

HRT-711

Modbus TCP to HART Gateway

Quick Start Guide

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.

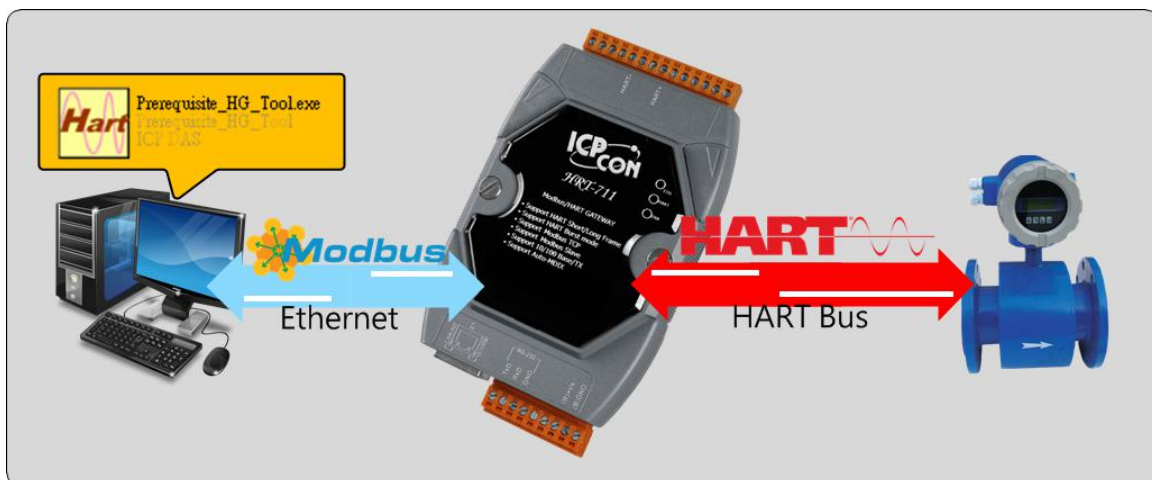
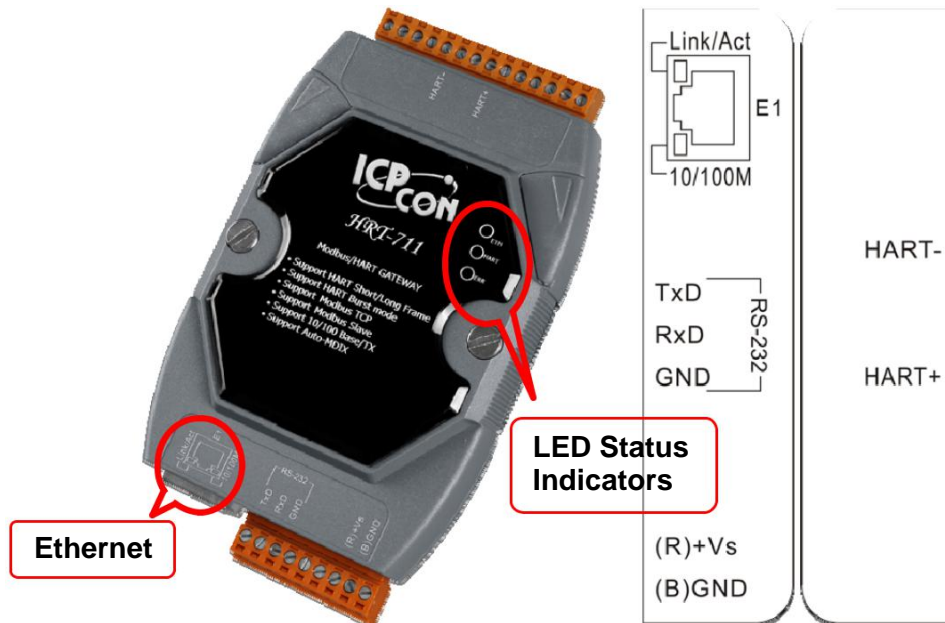


Figure 1: Application example

Technical Support

- **HRT-711 Website**
https://www.icpdas-usa.com/hrt_711.html
- **ICP DAS Website**
<http://www.icpdas-usa.com/>

-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.

