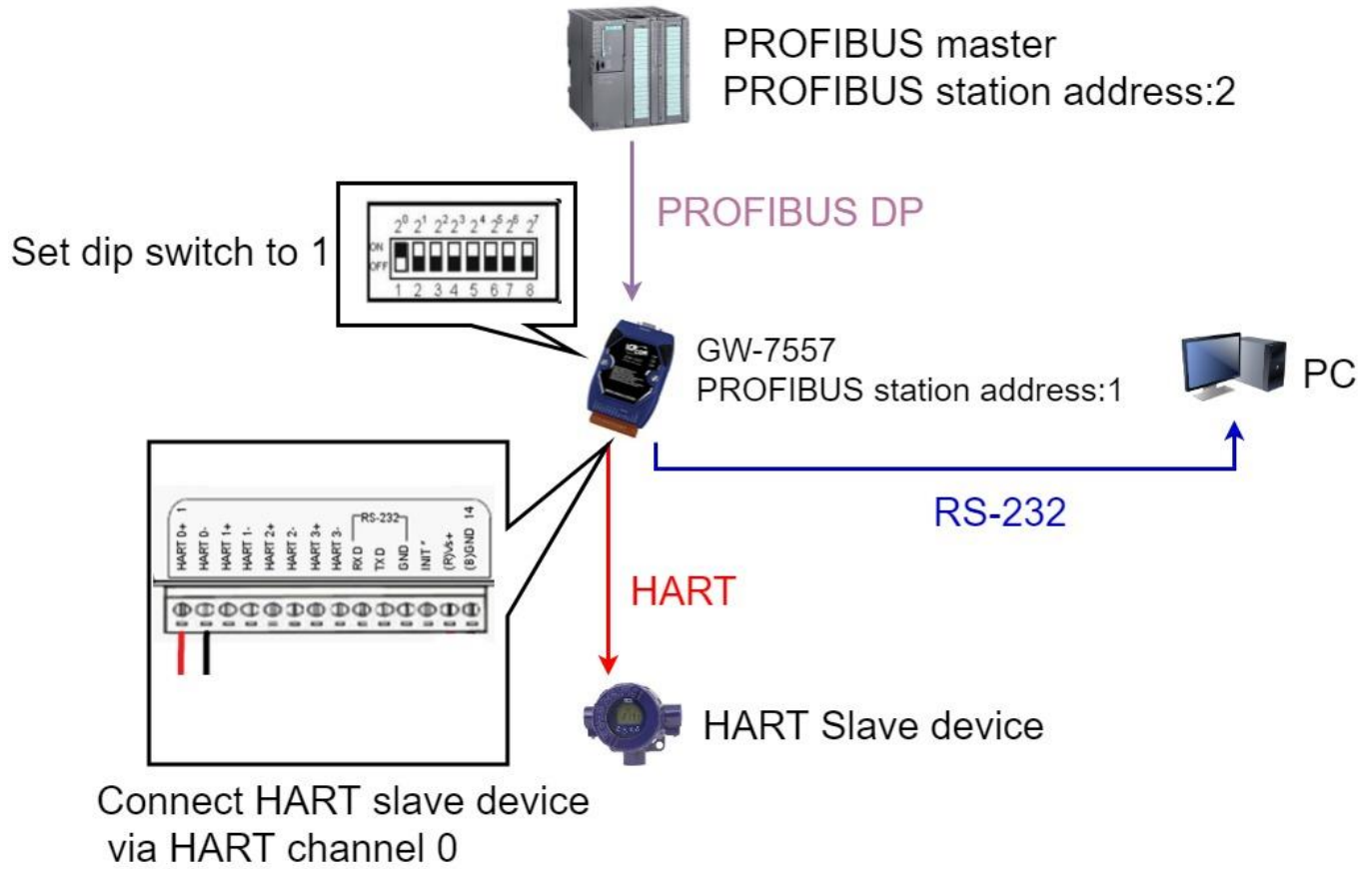


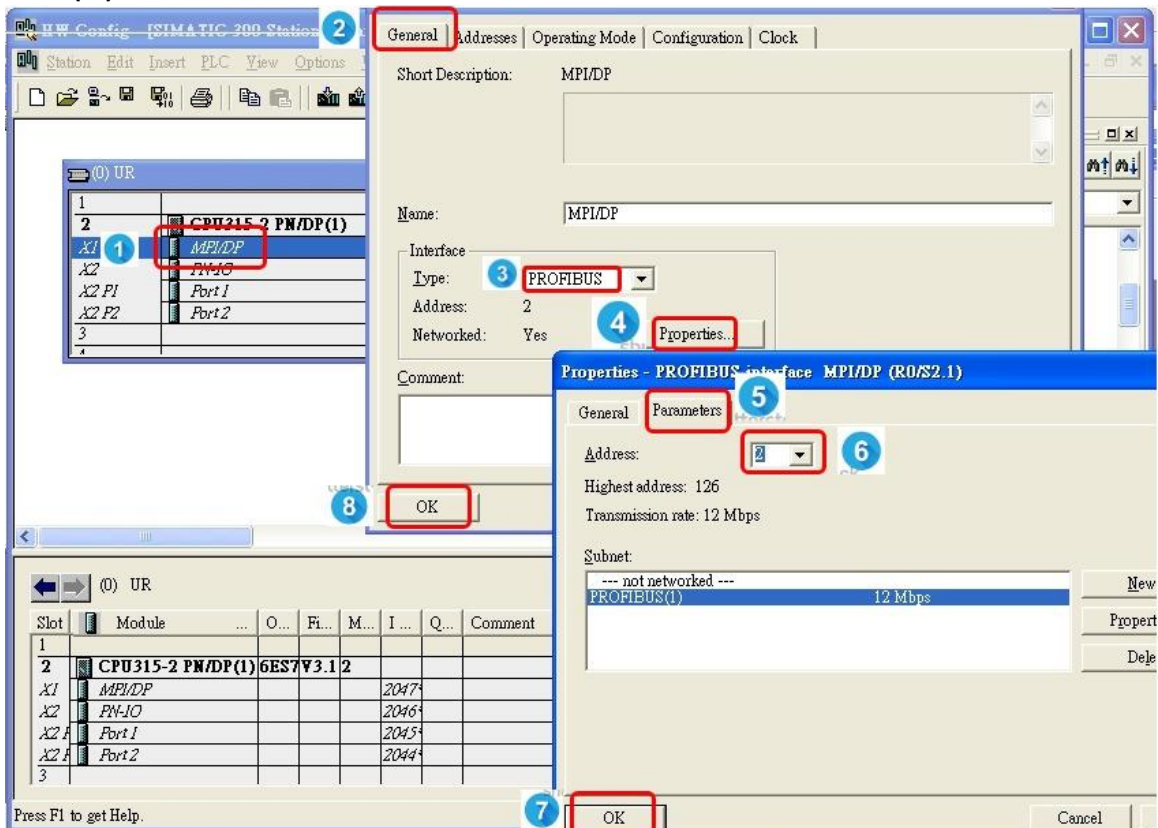
How to set HART Command in GW-7557 example for SIMATIC STEP 7

