ADDENDUM TO IP MOBILENET TEST REPORT

FOR THE

MOBILE DATA RADIO, M64700G25

FCC PART 90

COMPLIANCE

DATE OF ISSUE: NOVEMBER 15, 2004

PREPARED FOR:

IP MobileNet
16842 Von Karman Avenue
Irvine, CA 92606

PREPARED BY:

Mary Ellen Clayton
CKC Laboratories, Inc.
5473A Clouds Rest
Mariposa, CA 95338

W.O. No.: 82889

Date of test: November 8-11, 2004

Report No.: FC04-081A

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ADMINISTRATIVE INFORMATION

DATE OF TEST:	November 8-11, 2004
DATE OF RECEIPT:	November 8, 2004
PURPOSE OF TEST:	To demonstrate the compliance of the Mobile Data Radio, M64700G25 with the requirements for FCC Part 90 devices. **Addendum A** is to change the sub-standard on pages 6, 7 and 29.
TEST METHOD:	FCC Part 90
FREQUENCY RANGE TESTED:	8 MHz-9 GHz
MANUFACTURER:	IP MobileNet 16842 Von Karman Avenue Irvine, CA 92606
REPRESENTATIVE:	Eric Tanner
TEST LOCATION:	CKC Laboratories, Inc. 110 Olinda Place Brea, CA 92621

SUMMARY OF RESULTS

As received, the IP MobileNet Mobile Data Radio, M64700G25 was found to be fully compliant with the following standards and specifications:

United States
- FCC Part 90

CONDITIONS FOR COMPLIANCE

No modifications to the EUT were necessary to comply.

APPROVALS

Steve Behm, Director of Engineering Services

QUALITY ASSURANCE:

Joyce Walker, Quality Assurance Administrative Manager

TEST PERSONNEL:

Stuart Yamamoto, EMC Engineer

EQUIPMENT UNDER TEST (EUT) DESCRIPTION

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

EQUIPMENT UNDER TEST

Mobile Data Radio
Manuf: IPMobileNet
Model: M64700G25
Serial: 04363311
FCC ID: pending

PERIPHERAL DEVICES

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

Laptop Computer
Manuf: Dell Corporation
Model: PP02L Inspiron I2500
Serial: 5TZ6611

DC Power Supply
Manuf: Samlex America
Model: SEC 1223
Serial: 03061-0D01-0632

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

GPS Antenna
Manuf: San Jose Navigation, Inc.
Model: SM-25
Serial: 2569918

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
14K7F1D

FCC 2.1033 (c)(5) FREQUENCY RANGE
806 MHz – 821 MHz.

FCC 2.1033 (c)(6) OPERATING POWER
20 Watts ERP.

FCC 2.1033 (c)(7) MAXIMUM POWER RATING
Per FCC 90.635(d)Transmitter output power limit is 100 watts.

FCC 2.1033 (c)(8) DC VOLTAGES
13.8V.

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
FSK

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

Test Conditions: The EUT was connected to a laptop computer via the serial interface. The laptop computer was used to command the EUT to begin transmitting or stop transmitting as well as to change the EUT from channel to channel. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that there was no obstructions to the sky. A separate DC power supply was used to provide 13.8 VDC 9A to the EUT. On the output of the EUT was place a high power termination/attenuator which went to either a power meter or spectrum analyzer to measure the RF power, bandwidth, or emission mask. The EUT was set to output the rated power of 20 watts.

FCC 90.635(d) Transmitter output power.
Limit is 100 Watts
Measured Values from the EUT:
Low Channel (806 MHz). Measured value was 20.0 Watts ERP.
Middle Channel (813.5 MHz). Measured value was 20.0 Watts ERP.
High Channel (821 MHz). Measured value was 20.0 Watts ERP.
All values measure were less than the limit. PASS.

FCC 90.635(d) Transmitter Power

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
RF Power meter	02082	HP	435B	2445A11881	061704	061706
Power Sensor	02036	HP	8482A	1551A01004	061806	061806
High Power Attenuator	N/A	Weinschel	45-40-43	MN216	*1	*1

*1-Check of the attenuator insertion loss was performed just prior to this test at the discrete frequencies used (806 MHz, 813.5 MHz, and 821 MHz).

PHOTOGRAPH SHOWING TRANSMITTER OUTPUT POWER

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

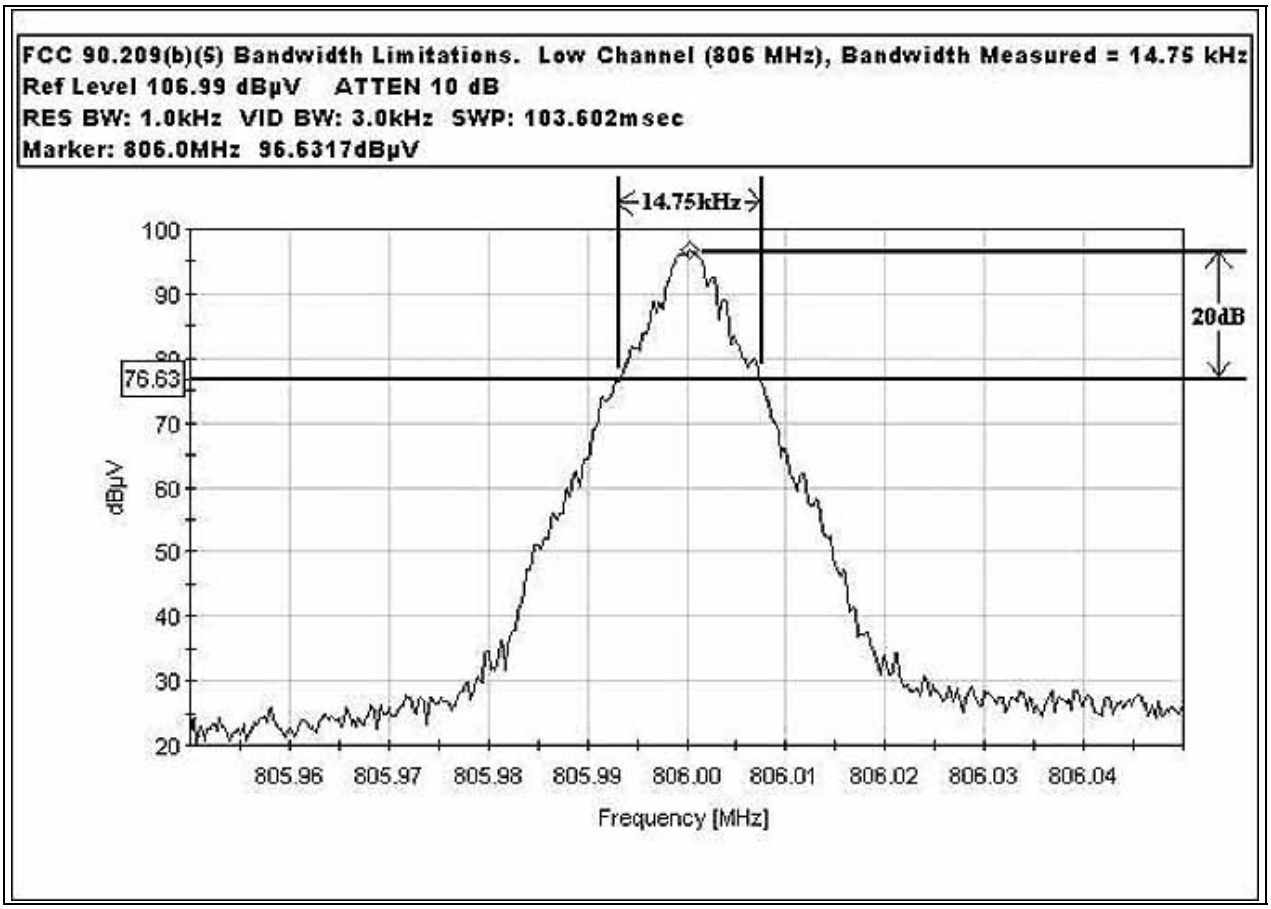
Not applicable to this unit.

