

Report on the FCC and IC Testing of the

SureFlap Ltd
Cat Flap Connect. Model: iDSCF

In accordance with FCC 47 CFR Part 15B and
ICES-003

Prepared for: SureFlap Ltd
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COMMERCIAL-IN-CONFIDENCE

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RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Natalie Bennett	02 December 2019	
Authorised Signatory	Matt Russell	02 December 2019	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD document control rules.

ENGINEERING STATEMENT

The measurements shown in this report were made in accordance with the procedures described on test pages. All reported testing was carried out on a sample equipment to demonstrate limited compliance with FCC 47 CFR Part 15B and ICES-003. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Graeme Lawler	02 December 2019	

FCC Accreditation

90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation

12669A Octagon House, Fareham Test Laboratory

EXECUTIVE SUMMARY

A sample of this product was tested and found to be compliant with FCC 47 CFR Part 15B: 2017 and ICES-003: 2016.



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1 Report Summary

1.1 Report Modification Record

Alterations and additions to this report will be issued to the holders of each copy in the form of a complete document.

Issue	Description of Change	Date of Issue
1	First Issue	12 July 2018
2	Up issue due to ISED Application deadline	23 August 2019
3	New ISED accreditation number for TUV SUD. Changing from IC2932B-1 to 12669A.	02 December 2019

1.2 Introduction

Applicant	SureFlap Ltd
Manufacturer	SureFlap Ltd
Model Number(s)	iDSCF
Serial Number(s)	Not Serialised (75941461-TSR0030)
Hardware Version(s)	00500621-DA_02 Internet 00500621-DA_02 Internet DualScan Cat Flap General Assembly (_02: revision 02)
Software Version(s)	Firmware 01127_FF (but special version for TUV SUD testing)
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15B: 2017 ICES-003: 2016
Order Number	2265
Date	19-January-2018
Date of Receipt of EUT	22-February-2018
Start of Test	26-May-2018
Finish of Test	28-May-2018
Name of Engineer(s)	Graeme Lawler
Related Document(s)	ANSI C63.4 (2014)



1.3 Brief Summary of Results

A brief summary of the tests carried out in accordance with FCC 47 CFR Part 15B and ICES-003 is shown below.

Section	Specification Clause		Test Description	Result	Comments/Base Standard
	Part 15B	ICES-003			
Configuration and Mode: Idle					
2.1	15.109	6.2	Radiated Emissions	Pass	ANSI C63.4 (2014)

Table 1



1.4 Application Form

MAIN EUT	
MANUFACTURING DESCRIPTION	Microchip Cat Flap Connect
MANUFACTURER	SureFlap Ltd
MODEL NAME/NUMBER	iDSCF
PART NUMBER	iDSCF
SERIAL NUMBER	see on the units
HARDWARE VERSION	00500621-DA_02 Internet DualScan Cat Flap General Assembly (_02: revision 02)
SOFTWARE VERSION	Firmware 01127_FF (but special version for TUV SUD testing)
PSU VOLTAGE/FREQUENCY/CURRENT	6VDC nom.
HIGHEST INTERNALLY GENERATED / USED FREQUENCY	2.4GHz
FCC ID (if applicable)	X09-DSCF-1002
INDUSTRY CANADA ID (if applicable)	8906A-DSCF1002
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	Catflap connected by 2.4 GHz RF to a hub which is connected to the internet. Allows the conditional entry of animals based on RFID tags. Usually situated in an external door of a house
COUNTRY OF ORIGIN	China
RF CHARACTERISTICS (if applicable)	
TRANSMITTER FREQUENCY OPERATING RANGE (MHz)	2400
RECEIVER FREQUENCY OPERATING RANGE (MHz)	2400
INTERMEDIATE FREQUENCIES	
EMISSION DESIGNATOR(S): (i.e. G1D, GXW)	
MODULATION TYPES: (i.e. GMSK, QPSK)	
OUTPUT POWER (W or dBm)	4 dBm
SEPARATE BATTERY/POWER SUPPLY (if applicable)	
MANUFACTURING DESCRIPTION	
MANUFACTURER	
TYPE	
PART NUMBER	
PSU VOLTAGE/FREQUENCY/CURRENT	
COUNTRY OF ORIGIN	
MODULES (if applicable)	
MANUFACTURING DESCRIPTION	
MANUFACTURER	
TYPE	
POWER	
FCC ID	
INDUSTRY CANADA ID	
EMISSION DESIGNATOR	
DHSS/FHSS/COMBINED OR OTHER	
COUNTRY OF ORIGIN	
ANCILLARIES (if applicable)	
MANUFACTURING DESCRIPTION	
MANUFACTURER	
TYPE	
PART NUMBER	
SERIAL NUMBER	
COUNTRY OF ORIGIN	

I hereby declare that the information supplied is correct and complete.

Name: Chris Cowdery
 Date: 13 Feb 2018

Position held: Head of Embedded Systems



1.5 Product Information

1.5.1 Technical Description

Catflap connected by 2.4 GHz RF to a hub which is connected to the internet. Allows the conditional entry of animals based on RFID tags. Usually situated in an external door of a house

1.6 Deviations from the Standard

No deviations from the applicable test standard were made during testing.

1.7 EUT Modification Record

The table below details modifications made to the EUT during the test programme. The modifications incorporated during each test are recorded on the appropriate test pages.

Modification State	Description of Modification still fitted to EUT	Modification Fitted By	Date Modification Fitted
Serial Number: Not Serialised (75941461-TSR0030)			
0	As supplied by the customer	Not Applicable	Not Applicable

Table 2

1.8 Test Location

TÜV SÜD conducted the following tests at our Fareham Test Laboratory.

Test Name	Name of Engineer(s)	Accreditation
Configuration and Mode: Idle		
Radiated Emissions	Graeme Lawler	UKAS

Table 3

Office Address:

Octagon House
Concorde Way
Segensworth North
Fareham
Hampshire
PO15 5RL
United Kingdom



2 Test Details

2.1 Radiated Emissions

2.1.1 Specification Reference

FCC 47 CFR Part 15B, Clause 15.109
ICES-003, Clause 6.2

2.1.2 Equipment Under Test and Modification State

iDSCF, S/N: Not Serialised (75941461-TSR0030) - Modification State 0

2.1.3 Date of Test

26-May-2018 to 28-May-2018

2.1.4 Test Method

The test was performed in accordance with ANSI C63.4, clause 8.

The following conversion can be applied to convert from dB μ V/m to μ V/m:
 $10^{\frac{\text{Field Strength in dB}\mu\text{V/m}}{20}}$.

Testing was performed at a 3m distance.

