



IP MOBILENET TEST REPORT
FOR THE
BASE STATION FOR MOBILE DATA RADIO NETWORK, B64450G25
FCC PART 90 AND RSS-119
COMPLIANCE

DATE OF ISSUE: SEPTEMBER 28, 2005

PREPARED FOR:

IP MobileNet
16842 Von Karman Avenue
Irvine, CA 92606

P.O. No.: 004248-00
W.O. No.: 84044

PREPARED BY:

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

Date of test: September 16-23, 2005

Report No.: FC05-058

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ADMINISTRATIVE INFORMATION

DATE OF TEST: September 16-23, 2005

DATE OF RECEIPT: September 16, 2005

FREQUENCY RANGE TESTED: 9 kHz-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

TEST METHOD: FCC Part 90, ANSI/TIA/EIA-603-B (2002), ANSI C63.4 (2003), FCC-MP5, RSS-Gen and RSS-119

PURPOSE OF TEST: To demonstrate the compliance of the Base Station for Mobile Data Radio Network, B64450G25 with the requirements for FCC Part 90 and RSS-119 devices.

FCC TO CANADA STANDARD CORRELATION MATRIX

Canadian Standard	Canadian Section	FCC Standard	FCC Section	Test Description
RSS119	5.5	90	90.209	Bandwidth Limitations
RSS119	5.5.1	NA	NA	Specific Requirements for Channel BW > 12.5kHz
RSS119	5.5.7	90	90.217	Exemption from technical standards
RSS119	5.7	90	90.207	Authorized Modulation Types
RSS119	5.8	NA	NA	Equivalent Channels (>12.5kHz)
RSS119	6.2	90	90.205	Power Output
RSS119	6.3	90	90.210	Spurious Emissions OATS
RSS119	6.3	90	90.210	Spurious Emissions Ant Terminal
RSS119	6.4	90	90.210	Emissions Mask
RSS119	6.5	90	90.214	Transient Freq Behavior
RSS119	6.6	2	2.1047	Modulation Limiting
RSS119	6.9	NA	NA	Data Modem Requirements
RSS119	7	90	90.213	Frequency Stability
RSS119	8	15	Subpart B	Receiver Requirements
RSS119	9	OET	65 Sup. C	RF Exposure Requirements
	IC-3172D		100638	Site File No.

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 representative of a production unit.

EQUIPMENT UNDER TEST

Base Station for Mobile Data Radio Network

Manuf: IP MobileNet
Model: B64450G25
Serial: 05386432
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: 2569790

**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**
450MHz – 507MHz.**FCC 2.1033 (c)(6) OPERATING POWER**
40 Watts.**FCC 2.1033 (c)(7) MAXIMUM POWER RATING**

450–470 MHz. (1) The maximum allowable station effective radiated power (ERP) is dependent upon the station's antenna HAAT and required service area and will be authorized in accordance with table 2 of Part 90.205(h). Applicants requesting an ERP in excess of that listed in table 2 must submit an engineering analysis based upon generally accepted engineering practices and standards that includes coverage contours to demonstrate that the requested station parameters will not produce coverage in excess of that which the applicant requires. 470–512 MHz. Power and height limitations are specified in §90.307 and 90.309.

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 15.107 – AC CONDUCTED EMISSIONS

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

Customer: **IP MobileNet**
 Specification: **FCC 15.107 Class B COND [AVE]**
 Work Order #: **84044** Date: 9/20/2005
 Test Type: **Conducted Emissions** Time: 12:01:50
 Equipment: **Base Station for Mobile Data Radio Network** Sequence#: 3
 Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
 Model: B64450G25 110 Vac 60 Hz
 S/N: 05386432

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Base Station for Mobile Data Radio Network*	IPMobileNet	B64450G25	05386432

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	2569790

Test Conditions / Notes:

The EUT and support equipment are located on the table top. Connected to the EUT Tx port is one high powered termination. Connected to the EUT serial port is the laptop computer via a shielded serial cable. 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 laptop computer using an unshielded cat. 5E cable. Connected to the EUT's three receive ports are shielded terminated coaxial cables. Connected to the EUT's DB-9 SLIP connection is a shielded unterminated cable. Connected to the EUT's BNC audio output port is a shielded unterminated 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: 60%, Pressure: 100kPa. Frequency 150kHz - 30MHz RBW=9kHz, VBW=9kHz. This data sheet is for the EUT transmitting at rated power (40 Watts) on Low (450MHz) channel.

Transducer Legend:

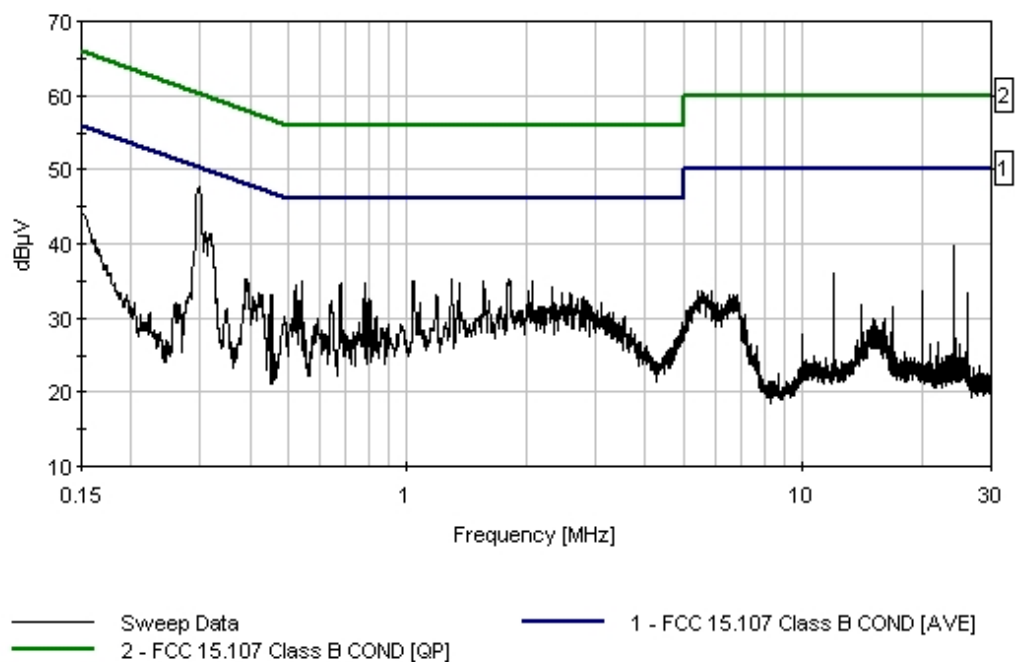
T1=Cable #8 Conducted Site D	T2=HP Filter AN 02343
T3=(L1) LISN Insertion Loss 02128	

Measurement Data:		Reading listed by margin.					Test Lead: Black				
#	Freq MHz	Rdng dB μ V	T1 dB	T2 dB	T3 dB	Dist dB	Table	Corr dB μ V	Spec dB μ V	Margin dB	Polar Ant
1	298.000k	44.3	+0.0	+0.2	+0.1		+0.0	44.6	50.3	-5.7	Black
Ave											
^	298.349k	47.4	+0.0	+0.2	+0.1		+0.0	47.7	50.3	-2.6	Black

3	24.018M	37.8	+0.4	+0.3	+1.3	+0.0	39.8	50.0	-10.2	Black
4	1.294M	35.0	+0.1	+0.2	+0.0	+0.0	35.3	46.0	-10.7	Black
5	1.808M	35.0	+0.1	+0.1	+0.1	+0.0	35.3	46.0	-10.7	Black
6	1.034M	34.7	+0.1	+0.2	+0.0	+0.0	35.0	46.0	-11.0	Black
7	1.557M	34.6	+0.1	+0.2	+0.1	+0.0	35.0	46.0	-11.0	Black
8	541.234k	34.5	+0.1	+0.2	+0.1	+0.0	34.9	46.0	-11.1	Black
9	2.068M	34.6	+0.1	+0.1	+0.1	+0.0	34.9	46.0	-11.1	Black
10	680.856k	34.3	+0.1	+0.3	+0.0	+0.0	34.7	46.0	-11.3	Black
11	781.937k	34.4	+0.1	+0.1	+0.0	+0.0	34.6	46.0	-11.4	Black
12	1.349M	34.3	+0.1	+0.2	+0.0	+0.0	34.6	46.0	-11.4	Black
13	523.781k	34.1	+0.0	+0.2	+0.1	+0.0	34.4	46.0	-11.6	Black
14	676.493k	33.9	+0.1	+0.3	+0.0	+0.0	34.3	46.0	-11.7	Black
15	2.332M	33.9	+0.1	+0.1	+0.1	+0.0	34.2	46.0	-11.8	Black
16	150.000k	40.8	+0.0	+3.3	+0.0	+0.0	44.1	56.0	-11.9	Black
17	517.236k	33.3	+0.0	+0.2	+0.1	+0.0	33.6	46.0	-12.4	Black
18	2.017M	33.2	+0.1	+0.1	+0.1	+0.0	33.5	46.0	-12.5	Black
19	2.476M	33.0	+0.1	+0.1	+0.1	+0.0	33.3	46.0	-12.7	Black
20	1.183M	32.9	+0.1	+0.2	+0.0	+0.0	33.2	46.0	-12.8	Black
21	390.703k	34.8	+0.0	+0.2	+0.1	+0.0	35.1	48.0	-12.9	Black
22	539.779k	32.7	+0.1	+0.2	+0.1	+0.0	33.1	46.0	-12.9	Black
23	799.390k	32.4	+0.1	+0.1	+0.0	+0.0	32.6	46.0	-13.4	Black
24	773.210k	32.2	+0.1	+0.2	+0.0	+0.0	32.5	46.0	-13.5	Black
25	643.769k	32.0	+0.1	+0.3	+0.0	+0.0	32.4	46.0	-13.6	Black
26	451.061k	32.9	+0.0	+0.2	+0.1	+0.0	33.2	46.9	-13.7	Black
27	805.934k	32.1	+0.1	+0.1	+0.0	+0.0	32.3	46.0	-13.7	Black

28	1.604M	31.9	+0.1	+0.2	+0.1	+0.0	32.3	46.0	-13.7	Black
29	531.780k	31.8	+0.1	+0.2	+0.1	+0.0	32.2	46.0	-13.8	Black
30	787.027k	31.9	+0.1	+0.1	+0.0	+0.0	32.1	46.0	-13.9	Black
31	3.106M	31.7	+0.1	+0.1	+0.1	+0.0	32.0	46.0	-14.0	Black

CKC Laboratories Inc. Date: 9/20/2005 Time: 12:01:50 IP MobileNet WO#: 84044
FCC 15.107 Class B COND [AVE] Test Lead: Black 110 Vac 60 Hz Sequence#: 3
IP MobileNet, B64450G25



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

Customer: **IP MobileNet**
 Specification: **FCC 15.107 Class B COND [AVE]**
 Work Order #: **84044** Date: 9/20/2005
 Test Type: **Conducted Emissions** Time: 12:07:38
 Equipment: **Base Station for Mobile Data Radio Network** Sequence#: 4
 Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
 Model: B64450G25 110 Vac 60 Hz
 S/N: 05386432

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Base Station for Mobile Data Radio Network*	IPMobileNet	B64450G25	05386432

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	2569790

Test Conditions / Notes:

The EUT and support equipment are located on the table top. Connected to the EUT Tx port is one high powered termination. Connected to the EUT serial port is the laptop computer via a shielded serial cable. 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 laptop computer using an unshielded cat. 5E cable. Connected to the EUT's three receive ports are shielded terminated coaxial cables. Connected to the EUT's DB-9 SLIP connection is a shielded unterminated cable. Connected to the EUT's BNC audio output port is a shielded unterminated 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: 60%, Pressure: 100kPa. Frequency 150kHz - 30MHz RBW=9kHz, VBW=9kHz. This data sheet is for the EUT transmitting at rated power (40 Watts) on Low (450MHz) channel.

Transducer Legend:

T1=Cable #8 Conducted Site D	T2=HP Filter AN 02343
T3=(L2) LISN Insertion Loss 02128	

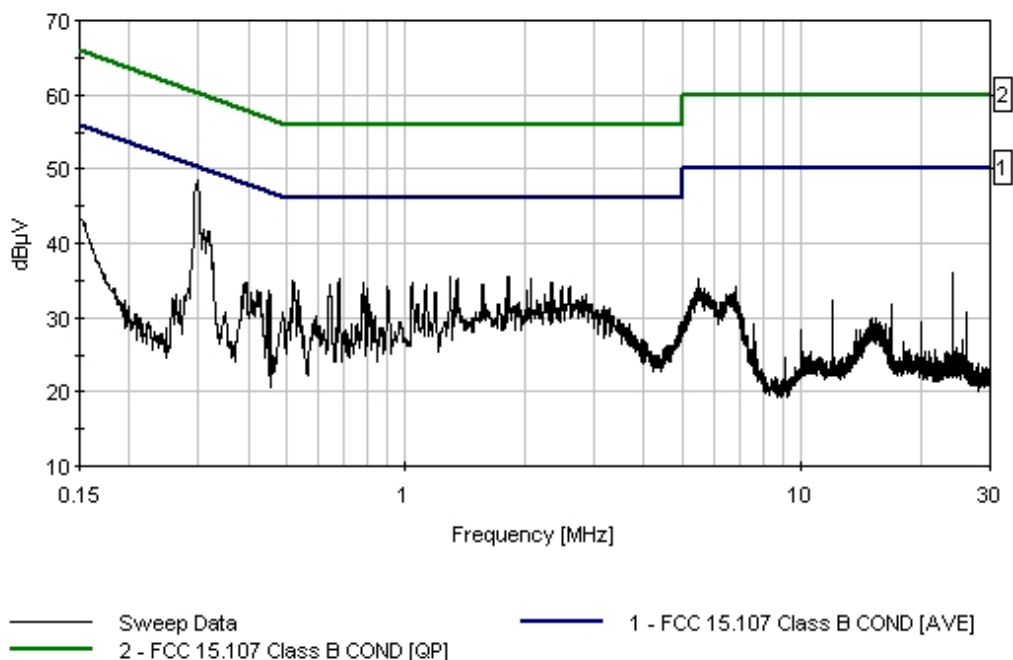
Measurement Data: Reading listed by margin. Test Lead: White

#	Freq MHz	Rdng dBμV	T1 dB	T2 dB	T3 dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	297.000k	44.6	+0.0	+0.2	+0.0		+0.0	44.8	50.3	-5.5	White
Ave											
^	296.894k	48.2	+0.0	+0.2	+0.0		+0.0	48.4	50.3	-1.9	White
3	1.817M	35.3	+0.1	+0.1	+0.1		+0.0	35.6	46.0	-10.4	White
4	1.298M	35.0	+0.1	+0.2	+0.1		+0.0	35.4	46.0	-10.6	White

