

PicoCOM1

Single Board Computer with ARM926EJ-CPU



Characteristics

- CPU ARM926EJ 210MHz
- 32MB Flash, 32MB SDRAM
- Ethernet 10/100MBit
- 3x Serielle (RS232/RS485 with 3,3V-level)
- 2x USB2.0 Host, 1x USB2.0 Device
- 1x CAN2.0 interface
- 1x I2C-interface
- 1x SPI-interface
- external SD-Card-Slot
- Audio (input/output, analogue)
- Windows CE 6.0 or embedded Linux
- 3,3V low power design (<1W at operation)
- extended temperature range (-20°C ... +85°C)

Description

The PicoCOM1 is a small and inexpensive communication module with integrated operating system. An important design objective was to offer as many standardized interfaces as possible, completely supported by the integrated OS. This allows for fast and straightforward implementation of the required communication tasks without requiring any in-depth hardware knowledge. Integrating the module into the surrounding hardware should be equally uncomplicated. Therefore the whole power-management (power supply, reset circuitry) is provided on-board and the module is connected to the main application via a pluggable 80-pin connector. Only some signal driver components for the requested interfaces need to be added. The computing power is provided by a 210MHz ARM CPU. By default the PicoCOM1 is equipped with 32MB RAM, 32MB flash, and the board is already suited for extended temperature range (-20°C to +85°C).

On-Board Operating System

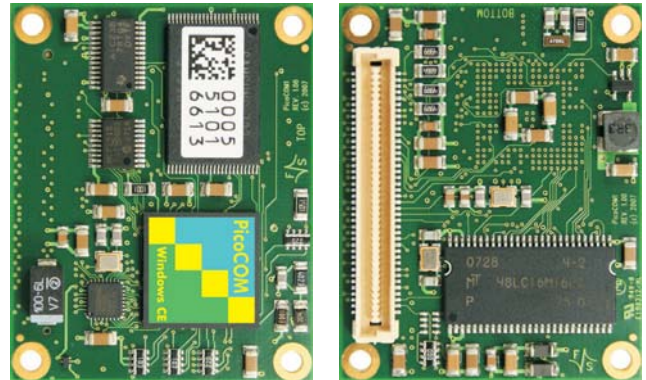


The PicoCOM1 uses Windows Embedded CE 6.0. All interfaces are supported by software drivers. With Visual Studio .NET (not included), applications can be programmed in C, C++, C# and Visual Basic.

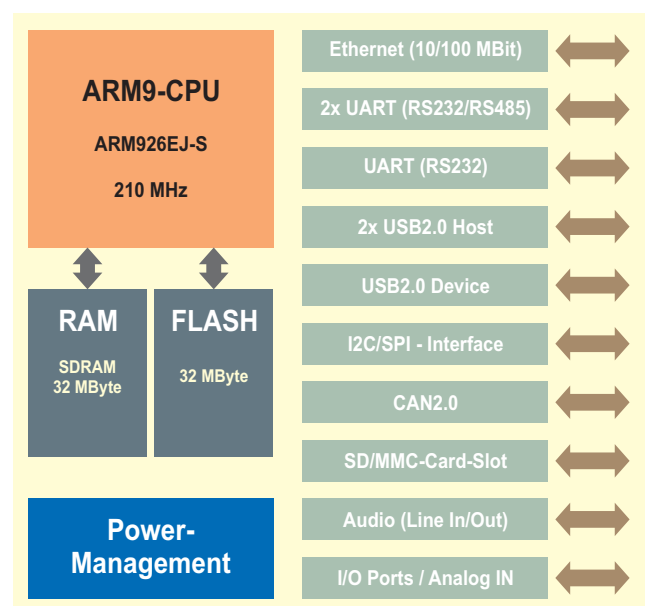


The Linux Evaluation Board Support Package (BSP) is already supplied with the starterkit. This package supports all basic interfaces and even allows development on a Windows PC. The additionally available Professional BSP offers the full capacity of the PicoCOM1 and development integration into the Eclipse IDE.

Full-Scale Representation



Block diagram



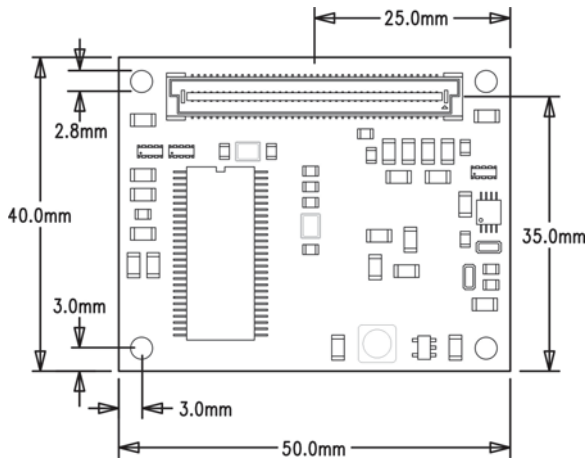
Starter-kit

For a quick and easy start we have designed a starter-kit. It consists of a baseboard with mounted PicoCOM1 and a set of cables. The baseboard offers connections for: Ethernet, USB Host, USB Device, 2x RS232, RS485, CAN2.0, SD-Card Slot, I2C, SPI, Audio (Line In, Line Out), and I/O Ports. It requires a 5V power supply. After registration of the starter-kit on www.picocom.de, the current operating system image can be downloaded and stored on the module. Any support requests can be placed in the especially established PicoCOM1 forum, and drivers, examples and documentation are available there, too.

