PicoCOM1

Hardware

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Preliminary

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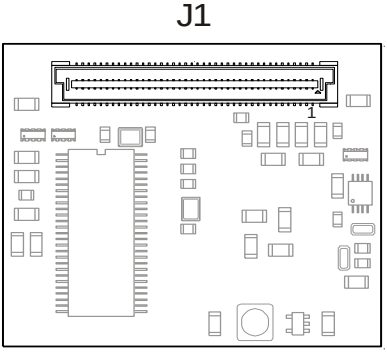
Table of Contents

1 Arrangement of Connectors

Figure 1.1: Bottom View



2 Technical Data Connectors

The PicoCOM1 is equipped with a
TycoElectronics 5177984-3 (8 pin, 0.8mm)
connector from ‘0.8mm Free Height (FH) Connectors’ series.

Matching connectors are:

5mm stacking height:	TycoElectronics 5177983-3
9mm stacking height:	TycoElectronics 5-5179009-3
13mm stacking height:	TycoElectronics 5-5179010-3

3 Connectors

3.1 Counting of the connector pins

The connector plug of PicoCOM1 will be treated as follows.

Pin 1 is marked in Figure 1.1. The row with pin1 contains all odd-numbered pins (1, 3, 5, 7 etc.), and corresponding to this, the row without pin 1 contains all even-numbered pins (2, 4, 6, 8 etc.).

3.2 IO-Pin limitations

PicoCOM1 is equipped with 43 pins that can be used as digital-IO. Most of these pins are multiplexed, so you have to make sure that these pins are used for one purpose only. For example, if you intend to use IO0 to IO3 you have to make sure that the COM2 is disabled.

Additionally there are some IO-Pins which are used internally and whose primary function can't be disabled completely. These pins may carry active signals while the device is booting, which must be kept in mind when connecting external hardware. For example even if you don't intend to use COM3 in your application, Pin43 and Pin44 be configured as serial line in the bootloader for a short period of time. will send Pins that could toggle during boot are marked with a * in the following table.

3.3 Connector J1

J1			
Pin	**Signal**	**Default Interface**	**Starter-Kit Interface**
1	TX-	Ethernet TX-	Ethernet TX-
2	RX-	Ethernet RX-	Ethernet RX-
3	TX+	Ethernet TX+	Ethernet TX+
4	RX+	Ethernet RX+	Ethernet RX+
5	V33	+3.3V +-5% DC	+3.3V +-5% DC
6	V33	+3.3V +-5% DC	+3.3V +-5% DC
7	GND	Ground	Ground
8	GND	Ground	Ground
9	VBAT	+3..+3.6V DC (RTC back-up battery)	+3..+3.6V DC (RTC backup battery)
10	nRES	Reset In (open drain)	Reset In (open drain)
11	SHDN	Shutdown (active low)	Shutdown (active low)
12	WKUP	Wake Up	Wake Up
13	IO0	IO0	COM2 TXD
14	IO1	IO1	COM2 RXD
15	IO2	IO2	COM2 RTS
16	IO3	IO3	COM2 CTS
17	IO4	IO4	COM1 TXD
18	IO5	IO5	COM1 RXD
19	HDPA	USB Host 1 +	USB Host 1 +
20	HDMA	USB Host 1 -	USB Host 1 -
21	DDP	USB Device +	USB Device +
22	DDM	USB Device -	USB Device -
23	IO6 [1)]	IO6	USB CNX
24	IO7 [1)]	IO7	USB PWR

J1			
Pin	**Signal**	**Default Interface**	**Starter-Kit Interface**
25	GND	Ground	Ground
26	nTRST	JTAG Reset	JTAG Reset
27	TMS	JTAG TMS	JTAG TMS
28	TDI	JTAG TDI	JTAG TDI
29	TDO	JTAG TDO	JTAG TDO
30	TCK	JTAG TCK	JTAG TCK
31	JTAGSEL	JTAG Select	JTAG Select
32	IO8 [1)]	IO8	I2C SDA
33	IO9 [1)]	IO9	I2C SCL
34	IO10 [2)]	IO10	SD DAT0
35	IO11	IO11	SD DAT1
36	IO12	IO12	SD DAT2
37	IO13	IO13	SD DAT3
38	IO14	IO14	SD CLK
39	IO15 [2)]	IO15	SD CMD
40	IO16	IO16	IRQ1
41	IO17 [2)]	IO17	IO17
42	GND	Ground	Ground
43	IO18 [1)]	IO18	COM3 TXD
44	IO19 [1)]	IO19	COM3 RXD
45	IO20	IO20	COM2 DSR
46	IO21	IO21	COM2 DCD
47	IO22	IO22	COM2 DTR
48	IO23	IO23	COM2 RI
49	IO24	IO24	COM1 RTS
50	IO25	IO25	COM1 CTS

