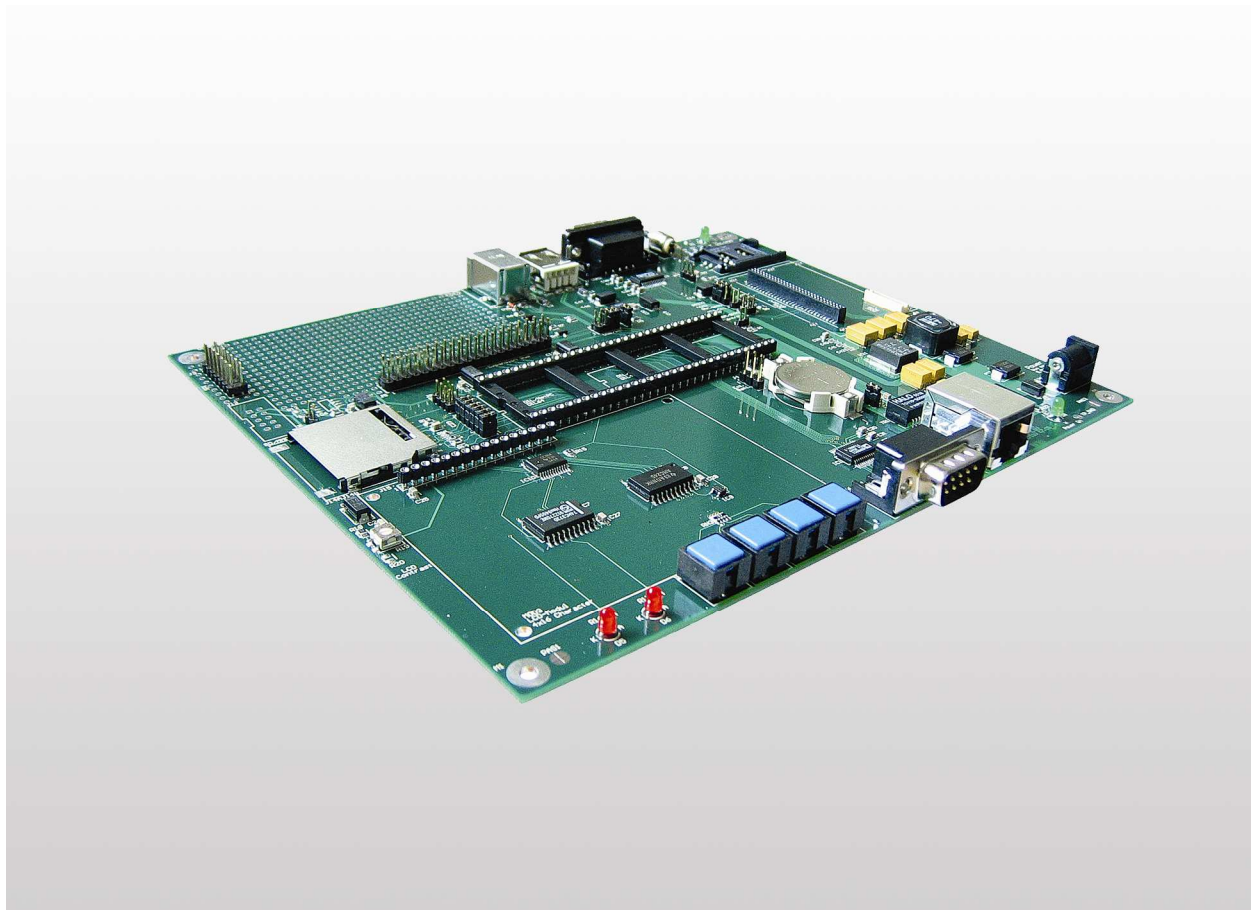


# ***DNP/EVA9***

## *Board Revision 1.1*

# Hardware Reference



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# CONTENT

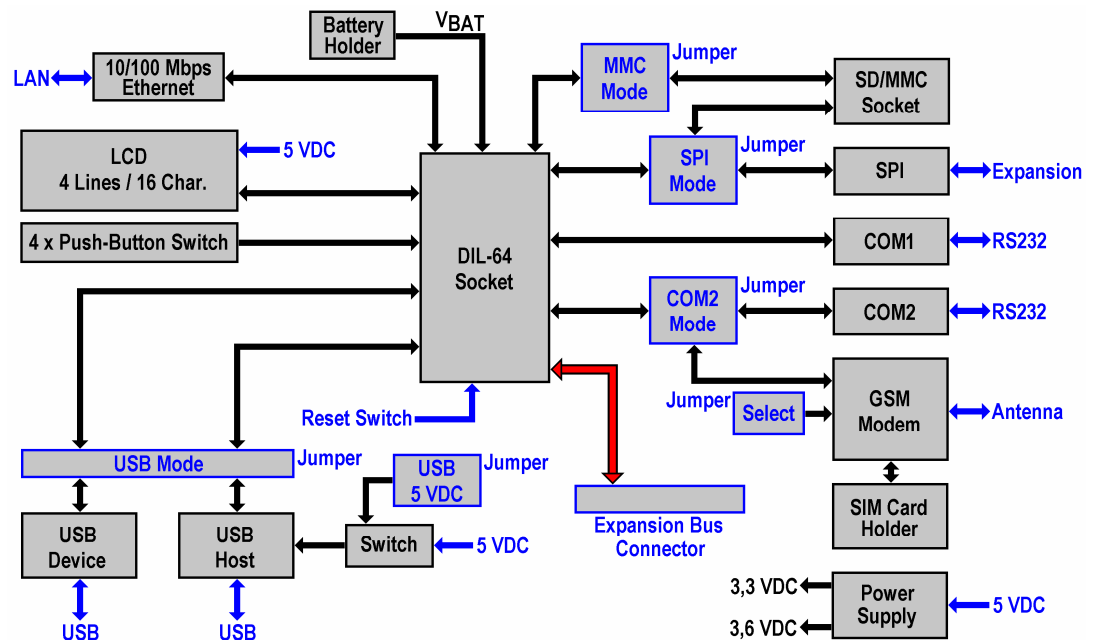
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# 1 INTRODUCTION

This document describes the hardware components of the DNP/EVA9. For further information about the individual components of this product you may follow the links from our website at <http://www.dilnetpc.com>. Our website contains a lot of technical information, which will be updated in regular periods.

## 1.1 Block diagram

Figure 1 shows the block diagram with the main components of the Evaluation Board DNP/EVA9. The DIL-64 socket (J1) forms the center of this figure. This socket connects a 64-pin DIL/NetPC with the DNP/EVA9 functions.



