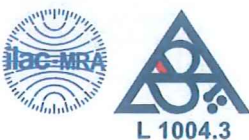


	INSTITUTE FOR TESTING AND CERTIFICATION, a.s. Testing Laboratory of Electrical Products Sokolovska 573 686 01 Uherske Hradiste Czech Republic	
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TESTING LABORATORY No. 1004.3
Accredited by the Czech Institute for Accreditation, o. p. s
According to ČSN EN ISO/IEC 17025:2018

Test Report No: 414105384AE1
Number of Copies: 2
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TEST REPORT

ABOUT THE ELECTROMAGNETIC COMPATIBILITY TEST of the MTU-1A2 Pan Tilt Positioner



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 Test Engineer and Report Author:
 Mr Vlastimil Vaculik

.....

 Head of Testing Laboratory:
 Mr Pavel Vavra

Issue Date: 2023-12-12
 Number of pages: 9
 Number of Appendices: 0

Distribution List: Institute for testing and certification (Copy No 1)
 Applicant (Copy No 2)

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The test results mentioned below relate solely to the Equipment under Test as received. The laboratory disclaims any responsibility for the information provided by the applicant.

1. GENERAL SPECIFICATIONS

* - out of scope of accreditation

** - information provided by the applicant

1.1. Equipment Under Test (EUT)

One sample MTU-1A2 Pan Tilt Positioner with serial number MU0102 was delivered to Institute for testing and certification on 2023-11-27. ATL 1004.3 started the requested tests under Job No 414105384.

Picture 1.1.A – EUT



Picture 1.1.A – EUT – labelling marker



1.2. Applicant

EVPU Defence a.s.
Jaktáře 1781
686 01 Uherské Hradiště
Czech Republic

Company ID: 26250888
Tax ID: CZ26250888

Order No.:
as of: 2023-11-27

1.3. Manufacturer

EVPU Defence a.s.
Jaktáře 1781
686 01 Uherské Hradiště
Czech Republic

1.4. Test Period

Started on: 2023-11-27

Finished on: 2023-11-27

1.5. Test Conditions

Ambient temperature: (+15 up to +35) °C / (+59 up to +95) °F

Barometric pressure: (86 up to 106) kPa

Relative humidity: (25 – 75) %

1.6. Place of Tests

Accredited testing laboratory 1004.3

Sokolovská 573

686 01 Uherské Hradiště

Czech Republic

1.7. Regulations used

<i>i</i>	<i>Regulation used</i>	<i>As Czech implementation of</i>
1	MIL-STD-461G : 2015	-

1.8. Test Instruments and Equipment

<i>i</i>	<i>Instrument / Equipment</i>	<i>Serial No</i>
1	Test Receiver Rohde & Schwarz ESIB 7	100318
2	LISN – 27V DC Z773	FD 002
3	LISN – 27V DC Z773	FD 003
4	Rod Antenna Schwarzbeck VAMP 9243 B	1404
5	Log-periodic Antenna Frankonia BTA-H	97061002
6	Antenna BBHA 9120 D	02284

All listed equipment subjected calibration has been duly calibrated and they passed a regular metrological inspection.

1.9. EUT Installation

EUT was installed on the grounded table. The EUT was supplied by stabilised DC voltage source of 24V. The conductors was on the non-conductive support 50 mm above the ground plane. The cable was 10 cm (4 in.) from the front of the test bench. The EUT was tested in the operation mode.

2. EMC TESTS OF RADIATED INTERFERENCE

The EUT was in operating mode.

2.1. Measurement of Conducted Emission

Requirement in	MIL-STD-461G
Testing method	Method CE102
Test specification	Measure the levels of conducted emissions produced by the EUT into the power cable in the 10 kHz to 10 MHz frequency band. The Selective Micro-voltmeter with a peak type detector was connected to an artificial network.
Measurement uncertainty	$U = \pm 3.5 \text{ dB}$ (specified for the coverage coefficient $k = 2$ and the confidence probability of 95 %)
Results	PASSED