Step 1: Wiring diagram

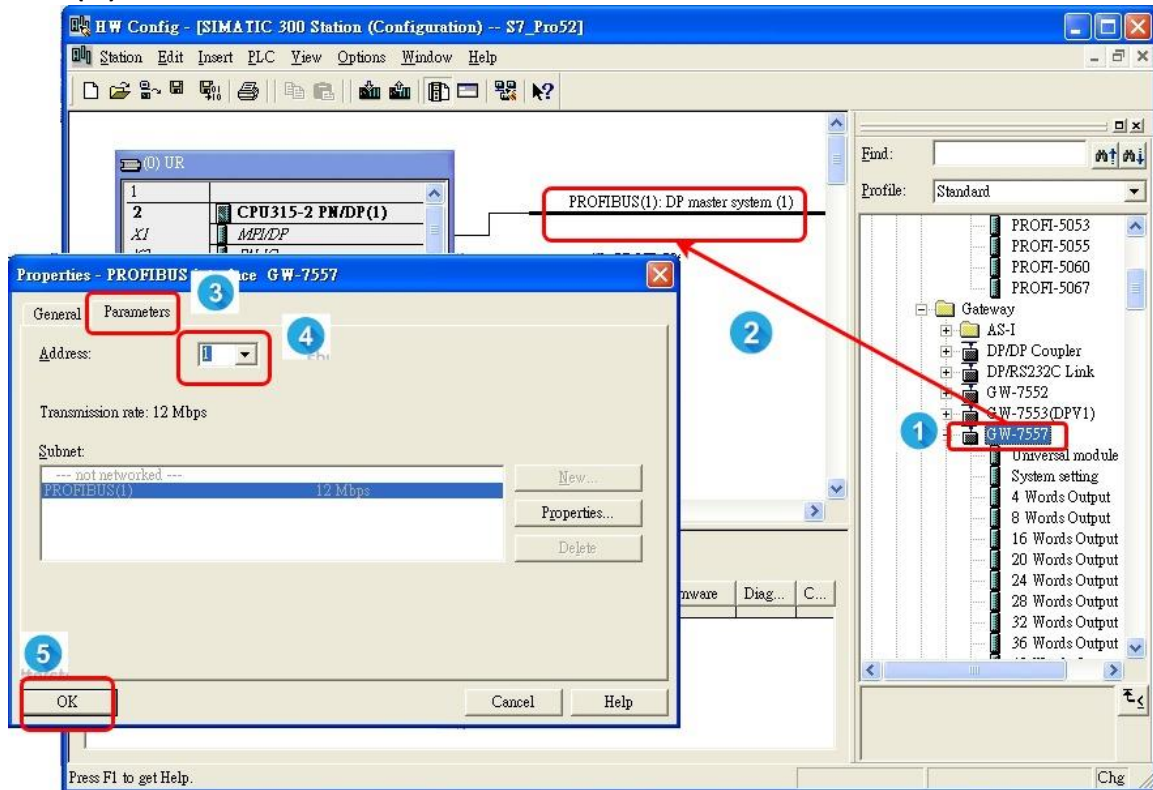


Step 2: Set up GW-7557 in SIMATIC STEP 7

1. Set PLC PROFIBUS station address.
 - (1) Double click "PROFIBUS DP" interface
 - (2) Select "General"
 - (3) Select "PROFIBUS"
 - (4) Click "Properties"
 - (5) Select "Parameters"
 - (6) Select "2"
 - (7) Click "OK"
 - (8) Click "OK"



2. Set GW-7557 PROFIBUS station address.
 - (1) Select "GW-7557".
 - (2) Drag "GW-7557" to PROFIBUS DP system.
 - (3) Select "Parameters".
 - (4) Select "1".
 - (5) Click "OK".



3. Set GW-7557 module.
 - (1) Select GW-7557
 - (2) Double click "System setting"

The screenshot shows the HW Config interface for a SIMATIC 300 station. The main workspace displays a rack configuration with a CPU 315-2 PN/DP