- Jumper

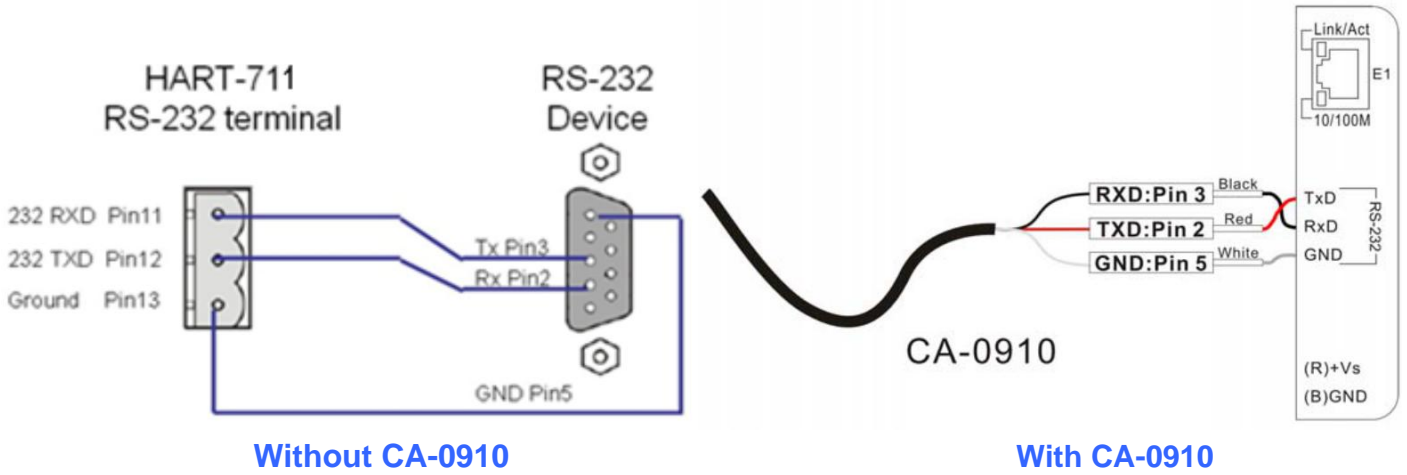
Jumper	Description
JP2	Enable/Disable hardware WDT. (Default setting is enable) NOTE: Please do not disable the hardware WDT.
JP3	For updating firmware. (Default setting is on 1 and 2) NOTE: Please do not switch to 2 and 3 when in normal operation.
JP4	The jumper can provide HART bus with 250 Ω (1/4 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

