

7. Technical Information

Chip-Set:	SystemBase SB16C1054PCI
Data Transfer Rate:	50 Baud up to 921.6 KBAud
Connectors:	1x 44 pin socket for connect the Octopus Cable
Hardware System:	PCI-Express x1 to x16
Operating System:	Windows 98/ ME/ 2000/ XP/ Vista/ 7/ 8.x/ 10/ Server 200xx SCO-Unix and Linux 2.4 or higher
Operating Temperature:	32°F to 55°Fahrenheit
Storage Temperature:	-40°F to 167°Fahrenheit
Rel. Humidity:	5% to 95%
Power:	3,3 Volt from the PCI-Express Slot
Size:	110 x 68,05 mm
Weight:	800g

EXSYS

EX-45364

RS-232/422/485 PCI-E Karte
mit 4 x 9 Pin Anschluss



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6. Driver Installation

Windows Server 20xx

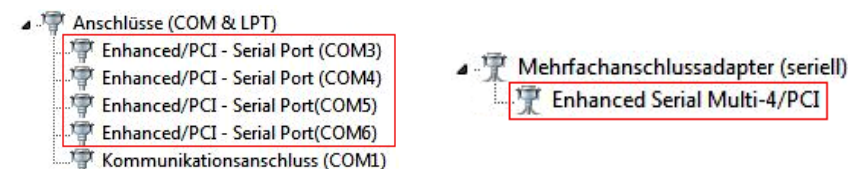
After completing the hardware installation, the operating system will automatically the card and install this! If the driver should not be installed automatically, insert the driver CD into you CD-ROM drive (eg drive D:) and then open the folder „IO/SYSTEMBASE/DRIVERS/PCI(PCIe Bridge)“. Please select the folder with your operating system and install the driver (see Picture). Follow the hardware assistant and finish the installation. **Important!** Restart your PC in any case after installing the drivers.

Use the following driver for the following Windows Server Version.

Windows Server 2003	=	XP Driver
Windows Server 2008	=	VISTA Driver
Windows Server 2008R2	=	Windows 7 Driver
Windows Server 2012	=	Windows 8 Driver
Windows Server 2012R2	=	Windows 10 Driver

CHECK INSTALLED DRIVER

Open the >**Device manager**<. Now you should see at „**Ports (COM & LPT)**“ and at „**Multifunction Adapter**“ the following new entry's:



If you see this or a similar information the device is installed correctly.

CHANGE PORT NUMBER

If you like to change the port number for example COM3 to COM5, open the „**Device Manager**“ click at „**COM3**“, „**Settings**“ and then „**Advance**“. There you can change between COM3 till COM256.

Linux / SCO Unix

The drivers are located in the following folder on our driver CD:

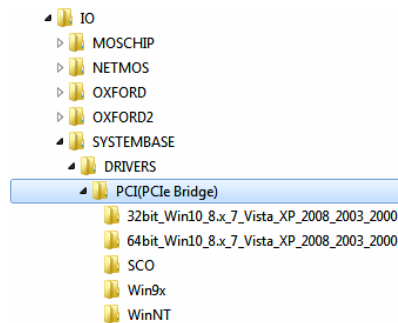
"IO/SYSTEMBASE/DRIVERS/PCI(PCIe Bridge)/SCO"

Because each individual distribution and kernel version of Linux is different, sadly we can't provide a installation instruction. Please refer to the installation manual for stand-ard I/O ports from your Linux/Unix version! In some newer versions of Linux the card will even be installed automatically after starting Linux.

