DeviceNet/PROFINET IO Gateway GT100-PN-DM

User Manual

V1.4

REV A







E-mail: SUPPORT@SSTCOMM. COM WWW. SSTCOMM. COM

DeviceNet/PROFINET IO Gateway

User Manual

Catalog

1 Introduction	4
1.1 About This Document	4
1.2 Copyright Information	4
1.3 Related Products	4
1.4 Terms	4
1.5 Revision History	4
2 Product Overview	6
2.1 Product Function	6
2.2 Product Features	6
2.3 Technical Specifications	7
3 Hardware Descriptions	9
3.1 Product Appearance	9
3.2 Indicators	9
3.3 Configuration Switch	10
3.4 Communication Port	11
3.4.1 DeviceNet Interface	11
3.4.2 Ethernet Interface	12
4 Use Method	13
4.1Quick Start Guide	13
4.1.1 Pre-operation Mode-Scan and Debug Slave Devices from DeviceNet Network	13
4.1.2 Pre-operation Mode-Upload and Download the Configuration of GT100-PN-DM	19
4.1.3 Operating Mode	21
4.2 SST-TD-CFG Software Configuration	22
4.2.1 Pre-configuration Considerations	22
4.2.2 User Interface	23
4.2.3 Device View Operation	25
4.2.4 Configuration View Operations	27
4.2.4.1 Ethernet Configuration View Interface	27
4.2.4.2 DeviceNet Network Configuration View Interface	29
4.2.4.4 Command Configuration View Interface	31
4.2.5 Comment View	32
4.2.6 Upload and Download Configuration	33
4.2.7 Save and Load Configuration	36
4.2.8 Excel Document Output	37
4.2.9 Monitor	38
4.3 DNetStart Software Configuration	38
4.3.1 Pre-configuration Notes	38
4.3.2 Software Main Interface	38
4.3.3 Toolbar	39
4.3.4 DeviceNet Device Network Configuration	39
4.3.5 DeviceNet Network Scanning	46



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

4.3.6 Equipment Parameter Modification and I/O Data Test	. 47
4.3.7 Send the Explicit Message	. 63
4.4 Run	. 64
5 Installation	65
5.1 Mechanical Dimensions	. 65
5.2 Installation Method	66



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

1 Introduction

1.1 About This Document

This document describes every parameter of the gateway GT100-PN-DM and provides using methods and some announcements that help users use the gateway. Please read this document carefully before using the gateway.

1.2 Copyright Information

The data and cases mentioned in this manual cannot be copied without authorization.

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1.3 Related Products

The related products include:

GT200-PN-3RS: Universal Serial/PROFIBUS IO Gateway

GT200-DP-DM: DeviceNet/PROFIBUS DP Gateway

If you want to get more information about related products, please visit www. sstcomm. com.

1.4 Terms

GT100-PN-DM: DeviceNet/PROFINET Gateway SST-TD-CFG: Gateway configuration software(Embedded in DNetStart)

DNetStart: DeviceNet Network configuration software

1.5 Revision History

Revision	Date	Chapter	Description
V1.2 REV A	08/13/2018	ALL	V1.2_Rev A new release,
			Added "only one
			DeviceNet slave station"
			to product functions;
			added application
			examples; modified main



DeviceNet/PROFINET IO Gateway

User Manual

			version to product
			version.
V1.4 REV A	02/20/2019	Chapter 3	Remove the three-pin power interface, and change the color of the gateway to cyan.



2 Product Overview

2.1 Product Function

SSTCOMM DeviceNet to PROFINET series gateway can connect slave devices with DeviceNet interface to PROFINET network. It acts as a master at the side of DeviceNet network, and a slave at the side of PROFINET network. GT100-PN-DM supports connecting a single DeviceNet slave to PROFINET network, and GT200-PN-DM supports connecting multiple DeviceNet slave to PROFINET network.