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

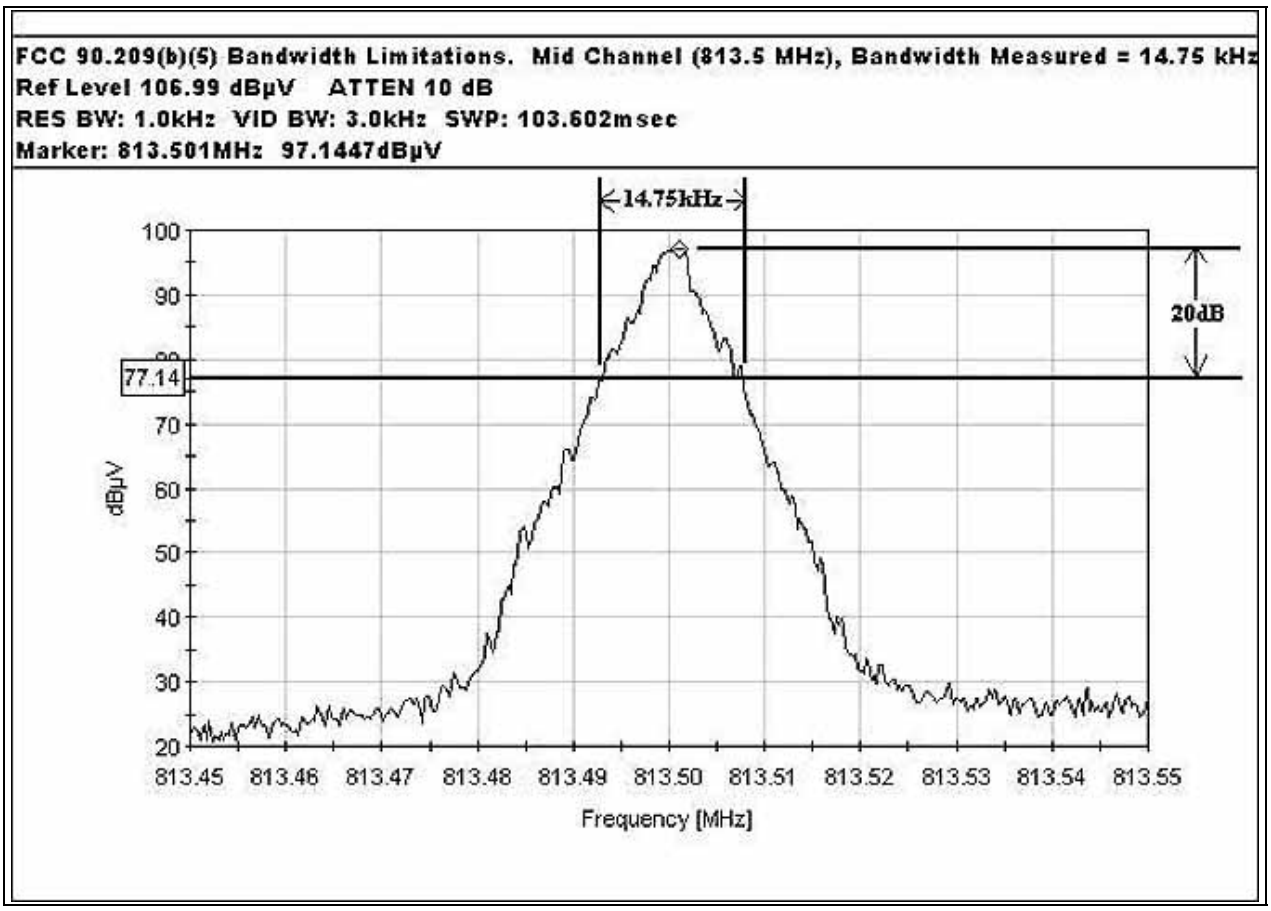
Not applicable to this unit.

FCC 90.209(b)(5) BANDWIDTH LIMITATIONS LOW CHANNEL (806 MHz)

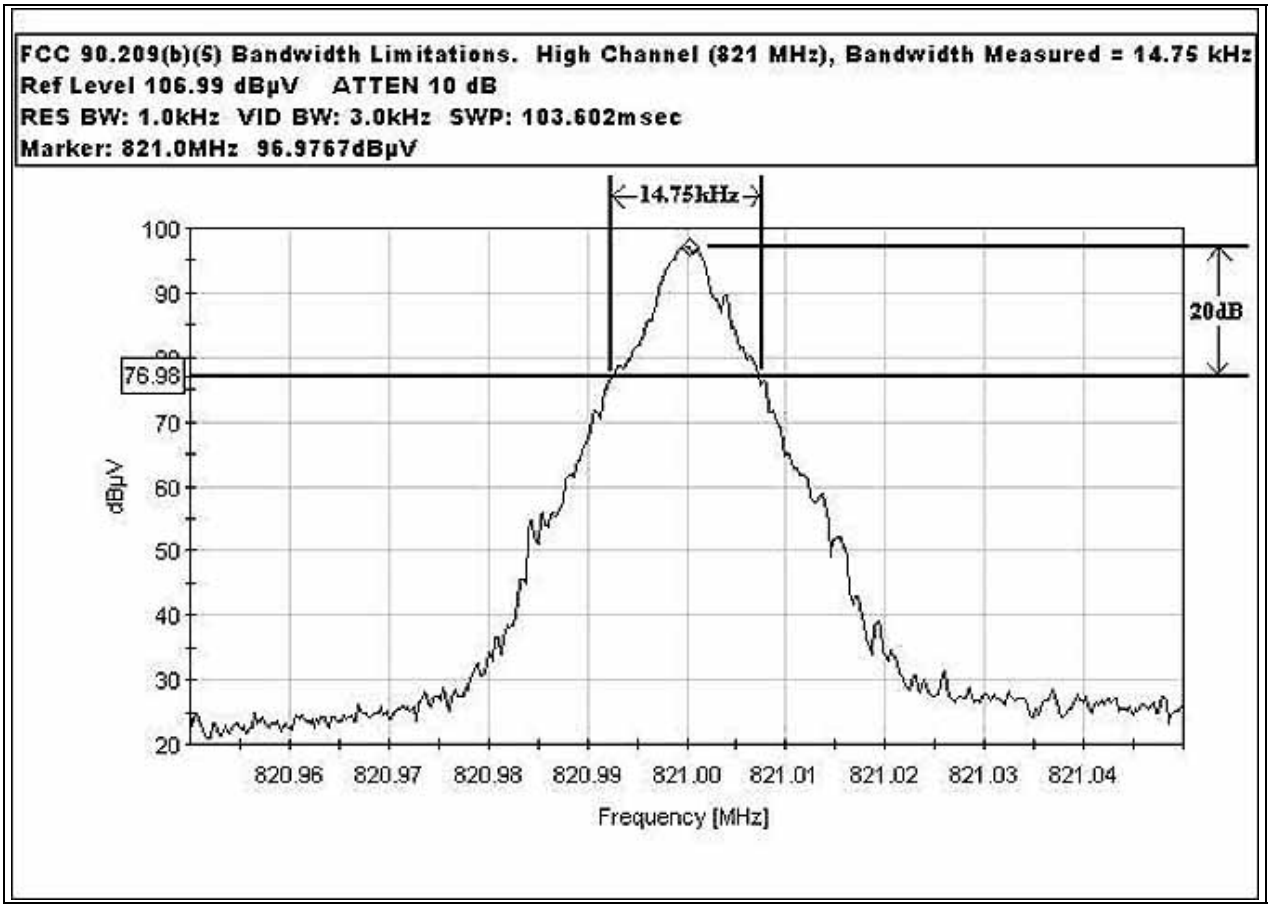
Test Conditions: The EUT was connected to a laptop computer via the serial interface. The laptop computer was used to command the EUT to begin transmitting or stop transmitting as well as to change the EUT from channel to channel. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that there was no obstructions to the sky. A separate DC power supply was used to provide 13.8 VDC 9A to the EUT. On the output of the EUT was place a high power termination/attenuator which went to either a power meter or spectrum analyzer to measure the RF power, bandwidth, or emission mask. The EUT was set to output the rated power of 20 watts.



