

HS HotSpot Series

Radio communication hotspot repeater

Description:

The Boomerang DMR hotspot repeater is based on the Pi-Star software and an MMDVM board. These units come with a pre-configured Pistar load making it easier for the user to get started. The NANO is a duplex unit with integrated antennas and a 10hr stand-by Li battery. The Nano is designed for travel and mobile applications. The MINI is similar to the NANO but provides duplex capabilities. The MINI+ is similar to the mini but includes Ethernet. The ULTRA is similar to the MINI plus but provides additional USB ports. The PRO provides the best possible performance and comes with Ethernet. The TOUCH provides similar performance as the PRO and comes with a touch screen displaying the dashboard. All these units use 3D printed ABS cases and come with a 16GB SD card.



	Boomerang Nano	Boomerang Mini	Boomerang Mini+	Boomerang Ultra	Boomerang Pro	Boomerang Plus	Boomerang Touch	
PN:	HSNANO	HSMINI	HSMINIP	HSULTRA	HSPRO	HSPLUS	HSTOUCH	
Modes	DMR, YSF, C4FM, P25, NXDN, DSTAR, POCSAG							
Frequency	144MHz-148MHz, 420MHz-475MHz							
Bands	VHF / UHF							
Time Slots	TS2 & TS1	TS1 & TS2						
Processor	PI 2W	PI 2W	PI 2W	PI 2W	PI 3 B+ or 4	Clone	PI 3 B+ or 4	
Software	Pi-Star (open source)							
SD card	Class 10 16Gb							
Power	5VDC 2A mini USB	5VDC 2A Micro USB	5VDC2.5A MicroUSB	5VDC2.5A MicroUSB	5VDC 3A USB	5VDC 3A Jack	5VDC 3A USB	
Antennas	2dBi			2.5dBi - folding		2dBi	2.5dBi - folding	
Connectivity	WiFi	WiFi	WiFi / RJ45 Ethernet	WiFi / RJ45 Ethernet	WiFi / RJ45 Ethernet	WiFi / RJ45 Ethernet	WiFi / RJ45 Ethernet	
Display	0.96" OLED	1.3" OLED					7" Capacitive touch	
Power	Battery			10mW				
Case	ABS – 3D printed							

POWERING UP THE HOTSPOT

Connecting the USB power cable

STEP - 0

- 1 – For models with Ethernet, please connect the unit to a DHCP router using the ethernet cable before powering up the unit
- 2 – Connect the power to the USB port and allow for up to 3 minutes bootup time. Please use the provided USB cable or equivalent with an adequate power source to provide the needed current. The unit will display the MMDVM logo on its screen when done booting up.
- 3 - No other messages will appear on the screen after this point.

Note:

- Skip to the last 2 pages of this manual if you don't feel like ready all the details and already familiar with Pi-Star
- The USB power connection is for power only. A device no recognized message will appear if connected to a PC's USB port.
- Disconnecting power while booting up or during operation can cause file corruption. Please use the "Power OFF" button under Admin > Power instead.



Power micro USB



Power mini USB



Plus model



Ethernet

CONNECTING THE BOOMERANG TO YOUR WiFi

After powering up the unit, the next step is to connect the unit to your network. If your unit is connected to your network using an ethernet cable, **you can skip this step** since it is already connected to your network via the cable. This step only applies if your unit will be connecting to your network over WiFi.

Configuring the Boomerang with your WiFi's password

Please skip steps A and B if your Boomerang hotspot is connected to your network using an Ethernet cable. The Boomerang PLUS requires an ethernet connection to setup the wifi.

After the unit boots up and the MMDVM logo is displayed on the screen, the hotspot will open a 2.4Ghz "Pi-Star-setup" WiFi network that you can connect to using your laptop or another wireless device. This network is open with no password for the purpose of accessing and configuring the unit with your WiFi password so that it can then connect to your WiFi network.

Please note that this "Pi-Star-setup" WiFi network will only be made available by the unit if it can not connect to your WiFi network. Once you configure the unit with your WiFi network's password and reboot it, it will then connect to your WiFi network and it will not open the "Pi-Star-setup" WiFi network

A – Using your computer or smart phone, look for the "Pi-Star-setup" 2.4Ghz WiFi network and connect to it. This network is open and does not require a password.

