



Warning:
 The PowerDNA assembly and I/O boards are sensitive to electrostatic discharge.
 Follow proper ESD precautions to avoid damaging devices.

Step 1

Remove the Faceplate

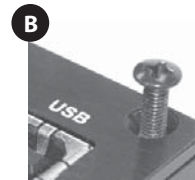


Disconnect power from the Cube, remove Ethernet cable(s), unplug all remaining cables connected to the installed I/O boards.

A. Unscrew jack screws located on the sides of RS-232 connector. Do the same for all other I/O boards with 37- and 62-pin D-sub connectors.

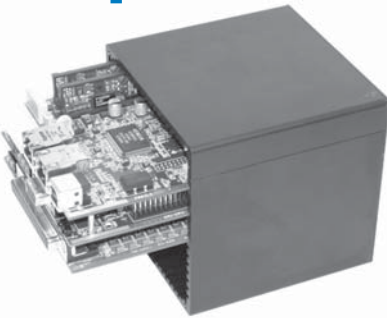
B. Remove the four screws located on the corners of the faceplate. Remove the faceplate.

C. Remove the I/O cover from the first unused I/O slot by removing the two screws that are holding the cover in place. You will need to remove one I/O cover for each new I/O board that you are adding.



Step 2

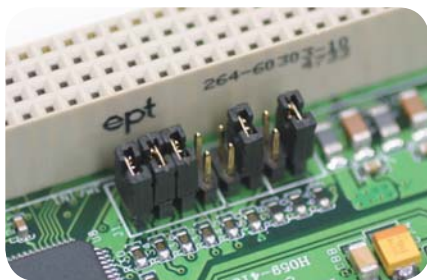
Remove the Stack of I/O Boards from the Cube



Gently pull the stack of I/O boards out of the Cube chassis, making sure not to damage the pins that are located on the bottom side of the last I/O board.

Step 3

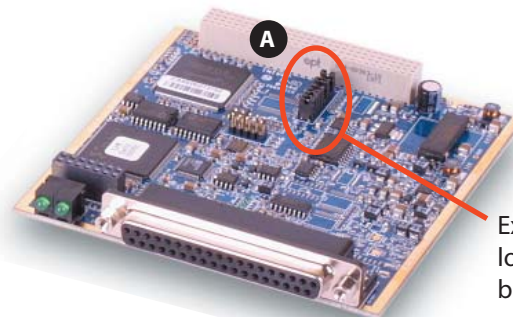
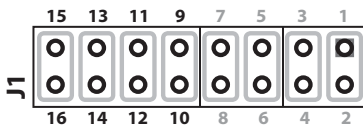
Locate the Jumper Block on the New I/O Board(s)



Each I/O board is equipped with a 16-pin jumper block, which is used to configure the physical position of the I/O board in the Cube. This establishes the I/O board order in the stack.

A. Locate the 16-pin jumper header on your new I/O board. It will be marked as J1 on most boards (or alternatively J2, J3 or J4 on some). The location of the jumper header varies for different board types. Refer to **page 4** of this document for drawings of example locations.

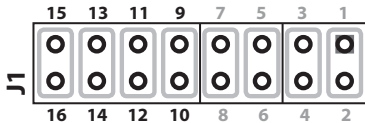
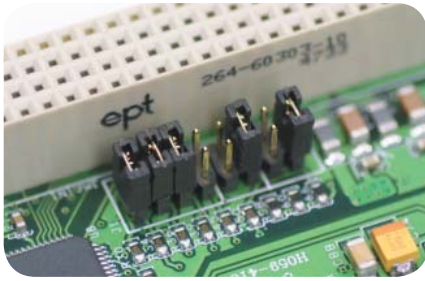
For some boards, you must remove a “daughter card” to gain access to the jumper header. If you are installing more than one layer, please locate the jumper blocks on all I/O boards.



Example:
 location of jumper
 block on DNA-AI-207

Step 4

Set Up Jumpers for the New I/O Board(s)

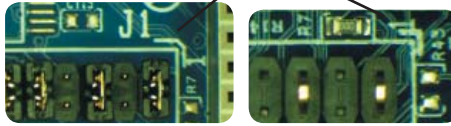


A. Locate pin 1 on the 16-pin jumper block.

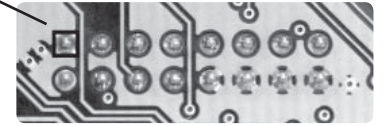
On the top side of the I/O board, pin 1 is indicated by a corner mark and silk screened '1' label (markings will slightly vary depending on the density of components on the board).

