How to set HART Command (burst mode) in GW-7557 example for SIMATIC STEP 7

Step 1: Wiring diagram

PROFIBUS master
PROFIBUS station address:2

PROFIBUS DP

Set dip switch to 1

GW-7557
PROFIBUS station address:1

PC

RS-232

HART

HART Slave device

Connect HART slave device
via HART channel 0
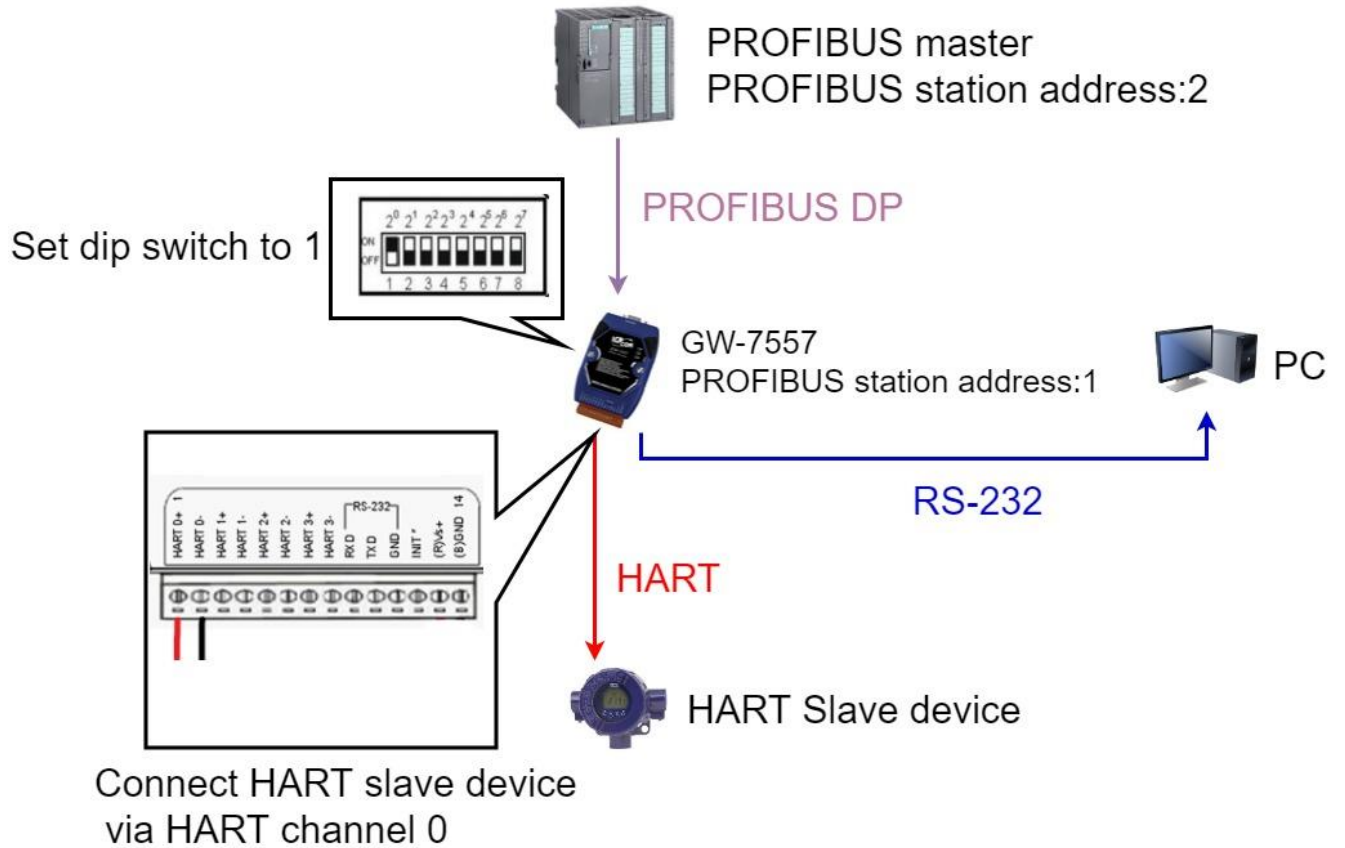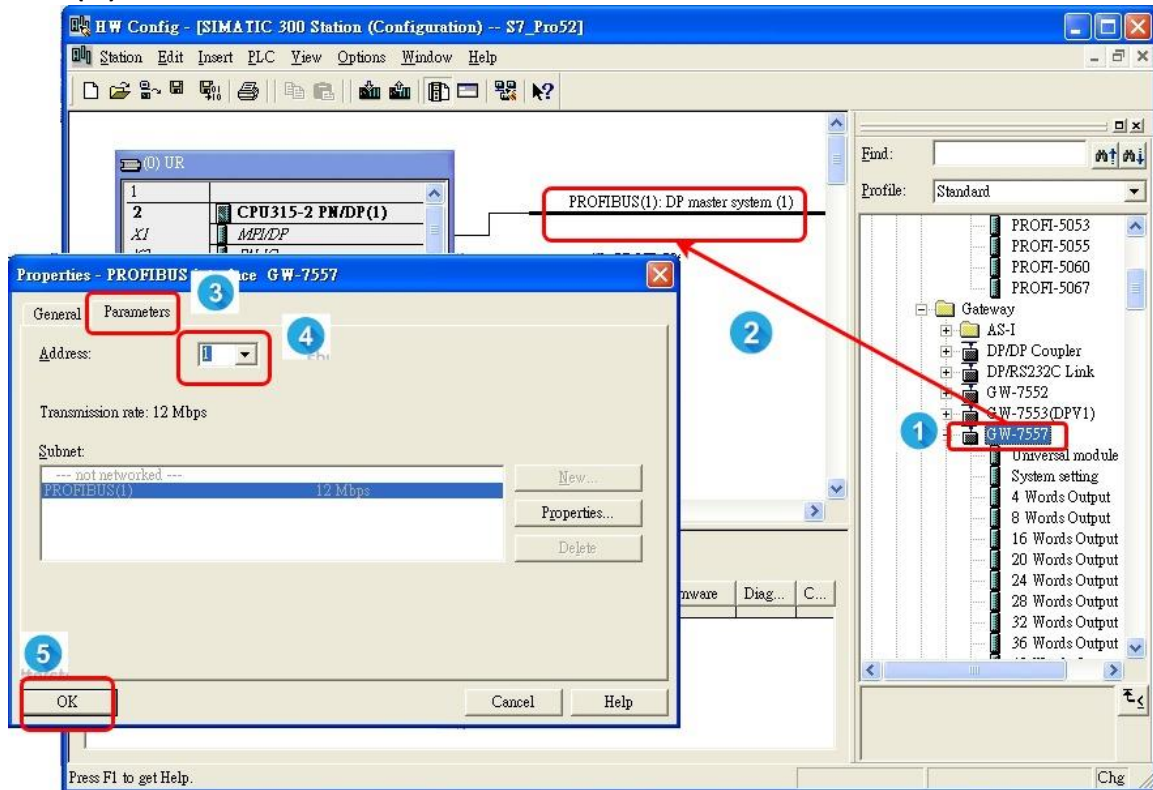
Step 2: Set up GW-7557 in SIMATIC STEP 7

