# FH01 Raw Data Handling Manual

Version 0.2

The on-device firmware currently supports exporting raw serial data over a USB connection. Please note, raw data from paired tests is saved on the <u>Right side unit only</u> The data is exported and saved as a .csv file The baud rate is 57600

#### The steps:

- 1. We need a program that can interpret and log an incoming one way data stream
  - a. This manual uses Putty, a generic program for monitoring serial data
  - b. A multitude of other programs can be used if you are familiar with them
- 2. We need to navigate to the data save slot on-device, then select export once everything is set up

# 1. Download and install Putty from <a href="https://www.putty.org/">https://www.putty.org/</a>

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#### Download PuTTY

PuTTY is an SSH and telnet client, developed originally by Simon Tatham for the Windows platform. PuTTY is open source software that is available with source code and is developed and supported by a group of volunteers.

You can download PuTTY here.

# 2. Find and record the COM port number of each of your devices. -If you already know these, skip to step 3.

2a. Plug in your FH01 unit with the provided USB cable

2b. Open device manager



2c. The port number of your device will look something like this. In this example, it is <u>COM11</u>

ᡖ Device Manager
File Action View Help
✓ L XPS13
> 💐 Audio inputs and outputs
> 嵾 Batteries
> 🚯 Bluetooth
> 👰 Cameras
> 💻 Computer
> 🕳 Disk drives
> 🖙 Display adapters
> 🛺 Human Interface Devices
> 🚠 Imaging devices
> 🔤 Keyboards
> 🧾 Memory technology devices
> II Mice and other pointing devices
> 🛄 Monitors
> 🚽 Network adapters
> 😰 Other devices
> 💂 Portable Devices
Ports (COM & LPT)
Silicon Labs CP210x USB to UART Bridge (COM11)
Standard Serial over Bluetooth link (COM4)
Standard Serial over Bluetooth link (COM5)
💭 Standard Serial over Bluetooth link (COM7)

# 3. Putty Initial Setup

## 3a. Change these setting on this first screen

- Serial line: The COM number of your device
- Speed: 57600
- Connection type: Serial
- Enter a name for this device (e.g. "FH01 Left")

PuTTY Configuration		? ×
Category:		
Session Logging Terminal Keyboard Bell Features Window Appearance Behaviour Translation Selection Colours Connection Data Proxy Telnet Rlogin SSH Serial	Basic options for your PuTTY set         Specify the destination you want to connect         Serial line         COM11         Connection type:         Raw       Ielnet         Rlogin       SSH         Load, save or delete a stored session         Saved Sessions         FH00.001	t to Speed 57600
	Default Settings FH00.001 FH00.002 FH01.001 FH01.002	Load Sa <u>v</u> e Delete
<u>A</u> bout <u>H</u> elp	Close window on e <u>x</u> it: Always Never Only on cle	ean exit <u>C</u> ancel

## 3b. Go to the "Logging" settings tab

- Session logging: All session output
- Select "Browse" button to choose where the data will be saved

😹 PuTTY Configuration	? ×
Category:	
<ul> <li>Session <ul> <li>Logging</li> <li>Terminal</li> <li>Keyboard</li> <li>Bell</li> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> <li>Connection</li> <li>Data</li> <li>Proxy</li> <li>Telnet</li> <li>Rlogin</li> <li>SSH</li> <li>Serial</li> </ul></li></ul>	Options controlling session logging         Session logging:         None       Printable output         All session output       SSH packets         SSH packets and raw data         Log file name:         putty.log         Browse         (Log file name can contain &Y, &M, &D for date, &T for time, &H for host name, and &P for port number)         What to do if the log file already exists:         Always overwrite it         Always overwrite it         Always append to the end of it         Ask the user every time         Flush log file frequently         Include header         Options specific to SSH packet logging         Omit known password fields         Omit session data
About Help	Open Cancel

### 3c. In this example, we are saving the data to the desktop.

- Best practice is to use the file name similar to the example below.
- The ampersand (&) symbol will automatically date and timestamp the file, meaning no file will ever overwrite each other
- The .csv file extension means it will automatically open in Excel
- "Force Hooks Device 1 &D&M&Y &T.csv"

Select session log file name	×
$\leftarrow$ $\rightarrow$ $\checkmark$ $\uparrow$ 📜 > This PC > Desktop > Force Hooks Raw (	Data 🗸 🖸 🔑 Search Force Hooks Raw Data
Organize • New folder	)    • ()
↑ Name	Date modified Type
Desktop	No items match your search.
➡ Downloads 🖈	
Documents 🖈	
Networks 🖈	
~ <	>
File name: Force Hooks - Device 1 - &D&M&Y &T.csv	~
Save as type: All Files (*.*)	~
▲ Hide Folders	<u>S</u> ave Cancel

#### 3d. Once that is done, head back to the "Session' tab and click "Save"

- Once you've done that, the settings are now saved under the named profile "FH00.001" in this example.
- From now on, we can just double click the saved session and all settings will be automatically applied

😹 PuTTY Configuration		? ×		
Category:				
	Basic options for your PuTTY session			
Logging Logging	Specify the destination you want to connect to			
Keyboard	Serial li <u>n</u> e	Speed		
Bell	COM11	57600		
<ul> <li>Features</li> <li>Window</li> <li>Appearance</li> <li>Behaviour</li> <li>Translation</li> <li>Selection</li> <li>Colours</li> <li>Connection</li> <li>Data</li> </ul>	Connection type: ◯ Ra <u>w</u> ◯ <u>T</u> elnet ◯ Rlogin ◯ <u>S</u> SH ● Se <u>r</u> ial			
	Load, save or delete a stored session Sav <u>e</u> d Sessions FH00.001			
	Default Settings FH00.001	Load		
- Proxy - Telnet	FH00.002 FH01.001	Sa <u>v</u> e		
Rlogin	FH01.002	<u>D</u> elete		
	Close window on e <u>x</u> it: Always Never Only on clean exit			
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## 4. Using Putty in normal operation

- 1. Plug in the device through USB
- 2. Open Putty
- 3. Double click on the corresponding saved session. The device may restart at this point, which is completely normal.
- 4. On the device, navigate to the desired save slot under "View Tests"
- 5. Press enter to export the data over usb
- 6. During this process, you should see the raw values being displayed on your PC screen
- 7. After the data has finished exporting, close the session window and the data will be automatically saved to your designed folder

#### Device start up

Practical 1 ************************************	ttps://www.forcehooks.com ********	
Battery Moni	Self-Test tor: Pass Pass Pass Pass Pass Displaying	
Threshold:20	****settings***** TestDuration:10 Fs:600 Factor:859256	

#### Screen after exporting a test

🖉 COM11 - PuTTY	_	×
5979,9.965000,1		
5980,9.9666667,1		
5981,9.968333,1		
5982,9.970000,1		
5983,9.971667,1		
5984,9.973333,1		
5985,9.975000,1		
5986,9.976667,1		
5987,9.978333,1		
5988,9.980000,1		
5989,9.981667,1		
5990,9.983333,1		
5991,9.985000,1		
5992,9.986667,1		
5993,9.988333,1		
5994,9.990000,1		
5995,9.991667,1		
5996,9.993333,1		
5997,9.995000,1		
5998,9.996667,1		
5999,9.998333,1		
Max:269 Min:1 Impulse(0-0.2s):2		
End of File		

#### Future Feature Additions:

- Ability to export all save slot data at once
- Custom PC application to communicate with the device
- Please contact info@forcehooks.com with any feature requests