**Figure 1: Block diagram of DNP/EVA9**

The 10/100 Mbps Ethernet LAN interface (J16) of the DIL-64 pinout goes directly over a simple magnetic part to a RJ45 connector. The COM1 interface signals of the DIL-64 socket are connected to a RS232 driver circuit and a 9-pin Sub-D connector (J6) with standard PC pinout. The Ethernet LAN interface and/or COM1 are necessary to communicate with the DIL/NetPC operating system for evaluation purpose. All expansion bus interface signals of the DIL-64 pinout are connected to an expansion bus connector (J5). This connector is located very close to the prototype area. The DNP/EVA9 is also equipped with a battery holder for 3 V lithium cells to supply the Vbat input of a DIL/NetPC. The other most important parts of the DNP/EVA9 are:

**COM2:** The RS232-based COM2 interface can be used if no GSM modem is available. The COM2 signals of the DIL-64 socket go over a special jumper field (COM2 mode). These jumpers allow connecting the COM2 signals either to the RS232-based COM2 Sub-D connector (J7) or to the GSM modem connectors of the DNP/EVA9.

**GSM Modem:** The DNP/EVA9 is available either with connectors (J8, J9) for a Siemens MC45 or a Sony Ericsson GM47/GR47 GSM/GPRS modem module. The version for the Sony Ericsson GM47/GR47 is the factory standard. A version for Siemens MC45 is available on request. The GSM modem is supported by a SIM card holder (J10). For using the GSM modem, please insert a standard SIM card for mobile phones from a mobile communication provider to this socket. There is also a jumper (JP4) available for customizing the SIM card holder to the Siemens MC45 or the Sony Ericsson GM47/GR47 GSM/GPRS modem module.

**LCD:** The DNP/EVA9 offers a LCD connector (J15). This connector drives standard text type LCDs with 4 lines and 16 characters per line. The DNP/EVA9 also contains the parts for LCD contrast voltage generation including a trim poti (R19) for LCD contrast adjustment.

**Push-Button Switch:** There are four push-button switches for user inputs. These switches are connected to PIO signals of the DIL-64 socket.

**SPI:** The SPI function pins of the DIL-64 pinout are connected to a special connector (J3). This connector works as SPI master and allows SPI-based expansions to slave devices. Over a jumper field (JP9) it is also possible to connect the SD/MMC socket with the SPI function pins.

**SD/MMC Socket:** This socket (J14) allows to use SD card or MMC compatibles devices. The socket can be driven by SD/MMC or SPI signals. The selection goes over two jumper fields (MMC Mode jumper JP8 and SPI mode JP9)

**USB:** The DNP/EVA9 offers two USB connectors (J12: 1 x USB Host and J11: 1 x USB Device). The USB host connector allows supplying 5 VDC to external devices. This voltage can be switched on or off with a special configuration jumper (JP6 – USB 5 VDC).

**Power Supply:** This functional unit generates two voltages from a single 5 VDC source: 3.3 VDC for the DIL-64 socket and all other logic parts, except the GSM modem and the LCD. 3.6 VDC for the GSM modem. This voltage is very stable. The current of a GSM modem depends from the operation mode (sleep, TX/RX data) and varies within in a wide range.

**Please note:** The 5 VDC supply voltage for the LCD is not generated by the DNP/EVA9 power supply. This voltage comes directly from the external 5 VDC input source.

The DNP/EVA9 also contains some special jumper fields. Most of these jumpers support to configure the board features for special needs. Some jumpers work in a pass-through mode and allow to free special DIL-64 signals for customer-specific use. The other most important jumpers are:

**COM2 Mode:** This jumper field with three jumpers (JP3, JP5, JP10) routes the COM2 signals of the DIL-64 pinout either to the RS232-based COM2 interface and connector or to the GSM modem socket.

**MMC Mode:** The MMC Mode jumper (JP8) allows opening the connection between the SD/MMC socket and the interface pins of the DIL/NetPC. This can be necessary if the SD/MMC socket is driven by the SPI signals.

**SPI Mode:** This jumper (JP9) connects the SPI function pins of the DIL-64 pinout – in addition to the connections to the SPI connector (J3) – with the SD/MMC socket.

**Please note:** Use either the MMC Mode jumper (JP8) or the SPI mode jumper (JP9). Do not set both jumpers at the same time!

**USB Mode:** The USB Mode jumper field (JP2) routes the USB host and device signals of the DIL-64 pinout through the two USB connectors of the DNP/EVA9. In other words, this jumper field allows you to interrupt the USB connection between the DIL-64 socket and the USB connectors. This can be necessary, if the DIL-64 USB signals are connected to other devices (i.e. customer-specific parts within the prototype area).

---

## 1.2 Feature Overview Evaluation Board DNP/EVA9

---

- One 64-pin DIL socket for DIL/NetPC
- Two serial interfaces COM1/COM2 (RS232)
- COM2 alternatively useable for GSM/GPRS modem
- GSM modem socket with SIM card holder
- One 10/100 Mbps Ethernet LAN interface
- One USB host port connector with 5 VDC power supply output
- One USB device port connector
- SD/MMC socket for memory card expansions
- SPI connector for SPI-based expansions
- One LCD connector for standard text type LCDs with 4 lines x 16 characters
- Four push-button switches for user input
- One reset switch
- One battery holder for 3 VDC CR 2032 lithium battery
- One 5 VDC power input connector
- Power supply with 3.3 VDC and 3.6 VDC outputs
- Prototype area with expansion bus connector

