QuickUSB®

Revision History

Bitwise systems™

QuickUSB Revision History

QuickUSB Library v2.15.2

Library

- Added QuickUsbWriteDataEx and QuickUsbReadDataEx API functions, along with QUICKUSB_OUT_OF_ORDER flag.
- Added QuickUsbReadBulkDataStartStreamToFile, QuickUsbWriteBulkDataStartStreamFromFile, and QuickUsbGetStreamStatus API functions.
- Added QuickUsbBulkAbort.
- Added QuickUsbGetLastDriverError.
- Added QuickUsbResetStatistic and QuickUsbGetStatistic.
- Added QuickUsbAllocateDataBuffer and QuickUsbFreeDataBuffer.
- Fixed a bug that caused the FPGA type to always switch to Xilinx after any default was written.
- Fixed a bug that caused QuickUsbEpcsErase() to lock up on Linux.

Driver

- Added ability to abort data requests.
- Corrected a memory leak in the Kernel non-paged memory pool caused when retrieving USB string descriptors.

Firmware

- Added a setting to bit 13 of the SETTING_DATAADDRESS setting to automatically have firmware reset the data address to the value in the SETTING_DATAADDRESS setting before every read and write transaction. This allows for faster use of the address bus when you need to always start at a specific address and allows the Asynchronous and Streaming APIs to better use the address bus.
- Fixed address bus issues with FIFOHS IO Model.
- Updated firmware IO model timing diagrams in User Guide.

Utility Applications

- Added calls to QuickUsbGetLastError to QuickUSB Programmer to report error codes on failure for easier debugging.
- Corrected bug in QiuckUsbDiagCs where the Count button always outputted zero for the last word in word-wide mode.
- Changed QuickUsbDiagCs to not overwrite reserved bits of SETTING_DATAADDRESS when setting the data address on data reads and writes.
- Added Streaming tab to QuickUsbDiag.
- Corrected text alignment issue in QuickUsbDiagCs.

QuickUSB Library v2.15.1

Library

- Added full support for Mac OS X (10.6 and later) and Linux (kernel v2.6.25 and later), including asynchronous and streaming data transfers.

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- Added new asynchronous and streaming data APIs. The new APIs introduce callback functions executed when data transfers complete and allow for automatic multithreading from within the QuickUSB Library.
- Added Python interface class.
- Reduced EEPROM configurations times by over 80%.
- Added new QuickUsbOpenEx() function allowing it to fail if module is already opened and corrected QuickUsbOpen() and QuickUsbFindModules() documentation on how a device is handled if already opened.
- Added a new QuickUsbCachedWriteI2C() API function to allow I2C repeated-starts.
- Added a new QuickUsbFpgaConfigure() API function that takes a file path to an FPGA data file, automatically reading and writing out FPGA configuration.
- Added programming API to programmatically change the firmware of already programmed QuickUSB.
- Added Altera FPGA EPCS device support and API to read and write EPCS devices.
- Corrected a bug where QuickUsbWriteStorage() would work incorrectly for addresses not evenly divisible by 64.
- Data reads and writes of odd value byte lengths return with error instead of rounding up when in word-wide mode.
- Correct a bug where an invalid handle could potentially cause an invalid memory access error.
- Corrected a bug where QuickUsbStartFpgaConfiguration() would not report the proper error code on failure.
- Corrected some incorrectly reported error codes in the read/write data routines having to do with ioctl and timeout failures.
- Implemented a performance improvement that allows the first read/write from/to defaults to be over 90% faster (read/write speed after the first access of defaults memory remains the same).
- Corrected a bug where if the I2CACK bit of the SETTING_I2CTL settings was set to ignore ACK, then subsequent EEPROM access would fail and potentially corrupt the EEPROM (also corrected in Firmware).
- Corrected a bug in the LabVIEW VI QuickUsbReadCommand.vi (updated UCHAR address to SHORT address – user contributed bug fix by Mark Hamberger).
- Changed QuickUSB.h to define QHANDLE as HANDLE instead of QLONG.
- Implemented protection against breaking firmware by setting the USB speed default to Full-Speed in older firmware.

Driver

- Implemented a new Windows KMDF driver that provides enhanced system stability and performance.
- Implemented a new Linux kernel driver to substantially increase performance over the older libusb implementation.

Firmware

- Implemented a firmware timeout mechanism that allows the module to recover after a data timeout. This allows data transfers

to continue after a timeout without the need to power-cycle the device.

