



- The RvA is a signatory to the EA MLA.
- The RvA is a signatory to the ILAC MRA.
- The RvA is a signatory to the IAF MLA.
- FCC Registration Number: NL0002 / 375449
- ISED CABid: NL0003

Test report No:
2291293.0515A-RSM

Test Report

USA FCC Part 15.209

CANADA RSS-Gen, RSS-210

(*) Identification of item tested	Manure Cleaning Robots
(*) Trademark	JOZ B.V.
(*) Model and /or type reference	MOOV2.0
(*) Features	RFID 134 kHz and Zigbee 2.4 GHz
Other identification of the product	FCC ID: 2BGQ2-ROBOTS IC: 32602ROBOTS Contains FCC: MCQ-XBS2C Contains IC:1846A-XBS2C
(*) Derived model(s)	N/A
(*) Applicant's name / address	JOZ B.V. - Industrieweg 5, 1617KK, Westwoud, The Netherlands
Test method requested, standard	USA FCC Part 15.209 (10-1-24) Edition: Radiated emission limits; general requirements. CANADA RSS-210 Issue 11 (June 2024). Licence-Exempt Radio Apparatus: Category I Equipment. CANADA RSS-Gen Issue 5 (April 2018), Amendment 1 (March 2019) and Amendment 2 (February 2021). ANSI C63.10-2020+Cor. 1-2023+C63.10a-2024 + Errata to C63.10a-2024:American National Standard for Testing Unlicensed Wireless Devices.
Verdict Summary	IN COMPLIANCE
Tested by (name / position & signature)	Alberto Serrano Criado Technical Professional EMC & Wireless Supervised by Jose Carlos Luque Technical Professional EMC & Wireless
Approved by (name / position & signature)	Sedat Eser Technical Professional EMC/Wireless
Date of issue	2026-01-14
Report template No	TRF_RSM_FCC R1.0 (*) "Data provided by the applicant"

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COMPETENCES AND GUARANTEES

The DEKRA is a testing laboratory competent to carry out the tests described in this report.

In order to assure the traceability to other national and international laboratories, DEKRA has a calibration and maintenance program for its measurement equipment.

DEKRA guarantees the reliability of the data presented in this report, which is the result of the measurements and the tests performed to the item under test on the date and under the conditions stated in the report and it is based on the knowledge and technical facilities available at DEKRA at the time of performance of the test.

DEKRA is liable to the client for the maintenance of the confidentiality of all information related to the item under test and the results of the test.

The results presented in this Test Report apply only to the particular item under test established in this document.

IMPORTANT: No parts of this report may be reproduced or quoted out of context, in any form or by any means, except in full, without the previous written permission of DEKRA.

GENERAL CONDITIONS

1. This report is only referred to the item that has undergone the test.
2. This report does not constitute or imply on its own an approval of the product by the Certification Bodies or Competent Authorities.
3. This document is only valid if complete; no partial reproduction can be made without previous written permission of DEKRA.
4. This test report cannot be used partially or in full for publicity and/or promotional purposes without previous written permission of DEKRA.

UNCERTAINTY

Uncertainties have been calculated according to the DEKRA internal document AM#2224. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%. Refer to the Annex 1 for further information.

ENVIRONMENTAL CONDITIONS

The climatic conditions during the tests are within the limits specified by the manufacturer for the operation of the EUT and the test equipment. The climatic conditions during the tests were within the following limits:

Ambient temperature	15 °C – 35 °C
Relative Humidity air	30% - 60%
Atmospheric pressure	86 kPa – 106 kPa

If explicitly required in the basic standard or applied product / product family standard the climatic values are recorded and documented separately in this test report.

POSSIBLE TEST CASE VERDICTS

Test case does not apply to test object	N/A
Test object does meet requirement	P (Pass) / PASS
Test object does not meet requirement	F (Fail) / FAIL
Not measured	N/M

DEFINITION OF SYMBOLS USED IN THIS TEST REPORT

☒ Indicates that the listed condition, standard or equipment is applicable for this report/test/EUT.			
☐ Indicates that the listed condition, standard or equipment is not applicable for this report/test/EUT.			
Decimal separator used in this report	☐	Comma (,)	☒ Point (.)

