ALVIDI

AVR-Development Module with 128K Bytes external SRAM

Model: AL-ERAM128_CAN

Version 2.0

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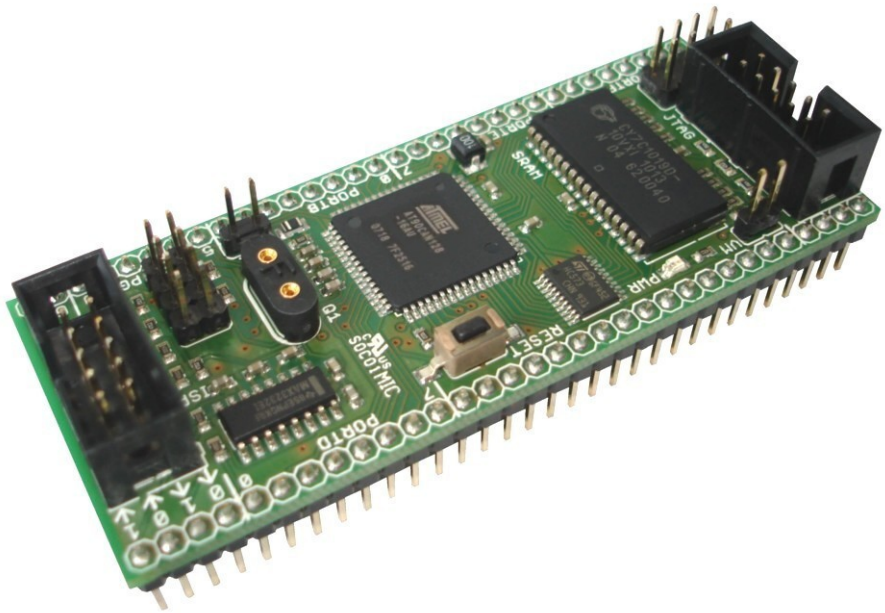
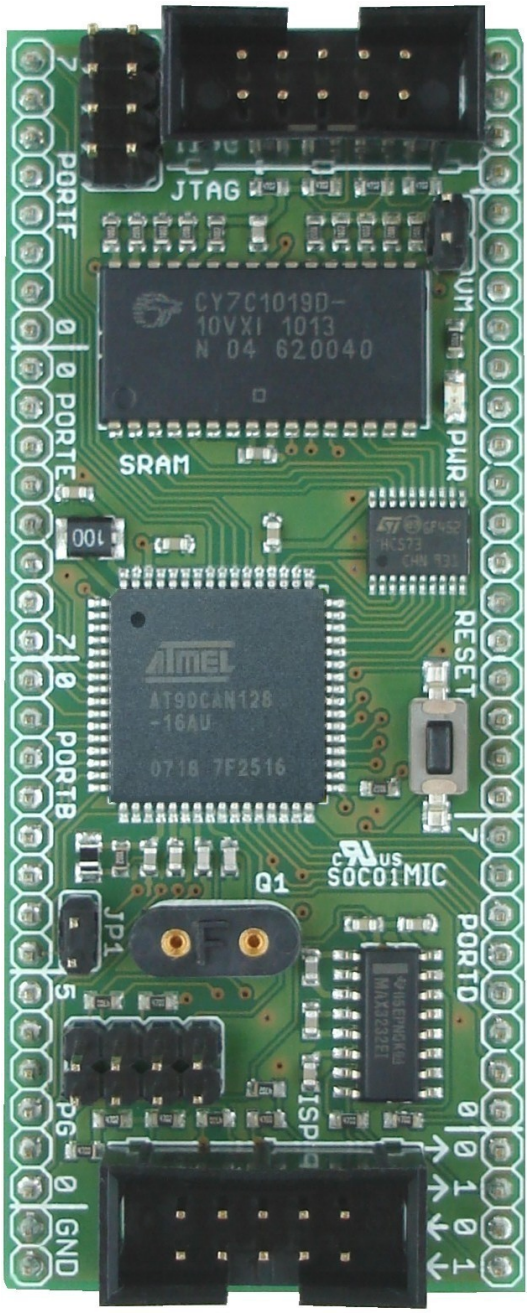