FCC 90.209(b)(5) BANDWIDTH LIMITATIONS MID CHANNEL (813.5 MHz)



FCC 90.209(b)(5) BANDWIDTH LIMITATIONS HIGH CHANNEL (821 MHz)



FCC 90.209(b)(5) Bandwidth Limitations

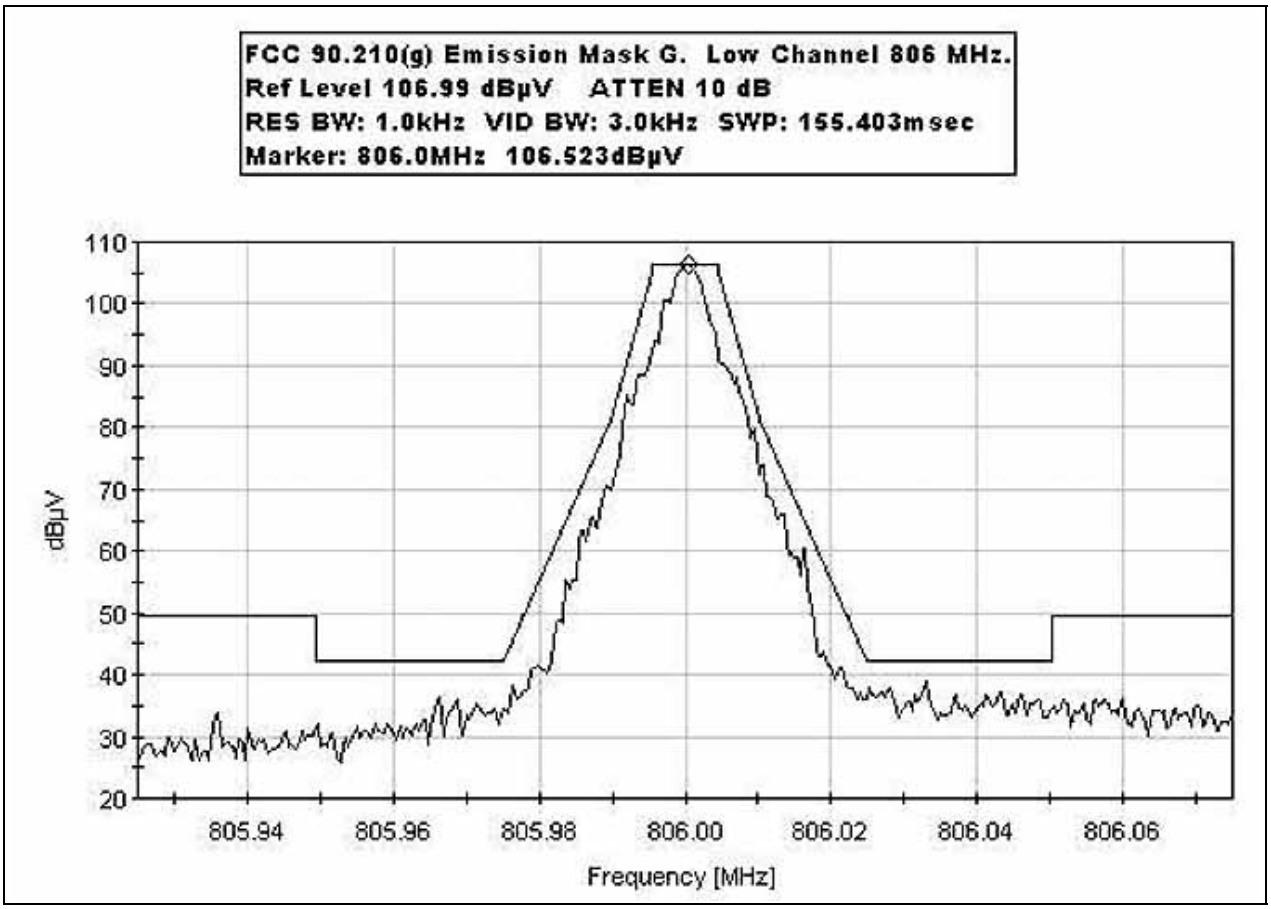
Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033105
High Power Attenuator	N/A	Weinschel	45-40-43	MN216	*1	*1

*1-Check of the attenuator insertion loss was performed just prior to this test at the discrete frequencies used (806 MHz, 813.5 MHz, and 821 MHz).

