

User Manual

MIC-3955/3527 Series

3U CPCI 4/8 Port RS-232/422/485
Communication Card

ADVANTECH

Enabling an Intelligent Planet

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5. Write the RMA number visibly on the outside of the package and ship it prepaid to your dealer.

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Declaration of Conformity

CE

This product has passed the CE test for environmental specifications when shielded cables are used for external wiring. We recommend the use of shielded cables. This kind of cable is available from Advantech. Please contact your local supplier for ordering information.

Technical Support and Assistance

1. Visit the Advantech website at <http://support.advantech.com> where you can find the latest information about the product.
2. Contact your distributor, sales representative, or Advantech's customer service center for technical support if you need additional assistance. Please have the following information ready before you call:
 - Product name and serial number
 - Description of your peripheral attachments
 - Description of your software (operating system, version, application software, etc.)
 - A complete description of the problem
 - The exact wording of any error messages

Safety Precaution - Static Electricity

Follow these simple precautions to protect yourself from harm and the products from damage.

- To avoid electrical shock, always disconnect the power from your PC chassis before you work on it. Don't touch any components on the CPU card or other cards while the PC is on.
- Disconnect power before making any configuration changes. The sudden rush of power as you connect a jumper or install a card may damage sensitive electronic components.

Safety Instructions

1. Read these safety instructions carefully.
2. Keep this User Manual for later reference.
3. Disconnect this equipment from any AC outlet before cleaning. Use a damp cloth. Do not use liquid or spray detergents for cleaning.
4. For plug-in equipment, the power outlet socket must be located near the equipment and must be easily accessible.
5. Keep this equipment away from humidity.
6. Put this equipment on a reliable surface during installation. Dropping it or letting it fall may cause damage.
7. The openings on the enclosure are for air convection. Protect the equipment from overheating. **DO NOT COVER THE OPENINGS.**
8. Make sure the voltage of the power source is correct before connecting the equipment to the power outlet.
9. Position the power cord so that people cannot step on it. Do not place anything over the power cord.
10. All cautions and warnings on the equipment should be noted.
11. If the equipment is not used for a long time, disconnect it from the power source to avoid damage by transient overvoltage.
12. Never pour any liquid into an opening. This may cause fire or electrical shock.
13. Never open the equipment. For safety reasons, the equipment should be opened only by qualified service personnel.
14. If one of the following situations arises, get the equipment checked by service personnel:
 - The power cord or plug is damaged.
 - Liquid has penetrated into the equipment.
 - The equipment has been exposed to moisture.
 - The equipment does not work well, or you cannot get it to work according to the user's manual.
 - The equipment has been dropped and damaged.
 - The equipment has obvious signs of breakage.
15. **DO NOT LEAVE THIS EQUIPMENT IN AN ENVIRONMENT WHERE THE STORAGE TEMPERATURE MAY GO BELOW -20° C (-4° F) OR ABOVE 60° C (140° F). THIS COULD DAMAGE THE EQUIPMENT. THE EQUIPMENT SHOULD BE IN A CONTROLLED ENVIRONMENT.**
16. **CAUTION: DANGER OF EXPLOSION IF BATTERY IS INCORRECTLY REPLACED. REPLACE ONLY WITH THE SAME OR EQUIVALENT TYPE RECOMMENDED BY THE MANUFACTURER, DISCARD USED BATTERIES ACCORDING TO THE MANUFACTURER'S INSTRUCTIONS.**

The sound pressure level at the operator's position according to IEC 704-1:1982 is no more than 70 dB (A).

DISCLAIMER: This set of instructions is given according to IEC 704-1. Advantech disclaims all responsibility for the accuracy of any statements contained herein.

Contents

Chapter 1	General Information	1
1.1	Introduction	2
1.2	Hardware Specifications	2
1.3	Front Board	3
1.4	Rear Board	3
1.5	System Diagram.....	3
	Figure 1.1 MIC-3955A1 4-Port front line out block diagram	3
	Figure 1.2 MIC-3955A2 & MIC-3527A2 4-port rear line out block diagram.....	4
	Figure 1.3 MIC-3955B1 8-Port front line out block diagram	4
	Figure 1.4 MIC-3955B2 & MIC-3527B2 8-port rear line out block diagram.....	5
1.6	Board Dimensions.....	5
	Figure 1.5 4-port front board dimensions.....	5
	Figure 1.6 4-port rear board dimensions	6
	Figure 1.7 8-port front line out board dimensions	6
	Figure 1.8 8-port rear line out front board dimensions.....	7
	Figure 1.9 8-port rear line out Rear board dimensions	7
Chapter 2	Hardware Configuration.....	9
2.1	Board Assembly	10
	Figure 2.1 MIC-3955A1 4-port Front line out board.....	10
	Figure 2.2 MIC-3955A2 4-port rear line out front board.....	10
	Figure 2.3 MIC-3527A2 4-port rear line out rear board	11
	Figure 2.4 MIC-3955B1 8-port front line out board	11
	Figure 2.5 MIC-3955B2 8-port rear line out front board.....	12
	Figure 2.6 MIC-3527B2 8-port rear line out rear board	12
2.2	Board Layout and LED Indicators	13
	Figure 2.7 MIC-3955A1 4-port front line out board	13
	Figure 2.8 MIC-3955A2 & MIC-3527A2 4-port rear line out front board	13
	Figure 2.9 MIC-3955A2 & MIC-3527A2 4-port rear line out rear board	14
	Figure 2.10 MIC-3955B1 8-port front line out board	14
	Figure 2.11 MIC-3955B2 & MIC-3527B2 8-port rear line out front board	15
	Figure 2.12 MIC-3955B2 & MIC-3527B2 8-port rear line out rear board	15
	Table 2.1: Front Panel LED Indicators Definition	16
2.3	Installation	16
	Figure 2.13 Handle status.....	17
Chapter 3	Driver Installation	19
3.1	Introduction	20
3.2	Microsoft Windows Driver Setup	20
3.3	Linux Driver Setup.....	24
3.4	RS232/RS422/RS485 Selection under Linux.....	25
3.5	Precautions for Linux with modem-manager.....	25

Appendix A

Pin Assignments and Jumper Settings 27

A.1	Pin Assignments	28
A.1.1	DB44(F) Connector Pin Assignments.....	28
A.1.2	DB44(F) to 4-port DB9(M) Serial Cable COM1 ~ COM4 Pin Assignments	28
A.1.3	DB62(F) Connector Pin Assignments.....	29
A.1.4	DB62(F) to 8-port DB9(M) Serial Cable COM1 ~ COM8 Pin Assignments	30
A.2	Jumper Settings	30
A.2.1	MIC-3955A1 4-port Front line out board	30
A.2.2	MIC-3527A2 4-port rear line out rear board.....	32
A.2.3	8-port front line out board & rear line out rear board jumper setting 33	
A.3	Accessory Cables	35
A.3.1	4-port Cable: 1 x DB44 to 4 x DB9	35
A.3.2	8-port Cable: 1 x DB62 to 8 x DB9	36

Chapter 1

General Information

1.1 Introduction

The MIC-3955 is a 3U CompactPCI 4/8-port RS-232/422/485 communication card, compliant with PICMG 2.0 R3.0 CompactPCI specification. Four or eight serial ports communicate via 32-bit PCI bus and share one interrupt source register and PCI interrupt number. Each serial port of MIC-3955 has 16C550 compatible 5G register set, transmitting/receiving 64 Byte FIFOs. MIC-3955 supports RTS/CTS or DTR/DSR auto hardware flow control and automatic software flow control over RS-422/485.

MIC-3955 has four SKUs. MIC-3955A1 supports 4-port front line out via DB44(F) connector and led indication; MIC-3955A2 & MIC-3527A2 should work together that support 4-port rear line out via DB44(F) in the rear panel and led indication in the front panel. MIC-3955B1 supports 8-port front line out via DB62(F) connector; MIC-3955B2 & MIC-3527B2 should work together that support 8-port rear line out via DB62(F) in the rear panel and led indication in front panel.

1.2 Hardware Specifications

- **PICMG compliance:** PICMG 2.0 R3.0
- **Bus interface:** PCI V2.3, 32-bit / 33MHz
- **I/O operating voltage:** 5 V
- **COM1, COM2, COM3, COM4, COM5, COM6, COM7, COM8:** RS-232/422/485 (isolated)
- **Communication controller:** XR17D154/XR17D158
- **IRQ:** All the ports use the same IRQ assigned by PCI plug & play function
- **Data bit:** 5, 6, 7, 8
- **Stop bit:** 1, 1.5, 2
- **Parity bit:** None, odd, even
- **Data rate:** 1Mbps (max)
- **Data signal:**
 - MIC-3955A1 4port front line out
DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS, RI (RS-232)
TxD-, TxD+, RxD+, RxD- (RS-422)
DATA-, DATA+ (RS-485)
 - MIC-3955A2 & MIC-3527A2 4-port rear line out
DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS, RI (RS-232)
TxD-, TxD+, RxD+, RxD- (RS-422)
DATA-, DATA+ (RS-485)
 - MIC-3955B1 8-port front line out
DCD, RxD, TxD, DTR, GND, DSR, RTS, CTS (RS-232)
TxD-, TxD+, RxD+, RxD- (RS-422)
DATA-, DATA+ (RS-485)
 - MIC-3955B2 & MIC-352782 8-port rear line out
RxD, TxD, RTS, CTS (RS-232)
TxD-, TxD+, RxD+, RxD- (RS-422)
DATA-, DATA+ (RS-485)
- **Isolated voltage:** 2500 VDC
- **Surge protection:** 2KV
- **Connector:** DB44(F) and DB62(F) on the board, and converted to DB9(M) via cable
- **Power consumption:** <5W @ 5V (typical)
- **Operating temperature:** -40 ~ 70° C
- **Operating humidity:** relative humidity 0%~95%, non-condensing
- **Storage temperature:** -40 ~ 85° C

1.3 Front Board

- **Dimension (W x H):** 160 x 100 mm
- **Interface & Led in front panel:**
 - MIC-3955A1: DB44(F) and led indication
 - MIC-3955A2: led indication
 - MIC-3955B1: DB62(F)
 - MIC-3955B2: Led indication
- **LED color:** Yellow for Tx; Green for Rx
- **CPCI connector:** J1, J2

1.4 Rear Board

- **Dimension (W x H):** 80 x 100 mm
- **Interface & Led in rear panel:**
 - MIC-3527A2: DB44(F) and led indication
 - MIC-3527B2: DB62(F)
- **CPCI connector:** J2, with dowel pin

