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Advantech AE Technical Share Document

Date	2017/3/7	Related Product	ADAM-4521		
Category	■FAQ □ SOP	Related OS	N/A		
Abstract	ADAM-4521, How to test the communication between RS-485 and RS-232 when using addressable mode?				
Keyword	ADAM-4521, addressable mode, RS232, ASCII command				
SR#	1-2797409837				
Revision History					
Date	Version	Author	Reviewer	Description	
2021/9/1	V2.0	Karen.Hsu	Owen.Chang	Utility: 2.6.00(B10)	

Problem Description:

The ADAM-4521 addressable converter allows user to build up an RS-485 network with RS-

232 devices by assigning each one an address for easier communication. This document

explains how to configure the module into addressable mode successfully and test the

communication between RS-485 and RS-232 devices.

Answer:

Steps for configure module into addressable mode

- 1. In Utility, make sure the below setting is correct as below picture
 - Addressable setting: select "Addressable" setting
 - Address: Enter a valid "<u>device ID</u>" in RS-485 network
 - Protocol: Choose "<u>RS-485</u>"



🗙 Advantech Adam/Apax .NET Utility (Win32) Ve	rsion 2.05.10			
File Tools Setup Help				
🕒 🔜 🤊 и 🖋 🎜 🕨 🗖				
Serial COM1 COM2 COM6	ADAM-4521 Module set General Setting Firmware version: Identification: Gate Time: Command Delimiter: Addressable Setting: Address: RS-232 Baudrate: Data Bits: Parity: Stop Bits:	ting A2.0 ADAM-4521-test 65535 {	10 ms/Unit Dec Addr (cr) RS-422/485 Baudrate: Data Bits: Parity: Stop Bits: Protocol:	Apply Apply Apply Apply 9600 – 8 bits None 1 RS-485 –

Figure 1 Utility addressable mode setting configuration page

Steps to test the address setting of the module

- Use AccessPort to request model name of ADAM-4521
- \$AA7 is the command for request model name, so enter \$037 with carriage return will get model name shown on the top part of window.

AccessPort - COM6(9600,N,8,1) Opened	
File Edit View Monitor Tools Operation Help	
🍓 🕘 🔁 🗒 🍃 🞯	
Terminal Monitor	
🖬 🖼 Hex ab 🖾 👷	
00000000: 21 30 33 41 44 41 4D 2D 34 35 32 31 2D 74 65 73 74 0D	!03ADAM-4521-test.
	w.
Send-> 🔘 Hex 💿 Char 🛛 Plain Text 🔻 🔲 Real Time Send	Clear Send DTR RTS Max Size < 64KB
\$037	^ ·
Read module ID command at address 03	
	·
Comm Status CTS JDSR RING JRLSD (CD) CTS Hold	DSR Hold RLSD Hold XOFF Hold
Ready	Tx 6 Rx 18 COM6(9600,N,8,1) O

Figure 2 Use AccessPort to test the RS-485 communication with address setting

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Steps to test the communication between RS485 and RS-232

- Connect ADAM-4561, ADAM-4521 in below test topology as shown in Figure 3
- Open two AccessPort for creating two COM ports, one is used as the sender, the other is used as the receiver.



Figure 3 Test topology for the communication between RS-232 and RS-485

• Confirm with the command delimiter set in Utility, here is symbol " { " like the green box below.

Firmware version:	A2.0		
Identification:	ADAM-4521-test		Apply
Gate Time:	65535	10 ms/Unit	Apply
Command Delimiter:	{		Apply
Addressable Setting:	Addressable	_	Apply
Address:	03 Hex 3 ÷	Dec 🗌 Addr (cr)	
-RS-232		-RS-422/485	

Figure 4 Command delimiter in Utility

Command format is defined as <u>Delimiter AA (Data)</u> in ADAM-4521 user manual, so enter
" **{03\$hello** " in request window in COM6 (RS-485), the response " **\$hello** " will show on the top part of window in COM1(RS-232)

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AccessPort - COM6(9600,N,8,1) Opened	AccessPort - COM1(9600,N,8,1) Opened
File Edit View Monitor Tools Operation Help	File Edit View Monitor Tools Operation Help
🍓 🕘 🛃 🗲 🔞	🍫 💿 🔁 📃 🍃 🞯
Terminal Monitor	Terminal Monitor
🖬 🕮 Hex ab 💟 🤮	🖬 📴 Hex ab 🖾 🤮
A	00000000: 24 68 65 6C 6C 6F Shello
Send-> 🔿 Hex 💿 Char Plain Text 👻 🔲 Real I	Send-> 🔘 Hex 💿 Char 🛛 Plain Text 🖵 🗖 Real Tir.
{03\$hello	A
Delimiter AA (Data) { 03 hello	
	Comm Status CTS DSR RING RLSD (CD) C1
	Ready
incauy at	

Figure 5 COM1(RS-232) receive command send from COM6 (RS-485)

Addressable Mode Application:

ADAM-4521 addressable mode allows users to send the command to specific address RS-232 devices. You can see several RS-232 devices without address in Fig6. With ADAM-4521 addressable mode, user could send command to device with specific address.

Cautions: The device connected by RS-232 in ADAM 4521 can't be master which means only receive the data from PC by RS-485/RS-422, but can't send the data from RS-232 to the PC side actively.



Figure 6 ADAM-4521 addressable mode application