CAN-8123/ CAN-8223/CAN-8423/CAN-8823 CANopen Slave Device

Quick Start User Guide

Introduction

This user guide introduces the user how to implement the CAN-8123/CAN-8223/CAN-8423 into their applications in a quick and easy way. Therefore, it For more detail information only provides the basic instructions. about the CAN-8123/CAN-8223/CAN-8423/CAN-8823, refer the please to CAN-8123/CAN-8223/CAN-8423/CAN-8823 user manual in the product CD or download it from following web site:

http://www.icpdas.com/products/Remote IO/can bus/can-8123.htm or

http://www.icpdas.com/products/Remote IO/can bus/can-8423.htm http://www.icpdas.com/products/Remote IO/can bus/can-8823.htm CAN-8123/CAN-8223 Hardware Structure





CAN-8123/ CAN-8223 CAN bus connectors ping assignment

		1			
CAN GND		Pin 1	Pin	Signal	Description
1000	IЭ		1	CAN_GND	Ground (0V)
CAN_L	(•)	Pin 2	2	CAN_L	CAN_L bus line
CAN Shield		Pin 3			(dominant low)
CAN_SIIICIU	ГЦ	1 m 5	3	CAN_SHLD	Optional CAN Shield
CAN H	(•)	Pin 4	4	CAN_H	CAN_H bus line
CAN VI		Din 5			(dominant high)
CAN_V+	\ -1	PIN 5	5	CAN_V+	CAN external positive supply

CAN-8423 CAN bus connectors ping assignment



Pin	Signal	Description
2	CAN_H	CAN_H bus line
		(dominant high)
3	CAN_SHLD	Optional CAN Shield
4	CAN_L	CAN_L bus line
		(dominant low)

CAN-8823 CAN bus connectors ping assignment



Pin	Signal	Description
2	CAN L	CAN_H bus line
	—	(dominant high)
5	CAN_SHLD	Optional CAN Shield
7	CAN H	CAN_L bus line
	_	(dominant low)

Power and CAN Connection

The CAN-8123/CAN-8223/CAN-8423 CAN connector is standard 5-pin screw terminal connector. The CAN-8823 CAN connector is D-Sub 9-pin. User can connect it directly to CAN-8123/CAN-8223/CAN-8423 with any other standard male 5-pin screw terminal and to CAN-8823 with D-Sub 9-pin connector. Take a note that the CAN-8423 power pin of CAN connector is useless. Therefore, users need to give CAN-8423 power by using power connector. Please refer to the CAN-8423 Hardware Structure described before.

Terminal Resistance

In order to minimize the reflection effects on the CAN bus line, the CAN bus line has to be terminated at both ends by two terminal resistances. The CAN-8123/CAN-8223/CAN-8423/CAN-8823 has the 120Ω terminal resistance inside. The JP2 of the CAN-8123/CAN-8223 and the JP1 of the CAN-8423/CAN-8823 is for terminal resistance.

Their position and jumper status are shown in the following figure.



Step1:Download the CANopen Slave Utility file from the web site http://www.icpdas.com/download/index.htm

or CD-ROM disk following the path:

"/CANopen/Slave/CAN-8x23/Utility/CANopen_SL.exe"

Step 2: Execute the CANopen_SL2.0.exe file to configure the CANopen Slave.

CAN-8123/ CAN-8223 Configuration (Off-line mode)

Step 1: Select "None" in the "COM Port" area.



Step 2: Take the CAN slave device (CAN-8823 with node ID 1) as an example, Users have to fill in "NODE ID" with 1 and choose "Device Name" with CAN-8823. Then, press "Next" button.

🖷 CAN-8x23 Utility, Ver	rsion 5.00 📃 🗖 🔀
Com Port None	CAN-8123 and CAN-8223 do not support Com Port connection. Please select none to build EDS file.
Hardware States Device Name CAN-8823 🗸	AN Baudrate
Firmware Ver.	Node ID 1
 Load Default Save Setting 	Next

Step 3: Then, select a specific device presented in the "Off line Setting" frame, and choose a correct slot module inserted.

