

AVCOMM 8000-PN Series Industrial Managed Ethernet Switch User Manual



8008TX-PN 8008GX2-PN

User Manual

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About This Manual

This user manual is intended to guide a professional installer to install and configure the switch. It includes procedures to assist you in avoiding unforeseen problems.



Only qualified and trained personnel should be involved with installation, inspection, and repairs of this switch.

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1. Overview

8000-PN series switch is a full Gigabit, DIN-Rail/wall mount type Ethernet switch, providing 8 Gigabit Ethernet ports to update the existing network to a full gigabit speed infrastructure. A full Gigabit network provides higher overall throughput than a legacy Fast Ethernet network and reduce the response time for timing sensitive applications that may mix of video, voice and data in its traffic pipe.

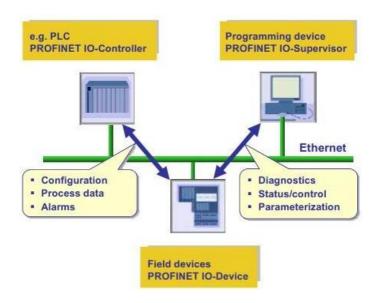
The PROFINET, which is the Ethernet, based automation standard of PROFIBUS International and covers all requirements of the automation technology is also implemented in 8000-PN series. The PROFINET overview and how to use 8000-PN series are in the following chapters.

2. PROFINET I/O Introduction

PROFINET is an industrial communication network based on Ethernet for all applications views from PROFIBUS International (PI). It covers the key markets and key technologies in automation both today and in the future. With PROFINET I/O implementation, production and process automation can be easily done. Besides, data exchanges on PROFINET I/O are done between I/O controller (PLC, etc.) and I/O devices (field devices).

2.1 Network Structure Overview

There are three major roles in PROFINET I/O network structure. They are I/O controller, I/O supervisor, and I/O devices. It follows the provider and consumer model for data exchange. The detail descriptions are below.



·I/O Controller

I/O Controller is a role to control the I/O device. In PROFINET I/O networking, it may exist exactone controller. However, it allows several controllers to implement system redundancy. The typical controller is the programmable logic controller (PLC) where the automation program runs.

·I/O Supervisor

I/O supervisor may be a programming device which control I/O controller, personal computer, or HMI device for commissioning or diagnostic use.

·I/O Device

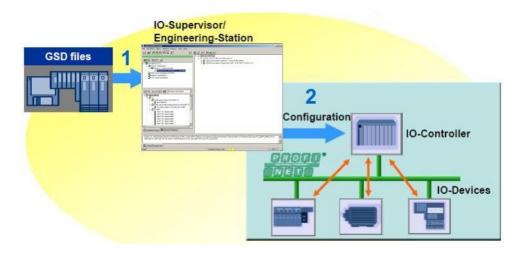
I/O device is a distributed field device which connected to one or more I/O controllers via PROFINET I/O. It sends switch data to controller periodically by supported cycle time. 8008TX-PN acts as a PROFINET I/O device. It supports many useful attributes for I/O controller to configure or monitor. The detail attributes are described under GSD file and following subject.

2.2 Device Description-GSD

The GSD file (General Station Description) is an XML based description language for PROFINET I/O Device. It uses to describe the features and functions of the PROFINET device model. Before configuring an I/O controller, the configuration tool needs a GSDML file for each type of device on the network. Find



your GSD file in the CD before start to run PROFINET.

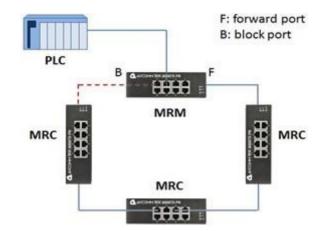


2.3 Media Redundancy-MRP

It introduces Media Redundancy Protocol (MRP) in PROFINET IO to prevent network broken caused by link loss or network device error. MRP is a special protocol for ring network setups. Ring networks are the preferred redundant network setups in the field area of Industrial Ethernet PROFINET networks. MRP guarantees quick network reconfiguration after the loss of a network link.

Within MRP, two device roles are defined: the Media Redundancy Manager (MRM) role, typically taken by either the IO-Controller or a switch in a ring, and the Media Redundancy Client (MRC) role, typically taken by PROFINET IO devices.

Both MRM and MRC have two designated ring ports. The links of these ring ports with other devices ring ports form the ring. See below figure.



