9	-27.1	+22.2	+0.6	+5.6	+0.0	40.2	46.0	-5.8	Horiz
^	809.800M	43.9	-27.1	+22.2	+0.6	+5.6	+0.0	45.2	46.0	-0.8	Horiz
3	300.017M	50.8	-27.6	+13.2	+0.3	+3.2	+0.0	39.9	46.0	-6.1	Horiz
4	375.000M	45.8	-27.7	+15.2	+0.3	+3.7	+0.0	37.3	46.0	-8.7	Horiz
5	300.001M	48.0	-27.6	+13.2	+0.3	+3.2	+0.0	37.1	46.0	-8.9	Vert

6	250.020M	48.3	-27.7	+12.5	+0.2	+3.0	+0.0	36.3	46.0	-9.7	Vert
7	613.100M	38.1	-27.3	+20.0	+0.5	+4.9	+0.0	36.2	46.0	-9.8	Vert
8	628.920M	36.6	-27.2	+20.2	+0.5	+4.9	+0.0	35.0	46.0	-11.0	Vert
9	608.570M	36.1	-27.3	+19.9	+0.5	+4.8	+0.0	34.0	46.0	-12.0	Vert
10	539.020M	36.6	-27.4	+19.4	+0.5	+4.5	+0.0	33.6	46.0	-12.4	Vert
11	432.000M	39.9	-27.7	+16.6	+0.3	+3.9	+0.0	33.0	46.0	-13.0	Vert
12	629.980M	34.5	-27.2	+20.2	+0.5	+4.9	+0.0	32.9	46.0	-13.1	Horiz
13	610.077M	34.9	-27.3	+19.9	+0.5	+4.8	+0.0	32.8	46.0	-13.2	Vert
14	609.793M	34.9	-27.3	+19.9	+0.5	+4.8	+0.0	32.8	46.0	-13.2	Vert
15	480.050M	37.8	-27.6	+17.7	+0.4	+4.2	+0.0	32.5	46.0	-13.5	Horiz
16	608.370M	34.5	-27.3	+19.9	+0.5	+4.8	+0.0	32.4	46.0	-13.6	Vert
17	432.000M	39.1	-27.7	+16.6	+0.3	+3.9	+0.0	32.2	46.0	-13.8	Horiz
18	362.480M	41.2	-27.7	+14.8	+0.3	+3.6	+0.0	32.2	46.0	-13.8	Horiz
19	612.280M	34.0	-27.3	+20.0	+0.5	+4.9	+0.0	32.1	46.0	-13.9	Vert
20	375.030M	40.4	-27.7	+15.2	+0.3	+3.7	+0.0	31.9	46.0	-14.1	Vert
21	350.000M	40.9	-27.6	+14.5	+0.3	+3.6	+0.0	31.7	46.0	-14.3	Horiz
22	336.000M	40.9	-27.6	+14.2	+0.3	+3.5	+0.0	31.3	46.0	-14.7	Vert
23	628.616M	32.7	-27.2	+20.1	+0.5	+4.9	+0.0	31.0	46.0	-15.0	Vert
24	540.200M	33.3	-27.4	+19.4	+0.5	+4.5	+0.0	30.3	46.0	-15.7	Horiz
25	144.020M	41.9	-27.7	+11.2	+0.2	+2.2	+0.0	27.8	43.5	-15.7	Horiz
26	325.020M	40.1	-27.6	+13.9	+0.3	+3.4	+0.0	30.1	46.0	-15.9	Vert
27	400.020M	38.0	-27.8	+15.8	+0.3	+3.7	+0.0	30.0	46.0	-16.0	Vert
28	288.010M	40.6	-27.6	+13.0	+0.3	+3.2	+0.0	29.5	46.0	-16.5	Horiz
29	128.050M	40.9	-27.6	+11.5	+0.1	+2.0	+0.0	26.9	43.5	-16.6	Vert

30	325.070M	38.9	-27.6	+13.9	+0.3	+3.4	+0.0	28.9	46.0	-17.1	Horiz
31	409.520M	36.1	-27.8	+16.1	+0.3	+3.8	+0.0	28.5	46.0	-17.5	Horiz
32	487.680M	33.2	-27.6	+17.9	+0.4	+4.2	+0.0	28.1	46.0	-17.9	Horiz
33	810.168M	24.9	-27.1	+22.2	+0.6	+5.6	+0.0	26.2	46.0	-19.8	Vert
34	273.120M	37.6	-27.7	+12.8	+0.3	+3.1	+0.0	26.1	46.0	-19.9	Vert
35	404.050M	33.5	-27.8	+15.9	+0.3	+3.7	+0.0	25.6	46.0	-20.4	Horiz
36	389.320M	33.7	-27.8	+15.5	+0.3	+3.7	+0.0	25.4	46.0	-20.6	Horiz
37	344.030M	34.2	-27.6	+14.4	+0.3	+3.6	+0.0	24.9	46.0	-21.1	Horiz

