# Dual rackmount APU 1

# Quick Start Guide

Thank you for purchasing a dual rack mount APU 1 server.

Your package should contain:

- 1RU rack mount server case
- Cover plate and hex screws for empty board slots
- Rack mounting screw set

*Optional Extras*

- 1 or 2 x board mounting kits to suit the APU 1 boards
  - 4 x wide and 2 x narrow aluminium strips, 1 locator strip, 4 x nylon spacers, 4 x M3 x12 screws, board mounting plate, punched cover plate, 2 x hex screws, hex key, 2 x optional thumb screws
- 1 or 2 x APU 1 boards

Please read the following instructions to begin using your dual rack mount APU 1.

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## *Things you will need*

### Tools

- Anti-static wrist strap
- 2mm hex key (supplied)
- Phillips head screwdriver
- SD card reader (optional)
- Null modem cable (optional)

### Materials

If you don't have them already, you'll need:

- 1 or 2 x APU 1 boards
- SD card or mSATA drive (1 per board)
- miniPCI express cards (optional)
  e.g. wireless adapter
- Operating system image

## *Instructions*

### *Safety Note*

The APU boards, like all electronic equipment, are sensitive to damage from static discharge. To avoid damage caused by static discharge, we strongly recommend that you use an anti-static wrist strap when handling the boards.

### Step 1 Install the boards into the rack mount case (optional)

If your boards are not installed in the rack mount case, you may need to do the following:

1. Remove the five (5) screws from the top of the case and remove the top of the case.
2. Place the nylon spacers over the four standoffs in the base of the case.
3. Sandwich one (1) of the narrower aluminium strips between two (2) of the wider aluminium strips, ensuring that the holes are aligned.
4. For the set of strips that goes on the right hand side, place the locator strip on the top, with the bent end at the rear, pointing downwards.
5. Insert one M3 x12 screw through each set of holes in the assembled aluminium strips.
6. Place the screws into the standoffs, through the nylon spacer, ensuring that the channel created by the strips is toward the centre of the board slot, and tighten the screws.
7. Repeat for the other side.
8. Replace the top of the case and tighten the screws.
   **Note:** Leave the case top off if installing APU boards for the first time.
9. Remove the serial port screws from the board.
10. Locate the cover plate on the front of the board, ensuring it is the right way around (power hole closer to the bottom).
11. Reinsert the serial port screws loosely, to hold the cover plate onto the board.
12. Holding the cover plate by the top and bottom, slot the edges of the APU board into the channels in the slide rails.
13. [First time installation only] Loosen the right hand slide rail screws to allow the locator strip to slide back and forth.
14. [internal PSU only] Connect power plug to header on front right corner of board.
15. Slide the board into the case, ensuring that the cover plate sits flush against the case front.
16. Insert and tighten the cover plate screws.
    **Note:** For easy access to the board, we recommend using the optional thumb screws. For infrequent access to the board, the hex screws provide a more secure option.
17. [First time installation only] Push on the rear of the locator strip with one hand while

pushing on the right-hand end of the cover plate with the other hand so that the right-hand front edge of the APU board is hard up against the cover plate. While holding this pressure with one hand, tighten the slide rail screws to lock the locator strip in place. You should still be able to insert and remove the board by sliding, but the ports should not move when pushed. Replace the top of the case and tighten the screws.
**Note:** If the board seems tight, you can adjust the thickness of the centre (narrow) slide rail strip by disassembling the rails, attaching a piece of adhesive tape to the underside of the narrow rail and re-assembling the rails.

18. Tighten the serial port screws.

## Step 2 Slide the board out from the case

To install the SD card, mSATA drive and/or miniPCIe card into the boards in the rack mount APU 1, you will need to slide the board out of the front of the case:

1. Disconnect power and all cables.
2. Using a hex key, remove the two hex head screws from the cover plate on the front of the case. If you are using the optional thumb screws, remove them by hand.
3. Holding the cover plate by the top and bottom, slide the board out of the case.
   **Note:** You can insert a network cable into an ethernet port and use it as a handle instead.

## Step 3 Configure and install an SD card

To use your APU 1, you will need to have an SD card or mSATA drive with a suitable operating system installed in the APU 1 board.

If your drive does not already have an operating system installed, you can either mount it in another machine (e.g. via a card reader) and copy a boot image onto it, or network or USB boot the APU 1. The APU 1 supports many operating systems including BSD, Linux and a number of proprietary operating systems.

### *SD card installation*

Insert the SD card into the socket on the front right hand side of the board, label up. Ensure the SD card is fully engaged in the socket. The card should not extend past the edge of the board.

### *SD card removal*

To remove the SD card from the APU 1 board, grasp the SD card firmly between thumb and index finger and pull straight out.

## Step 4 Install the miniPCIe card(s) and/or mSATA drive (optional)

Insert your miniPCIe card or mSATA drive into the miniPCIe slot at an angle of about 45° to the board. Ensure that the card / drive is firmly seated in the slot and then lay it onto the board, pressing down until the locking tabs on either side click into place.

If you are installing a wireless card, please note that like all electronic equipment, they are sensitive to damage from static discharge, especially the RF switch and the power amplifier. To avoid damage caused by static discharge, we strongly recommend that you do the

following when installing a wireless radio card.

- Touch your hands and the bag containing the wireless card to a ground point on the board (for example one of the holes in the corner of the board). This will equalize the potential of the wireless card and board.
- Insert the radio card into the miniPCIe slot on the board.
- Install the bulkhead end of the pigtail into the case. This will ground the pigtail to the case.
- Touch the u.fl end of the pigtail to a ground point on the board to discharge any static, then attach the u.fl end to the connector on the wireless card.

### Step 5 Install the SIM card (optional)

From the front of the board, gently slide your SIM card into the slot, connector side up, notched end first. Push firmly until you hear a small click. Release pressure and the card will spring back slightly and stop. To remove, push firmly until you hear a small click and the card will slide out so that it can be grasped between thumb and forefinger and pulled out.

### Step 6 Slide the board back into the case

Before you can begin using your APU 1, you will need to slide the board back into the case.

1. Ensuring that the edges of the APU board are properly engaged in the slide rails, slide the board back into the case.
2. Replace the cover plate screws and tighten.
   **Note:** For easy access to the board, we recommend using the optional thumb screws. For infrequent access to the board, the hex screws provide a more secure option.

### Step 7 Connect to the serial console (optional)

If you want to configure your operating system via the console, you will need to connect to the serial port via a null modem cable.

Your terminal emulator should be set to 115200 baud, 8 bits, no parity, 1 stop bit, no flow control.

### Step 8 Apply power

Ensure that the power is turned off at the switch before plugging in the power supply to the board. Connect the IEC cable to the socket at the rear of the case and turn the switch to on.

The board will go through its boot up cycle, which you can watch if you are connected to the serial console.

Your rack mount APU 1 is ready to use!

### More information

For more detailed instructions on using your rack mount APU 1, please visit our website at www.yawarra.com.au and download the manufacturer's user guides for the boards.

 