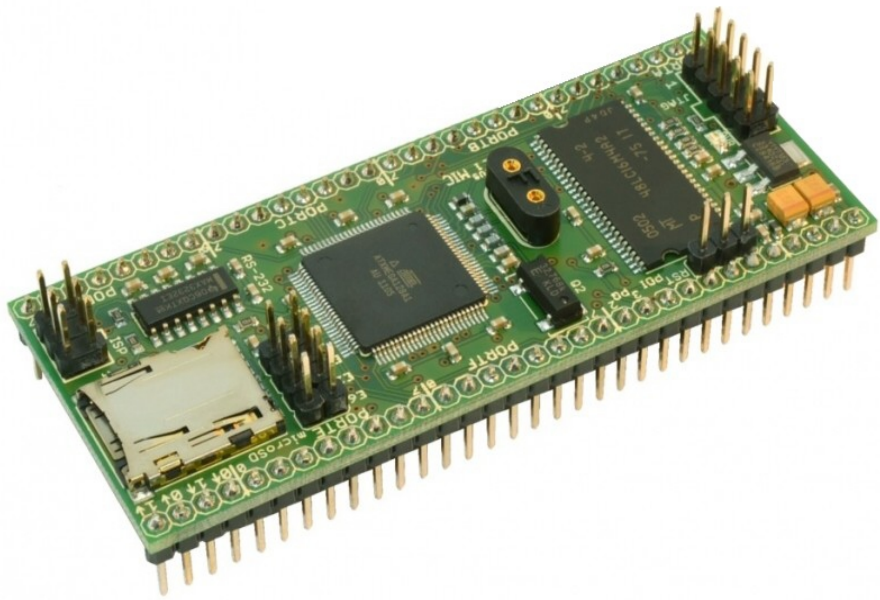
ALVIDI

AVR ATxmega
Development Module

Model: AL-XAVRB V2.0

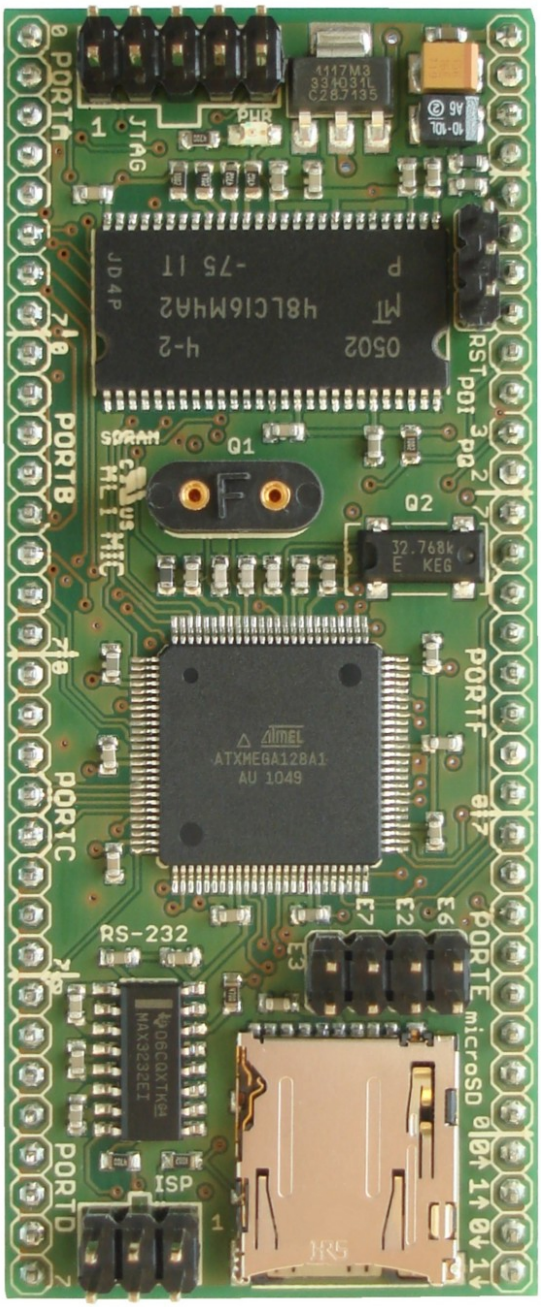
- Summary
- Measures
- Description
- Electrical Characteristics
- Programming
- Settings