Application examples:



2.2 Product Features

- Wide application: Support connecting DeviceNet devices to PROFINET networks. For example, Such as Robot with DeviceNet interface, inverter, motor startup protection devices, intelligent high and low voltage electrical appliances, intelligent field measuring equipment and PLC etc. PROFINET end connects with PLC like Siemens S7-300/400/1200/1500.
- Easy configuration: Users don't need to know the technical details of PROFINET and DeviceNet, only refer to this manual and the application cases provided, complete configuration according to requirements, the network can be connected in a short time.
- Transparent communication: According to the mapping relationship between PROFINET communication data area and DeviceNet communication data area, users can realize data transparent communication between DeviceNet network and PROFINET network.



GT100-PN-DM DeviceNet/PROFINET IO Gateway

User Manual

2.3 Technical Specifications

[1] Support Two modes: Pre-operation and Operation;

(A) Pre-operation mode

- Support device search, namely online scanning DeviceNet slave through DNetStart software
- Support one-click application scan to DeviceNet slave I/O parameter configuration
- > Support reading and writing configuration
- Support Direct jump to operation mode after writing configuration
- Support DeviceNet baud rate: 125K, 250K, 500K
- Support reading and writing DeviceNet slave parameters
- Support reading and writing DeviceNet I/O data(polling)
- Support reading cos commands (COS) (up to 14 bytes)
- > Support reading and writing product information

(B) Operation mode

- Support DeviceNet baud rate: 125K, 250K and 500K
- Support PROFINET Master communication
- Single DeviceNet slave maximum support input: 128 bytes; Output: 112 bytes
- Support connecting only one DeviceNet slave, and GT200-PN-DM supports connecting multiple slave. and input timeout clearing and holding function of DeviceNet (optional)
- > DeviceNet supports data no-exchange, two-byte exchange, four-byte exchange

[2] Support standard RROFINET I/O protocol;

[3] PROFINET supports up to 32 slots, The maximum number of input bytes is 384 and the maximum number of output bytes is 384. The length available to the user is limited by the specific PLC and PDU size of the communication module)The length of input and output data blocks set in PROFINET master should be the same as that configured in SST-TD-CFG;

[4] The types of PROFINET modules supported are as follows:

- > Input 001 byte
- Input 002 bytes
- > Input 004 bytes
- > Input 008 bytes
- > Input 016 bytes
- Input 032 bytes
- > Input 064 bytes
- Input 128 bytes



GT100-PN-DM DeviceNet/PROFINET IO Gateway

User Manual

- > Input 256 bytes
- > Input 512 bytes
- > Output 001 byte
- > Output 002 bytes
- > Output 004 bytes
- > Output 008 bytes
- Output 016 bytes
- > Output 032 bytes
- > Output 064 bytes
- > Output 128 bytes
- > Output 256 bytes
- Output 512 bytes
- > Input / Output 001 byte
- Input / Output 002 bytes
- Input / Output 004 bytes
- Input / Output 008bytes
- Input / Output 016 bytes
- Input / Output 032 bytes
- Input / Output 064 bytes
- Input / Output 128 bytes
- Input / Output 256 bytes
- Input / Output 512 bytes

[5] Working environment:

- Relative Humidity: 5% to 95% (No condensing)
- \blacktriangleright Temperature: -40°F~185°F (-40°C ~ 85°C)
- Installation site elevation does not exceed 2000 meters
- Pollution level: 3
- [6] Power supply: 24VDC (11V ~ 30V);
- [7] Operation temp: $-4^{\circ}F \sim 140^{\circ}F(-20^{\circ}C \sim 60^{\circ}C)$, Humidity: 5%~ 95% (non-condensing);
- [8] Built-in electrostatic protection: 15 KV ESD; Communication interface isolation: 3KV;
- [9] External dimensions (W*H*D): 0. 98 in*3.94 in *3.54 in (25mm*100mm*90mm);
- [10] Installation: 1.38 in (35mm) DIN RAIL;
- [11] Protection level: IP20.





3 Hardware Descriptions

3.1 Product Appearance

PROFINET Indicators PROFINET Indicators PROFINET Indicators PROFINET Interface PROFINET Interface

DIP Switch

Figure 1 Product Appearance (only for reference)

3.2 Indicators

PROFINET LED Indicators

MS	NS	Description
Always Red	Off	Module is running and initialization has not yet completed
Always Green	Red blinking	Initialization completed, no connection with PLC; Or in the
		normal communication with PLC, the network line is pulled
		out or dropped off.