1.5 System Diagram

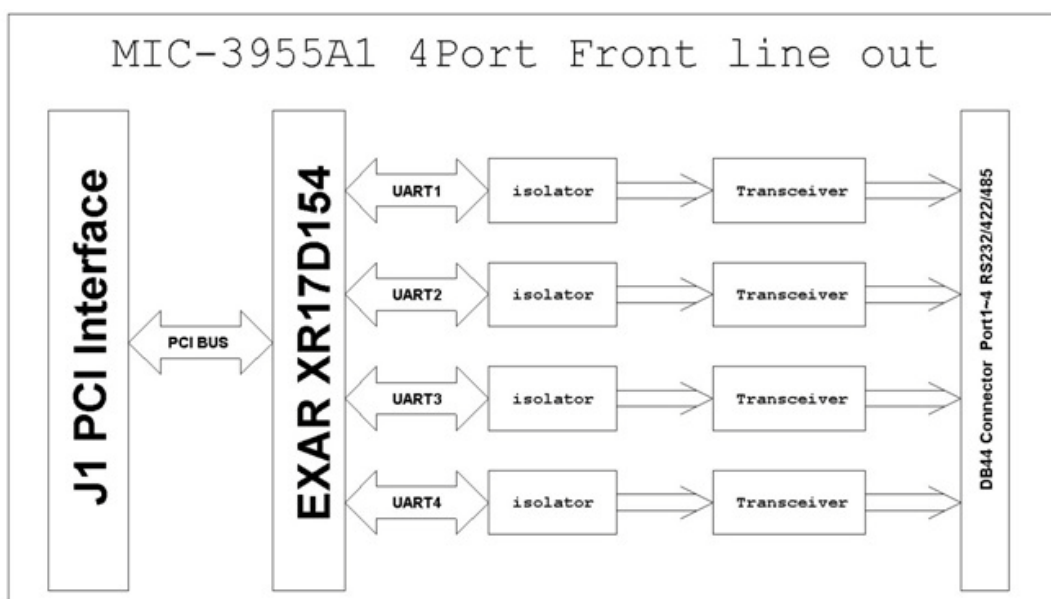


Figure 1.1 MIC-3955A1 4-Port front line out block diagram

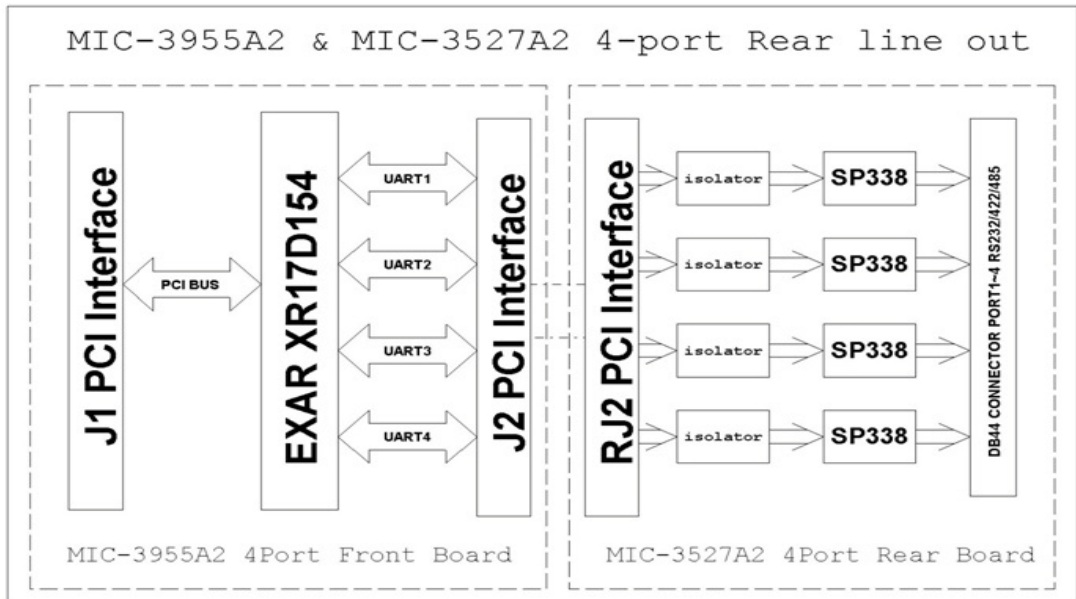


Figure 1.2 MIC-3955A2 & MIC-3527A2 4-port rear line out block diagram

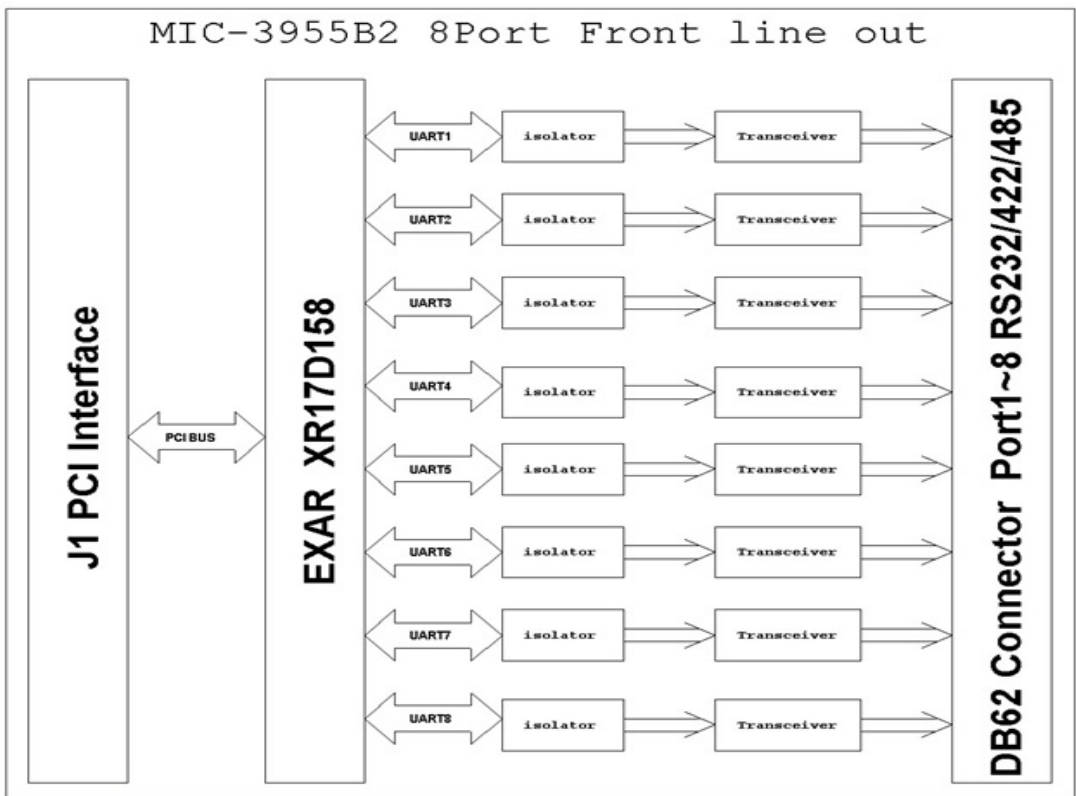


Figure 1.3 MIC-3955B1 8-Port front line out block diagram

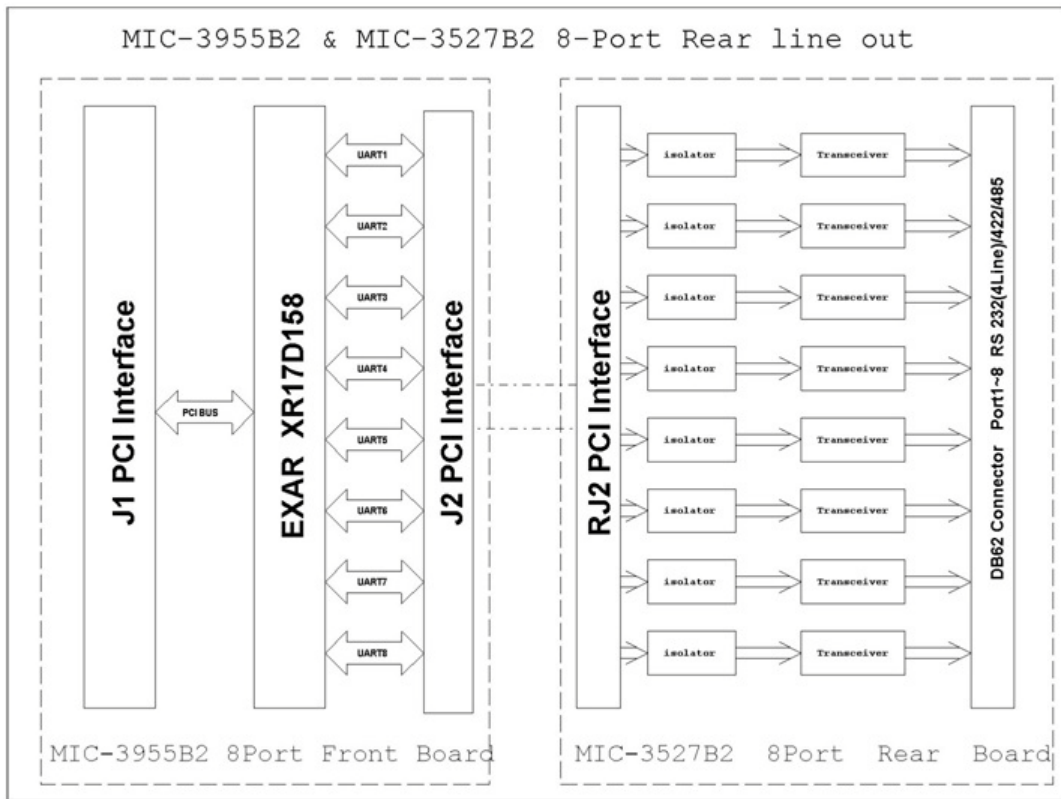


Figure 1.4 MIC-3955B2 & MIC-3527B2 8-port rear line out block diagram

1.6 Board Dimensions

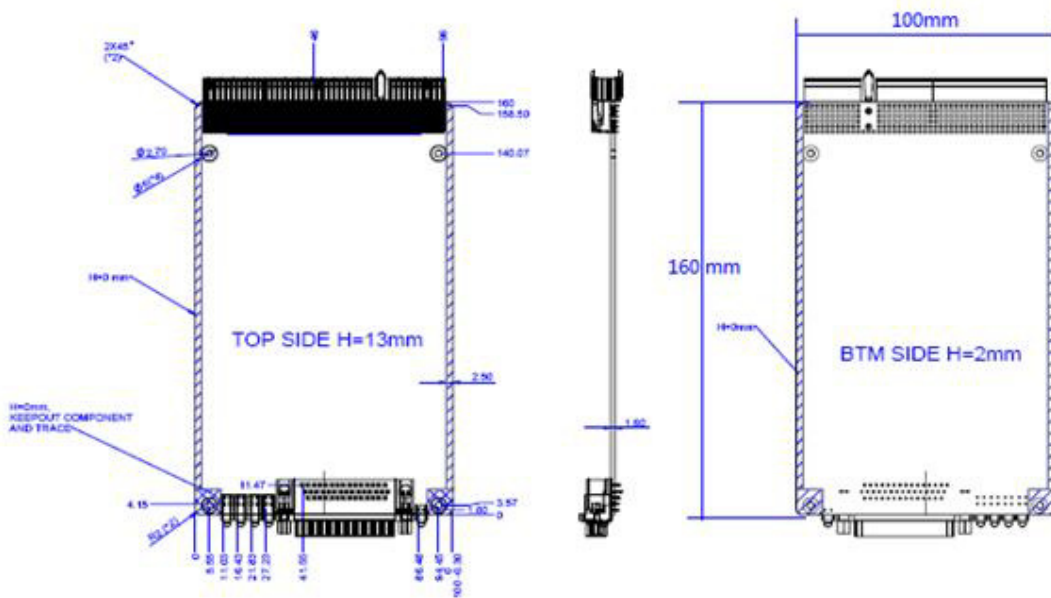