© 2015 ALVIDI

Summary

PA0	5-12V
PA1	NC
PA2	3.3V
PA3	3.3V
PA4	GND
PA5	GND
PA6	NC
PA7	SDRAM CS
PB0	RESET
PB1	PDI
PB2	PQ3
PB3	PQ2
JTAG-TMS/PB4	PF7
JTAG-TDI/PB5	PF6
JTAG-TCK/PB6	PF5
JTAG-TDO/PB7	PF4
PC0	PF3
PC1	PF2
PC2	PF1
PC3	PF0
PC4	PE7/RS232 TXD1
PC5	PE6/RS232 RXD1
PC6	PE5
PC7	PE4
PD0	PE3/RS232 TXD0
PD1	PE2/RS232 RXD0
PD2	PE1
SD Card Switch/PD3	PE0
SD Card SS/PD4	Output 0
SD Card MOSI/PD5	Output 1
SD Card MISO/PD6	Input 0
SD Card SCK/PD7	Input 1

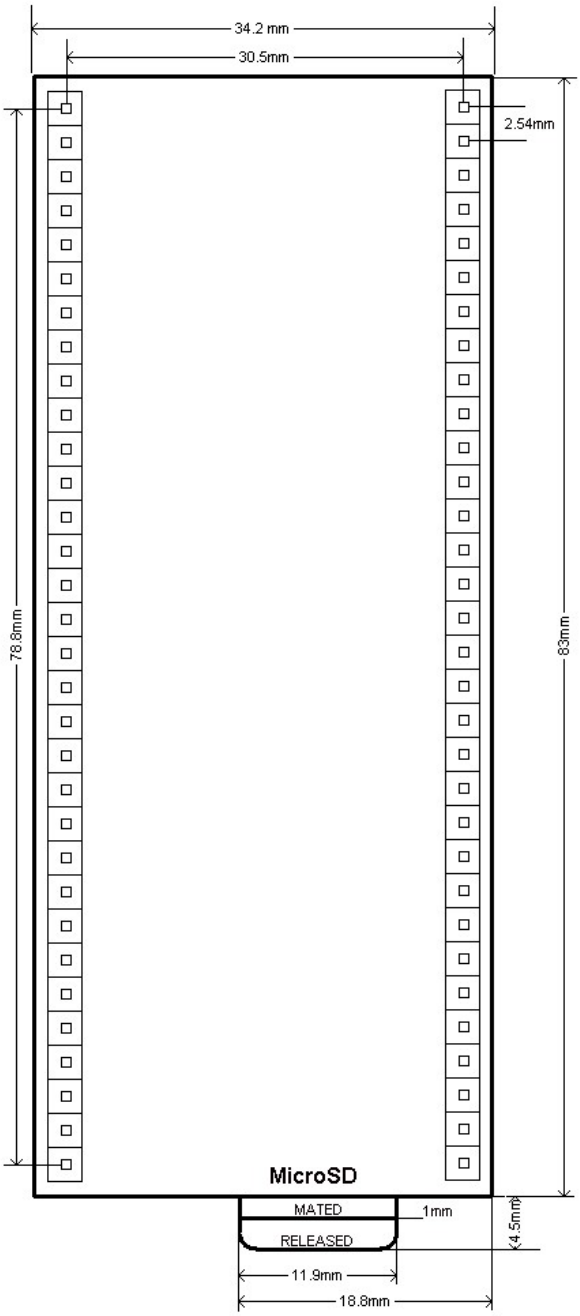


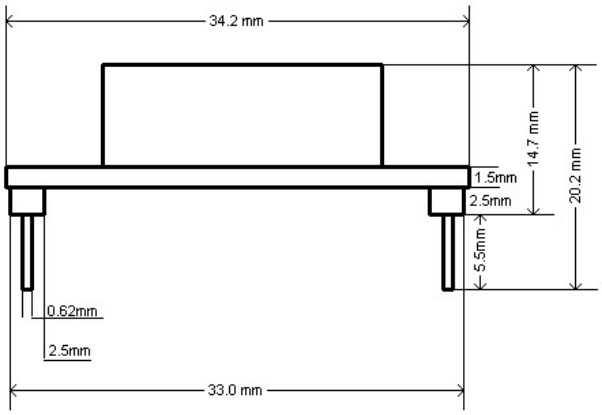
All description in **BLUE** concern the internal connection

Attention! Polarity reversal and overvoltage may cause a destruction of the electronic components!!!

© 2015 ALVIDI

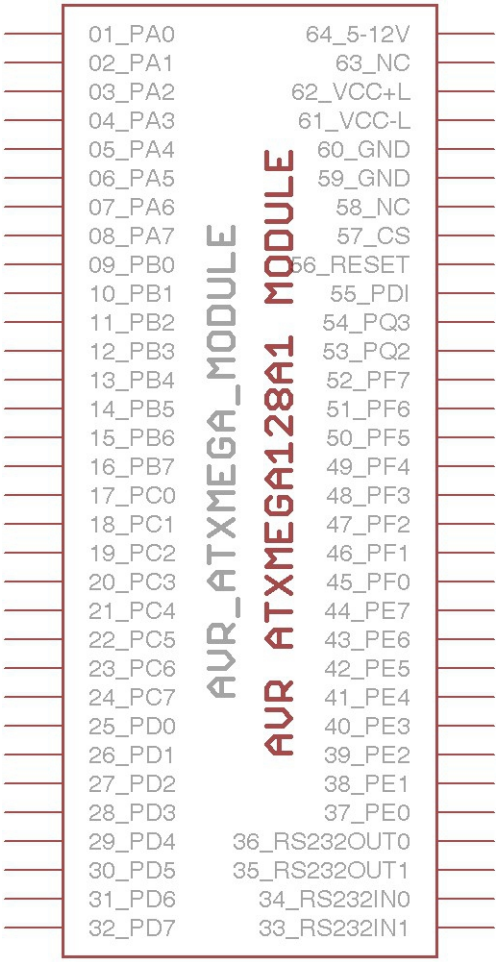
Measures





© 2015 ALVIDI

Description



- **Controller:** Atmel AVR ATxmega128A1U-AU up to 32 MHz
- **Equipment:**
  - internal voltage regulator 3.3V
  - external SDRAM 64Mbit
  - MicroSD card slot
  - RS-232 Transceiver
  - Power LED
- **Voltage supply:**
  - external 3.3V or
  - external 5.0-12V
- **Module size:** W x H x D 34mm x 83mm x 19.3mm
- **external quartz:**
  - quartz socket
  - external 32.768KHz quartz
- **PC-Connection:** 2 x RS232, separable with jumpers
- **Compatibility:** compatible with hole matrix board and hole-distance 2.54 mm
- **Circuit:** built on the recommendation of the manufacturer
- **Programming:**
  - JTAG MKII connector or
  - AVR ISP MKII connector
- **Pin configuration ISP & JTAG:**
  - ISP(PDI) connector 6-pin, standard of Atmel
  - JTAG connector 10-pin, standard of Atmel
- **Pin configuration of AVR-Module:** shown at the left picture
- **Conformity:** **RoHS Compliance**
- **Produced** in Germany