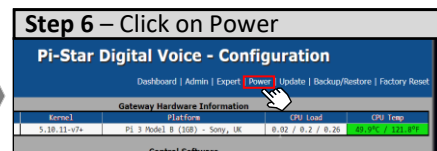
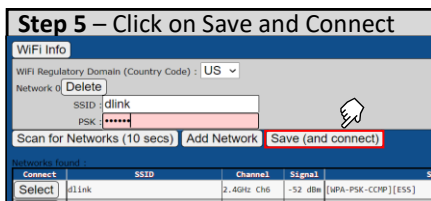
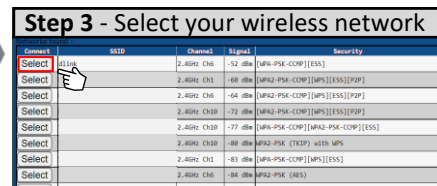
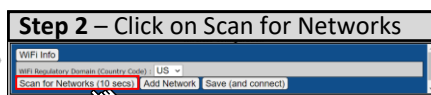
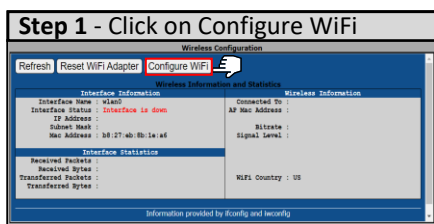
Please note that a computer may not refresh this list quickly and you may need to click away from this list and click again to refresh it. You can also use a smartphone or tablet to check for "Pi-Star-setup".

B – A web browser should automatically open and display the Pi-Star dashboard.

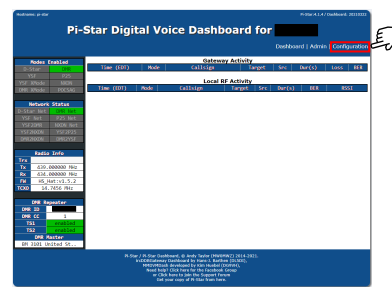
If a web browser does not automatically open the dashboard after connecting to the "Pi-Star-setup" WiFi (which rarely happens!), please open a web browser and connect to the default gateway created by the unit. This is typically "http://192.168.50.1" but you can look for this IP address using "ipconfig" in your command line. You will need to look for how to use the "ipconfig" command if you are not familiar with it.

C - Once the dashboard is displayed, click on the "Configuration" link and scroll down to the "Wireless Configuration" block then follow the steps below:

If a login screen is presented, use username: **pi-star** / password: **raspberry** (all lower case!)



The hotspot will now connect to your WiFi when it reboots



CONNECTING TO THE BOOMERANG

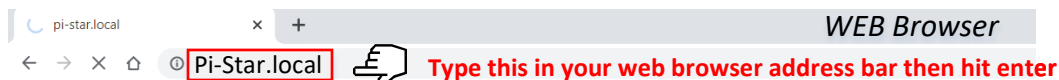
Now that your hotspot is connected to your network either using the Ethernet cable or WiFi, you will be using a web browser to connect to your hotspot's dashboard. Please make sure that your computer is connected to the same network that your hotspot is connected to.

Connecting to the Boomerang using a web browser

STEP - 2

After the unit boots up and the MMDVM logo is displayed on the hotspot's screen, follow the steps below:

- Using a computer connected to the same network, open a web browser like Chrome or Edge
- Type "Pi-Star.local" in the web browser's address bar and click on Enter
- This should connect you to the hotspot's Pi-Star dashboard



- If the step above does not take you to the Pi-Star dashboard, it will indicate that your computer is not configured to access ".local" domains. In this case, you need to find the hotspot's IP address that was assigned to the hotspot by your network router and use that instead of the "Pi-Star.local".

