

**HMI to S7200 by PPI**

**Sample application**

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## 1. Requirements

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### Hardware

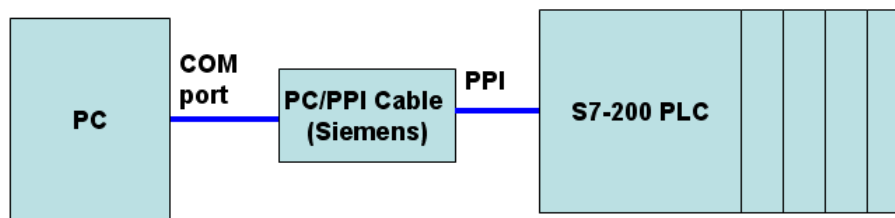
1. HMI 450
2. S7200 PLC
3. PC/PPI CABLE FROM SIEMENS
4. HMI to PC, Ethernet cable (Cross over or straight cable)

### Software

Panel Studio pack V1.0 or later  
Application program: HMI450\_S7200\_PPI  
Step7 Microwin, Siemens Software

## 2. Online Simulation

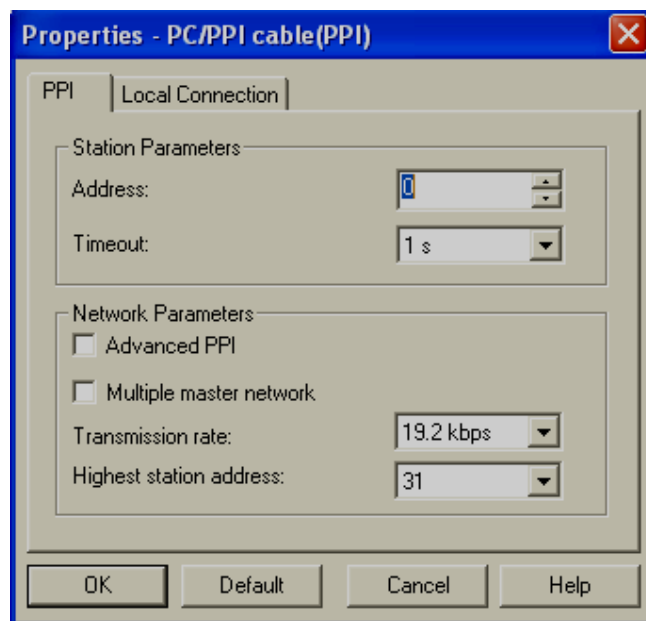
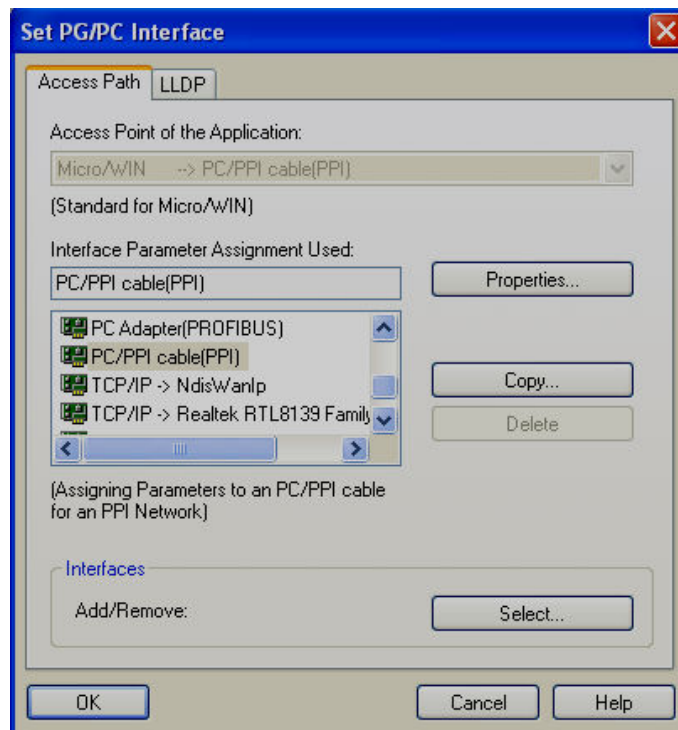
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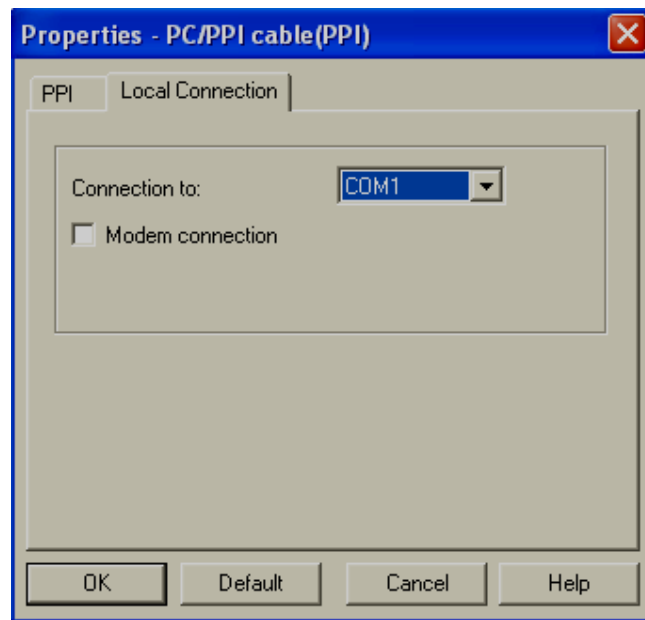


1. Connect Siemens PPI cable between S7200 PLC to PC. Note down COM port number in PC and it should be entered in OPC server configuration before running Online simulation in PC.

