

## Test & Measurement, Data acquisition



- VISION
- X-RAY
- SENSOR

Edition: October 2011

### Highlight: Optical Fibre Connectivity

#### The fastest transmission links on Sundance's COTS modules



**SMT122T: Fibre + Ethernet** (Dual optical fibre, PCI Express)



Sundance has now upgraded its range of embedded solutions to include **faster optical transceiver** modules.

By offering point-to-point fibre-optics supporting **data rates up to 4Gbps**, our Sundance products are favoured for applications that need high bandwidth, long distance and complete immunity to electrical interference and radio frequency interference (RFI).

Targeted applications are high-speed communication systems, high bandwidth remote sensor systems, signal processing, high-speed digital recording, and high bandwidth video systems particularly over long distances.

In order to supply you with a **turn-key solution**, Sundance offers a variety of **FPGA IP cores** to support high-speed full duplex data transfers over optical transceivers:

- [FC120](#) Serial FPDP VITA 17.1 IP core,
- **Fibre Channel** IP core,
- or any **custom-specific FPGA IP core** matching your specifications.

Visit our website at [www.SUNDANCE.com](http://www.SUNDANCE.com) to find out more.

**SMT123T: Multi-Fibre channels**  
(Four transceivers, PCI Express)



**SMT105: Embedded PCIe/104**  
(Small form factor with Fibre modules)



**SMT700: 3U PXI Express**  
(Industrial-grade Fibre solution)

### Zoom in on Remote sensor applications

#### Data acquisition in harsh environments



Aircraft engine manufacturers require to monitor many data acquisition channels in parallel to measure strain, vibration, pressure and the temperature of the engine under test. In order to get the best measure the data acquisition and processing system (typically a [EVP6472-916](#) multichannel and multicore platform) needs to be the smallest size possible, and the close to the engine. As the data is exploited by the laboratory located at more than 300 m. (equivalent to 900 ft.) away from the sensors the main

issue is to transport the data without being polluted by the perturbations emitted by engine under test.

**Optical fibres** are particularly well suited to transmit data at gigabit speed rates over long distance ranges, fast enough to guarantee real-time data measurements for analysis. Fibre optics are also excellent against disturbed environments because of their noise immunity, and good resistance to EMCs/RFIs (radio frequency interferences).

One well-known customer successfully deployed our [EVP6472-916](#) combined to the [SMT551E](#) dual fibres converter board to achieve engine field qualification tests.