How to make yourself a Digital HotSpot on one slide

Well, a few slides really.

Don - KI5AIU

The Seven easy Steps

1. What you'll need
2. Assembling the HotSpot
3. Creating the boot image
4. Booting Pi-Star
5. Configuring Pi-Star
6. Connecting to Pi-Star
7. Celebrate!
8. Final thoughts

What You'll Need

- Hardware
  - MMDVM hat (suggest Ham Radio Outlet)
  - Raspberry Pi Zero W
  - 8Mb Micro SD card with Mini Adapter
  - A digital radio (base or HT)
- Software (all freeware)
  - Etcher – copy an image to a memory card (https://etcher.en.softonic.com/)
  - Pi-Star Source – the Pi-Star-Rpi- version (http://www.pistar.uk/downloads/)

Where to start

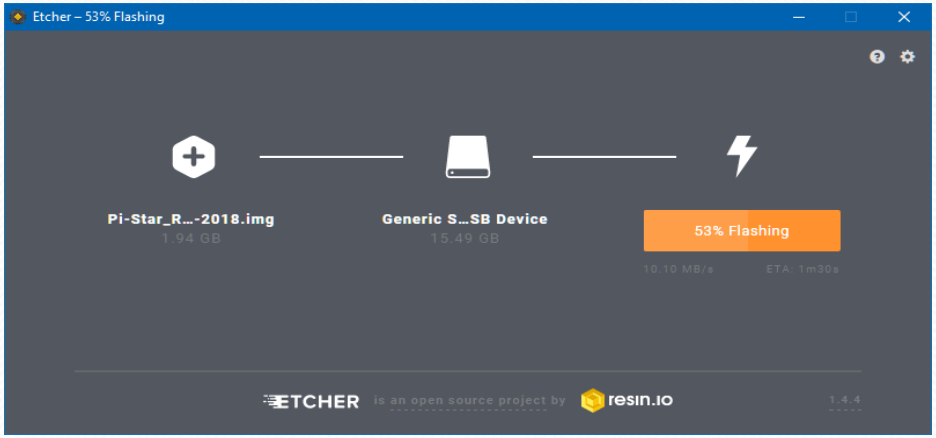
- If you bought a ready built Hot Spot with Pi-Star loaded, skip to the “Configuring Pi-Star” slides.
- If you bought a ready built Hot Spot that did not come loaded with Pi-Star, skip to the “Creating the Boot image” slides.
- If you bought the components, proceed to the next slide.

Assembling the HotSpot

- Raspberry Pi Zero W will have a 2x20 pin header.
- Zumspot will have a 2x20 pin socket.
- Stack the Zumspot over the Pi Zero W and press together.
- Mount the antenna to the Zumspot
- Add power using a micro USB cable and wall wart to the micro USB port closest to the corner.
- You can shop for cases or make your own.

Creating the Boot image

- Unzip the Pi-Star file
- Use Etcher to copy disk image file (.img) to micro SD card. Etcher is available for Windows, Mac and Linux.



Creating the Boot image

- Tell Pi Zero W about your WiFi with a Supplicant file
- Use notepad to create a file called: wpa_supplicant.conf

```
ctrl_interface=DIR=/var/run/wpa_supplicant GROUP=netdev
update_config=1
ap_scan=1
fast_reauth=1
country=JP
network={
   ssid="yourSSID"
   psk="yourpassword"
   id_str="0"
   priority=100
}
```

- Copy the file to the root of the micro SD card.
- All done with the boot image.

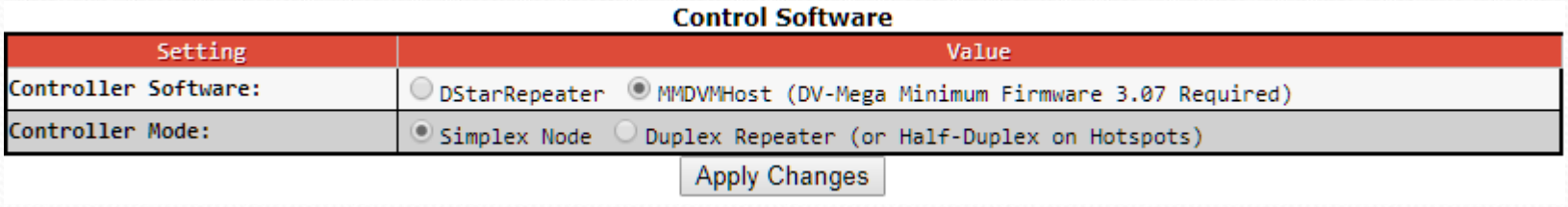
Booting Pi-Star

- Insert the microSD card with Pi-Star image into the Pi Zero W memory slot.
- Turn on power.
- Access the hotspot through your web browser at URL: pi-star
- Unconfigured Pi-Star will complain about an unknown mode. This is normal.
- Now on to Configuration.