**Note:** Please note that you must use COM2 in OPC Server configuration before downloading application to HMI

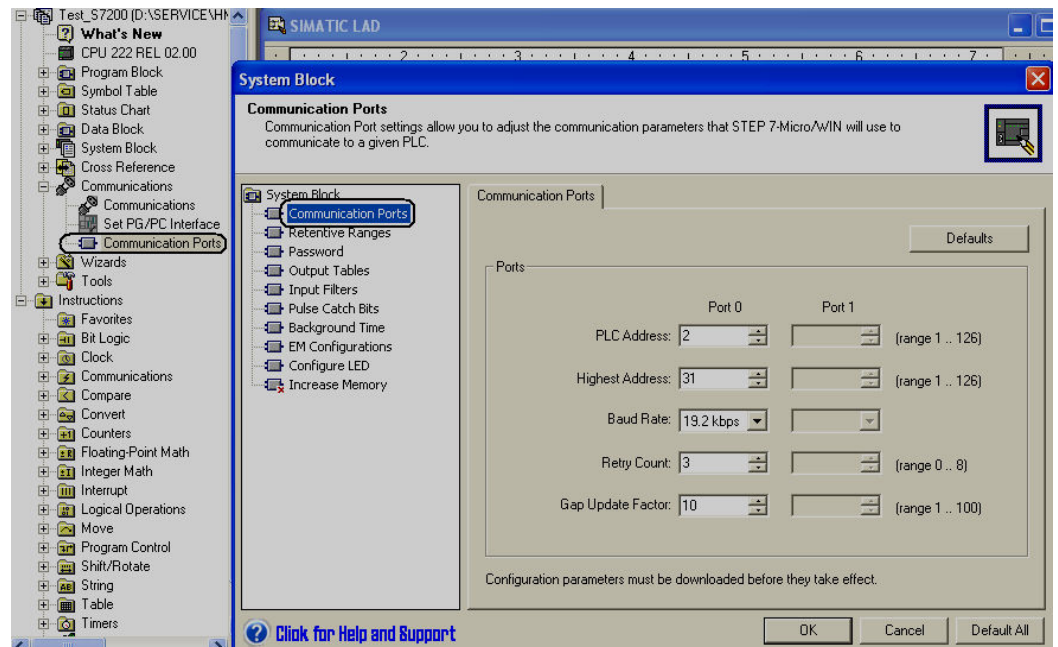
2. Set PG/PC interface as below





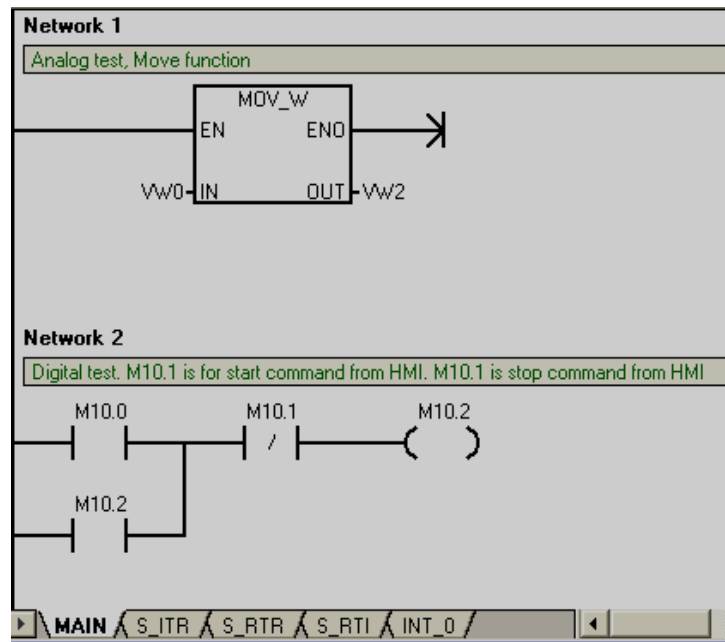
Note down COM port number and Transmission rate, they need to set in OPC server later.

3. Make sure, S7200 PLC setup is as shown below

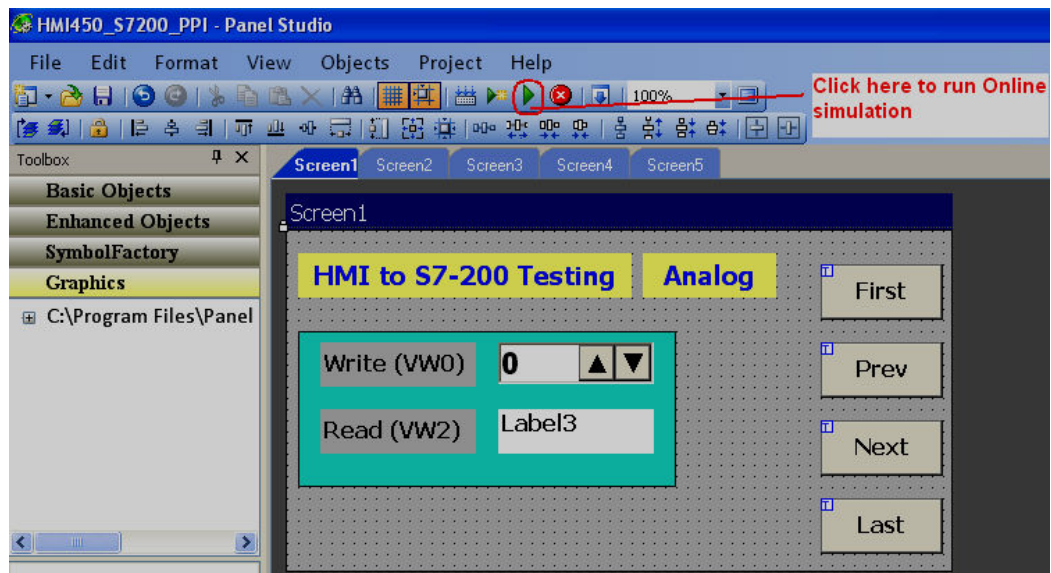


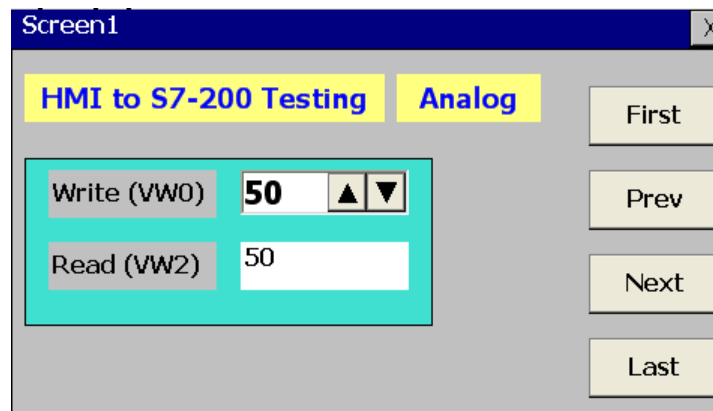
Note down PLC address and Baud rate, these details must be set in OPC server configuration later.

4. Write a small PLC program in OB1 as shown attached and then download to PLC. Make sure PLC is in Run mode

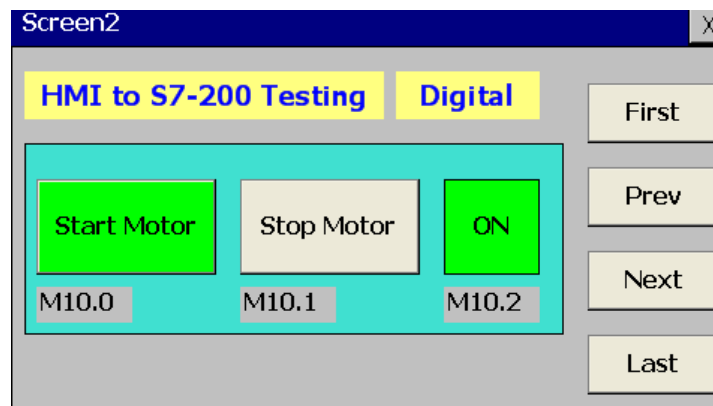


5. Install Panel Studio pack in PC. Open HMI450\_S7200\_MPI.prj Panel Studio application in PC. Run Online simulation as shown below