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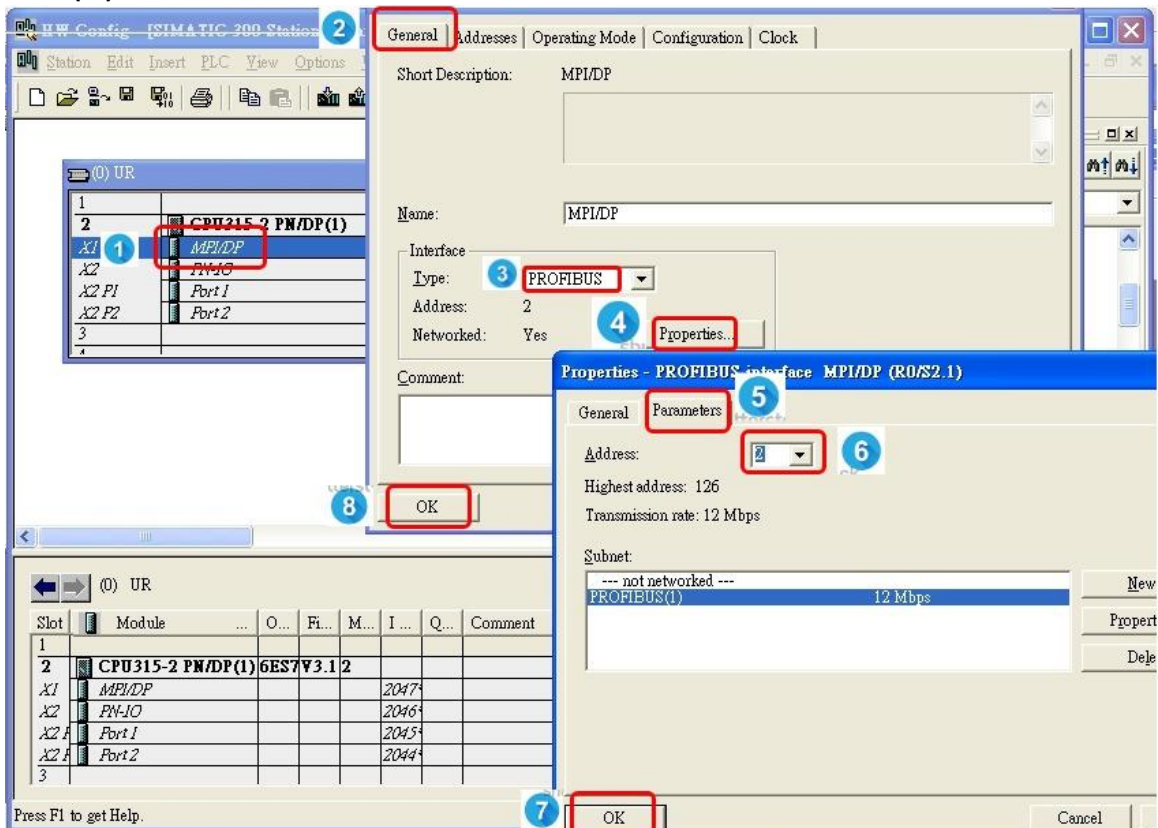
2. Set GW-7557 PROFIBUS station address.
   (1) Select "GW-7557".
   (2) Drag "GW-7557" to PROFIBUS DP system.
   (3) Select "Parameters".
   (4) Select "1".
   (5) Click "OK".

