REGULATORY COMPLIANCE REPORT

TITLE: FCC & IC Test Report for 15.249 & RSS-210 Low Power Devices

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	
B1		answer first non-conforms, clarity on the SMA connector, voltage variation, receiver emissions, MPE, etc.	11dec09	Engineering	
				Regulatory	
C		answers to second round: power out of voltage, removed MPE,	17dec	Engineering	
				Regulatory	

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Test Data Summary

FCC Part 15.249 / IC RSS-210 Annex 2
Field strength of low power Transmitter; 900 BCR Radio 908 – 923.8 MHz
FCC ID: EO9BCR900
IC: 864D-BCR900
IC Device Models (for IC): **900 BCR Radio**
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
Part 15.31(e)	Variation of Input Voltage – Conducted	n/a	12.2	P
Part 15.207 / RSS-Gen 7.2.2	AC Power line Conducted Emissions	Table	36.5 dBuV/m	P
15.249(d) / RSS-210 sec. 2.7 table 2	Out of band non-harmonic radiated emissions	table	None detected	P
15.35(b)	duty cycle corrections	calculated	NA	
15.249(a) / RSS-210 A2.9	Radiated emissions of transmitter fundamental and harmonics	50,000 / 500 uV/m	48,528 uV/m 419.3 uV/m	P P
15.249(d)	Band Edge. conducted	-50dBc or 200 uV/m (lesser)	-61 dBc	P
RSS-GEN 4.6.1	99% Bandwidth conducted	<0.5% of the center frequency	186.3kHz	P
RSS-Gen 7.2.3	Receiver Spurious Emissions - radiated	table	41.12 dBuV/m	P

Rule versions: FCC Part 1; FCC Part 2; FCC Part 15, RSS-102 Issue 2 (11-2005; RSS-210 Issue 7 (June 2007; , RSS-Gen Issue 2 (June 2007)
Reference docs: ANSI C63.4-2003; DA 00-705 (03-30-2000); OET65 (08-1997); OET65C (06-2001); IEEE C95.3-2002.

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

CONDITIONS DURING TESTING

No Modifications to the EUT were necessary during the testing.

FCC 15.31(m) – IC _n/a_; Number of Channels
This device was tested on three channels.

FCC 15.203 – IC _n/a_; Antenna Connector Requirements for detachable antennas
The antenna is removable and has a unique Reverse Polarity SMA connector; therefore the EUT complies with these FCC rules.

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%.
RSS-Gen 4.3: Tests shall be performed at ambient temperature

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

There was no change in output power level seen over the voltage variation.

15.207 / RSS-GEN 7.2.2

Power line Conducted Emissions

Measure the AC power line conducted emissions from 150kHz to 30 MHz using a 50 µH/50Ω 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 (dB□V)	Average (dB□V)
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

15.209 / RSS-210 sec. 2.7 table 2

Out of band non-harmonic emissions, radiated

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table

Frequency (MHz)	Field Strength (microvolts/meter)	in dBuV/m	Measurement Distance (meters)*
0.009-0.490	2440F (kHz)		300
0.490-1.705	2400F (kHz)		30
1.705-30.0	30	29.5	30
30-88	100	40	3
88-216	150	43.5	3
216-960	200	46	3
Above 960	500	54	3

FS (dBuV/) = 20 * log (FS(uV/m))

* Adjust 40dB/decade when measuring at different distances than specified.

note: 15.249(e) As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Measure the field strength of all spurious emissions that are not harmonics according to the procedure in Appendix A.

For emissions measurements below 30MHz, rotate the loop antenna about its horizontal and vertical positions to maximize emissions.

Equipment Used	Serial Number	Cal Date	Due
AH systems preamplifier model PAM 0126	135	12/08	12/09
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		
10/20/09	W. Raymond Stoner		

Unit tested: 67400138

Frequency range investigated was 9 kHz to 9.28GHz. (part 15.33 (a))

Out of band non-Harmonic emissions were not found.

