This document is an outline which can be used to assist in setting up the ASL3 Allstar image on SHARI Allstar devices. Some of the advanced setups like activating the COS LED, installing Supermon and Allmon3 are accomplished using the commands typed into the Terminal. To assist with this, the required entries on the terminal line are contained in this document as **bold text**. This text can be copied (highlight/right mouse click) and then pasted to the terminal line (left click to change the focus and then a right click to paste). Note: If Microsoft Edge browser will not let you right click to paste. Use <shift>+<insert> instead

This outline is for ASL3, using the Trixie operating system

To Begin

- Get detailed help from Allstarlink if required (https://allstarlink.github.io/user-guide/pi-detailed/)
- Install Raspberry Pi Imager version 2.06 or greater on your computer (Raspberry Pi Imager)
- Get our ASL3 suggested settings documents: https://kits4hams.com/wp-content/uploads/2025/08/Kits-4-Hams-suggested-SHARI-settings-for-ASL3-version-19-and-above_v1.00.pdf

Write the image to microSD card using Raspberry Pi Imager:

- Plug microSD card into computer using USB adapter or uSD to SD adapter thingy
- Open Raspberry Pi Imager
- Select **APP OPTIONS** in the box in lower left corner
- Click on EDIT of the **Content Registry**
- Select Use custom URL
- Enter **https://rpi.allstarlink.org/latest.json** into the “example” box
- Click on Apply & Restart
- Select your device (Pi5, Pi4, Pi3, Pizero 2W) and click on NEXT
- Choose Operating system (AllstarLink .....) and click on NEXT
- Select your storage device and click on NEXT
- Continue by answering the Customization questions

- Choose Hostname: Recommend *<your call> - <your node number>* but it is up to you. Just no spaces, use hyphen or underscore
- Localization:Capital City means for the country. For USA it is Washington, D.C. (United States)
- Choose username; Record and save your Hostname, username and password, lest you forget them
- Choose WiFi; Configure wireless LAN if desired
- SSH authentication: Enable if desired
- Click on WRITE

Configure Node:

- Remove microSD card and insert in Pi
- Plug in ethernet cable if not using WiFi
- Apply power to the Pi
- Wait for the green COMMS LED on the SHARI board to begin blinking (not the green LED on the Pi)

Log in:

(You use your browser (Edge, Chrome, etc) to connect to your node)

- Open a new tab in browser
- Enter your Hostname followed by dot local (i.e. <hostname>.local) into address bar
- Click on Advanced and the Proceed to.....(unsafe)
- The cockpit opens – click on Web Admin Portal
- Reports as unsafe – proceed anyway by clicking on Advanced
- Enter User name and Password
- Click on Turn on administrative access when the dashboard opens.
- Click on Overview on the left side. If Useage for the CPU is showing more that 1% activity, sit back and wait until it is less than 1%. It is updating. If updates are available, the node may automatically "reboot" after the initial boot, initial package updates, and initial configuration updates so you will see a “Reconnect” message when it is done with this initialization
- Click on Reconnect and Log in again if necessary

Updates:

If this is a new install there should be no updates. To check, click on Software updates to see and install if necessary
Note: Click on Terminal and enter **sudo reboot** after any updates (unless you switched Reboot to on)

Set up your node:

- Go to Terminal (menu column on the left)
- Enter **sudo asl-menu** (Note: First time using sudo requires you to enter your log-in password)
  Use the keyboard up/down arrow keys to move between menu choices
  Use the TAB key to move between the menu and choices at the bottom
- 1 Node Settings <enter> →1 Allstar Node Setup Menu <enter>
- Enter your node number from Allstarlink.org
- Enter node password (Note: This is from Allstarlink.org Portal>Node Settings, not the password you use for ASL3)
- Default/manual configuration (show all settings) <enter>

Note: You are given a choice of Default/manual configuration, Common Configurations and Device Configurations. This outline is using Default Configurations so that you become more aware of the settings involved in the setup. Feel free to choose the other two selections at any time.

