Symmetricom

Model PCI-SG 2

Multi-Functional Time and Frequency PCI Plug-in Card

KEY FEATURES

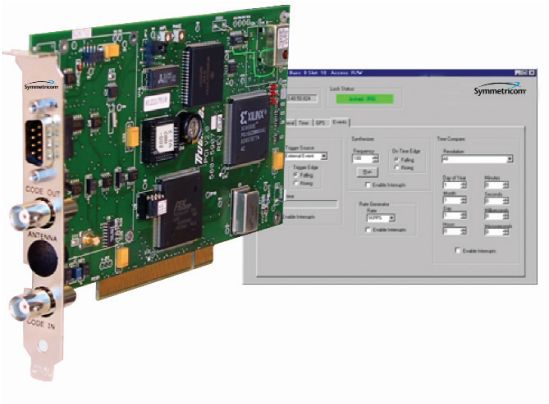
- PCI local bus operation
- IRIG-A, B or 1 PPS input
- IRIG-B and 1 PPS outputs
- 1 PPS to 1 MPPS rate synthesizer output
- 1, 5, 10 MPPS rate generator output
- External event input/interrupt
- Time compare input/interrupt
- Real time clock backup
- Windows control panel interface software

The PCI-SG 2 provides precise time 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 standalone 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 is supplied on demand over the 32-bit PCI bus. In addition to time and status, the PCI-SG 2 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 with various input impedance choices.

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 rate synthesizer, 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. An on-board, capacitor-powered clock maintains time during a power failure condition for up to 48 hours.



PCI-SG 2 Specifications

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, selectable
  - Connector: BNC
  - Timing Accuracy: 3 microseconds
- RS-422 Input Code: IRIG-A or B
  - Timing Accuracy: 1 microsecond
  - Connector: 9 pin D subminiature
- Error Bypass: Factory set to three frames
- External 1 PPS Input[1]: 1 microsecond timing accuracy (uses external event input port)

STAND-ALONE GENERATOR MODE

Allows the user to preset, start and stop the PCI-SG 2 over the PCI bus.

GENERAL SPECIFICATIONS

- IRIG-B Serial Code Output (Analog):
  - Amplitude: 3 Vpp into 600 ohms
  - Ratio: 3:1
  - Connector: BNC
- IRIG-B Serial Code Output (RS-422):
  - Amplitude: RS-422 levels
  - Input Termination: Selectable, 120 ohms or none
  - Connector: 9 pin D subminiature, selectable to BNC (ACMOS)
- Oscillator:
  - Accuracy: 5x10-8 (when disciplined to IRIG Code)
  - Stability: 2.5 PPM, 0°C to +50°C, unlocked
- 1 PPS Pulse Rate Output:
  - Amplitude: 0–5 Vdc[2]
  - Timing: Positive edge on time
  - Duty Cycle: 50%
  - Connector: 9 pin D subminiature, selectable to BNC
- Pulse Rate Generator Output:
  - Rates: 1 PPS, 10 PPS, 100 PPS, 1 kPPS, 10 kPPS, 100kPPS, 1MPPS, 5 MPPS, 10 MPPS
  - Outputs: Interrupt and pulse
  - Amplitude: 0–5 Vdc[2]
  - Connector: 9 pin D subminiature, selectable to BNC
- Pulse Rate Synthesizer Output:
  - Rates: 1 PPS to 1MPPS, step size 1 PPS
  - Outputs: Interrupt and pulse
  - Amplitude: 0–5 Vdc[2]
  - Connector: 9 pin D subminiature, selectable to BNC
- External Event Time Capture:
  - Resolution: 100's ns–years
  - Output: Interrupt
  - Event Input: Selectable positive or negative edge of 2–5 Vdc pulse
  - Impedance: Approximately 2k ohms
  - Connector: 9 pin D subminiature
- Time Compare Output:
  - Resolution: 100's ns–years
  - Outputs: Interrupt and pulse at compare time
  - Amplitude: +5 Vdc[2] on compare
  - Connector: 9 pin D subminiature

MECHANICAL/ENVIRONMENTAL

Power: <5 watts
Size: PCI 5 V short card
Operating Temperature: 0°C to +50°C
Storage Temperature: -17°C to +85°C
Humidity: To 95%, noncondensing
Certification: FCC, CE, UR
Real Time Clock: On board capacitor-powered clock maintains time during power fail conditions for up to 48 hours.

SOFTWARE

The PCI-SG 2 includes the Symmetricom PCI_Panel application program for Windows 95/98/NT/2000. Using this program you can review the PCI-SG 2 card status and adjust board configuration and output parameters.
The program can also operate as a background task keeping the host computer clock synchronized to the PCI-SG 2 card.

OPTIONS

- For GPS synchronization, see the GPS-PCI 2 data sheet
- Transformer Coupled Input Code (single ended or balanced)
- Transformer Coupled Output Code (balanced)

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

[2] 5 Vdc outputs have ACMOS levels.

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