DSPC-8681

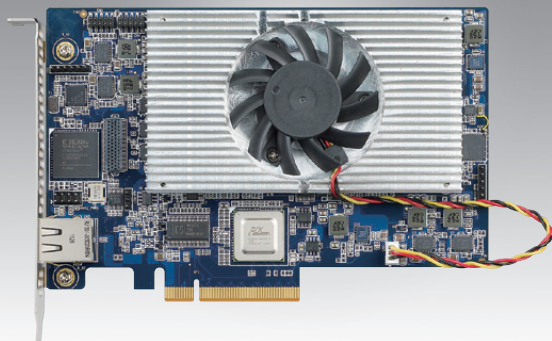## Half-length PCI Express Card with 4 TMS320C6678 DSPs

NEW

Features

- Four TI TMS320C6678 DSPs on single half-length PCI Express Card with PCIe Gen 2 x8 interface to the edge connector
- Eight TMS320C66x™ DSP Core Subsystems (C66x CorePacs) @ 1.0 GHz per DSP
- 1 GB DDR-1333 on board memory per DSP
- Supports XDS560v2 evaluation module via JTAG for CCS connection
- Hardware monitor for temperature detection
- Applications:
  - IPTV/Web TV/mobile TV video transcoder
  - Audio and video transcoding/transrating
  - Media gateways and accelerator
  - Medical applications
  - High Performance Computing

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Introduction

The DSPC-8681 integrates four Texas Instruments TMS320C6678 multi-core digital signal processors (DSPs), the PLX® ExpressLane™ PEX8624 PCIe switch, and the Xilinx XC3S200AN Spartan-3 FPGA to achieve the highest possible performance levels in a half-length PCIe form factor. The DSPs provide fixed- and floating-point capabilities and include packet accelerator support for various transport plane protocols and a security accelerator engine which supports a wide range of security and encryption standards including DES.
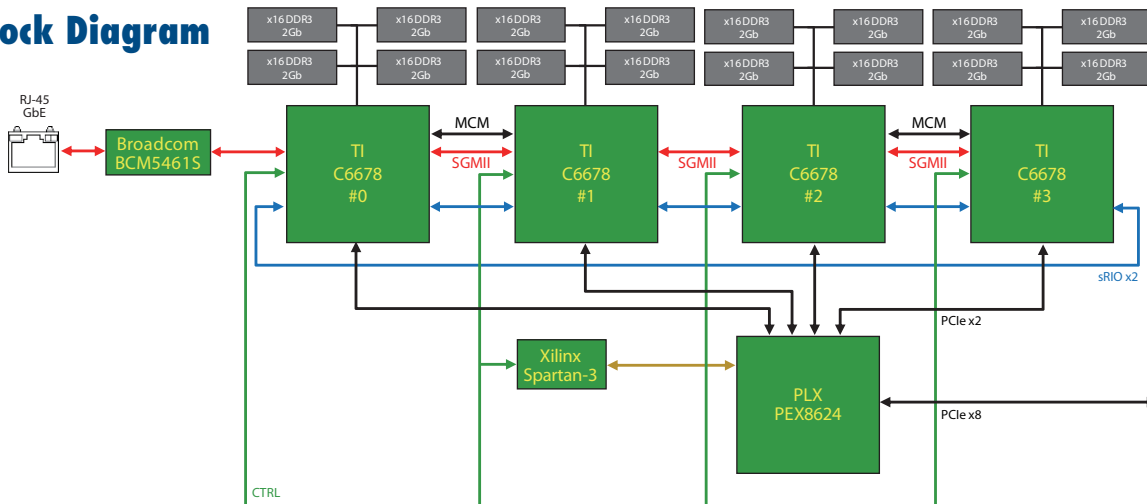
The DSPC-8681 includes Serial RapidIO and SGMII daisy-chains for connecting all DSP devices. Each DSP device is also connected by two separate PCI Express lanes (PCIe x2) via the PEX8624 enabling up to 10Gbps non-blocking throughput. The card can support 120 channels in an H.264 mobile video application (CIF, 30fps) and 60 channels in a content delivery network using H.264 (SD, 30fps). For HD Broadcast applications, the DSPC-8681 is capable of supporting 4 channels of AVCIntra-50, 10-bit, 4:2:0 at 60fps.