5	1.349M	34.8	+0.1	+0.2	+0.1	+0.0	35.2	46.0	-10.8	White
6	2.072M	34.9	+0.1	+0.1	+0.1	+0.0	35.2	46.0	-10.8	White
7	680.856k	34.6	+0.1	+0.3	+0.1	+0.0	35.1	46.0	-10.9	White
8	518.690k	34.6	+0.0	+0.2	+0.1	+0.0	34.9	46.0	-11.1	White
9	521.599k	34.5	+0.0	+0.2	+0.1	+0.0	34.8	46.0	-11.2	White
10	780.482k	34.5	+0.1	+0.1	+0.1	+0.0	34.8	46.0	-11.2	White
11	1.039M	34.4	+0.1	+0.2	+0.1	+0.0	34.8	46.0	-11.2	White
12	1.124M	34.1	+0.1	+0.2	+0.1	+0.0	34.5	46.0	-11.5	White
13	1.579M	34.1	+0.1	+0.2	+0.1	+0.0	34.5	46.0	-11.5	White
14	641.587k	33.9	+0.1	+0.3	+0.1	+0.0	34.4	46.0	-11.6	White
15	1.562M	33.9	+0.1	+0.2	+0.1	+0.0	34.3	46.0	-11.7	White
16	902.518k	33.7	+0.1	+0.2	+0.1	+0.0	34.1	46.0	-11.9	White
17	804.480k	33.7	+0.1	+0.1	+0.1	+0.0	34.0	46.0	-12.0	White
18	538.325k	33.2	+0.1	+0.2	+0.1	+0.0	33.6	46.0	-12.4	White
19	150.727k	40.3	+0.0	+3.1	+0.1	+0.0	43.5	56.0	-12.5	White
20	1.187M	33.0	+0.1	+0.2	+0.1	+0.0	33.4	46.0	-12.6	White
21	773.210k	32.7	+0.1	+0.2	+0.1	+0.0	33.1	46.0	-12.9	White
22	391.430k	34.5	+0.0	+0.2	+0.1	+0.0	34.8	48.0	-13.2	White
23	452.515k	33.3	+0.0	+0.2	+0.1	+0.0	33.6	46.8	-13.2	White
24	801.571k	32.3	+0.1	+0.1	+0.1	+0.0	32.6	46.0	-13.4	White
25	796.481k	32.2	+0.1	+0.1	+0.1	+0.0	32.5	46.0	-13.5	White
26	24.018M	33.9	+0.4	+0.3	+1.4	+0.0	36.0	50.0	-14.0	White
27	448.879k	32.4	+0.0	+0.2	+0.1	+0.0	32.7	46.9	-14.2	White
28	1.068M	31.3	+0.1	+0.2	+0.1	+0.0	31.7	46.0	-14.3	White
29	3.157M	31.2	+0.1	+0.1	+0.2	+0.0	31.6	46.0	-14.4	White

30	509.964k	31.0	+0.0	+0.2	+0.1	+0.0	31.3	46.0	-14.7	White
31	3.263M	30.8	+0.1	+0.1	+0.2	+0.0	31.2	46.0	-14.8	White

CKC Laboratories Inc. Date: 9/20/2005 Time: 12:07:38 IP MobileNet WO#: 84044
FCC 15.107 Class B COND [AVE] Test Lead: White 110 Vac 60 Hz Sequence#: 4
IP MobileNet, B64450G25



15.107 Conducted Emissions Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807
Coaxial Cable	-	Harbour Industries	M17/60-RG142	Cable #8	070204	070206
LISN	00848	EMCO	3816/2	1102	120804	120806
LISN	02128	EMCO	3816/2	1090	051605	051607
150kHz HPF	02610	TTE	HB9615-150k-50-720	G7755	041604	041606

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted Emissions - Front View

PHOTOGRAPH SHOWING MAINS CONDUCTED EMISSIONS



Mains Conducted 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 #: **84044** Date: 9/22/2005
 Test Type: **Maximized Emissions** Time: 14:19:36
 Equipment: **Base Station for Mobile Data Radio Network** Sequence#: 5
 Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
 Model: B64450G25
 S/N: 05386432

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Base Station for Mobile Data Radio Network*	IPMobileNet	B64450G25	05386432

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	2569790

Test Conditions / Notes:

The EUT and support equipment are located on the table top. Connected to the EUT Tx port is one high powered termination. Connected to the EUT serial port is the laptop computer via a shielded serial cable. 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 laptop computer using an unshielded cat. 5E cable. Connected to the EUT's three receive ports are shielded terminated coaxial cables. Connected to the EUT's DB9 SLIP connection is a shielded unterminated cable. Connected to the EUT's BNC audio output port is a shielded unterminated 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: 60%, Pressure: 100kPa. Frequency 30MHz - 1000MHz RBW=120kHz, VBW=120kHz; 1000MHz - 6000MHz RBW=1MHz, VBW=1MHz. This data sheet is for the EUT transmitting at rated power (40 Watts) on Low (450MHz) channel. Frequency range scanned and maximized, 30 MHz to 5600 MHz.

Transducer Legend:

T1=Chase bilog a/n 00851, s/n 2629	T2=Cable #22 080905 Preamp to SA
T3=Cable #33 44ft RG-214(ant to Bulkhead)	T4=Cable Heliax #17 84ft(10 meter) 100205
T5=Preamp 8447D Asset 00010	T6=Cable #19 54ft Heliax 081807
T7=DRG Horn_01646_072206	T8=HF Preamp Cal. HP-83017A,S/N- 3123A00282
T9=1-40 GHz Cable_122306	

Measurement Data:

Reading listed by margin.

Test Distance: 3 Meters

#	Freq	Rdng	T1 T5 T9	T2 T6	T3 T7	T4 T8	Dist	Corr	Spec	Margin	Polar
	MHz	dB μ V	dB	dB	dB	dB	Table	dB μ V/m	dB μ V/m	dB	Ant
1	504.024M QP	47.4	+17.1 -27.8	+0.4	+2.5	+2.6	+0.0	42.2	46.0	-3.8	Horiz
^	504.022M	48.0	+17.1 -27.8	+0.4	+2.5	+2.6	+0.0	42.8	46.0	-3.2	Horiz
3	520.799M	44.9	+17.6 -27.8	+0.4	+2.5	+2.6	+0.0	40.2	46.0	-5.8	Horiz
4	588.021M	43.1	+19.0 -28.0	+0.5	+2.8	+2.8	+0.0	40.2	46.0	-5.8	Vert
5	198.059M	50.4	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	37.1	43.5	-6.4	Vert
6	201.082M	50.4	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	37.0	43.5	-6.5	Vert
7	201.065M	49.9	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	36.5	43.5	-7.0	Horiz
8	195.084M	48.8	+10.2 -26.6	+0.2	+1.5	+1.6	+0.0	35.7	43.5	-7.8	Horiz
9	198.076M	48.9	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	35.6	43.5	-7.9	Horiz
10	453.603M	44.7	+15.8 -27.7	+0.4	+2.4	+2.4	+0.0	38.0	46.0	-8.0	Horiz
11	130.050M	47.6	+11.8 -26.8	+0.2	+1.2	+1.3	+0.0	35.3	43.5	-8.2	Vert
12	144.030M	46.8	+12.1 -26.8	+0.2	+1.2	+1.4	+0.0	34.9	43.5	-8.6	Vert
13	195.088M	47.6	+10.2 -26.6	+0.2	+1.5	+1.6	+0.0	34.5	43.5	-9.0	Vert

14	537.586M	41.1	+18.0 -27.9	+0.5	+2.6	+2.7	+0.0	37.0	46.0	-9.0	Vert
15	537.604M	40.9	+18.0 -27.9	+0.5	+2.6	+2.7	+0.0	36.8	46.0	-9.2	Horiz
16	200.051M	47.6	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	34.2	43.5	-9.3	Vert
17	126.042M	46.2	+11.7 -26.8	+0.2	+1.1	+1.3	+0.0	33.7	43.5	-9.8	Vert
18	140.059M	45.7	+12.0 -26.8	+0.2	+1.2	+1.4	+0.0	33.7	43.5	-9.8	Vert
19	199.081M	46.9	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	33.6	43.5	-9.9	Vert
20	202.059M	46.9	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	33.5	43.5	-10.0	Vert
21	196.032M	46.6	+10.1 -26.6	+0.2	+1.5	+1.6	+0.0	33.4	43.5	-10.1	Horiz
22	520.795M	40.6	+17.6 -27.8	+0.4	+2.5	+2.6	+0.0	35.9	46.0	-10.1	Vert
23	194.047M	46.2	+10.2 -26.6	+0.2	+1.5	+1.6	+0.0	33.1	43.5	-10.4	Horiz
24	957.587M	31.6	+23.4 -27.4	+0.6	+3.7	+3.4	+0.0	35.3	46.0	-10.7	Vert
25	504.026M	40.5	+17.1 -27.8	+0.4	+2.5	+2.6	+0.0	35.3	46.0	-10.7	Vert
26	136.050M	44.9	+11.9 -26.8	+0.2	+1.2	+1.3	+0.0	32.7	43.5	-10.8	Vert
27	197.080M	45.9	+10.1 -26.6	+0.2	+1.5	+1.6	+0.0	32.7	43.5	-10.8	Vert
28	197.056M	45.8	+10.1 -26.6	+0.2	+1.5	+1.6	+0.0	32.6	43.5	-10.9	Horiz
29	436.783M	42.0	+15.4 -27.5	+0.4	+2.3	+2.4	+0.0	35.0	46.0	-11.0	Horiz
30	203.082M	45.7	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	32.3	43.5	-11.2	Horiz

31	200.053M	45.7	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	32.3	43.5	-11.2	Horiz
32	202.072M	45.6	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	32.2	43.5	-11.3	Horiz
33	120.050M	44.8	+11.5 -26.8	+0.2	+1.1	+1.3	+0.0	32.1	43.5	-11.4	Vert
34	204.051M	45.4	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	32.1	43.5	-11.4	Vert
35	554.403M	38.1	+18.4 -27.9	+0.5	+2.6	+2.7	+0.0	34.4	46.0	-11.6	Vert
36	470.386M	40.5	+16.2 -27.7	+0.4	+2.4	+2.5	+0.0	34.3	46.0	-11.7	Horiz
37	204.071M	45.0	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	31.7	43.5	-11.8	Horiz
38	186.056M	44.5	+10.7 -26.7	+0.2	+1.4	+1.5	+0.0	31.6	43.5	-11.9	Horiz
39	840.004M	32.8	+21.8 -27.8	+0.6	+3.5	+3.1	+0.0	34.0	46.0	-12.0	Vert
40	186.060M	44.3	+10.7 -26.7	+0.2	+1.4	+1.5	+0.0	31.4	43.5	-12.1	Vert
41	203.076M	44.5	+9.9 -26.6	+0.2	+1.5	+1.6	+0.0	31.1	43.5	-12.4	Vert
42	190.048M	43.8	+10.5 -26.6	+0.2	+1.5	+1.6	+0.0	31.0	43.5	-12.5	Vert
43	205.069M	44.2	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	30.9	43.5	-12.6	Horiz
44	192.063M	43.8	+10.4 -26.6	+0.2	+1.5	+1.6	+0.0	30.9	43.5	-12.6	Vert
45	192.058M	43.6	+10.4 -26.6	+0.2	+1.5	+1.6	+0.0	30.7	43.5	-12.8	Horiz
46	336.070M	42.1	+13.2 -26.8	+0.4	+2.0	+2.1	+0.0	33.0	46.0	-13.0	Vert
47	432.116M	40.1	+15.3 -27.5	+0.4	+2.3	+2.4	+0.0	33.0	46.0	-13.0	Horiz

48	369.617M	40.8	+14.3 -26.9	+0.4	+2.1	+2.3	+0.0	33.0	46.0	-13.0	Vert
49	193.055M	43.4	+10.3 -26.6	+0.2	+1.5	+1.6	+0.0	30.4	43.5	-13.1	Horiz
50	125.084M	42.7	+11.6 -26.8	+0.2	+1.1	+1.3	+0.0	30.1	43.5	-13.4	Vert
51	178.059M	42.5	+11.2 -26.7	+0.2	+1.4	+1.5	+0.0	30.1	43.5	-13.4	Vert
52	487.186M	38.0	+16.7 -27.8	+0.4	+2.5	+2.6	+0.0	32.4	46.0	-13.6	Horiz
53	403.220M	39.0	+14.7 -27.0	+0.4	+2.1	+2.4	+0.0	31.6	46.0	-14.4	Horiz
54	208.051M	42.1	+10.0 -26.6	+0.2	+1.5	+1.6	+0.0	28.8	43.5	-14.7	Vert
55	128.031M	41.0	+11.7 -26.8	+0.2	+1.1	+1.3	+0.0	28.5	43.5	-15.0	Vert
56	369.595M	38.8	+14.3 -26.9	+0.4	+2.1	+2.3	+0.0	31.0	46.0	-15.0	Horiz
57	386.381M	38.7	+14.5 -27.0	+0.4	+2.1	+2.3	+0.0	31.0	46.0	-15.0	Vert
58	470.400M	37.0	+16.2 -27.7	+0.4	+2.4	+2.5	+0.0	30.8	46.0	-15.2	Vert
59	403.195M	38.1	+14.7 -27.0	+0.4	+2.1	+2.4	+0.0	30.7	46.0	-15.3	Vert
60	806.436M	30.3	+21.0 -27.7	+0.6	+3.3	+3.1	+0.0	30.6	46.0	-15.4	Vert
61	386.391M	38.1	+14.5 -27.0	+0.4	+2.1	+2.3	+0.0	30.4	46.0	-15.6	Horiz
62	436.811M	37.3	+15.4 -27.5	+0.4	+2.3	+2.4	+0.0	30.3	46.0	-15.7	Vert
63	214.061M	40.6	+10.1 -26.6	+0.3	+1.6	+1.7	+0.0	27.7	43.5	-15.8	Vert
64	419.990M	37.1	+15.1 -27.3	+0.4	+2.2	+2.4	+0.0	29.9	46.0	-16.1	Vert

65	671.962M	30.9	+20.0 -27.8	+0.6	+3.0	+2.9	+0.0	29.6	46.0	-16.4	Vert
66	571.202M	32.9	+18.7 -27.9	+0.5	+2.7	+2.7	+0.0	29.6	46.0	-16.4	Vert
67	420.005M	36.6	+15.1 -27.3	+0.4	+2.2	+2.4	+0.0	29.4	46.0	-16.6	Horiz
68	604.800M	31.7	+19.3 -28.0	+0.5	+2.8	+2.8	+0.0	29.1	46.0	-16.9	Vert
69	487.218M	34.7	+16.7 -27.8	+0.4	+2.5	+2.6	+0.0	29.1	46.0	-16.9	Vert
70	144.033M	37.7	+12.1 -26.8	+0.2	+1.2	+1.4	+0.0	25.8	43.5	-17.7	Horiz
71	132.021M	37.8	+11.8 -26.8	+0.2	+1.2	+1.3	+0.0	25.5	43.5	-18.0	Horiz
72	1008.001M	45.1	+0.0 +0.0 +0.8	+0.0 +2.2	+0.0 +23.2	+3.4 -41.2	+0.0	33.5	54.0	-20.5	Vert
73	1041.636M	39.9	+0.0 +0.0 +0.9	+0.0 +2.2	+0.0 +23.4	+3.5 -41.0	+0.0	28.9	54.0	-25.1	Vert
74	1041.601M	36.5	+0.0 +0.0 +0.9	+0.0 +2.2	+0.0 +23.4	+3.5 -41.0	+0.0	25.5	54.0	-28.5	Horiz
75	1007.998M	36.8	+0.0 +0.0 +0.8	+0.0 +2.2	+0.0 +23.2	+3.4 -41.2	+0.0	25.2	54.0	-28.8	Horiz

