

# **ROGERS LABS, INC.**

4405 West 259<sup>th</sup> Terrace  
Louisburg, KS 66053  
Phone / Fax (913) 837-3214

## **TEST REPORT**

**For**

## **APPLICATION of CERTIFICATION**

For

**KEN-A-VISION MFG., CO., INC.**

5615 Raytown Road  
Kansas City, MO 64133

Thomas Dunn,  
President

MODEL: WIRELESS CLIP KIT

Frequency Range 914 - 918 MHz  
FCC ID: OEV-WIRELESS

Test Date: March 6, 2000

Certification Date: March 6, 2000

Certifying Engineer: *Scot D. Rogers*

Scot D. Rogers  
ROGERS LABS, INC.  
4405 West 259<sup>th</sup> Terrace  
Louisburg, KS 66053  
Phone: (913) 837-3214  
FAX: (913) 837-3214

## TABLE OF CONTENTS

<b>FORWARD:</b> .....	<b>3</b>
<b>1) APPLICABLE STANDARDS &amp; TEST PROCEDURES</b> .....	<b>3</b>
2.1033(b) Application for Certification .....	4
<b>2) EQUIPMENT TESTED</b> .....	<b>5</b>
<b>3) EQUIPMENT FUNCTION AND TESTING PROCEDURES</b> .....	<b>5</b>
<b>4) EQUIPMENT AND CABLE CONFIGURATIONS</b> .....	<b>5</b>
Conducted Emission Test Procedure .....	5
Radiated Emission Test Procedure .....	6
<b>5) LIST OF TEST EQUIPMENT</b> .....	<b>6</b>
<b>6) UNITS OF MEASUREMENTS</b> .....	<b>7</b>
<b>7) TEST SITE LOCATIONS</b> .....	<b>7</b>
<b>8) SUBPART B – UNINTENTIONAL RADIATORS</b> .....	<b>8</b>
Conducted EMI:.....	8
Radiated EMI:.....	12
Data: Conducted (6 Highest Emissions): .....	17
Data: Radiated (6 Highest Emissions) : .....	17
Summary of Results for Conducted Emissions: .....	17
Summary of Results for Radiated Emissions: .....	18
Statement of Modifications: .....	18
<b>9) SUBPART C - INTENTIONAL RADIATORS</b> .....	<b>18</b>
15.203 Antenna Requirements .....	18
Restricted Bands of Operation Per 15.205 .....	18
Data 15.205:.....	19
15.209 Radiated Emissions Limits; General Requirements .....	19
Radiated EMI:.....	19
Data 15.209:.....	20
Summary of Results for Radiated Emissions: .....	21
15.249 Operation in the Band 902-928 MHz .....	21
Radiated Emissions of Intentional Radiator:.....	22
Statement of Modifications: .....	23

**FORWARD:**

The following is submitted for consideration in obtaining a Grant of Certification for low power intentional radiators operated under CFR 47, paragraph 15.249.

Name of Applicant:

KEN-A-VISION MFG., CO., INC.  
5615 Raytown Road  
Kansas City, MO 64133

Model: WIRELESS CLIP KIT

FCC I.D.: OEV-WIRELESS

Frequency Range: 914 MHz to 918 MHz

Operating Power: 35.08 mV/m @ 3 Meters (90.9 dBμV/m @ 3 meters)

**1) Applicable Standards & Test Procedures**

a) In accordance with the Federal Communications Code of Federal Regulations, dated October 1, 1998, Part 2, Subpart J, Paragraphs 2.907, 2.911, 2.913, 2.925, 2.926, 2.1031 through 2.1057, Part 15C Paragraph 15.249, and FCC Document FCC98-58 the following is submitted:

b) Test procedures used are the established Methods of Measurement of Radio-Noise Emissions as described in the ANSI 63.4-1992 Document.

**2.1033(b) Application for Certification**

- (1) Manufacturer:  
KEN-A-VISION MFG., CO., INC.  
5615 Raytown Road  
Kansas City, MO 64133
- (2) Identification: Model: WIRELESS CLIP KIT  
FCC I.D.: OEV-WIRELESS
- (3) Instruction Book:  
  
Refer to Exhibit for Instruction Manual.
- (4) Description of Circuit Functions:  
  
Refer to Exhibit for Circuit Description.
- (5) Block Diagram with Frequencies:  
  
Refer to Exhibit for Block Diagram.
- (6) Report of Measurements:  
  
Report of Measurements follows in this Report.
- (7) Photos: Construction, Component Placement, etc.:  
  
Refer to Appendix of this report for Photographs of  
equipment and/or to exhibits.
- (8) Brief description of peripheral equipment used with EUT.  
  
The EUT is designed for use with the Video Flex system.  
The Video Flex outputs a NTSC video signal to the  
Wireless Clip Kit, which sends the image to a receiver  
for display on a video monitor.
- (9) Transition Provisions of 15.37 are not being requested.
- (10) Direct Sequence Spread Spectrum:  
  
Not Applicable.
- (11) Not Applicable. The EUT is not a Scanning Receiver.

## 2) Equipment Tested

<u>EQUIPMENT</u>	<u>MODEL/PART#</u>	<u>FCC I.D.</u>
EUT	WIRELESS CLIP KIT	OEV-WIRELESS
VIDEO FLEX	Video Flex	N/A

## 3) Equipment Function and Testing Procedures

The EUT is a 914 - 918 MHz radio transmitter used to send video images from the VIDEO FLEX to a remote video monitor.

The EUT is operated from an onboard battery. The battery may be recharged using the supplied AC adapter. The transmitter is disabled while the battery charges and has no other provision for connection to the utility power system.

Since the EUT is battery operated, line conducted emissions testing was performed on the VIDEO FLEX while the transmitter was in operation and also on the battery AC adapter while the battery was charging.

## 4) Equipment and Cable Configurations

### ***Conducted Emission Test Procedure***

The test setup, including the EUT, was arranged in a typical equipment configuration and placed on a 1 x 1.5-meter wooden bench, 0.8 meters high located in a screen room. Since the EUT is battery operated, line conducted emissions testing was performed on the VIDEO FLEX while the transmitter was in operation and also on the AC adapter while the battery was

charging. The power lines of the system were isolated from the power source using a standard LISN with a 50- $\mu$ Hy choke. EMI was coupled to the spectrum analyzer through a 0.1  $\mu$ F capacitor internal to the LISN. The LISN was positioned on the floor beneath the wooden bench supporting the EUT. The power lines and cables were draped over the back edge of the table.

### ***Radiated Emission Test Procedure***

The EUT was placed on a rotatable 1 x 1.5-meter wooden platform, 0.8 meters above the ground plane at a distance of 3 meters from the FSM antenna. EMI energy was maximized by equipment placement, raising and lowering the FSM antenna, changing the antenna polarization, and by rotating the turntable. Each emission was maximized before data was taken using a spectrum analyzer. Refer to photos in Appendix for EUT placement.

## **5) List of Test Equipment**

A Hewlett Packard 8591EM Spectrum Analyzer was used as the measuring device for the emissions testing of frequencies below 1 GHz. A Hewlett Packard 8562A Spectrum Analyzer was used as the measuring device for testing the emissions at frequencies above 1 GHz. The analyzer settings used are described in the following table. Refer to Appendix for a complete list of Test Equipment.

HP 8591 EM ANALYZER SETTINGS		
CONDUCTED EMISSIONS:		
RBW	AVG. BW	DETECTOR FUNCTION
9 kHz	30 kHz	Peak / Quasi Peak
RADIATED EMISSIONS:		
RBW	AVG. BW	DETECTOR FUNCTION
120 kHz	300 kHz	Peak / Quasi Peak
HP 8562A ANALYZER SETTINGS		
RBW	VIDEO BW	DETECTOR FUNCTION
100 kHz	100 kHz	PEAK
1 MHz	1 MHz	Peak / Average

<u>EQUIPMENT</u>	<u>MFG.</u>	<u>MODEL</u>	<u>CAL. DATES</u>	<u>DUE.</u>
LISN	Comp. Design	1762	9/99	9/00
Antenna	ARA	BCD-235-B	9/99	9/00
Antenna	EMCO	3147	9/99	9/00
Antenna	EMCO	3143	4/99	4/00
Analyzer	HP	8591EM	7/99	7/00

## 6) Units of Measurements

Conducted EMI: Data is in dB $\mu$ V; dB referenced to one microvolt.