15.35(b)

Pulsed Operation

Calculate the maximum duty cycle of the transmitter that will occur in any 100ms. Perform the following calculation:

$$\text{Duty Cycle}_{dB} = |20 * \log(\text{Duty Cycle \%})|$$

No Duty Cycle corrections were required to comply with emission limits, therefore this calculation is N/A.

15.249(a) / RSS-210 A2.9

Transmitter Fundamental and Harmonics, radiated

(a) Except as provided in paragraph (b) of this section, the field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following: (table below)
(c) Field strength limits are specified at a distance of 3 meters.
(e) As shown in §15.35(b), for frequencies above 1000 MHz, the field strength limits in paragraphs (a) and (b) of this section are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Measure the field strength of the transmitter fundamental and harmonic emissions at three meters according to the procedure in Appendix A. Record emissions levels with the transmitter near its lowest, middle, and highest frequencies. The maximum field strength of emissions may not exceed:

Fundamental (µV/m)	in (dBuV/m)	Harmonics (µV/m)	Average in (dBuV/m)	Peak in dBµV/m
50,000	94	500	54	74

FS (dBuV/m) = 20 * log (FS(uV/m))

Equipment Used	Serial Number	Cal Date	Due
AH systems preamplifier model PAM 0126	135	12/08	12/09
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		
10/20/09	W. Raymond Stoner		

Unit tested: 67400138

For harmonics, adjust for the proper duty cycle correction in accordance with the results from test above.

From the pulsed operation test above, there is no duty cycle correction for this case.

Transmitter Fundamental measurements;

1	2	3	4	5	6	7	8	9	10	11
				Peak	Ant.	Cable	Amplifier	Peak		
Frequency	Antenna	Height/		Level	Factor	Loss	Gain	Power	Limit	
MHz	Position	Angle	Angle	dBuV/m	dB/m	dB	dB	dBuV/m	dBuV/m	Margin
908.05	Vertical	142	195	64.36	24.26	2.61	0	91.23	94	-2.77
908.05	Horizontal	100	300	49.33	24.26	2.61	0	76.2	94	-17.8
915.95	Vertical	142	200	66.1	24.16	2.63	0	92.89	94	-1.11
915.95	Horizontal	184	85	52.45	24.16	2.63	0	79.24	94	-14.76
923.75	Vertical	136	130	67.08	24	2.64	0	**93.72**	94	-0.28
923.75	Horizontal	166	305	49.67	24	2.64	0	76.31	94	-17.69