3. PROFINET I/O Command on Switch

3.1 Configuration

- Enable PROFINET

No command. (PROFINET function always on)

- Set PROFINET Name

configure terminal profinet devname <name>



Example:

8008TX-PN# configure terminal

8008TX-PN(config)# *profinet*

8008TX-PN (profinet-config)# devname IO-Device-01

IO-Device-01(profinet-config)#

2.4 Monitor (MRP, LLDP)

- Device Name

show profinet name

Example:

8008TX-PN # *show profinet name* Name of Station

: 8008TX-PN

- PROFINET Status

show profinet status

Example:

8008TX-PN # **show profinet status** PROFINET Status

: Enable

- MRP Status

show profinet mrp all show profinet mrp group <1,2>



Example:

8008TX-PN # show profinet mrp all					
MRP Group 1 Info:					
Role	: Manager				
Ring Port1	:1				
Ring Port2	: 2				
Vlan	: 0				
Manager Priority	: 0xa000				
Topology Change Interval	:1				
Topology Change Repeat Count	: 3				
Short Test Interval	: 10				
Default Test Interval	: 20				
Test Monitoring Count	: 3				
Non Blocking MRC Supported	: 0				
Test Monitoring Extended Count	: 25				
React on Link Change	: 1				
Check Media Redundancy	:1				
Domain Name	: mrpdomain-1				
Real Role State	: 1				
Real Ring State	: 1				
Ring Port1 PortState	: FORWARDING				
Ring Port2 PortState	: BLOCKED				
MRP Group 2 Info:					
Role	: Client				
Ring Port1	: 3				
Ring Port2	: 4				
Vlan Link Down Interval	: 0 : 20				
Link Up Interval	: 20				
Link Change Count	: 4				
Blocked State Supported	:1				
Domain Name	: mrpdomain-2				
Ring Port1 PortState Ring Port2 PortState	: FORWARDING : BLOCKED				
	. DECCRED				



8008TX-PN # show profinet mrp group 1

MRP Group 1: Mode: Enable Role: MRM Node 1 : 1 Node 2 : 2 DomainName : mrpdomain-1

- LLDP Information

8008TX-PN # <i>show lldp neighbors</i>								
Local Interface	: GigabitEthernet 1/2							
Chassis ID	: 00-05-65-72-E7-69							
Port ID	: port-001							
Port Description	: port-001							
System Name	: 8008TX-PN							
System Description	: 8 ports							
System Capabilities	: Bridge(+)							
Management Address	: 192.168.0.3 (IPv4)							
Profinet - Port Status	: RT Class 2 Port Status - OFF							
	RT Class 3 Port Status - OFF							
Profinet - Chassis MAC	: Chassis MAC : 00-05-65-72-E7-69							
IEEE 802.3 - MAC/PHY	: Port Auto Negotiation - Enable							
	Port Auto Capability - 1000BASE-T full duplex mode							
	100BASE-TX full duplex mode							
	100BASE-TX half duplex mode							
	10BASE-T full duplex mode							
	10BASE-T half duplex mode							
	Port MAU type - 1000BaseTFD							
Profinet - Port Delay	: Port Rx Delay Local - 0 Port							
	Rx Delay Remote - OPort Tx							
	Delay Local - 0 Port Tx							
	Delay Remote - 0Port							
	Cable Delay Local - 0							



4. PROFINET I/O Attributes Support

4.1 Cyclic I/O Data (RTC)

8000-PN switch provides PROFINET I/O cyclic data which sends information between PROFINET switch and the controller periodically. The default transfer frequency of PROFINET cyclic data is 128 ms. There are 3 available values defined in GSD file: 128, 256, or 512 ms.

The following tables show 8000-PN switch which supports 5 RTC modules. The second byte for module 2 to 5 depends on the port count of device.