## 2 BOARD LAYOUT

### 2.1 Overview Interfaces

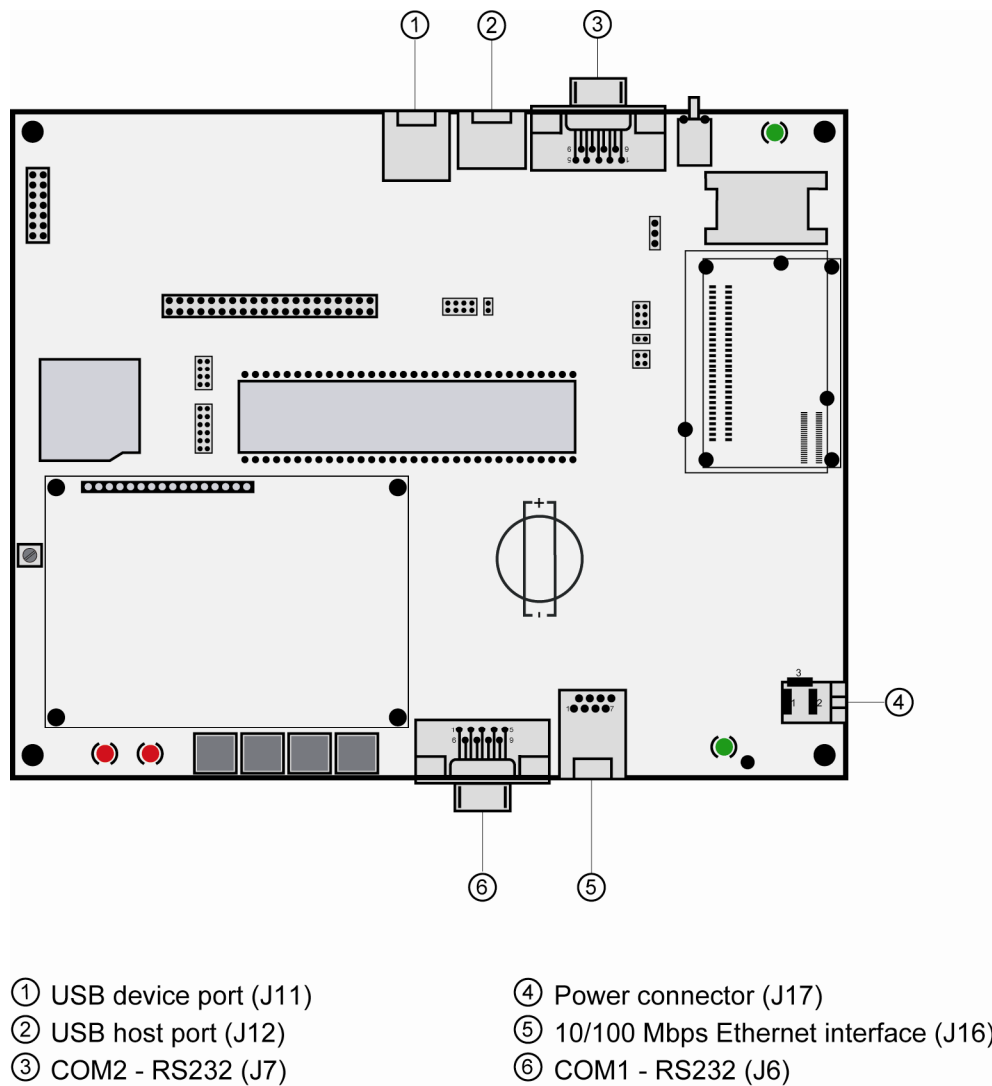
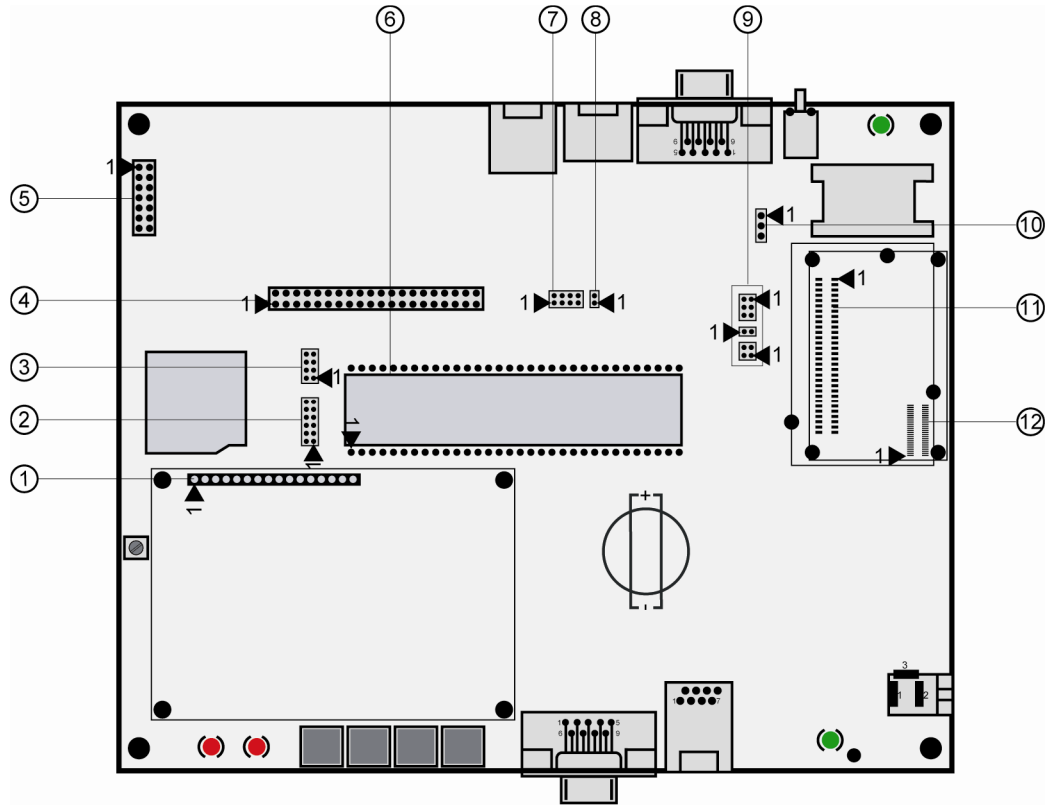