Figure 1.5 4-port front board dimensions

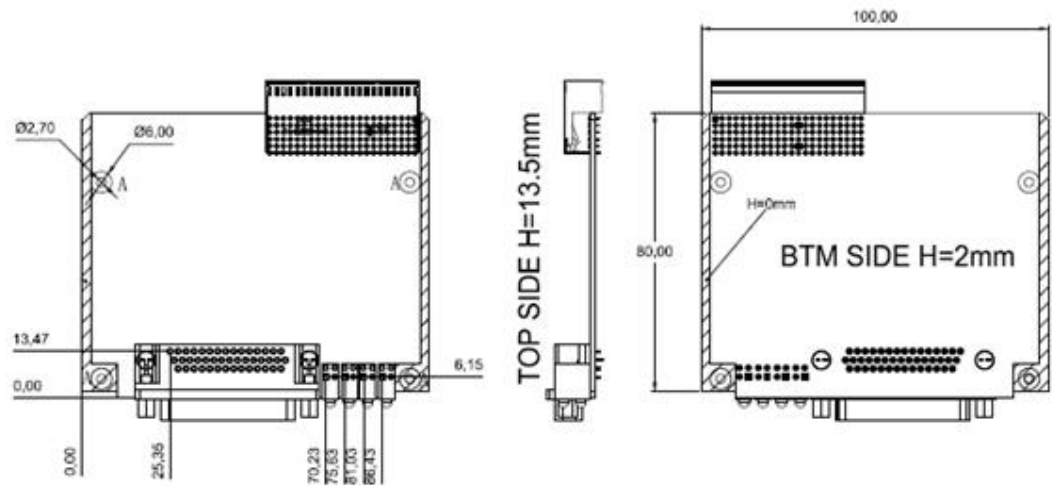


Figure 1.6 4-port rear board dimensions

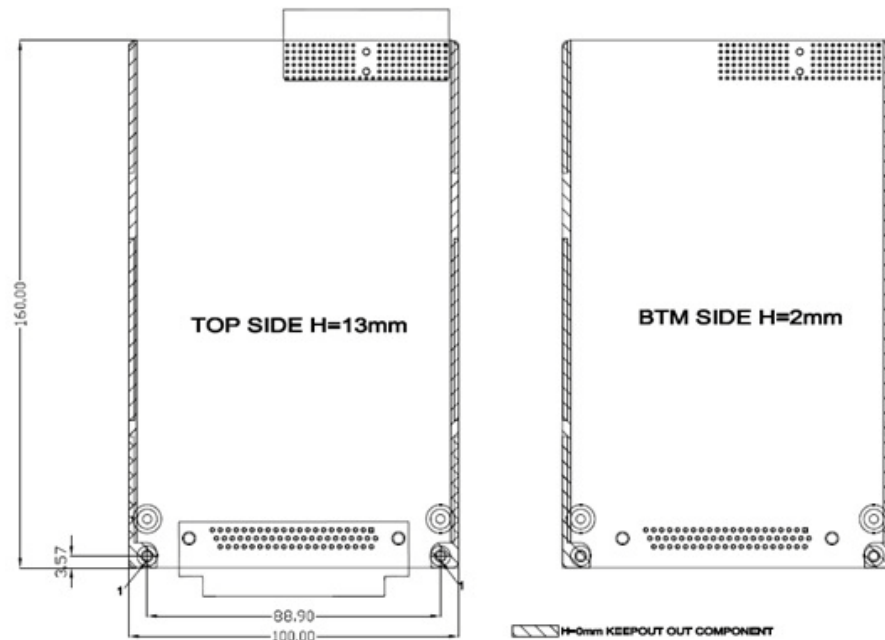


Figure 1.7 8-port front line out board dimensions

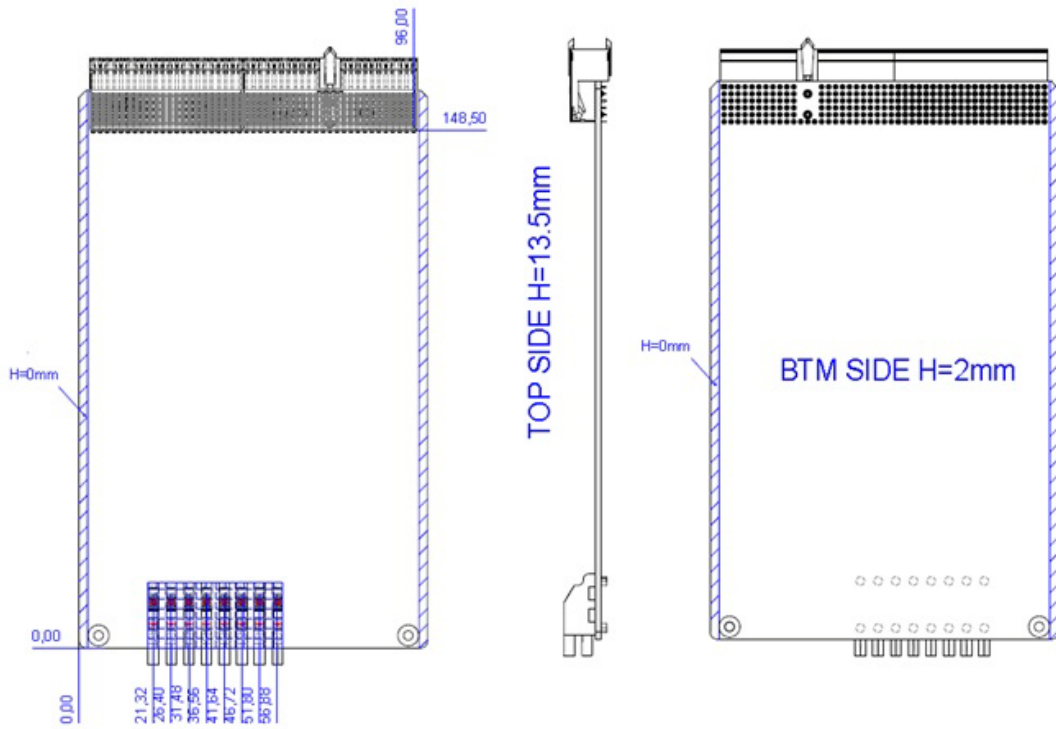


Figure 1.8 8-port rear line out front board dimensions

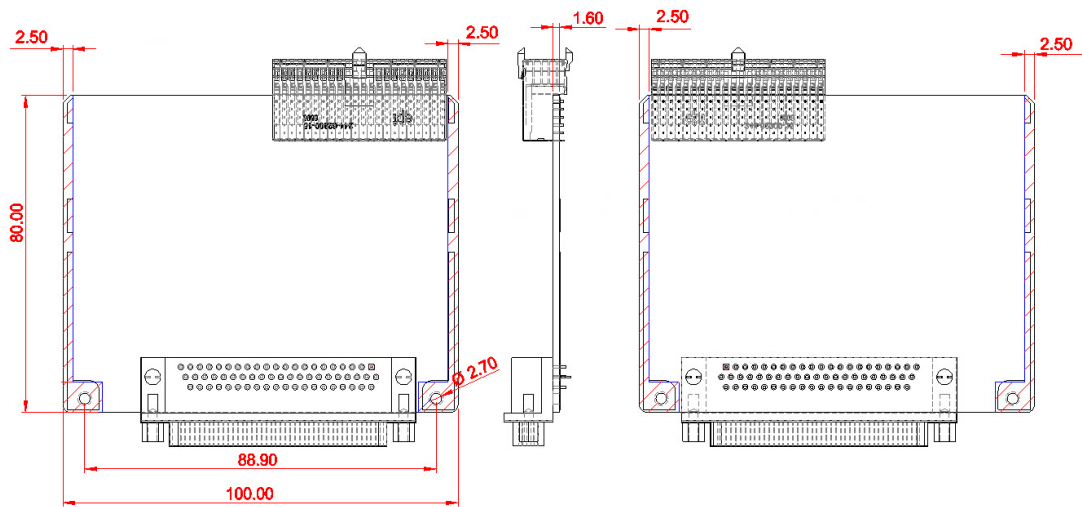


Figure 1.9 8-port rear line out Rear board dimensions

Chapter 2

Hardware
Configuration

2.1 Board Assembly

Please refer to the figures below to assemble MIC-3955 & MIC-3527 board.

