APPLICANT: SPEEDCOM WIRELESS INTERNATIONAL CORP.

FCC ID: NCBSLXE

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TEST REPORT CONTAINING:

EXHIBIT ATTACHMENTS:

7 APRIL 2000

Federal Communications Commission
Authorization and Evaluation Division
7435 Oakland Mills Road
Columbia, MD 21046

SUBJECT: SPEEDCOM WIRELESS INTERNATIONAL CORP.

FCCID: NCBSLXE

To Whom It May Concern:

This will serve as a request for confidentiality for the schematics for the radio. The schematics will be sent directly from the manufacturer to the FCC upon request. Once the review of the application is complete and the schematics are no longer needed, they must be returned to the manufacturer, where they were sent from.

The attached application is for a direct sequence spread spectrum assembly, made up of the Bridge/Radio, Voltage Injector, 50 foot of coax, an amplifier, 10 foot of coax, a lightening arrestor, and a parabolic antenna.

This system is has only one type of antenna, a parabolic dish that has 24dBi.

SPEEDCOM WIRELESS INTERNATIONAL CORP. purchases standard antennas from the manufacturers with unique connectors, a reverse TNC, on them.

The user manual will have the following statement in it;
"WARNING! ALL PERSONNEL SHOULD STAY AT LEAST 1 METER (3.5') FROM ANTENNA TO AVOID EXPOSURE TO POSSIBLE MICROWAVE ENERGY.", FCC rules 15.247(b)(4).

The antenna is intended to be use outside.

Should you have any questions or require any further information with regards to this, please feel free to contact me.

Sincerely,

S. S. Sanders

SSS/sh
Encl.

APPLICANT: SPEEDCOM WIRELESS INTERNATIONAL CORP.
FCCID: NCBSLXE
REPORT #: T:\CUS\S\SPEED\SPE54U0\54X0.RPT
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TEST EQUIPMENT LIST

1._X_Spectrum Analyzer: HP 8566B-Opt 462, S/N 3138A07786, w/ preselector HP 85685A, S/N 3221A01400, Quasi-Peak Adapter HP 8565OA, S/N 3303A01690 & Preamplifier HP 8449B-OPT H02, S/N 3008A00372 Cal. 10/17/99
2._X_Biconnical Antenna: Eaton Model 94455-1, S/N 1057
3._X_Log-Periodic Antenna: Electro-Metrics Model EM-6950, S/N 632
4._X_Double-Ridged Horn Antenna: Electro-Metrics Model RGA-180, 1-18 GHz, S/N 2319 Cal. 4/27/99
5.___Horn 40-60GHz: ATM Part #19-443-6R
6._X_Line Impedance Stabilization Network: Electro-Metrics Model ANS-25/2, S/N 2604 Cal. 2/9/00
7.___Temperature Chamber: Tenney Engineering Model TTRC, S/N 11717-7
8._X_Peak Power Meter: HP Model 8900C, S/N 2131A00545 Cal 7/19/99
9._X_Opean Area Test Site #1-3meters Cal. 12/22/99

TEST PROCEDURE

GENERAL: This report shall NOT be reproduced except in full without the written approval of TIMCO ENGINEERING, INC. Shielded interface cables were used in all cases except for cables connecting to the telephone line and the power cords. A test program was run which simulated a normal data transmission on a network.

POWER LINE CONDUCTED INTERFERENCE: The procedure used was ANSI STANDARD C63.4-1992 using a 50uH LISN. Both lines were observed with the UUT transmitting. The bandwidth of the spectrum analyzer was 10kHz with an appropriate sweep speed. The ambient temperature of the UUT was 76oF with a humidity of 55%.

BANDWIDTH 6.0dB: The measurements were made with the spectrum analyzer's resolution bandwidth(RBW)=1.0MHz and the video bandwidth(VBW) =3.0MHz and the span set as shown on plot.