6. Driver Installation

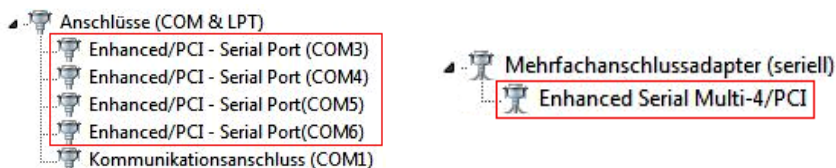
Windows

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1. Beschreibung

Die EX-45364 ist eine PCI-Express serielle RS-232/422/485 Karte mit 4 seriellen FIFO 16C95x Ports, für den Anschluss von High-Speed seriellen RS-232 Peripherie Geräten (z.B. Terminal, Modem, Plotter usw.). Der serielle PCI Bus unterstützt dabei optimal die Leistung des schnellen SystemBase Chipset mit 256byte FIFO Cache. Die EX-45364 gewährleistet so eine sichere Datenübertragung und exzellente Performance von bis zu 921KBaud/s für jedes angeschlossene Gerät! Sie unterstützt den PCI-Express x1 bis x16 Slot. Es ist nicht möglich die I/O Adressen und Interrupts manuell einzustellen, da die Einstellungen der Karte vom System (BIOS) und beim installieren des Betriebssystems automatisch vorgenommen werden. Über die Jumper können Sie 5V oder 12V auf Pin 9 des seriellen Anschluss umleiten. Achten Sie bitte darauf dass die Angeschlossenen Geräte dies auch unterstützen. Die Ausgänge können einheitlich als RS-232, RS-422, RS-485 mit 2 Draht oder RS-485 mit 4 Draht konfiguriert werden. Es wird zusätzlich für den Einbau in schmale Computergehäuse ein 8 cm Low Profile Slot-Bügel mitgeliefert.

Merkmale:

- Kompatibel zu PCI-Express x1 bis x16
- Bis 921.6 Kbps Baud Rate
- Unterstützt wird RS-232, RS-422, 2 Draht RS-485 und 4 Draht RS-485
- Unterstützt Windows NT 4.0/ 9x/ 2000/ XP/ Vista/ 7/ 8.x/ 10/ Server 20xx/ Linux
- **Zertifiziert für CE / FCC / RoHS / WEEE**  **DE97424562**

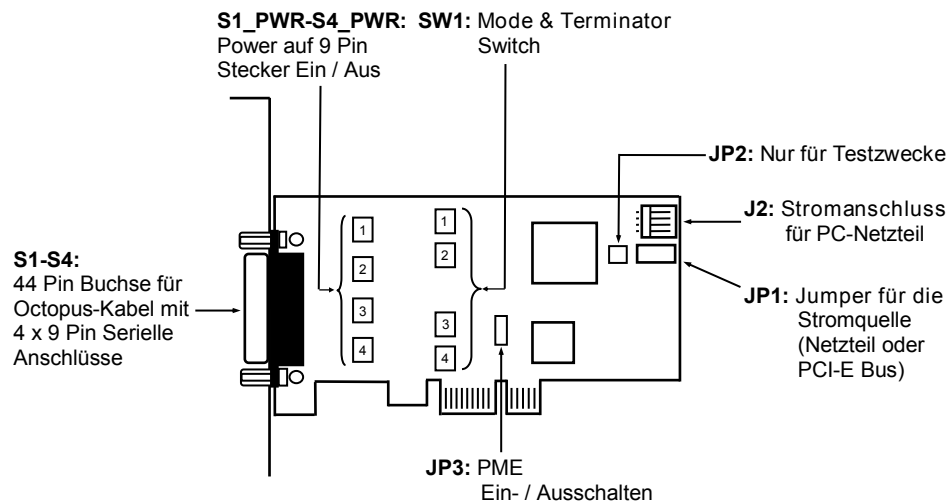
2. Lieferumfang

Bevor Sie die EX-45364 in Ihren PC installieren, überprüfen Sie bitte zuerst den Inhalt der Lieferung:

- EX-45364
- Treiber CD
- Bedienungsanleitung
- Octopus Kabel
- Low Profile Bügel

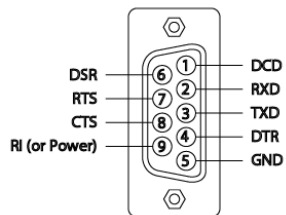
3. Aufbau und Anschlüsse

3.1 Aufbau

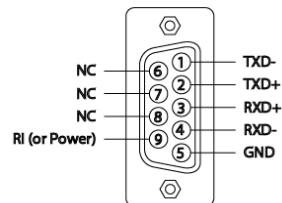


3.2 Anschlüsse

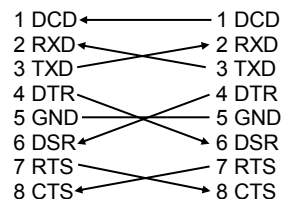
RS232 Pin Assignment



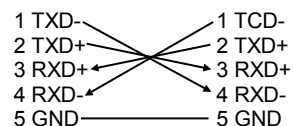
RS422 and RS485-4wire Pin Assignment



DB9 (EX-45364) **DB9 (Endgerät)**



DB9 (EX-45364) **DB9 (Endgerät)**



4. Switch and Jumper Settings

4.2 Jumper Settings

JP3:

ENA | DIS



DIS = The function PME is disable (Factory Setting)

ENA = The function PME is enable. Now the card can be activate the computer through the serial ports.

But this should not be adjusted for standard applications.

