

11.5.2 For Ethernet Communication

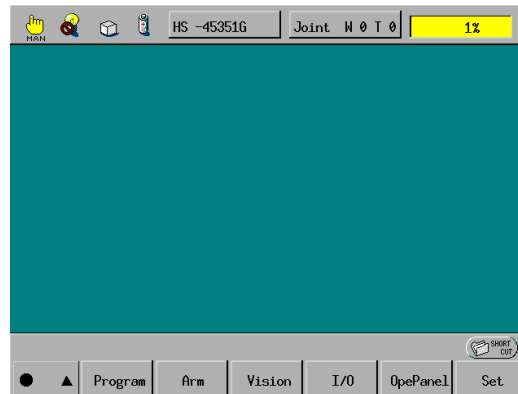
11.5.2.1 Ethernet (Configuring the robot controller)

Configure the robot controller from the teach pendant so that WINCAPSIII can communicate with the robot controller via Ethernet.

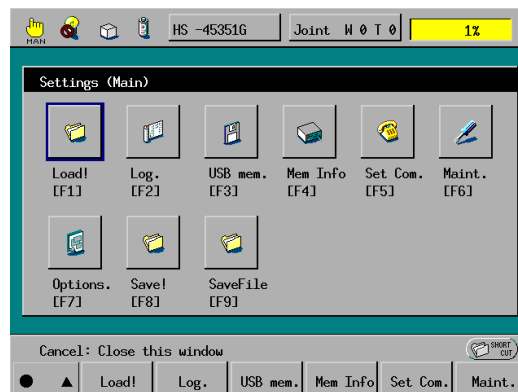
Make settings for the communication permission and IP address.

Step 1 Press [F6 Set] on the basic screen of the teach pendant.

F6



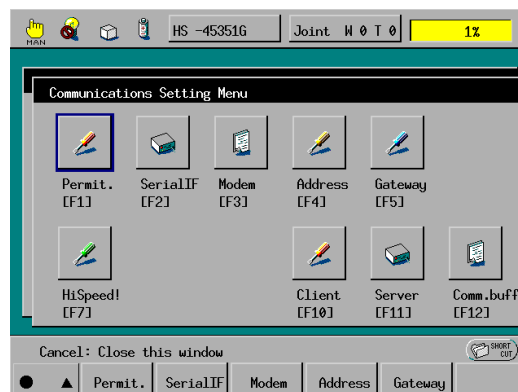
The Settings (Main) window appears on the screen.



Step 2 Press [F5 Set Com.].

The Communications Setting Menu window appears on the screen.

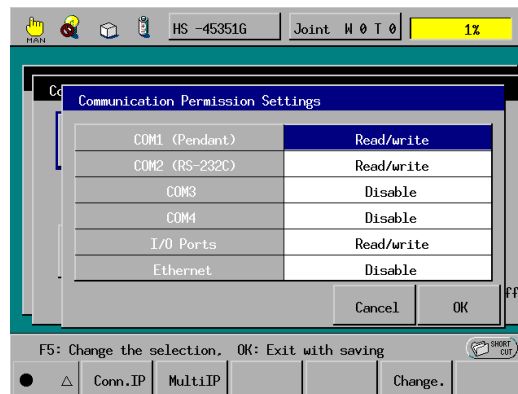
F5



Step 3 Press [F1 Permit.].

The Communication Permission Settings window appears on the screen.

F1

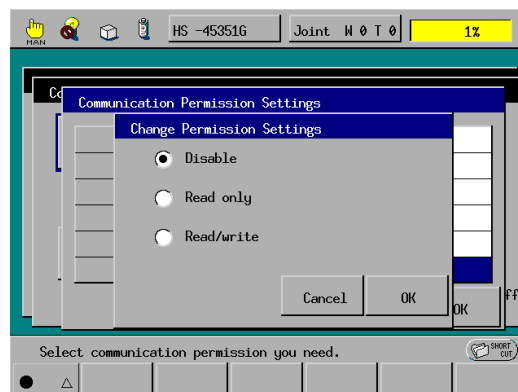


Step 4 Select Ethernet and press [F5 Change.].

The Change Permission Settings window appears on the screen.

F5

Step 5 Select Read/Write.



The meanings of the permission settings are as follows:

When using Ethernet, select Read/Write.

- Disable: Communication port is not used.
- Read only: Personal computer is enabled to read the robot controller data. It is not allowed to send data to the robot controller.
- Read/Write: Data exchange is allowed between the personal computer and robot controller.

