



Test Report - FCC PART 1.1310 / MPE  
Applicant: Navico RBU Italia S.r.l

Approved for Release By:

Signature: Bruno Clavier

Name & Title: Bruno Clavier, General Manager

Date of Signature 6/6/2024

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## Table of Contents

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1.	CUSTOMER INFORMATION.....	3
2.	LOCATION OF TESTING .....	3
2.1	TEST LABORATORY .....	3
2.2	TESTING WAS PERFORMED, REVIEWED BY .....	4
3.	TEST SAMPLE(S) (EUT/DUT).....	5
3.1	DESCRIPTION OF THE EUT.....	5
4.	TEST METHODS & APPLICABLE REGULATORY LIMITS.....	6
4.1	TEST METHODS/STANDARDS/GUIDANCE: .....	6
4.1.1	<i>FCC Limits for Maximum Permissible Exposure (MPE)</i> .....	6
4.2	APPLIED LIMITS AND REGULATORY LIMITS:.....	7
5.	MEASUREMENT UNCERTAINTY.....	7
6.	ENVIRONMENTAL CONDITIONS .....	7
6.1	TEMPERATURE & HUMIDITY.....	7
7.	LIST OF TEST EQUIPMENT AND TEST FACILITY.....	8
7.1	LIST OF TEST EQUIPMENT .....	8
7.2	RF OUTPUT POWER .....	9
8.	RF EXPOSURE RESULTS .....	10
9.	HISTORY OF TEST REPORT CHANGES.....	12



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## 1. Customer Information

**Applicant:** Navico RBU Italia S.r.l  
**Address:** Via Romita, 26  
Montagnana Val di Pesa-Montespertoli, Firenze 50025  
Italy

## 2. Location of Testing

### 2.1 Test Laboratory

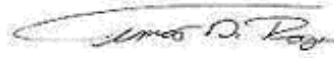
Timco Engineering Inc. is a subsidiary of Industrial Inspection & Analysis, Inc. ("IIA"). Testing was performed at IIA's permanent laboratory located at 13146 NW 86th Drive, Suite 400, Alachua, Florida 32615.

FCC test firm # 578780  
FCC Designation # US1070  
FCC site registration is under A2LA certificate # 0955.01  
ISED Canada test site registration # 2056A  
EU Notified Body # 1177  
For all designations see A2LA scope # 0955.01

2.2 Testing was performed, reviewed by

Dates of Testing: 6/5/2024

Signature: \_\_\_\_\_



Sr. EMC Engineer  
EMC-003838-NE



Name & Title: \_\_\_\_\_

Tim Royer, EMC Engineer

Date of Signature \_\_\_\_\_

6/6/2024

### 3. Test Sample(s) (EUT/DUT)

The test sample was received: 6/5/2024

#### 3.1 Description of the EUT

A description as well as unambiguous identification of the EUT(s) tested. Where more than one sample is required for technical reasons (such as the use of connected units for the purpose of conducted output power testing where the product units will have integral antennas), each specific test shall identify which unit was tested.

Identification	
FCC ID:	2AJJ3HALO5000
Brief Description	Pulse Compression Radar
Model(s) #	HALO 5000

Technical Characteristics	
Technology	Pulse Compression Radar
Frequency Range	9.3 GHz-9.5 GHz
Rated RF O/P Power	130 W
Modulation	Pulse/ FM Chirp
Bandwidth & Emission Class	PON
Antenna Connector	WR90
Voltage Rating (AC or Batt.)	24V DC

Antenna Characteristics			
Antenna	Frequency Range	Mode / BW	Antenna Gain
000-11465-001	9.39-9.50GHz	4 ft	27.2 dBi
000-11466-001	9.39-9.50GHz	6 ft	29 dBi

#### 4. Test methods & Applicable Regulatory Limits

##### 4.1 Test methods/Standards/Guidance:

The following guidance FCC KDB 447498 D01 General RF Exposure Guidance v06 and FCC KDB 865664 D02 RF Exposure Reporting v01r02 sec. 2.2 was used for RF exposure evaluation as per FCC Part 1.1310 and FCC Part 2.1091 and part 2.1093. Full test results are available in this report.

