Test Report

Report No.: MTi210706005-01E4

Date of issue: 2022-05-26

Applicant: ShiftCam Limited

Product: ProGrip

Model(s): PG0001, PG-GP-XX-XX

FCC ID: 2A7IM-PG0001

Shenzhen Microtest Co., Ltd.

http://www.mtitest.com

Address: 101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao' an District, Shenzhen, Guangdong, China
Tel: (86-755)88850135 Fax: (86-755) 88850136 Web:www.mtitest.com E-mail: mti@51mti.com

Instructions

1. This test report shall not be partially reproduced without the written consent of the laboratory.

2. The test results in this test report are only responsible for the samples submitted

3. This test report is invalid without the seal and signature of the laboratory.

4. This test report is invalid if transferred, altered, or tampered with in any form without authorization.

5. Any objection to this test report shall be submitted to the laboratory within 15 days from the date of receipt of the report.

Contents

Test Result Certification	
Applicant:	**ShiftCam Limited**
Address:	Unit 10, 7/ F, Goldfield Industrial Centre, 1 Sui Wo Road, Fo Tan, Shatin, NT, Hong Kong
Manufacturer:	**ShiftCam Limited**
Address:	Unit 10, 7/ F, Goldfield Industrial Centre, 1 Sui Wo Road, Fo Tan, Shatin, NT, Hong Kong
Product description	
Product name:	ProGrip
Trademark:	ShiftCam
Model name:	PG0001
Serial Model:	PG-GP-XX-XX
Standards:	FCC CFR 47 PART 1, § 1.1310
Test method:	KDB 680106 v03r01
Date of Test	
Date of test:	2021-08-09 ~ 2022-05-26
Test result:	Pass

Test Engineer : Danny Xu

(Danny Xu)

Reviewed By: : Leon Chen

(Leon Chen)

Approved By: : Tom Xue

(Tom Xue)

1 General Description

1.1 Description of the EUT

Product name:	ProGrip
Model name:	PG0001
Series Model:	PG-GP-XX-XX
Model difference:	All the models are the same circuit and RF module, except the Plastic Color and model name.
Electrical rating:	Input: Type C 5V/3A, 9V/2A Output: Type C 5V/3A, 9V/2A, 12V/1.5A Wireless: 5W
Accessories:	1. USB-C to USB-C cable (1.2 m)
RF specification:	
Operation frequency:	transmitter 1: 115 kHz – 205 kHz
Modulation type:	ASK
Antenna type:	Coil Antenna

1.2 Description of test modes

All the test modes were carried out with the EUT in normal operation, the final test mode of the EUT was the worst test mode for emission test, which was shown in this report and defined as:

No.	Emission test modes
Mode 1	Stand-by mode
Mode 2	Wireless output (5W)
The test data only show worst test mode: Mode 2	

1.3 Description of support units

The EUT has been tested as an independent unit together with other necessary accessories or support units. The following support units or accessories were used to form a representative test configuration during the tests.

Support equipment list			
Description	Model	Serial No.	Manufacturer
Android phone	S9	R28K34V79NT	Samsung
Adapter	HW-090200CH0	/	Huizhou BYD Electronics Co., Ltd.
Support cable list			
Description	Length (m)	From	To
/	/	/	/

2 Test facilities and accreditations

2.1 Test laboratory

Test laboratory:	Shenzhen Microtest Co., Ltd.
Test site location:	101, No. 7, Zone 2, Xinxing Industrial Park, Fuhai Avenue, Xinhe Community, Fuhai Street, Bao'an District, Shenzhen, Guangdong, China
Telephone:	(86-755)88850135
Fax:	(86-755)88850136
CNAS Registration No.:	CNAS L5868
FCC Registration No.:	448573

3 List of test equipment

No.	Equipment	Manufacturer	Model	Serial No.	Cal. date	Cal. Due
MTI-E115	Electric and Magnetic Field Probe – Analyzer	Narda	EHP-200A	101166	2021/06/02	2022/06/01

4 Test result

4.1.1 Requirement

§1.1310: The criteria listed in the following table shall be used to evaluate the environment impact of human exposure to radio frequency (RF) radiation as specified in §1.1307(b), except in the case of portable devices which shall be evaluated according to the provisions of FCC part 2.1093 of this chapter.