- 3 Node callsign <enter> → Enter your callsign
- 4 Radio interface → SimpleUSB
- 5 Duplex type <enter> → Choose: 1 Half-duplex node (Hotspot) with telemetry tones
  Note: Up/Down arrow keys move red box. Space bar confirms choice (moves the asterisk)
- 6 Post node status set to Yes
- 8 Interface Tune CLI → Change/set the following selections after restarting Asterisk
  - Restart Asterisk now
  - 2) RX Voice Level = 650 Note: This requires several <enters> to accomplish)

- 3) TX Channel A=600
- G) Toggle PL Filter=disable
- J) CTCSS From='no'
- W) Write
- 0) Exit Menu

- Do a Tab, tab to get to <back> and press <enter>
- **4** Update Asterisk IAX port if it is not 4569
  - (If this is your first node use 4569. Go up, i.e. 4570 or down 4568 etc for additional node numbers)
- **3** Update Asterisk AMI Password (you can change this or use the default)] Note: copy it and save for installing Supermon later in this outline
- **2** Restart Asterisk if 3 or 4 changed
- Do a Tab, tab to get to <back> and press <enter>
- Go to Terminal using Tab, tab <Exit Main Menu>,<Yes>

Program the SA818:

- Enter **sudo sa818-menu**
- Enter required data. Refer to Kits 4 Hams Suggested Settings for ASL3 document for settings

Enable COS LED:

In this section we make changes to **rpt.conf** to enable the yellow COS LED so that it lights up whenever the SA818S is receiving an RF signal. We also add a line which allows the user to update Supermon (Installed later in this outline) by typing ***SMUPDATE** in the Supermon Input Box and left clicking on the DTMF button.

Go to Terminal

- Enter **sudo nano -l /etc/asterisk/rpt.conf** (You are now using the Nano editor. Use arrow keys – not mouse to navigate)
- Navigate down to find the stanza labeled [functions](functions-main) Note: This should be around line 503
- Add line **SMUPDATE=cmd,/usr/local/sbin/supermonASL3_latest_update** just below the [functions](functions-main) stanza
- Navigate further down to find the stanza labeled [evemts](events-main)
- Add two lines below line starting with [events](events-main) Note: This should be around line 687
- Type them in or use the mouse and copy/paste to add them
- **cop,62,GPIO4:1 = c|t|RPT_RXKEYED**
- **cop,62,GPIO4:0 = c|f|RPT_RXKEYED**
- To exit the editor use <ctrl>-X (i.e. Ctrl then X keys pressed at the same time), then "Y", then <enter> to exit Nano editor
- Enter **sudo astres.sh** to restart asterisk

Verify/Adjust RX Voice Level:

- Set up a radio to the frequency and subaudible tone you just programmed into the SA818
- Key up and verify the yellow COS LED comes on.
- Unkey and verify the node transmits a courtesy tone and the red PTT LED is on
- Key up and connect to the Parrot node (55553) by dialing DTMF sequence *355553 and unkey
    - After connection message key up and ID with your call and a short voice message. Unkey and listen for the comment on level followed by a parrot of your voice message. If the level is not correct, change the distance of your mouth to the microphone on the radio, change the mic gain on your radio or go to 8 Interface Tune CLI and change 2) RX Voice Level = 650 to a different value. You can just keep adjusting the level from 650 until you have it correct. Dial *10 to disconnect from the parrot node

WiFi:

Set up the correct country code for WiFi (Failure to do this will render WiFi inoperable)

- Enter **sudo raspi-config**
- Choose *5 Localisation Options*
- Choose *L4 WLAN Country*
- Select the country in which the Pi is to be used (US for USA)
- <OK> then <Finish> to return to Terminal

If you want WiFi and did not set it up in the data entered into Raspberry Pi Imager