##### 4.1.1 FCC Limits for Maximum Permissible Exposure (MPE)

Frequency Range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm <sup>2</sup> )	Averaging Time (minutes)
<b>A Limits for Occupational/Controlled Exposure</b>				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*(900/f <sup>2</sup> )	<6
30-300	61.4	0.163	1.0	<6
300-1,500			f/300	<6
1,500-100,000			5	<6
<b>B Limits for General Population/Uncontrolled Exposure</b>				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*(180/f <sup>2</sup> )	<30
30-300	27.5	0.073	0.2	<30
300-1,500			f/1500	<30
1,500-100,000			1.0	<30

#### 4.2 Applied Limits and Regulatory Limits:

- 1) FCC PART 1.1310

#### 5. Measurement Uncertainty

Parameter	Uncertainty (dB)
Conducted Emissions	± 3.14 dB
Radiated Emissions (9kHz – 30 MHz)	± 3.08 dB
Radiated Emissions (30 – 200 MHz)	± 2.16 dB
Radiated Emissions (200 – 1000 MHz)	± 2.15 dB
Radiated Emissions (1 GHz – 18 GHz)	± 2.14 dB
Radiated Emissions (18 GHz – 40 GHz)	± 2.31 dB

**Note:** The uncertainties provided in this table represent an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of K=2.

#### 6. Environmental Conditions

##### 6.1 Temperature & Humidity

Measurements performed at the test site did not exceed the following:

Parameter	Measurement
Temperature	23 C +/- 5%
Humidity	55% +/- 5%
Barometric Pressure	30.05 in Hg

**Note:** Specific environmental conditions that are applicable to a specific test are available in the test result section.

## 7. List of Test Equipment and Test Facility

The test equipment used identified by type, manufacturer, serial number, or other identification and the date on which the next calibration or service check is due.

Description of the firmware or software used to operate EUT for testing purposes.

A complete list of all test equipment used shall be included with the test report. The manufacturer’s model and serial numbers, and date of last calibration, and calibration interval shall be included. Measurement cable loss, measuring instrument bandwidth and detector function, video bandwidth, if appropriate, and antenna factors shall also be included where applicable.

### 7.1 List of Test Equipment

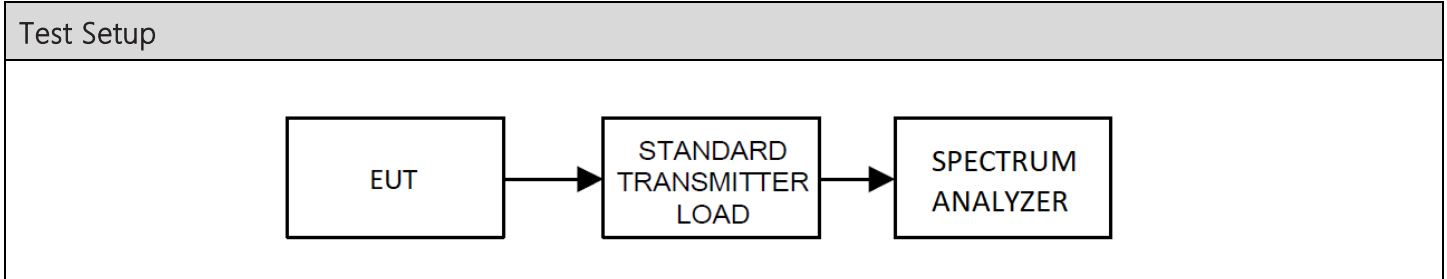
Test Equipment						
Type	Device	Manufacturer	Model	SN#	Current Cal	Cal Due
Field Probe Meter	E-Field, H-Field, B-Field Probe Handheld Meter	Wave Control	SMP2	20SN1400	2/23/24	2/23/27
Field Probe	E-Field Probe	Wave Control	WPF8	20WP041171	2/23/24	2/23/27

Software			
Software	Author	Version	Validation on
ESU Firmware	Rohde & Schwarz	4.43 SP3; BIOS v5.1-24-3	2018
RSCCommander	Rohde & Schwarz	1.6.4	2014
ScopeExplorer	LeCroy	v2.25.0.0	2009
Field Strength	Timco	v4.10.7.0	2016



## 7.2 RF Output Power

Limits from FCC Parts 2.1046(a), and 90.205 (r); and test procedure from ANSI C63.26-2015.