in slot 2 and a PROFIBUS DP master system. A GW-7557 module is highlighted in slot 1. The right-hand pane shows the module's properties, with 'System setting' selected. The bottom pane shows a table of module slots with 'System setting' in slot 1 and 'Command 3' in slot 2.

| Slot | DP ID | Order Number / Designation | I Address | Q Address | Comment |
|------|-------|----------------------------|-----------|-----------|---------|
| 1 | 11A1 | System setting | 0...21 | | |
| 2 | 37 | --> System setting | | 0...5 | |
| 3 | 64 | Command 3 | 22...47 | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |

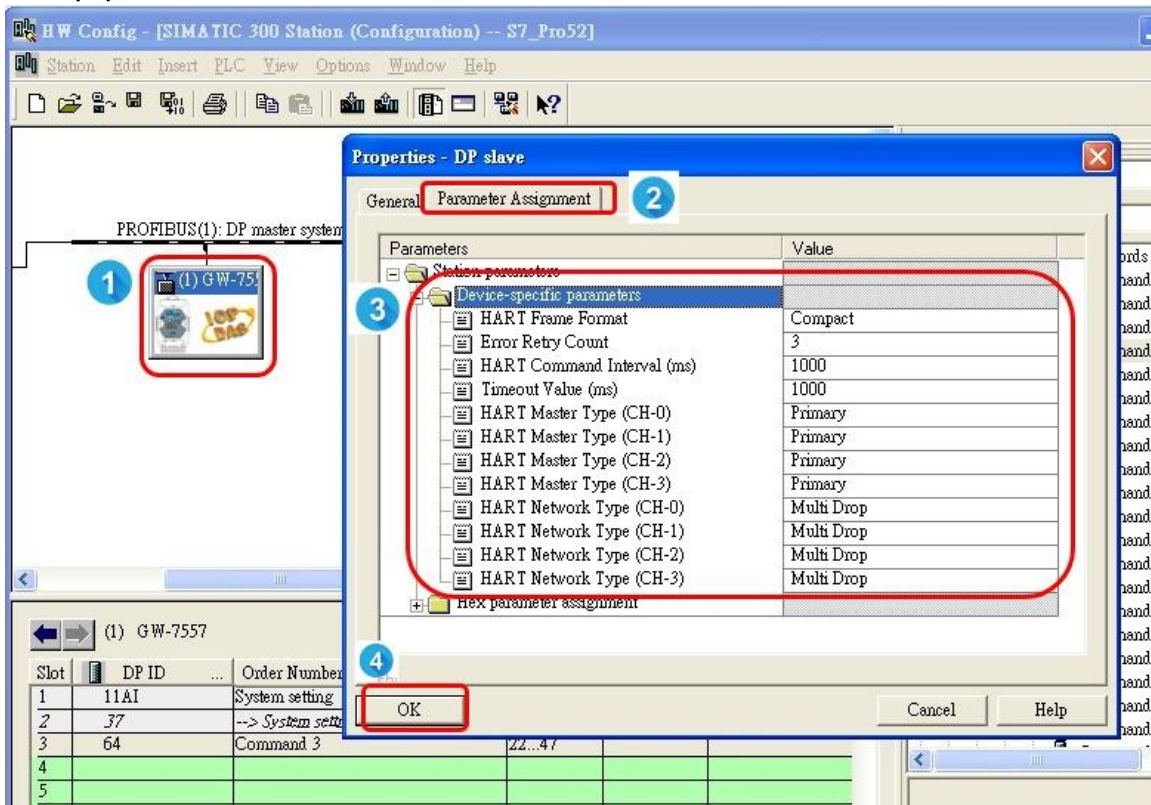
4. Set HART Command
 - (1) Double click "Command 3"
(you can choose other HART command that you need)

