HRT-711

Quick Start Guide

Jan 2014, Version 1.00

Congratulations!

The hardware wiring and detailed operation of HRT-711, users can refer to the user manual in the ICP DAS companion CD-ROM (CD:\hart\gateway\HRT-711\manual\HRT-711_usermanual.pdf).

The quick start is used to help users quickly understand HRT-711 how to convert Modbus communication to HART. The below demo will use a HRT-711 module (as HART master), one HART slave device and one PC to make a simple application as below Figure 1. The PC is prepared for the setting and operation of HRT-711.

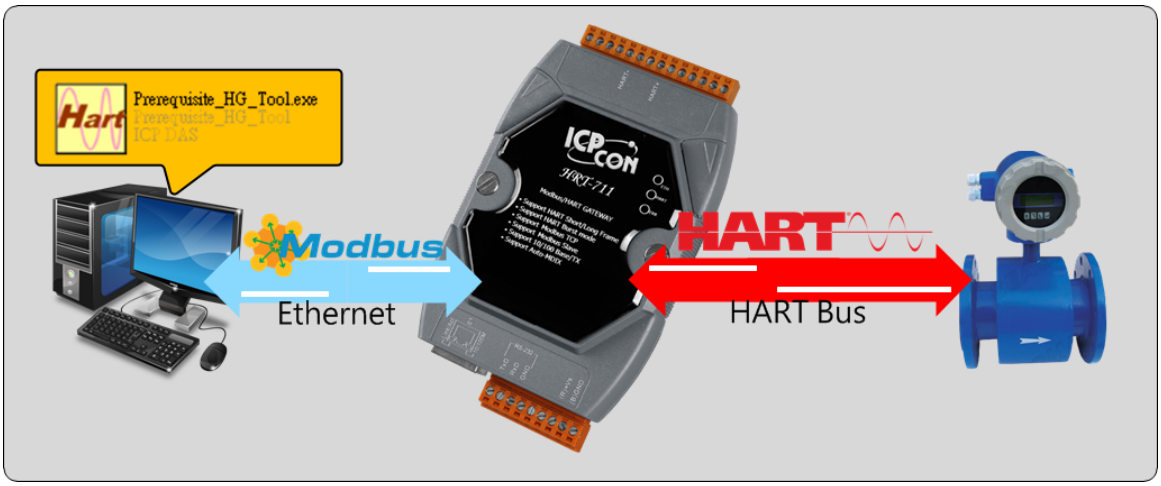


Figure 1: Application example

Technical Support

- **HRT-711 User Manual**

  ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/hart/gateway/hrt-711/manual/

- **HRT-711 Website**

  http://www.icpdas.com.tw/root/product/solutions/industrial_communication/fieldbus/hart/gateway/hrt-711.html

