INTERNAL REGULATORY COMPLIANCE REPORT

TITLE: FCC Test Report for FCC Part 101 (952 - 960 MHz) Transmitter

900 BCR Radio

AUTHOR: W. Raymond Stoner

REV	CCO	DESCRIPTION OF CHANGE	DATE	*APPROVALS*	
001		INITIAL RELEASE		Engineering	
				Regulatory	

REVISION HISTORY

A		first filing	02dec09	Engineering	
				Regulatory	
B		answer 1st nonconforms; voltage variation, MPE, etc.	11dec09	Engineering	
				Regulatory	
				Engineering	
				Regulatory	

Test Data Summary

FCC Part 101 Transmitter
900 BCR Radio, 952 – 960 MHz for EUT
FCC ID: EO9BCR900

Part Numbers: 900 BCR Radio
Serial Numbers – see below
OATS Registration Number: FCC 90716, IC 864D-1

Rule	Description	Spec Limit	Max. Reading	Pass/Fail
FCC15.31(e)	Variation of Input Voltage – Conducted	n/a	12.2V	Pass
FCC 15.207	AC Power line Conducted Emissions	Table	36.5 dBuV/m	Pass
FCC 101.113	EIRP of Fundamental Emissions – FCC	<14 dBW	-4.5 dBW	Pass
FCC 101.109	Occupied Bandwidth (99%) – FCC	< 12.5kHz	3.4705kHz	Pass
FCC 101.111a(5)	Transmit Mask - FCC	table	see plot	Pass
FCC 101.111(a)(5)(iv)	EIRP of Transmitter Spurious Emissions	< 50+ log(P) or 70dBc	-21.68 dBm	Pass
FCC 101.107	Frequency Stability	<1.5ppm	0.90ppm	Pass
FCC 1.1310	SAR/MPE evaluation, general population/ uncontrolled areas	< 60/F(GHz) - <f_{MHz} / 1500 mW/cm^2	see SAR Test Report	Pass

Rule versions: FCC Part 1; FCC Part 2; FCC Part 101
Reference docs: ANSI C63.4-2003; OET65 (08-1997); OET65C (06-2001); IEEE C95.3-2002.

Cognizant Personnel	
Name	Title
W. Raymond Stoner	Engineer
Name	Title
Jay Holcomb	Regulatory Manager
Name	Title
Drew Rosenberg	Project Lead

CONDITIONS DURING TESTING

No Modifications to the EUT were necessary during the testing.

ANSI C63.4 - Temperature and Humidity During Testing
The temperature during testing was within +10º C and +40º C.
The Relative humidity was between 10% and 90%.

EQUIPMENT UNDER TEST (EUT) DESCRIPTION
Itron declares that the EUT tested was representative of a production unit.

EQUIPMENT UNDER TEST

EUT Module

Manuf:	Itron, Inc.
Model:	**900 BCR Radio**
Serial Number(s)	Listed Below
Power source	Belt clip charging cradle

Plot Information
In the zero span measurements, the line in the display is the trigger level.

Peripheral Devices
The EUT was tested with the following peripheral devices:

12VDC Power Supply
Manuf: CUI Inc.
Model: DSA-0421S-121
Serial: NA

Charging Cradle
Manuf: Itron Inc
Model: NA
Serial: NA

AC Adapter for PC
Manuf: Lite-On Technology Corporation
Model: LA90PSO-00
Serial: CN-ODF266-71615-65O-202C

Laptop PC
Manuf: Dell Inc
Model: PP18L
Serial: 21216189133

15.31(e)
Variation of Supply Voltage

For intentional radiators, measurements of the variation of the input power or the radiated signal level of the fundamental frequency component of the emission, as appropriate, shall be performed with the supply voltage varied between 85% and 115% of the nominal rated supply voltage. For battery operated equipment, the equipment tests shall be performed using a new battery.

Vary the supply voltage from 85% to 115% of the nominal voltage. If the power level of the fundamental signal varies with supply voltage, record the voltage level at which the fundamental signal is at its highest and use that voltage level for all further testing.

Equipment Used	Serial Number	Cal Date	Due
Fluke 83 Multimeter	48000153	3/09	3/10
Kikasui AC power supply PCR500L	BL005456	3/09	3/10
Date	Tested by		
12/11/09	W. Raymond Stoner		

Unit tested: 67400139

Line Voltage	UUT input voltage
102	12.2
120	12.2
138	12.2

FCC 15.207

Power line Conducted Emissions

Measure the AC power line conducted emissions from 150kHz to 30 MHz using a 50uH/50 ohm line impedance stabilization network (LISN) according to the procedure specified in ANSI C63.4. Verify that no emissions exceed the following limits:

Frequency (MHz)	Quasi-Peak (dBuV)	Average (dBuV)
0.15-0.5	66 to 56*	56 to 46*
0.5-5	56	46
5-30	60	50

*Decreases with the logarithm of frequency

Equipment Used	Serial Number	Cal Date	Due
Agilent SA E4407B	MY45107856	3/09	3/11
Emco-3810/2 LISN	00026824	4/09	4/10
Agilent Transient limiter 11947A	3107A03963	3/09	3/10
Date	Tested by		
11/02/09	W. Raymond Stoner		

Unit tested: 67400139

1	2	3	4	5	6	7	8
Freqency		Peak	Transient		Corrected		
MHz	Polarity	Level	limiter	LISN	Value	Spec	Margin
0.962	Black	25.4	10	0	35.4	46	-10.6
2.319	White	25.4	10	0.1	35.5	46	-10.5
3.641	White	25.5	10	0.1	35.6	46	-10.4
3.901	Black	26.3	10	0.2	36.5	46	-9.5
4.011	White	25.2	10	0.2	35.4	46	-10.6
4.135	Black	25.7	10	0.2	35.9	46	-10.1
4.194	Black	25.2	10	0.2	35.4	46	-10.6
4.39	White	26.3	10	0.2	36.5	46	-9.5
4.454	Black	25.7	10	0.2	35.9	46	-10.1
4.59	Black	26	10	0.2	36.2	46	-9.8

3+4+5=6 6-7=8

FCC 101.113

EIRP of Fundamental Emissions

(a) On any authorized frequency, the average power delivered to an antenna in this service must be the minimum amount of power necessary to carry out the communications desired. Application of this principle includes, but is not to be limited to, requiring a licensee who replaces one or more of its antennas with larger antennas to reduce its antenna input power by an amount appropriate to compensate for the increased primary lobe gain of the replacement antenna(s). In no event shall the average equivalent isotropically radiated power (EIRP), as referenced to an isotropic radiator, exceed the values specified below. In cases of harmful interference, the Commission may, after notice and opportunity for hearing, order a change in the effective radiated power of this station. Further, the output power of a transmitter on any authorized frequency in this service may not exceed the following:

Frequency (MHz)	Fixed (dBW)	Mobile (dBW)
952-960	40	14

Equipment Used	Serial Number	Cal Date	Due
HP4407B	MY45107856	3/09	3/11
Date	Tested by		
11 November 2009	W. Raymond Stoner		

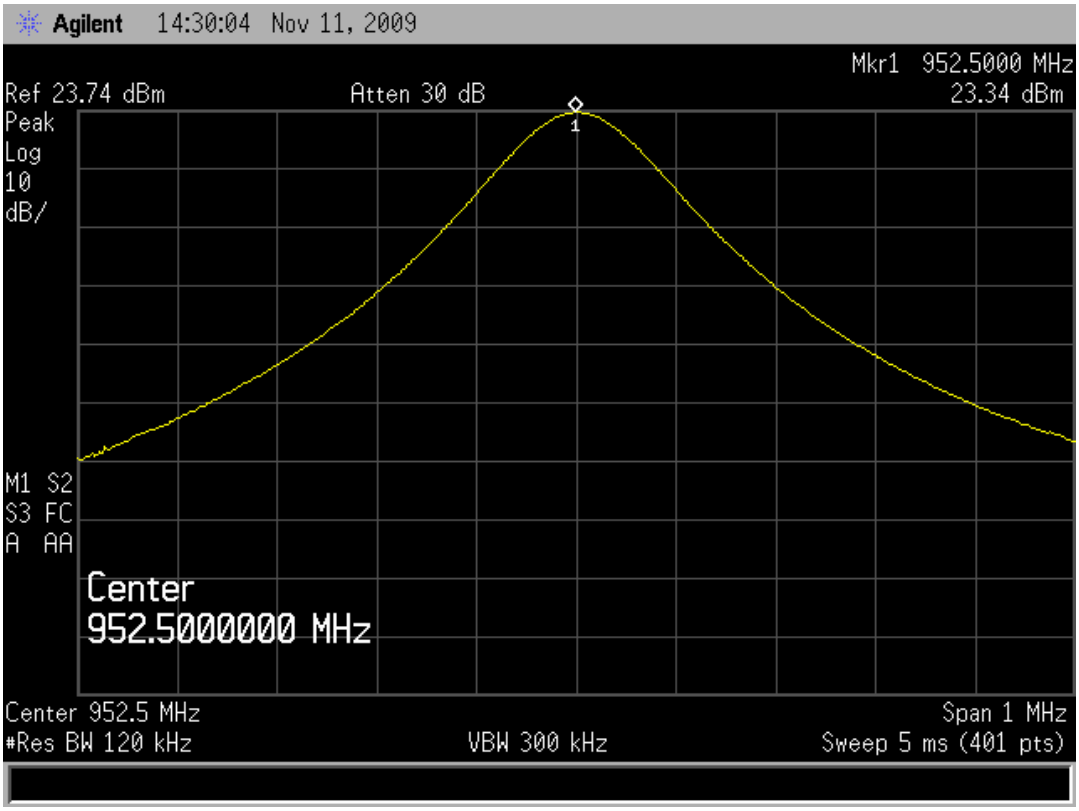
Unit tested: 67400139

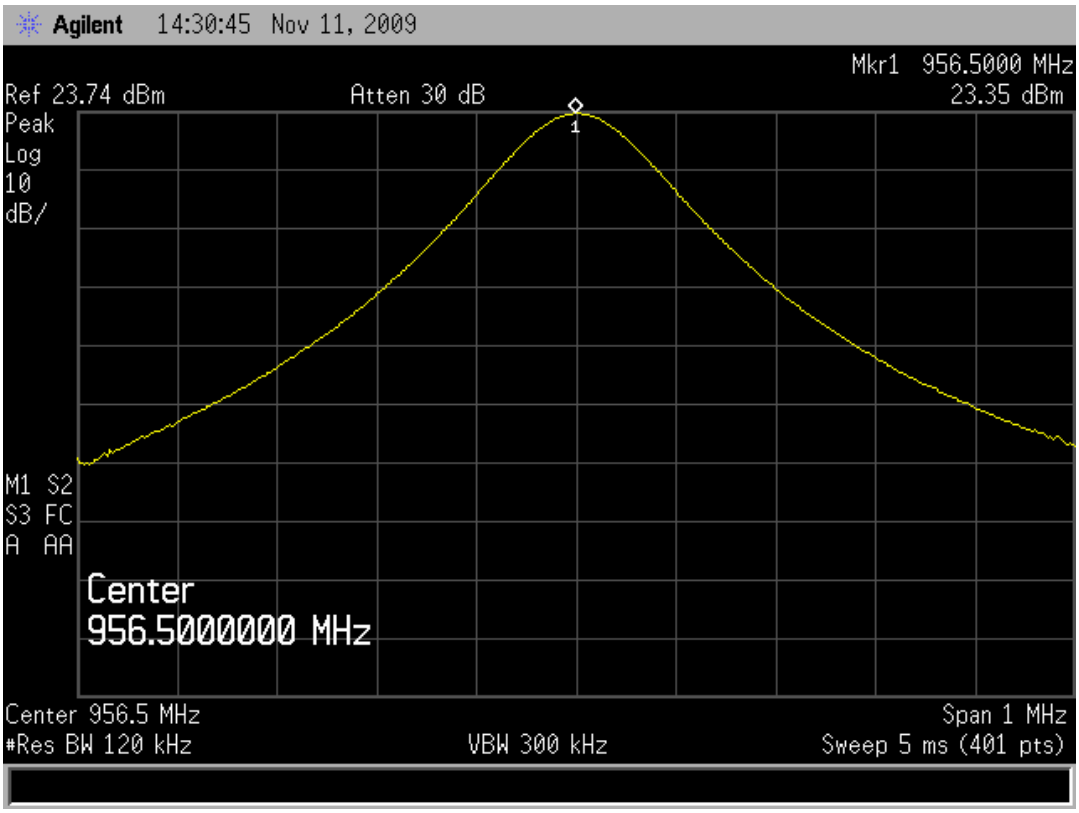
Fill in the white spaces in the table below for each frequency measured:

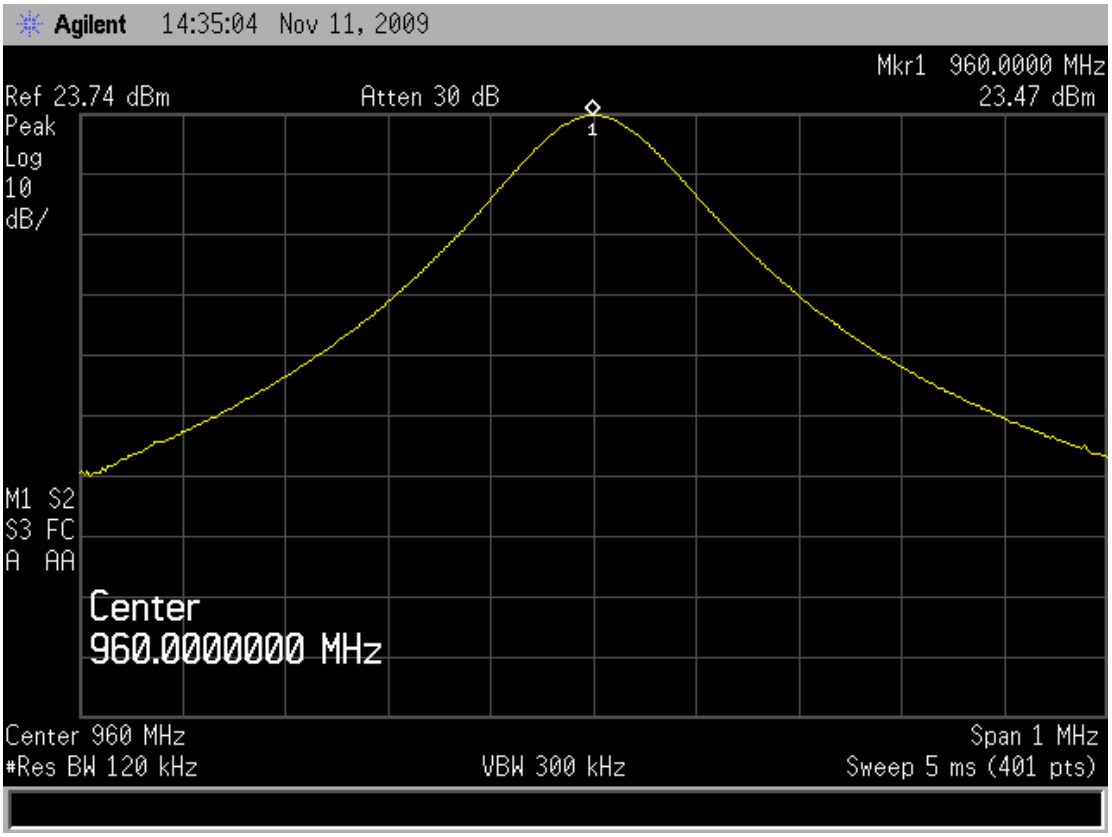
Frequency (MHz)	Reading (dBm)	Attenuation (dB)	Power Level (dBm)	Rated Power	Deviation
952.5	23.3	0	23.3	23.5	-0.2
956.5	23.4	0	23.4	23.5	-0.1
960	23.5	0	23.5	23.5	0

This device uses a third party OEM antenna with a gain of 2.0 dbi

EIRP for this device is:
Antenna conducted power = 0.224W (23.5 dbm)
Antenna Gain = 2.0dbi
EIRP = 25.5 dbm (0.355W or -4.5 dbW)


Agilent 14:30:04 Nov 11, 2009
Mkr1 952.5000 MHz
23.34 dBm
Ref 23.74 dBm
Atten 30 dB
Peak
Log
10
dB/
M1 S2
S3 FC
A AA
Center
952.5000000 MHz
Center 952.5 MHz
#Res BW 120 kHz
VBW 300 kHz
Span 1 MHz
Sweep 5 ms (401 pts)


Agilent 14:30:45 Nov 11, 2009
Mkr1 956.5000 MHz
23.35 dBm
Ref 23.74 dBm
Atten 30 dB
Peak
Log
10
dB/
M1 S2
S3 FC
A AA
Center
956.5000000 MHz
Center 956.5 MHz
#Res BW 120 kHz
VBW 300 kHz
Span 1 MHz
Sweep 5 ms (401 pts)


Agilent 14:35:04 Nov 11, 2009
Mkr1 960.0000 MHz
23.47 dBm
Ref 23.74 dBm
Atten 30 dB
Peak
Log
10
dB/
1
M1 S2
S3 FC
A AA
Center
960.0000000 MHz
Center 960 MHz
#Res BW 120 kHz
VBW 300 kHz
Span 1 MHz
Sweep 5 ms (401 pts)

FCC 101.109

Occupied Bandwidth

(c) The maximum bandwidth which will be authorized per frequency assigned is set out in the table that follows. Regardless of the maximum authorized bandwidth specified for each frequency band, the Commission reserves the right to issue a license for less than the maximum bandwidth if it appears that a lesser bandwidth would be sufficient to support an applicant's intended communications.

952 to 960 200 kHz [1, 5, 6]
footnote 5 & 6 point to 101.147 (b)

5. A 12.5 kHz bandwidth applies only to frequencies listed in §101.147(b)(1 through 4).
6. For frequencies listed in §101.147(b)(1 through 4), consideration will be given on a case-by-case basis to authorizing bandwidths up to 50 kHz.

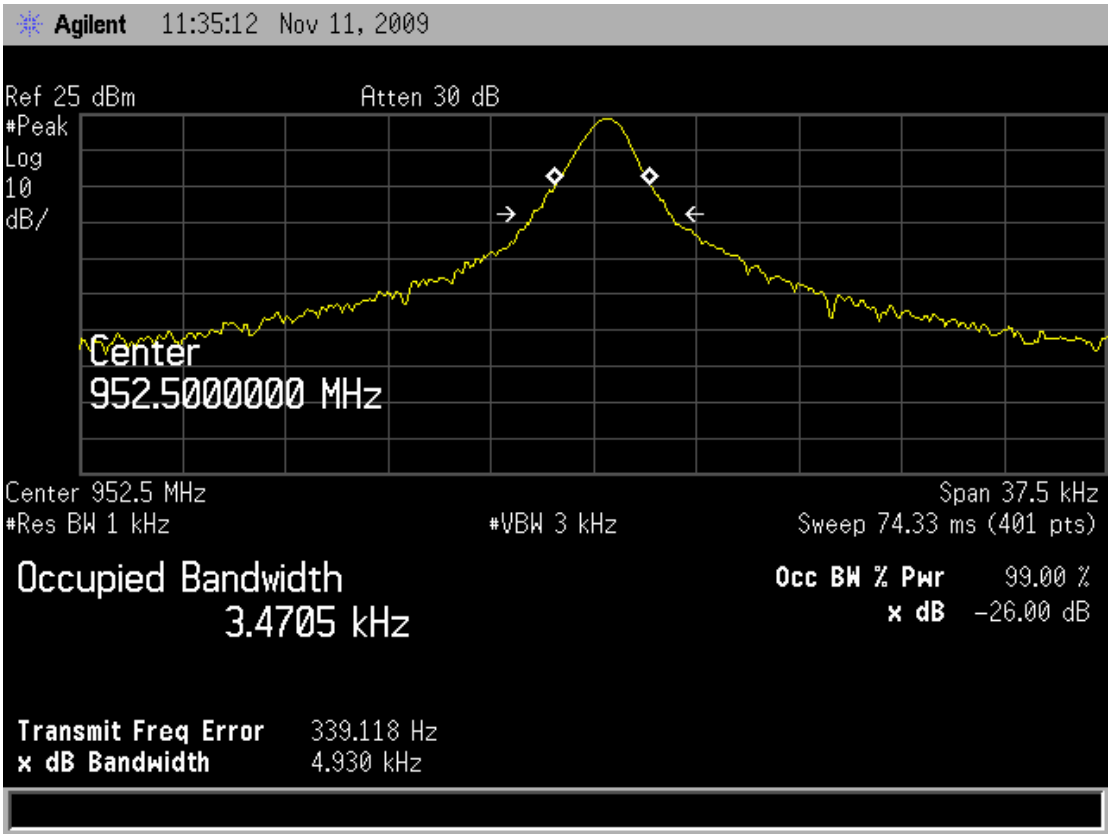
147 (b) … … …The normal channel bandwidth assigned will be 12.5 kHz. EA licensees, however, may combine contiguous channels without limit or justification. … … … Equipment that is used to create additional frequencies by narrowing bandwidth (whether authorized for a 12.5 kHz, 25 kHz or greater bandwidth) will be required to meet, at a minimum, the ±0.00015 percent tolerance requirement so that all subfrequencies will be within the emission mask. … … …

