I-7580 User Manual

Version 1.00, May 2014

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Email: service@icpdas.com

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GW-7553 PROFI-8455 PROFI-5000

PROFINET is an open Industrial Ethernet standard developed by the PROFIBUS Organization (PI). Based on Ethernet versatility, PROFINET make vertical integration of field level with Enterprise level easily. PROFINET is automation in real time, so it can cover all requirements of the Automation Industry. PROFINET is fit for factory automation, process automation, safety applications and motion control applications, etc.

PROFINET contains 2 different solutions. They are PROFINET IO and PROFINET CBA (Component Based Automation). I-7580 module are PROFINET IO device. The user can access and configure the modules easily by using the GSDML file in any PROFINET Engineering tool, and exchange process data quickly with the IO controller.

1.1. Features

- Transfer protocol: PROFINET IO
- Supported Ethernet services: ICMP, IGMP, ARP, DHCP, TELNET, TFTP, SNMP, VLAN Priority Tagging
- Supported PROFINET services: RTC, RTA, CL-RPC, DCP, LLDP, I&M
- PROFINET Conformance Class B and RT Class 1
- Cyclic Time: 1ms (min)
- Generic GSDML File Provided
- Max. Input / Output data :512 / 384 bytes
- Max transmission speed up to 460800 bps for COM port
- COM port driver has 10 KB QUEUE input buffer & 10 KB QUEUE output buffer
- Built-in self-tuner ASIC controller on RS-422/485 port
- Integrated 2-Port Switch
- Automatic MDI / MDI-X Crossover for Plug-and-play
- Provide LED indicators
- Robust, fan less design
- 4 kV Contact ESD protection for any terminal
- Wide range of power input (+10 ~ +30 VDC) and operating temperature (-25 ~ +75°C)

1.2. Specification

Hardware	
CPU	32-bit CPU Core
RAM/Flash/EEPROM	32 MB / 4 MB / 8 KB
Watchdog	CPU built-in
ESD Protection	4 kV class A

PROFINET Interface	
Protocol	PROFINET IO Device
Conformance Classes	Class B
Services	RTC, RTA, CL-RPC, DCP, LLDP, I&M
Cycle Time	1 ms (min)

Ethernet Interface	
Controller	10/100Base-TX Ethernet Controller
	(Auto-negotiating, Auto_MDIX)
Connector	RJ-45 x 2 (LED indicators), Integrated 2-Port
	Switch
Services	ICMP, IGMP, ARP, DHCP, TELNET, TFTP,
	SNMP, VLAN Priority Tagging

UART Interface	
СОМ	RS-232/RS-422/RS-485
	(can't be used simultaneously)
COM Compositor	3-pin screwed terminal block (RxD, TxD, GND)
	4-pin screwed terminal block (RxD+, RxD-, TxD+,
COM Connector	TxD-)
	2-pin screwed terminal block (DATA+, DATA-)
Baud Rate (bps)	1200, 2400, 4800, 9600, 19200, 38400, 57600,
	115200, 230400, 460800
Data bit	7, 8

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Stop bit	1
Parity	None, Even, Odd

LED Display	
Round LED	AP LED, BOOT LED, ERR LED

Power Requirements	
Power supply	Unregulated +10 ~ +30 VDC
Protection	Power reverse polarity protection, Over-voltage
	brown-out protection
Power Consumption	3.4 W

Mechanical	
Dimensions	42 mm x 76 mm x 119 mm (W x L x H)
Installation	DIN Rail or Wall mounting

Environment	
Operating Temperature	-25 °C ~ +75 °C
Storage Temperature	-30 °C ~ +80 °C
Humidity	10~ 90 % RH, non-condensing

1.3. Internal I/O Structure



I-7580 Internal I/O Structure

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1.4. Pin Assignment



Pin	Name	Description
1	-	N/A
2	D-	Data- of RS-485
3	D+	Data+ of RS-485
4	-	N/A
5	-	N/A
6	-	N/A
7	-	N/A
8	Rx-	Receive Data- of RS-422
9	Rx+	Receive Data+ of RS-422

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10	Tx-	Transmit Data- of RS-422
11	Tx+	Transmit Data+ of RS-422
12	-	N/A
13	-	N/A
14	-	N/A
15	-	N/A
16	GND	GND of RS-232
17	Rx	Receive Data of RS-232
18	Tx	Transmit Data of RS-232

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1.5. Overview



Here is a brief overview of the components and its descriptions for module status.

UART Connector

For more detailed information regarding the pin assignments of the UART Connector, please refer to "1.4. Pin Assignment"

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AP mode:

AP	BOOT	ERR	Description			
OFF	OFF	Flash (Slow)	waiting for PROFINET connection			
ON	OFF	OFF	PROFINET connection is established.			
ON	OFF	Flash (Slow)	Device is at AP mode and the module received the incorrect parameters.			
ON	OFF	Flash (Fast)	Error! I-7580 has diagnostic message.			
ON	Flash (Slow)	Flash (Slow)	Hardware authentication error!			
ON	Flash (Fast)	OFF	COM port is transmitting or receiving data.			

Bootloader mode:

AP	BOOT	ERR	Description
OFF	OFF	Flash (Slow)	waiting for PROFINET connection
ON	OFF	OFF	PROFINET connection is established.
ON	OFF	Flash (Slow)	Device is at AP mode and the module received the incorrect parameters.
ON	OFF	Flash (Fast)	Error! I-7580 has diagnostic message.

Flash(Slow) : about 500 ms Flash(Fast) : about 100 ms

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> Ethernet Ports

An Ethernet port is an opening on I-7580 network equipment that Ethernet cables plug into. Ethernet ports accept cables with RJ-45 connectors.

Tips & Warnings



- 1. When users connect I-7580 and switch, users should not connect LAN1 and LAN2 to switch at the same time, else it will lead to abnormal network.
- 2. When users connect network devices by daisy chain topology, users can connect these devices in series by LAN1 and LAN2.

➤ Rotary Switch

Position	Mode	Module configuration	
0	AP mode	Output: 32 bytes	
		Input: 32 bytes	
1	AP mode	Output: 64 bytes	
I	Ar mode	Input: 64 bytes	
2	AP mode	Output: 128 bytes	
2	AP mode	Input: 128 bytes	
3	AP mode	Output: 256 bytes	
5	Ar mode	Input: 256 bytes	
Л	AP modo	Output: 384 bytes	
4	Ar mode	Input: 384 bytes	
5	AP mode	Output: 384 bytes	
5	AP mode	Input: 512 bytes	
6	AP mode	Reserved	
7	AP mode	Reserved	

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8~F	Bootloader mode	N/A

Tips & Warnings



If AP LED turn on, BOOT LED turn off and ERR LED flash slow. It means that the value of rotary switch does not match the settings of the modules(please refer to section 4.2. Module configuration).

> Power Connector

Pin Name	Function		
+VS	10 ~ 30 VDC power input		
GND	Ground connection		
F.G.	Frame ground connection		

1.6. Wiring and Jumper Setting Instructions

It is recommended to use only one serial port (RS232, RS485 or RS422) of the converter at the same time. The following section describes the necessary steps to be taken to connect one of the three COM port types to a serial device or serial network. The pull high/low resistor of COM port is shown in below.



1.6.1. RS-232 Connection

The RS-232 port of the I-7580 has got three pins.



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1.6.2. RS-422 Connection

The I-7580 converter is always a PROFINET IO device but it can in a local RS-422 network either take the position of a master or that of a slave. Depending on whether the converter acts as a local master or as a slave and on the number of devices connected to the RS-422 network device the four jumpers provided by the module has to be set. The jumpers set the pull high and pull down resistors for the RS-422 port.