Use Up/Down arrows and change the value at VW0. It should change at VW2 also because Move instruction used in PLC program to Move contents from VW0 to VW2

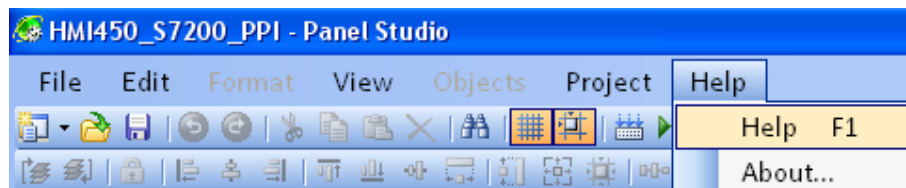


In Screen2, press “Start Motor” button and check status at M10.2. Then, press “Stop Motor1” and observe status of M10.2. Please check PLC program for motor control

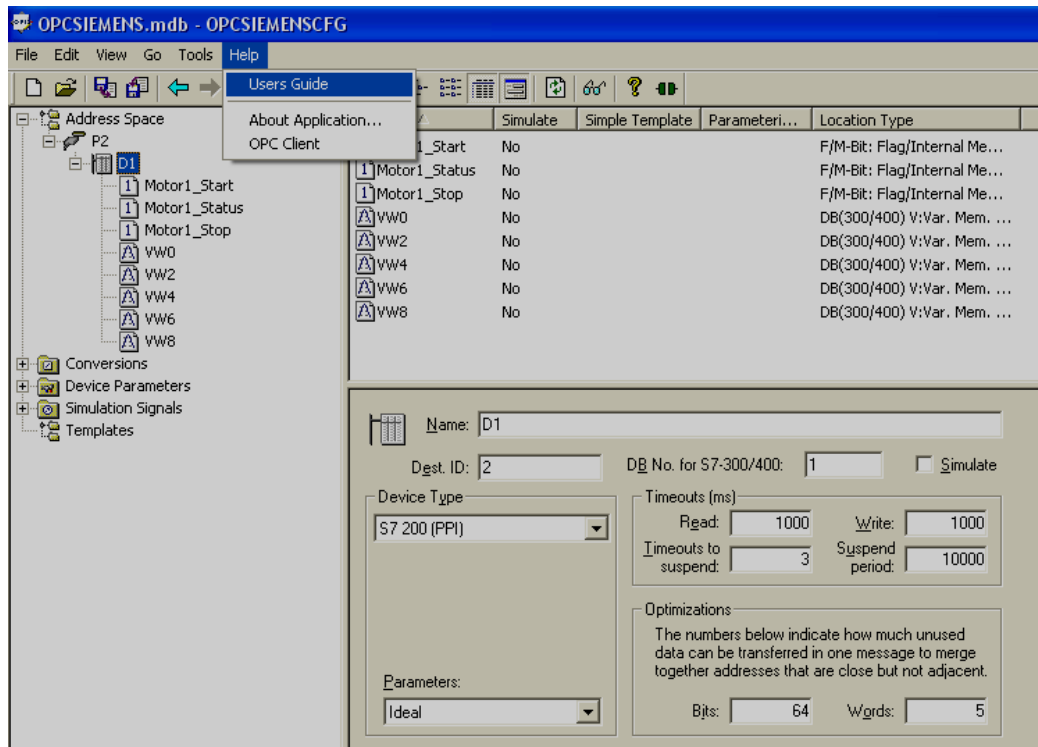
### 3. Reference manuals

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#### 1. HMI user manual

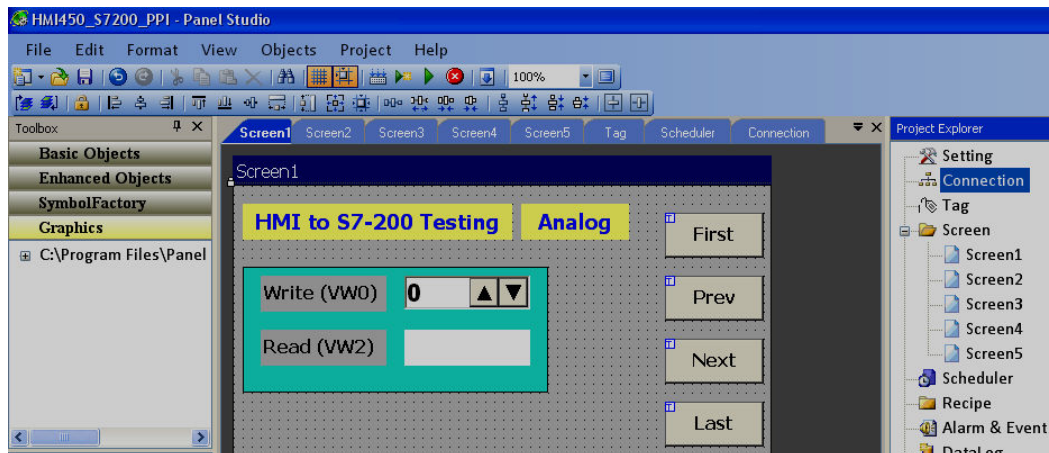


2.Siemens OPC server user manual (This can be accessed from OPC server configuration menu itself as shown below)



## 4. OPC Server configuration screens

(This is already done in sample application program-all the following pages is for user information only when creating new project)





## Connection

1 / 0
+
×
✓

Name:

Type:

Comment:

Protocol:

|   | Name       | Type       | Parameter  | Comme |
|---|------------|------------|------------|-------|
| ▶ | OPCSIEMENS | OPC Server | OPCSIEMENS | P2    |

OPCSIEMENS.mdb - OPCSIEMENSCFG

File Edit View Go Tools Help

Address Space

- ▶ P2
  - D1
- Conversions
- Device Parameters
- Simulation Signals
- Templates

| Name | Simulate | Type       | Address | Max. Merg... | Max. Merg... | Par |
|------|----------|------------|---------|--------------|--------------|-----|
| D1   | No       | S7-200 PPI | 2       | 64           | 5            | Ide |

Name:  ☐ Simulate

File name:

Baud rate:

☐ Monitor CTS for output flow control

Data bits:   
☐ 7 bits   
☒ 8 bits

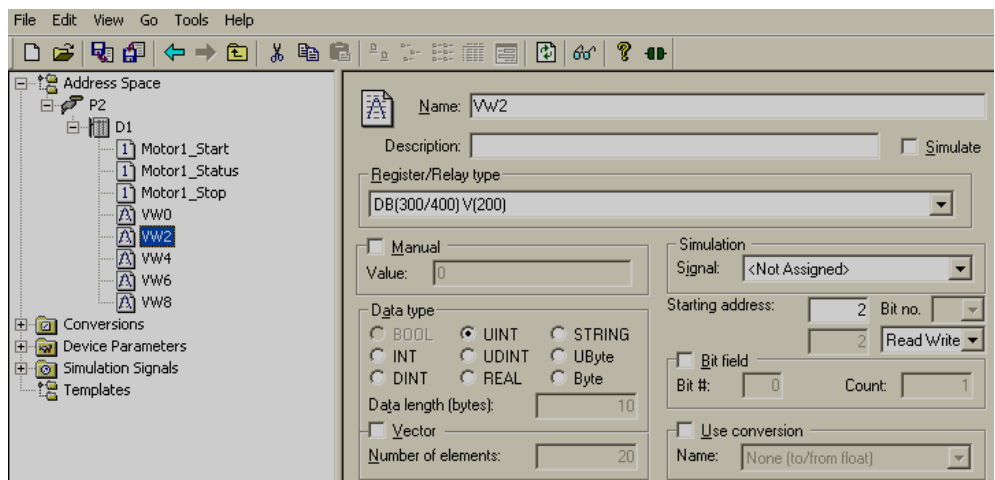
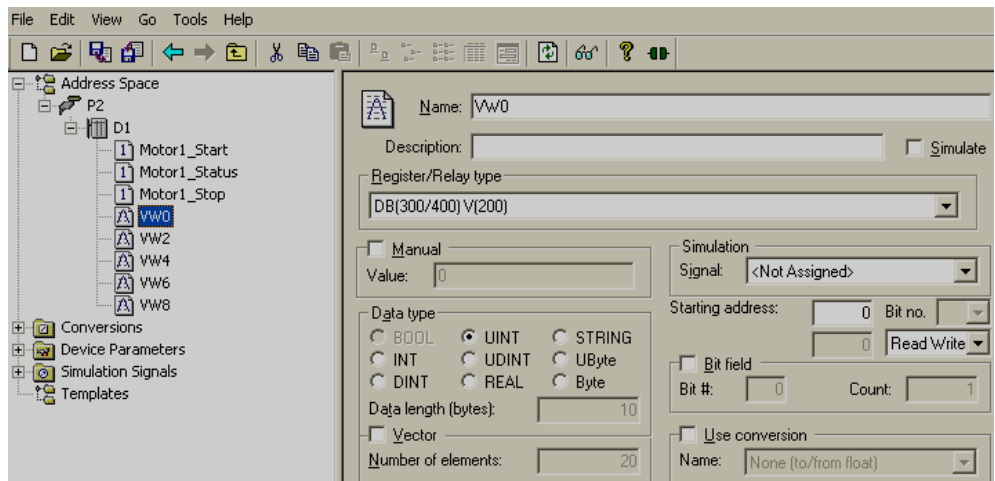
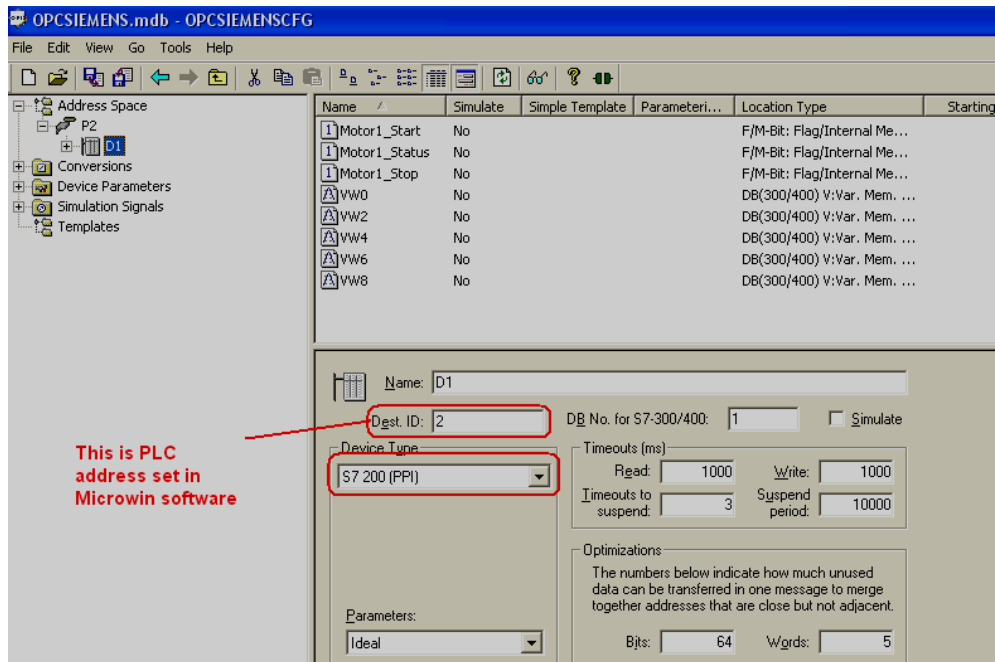
Stop bits:   
☒ 1   
☐ 1.5   
☐ 2

