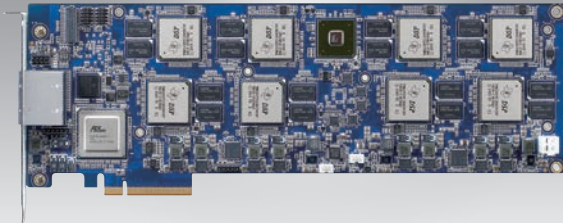


# DSP-8682

Full-length PCI Express Card  
with 8 TMS320C6678 DSPs

NEW



## Features

- Eight TI TMS320C6678 DSPs on single full-length PCI Express Card with PCIe Gen3 x8 interface to the edge connector
- Eight TMS320C66x™ DSP Core Subsystems (C66x CorePacs) @ 1/1.25 GHz per DSP
- 2 GB (Optional) DDR3-1333/1600 on board memory per DSP
- Applications:
  - Audio and video transcoding/transrating
  - Media gateways and accelerator
  - High Performance Computing
  - Broadcasting Application
  - Automatic Optical Inspection

FCC CE

## Introduction

The DSP-8682 integrates eight Texas Instruments TMS320C6678 multi-core digital signal processors (DSPs) each with 2GB of DDR3 1333/1600MHz 64-bit DDR3 memory, the PLX® ExpressLane™ PEX8748 PCIe Gen 3 switch, a Xilinx XC3S200AN Spartan-3 FPGA, and an IDT CPS1616 Serial RapidIO Gen 2 switch to achieve the highest possible performance levels in a full-length PCIe form factor. The PEX8748 and the IDT CPS1616 interconnect x2 lanes between each DSP device. A high speed connection to the host is assured through the PEX8748 switch's PCIe x8 Gen 3 interface for the fastest possible data transfers. A HyperLink chip-to-chip interconnect interface has been implemented enabling the on-chip navigator to transparently dispatch tasks for execution between DSP pairs.

In addition, an SGMII daisy chain between all devices is connected to a Broadcom BCM5482S providing two RJ-45 Gigabit Ethernet connections the I/O panel.

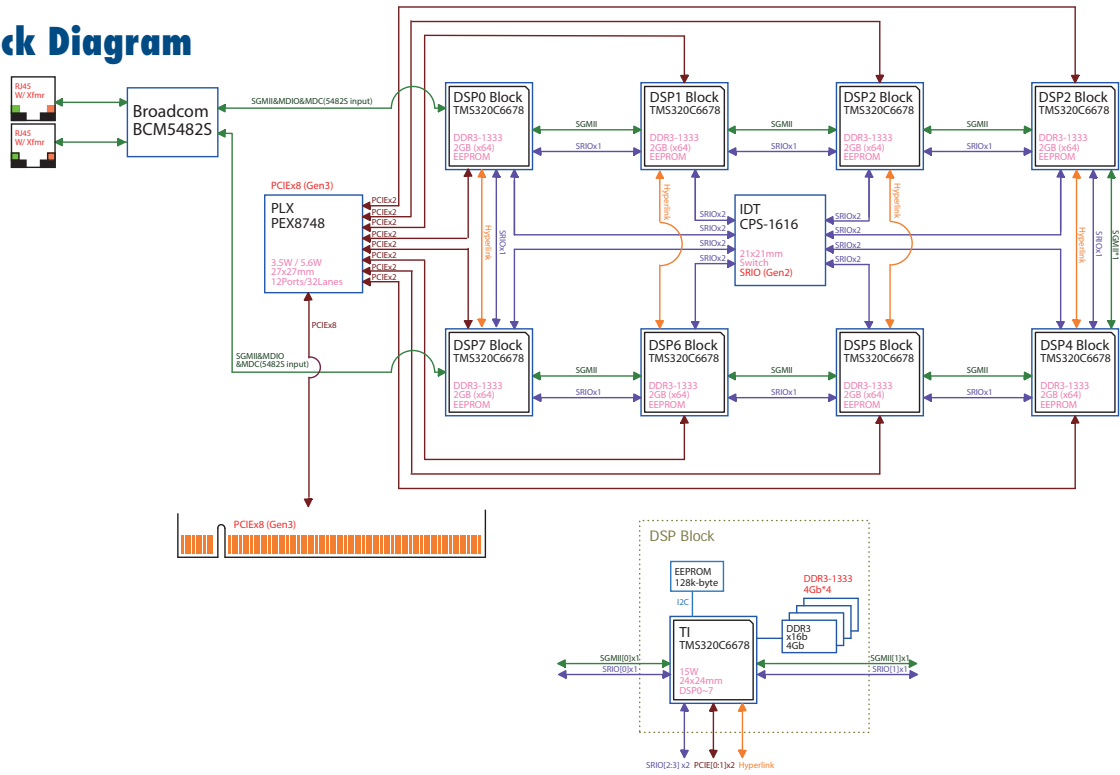
The DSP's provide fixed- and floating-point capabilities enabling the board to perform 2,048 GMACs (Giga Multiply-Accumulation operations per second) using the embedded C66x DSP cores inside the TMS320C6678 devices.

