



BB-Config

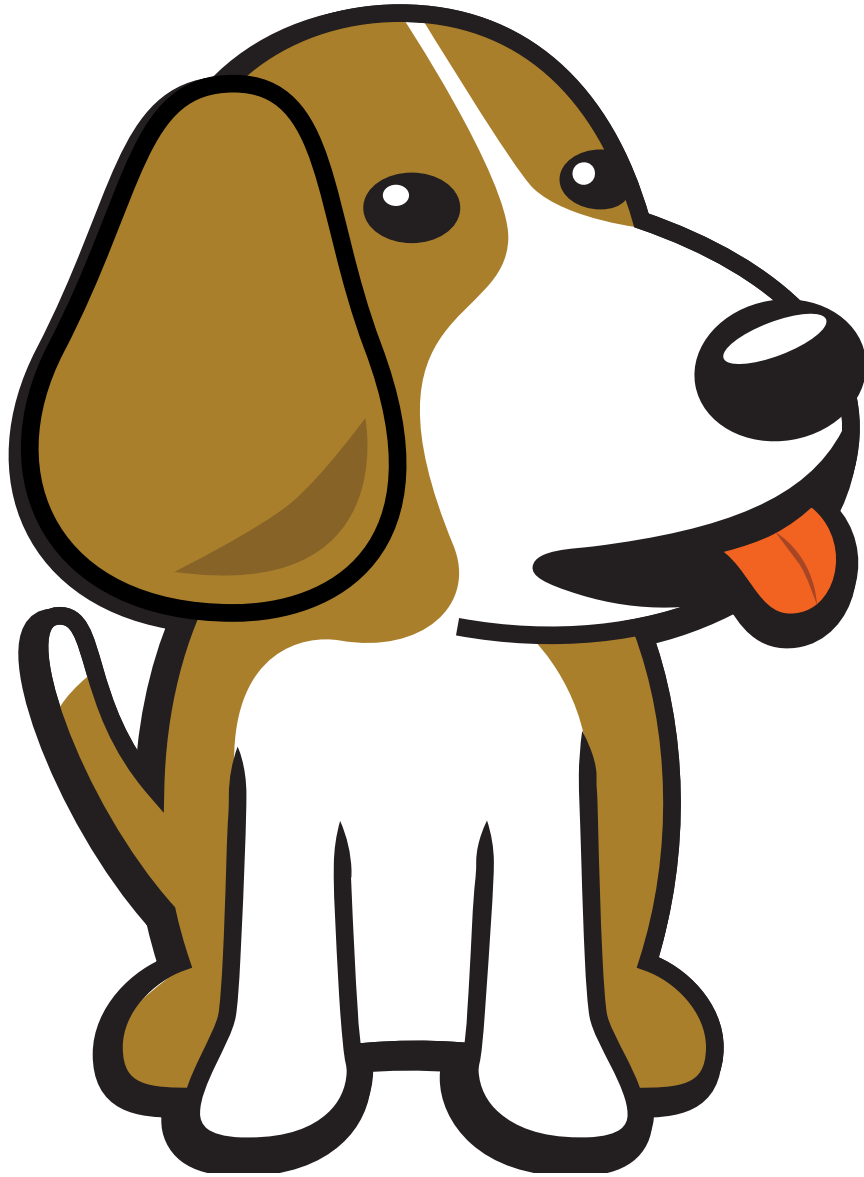


Table of contents

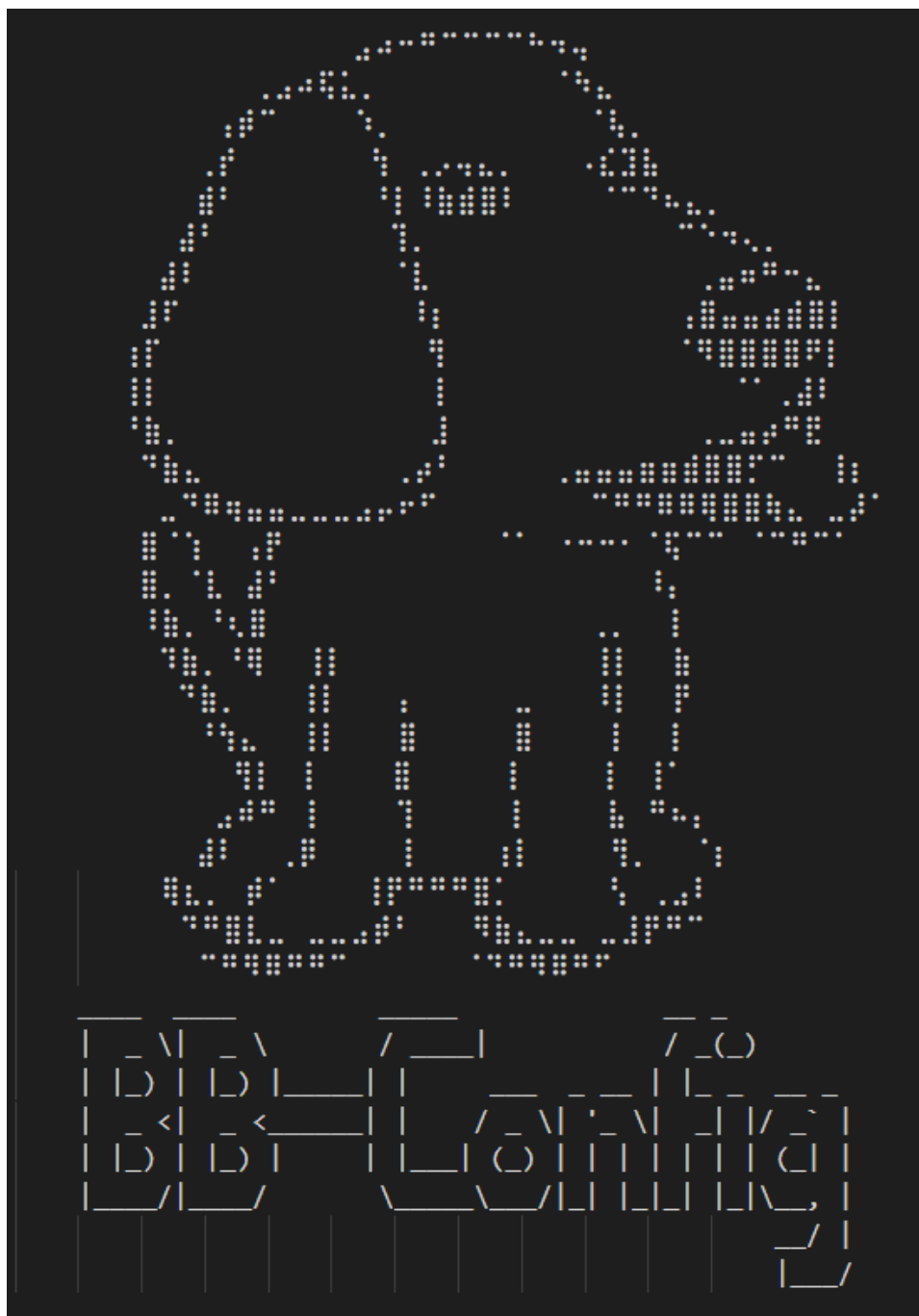
1 BB-Config Detail	1
1.1 What is BB-Config	2
2 Build from Source	5
2.1 Dependencies	5
2.2 Build	5
2.3 Install	5
3 Features	7
3.1 BB-Config v1.x	7
3.1.1 PRU Enable/Disable	7
3.1.2 GPIO	7
3.1.3 EMMC and MicroSD Stats	8
3.1.4 LEDs	9
3.1.5 Password	9
3.1.6 SSH	10
3.1.7 WiFi	10
3.1.8 Internet Sharing and Client Config	11
3.1.9 About	12
3.2 BB-Config v2.x	12
3.2.1 ADC (Graph)	12
3.2.2 DAC (PWM)	13
3.2.3 uEnv	13
3.2.4 services	14
3.2.5 PINMUX	14
3.2.6 Overlay (dts)	16
3.2.7 WiFi (D-Bus)	16
4 Version	19
4.1 GSOC@21 BB-Config v1.x	19
4.2 GSOC@22 BB-Config v2.x	19

Chapter 1

BB-Config Detail

Configure your beagle devices easily.

