

SAR Exclusion Report (NFC 13.56MHz)

Report No.: WIRS138807 – FCC SAR Exclusion

Test Model: Rovebot Remote Controller (RRC)

Received Date: 01/30/2026

Test Date: 03/27/2026

Issued Date: 05/01/2026

Applicant: Zoox, Inc.

Address: 1149 Chess Dr. Foster City CA 94404

Issued By: Eurofins Electrical and Electronic Testing NA, Inc.

Lab Address: 3162 Belick St. Santa Clara CA, 95054



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1. Certificate of Conformity

Product: Zoox

Brand: Zoox

Test Model: Rovebot Remote Controller (RRC)

Sample Status: Production

Applicant: Zoox Inc.

Test Date: 03/27/2026

Standard: 47 CFR FCC Part 2.1093 and FCC Part 1.1310
KDB 447498 D01 General RF Exposure Guidance v06



Chin Ming Lui
Senior Wireless Test Engineer

Engineering Statement: The measurements shown in this report were made in accordance with the procedures indicated, and the emissions from this equipment were found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements, and for the qualifications of all persons taking them. It is further stated that upon the basis of the measurements made, the equipment tested is capable of operation in accordance with the requirements of Part 22 Subpart H and Part 24 Subpart E and Part 27 Subpart L of the FCC Rules under normal use and maintenance.

Report Status Sheet

Revision	Report Date	Reason for Revision
Ø	May 1, 2026	Initial Issue.

2. EUT General info

Intended Use

The Rovebot Remote Controller (RRC) is a proprietary technology developed by Zoox to facilitate a seamless and manual method of controlling Zoox vehicles. RRC is used to manually control the Zoox vehicles around the manufacturing line, test tracks, depots and in emergency situations.

The host device contains an NFC 13.56 MHz communication transmitter and WiFi 2.4 GHz and 5 GHz Transmitters Module FCC ID: 2BNNA-91167878.

Operating Environment & Conditions

Voltage: 3.7V DC (Battery Operated), Max Current: 2A

Product Dimensions/Weight

Height: 8.87 inches
Width: 8.15 inches
Depth: 2.24 inches
Weight: 1.43lb

RF Functions

NFC:

Technology: RFID 13.56 MHz
Output Power: 5.942 dBuV/m at 30m Distance
Antenna: Type: FPC Coil Antenna, Manufacturer: Molex

WiFi 2.4 GHz – (Module integrated into host, FCC ID of Module: 2BNNA-91167878)

802.11b: Data Rate 1 Mbps, Channels 1 to 11
802.11g: Data Rate 6 Mbps, Channels 1 to 11
802.11n HT20: Data Rate MCS0, Channels 1 to 11

WiFi 5 GHz – (Module integrated into host, FCC ID of Module: 2BNNA-91167878)

U-NII 1: 5180 – 5240 MHz

- 802.11a: Data Rate 6 Mbps, Channels 36 to 48
- 802.11n HT20: Data Rate MCS0, Channels 36 to 48

U-NII 2A: 5260 – 5320 MHz

- 802.11a: Data Rate 6 Mbps, Channels 52 to 64
- 802.11n HT20: Data Rate MCS0, Channels 52 to 64

U-NII 2C: 5500 – 5700 MHz

- 802.11a: Data Rate 6 Mbps, Channels 100 to 140
- 802.11n HT20: Data Rate MCS0, Channels 100 to 140

U-NII 3: 5745 – 5825 MHz:

- 802.11a: Data Rate 6 Mbps, Channels 149 to 165
- 802.11n HT20: Data Rate MCS0, Channels 149 to 165

Note: SAR requirements for WiFi 2.4 GHz and WiFi 5 GHz are covered by RF Exposure Lab SAR Report# SAR20260403

Equipment Configuration List

Name/Description	Part Number	Serial Number	Rev. #
Rovebot Remote Controller	P00007878-02	26072 00001	D

Note: Equipment Configuration information was provided by Zoxx, Inc.

Support Equipment List

Name/Description	Manufacturer	Model	Serial Number
Test Laptop	Lenovo	ThinkPad	183UB3

Note: Support Equipment information was provided by Zoxx, Inc.

Ports and Cabling List

N/A

Antenna Information

Radio	Antenna Type	Manufacturer	Part No	Frequency Range	Peak Gain
WiFi (Internal)	Chip Antenna	Silicon Labs	RS9116 CC0	2412MHz - 2462MHz 5180MHz - 5240MHz 5260MHz - 5320MHz 5500MHz - 5700MHz 5745MHz - 5825MHz	0.712 dBi (2.4GHz), 1.25 dBi (5.0GHz)
WiFi (External)	Flat Patch	Taoglas	FXP840.07.0055 B		3.35dBi (2.4GHz), 3.37dBi (5.0GHz)
NFC	*FPC Coil Antenna	Molex	1462362131	13.56MHz	-

Note: Antenna information was provided by Zoxx, Inc. Eurofins E&E Testing NA, LLC did not test or verify the accuracy of the antenna information.

*NFC Antenna 13.56 MHz Cable length 102.00mm Number of Turns: 2

3. RF Exposure conditions

The Rovebot Remote Controller (RRC) device is intended for operation in the general population (uncontrolled RF exposure environment).

The WiFi 2.4 GHz and 5 GHz radios do not transmit simultaneously per operational description by Zoox Inc.

3.1 Antenna Separation Distance

The distance from the RFID antenna to the outside of the enclosure is < 5 mm.

3.2 Maximum Transmit Power

The Maximum Field Strength measured at 3m distance is 45.942 dBμV/m ^{Note}.

Maximum Tolerance: ±2 dB

Maximum Field Strength Including Tolerance: 47.942 dBμV/m at 3m Distance

Note: Maximum Field Strength value leveraged from Eurofins test report # WIRS138807-FCC 15.225)

3.3 SAR exemption calculation

For transmitters where Field Strength was measured at a specific distance, the radiated power is calculated using the formula from ANSI C63.10-2020 as follows:

$$EIRP = E_{M_{ref}} + 20 \log(d_{M_{ref}}) - 104.7$$

where

EIRP	is the equivalent isotropically radiated power, in dBm
$E_{M_{ref}}$	is the field strength of the emission at the measurement distance, in dBμV/m
$d_{M_{ref}}$	is the measurement distance, in m

The EIRP was then used in the numerator in the power density equation above in place of the conducted power and antenna gain.

$$EIRP = 47.94 \text{ dBμV/m} + 20 \cdot \log(3\text{m}) - 104.7 = -47.22 \text{ dBm}$$

$$ERP = EIRP - 2.15 = -47.21 - 2.15 = -49.37 \text{ dBm}$$

ERP of -49.37 dBm converted to milliwatts is 0.00001mW, which is below the blanket sanction of 1 mW allowed according to KDB 447498.

4. Conclusion

This device meets the SAR test exclusion requirements as per KDB 447498 D01 General RF Exposure Guidance v06. Therefore, this device is compliant with the SAR limits specified in 47 CFR FCC Part 1.1310 (a) to (c).

EUT Photos and Antenna position