ABBREVIATIONS

For the purposes of the present document, the following abbreviations apply:

EUT	: Equipment Under Test
DUT	: Device Under Test
QP	: Quasi-Peak
PK	: Peak
AV	: Average
SAC	: Semi-Anechoic Chamber
OATS	: Open Area Test Site
RBW	: Resolution Bandwidth
VBW	: Video Bandwidth
Tx	: Transmitter
Rx	: Receiver
N/A	: Not Applicable
N/M	: Not Measured
RGP	: Reference Ground Plane
TX	: Transmission
RX	: Reception

DATA PROVIDED BY THE APPLICANT

The following data has been provided by the client:

1. Information relating to the description of the sample ("Identification of the item tested", "Trademark", "Model and/or type reference tested" and Features).

DEKRA Certification B.V. declines any responsibility with respect to the information provided by the applicant and that may affect the validity of results.

DOCUMENT HISTORY

Report nr.	Date	Description
2291293.0515-RSM	2026-12-18	First release.
2291293.0515A-RSM	2026-01-14	Second release. . It was updated the versions of ANSI C63.10 to the last versions. This revision of the test report cancels and replaces the test report with a reference number 2291293.0515-RSM.

CONCLUSION, REMARKS AND COMMENTS

The equipment under test (EUT) does meet the requirements of the stated standard(s)/test(s).

1 GENERAL INFORMATION

1.1 General Description of the Item(s)

Description of the item.....:	Manure cleaning Robots
Model / Type number	MOOV2.0
Reference number	100015155
Trademark	JOZ B.V.
Manufacturer.....:	JOZ B.V.
Address	Industrieweg 5, 1617KK, Westwoud, The Netherlands

Operating frequency range(s) – Tx :	RFID: 134.6 kHz
Operating frequency range(s) – Rx :	RFID: 134.6 kHz
Type of Modulation.....:	RFID: Unmodulated sinus wave
Number of channel.....:	RFID: 1
Antenna type.....:	RFID: Loop antenna
Antenna gain.....:	RFID : 1.5 dBi

Rated power supply.....:	Voltage and Frequency		Power connection type				
			L1	L2	L3	N	PE
	☐	AC:	☐	☐	☐	☐	☐
	☐	DC:					
	☒	Battery: 2x12V 110Ah AgM series 24Volts, 2x12V 80Ah Lead carbon series 24V					
Rated Power	0.8 kW						
Clock frequencies.....:	24 MHz						
Other parameters.....:	RFID 134 kHz, Zigbee 2.4 GHz						
Software version	2.1.66						
Hardware version.....:	V8.3						
Dimensions in cm (W x H x D).....:	128 x 114 x 100						
Mounting position.....:	☐	Table top equipment					
	☐	Wall/Ceiling mounted equipment					
	☒	Floor standing equipment					
	☐	Hand-held equipment					
	☐	Other:					

Intended use of the Equipment Under Test (EUT)
The product is used in the cow barn to push the feed towards the cow.

No	Module/parts of test item	Type	Manufacturer
1	ECU	V8.3	JOZ
2	Drive Motor	80BLF3A 160-220 12	BEGE
3	Actuator	BC24-11Ap08-050-0-0 Special	Axipro

No	Documents as provided by the applicant - Description	File name	Issue date
1	General information form	01 General information form v1.1	2024-10-14

Modifications to the test item during testing	☒	N/A	☐	Refers Chapter
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Copy of marking plate:



JOZ b.v.
Industrieweg 5
1617KK Westwoud
The Netherlands
Made in EU
2025

Model Moov 2.0
FCC ID 2BGQ2-ROBOTS
IC 32602ROBOTS
Contains FCC ID MCQ-XBS2C
Contains IC 1846A-XBS2C
Power 2.5kWh/day
Weight 685 kg
Input 24VDC





S/N : XXXXXXXXXX
Warranty void if seal is broken

1.2 Derived models

N/A

1.3 Test data

Test Location	DEKRA Certification B.V., Netherlands
Date (start)	2024-12-16
Date (finish)	2025-01-22

2 DESCRIPTION OF TEST SETUP

2.1 Sample(s) used for tests

During the tests the following sample(s) has(have) been used.

Sample	Logistics number	Model number	Serial number	Remark(s) / Changes
01	105998 / 1-6	MOOV2.0	100015155	--
<u>Supplementary information:</u> ---				

2.2 Operating mode(s) used for tests

During the tests the following operating mode(s) has(have) been used.

