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1 General

1.1 Contents

This entry describes different solutions if you should encounter problems when transferring the configuration file to the HMI operator panel. Possible causes are listed and remedies given for clearing them.

Requirement

Transfer of the HMI configuration to the operator panel is by Ethernet or PN/IE.

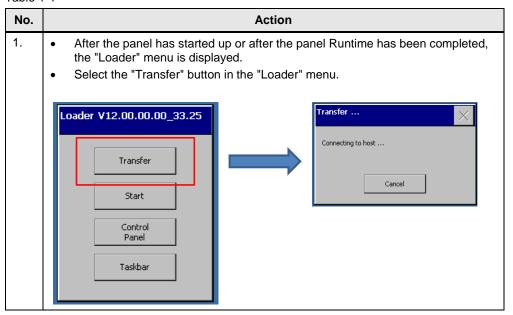
1.2 Settings

You must open different menus to check the settings. This chapter describes how to get to the menus and settings. In later error analyses we refer to this chapter.

1.2.1 Settings on the Panel

Set the panel to the Transfer mode

Table 1-1

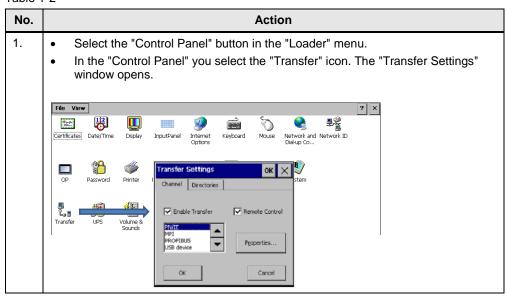


Make Transfer settings on the panel

Note

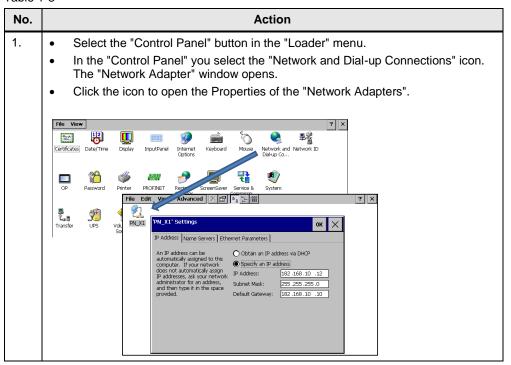
If routers are integrated in the network, for example in combination with "VPN", then refer to the information about Transfer settings in section <u>2.2.2</u>.