> Configuration of pull high/low resistor for the RS-422 port

Pull High / Low resistor	Condition			
	The I-7580 is the master in RS-422 bus			
Enable (default)	or The number of devices connected to the			
	RS-422 bus is less than 10			
	The I-7580 is a slave in RS-422 bus			
Disable	or			
Disable	The number of devices connected to the			
	RS-422 bus is more than 10			
RS-422 Pull High/Low	RS-422 Pull High/Low			
resistor enable	resistor disable			
JP7 JP8	JP7 JP8			
JP9 JP10	JP 9 JP 10			

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1.6.3. RS-485 Connection

The I-7580 converter can only act in the PROFINET network as a slave. In a RS-485 network however it can either be a local master or slave. Before the module is connected to a RS-485 network it is important to know whether the module takes the place of a slave or master and how many devices are active on the RS-485 bus. The two jumpers (JP7 and JP8) have to be set according the bus configuration.



> Configuration of pull high/low resistor for the RS-485 port

Pull High / Low resistor	Condition				
Enable (default)	The I-7580 is the master in RS-485 bus or The number of devices connected to the RS-485 bus is less than 10				
Disable	The I-7580 is a slave in RS-485 bus or The number of devices connected to the RS-485 bus is more than 10				
RS-485 Pull High/Low resistor enable 1 2 3 1 2 3 JP 7 JP 8	RS-485 Pull High/Low resistor disable 1 2 3 1 2 3 JP 7 JP 8				

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1.7. Dimensions



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2. PROFINET

PROFINET contains 2 different solutions. They are PROFINET IO and PROFINET CBA (Component Based Automation). **I-7580 module is a PROFINET IO device**.

PROFINET IO is used for communication with decentral periphery like IOs, drives, etc.

PROFINET CBA is a communication solution for autonomously acting partial units of machines or plants.



2.1. Device classes of PROFINET IO

The following devices classes are defined to facilitate structuring of PROFINET IO field devices.

- IO-Controller: This is typically a PLC on which the automation program runs
- IO-Supervisor: This can be a programming device (PG), personal computer (PC), or human machine interface (HMI) device for commissioning or diagnostic purposes.
- IO-Device: An IO-Device is a distributed I/O field device that is connected via PROFINET IO. It can exchange data with multiple IO-Controllers.



2.2. Device Description

The functionality of a PROFINET IO Device is always described in a GSD file. This file contains all data that are relevant for engineering as well as for data exchange with IO-Device.

PROFINET IO-Devices can be described using XML-based GSD. The description language of the GSD file, i.e. GSDML (General Station Description Markup Language) is based on international standards.

Every manufacturer of a PROFINET IO-Device must supply an associated GSD file according to the GSDML specification. Users can access and configure I-7580 module by using the GSDML file in any PROFINET Engineering tool.



2.3. Conformance Classes (CC)

PI has classified the scope of functions in PROFINET IO into 3 conformance classes (CC-A, CC-B, CC-C). Users simply need to select a CC appropriate for system and do not need to worry about any other details to ensure the interoperability in an automation system with regard to the scope of functions and performance parameters.

CC-A:

Use of the infrastructure of an existing Ethernet network including integration of basic PROFINET functionality. All IT services can be used without restrictions. Examples of typical applications are in building automation and process automation. Wireless communication is only possible in this class.

CC-B:

In addition to the functions of CC-A, the scope of functions of CC-B supports easy and user-friendly device replacement without the need for an engineering tool. Examples of typical applications are in automation systems with a higher-level machine controller that place relatively low demands for a deterministic data cycle.

CC-C:

In addition to the functions of CC-B, the scope of functions of CC-C supports high-precision and deterministic data transmission, including for isochronous applications. An example of a typical application is the field of motion control.



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3. Basic Application

If you are a new user, begin with this chapter, it includes a guided tour that provides a basic overview of installing, configuring and using the I-7580.

In the following examples the S7-1200 PLC from Siemens is used to be a PROFINET IO Controller. The configuration and communication is done by the program "Step 7 V11 SP2 (TIA PORTAL)" provided by Siemens.

3.1. Connect to Network, PC and PROFINET IO controller

The I-7580 module is equipped with two RJ-45 Ethernet ports for connection to an Ethernet switch, PC and PROFINET IO controller.

Tips & Warnings



- 1. When users connect I-7580 and switch, users should not connect LAN1 and LAN2 to switch at the same time, else it will lead to abnormal network.
- 2. When users connect network devices by daisy chain topology, users can connect these devices in series by LAN1 and LAN2.



3.2. Network configuration

In this example, please follow the below configuration to configure the network.

PC: IP: 192.168.6.210 Mask: 255.255.0.0

PLC: Device name: plc1 IP: 192.168.6.211 Mask: 255.255.0.0

I-7580: Device name: i-7580 IP: 192.168.6.212 Mask: 255.255.0.0



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Step 1: Set PC's IP

Click "start->Settings->Network Connections"



Double click "Local Area Connection" icon



Local Area Connection Enabled AMD PCNET Family PCI

Click "Properties" button

📥 Local Area Con	nection Status 🛛 🛛 🛛	
General Support		
Connection		-
Status:	Connected	
Duration:	00:23:43	
Speed:	10.0 Mbps	
Signal Strength:		
Activity	Sent — 🦣 — Received	
Packets:	10,709 8,894	
Properties	Disable	
	Close	,

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Select "Internet Protocol(TCP/IP)" and click "Properties" button

🕹 Local Area Connection Properties 🛛 🔹 💽				
General Authentication Advanced				
Connect using:				
MD PCNET Family PCI Ethernet Adapter				
Configure				
This connection uses the following items:				
 Client for Microsoft Networks Eile and Printer Sharing for Microsoft Networks QoS Packet Scheduler Thternet Protocol (TCP/IP) 				
Install Uninstall Properties				
Description Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.				
Show icon in notification area when connected				
OK Cancel				

Set "Internet Protocol Properties" and then click "OK" button.

Internet Protocol (TCP/IP)Properties 🔗 🔀					
General					
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.					
Use the following IP address:					
IP address:	192.168.6.210				
Subnet mask:	255.255.0.0				
Default gateway:	192.168.0.254				
Obtain DNS server address automatically O Use the following DNS server addresses:					
Preferred DNS server:	168 . 95 . 1 . 1				
Alternate DNS server:	· · ·				
Advanced					
	OK Cancel				

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Step 2: Set PLC's name and IP

Double Click TIA icon to start Step 7 V11



Click "Project view"



Search accessible devices



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0h Siemens					- *
Enject Edit Dev Insert Online Opti	ions Icols Window Help				Totally Integrated Automation
📑 🎦 🔚 Save project 🚢 🐰 🛄 🔍	X じゅつき 副 田田	[[] 말 다 :	🖉 Gosnline 🖉 Gooffine 👔	10 IR 1	PORTAL
Project tree 🛛 🕄	1				
Devices					
1900					C
A					
Online access					
🗑 🛄 USB (S7USB) 📃 📕					
🗧 🎑 CON [85252]PPI multi-master cable] 🛛 📕			Step1: Select PLC by	mac	
Trease As a line line line line line line line line			address and click rig	ht button	
Realtek ITLS139 Pamily PCI Past Ether.					
Opdate accessible devices	4				
TeleService [Automatic protocol dete	open				
SIMATIC Card Reader	X og	CtyleX			
	🜆 Copj	Cerl+C			
	Di Easte	ColeV			
	× Delete	Del			
	Regame	F2			
	Go to device				
	Gio to library				
	💋 Googline	Cofe K			
< =	Coline & diagnostics	Oriso	Step2: Click "Onlin	e 8.	
 Details view 	Fecerve allarmo		diagnostics" buttor	1	Cilling and the second second
	Start Simulation			1000	
Name	Cross-enderen ca information	shihare			
S Online & diagnostics	X Crossmelerences	F8			
	I Print .	CtrlaP			
	Print pregiew				
	Repetties	Alt+Enter			
		110010			
			🖳 Propertie	s 🚺 Info	😼 Diagnostics 👘 👘 👘
 Partal view Dverview 				💙 The 1710	FINET device nome was ession