5+6+7+8=9 9-10=11 FS (dBuV/m) = 20 * log (FS(uV/m)); 93.72 dBuV/m = 48.528 uV/m

Transmitter Harmonic measurements

1	2	3	4	5	6	7	8	9	10	11
				Peak	Ant.	Cable	Amplifier	Peak	Peak	
Frequency	Antenna	Height/		Level	Factor	Loss	Gain	Power	Limit	
MHz	Position	Angle	Angle	dBuV/m	dB/m	dB	dB	dBuV/m	dBuV/m	Margin
1812.24	Vertical	164	200	46.86	26.5	4.45	-35.43	42.38	74	-31.62
1812.24	Horizontal	128	345	47.42	26.5	4.45	-35.43	42.94	74	-31.06
1816.095	Vertical	100	205	44.35	26.52	4.46	-35.43	39.9	74	-34.1
1816.095	Horizontal	100	330	45.3	26.52	4.46	-35.43	40.85	74	-33.15
1832	Vertical	100	240	49.92	26.59	4.47	-35.44	45.54	74	-28.46
1832	Horizontal	100	305	42.73	26.59	4.47	-35.44	38.35	74	-35.65
1843.765	Vertical	100	190	45.05	26.65	4.47	-35.45	40.72	74	-33.28
1843.765	Horizontal	100	245	52	26.65	4.47	-35.45	47.67	74	-26.33
1847.625	Vertical	100	195	52.2	26.67	4.47	-35.45	47.89	74	-26.11
1847.625	Horizontal	128	355	50.11	26.67	4.47	-35.45	45.8	74	-28.2
2720.22	Vertical	100	335	43.07	29.35	5.27	-35.21	42.48	74	-31.52
2720.22	Horizontal	100	330	45.39	29.35	5.27	-35.21	44.8	74	-29.2
2723.85	Vertical	100	320	47.31	29.36	5.27	-35.21	46.73	74	-27.27
2723.85	Horizontal	100	335	50.4	29.36	5.27	-35.21	49.82	74	-24.18
2748	Vertical	100	340	44.31	29.44	5.3	-35.2	43.85	74	-30.15
2748	Horizontal	100	340	46.68	29.44	5.3	-35.2	46.22	74	-27.78
2767.655	Vertical	100	190	42.98	29.51	5.31	-35.19	42.61	74	-31.39
2767.655	Horizontal	100	335	43.66	29.51	5.31	-35.19	43.29	74	-30.71
2771.61	Vertical	100	355	43.7	29.52	5.32	-35.18	43.36	74	-30.64
2771.61	Horizontal	100	330	45.12	29.52	5.32	-35.18	44.78	74	-29.22
3628.35	Vertical	100	265	43.01	31.53	5.98	-34.86	45.66	74	-28.34
3628.35	Horizontal	100	225	42.16	31.53	5.98	-34.86	44.81	74	-29.19
3631.61	Vertical	112	30	49.78	31.54	5.98	-34.85	52.45	74	-21.55
3631.61	Horizontal	101	140	45.97	31.54	5.98	-34.85	48.64	74	-25.36
3664	Vertical	112	55	44.37	31.63	6.01	-34.84	47.17	74	-26.83
3664	Horizontal	102	130	42.13	31.63	6.01	-34.84	44.93	74	-29.07
3691.365	Vertical	100	180	41.37	31.7	6.03	-34.82	44.28	74	-29.72
3691.365	Horizontal	100	0	40.3	31.7	6.03	-34.82	43.21	74	-30.79

5+6+7+8=9 9-10=11 FS (dBuV/m) = 20 * log (FS(uV/m)); 52.45 dBuV/m – 419.3 uV/m

All peak measurement were below the average spec limits, therefore average not reported.
All frequencies above the fourth harmonic are below the noise floor

Part 15.249(d)

Band Edge, conducted.

(d) Emissions radiated outside of the specified frequency bands, except for harmonics, shall be attenuated by at least 50 dB below the level of the fundamental or to the general radiated emission limits in §15.209 (200uV/m at 3 meters), whichever is the lesser attenuation.

Use the following spectrum analyzer settings:

Span = wide enough to capture the peak level of the emission operating on the channel closest to the band edge, as well as any modulation products which fall outside of the authorized band of operation
RBW ≥ 1% of the span
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Allow the trace to stabilize. Set the marker on the emission at the band edge, or on the highest modulation product outside of the band, if this level is greater than that at the band edge. Enable the marker-delta function, and then use the marker-to-peak function to move the marker to the peak of the in-band emission. The marker-delta value now displayed must comply with the limit specified in this Section. Submit this plot.

