Manufacturer:	Idesco Oy
Address:	Elektroniikkatie 4, FI-90590 Oulu, Finland
Model:	T11
Type:	-
FCC ID:	UJRT11
Contains FCC ID:	WAP2005

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

REFERENCE DOCUMENTS

§1.1310 Radiofrequency radiation exposure limits
KDB 447498 D01 General RF Exposure Guidance v06

EUT SPECIFICATION

The equipment under test is an access control reader with NFC and BLE.

	NFC	**BLE**
Operating frequency range:	13.56 MHz	2402-2480 MHz
Channels:	1	40
Channel width:	1.6 MHz	1 MHz
Channel separation:	-	2 MHz
Modulation:	ASK	GFSK
Maximum output power:	806 mW	2 mW
Antenna model/type:	Integral PCB loop antenna	Integral ceramic chip antenna
Antenna gain:	-	0.5 dBi

Device category:	Mobile
Environment:	General Population/Uncontrolled
Separation distance:	20 cm (body) *

* Note: The equipment is operated by hand occasionally, only for a few seconds at a time. Therefore, the exposure is assessed for body at 20 cm from the equipment.

ASSESSMENT

Standalone SAR Test Exclusion

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 at 13.56 MHz and for test separation distance 200 mm (body, 1-g SAR), the SAR Test Exclusion Threshold is calculated according to clause 4.3.1 c) 1):

$$P_{th} = \left[1 + \log\left(\frac{100}{13.56}\right)\right] * \left[\frac{50 * 3.0}{\sqrt{0.001 * 100}} + (200 - 50) * \left(\frac{100}{150}\right)\right] \approx 1073 \text{ mW}$$

The maximum conducted output power of the NFC transmitter (806 mW) is below the threshold.

For equipment operating at 2.402-2.480 GHz and for test separation distance 200 mm (body, 1-g SAR), the SAR Test Exclusion Threshold is calculated according to clause 4.3.1 b) 2):

$$P_{th} = \frac{50 * 3.0}{\sqrt{2.480}} + (200 - 50) * 10 \approx 1595 \text{ mW}$$

The maximum e.i.r.p. of the BLE transmitter (2.2 mW) is below the threshold.

Simultaneous Transmission SAR Test Exclusion

When an antenna qualifies for the standalone SAR test exclusion and also transmits simultaneously with other antennas, the standalone SAR value must be estimated according to KDB document 447498 D01 v06 clause 4.3.2 to determine the simultaneous transmission SAR test exclusion criteria.

For test separation distance 200 mm (body, 1-g SAR), the estimated SAR is determined according to clause 4.3.2 b):

$$SAR_{est} = 0.4 + 0.4 = 0.8 \text{ W/kg}$$

The sum of the estimated SAR values for NFC and BLE transmitters is below the SAR limit for body, 1.6 W/kg.

CONCLUSION

The assessment shows that the device qualifies for standalone and simultaneous transmission SAR test exclusions.

Date: March 28, 2025

Henri Mäki
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