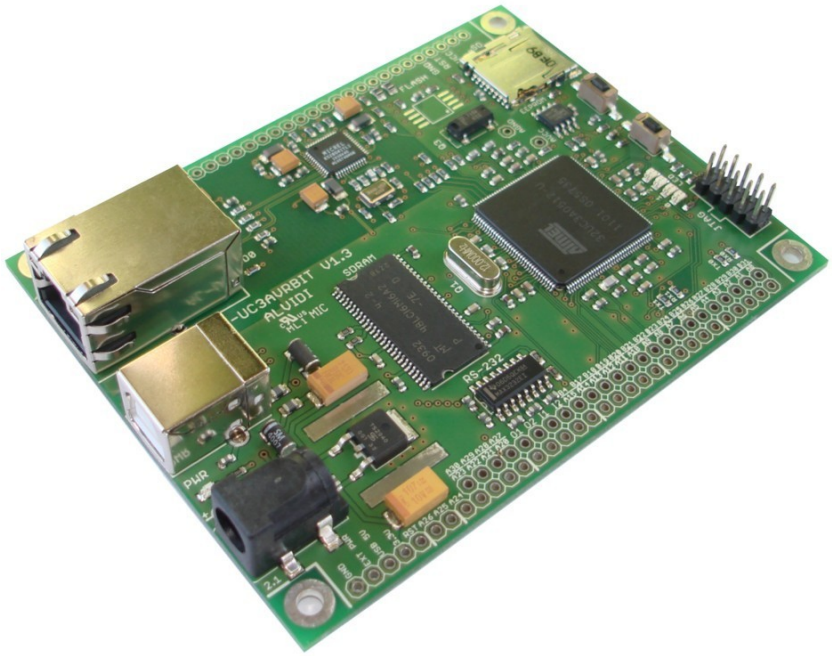
ALVIDI

AVR32-Development Board

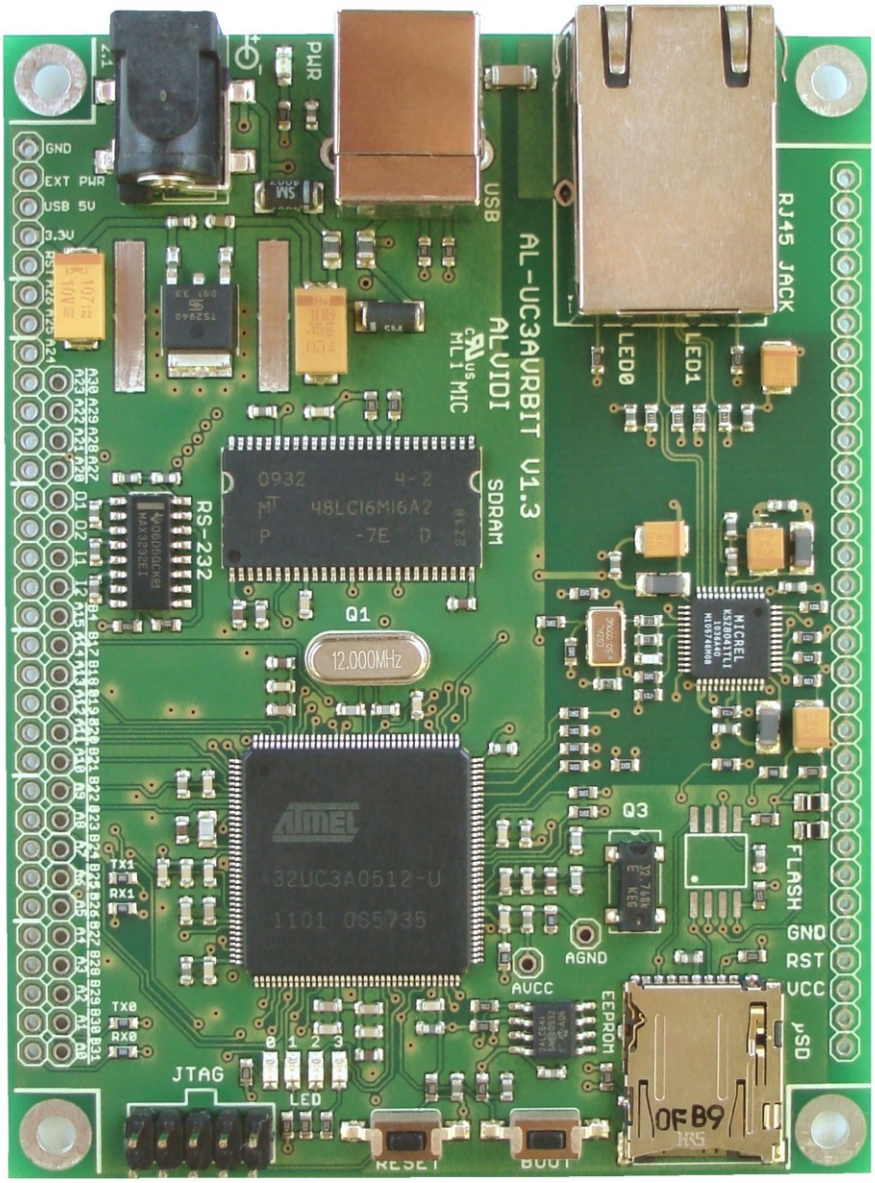
Model: AL-UC3AVRBIT V1.3

- Summary
- Measures
- Description
- Electrical Characteristics
- Periphery and AT32UC3A0512



Summary

GND		
EXT PWR		
USB 5V		
3.3V		
RESET		
A26		
A25		
A24		
A23	A30	
A22	A29	
A21	A28	
A20	A27	
A19	OUT1	