• Select PLC and click "Online & diagnostics" button

Set IP and Mask

Diagnostics Functions	Assign IP address	Step2: Set IP & Mask
Assign IP address Set time of day		
Reset to factory settings	MAC address:	00 - 1C - Y - 0A - DC - 08 Accessible devices
Assign name	IP address:	192.168.6.211
	Subnet mask:	255.255.0.0
Step1: Click Assgin IP addre	Router address:	
		Assign IP address
	l	
		Î
	Step: butto	3: Click "Assgin IP address" n

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Set device name

Diagnostics Functions Assign IP address Set time of day Reset to factory settings <mark>Assign name Assign name </mark>		PRC	PFINET device nam Typ p2: Input d	e: pic_1 e: \$7-120 evice name]
Step1: Click Assign name	Acce	ssible devices in the ne	Only show device Only show device Only show device	s of the same type s with bad parameter s s without names	ettings
	IP address	MAC address	Туре	Name	Status
			Step3:	Click "Assign n	ame" button

Step 3: Set I-7580 module's name and IP

Search accessible devices



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Select I-7580 module and click "Online & diagnostics" button

Set IP and Mask

roject tree		Online access 🔸 Intel(R)	PRO/1000 MT Network Conn	nection 🔸 i-7580 [12-34-56-78-9A-BC]
Devices				
 COM <2> [RS232/PPI multi-master c. PLCSIM V5.x [MPI] Intel(R) PRO/1000 MT Network Conn. Update accessible devices i-7580 [1-234-56-78-9A-BC] i-ndes-1840.dt 		Diagnostics General Functions Assign IP address Assign name Reset to factory setti	Assign IP address MAC address IP address Subnet mask	Step2: Set IP & Mask
• icpdas-xp-esxi Step1: Clic	k Assi	gn IP address		Use router
	>		Router address:	0.0.0.0
Name Online & diagnostics				Assign IP address
			Ste	ep3: Click "Assign IP address" tton

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Set device name

ping postion					
General					
Functions		PRO	FINET device nam	i-7580	
Assign IP address			ур	e: -7580	
Assign name					
Reset to factory settings			/		
T		Step2: I	nput device	name	
	_				
tep1: Click Assign name			on hu alta suu dan isaa	[+]	
			Only show device:	s of the same type	
			Only show device:	s with bad parameter set	ttings
			Only show device: Only show device:	s with bad parameter set s without names	ttings
•			Only show device: Only show device:	s with bad parameter set s without names	tings
-	Acce	ssible devices in the ne	Only show device: Only show device:	s with bad parameter set s without names	ttings
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: twork:	s with bad parameter set s without names Name	ttings Status
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: twork:	s with bad parameter set s without names Name	tings Status
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: twork: 😥 Type	s with bad parameter set s without names Name ep3: Click "Assic	Status
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: twork: 😰 Type	s with bad parameter set s without names Name ep3: Click "Assig	Status
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: twork: 20 Type St	s with bad parameter set s without names Name ep3: Click "Assig	Status In name" button
	Acce IP address	ssible devices in the ne MAC address	Only show device: work:	s with bad parameter set s without names Name ep3: Click "Assig	Status In name" button
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: work: 2	s with bad parameter set s without names Name ep3: Click "Assig	Status In name" button
	Acce IP address	ssible devices in the ne MAC address	Only show device: Only show device: work: Type St	s with bad parameter set s without names Name ep3: Click "Assig	status

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3.3. GSD Import

In this example, please follow the step to import GSD file.

Step 1: Get GSD file

The GSD file can be obtained from companion CD or our FTP site:

CD: \fieldbus_cd\profinet\converter\i-7580\gsd\ ftp://ftp.icpdas.com/pub/cd/fieldbus_cd/profinet/converter/i-7580/gsd/

Step 2: Import GSD file

Double Click TIA icon to start Step 7 V11









Select "Menu->Options->Install general station description file (GSD)"

Select and install GSD file

Install general s	tation description	file							×
Content of imp	oorted path						-	\sim	
GSDML-V2.3-I	CPDAS-17580-20140	Ver V2.	Step1	: Select	t th	e GSD	file din	ectory))FINET I
1									
Step2: Sele	ct the GSD file	1							
		1			Ste	p3: Clic	ck "Ins	tall" b	utton
							+		
								tall	Cancel

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3.4. Project Setup

In this example, please follow the step to setup project.

Step 1	Create	the	project
--------	--------	-----	---------

Double Click TIA icon to start Step 7 V11



• Create the Project

	Create new project		
Open existing project	Project name: Path:	Project2 CiUsersi	
🥚 Create new project	Author:	Ryan Step2: Input project name	
🔵 Migrate project	Comment:		<u>^</u>
Close project			~
Step1: Select "Creat	e new project"	Step3: Click "Create" butt	on Create
Welcome Tour			
First steps			
100110			

Step 2: Project configuration

Add a PLC device



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•	Set the device name of PLC to "PLC_7	1"
---	--------------------------------------	----

				🚰 Topology view	.
Network Connections HMI connection	on 💌 📲	🚉 🔍 ± 100%	•		
PLC_1					
CPU 1211C			Step1: Select	"Properties"	
				\backslash	
Step2: Select "Genera	l"				
PLC_1 [CPU 121/C AC/DC/RIy]				Properties	
Conorol					
		Step3: Input d	evice name		
	- General 💄				
	Drainst in	formation			
 Di6(D04 	Project in	iormación 🔰			
 Al2 		Name:	PLC 1		
High speed counters (HSC)		Auchan	line de la		
Pulse generators (PTO/PWM)		Author:	Icpuas		
Startup	4	Comment:		~	
Cycle					
Communication load	<u> </u>				
System and clock memory					
Web server					
Time of day				Y	
Protection		PositionNumber:	1		
Connection resources					
Overview of addresses	Catalog info	rmation			
Portal view Overview	A Devices & ne				

Set the IP and mask of PLC and add a new subnet

PLC_1 CPU 1211C			
Step1: Select "PROF	INET interface" -> "Ether	rnet addresses"	🔍 Properties
General			
General PROFINET interface General Ethernet addresses Advancea Time synchronization DI6/DQ4 Step2: Click Al/2 button	Ethernet addresses Interface networked w si "Add new subnet"	vith ubnet: Not networked Add new subnet	
 Fign speed counters Pulse generators (PTO/PWM) Startup Cycle Communication load System and clock memory Web server Time of dex 	Step3: Set IP & Mask	Set IP address in th IP address: Subnet mask: Use IP router Router address:	e project 192 . 168 . 6 . 211 255 . 255 . 0 . 0
A Destal view		Set IP address using	g a different method

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Add I-7580 module



Select PROFINET interface



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Set device name to "i-7580"

				Ļ	IO system: PLC_	_1.1
PLC_1 CPU 1211C	I-7580 I-7580 2-Port D PLC_1	667 	•	Step1: C I-7580 ic	lick :on	
I-7580 Step2: Se General FROFINET interface [X1]	lect "General"			🗟 Properties	1. Info	2
General Ethernet addresses Advanced options		Name:	I-7580			
Identification & Maintenance	ut device name	Comment:				_
	P					

Set the IP of I-7580 module

		4 IO system: PLC_1.PROFINET IC
PLC_1 CPU 1211C	I-7580 I-7580 2-Port D PLC_1	
1-7580	📴 Pr	operties 🗓 Info 😨 Diagnos
General		"
▶ General	Step1: Select "PROFINET Interface	
▼ PROFINET interface [X1]	-> "Ethernet addresses"	
General		
Ethernet addresses		
Advanced options	Subnet: PN/IE_1	
Identification & Maintenance	Add new	subnet
	IP protocol	
	 Use IP protocol 	
Sten2: Input 1	Paddress Set IP addre	ss in the project
Step2. Input i		100 160 6 010
		ess. 192.100.0 .212
	Use IP router	

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Select module type of I-7580 module

