Symmetricom®

Windows SDK for bc635/637PCI-U

Software Development Kit for Windows NT/2000/XP and Symmetricom bc635/637PCI-U and CPCI/PMC Cards

KEY FEATURES

- Windows NT/2000/XP SDK

- Full-Featured Function Set for Faster PCI Timing Card Integration

- Windows NT/2000/XP Kernel Mode Driver

- Code Examples

- Test Application Program

- Complete Documentation

The PCI SDK for Windows® is a full-featured software development kit that speeds integration of Symmetricom PCI products into an application. The SDK is an easy-to-integrate and highly reliable alternative to writing lower-level code to address a card's memory registers directly. The function calls and device drivers in the SDK make interfacing to a Symmetricom PCI card straightforward and help keep your software development focused on the end application. Included in the SDK is the Windows NT/2000/XP kernel mode device driver for the 32-bit PCI interface. The SDK includes .h, .lib, and DLL files for linking applications to drivers.

The SDK functions address each Symmetricom PCI timing card feature, and the function names and parameters provide intuitive insight into the capability of each function. The target programming environment is Microsoft® Visual C++.

Programmers will find the SDK an invaluable resource in accelerating the integration of Symmetricom PCI cards into applications, saving both time and money. By using the SDK, you can leverage Symmetricom's timing expertise and confidently integrate a Symmetricom PCI card into your application.

Included in the SDK is Symmetricom's bc635cpp application program, which can be used to ensure proper operation of the PCI card, as well as the TrayTime application allowing the user to update the system clock in which the card is installed. Source code for these programs as well as smaller example programs are included.

PCI-WINSDK Software for bc635/637PCI-U and CPCI/PMC cards

SDK Function Reference List

BASIC FUNCTIONS

- bcStartPCI: Opens underlying device layer.
- bcStopPCI: Closes underlying device layer.
- bcStartInt: Starts the interrupt thread to signal interrupts.
- bcStopInt: Stops the interrupt thread and releases any used resources.
- bcSetInts: Enables an interrupt source.
- bcReqInts: Returns the interrupt value currently enabled.

- bcGetReg: Returns requested register contents.
- bcSetReg: Set requested register contents.
- bcGetDPReg: Returns requested register contents
- bcSetDPReg: Sets requested register contents.
- bcSetPciCard: Resets module manufacturer's settings.
- bcCommand: Send SW reset command to board.
- bcSpecialBoot: Commands TFP to ignore multiple reset pulses after power-on.

- bcReadBinTime: Reads TFP major time in binary format.
- bcReadDecTime: Reads TFP major time in BCD format.
- bcSetTmfmt: Format major time to binary or grouped decimal.
- bcSetBinTime: Sets TFP major time in binary format.
- bcSetBCDTime: Sets TFP major time in BCD format.
- bcSetYear: Programs year value.
- bcYearAutoInc: Enables or disables year auto-increment features that occurs at the beginning of the year.
- bcSetLocalFlag: Enables or disables local time offset in conjunction with bcSetLocOff. Commands board to report time at an offset relative to UTC.
- bcSetDaylightFlag: Adjusts TFP time by one-hour (if IEEE time format is used).
- bcSetLeapEvent: Inserts or deletes leap second data (in non-GPS modes).
- bcSetMode: Selects TFP operating mode.
- bcSetTcIn: Selects time code format and modulation for timecode decoding mode.
- bcReqTimeData: Returns selected time data from the board.
- bcReqTimeCodeData: Returns selected time code data from the board.
- bcReqOtherData: Returns selected data from the board.
- bcReqVerData: Returns firmware version data from the board.
- bcReqManufData: Returns manufacturer's data from the board.

EVENT FUNCTIONS

- bcReadEventTime: Latches and returns TFP time caused by an external event.
- bcSetHbt: Selects a user programmable periodic output.
- bcSetPDelay: Programs propagation delay compensation.

OSCILLATOR FUNCTIONS

- bcSetClkSrc: Enables or disables on-board oscillator.
- bcSetDac: Modifies oscillator DAC value.
- bcSetGain: Modifies on-board oscillator frequency control algorithm.
- bcSetDis: Modifies on-board oscillator frequency control algorithm.
- bcSetJam: Enables or disables jamsynch feature.
- bcForceJam: Forces TFP oscillator to jamsynch.
- bcAdjustClock: Advances or retards TFP internal clock.
- bcReqOscData: Returns TFP oscillator data.

GENERATOR MODE FUNCTIONS

- bcSetGenCode: Selects time code generator format.
- bcSetGenOff: Commands an offset to the on-board timecode generation function.

GPS MODE FUNCTIONS

- bcGPSReq: Returns a GPS data packet.
- bcGPSSnd: Sends a GPS receiver data packet.
- bcGPSMan: Manually sends and retrieves GPS receiver datapackets.
- bcGPSOperMode: Directs the GPS receiver to function in static or dynamic mode.
- bcSetUtcCtl: Commands TFP to use GPS or UTC time base.

RTC FUNCTIONS

- bcSyncRtc: Synchronizes RTC to current TFP time.
- bcDisRtcBatt: Commands RTC circuit and battery to disconnect after power is turned off.

The PCI cards have different user-configurable operating modes. Some of the above functions may not be available depending on the mode selected or if GPS is installed.

LICENSING

The Symmetricom PCI SDK is sold as a seat license. Distribution of embedded Symmetricom software in customer applications is royalty free.

MINIMUM SYSTEM REQUIREMENTS

- Software: Microsoft Visual C++
- Operating System: Microsoft Windows NT/2000/XP
- Hardware: PC-compatible system with a Pentium or faster processor (bc635PCI and bc637PCI are also compatible with SDK)
- Memory: 24 Mb

ORDERING INFORMATION

- PCI-WINSDK   PCI-U, CPCI or PMC Windows Software Developer's Kit
- PCI-WINSDK-U   PCI-U, CPCI or PMC Windows SDK Upgrade

The SDK includes the interface library, example programs and source code utilizing the interface library, and a User's Guide containing the library definitions.