4116 RAM Test Board Introduction and Setup

For Vetus Pars firmware version 2.1.0

The 4116 RAM Test Board lets Vetus Pars identify and communicate with a dedicated board for testing 4116 dynamic RAM. The board includes its own controller and the additional power circuitry required by 4116 devices.

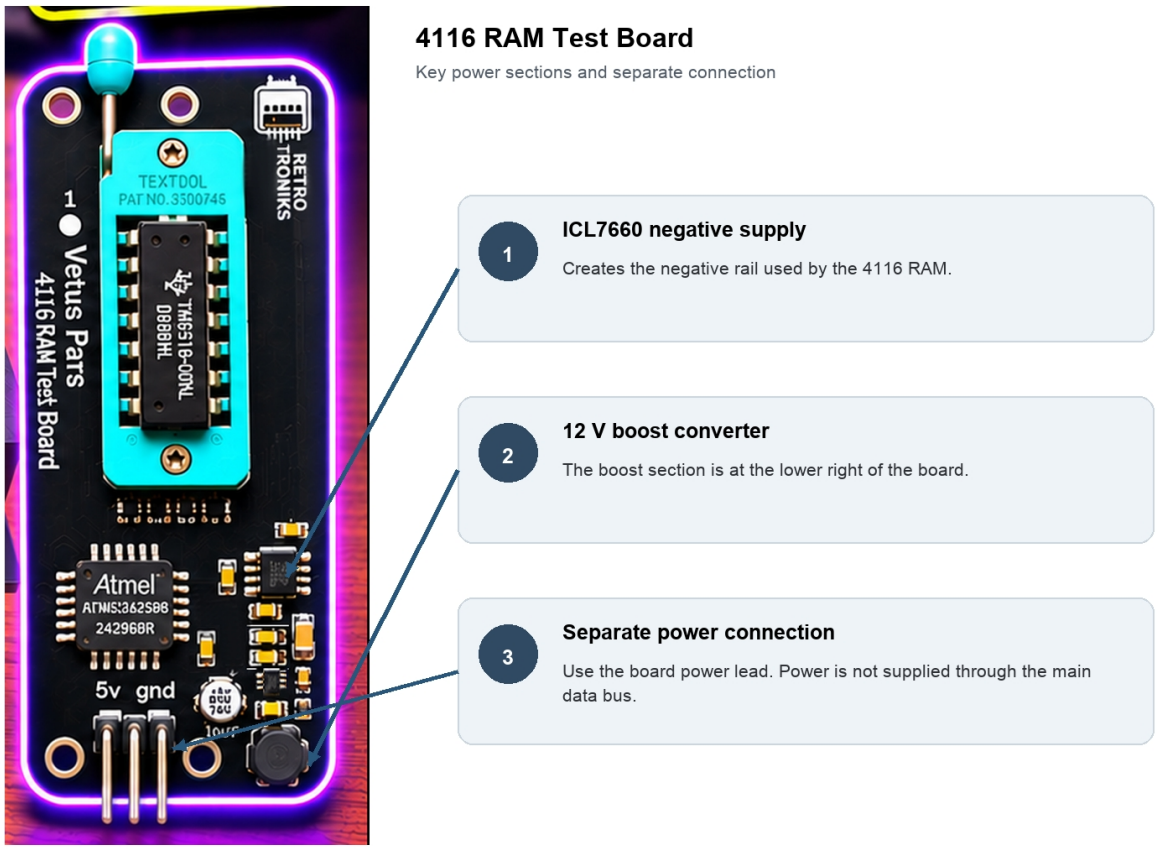
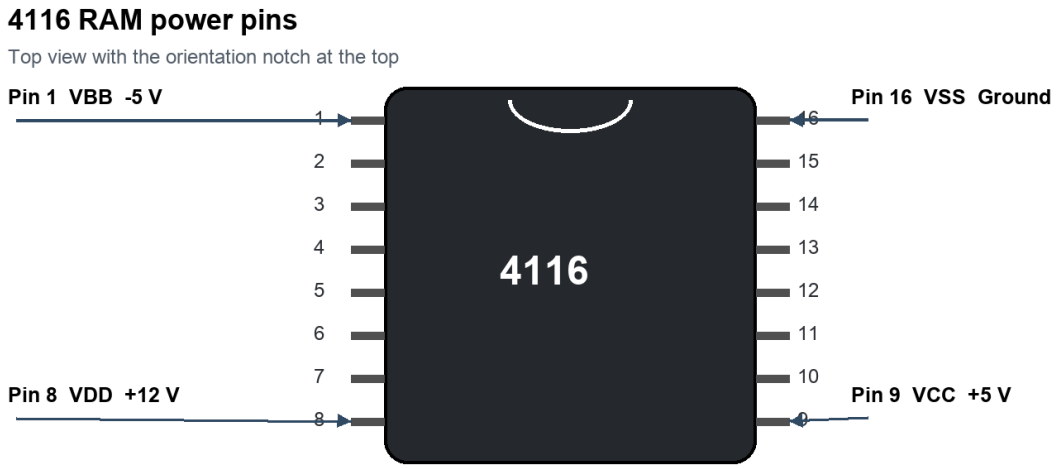


