Support for CAN module in a LinPAC with I-87120

Applies to:			No. L6-002
Platform	OS version	SDK version	Classification
LP-8x3x/8x4x LP-8x2x/9x2x LP-8x8x/8x8x-atom LX-8x3x/9x3x/9x7x/9x8x	All version	LP-8x3x/8x4x:1.11 later LP-8x2x/9x2x:1.1 later LP-8x8x/8x8x-atom: 0.8.3 later LX-8x3x/9x3x/9x7x/9x8x: 0.8.8 later	Linux Applications

The LinPAC I-87120 module provides message transfer functionality for CAN modules. Let's look at an example where we wish to communicate between an I-87120 module on an LP-8841 and an I-7565-H2 module. The following is a demonstration of the configuration and processes involved.

In this example, we will use the modules indicated in the table below, which also provides a brief description of each module:

Module	Description
LP-8841	This is a standard LinPAC-8000 module with 8 I/O slots.
I-87120	This module provides a 1-port programmable CAN interface slot.
I-7565-H2	This module is a high-performance intelligent USB to 2- port CAN bus converter.

Step 1: Set up the configuration.

Connect the USB port on the I-7565-H2 module to the Host PC and then connect the CAN_L pin and the CAN_H pin on both the I-87120 module and the I-7565-H2 module. Figure 1 below shows the wiring diagram for the modules.

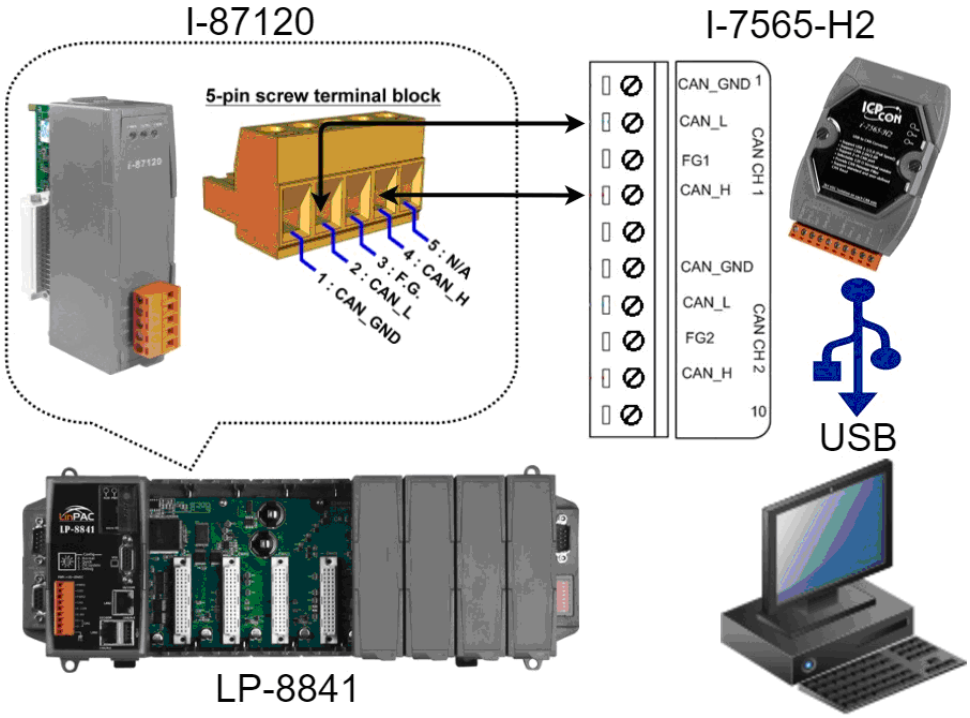


Fig 1. Wiring diagram

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Step 2: Install the Driver for the I-7565-H2 Module.

For full details of how to install the necessary drivers for the I-7565-H2 module, refer to the "**Driver Installation**" section in the User Manual, which can be found at:
ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/can/converter/i-7565-h1h2/manual/win2k_xp/i-7565h1h2_usermanual_en_v2.3.1.pdf

Download the driver from the ICP DAS website at:
http://ftp.icpdas.com/pub/cd/fieldbus_cd/can/converter/i-7565-h1h2/driver

Once the driver installation file has downloaded, execute the "**ICPUsbConverter_Drvinst_v1.4**" file to automatically install the driver, and then wait until the installation process has finished, as illustrated in figure 2 below.

