

DATE: 31 March 2011


I.T.L. (PRODUCT TESTING) LTD.
FCC Radio Test Report
for
Visonic Technologies (1993) Ltd.

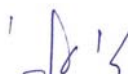
Equipment under test:

Handheld Low Frequency Exciter

5-HLA00125

Written by: 
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Approved by: For/ 
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Approved by: 
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This report relates only to items tested.

TABLE OF CONTENTS

1.	GENERAL INFORMATION-----	4
1.1	Administrative Information.....	4
1.2	List of Accreditations	5
1.3	Product Description	6
1.4	Test Methodology	6
1.5	Test Facility	6
1.6	Measurement Uncertainty	6
2.	SYSTEM TEST CONFIGURATION-----	7
2.1	Justification.....	7
2.2	EUT Exercise Software	7
2.3	Special Accessories	7
2.4	Equipment Modifications	7
2.5	Configuration of Tested System.....	7
3.	TEST SET-UP PHOTO-----	8
4.	FIELD STRENGTH OF FUNDAMENTAL 125 KHZ TRANSMITTER-----	9
4.1	Test Specification	9
4.2	Test Procedure.....	9
4.3	Test Results	9
4.4	Test Instrumentation Used, Field Strength of Fundamental	11
4.1	Field Strength Calculation	11
5.	RADIATED EMISSION, 9 KHZ – 30 MHZ-----	12
5.1	Test Specification	12
5.2	Test Procedure.....	12
5.3	Measured Data.....	12
5.4	Test Instrumentation Used, Radiated Measurements	14
5.5	Field Strength Calculation	14
6.	APPENDIX A - CORRECTION FACTORS-----	15
6.1	Correction factors for CABLE.....	15
6.2	Correction factors for PASSIVE LOOP ANTENNA.....	16
7.	COMPARISON REQUIREMENTS FCC WITH INDUSTRY CANADA-----	17

1. General Information

1.1 Administrative Information

Manufacturer: Visonic Technologies (1993) Ltd.

Manufacturer's Address: Pob 13132
30 Habarzel St.
Tel Aviv 69710
Israel
Tel: +972-03-7681400
Fax: +972-03-7681415

Manufacturer's Representative: Avi Manela

Equipment Under Test (E.U.T): Handheld Low Frequency Exciter

Equipment Model No.: 5-HLA00125

Equipment Serial No.: Not Designated

Date of Receipt of E.U.T: 02.05.10

Start of Test: 02.05.10

End of Test: 02.05.10

Test Laboratory Location: I.T.L (Product Testing) Ltd.
Kfar Bin Nun,
ISRAEL 99780

Test Specifications: FCC Part 15 Subpart C
RSS-310

1.2 List of Accreditations

The EMC laboratory of I.T.L. is accredited by the following bodies:

1. The American Association for Laboratory Accreditation (A2LA) (U.S.A.), Certificate No. 1152.01.
2. The Federal Communications Commission (FCC) (U.S.A.), Registration No. 90715.
3. The Israel Ministry of the Environment (Israel), Registration No. 1104/01.
4. The Voluntary Control Council for Interference by Information Technology Equipment (VCCI) (Japan), Registration Numbers: C-1350, R-1285.
5. Industry Canada (Canada), IC File No.: 46405-4025; Site No. IC 4025B-1.
6. TUV Product Services, England, ASLLAS No. 97201.

I.T.L. Product Testing Ltd. is accredited by the American Association for Laboratory Accreditation (A2LA) and the results shown in this test report have been determined in accordance with I.T.L.'s terms of accreditation unless stated otherwise in the report.

1.3 Product Description

The Elpas Handheld LF Exciter provides on-duty healthcare personnel with an effective, low-cost, easy-to-use tool for performing ad-hoc patient/asset match and association tests, canceling nurse/patient-calls or for triggering entrance or exit monitoring applications.

The Elpas Handheld LF Exciter emits a harmless, low power; sphere shaped magnetic (125KHz) field whenever its large oversized button is engaged. Thus whenever a staff member pushes the exciter's button within a 0 - 30cm (0.0 to 11.8 inches) radius of a patient/asset bearing an Elpas active RFID tag, the exciter will trigger the mobile tag to immediately transmit data messages. The data is instantly detected, interpreted and relayed by the legacy Elpas RF reader infrastructure to the host computer in support of the configured medical application.