Upon making section, press OK.

The screen returns to the Communication Permission Settings window.

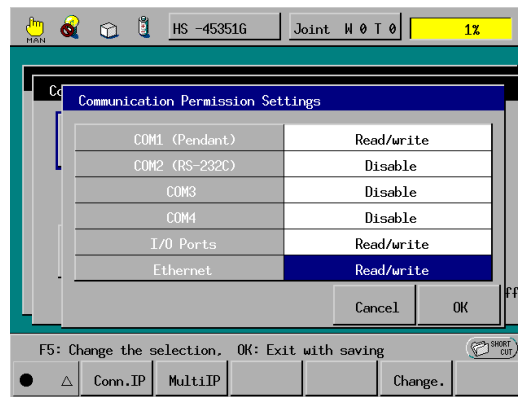
Note: It is not possible to select Read/Write for both COM2 (RS-232C) and Ethernet concurrently. To select Read/Write for Ethernet, therefore, select Disable or Read only for COM2 (RS-232C).

Step 6

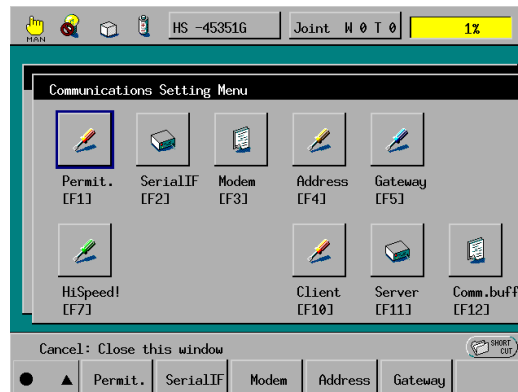
Check the display contents and press OK.

The permission setting becomes valid.

OK



The screen returns to the Communications Setting Menu window.

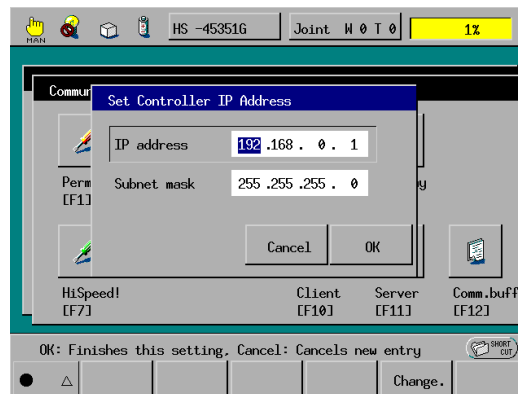


Step 7

Press [F4 Address].

The Set Controller IP Address window appears.

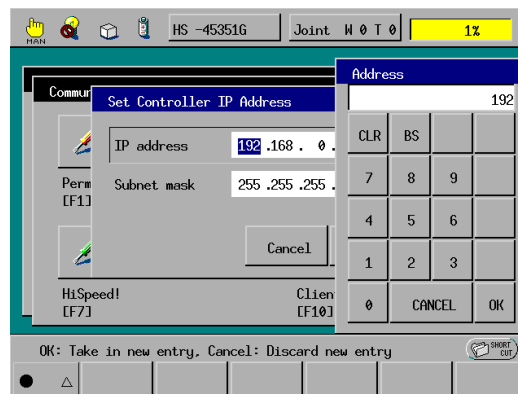
F4



Step 8

Press [F5 Change.] and enter a required address.

F5



Step 9

Press Cancel twice.

The display returns to the basic screen.

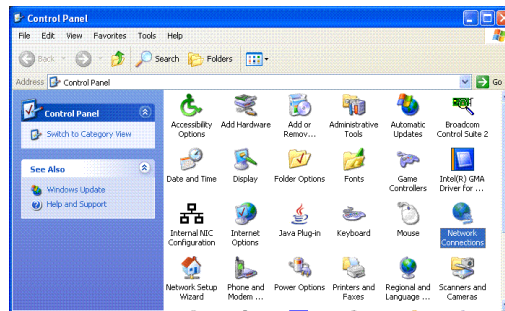
11.5.2.2 Setting Network Environment

To effect connection by EtherNet, it is necessary to set up Windows. The network environment setting procedures will be described here preconditioned on the fact that the network card (adapter) is installed and that the Internet protocol (RCP/IP) is effective.