A18	OUT2	
A17	IN1	
A16	IN2	
A15	B04	
A14	B17	
A13	B18	
A12	B19	
A11	B20	
A10	B21	
A09	B22	
A08	B23	
A07	B24	
A06	B25	
A05	B26	
A04	B27	
A03	B28	
A02	B29	
A01	B30	
A00	B31	



GND	
GND	
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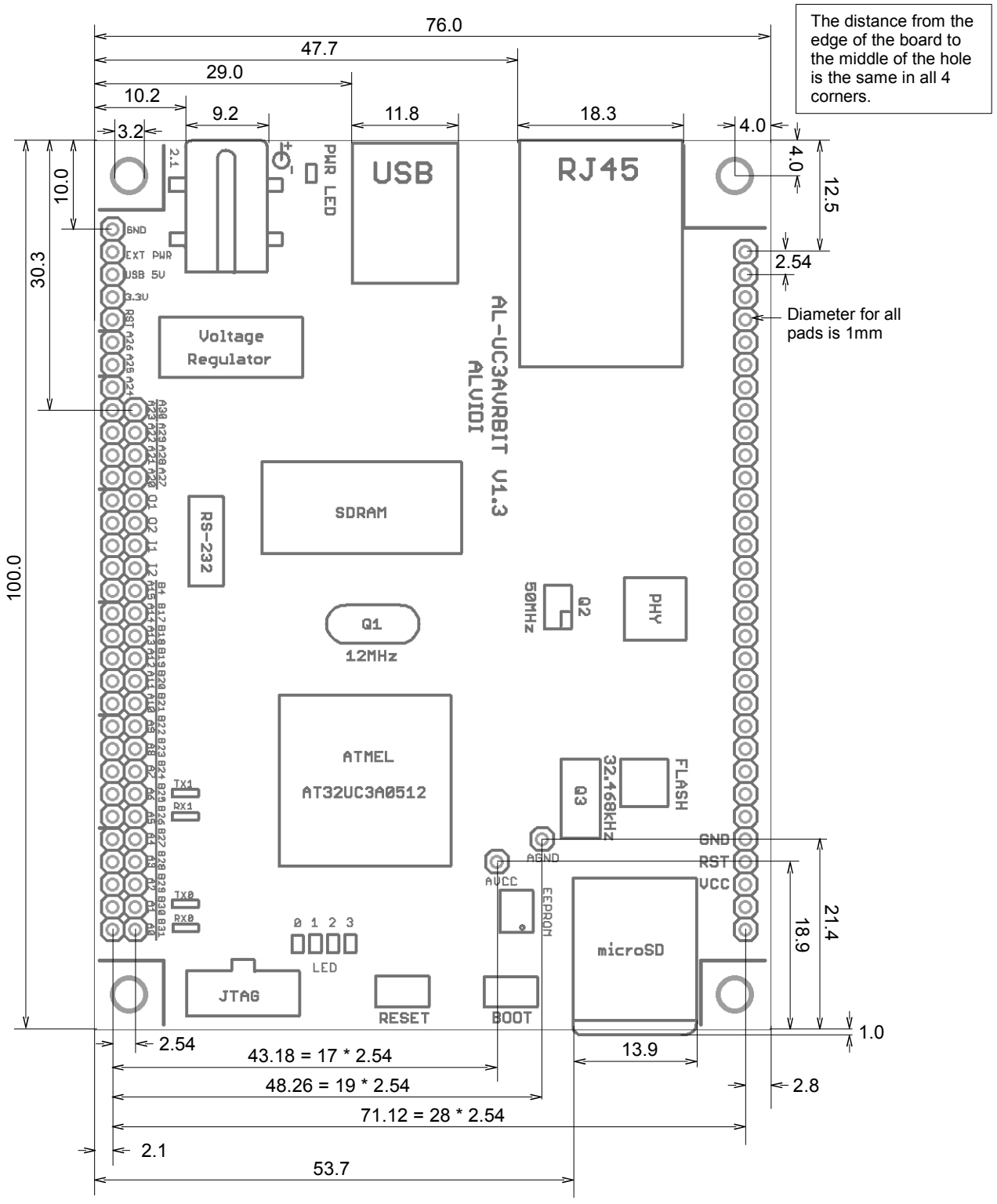
GND	
GND	
GND	
GND	
GND	
GND	
GND	
GND	
RESET	
3.3V	
3.3V	
3.3V	