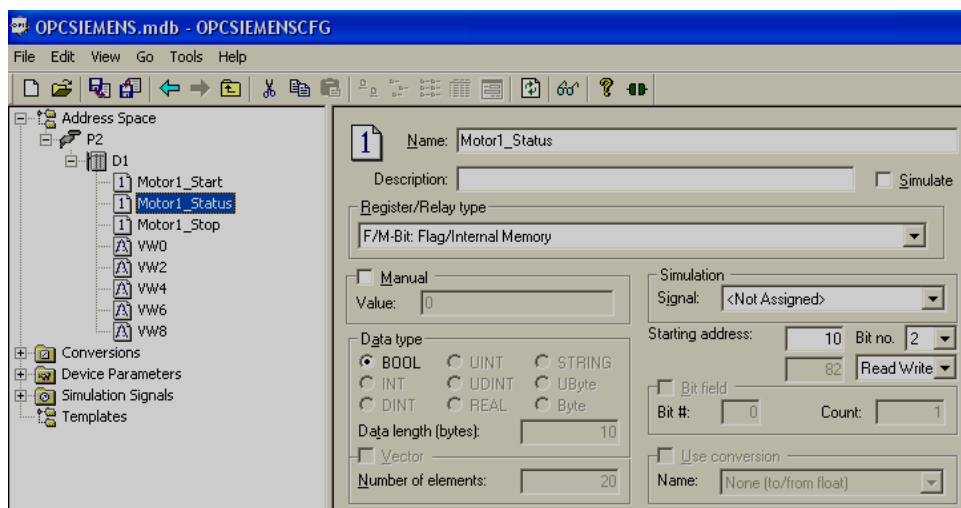
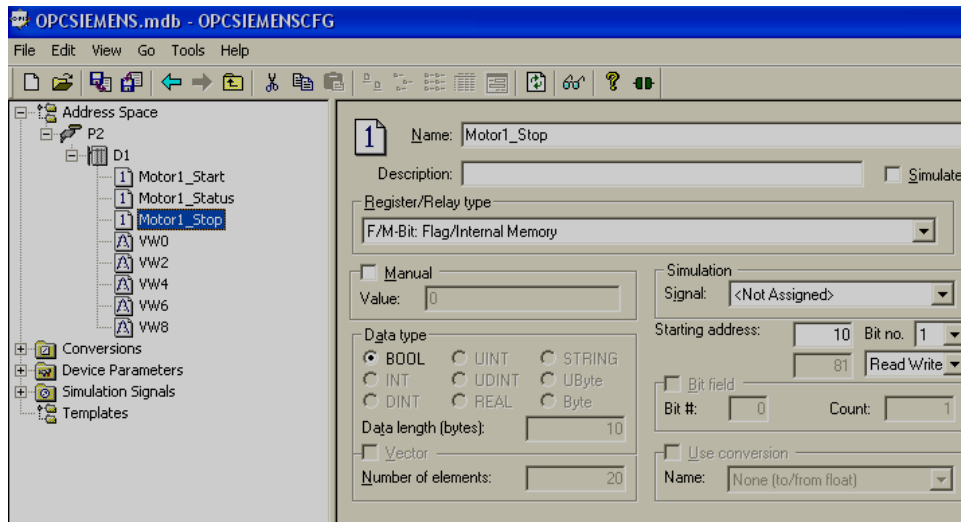
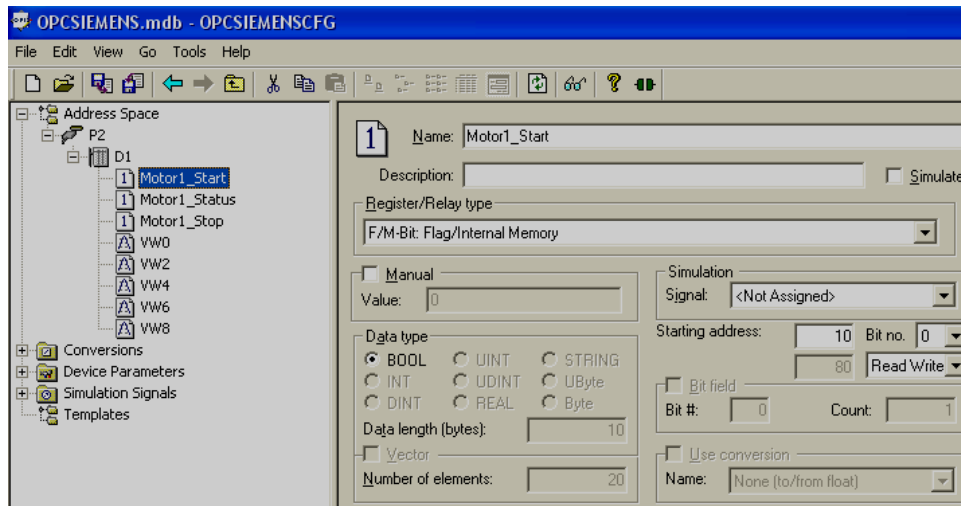
RTS flow control:   
☒ Disable   
☐ Enable

Parity scheme:   
☐ No   
☒ Even   
☐ Odd

☐ Parity checking enabled

**COM port number should be 2 before downloading application to HMI.  
Parity should be selected as "Even"**





# Tag

User Define

System

16

/ 0

+

×

✓

Connection

OPCSIEMENS

Register

P2.D1.Vw8

Name

P2\_D1\_Vw8

Gain

1

Type

Analog

Read/Write

Read & Wi

Offset

0

Scan mode

Always

Scan rate

100

ms

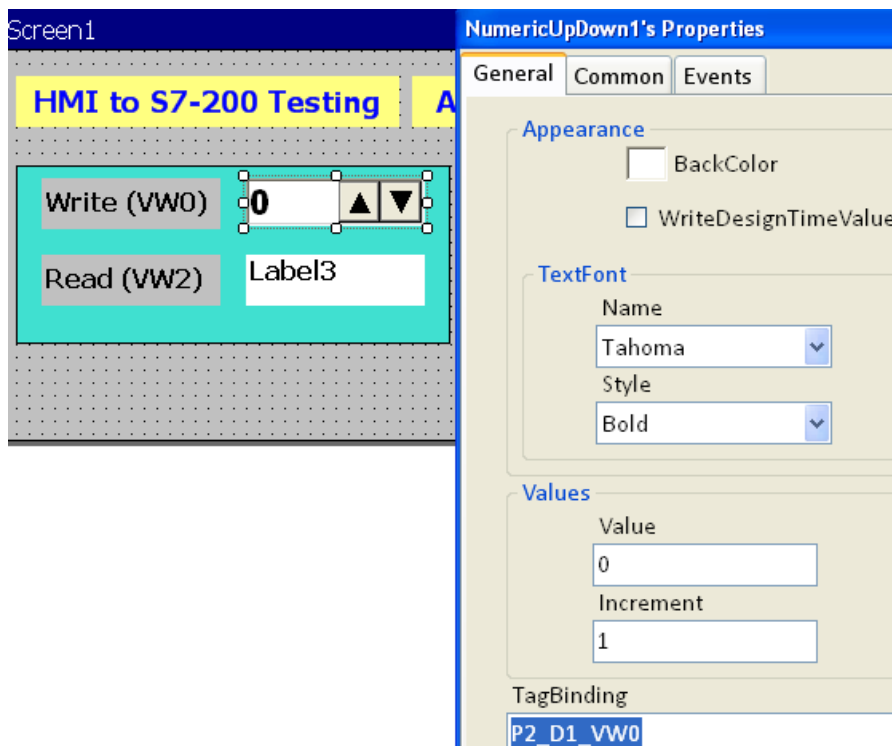
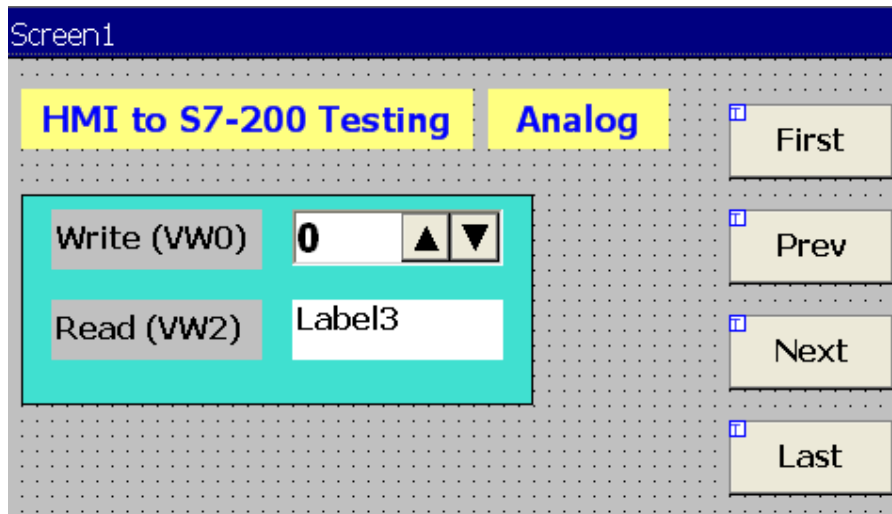
Comment

