

FCC Testing of the  
Shot Scope Technologies Ltd  
GPS Golf Watch, Model: Shot Scope V2  
In accordance with FCC 47 CFR Part 15B

Prepared for: Shot Scope Technologies Ltd  
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FCC ID: 2AHWR-SS03



Product Service

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Date: September 2017  
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RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Project Management	Natalie Bennett	04 September 2017	
Authorised Signatory	Matthew Russell	04 September 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. The sample tested was found to comply with the requirements defined in the applied rules.

RESPONSIBLE FOR	NAME	DATE	SIGNATURE
Testing	Graeme Lawler	04 September 2017	

FCC Accreditation  
90987 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.



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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	04 September 2017

**Table 1**

### 1.2 Introduction

Applicant	Shot Scope Technologies Ltd
Manufacturer	Shot Scope Technologies Ltd
Model Number(s)	Shot Scope V2
Serial Number(s)	Not Serialised (75940057-TSR0007)
Hardware Version(s)	1.2
Software Version(s)	1.0
Number of Samples Tested	1
Test Specification/Issue/Date	FCC 47 CFR Part 15B: 2016
Order Number	TUV SUD CE & FCC 001
Date	15-August-2017
Date of Receipt of EUT	29-August-2017
Start of Test	29-August-2017
Finish of Test	29-August-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 is shown below.

Section	Specification Clause	Test Description	Result	Comments/Base Standard
Configuration: Idle				
2.1	15.109	Radiated Emissions	Pass	ANSI C63.4

**Table 2**



#### 1.4 Declaration of Build Status

MAIN EUT			
MANUFACTURING DESCRIPTION	GPS golf watch with automated performance tracking		
MANUFACTURER	Shot Scope Technologies Ltd		
MODEL NAME/NUMBER	Shot Scope V2		
PART NUMBER	SSP-GPS-01		
SERIAL NUMBER	0030		
HARDWARE VERSION	1.2		
SOFTWARE VERSION	1.0		
TRANSMITTER FREQUENCY OPERATING RANGE (MHz)	2402 – 2480 (BLE), 13.56 (RFID)		
RECEIVER FREQUENCY OPERATING RANGE (MHz)	1575.42 (GPS), 1602.0 (Glonass)		
COUNTRY OF ORIGIN	United Kingdom		
INTERMEDIATE FREQUENCIES			
EMISSION DESIGNATOR(S): (i.e. G1D, GXW)			
MODULATION TYPES: (i.e. GMSK, QPSK)	GFSK (BLE), ASK (RFID)		
HIGHEST INTERNALLY GENERATED FREQUENCY	2.480 GHz (BLE)		
OUTPUT POWER (W or dBm)	-2dBm (BLE)		
FCC ID	2AHWR-SS03		
INDUSTRY CANADA ID			
TECHNICAL DESCRIPTION (a brief description of the intended use and operation)	Shot Scope V2 is used by golfers to provide distance information from their position to their target. It also tracks how far each golf shot is hit and what golf club was used.		
BATTERY/POWER SUPPLY			
MANUFACTURING DESCRIPTION	Lithium Polymer Battery, 400mAh		
MANUFACTURER	Yok Energy		
TYPE	Lithium Polymer		
PART NUMBER	YE463030C		
VOLTAGE	Nominal 3.7V		
COUNTRY OF ORIGIN	China		
MODULES (if applicable)			
MANUFACTURING DESCRIPTION	GNSS receiver module		
MANUFACTURER	Origin GPS		
TYPE	ORG1510-MK05		
POWER			
FCC ID			
COUNTRY OF ORIGIN	Israel		
INDUSTRY CANADA ID			
EMISSION DESIGNATOR			
DHSS/FHSS/COMBINED OR OTHER			
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: Lewis Allison Position held: Chief Technology Officer  
 Date: 28/08/2017

## 1.5 Product Information

### 1.5.1 Technical Description

Shot Scope V2 is used by golfers to provide distance information from their position to their target. It also tracks how far each golf shot is hit and what golf club was used.

