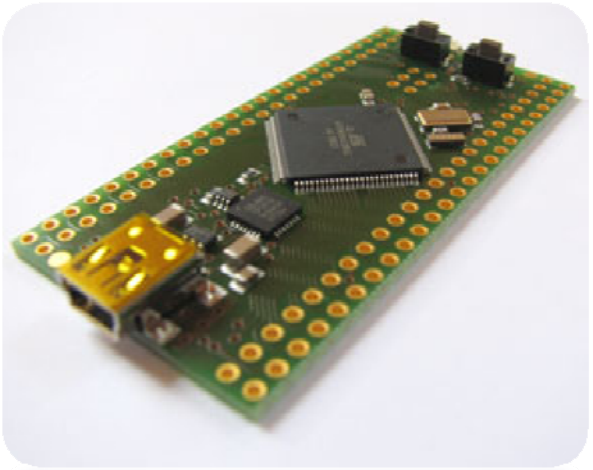
Xmega-A1-USB Mikrocontrollermodul



1. Electrical Characteristics

Absolute Maximum Ratings

- Operating Temperature -25°C to +80°C
- Storage Temperature -35°C to +90°C
- Voltage on any Pin with respect to Ground -0.5V to VCC+0.5V
- Maximum Operating Voltage related to Microcontroller 3.6V
- Maximum USB VBUS Voltage 5,25V
- DC Current per I/O Pin 20.0 mA
- DC Current VCC and GND Pins 200.0 mA

Notice:
Stresses above those listed may cause permanent damage to the device. This is a stress rating only and functional operation of the devices at or exceeding the conditions in the operation listings of this specification is not implied. Exposure to maximum rating conditions for extended periods may affect device reliability.

Main Electrical Characteristics

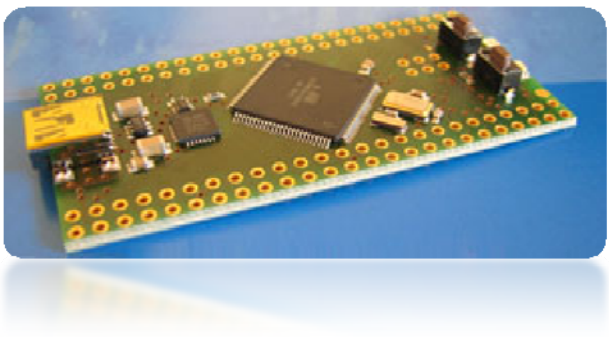
Refer to following sections of XmegaA1 Datasheet:

- DC Characteristics
- Operating Frequency and Voltage
- ADC Characteristics
- DAC Characteristics
- Analog Comparator Characteristics
- Bandgap Voltage Characteristics
- Brownout Detection Characteristics
- PAD Characteristics
- POR Characteristics
- Reset Characteristics
- Oscillator Characteristics

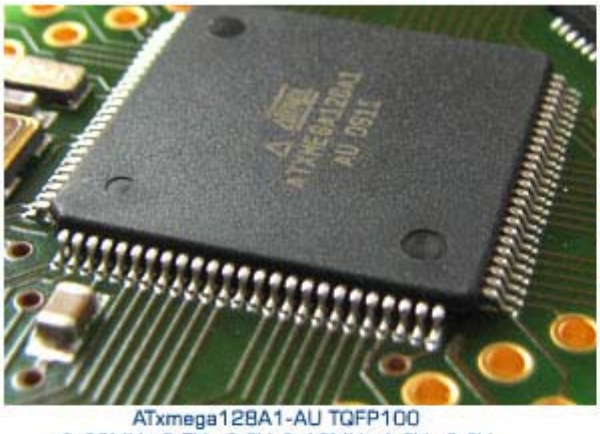
Xmega-A1-USB Mikrocontrollermodul

2. Features

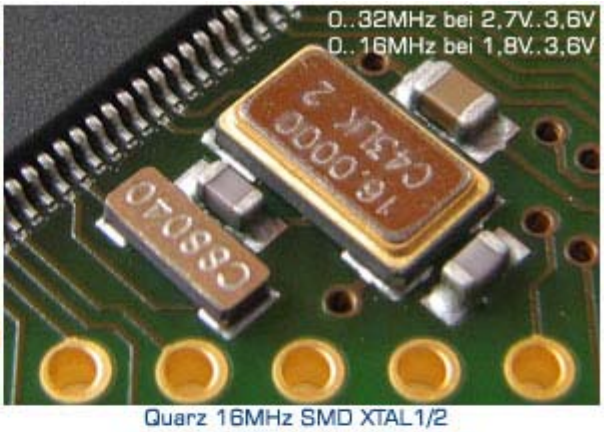
- Microcontroller ATXmega128A1-AU TQFP100
- 0-32MHz 2,7V...3,6V, 0-16MHz 1,8V...3,6V
- USB-UART-Bridge CP2102 (connected to PORTF USART0)
- USB-side ESD-protected (VBUS, D+, D-, Suppressor-Diode-Array)
- USB-Connector Mini-USB SMD
- High-Speed-Leveltranslator between Microcontroller-USART and USB-UART-Bridge enables high transfer rates even at low supply voltages VCC
- Reset-Button (sub miniature smd)
- Button at Pin PQ2 (sub miniature smd)
- Power- and Status-LED (PQ3)
- Atmel-pin-compatible program-and-debug-interface PDI (6-pin, 2-row)
- All pins routed to pads for pinheader connector (2 x 50-pin 2-row, contact spacing 2,54mm)
- Quartz 16MHz SMD XTAL1/2 (up to 32MHz system clock possible: external 16MHz Quartz with PLL or internal oscillator)
- Quartz 32,768kHz SMD TOSC1/2
- Small module size: Pcb dimensions 36,50x63,50mm²
- Pcb technic FR4, two layers, solder resist, RoHS, produced with quality standard ISO9001:2000
- Improvements: Pcb surface NiAu, vias sealed
- Made in germany



