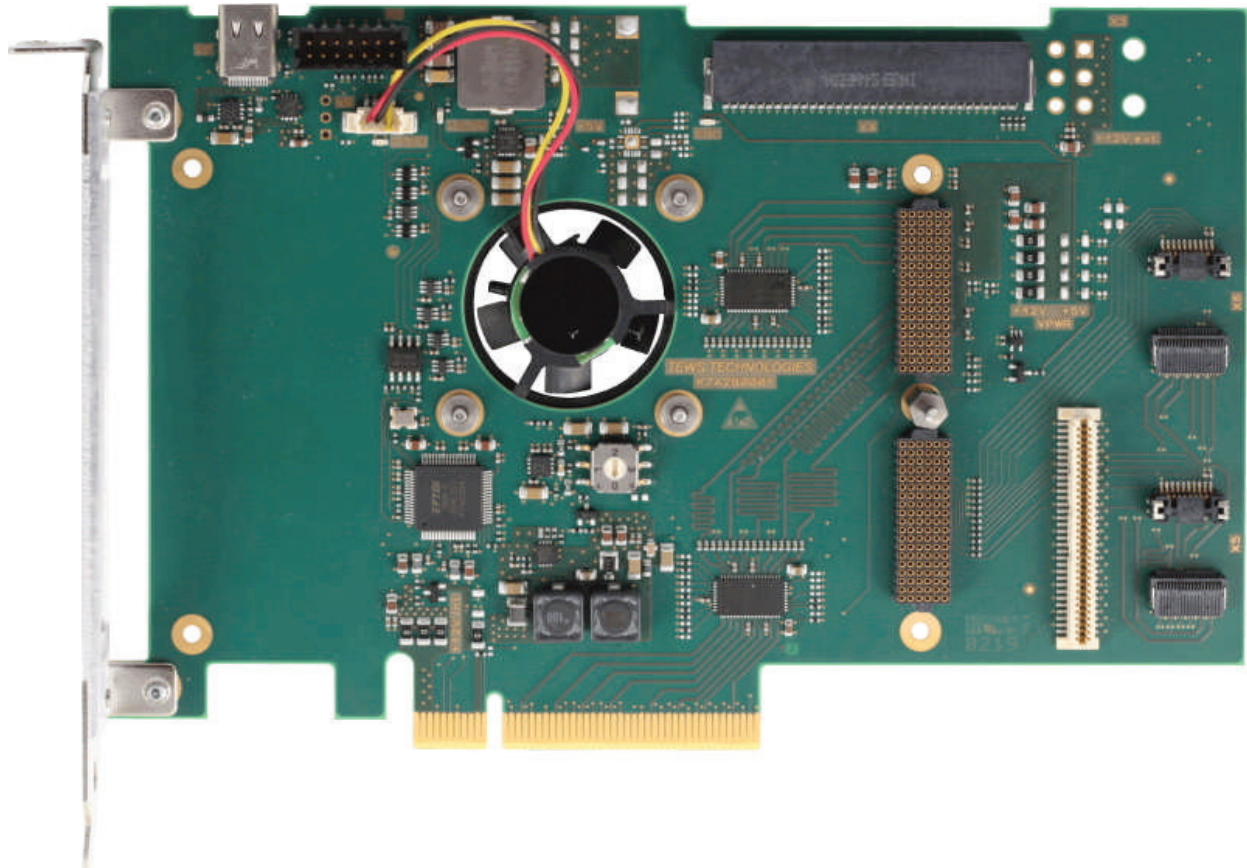# TPCE280   PCI Express x8, Gen3 XMC Carrier

TPCE280-10R

Application Information

The TPCE280 is a standard height, half-length PCI Express Revision 3.0 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 PCI Express x8 link from the host board to the XMC module is enhanced by a PCIe Gen3 Redriver, allowing safe operation of XMC modules on PCIe mainboards.

The voltage level for the XMC's main power supply, VPWR, is selectable via order option. The TPCE280-x0R variants provide 12V VPWR and the TPCE280-x1R order options provide 5V VPWR.

The TPCE280 supports XMC front panel I/O, and also P14 and P16 rear I/O independently.

XMC P14 Rear-I/O is offered through a 68-pin ERNI SMC, right angle male, 1.27mm pitch connector. The I/O lines are routed differential.

XMC P16 Rear-I/O is implemented through two Samtec Firefly UCC8 and UEC5 connectors providing access to the P16 I/O lines.

The TPCE280 provides a fan mounted under the XMC slot that helps cooling the system. This fan does not occupy a second PCIe slot as most other carrier solutions do.

