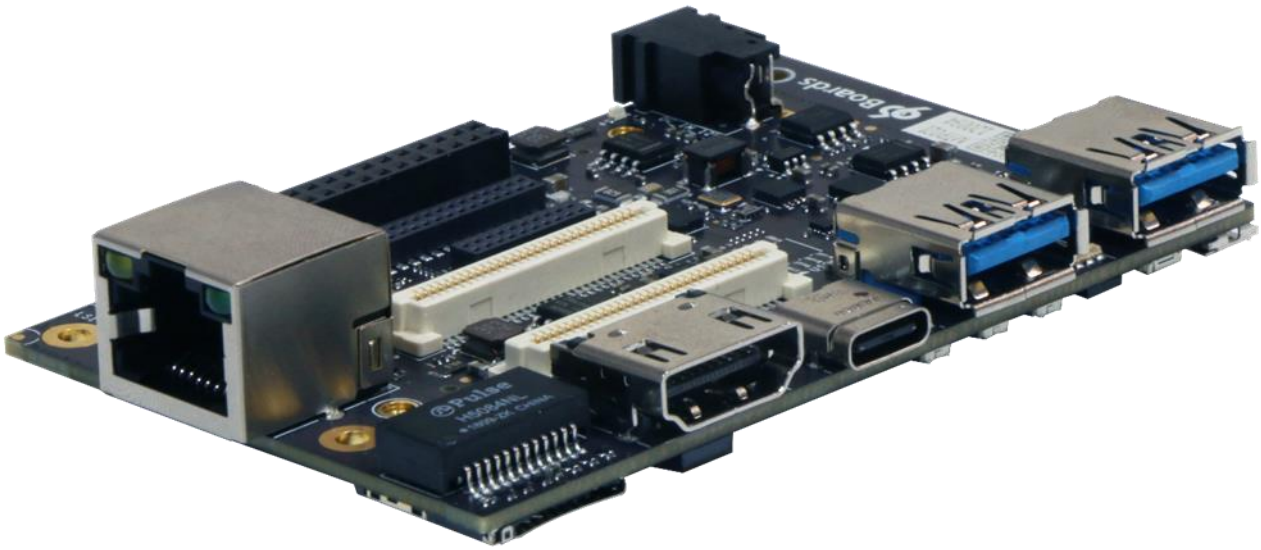
Qualcomm® Robotics RB3 Platform

Quick Start Guide (Linux Embedded)



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Thundercomm

Getting Started

Learn about your Qualcomm® Robotics RB3 platform as well as how to prepare and set up for basic use. The Qualcomm Robotics RB3 Platform is a dedicated robotics platform designed to accelerate computing and intelligence capabilities for consumer and industrial robotics. It supports the development of smart, power-efficient and cost-effective robots by combining high-performance heterogeneous computing, Qualcomm® Artificial Intelligence (AI) Engine for on-device machine learning, computer vision, voice interface, multimedia and connectivity.