For example, if the I-87057 and I-8051 modules are inserted in slot 0 and slot 1 respectively, please select 87057 in the list box, and click "Apply Module" to save the configuration.



Step 4: After finishing the configuration, users can one-left click on the slot module in the "Off Line Setting" frame if need to change the configuration. If the configuration is successful, users can see the correct module name when mouse moving in, for example 87057 on the top of the slot module..



Step 5: Then, repeat the step 3~4 to configure the slot 1 to I-8042 module. Then, click "Save Setting" button to finish the off-line parameter settings..



Step 6: Then users can press button "Create EDS Module" for create CANopen slave EDS file.

🖷 Off-Line Setting	
87057	Back
	Apply Module
	Save Setting
الله الذي الذي الذي الذي الذي الذي الذي الذي	Create EDS file

Step 7: The two fields, "description" and "create by", can help users to do some notes in EDS files. If these two fields are empty, the "ICPDAS CANopen I/O Slave Device" and "ICPDAS" will be used as the default value when creating the EDS file.

🖷 EDS File I	nformation			
CEDS File Inform	ation			
Description				
Crusted Dru				
Created By:				<u>^</u>
PDO Info	Device Info	Module Info	Back	Finish



purpose to view the PDO objects, device profile and slot module configuration information. These information dialogs are shown below.

	PDO Setting Result						×	
		Setting Re	esult TxPD DO No. 1 2 3 4	COB ID(F 181 281 381 481	Hex) Trans	RxPDO mission 255 255 255 255	Inhibit Tin 0 0 0 0	
Devie	ce Object I	nformatio	on					
Setting I	Result I-8K PWM Obje DI/DO Object	ct	I-8K Co AI/A	unter Object O Object			>	
	Index	0x6000	0x62	00 0x620				
•	Description	Read DI	W:	rite DO 🛛 DO E	irr b			
	Sub-Index O	2		2	2			
	Sub-Index 1	S_1 8051_DI 0	~ \$_0 87057_DO 0 ff					
	Sub-Index 2	S_1 8051_D_9	0 0070	157 000	£6		_	
*			🗏 Mod	ule Inforn	nation			
<			14.1.1					
			Module	e Information -				
				Slot No.	Name	DC) Ch No.	AO
			1	0	87057		16	
			$\frac{2}{2}$	1	8051		0	+
			$\frac{1}{4}$	3	8017H9	3	0	+
			5	4	None	-	0	+
			6	5	None		0	
			7	6	None		0	
			8	7	None		0	
			*					
			<					>

🖷 EDS File I	Information
EDS File Inforn	nation
Description	This EDS file is for the CAN-8223 with I-8024 and I-8042
Created By:	ICP DAS-RD7
PDO Info	Device Info Module Info Back Finish

Note: If users use off-line method to get the EDS file, the objects which are used to record the input/output range of the analog modules will be described to default value in the EDS file. However, the I-87K slot modules hold the input/output range parameter settings in their own EEPROM. It may cause the mismatch between real input/output range setting and EDS file. By the way, II-8KCPSx needs to configure the input/output range settings by using CANopen SDO protocol. For more detail, please refer to the section 5.5 in CAN-8123/CAN-8223/CAN-8423/CAN-8823 user manual.

CAN-8423/CAN-8823 Configuration (On-line mode)

Before using the CAN Slave utility, please make sure that you have connected COM1 of the CAN-8423/CAN-8823 with the available COM port on your PC. The architecture is displayed in the following figure. In this example, the CAN-8423 will be used, and slot modules, I-87057, I-8051, I-8024 and I-8017H are plugged in the slot 0, 1, 2, 3 respectively (If users don't have any slot module, they can also follow this demo to configure their CAN-8423. But some situation or information relative with slot modules will be difference).



Step 1: Turn off the CAN-8423. Set the "Baud" rotary switch of CAN-8423 to 9 for configuration mode. Then Turn on the CAN-8423.



