REGULATORY COMPLIANCE REPORT

TITLE: FCC & IC Test Report for 15.249 & RSS-210 Transmitter
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REV	CCO	DESCRIPTION OF CHANGE	DATE	APPROVALS	
1		INITIAL RELEASE		Engineering	Jeff Gilbert
				Engineering	Drew Rosenberg

REVISION HISTORY

				Engineering	
				Engineering	
				Engineering	

Test Data Summary

FCC 15.249 / IC RSS-210
Transmitter 908 - 924 MHz
FCC ID: EO9HHSRISM / **IC ID:** 864A-HHSRISM
Device Model: HHSR
OATS Registration Number: FCC 90716, IC 5615

Rule	Description	Max. Reading	Pass/Fail
Part 15.31(e)	Variation of Input Voltage - Conducted	N/A (battery device)	N/A
Part 15.207 / RSS-Gen 7.2.2	AC Powerline Conducted Emissions	N/A (battery device)	N/A
Part 15.249(a) / RSS-210 A2.9 (1)	Field Strength - Fundamental	1.46 mV/m @ 3m (63.27 dBuV)	Pass
Part 15.249(a) / RSS-210 A2.9 (1)	Field Strength - Harmonics	323 uV/m @ 3632 MHz	Pass
Parts 15.205 & 15.209 / RSS-210 2.2, 2.6 Tables 1 & 2	Restricted Bands / Spurious Emissions - Radiated	140 uV/m @ 852 MHz	Pass

Rule versions: FCC Part 1 (01-2006), FCC Part 2 (01-2006), FCC Part 15 (02-2006), RSS-102 (11-2005), RSS-210 Issue 6 (09-2005), RSS-Gen Issue 1 (09-2005).
Reference docs: ANSI C63.4-2003, TIA-603-C (08-2004).

Cognizant Personnel

Name	Title
Mark Kvamme	Test Technician
Jeff Gilbert	Regulatory Engineer
Drew Rosenberg	Project Lead

Equipment Used	Serial Number	Cal Date	Due
Hewlett Packard 437B power meter	3125U16900	5/30/2006	5/30/2007
Hewlett Packard 8481D power sensor	3318A11513	6/6/2006	6/6/2007
Hewlett Packard 8593E spectrum analyzer	3543A02032	10/4/2006	10/4/2007
ETS Lindgren dipole antenna	78573	9/16/2006	9/16/2007
EMCO 3115 double ridge wave guide	9508-4550	3/15/2006	3/15/2007
Hewlett Packard 8673D Signal Generator	6123A01161	12/1/2006	12/1/2007

15.249(a) (1) / RSS-210 A2.9 (1)

Field Strength – Fundamental Emission

Using the following set-up, verify that the fundamental emission field strength of the EUT does not exceed 50 mV/m @ 3m (94 dBuV).

Span = wide enough to fully capture the emission being measured
RBW = 100 kHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified.

Date	Temp/Humidity ºF / %	Tested by
12/27/2006	50/48	Mark Kvamme

						Amplifier	Ant.	Cable		
Freq.	Antenna	Table	Level		Level	Gain	Factor	Loss	**Level**	Limit
MHz	Height	Azimuth	dBm	Polarity	dBuV	dB	dB	dB	**dBuV/m**	dBuV/m
908	101	340	-45.55	Vertical	61.45	29.66	27.8	1.55	61.14	94
916	101	340	-43.42	Vertical	63.58	29.66	27.8	1.55	63.27	94
924	101	340	-43.49	Vertical	63.51	29.66	27.8	1.55	63.2	94

15.249(a) (1), 15.205, 15.209 / RSS-210 A2.9 (1), 2.2, 2.6

Field Strength – Harmonics and Spurious

Using the following set-up, verify that the field strength of the harmonics of the fundamental emission, as well as any spurious emissions that fall within a restricted band, do not exceed 500 uV/m @ 3m. Also verify that any other spurious emissions do not exceed the general limits of 15.209.

Span = wide enough to fully capture the emission being measured
RBW = 1 MHz for f ≥ 1 GHz, 100 kHz for f < 1 GHz
VBW ≥ RBW
Sweep = auto
Detector function = peak
Trace = max hold

Follow the guidelines in ANSI C63.4-2003 with respect to maximizing the emission by rotating the EUT, measuring the emission while the EUT is situated in three orthogonal planes (if appropriate), adjusting the measurement antenna height and polarization, etc. A pre-amp and a high pass filter are required for this test, in order to provide the measuring system with sufficient sensitivity. Allow the trace to stabilize. The peak reading of the emission, after being corrected by the antenna factor, cable loss, pre-amp gain, etc., is the peak field strength, which must comply with the limit specified.