Operating mode	Description of the operating mode	Used for testing
1	EUT ON. TX continuous modulated carrier at 134.6 kHz RFID.	☒
<u>Supplemental information:</u>		

2.3 Port(s) of the EUT

Port name and description	Connected to / Termination	Cable		
		Length used during test [m]	Attached during test	Shielded
Enclosure	--	--	☐	☐
			☐	☐
<u>Supplemental information:</u> ---				

2.4 Support / Auxiliary equipment / unit / software for the EUT

The EUT has been tested with the following auxiliary equipment / unit / software:

Auxiliary equipment / unit / software	Type / Version	Manufacturer	Supplied by
<u>Supplemental information:</u> ---			

2.5 Test Configuration / Block diagram used for tests

The following block diagram has been used during the tests:



2.6 Test conditions

Power supply (V) of MOOV2.0:

Vnom= 24 Vdc.

Vmin= N/A

Vmax= N/A

Type of Power Supply: 2 x 12V batteries.

Temperature (°C):

Tn = +15° to +35°.

Tmin= N/A

Tmax= N/A

The MOOV2.0 is placed inside an anechoic chamber on a turntable.

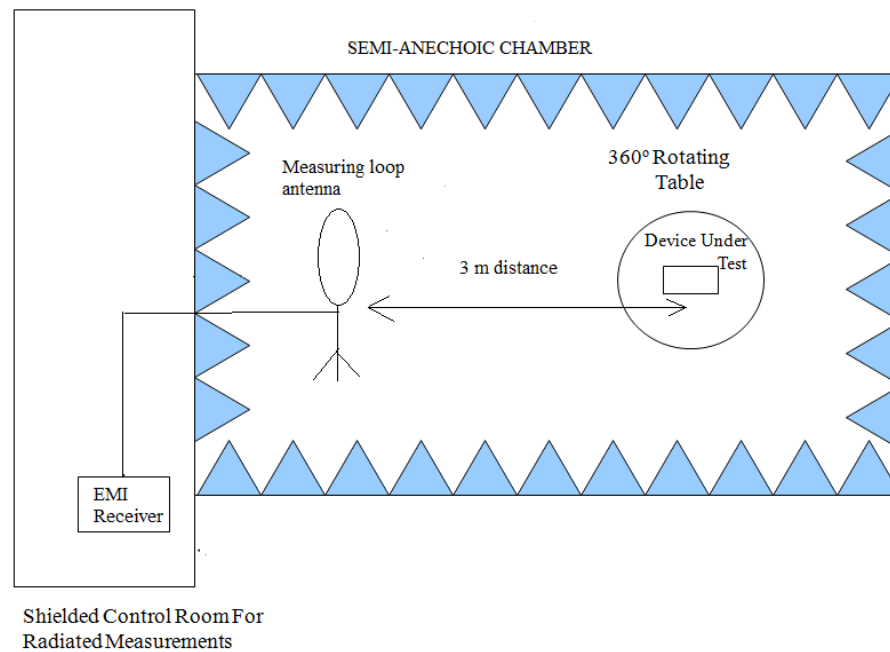
RADIATED TEST Setup

All radiated tests were performed in a semi-anechoic chamber. The measurement antenna (Loop antenna for the range between 9 kHz to 30 MHz) is situated at a distance of 3 m.

For radiated emissions in the range 9 kHz to 30 MHz that is performed at a distance closer than the specified distance, an inverse proportionality factor of 40 dB per decade is used to normalize the measured data for determining compliance.

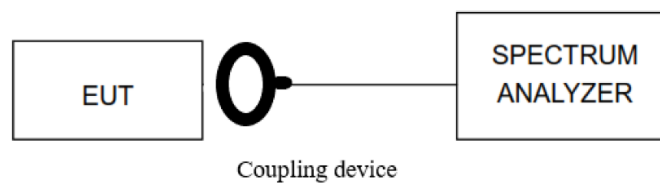
The equipment under test was set up on a non-conductive platform above the ground plane and the situation and orientation was varied to find the maximum radiated emission.

In the range between 9 kHz and 30 MHz the measurements were made in the three different orientation planes of the loop antenna to determine the maximum received field.



CONDUCTED TEST Setup

The equipment under test was set up in a shielded room and it is directly connected to the spectrum analyzer through a coupling device.