Slot1: Device Data

Category	Direction	Byte	Bit	Name	Description		
	Device Input 0		0	Alarm Status	0 is No Alarm, 1 is Alarm happened.		
			1	Power 1	0 is Fail, 1 is OK		
Device		Input 0	2	Power 2	0 is Fail, 1 is OK		
			3	Ring	0 is disabled, 1 is enabled		
					4	Ring Status	0 is Fail, 1 is Normal

Slot 2: Port Status

Category	Direction	Byte	Bit	Name	Description
			0	Port 1 Connection	0 is not connected, 1 is connected
			1	Port 2 Connection	0 is not connected, 1 is connected
			2	Port 3 Connection	0 is not connected, 1 is connected
		0	3	Port 4 Connection	0 is not connected, 1 is connected
		0	4	Port 5 Connection	0 is not connected, 1 is connected
			5	Port 6 Connection	0 is not connected, 1 is connected
			6	Port 7 Connection	0 is not connected, 1 is connected
Port Status	Input		7	Port 8 Connection	0 is not connected, 1 is connected
		1	0 Port 9 Connection		0 is not connected, 1 is connected
			1	Port 10 Connection	0 is not connected, 1 is connected
			2	Port 11 Connection	0 is not connected, 1 is connected
			3	Port 12 Connection	0 is not connected, 1 is connected
			4	Port 13 Connection	0 is not connected, 1 is connected
			5	Port 14 Connection	0 is not connected, 1 is connected



Slot 3: Port Alarm Setting

Category	Direction	Byte	Bit	Name	Description		
			0	Port 1 Alarm	0 is not send Alarm, 1 is send Alarm		
			1	Port 2 Alarm	0 is not send Alarm, 1 is send Alarm		
			2	Port 3 Alarm	0 is not send Alarm, 1 is send Alarm		
		0	3	Port 4 Alarm	0 is not send Alarm, 1 is send Alarm		
		0	4	Port 5 Alarm	0 is not send Alarm, 1 is send Alarm		
	ort Setting Output	· · · · · · · · · · · ·	5	Port 6 Alarm	0 is not send Alarm, 1 is send Alarm		
Dort Cotting			6	Port 7 Alarm	0 is not send Alarm, 1 is send Alarm		
Port Setting			7	Port 8 Alarm	0 is not send Alarm, 1 is send Alarm		
			0	Port 9 Alarm	0 is not send Alarm, 1 is send Alarm		
					1	Port 10 Alarm	0 is not send Alarm, 1 is send Alarm
			2	Port 11 Alarm	0 is not send Alarm, 1 is send Alarm		
			3	Port 12 Alarm	0 is not send Alarm, 1 is send Alarm		
			4	Port 13 Alarm	0 is not send Alarm, 1 is send Alarm		
			5	Port 14 Alarm	0 is not send Alarm, 1 is send Alarm		

Slot 4: MRP Group1

Category	Direction	Byte	Bit	Name	Description
	Input		0	MRP Group1 Mode	0 is Disable MRP, 1 is Enable MRP
MRP Group1	Input	0	1	MRP Group1 Role	0 is MRC, 1 is MRM
			0	Port1 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			1	Port2 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			2	Port3 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
		4	3	Port4 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
	Input	1	4 Port5 is MRP-G1 Ring port		0 is not Ring port, 1 is Ring port
			5	Port6 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
MRP			6	Port7 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
Group1 Port			7	Port8 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
		2	0	Port9 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			1	Port10 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			2	Port11 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			3	Port12 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			4	Port13 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port
			5	Port14 is MRP-G1 Ring port	0 is not Ring port, 1 is Ring port



Slot 5: MRP Group2

Category	Direction	Byte	Bit	Name	Description
	Input		0 MRP Group2 Mode		0 is Disable MRP, 1 is Enable MRP
MRP Group2	Input	0	1	MRP Group2 Role	0 is MRC, 1 is MRM
			0	Port1 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			1	Port2 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			2	Port3 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
		1	3	Port4 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
	Input	2	4	Port5 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			5	Port6 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
MRP Group2			6	Port7 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
Port			7	Port8 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			0	Port9 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			1	Port10 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			2	Port11 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port
			3 Port12 is MRP-G2 Ring port		0 is not Ring port, 1 is Ring port
			4 Port13 is MRP-G2 Ring port		0 is not Ring port, 1 is Ring port
			5	Port14 is MRP-G2 Ring port	0 is not Ring port, 1 is Ring port

4.2 Acyclic I/O Data (RTA)

8000-PN switch also provides PROFINET I/O acyclic data for more flexible settings and monitoring. Thus, it allows to read or to write the supported attributes. It uses PROFINET acyclic data to achieve communication in the network. For writable attributes, a controller, like SIMATIC STEP 7 tool, or engineering deployment software needed to edit it. The following tables show 8000-PN switch which supports 4 RTA modules.

