

FCC and Industry Canada Testing of the  
BCF Technology Ltd  
Pig Scanner, Model: Duo-Scan:Go  
In accordance with FCC 47 CFR Part 15B and  
ICES-003

Prepared for: BCF Technology Ltd  
Imaging House  
Phoenix Crescent  
Strathclyde Business Park  
Bellshill  
ML4 3NJ  
UNITED KINGDOM



Product Service

Choose certainty.  
Add value.

FCC ID: 2AL6R-DSGC0  
IC: 22758\_DS GC01

## COMMERCIAL-IN-CONFIDENCE

Date: July 2017  
Document Number: 75939174-01 | Issue: 01

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Steven White	24 July 2017	
Authorised Signatory	Matthew Russell	24 July 2017	

Signatures in this approval box have checked this document in line with the requirements of TÜV SÜD Product Service 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	24 July 2017	

FCC Accreditation

90987 Octagon House, Fareham Test Laboratory

Industry Canada Accreditation

IC2932B-1 Octagon House, Fareham Test Laboratory

### EXECUTIVE SUMMARY

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



#### DISCLAIMER AND COPYRIGHT

This non-binding report has been prepared by TÜV SÜD Product Service with all reasonable skill and care. The document is confidential to the potential Client and TÜV SÜD Product Service. No part of this document may be reproduced without the prior written approval of TÜV SÜD Product Service. © 2017 TÜV SÜD Product Service.

#### ACCREDITATION

Our UKAS Accreditation does not cover opinions and interpretations and any expressed are outside the scope of our UKAS Accreditation. Results of tests not covered by our UKAS Accreditation Schedule are marked NUA (Not UKAS Accredited).

TÜV SÜD Product Service  
is a trading name of TÜV SÜD Ltd  
Registered in Scotland at East Kilbride,  
Glasgow G75 0QF, United Kingdom  
Registered number: SC215164

TÜV SÜD Ltd is a  
TÜV SÜD Group Company

Phone: +44 (0) 1489 558100  
Fax: +44 (0) 1489 558101  
[www.tuv-sud.co.uk](http://www.tuv-sud.co.uk)

TÜV SÜD Product Service  
Octagon House  
Concorde Way  
Fareham  
Hampshire PO15 5RL  
United Kingdom



Product Service

# Contents

- 1 Report Summary .....2**
  - 1.1 Report Modification Record.....2
  - 1.2 Introduction.....2
  - 1.3 Brief Summary of Results .....3
  - 1.4 Declaration of Build Status.....4
  - 1.5 Product Information .....5
  - 1.6 Deviations from the Standard.....5
  - 1.7 EUT Modification Record .....5
  - 1.8 Test Location.....5
- 2 Test Details .....6**
  - 2.1 Radiated Emissions.....6
- 3 Measurement Uncertainty .....11**



## 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	24 July 2017

**Table 1**

### 1.2 Introduction

Applicant	BCF Technology Ltd
Manufacturer	BCF Technology Ltd
Model Number(s)	Duo-Scan:Go
Serial Number(s)	DSG00000002
Hardware Version(s)	In production
Software Version(s)	fcc_testing_v1
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15B: 2016 ICES-003: 2016
Order Number	33423
Date	19-May-2017
Date of Receipt of EUT	27-June-2017
Start of Test	27-June-2017
Finish of Test	28-June-2017
Name of Engineer(s)	Graeme Lawler
Related Document(s)	ANSI C63.4 (2014)



Product Service

**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: Normal Operation - Tx Idle					
2.1	15.109	6.2	Radiated Emissions	Pass	ANSI C63.4

**Table 2**



#### 1.4 Declaration of Build Status

Manufacturer	<u>BCF Technology Ltd</u>	
Country of origin	<u>United Kingdom</u>	
UK Agent	<u>N/A</u>	
Technical Description	<u>Swine Ultrasound Scanner</u>	
Model No	<u>DSGC01</u>	
Part No	<u>DSG-SCANNER-C</u>	
Serial No	<u>DSCG00000001, DSCG00000002, DSCG00000003 and DSCG00000004</u>	
Drawing Number	<u>DSG-SCANNER-C</u>	
Build Status	<u>In production</u>	
Software Issue	<u>fcc_testing_v1</u>	
Hardware Issue	<u>PBA-PP510_REV_F</u>	
Highest Internally Generated Frequency	<u>180MHz</u>	
FCC ID	<u>FCC ID: 24168-DSGC01</u>	
Industry Canada ID	<u>IC: 22758-DSGC01</u>	
Signature	<u><i>Roberto G. J. J.</i></u>	
Date	<u>04/07/2017</u>	
D of B & Serial No	19/05/2017	DSCG00000001
	19/05/2017	DSCG00000002
	19/05/2017	DSCG00000003
	19/05/2017	DSCG00000004