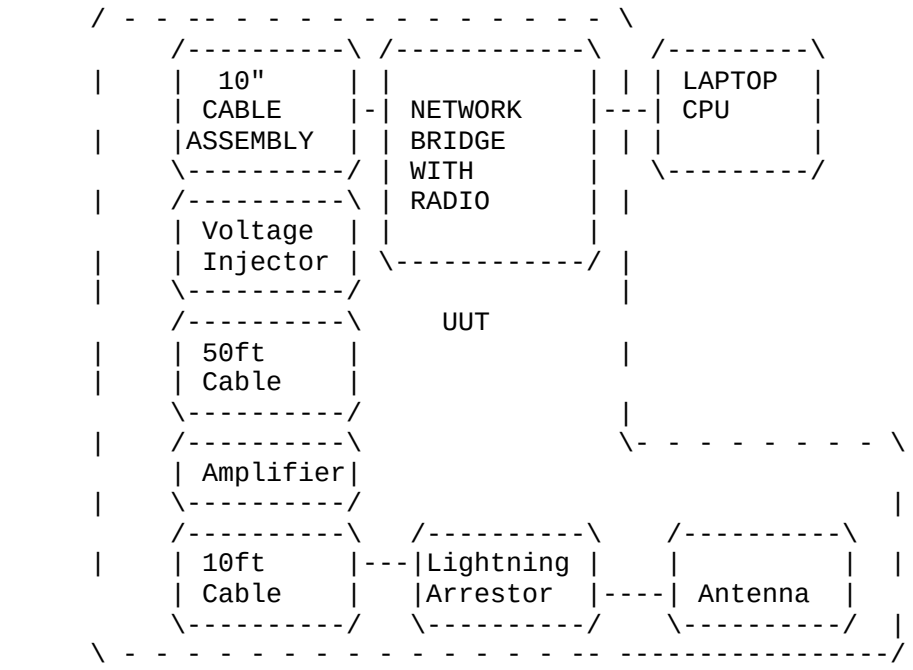
POWER OUTPUT: The RF power output was measured at the antenna feed point using a peak power meter.

ANTENNA CONDUCTED EMISSIONS: The RBW=100KHz, VBW=300KHz and the span set to 10.0MHz and the spectrum was scanned from 30MHz to the 10th Harmonic of the fundamental. Above 1.0GHz the resolution bandwidth was 1.0MHz and the VBW = 3.0MHz and the span to 50MHz.

RADIATION INTERFERENCE: The test procedure used was ANSI STANDARD C63.4-1992 using a HEWLETT PACKARD spectrum analyzer with a preselector. The bandwidth(RBW) of the spectrum analyzer was 100kHz up to 1GHz and 1.0MHz above 1GHz with an appropriate sweep speed. The VBW above 1.0GHz was = 3.0MHz. The analyzer was calibrated in dB above a microvolt at the output of the antenna. The ambient temperature of the UUT was 71oF with a humidity of 56%.

PRODUCT DESCRIPTION:

The NCBSLXE is a direct sequence spread spectrum radio that operates in the 2421MHz band.



APPLICANT: SPEEDCOM WIRELESS INTERNATIONAL CORP.

FCC ID: NCBSLXE -

NAME OF TEST: POWER LINE CONDUCTED INTERFERENCE

RULES PART NUMBER: 15.107(a)

REQUIREMENTS: .45 - 30 MHz 250 uV OR 47.96 dBuV

TEST PROCEDURE: ANSI STANDARD C63.4-1992. The spectrum was scanned from .45 to 30 MHz.

TEST DATA:

THE HIGHEST EMISSION READ FOR LINE 1 WAS 203.92uV @ 5.47MHz.

THE HIGHEST EMISSION READ FOR LINE 2 WAS 179.66uV @ 6.06MHz.

THE GRAPHS IN EXHIBITS 11A-11B REPRESENT THE EMISSIONS TAKEN FOR THIS DEVICE.

TEST RESULTS: Both lines were observed. The measurements indicate that the unit DOES appear to meet the FCC requirements for this class of equipment.

APPLICANT: SPEEDCOM WIRELESS INTERNATIONAL CORP.

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NAME OF TEST: 6.0dB BANDWIDTH

RULES PART NUMBER: 15.247(a)(2)

REQUIREMENTS: The 6.0dB bandwidth must be greater than 500KHz.

MEASUREMENT: The 6.0dB bandwidth measured @ 2434.10MHz was 10.05MHz.

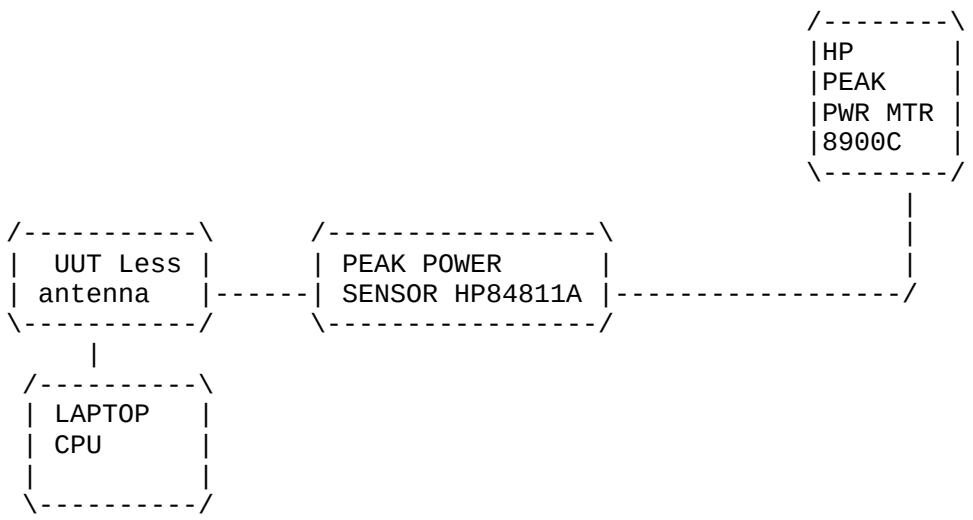
MEASUREMENT DATA: See plots, Exhibits #8.

