tM-7530

Sep 2014, Version 1.0.0



Introduction

ICP DAS has provided a lot of UART/CAN product solutions which are widely recommended in the market. These UART/CAN converters can help users to implement the communication between RS-232 and CAN network. In order to cater for costing requirement, we provide a new solution of RS-232/CAN converter, tM-7530. The tM-7530 is a tiny RS-232/CAN to fit narrower environment as a result of its small size. It has isolation on power side and on CAN bus side and its performance is faster than other RS-232/CAN module. The function of tM-7530 can full compatibly with I-7530 and I-7530T. Besides, it provides new function such as listen only. User can use this function to listen CAN bus messages and error detection. According to above features, tM-7530 is an economical and practical RS-232/CAN converter solution.



Technical Support

• tM-7530 User Manual

CD:\fieldbus_cd\can\pac\ converter\ tM-7530\ manual\ http://ftp.icpdas.com/pub/cd/fieldbus_cd/can/converter/tM-7530/manual\

• tM-7530 Website

http://www.icpdas.com/root/product/solutions/industrial_communication/fieldbus/can_ _bus/converter/tM-7530.html http://ftp.icpdas.com/pub/cd/fieldbus_cd/can/converter/tM-7530/utility

• ICP DAS Website

http://www.icpdas.com/

Hardware Introduction and Installation



The left graph is the surface of tM-7530. It uses D-sub 9 pin female connector as RS-232 communication interface and uses 2 or 3 wire to connect CAN bus with spring type connector. It has 2 LED indicators Run and Err. They are used to response module status immediately at all time.

Table: RS-232 Pin Assignment

0

Pin	3-wire RS-232
1	N/A
2	RS-232 TxD
3	RS-232 RxD
4	N/A
5	RS-232 GND
6	N/A
7	N/A
8	N/A
9	N/A

Pin	Power	
1	+Vs	
	(10~30VDC Power)	Power -
2	GND	L +Vs
3	F.G.	
Pin	CAN	[CAN_G
1	CAN_L	CAN.
2	CAN_H	LCAN
3	CAN_GND	

Table: Power and CAN Bus Pin Assignment



LED Indicator	Condition	Status				
	Configuration Mode	Flash Once Per Secord				
Run	Dup Modo	Turn on when no data needs to be sent				
	Run Mode	Flash once when sending a CAN message				
	FIFO overflow					
Err	CAN Bus Off	Always turned on				
	CAN Error Passive					
	Some errors occurred	Flash				

How to connect with spring type connector? Press and Insert.

A - Control of the second seco

1. Press

2 Configuration/Run Mode

There is a dip-switch on the bottom of tM-7530. After switching and rebooting, the tM-7530 will enter into Normal mode or Init mode.



3 tM-7530 wire connection

tM-7530 spring type connector







There is no terminator resistor in the tM-7530. Therefore, if users would like to use terminator resistor, it is necessary to wire a 120Ω resistance on the CAN bus, as following figure.

5 Software Utility Introduction

CAN1 (VxCANPort 00)													_
	📽 M-7530 📃 🗖 🔀												
	Port,1												
	File * Setting * Advanced *												
	Send												
	Mode	ID	RTR	Len	D0	D1	D2	D3	D4	DS	D6	D7	ms
	C111 2 03 11	212											
	CAN 2.0A	512	0 0	0 V		- 22	33	44	22	00		88	0
	🗌 ID increase								Send Co	unt		5	Clear O
										-		_	
	Data increa	kse					Transn	it Log	Sen	d ()	Sen		Stop
	No. Received	Message Lis	t								P	emark	^
	43 2.0A, ID =	43 2.0A, ID = 123, Len = 8, Data = 11, 22, 33, 44, 55, 66, 77, 88, 104915, 196971361											
	44 2.0A, ID = 123, Len = 8, Data = 11, 22, 33, 44, 55, 66, 77, 88, 104915.211443373												
	45 2.0A, ID =	123, Len = 8	8, Data = 11,	22, 33, 44	, 55, 66	, 77, 8	8, 1049	15.233	925401				
		123, Len = 8	8, Data = 11,	22, 33, 44	, 55, 66	6, 77, 8	8, 1049	15.241	860942				
	46 2.0A, ID =					1778	8, 104	15.258	433464				
	46 2.0A, ID = 47 2.0A, ID =	123, Len = 8	s, Data = 11,	22, 33, 44	, 55, 66								
	46 2.0A, ID = 47 2.0A, ID = 48 2.0A, ID =	123, Len = 8 123, Len = 8	s, Data = 11, 8, Data = 11,	22, 33, 44	, 55, 66	, 77, 8	8, 1049	15.276	940728				
	46 2.0A, ID = 47 2.0A, ID = 48 2.0A, ID = 49 2.0A, ID = 50 2.0A, ID =	123, Len = 8 123, Len = 8 123, Len = 8	s, Data = 11, 3, Data = 11, 3, Data = 11, 3, Data = 11,	22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44	, 55, 66, 55, 66	, 77, 8 , 77, 8 , 77, 8	8, 1049	15.276	940728 525051 451454				
	46 2.0A, ID = 47 2.0A, ID = 48 2.0A, ID = 49 2.0A, ID = 50 2.0A, ID = 51 2.0A, ID =	123, Len = 8 123, Len = 8 123, Len = 8 123, Len = 8 123, Len = 8	5, Data = 11, 3, Data = 11, 3, Data = 11, 3, Data = 11, 3, Data = 11,	22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44	, 55, 66 , 55, 66 , 55, 66 , 55, 66	6, 77, 8 6, 77, 8 6, 77, 8 6, 77, 8	8, 1049 8, 1049 8, 1049 8, 1049	15.276 15.291 15.303	940728 525051 451454 745642				
	46 2.0A, ID = 47 2.0A, ID = 48 2.0A, ID = 49 2.0A, ID = 50 2.0A, ID = 51 2.0A, ID =	123, Len = 8 123, Len = 8 123, Len = 8 123, Len = 8 123, Len = 8	5, Data = 11, 3, Data = 11, 3, Data = 11, 3, Data = 11, 3, Data = 11,	22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44 22, 33, 44	, 55, 66 , 55, 66 , 55, 66 , 55, 66	5, 77, 8 5, 77, 8 5, 77, 8 5, 77, 8	8, 1049 8, 1049 8, 1049 8, 1049	15.276 15.291 15.303 15.327	940728 525051 451454 745642				