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

4. Set HART Command
   (1) Double click "Command 1" (you can choose other HART command that you need to change burst mode)
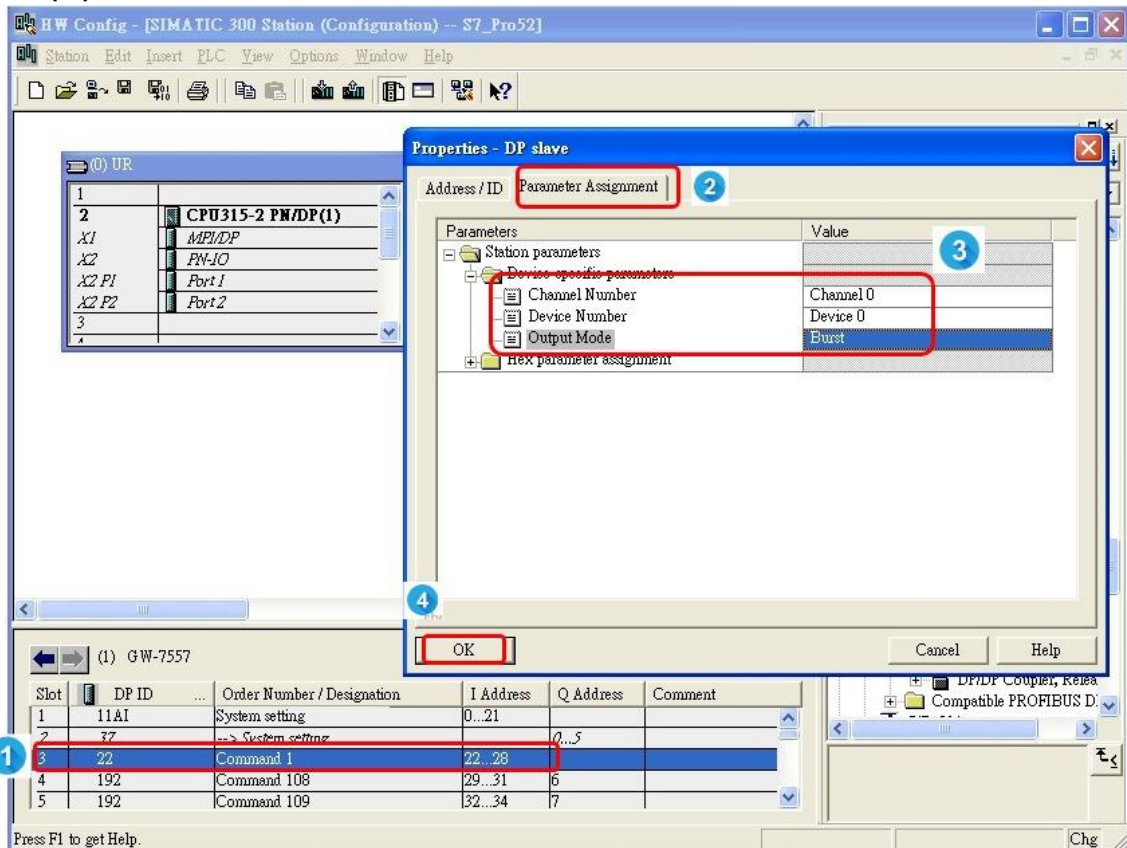   (2) Double click "Command 108"
   (3) Double click "Command 109"

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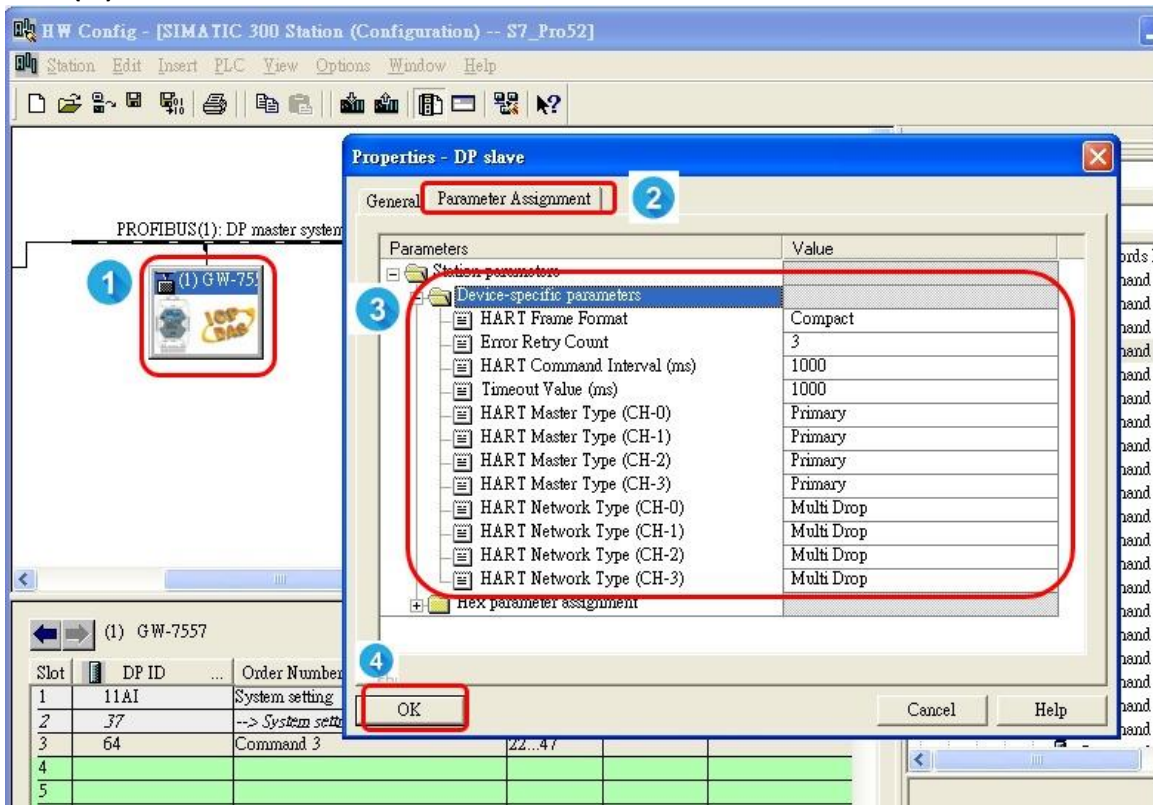
6. Set module parameters
   (1) Double click "command 1"
   (2) Select "Parameter Assignment"
   (3) Set module parameters of "command 1":
   ● Channel Number: Channel 0
   ● Device Number: Device 0
   ● Output Mode: Burst
   (4) Click "OK"