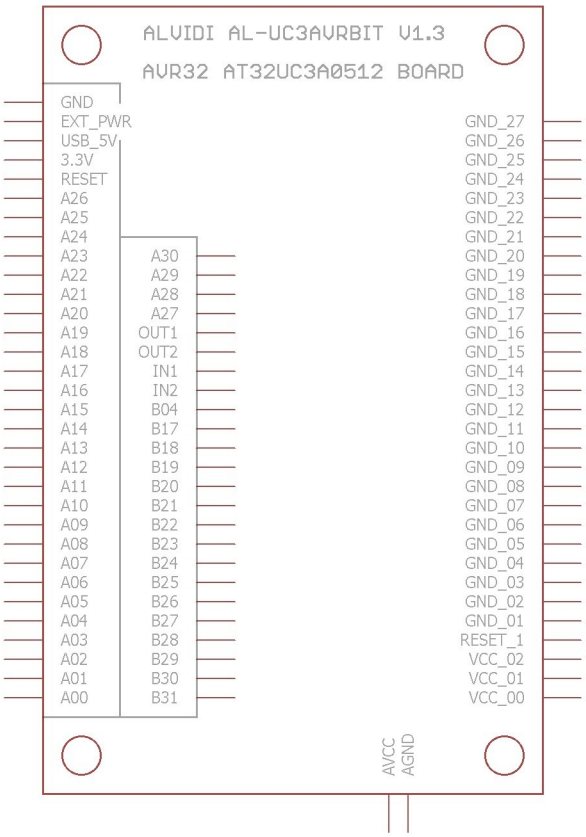
Attention! Polarity reversal and overvoltage may cause a destruction of the electronic components!!!

Measures



all dimension in mm

Description



- Controller: Atmel AVR32 AT32UC3A0512 up to 66 MHz

- Equipment:

- linear voltage regulator 3.3V
- SDRAM 256MBit
- EEPROM 8Kbyte
- microSD card slot
- reset and boot key
- 4x LED and Power LED
- RS-232 Transceiver
- Ethernet
- JTAG connector
- 2x qurtz and 1x oscillator
- 47 external I/O

- optional equipment:

on request

- DataFlash:
  - AT45DB161D-SU
  - AT45DB321D-SU
  - AT45DB642D-CNU
- heat sink FK 244 13 D PAK

- Voltage Supply:

- external 3,3V oder
- external
  - 5V without heat sink
  - 5 – 12V with heat sink
- USB 5V
- Power Jack
  - 5V without heat sink
  - 5 – 12V with heat sink

- Board size: B x H x T 100 mm x 76 mm x 18 mm

- Quartz:

- 50MHz (oscillator),
- 12MHz und
- 32,768KHz

- Interfaces:

- USB
- Ethernet
- 2 x RS232
- JTAG

- Compatibility: compatible with hole matrix board 2.54 mm

- Circuit: built on the recommendation of the manufacturers

- Programming:

- JTAG MKII connector (10-pin)or
- USB boot loader (USB type B)