NAME OF TEST: POWER OUTPUT

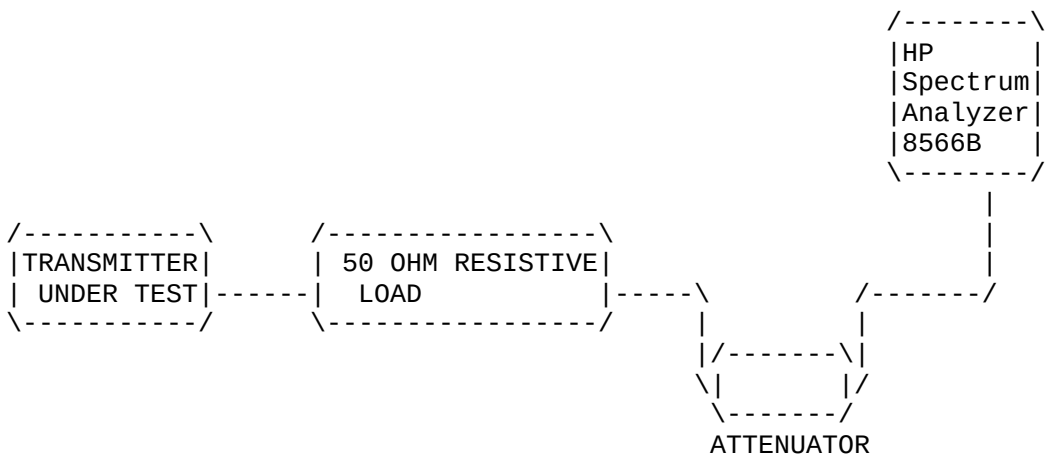
RULES PART NUMBER: 15.247(b) 1.0Watt or +30dBm
Watts or 24dBm for 24dBi Gain Ant

MEASUREMENT: 88.0 mWATTS or 0.088 Watts @ 2421.6MHz

15.247(c) Method of Measuring RF Power output:
The Peak power Sensor was connected in place of the antenna.



15.247(c) Method of Measuring RF Conducted Spurious Emissions



NAME OF TEST: SPURIOUS EMISSIONS AT ANTENNA TERMINALS

REQUIREMENTS: Emissions must be at least 20dB down from the highest emission level within the authorized band as measured with a 100KHz RBW.

EMISSION FREQUENCY MHz	dB BELOW CARRIER
2421.6	00.0
4843.2	-48.6
7264.8	-57.9

NOTE: THE SPECTRUM WAS SCANNED TO THE TENTH HARMONIC.

15.247(c),15.205 &15.209(b) Field_strength_of_spurious_emissions:

REQUIREMENTS:

FIELD STRENGTH of Fundamental:	FIELD STRENGTH of Harmonics	S15.209
902-928MHz		30 - 88 MHz 40 dBuV/m @3M
2.4-2.4835GHz		88 -216 MHz 43.5
127.38dBuV/m @3m	54 dBuV/m @3m	216 -960 MHz 46
		ABOVE 960 MHz 54dBuV/m

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, WHICHEVER IS THE LESSER ATTENUATION.

REQUIREMENTS: Emissions that fall in the restricted bands (15.205) must be less than 54dBuV/m otherwise the spurious and harmonics must be attenuated by at least 20dB.

TEST DATA:

EMISSION FREQUENCY MHz	METER READING @ 3m dBuV	COAX LOSS dB	ACF dB	FIELD STRENGTH dBuV/m	MARGIN dB	ANT.
DIGITAL EMISSIONS						
66.80	30.80	0.80	7.07	38.67	1.33	H
100.20	22.10	0.80	8.25	31.15	12.35	H
167.10	11.60	0.90	18.02	30.52	12.98	H
200.40	29.60	1.20	11.94	42.74	0.76	H
334.10	21.60	1.40	15.09	38.09	7.91	V
340.80	28.00	1.40	15.28	44.68	1.32	H
367.50	16.90	1.40	16.06	34.36	11.64	V
388.20	13.40	1.40	16.66	31.46	14.54	V
397.60	16.90	1.40	16.93	35.23	10.77	H
400.90	14.70	1.60	17.02	33.32	12.68	V
400.98	16.40	1.60	17.02	35.02	10.98	H
434.30	18.20	1.60	17.79	37.59	8.41	H
467.80	23.80	1.60	18.56	43.96	2.04	H
534.60	16.40	1.60	19.58	37.58	8.42	H
537.30	21.40	1.60	19.60	42.60	3.40	H

