

EXHIBIT 2
MEASUREMENT REPORT

MEASUREMENT REPORT FOLLOWS THIS PAGE

MEASUREMENT REPORT
FCC ID: NZV-LM-3700

EXHIBIT 2

TEST FACILITY

The testing was conducted at the Hyak Laboratories, Inc., three meter open field site located in Spotsylvania, Virginia. A complete description of the site is on file with the FCC Laboratory Division, Ref. 31040/SIT/HYAK.

TEST PROCEDURE

Testing was conducted using ANSI 63.4 (1992) as the measurement procedure.

INSTRUMENTATION

From the list of test equipment; the following instruments were used to conduct the tests:

EMCO 3120 Dipole Antenna Set	S/N 0040
EMCO 3115 Double Ridge Guide Horn	S/N 8903-3114
HP 8563E Spectrum Analyzer	S/N 3416A02224
HP 8596E Spectrum Analyzer	S/N 3235A00144
Compliance Design LISN	S/N 8379584

TEST REPORT

A. DEVICE UNDER TEST

The device is a superregenerative receiver operating under the provisions of Part 15.209 of the FCC rules. The frequency of operation is 418 MHz. nominal.

The device is powered directly from the 115 volt AC line of a residential building. In normal use the receiver module is plugged into an unswitched wall outlet and will have a lamp or other appliance plugged into the receptacle that is integral to the module. The device is activated when a signal is detected from the companion transmitter module (FCC ID: NZV-SM-3720) and the address codes match.

When the device receives an on command, the internal logic circuitry applies trigger pulses to a triac which causes 115VAC to be present at the integral receptacle. The triac will remain in the on state until the device receives an off command or until the building's power fails. If building power is interrupted and then restored, the device will power up with the triac in the off state.

B. MEASUREMENT PROCEDURE : RADIATED EMISSIONS

Transmitter field strength measurements were conducted according to the procedures set out in ANSI C63.4 (1992). The device under test was placed on a reversible rotating turntable 0.8 meters high, centered at 3 meters distant from the measurement antenna. The device was placed in the center of the turntable and tested in the two logical positions as shown in the photographs.

The device was powered by an ONEAC CB1120 powerline signal isolator/conditioner supply located directly under the turntable, connected through slip rings mounted under the turntable base. Measurements were taken with the triac in both the triggered and off states.

The field strength measurements were taken using an HP8596E spectrum analyzer, an EMCO 3121C dipole set and an EMCO 3115 DRG horn. The device was scanned from 30MHz. to 4.2GHz. and all emissions were noted.

At each detected emission frequency, the device was measured by rotating the turntable and adjusting the antenna height over a range of 1 to 4 meters to obtain the maximum output level. This procedure was performed with both horizontal and vertical antenna polarizations with the device in the positions described above.

The readings were taken in quasi-peak mode with the device at rest and were recorded in column 2 on the data sheet. The cohered readings were obtained by directing a 418.025 MHz. unmodulated carrier from an HP8640B signal generator, through an EMCO 3148A log periodic antenna aimed at the device under test. Care was taken to insure that the cohering signal was not masking any of the cohered points radiating from the device. The cohered readings are peak and noted as such on the data sheet

C. PLOTS

The plots for the line conducted measurements were made using an HP8594E spectrum analyzer equipped with a precision frequency reference. Measurements were taken through a Compliance Design 50uH LISN. The LISN was powered from an ONEAC CB1120 powerline signal isolator/conditioner. The spectrum from 450kHz. to 30MHz. was recorded for both lines and then plotted with an HP7475A pen plotter.

RADIATED EMISSIONS			FCC ID: NZV-LM-3700		page 1 of 1		
client Lectronic Solutions			model # LM-3700		project # 623		
device superregenerative receiver				test date 08-27-98			
CFR V47 15.209		antenna dipoles/DRG horn			temp. 30C		
Frequency Radiated MHz.	Q-Peak Reading dBm	Ant Factor dB	Field 1 Intensity uV/m @ 3m	Duty Cycle		Field 2 Intensity uV/m @ 3m	FCC Limit uV/m
				%	-dB		
410.020	-94.01	20.6				48	200
417.178	-89.51	20.7				81	200
418.433	-100.86	20.7				22	200
429.137	-96.28	20.8				38	200
819.886	-118.36	26.8				6	200
1251.538	-110.97	25.7				12	500
The above data taken from quasi-peak readings.							
Cohered data (Cohering signal = 418.029 MHz. unmodulated)							
416.692	* -85.64	20.7				127	200
417.788	* -95.59	20.7				40	200
* peak readings							