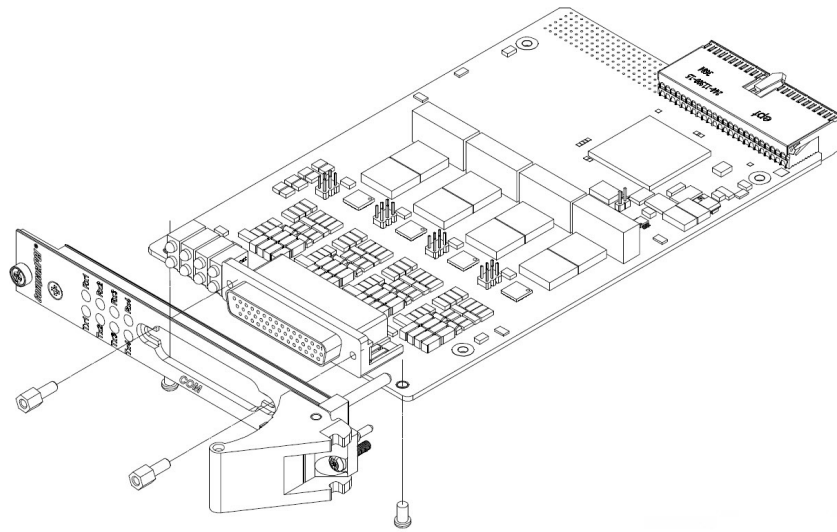


Figure 2.1 MIC-3955A1 4-port Front line out board

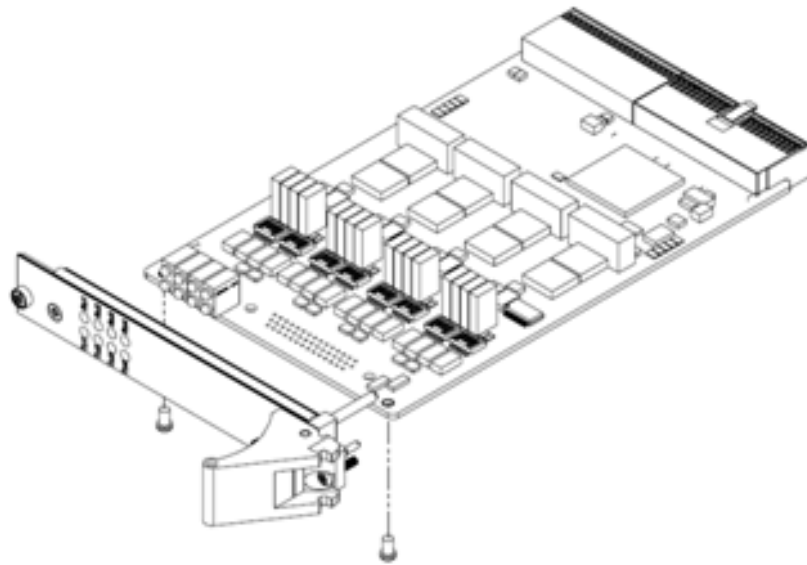


Figure 2.2 MIC-3955A2 4-port rear line out front board

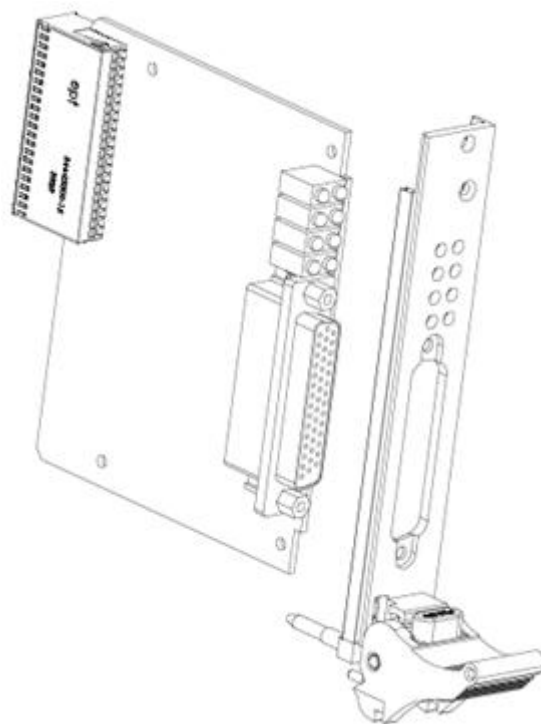


Figure 2.3 MIC-3527A2 4-port rear line out rear board

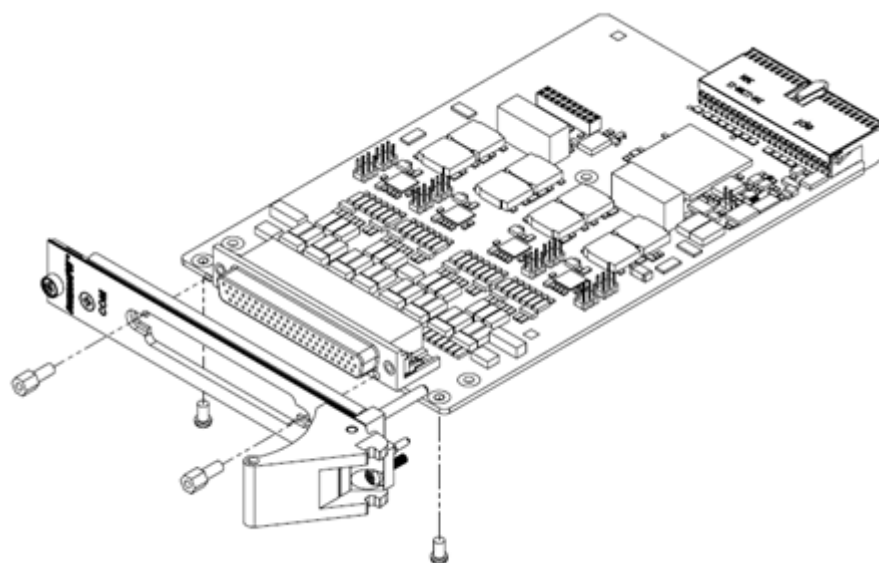


Figure 2.4 MIC-3955B1 8-port front line out board

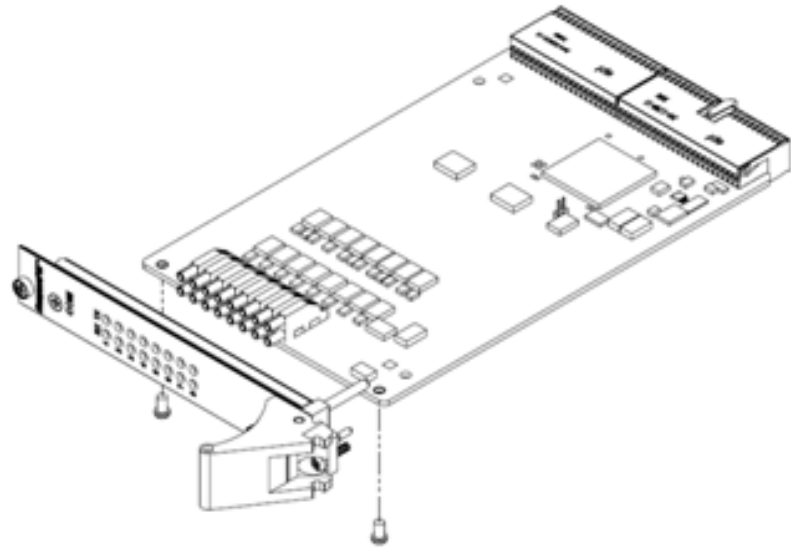


Figure 2.5 MIC-3955B2 8-port rear line out front board

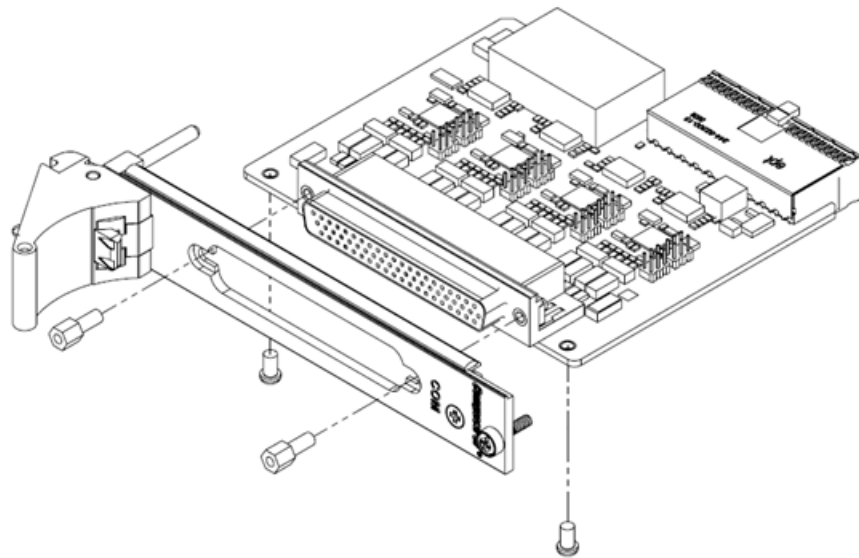


Figure 2.6 MIC-3527B2 8-port rear line out rear board

2.2 Board Layout and LED Indicators

MIC-3955 FIO and MIC-3527 RIO are as below:



Figure 2.7 MIC-3955A1 4-port front line out board



Figure 2.8 MIC-3955A2 & MIC-3527A2 4-port rear line out front board



Figure 2.9 MIC-3955A2 & MIC-3527A2 4-port rear line out rear board



Figure 2.10 MIC-3955B1 8-port front line out board



Figure 2.11 MIC-3955B2 & MIC-3527B2 8-port rear line out front board



Figure 2.12 MIC-3955B2 & MIC-3527B2 8-port rear line out rear board

Table 2.1: Front Panel LED Indicators Definition

No.	LED	Status*	Description
1	RX1	Blinking	COM1 is receiving data
2	TX1	Blinking	COM1 is transmitting data
3	RX2	Blinking	COM2 is receiving data
4	TX2	Blinking	COM2 is transmitting data
5	RX3	Blinking	COM3 is receiving data
6	TX3	Blinking	COM3 is transmitting data
7	RX4	Blinking	COM4 is receiving data
8	TX4	Blinking	COM4 is transmitting data
9	RX5	Blinking	COM5 is receiving data
10	TX5	Blinking	COM5 is transmitting data
11	RX6	Blinking	COM6 is receiving data
12	TX6	Blinking	COM6 is transmitting data
13	RX7	Blinking	COM7 is receiving data
14	TX7	Blinking	COM7 is transmitting data
15	RX8	Blinking	COM8 is receiving data
16	TX8	Blinking	COM8 is transmitting data

Note! Green for RX, receiving data; Yellow for TX, transmitting data;



2.3 Installation

Be cautious when plugging the card because CompactPCI connector has rigid pins. The chassis's backplane may be damaged easily if the card is improperly installed. Plugging the card will be easier with handles. Please follow the procedures below to install the card to the chassis:

Insert the card:

1. Hold the card vertically to make sure the direction is correct: components on the front panel point to the right hand side, components on the rear card point to the left hand side and the handles point to the lower part of the chassis.
2. Hold the handles and press the button in the middle to unlock them.

Caution! Keep your finger away from bottom of the chassis to avoid getting hurt.



3. Align upper and lower edges of the card to the rails of the chassis and insert it.
4. Slide the card along the rail until the dowel pin of the handle touches the circle hole on the top of the rail.

Note! If the card is correctly inserted and totally slides into the chassis, the dowel pin should align with the circle hole on the rail. Or else, remove the card and repeat step 3. Avoid inserting the card into the chassis by force.



5. Uplift the handle to insert the card to the proper place.

Pull out the card:

1. Remove the four screws from the card.
2. Press the button to unlock the handle to ensure the card can be pulled out.
3. Pull out the card.

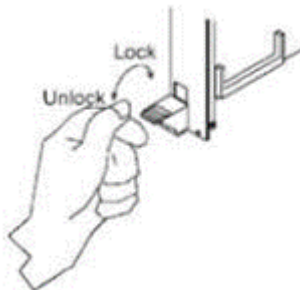


Figure 2.13 Handle status

Chapter 3

Driver Installation

3.1 Introduction

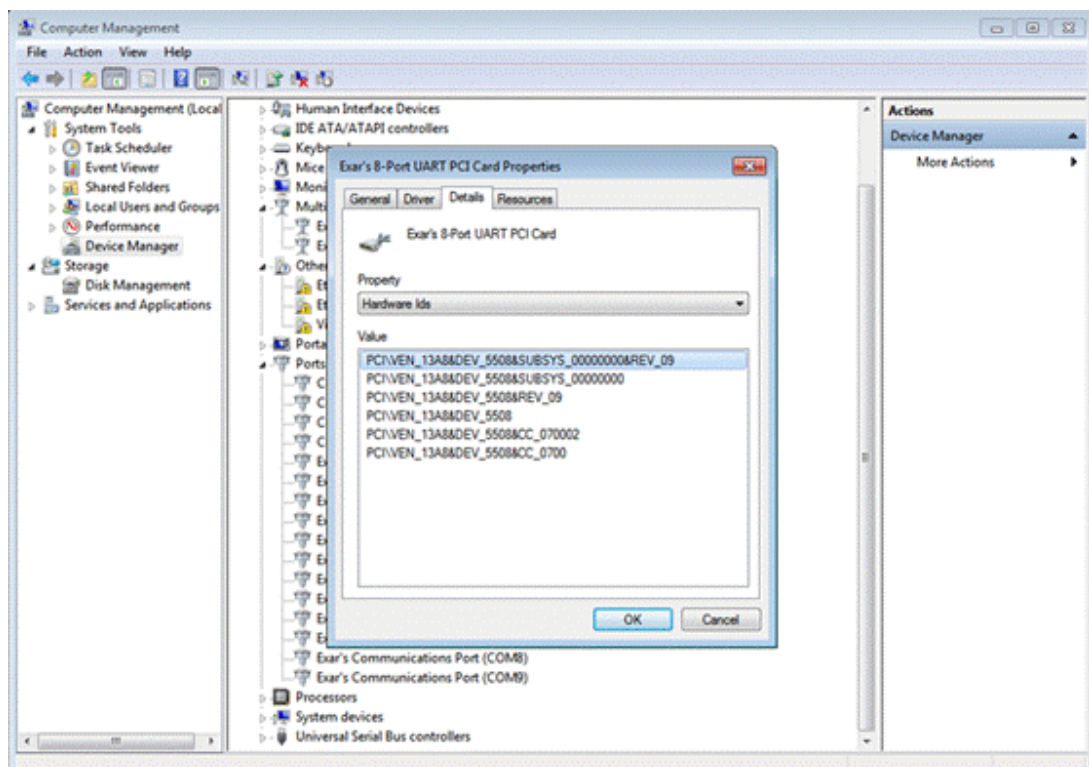
MIC-3955 supports Microsoft Windows and GNU/Linux. Tested on the OS below:

- Microsoft Windows:
Windows XP 32bit / Windows 7 64bit / Windows 10 64bit
- GNU/Linux:
Fedora 14 64bit / CentOS 6 32/64bit / CentOS 7 64bit
Neokylin 64bit / Ubuntu 16.04 64bit / Ubuntu 18.04 64bit

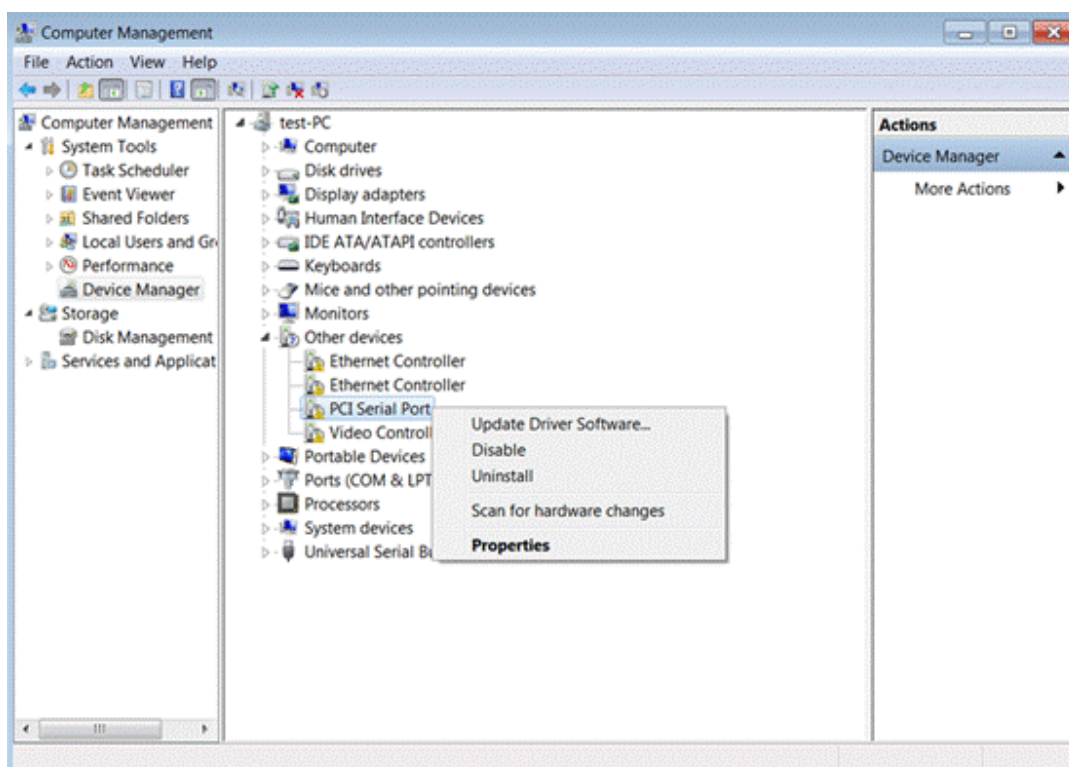
It should be working on other Linux distribution with Kernel 2.6.32 or later. Corresponding drivers will be uploaded to Advantech official website for the user to download.

3.2 Microsoft Windows Driver Setup

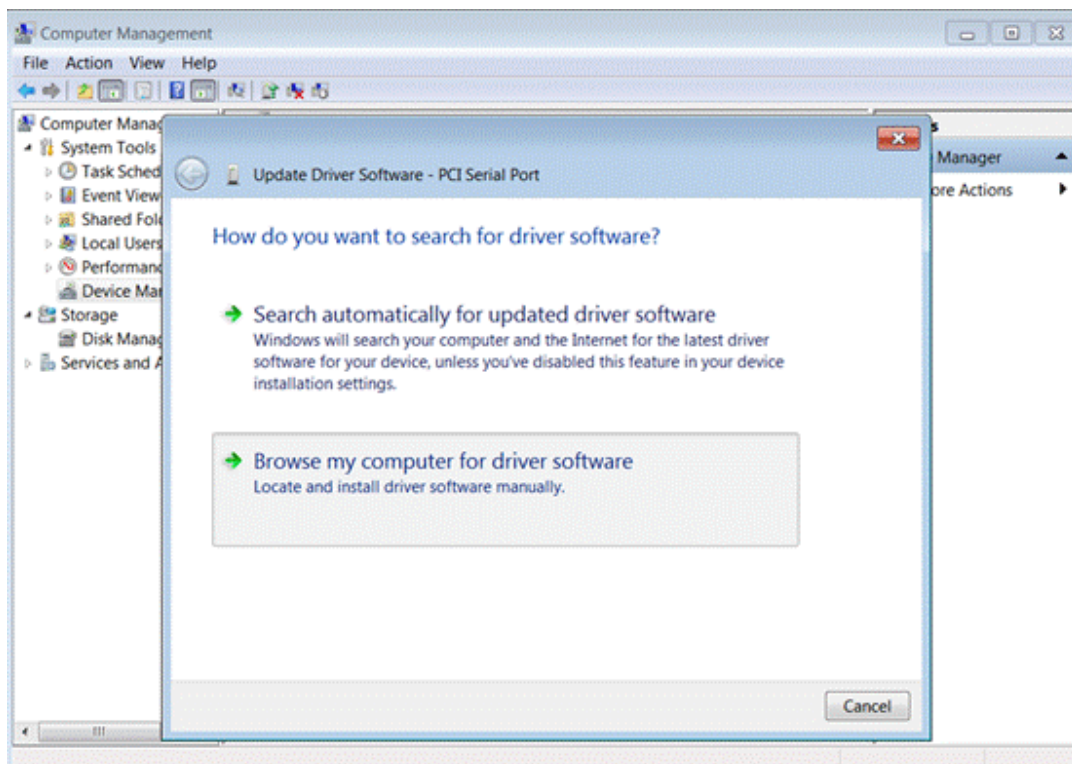
1. Open Device Manager after turning on the computer. If the serial port card driver is not installed, please find the card named "PCI Serial Port" in "Other devices". Check whether the "Vendor ID" and "Device ID" in "Properties - Detail" are consistent with the preset (Vendor ID: 13FE, Device ID: 4port:3955h/8Port:5508h).



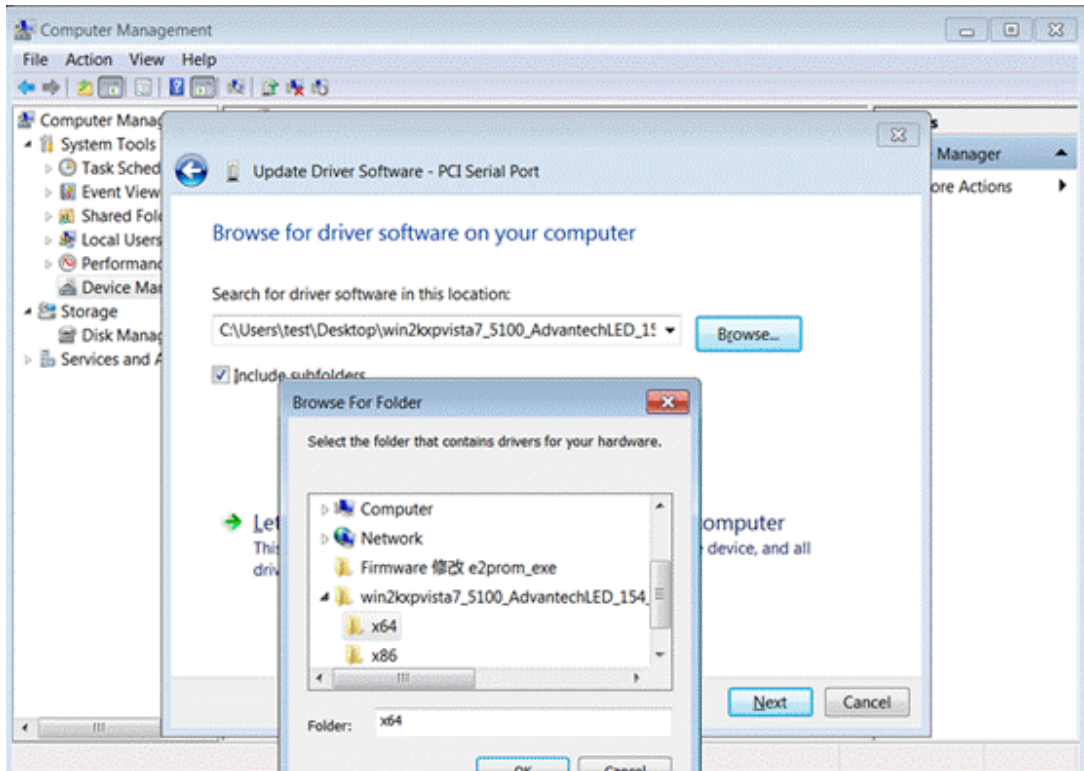
2. When confirmed OK, right click “PCI Serial Port” and select “Update Driver Software” to install driver for serial port card.



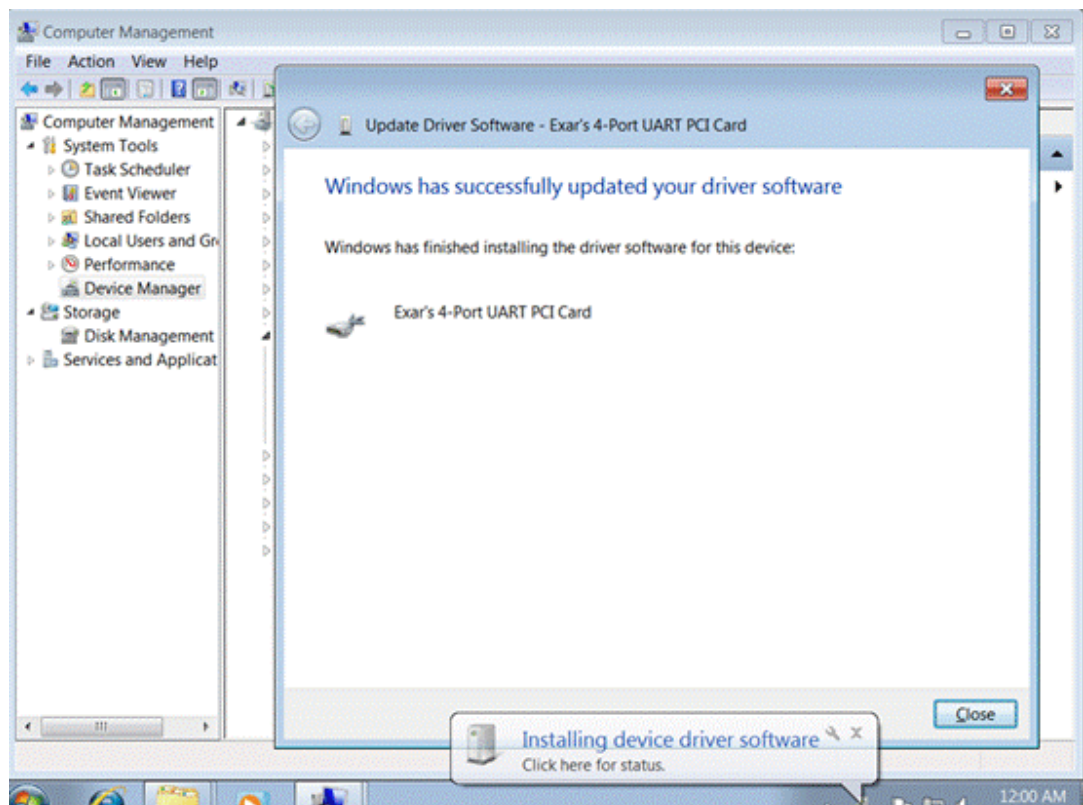
3. Select “Browse my computer for driver software”.