[Github](#)



1.1 What is BB-Config


BB-Config is software that makes the most common low-level configuration changes of beagle devices easily and provides a terminal UI.

BB-Config is using [FTXUI](#) (C++ Functional Terminal User Interface) which provides a simple and elegant looking UI.

```
↑ bb-config [Exit] About bb-config
```

System	
PRU enable/disable	
GPIO	Application bb-config
DAC	Description bb-config is a tool-set, that aims to provide the functionality to make the most common low-level configuration changes in beagle devices easily
EMMC and MicroSD stats	Website https://github.com/SAtacker/bb-config
LEDs	Commit https://github.com/SAtacker/bb-config/commit/6d2332c32c5ca0e4fb51a
uEnv	Version 85
Password	
SSH	
PinMux	
Services	
> ADC	
Network	
WiFi	
> Internet Sharing and Client Config	
Info	
> About	

View Logo



Chapter 2

Build from Source

2.1 Dependencies

- g++
- cmake
- glib-2.0
- libnm

2.2 Build

```
git clone https://git.beagleboard.org/gsoc/bb-config
cd bb-config
mkdir build
cd build
cmake ..
make -j$(nproc)
```

2.3 Install

```
sudo make install
```

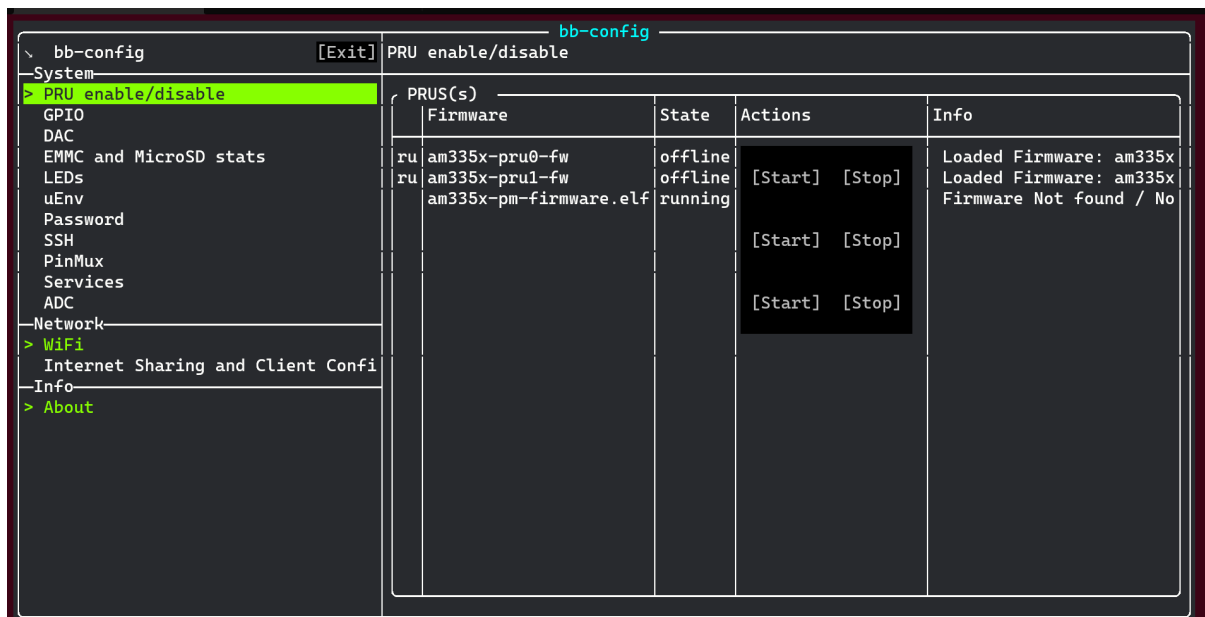

Chapter 3

Features

3.1 BB-Config v1.x

3.1.1 PRU Enable/Disable

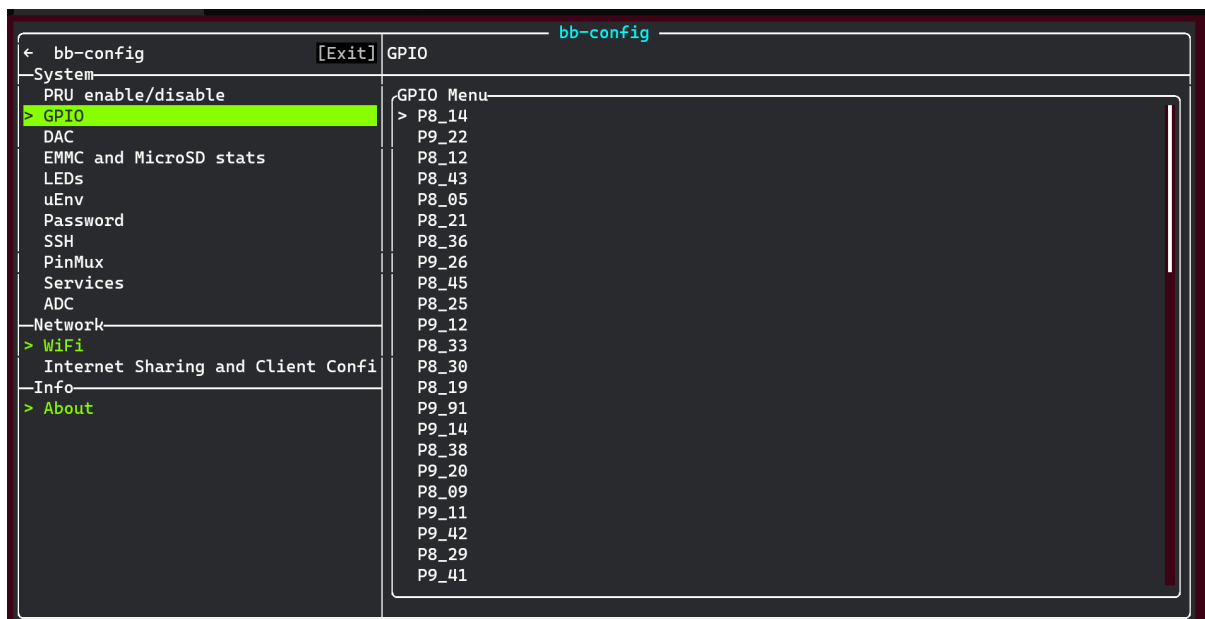
- Enable/Disable PRU



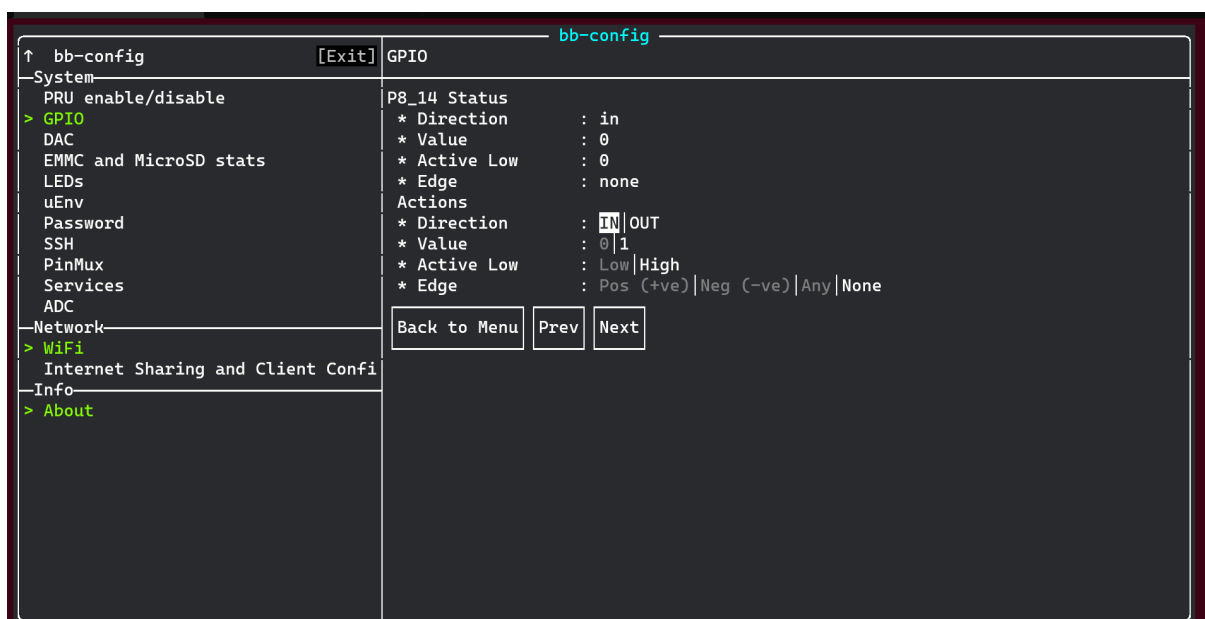
3.1.2 GPIO

- Turn On/Off gpio

GPIO Menu

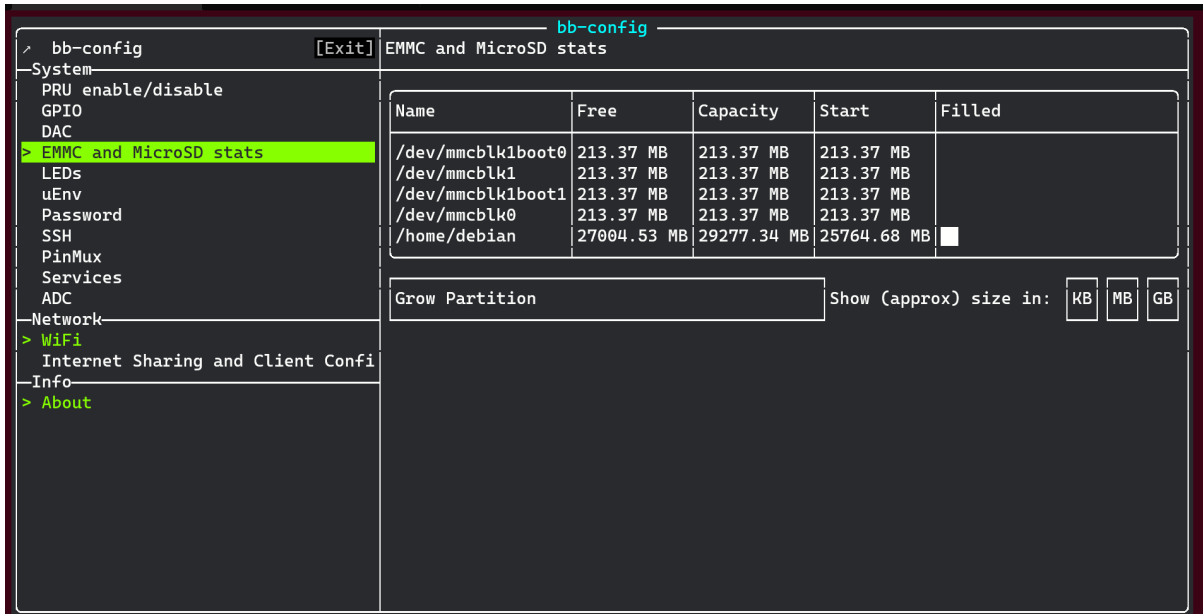


GPIO Setting



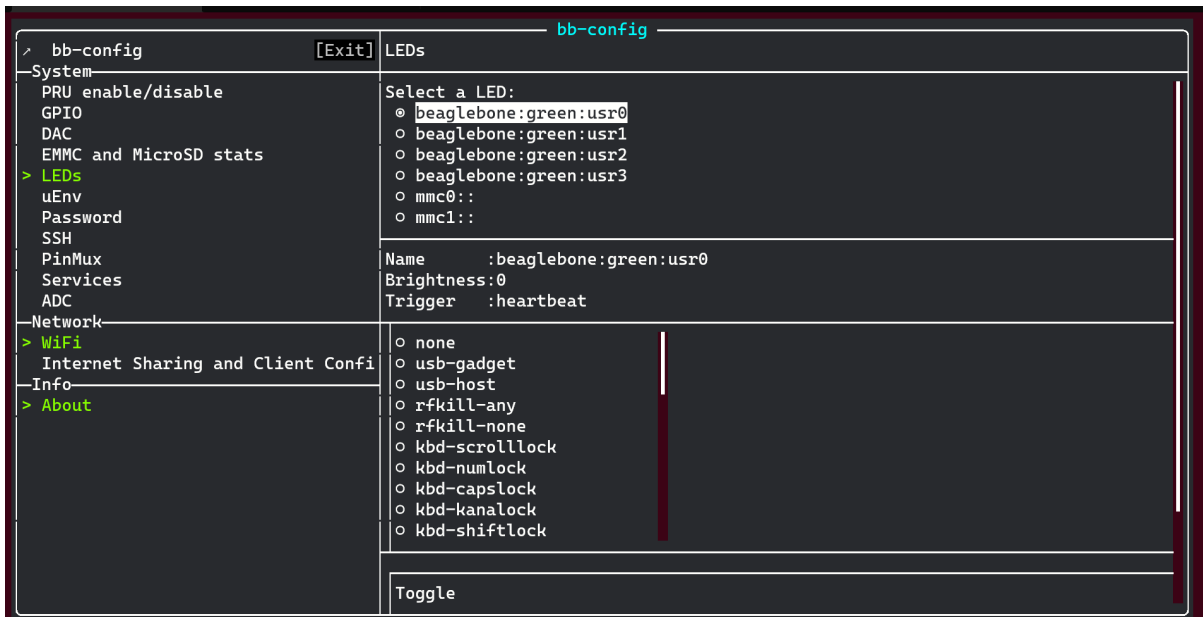
3.1.3 EMMC and MicroSD Stats

- Storage stats & grow partition



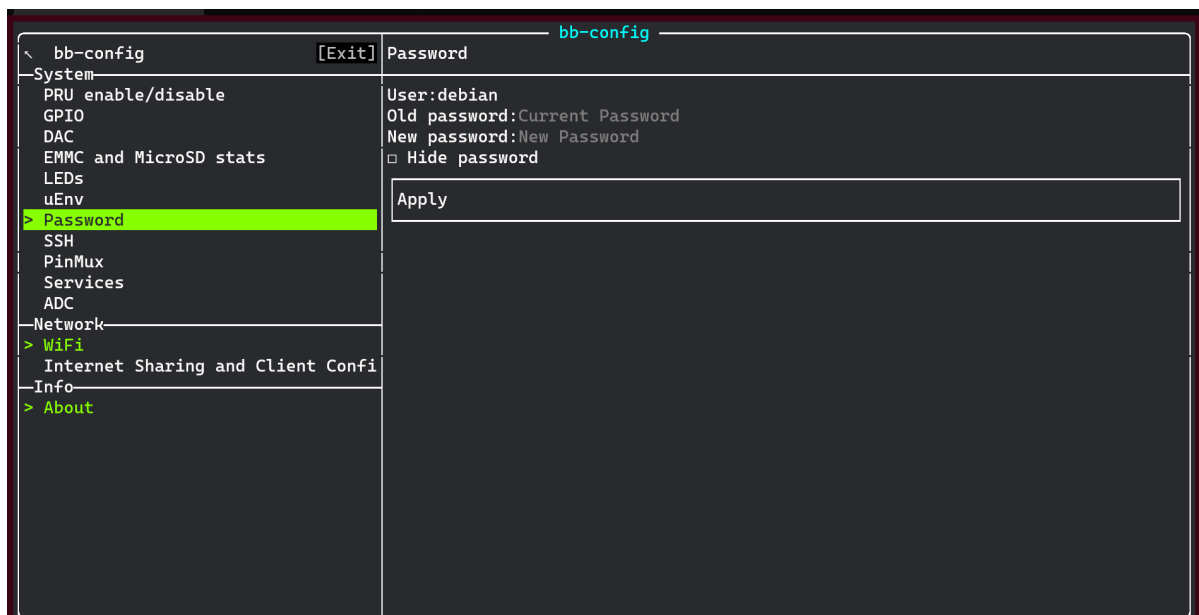
3.1.4 LEDs

- Config board build in LEDs



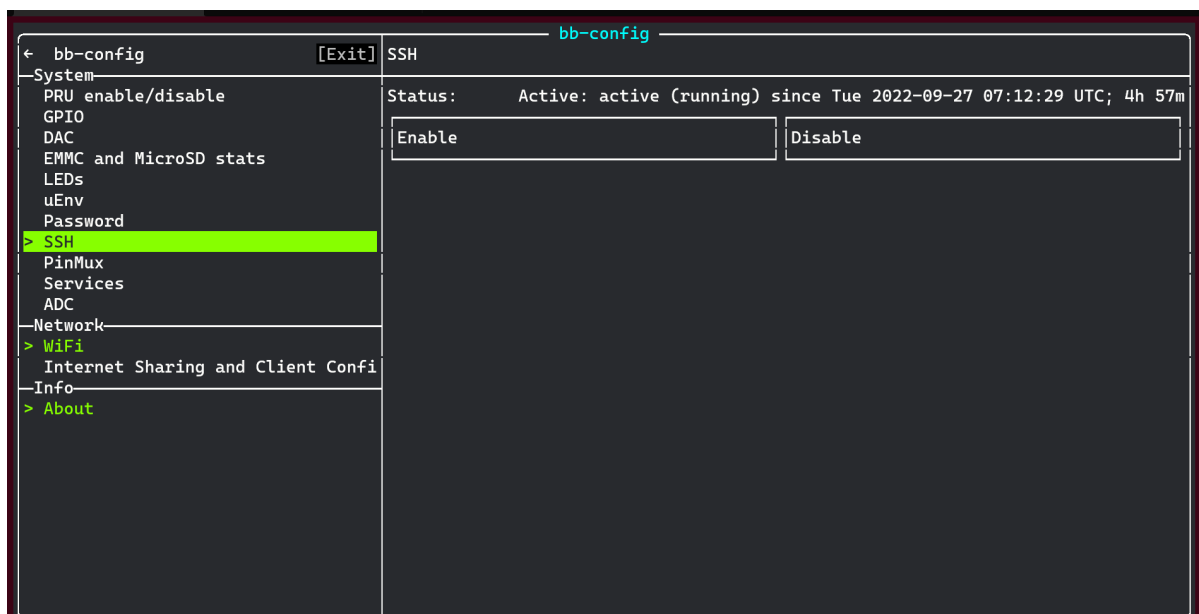
