

**Reconfigurable FPGA Computing**

Board	FPGA	Memory	I/Os
SMT100	Virtex-5	DDR2	LVDS, LVTTTL, Serial

**Digitizers**

Board	Sampling	Resolution	A/D Channels
SMT191	1GSPS	8-bit	Dual
SMT190	210MSPS	12-bit	Dual
SMT141	250MSPS	14-bit	Quad
SMT180	125MSPS	14-bit	Octal
SMT184	125MSPS	14-bit	Quad

**Arbitrary Waveform Generators**

Board	Sampling	Resolution	D/A Channels
SMT181	1GSPS	14-bit	Dual
SMT142	800MSPS	16-bit	Quad

**Data Acquisition (ADC & DAC)**

Board	Sampling	A/D	Sampling	D/A	Channels
SMT143	250MSPS	14-bit	800MSPS	16-bit	Dual
SMT150	125MSPS	14-bit	500MSPS	16-bit	Dual
SMT159	40MHz	12-bit	125MSPS	14-bit	Quad
SMT146	600kHz	16-bit	2MSPS	16-bit	Quad

**Clock and Signal Generator**

Board	Features
SMT199	Dual 400MSPS DDS, Ext. Clock

**RF Front-ends**

Board	Features	RF band	Resolution	Channels
SMT101	MIMO	2.4 & 5GHz	10-bit	Dual
SMT111	LTE	2.4 & 5GHz	12-bit	Dual
SMT103	WIMAX	2.4-2.7GHz	12-bit	Dual

**Framegrabbers and Video Displays**

Board	Features
SMT109	16 PAL/NTSC analog inputs
SMT139	DVI Transceiver
SMT149	Dual Camera Link (base/medium/full)

**Communications**

Board	Features
SMT145	Dual Gigabit Ethernet, SDRAM, Flash
SMT122	RS-422 interface, LVTTTL I/Os

**Sundance Multiprocessor Technology**

- ● ● embedded signal processing solutions

**Embedded PCI/104-Express  
Small Form Factor Computing Solutions****UK and Scandinavia**

Flemming Christensen  
T. +44 (0) 7850 911 417  
flemming.c@sundance.com

**Americas**

Sebastien Maury  
T. +1 (214) 272 0395  
sebastien.m@sundance.com

**China and Asia-Pacific**

Pascal Coppens  
T. +85 235 834 283  
pascal.c@sundance.com

**Europe, Middle-East and India**

Fabio Ancona  
T. +39 0185 385 193  
sundance.italia@sundance.com

**France and Benelux**

Jeremie Veyret  
T. +33 (0) 296 412 235  
jeremie.v@sundance.com

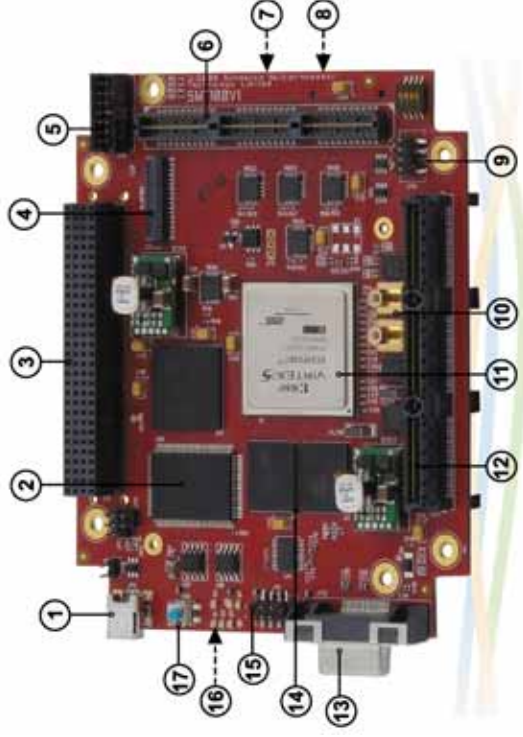
**Israel**

David Hirshberg  
+972 (0) 722 510 990  
israel@sundance.com

- Un-manned Aerial Vehicles
- LTE, WIMAX & WCDMA/HSPA
- Medical X-Ray imaging systems
- Research, Science & Technology
- Space, Land, Sea, Air equipments
- Industrial control & vision solutions
- Avionics measurement instruments

## Series-1, Stackable PCI/104-Express Modules

●●● Stackable computing, the flexibility to scale...