The PCIe edge card connector provides +12V and +3.3V. The TPCE280-1xR uses only 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 x8 card is allowed to use 25W on its +12V supply which allows to operate most of the available XMC modules on the TPCE280-1xR. For XMC modules with increased power requirements, the TPCE280-2xR offer a PCIe Graphics Power Connector to supply XMCs with up to 75W.

A 14-pin 2mm JTAG header is available for XMC module debugging purposes. Four JTAG (TRST# not included) signals are routed directly to the XMC slot.

Technical Information

- ❏ Form Factor: PCI Express x8, Revision 3.0
  - ❏ Board size: Half-Length (167.65mm x 111.15mm)
  - ❏ PCIe Speed: max. 8GT/s (depending on the XMC)
- ❏ One XMC Slot
  - ❏ PCIe Interface: x8, Rev. 3.0
  - ❏ XMC Front Panel I/O
  - ❏ XMC P14 I/O connected to 68-pin ERNI SMC, Right-Angle Male, 1.27mm pitch connector
  - ❏ XMC P16 I/O connected to two Samtec Firefly UCC8 and UEC5 connectors
- ❏ All XMC Power Supplies generated from +12V
  - ❏ TPCE280-1xR: +12V from PCIe Edge Connector
  - ❏ TPCE280-2xR: +12V from PCIe Graphics Power Connector

- ❏ JTAG
  - ❏ 14-pin header with four signals (TRST# not included) routed to the XMC connector
  - ❏ JTAG reference voltage to the XMC is selectable from 1.5V, 1.8V, 2.5V and 3.3V
- ❏ A FAN provides direct air cooling to the XMC without occupying a second PCIe slot
- ❏ Operating temperature -40°C to +85°C
- ❏ MTBF (MIL-HDBK217F/FN2 G_B 20°C)
  TPCE280-10R: 344000h
  TPCE280-11R: 334000h
  TPCE280-20R: 321000h
  TPCE280-21R: 316000h
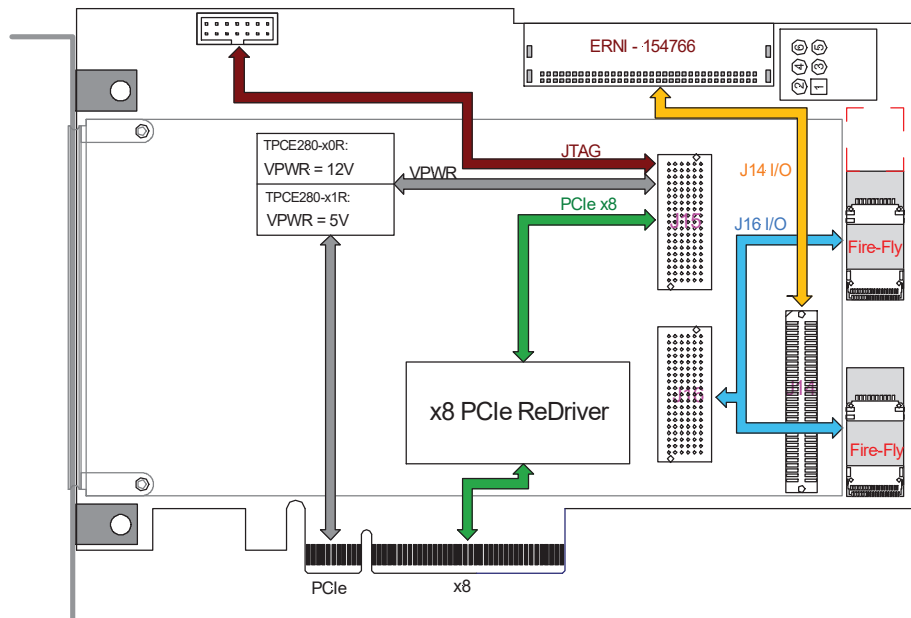
Order Information

RoHS Compliant

TPCE280-10R PCIe x8, Gen3 XMC Carrier, +12V Power Supply from PCIe Edge Connector, VPWR = 12V, J14 I/O, J16 I/O, JTAG to XMC via 14-pin header

TPCE280-11R PCIe x8, Gen3 XMC Carrier, +12V Power Supply from PCIe Edge Connector, VPWR = 5V, J14 I/O, J16 I/O, JTAG to XMC via 14-pin header

TPCE280-20R PCIe x8, Gen3 XMC Carrier, +12V Power Supply from PCIe Graphics Power Connector (cable adapter enclosed in order), VPWR = 12V, J14 I/O, J16 I/O, JTAG to XMC via 14-pin header

TPCE280-21R PCIe x8, Gen3 XMC Carrier, +12V Power Supply from PCIe Graphics Power Connector (cable adapter enclosed in order), VPWR = 5V, J14 I/O, J16 I/O, JTAG to XMC via 14-pin header

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

Documentation

TPCE280-DOC User Manual