ro: Ready Only

rw: Read and Write

Byte	Name	Access	Value	Description
			0	Unavailable (Do not support)
0	Device Status	ro	1	OK (default)
			2	Device bootup fails
	1 Alarm Status	ro	0	Unavailable (Do not support)
1			1	No Alarm(default)
			2	Alarm happened
	2 Power 1 Status	ro	0	Unavailable (Do not support)
2			1	ОК
			2	Power 1 fails

System Data (Slot 0x0, Subslot 0x1, Index 0x1)



			111.0	USTRIALTI —
			0	Unavailable (Do not support)
3	Power 2 Status	ro	1	ОК
			2	Power 2 fails
			0	MRP
4	Deducedent Mede		1	RSTP/MSTP
4	Redundant Mode	ro	2	Ring/Coupling/Dual Homing/Chain/Balancing Chain
			3	No Redundant
	Ding 4 Made		0	Unavailable (Do not support)
5	Ring-1 Mode	ro	1	Enabled
	(config value)		2	Disabled
			0	Unavailable (Do not support)
6	Ring-1 Role	ro	1	Ring Master
			2	Ring Slave
			0	Unavailable (Do not support)
7			1	Disabled
7	Ring-1 State	ro	2	Normal
			3	Fail
			0	Unavailable (Do not support)
8	Ring-2 Mode	ro	1	Enabled
	(config value)		2	Disabled
			0	Unavailable (Do not support)
			1	Ring Master
0			2	Ring Slave
9	Ring-2 Role	ro	3	Coupling Primary
			4	Coupling Backup
			5	Dual Homing
			0	Unavailable (Do not support)
10			1	Disabled
10	Ring-2 State	ro	2	Normal
			3	Fail
	Ding 2 Made		0	Unavailable (Do not support)
11	Ring-3 Mode	ro	1	Enabled
	(config value)		2	Disabled
			0	Unavailable (Do not support)
40			1	Chain Head
12	Ring-3 Role	ro	2	Chain Tail
			3	Chain Member



			4	Balancing Chain Terminal 1
			5	Balancing Chain Terminal 2
			6	Balancing Chain Central Block
			7	Balancing Chain Member
	13 Ring-3 State		0	Unavailable (Do not support)
10		ro	1	Disabled
13			2	Normal
			3	Fail

Port Data (Slot 0x0, Subslot 0x8001~0x800e, Index 0x1)

Byte	Name	Access	Value	Description
			0	Do not send alarm
0	Port Alarm	ro	1	Send alarm when port
			1	link down
			0	Unavailable (Do not support)
1	Port Admin State	ro	1	Off
			2	On
			0	Unavailable (Do not support)
2	Port Link State	ro	1	Link is up
			2	Link is down
			0	Unavailable (Link down show Unavailable)
2	3 Port Speed	ro	1	10 Mbps
5			2	100 Mbps
			3	1G bps
			0	Unavailable (Link down show Unavailable)
4	4 Port Duplex	ro	1	Half
			2	Full
	Port Auto pogotistico		0	Unavailable (Do not support)
5	Port Auto-negotiation	ro	1	Off
			2	On

MRP Group 1 (Slot 0x0, Subslot 0x1, Index 0x3)

Byte	Name	Access	Value	Description
0			0	Disable MRP (Default)
0	MRP Mode	rw	1	Enable MRP
1		5 14	0	MRC (Default)
	MRP Role	rw	1	MRM



_					
	2	Ring Port1 of MRP	rw	0~13	Port ID of Ring port1, 0 is Default value.
	Z	King FOLLE OF MIKE	I VV	0 13	(0 is meaning port1, 1 is meaning port2etc,)
	2	Ring Port2 of MRP	544	0~13	Port ID of Ring port1, 1 is Default value.
	5	KING POILZ OF WIRP	rw	0 15	(0 is meaning port1, 1 is meaning port2etc,)

MRP Group 2 (Slot 0x0, Subslot 0x1, Index 0x3)

Byte	Name	Access	Value	Description
0		544	0	Disable MRP (Default)
0	MRP Mode	rw	1	Enable MRP
1			0	MRC (Default)
1	MRP Role	rw	1	MRM
2	Ding Dort1 of MDD	544	0~12	Port ID of Ring port1, 2 is Default value.
2	Ring Port1 of MRP	rw	0~13	(0 is meaning port1, 1 is meaning port2etc,)
3	Ding Dort2 of MDD	F) 4 /	0~13	Port ID of Ring port1, 3 is Default value.
5	Ring Port2 of MRP	rw		(0 is meaning port1, 1 is meaning port2etc,)

5. Integration in I/O Controller (Use Simatic S7)

5.1 Operation Procedure

This chapter shows how to use 8000-PN switch in a PROFINET network. At first, it needs an I/O controller in the network and integrates the I/O device into the controller. The following steps show the integration procedures.

