

Advantech AE Technical Share Document

Date	2015 / 10 / 02	SR#	1-2255369021	
Category	□ FAQ∎ SOP	Related OS	Microsoft Windows XP / 7 / 8 / 8.1	
Abstract	How to do loopback testing with Advantech RS-485 communication card?			
Keyword	Serial Communication cards / RS-232 / RS-422 / RS-485 / COM / PCI Communication cards			
	/ PCIE Communication cards / PC-104 PCI Communication Modules			
Related Product	PCI-1601A/B / PCI-1602 / PCI-1602UP / PCI-1620A/B / PCI-1612C / PCI-1602UP /			
	PCI-1622B / PCI-1622C / PCIE-1622 / PCM-3610 / PCM-3612 / PCM-3614 / PCM-3618 /			
	PCM-3614I / PCM-3618I /			

Problem Description:

This is a SOP document to describe how to do loop back test with Advantech RS-485 com port card. By connecting the proper wires, this loop back test can help user to verify the operation of RS-485 com port.

Brief Solution :

Loop back testing with DB9 connector:

1. Please check on-board DIP switches are set to "Auto" mode that means the driver automatically senses the direction of the data flow and switches the direction of transmission. No handshaking is necessary. Please check table as Figure 1.

Mode	Switch Position
RS-485	AUTO
RS-422_Master	ON
MS-422_Slave	AUTO

Figure 1. AUTO/ON mode setting table.



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2. Please check how many com ports user have, check com number (at Device Manager), and make sure that com port is RS422 / 485 as Figure 1:

🚔 Device Manager	Advantech PCI Serial Port (COM12) Properties
<u>File Action View H</u> elp ← ⇔ 〒 □ 図 □ 0 12 0 0 0	General Settings FIFOs Driver Details Power Management
 □ DE ATA/ATAPI controllers □ Keyboards ○ Mice and other pointing devices □ Multi-port serial adapters □ Portable Devices □ Portable Devices □ Ports (COM & LPT) □ Advantech PCI Serial Port (COM12) □ Advantech PCI Serial Port (COM13) □ Advantech PCI Serial Port (COM14) □ Advantech PCI Serial Port (COM15) □ Thtel(R) Active Management Technology - SOL (COM3) □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □	Advantech ICOM PCI/PCIE Card 16C950 High Performance UART Hardware Configuration RS232 RS422/485 Enable Modern Status Interrupt Default Communications Parameters Bits per second: 9600 Data bits: 8 Flow control: None Parity: None Stop bits: 1 - COM Port Number Port number to use: COM12 Restore Defaults Com Port Number

Figure 1. (Left) Com port check with Device Manager (Right) check RS-422-485 configuration

3. Choose two of all Advantech com port, then connect with each DATA+,- pin as Figure 2: (Port A's pin1 to Port B's pin1; Port A's pin2 to Port B's pin2)



Figure 2. Connect with DATA+ & DATA- of Port A & Port B.



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4. Open two HyperTerminal (ex. TTY), and setting those two port configuration as Figure 3.: (Port A : COM12, Port B : COM13)

Action Settings Iransfer About	Action Settings Iransfer About

Figure 3. Using TTY do com port setting for loop back test

Then, do "Connect" each other as Figure 4:

Action Settings Transfer About	Action Settings Iransfer About
	Connect Shift+PgUp
	Disconnect Shift+PgDn
	E <u>x</u> it

Figure 4. Do connect with TTY software

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 User can type word or number with computer keyboard on COM12 widows, and receive data will show up on COM13 windows; Please make sure those two way can receive data (From COM12 to COM13; From COM13 to COM12) as Figure 5 & 6, then that is a successful loop back test with two RS-485 com ports.

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	advantech rs485 test verified	
COM 12	COM 13	
		1

Figure 5. Type words on COM 12 windows



Figure 6. Type words on COM 13 windows