



RF - TEST REPORT

- Human Exposure -

Type / Model Name : ID My Cow

Product Description : Identification system

Applicant : DATAMARS SA

Address : Via Industria 16
6814 Lamone, SWITZERLAND

Manufacturer : DATAMARS Ltd

Address : Northern Region Industrial Estate No. 76/4
Moo 4, Tambol Ban Klang, Amphur Muang Lumphun,
Lumphun Province, THAILAND 51000

Test Result according to the standards listed in clause 1 test standards:	POSITIVE
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Test Report No. : 80200966-06 Rev_1	07. August 2025 Date of issue
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FCC ID: NDX-IDMYCOW

IC ID: 8521A-IDMYCOW

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ATTACHMENT A as separate supplement

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1 TEST STANDARDS

The tests were performed according to following standards:

FCC Rules and Regulations Part 1, Subpart I - Procedures Implementing the National Environmental Policy Act of 1969

Part 1, Subpart I, Section 1.1310

Radiofrequency radiation exposure limits

KDB 447498 D01

RF Exposure procedures and equipment authorisation policies for mobile and portable devices.

ANSI C95.1: 2005

IEEE Standard for Safety Levels with respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz

RSS-102, Issue 6

Radio Frequency (RF) Exposure Compliance of Radiocommunication Apparatus (All Frequency Bands)

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2 EQUIPMENT UNDER TEST

2.1 Information provided by the Client

Please note, we do not take any responsibility for information provided by the client or his representative which may have an influence on the validity of the test results.

2.2 Sampling

The customer is responsible for the choice of sample. Sample configuration, start-up and operation is carried out by the customer or according to his/her instructions.

2.3 Photo documentation of the EUT – See ATTACHMENT A

2.4 Equipment type

2.4 GHz LoRa Device

2.5 Short description of the equipment under test (EUT)

The EUT is the identification system IDMyCow. It is used to identify animals wearing EarTag and CollarTag and can be used to identify passing cows with high performance ID identification rate.

The IDMyCow system is composed of:

- Primary Reader
- Node Reader
- External Directional Antenna
- Power supply AC/DC IN 110V/230V OUT 15V GlobTek RR9KG4000T00CIMR6B

Wires and cables are part of the system:

- SMA-SMA coaxial cable
- USB cable connection 2m (USB-A to USB-B)
- USB cable connection 5m (USB-A to USB-B)

Number of tested samples: 1

Serial number: SAMPLE P-0009, SAMPLE -N-0009, SAMPLE-A-0009
(Note: P for Primary Reader, N for Node Reader, A for Activation Antenna)

Firmware version: Candle OpenWrt v1.0.3

2.6 Variants of the EUT

There are no variants.

The test report merely corresponds to the test sample. It is not permitted to copy extracts of these test results without the written permission of the test laboratory.

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2.7 Operation frequency and channel plan

The operating frequency is 2400 MHz to 2483.5 MHz.

Channel plan:

Channel	Frequency (MHz)	Channel	Frequency (MHz)
37	2402	18	2442
0	2404	19	2444
1	2406	20	2446
2	2408	21	2448
3	2410	22	2450
4	2412	23	2452
5	2414	24	2454
6	2416	25	2456
7	2418	26	2458
8	2420	27	2460
9	2422	28	2462
10	2424	29	2464
38	2426	30	2466
11	2428	31	2468
12	2430	32	2470
13	2432	33	2472
14	2434	34	2474
15	2436	35	2476
16	2438	36	2478
17	2440	39	2480

Note: the marked frequencies are determined for final testing.

2.8 Transmit operating modes

The EUT uses LI 4/5 Code Rate with a spreading factor of 6 and a bandwidth of 1625 kHz.

2.9 Antennas

The following antennas shall be used with the EUT:

External TX directional antenna with 7 dBi max. gain.

2.10 Power supply system utilised

Power supply voltage, V_{nom} : 10.8 V_{DC} (battery powered)
 Power supply voltage, alternative 1 : 15 V_{DC} (12 V_{DC} – 48 V_{DC})
 Power supply voltage, alternative 2 : 48 V_{DC} (PoE)

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3 TEST RESULT SUMMARY

Operating in the 2400 MHz – 2483.5 MHz band:

FCC Rule Part	RSS Rule Part	Description	Result
KDB 447498, 7.1	RSS 102, 6.6	MPE	not applicable
KDB 447498, 4.3.1	RSS 102, 6.3	SAR exclusion consideration	passed
KDB 447498, 7.2	RSS102, 8.2	Co-location, Co-transmission	not applicable

3.1 Revision history of test report

Test report No	Rev.	Issue Date	Changes
80200966-06	0	17 January 2025	Initial test report
80200966-06	1	07 August 2025	Reference to RSS 102 SAR Exclusion limits added

The test report with the highest revision number replaces the previous test reports.

3.2 Final assessment

The equipment under test fulfils the requirements cited in clause 1 test standards.

