# TPCE275   PCI Express XMC Carrier

Application Information

The TPCE275 is a standard height PCI Express Revision 1.1 compatible module that provides one slot for a single-width XMC module used to build modular, flexible and cost effective I/O solutions for all kinds of applications like process control, medical systems, telecommunication and traffic control.

The TPCE275 is a versatile solution to upgrade well known XMC I/O solutions to the PCI Express signalling standard.
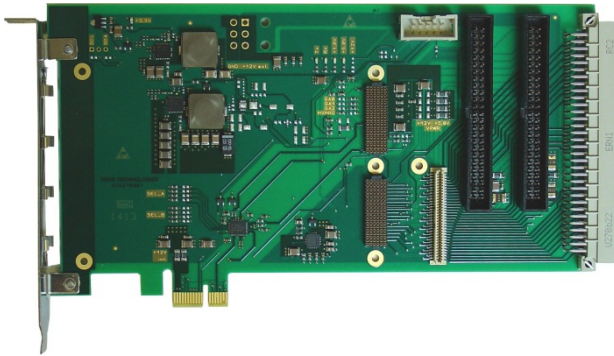
TPCE275-10R

The PCI Express x1 link from the host board to the XMC module is enhanced by a PCIe Redriver, allowing safe operation of XMC modules on PCIe mainboards.

VPWR is selectable via order option. The TPCE275-x0 variants provide for 12V VPWR and the TPCE275-x1 order options provide 5V VPWR.

The TPCE275 supports XMC front panel I/O, and also P14 and P16 rear I/O independently.

XMC P14 rear I/O is provided through a VME P2 style connector (IEC 60603-2, Type C). The I/O mapping of P14 complies with VITA-35 ("PMC P4 to VME-P2, Rows A-C mapping").

XMC P16 rear I/O is provided through two 50-pin flat cable connectors mounted in a 2.54mm grid.

The PCIe edge card connector provides +12V and +3.3V. The TPCE275-1x uses the +12V of the PCIe edge card connector to generate all power supply voltages for the XMC slot (+3.3V, VPWR and +12V).

According to the PCIe specification, a PCIe x1 card is limited to 6W on the +12V which allows to operate many of the available XMC modules on the TPCE275-1x.

For increased power requirements of an XMC module, the TPCE275-2x offer a PCIe Graphics Power Connector to supply the +12V for generating all the power supply voltages for the XMC slot providing power of up to 25W.

A 10-pin JTAG header is available for XMC module debugging purposes. All five JTAG signals are routed directly to the XMC slot.

For First-Time-Buyers, the engineering documentation TPCE275-ED is recommended. The engineering documentation includes TPCE275-DOC, schematics and data sheets of TPCE275.