Note: This document has been prepared to enable manufacturers with no mechanism for producing their own Declaration of Build Status, to declare the build state of the equipment submitted for test.

No responsibility will be accepted by TÜV SÜD Product Service as to the accuracy of the information declared in this document by the manufacturer.

## 1.5 Product Information

### 1.5.1 Technical Description

The product is a Swine Ultrasound Scanner used in the veterinary industry for scanning pigs, sheep or goats. The product contains a Texas Instruments pre-approved 2.4 GHz and 5 GHz WLAN module which is FCC and Industry Canada certified and this is used to communicate to a commercial smart phone or tablet.

The scanner is a compact handheld unit with a built in ultrasound probe and uses certified Li-ion batteries.

## 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: DSG000000002			
0	As supplied by the customer	Not Applicable	Not Applicable

**Table 3**

## 1.8 Test Location

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

Test Name	Name of Engineer(s)	Accreditation
Configuration: Normal Operation - Tx Idle		
Radiated Emissions	Graeme Lawler	UKAS

**Table 4**

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

Duo-Scan:Go, S/N: DSG00000002 - Modification State 0

#### 2.1.3 Date of Test

27-June-2017 to 28-June-2017

#### 2.1.4 Test Method

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

#### 2.1.5 Environmental Conditions

Ambient Temperature 20.6 °C  
Relative Humidity 65.0 %

#### 2.1.6 Test Results

Normal Operation Tx Idle

Highest frequency generated or used within the EUT: 5250 MHz  
Upper frequency test limit: 30GHz

Frequency (MHz)	QP Level (dBuV/m)	QP Limit (dBuV/m)	QP Margin (dBuV/m)	Angle(Deg)	Height(m)	Polarity
30.357	30.8	40.0	-9.2	151	1.00	Vertical
33.341	30.5	40.0	-9.5	298	3.35	Vertical
36.725	27.6	40.0	-12.4	9	1.00	Horizontal
359.986	32.8	46.0	-13.2	106	1.00	Horizontal
375.004	31.4	46.0	-14.6	118	1.00	Horizontal
960.000	34.3	46.0	-11.7	50	1.00	Horizontal

