Test Report

HELEM2503000058-2 v1.0

FINAS Finnish Accreditation Service T004 (EN ISO/IEC 17025)

INTENTIONAL RADIATOR TESTS ACCORDING TO FCC PART 15 C AND ISED CANADA REQUIREMENTS

Equipment Under Test:	RFID Reader
Model:	T10
Customer / Manufacturer:	Idesco Oy Elektroniikkatie 4 FI-90590 Oulu Finland
FCC Rule Part:	15.247
IC Rule Part:	RSS-247, Issue 3 RSS-GEN Issue 5 Amendment 2
KDB:	558074 D01 15.247 Meas Guidance v05r02 Guidance for Compliance Measurements on Digital Transmission Systems, Frequency Hopping Spread Spectrum System, and Hybrid System Devices Operating Under §15.247 of the FCC rules (April 2, 2019)

- *partial testing, see test suite for details*

Date:	15 August 2025	Date:	15 August 2025
Issued by:	Lauri Sippola Testing Engineer	Checked by:	Rauno Repo Senior EMC Specialist

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GENERAL REMARKS

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

RELEASE HISTORY

Version	Changes	Issued
1.0	Initial release	15 August 2025

PRODUCT DESCRIPTION

Equipment Under Test

Equipment Under Test:	RFID Reader
Model:	T10
Type:	-
Trademark:	-
Serial no:	-
FCC ID:	UJRT10
IC:	6701A-T10
Contains FCC ID:	WAP2005
Contains IC:	7922A-2005
Radio module or chip:	BLE: Cypress/ Infineon CYBLE-222014-01 RFID/NFC: STMicroelectronics ST25R3916B-AQWT

General Description

Access control reader with BLE and NFC support.

Classification

Fixed device	☒
Mobile Device (Human body distance > 20cm)	☐
Portable Device (Human body distance < 20cm)	☐

Modifications Incorporated in the EUT

No modifications.

Ratings and declarations

Operating Frequency Range (OFR):	2402 - 2480 MHz
Channels:	40
Channel separation:	2 MHz
Transmission technique:	DSSS
Modulation:	GFSK
Antenna type:	Integral ceramic chip antenna
Integral Antenna gain:	-

Power Supply

Operating voltage range:	10 – 42 VDC (24 VDC nominal)

Mechanical Size of the EUT

Height: 30.4 mm	Width: 76.8 mm	Length: 127.2 mm

SUMMARY OF TESTING

Test Specification	Description of Test	Result
§15.203	Antenna requirement	**PASS**
§15.209(a), §15.247(d) / RSS-247 5.5	Radiated Emissions 30 MHz – 18 GHz	**PASS**

The decision rule applied for the tests results stated in this test report is according to the requirements of section 1.4 of ANSI C63.10-2020.

EUT Test Conditions during Testing

The EUT was in continuous transmit mode during all the tests. The EUT was configured into the wanted channel using software provided by the manufacturer. The NFC radio was continuously transmitting at 13.56 MHz.