Radiated EMI: Data is in dB $\mu$ V/m; dB/m referenced to one microvolt per meter.

## 7) Test Site Locations

**Conducted EMI:** The AC powerline conducted emissions tests were performed in a shielded screen room located at Rogers Labs, Inc., 4405 W. 259<sup>th</sup> Terrace, Louisburg, KS.

**Radiated EMI:** The radiated emissions tests were performed at Rogers Labs, Inc. 3 meters Open Area Test Site (OATS) located at Rogers Labs, Inc., 4405 W. 259<sup>th</sup> Terrace, Louisburg, KS.

**Site Approval:** Refer to Appendix for FCC Site Approval Letter, Reference 31040/SIT 1300F2, Dated February 6, 1998.

## 8) **SUBPART B – Unintentional Radiators**

### **Conducted EMI**

The EUT was arranged in a typical equipment configuration and placed on a 1 x 1.5-meter wooden bench 80 cm above the conducting ground plane, floor of a screen room. The bench was positioned 40 cm away from the wall of the screen room. The LISN was positioned on the floor of the screen room 80-cm from the rear of the EUT. The power cord of the VIDEO FLEX was connected to the LISN for testing while the transmitter was in use. The AC adapter power cord was connected to the LISN for testing while the battery was charging. A second LISN was also positioned on the floor of the screen room and used to power the auxiliary equipment. EMI was coupled to the spectrum analyzer through a 0.1  $\mu$ F capacitor, internal to the LISN. Power line conducted emissions testing was carried out individually for each current carrying conductor of the VIDEO FLEX and EUT. The excess length of lead between the

system and the LISN receptacle was folded back and forth to form a bundle not exceeding 40 cm in length. The screen room, conducting ground plane, analyzer and LISN were bonded together to the protective earth ground. Preliminary testing was performed to identify the frequencies of the emissions, which had the highest amplitudes. The cables were repositioned to obtain maximum amplitude of measured EMI level. Once the worst case configuration was identified, plots were made of the spectrum analyzer screen from 0.15 MHz to 30 MHz then the data was recorded with maximum conducted emissions levels. Refer to figures 1 and 2 for plots of conducted emissions for the VIDEO FLEX while the transmitter was in operation. Refer to figures 3 and 4 for plots of conducted emissions for the battery charger while recharging the onboard battery.

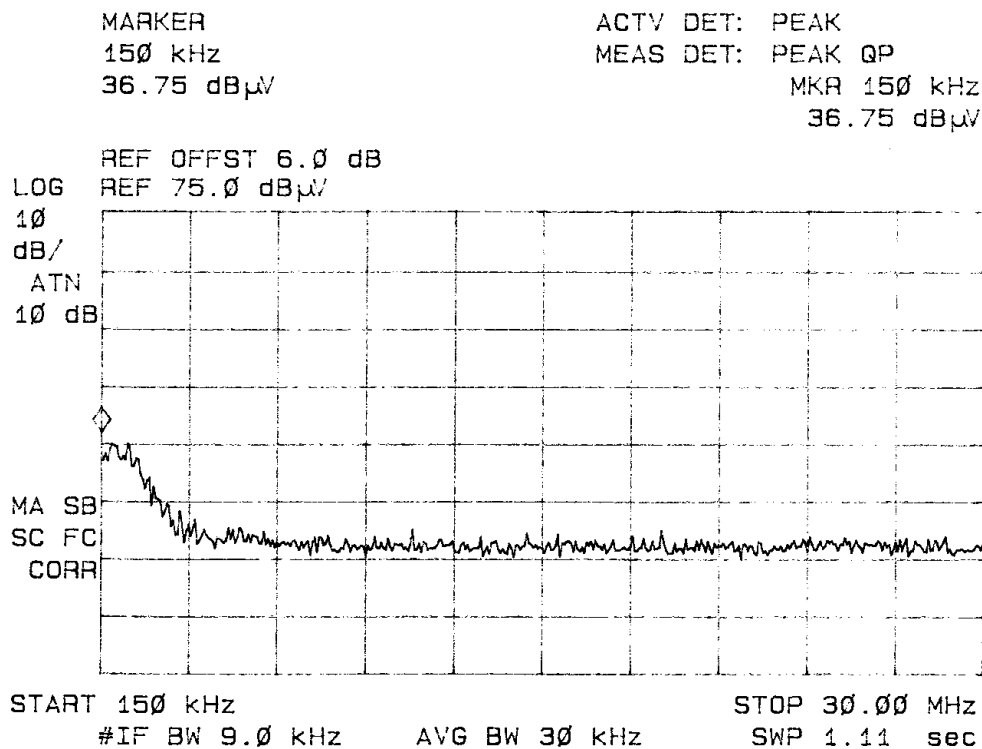


Figure 1 Line conducted emissions L1 (VIDEO FLEX)

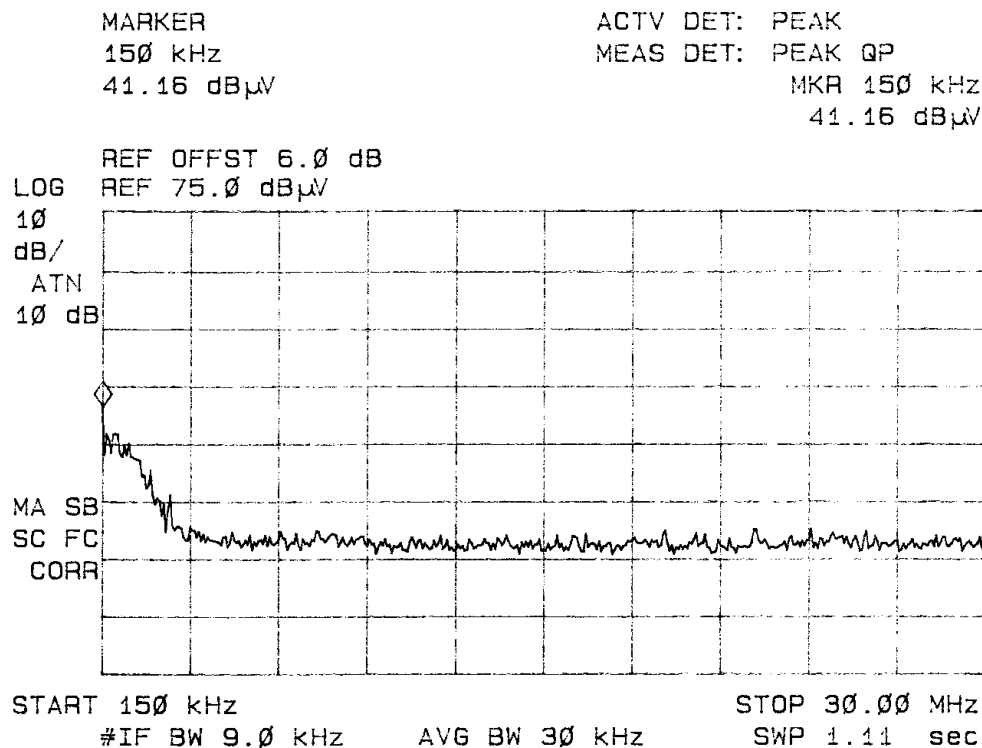


Figure 2 Line conducted emissions L2 (VIDEO FLEX)