Typically worn as a neck lanyard, the Handheld LF Exciter is enclosed in a shower proof, IP-64 water-rated black ABS outer housing. Powered by a single commercially available lithium battery (CR-2430 or equivalent), the device provides approximately three years of service before needing replacement. The exciter is shipped with pre-attached neck lanyard and one lithium battery.

1.4 Test Methodology

Radiated testing was performed according to the procedures in ANSI C63.4: 2003. Radiated testing was performed at an antenna to EUT distance of 3 meters.

1.5 Test Facility

The radiated emissions tests were performed at I.T.L.'s testing facility at Kfar Bin-Nun, Israel. This site is a FCC listed test laboratory (FCC Registration No. 90715, date of listing September 06, 2009).

I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 Measurement Uncertainty

Radiated Emission

Radiated Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) for open site 30-1000MHz:

Expanded Uncertainty (95% Confidence, K=2):

± 5.2 dB

Note: See ITL Procedure No. PM 198.

2. System Test Configuration

2.1 *Justification*

Radiated emission screening was performed in 3 orthogonal orientations. The worst case orientation was the horizontal position.

2.2 *EUT Exercise Software*

The EUT was tested with the standard system software.

2.3 *Special Accessories*

No special accessories were needed.

2.4 *Equipment Modifications*

No modifications were needed in order to achieve compliance

2.5 *Configuration of Tested System*

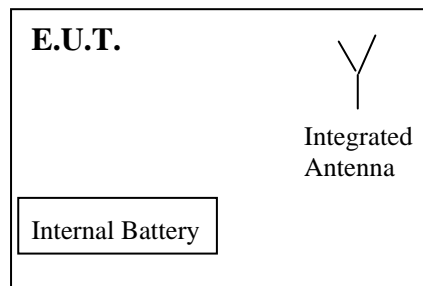


Figure 1. Configuration of Tested System

3. Test Set-up Photo

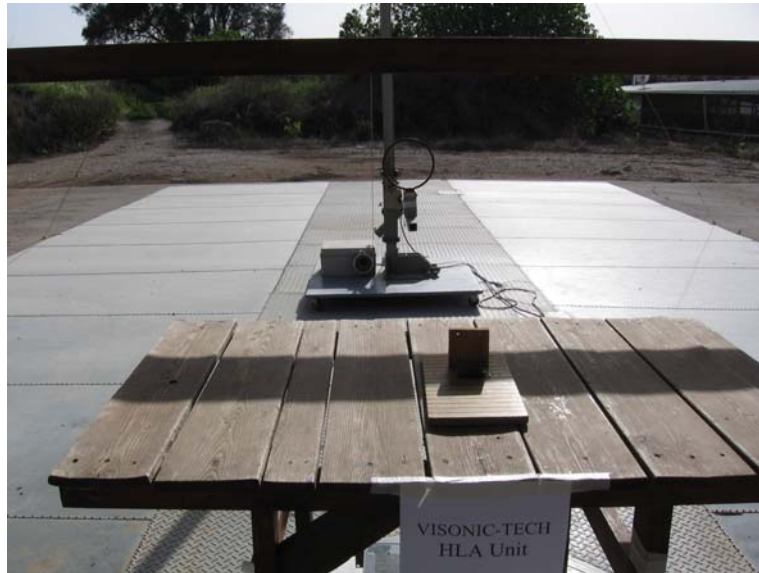


Figure 2. Radiated Emission Test

4. Field Strength of Fundamental 125 kHz Transmitter

4.1 Test Specification

F.C.C., Part 15, Subpart C, Section 15.209

4.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.

The E.U.T. was placed on a non-conductive table, 0.8 meters above the O.A.T.S. ground plane.

The EMI receiver was set to the E.U.T. Fundamental Frequency (125 kHz) and Peak Detection.

The distance between the E.U.T. and test antenna was 3 meters.

The turntable and antenna were adjusted for maximum level reading on the EMI receiver. The loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter.

4.3 Test Results

JUDGEMENT: Passed by 41.44 dB

The EUT met the FCC Part 15, Subpart C, Section 15.209 specification requirements.

The details of the highest emissions are given in Figure 3.