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LM-3700 CONDUCTED LINE 1

REF 75.0 dBμV #AT 0 dB

MKR 450 KHZ
26.90 dBμV

TABLE
ΔDL NRM

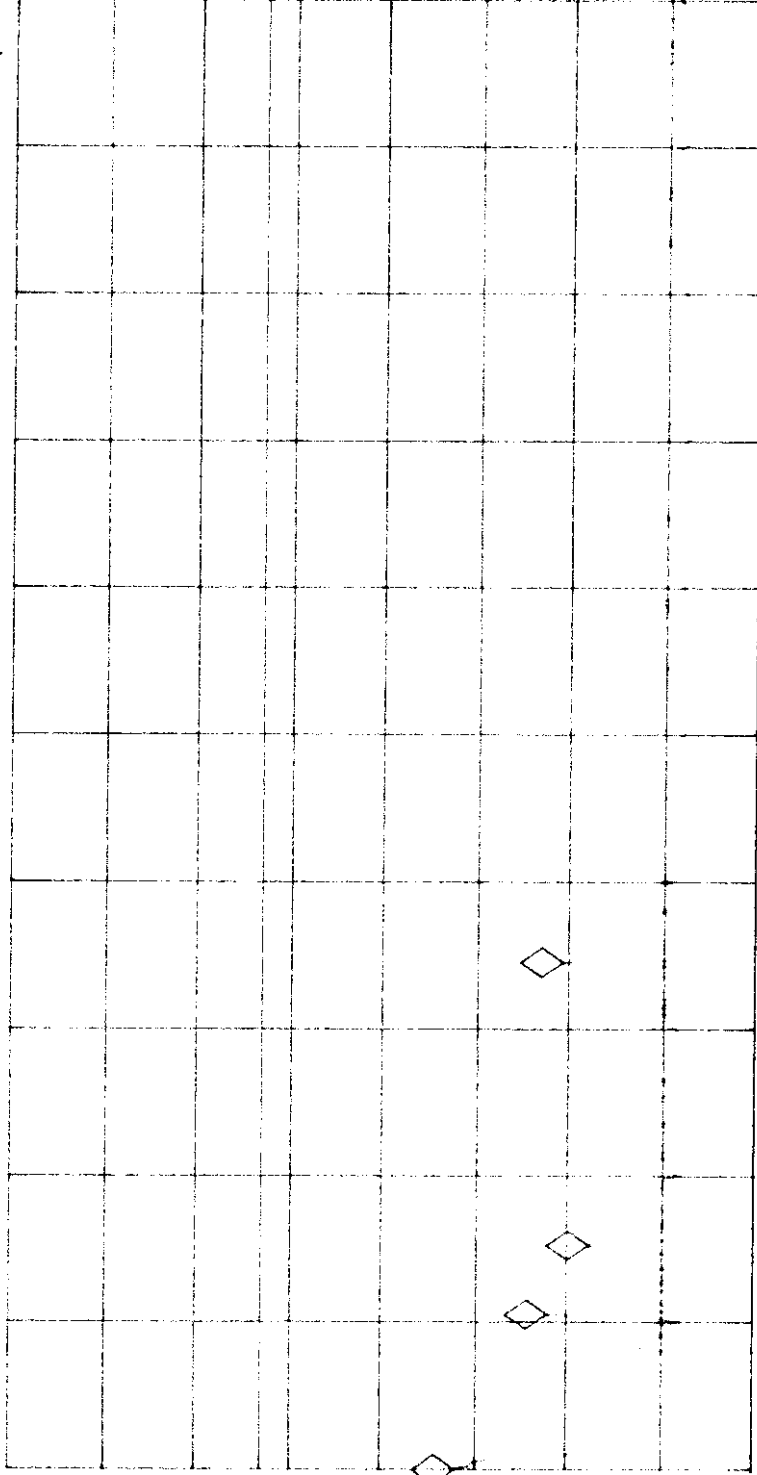
PEAK
LOG
10
dB/

CNT RES
AUTO MAN

DL

48.0

dBμV



Marker 1: 48.0 dBμV

Marker 2: 48.0 dBμV

Marker 3: 48.0 dBμV

Marker 4: 48.0 dBμV

Marker 5: 48.0 dBμV

Frequency: 48.0 KHZ

Frequency: 48.0 KHZ

Frequency: 48.0 KHZ

Frequency: 48.0 KHZ

Frequency: 48.0 KHZ

Amplitude: 48.0 dBμV

Amplitude: 48.0 dBμV

Amplitude: 48.0 dBμV

Amplitude: 48.0 dBμV

Amplitude: 48.0 dBμV

DSP LINE

ON OFF

More
2 of 2

START 450 KHZ

#RES BW 9.0 KHZ

STOP 30.00 MHZ

#SWP 100 sec

VBW 30 KHZ

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LM-3700 CONDUCTED LINE 2