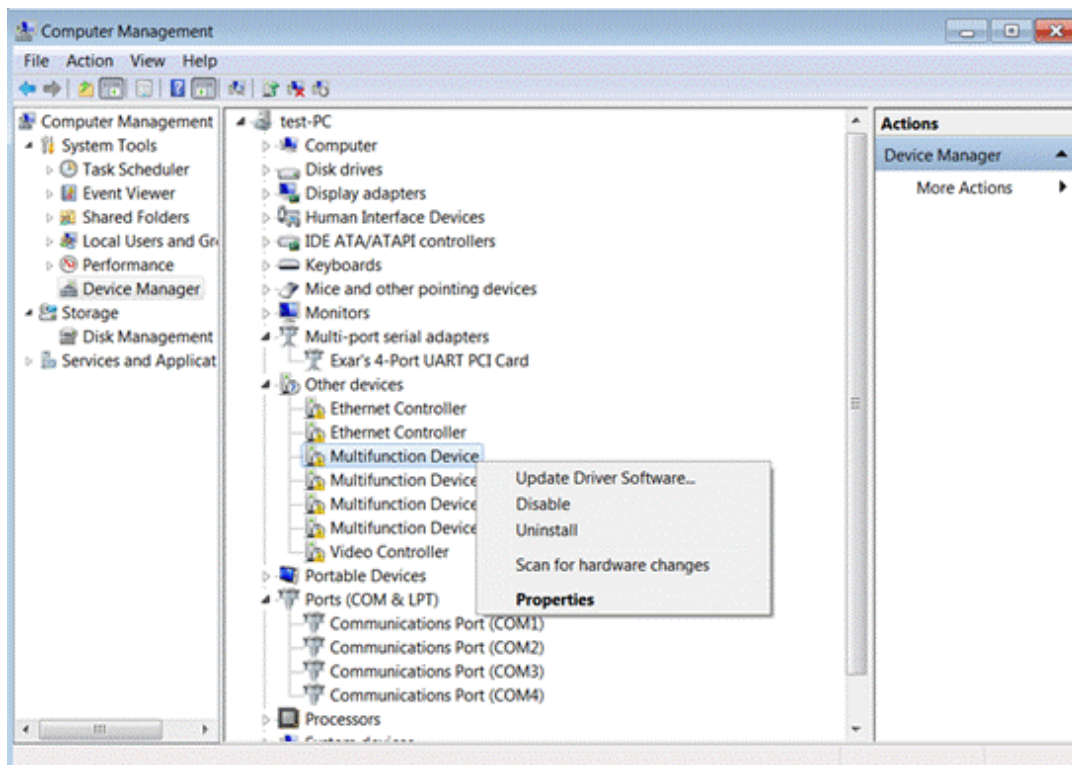
4. Select the folder where driver files are located.



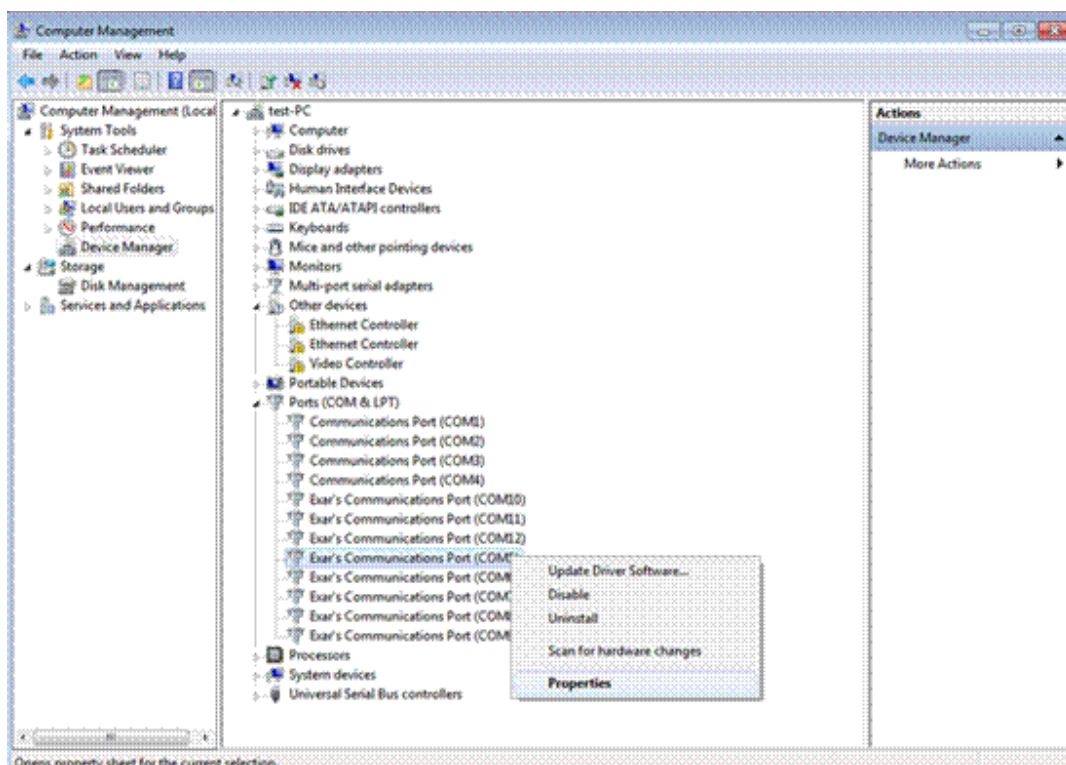
5. The below window appears when installation is finished.



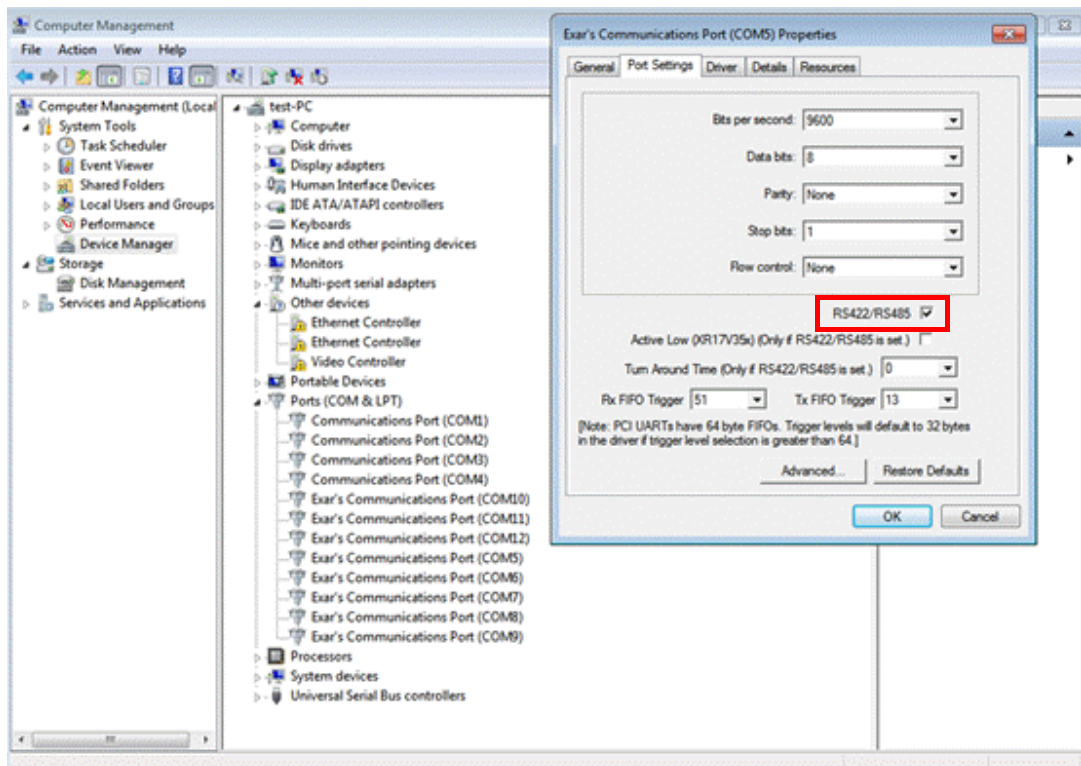
6. If installation is successful, "Exar's 4/8 Port UART PCI Card" will appear under "Multi-port serial adapters", 154 chip shows 4 port and 158 chip shows 8 port. Several "Multifunction Device" with exclamation marks appear under "Other devices". Install the same driver for them.



7. Each time when a "Multifunction Device" is successfully installed, "Exar's Communication Port (COMxx)" will appear under "Ports (COM&LPT)".



- When you need to test RS422/RS485, please first adjust to the right serial port mode, and then check “RS422/RS485” under “Port Setting” of “COM Port” and enable RS422 primary/secondary selection and RS485 automatic data flow control function.



3.3 Linux Driver Setup

- Decompress the driver installation package (suppose the package name is: xr17v35x_v1.9.11.tgz)

```
# tar xvf xr17v35x_v1.9.11.tgz
```

- Enter the driver folder

```
# cd xr17v35x
```

- Compile the driver

```
# make
```

- Install the driver

```
# make install
```

Restart the Linux system when installation is complete and the driver will be automatically loaded.

3.4 RS232/RS422/RS485 Selection under Linux

RS232/RS422/RS485 selection under Linux is as below:

Currently, driver v1.9.11 adopts RS485 mode by default and supports auto low control function.

Before testing RS232 / RS422 / RS485, please adjust to the proper serial port mode and make relative settings under OS.

3.5 Precautions for Linux with modem-manager

For customers who use CentOS 6.x/ CentOS 7.x or Fedora 14, some services must be disabled to avoid the conflict with MIC-3955 Linux driver.

- Using CentOS 6, Please use the following commands:

```
chkconfig spice-vdagentd off
chkconfig modem-manager off
chkconfig haldaemon off
mv /usr/sbin/modem-manager /usr/sbin/modem-manager.bak
```
- Using CentOS 7, Please use the following commands:

```
systemctl disable ModemManager.service
```

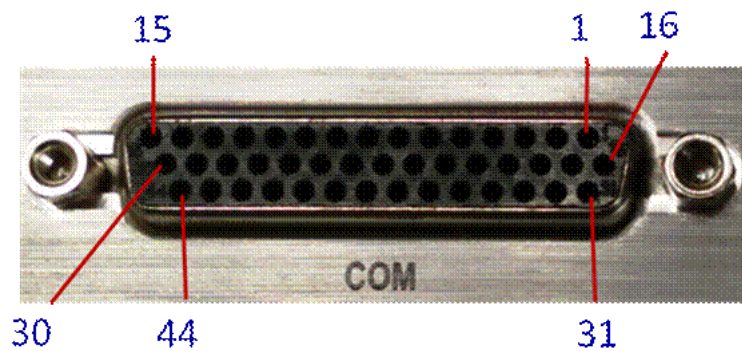
Then, please reboot your system, then MIC-3955 will work well.