15.109 Radiated Emissions Test Equipment

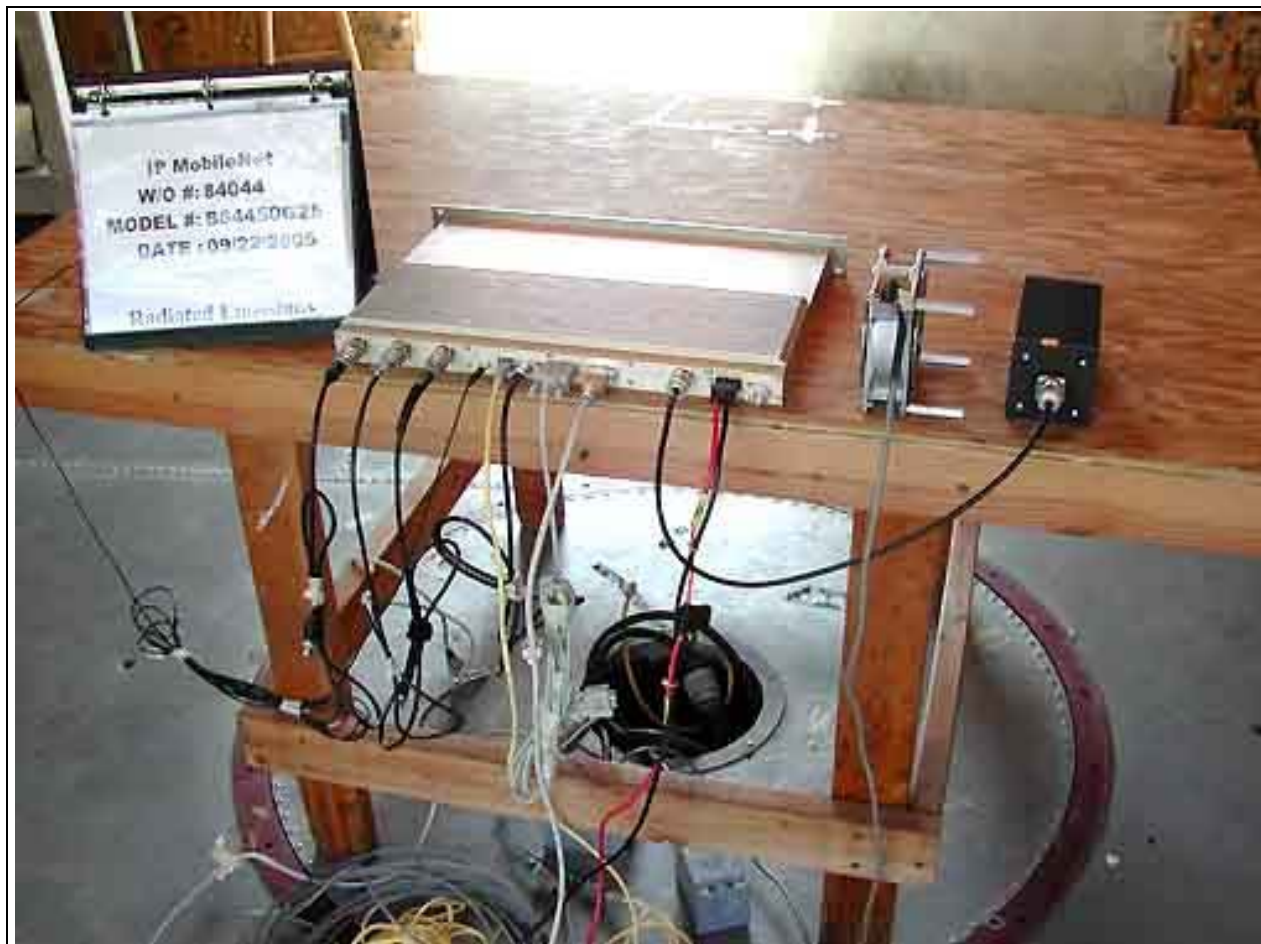
Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807
Bilog Antenna	00851	Schaffner- Chase EMC	CBL6111C	2629	031604	031606
Antenna cable (10 meter site D)	NA	Andrew	LDF1-50	Cable#17	100204	100206
Antenna cable from bulkhead to antenna	N/A	Pasternack	RG-214/U	Cable #33	040105	040106
Preamplifier to SA Cable (3 feet)	NA	Pasternack	E100316-I	Cable #22	080904	080906
Pre-amp	00010	HP	8447D	2727A05392	070204	070206
Antenna cable (Helix)	NA	Andrew	LDF1-50	Cable#19	101303	101305
Horn Antenna	01646	EMCO	3115	9603-4683	072204	072206
Microwave Pre-amp	00787	HP	83017A	3123A00282	052705	052707
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032505	032507
24" SMA Cable (White)	P5183	Pasternack	NA	1- 40GHz_white	122304	122306

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Front View

PHOTOGRAPH SHOWING RADIATED EMISSIONS



Radiated Emissions - Back View

FCC 15.111 – ANTENNA PORT EMISSIONS FOR RECEIVER

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

Customer: **IP MobileNet**
 Specification: **FCC 15.111**
 Work Order #: **84044** Date: 9/20/2005
 Test Type: **Maximized Emissions** Time: 11:16:16
 Equipment: **Base Station for Mobile Data Radio Network** Sequence#: 2
 Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
 Model: B64450G25
 S/N: 05386432

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Base Station for Mobile Data Radio Network*	IPMobileNet	B64450G25	05386432

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	2569790

Test Conditions / Notes:

The EUT, support equipment, and the test equipment are located on the table top. Connected to the EUT Tx port is one high powered termination. Connected to the EUT serial port is the laptop computer via a shielded serial cable. 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 laptop computer using an unshielded cat. 5E 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 and change between channels. Voltage to the EUT is 13.8 VDC. Temperature: 21°C, Humidity: 60%, Pressure: 100kPa. Frequency 150kHz - 30MHz RBW=9kHz, VBW=9kHz; 30MHz - 1000MHz RBW=120kHz, VBW=120kHz; 1000MHz - 6000MHz RBW=1MHz, VBW=1MHz. Frequency range scanned and maximized, 4 MHz to 5600 MHz. This data sheet is for the EUT transmitting at rated power (40 Watts) on Low (450 MHz), Mid (480MHz), and High (507 MHz) channels as well as the EUT in standby mode. Ports under test: RX1, RX2, and RX3.

Transducer Legend:

T1=1-40 GHz Cable_122306

Measurement Data: Reading listed by margin.

Test Distance: None

#	Freq MHz	Rdng dBμV	T1 dB	dB	dB	dB	Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	1640.005M	45.4	+1.1				+0.0	46.5	50.0	-3.5	None
									RX3		
2	820.015M	45.4	+0.8				+0.0	46.2	50.0	-3.8	None
									RX1		
3	2870.000M	44.0	+1.5				+0.0	45.5	50.0	-4.5	None
									RX1		

4	2200.000M	44.2	+1.3	+0.0	45.5	50.0 RX3	-4.5	None
5	2730.000M	43.9	+1.4	+0.0	45.3	50.0 RX3	-4.7	None
6	2200.000M	43.8	+1.3	+0.0	45.1	50.0 RX1	-4.9	None
7	450.003M	44.3	+0.7	+0.0	45.0	50.0 RX2	-5.0	None
8	2730.001M	43.4	+1.4	+0.0	44.8	50.0 RX1	-5.2	None
9	2640.000M	43.3	+1.4	+0.0	44.7	50.0 RX1	-5.3	None
10	2050.000M	43.0	+1.2	+0.0	44.2	50.0 RX1	-5.8	None
11	480.004M	43.4	+0.7	+0.0	44.1	50.0 RX2	-5.9	None
12	1640.000M	42.9	+1.1	+0.0	44.0	50.0 RX1	-6.0	None
13	820.005M	43.1	+0.8	+0.0	43.9	50.0 RX3	-6.1	None
14	2200.000M	42.4	+1.3	+0.0	43.7	50.0 RX2	-6.3	None
15	3520.000M	42.0	+1.6	+0.0	43.6	50.0 RX1	-6.4	None
16	4100.000M	41.8	+1.8	+0.0	43.6	50.0 RX1	-6.4	None
17	2460.000M	41.4	+1.4	+0.0	42.8	50.0 RX1	-7.2	None
18	5460.000M	40.6	+2.1	+0.0	42.7	50.0 RX1	-7.3	None
19	3280.000M	41.1	+1.6	+0.0	42.7	50.0 RX1	-7.3	None
20	2460.000M	41.3	+1.4	+0.0	42.7	50.0 RX2	-7.3	None
21	5280.004M	40.6	+2.0	+0.0	42.6	50.0 RX1	-7.4	None
22	507.001M	41.8	+0.7	+0.0	42.5	50.0 RX2	-7.5	None
23	2275.000M	41.1	+1.3	+0.0	42.4	50.0 RX2	-7.6	None
24	2050.000M	41.1	+1.2	+0.0	42.3	50.0 RX2	-7.7	None
25	3280.000M	40.4	+1.6	+0.0	42.0	50.0 RX3	-8.0	None
26	1640.000M	40.8	+1.1	+0.0	41.9	50.0 RX2	-8.1	None
27	450.003M	41.2	+0.7	+0.0	41.9	50.0 RX3	-8.1	None
28	3080.000M	40.1	+1.6	+0.0	41.7	50.0 RX1	-8.3	None

29	4399.998M	39.6	+1.9	+0.0	41.5	50.0	-8.5	None
						RX1		
30	4920.000M	39.5	+2.0	+0.0	41.5	50.0	-8.5	None
						RX2		
31	2460.000M	40.0	+1.4	+0.0	41.4	50.0	-8.6	None
						RX3		
32	2640.000M	39.9	+1.4	+0.0	41.3	50.0	-8.7	None
						RX3		
33	3640.001M	39.5	+1.7	+0.0	41.2	50.0	-8.8	None
						RX1		
34	820.000M	40.0	+0.8	+0.0	40.8	50.0	-9.2	None
						RX2		
35	455.017M	40.0	+0.7	+0.0	40.7	50.0	-9.3	None
						RX1		
36	4100.000M	38.8	+1.8	+0.0	40.6	50.0	-9.4	None
						RX2		
37	480.006M	39.9	+0.7	+0.0	40.6	50.0	-9.4	None
						RX3		
38	1230.011M	39.2	+1.0	+0.0	40.2	50.0	-9.8	None
						RX1		
39	4920.000M	38.2	+2.0	+0.0	40.2	50.0	-9.8	None
						RX1		
40	3520.000M	38.5	+1.6	+0.0	40.1	50.0	-9.9	None
						RX2		
41	3080.000M	38.5	+1.6	+0.0	40.1	50.0	-9.9	None
						RX3		
42	910.022M	39.3	+0.8	+0.0	40.1	50.0	-9.9	None
						RX3		
43	880.006M	39.3	+0.8	+0.0	40.1	50.0	-9.9	None
						RX3		
44	1320.015M	38.6	+1.0	+0.0	39.6	50.0	-10.4	None
						RX1		
45	1760.000M	38.4	+1.1	+0.0	39.5	50.0	-10.5	None
						RX1		
46	2730.000M	38.1	+1.4	+0.0	39.5	50.0	-10.5	None
						RX2		
47	1365.019M	38.4	+1.0	+0.0	39.4	50.0	-10.6	None
						RX1		
48	4840.000M	37.4	+1.9	+0.0	39.3	50.0	-10.7	None
						RX2		
49	5330.000M	37.1	+2.1	+0.0	39.2	50.0	-10.8	None
						RX1		
50	910.009M	38.2	+0.8	+0.0	39.0	50.0	-11.0	None
						RX3		
51	3185.001M	37.3	+1.6	+0.0	38.9	50.0	-11.1	None
						RX1		
52	2870.000M	37.0	+1.5	+0.0	38.5	50.0	-11.5	None
						RX3		
53	1365.005M	37.4	+1.0	+0.0	38.4	50.0	-11.6	None
						RX3		

54	3960.000M	36.6	+1.7	+0.0	38.3	50.0 RX1	-11.7	None
55	5460.000M	36.2	+2.1	+0.0	38.3	50.0 RX3	-11.7	None
56	3185.000M	36.7	+1.6	+0.0	38.3	50.0 RX3	-11.7	None
57	1365.005M	37.3	+1.0	+0.0	38.3	50.0 RX3	-11.7	None
58	1521.020M	37.1	+1.0	+0.0	38.1	50.0 RX1	-11.9	None
59	2275.000M	36.7	+1.3	+0.0	38.0	50.0 RX3	-12.0	None
60	880.023M	37.2	+0.8	+0.0	38.0	50.0 RX1	-12.0	None
61	2275.001M	36.5	+1.3	+0.0	37.8	50.0 RX1	-12.2	None
62	1760.000M	36.7	+1.1	+0.0	37.8	50.0 RX2	-12.2	None
63	4550.001M	35.7	+1.9	+0.0	37.6	50.0 RX1	-12.4	None
64	1820.001M	36.5	+1.1	+0.0	37.6	50.0 RX1	-12.4	None
65	4550.000M	35.7	+1.9	+0.0	37.6	50.0 RX2	-12.4	None
66	5460.000M	35.4	+2.1	+0.0	37.5	50.0 RX2	-12.5	None
67	3640.000M	35.8	+1.7	+0.0	37.5	50.0 RX3	-12.5	None
68	1320.005M	36.4	+1.0	+0.0	37.4	50.0 RX3	-12.6	None
69	3185.000M	35.6	+1.6	+0.0	37.2	50.0 RX2	-12.8	None
70	3520.000M	35.6	+1.6	+0.0	37.2	50.0 RX3	-12.8	None
71	4400.000M	35.2	+1.9	+0.0	37.1	50.0 RX2	-12.9	None
72	5280.000M	35.0	+2.0	+0.0	37.0	50.0 RX2	-13.0	None
73	440.020M	36.3	+0.7	+0.0	37.0	50.0 RX1	-13.0	None
74	3640.000M	35.2	+1.7	+0.0	36.9	50.0 RX2	-13.1	None
75	4400.000M	34.8	+1.9	+0.0	36.7	50.0 RX3	-13.3	None
76	2640.000M	35.0	+1.4	+0.0	36.4	50.0 RX2	-13.6	None
77	3960.000M	34.4	+1.7	+0.0	36.1	50.0 RX2	-13.9	None
78	480.023M	35.3	+0.7	+0.0	36.0	50.0 RX1	-14.0	None

79	3080.000M	34.2	+1.6	+0.0	35.8	50.0 RX2	-14.2	None
80	4550.000M	33.9	+1.9	+0.0	35.8	50.0 RX3	-14.2	None
81	2050.000M	34.6	+1.2	+0.0	35.8	50.0 RX3	-14.2	None
82	910.001M	35.0	+0.8	+0.0	35.8	50.0 RX1	-14.2	None
83	1820.000M	34.6	+1.1	+0.0	35.7	50.0 RX2	-14.3	None
84	4095.001M	33.8	+1.8	+0.0	35.6	50.0 RX1	-14.4	None
85	3960.000M	33.9	+1.7	+0.0	35.6	50.0 RX3	-14.4	None
86	1760.000M	34.5	+1.1	+0.0	35.6	50.0 RX3	-14.4	None
87	5005.000M	33.5	+2.0	+0.0	35.5	50.0 RX2	-14.5	None
88	5005.000M	33.4	+2.0	+0.0	35.4	50.0 RX1	-14.6	None
89	507.004M	34.7	+0.7	+0.0	35.4	50.0 RX3	-14.6	None
90	4510.000M	33.4	+1.9	+0.0	35.3	50.0 RX2	-14.7	None
91	4840.001M	33.3	+1.9	+0.0	35.2	50.0 RX1	-14.8	None
92	3690.000M	33.5	+1.7	+0.0	35.2	50.0 RX2	-14.8	None
93	3280.000M	33.5	+1.6	+0.0	35.1	50.0 RX2	-14.9	None
94	1230.000M	34.1	+1.0	+0.0	35.1	50.0 RX2	-14.9	None
95	1365.003M	34.1	+1.0	+0.0	35.1	50.0 RX2	-14.9	None
96	880.000M	34.2	+0.8	+0.0	35.0	50.0 RX2	-15.0	None
97	1365.000M	33.9	+1.0	+0.0	34.9	50.0 RX2	-15.1	None
98	2870.000M	33.3	+1.5	+0.0	34.8	50.0 RX2	-15.2	None
99	4510.000M	32.8	+1.9	+0.0	34.7	50.0 RX1	-15.3	None
100	1230.004M	33.7	+1.0	+0.0	34.7	50.0 RX3	-15.3	None
101	1320.002M	33.6	+1.0	+0.0	34.6	50.0 RX2	-15.4	None
102	450.005M	33.8	+0.7	+0.0	34.5	50.0 RX1	-15.5	None
103	4095.000M	32.6	+1.8	+0.0	34.4	50.0 RX2	-15.6	None

