1.) Follow the instructions in the file arm64 Debian Basic Install for Rock64 or arm64 Debian Basic Install for PineH64B
A 16GB eMMC module is sufficient as the whole setup requires only 2.5GB in space when finished.

2.) Install sudo (log-in as root)

```
apt install sudo
```

```
nano /etc/sudoers
```

scroll down to User privilege specification
copy root for your specific username and save

3.) Reduce network speed to 100MBit and set network to static IP address

```
sudo apt install ethtool
```

```
sudo nano /etc/network/interfaces
```

```
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

source /etc/network/interfaces.d/*

# The loopback network interface
auto lo
iface lo inet loopback

# The primary network interface
auto eth0
allow-hotplug eth0
iface eth0 inet static
        link-speed 100
        link-duplex full
        ethernet-autoneg off
        address 192.168.1.xxx
        netmask 255.255.255.0
        gateway 192.168.1.xxx
        dns-nameservers 192.168.1.xxx
```

replace xxx with your relevant/desired subaddress

```
sudo nano /etc/resolv.conf
```

```
nameserver 192.168.1.xxx
```

xxx should match your DNS Server

4.) Install system monitoring

```
sudo apt install hddtemp lm-sensors glances htop screenfetch
```

```
sudo nano /etc/glances/glances.conf
```

comment / uncomment various sections

```
sudo nano /lib/systemd/system/glances.service
```

```
[Unit]
Description=Glances
After=network.target

[Service]
ExecStart=/usr/bin/glances -w
Restart=on-abort

[Install]
WantedBy=multi-user.target
```

```
sudo systemctl status glances.service
```

pressing ‘q’ returns to console

sudo reboot — to restart the machine and all systemd services, once machine is up again check 192.168.1.xxx:61208 if glances is running correctly.

sensors — shows all data gathered by lm-sensors

glances — shows a variety of system/machine data which can be configured by changing nano /etc/glances/glances.conf

5.) Install GPS Software

```
sudo apt install gpsd

sudo dpkg-reconfigure gpsd

sudo nano /lib/systemd/system/gpsd.socket
```

change **ListenStream=127.0.0.1:2947** to **ListenStream=0.0.0.0:2947**

```
sudo nano /etc/default/gpsd

START_DAEMON="true"
USBAUTO="true"
DEVICES="/dev/ttyXYZ"
```

check with ls /dev/ for correct device and replace XYZ with AMA0 or ACM0 or USB0 as appropriate.

```
GPSD_OPTIONS="-n"
GPSD_SOCKET="/var/run/gpsd.sock"

sudo systemctl enable gpsd
sudo systemctl start gpsd
sudo systemctl status gpsd

sudo reboot
```

Use cgps or gpsmon to check GPS data and position.

6.) Install FlightAware Software

```
sudo apt install git debhelper librtlsdr-dev pkg-config dh-systemd libncurses5-dev libbladerf-dev
sudo apt install libhackrf-dev liblimesuite-dev tcl8.6-dev python3-dev python3-venv libz-dev
sudo apt install libboost-system-dev libboost-program-options-dev libboost-regex-dev
sudo apt install libboost-filesystem-dev

makedir flightaware
cd flightaware

git clone https://github.com/flightaware/dump1090.git

cd dump1090

sudo dpkg-buildpackage -b --no-sign

cd ..

sudo apt install /home/user/flightaware/dump1090-fa_X.0_arm64.deb
sudo apt install /home/user/flightaware/dump1090-fa-dbgsym_X.0_arm64.deb

sudo systemctl enable dump1090-fa
sudo systemctl start dump1090-fa
sudo systemctl status dump1090-fa

git clone https://github.com/flightaware/piaware_builder.git

cd piaware_builder
./sensible-build.sh buster
cd package-buster
```

```
sudo dpkg-buildpackage -b --no-sign

sudo apt install /home/user/flightaware/piaware_builder/piaware_X.0_arm64.deb
sudo apt install /home/user/flightaware/piaware_builder/piaware-dbgsym_X.0_arm64.deb

sudo systemctl enable piaware
sudo systemctl start piaware
sudo systemctl status piaware

sudo reboot

sudo piaware-config allow-auto-updates yes
sudo piaware-config allow-manual-updates yes
sudo piaware-config feeder-id XXXXX          replace X with Unique Identifier
                                             found on FlightAware web site.
```

7a.) Optional, install tar1090 web interface

```
sudo bash -c "$(wget -q -O – https://raw.githubusercontent.com/wiedehopf/tar1090/master/install.sh)"

sudo nano /usr/local/share/tar1090/html/config.js      Amend web interface if needed
```

7b.) Optional, install Dump1090-OpenLayers3 mod

```
git clone https://github.com/alkissack/Dump1090-OpenLayers3-html.git

cd /usr/share/dump1090-fa
sudo cp -R html original-html
sudo rm -R -f html
cd /home/user/Dump1090-OpenLayers3-html
sudo cp -R public_html /usr/share/dump1090-fa/html
cd /usr/share/dump1090-fa/html

sudo nano config.js                          Amend DefaultZoomLvl, SiteLat, SiteLon,
                                             ShowMouseLatLong, ShowMaxRange.

sudo cp -R config.js /usr/share/dump1090-fa/config.js

sudo reboot
```

8.) Console auto log-in and Glances start at boot/log-in

```
nano /home/user/.bashrc                      add glances to the END of file

sudo nano /etc/systemd/logind.conf           uncomment #NAutoVTs=6 and set to NAutoVTs=2

sudo mkdir /etc/systemd/system/getty@tty1.service.d

sudo nano /etc/systemd/system/getty@tty1.service.d/override.conf

[Service]
ExecStart=
ExecStart=-/usr/sbin/agetty --autologin user --noclear %I $TERM


sudo systemctl enable getty@tty1

sudo reboot
```

Done, enjoy your new ADSB receiver !