2.1.5 Environmental Conditions

Ambient Temperature 23.5 °C
Relative Humidity 55.1 %

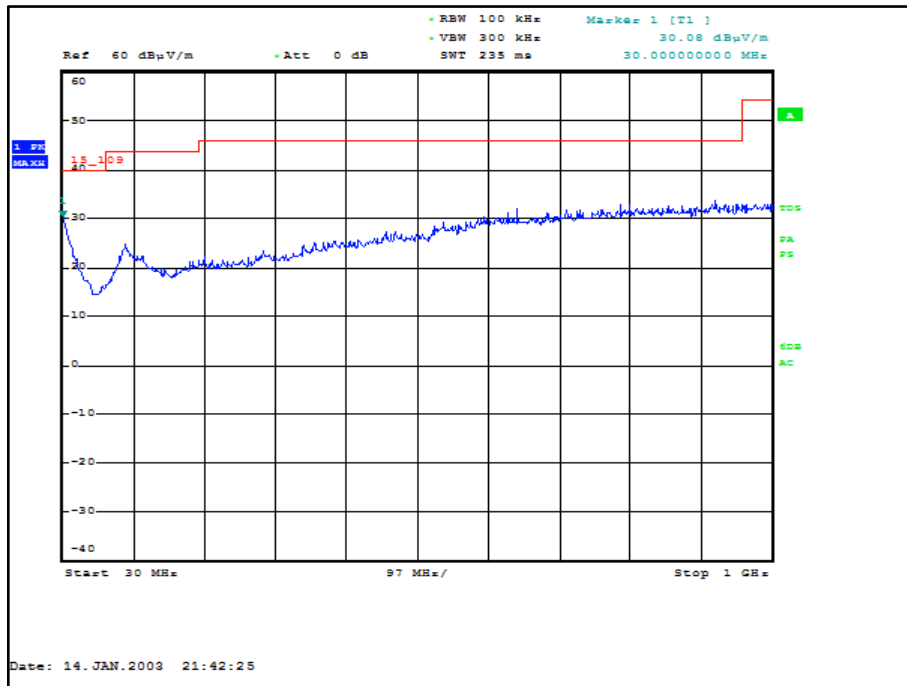
2.1.6 Test Results

Idle

Highest frequency generated or used within the EUT: 2.4 GHz
Upper frequency test limit: 13 GHz

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Azimuth (Degrees)	Antenna Height (cm)	Polarisation
30.000000	26.17	40.00	-13.83	360	100	Vertical
31.000000	25.42	40.00	-14.58	360	100	Vertical
32.000000	24.92	40.00	-15.08	360	100	Vertical
940.00000	28.15	46.00	-17.85	360	100	Vertical
950.00000	28.77	46.00	-17.23	360	100	Vertical
960.00000	28.25	46.00	-17.75	360	100	Vertical

Table 4 - 30 MHz to 1 GHz



Note : Above plot shows the pre-scan, final test results were obtained using the defined 120kHz Bandwidth and Quasi-Peak Detector.

Figure 1 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (dBμV/m)		Limit (dBμV/m)		Margin (dBμV/m)	
	Peak	Average	Peak	Average	Peak	Average
*						

Table 5 - 1 GHz to 13 GHz

*No emissions were detected within 10 dB of the limit.