© 2015 ALVIDI

Electrical Characteristics

	Min	Typ	Max
for **all** modules with	**Operating Temperature**		
with microSD card slot	-25 °C		85 °C
without microSD card slot	**- 40 °C**		**85 °C**
	Voltage Sources		
external 3,3V	3.0 V	3.3 V	3.6V
external 5-12V *	4.3 V		12 V
	Frequency		
operating frequency	0 Hz		32 MHz
external quartz Q1 (quartz socket)	0 Hz		16 MHz
external quartz Q2		32.768 kHz	
	Maximum DC Current		
per I/O Pin		25 mA	

more electrical characteristics you will find on the page 74 in the data sheet ATxmega128A1U.pdf

- ► SDRAM: MT48LC16M4A2P-75IT
- ► SD card slot: micro SD push-push
- ► RS 232 Tranceiver: MAX3232
- ► 4-layer PCB DIN ISO 9001
- ► with UL-Approbation
- ► top-side mounted

* by using external power supply on pin 5-12V we recommend to supply with low current (by 12V non-stop operation maximum 100 mA), otherwise cooling of the voltage regulator should be provided.

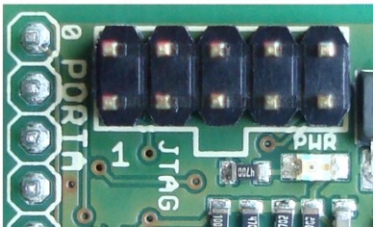
Possible Modifications

¤ with ATxmegaXXXA1-AU
¤ with SDRAM: MT48LC32M4A2P-75IT
¤ with mounted quartz (without quartz socket)
¤ without laterally pins

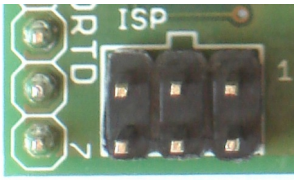
© 2015 ALVIDI

Programming

JTAG



ISP



Pin Configuration
JTAG-Connector

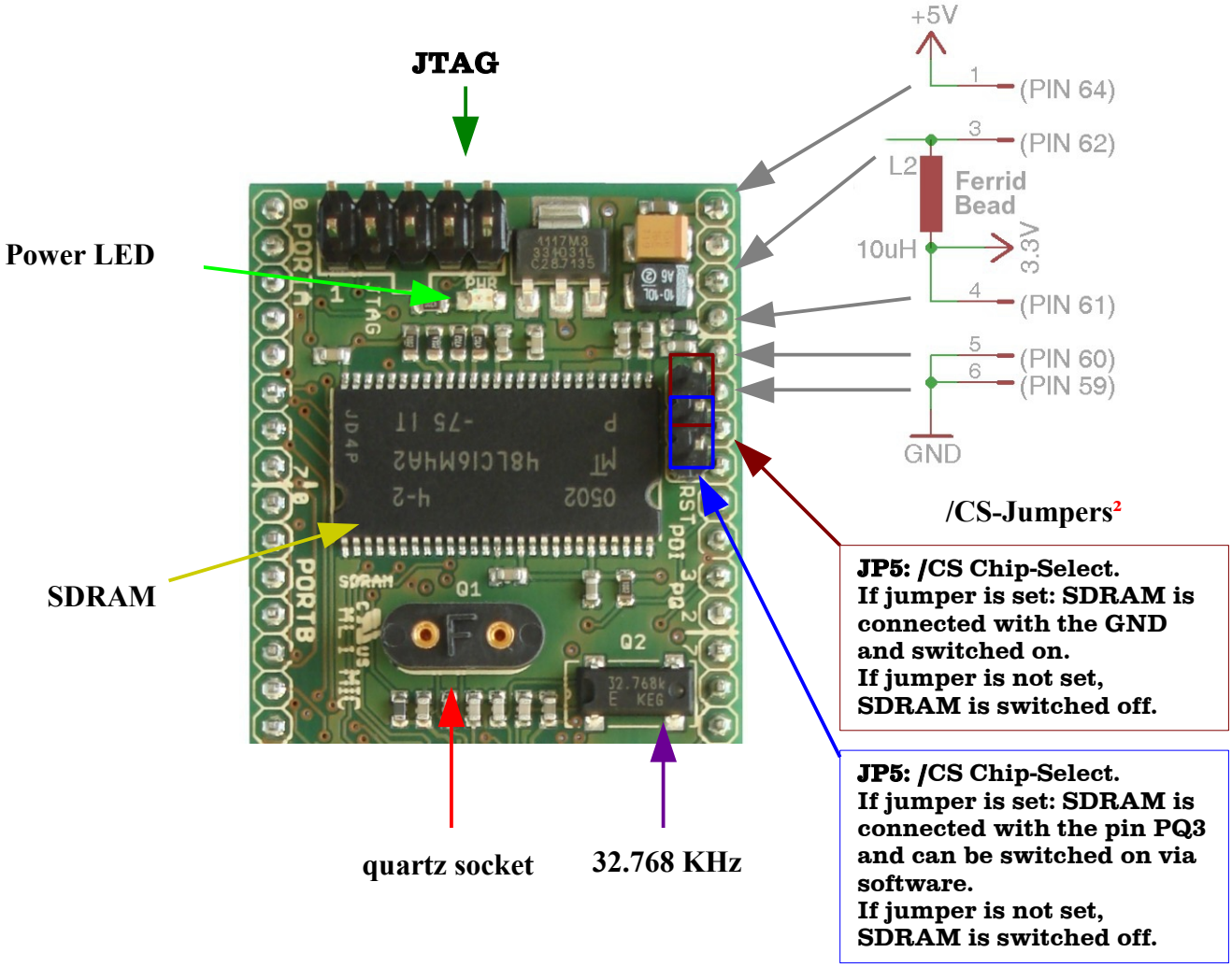
(2) GND	(4) VCC	(6) RESET	(8) PDI	(10) GND
(1) TCK	(3) TDO	(5) TMS	(7) VCC	(9) TDI

