Setting up Pi-Star DMR hotspot for local use

In this example I use a Raspberry Pi3 (because of the wired ethernet) and a MMDVM_HS_HAT clone.

Download the newest Pi-Star image and proceed with flashing the card.

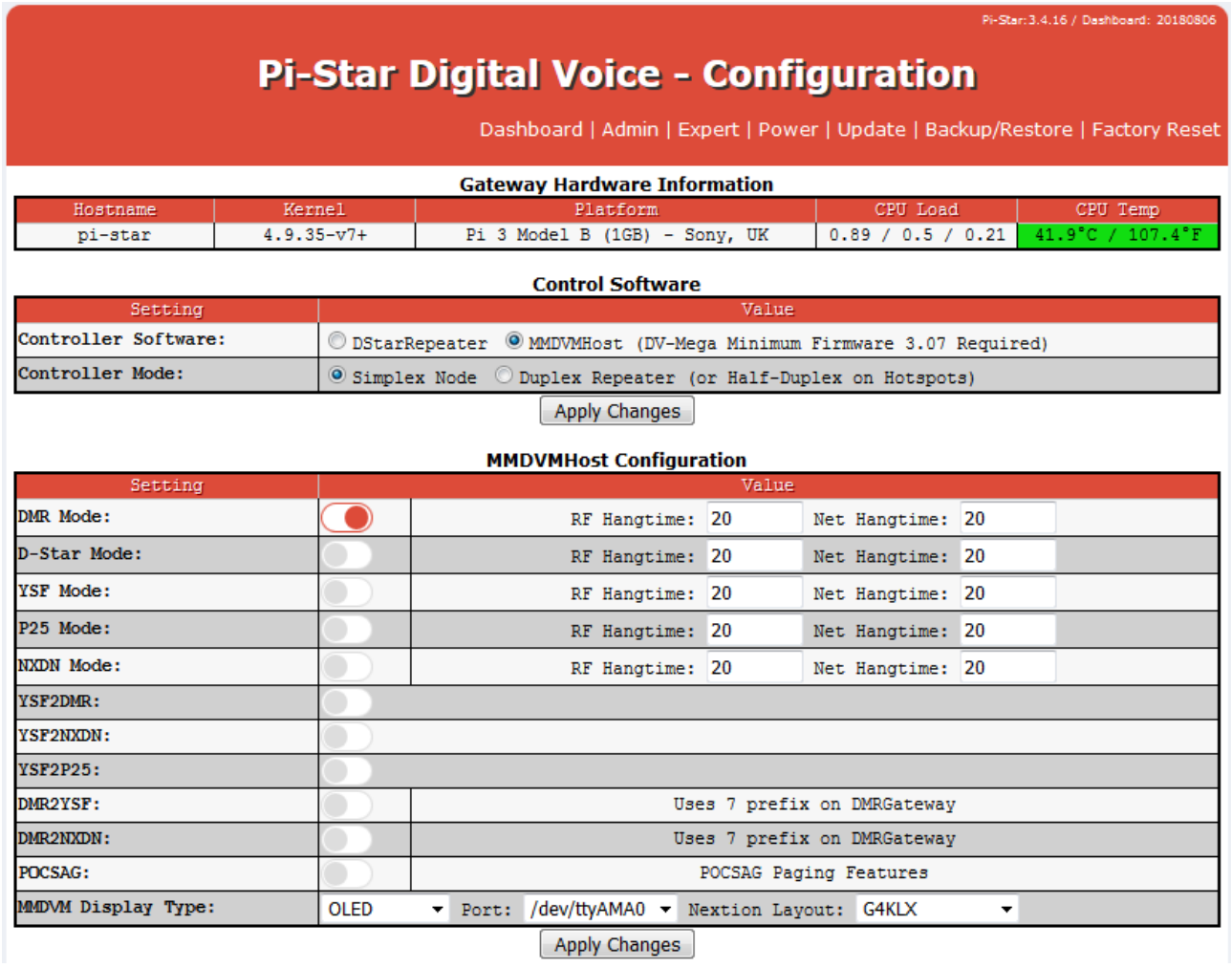
Refer to: **http://pistar.uk**

default username: **pi-star**
default password: **raspberry**

1. Get Pi-Star running and configure for internet use

Enter data section after section and „Apply Changes“ each time.

