

# TYT DMR MD-9600 & MD-UV380

Prepared by W8BR  
June 2019

## Code Plug Data Structure



W8BR – TYT MD-UV380  
And TYT MD-9600 Mobile

### Suggested steps, in order.

1. Basic Settings
2. Create Contacts
3. Create Receive Groups
4. Create Channels
5. Create Zones / Scan Lists

#### Digital Contacts List

(Talk Groups & Individual IDs)

Contacts Lists contain:

- Talk Group Name
- Talk Group Number
- Call Type (Group Call)
- Call ID #
- (No) Call Receive Tone

#### Zone Information

(Grouping of Channels by Town, County, Simplex, Analog, Digital, etc.)

- Channel A
- Channel B

#### Channel Information

- Channel Name
- Frequenc(ies)
- Contact Name
- Group List
- Color Code
- Repeater Time Slot
- Etc.

#### Digital Receive Groups

(Grouping of Digital Contacts)

#### Scan List

(Group Available Channels)

**\* A separate Channel needs to be created for every Talk Group desired. For example: One repeater with multiple Talk Groups or one Hotspot will require separate Channels for each Talk Group desired.**

# Pi-Star Hotspot Using Multi-Mode Digital Voice Modem (MMDVM) and Raspberry Pi 3 B+



W8BR – Homebrew Hotspot

# Pi-Star Hotspot

Setup is facilitated with:

- HDMI Display
- USB Keyboard
- Internet LAN connection or Wifi



W8BR – Homebrew Hotspot

# Dashboard Screen

Hostname: pi-star

Pi-Star: 4.0.0-RC3 / Dashboard: 20190526

## Pi-Star Digital Voice Dashboard for W8BR

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   | HS_Hat:v1.4.7  |
| TCXO | 14.7456 MHz    |

DMR Repeater

|                     |          |
|---------------------|----------|
| DMR ID              | 3138319  |
| DMR CC              | 1        |
| TS1                 | disabled |
| TS2                 | enabled  |
| TG 313938/No Ref    |          |
| DMR Master          |          |
| BM United States .. |          |

Gateway Activity

| Time (EDT)       | Mode       | Callsign | Target    | Src | Dur (s) | Loss | BER  |
|------------------|------------|----------|-----------|-----|---------|------|------|
| 13:37:43 Jun 5th | DMR Slot 2 | AE5TC    | TG 313938 | Net | 0.1     | 0%   | 0.0% |
| 13:30:26 Jun 5th | DMR Slot 2 | KD8DVR   | TG 3139   | Net | 3.4     | 0%   | 0.0% |
| 13:29:35 Jun 5th | DMR Slot 2 | W8BR     | TG 3139   | RF  | 36.4    | 0%   | 0.3% |
| 13:27:49 Jun 5th | DMR Slot 2 | W8KWH    | TG 3139   | Net | 98.8    | 0%   | 0.0% |
| 13:23:36 Jun 5th | DMR Slot 2 | W8PTB    | TG 3139   | Net | 9.5     | 0%   | 0.0% |
| 13:09:43 Jun 5th | DMR Slot 2 | WJ8B     | TG 3139   | Net | 2.7     | 40%  | 0.9% |
| 13:03:03 Jun 5th | DMR Slot 2 | WD8BAH   | TG 3139   | Net | 3.0     | 8%   | 0.0% |
| 13:01:23 Jun 5th | DMR Slot 2 | N8EWQ    | TG 3139   | Net | 2.6     | 0%   | 0.0% |
| 13:00:31 Jun 5th | DMR Slot 2 | NA8W     | TG 3139   | Net | 53.8    | 6%   | 0.0% |
| 12:01:40 Jun 5th | DMR Slot 2 | KF8CE    | TG 3139   | Net | 0.5     | 0%   | 0.0% |

Local RF Activity

| Time (EDT)       | Mode       | Callsign | Target  | Src | Dur (s) | BER  | RSSI    |
|------------------|------------|----------|---------|-----|---------|------|---------|
| 13:29:35 Jun 5th | DMR Slot 2 | W8BR     | TG 3139 | RF  | 36.4    | 0.3% | S9+46dB |

Pi-Star / Pi-Star Dashboard, © Andy Taylor (MW0MWZ) 2014-2019.  
ircDDBGateway Dashboard by Hans-J. Barthen (DL5DI),  
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.