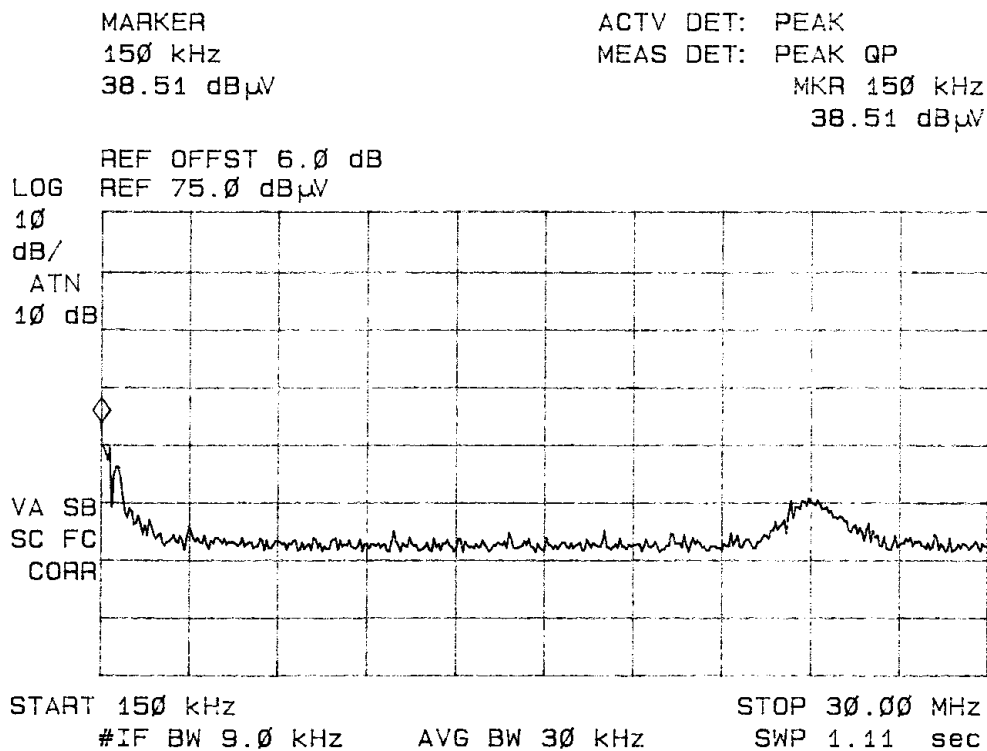


Figure 3 Line conducted emissions L1 (Battery Charger)

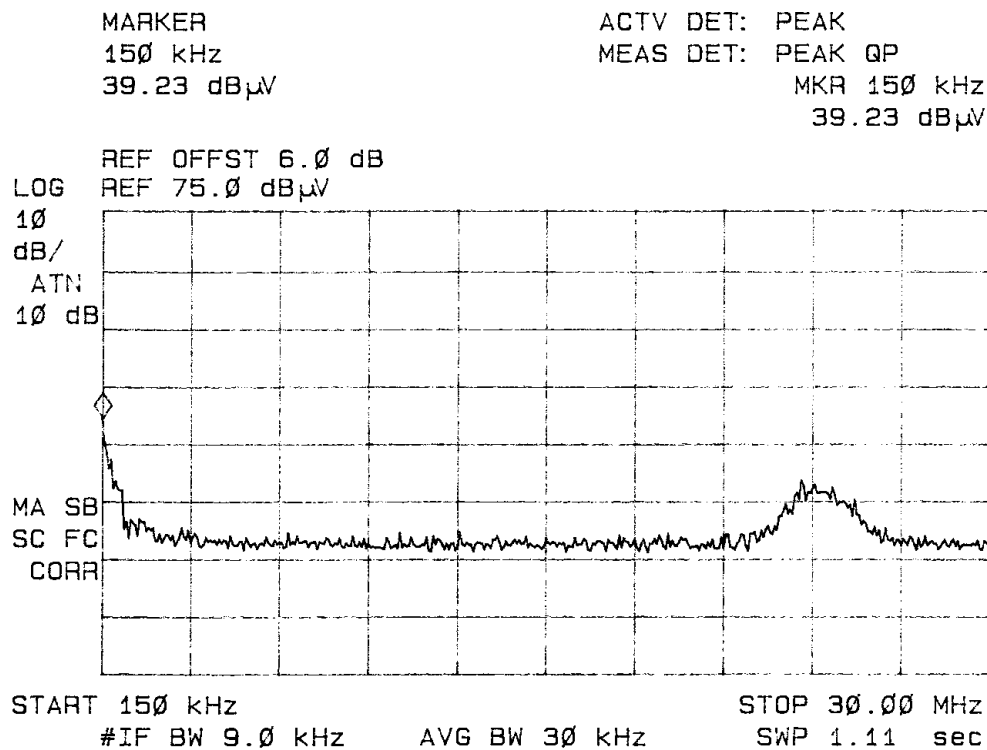


Figure 4 Line conducted emissions L2 (Battery Charger)

**Radiated EMI**

The EUT was arranged in a typical equipment configuration and operated in a standard mode. Preliminary testing was performed in a screen room with the EUT positioned 1 meter from the FSM. Radiated emissions measurements were performed to identify the frequencies, which produced the highest emissions. Plots were made of the frequency spectrum from 30 MHz to 10,000 MHz for the preliminary testing. Refer to figures 5 through 10 for plots of the frequency spectrum produced by the EUT and support equipment. The EUT and cable locations were noted and reconfigured at the open area test site. The highest radiated emission was then re-maximized at this location before final radiated emissions measurements were performed. Final data was taken with the EUT located at the OATS at a distance of 3 meters between the EUT and the receiving antenna. The frequency spectrum from 30 MHz to 10,000 MHz was searched for radiated emissions. Measured emission levels were maximized by EUT placement on the table, changing cable location, rotating the turntable through 360 degrees, varying the antenna height between 1 and 4 meters above the ground plane and changing antenna position between horizontal and vertical polarization. Antennas used were Broadband Biconical from 30 to 200 MHz, Log Periodic from 200 MHz to 5 GHz, and or a Biconilog from 30 to 1000 MHz, and pyramidal horns and/or mixers from 4 GHz to 10 GHz.

## Sample Calculations:

RFS = Radiated Field Strength

dBμV/m @ 3m = dBμV + A.F. - Amplifier Gain

dBμV/m @ 3m = 63.9 + 8.9 - 35

= 37.8

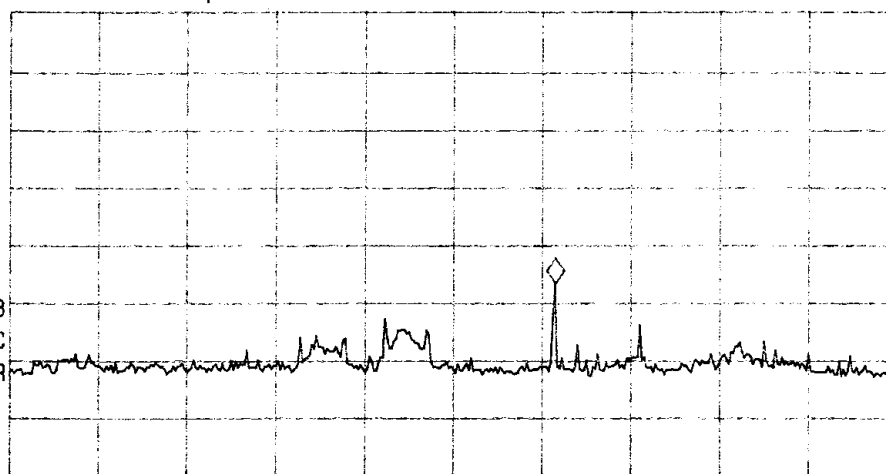
MARKER  
153.0 MHz  
33.18 dBμV

ACTV DET: PEAK  
MEAS DET: PEAK QP  
MKR 153.0 MHz  
33.18 dBμV

LOG REF 80.0 dBμV

10  
dB/  
#ATN  
0 dB

MA SB  
SC FC  
CORR



START 30.0 MHz

#IF BW 120 kHz

AVG BW 300 kHz

STOP 230.0 MHz

SWP 41.7 msec

Figure 5 Radiated Emissions taken in screen room.

