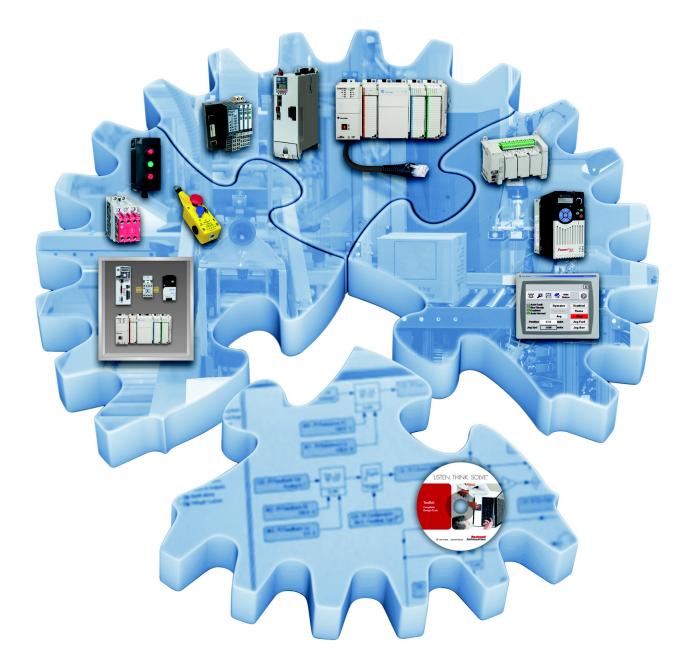
Quick Start



# Stratix 5700

# Switch Configuration





## **Important User Information**

Read this document and the documents listed in the additional resources section about installation, configuration, and operation of this equipment before you install, configure, operate, or maintain this product. Users are required to familiarize themselves with installation and wiring instructions in addition to requirements of all applicable codes, laws, and standards.

Activities including installation, adjustments, putting into service, use, assembly, disassembly, and maintenance are required to be carried out by suitably trained personnel in accordance with applicable code of practice.

If this equipment is used in a manner not specified by the manufacturer, the protection provided by the equipment may be impaired.

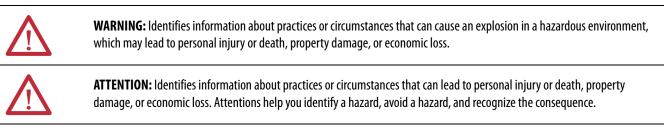
In no event will Rockwell Automation, Inc. be responsible or liable for indirect or consequential damages resulting from the use or application of this equipment.

The examples and diagrams in this manual are included solely for illustrative purposes. Because of the many variables and requirements associated with any particular installation, Rockwell Automation, Inc. cannot assume responsibility or liability for actual use based on the examples and diagrams.

No patent liability is assumed by Rockwell Automation, Inc. with respect to use of information, circuits, equipment, or software described in this manual.

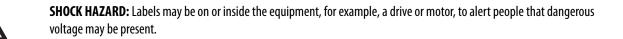
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Throughout this manual, when necessary, we use notes to make you aware of safety considerations.



**IMPORTANT** Identifies information that is critical for successful application and understanding of the product.

Labels may also be on or inside the equipment to provide specific precautions.





**BURN HAZARD:** Labels may be on or inside the equipment, for example, a drive or motor, to alert people that surfaces may reach dangerous temperatures.



**ARC FLASH HAZARD:** Labels may be on or inside the equipment, for example, a motor control center, to alert people to potential Arc Flash. Arc Flash will cause severe injury or death. Wear proper Personal Protective Equipment (PPE). Follow ALL Regulatory requirements for safe work practices and for Personal Protective Equipment (PPE).

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## **About This Publication**

This Quick Start provides examples and procedures for configuring Stratix 5700 switches.

## **Additional Resources**

Use the additional resources listed in this table for more information when using Stratix 5700 switches.

Resource	Description
Stratix 5700 Industrial Ethernet Switch Product Profile, publication ENET-PP005	Overview of features and functionality of Stratix 5700 Switches.
Stratix 5700 Ethernet Managed Switches User Manual, publication <u>1783-UM004-EN-P</u>	Describes the installation, configuration, and troubleshooting of Stratix 5700 Switches.
Stratix Ethernet Switches Specifications, publication <u>1783-TD001-EN-P</u>	Describes the Specification of Stratix Ethernet Switches.