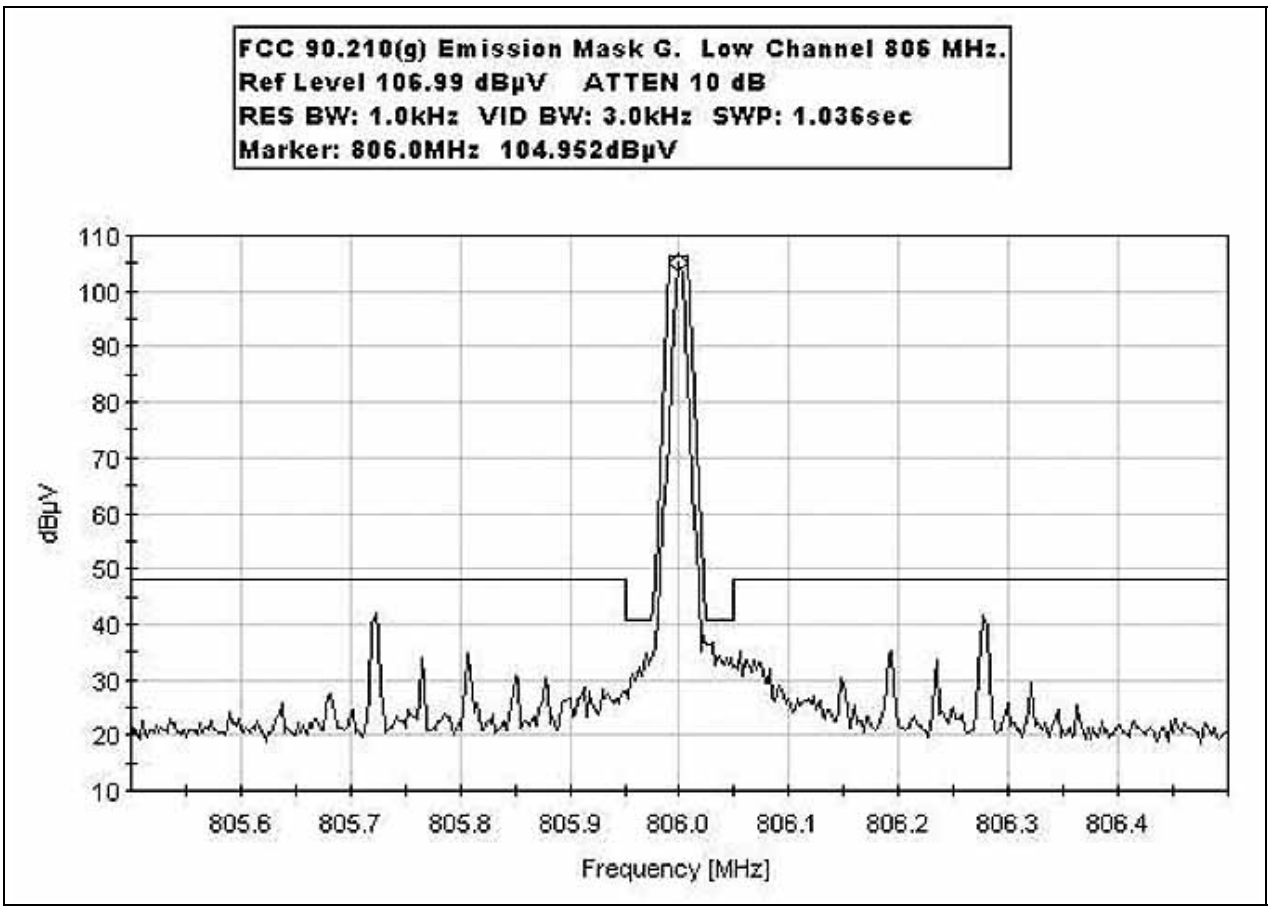
PHOTOGRAPH SHOWING BANDWIDTH LIMITATIONS

FCC 90.210(g) EMISSIONS MASK LOW CHANNEL (806 MHz) 150 k SPAN

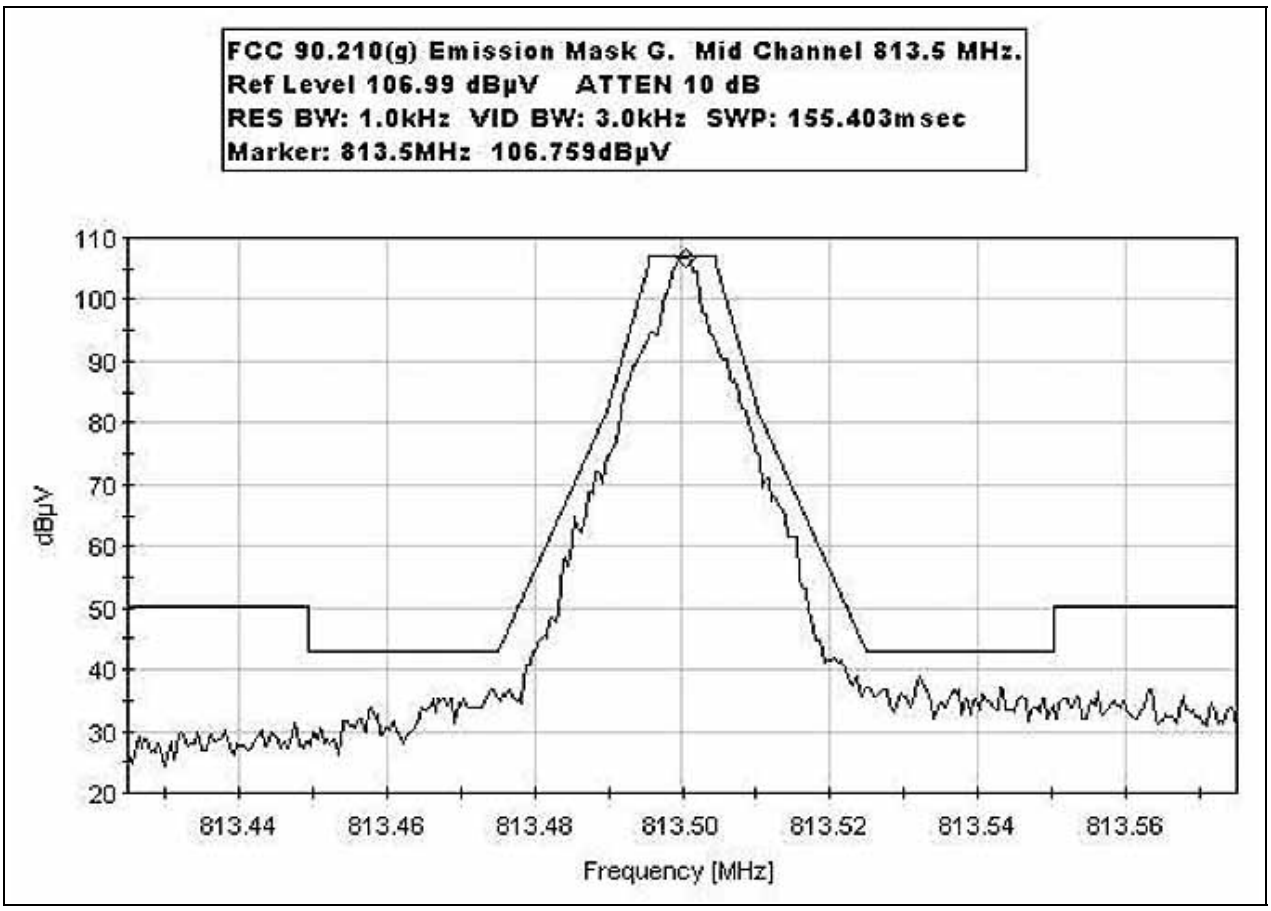
Test Conditions: The EUT was connected to a laptop computer via the serial interface. The laptop computer was used to command the EUT to begin transmitting or stop transmitting as well as to change the EUT from channel to channel. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that there was no obstructions to the sky. A separate DC power supply was used to provide 13.8 VDC 9A to the EUT. On the output of the EUT was place a high power termination/attenuator which went to either a power meter or spectrum analyzer to measure the RF power, bandwidth, or emission mask. The EUT was set to output the rated power of 20 watts.