1. Create a new project for PROFINET I/O in S7.

Create a deploying environment to start PROFINET network building.

2. Install a GSD file into the Controller.

GSD file describes the features of the PROFINET device model.

Get the corresponding GSD file from manufacturer.

3. Configure I/O device parameters.

Parameters can be configured including IP address, Name, port alarm, MRP group, etc.

4. Compile and load the project.

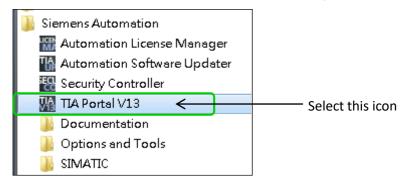
Load the project into the PLC to start PROFINET operation.

5. Monitor the I/O Switch from the controller.

Use SETP 7 to monitor I/O device's attributes.

5.2 Create a new project for PROFINET I/O in S7

After installed SIMATIC Step 7 software in a PC, open the management interface.





Create a new project, and name your new project name, ex: 0618_Test.

Viemens Siemens					_ ¤ ×
-					Totally Integrated Automation PORTAL
Start			Create new project		
Devices &		Open existing project	Project name:	0618_Test	
networks	19 C	Open existing project	Path:	C'Users\user\Documents\Automation	
		🥚 Create new project	Author:	user	
PLC programming		🌒 Migrate project	Comment		^
Motion &		🕥 Close project			~
technology	-				Create
Visualization		Welcome Tour			

After new project created, configure the test device. (I/O Controller)

First steps			
Project: "061	18_Test" was opened s	uccessfull	y. Please select the next step:
Start			
│	Devices & networks	¢.	Configure a device
╞	PLC programming	٢	Write PLC program

Select the type of used I/O Controller. (ex: 6ES7 212-1BE40-0XB0)

Add new device _			
Device name:			
]	
	- 🖬 Controllers	Device:	
	✓ Da CPU		1 ³⁸
Controllers	🕨 🫅 CPU 1211C AC/DC/Rly		7
	🕨 🧊 CPU 1211C DA/DA/DC		u
	Emilia CPU 1211C DC/DC/Rly		CPU 1212C AC/DC/Rly
	🗢 🛅 CPU 1212C AC/DC/Rly		or of 1212 of 142 datay
	6ES7 212-1BD30-0×B0		
	6ES7 212-1BE31-0×B0	Order no.:	6ES7 212-1BE40-0XB0
НМІ	6ES7 212-18E40-0X80	Version:	V4.0
	DEPU 1212C DC/DC/DC		
	P	Description:	



After selected the corresponding controller, the figure is shown in "network view" sheet.

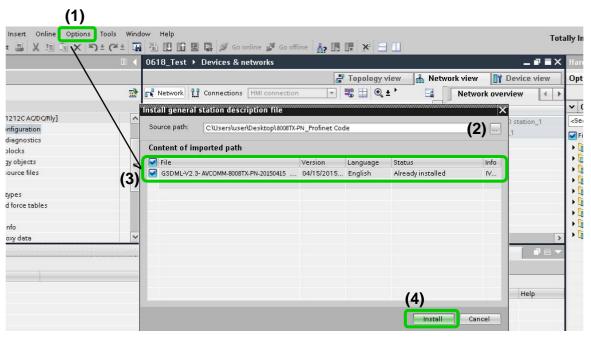
	0618_Test > Devices & networks	💶 🖬 🖬 🗙 Hardware catalog 🔳 🗉)
Devices	🚽 Topology view 🛛 🛔 Network view 👔 D	evice view Options
3 O O	🕋 💦 Network 🔢 Connections 🕅 Connection 🔍 📲 🖽 🍳 🛨 📴 🛛 Network overvi	iew 🕢 🕨 🗌
	Device	✓ Catalog
PLC_1 [CPU 1212C AC/DC/Rly]	▶ PLC_1 ▼ 57-1200	station 1 <search> ini iii</search>
Device configuration	CPU 1212C PLC *	
🖳 🖳 Online & diagnostics		M riner
🕨 🕁 Program blocks		Controllers Im HMI
Technology objects		PC systems
🕨 🚋 External source files		Drives & starters
🕨 🔚 PLC tags		Network components
PLC data types		Detecting & Monitoring
Watch and force tables		Distributed VO
Traces		Field devices
Program info		• 🛅 Other field devices
Device proxy data		
Details view		
	Device information Connection information Alarm display	
Name	All devices offline	
	🌱 Onlin 🖕 Oper Device/module Message Details	Help
		> Information

5.3 Install a GSD File

> Load and install the I/O device's GSD file into controller.

