

---

# Quick Start Guide for ECAN-240 (Modbus TCP to 2-port CAN Bus Gateway)

Sep 2016, Version 1.0.0

## Congratulations!

Thanks for purchasing the ECAN-240 module - the Modbus/CAN solution for remote monitoring and control application. This Quick Start Guide will provide related information which needed to get start with the ECAN-240 module. Please also consult the user manual for detailed information on the setup and usage of the ECAN-240 module.

## What's In the Box?

In addition to this guide, the package includes the following items:



**ECAN-240**



**Screw Driver (1C016)**

## Technical Support

- **ECAN-240 User Manual**

CD:\fieldbus\_cd\can\gateway\ECAN-240\document\

[ftp://ftp.icpdas.com/pub/cd/fieldbus\\_cd/can/gateway/ECAN-240/document/](ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/can/gateway/ECAN-240/document/)

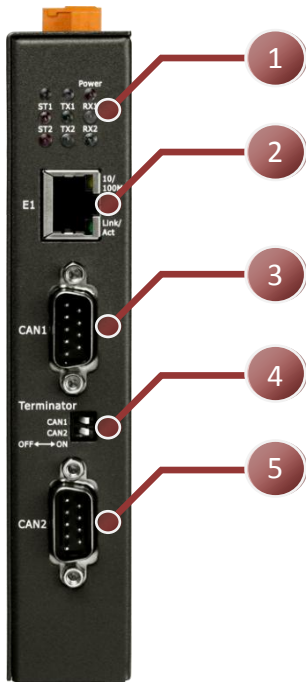
- **ECAN-240 Website**

[http://www.icpdas.com/root/product/solutions/industrial\\_communication/fieldbus/can\\_bus/gateway/ecan-240.html](http://www.icpdas.com/root/product/solutions/industrial_communication/fieldbus/can_bus/gateway/ecan-240.html)

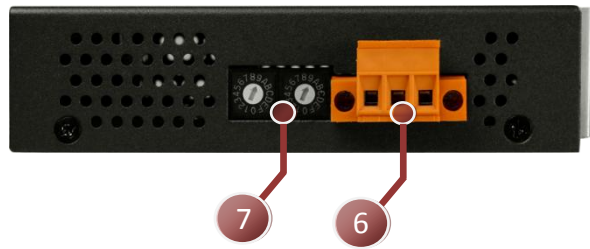
- **ICP DAS Website**

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

■ Appearance

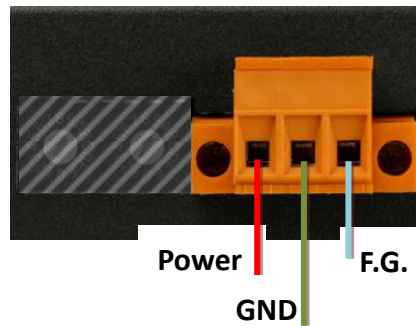
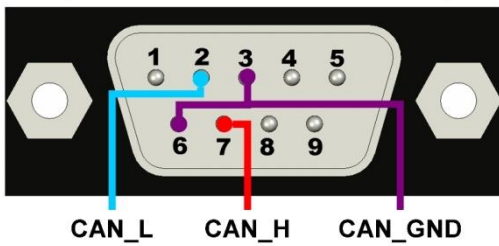


No.	Description
1	LED indicators (7)
2	Ethernet Port with RJ-45 connector
3	CAN1 with 9-pin D-sub male connector
4	Terminator Resistor DIP-switches
5	CAN2 with 9-pin D-sub male connector
6	Power Connector(PWR, GND, F.G.)
7	CAN Bus Baud Rate Rotary Switch



■ Wire connections and pin assignments

9-pin D-Sub male connector



Pin	Description
1	N/A
2	CAN Low
3	CAN Ground
4	N/A
5	N/A
6	CAN Ground
7	CAN High
8	N/A
9	N/A

Pin	Description
Power	Power, +10~+30V <sub>DC</sub>
GND	Power Ground
F.G.	Frame Ground

■ **LED Indicator**

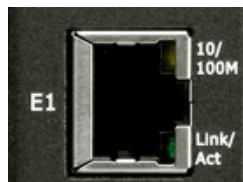
The ECAN-240 module provides seven LED indicators, including indicators for power status and CAN Bus status. The Following is an overview of the purpose and function of each LED indicator together with a description.