### 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 (75940057-TSR0007)			
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: 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

#### 2.1.2 Equipment Under Test and Modification State

Shot Scope V2, S/N: Not Serialised (75940057-TSR0007) - Modification State 0

#### 2.1.3 Date of Test

29-August-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 22.7 °C

Relative Humidity 55.0 %

#### 2.1.6 Test Results

Idle

Highest frequency generated or used within the EUT: 2.480 GHz

Upper frequency test limit: 13 GHz

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

**Table 5 - 30 MHz to 1 GHz**

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

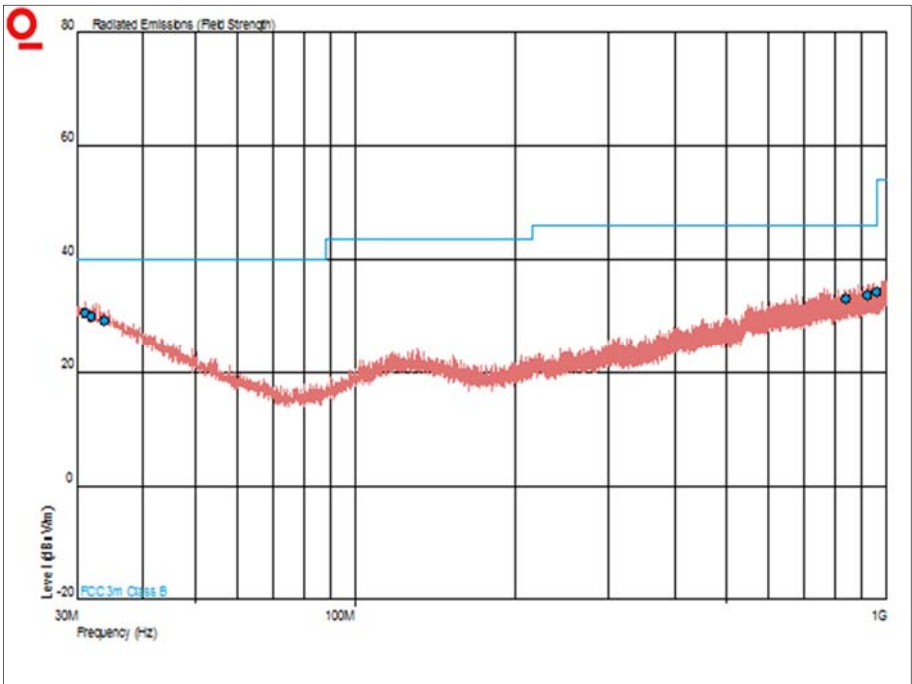


Figure 1 - 30 MHz to 1 GHz - Horizontal and Vertical

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

Table 6 - 1 GHz to 13 GHz

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