Finding the hotspot IP address (skip this if you are able to connect to the dashboard):

- Option 1: Connect to your router using a web browser and look for the client list. You should find "Pi-Star" with the corresponding IP address.
- Option 2: Using the command prompt, ping "Pi-Star.local". This will return the unit's IP address. A screenshot of the command prompt is below
- Option 3: Use an IP scanner software to scan your network for all devices. You should see your hotspot's IP address.
- Option 4: Create a channel on your radio with the RX and TX frequencies programmed in the hotspot and PTT. The hotspot will display its IP address once it sees the radio (you will need to create a working digital channel with a talk group, cc, etc.)

```
Command Prompt
C:\Users\simo>ping pi-star.local

Pinging pi-star [192.168.1.201] with 32 bytes of data:
Reply from 192.168.1.201: bytes=32 time<1ms TTL=64
Reply from 192.168.1.201: bytes=32 time<1ms TTL=64
Reply from 192.168.1.201: bytes=32 time<1ms TTL=64
Reply from 192.168.1.201: bytes=32 time<1ms TTL=64

Ping statistics for 192.168.1.201:
    Packets: Sent = 4, Received = 4, Lost = 0 (0% loss),
    Approximate round trip times in milli-seconds:
        Minimum = 0ms, Maximum = 0ms, Average = 0ms
```

CONFIGURING THE HOTSPOT

Accessing the configuration screen

STEP - 3

Hostname: pi-star Pi-Star:4.1.4 / Dashboard: 20210322

Pi-Star Digital Voice Dashboard for [REDACTED]

Dashboard | Admin | **Configuration**

Gateway Activity							
Time (EDT)	Mode	Callsign	Target	Src	Dur(s)	Loss	BER

Local RF Activity							
Time (EDT)	Mode	Callsign	Target	Src	Dur(s)	BER	RSSI

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	
Tx	439.000000 MHz
Rx	434.000000 MHz
FW	HS_Hat:v1.5.2
TCXO	14.7456 MHz

DMR Repeater

DWR ID	[REDACTED]
DWR CC	1
TS1	enabled
TS2	enabled

DMR Master

BM 3101 United St..

Pi-Star / Pi-Star Dashboard, © Andy Taylor (MW0MZW) 2014-2021.
ircDDBGateway Dashboard by Hans-J. Barthel (DL5BJ),
MMDVMDash developed by Kim Huebel (DG9VH).
Need help? Click here for the Facebook Group
or Click here to join the Support Forum
Get your copy of Pi-Star from here.



Click on configuration to enter the configuration screen

Login

STEP - 4

A login screen may appear.

User: pi-star

Password: raspberry

All lower case

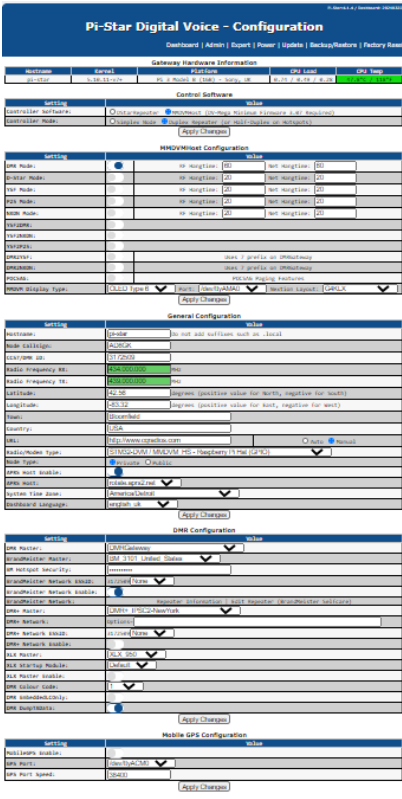
Sign in

http://192.168.1.59

Your connection to this site is not private

Username

Password



MMDVM Configuration block

General configuration block

DMR configuration block

Note about the configuration page:

This page consists of multiple configuration blocks:

- Controls software
- MMDVM Configuration
- General configuration
- DMR configuration
- Mobil GPS configuration
- Firewall configuration
- Wireless configuration
- Remote Access Password



Each block has its "Apply Changes" button. This button only saves the parameter in its block. The configuration will therefore consist of changes to each section independently. Once a section is configured, the changes will be applied before moving to the next section.