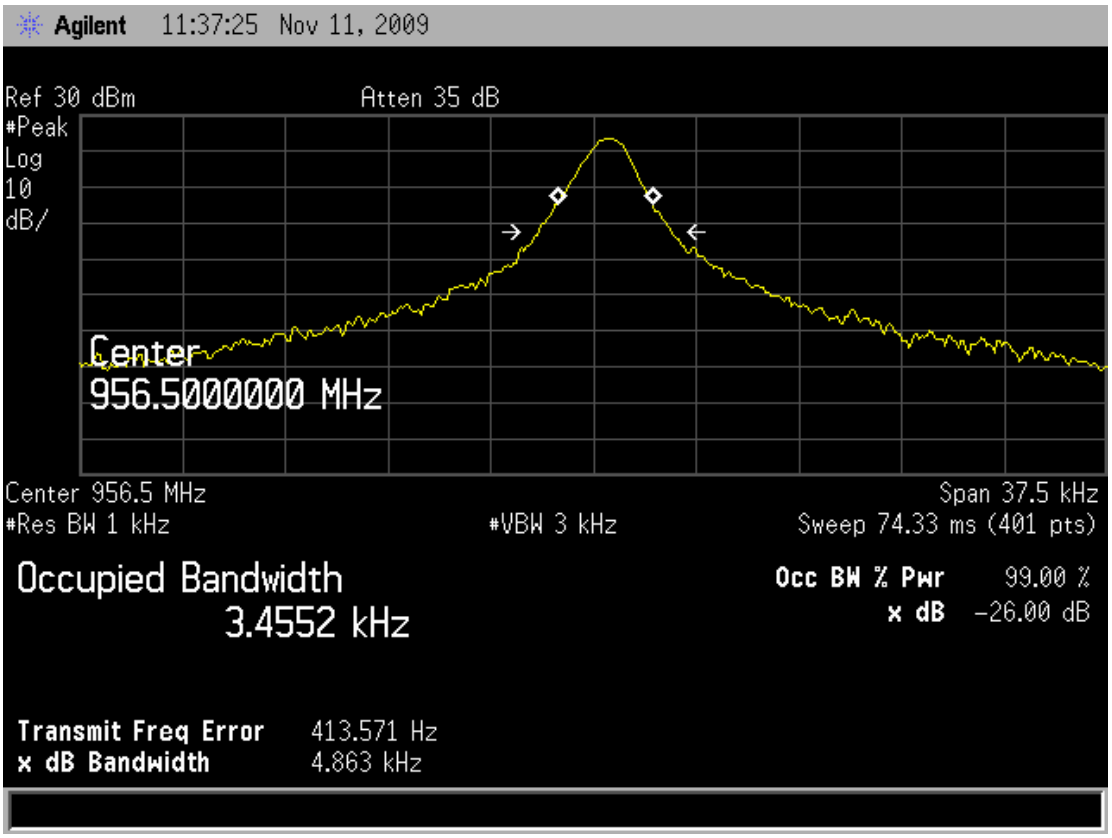
Equipment Used	Serial Number	Cal Date	Due
HP4407B	MY45107856	3/09	3/11
Date	Tested by		
11 November 2009	W. Raymond Stoner		

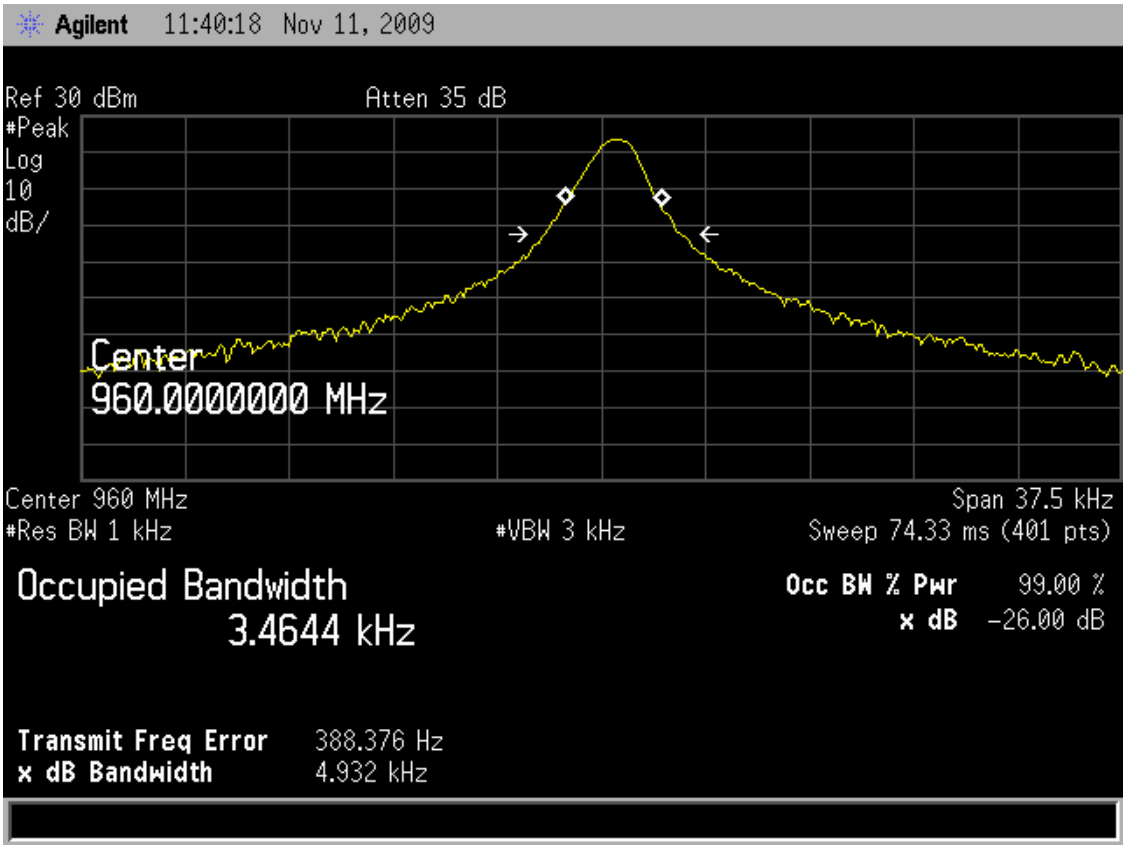
Measure the occupied bandwidth (99% bandwidth).

