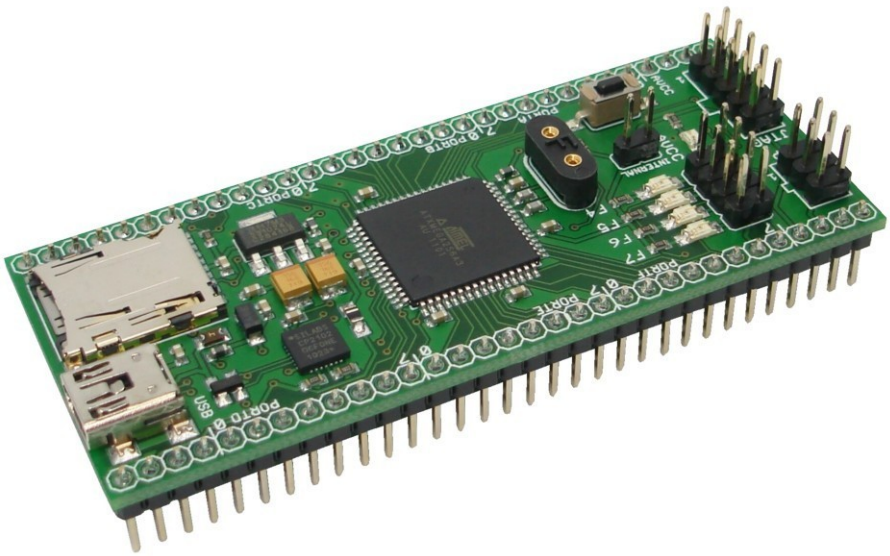
ALVIDI

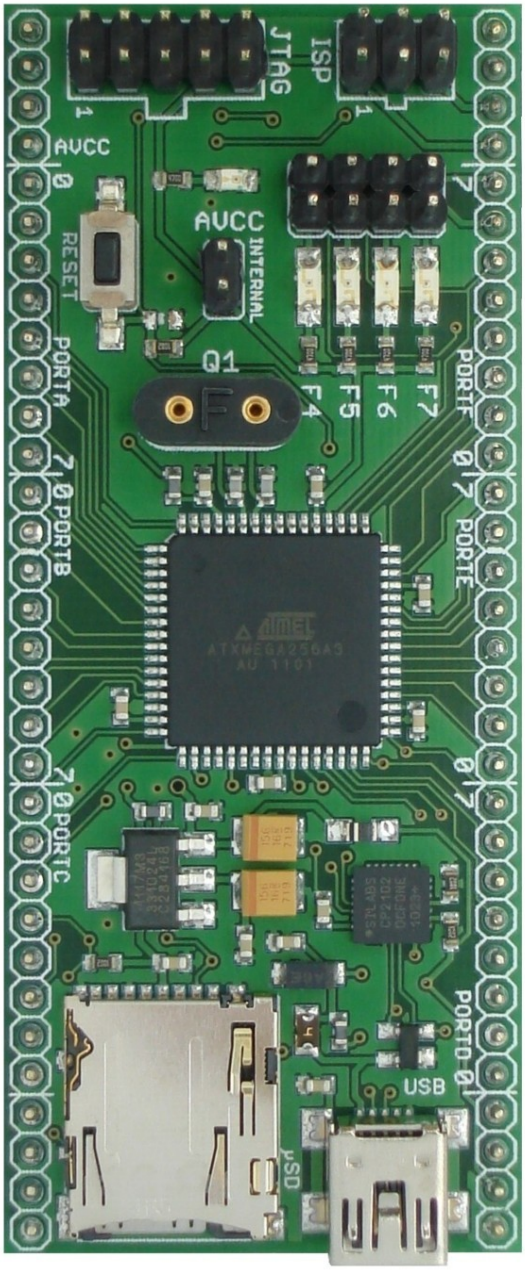
AVR ATxmega
Extended Module

Model: AL-XSLED_EXT

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



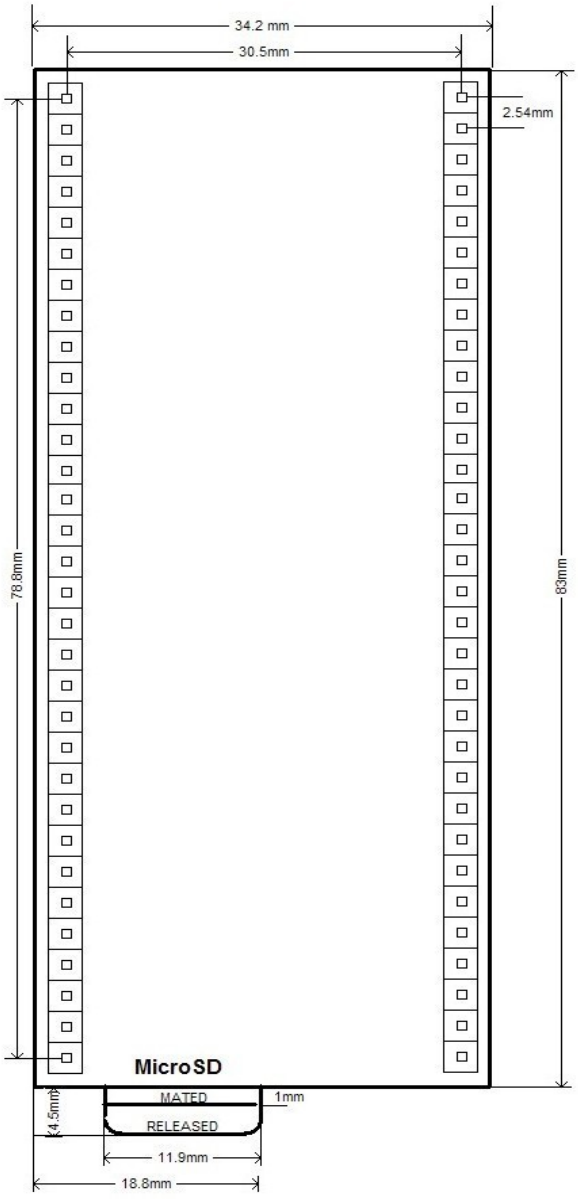
Summary

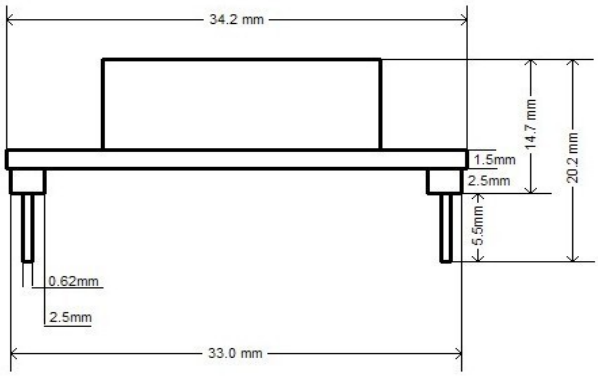
NC		NC
NC		NC
NC		RESET
AVCC		PDI
PA0		PF7/LED F7
PA1		PF6/LED F6
PA2		PF5/LED F5
PA3		PF4/LED F4
PA4		PF3
PA5		PF2
PA6		PF1
PA7		PF0
PB0		PE7
PB1		PE6
PB2		PE5
PB3		PE4
JTAG-TMS/PB4		PE3
JTAG-TDI/PB5		PE2
JTAG-TCK/PB6		PE1
JTAG-TDO/PB7		PE0
PC0		PD7/USB TXD
PC1		PD6/USB RXD
PC2		PD5
SD Card Switch/PC3		PD4
SD Card SS/PC4		PD3
SD Card MOSI/PC5		PD2
SD Card MISO/PC6		PD1
SD Card SCK/PC7		PD0
NC		3.3V
NC		EXT.5-12V
NC		USB 5V
NC		GND

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

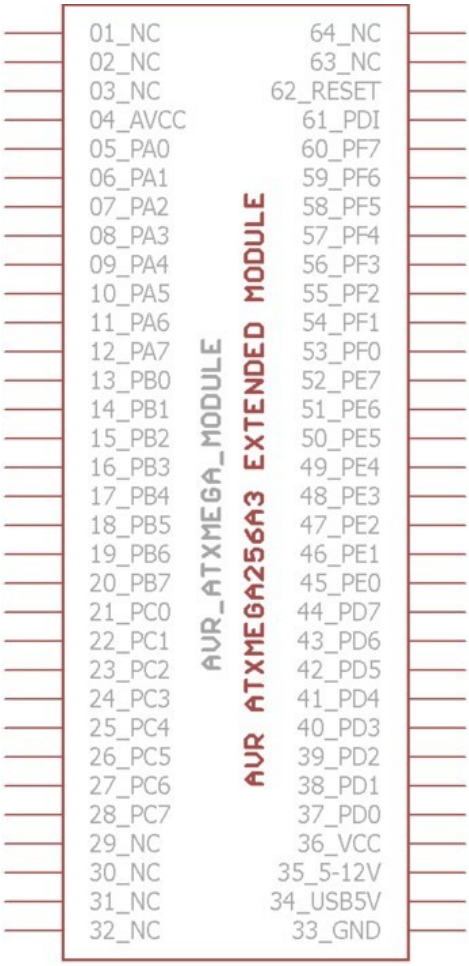
Attention! Polarity reversal and overvoltage may cause a destruction of the electronic components!!!

Measures





Description



- **Controller:** Atmel AVR ATxmega256A3-AU up to 32 MHz
- **Additional equipping:**
  - internal voltage regulator 3.3V
  - microSD card slot (push-push)
  - USB-power supply/communication
  - Power LED and 4x programmable LED
  - Reset key
- **Voltage supply:**
  - external 3.3V or
  - external 5.0-12V
  - USB 5V
- **Module size:** W x H x D 34mm x 83mm x 19.3mm
- **Quartz:** quartz socket
- **PC-Connection:** 2 x RS232, separable with jumpers
- **Compatibility:** compatible with hole matrix board (hole distance 2.54 mm)
- **LED:** Power LED and 4 LEDs separable with jumpers
- **Circuit:** built on the recommendation of the manufacturer
- **Programming:**
  - JTAG MKII connector or
  - AVR ISP MKII connector
- **Pin configuration ISP & JTAG:**
  - ISP(PDI) 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