Table 1-2



Change network settings on the panel

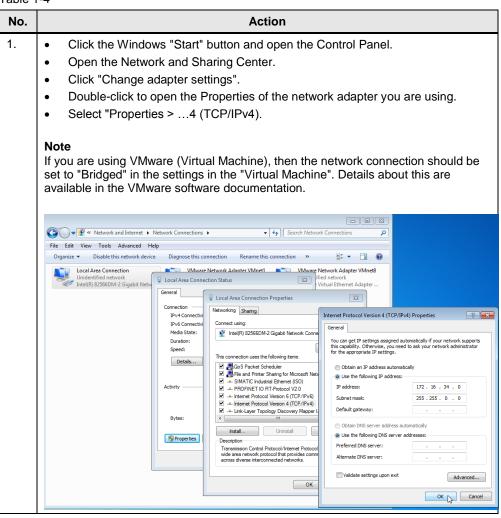
Table 1-3



1.2.2 Settings on the Configuration PC

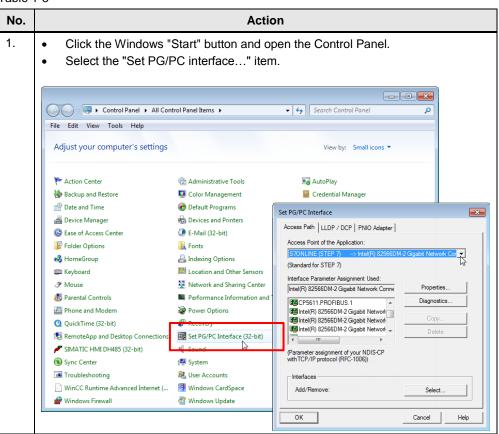
Network adapter settings on the PC

Table 1-4



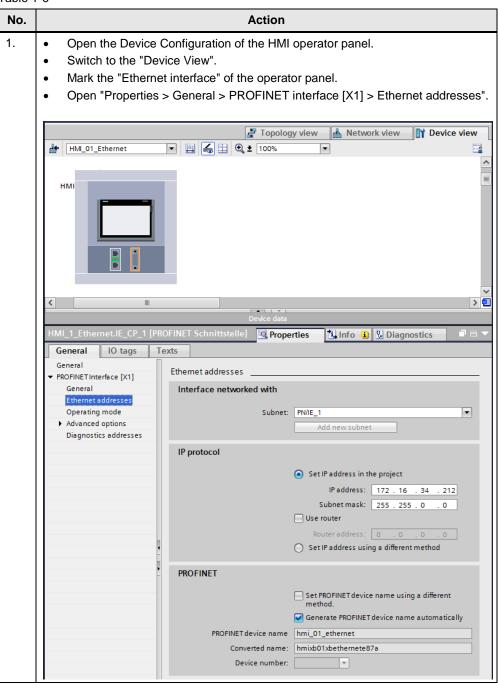
Settings of the PG/PC interface

Table 1-5



Network settings in the HMI configuration

Table 1-6

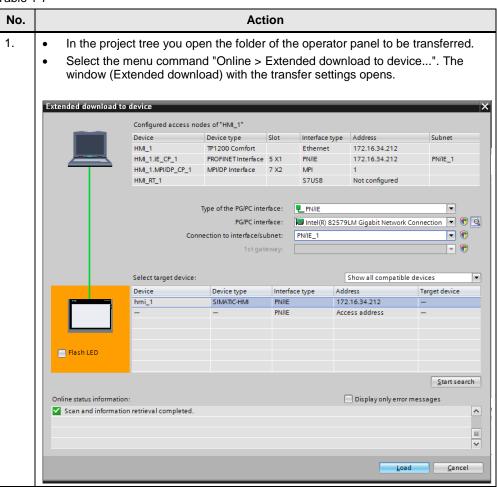


Transfer settings in the HMI configuration

Note

If routers are integrated in the network, for example in combination with "VPN", then refer to the information about Transfer settings in section <u>2.2.2</u>.

Table 1-7



2 Basic Check

This chapter describes the most common sources of error.

If you cannot now transfer the configuration to the HMI operator panel, then you must run a detailed check. Refer here to chapter $\underline{3}$.

Are you using a USB-Ethernet Adapter?

You can only use Ethernet interfaces that are present as hardware for project transfer.

Therefore no "USB to Ethernet" adapters can be used.

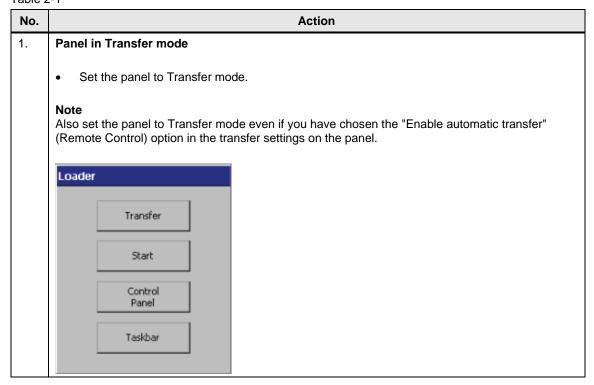
More information about this is available in this entry:

http://support.automation.siemens.com/WW/view/en/19109408

2.1 General Settings

Settings on the panel

Table 2-1



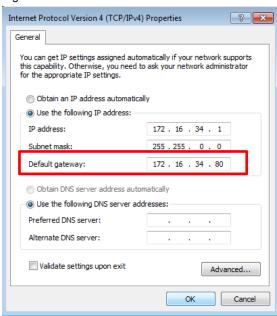
No.	Action		
2.	Check the IP address		
	 Check the IP address and subnet mask set on the configuration PC (network adapter settings) in the HMI configuration (transfer settings) on the panel (network settings) 		
	Notes		
	The IP addresses must be unique in the network.		
	If you are not using a router, then the addresses assigned must be in the same subnet.		
	Example (incorrect setting)		
	Configuration PC		
	- IP address: 172.16.34.10		
	Subnet: 255.255.0.0		
	HMI configuration / Transfer settings		
	- IP address: 172.16.34,200		
	Subnet: 255.255.0.0		
	Panel network setting		
	- IP address: 172.16.34.200		
	Subnet: 255.255.255.0 -> In this case the subnet mask is not in the specified area.		

Ethernet setting on the PC (see section 1.2.2)

Check the adapter settings on the configuration PC.

If you are using a router, you must specify the IP address of that router for "Default gateway" in addition to the IP address and subnet mask (see also section 2.2).

Figure 2-1

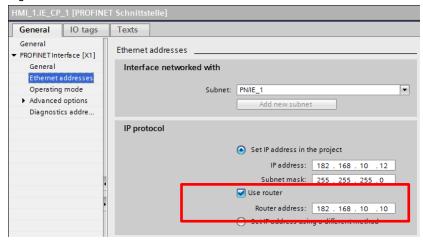


Ethernet setting in the HMI configuration (see section 1.2.2)

Check the network settings in the HMI configuration.

If you are using a router, you must specify the IP address of that router for "Default gateway" in addition to the IP address and subnet mask (see also section 2.2).

Figure 2-2

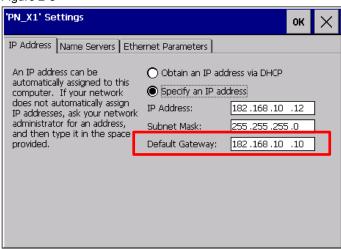


Ethernet setting on the operator panel (see section 1.2.1)

Check the network settings on the HMI operator panel.

If you are using a router, you must specify the IP address of that router for "Default gateway" in addition to the IP address and subnet mask (see also section 2.2).

Figure 2-3



Note

When the HMI configuration has been transferred, the settings made on the panel are overwritten by the settings made in the configuration.

2.2 Using a Router

If the configuration PC and the panel are in different Ethernet networks, then the two Ethernet networks are connected through a router, for example.

Note

Details on the topic of "Integrating HMI Operator Panels in TCP/IP Networks ..." are available in Entry ID: <u>92346478</u>

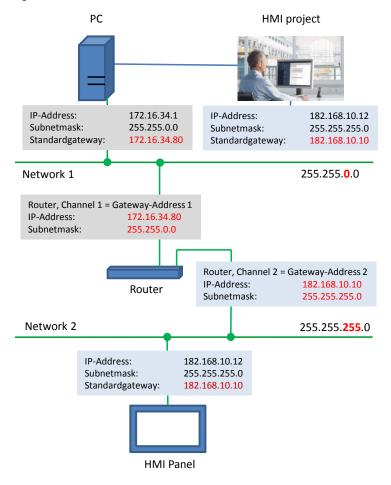
2.2.1 Enter Router Address

When you specify the IP address in the HMI configuration you must also specify the network-specific IP address of the router.

Example

- Network 1 Configuration PC
- Network 2 HMI operator panel

Figure 2-4

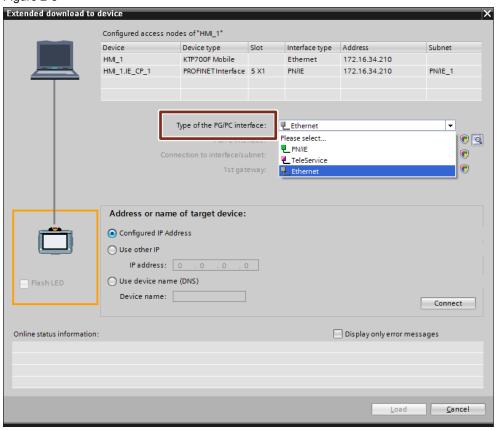


2.2.2 Transfer Settings in the Configuration and on the Panel

If routers are integrated in the network, for example in combination with "VPN", then in the Transfer settings, for "Type of the PG/PC interface:" you select "Ethernet" instead of "PN/IE" in the drop-down list box.