5. Hardware Installation

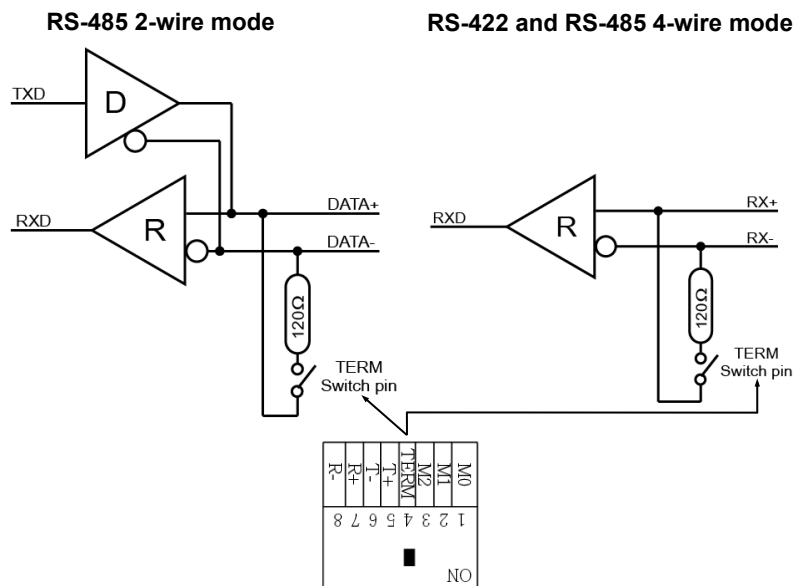
If you are ready with the jumper settings, please proceed with the following installation instructions. Because there are large differences between PC's, we can give you only a general installation guide for the EX-45364. Please refer to your computer's reference manual whenever in doubt.

1. Turn off the power to your computer and any other connected peripherals.
2. Remove the mounting screws located at the rear and/or sides panels of your Computer and gently slide the cover off.
3. Locate an available expansion slot and remove its covers from the rear panel of your computer. Make sure it is the right expansion slot for the card (see card description)
4. Align the card with the PCI-Express slot and then gently but firmly, insert the card. Make sure the card is seated and oriented correctly. Never insert the card by force!
5. Then connect the card with a screw to the rear panel of the computer case.
6. Gently replace your computer's cover and the mounting screws.

4. Switch and Jumper Settings

4.1 Switch Settings

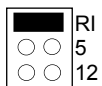
Termination for RS-422, RS-485 2-wire and RS-485 4-wire mode:



4.2 Jumper Settings

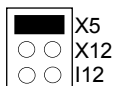
S1_PWR-S4_PWR:

- RI = The pin 9 is connected with RI (Ring Indicator) signal. (Factory Setting)
- 5 = At pin 9 is now a voltage of +5V DC.
- 12 = At pin 9 is now a voltage of +12V DC.



There are 4 jumper on the board, so you can make the settings individually for all serial ports. The voltage adjustment can be made with the jumper JP1. But this should not be adjusted for standard applications.

JP1:



- If you have the jumper S1_PWR-S4_PWR set to 5 or 12, you can adjust the voltage with the jumper JP1. There are 3 different power sources. **(Attention! Connector J2 must be connected to the power supply!)**
- X5 = 5Volt from PC Power Supply (Factory Setting)
 - X12 = 12Volt from PC Power Supply
 - I12 = 12Volt from Mainboard

4. Switch und Jumper Einstellungen

4.1 Switch Einstellungen

Es gibt vier 8-Pin DIP-Schalter auf der Platine der EX-45364. Für jeden Port gibt es einen separaten DIP-Schalter. Die 8-Pin DIP-Schalter sind für den Mode (RS-232, RS-422, RS-485 2-Draht oder RS-485 4-Draht) und die Terminierung der Signale RX+, RX-, TX+ und TX- zuständig (siehe Bild auf Seite 4 unter Aufbau). Die Einstellungen sind für jeden seriellen Port individuell einstellbar. Der oberste DIP-Schalter ist für den Port 1 (S1) zuständig, der zweite DIP-Schalter ist für den Port 2 (S2) zuständig usw.. Aus den nachfolgenden Tabellen auf Seite 5, 6 und 7, können Sie die Einstellung des Mode Switch und der Terminator Switches entnehmen. Zusätzlich sind auf der Rückseite der Platine die Einstellmöglichkeiten des Mode und Terminator Switches aufgedruckt.

