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Find the *Microsemi / Symmetricom / TrueTime PCI-SG 2U* at our website: *Click HERE*

# Model PCI-SG

## *Synchronized Generator for Computer Clock Synchronization*



- PCI local bus operation
- Zero latency
- IRIG A or B input
- IRIG B output
- 1 PPS output
- Programmable pulse rate output/interrupt
- External event occurrence interrupt
- Time compare input/interrupt
- Optional software development kit and drivers

The PCI-SG provides precise time, with zero latency, to computers that have PCI expansion slots. The time is derived from an IRIG A or B time code input or the internal oscillator in the stand-alone generator mode. The frequency of the internal oscillator is precisely disciplined to that of the external synchronization input. Synchronization to an external 1 PPS is also possible.

Time, microseconds through years, and status information are supplied on demand over the 32-bit PCI bus. In addition to time and status, the PCI-SG provides a 1 PPS pulse rate, a programmable time-compare register, a programmable frequency pulse rate, an external event time capture, and an IRIG B serial time code output.

Rear panel BNC connectors are used for the IRIG code input/output. A rear panel mounted multipin connector contains the 1 PPS pulse rate output, the programmable pulse rate output, the external event input signal and the input/output connections for the RS-422 versions of the input/output IRIG time code. You can also configure the analog input code to be single-ended with various input impedance choices. A transformer coupling option is also available. The output code is single ended in its standard configuration or you can specify the balanced transformer coupling option.

Information provided over the PCI bus includes time, status, and the time of occurrence of the external event. Interrupts generated by the programmable rate generator, the occurrence of an external event input, and the time compare occurrence are also provided. Depending upon the operating mode, you can program the hours offset from UTC, leap second, year and daylight savings time.

A TrueTime software development kit, SDK for PCI/CPCI, is optionally available for Windows 95/98 and Windows NT. The SDK includes a Windows NT kernel mode device driver, a Windows 95/98 VxD device driver, a DLL for accessing either of the drivers, a sample program, and code examples. This TrueTime SDK is a tremendous time saving tool for quickly integrating all of the features of the PCI-SG into an application program. Complete access to timing information, status, and control is easily available using the SDK. See the TrueTime SDK for PCI/CPCI data sheet for complete specifications.

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## SPECIFICATIONS PCI-SG

### SYNCHRONIZED GENERATOR MODE

| | | |
|---|---|---|
| **Analog Input Code:** | IRIG A or B | |
| | **Ratio:** | 2:1 to 5:1 |
| | **Amplitude:** | 0.5-10 Vpp |
| | **Impedance:** | 50-600-10k ohms, internal (single-ended) switch selectable |
| | **Connector:** | BNC |
| | **Timing Accuracy:** | 5 microseconds |
| **RS-422 Input Code:** | IRIG A or B | |
| | **Timing Accuracy:** | 5 microseconds |
| | **Connector:** | DE9 |


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| | |
|---|---|
| **External 1 PPS Input*:** | 1 microsecond timing accuracy (uses external event input port) |
| **Error Bypass:** | Factory set to three frames |

**STAND-ALONE GENERATOR MODE**
Allows the user to preset, start and stop the PCI-SG over the PCI bus.

**GENERAL SPECIFICATIONS**

| | | |
|---|---|---|
| **IRIG B Serial Code Output (Analog):** | **Amplitude:** | Adjustable, 0.5 to 10 Vpp into 600 ohms |
| | **Ratio:** | Fixed, 3:1 |
| | **Connector:** | BNC |
| **IRIG B Serial Code Output (RS-422):** | **Amplitude:** | RS-422 levels |
| | **Connector:** | DE9 |
| **Oscillator:** | **Accuracy:** | $5x10^{-8}$ (when disciplined to IRIG Code or optional GPS input) |
| | **Stability:** | 2.5 PPM, 0°C to +50°C, unlocked |
| **1 PPS Pulse Rate Output:** | **Level:** | 0-5 Vdc** |
| | **Timing:** | Positive edge on time |
| | **Duty Cycle:** | 50% |
| | **Connector:** | DE9 |
| **Programmable Pulse Rate Output:** | **Rates:** | 1 PPS, 10 PPS, 100 PPS, 1 kPPS, 10 kPPS |
| | **Outputs:** | Interrupt and pulse |
| | **Amplitude:** | 0-5 Vdc** |
| | **Connector:** | DE9 |
| **External Event Occurrence Input:** | **Resolution:** | Microseconds-years |
| | **Output:** | Interrupt |
| | **Event Input:** | Positive edge of 2-5 Vdc pulse |
| | **Impedance:** | Approximately 2k ohms |
| | **Connector:** | DE9 |
| **Time Compare Output:** | **Resolution:** | Microseconds-years |
| | **Outputs:** | Interrupt and pulse at compare time |
| | **Amplitude:** | +5 Vdc** on compare |
| | **Connector:** | DE9 |

**MECHANICAL/ENVIRONMENTAL**

| | |
|---|---|
| **Power:** | <5 watts |
| **Size:** | PCI short card |
| **Operating Temperature:** | 0°C to +50°C |
| **Storage Temperature:** | -17°C to +85°C |
| **Humidity:** | To 95%, noncondensing |
| **Certification:** | CE pending, Year 2000 |

**SOFTWARE**

The PCI-SG includes the TrueTime TimeServer 32 application program for Windows 95/98/NT, which provides control over time-related settings and runs as a background task keeping the computer clock synchronized to the PCI-SG card. TimeServer 32 is a 32-bit Windows application that can provide a Dynamic Data Exchange (DDE) linkage between your installed TrueTime hardware product and DDE-aware Windows applications, such as Microsoft® Excel.

## OPTIONS

- TrueTime Software Development Kit (SDK) PCI/CPCI for Windows


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95/98 and Windows NT

- For GPS synchronization, see the GPS-PCI data sheet
- Transformer Coupled Input Code (single ended or balanced)
- Transformer Coupled Output Code (balanced)

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* When external 1 PPS is used as sync input, the external event is not available.

** 5 Vdc outputs have standard HCMOS levels.

*Specifications subject to change without notice.*

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