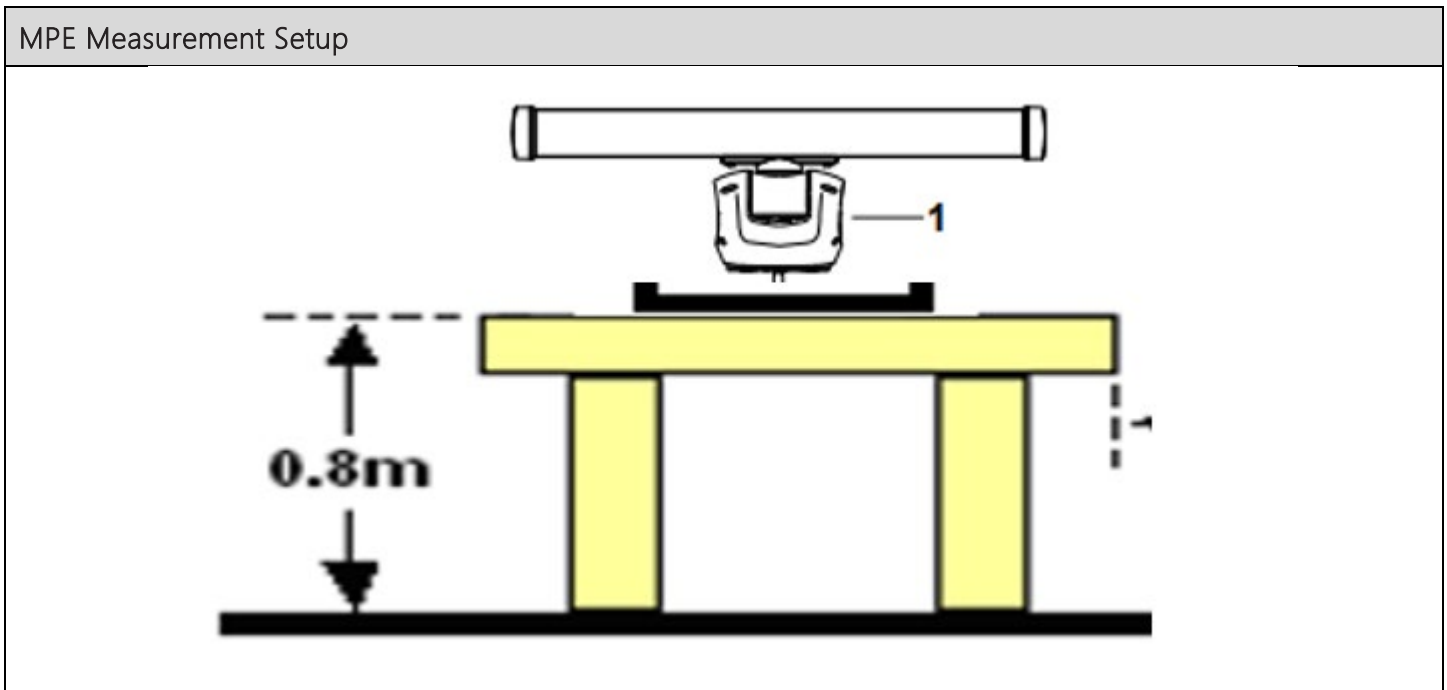
Center Freq (MHz)	Duty Cycle (%)	Measured output (dBm)	Loss (dB)	Peak Power (dBm)	Peak Power (W)	Mean Power (W)
9360.00	3.60%	-25.34	75.72	50.380	109.144	3.929
9390.00	3.60%	-27.10	75.72	48.620	72.778	2.620

