

Skipper's Mate - Pi Zero W Experimental Download

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1. INTRODUCTION

We have just released the first ISO (image) designed for a Raspberry Pi Zero W. The Zero W consumes very little power – even less than an Arduino – and we are planning to look at other uses for the Zero such as a camera server and a wireless sensor server.

However, this slimmed down version has been tested pretty thoroughly – but only on a single Pi Zero. So we would be most grateful if anyone who downloads this and tries it would provide feedback on the forum for the benefit of others.

We will not be selling the Pi Zero W – because you are likely to want to use digital pins which means you're going to have to solder on a header – so it's up to you ! Not everyone wants to play at soldering – if so, stick with the the main Pi models (e.g. RPi3B) which come ready-soldered.

You can, if you wish, purchase other equipment for the Zero W – or extras such as Sensor Control Units. Alternatively you can buy and build your own kit. Remote access via our servers on the Internet backbone is available to all users – initially free and thereafter for a small monthly or annual subscription. If you prefer to run your own web server for access to your boat the software is available for download. All our software – for the boat and the Internet – is Free Open Source Software.

1.1 Zero W Image or Zero W Pre-Prepared Card

Please refer to the document **Skipper's Mate – What To Do With An ISO** which is intended to help you get going with either a pre-prepared micro SD card purchased from the web site (containing the ISO image) **or** the ISO image downloaded from the web site.

The card/download contains the full version of **Skipper's Mate** and all sources/build files. You will require one of the following :

- ◆ micro SD card pre-loaded – purchased from the web site with the **Zero W image**
- ◆ ISO image only – freely downloadable from the web site – **Zero W image**

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You can also compile from source if you wish. If so, you will require separate software and documentation- available from the web site Downloads page.

All our software is Open Source. If you wish to compile from source files please consult the website - at <https://www.skippersmate.co.uk/downloads.html> for additional documentation and the program downloads to be applied to an existing Rasbian installation.

The Zero has a less powerful processor than the Pi3B and half the memory. We have not, to date, found any aspects of the Skipper's Mate TESS system which will not work. However the exception of the TVHeadend software seems to tax the Zero so it is really up to you whether you load it – or not. The TVHeadend software is installed but is not run automatically.

2. WHAT TO DO WITH A PI ZERO W AND SKIPPER'S MATE

With the exception of the next section – kit you need to get going – please refer to the following documents :

(see <https://www.skippersmate.co.uk/skippersmate/manuals.html>)

- ◆ Skipper's Mate – What To Do With An ISO
- ◆ TESS Notes – Getting Started and Testing

3. KIT YOU NEED TO GET STARTED WITH THE PI ZERO

Note – if you are unsure of what hardware will work with a Raspberry Pi we suggest you Google for “Raspberry Pi Verified Peripherals”.

See also Assembly Instructions available from the Downloads page on the web site <https://www.skippersmate.co.uk>

3.1 Essentials for Getting Started

You should have the following :

- ◆ Raspberry Pi Zero W (i.e. model with built-in wireless)
- ◆ Power Source for Raspberry Pi – you will need a step-down from 12V or 24V to 5V, unless you want to run off mains power, in which case you will need a suitable mains power transformer (2 amp min.)
- ◆ SD or Micro SD card – bootable
- ◆ USB hub, powered from the Power Source (above) – the Pi Zero W has only one USB port so you need a hub. We use the Pi Hut 7-port USB hub but they have a new hub for the Zero W (if anyone tries this could they please post so others know if it is a good alternative ?)
- ◆ USB Wireless Access Point (WAP) **and/or** 3G/4G mobile broadband dongle

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3.2 Optional Extras for the Pi Zero W Boat Control Unit

- ◆ GPS

- ◆ Daylight camera – we suggest the Raspberry Pi ribbon cable daylight camera or a USB daylight camera. The PIR will trigger the light so that the camera can capture video of any intruder – you can turn the light on (and off) when you wish to see the boat camera after dark – thus saving the extra power consumption of an infra-red camera

- ◆ PIR

- ◆ 2-channel relay

- ◆ LED light

3.3 Optional Extras to extend the Skipper's Mate System

- ◆ Sensor Servers – e.g. Voltage, Temp/Humidity/Dew Point, Hatches/Doors - see web site for the range