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Using Our Raspberry Pi Image Without A Magni

About Our Raspberry Pi Images

Ubiquity Robotics makes an image for the Raspberry Pi that it shares freely. This image is meant to support the Magni robot that we offer and we are not able to give much assistance to those who don't have a Magni but who wish to use the image for their own projects. We do offer some documents that users of the image may find helpful and so this page is meant to offer some assistance of the most likely questions people may have about the image.

Connecting To Your Network

Our image comes up and starts up a WiFi hotspot by default. To learn more about how to connect with the hotspot, see **THIS_PAGE**.

You can also directly hook up a LAN cable to a router you may have that offers a DHCP connection. If you do that you can find software to scan your network for the new IP address and then use a tool such as ssh or putty to connect a console.

Also Note that pi3-miniuart-bt is enabled by default, so bluetooth stability may be affected. Disable it if you are using bluetooth but not the serial port.

Disabling the Magni Support Software

The Ubiquity Robotics images will come up and run the software required for a Magni robot by default.

To disable the Magni software you can use this line once you connect with a linux console as discussed above.

```
sudo systemctl disable magni-base
```

The GUI

The GUI is provided for debugging purposes only. The primary method of using this image is headless via SSH. Minor GUI issues probably exist, but we don't have the resources to address them.

If you are trying to connect to Wifi from the GUI you must first disconnect from the ubiquityrobotXXXX network

Disabling The Automatic Startup of roscore

The Ubiquity Robotics images will start up roscore by default. Robot Operating System, ROS, uses a core process and the Magni software platform is based on ROS.

In some cases users may want to disable even the startup of roscore and you can use the line that follows to do so after connecting to a linux console.

```
sudo systemctl disable roscore
```

Using The GPIO Lines

Our image uses some of the GPIO lines to control our Magni robot. By default many of the lines are unused and these are the best ones to think about using for your own uses. You should see the section regarding GPIO Lines Used For The Sonar Board and use those lines as we do not use them until they are enabled by users who order a Magni with a Sonar board.

Using The I2C Bus

If you want to use the I2C bus be aware that we expect and look for certain I2C devices. You should avoid use of the I2C addresses that we use. Also note that many users don't realize they must supply pullup resistors to 3.3 volts for proper I2C operation. As we cannot know what you have in mind a general rule is to try something on the order of a 3.3 kiloohm resistor. Note that many boards for I2C devices may have the pullup resistors already on the little sensor boards so just be aware you must think about the pullup resistors in general.

Please see the addresses on I2C that we use and avoid these addresses if you can as you may get our software interacting with your software in some cases. See our I2C discussion that is specific to Magni but will list the addresses used in the section titled Guidelines For Usage Of The I2C Bus on **THIS_PAGE**.

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