Pypilot 0.35 on Openplotter 3.0 version 04-SEP-2022

1. First, browse to

<u>https://openplotter.readthedocs.io/en/latest/getting_started/downloading.html</u> and download the Openplotter Headless image. Since I tested on a raspberry 3b+, I downloaded the 32-bit version. On a raspberry 4, I would do the same.

Downloading — OpenPlotter 3 d 🗙 🕂		✓ - □ X						
\leftarrow \rightarrow C \triangleq openplotter.readthedocs.io/en/la	test/getting_started/do	wnloading.html 🛛 🕸 🖈 🔝 🧶 🛣 🔹 🛤 🛸 🖬 🌍 🗄						
Instrument Panel								
SailGauge OpenPlotter Headless								
Кір								
Node-Red Dashboard	Same as OpenPlott.	Starting but ready to be used remotely without monitor.						
Grafana	Doumload							
InfluxDB OSS 2.x	Don moad.							
SEDIAL - 3.1.3-STARLE	Image name	OpenPlotter Headless						
	Hostname:	openplotter						
	User:	pi						
Connecting a USB GPS receiver	Password:	raspberry						
Connecting a USB RS422 converter	Language:	en GBUITE-8						
Connecting a USB CAN converter	Lunguuge							
Connecting the dAISy HAT	Keymap:	gb						
CAN BUS - 3.2.5-STABLE	Layout:	English (UK)						
CAN Bus	TimeZone:	Europe/London						
Input data by slcand	Wifi client:	SSID: none, Password: none, Country: none						
Input data by MCP2515/MCP251xfd	Wifi AP:	SSID: openplotter, Password: 12345678, IP: 10.10.10.1						
🗄 Output data	SSH:	Enabled						
	Remote desktop:	Enabled						
Pread the Docs v: latest ▼	Installed apps:	Settings - Docs - Signal K installer - OpenCPN installer - Xygrib -						

2. Then, download the raspberry pi imager, click Operating System , scoll to Use Custom, and choose your downloaded image file.

	Operating System	
¢	Emulation and game OS Emulators for running retro-computing platforms	>
0	Other specific-purpose OS Thin clients, digital signage and 3D printing operating systems	>
Ŋ	Misc utility images Bootloader EEPROM configuration, etc.	>
Ō	Erase Format card as FAT32	
	Use custom	

3. Stick an SD card adapter with an SD card in your USB port, then for Storage, choose the SD card.



- 4. Click Write to burn the image on your SD card.
- 5. When ready, stick the SD card in your raspberry and turn on the raspberry.

- 6. After a while, you should see a wifi station appear called openplotter. Connect to it. The wifi passphrase is 12345678.
- 7. Note: if you have connected before, and/or have problems connecting, it might help to Forget the device credentials.



Note: if you have no internet connection to the raspberry (see later) the wifi connection might disconnect after a few seconds. Reconnect to it. You should get a 10.10.10.0 ip address.

8. Download a vnc viewer from the internet. In this example, RealVNC Viewwer is used. Make a new connection with File → New Connection. Select 10.10.10.1:5900 for VNC Server:



9. Press ok and the connect to the machine.

10. Default credentials to be used are the unix credentials of the pi user, in this case pi and raspberry as indicated below:

🔽 Authentica	tion X					
Authenticate to VNC Server 10.10.10.1::5900 (TCP)						
Enter VNC Ser (Hint: NOT yo	ver credentials ur RealVNC account details)					
Use mame:	pi					
Password:	raspberry 🗿					
Remembe	r password <u>Forgot password?</u>					
Catchphrase:	Present metal rubber. Forget depend oxygen.					
Signature:	8f-39-e4-ef-08-6c-ae-52					
	OK Cancel					