You can view or download publications at <a href="http://www.rockwellautomation.com/literature/">http://www.rockwellautomation.com/literature/</a>. To order paper copies of technical documentation, contact your local Allen-Bradley distributor or Rockwell Automation sales representative.

## Set Up the Switch Initially with Express Setup

The switch can operate without an IP address assigned to it. However, without an IP address, your switch will run as an unmanaged switch, and is limited to using only the status indicators on the switch front panel for diagnostics. We recommend when you first set up the switch, use Express Setup to enter the initial IP address. Doing this enables the switch to be used as a managed switch.

#### **Before You Begin**

Do the following to configure your computer:

- Disable any wireless interface running on your personal computer.
- Disable other networks in your system.
- Set your computer to automatically determine its IP address (DHCP) versus statically configured.
- Disable any static DNS servers.
- Disable browser proxy settings. Typically, browser settings are in Tools > Internet Options > Connections >LAN Settings.

#### What You Need

Have the following equipment available to set up the switch:

- A personal computer with Windows 2000, Windows XP, Windows 2003, or Windows Vista operating system installed
- A supported web browser (Internet Explorer 9.0, 10.0, and 11.0, or Firefox 25, 26) with JavaScript enabled
- A straight-through or crossover Category 5 Ethernet cable to connect your personal computer to the switch

#### **Run Express Setup**

To run Express Setup, follow these steps.

1. Make sure that at least one switch Ethernet port is available for Express Setup.

**IMPORTANT** Do not use the console port for Express Setup.

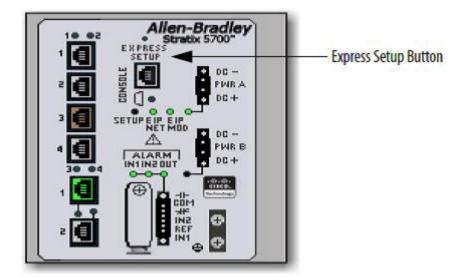
During Express Setup, the switch acts as a DHCP server. If your personal computer has a static IP address, change your personal computer settings before you begin to temporarily use DHCP.

2. Apply power to the switch.

When the switch powers on, it begins its power on sequence. The power on sequence takes approximately 60 seconds to complete.

- 3. Make sure that the power on sequence has completed by verifying that the EIP Mod and Setup status indicators are flashing green. If the switch fails the power on sequence, the EIP Mod status indicator turns red.
- 4. Press and release the Express Setup button shown in <u>Figure 1</u>. Wait for a few seconds until the status indicator on one of the unconnected switch ports flashes green.

#### Figure 1 - Express Setup Button



This button is recessed 16 mm (0.63 in.) behind the front panel. Use a small tool, such as a paper clip, to reach the button.

- 5. Connect a Category 5 Ethernet cable from the flashing switch port to the Ethernet port on your personal computer.
  - **TIP** If you wait too long to connect the cable, the Setup status indicator turns off.

The port status indicators on your personal computer and on the switch both flash while the switch configures the connection.

- 6. While the Setup status indicator flashes green, start an Internet browser session on the personal computer and navigate to http://169.254.0.1. If you have a home page configured, the switch configuration loads instead of your normal home page. The switch prompts you for the default switch username and password.
- 7. Enter the default switch password: switch. The default user name is admin.

**IMPORTANT** In some scenarios, the switch requires you to enter the switch password multiple times before it accepts the password.

- 8. If the Express setup window does not appear, do the following:
  - Enter the URL of a well-known website in your browser to be sure the browser is working correctly. Your browser then automatically redirects to the Express Setup web page.
  - Verify that any proxy settings or pop-up blockers are disabled on your browser.
  - Verify that any wireless interface is disabled on your personal computer.
- 9. Complete the fields shown in <u>Figure 2</u>. To view fields for Common Industrial Protocol (CIP), you must click Advanced Settings (refer to <u>Table 1</u>).

Figure 2 - Express Setup Window

<ul> <li>Network Settings</li> </ul>	
Host Name:	
Management Interface (VLAN):	1
IP Assignment Mode:	Static DHCP
IP Address:	/ 255.255.255.0
Default Gateway:	
NTP Server:	
User:	admin Password: Confirm Password:
<ul> <li>Advanced Settings</li> </ul>	
CIP VLAN:	1
IP Address:	
Same As Management VLAN:	
Telnet, CIP and Enable Password: (leave it blank if no change)	Confirm Password:
Same As Admin Password	
Submit	

