

LogiLogger V1.3

Data Logging Module

Datasheet Rev.: 1.0
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Features

- Atmel **Atmega644P** RISC CPU @ 10MHz
- 1 **USB 2.0** interface
- 18 digital I/O, with alternate functions: 4 10-bit ADC channels, 2 UARTs, 1 I2C master interface, 1 SPI interface, JTAG interface (functions shared with digital I/O)
- **32Kbytes** nonvolatile storage in **FRAM**
- **32Mbit** DataFlash
- Optional **Micro-Sdcard** adapter
- **Battery-backed real time clock** for time stamping (rechargeable Lithium battery)
- 3-5V Operation

Ordering Information

Art.-No. 01.0032

LogiLogger V1.3, OEM board

Contact:

Elektronik-Atelier Kallen

Giacomettistrasse 33A
CH-3006 Bern / Switzerland

Web: www.avrcard.com

Email: info@avrcard.com

Tel: +41-31-832 1441

Fax: +41-31-560 4110

Specifications

CPU

Type	Atmel Atmega644p, 8-bit RISC
CPU clock	10MHz
Program Memory	64 Kbytes Flash
Programming	Via ISP or JTAG interfaces, or via pre-programmed bootloader and USB interface

STORAGE

FRAM	32 Kbytes Ferroelectric RAM on I2C bus
Flash	32Mbits Atmel DataFlash on SPI bus
EEPROM	1KBytes in CPU
SDcard	Micro-Sdcard on bottom of board

REAL-TIME CLOCK

Clock frequency	32 kHz, individually calibrated
Backup	Onboard 3V rechargeable Lithium cell

I/O

Digital	18 general purpose I/O pins with 100Ohm series resistors
Analog	4 channel 10-bit ADC inputs
Serial	2 asynchronous serial interfaces, I2C and SPI interfaces
Connector	20-way, 2mm pitch header
USB	USB 2.0 slave, USB-Serial adapter

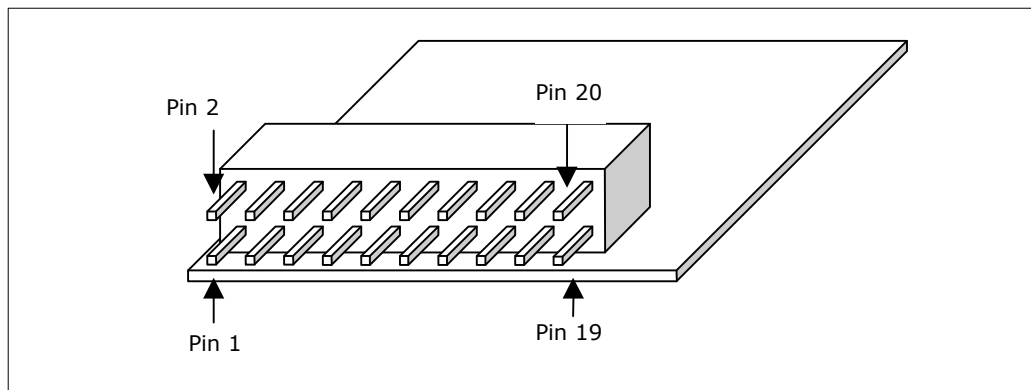
Power Supply

Requirement	3..5VDC, max. 20mA
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Mechanical

Size (L x W)	37 x 50 x 6.5 mm
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Connector Specifications