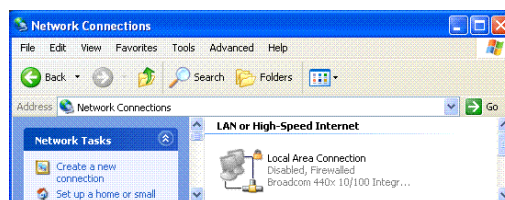
First, check that the local area connection is effective.

Next, set up an IP address for the TCP/IP property.

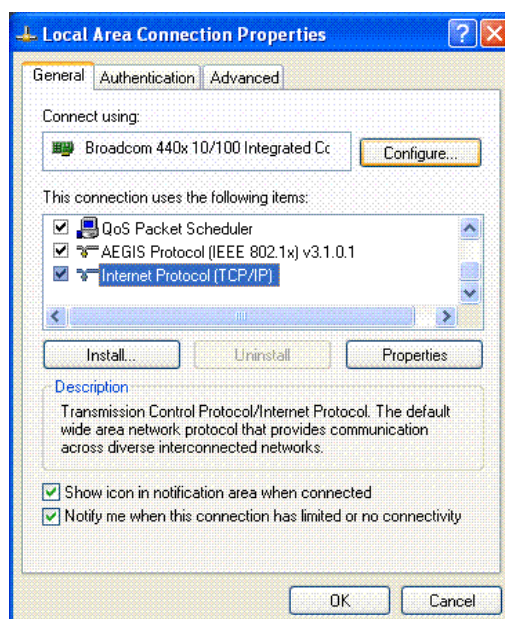
- Step 1** Select Settings and Control Panel in this order from the START of Windows.
The Control Panel window will appear on the screen.



- Step 2** On the above screen, click the icon "Network Connections."
The Local Area Connection icon appears as shown below.
If "Disabled" is displayed with the icon, move the pointer to the icon, click the right mouse button, and then select "Enable."



- Step 3** Place the pointer on the "Local Area Connection Properties" icon, click the right mouse button and select "Property."
The Local Area Connection Properties appears.



Step 4 In the Local Area Connection Properties window, select the General tab.

In the "This connection uses the following item:" area, press the Properties button with the Internet Protocol [TCP/IP] selected. The Internet Protocol (TCP/IP) Properties window appears.

Step 5 Select the General tab and click the "Use the following IP address:".

Then enter the IP address and the Subnet mask.

For the actual values of the IP address and subnet address, inquire to the network administrator in charge of the pertinent network.

If the network is local (for example, an environment for connecting the personal computer and the robot controller only), the IP address can be set as desired. Therefore, the IP address will be tentatively set here to 192.168.0.1 and the subnet address to 255.255.255.0.

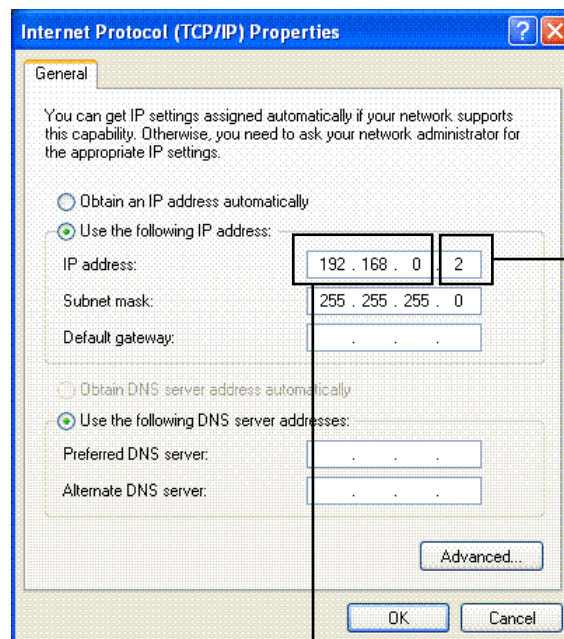
Click on **OK** and the IP address setting is completed.

Note (1): When making connection to a wide area network (for example an in-house network), always inquire to the network administrator before setting the IP address and subnet mask.

If an IP address used for the local area network is connected to the wide area network (for example the in-house network) without first invalidating it, confusion may be occur in the connected network.

Note (2): No redundant IP addresses are allowed within the same network. When making a connection to a widely shared network, care should be taken not to allow an IP address to be redundant with another terminal. The following are examples of IP addresses that have the least probability of redundancy with another terminal:

192.168.0.2 to 192.168.0.xxx (xxx represent 003 to 999.)