Summary

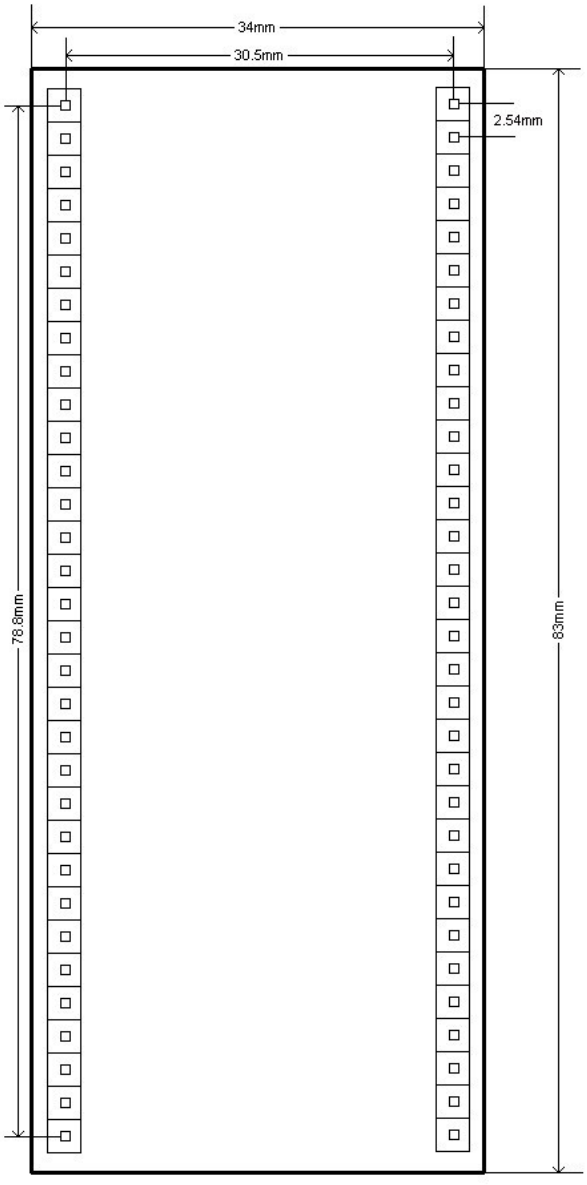


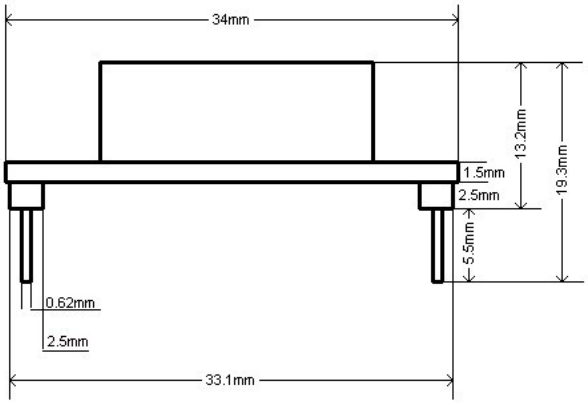
JTAG-TDI/PF7	VCC
JTAG-TDO/PF6	VSRAM
JTAG-TMS/PF5	RESET
JTAG-TCK/PF4	AREF
PF3	NC
PF2	NC
PF1	NC
PF0	NC
ISP MOSI/RS232 RXD0/PE0	NC
ISP MISO/RS232 TXD0/PE1	NC
PE2	NC
PE3	NC
PE4	NC
PE5	NC
PE6	NC
PE7	NC
PB0	NC
ISP SCK/PB1	NC
PB2	NC
PB3	NC
PB4	PD7
PB5	PD6
PB6	PD5
PB7	PD4
NC	PD3/RS232 TXD1
BOOT-PIN/PG4	PD2/RS232 RXD1
PG3	PD1
PG2	PD0
PG1	OUT0
PG0	OUT1
GND	IN0
GND	IN1

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

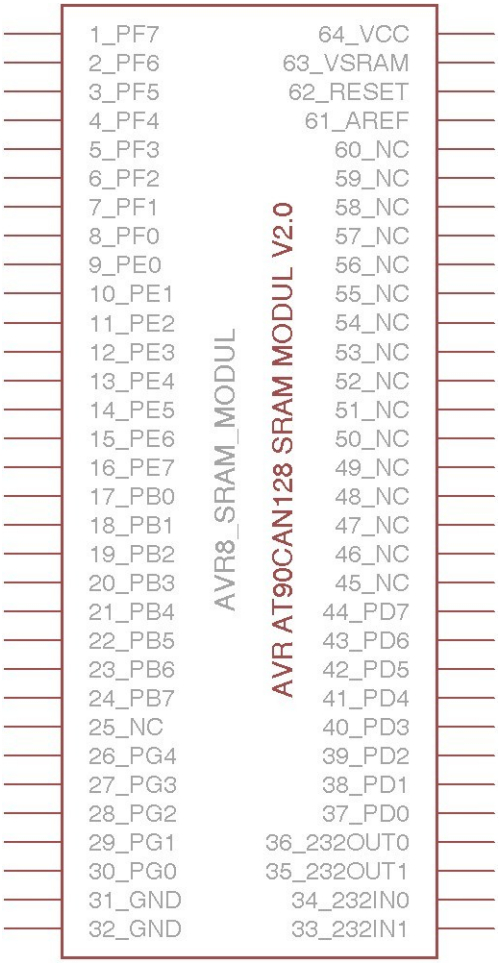
Attention! Polarity reversal and overvoltage may cause a destruction of the electronic components!!!