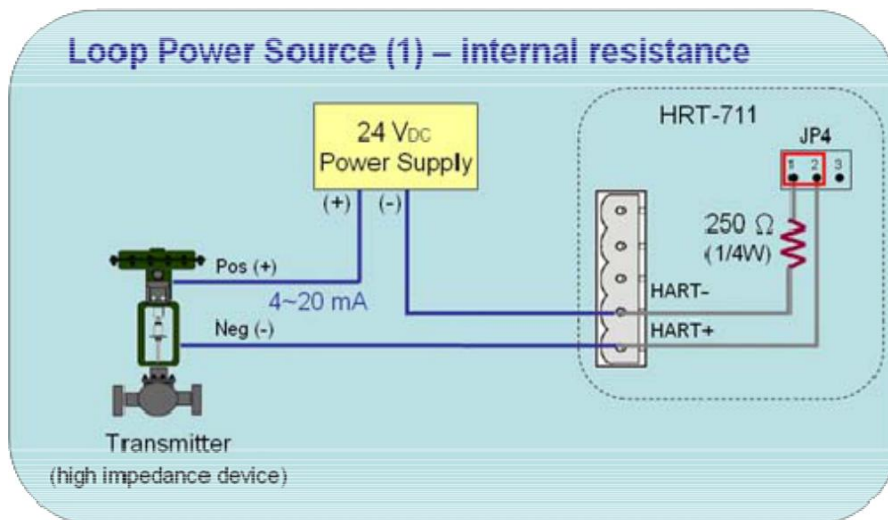


LED	Status	Description
ETH	Blink	Blink every 0.2 second : Receiving Ethernet packet Blink every 3 second : The network function is normal
	Off	Ethernet Error
HART	Blink	Blink every 1 second : The HRT-711 is in the initialing procedure Blink every 0.5 second : The HRT-711 is handling the burst frame sent 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



-HART network wiring



-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:

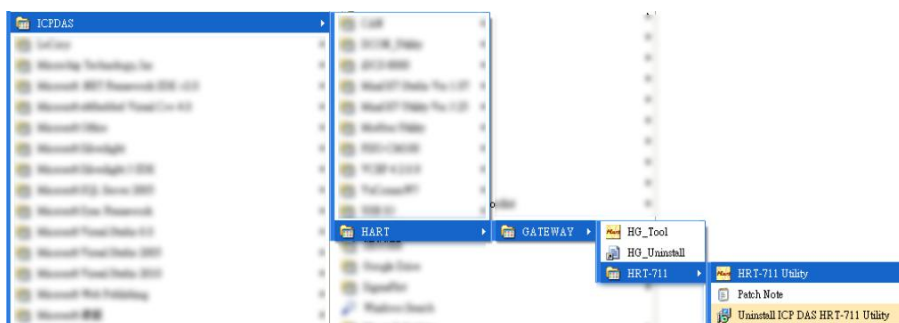
<http://www.microsoft.com/downloads/details.aspx?FamilyID=0856each-4362-4b0d-8edd-aab15c5e04f5&DisplayLang=en>

◆ Microsoft .Net Framework Version

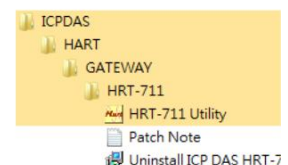
3.5: <http://www.microsoft.com/downloads/details.aspx?familyid=333325FD-AE52-4E35-B531-508D977D32A6&displaylang=en>

[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



Making Data Acquisition Easy

CAGE/NCAGE CODE: 3FNFO

-Communication test

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

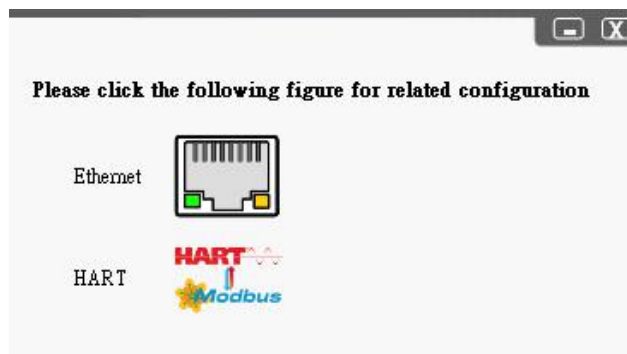
Step 2: Switch the DIP switch to the “Init” position.