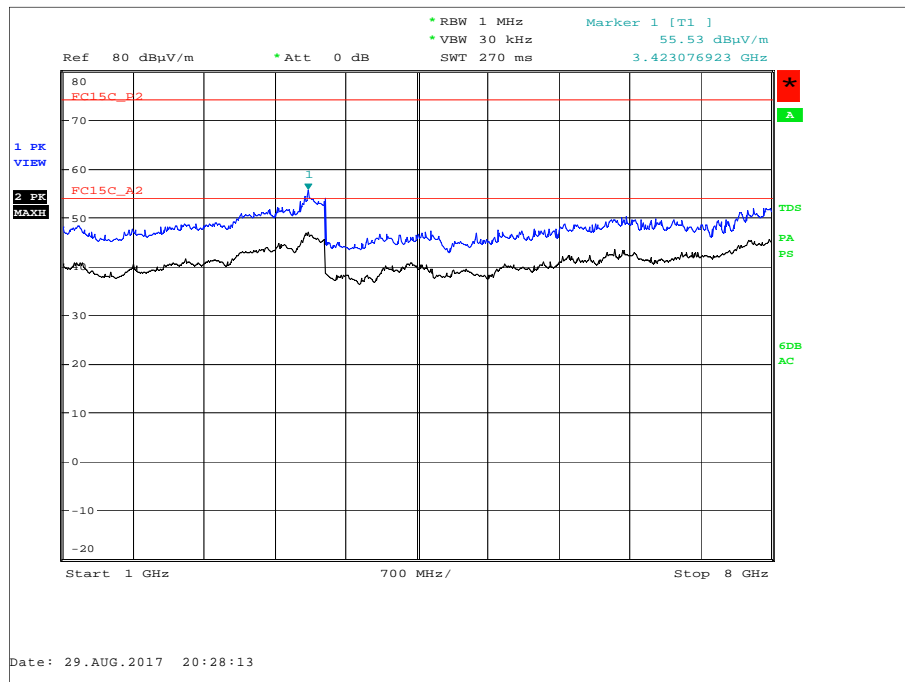


Figure 2 - 1 GHz to 8 GHz - Horizontal and Vertical

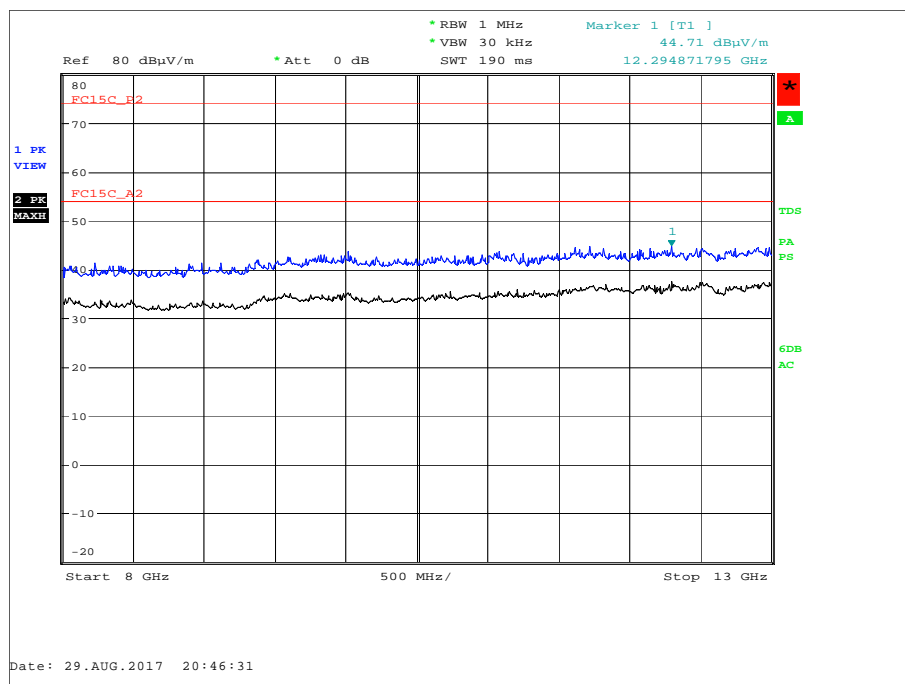


Figure 3 - 8 GHz to 13 GHz - Horizontal and Vertical

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

**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 (Bilog)	Schaffner	CBL6143	287	24	18-Apr-2018
Pre-Amplifier	Phase One	PS04-0086	1533	12	31-Jul-2018
Screened Room (5)	Rainford	Rainford	1545	36	20-Dec-2017
Turntable Controller	Inn-Co GmbH	CO 1000	1606	-	TU
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
Suspended Substrate Highpass Filter	Advance Power Components	11SH10-3000/X18000-O/O	4412	12	03-Apr-2018
Cable (Yellow, Rx, Km-Km 2m)	Scott Cables	KPS-1501-2000-KPS	4527	6	04-Nov-2017
Double Ridged Waveguide Horn Antenna	ETS-Lindgren	3117	4722	12	17-Feb-2018
Double Ridge Broadband Horn Antenna	Schwarzbeck	BBHA 9120 B	4848	12	17-Feb-2018

**Table 7**

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 8**