LED Name	LED Status	LED Description
<b>Power (Red)</b>	ON	The power of the module is ON
<b>ST1 (Red)</b>	ON	CAN1 Bus is OFF ( <b>*Note</b> )
	Flashing	An error has occurred on CAN 1
<b>ST2 (Red)</b>	ON	CAN2 Bus is OFF ( <b>*Note</b> )
	Flashing	An error has occurred on CAN 2
<b>TX1 (Green)</b>	Flashing	A CAN message was successfully transmitted on CAN1
<b>TX2 (Green)</b>	Flashing	A CAN message was successfully transmitted on CAN2
<b>RX1 (Green)</b>	Flashing	A CAN message was successfully received on CAN1
<b>RX2 (Green)</b>	Flashing	A CAN message was successfully received on CAN2

**\*Note:** The CAN Bus will be set to OFF if there are too many faults or if communication is interrupted. In this situation, the ECAN-240 module will automatically restore the Bus and the LED will be turned off.

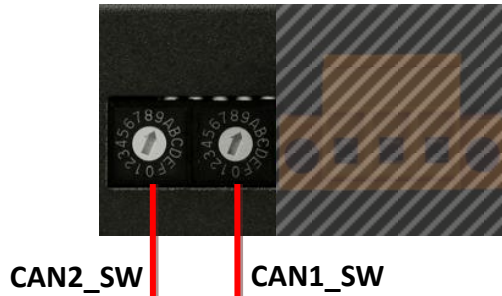
The Ethernet status indicator on ECAN-240 is part of the built-in RJ-45 connector, such as shown in the figure below.



LED Name	LED Status	LED Description
<b>10/100M</b>	ON	100 Mbps
	OFF	10 Mbps or Ethernet disconnected.
<b>Link/Act</b>	Flashing	Communicating

## ■ Rotary Switch

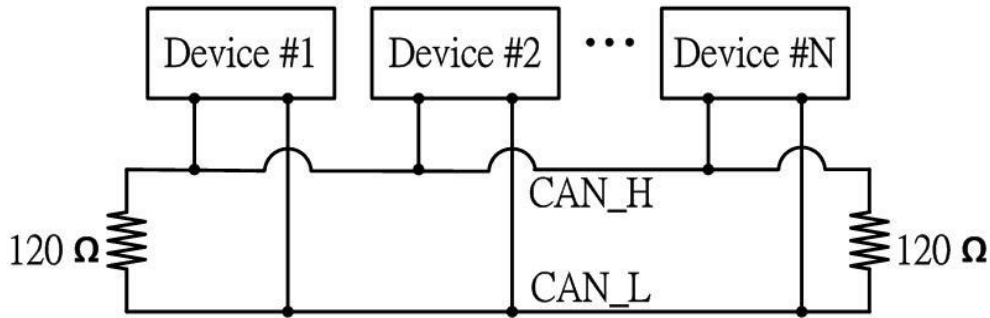
The ECAN-240 module provides two rotary switches that are used to change CAN Bus Baud Rate for using the built-in configuration functions. The following is an overview of the purpose and function of each rotary switch position together with a description.



CAN1_SW Value	CAN2_SW	Rotary Switch Description
0	0	CAN Bus Baud Rate = 10 kbps.
1	1	CAN Bus Baud Rate = 20 kbps.
2	2	CAN Bus Baud Rate = 50 kbps.
3	3	CAN Bus Baud Rate = 80 kbps.
4	4	CAN Bus Baud Rate = 100 kbps.
5	5	CAN Bus Baud Rate = 125 kbps.
6	6	CAN Bus Baud Rate = 250 kbps.
7	7	CAN Bus Baud Rate = 500 kbps.
8	8	CAN Bus Baud Rate = 800 kbps.
9	9	CAN Bus Baud Rate = 1 Mbps.
A	A	User-defined CAN Bus baud rate.
B~E		Reserved.
F	B	Load factory default IP, Mask, Gateway values and not save into EEPROM.
	C	Module self-testing function. Tests the two CAN Buses and the UDP broadcasting function.
	D	Load all factory default values and saves them to the EEPROM.
	E	Reserved.
	F	Bootloader mode.

■ **Terminator Resistor**

In order to minimize the effects of reflection on the CAN Bus, the bus must be terminated using a terminator resistor at each end. According to the specifications given in ISO 11898-2, each terminator resistor should be 120Ω (or between 108Ω and 132Ω). The bus topology and the positions of these terminator resistors are shown below.



The ECAN-240 module includes two CAN ports and terminator resistors are provided for each CAN port. The terminator resistor can be enabled or disabled via the terminator DIP-switches as illustrated in following figure.