Unit tested: 67400139

Frequency, MHz	total BW, Hz
952.5	*3470.5*
956.5	*3455.2*
960	*3464.4*


Agilent 11:35:12 Nov 11, 2009
Ref 25 dBm
Atten 30 dB
#Peak
Log
10
dB/
Center
952.5000000 MHz
Center 952.5 MHz
#Res BW 1 kHz
#VBW 3 kHz
Span 37.5 kHz
Sweep 74.33 ms (401 pts)
Occupied Bandwidth
3.4705 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 339.118 Hz
x dB Bandwidth 4.930 kHz


Agilent 11:37:25 Nov 11, 2009
Ref 30 dBm
Atten 35 dB
#Peak
Log
10
dB/
Center
956.5000000 MHz
Center 956.5 MHz
#Res BW 1 kHz
#VBW 3 kHz
Span 37.5 kHz
Sweep 74.33 ms (401 pts)
Occupied Bandwidth
3.4552 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 413.571 Hz
x dB Bandwidth 4.863 kHz


Agilent 11:40:18 Nov 11, 2009
Ref 30 dBm
Atten 35 dB
#Peak
Log
10
dB/
Center
960.0000000 MHz
Center 960 MHz
#Res BW 1 kHz
#VBW 3 kHz
Span 37.5 kHz
Sweep 74.33 ms (401 pts)
Occupied Bandwidth
3.4644 kHz
Occ BW % Pwr 99.00 %
x dB -26.00 dB
Transmit Freq Error 388.376 Hz
x dB Bandwidth 4.932 kHz

FCC 101.111a(5)

Transmitter Mask (US)- conducted

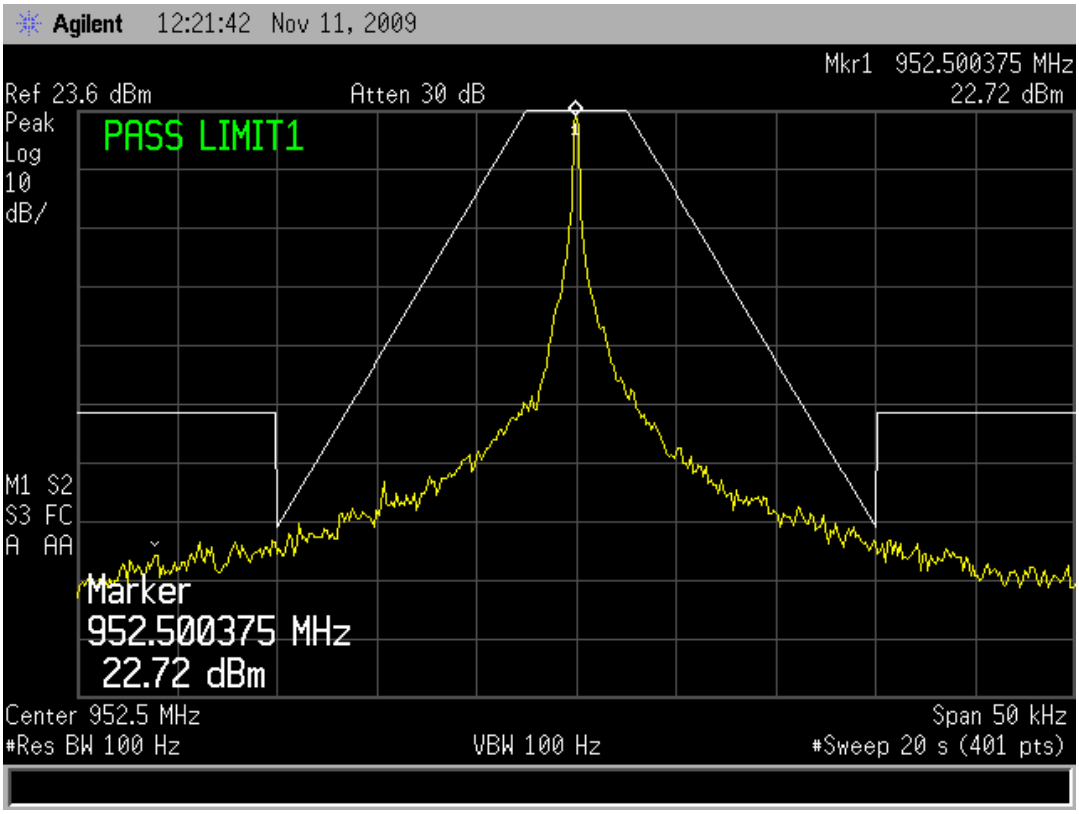
(5) When using transmissions employing digital modulation techniques on the 900 MHz multiple address frequencies with a 12.5 kHz bandwidth, the power of any emission must be attenuated below the un-modulated carrier power of the transmitter (P) in accordance with the following schedule:

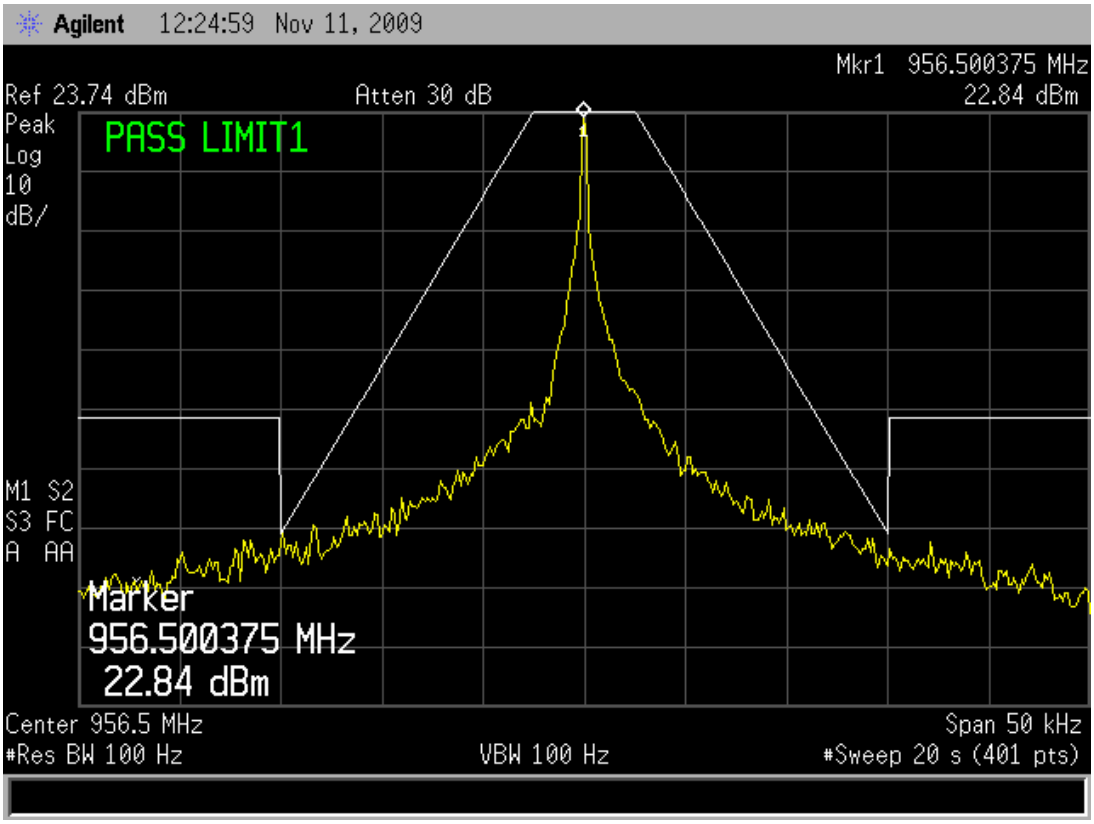
Minimum Displacement Frequency (kHz)	Maximum Displacement Frequency (kHz)	Attenuation below un-modulated carrier (dB)
2.5	6.25	53*log(fd/2.5)
6.25	9.5	103*log(fd/3.9)
9.5	15	157*log(fd/5.3)
15	>15	50+Log(P) or 70

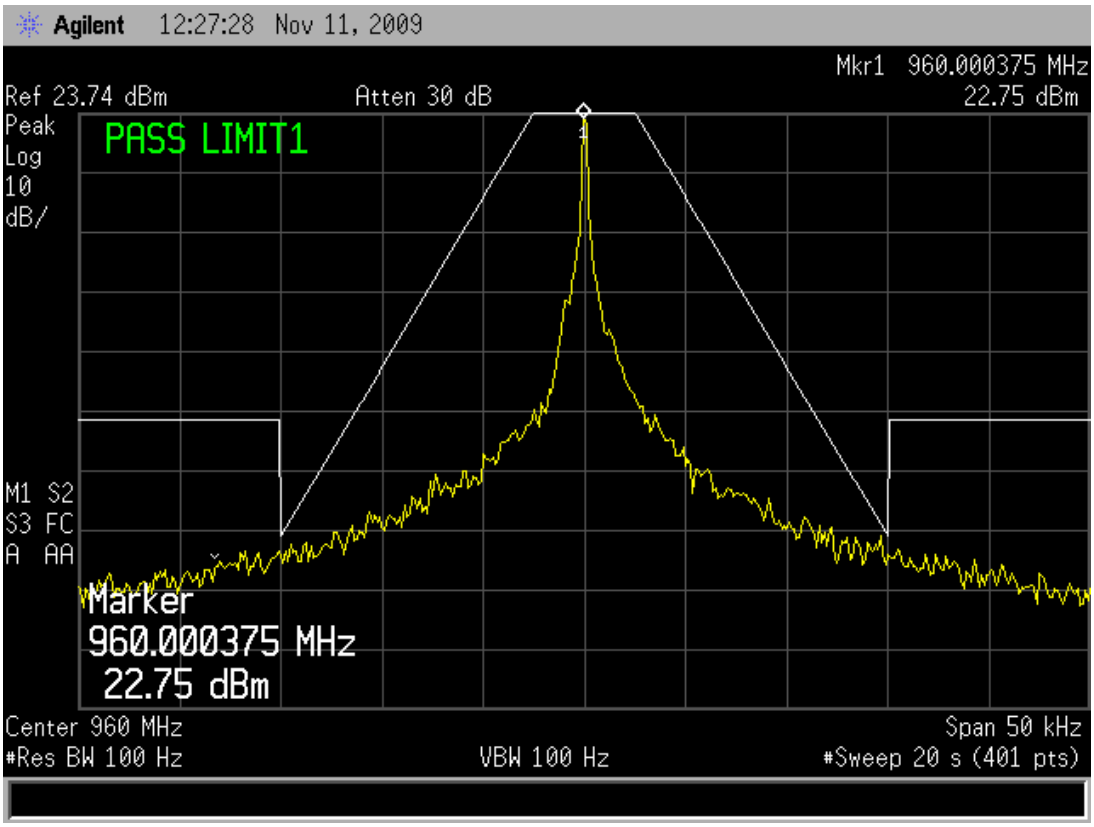
Equipment Used	Serial Number	Cal Date	Due
HP4407B	MY45107856	3/09	3/11
Date	Tested by		
11 November 2009	W. Raymond Stoner		

Measure the transmitter mask, referenced to an un-modulated carrier, according to the above schedule:

Unit tested: **67400139**




Agilent 12:24:59 Nov 11, 2009
Mkr1 956.500375 MHz
22.84 dBm
Ref 23.74 dBm
Atten 30 dB
Peak
Log
10
dB/
PASS LIMIT1
M1 S2
S3 FC
A AA
Marker
956.500375 MHz
22.84 dBm
Center 956.5 MHz
#Res BW 100 Hz
VBW 100 Hz
Span 50 kHz
#Sweep 20 s (401 pts)


Agilent 12:27:28 Nov 11, 2009
Mkr1 960.000375 MHz
22.75 dBm
Ref 23.74 dBm
Atten 30 dB
Peak
Log
10
dB/
PASS LIMIT1
M1 S2
S3 FC
A AA
Marker
960.000375 MHz
22.75 dBm
Center 960 MHz
#Res BW 100 Hz
VBW 100 Hz
Span 50 kHz
#Sweep 20 s (401 pts)

FCC 101.111(a)(5)(iv)

EIRP of Transmitter Spurious Emissions

Measure the EIRP of all transmitter spurious emissions that are >15kHz away from the center of the fundamental peak. The EIRP of these emissions may not exceed 50+10log(P) or 70dB below the EIRP which ever is lesser, of the fundamental (measured in test above). Use the antenna substitution procedure to perform these measurements (annex A).