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC 15.109 Class B**
Work Order #: **85420** Date: 7/25/2006
Test Type: **Maximized Emissions** Time: 13:53:38
Equipment: **Mobile Data Radio** Sequence#: 3
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. TX = 824 MHz, RX = 869 MHz, Inj = 824 MHz. Frequency range of measurement = 30 MHz - 9 GHz. Frequency 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=Preamp 8447D 060108
T2=Bilog AN01995 020208 Chase
T3=Cable #10 051607
T4=Cable #15, Site A, 010307
T5=Pre amp 1- 26GHz 071908

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

#	Freq	Rdng	T1 T5	T2	T3	T4	Dist	Corr	Spec	Margin	Polar
	MHz	dBµV	dB	dB	dB	dB	Table	dBµV/m	dBµV/m	dB	Ant
1	300.000M	51.9	-27.6	+13.2	+0.3	+3.2	+0.0	41.0	46.0	-5.0	Horiz
2	40.680M	47.3	-27.8	+13.8	+0.1	+1.1	+0.0	34.5	40.0	-5.5	Vert
3	375.000M	48.0	-27.7	+15.2	+0.3	+3.7	+0.0	39.5	46.0	-6.5	Horiz
4	335.970M	46.0	-27.6	+14.2	+0.3	+3.5	+0.0	36.4	46.0	-9.6	Horiz
5	612.980M	38.1	-27.3	+20.0	+0.5	+4.9	+0.0	36.2	46.0	-9.8	Horiz

6	299.993M	45.0	-27.6	+13.2	+0.3	+3.2	+0.0	34.1	46.0	-11.9	Vert
7	321.980M	43.9	-27.6	+13.8	+0.3	+3.4	+0.0	33.8	46.0	-12.2	Horiz
8	611.770M	35.8	-27.3	+19.9	+0.5	+4.8	+0.0	33.7	46.0	-12.3	Vert
9	533.070M	37.0	-27.5	+19.2	+0.5	+4.4	+0.0	33.6	46.0	-12.4	Vert
10	368.000M	41.6	-27.7	+15.0	+0.3	+3.6	+0.0	32.8	46.0	-13.2	Horiz
11	403.270M	40.6	-27.8	+15.9	+0.3	+3.7	+0.0	32.7	46.0	-13.3	Horiz
12	531.170M	36.1	-27.5	+19.1	+0.5	+4.4	+0.0	32.6	46.0	-13.4	Horiz
13	288.000M	43.5	-27.6	+13.0	+0.3	+3.2	+0.0	32.4	46.0	-13.6	Horiz
14	455.170M	37.9	-27.6	+17.2	+0.3	+4.0	+0.0	31.8	46.0	-14.2	Horiz
15	547.780M	34.1	-27.4	+19.6	+0.5	+4.5	+0.0	31.3	46.0	-14.7	Horiz
16	441.700M	37.7	-27.6	+16.9	+0.3	+4.0	+0.0	31.3	46.0	-14.7	Vert
17	660.830M	31.7	-27.1	+20.4	+0.5	+5.0	+0.0	30.5	46.0	-15.5	Horiz
18	351.180M	39.3	-27.6	+14.5	+0.3	+3.6	+0.0	30.1	46.0	-15.9	Horiz
19	474.030M	35.4	-27.6	+17.6	+0.3	+4.1	+0.0	29.8	46.0	-16.2	Horiz
20	398.450M	37.5	-27.8	+15.8	+0.3	+3.7	+0.0	29.5	46.0	-16.5	Vert
21	424.050M	36.6	-27.7	+16.4	+0.3	+3.8	+0.0	29.4	46.0	-16.6	Horiz
22	478.150M	34.7	-27.6	+17.7	+0.4	+4.2	+0.0	29.4	46.0	-16.6	Vert
23	176.970M	42.6	-27.7	+9.2	+0.2	+2.5	+0.0	26.8	43.5	-16.7	Horiz
24	387.200M	37.5	-27.8	+15.5	+0.3	+3.7	+0.0	29.2	46.0	-16.8	Horiz
25	305.070M	39.9	-27.6	+13.3	+0.3	+3.2	+0.0	29.1	46.0	-16.9	Horiz
26	480.720M	34.1	-27.6	+17.7	+0.4	+4.2	+0.0	28.8	46.0	-17.2	Horiz
27	485.330M	33.9	-27.6	+17.8	+0.4	+4.2	+0.0	28.7	46.0	-17.3	Horiz
28	354.680M	36.8	-27.6	+14.6	+0.3	+3.6	+0.0	27.7	46.0	-18.3	Vert
29	435.430M	34.4	-27.7	+16.7	+0.3	+3.9	+0.0	27.6	46.0	-18.4	Horiz