The screenshot shows the HW Config interface for a SIMATIC 300 station. The main workspace displays a rack configuration with a CPU315-2 DP and a GW-7557 gateway connected to a PROFIBUS DP master system. The gateway's slot 3 is highlighted in red, and its configuration is shown in the table below.

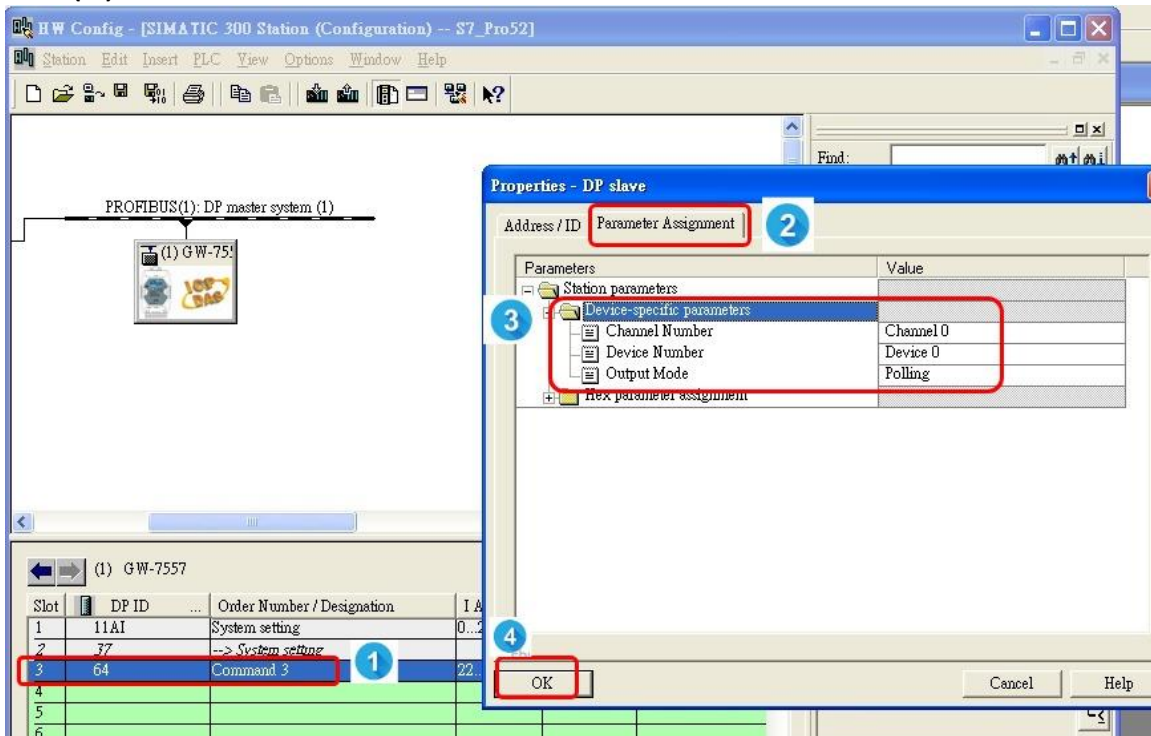
| Slot | DP ID | ... | Order Number / Designation | I Address | Q Address | Comment |
|------|-------|-----|----------------------------|-----------|-----------|---------|
| 1 | 11AI | | System setting | 0...21 | | |
| 2 | 37 | | --> System setting | | 0...5 | |
| 3 | 64 | | Command 3 | 22...47 | | |
| 4 | | | | | | |
| 5 | | | | | | |
| 6 | | | | | | |
| 7 | | | | | | |

The right-hand panel shows a list of HART commands, with 'Command 3' highlighted and circled in red. A blue circle with the number '1' is also present next to 'Command 3' in the list.