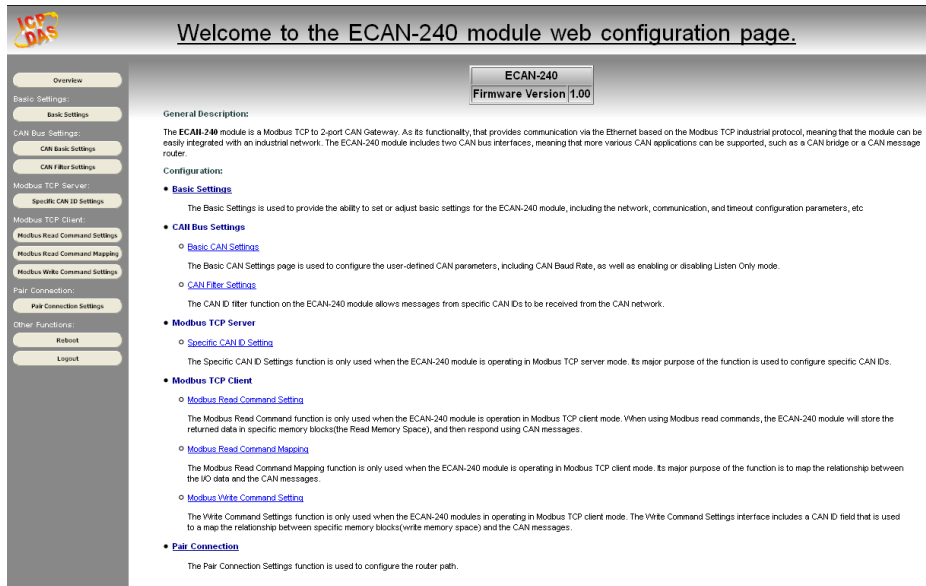
As indicated in the figure, when the DIP-switch is in the OFF position, the terminator resistor function is disabled. Similarly, when the DIP-switch is in the ON position, the terminator resistor function is enabled.

■ **Web Configuration**

The configuration for the module parameters or communication commands (in Modbus Client mode only) on the ECAN-240 module can be performed via a standard web browser using the embedded web configuration function. The web configuration functions are divided into several categories and includes basic configuration, CAN Bus configuration, Modbus configuration and pair connection configuration. The following is an overview of the process used to configure the ECAN-240 module via the web.

The figure below is an illustration of the main screen for web configuration. On the left are the function buttons, including Overview, Basic Settings, CAN Basic Settings, CAN Filter Settings, Specific CAN ID Settings (Modbus TCP Server), Read Command Settings (Modbus TCP Client),

## Read Command Mapping(Modbus TCP Client), Write Command Settings (Modbus TCP Client), Pair Connection, Reboot, and Logout.

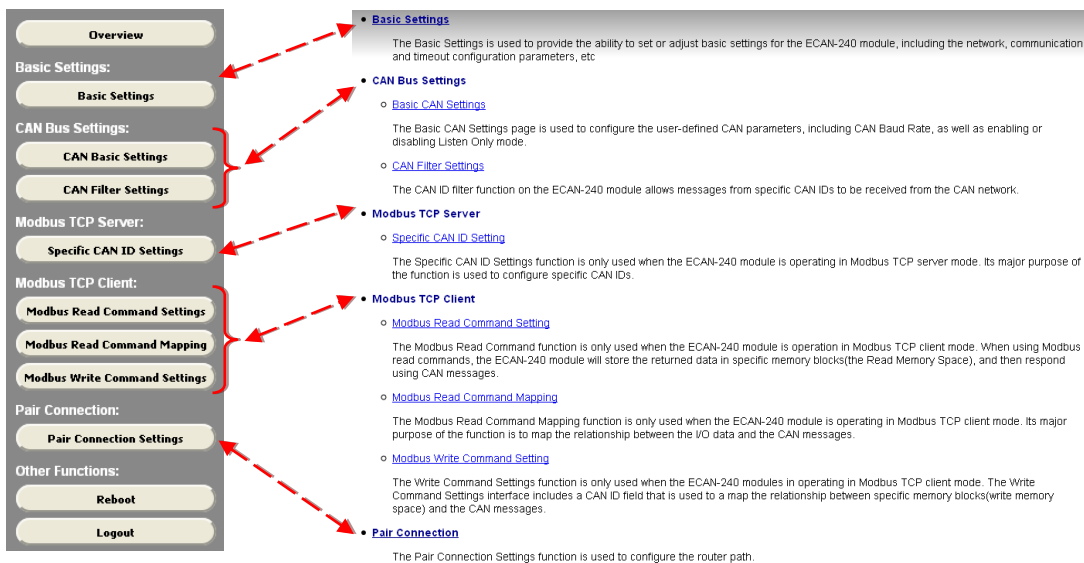


### ■ Configuration Operation

The Overview page shows details of the firmware version currently in use on the ECAN-240 module, as illustrated in the figure below. The Overview page also provides a description of each configuration function. The configuration web page can be accessed using either the function button or the link on Overwrite page.