Measures





Description



- **Controller:** Atmel AVR AT90CAN128-16AU up to 16 MHz

- **Additional equipping:**
  - external SRAM 128 KByte
  - with 10 ns speed
  - RS-232 Transceiver
  - Reset key
  - Power LED

- **External SRAM:** internal or external voltage

- **Supply voltage:** 5 V

- **Module size:** W x H x D 34 mm x 83 mm x 19.3 mm

- **Temperature:** -40°C up to +85°C

- **Quartz socket:** simple and fast quartz exchange

- **PC-Connection:** 2 x RS232, separable with jumpers

- **Compatibility:** compatible with hole matrix board (hole distance 2.54 mm)

- **Circuit:** built on the recommendation of the manufacturer

- **Programming:** ISP or JTAG connector

- **Pin configuration of AVR-Module:** shown at the left picture

- **Pin configuration ISP & JTAG connectors:** 10-pin, standard of Atmel

- **Functionality:** tested, ready for use

- **Conformity:** RoHS Compliance

- **Produced** in Germany

Electrical Characteristics

	Min	Typ	Max
for **all** modules with	**Operating Temperature**		
MAX3232EID (actual)	**- 40 °C**		**85 °C**
MAX3232IDR (actual)			
	Operating Voltage		
• with 5 V version (actual)	4.5 V	5 V	5.5 V
• with 3.3 V version	3.0 V	3.3 V	3.6 V
	Operating Frequency		
• with 5 V version (actual)	0 Hz		16 MHz
• with 3.3 V version	0 Hz		8 MHz
	Maximum DC Current per I/O Pin		
• with 5 V version (actual)			20 mA
• with 3.3 V version			10 mA
	Maximum Access Time of SRAM		
• with 5 V version (actual)			10 nS
• with 3.3 V version			10 nS

more electrical characteristics you will find on the page 365 in the data sheet AT90CAN128.pdf

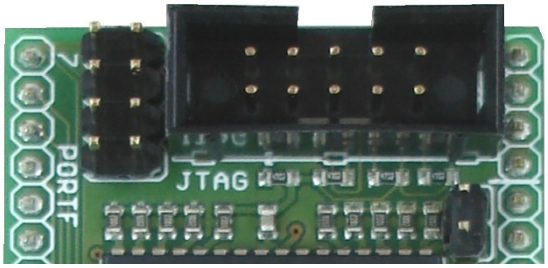
- ► 2-layer Leiterplatte DIN ISO 9001
- ► with UL-Approbation
- ► top-side mounted
- ► SRAM CY7C1019D
- ► Latch 74HC573

Possible Modifications

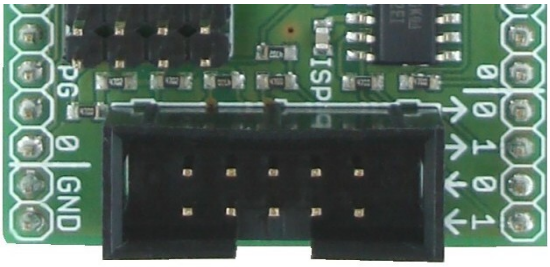
- ¤ 3.3V Version
- ¤ with mounted quartz (without quartz socket)
- ¤ without laterally pins

Programming

JTAG [1]



ISP [2]