DeviceNet/PROFINET IO Gateway

User Manual

Always Green	Always Red	No plug-in network cable
Always Green	Always Green	Connect with PLC and communicate normally

DeviceNet LED Indicators

Pre-operation mode:

MS	NS	Description
Green blinking	Off	Initialization completed; searching not started yet
Always Green	Green blinking	The master is online, but no connection has been established
		with the slave
Always Green	Always Green	Connection has been established with slave
Always Green	Always Red	Disconnected with slave

Operation mode:

MS	NS	Description
Always Green	Off	Module is running and initialization has not yet been
		completed
Always Green	Green blinking	Initialization completed, The master is online, but no
		connection has been established with the slave
Always Green	Always Green	Connection has been established with slave
Always Green	Red blinking	The slave is disconnected from the master
Always Green	Always Red	There is no slave on CAN network, Address Duplication Detection Conflict, CAN Network error

3.3 Configuration Switch

Total 2 bits, function as follows:





DeviceNet/PROFINET IO Gateway

User Manual

Mode(bit 1)	Function(bit 2)	Description
Off	Off	Operation mode(Support SST-TD-CFG configuration)
Off	On	Pre-operation mode(Support SST-TD-CFG configuration)
On	Off	NA
On	On	NA

3.4 Communication Port

3.4.1 DeviceNet Interface

5-pin connector:





Open 5-pin connector at the side of DeviceNet:



GT100-PN-DM supplies power through DeviceNet port



DeviceNet/PROFINET IO Gateway

User Manual

Pin	Wiring
1	GND(24V-)
2	CAN-L
3	shield
4	CAN-H
5	+24V

3.4.2 Ethernet Interface



Ethernet interface uses RJ-45 plug-in; its pin (standard Ethernet signal) is defined as below:

Pin	Signal Description
S1	TXD+, Tranceive Data+, Output
S2	TXD-, Tranceive Data-, Output
S3	RXD+, Receive Data+, Input
S4	Bi-directional Data+
S5	Bi-directional Data-
S6	RXD-, Receive Data-
S7	Bi-directional Data+
S 8	Bi-directional Data-



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

4 Use Method

4.1Quick Start Guide

The gateway supports two modes of pre-operation and operation. Pre-operation mode is used to scan slave devices in DeviceNet, debug or upload and download the GT100-PN-DM configuration; Operating mode for normal communication. Using DIP switch to select mode. , please refer to 3.3 Configuration switch.

4.1.1 Pre-operation Mode-Scan and Debug Slave Devices from DeviceNet Network

Application: when the I/O parameter of the slave from DeviceNet is uncertain.

1.Please turn the first bit to OFF, turn the second bit to ON, connect the DeviceNet port of GT100-PN-DM to slave devices, power on the GT100-PN-DM and use network cable to connect it (one of Ethernet port of GT100-PN-DM) and connect the other end to PC or PC's switch.

2.Double-click the DNetStart software, which has installed on the PC, as shown below:



3. Click the EDS Wizard, and follow the prompt to import the EDS of the slave devices.



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

4. Click toolbar "Internet connection", Select the GT100-PN-DM configuration interface shown as below.

C PCI-CAN Interface C GT200-DP-DM Interface C USB-CAN Interface C GT200-PN-DM Interface C GT200-PN-DM Interface C GT100-PN-DM Interface C GT100-PN-DM Interface Setting interface etwork Segment Assign Ethemet paramete P Addre MAC A Device N Gateway Subnet	PCI-CAN Interface C GT200-DP-DM Interface USB-CAN Interface C GT100-DP-DM Interface GT200-PN-DM Interface C Ethernet-CAN Interface GT100-PN-DM Interface Setting interface work Segment Addre MAC A Device N Gateway Subnet 92.168 64-EA-C gtpndm 192.168.0 255.255.2	ection				
C USE-CAN Interface C GT100-DP-DM Interface G GT200-PN-DM Interface G GT100-PN-DM Interface Setting interface Setting interface Assign Ethemet parameter P Addre MAC A Device N Gateway Subnet	USB-CAN Interface C GT100-DP-DM Interface GT200-PN-DM Interface C Ethernet-CAN Interface GT100-PN-DM Interface Setting interface work Segment Addre MAC A Device N Gateway Subnet 92.168 64-EA-C gtpndm 192.168.0 255.255.2	PCI-CAN Interface		← GT200-E	P-DM Interfac	e
C GT200-PN-DM Interface C Ethernet-CAN Interface GT100-PN-DM Interface Setting interface etwork Segment Assign Ethernet paramete P Addre MAC A Device N Gateway Subnet	GT200-PN-DM Interface C Ethernet-CAN Interface GT100-PN-DM Interface Setting interface work Segment Addre MAC A Device N Gateway Subnet 92.168 64-EA-C gtpndm 192.168.0 255.255.2	◦ USB-CAN Interface			P-DM Interfac	e
GT100-PN-DM Interface Setting interface Etwork Segment Assign Ethemet parameter P Addre MAC A Device N Gateway Subnet	GT100-PN-DM Interface Setting interface work Segment Addre MAC A Device N Gateway Subnet 92.168 64-EA-C gtpndm 192.168.0 255.255.2	GT200-PN-DM Interfa	ice	C Ethernet	-CAN Interfac	e
etwork SegmentAssign Ethernet paramete P Addre Device N Gateway Subnet	vork Segment Addre MAC A Device N Gateway Subnet 192.168 64-EA-C gtpndm 192.168.0 255.255.2	GT100-PN-DM Interfa	ice		Setting	g interface
P Addre MAC A Device N Gateway Subnet	Addre MAC A Device N Gateway Subnet 192.168 64-EA-C gtpndm 192.168.0 255.255.2			As	sign Ethernet p	parameters
	92.168 64-EA-C gtpndm 192.168.0 255.255.2	Addre MAC A	Device N	Gateway	. Subnet	
192.168 64-EA-C gtpndm 192.168.0 255.255.2		192.168 64-EA-C	gtpndm	192.168.0	. 255.255.2	

5.Click the "setting interface", the "setting interface" dialog box appears, software will scan GT100-PN-DM automatically in the network. (if no devices are scanned, please click "Refresh" to try again), then to click "selected".

6.Now the following dialog box appears, the IP address is read only. "DeviceNet node address" and "DeviceNet Baud rate" can be set. DeviceNet node address refers to the node address in the DeviceNet bus of GT100-PN-DM, and DeviceNet Baud rate refers to the Baud rate used by the DeviceNet network. After setting, click "OK".



DeviceNet/PROFINET IO Gateway

User Manual

PAddress:	192.168.0.8
DeviceNet Node address	: 0
DeviceNet Baud rate:	125K

- 7. Return to the "route selection", and click "OK" to start scanning for devices on the DeviceNet network.
- 8. After scanning the slave devices, as shown blew.

🔛 DNetStar	t - Untitled		
: File(F) Edi	t(E) View(V) Net(N)	Device(D) Tools(T) Help(H)	
i 🗅 😂 🗔		🔅 EDS Wizard 📖 🗛 😤 Internet Connection 🗄 🛃 💥 🔟 🛅 📷	
Equipment Mar	Agement Vet AC Drive Communication Adapter General Purpose Discrete J Specialty I/O nufacturer Allen-Bradley Company, In Rockwell Automation/Entel SST Automation Co. Ltd. Communication Adapter Communication Adapter SST DeviceNet Ada	Modbus-Devicel SST DeviceNet Adaptor Adaptor k. RIND Intl. Pr Adaptor aptor	8
Output Windov	v		×
Information	Time	Explanation	^
W 1	2018-12-24 16:17:35	Scan to device with address 18: Modbus-DeviceNet Adaptor	
B 2	2018-12-24 16:17:46	The user interrupts the scan and scans to 2 devices before the interruption.	
W 3	2018-12-24 16:21:37	Scan to device with address 63: SST DeviceNet Adaptor	199
4	2018-12-24 16:21:40	Scan to device with address 18: Modbus-DeviceNet Adaptor	
0 5	2018-12-24 16:21:51	The scan is completed and there are 3 devices on the current network.	~
н а э ы /	Information / Find /		
Ready		Capi	tal Number Scroll 🚅