3 VERDICT SUMMARY SECTION

This chapter presents an overview of standards and results. Refer to the next chapters for details of measured test results and applied test levels.

3.1 Standards

Standard	Year	Description
FCC Rules & Regulations 47 CFR Chapter I - Part 15 Subpart C Clause 15.209	2024-01	Radiated emission limits; general requirements.
RSS-Gen – Issue 5 + Amendment 1 + Amendment 2	2018-04 + 2019-03 + 2021-02	General Requirements for Compliance of Radio Apparatus

3.2 Overview of results – RFID 134.6 kHz

Test case	Standard	Verdict	Remarks
Occupied Bandwidth	FCC 2.1049 / RSS Gen 6.7	P	--
-26 dBc Bandwidth	FCC 2.1049 / RSS Gen 6.7	P	--
Radiated emission limits; general requirements	FCC 15.209 Subclause (a) / RSS-Gen Clause 8.9.	P	--
Supplementary information and remarks: ---			

3.3 Deviation(s) from the Standard(s) / Test Specification(s)

The following deviation(s) was / were made from the published requirements of the listed standards:
N/A.

4 TEST RESULTS RFID

4.1 Product Information

The following information is provided by the supplier, in accordance with clause 5.3.1:

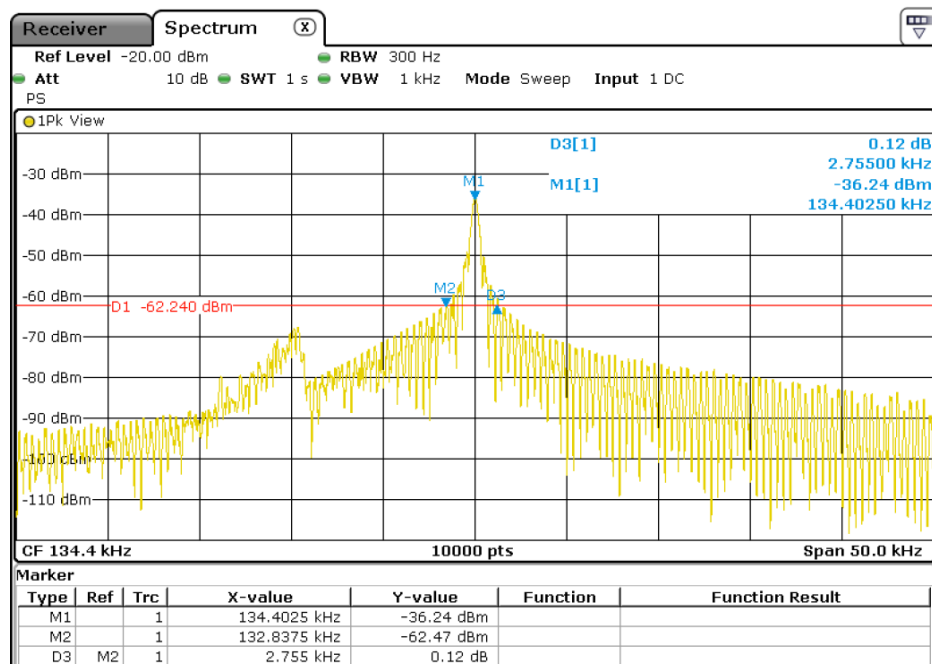
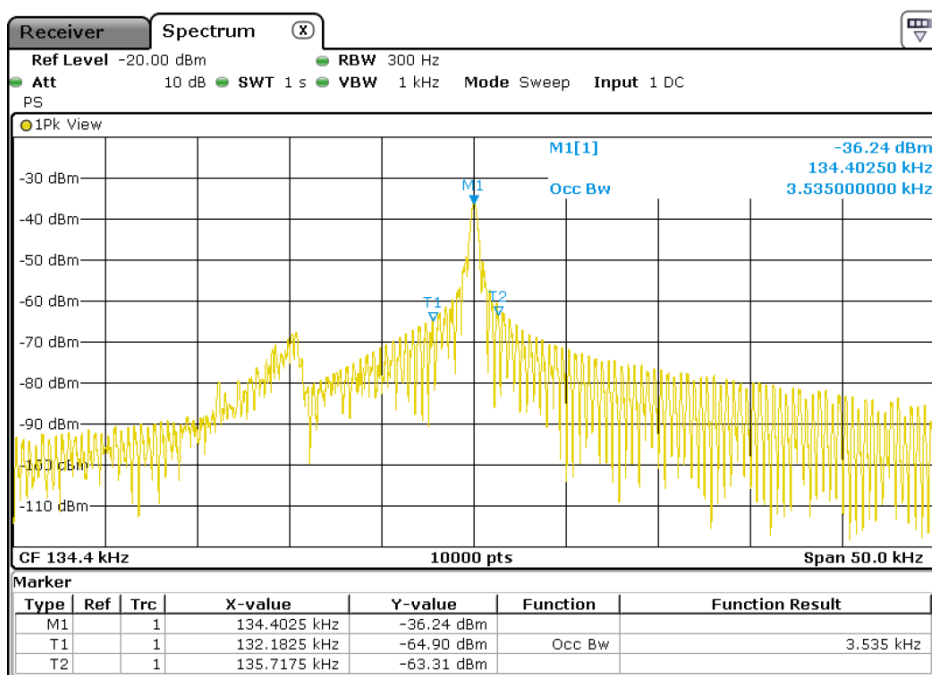
Information	Description
Modulation	RFID: Unmodulated sinus wave
Frequency band/Range	RFID: 134 kHz
Operation mode 1: Single Antenna Equipment	RFID: Equipment with one antenna
- Operating Frequency Range	RFID: 134 kHz
- Channel Spacing	RFID: N/A
- Number of Channels	RFID: 1
Extreme operating conditions	
- Temperature range	-10°C – 50°C
Antenna type	RFID: Loop
Antenna gain "Antenna port 1"	RFID: 1.5 dBi
Nominal Voltage	
- Supply Voltage	24.0 V
- Type of power source	DC powered
Equipment type	Floor standing equipment