Pin Configuration JTAG-Connector

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

Pin Configuration ISP-Connector

(2) VCC	(4) GND	(6) GND	(8) GND	(10) GND
(1) MOSI	(3) GND	(5) Reset	(7) SCK	(9) MISO

1 When programming with JTAG the JPl-(1-4)-jumpers should be set.

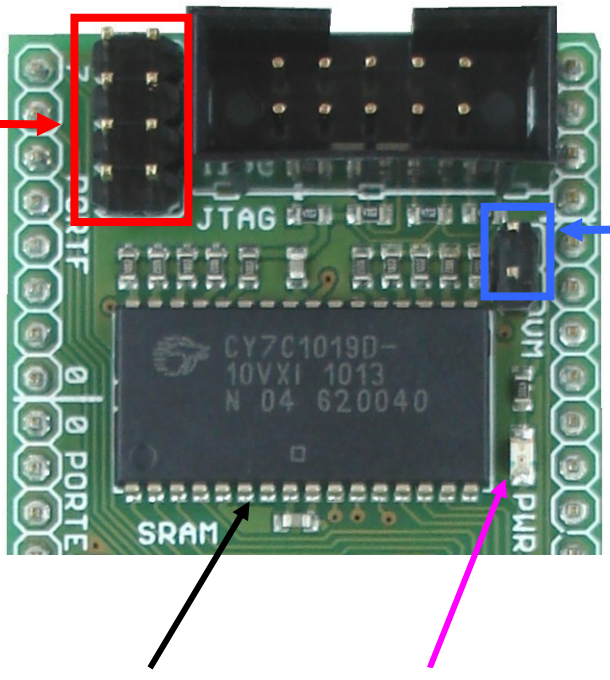
2 When programming with ISP the UART-jumpers JP2-3 and JP2-1 should not be set.

Settings

JTAG-jumpers

JP2-1	**Pin: PF7**
JP2-2	**Pin: PF6**
JP2-3	**Pin: PF5**
JP2-4	**Pin: PF4**

When programming with JTAG the jumpers should be set in the red square.



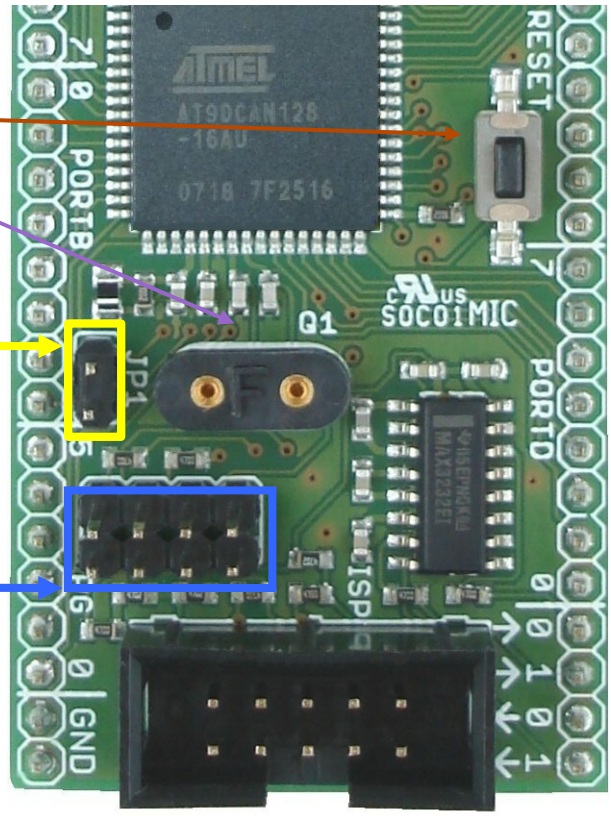
VSRAM-jumper

If **JP3 is set:** internal SRAM power supply. On pin: VSRAM is a supply voltage applied

If **JP3 is not set:** only external SRAM power supply. Therewith the data buffering is possible, but only when the uninterruptible supply is guaranteed.

128 KByte external SRAM

Power LED



JP1- is set: Jumper connects controller (port B pin 7 / PB7) with address line 16 (A16)[1] of the SRAMs. **PB7 should be free of any connections.**

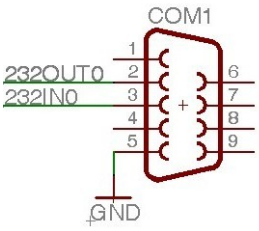
JP1- is not set: PB7 could be used freely

UARTs-Jumpers

JP5-4	JP5-3	JP5-2	JP5-1
Pin:PD2	Pin:PE0	Pin:PD3	Pin:PE1

The UARTs-pins can be parted from RS232 transceivers with these jumpers.
When programming with ISP the UART-jumpers JP5-3 (PE0) and JP5-1 (PE1) should not be set.

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



	D-SUB 9-p.	AL-ERAM128_CAN
CH 0 example in the left picture	Pin 2	36_232OUT0
	Pin 3	34_232IN0
	GND	32_GND
CH 1	Pin 2	35_232OUT1
	Pin 3	33_232IN1
	GND	32_GND

[1] AT90CAN128 could operate only up to 64 KByte external SRAM. If you need 128 KByte, you should operate manually. JP1(address line 16-A16) should be set.