3.1.5 Password

- Change users password



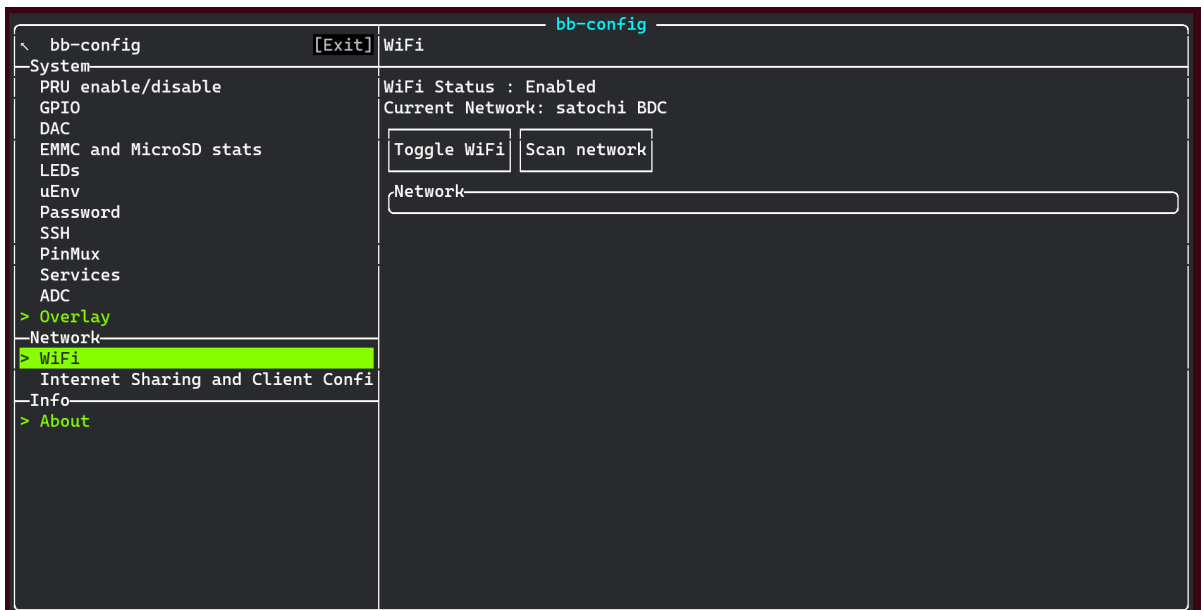
3.1.6 SSH

- Enable/Disable SSH

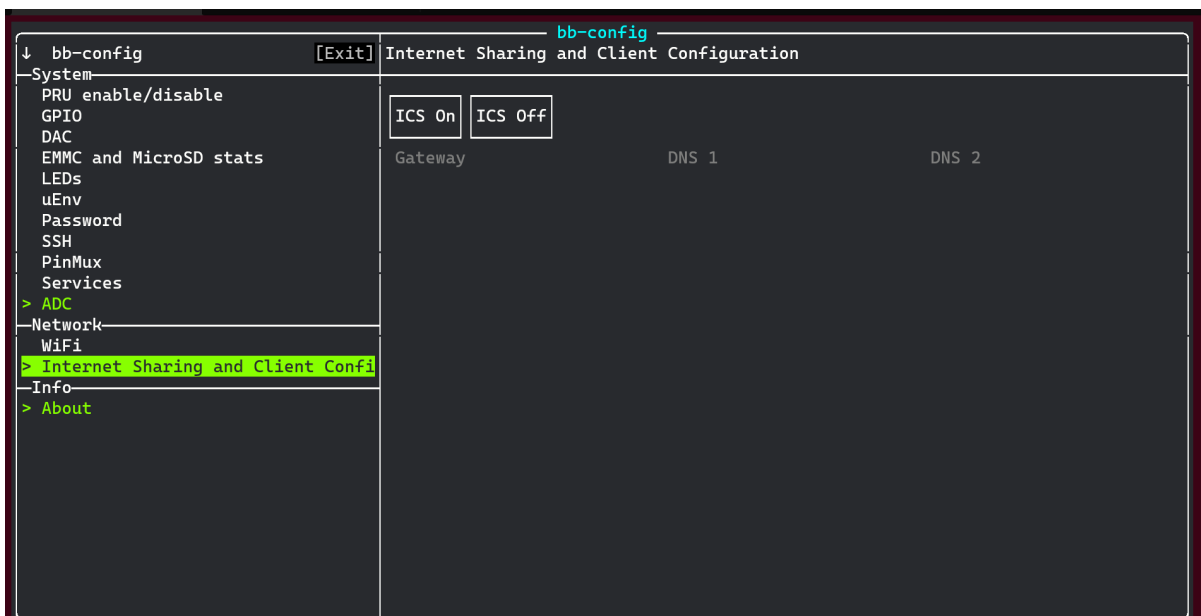


3.1.7 WiFi

- Connect to Wi-Fi



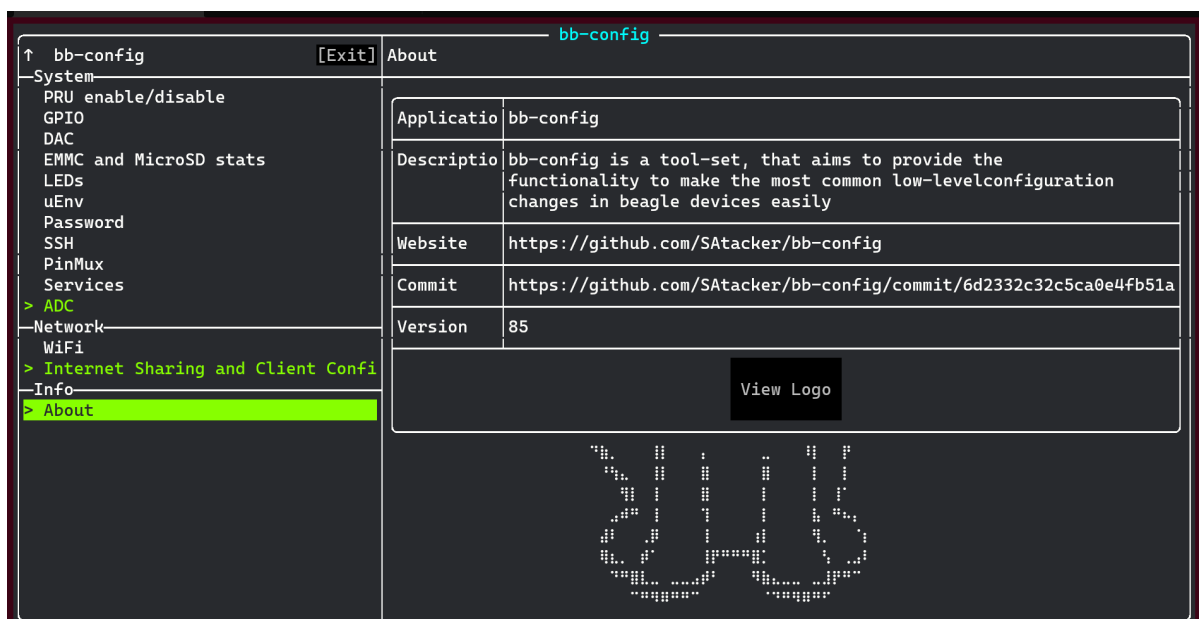
3.1.8 Internet Sharing and Client Config



- Note: You'll have to configure your host Following is an example script:

```
echo 1 > /proc/sys/net/ipv4/ip_forward
iptables --table nat --append POSTROUTING --out-interface wlp4s0 -j MASQUERADE
iptables --append FORWARD --in-interface wlp4s0 -j ACCEPT
```