Configuration > General Configuration

STEP - 5

First input the needed information in the general configuration block and click on "Apply changes". Please only change the information pointed to by the hand icon and leave the other boxes unchanged

General Configuration

Setting	Value
Hostname:	pi-star <small>Do not add suffixes such as .local</small>
Node Callsign:	AB1CDE Input your call sign
CCS7/DMR ID:	3112345 Input your DMR ID
Radio Frequency RX:	434.000.000 MHz Input the RX/TX Hotspot frequencies if different Simplex hotspots like the Nano only need 1 frequency
Radio Frequency TX:	439.000.000 MHz
Latitude:	42.56 Input your location's latitude
Longitude:	-83.32 Input your location's longitude
Town:	Bloomfield Input your city
Country:	USA Input the country if different
URL:	http://www.cqradios.com Input the QRZ link <input type="radio"/> Auto <input checked="" type="radio"/> Manual
Radio/Modem Type:	STM32-DVM / MMDVM_HS - Raspberry Pi Hat (GPIO)
Node Type:	<input type="radio"/> Private <input checked="" type="radio"/> Public Leave as public until the hotspot is fully configured and tested Then switch is to private if you want to limit access to a few DMRIDs
APRS Host Enable:	<input checked="" type="checkbox"/>
APRS Host:	rotate.aprs2.net
System Time Zone:	America/Detroit Select your time zone
Dashboard Language:	english_uk

Apply Changes






Click Apply Changes when done with this section

Configuration > DMR Configuration

STEP - 6

Next, configure the 3 items in shown below in the DMR configuration block. Please do not modify any other parameters at this time. The goal is to get your unit up and running first, save your configuration, then go back and change other parameter if you need to

DMR Configuration

Setting	Value
DMR Master:	DMRGateway
BrandMeister Master:	BM_3104_United_States  Pick Brandmeister master server closest to your locaiton
BM Hotspot Security:	PASSWORD  Input the Brandmeister hotspot password
BrandMeister Network ESSID:	31???? None  Leave as None if only using 1 hotspot.
BrandMeister Network Enable:	<input checked="" type="checkbox"/>
BrandMeister Network:	Repeater Information Edit Repeater (BrandMeister Selfcare)
DMR+ Master:	DMR+_IPSC2-NewYork
DMR+ Network:	Options=
DMR+ Network ESSID:	31???? None
DMR+ Network Enable:	<input type="checkbox"/>
XLX Master:	XLX_950
XLX Startup Module:	Default
XLX Master Enable:	<input type="checkbox"/>
DMR Colour Code:	1
DMR EmbeddedLCOnly:	<input type="checkbox"/>
DMR DumpTADData:	<input checked="" type="checkbox"/>

Apply Changes



Click Apply Changes when done with this section

Configuration > Firewall configuration and AP Password

STEP - 7





The Pi-Star application includes a firewall to protect against intruders. This firewall also allows the users to access and configure the unit using an access point (AP). This access point is open by default and needs to be password protected. The screenshot below shows the access point (AP) turned ON. The AP can be turned OFF if not needed.

Firewall Configuration

Setting	Value
Dashboard Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public
ircDDBGateway Remote:	<input checked="" type="radio"/> Private <input type="radio"/> Public
SSH Access:	<input checked="" type="radio"/> Private <input type="radio"/> Public
Auto AP:	<input checked="" type="radio"/> On <input type="radio"/> Off Note: Reboot Required if changed
uPNP:	<input checked="" type="radio"/> On <input type="radio"/> Off

Apply Changes

If desired, one can set up an access point password in the following section. This is optional and can be left without a password if security is not a concern when accessing the unit via it's access point.

Auto AP SSID	PSK		
pi-star 	PSK: <input type="text" value=""/> 	Confirm PSK: <input type="text" value=""/> 	<input type="button" value="Set PSK"/> 

NOTE: Make sure you are in the AP SSID Area

Enter the AP access point password

Enter the AP access point password again

Click to set the AP password

Configuration > Wireless Configuration

STEP - 8

If you have an ethernet unit and wish to also set it up to be able to connect over WiFi, do the following::

- 1 – Click on configure with then scan for wireless network.
- 2 – Select the network to connect to then type your WiFi password

Wireless Configuration

Refresh Reset WiFi Adapter **Configure WiFi** **Click on Configure WiFi**

Interface Information	Wireless Information
Interface Name : wlan0	Connected To :
Interface Status : Interface is down	AP Mac Address :
IP Address :	
Subnet Mask :	
Mac Address : e4:5f:01:70:e3:2f	
Interface Statistics	
Received Packets :	
Received Bytes :	
Transferred Packets :	
Transferred Bytes :	
WiFi Country : US	

Information provided by ifconfig and iwconfig

Wireless Configuration

WiFi Info

WiFi Regulatory Domain (Country Code) : US ▾

Scan for Networks (10 secs) Add Network Save (and connect)

