



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

- **tM-7530 Utility**

http://ftp.icpdas.com/pub/cd/fieldbus_cd/can/converter/tM-7530/utility

- **ICP DAS Website**

<http://www.icpdas.com/>

1

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

| 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 |

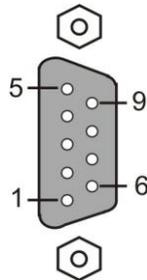


Table: Power and CAN Bus Pin Assignment

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

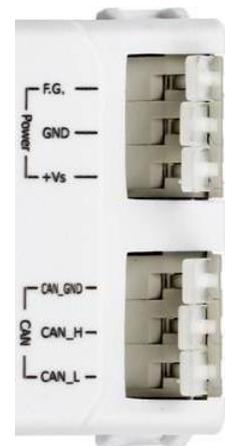
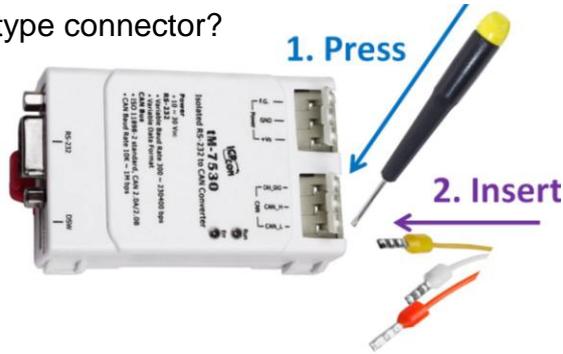


Table: LED Indicator

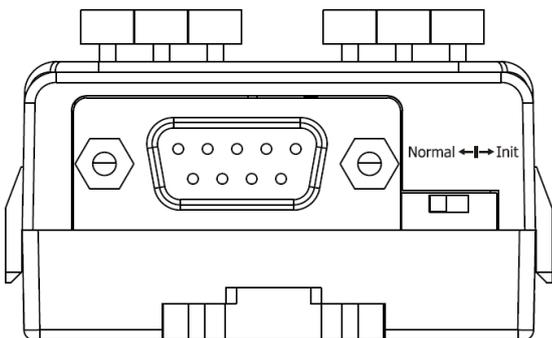
| LED Indicator | Condition | Status |
|---------------|---|---------------------------------------|
| Run | Configuration Mode | Flash Once Per Second |
| | Run Mode | Turn on when no data needs to be sent |
| | | Flash once when sending a CAN message |
| Err | FIFO overflow CAN Bus Off CAN Error Passive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

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



2 Configuration/Run Mode

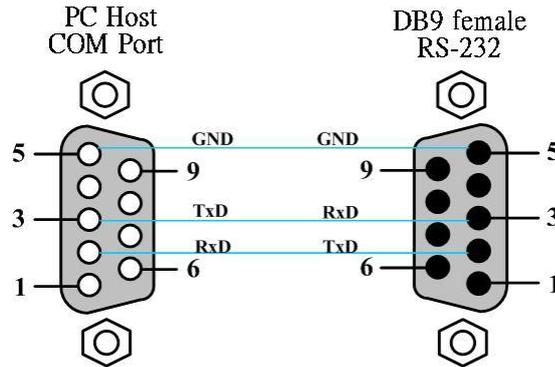
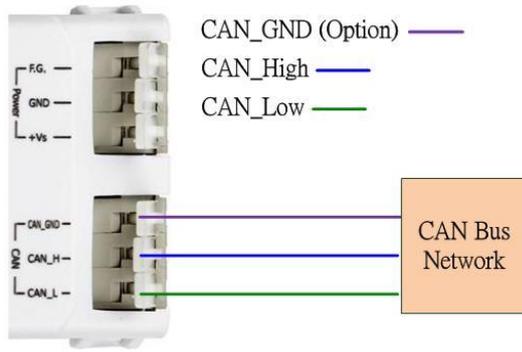
There is a dip-switch on the bottom of tM-7530. After switching and rebooting, the tM-7530 will enter into Normal mode or Init mode.



| Mode | Dip-Switch Position |
|--------|--|
| Normal | Normal <input type="checkbox"/> Init <input type="checkbox"/> |
| Init | Normal <input type="checkbox"/> Init <input checked="" type="checkbox"/> |

3 tM-7530 wire connection

tM-7530
spring type connector

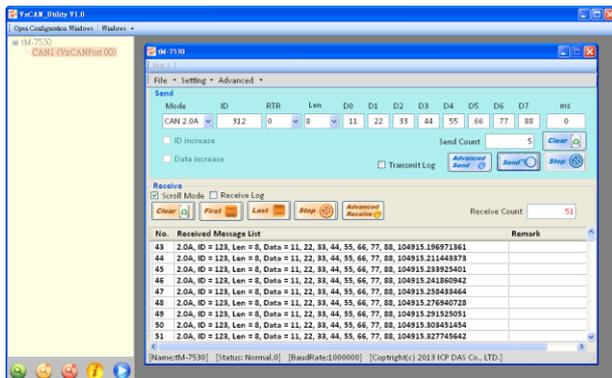


4 Terminal Resistor



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

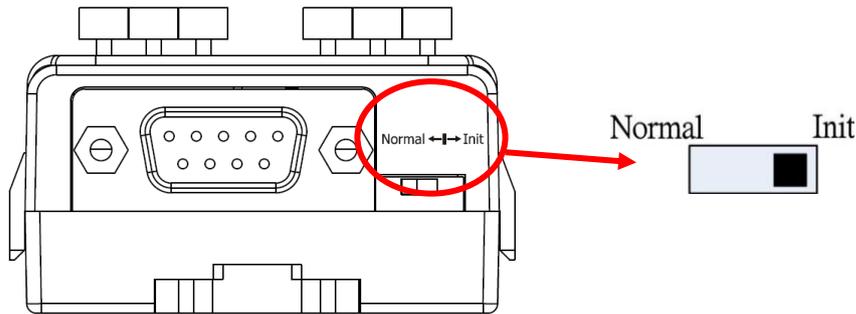


The tM-7530 uses VxCAN Utility to configure module and test. The VxCAN Utility is based on the Virtual CAN technology which is developed by the ICP DAS and is used to integrate the CAN interfaces of the different CAN converters from the ICP DAS. All of the CAN interfaces found by the PC will be sequentially 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.