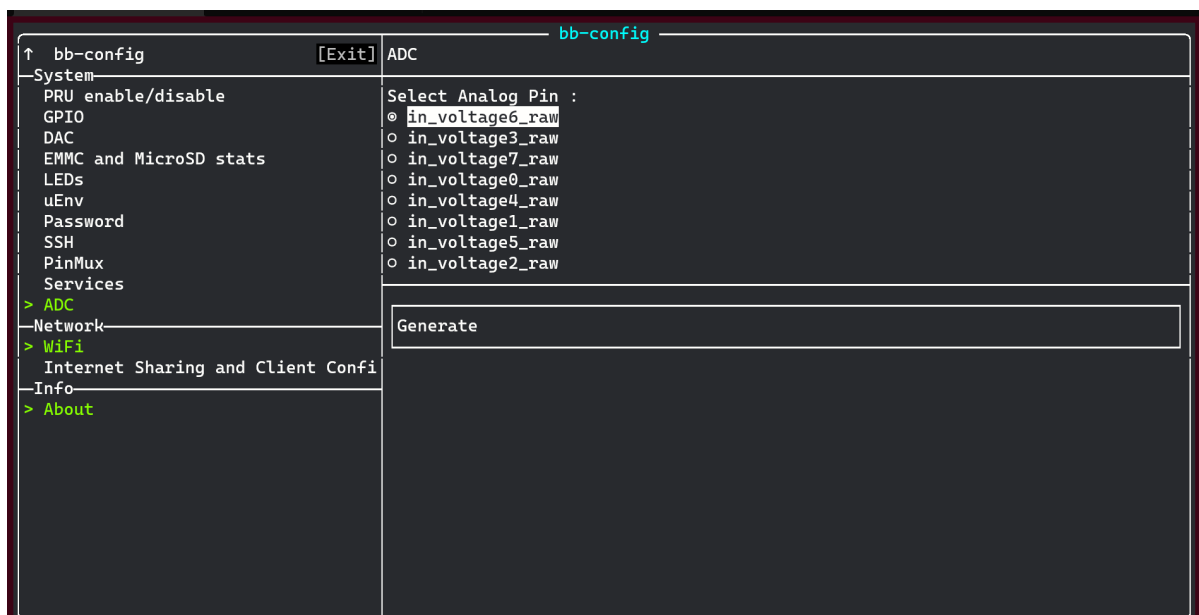
3.1.9 About

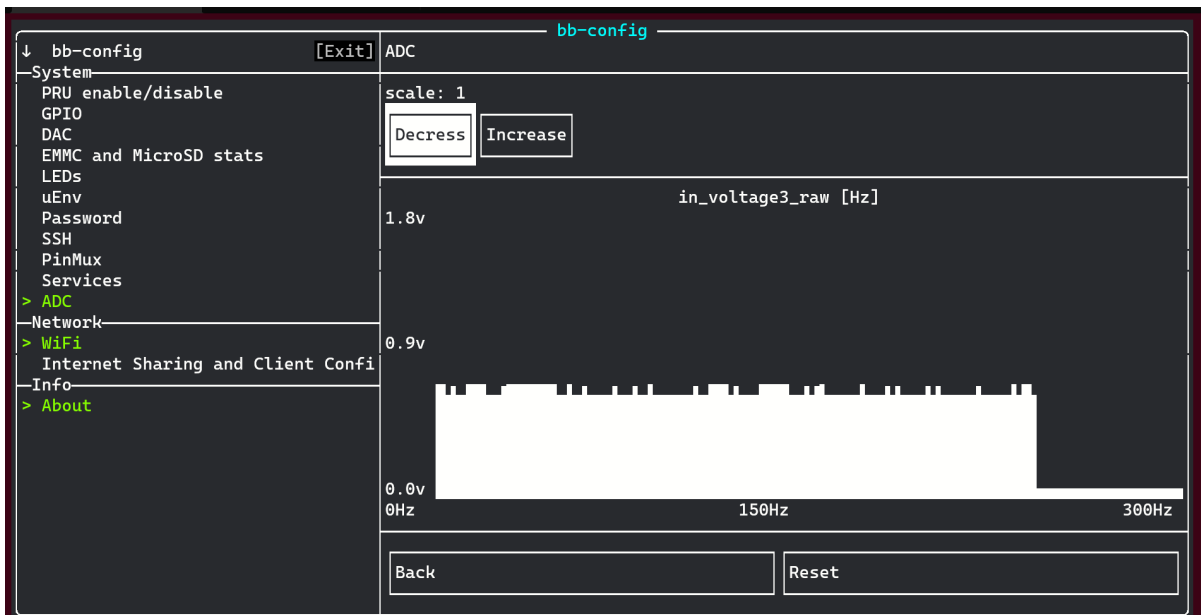


3.2 BB-Config v2.x

3.2.1 ADC (Graph)

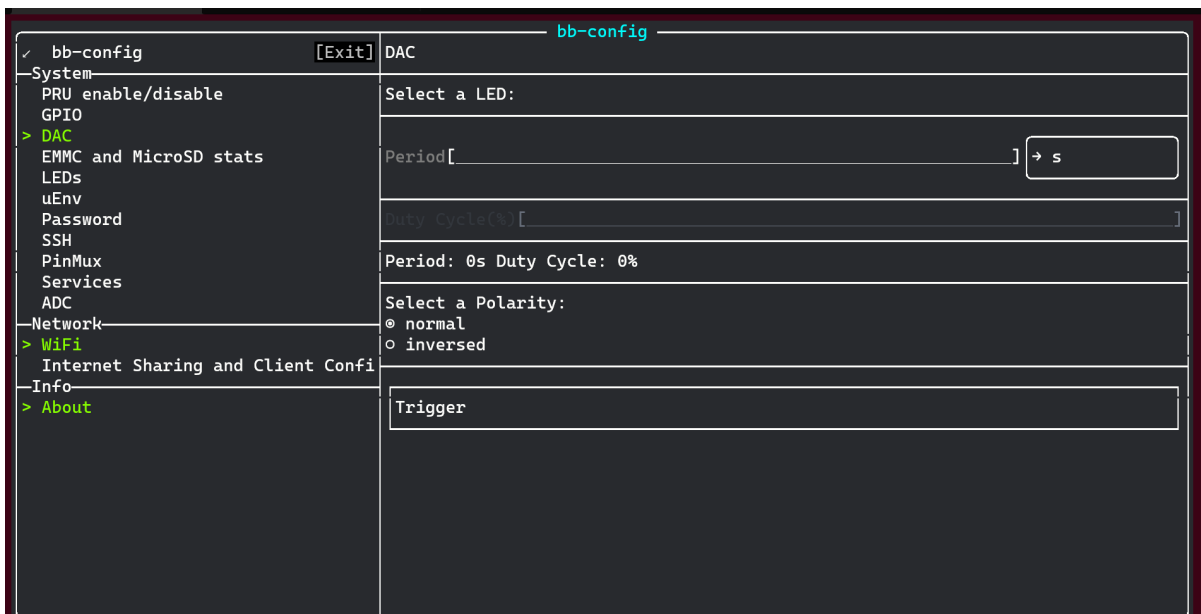
- Plot graph for Analogue pin





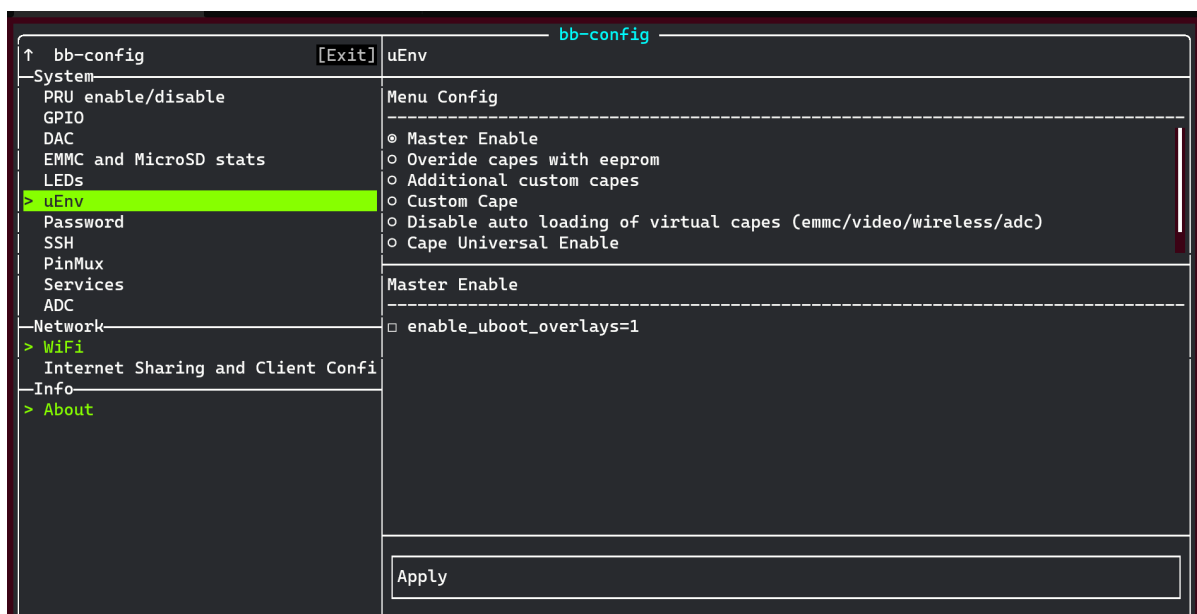
3.2.2 DAC (PWM)