Xmega-A1-USB
Mikrocontrollermodul



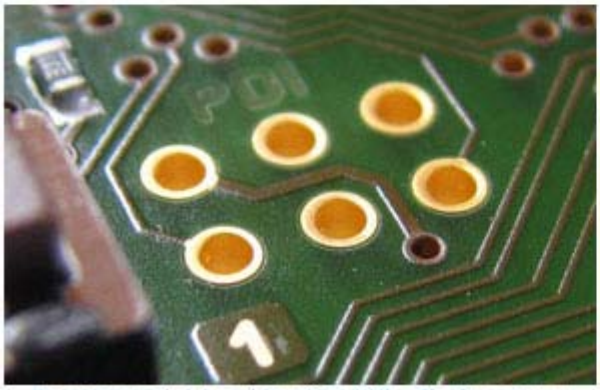
ATxmega128A1-AU TQFP100
0-32MHz 2,7V...3,6V, 0-16MHz 1,8V...3,6V



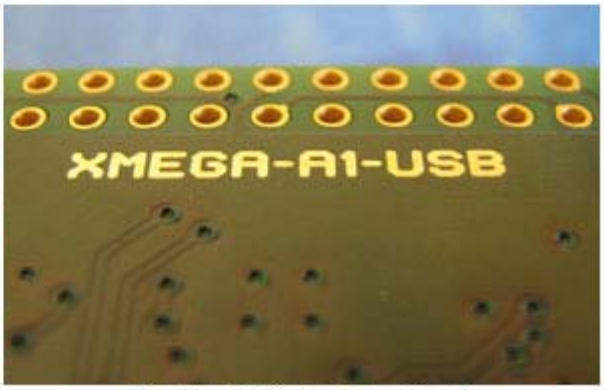
Quarz 16MHz SMD XTAL1/2
Quarz 32,768kHz SMD TOSC1/2

USB-UART-Bridge CP2102 + Leveltranslator
Transient Voltage Suppressor Diode Array (USB)

Sub-Miniaturtaster an PQ2 und RESET\
Power LED + Status LED an PQ3



Program-and-debug-Interface PDI - Pin-Anordnung
gemäß dem von Atmel empfohlenem Design