104	1058.428M	33.4	+0.9	+0.0	34.3	50.0	-15.7	None
						RX1		
105	1521.008M	33.2	+1.0	+0.0	34.2	50.0	-15.8	None
						RX3		
106	3690.000M	32.4	+1.7	+0.0	34.1	50.0	-15.9	None
						RX1		
107	507.007M	33.4	+0.7	+0.0	34.1	50.0	-15.9	None
						RX1		
108	1013.998M	33.2	+0.8	+0.0	34.0	50.0	-16.0	None
						RX3		
109	1521.001M	32.8	+1.0	+0.0	33.8	50.0	-16.2	None
						RX2		
110	756.020M	33.0	+0.8	+0.0	33.8	50.0	-16.2	None
						RX1		
111	960.002M	32.9	+0.8	+0.0	33.7	50.0	-16.3	None
						RX2		
112	4920.000M	31.4	+2.0	+0.0	33.4	50.0	-16.6	None
						RX3		
113	924.001M	32.6	+0.8	+0.0	33.4	50.0	-16.6	None
						RX3		
114	789.603M	32.6	+0.8	+0.0	33.4	50.0	-16.6	None
						RX3		
115	789.606M	32.5	+0.8	+0.0	33.3	50.0	-16.7	None
						RX2		
116	1075.193M	32.4	+0.9	+0.0	33.3	50.0	-16.7	None
						RX1		
117	3690.000M	31.5	+1.7	+0.0	33.2	50.0	-16.8	None
						RX3		
118	910.006M	32.4	+0.8	+0.0	33.2	50.0	-16.8	None
						RX2		
119	1024.806M	32.2	+0.9	+0.0	33.1	50.0	-16.9	None
						RX3		
120	1108.803M	32.1	+0.9	+0.0	33.0	50.0	-17.0	None
						RX1		
121	910.000M	32.1	+0.8	+0.0	32.9	50.0	-17.1	None
						RX2		
122	1041.598M	31.9	+0.9	+0.0	32.8	50.0	-17.2	None
						RX3		
123	1075.201M	31.6	+0.9	+0.0	32.5	50.0	-17.5	None
						RX3		
124	1058.404M	31.5	+0.9	+0.0	32.4	50.0	-17.6	None
						RX3		
125	1014.001M	31.6	+0.8	+0.0	32.4	50.0	-17.6	None
						RX2		
126	1108.804M	31.3	+0.9	+0.0	32.2	50.0	-17.8	None
						RX3		
127	1008.003M	31.3	+0.8	+0.0	32.1	50.0	-17.9	None
						RX3		
128	455.003M	31.3	+0.7	+0.0	32.0	50.0	-18.0	None
						RX2		

129	890.401M	30.9	+0.8	+0.0	31.7	50.0	-18.3	None
						RX3		
130	16.801M	31.3	+0.3	+0.0	31.6	50.0	-18.4	None
						RX2		
131	440.006M	30.8	+0.7	+0.0	31.5	50.0	-18.5	None
						RX3		
132	789.622M	29.4	+0.8	+0.0	30.2	50.0	-19.8	None
						RX1		
133	410.010M	28.2	+0.6	+0.0	28.8	50.0	-21.2	None
						RX1		
134	1014.003M	27.2	+0.8	+0.0	28.0	50.0	-22.0	None
						RX1		

FCC 15.111 Antenna Power Conduction for Receivers Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
24" SMA Cable (White)	P5183	Pasteck	NA	1-40GHz_white	122304	122306

FCC 15.111



FCC 2.1033(c)(14)/2.1046/90.205 - RF POWER OUTPUT

IP MobileNet, Model B64450G25, Serial 05386432

Test conditions for the EUT are as follows:

The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's DB9 serial port was also connected to the laptop computer via a shielded serial cable. 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 utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate DC power supply was used to provide the EUT with 13.8 Vdc/10A. On the RF output of the EUT was placed a high power attenuator and a coaxial cable connected to either a power meter or a spectrum analyzer to measure the RF output power.

Measured Values from the EUT:

Low Channel (450 MHz). Measured value was 40.0 Watts (ERP).

Middle Channel (480 MHz). Measured value was 40.0 Watts (ERP).

High Channel (507 MHz). Measured value was 40.0 Watts (ERP).

FCC 90.205 RF Power Output Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
RF Power meter	02082	HP	435B	2445A11881	061704	061706
Power Sensor	02036	HP	8482A	1551A01004	061804	061806
Spectrum Analyzer	02672	Agilent	E4446A	US44300438	011405	011407
High Power Attenuator	N/A	JFW	50FH-040-100-2N	(none)	NCR	NCR

NCR = No Cal Required because check of the attenuator insertion loss was performed just prior to this test at the discrete frequencies used (450 MHz, 480 MHz, and 505.5 MHz).

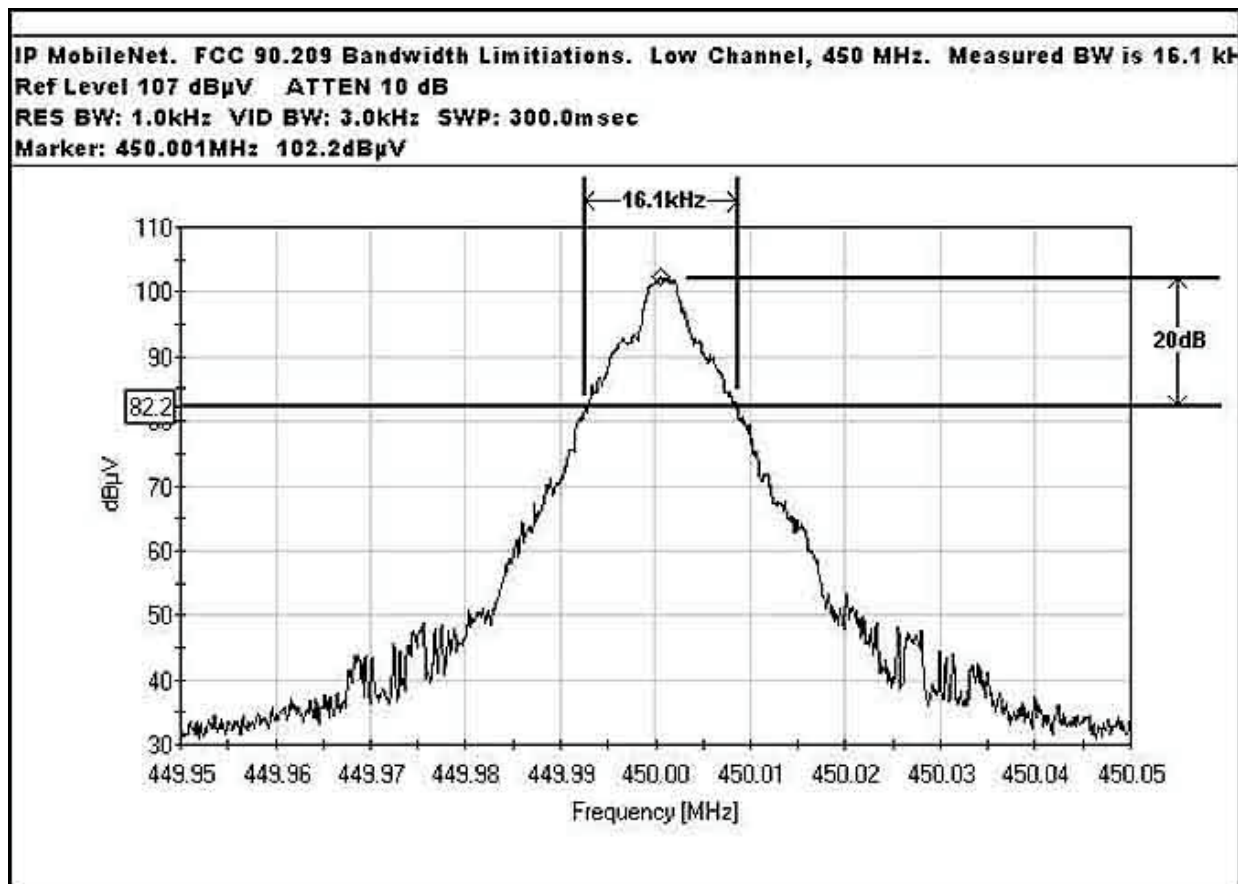
FCC 90.205 RF POWER OUTPUT



FCC 2.1033(c)(14)/2.1049(i)/90.209- OCCUPIED BANDWIDTH

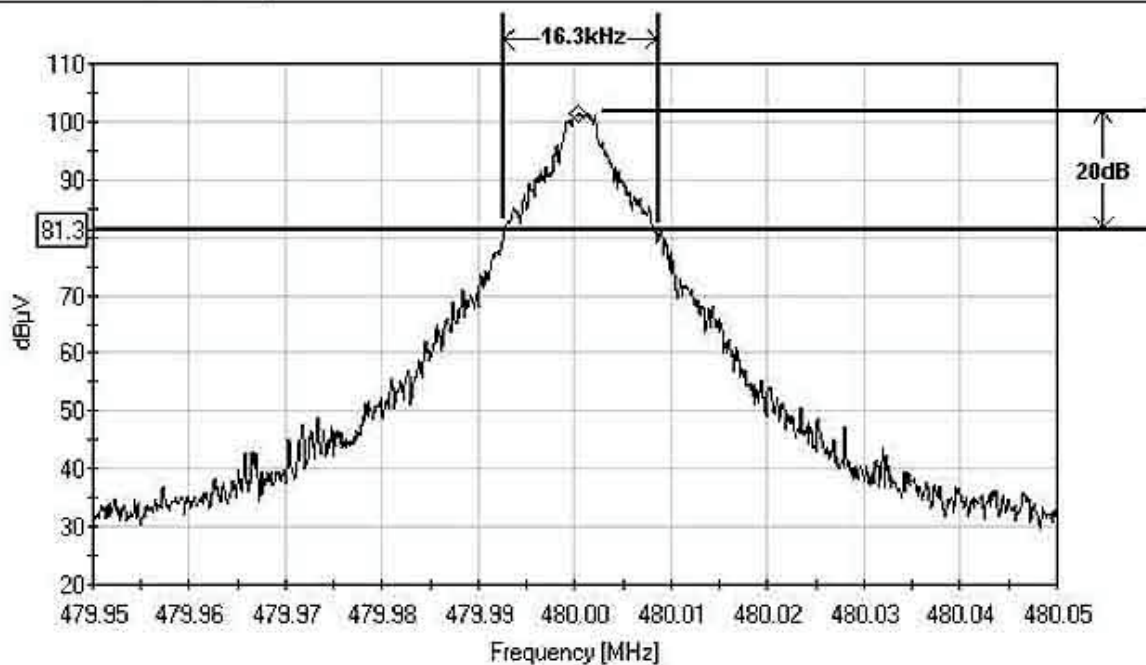
Test Conditions: The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's DB9 serial port was also connected to the laptop computer via a shielded serial cable. The laptop computer was used to command the EUT to begin transmitting or stop transmitting as well as to change the EUT from channel to channel utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate DC power supply was used to provide the EUT with 13.8 VDC/10A. On the RF output of the EUT was placed a high power attenuator and a coaxial cable connected to a spectrum analyzer to measure the EUT fundamental emission. The EUT was configured to output its rated output power (40Watts).

FCC 90.209 BANDWIDTH LIMITATIONS LOW CHANNEL 450MHz



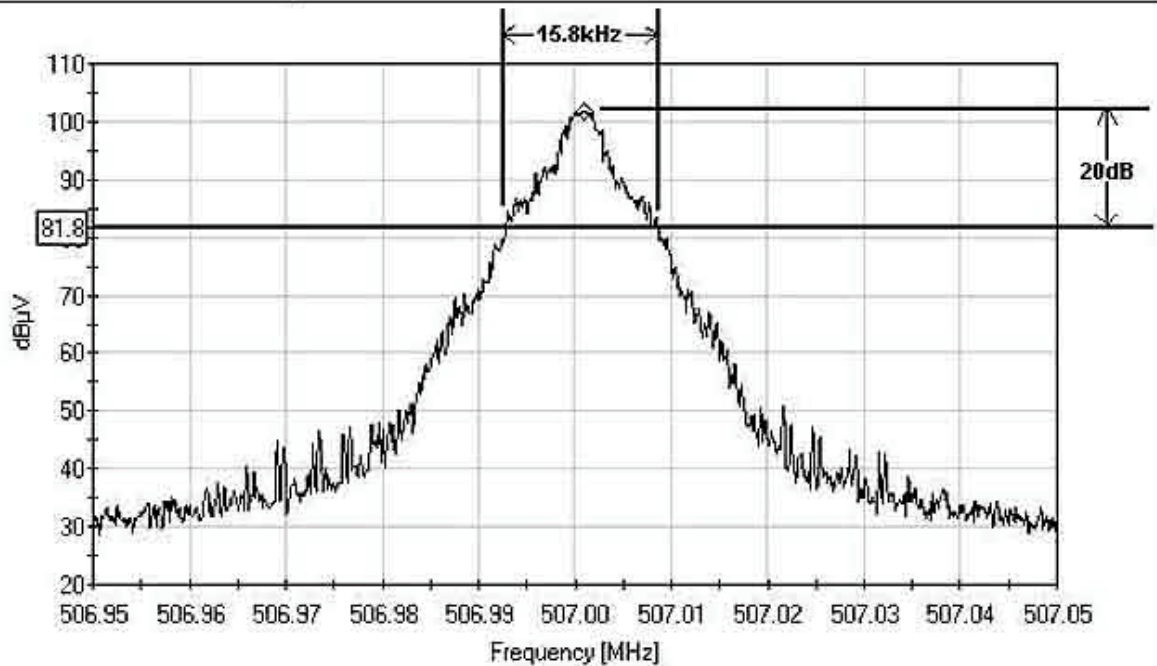
FCC 90.209 BANDWIDTH LIMITATIONS MIDDLE CHANNEL 480MHz

IP MobileNet. FCC 90.209 Bandwidth Limitations. Middle Channel, 480 MHz. Measured BW is 16.3 kHz
Ref Level 107 dBμV ATTN 10 dB
RES BW: 1.0kHz VID BW: 3.0kHz SWP: 300.0msec
Marker: 480.0MHz 101.3dBμV



FCC 90.209 BANDWIDTH LIMITATIONS HIGH CHANNEL 507MHz

IP MobileNet. FCC 90.209 Bandwidth Limitations. High Channel, 507 MHz. Measured BW is 15.8 kHz
Ref Level 107 dBμV ATEN 10 dB
RES BW: 1.0kHz VID BW: 1.0kHz SWP: 300.0msec
Marker: 507.001MHz 101.8dBμV



FCC 90.209 Bandwidth Limitations Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807