### User-Configurable Virtex-5 FPGA with Customizable I/O

1. USB (Flash programming)
2. USB 2.0 Controller
3. PCI 32-bit / 33MHz Bus
4. SLB Power Connector
5. JTAG
6. Sundance Local Bus (LVDS or LVTTL, 120 I/Os)
7. MicroSD Socket
8. External Power Connector (+3.3V, +5V, +/-12V)
9. LVTTL and differential clock I/Os
10. External Trigger and 1pps via MMCX
11. Virtex-5 FXT FPGA (FF656 package)
12. PCI Express Bus (4x 2.5Gbps)
13. Cable PCIe (1x 2.5Gbps)
14. 512MB DDR2 SDRAM (2 x 128M x 16-bit)
15. Dual RS-232
16. Two SATA connectors
17. Reset Switch

## Description

Sundance's PCI/104 Express boards are stackable modular solutions enabling multiprocessor architectures built around Xilinx Virtex™-5 FPGA devices, and multiple I/O interfaces.

High-speed DDR2 SDRAM memory buffers and performing PCI Express interface make the Series-1 a powerful, flexible and scalable I/O processor module to implement the most demanding digital signal processing algorithms.

A choice of medium and large-size Virtex-5 FXT FPGA devices with built-in PowerPC 440 processor core and multiple I/Os: two RS-232 for serial communications with terminals, two SATA sockets to connect massive recording systems, four LVTTL to interface to alert signals, one differential clock and two single-ended I/O via MMCX connectors for external clock, external trigger or 1pps synchronization signal.

Auxiliary power supply connector and one MicroSD Flash socket are easily accessible to operate the boards in standalone mode.

The Series-1 offers reliability, high-data rates and longevity for all military, aerospace, medical, instrumentation and industrial control applications.

### Compatibility with existing PCI infrastructure

#### Advantages for rugged embedded environment

- Compact module size: 3.6"x3.8" (90mm x 96mm)
- Self-stacking property: no backplanes or card cages
- Rugged connectors: Reliable in harsh environments
- Mounting holes: Resistance to shock and vibration
- Fully compatible with PC: Reduced development costs and time-to-market

## Features

### Mechanical

- PCI/104-Express small form factor
- Adjust for stack-up or stack-down
- Air-cooled board
- Optional PCI/104 small form factor

### Target FPGA device

- Virtex-5: FX30T or FX70T (PowerPC 440)

### Configuration

- Download from PCI, PCI Express, USB or Flash

### Memory

- 512MB DDR2 SDRAM (2 x 128M x 16-bit)
- 64MB Flash

### On-board I/Os

- 4 LVTTL & Differential I/Os
- 4 user LEDs
- JTAG Header for debugging and simulation

### Sundance Local Bus (SLB)

- FPGA mezzanine card interface with power supply
- Variety of functionalities:
  - ADC, DAC, Video and Communication interfaces
  - Open specifications

### On-board connectors

- Cable PCIe (one lane)
- Two SATA sockets (2 lanes @ 2.5Gbps)
- Two RS-232 Ports
- MicroSD flash socket
- USB to allow easy Flash reprogramming
- External power supply connector

### Software support

- Board control and monitoring tools
- Flash programming utility
- Confidence test
- Host side API and C++ software functions
- Software program example
- Xilinx FPGA project
- Support from 3L Diamond
- Drivers for Windows, Linux or VxWorks