Here is my sample configuration:



General Configuration

Setting	Value
Hostname:	da0not-dmr Do not add suffixes such as .local
Node Callsign:	DA0NOT
CCS7/DMR ID:	2627576
Radio Frequency:	433.625.000 MHz
Latitude:	48.99 degrees (positive value for North, negative for South)
Longitude:	8.34 degrees (positive value for East, negative for West)
Town:	Karlsruhe, JN48EX
Country:	Germany
URL:	http://www.qsl.net/db/da0not Auto Manual
Radio/Modem Type:	MMDVM_HS_Hat (DB9MAT & DF2ET) for Pi (GPIO)
Node Type:	Private Public
System Time Zone:	Europe/Berlin
Dashboard Language:	german_de

Apply Changes

DMR Configuration

Setting	Value
DMR Master:	BM_Germany_2622
BrandMeister Network:	Repeater Information | Edit Repeater (BrandMeister Selfcare)
DMR Colour Code:	1
DMR EmbeddedLCOnly:	
DMR DumpTAData:	

Apply Changes

General Configuration > Node Type = Public (every ID can use it)

Check out and enjoy...

There are plenty of tutorials out on youtube and several websites how to configure Pi-Star.

2. Create the local DMR network

Installing HBLink:

HBLink can run on a separate RasPi or Linux PC. Installing on a Pi-Star hotspot runs into difficulties because Pi-Star is using its own firewall. Access over AREDN discoverd several problems during testing. HBLink may run parallel on a native MMDVM installation.

First update your system. Rename the RasPi using **raspi-config** (here: **DMRMaster**).

Updates:

```
sudo apt update
sudo apt upgrade
```

Install git:

```
sudo apt install git
```

Download the packages:

```
git clone https://github.com/n0mjs710/dmr_utils
git clone https://github.com/n0mjs710/HBLink
```

Auto install dmr_utils:

```
cd dmr_utils
sudo ./install.sh
```

Change over to the HBLink folder:

```
cd ..
cd HBLink/
```

Copy and edit configuration:

```
cp hblink-SAMPLE.cfg hblink.cfg
nano hblink.cfg
```

Make changes:

```
[LOGGER]
...
LOG_LEVEL: INFO
...

[MASTER-1]
MODE: MASTER
ENABLED: True
REPEAT: True
EXPORT_AMBE: False
IP:
PORT: 62031
PASSPHRASE: s3cr37w0rd
GROUP_HANGTIME: 5
…

[REPEATER-1]
…
ENABLED: False
```

Make sure you edit the LOG_LEVEL, the MASTER-1 port and disable the REPEATER-1.

Pi-Star has its own firewall and is blocking many ports per default.
Changing port to 62031 (Brandmeister) fixes this problem.

Save and exit (**CTRL + X, Y, ENTER**)

3. Make HBLink autostart

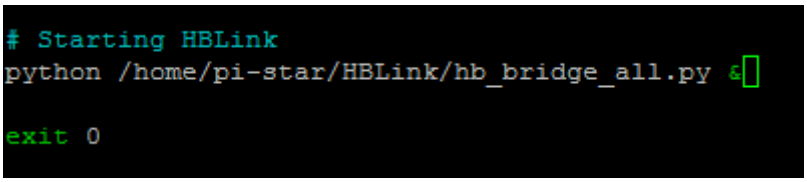
Edit the autostart file:

```
sudo nano /etc/rc.local
```

Add these lines before the exit 0:

```
# Starting HBLink
python /home/pi-star/HBLink/hb_bridge_all.py &
```

It should look like this:

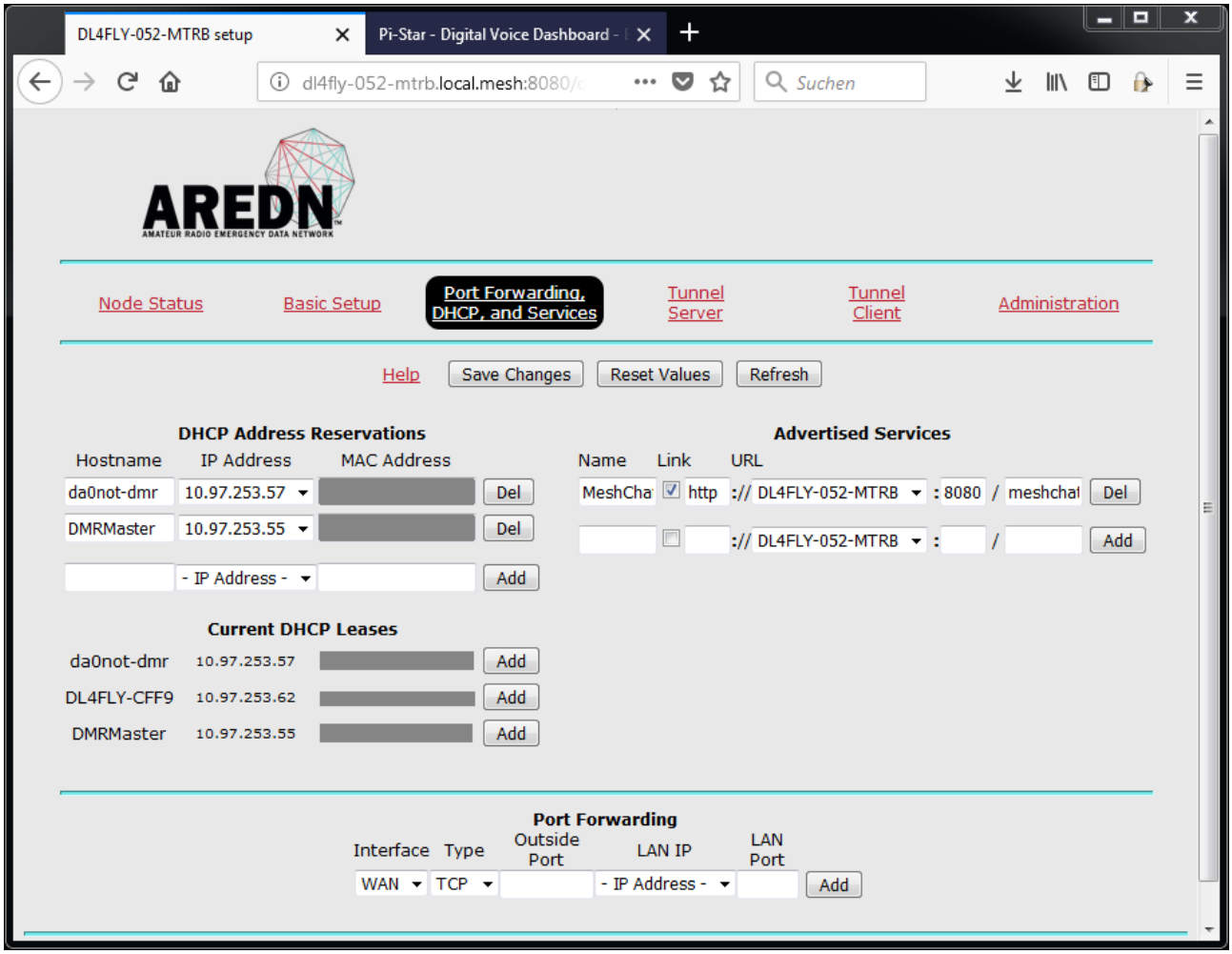


Don't forget the **&** at the end...

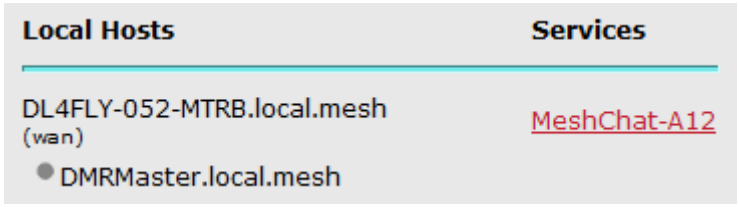
Save and exit (**CTRL + X, Y, ENTER**)

Restart the hotspot (**sudo reboot**) to get the configuration active.