5. Set GW-7557 device parameters.
 - (1) Double click "GW-7557"
 - (2) Select "Parameter Assignment"
 - (3) Set device parameters of GW-7557:
 - HART Frame Format: Compact
 - Error Retry Count: 3
 - HART Command Interval(ms): 1000
 - Timeout Value(ms): 1000
 - HART Master Type(CH-0): Primary
 - HART Master Type(CH-1): Primary
 - HART Master Type(CH-2): Primary
 - HART Master Type(CH-3): Primary
 - HART Network Type(CH-0): Multi Drop
 - HART Network Type(CH-1): Multi Drop
 - HART Network Type(CH-2): Multi Drop
 - HART Network Type(CH-3): Multi Drop
 - (4) Click "OK"



6. Set module parameters
 - (1) Double click "command 3"
 - (2) Select "Parameter Assignment"
 - (3) Set module parameters of "command 3":
 - Channel Number: Channel 0
 - Device Number: Device 0
 - Output Mode: Polling
 - (4) Click "OK"



7. Save, compile, and download to PLC

(1) Save and Compile

(2) Download settings into PLC

The screenshot shows the SIMATIC Manager HW Config interface. The main window displays a rack configuration for a SIMATIC 300 station. The rack contains a CPU 315-2 PN/DP (1) and a PROFIBUS DP master system (1). The CPU is connected to a PROFIBUS DP master system (1) which is connected to a GW-757 module (1). The GW-757 module is connected to a PROFIBUS DP master system (1).

The table below shows the configuration for the GW-757 module:

| Slot | DP ID | Order Number / Designation | I Address | Q Address | Comment |
|------|-------|----------------------------|-----------|-----------|---------|
| 1 | 11AI | System setting | 0...21 | | |
| 2 | 37 | --> System setting | | 0...5 | |
| 3 | 64 | Command 3 | 22...47 | | |
| 4 | | | | | |
| 5 | | | | | |
| 6 | | | | | |
| 7 | | | | | |

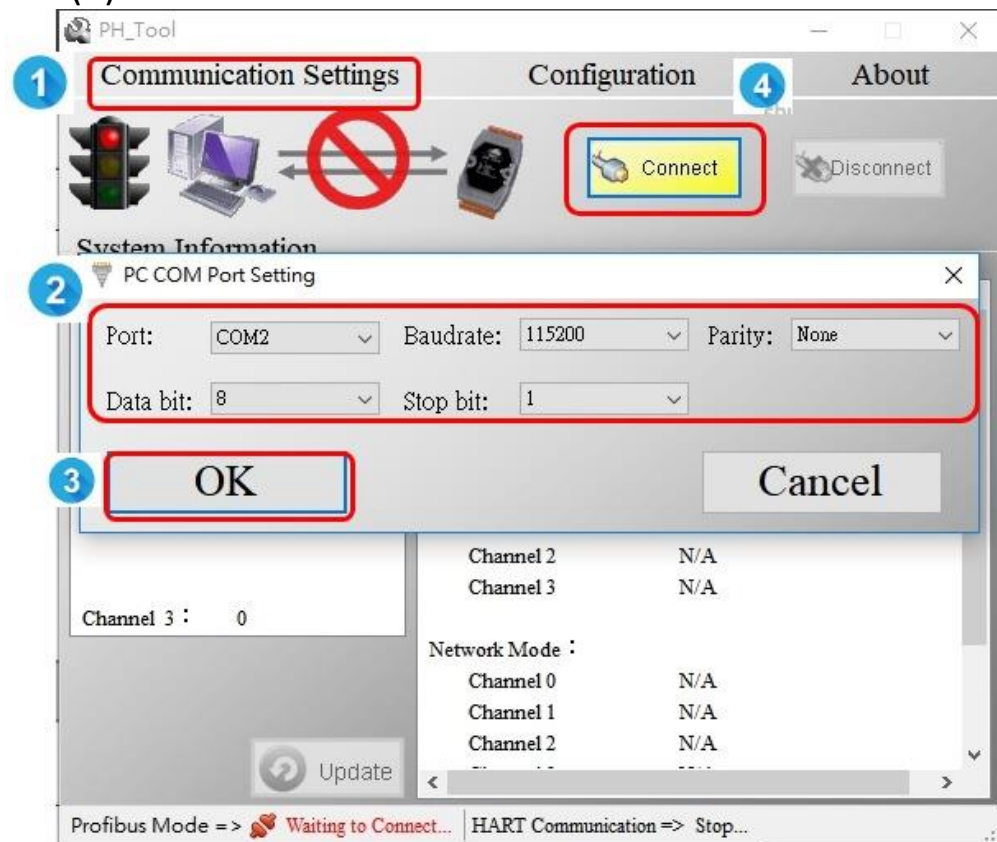
The interface also shows a list of modules on the right side, including Universal module, System setting, and various Words Output and Words Input modules. The status bar at the bottom indicates "Selecting the hardware".