#### Table 1 - Express Setup Fields

Field	Description
	Network Settings
Host Name	The name of the device.
Management Interface (VLAN ID)	The name and ID of the management VLAN through which the switch is managed. Choose an existing VLAN to be the management VLAN.
	The default ID is 1. The default name for the management <b>VLAN</b> is default. The number can be from 1 1001. Be sure that the switch and your network management station are in the same VLAN. Otherwise, you lose management connectivity to the switch.
	The management VLAN is the broadcast domain through which management traffic is sent between specific users or devices. It provides broadcast control and security for management traffic that must be limited to a specific group of users, such as the administrators of your network. It also provides secure administrative access to all devices in the network at all times.
IP Assignment Mode	The IP Assignment mode determines whether the switch IP Information is manually assigned (static) or is automatically assigned by a Dynamic Host Configuration Protocol (DHCP) server. The default is <b>Static</b> . We recommend that you click Static and manually assign the IP address for the switch. You can then use the same IP address
	whenever you want to access the Device Manager web interface.
IP Address	<ul> <li>The IP address and associated subnet mask are unique identifiers for the switch in a network:</li> <li>The IP address format is a 32-bit numeric address written as four numbers separated by periods. Each number can range between 0 255.</li> </ul>
	<ul> <li>The subnet mask is the network address that identifies the subnetwork (subnet) to which the switch belongs. Subnets are used to segment the devices in a network into smaller groups. The default is 255.255.255.0.</li> </ul>
	This field is enabled only if the IP Assignment mode is Static. Make sure that the IP address that you assign to the switch is not being used by another device in your network. The IP address and the default gateway cannot be the same.
Default Gateway (optional)	The IP address for the default gateway. A gateway is a router or a dedicated network device that enables the switch to communicate with devices in other networks or subnetworks. The default gateway IP address must be part of the same subnet as the switch IP address. The switch IP address and the default gateway IP address cannot be the same.
	If all of your devices are in the same network and the default gateway is not used, you do not need to enter an IP address in this field. This field is enabled only if the IP assignment mode is Static.
	You must specify a default gateway if your network management station and the switch are in different networks or subnetworks. Otherwise, the switch and your network management station cannot communicate with each other.
NTP Server	The IP address of the Network Time Protocol (NTP) server. NTP is a networking protocol for clock synchronization between computer systems over packet switched, variable-latency data networks.
User	Enter the user name.
Password, Confirm Password	The password for the switch can have up to 63 alphanumeric characters, can start with a number, is case-sensitive, and can have embedded spaces. The password cannot be a single digit, it cannot contain a ? or a tab, and it does not allow spaces at the beginning or the end. The default is <b>switch</b> .
	To complete initial setup, you must change the password from the default password, <b>switch</b> . This password is also used as the Control Industrial Protocol (CIP) security password. We recommend that you provide a password to the switch to secure access to the device manager.
	Advanced Settings
CIP VLAN	The VLAN on which Common Industrial Protocol (CIP) is enabled. The CIP VLAN can be the same as the management VLAN or you can isolate CIP traffic on another VLAN that is already configured on this device.
IP Address	The IP address and subnet mask for the CPI VLAN if the CIP VLAN is different from the management VLAN. The format is a 32-bit numeric address written as four numbers separated by periods. Each number can be from 0255.
	Make sure that the IP address that you assign to this device is not being used by another device in your network.
Same As Management VLAN	Indicates whether the settings for the CIP VLAN are the same as the management VLAN.
Telnet, CIP and Enable Password (optional), Confirm Password	This is the password used for Telnet and CIP security.
Same As Admin Password	Sets the password used for Telnet and CIP security to the same user password specified under Network Settings.

#### 10. Click Submit.

The switch initializes its configuration for typical industrial EtherNet/IP applications. The switch then redirects you to the logon page for the Device Manager web interface. You can continue to launch the Device Manager web interface for further configuration or exit the application.

- 11. Turn off DC power at the source, disconnect all cables to the switch, and install the switch in your network.
- 12. After you complete Express Setup, refresh the personal computer IP address:
  - For a dynamically-assigned IP address, disconnect the personal computer from the switch, and reconnect the personal computer to the network. The network DHCP server assigns a new IP address to the personal computer.
  - For a statically-assigned IP address, change it to the previously configured IP address.

For information on more advanced configuration options, see the Stratix 5700 Ethernet Managed Switches User Manual, publication <u>1783-UM004-EN-P</u>.

# Assigning the Smartports Using the Device Manager Web Interface (Optional)

After you complete Express Setup, you can manage the switch by using the Device Manager Web interface supplied with the switch.