This section must be the same as that specified in the controller.

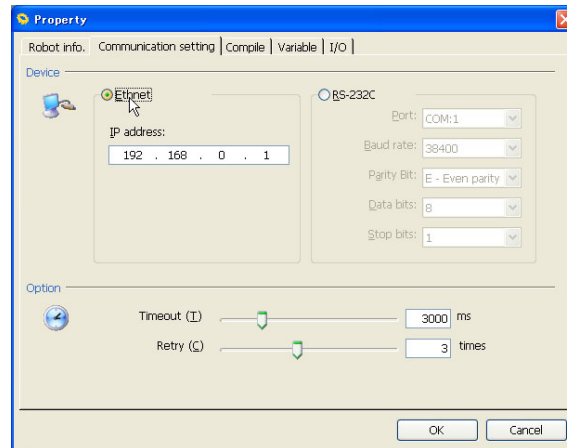
This value must not be the same as that specified in the controller.

11.5.2.3 Ethernet (Configuring WINCAPSIII)

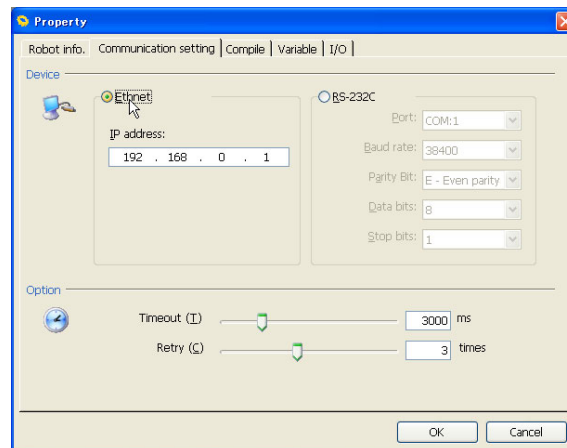
Configure the PC in WINCAPSIII so that WINCAPSIII can communicate with the robot controller via Ethernet.

The interface can be also specified with the WINCAPSIII Project wizard (see Section 11.3.2, step 5). Even after the wizard is finished, the interface can be changed with the procedure given below.

- STEP 1** Choose Project | Properties to display the Property window and then choose the Communications setting tab.



- STEP 2** Make sure that Ethernet is selected and enter the IP address of the robot controller.



- STEP 3** Specify the timeout period and the number of retries, and then press OK.
The communications setting for the PC has been completed.

11.6 Transmitting Data with WINCAPSIII

Before transmitting data (sending/receiving data between the robot controller and WINCAPSIII), it is necessary to make the communication permission settings and to check the controller operation status. Depending on the controller status, data transmission may fail.

11.6.1 Preparation in the Controller (Precautions for Transferring Data)

- (1) Check that no error message is displayed on the teach pendant screen.
- (2) Check that the permission settings for the communications port to be used (for RS232C or EtherNet) is "Read/write."

Note: If "Read only" is selected, transmitting data will cause the ERROR200B ("Configuration transmission failure").

- (3) Depending on the combination of ON/OFF status of the robot controller motor and the operation mode selected, transmitting data may not be possible, as shown in the table below.

Status	Motor	Controller operation mode				Remarks
		External Auto	Internal Auto	Manual	Teach	
PAC programs	ON	N	N	N	N	Y1: Programs are not saved automatically.
	OFF	N	Y1	Y	Y1	
Variable	ON	N	Y	Y	Y	
	OFF	N	Y	Y	Y	
I/O	ON	N	N	N	N	
	OFF	N	Y	Y	Y	
Arm	ON	N	Y2	Y2	Y2	Y2: Only tool, work, and area data can be transmitted.
	OFF	N	Y	Y	Y	

Y: Transmission possible, N: Transmission impossible

Note (1): WINCAPSIII can receive data regardless of the ON/OFF status of the controller motor and the controller operation mode.

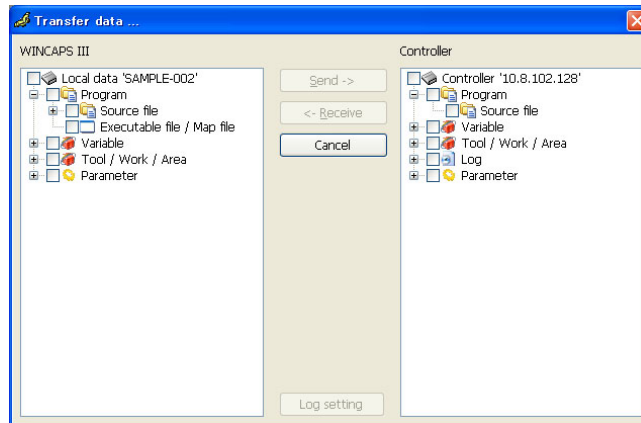
Note (2): Receiving data during program execution will slow down the program execution.