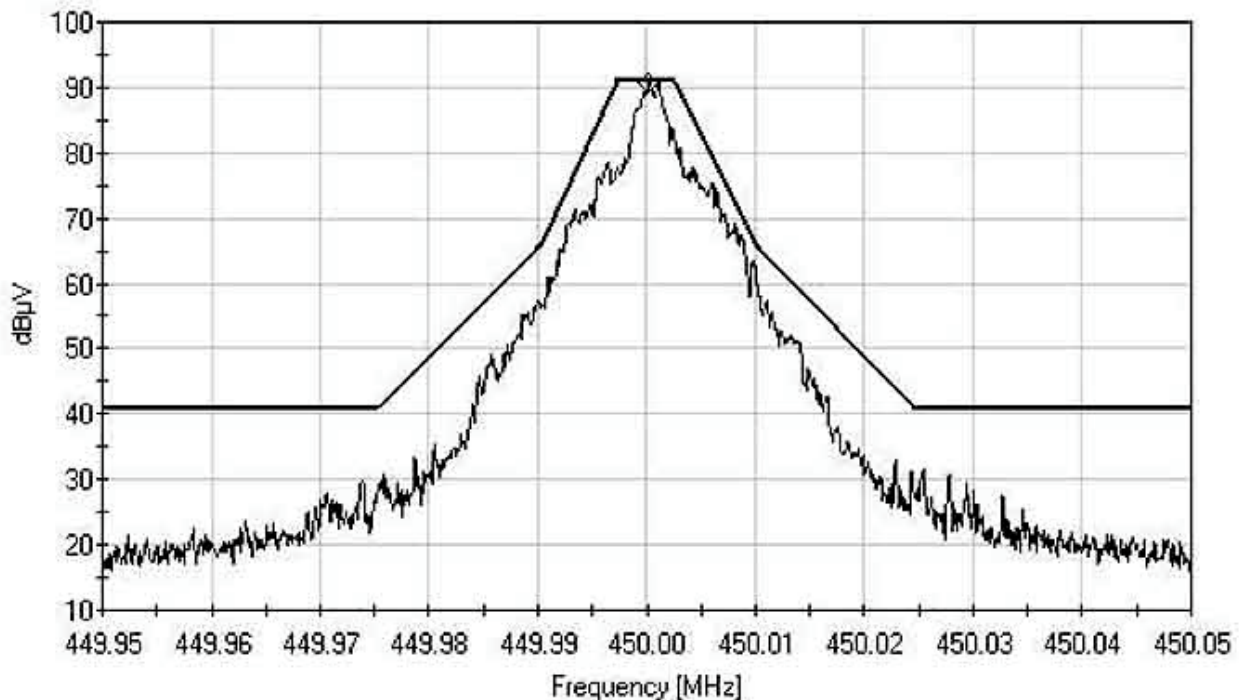
FCC 90.209



FCC 90210(c) EMISSIONS MASK LOW CHANNEL 405MHz SMALLSPAN

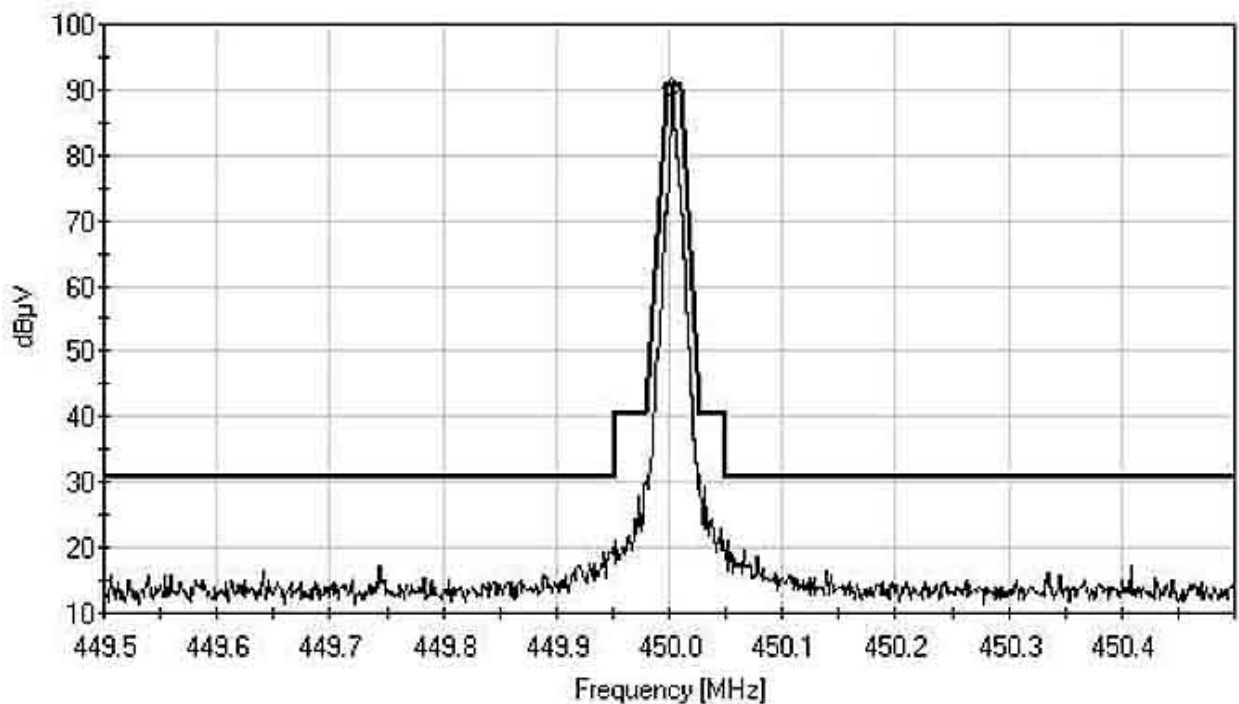
Test Conditions: The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's DB9 serial port was also connected to the laptop computer via a shielded serial cable. The laptop computer was used to command the EUT to begin transmitting or stop transmitting as well as to change the EUT from channel to channel utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate DC power supply was used to provide the EUT with 13.8 VDC/10A. On the RF output of the EUT was placed a high power attenuator and a coaxial cable connected to a spectrum analyzer to measure the EUT fundamental emission. The EUT was configured to output its rated output power (40Watts).

IP MobileNet B64450G25. FCC 90.210(c) Emission Mask C. Low Channel, 450 MHz.
Ref Level 107 dBμV ATTEN 10 dB
RES BW: 300.0Hz VID BW: 1.0kHz SWP: 2.0sec
Marker: 450.0MHz 90.7dBμV



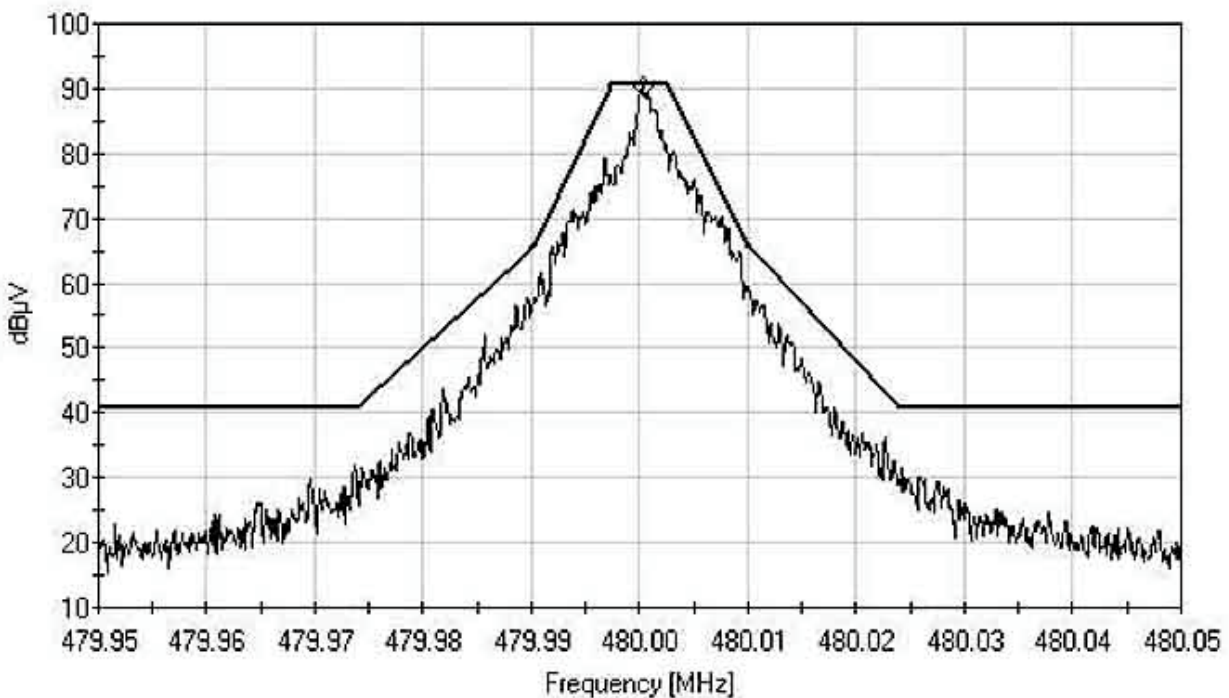
FCC 90210(c) EMISSIONS MASK LOW CHANNEL 405MHz BIGSPAN

IP MobileNet B64450G25. FCC 90.210(c) Emission Mask C. Low Channel, 450 MHz.
Ref Level 107 dBμV ATTN 10 dB
RES BW: 300.0Hz VID BW: 1.0kHz SWP: 20.0sec
Marker: 450.003MHz 90.4dBμV



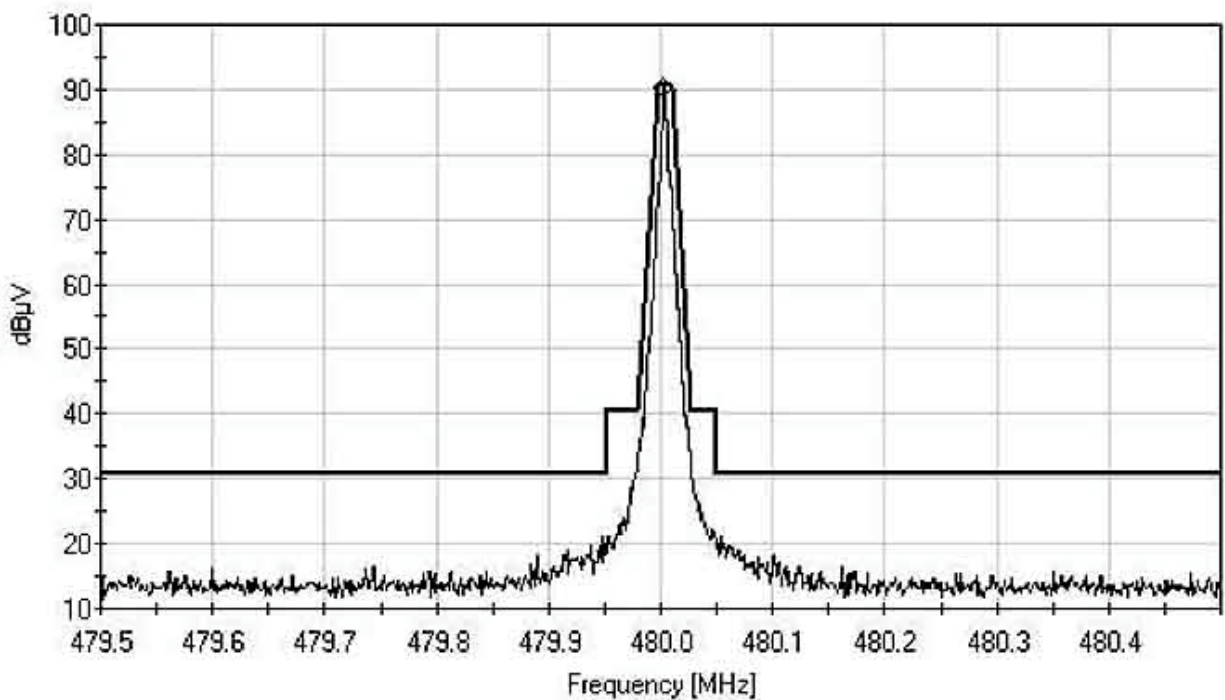
FCC 90210(c) EMISSIONS MASK MIDDLE CHANNEL 480MHz SMALLSPAN

IP MobileNet B64450G25. FCC 90.210(c) Emission Mask C. Middle Channel, 480 MHz.
Ref Level 107 dBμV ATTN 10 dB
RES BW: 300.0Hz VID BW: 1.0kHz SWP: 2.0sec
Marker: 480.0MHz 90.2dBμV



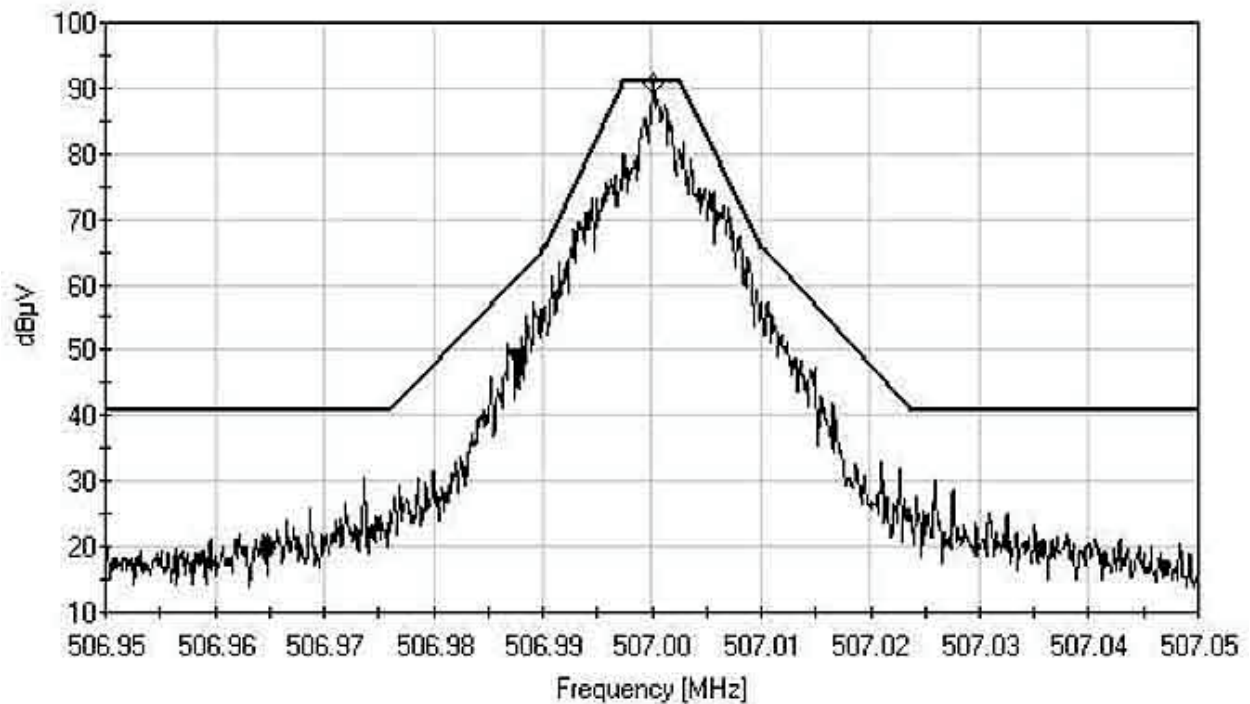
FCC 90210(c) EMISSIONS MASK MIDDLE CHANNEL 480MHz BIGSPAN

IP MobileNet B64450G25. FCC 90.210(c) Emission Mask C. Middle Channel, 480 MHz.
Ref Level 107 dB μ V ATTN 10 dB
RES BW: 300.0Hz VID BW: 1.0kHz SWP: 20.0sec
Marker: 480.003MHz 90.3dB μ V