(Device icon and its GSD file should put into the same directory, then the device icon will be displayed in STEP7 after install GSD file)

→Options/Install GSD/Select a GSD file



- > Add I/O device onto the management interface.
- → Other field devices/ PROFINET IO/ Network Components /AVCOMM ... / 8008TX-PN



0618_Test → Devi	ices & networks				∎×	Hardware catalog		•	
		🛃 Topology vie	w 🛔 Network vi	ew 📑 Device vi	ew	Options		_	
Network 🔡 Coni	nections HMI conne	ection 💌 😽	E P E Ne	twork overview	4 1				Hardware
			<u> </u>	Device		✓ Catalog	and a second		dwa
-				▼ \$7-1200 station_	l)	<search></search>	ini j	1ini	
PLC 1				▶ PLC_1		Filter			catalog
CPU 1212C	🔳 Drag ar	nd drop twice	-			🕨 🛅 НМІ		~	log
	toadd ty	NO I/O	\leftarrow			🕨 🛅 PC systems			
	devices					🕨 🛅 Drives & starters			γ.
	uevices					🕨 🫅 Network components			0
						🕨 🌆 Detecting & Monitoring			Online tools
						🕨 🫅 Distributed I/O			le t
						Field devices			00
			~			🗢 🛅 Other field devices			60
<			> 📃 🕔	III	>	PROFINET IO			-
edbin-		Q Properties	🗓 Info 🚺 🛚 I	Diagnostics		🕨 🧊 Drives		=	
2				Jagnosucs		🕨 🧰 Encoders			Tasks
Device information	on Connectio	n information	larm display			🕨 🧰 Gateway			S
All devices offli	ne) 🧰 Ident Systems			-
🕐 Onlin 🦷 Oper	Device/module	Message	Details			▼ 📠 Network Compone			L
						🕨 🤙 GE Intelligent F			ib
						👻 🛅 AvcommTechno			Libraries
						👻 🧊 Industrial PR		··· 🔚	es
						▼ 🚺 8008TX-PN			
						▼ 1 1			
						800	D8TX-PN		

> Connect lines between PLC and I/O Devices. It also can modify I/O Device Name.





> Pre-Compile the project, then download to PLC.

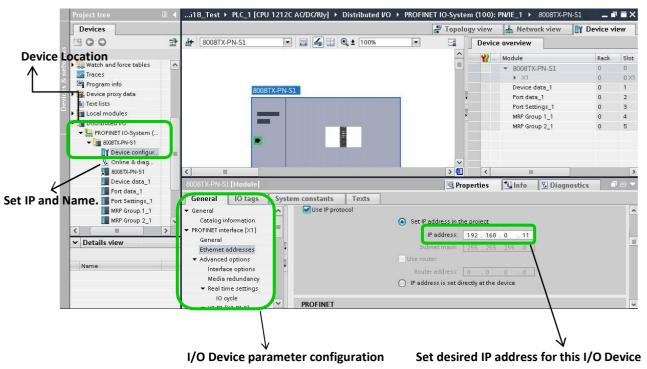
Compile	Download		
🗎 🗙 🎝 ± 🖓 ± 🕅 🖥	🗄 🛄 🔓 🖳 🧖 Go onl	line 🖉 Go offline 🕌 👫 🖪	* 🗄 🛄
0618_Test → Devices	& networks		
			7 Topology view 🔒 Netwo
K Network	HMI connection	- 📲 🛄 🍳 ± 100% I IO system: PL	C 1.PROFINET IO-System (100)
PLC_1 CPU 1212C	8008TX-PN-S1	8008TX-PN- 8008TX-PN	
	PLC_1	PLC_1	PLC_1.PROFINET IO-S

> Select the connection interface from the PC and the connected controller.