Configuring Pi-Star

- Before Configuring, click on Admin and select updates. This will ensure you have the most current version and files.
- After Updates, click on the Configuration menu button.
- After making changes to each section, click on Apply changes. This takes a minute or two. Pi-Star will save the changes and return to the configuration screen.

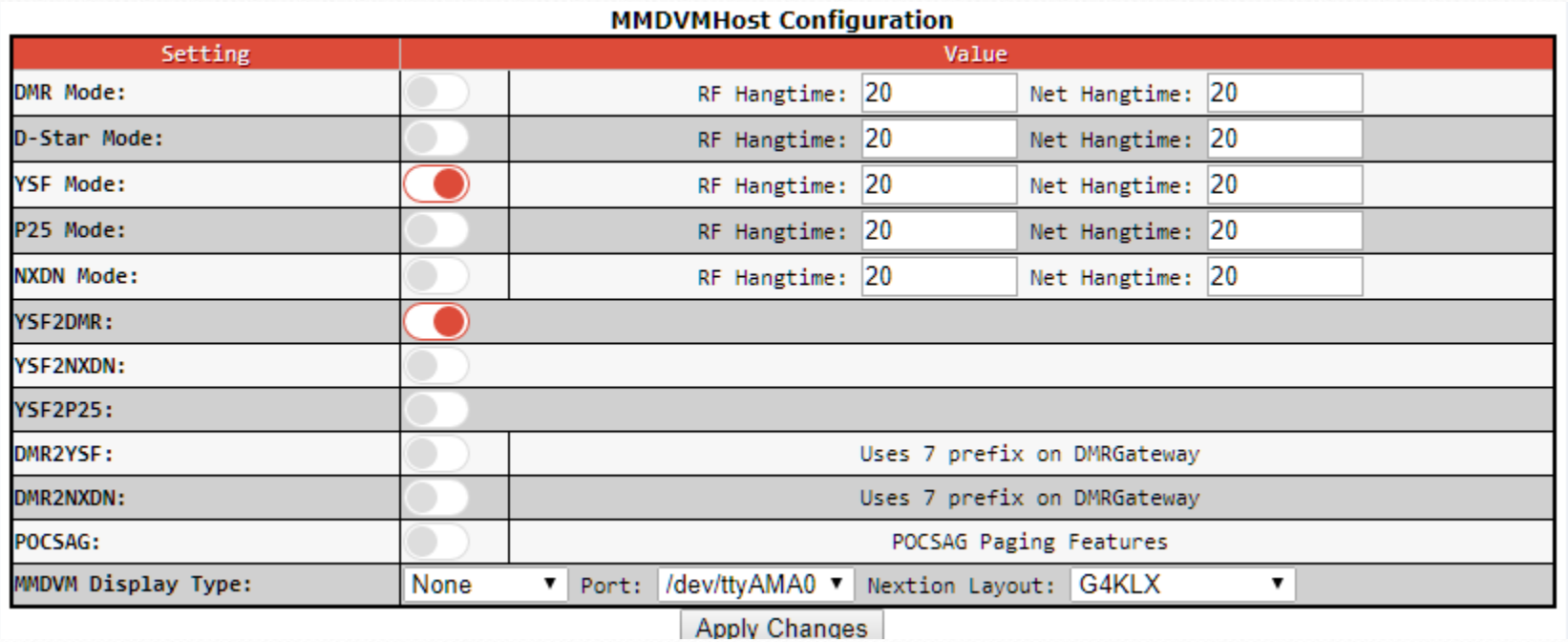
Configuring Pi-Star



This section should be default correctly. If use the above settings.

Click on Apply Changes.

