

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

KDB 447498 D01 General RF Exposure Guidance v06

EUT SPECIFICATION

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

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 ≤ 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

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

Date: June 4, 2024



Henri Mäki
Testing Engineer