- (4) Check that neither the Program list window nor Select Variable type window is displayed on the teach pendant screen.

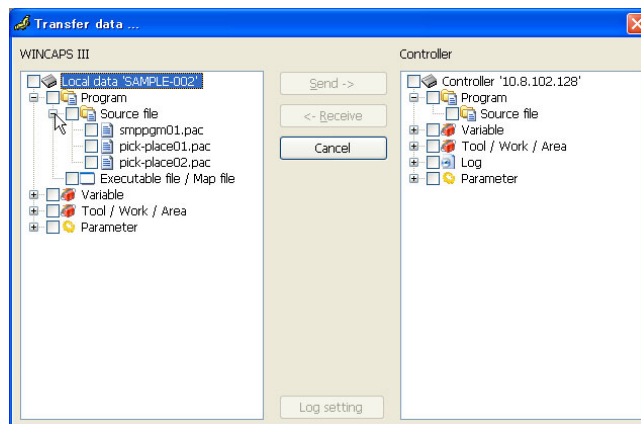
11.6.2 Transferring Program Data to the Robot Controller

At present, the execution program compiled in this Chapter so far is still in the PC. To run the program, it is necessary to transmit (upload) it to the robot controller.

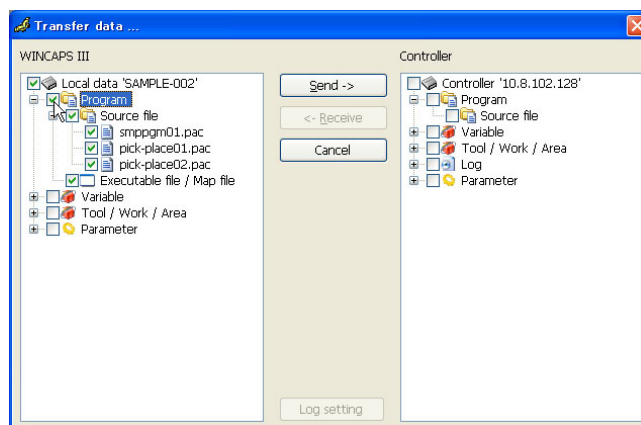
STEP 1 In WINCAPSIII, choose Connect | Transfer data to display the following window.



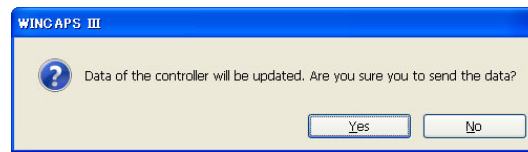
STEP 2 In the WINCAPSIII pane, choose Program | Source file to display the programs held in WINCAPSIII.



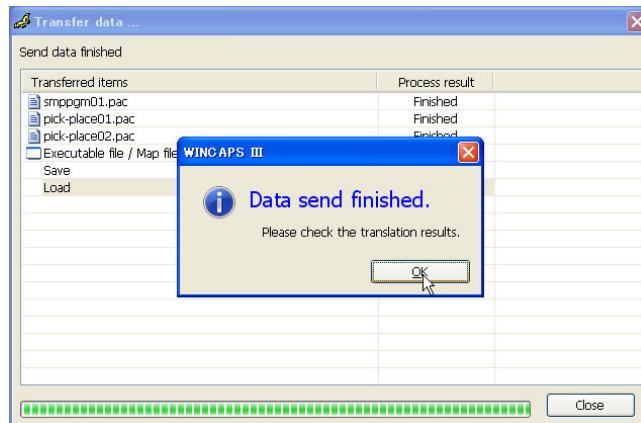
STEP 3 Select Program and press Send.



STEP 4 Wait for the confirmation dialog to appear. Press Yes to transfer the data to the robot controller.



STEP 5 Confirm that all of the data transfer results are Finished.



STEP 6 On the teach pendant, press [F1 Program] to display the Program List window. Check that programs transferred are shown in the list.

The program transfer to the robot controller has been completed.