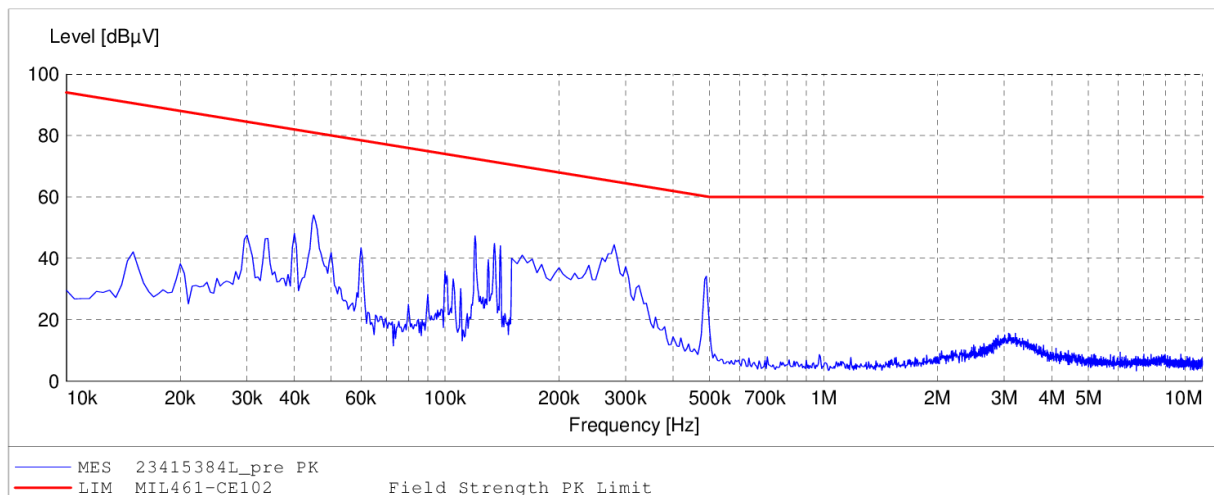
Figure 2.1.A – EUT during conducted emissions test



Limits of the conducted emissions of the radiated filed are established according to MIL-461G, CE102 - Mobile navy

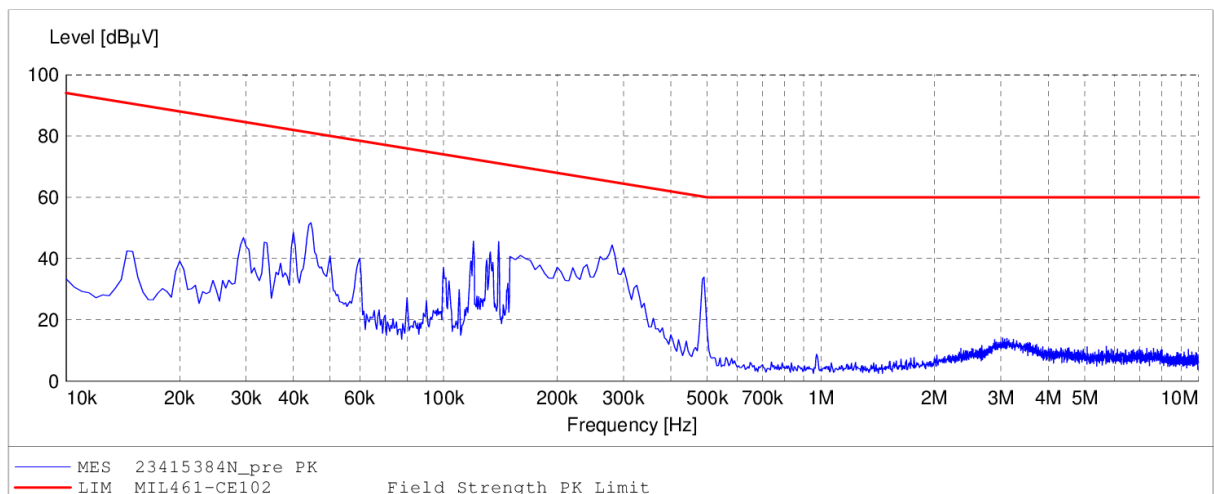
Graph 2.1.A – power leads +

EUT: MTU-1A2 Pan Tilt Positioner
 Manufacturer: EVPU DEFENCE a.s.
 Operating Condition:
 Test Site:
 Operator: V.Vaculik
 Test Specification: +24V
 Comment: static position
 Start of Test: 27.11.2023 / 7:57:51



Graph 2.1.B – power leads -

EUT: MTU-1A2 Pan Tilt Positioner
 Manufacturer: EVPU DEFENCE a.s.
 Operating Condition:
 Test Site:
 Operator: V.Vaculik
 Test Specification: GND (24V), static position
 Comment:
 Start of Test: 27.11.2023 / 8:03:22



The EUT complies requirements of MIL-STD-461G, CE102 conducted emissions in the range of 10kHz to 10MHz.