# Admin Screen

Hostname: pi-star

Pi-Star: 4.0.0-RC3 / Dashboard: 20190526

## Pi-Star Digital Voice Dashboard for W8BR

[Dashboard](#) | [Admin](#) | [Live Logs](#) | [Power](#) | [Update](#) | [Configuration](#)

### Gateway Hardware Information

| Hostname       | Kernel        | Platform                       | CPU Load           | CPU Temp         |
|----------------|---------------|--------------------------------|--------------------|------------------|
| pi-star        | 4.14.79-v7+   | Pi 3 Model B+ (1GB) - Sony, UK | 0.03 / 0.22 / 0.27 | 51.5°C / 124.7°F |
| Service Status |               |                                |                    |                  |
| MMDVMHost      | DMRGateway    | YSFGateway                     | YSFPParrot         | P25Gateway       |
| DStarRepeater  | ircDDBGateway | TimeServer                     | PiStar-Watchdog    | PiStar-Remote    |
|                |               |                                |                    | PiStar-Keeper    |

### Modes Enabled

|           |        |
|-----------|--------|
| D-Star    | DMR    |
| YSF       | P25    |
| YSF XMode | NXDN   |
| DMR XMode | POCSAG |

### Network Status

|            |          |
|------------|----------|
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| YSF2DMR    | NXDN Net |
| YSF2NXDN   | YSF2P25  |
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### Radio Info

|      |                |
|------|----------------|
| Trx  | Listening      |
| Tx   | 433.300000 MHz |
| Rx   | 433.300000 MHz |
| PW   | HS_Hat:v1.4.7  |
| TCXO | 14.7456 MHz    |

### DMR Repeater

|                     |          |
|---------------------|----------|
| DMR ID              | 3138319  |
| DMR CC              | 1        |
| TS1                 | disabled |
| TS2                 | enabled  |
| TG 313938/No Ref    |          |
| DMR Master          |          |
| BM United States .. |          |

### Active BrandMeister Connections

| BrandMeister Master   | Default Ref | Timeout(s) | Active Ref | Static TGs   | Dynamic TGs |
|-----------------------|-------------|------------|------------|--|-------------|
| BM United States 3108 | Not Set     | Not Set    | None       | TG3139 TG31399<br>TG31685<br>TG310323<br>TG313938<br>TG3138319 | TG3139      |

### Gateway Activity

| Time (EDT)       | Mode       | Callsign | Target    | Src | Dur(s) | Loss | BER  |
|------------------|------------|----------|-----------|-----|--------|------|------|
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### Local RF Activity

| Time (EDT)       | Mode       | Callsign | Target  | Src | Dur(s) | BER  | RSSI    |
|------------------|------------|----------|---------|-----|--------|------|---------|
| 13:29:35 Jun 5th | DMR Slot 2 | W8BR     | TG 3139 | RF  | 36.4   | 0.3% | S9+46dB |

Pi-Star / Pi-Star Dashboard, © Andy Taylor (MW0MWZ) 2014-2019.  
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## Top Of Screen

Pi-Star: 4.0.0-RC3 / Dashboard: 20190526

### Pi-Star Digital Voice - Configuration

Dashboard | Admin | Expert | Power | Update | Backup/Restore | Factory Reset

#### Gateway Hardware Information

| Hostname | Kernel      | Platform                       | CPU Load         | CPU Temp         |
|----------|-------------|--------------------------------|------------------|------------------|
| pi-star  | 4.14.79-v7+ | Pi 3 Model B+ (1GB) - Sony, UK | 0.17 / 0.3 / 0.3 | 51.5°C / 124.7°F |

#### Control Software

| Setting              | Value   |
|----------------------|---|
| Controller Software: | <input type="radio"/> DStarRepeater <input checked="" type="radio"/> MMDVMHost (DV-Mega Minimum Firmware 3.07 Required) |
| Controller Mode:     | <input checked="" type="radio"/> Simplex Mode <input type="radio"/> Duplex Repeater (or Half-Duplex on Hotspots)        |