As illustrated below, each button is mapped to a link, meaning that there are two ways to access the configuration page.



■ **Firmware Update**

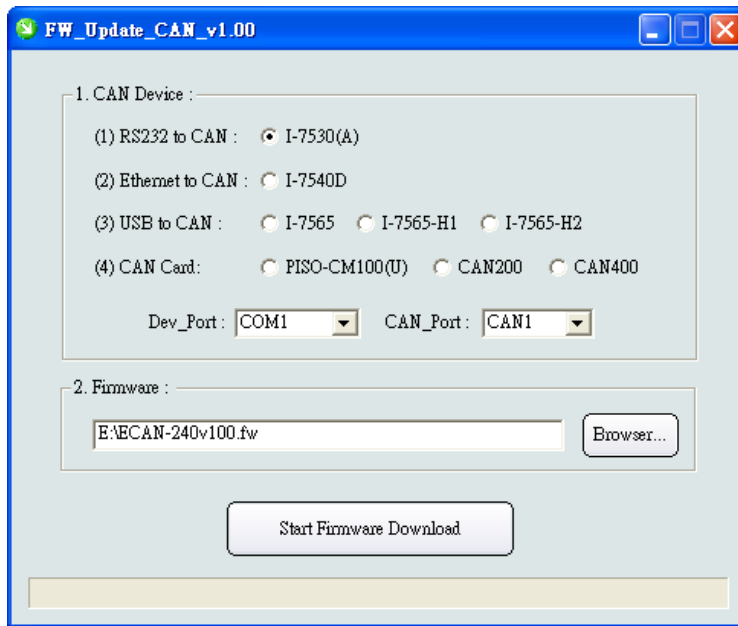
The firmware on the ECAN-240 module can be updated via CAN devices produced by ICP DAS. The latest firmware file (“\*.fw”) and the latest version of the Firmware Update utility, FW\_Update\_CAN, are available from the FTP link below. A notification will not be sent when a new version is released.

[ftp://ftp.icpdas.com/pub/cd/fieldbus\\_cd/can/gateway/ECAN-240/firmware](ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/can/gateway/ECAN-240/firmware)  
[ftp://ftp.icpdas.com/pub/cd/fieldbus\\_cd/can/gateway/ECAN-240/software/update\\_tool](ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/can/gateway/ECAN-240/software/update_tool)

Follow the process described below to update the firmware for the ECAN-240 module using the ICP DAS Firmware Update utility.

**Step 1:** Move the two rotary switches to the 0xF position (Bootloader mode) and reboot the module. Once the ECAN-240 module has rebooted, all the LEDs on the module will be flashing.

**Step 2:** Run the Firmware Update utility, FW\_Update\_CAN.



**[1] CAN devices:**

The firmware on the ICP DAS CAN products indicated below can be updated using Firmware Update utility.

- (1) RS232 to CAN : I-7530(A).
- (2) Ethernet to CAN: I-7540D.
- (3) USB to CAN: I-7565, I-7565-H1, and I-7565-H2.
- (4) CAN Card: PISO-CM100(U), PISO-/PCM-/PEX-CAN200 and CAN400.

Before updating the firmware, the following parameters needs to be set on the utility.

- (1) Select CAN hardware device.
- (2) Set Dev\_Port or Board\_ID (only for CAN card).
- (3) Set CAN\_Port number.
- (4) Connect to CAN Port 1 of the ECAN-240 module.

**[2] Download the Firmware:**

- (1) Click the “Browser...” button to select the location of the firmware file. The name of the firmware file will be ECAN-240\_vXXX.fw (where X denotes the firmware version)
  
- (2) Click the “Start Firmware Download” button to being the firmware update process. While the firmware is being updated, a progress bar will be displayed in the utility to indicate the status of the update process. Once the firmware has been successfully updated, a notification will be displayed.