2.2. Measurement of Radiated Field

Requirement in	MIL-STD-461G
Testing method	Method RE102
Test specification	The field strength levels, radiated by the EUT into environment on frequencies of 2 MHz up to 6 GHz. The measurement was carried out in the semi-anechoic chamber at the distance of 1 m. The Selective Micro-voltmeter with a peak type detector was connected to the measuring rod antenna (band 2 up to 30MHz), log-periodic antenna (band 30MHz – 1GHz), horn antenna (band 1000 MHz – 6000 MHz). The maximum of emission was searched for horizontal and for vertical polarization by rotation of device and by turning the high of antenna. The EUT was placed on the shielded table in the shielded anechoic chamber. EUT was in the operation mode during the test.
Measurement uncertainty	$U = \pm 5.2 \text{ dB}$ (specified for the coverage coefficient $k = 2$ and the confidence probability of 95 %)
Results	PASSED

Figure 2.2.A – EUT during radiated emissions test



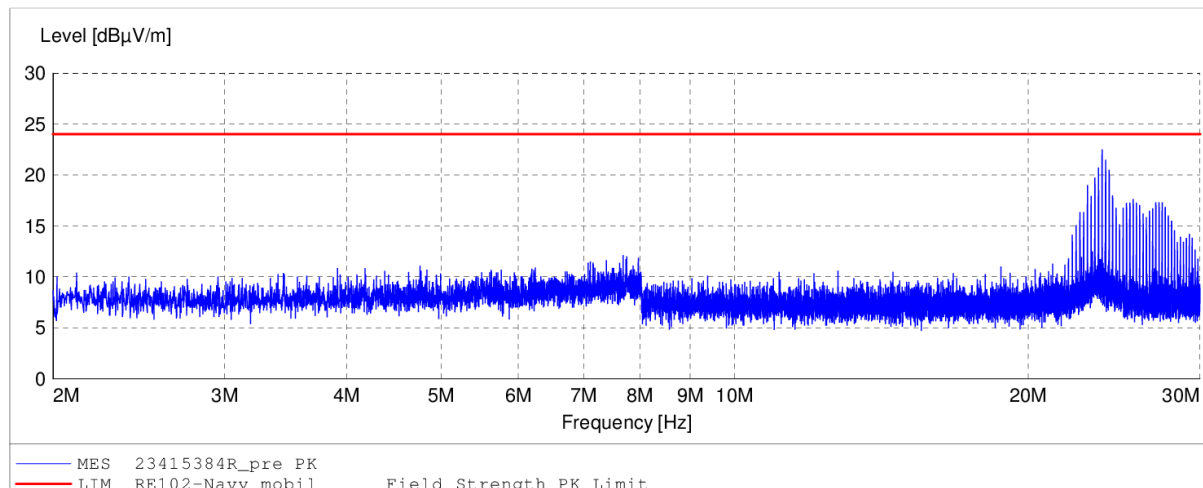
Figure 2.2.B – EUT during radiated emissions test



Limits of the radiated emissions of the radiated filed are established according to MIL-461G, RE102 – Mobile navy