Table 1 to §1.1310(e)(1) - Limits for Maximum Permissible Exposure (MPE)

Frequency range (MHz)	Electric field strength (V/m)	Magnetic field strength (A/m)	Power density (mW/cm^2)	Averaging time (minutes)
(i) Limits for Occupational/Controlled Exposure				
0.3-3.0	614	1.63	*(100)	≤6
3.0-30	1842/f	4.89/f	*($900/f^2$)	<6
30-300	61.4	0.163	1.0	<6
300-1500			f/300	<6
1500-100000			5	<6
(ii) Limits for General Population/Uncontrolled Exposure				
0.3-1.34	614	1.63	*(100)	<30
1.34-30	824/f	2.19/f	*($180/f^2$)	<30
30-300	27.5	0.073	0.2	<30
300-1500			f/1500	<30
1500-100000			1.0	<30

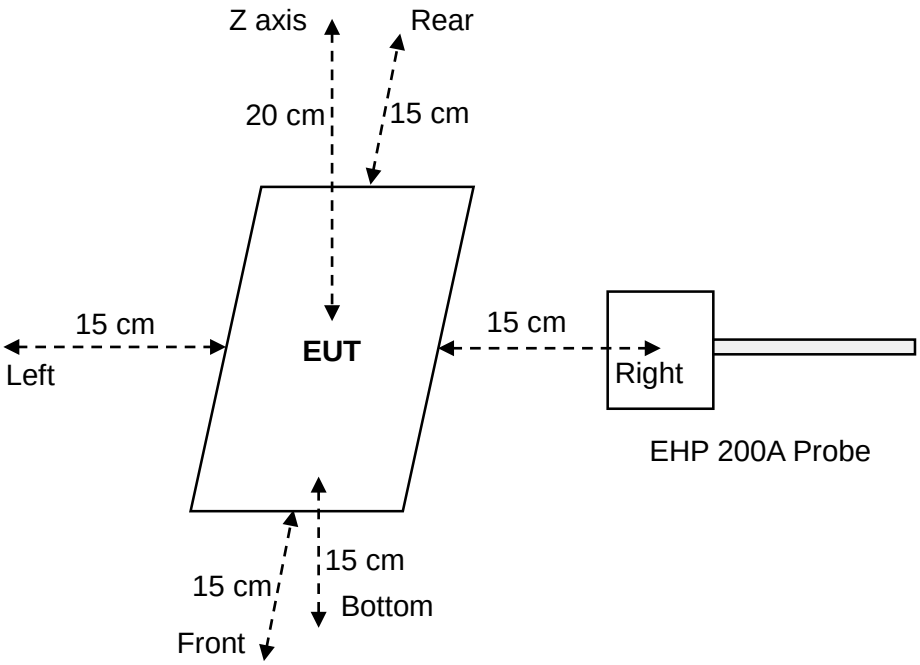
f = frequency in MHz
* = Plane-wave equivalent power density

Note 1: Occupational/controlled exposure limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure.

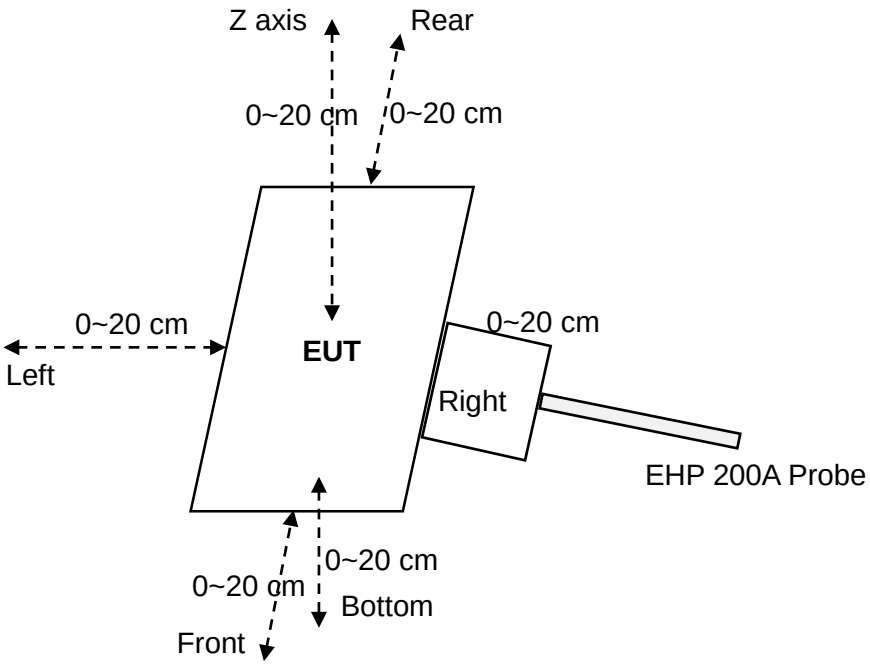
Note 2: General population/uncontrolled exposure limits apply in situations in which the general public may be exposed, or in which persons who are exposed as a consequence of their employment may not be fully aware of the potential for exposure or cannot exercise control over their exposure.