Technical Information

- Form Factor: PCI Express x1, Revision 1.1
  - Board size: approx. 200mm x 111mm
- One XMC Slot:
  - PCIe Interface: x1, Rev. 1.1
  - XMC Front Panel I/O
  - XMC P14 I/O connected to VME P2 Style Connector (IEC 60603-2 compatible)
  - XMC P16 I/O connected to two 50-pin flat cable connectors
- All XMC Power Supplies generated from +12V
  - TPCE275-1x: +12V from PCIe edge card connector
  - TPCE275-2x: +12V from PCIe Graphics Power Connector
- JTAG:
  - 10-pin header with all five JTAG signals routed to XMC connector
- Operating temperature: 0°C to +70°C
- MTBF (MIL-HDBK217F/FN2 G_B 20°C):
  TPCE275-10R: 664000h
  TPCE275-11R: 664000h
  TPCE275-20R: 637000h
  TPCE275-21R: 637000h
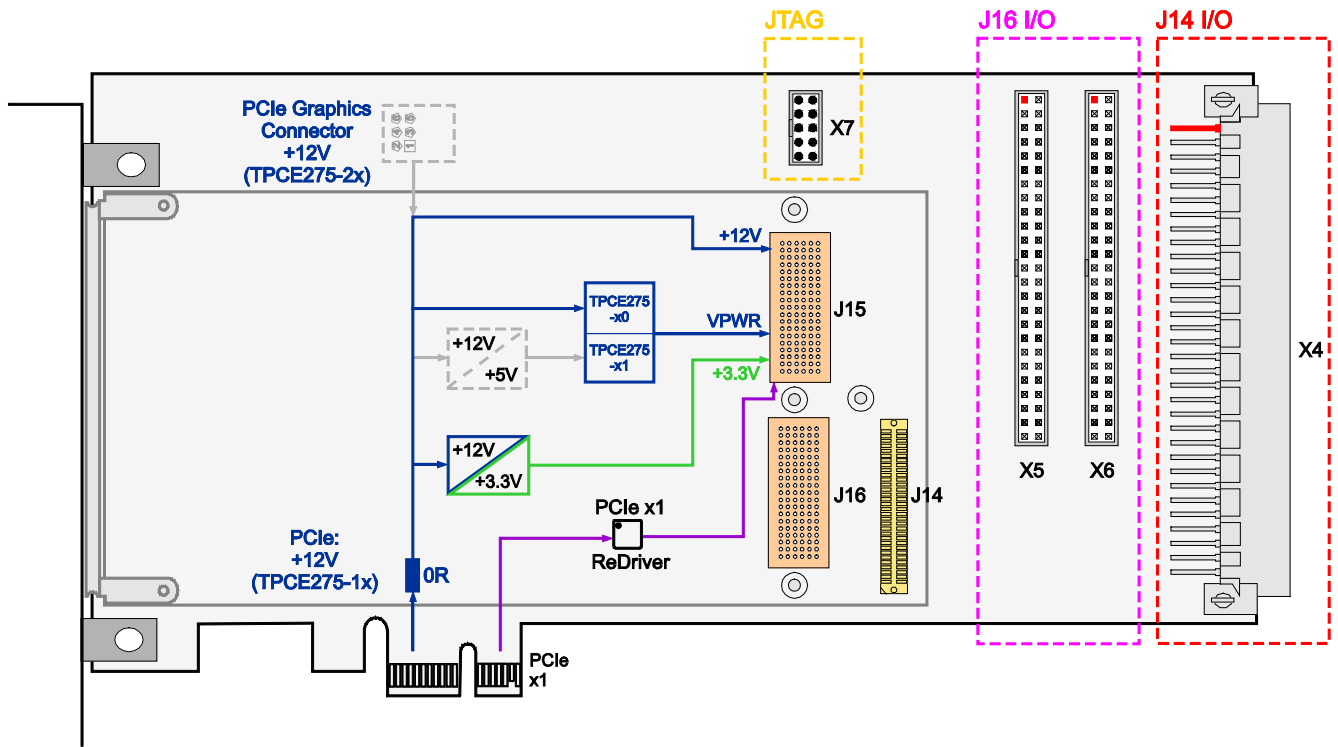
Schematic Diagram showing TPCE275

Order Information

RoHS Compliant

TPCE275-10R PCI Express XMC Carrier, VPWR: 12V, +12V Power Supply from PCIe Connector, J14 I/O, J16 I/O

TPCE275-11R PCI Express XMC Carrier, VPWR: 5V, +12V Power Supply from PCIe Connector, J14 I/O, J16 I/O

TPCE275-20R PCI Express XMC Carrier, VPWR: 12V, +12V Power Supply via PCIe Graphics Power Connector, 2 x 5.25" to 6-pin adapter cable included, J14 I/O, J16 I/O

TPCE275-21R PCI Express XMC Carrier, VPWR: 5V, +12V Power Supply via PCIe Graphics Power Connector, 2 x 5.25" to 6-pin adapter cable included, J14 I/O, J16 I/O

Documentation

TPCE275-DOC User Manual
TPCE275-ED Engineering documentation (TPCE275-DOC, Schematics, Assembly Drawing, Data Sheets)

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