RAVEN
sFPDP PCIe PLATFORM

TECHWAY
SIGNAL VISION SYSTEM

Ready-to-use & cost-effective platform

APPLICATIONS

- RADAR
- SONAR
- Electronic Warfare
- Medical imaging
- Infrared imaging system
- Range & Telemetry system
- Physics research
- Video production

BENEFITS

- Cost-effective solution
- COTS sFPDP platform
- VITA 17.1 and 17.3 compliant
- Optical or/and copper SFP modules
- Multi-board application support
- Trigger inputs
- Low power
- Windows and Linux compliant SDK
- SDK includes :
  - Drivers
  - C++ class API
  - Example designs

DEFENCE

INDUSTRY
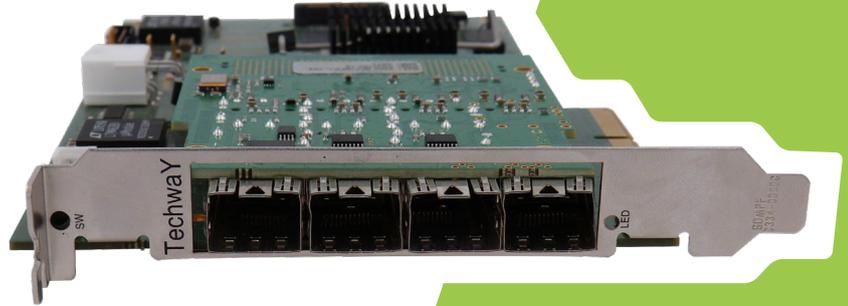
RAVEN is a flexible platform implementing 4 sFPDP channels with receive and transmit engine for high-performance data-processing.
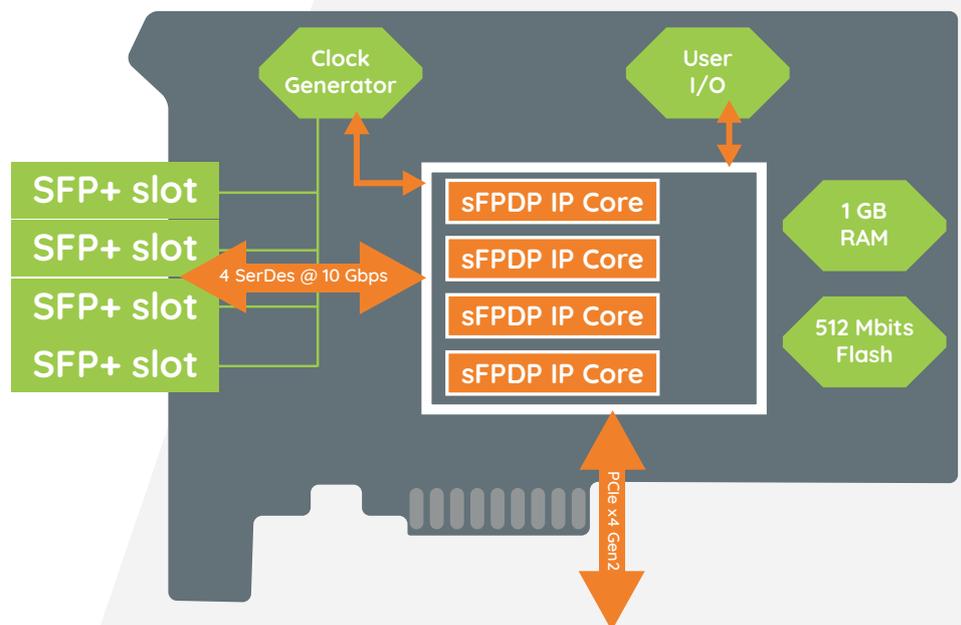
Based on Xilinx Kintex-7 FPGA, this sFPDP platform supports up to 10 Gbps data rate per link. RAVEN is fully dimensioned to implement VITA 17.1 and 17.3 sFPDP standards and offers the following functionalities : Flow Control, CRC, Framed/Unframed, Copy/Loop Mode.

The user-friendly API (Application Programming Interface) software, written in C++, allows to get/send data, monitoring, configure, upgrade, etc.

This platform is compliant with copper or fiber thanks to its SFP+ slots.

Clock Generator

User I/O

SFP+ slot
SFP+ slot
SFP+ slot
SFP+ slot

4 SerDes @ 10 Gbps

sFPDP IP Core
sFPDP IP Core
sFPDP IP Core
sFPDP IP Core

1 GB RAM

512 Mbits Flash

PCIe x4 Gen2

info@techway.com - ☎ +33 (0)1 64 53 37 90

RAVEN

sFPDP PCIe PLATFORM

KEY FEATURES

- 4 sFPDP channels
- Up to 10 Gbps per link
- PCIe x4 Gen2
- Low-profile PCIe form factor
- Xilinx Kintex-7 FPGA
- 1Gb on-board DDR3 RAM
- 8 User I/Os connector
- Independent clock per channel

ENVIRONMENTAL INFORMATION

- Operating temperature range : 0°C to 50°C
- Storage temperature range : -55°C to 125°C
- Maximum shock range : 10g during 20ms
- Maximum vibration range : 0.03 g2/Hz
- Compliant with ROHS process

SOFTWARE

- Linux (64 bits) supported
- Windows 10 (64 bits) supported
- Easy-to-use API
- Multi-board management
- Concurrent access supported
- Example designs
- Advanced DMA engine

ORDERING INFORMATION

- RAVEN-1
  - VITA 17.1 sFPDP platform, 4 channels, PCIe x4 Gen2
- RAVEN-3
  - VITA 17.3 sFPDP platform, 4 channels, PCIe x4 Gen2
- RAVEN_850_SFP_pack
  - Set of 4x SFP+ transceivers multimode 850nm for RAVEN platforms

RAVEN product line is delivered as a ready-to-use platform. Its FPGA design is open to customization for specifics projects (on demand).

ABOUT sFPDP PROTOCOL

Serial Front Panel Data Port is a high-speed low-latency serial communications protocol for use in high-speed data transfer applications.

sFPDP is ideal for use in applications such as high-speed communication system backplanes, high-bandwidth remote sensor systems, signal processing, data recording, and high-bandwidth video systems.

The simple and lightweight nature of the protocol makes it an attractive choice for replacement of parallel bus interconnects using serial transceiver technology.

sFPDP can be used in point-to-point or loop topologies, uni-directional or bidirectional links, and easily supports different types of data with efficient and flexible data framing options.

VITA 17.3 sFPDP protocol describes the third generation "Serial FPDP" standard. This standard supports multi-lane channel bonding and advanced 64B/67B encoding to increase the bandwidth capabilities of the link.

VITA 17.3 sFPDP allows Serial FPDP to continue filling the needs of high-bandwidth (up to 10 Gbps per link), low-latency remote sensor data connections and flexible system interconnect solutions that are scalables.

RAVEN-1 vs. RAVEN-3

RAVEN-1 proposes serial communication channels fully compliant with VITA 17.1-2015 standard. RAVEN-1 is a modern and cost-effective interface solution to communicate with your legacy systems based on sFPDP protocol.

RAVEN-3 integrates the brand-new version of VITA 17.3-2018 sFPDP. It brings you high-effective serial communication protocol with no data rate limitation and up to date functionalities.

RAVEN-1 and RAVEN-3 share the same hardware solution and software interface. They allow you to have VITA 17.1 and 17.3 protocols easily cohabiting in your system or to migrate quickly and with no risk from VITA 17.1 to 17.3.

Information and photos subject to change without notice