4.2 Occupied Bandwidth

Results

(see next plots)

99% Bandwidth (kHz)	3.535
-26 dBc Bandwidth (kHz)	2.755



4.3 Emission limitations radiated (Transmitter)

SPECIFICATION FCC 15.209 and RSS-Gen:

Except as provided elsewhere in this subpart, the emissions from an intentional radiator shall not exceed the field strength levels specified in the following table:

Frequency Range (MHz)	Field strength (μV/m)	Field strength (dBμV/m)	Magnetic field strength (H-Field) (μA/m)	Measurement distance (m)
0.009-0.490	2400/F(kHz)	-	6.37/ F(kHz)	300
0.490-1.705	24000/F(kHz)	-	63.7/ F(kHz)	30
1.705 - 30.0	30	29.54	0.08	30
30 - 88	100	40	-	3
88 - 216	150	43.5	-	3
216 - 960	200	46	-	3
Above 960	500	54	-	3

The emission limits shown in the above table are based on measurements employing CISPR quasi-peak detector except for the frequency bands 9-90 kHz, 110-490 kHz and above 1000 MHz. Radiated emission limits in these three bands are based on measurements employing an average detector.

RESULTS:

All tests were performed in a semi-anechoic chamber at a distance of 3 m.

The spectrum was inspected from 9 kHz to 30 MHz searching for spurious signals.

The field strength is calculated by adding correction factor to the measured level from the spectrum analyser. This correction factor includes antenna factor and cable loss.

The equipment under test (EUT) can transmit through 3 antennas but not simultaneously. A preliminary scan was performed for the worst case antenna.