							📲 To	opology view 🛛 🛔	Network	view	时 Device view	Ор	tions
					(Device view			-		-		
Devi	ce overview								7			~	Catalog
	Module	Rack	Slot	I address	Q addre	Type Step1: S	elect	"Device view"	mware	Comm	ent	<50	earch>
-		0	0			1-758			1.3.0				Filter
	Internal	0	0 ×1			1-7580							I-7580 2-Port Device
	RSW:0 Input:32Byte Output:	0	1	132	132	RSW:0 Input:32Byte	<u>•</u>	Step and add	2: Select double c module	: modu lick thi	Ile type is icon to	-+ť	Input and Output Modules RSW-0 Input 32Byte Output:32Byte RSW-1 Input 54Byte Output:32Byte RSW-2 Input 128Byte Output:128Byte RSW-3 Input 556Byte Output:128Byte RSW-4 Input:344Byte Output:384Byte RSW-5 Input:512Byte Output:384Byte

					Sten1 · Clic	k mod			
Device overview						.k mou			
🔐 Module	Rack	Slot	l address	Q addre	Туре	Order n	o.	Firmware	Comment
	0	0			580 2-Port Device	I-7580		v3.3.0	
 Internai 	U	0.21			1-7580				
RSW:0 Input:32Byte Output:	0	1	132	132	RSW:0 Input:32Byte		Step3: Set parameters	Module	
RSW:0 Input:32Byte Output:32Byte_1							/	🔍 Properti	es 🔃 Ir
General						\checkmark			
Module parameters		Module	e paramete	ers					
I/O addresses		Gene	eral param	eters					
				Baud ra	ate: 115200			•	
				Par	rity: None			•	
Step2: Click "Module	•			Data	bit: 8 data bit			•	
parameters"				Stop	bit: 1 stop bit			•	
	•		End cha	r of input da	ata: None			•	
			Input fixe	ed length da	ata: Disable			-	
			Unit of	timeout val	ue: 1 ms			-	
			Diagno:	sis of time o	out: None			-	

Set module parameters of I-7580 module



Compile and download to device



ownload to device

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The software has not been loaded, because it is up-to-date. Start modules Start modules after downloading to device.	_
1 > Start modules Start modules after downloading to device.	
Step1: Select "Start	all"
Step2: Click "Finish" button	



At this time, the AP LED should turn on, BOOT LED and ERR LED should turn off, it means the connection between PLC and I-7580 module is established.

4.1. Communication Sequence

I-7580 module has basically got 4 buffers:

- PROFINET IO device input buffer
- PROFINET IO device output buffer
- COM port input buffer
- COM port output buffer

PROFINET IO controller has basically got 2 buffers:

- PROFINET IO controller input buffer
- PROFINET IO controller output buffer

In I-7580, data is transferred from the COM port input buffer to PROFINET IO device output buffer and from PROFINET IO device input buffer to COM port output buffer. The data flow in I-7580 is shown in below.



During each message cycle PROFINET IO controller writes the content of its output buffer to PROFINET IO device input buffer and reads the content of PROFINET IO device output buffer to its input buffer. The exchange cycle is taking place even I-7580 User Manual (Version 1.00, May/2014)

though the content of the PROFINET IO controller and PROFINET IO device output buffer has not changed. The data flow between PROFINET IO controller and I-7580 is shown in below.



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4.2. Module configuration

The user can set the size of the I/O modules in the PROFINET configuration tool. Each I/O module will allocate input 8 bytes and output 8 bytes for system. The settings of the modules are described below.

- Max. I/O modules: 1
- "RSW:0 Input:32Byte Output:32Byte" module
- "RSW:1 Input:64Byte Output:64Byte" module
- "RSW:2 Input:128Byte Output:128Byte" module
- "RSW:3 Input:256Byte Output:256Byte" module
- "RSW:4 Input:384Byte Output:384Byte" module
- "RSW:5 Input:512Byte Output:384Byte" module

Tips & Warnings



If AP LED turn on, BOOT LED turn off and ERR LED flash slow. It means that the value of rotary switch does not match the settings of the modules(please refer to section 1.5. Overview -> Rotary Switch).

4.3. Module Parameter Settings

The user can configure the module parameters to set the communication mode and data format by the PROFINET configuration tool. The module parameters are described below.

- COM port baud rate : 1200 / 2400 / 4800 / 9600 / 19200 / 38400 / 57600
 / 115200 / 230400 / 460800
- COM port parity : None / Even / Odd
- COM port data length : 7 / 8
- COM port stop bit : 1 / 2
- End char of input data : None / CR / LF / CR+LF / LF+CR
- Input fixed length data: Enable / Disable
- Unit of timeout value: 1 ms / 10 ms
- Diagnosis of time out: None / Master Slave mode / Cyclic input data mode

> Diagnosis of time out about input data

1. Master Slave mode:

In this mode, the I-7580 acts as a local serial master, sends a request to the slaves of the serial network and expects an immediate response.

If the time between the request send and the response received exceeds 3 seconds, the I-7580 will send the diagnostic message "Input Data Error –Data loss".



2. Cyclic input data mode:

In this mode, the I-7580 is continuously receiving telegrams from the serial network without sending any request telegrams.

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If the time interval between two arriving telegrams is greater than 3 seconds, the I-7580 will send the diagnostic message "Input Data Error –Data loss".



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4.4. PROFINET Input Data Area

The maximum input data length of I-7580 is 512 bytes. The first 8 bytes of the received input data are reserved for the communication status. The remaining data in the input data area represents the data packet received from the serial network. The 9th byte therefore shows the first byte of the received serial data.

Byte	Data	Description
	0x00	I-7580 is currently not transmitting I/O data
0	0x01	I-7580 is transmitting data to the COM port
	0x02	I-7580 is receiving data from the COM port
1	Error State	Bit 0: Output FIFO overflow Bit 1 : Input FIFO overflow Bit 2 : Output Data loss Bit 3 : Input Data loss Bit 4 : Input Data overflow
2	Longth	Received data length (High byte)
3	Length	Received data length (Low byte)
4	Input	Received data count (High byte)
5	Count	Received data count (Low byte)
6	Output	Transmitted data count (High byte)
7	Count	Transmitted data count (Low byte)
8~511	Data	Receive data from COM port

I-7580 module built-in three modes to identify data from two batches of data packet. They are (1) Interval time, (2) Fixed data length, and (3) End character of data.

> Interval time mode

If the time between two consecutive bytes exceeds the timeout value, the module transfers the data from the COM port input buffer to the PROFINET IO device output buffer. The default timeout value is set to the duration needed to send one data byte. That means if after a time period of one byte no additional data arrives then the data already in the COM port input buffer will be regarded as a data packet.

It is recommended that the interval time between every message arriving at the

COM port should be greater than 2 milliseconds.

> Fixed data length mode

The converter counts the number of bytes arriving at the COM port. If the specified number of data length has entered the serial input buffer the content is removed from the input buffer and transferred to the PROFINET IO device output buffer. The last string will only be send after a transmit time of three bytes has elapsed.

To use this feature, "Input fixed length data" of module parameter has to be set "Enable" (please refer to section 4.3. Module Parameter Settings).

The data length has to be defined in the byte 5,6 of the PROFINET output data area (please refer to section 4.5. PROFINET Output Data Area).



> End character mode

As soon as the converter detects the end characters of the incoming serial data stream, it removes the data from the serial receive buffer and transfers it to the PROFINET IO device output buffer of the converter.

If the time interval between two consecutive bytes is longer than the time needed to transmit three bytes then the module treat this situation as an end of a string.

To use this feature, "End char of input data" of module parameter has not to be set "None" (please refer to section 4.3. Module Parameter Settings).

