EMC COMPLIANCE REPORT

EUT Name : Electrical Stretcher Support

Manufacturer :

Model : Arike

Serial No. : ESS9801001

Applicant : E1 Parto Jam Co.

Standard : BS EN 60601-1-2:2014

EUT has been tested and :
☒ Is certified
☐ Is not certified

Test Engineer
S.Rahimi

Approved By

Technical Manager
Dr. P. Dehkhoda

Senior Manager
Prof. S. H. Sadeghi

Note: *The test result in this report refers exclusively to the presented test model / sample.*

The test report shall not be reproduced except in full, without the written approval of the laboratory.

CONTENTS

1 GENERAL INFORMATION

1.1 Applicant Information

Applicant : E1 Parto Jam Co.
Address : No 47, Ghafari St, Fajr St, Motahari Ave, Theran, Iran
Contact Person : Ms Ebadi
Telephone : +982188813304
Fax : -

1.2 EUT Information

EUT Name : Electrical Stretcher Support
Manufacturer :
Rating(s) : 12VDC, 360W
Intended Environment : Professional healthcare facility
Date of Acceptance : 01/13/2021

1.3 EUT Support Equipment Information

EUT Support Equipment	Manufacturer	Model	Serial No.	Rating(s)
-	-	-	-	-

1.4 Typical equipment used for test

Equipment	Manufacturer	Model
Electrostatic discharge		
ESD Generator	EMTEST	Dito
Bleeding Resistor	EMTEST	Dito
Vertical Coupling Plane	EMTEST	Dito
Horizontal Coupling Plane	AUT	N/A
ESD Generator	EMTEST	Dito
RF Radiated and Conducted Immunity Test		
Semi-Anechoic Chamber	Albatross	P23315
Integrated EMS measurement system	R&S	IMS
Power Amplifier for Radiated Immunity Test	BONN ELECTRONIK	BLWA 0825-160/100/35D
Power Amplifier for Conducted Immunity Test	BONN ELECTRONIK	BSA 0125-150
Bulk Current Injection (BCI)	TESEQ	CIP9136A
Cable Set and Connections	R&S	-
GPIB-Extender	R&S	NI-G140
EMC32 Software	R&S	EMC32-E+
Power Sensor	R&S	NRP-Z91
Attenuator	R&S	RBU100
Line distributor/EMI filter	R&S	CS-LDE
System Controller Laptop	R&S	BIT-RNB
High Gain Log-Periodic Antenna	R&S	HL046E
Broad-band horn antenna	R&S	BBHA9120E
Broadband Field Meter	R&S	TS-NBM500
E-Field Probe Isotropic	R&S	TS-EF0391
Field strength sensor mast	R&S	I-FSM230
Conducted Electromagnetic Interference Measurements		
EMI Receiver	R&S	ESIB26
Cable Set and Connections	R&S	N/A
Semi-Anechoic Chamber	Albatross	P23315
Log-Per EMI-Antenna	R&S	HL562
GPIB-Extender	R&S	NI-G140

1.5 EUT Photographs

Figure 1-EUT Photograph

Figure 2-EUT Model & Serial Number

2 OVERVIEW OF RESULTS

2.1 Immunity Tests

Immunity Tests	Standards (BS EN 60601-1-2:2014)	Result
Electrostatic Discharge Test	Sub Clause 8 Table 4 (As Per IEC 61000-4-2:2008)	Pass
Electromagnetic Field Immunity Test	Sub Clause 8 Table 4 (As Per IEC 61000-4-3:2010)	Pass
Burst Test	Sub Clause 8 Table 4 (As Per IEC 61000-4-4:2012)	N/A
Surge Test	Sub Clause 8 Table 4 (As Per IEC 61000-4-5:2017)	N/A
Conducted Disturbances Test	Sub Clause 8 Table 4 (As Per IEC 61000-4-6:2013)	N/A
Power Frequency Magnetic Fields Immunity Test	Sub Clause 8 Table 4 (As Per IEC 61000-4-8:2009)	N/D
Voltage Dips, Short Interruptions and Voltage Variations Test	Sub Clause 8 Table 4 (As Per IEC61000-4-11:2017)	N/A

***: During the immunity tests, basic essential performance of the EUT has been monitored.**

2.2 Emission Test

Emission Tests	Standards (BS EN 60601-1-2:2014)	Class	Result
Harmonic Current	Sub Clause 7.2.1 (As Per IEC 61000-3-2:2018)	A	N/A
Voltage Fluctuation and Flicker	Sub Clause 7.2.2 (As Per IEC 61000-3-3:2017)	-	N/A
Conducted Electromagnetic Interference	Sub Clause 7.3 Table 2 (As Per CISPR 11:2016)	A	N/A
		B	N/A
Radiated Electromagnetic Interference	Sub Clause 7.3 Table 2 (As Per CISPR 11:2016)	A	Pass
		B	Pass

Note

Pass/Fail: This test has been done and mentioned result has been obtained.
N/A: mentioned test is not applicable for the EUT according to its specific product standard.
N/D: mentioned test is not doable in this Lab.
__: The test has been canceled due to manufacturer request.

3 IMMUNITY TESTS

3.1 Electrostatic Discharge Test

This test relates to equipment, systems, subsystems and peripherals which may be involved in static electricity discharge owing to environmental and installation conditions, such as low relative humidity, use of low-conductivity carpets, vinyl garments, etc., which may exist in all locations classified in standards relevant to electrical and electronic equipment.

3.1.1 Test Information

Test Standard : IEC 61000-4-2: 2008
Test Engineer : S.Rahimi
Date of Test : 01/18/2021
EUT Setup : Table-Top
Test Result : Pass

3.1.2 Ambient Conditions

Temperature : 19.3C
Relative Humidity : 27.2%RH
Atmospheric Pressure : 87-88 kPa

3.1.3 Test Setup for Table-top Equipment

The test procedure was in accordance with IEC 61000-4-2 as the following:

- The test set-up shall consist of a wooden table, 0.8 m high, standing on the ground reference plane.
- A horizontal coupling plane (HCP) 1.6 × 0.8 m, shall be placed on the table. The EUT and cables shall be isolated from the coupling plane by an insulating support 0.5 mm thick.
- When a metallic accessible part, to which the ESD pulse is to be applied, is available on the EUT, this part shall be connected to the HCP via the cable with bleeder resistors.

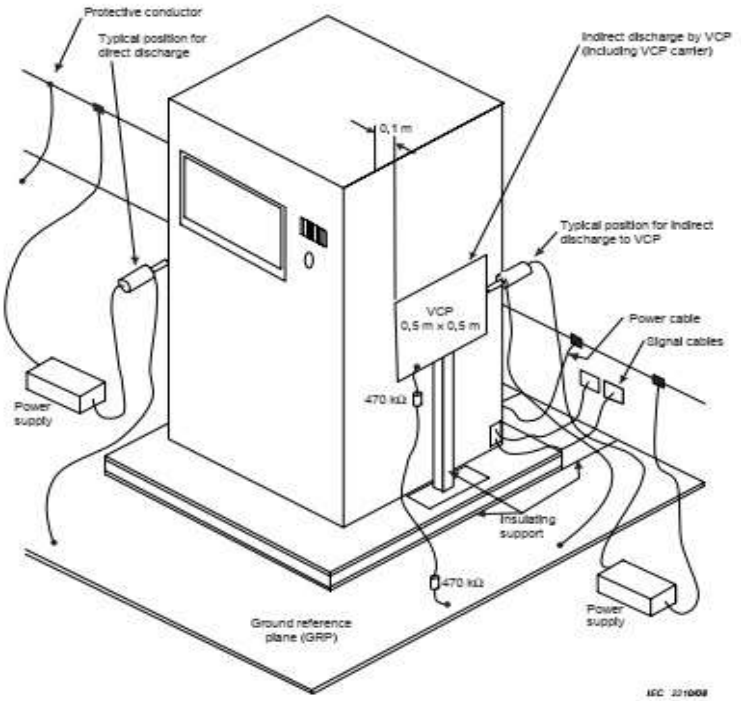


Figure 3- Example of test setup for floor-standing equipment, laboratory tests (IEC 61000-4-2)

3.1.4 Test Levels and Results

Direct Discharge

Type	Number of Points	Number of Pulses	Voltage (kV)	Result
Contact	10	10	±8	Pass
Air	10	10	±2, ±4, ±8, ±15	Pass

Indirect Discharge*

Type	Number of Points	Number of Pulses	Voltage (kV)	Result
HCP	1	10	±8	Pass
VCP Front	1	10	±8	Pass
VCP Left	1	10	±8	Pass
VCP Back	1	10	±8	Pass
VCP Right	1	10	±8	Pass

3.2 Electromagnetic Field Immunity Test

The object of this standard is to establish a common reference for evaluating the immunity of electrical and electronic equipment when subjected to radiated, radio-frequency electro-magnetic fields. Particular considerations are devoted to the protection against radio-frequency emissions from digital radiotelephones and other RF emitting devices.

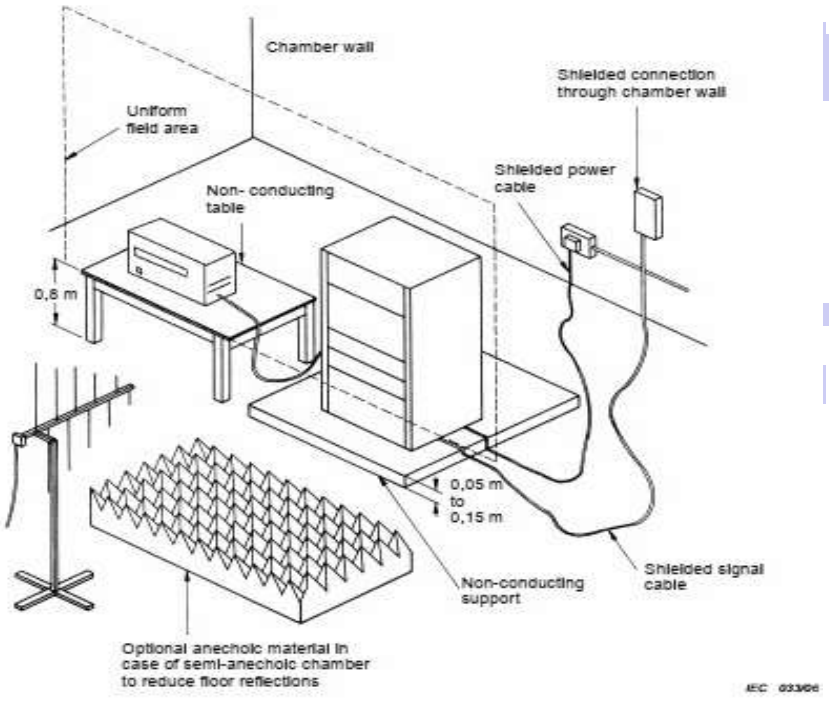
3.2.1 Test Information

Test Standard : IEC 61000-4-3:2006
Test Engineer : S.Rahimi
Date of Test : 01/18/2021
EUT Setup : Table-Top
Test Result : Pass

3.2.2 Ambient Conditions

Temperature : 19.3C
Relative Humidity : 25.4%RH
Atmospheric Pressure : 87-88 kPa

3.2.3 Test Setup



NOTE Anechoic lining material has been omitted from walls for clarity.

Figure 4- Example of test setup for floor-standing equipment (IEC 61000-4-3)

3.2.4 Test Levels and Results

Unit	Freq. Range (MHz)	Freq. Step	Field Strength (V/m)	Dwell Time (s)	Ant. Polarity	EUT Orientation	Test Result
1	80-2700	1%	3	3	H/ V	Front	**Pass/ Pass**
2	80-2700	1%	3	3	H/ V	Back	**Pass/ Pass**
3	80-2700	1%	3	3	H/ V	Left	**Pass/ Pass**
4	80-2700	1%	3	3	H/ V	Right	**Pass/ Pass**

3.2.5 Test Levels and Result ISM Band

Unit	Test frequency (MHz)	Band (MHz)	Service	Modulation	TEST LEVEL IMMUNITY (V/m)	Test Result
1	385	380 – 390	TETRA 400	Pulse modulation 18 Hz	27	**Pass**
2	450	430 – 470	GMRS 460, FRS 460	FM ± 5 kHz deviation 1 kHz sine	28	**Pass**
3	710	704 – 787	LTE Band 13, 17	Pulse modulation 217 Hz	9	**Pass**
	745					
	780					
4	810	800 – 960	GSM 800/900, TETRA 800, iDEN 820, CDMA 850, LTE Band 5	Pulse modulation 18 Hz	28	**Pass**
	870					
	930					
5	1 720	1 700 – 1 990	GSM 1800; CDMA 1900; GSM 1900; DECT; LTE Band 1, 3, 4, 25; UMTS	Pulse modulation 217 Hz	28	**Pass**
	1 845					
	1 970					
6	2 450	2 400 – 2 570	Bluetooth, WLAN, 802.11 b/g/n, RFID 2450, LTE Band 7	Pulse modulation 217 Hz	28	**Pass**
7	5 240	5 100 – 5 800	WLAN 802.11 a/n	Pulse modulation 217 Hz	9	**Pass**
	5 500					
	5 785					

4 EMISSION TESTS

4.1 Radiated Electromagnetic Interference Measurement

This test is concerned with the measurements of Radiated electromagnetic interference of electrical and electronic equipment.

4.1.1 Test Information

Test Standard	:	CISPR 11:2015
Test Engineer	:	S.Rahimi
Date of Test	:	01/19/2021
EUT Setup	:	Table-Top
EUT Class	:	A/B
Test Result	:	Pass/Pass

4.1.2 Ambient Conditions

Temperature	:	20.2˚C
Relative Humidity	:	26.3%RH
Atmospheric Pressure	:	87-88 kPa

4.1.3 Test Setup for Table-top Equipment

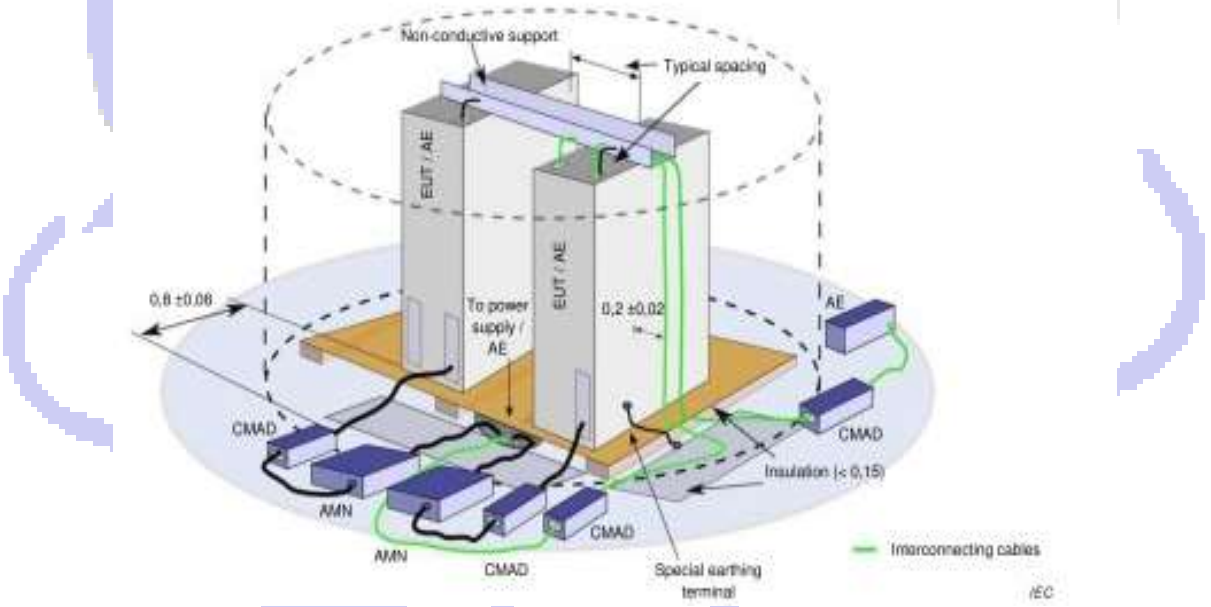
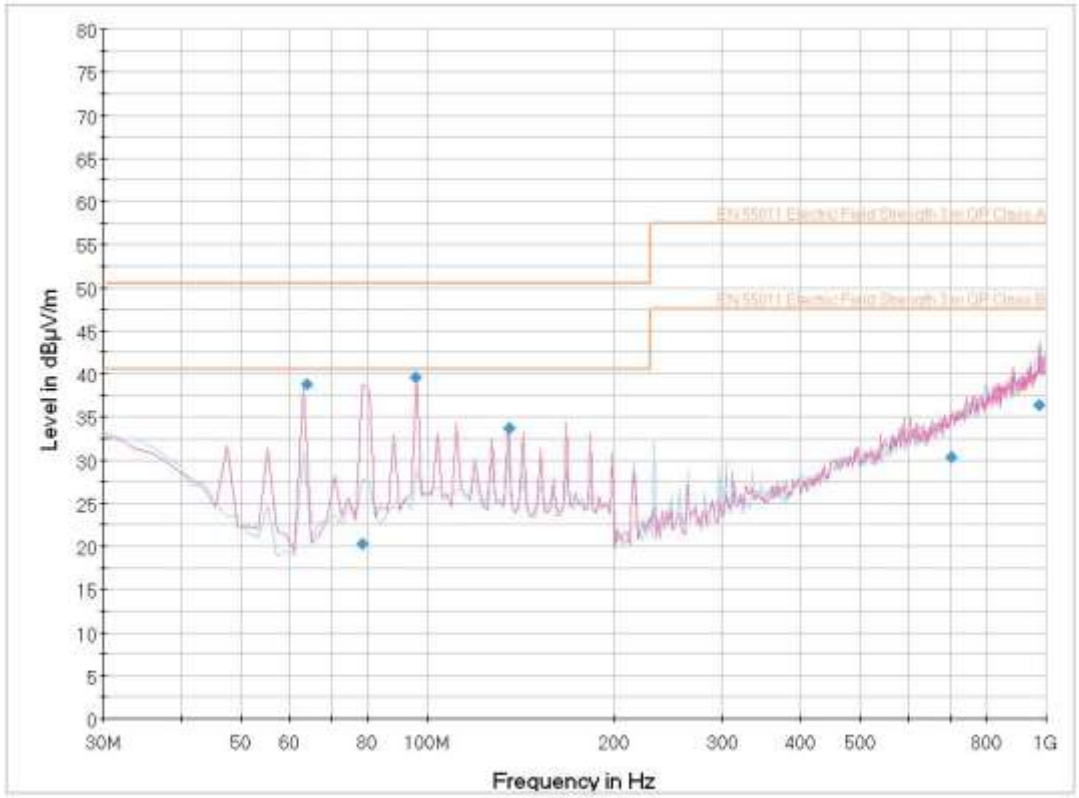


Figure 5- Example for a typical test setup for measurement of radiated disturbances from a floor standing EUT, 3D view Test Results

4.1.4 Test Results



Frequency	Quasi Peak	Meas. Time	Bandwidth	Height	Polarization	Azimuth	Corr.
MHz	dBµV/m	ms	kHz	cm		deg	dB
64.006092	38.8	15000.0	120.000	100.0	V	0.0	7.0
78.637194	20.2	15000.0	120.000	100.0	V	270.0	10.7
95.972184	39.6	15000.0	120.000	100.0	V	0.0	11.5
136.009940	33.6	15000.0	120.000	100.0	V	180.0	11.2
701.441283	30.3	15000.0	120.000	100.0	V	270.0	22.6
976.153347	36.3	15000.0	120.000	100.0	V	180.0	26.3

5 PHOTOGRAPH OF TEST

Figure 6: Equipment under Radiated Emission Test