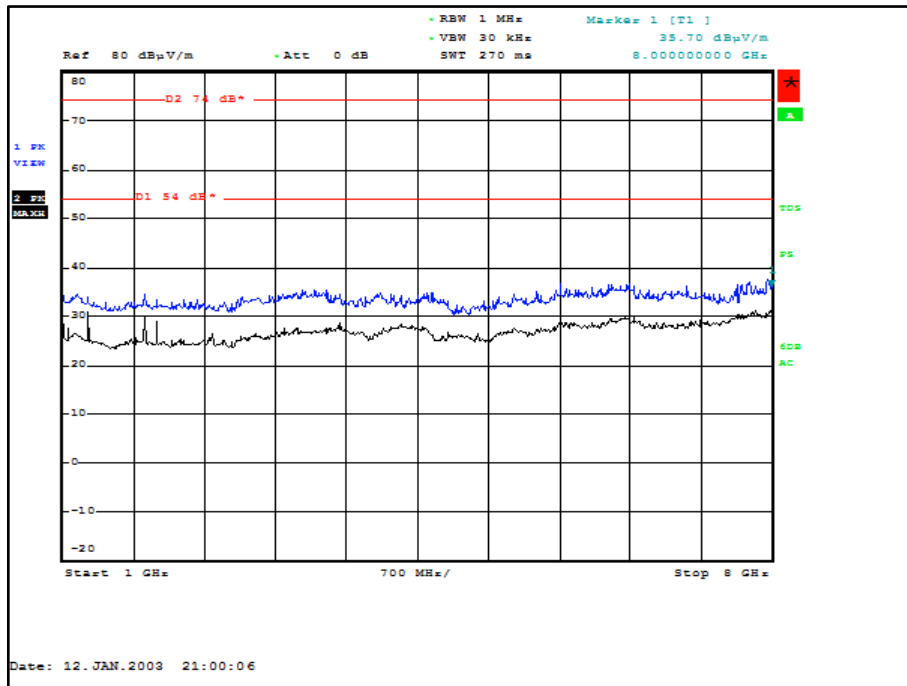


Figure 2 – 1 GHz to 8 GHz -Horizontal and Vertical

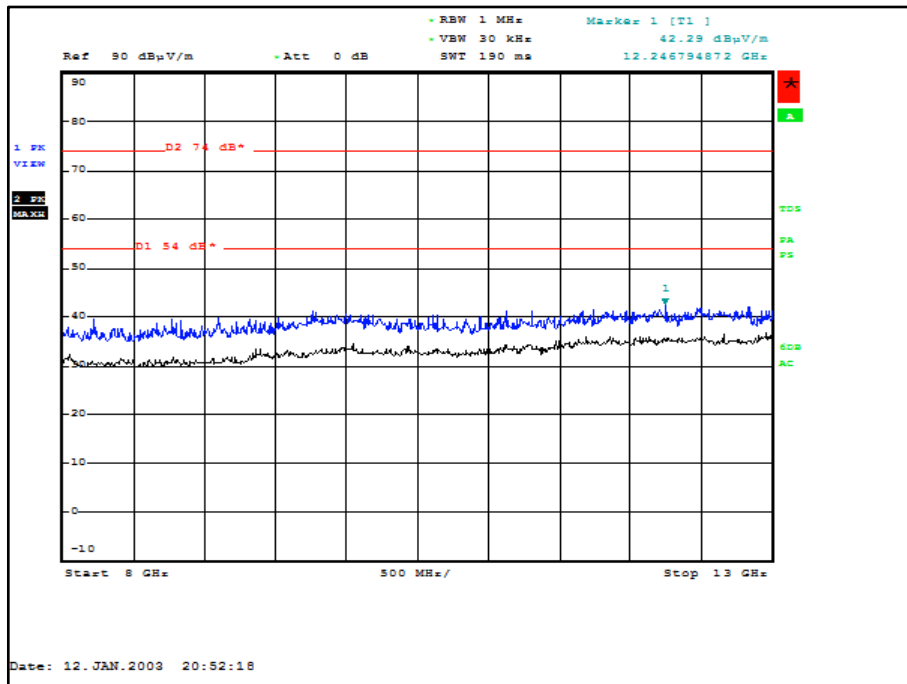


Figure 3 – 8 GHz to 13 GHz -Horizontal and Vertical



FCC 47 CFR Part 15, Limit Clause 15.109

Frequency of Emission (MHz)	Field Strength (µV/m)
30 to 88	100.0
88 to 216	150.0
216 to 960	200.0
Above 960	500.0

Table 6

ICES-003, Limit Clause 6.2

Frequency of Emission (MHz)	Quasi-Peak (dBµV/m)
30 to 88	40.0
88 to 216	43.5
216 to 960	46.0
960 to 1000	54.0

Table 7

Frequency of Emission (MHz)	Field Strength (dBµV/m)	
	Linear Average Detector	Peak Detector
Above 1000	54.0	74.0

Table 8



2.1.7 Test Location and Test Equipment Used

This test was carried out in EMC Chamber 5.

Instrument	Manufacturer	Type No	TE No	Calibration Period (months)	Calibration Due
Pre-Amplifier	Phase One	PS04-0086	1533	12	12-Jan-2019
Screened Room (5)	Rainford	Rainford	1545	36	09-Jun-2018
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Antenna (Bilog)	Chase	CBL6143	2904	24	08-Aug-2019
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	22-Nov-2018
1GHz to 8GHz Low Noise Amplifier	Wright Technologies	APS04-0085	4365	12	18-Oct-2018
Cable (Rx, Nm-Nm, 7m)	Scott Cables	SLU18-NMNM-07.00M	4498	6	19-Jun-2018
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	02-Jul-2018
Cable (Rx, SMAM-SMAM 0.5m)	Scott Cables	SLSLL18-SMSM-00.50M	4528	6	15-Aug-2018
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	01-Mar-2019
Mast Controller	maturo GmbH	NCD	4810	-	TU
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	4811	-	TU
4dB Attenuator	Pasternack	PE7047-4	4935	12	28-Nov-2018
Hygrometer	Rotronic	HP21	4989	12	26-Apr-2019

Table 9

TU – Traceability Unscheduled



3 Measurement Uncertainty

For a 95% confidence level, the measurement uncertainties for defined systems are:

Test Name	Measurement Uncertainty
Radiated Emissions	30 MHz to 1 GHz: ± 5.2 dB 1 GHz to 40 GHz: ± 6.3 dB

Table 10