The 32 DSP cores on the DSPC-8681 make it ideal for power efficient solutions based on commercial and industrial servers needing the highest performing video processing technology on fast-to-deploy PCIe add-in cards. It is a perfect fit for applications in many industries such as digital media, communications, video-surveillance, medical imaging, bioinformatics, radar, sonar and instrumentation, high performance computing as well as test and measurement.
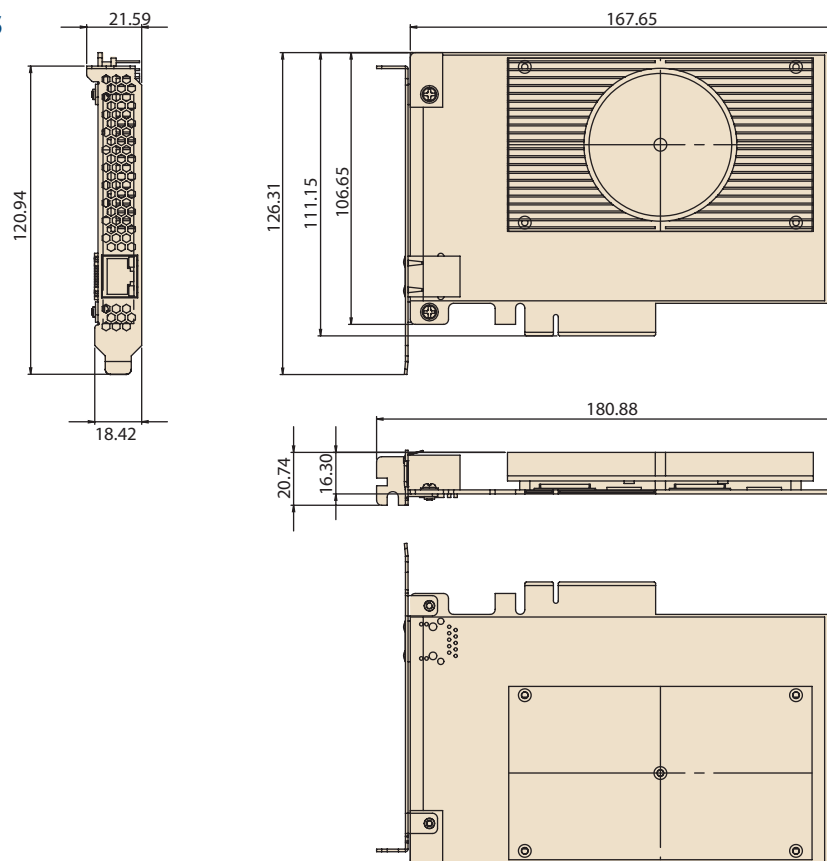
Specifications

Media Processing Elements	Four TI TMS320C6678
	Eight TMS320C66x cores (@1.0GHz) per DSP
	1024 MB DDR3-1333 on board memory
	Two Serial RapidIO 2.1 x2 interfaces up to 10Gbps bandwidth
	One PCI Express Gen-2 x2 interface
	Dual 10/100/1000Mbps Ethernet w/ SGMII
Host Interface	PCI Express Gen-2 x8 with PCI Express x8 edge connector
Ethernet	1 x 10/100/1000 Mbps Ethernet port
Software Support	Host PC Linux DSP program loader
	MCSDK for TMS320C6678
	PDK for TMS320C6678
Power	Max. 54 W
Cooling	Aluminum cooler with fan (4800 RPM, 19.41 CFM)
Physical Dimensions	111.15 x 167.65 mm (4.48" x 6.6")
	0.5 kg
Environment	Operating temperature: 0 to 50° C
	Humidity: 20% to 90 % RH
	Storage temperature: -20 to 70° C
	Humidity: 5% to 95 % RH

ADVANTECH

Last updated : 18-Oct-2012

Block Diagram

Dimensions

Unit: mm

Ordering Information

Part Number	Description
DSPC-8681E-00A1E	Half-length PCI Express Card with 4 TMS320C6678