Example 1: The end character : CR(0x0D)	Example 2: The end character : CR(0x0D)
String arriving at the Com Port:	Time interval between two consecutive bytes is longer than the time needed to transmit three bytes
01 02 0D 03 0D 04 05 06 07 0D	String arriving at the Com Port:
String Count : 3	01 02 03 04 0D 05 06 07 08 0D String Count : 3
String 1: 01 02	String 1: 01 02
String 2: 03	String 2: 03 04
String 3: 04 05 06 07	String 3: 05 06 07 08

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4.5. PROFINET Output Data Area

Byte	Data	Description
1	0~255	Data output command
	0x01	Control bit – clear all diagnostic messages
2	0x02	Control bit – clear Received data count
	0x04	Control bit – clear Transmitted data count
3	Longth	Output data length (High byte)
4	Lengin	Output data length (Low byte)
5	Longth	Fixed data length (High byte)
6	Length	Fixed data length (Low byte)
7	0~255	Interval time between the two batches of the data
8	0~255	Timeout value
9~384	Data	Output data to COM port

The maximum output data length of I-7580 is 384 bytes. The first 8 bytes are needed to set the communication behavior of the converter.

> Data output command (byte 1)

The PROFINET IO Controller is cyclically polling the I-7580 module. PROFINET IO Controller sends data from its output buffer to the input buffer of the converter. If no new data is put on the PROFINET IO Controller output buffer, the PROFINET IO Controller sends in each polling cycle the same data. It is therefore necessary for the converter to detect whether the data arriving at its PROFINET IO device input buffer has already been sent before or is new. The converter recognizes a new data packet when the value of the first byte differs from the previous data packet. A change of the first byte results in an immediate output of the newly arrived data (at the PROFINET IO device input buffer) to the serial COM port.

When the user wants to send a new data packet to the converter, the user should increase progressively the first byte (ex: 0->1, 1->2, 2->3, ..., 255->0) and the converter will send the new data packet to the serial COM port. If the user changes the first byte but doesn't increase progressively it (ex: 0->2, 1->3, 2->5), the converter will send a diagnostic message "Output data - data loss". The user can know the PROFINET data may be loss by this message.

Tips & Warnings



The converter will send no data to the connected serial devices if the content of the first byte of two consecutive PROFINET messages is identical. Even if the remaining bytes differ, no message will be forwarded to the COM port. The converter detects a new data packet only by checking the first byte.

Control bit (byte 2)

- Bit 0: When this bit is set, diagnostic messages send by the I-7580 module will all be cleared.
- Bit 1: When this bit is set, the I-7580 module sets the "Received data count" (please refer to section 4.4. PROFINET Input Data Area) to zero.
- Bit 2: When this bit is set, the I-7580 module sets the "Transmitted data count" (please refer to section 4.4. PROFINET Input Data Area) to zero.
- Bit 3~7: The remaining bits have to be set to zero.

Output data length (byte 3, byte 4)

The output data length default value is zero. It has to be set for every single output command otherwise no data will be send to the COM port.

These 2 bytes determines the number of bytes copied from the I-7580 PROFINET IO device input buffer to the COM output buffer. That means independent of the data length send by the master only the number of bytes specified in the third byte will be forwarded to the COM port.

Fixed data length (byte 5, byte 6)

These 2 bytes determines the length of the serial response data string. The converter waits until the data arriving at the COM port buffer has reached the specified length.

To use this feature, "Input fixed length data" of module parameter has to be set "Enable" (please refer to section 4.3. Module Parameter Settings).

> Interval time (byte 7)

These 2 bytes can increase the interval time between the two batches of the data packet, it means the converter can delay the data output from PROFINET to Series COM port.

Example: Interval time: 15 ms



Timeout value (byte 8)

The timeout is only relevant for the communication between the I-7580 converter and the serial network. The converter receives the response of a device in the serial network at the COM port as a continuous data stream. A silent interval in the data stream exceeding the timeout value signals the converter the end of the message and forwards this message to its PROFINET IO device output buffer. Valid values for the timeout: 0 to 255

A "0" represents the minimum value which equals the transmission time of one byte [(start bit+data bit+parity bit+stop bit)/Baudrate].

A "1" assigns a timeout value of either 1 or 10 milliseconds depending on the chosen unit (1 or 10ms). The maximum value "255" represents either 255 milliseconds (time unit: 1ms) or 2550 milliseconds (time unit:10 ms).

This byte specifies the timeout for the data stream of the serial response. If for

every request send by the converter multiply responses are expected, then the timeout applies to all these messages.

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4.6. Diagnostic Messages

The I-7580 module has two types of diagnostic message. They are "Output Data Error" and "Input Data Error".

Туре	Description			
	FIFO overflow			
Output Data Error	Data loss			
	FIFO overflow			
Input Data Error	Data loss			
•	Data overflow			

Output Data Error

- When the speed of PROFINET network is bigger than serial network and the PROFINET IO controller transmit continuously data to the I-7580 module, the output buffer of the I-7580 will overflow and I-7580 will send the diagnostic message "Output Data Error – FIFO overflow ".
- When the I-7580 module receives the data output command (first byte of the output data area, please refer to section 4.5. PROFINET Output Data Area) from PROFINET IO controller and the command is not increase continuously (ex: 0->1, 1->2, ..., 254->255, 255->0), the I-7580 will send the diagnostic message "Output Data Error Data loss " to PROFINET IO controller.

Input Data Error

- When the speed of serial network is bigger than PROFINET network and the serial device transmit continuously data to the I-7580 module, the input buffer of the I-7580 will overflow and I-7580 will send the diagnostic message "Input Data Error – FIFO overflow ".
- When the I-7580 module can't receive data in time from COM port, it will send the diagnostic message "Input Data Error – Data loss ", please refer to section 4.4. PROFINET Input Data Area.
- The maximum input data length of the I-7580's COM port is 506 bytes. When the I-7580's COM port receive data more than 506 bytes, it will send the diagnostic message "Input Data Error – Data overflow ".

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4.7. Communication test - Receive

In PC side, we use "Send232" to test PROFINET communication and serial communication. This utility simulates a serial device and can be obtained from our FTP site (download Send232). We send the string "sendtoi7580" by Send232 and receive the same string in PROFINET input data area.

🚰 Send	232 ¥. 2.0.1 COM1			Send232 ¥. 2.	0.1 COM1	
	A status 11 III IIII IIIIIIIIIIIIIIIIIIIIIIIII	Send string with None CLF CCR © CR CLF	_CR 8_LF	COM status	115200 ▼ C None N.8.1 C CR Close F	ring with C LF_CR CR_LE
	end Stop	String Send		Interval 500	Set Stop	80 Send
Set	parameters a	nd press ^r Or	oen 」	Send sendtoi7580	Receive	
	Clear	Clear Exit Program		Input data	and press	ear rogram
			1	PC		2
19 1.	91 90 17 🚏 🖤	h 1				
i	Name	Address	Display format	Monitor value		
1	"IState"	%IB1	DEC_unsigned	0	Data lengti	
2	"error state"	%IB2	DEC_unsigned	0		
3	"rov len"	%IW3	DEC_unsigned	13		
4	"rev ent"	%IW5	DEC_unsigned 💌	1	Deceived d	ata count
5	"out_cnt"	%IW7	DEC_unsigned	0	Received d	
6	"IN_data_(0)"	%IB9	Character	's'		
7	"IN_data_(1)"	%IB10	Character	'e'		
8	"IN_data_(2)"	%IB11	Character	'n'		
9	"IN_data_(3)"	%IB12	Character	.d.		
10	"IN_data_(4)"	%IB13	Character	't'	Received d	ata
11	"IN_data_(5)"	%IB14	Character	·0'		
12	IN_data_(6)"	%IB15	Character			
13	IN_data_(/)"	%ID15	Character			
14	IN_data_(8)"	761B17	Character	5		
15	"IN_data_(9)"	76115115 9/11910	Character	0 '0'		
10	"IN_data_(10)	201019 9/1020	Character	16400		
10	"IN_data_(11)"	%ID2U %ID21	Hex Hex	16#00		3
10	IN_OATA_(12)"	7610.21	nex	16#UA		5

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4.8. Communication test - Transmit

In PROFINET output data area, please set value of byte 4 to 8, and input data string "sendtoPC" to byte 9~13. As soon as byte 1 changes its value from 0 to 1, the data string will be transferred to RS232 device.