J1			
Pin	**Signal**	**Default Interface**	**Starter-Kit Interface**
51	CAN+	CAN+	CAN+
52	CAN-	CAN-	CAN-
53	HDPB	USB Host 2 +	USB Host 2 +
54	HDMB	USB Host 2 -	USB Host 2 -
55	IO26 [3)]	IO26	SPI MISO
56	IO27 [3)]	IO27	SPI MOSI
57	IO28 [3)]	IO28	SPI SPCK
58	IO29	IO29	SPI PCS0
59	IO30	IO30	SPI PCS1
60	IO31	IO31	SPI PCS2
61	GND	Ground	Ground
62	GND	Ground	Ground
63	IO32	IO32	IO32
64	IO33	IO33	IO33
65	IO34	IO34	IO34
66	IO35	IO35	IO35
67	IO36	IO36	IO36
68	IO37	IO37	IO37
69	IO38	IO38	IO38
70	IO39	IO39	IO39
71	ELED0	Ethernet LED	Ethernet LED
72	GND	Ground	Ground
73	GND	Ground	Ground
74	IO40	IO40	Analog In 1
75	IO41	IO41	Analog In 2
76	IO42	IO42	Analog In 3

J1			
Pin	**Signal**	**Default Interface**	**Starter-Kit Interface**
77	LOUT	Line Out Left	Line Out Left
78	ROUT	Line Out Right	Line Out Right
79	LIN	Line In Left	Line In Left
80	RIN	Line In Right	Line In Right

1) These pins carry internal signals and may toggle during boot.
2) Like 1) theses pins carry internal signals. But this restriction is limited to hardware revisions ≤1.20 only.
3) If using the CAN interface, these pins are restricted to SPI function.

See PicoCOM1 starterkit documentation for connection examples.

4 Dimensions PicoCOM1

Board thickness:	1.6 mm
Height of parts on top side:	3.0 mm
Height of parts on bottom side (without connectors):	2.0 mm
Pin pitch of connector:	0.8 mm
Mounting hole diameter	2.8 mm

Figure 4.1: Top View

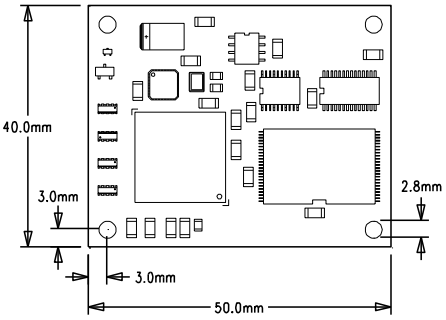
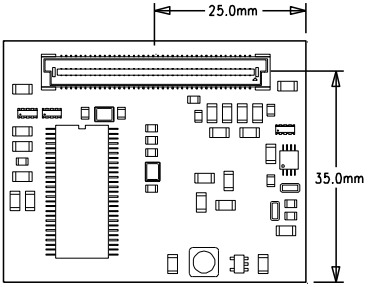


Figure 4.2: Bottom View



All values can have tolerances of ±0,5mm.

5 Technical Data PicoCOM1

Power Supply:	+3.3V DC / ±5%
Current Consumption:	< 400 mA (<450mA in custom LDO version) <2A on startup up to 2.5V

!! we recommend a 2A power source with fast rise time to avoid startup problems !!

Inputs/Outputs:	max. 43 I/O
RAM:	32 MByte SDRAM
Flash:	32 MByte Flash
CPU:	Atmel AT91SAM9260 210 MHz
Operating Temperature:	–20°C ... +85°C
Dimensions:	80 x 50 x 10 mm (l x w x h)
Weight:	50 gr.

Index

Note:
Changes that serve technical progress are reserved.