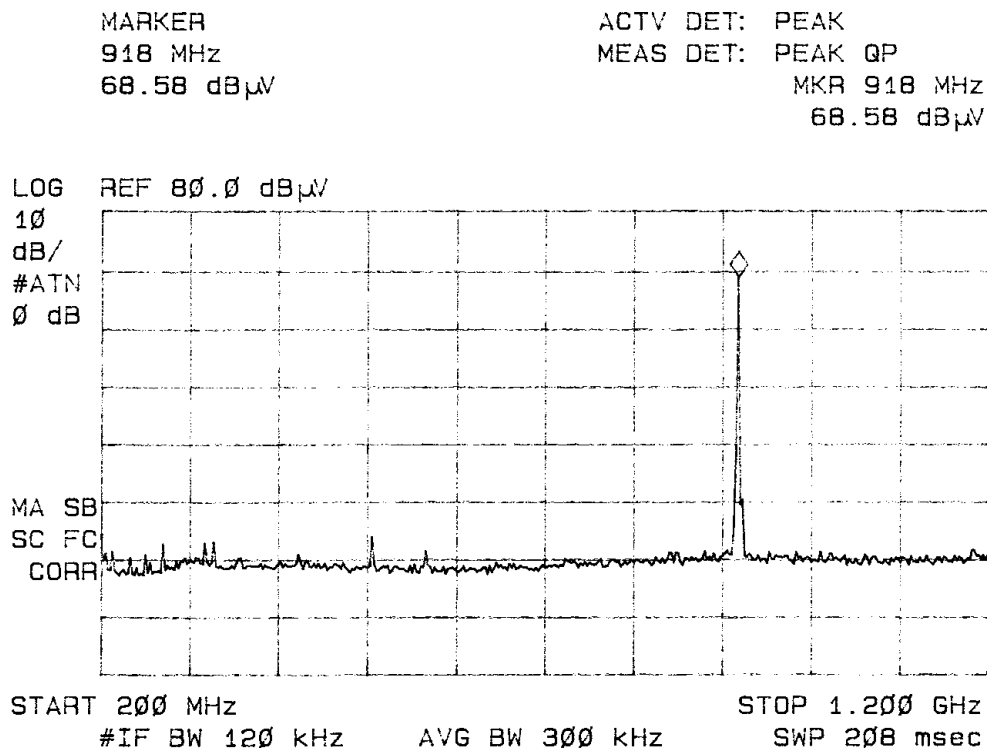


Figure 6 Radiated Emissions taken in screen room.

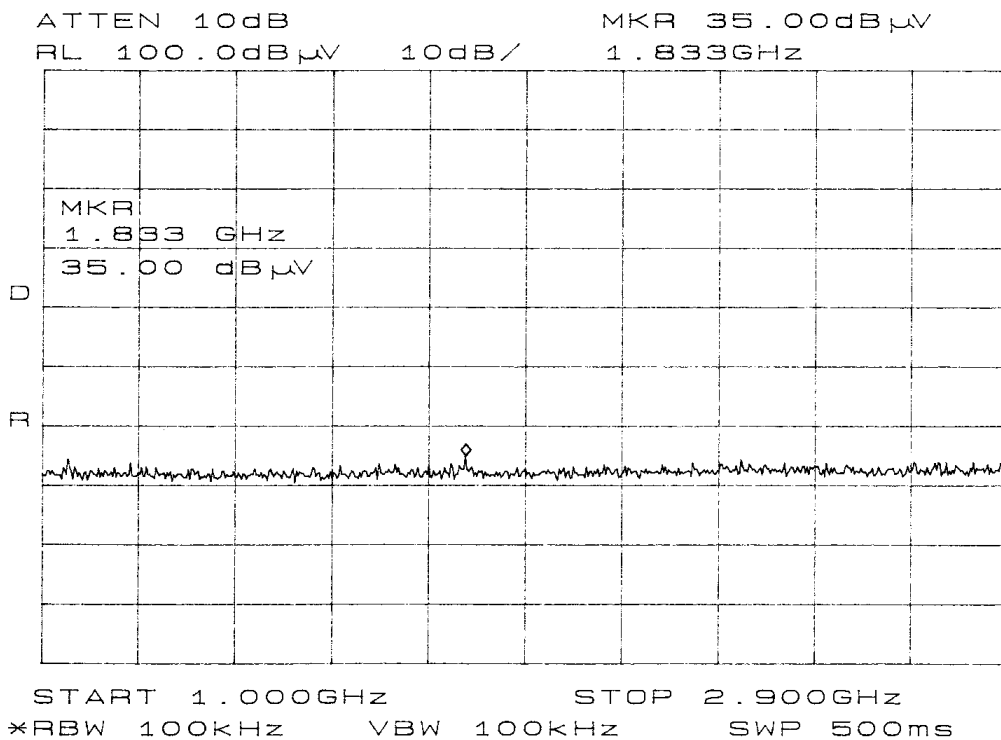


Figure 7 Radiated Emissions taken in screen room.

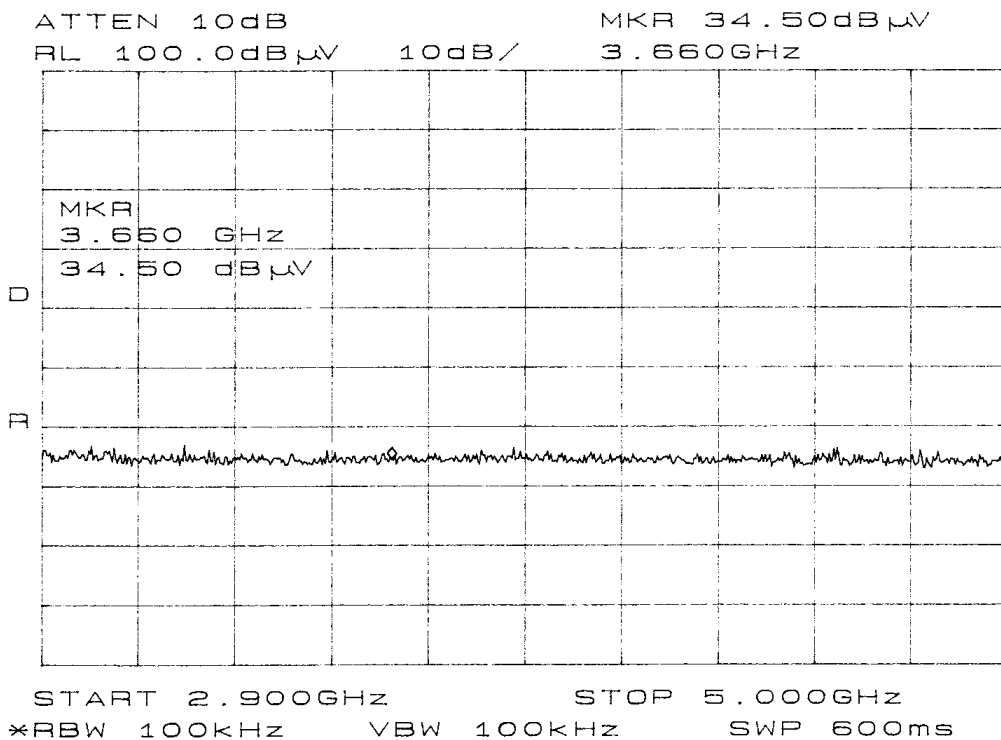


Figure 8 Radiated Emissions taken in screen room.