## **Before You Begin**

Complete the steps for the Express Setup in <u>Chapter 1</u>.

## What You Need

Have the following equipment available to set up the switch:

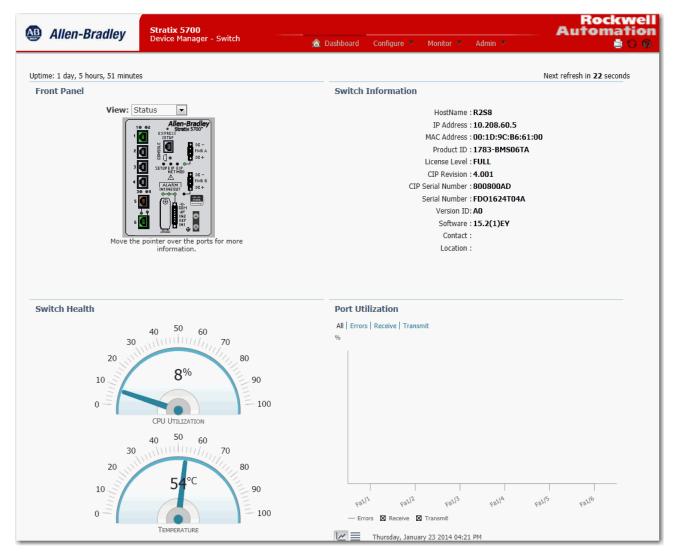
- A personal computer with Windows 2000, Windows XP, Windows 2003, or Windows Vista operating system installed
- A supported web browser (Internet Explorer 9.0, 10.0, and 11.0, or Firefox 25, 26) with JavaScript enabled
- A straight-through or crossover Category 5 Ethernet cable to connect your personal computer to the switch

## Access the Device Manager Web Interface

To access the Device Manager Web Interface, follow these steps.

- 1. Launch a Web browser on your workstation.
- 2. Enter the switch IP address in the Web browser and click Enter.
- 3. Enter the user name and password.

#### Figure 3 - Device Manager Web Interface



#### **Smartports**

Smartports are recommended configurations for the switch ports. These configurations, referred to as port roles, optimize the switch connections and provide security, transmission quality, and reliability for traffic from the switch ports. The port roles also help prevent port misconfigurations.

**TIP** Use Smartport roles immediately after the initial setup of the switch to correctly configure the switch ports before they connect to devices.

#### **Configure Smartports**

To assign Smartport roles to switch ports, from the Configure menu, choose Smartports.

#### Figure 4 - Configure Menu

🔇 Network   Sma	artports	
Smartport Role	Custom Smartports	
Smartport Role		
/ Edit		
Port Name	Role	
Fa1/1	None	
Fa1/2	CS10-Test	
□ Fa1/3	None	
□ Fa1/4	None	
□ Fa1/5	Automation Device	Save   Cancel
□ Fa1/6	Multiport Automation Device	
	Desktop for Automation	
	Virtual Desktop for Automation Switch for Automation	
	Router for Automation	
	Phone for Automation	
	Wireless for Automation	
	Port Mirroring	
	None	
	Custom Smartports	
	CS10-Test	

Follow these guidelines when using Smartport roles:

- Before using Smartport roles, decide which switch port is connected to which device type.
- Before attaching a device to the port or reconnecting devices that have been moved, verify which Smartport role is applied to a port.

**IMPORTANT** We recommend that you do not change port settings after enabling a Smartport role on a port. Any port setting changes can alter the effectiveness of the Smartport role.

• When the user attempts to apply a port role to a routed port in the Smartports window, this error message appears:

A port role cannot be configured on a routed port.

To apply a Smartport role, follow this procedure.

- 1. From the Configure menu, choose Smartports.
- 2. Select a port.
- 3. Choose a Smartport role from the pull-down menu in the Role column.
- 4. Click Save.

#### **Optimize Ports Through Smartports Port Roles**

The port roles are based on the type of devices to be connected to the switch ports. For example, the Desktop for Automation port role is specifically for switch ports to be connected to desktop and laptop /computers. Refer to <u>Table 2</u> for a list of available ports.