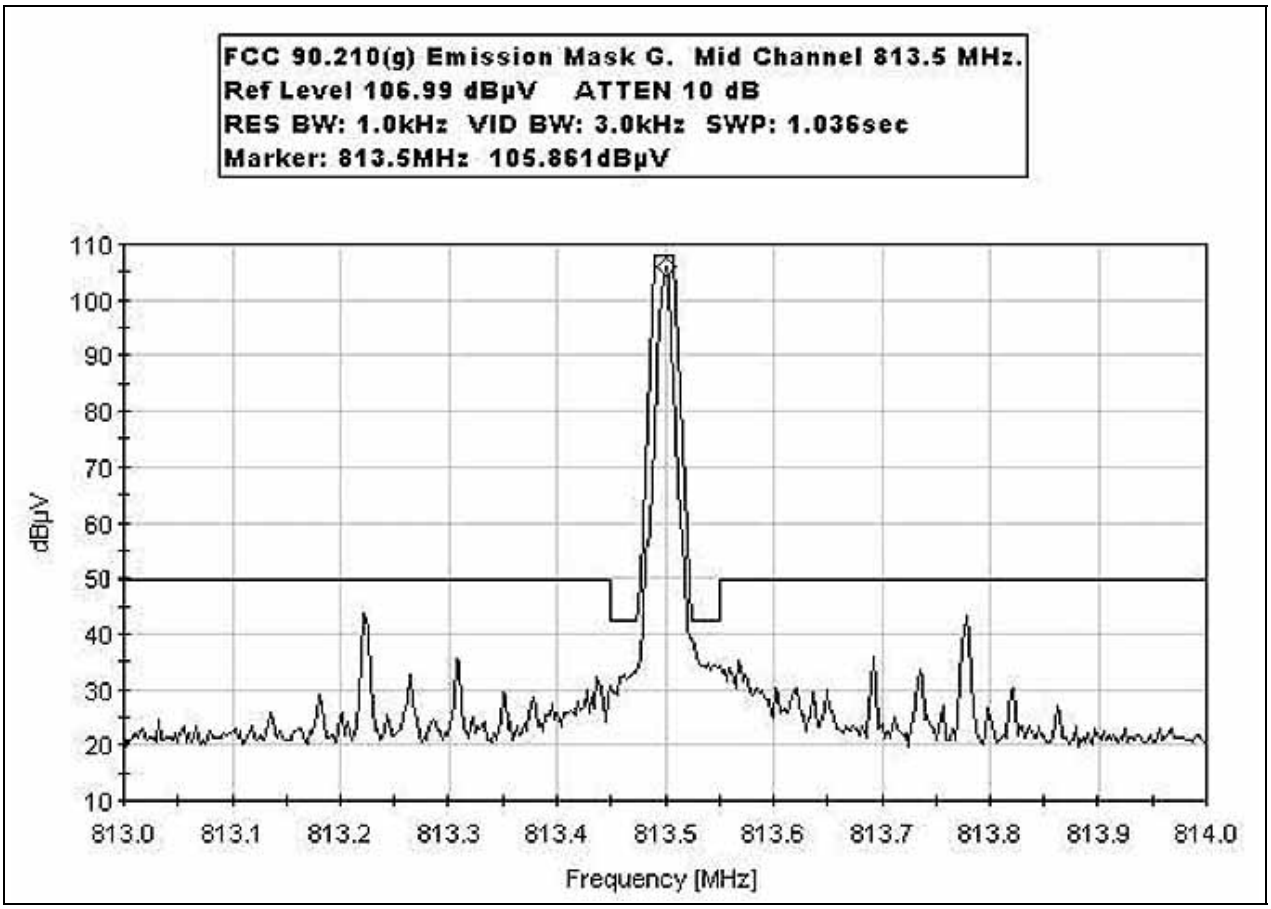
FCC 90.210(g) EMISSIONS MASK LOW CHANNEL (806 MHz) 1 M Span



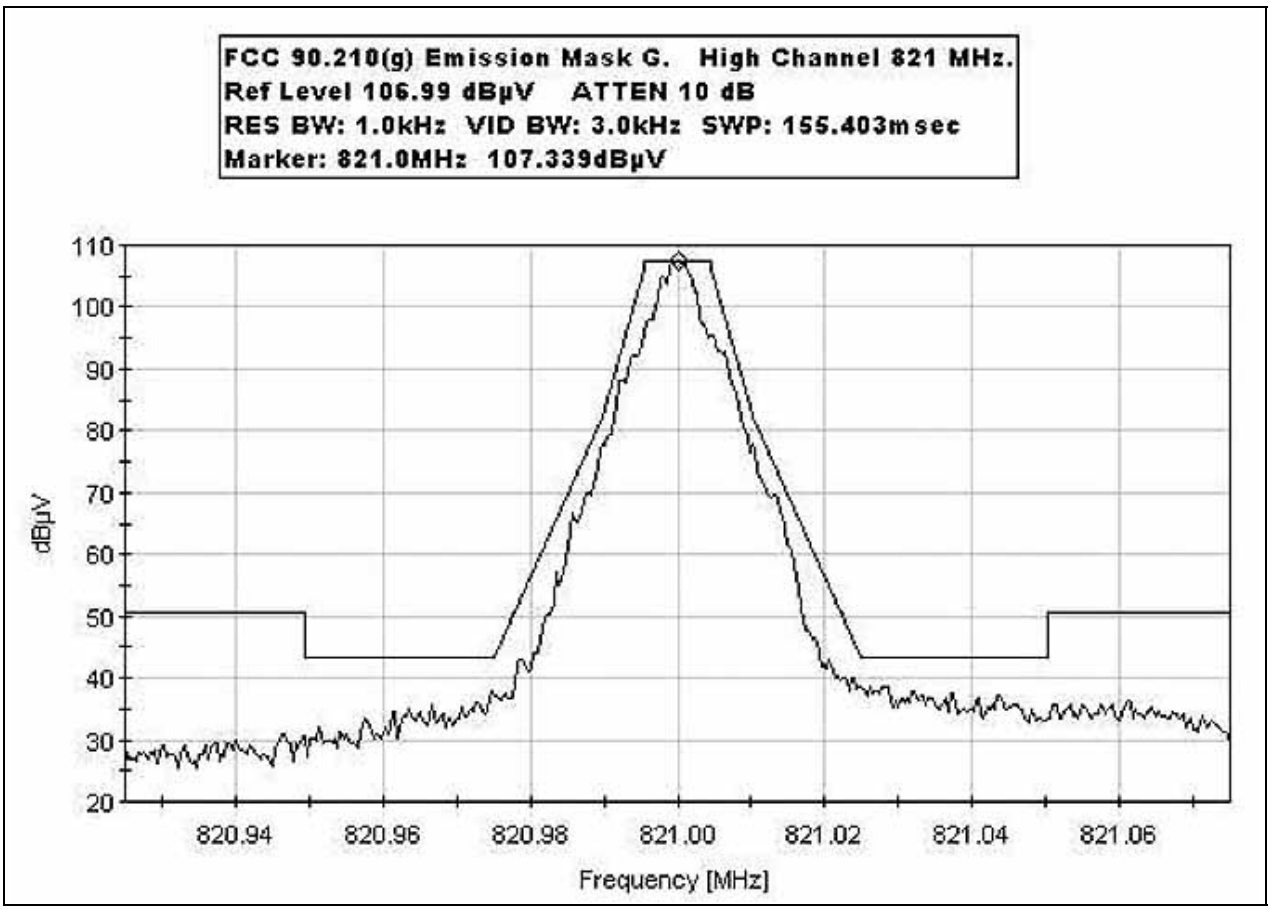
FCC 90.210(g) EMISSIONS MASK MID CHANNEL (813.5 MHz) 150 k SPAN