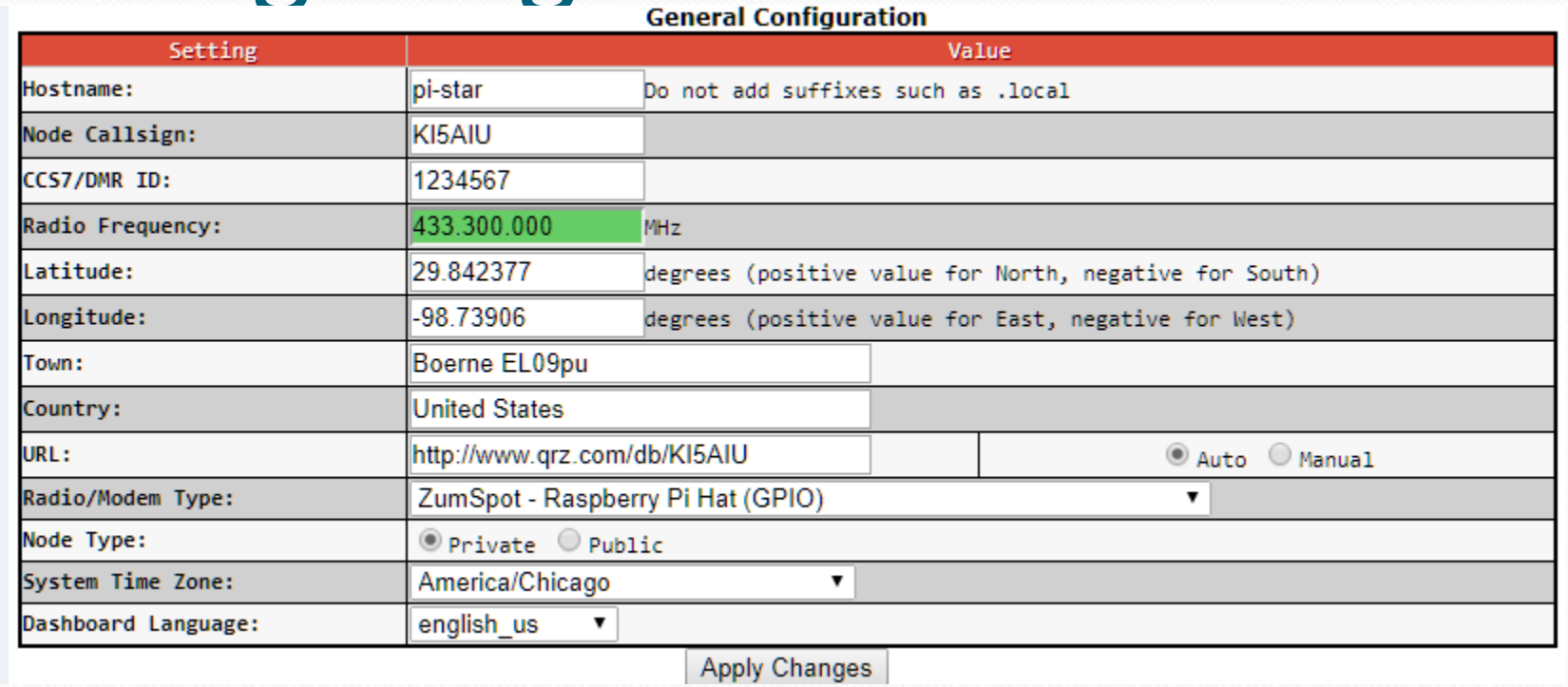
Configuring Pi-Star



Turn on YSF Mode and YSF2DMR

Click on Apply Changes

Configuring Pi-Star



General Configuration

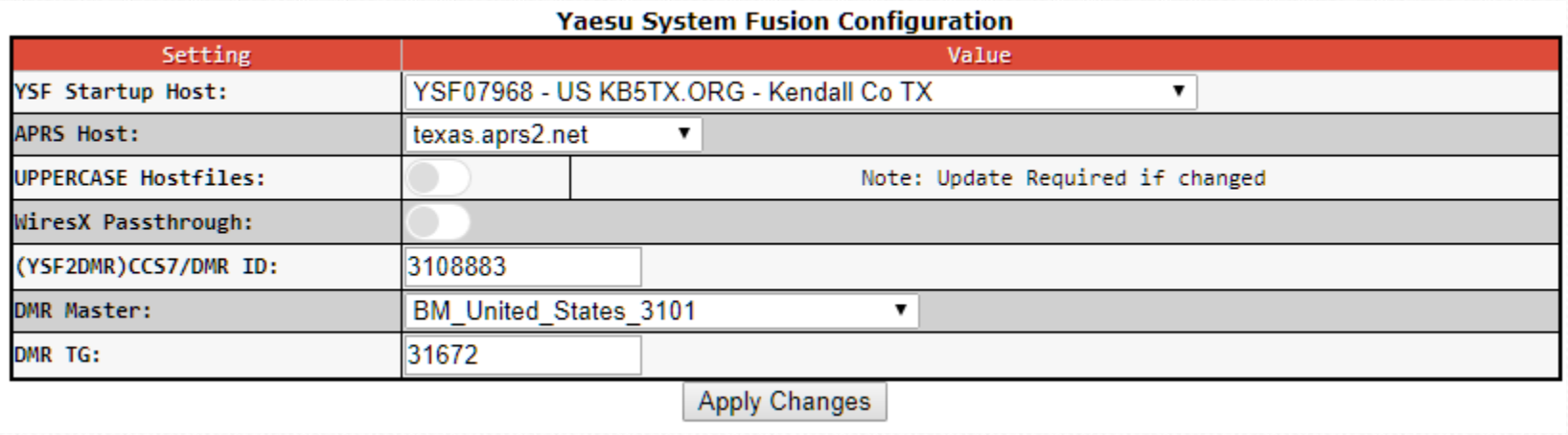
Setting	Value
Hostname:	pi-star — Do not add suffixes such as .local
Node Callsign:	KI5AIU
CCS7/DMR ID:	1234567
Radio Frequency:	433.300.000 MHz
Latitude:	29.842377 degrees (positive value for North, negative for South)
Longitude:	-98.73906 degrees (positive value for East, negative for West)
Town:	Boerne EL09pu
Country:	United States