4. Create AREDN DHCP Address Reservation

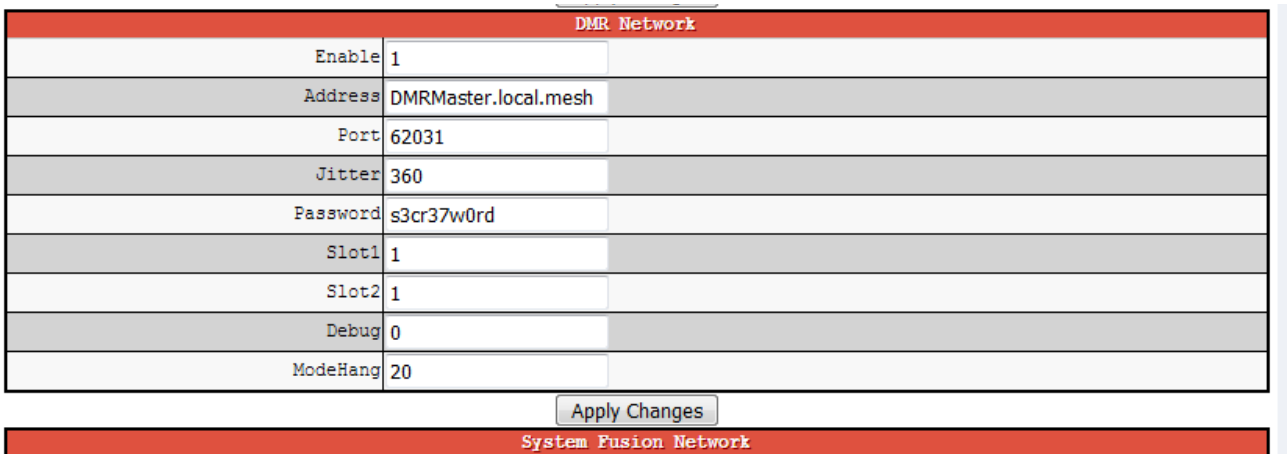


The HBLink unit should now be visible on Mesh-Status page:



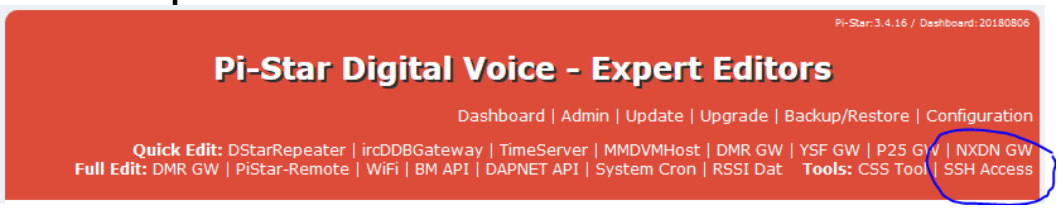
5. Reconfiguring Pi-Star for local net

In Pi-Star go to **Configuration > Expert > MMDVMHost**
Scroll down to DMR Network. Make your changes according to your HBLink settings. You can activate both timeslots.



Test the connection:
You can gain access with putty or with the Pi-Star GUI

Configuration > Expert > SSH Access



It is possible to see if the connection is working by reviewing the logfile of Pi-Star.
In a SSH shell you type:

```
tail -f /var/log/pi-star/MMDVM-2018xxxx.log
```

Pi-Star creates an individual logfile each day.

You should see something like this:

```
pi-star@da0not-dmr(ro):~$ tail -f /var/log/pi-star/MMDVM-2018-10-07.log
I: 2018-10-07 10:34:25.846     Call Hang: 3s
I: 2018-10-07 10:34:25.846     TX Hang: 4s
I: 2018-10-07 10:34:25.846     Mode Hang: 20s
I: 2018-10-07 10:34:26.030 Interfaces Info
I: 2018-10-07 10:34:26.031     IPv4: lo:127.0.0.1
I: 2018-10-07 10:34:26.031     IPv4: eth0:192.168.1.110
I: 2018-10-07 10:34:26.031     Default interface is : eth0
I: 2018-10-07 10:34:26.032     IP to show: eth0:192.168.1.110
M: 2018-10-07 10:34:26.032 MMDVMHost-20180802_Pi-Star is running
M: 2018-10-07 10:34:35.870 DMR, Logged into the master successfully
```

Have fun... 73 Timm DL4FLY