11. If all is right, this screen should show up. Read the message and click ok:





12. Let's first respond to the message you just clicked away: choose Raspberry → Preferences → Raspberry Pi Configuration:



ve openplotter (openplotter) - VNC Viewer			- 🗆 X
🗕 🛑 📰 🌅 🌠	🧆 📒 🎳 Raspberry Pi Configu	Change Password	19:45 🕴 🚺
Wastebasket			
	Raspberry Pi Configu	ration 🗸 🗸 🗙	
	System Display Interfaces Per	Comance Localisation	
	Password:	Change Password	
	Hostname:	Change Passw	
	Boot:	Enter new password:	
	Auto Login:	Confirm new password:	
	Network at Boot:	Car	ncel OK
	Splash Screen:		
		Cancel OK	

13. Click Change Password and then enter a new password and ok:

14. Now prepare the raspberry for pypilot operation: click the third tab Interfaces, enable I2C, enable Serial Port and disable Serial Console.

ve openplotter (openplotter) - VNC Viewer			— C) X
🐞 🛑 🖿 🥌 🌠	🧆 📒 👹 Raspberry Pi Configu	V2 ★	11 📢	19:47
Wastebasket				
	Raspberry Pi Configuration 🗸 🗸 🗙			
	System Display Interfaces Performance Localisation			
	SSH:			
	VNC:			
	SPI:			
	12C:			
	Serial Port:			
	Serial Console:			
	1-Wire:			
	Remote GPIO:			
	Cancel OK			

V2 openplotter (openplotter) - VNC Viewer			- 0	ı x
	🏕 🚝 📓 Raspberry Pi Configu		1.	19:48
Wastebasket				
	Raspberry Pi Configuration 🗸 🔹 🗙			
	System Display Interfaces Performance Localisation			
	SSH:			
	VNC:			
The	changes you have made require the Raspberry Pi to be rebooted to take effe	ct.		
	Remote GPIO:			
	Cancel OK			

15. Raspberry begs for a reboot, but say no for now:

16. Let's first establish internet connection. Hovering over the up and down arrow shows the network interfaces.



17. If you have stuck in an ethernet cable that comes from your home modem, the eth0 will be set and you are probably set up ok.



18. If you have stuck a wifi dongle in your raspberry, there is something to be done.



19. First choose your country!? Long story, don't ask.



20. Use page down to scroll to the long list, select your country and press ok.



21. Then choose your wifi connection:



22. Now reboot:



23. When you reconnect to the raspberry, you will see that there are updates available. Install them.



24. And reboot when the system is up to date:



Now we are ready to install openplotter-pypilot. Choose Accessories \rightarrow Terminal:



25. Type the 4 (!) commands from the release notes

<u>https://forum.openmarine.net/showthread.php?tid=4210&pid=23542#pid23542</u>. If you are on VNC Viewer, you can copy them and use Edit \rightarrow Paste:





26. These 4 commands go very quick. When you start openplotter-pypilot for the first time, you need to click start to install pypilot itself. This takes quite a while.



🔽 openplotter (openplotter) - VNC Viewer	-	
🛞 🌐 🛅 😇 🌠 🧈 🚝 🔽 pi@openplotter: ~/op 🧊 Post-installation acti 🛛 🔽 🖇	ି 🔹 🌒	15:12
Wastebasket		
'/etc/system/system/pypilot_hat.service'		
'scripts/debian/etc/system/system/pypilot_web.service' -> Cancel '/etc/system/gypilot_web.service'		
Removing incompatible packages Close		
Installing Pypilot		
installing debian service scripts		
Creating config files		
DONE Setting version		
DONE		
Done. Close this window and open the app again.	¥.	
Installed /usr/local/lib/python3.9/dist-packages/openplotterPypilot-2.2.0-py3.9.		
egg Processing dependencies for openplotterPypilot==2.2.0		
Finished processing dependencies for openplotterPypilot==2.2.0 pi@openplotter:~/openplotter-pypilot \$ openplotter-pypilot		
pi@openplotter:~/openplotter-pypilot \$ []		

27. After it succeeds, you must close and start again:

28. When I restarted, I got this message. Which was weird, because I thought I did that in step 14:



29. Anyway, there appears to be a tab called serial:

venplotter (op	enplotter) - VNC Viewer	– – ×
Click here to o	pen applications menu	
Wastebasket		
	Pypilot 2.2.0	~ ^ X
	🕃 🔆 🏘 🔛 🖾 🂳 Help Settings Control Calibration Scope Client	
	Services Keys Serial Reinstall	
	pyplat version 0.35 Detected IMU: Out-odiscover	
	Services Disabled Disabled	
	Web Control Enable	Open Browser
	Hat Control Enable	Configure
		11.

