CERTIFICATE

of Conformity

Reference No.: MOS1706259557E

Applicant	:	**GEVA di evangelista giorgio**
Address	:	**Via Navili 1, 10040, Almese TO, Italy**
Product	:	**Battery POE v4 24v**
Model(s)	:	**Battery POE v4 24v**

The submitted products have been tested by us with the listed standards and found in compliance with the following European Directives:

The EMC Directive 2014/30/EU

EN 55014-1: 2006+A1: 2009+A2: 2011, EN 55014-2: 2015

EN 61000-3-2: 2014, EN 61000-3-3: 2013

The tests were performed in normal operation mode. The test results apply only to the particular sample tested and to the specific tests carried out. This certificate applies specifically to the sample investigated in our test reference number only.

The CE markings as shown below can be affixed on the product after preparation of necessary technical documentation.

Other relevant Directives have to be observed.

CE

Center of Testing Certification MOSEN * APPROVED

Manager

July 04, 2017

Mosen Detection Technology Co., Ltd.
Add: No.3889, Huang'pu East Road, Huang'pu District, Guangzhou, China
TEL: 020-66623300 web: www.mosen-cert.com

EMC TEST REPORT

For

GEVA di evangelista giorgio

Battery POE v4 24v

Model No.: Battery POE v4 24v

Prepared for	:	GEVA di evangelista giorgio
Address	:	Via Navili 1, 10040, Almese TO, Italy
Prepared by	:	Mosen Detection Technology Co., Ltd.
Address	:	No.3889, Huang'pu East Road, Huang'pu District, Guangzhou, China
Tel	:	(+86)20-66623300
Fax	:	(+86)20-82030023
Web	:	www.mosen-cert.com
Date of receipt of test sample	:	In June 25, 2017
Number of tested samples	:	2
Serial number	:	Prototype
Date of Test	:	In June 25, 2017 - July 04, 2017
Date of Report	:	July 04, 2017

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EMC TEST REPORT
EN 55014-1: 2006+A1: 2009+A2: 2011
Requirements for household appliances, electric tools and similar apparatus -- Part 1: Emission
EN 55014-2: 2015
Requirements for household appliances, electric tools and similar apparatus -- Part 2: Immunity - Product family standard

Report Reference No. .....:	**MOS1706259557E**
Date Of Issue.....:	July 04, 2017
Testing Laboratory Name.....:	**Mosen Detection Technology Co., Ltd.**
Address.....:	No.3889, Huang'pu East Road, Huang'pu District, Guangzhou, China
Testing Location/ Procedure.....:	Full application of Harmonised standards ■ Partial application of Harmonised standards ☐ Other standard testing method ☐
Applicant's Name.....:	**GEVA di evangelista giorgio**
Address.....:	Via Navili 1, 10040, Almese TO, Italy
Test Specification:	
Standard.....:	EN 55014-1: 2006+A1: 2009+A2: 2011 EN 61000-3-2: 2014 EN 61000-3-3: 2013 EN 55014-2: 2015
TRF Originator.....:	Mosen Detection Technology Co., Ltd.

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Test Item Description.....:	**Battery POE v4 24v**
Model/ Type Reference.....:	Battery POE v4 24v
Result .....:	**Positive**

Compiled by:	**Supervised by:**	**Approved by:**
Happy	Wise	Lydia
Happy Liu/ File administrators	Wise Shen/ Technique principal	Lydia Lin/ Manager

EMC -- TEST REPORT

Test Report No. : MOS1706259557E	July 04, 2017 Date of issue

Type / Model.....	: Battery POE v4 24v
EUT.....	: Battery POE v4 24v
Applicant.....	**: GEVA di evangelista giorgio**
Address.....	: Via Navili 1, 10040, Almese TO, Italy
Telephone.....	: /
Fax.....	: /
Manufacturer.....	**: GEVA di evangelista giorgio**
Address.....	: Via Navili 1, 10040, Almese TO, Italy
Telephone.....	: /
Fax.....	: /
Factory.....	**: GEVA di evangelista giorgio**
Address.....	: 30 Fountain Crescent Inchinnan Business Park Renfrew PA4 9RE UK
Telephone.....	: /
Fax.....	: /

Test Result according to the standards on page 7:	**Positive**

The test report merely corresponds to the test sample.
It is not permitted to copy extracts of these test result without the written permission of the test laboratory.

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1. SUMMARY OF STANDARDS AND RESULTS....

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1.1. Description of Standards and Results

The EUT have been tested according to the applicable standards as referenced below.

EMISSION (EN 55014-1: 2006+A1: 2009+A2: 2011)			
Description of Test Item	**Standard**	**Limits**	**Results**
Conducted disturbance at mains terminals	EN 55014-1: 2006+A1: 2009+A2: 2011	--------	PASS
Clicks	EN 55014-1: 2006+A1: 2009+A2: 2011	--------	PASS
Disturbance Power	EN 55014-1: 2006+A1: 2009+A2: 2011	--------	PASS
Radiated disturbance	EN 55022: 2010	A	N/A
Harmonic current emissions	EN 61000-3-2: 2014	Class A	PASS
Voltage fluctuations & flicker	EN 61000-3-3: 2013	--------	PASS

IMMUNITY (EN 55014-2: 2015)			
Description of Test Item	**Basic Standard**	**Performance Criteria**	**Results**
Electrostatic discharge (ESD)	EN 61000-4-2: 2009	B	PASS
Radio-frequency, Continuous radiated disturbance	EN 61000-4-3: 2006+A2: 2010	A	N/A
Electrical fast transient (EFT)	EN 61000-4-4: 2012	B	PASS
Surge (Input a.c. power ports)	EN 61000-4-5: 2014	B	PASS
Radio-frequency, Continuous conducted disturbance	EN 61000-4-6: 2014	A	PASS
Power frequency magnetic field	EN 61000-4-8: 2010	A	N/A
Voltage dips, 60% reduction	EN 61000-4-11: 2004	C	PASS
Voltage dips, 30% reduction		C	PASS
Voltage interruptions		C	PASS
N/A is an abbreviation for Not Applicable.			

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1.2. Description of Performance Criteria

General Performance Criteria

Examples of functions defined by the manufacturer to be evaluated during testing include, but are not limited to, the following:

— essential operational modes and states;

— tests of all peripheral access (hard disks, floppy disks, printers, keyboard, mouse, etc.);

— quality of software execution;

— quality of data display and transmission;

— quality of speech transmission.

1.2.1. Performance criterion A

The equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed below a performance level specified by the manufacture when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance. If the minimum performance level or the permissible performance loss is not specified by the manufacturer, then either of these may be deliver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

1.2.2. Performance criterion B

After the test, the equipment shall continue to operate as intended without operator intervention. No degradation of performance or loss of function is allowed, after the application of the phenomena below a performance level specified by the manufacture, when the equipment is used as intended. The performance level may be replaced by a permissible loss of performance.

During the test, degradation of performance is allowed. However, no change of operation state or stored data is allowed to persist after the test.

If the minimum performance level (or the permissible performance loss) is not specified by the manufacturer, then either of these may be deliver from the product description and documentation, and by what the user may reasonably expect from the equipment if used as intended.

1.2.3. Performance criterion C

Loss of function is allowed, provided the function is self-recoverable, or can be restored by the operation of the controls by the user in accordance with the manufacture’s instructions.

Functions, and/or information stored in non-volatile memory, or protected by a battery backup, shall not be loss.

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2. GENERAL INFORMATION

2.1. Description of Device (EUT)

EUT : Battery POE v4 24v

Model Number : Battery POE v4 24v

EUT Clock Frequency : ≤15MHz

2.2. Test Facility

Site Description

EMC Lab. : CNAS Registration Number. is L4595.

FCC Registration Number. is 899208.

Industry Canada Registration Number. is 9642A-1.

VCCI Registration Number. is C-4260 and R-3804.

ESMD Registration Number. is ARCB0108.

UL Registration Number. is 100571-492.

TUV SUD Registration Number. is SCN1081.

TUV RH Registration Number. is UA 50296516-001.

2.3. Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. The reader is cautioned that there may be errors within the calibration limits of the equipment and facilities. The measurement uncertainty was calculated for all measurements listed in this test report acc. To CISPR 16 – 4 “Specification for radio disturbance and immunity measuring apparatus and methods – Part 4: Uncertainty in EMC Measurements” and is documented in the LCS quality system acc. To DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

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2.4. Measurement Uncertainty

Test Item	Frequency Range	Expanded uncertainty (Ulab)	Expanded uncertainty (Ucispr)
Conducted Emission	(9kHz to 150kHz)	2.63 dB	4.0 dB
	(150kHz to 30MHz)	2.35 dB	3.6 dB
Power disturbance	(30MHz to 300MHz)	2.90dB	4.5 dB
Electromagnetic Radiated Emission (3-loop)	(9kHz to 30MHz)	3.60 dB	N/A
Radiated Emission	(9kHz to 30MHz)	3.68 dB	N/A
Radiated Emission	(30MHz to 1000MHz)	3.48 dB	5.2 dB
Radiated Emission	(above 1000MHz)	3.90 dB	N/A
Mains Harmonic	Voltage	0.510%	N/A
Voltage Fluctuations & Flicker	Voltage	0.510%	N/A

(1) Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

(2) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

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3. MEASURING DEVICE AND TEST EQUIPMENT

3.1. Conducted Disturbance

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2016/06/18
2	10dB Attenuator	SCHWARZBECK	OSPAM236	9729	2016/06/18
3	Artificial Mains	ROHDE & SCHWARZ	ENV216	101288	2016/06/18
4	EMI Test Software	AUDIX	E3	N/A	2016/06/18

3.2. Disturbance Power

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2016/06/18
2	Absorbing clamp	ROHDE & SCHWARZ	MDS 21	4033	2015/10/28
3	EMI Test Software	AUDIX	E3	N/A	2016/06/18

3.3. Radiated Electromagnetic Disturbance

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	EMI Test Receiver	ROHDE & SCHWARZ	ESCI	101142	2016/06/18
2	Triple-loop Antenna	EVERFINE	LLA-2	11050003	2016/06/18
3	EMI Test Software	AUDIX	E3	N/A	2016/06/18

3.4. Radiated Disturbance (Electric Field)

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	3m Semi Anechoic Chamber	SIDT FRANKONIA	SAC-3M	03CH03-HY	2016/02/04
2	EMI Test Receiver	ROHDE & SCHWARZ	ESPI	101840	2016/06/18
3	Log per Antenna	SCHWARZBECK	VULB9163	9163-470	2016/06/18
4	EMI Test Software	AUDIX	E3	N/A	2016/06/18
5	Positioning Controller	MF	MF-7082	/	2016/06/18

3.5. Harmonic Current

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2016/06/18

3.6. Voltage fluctuation and Flicker

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power Analyzer Test System	Voltech	PM6000	20000670053	2016/06/18

3.7. Electrostatic Discharge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	ESD Simulator	KIKUSUI	KC001311	KES4021	2015/09/02

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3.8. RF Field Strength Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	SIGNAL GENERATOR	HP	8648A	625U00573	2016/06/18
2	Amplifier	AR	500A100	17034	2016/06/18
3	Amplifier	AR	100W/1000M1	17028	2016/06/18
4	Isotropic Field Monitor	AR	FM2000	16829	2016/06/18
5	Isotropic Field Probe	AR	FP2000	16755	2016/06/18
6	Bi-conic Antenna	EMCO	3108	9507-2534	2016/06/18
7	By-log-periodic Antenna	AR	AT1080	16812	2016/06/18
8	EMS Test Software	ROHDE & SCHWARZ	ESK1	N/A	2016/06/18

3.9. Electrical Fast Transient/Burst

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Electrical fast transient(EFT)generator	3CTEST	EFT-4021	EC0461044	2016/01/20
2	Coupling Clamp	3CTEST	EFTC	EC0441098	2016/06/18

3.10. Surge

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Surge test system	3CTEST	SG5006G	EC5581070	2016/06/18
2	Coupling/decoupling network	3CTEST	SGN-5010G	CS5591033	2016/06/18

3.11. Conducted Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Simulator	EMTEST	CWS500C	0900-12	2016/06/18
2	CDN	EMTEST	CDN-M2	5100100100	2016/06/18
3	CDN	EMTEST	CDN-M3	0900-11	2016/06/18
4	CDN	EMTEST	CDN-M	0900-12	2016/06/18
5	Attenuator	EMTEST	ATT6	0010222A	2016/06/18
6	Infuse tongs	EMTEST	EM-Clamp	0513A031201	2016/06/18

3.12. Power Frequency Magnetic Field Susceptibility

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Power frequency mag-field generator System	EVERFINE	EMS61000-8K	906003	2016/06/18

3.13. Voltage Dips

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2016/06/18

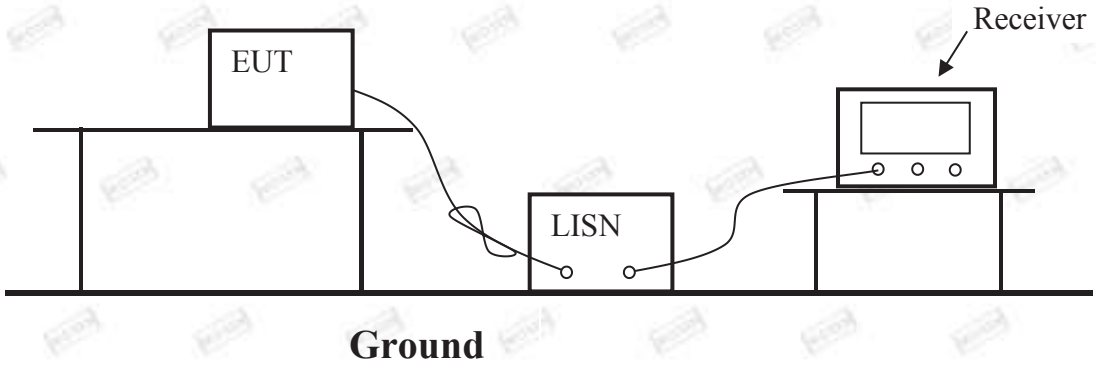
3.14. Voltage Short Interruptions

Item	Test Equipment	Manufacturer	Model No.	Serial No.	Last Cal.
1	Voltage dips and up generator	3CTEST	VDG-1105G	EC0171014	2016/06/18

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4. POWER LINE CONDUCTED EMISSION MEASUREMENT

4.1. Block Diagram of Test Setup



4.2. Power Line Conducted Emission Limits

Frequency (MHz)	Limit (dBμV)	
	Quasi-peak Level	Average Level
0.15 ~ 0.50	66.0 ~ 56.0 *	59.0 ~ 46.0 *
0.50 ~ 5.00	56.0	46.0
5.00 ~ 30.00	60.0	50.0

Remark: * means decreasing linearly with logarithm of frequency.

4.3. EUT Configuration on Test

The following equipments are installed on Conducted Emission Measurement to meet EN 55014–1 requirements and operating in a manner which tends to maximize its emission characteristics in a ON application.

4.4. Operating Condition of EUT

4.4.1. Setup the EUT as shown on Section 4.1.

4.4.2. Turn on the power of all equipments.

4.4.3. Let the EUT work in measuring mode (ON) and measure it.

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4.5. Test Procedure

The EUT is put on the plane 0.8m high above the ground by insulating support and connected to the AC mains through a Line Impedance Stability Network (L.I.S.N). This provided a 50ohm coupling impedance for the tested equipments. Both sides of AC line are investigated to find out the maximum conducted emission according to the EN 55014-1 regulations during conducted emission measurement.

The bandwidth of the field strength meter is set at 9kHz.

The frequency range from 150kHz to 30MHz is investigated. The scanning waveform, please refer to the next page.

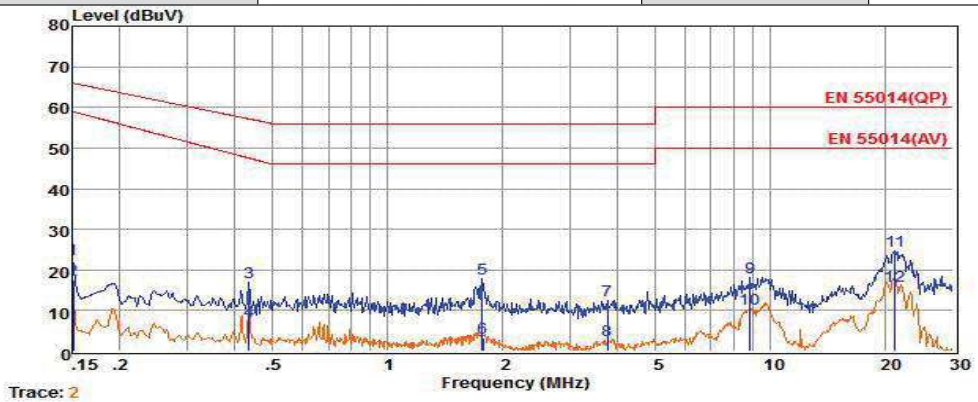
4.6. Test Results

PASS.

The frequency range 150kHz to 30MHz is investigated.

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Model No.	Battery POE v4 24v	Test Mode	ON
Environmental Conditions	24℃, 56% RH	Test Engineer	Wise Shen
Pol	Line		

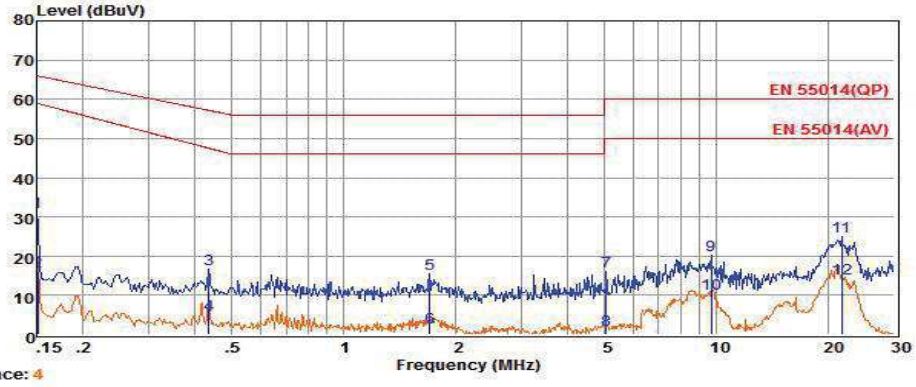


Trace: 2

	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	2.94	9.57	0.02	10.00	22.53	66.00	-43.47	QP
2	0.15100	-2.16	9.57	0.02	10.00	17.43	58.93	-41.50	Average
3	0.43511	-2.57	9.62	0.04	10.00	17.09	57.15	-40.06	QP
4	0.43521	-12.20	9.62	0.04	10.00	7.46	47.50	-40.04	Average
5	1.77162	-1.99	9.64	0.05	10.00	17.70	56.00	-38.30	QP
6	1.77262	-16.43	9.64	0.05	10.00	3.26	46.00	-42.74	Average
7	3.75939	-7.16	9.65	0.06	10.00	12.55	56.00	-43.45	QP
8	3.76039	-16.91	9.65	0.06	10.00	2.80	46.00	-43.20	Average
9	8.86920	-1.56	9.69	0.08	10.00	18.21	60.00	-41.79	QP
10	8.87020	-9.40	9.69	0.08	10.00	10.37	50.00	-39.63	Average
1121	.14722	4.75	9.73	0.12	10.00	24.60	60.00	-35.40	QP
1221	.14822	-3.66	9.73	0.12	10.00	16.19	50.00	-33.81	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
2. The emission levels that are 20dB below the official limit are not reported.

Model No.	Battery POE v4 24v	Test Mode	ON
Environmental Conditions	24℃, 56% RH	Test Engineer	Wise Shen
Pol	Neutral		



Trace: 4

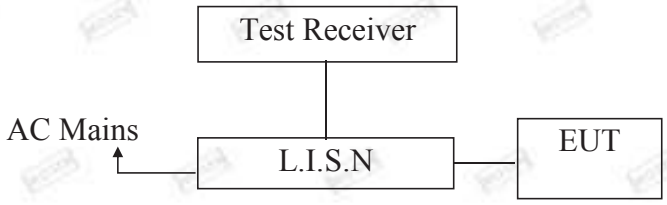
	Freq	Reading	LisnFac	CabLos	Atten_Fac	Measured	Limit	Over	Remark
	MHz	dBuV	dB	dB	dB	dBuV	dBuV	dB	
1	0.15000	11.54	9.70	0.02	10.00	31.26	66.00	-34.74	QP
2	0.15100	-3.55	9.70	0.02	10.00	16.17	58.93	-42.76	Average
3	0.43511	-2.86	9.62	0.04	10.00	16.80	57.15	-40.35	QP
4	0.43521	-14.72	9.62	0.04	10.00	4.94	47.50	-42.56	Average
5	1.69810	-4.18	9.63	0.05	10.00	15.50	56.00	-40.50	QP
6	1.69910	-17.96	9.63	0.05	10.00	1.72	46.00	-44.28	Average
7	5.05796	-3.77	9.66	0.06	10.00	15.95	60.00	-44.05	QP
8	5.05896	-18.39	9.66	0.06	10.00	1.33	50.00	-48.67	Average
9	9.70514	0.45	9.72	0.08	10.00	20.25	60.00	-39.75	QP
10	9.70614	-9.40	9.72	0.08	10.00	10.40	50.00	-39.60	Average
1121	.71493	4.93	9.82	0.12	10.00	24.87	60.00	-35.13	QP
1221	.71593	-5.64	9.82	0.12	10.00	14.30	50.00	-35.70	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss+Atten_Fac.
2. The emission levels that are 20dB below the official limit are not reported.

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5. CLICKS MEASUREMENT

5.1. Block Diagram of Test Setup



(EUT: Battery POE v4 24v)

5.2. Clicks Measurement Standard and limit

5.2.1. Test Standard

EN 55014-1: 2006+A1: 2009+A2: 2011

5.2.2. Test Limit

According to standard EN 55014-1, if click rate (N) less 5/min and the time of this discontinuous disturbances does not exceed 10ms, then the limit value are omitted.

5.3. EUT Configuration on Test

The configuration of EUT is same as Section 2.1.

5.4. Operating Condition of EUT

5.4.1. Setup the EUT as shown Section 5.1.

5.4.2. Turn on the power of all equipments.

5.4.3. After that, let EUT work in test mode (On/Off) and measure it.

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5.5. Test Procedure

This test is done when switch operations in thermostatically controlled appliances, automatic program controlled machines and other electrically controlled or operated appliances may generate discontinuous disturbance (Click). The measurement of disturbance shall be performed at the following restricted number of frequencies: 150kHz, 500kHz, 1.4MHz and 30MHz. At each frequency, for appliances which stop automatically, duration of the minimum number of complete programs necessary to produce 40 counted clicks or, where relevant, 40 counted clicks have not been produced, the test is stopped at the end of the program in course. The relevant click rate N. The appliance under test shall be deemed to comply with the limit if not more than a quarter of the number of the counted click registered during the observation time.

5.6. Test Results

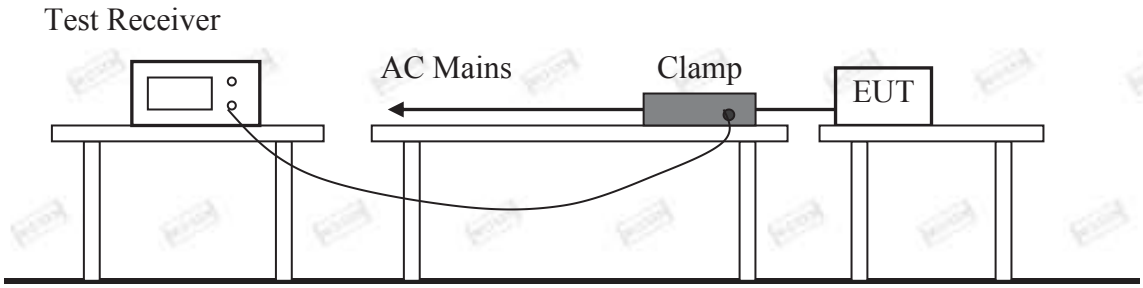
PASS.

The click rate (N=1/2.1=0.48<5) of the EUT is less than 5/min and the time of this discontinuous disturbances (△T=4ms<10ms) does not exceed 10ms. According to EN 55014-1, the limit values are omitted.

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6. DISTURBANCE POWER MEASUREMENT

6.1. Block Diagram of Test Setup



6.2. Test Standard

EN 55014-1: 2006+A1: 2009+A2: 2011

6.3. Disturbance Power Limits

All emanations from devices or system including any network of conductors and apparatus connected there to, shall not exceed the level of field strengths specified below:

Frequency MHz	Limits dB(pW)	
	Quasi-peak Value	Average Value
30 ~ 300	45 Increasing Linearly with Frequency to 55	35 Increasing Linearly with Frequency to 45

	Household and similar appliances		Tools					
1	2	3	4	5	6	7	8	9
Frequenc y range			Rated motor power not exceeding 700 W		Rated motor power above 700 W and not exceeding 1000 W		Rated motor power above 1000 W	
(MHz)	dB (pW) Quasi-peak	dB (pW) Average	dB (pW) Quasi-peak	dB (pW) Average	dB (pW) Quasi-peak	dB (pW) Average	dB (pW) Quasi-pea k	dB (pW) Average
Increasing linearly with the frequency from:								
200 to 300	0 to 10 dB	-	0 to 10 dB	-	0 to 10 dB	-	0 to 10 dB	-
NOTE 1 This table only applies if specified in 4.1.2.3.2. NOTE 2 The measured result at a particular frequency shall be less than the relevant limit minus the corresponding margin (at that frequency).								

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6.4. EUT Configuration on Test

The EN 55014-1 Regulations test method must be used to find the maximum emission during radiated emission measurement. The configuration of the EUT is the same as used in conducted emission measurement.

6.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 4.4, except the test set up replaced as Section 6.1.

6.6. Test Procedure

The EUT is placed on the plane 0.8m high above the ground by insulating support and away from other metallic surface at least 0.4m. It is connected to the power mains through an extension cord of 6m min. The absorber clamp clamps the cord and moves from the far end to the EUT to measure the disturbing energy emitted from the cord.

The bandwidth of the field strength meter is set at 120kHz.

All the test results are listed in Section 6.7.

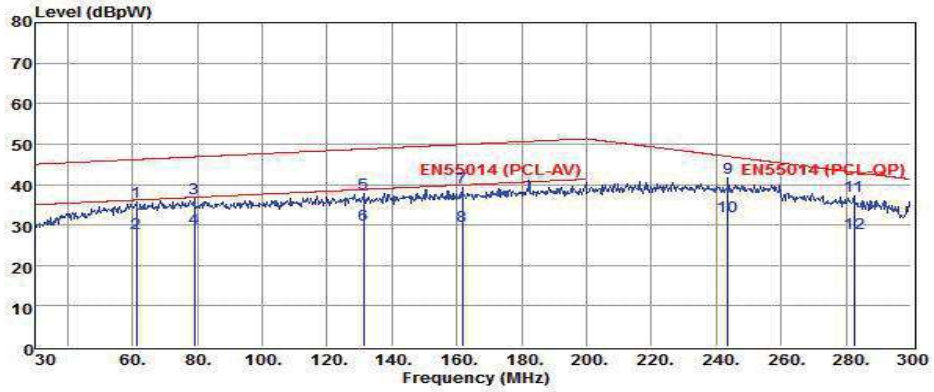
6.7. Test Results

PASS.

The frequency spectrum from 30 MHz to 300 MHz is investigated.

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Model No.	Battery POE v4 24v	Test Mode	ON
Environmental Conditions	24℃, 56% RH	Test Engineer	Wise Shen
Pol	/		



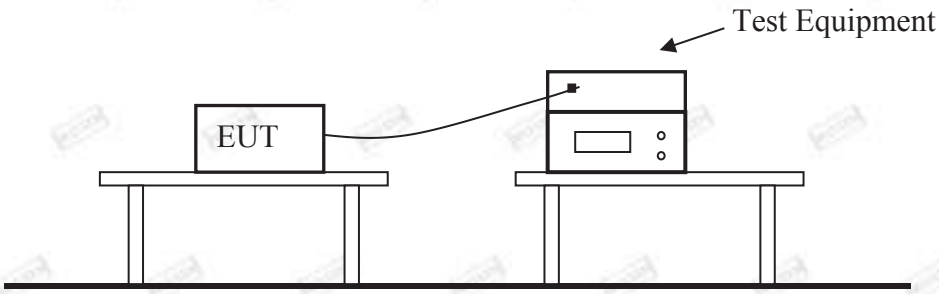
	Freq	Reading	LisnFac	CabLos	Measured	Limit	Over	Remark
	MHz	dBpW	dB	dB	dBpW	dBpW	dB	
1	61.32	10.74	0.74	24.15	35.63	46.17	-10.54	QP
2	61.32	3.16	0.74	24.15	28.05	36.17	-8.12	Average
3	79.14	11.02	1.10	24.35	36.47	46.83	-10.36	QP
4	79.14	3.64	1.10	24.35	29.09	36.83	-7.74	Average
5	131.25	11.05	2.04	24.77	37.86	48.76	-10.90	QP
6	131.25	3.27	2.04	24.77	30.08	38.76	-8.68	Average
7	161.76	11.32	2.85	24.98	39.15	49.89	-10.74	QP
8	161.76	1.80	2.85	24.98	29.63	39.89	-10.26	Average
9	243.57	12.10	3.93	25.55	41.58	46.95	-5.37	QP
10	243.57	2.50	3.93	25.55	31.98	483.01	-451.03	Average
11	282.45	8.04	3.50	25.78	37.32	43.07	-5.75	QP
12	282.45	-1.31	3.50	25.78	27.97	483.01	-455.04	Average

Remarks: 1. Measured = Reading + Lisn Factor +Cable Loss.
2. The emission levels that are 20dB below the official limit are not reported.

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7. HARMONIC CURRENT EMISSION MEASUREMENT

7.1. Block Diagram of Test Setup



7.2. Test Standard

EN 61000-3-2: 2014

7.3. Operation Condition of EUT

Same as Section 4.4 except the test setup replaced as Section 7.1.

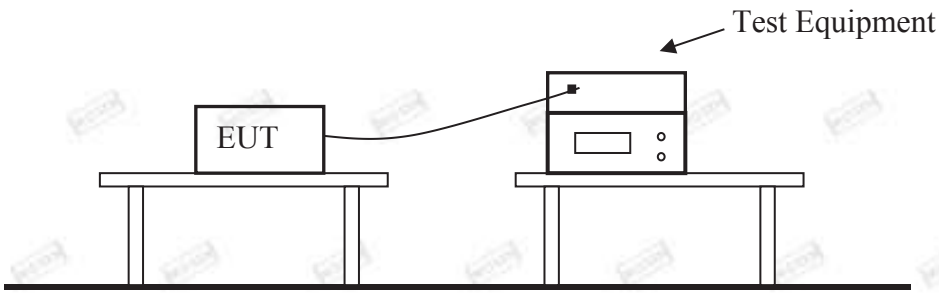
7.4. Test Results

PASS.

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8. VOLTAGE FLUCTUATION AND FLICKER MEASUREMENT

8.1. Block Diagram of Test Setup



8.2. Test Standard

EN 61000-3-3: 2013

8.3. Operation Condition of EUT

8.3.1. Setup the EUT as shown Section 8.1.

8.3.2. Turn on the power of all equipments.

8.3.3. Let EUT work in test mode (On/Off) and measure it.

8.4. Test Results

PASS.

Please refer to the next page.

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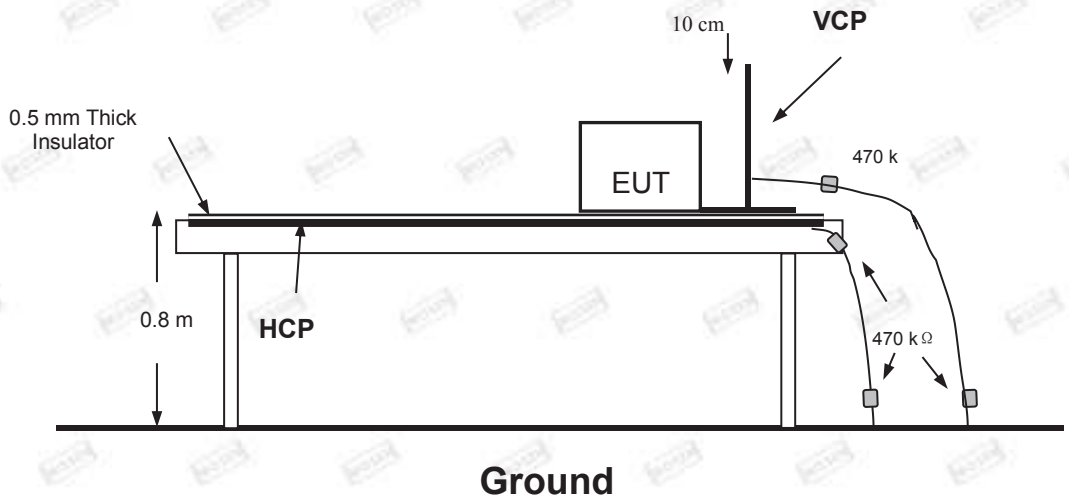
Model No.	Battery POE v4 24v	Test Engineer	Wise Shen
Overall Result: PASS	Notes: Measurement method - Voltage		

	Pst	dc (%)	dmax (%)	d(t) > 3.3%(ms)
Limit	1.000	3.300	4.000	500
Reading 1	0.091	0.011	0.223	0

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9. ELECTROSTATIC DISCHARGE IMMUNITY TEST

9.1. Block Diagram of Test Setup



9.2. Test Standard

EN 55014-2: 2015
(EN 61000-4-2: 2009, Severity Level: 3 / Air Discharge: ± 8KV, Level: 2 / Contact Discharge: ±4KV)

9.3. Severity Levels and Performance Criterion

9.3.1. Severity level

Level	Test Voltage Contact Discharge (KV)	Test Voltage Air Discharge (KV)
1.	±2	±2
2.	±4	±4
3.	±6	±8
4.	±8	±15
X	Special	Special

9.3.2. Performance criterion: **B**

9.4. EUT Configuration on Test

The configuration of EUT are listed in Section 4.3.

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9.5. Operating Condition of EUT

Same as conducted emission measurement, which is listed in Section 4.4 except the test set up replaced by Section 9.1.

9.6. Test Procedure

9.6.1. Air Discharge

This test is done on a non-conductive surface. The round discharge tip of the discharge electrode shall be approached as fast as possible to touch the EUT. After each discharge, the discharge electrode shall be removed from the EUT. The generator is then re-triggered for a new single discharge and repeated 10 times for each pre-selected test point. This procedure shall be repeated until all the air discharge completed.

9.6.2. Contact Discharge

All the procedure shall be same as Section 9.6.1. except that the tip of the discharge electrode shall touch the EUT before the discharge switch is operated.

9.6.3. Indirect Discharge For Horizontal Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied at the front edge of each HCP opposite the center point of each unit (if applicable) of the EUT and 0.1m from the front of the EUT. The long axis of the discharge electrode shall be in the plane of the HCP and perpendicular to its front edge during the discharge.

9.6.4. Indirect Discharge For Vertical Coupling Plane

At least 10 single discharges (in the most sensitive polarity) shall be applied to the center of one vertical edge of the coupling plane. The coupling plane, of dimensions 0.5m X 0.5m, is placed parallel to, and positioned at a distance of 0.1m from the EUT. Discharges shall be applied to the coupling plane, with this plane in sufficient different positions that the four faces of the EUT are completely illuminated.

9.7. Test Results

PASS.

Please refer to the next page.

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Electrostatic Discharge Test Results

Standard	☐ IEC 61000-4-2 ☑ EN 61000-4-2		
Applicant	GEVA di evangelista giorgio		
EUT	Battery POE v4 24v	**Temperature**	23℃
M/N	Battery POE v4 24v	**Humidity**	51%
Criterion	B	**Pressure**	1021mbar
Test Mode	ON	**Test Engineer**	Wise Shen

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Air Discharge						
Test Points	Test Levels			Results		
	± 2KV	± 4KV	± 8KV	Pass	Fail	Performance Crite on
Front	☒	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☒	☐	☐ A ☒ B
Top	☒	☒	☒	☒	☐	☐ A ☒ B
Bottom	☒	☒	☒	☒	☐	☐ A ☒ B

Contact Discharge					
Test Points	Test Levels		Results		
	± 2 kV	±4 kV	Pass	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☐	☐ A ☒ B
Top	☒	☒	☒	☐	☐ A ☒ B
Bottom	☒	☒	☒	☐	☐ A ☒ B

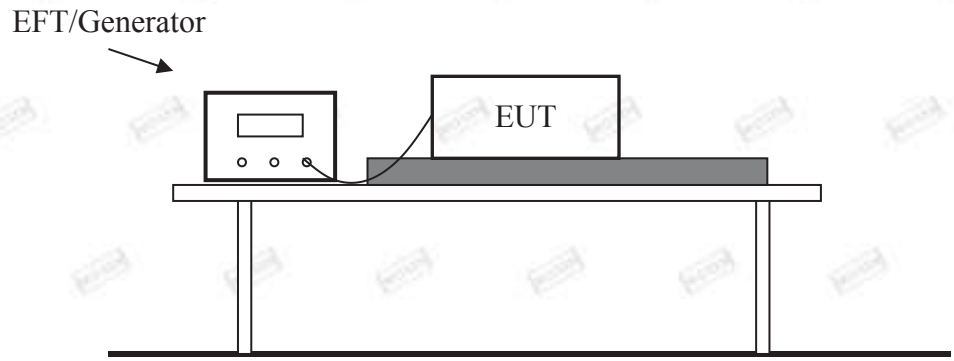
Discharge To Horizontal Coupling Plane					
Side of EUT	Test Levels		Results		
	± 2 KV	± 4 KV	Pass	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☐	☐ A ☒ B

Discharge To Vertical Coupling Plane					
Side of EUT	Test Levels		Results		
	± 2 kV	± 4 kV	Pass	Fail	Performance Criterion
Front	☒	☒	☒	☐	☐ A ☒ B
Back	☒	☒	☒	☐	☐ A ☒ B
Left	☒	☒	☒	☐	☐ A ☒ B
Right	☒	☒	☒	☐	☐ A ☒ B

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10. ELECTRICAL FAST TRANSIENT/BURST IMMUNITY TEST

10.1. Block Diagram of Test Setup



10.2. Test Standard

EN 55014-2: 2015 (EN 61000-4-4: 2004+A1: 2010, Severity Level: Level 2: 1KV)

10.3. Severity Levels and Performance Criterion

10.3.1. Severity level

Open Circuit Output Test Voltage ± 10%		
Level	On Power Supply Lines	On I/O (Input/Output) Signal data and control lines
1.	0.50KV	0.25KV
2.	1.00KV	0.50KV
3.	2.00KV	1.00KV
4.	4.00KV	2.00KV
X	Special	Special

10.3.2. Performance criterion: **B**

10.4. EUT Configuration on Test

The configuration of EUT are listed in Section 4.3.

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10.5. Operating Condition of EUT

10.5.1. Setup the EUT as shown in Section 10.1.

10.5.2. Turn on the power of all equipments.

10.5.3. Let the EUT work in test mode (ON) and measure it.

10.6. Test Procedure

The EUT is put on the table which is 0.8 meter high above the ground. This reference ground plane shall project beyond the EUT by at least 0.1m on all sides and the minimum distance between EUT and all other conductive structure, except the ground plane beneath the EUT, shall be more than 0.5m.

10.6.1. For input and output AC power ports:
The EUT is connected to the power mains by using a coupling device which couples the EFT interference signal to AC power lines. Both polarities of the test voltage should be applied during compliance test and the duration of the test is 2 mins.

10.6.2. For signal lines and control lines ports:
No I/O ports. It's unnecessary to test.

10.6.3. For DC output line ports:
No DC output ports. It's unnecessary to test.

10.7. Test Results

PASS.

Please refer to the following page.

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Electrical Fast Transient/Burst Test Results

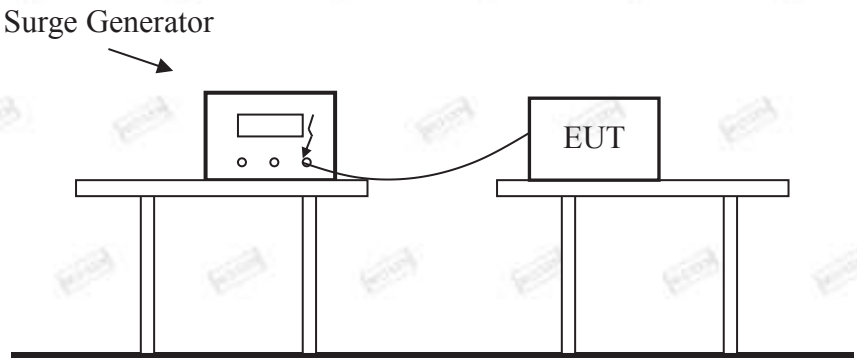
Standard	☐ IEC 61000-4-4 ☑ EN 61000-4-4		
Applicant	GEVA di evangelista giorgio		
EUT	Battery POE v4 24v	**Temperature**	23℃
M/N	Battery POE v4 24v	**Humidity**	51％
Test Mode	ON	**Criterion**	B
Test Engineer	Wise Shen		

Line	Test Voltage	Result (+)	Result (-)
L	1KV	PASS	PASS
N	1KV	PASS	PASS
PE	1KV	PASS	PASS
L-N	1KV	PASS	PASS
L-PE	1KV	PASS	PASS
N-PE	1KV	PASS	PASS
L-N-PE	1KV	PASS	PASS
Signal Line			
I/O Cable			

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11. SURGE IMMUNITY TEST

11.1. Block Diagram of Test Setup



11.2. Test Standard

EN 55014-2: 2015
(EN 61000-4-5: 2014, Severity Level: Level 2, Line to Line: 1.0KV; Level 3 Line to Ground: 2.0KV)

11.3. Severity Levels and Performance Criterion

11.3.1. Severity level

Severity Level	Open-Circuit Test Voltage (KV)
1	0.5
2	1.0
3	2.0
4	4.0
X	Special

11.3.2. Performance criterion: **B**

11.4. EUT Configuration on Test

The configuration of EUT are listed in Section 4.3.

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11.5. Operating Condition of EUT

11.5.1. Setup the EUT as shown in Section 11.1.

11.5.2. Turn on the power of all equipments.

11.5.3. Let the EUT work in test mode (ON) and measure it.

11.6. Test Procedure

11.6.1. Set up the EUT and test generator as shown on Section 11.1.

11.6.2. For line to line coupling mode, provide a 1.0 KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

11.6.3. For line to earth coupling mode, provide a 2.0KV 1.2/50us voltage surge (at open-circuit condition) and 8/20us current surge to EUT selected points.

11.6.4. At least 5 positive and 5 negative (polarity) tests with a maximum 1/min repetition rate are conducted during test

11.6.5. Different phase angles are done individually.

11.6.6. Record the EUT operating situation during compliance test and decide the EUT immunity criterion for above each test.

11.7. Test Results

PASS.

Please refer to the following pages

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Surge Immunity Test Result

Standard	☐ IEC 61000-4-5 ☑ EN 61000-4-5		
Applicant	GEVA di evangelista giorgio		
EUT	Battery POE v4 24v	**Temperature**	23℃
M/N	Battery POE v4 24v	**Humidity**	51%
Test Mode	ON	**Criterion**	B
Test Engineer	Wise Shen		

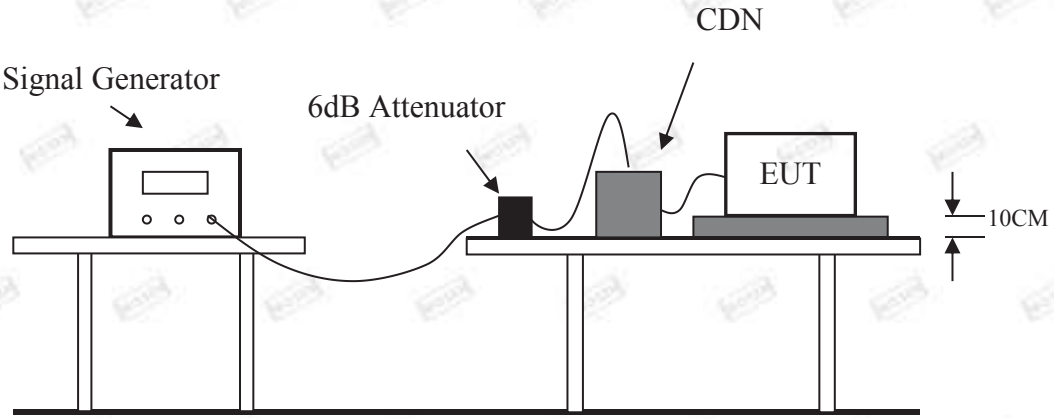
Location	Polarity	Phase Angle	Number of Pulse	Pulse Voltage (KV)	Result
L-N	+	0°	5	1.0	PASS
	+	90°	5	1.0	PASS
	+	180°	5	1.0	PASS
	+	270°	5	1.0	PASS
	-	0°	5	1.0	PASS
	-	90°	5	1.0	PASS
	-	180°	5	1.0	PASS
	-	270°	5	1.0	PASS
L-PE	+	0°	5	2.0	PASS
	+	90°	5	2.0	PASS
	+	180°	5	2.0	PASS
	+	270°	5	2.0	PASS
	-	0°	5	2.0	PASS
	-	90°	5	2.0	PASS
	-	180°	5	2.0	PASS
	-	270°	5	2.0	PASS
N-PE	+	0°	5	2.0	PASS
	+	90°	5	2.0	PASS
	+	180°	5	2.0	PASS
	+	270°	5	2.0	PASS
	-	0°	5	2.0	PASS
	-	90°	5	2.0	PASS
	-	180°	5	2.0	PASS
	-	270°	5	2.0	PASS
Signal Line					

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Note	

12. INJECTED CURRENTS SUSCEPTIBILITY TEST

12.1. Block Diagram of Test Setup



12.2. Test Standard

EN 55014-2: 2015
(EN 61000-4-6: 2014, Severity Level: 3V (rms), (0.15MHz ~ 230MHz))

12.3. Severity Levels and Performance Criterion

12.3.1. Severity level

Level	Field Strength (V)
1.	1
2.	3
3.	10
X	Special

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12.3.2. Performance criterion: **A**

12.4. EUT Configuration on Test

The configuration of EUT are listed in Section 4.3.

12.5. Operating Condition of EUT

12.5.1. Setup the EUT as shown in Section 12.1.

12.5.2. Turn on the power of all equipments.

12.5.3. Let the EUT work in test mode (ON) and measure it.

12.6. Test Procedure

12.6.1. Set up the EUT, CDN and test generators as shown on Section 12.1.

12.6.2. Let the EUT work in test mode and measure it.

12.6.3. The EUT are placed on an insulating support 0.1m high above a ground reference plane. CDN (coupling and decoupling device) is placed on the ground plane about 0.3m from EUT. Cables between CDN and EUT are as short as possible, and their height above the ground reference plane shall be between 30 and 50 mm (where possible).

12.6.4. The disturbance signal described below is injected to EUT through CDN.

12.6.5. The EUT operates within its operational mode(s) under intended climatic conditions after power on.

12.6.6. The frequency range is swept from 150kHz to 230MHz using 3V signal level, and with the disturbance signal 80% amplitude modulated with a 1kHz sine wave.

12.6.7. The rate of sweep shall not exceed $1.5*10^{-3}$ decades/s. Where the frequency is swept incrementally, the step size shall not exceed 1% of the start and thereafter 1% of the preceding frequency value.

12.6.8. Recording the EUT operating situation during compliance testing and decide the EUT immunity criterion.

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12.7. Test Results

PASS.

Please refer to the following pages

Injected Currents Susceptibility Test Results			
Standard	☐ IEC 61000-4-6 ☑ EN 61000-4-6		
Applicant	GEVA di evangelista giorgio		
EUT	Battery POE v4 24v	**Temperature**	23℃
M/N	Battery POE v4 24v	**Humidity**	51%
Test Mode	ON	**Criterion**	A
Test Engineer	Wise Shen		

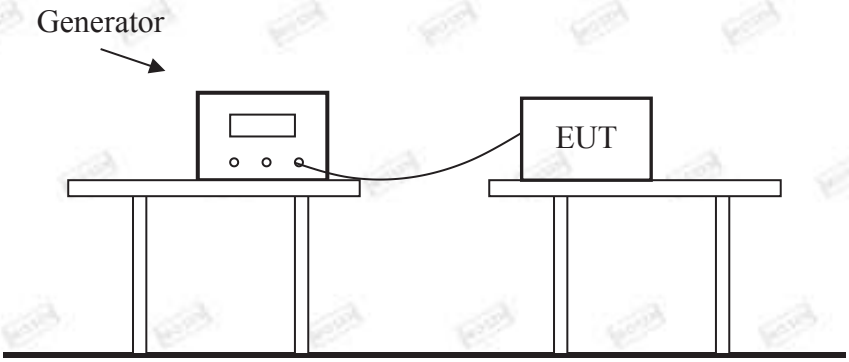
Frequency Range (MHz)	Injected Position	Strength (Unmodulated)	Criterion	Result
0.15 ~ 230	AC Mains	3V	A	PASS

Remark:
1. Modulation Signal:1kHz 80% AM
2. Measurement Equipment :
Simulator: CIT-10 (FRANKONIA)
CDN : ☐CDN-M2 (FRANKONIA)
☑CDN-M3 (FRANKONIA)

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13. VOLTAGE DIPS AND INTERRUPTIONS TEST

13.1. Block Diagram of Test Setup



13.2. Test Standard

EN 55014-2: 2015 (EN 61000-4-11: 2004)

13.3. Severity Levels and Performance Criterion

13.3.1. Severity level

Test Level %U_T	Voltage dip and short interruptions %U_T	Duration (in period)	
0	100	0.5	0.5
40	60	10	12
70	30	25	30

13.3.2. Performance criterion: **C&C**

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13.4. EUT Configuration on Test

The configuration of EUT are listed in Section 4.3.

13.5. Operating Condition of EUT

13.5.1. Setup the EUT as shown in Section 13.1.

13.5.2. Turn on the power of all equipments.

13.5.3. Let the EUT work in test mode (ON) and measure it.

13.6. Test Procedure

13.6.1. Set up the EUT and test generator as shown on Section 13.1.
13.6.2. The interruptions is introduced at selected phase angles with specified duration.
13.6.3. Record any degradation of performance.

13.7. Test Result

PASS.

Please refer to the following page.

Voltage Dips And Interruptions Test Results

Standard	☐ IEC 61000-4-11 ☑ EN 61000-4-11		
Applicant	GEVA di evangelista giorgio		
EUT	Battery POE v4 24v	**Temperature**	23℃
M/N	Battery POE v4 24v	**Humidity**	51%
Test Mode	ON	**Criterion**	C&C
Test Engineer	Wise Shen		

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Test Level % U_T	Voltage Dips & Short Interruptions % U_T	Duration (in periods)		Criterion	Result
		50Hz	60Hz		
40	60	10P	12P	C	PASS
70	30	25P	30P	C	PASS
0	100	0.5P	0.5P	C	PASS

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14. EXTERNAL AND INTERNAL PHOTOS OF THE EUT



Fig. 1 Model: Battery POE v4 24v



Fig. 2 Model: Battery POE v4 24v

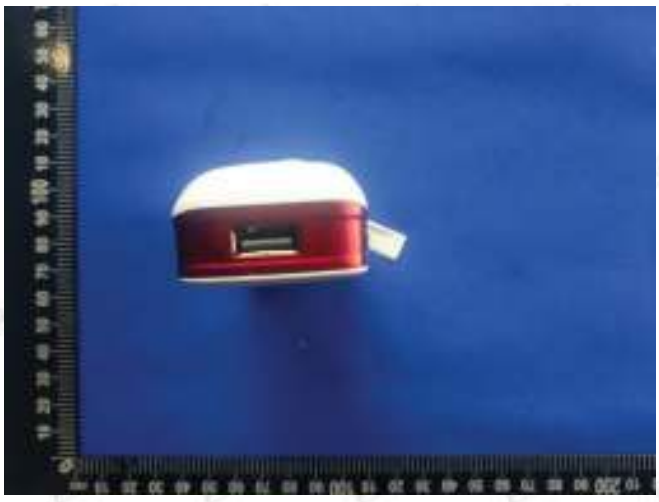


Fig. 3 Model: Battery POE v4 24v

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Fig. 4 Model: Battery POE v4 24v

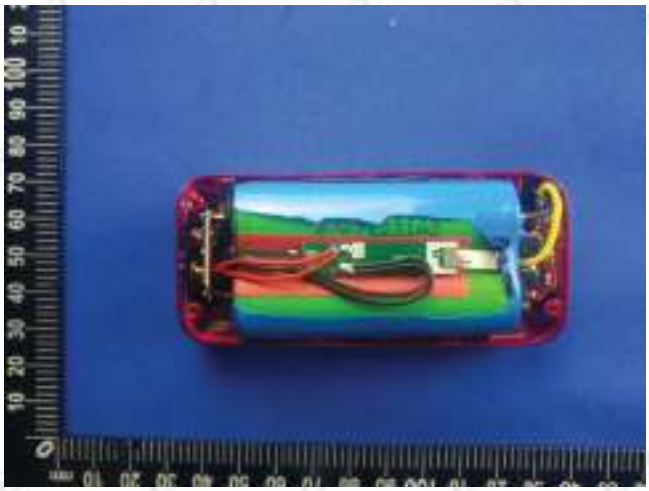


Fig. 5 Model: Battery POE v4 24v

----------THE END OF TEST REPORT----------

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