

MPCI-SEREX

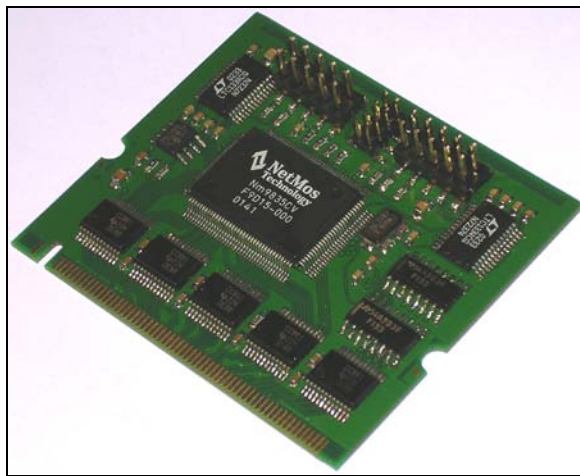
QUICK-REFERENCE R1.1, PCB R1.0

Description

The Mini-PCI Serial Extension is an extension board developed especially for LiPPERT's Thunderbird Mini-ITX-Mainboard, but it can be generally used on every board which features a MiniPCI connector. The adapter adds two serial ports to the system. The UART's are compatible to the standard 16C550. The line interface can be configured with jumpers for the RS232, RS484 or RS422 standard.

In case of RS485 or RS422, a termination resistor of 100 ohms between the TX+/TX- or RX+/RX- lines can be activated by jumpers.

The I/O addresses for the UARTs can be selected using the available drivers. The used IRQ's are set by the BIOS of the CPU board.



Inserting the card

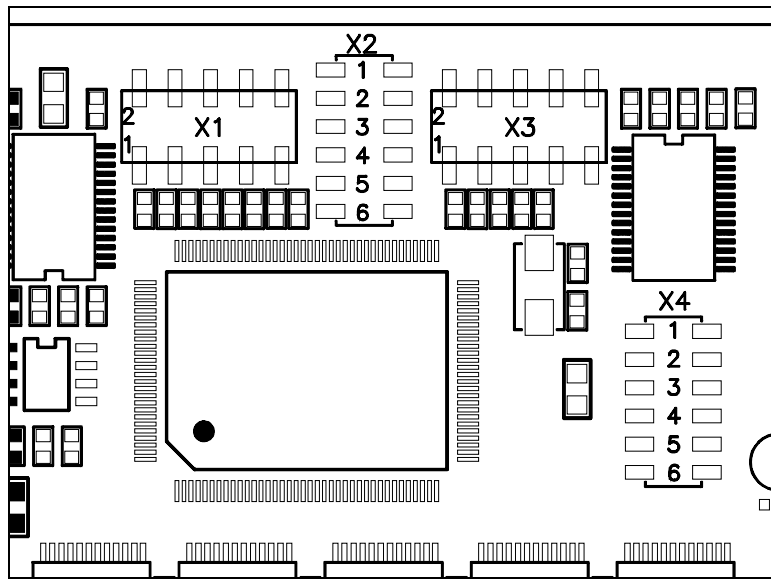
Insert the card at an angle of about 45 degrees. Then push it towards your mainboard until it snaps into the two latches at the left and the right.

Removing the card

Push the latches –one after another– to the outside carefully. The card can be removed easily now.

When installing or removing the card, be sure to touch a grounded surface first to discharge any static electricity from your body.

Connectors and Jumper Placement



X1: COM-Port 1 / X3: COM-Port 2 (IDC10 header 2.54 mm)

RS232 Function

Pin	Signal	Pin	Signal
1	DCD	2	DSR
3	RxD	4	RTS
5	TxD	6	CTS
7	DTR	8	RI
9	GND	10	VCC

RS485 / RS422 Function

Pin	Signal	Pin	Signal
1	n.c.	2	RxD+
3	RxD-	4	TxD+
5	TxD-	6	n.c.
7	n.c.	8	n.c.
9	n.c.	10	n.c.

n.c.: do not connect Note: two adapter cables from IDC (10pin, female) to SUB-D (9pin, male) are included.

X2: RS485/RS422 function and termination (Jumper 2.0 mm)

No.	Jumper ON	Jumper OFF	Default
1	select RS485/RS422 mode on COM-port 2	select RS232 mode on COM-port 2	OFF
2	enable 100 ohm termination resistor between RxD- and RxD+ on COM-port 2	disable 100 ohm termination resistor between RxD- and RxD+ on COM-port 2	OFF
3	enable 100 ohm termination resistor between TxD- and TxD+ on COM-port 2	disable 100 ohm termination resistor between TXD- and TXD+ on COM-port 2	OFF
4	select RS485/RS422 mode on COM-port 1	select RS232 mode on COM-port 1	OFF
5	enable 100 ohm termination resistor between RxD- and RxD+ on COM-port 1	disable 100 ohm termination resistor between RxD- and RxD+ on COM-port 1	OFF
6	enable 100 ohm termination resistor between TxD- and TxD+ on COM-port 1	disable 100 ohm termination resistor between TXD- and TXD+ on COM-port 1	OFF

X4: clock selection for UART 1 and UART 2 (Jumper 2.0 mm)

Jumper ON	UART 1 input clock	UART 2 input clock	Maximum Baud rate
1	1.8432 MHz (default)		115200
2	3.6864 MHz		230400
3	7.3728 MHz		460800
4		7.3728 MHz	460800
5		3.6864 MHz	230400
6		1.8432 MHz (default)	115200

Tristate Control of RS485 transmitter

The RS485 transmitter can be enabled or disabled by the handshake signal RTS, which may necessary in RS485/RS422 Data Transmission applications.

The RTS line is connected to the RS-485 driver enable such that setting the RTS line to a high (logic 1) state enables the RS-485 driver. Setting the RTS line low (logic 0) puts the driver into tristate. This in effect disconnects the driver from the bus, allowing other nodes to transmit over the same wire pair.

Software Installation

Drivers are available for MS-DOS, for Windows 98/2000/XP and for Linux. The latest versions of the drivers can be either downloaded at http://www.moschip.com/html/download_drivers.html (Product name: MCS9835) or obtained by sending a mail to support@lippertembedded.com.

Please follow the installation instructions which are coming together with the driver packages. Additionally notice the following hints for MS-DOS:

MS-DOS does not allow more than 4 serial ports. For example if there are already 3 COM ports in the system, only one of the two ports will be installed. To map the ports to the standard legacy I/O ports (3F8h, 2F8h, 3E8h, 2E8h) execute the nmdosin.exe driver utility with options "-a -r".

Warning: The board must not be connected or disconnected to the MiniPCI connector with power supply switched ON!

Note: Guarantee is void if the connections are not done according to the instructions.

Technical Characteristics:

Size (LxW):	Mini-PCI, 2.35" x 2.0" (59.60 mm x 50.95 mm)
Controller	MosChip MCS9835
Supported OS	MS-DOS, Windows 98/2000/XP, Linux
Operating temperature:	-20...60 °C
Storage temperature:	-40...70 °C
Temperature change:	max. 10K / 30 min
Relative humidity:	10...90 %
Pressure:	450...1100 hPa
Supply voltage:	3.3V and 5 VDC (from MiniPCI connector)
Supply current:	typ. 200 mA

Ordering Information:

Ordering Number	Description
806-0006-10	Mini-PCI module, 2x COM (RS232/422/485), 2 cables. Operating temp. range: -20°C .. +60°C

If you have any questions regarding this product, please contact support@lippertembedded.com or use the phone number given below.

Check LiPPERT's website at www.lippertembedded.com for new products or driver updates as well as for additional manuals.