Figure 2: Interfaces DNP/EVA9

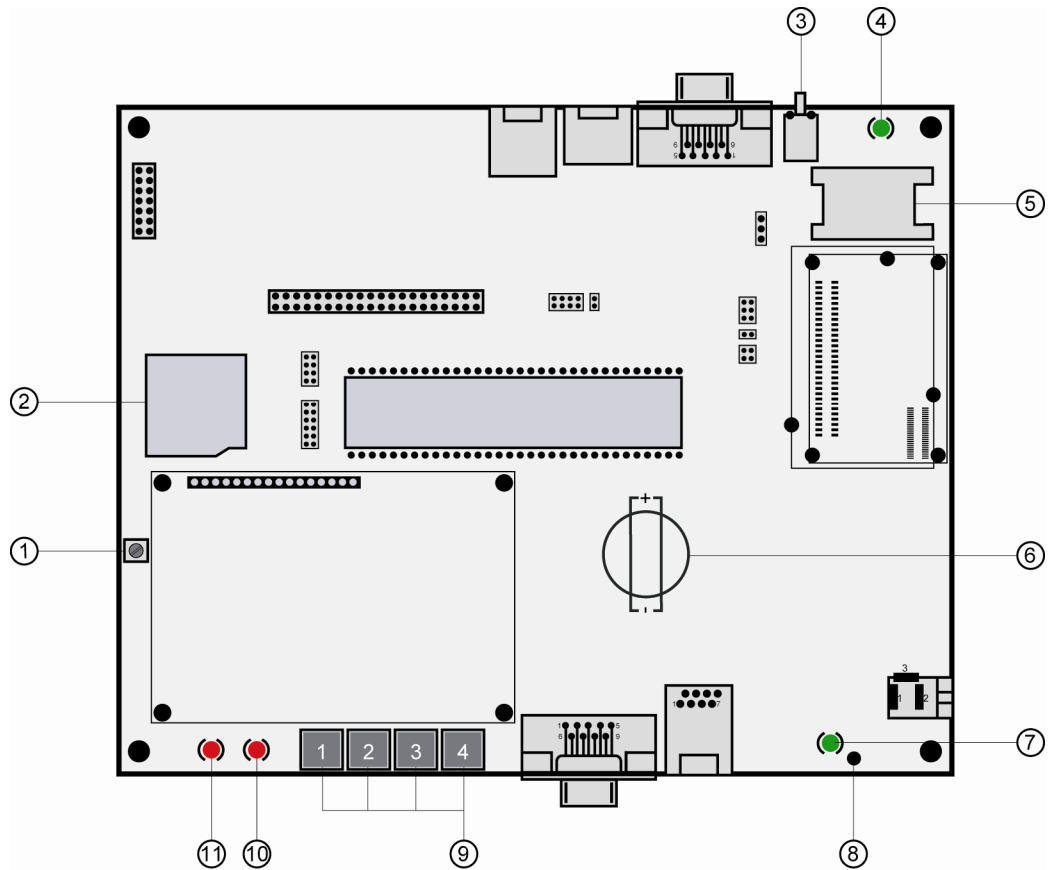
## 2.2 Overview Jumpers and Connectors



- |                          |                              |
|--------------------------|------------------------------|
| ① LCD connector (J15)    | ⑦ USB mode (JP2)             |
| ② MMC mode (JP8)         | ⑧ USB VCC (JP6)              |
| ③ SPI mode (JP9)         | ⑨ COM2 mode (JP3, JP5, JP10) |
| ④ Expansion bus (J5)     | ⑩ GSM modem select (JP4)     |
| ⑤ SPI (J3)               | ⑪ GSM modem connector 1 (J8) |
| ⑥ 64-pin DIL socket (J1) | ⑫ GSM modem connector 2 (J9) |

**Figure 3: Jumpers and connectors DNP/EVA9**

## 2.3 Overview LEDs, Buttons, etc.



- |                         |                                    |
|-------------------------|------------------------------------|
| ① LCD contrast (R19)    | ⑦ Power LED (D8)                   |
| ② SD/MMC socket (J14)   | ⑧ Testpoint (GND = ground)         |
| ③ Reset button (S1)     | ⑨ 4 x Push-button switch (S2 - S5) |
| ④ GSM modem LED (D2)    | ⑩ LED2 (D6)                        |
| ⑤ SIM card holder (J10) | ⑪ LED1 (D5)                        |
| ⑥ Battery holder (BAT1) |                                    |

**Figure 4: LEDs, buttons, etc. DNP/EVA9**



## 3 PINOUTS

### 3.1 DIL-64 Socket – J1 (1. Part)

Pin	Name	Group	Function
1	PA0	PIO	Parallel I/O, Port A, Bit 0 (see also: Alternate Function)
2	PA1	PIO	Parallel I/O, Port A, Bit 1 (see also: Alternate Function)
3	PA2	PIO	Parallel I/O, Port A, Bit 2 (see also: Alternate Function)
4	PA3	PIO	Parallel I/O, Port A, Bit 3 (see also: Alternate Function)
5	PA4	PIO	Parallel I/O, Port A, Bit 4 (see also: Alternate Function)
6	PA5	PIO	Parallel I/O, Port A, Bit 5 (see also: Alternate Function)
7	PA6	PIO	Parallel I/O, Port A, Bit 6
8	PA7	PIO	Parallel I/O, Port A, Bit 7
9	PB0	PIO	Parallel I/O, Port B, Bit 0 (see also: Alternate Function)
10	PB1	PIO	Parallel I/O, Port B, Bit 1 (see also: Alternate Function)
11	PB2	PIO	Parallel I/O, Port B, Bit 2 (see also: Alternate Function)
12	PB3	PIO	Parallel I/O, Port B, Bit 3 (see also: Alternate Function)
13	PB4	PIO	Parallel I/O, Port B, Bit 4 (see also: Alternate Function)
14	PB5	PIO	Parallel I/O, Port B, Bit 5 (see also: Alternate Function)
15	PB6	PIO	Parallel I/O, Port B, Bit 6 (see also: Alternate Function)
16	PB7	PIO	Parallel I/O, Port B, Bit 7 (see also: Alternate Function)
17	PC0	PIO	Parallel I/O, Port C, Bit 0 (see also: Alternate Function)
18	PC1	PIO	Parallel I/O, Port C, Bit 1 (see also: Alternate Function)
19	PC2	PIO	Parallel I/O, Port C, Bit 2 (see also: Alternate Function)
20	PC3	PIO	Parallel I/O, Port C, Bit 3 (see also: Alternate Function)
21	RXD1	SIO	COM1 Serial Port, RXD Pin
22	TXD1	SIO	COM1 Serial Port, TXD Pin
23	CTS1	SIO	COM1 Serial Port, CTS Pin
24	RTS1	SIO	COM1 Serial Port, RTS Pin
25	DCD1	SIO	COM1 Serial Port, DCD Pin
26	DSR1	SIO	COM1 Serial Port, DSR Pin
27	DTR1	SIO	COM1 Serial Port, DTR Pin
28	RI1	SIO	COM1 Serial Port, RI Pin
29	RESIN	RESET	RESET Input
30	TX+	LAN	10BASE-T/100BASE-TX Ethernet Interface, TX+ Pin
31	TX-	LAN	10BASE-T/100BASE-TX Ethernet Interface, TX- Pin
32	GND	---	Ground

Table 1: Pinout DIL-64 socket – pin 1 to 32



## 3.2 DIL-64 Socket – J1 (2. Part)

Pin	Name	Group	Function
33	RX+	LAN	10BASE-T/100BASE-TX Ethernet Interface, RX+ Pin
34	RX-	LAN	10BASE-T/100BASE-TX Ethernet Interface, RX- Pin
35	RESOUT	RESET	RESET Output
36	VBAT	PSP*	Real Time Clock Battery Input
37	CLKOUT	PSP*	Clock Output
38	TXD2	PSP*	COM2 Serial Port, TXD Pin
39	RXD2	PSP*	COM2 Serial Port, RXD Pin
40	HDMA	PSP*	USB Host Port- (Interrupt Input on other DIL/NetPCs)
41	HDP+	PSP*	USB Host Port+ (Interrupt Input on other DIL/NetPCs)
42	DDM	PSP*	USB Device Port- (Interrupt Input on other DIL/NetPCs)
43	DDP	PSP*	USB Device Port+ (Interrupt Input on other DIL/NetPCs)
44	INT1	PSP*	Interrupt Input 1
45	CS4	PSP*	Chip Select Output 4. Physical Address Range 0x7000.0000-0x7FFF.FFFF
46	CS3	PSP*	Chip Select Output 3. Physical Address Range 0x6000.0000-0x6FFF.FFFF
47	CS2	PSP*	Chip Select Output 2. Physical Address Range 0x5000.0000-0x5FFF.FFFF
48	CS1	PSP*	Chip Select Output 1. Physical Address Range 0x4000.0000-0x4FFF.FFFF
49	RDY	PSP*	External Ready Input
50	RD	PSP*	Read Signal, Expansion Bus
51	WR	PSP*	Write Signal, Expansion Bus
52	SA3	PSP*	Expansion Bus, Address Bit 3
53	SA2	PSP*	Expansion Bus, Address Bit 2
54	SA1	PSP*	Expansion Bus, Address Bit 1
55	SA0	PSP*	Expansion Bus, Address Bit 0
56	SD7	PSP*	Expansion Bus, Data Bit 7
57	SD6	PSP*	Expansion Bus, Data Bit 6
58	SD5	PSP*	Expansion Bus, Data Bit 5
59	SD4	PSP*	Expansion Bus, Data Bit 4
60	SD3	PSP*	Expansion Bus, Data Bit 3
61	SD2	PSP*	Expansion Bus, Data Bit 2
62	SD1	PSP*	Expansion Bus, Data Bit 1
63	SD0	PSP*	Expansion Bus, Data Bit 0
64	Vcc	---	3.3 Volt Power Input

