

Nemko Test Report: 3L0260RUS1Rev1

Applicant: Erchonia Medical
3960 East Palm
Building #9
Mesa, AZ 85215

**Equipment Under Test:
(E.U.T.)** MSM1-RF

In Accordance With: **FCC Part 15, Subpart C, 15.249**
For 900 MHz Transmitters

Tested By: Nemko Dallas Inc.
802 N. Kealy
Lewisville, Texas 75057-3136

Authorized By:



Tom Tidwell, Frontline Manager

Date: 6/30/03

Total Number of Pages: 17

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EQUIPMENT:MSM1-RF

Section 1. Summary Of Test Results

Manufacturer: Erchonia Medical

Model No.: MSM1-RF

Serial No.: None

General: **All measurements are traceable to national standards.**

These tests were conducted on a sample of the equipment for the purpose of demonstrating compliance with FCC Part 15.249. All tests were conducted using measurement procedure ANSI C63.4-1992. Radiated Emissions were made on an open area test site.



New Submission



Production Unit



Class II Permissive Change



Pre-Production Unit

THIS TEST REPORT RELATES ONLY TO THE ITEM(S) TESTED.

THE FOLLOWING DEVIATIONS FROM, ADDITIONS TO, OR EXCLUSIONS FROM THE TEST
SPECIFICATIONS HAVE BEEN MADE.

See " Summary of Test Data".

**NVLAP LAB CODE: 100426-0**

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Summary Of Test Data

NAME OF TEST	PARA. NO.	RESULT
Conducted Emissions	15.207	Complies
Radiated Emissions	15.249	Complies

Section 2. General Equipment Specification

Frequency Range: 909.37 MHz Fixed

Operating Frequency(ies) of Sample: 909.37 MHz

Tunable Bands: N/A

Number of Channels: 1

Channel Spacing: NA

User Frequency Adjustment: None

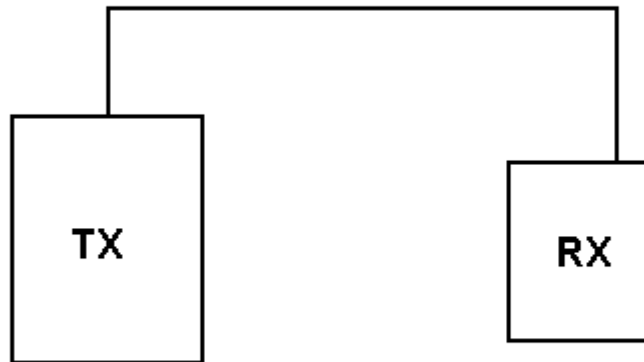
Integral Antenna	Yes	No
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Note: If antenna is not integral to transmitter explain method of attachment and type of unique connector:

Description of Operation

Refer to separate exhibit

System Diagram



Section 3. Powerline Conducted Emissions

NAME OF TEST: Powerline Conducted Emissions	PARA. NO.: 15.207
TESTED BY:	DATE:

Minimum Standard:

Frequency (MHz)	Maximum Powerline Conducted RF Voltage	
	(μ V)	(dB μ V)
0.45 - 30.0	250	48

Test Results: Complies. See attached graph(s).

Measurement Data: See attached graph(s).

Method of Measurement: (Procedure ANSI C63.4-1992)

Measurements were made using a spectrum analyzer with 10 kHz RBW, Peak Detector. Any emissions that are close to the limit are measured using a test receiver with 10 kHz bandwidth, CISPR Quasi-Peak Detector.