7. Set module parameters
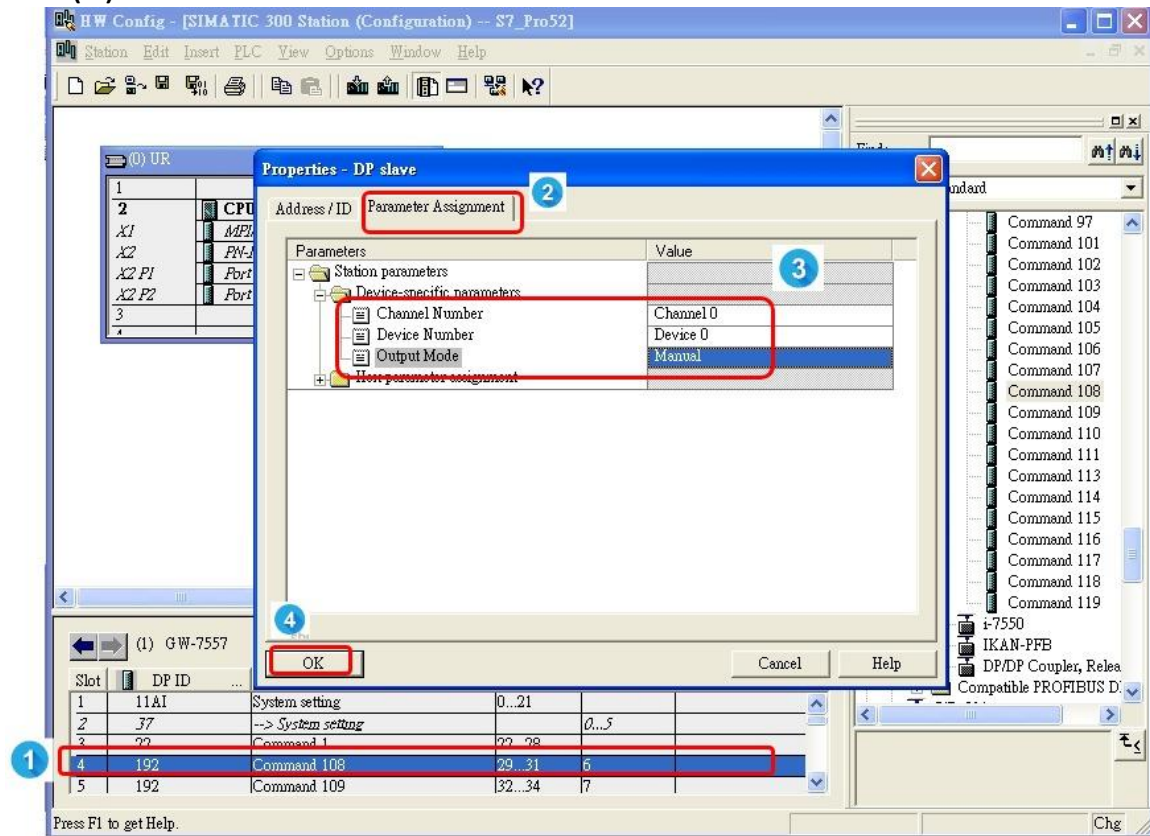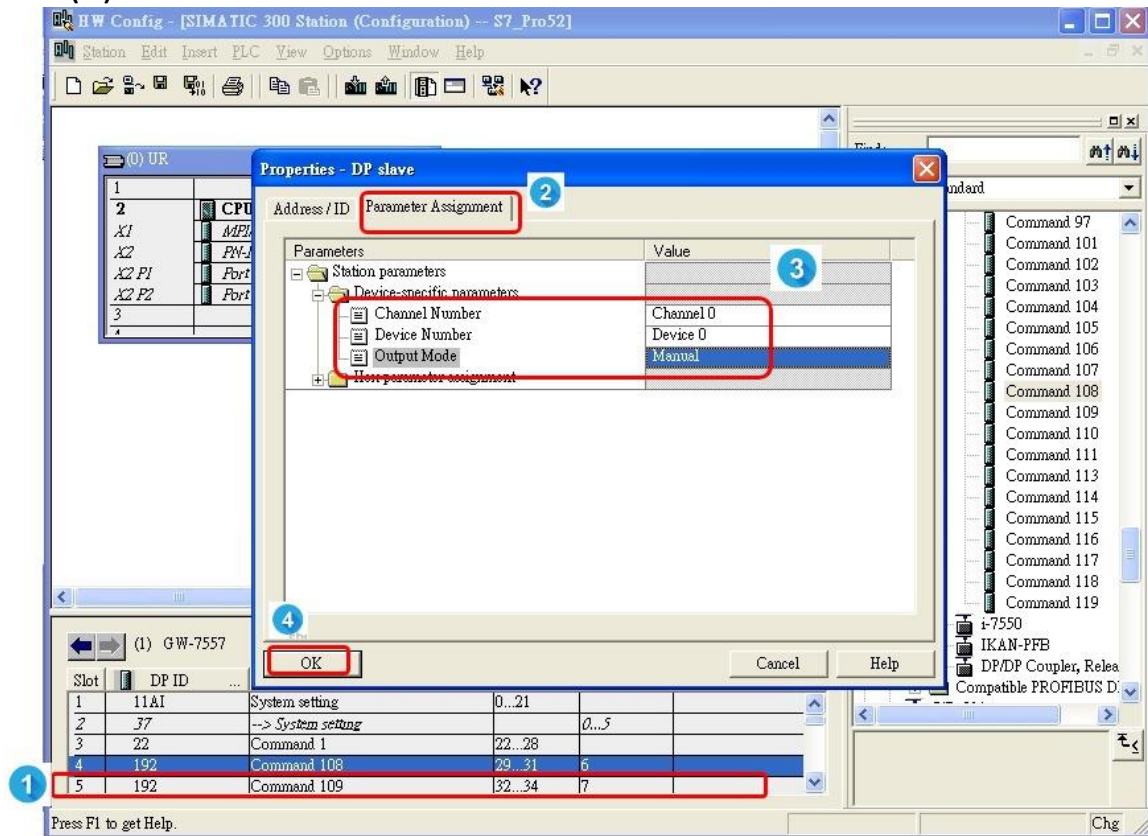   (1) Double click "command 108"
   (2) Select "Parameter Assignment"
   (3) Set module parameters of "command 108":
   ● Channel Number: Channel 0
   ● Device Number: Device 0
   ● Output Mode: Manual
   (4) Click "OK"