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5. MiniOS7 Utility Tool

The MiniOS7 Utility is a useful tool that provides a quick and easy way to get Ethernet settings and firmware version of I-7580 module.

5.1. Installing the MiniOS7 Utility

Step 1: Get the MiniOS7 Utility tool



The MiniOS7 Utility can be obtained from companion CD or our FTP site: CD:\Napdos\minios7\utility\minios7_utility\ ftp://ftp.icpdas.com/pub/cd/8000cd/napdos/minios7/utility/minios7_utility/

Step 2: Follow the prompts to complete the installation

After the installation has been completed, there will be a new short-cut for MiniOS7 Utility on the desktop.





5.2. Using MiniOS7 Utility to get Ethernet settings and firmware version

Step 1: Run the MiniOS7 Utility



Step 2: Press "F12" or choose "Search" from the "Connection" menu

After pressing **F12** or choosing **Search** from **Connection** menu, that will search all of the modules that provide by ICP DAS on your network.

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Tips & Warnings



- If you can't find the module by searching the network. It means the IP address of I-7580 module is zero (default IP = 0.0.0.0). At this time, please follow the section 3.2. Network configuration=> Step 3: Set I-7580 module's name and IP" to set module's IP and then re-search the network again. Or, wait for the PROFINET controller connect to I-7580 module (AP LED=ON) and then re-search the network again.
- 2. About scan result of MiniOS7 Utility, Alias=module name & firmware version.

6. **PFN_Tool Utility**

6.1. Installing the PFN_Tool Utility

Step 1: Get the PFN_Tool Utility





The PFN_Tool Utility can be obtained from companion CD or our FTP site: CD:\fieldbus_cd\profinet\utility\ ftp://ftp.icpdas.com.tw/pub/cd/fieldbus_cd/profinet/utility/

Step 2: Follow the prompts to complete the installation

After the installation has been completed, there will be a new shortcut for PFN_Tool Utility on the desktop.



PFN_Tool.exe

6.2. **PFN_Tool Utility Functionalities**

6.2.1. Module Search

Step 1: Select Network Device

Select network device that connect with I-7580 module, and press "Search Start" button.

PFN_Tool (Ve	rsion 1.2)					
letwork Devices	IP: 172.16.222.1 M IP: 172.16.222.1 M IP: 172.16.38.1 M IP: 172.168.77.77	IAC: 00-50-56-C0-00-08 IAC: 00-50-56-C0-00-08 AC: 00-50-56-C0-00-01 (MAC: 6C-90-49-AC-51-8	(VMware Virtual Et (VMware Virtual Et 7Mware Virtual Eth B (Realtok R TL816	hemet Adapter for V hemet Adapter for V emet Adapter for Vb SC(2)STITC(2) PC	Mnet8) Mnet8) (net1) (-E Gigabit Ethernet)	
Туре	REN_Tool (Ver	rsion 1.2) IP: 192.168.77.77 MA	C: 6C-F0-49-AC-51	-8B (Realtek RTL8)	.68C(P)/8111C(P) PC	I-E Gigabit Ethemet N
\sum			Sea	rch Start		
	Live List	Name	IP	Mask	Gateway	Mac

Step 2: Search results

Live List will show all of the PROFINET devices on the same network of network device.

PFN_	Tool (Version 1.2	2)				
Network	Devices : IP: 192	.168.77.77 MAC: 6C-3	F0-49-AC-51-8B (Realtek RTL8168	C(P)/8111C(P) PCI-	E Gigabit Ethernet N 🔽
			Search Sta	aurt		
Live L	ist					
	Туре	Name	IP	Mask	Gateway	Mac
•	I-7580	i-7580	0.0.0.0	0.0.0.0	0.0.0.0	12:34:56:78:9A:EE
	SIMATIC-PC	icpdas-xp-esxi	192.168.12.5	255.255.0.0	192.168.0.254	00:0C:29:AF:80:62
	S7-PC	icpdas-1840dba0	192.168.0.78	255.255.0.0	192.168.0.254	00:1D:7D:AA:B8:
	SIMATIC-PC	ryanlin-pc	192.168.77.77	255.255.0.0	192.168.0.254	6C:F0:49:AC:51:
	SIMATIC-PC	icpdas-esxi-w7	192.168.12.7	255.255.0.0	192.168.0.254	00:0C:29:41:63:B0
	SIMATIC-PC	da	192.168.24.49	255.255.0.0	192.168.0.254	6C:F0:49:6E:42:9A
c - 16						
<						>

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6.2.2. Module Basic Configuration

Step 1: Open Device	Basic Configuration	
PFN_Tool (Version	a 1.2)	
Net Pevices : IP:	192.168.77.77 MAC: 6C-F0-49-AC-51-8B (Realtek RTL8168C(P)/8111C(P) P	CI-E Gigabit Ethemet N 💌
Searc	Search Start	
Live List	None ID Make Catoway	
1-7580	Device Basic Configuration	12:34:56:78:9A:EE
SIMATIC-PO	Device Information	00:0C:29:AF:80:62
	Device Type : I-7580 Device Name : i-7580 IP Address : 0.0.0	00:1D:7D:AA:B8: 6C:F0:49:AC:51:
SIMA TIC-PO	Subnet Mask : 0.0.0.0 Gateway : 0.0.0.0 Mar Adverse : 12:34:55:78:98:FF	00:0C:29:41:63:B0
SIMA TIC-PO	Device Name Configure	6C:F0:49:6E:42:9A
	Device Name : Set	
	Network Configure	
	IF Address : 0.0.0.0	
<	Gateway : 0.0.0.0 Set	>
	Advanced Settings	
Step 2: Set Device Na	ame	
Device Basic Confi	iguration 📃 🗖 🗙	
Device Information		1
Device Type : I-	7580	
Device Name : i- IP Address : 0	7580 .0.0.0	
Subnet Mask : 0 Gateway : 0	0.0.0	
Mac Address : 1	2:34:5 FF	
Device Name Conf	isure device name	
Device Name :	-7580 Set	2 Press Set J
Network Configur		
IP Address : 0		
Subnet Mask : 0		
Cutumer 1	000 Set 'device name' sucess.	
Gaieway : U		
	確定	
		1

Step 3: Set Network Parameters

The network parameter of I-7580 module must have the same domain and different IP with PC.

EX: PC's IP = 192.168.1.110

I-7580 module's IP = 192.168.1.111

Device Basic Co	nfiguration				
Device Informa Device Type : Device Name : IP Address : Subnet Mask : Gateway : Mac Address :	tion 1-7580 i-7580 0.0.0.0 0.0.0.0 0.0.0 12:34:56:78:9A:EI	Inform	ation Set 'network confi	X gure' sucess.	
Device Name C Device Name :	onfigure i-7580		確定 Set		
IP Address :	192.168.0.111			2 Pres	s「Set」 on
Gateway :	192.168.0.254		Set		
1 Set r	network paran	neters	Advanced Setti	ngs	

Connection-specific DNS Suffix .	
Description	Realtek RTL8168C(P)/8111C(P) PCI-E Gigabit Ethernet NIC
Physical Address	6C-F0-49-AC-51-8B
Dhcp Enabled	No
IP Address	192.168.0.110
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.254
DNS Servers	168.95.1.1

Tips & Warnings



 When PROFINET controller connect to I-7580 module (AP LED=ON), user can't set device name and network parameters.



