

TEST REPORT

Application No.: HKEM2202000224AT
Applicant: VALD Pty Ltd
Address of Applicant: 115 Breakfast Creek Rd. Newstead QLD 4006, Australia
Equipment Under Test (EUT):
EUT Name: ForceDecks Dual Force Plate System
Model No.: FDMini, FDLite, FDMax
Please refer to section 2 of this report which indicates which model was actually tested and which were electrically identical.
Trade Mark: ForceDecks
FCC ID: 2A6SF-FD
Standard(s) : 47 CFR Part 1.1307, Part 1.1310
KDB447498D01 General RF Exposure Guidance v06
Date of Receipt: 2022-02-25
Date of Test: 2022-02-22 to 2022-03-15
Date of Issue: 2022-03-20

Test Result:	In the configuration tested, the EUT complied with the standards specified above.
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Law Man Kit
EMC Manager

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Unless otherwise stated the results shown in this test report refer only to the sample(s) tested and such sample(s) are retained for 30 days only.

Revision Record				
Version	Chapter	Date	Modifier	Remark
01		2022-03-20		Original

Authorized for issue by:			
			
		Panny Leung /Project Engineer	Date: 2022-03-20
			
		Law Man Kit /Reviewer	Date: 2022-03-20

2 Test Summary

Radio Spectrum Technical Requirement				
Item	Standard	Method	Requirement	Result
RF Exposure	47 CFR Part 1.1307, Part 1.1310	CFR 47 Part 1.1310	CFR 47 Part 1.1310	Pass

Declaration of EUT Family Grouping:

Item no.: FDMini, FDLite, FDMax

According to the confirmation from the applicant, the above models are identical in circuitry design, PCB layout, electrical components used, internal wiring and functions, only differ in decoration, and battery.

FDMax + FD Lite	FD Mini
Meinovo 186502P1S 5.2Ah Li-Ion battery pack with thermistor	Meinovo SJYPN525060 2.0Ah Li-Ion battery pack with thermistor

Therefore, only the model FDMini was tested in this report.

Abbreviation:

Tx: In this whole report Tx (or tx) means Transmitter.
 Rx: In this whole report Rx (or rx) means Receiver.
 RF: In this whole report RF means Radiated Frequency.
 CH: In this whole report CH means channel.
 Volt: In this whole report Volt means Voltage.
 Temp: In this whole report Temp means Temperature.
 Humid: In this whole report Humid means humidity.
 Press: In this whole report Press means Pressure.
 N/A: In this whole report not application.



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4 General Information

4.1 Details of E.U.T.

Power supply:	USB5VDC Or Rechargeable Li-ion Battery Model: SJYPN525060 Rated Capacity: 2Ah Rated Voltage: 3.7V Charging Voltage: 4.2V
Test voltage:	AC 120V or DC 3.7V
Cable:	N/A
Antenna Gain:	1.6 dBi
Antenna Type:	Dipole
Bluetooth Version:	5.0
Channel Spacing:	2MHz
Modulation Type:	GFSK
Number of Channels:	40
Operation Frequency:	2402MHz to 2480MHz
Series number:	A1
Hardware Version:	V3.5
Software Version:	V2.6

4.2 Description of Support Units

The EUT has been tested with corresponding accessories as below:

Supplied by client

Description	Manufacturer	Model No.	SN/Certificate NO
nRF Connect for Desktop software	NORDIC SEMICONDUCTORS	V2.0.1	N/A

Supplied by SGS:

Description	Manufacturer	Model No.	SN/Certificate NO
NoteBook (EMC4)	Dell	P75F	N/A

4.3 Modulation configure

RF software:	EspRFTestTool			
RF software:	nRF Connect for Desktop - Direct test mode			
Modulation	Packet	Packet Type	Packet Size	Power
GFSK	Default	Default	Default	4
Remark: 1. default value was set in test software as maximum output power setting.				

4.4 Measurement Uncertainty

RF

No.	Item	Measurement Uncertainty
1	Conduction emission	2.8dB (9kHz to 150kHz)
		2.8dB (150kHz to 30MHz)
2	Radio Frequency	$\pm 7.25 \times 10^{-8}$
3	Duty cycle	$\pm 0.37\%$
4	Occupied Bandwidth	$\pm 3\%$
5	RF conducted power (30MHz-40GHz)	1.5dB
6	RF power density	1.5dB
7	Conducted Spurious emissions	1.5dB
8	RF Radiated power & Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.7dB (1GHz-6GHz)
		4.7dB (6GHz-18GHz)
		5.7dB (18GHz-40GHz)
9	Temperature test	$\pm 1^{\circ}\text{C}$
10	Humidity test	$\pm 3\%$
11	Supply voltages	$\pm 1.5\%$
12	Time	$\pm 3\%$

Remark:

The U_{lab} (lab Uncertainty) is less than U_{CISPR} (CISPR Uncertainty), so the test results

- compliance is deemed to occur if no measured disturbance level exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance level exceeds the disturbance limit.