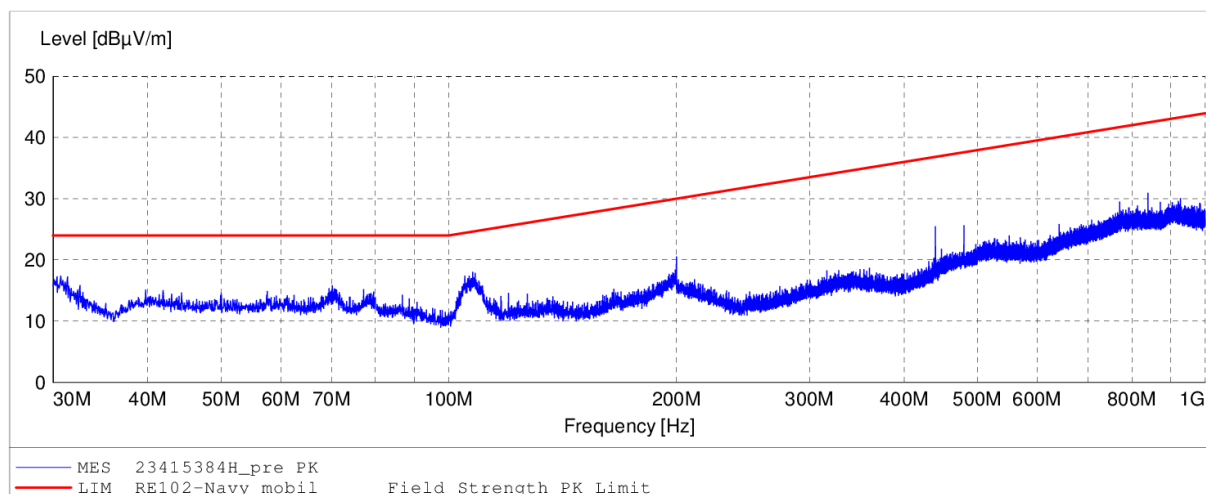
Graph 2.2.A – Rod antenna

EUT: MTU-1A2 Pan Tilt Positioner
 Manufacturer: EVPU DEFENCE a.s.
 Operating Condition:
 Test Site:
 Operator: V.Vaculik
 Test Specification: Rod
 Comment: static position
 Start of Test: 27.11.2023 / 8:31:03



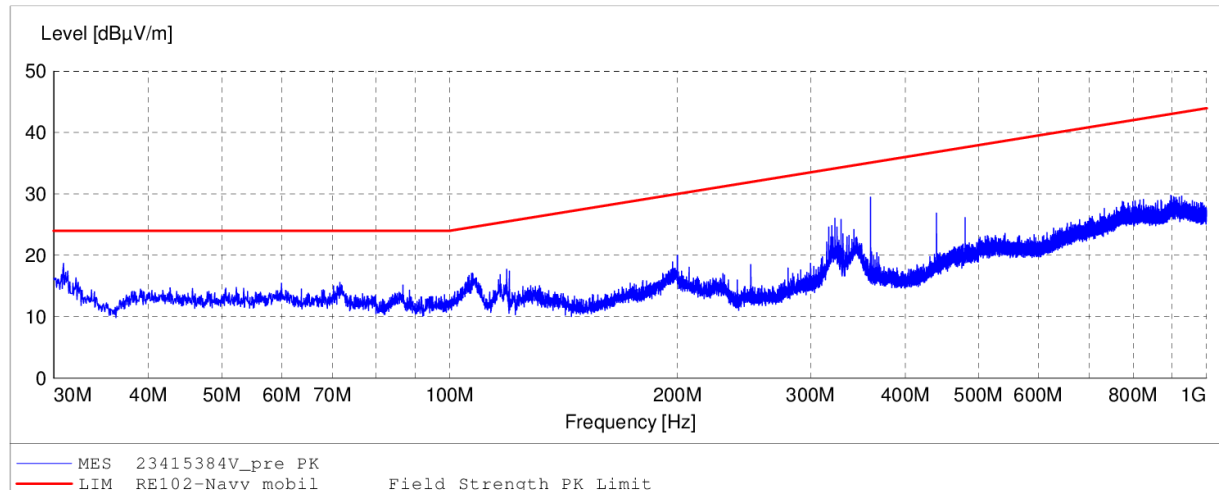
Graph 2.2.B – Horizontal polarization

EUT: MTU-1A2 Pan Tilt Positioner
 Manufacturer: EVPU DEFENCE a.s.
 Operating Condition:
 Test Site:
 Operator: V.Vaculik
 Test Specification: Horizontal
 Comment: static position
 Start of Test: 27.11.2023 / 8:06:46