8. Set module parameters
   (1) Double click "command 109"
   (2) Select "Parameter Assignment"
   (3) Set module parameters of "command 109":
   ● Channel Number: Channel 0
   ● Device Number: Device 0
   ● Output Mode: Manual
   (4) Click "OK"

9. Save, compile, and download to PLC
   (1) Save and Compile
   (2) Download settings into PLC

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.
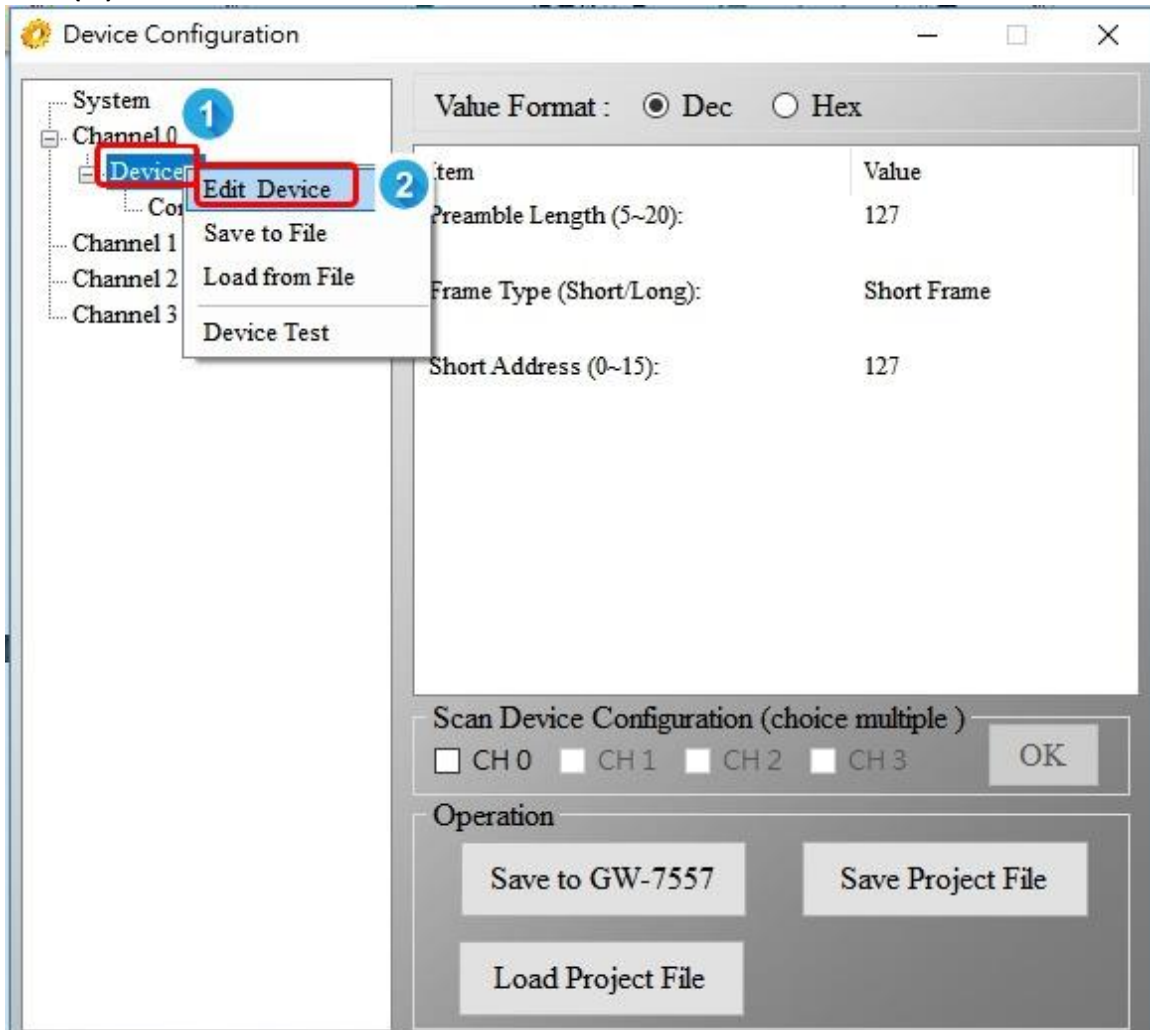   (3) Click "OK"
    (4) Click "Connect"
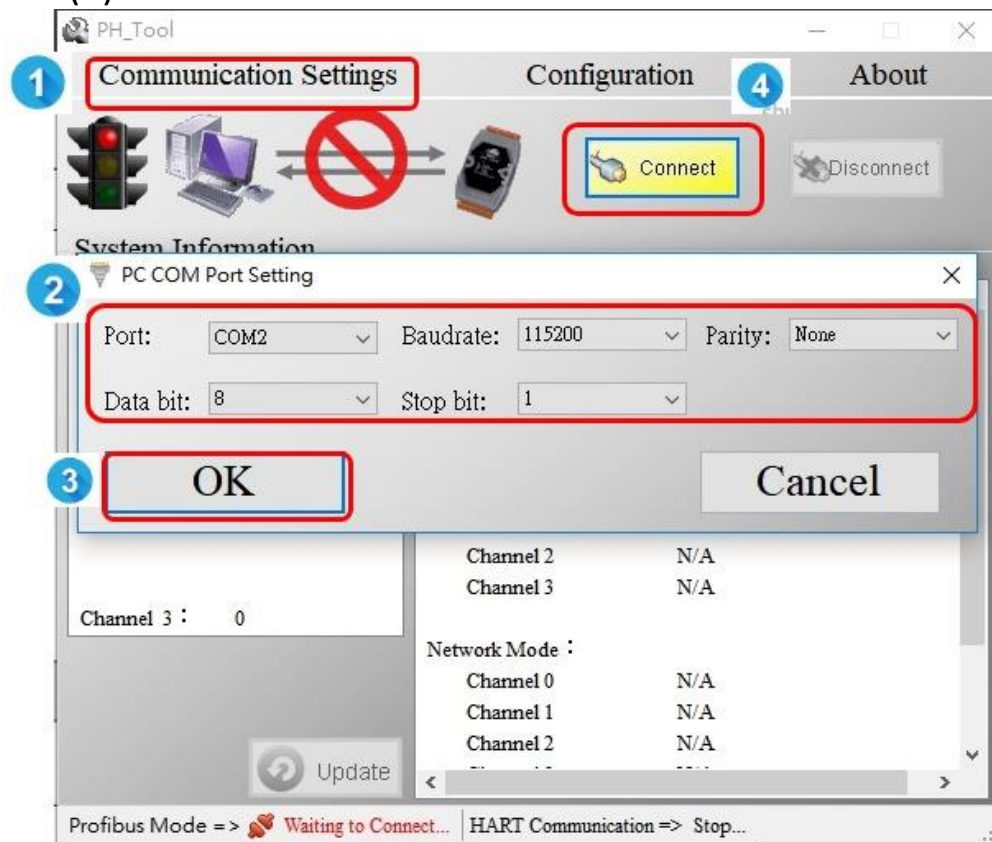
If you forget the Com port settings of GW-7557, please refer to GW-7557 user manual 2.6.