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

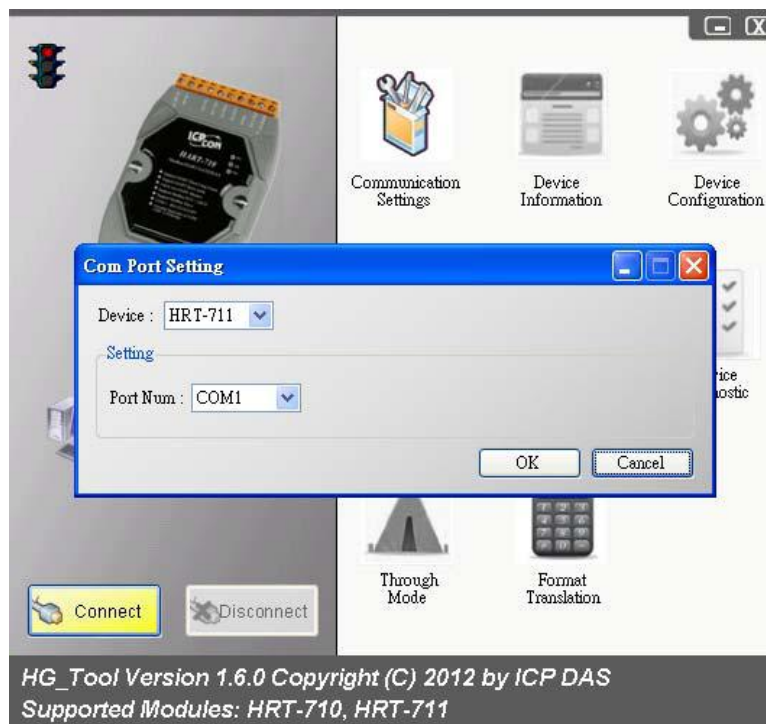
Step 4: Wait for the “HART” LED indicator to be always on status. If the led always flashes, please check the HART network wiring. It means the HRT-711 can’t connect to the HART slave devices.

Step 5: Execute the HRT-711 utility.

Step 6: Click “HART to Modbus”



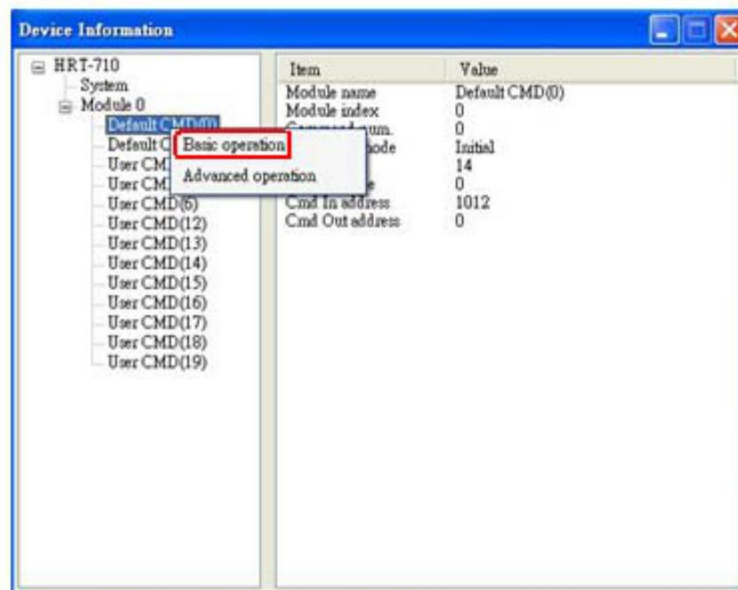
Step 7: Select HRT-711 and ComPort in the communication settings.



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.



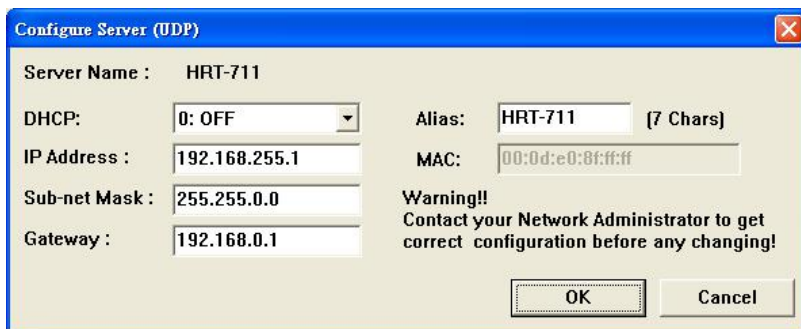
The information of HART command 0

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.

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.