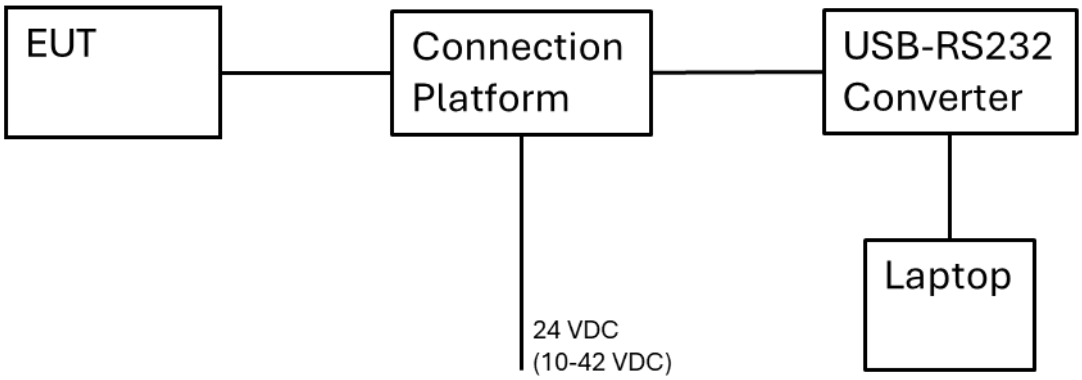

Figure 1: Test setup block diagram

Table 1: Test frequencies and settings

Channel	Frequency (MHz)
HIGH	2480

Test Facility

Testing Laboratory / address: FCC designation number: **FI0002** ISED CAB identifier: **T004**	SGS Fimko Ltd Takomotie 8 FI-00380, HELSINKI FINLAND
Test Site:	☐ K10LAB, ISED Canada registration number: **8708A-1** ☒ K5LAB, ISED Canada registration number: **8708A-2** ☐ T10LAB

TEST RESULTS

Antenna Requirement

Standard: FCC Rule §15.203
Tested by: LAS
Date: 10 March 2025

FCC Rule: 15.203

An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device.

Specification	Requirement (at least one of the following shall be applied)	Conclusion
§15.203	1. Permanently attached antenna 2. Unique coupling to the intentional radiator 3. Professionally installed radio. The installer shall be responsible for ensuring that the proper antenna is employed so that the limits in this part are not exceeded.	**PASS**
Note	Option 1 is used	

Radiated Emissions 30 MHz - 18 GHz

Standard:	ANSI C63.10	(2020)
Tested by:	LAS	
Date:	11 March 2025	
Temperature:	22 ºC	
Humidity:	37 %RH	
Measurement uncertainty:	± 4.51 dB	Level of confidence 95 % (k = 2)

FCC Rule: 15.247(d), 15.209(a)

RSS-247 5.5

In any 100 kHz bandwidth outside the frequency band in which the spread spectrum or digitally modulated intentional radiator is operating, the radio frequency power that is produced by the intentional radiator shall be at least 20 dB below that in the 100 kHz bandwidth within the band that contains the highest level of the desired power. In addition, radiated emissions which fall in the restricted bands, as defined in Section 15.205(a), must also comply with the radiated emission limits specified in Section 15.209(a)**.**

The correction factor in the final result table contains the sum of the transducers (antenna + amplifier + cables).

The pre-measurements were performed with the EUT being in three orthogonal positions (X, Y, Z). Final measurements were done in worst position.

Frequency range [MHz]	Limit [µV/m]	Limit [dBµV/m]	Detector
0.009-0.490	2400/F(kHz)	48.5-13.8	Quasi-peak
0.490-1.705	24000/F(kHz)	33.8-22.97	Quasi-peak
1.705-30.0	30	29.54	Quasi-peak
30 - 80	100	40.0	Quasi-peak
88 - 216	150	43.5	Quasi-peak
216 - 960	200	46.0	Quasi-peak
960 - 1000	500	53.9	Quasi-peak
Above 1000	500	53.9	Average
Above 1000	5000	73.9	Peak

Test results

Table 2: Quasi-peak results HIGH channel

Frequency (MHz)	QuasiPeak (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time (ms)	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
32.855000	34.53	40.00	5.47	1000.0	120.000	148.0	V	124.0	16.6
34.115000	31.94	40.00	8.06	1000.0	120.000	148.0	V	136.0	16.6
44.715000	30.65	40.00	9.35	1000.0	120.000	100.0	V	120.0	17.7
60.055000	24.64	40.00	15.36	1000.0	120.000	100.0	V	356.0	17.9
63.305000	32.96	40.00	7.04	1000.0	120.000	105.0	V	144.0	17.5
69.025000	36.32	40.00	3.68	1000.0	120.000	100.0	V	121.0	16.4
71.995000	29.83	40.00	10.17	1000.0	120.000	161.0	V	352.0	15.8
84.135000	28.48	40.00	11.52	1000.0	120.000	237.0	H	330.0	12.2