30	414.120M	35.0	-27.7	+16.2	+0.3	+3.8	+0.0	27.6	46.0	-18.4	Horiz
31	504.970M	32.0	-27.6	+18.3	+0.4	+4.3	+0.0	27.4	46.0	-18.6	Vert
32	459.250M	32.9	-27.6	+17.3	+0.3	+4.1	+0.0	27.0	46.0	-19.0	Vert
33	232.030M	40.0	-27.6	+11.3	+0.2	+2.8	+0.0	26.7	46.0	-19.3	Horiz
34	376.620M	35.1	-27.7	+15.2	+0.3	+3.7	+0.0	26.6	46.0	-19.4	Vert
35	515.530M	30.5	-27.5	+18.6	+0.4	+4.4	+0.0	26.4	46.0	-19.6	Horiz
36	226.750M	36.6	-27.6	+10.9	+0.2	+2.7	+0.0	22.8	46.0	-23.2	Horiz
37	254.030M	33.2	-27.7	+12.6	+0.2	+3.0	+0.0	21.3	46.0	-24.7	Horiz

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
9kHz-30MHz						
Loop Antenna	00314	EMCO	6502	2014	061406	061408
30 -1000MHz						
Bilog Antenna	01995	Chase	CBL6111C	2451	020206	020208
Pre-amp	00309	HP	8447D	1937A02548	060106	060108
Antenna cable	P05198	Belden	8268 (RG-214)	Cable#15	010305	010307
Pre-amp to SA cable	P05050	Pasternack	RG223/U	Cable#10	051605	051607
1-9GHz						
Horn Antenna	00849	EMCO	3115	6246	062906	062908
Microwave Pre-amp	00786	HP	83017A	3123A00281	071906	071908
Heliax Antenna cable	P04384	Andrew	LDF1-50	Cable#20	091604	091606
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS

Radiated Emissions - Back View

FCC 15.111 – ANTENNA PORT TEST FOR RECEIVERS

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC15.111 Antenna Power Conduction limits for Receiver**
Work Order #: **85420** Date: 7/26/2006
Test Type: **Conducted Emissions** Time: 14:58:30
Equipment: **Mobile Data Radio** Sequence#: 7
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25 13.8 Vdc
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. Conducted spurious emission evaluated at the RX antenna port 2. TX =806 MHz, RX = 851 MHz, Inj = 806 MHz. Frequency range of measurement = 30 MHz - 9 GHz. Frequency 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=1-40 GHz Cable_020807

Measurement Data: Reading listed by margin. Test Lead: Antenna Terminal

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	3224.000M	46.3	+1.2				+0.0	47.5	50.0	-2.5	Anten
2	4030.000M	45.8	+1.3				+0.0	47.1	50.0	-2.9	Anten
3	2417.980M	42.6	+1.0				+0.0	43.6	50.0	-6.4	Anten
4	1612.000M	37.8	+0.8				+0.0	38.6	50.0	-11.4	Anten
5	7253.000M	28.5	+1.8				+0.0	30.3	50.0	-19.7	Anten

6	6448.000M	25.0	+1.7	+0.0	26.7	50.0	-23.3	Anten
7	3730.000M	24.1	+1.2	+0.0	25.3	50.0	-24.7	Anten
8	5602.000M	22.7	+1.5	+0.0	24.2	50.0	-25.8	Anten
9	806.000M	21.8	+0.6	+0.0	22.4	50.0	-27.6	Anten