9. Double click the slave devices, look the I/O parameter of the slave devices, as shown blew.



DeviceNet/PROFINET IO Gateway

User Manual

operty			
eneral information	n Parameter 1/0) Data EDS File	
Double data	e-click the attribute	line in the list to get detailed inp	ut and output
data.			
Polled input	Polled output	Cos input	Help
Message Type	Size	Data Description	
Polled	222		
Input	64-Bytes	Network input 4	
Carpar	010,000	from one output i	
			A 1010

10. Double click the master icon (the node of this example is 63), Pop-up "Property"box. Click"Scan List", Move desirable device from left to right scan list, double-click to edit I/O parameter, Set the length of the slave I/O parameters, Then click ok; Configure the mapped address of input and output data in"Input" and"Output". In"PROFIBUS Parameter", the input and output block size of PROFINET can be set. The corresponding DeviceNet network parameters can be set in "DeviceNet Parameter" (see 4.3 DNetStart configuration software for detailed usage.



DeviceNet/PROFINET IO Gateway

User Manual

Property			
PROFINET Paramete General information The EDS file is used provided by the mar	r Scan List d to communicat hufacturer.	DeviceNet pa	rameter Output
Desirable device:	→ × × ×	Scan List: ID parameter na	me iceNet
Automatic mapping when a Upload from scanner Download to scanner Edit I/O parameters	dding	Node activity Electronic key DeviceType Vender Product Type MajRev MinRev	
	Apply	ок	Cancel



User Manual		
I/O parameter settings		
Strobed	COS/Cyclic	
Allowed	Allowed	
Input: 0 📑 Bytes	C State Change(COS) 🧟 Cycle(Cylic)
Use output bit Г	Input:	0 📑 Bytes
Polled	Output:	0 Bytes
₩ Allowed	Heartbeat Rate:	0 - msec
Input: 16 🕂 Bytes		
Output: 16 🕂 Bytes		Advanced(A)
Polling cycle: Every scan		

11.Click"Apply" to save the configured parameters in the GT100-PN-DN. At this time, prompt "Successful application"will pop up. Click"OK"to return to the main interface

12.About debugging, you can skip this process if you don't need debugging, If you need debugging, double-click the slave icon (node 13 in this example)In"Parameter", you can upload the relevant parameters of the slave device,In "I/O Data", You can read and write data from the slave station. (See 4.3 DNetStart Configuration Software for detailed software.)



DeviceNet/PROFINET IO Gateway

User Manual

operty			
eneral information	n Parameter 1/0	Data EDS File	
Doubl	e-click the attribute	line in the list to get detailed inp	ut and output
data.			
Polled input	Polled output	Cos input	Help
T olice inpac	T bied bulpat		
Message Type	Size	Data Description	
Polled			
Input	64-Bytes	Network input 4	
output	04 09(03	Network Output 4	
		1	1.1
		Apply OK	Cancel

4.1.2 Pre-operation Mode-Upload and Download the Configuration of GT100-PN-DM

Applicable scene: View the existing configuration on the GT100-PN-DM device, determine the parameters of the slave, directly set the relevant parameters in the SST-TD-CFG software and download the configuration to the GT100-PN-DM device.

1) Click the " configuration icon in the DNetStart toolbar, choose GT200-PN-DM/GT100-PN-DM, then choose "GT100-PN-DM". The "Gateway configuration software SST-TD-CFG-PROFINET/DeviceNet" box will pop up. Click "Upload configuration" in the toolbar to view the configuration saved in GT100-PN-DM, and click



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

"Download Configuration" to download the set configuration into GT100-PN-DM, (Please refer to 4.2 for SST-TD-CFG instructions)

💥 Gateway Configuration Software S	ST-TD-CFG - PROFINET/DeviceNet		
File(F) Edit(E) Tool(T) Help(H)	Configuration		
Device - G1100-PN-DM			^î
Ethemet	Type of Protocol	PROFINET	
DeviceNet network	Assign IP Mode	Manual Assign	
	IP Address	192.168.0.10	
	Subnet Mask	255.255.255.0	
	Gateway Address	192.168.0.1	
	DNS1	0.0.0.0	
	DNS2	0.0.0.0	
	Input Bytes	0	
	Output bytes	0	
	PROFINET configuration project	Configuration	E
	J		
•	, III.		*
Ready		Ca	pital Digital Scroll