Table 5 - 30 MHz to 1 GHz

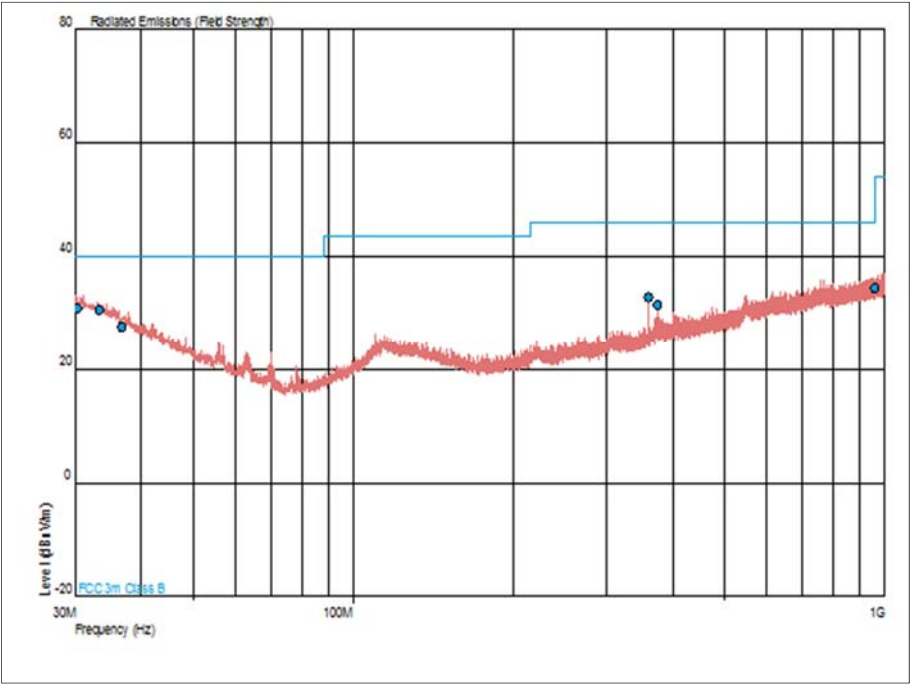


Figure 1 - 30 MHz to 1 GHz - Horizontal and Vertical

Frequency (GHz)	Result (dBµV/m)		Limit (dBµV/m)		Margin (dBµV/m)		Angle (°)	Height (m)	Polarisation
	Peak	Average	Peak	Average	Peak	Average			
*									

Table 6 - 1 GHz to 30 GHz

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

Frequency (GHz)	Result (dBµV/m)		Limit (dBµV/m)		Margin (dBµV/m)		Angle (°)	Height (m)	Polarisation
	Peak	Average	Peak	Average	Peak	Average			
*									

