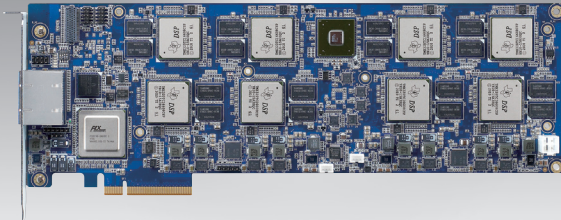


# DSP-8682

**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.

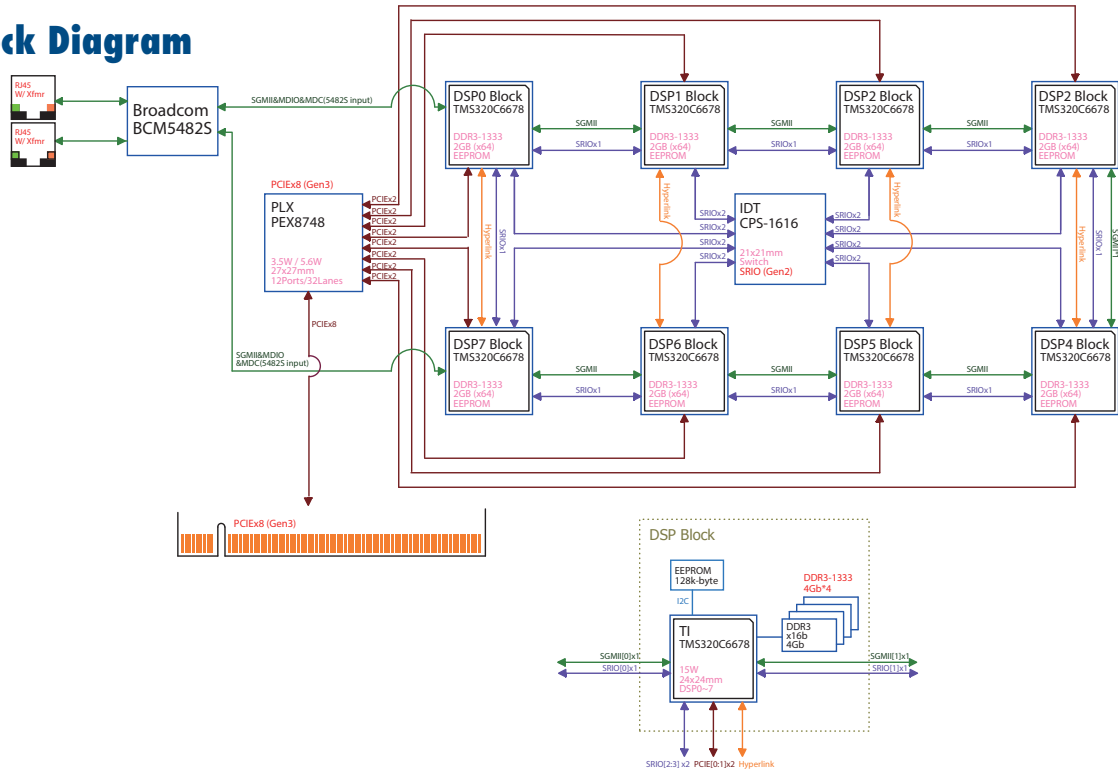
The DSP's provide fixed- and floating-point capabilities enabling the board to perform 2,048 GMACs (Giga Multiply-Accumulation operations per second) using the embedded C66x DSP cores inside the TMS320C6678 devices.

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

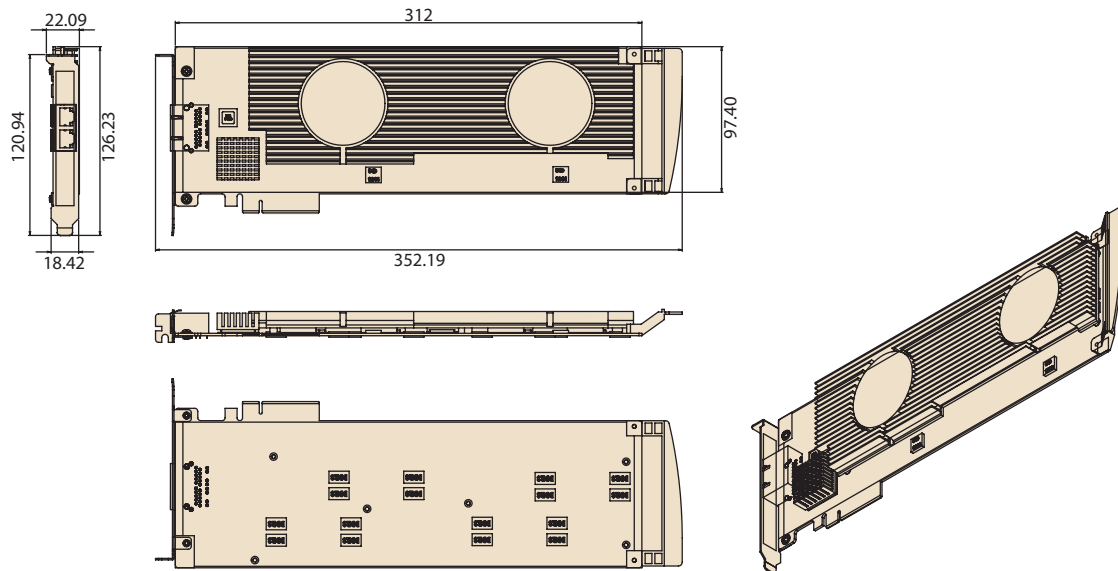
Media Processing Elements	Eight TI TMS320C6678
	Eight TMS320C66x cores (@1/1.25GHz) per DSP
	2048 MB DDR3-1333 on board memory
	One Serial RapidIO 2.1 x2 interface up to 10Gbps plus two x1 interfaces up to 5Gbps bandwidth
	One PCI Express Gen-2 x2 interface
Host Interface	Dual 10/100/1000Mbps Ethernet w/ SGMII
Ethernet	PCI Express Gen-3 x8 with PCI Express x8 edge connector
Software Support	2 x10/100/1000 Mbps Ethernet ports
	Host PC Linux DSP program loader
	MCSDK for TMS320C6678
Power	PDK for TMS320C6678
	Max. 106W
	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