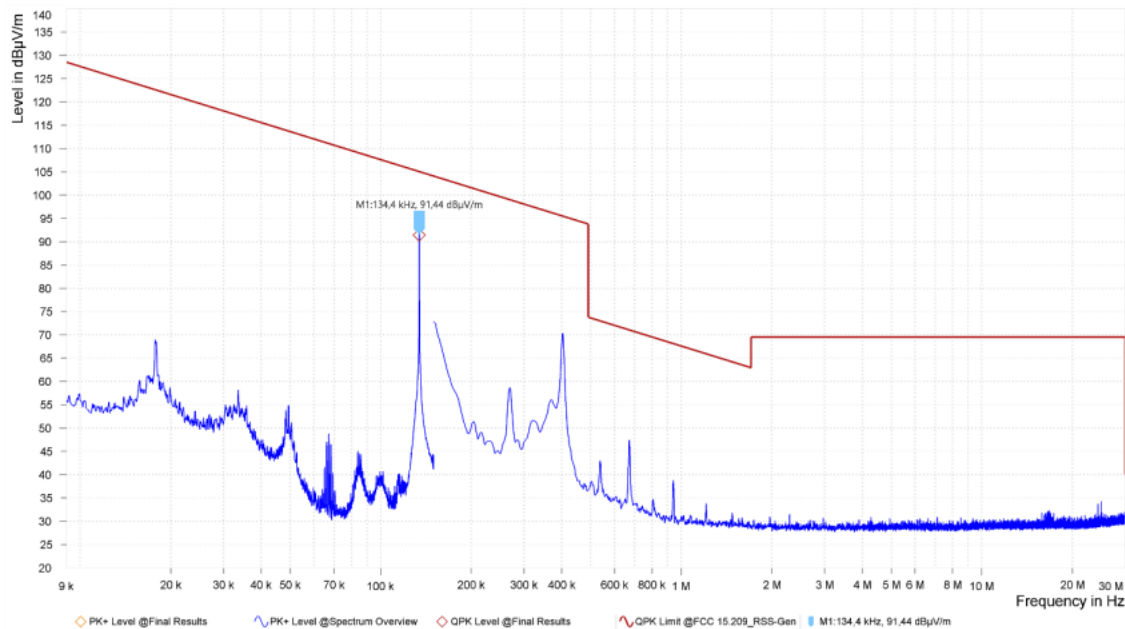
Frequency range 9 kHz - 30 MHz

The maximum field strength of fundamental emission:

Frequency (kHz)	Maximum field strength (dBμV/m) measured at 3 m (average detector)	Maximum Field strength (H-Field) (dBuA/m) measured at 3m (average detector)	Maximum field strength (dBμV/m) extrapolated to 300 m (40 dB/decade)	Maximum field strength (dBuA/m) measured at 300m (40 dB/decade)	Maximum field strength (μV/m) extrapolated to 300 m (40 dB/decade)	Maximum field strength (uA/m) measured at 300m (40 dB/decade)	Limit field strength (uV/m) measured at 300m	Limit field strength (uA/m) measured at 300m
134.6	85.67	34.17	5.67	-45.83	1.92	0.00509	17.83	0.0473

Verdict: PASS

FREQUENCY RANGE 9 kHz-30 MHz.



Frequency (MHz)	Peak Level [dBµV/m]	Peak Limit [dBµV/m]	Pol	Azimuth (deg)	Height (cm)	Bandwidth (kHz)
0.134	92.66	125.04	Y	-5.7	100	0.200

Resolution bandwidth:

200 Hz for $9 \text{ kHz} \leq f \leq 150 \text{ kHz}$

9 kHz for $150 \text{ kHz} \leq f \leq 30 \text{ MHz}$

Note: The scan is performed with a peak detector. The peaks closest to the limit are re-measured with the detector type as specified in FCC 15.209/RSS-Gen.

The limits shown in the above plot are extrapolated to 3 meters. The highest peak corresponds to the carrier level.

ANNEX 1 - MEASUREMENT UNCERTAINTIES

The table(s) below show(s) measurement uncertainties of the EMC test set-ups. The reported expanded uncertainties are based on a standard uncertainty multiplied by a coverage factor of $k=2$, providing a level of confidence of approximately 95%.

Radiated Emission tests	Uncertainty
Radiated emissions; 9 KHz – 30 MHz (X/Y/Z)	3.82 dB
Conducted Emission tests	Uncertainty
Occupied Bandwidth	1.40 %

ANNEX 2: USED EQUIPMENT

Test equipment used - 9KHz - 30 MHz				
Equipment	Manufacturer	Model	Dekra ID	Cal. Due
Anechoic Chamber 3m	ETS Lindgren	SAC-3m	135615	2026-27
EMI Test Receiver	Rohde & Schwarz	ESW44	135750	2025-27
EMI Test Receiver	Rohde & Schwarz	ESR7	132186	2025-35
Coaxial cable (5m)	Huber&Suhner	SUCOFLEX 126EA	134189	2026-40
Coaxial cable (3m)	Huber&Suhner	SUCOFLEX 102E	132535	2026-39
Loop antenna EMC	Rohde & Schwarz	HFH2-Z2E	134139	2026-49
Test-Control Software	Rohde-Schwarz	ELEKTRA	500160	2029-41