The tM-7530 uses VxCAN Utility to configure module and test. The VxCAN Utility is based on the Virtual CAN technology which is developed by the ICP DAS and is used to integrate the CAN interfaces of the different CAN converters from the ICP DAS. All of the CAN interfaces found by the PC will be sequentially mapping to the virtual CAN ports by the Virtual CAN driver. Users just use the virtual CAN ports to develop their application, and don't need to know what kind of CAN converter they use.

Configure tM-7530 via VxCAN Utiliy

Step 1: tM-7530 on Init Mode

Before powering on the CAN converters, users must set them to the Init mode. Users need to switch the Init/Normal DIP-Switch to Init position



Step 2: Connect the available COM port of the PC to the tM-7530, and execute the VxCAN Utility.

Step 3: Click the button 🖾 to search tM-7530 connected to the PC.

Step 4: After searching done, the tM-7530 will be list in the left window of VxCAN Utility.

🗄 tM-7530 -Init

Step 5: Click the tM-7530-Init in the list, the module configuration dialog is popped up.

📱 VxCANPort: 1 (tM-7530) - Module Setting										
UART Baud Rate: 115200 ▼ Data Bit ③ 8 ○ 7 ○ 6 ○ 5 Stop Bit ③ 1 ○ 2 Parity Bit ④ None ○ Odd ○ Even	CAN CAN Specification CAN Specification CAN 2.0A CAN 2.0B CAN 2.0A CAN 2.0B CAN									
Add CheckSum O Enable O Disable Error Response	Set CAN ID Filter									
 ○ Enable ○ Disable TimeStamp Response ○ Enable ○ Disable 	Communication Mode: Torma									
Save All Setting	Load Default Setting									

The configuration is divided to three areas with different color. They are UART, Communication, and CAN configuration area. Each area can set different parameters of tM-7530.

After finishing the configuration, users can click the button "Save All Setting" to save the configuration in to the EEPROM of the CAN converter. If users would like to recover the parameters to the factory default, click "Load Default Setting" button to recover all of the configuration parameters to be default value. Afterwards, users can use the button "Save All Settings" to save the default parameters in to the EEPROM of the CAN converter.

The default values of the parameters of the CAN converter are shown below.

RS-232:

RS-232 Baud rate	= 115200
Data Bit	= 8
Stop Bit	= 1
Parity	= None
Add Checksum	= No
Error Response	= No
TimeStamp Response	= No

CAN:

CAN Specification	= 2.0A
CAN bus Baud rate	= 125K
Acceptance Code	= 000
Acceptance Mask	= 000

Communication:

Mode: Normal

Test tM-7530 via VxCAN Utiliy

Step 1: tM-7530 on Normal Mode

Set the Init/Normal DIP switch of the CAN converter to normal mode. When the CAN module runs on the normal mode, the run LED indicator will be turned on. If the CAN converter sends or receives the CAN messages, the run LED will flash once per message.



Step 2: Connect the COM port of PC to the CAN converter, and execute the VxCAN Utility.

- Step 3: Click the search button 🔛 to search all CAN converters connected to the PC.
- Step 4: After searching done, the tM-7530 will be list in the left window of VxCAN Utility.



Step 5: Click the CAN port of the tM-7530 to set the CAN parameters of the tM-7530.



Check the "Active Port" and Click "Confirm" button to enable the CAN port of the CAN converter. The parameters set here are not stored in the EEPROM. If users would like to configure the other parameters expect the CAN parameters, please use Configuration interface of the VxCAN Utility to do that.

Step 6: Click "Start" button 💟 to open test interface.	
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W at 7520												
Port 1												
File • Settin	g • Advanced	-										
Send	-											
Mode	ID	RTR	Len	D0 D1	D2	D3	D4 D	5 D6	D7	ms		CondAree
CAN 2.0A	✓ 000	0	8 1	00 0	0 00	00	00	00 00	00			Send Area
🗌 ID incre	ase					9	Send Cou	nt	0	Clear		
🗌 Data in	rease				Transu	منافامح	Advan	ced		Stop		
					rransn	nitLog	Sena					
Scroll Mode	Beceive L	o or									\triangleleft	
Clear	First	ast 🔲	Stop	Advanced			F	Receive C	ount	0		
				Receive	<u>*</u>]				· · · · · ·			Received Area
No. Receiv	ed Message Lis	t							Remark		^	
r												
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											~	
<.				Ш								
[Name:tlVI-/53	0] [Status: 753	30000, OJ	[BaudRate:	125000] [0	.optright(c) 2013	ICP DAS (.o., LID.]				

The test interface is divided to two areas. One is for sending CAN messages, and the other is for reception. If users want to send CAN message, fill the data into the corresponding field, and click "Send" button. If the CAN converter gets any CAN messages, they will be shown in received area automatically. About the details for the VxCAN Utility operation please refer to the users' manual of the VxCAN Utility in the following web site.

http://ftp.icpdas.com/pub/cd/fieldbus_cd/can/virtual_can/vxcan_utility/