On the reverse of the I/O board, pin 1 is indicated by a square via.

A pin 1 & corner markings (top examples)



pin 1 (reverse example)



B. Add or remove jumpers between pins 9-10, 11-12, 13-14, and/or 15-16 according to the table below to configure the jumper block. New I/O boards must have these jumpers configured prior to installation to ensure proper functionality.

Only jumpers 9-10, 11-12, 13-14, and 15-16 are used to uniquely identify the location of the I/O board(s) within the Cube. **Do not adjust any other jumper settings on the board - the new board(s) will not be recognized within the Cube if they are configured incorrectly and they may cause adverse functionality of other boards.**

| | | I/O Board Position as marked on the Faceplate* | | | | | |
|---------|-------|---|---|---|---|---|---|
| | | I/O 1 | I/O 2 | I/O 3 | I/O 4 | I/O 5 | I/O 6 |
| Jx Pins | 9-10 | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 11-12 | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 13-14 | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |
| | 15-16 | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> |

* All I/O boards are sequentially enumerated from top to the bottom of the Cube

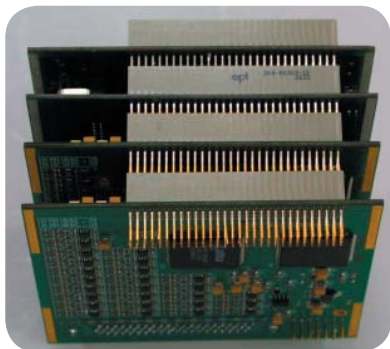
- Open - Closed

Note: Jumpers are set to the zero-based binary equivalent of the board's position in the stack. A binary '0' is represented as an installed jumper (closed); a '1' is represented as an uninstalled jumper (open).

The top I/O board in the stack is "I/O 1". I/O 1 maps to jumper address 0 (0000), which has all jumpers installed. I/O 2 maps to jumper address 1 (0001), which has jumpers 15-16, 13-14 and 11-12 installed and 9-10 open. I/O 3 maps to jumper address 2 (0010). I/O 4 maps to jumper address 3 (0011). This sequence (0100, 0101, 0110) continues for each successive physical position in the stack.

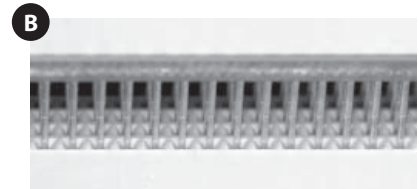
Step 5

Assemble the I/O Board(s)



A. Remove the jack screws that are attached to your new I/O board (to avoid interference when reassembling the faceplate onto the Cube).

B. Position the stack of layers so that you are viewing the 120-pin connectors. Align the 120-pin and 14-pin connectors of the new board with the pins from the last board in the stack.



Gently push the new board into place, making sure not to damage any of the I/O boards or to bend any of the pins.

Step 6

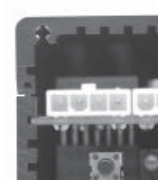
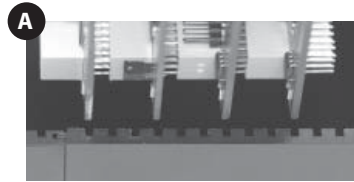
Install the I/O Boards in the Cube



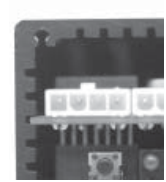
A. Ensure that the I/O boards in the stack are properly spaced prior to installation into the Cube. The spacing should allow for two open slide rails in between each board. If the boards are not properly spaced, you will not be able to slide the stack into the Cube.

B. Ensure the stack is aligned properly in the Cube chassis. The top board of the 5-layered version of the Cube (DNA-CM5 or DNA-FCM5 models) aligns to and inserts into the second slide rail (from the top) of the Cube.

The top board of all other Cube versions inserts into the third slide rail.



DNA-(F)CM5



DNA-(F)CM8

Gently press the stack of I/O boards into the cube chassis. The I/O boards are completely installed when the stack presses firmly against the backplate of the Cube.