Apply Changes

#### MMDVMHost Configuration

| Setting             | Value   |
|---------------------|---|
| DMR Mode:           | <input checked="" type="radio"/> RF Hangtime: 20 Net Hangtime: 20 |
| D-Star Mode:        | <input type="radio"/> RF Hangtime: 20 Net Hangtime: 20            |
| YSF Mode:           | <input type="radio"/> RF Hangtime: 20 Net Hangtime: 20            |
| P25 Mode:           | <input type="radio"/> RF Hangtime: 20 Net Hangtime: 20            |
| NXDN Mode:          | <input type="radio"/> RF Hangtime: 20 Net Hangtime: 20            |
| YSF2DMR:            | <input type="radio"/>   |
| YSF2NXDN:           | <input type="radio"/>   |
| YSF2P25:            | <input type="radio"/>   |
| DMR2YSF:            | <input type="radio"/> Uses 7 prefix on DMRGateway                 |
| DMR2NXDN:           | <input type="radio"/> Uses 7 prefix on DMRGateway                 |
| POCSAG:             | <input type="radio"/> POCSAG Paging Features                      |
| MMDVM Display Type: | OLED Port: /dev/ttyUSB0 Nextion Layout: G4KLX                     |

Apply Changes

#### General Configuration

| Setting             | Value   |
|---------------------|---|
| Hostname:           | pi-star Do not add suffixes such as .local  |
| Node Callsign:      | W8BR  |
| CCS7/DMR ID:        | 3138319   |
| Radio Frequency:    | 433.300.000 MHz   |
| Latitude:           | 40.117503 degrees (positive value for North, negative for South)                              |
| Longitude:          | -82.18444 degrees (positive value for East, negative for West)                                |
| Town:               | Frazeyburg EN80vc   |
| Country:            | United States   |
| URL:                | http://www.qrz.com/db/W8BR <input checked="" type="radio"/> Auto <input type="radio"/> Manual |
| Radio/Modem Type:   | STM32-DVM / MMDVM_HS - Raspberry Pi Hat (GPIO)  |
| Node Type:          | <input checked="" type="radio"/> Private <input type="radio"/> Public                         |
| APRS Host:          | euro.aprs2.net  |
| System Time Zone:   | America/New_York  |
| Dashboard Language: | english_uk  |

Apply Changes

## Configuration Screen

#### DMR Configuration

| Setting               | Value  |
|-----------------------|--|
| DMR Master:           | BM_United_States_3108  |
| Hotspot Security:     | *****  |
| BrandMeister Network: | Repeater Information   Edit Repeater (BrandMeister Selfcare) |
| DMR ESSID:            | 3138319 None   |
| DMR Colour Code:      | 1  |
| DMR EmbeddedLCOnly:   | <input type="checkbox"/>                                     |
| DMR DumpTADData:      | <input checked="" type="checkbox"/>                          |

Apply Changes

#### 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

#### Wireless Configuration

Refresh Reset WiFi Adapter Configure WiFi

##### Wireless Information and Statistics

| Interface Information   | Wireless Information  |
|---|---|
| Interface Name : wlan0<br>Interface Status : <b>Interface is up</b><br>IP Address : 192.168.0.8<br>Subnet Mask : 255.255.255.0<br>Mac Address : b8:27:eb:11:45:a0 | Connected To : CenturyLink0370<br>AP Mac Address : 54:83:3a:7e:42:36<br><br>Bitrate : 65.0 MBit/s<br>Signal Level : -39 dBm |
| Interface Statistics  | Transmit Power : 31 dBm<br>Link Quality : 70/70   |
| Received Packets : 9064<br>Received Bytes : 3319005 (3.1 MiB)<br>Transferred Packets : 271<br>Transferred Bytes : 42794 (41.7 KiB)                                |   |

Information provided by ifconfig and iwconfig

#### Remote Access Password

| User Name  | Password                                 |
|--|--|
| pi-star  | Password: Confirm Password: Set Password |
| WARNING: This changes the password for this admin page AND the "pi-star" SSH account |  |

Pi-Star web config, © Andy Taylor (MW0MWZ) 2014-2019.  
Need help? Click here for the Support Group  
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Of  
Screen