- Optimized soft serial shifter by ~20%, allowing for faster SPI and FPGA configurations.
- Added SPICONFIG settings to optionally use PORT A or E for SPI/FPGA, allowing for support of 128, 100, and 56-pin FX2's with SPI, FPGA configuration, and EPCS configuration.
- Corrected an I2C error in the QuickUSB firmware where the I2C SCL line was held low when an invalid address was written to or read from.
- Corrected a bug in firmware that would cause Windows to blue and/or a QuickUSB device to continually re-enumerate when set to run in Full-Speed mode on power-up. Additional protection against this added to library.
- Corrected a bug where the defaults settings for EP's would be overwritten on EP initialization.
- Corrected a bug where the SPI SCK pin (PE1) was not automatically configured as an output, causing SCK not to be driven if PE1 was configured as an input.
- Corrected a bug where if the I2CACK bit of the SETTING_I2CTL settings was set to ignore ACK, then subsequent EEPROM access would fail and potentially corrupt the EEPROM (also corrected in library).

Utility Applications

- New QuickUSB Customizer utility to program and customize QuickUSB devices.
- New QuickUSB .NET Diagnostics application.
- New QuickUSB Python Diagnostics application.
- Changed QuickUsbProgrammer to disable module scan before programming and enable it afterwards.
- Substantially reduced firmware programming times (through library and firmware updates).
- Changed programmer to automatically set the IgnoreACK setting of SETTING_I2CTL to 0 as to not interfere with EEPROM writes in firmware v2.14.3 and earlier.

QuickUSB Library v2.14.3

Library

- Corrected an error that caused the QuickUSB Programmer to function incorrectly with IChipPack licenses (existed in v2.14.1 and v2.14.2 of library only).

Driver

- No changes.

Firmware

- No changes.

QuickUSB Library v2.14.2

Library

- Updated the QuickUSB Library installer to install the Microsoft Visual C++ 2008 Runtime.

Driver

- Updated QuickUSB Standalone Driver Package to install the Microsoft Visual C++ 2008 Runtime.

Firmware

- No changes.

QuickUSB Library v2.14.1

Library

- Built DLL files with the multi-threaded DLL version of MSVCR. This fixes various multi-threading errors present in the 2.14.0 version of the QuickUSB DLLs.
- ~~Removed the windows.h dependency from QuickUSB.h.~~ Reintroduced in v2.15.0.
- Removed the (undocumented) requirement that QuickUsbFindModules() be called before any call to QuickUsbOpen().
- Fixed a bug in the QuickUsbReadRS232 function where the number of bytes read was incorrectly reported for transactions larger than 64 bytes.
- Documented the "cached write" feature of the I2C functions, which allows a write then a read in a single transaction. Also added cached write button to I2C tab of the QuickUSB Diagnostics utility.

Driver

- Fixed driver to install on non-English versions of Windows.
- ~~Added msvcr90.dll to driver package so that computers without the Microsoft Visual C Runtime v9.0 installed can still work with QuickUSB.~~ Fixed in v2.14.2.
- Removed IA64 support.

Firmware

- Updated firmware to monitor the WAKEUP pin and release the USB data lines (D+/D-) when driven low.

QuickUSB Library v2.14.0

Library

- Updated the QuickUSB library to fully support 32- and 64-bit Windows XP, Vista, and 7.
- Added a .NET assembly to add QuickUSB support to any .NET 2.0 capable programming language.
- Added two new QuickUSB API functions, QuickUsbReadStorage and QuickUsbWriteStorage, which allow you to read and write up to 2 KB of non-volatile memory.
- Added the QuickUsbStorageCs C#.
- Added a 3D CAD STEP of the QuickUSB Module.
- Added the AsyncReadTestMulti sample.
- Added a Visual Studio sample setup application demonstrating how to use the new driver merge module.

Driver

- Updated the QuickUSB driver to fully support 32- and 64-bit Windows XP, Vista, and 7.

- Added a new driver setup program and installation merge module that allows QuickUSB developers to distribute the QuickUSB driver and DLLs.

Firmware

- Added SPI clock polarity and clock phase control settings. Also updated the QuickUSB Diagnostics application to control the new SPI settings.
- Optimized SPI and FPGA serializer routines to add over a 10X speed increase. Now both SPI and FPGA configuration can operate at rates over 500 Kbps.

QuickUSB Library v2.11.1

- Updated QuickUSB User Guide to v2.11.34.
- Replaced Full Handshake I/O model with latest version ("quickusb-fullhs v2.11rc9.qusb") due to an error in the previous version of firmware.

QuickUSB Library v2.11.0

- New Release.