**Table 2: Pinout DIL-64 socket – pin 33 to 64**

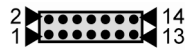
\* **Please note:** Some pins are called "Product Specific Pins (PSP)". Other members of the *DIL/NetPC* family will differ with these pins from the *DNP/9200*. All other pins will have the same primary functions. The *DNP/9200* alternate functions (pin 1 to 20) are AT91RM9200-specific.



### 3.3 SPI – J3

Pin	Name	DIL-64 Pin	Function
1	Vcc	---	3.3 VDC
2	GND	---	Ground
3	MOSI	17	Master Out Slave In (SPI Data)
4	GND	---	Ground
5	MISO	18	Master In Slave Out (SPI Data)
6	GND	---	Ground
7	SPICLK	19	SPI Clock
8	GND	---	Ground
9	SPICS0	20	SPI Chip Select
10	GND	---	Ground
11	Reserved	---	Reserved
12	GND	---	Ground
13	Reserved	---	Reserved
14	Vcc	---	3.3 VDC

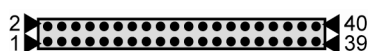
Table 3: Pinout SPI



### 3.4 Expansion Bus – J5

Pin	Name	DIL-64 Pin	Function
1	GND	---	Ground
2	GND	---	Ground
3	SD0	63	Expansion Bus, Data Bit 0
4	SD1	62	Expansion Bus, Data Bit 1
5	SD2	61	Expansion Bus, Data Bit 2
6	SD3	60	Expansion Bus, Data Bit 3
7	SD4	59	Expansion Bus, Data Bit 4
8	SD5	58	Expansion Bus, Data Bit 5
9	SD6	57	Expansion Bus, Data Bit 6
10	SD7	56	Expansion Bus, Data Bit 7
11	GND	---	Ground
12	GND	---	Ground
13	SA0	55	Expansion Bus, Address Bit 0
14	SA1	54	Expansion Bus, Address Bit 1
15	SA2	53	Expansion Bus, Address Bit 2
16	SA3	52	Expansion Bus, Address Bit 3
17	GND	---	Ground
18	GND	---	Ground
19	WR	51	Write Signal, Expansion Bus
20	RD	50	Read Signal, Expansion Bus
21	RDY	49	External Ready Input
22	RESOUT	35	RESET Output
23	GND	---	Ground
24	GND	---	Ground
25	CS1	48	Chip Select Output 1. Physical Address Range 0x4000.0000-0x4FFF.FFFF
26	CS2	47	Chip Select Output 2. Physical Address Range 0x5000.0000-0x5FFF.FFFF
27	CS3	46	Chip Select Output 3. Physical Address Range 0x6000.0000-0x6FFF.FFFF
28	CS4	45	Chip Select Output 4. Physical Address Range 0x7000.0000-0x7FFF.FFFF
29	GND	---	Ground
30	GND	---	Ground
31	INT1	44	Interrupt Input 1
32	DDP	43	USB Device Port + (Interrupt Input on other DIL/NetPCs)
33	DDM	42	USB Device Port - (Interrupt Input on other DIL/NetPCs)
34	HDP+	41	USB Host Port + (Interrupt Input on other DIL/NetPCs)
35	HDMA	40	USB Host Port - (Interrupt Input on other DIL/NetPCs)
36	NC		
37	GND	---	Ground
38	GND	---	Ground
39	CLKOUT	37	Clock Output
40	GND	---	Ground

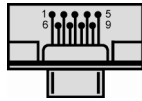
Table 4: Pinout expansion bus



### 3.5 COM1 Connector – J6

Pin	Name	Function
1	DCD	COM1 Serial Port, DCD pin
2	RXD	COM1 Serial Port, RXD pin
3	TXD	COM1 Serial Port, TXD pin
4	DTR	Fixed to Vcc
5	GND	Ground
6	DSR	COM1 Serial Port, DSR pin
7	RTS	COM1 Serial Port, RTS pin
8	CTS	COM1 Serial Port, CTS pin
9	RI	Not connected to CPU

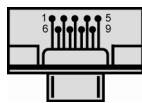
Table 5: Pinout COM1 connector



### 3.6 COM2 Connector – J7

Pin	Name	Function
1	---	Not Connected
2	RXD	COM2 Serial Port, RXD pin
3	TXD	COM2 Serial Port, TXD pin
4	---	Not Connected
5	GND	Ground
6	---	Not Connected
7	---	Not Connected
8	---	Not Connected
9	---	Not Connected

Table 6: Pinout COM2 connector



### 3.7 GSM Modem Connector 1 – J8 (1. Part)

Pin	Name	Function
1	3.6 VDC	3.6 VDC
2	GND	Ground
3	3.6 VDC	3.6 VDC
4	GND	Ground
5	3.6 VDC	3.6 VDC
6	GND	Ground
7	3.6 VDC	3.6 VDC
8	GND	Ground
9	3.6 VDC	3.6 VDC
10	GND	Ground
11	NC	Not Connected
12	GND	Ground
13	NC	Not Connected
14	PWRON	GSM Modem Power On
15	SIMVcc	SIM Card Vcc
16	SIMPRE	SIM Card Present
17	SIMRES	SIM Card Reset
18	SIMDAT	SIM Card Data
19	SIMCLK	SIM Card Clock
20	NC	Not Connected
21	NC	Not Connected
22	NC	Not Connected
23	NC	Not Connected
24	NC	Not Connected
25	NC	Not Connected
26	NC	Not Connected
27	NC	Not Connected
28	NC	Not Connected
29	NC	Not Connected
30	NC	Not Connected

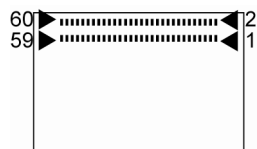
Table 7: Pinout GSM modem connector 1 – pin 1 to 30