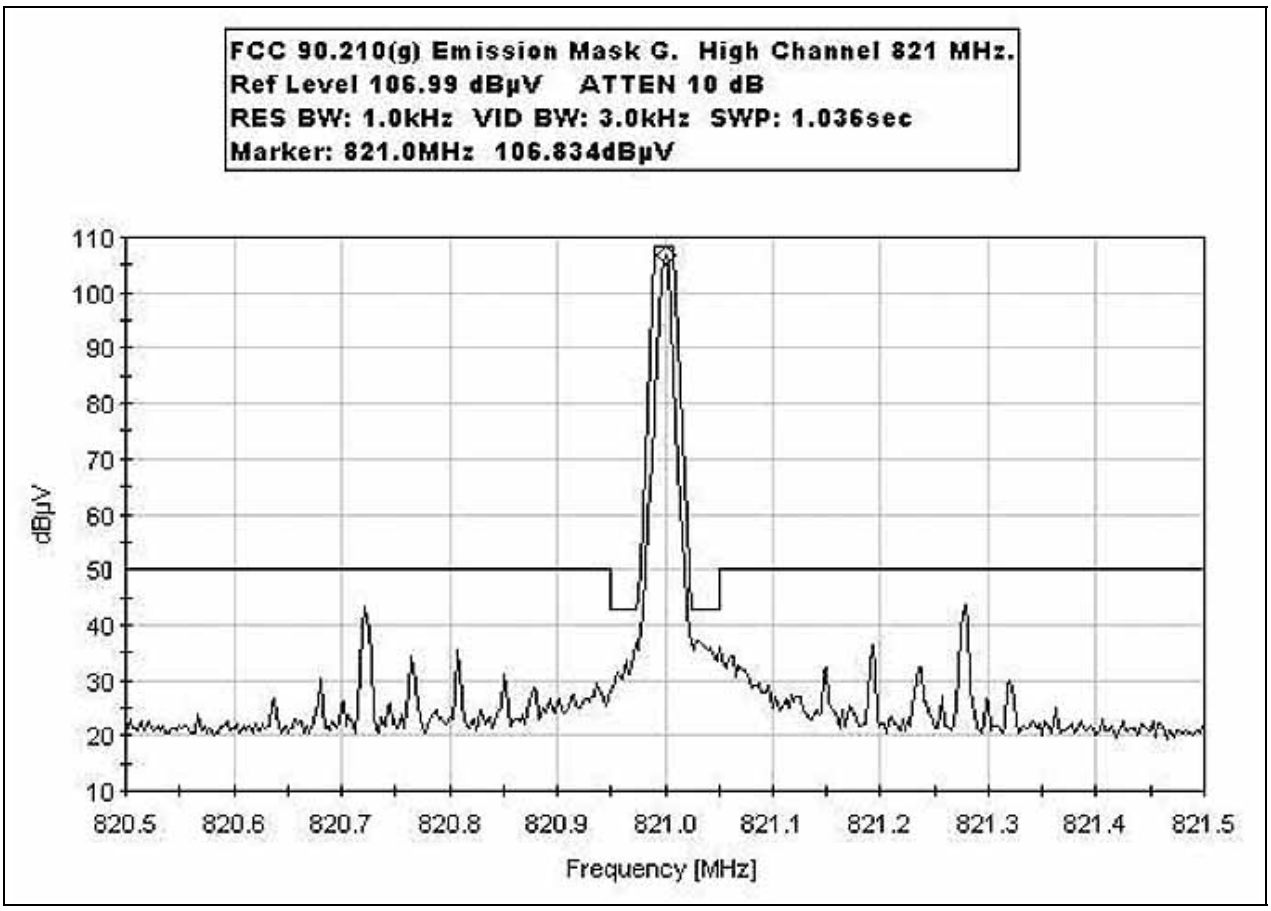
FCC 90.210(g) EMISSIONS MASK MID CHANNEL (813.5 MHz) 1 M SPAN



FCC 90.210(g) EMISSIONS MASK HIGH CHANNEL (821 MHz) 150 k SPAN



FCC 90.210(g) EMISSIONS MASK HIGH CHANNEL (821 MHz) 1 M Span



FCC 90.210(g) Occupied Bandwidth/Emission Mask

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033105
High Power Attenuator	N/A	Weinschel	45-40-43	MN216	*1	*1

Note:
*1-Check of the attenuator insertion loss was performed just prior to this test at the discrete frequencies used (806 MHz, 813.5 MHz, and 821 MHz).

PHOTOGRAPH SHOWING EMISSIONS MASK

FCC 2.1033(c)(14)/2.1051/90.210(g) - 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 90.210G Spurious ANTENNA**
Work Order #: **82889** Date: 11/08/2004
Test Type: **Maximized Emissions** Time: 16:16:48
Equipment: **Mobile Data Radio** Sequence#: 1
Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
Model: M64700G25
S/N: 04363311

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64700G25	04363311

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell Corporation	PP02L Inspiron I2500	5TZ6611
DC Power Supply	Samlex America	SEC 1223	03061-0D01-0632
High Power Termination	Weinschel Corporation	45-40-43	MN216
GPS Antenna	San Jose Navigation, Inc.	SM-25	2569918

Test Conditions / Notes:

The EUT, support equipment, and the test equipment are located on the tabletop. Connected to the EUT Tx/Rx port is a high powered attenuators and then coaxial cable to the spectrum analyzer. Connected to the EUT serial port is a laptop computer. Connect to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. Power to the EUT is supplied by an external DC Power supply. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. Voltage to the EUT is 13.8 VDC. Temperature: 21°C, Humidity: 54%, Pressure: 100kPa. Frequency range scanned and maximized, 8 MHz to 9000 MHz. This data sheet contains data for the EUT operating on Low (806 MHz), Mid (813.5 MHz), and High (821 MHz) channels and transmitting at its rated output power. Frequency 9kHz-150kHz, RBW=200Hz, VBW=200Hz; 150kHz-30MHz, RBW=9kHz, VBW=9kHz; 30MHz-1000MHz, RBW=120kHz, VBW=120kHz; 1000MHz-9000MHz, RBW=1MHz, VBW=1MHz.