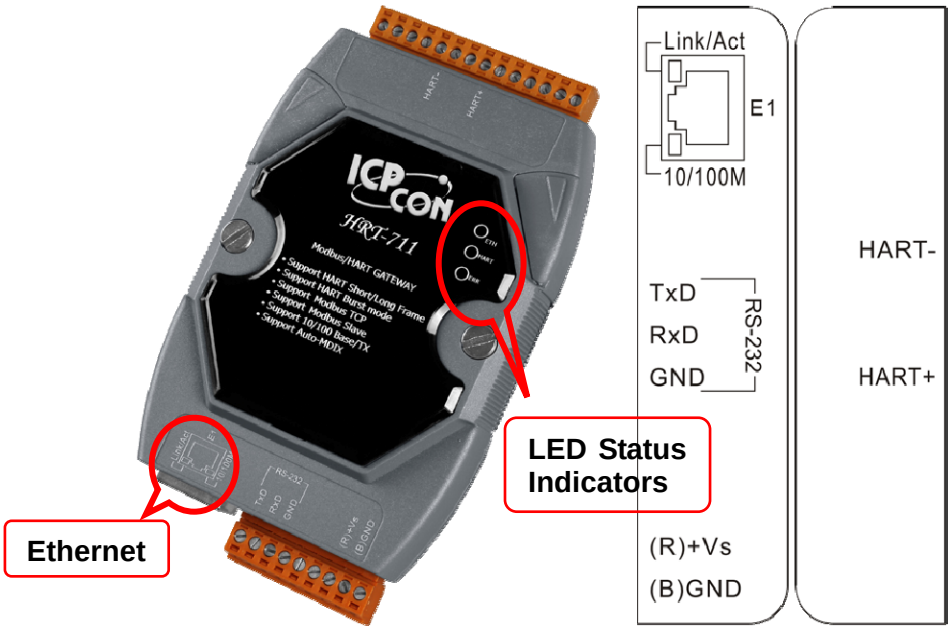
- **ICP DAS Website**

  http://www.icpdas.com/

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Pin Assignment



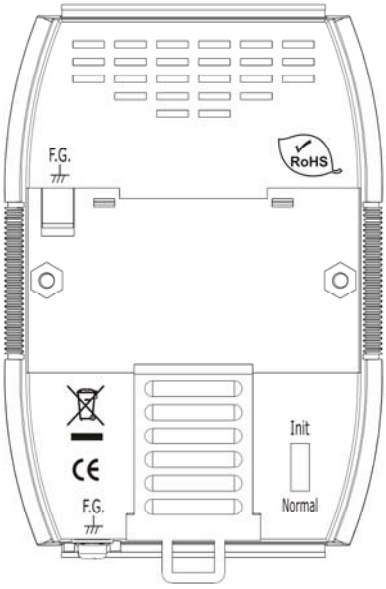
Pin Name	Group	Description
HART+	HART	Positive of HART
HART-		Negative of HART
+VS	Power Source	V+ of Power Supply(+10 ~ +30 VDC)
GND		GND of Power Supply
TXD	Configuration	Transmit Data of RS-232
RXD		Receive Data of RS-232
GND		GND of RS-232
E1	Modbus/TCP	Ethernet RJ45 connector for Modbus/TCP

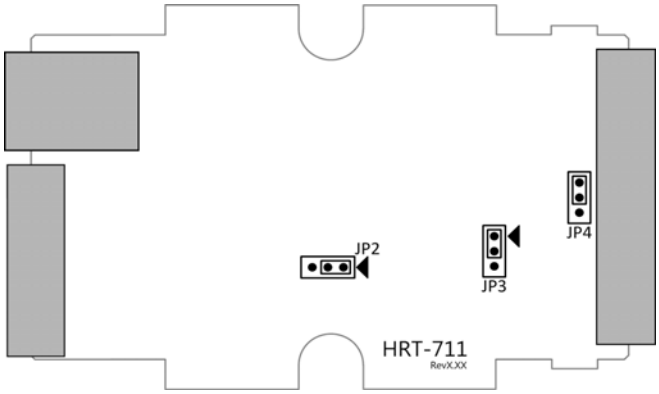
DIP Switch

If user set the DIP switch in the backplane of HRT-711 to be “Default” position, HRT-711 will run in the default mode.

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Jumper

Jumper	Description
JP2	Enable/Disable hardware WDT. (Default setting is enable) NOTE: Please do not disable the hardware WDT.
JP3	For updating firmware. (Default setting is on 1 and 2) NOTE: Please do not switch to 2 and 3 when in normal operation.
JP4	The jumper can provide HART bus with 250 Ω (1/4 W) resistor. When the pin 1&2 of JP4 is closed, the resistor will connect to HART bus. When the pin 2&3 of JP4 is closed or JP4 without jumper connected, it will disconnect the resistor from HART bus. By default, the pin1&2 of JP4 is closed.