### 3.8 GSM Modem Connector 1 – J8 (2. Part)

Pin	Name	Function
31	---	Not Connected
32	---	Not Connected
33	GSMACT	GSM Modem Activity Output
34	---	Not Connected
35	---	Not Connected
36	---	Not Connected
37	DTR	GSM Modem DTR
38	---	Not Connected
39	RTS	GSM Modem RTS
40	CTS	GSM Modem CTS
41	TXD	GSM Modem TD
42	RXD	GSM Modem RD
43	---	Not Connected
44	---	Not Connected
45	---	Not Connected
46	---	Not Connected
47	---	Not Connected
48	---	Not Connected
49	---	Not Connected
50	---	Not Connected
51	---	Not Connected
52	---	Not Connected
53	---	Not Connected
54	---	Not Connected
55	---	Not Connected
56	---	Not Connected
57	---	Not Connected
58	---	Not Connected
59	---	Not Connected
60	---	Not Connected

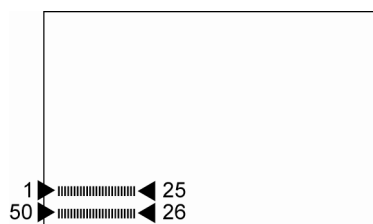
Table 8: Pinout GSM modem connector 1 – pin 31 to 60



### 3.9 GSM Modem Connector 2 – J9 (1. Part)

Pin	Name	Function
1	SIMCLK	SIM Card Clock
2	SIMVcc	SIM Card Vcc
3	SIMDAT	SIM Card Data
4	SIMRES	SIM Card Reset
5	SIMPRE	SIM Card Present
6	SIMGND	SIM Card GND
7	---	Not Connected
8	---	Not Connected
9	---	Not Connected
10	---	Not Connected
11	---	Not Connected
12	---	Not Connected
13	GSMACT	GSM Modem Activity Output
14	---	Not Connected
15	RXD	GSM Modem RD
16	---	Not Connected
17	TXD	GSM Modem TD
18	---	Not Connected
19	---	Not Connected
20	---	Not Connected
21	GND	Ground
22	GND	Ground
23	GND	Ground
24	GND	Ground
25	GND	Ground

**Table 9: Pinout GSM modem connector 2 – pin 1 to 25**





### 3.10 GSM Modem Connector 2 – J9 (2. Part)

Pin	Name	Function
26	3.6 VDC	3.6 VDC
27	3.6 VDC	3.6 VDC
28	3.6 VDC	3.6 VDC
29	3.6 VDC	3.6 VDC
30	3.6 VDC	3.6 VDC
31	---	Not Connected
32	---	Not Connected
33	---	Not Connected
34	RTS	GSM Modem RTS
35	DTR	GSM Modem DTR
36	---	Not Connected
37	CTS	GSM Modem CTS
38	---	Not Connected
39	---	Not Connected
40	---	Not Connected
41	PWRON	GSM Modem Power On
42	---	Not Connected
43	---	Not Connected
44	---	Not Connected
45	---	Not Connected
46	---	Not Connected
47	---	Not Connected
48	---	Not Connected
49	---	Not Connected
50	---	Not Connected

Table 10: Pinout GSM modem connector 2 – pin 26 to 50



### 3.11 SIM Card Holder – J10

Pin	Name	Function
1	SIMVcc	SIM Card Vcc
2	SIMRES	SIM Card Reset
3	SIMCLK	SIM Card Clock
4	SIMGND	SIM Card GND
5	NC	Not Connected
6	SIMDAT	SIM Card Data

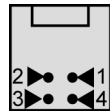
Table 11: Pinout SIM card holder



### 3.12 USB Device Port – J11

Pin	Name	DIL-64 Pin	Function
1	Reserved	---	Reserved
2	DATA-	42	USB Device Port -
3	DATA+	43	USB Device Port +
4	GND	---	Ground

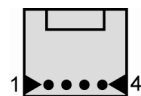
Table 12: Pinout USB device port



### 3.13 USB Host Port – J12

Pin	Name	DIL-64 Pin	Function
1	5 VDC	---	5 VDC Output*
2	DATA-	40	USB Host Port -
3	DATA+	41	USB Host Port +
4	GND	---	Ground

Table 13: Pinout USB host port

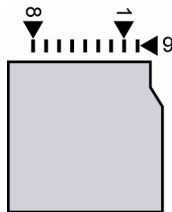


\* **Please note:** Jumper JP6 (USB 5 VDC) enables the 5 VDC output of this pin.

### 3.14 SD/MMC Socket – J14

Pin	Name	DIL-64 Pin	Function
1	MCDA3'	14	Multimedia Card A Data 3
2	MCCDA'	10	Multimedia Card A Command
3	GND	---	Ground
4	Vcc	---	3.3 VDC
5	MCCK'	9	Multimedia Card Clock
6	GND	---	Ground
7	MCDA0'	11	Multimedia Card A Data 0
8	MCDA1'	12	Multimedia Card A Data 1
9	MCDA2'	13	Multimedia Card A Data 2

Table 14: Pinout SD/MMC socket



Please note: The pins 1, 2, 5, 7, 8 and 9 go over jumper JP8.

### 3.15 LCD Connector – J15

Pin	Name	Function
1	GND	Ground
2	5 VDC*	5 VDC*
3	V0	Contrast Voltage over R19
4	RS	Register elect
5	R/W	Read/Write
6	E	Enable
7	---	Not Connected
8	---	Not Connected
9	---	Not Connected
10	---	Not Connected
11	DB4	LCD Data Bit 4
12	DB5	LCD Data Bit 5
13	DB6	LCD Data Bit 6
14	DB7	LCD Data Bit 7
15	Reserved	Reserved
16	Reserved	Reserved

Table 15: Pinout LCD connector

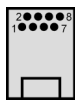


\* Please note: The 5 VDC output is connected directly to pin 1 of J17 (power connector).

### 3.16 10/100 Mbps Ethernet Interface – J16

Pin	Name	Function
1	TX+	10/100 Mbps LAN, TX+ pin
2	TX-	10/100 Mbps LAN, TX- pin
3	RX+	10/100 Mbps LAN, RX+ pin
4	---	Not Connected
5	---	Not Connected
6	RX-	10/100 Mbps LAN, RX- pin
7	---	Not Connected
8	---	Not Connected

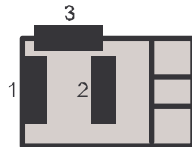
Table 16: Pinout 10/100 Mbps Ethernet interface



### 3.17 Power Connector – J17

Pin	Name	Function
1	5 VDC	Power Input (max. 5.5 VDC)
2	GND	Ground
3	GND	Ground

Table 17: Pinout power connector



### 3.18 USB Mode Jumper – JP2

Pin	Name	DIL-64 Pin	Function
1	DDP	43	USB Device Port +
2	DDP'	---	...to USB Device Port Pin 3
3	DDM	42	USB Device Port -
4	DDM'	---	...to USB Device Port Pin 2
5	HDP A	41	USB Host Port +
6	HDP A'	---	...to USB Host Port Pin 3
7	HDMA	40	USB Host Port -
8	HDMA'	---	...to USB Host Port Pin 2