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC15.111 Antenna Power Conduction limits for Receiver**
Work Order #: **85420** Date: 7/26/2006
Test Type: **Conducted Emissions** Time: 15:03:08
Equipment: **Mobile Data Radio** Sequence#: 8
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25 13.8 Vdc
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. Conducted spurious emission evaluated at the RX antenna port 2. TX =815 MHz, RX = 860 MHz, Inj = 815 MHz. Frequency range of measurement = 30 MHz - 9 GHz. Frequency 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=1-40 GHz Cable_020807

Measurement Data: Reading listed by margin. Test Lead: Antenna Terminal

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	3259.958M Ave	48.0	+1.2				+0.0	49.2	50.0	-0.8	Anten
^	3259.992M	48.0	+1.2				+0.0	49.2	50.0	-0.8	Anten
^	3259.992M	47.9	+1.2				+0.0	49.1	50.0	-0.9	Anten
4	4074.992M	45.9	+1.3				+0.0	47.2	50.0	-2.8	Anten
5	2445.008M	42.6	+1.0				+0.0	43.6	50.0	-6.4	Anten
6	1629.970M	40.1	+0.8				+0.0	40.9	50.0	-9.1	Anten

7	7334.992M	28.8	+1.8	+0.0	30.6	50.0	-19.4	Anten
8	6519.990M	27.0	+1.7	+0.0	28.7	50.0	-21.3	Anten
9	3730.090M	27.1	+1.2	+0.0	28.3	50.0	-21.7	Anten
10	5705.000M	24.3	+1.6	+0.0	25.9	50.0	-24.1	Anten
11	4890.000M	21.9	+1.5	+0.0	23.4	50.0	-26.6	Anten

Test Location: CKC Laboratories Inc. •180 N Olinda Place • Brea CA, 92823 • 714-993-6112

Customer: **IP MobileNet**
Specification: **FCC15.111 Antenna Power Conduction limits for Receiver**
Work Order #: **85420** Date: 7/26/2006
Test Type: **Conducted Emissions** Time: 15:10:22
Equipment: **Mobile Data Radio** Sequence#: 9
Manufacturer: IPMobileNet Tested By: E. Wong
Model: M64800-25 13.8 Vdc
S/N: NA

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64800-25	NA

Support Devices:

Function	Manufacturer	Model #	S/N
High Power Termination	Weinschel Corporation	45-40-43	MN216
Laptop Computer	Dell Corporation	PP01L Inspiron 4100	05D481
GPS Antenna	San Jose Navigation, Inc.	SM-25	2533961
DC Power Supply	HP	6652ASEC 1223	3235A-00835

Test Conditions / Notes:

The EUT is located on the wooden tabletop. Connected to the EUT Tx/Rx port is one high power load attenuator. Connected to the EUT serial port is an unterminated shielded serial cable. Connected to the EUT Rx2 port is a 50 Ohm terminator. Connected to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. The EUT ethernet port is connected to the remotely located laptop computer using an unshielded cat. 5E cable. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. DC power is supplied by a remote support DC power supply. Conducted spurious emission evaluated at the RX antenna port 2. TX = 824 MHz, RX = 869 MHz, Inj = 824 MHz. Frequency range of measurement = 30 MHz - 9 GHz. Frequency 30 MHz - 1000 MHz RBW=120 kHz, VBW=120 kHz; 1000 MHz - 9000 MHz RBW=1 MHz, VBW=1 MHz. 13.8 VDC (110/60Hz source). 24°F, 58% relative humidity.

Transducer Legend:

T1=1-40 GHz Cable_020807

Measurement Data: Reading listed by margin. Test Lead: Antenna Terminal

#	Freq MHz	Rdng dBµV	T1 dB	dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	3296.000M Ave	48.3	+1.2				+0.0	49.5	50.0	-0.5	Anten
^	3295.965M	48.6	+1.2				+0.0	49.8	50.0	-0.2	Anten
^	3296.000M	48.4	+1.2				+0.0	49.6	50.0	-0.4	Anten
^	3296.000M	48.4	+1.2				+0.0	49.6	50.0	-0.4	Anten
5	4120.000M	46.1	+1.3				+0.0	47.4	50.0	-2.6	Anten
6	2472.000M	43.3	+1.0				+0.0	44.3	50.0	-5.7	Anten

7	1648.000M	40.3	+0.8	+0.0	41.1	50.0	-8.9	Anten
8	5768.000M	36.3	+1.6	+0.0	37.9	50.0	-12.1	Anten
9	824.000M	30.3	+0.6	+0.0	30.9	50.0	-19.1	Anten

Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
1.0 GHz HPF	02749	K&L	9SH10-1000	1	030706	030708

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP