TEST REPORT

Title 47-Telecommunication

Chapter I - Federal Communications Commission

Subchapter A - General

Part 1 - Practice and procedure

Subpart I - Procedures Implementing the National Environmental Policy Act of 1969

Report Reference No. ..... :	REP010669	
Tested by (name, function and signature) ..... :	O. Frau	(project handler)
Approved by (name, function and signature) ..... :	P. Barbieri	(verifier)
Date of issue ..... :	2023-04-27	
Testing Laboratory ..... :	**Nemko Spa**	
Address ..... :	Via del Carroccio, 4 – 20853 Biassono (MB) – Italy	
Testing location	Nemko Spa	
Address ..... :	Via del Carroccio, 4 – 20853 Biassono (MB) – Italy	
Registration number:	682159	
Applicant's name ..... :	**DATALOGIC S.r.l.**	
Address ..... :	Via S. Vitalino 13 - 40012 Lippo Di Calderara Di Reno - Bologna - Italy	
Test specification:		
Standard ..... :	FCC CFR 47 Part 1 Subpart I	
	§1.1310 – Radiofrequency radiation exposure limits	☒
Test procedure ..... :	Nemko WM L0077, WM L0177 and WM L1002	
Test Report Form No. ..... :	FCCTRF	
TRF Originator ..... :	Nemko Spa	
Master TRF ..... :	2014-03	

Test item description ..... :	**Base charger station**
Trade Mark ..... :	n/a
Manufacturer ..... :	DATALOGIC S.r.l.
Address of manufacturer ..... :	Via S. Vitalino 13 - 40012 Lippo Di Calderara Di Reno - Bologna - Italy
FCC ID ..... :	n/a
Model / Type (Tested) ..... :	JOYA TOUCH 3-SLOT CRADLE
Variants ..... :	MEMOR 1 3-SLOT CRADLE
Ratings ..... :	100-240 Vac, 50/60 Hz, 2 A (from power supply)

Test Report No. : REP010669	2023-04-27 Date of issue

Short description of the EuT and Copy of marking plate	
Charging base station for wall or table mounting for simultaneous charging of up to 3 devices	
Number of tested samples:	1
Serial number:	PRJ0034515001 (assigned by Nemko)
Operating frequency:	100 ÷ 148 kHz band
Accessories and detachable parts included:	The E.U.T. is composed of four units
Other options included:	-
Testing	
Date of receipt of test sample:	2023-04-20
Testing commenced on:	2023-04-26
Testing concluded on:	2023-04-26
Possible test case verdicts:	
test case does not apply to the test object:	N (Not applicable)
test object does meet the requirement:	P (Pass)
test object does not meet the requirement:	F (Fail)

Symbols used in this test report

☒ The crossed square indicates that the listed condition or equipment is applicable for this report.

☐ The empty square indicates that the listed condition or equipment is not applicable for this report.

Throughout this report point is used as decimal separator.

The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report.

Verdict according to the standards listed at page 5:	**Pass**

PROJECT HISTORY		
Report number	**Modification to the report / comments**	**Date**
REP010669	First release	2023-04-27
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REMARKS		
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PRODUCT VARIANTS		
Variant model	**Difference against the main model**	**Test performed**
JOYA TOUCH 3-SLOT CRADLE	Main model	All
MEMOR 1 3-SLOT CRADLE	The difference between your product versions is in the trade name and color, the tested product is white and the black color variant. The electronic parts are the same for both versions.	None
REMARKS		

Contents

1 TEST STANDARDS

The tests were performed according to following standards and procedures.

NEMKO WM L0177: General routines for using instruments at Nemko

NEMKO WM L1002: Measurement Uncertainty - Policy and Statement

NEMKO WM L0077: General routines to perform EMC tests

FCC CFR 47 Part 1 Subpart I
Code of Federal Regulations – Title 47 – Part 1 Practice and procedure – Subpart I Procedures Implementing the National Environmental Policy Act of 1969

The main standard above contains references to other standards, which are listed below.

KDB 680106 D01 RF Exposure Wireless Charging App v03
RF exposure considerations for low power consumer wireless power transfer applications

2 SUMMARY OF TEST RESULTS

FCC Part 1 Subpart I requirements			
Part	**Test description**	**Frequency range**	**Verdict**
§1.1310	Radiofrequency radiation exposure limits	100 kHz – 300 kHz	P
GENERAL REMARKS			

3 EQUIPMENT UNDER TEST

3.1 Power supply system utilised

Power supply voltage:	☒	230V/50 Hz / 1ϕ	☐	115V/60Hz / 1ϕ
	☐	400V/50 Hz 3PE	☐	400V/50 Hz 3NPE
	☐	3 V DC	☐	5 V DC

3.2 EuT operation modes

Mode	Description
1	Normal charging battery from the AC/DC power supply, provided by the customer.

3.3 EuT configuration modes

The EuT was configured to measure its highest possible radiation level. The test modes selected are according to EuT instruction manual.

Mode	Description
1	EUT in maximum output power transfer mode, WPT battery initially discharged. Radiated measurements were performed with the reader placed above the base; it produced worst case emissions and output power, therefore this alignment was used for all measurements.

3.4 Input/Output Ports

Port	Name	Type*	Cable Max. >3m	Cable Shielded	Description
0	ENCLOSURE	N/E	—	—	—
1	DC	DC	☐	☐	AC/DC Adapter

*Note:

AC = AC Power Port DC = DC Power Port N/E = Non-Electrical

I/O = Signal/Control Input or Output Port TP = Telecommunication Ports

3.5 Equipment Used During Test

Use*	Product Type	Manufacturer	Model	Remarks
EUT	WPT	DATALOGIC	JOYA TOUCH 3-SLOT CRADLE	Provided by the customer
AE	PowerScan	DATALOGIC	M_B 2A	Provided by the customer
AE	PowerScan	DATALOGIC	REFERENCE	Provided by the customer
AE	PowerScan	DATALOGIC	M_A_K 2B	Provided by the customer
AE	AC/DC Power supply	EDACPOWER ELEC.	EA10681U-120	Provided by the customer

Note: * Use:

EUT - Equipment Under Test

AE - Auxiliary/Associated Equipment (Not Subjected to Test)

3.6 Test software

Not applicable

4 TEST ENVIRONMENT

4.1 Address of the test laboratory

Nemko Spa
Via del Carroccio, 4
20853 Biassono (MB) - Italy

Tests site/benches are in accordance with applicable standard/s and have been utilized by Nemko Spa testing engineer(s).

4.2 Environmental conditions

In the laboratory, the following ambient conditions are respected for each test reported below:

Ambient temperature:	18 ÷ 33 °C (1)
Relative Humidity:	25 ÷ 70 % (2)
Atmospheric pressure:	860 ÷ 1060 hPa

(1) For luminaire, temperature during tests was verified to be within 18 ÷ 30 °C
(2) During ESD test, humidity was verified to be within 30 ÷ 60 %

The following instruments are used to monitor the environmental conditions:

Equipment	Manufacturer	Model	Serial N°
Thermo-hygrometer data loggers	Testo	175-H2	20012380/305
Thermo-hygrometer data loggers	Testo	175-H2	38203337/703
Barometer	Castle	GPB 3300	072015

4.3 Statement of the measurement uncertainty

The measurement uncertainty was calculated for each test and quantity listed in this test report, according to CISPR 16-4-2 and other specific test standard and is documented in Nemko Spa working manual WML1002.

The assessment of conformity for each test performed on the equipment is performed not taking into account the measurement uncertainty. The two following possible verdicts are stated in the report:

P (Pass) - The measured values of the equipment respect the specification limit at the points tested. The specific risk of false accept is up to 50% when the measured result is close to the limit.

F (Fail) - One or more measured values of the equipment do not respect the specification limit at the points tested. The specific risk of false reject is up to 50% when the measured result is close to the limit.

Hereafter Nemko's measurement uncertainties are reported:

Test	Range	Measurement Uncertainty	Notes
Radiated Disturbance 10m Chamber	Antenna distance 3 m, 10 m 0.009 ÷ 200 MHz	5.0 dB	(1)
	Antenna distance 1 m, 3 m, 10 m 200 ÷ 1000 MHz	5.2 dB	(1)
	Antenna distance 1 m, 3 m, 10 m 1 ÷ 6 GHz	5.2 dB	(1)
	Antenna distance 1 m, 3 m 6 ÷ 18 GHz	5.5 dB	(1)
	Antenna distance 1 m, 3 m 18 ÷ 40 GHz	7.2 dB	(1)
Radiated Disturbance with large loop antenna system (LLAS)	0.009 ÷ 30 MHz	3.3 dB	(1)
Conducted Disturbance	0.02 ÷ 150 kHz with AMN	3.8 dB	(1)
	150 kHz ÷ 30 MHz with AMN	3.4 dB	(1)
	150 kHz ÷ 30 MHz with AAN	4.6 dB	(1)
	9 kHz ÷ 30 MHz with voltage probe	2.9 dB	(1)
	150 kHz ÷ 30 MHz with current probe	2.9 dB	(1)
Clicks	9 ÷ 150 kHz	3.8 dB	(1)
	150 kHz ÷ 30 MHz	3.4 dB	(1)
Disturbance Power	30 MHz ÷300 MHz	4.5 dB	(1)
Frequency	10 Hz ÷ 1 kHz	0.2 %	(1)
	1 kHz ÷ 40 GHz	10^{-6}	(1)
Harmonic Current Emission	50 Hz ÷ 2 kHz	3 %	(1)
Fluctuation and Flikers	Fluctuation	0.05 %	(1)
	Flikers	5 %	(1)
Radiated Immunity Anechoic Chambers	20 MHz ÷ 6 GHz	3.4 dB	(1) (3)
Radiated Immunity TEM Cell	0.01 ÷ 200 MHz	3.0 dB	(1) (3)
Bulk Current	1 ÷ 200 MHz	3.0 dB	(1)
Immunity to conducted disturbances	9 kHz ÷ 230 MHz	3.0 dB	(1)
ESD Immunity	Voltage, Current, Rise time, Duration	(2)	(1)
Burst Immunity	Voltage, frequency, burst period and duration, rise time and pulse width	(2)	(1)
Surge Immunity	Voltage, Current, Rise time, Duration	(2)	(1)
DIPS, Interruption and Voltage duration Immunity	Amplitude	5 %	(1)
	Duration	5 %	
Impulse Magnetic Field Immunity	Peak Current	10 %	(1) (3)
	Rise time, Duration	20 %	
Power Frequency Magnetic Field Immunity	16.7 Hz, 50 Hz, 60 Hz	2.0 dB	(1) (3)
Damped Oscillatory Wave Immunity Ring Wave Immunity	Voltage, front time, frequency 100 kHz, 1 MHz	(2)	(1)
Damped Magnetic Field	Amplitude: 100 kHz, 1 MHz	3 dB	(1)
	Frequency: 100 kHz, 1 MHz	10 %	
Low Frequency Immunity	15 Hz ÷ 150 kHz	2.2 dB	(1)
Automotive transients Immunity	Voltage, rise time, duration time Impulses 1, 2a, 2b, 3a, 3b and 4	(2)	(1)
Automotive transients Emission	Amplitude, Time	10 %	(1)
EMF for Lighting Equipment	-	25 %	(1)
Electromagnetic fields (EMF)	Magnetic, Electric and Electromagnetic fields: 0 Hz ÷ 40 GHz	25 %	(1)
Electrical quantities (voltage, current, resistance)	AC/DC Voltage 10 mV ÷ 1000 V 0÷100 kHz AC/DC Current 0.1 mA ÷ 400 A 0÷1 kHz Resistance 100 mΩ ÷ 10 MΩ	2.5 %	(1)

NOTES:
(1) The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 %
(2) The instruments used for this immunity test is according to the tolerances requested by the applicable standard
(3) The reported expanded uncertainty of measurement is related to the stimulus quantity

5 TEST CONDITIONS AND RESULTS

5.1 Radiofrequency radiation exposure limits

5.1.1 Photo documentation of the test set-up

Test set-up

Test on the frontal side

Test on the right side

Test on the left side

Test on the rear

Test above the top surface

5.1.2 Test method

For devices designed for typical desktop applications, such a wireless charging pads, RF exposure evaluation should be conducted assuming a user separation distance of 15 cm. E and H field strength measurements or numerical modeling may be used to demonstrate compliance. Measurements should be made from all sides and the top of the primary/client pair, with the 15 cm measured from the center of the probe(s) to the edge of the device.

5.1.3 Limits

The aggregate H-field strengths at 15 cm surrounding the device and 20 cm above the top surface from all simultaneous transmitting coils must be less than 50% of the MPE limit.

Emissions between 100 kHz to 300 kHz should be assessed versus the limits at 300 kHz in Table 1 of Section 1.1310: 614 V/m and 1.63 A/m.

5.1.4 Test result

Test point	Distance	E-field strengths	H-field strengths	Verdict
Front side	15 cm	1.57 V/m	0.29 A/m	P
Right side	15 cm	0.64 V/m	0.07 A/m	P
Left side	15 cm	0.55 V/m	0.06 A/m	P
Rear side	15 cm	0.70 V/m	0.28 A/m	P
Above the top	20 cm	0.87 V/m	0.04 A/m	P

Verdict:	☒ P ☐ F ☐ N
Frequency range:	100 kHz – 300 kHz
Kind of test site:	Shielded room
Remarks:	

5.1.5 Test equipment used

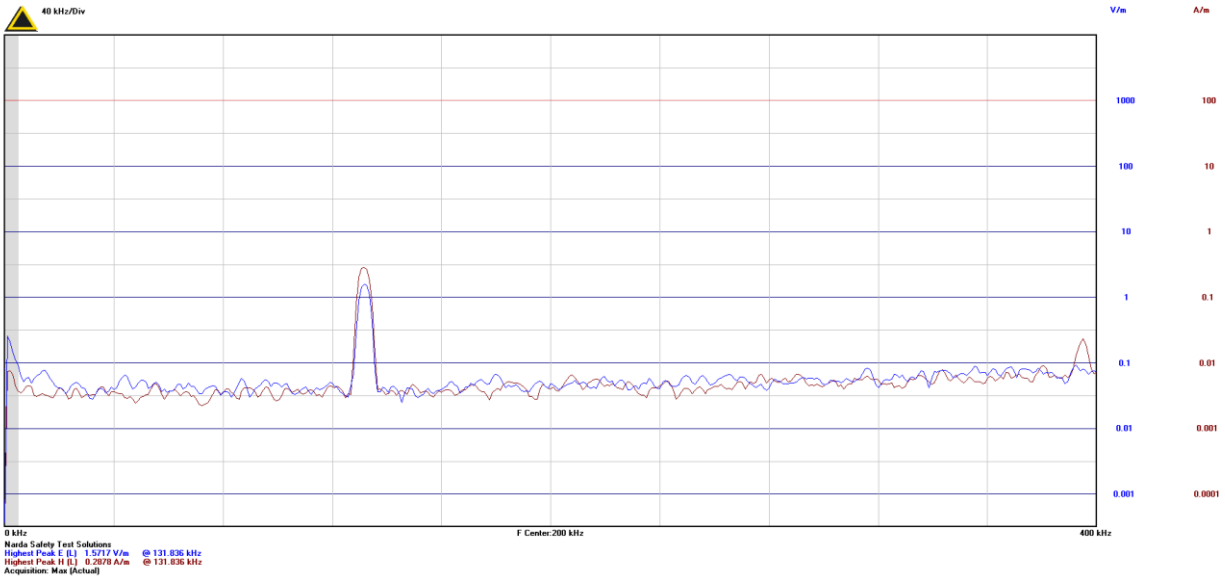
Equipment	Manufacturer	Model	Serial N°	Cal Date	Due Date
Filed meter	Narda	EHP-200A	170WX90208	2022-04	2024-04
Filed meter	Narda	EHP-50G	510ZY00109	2022-04	2024-04
Shielded room	Siemens	Conducted emission test room	1862	NSC	NSC

NSC = Not Subject to Calibration

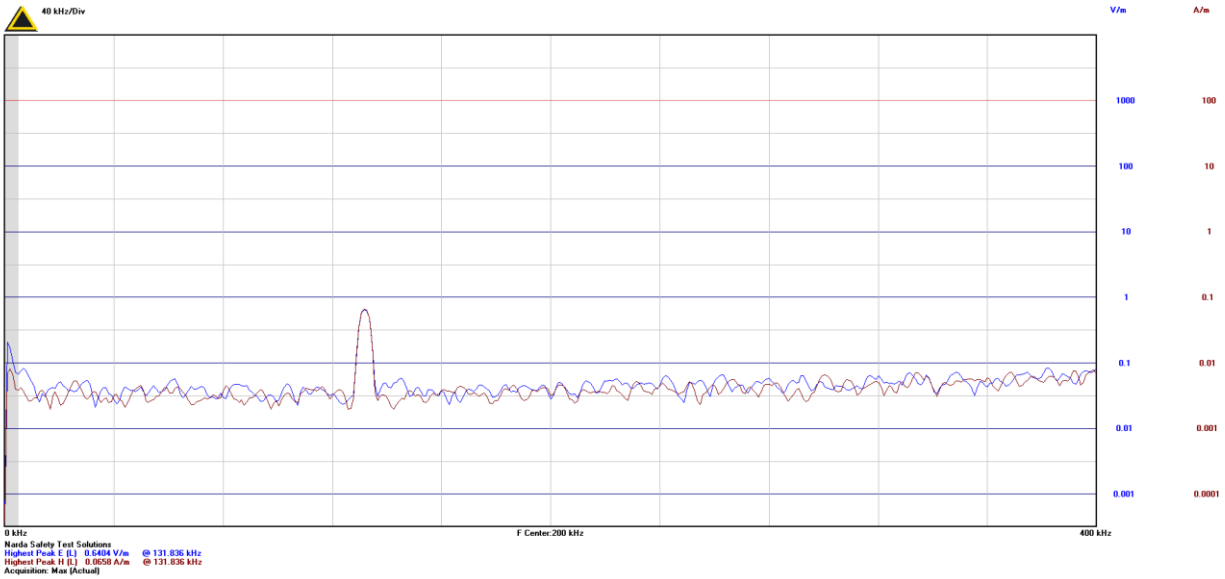
5.1.6 Test software details

Manufacturer of Software	Details
	See clause 3.6

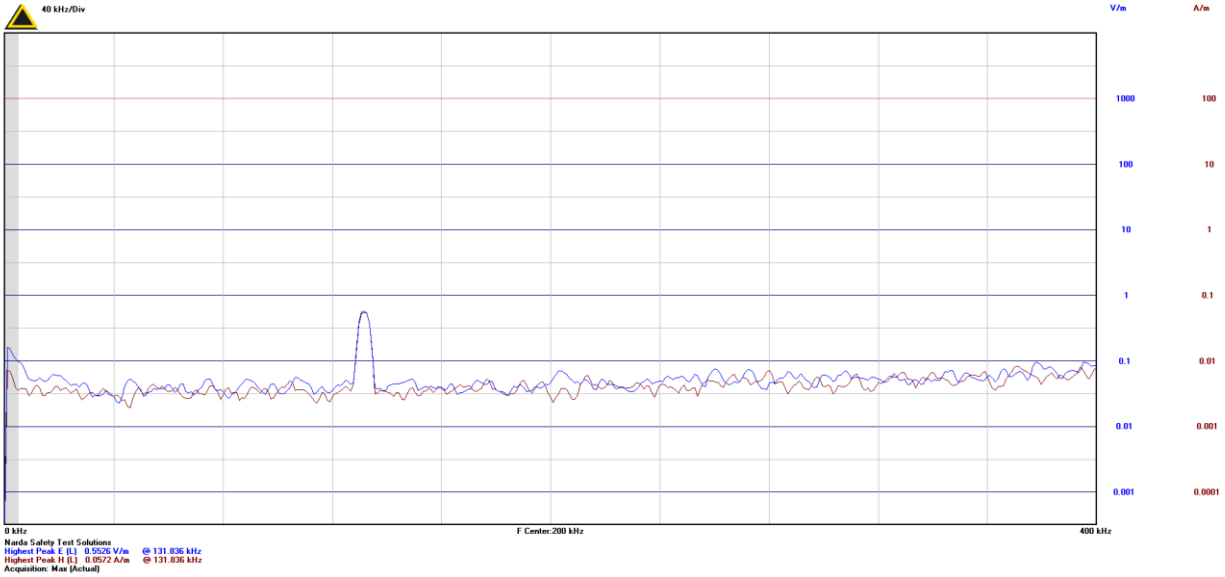
5.1.7 Test data



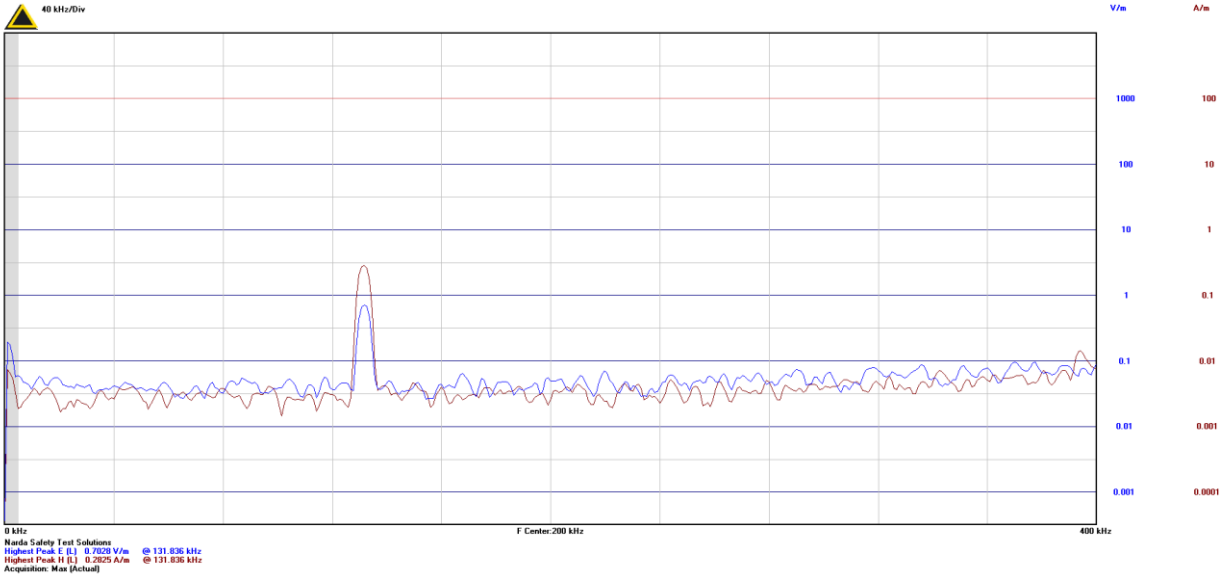
Front side



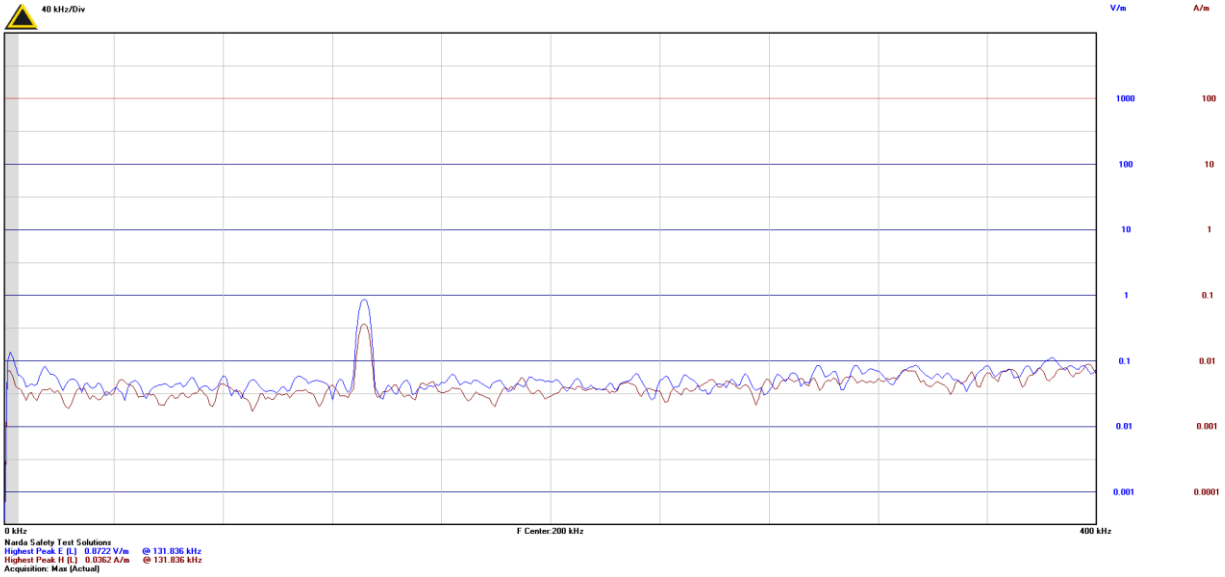
Right side



Left side



Rear side



Above the top

6 EUT PHOTOS

EUT


S/N:G22EB9879
P/N: 91ACC0043
MODEL:JOYA TOUCH 3-SLOT CRADLE
Manufactured May 2022
Input: 12VDC ⎓ 5A
Made in Vietnam

Accessories

End of report