Transducer Legend:

T1=SMA Cable 1-40GHz AN2604_012305	T2=Attenuator Weinschel 45-40-43

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

#	Freq MHz	Rdng dBµV	T1 dB	T2 dB	dB	dB	Dist Table	Corr dBµV	Spec dBµV	Margin dB	Polar Ant
1	2440.500M Ave	43.2	+0.5	+43.0			+0.0	86.7	94.0	-7.3	None
^	2440.500M	45.2	+0.5	+43.0			+0.0	88.7	94.0	-5.3	None
3	1642.000M	43.2	+0.4	+43.0			+0.0	86.6	94.0	-7.4	None
4	810.304M	43.4	+0.0	+43.0			+0.0	86.4	94.0	-7.6	None

5	1612.000M	42.9	+0.4	+43.0		+0.0	86.3	94.0	-7.7	None
6	2463.000M Ave	42.4	+0.5	+43.0		+0.0	85.9	94.0	-8.1	None
^	2463.000M	45.1	+0.5	+43.0		+0.0	88.6	94.0	-5.4	None
8	1627.000M	42.4	+0.4	+43.0		+0.0	85.8	94.0	-8.2	None
9	802.806M	41.9	+0.0	+43.0		+0.0	84.9	94.0	-9.1	None
10	795.305M	41.8	+0.0	+43.0		+0.0	84.8	94.0	-9.2	None
11	2418.000M Ave	41.2	+0.5	+43.0		+0.0	84.7	94.0	-9.3	None
^	2418.000M	43.8	+0.5	+43.0		+0.0	87.3	94.0	-6.7	None
13	206.413M	38.3	+0.0	+43.0		+0.0	81.3	94.0	-12.7	None
14	195.164M	38.3	+0.0	+43.0		+0.0	81.3	94.0	-12.7	None
15	183.916M	37.9	+0.0	+43.0		+0.0	80.9	94.0	-13.1	None
16	822.807M	36.4	+0.0	+43.0		+0.0	79.4	94.0	-14.6	None
17	830.307M	36.0	+0.0	+43.0		+0.0	79.0	94.0	-15.0	None
18	722.007M	35.7	+0.0	+43.0		+0.0	78.7	94.0	-15.3	None
19	837.805M	34.9	+0.0	+43.0		+0.0	77.9	94.0	-16.1	None
20	796.709M	34.7	+0.0	+43.0		+0.0	77.7	94.0	-16.3	None
21	688.410M	34.6	+0.0	+43.0		+0.0	77.6	94.0	-16.4	None
22	729.509M	34.3	+0.0	+43.0		+0.0	77.3	94.0	-16.7	None
23	804.205M	33.9	+0.0	+43.0		+0.0	76.9	94.0	-17.1	None
24	737.005M	33.9	+0.0	+43.0		+0.0	76.9	94.0	-17.1	None
25	722.402M	33.9	+0.0	+43.0		+0.0	76.9	94.0	-17.1	None
26	931.109M	33.7	+0.0	+43.0		+0.0	76.7	94.0	-17.3	None
27	302.407M	33.5	+0.0	+43.0		+0.0	76.5	94.0	-17.5	None
28	336.007M	33.1	+0.0	+43.0		+0.0	76.1	94.0	-17.9	None
29	703.407M	32.5	+0.0	+43.0		+0.0	75.5	94.0	-18.5	None

30	369.607M	31.5	+0.0	+43.0		+0.0	74.5	94.0	-19.5	None
31	695.909M	30.7	+0.0	+43.0		+0.0	73.7	94.0	-20.3	None
32	3254.000M Ave	27.8	+0.6	+43.0		+0.0	71.4	94.0	-22.6	None
^	3254.000M	44.1	+0.6	+43.0		+0.0	87.7	94.0	-6.3	None
34	3224.000M Ave	27.7	+0.6	+43.0		+0.0	71.3	94.0	-22.7	None
^	3224.000M	43.6	+0.6	+43.0		+0.0	87.2	94.0	-6.8	None
36	3284.000M Ave	27.5	+0.6	+43.0		+0.0	71.1	94.0	-22.9	None
^	3284.000M	43.8	+0.6	+43.0		+0.0	87.4	94.0	-6.6	None

Spurious Emissions - ANT

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033105
24" SMA Cable	2604	Argosy	UFA147A	0-0360-200200	012304	012305

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP

FCC 2.1033(c)(14)/2.1053/90.210(g) - 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 90.210G Spurious OATS**
Work Order #: **82889** Date: 11/09/2004
Test Type: **Maximized Emissions** Time: 16:25:29
Equipment: **Mobile Data Radio** Sequence#: 1
Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
Model: M64700G25
S/N: 04363311

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

Function	Manufacturer	Model #	S/N
Mobile Data Radio*	IPMobileNet	M64700G25	04363311

Support Devices:

Function	Manufacturer	Model #	S/N
Laptop Computer	Dell Corporation	PP02L Inspiron I2500	5TZ6611
DC Power Supply	Samlex America	SEC 1223	03061-0D01-0632
High Power Termination	Weinschel Corporation	45-40-43	MN216
GPS Antenna	San Jose Navigation, Inc.	SM-25	2569918

Test Conditions / Notes:

The EUT and some of the support equipment are located on the table top. Connected to the EUT Tx/Rx port is a 1 meter long coaxial cable terminated into a high power termination. Connected to the EUT serial port is a long serial cable then to a remotely located laptop computer. Connect to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. Connected to the EUT RJ45 port and Rx ports are unterminated cables. Power to the EUT is supplied by an external DC Power supply. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously. Voltage to the EUT is 13.8 VDC. Temperature: 18°C, Humidity: 52%, Pressure: 100kPa. Frequency range scanned and maximized, 8 MHz to 9000 MHz. This data sheet contains data for the EUT operating on Low (806 MHz), Mid (813.5 MHz), and High (821 MHz) channels and transmitting at its rated output power. Frequency 9kHz-150kHz, RBW=200Hz, VBW=200Hz; 150kHz-30MHz, RBW=9kHz, VBW=9kHz; 30MHz-1000MHz, RBW=120kHz, VBW=120kHz; 1000MHz-9000MHz, RBW=1MHz, VBW=1MHz.

Operating Frequency: 806 MHz - 821 MHz
Channels: Low, Mid and High
Highest Measured Output Power: 43.01 ERP(dBm)= 20 ERP(Watts)
Distance: 3 meters
Limit: 43+10Log(P) 56.01 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
4,105.00	-19.4	Vert	62.41
4,105.00	-17.9	Vert	60.91
4,067.50	-19.5	Vert	62.51
4,067.50	-17.7	Vert	60.71
4,030.00	-19.9	Vert	62.91

4,030.00	-18.4	Vert	61.41
4,105.00	-22.4	Horiz	65.41
2,440.50	-22.4	Vert	65.41
4,836.00	-23	Vert	66.01
2,463.00	-24.1	Vert	67.11
4,030.00	-24.4	Horiz	67.41
4,067.50	-24.5	Horiz	67.51
5,642.00	-25.2	Vert	68.21
7,389.00	-25.3	Vert	68.31
7,321.50	-25.5	Vert	68.51
2,440.50	-26.1	Horiz	69.11
4,881.00	-26.5	Vert	69.51
2,418.00	-26.5	Vert	69.51
2,418.00	-26.7	Horiz	69.71
5,694.50	-27.3	Horiz	70.31
5,694.50	-27.8	Vert	70.81
2,463.00	-27.9	Horiz	70.91
5,642.00	-27.9	Horiz	70.91
5,747.00	-28	Horiz	71.01
7,389.00	-28.8	Horiz	71.81
5,747.00	-28.9	Vert	71.91
4,926.00	-28.9	Vert	71.91
1,627.00	-29.7	Vert	72.71
1,612.00	-29.8	Horiz	72.81
1,612.00	-29.8	Vert	72.81
4,836.00	-31.1	Horiz	74.11
3,254.00	-31.7	Vert	74.71
3,284.00	-31.9	Vert	74.91
1,627.00	-32	Horiz	75.01
1,642.00	-33.6	Horiz	76.61
6,508.00	-33.6	Horiz	76.61
4,926.00	-33.9	Horiz	76.91
7,321.50	-34.2	Horiz	77.21
3,224.00	-34.6	Vert	77.61
1,642.00	-35.4	Vert	78.41
7,254.00	-35.5	Vert	78.51
8,210.00	-35.6	Vert	78.61
4,881.00	-35.7	Horiz	78.71
3,254.00	-35.8	Horiz	78.81
8,210.00	-36.1	Horiz	79.11
3,284.00	-36.3	Horiz	79.31
6,568.00	-37.2	Horiz	80.21
8,135.00	-37.2	Vert	80.21
8,060.00	-37.5	Vert	80.51
3,224.00	-38.2	Horiz	81.21
7,254.00	-38.4	Horiz	81.41
6,448.00	-38.4	Vert	81.41
6,568.00	-38.5	Vert	81.51
6,508.00	-39.1	Vert	82.11
8,135.00	-39.1	Horiz	82.11
8,060.00	-39.1	Horiz	82.11
6,448.00	-39.7	Horiz	82.71