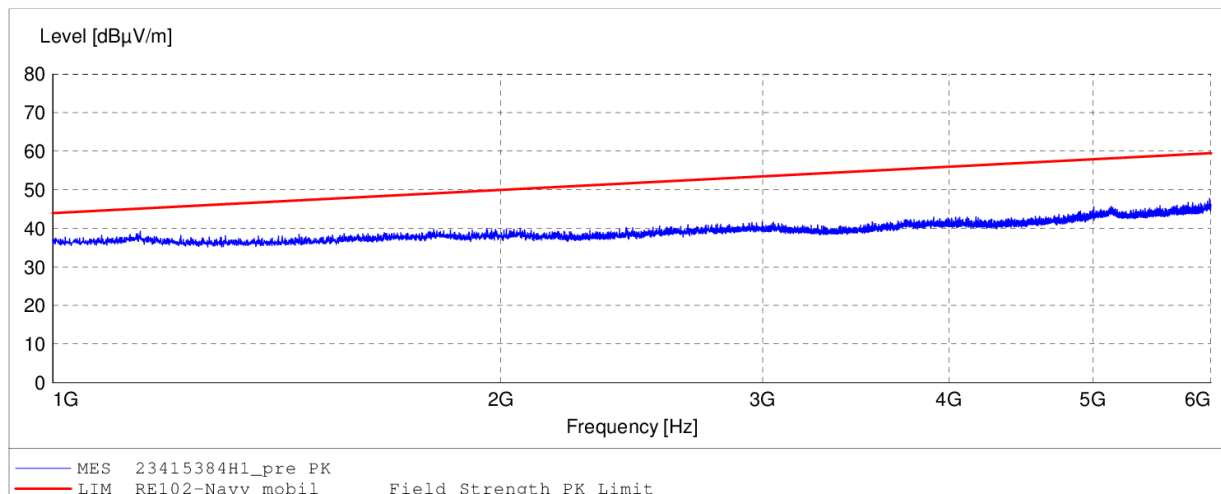
Graph 2.2.C – Vertical polarization

EUT: MTU-1A2 Pan Tilt Positioner
 Manufacturer: EVPU DEFENCE a.s.
 Operating Condition:
 Test Site:
 Operator: V.Vaculik
 Test Specification: Vertical
 Comment: static position
 Start of Test: 27.11.2023 / 8:13:31



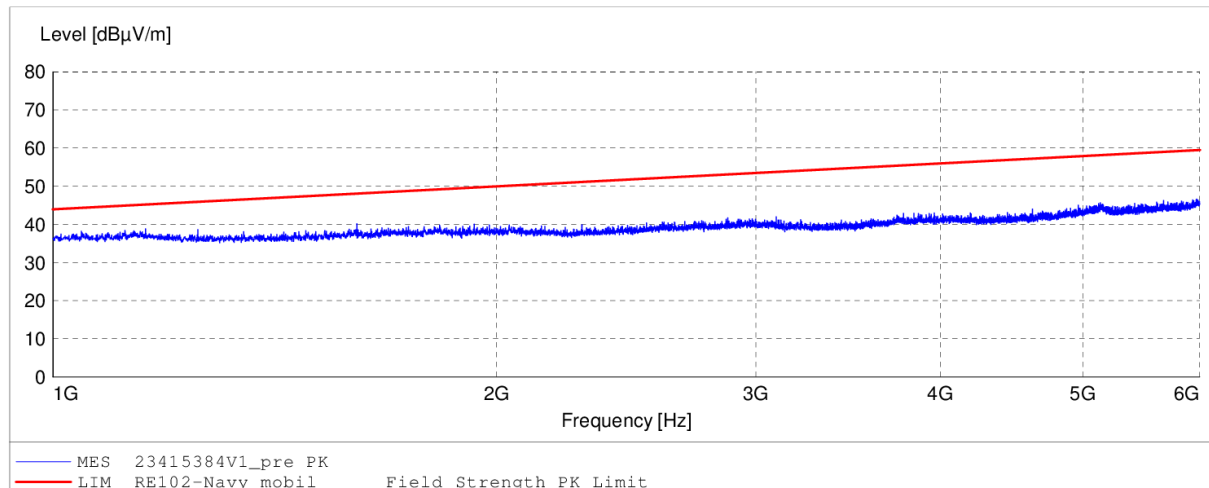
Graph 2.2.D – Horizontal polarization

EUT: MTU-1A2 Pan Tilt Positioner
 Manufacturer: EVPU DEFENCE a.s.
 Operating Condition:
 Test Site:
 Operator: V.Vaculik
 Test Specification: Horizontal
 Comment: static position
 Start of Test: 27.11.2023 / 8:21:24



Graph 2.2.E – Vertical polarization

EUT: MTU-1A2 Pan Tilt Positioner
Manufacturer: EVPU DEFENCE a.s.
Operating Condition:
Test Site:
Operator: V.Vaculik
Test Specification: Vertical
Comment: static position
Start of Test: 27.11.2023 / 8:25:02



The EUT complies requirements of MIL-STD-461G, RE102 radiated emissions in the range of 2 to 6000MHz.

The stated expanded measurement uncertainty is the product of the standard uncertainty and the expansion coefficient $k = 2$, which for a normal distribution corresponds to a coverage probability of about 95%. Standard uncertainty was determined in accordance with EA 4/16.

ILAC-G8 decision rule used: 09/2019: 4.2.1 Binary statement for simple acceptance rule.

3. STATEMENT OF CONFORMITY

MTU-1A2 Pan Tilt Positioner complies with requirements of the following regulations in the range of performed tests:

MIL-STD-461G, CE102

MIL-STD-461G, RE102