

**Field Strength of Transmitter Radiated Spurious Emissions**

**Prepared On Behalf**

**Of**

**SIERRA WIRELESS, INC.**

**FCC ID: LL9ACRD2**

**Model: AirCard2**

**Prepared By**

**Spectrum Technology, Inc.**

**209 Dayton Street**

**Edmonds, WA 98020**

**425 771-4482**

**November 2, 1998**



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November 2, 1998

Federal Communications Commission  
Authorization and Standards Division  
7435 Oakland Mills Rd.  
Columbia, M.D. 21046

Gentlemen:

Spectrum Technology Incorporated has measured the transmitter field strength of radiated spurious emissions at high and low power settings in accordance with the requirements contained in Parts 2 and 22 of the Commissions regulations. To the best of my knowledge, these tests were performed using measurement procedures consistent with the Industry or Commission standards and demonstrates that the equipment complies with the published standard. The applicable rule parts are listed in the following test results.

The Open Area Test Site used for these measurements is located at Fluke Park II, Everett, Washington. Site information required by Part 2 measured in accordance with ANSI C63.4-1992 was most recently updated with the FCC Authorization and Evaluation Division, Sampling and Measurements Branch in January 1998.

Sincerely,

A handwritten signature in black ink that reads "Rod Munro". The signature is written in a cursive, flowing style.

Rod Munro  
President

RM/af

**TEST: FIELD INTENSITY MEASUREMENTS OF SPURIOUS RADIATION**

FCC ID: LL9ACRD2

Grantee: Sierra Wireless, Inc.

Serial No: None, production units have ESN

Minimum Standard Specified: Para. 22.359

Test Results: Equipment complies with standard

Equipment Authorization Procedure Para. 2.993

Test Equipment Setup: See block diagram

Frequency Range Observed: 0 MHz to 9 GHz

Operating Frequency: 837.023 MHz

Crystal Frequency: 14.85 MHz Reference Oscillator

Transmitter Power Output: .00631 Watt (8 dBm) Low Power  
.600 Watt (28 dBm) High Power  
(in 4 dB steps controlled by Cell site)

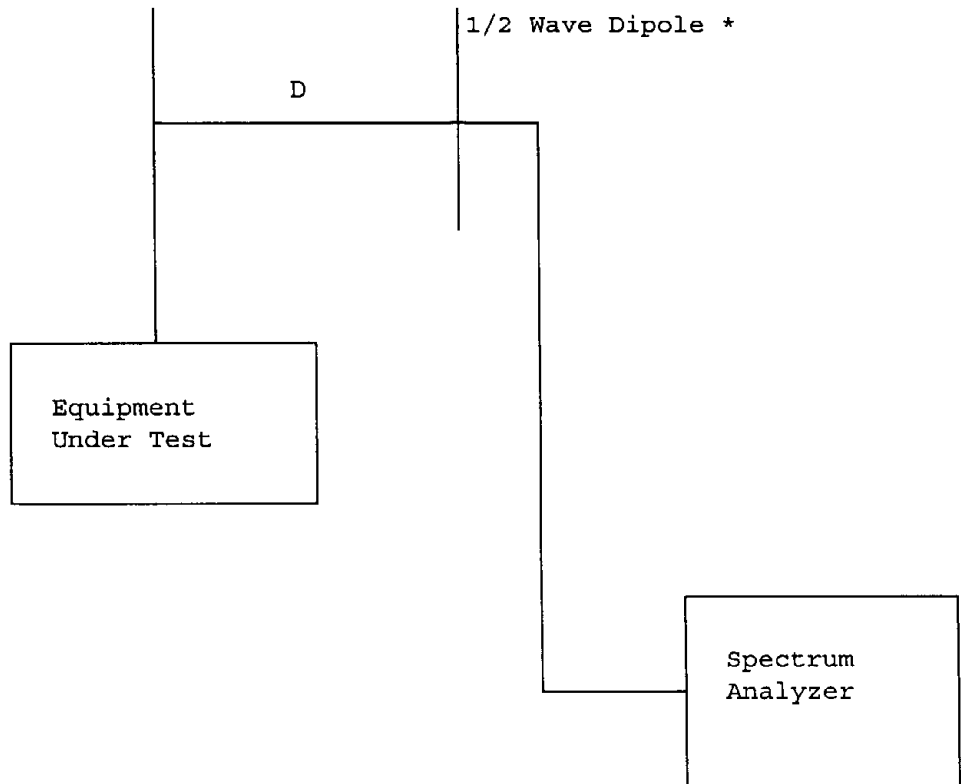
Spurious Limit =  $43 \text{ dB} + 10\text{Log}_{10} \text{ PO} =$  -21 dB for low power .00631 Watt  
-41 dB for high power .6 Watt

<u>FORMULA</u>	<u>FREQUENCY IN MHz</u>	<u>Level (dB below carrier)</u>	
		Low	High
Fo	837.000	-0-	-0-
2Fo	1674.03	-45.76	-52.11
3Fo	2511.06	-36.76	-46.43
4 Fo	334809	-46.81	-61.33

No other radiated harmonic emissions were measurable at three meters.

Field Intensity Measurement Of  
Spurious Radiation Test Set Up

D = 100 ft. or 3 meters



See Equipment List  
for Equipment Specifications

*	1/2 Wave Dipole Set	30-1000 MHz
	Dual Ridged Guide RGA-60	1-18 GHz

**TEST EQUIPMENT LIST A  
SPECTRUM TECHNOLOGY, INC.**

<u>Equipment</u>	<u>Manufacturer</u>	<u>Serial Number</u>	<u>Cal Date/Due Date</u>
Spectrum Analyzer	Hewlett-Packard 8562A	08562-60062	9/14/98 9/14/99
Amplifier 9 kHz-1300 MHz	Hewlett-Packard 8447F OPT H64	2727A02208	9/14/98 9/14/99
RF Signal Gen.	Fluke 6071A	2915016	8/11/98 5/11/99
Service Monitor	IFR FM/AM 500A	4103	---
Oscilloscope	Kikusui C055060	6132295	---
Power Supply	Astron VS35	8601266	---
Voltmeter	Fluke 8020A	N2420658	---
Multimeter	Fluke 25	3710310	---
Wattmeter	Bird 43	56227	---
RF Termination	Bird 8135	10004	---
Dual Phase LISN 50 ohm/50 uH	STI per MP-4	02	1/9/98 1/9/99
Dual Phase LISN 50 ohm/50 uH	Compliance Design	8012-50R-24-BNC	1/9/98 1/9/99
Audio Generator	Hewlett-Packard 205-AG	8689	---
Attenuators:	Texscan FP45-20 Texscan FP45-10 Weinschel 40-10-33 Mini-Circuits CAT30 Pomona 4108-10	CZ682 8419 01	
Thermometer	Fluke 52	3965185	---
Test Line Simulator	Teltone TLS-2	none	---
Turn Table, RC	EMCO 1060-2M	8912-1415	---
Antenna Mast, RC	Compliance Design, Inc.	M100	---
Antennas:			
DiPole Set	EMCO Model: 3121C	1335	9/18/97 3/18/99
Diploe Set	EMCO Model: 3121C	1336	9/18/97 3/18/99
Bi-Conical	EMCO 3104	3763	reference only
Bi-Conical	EMCO 3104C	9401-4635	6/20/97 1/20/99
Log-Periodic	EMCO 3146	1754	6/15/98 6/15/99
Active Loop	EMCO 6502	9107-2645	reference only