Click to scan your for Wifi Networks

WiFi Info

WiFi Regulatory Domain (Country Code) : US ▾

Network 0 Delete

SSID :	dlink
PSK :	

Type your WiFi password then click on Save and connect

Scan for Networks (10 secs) Add Network Save (and connect)

Networks found :

Connect	SSID	Channel	Signal	Security
Select	DIRECT-EZDESKTOP-0B0ALQPmsJM	2.4GHz Ch6	-49 dBm	[WPA2-PSK-CCMP][WPS][ESS][P2
Select	dlink	2.4GHz Ch6	-53 dBm	[WPA-PSK-CCMP][ESS]
Select	DIRECT-32-HP 1200 Neverstop	2.4GHz Ch1	-57 dBm	[WPA2-PSK-CCMP][WPS][ESS][P2

Select you WiFi network

Once the “Save and connect” button is pressed, you can scroll up to the top of the screen, Click on “Power”, then “Reboot”.

After rebooting, your hotspot will now connect to the wireless network as well as your wired if connected.

The Wireless configuration block will show your LAN and WiFi connections

Wireless Configuration

Refresh Reset WiFi Adapter Configure WiFi

Interface Information	Wireless Information
Interface Name : wlan0	Connected To : Fg90b
Interface Status : Interface is up	AP Mac Address : 02:00:03:da:28:48
IP Address : 192.168.43.191	
Subnet Mask : 255.255.255.0	
Mac Address : b8:27:ab:8b:1e:a6	
Interface Statistics	
Received Packets : 5621	Transmit Power : 31 dBm
Received Bytes : 703732 (685.2 KiB)	Link Quality : 91 %
Transferred Packets : 7481	Channel Info : 2.4GHz Ch6 (2.437 GHz)
Transferred Bytes : 3467360 (3.3 MiB)	WiFi Country : JP

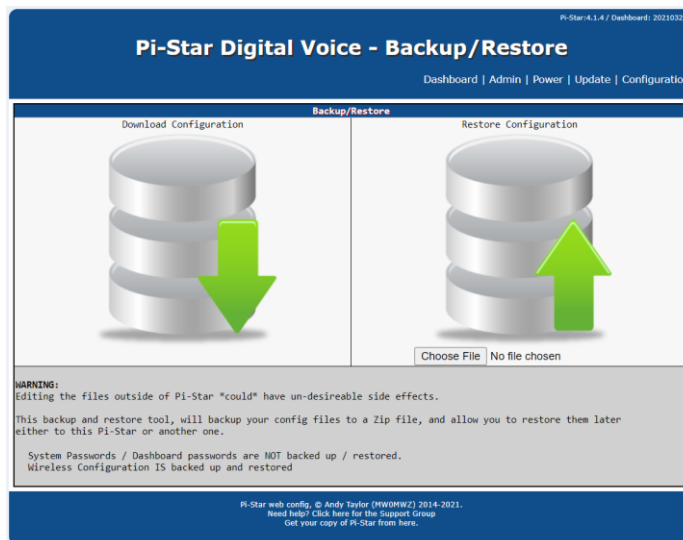
Information provided by ifconfig and iwconfig


Admin > Backup/Restore

STEP - 9

Once the unit is fully configured and tested, save the configuration using the backup and restore feature. Click on backup and name the file. You can use this file to restore your configuration at a later date if needed.

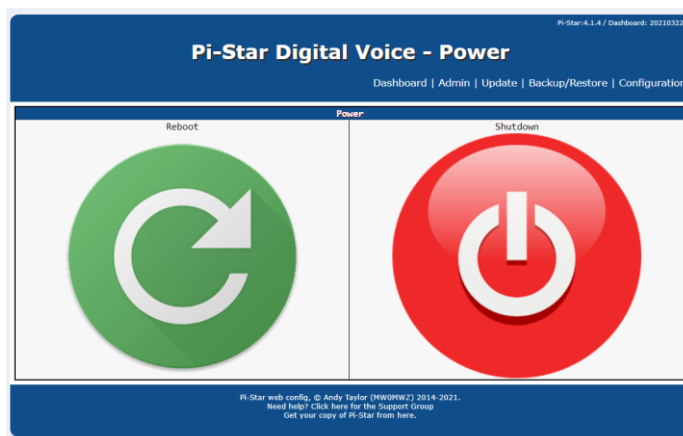
Click to backup 



 Choose a restore file then click to restore an old configuration that was previously saved