Spurious Emissions - OATS

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	070204	070206
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	070204	070206
Quasi Peak Adapter	00200	HP	85650A	2043A00221	070204	070206
Bilog Antenna	00851	Schaffner-Chase EMC	CBL6111C	2629	031604	031606
Antenna cable (10 meter site D)	NA	Andrew	LDF1-50	Cable#17	101104	101105
Antenna cable from bulkhead to antenna	N/A	Pasternack	RG-214/U	Cable #33	032904	032905
Preamp to SA Cable (3 feet)	NA	Pasternack	E100316-I	Cable #22	080904	080905
Pre-amp	00010	HP	8447D	2727A05392	070204	070206
Loop Antenna	00314	EMCO	6502	2014	062804	062806
Antenna cable (Heliax)	NA	Andrew	LDF1-50	Cable#19	101304	101305
Horn Antenna	01646	EMCO	3115	9603-4683	042503	042505
Microwave Pre-amp	00787	HP	83017A	3123A00282	042303	042305
Magnetic Loop Antenna	00314	Emco	6502	2014	072804	072806
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033105
24” SMA Cable	2604	Argosy	UFA147A	0-0360-200200	012304	012305
1.5 GHz HPF	02116	HP	84300-80037	3643A00027	060603	060605

PHOTOGRAPH SHOWING RADIATED EMISSIONS

FCC 90.210(g)

PHOTOGRAPH SHOWING RADIATED EMISSIONS

FCC 90.210(g)

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

Test Conditions: The EUT is placed in the temperature chamber. RF signal is monitored from the antenna port. A spectrum analyzer is employed to measured the frequency stability of the EUT.

Customer: IP MobileNet
WO#: 82889
Date: 11/10,11/2004
Test Engineer: S. Yamamoto

Device Model #: M64700G25
Operating Voltage: 13.8 **Vdc**

Frequency Limit: 2.50E+00 **ppm** **2.5** ppm 2.50E+00 ppm

Temperature Variations

		Channel 3 (MHz)	Dev (ppm)	Channel 4 (MHz)	Dev (ppm)	Channel 5 (MHz)	Dev (ppm)
Channel Frequency:		**806.000000000**		**813.500000000**		**821.000000**	
Temp (C)	Voltage						
-30	13.8	806.000352000	0.436724	813.500406000	0.499078	821.000357	0.434835
-20	13.8	806.000227000	0.281638	813.500207000	0.254456	821.000262	0.319123
-10	13.8	806.000446000	0.553350	813.500497000	0.610940	821.000504	0.613885
0	13.8	806.000375000	0.465260	813.500306000	0.376152	821.000264000	0.321559
10	13.8	806.000363000	0.450372	813.500411000	0.505224	821.000381000	0.464068
20	13.8	806.000372000	0.461538	813.500354000	0.435157	821.000360	0.438489
30	13.8	806.000042000	0.052109	813.500018000	0.022127	821.000042000	0.051157
40	13.8	806.000008000	0.009926	813.500009000	0.011063	821.000009000	0.010962
50	13.8	805.999964000	-0.044665	813.499898000	-0.125384	820.999931000	-0.084044

Voltage Variations (±15%)

Temp (C)	Voltage	Channel 3 (MHz)	Dev. (ppm)	Channel 4 (MHz)	Dev. (ppm)	Channel 5 (MHz)	Dev. (ppm)
20	11.7	806.000354000	0.439206	813.500375000	0.460971	821.000327	0.398295
20	13.8	806.000372000	0.461538	813.500354000	0.435157	821.000360	0.438489
20	15.9	806.000360000	0.446650	813.500366000	0.449908	821.000351	0.427527

Max Deviation (ppm)	+	**0.55335**		+	**0.61094**	+	**0.61389**
Max Deviation (ppm)	-	**0.04467**		-	**0.12538**	-	**0.08404**
		PASS			**PASS**		**PASS**

FCC 90.539 Frequency Stability

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033105
24" SMA Cable	2604	Argosy	UFA147A	0-0360-200200	012304	012305
Temperature Chamber	01878	Thermotron	S1.2 Mini Max	(none)	071904	071906
High Power Attenuator	N/A	Weinschel	45-40-43	MN216	*1	*1

*1-Check of the attenuator insertion loss was performed just prior to this test at the discrete frequencies used (806 MHz, 813.5 MHz, and 821 MHz).

PHOTOGRAPH SHOWING FREQUENCY STABILITY

FCC 90.539

FCC 90.543(e)

90.543(e) Setup

The equipment under test (EUT) and all of the support equipment except the laptop computer are located on the tabletop. Connected to the EUT Tx/Rx port is a 1 meter long coaxial cable terminated into a high power termination. Connected to the EUT serial port is a long serial cable then to a remotely located laptop computer. Connect to the EUT GPS port is a standard GPS antenna with 5 meter long coaxial cable. Connected to the EUT RJ45 port and Rx ports are unterminated cables. Power to the EUT is supplied by an external DC Power supply. The remotely located laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously.

90.543(e) Test Conditions and Results

The EUT was configured to transmit at the nominal rated power of 20W for the low (806 MHz), middle (813.5 MHz), and high (821 MHz) channels. For each of these three channels, the frequency band of 1559 MHz to 1610 MHz was scanned, detection was performed with a reduced resolution bandwidth and with the aid of a high pass filter at the required resolution bandwidth. **There were no emissions in this frequency band within 50dB of the limit.** Voltage to the EUT was 13.8 VDC. Temperature: 18C, Humidity: 52%, Pressure: 100kPa.

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Antenna cable (10 meter site D)	NA	Andrew	LDF1-50	Cable#17	100204	100205
Antenna cable (Heliax)	NA	Andrew	LDF1-50	Cable#19	101304	101305
Horn Antenna	01646	EMCO	3115	9603-4683	042503	042505
Microwave Pre-amp	00787	HP	83017A	3123A00282	042303	042305
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	033103	033105
24" SMA Cable	2604	Argosy	UFA147A	0-0360-200200	012304	012305
1.5 GHz HPF	02116	HP	84300-80037	3643A00027	060603	060605
Spectrum Analyzer	00784	HP	8596E	3346A00209	011903	011905
24" SMA Cable	2604	Argosy	UFA147A	0-0360-200200	012304	012305

PHOTOGRAPH SHOWING DIRECT CONNECT TEST SETUP