

Unit / Module Description:	PCIe PCI/104-Express 1-lane carrier
Unit / Module Number:	SMT004C
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Product Specification for SMT004C

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Certificate Number FM 55022

Revision History

Issue	Changes Made	Date	Initials
1.0	First release.	4/6/13	GKP

PLEASE READ ALL OF THE NOTES IN RED.

Failure to adhere to this may result in a non-functioning system, and damage may be caused to the host.

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1 Introduction / Description

The SMT004C is a PCI/104-Express carrier board in the PCI-Express (http://www.pc104.org/pci104_Express_specs.php) format.

The main features of the SMT004C are:

- PCIe form factor card acting as a PCIe/104 carrier.
- 1-lane PCIe interface.
- Stack-down configuration only.
- Support for cooling fan.

2 Related Documents (hyperlinks)

[PCI/104-Express specification.](#)

[PCI/104 specification.](#)

3 Acronyms, Abbreviations and Definitions

A list of acronyms etc:

<http://www.sundance.com/web/files/static.asp?pagename=acc>

4 Functional Description

4.1 Express Connectivity

The SMT004C is a 1-lane PCIe form-factor plug-in board.

The 1-lane PCIe interface is connected directly to a bottom PCIe/104 connector. This allows a stack to be constructed on the bottom side of this card.

The express connectivity is such that lane 0 (PE0) of the PCI express connector is routed to PEx1_3 (lane 3) of the PCIe/104 connector.

The 16-lane portion of the PCIe/104 connector (PEx16) is not used.

NOTE: That the above connection is quite specific and not all PCIe/104 cards will support this scheme.

The full connectivity is shown here:

PCI express		PCIe/104	
Signal	Pin	Signal	Pin
PETp0	B14	PEx1_3Tp	18
PETn0	B15	PEx1_3Tn	20
PERp0	A16	PEx1_3Rp	30
PERn0	A17	PEx1_3Rn	32
REFCLK+	A13	PEx1_0Clkp	42
REFCLK-	A14	PEx1_0Clkn	44
PERST#	A11	PE_RST#	2
WAKE#	B11	WAKE#	53
SMCLK	B5	SMB_CLK	49
SMDAT	B6	SMB_DAT	47

4.2 Reset

Reset of the board is from the PCI express reset signal which is logically ANDed with a push button SW1.

4.3 Power

The +3.3V and +12V power rails are provided directly from the PCI express connector to the PCIe/104 connector.

Additionally, the PCIe/104 requires a +5V power supply. This is provided here via a Molex disk drive type connector or a SATA power connector.

NOTE: The +12V and +3.3V supplies from the PCI express connector are connected directly to the power connectors mentioned above. If your system power supply uses separate circuitry to produce the supplies which power the edge connectors to those that power the disk drives, then the disk drive power cables will need to be modified to isolate all but the +5V and ground pins.

4.4 Fan

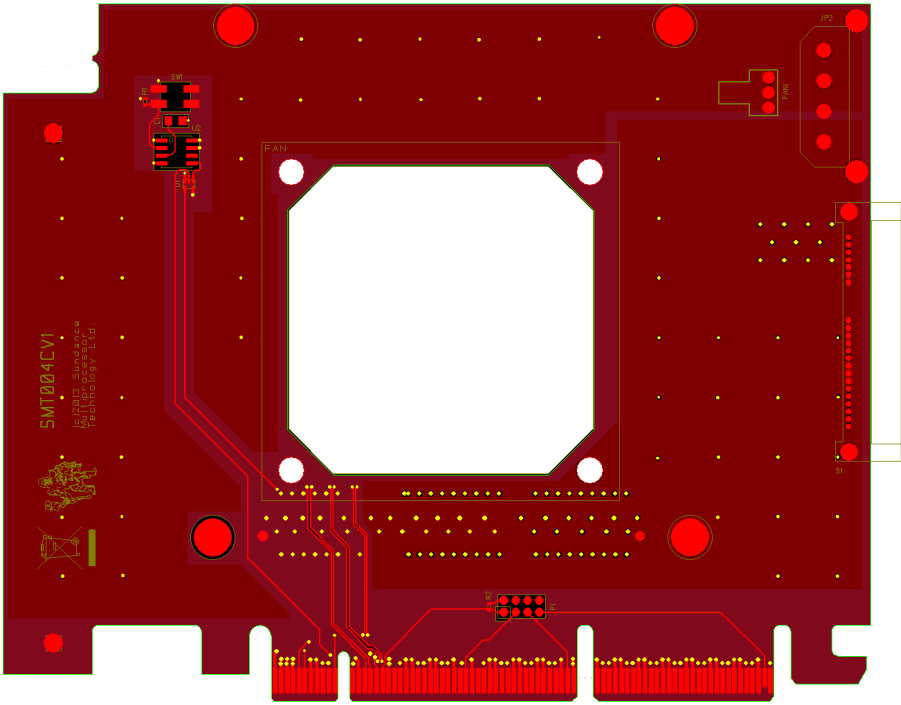
Provision is made to allow the use of a 60mm fan. The fan power connector supplies +12V.