6.2.3. Module Advanced Configuration

			Device Advanced Configuration		
PFN_Tool (Version 1.2)			Device Information		
Network Devices : IP: 192.16	8.77.77 MAC: 6C-F0-49-AC-51	-8B (Realtek RTL8168	Device Type : I-7580 Firmware Version : V1.0		
Search Modu	ule Sea	rch Start	Information Communication Log C	omport Test Diagnostic Msg.	
Live List			Item	Value	
Туре 1-7580	Name IP	Mask	Rotary Switch PROFINET Connection	5 OFFLINE	
2 Double Click	ce Information				
SIMATIC Devi Devi SIMATIC SUMATIC SUMATIC	ce Type : 1-7580 ce Name : i-7580 ldress : 0.0.0.0 et Maak : 0.0.0.0 way : 0.0.0.0				
Devi	ce Name Configure				
Net	hour in the second second	U			
IP Ac	idress : 192.168.0.111				
Subn	et Mask : 255,255,255.0				
Gate	way : 192.168.0.254				
				Undate	
		Advanced		Update	

Step 2: Advanced Configuration

Device Advanced Configuration of I-7580 has 4parts, they are (1)Information (2)Communication Log (3)Comport Test (4)Diagnostic Msg.

Device Advanced Configuration	
Device Information Device Type : I-7580 Firmware Version : V1.0	
Information Communication Log Comport Test Diagnostic Msg.	
liem Value	

➤ Information

It shows all settings (ex. Module parameters or rotary switch value, etc...) of I-7580.

Wait for PF	ROFINET Connection	PROFINET	Connection established
Device Advanced Configuration		Device Advanced Configuration	
Device Information Device Type : 1-7580 Firmware Version : V1.0	omport Test Diagnostic Msg.	Device Information Device Type : 1-7580 Firmware Version : ¥1.0	g Comport Test Diagnostic Msg.
Item Rotary Switch PROFINET Connection	Value 5 OFFLINE	Item Rotary Switch PROFINET Connection Module Selected Baud rate Parity Data bit Stop bit End char of input data Input fixed length data Unit of time out value Diagnosis of time out	Value 5 ONLINE Input:12Byte Output:384Byte 115200 NONE 8 1 NONE DISABLE 1 ms NONE
	Update		Update

Communication Log

It shows communication logs between I-7580 and serial devices connected with I-7580.

Drvice Advanced Configuration	
Divise Takenation Divise Type : 1-7560 Permise Vito	Update logs ok
Television Computer the Log Comport Test Diagnostic Msg	Device Monared Configuration
Format: ASCE V Message Counts: NVA Seve	Drvise Information Update Log OK !! Drvise Type : 1/790
1 Select data format	Promware Vention: Y1.0 確定 Information Communication Log Comport Test Diagnostic Mog
1. Select data format	Format ASCII V Message Counts: 2 Save
	I JS703 Tx 0 weakbpC 2 26525 Rx 13 medite/CS80
Update Clear	
2. Press [©] Update L to	
undate logs 1	2
	Update Clew
Device Advanced Configuration	Preiz Alvisiel California
Device Type : 1-7580 Filowere Version : V1.0	Promoti Visio 113 Information CommunicationLog Comport Test Diagnostic Mag
Information communication to g Comport Test D Binary format	Format: 4/LG Message/control: 2 See # Tammangian Taffix: Logh Date # S700 Ta 0 math/d
# Timethamp(me) Tx/Rx Length Deta 1 6573 Rx 13 73 65 6E 64 74 6F 60 97 35 38 30 0D 0.A	2 200 Tx U whom
2 5067 Tx 8 73 65 6E 64 74 6F 50 43	
	to save logs
	Save Communication Log
	Save CommLog_05151418.txt OK!!
	You can find the file in the following path ⇒ C.\Program FilesUCPDASUPROFINETUPFN_Tool
	# Timestamp(ms) Tx/Rx Length Data
Update	1 35703 Tx 8 sendtoPC 2 26325 Rx 13 sendtoi7580
2	

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Comport Test

User can test Communication between I-7580 and serial devices connected with I-7580 via PFN_Tool.

Parameters ASCII End char of input data NONE Set Baudrate: 115200 Diagnosis of time out: None Image: Control ingut data Image: Control ingut data None Image: Control ingut data Image:	Send String to COM 1 Send String with: CR+LF Send CR Send String to COM 1 Send String to COM
Comport test X Set OK !! OK	1. Input data and press 「Send」 Sent232 to send data to PC COM state Line control: N.8.1 C LF CR C LF CR C LF CR C LF CR C LF CR C LF CR
Parameters Format: Baudrate: Line Control: Unit of timeout: 1 main of input data Diagnosis of time out: Input fixed length: Unit of timeout: 1 main of input data Diagnosis of time out: Input fixed length: Diagnosis of time out: Diagnosis of time out: Diagn	Auto send Interval 500 Set Send Stop Clear Exit Program
Send 232 Y. 2.0.1 COM1 COM status Send string with Com CR_CR CR CR_LF CR CR_LF Creme Close Send String to I-7580 Send String to I-7580 Send String to I-7580 Send String to I-7580	Parameters ASCII End char of input data NONE Reset Baudrate: 115200 Diagnosis of time out: None Imput fixed length: Diagher Unit of timeout: n.g.v timeout value(0~255): Fixed length: O 1. Press [¬] Reset _J to close COM port 1 1 1
Send String to 1-7580 Clear 2. Press 「Update」 to update data	Comport test X Reset OK !! OK
Send String to 1-7580 3. Receive data sucessfully Update 3	2. Close COM port OK

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➤ Diagnostic Msg.

It shows diagnostic messages of I-7580.

Devise Advanced Configuration Prive Information Prive Version: Information Communication Log Communication Log Message Counts N/A Value: Na Value: Value:	Diagbistic Msg. Update Diagbistic Msg. OK !! OK Update OK
Device Advanced Configuration Device Information Envice Type Envice Type Information Communication Log Comport Test Diagnostic Msg Message Counts: 2 Value: Data Loss Data Overflow	Image: Sector State Will DEC_unsigned 0 Image: Sector State DEC_unsigned 0 0 Image: Sector Sector State DEC_unsigned 0 0 Image: Sector Sec

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7. Configuration with Web Browser

7.1. Connecting to Web Server

Open web browser (ex. IE) and enter the IP address of the I-7580 module in the Address field and press "Enter" to connect to I-7580 module.



Tips & Warnings



 I-7580 has to set IP settings to connect to web server. Please follow the section 3.2. Network configuration=> Step 3: Set I-7580 module's name and IP" to set module's IP or follow the section 5.2. Using MiniOS7 Utility to get Ethernet settings and firmware version or follow the section 6.2.2. Module Basic Configuration.

7.2. Web Configuration

	DAS (2)
Home	I-7580 Overview
Communication Logs	The I-7580 is specially designed for PROFINET ID device. It offers RS-232, RS-422, and
Diagnostic Messages	RS-485 three kinds of communication way. With the Hybrid COM 1 design, users can readily choose one type of com port to use. Through the GSDML file, it is easy to hand have a set of the s
Information	communicate with any standard PROFINET IO controller.
	 Protocit PROFINET 10 Device Protocit PROFINET 10 Device Optici Time: time (min) Optici Time: time (min) Hat length of involuted data is \$12084 Bries Hat length of involuted data is \$12084 Bries Hat length of flucture ASIC controller on RS-422448 port Hull-In self-tuner ASIC controller on RS-422448 port Hergisted 2-Port Switch Provide LED Indicators Opticati ESD protection for any terminal Opticating temperature (-25 °C to -75 °C)

The left side(1) is the function menu and the other(2) is the setup page.

Function Menu:

- Home
- Communication Logs
- Comport Test
- Diagnostic Messages
- Information

➤ Home

It shows the introduction of I-7580.

Communication Logs

It shows communication logs between I-7580 and serial devices connected with I-7580.