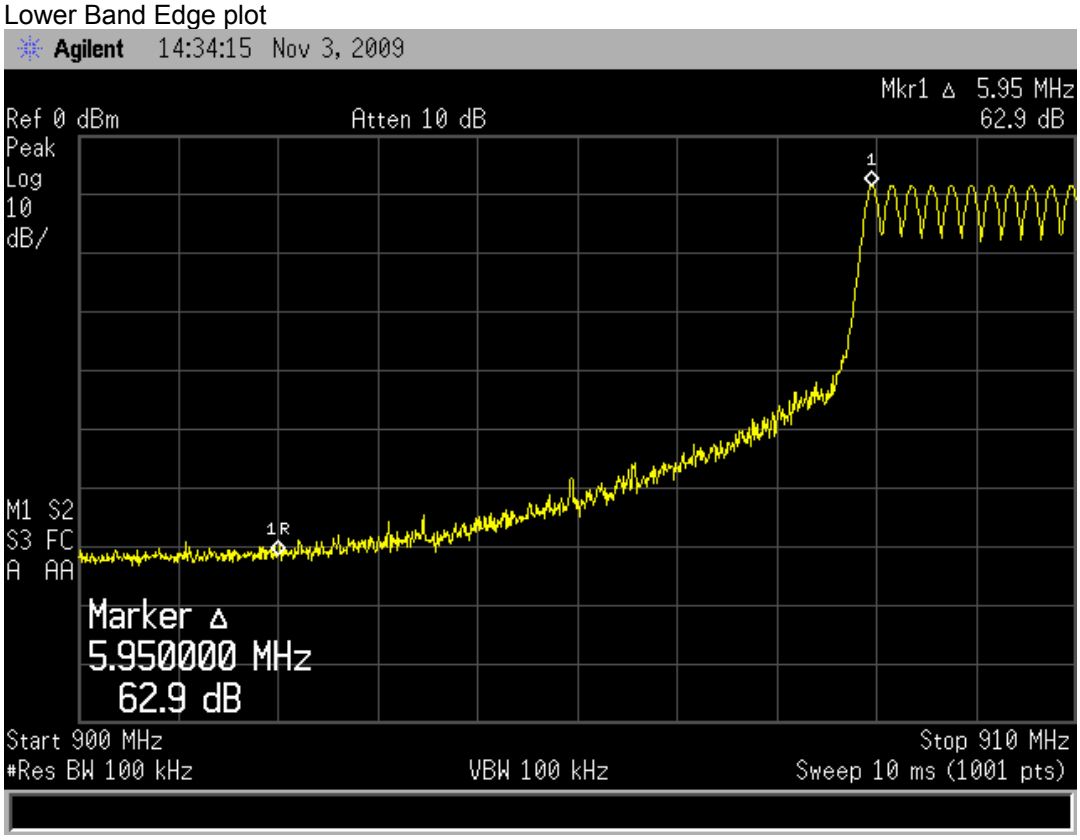
Now, using the same instrument settings, enable the hopping function of the EUT. Allow the trace to stabilize. Follow the same procedure listed above to determine if any spurious emissions caused by the hopping function also comply with the specified limit. Submit this plot.

Equipment Used	Serial Number	Cal Date	Cal Due
HP 4407B	MY45107856	3/09	3/11
Date	Tested by		
28-Oct-09	W. Raymond Stoner		

