

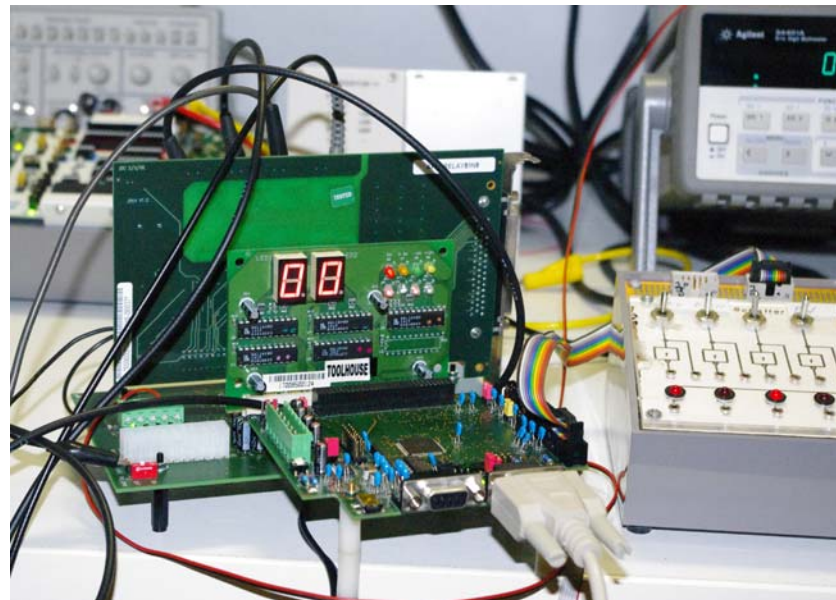
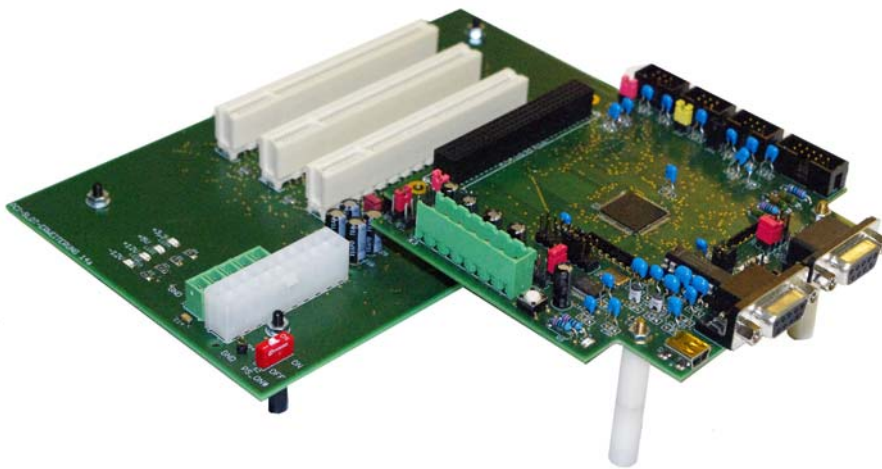
PCI Baseboard 14a Hardware Reference

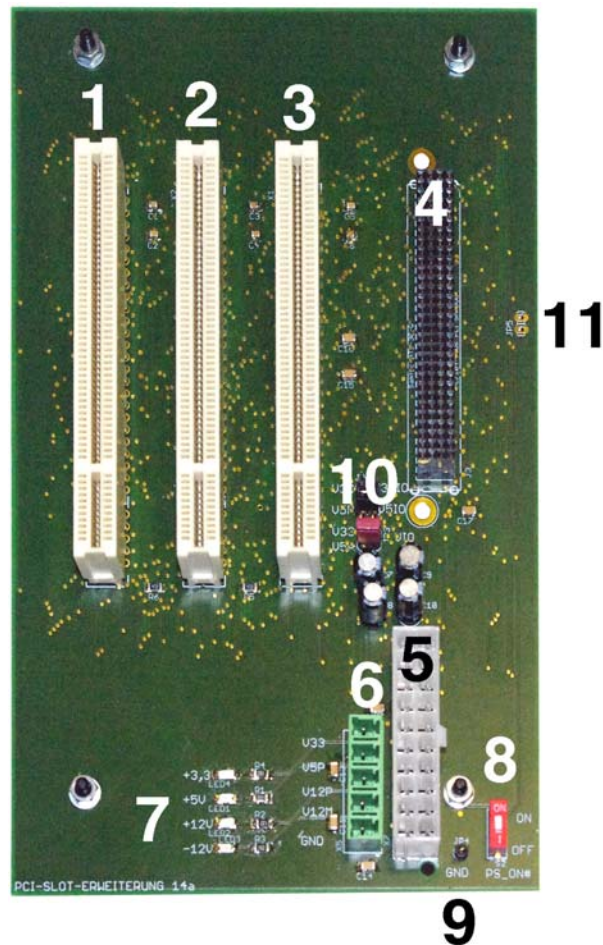
Release 1.2 (October 16, 2017)

Purpose:

Passive platform providing three legacy PCI bus card connectors (slots) and one PCI/104 connector.