Table 2 - Available Ports

Port	Description
Automation Device Macro	The Automation Device Smartport should be used for any EtherNet/IP devices. This includes controllers, HMI displays, distributed I/O, etc. The Automation Device Smartport enables the following features: • Sets the port to host mode • Enables MAC flooding attack protection • Sets the VLAN number • Enables the automation QoS policy • Configures the output queues • Enables the alarm profile • Disables Cisco Discovery Protocol (CDP)
Multiport Automation device	<ul> <li>Apply this role to ports connected to multiport EtherNet/IP devices, such as multiport EtherNet/IP devices arranged in a linear or daisy chain topology, the 1783-ETAP module (for connection to the device port only), unmanaged switches (such as the Stratix 2000<sup>™</sup>) and managed switches with Remote Spanning Tree Protocol (RSTP) disabled:</li> <li>Port is set to Access mode</li> <li>No port security</li> <li>Optimize queue management for CIP traffic</li> </ul>
Desktop for Automation	The Desktop for Automation Smartport should be used for PCs used on the Cell/Area zone EtherNet/IP network. It should not be used for any systems running virtual machines without turning the port security configuration off. The Desktop for Automation Smartport enables the following features:         • Sets the port in access mode         • Set the VLAN number         • Enables MAC flooding attack protection         • Enables Spanning Tree Portfast         • Enables the automation QoS policy         • Sets the alarm profile

#### Table 2 - Available Ports

Port	Description
VM - Desktop for Automation	Apply this role to ports connected to computers running virtualization software. This can be used with devices running up to two MAC addresses. If you want to support more than two image you need to go into port security tab and modify the allowed devices. Important: Do not apply the Virtual Desktop for Automation role to ports that are connected to switches, routers, or access points. Sets the port access mode Portfast is enabled Set the VLAN number CIP-PTP-Traffic Policy enabled
Switch for Automation	The Switch which support STP(Spanning Tree Protocol) for Automation Smartport is used on ports that connect to other managed Ethernet switches. The Switch for Automation enables the following features: Sets the port in trunk mode Sets the native VLAN Sets Spanning Tree to use a point-to-point link Sets the port to trust QoS policy Configures the output queues Sets the alarm profile
Router for Automation	The Router for Automation Smartport is used on ports that connect to routers such as the Cisco 2800 Series ISR. The Router for Automation Smartport enables the following features:         • Sets the port in trunk mode         • Sets the native VLAN         • Enables Spanning Tree Portfast         • Enables Spanning Tree BPDU Guard         • Sets the port to trust DSCP         • Enables the automation QoS policy         • Configures the output queues         • Sets the alarm profile
Phone for Automation	The Phone for Automation Smartport is used on ports that connect to a VolP phone. The Phone for Automation Smartport enables the following features:         Sets the port in access mode         Sets the voice and data VLANs         Enables MAC Flooding protection         Enables Spanning Tree Portfast         Enables Spanning Tree BPSU Guard         Enables the VolP QoS policy         Configures the output queues         Sets the alarm profile
Wireless for Automation	The Wireless for Automation Smartport is used on ports that connect to wireless access points or Wireless LAN Controllers. The Wireless for Automation Smartport enables the following features: • Sets the port in trunk mode • Sets the native VLAN • Disables Dynamic Trunking Protocol (DTP) • Enables Spanning Tree BPDU Guard • Sets the port to trust COS • Enables the Automation QoS policy • Configures the output queues • Sets the alarm profile

## **Rockwell Automation Support**

Rockwell Automation provides technical information on the Web to assist you in using its products. At <u>http://www.rockwellautomation.com/support</u> you can find technical and application notes, sample code, and links to software service packs. You can also visit our Support Center at <u>https://rockwellautomation.custhelp.com/</u> for software updates, support chats and forums, technical information, FAQs, and to sign up for product notification updates.

In addition, we offer multiple support programs for installation, configuration, and troubleshooting. For more information, contact your local distributor or Rockwell Automation representative, or visit <a href="http://www.rockwellautomation.com/services/online-phone">http://www.rockwellautomation.com/services/online-phone</a>.

#### **Installation Assistance**

If you experience a problem within the first 24 hours of installation, review the information that is contained in this manual. You can contact Customer Support for initial help in getting your product up and running.

United States or Canada	1.440.646.3434
	Use the <u>Worldwide Locator</u> at <u>http://www.rockwellautomation.com/rockwellautomation/support/overview.page</u> , or contact your local Rockwell Automation representative.

#### **New Product Satisfaction Return**

Rockwell Automation tests all of its products to help ensure that they are fully operational when shipped from the manufacturing facility. However, if your product is not functioning and needs to be returned, follow these procedures.

United States	Contact your distributor. You must provide a Customer Support case number (call the phone number above to obtain one) to your distributor to complete the return process.
Outside United States	Please contact your local Rockwell Automation representative for the return procedure.

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