LED Indicator

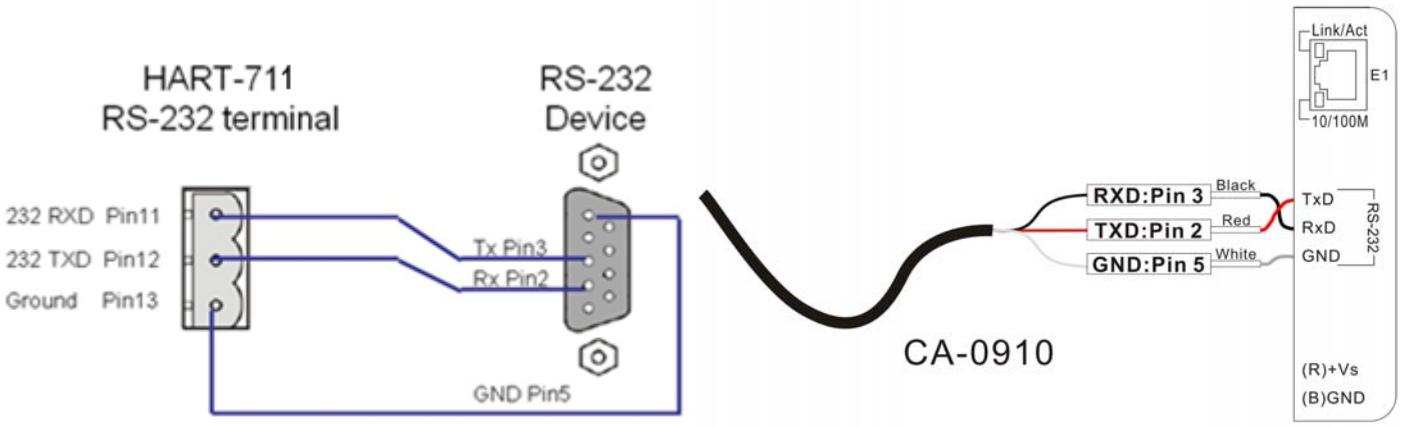


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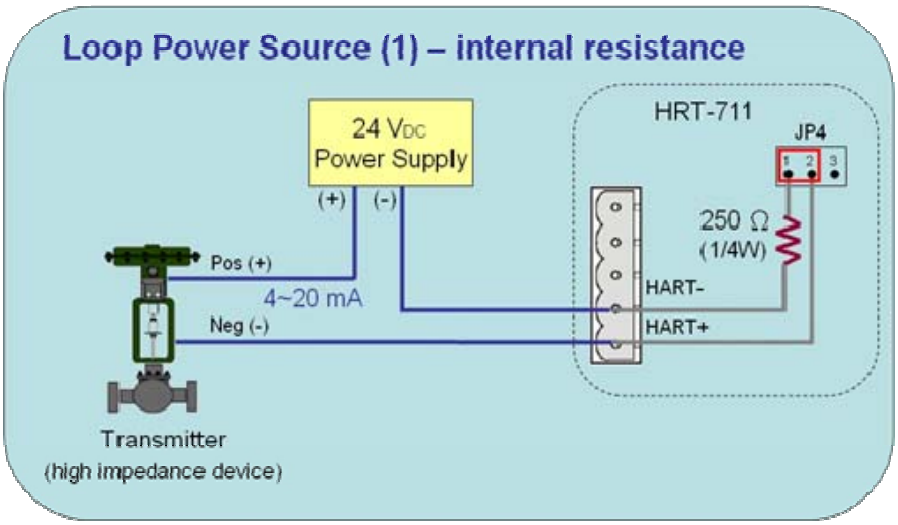
LED	Status	Description
ETH	Blink	Blink every 0.2 second：Receiving Ethernet packet Blink every 3 second：The network function is normal
	Off	Ethernet Error
HART	Blink	**Blink every 1 second：** The HRT-711 is in the initialing procedure **Blink every 0.5 second：** The HRT-711 is handling the burst frame sent from HART device
	Solid	The HRT-711 is in the normal status
	Off	Firmware is not loaded
ERR	Blink	HART communication error
	Off	HART communication is good

RS-232 connection



Without CA-0910 **With CA-0910**

HART network wiring



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Install HG_Tool Utility

[Install .NET Compact Framework]

(1) When executing utility, the .NET Framework 2.0 or above must be installed first. If the .NET Framework 2.0 or above exists in the PC, please omit the step.