- Generate PWM waveform



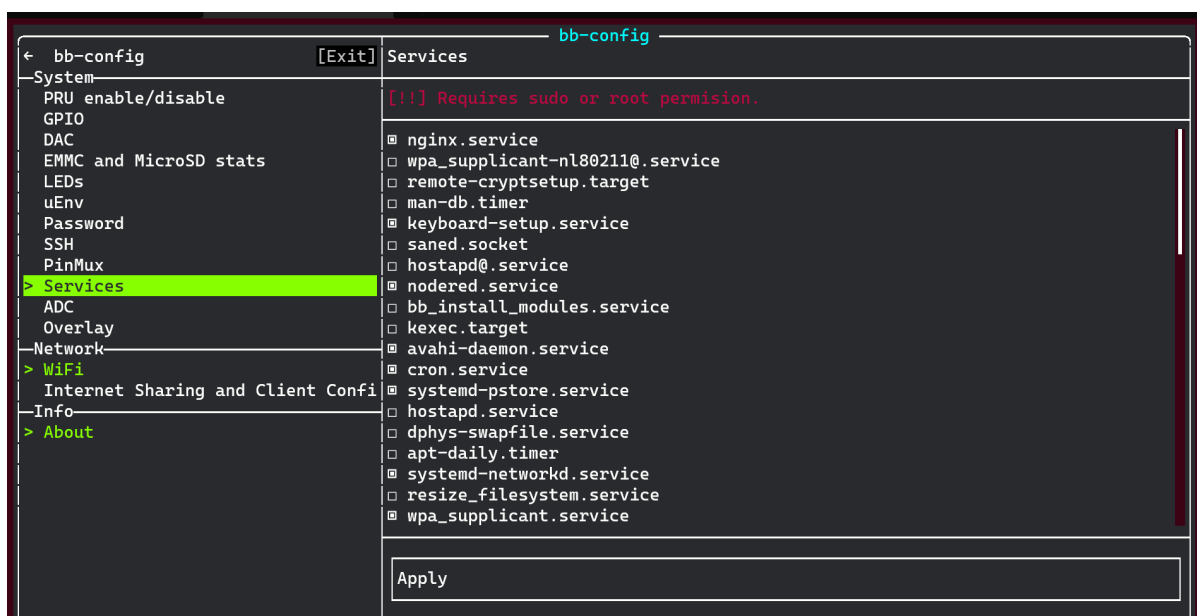
3.2.3 uEnv

- Enable/Disable boot configuration



3.2.4 services

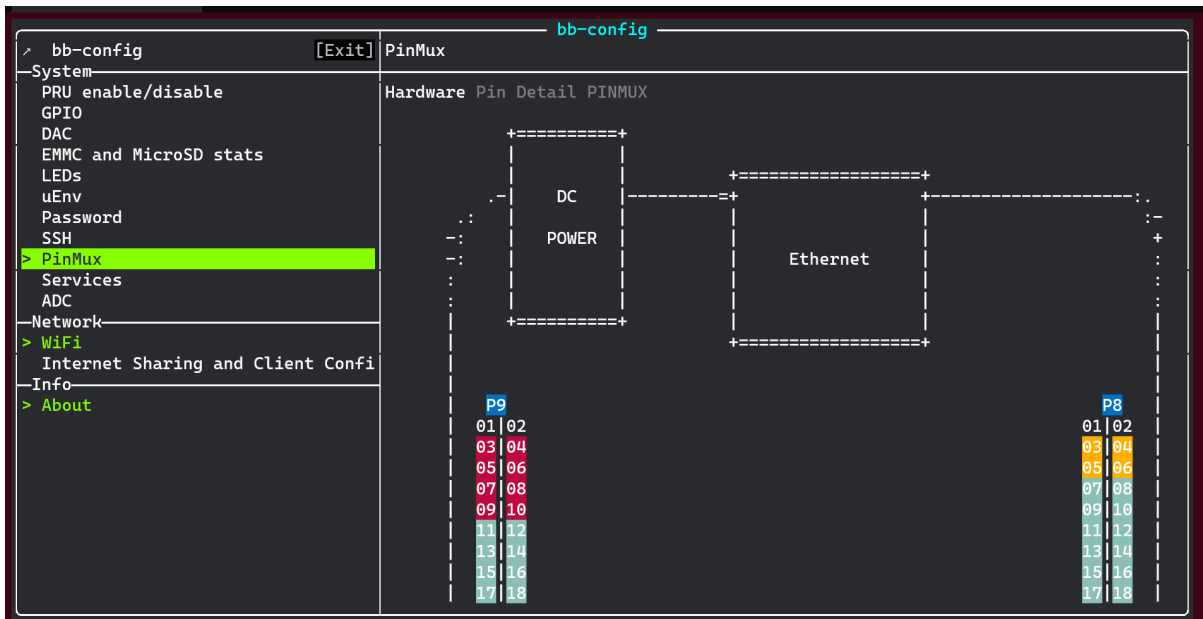
- Enable/Disable services startup at boot



3.2.5 PINMUX

- Display PIN I/O detail
- Config PINMUX

Hardware Display

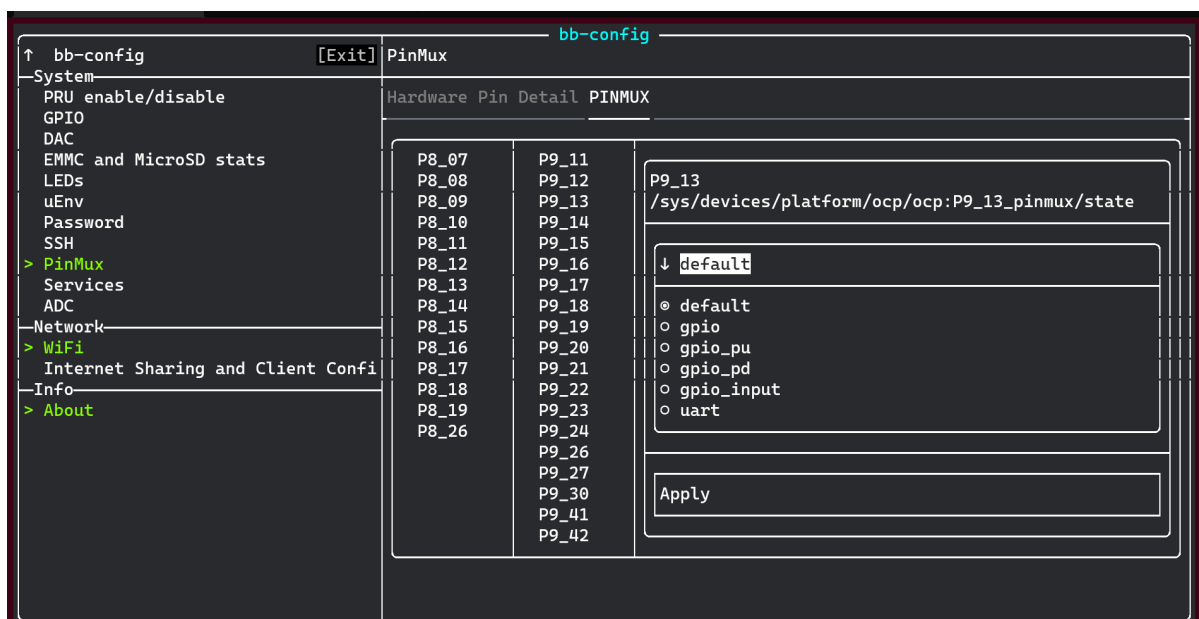


Pin Table References

The screenshot shows the 'bb-config' interface with the 'PinMux' menu selected. The left sidebar is the same as in the previous image. The main display area shows 'Hardware Pin Detail PINMUX' with a detailed pin table. The table has columns for pin numbers (1-44) and functions (gnd, emmc, gpio, hdmi, i2c, audio, adc, power, system). The functions are color-coded: gnd (yellow), emmc (orange), gpio (teal), hdmi (light blue), i2c (blue), audio (yellow), adc (magenta), power (red), and system (red).