According to decision rule based on Clause 4.2 of CISPR 16-4-2, the EUT complied with the standards specified above.

4.5 Test Location

All tests were performed at:

SGS Hong Kong Limited
Unit 2 and 3, G/F, Block A, Po Lung Centre,
11 Wang Chiu Road, Kowloon Bay, Kowloon, Hong Kong
Tel: +852 2305 2570 Fax: +852 2756 4480

No tests were sub-contracted.

4.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

• **IAS Accreditation (Lab Code: TL-817)**

SGS Hong Kong Limited has met the requirements of AC89, IAS Accreditation Criteria for Testing Laboratories, and has demonstrated compliance with ISO/IEC Standard 17025:2017, General requirements for the competence of testing and calibration laboratories. This organization is accredited to provide the services specified in the scope of accreditation maintained on the IAS website (www.iasonline.org).

The report must not be used by the client to claim product certification, approval, or endorsement by IAS, NIST, or any agency of the Federal Government.

• **FCC Recognized Accredited Test Firm(CAB Registration No.: 514599)**

SGS Hong Kong Limited has been accredited and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Designation Number: HK0015, Test Firm Registration Number: 514599.

• **Industry Canada (Site Registration No.: 26103; CAB Identifier No.: HK0015)**

SGS Hong Kong Limited has been recognized by Department of Innovation, Science and Economic Development (ISED) Canada as a wireless testing laboratory. The acceptance letter from the ISED is maintained in our files. CAB Identifier No: HK0015, Site Registration Number: 26103.

4.7 Deviation from Standards

None

4.8 Abnormalities from Standard Conditions

None



5 Equipment List

Conducted Peak Output Power					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
SMBV100A VECTOR SIGNAL GENERATOR	Rohde & Schwarz	SMBV100A	E234	2021/08/16	2022/08/15
FSV40 SIGNAL ANALYZER 40GHz	Rohde & Schwarz	FSV40	E235	2021/08/16	2022/08/15
OSP	Rohde & Schwarz	OSP-B157W8	E242	2021/08/16	2022/08/15
Cable	Rohde & Schwarz	J12J103539-00-2	E239	2021/07/15	2022/07/14
WMS32 Test software	Rohde & Schwarz	N/A	Version 11	N/A	N/A

General used equipment					
Equipment	Manufacturer	Model No	Inventory No	Cal Date	Cal Due Date
Digital temperature & humidity data logger	SATO	SK-L200TH II	E232	2021/08/16	2022/08/15
Electronic Digital Thermometer with Hygrometer	nil	2074/2075	E159	2021/08/16	2022/08/15
Barometer with digital thermometer	SATO	7612-00	E218	2021/03/29	2022/03/28
Conditional Chamber	Zhong Zhi Testing Instruments	CZ-E-608D	E216	2021/08/17	2022/08/16

6 Radio Spectrum Technical Requirement

6.1 RF Exposure

6.1.1 Test Requirement:

CFR 47 Part 2.1093

Limit:

The 1-g and 10-g SAR test exclusion thresholds for 100 MHz to 6 GHz at test separation distances ≤ 50 mm are determined by:

$[(\text{max. power of channel, including tune-up tolerance, mW}) / (\text{min. test separation distance, mm})] \cdot [\sqrt{f(\text{GHz})}] \leq 3.0$ for 1-g SAR and ≤ 7.5 for 10-g extremity SAR, where

$f(\text{GHz})$ is the RF channel transmit frequency in GHz

Power and distance are rounded to the nearest mW and mm before calculation¹⁷

The result is rounded to one decimal place for comparison

The test exclusions are applicable only when the minimum test separation distance is ≤ 50 mm and for transmission frequencies between 100 MHz and 6 GHz. When the minimum test separation distance is < 5 mm, a distance of 5 mm is applied to determine SAR test exclusion

6.1.2 Conclusion

According to the formula. calculate the test exclusion thresholds:

$$\text{General RF Exposure} = (3.08\text{mW} / 5\text{ mm}) \times \sqrt{2.402\text{ GHz}} = 1.0 \quad (1)$$

SAR requirement:

$$S = 3.0 \quad (2)$$

$$(1) < (2)$$

So the SAR report is not required.

Remark: 3.08 mW is the worst EIRP from report HKEM220200022402



7 Photographs

7.1 EUT Constructional Details (EUT Photos)

Refer to the appendices of setup, external and internal photos.

- End of the Report -