(2) User can download and Install .NET Compact Framework from the below website.

◆ Microsoft .Net Framework Version 2.0:
http://www.microsoft.com/downloads/details.aspx?FamilyID=0856eacb-4362-4b0d-8edd-aab15c5e04f5&DisplayLang=en

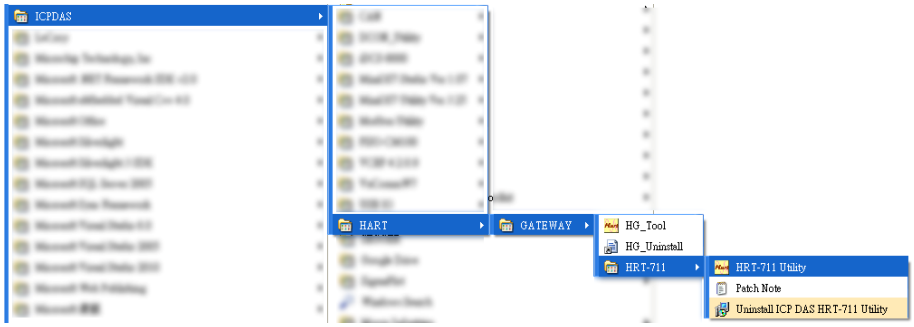
◆ Microsoft .Net Framework Version 3.5:
http://www.microsoft.com/downloads/details.aspx?familyid=333325FD-AE52-4E35-B531-508D977D32A6&displaylang=en

[Install HRT-711 Utility]

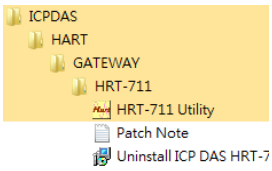
(1) Users can download the installation file of “HRT-711 Utility” from the CD- (“CD:\hart\gateway\hrt-711\utilities\”) or ICP DAS web site: “ftp://ftp.icpdas.com.tw/pub/cd/fieldbus_cd/hart/gateway/hrt-711/utilities/”

(2) Execute the “HRT-711 Utility x.x.x.x.exe” file to install the utility.

(3) After finishing the installation of the HRT-711 Utility, users can run the utility. (refer to the path in the below figure)



Windows XP



Windows 7&8

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Communication test

Step 1: Connect PC, HRT-711 and HART slave device according to figure1.

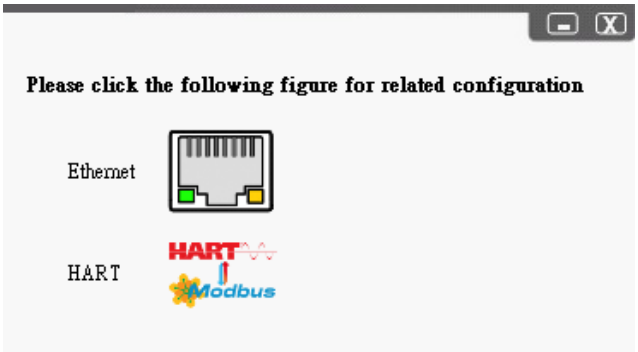
Step 2: Swtich the DIP switch to the “Init” position.

Step 3: Turn on the power of the HRT-711.