Mode & Terminator Switch (SW1)

Modes	RS-232	RS-422	RS-485 2-Draht	RS-485 4-Draht																																																																																																																																																																																																																																																																																																																																				
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4. Switch und Jumper Einstellungen

4.1 Switch Einstellungen

Mode & Terminator Switch (SW1)

Resistoren Off

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	■
T-	6	■
R+	7	■
R-	8	■

Resistoren On

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	■
T-	6	■
R+	7	■
R-	8	■

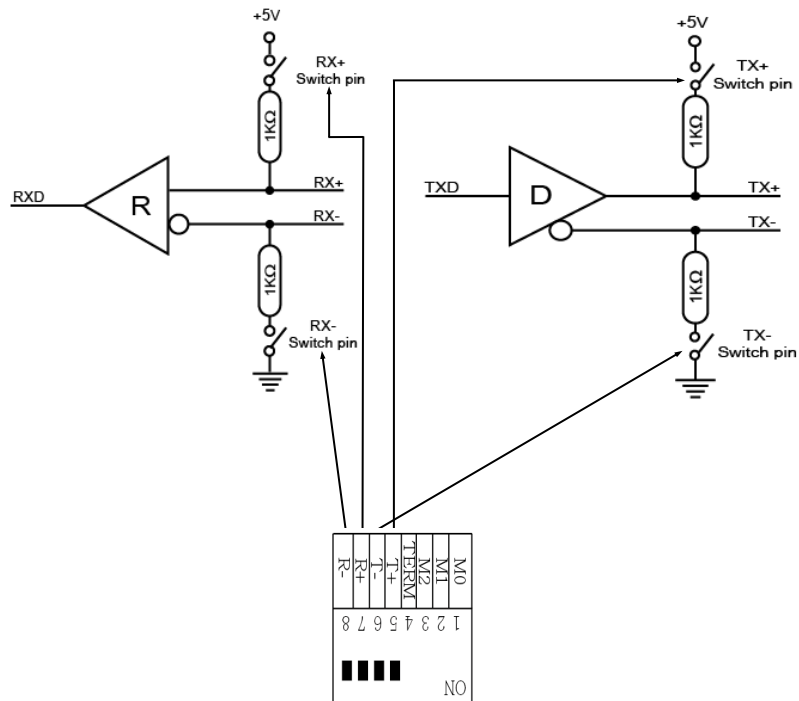
Terminator Off

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	
T-	6	
R+	7	
R-	8	

Terminator On

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	
T-	6	
R+	7	
R-	8	

Resistoren für RS-422, RS-485 2-Draht und RS-485 4-Draht Mode:



4. Switch and Jumper Settings

4.1 Switch Settings

Mode & Terminator Switch (SW1)

Resistor Off

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	■
T-	6	■
R+	7	■
R-	8	■

Resistor On

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	■
T-	6	■
R+	7	■
R-	8	■

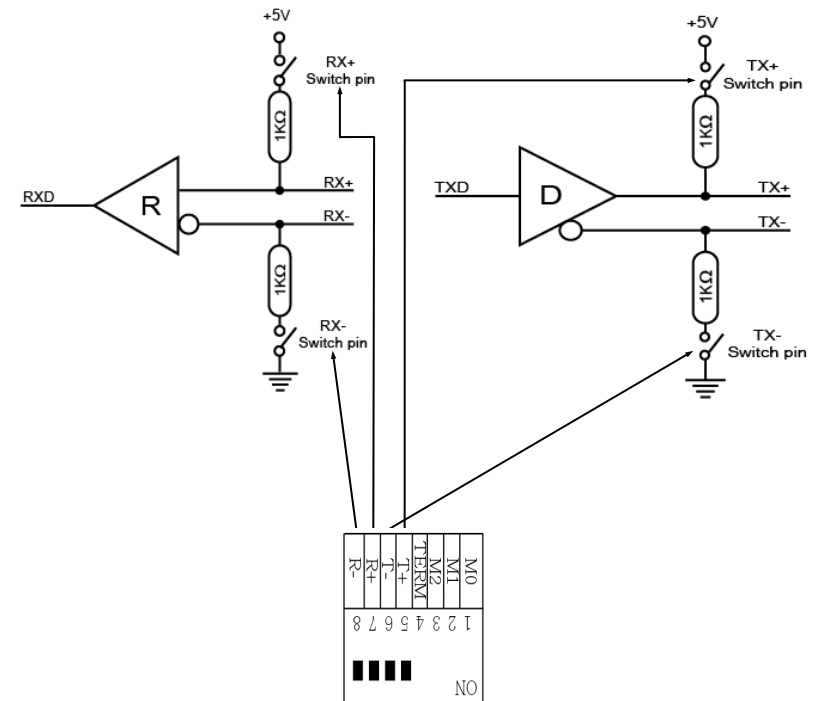
Terminator Off

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	
T-	6	
R+	7	
R-	8	

Terminator On

M0	1	ON
M1	2	
M2	3	
TERM	4	■
T+	5	
T-	6	
R+	7	
R-	8	

Resistors for RS-422, RS-485 2-wire and RS-485 4-wire mode:



4. Switch and Jumper Settings

4.1 Switch Settings

There are four 8-pin DIP-switches on the board of the EX-45364. For each port there is a separate DIP-switch. The 8-pin DIP-switches are for the modes (RS-232, RS-422, RS-485 2-wire or RS-485 4-wire) and for the signal termination for RX+, RX-, TX+ and TX- (see picture on page 12 under layout). The settings can be set individually for each serial port. The DIP-switch at the top are responsible for the port 1 (S1), the second DIP-switch are responsible for the port 2 (S2) etc.. The following tables on page 13, 14 and 15 you can see the setting of the mode switch and terminator switch. Additionally the setting of the mode switch are printed on the back of the board.

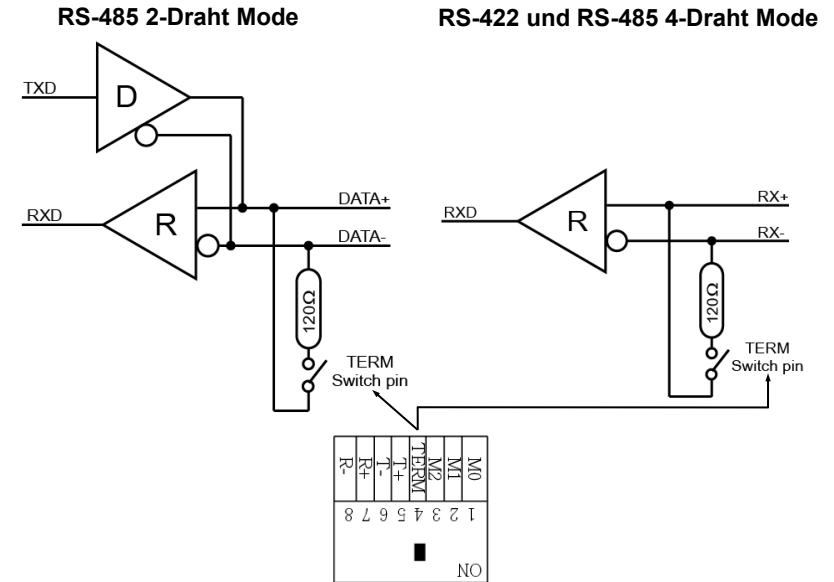
Mode & Terminator Switch (SW1)

Modes	RS-232	RS-422	RS-485 2-wire	RS-485 4-wire																																																																
Port 1	<table border="1"> <tr><td>M0</td><td>ON</td></tr> <tr><td>M1</td><td>ON</td></tr> <tr><td>M2</td><td>ON</td></tr> <tr><td>TERM</td><td>ON</td></tr> <tr><td>T+</td><td>ON</td></tr> <tr><td>T-</td><td>ON</td></tr> <tr><td>R+</td><td>ON</td></tr> <tr><td>R-</td><td>ON</td></tr> </table>	M0	ON	M1	ON	M2	ON	TERM	ON	T+	ON	T-	ON	R+	ON	R-	ON	<table border="1"> <tr><td>M0</td><td>ON</td></tr> <tr><td>M1</td><td>ON</td></tr> <tr><td>M2</td><td>ON</td></tr> <tr><td>TERM</td><td>ON</td></tr> <tr><td>T+</td><td>ON</td></tr> <tr><td>T-</td><td>ON</td></tr> <tr><td>R+</td><td>ON</td></tr> <tr><td>R-</td><td>ON</td></tr> </table>	M0	ON	M1	ON	M2	ON	TERM	ON	T+	ON	T-	ON	R+	ON	R-	ON	<table border="1"> <tr><td>M0</td><td>ON</td></tr> <tr><td>M1</td><td>ON</td></tr> <tr><td>M2</td><td>ON</td></tr> <tr><td>TERM</td><td>ON</td></tr> <tr><td>T+</td><td>ON</td></tr> <tr><td>T-</td><td>ON</td></tr> <tr><td>R+</td><td>ON</td></tr> <tr><td>R-</td><td>ON</td></tr> </table>	M0	ON	M1	ON	M2	ON	TERM	ON	T+	ON	T-	ON	R+	ON	R-	ON	<table border="1"> <tr><td>M0</td><td>ON</td></tr> <tr><td>M1</td><td>ON</td></tr> <tr><td>M2</td><td>ON</td></tr> <tr><td>TERM</td><td>ON</td></tr> <tr><td>T+</td><td>ON</td></tr> <tr><td>T-</td><td>ON</td></tr> <tr><td>R+</td><td>ON</td></tr> <tr><td>R-</td><td>ON</td></tr> </table>	M0	ON	M1	ON	M2	ON	TERM	ON	T+	ON	T-	ON	R+	ON	R-	ON
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4. Switch und Jumper Einstellungen