- Pin configuration: shown at the left picture

- Functionality: tested, ready for use

- Conformity: **RoHS Compliance**

- Produced in Germany

Electrical Characteristics

	Min	Typ	Max
	Operating Temperature		
without SD card slot	**- 40 °C**		**70 °C**
with SD card slot	**- 25 °C**		**70 °C**
	Voltage Sources		
external 3.3V	3.0 V	3.3 V	3.6V
external 5-12V *	3.6 V		12 V
USB 5V		5V	
	Frequenzen		
operating frequency	0 Hz		66 MHz
external quartz Q1		12 MHz	
external oszillator Q2		50 MHz	
external quartz Q3		32.768 kHz	
	Maximum DC Current		
per I/O Pin		4 mA	
on board			300mA
external load			200mA

more electrical characteristics you will find on the page 763 in the data sheet AT32UC3A0512.pdf

- ► voltage regulator: TS2940CP-33
- ► SDRAM: MT48LC16M16A2P-7ETI
- ► RS232: MAX3232EI
- ► PHY: KSZ8041TLI
- ► EEPROM: 24LC64
- ► 4-layer PCB DIN ISO 9001
- ► with UL-Approbation
- ► one-side mounted
- ► USB connctor type B

* using the external power supply on pin EXT PWR over 5V is permitted only with suitable heat sink of the voltage regulator. As heat sink we recommend FK 244 13 D PAK by FISCHER ELEKTRONIK (optional equipping on request)

Periphery und AT32UC3A0512

SDRAM	AVR32
A0	PX32
A1	PX31
A2	PX30
A3	PX29
A4	PX28
A5	PX27
A6	PX26
A7	PX25
A8	PX24
A9	PX23
A10	PB16
A11	PX21
A12	PX20
BA0	PX18
BA1	PX17
DQML	PX34
DQMH	PX11
CLK	PB10
CKE	PB11
CS#	PX14
RAS#	PB12
CAS#	PB13
WE#	PB14
DQ0	PX10
DQ1	PX09
DQ2	PX08
DQ3	PX07
DQ4	PX06
DQ5	PX05
DQ6	PX04
DQ7	PX03
DQ8	PX02
DQ9	PX01
DQ10	PX00
DQ11	PX39
DQ12	PX38
DQ13	PX37
DQ14	PX36
DQ15	PX35

EEPROM	AVR32
SCL	PA30
SDA	PA29

µSD -microSD, FL-DataFlash

*- periphery are connected via 0 ohm resistor with µC

PHY	AVR32
REF_CLK	PB00
TX_EN	PB01
TX0	PB02
TX1	PB03
RX0	PB05
RX1	PB06
RX_ER	PB07
MDC	PB08
MDIO	PB09
RX_DV	PB15
RESET	PX22
Interrupt	PA24

RS232	AVR32
TX0	PA01
TX1	PA06
RX0	PA00
RX1	PA05

microSD	AVR32
/SS	PA10
MOSI	PA12
SCK	PA13
MISO	PA11
SWITCH	PA14

DataFlash	AVR32
/CS	PA08
SCK	PA13
MOSI	PA12
MISO	PA11
RESET	RESET

LED	AVR32
0	PX12
1	PX13
2	PX15
3	PX16

QUARZ	AVR32
Q1-PIN1	PC02
Q1-PIN2	PC03
Q3-PIN1	PC00
Q3-PIN2	PC01

AGND*	GNDANA
AVCC*	VDDANA

LAST	EXT I/O	AVR32
RX0 (RS232)*	A00	PA00
TX0 (RS232)*	A01	PA01
	A02	PA02
	A03	PA03
	A04	PA04
RX1 (RS232)*	A05	PA05
TX1 (RS232)*	A06	PA06
	A07	PA07
CS (FLASH)	A08	PA08
	A09	PA09
CS (µSD)	A10	PA10
MISO (µSD+FL)	A11	PA11
MOSI (µSD+FL)	A12	PA12
SCK (µSD+FL)	A13	PA13
SWITCH (µSD)	A14	PA14
	A15	PA15
	A16	PA16
	A17	PA17
	A18	PA18
	A19	PA19
BOOT KEY	A20	PA20
	A21	PA21
	A22	PA22
	A23	PA23
INTRP (PHY)*	A24	PA24
	A25	PA25
	A26	PA26
	A27	PA27
	A28	PA28
SDA (EEPROM)	A29	PA29
SCL (EEPROM)	A30	PA30
	B04	PB04
	B17	PB17
	B18	PB18
	B19	PB19
	B20	PB20
	B21	PB21
	B22	PB22
	B23	PB23
	B24	PB24
	B25	PB25
	B26	PB26
	B27	PB27
	B28	PB28
	B29	PB29
	B30	PB30
	B31	PB31