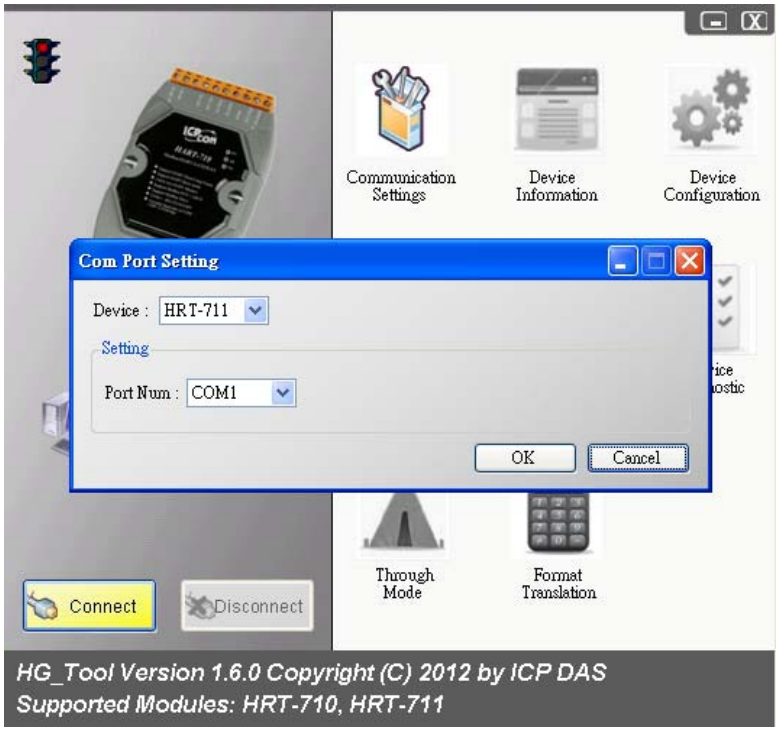
Step 4: Wait for the “HART” LED indicator to be always on status. If the led always flashes, please check the HART network wiring. It means the HRT-711 can’t connect to the HART slave devices.

Step 5: Execute the HRT-711 utility.

Step 6: Click “HART to Modbus”



Step 7: Select HRT-711 and ComPort in the communication settings.



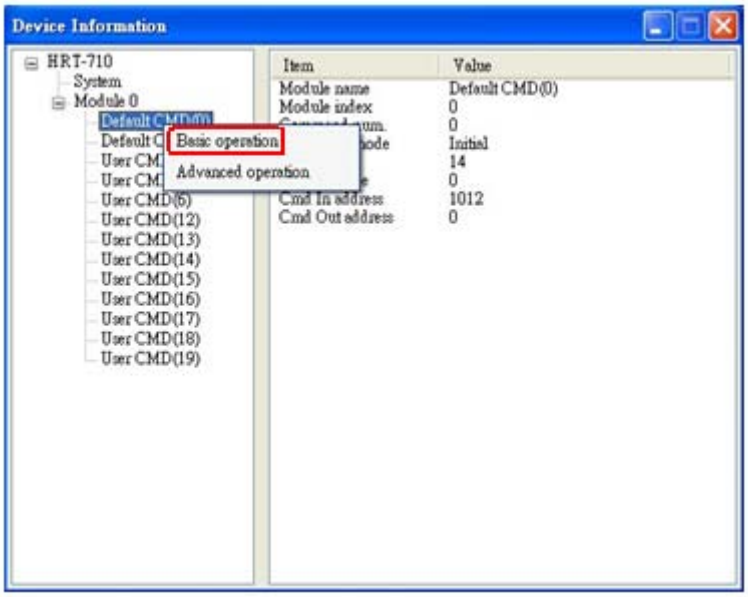
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Step 8: Click “Connect” button.

Step 9: Wait for the traffic light changes into “green” light. If the traffic light always keeps in the “yellow” light, it means the PC can’t connect to HRT-711, please check the RS-232 connection.

Step 10: Click the “Device Information” icon. Then select the default command or user command and right-click the mouse to choose the “Basic Operation” option to get the information of the corresponding HART command.