Connector assignment

J1 - System-Connector									
1	TX- (Ethernet)	17	IO4 / TxD1 (Serial Port 1)	33	IO9 / SCL (I2C)	49	IO24 / RTS1 (Serial Port 1)	65	IO34
2	RX- (Ethernet)	18	IO5 / RxD1 (Serial Port 1)	34	IO10 / DAT0 (SD-/MMC-Card)	50	IO25 / CTS1 (Serial Port 1)	66	IO35
3	TX+ (Ethernet)	19	HDBA (USB Host 1)	35	IO11 / DAT1 (SD-/MMC-Card)	51	CAN+ (CAN-Bus)	67	IO36
4	RX+ (Ethernet)	20	HDMA (USB Host 1)	36	IO12 / DAT2 (SD-/MMC-Card)	52	CAN- (CAN-Bus)	68	IO37
5	+3.3V (Power Supply)	21	DDP (USB Device)	37	IO13 / DAT3 (SD-/MMC-Card)	53	HDPB (USB Host 2)	69	IO38
6	+3.3V (Power Supply)	22	DDM (USB Device)	38	IO14 / CLK (SD-/MMC-Card)	54	HDMB (USB Host 2)	70	IO39
7	GND (System Ground)	23	IO6 / USB CNX (USB Device)	39	IO15 / CMD (SD-/MMC-Card)	55	IO26 / MISO (SPI)	71	ELED0 (Ethernet)
8	GND (System Ground)	24	IO7 / USB PWR (USB Device)	40	IO16 / IRQ1 (Interrupt)	56	IO27 / MOSI (SPI)	72	GND (System Ground)
9	VBAT (+3V ... 3.6V / RTC Supply)	25	GND (System Ground)	41	IO17	57	IO28 / SPCK (SPI)	73	GND (System Ground)
10	nRES (Reset CPU)	26	nTRST (JTAG)	42	GND (System Ground)	58	IO29 / CS0 (SPI)	74	IO40 / AD1 (Analog in 1)
11	SHDN (Shut Down Power Supply)	27	TMS (JTAG)	43	IO18 / TxD3 (Serial Port 3)	59	IO30 / CS1 (SPI)	75	IO41 / AD2 (Analog in 2)
12	WKUP (Wake Up CPU)	28	TDI (JTAG)	44	IO19 / RxD3 (Serial Port 3)	60	IO31 / CS2 (SPI)	76	IO42 / AD3 (Analog in 3)
13	IO0 / TxD2 (Serial Port 2)	29	TDO (JTAG)	45	IO20 / DSR2 (Serial Port 2)	61	GND (System Ground)	77	LOUT (Line out left)
14	IO1 / RxD2 (Serial Port 2)	30	TCK (JTAG)	46	IO21 / DCD2 (Serial Port 2)	62	GND (System Ground)	78	ROUT (Line out right)
15	IO2 / RTS2 (Serial Port 2)	31	JTAGSEL (JTAG)	47	IO22 / DTR2 (Serial Port 2)	63	IO32	79	LIN (Line in left)
16	IO3 / CTS2 (Serial Port 2)	32	IO8 / SDA (I2C)	48	IO23 / RI2 (Serial Port 2)	64	IO33	80	RIN (Line in right)

Dimension



Technical data

Power Supply:	+3,3V _{DC} / ±5%
Power consumption:	< 400mA
Digital I/O:	max. 42 I/O-port lines (alternative with interfaces allocated)
Interfaces:	1x Ethernet 10/100 MBit 3x Serial (RS232/RS485 with 3,3V-level) 2x USB2.0 Host 1x USB2.0 Device 1x I2C 1x SPI 1x CAN2.0 1x SD-Card-Slot (external) 1x Audio (Line in/out, analogue) max. 3 analogue inputs (alternative with I/O-ports allocated)
RAM:	32 MByte SDRAM Opt. 64 MByte
Program memory:	32 MByte Flash Opt. 64 MByte
Prozessor:	CPU with ARM926EJ-S Core, 210MHz
Temperature range:	-20°C ... 85°C
Dimension:	50mm x 40mm x 10mm (l x w x h)
Weight:	ca. 15 gr

Standard versions / Order notation

PicoCOM1-WCE6.0

32MB SDRAM, 32MB Flash, Ethernet, CAN2.0, Audio, Windows CE 6.0

PicoCOM1-LIN

32MB SDRAM, 32MB Flash, Ethernet, CAN2.0, Audio, Embedded Linux

PicoCOM1-SKIT-WCE

Starter-kit with PicoCOM1-WCE6.0, baseboard, cables

PicoMOD1-SKIT-LIN

Starter-kit with PicoCOM1-LIN, baseboard, cables

Attention:

Special versions only for order quantities of at least 1000 parts!

Order key

PicoCOM1-64D64FnNCA-WCE6.0

Typ	SDRAM	Flash	Net	CAN	Audio	System
PicoCOM1	16D 16 MByte	16F 16 MByte	blank Ethernet	blank CAN	blank Audio	WCE6.0 Windows CE 6.0
	blank 32 MByte	blank 32 MByte	nN no Ethernet	nC no CAN	nA no Audio	LIN Embedded Linux
	64D 64 MByte	64F 64 MByte				

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