Step 2: Use the "ID" rotary switch and "Baud" rotary switch to set the baud rate of CAN-8423. The node ID is useless when the value exceeds the 7F (127 for decimal format) because of the CANopen spec definition. The relationship between the rotary switch value and practical baud rate is displayed in the following table. Here, use ID 123 and baud rate 1000Kbps for the demo. Therefore, set the "ID" rotary switch to "7B" (7B=7*16+B=112+11=123) and "Baud" rotary switch to 7.



Rotary Switch Value	Baud rate (K BPS)
0	10
1	20
2	50
3	125
4	250
5	500
6	800
7	1000

Step 3: To execute the CAN_SL.exe file, and to display the figure, users have to connect a PC COM port and the CAN-8423 or CAN-8823 well. Here, take the PC COM 1 as an example. Click "Connect" button to get the information stored in the CAN-8823.

🖷 CAN-8x23 Utility, Version 5.00 👘 📃 🗖 🔀						
Com Port COM1 Connect	CAN-8123 and CAN-8223 do not support Com Port connection. Dease select none to build EDS file.					
Device Name CAN-8123	CAN Baudrate					
Firmware Ver.	Node ID					
 Load Default Save Setting 	Next					

Step 4: Then, users can set the slot information of CAN-8823 in the below of "CAN-8x23 Configure" frame.

🖷 CAN	-8x23 Configure	
CAN-8	x23 I/O Module Module Type: AI Module Channel: 8	SET Next
0. 870. CH0	57 1. 8051 2. 8024 3. 8017H8 4. 5. 6. 7. 00: -10.00 V ~ +10.00 V ~	
CH1	00: -10.00 V ~ +10.00 V 💌	
CH2	00: -10.00 V ~ +10.00 V 💌	
CH3	00: -10.00 V ~ +10.00 V 💌	
CH4	00: -10.00 V ~ +10.00 V 💌	
CH5	00: -10.00 V ~ +10.00 V 💌	
CH6	00: -10.00 V ~ +10.00 V 💌	
CH7	00: -10.00 V ~ +10.00 V 💌	

Step 5: Please select the slot module 3 in the control tab area, and choose the output range in

the channel area. Here, take the selection -5.00V~+5.00V as an example. Because of the feature of I-8017H8 slot module, output range on each channel will be changed in the same way after users select the output range in one of the channels.



Step 6: After setting the proper output range, users can click "Set" button to store the configuration. If all of slot module configurations are finished, click "Next" button to next step

nformation			×
ation			
		~	
		~	
		~	
EDS file C	reated!!		
		~	
Device Info	Module Info	Back Finis	h /
	nformation ation EDS file C 確定 Device Info	nformation ation EDS file Created!! 確定 Device Info Module Info	nformation ation EDS file Created!! EDS file Created!!

Step 7: Then, "EDS File Information" window will pop out. Users can fill the "Description" and "Create by" fields for the EDS file. Also, users can see the CANopen objects information and modules information by clicking the buttons.

If User wants to set dynamic PDO COB-ID, input the COB-ID into the field of "PDO setting Result" window.

🖷 EDS File I	nform	ation				
-EDS File Inform	ation —					
Description				~		
Created By:	PDO	Setting Res	ult			
Set Dyns						
		TxPDO		RxPDO		
PDO Info		PDO No.	COB ID(Hex)	Transmission	Inhibit Tir	
	1	1	181	255	0	
	2	2	281	255	0	
	3	3	381	255	0	
	4	4	481	255		
	5	5		200		
	<u>n</u>		0000000	200		
	<	ш			>	

Then press button "Set Dynamic PDO" to store the dynamic PDO COB-ID.

-	PDO	Setting Resi	ult			
c	Setting	Result			C	Set Dynamic PDO
		TxPDO			RxPDO	
		PDO No.	COB ID(H	lex)	Transmission	Inhibit Tir
	1	1	181		255	0
	2	2	281		255	0
	3	3	381		255	0
	4	4	481	_	255	0
	5	5	491		255	0
	6	6	8000000)0	255	0
	*					
		1	1		1	
	<					>

Note1: The CAN-8423/8823 can also create the EDS file by using off-line mode, and set the analog input range or analog output range by using the CANopen SDO protocol. Note2: The function, dynamic PDO setting, is only supported on-line mode.

Application Procedure