Table 3: Peak and average results HIGH channel

Frequency (MHz)	MaxPeak (dBµV/m)	CAverage (dBµV/m)	Limit (dBµV/m)	Margin (dB)	Meas. Time	Bandwidth (kHz)	Height (cm)	Pol	Azimuth (deg)	Corr. (dB/m)
2479.750000	77.78	---	---	---	1000.0	1000.000	301.0	H	144.0	14.3
2483.600000	52.74	---	74.00	21.26	1000.0	1000.000	371.0	H	159.0	14.5
2492.800000	---	36.39	54.00	17.61	1000.0	1000.000	259.0	V	279.0	14.8

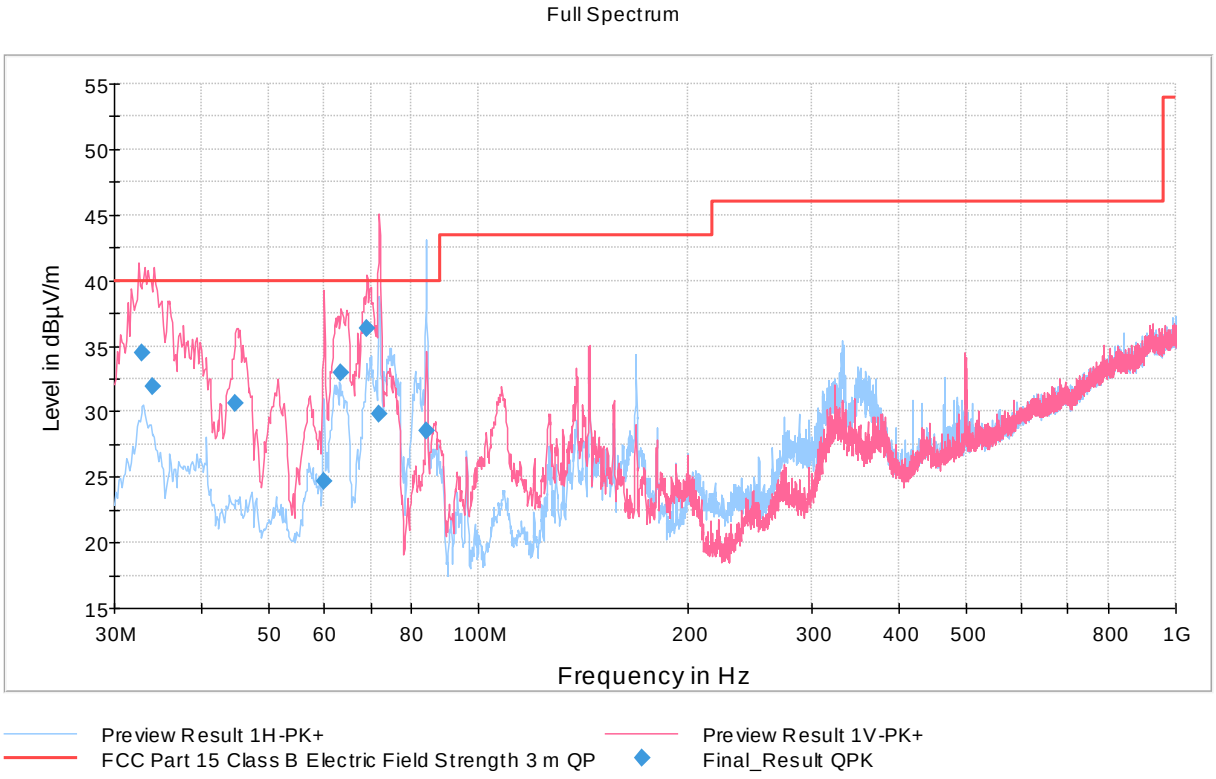

Figure 2: HIGH channel (30 MHz – 1 GHz)

