

Subject: How to configure the DH+ communication using a PC 104 card, AN# 1099 Date: June 15, 2001 Name: Allen Heskett Page: 17

Description: Use a Synergetic PC 104 card on a CE unit, configure it to run with a Design Studio Application and a SLC 504.

A. First ensure that the PLC program is set up to use DH+ with the same settings as the PC 104 card. See the example below.



B. Now go set up the CE unit and the DH+ Interface Card using the following procedure.

Using the Synergetic card takes the place of one (1) of the COM ports on the CE device.One of the COM ports on the CE device must be disabled in the BIOS for the DH+ card to work properly. Equipment used: Windows CE 2.11 on a 3410T, Synergetic card SMS-CIF104-RIODHP, Allen Bradley SLC5/04 CPU, Design Studio Version 3.3 with SP2.



- 1. On your development PC download and install the three disk version of the configuration software from the following website <a href="http://www.dltech.net/software.shtml">http://www.dltech.net/software.shtml</a>
- 2. Plug the PC104 card into the CE device. Connect the PC104 card to a COM port on your development PC, via the Phoenix 5 pin to DB-9 cable that is provided with the Synergetic card.
- 3. Please read step 3 completely before proceeding. Connect a keyboard to the CE device and power up the unit. During the boot up process press the delete key to enter into the CMOS setup utility. Using the arrow keys on you keyboard cursor over to the integrated peripherals heading and press the enter key. Disable one (1) of the onboard serial ports. Save the changes and exit the CMOS setup utility.
- 4. On your development PC run the Datalink Technologies program.

		Programs		Windows Media Player
	*	F <u>a</u> vorites		Advantech Adam Utility
	$\bigcirc$	Documents		HyperSnap-DX
	<u>,</u>	<u>S</u> ettings	u	Outlook Express
		Find •		RoboMotion
	2	Help		Microsoft TechNet
202	<del>,</del>	Bun		Real •
SMC	<u> </u>	<u> </u>		Advantech Studio Tools
ĕ	Č.	Log Off Samd	蛊	DataLink Technologies, Inc.
5		Shut Down		Rockwell Software
	~		-	CIF Device Driver
8	Start	[ 🙆 Inbox - Mi 🤌 Datal	Ē.	SyCon System Configurator



OPERATOR INTERFACE PRODUCTS APPLICATION NOTE						
port on the development PC running the Datalink software. Next select, <u>Set COM &amp;IRQ of a New Datalink</u> .						
DL32 - Windows 32-bit Parameter Configuration Program DL32 Configuration Program Main Menu Select the COM PORT the DataLink Interface Card is configured as or connected to ○ COM1 ○ COM2 ○ COM3 ○ COM4 ○ COM5 ○ COM6 ○ COM7 ○ COM8						
DL32 is now set to communicate with the Interface Card via COM:       2         New Interface Card Hardware Configuration       2         SET COM & IRQ of a New DataLink						
Online Operating Parameters <u>C</u> ONFIGURE NEW     DOWNLOAD from FILE <u>U</u> PLOAD to FILE						
DataLink Testing Tools       D <u>H</u> + Diagnostics Package <u>O</u> PERATING Modes <u>D</u> L Off-line Manager						
Exit DL32 Return to Product Selection						

7. Select your operating system.



OPERATOR INTERFACE PRODUCTS APPLICATION NOTE
Information on Configuring the DataLink's COM & IRQ         INFORMATION ON CONFIGURING THE IDENTITY OF AN INTERFACE CARD         **NOTE:NEW DL'S FROM THE FACTORY ARE SHIPPED CONFIGURED AS COM 4 (02E8) AND IRO 5**         You will select the path that the DL32 program will use to configure the Com Port and Irq "Identity" of a DataLink Interface Card (DL). Path 1 is over the computer's internal bus and requires one of the two temporary "Configure" addresses to be selected. Path 2 uses a cable between the DL card's 5 pin connector and a serial port on either the same computer or to an external computer.         Continue Configuring COM & IRQ       Return to Main Menu

9. On this screen select the COM port that will be used to configure the COM and IRQ of the interface card, this would be the COM port on the development PC running the Datalink software. And then select, <u>Configure Via COM 2</u> (for this example).