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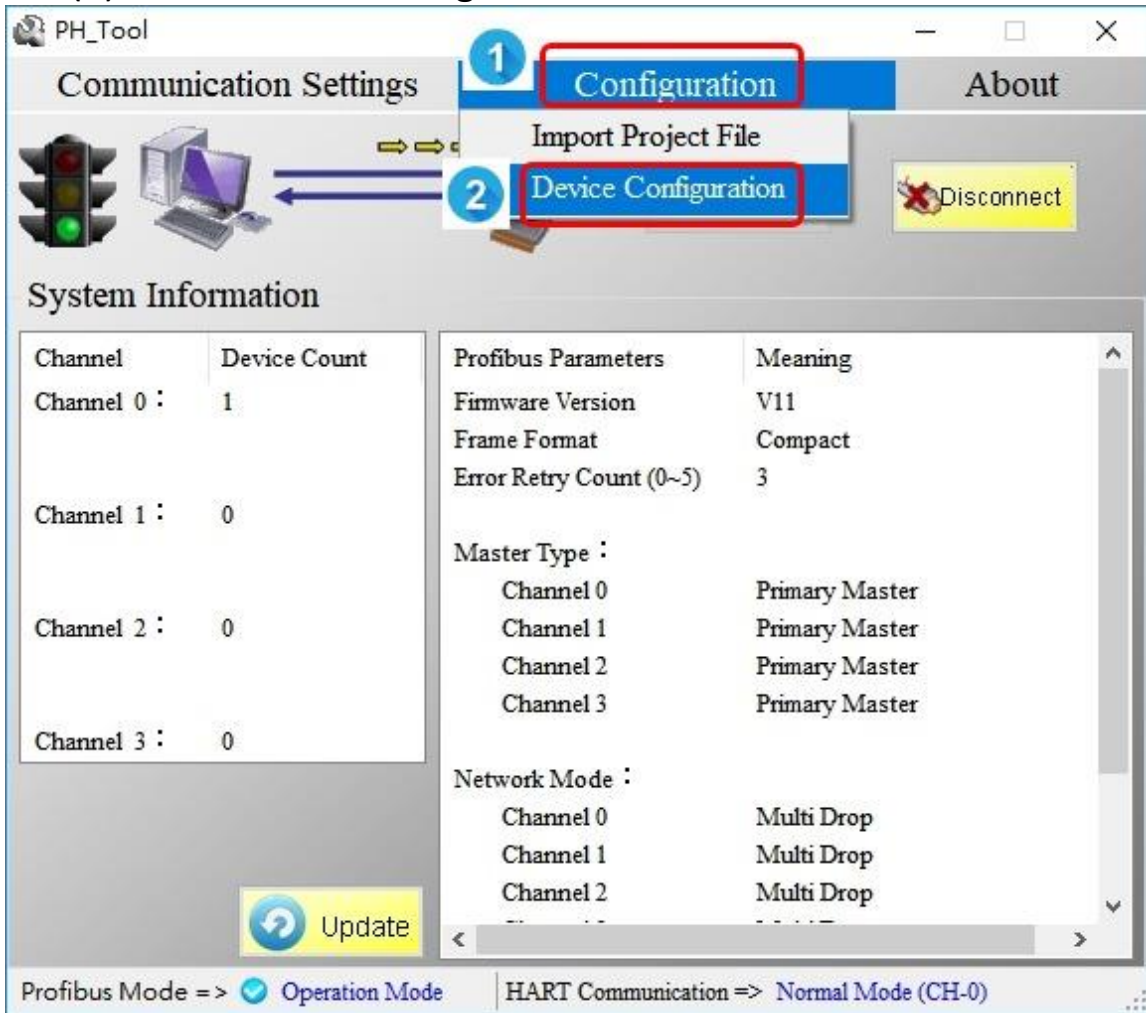
4. Set GW-7557
   (1) Right click "Device 0"
   (2) Click "Edit Device"