2) If you want to modify the PROFINET device name and IP address. Click "Tool" in the toolbar->"Assign Ethernet Parameters", Click "Browse" in the pop-up box to select the device and click "Log In", As shown in the figure below, you can modify the IP address and device name at this time, click "OK" to complete the modification.



ser Manual			
Set The IP Address	and Device Name		
Destination MAC	Address 64-EA-C5-13	:-00-C0	Browse
Ethernet			
IP Address	192 . 168 . 0 . 80	Gateway Address	192.168.0.1
Subnet Mask	255 . 255 . 255 . 0		Assign Ethernet
During	dut80		A coim Nam

4.1.3 Operating Mode

1) Set the first bit of the DIP switch to OFF and the second bit to OFF

2) Using a network cable, one end is connected to the GT100-PN-DM, and one end is connected to a PLC or a switch connected to the PLC(please download the configuration to the PLC)

3) Connect GT100-PN-DM to DeviceNet network.

4) Power on the GT100-PN-DM. At this time, the GT100-PN-DM will establish communication with the slave devices in the DeviceNet network.

5) The PROFINET side will establish communication with the PLC(Whether a connection is established, please refer to 3.2 to judge according to the status of the indicator)

The normal communication between GT100-PN-DM and PLC(PROFINET master station)requires the following three conditions to be met at the same time:

1. The name of the PROFINET device is the same as the device name in the PLC configuration.

2. The IP address of the PROFINET device is the same as the device IP address in the PLC configuration.

3. The configuration module of PROFINET device (configured through GT100-PN-DM) is consistent with the data block configured on the PLC configuration page.

If you encounter any problems during configuration and operation, please send emails to support: support@sstcomm.com.





4.2 SST-TD-CFG Software Configuration

4.2.1 Pre-configuration Considerations

SST-TD-CFG is a software based on Windows platform. It is mainly used to view configuration information and configure related parameters and commands of DeviceNet.

Just open DNetStart and Enter the interface for selecting the corresponding product model. to select GT100-PN-DM.



Take GT100-PN-DM as an example, click OK to pop up the following interface:



DeviceNet/PROFINET IO Gateway

User Manual

vice - GT100-PN-DM	Configuration		
Ethemet	Type of Protocol	PROFINET	
DeviceNet network	Assign IP Mode	Manual Assign	
	IP Address	192.168.0.10	
	Subnet Mask	255.255.255.0	
	Gateway Address	192.168.0.1	
	DNS1	0.0.0.0	
	DNS2	0.0.0.0	
	Input Bytes	0	
	Output bytes	0	
	PROFINET configuration project	Configuration	

4.2.2 User Interface

The interface of SST-TD-CFG includes: title bar, menu bar, toolbar, status bar, equipment section, configuration section and comment section.

Remark: In this software, all the gray parts are unchangeable items.



DeviceNet/PROFINET IO Gateway

User Manual

		Menu Bar	Title Bar
		in chia bai	inde bai
e - TD-140	anfiguration	2	
themet eviceNet network	Agree IP Sett	PF	ROFINET atic Configuration
	IP Address	19	2.168.0.10
Ν	Subnet Mask	25	5.255.255.0
\sum	Gateway address	19	2.168.0.1
$ \rangle$	DNS1	-	Configuration plate:
	LINS2		
	Output bytes	0	Input configuration
thernet, DeviceNe adding nodes and o	et network, and commands		
			Comment plate: Explain the function of the configuration

Tool bar:

Tool bar interface is shown as below:



The functions from left to right are: New, open, save, Add Node, Delete Node, Increase mapping, Delete Mapping, Upload Configuration, Download Configuration, Automatic calculation of Mapping Address, Document Output, and monitor.





GT100-PN-DM DeviceNet/PROFINET IO Gateway

User Manual

Delete Node: delete a DeviceNet slave node

Increase Mapping: add a mapping type

X Delete Mapping: delete a mapping type

¹Upload Configuration: Read configuration information from the module and display it in the software

Download Configuration: Download configuration information from the software to the module

Automatic calculation of Mapping Address: Calculate the mapped address of the configured mapping type inside the gateway

Document Output: output the current configuration to the local hard disk, save it in . xls file format

Monitor: Monitor gateway memory input buffer data

4.2.3 Device View Operation

4.2.3.1 Device View Interface



4.2.3.2 Operation Mode of Device View

For the device view, the following three modes of operation are supported: editing menu, editing toolbar and right-click editing menu.