Note: The mean power was calculated based on formula:

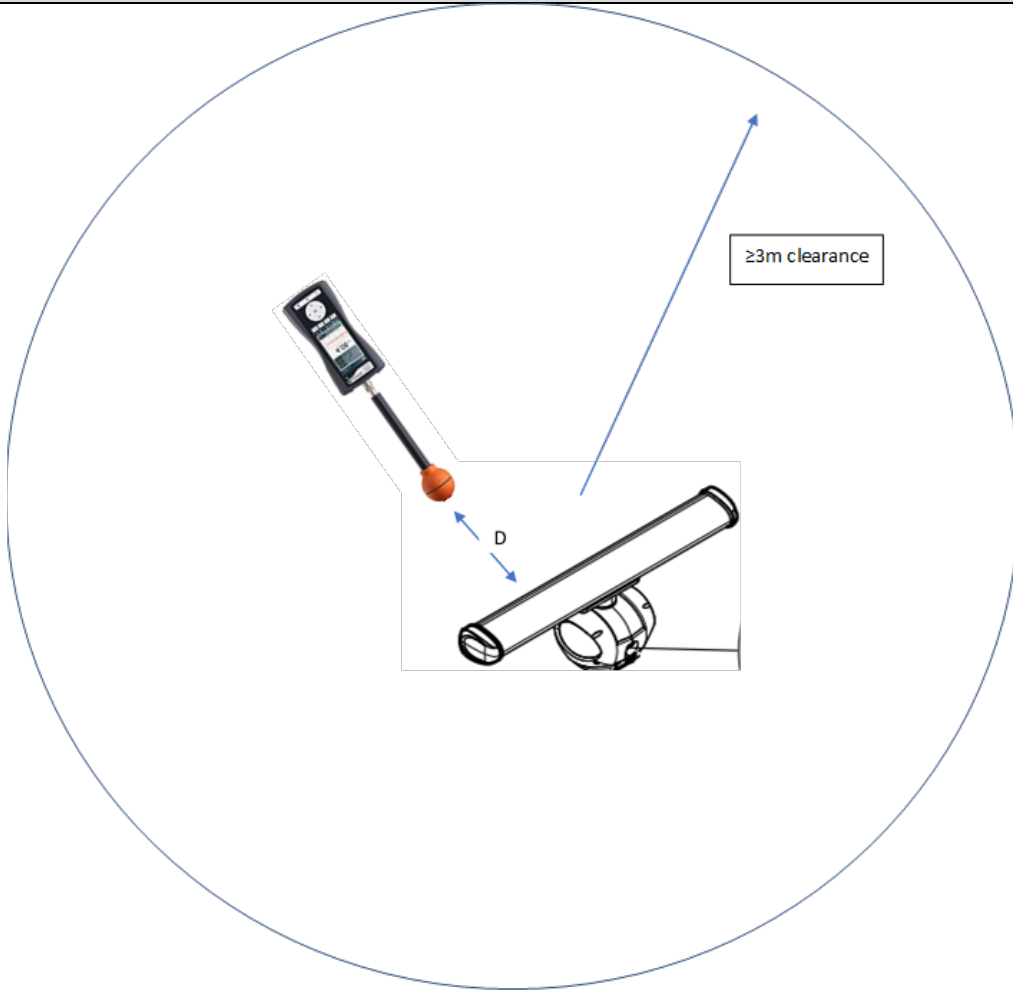
$$P_a = P_m * DC$$

8. RF Exposure Results

MPE Measurements		
Channel 2		
Distance	Measurement	Distance
6 ft	1 mW/ cm <sup>2</sup>	95.7 cm



MPE Measurement



## 9. History of Test Report Changes

Test Report #	Revision #	Description	Date of Issue
TR_10333-23_FCC PT 1.1310_ MPE_MEAS	1	Initial release	6/5/2024



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END OF TEST REPORT

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