Bear in mind that you also have to select "Ethernet" in the Transfer settings on the operator panel.

Figure 2-5



Background information

In general the Transfer also works with the setting "PN/IE". For this all the routers connected in between have to support "DCP" (Discovery and Configuration Protocol).

If this is not the case, no connection is established via the setting "PN/IE". Which routers support "DCP" is manufacturer-specific and device-specific and cannot be dealt with here.

2.3 Cable Connections

Check the cable connections between the operator panel and the PC.

Causes of error and remedies

- The panel is connected to the PC with an Ethernet cable.
 - Panel with one Ethernet port:
 In this case you use a "crossed" Ethernet cable. Do not use a "patch cable" (connections are configured identically on both connectors).
 - Panel with **two** Ethernet ports: You can use a "crossed" Ethernet cable and also a "patch cable".
 - Make sure that the connectors are slotted in properly.
- The panel is **not** connected to the PC with an Ethernet cable.
 - Make sure that the panel is connected to the correct network segment.
 - If there is a "switch" or "router" in the network, then make sure that the power supply is switched on on the devices.
 - First try to establish a direct Ethernet connection between the panel and the configuration PC.

3 Detailed Check

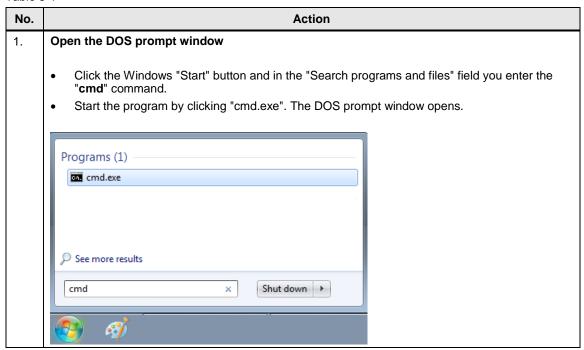
3.1 PC Settings

3.1.1 Run a Ping Test

A "ping" is a diagnostics tool for checking whether a specified node is available in an IP network.

If a ping works on the operator panel, then there is a network connection established between the PC and the panel.

Table 3-1



No. 2. Run a ping test

• In the DOS command line you enter the following command:

ping "Operator panel IP address"

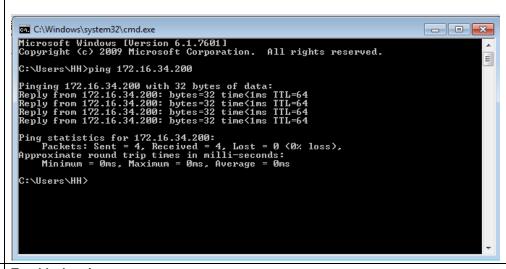
Complete the entry with the "ENTER" key.

Example:

IP address of the HMI operator panel: 172.16.34.200 => ping 172.16.34.200

- If the node is reached, you get the message "Reply from...".
- If the node is **not** reached, you get the message "Time for request exceeded", for example.