MHz	MHz	MHz	GHz
0.090-0.110	16.42-16.423	399.9-410	4.5-5.15
0.495-0.505 1	16.69475-16.69525	608-614	5.35-5.46
2.1735-2.1905	16.80425-16.80475	960-1240	7.25-7.75
4.125-4.128	25.5-25.67	1300-1427	8.025-8.5
4.17725-4.17775	37.5-38.25	1435-1626.5	9.0-9.2
4.20725-4.20775	73-74.6	1645.5-1646.5	9.3-9.5
6.215-6.218	74.8-75.2	1660-1710	10.6-12.7
6.26775-6.26825	108-121.94	1718.8-1722.2	13.25-13.4
6.31175-6.31225	123-138	2200-2300	14.47-14.5
8.291-8.294	149.9-150.05	2310-2390	15.35-16.2
8.362-8.366	156.52475-156.52525	2483.5-2500	17.7-21.4
8.37625-8.38675	156.7-156.9	2655-2900	22.01-23.12
8.41425-8.41475	162.0125-167.17	3260-3267	23.6-24.0
12.29-12.293	167.72-173.2	3332-3339	31.2-31.8
12.51975-12.52025	240-285	3345.8-3358	36.43-36.5
12.57675-12.57725	322-335.4	3600-4400	Above 38.6
13.36-13.41			

Date	Temp/Humidity ºF / %	Tested by
12/27/2006	50/48	Mark Kvamme

Frequency range investigated was 30 kHz to 9.1 GHz.

						Amplifier	Ant.	Cable			
Freq.	Antenna	Table	Level		Level	Gain	Factor	Loss	**Level**	Limit	Margin
MHz	Height	Azimuth	dBm	Polarity	dBuV	dB	dB	dB	**dBuV/m**	dBuV/m	dB
852	128	255	-58.78	Vertical	48.22	29.59	22.8	1.5	42.93	46	3.07
1816	101	10	-60	Horizontal	47	34.93	26.9	2.35	41.32	54	12.68
1832	101	10	-60	Horizontal	47	34.93	26.9	2.35	41.32	54	12.68
1848	101	10	-60	Horizontal	47	34.93	26.9	2.35	41.32	54	12.68
2724	101	230	-44.79	Vertical	62.21	46.42	29.3	3.03	48.12	54	5.88
2748	101	230	-47.3	Vertical	59.7	46.42	29.3	3.03	45.61	54	8.39
2772	101	230	-48.81	Vertical	58.19	46.42	29.3	3.03	44.1	54	9.9
3632	136	235	-44.37	Vertical	62.63	47.7	31.6	3.66	50.19	54	3.81
3664	136	235	-46.39	Vertical	60.61	47.7	31.6	3.66	48.17	54	5.83
3696	136	235	-48.28	Vertical	58.72	47.7	31.6	3.66	46.28	54	7.72
4540	101	285	-54	Vertical	53	47.96	32.8	4.31	42.15	54	11.85
4580	101	285	-54	Vertical	53	47.96	32.8	4.31	42.15	54	11.85
4620	101	285	-54	Vertical	53	47.96	32.8	4.31	42.15	54	11.85
5448	116	30	-50.08	Horizontal	56.92	47.19	34.4	4.73	48.86	54	5.14
5496	116	30	-52.69	Horizontal	54.31	47.19	34.4	4.73	46.25	54	7.75
5544	116	30	-54	Horizontal	53	47.19	34.4	4.73	44.94	54	9.06
6356	100	310	-54	Horizontal	53	46.84	35	5.3	46.46	54	7.54
6412	100	310	-54	Horizontal	53	46.84	35	5.3	46.46	54	7.54
6468	100	310	-54	Horizontal	53	46.84	35	5.3	46.46	54	7.54
7264	100	180	-54	Horizontal	53	49.05	36.6	6.14	46.69	54	7.31
7328	100	180	-54	Horizontal	53	49.05	36.6	6.14	46.69	54	7.31
7393	100	180	-54	Horizontal	53	49.05	36.6	6.14	46.69	54	7.31