Device	Device type	Slot	Туре	Address		Subnet
PLC_1	CPU 1212C AC/D	1 ×1	PN/IE	192.168.0.1		PN/IE_1
	Type of the PG/PC inter PG/PC inter	rface:		°Cle GBE Family Cont	roller	▼ ▼
Compatible devi	Connection to interface/su 1st gate ices in target subnet:		PN/IE_1	S 1	how all com	
Compatible devi Device	1 st gate		PN/IE_1	₩ Si		patible d
	1st gate	eway: [PN/IE_1		how all com Target o PLC_1	patible d
Device	1 st gate ices in target subnet: Device type	eway: [PN/IE_1	Address	Target o	patible d
Device	1 st gate ices in target subnet: Device type	type PN/IE	PN/IE_1	Address 192.168.0.2	Target o	patible d
Device	1 st gate ices in target subnet: Device type	type PN/IE	PN/IE_1	Address 192.168.0.2	Target o	patible o

 5.4 Device Configuration
 Start to configure I/O Device including IP address, Name, MRP group, etc. →Double click the I/O Device icon will get below page.





Set IO Device IP address

(1)

(2) To scan the network device, then select the IO Device's MAC.

Devices				
. 🖻 0 0	📑 💌 Diagnostics	Lasian IR address		
2	General	Assign IP address		
🗧 🕨 🥅 Watch and force tables	Diagnostic status			\checkmark
Traces	PROFINET interface			
Program info	 Functions 	MAC address:	00 - 05 - 65 - 72 - E6 - E1	Accessible devices
Programmino Programmino Programmino Programmino Programmino	Assign IP address			
Text lists	Assign name	 IP address: 	192.168.0.11	
5 Decal modules	Reset to factory settings	Subnet mask:	255 . 255 . 255 . 0	
▼ 10 Distributed I/O		-	Use router	
🗢 🔛 PROFINET IO-System (Pouter address:	192.168.0.11	
8008TX-PN-S1		Router address.	192 1 100 1 0 1 11	
Device configur			Assign IP address	
🛂 Online & diag.				
1 8008TX-PN-S1				
¥			\checkmark	
Oouble Click		(3)) Press "Assign IP a	address" button



Set IO Device Name

B O O		Diagnostics	Erraiabhara Tailea	hmer im Netzwerk:				
		General						
Watch and force tables	~	Diagnostic status	IP address	MAC address	Туре	Name	Status	
Traces Program info	-	PROFINET interface	192,168,0,1	28-63-36-84-31-29	S7-1200	plc 1	📿 ок	
		▼ Functions	192.168.0.11	00-05-65-72-E6-E1	Industrial Switch	8008TX-PN-f1	🥑 ок	
强 Device proxy data	- 1	Assign IP address	192.168.0.52	00-05-65-72-E7-69	Industrial Switch	8008TX-PN-f2	💙 ОК	
Text lists		Assign name 🛃	192.168.0.53	00-05-65-72-E8-19	Industrial Switch	8008TX-PN-f3	🥑 ок	
Local modules		Reset to factory settings						
Distributed I/O		-						
🗢 🔛 PROFINET IO-System (
- 0 8008TX-PN-S1						Update	Assign name	_
🛐 Device configur						opuare	Assign name	
😵 Online & diag							Assig	n d
8008TX-PN-S1								5

Select the I/O Device, then press "Assign name" button.

Set MRP Group 1. \triangleright

8008TX-PN-S1 [Module]	🖳 Properties 🔩 In	fo 🗓 Diagnostics 📑 🖃 🛛
General IO tags	System constants Texts	
🕶 General	> Media redundancy	
Catalog information	Media redundancy	
▼ PROFINET interface [×1]		
General	MRP domain mrpdomain-1	
Ethernet addresses	Media redundancy role: Manager	Role: MRM
 Advanced options 		
Interface options	• Ring port 1: X1 [X1]X1 P1 [X1 P1 P	- Automation - Automati
Media redundancy	Ring port 2: X1 [X1]X1 P2 [X1 P2 R	Ring Port
 Real time settings 	Diagnostics interru	ots
10 cycle		
▼ ×1 P1 [×1 P1 R]		_
General	Domain settings	
Port interconnec		