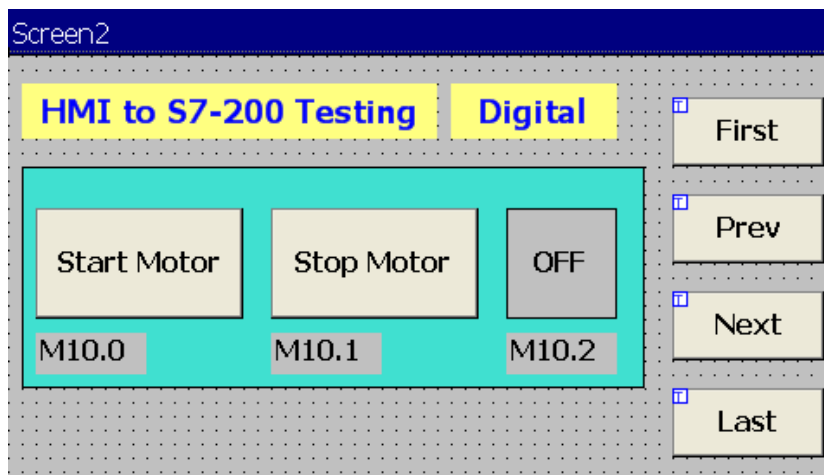
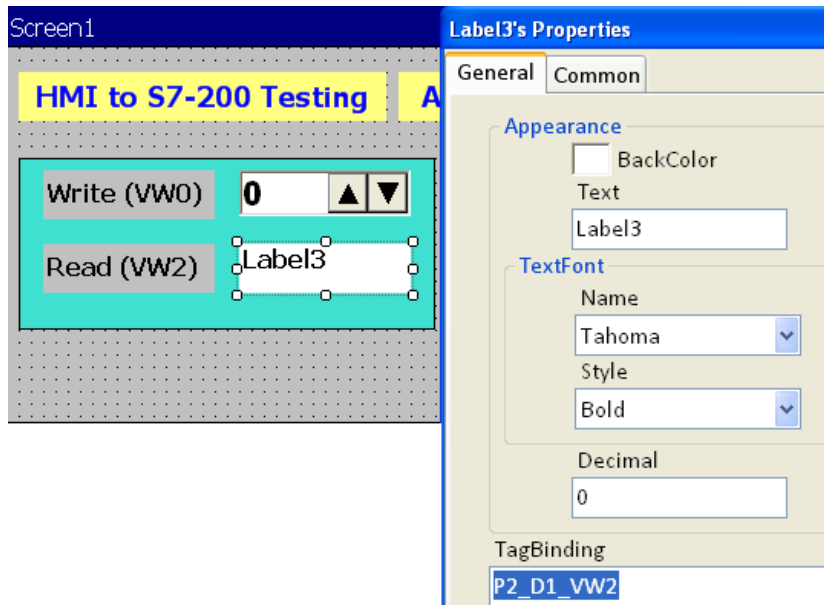
|  | Connection | Name                | Type    | Scan mode |
|--|------------|---------------------|---------|-----------|
|  | OPCSIEMENS | P2_StopBits         | Analog  | Always    |
|  | OPCSIEMENS | P2_D1_Motor1_Start  | Digital | Always    |
|  | OPCSIEMENS | P2_D1_Motor1_Status | Digital | Always    |
|  | OPCSIEMENS | P2_D1_Motor1_Stop   | Digital | Always    |
|  | OPCSIEMENS | P2_D1_Vw0           | Analog  | Always    |
|  | OPCSIEMENS | P2_D1_Vw2           | Analog  | Always    |

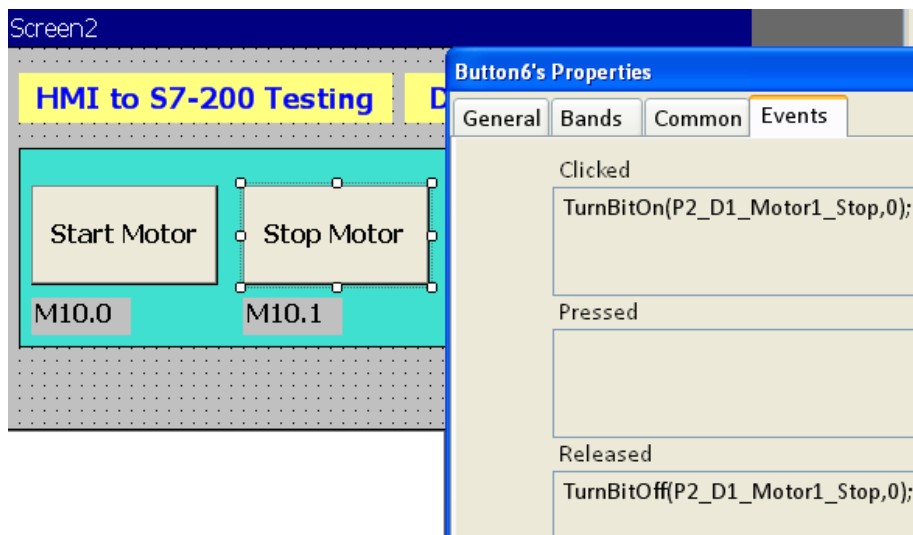
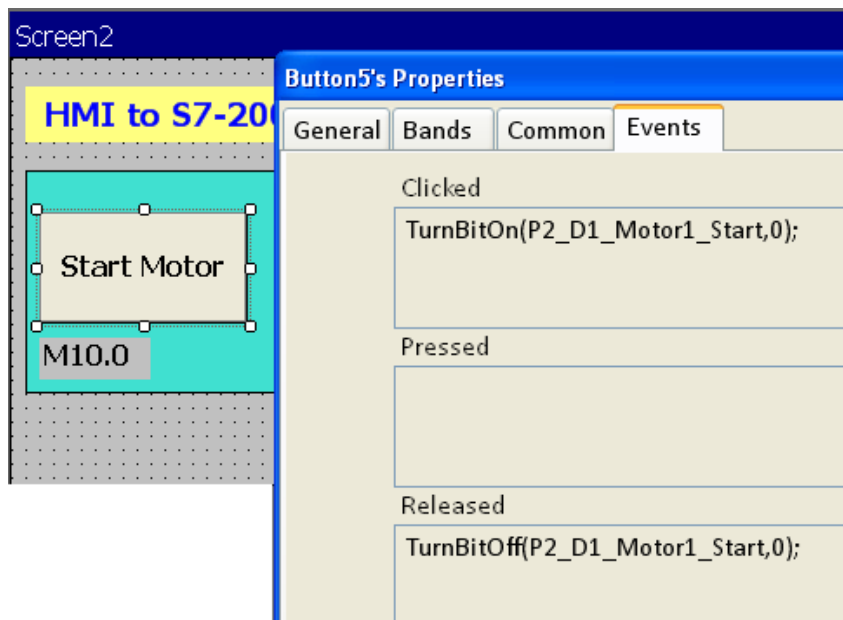
Fig: Tag data base in Panel Studio software. Once OPC server configuration is completed, please close OPC server configuration screen and then check tags. All tags defined at OPC server should appear as shown above