4.2 Test setup

For mobile exposure conditions:



For portable exposure conditions:



4.3 Test Procedures

For mobile exposure conditions:

a. The RF exposure test was performed in anechoic chamber.

b. E and H-field measurements should be made with the center of the probe at a distance of 15 cm surrounding the EUT and 20 cm above the top surface of the primary/client pair.

c. The highest emission level was recorded and compared with limit.

d. The EUT was measured according to the dictates of KDB 680106 v03r01.

For portable exposure conditions:

a. The RF exposure test was performed in anechoic chamber.

b. Perform H-field measurements for each edge/top surface of the host/client pair at every 2 cm, starting from as close as possible out to 20 cm

c. The highest emission level was recorded and compared with limit.

4.4 Equipment Approval Considerations item 5 b) of KDB 680106 D01 v03r01

Requirement	Device
1. Power transfer frequency is less than 1 MHz.	Yes. The operating frequencies: 115 kHz – 205 kHz
2. Output power from each primary coil is less than or equal to 15 watts	Yes. The maximum output power: 5W
3. The system may consist of more than one source primary coils, charging one or more clients. If more than one primary coil is present, the coil pairs may be powered on at the same time.	Yes. The EUT have one source primary coils.
4. Client device is placed directly in contact with the transmitter.	Yes. The client device is placed directly in contact with the transmitter.
5. Mobile exposure conditions only (portable exposure conditions are not covered by this exclusion).	No. The EUT can be used as potable exposure conditions
6. The aggregate H-field strengths anywhere at or beyond 15 cm surrounding the device, and 20 cm away from the surface from all coils that by design can simultaneously transmit, and while those coils are simultaneously energized, are demonstrated to be less than 50% of the applicable MPE limit.	No. For the portable exposure conditions, the measurement was taken based on the KDB inquiry. See the test result in item 4.5.

4.5 Test results

For portable exposure condition:

Note: operating modes with client device (1 %, 50%, 99% battery status of client device) have been test, only show the data of worst case of 1% battery status of client device.

Test condition 1: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 0cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.8297	1.63	89.36%
	Left	1.2646		
	Right	1.1135		
	Front	0.4812		
	Rear	0.4494		
	Bottom	1.4565		

Test condition 2: Mode 2 operating mode with client device (1 % battery status of client device) -test distance: 2cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.6400	1.63	68.82%
	Left	0.9703		
	Right	0.8589		
	Front	0.3715		
	Rear	0.3444		
	Bottom	1.1218		

Test condition 3: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 4cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.5179	1.63	55.79%
	Left	0.7879		
	Right	0.6987		
	Front	0.2764		
	Rear	0.2805		
	Bottom	0.9094		

Test condition 4: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 6cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.4619	1.63	49.62%
	Left	0.7032		
	Right	0.6177		
	Front	0.2518		
	Rear	0.2505		
	Bottom	0.8088		

Test condition 5: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 8cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.3942	1.63	42.61%
	Left	0.6015		
	Right	0.5327		
	Front	0.2215		
	Rear	0.2157		
	Bottom	0.6946		

Test condition 6: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 10cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.3215	1.63	34.39%
	Left	0.4840		
	Right	0.4292		
	Front	0.1861		
	Rear	0.1733		
	Bottom	0.5606		

Test condition 7: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 12cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.2772	1.63	29.91%
	Left	0.4213		
	Right	0.3727		
	Front	0.1424		
	Rear	0.1510		
	Bottom	0.4876		

Test condition 8: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 14cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.2504	1.63	27.18%
	Left	0.3824		
	Right	0.3383		
	Front	0.1277		
	Rear	0.1363		
	Bottom	0.4431		

Test condition 9: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 16cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.1240	1.63	13.25%
	Left	0.1869		
	Right	0.1649		
	Front	0.0598		
	Rear	0.0664		
	Bottom	0.2159		

Test condition 10: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 18cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0925	1.63	7.05%
	Left	0.1096		
	Right	0.1149		
	Front	0.0488		
	Rear	0.0512		
	Bottom	0.0867		

Test condition 11: Mode 2 operating mode with client device (1 % battery status of client device) - Test distance 20cm

Antenna	Probe Position	H–field (A/m)		
		Measurement	Limit	Max. Percentage (%)
1	Z axis	0.0671	1.63	4.12%
	Left	0.0582		
	Right	0.0498		
	Front	0.0536		
	Rear	0.0465		
	Bottom	0.0533		

Photographs of the test setup

See the APPENDIX - Test Setup Photo.

Photographs of the EUT

See the APPENDIX - EUT Photos.

----End of Report----