Step 3: Set up HART slave device via “PH_Tool”

1. Double click “PH_Tool” icon to open “PH_Tool”



2. PH_Tool connects GW-7557
 - (1) Select “Communication Settings”.
 - (2) Set communication settings of PC com port, these settings have to be the same with GW-7557, or else the connection will be failed.
 - (3) Click “OK”
 - (4) Click “Connect”



If you forget the Com port settings of GW-7557, please refer to [GW-7557 user manual](#) 2.6.

3. Set GW-7557

(1) Click "Configuration"

(2) Click "Device Configuration"

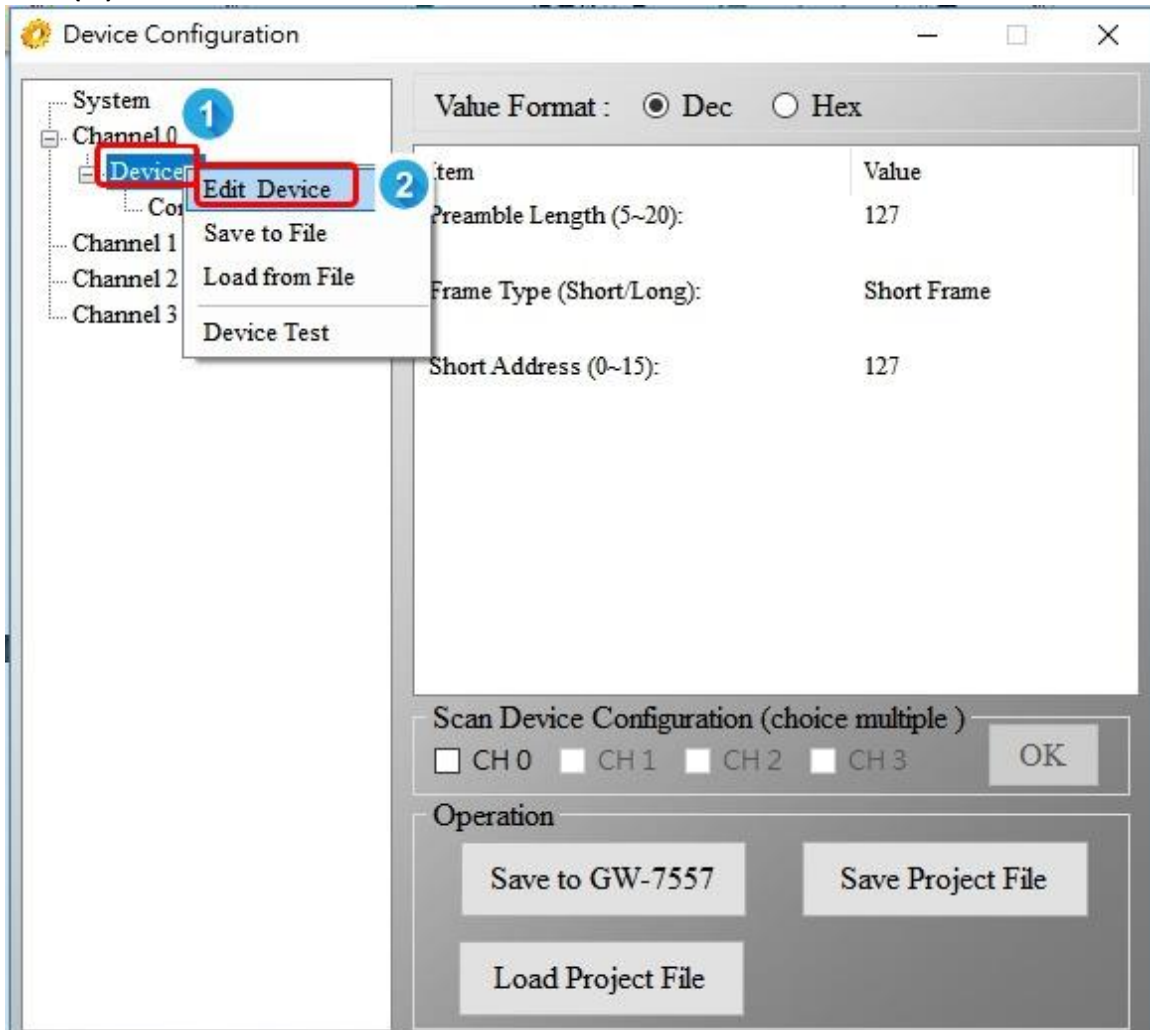
The screenshot shows the PH_Tool software interface. At the top, there is a menu bar with "Communication Settings", "Configuration", and "About". The "Configuration" menu is highlighted with a red box and a blue circle containing the number "1". Below it, a dropdown menu is visible with "Import Project File" and "Device Configuration". The "Device Configuration" option is highlighted with a red box and a blue circle containing the number "2". To the right of the dropdown is a "Disconnect" button. Below the menu bar is a "System Information" section containing two tables. The first table shows channel device counts, and the second table shows Profibus parameters and network modes. At the bottom, there is an "Update" button and a status bar showing "Profibus Mode => Operation Mode" and "HART Communication => Normal Mode (CH-0)".