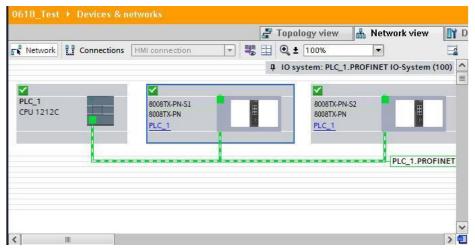
Set MRP Group 2. \geq

Port options	MRP Group2 Data			
Hardware identifier X1 P6 [X1 P6 R]	MRP Mode:	Disable .	-	Mode: Disable
▶ X1 P7 [X1 P7 R]	MRP Role:	MRC	•	
▶ ×1 P8 [×1 P8 R]	MRP Port1:	Port 3	•	
Hardware identifier Module parameters	MRP Port2:	Port 4	•	

5.5 Compile and load the project into the PLC After Configure I/O Device1 to MRM, I/O Device2 to MRC,

- → Run Compile and Download to PLC. (PLC will also send configuration to I/O Device)





Check MRP Information from IO Devices.

IO-Device	L
------------------	---

MRP Group 1 Info:	
Role	: Manager
Ring Port1	:1
Ring Port2	: 2
Vlan	: 0
Manager Priority	: 0xa000
Topology Change Interval	:1
Topology Change Repeat Count	1:3
Short Test Interval	: 10
Default Test Interval	: 20
Test Monitoring Count	: 3
Non Blocking MRC Supported	: 0
Test Monitoring Extended Count	: 25
React on Link Change	:1
Check Media Redundancy	:1
Domain Name	: mrpdomain-4
Real Role State	:1
Real Ring State	:1
Ring Port1 PortState	: BLOCKED
Ring Port2 PortState	: FORWARDING

IO-Device	2
------------------	---

MRP Group 1 Info:	
Role Ring Port1 Ring Port2 Vlan Link Down Interval Link Up Interval Link Change Count Blocked State Supported Domain Name Ring Port1 PortState Ring Port2 PortState	: Client : 1 : 2 : 0 : 20 : 20 : 20 : 4 : 1 : mrpdomain-4 : FORWARDING : FORWARDING

5.6 Monitoring the Switch

Check RTC Information from IO Controller.

On "Device overview" sheet, it shows each module address in the table.

Ex: To monitor device data, it needs to filter the PLC tags in address 1. (1Byte)The information in this byte is defined in RTC attribute table.

pdule	Rack	Slot	I address		
8008TX-PN-s1	0	0			
▶ ×1	0	0 ×1			
Device data_1	0	1	1		
Port data_1	0	2	2		
Port Settings_1	0	з	3		
MRP Group 1_1	0	4	45		
MRP Group 2_1	0	5	67		



To monitor some RTC attributes below.

Address→Status:

 $2.0 \rightarrow Port 1 connected$

.

- 1.0 → Alarm LED off 2.1 → Port 2 connected 1.1 → Power 1 on 2.2 → Port 3 disconnected
- 1.1 \rightarrow Power 1 on 2.2 \rightarrow 1.2 \rightarrow Power 2 off 2.3 \rightarrow
 - 2.3 \rightarrow Port 4 disconnected

							个		
Project tree		061	8_Test → PLC_1 [CPU 12120	Cac/dc/Riy] → PL	C tags 🔸 Default	tag tabl	e [68]		-
Devices					🕣 Tag	s 🗉	J ser cor	stants	🗶 System cons
······································		9	🥑 🖻 🎇 🕱			u			
		1	Default tag table						
Device configuration	^		Name	Data type	Address	Retain	Visibl	Acces	Monitor value
😼 Online & diagnostics		1	硘 IOD-1 Alarm Status	Bool	%I1.0			N	FALSE
🕨 🔜 Program blocks		2	al IOD-1 Power 1 Status	Bool	%11.1				TRUE
🕨 🙀 Technology objects		3	💷 IOD-1 Power 2 Status	Bool	%11.2				FALSE
🕨 📷 External source files	=	4	a IOD-1 Port 1 Connection	Bool	%12.0			N	TRUE
🕶 🚂 PLC tags	• -	5	硘 IOD-1 Port 2 Connection	Bool	%12.1				TRUE
🖏 Show all tags		6	硘 IOD-1 Port 3 Connection	Bool	%12.2				FALSE
📑 Add new tag table		7	a IOD-1 Port 4 Connection	Bool	%12.3				FALSE
💥 Default tag table [64]		8	<add new=""></add>				V	V	
C data types									

Note:

- 1.0 means the first bit of PLC tag address 1.
- 1.1 means the second bit of PLC tag address 1.
- 1.2 means the third bit of PLC tag address 1.
- 2.3 means the fourth bit of PLC tag address 2.