The 64 DSP cores on the DSP-8682 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. This raw computing power makes the DSP-8682 a perfect fit for advanced and complex video processing such as JPEG2000 for 2K/4K processing, AVC-Intra 50/100 and AVC-Ultra, deep-color pixel manipulation, HEVC/H.265 and motion-compensated temporal filtering. It is also suited for applications in many industries such as media gateways and high performance computing.

## Specifications

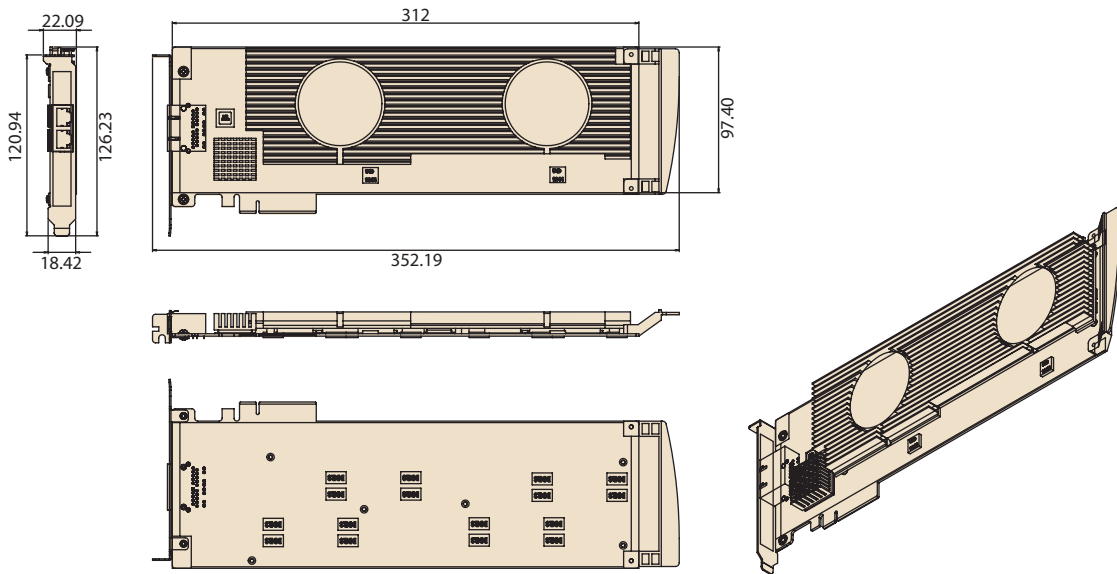
Media Processing Elements	Eight TI TMS320C6678
	Eight TMS320C66x cores (@1/1.25GHz) per DSP
	2048 MB DDR3-1333 on board memory
	One Serial RapidIO 2.1 x2 interface up to 10Gbps plus two x1 interfaces up to 5Gbps bandwidth
	One PCI Express Gen-2 x2 interface
	Dual 10/100/1000Mbps Ethernet w/ SGMII
Host Interface	PCI Express Gen-3 x8 with PCI Express x8 edge connector
Ethernet	2 x10/100/1000 Mbps Ethernet ports
Software Support	Host PC Linux DSP program loader
	MCSDK for TMS320C6678
	PDK for TMS320C6678
Power	Max. 106W
Cooling	Aluminum cooler with fan (4800 RPM, 19.41 CFM)
Physical Dimensions	111.15 x 312 mm (4.38" x 12.28")
	0.8 kg
Environment	Operating temperature: 0 to 50° C
	Humidity: 20% to 90 % RH
	Storage temperature: -20 to 70° C
	Humidity: 5% to 95 % RH

### Block Diagram



### Dimensions

Unit: mm



### Ordering Information

Part Number	Description
DSPC-8682G1-00A1E	Full-length PCI Express Card with 8 TMS320C6678 & 1GB DDR3 on board memory per DSP
DSPC-8682G2-00A1E	Full-length PCI Express Card with 8 TMS320C6678 & 2GB DDR3 on board memory per DSP