TEST PERSONNEL:

Tester Signature: For/  _____

Date: 07.04.11

Typed/Printed Name: A. Sharabi

Field Strength of Fundamental

E.U.T Description Handheld Low Frequency
Exciter

Model Number 5-HLA00125

Part Number: Not Designated

Frequency (MHz)	Peak Reading (dBμV/m)	Specification (dBμV/m)	Margin (dB)
0.125	64.23	105.67	-41.44

Figure 3. Field Strength of Fundamental

Note: Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

$$L_{im300m} = 25.67 \text{ dB}\mu\text{V/m}$$

$$L_{im3m} = 25.67 \text{ dB}\mu\text{V/m} + 80.0 \text{ dB}\mu\text{V/m} = 105.67 \text{ dB}\mu\text{V/m}$$

4.4 Test Instrumentation Used, Field Strength of Fundamental

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	November 10, 2009	1 year
RF Section	HP	85420E	3705A00248	November 10, 2009	1 year
Passive Loop Antenna	EMCO	6509	9702-1411	June 18, 2009	1 year
Antenna Mast	ARA	AAM-4A	1001	N/A	N/A
Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A

4.1 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS: Field Strength [dB μ v/m]
 RA: Receiver Amplitude [dB μ v]
 AF: Receiving Antenna Correction Factor [dB/m]
 CF: Cable Attenuation Factor [dB]

Example: FS = 30.7 dB μ V (RA) + 14.0 dB (AF) + 0.9 dB (CF) = 45.6 dB μ V

No external pre-amplifiers are used.

Radiated Emission

E.U.T Description Handheld Low
 Frequency Exciter
Type 5-HLA00125
Serial Number: Not Designated

Specification: FCC Part 15, Subpart C

Antenna: 3 meters distance

Frequency range: 9 kHz to 30 MHz

Detectors: Peak

Frequency (MHz)	Peak Reading (dB μ V/m)	Average Reading (dB μ V/m)	Average Specification (dB μ V/m)	Margin (dB)
0.250	55.2	49.0	99.7	-50.7
0.375	55.2	48.8	96.1	-47.3

Figure 4. Radiated Emission. Detectors: Peak, Quasi-peak

Note: Margin refers to the test results obtained minus specified requirement; thus a positive number indicates failure, and a negative result indicates that the product passes the test.

5.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	November 10, 2009	1 year
RF Section	HP	85420E	3705A00248	November 10, 2009	1 year
Passive Loop Antenna	EMCO	6509	9702-1411	June 18, 2009	1 year
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Turntable	ARA	ART-1001/4	1001	N/A	N/A
Mast & Table Controller	ARA	ACU-2/5	1001	N/A	N/A

5.5 Field Strength Calculation

The field strength is calculated directly by the EMI Receiver software, and a "Correction Factors" data disk, using the following equation:

$$FS = RA + AF + CF$$

FS: Field Strength [dB μ v/m]

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CF: Cable Attenuation Factor [dB]

Example: FS = 30.7 dB μ V (RA) + 14.0 dB (AF) + 0.9 dB (CF) = 45.6 dB μ V

No external pre-amplifiers are used.

6. APPENDIX A - CORRECTION FACTORS

6.1 Correction factors for CABLE from EMI receiver to test antenna at 3 meter range.

FREQUENCY (MHz)	CORRECTION FACTOR (dB)	FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.3	1200.0	7.3
20.0	0.6	1400.0	7.8
30.0	0.8	1600.0	8.4
40.0	0.9	1800.0	9.1
50.0	1.1	2000.0	9.9
60.0	1.2	2300.0	11.2
70.0	1.3	2600.0	12.2
80.0	1.4	2900.0	13.0
90.0	1.6		
100.0	1.7		
150.0	2.0		
200.0	2.3		
250.0	2.7		
300.0	3.1		
350.0	3.4		
400.0	3.7		
450.0	4.0		
500.0	4.3		
600.0	4.7		
700.0	5.3		
800.0	5.9		
900.0	6.3		
1000.0	6.7		

NOTES:

1. The cable type is RG-214.
2. The overall length of the cable is 27 meters.
3. The above data is located in file 27MO3MO.CBL on the disk marked "Radiated Emission Tests EMI Receiver".

6.2 Correction factors for PASSIVE LOOP ANTENNA

Model 6509

S/N 9702-1411

FREQUENCY (MHz)	Magnetic Antenna Factor (dB μ V/m)	Electric Antenna Factor (dB μ V/m)
0.05	99.9	101.1
0.08	92.5	93.9
0.35	86.9	88.2
0.5	81.9	83.1
0.9	84.6	83.2
2.0	84.0	85.3
10.0	83.1	84.5

7. Comparison requirements FCC with Industry Canada

FCC Specification	According FCC Standard	IC Standard
Radiated Emission	FCC Part 15.209	RSS310 Issue 3 Clause 3.7