MKR 600 KHZ

REF 75.0 dBμV #AT 0 dB

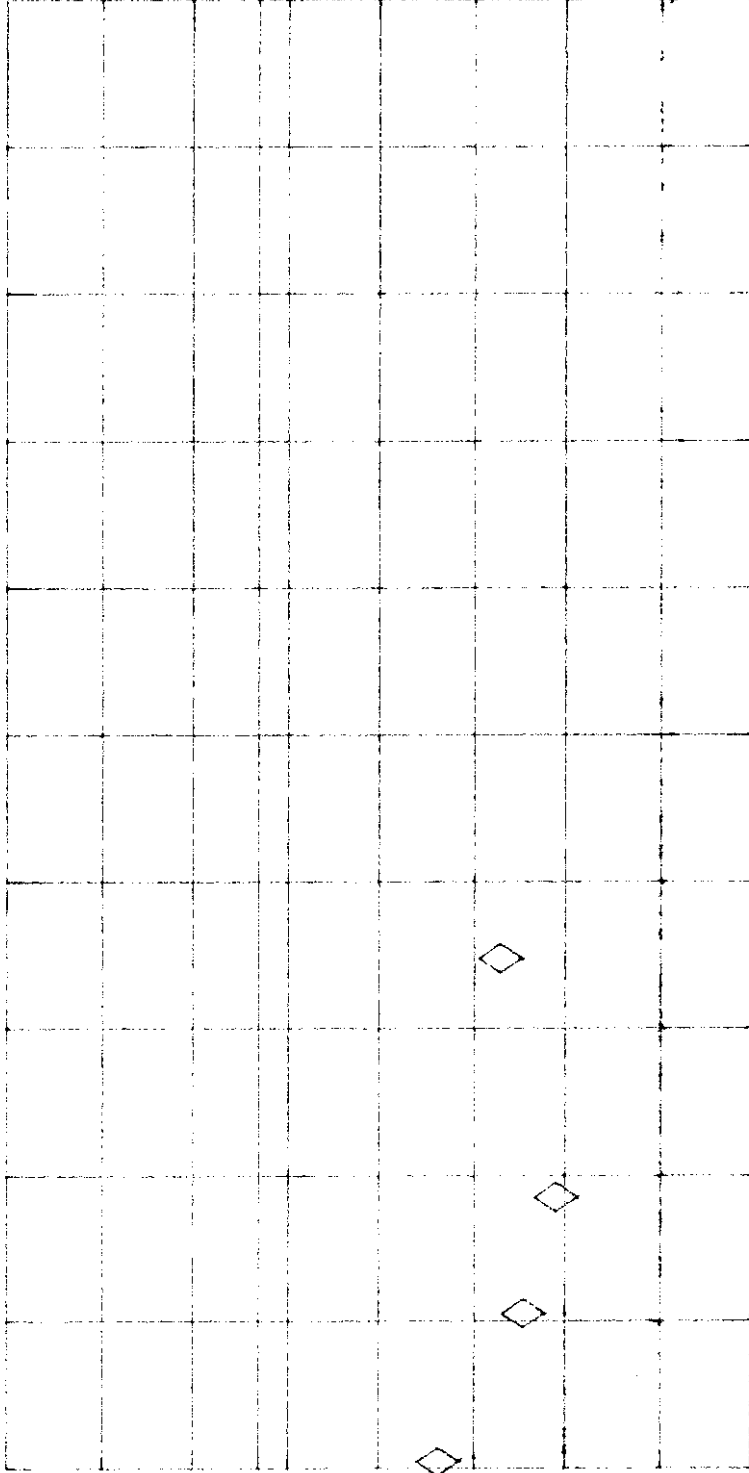
26.31 dBμV

TABLE
ΔDL NRM

PEAK
LOG
10
dB/

CNT RES
AUTO MAN

DL
48.0
dBμV



DSP LINE
ON OFF

More
2 of 2

Marker	Frequency (MHz)	Amplitude (dBμV)	Amplitude (dBm)
1	4.800	48.0	-12.0
2	4.800	48.0	-12.0
3	4.800	48.0	-12.0
4	4.800	48.0	-12.0

START 450 KHZ
#RES BW 9.0 KHZ
STOP 30.00 MHz
#SWP 100 sec
VBW 30 KHZ

EXHIBIT 3
PRODUCT DESCRIPTION

PRODUCT DESCRIPTION FOLLOWS THIS PAGE

PRODUCT DESCRIPTION
FCC ID: NZV-LM-3700

EXHIBIT 3

TYPE OF APPLICATION:	Certification
FCC ID:	NZV-LM-3700
APPLICABLE RULES	15.109
TYPE OF DEVICE:	Super-Regenerative Rec.
APPLICANT:	Lectronic Solutions, Inc.