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DATE: 21 January 2014

I.T.L. (PRODUCT TESTING) LTD.

FCC Radio Test Report

for

Visonic Ltd.

Equipment under test:

Wireless Magnetic Contact Detector

MCT-302 3V

Written by: _____

R. Pinchuck, Documentation

Approved by: _____

A. Sharabi, Test Engineer

Approved by: _____

I. Raz, EMC Laboratory Manager

Measurement/Technical Report for
Visonic Ltd.

Wireless Magnetic Contact Detector

MCT-302 3V

FCC ID: GSAMCT3023V

IC ID: 1467A-MCT3023V

This report concerns: Original Grant:
Class I change:
Class II change: X

Equipment type: Part 15 Security/Remote Control Transceiver

Limits used: 47CFR15 Section 15.231 (a-d)

Measurement procedure used is ANSI C63.4-2003.

Application for Certification
prepared by:
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Applicant for this device:
(different from "prepared by")
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1. General Information

1.1 Administrative Information

Manufacturer:	Visonic Ltd.
Manufacturer's Address:	24 Habarazel St., Tel-Aviv, 69710 Israel Tel: +972-3-645-6789 Fax: +972-3-645-6788
Manufacturer's Representative:	Arick Elshtein
Equipment Under Test (E.U.T):	Wireless Magnetic Contact Detector
Equipment Model No.:	MCT-302 3V
Equipment Serial No.:	Not Designated
Date of Receipt of E.U.T:	15.01.14
Start of Test:	15.01.14
End of Test:	16.01.14
Test Laboratory Location:	I.T.L (Product Testing) Ltd. Kfar Bin Nun, ISRAEL 99780
Test Specifications:	FCC Part 15 Subpart C RSS-210, Issue 8, 2010

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.

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

MCT-302 is a fully supervised PowerCode™ magnetic contact transmitter, designed primarily for protecting doors and windows using a built-in magnetic contact that operates in conjunction with a magnet to detect the opening and closure of a door or window. This highly reliable top-performance wireless device is easy to install and operate in a wide range of residential and commercial environments.

An additional hard-wired, end-of-line (EOL) protected input can be used, with normally open (NO) and normally closed (NC) pushbuttons, sensors, contacts, switches and other detection devices, for a variety of security and control applications. The **MCT-302 T** offers an additional back tamper switch for detecting removal of the device from its place to comply with the latest European EN standards requirements.

When activated, the magnetic contact and the auxiliary input initiate an individual 24-bit PowerCode ID message, which identifies it to the target receiver as a separate transmitter. Each ID code is randomly selected from 16 million possible combinations, and is therefore unique and virtually impossible to accidentally reproduce.

A smart anti-collision algorithm prevents signal jamming by simultaneous transmission from multiple devices. Periodic transmission of supervision signals is used to confirm system connectivity at all times.

These unique top quality devices are available in several optional frequencies in compliance with European, U.S. and other international standards. Each transmitter is powered by a standard long-life lithium battery, which is constantly monitored, with automatic reporting to the receiver when the battery needs to be replaced.

1.4 Test Methodology

Both conducted and radiated testing were 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 3, 2009).
I.T.L.'s EMC Laboratory is also accredited by A2LA, certificate No. 1152.01.

1.6 Measurement Uncertainty

Conducted Emission

Conducted Emission (CISPR 11, EN 55011, CISPR 22, EN 55022, ANSI C63.4) 0.15 – 30 MHz:

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

± 3.44 dB

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):

± 4.96 dB

2. System Test Configuration

2.1 Justification

The product was originally authorized for FCC certification under
FCC ID: GSAMCT3023V and IC Certification under IC ID: 1467A-MCT3023V.

The Class II Permissive change to the original product is as follows:

1. Modified the RF by changing the SAW resonator on the RF board from:
   Manufacturer: Murata, Model Number : SARCC315M00KXL0R12
   to
   Manufacturer: RFM, Model: RO3073E-1 13.

2.2 EUT Exercise Software

No EUT exercise software was used.

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

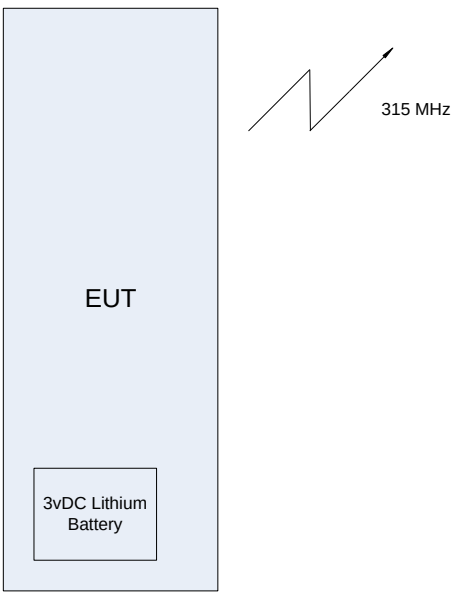

Figure 1. Configuration of Tested System

3. Conducted and Radiated Measurement Test Set-up Photo

Figure 2. Radiated Emission Test

Figure 3. Radiated Emission Test

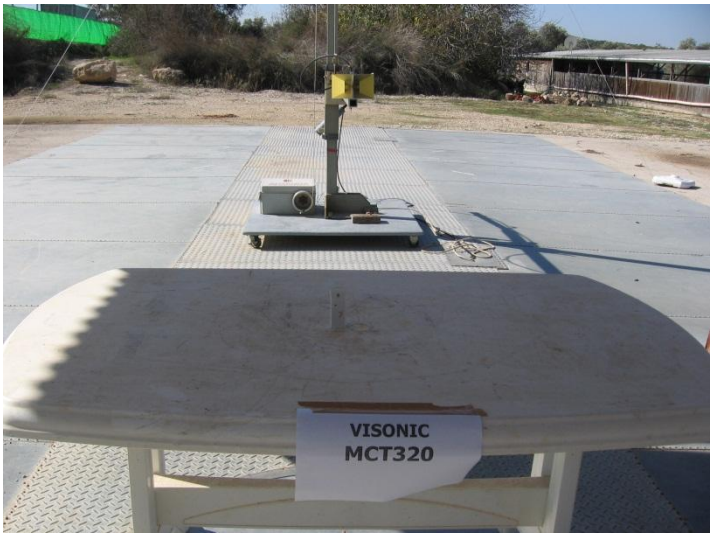

Figure 4. Radiated Emission Test

Figure 5. Radiated Emission Test

4. Average Factor Calculation

1. Transmission pulse duration = N/A
2. Transmission pulse period = N/A
3. Burst duration = >100msec
4. Time between bursts >100ms
5. $$\text{Average Factor} = 20\log\left[\frac{\text{Pulse duration}}{\text{Pulse period}} \times \frac{\text{burst duration}}{100\text{msec}} \times \text{Num of burst within } 100\text{msec}\right]$$

$$\text{Average Factor} = 20\log[1] = 0dB$$

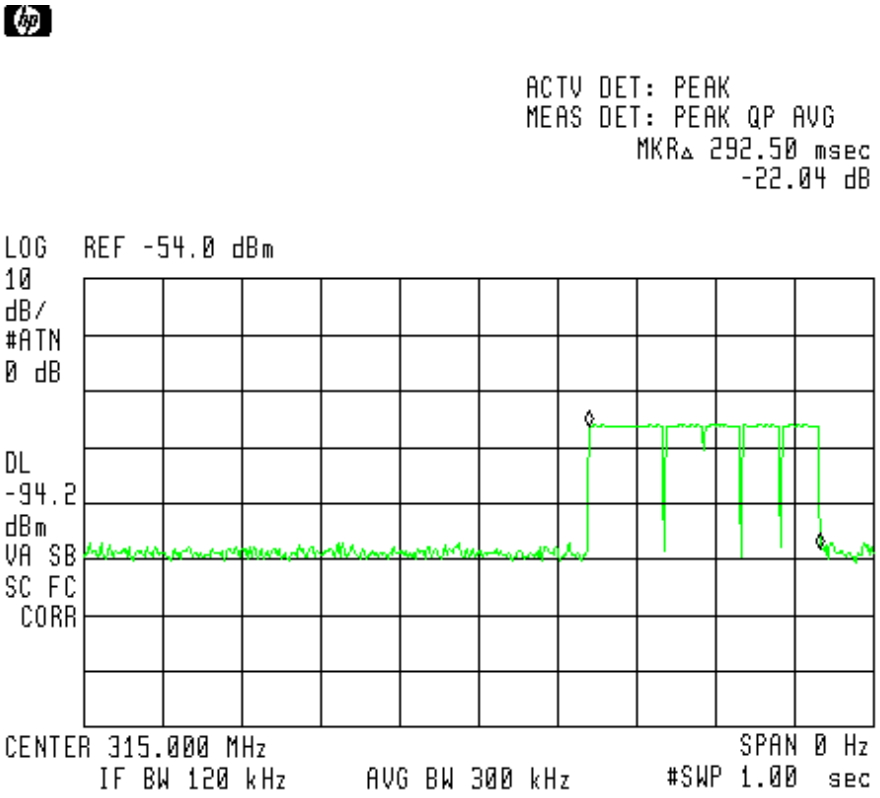

Figure 6. Burst duration = 292.5msec

4.1 Test Instrumentation Used

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Antenna Bioconical	EMCO	3104	2606	August 30, 2013	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	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

Figure 7 Test Equipment Used

5. Periodic Operation

5.1 Specification

F.C.C., Part 15, Subpart C, Section 15.231(a)

5.2 Requirements

Requirement	Rationale	Verdict
Continuous transmissions are not permitted.	N/A	Complies
A manually operated transmitter shall be deactivated within not more than 5 seconds after releasing the switch.	N/A	Complies
An automatically operated transmitter shall cease operation within 5 seconds after activation.		Complies
Periodic transmissions at regular predetermined intervals are not permitted.	N/A	Complies
Polling or supervised transmissions to determine system integrity of transmitter used in security or safety applications shall not exceed more than 2 seconds per hour.	See plots in Figure 8 and Figure 9	Complies

5.3 Results

JUDGEMENT: Passed

The EUT met the FCC Part 15, Subpart C, Section 15.231(a) specification requirements.

TEST PERSONNEL:

Tester Signature:  Date: 04.02.14

Typed/Printed Name: A. Sharabi

Periodic Operation

E.U.T Description	Wireless Magnetic Contact Detector
Type	MCT-302 3V
Serial Number:	Not Designated

Specification: F.C.C., Part 15, Subpart C, 15.231(a)

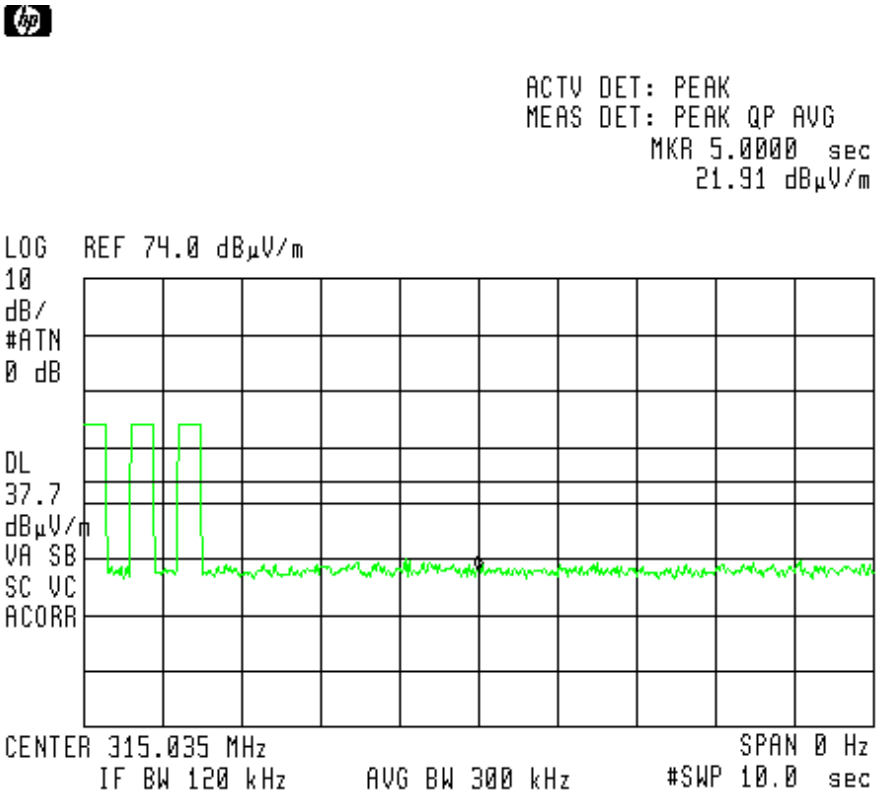

Figure 8. Automatically operated transmitter – TAMPER OFF/ON

Periodic Operation

E.U.T Description	Wireless Magnetic Contact Detector
Type	MCT-302 3V
Serial Number:	Not Designated

Specification: F.C.C., Part 15, Subpart C, 15.231(a)

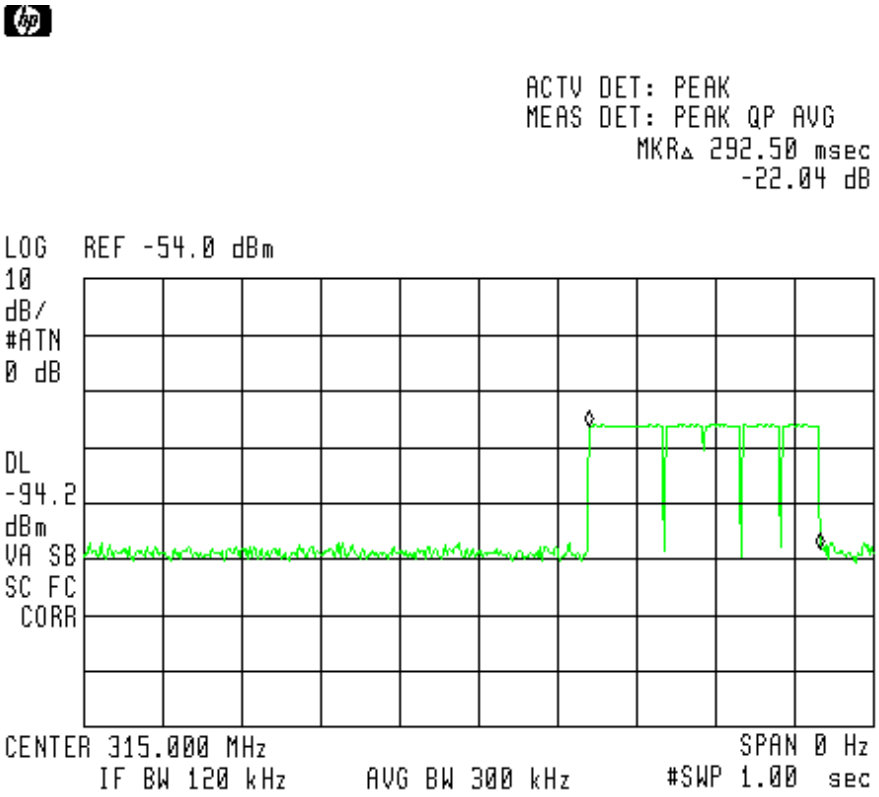

Figure 9. System Integrity Pulse Width Within 1 Hour < 2SEC

5.4 Test Instrumentation Used; Periodic Operation

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	February 26, 2013	1 Year
RF Section	HP	85420E	3705A00248	February 26, 2013	1 year

Figure 10 Test Equipment Used

6. Field Strength of Fundamental

6.1 Test Specification

F.C.C., Part 15, Subpart C, Section 15.231(b)

6.2 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 and Peak Detection.
The turntable and antenna mast were adjusted for maximum level reading on the EMI receiver.
The measurement was performed for vertical and horizontal polarizations of the test antenna.

The average result is:

Peak Level(dBµV/m) + E.U.T. Duty Cycle Factor, in 100msec time window (dB)

6.3 Measured Data

JUDGEMENT: Passed by 6.30 dB

The EUT met the FCC Part 15, Subpart C, Section 15.231(b) specification requirements.

The details of the highest emissions are given in Figure 11 to Figure 13.

TEST PERSONNEL:

Tester Signature: _____ Date: 04.02.14

Typed/Printed Name: A. Sharabi

Field Strength of Fundamental

E.U.T Description	Wireless Magnetic Contact Detector
Type	MCT-302 3V
Serial Number:	Not Designated

Specification: F.C.C., Part 15, Subpart C, 15.231(b)

Antenna Polarization: Horizontal/Vertical

Test Distance: 3 meters Detector: Peak

Freq. (MHz)	Pol. V/H	Peak Reading (dBµV/m)	Average Factor (dB)	AVG Result (dBµV/m)	AVG Specification (dBµV/m)	Margin (dB)
315.0350	H	68.46	0	68.46	75.62	-7.16
315.0350	V	69.32	0	69.32	75.62	-6.30

Figure 11. Field Strength of Fundamental. Antenna Polarization: HORIZONTAL/VERTICAL. Detector: Peak

Notes:

1. 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.
2. "Peak Reading." (dBµV/m) included the "Correction Factors".
3. "Correction Factors" (dB) = Test Antenna Correction Factor(dB) + Cable Loss.
4. "Average Result" (dBµV/m)=Peak Reading (dBµV/m)+D.C.F. (dB)

Field Strength of Fundamental

E.U.T Description	Wireless Magnetic Contact Detector
Type	MCT-302 3V
Serial Number:	Not Designated

Specification: F.C.C., Part 15, Subpart C, 15.231(b)

Antenna Polarization: Horizontal

Test Distance: 3 meters Detector: Peak

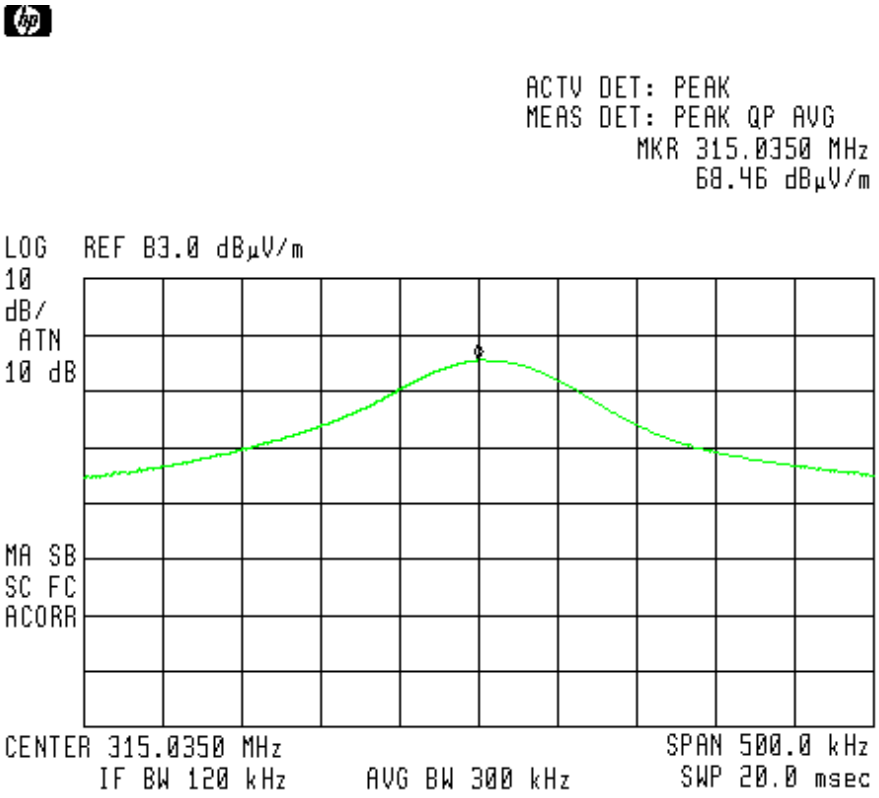

Figure 12. Field Strength of Fundamental. Antenna Polarization: HORIZONTAL. Detector: Peak

Field Strength of Fundamental

E.U.T Description	Wireless Magnetic Contact Detector
Type	MCT-302 3V
Serial Number:	Not Designated

Specification: F.C.C., Part 15, Subpart C, 15.231(b)

Antenna Polarization: Vertical

Test Distance: 3 meters Detector: Peak

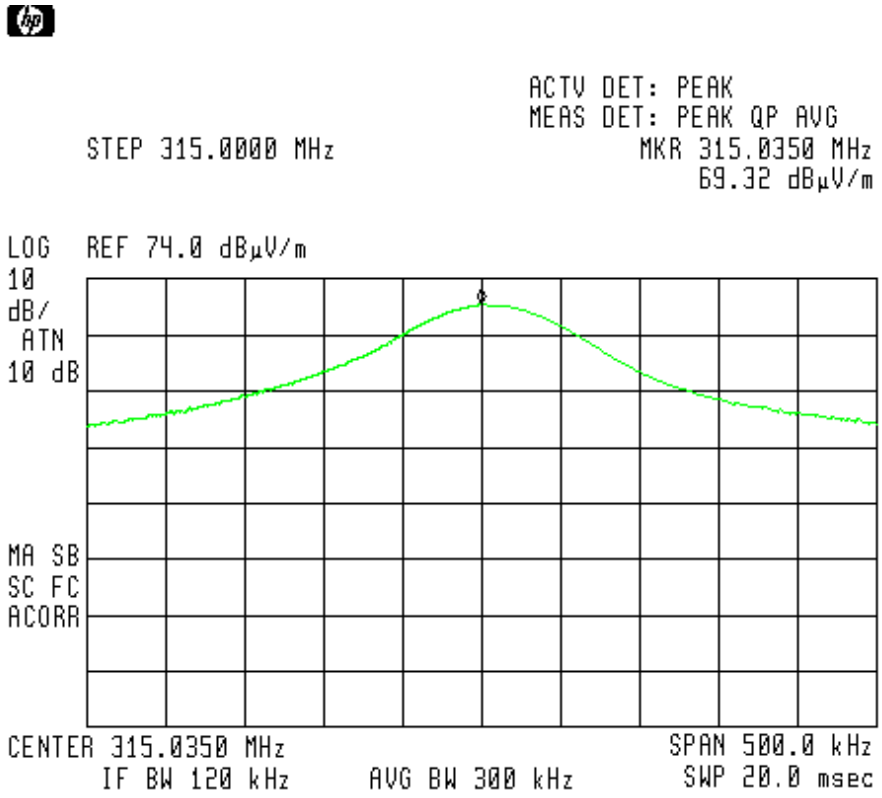

Figure 13. Field Strength of Fundamental. Antenna Polarization: VERTICAL. Detector: Peak

6.4 Test Instrumentation Used, Field Strength of Fundamental

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	February 26, 2013	1 year
RF Section	HP	85420E	3705A00248	February 26, 2013	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	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
Printer	HP	LaserJet 2200	JPKGC19982	N/A	N/A

Figure 14 Test Equipment Used

7. Radiated Emission, 9 kHz – 30 MHz

7.1 Test Specification

9 kHz-30 MHz, FCC, Part 15, Subpart C, Section 209

7.2 Test Procedure

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

A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in Figure 3.1.

The frequency range 9 kHz-30 MHz was scanned.

The emissions were measured using a computerized EMI receiver complying with CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 9 kHz-30MHz, the loop antenna was rotated on its vertical axis. The antenna height (center of loop) was 1 meter at a distance of 3 meters.

The E.U.T. was operated at the frequency of 315 MHz. This frequency was measured using a peak detector.

7.3 Measured Data

JUDGEMENT: Passed

The EUT was tested and it met the requirements of the FCC Part 15, Subpart C specification.

No signals were detected in the frequency range of 9 kHz – 30 MHz.

TEST PERSONNEL:

Tester Signature: _____ Date: 04.02.14

Typed/Printed Name: A. Sharabi

7.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	February 26, 2013	1 year
RF Section	HP	85420E	3705A00248	February 26, 2013	1 year
Active Loop Antenna	EMCO	6502	9506-2950	April 11, 2013	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

Figure 15 Test Equipment Used

7.5 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 [dBµv/m]
RA: Receiver Amplitude [dBµv]
AF: Receiving Antenna Correction Factor [dB/m]
CF: Cable Attenuation Factor [dB]

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

No external pre-amplifiers are used.

8. Radiated Emission 30 MHz - 4000MHZ

8.1 Test Specification

30 - 4000 MHz, F.C.C., Part 15, Subpart C

8.2 Test Procedure

The E.U.T. operation mode and test set-up are as described in Section 3.
See Section 3.1 Justification of the System Test Configuration concerning the E.U.T. orientation for this test.
A preliminary measurement to characterize the E.U.T was performed inside the shielded room at a distance of 3 meters, using peak detection mode and broadband antennas. The preliminary measurements produced a list of the highest emissions. The E.U.T was then transferred to the open site, and placed on a remote-controlled turntable. The E.U.T was placed on a non-metallic table, 0.8 meters above the ground. The configuration tested is shown in *Figure 1*.The signals from the list of the highest emissions were verified and the list was updated accordingly.
The levels of the emissions within the frequency ranges of the restricted bands (Section 15.205 of FCC Part 15) were compared to the limits of the table in Section 15.209 (a), General Requirements.

The emissions were measured using a computerized EMI receiver complying with CISPR 16 requirements. The specification limits and applicable correction factors are loaded to the receiver via a 3.5" floppy disk.

In the frequency range 2.9 – 4.0 GHz, a spectrum analyzer including a low noise amplifier was used. The test distance was 3 meters. During peak measurements, the I.F. bandwidth was 1 MHz, and video bandwidth 3 MHz. During average measurements, the I.F. bandwidth was 1 MHz and video bandwidth was 100 Hz.

The readings were maximized by adjusting the antenna height between 1-4 meters, the turntable azimuth between 0-360°, and the antenna polarization. Verification of the E.U.T emissions was based on the following methods: turning the E.U.T on and off; using a frequency span less than 10 MHz; observation of the signal level during turntable rotation. (Background noise is not affected by the rotation of the E.U.T.)

The emissions were measured at a distance of 3 meters.

8.3 Test Data

JUDGEMENT: Passed by 10.5 dB

The EUT met the requirements of the F.C.C. Part 15, Subpart C specification.

The margin between the emission level and the specification limit was 10.5 dB in the worst case at the frequency of 945.0 MHz, vertical polarization.

TEST PERSONNEL:

Tester Signature: _____ Date: 04.02.14

Typed/Printed Name: A. Sharabi

Radiated Emission

E.U.T Description Wireless Magnetic Contact Detector
Type MCT-302 3V
Serial Number: Not Designated

Specification: FCC Part 15, Subpart C

Antenna Polarization: Horizontal/Vertical Frequency range: 30 MHz to 4000MHz
Antenna: 3 meters distance Detectors: Peak, Quasi-peak

Frequency (MHz)	**Antenna Polarity** (H/V)	**Peak Reading** (dBµV/m)	**Average Factor** (dBµV/m)	**Average Result** dBµV/m)	**Average Specification** (dBµV/m)	**Margin** (dB)
630.0	H	38.5	0	38.5	55.6	-17.1
630.0	V	40.7	0	40.7	55.6	-14.9
945.0	H	44.7	0	44.7	55.6	-10.9
945.0	V	45.1	0	45.1	55.6	-10.5

Figure 16. Radiated Emission. Antenna Polarization: VERTICAL. Detectors: Peak, Quasi-peak

Notes:

1. 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.
2. "Peak Reading." (dBµV/m) included the "Correction Factors".
3. "Correction Factors" (dB) = Test Antenna Correction Factor(dB) + Cable Loss.
4. "Average Result" (dBµV/m)=Peak Reading (dBµV/m)+ Average Factor (dB)

8.4 Test Instrumentation Used, Radiated Measurements

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	February 26, 2013	1 year
RF Section	HP	85420E	3705A00248	February 26, 2013	1 year
Low Noise Amplifier	DBS MICROWAVE	LNA-DBS-0411N313	013	August 21, 2013	1 Year
Spectrum Analyzer	HP	8592L	3826A01204	February 28, 2013	1 Year
Antenna Bioconical	EMCO	3104	2606	August 30, 2013	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	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
Printer	HP	LaserJet 2200	JPKGC19982	N/A	N/A

Figure 17 Test Equipment Used

9. 20dB Bandwidth

9.1 Test procedure

The transmitter unit operated with normal modulation. The spectrum analyzer was set to 100 kHz resolution BW and center frequency of the transmitter fundamental. The spectrum bandwidth of the transmitter unit was measured and recorded. The BW was measured at 20 dBc points.

The EUT was set up as shown in *Figure 1*, and its proper operation was checked. The transmitter occupied bandwidth was measured with the EMI receiver as frequency delta between reference points on the modulation envelope.

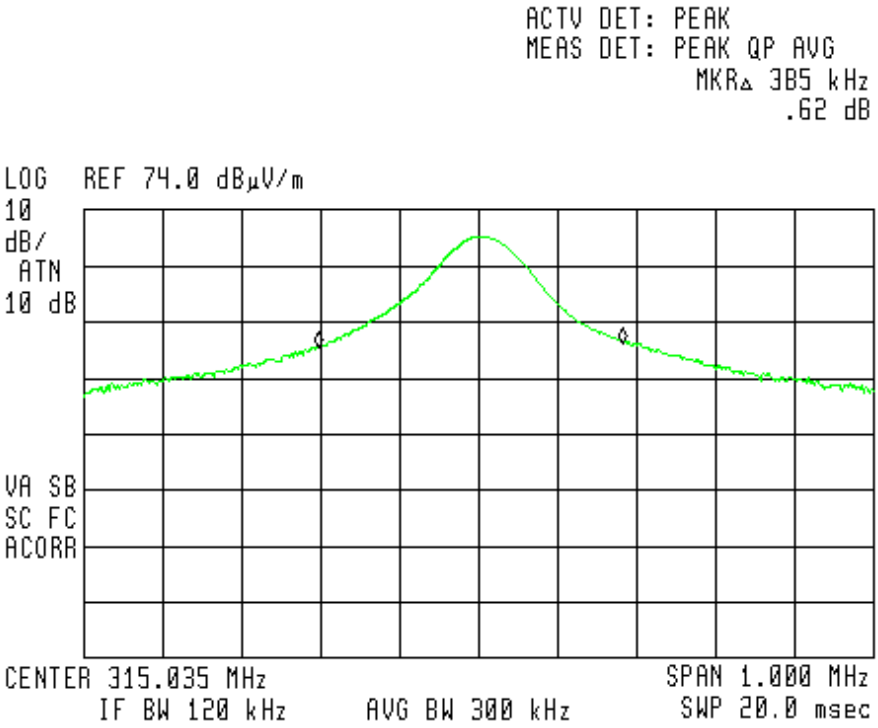

Figure 18 – 20dB Bandwidth

9.2 Results table

E.U.T Description: Wireless Magnetic Contact Detector
Model: MCT-302 3V
Serial Number: Not Designated
Specification: F.C.C. Part 15, Subpart C: (15.231(c))

Bandwidth Reading (kHz)	Specification (kHz)	Margin (kHz)
385	787	-402

Figure 19 20 dB Bandwidth

JUDGEMENT: Passed by 402 kHz

TEST PERSONNEL:
Tester Signature: _____ Date: 04.02.14
Typed/Printed Name: A. Sharabi

(1) 0.25% of the E.U.T. fundamental frequency, Section 15.231(c).

9.3 Test Instrumentation Used; 20 dB Bandwidth

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	February 26, 2013	1 year
RF Section	HP	85420E	3705A00248	February 26, 2013	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	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
Printer	HP	LaserJet 2200	JPKGC19982	N/A	N/A

Figure 20 Test Equipment Used

10. 26dB Bandwidth

10.1 Test procedure

The transmitter unit operated with normal modulation. The spectrum analyzer was set to 100 kHz resolution BW and center frequency of the transmitter fundamental. The spectrum bandwidth of the transmitter unit was measured and recorded. The BW was measured at 26 dBc points.

The EUT was set up as shown in *Figure 1*, and its proper operation was checked. The transmitter occupied bandwidth was measured with the EMI receiver as frequency delta between reference points on the modulation envelope.

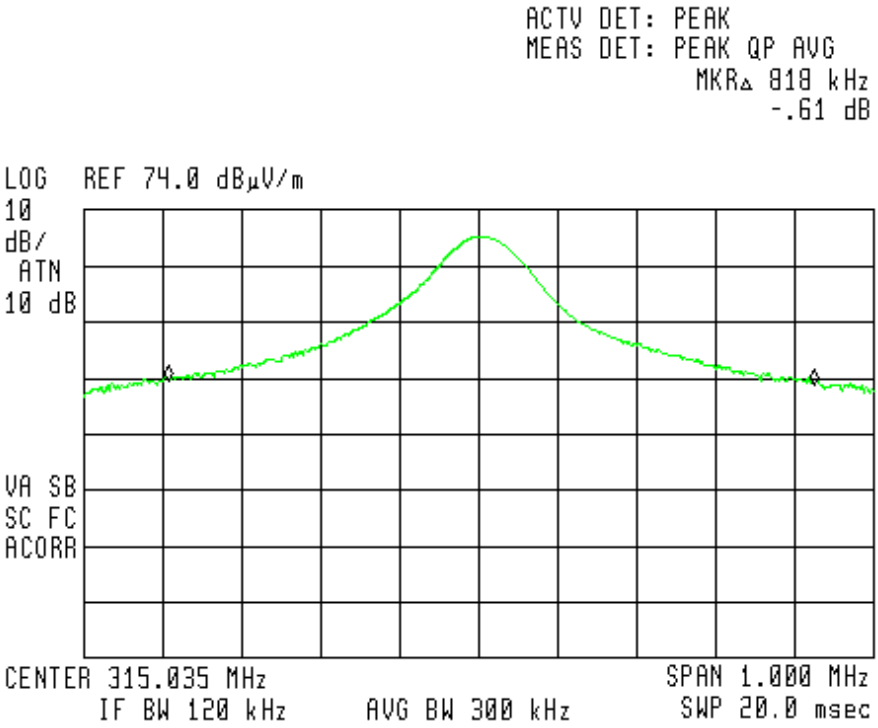

Figure 21 – 26dB Bandwidth

10.2 Results table

E.U.T Description: Wireless Magnetic Contact Detector
Model: MCT-302 3V
Serial Number: Not Designated
Specification: F.C.C. Part 15, Subpart C: (15.231(c))

Bandwidth Reading (kHz)	Specification (1) (kHz)
818	N/A

Figure 22 26 dB Bandwidth

JUDGEMENT: N/A

TEST PERSONNEL:

Tester Signature: _____ Date: 04.02.14

Typed/Printed Name: A. Sharabi

10.3 Test Equipment Used; 26 dB Bandwidth

Instrument	Manufacturer	Model	Serial Number	Calibration	Period
EMI Receiver	HP	85422E	3906A00276	February 26, 2013	1 year
RF Section	HP	85420E	3705A00248	February 26, 2013	1 year
Antenna Log Periodic	ARA	LPD-2010/A	1038	April 2, 2013	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
Printer	HP	LaserJet 2200	JPKGC19982	N/A	N/A

Figure 23 Test Equipment Used

11. APPENDIX A - CORRECTION FACTORS

11.1 Correction factors for CABLE

from EMI receiver to test antenna at 3 meter range.