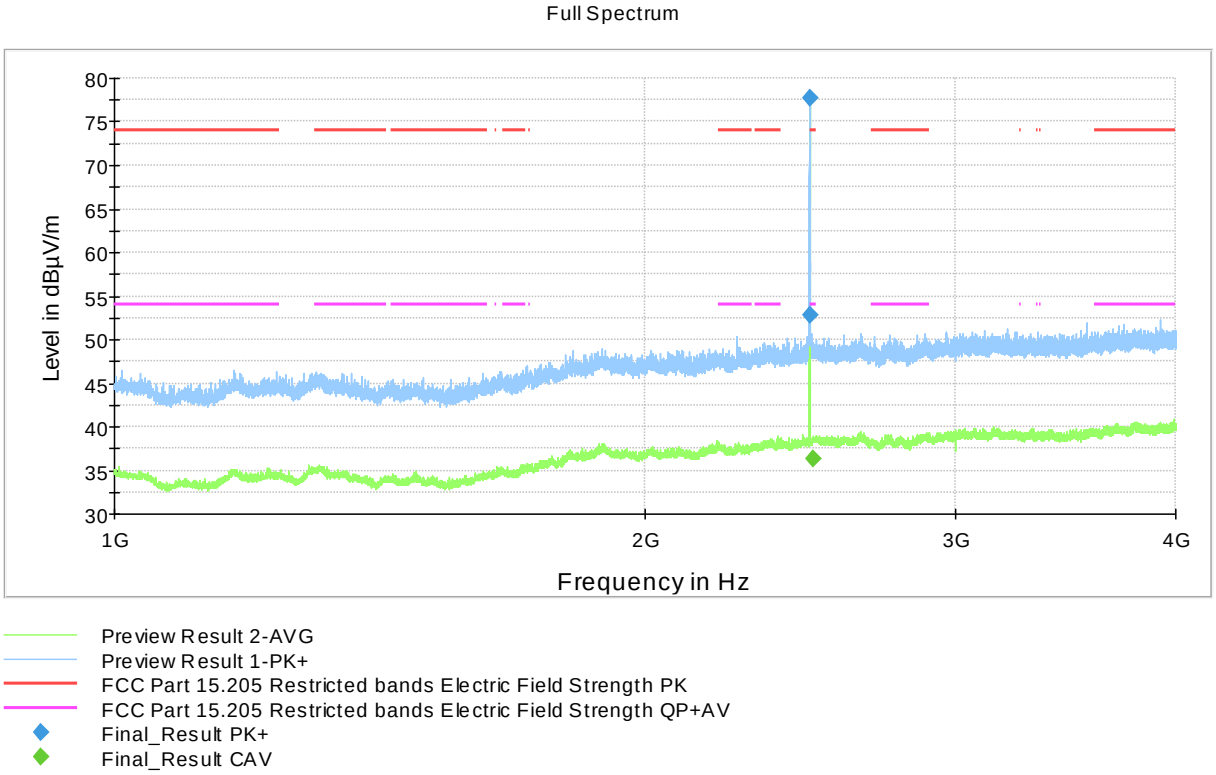

Figure 3: HIGH channel (1 GHz – 4 GHz)