Test Data – Powerline Conducted Emissions

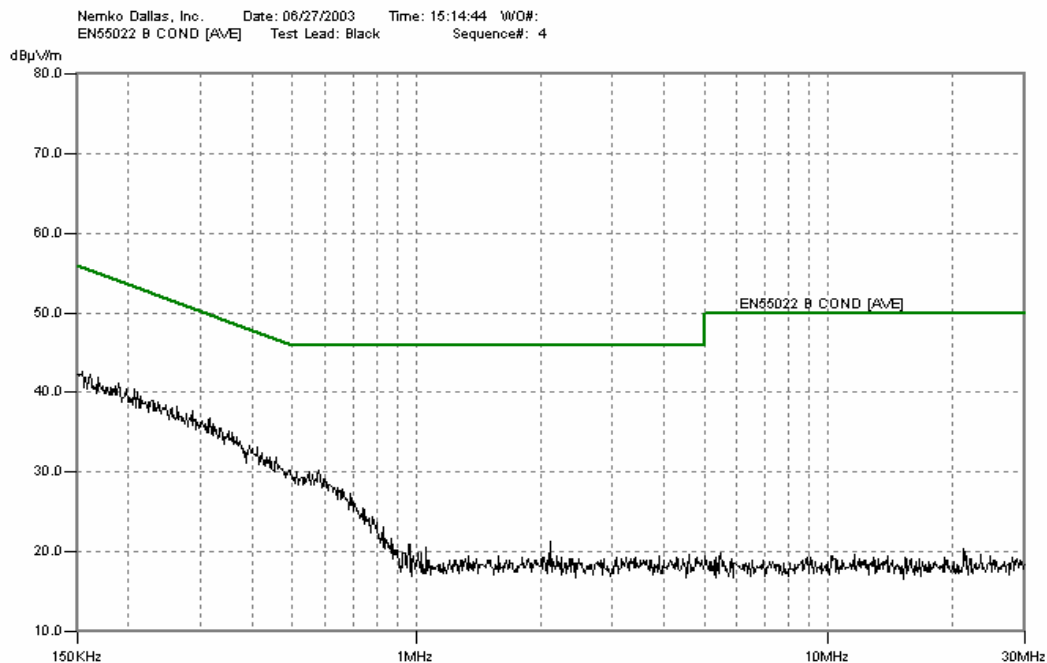


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Data Plot		Powerline Conducted Emissions	
Page <u>1</u> of <u>2</u>		Complete <u>X</u>	
Job No.:	3L0260	Date:	6/27/2003
Specification:	15.207	Temperature(°C):	22
Tested By:	Lance Walker	Relative Humidity(%)	40
E.U.T.:	MSM1-RF		
Configuration:	TABLETOP		
Sample Number:	1		
Location:	Shielded room	RBW:	10 kHz
Detector Type:	Peak	VBW:	10 kHz
Measurement		Distance: <u>na</u> m	
Test Equipment Used			
Antenna:		Directional Coupler:	
Pre-Amp:		Cable #1:	
Filter:		Cable #2:	
Receiver:		Cable #3:	
Attenuator #1:		Cable #4:	
Attenuator #2:		Mixer:	
Additional equipment used:	1188	1555	1019
		1266	1283
Measurement Uncertainty:	+/-1.7 dB		

Notes: Hot line

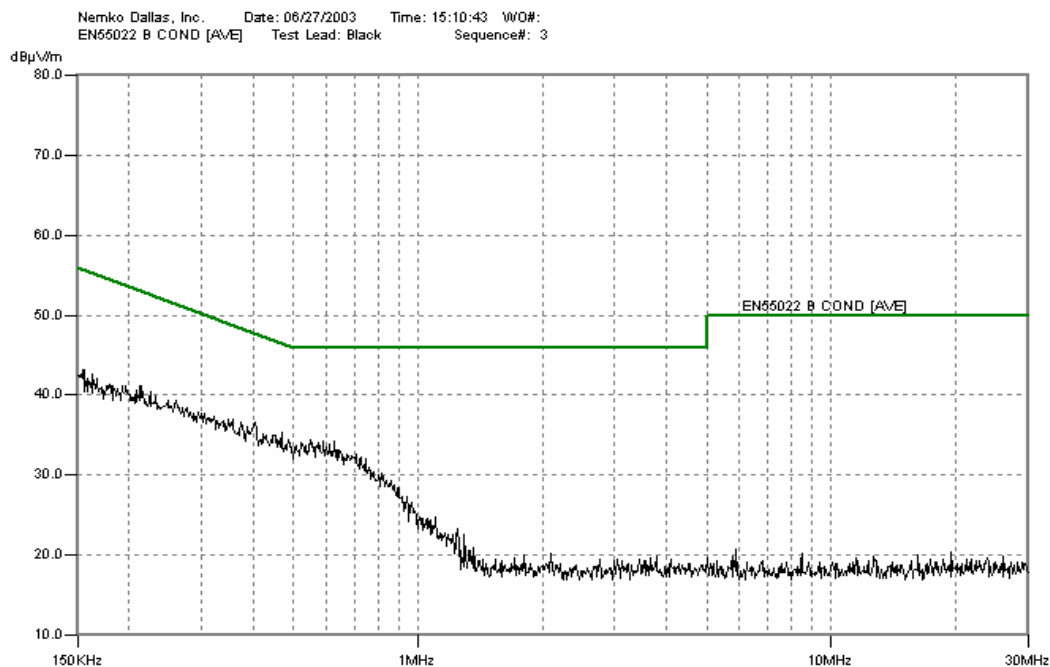
Test Data – Powerline Conducted Emissions