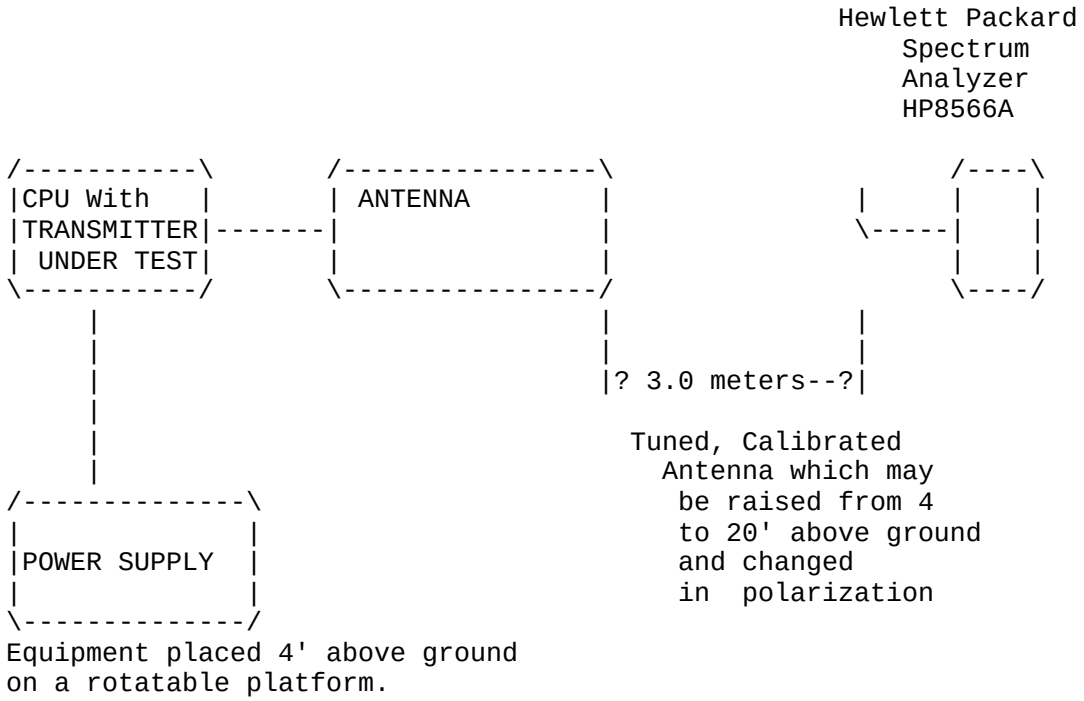
TEST DATA:

EMISSION FREQUENCY MHz	METER READING @ 3m dBuV	COAX LOSS dB	ACF dB	FIELD STRENGTH dBuV/m	FCC. LIMIT dB	MARGIN dB	ANT.
Antenna Gain 24dBi							
Intentional Radiator Emissions							
2422.00	92.50	1.09	29.06	122.65	127.38	4.73	V
2483.5	122.65 - 70dB =			52.65	54.00	1.35	
4844.00R	4.50	1.46	33.95	39.91	54.00	14.09	V
7263.00R	1.40	1.82	36.67	39.89	54.00	14.11	H
16954.00	3.50	2.80	40.13	46.43	46.43	7.57	V

METHOD OF MEASUREMENT: The procedure used was ANSI STANDARD C63.4-1992 &

the Guidance on Measurements for Direct Sequence Spread Spectrum Systems. The bandedge measurement procedure was the procedure given out at the FCC training session in Dec. 1999. Measurements were made at the open field test site of TIMCO ENGINEERING INC. located at 849 N.W. State Road 45, Newberry, Florida 32669.

Method of Measuring Radiated Spurious Emissions



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APPLICANT: SPEEDCOM WIRELESS INTERNATIONAL CORP.

FCC ID: NCBSLXE

NAME OF TEST: POWER SPECTRAL DENSITY

RULES PART NUMBER: 15.247(d)

REQUIREMENTS: The peak level measured must be no greater than +8.0dBm.

DATA: THE PLOTS ARE SHOWN IN EXHIBIT 10

The level at 2421.5MHz was -5.3dBm.

TEST PROCEDURE: The peak emission within the 6dB bandwidth was located and zoomed in upon. The RBW was set to 3kHz, VBW = 100kHz, the sweep set to 500 seconds and the span to 1.5MHz and then the information was ploted.

APPLICANT: SPEEDCOM WIRELESS INTERNATIONAL CORP.

FCC ID: NCBSLXE

NAME OF TEST: PROCESSING GAIN

RULES PART NUMBER: 15.247(e)

REQUIREMENTS:

DATA: The processing gain information supplied by the manufacturer is 10.0dB.