Durchkontaktierungen versiegelt
Oberfläche chemisch NiAu

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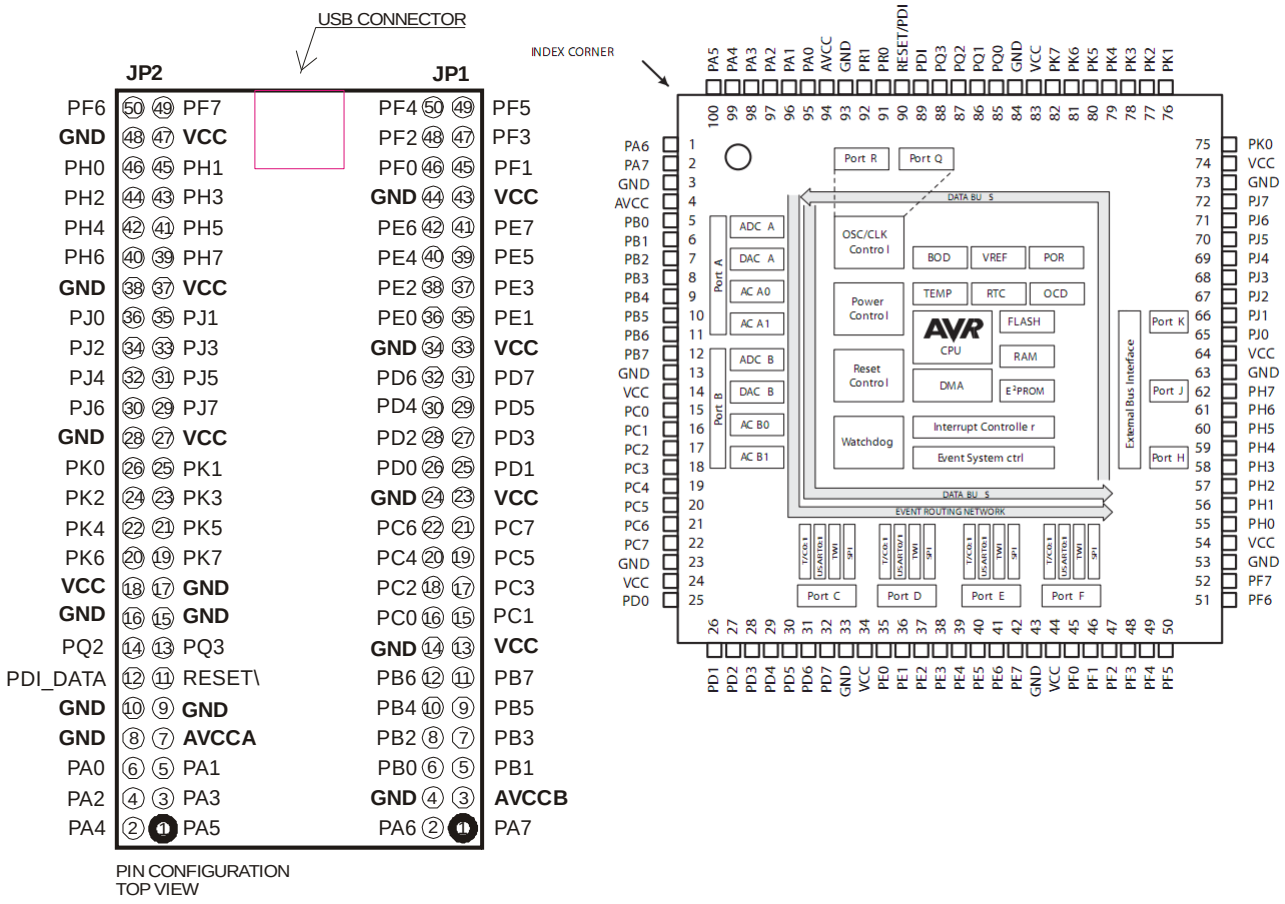
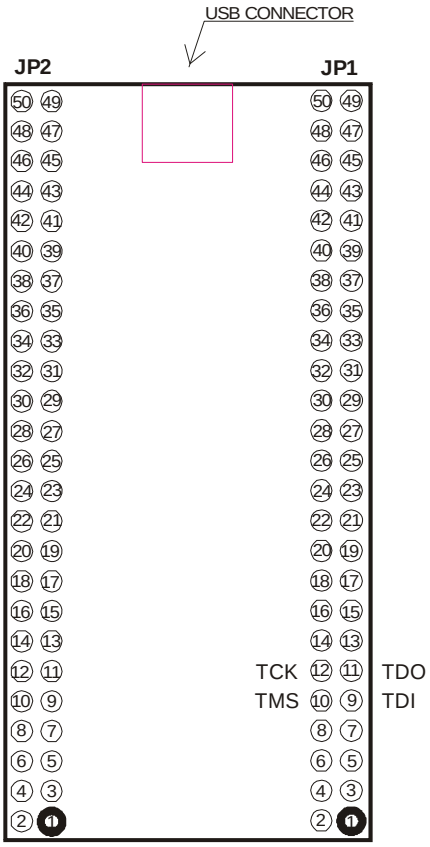
3. Module Pinout and Microcontroller Block Diagram



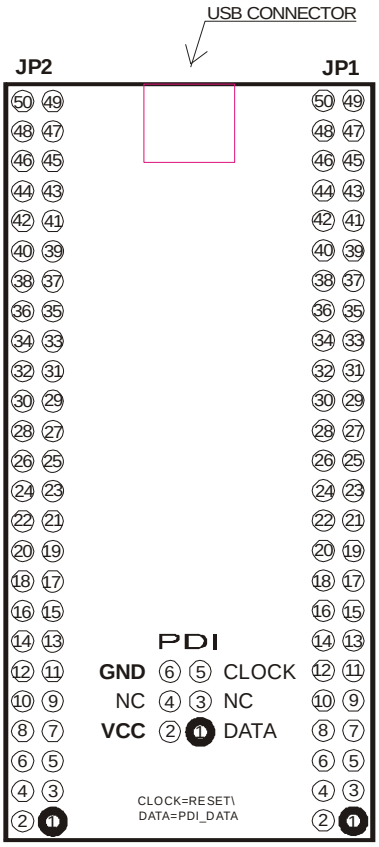
Alternate Port Functions

In addition to the input/output functions on all port pins, most pins have alternate functions. This means that other modules or peripherals connected to the port can use the port pins for their functions, such as communication or pulse-width modulation. Section “Pinout and Pin Functions” of XmegaA1 datasheet shows which modules on peripherals that enables alternate functions on a pin, and what alternate functions that is available on a pin.

4. Program and debug interfaces



PIN CONFIGURATION
JTAG INTERFACE
TOP VIEW



PIN CONFIGURATION
PROGRAM AND DEBUG INTERFACE PDI
TOP VIEW

5. Dimensions