

**Manufacturer:** iLOQ Oy  
**Address:** Elektriikkatie 10, FI-90590 Oulu, Finland  
**Model:** N504i  
**Type:** -  
**FCC ID:** 2A2HZN504I

**Test laboratory:** SGS Fimko Oy  
**Address:** Karakaarenkuja 4, FI-02610 Espoo, Finland  
**Accreditation body:** FINAS  
**Designation number:** FI0002

## REFERENCE DOCUMENTS

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KDB 447498 D01 General RF Exposure Guidance v06

## EUT SPECIFICATION

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iLOQ N504i is an NFC/PIN door reader used to read and write data to iLOQ keys. A valid key will open the door, and each time the key is used, it will be updated with the latest data.

Operating frequency range:	13.56 MHz
Channels:	1
Channel width:	1.3 MHz (Occupied Bandwidth 99 %)
Modulation:	ASK, BPSK
Maximum conducted output power	50 mW (declared by the manufacturer)
Antenna model:	-
Antenna gain:	-
Device category:	Fixed
Environment:	General Population/Uncontrolled
Separation distance:	≤ 50 mm

## ASSESSMENT

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### Exemption limits:

A single RF source is exempt if it satisfies the SAR Test Exclusion Threshold conditions presented in KDB document 447498 D01 v06 clause 4.3.1. For equipment operating below 100 MHz and for test separation distances  $\leq 50$  mm, the SAR Test Exclusion Threshold is calculated according to clause 4.3.1 c) 2):

$$P_{(mW)} = \frac{1}{2} \times \left[ 1 + \log \left( \frac{100}{f_{EUT}} \right) \right] \times \left[ \frac{d_{(mm)} \times 3.0}{\sqrt{0.001 \times f_{(MHz)}}} + (d_{(mm)} - 50) \times \left( \frac{f_{(MHz)}}{150} \right) \right]$$

where  $f_{EUT}$  is the operating frequency of the equipment in MHz,  $d_{(mm)} = 50$  and  $f_{(MHz)} = 100$ .

### Assessment results:

For  $f_{EUT} = 13.56$  the SAR Test Exclusion Threshold is:

$$P_{(mW)} = \frac{1}{2} \times \left[ 1 + \log \left( \frac{100}{13.56} \right) \right] \times \left[ \frac{50 \times 3.0}{\sqrt{0.001 \times 100}} + (50 - 50) \times \left( \frac{100}{150} \right) \right] \approx 443 \text{ mW}$$

The maximum conducted output power of the EUT (50 mW) is below the threshold.

## CONCLUSION

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The assessment shows that the device qualifies for SAR Test Exclusion.

Date: June 4, 2024



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