Appendix **A**

Pin Assignments and Jumper Settings

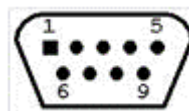
A.1 Pin Assignments

A.1.1 DB44(F) Connector Pin Assignments



Pin	Definition	Pin	Definition	Pin	Definition
1	COM1_TX	16	COM1_CTS	31	COM1_DCD
2	COM1_RX	17	COM1_DTR	32	COM1_RI
3	COM1_RTS	18	COM1_DSR	33	GND_COM1
4	NC	19	NC	34	NC
5	COM2_TX	20	COM2_CTS	35	COM2_DCD
6	COM2_RX	21	COM2_DTR	36	COM2_RI
7	COM2_RTS	22	COM2_DSR	37	GND_COM2
8	NC	23	NC	38	NC
9	COM3_TX	24	COM3_CTS	39	COM3_DCD
10	COM3_RX	25	COM3_DTR	40	COM3_RI
11	COM3_RTS	26	COM3_DSR	41	GND_COM3
12	NC	27	NC	42	COM4_DCD
13	COM4_TX	28	COM4_CTS	43	COM4_RI
14	COM4_RX	29	COM4_DTR	44	GND_COM4
15	COM4_RTS	30	COM4_DSR		

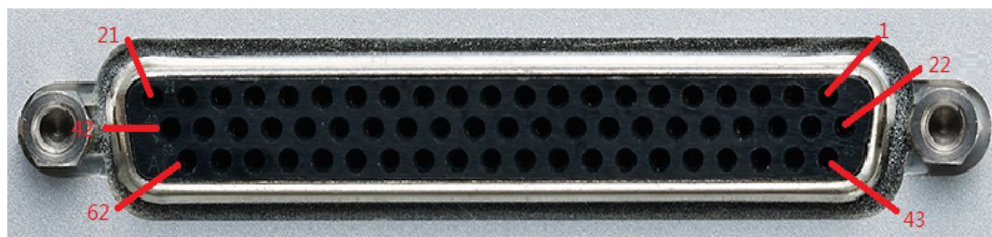
A.1.2 DB44(F) to 4-port DB9(M) Serial Cable COM1 ~ COM4 Pin Assignments



Pin	Pin assignments		
	RS232	RS422	RS485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	GND	GND	GND

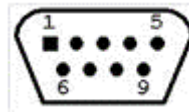
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	RI	NC	NC

A.1.3 DB62(F) Connector Pin Assignments



Pin	Definition	Pin	Definition	Pin	Definition
1	COM8_DTR_422RX-	22	COM8_TXD_422RX+	43	GND_COM_D_A
2	COM7_RXD_422TX+	23	COM7_DCD_422TX-	44	COM8_CTS#
3	COM7_CTS#	24	COM8_RTS#	45	COM8_DSR#
4	COM8_RXD_422TX+	25	COM7_DSR#	46	GND_COM_D_A
5	COM7_TXD_422RX+	26	COM8_DCD_422TX-	47	COM7_RTS#
6	COM6_DTR_422RX-	27	COM7_DTR_422RX-	48	COM6_CTS#
7	COM5_RXD_422TX+	28	COM6_TXD_422RX+	49	COM6_RTS#
8	COM6_DSR#	29	COM5_DCD_422TX-	50	GND_COM_D_A
9	COM6_RXD_422TX+	30	COM5_RTS#	51	COM5_CTS#
10	COM5_TXD_422RX+	31	COM6_DCD_422TX-	52	COM5_DSR#
11	COM4_DTR_422RX-	32	COM5_DTR_422RX-	53	GND_COM_A
12	COM3_DCD_422TX-	33	COM4_TXD_422RX+	54	COM4_CTS#
13	COM4_RTS#	34	COM3_RXD_422TX+	55	COM4_DSR#
14	COM4_RXD_422TX+	35	COM3_RTS#	56	COM3_CTS#
15	COM3_DTR_422RX-	36	COM4_DCD_422TX-	57	COM3_DSR#
16	COM2_DTR_422RX-	37	COM3_TXD_422RX+	58	GND_COM_A
17	COM1_DCD_422TX-	38	COM2_TXD_422RX+	59	COM2_DSR#
18	COM2_RTS#	39	COM1_RXD_422TX+	60	COM2_CTS#
19	COM1_RTS#	40	COM1_CTS#	61	COM1_DSR#
20	COM2_RXD_422TX+	41	COM2_DCD_422TX-	62	GND_COM_A
21	COM1_TXD_422RX+	42	COM1_DTR_422RX-		

A.1.4 DB62(F) to 8-port DB9(M) Serial Cable COM1 ~ COM8 Pin Assignments



Pin	Pin assignments		
	RS232	RS422	RS485
1	DCD	TX-	DATA-
2	RX	TX+	DATA+
3	TX	RX+	NC
4	DTR	RX-	NC
5	GND	GND	GND
6	DSR	NC	NC
7	RTS	NC	NC
8	CTS	NC	NC
9	NC	NC	NC

Note! RS232 of 8-port rear line out don't contain DCD/DTR/DSR signals.



Note! NC --> No connect.



A.2 Jumper Settings

MIC-3955 supports RS-232/422/485 communication modes, which can be selected via the jumpers on the card.

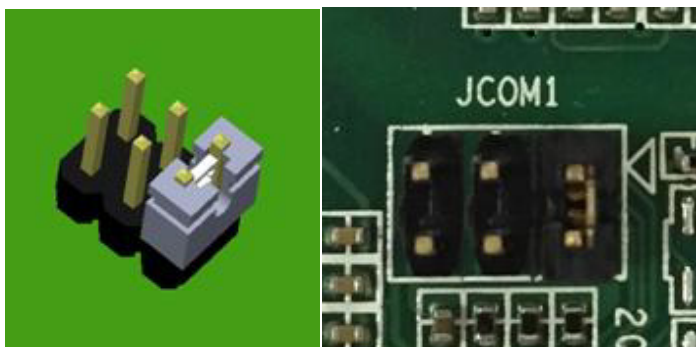
A.2.1 MIC-3955A1 4-port Front line out board

Corresponding chip on the card controls operation mode of the serial port. Currently, the chip is SP339 and operation mode of each port can be controlled individually. The four jumpers are JCOM1, JCOM2, JCOM3 and JCOM4. Operation modes of the 4 ports can be selected through closing different jumpers.

	SP339
RS232	1-2
RS485	3-4
RS422	1-2, 3-4

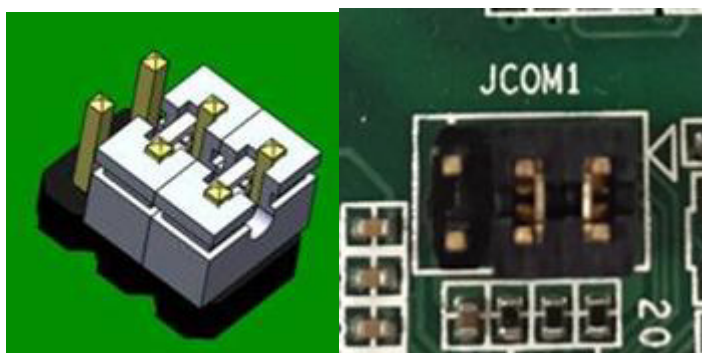
RS-232 mode jumper setting (This is the factory setting. An additional jumper closes pin 4 and pin6, which doesn't affect the function of RS232):

Close Pin1 and Pin2 of JCOM1, JCOM2, JCOM3 and JCOM4. The pin indicated by the triangle on PCB is Pin1.



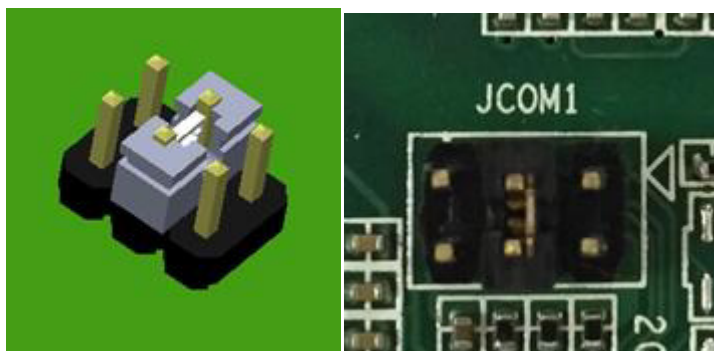
RS-422 mode jumper selection:

Close Pin1 & Pin2, Pin3 & Pin4 of JCOM1, JCOM2, JCOM3 and JCOM4. The pin indicated by the triangle on PCB is Pin1.



RS-485 mode jumper selection:

Close Pin3 & Pin4 of JCOM1, JCOM2, JCOM3 and JCOM4.



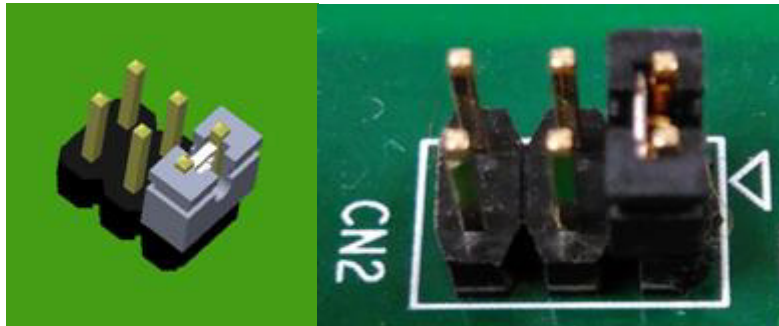
A.2.2 MIC-3527A2 4-port rear line out rear board

Corresponding chip on the card controls operation mode of the serial port. Currently, the chip is SP338 and operation mode of each port can be controlled individually. The four jumpers are CN1, CN2, CN3 and CN4. Operation modes of the 4 ports can be selected via closing different jumpers.

	SP338
RS232	1-2
RS485	3-4
RS422	5-6

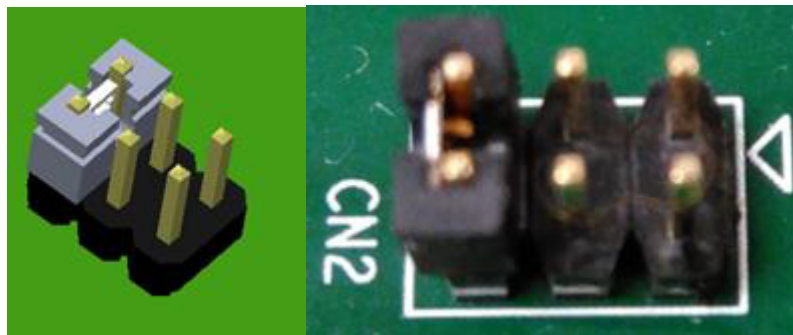
RS-232 mode jumper selection (Default setting):

Close Pin1 and Pin2 of CN1, CN2, CN3 and CN4. The pin indicated by the triangle on PCB is Pin1.



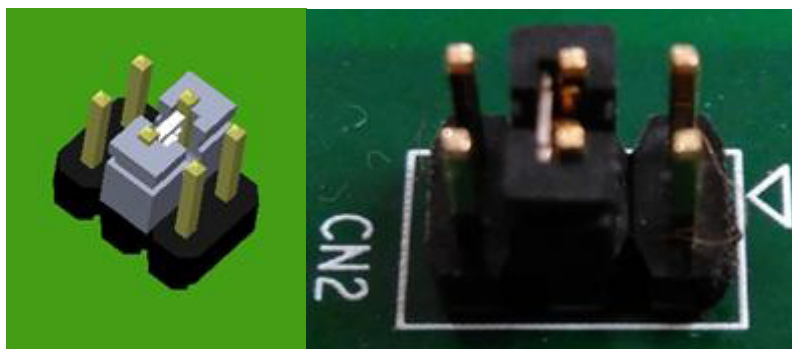
RS-422 mode jumper selection:

Close Pin5 and Pin6 of CN1, CN2, CN3 and CN4. The pin indicated by the triangle on PCB is Pin1.