URL:	http://www.qrz.com/db/KI5AIU — Auto / Manual
Radio/Modem Type:	ZumSpot - Raspberry Pi Hat (GPIO)
Node Type:	Private / Public
System Time Zone:	America/Chicago
Dashboard Language:	english_us

Apply Changes

Set Callsign, Frequency (UHF), Lat/Long of QTH, Town, Country, URL of your QRZ account, Time Zone, and most IMPORTANT, Radio type (as shown).

Click on Apply Changes

Configuring Pi-Star



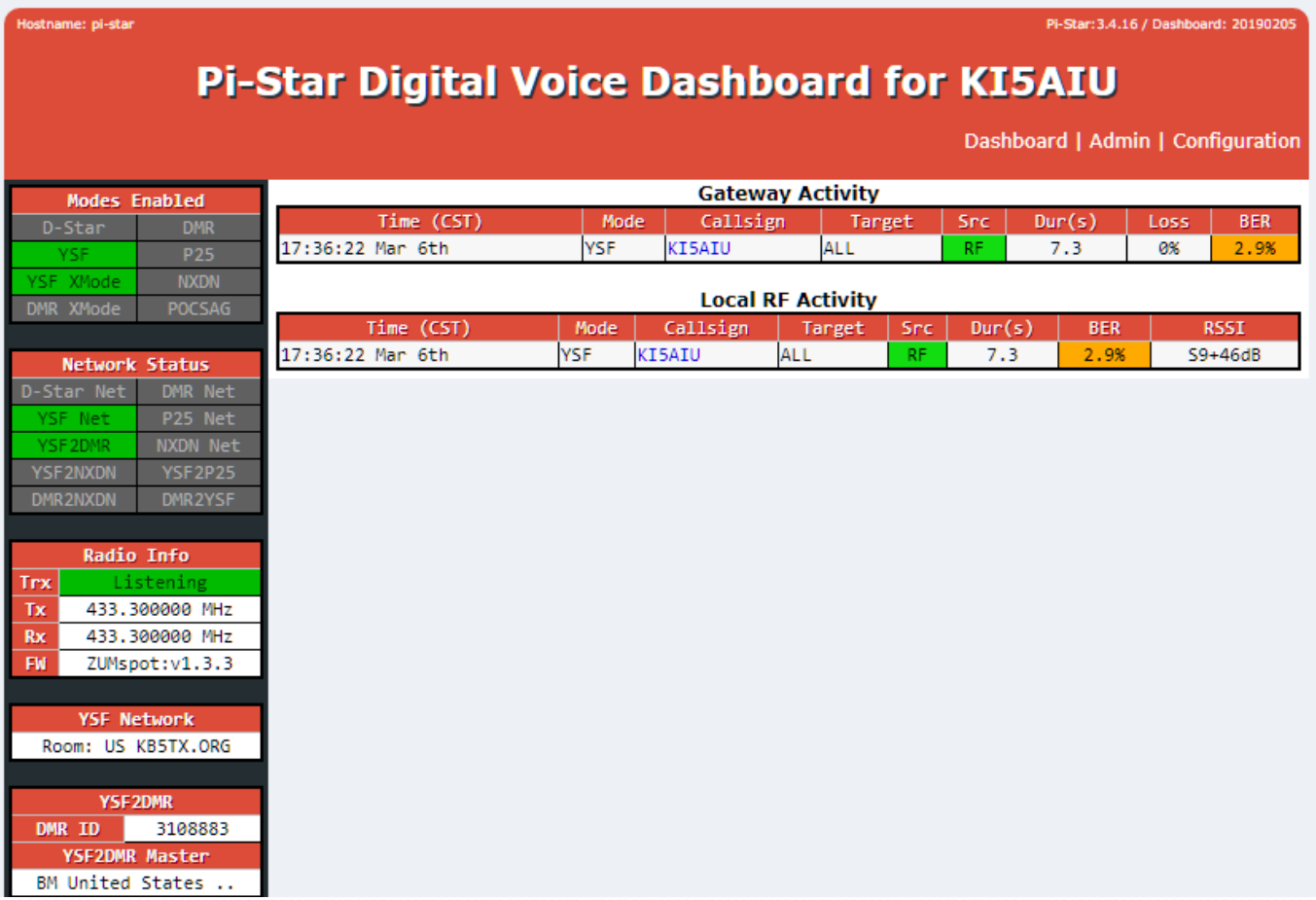
Set the KB5TX reflector from the list.
Set the APRS host from the list.
DMR Id and TG should be ok as default, otherwise set as shown.