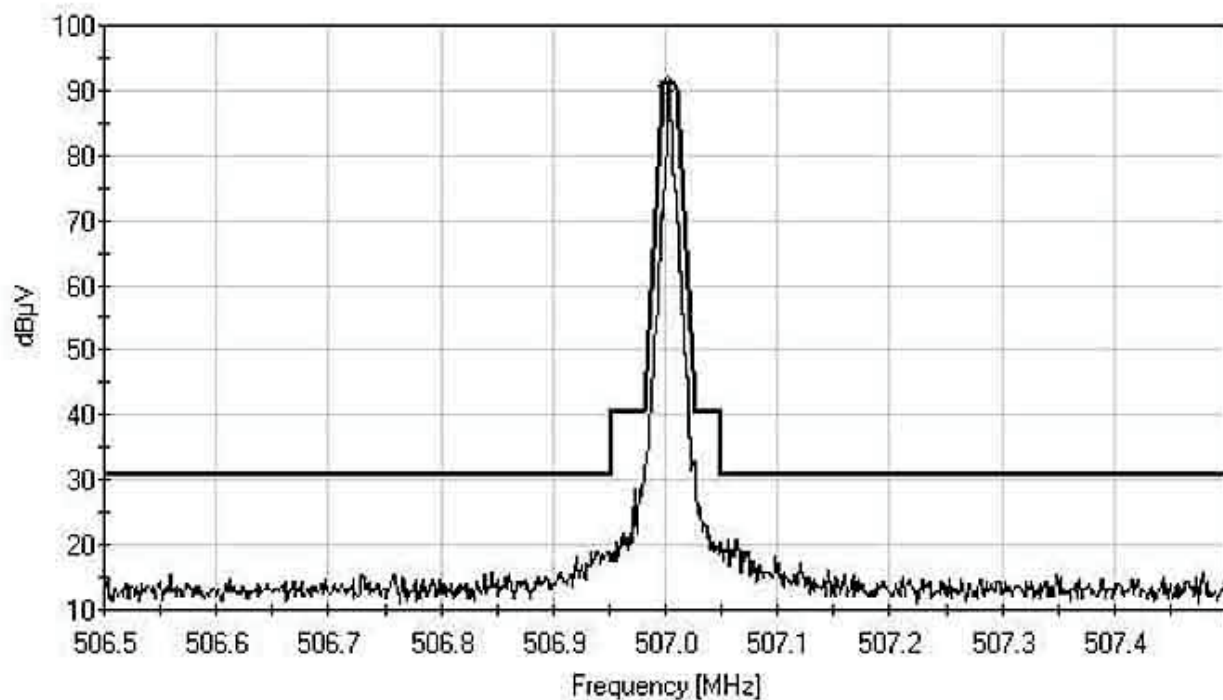
FCC 90210(c) EMISSIONS MASK HIGH CHANNEL 507MHz SMALLSPAN

IP MobileNet B64450G25. FCC 90.210(c) Emission Mask C. High Channel, 507 MHz.
Ref Level 107 dBμV ATTN 10 dB
RES BW: 300.0Hz VID BW: 1.0kHz SWP: 2.0sec
Marker: 507.0MHz 90.5dBμV



FCC 90210(c) EMISSIONS MASK HIGH CHANNEL 507MHz BIGSPAN

IP MobileNet B64450G25. FCC 90.210(c) Emission Mask C. High Channel, 507 MHz.
Ref Level 107 dB μ V ATTEN 10 dB
RES BW: 300.0Hz VID BW: 1.0kHz SWP: 20.0sec
Marker: 507.003MHz 90.5dB μ V



FCC 90.210(c) Occupied Bandwidth/Emission Mask Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807

FCC 90.209(c) EMISSIONS MASK





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 Antenna Spurious Emission**
 Work Order #: **84044** Date: 9/19/2005
 Test Type: **Maximized Emissions** Time: 10:50:29
 Equipment: **Base Station for Mobile Data Radio Network** Sequence#: 1
 Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
 Model: B64450G25
 S/N: 05386432

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Base Station for Mobile Data Radio Network*	IPMobileNet	B64450G25	05386432

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	2569790

Test Conditions / Notes:

The EUT, support equipment, and the test equipment are located on the table top. The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's DB9 serial port was also connected to the laptop computer via a shielded serial cable. 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 utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate external DC power supply was used to provide the EUT with 13.8 Vdc/10A. On the RF output of the EUT was placed a high power attenuator and a coaxial cable connected to a spectrum analyzer. The laptop computer is used to check the status of the EUT as well as send commands to have it transmit continuously and change between channels. Voltage to the EUT is 13.8 VDC. Temperature: 22°C, Humidity: 55%, Pressure: 100kPa. Frequency 150kHz - 30MHz RBW=9kHz, VBW=9kHz; 30MHz - 1000MHz RBW=120kHz, VBW=120kHz; 1000MHz - 6000MHz RBW=1MHz, VBW=1MHz. Frequency range scanned and maximized, 4 MHz to 5600 MHz. This data sheet is for the EUT transmitting at rated power (40 Watts) on Low (450 MHz), Mid (480MHz), and High (507 MHz) channels.

Transducer Legend:

T1=1-40 GHz Cable_122306	T2=40dB Attenuator JFW
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<i>Measurement Data:</i>		Reading listed by margin.				Test Distance: None				
#	Freq MHz	Rdng dBμV	T1 dB	T2 dB		Dist Table	Corr dBμV	Spec dBμV	Margin dB	Polar Ant
1	900.001M	50.2	+0.8	+40.0		+0.0	91.0	94.0	-3.0	None
2	490.200M	50.1	+0.7	+40.0		+0.0	90.8	94.0	-3.2	None

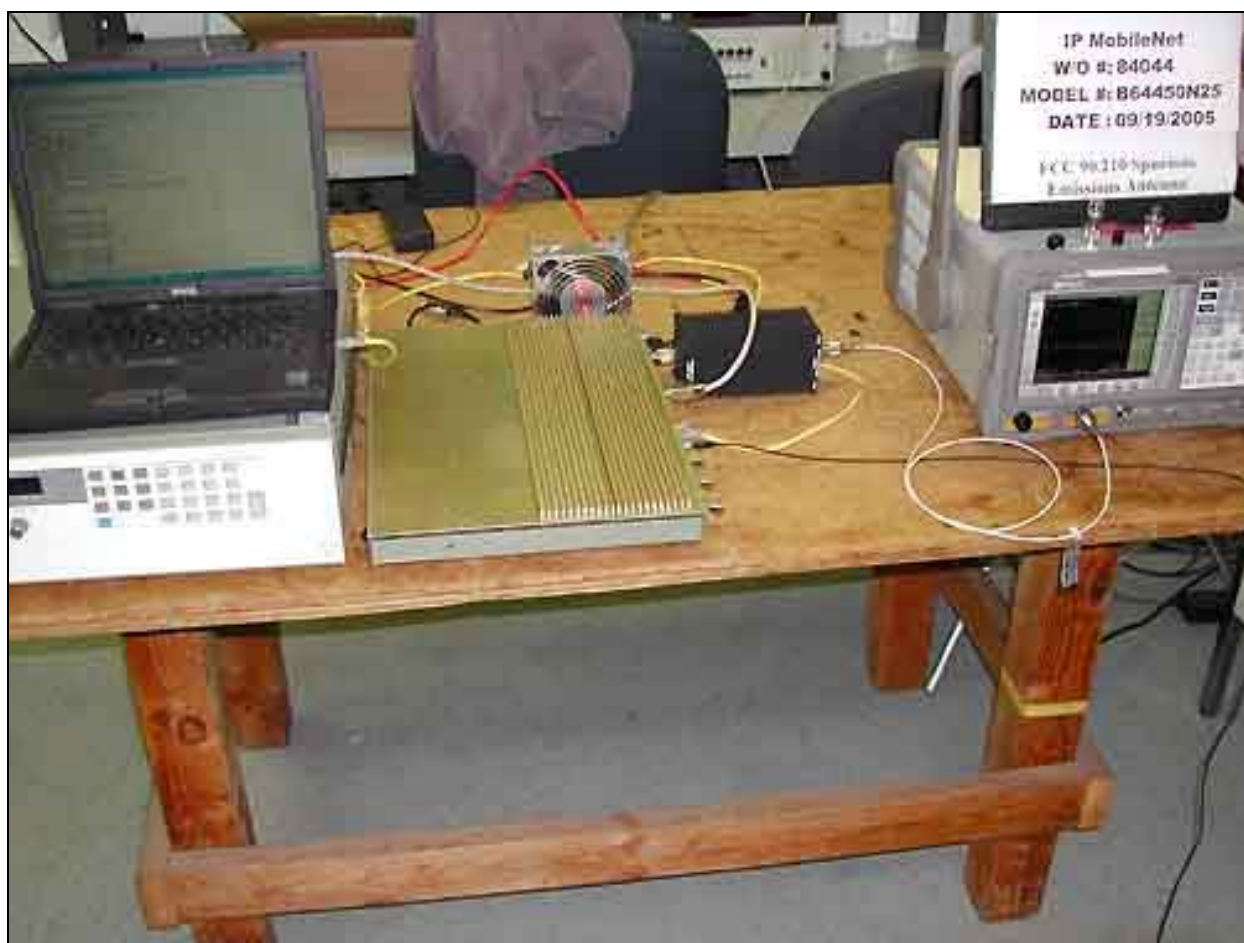
3	463.202M	49.3	+0.7	+40.0	+0.0	90.0	94.0	-4.0	None
4	466.801M	49.2	+0.7	+40.0	+0.0	89.9	94.0	-4.1	None
5	960.000M	48.1	+0.8	+40.0	+0.0	88.9	94.0	-5.1	None
6	1014.000M	47.8	+0.8	+40.0	+0.0	88.6	94.0	-5.4	None
7	3549.000M	42.8	+1.6	+44.1	+0.0	88.5	94.0	-5.5	None
8	496.798M	47.5	+0.7	+40.0	+0.0	88.2	94.0	-5.8	None
9	469.301M	47.5	+0.7	+40.0	+0.0	88.2	94.0	-5.8	None
10	496.300M	47.3	+0.7	+40.0	+0.0	88.0	94.0	-6.0	None
11	3360.004M	43.3	+1.6	+43.0	+0.0	87.9	94.0	-6.1	None
12	523.799M	47.0	+0.7	+40.0	+0.0	87.7	94.0	-6.3	None
13	1350.001M	46.3	+1.0	+40.0	+0.0	87.3	94.0	-6.7	None
14	433.207M	46.2	+0.7	+40.0	+0.0	86.9	94.0	-7.1	None
15	540.599M	46.0	+0.7	+40.0	+0.0	86.7	94.0	-7.3	None
16	517.200M	46.0	+0.7	+40.0	+0.0	86.7	94.0	-7.3	None
17	473.404M	45.9	+0.7	+40.0	+0.0	86.6	94.0	-7.4	None
18	1440.000M	45.5	+1.0	+40.0	+0.0	86.5	94.0	-7.5	None
19	439.301M	45.5	+0.7	+40.0	+0.0	86.2	94.0	-7.8	None
20	3840.004M	40.4	+1.7	+43.8	+0.0	85.9	94.0	-8.1	None
21	530.411M	45.2	+0.7	+40.0	+0.0	85.9	94.0	-8.1	None
22	3042.000M	43.2	+1.5	+40.8	+0.0	85.5	94.0	-8.5	None
23	550.800M	44.8	+0.7	+40.0	+0.0	85.5	94.0	-8.5	None
24	2400.000M	44.1	+1.3	+40.0	+0.0	85.4	94.0	-8.6	None
25	416.401M	44.7	+0.6	+40.0	+0.0	85.3	94.0	-8.7	None
26	483.600M	44.5	+0.7	+40.0	+0.0	85.2	94.0	-8.8	None
27	500.395M	44.2	+0.7	+40.0	+0.0	84.9	94.0	-9.1	None

28	547.198M	44.1	+0.7	+40.0	+0.0	84.8	94.0	-9.2	None
29	534.000M	44.0	+0.7	+40.0	+0.0	84.7	94.0	-9.3	None
30	4056.000M	42.4	+1.8	+40.4	+0.0	84.6	94.0	-9.4	None
31	446.399M	43.9	+0.7	+40.0	+0.0	84.6	94.0	-9.4	None
32	513.598M	43.6	+0.7	+40.0	+0.0	84.3	94.0	-9.7	None
33	3600.000M	38.9	+1.7	+43.7	+0.0	84.3	94.0	-9.7	None
34	1521.000M	42.9	+1.0	+40.0	+0.0	83.9	94.0	-10.1	None
35	2535.000M	42.0	+1.4	+40.1	+0.0	83.5	94.0	-10.5	None
36	2028.000M	42.3	+1.2	+40.0	+0.0	83.5	94.0	-10.5	None
37	2880.004M	41.9	+1.5	+40.1	+0.0	83.5	94.0	-10.5	None
38	3150.000M	40.3	+1.6	+41.6	+0.0	83.5	94.0	-10.5	None
39	439.804M	42.4	+0.7	+40.0	+0.0	83.1	94.0	-10.9	None
40	382.801M	42.5	+0.6	+40.0	+0.0	83.1	94.0	-10.9	None
41	4563.000M	41.6	+1.9	+39.5	+0.0	83.0	94.0	-11.0	None
42	1920.000M	41.8	+1.2	+40.0	+0.0	83.0	94.0	-11.0	None
43	349.200M	42.1	+0.6	+40.0	+0.0	82.7	94.0	-11.3	None
44	456.604M	41.6	+0.7	+40.0	+0.0	82.3	94.0	-11.7	None
45	4500.000M	37.9	+1.9	+41.3	+0.0	81.1	94.0	-12.9	None
46	2250.002M	39.1	+1.3	+39.9	+0.0	80.3	94.0	-13.7	None
47	2700.000M	38.5	+1.4	+39.9	+0.0	79.8	94.0	-14.2	None
48	4050.000M	37.1	+1.8	+40.7	+0.0	79.6	94.0	-14.4	None
49	1800.002M	37.5	+1.1	+40.0	+0.0	78.6	94.0	-15.4	None

FCC 90.210(c) Spurious Emissions Antenna Terminal Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
24" SMA Cable (White)	P5183	Pasterneck	NA	1-40GHz_white	122304	122306

FCC 90.210(c) ANTENNA CONDUCTED SPURIOUS EMISSIONS



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 Emissions**
 Work Order #: **84044** Date: 9/22/2005
 Test Type: **Maximized Emissions** Time: 16:32:06
 Equipment: **Base Station for Mobile Data Radio Network** Sequence#: 6
 Manufacturer: IPMobileNet Tested By: Stuart Yamamoto
 Model: B64450G25
 S/N: 05386432

Equipment Under Test (* = EUT):

Function	Manufacturer	Model #	S/N
Base Station for Mobile Data Radio Network*	IPMobileNet	B64450G25	05386432

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	2569790

Test Conditions / Notes:

The EUT and support equipment are located on the table top. Connected to the EUT Tx port is one high powered termination. Connected to the EUT serial port is the laptop computer via a shielded serial cable. 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 laptop computer using an unshielded cat. 5E cable. Connected to the EUT's three receive ports are shielded terminated coaxial cables. Connected to the EUT's DB9 SLIP connection is a shielded unterminated cable. Connected to the EUT's BNC audio output port is a shielded unterminated 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: 23°C, Humidity: 45%, Pressure: 100kPa. Frequency 150kHz - 30MHz RBW=9kHz, VBW=9kHz; 30MHz - 1000MHz RBW=120kHz, VBW=120kHz; 1000MHz - 6000MHz RBW=1MHz, VBW=1MHz. This data sheet is for the EUT transmitting at rated power (40 Watts) on Low (450MHz), Middle (480 MHz), and High (507 MHz) channels. Frequency range scanned and maximized, 4 MHz to 5600 MHz.