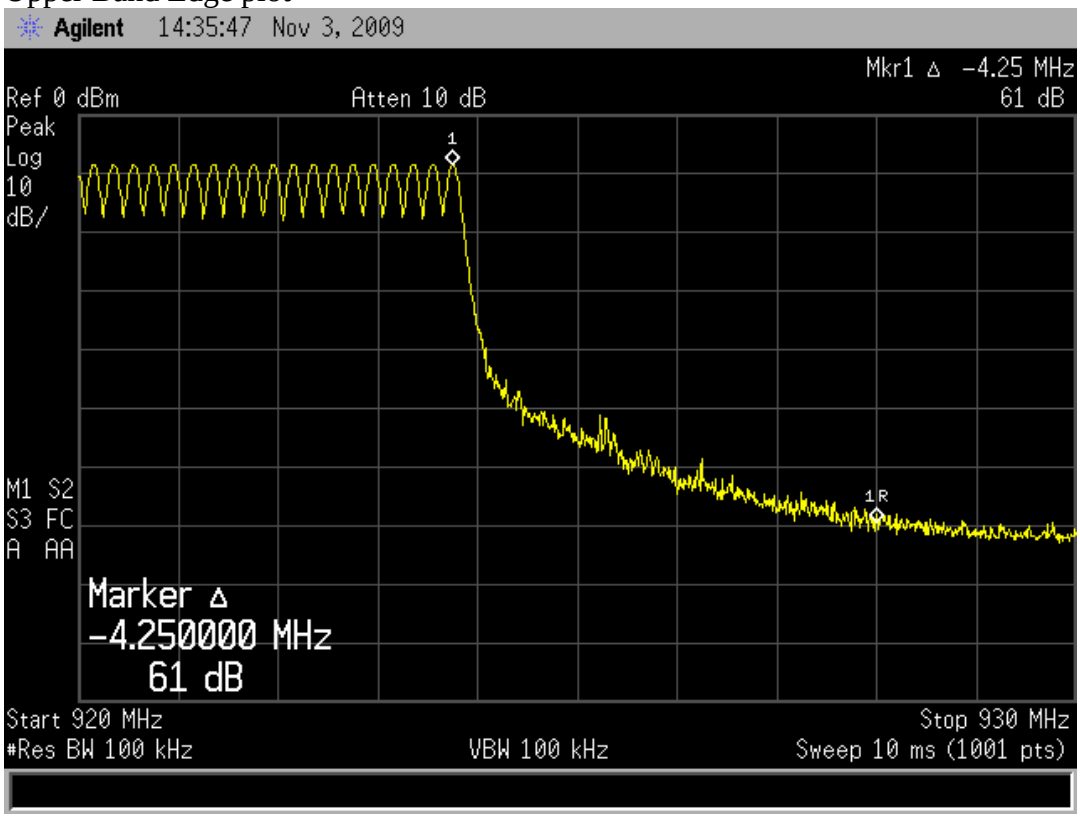
Unit tested: 67400139

Band edge @ 902 MHz is down -62.9 dbc
Band edge @ 928 MHz is down -61.0 dbc

Lower Band Edge plot



Upper Band Edge plot



RSS-GEN 4.6.1

99% Bandwidth, conducted

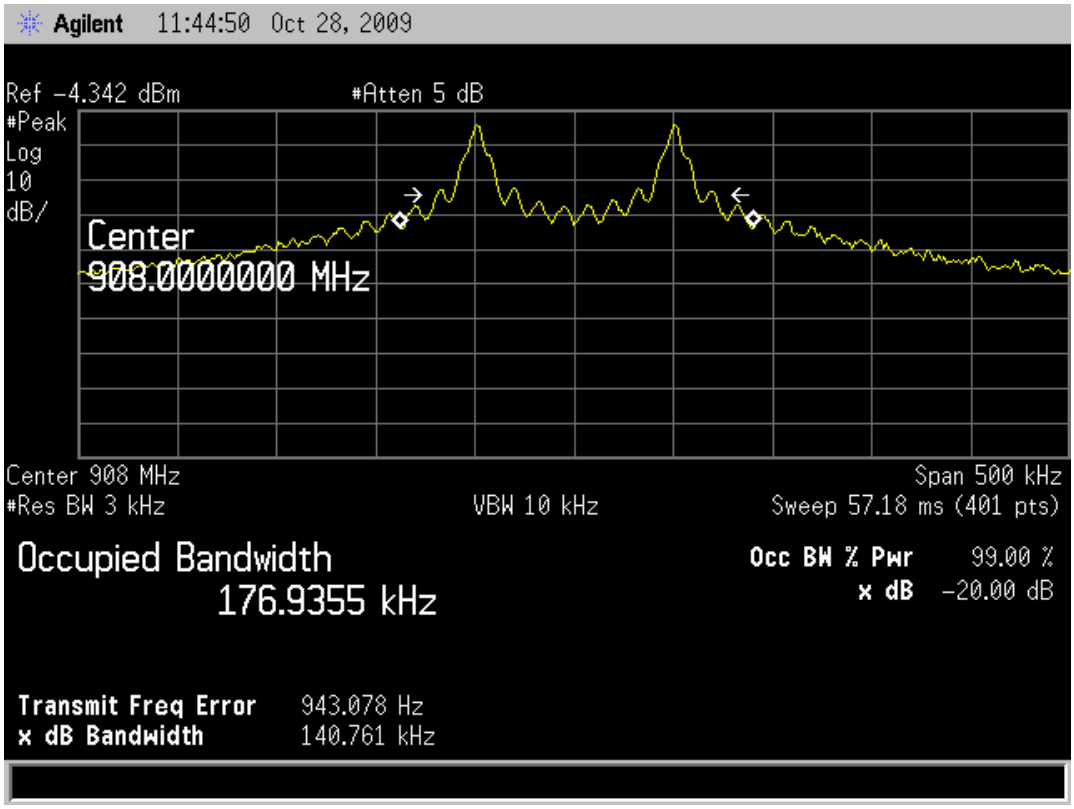
The transmitter shall be operated at its maximum carrier power measured under normal test conditions. The span of the analyzer shall be set to capture all products of the modulation process, including the emission skirts. The resolution bandwidth shall be set to as close to 1% of the selected span as is possible without being below 1%. The video bandwidth shall be set to 3 times the resolution bandwidth. Video averaging is not permitted. Where practical, a sampling detector shall be used since a peak or, peak hold, may produce a wider bandwidth than actual.
The trace data points are recovered and are directly summed in linear terms. The recovered amplitude data points, beginning at the lowest frequency, are placed in a running sum until 0.5% of the total is reached and that frequency recorded. The process is repeated for the highest frequency data points. This frequency is recorded.
The span between the two recorded frequencies is the occupied bandwidth.