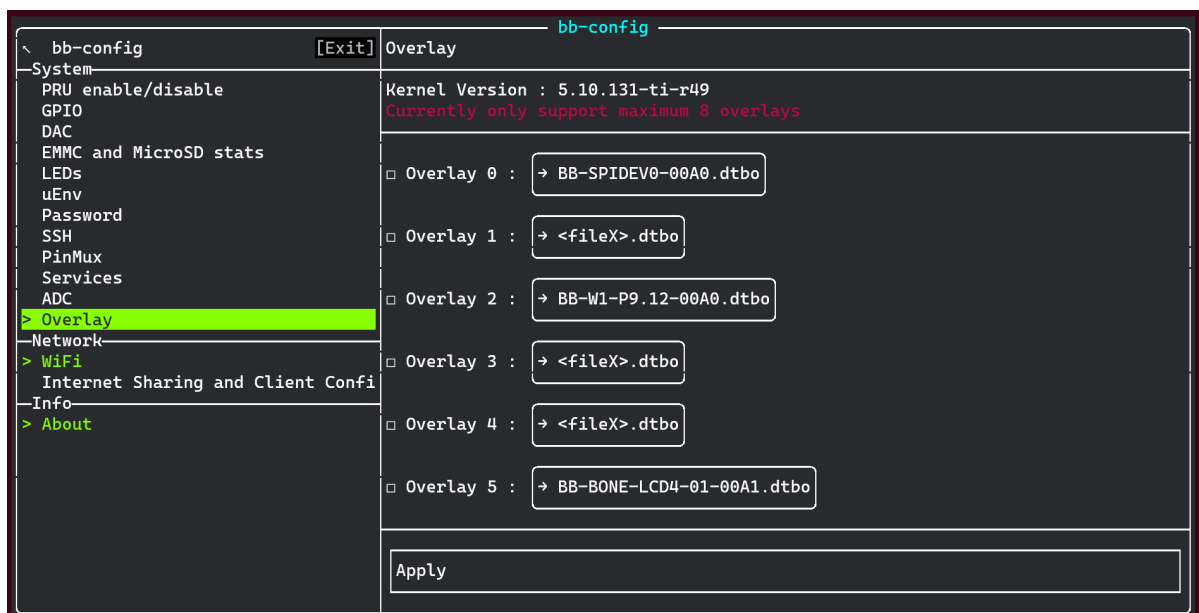
Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	gnd	2	gnd	3	gnd	4	gnd
3	emmc	4	emmc	5	emmc	6	emmc
5	emmc	6	emmc	7	power	8	power
7	gpio	8	gpio	9	power	10	power
9	gpio	10	gpio	11	system	12	system
11	gpio	12	gpio	13	gpio	14	gpio
13	gpio	14	gpio	15	gpio	16	gpio
15	gpio	16	gpio	17	gpio	18	gpio
17	gpio	18	gpio	19	i2c	20	i2c
19	gpio	20	emmc	21	gpio	22	gpio
21	emmc	22	emmc	23	gpio	24	gpio
23	emmc	24	emmc	25	audio	26	gpio
25	emmc	26	gpio	27	gpio	28	audio
27	hdmi	28	hdmi	29	audio	30	gpio
29	hdmi	30	hdmi	31	audio	32	power
31	hdmi	32	hdmi	33	adc	34	gnd
33	hdmi	34	hdmi	35	adc	36	adc
35	hdmi	36	hdmi	37	adc	38	adc
37	hdmi	38	hdmi	39	adc	40	adc
39	hdmi	40	hdmi	41	gpio	42	gpio
41	hdmi	42	hdmi	43	gnd	44	gnd
43	hdmi	44	hdmi				

Pin Config



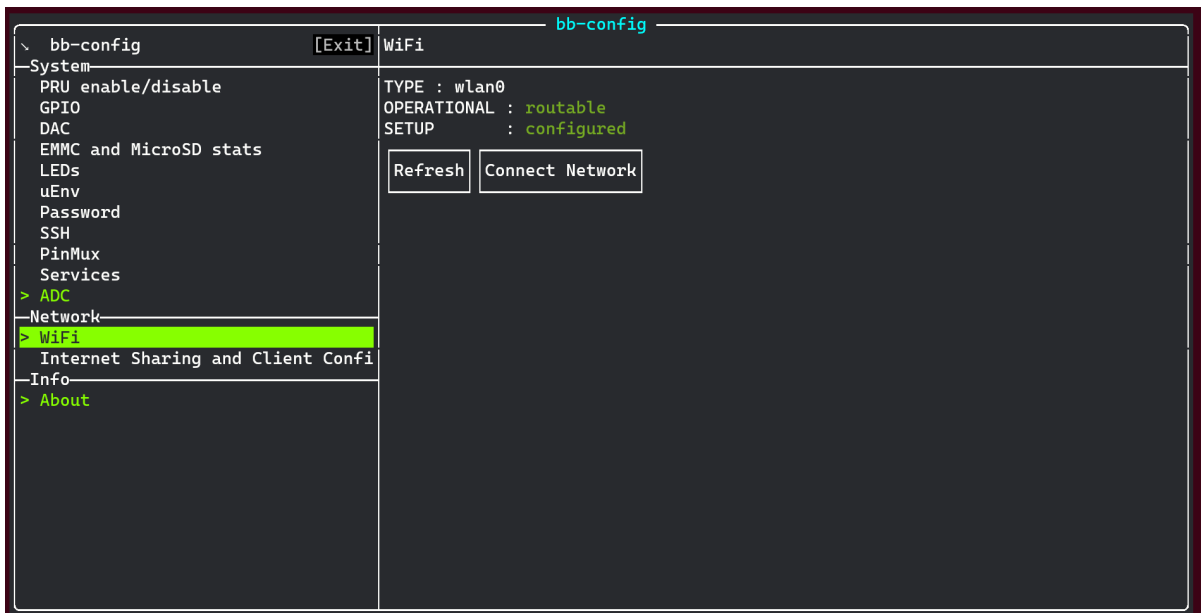
3.2.6 Overlay (dts)

- Enable/Disable Device Tree Overlay in Boot option
- Select dtbo file and automate update in uEnv.txt



3.2.7 WiFi (D-Bus)

- Connect to WiFi with wpa_supplicant
- Support for Debian 11



Chapter 4

Version

4.1 GSOC@21 BB-Config v1.x

- Name: Shreyas Atre
- Mentors: Arthur Sonzogni, Abhishek Kumar, Deepak Khatri.
- Organization: BeagleBoard.org
- Code: <https://github.com/SAtacker/beagle-config>
- Project Page: <https://summerofcode.withgoogle.com/projects/#6718016412188672>
- Progress Log: <https://satacker.github.io/gsoc-log/>
- Kanban: <https://github.com/SAtacker/beagle-config/projects/1>
- Initial Video: <https://youtu.be/vFUWCzqE6xl>

4.2 GSOC@22 BB-Config v2.x

- Name: Seak Jian De
- Mentors: Shreyas Atre, Vedant Paranjape, Vaishnav Achath.
- Organization: BeagleBoard.org
- Code: <https://git.beagleboard.org/gsoc/bb-config>
- Project Page: <https://summerofcode.withgoogle.com/programs/2022/projects/2DbiYPIY>
- Progress Log: <https://forum.beagleboard.org/t/weekly-progress-report-bb-config-improvements-gpio-benchmark/32357/2>
- Initial Video: https://youtu.be/V_Euk5uWY1o