The information of HART command 0

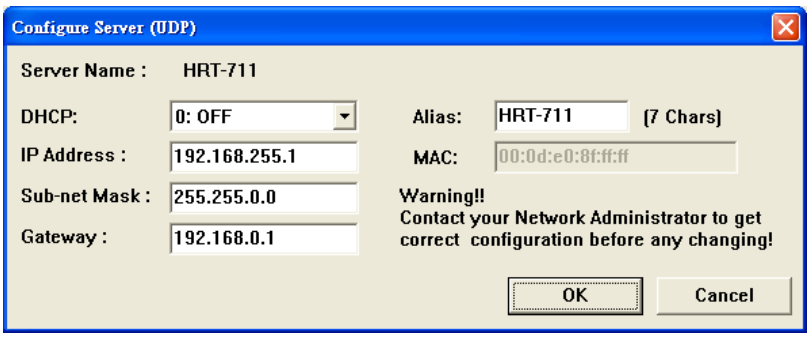
Step 11: Close all window to back to the main form in Step 6, and then click the Ethernet to configure network.

Step 12: Switch the DIP switch to the “Normal” position then power cycle the module.

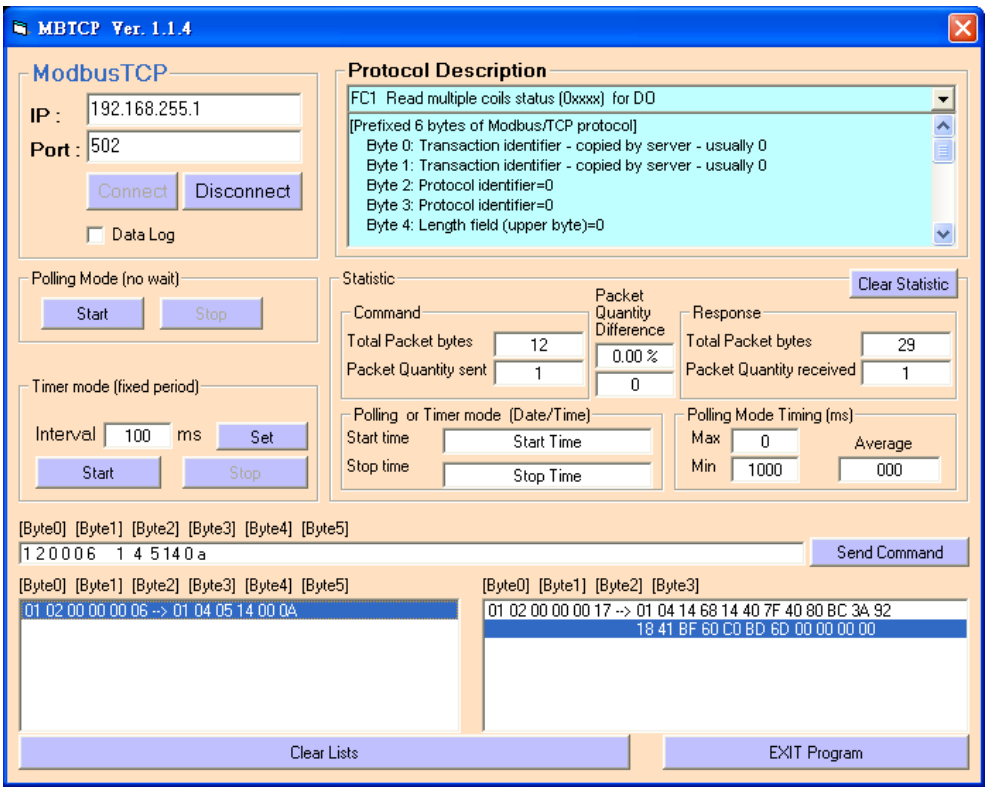
Step 13: When the Ethernet LED on the RJ-45 is on, click Search Servers to search all ICPDAS devices.

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Step 14: Double click HRT-711 in the list to assign network parameters. Then click OK to apply new setting when finish configuration.



Step 15: Users now can read HART device process variable from Modbus. There are many Modbus/TCP client software to test. (Ex: Modbus Utility) The following figure is an example to read Cmd 3 process variables.



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