FREQUENCY (MHz)	CORRECTION FACTOR (dB)
10.0	0.3
20.0	0.6
30.0	0.8
40.0	0.9
50.0	1.1
60.0	1.2
70.0	1.3
80.0	1.4
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

FREQUENCY (MHz)	CORRECTION FACTOR (dB)
1200.0	7.3
1400.0	7.8
1600.0	8.4
1800.0	9.1
2000.0	9.9
2300.0	11.2
2600.0	12.2
2900.0	13.0

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".*

11.2 Correction factors for CABLE

from EMI receiver to test antenna at 3 meter range.

FREQUENCY (GHz)	CORRECTION FACTOR (dB)
1.0	1.2
2.0	1.6
3.0	2.0
4.0	2.4
5.0	3.0
6.0	3.4
7.0	3.8
8.0	4.2
9.0	4.6
10.0	5.0
12.0	5.8

NOTES:

1. The cable type is RG-8.

2. The overall length of the cable is 10 meters.

11.3 Correction factors for CABLE

from spectrum analyzer to test antenna above 2.9 GHz

FREQUENCY (GHz)	CORRECTION FACTOR (dB)	FREQUENCY (GHz)	CORRECTION FACTOR (dB)
1.0	1.9	14.0	9.1
2.0	2.7	15.0	9.5
3.0	3.5	16.0	9.9
4.0	4.2	17.0	10.2
5.0	4.9	18.0	10.4
6.0	5.5	19.0	10.7
7.0	6.0	20.0	10.9
8.0	6.5	21.0	11.2
9.0	7.0	22.0	11.6
10.0	7.5	23.0	11.9
11.0	7.9	24.0	12.3
12.0	8.3	25.0	12.6
13.0	8.7	26.0	13.0

NOTES:

1. The cable type is SUCOFLEX 104 E manufactured by SUHNER.

2. The cable is used for measurements above 2.9 GHz.

3. The overall length of the cable is 10 meters.

12.6 Correction factors for LOG PERIODIC ANTENNA

Type LPD 2010/A
at 3 and 10 meter ranges.

Distance of 3 meters

FREQUENCY (MHz)	AFE (dB/m)
200.0	9.1
250.0	10.2
300.0	12.5
400.0	15.4
500.0	16.1
600.0	19.2
700.0	19.4
800.0	19.9
900.0	21.2
1000.0	23.5

Distance of 10 meters

FREQUENCY (MHz)	AFE (dB/m)
200.0	9.0
250.0	10.1
300.0	11.8
400.0	15.3
500.0	15.6
600.0	18.7
700.0	19.1
800.0	20.2
900.0	21.1
1000.0	23.2

NOTES:

1. *Antenna serial number is 1038.*
2. *The above lists are located in file number 38M3O.ANT for a 3 meter range, and file number 38M100.ANT for a 10 meter range.*
3. *The files mentioned above are located on the disk marked "Radiated Emission Test EMI Receiver".*

11.4 Correction factors for BICONICAL ANTENNA

Type EMCO 3104, at 3 meter range

FREQUENCY (MHz)	AF2 (dB/m)
30.0	14.5
40.0	12.8
50.0	12.7
60.0	11.2
70.0	8.7
80.0	7.5
90.0	13.0
100.0	12.3
120.0	12.5
140.0	11.2
160.0	14.8
180.0	16.4
200.0	16.0
250.0	17.8
300.0	20.7

NOTES:

1. Antenna serial number is 2606.

11.5 Correction factors for ACTIVE LOOP ANTENNA

Model 6502
S/N 9506-2950

FREQUENCY (MHz)	Magnetic Antenna Factor (dB)	Electric Antenna Factor (dB)
.009	-35.1	16.4
.010	-35.7	15.8
.020	-38.5	13.0
.050	-39.6	11.9
.075	-39.8	11.8
.100	-40.0	11.6
.150	-40.0	11.5
.250	-40.0	11.6
.500	-40.0	11.5
.750	-40.1	11.5
1.000	-39.9	11.7
2.000	-39.5	12.0
3.000	-39.4	12.1
4.000	-39.7	11.9
5.000	-39.7	11.8
10.000	40.2	11.3
15.000	-40.7	10.8
20.000	-40.5	11.0
25.000	-41.3	10.2
30.000	42.3	9.2

12. Comparison Industry Canada Requirements With FCC

Visonic Ltd. M/N: MCT-302 3V

IC: 1467A-MCT3023V FCC ID: GSAMCT3023V

FCC Specification	According FCC Standard	IC Standard
Periodic Operation	FCC Part 15.231 (a)(1-5)	RSS- 210 Issue 8 Section 2.5 Annex 1, A1.1.1
Field Strength at Fundamental	FCC Part 15.231 (b)	RSS- 210 Issue 8 Section 2.5 Annex 1 A1.1.2,
Spurious Emissions	FCC Part 15.231 (b)	RSS GEN Issue 3 7.2.2(Table3)
Bandwidth	FCC Part 15.231 (c)	RSS- 210 Issue 8 Section 2.5 Annex 1 A1.1.3