Operating Frequency: 450MHz - 507MHz
 Channels: _____
 Highest Measured Output Power: 46.02 ERP(dBm)= 40 ERP(Watts)
 Distance: 3 meters
 Limit: $43+10\log(P)$ 59.02 dBc

Freq. (MHz)	Reference Level (dBm)	Antenna Polarity (H/V)	dBc
2,028.00	-29.9	Vert	75.92
900.02	-30	Horiz	76.02
1,521.00	-30.1	Horiz	76.12
2,028.00	-30.5	Horiz	76.52
2,250.00	-30.7	Vert	76.72
1,349.98	-31.9	Vert	77.92
1,440.01	-33	Horiz	79.02
2,535.00	-33.6	Horiz	79.62
2,400.00	-33.8	Horiz	79.82
900.01	-33.8	Vert	79.82
439.31	-34.9	Horiz	80.92
1,350.00	-35.8	Horiz	81.82
3,042.00	-35.9	Vert	81.92
2,535.00	-36	Vert	82.02
2,700.00	-36.7	Horiz	82.72
3,549.00	-37.4	Vert	83.42
3,042.00	-39.2	Horiz	85.22
3,360.00	-39.7	Horiz	85.72
469.31	-39.7	Vert	85.72
3,360.00	-40.3	Vert	86.32
3,549.00	-40.6	Horiz	86.62
439.31	-40.7	Vert	86.72
469.31	-40.7	Horiz	86.72
3,600.00	-40.8	Horiz	86.82
2,400.00	-41.5	Vert	87.52

FCC 90.210(c) Spurious Emissions OATS Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807
Spectrum Analyzer	02467	Agilent	E7405A	US40240225	032205	032207
Bilog Antenna	00851	Schaffner- Chase EMC	CBL6111C	2629	031604	031606
Antenna cable (10 meter site D)	NA	Andrew	LDF1-50	Cable#17	100204	100206
Antenna cable from bulkhead to antenna	N/A	Pasternack	RG-214/U	Cable #33	040105	040106
Preamp to SA Cable (3 feet)	NA	Pasternack	E100316-I	Cable #22	080904	080906
Pre-amp	00010	HP	8447D	2727A05392	070204	070206
Antenna cable (Heliac)	NA	Andrew	LDF1-50	Cable#19	101303	101305
Horn Antenna	01646	EMCO	3115	9603-4683	072204	072206
Microwave Pre-amp	00787	HP	83017A	3123A00282	052705	052707
Magnetic Loop Antenna	00314	Emco	6502	2014	072804	072806
24" SMA Cable (White)	P5183	Pasterneck	NA	1-40GHz_white	122304	122306

FCC 90.210(c) OATS SPURIOUS EMISSIONS



FCC 90.210(c) OATS SPURIOUS EMISSIONS



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

Test Conditions: The EUT is placed in the temperature chamber. All support equipment is located outside the chamber. The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's serial port was also connected to the laptop computer via a shielded DB-9 cable. 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 utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate DC power supply was used to provide the EUT with 13.8 VDC/10A. On the RF output of the EUT was placed a high power attenuator and a coaxial cable connected to a spectrum analyzer to measure the EUT's frequency stability. The EUT was configured to output its rated output power (40Watts).

Customer: IP MobileNet
WO#: 84044
Test Engineer: S. Yamamoto

Device Model #: B64450G25
Operating Voltage: 13.8 Vdc

Frequency Limit: 2.5 ppm 2.5 ppm 2.5 ppm

Temperature Variations

Channel Frequency:		Channel 0 (MHz)	Dev (ppm)	Channel 1 (MHz)	Dev (ppm)	Channel 2 (MHz)	Dev (ppm)
		450.000000000		480.000000000		507.000000	
Temp (C)	Voltage						
-30	13.8	449.999559000	-0.980001	480.000040000	0.083333	507.000090	0.177515
-20	13.8	449.999550000	-1.000001	479.999935000	-0.135417	506.999990	-0.019724
-10	13.8	449.999560000	-0.977779	480.000065000	0.135417	507.000170	0.335306
0	13.8	449.999560000	-0.977779	480.000160000	0.333333	507.000125000	0.246548
10	13.8	449.999565000	-0.966668	480.000190000	0.395833	507.000190000	0.374753
20	13.8	449.999675000	-0.722223	480.000155000	0.322917	507.000135	0.266272
30	13.8	449.999665000	-0.744445	480.000155000	0.322917	507.000110000	0.216962
40	13.8	449.999905000	-0.211111	480.000135000	0.281250	507.000090000	0.177515
50	13.8	450.000130000	0.288889	480.000055000	0.114583	507.000145000	0.285996

Voltage Variations (±15%)

Temp (C)	Voltage	Channel 0 (MHz)	Dev. (ppm)	Channel 1 (MHz)	Dev. (ppm)	Channel 2 (MHz)	Dev. (ppm)
20	11.7	450.000095000	0.211111	480.000080000	0.166667	507.000135	0.266272
20	13.8	449.999675000	-0.722223	480.000105000	0.218750	507.000025	0.049310
20	15.9	450.000140000	0.311111	480.000155000	0.322917	507.000060	0.118343

Max Deviation (ppm)	+	0.31111
Max Deviation (ppm)	-	1.00000
PASS		

	+	0.39583
	-	0.13542
PASS		

	+	0.37475
	-	0.01972
PASS		

FCC 90.213 Frequency Stability Test Equipment

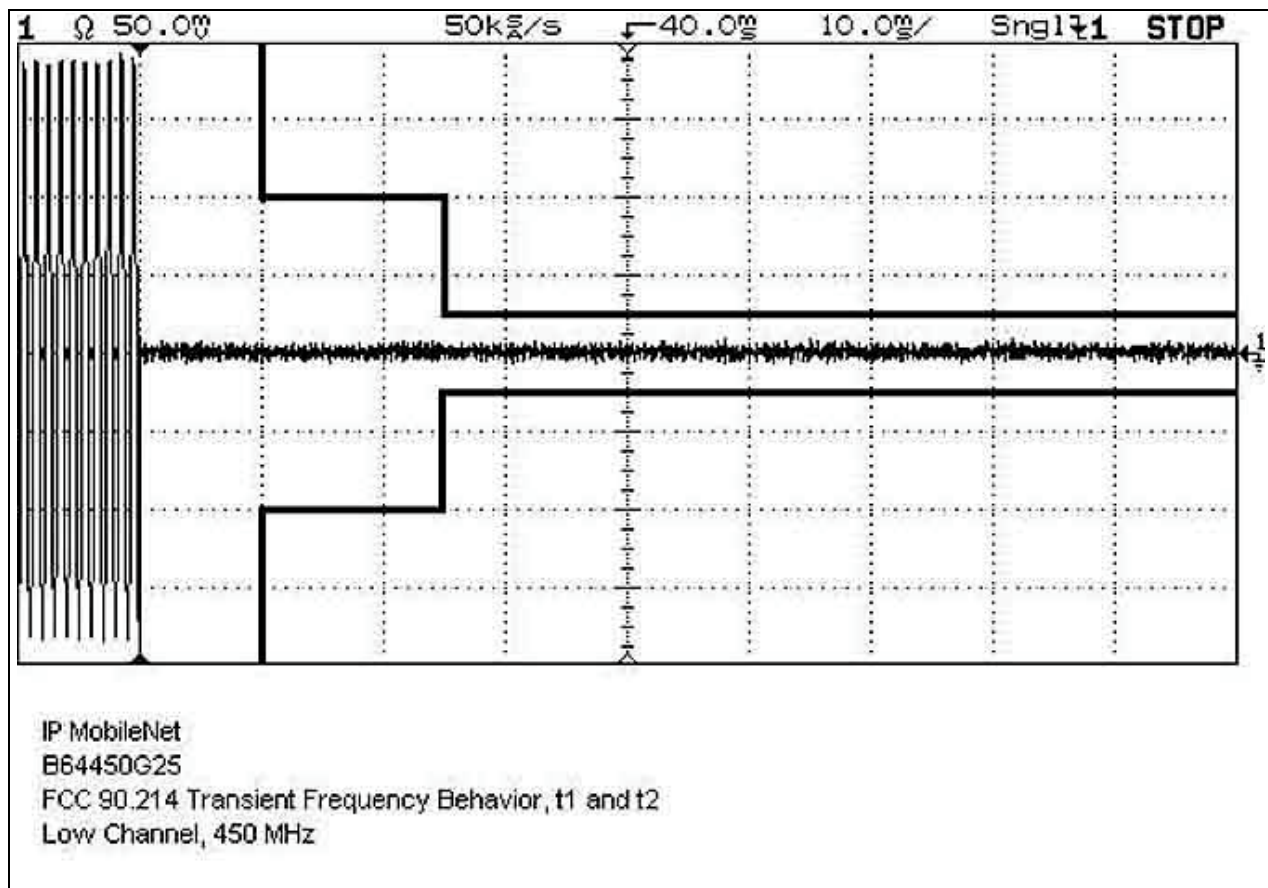
Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807
Temperature Chamber	01878	Thermotron	S1.2 Mini Max	(none)	071904	071906
Digital Multimeter	01830	Fluke	45	6949042	012405	012406

FCC 90.213 FREQUENCY STABILITY

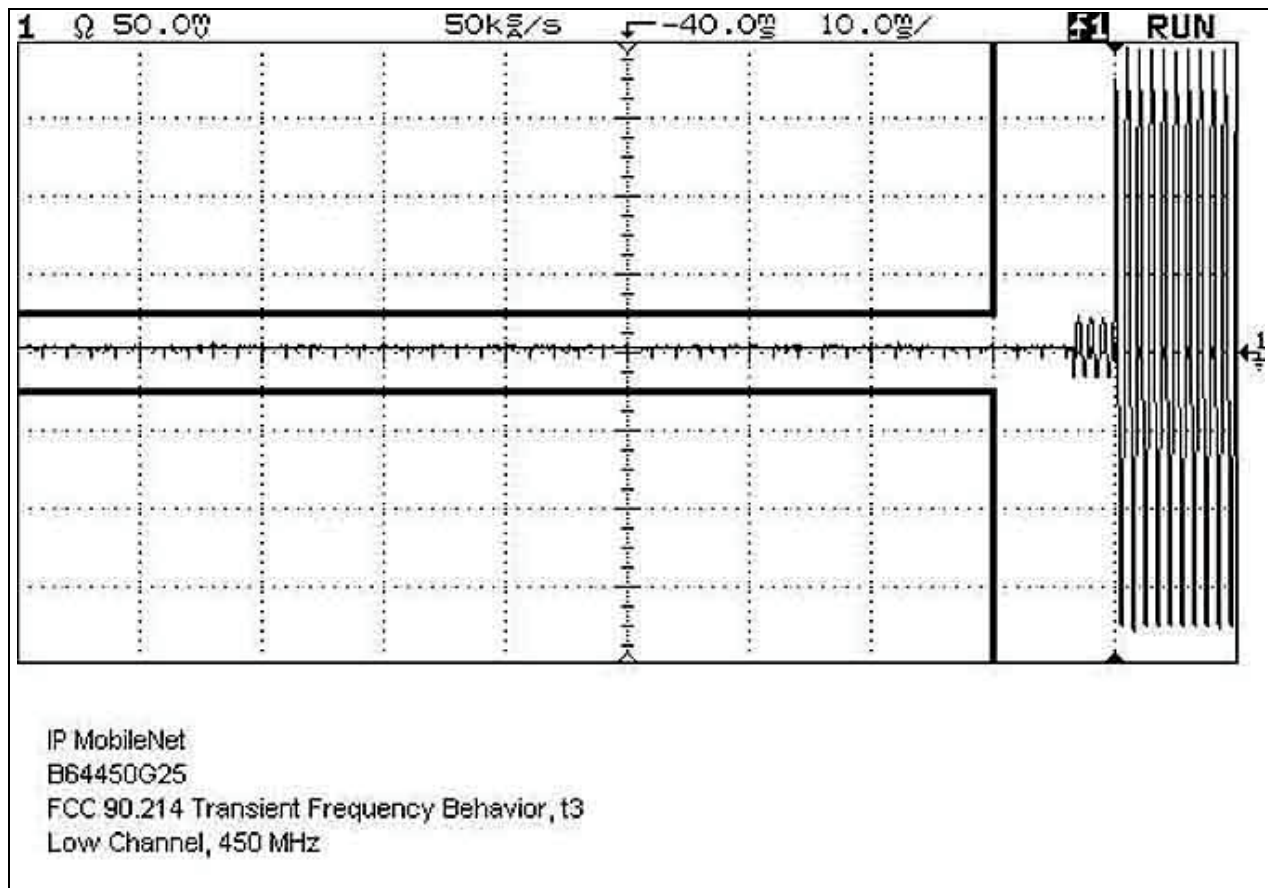


FCC 90.214 TRANSIENT FREQUENCY BEHAVIOR LOW CHANNEL t1 AND t2

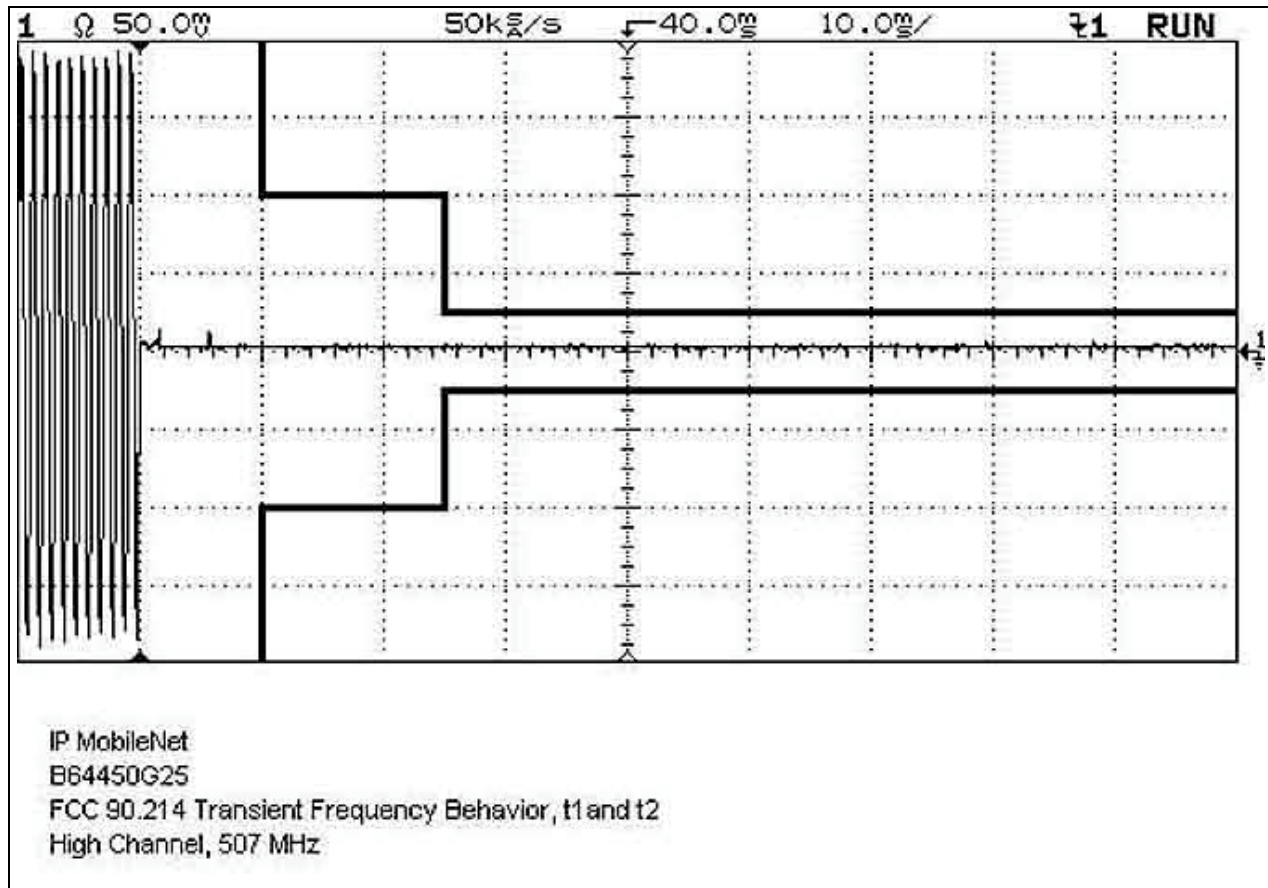
Test Conditions: The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's DB9 serial port was also connected to the laptop computer via a shielded DB9 cable. The laptop computer was used to command the EUT to begin transmitting or stop transmitting as well as to change the EUT from channel to channel utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate DC power supply was used to provide the EUT with 13.8 VDC/10A. The EUT was configured to output its rated output power (40Watts). On the RF output of the EUT was placed a high power attenuator and then a coaxial cable to the combiner. The signal generators output was set to the EUT transmit frequency with 25kHz deviation 1kHz FM and connected to the combiner. The top port of the combiner was connected to the input of the modulation analyzer and the modulation analyzers output to the oscilloscope. The remaining two ports of the combiner were terminated into fifty ohm loads. The EUT was configured to output its rated output power and measurement were made for the low and high channels.



