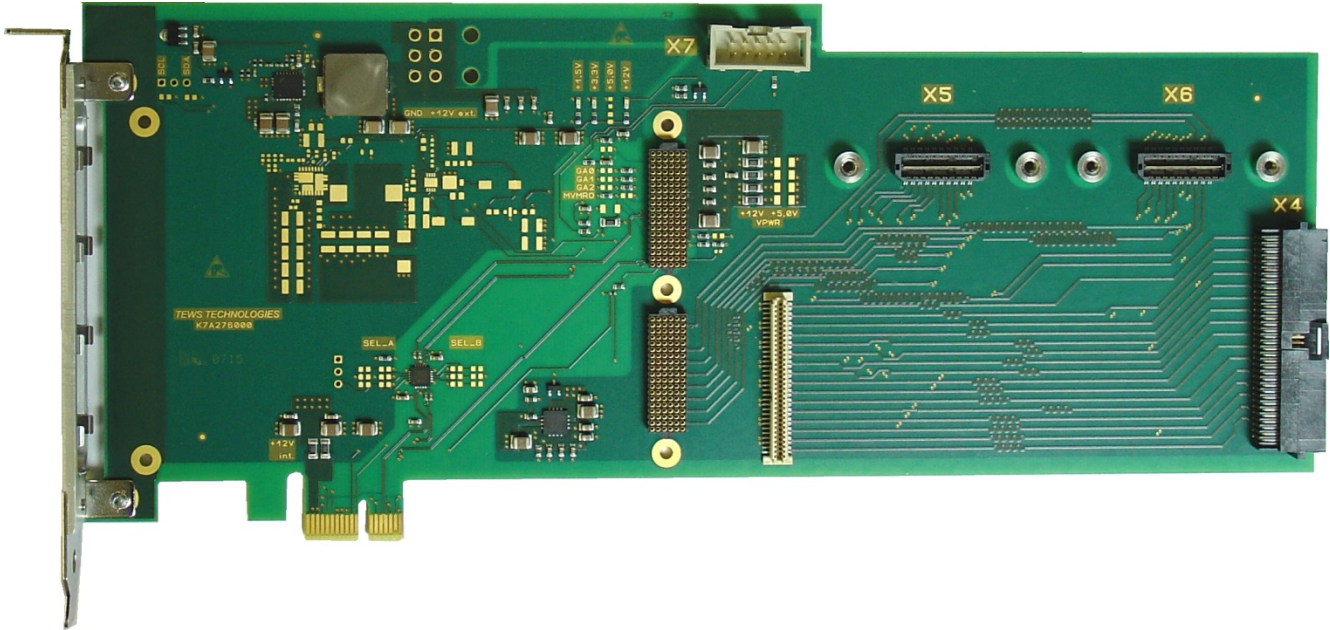# TPCE276   PCI Express x1, Gen2 XMC Carrier

TPCE276-10R

Application Information

The TPCE276 is a standard height PCI Express Revision 2.0 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 TPCE276 is a versatile solution to upgrade well known XMC I/O solutions to the PCI Express signalling standard.

The PCI Express x1 link from the host board to the XMC module is enhanced by a PCIe Gen2 Redriver, allowing safe operation of XMC modules on PCIe mainboards.

VPWR is selectable via order option. The TPCE276-x0R variants provide for 12V VPWR and the TPCE276-x1R order options provide 5V VPWR.

The TPCE276 supports XMC front panel I/O, and also P14 and P16 rear I/O independently.

XMC P14 rear I/O is provided through a Tyco AMPMODU System 50 0.050x0.100 flat ribbon cable connector. The I/O lines are routed differential.

XMC P16 rear I/O is implemented through two Samtec QTH-DP 0.50mm Q Pairs® High Speed Ground Plane Socket Strip, Differential Pair connector providing access to all P16 I/O lines.

The PCIe edge card connector provides +12V and +3.3V. The TPCE276-1xR 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 TPCE276-1xR. For increased power requirements of an XMC module, the TPCE276-2xR 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.