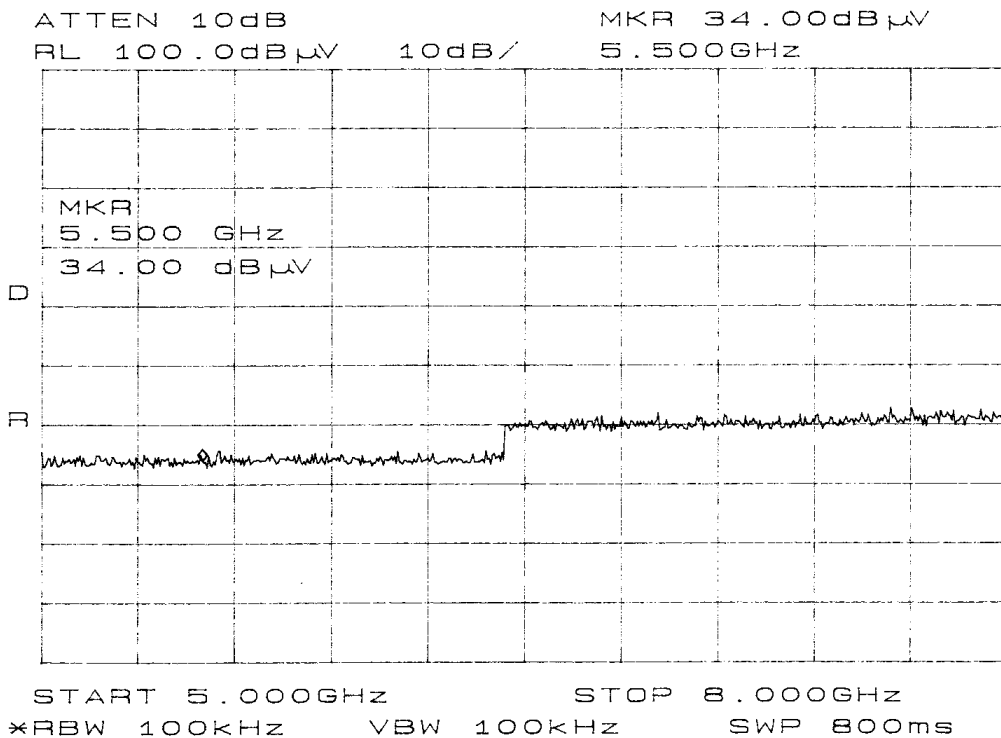


Figure 9 Radiated Emissions taken in screen room.

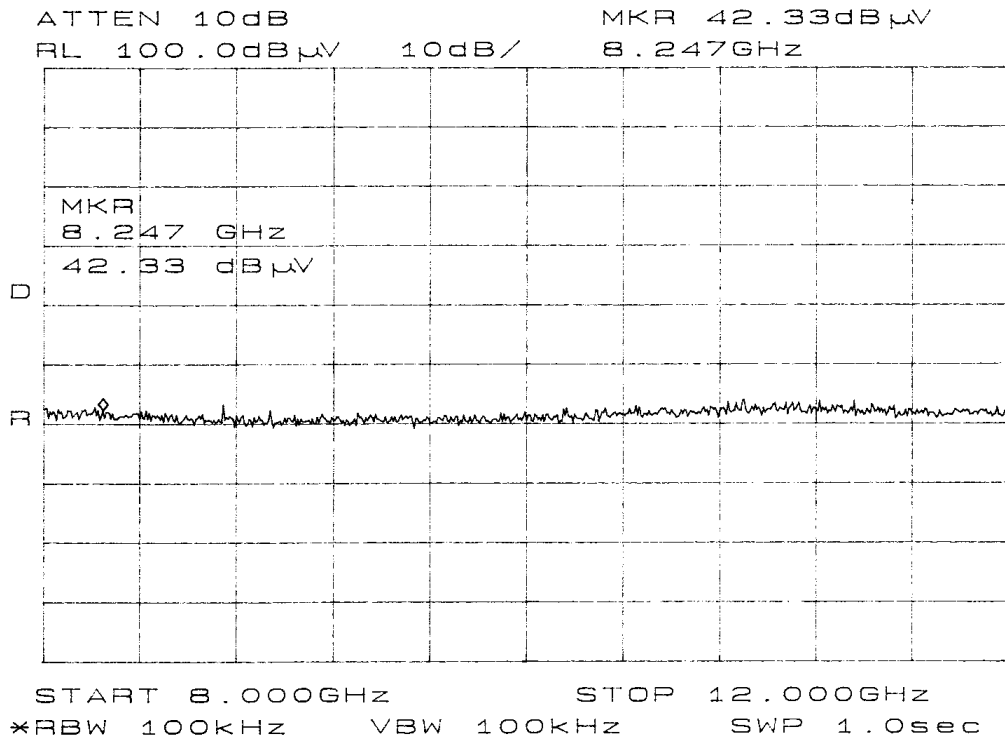


Figure 10 Radiated Emissions taken in screen room.

**Data: Conducted Emissions VIDEO FLEX (7 Highest Emissions):**

Frequency In MHz	L1 Peak Level In dBμV	L2 Peak Level In dBμV	FCC Quasi-peak Limit in dBμV
0.15	41.1	36.7	N/A
0.30	37.9	35.4	N/A
0.52	36.9	35.2	48.0
1.0	34.8	34.9	48.0
1.8	30.1	32.4	48.0
2.0	27.6	29.6	48.0
2.4	26.0	27.4	48.0

Other emissions present had amplitudes at least 10 dB below the limit.

**Data: Conducted Emissions Battery Charger (7 Highest Emissions):**

Frequency In MHz	L1 Peak Level In dB $\mu$ V	L2 Peak Level In dB $\mu$ V	FCC Quasi-peak Limit in dB $\mu$ V
0.15	38.5	39.2	N/A
0.45	34.2	32.0	48.0
0.60	30.9	28.3	48.0
0.82	28.8	26.7	48.0
23.6	25.1	28.4	48.0
24.1	25.5	27.8	48.0
24.7	24.0	27.3	48.0

Other emissions present had amplitudes at least 10 dB below the limit.

**Data: EUT and System Radiated Emissions (6 Highest) :**

Frequency In MHz	FSM Hor. (dB $\mu$ V) Quasi-Peak	FSM Vert. (dB $\mu$ V) Quasi-Peak	Ant. Fact. (dB)	Amp. Gain (dB)	Comp. Hor. (dB $\mu$ V/m) @ 3m	Comp. Vert. (dB $\mu$ V/m) @ 3 m	FCC Limit (dB $\mu$ V)
85.9	47.9	45.5	8.9	35	21.8	19.4	40.0
95.4	38.0	45.0	8.5	35	11.5	18.5	43.5
114.5	36.7	55.3	7.6	35	9.3	27.9	43.5
124.0	34.8	51.1	8.4	35	8.2	24.5	43.5
152.6	42.4	50.2	10.7	35	18.1	25.9	43.5
324.2	34.0	43.6	14.7	35	13.7	23.3	46.0

Other emissions present had amplitudes at least 10 dB below the limit.

**Summary of Results for Conducted Emissions:**

The conducted emissions for the EUT meet the requirements for FCC Part 15B CLASS B Digital Devices. The EUT had a 11.1 dB minimum margin below the limit. Other emissions were present with amplitudes at least 10.0 dB below the limit.

**Summary of Results for Radiated Emissions:**

The radiated emissions for the EUT meet the requirements for FCC Part 15B CLASS B Digital Devices. The EUT had a 15.6 dB minimum margin below the limit. Other emissions were present with amplitudes at least 10 dB below the limit.

**Statement of Modifications:**

No modifications were required for the EUT to meet the FCC Part 15B CLASS B emissions standards. There were no deviations to the specifications.

**9) Subpart C - Intentional Radiators**

As per CFR Part 15, Subpart C, paragraph 15.249. The following information is submitted:

***15.203 Antenna Requirements***

The unit is produced with a permanently attached antenna. The antenna is not replaceable or user serviceable. The requirements of 15.203 are met; there are no deviations or exceptions to the specification.

***Restricted Bands of Operation Per 15.205***

Spurious emissions falling in the restricted frequency bands of operation were measured at the OATS. The EUT utilizes frequency, determining circuitry, which generates harmonics falling in the restricted bands. Emissions were measured at the OATS, using appropriate antennas or pyramidal horns,

amplification stages, and a spectrum analyzer. No other significant emission was observed which fell into the restricted bands of operation.

