

# GT-64120



## Features

- ◆ **Supports a wide variety of 64-bit IDT RISController CPUs**
  - IDT RC4650, RC4700, RC5000, RC64475
- ◆ **Up to 75MHz CPU bus frequency**
  - 8 word deep write posting FIFO
  - Accepts cache line writes at zero wait-states
- ◆ **Advanced Dual-Mode Universal PCI 2.1 Interface**
  - Can be configured as 2 independent 32-bit interfaces or as a single 64-bit interface
  - Operates up to 66MHz
  - 192-bytes of posted write and read prefetch buffers for each 32-bit interface
  - Dual 32-bit interfaces can be run asynchronously
  - 32/64-bit PCI master and slave operations
  - I<sub>2</sub>O Messaging and Plug and Play support
- ◆ **Synchronous DRAM controller**
  - 512 MByte address space
  - Supports 2- and 4- way bank interleaving
  - 32- or 64-bit data width banks
  - Zero wait-state burst accesses at 75MHz
  - UMA support (allows for shared DRAM arrays)
  - Optional Read-Modify-Write for parity support

- ◆ **Device controller**
  - 5 independent chip selects
  - Programmable timing for each chip select
  - 8-, 16-, 32- and 64-bit width device support
  - Default device select for boot ROMs
  - 640 MByte address space
- ◆ **DMA controller**
  - Four independent channels
  - Chaining via linked lists of descriptors
  - Software and hardware request mechanisms
  - Fly-by support
- ◆ **Three 24-bit timers and one 32-bit timer**

## Description

The GT-64120 is a single-chip PCI system controller for 64-bit IDT RISController CPUs. This highly-integrated device contains all the key system peripherals needed to build a high-performance 64-bit MIPS system: SDRAM controller, device controller, DMA engines, timers, and fast PCI interfaces.

The GT-64120 includes an advanced dual-mode PCI interface unit that can support two independent 32-bit PCI buses, or a single 64-bit PCI interface. Bus speeds up to 66MHz on the PCI bus are also supported, as is an industry standard I<sub>2</sub>O messaging unit. Universal PCI for both 3.3V and 5V signalling is included.

The 64-bit device controller on the GT-64120 supports a wide range of memory devices including SDRAM, Flash, and SRAM. With a 75MHz interface to SDRAM, the GT-64120 offers outstanding bandwidth and performance.

## CPUs Supported

RC4650, RC4700, RC64475, RC5000



**Operating Characteristics**

Operating Voltage:	3.3V +/- 5%
	5V tolerant on memory & PCI buses
Operating Temperature:	0 to 70C
Maximum Local Bus Frequency:	75MHz
Maximum PCI Frequency:	66MHz
Package:	388 BGA

**Evaluation Platform**

Galileo Technology produces the EV-64120-MBD which demonstrates the use of the IDT RC5000 CPU along with the GT-64120 in a PCI-expansion card form factor. The EV-64120-4700 is also available supporting IDT's RC4700 CPU. In addition, Galileo provides the EV-64BP, which is a passive PCI backplane with several 32- and 64-bit slots for quickly assembling a PCI development system on the bench.

**Contact List**

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