DeviceNet/PROFINET IO Gateway

User Manual

<mark>%</mark> Gatev	vay Configuration Softwar	e SST-TD-CFG - PROFINET/DeviceNet	
: File(F)	Edit(E) Tool(T) Help(H)		
i 🗅 😅	^{指+} Add Node(N)		
Device - I	🎏 Delete Node(D)	Configuration	
Ethen	Increase Mapping(I)	Agreement Type	-
🖃 Devic	Delete Mapping(E)	DeviceNet communication baud rate	
i no	ode-1	DeviceNet node address	
	DNET POLL INPUT	Explicit packet timeout	1
	DNET COS INPLIT	Network input timeout clear time	70
E no	nde-2	I/O scan time period	1000
	DNET POLL INPUT	Input data hold/clear	lit(
	DNET POLL OUTPUT	Command resend	
	DNET COS INPUT		- 15



4.2.3.3 Operation Types of Device View

1) Add Node: Right-click on the DeviceNet network or an existing node, select the node, and then perform the add node operation. Add a node named "new node" under the DeviceNet network.

2) Delete Node: Right-click, select the node to be deleted, and then perform the delete node operation. The node and all commands under it are deleted.

3) Increase Mapping: Right-click on the node, and then perform an add mapping operation to add a mapping type for the node. The following selection of the mapping type dialog box is displayed for the user to select, as shown in the following figure. :

Current mapping type: DeviceNet polling input -> ProfiNet input (General); DeviceNet polling output <-ProfiNet output; DeviceNet variable input -> ProfiNet input; DeviceNet variable output -> ProfiNet output

Select mapping type: double-click mapping type



nfigurat

Tool(T



4) Delete Mapping: Right-click, select the mapping type to be deleted, and then perform the delete mapping operation. The map type is deleted.

4.2.4 Configuration View Operations

4.2.4.1 Ethernet Configuration View Interface

The configuration interface of Ethernet is as follow:



DeviceNet/PROFINET IO Gateway

User Manual

💥 Gateway Configuration Softwa	are SST-TD-CFG - PROFINET/DeviceNet		
: File(E) Edit(E) Tool(<u>T</u>) Help(H)			
i D 🚅 🖬 🖬 🖬 🛣 🕹 🗄	💐 🖻 🖵		
Device - TD-140	Configuration		<u> </u>
Etheme: DeviceNet network node-1 DNET POLL INPUT DNET POLL OUTPUT DNET COS INPUT DNET POLL INPUT DNET POLL OUTPUT DNET COS INPUT	Agreement Type IP Setting Method IP Address Subnet Mask Gateway address DNS1 DNS2 Input bytes Output bytes PROFINET configuration project	PROFINET Static Configuration 192.168.0.10 255.255.255.0 192.168.0.1 00.00 0.00.0 0.00.0 0 0 0 0 0.00 0.00.0 0.00.0 0.00.0 0 0 0 0 0.00.0 0.00.0 0.00.0 0 0 0 0 0 0 0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0 0.0.0.0.0 0.0.0.0.0 0.0.0.0.0 0.0.0.0.0 0.0.0.0.0 0.0.0.0.0	
Ready		Capital	Digital Scroll

- > **IP address:** Set the IP address of GT100-PN-DM.
- Subnet mask: Set the subnet mask.
- **Gateway address:** Set the gateway address of the LAN where GT100-PN-DM is located.
- Input bytes: Display the length of input data exchanged between GT100-PN-DM and PLC, the length is configured by the PROFINET project dialog
- Output bytes: Display the length of output data exchanged between GT100-PN-DM and PLC, the length is configured by the PROFINET project dialog
- PROFINET configuration project: Click to enter the interface for setting the GT100-PN-DM input and output data length.