6 Configure tM-7530 via VxCAN Utility

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.



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 |

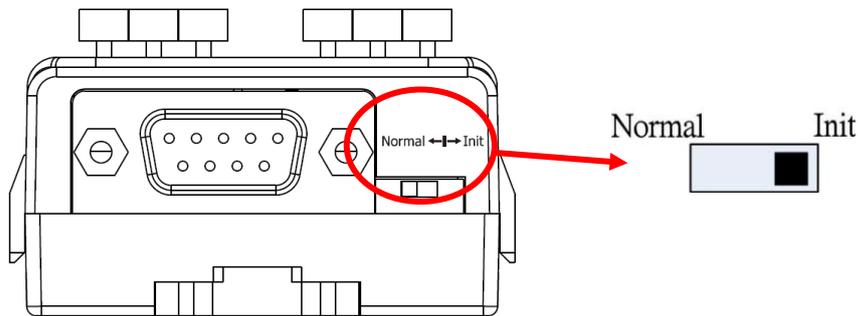
Communication:

Mode: Normal

7 Test tM-7530 via VxCAN Utility

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.



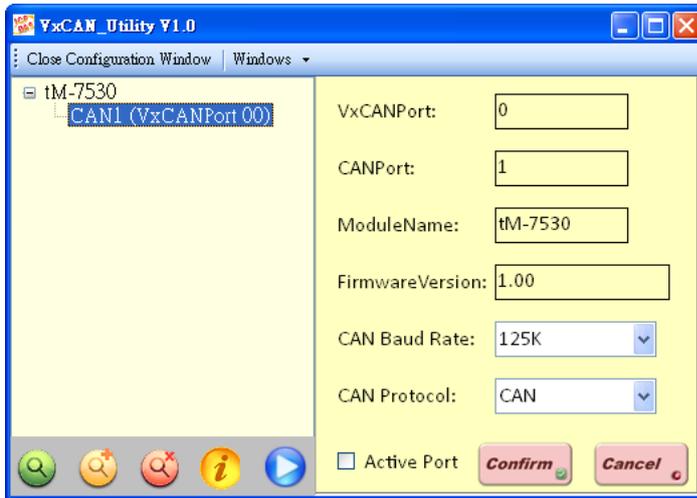
Step 2: Connect the COM port of PC to the CAN converter, and execute the VxCAN Utility.

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.

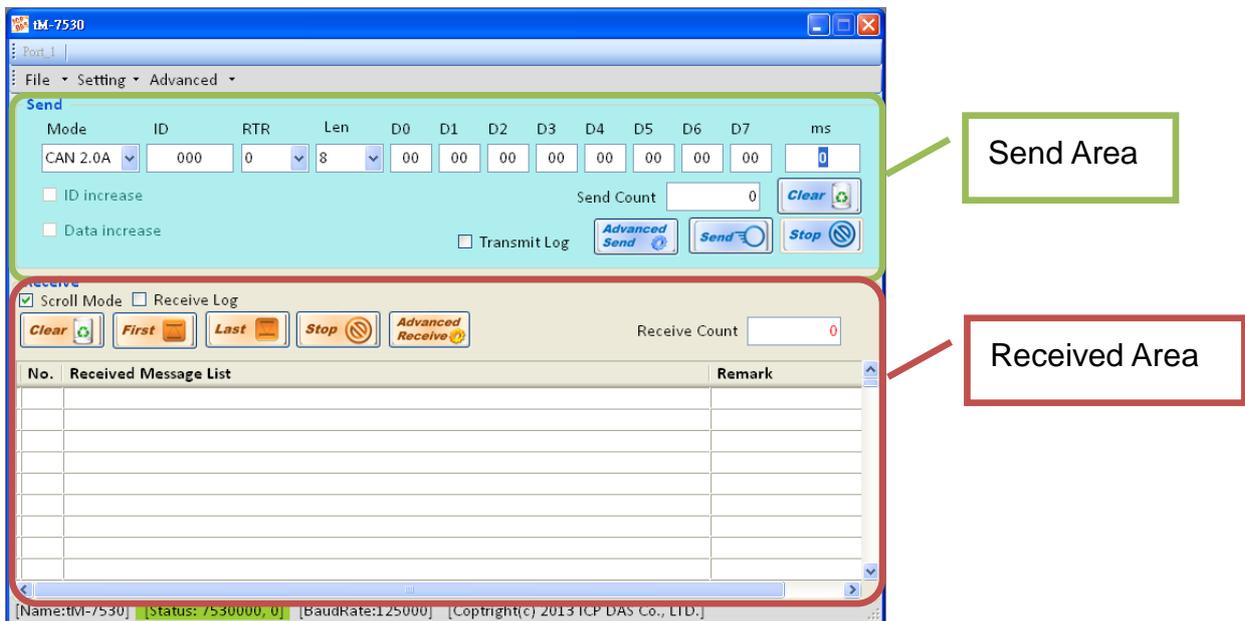


Step 5: Click the CAN port of the tM-7530 to set the CAN parameters of the tM-7530.



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.



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/