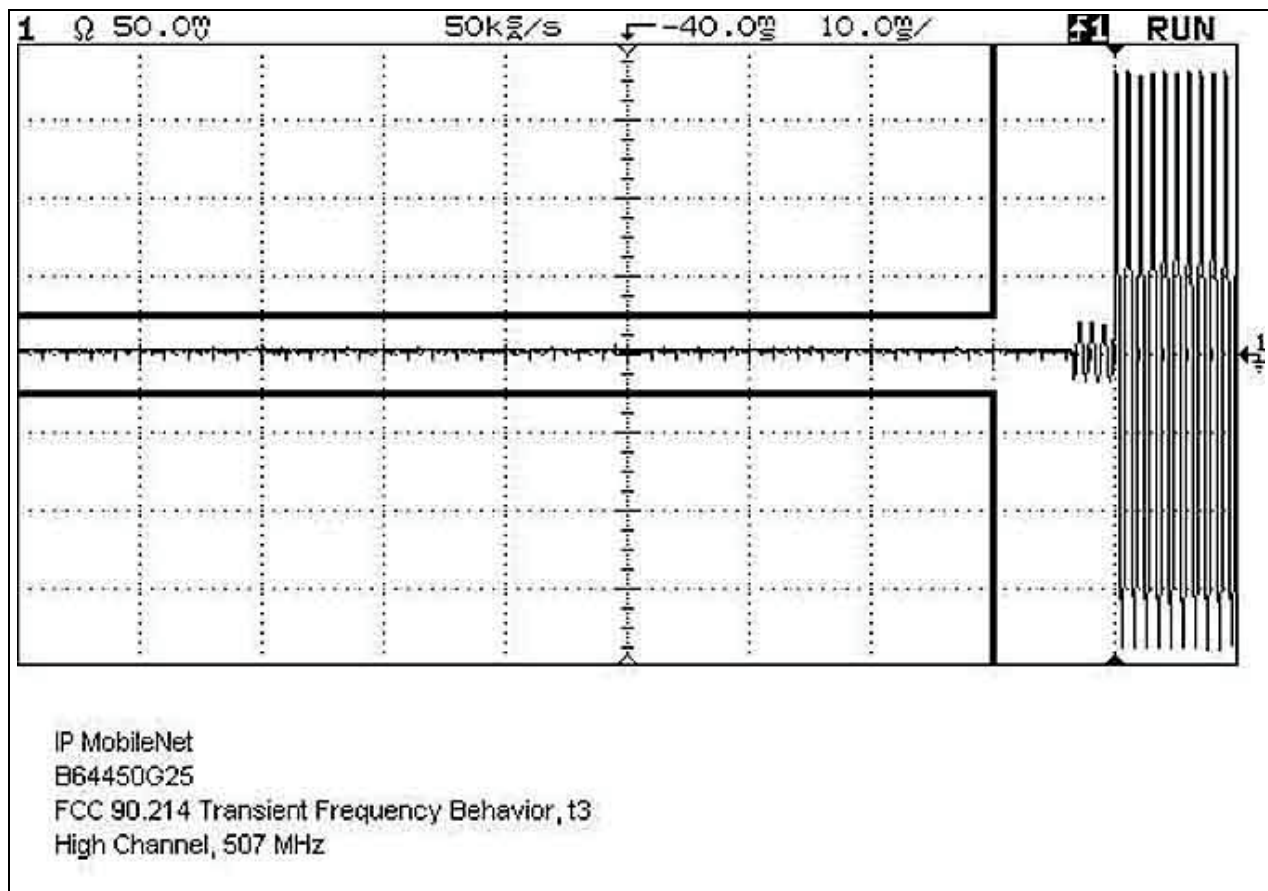
FCC 90.214 TRANSIENT FREQUENCY BEHAVIOR LOW CHANNEL t3



FCC 90.214 TRANSIENT FREQUENCY BEHAVIOR HIGH CHANNEL t1 AND t2



FCC 90.214 TRANSIENT FREQUENCY BEHAVIOR HIGH CHANNEL t3



FCC 90.214 Transient Frequency Behavior Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Power Meter	02082	HP	435B	2445A11881	061704	061706
Power Sensor	02036	HP	8482A	1551A01004	061804	061806
Signal Generator	02227	Marconi	2024	112282/515	081805	081807
Digital Oscilloscope	00320	HP	54615B	US35420826	081204	081206
Modulation Analyzer	02072	HP	8901A	2751A05181	102504	102506
Combiner	P01313	Motorola	(none)	549TR18HQ	NCR	NCR

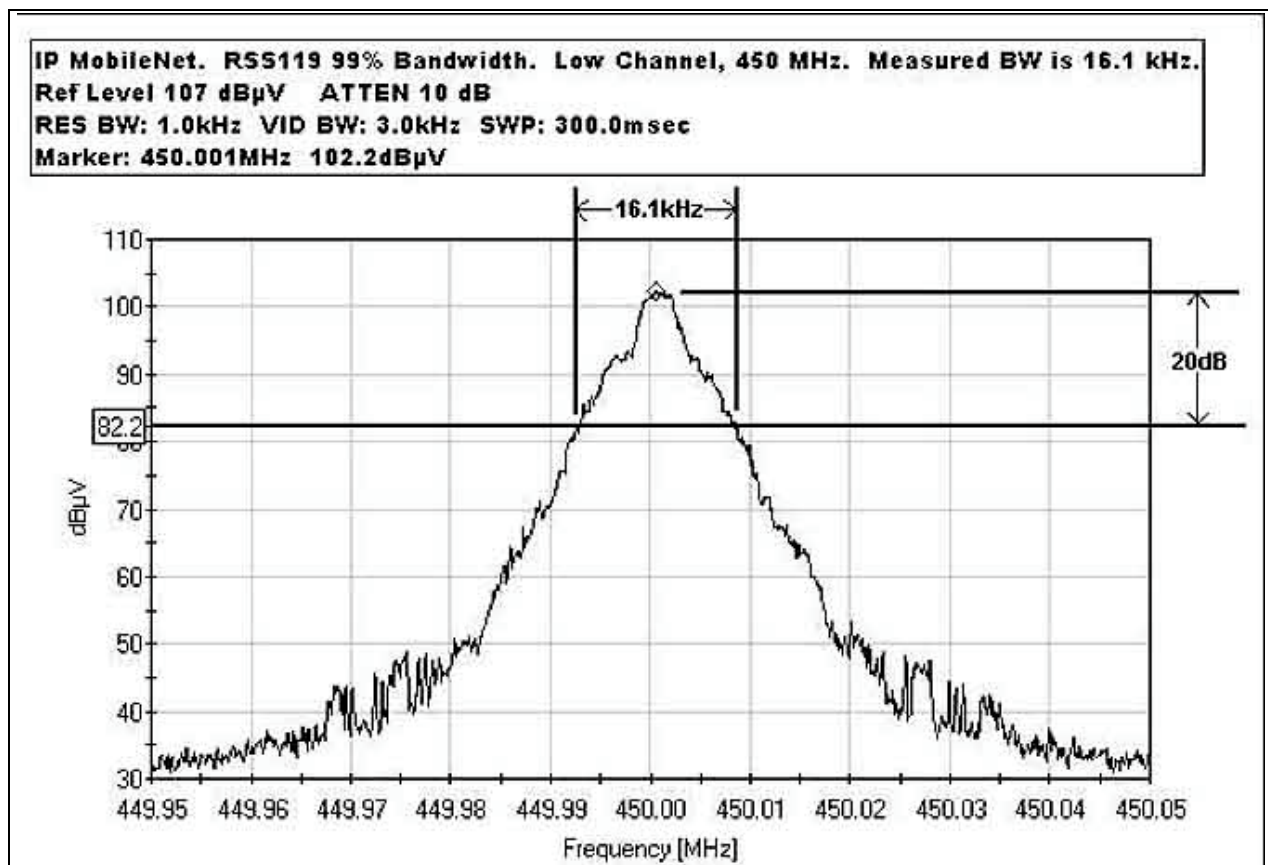
NCR = No Cal Required

FCC 90.214 TRANSIENT FREQUENCY BEHAVIOR



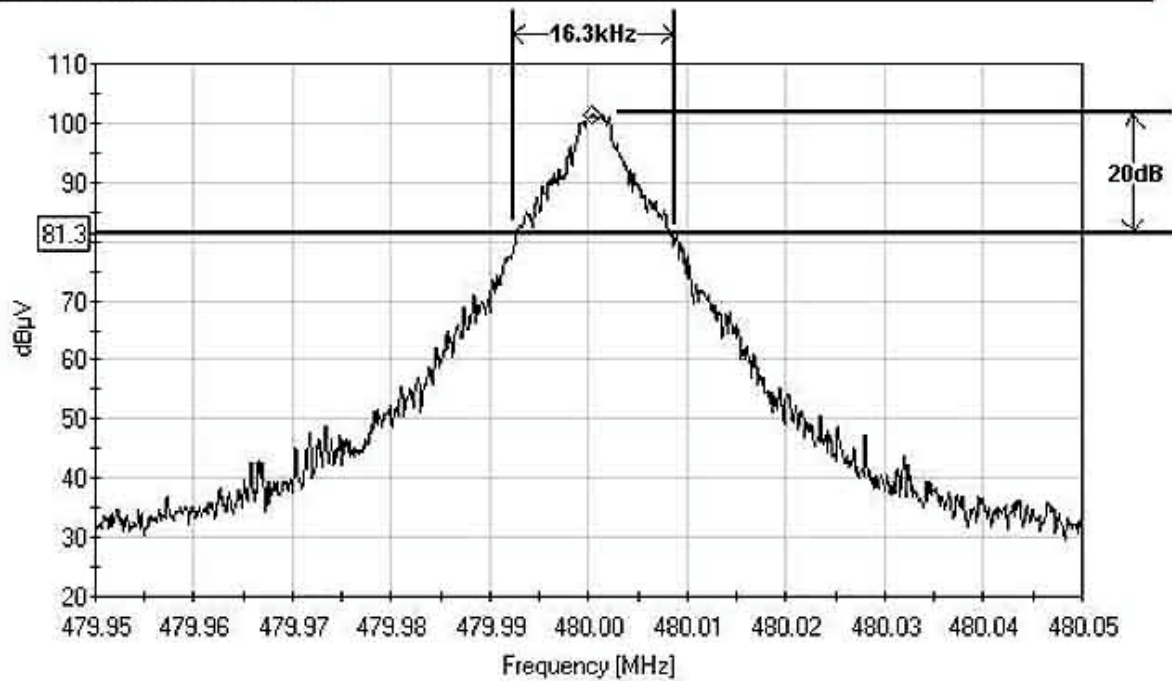
RSS-119 99% BANDWIDTH LOW CHANNEL 450MHz

Test Conditions: The EUT's ethernet port was connected to a laptop computer via an unshielded cat 5E cable. The EUT's DB9 serial port was also connected to the laptop computer via a shielded serial cable. 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 utilizing both interface ports. Also connected to the EUT was a GPS antenna. This GPS antenna was placed outside the room so that it had no obstructions to the sky. A separate DC power supply was used to provide the EUT with 13.8 VDC/10A. On the RF output of the EUT was placed a high power attenuator and a coaxial cable connected to a spectrum analyzer to measure the EUT fundamental emission. The EUT was configured to output its rated output power (40Watts).

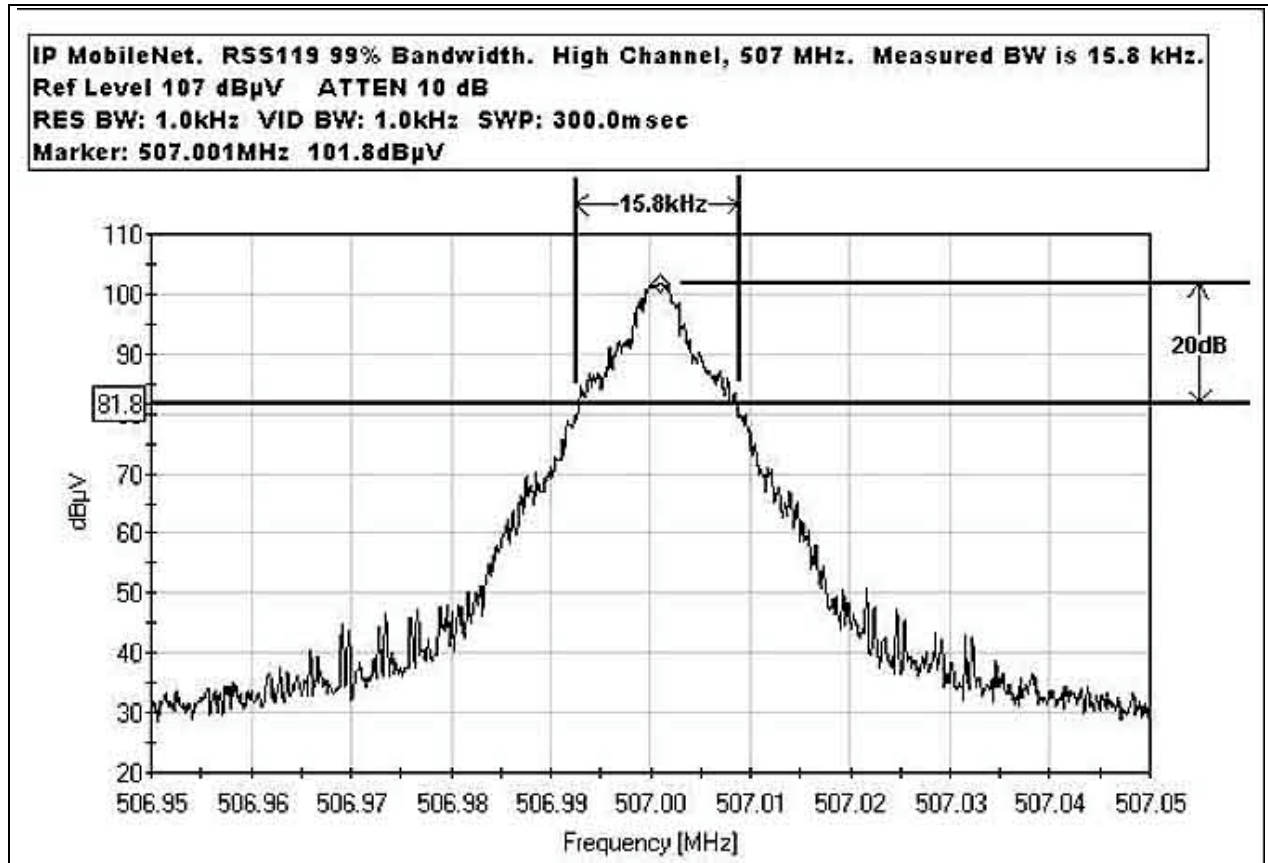


RSS-119 99% BANDWIDTH MIDDLE CHANNEL 480MHz

IP MobileNet. RSS119 99% Bandwidth. Middle Channel, 480 MHz. Measured BW is 16.3 kHz.
Ref Level 107 dBμV ATTEN 10 dB
RES BW: 1.0kHz VID BW: 3.0kHz SWP: 300.0msec
Marker: 480.0MHz 101.3dBμV



RSS-119 99% BANDWIDTH HIGH CHANNEL 507MHz



RSS119 99% Bandwidth Test Equipment

Equipment	Asset #	Manufacturer	Model #	Serial #	Cal Date	Cal Due
Spectrum Analyzer RF Section	00989A	HP	8568A	2049A01287	040805	040807
Spectrum Analyzer Display Section	00034	HP	85662A	2349A06091	040805	040807
Quasi Peak Adapter	00200	HP	85650A	2043A00221	040805	040807

RSS-119 99% BANDWIDTH