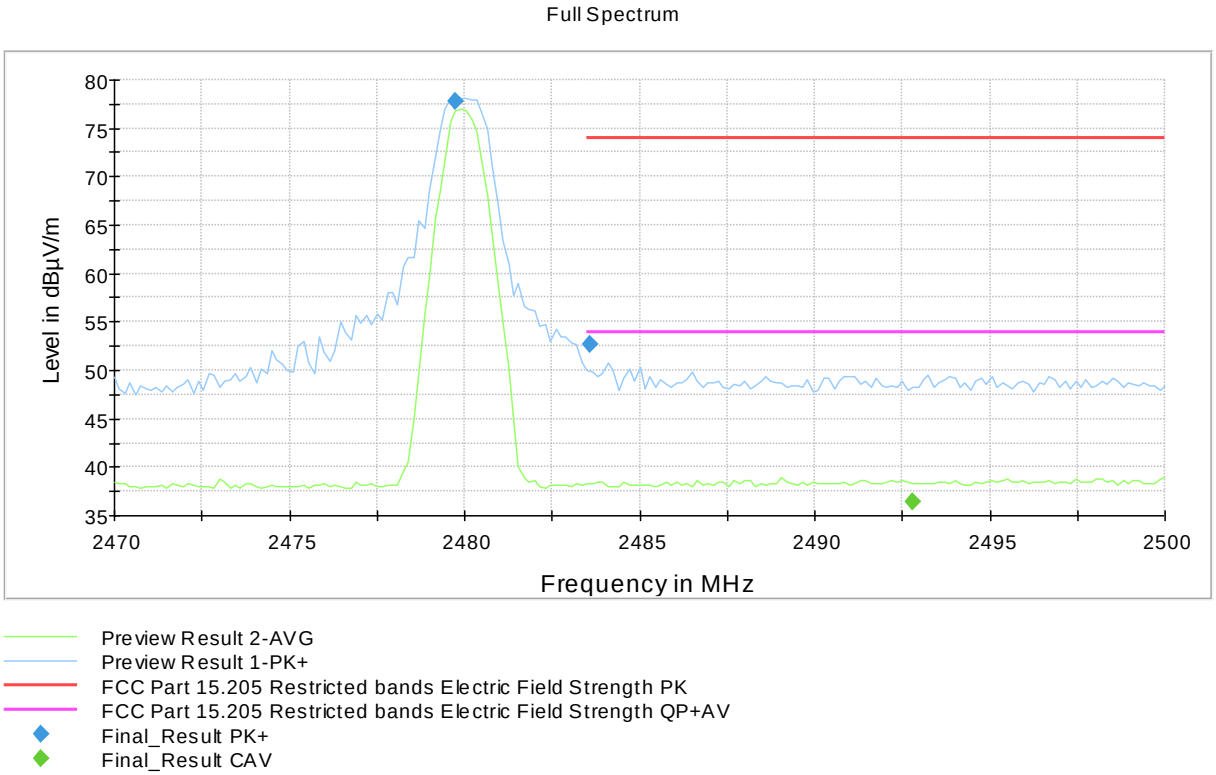

Figure 4: Upper band-edge

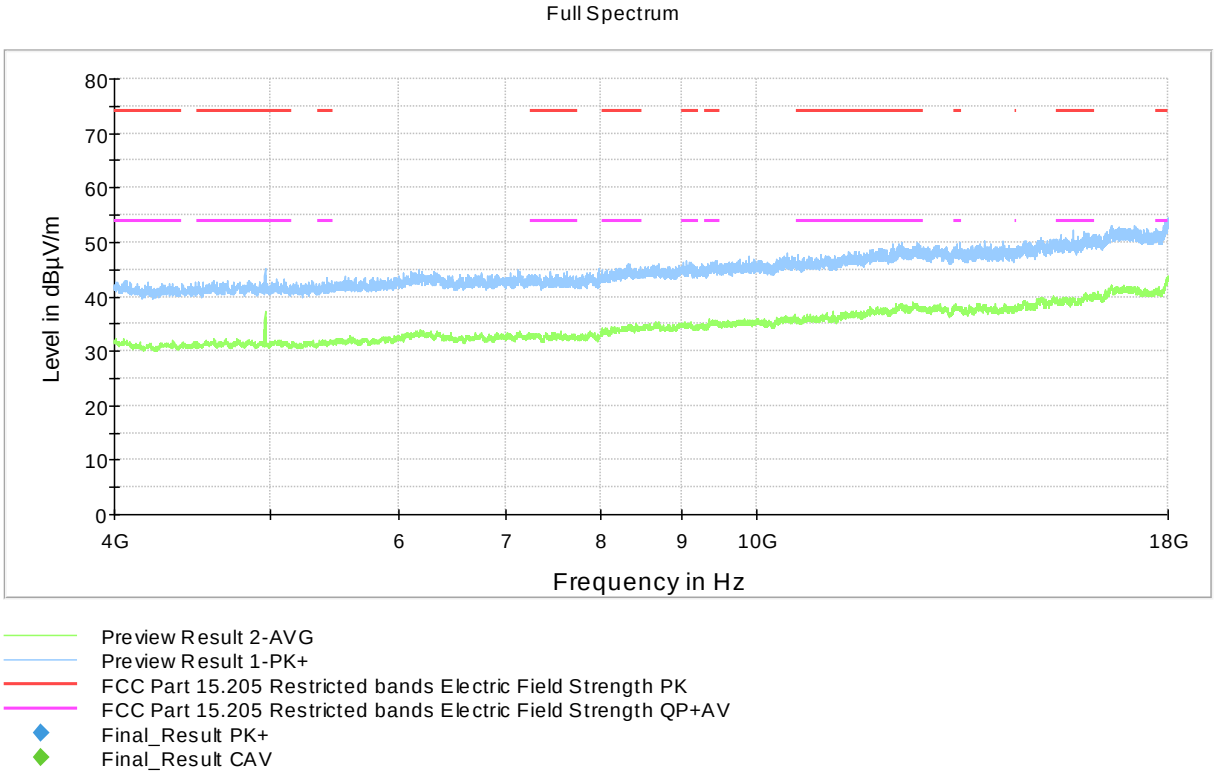

Figure 5: HIGH channel (4 GHz – 18 GHz)

TEST EQUIPMENT

Description	Manufacturer	Model	Identifier	Cal. Date	Cal. Due
ANTENNA	EMCO	3117, emi 1-18GHz	inv. 7293	2024-06-28	2026-06-28
ANTENNA	SCHWARZBECK	VULB 9168	inv. 8911	2024-12-11	2026-12-11
ANTENNA MAST	MATURO	TAM 4.0E	inv. 10181	NCR	NCR
ATTENUATOR	HUBER & SUHNER	6610.19.AA (10 dB)	inv. A3	2024-12-11-	2026-12-11
ATTENUATOR	PASTERNACK	PE 7004-4 (4dB)	inv. 10126	2024-12-11	2026-12-11
CABLE	-	FB3AirC	inv. C155	NCR	NCR
CABLE	SUHNER	SUCOFLEX 126E 1-18GHz	sn:502975/126E (C137)	2025-03-27	2026-03-27
COAX CHAIN K5 EMI < 1GHz	-	C053+FP3AirC+C138	-	2024-03-28	2025-03-28
COAX CHAIN K5 EMI 1GHz-26.5GHz	-	C135+C149	sn:-	2025-03-26	2026-03-26
EMI TEST RECEIVER	ROHDE & SCHWARZ	ESW26	inv. 10679	2024-06-12	2025-06-11
FILTER	WAINWRIGHT	HP, WHKX4.0/18G-10SS	inv. 10403	2024-12-10	2026-12-10
MAST & TURNTABLE CONTROLLER	MATURO	NCD	inv. 10183	NCR	NCR
POWER SUPPLY	CALIFORNIA INSTR.	5001 iX Series II	inv. 7826	NCR	NCR
POWER SUPPLY	DELTA	SM 130-25D	inv. 10406	NCR	NCR
RF PREAMPLIFIER	CIAO	CA118-3123	inv:10278	2024-09-10	2025-09-10
TEMPERATURE/ HUMIDITY SENSOR	EDS	OW-ENV-TH, K5 SAC	inv. 10517	2024-11-02	2025-11-02
TEST SOFTWARE	ROHDE & SCHWARZ	EMC-32	-	NCR	NCR
TURNTABLE	MATURO	DS430 UPGRADED	inv. 10182	NCR	NCR

NCR = No Calibration Required

END OF REPORT