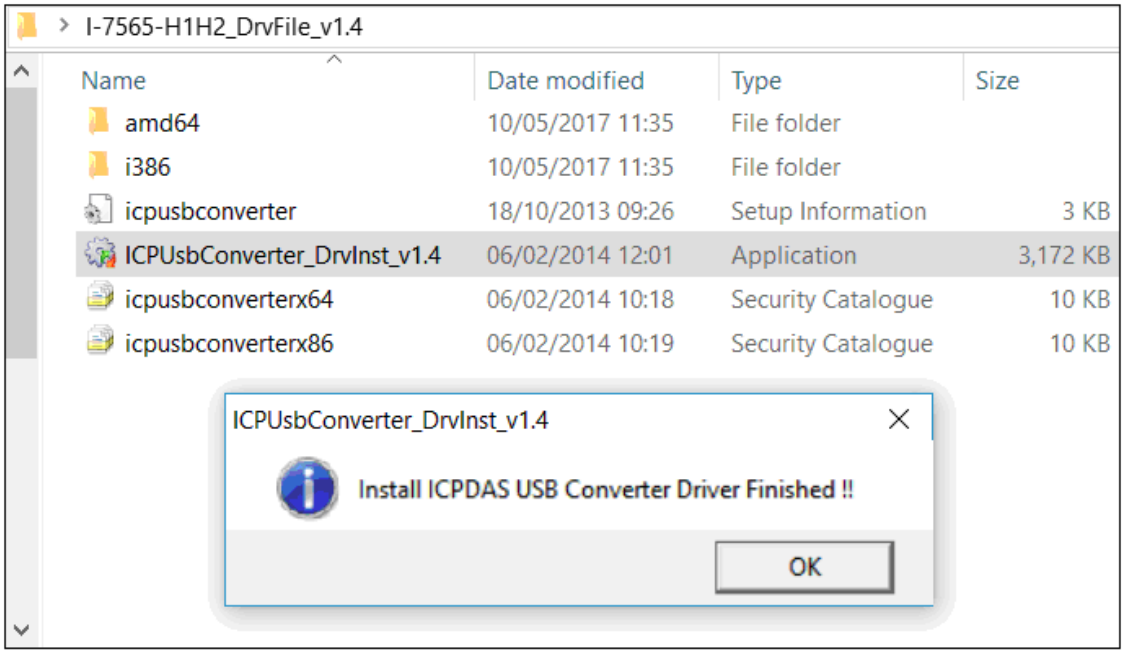


Fig 2. Driver Installation

Step 3: Using the I-7565-H1H2_Utility.

The I-7565-H1/H2 Utility is a powerful tool that is provided by ICP DAS to enable quick and easy testing of CAN bus communication when sending or receiving CAN messages. An additional function of the I-7565-H1/H2 Utility allows the time-stamp to be displayed for each CAN message received, providing a convenient method when analyzing data. The I-7565-H1/H2 Utility can be downloaded from the ICP DAS website at:
http://ftp.icpdas.com/pub/cd/fieldbus_cd/can/converter/i-7565-h1h2/software/utility.

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The following is a description of how to use the Utility based on desktop editions of Windows 10.

Once you have downloaded the I-7565-H1/H2 Utility rar file, decompress the package and locate the I-7565-H1H2_Utility_Win10.exe file. Right click the icon for the file, and select the "**Run as administrator**" option from the context menu to open the Utility, as illustrated in figure 3 below.