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"
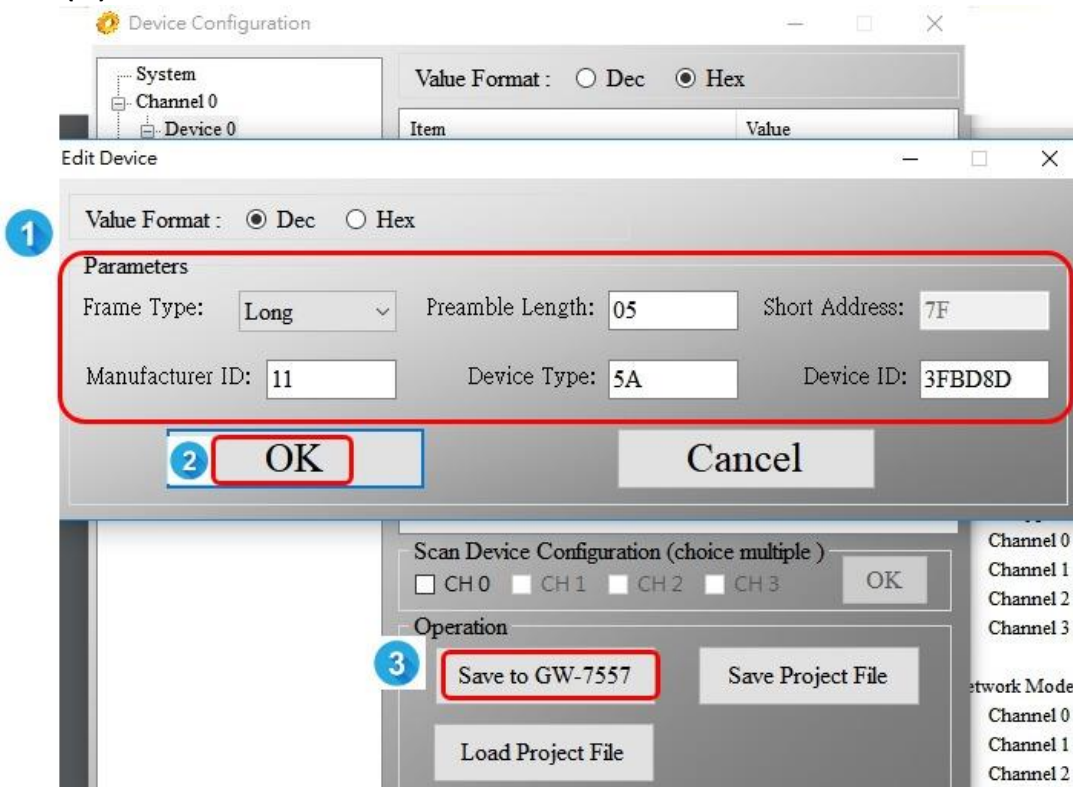
Step 4: Show the HART data in the variable table

1. Establish a variable table
    (1) Right click "Blocks"
    (2) Select "Insert New Object"
    (3) Select "Variable Table"
    (4) Double click "VAT_1"
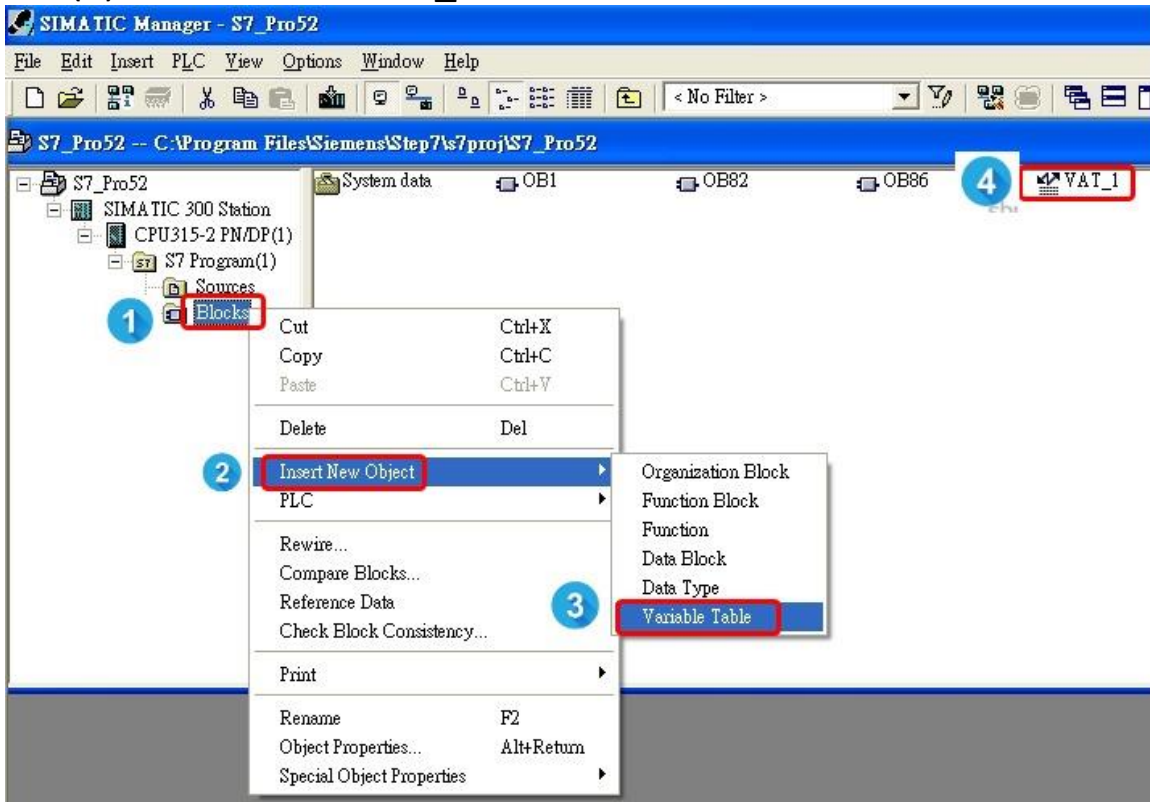
2. Set variable table
    (1) Key in "System setting", "command 1",
        "command 108", and "command 109" data address.
        The data address in VAT_1 correspond module address.
    (2) Click monitor button