			Sel	lect ASCII/Binary format	
rmat					
#	Binary mp (ms)	Tx/Rx	Lenath	Data	
	Dinary	- narta	Longar		
				Update	CI
	• • • • • • • • • • • • • • • •				
omn	nunication Log	SCII			
		isen			
rmat					
#	Timestamp (ms)	Tx/Rx	Length	Data	
1	56299	Rx	13	sendtoi7580	
2	52539	Tx	8	sendtoPC	
					0
				Update	CI
				Press ' Update 1 to update logs	
	•••••				• •
•••	•••••				
•••					
omm	nunication Lo				•••
omm	nunication Lo	ary _			
omm	Binary V	ary			
omm ormat	Binary V Timestamp (ms)	ary Tx/Rx	Length	Data	
omm ormat 1	Binary Timestamp (ms) 56299	ary Tx/Rx Rx	Length 13	Data 73 65 6E 64 74 6F 69 37 35 38 30 0D 0A	
omm ormat 1	Binary ▼ Timestamp (ms) 56299 52539	ary Tx/Rx Rx Tx	Length 13 8	Data 73 65 6E 64 74 6F 69 37 35 38 30 0D 0A 73 65 6E 64 74 6F 50 43	
omm ormat 1 2	Binary ▼ Timestamp (ms) 56299 52539	ary Tx/Rx Rx Tx	Length 13 8	Data 73 65 6E 64 74 6F 69 37 35 38 30 0D 0A 73 65 6E 64 74 6F 50 43	CI
omm ormat 1	Timestamp (ms) 56299 52539	ary Tx/Rx Rx Tx	Length 13 8	Data 73 65 6E 64 74 6F 69 37 35 38 30 0D 0A 73 65 6E 64 74 6F 50 43 Update	CI
omm rrmat 1 2	Timestamp (ms) 56299 52539	ary Tx/Rx Rx Tx	Length 13 8	Data 73 65 6E 64 74 6F 69 37 35 38 30 0D 0A 73 65 6E 64 74 6F 50 43 Update	CI
omm rrmat	Elinary ♥ Binary ♥ Timestamp (ms) 56299 52539	ary Tx/Rx Rx Tx	Length 13 8	Data 73 65 6E 64 74 6F 69 37 35 38 30 0D 0A 73 65 6E 64 74 6F 50 43 Update Update	CI

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Comport Test

User can test Communication between I-7580 and serial devices connected with I-7580 via web server.



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> Diagnostic Messages

It will show diagnostic messages of I-7580.

Home	Diagnostic Messa	Diagnostic Message Descriptions		
Communication Logs	Message Counts: 0	Message Counte: 0		
Diagnostic Messages	Value: 0x00			
Information	Diag Data	Messages	Descriptions	
T		moodgee		
Home				
Click to undate	diagnostic messag			
Click to upuate	ulaynostic messay	es		
				r
me	Diagnostic Message	Descriptions		
me mmunication Logs	Diagnostic Message	Descriptions		
me mmunication Logs mport Test	Diagnostic Message Message Counts: 2	Descriptions		
me immunication Logs mport Test agnostic Messages	Diagnostic Message Message Counts: 2 Value: 0x14	Descriptions		
me immunication Logs import Test agnostic Messages primation	Diagnostic Message Message Counts: 2 Value: 0x14	Descriptions	Descriptions	
me mmunication Logs mport Test agnostic Messages prmation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04	Descriptions Messages Dutout Data Error	Descriptions Data Loss	
me mmunication Logs mport Test agnostic Messages ormation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Messages Dutput Data Error Input Data Error	Descriptions Data Loss Data Overflow	
me immunication Logs import Test agnostic Messages prmation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Descriptions Messages Jutput Data Error Input Data Error	Descriptions Data Loss Data Overflow	
me Immunication Logs Import Test agnostic Messages ormation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Descriptions Messages Jutput Data Error Input Data Error	Descriptions Data Loss Data Overflow	
me immunication Logs import Test agnostic Messages ormation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Descriptions Messages Dutput Data Error Input Data Error	Descriptions Data Loss Data Overflow	
me immunication Logs import Test agnostic Messages ormation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Descriptions Messages Dutput Data Error Input Data Error	Descriptions Data Loss Data Overflow	
me Immunication Logs Import Test agnostic Messages formation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Messages Dutput Data Error Input Data Error	Descriptions Data Loss Data Overflow Diagnos	tic messages
me immunication Logs import Test agnostic Messages ormation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Descriptions Messages Image: Constraint of the second	Descriptions Data Loss Data Overflow Diagnos	tic messages
me immunication Logs import Test agnostic Messages ormation Home	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10	Descriptions Messages Dutput Data Error Input Data Error	Descriptions Data Loss Data Overflow Diagnos	tic messages
me immunication Logs import Test agnostic Messages ormation Home	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10 Name Address	Descriptions Messages Image: Constraint of the second	Descriptions Data Loss Data Overflow Diagnos	tic messages
me mmunication Logs mport Test agnostic Messages ormation Home	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10 X10 Name Address "Istate" %HB	Descriptions Messages Dutput Data Error Input Data Error Display forms DEC_unsigned Her	Descriptions Data Loss Data Overflow Diagnos	tic messages
me mmunication Logs mport Test agnostic Messages ormation Home	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10 Name Name Name Name Name Name Name Name	Descriptions Messages Image: Construct of the second	Descriptions Data Loss Data Overflow Data Overflow	tic messages
me mmunication Logs mport Test agnostic Messages ormation Home	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10 Value: 0x14 Name Name Name Address "IState" %iB1 "error state" %iB2 "rov len" %iW3	Descriptions	Descriptions Data Loss Data Overflow Data Overflow	tic messages
mme me mmunication Logs mport Test agnostic Messages ormation	Diagnostic Message Message Counts: 2 Value: 0x14 Diag Data 0x04 0x10 Value: 0x14 Name "Istate" %iB1 "error state" %iB2 "rov len" %iW3	Descriptions Messages Dutput Data Error Input Data Error Display forms DEC_unsigned Hex DEC_unsigned DEC_u	Descriptions Data Loss Data Overflow Diagnos	tic messages

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➤ Information

It shows all settings (ex. Module parameters or rotary switch value, etc...) of I-7580.

Device Information		Module Information	
Device Information	Module Information	Device Information	Module Information
HARDWARE: MAC Address: Device Hardware Revision:	12:34:56:78:9a:bc	Rotary Switch: PROFINET Connection: Module Selected:	5 ONLINE
NETWORK INTERFACE FIRMWARE: Industrial Ethernet Protocol: Firmware Version:	PROFINET	Baudrate(bps): Parity: Data bit:	115200 NONE 8
SOFTWARE: User Software Version:	1.0.0	Stop bit: End char of input data: Input fixed length data:	1 NONE DISABLE
IP STATUS: IP address: Subnet mask:	192.168.77.22 255.255.0.0 400.450.77.22	Unit of timeout value: Diagnosis of timeout:	1 ms NONE
Gateway:	192. 168. / / .22		

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8. Troubleshooting

ltem	Trouble state	Solution
1	'AP', 'BOOT' and 'ERR' LED are always off.	The power supply of I-7580 module has some problems. Please check the wire connection of the power and the voltage is between 10~30Vpc.
2	'AP' and 'BOOT' LED are always off and 'ERR' LED is always flash per 500ms.	That means the I-7580 module can't connect to the PROFINET IO controller. Please check the wire connection and module configuration (include network settings, device name) and project configuration of engineering tool that provide by PROFINET IO controller's manufacturer.
3	'AP' LED is always on and 'BOOT' LED is always off and 'ERR' LED is always flash per 500ms.	It means that the value of rotary switch does not match the settings of the modules(please refer to section 4.2. Module configuration).
4	'BOOT' LED is always on.	It means the I-7580 module is at Bootloader mode. Please set the I-7580 module to AP mode.
5	Can't find any I-7580 module by MiniOS7 Utility	It means the IP address of I-7580 module is zero (default IP = 0.0.0.0). At this time, please follow the section 3.2. Network configuration => Step 3: Set I-7580 module's name and IP" to set module's IP and then re-search the network again. Or, wait for the PROFINET controller connect to I-7580 module (AP LED=ON) and then re-search the network again.
6	Can't find any I-7580 module by PFN_Tool Utility	 a. Please check the wire connection b. Please set the I-7580 module to AP mode, please refer to the section 1.5. → Rotary Switch. c. Please check network card is ok, and I-7580 module and network card have to in the same network.

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