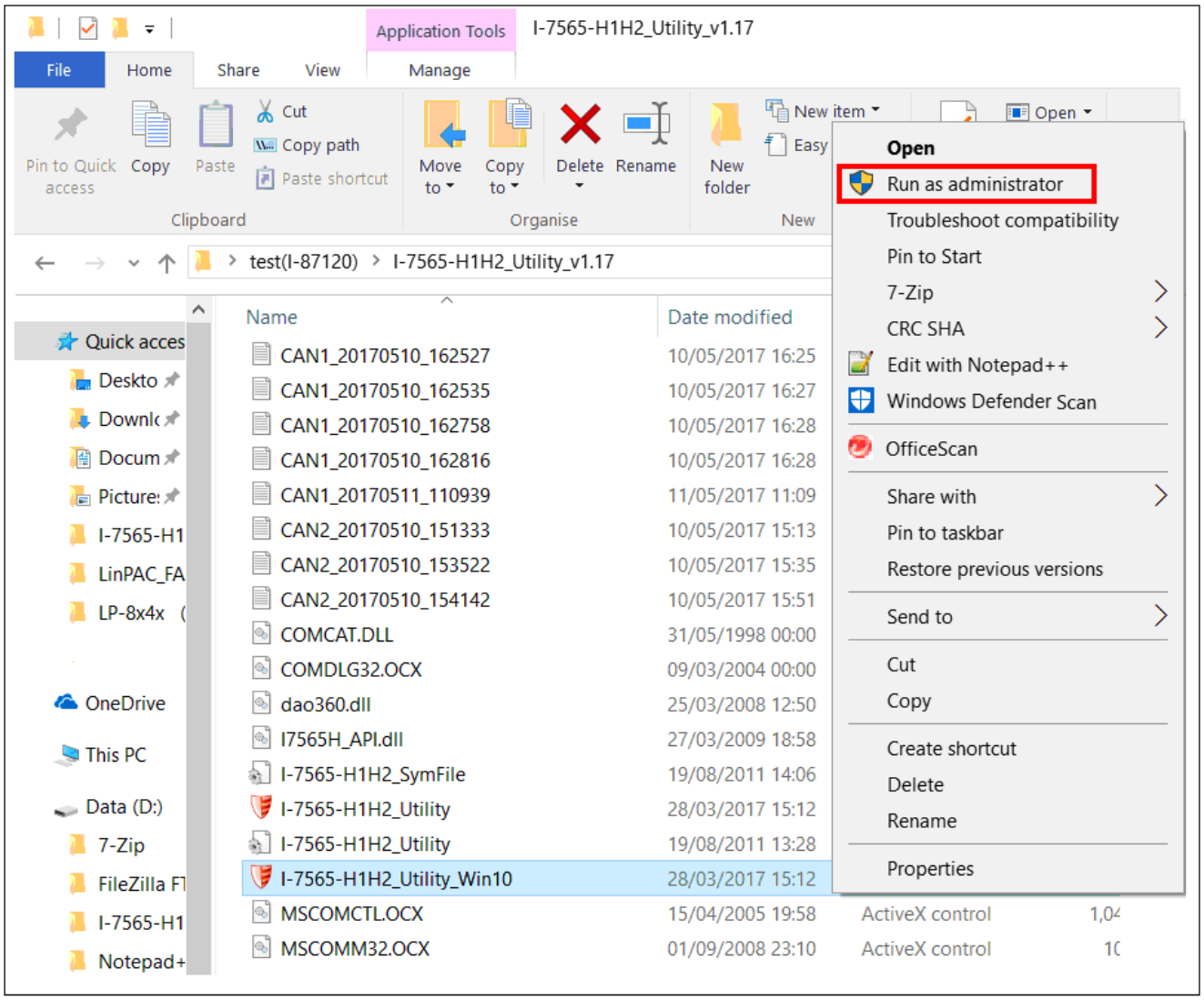


Fig 3. Starting the I-7565-H1H2_Utility

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The “I-7565-H1/H2 Utility” can now be used to configure the connection parameters for the module. Click the “**Connect**” button to connect to the I-7565-H2 module, and then configure the parameters as illustrated in figure 4 below.

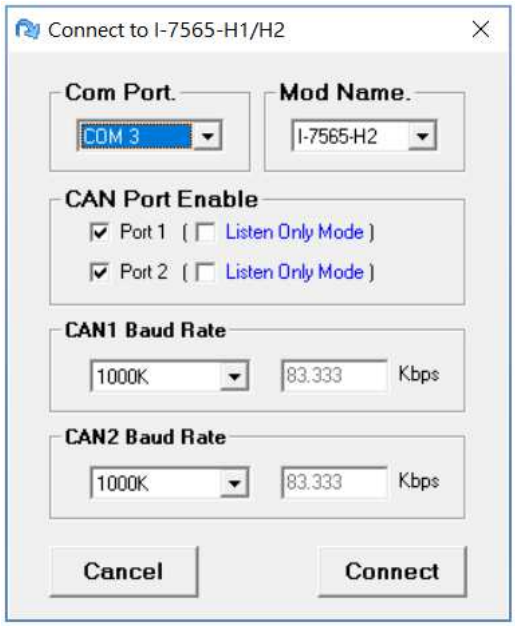


Fig 4. Configuring the connection parameters

Note:

1) The instructions above are for Windows 10.