Action



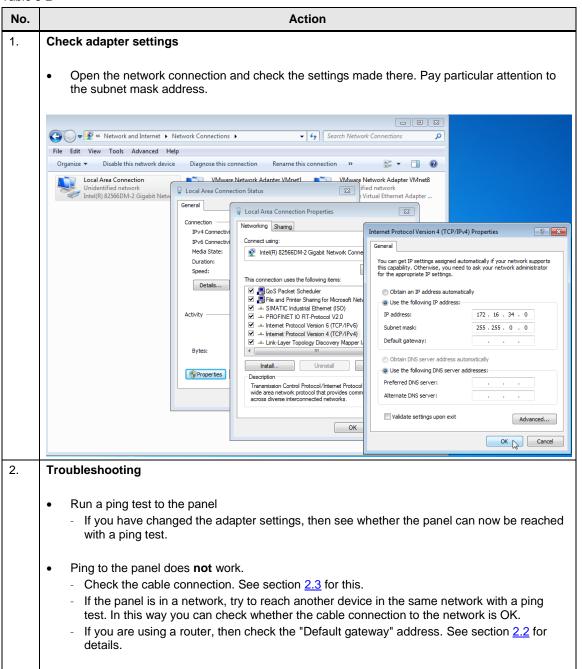
3. Troubleshooting

- Ping to the panel works but it is not possible to transfer the project.
 - Is the same IP address entered in the HMI configuration as previously with the ping test?
 - If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and run the ping test again. There should be no reply.
 - Is the panel in Transfer mode?
 - Is the "Enable Transfer" option enabled in the transfer settings on the operator panel?
 - Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there?
- Ping to the panel does **not** work.
 - Is the panel switched on?
 - Check the cable connection.
 - If the panel is in a network, try to reach another device in the same network with a ping test. In this way you can check whether the cable connection to the network is OK.
 - If you are using a router, then check the "Default gateway" address. See section 2.2 for details.

3.1.2 PC Ethernet Interface

Check the settings of the Ethernet interface on the PC.

Table 3-2



3.1.3 PG/PC Interface

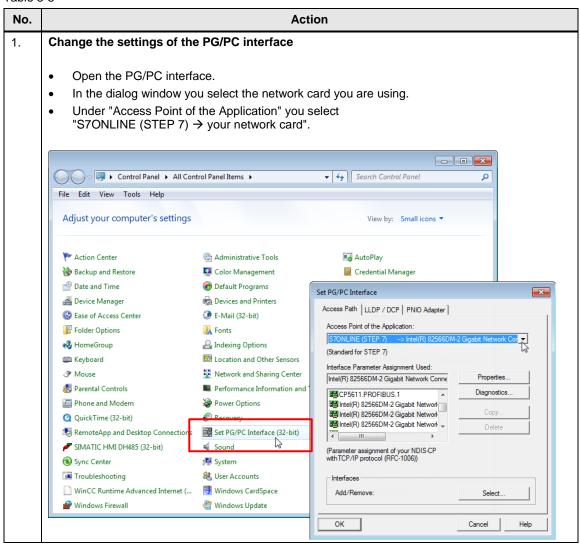
WinCC (TIA Portal)

When using WinCC (TIA Portal), there is no need to make any settings in the PG/PC interface for transferring the configuration to the operator panel. All the required settings are made in the "Extended download" menu.

WinCC flexible 2008

When using WinCC flexible 2008, check the settings in the PG/PC interface.

Table 3-3



No. Action 2. **Troubleshooting** Note If you cannot change the PG/PC interface, check whether "PLC SIM" or an HMI Runtime is still enabled. PLC SIM disables all other online interfaces. In this case, first close the running application (assuming that this is allowed to be closed). Run a ping test to the panel If you have changed the PG/PC interface settings, then see whether the panel can now be reached with a ping test. If the ping test is successful, now try to transfer the configuration to the panel. Ping to the panel does not work. Check the cable connection. See section 2.3 for this. If the panel is in a network, try to reach another device in the same network with a ping Check the settings of the Ethernet interface on the PC. See section 1.2.2 for this. Check the network settings on the operator panel. See section 1.2.1 for this. Ping to the panel works, transfer of the configuration does **not** work. - Is the same IP address entered in the HMI configuration as previously with the ping test? - If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and run the ping test again. There should be no reply. - Is the panel in Transfer mode?

Is the "Enable Transfer" option enabled in the transfer settings on the operator panel? Compare the transfer parameters in the configuration with those on the operator panel.

Is "PN/IE or Ethernet" selected there?