#### Data 15.205:

#### Radiated Emissions in Restricted Bands:

Emission Frequency (MHz)	FSM Horz. (dBμV)	FSM Vert. (dBμV)	Ant. Factor (dB)	Amp. Gain (dB)	RFS Horz. @ 3m (dBμV/m)	RFS Vert. @ 3m (dBμV/m)	Limit @ 3m (dBμV/m)
2749.5	35.6	37.8	32.6	25	43.2	45.4	54.0
3660.0	34.4	34.8	37.1	25	46.5	46.9	54.0
4582.5	34.0	34.0	29.9	25	38.9	38.9	54.0
7332.0	29.0	28.0	29.9	25	33.9	32.9	54.0
8248.5	28.3	29.3	33.5	25	36.8	37.8	54.0
9165.0	27.3	27.0	33.5	25	35.8	35.5	54.0

No other emissions found in the restricted bands.

#### Sample Calculations:

$$\begin{aligned}
 \text{Computed Quasi-Peak (dBμV/m @ 3m)} &= \text{FSM(dBμV)} + \text{A.F.(dB)} - \text{Gain(dB)} \\
 &= 35.6 + 32.6 - 25 \\
 &= 43.2
 \end{aligned}$$

#### 15.209 Radiated Emissions Limits; General Requirements

##### Radiated EMI

The EUT was arranged in a typical equipment configuration and operated in a standard mode. Preliminary testing was performed in a screen room with the EUT positioned 1 meter from the FSM. Radiated emissions measurements were performed to identify the frequencies, which produced the highest emissions. Plots were made of the frequency spectrum from 30

MHz to 10 GHz for the preliminary testing. The highest radiated emission was then re-maximized at this location before final radiated emissions measurements were performed. Final data was taken with the EUT located at the open field test site at a distance of 3 meters between the EUT and the receiving antenna. The frequency spectrum from 30 MHz to 10 GHz was searched for radiated emissions. Measured emission levels were maximized by EUT placement on the table, changing cable location, rotating the turntable through 360 degrees, varying the antenna height between 1 and 4 meters above the ground plane and changing antenna polarization between horizontal and vertical. Antennas used were Broadband Biconical from 30 MHz to 200 MHz, Log Periodic from 200 MHz to 5 GHz and/or Biconilog from 30 MHz to 1000 MHz; and pyramidal horns and or mixers from 4 GHz to 10 GHz

### Data 15.209:

#### Data: EUT and System Radiated Emissions (6 Highest) :

Frequency In MHz	FSM Hor. (dBμV) Quasi-Peak	FSM Vert. (dBμV) Quasi-Peak	Ant. Fact. (dB)	Amp. Gain (dB)	Comp. Hor. (dBμV/m) @ 3m	Comp. Vert. (dBμV/m) @ 3 m	FCC Limit (dBμV)
85.9	47.9	45.5	8.9	35	21.8	19.4	40.0
95.4	38.0	45.0	8.5	35	11.5	18.5	43.5
114.5	36.7	55.3	7.6	35	9.3	27.9	43.5
124.0	34.8	51.1	8.4	35	8.2	24.5	43.5
152.6	42.4	50.2	10.7	35	18.1	25.9	43.5
324.2	34.0	43.6	14.7	35	13.7	23.3	46.0

Other emissions present had amplitudes at least 10 dB below the limit.

## Sample Calculations:

$$\begin{aligned}\text{RFS} &= \text{Radiated Field Strength} \\ \text{dB}\mu\text{V/m @ 3m} &= \text{dB}\mu\text{V} + \text{A.F.} - \text{Amplifier Gain} \\ &= 47.9 + 8.9 - 35 \\ &= 21.8\end{aligned}$$

**Summary of Results for Radiated Emissions:**

The radiated emissions for the EUT meet the requirements for FCC Part 15C Intentional Radiators. The EUT had a 15.6 dB minimum margin below the limits. Other emissions were present with amplitudes at least 10 dB below the FCC Limits.

***15.249 Operation in the Band 902 - 928 MHz***

The power output was measured on an open field test site at 3-meters distance. Data was taken per Paragraph 2.1046(a) and 15.249.

(a) The EUT was placed on a wooden turntable 0.8 meters above the ground plane and at a distance of 3-meters from the FSM antenna. The amplitude of the carrier frequency was measured using a spectrum analyzer. The amplitude of the emission was then recorded from the analyzer display.

(b) Emissions radiated outside of the specified 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. The amplitudes of each spurious emission were measured at a distance of 3 meters from the FSM antenna at the OATS. The amplitude of each spurious emission was

maximized by varying the FSM antenna height, polarization, and by rotating the turntable. A Biconilog Antenna was used for measuring emissions from 30 to 1000 MHz, a Log Periodic Antenna for 200 to 5000 MHz; and/or Pyramidal Horn Antenna from 4 to 10 GHz. Emissions were measured in dB $\mu$ V/m and converted to dB $\mu$ V/m @ 3 meters using the following equation.

#### Data: Intentional Radiated Emissions:

FREQ.	FSM IN HOR. DB $\mu$ V	FSM IN VERT. dB $\mu$ V	ANT. FACT.	AMP. GAIN	LEVEL IN dB $\mu$ V/m @ 3m HOR.	LEVEL IN dB $\mu$ V/m @ 3m VERT.	LEVEL IN dB $\mu$ V/m @ 3m
916.5	82.7	93.0	22.9	25	80.6	90.9	94.0

Note: Level was measured @ 3 meter site.

$$\begin{aligned}
 \text{dB}\mu\text{v/m@ 3m} &= \text{FSM} + \text{A.F.} - \text{AMP. GAIN} & \mu\text{V/M} &= 10^{((\text{dB}\mu\text{v/m}/20)} \\
 &= 93.0 + 22.9 - 25 & &= 35.08\text{E3 } \mu\text{V/M} \\
 &= 90.9 & &= 35.08 \text{ mV/M}
 \end{aligned}$$

The band edges are protected due to the frequency band of operation.

#### Radiated Emissions of Intentional Radiator:

The EUT had a 3.1 dB margin below the limits. The radiated emissions for the EUT meet the requirements for FCC Part 15C Intentional Radiators. There are no measurable emissions in the restricted bands other than those recorded in this report. Other emissions were present with amplitudes at least 10 dB below the FCC Limits. The specification of

15.249 are met, there are no deviations or exceptions to the requirements.

**Statement of Modifications:**

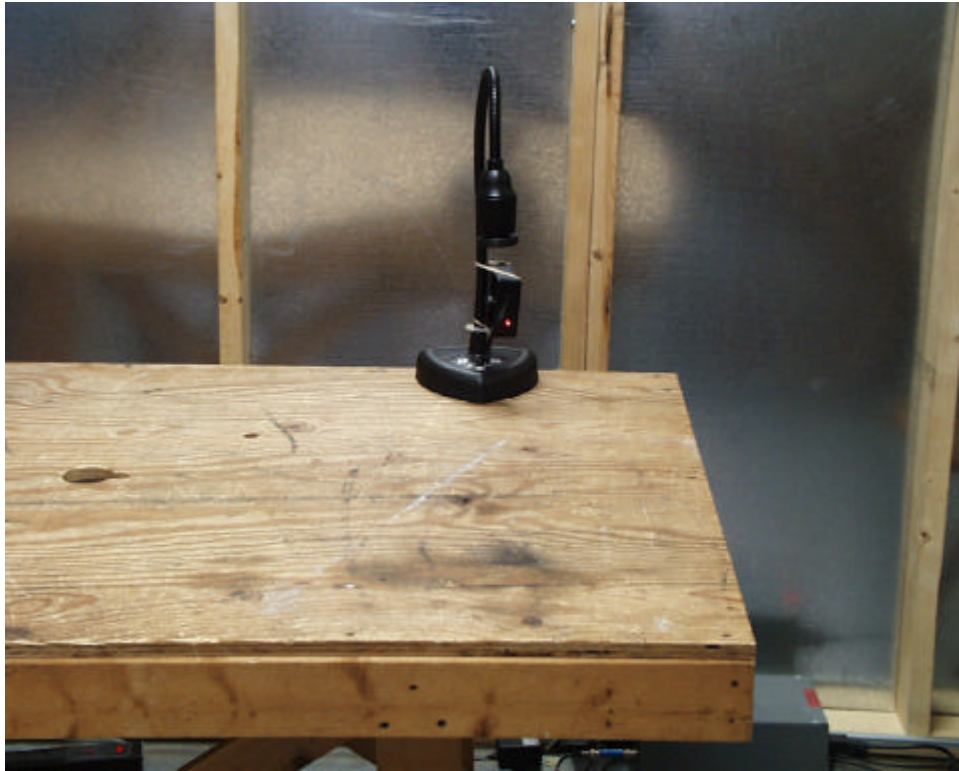
No modifications to the EUT were required for the unit to meet the FCC Part 15B CLASS B emissions standards. There were no deviations to the specifications.