## 5. HMI Configuration screens

(This is already done in sample application program-all the following pages is for user information only when creating new project)

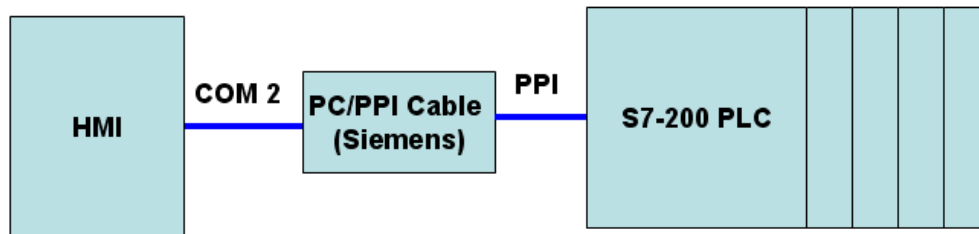






## 6. Run application in HMI

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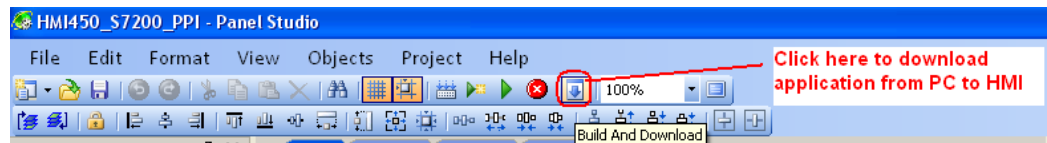
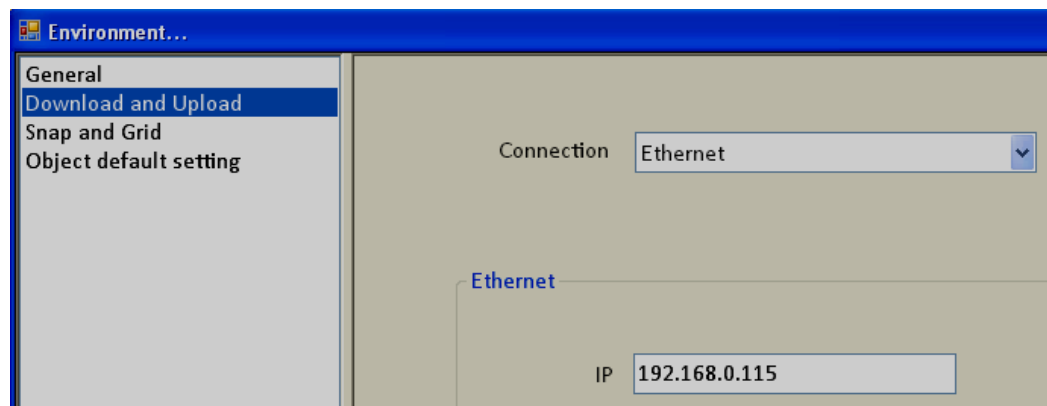
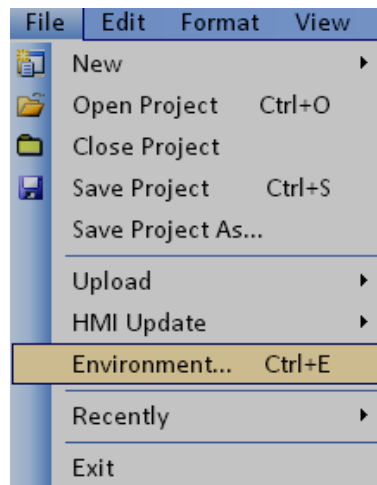


1. Hold your finger at any touch area in HMI and Power on HMI. It should show control center screen



2. Connect PPI Cable from PLC to HMI (COM2) port only
3. In HMI, Press at "System information" and check IP address of HMI from Control Center. For ex: 192.168.0.115
4. From Panel Studio software, enter IP address of HMI as shown below and then download HMI450\_S7200\_PPI application from PC to HMI via Ethernet





5. From Control center at HMI, press "Run"

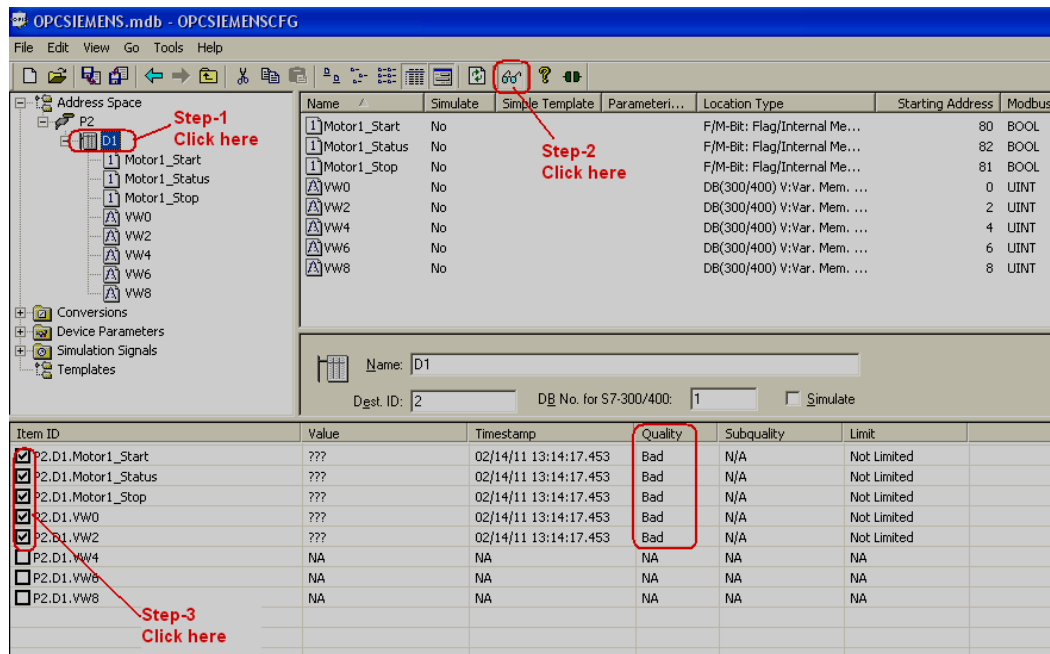
## 7. OPC server testing

(This is for advance users only)