Date of receipt of test sample : acc. to storage records

Testing commenced on : 04 September 2024

Testing concluded on : 28 November 2024

Checked by:


Jürgen Pessinger
2025.08.07
10:52:08 +02'00'

Jürgen Pessinger
Radio Team

Tested by:


Christopher Thaller
2025.08.07
08:45:10 +02'00'

Christopher Thaller
Radio Team

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4 TEST ENVIRONMENT

4.1 Address of the test laboratory

CSA Group Bayern GmbH
Straubinger Straße 100
94447 PLATTILING
GERMANY

4.2 Environmental conditions

During the measurement the environmental conditions were within the listed ranges:

Temperature: 15 - 35 °C

Humidity: 30 - 60 %

Atmospheric pressure: 86 - 106 kPa

4.3 Statement of the measurement uncertainty

The data and results referenced in this document are true and accurate. It is noted that the expanded measurement uncertainty corresponds to the measurement results from the standard measurement uncertainty multiplied by the coverage factor $k = 2$. The true value is located in the corresponding interval with a probability of 95 %. The measurement uncertainty was calculated for all measurements listed in this test report on basis of the ETSI Technical Report TR 100 028 Electromagnetic compatibility and Radio spectrum Matters (ERM); Uncertainties in the measurement of mobile radio equipment characteristics; Part 1 and Part 2. The results are documented in the quality system acc. to DIN EN ISO/IEC 17025. Furthermore, component and process variability of devices similar to that tested may result in additional deviation. The manufacturer has the sole responsibility of continued compliance of the device.

4.4 Conformity Decision Rule

The applied conformity decision rule is based on ILAC G8:09/2019 clause 4.2.1 Binary Statement for Simple Acceptance Rule ($w = 0$).

Details can be found in the procedure CSA_B_V50_29.

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5 HUMAN EXPOSURE

5.1 Test results

The RF output power is taken from the test report 80200966-04 Rev_0 issued by CSA Group Bayern GmbH.

FCC §15.247 (b)(4)					
Modulation	Channel	Frequency	Measured Conducted TX Power	Conducted Tx-Power Limit	Margin
		MHz	dBm	dBm	dB
DSSS	CH37	2402	-9.7	29.0	-38.7
	CH20	2446	-10.0	29.0	-39.0
	CH39	2480	-10.1	29.0	-39.1

RSS-247 5.4 (d)							
Modulation	Channel	Frequency	Measured Conducted TX Power	Antenna gain	EIRP	EIRP Limit	Margin
		MHz	dBm	dBd	dBm	dBm	dB
DSSS	CH37	2402	-9.7	7.0	-2.7	36.0	-38.7
	CH20	2446	-10.0	7.0	-3.0	36.0	-39.0
	CH39	2480	-10.1	7.0	-3.1	36.0	-39.1

Remarks: None.

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5.2 SAR test exclusion considerations

5.2.1 Applicable standard

According to KDB 447498 D01 (3)(a) according to §§1.1307(b)(3)(i)(A)

The available maximum time-averaged power is no more than 1 mW, regardless of separation distance. This exemption may not be used in conjunction with other exemption criteria other than those in paragraph (b)(3)(ii)(A) of this section.

5.2.2 Determination of the standalone SAR test exclusion

Radiated output power EIRP:	0.54 mW	-2.7 dBm
Tune-up tolerance:	2.00 dB	
Maximum output power:	-0.7 dBm	0.85 mW
Antenna gain max:	7 dBi	

$$0.85 \text{ mW} < 1 \text{ mW}$$

Conclusion: SAR testing is not necessary.

The requirements are **FULFILLED**.

Remarks: None.

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5.3 Exemption limits for routine evaluation - SAR evaluation

5.3.1 Applicable standard

According to RSS-102, item 6.3 SAR exemption limits:

SAR evaluation is required if the separation distance between the user and/or bystander and the antenna and/or radiating element of the device is less than or equal to 20 cm, except when the device operates at or below the applicable output power level (adjusted for tune-up tolerance) for the specified separation distance defined in Table 1.

Table 1: SAR evaluation – Exemption limits for routine evaluation based on frequency and separation distance
4, 5

Frequency (MHz)	Exemption Limits (mW)				
	At separation distance of ≤5 mm	At separation distance of 10 mm	At separation distance of 15 mm	At separation distance of 20 mm	At separation distance of 25 mm
≤ 300	45 mW	116 mW	139 mW	163 mW	189 mW
450	32 mW	71 mW	87 mW	104 mW	124 mW
835	21 mW	32 mW	41 mW	54 mW	72 mW
1900	6 mW	10 mW	18 mW	33 mW	57 mW
2450	3 mW	7 mW	16 mW	32 mW	56 mW
3500	2 mW	6 mW	15 mW	29 mW	50 mW
5800	1 mW	5 mW	13 mW	23 mW	32 mW

4 The exemption limits in Table 1 are based on measurements and simulations of half-wave dipole antennas at separation distances of 5 mm to 25 mm from a flat phantom, providing a SAR value of approximately 0.4 W/kg for 1 g of tissue.

5.3.2 Conclusion according RSS-102.

Maximum output power at 2450 MHz, **0.85 mW** is **< 7 mW**;

For the EUT SAR measurement is NOT necessary

The requirements are **FULFILLED**.

Remarks: None.