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Nemko Dallas, Inc.

Data Plot		Powerline Conducted Emissions	
Page 2 of 2			
Job No.:	3L0260	Date:	6/27/2003
Specification:	15.207	Temperature(°C):	22
Tested By:	Lance Walker	Relative Humidity(%)	40
E.U.T.:	MSM1-RF		
Configuration:	TABLETOP		



Notes: Neutral side

EQUIPMENT: MSM1-RF

Conducted Photographs (Worst Case Configuration)

SIDE VIEW



FRONT VIEW



Section 4. Radiated Emissions

NAME OF TEST: Radiated Emissions	PARA. NO.: 15.249
TESTED BY: David Light	DATE: 6/27/03

Minimum Standard: Para no. 15.249

(a) The field strengths shall not exceed the following:

Fundamental (MHz)	Field Strength (mV/m)	Field Strength (dB μ V)	Harmonic (mV/m)	Harmonic (dB μ V)
902-928	50	94	0.5	54

(b) Field strength limits are specified at a distance of 3 metres.

(c) 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 limits of 15.209 whichever is the less attenuation.

(d) ...for frequencies above 1000 MHz, the above field strength limits are based on average limits. However, the peak field strength of any emission shall not exceed the maximum permitted average limits specified above by more than 20 dB under any condition of modulation.

Test Results: Complies

Measurement Data: See attached table.

Note: Since the EUT is hand-held, testing was performed in three orthogonal axis to determine the worst-case orientation of the EUT. The data presented represents the worst-case orientation.

Test Data - Radiated Emissions



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Radiated Emissions								
Page <u>1</u> of <u>1</u>								
Job No.:	3L0260		Date: 6/27/2003					
Specification:	15.249		Temperature(°C): 22					
Tested By:	David Light		Relative Humidity(%) 40					
E.U.T.:	MSM1-RF							
Configuration:	Tabletop - Upright (worst configuration)							
Sample Number:	1							
Location:	AC 3		RBW:		1 MHz			
Detector Type:	Peak		VBW:		1 MHz			
Test Equipment Used								
Antenna:	1304		Directional Coupler:		#N/A			
Pre-Amp:	1016		Cable #1:		1484			
Filter:	#N/A		Cable #2:		1485			
Receiver:	1464		Cable #3:		#N/A			
Attenuator #1:	#N/A		Cable #4:		#N/A			
Attenuator #2:	#N/A		Mixer:		#N/A			
Additional equipment used:	760		1508		1983			
Measurement Unc	+/- 3.6 dB							
Frequency (GHz)	Meter Reading (dBuV)	Antenna Factor (dB)	Cable Loss (dB)	Pre-Amp Gain (dB)	Corrected Reading (dBuV/m)	Limit (dBuV/m)	Delta (dB)	Comment
0.9093	55.3	23.8	1.8	0.0	80.9	94	-13.1	Vertical
0.9093	61.5	23.8	1.8	0.0	87.1	94	-6.9	Horizontal
1.82	49.2	26.7	2.8	31.8	46.9	54	-7.1	Horizontal - PEAK
2.73	50	29.1	3.7	32.5	50.3	54	-3.7	Horizontal - PEAK
3.67	45.8	31.7	3.7	31.7	49.5	54	-4.5	Horizontal - PEAK
Notes: Scanned to the 10th harmonic of carrier. No spurious emissions were detected above the noise floor in the VERTICAL polarity.								
Measurements below 1 GHz were made on an OATS								