IB : input Byte ; QB : output Byte

IW: input Word ; QW : output Word

3. Set burst command number
   (1) Key in "1" at QB0
   (2) Key in "4" at QB1(Close auto detecting function)
   (3) Key in "3" at QB2(the module order of command 108)
   (4) Key in "1" at QB6(Command 1 is changed burst mode)
   (5) Click Modify variable icon
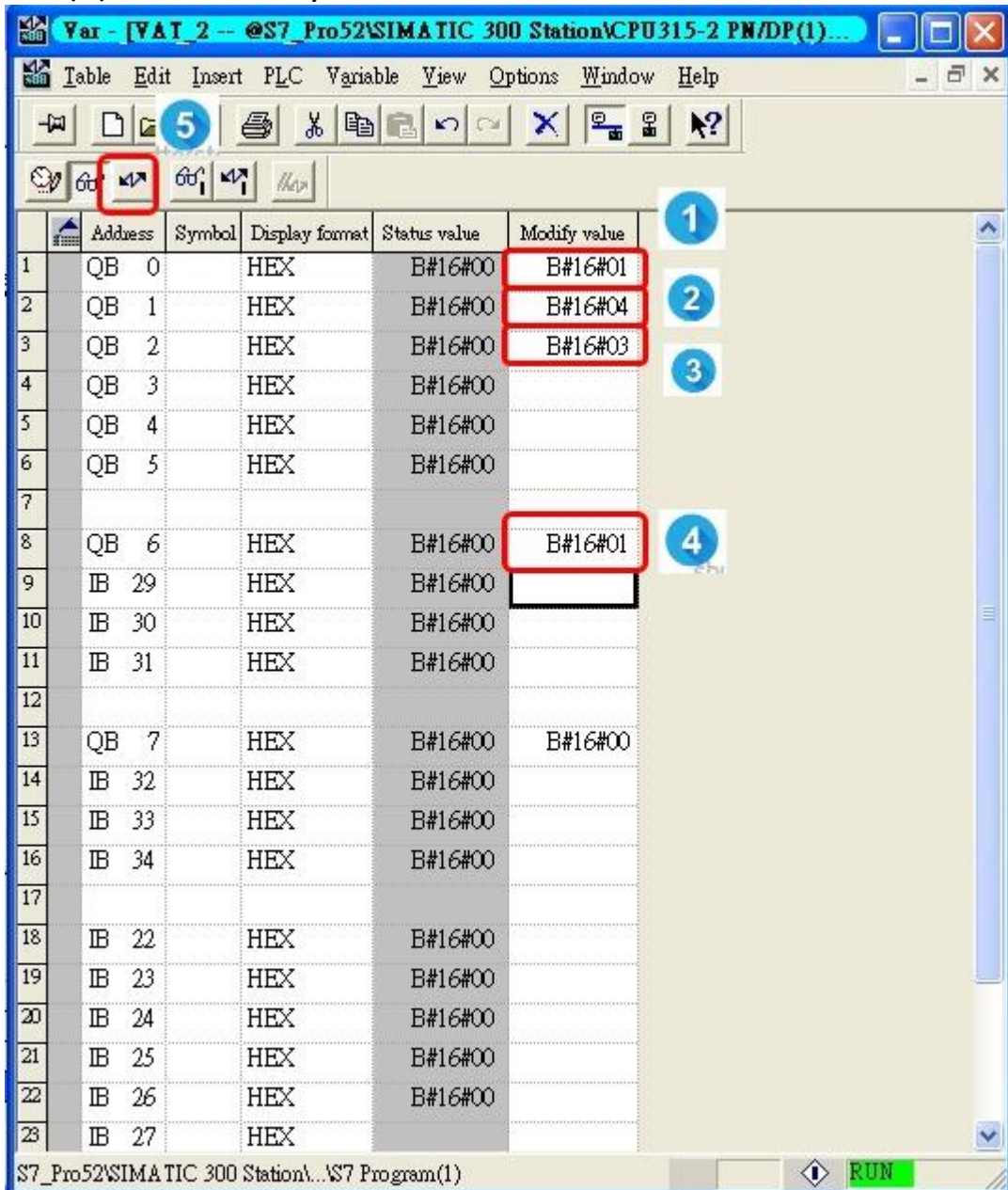
4. Enable burst mode
   (1) Key in "2" at QB0
   (2) Key in "4" at QB2(the module order of command 109)
   (3) Key in "1" at QB7(Enable burst mode)
   (4) Click Modify variable icon

5. Receive HART burst command 1 data from HART slave device.