- Go to WiFi manager
- Scan for WiFI networks (if necessary)
- Enter SSID and Passphrase of desired WiFi connection(s)
- Return to terminal

Install Supermon:

From the Terminal (Note: A more detailed version is available at https://tinyurl.com/Supermon-NEW)

- **cd /usr/local/sbin**
- **sudo wget "http://2577.nodes.allstarlink.org:43856/supermonASL_fresh_install" -O supermonASL_fresh_install**
- **sudo chmod +x supermonASL_fresh_install**
- **hash**
  sudo supermonASL_fresh_install
  Note: This take a minute or more to execute. Manually scroll the terminal if auto-scrolling stops
- **sudo wget "http://2577.nodes.allstarlink.org:43856/supermonASL3_latest_update" -O supermonASL3_latest_update**
- **sudo chmod +x supermonASL3_latest_update**
- **hash**
- **sudo supermonASL3_latest_update**

Edit the allmon.ini file using the Nano editor

- **cd /var/www/html/supermon**
- **sudo nano allmon.ini**
  - Change nodes=12345,12346 to nodes=<your node number>
  - Change [12345] stanza to <your node number>
  - Change passwd=secret to passwwd=<the AMI password you were told to copy and save earlier in the outline>

- Comment out (start each line with a semicolon ';') the [12346] stanza heading and each line in the stanza
  Note: This may already be done with the latest Supermon version
- In the [LsNodes] stanza change .....node=12345 to node=<your node number>
- Exit and save with Ctrl>+X, then Y (Yes) then <enter>

Setup the User and Password for you to log into Supermon

- **sudo rm .htpasswd**
- **sudo htpasswd -cB .htpasswd admin (**if a different user name than admin is desired change it here)
  Hint: You will be asked to enter the password twice, typing of the password does not show on the screen

Add a line into your root user crontab, this gets the required AllStar database (once a day):

- **cd /**
- **sudo crontab -e**
- **0 3 * * * /usr/bin/php /var/www/html/supermon/astdb.php cron**

Install Allmon3:

- **cd /**
- **sudo allmon3-passwd --delete allmon3** (error message is OK)
- **sudo allmon3-passwd admin (**if a different user name than admin is desired change it here)
- **sudo reboot**
- Wait for the blinking green COMMS LED on SHARI then Reconnect

Verify Allmon3:

- open new tab in browser
- URL = <host name>.local/allmon3
- verify Allmon3 login works

Finish Supermon Setup:

- open new tab in browser
- <host name>.local/supermon
- click on Nodes, then click on your node number to Activate the node number (must do this to log in)
- click on Login then login using Tab key to navigate - not the mouse
- Click on “Configuration Editor” button and select global.inc to edit. You can change anything in quotes.
- Recommend:

  $CALL = "Your Callsign";
  $NAME = "Your Name";
  $LOCATION = "Howell, MI";
  $TITLE2 = "12345 Cloud Server"; (we recommend a description of your node. i.e. SHARI PiHatU NeoPi5)
  $TITLE3 = "AllStarLink/IRLP/EchoLink/Digital - Bridging Control Center"; (we recommend “Node <your node number>
  $BACKGROUND = "background.jpg"; (we recommend deleting background.jpg so you have two quotes i.e. “”

$BACKGROUND_COLOR = "green";
$SMSERVERNAME = "12345 Cloud"; (we recommend Supermon <your node number>
$LOCALZIP = "48843"; (your zip code to get your local weather)
$DVM_URL_NAME = "Kits 4 Hams";
$DVM_URL = "http://kits4hams.com"; (also delete the "//" at the beginning)

- Click on "Write your Edits" box at bottom to save your edits
- Click on Return to Index
- Click on Close Window
- Refresh your browser window

Backup:

- **sudo asl-menu**
- B Backup and restore Menu
- 1 Create node backup

Shutdown

- Back to Overview
- Shutdown (top right corner) or **sudo shutdown -h now** at the terminal