PIC32™ Industrial Client Microcontroller for StackableUSB™ USB1132

Features

- ✓ 80MHz system clock
- ✓ 1.56 DMIPS/MHz performance
- ✓ 512KB Flash, 32KB SRAM memory
- ✓ Single-cycle multiply and high-performance divide unit
- ✓ On-board RS232 transceiver
- ✓ Easy development with Microchip's MPLAB IDE
- ✓ Small 1.85" x 1.74" board
- ✓ -40°to +85℃ operation

The USB1132 is the ideal module for applications requiring more performance than typical micro-controllers have offered but not needing the full blast offered by an SBC. Well-suited for applications confined to small, tight spaces, the 125 DMIPS performance requires only 100mA power, considerably less than an SBC.

The USB1132 is powered by the PIC32 micro-controller. The unit is factory configured as a Client device so adding this module to any StackableUSB host SBC or controller expands the system's available control features to include a 10-bit ADC, two (2) RS232 ports, four (4) programmable LEDs, and digital I/O. Developers will appreciate the PIC32 easy-to-use and solidly supported software tools as they program and debug control functions for remote operation not requiring service from the single board computer or controller.

The 1.85" x 1.74" module is USB 2.0 compliant providing users the advantages of plug and play interfacing. The module stacks onto the top or bottom of any StackableUSB host single board computer or microcontroller forming a small, rugged, embeddable system, ideal for harsh environments. The USB1132 can be connected to desktop PCs and laptops via a ICSP connector for development.

Software/Driver Support

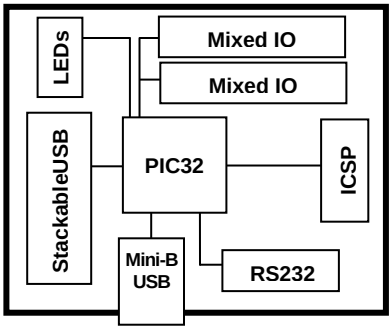
Windows 7, Windows XP, Vista
MPLAB IDE
MPLAB C32 C Compiler
USB Client stack
Graphics & audio library
16- and 32-bit File System
Sample software

Compatible Hardware

StackableUSB Host single board computers and microcontrollers
PC host desktops and laptops
SPI, I2C, UART
ICE
ICD3

Mounting/Packaging

¼-size 104™ Form Factor
Standoffs, STDOFFUSB



Specifications:

Mechanical:
- ❑ 1.85" x 1.74" StackableUSB
- ❑ ¼-size 104™ Form Factor

Power Requirements:
- ❑ +5v ±5% at 100mA typical

Environmental:
- ❑ -40 to +85℃ operating
- ❑ -40° to +85℃ storage
- ❑ 5%-95% relative humidity, non-condensing

Processor:
- ❑ MIPS32® M4K™ 32-bit core
- ❑ 80MHz, 1.56 DMIPS/MHz
- ❑ 5-stage pipeline, 32-bit ALU
- ❑ Single-cycle multiply and high-performance divide unit
- ❑ User and kernel modes to enable robust embedded system
- ❑ Prefetch cache module to speed execution from flash
- ❑ 512KB flash, 32KB SRAM

Serial Ports:
- ❑ Two (2) RS232 ports available from 20-pin header

LEDs
- ❑ Four (4) programmable user LEDs
- ❑ One (1) power LED

Peripheral Features:
- ❑ 4-channel hardware DMA controller with automatic data size detection
- ❑ USB 2.0 compliant full-speed controller
- ❑ USB has a dedicated DMA channel
- ❑ Two (2) I2C modules
- ❑ Two (2) UART modules with:
  - RS232, RS485 and LIN 1.2 support
  - IrDA® with on-chip hardware encoder and decoder
- ❑ Parallel master and slave port
- ❑ Hardware real time clock/calendar
- ❑ Five (5) 16-bit timers/counters (two 16-bit pairs combine to create two 32-bit timers)
- ❑ Five (5) capture inputs
- ❑ Five (5) compare/PWM outputs
- ❑ Five (5) external interrupt pins
- ❑ High-speed I/O pins capable of toggling at up to 80MHz
- ❑ High-current sink/source (18 mA/18 mA) on all I/O pins
- ❑ Configurable open-drain output on digital I/O pins

Analog Features:
- ❑ 16-channel 10-bit analog-to-digital converter
- ❑ 500 KSPS conversion rate
- ❑ Conversion available during sleep, idle
- ❑ Two (2) analog comparators
- ❑ 5.5V tolerant input pins (digital pins only)

Debug Features:

- ❑ 2-wire ICSP interface with unobtrusive Access and real time data exchange with application

External Connections:

- ❑ Mini-B USB
- ❑ StackableUSB
- ❑ 20-pin header for RS232
- ❑ 6-pin ICSP debug port
- ❑ 2x40-pin headers for I/O and peripherals

Internal Electrical Interface:

- ❑ StackableUSB
- ❑ USB 1.1 & 2.0 compatible, full-speed

Development Kit:

- ❑ Base module
- ❑ Complete cable set
- ❑ Documentation, sample software

Ordering Information:

OEM Modules:

USB1132-ST	PIC32 Industrial Client Microcontroller with StackableUSB stackthrough connector
USB1132-PC	PIC32 Industrial Client Microcontroller with Mini-B USB connector for PC connection
CS1132	Complete cable set

Related Products:

STDOFFUSB	StackableUSB standoff kit
BA4040	40-pin mixed I/O header breakout assembly
BA2018	20-pin RS232 header to dual DB9 breakout cable
CA4142	ICSP programming/ debugging cable
CA4136	Type A to Mini-B USB cable

Development Board Kits*

DK1132-ST	USB1132-ST development kit
DK1132-PC	USB1132-PC development kit

**See Development Kit Specifications*