2) If you using an earlier version of Windows, execute the file “**I-7565-H1H2_Utility.exe**”.

Step 4: Execute the "i87120.exe" example and begin communicating with the I-7565-H2 module.

To begin communicating with the I-7565-H2 module we can use the example file, “i87120.exe”, which can be found in the examples folder of the LP-8x4x SDK. However, in order to use the “i87120.exe” example file, we first need to upload it from the LP-8x4x SDK to the LinPAC.

In this example, we will use the I-87120 module to send 10 CAN messages to the I-7565-H2 module, and use the I-7565-H1/H2 Utility to monitor the messages received. The I-7565-H1/H2 utility can also be used to send CAN messages to the I-87120 module, and then the results of the CAN message received by the I-87120 module, will be displayed on the screen of the LP-8x4x.

Figure 5 below provides an illustration of the interface for the I-7565-H1/H2 Utility. The two main features of the Utility are the “CAN Message Send Area” and the “CAN Message Receive Area”.

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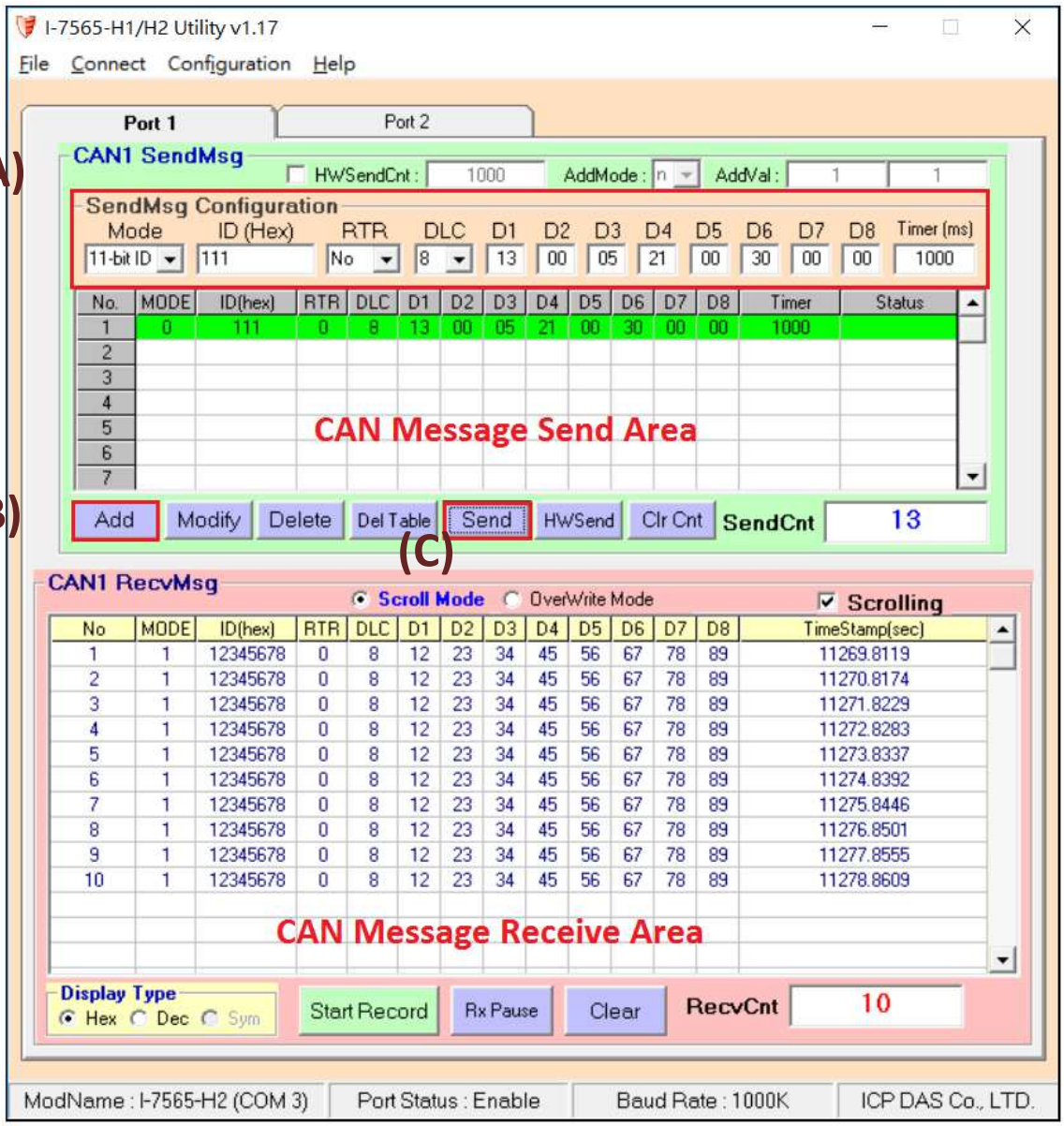