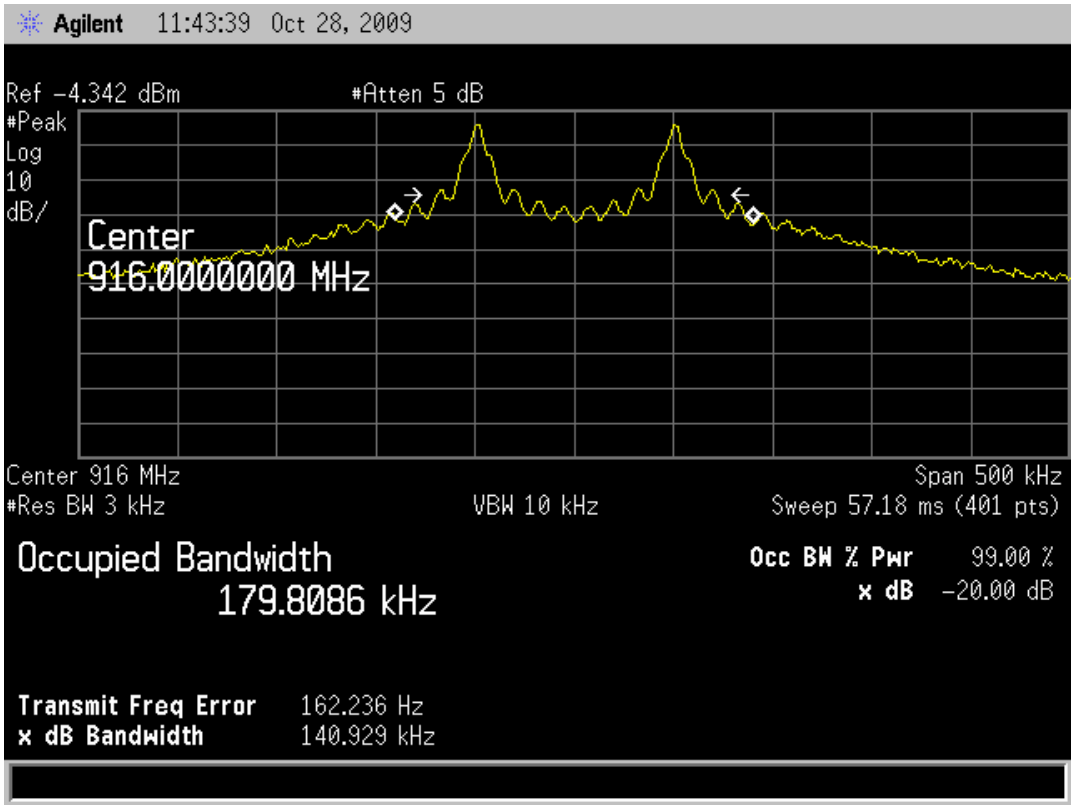
Capture a plot of the 99% bandwidth of a single transmission.