Setup - What you will need

Required

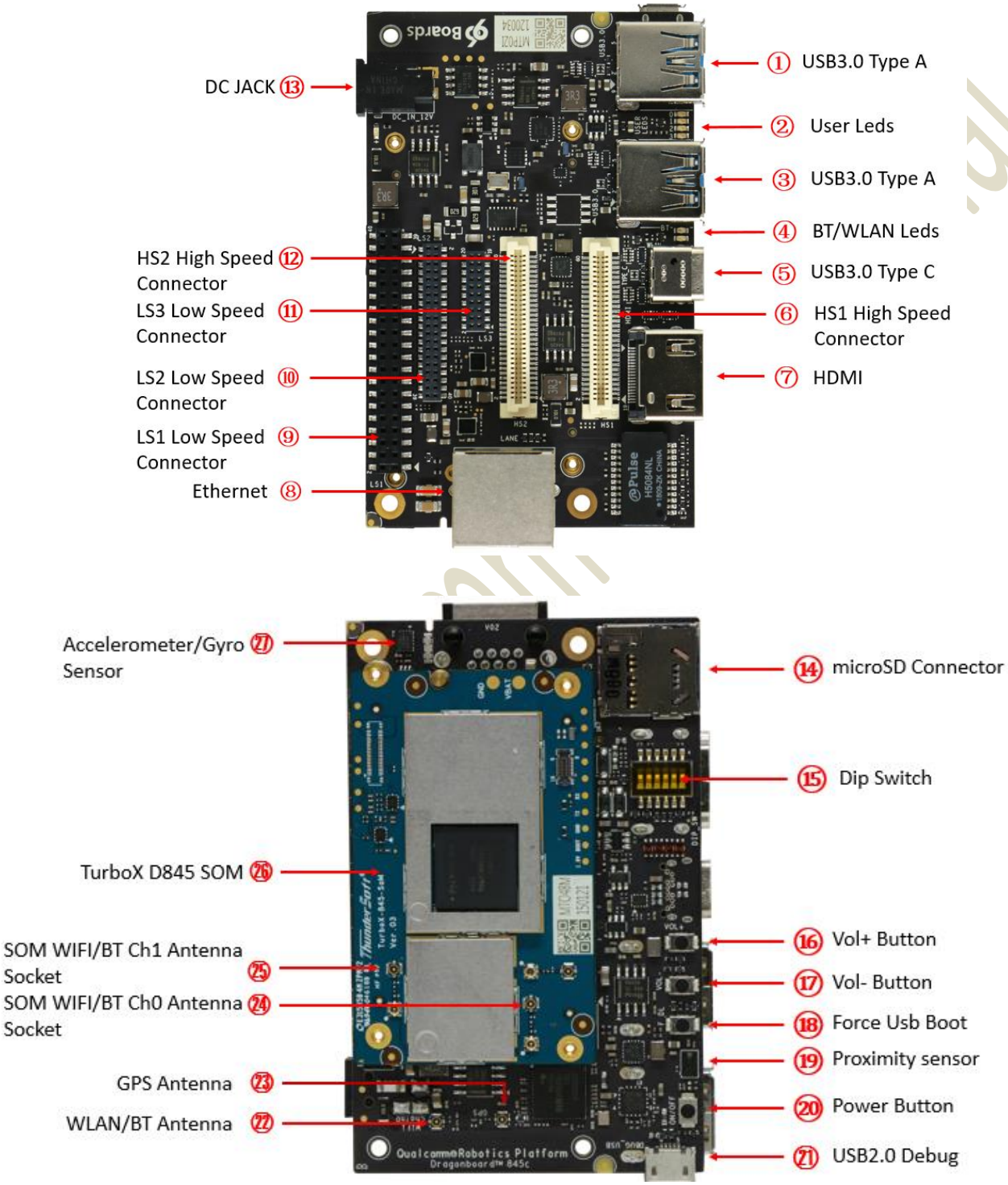
- DragonBoard™ 845c development board
  - Board based on Qualcomm® Snapdragon™ 845 processor
- Power adapter
  - 96Boards specification require a 12V with 2500mA power adapter
- USB to micro USB cable
  - This is needed for serial console interface and fastboot/adb commands
- USB to USB Type C cable
  - This is needed to connect the USB3.0 Type C port and flash the images
- Host PC
  - This is needed to connect the board and have fastboot installed

Optional

- Navigation Mezzanine board
  - This board allows you to expand your experience by adding cameras, peripherals and enhancing onboard components
- Camera Modules
  - OV8856
  - OV7251
  - ToF
  - SLM Camera
- Cellular Mezzanine board
  - This board supports LTE module for a better communication experience

Out of the Box

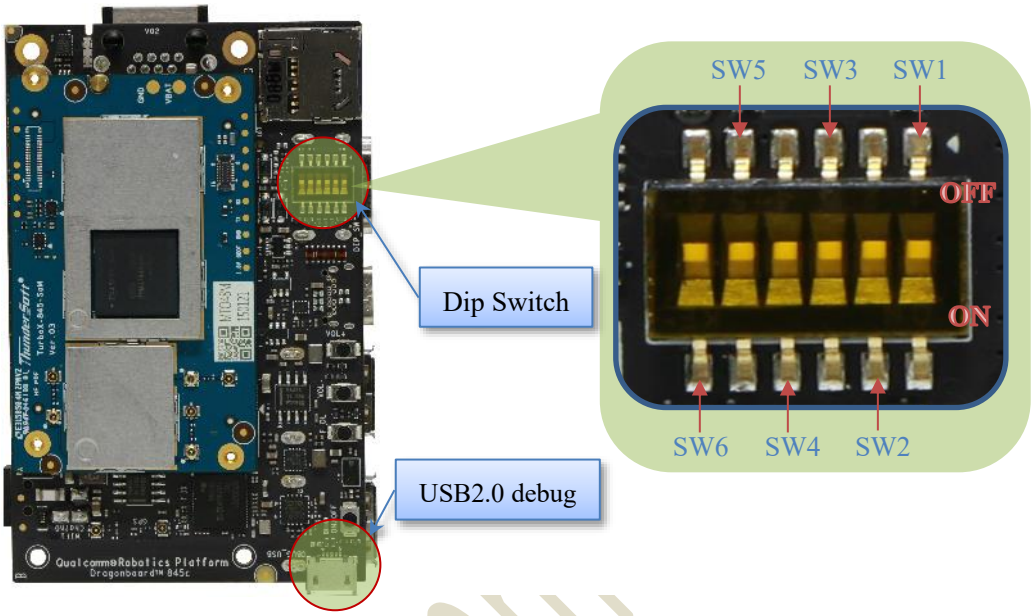
Board overview



Starting the board for the first time

To start the board, follow these simple steps:

- Step 1: Open the serial console tool on the Host PC.(for example:minicom)
- Step 2: Enable the USB2.0 debug port by turning on the SW2 of the Dip Switch ⑮



- Step 3: Connect the Micro-B plug on the USB cable to the USB2.0 debug port ㉑ on the device,and the other end to an available USB port on the host PC
  Note: please set the Bps/Par/Bits to 115200 8N1
- Step 4: Connect the power supply to power connector ⑬
- Step 5: Plug the power supply into a power outlet,and “power up” green Led should illuminate
- Step 6: Press and release the power button on the device,and user yellow Led0 should illuminate

The board will start the booting process, and you should see Login Credentials displayed on the host PC:

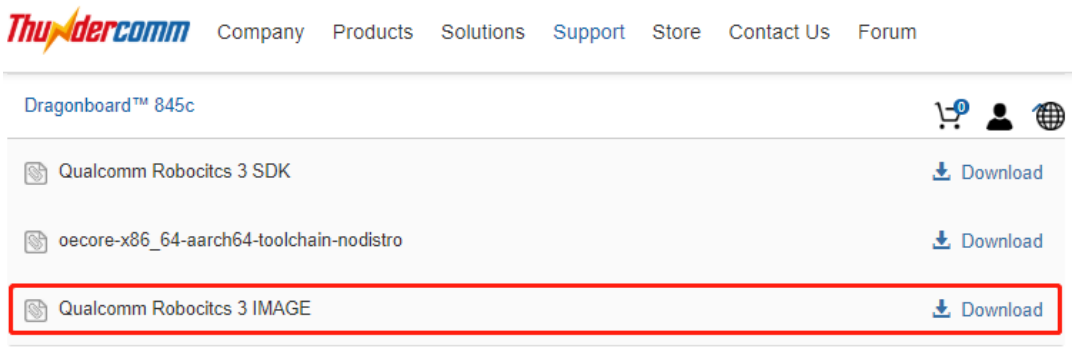
sda845 login: root

Password: 123456

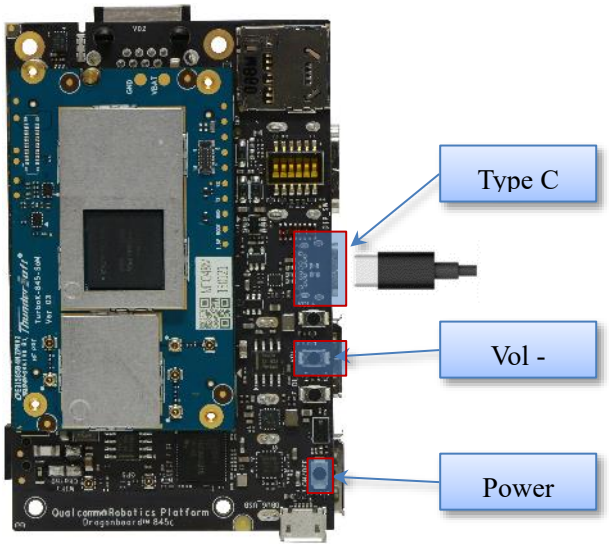
For more information and support, you may also want to visit the Qualcomm® Robotics RB3 Platform Hardware User Manual & Linux User Guide.

Program system images using fastboot

- Step 1: Download the Linux images package from the Thundercomm Website and unzip to the “SDA845-ROBOT-IMAGE”



- Step 2: Connect the power supply to power connector, press and hold the " Vol -" button, then press the "Power" button once quickly to force the device to enter fastboot mode, finally plug the USB cable into the Device Type C Port.



- Step 3: Confirm that fastboot is active as follows:
  - From the Windows command shell, run:

```
$fastboot devices
dae93bbb  fastboot
```

  - From Linux, Run:

```
$ sudo fastboot devices
dae93bbb  fastboot
```

- Step 4: Flash each binary selectively through the following fastboot command options

```
$ cd SDA845-ROBOT-IMAGE
$ fastboot flash abl_a <path to abl.elf>
$ fastboot flash boot_a <path to sda845-boot.img>
$ fastboot flash system_a <path to sda845-sysfs.ext4>
$ fastboot flash systemrw <path to sda845-systemrw.ext4>
$ fastboot flash cache <path to sda845-cache.ext4>
$ fastboot flash userdata <path to sda845-usrfs.ext4>
$ fastboot flash persist <path to sda845-persist.ext4>
```

- Step 5: Reboot and enjoy working with your board

```
$ fastboot reboot
rebooting…
```