Connect PLC to HMI using Siemens PPI cable

Make sure PLC is in Run mode

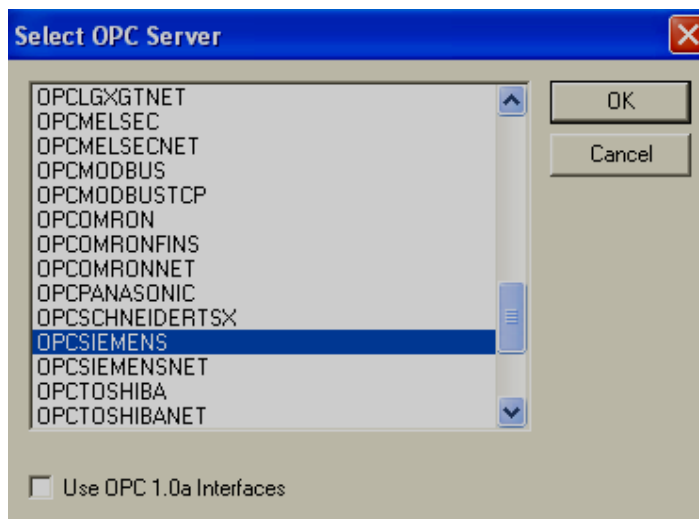
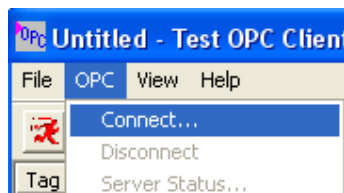
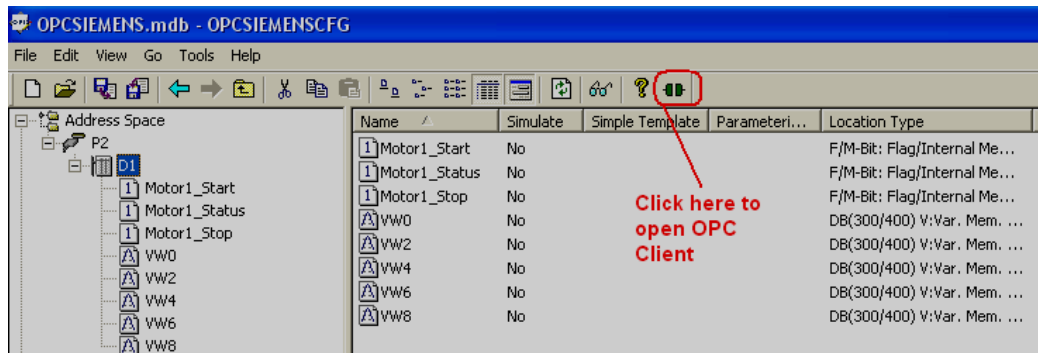
Open OPCSIEMENS Configuration screen

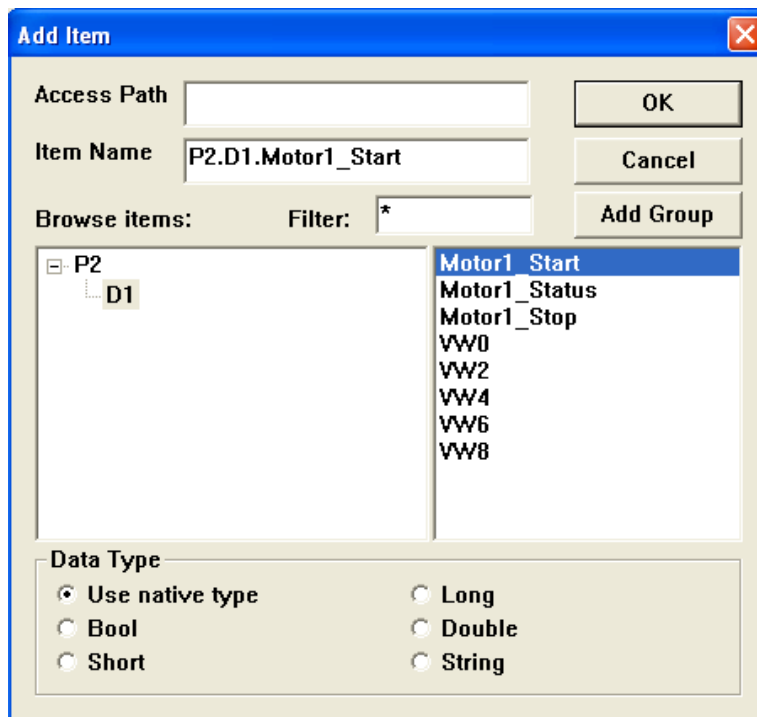
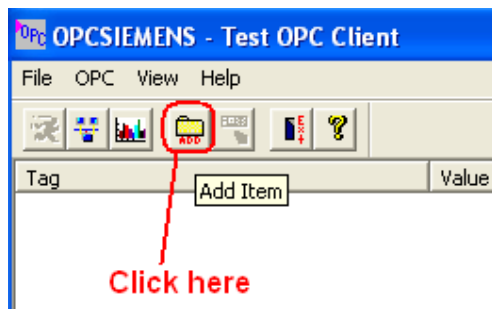


Select the check box then, it should show status of tag in Real time. If quality is good, then, communication is OK. If it is showing “Bad”, then, you need to check cable, communication settings in both PLC and OPC server configuration, COM port number in OPC server configuration at PC etc.

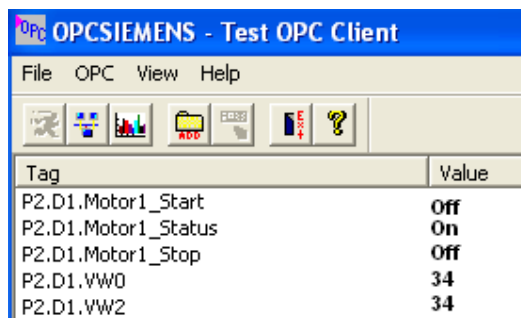
## 8. OPC Client testing

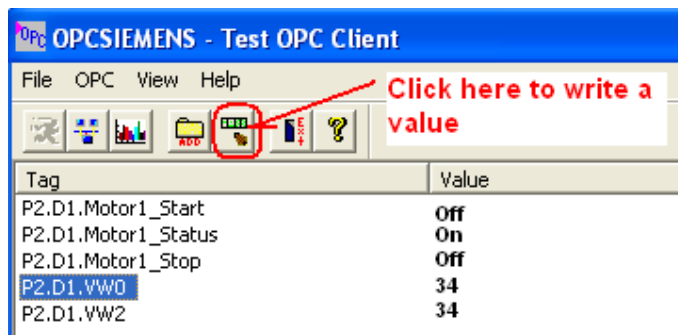
(This is for advance users only)




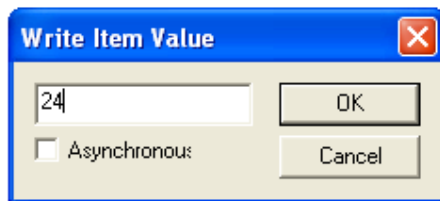


Select device D1 on left side, click at first Tag say Motor1\_Start and then click at “Add group”, then click OK, it will add all the tags of PLC in OPC client for testing purpose





Select the tag first and then click at  to write value



Note: Please be careful while working with Digital IO's. You need to follow the PLC program.

In this case

To Start a Motor

P2.D1.Motor1\_Start → Turn ON (Write 1)  
P2.D1.Motor1\_Start → Turn OFF (Write 0)

To Stop a Motor

P2.D1.Motor1\_Stop → Turn ON (Write 1)  
P2.D1.Motor1\_Stop → Turn OFF (Write 0)