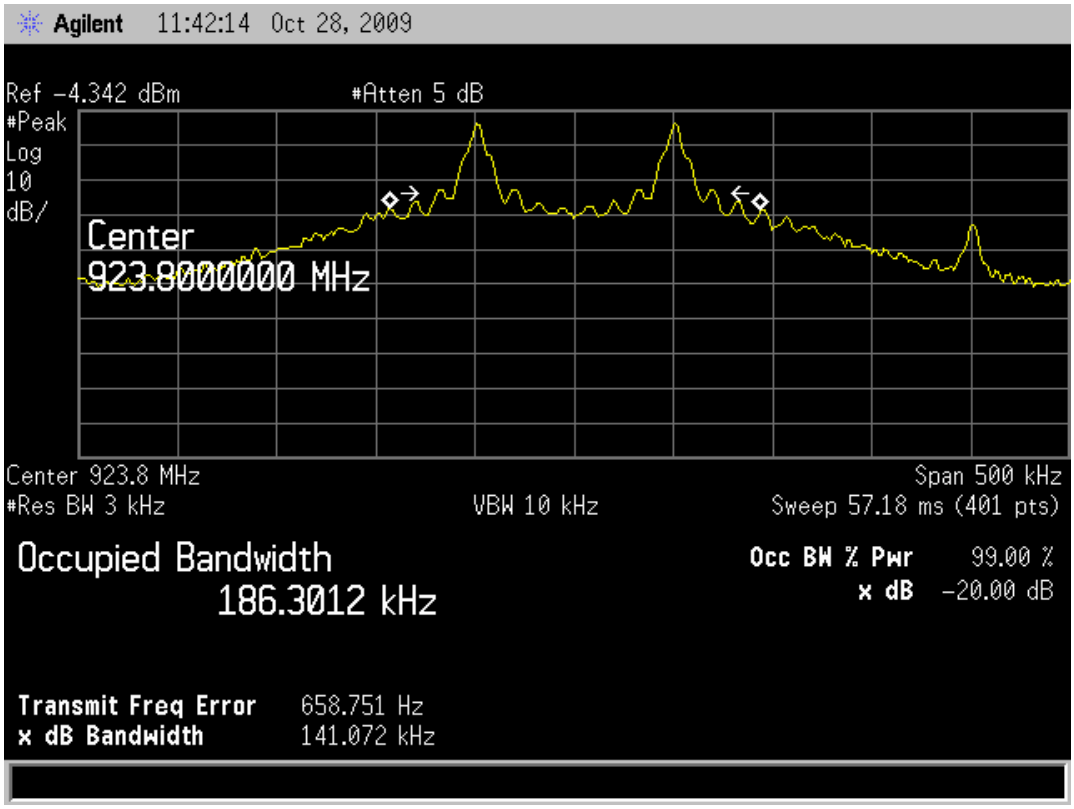
Equipment Used	Serial Number	Cal Date	Cal Due
HP 4407B	MY45107856	3/09	3/11
Date	Tested by		
28-Oct-09	W. Raymond Stoner		

Unit tested: 67400139

Frequency, MHz	total BW, kHz
908	*176.9355*
916	*179.8086*
923.8	*186.3012*


Agilent 11:44:50 Oct 28, 2009
Ref -4.342 dBm
#Atten 5 dB
#Peak
Log
10
dB/
Center
908.0000000 MHz
Center 908 MHz
#Res BW 3 kHz
VBW 10 kHz
Span 500 kHz
Sweep 57.18 ms (401 pts)
Occupied Bandwidth
176.9355 kHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 943.078 Hz
x dB Bandwidth 140.761 kHz