EQUIPMENT:MSM1-RF

Radiated Photographs (Worst Case Configuration)

FRONT VIEW



REAR VIEW



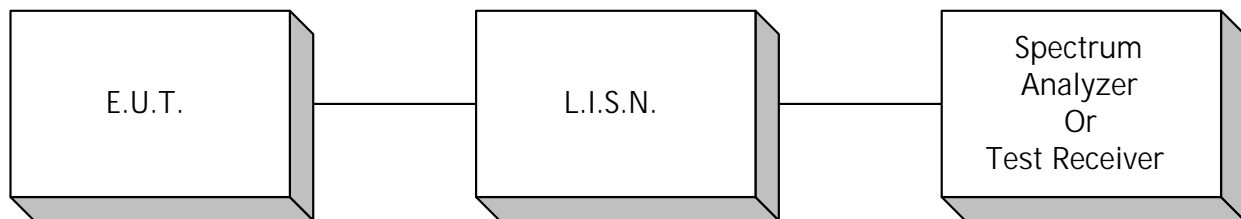
Section 5. Test Equipment List

ID	Description	Manufacturer Model Number	Serial Number	Calibration Date	Calibration Due
1304	HORN ANTENNA	ELECTRO METRICS RGA-60	6151	07/30/01	07/30/03
1484	Cable 2.0-18.0 Ghz	Storm PR90-010-072	N/A	07/15/02	07/15/03
1485	Cable 2.0-18.0 Ghz	Storm PR90-010-216	N/A	07/15/02	07/15/03
1016	Pre-Amp	HEWLETT PACKARD 8449A	2749A00159	07/15/02	07/15/03
760	Antenna biconical	Electro Metrics MFC-25	477	06/05/03	06/05/04
1508	ANTENNA, LP	KTL 3146	1349	06/05/03	06/05/04
1983	CABLE	KTL Site A OATS	N/A	03/28/03	03/28/04
1188	LISN	EMCO 3825/2	1214	04/09/03	04/09/04
758	HIGH PASS FILTER	SOLAR 7930-5.0	197	08/22/02	08/22/03
1019	CABLE, 9.5m	KTL RG223	N/A	01/02/03	01/02/04
1129	CABLE, 9.5m	KTL RG58	N/A	06/18/03	06/18/04
1283	Spectrum analyzer display	Hewlett Packard 85662A	1811A00223	11/19/02	11/19/03

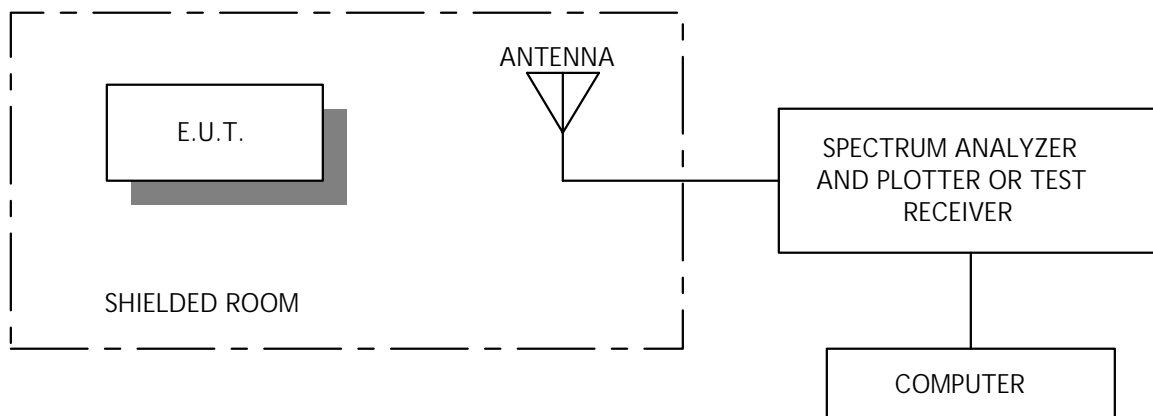
ANNEX A

TEST DIAGRAMS

Conducted Emissions



Radiated Prescan



Test Site For Radiated Emissions