Fig 5. The interface of the I-7565-H1/H2 Utility

Follow the procedure described below to send a CAN message.

(A) First enter the desired CAN packet message in the text boxes found in the "SendMsg Configuration" panel. In this example we are sending the command 13 00 05 21 00 30 00 00, and then enter the value 1000 in the "**Timer (ms)**" textbox. This means that the I-7565-H2 module will send a CAN message to the I-87120 module once every second.

(B) Click the "**Add**" button to add the CAN message to the "CAN Message Send Area".

(C) After clicking the "**Send**" button, the I-7565-H1/H2 Utility will automatically send the CAN messages to the I-87120 module via the USB port on the HostPC.

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Establish a remote connection the LP-8x4x host and execute the “i87120.exe“ file. The I-87120 module will send 10 CAN messages to the I-7565-H2 module. All the messages received by the I-7565-H2 module will be displayed in the “CAN Message Receive Area“ on the I-7565-H1/H2 utility, as illustrated in Fig 5.

The I-7565-H1/H2 Utility sends the CAN messages to the I-87120 module via the USB port on the Host PC. When the I-87120 module receives the CAN message, the information will be displayed on the screen of the LP-8x4x host, as illustrated in Fig 6 below.

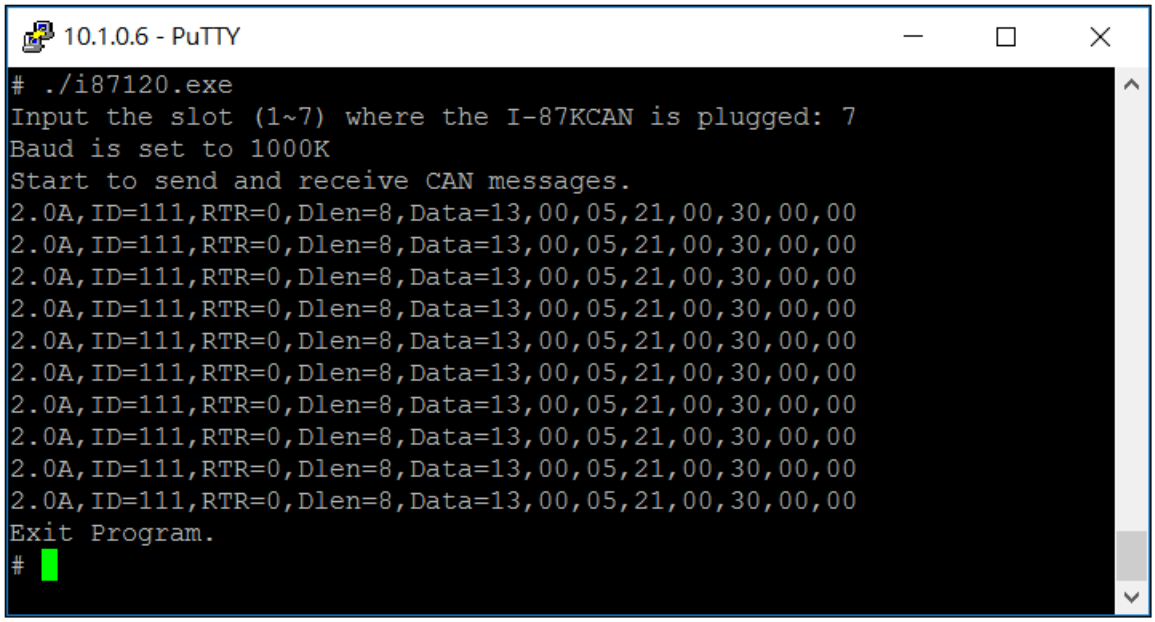


Fig 6. Output screen on the LP-8x4x host

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