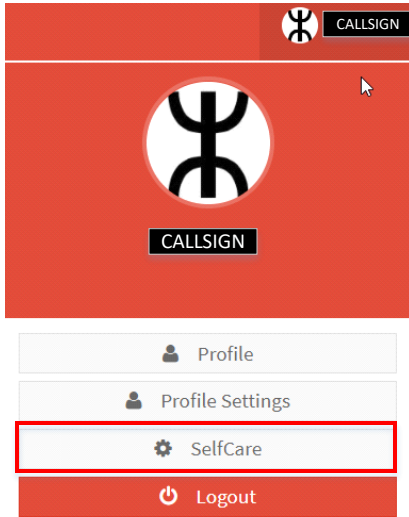
Admin > Power

Avoid disconnecting the power from the hotspot. Try to always use the "Reboot" button to reboot the unit or the "Shutdown" button to turn the unit OFF before unplugging the power. You can find these button by clicking on "Admin" then "Power"



Brandmeister > SelfCare

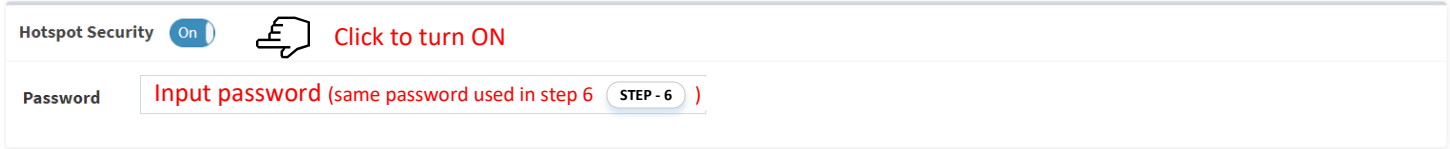
Login to the Brandmeister.network website and access the settings by clicking on the call sign as shown below, then click on the "SelfCare" button. The hotspot password entered in step 6 (STEP - 6) (DMR configuration) needs to match the password used in the Brandmeister hotspot security.



 Click to access the settings

 Click on selfCare to access the hotspot password

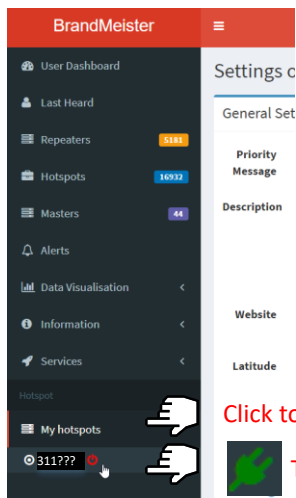
Once the SelfCare Screen is accessed, scroll down to the bottom of the screen and follow the steps below




 Click to turn ON

Click to save   

Check to make sure your hotspot is connected to Brandmeister.



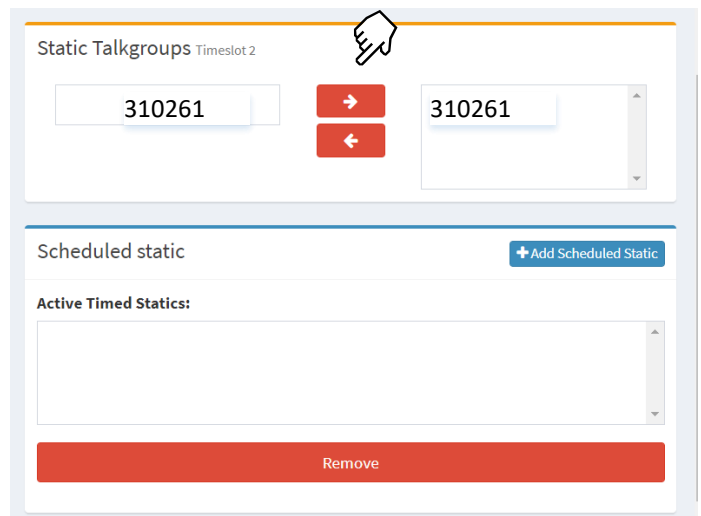
Once the password is saved, check under the "My Hotspots" to confirm that the hotspot status icon is shown with a green icon indicating that is is connected to Brandmeister.