## **APPENDIX**

Model: WIRELESS CLIP KIT

1. Photos of Conducted Emissions Test Set Up
2. Photos of Conducted Emissions Test Set Up
3. Photos of Radiated Emissions Test Set Up
4. Photos of Case Front and Back
5. Photo Inside of Case
6. Photos RF Printed Circuit Board
7. Photo FCC ID Label Location
8. Rogers Qualifications
9. Test Equipment List
10. FCC Site Approval Letter

KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTOS OF CONDUCTED EMISSIONS TEST SET UP (VIDEO FLEX)



KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTOS OF CONDUCTED EMISSIONS TEST SET UP (Battery Charger)



ROGERS LABS, INC.

4405 W. 259th Terrace

Louisburg, KS 66053

Phone/Fax: (913) 837-3214

KEN-A-VISION Mfg., Co., Inc.

MODEL: Wireless Clip Kit

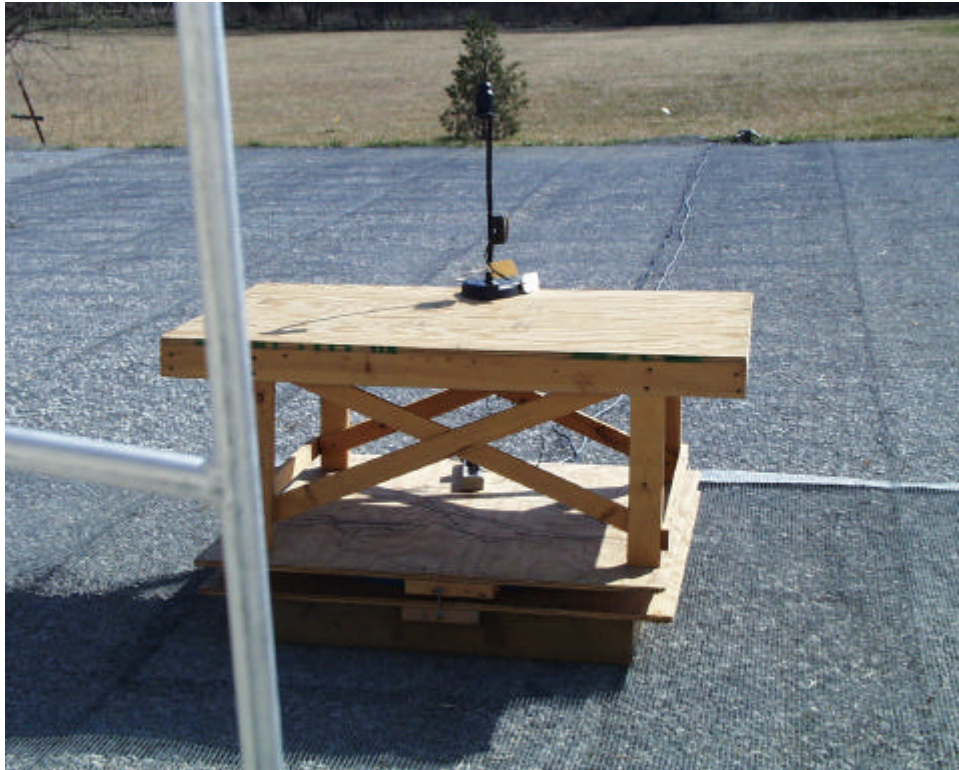
Test #: 000306

Test to: FCC Parts 2 and 15c

FCCID#: OEV-WIRELESS

Page 26 of 34  
CERTIFICATION\KENAVISIONRF Module 03/23/2000

KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTOS OF RADIATED EMISSIONS TEST SET UP



ROGERS LABS, INC.

4405 W. 259th Terrace

Louisburg, KS 66053

Phone/Fax: (913) 837-3214

KEN-A-VISION Mfg., Co., Inc.

MODEL: Wireless Clip Kit

Test #: 000306

Test to: FCC Parts 2 and 15c (15.249)

FCCID#: OEV-WIRELESS

Page 27 of 34  
CERTIFICATION\KENAVISIONRF Module 03/23/2000

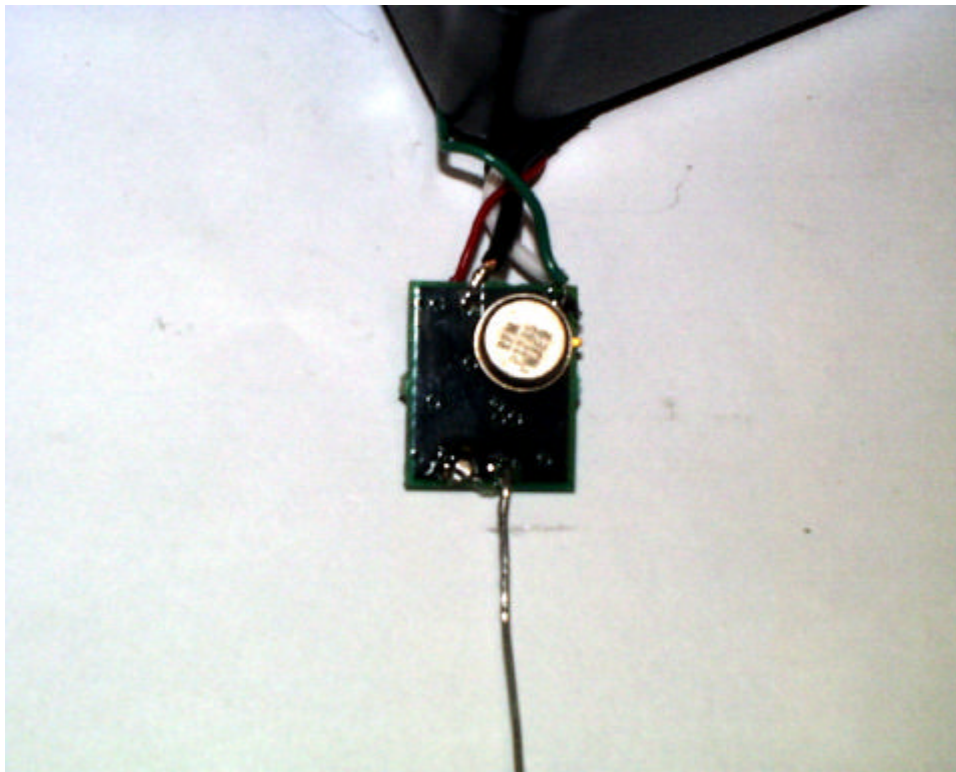
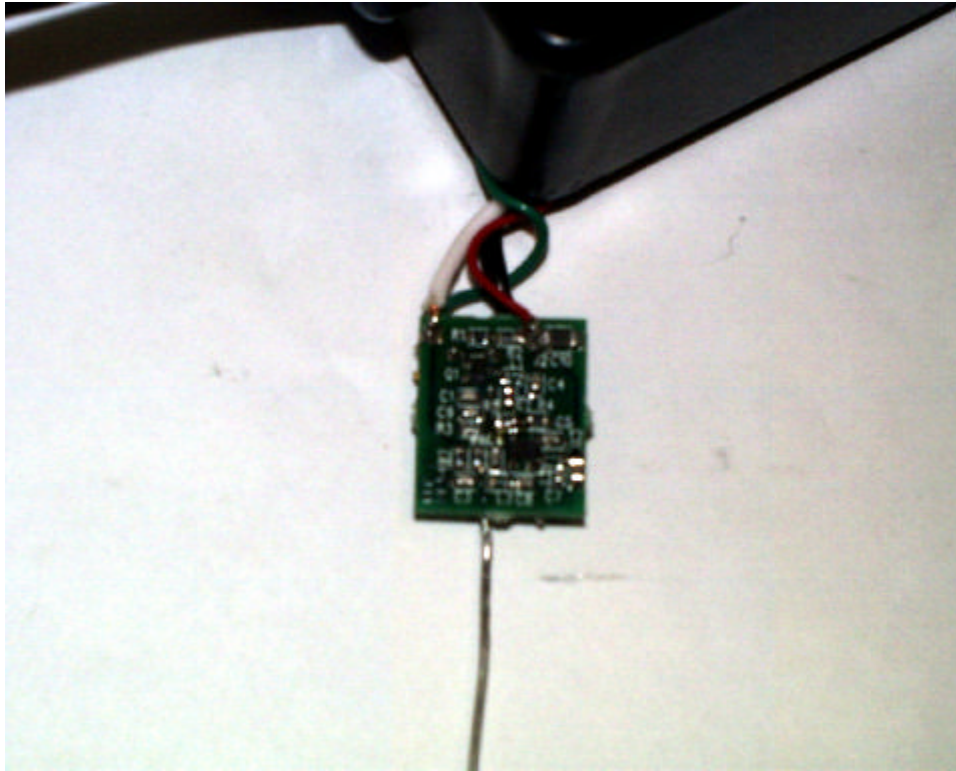
KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTOS OF CASE FRONT AND BACK



KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTO OF INSIDE CASE



KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTOS OF RF PRINTED CIRCUIT BOARD



ROGERS LABS, INC.

4405 W. 259th Terrace

Louisburg, KS 66053

Phone/Fax: (913) 837-3214

KEN-A-VISION Mfg., Co., Inc.

MODEL: Wireless Clip Kit

Test #: 000306

Test to: FCC Parts 2 and 15c

FCCID#: OEV-WIRELESS

(15.249) Page 30 of 34  
CERTIFICATION\KENAVISIONRF Module 03/23/2000

KEN-A-VISION MFG., CO., INC.  
MODEL: WIRELESS CLIP KIT  
PHOTO FCC ID LABEL LOCATION



**TEST EQUIPMENT LIST FOR ROGERS LABS, INC.**

The test equipment used is maintained in calibration and good operating condition.

<u>List of Test Equipment:</u>	<u>Calibration Date:</u>
Scope: Tektronix 2230	2/00
Wattmeter: Bird 43 with Load Bird 8085	2/00
Power Supplies: Sorensen SRL 20-25, SRL 40-25, DCR 150, DCR 140	2/00
H/V Power Supply: Fluke Model: 408B (SN: 573)	2/00
R.F. Generator: HP 606A	2/00
R.F. Generator: HP 8614A	2/00
R.F. Generator: HP 8640B	2/00
Spectrum Analyzer: HP 8562A,	2/00
Mixers: 11517A, 11970A, 11970K, 11970U	
HP Adapters: 11518, 11519, 11520	
Spectrum Analyzer: HP 8591 EM	7/99
Frequency Counter: Leader LDC 825	2/00
Antenna: EMCO Biconilog Model: 3143	10/99
Antenna: EMCO Log Periodic Model: 3147	10/99
Antenna: Antenna Research Biconical Model: BCD 235	10/99
Antenna: EMCO Dipole Set 3121C	2/00
Antenna: C.D. B-100	2/00
Antenna: Solar 9229-1 & 9230-1	2/00
Antenna: EMCO 6509	2/00
Audio Oscillator: H.P. 200CD	2/00
R.F. Power Amp 65W Model: 470-A-1000	2/00
R.F. Power Amp 50W M185- 10-500	2/00
R.F. PreAmp CPPA-102	2/00
Shielded Room 5 M x 3 M x 3.0 M (100 dB Integrity)	
LISN 50 $\mu$ Hy/50 ohm/0.1 $\mu$ f	10/99
LISN Compliance Eng. 240/20	2/00
Peavey Power Amp Model: IPS 800	2/00
Power Amp A.R. Model: 10W 1000M7	2/00
Power Amp EIN Model: A300	2/00
ELGAR Model: 1751	2/00
ELGAR Model: TG 704A-3D	2/00
ESD Test Set 2000i	10/95
Fast Transient Burst Generator Model: EFT/B-100	10/95
Current Probe: Singer CP-105	2/00
Current Probe: Solar 9108-1N	2/00
Field Intensity Meter: EFM-018	10/95
KETEK Ecat Surge Generator	10/99

02/25/2000

**QUALIFICATIONS**  
**Of**  
**SCOT D. ROGERS, ENGINEER**  
**ROGERS LABS, INC.**

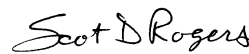
Mr. Rogers has approximately 12 years experience in the field of electronics. Six years working in the automated controls industry and 6 years working with the design, development and testing of radio communications and electronic equipment.

**POSITIONS HELD:**

Systems Engineer:	A/C Controls Mfg. Co., Inc. 6 Years
Electrical Engineer:	Rogers Consulting Labs, Inc. 5 Years
Electrical Engineer:	Rogers Labs, Inc. Current

**EDUCATIONAL BACKGROUND:**

- 1) Bachelor of Science Degree in Electrical Engineering from Kansas State University.
- 2) Bachelor of Science Degree in Business Administration Kansas State University.
- 3) Several Specialized Training courses and seminars pertaining to Microprocessors and Software programming.

  
Scot D. Rogers

March 6, 2000  
Date

1/11/99

# **FEDERAL COMMUNICATIONS COMMISSION**

7435 Oakland Mills Road  
Columbia, MD 21046  
Telephone: 301-725-1585 (ext-218)  
Facsimile: 301-344-2050

February 6, 1998

IN REPLY REFER TO  
**31040/SIT**  
**1300F2**

**Rogers Labs, Inc.**  
**4405 West 259th Terrace**  
**Louisburg, KS 66053**

Attention: Scot D. Rogers

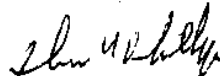
Re: Measurement facility located at above address  
(3 and 10 meter site)

Gentlemen:

Your submission of the description of the subject measurement facility has been reviewed and found to be in compliance with the requirements of Section 2.948 of the FCC Rules. The description has, therefore, been placed on file and the name of your organization added to the Commission's list of facilities whose measurement data will be accepted in conjunction with applications for certification or notification under Parts 15 or 18 of the Commission's Rules. Our list will also indicate that the facility complies with the radiated and AC line conducted test site criteria in ANSI C63.4-1992. Please note that this filing must be updated for any changes made to the facility, and at least every three years the data on file must be certified as current.

Per your request, the above mentioned facility has been also added to our list of those who perform these measurement services for the public on a fee basis. This list is updated monthly and is available on the Laboratory's Public Access Link (PAL) at 301-725-1072, and also on the Internet at the FCC Website [www.fcc.gov/oet/info/database/testsite/](http://www.fcc.gov/oet/info/database/testsite/).

Sincerely,



**Thomas W. Phillips**  
**Electronics Engineer**  
**Customer Service Branch**

ROGERS LABS, INC.  
4405 W. 259th Terrace  
Louisburg, KS 66053  
Phone/Fax: (913) 837-3214

KEN-A-VISION Mfg., Co., Inc.  
MODEL: Wireless Clip Kit  
Test #: 000306 FCCID#: OEV-WIRELESS  
Test to: FCC Parts 2 and 15c (15.249) Page 34 of 34  
CERTIFICATION\KENAVISIONRF Module 03/23/2000