Table 18: Pinout USB mode jumper

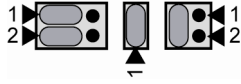


Default setting of JP2 is set (USB enabled):

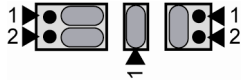


### 3.19 COM2 Mode Jumper – JP3, JP5, JP10

Default setting of JP3, JP5 and JP10 (COM2 enabled):



Setting of JP3, JP5 and JP10 to enable the GSM modem (COM2 disabled):



### 3.20 GSM Modem Select Jumper – JP4

Pin	Name	Function
1	SIMVcc	SIM Card Vcc
2	SIMPRE	SIM Card Present
3	SIMGND	SIM Card GND

Table 19: Pinout GSM modem select jumper

Default setting of JP4 (GSM modem connector 1 enabled):



Setting of JP4 to enable GSM modem connector 2 (GSM modem connector 1 disabled):



### 3.21 USB 5 VDC Jumper – JP6

Pin	Name	Function
1	Vcc	3.3 VDC
2	ENA	USB 5 VDC Enabled

Table 20: Pinout USB mode jumper

Default setting of JP6 is set (USB 5 VDC enabled):

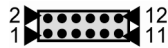


If this jumper is set the 5 VDC output of the USB host port J12 is enabled. If this jumper is not set there is no voltage on the USB host port J12 available.

### 3.22 MMC Mode Jumper – JP8

Pin	Name	DIL-64 Pin	Function
1	MCDA3	14	Multimedia Card A Data 3
2	MCDA3'	---	...to SD/MMC Socket Pin 1
3	MCCDA	10	Multimedia Card A Command
4	MCCDA'	---	...to SD/MMC Socket Pin 2
5	MCCK	9	Multimedia Card Clock
6	MCCK'	---	...to SD/MMC Socket Pin 5
7	MCDA0	11	Multimedia Card A Data 0
8	MCDA0'	---	...to SD/MMC Socket Pin 7
9	MCDA1	12	Multimedia Card A Data 1
10	MCDA1'	---	...to SD/MMC Socket Pin 8
11	MCDA2	13	Multimedia Card A Data 2
12	MCDA2'	---	...to SD/MMC Socket Pin 9

Table 21: Pinout MMC mode jumper



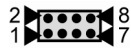
Default setting of JP8 is set (MMC enabled):



### 3.23 SPI Mode Jumper – JP9

Pin	Name	DIL-64 Pin	Function
1	MOSI	17	Master Out Slave In (SPI Data Output)
2	MOSI'	---	...to SD/MMC Socket Pin 2
3	MISO	18	Master In Slave Out (SPI Data Input)
4	MISO'	---	...to SD/MMC Socket Pin 7
5	SPICLK	19	SPI Clock
6	SPICLK'	---	...to SD/MMC Socket Pin 5
7	SPICS0	20	SPI Chip Select CS0
8	SPICS0'	---	...to SD/MMC Socket Pin 1

Table 22: Pinout SPI mode jumper



Default setting of JP9 is not set (SPI disabled):



**Please note:** Do not set JP8 (MMC mode) and JP9 (SPI mode) at the same time.

## 4 BATTERY HOLDER

Please use a CR 2032 lithium battery from Sony or other vendors . The battery holder on the DNP/EVA9 is a Renata SMTU 2032-1.

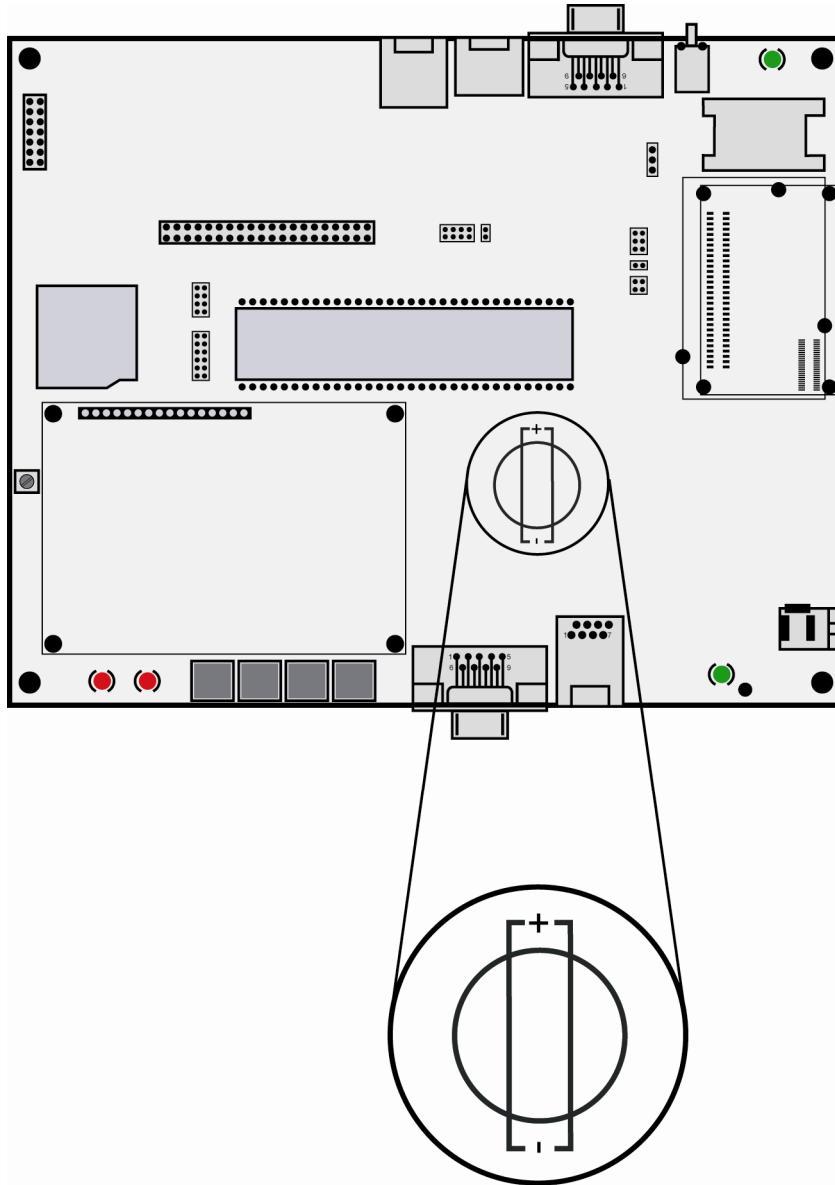


Figure 5: Battery holder of DNP/EVA9

## 5 MECHANICAL DIMENSIONS

All length dimensions have a tolerance of 0.5 mm. The drillings are suitable for M3 screws.