Application Interface Connector Pinout

X1: Application Interface			
No.	Signal	Type	Description
1	PA0	IN/OUT	ADC channel 0 / GPIO
2	PA1	IN/OUT	ADC channel 1 / GPIO
3	PA2	IN	ADC channel 2 / GPIO (connected via 1:2 voltage divider)
4	VIN+	POWER	3...5VDC Input
5	PB1	IN/OUT	Ext. clock to Timer 1 (T1) / GPIO
6	PD3	IN/OUT	TXD1 / GPIO
7	SCK	OUT	SPI interface, programming interface
8	MOSI	OUT	
9	MISO	IN	
10	GND	POWER	Signal and supply ground
11	RESET	IN/OUT	CPU reset, active low
12	PD2	IN/OUT	RXD1 / GPIO
13	SCL	OUT	I2C interface, clock
14	SDA	IN/OUT	I2C interface, data
15	RXD	IN	Serial interface 1, receive data
16	TXD	OUT	Serial interface 1, transmit data
17	PC2	IN/OUT	GPIO /JTAG, connected to Sdcard, CD
18	PC3	IN/OUT	GPIO /JTAG, connected to Sdcard, WP
19	PC4	IN/OUT	GPIO /JTAG, connected to LED D3
20	PC5	IN/OUT	GPIO /JTAG

Driver Installation for USB-Serial Adapter

To install VCP drivers under Windows XP and XP SP1, follow the instructions below:

- 1 Download the latest available VCP drivers from the FTDI website (<http://www.ftdichip.com/Drivers/VCP.htm>) and unzip them to a location on your PC.
- 2 If you are running Windows XP or Windows XP SP 1, temporarily disconnect your PC from the Internet. This can be done by either removing the network cable from your PC or by disabling your network card by going to the "Control Panel\Network and Dial-Up Connections", rightclicking on the appropriate connection and selecting "Disable" from the menu. The connection can be re-enabled after the installation is complete. This is not necessary under Windows XP SP 2 if configured to ask before connecting to Windows Update. Windows XP SP 2 can have the settings for Windows Update changed through "Control Panel\System" then select the "Hardware" tab and click "Windows Update".
- 3 Connect the LogiLogger device to a spare USB port on your PC. This will launch the Windows Found New Hardware Wizard. If there is no available Internet connection or Windows XP SP 2 is configured to ask before connecting to Windows Update, the screen below is shown. Select "No, not this time" from the options available and then click "Next" to proceed with the installation. If there is an available Internet connection, Windows XP will silently connect to the Windows Update website and install any suitable driver it finds for the device in preference to the driver manually selected.
- 4 Select "Install from a list or specific location (Advanced)" and then click "Next".
- 5 Select "Search for the best driver in these locations" and enter the file path in the combo-box where the VCP drivers have been unzipped, or browse to it by clicking the browse button. Once the file path has been entered in the box, click next to proceed.
- 6 If Windows XP is configured to warn when unsigned (non-WHQL certified) drivers are about to be installed, a warning screen will be displayed. Click on "Continue Anyway" to continue with the installation. If Windows XP is configured to ignore file signature warnings, no message will appear.
- 7 A progress screen will be displayed as Windows XP copies the required driver files.
- 8 Windows should then display a message indicating that the installation was successful. Click "Finish" to complete the installation. This has installed the serial converter. The COM port emulation driver must be installed after this has completed.
- 9 After clicking "Finish", the Found New Hardware Wizard will continue by installing the COM port emulation driver. The procedure is the same as that above for installing the serial converter driver.
- 10 Open the Device Manager (located in "Control Panel\System" then select the "Hardware" tab and click "Device Manger") and select "View > Devices by Type". The device appears as an additional COM port with the label "USB Serial Port" and a COM port number next to it.

Notice to Users

The intended use of the LogiLogger modules is described in this document. Other than the described uses are not permitted or only after consultation with the manufacturer.

LogiLogger modules are not authorized for use as critical components in life-support devices or systems.

Life-support devices or systems are devices or systems intended for surgical implantation into the body or to sustain life, and whose failure to perform, when properly used in accordance with instructions for use provided in the labeling and user's manual, can be reasonably expected to result in significant injury.

No complex software or hardware system is perfect. Bugs are always present in a system of any size. In order to prevent danger to life or property, it is the responsibility of the system designer to incorporate redundant protective mechanisms appropriate to the risk involved.

All LogiLogger modules are 100 percent functionally tested. Additional testing may include visual quality control inspections. Specifications are based on characterization of tested sample units rather than testing over temperature and voltage of each unit. LogiLogger modules may qualify components to operate within a range of parameters that is different from the manufacturer's recommended range.