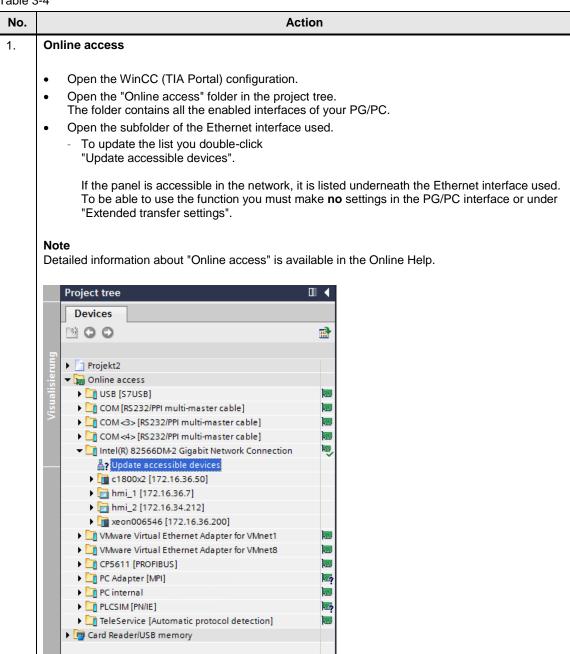
3.1.4 Display Accessible Devices

Section <u>3.1.1</u> describes how to test the connection to the panel using a ping test. Instead of the ping test you can also use the function presented below for testing the online connection.

The advantage of this function is that you can see all the nodes connected to the network.

WinCC (TIA Portal)

Table 3-4

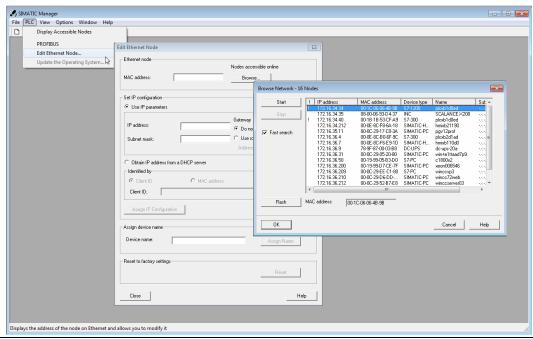


No.	Action	
2.	Troubleshooting	
	The panel is in the list of accessible devices. Try now to transfer the configuration to the panel.	
	 The panel is not in the list of accessible devices. Check the cable connection. See section <u>2.3</u> for this. Check the settings of the Ethernet interface on the PC. See section <u>1.2.2</u> for this. Check the network settings on the operator panel. See section <u>1.2.1</u> for this. 	
	 The panel is in the list of accessible devices but transfer of the configuration does not work. If there are other devices in the network in addition to the panel, one of these nodes might possibly have the same IP address as the panel. Remove the panel from the network and update the function. Is the panel in Transfer mode? Is the "Enable Transfer" option enabled in the transfer settings on the operator panel? Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there? 	

WinCC flexible 2008

Table 3-5

No. Action 1. Online access Open the STEP 7 SIMATIC Manager (no project should be loaded). In the toolbar you select the option "PLC > Edit Ethernet Node...". The "Edit Ethernet Node" dialog opens. Click the "Browse" button. A window opens showing all the accessible nodes.



2. **Troubleshooting**

Note

If you cannot open the "Edit Ethernet Node" dialog, check the PG/PC interface. There, the Ethernet interface you are using must be selected under "Access Point of the Application".