Pin Configuration
ISP-Connector

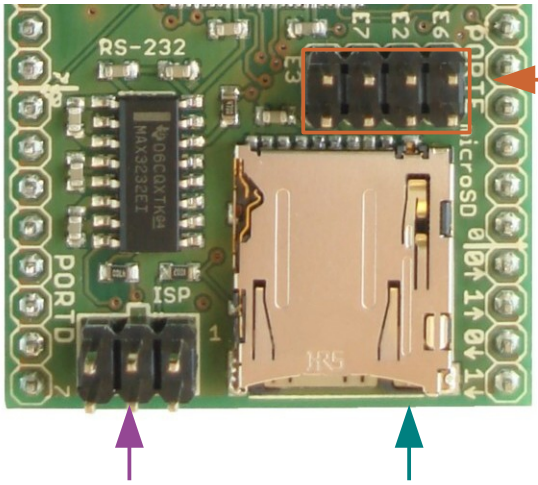
(5) RESET	(3)	(1) PDI
(6) GND	(4)	(2) VCC

© 2015 ALVIDI

Settings



© 2015 ALVIDI

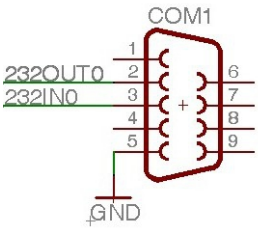


USART-Jumpers [1]

JP2-1	JP2-2	JP2-3	JP2-4
PE3 TxD0	PE7 TxD1	PE2 RxD0	PE6 RxD1

These jumpers separate RS-232 Transceiver from the USART Pins of the controller. While using RS232 the corresponding external USARTs Pins of the module, USARTE0 (external Pins: PE2 and PE3) und USARTE1 (external Pins: Be PE6 and PE7) should be free of any connection.

Connection of D-SUB 9-pin female connector (serial port/COM1)



	D-SUB 9-p.	AL-XAVRB
CH 0 example in the left picture	Pin 2	36_RS232OUT0
	Pin 3	34_RS232IN0
	GND	60_GND
CH 1	Pin 2	35_RS232OUT1
	Pin 3	33_RS232IN1
	GND	60_GND

© 2015 ALVIDI