Which is lesser:

For 0.355watts == 50 + 10log (0.355) = 45.5 dBW; this is less than 70, per the rule.
therefore: W = -4.5dBW – 45.5dBw = **-50dBW == -20dBm**.

Equipment Used	Serial Number	Cal Date	Due
AH systems preamplifier model PAM 0126	135	12/07	12/08
H/S Sucoflex 40ft cable	220297001	12/07	12/09
Agilent E7405A Spectrum Analyzer	MY45113415	7/09	7/10
Emco 6502 Loop (9kHz to 30Mhz)	9509-2970	10/08	10/10
Emco 3110B Biconical (30MHz-to 300MHz)	9807-3129	10/09	10/11
Emco 3148 Log Periodic (200Mhz to 1GHz)	9901-1044	10/09	10/11
Emco 3115 wave guide (1GHz-18GHz)	9205-3878	3/08	3/10
Date	Tested by		
11/19/09/09	W. Raymond Stoner		

1	2	3	4	5	6	7	8	9	10
Frequency (MHz)	Polarity	Analyzer Reading of Device Emissions (dBm)	Analyzer Reading of Generator Emissions (dBm)	Difference (add to ERP reading)	Substitution Antenna Gain (dBi)	Generator Output (dBm)	EIRP (dBm)	Spec Limit (dBm)	Margin (dB)
1904	Vertical	-43.37	-42.88	-0.49	8.6	-45.8	-37.69	-20	-17.69
1904	Horizontal	-42.21	-39.28	-2.93	8.6	-42.9	-37.23	-20	-17.23
1912	Vertical	-46.62	-46.89	0.27	8.6	-49.66	-40.79	-20	-20.79
1912	Horizontal	-41.59	-41.18	-0.41	8.6	-44.28	-36.09	-20	-16.09
1920	Vertical	-40.96	-39.59	-1.37	8.6	-42.61	-35.38	-20	-15.38
1920	Horizontal	-41.34	-39.02	-2.32	8.6	-43.1	-36.82	-20	-16.82
2856	Vertical	-31.14	-31.8	0.66	9.5	-34.56	-24.4	-20	-4.4
2856	Horizontal	-28.17	-29.69	1.52	9.5	-32.7	-21.68	-20	-1.68
2868	Vertical	-36.13	-36.24	0.11	9.5	-38.32	-28.71	-20	-8.71
2868	Horizontal	-29.56	-29.69	0.13	9.5	-32.4	-22.77	-20	-2.77
2880	Vertical	-30.66	-30.88	0.22	9.5	-32.85	-23.13	-20	-3.13
2880	Horizontal	-28.91	-28.4	-0.51	9.5	-30.76	-21.77	-20	-1.77
3808	Vertical	-54.87	-53.79	-1.08	9.2	-50.4	-42.28	-20	-22.28
3808	Horizontal	-54.58	-54.18	-0.4	9.2	-52.25	-43.45	-20	-23.45
3824	Vertical	-55.81	-55.37	-0.44	9.2	-51.58	-42.82	-20	-22.82
3824	Horizontal	-59.99	-58.51	-1.48	9.2	-57.7	-49.98	-20	-29.98
3840	Vertical	-55.42	-55.29	-0.13	9.2	-51.95	-42.88	-20	-22.88
3840	Horizontal	-61.44	-60.9	-0.54	9.2	-58.58	-49.92	-20	-29.92
4760	Vertical	-47.35	-47.07	-0.28	11	-44.25	-33.53	-20	-13.53
4760	Horizontal	-53.26	-54.41	1.15	11	-52.06	-39.91	-20	-19.91
4780	Vertical	-47.68	-47.28	-0.4	11	-44.47	-33.87	-20	-13.87
4780	Horizontal	-49.15	-49.75	0.6	11	-47.71	-36.11	-20	-16.11
4800	Vertical	-48.64	-48.17	-0.47	11	-45.72	-35.19	-20	-15.19
4800	Horizontal	-49.28	-50.07	0.79	11	-47.4	-35.61	-20	-15.61
5712	Vertical	-59.18	-59.19	0.01	11.4	-54.77	-43.36	-20	-23.36
5712	Horizontal	-60.23	-60.1	-0.13	11.4	-54.81	-43.54	-20	-23.54
5736	Vertical	-58.5	-58.85	0.35	11.4	-53.8	-42.05	-20	-22.05
5736	Horizontal	-58.34	-57.97	-0.37	11.4	-52.69	-41.66	-20	-21.66
5760	Vertical	-58.02	-58.91	0.89	11.4	-54.01	-41.72	-20	-21.72
5760	Horizontal	-58.98	-57.96	-1.02	11.4	-52.7	-42.32	-20	-22.32
6664	Vertical	-53.03	-52.55	-0.48	11.8	-42.18	-30.86	-20	-10.86
6664	Horizontal	-52.51	-52.57	0.06	11.8	-44.64	-32.78	-20	-12.78
6692	Vertical	-52.44	-52.4	-0.04	11.6	-44.41	-32.85	-20	-12.85
6692	Horizontal	-50.69	-51.36	0.67	11.6	-43.16	-30.89	-20	-10.89
6720	Vertical	-51.6	-51.21	-0.39	11.6	-44.66	-33.45	-20	-13.45
6720	Horizontal	-51.74	-52.49	0.75	11.6	-42.6	-30.25	-20	-10.25
7616	Vertical	-46.23	-46.91	0.68	11.5	-40.1	-27.92	-20	-7.92
7616	Horizontal	-46.7	-45.6	-1.1	11.5	-37.1	-26.7	-20	-6.7
7648	Vertical	-45.43	-44.68	-0.75	11.5	-37.52	-26.77	-20	-6.77
7648	Horizontal	-44.15	-45.56	1.41	11.5	-36.76	-23.85	-20	-3.85
7680	Vertical	-46.05	-45.97	-0.08	11.5	-38.54	-27.12	-20	-7.12
7680	Horizontal	-45.36	-45.62	0.26	11.5	-35.76	-24	-20	-4
8568	Vertical	-46.74	-47.11	0.37	11.6	-38.83	-26.86	-20	-6.86
8568	Horizontal	-44.39	-43.89	-0.5	11.6	-34.1	-23	-20	-3
8604	Vertical	-46.31	-47.16	0.85	11.6	-38.3	-25.85	-20	-5.85
8604	Horizontal	-45.89	-45.03	-0.86	11.6	-34.58	-23.84	-20	-3.84
8640	Vertical	-47.05	-47.64	0.59	11.6	-38.77	-26.58	-20	-6.58
8640	Horizontal	-44.85	-45.18	0.33	11.6	-34.85	-22.92	-20	-2.92

5 = 3 -4; 8 = 5 + 6 + 7 10=8 - 9

FCC 101.107

Frequency Stability

(a) The carrier frequency of each transmitter authorized in these services must be maintained within the following percentage of the reference frequency except as otherwise provided in paragraph (b) of this section or in the applicable subpart of this part (unless otherwise specified in the instrument of station authorization the reference frequency will be deemed to be the assigned frequency):

Frequency (MHz)	Tolerance (percentage)
952 to 960	0.0005

footnote 5: For private operational fixed point-to-point microwave systems, with a channel greater than or equal to 50 KHz bandwidth, ±0.0005%; for multiple address master stations, regardless of bandwidth, ±0.00015%; for multiple address remote stations with 12.5 KHz bandwidths, ±0.00015%; for multiple address remote stations with channels greater than 12.5 KHz bandwidth, ±0.0005%.