 Click to expand and show the hotspot(s)

 This is shown when connected

Click on your hotspot to add static talk groups

Click to add static talkgroup



 Click to add static talkgroup

Other Resources

There are many other settings and features that can be configured on Pi-Star and Brandmeister. The Wikis for these systems are available online.

- To create a DMR ID (<https://www.radioid.net/register#!>)
- Obtain a copy of an FCC license (<https://wireless2.fcc.gov/UlsEntry/licManager/login.jsp>)
- Create a Brandmeister account (<https://Brandmeister.network/>)
- Find your a location coordinate (<https://www.latlong.net/>)

Creating a test channel in the radio

To test your hotspot, you will need to create a channel with the appropriate TX and RX frequencies, color code and time slot. Below is the configuration for the default configuration that the hotspot is set to.

TX: 434.0000Mhz
RX: 439.0000Mhz
Channel type: Digital
Transmit power: Low
Band width: 12.5khz
Talkgroup: 9990 (private call) or any talkgroup that you know works
Color code: 1
Time slot: 1 or 2

If your radio uses zones, then a zone will need to be created for this channel.

Notes

Software:

The Pi-Star software is based on Jonathan Naylor's (G4KLX) work and now supports the full G4KLX MMDVM suite, including the extra cross-mode gateways added on by Andy (CA6JAU) who is still supporting this project. For software support and help, please refer to <https://www.Pi-Star.uk/> and other online Pi-Star forums. This manual is not a Pi-Star user manual. These units are shipped preconfigured. This user manual only covers very basic configurations that are still needed for the user to input.

Antennas:

These hotspots produce a low RF power signal with an expected range of about 100 - 300ft. The stock antennas provided with the units will best perform on UHF at around 433Mhz. Higher gain antennas can be used to improve the range if needed.

Power usage:

The BMHSP13 is provided with a 3A power adapter. Using other adapters with less power can cause the unit not to boot up properly. The BMHSP0 needs about 2A and is provided with a USB cable only which can be used with most USB power adapters.

Operating temperature:

The BMHSP13 CPU typically runs at about 135°C, while the BMHSP10 CPU runs about 120°C. This difference in operating temperature is mainly due to CPU performance and clock. The BMHSP13 provides a much higher performance and therefore uses more power and generates more heat. Both units will run warmer if used in an area that is not properly vented or one that is sunny.

Quick start and warnings:

IMPORTANT:

This is a duplex hotspot capable of both timer slot 1 and time slot 2. Please do not load a simplex configuration to this unit, it will not work as simplex. The TX and RX frequencies need to have a minimum of a 5 MHz offset. This unit was loaded with our default configuration. The user only needs to update a few parameter to get it fully functional. This includes your call sign, DMR ID, BM security password and a few other parameters as shown in this manual. Please do not change other parameters as that could cause problems with your configuration. Once configured, please back up your configuration to save in case you need to reload it.

Powering up the unit

- Connect the ethernet cable to your network (if equipped).
- Connect the USB power adapter to power up the unit up (please use the supplied adapter / cable).
- Wait for the MMDVM logo to be displayed on the screen.

If connecting over WiFi

- Look for the "Pi-Star-setup" WiFi network and connect to it (no password is needed).
- Once connected to "Pi-Star-setup" WiFi, a web browser should open automatically on the Pi-Star dashboard.
- Click on configuration (the user name is "Pi-Star" and password is "raspberry" if you are asked to login).
- Once you are on the configuration screen, scroll down to the "Wireless Configuration" block.
- Click on configure WiFi than Scan for Networks.
- Select your WiFi network (2.4Ghz).
- Type your WiFi network password in the password field (please make sure you type the correct password!).
- Click on "Save and Connect".
- Wait 5 seconds to give the unit time to save your WiFi and its password.
- Scroll up to the top of the page and click on "Power" then click on "Reboot".
- Once the unit reboots, the MMDVM logo will display again. At this point, the "Pi-Star-setup" WiFi will not appear since the unit will now be connected to your own WiFi network. If "Pi-Star-setup" WiFi appears, then it means that the unit was not able to connect to your WiFi. Please check your WiFi password and try again.