Technical Information

- ❏ Form Factor: PCI Express x1, Revision 2.0
  - ❏ Board size: approx. 257mm x 111mm
- ❏ One XMC Slot:
  - ❏ PCIe Interface: x1, Rev. 2.0
  - ❏ XMC Front Panel I/O
  - ❏ XMC P14 I/O connected to Tyco AMPMODU System 50 0.050x0.100 connector
  - ❏ XMC P16 I/O connected to two Samtec QTH-DP 0.50mm Q Pairs® High Speed Ground Plane Socket Strip, Differential Pair connectors
- ❏ All XMC Power Supplies generated from +12V
  - ❏ TPCE276-1xR: +12V from PCIe edge card connector
  - ❏ TPCE276-2xR: +12V from PCIe Graphics Power Connector

- ❏ JTAG:
  - ❏ 10-pin header with all five JTAG signals routed to XMC connector
- ❏ Operating temperature: -40°C to +85°C
- ❏ MTBF (MIL-HDBK217F/FN2 G_B 20°C):
  TPCE276-10R: 603000h
  TPCE276-11R: 603000h
  TPCE276-20R: 535000h
  TPCE276-21R: 535000h
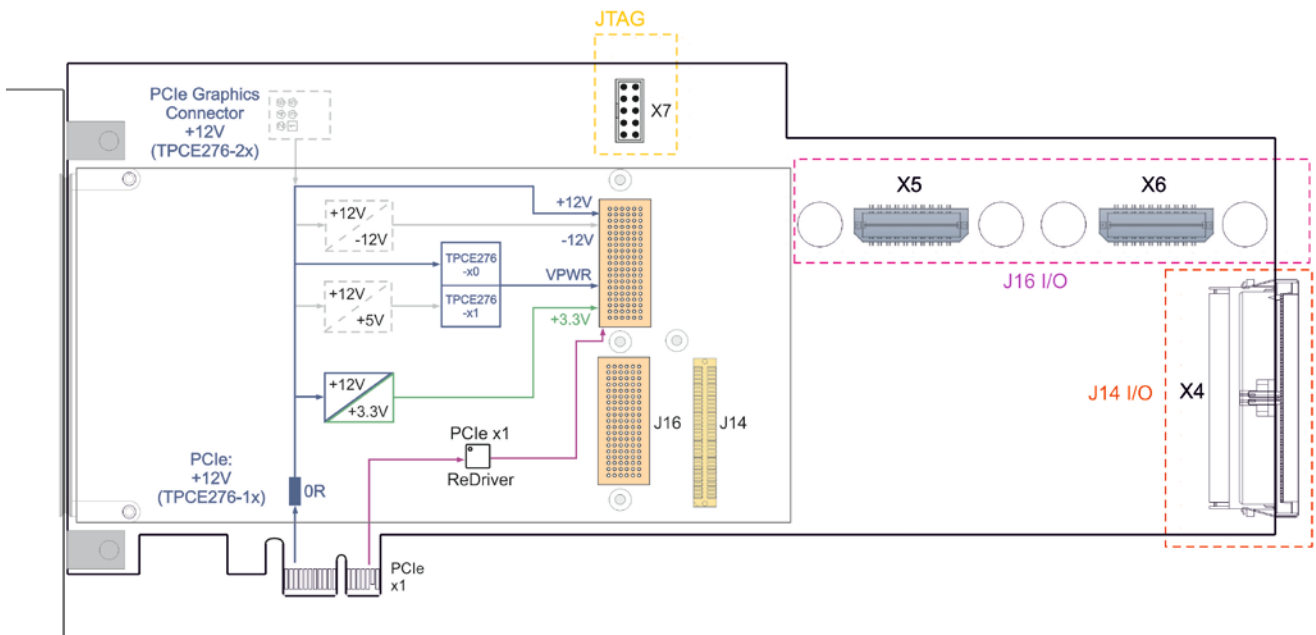
Order Information

RoHS Compliant

TPCE276-10R   1 Slot XMC Carrier, PCIe x1, VPWR = 12V, 12V from PCIe connector
TPCE276-11R   1 Slot XMC Carrier, PCIe x1, VPWR = 5V, 12V from PCIe connector
TPCE276-20R   1 Slot XMC Carrier, PCIe x1, VPWR = 12V, 12V from PCIe Graphics connector
TPCE276-21R   1 Slot XMC Carrier, PCIe x1, VPWR = 5V, 12V from PCIe Graphics connector

For the availability of non-RoHS compliant (leaded solder) products please contact TEWS.

Documentation
TPCE276-DOC   User Manual

Related Products
TPCE001-TM   VG64 I/O Transition Module