Figure 1 Board image and power sections

Power requirements

A 4116 RAM uses four power connections. The test board generates the special rails on the board: the boost section provides +12 V, and the ICL7660 section provides the negative supply.

The ZIF bus leaves the lines to device pins 1, 8, 9, and 16 disconnected. This keeps all four 4116 power pins isolated from the normal ZIF bus. Those pins remain unpowered until the test code issues BRD_ON.



4116 device power pins

Pin	Supply	Purpose
1	VBB -5 V	Negative substrate supply
8	VDD +12 V	Main 4116 memory supply
9	VCC +5 V	Logic supply
16	VSS Ground	Power return

Connect the board to Vetus Pars

Important The 4116 board power connection is separate from the main data bus. Unlike the default board arrangement, the required board power is not carried through the main data connection. The ZIF-bus lines for pins 1, 8, 9, and 16 are intentionally disconnected so the board controls those rails only after BRD_ON is executed.

1. **Turn Vetus Pars off**
   Make all board and power connections with Vetus Pars powered off.

2. **Connect the main data cable**
   Connect the board to the Vetus Pars add-on board data connection in the correct orientation.

3. **Connect the separate power lead**
   Connect the board power lead to the dedicated power pins at the bottom right of Vetus Pars. Match the marked board connection and do not shift the connector by one pin.

4. **Check the installation**
   Confirm both connections are secure before turning Vetus Pars on.

Scan for the board

1. **Open Add On Boards**
   From the Vetus Pars main menu, open the Add On Boards screen.

2. **Start the scan**
   Select the board scan option. Vetus Pars powers and queries the connected board.

3. **Confirm identification**
   Verify that the 4116 RAM Test Board appears before running a test.

Board commands are not required

Side note The 4116 RAM Test Board does not use board-specific commands during a test. Do not add BRD_SEND_CMD or BRD_GET_RSLT to 4116 test code. The board scan handles identification from the Vetus Pars menu.

Power the board in Vetus code

BRD_ON is still required because it enables the board-controlled power rails for ZIF pins 1, 8, 9, and 16. It is a Vetus power-control instruction, not a board-specific command.

```
BRD_ON
DELMS 500
// 4116 test instructions go here
BRD_OFF
ENDTEST
```

What each instruction does

Instruction	Purpose
BRD_ON	Energizes the isolated 4116 power rails for device pins 1, 8, 9, and 16.
DELMS 500	Allows the board power rails time to stabilize before the RAM test begins.
BRD_OFF	Turns the board-controlled power rails off when the test is complete.