The unit is now either connected to your network over WiFi or Ethernet

- Now that the unit is connected to your network, open a web browser and type "Pi-Star.local" in the address bar (not the google search bar!). This will display the dashboard again.
- If this does not work, you need to log into your network router and see what IP address was assigned to your hotspot. You can then input that IP address in your web browser's address bar to access the Pi-Star dashboard.
- You can now configure the unit with your call sign, BM password, frequencies, etc. (see the user manual for more details or look up the Pi-Star wiki or other resources online)
- Once the unit is fully configured, the DMR Mode and Network Status Icons on the main dashboard should be both green. You are now ready to configure your radio and access DMR!
- If the DMR Network status is yellow, then you need to correct your BrandMeister hotspot security password.

Modes Enabled	
D-Star	2Tn1
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

Most likely the wrong BM password was entered

Modes Enabled	
D-Star	2Tn1
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

You are connected!

Common mistakes - Do's and Don'ts

If you make a mistake that is not listed below, please send us a note and we will share it with others. Let's laugh about our mistake but let's share and learn from them also!



- The unit won't power up or keeps rebooting. This typically happens when using a low current USB cable or power source.
- I clicked on factory reset, the unit no longer works now. Yes, the unit will lose its default configuration and will not need to be reloaded with the Boomerang configuration again. Please don't factory reset and don't load configurations from other non-Boomerang hotspots.
- Waiting for the unit to do something after the MMDVM logo appears on the screen. Sorry, nothing will happen after this point. Don't waste your time waiting. You need to use a computer to connect and to configure the unit.
- Connecting to the USB port using a computer or another device thinking that you can configure it that way. The power USB is for power only. Your computer will not recognize the unit as a valid USB device. Please don't connect to the USB port and expect your web browser to be able to access the unit via USB. It is a web browser, not a USB browser!
- I can't find the "Pi-Star-setup" WiFi network. This is because you have probably already configured your unit with your WiFi network's password and it is now connected to your network, or your computer is not refreshing its WiFi list. Use another device like a tablet or a phone to look for "Pi-Star-setup" if needed.
- When connecting to the unit for the first time via the "Pi-Star-setup", please only configure its wireless connection back so that it can connect to your WiFi first. One step at a time! Get it connected to your network first. Don't mess it up before you even start!
- Wrong WiFi password was entered. This is a very frequent mistake. Please make sure you are entering the correct password. The unit will not be able to connect to your WiFi if you enter the wrong password.
- Wrong Brandmeister hotspot security password. This is another very common mistake. Please use one finger when typing passwords, that helps reduce typos.
- Picked an inactive Brandmeister master
- Can't find the "Pi-Star-setup" after the unit was configured with your WiFi password. The "Pi-Star-setup" WiFi will not be available if the unit is connected to your WiFi network.
- TX and RX frequencies must be different for Duplex hotspots. Duplex hotspots can't be used as simplex.
- Hotspot TX frequency must be set to the RX frequency on the radio, same with the RX. This is a common mistake also.
- Selected simplex mode in a duplex hotspot. This will automatically change other parameters which will jack-up the unit. It will need to be reset with our default configuration to correct this issue. Please don't buy a Ferrari to go off-roading! If you get a duplex hotspot, please use it as duplex, it will provide you with more features and better performance than a simplex! But, it can't work as a simplex!
- Changed parameters that are not marked to be changed in the user's manual. This unit has many parameters and many opportunities to screw things up! This could be a messy problem and please don't call us to help you untangle a huge mess. Just reload your saved configuration.
- **IMPORTANT:** Save your configuration when you get the unit working. This will allow you to recover the unit if you later mess it up!
- I can't log into the unit. Please, please, please, don't change the default password and then call us to help you log into the unit! We will not be able to help with this issue. You will need to order a new SD card to resolve this issue.
- When picking the channel frequencies, please stay inside the band by at least 1MHz.
- One last mistake some make is that they just don't want to read the manual!

Note:

- Hundreds of these hotspots are in the field, less than 1% had an actual defect. Please read the manual and follow it step by step and don't change anything that is not indicated in the manual. Once you get the unit working, save your configuration. You can now try whatever you want and can always go back to your original configuration if needed. Have fun, don't stop learning, laugh at your mistakes and share them with others so that they learn from them. 73!