Agilent 11:43:39 Oct 28, 2009
Ref -4.342 dBm
#Atten 5 dB
#Peak
Log
10
dB/
Center
916.0000000 MHz
Center 916 MHz
#Res BW 3 kHz
VBW 10 kHz
Span 500 kHz
Sweep 57.18 ms (401 pts)
Occupied Bandwidth
179.8086 kHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 162.236 Hz
x dB Bandwidth 140.929 kHz


Agilent 11:42:14 Oct 28, 2009
Ref -4.342 dBm
#Atten 5 dB
#Peak
Log
10
dB/
Center
923.8000000 MHz
Center 923.8 MHz
#Res BW 3 kHz
VBW 10 kHz
Span 500 kHz
Sweep 57.18 ms (401 pts)
Occupied Bandwidth
186.3012 kHz
Occ BW % Pwr 99.00 %
x dB -20.00 dB
Transmit Freq Error 658.751 Hz
x dB Bandwidth 141.072 kHz

RSS-Gen 7.2.3 (RSS-GEN 4.10)

Receiver Spurious Emission Limits

7.2.3.2 Radiated Measurement

All spurious emissions shall comply with the limits of Table 1.

Receiver Spurious Emissions

The receiver shall be operated in the normal receive mode near the mid-point of the band over which the receiver is designed to operate. Unless otherwise specified in the applicable RSS, the radiated emission measurement is the standard measurement method (with the device's antenna in place) to measure receiver spurious emissions. Radiated emission measurements are to be performed using a calibrated open-area test site. As an alternative, the conducted measurement method may be used when the antenna is detachable. In such a case, the receiver spurious signal may be measured at the antenna port. If the receiver is super-regenerative, stabilize it by coupling to it an un-modulated carrier on the receiver frequency (antenna conducted measurement) or by transmitting an un-modulated carrier on the receiver frequency from an antenna in the proximity of the receiver (radiated measurement). Taking care not to overload the receiver, vary the amplitude and frequency of the stabilizing signal to obtain the highest level of the spurious emissions from the receiver. For either method, the search for spurious emissions shall be from the lowest frequency internally generated or used in the receiver (e.g. local oscillator, intermediate or carrier frequency), or 30 MHz, whichever is the higher, to at least 3 times the highest tunable or local oscillator frequency, whichever is the higher, without exceeding 40 GHz.

Receiver Spurious Emission Standard

The following receiver spurious emission limits shall be complied with:

(a) If a radiated measurement is made, all spurious emissions shall comply with the limits of Table 1. The resolution bandwidth of the spectrum analyzer shall be 100 kHz for spurious emission measurements below 1.0 GHz, and 1.0 MHz for measurements above 1.0 GHz.

Equipment Used	Serial Number	Cal Date	Due
AH systems preamplifier model PAM 0126	135	12/08	12/09
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		
10/20/09	W. Raymond Stoner		

Unit tested: 67400138

Table 1- Spurious Emission Limits for Receivers

Spurious Frequency (MHz)	Field Strength (microvolt/m at 3 meters)	in dBuV/m
30-88	100	40
88-216	150	43.5
216-960	200	46
Above 960	500	54

FS(uV/m) = 10 raised to the power of {(dBuV/m)/20}

Frequency range investigated was 9kHz to 5 GHz.

1	2	3	4	5	6	7	8	9	10
	Antenna	Antenna					Peak		
	Position	Height/		Antenna	Cable	Amplifier	Corrected	Peak	
Frequency	Vertical or	Table	Level	Factor	Loss	Gain	Level	Limit	
MHz	Horizontal	Azimuth	dBm	dB/m	dBm	dB	dbuV/m	dBuV/m	margin
852	Vertical	124/75	51.29	22.4	2.5	-35.07	41.12	46	-4.88
852	Horizontal	132/0	47.83	22.4	2.5	-35.07	37.66	46	-8.34

[8] = [4]+[5]+[6]+[7]; [9] = From Table above [10]=[8] – [9]

Appendix A

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.