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ADItech

Electromagnetic Compatibility

and Electrical Safety

CETENA Foundation
Polígono Mocholí, Plaza Cein nº 4 31110 NOAIN - Navarra
Tel.848 420 800 Fax.948 317 754
N.I.F. G-31704232
e-mail: info@cemitec.com - www.cemitec.com

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REPORT Nr: PR-18-0565

Written for: Zero Point Energy, S.L.

Related to: EMC Tests practiced on

"Monsol CcM2-W'' AC measurement device

INDEX **PAGE**

1. GENERAL CONDITIONS

This report refers only and exclusively to the objects and equipments that have undergone the test.

This report does not represent or prove to be the Certification of the Product. This must be expedited by the Certification Bodies or competent Authorities.

2. GUARANTIES

CEMITEC guaranties professional discretion by all its personnel in relation with the accomplishment of the works it carries out. All the data regarding the testing as well as the equipment itself will be treated confidentially.

CEMITEC guaranties the results and conclusions contained in this report; the data presented is the result of the tests and measurements carried out with the equipment. These tests are referred to the moment and conditions indicated in this report.

3. TEST CHARACTERISTICS

3.1. TESTS CARRIED OUT

The following services were requested to the EMC division in CEMITEC:

1. Conducted emission. Harmonic current emission measurement:
   - Standard: UNE-EN 61000-3-2:2014.
   - Limit: Class A equipment.
   - Method: ME.CM10 and UNE-EN 61000-3-2:2014.

2. Conducted emission. Fluctuating voltage and flicker measurement:
   - Standard: UNE-EN 61000-3-3:2013.
   - Limit: 16 A or lower input current equipment.
   - Method: ME.CM11 and UNE-EN 61000-3-3:2013.

3. Radiated Emission. Electromagnetic radiated disturbance measurement [(1)]:
   - Standard: ETSI-EN 301489-1 v1.9.2, ETSI-EN 301489-17 v2.2.1 and EN 61326-1:2013.
   - Limit: UNE-EN 55032:2016, +/AC:2016-07 (enclosure port, 3 m distance measurement).
   - Method: UNE-EN 55032:2016, +/AC:2016-07.

4. Conducted Emission. Electromagnetic conducted disturbance measurement [(1)]:
   - Standard: ETSI-EN 301489-1 v1.9.2, ETSI-EN 301489-17 v2.2.1 and EN 61326-1:2013.
   - Limit: UNE-EN 55032:2016, +/AC:2016-07 (AC mains input power port).
   - Method: UNE-EN 55032:2016, +/AC:2016-07.

5. Immunity to Electrostatic Discharges:

Standard:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013.
Failure Criterion:	B.
Severity Level:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM04 and UNE-EN 61000-4-2:2010.
Applied to:	EUT's enclosure port.

6. Radiated Immunity to RF Field.

Standard:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013.
Failure Criterion:	A.
Severity Level:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM06, and UNE-EN 61000-4-3:2007, +/A1:2008, +/A2:2011.
Applied to:	EUT's enclosure port.

7. Conducted Immunity to EFT/Bursts.

Standard:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013.
Failure Criterion:	B.
Severity Level:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM03 and UNE-EN 61000-4-4:2013.
Applied to:	AC mains power port (input and output).

8. Conducted Immunity to Surges.

Standard:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013.
Failure Criterion:	B.
Severity Level:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM08 and UNE-EN 61000-4-5:2015.
Applied to:	AC mains power port (input).

9. Conducted immunity to RF Field.

Standard:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013.
Failure Criterion:	A.
Severity Level:	ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM01 and UNE-EN 61000-4-6:2014.
Applied to:	AC mains power port (input and output).

10. Radiated immunity to Industrial Frequency Magnetic Field.

Standard:	EN 61326-1:2013.
Failure Criterion:	A.
Severity Level:	EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM02 and UNE-EN 61000-4-8:2011.
Applied to:	EUT's enclosure port.

11. Conducted immunity to voltage dips and short interruptions (1).

Standard:	ETSI-EN 301489-1 v1.9.2, ETSI-EN 301489-17 v2.2.1 and EN 61326-1:2013.
Failure Criterion:	B and C.
Severity Level:	ETSI-EN 301489-1 v1.9.2, ETSI-EN 301489-17 v2.2.1 and EN 61326-1:2013 (industrial electromagnetic environment).
Method:	ME.CM07 and UNE-EN 61000-4-11:2005.
Applied to:	AC mains power port (input).

4. TESTING CONDITIONS

4.1. ENVIRONMENTAL CONDITIONS

The environmental conditions that apply to the tests described in this report were measured in the EMC laboratory of CEMITEC. The temperature, humidity and pressure levels present, were always in the most restrictive range applicable to the EMC tests practiced in the laboratory, that is represented in the following table:

Temperature	Min = 15 ºC Max = 30 ºC
Relative Humidity	Min = 45 % Max = 60 %
Atmospheric Pressure	Min = 860 mbar Max = 1060 mbar

4.2. EQUIPMENT USED

- Space Saver 26 H Semianechoic Chamber (CM01/14) (Serial Nr 2176)
- Rohde & Schwarz ESR26 EMI Test Receiver (CM01/10) (Serial Nr 1316.3003K26/101302)
- Rohde & Schwarz ESH3-Z5 LISN (CM01/04) (Serial Nr 827246/002)
- ETS 3142D BiconiLog Antenna (CM01/62) (Serial Nr 00122391)
- Schwarzbeck STLP9149 Stacked LogPeriodic Antenna (CM01/50) (Serial Nr STLP9149-004)
- Agilent N5181A signal generator (CM01/06) (Serial Nr MY47071030)
- ar 150W1000 amplifier (CM01/09) (Serial Nr 300665)
- BONN BDC 0810-40/200 bidirectional coupler (CM01/76) (Serial Nr 1610792)
- ar 50S1G4A amplifier (CM01/51) (Serial Nr 0322437)
- BONN BLMA 4060-40 amplifier (CM01/72) (Serial Nr 1510518)
- Rohde & Schwarz NRVD RF wattmeter (CM01/07) (Serial Nr 1000105)
- Rohde & Schwarz URV5-Z4 voltage probe (CM01/07-01) (Nº serie 838314/039)
- DARE!! CTR1009B Radicentre test system (CM01/75)
- DARE!! RPR2006C Power Sensor (CM01/73) (Serial Nr 15I00037SN040)
- ETS-Lindgren HI-6105 electric field probe (CM01/44) (Serial Nr 00061400)

- PPM Mini Scout Video Monitoring System (CM01/12)
- DARE!! Radimation EMC tests software (CM01/56)
- Schaffner NSG 438 ESD simulator system (CM01/33) (Serial Nr 378)
- Schaffner NSG 2050 module (CM01/26) (Serial Nr 200449-521LU)
- Schaffner PNW 2225 Burst module (CM01/30) (Serial Nr 200448-529LU)
- Schaffner CDN 3425 coupling clamp (CM01/32) (Serial Nr 1943)
- Schaffner PNW 2050 pulse network (CM01/27) (Serial No. 200445-549LU)
- Schaffner CDN 133 coupling/decoupling network (CM01/59) (Serial Nr 34446)
- EM TEST CWS500C Perturbation simulator (CM01/08) (Serial Nr 1001-04)
    - EM Test 6 dB / 75W attenuator (CM01/08-01) (Serial Nr 0002143A)
    - EM Test CDN M3/32A coupling/decoupling network (CM01/08-04) (Serial Nr 9912188C)
    - EM Test F2031 EM Clamp (CM01/08-02)
    - EM Test ICD V2.36 Test Software (CM01/08-09) (Serial Nr 002024)
- Schaffner MFO 6501 Magnetic field generator (CM01/21) (Serial Nr 34278)
- Schaffner INA 702 Magnetic field Antenna (CM01/22) (Serial Nr 131)
- FLUKE 179 multimeter (CM01/47) (Serial Nr 86500139)
- Narda-STS EHP-50D magnetic field probe (CM01/69) (Serial Nr 120WX20743)
- Schaffner WIN 2050 Test Software (CM01/37) (Serial Nr 690-814A)
- SPS EMV D 15000/PAS power system (CM01/78) (Serial Nr A5887 00/1 0417 and A5887 00/2 0417)
- EM Test DPA 503 Harmonics and Flicker meter (CM01/18) (Serial Nr 0604-02)
- Universal Technic Clamp M1.U (CM01/18-02) (Serial Nr 0604-02 L1)
- California Instruments 5001 iX-400 (CM01/19) (Serial Nr 56081)
- Isolation Transformer (CM01/15)

4.3. TESTS TIME MAP

The tests described in this report were carried out at CEMITEC's facilities.

TEST	TESTED SAMPLE	TEST DATE	RESULT
Current Harmonics Emission	A	08/05/2018	P
Voltage fluctuations and Flicker Emission	A	08/05/2018	P
Radiated Emission (1)	A	2018/05/02 and 03	P
Conducted Emission (1)	A	2018/05/07	P
Electrostatic Discharge Immunity	A	2018/05/09	P
Radiated RF Immunity	A	2018/05/07	P
EFT / Bursts Immunity	A	2018/05/09	P
Surge Immunity	A	2018/05/10	P
Conducted RF Immunity	A	2018/05/09	P
Magnetic field Immunity	A	2018/05/09	P
Voltage dips and short interruptions Immunity (1)	A	2018/05/10	P

4.4. UNCERTAINTY

The Uncertainty of the test that apply to the measurement of perturbing continuous voltage on AC mains is below ± 3.6 dB with K=2 according to the standard UNE-EN 55016-4-2:2007.

The Uncertainty of the test that apply to the Harmonic current measurement is I=5.8% with K=2 and the uncertainty of the test that apply to the Fluctuating voltage and Flicker measurement is I=5.8% with k=2.

5. EUT IDENTIFICATION DATA

5.1. TEST PETITIONER AND EUT SUPPLIER

Name: Zero Point Energy, S.L.

Address: Calle La Gitanilla, 17, Nave 01, portón A.

29004 Málaga (Spain).

Phone: 952 02 05 80.

Contact person: José Luis Vilches.

5.2. TESTED EQUIPMENT IDENTIFICATION

Product: AC Powered device for measurement purposes connected directly to a circuit breaker. CcM2-WiFi is able to measure voltage, current, power and energy of an electrical single-phase installation. It provides measured data wirelessly, using a WiFi connection.

Trade mark: Monsol CcM.

Type: CcM2-W.

Manufacturer: Monsol Electronic, S.L.

Address: Calle La Gitanilla, 17, Nave 01, portón A.

29004 Málaga (Spain).

The equipment tested are described in the following tables:

SAMPLE A

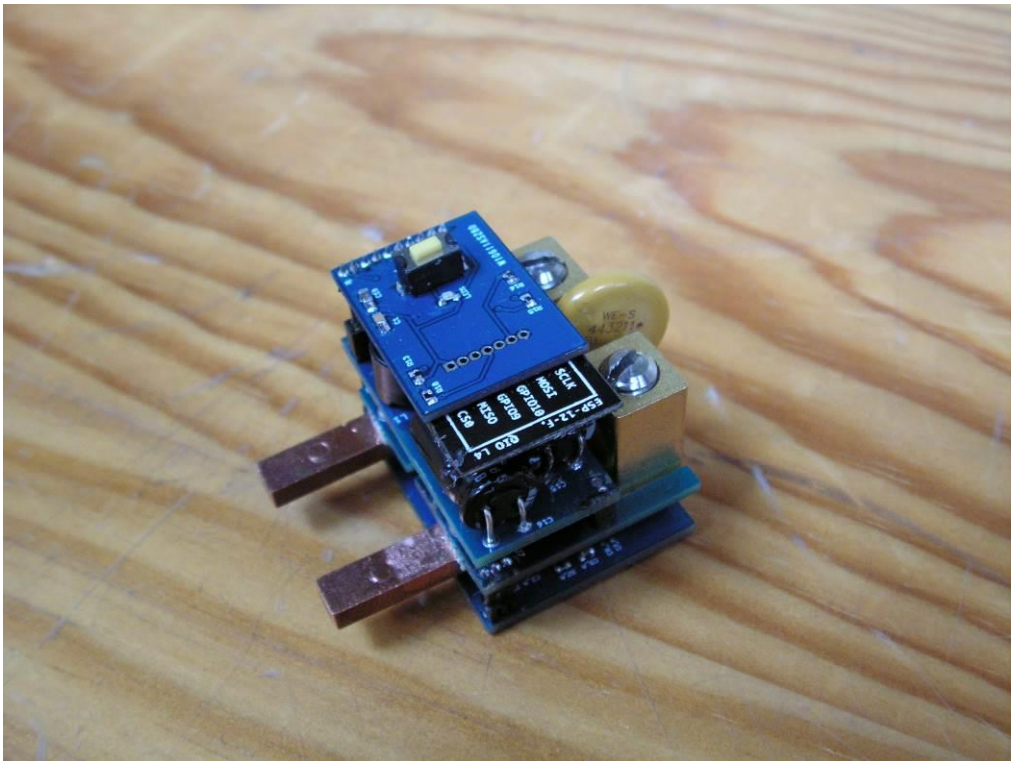
CONTROL NUMBER	RECEPTION DATE	TRADE MARK	SERIAL NUMBER	TYPE	DESCRIPTION
A01	2018/05/02	Monsol CcM	Serie 03 Nº 01	CcM2-W	AC powered device for measurement purposes connected directly to a circuit breaker, able to measure voltage, current, power and energy of an electrical installation (EUT).
A02	2018/05/02	---	---	---	660 Ω resistive load (AE).
A03	2018/05/02	---	---	---	Control and monitorization PC with Wi-Fi connection (AE).

EUT: Equipment Under Test. AE: Auxiliary Equipment, not under test

The interfaces corresponding to the tested samples are described below:

INTERFACE Nr	TYPE/DESCRIPTIÓN	CABLE LENGTH
I01	AC mains power port (230 Vac / 50 Hz) (L1+N)	L > 3 m
I02	AC load port (connected in parallel to L1+N)	L > 3 m
I03	Wi-Fi interface, 2.4 GHz	---

5.3. TESTED SAMPLE IMAGES



5.4. TESTED EQUIPMENT MODES OF OPERATION

During the tests execution, the samples remained on the following operating modes:

- M01 mode of operation:

  EUT ON, powered at 230 Vac and 50 Hz. Blue led on the EUT blinking every 10 seconds. Auxiliary resistive load (660 Ω) connected between L1 and N. The device creates an open Wi-Fi network with which the auxiliary PC is connected. The PC is in continuous communication with the DUT, and reports its measured data, available at the web portal http://192.168.4.1, on the screen. These data are refreshed every 10 seconds.

5.5. TESTED EQUIPMENT MONITORING CONDITIONS

The properly functioning of the EUT was checked before and after the tests.

During the immunity tests the behaviour of the DUT's led was visually checked. In addition, the information about the measurement data (corresponding to a 660 Ω resistive load) obtained from the DUT every 10 seconds via Wi-Fi, and provided by the auxiliary PC, was checked. Any other possible failures like communication losses, were also monitored with the PC.

5.6. PERFORMANCE CRITERIA APPLIED

- **Performance criterion A**: The DUT will work as expected during the tests. No communication losses, degradation on the measured data or changes in the behaviour of the DUT's led will be allowed during or after the tests.

- **Performance criterion B**: The DUT will work as expected after the tests. Certain degradation or loss of function will be admitted during them, provided that the EUT recovers itself after the application of the interference, returning to its original operation mode without any help from the user. The allowed degradation or loss of function would include events such as communication losses, corruption of measured data, or unexpected blinkings on the DUT's led.

- **Performance criterion C**: The DUT will work as expected after the tests. Certain degradation or loss of function will be admitted during them, provided that the EUT recovers its functioning mode after the application of the interference, either by itself or with the help of the user. The allowed degradation or loss of function would include events such as communication losses, corruption of measured data or unexpected blinkings on the DUT's led.

6. TEST RESULTS

6.1. EMISSION RESULTS

6.1.1. CONDUCTED EMISSION. HARMONIC CURRENT MEASUREMENT

LIMITS OF PERMISSIBLE HARMONIC CURRENT

The applicable limits for the measurement of perturbing harmonic current on the AC mains port, according to the standard UNE-EN 61000-3-2:2014, for Class A equipment, are as follow:

Odd harmonics		Even harmonics	
Harmonic order	**Maximum current (A)**	**Harmonic order**	**Maximum current (A)**
3	2.30	2	1.08
5	1.14	4	0.43
7	0.77	6	0.30
9	0.40	$8 \leq n \leq 40$	0.23 8/n
11	0.33		
13	0.21		
$15 \leq n \leq 39$	0.15 15/n		

TESTING METHOD

According to UNE-EN 61000-3-2:2014 and internal method ME.CM10.

MODES OF OPERATION

The sample remained in the mode of operation M01 during the test.

Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

The sample tested was the sample A.

TEST RESULTS

P: Pass, F: Fail, NA:Not Applicable, NM: Not Measured

Description	Result
AC mains harmonic current measurement.	P

Average harmonic current results				
Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	353.150E-3			
2	2.461E-3	0.228	1.08	PASS
3	2.997E-3	0.130	2.30	PASS
4	2.403E-3	0.559	430.00E-3	PASS
5	2.193E-3	0.192	1.14	PASS
6	2.143E-3	0.714	300.00E-3	PASS
7	2.194E-3	0.285	770.00E-3	PASS
8	1.999E-3	0.869	230.00E-3	PASS
9	2.111E-3	0.528	400.00E-3	PASS
10	2.016E-3	1.096	184.00E-3	PASS
11	2.057E-3	0.623	330.00E-3	PASS
12	1.868E-3	1.218	153.33E-3	PASS
13	1.674E-3	0.797	210.00E-3	PASS
14	1.319E-3	1.004	131.43E-3	PASS
15	1.644E-3	1.096	150.00E-3	PASS
16	1.592E-3	1.384	115.00E-3	PASS
17	1.271E-3	0.960	132.35E-3	PASS
18	944.239E-6	0.924	102.22E-3	PASS
19	1.046E-3	0.884	118.42E-3	PASS
20	680.860E-6	0.740	92.00E-3	PASS
21	793.414E-6	0.494	160.71E-3	PASS
22	749.869E-6	0.897	83.64E-3	PASS
23	645.156E-6	0.440	146.74E-3	PASS
24	772.092E-6	1.007	76.66E-3	PASS
25	459.920E-6	0.341	135.00E-3	PASS
26	672.011E-6	0.950	70.77E-3	PASS
27	382.557E-6	0.306	124.99E-3	PASS
28	266.072E-6	0.405	65.71E-3	PASS
29	472.788E-6	0.406	116.39E-3	PASS
30	481.052E-6	0.784	61.33E-3	PASS
31	567.233E-6	0.521	108.87E-3	PASS
32	305.828E-6	0.532	57.50E-3	PASS
33	446.104E-6	0.436	102.27E-3	PASS
34	396.305E-6	0.732	54.12E-3	PASS
35	607.456E-6	0.630	96.44E-3	PASS
36	482.850E-6	0.945	51.11E-3	PASS
37	507.544E-6	0.556	91.21E-3	PASS
38	426.327E-6	0.880	48.42E-3	PASS
39	356.912E-6	0.412	86.53E-3	PASS
40	308.433E-6	0.671	46.00E-3	PASS

Maximum harmonic current results				
Hn	Ieff [A]	% of Limit	Limit [A]	Result
1	353.445E-3			
2	2.658E-3	0.164	1.62	PASS
3	3.088E-3	0.089	3.45	PASS
4	2.569E-3	0.398	645.00E-3	PASS
5	2.379E-3	0.139	1.71	PASS
6	2.342E-3	0.520	450.00E-3	PASS
7	2.444E-3	0.212	1.15	PASS
8	2.245E-3	0.651	345.00E-3	PASS
9	2.263E-3	0.377	600.00E-3	PASS
10	2.132E-3	0.772	276.00E-3	PASS
11	2.112E-3	0.427	495.00E-3	PASS
12	1.930E-3	0.839	229.99E-3	PASS
13	1.928E-3	0.612	315.00E-3	PASS
14	1.648E-3	0.836	197.15E-3	PASS
15	1.704E-3	0.757	225.00E-3	PASS
16	1.676E-3	0.972	172.50E-3	PASS
17	1.457E-3	0.734	198.52E-3	PASS
18	1.389E-3	0.906	153.33E-3	PASS
19	1.123E-3	0.632	177.63E-3	PASS
20	1.022E-3	0.741	138.00E-3	PASS
21	949.723E-6	0.591	160.71E-3	PASS
22	812.125E-6	0.647	125.46E-3	PASS
23	702.359E-6	0.479	146.74E-3	PASS
24	839.335E-6	0.730	114.99E-3	PASS
25	517.729E-6	0.384	135.00E-3	PASS
26	753.723E-6	0.710	106.16E-3	PASS
27	511.094E-6	0.409	124.99E-3	PASS
28	627.150E-6	0.636	98.57E-3	PASS
29	541.961E-6	0.466	116.39E-3	PASS
30	559.730E-6	0.608	92.00E-3	PASS
31	628.992E-6	0.578	108.87E-3	PASS
32	626.600E-6	0.726	86.25E-3	PASS
33	587.899E-6	0.575	102.27E-3	PASS
34	563.197E-6	0.694	81.18E-3	PASS
35	709.258E-6	0.735	96.44E-3	PASS
36	615.639E-6	0.803	76.66E-3	PASS
37	585.449E-6	0.642	91.21E-3	PASS
38	481.174E-6	0.663	72.63E-3	PASS
39	466.920E-6	0.540	86.53E-3	PASS
40	470.258E-6	0.682	69.00E-3	PASS

Maximum harmonic voltage results				
Hn	Ueff [V]	Ueff [%]	Limit [%]	Result
1	230.40	100.173		
2	97.04E-3	0.042	0.2	PASS
3	525.84E-3	0.229	0.9	PASS
4	67.65E-3	0.029	0.2	PASS
5	63.01E-3	0.027	0.4	PASS
6	33.53E-3	0.015	0.2	PASS
7	27.76E-3	0.012	0.3	PASS
8	42.30E-3	0.018	0.2	PASS
9	16.61E-3	0.007	0.2	PASS
10	20.36E-3	0.009	0.2	PASS
11	19.84E-3	0.009	0.1	PASS
12	19.63E-3	0.009	0.1	PASS
13	20.77E-3	0.009	0.1	PASS
14	13.07E-3	0.006	0.1	PASS
15	13.54E-3	0.006	0.1	PASS
16	17.92E-3	0.008	0.1	PASS
17	13.76E-3	0.006	0.1	PASS
18	18.85E-3	0.008	0.1	PASS
19	10.14E-3	0.004	0.1	PASS
20	21.17E-3	0.009	0.1	PASS
21	10.33E-3	0.004	0.1	PASS
22	11.49E-3	0.005	0.1	PASS
23	8.61E-3	0.004	0.1	PASS
24	9.34E-3	0.004	0.1	PASS
25	11.62E-3	0.005	0.1	PASS
26	13.41E-3	0.006	0.1	PASS
27	8.89E-3	0.004	0.1	PASS
28	13.29E-3	0.006	0.1	PASS
29	10.59E-3	0.005	0.1	PASS
30	11.94E-3	0.005	0.1	PASS
31	7.74E-3	0.003	0.1	PASS
32	10.11E-3	0.004	0.1	PASS
33	10.06E-3	0.004	0.1	PASS
34	9.13E-3	0.004	0.1	PASS
35	7.91E-3	0.003	0.1	PASS
36	8.71E-3	0.004	0.1	PASS
37	9.81E-3	0.004	0.1	PASS
38	7.82E-3	0.003	0.1	PASS
39	7.48E-3	0.003	0.1	PASS
40	11.03E-3	0.005	0.1	PASS

6.1.2. CONDUCTED EMISSION. VOLTAGE FLUCTUATIONS AND FLICKER

LIMITS OF FLUCTUATING VOLTAGE AND FLICKER

The limits are established for the voltage fluctuations and flicker that may occur on the AC mains port of the EUT. The applicable limits according to the standard UNE-EN 61000-3-3:2013 (section A.1 and A.1.1) for 16 A or lower input current equipment, are as follow:

- The $\mathbf{P_{st}}$ value cannot be above 1.0;
- The $\mathbf{P_{lt}}$ value cannot be above 0.65;
- The relative voltage variation in steady state $\mathbf{d_c}$, cannot exceed the value of 3.3 %;
- The maximum relative value of the voltage variation $\mathbf{d_{max}}$, cannot exceed the value of 4 %;
- The value **d(t)** during a voltage variation cannot exceed 3,3 % for a time greater than 500 ms;

TESTING METHOD

According to the standard UNE-EN 61000-3-3:2013 (section A.1 and A.1.1) and internal method ME.CM11.

MODES OF OPERATION

The sample remained in the mode of operation M01 during the test.

Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

The sample tested was the sample A.

TEST RESULTS

P: Pass, F: Fail, NA:Not Applicable, NM: Not Measured

Description	Result
AC mains harmonic current measurement.	P

Maximum Flicker results

	EUT values	Limit	Result
Pst	0.028	1.00	PASS
Plt	0.028	0.65	PASS
dc [%]	0.000	3.30	PASS
dmax [%]	0.081	4.00	PASS
dt [s]	0.000	0.50	PASS

6.1.3. RADIATED EMISSION. DISTURBING RADIATED FIELD (1)

LIMITS OF PERMISSIBLE DISRUPTION

The applicable limit for the measurement of electromagnetic radiated disturbance on the surroundings port of the EUT, according to the standard ETSI-EN 301489-1 v1.9.2, ETSI-EN 301489-17 v2.2.1 and EN 61326-1:2013, in the frequency range between 30 MHz and 6 GHz, and at a distance of three metres, is as follows:

Frequency range	QP (dBµV/m)	AVG (dBµV/m)	PK (dBµV/m)
30 MHz – 230 MHz	40	---	---
230 MHz – 1000 MHz	47	---	---
1000 MHz – 3000 MHz	---	50	70
3000 MHz – 6000 MHz	---	54	74

NOTE: The exclusion band for transmitters operating in the 2450 MHz band applies in this test, according to ETSI-EN 301489-1 v1.9.2 and ETSI-EN 301489-17 v2.2.1. Therefore, the frequency band from 2280 MHz to 2607,675 MHz is excluded from radiated emission measurements.

TESTING METHOD

According to the standard UNE-EN 55032:2016, +/AC:2016-07, for table standing equipment and 3 m distance measurement, with the exception that the antenna reached a maximum height of 2 m during the test. The measurement was carried out inside of an anechoic screened chamber.

MODES OF OPERATION

The sample remained in the mode of operation M01 during the test.

Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

The sample tested was the sample A.

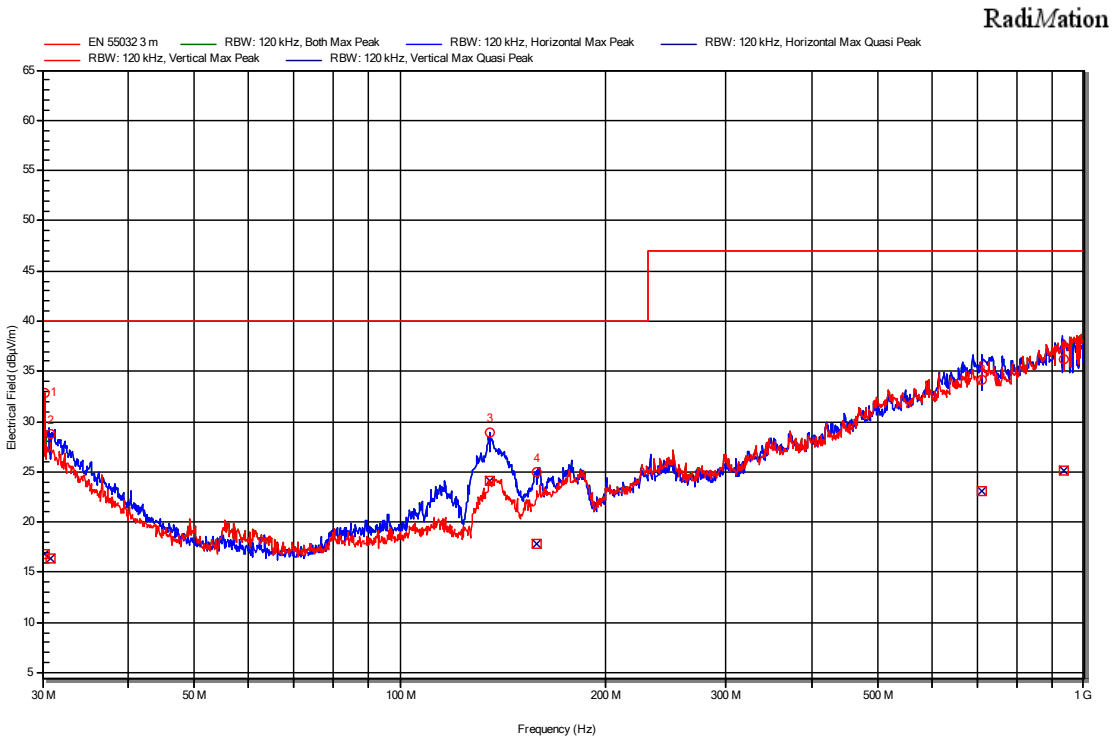
TEST SETUP

TEST RESULTS

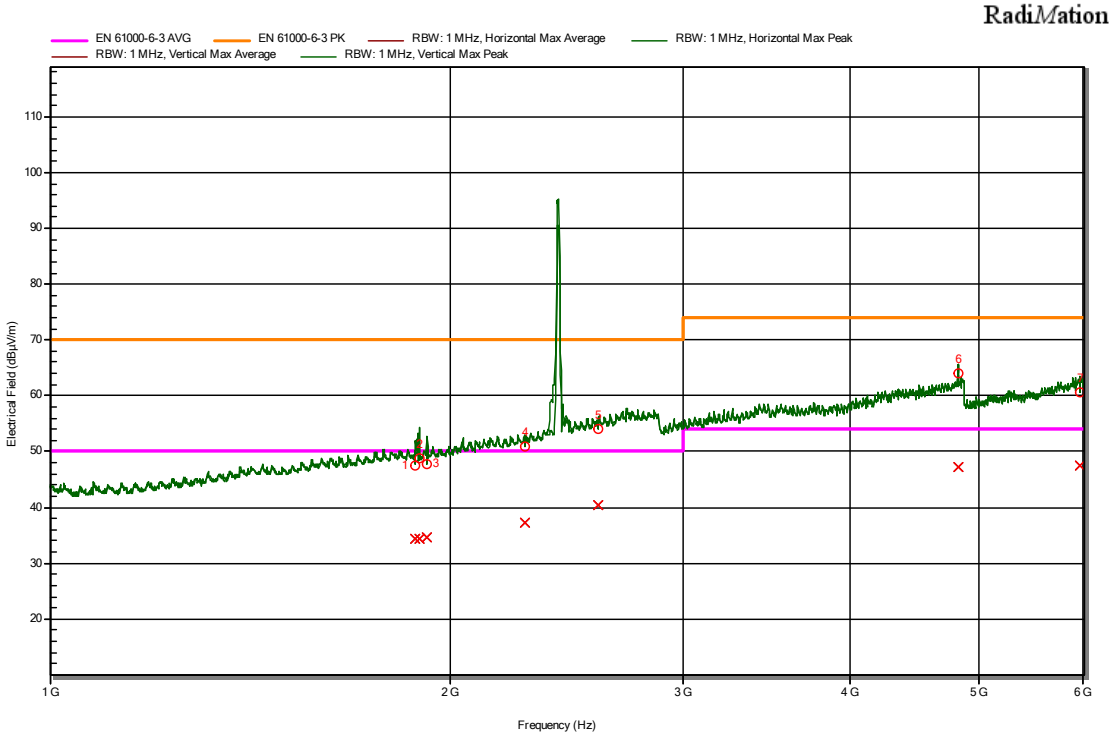
P: Pass, F: Fail, NA:Not Applicable, NM: Not Measured

Description	Result
Radiated Emission. 30 MHz to 1 GHz.	P
Radiated Emission. 1 GHz to 6 GHz.	P

TABLES AND GRAPHICAL RESULTS



Peak Number	Frequency	Quasi-Peak	Quasi-Peak Limit	Status	Angle	Height	Polarization
1	30,24 MHz	16,9 dBµV/m	40 dBµV/m	Pass	250 Degree	1,95 m	Vertical
2	30,81 MHz	16,4 dBµV/m	40 dBµV/m	Pass	113 Degree	1,65 m	Horizontal
3	135,54 MHz	24,2 dBµV/m	40 dBµV/m	Pass	170 Degree	2 m	Horizontal
4	158,31 MHz	17,8 dBµV/m	40 dBµV/m	Pass	170 Degree	1,85 m	Horizontal
5	711,18 MHz	23,1 dBµV/m	47 dBµV/m	Pass	80 Degree	1,95 m	Horizontal
6	934,83 MHz	25,1 dBµV/m	47 dBµV/m	Pass	68 Degree	1,35 m	Vertical



NOTE: The frequency band from 2.280 MHz to 2.607,675 MHz is excluded from radiated emission measurements, as per ETSI EN 301489-17 v2.2.1.

Peak Number	Frequency	Peak	Peak Limit	Average	Average Limit	Status	Angle	Height	Polarization
1	1,884 GHz	47,4 dBµV/m	70 dBµV/m	34,4 dBµV/m	50 dBµV/m	Pass	195 Degree	1 m	Horizontal
2	1,896 GHz	48,8 dBµV/m	70 dBµV/m	34,4 dBµV/m	50 dBµV/m	Pass	275 Degree	1 m	Vertical
3	1,924 GHz	47,7 dBµV/m	70 dBµV/m	34,6 dBµV/m	50 dBµV/m	Pass	350 Degree	1 m	Horizontal
4	2,279 GHz	50,9 dBµV/m	70 dBµV/m	37,4 dBµV/m	50 dBµV/m	Pass	350 Degree	1 m	Vertical
5	2,588 GHz	54 dBµV/m	70 dBµV/m	40,4 dBµV/m	50 dBµV/m	Pass	265 Degree	1 m	Vertical
6	4,824 GHz	64 dBµV/m	74 dBµV/m	47,3 dBµV/m	54 dBµV/m	Pass	23 Degree	1 m	Vertical
7	5,967 GHz	60,6 dBµV/m	74 dBµV/m	47,5 dBµV/m	54 dBµV/m	Pass	160 Degree	1 m	Horizontal

6.1.4. CONDUCTED EMISSION. CONDUCTED DISTURBANCE MEASUREMENT (1)

LIMITS OF PERMISSIBLE DISRUPTION

The applicable limit for the measurement of electromagnetic conducted disturbance on the AC mains port of the EUT, according to the standard ETSI-EN 301489-1 v1.9.2, ETSI-EN 301489-17 v2.2.1 and EN 61326-1:2013, in the frequency range between 150 kHz and 30 MHz, is as follows:

Frequency range	QP Limits (dBµV/m)	AVG Limits (dBµV/m)
150 kHz – 500 kHz	66 to 56	56 to 46
500 kHz – 5 MHz	56	46
5 MHz – 30 MHz	60	50

TESTING METHOD

According to the standard UNE-EN 55032:2016, +/AC:2016-07, for table standing equipment. The measurement was carried out inside of an anechoic screened chamber.

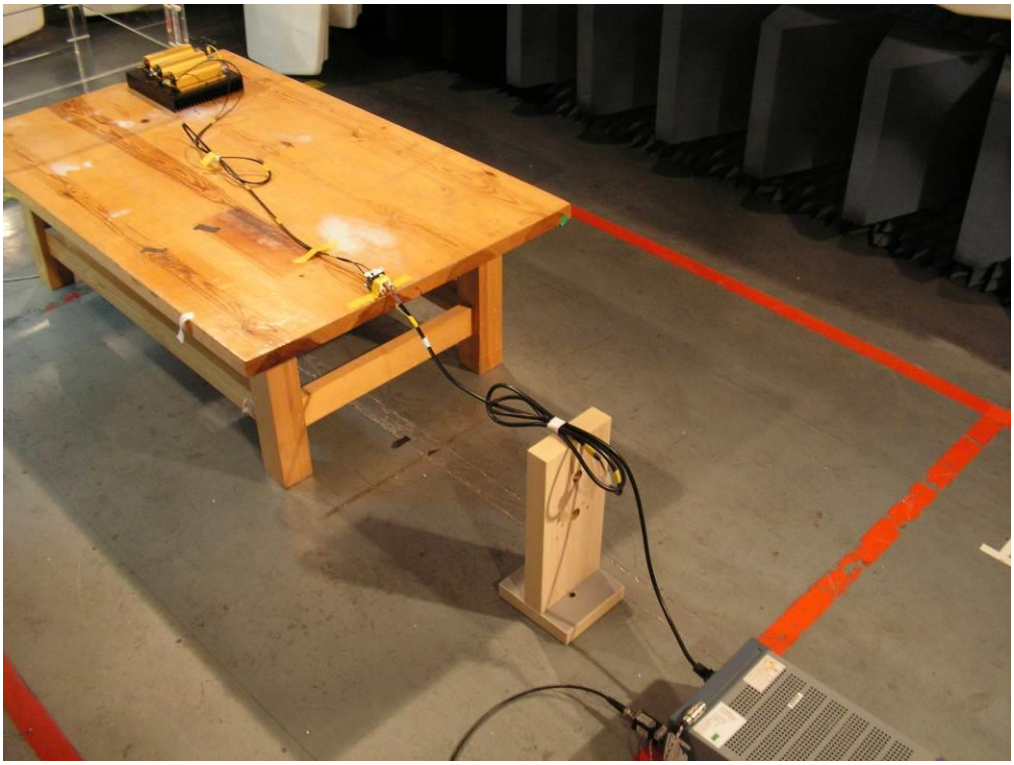
MODES OF OPERATION

The sample remained in the mode of operation M01 during the test.

Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

The sample tested was the sample A.

TEST SETUP



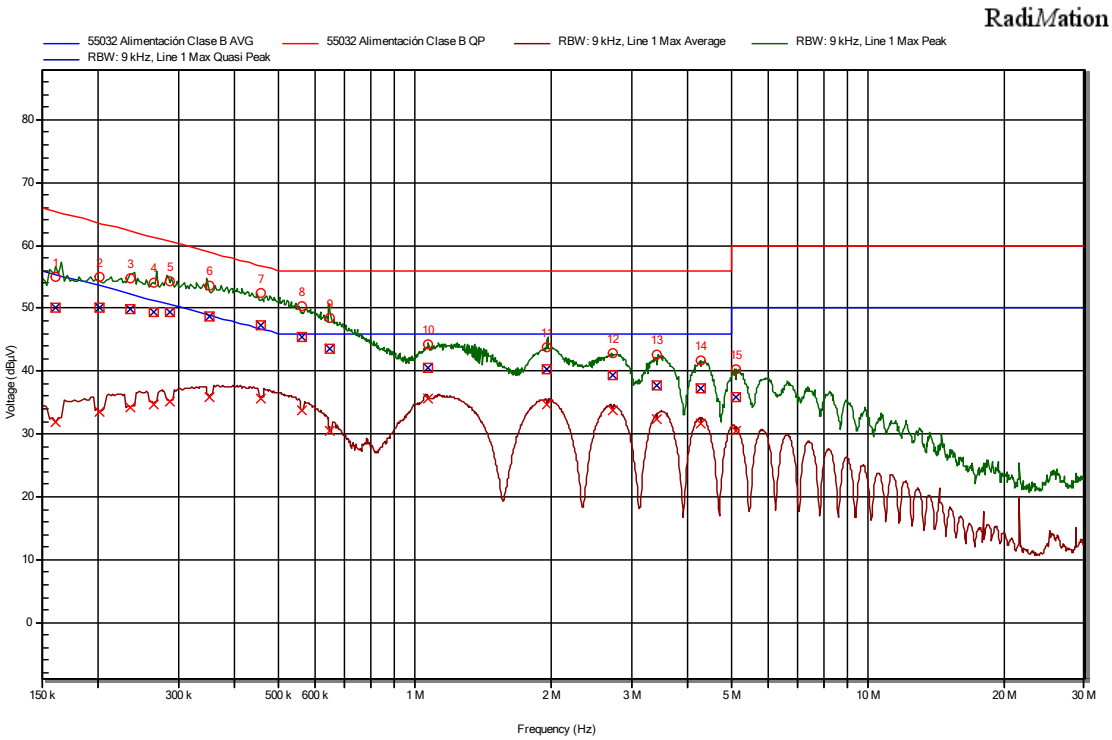
TEST RESULTS

P: Pass, F: Fail, NA:Not Applicable, NM: Not Measured

Description	Result
Conducted Emission. 150 kHz to 30 MHz.	P

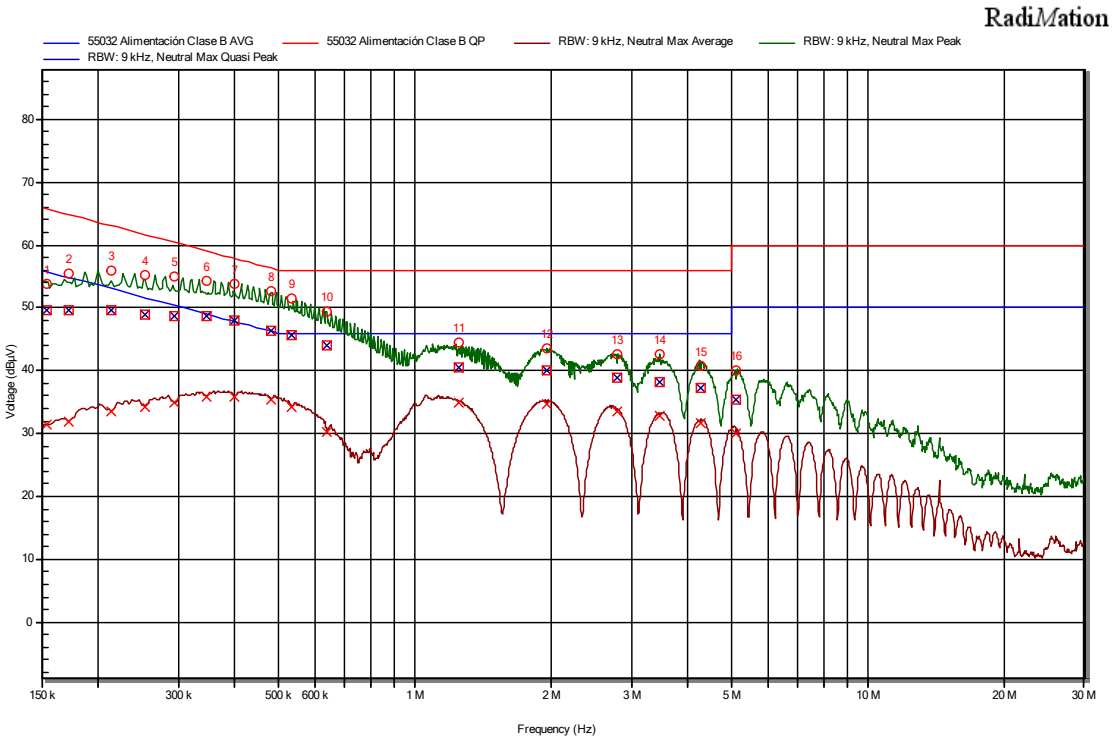
TABLES AND GRAPHICAL RESULTS

Measurement in L1



Peak Number	Frequency	Average	Average Limit	Quasi-Peak	Quasi-Peak Limit	Status
1	161,25 kHz	31,8 dBµV	55,4 dBµV	50 dBµV	65,4 dBµV	Pass
2	201,75 kHz	33,6 dBµV	53,5 dBµV	50,2 dBµV	63,5 dBµV	Pass
3	235,5 kHz	34,2 dBµV	52,3 dBµV	49,9 dBµV	62,3 dBµV	Pass
4	264,75 kHz	34,7 dBµV	51,3 dBµV	49,4 dBµV	61,3 dBµV	Pass
5	287,25 kHz	35,2 dBµV	50,6 dBµV	49,3 dBµV	60,6 dBµV	Pass
6	352,5 kHz	36 dBµV	48,9 dBµV	48,8 dBµV	58,9 dBµV	Pass
7	458,25 kHz	35,6 dBµV	46,7 dBµV	47,2 dBµV	56,7 dBµV	Pass
8	564 kHz	33,7 dBµV	46 dBµV	45,4 dBµV	56 dBµV	Pass
9	649,5 kHz	30,5 dBµV	46 dBµV	43,6 dBµV	56 dBµV	Pass
10	1,07 MHz	35,5 dBµV	46 dBµV	40,6 dBµV	56 dBµV	Pass
11	1,961 MHz	34,8 dBµV	46 dBµV	40,2 dBµV	56 dBµV	Pass
12	2,726 MHz	33,8 dBµV	46 dBµV	39,3 dBµV	56 dBµV	Pass
13	3,415 MHz	32,4 dBµV	46 dBµV	37,8 dBµV	56 dBµV	Pass
14	4,272 MHz	31,7 dBµV	46 dBµV	37,2 dBµV	56 dBµV	Pass
15	5,096 MHz	30,4 dBµV	50 dBµV	35,8 dBµV	60 dBµV	Pass

Measurement in N



Peak Number	Frequency	Average	Average Limit	Quasi-Peak	Quasi-Peak Limit	Status
1	154,5 kHz	31,5 dBµV	55,8 dBµV	49,5 dBµV	65,8 dBµV	Pass
2	172,5 kHz	31,8 dBµV	54,8 dBµV	49,6 dBµV	64,8 dBµV	Pass
3	213 kHz	33,6 dBµV	53,1 dBµV	49,6 dBµV	63,1 dBµV	Pass
4	253,5 kHz	34,1 dBµV	51,6 dBµV	49 dBµV	61,6 dBµV	Pass
5	294 kHz	34,8 dBµV	50,4 dBµV	48,7 dBµV	60,4 dBµV	Pass
6	345,75 kHz	35,8 dBµV	49,1 dBµV	48,6 dBµV	59,1 dBµV	Pass
7	399,75 kHz	35,9 dBµV	47,9 dBµV	48 dBµV	57,9 dBµV	Pass
8	480,75 kHz	35,3 dBµV	46,3 dBµV	46,5 dBµV	56,3 dBµV	Pass
9	534,75 kHz	34,2 dBµV	46 dBµV	45,6 dBµV	56 dBµV	Pass
10	640,5 kHz	30,4 dBµV	46 dBµV	44 dBµV	56 dBµV	Pass
11	1,248 MHz	34,8 dBµV	46 dBµV	40,5 dBµV	56 dBµV	Pass
12	1,95 MHz	34,7 dBµV	46 dBµV	40,1 dBµV	56 dBµV	Pass
13	2,785 MHz	33,5 dBµV	46 dBµV	38,9 dBµV	56 dBµV	Pass
14	3,473 MHz	32,7 dBµV	46 dBµV	38,3 dBµV	56 dBµV	Pass
15	4,259 MHz	31,7 dBµV	46 dBµV	37,2 dBµV	56 dBµV	Pass
16	5,114 MHz	30,1 dBµV	50 dBµV	35,4 dBµV	60 dBµV	Pass

6.2. IMMUNITY RESULTS

6.2.1. IMMUNITY TO ELECTROSTATIC DISCHARGES

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test..

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test. The sample was mounted as a table standing equipment, being this setup the most similar to a real EUT's installation.

  The sample tested was the sample A.

- The severity level applied was according to the standards ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment:

Discharge type	Level	Nr of discharges
Contact discharge	± 2 kV, ± 4 kV	10 per level and polarity

- Performance Criteria Applied:

  Performance Criterion B.

- Application Method:

  According to the standard UNE-EN 61000-4-2:2010 and internal method ME.CM04.

  Ten discharges were applied for each test level and polarity, with 1 second interval between them.

  NOTE: Only indirect contact discharges were applied to the EUT, as the device is not accesible to the user during operation.

TEST SETUP

TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured

Description	Result
Indirect Discharge. Contact discharge. Applied on the Vertical Coupling Plane, placed on the four sides of the EUT. Voltage applied: ±2 kV and ±4 kV. Comments: No anomalies are observed.	P
Indirect Discharge. Contact discharge. Applied on the Horizontal Coupling Plane, under the EUT. Voltage applied: ±2 kV and ±4 kV. Comments: No anomalies are observed	P

6.2.2. ***IMMUNITY TO RF FIELDS***

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test.

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test.

  The test was carried out inside of a semianechoic screened chamber.

  The sample tested was the sample A.

- The severity level applied was according to the strictest requirements defined within the standards ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment, exposing the EUT to a radiated field with the following characteristics:

Frequency Ranges	Modulation	Test Voltage
80 MHz – 1000 MHz	AM 80% 1 kHz	10 V/m
1.4 GHz – 2 GHz	AM 80% 1 kHz	3 V/m
2 GHz – 2.7 GHz	AM 80% 1 kHz	3 V/m

  In this test the frequency sweep was incremented by 1%, and the dwell time was 3 seconds. The delay time was 0 seconds.

- Performance Criteria Applied:

  Performance Criterion A.

- Application Method:

  According to standard 61000-4-3:2007, +/A1:2008, +/A2:2011 and internal method ME.CM06.

TEST SETUP

TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured.

Description	Result
Frequency interval: 80 MHz – 1 GHz. Field: 10 V/m. AM Modulation 80%, 1 kHz. 0º (EUT´s front view). Horizontal Polarization. Comments: No anomalies are observed.	P
Frequency interval: 80 MHz – 1 GHz. Field: 10 V/m. AM Modulation 80%, 1 kHz. 90º. Horizontal Polarization. Comments: No anomalies are observed.	P
Frequency interval: 80 MHz – 1 GHz. Field: 10 V/m. AM Modulation 80%, 1 kHz. 0º (EUT´s front view). Vertical Polarization. Comments: No anomalies are observed.	P
Frequency interval: 80 MHz – 1 GHz. Field: 10 V/m. AM Modulation 80%, 1 kHz. 90º. Vertical Polarization. Comments: No anomalies are observed.	P
Frequency interval: 1.4 GHz – 2.7 GHz. Field: 3 V/m. AM Modulation 80%, 1 kHz. 0º (EUT´s front view). Horizontal Polarization. Comments: No anomalies are observed.	P
Frequency interval: 1.4 GHz – 2.7 GHz. Field: 3 V/m. AM Modulation 80%, 1 kHz. 90º. Horizontal Polarization. Comments: No anomalies are observed.	P
Frequency interval: 1.4 GHz – 2.7 GHz. Field: 3 V/m. AM Modulation 80%, 1 kHz. 0º (EUT´s front view). Vertical Polarization. Comments: No anomalies are observed.	P
Frequency interval: 1.4 GHz – 2.7 GHz. Field: 3 V/m. AM Modulation 80%, 1 kHz. 90º. Vertical Polarization. Comments: No anomalies are observed.	P

6.2.3. ***IMMUNITY TO EFT/BURSTS***

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test..

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test. The sample was mounted as a table standing equipment, being this setup the most similar to a real EUT's installation.

  The sample tested was the sample A.

- The severity level applied was according to the strictest requirements defined within the standards ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment:

Port	Repetition frequency	Level (kV)	Duration
AC power ports	5 kHz	± 2 kV	1 minute/polarity

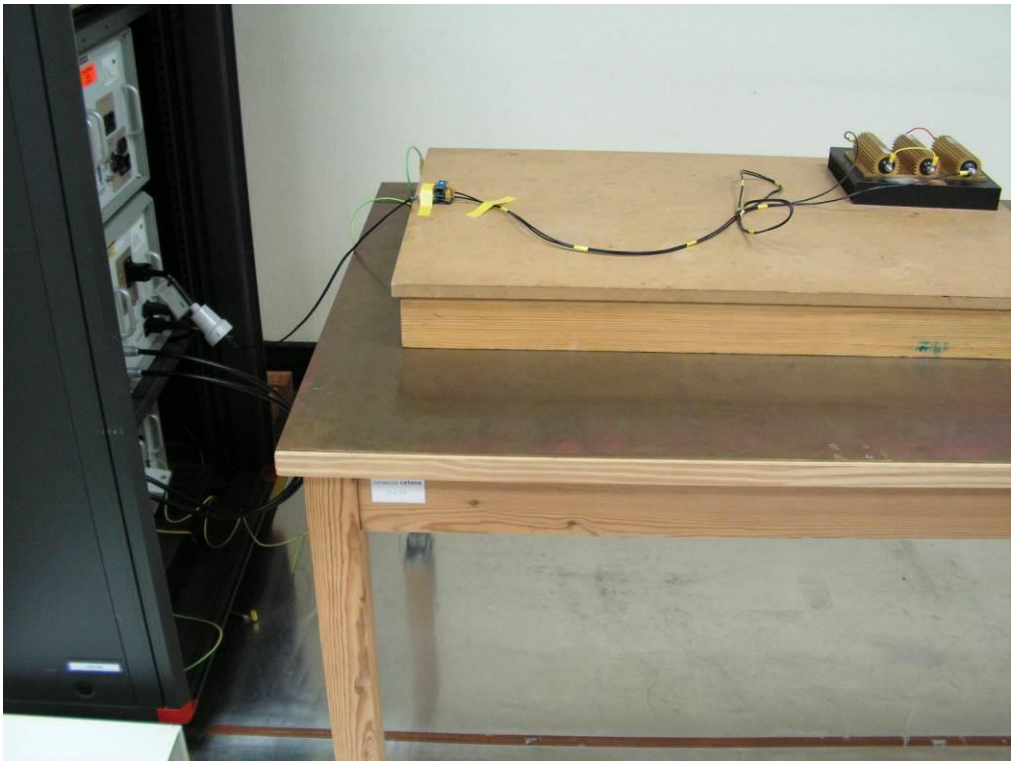
- Performance Criteria Applied:

  Performance Criterion B.

- Application Method:

  According to standard UNE-EN 61000-4-4:2013 and internal method ME.CM03.

TEST SETUP



TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured.

Description	Result
Tested interface: I01 (L1, N, PE). Direct coupling. Level: ± 2 kV. Comments: No anomalies are observed.	P
Tested interface: I01 (L1). Direct coupling. Level: ± 2 kV. Comments: No anomalies are observed.	P
Tested interface: I01 (N). Direct coupling. Level: ± 2 kV. Comments: No anomalies are observed.	P
Tested interface: I02. Capacitive coupling. Level: ± 2 kV. Comments: No anomalies are observed.	P

6.2.4. IMMUNITY TO SURGES

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test.

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test.

  The sample tested was the sample A.

- The severity level applied was according to the standards ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment:

Port	Level (kV)	Nr of pulses
AC power ports	± 0.5 kV, ± 1 kV (differential mode)	5 pulses/polarity

- Performance Criteria Applied:

  Performance Criterion B.

- Application Method:

  According to standard UNE-EN 61000-4-5:2015 and internal method ME.CM08.

  NOTE: Only differential mode surge pulses were applied to the EUT, as the device did not include any ground terminal.

TEST SETUP

TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured.

Description	Result
Tested interface: I01. (L1-N) Z_{out}: 2 Ω. Phase coupling: 0º, 90º, 180º and 270º. Level: ± 0.5 kV. Comments: No anomalies are observed.	P
Tested interface: I01. (L1-N) Z_{out}: 2 Ω. Phase coupling: 0º, 90º, 180º and 270º. Level: ± 1 kV. Comments: No anomalies are observed.	P

6.2.5. *IMMUNITY TO COMMON MODE RF FIELD*

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test.

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test. The sample was mounted on a 10 cm isolating platform, over the earth reference plane.

  The sample tested was the sample A.

- The EUT was tested as a simple unit.

- The severity level applied was according to the standards ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment, exposing the EUT to an induced voltage with the following characteristics:

Port	Frequency Ranges	Modulation	Test Voltage
AC power ports	0,15 MHz – 80 MHz	AM 80% 1 kHz	3 Vrms

  In this test the frequency sweep was incremented by 1%, and the dwell time was 3 seconds. The delay time was 0 seconds.

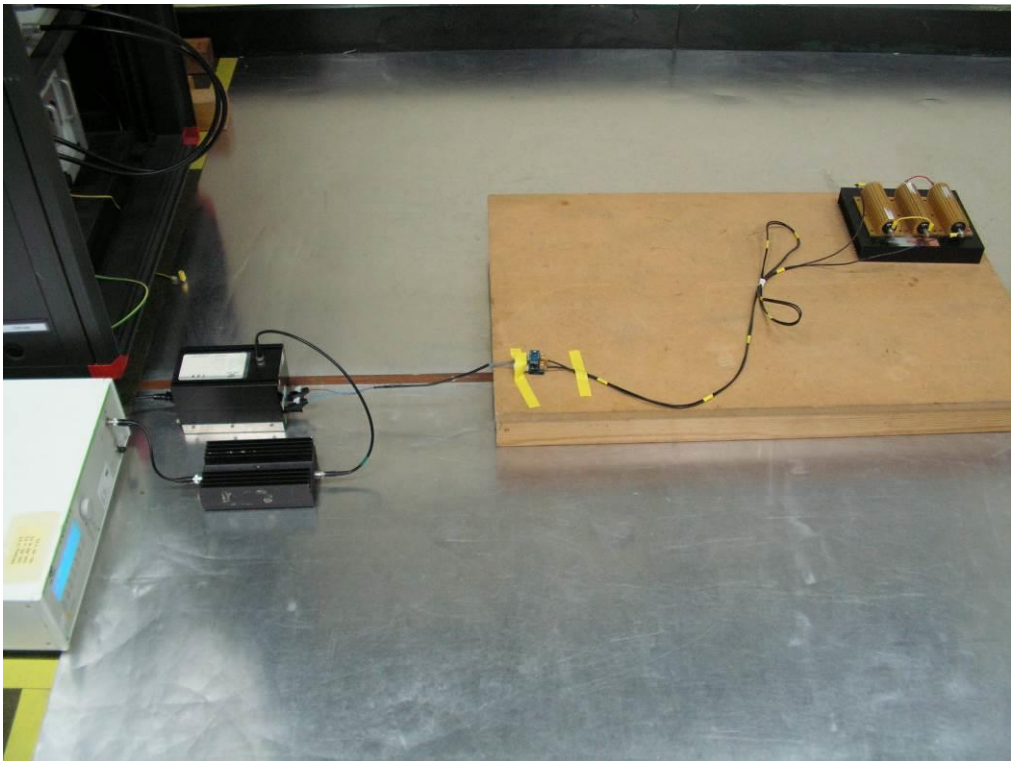
- Performance Criteria Applied:

  Performance Criterion A.

- Application Method:

  According to the standard UNE-EN 61000-4-6:2014 and internal method ME.CM01.

TEST SETUP



TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured.

Description	Result
Frequency range: 0,15 MHz – 80 MHz. Field level: 3 Vrms over 150 Ω. AM modulation, 80% with 1 kHz. Tested interface: I01. Coupling through CDN. Comments: No anomalies are observed.	P
Frequency range: 0,15 MHz – 80 MHz. Field level: 3 Vrms over 150 Ω. AM modulation, 80% with 1 kHz. Tested interface: I02. Coupling through EM Clamp. Comments: No anomalies are observed.	P

6.2.6. IMMUNITY TO INDUSTRIAL FREQUENCY MAGNETIC FIELD

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test.

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test. The sample was mounted as a table standing equipment, being this setup the most similar to a real EUT's installation.

  The sample tested was the sample A.

- The severity level applied was according to the standard EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment:

Frequency	Level	Duration
50 Hz	30 A/m	1 minute/axis
60 Hz	30 A/m	1 minute/axis

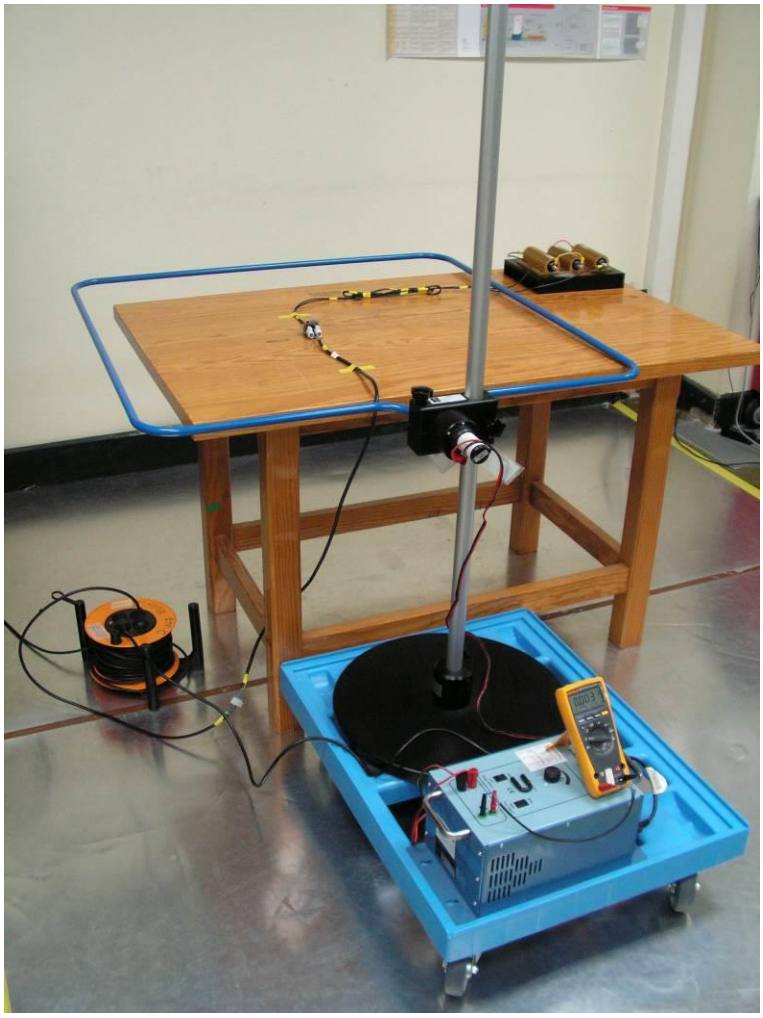
- Performance Criteria Applied:

  Performance Criterion A.

- Application Method:

  According to standard UNE-EN 61000-4-8:2011 and internal method ME.CM02.

TEST SETUP



TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured.

Description	Result
Frequency: 50 Hz. Level: 30 A/m. H field orientation: X axis. Comments: No anomalies are observed.	P
Frequency: 50 Hz. Level: 30 A/m. H field orientation: Y axis. Comments: No anomalies are observed.	P
Frequency: 50 Hz. Level: 30 A/m. H field orientation: Z axis. Comments: No anomalies are observed.	P
Frequency: 60 Hz. Level: 30 A/m. H field orientation: X axis. Comments: No anomalies are observed.	P
Frequency: 60 Hz. Level: 30 A/m. H field orientation: Y axis. Comments: No anomalies are observed.	P
Frequency: 60 Hz. Level: 30 A/m. H field orientation: Z axis. Comments: No anomalies are observed.	P

6.2.7. IMMUNITY TO VOLTAGE DIPS AND SHORT INTERRUPTIONS (1)

TEST PLAN

- MODES OF OPERATION

  The sample remained in the mode of operation M01 during the test.

  Once the equipment was turned on, approximately 5 minutes were waited until its warming up and stabilization.

- SAMPLE'S CONFIGURATION

  The EUT was mounted according to the specifications given by the manufacturer for the mode of operation used in the test. The sample was mounted as a table standing equipment, being this setup the most similar to a real EUT's installation.

  The sample tested was the sample A.

- The severity level applied was according to the strictest requirements defined within the standards ETSI-EN 301489-1 v1.9.2 (1), ETSI-EN 301489-17 v2.2.1 (1) and EN 61326-1:2013 for equipment intended to be used in an industrial electromagnetic environment:

Phenomena	Severity level	Performance criteria
Short interruptions	0% U_{nom} during 0.5 period (50 Hz and 60 Hz)	B
	0% U_{nom} during 1 period (50 Hz and 60 Hz)	
	0% U_{nom} during 250/300 periods (50/60 Hz)	C
Voltage dips	40% U_{nom} during 10/12 periods (50/60 Hz)	C
	70% U_{nom} during 25/30 periods (50/60 Hz)	B

- Performance Criteria Applied:

  Performance Criterion B and C.

- Application Method:

  According to standard UNE-EN 61000-4-11:2005 and internal method ME.CM07.

TEST SETUP

TEST RESULTS

P: Pass, F: Fail, NA: Not applicable, NM: Not measured.

Description	Result
100 % short interruptions. (0 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 10 ms (10 s between repetitions). Tested interface: I01. Frequency: 50 Hz. Performance criteria: B. Comments: No anomalies are observed.	C
100 % short interruptions. (0 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 20 ms (10 s between repetitions). Tested interface: I01. Frequency: 50 Hz. Performance criteria: B. Comments: No anomalies are observed.	C
60 % voltage dips. (40 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 200 ms (10 s between repetitions). Tested interface: I01. Frequency: 50 Hz. Performance criteria: C. Comments: No anomalies are observed.	C
30 % voltage dips. (70 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 500 ms (10 s between repetitions). Tested interface: I01. Frequency: 50 Hz. Performance criteria: B. Comments: No anomalies are observed.	C

100 % short interruptions. (0 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 5 s (10 s between repetitions). Tested interface: I01. Frequency: 50 Hz. Performance criteria: C. Comments: No anomalies are observed.	C
100 % short interruptions. (0 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 10 ms (10 s between repetitions). Tested interface: I01. Frequency: 60 Hz. Performance criteria: B. Comments: No anomalies are observed.	C
100 % short interruptions. (0 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 20 ms (10 s between repetitions). Tested interface: I01. Frequency: 60 Hz. Performance criteria: B. Comments: No anomalies are observed.	C
60 % voltage dips. (40 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 200 ms (10 s between repetitions). Tested interface: I01. Frequency: 60 Hz. Performance criteria: C. Comments: No anomalies are observed.	C

30 % voltage dips. (70 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 500 ms (10 s between repetitions). Tested interface: I01. Frequency: 60 Hz. Performance criteria: B. Comments: No anomalies are observed.	C
100 % short interruptions. (0 % U_{nom} test level). Nr of repetitions: 3. Phase coupling: 0º and 180º. Duration and time between repetitions: 5 s (10 s between repetitions). Tested interface: I01. Frequency: 60 Hz. Performance criteria: C. Comments: No anomalies are observed.	C

CETENA Foundation – NIF: G31704232
Polígono Mocholí – Plaza Cein, nº 4 – 31110 Noain (Navarra) SPAIN
Tfno.: +34 848 420800 – Fax: + 34 948 317754
info@cemitec.com - http://www.cemitec.com

(1) The marked tests/activities are not supported by ENAC accreditation

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Nº 69 / LE 814

Development date: Noain, May 17th, 2018

Developed by: Iosu Martínez (EMC Technician)

Approved by: Ana Resano (EMC Responsible)

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