All PCI connectors are wired according to the specifications PCI 2.2 / 2.3 and PIC/104, supporting the 32-bit bus and 5-V signaling. Thus the board accepts all kinds of PCI host modules, SBC cards, and I/O units. However, its particular purpose is to complement the PCI Host Adapter 14a, a microcontroller-based PCI/104 host platform.





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|---|-----------------------------|----|--|
| 1 | PCI slot 1; 32 bits, 5 V | 7 | Power LEDs |
| 2 | PCI slot 2; 32 bits, 5 V | 8 | Internal ATX power switch |
| 3 | PCI slot 3; 32 bits, 5 V | 9 | Ground test point |
| 4 | PCI/104 connector, 120 pins | 10 | Power supply configuration pin headers |
| 5 | ATX power supply connector | 11 | ATX power switch terminal |
| 6 | Power supply terminals | | |

PCI slots (1), (2), (3)

The board can be populated with three PCI slot connectors (124 pins). The connectors are to be inserted with regard to the 5-V signaling level.

PCI/104 connector (4)

The connector pins are connected to signals, supply voltages, and ground according to the PCI/104 specification.

ATX power supply connector (5)

This 20-pin connector allows employing power supply units manufactured primarily for use in personal computers.

Power supply terminals (6)

This terminal block has a pin pitch of 150 mils = 3.81 mm. Any connector type with appropriate footprint may be inserted. It allows attaching power supply units, which have no ATX-type connector.

Power LEDs (7)

A light-emitting diode is provided for each operating voltage (+ 3,3 V, + 5 V, + 12 V, – 12 V).

Internal AT power switch (8)

This switch allows switching ATX-type power supply units in and off without the need to rely on an external switch.

Ground test point (9)

A ground test point can be inserted to support oscilloscope attachment and the like.

Configuration pin headers (14)

In each of pin headers JP1, JP2, and JP3, one jumper must be inserted to select between bus addressing and geographic addressing. Geographic addressing is only effective if a 12-pin auxiliary connector (4) is inserted and an appropriate PC/104 module is plugged on.

ATX power switch terminals (11)

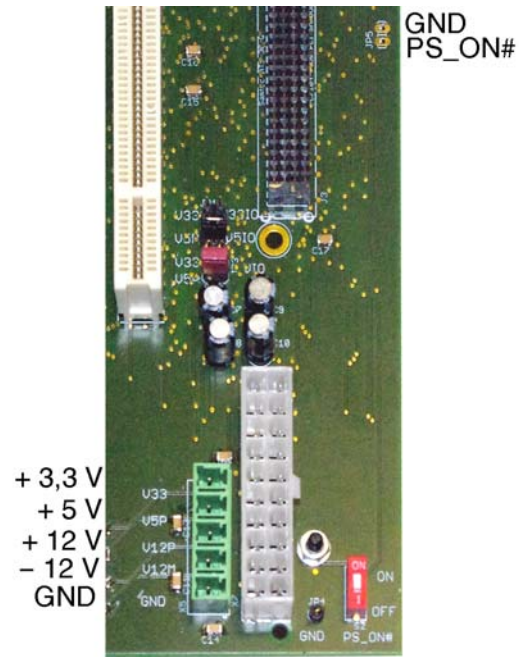
ATX power supplies require a switch to connect the signal PS_ON# to ground. These terminals allow attaching an external switch, relay contact or the like.

Power Supply

Power must be supplied from outside. A 20-pin connector allows for attaching an ATX-type power supply unit. The board provides a local on/off-switch as well as a terminal block connected to the signal PS_ON#. Additional terminals facilitate connecting arbitrary power sources. All PCI supply voltages are supported: +3,3 V, + 5 V, + 12 V, and – 12 V.

Power sources:

- a) the ATX-type power supply connector J8 (5),
- b) the power supply connector J5 (6),
- c) the PCI/104 connector J1 (4). The power supply may be connected, for example, to the PCI host adapter 14a.



Power Supply Configuration

The baseboard supports 5-V signaling. Thus the system is to be fed with + 5 V, and the I/O voltage VIO ist to be configured to 5 V. The system components determine over the other supply voltages.

Note:

JP1, JP2, and JP3 have been provided for bring-up and experimenting. JP1 and JP2 are not used. Insert a jumper on JP3 to set VIO = 5 V. All those headers will be omitted in future releases.