| Channel | Device Count |
|-------------|--------------|
| Channel 0 : | 1 |
| Channel 1 : | 0 |
| Channel 2 : | 0 |
| Channel 3 : | 0 |

| Profibus Parameters | Meaning |
|-------------------------|----------------|
| Firmware Version | V11 |
| Frame Format | Compact |
| Error Retry Count (0~5) | 3 |
| Master Type : | |
| Channel 0 | Primary Master |
| Channel 1 | Primary Master |
| Channel 2 | Primary Master |
| Channel 3 | Primary Master |
| Network Mode : | |
| Channel 0 | Multi Drop |
| Channel 1 | Multi Drop |
| Channel 2 | Multi Drop |

Profibus Mode => Operation Mode | HART Communication => Normal Mode (CH-0)

4. Set GW-7557
 - (1) Right click "Device 0"
 - (2) Click "Edit Device"



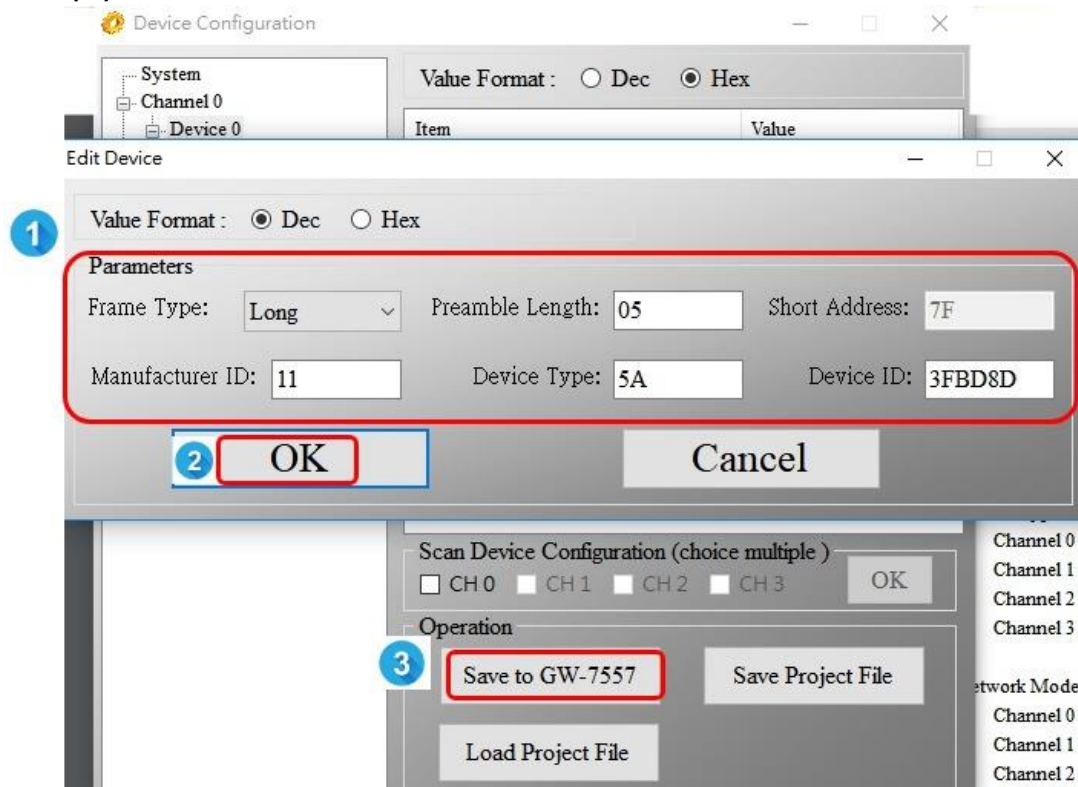
5. Set the parameters of HART slave device

(1) Set the parameters of HART slave device.

Please access these parameters from the manual of HART slave device.