Equipment Used	Serial Number	Cal Date	Due
HP4407B	MY45107856	3/09	3/11
Date	Tested by		
23 November 2009	W. Raymond Stoner		

At the device's rated voltage level, measure the carrier frequency at every 10 degrees from -30ºC to +50ºC. At +20ºC, measure the carrier frequency with the device powered at 85% and 115% of the device's rated voltage level. If the device is battery powered, then measurements should be made at the maximum and cutoff battery voltages.

The carrier frequency may not deviate from the reference level measured at +20ºC and with the device powered at its rated voltage level by more than +/- 0.00015%.

Fill in the white spaces in the following tables. For tables that do not apply, enter a "-":

Temperature (ºC)	20	-30	-20	-10	0
Frequency (MHz)	956.000775	956.000725	956.000425	956.000900	956.000800
Deviation (%)	0.00000%	-0.00001%	-0.00004%	0.00001%	0.00000%

Temperature (ºC)	20	10	30	40	50
Frequency (MHz)	956.000775	956.000850	956.000600	956.000550	955.999925
Deviation (%)	0.00000%	0.00001%	-0.00002%	-0.00002%	-0.00009%

Battery Voltage	Peak 4.2V	Cutoff 3.4V
Frequency (Hz)	956.001000	956.001875
Deviation (%)	0.00000%	0.00009%

1.1310 & 2.1091(mobile) or 2.1093(portable) / KDB447498

Maximum Permissible Exposure (MPE)

Radiofrequency radiation exposure limits. - The criteria listed in Table 1 shall be used to evaluate the environmental impact of human exposure to radiofrequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of §2.1093 of this chapter.

1.1307 (b) In addition to the actions listed in paragraph (a) of this section, Commission actions granting construction permits, licenses to transmit or renewals thereof, equipment authorizations or modifications in existing facilities, require the preparation of an Environmental Assessment (EA) if the particular facility, operation or transmitter would cause human exposure to levels of radiofrequency radiation in excess of the limits in §§1.1310 and 2.1093 of this chapter.

Determine the maximum power density for the general / uncontrolled population minimum separation distance of 20 cm. (f_{MHz} / 1500 mW/cm^2)

The power density is calculated as:

$$P_d = \frac{P_t \times G}{4 \times \pi \times r^2}$$

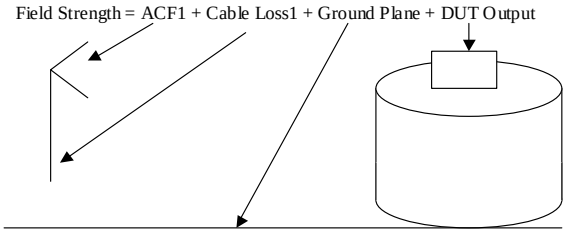
P_d = power density in *mW/cm^2*
P_t = transmit power in milliwatts
G = numeric antenna gain
r = distance between body and transmitter in centimeters.

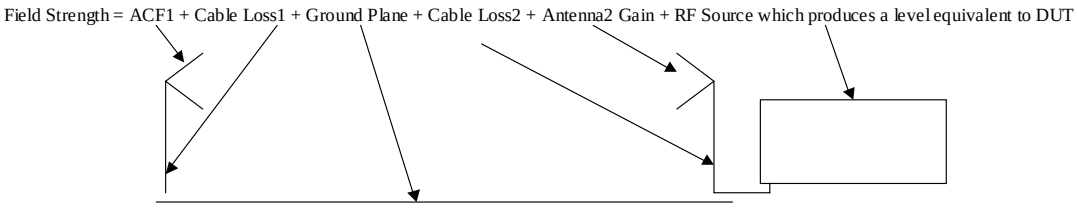
This device is considered a portable device. A SAR Test was performed and a report is available with this filing.

ANNEX A

Antenna Substitution Method of EIRP Measurement

First, measure the field strength of the device in accordance with the procedure in Annex B. Second, replace the device with an antenna and connect the antenna to the output of a signal generator. Set the signal generator to the same frequency as the device emission that is being measured. Adjust the height of receiving antenna to give the highest reading. Repeat with the substitution antenna in the vertical position. Bring the position back to the polarity and height that results in the highest field strength reading. Set the signal generator to a power that results in the same field strength reading as that of the device emission. The gain of the transmitting antenna, output power of the generator, and loss of the cable can then be used to determine the EIRP of the device.





ANNEX B

Field Strength Measurement Procedure

This test measures the field strength of radiated emissions using a spectrum analyzer and a receiving antenna in accordance with ANSI C63.4-2003. During the test, the EUT is to be placed on a non-conducting support at 80 cm above the horizontal ground plane of the OATS. The horizontal distance between the antenna and the EUT is to be 3 meters. The bandwidths used shall be; 200 Hz from 9 kHz to 150 kHz, 9 kHz from 150 kHz to 30 MHz, 120 kHz from 30 MHz to 1000 MHz, and 1 MHz from 1 GHz to 40 GHz, with the detector set to peak hold.

1) The antenna correction factor, preamplifier gain (if the preamplifier is installed), and cable loss may be stored in tables in the EMC analyzer and the level at the analyzer is then the corrected level in dbuV/m. Otherwise it is calculated externally.
2) Monitor the frequency range of interest at a fixed antenna height and EUT azimuth.
3) If appropriate, manipulate the system cables to produce the highest amplitude signal relative to the limit. Note the amplitude and frequency of the suspect signal.
4) Rotate the EUT 360° to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, go back to the azimuth and repeat step 3). Otherwise, orient the EUT azimuth to repeat the highest amplitude observation and proceed.
5) Move the antenna over its fully allowed range of travel to maximize the suspected highest amplitude signal. If the signal or another at a different frequency is observed to exceed the previously noted highest amplitude signal by 1 dB or more, return to step 3) with the antenna fixed at this height. Otherwise, move the antenna to the height that repeats the highest amplitude observation and proceed.
6) Change the polarity of the antenna and repeat step 3), step 4), and step 5). Compare the resulting suspected highest amplitude signal with that found for the other polarity. Select and note the higher of the two signals.
7) The final maximized level displayed on the EMC analyzer is the field strength.