RS-485 mode jumper selection:

Close Pin3 and Pin4 of CN1,CN2, CN3 and CN4.



A.2.3 8-port front line out board & rear line out rear board jumper setting

Note! Jumper setting is the same as below between MIC-3955B1 8-port front line out board & MIC-3527B2 8-port rear line out board.

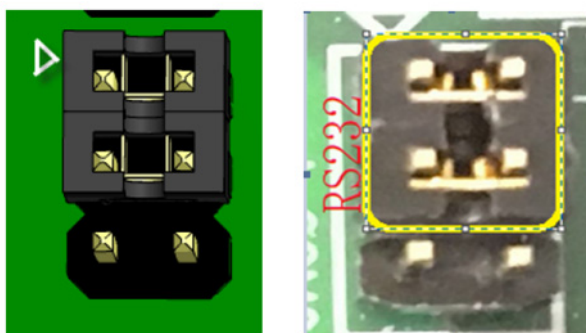


Corresponding chip on the card controls operation mode of the serial port. Currently, the chip is F81439 and operation mode of each port can be controlled individually. The eight jumpers are J_COM1, J_COM2, J_COM3, J_COM4, J_COM5, J_COM6, J_COM7, J_COM8. Operation modes of the 8 ports can be selected via closing different jumpers.

Mode	J_COM1~8
RS-232 (Default)	1-2,3-4
RS-422 /w Term-R and Bias-R	3-4, 5-6
RS485	1-2, 5-6
RS485 /w Term-R and Bias-R	1-3, 5-6

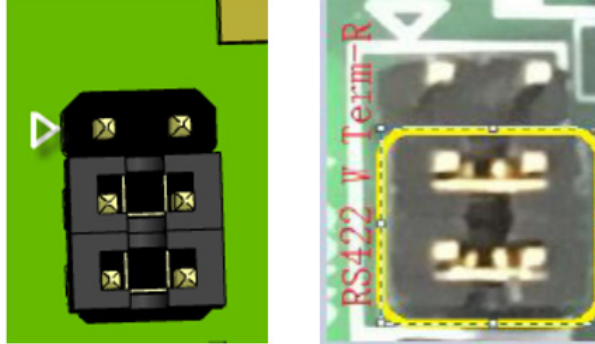
RS-232 mode jumper selection (Default setting):

Close Pin1 and Pin2, Pin3 and Pin4 of J_COM1, J_COM2, J_COM3, J_COM4, J_COM5, J_COM6, J_COM7, J_COM8. The pin indicated by the triangle on PCB is Pin1.



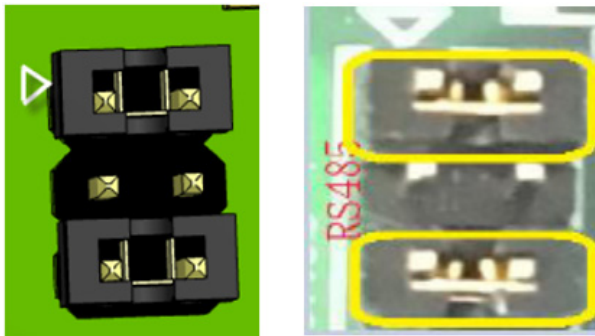
RS-422 mode with Term-R jumper selection:

Close Pin3 and Pin4, Pin5 and Pin6 of J_COM1, J_COM2, J_COM3, J_COM4, J_COM5, J_COM6, J_COM7, J_COM8. The pin indicated by the triangle on PCB is Pin1.



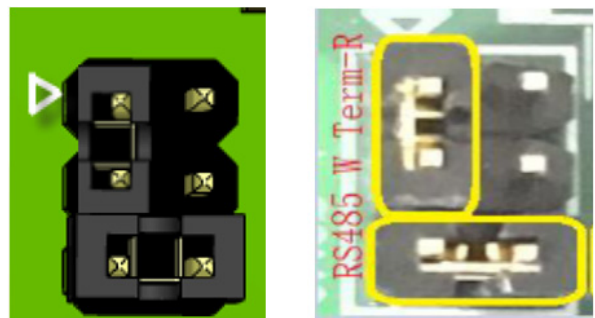
RS-485 mode jumper selection:

Close Pin1 and Pin, Pin5 and Pin6 of J_COM1, J_COM2, J_COM3, J_COM4, J_COM5, J_COM6, J_COM7, J_COM8. The pin indicated by the triangle on PCB is Pin1.



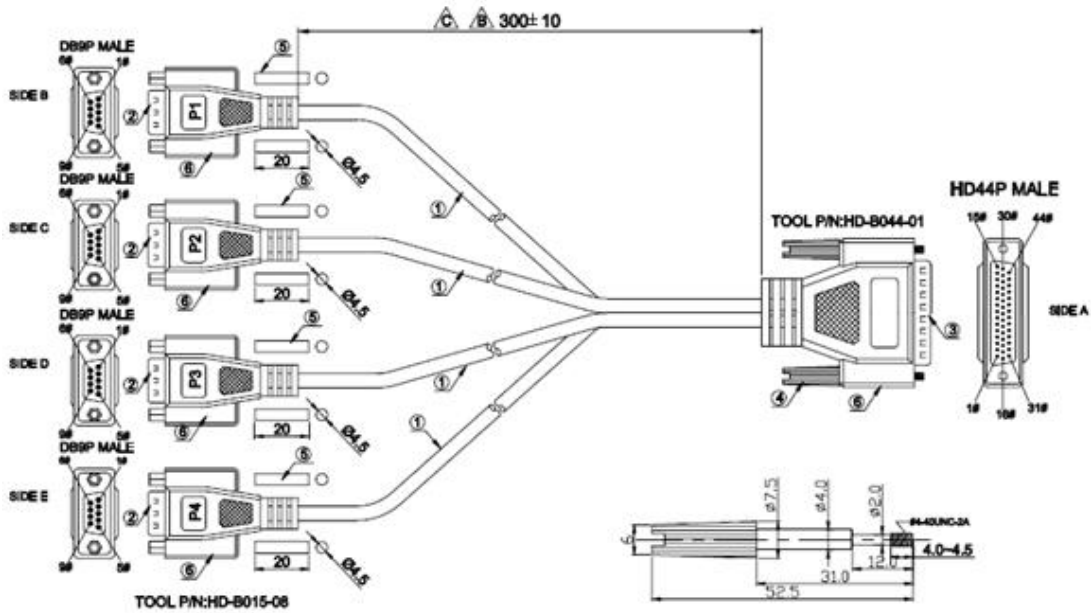
RS-485 mode with Term-R jumper selection:

Close Pin1 and Pin3, Pin5 and Pin 6 of J_COM1, J_COM2, J_COM3, J_COM4, J_COM5, J_COM6, J_COM7, J_COM8. The pin indicated by the triangle on PCB is Pin1.



A.3 Accessory Cables

A.3.1 4-port Cable: 1 x DB44 to 4 x DB9



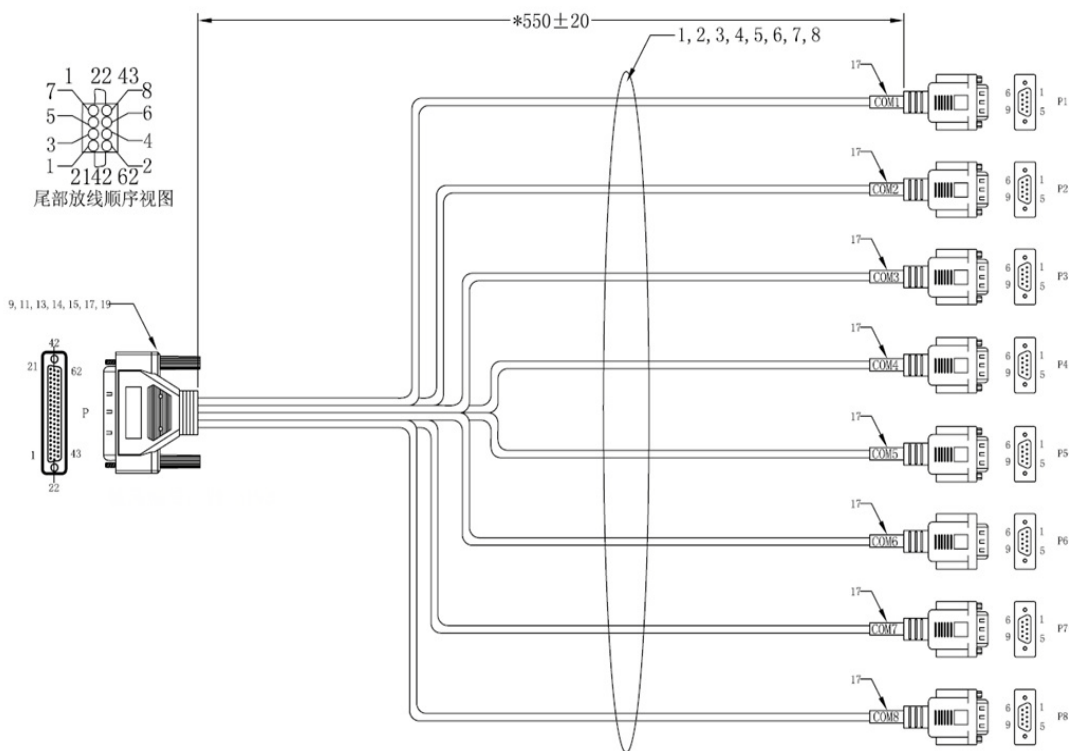
PIN ASSIGNMENT

HD44P MALE SIDE A	DB9P MALE SIDE B	HD44P MALE SIDE A	DB9P MALE SIDE C
1	3	5	3
16	8	20	8
2	2	6	2
17	4	21	4
3	7	7	7
18	6	22	6
31	1	35	1
32	9	36	9
33	5	37	5
4	SHELL	8	SHELL

HD44P MALE SIDE A	DB9P MALE SIDE D	HD44P MALE SIDE A	DB9P MALE SIDE E
9	3	13	3
24	8	28	8
10	2	14	2
25	4	29	4
11	7	15	7
26	6	30	6
39	1	42	1
40	9	43	9
41	5	44	5
12	SHELL	19	SHELL

A.3.2 8-port Cable: 1 x DB62 to 8 x DB9





Cable: 1 x DB62 to 8 x DB9 Pin Assignment

Pin Assignment

P	P1
17	1
39	2
21	3
42	4
62	5
61	6
19	7
40	8

Pin Assignment

P	P2
41	1
20	2
38	3
16	4
58	5
59	6
18	7
60	8

Pin Assignment

P	P3
12	1
34	2
37	3
15	4
58	5
57	6
35	7
56	8

Pin Assignment

P	P4
36	1
14	2
33	3
11	4
53	5
55	6
13	7
54	8

Pin Assignment

P	P5
29	1
7	2
10	3
32	4
50	5
52	6
30	7
51	8

Pin Assignment

P	P6
31	1
9	2
28	3
6	4
50	5
8	6
49	7
48	8

Pin Assignment

P	P7
23	1
2	2
5	3
27	4
46	5
25	6
47	7
3	8

Pin Assignment

P	P8
26	1
4	2
22	3
1	4
43	5
45	6
24	7
44	8

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