Step 7

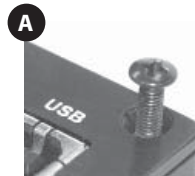
Attach the Faceplate



A. Attach the faceplate using the screws that were removed in Step 1.

Important: Be sure the Reset button is free to move as you attach the faceplate and install screws. The Reset button is located above the Sync connector and to the left of the RS-232 port.

B. Attach the jack screws removed in Step 1, and attach jack screws to your new I/O board, if applicable.



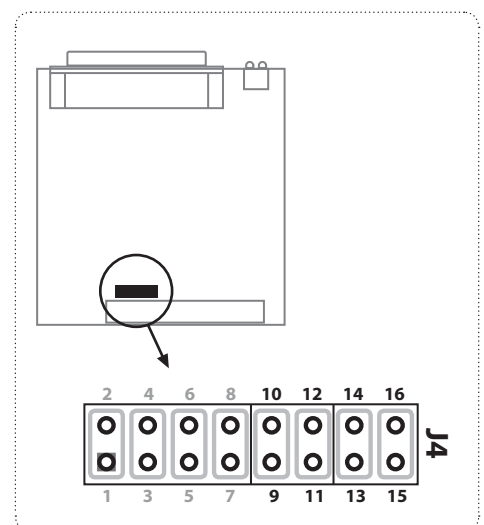
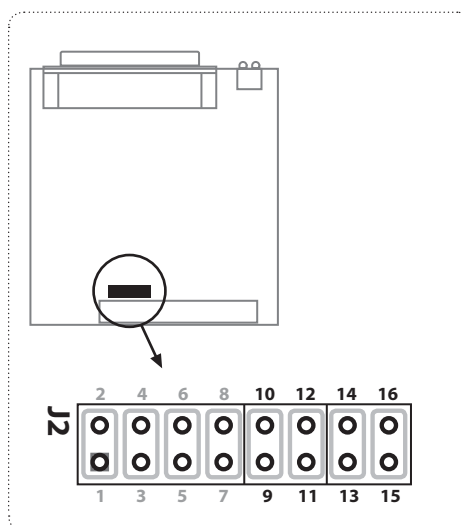
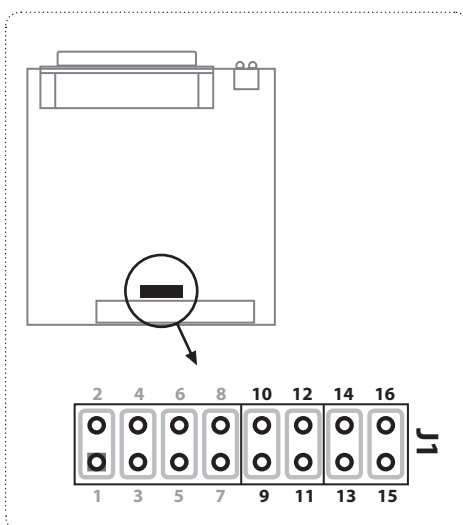
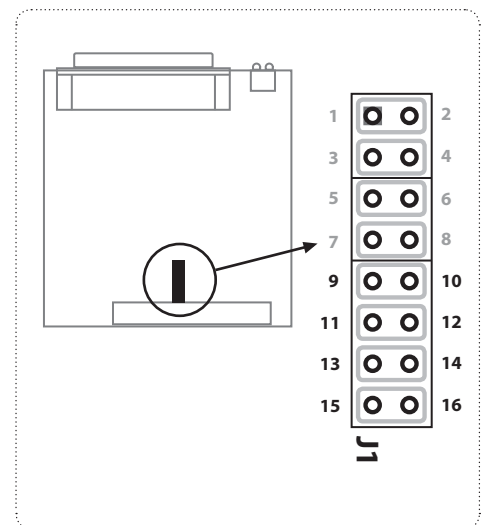
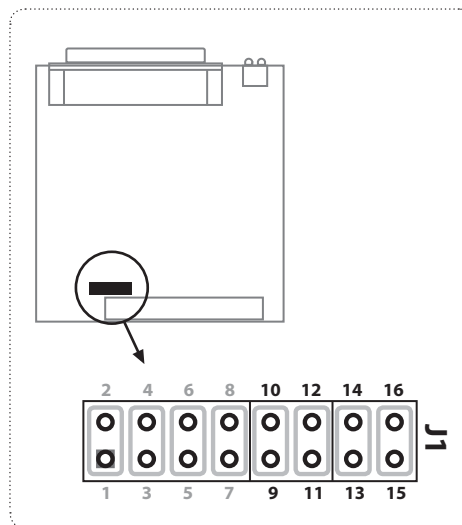