30. And there I can click Enable:

ve openplotter (ope	enplotter) - VNC Viewer	- 🗆 X
8	🛯 🧱 🌠 🏕 📒 🗾 pi@openplotter: ~/op 🥵 Pypilot 2.2.0	V2 🗚 🛜 📣 15:15
Wastebasket		
	Pypilot 2.2.0	~ ^ X
	Kan the settings and the set of	
	Services Keys Serial Reinstall	
	Hardware Serial warning: no hardware serial	Enable
	Add Remove	
		<i>///</i>

🔽 openplotter (op	enplotter) - VNC Viewer	- 🗆 X
8	🗆 🧱 🌠 🧈 🚝 pi@openplotter: ~/op 🧖 Pypilot 2.2.0	V2 🛜 剩 15:15
Wastebasket		
	Pypilot 2.2.0	~ ^ X
	No.No.No.No.HelpSettingsControlCalibrationScopeClient	
	Services Keys Serial Reinstall	
	Hardware Serial warning: no hardware serial	Enable
	reboot ~ ~ × must reboot to apdate changes to thordware serial OK	
		li.

31. Which worked and begged me to do a reboot:

32. Which I had to initiate myself:

ve openplotter (open	plotter) - VNC Viewer	-	- 🗆 X
8	📖 🌅 🌈 🧈 📒 🗾 pi@openplotter: 🧖 Pypilot 2.2.0 🦉 Shutdown Optio	V2 🗧	(1) 15:16
Wastebasket			
	Pypilot 2.2.0	~ ^ X	
	KKKKHelpSettingsControlCalibrationScopeClient		
	Services Keys Serial Reinstall		
	Hardware Serial warning: no hardw Shutdown Options 👻 🔨 🗙	Enable	
	Shutdown		
	Reboot		
	Logout		
	Add Remove		
			<u>.</u>

openplotter (openplott	tter) - VNC View	/er		nonplotter	Durp	ilot 2.2.0		□ X
Wastebasket		0	2_ pi@c	penpiotter. ··		1012.2.0	<u>₩</u> ⊂ o	10.02
			-	Pypilo	ot 2.2.0	-	~ ^ X	
	🐹 Help	X Settings	Control	Calibration	💢 Scope	Client		
	Services	Keys Se	erial Reins	tall				
py De De	pilot versior etected IMU: etected Hard	n 0.35 Auto d ware no pyr	iscover vilot hat detect	ed				
Ha	eb Control	Auto	pilot ▼ able able	>			Open Browser Configure	

33. But after that I could start openplotter-pypilot without any pop-up messages

34. Then I switched Services to Autopilot, enabled Web Control and Hat Control. This brought up all services, persistent to a reboot., listening to the right ports and all, so I would call this a success.



- 😢 openplotter (openplotter) VNC Viewer × 📟 🥘 🌈 🌁 pi@openplotter: ~ 🧖 Pypilot 2.2.0 Autopilot Control (15:33 6 Wastebasket Pypilot 2.2.0 ~ X Client X . ð Help Settings Control Calibration Scope Services Serial Keys Disengaged none 0 none pypilot version 0.35 AP Tack 0.0 Detected IMU: Auto discover 0.0 Detected Hardware no pypilot hat • t Services Autopilot 🔻 Pilot hasin Compass OGPS OWind OTrue Wind Web Control 🖌 Enable Hat Control 🖌 Enable D PR FF Ρ Ĩ DD 0.00300 0.00000 0.09000 0.07500 0.00500 0.60000 Scope Client Calibration Close
- 35. For instance, I could select Control to get the control screen.

36. As can be seen, I have no IMU and motor controller connected at the moment; this is because I clipped the gpio pins on this particular raspberry.