VIA INTERNAL BUS	VIA 5 PIN EURO-PHOENIX CONNECTOR CAE O COM 1 O COM 2 O COM 3 O CO FROM YOUR TO THE DATAI COMPUTER INTERFACE C. DENTITY VIA COM2		O COM 4 E DATALINK FACE CARD	
Help on Comm. Route UPLOAD DL COM & IRO S	<u>C</u> ONFIGUR	E VIA COM2	<u>R</u> et	urn to Main Menu

OPERATOR INTERFACE PRODUCTS APPLICATION NOTE	
19. On the next series is select the COM port and IRQ that the interface card will be configured as. In this example COM 2 IRQ 3. And then select, Download COM & IRQ Settings. ST New Interface Card COM and IBQ Selection DATALINK INTERFACE CARD COM AND IRQ IDENTITY CONFIGURATION OF DATALINK VIA 5 PIN EURO-PHOENX CONNECTOR VIOUR PC VIA COM2 VIA COM2 COMPORT ADDRESS RQ 2 2 02F8 3 2 DOWNLOAD COM & IRQ SETTINGS STATUS Backio Comm. Route CONFIGURATION COMPLETE Return to Main Menu	



OPERATOR INTERFACE PRODUCTS APPLICATION NOTE
12. You should see the following message in the Status block, <u>A OK! Datalink COM port and IRQ configured successfully</u> . If successful then select, Configuration Complete.
** New Interface Card COM and IRQ Selection         DATALINK INTERFACE CARD COM AND IRQ IDENTITY         CONFIGURATION OF DATALINK VIA 5 PIN EURO-PHOENIX CONNECTOR         DL97 IN       TO THE DATALINK         YOUR PC       INTERFACE CARD         Image: Comparison of the comparison
DataLink's Identity in the Computer COM PORT ADDRESS IRQ 2 02F8 3 DOWNLOADING TO DATALINK STATUS A-OK! DataLink COM PORT and IRQ Configured Successfully! Backto Comm. Route <u>C</u> ONFIGURATION COMPLETE <u>Return to Main Menu</u>

OPERATOR INTERFACE PRODUCTS APPLICATION NOTE				
	Windows 95 COM Port Installation	1		
	*** Windows 95 COM Port Installation ***			
	In order for the DataLink to function under Windows 95, you MUST configure its COM Port settings.			
	1. Open the Control Panel			
	2. Double Click ' ADD NEW HARDWARE'			
	3. Click NEXT			
	4. Choose 'NO' so that Windows DOES NOT search for new hardware			
	5. Select 'COM & LPT' - then click NEXT			
	7. Windows should have found the next available Input/Output Range and Interrupt Request			
	8. Click NEXT and then FINISH			
<u> </u>	<u>0</u> K			

OPERATOR INTERFACE PRODUCTS APPLICATION NOTE				
PL On this select select, <u>configure rew</u> . DL32 - Windows 32-bit Parameter Configuration Program Main Menu DL32 Configuration Program Main Menu Select the COM PORT the DataLink Interface Card is configured as or connected to COM1 © COM2 © COM3 © COM4 © COM5 © COM6 © COM7 © COM8 DL32 is now set to communicate with the Interface Card via COM: 2 New Interface Card Hardware Configuration				
SET COM & IRQ of a New DataLink       Interface Card       COM: 2         Online Operating Parameters       Com & Irq as Displayed       IRQ: 3         CONFIGURE NEW       DOWNLOAD from FILE       UPLOAD to FILE         DataLink Testing Tools       Dotal Link Testing Tools       UPLOAD to FILE				
DH+ Diagnostics Package       OPERATING Modes       DL Off-line Manager         Exit DL32       Return to Product Selection				

15. On this screen set the parameters for your application. And then select, <u>Set DF1 Advanced parameters</u>.

🔊 Configuration of [DL-PC/104] - MAIN M	IENU 📃
- SELECT NETWORK PROTOCOL	
	C A-B RIO ADAPTER
- AB DH+ NETWORK PARAMETERS	
STATION NUMBER 00	• Octal
DH+ NETWORK SPEED 57.6	r Kbaud
DF1 BUS PROTOCOL	
PROTOCOL AB-DF1	
BUS SPEED EMULATION 38.4	Baud SET DF1 AD VANCED PARAMETERS
CONFIGURATION Settings	DOWNLOAD to DL <u>R</u> ETURN to Main Menu