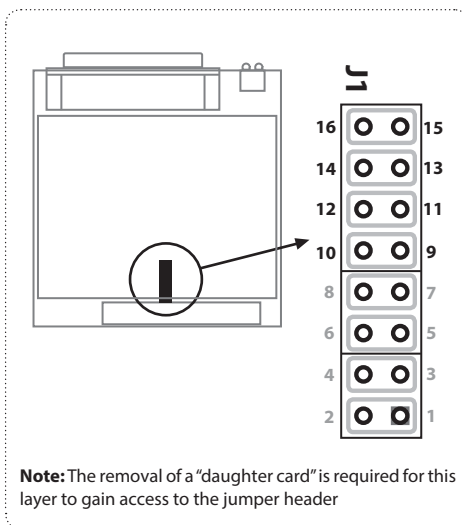
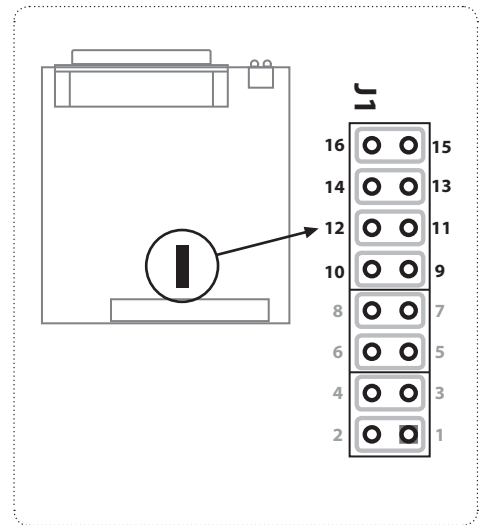
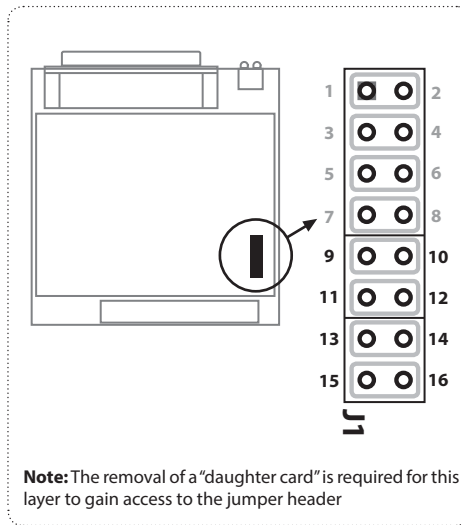
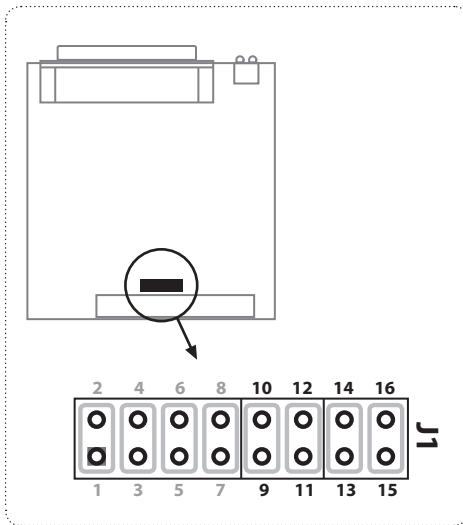
Your new I/O board(s) are now installed in the Cube and ready for use. For start-up instructions, refer to the PowerDNA Quick Start Guide.

If you have any questions, please contact UEI Technical Support:

- support@ueidaq.com
- +1 (508) 921-4600

APPENDIX A.

Location, designators (J1, J2, J3 or J4) and pins positions for the 16-pin configuration jumper header as seen from the top for a representative example of PowerDNA I/O boards



Note: J1, J2, J3 or J4 is the only 16-pin header on an I/O board!