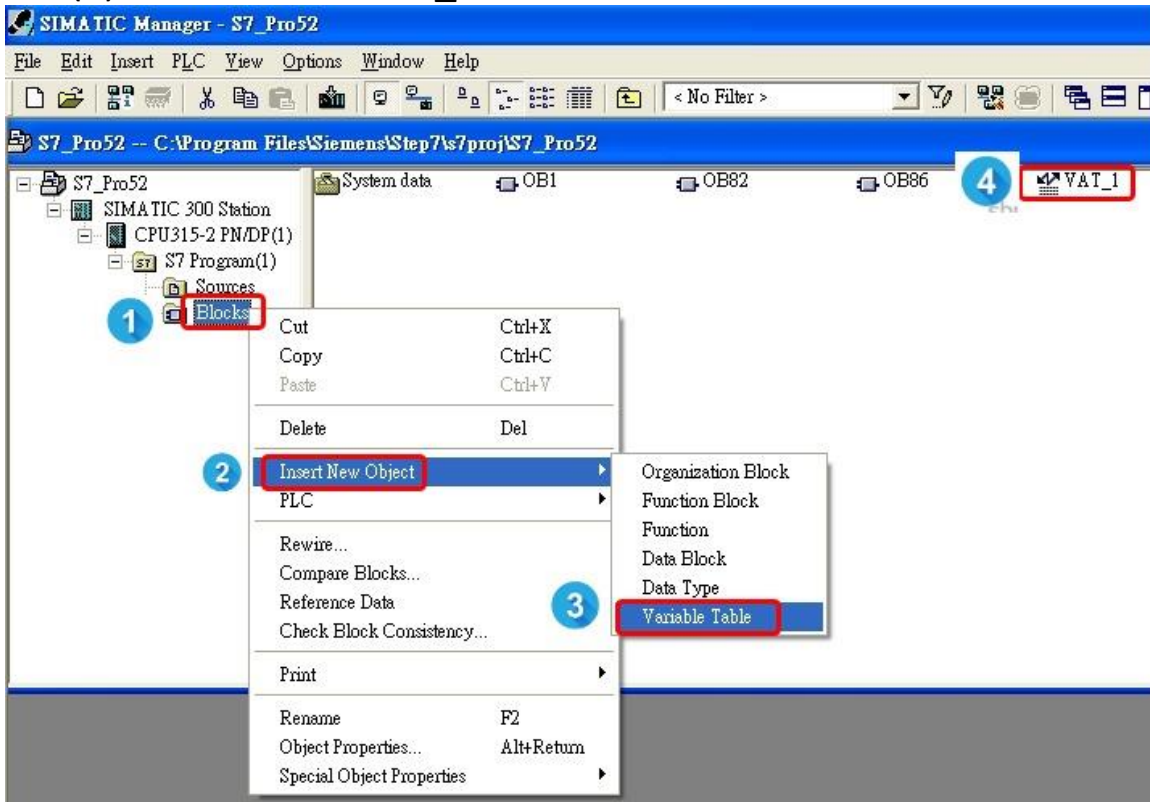
(2) Click “OK”

(3) Click “Save to GW-7557”



Step 4: Show the HART data in the variable table

1. Establish a variable table
 - (1) Right click "Blocks"
 - (2) Select "Insert New Object"
 - (3) Select "Variable Table"
 - (4) Double click "VAT_1"



2. Set variable table

(1) Key in "command 3" data address.

The data address in VAT_1 correspond module address.

(2) Click monitor button.

The screenshot shows the SIMATIC Manager interface. On the left, a rack view shows a CPU315-2 PM/DP(1) module. On the right, a variable table is displayed with columns for Address, Display format, and Status value. A red box highlights the address range IB 22 to IB 36. A red arrow points from a text box to the 'IB 22' address in the table. Below the variable table, a table for the DP master shows 'Command 3' at address 22..47. A red box highlights this address range, with a red arrow pointing to the 'IB 22' address in the variable table. A red text box contains the following information:

IB : input Byte ; QB : output Byte
IW: input Word ; QW : output Word

3. Receive HART command 3 data from HART Slave device.

The screenshot shows the HART Device Simulator interface. On the left, a variable table is displayed with columns for Address, Symbol, Display format, Status value, and Modify value. A red box highlights the address range IB 25 to IB 46. On the right, a table for HART Devices shows parameters for various devices. A red box highlights the parameters for device 05, which are: PV_Value: 4.444000, PV_Unit: psi, SV_Value: 3.300000, SV_Unit: bar, TV_Value: 2.200000, TV_Unit: mbar, QV_Value: 1.100000, QV_Unit: g/cm2. A red arrow points from the 'TV_Value' cell to the 'IB 31' address in the variable table.