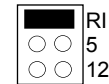
4.1 Switch Einstellungen

Terminator für RS-422, RS-485 2-Draht und RS-485 4-Draht Mode:



4.2 Jumper Einstellungen

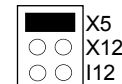
S1_PWR-S4_PWR:



- RI** = Am Pin 9 liegt das Standard Signal RI (Ring Indicator) an. (Werkseinstellung)
- 5** = Am Pin 9 liegt jetzt eine Spannung von +5V DC an.
- 12** = Am Pin 9 liegt jetzt eine Spannung von +12V DC an.

Es gibt den Jumper vier mal auf der Platine, sodass Sie für alle seriellen Ports die Einstellung individuell vornehmen können. Die Einstellung der Spannung nehmen Sie mit JP1 vor. Dieser sollte aber bei Standard Anwendungen nicht verstellt werden.

JP1:



Wenn Sie einen der Jumper S1_PWR-S4_PWR auf 5 oder 12 gesetzt haben, können Sie mit dem Jumper JP1 den Spannungswert einstellen. Es gibt 3 verschiedene Spannungsquellen. **(Achtung! Anschluss J2 muss mit dem PC-Netzteil verbunden sein!)**

- X5** = 5Volt vom PC-Netzteil (Werkseinstellung)
- X12** = 12Volt vom PC-Netzteil
- I12** = 12Volt vom Mainboard

4. Switch und Jumper Einstellungen

4.2 Jumper Einstellungen

JP3:

ENA | DIS



- DIS** = Die Funktion PME ist ausgeschaltet (Werkseinstellung)
 - ENA** = Die Funktion PME ist eingeschaltet. Der PC kann nun durch die Seriellen Ports der EX-45364 aktiviert werden.
- Dieser sollte aber bei Standard Anwendungen nicht verstellt werden.

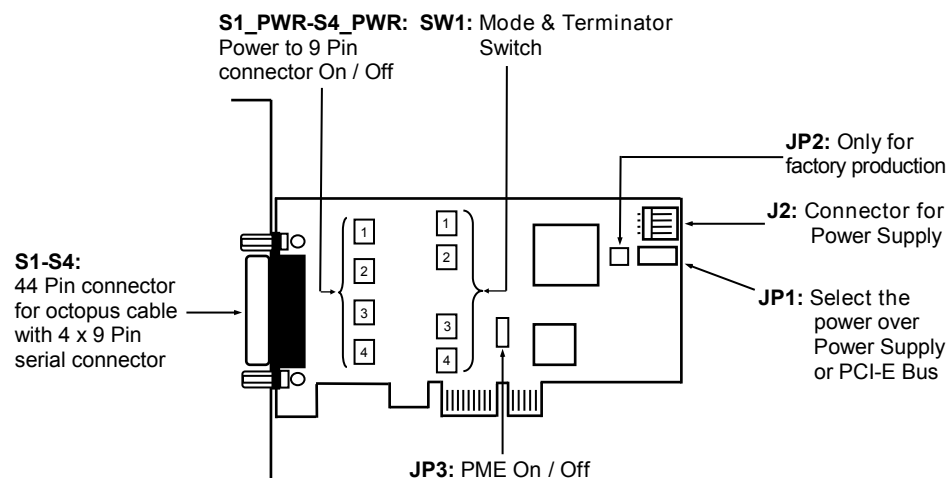
5. Hardware Installation

Wenn Sie die Karte installieren, beachten Sie bitte die folgenden Hinweise. Da es große Unterschiede zwischen PC's gibt, können wir Ihnen nur eine generelle Anleitung zum Einbau der EX-45364 geben. Bei Unklarheiten halten Sie sich bitte an die Bedienungsanleitung Ihres Computersystems.