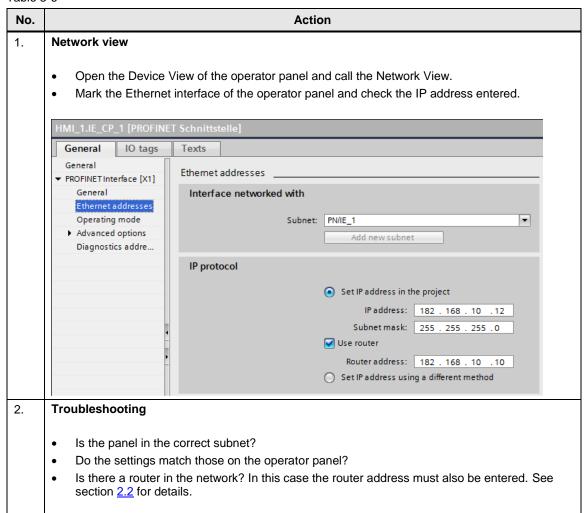
- The panel is in the list of accessible devices.
 - If the panel you are using is in the list of accessible devices, check the IP addresses of the other nodes in the list. There might be a device there with the same IP address as the operator panel.
- The panel is **not** in the list of accessible devices.
 - Check the cable connection. See section 2.3 for this.
 - Check the settings of the Ethernet interface on the PC. See section 1.2.2 for this.
 - Check the network settings on the operator panel. See section 1.2.1 for this.
- The panel is in the list of accessible devices but transfer of the configuration does **not** work.
 - If there are other devices in the network in addition to the panel, one of these nodes might

No.	Action	
	possibly have the same IP address as the panel. Remove the panel from the network and update the function.	
	 Is the panel in Transfer mode? Is the "Enable Transfer" option enabled in the transfer settings on the operator panel? Compare the transfer parameters in the configuration with those on the operator panel. Is "PN/IE or Ethernet" selected there? 	

3.2 HMI Configuration

3.2.1 Check the PROFINET Interface

Table 3-6



3.2.2 Check the Transfer Settings

Note

If routers are integrated in the network, for example in combination with "VPN", then refer to the information about Transfer settings in section <u>2.2.2</u>.

Table 3-7

No. **Action** 1. Transfer settings / Extended download In the "Extended download" dialog you must check every item and make sure that these match the transfer settings on the panel. PG/PC interface type - The setting you make here must be identical to the one on the operator panel. PG/PC interface Make sure that you select the correct network card here. Connection to subnet Here you select the network in which the panel is located. If the panel is connected directly to the PC, you can also use the "Direct at slot..." setting. Show all compatible devices (option) Select this option if you do not know the address of the operator panel, for example, or you want to have all the network nodes displayed. Extended download to device Configured access nodes of "HMI_1" Device Device type Slot Type Address Subnet TP700 Comfort HMI_1 HTTP TP700 Comfort Ethernet 172.16.34.212 S7USB < Type of the PG/PC interface: PN/IE • PG/PC interface: Intel(R) 82566DM-2 Giga... **•** ▼ 💮 Connection to subnet: PN/IE_1 ₩ 💮 Show all compatible devices Device type Address Target device SIMATIC-HMI 172.16.34.212 hmi 1 PN/IE SIMATIC-HMI PN/IE 172.16.36.7 hmi_1 <u>R</u>efresh Online status information: Found accessible device wincc72web [172.16.36.210] Found accessible device xeon006546 [172.16.36.78] 1 Scan completed, 3 compatible devices of 19 accessible devices found

No.	Action		
2.	Troubleshooting		
	 The panel is in the "Compatible devices in target subnet" table. If the panel you are using is in the list of accessible devices, check the IP addresses of the other nodes in the list. There might be a device there with the same IP address as the operator panel. Is the panel in Transfer mode? Is the "Enable Transfer" option enabled in the transfer settings on the operator panel? 		
	 The panel is not in the "Compatible devices in target subnet" table. Check the entry for "Type of the PG/PC interface:". Is "PN/IE" or "Ethernet" selected there? Compare this with the transfer settings on the operator panel. Enable the "Show all compatible devices" option. The panel is also recognized if the incorrect IP address is entered on the panel. Take a look at the operator panel settings in section 1.2.1 and check the points listed there. Check the cable connection. See section 2.3 for this. 		