Electrical Characteristics

	Min	Typ	Max
	Operating Temperature		
for **all** current modules	**-20 °C**		**85 °C**
	Voltage Sources		
external 3,3V	3.0 V	3.3 V	3.6V
external 5-12V *	4.3 V		12 V
USB 5V		5V	
	Frequency		
operating frequency	0 Hz		32 MHz
external quartz Q1 (quartz socket)	0 Hz		16 MHz
	Maximum DC Current		
per I/O Pin		20 mA	

more electrical characteristics you will find on the page 63 in the data sheet ATxmega256A3.pdf

- ► voltage regulator: TS1117CW-33
- ► USB Tranceiver: CP2102
- ► 4-layer PCB DIN ISO 9001
- ► 4x LED yellow 2V 20 mA 140° 39 mcd

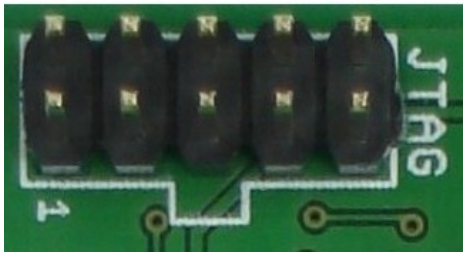
* by using external power supply on pin 5-12V we recommend to supply with low current (by 12V non-stop operation maximum 100 mA), otherwise cooling of the voltage regulator should be provided.

Possible Modifications

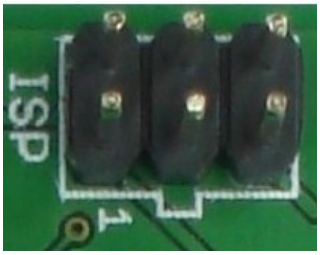
¤ with ATxmegaXXXA3-AU
¤ with mounted quartz (without quartz socket)
¤ without laterally pins

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

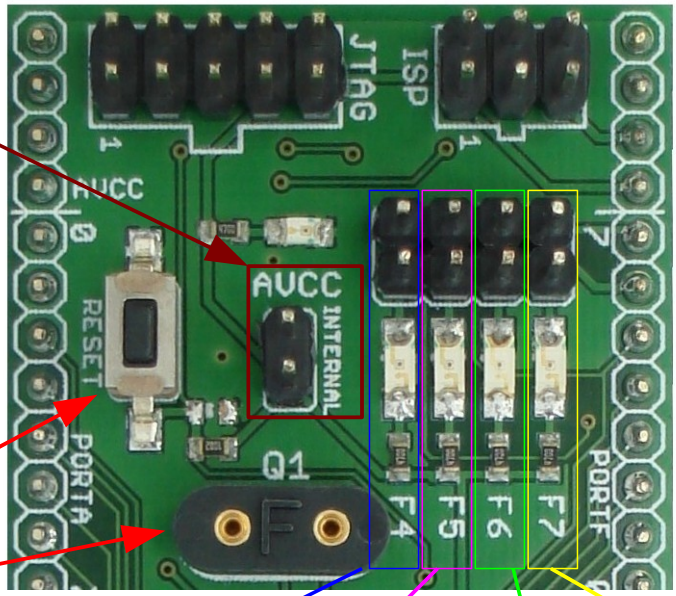
(2) VCC	(4)	(6) GND
(1) PDI	(3)	(5) RESET

Settings

JTAG **ISP**

AVCC-Jumper JP3

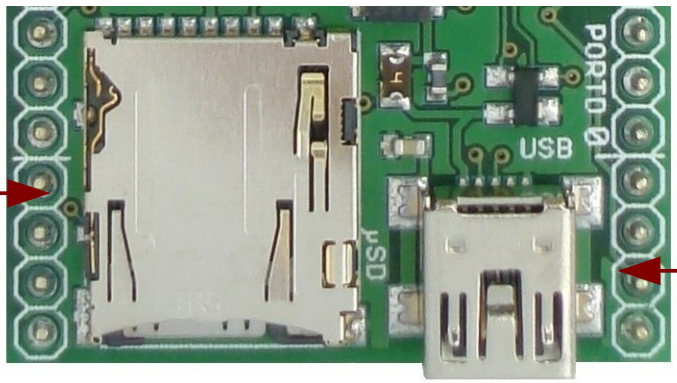
JP3 is set:
The internal voltage of 3.3Vis applied on the AVCC-pin of the module and on the AVCC-pin of the controller.
JP3 is opened:
The external voltage may be applied to the AVCC-pin of the module.



RESET-Taste

Quartz socket

LED-Jumper JP5-4	LED-Jumper JP5-3	LED-Jumper JP5-2	LED-Jumper JP5-1
+LED F4 (yellow) +resistor Jumper is connected to the pin PF4	+LED F5 (yellow) +resistor Jumper is connected to the pin PF5	+LED F6 (yellow) +resistor Jumper is connected to the pin PF6	+LED F7 (yellow) +resistor Jumper is connected to the pin PF7



microSD

Mini USB type B