Click on Apply Changes

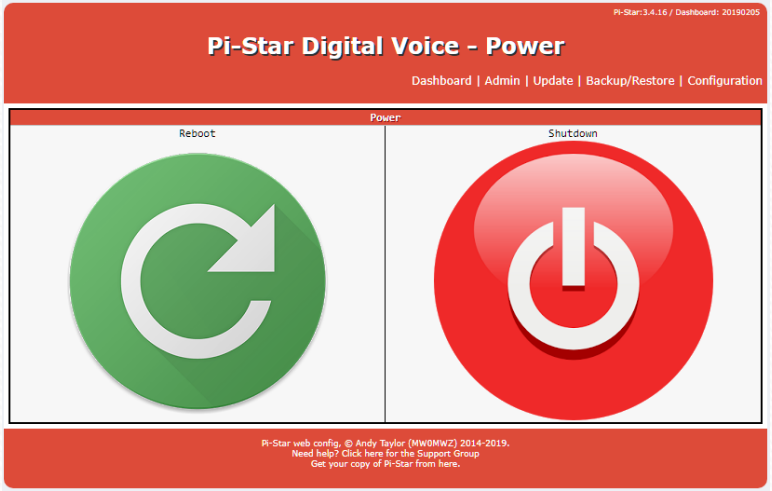
Connecting to Pi-Star

- If already connected, navigate to the Dashboard (top left menu item)
- If starting the Pi-Star, navigate to the URL: pi-star/ and wait for the dashboard to appear (2-4 minutes).
- Configure your digital radio for the Hot Spot frequency. In this case 433.300, set radio to simplex (no repeater offset), set digital mode, set power to low or medium.
- Key the mic…..

Celebrate


Hostname: pi-star
Pi-Star:3.4.16 / Dashboard: 20190205
Pi-Star Digital Voice Dashboard for KI5AIU
Dashboard | Admin | Configuration
Modes Enabled
D-Star
DMR
YSF
P25
YSF XMode
NXDN
DMR XMode
POCSAG
Network Status
D-Star Net
DMR Net
YSF Net
P25 Net
YSF2DMR
NXDN Net
YSF2NXDN
YSF2P25
DMR2NXDN
DMR2YSF
Radio Info
Trx
Listening
Tx
433.300000 MHz
Rx
433.300000 MHz
FW
ZUMspot:v1.3.3
YSF Network
Room: US KB5TX.ORG
YSF2DMR
DMR ID
3108883
YSF2DMR Master
BM United States ..
Gateway Activity
Time (CST)
Mode
Callsign
Target
Src
Dur(s)
Loss
BER
17:36:22 Mar 6th
YSF
KI5AIU
ALL
RF
7.3
0%
2.9%
Local RF Activity
Time (CST)
Mode
Callsign
Target
Src
Dur(s)
BER
RSSI
17:36:22 Mar 6th
YSF
KI5AIU
ALL
RF
7.3
2.9%
S9+46dB

Final Thoughts



You can turn it off by just pulling power, but I like to use the Admin | Power option. Then click on Shutdown.

The Pi-Star software and dashboard get frequent revisions. The software will update automagically every night if powered on. If not left on, it's a good idea to occasionally use the Update command found on the Admin menu.

Final Thoughts