Operator Panel Settings 3.3

3.3.1 **Transfer settings**

Note

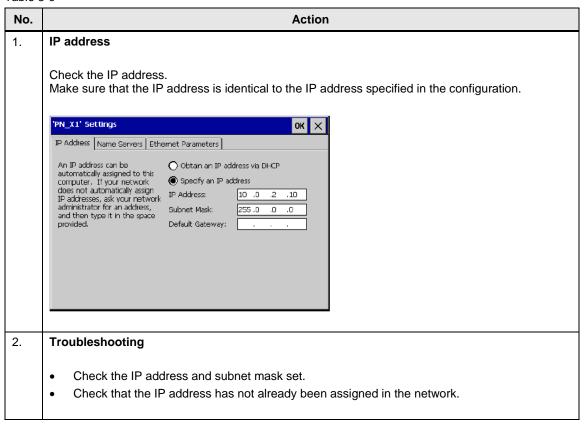
If routers are integrated in the network, for example in combination with "VPN", then refer to the information about Transfer settings in section 2.2.2.

Table 3-8 No. Action **Transfer settings** 1. Check the settings in the "Transfer Settings" dialog. **Enable Transfer** - This option must be enabled if you want to transfer the configuration to the panel. If you disable this option, you have to set the panel manually to Transfer Mode before you can transfer the configuration to the panel. Specify the transfer protocol. This setting must be identical to the one in the configuration. Transfer Settings Channel Directories ✓ Enable Transfer Remote Control MP] PROFIBUS Properties... USB device OΚ Cancel 2. **Troubleshooting**

- Transfer protocol
 - Is "PN/IE" or "Ethernet" selected there? This setting must be identical to the one in the configuration.
- Properties....
 - Use the "Properties..." button to call the network settings. Check the IP address set there. This must match the IP address used in the configuration.

3.3.2 Network Settings

Table 3-9



4 Tips for Configuring and Commissioning

Configuration

Make a list of all the devices in the network. Note the following information for each device.

- Device designation
- IP address
- Subnet mask
- MAC address

Compare the list with the devices in the plant. This avoids duplicate assignment of IP addresses.

Commissioning

Before you start testing the network connection to the panel, take a good look at the network structure of the plant. If necessary, get together with a network manager before commissioning.

- Check the cable connections.
- Are there routers in the network?
- Are there switches in the network?
- Are there already multiple devices/operator panels in the network?
- Is there a list of the devices already in the network?
- Are all the devices in the same subnet and the same IP band?
- First make a direct connection with the panel and then try to establish a connection. Only when that works should you connect the panel to the network.
- If you are using a router, try to minimize the possible security settings in the router for test purposes. Depending on the parameters of the security settings, you might not get a reply from ping requests

5 Link List

WinCC (TIA Portal)

Table 5-1

No.	Туре	Link
1.	FAQ	Which connector cables are available for connecting to SIMATIC Panels? http://support.automation.siemens.com/WW/view/en/19109408
2.	FAQ	How can you transfer a WinCC (TIA Portal) configuration to an operator panel using Ethernet? http://support.automation.siemens.com/WW/view/en/58522604
3.	Application	Remote access to SIMATIC HMI Panels http://support.automation.siemens.com/WW/view/en/109476153
4.	Manual	WinCC Comfort / WinCC Advanced V12.0 http://support.automation.siemens.com/WW/view/en/68075405

WinCC flexible 2008

Table 5-2

No.	Туре	Link
1.	FAQ	Which connector cables are available for connecting to SIMATIC Panels? http://support.automation.siemens.com/WW/view/en/19109408
2.	FAQ	How can you transfer a WinCC flexible project via Ethernet to a Windows-based panel? http://support.automation.siemens.com/WW/view/en/23800567
3.	FAQ	How do you use WinCC flexible to configure communication between an operator panel and an S7 station via S7 routing? http://support.automation.siemens.com/WW/view/en/22257781
4.	FAQ	Why is the communication driver marked "orange" in WinCC flexible when another Ethernet communication is added to an existing MPI/DP? http://support.automation.siemens.com/WW/view/en/19436008
5.	Manual	SIMATIC HMI WinCC flexible 2008 WinCC flexible 2008 Compact / Standard / Advanced http://support.automation.siemens.com/WW/view/en/18796010