The fan mounts on the top side of the card and thus provides cooling through a opening to the bottom mounted board.

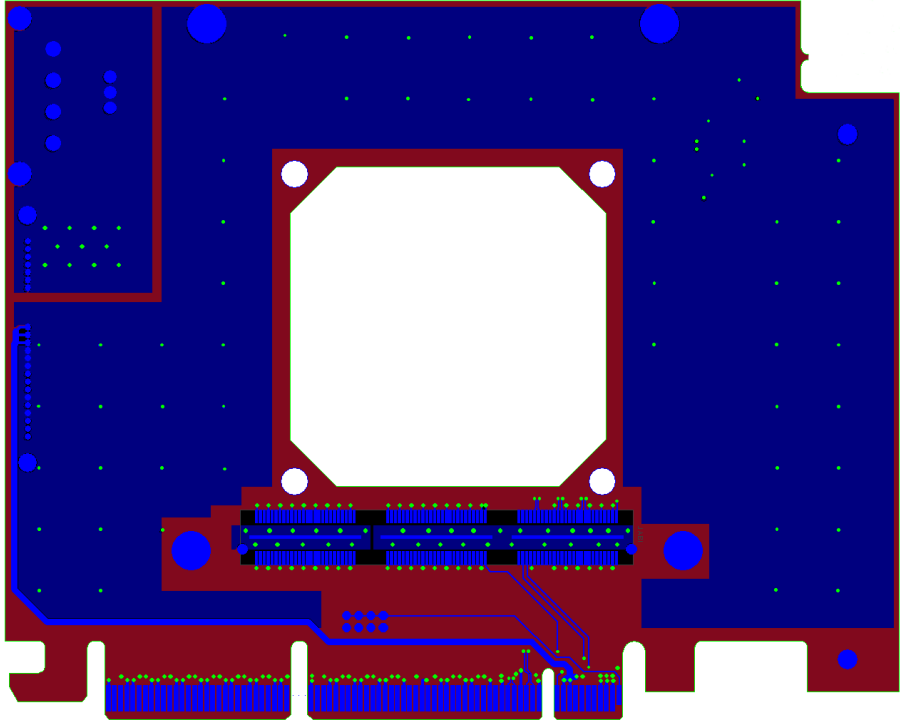
An optional adaptor bracket can be supplied to allow the use of a 40mm fan.

5 Footprint

5.1 Top View



5.2 Bottom View



6 Safety

This module presents no hazard to the user when in normal use.

7 EMC

This module is designed to operate from within an enclosed host system, which is build to provide EMC shielding. Operation within the EU EMC guidelines is not guaranteed unless it is installed within an adequate host system.

This module is protected from damage by fast voltage transients originating from outside the host system which may be introduced through the output cables.

Short circuiting any output to ground does not cause the host PC system to lock up or reboot.

8 Verification, Review & Validation Procedures

Carried out in accordance with the Sundance Quality Procedures (ISO9001).

9 Ordering Information

Order number:

SMT004C