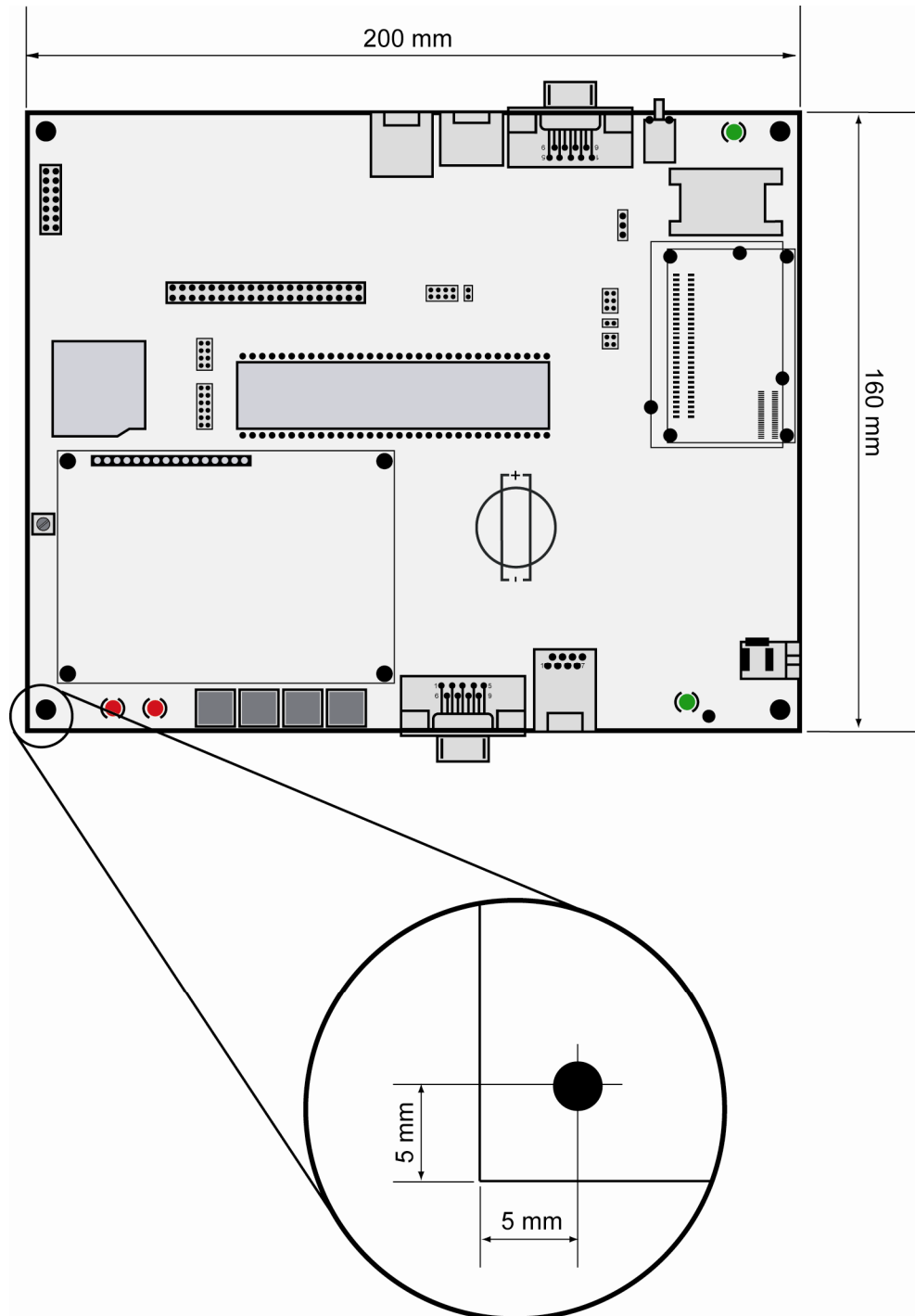


Figure 6: Mechanical dimensions of DNP/EVA9



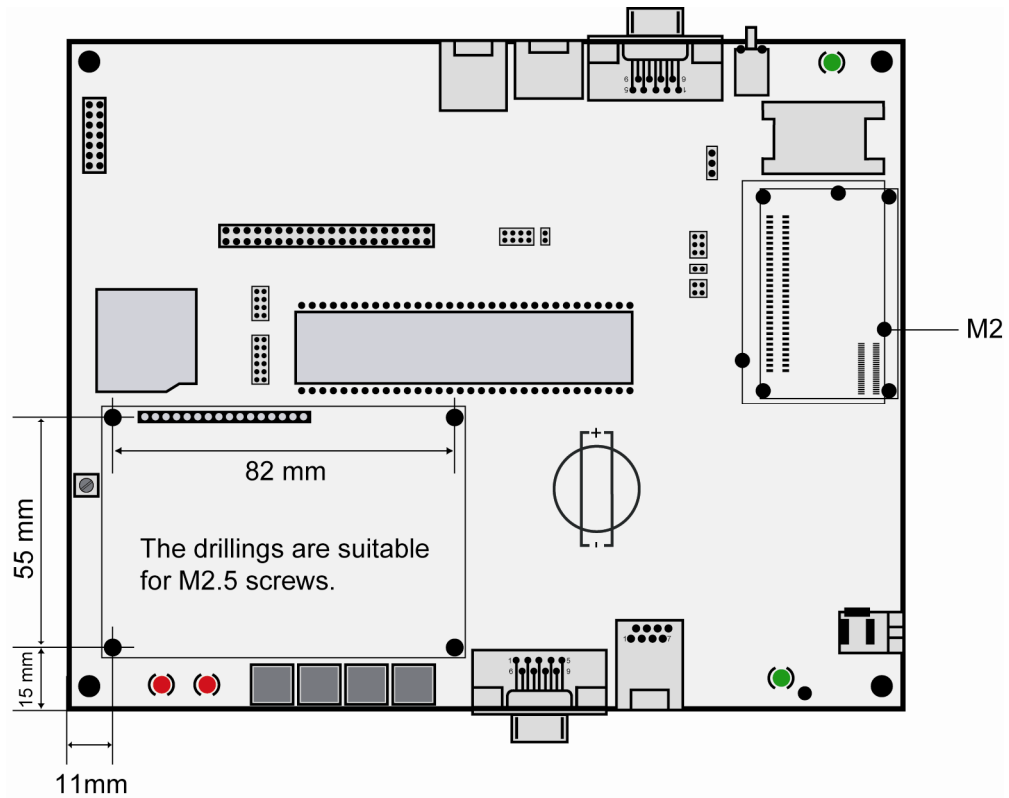


Figure 7: Mechanical dimensions of LCD area

## CONTACT

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## DOCUMENT HISTORY

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Revision	Date	Remarks	Name
1.0	2006-01-05	first version	WBU
1.1	2006-03-21	error in board layout corrected (COM2 mode jumper)	WBU

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