OPERATOR INTERFACE PRODUCTS APPLICATION NOTE						
16. On this screen set the parameters for your application. And then select, <u>Accept</u> .						
	DF1 ADVANCED PARAMETERS	1				
	PRESS BUTTONS TO TOGGLE THE FOLLOWING OPTIONS:					
	MESSAGE CHECK BCC     CRC  DUPLICATE MESSAGE     G IGNORE     G ACCEPT  EMBEDDED RESPONSES     O NONE     C EXECUTE  DIAGNOSTICS     C EXECUTE     O PASS  CONFIGURATION     O POINT-POINT / FULL DUPLEX     MULTI-DROP / HALF DUPLEX  HANDSHAKING LOOPBACK     O NONE     O RTS TO CTS					
	ACCEPT					
		I				



## 17. On this screen select, <u>Download to DL</u>.

📌 Configuration of [DL-PC/104] - M.	AIN MENU	
- SELECT NETWORK PROTOCOL © A-B DH+	C A-B RIO	ADAPTER
AB DH+ NETWORK PARAMETER STATION NUMBER 00 DH+ NETWORK SPEED 57.6	Octal	
DF1 BUS PROTOCOL PROTOCOL AE BUS SPEED EMULATION 960	3-DF1 0 <b>S</b> ET DF1 A	AD VANCED PARAMETERS
<u>C</u> ONFIGURATION Settings	DOWNLOAD to DL	<u>R</u> ETURN to Main Menu

OPERATOR INTERFA APPLICATION NOTE	CE PRODUCTS
18. It is a good idea to print the next screen for referenc	e.
And then select, <u>Download these parameters to Data</u> View Configuration           PRINT Summary         DATALINK CONFIGURATION SUMMA	alink.
Thursday, Apr. 26, 2001 MODEL: DL-PC/104 STATION NUI COMMUNICATION PORT: 2 NETWORK PROTOCOL DUA NETWORK SP	MBER 00 Octal
BUS PROTOCOL: DF1 BUS SPEED EN	AULATION 9600 Kbaud
DOWNLOAD These Parameters to Data         STATUS       Click on the above button to download these parameters         CHANGE These Parameters       Image: Click on the above button to download these parameters	rameters to a DataLink Return to Main Menu

OPERATOR INTERFACE PRODUCTS APPLICATION NOTE	
<ol> <li>You should see the following message in the Status block. <u>A OK! Transmission received by Datalink</u>. If successful then select, <u>Return to Main Menu</u>.</li> </ol>	
View Configuration         PRINT Summary       DATALINK CONFIGURATION SUMMARY         Thursday, Apr. 26, 2001       Thursday, Apr. 26, 2001         MODEL:       DL-PC/104       STATION NUMBER 00 Octal         COMMUNICATION PORT:       2         NETWORK PROTOCOL       DH+       NETWORK SPEED 57.6         BUS PROTOCOL: DF1       BUS SPEED EMULATION 9600       Kbaud	
Download Parameters         STATUS       A-OK! Transmission received by DataLink         CHANGE These Parameters       Return to Main Menu	



20. On this screen select, Operating Modes.



## OPERATOR INTERFACE PRODUCTS APPLICATION NOTE



OPERATOR INTERFACE PRODUCTS APPLICATION NOTE	I
Change Interface Card Operating Modes     Operating Modes     Operating Modes for an Interface Card     Operating Mode (SOFT RESET to Put On Network)     Diagnostic Modes     DEBUG Mode     (Goto Dot Prompt)     STATUS	

22. You should see the following message in the Status block, <u>A OK! Interface card mode changed successfully</u>.



If successful select, <u>Return to Main Menu</u>.

23. The setup of the interface card is now complete. Close the Datalink Technologies program.



## 25. Very important!!!!

DH+ is configured on an octal numbering system. The user must remember to configure the driver sheets within Design Studio for the decimal equivalent. For example, if a SCL5/04 was configured as node 45 octal, the decimal equivalent is



-37. The number 37 must be entered into the station heading block on the driver sheet in Design Studio.