1. Schalten Sie Ihren Rechner und alle angeschlossenen Peripheriegeräte aus und ziehen Sie bei allen Geräten den Netzstecker.
2. Lösen Sie die Schrauben des Gehäuses auf der Rückseite Ihres Computers und entfernen Sie vorsichtig das Gehäuse.
3. Suchen Sie einen freien PCI-Express Steckplatz und stecken Sie die Karte vorsichtig in den ausgewählten PCI-Express Steckplatz ein. Stellen Sie sicher das es sich um den richtigen Steckplatz handelt!
4. Beachten Sie das die Karte korrekt eingesteckt wird und das kein Kurzschluss entsteht. Wenden Sie bitte keine Gewalt an um die Karte einzustecken!
5. Danach befestigen Sie die Karte bitte mit einer Schraube am Gehäuse.
6. Jetzt können Sie das Computergehäuse mit den Schrauben wieder schließen.

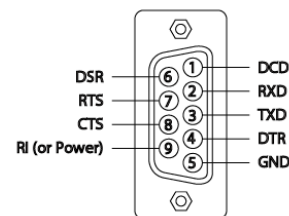
3. Layout and Connections

3.1 Layout

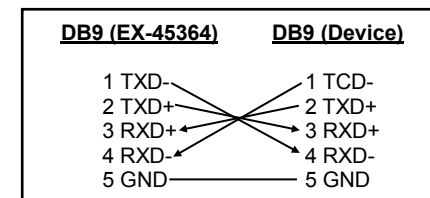
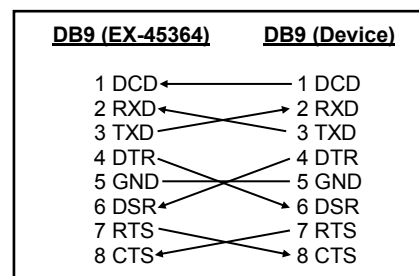
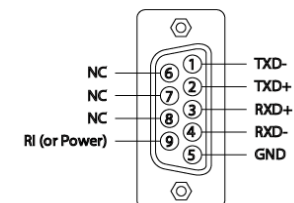


3.2 Connections

RS232 Pin Assignment



RS422 and RS485-4wire Pin Assignment



1. Description

The EX-45364 is a plug & play high-speed serial RS-232/422/485 expansion card for the PCI-Express Bus. The EX-45364 provides four 9 pin high speed RS-232/422/485 serial ports. It uses data transfer rates up to 921Kbaud/s. The EX-45364 design utilizes the SystemBase chipset with 256-byte buffer, which incorporates the latest in high speed interface technology. In combination with the fast PCI-Express bus it provides a secure and very high data transfer on each port. It supports PCI-Express x1 to x16. It is not possible to change the address or IRQ settings manually, they will be obtained automatically by the system BIOS and operating system. With the jumpers you can enable 5V or 12V power to pin 9. Please note if you use power to pin 9 your peripheral device must support it. The serial ports can be configured as RS-232, RS-422, RS-485 2-wire or RS-485 4-wire. There is additionally a 8 cm low profile slot bracket for installation in small computer housing.

Features:

- Compatible for PCI-Express x1 to x16
- Up to 921.6 Kbps Baud Rate
- Support RS-232, RS-422, RS-485 2-wire and RS-485 4-wire
- Support Windows NT 4.0/ 9x/ 2000/ XP/ Vista/ 7/ 8.x/ 10/ Server 20xx/ Linux
- **Certificate for CE / FCC / RoHS / WEEE** ~~DE~~ **DE97424562**

2. Extent of Delivery

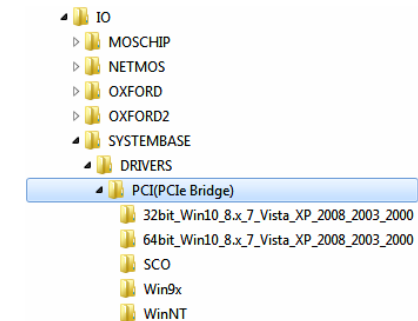
Before you install the EX-45364 in your PC, you should first check the contents of the delivery:

- EX-45364
- Driver CD
- Manual
- Octopus Cable
- Low Profile Bracket

6. Treiber Installation

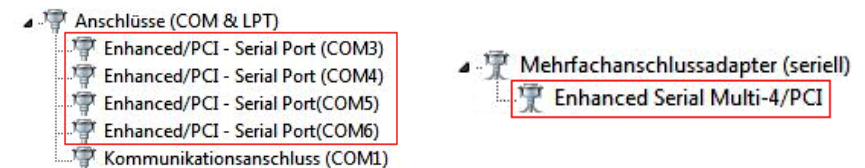
Windows

Nach Abschluss der Hardwareinstallation erkennt das Betriebssystem automatisch die Karte und installiert diese! Falls die Treiber nicht automatisch installiert werden sollten, legen Sie nun die Treiber CD in Ihr CD-ROM Laufwerk (z.B. Laufwerk D:) ein und öffnen Sie den Ordner „IO/SYSTEMBASE/DRIVERS/PCI(PCIe Bridge)“. Nun wählen Sie den Ordner Ihres Betriebssystems aus und installieren Sie die Treiber (siehe Abbildung). Folgen Sie den Installationsanweisungen und schließen Sie die Installation ab. **Wichtig!** Starten Sie Ihren PC nach der Installation neu.



ÜBERPRÜFEN DES INSTALLIERTEN TREIBER

Öffnen Sie den >Geräte-Manager<. Jetzt müssten Sie unter „Anschlüsse (COM & LPT)“ und unter „Multifunktionsadapter“ folgende Einträge sehen:



Sind diese oder ähnliche Einträge vorhanden, ist die Karte richtig installiert.

ÄNDERN DER PORT NUMMER

Sie können auch die Port Nummer ändern, indem Sie im Geräte manager z.B. „COM3“ „Anschlusseinstellung“ und „Erweitert“ öffnen. Nun können Sie dann zwischen COM3 bis COM256 wählen!

6. Treiber Installation

Windows Server 20xx

Nach Abschluss der Hardwareinstallation erkennt das Betriebssystem automatisch die Karte und installiert diese! Falls die Treiber nicht automatisch installiert werden sollten, legen Sie nun die Treiber CD in Ihr CD-ROM Laufwerk (z.B. Laufwerk D:) ein und öffnen Sie den Ordner „IO/SYSTEMBASE/DRIVERS/PCI(PCIe Bridge)“. Nun wählen Sie den Ordner Ihres Betriebssystems aus und installieren Sie die Treiber (siehe Abbildung). Folgen Sie den Installationsanweisungen und schließen Sie die Installation ab.

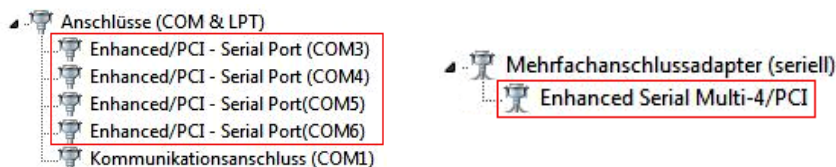
Wichtig! Starten Sie Ihren PC nach der Installation neu.

Es werden folgende Treiber für die Server Betriebssysteme installiert:

Windows Server 2003	=	XP Treiber
Windows Server 2008	=	VISTA Treiber
Windows Server 2008R2	=	Windows 7 Treiber
Windows Server 2012	=	Windows 8.x Treiber
Windows Server 2012R2	=	Windows 10 Treiber

ÜBERPRÜFEN DES INSTALLIERTEN TREIBER

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Linux / SCO Unix

Die Treiber für Linux / SCO Unix befinden sich in folgendem Verzeichnis:

"IO/SYSTEMBASE/DRIVERS/PCI(PCIe Bridge)/SCO"

Da sich die einzelnen Distributionen und Kernelversionen sehr voneinander unterscheiden, können wir Ihnen leider keine Installationsanweisung zu Verfügung stellen. Bitte halten Sie sich an die Installationsanweisung für Standard I/O Ports Ihrer Linux/Unix Version. In einigen neueren Versionen, wird die Karte sogar automatisch beim Start installiert.

7. Technische Daten

Chip-Set:	SystemBase SB16C1054PCI
Datentransfer-Rate:	50 Baud bis 921.6 Kbaud
Anschlüsse:	1x 44 Pin Buchse zum Anschluss vom Octopus Kabel
Hardwaresystem:	PCI-Express x1 bis x16
Betriebssystem:	Windows 98/ ME/ 2000/ XP/ Vista/ 7/ 8.x/ 10/ Server 200xx SCO-Unix und Linux 2.4 oder höher
Betriebstemperatur:	0° bis 55° Celsius
Lagertemperatur:	-40° bis 75° Celsius
Rel. Luftfeuchtigkeit:	5% bis 95%
Stromversorgung:	3,3 Volt vom PCI-Express Slot
Abmessung:	110 x 68,05 mm
Gewicht:	800g