Table 7 - 1 GHz to 30 GHz

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



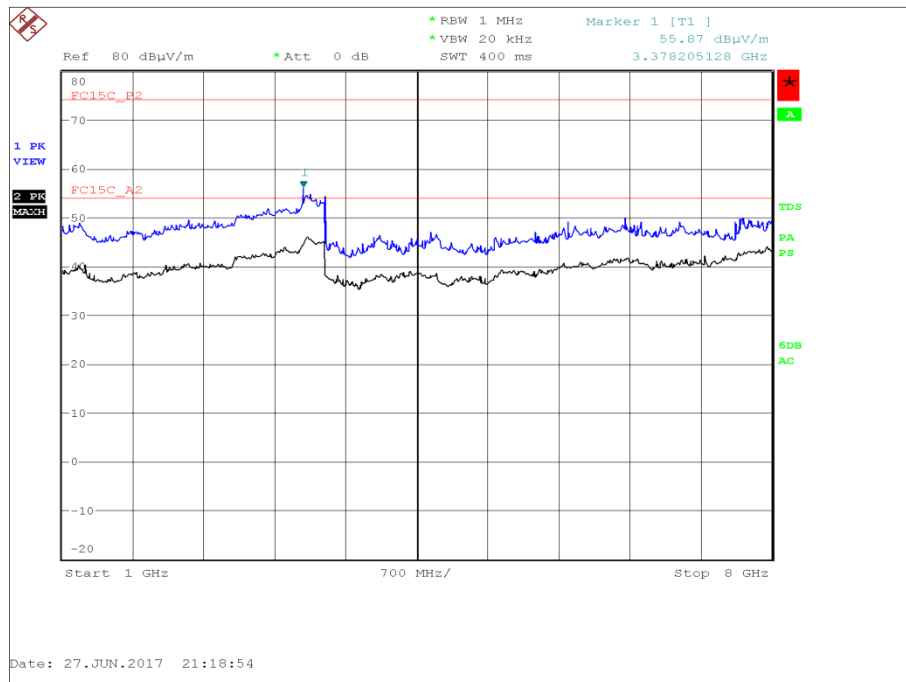


Figure 2 - 1 GHz to 8 GHz - Horizontal and Vertical

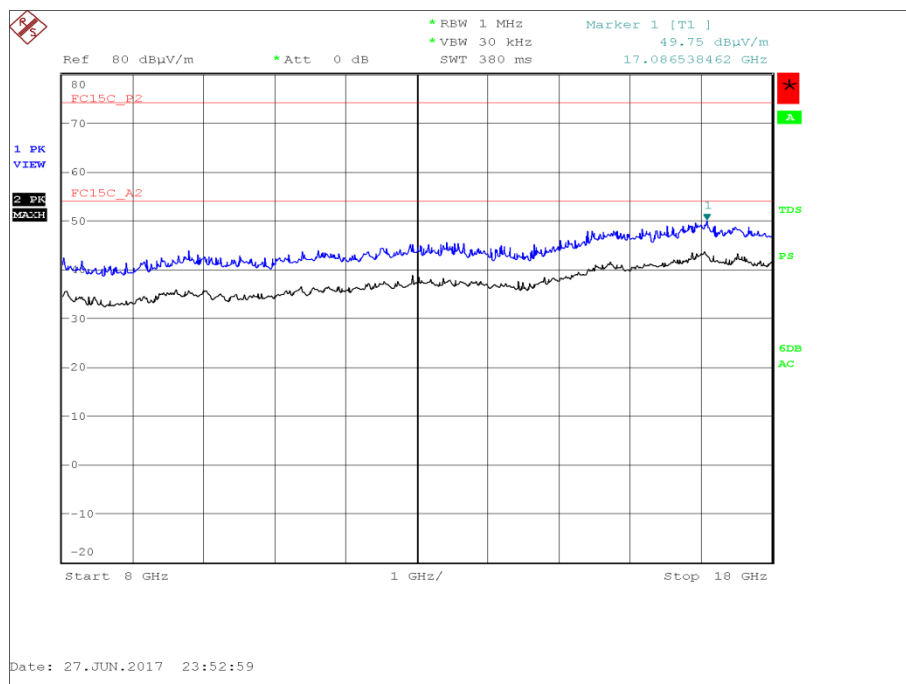
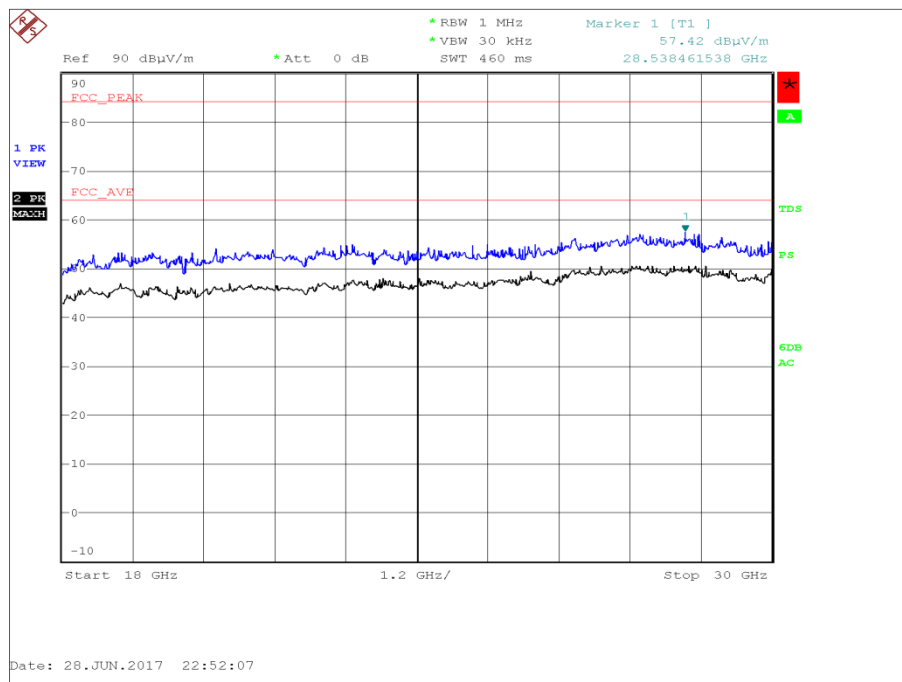


Figure 3 - 8 GHz to 18 GHz - Horizontal and Vertical



**Figure 4 - 18 GHz to 30 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

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

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

## 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
Antenna 18-40GHz (Double Ridge Guide)	Link Microtek Ltd	AM180HA-K-TU2	230	24	12-Feb-2018
Antenna (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2018
Pre-Amplifier	Phase One	PS04-0086	1533	12	29-Jul-2017
18GHz - 40GHz Pre-Amplifier	Phase One	PS04-0087	1534	12	23-Jan-2018
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
Hygrometer	Rotronic	A1	2138	12	02-Feb-2018
Cable (N-N, 8m)	Rhophase	NPS-2302-8000-NPS	3248	12	02-May-2018
EMI Test Receiver	Rohde & Schwarz	ESU40	3506	12	12-Nov-2017
Tilt Antenna Mast	maturo GmbH	TAM 4.0-P	3916	-	TU
Mast Controller	maturo GmbH	NCD	3917	-	TU
Cable (Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4526	6	23-Jul-2017
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	6	04-Nov-2017
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	17-Feb-2018

**Table 8**

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 9