Note: This configuration project must be the same as the data block configuration of the corresponding slot in the software and hardware configuration of the PROFINET master. The PROFINET configuration project dialog is:



DeviceNet/PROFINET IO Gateway

User Manual

Slot numb	Module	I address	Q address	+	
1	input+output-16byte	256	256		
2	input+output-16byte	272	272		
8	input+output-8byte	288	288	_	
				-	
				-	
				_	
				-	
				-	
				-	
				-	

It can be seen that the above configuration has a total of three slots, respectively: 16 bytes of input and output, 16 bytes of input and output.

As with the modules in the PROFINET master software, you can drag the module from the box on the right into the slot on the left.

Note: The slots and modules in the PROFINET project must match the slots and modules in the PROFINET master software!

4.2.4.2 DeviceNet Network Configuration View Interface

Protocol type is DeviceNet. The configuration parameters are: DeviceNet Baud Rate, DeviceNet Node Address, How to Action after N successive Response Timeout, Commend Resend

The configuration view interface is displayed as follows:



DeviceNet/PROFINET IO Gateway

User Manual

💥 Gateway Configuration Software	SST-TD-CFG - PROFINET/DeviceNet		
: File(E) Edit(E) Tool(<u>T</u>) Help(<u>H</u>)			
i D 🚅 🖬 🖬 🖬 🔐 🗙 🕹 🤞			
Device - TD-140	Configuration		-
Ethernet DeviceNet network	Type of Protocol DeviceNet Baud Rate DeviceNet Baud Rate DeviceNet Node Address Explicit Packet Timeout Clear Data Time for Network Input I/O Sen Time Period How to Action after N successive Response Timeout Command Resend	DeviceNet 250K 63 5 Clear 3	
Ready		Capital Digital Sch	Dill

DeviceNet Baud Rate: 125, 250 and 500KBPS optional

DeviceNet Node Address: The node address of the gateway on the DeviceNet network, 0~63 optional Explicit packet timeout: DeviceNet explicit packet timeout time setting, in units of 10ms, up to 2.5s

Clear Data Time for Network Input: DeviceNet network input timeout time setting. If this time value is exceeded, the DeviceNet slave node does not respond and the corresponding data mapping area is cleared. In units of 10ms, the maximum is 2.5s

I/O Scan Time Period: DeviceNet network I/O scan cycle, in units of 10ms, up to 500ms

How to Action after N successive Response Timeout: When the number of DeviceNet command response errors reaches the number of Modbus command retransmissions, the corresponding DeviceNet input data is cleared.

Select "clear", DeviceNet input data is cleared;

Select "Hold", DeviceNet input data keeps the correct data received last time.

4.2.4.3 Node Configuration View Interface

On the device view page, click the node. The configuration view is displayed as follows.



GT100-PN-DM	
-------------	--

DeviceNet/PROFINET IO Gateway

User Manual

Device - TD-140	Configuration	
Ethernet DeviceNet network DeviceNetwork Dev	Slave address (0 to 63)	

4.2.4.4 Command Configuration View Interface

In the device view interface, Click DeviceNet network->node->mapping type, The configuration view interface is displayed as follow:



DeviceNet/PROFINET IO Gateway

User Manual

💥 Gateway Configuration Softw	are SST-TD-CFG - PROFINET/DeviceNet		
: File(E) Edit(E) Tool(<u>T</u>) Help(H)			
i D 🚅 🖬 🖬 🖬 🗃 🗙 🕹	o 🚜 🖻 🖵		
Device - TD-140	Configuration		-
Ethemet DeviceNet network node-1 DNET POLL INPUT	Slave Address (0 to 63) Number of Bytes Mapping Address Mnemonic Description Byte Swap	1 No Swap Four.Byte Swap. e register, for example: 12 34 The result after the exchange is 34 12 are swapped, for example: 12 34 56 78 The result of the exchange is 78	
n and a second se	<i>.</i>	and here a large set	1

Slave address: cannot be changed, the same as node address.

Number of byte: Bytes numbers mapped, 1~128 bytes for input bytes and 1~112 bytes for output bytes.

Mapping address: Memory address mapped to the gateway, starting from 0

Mnemonic description: Users can input descriptive notes here, these are not downloaded into gateway.

Byte Swap: There are three types: No Swap, Double-Byte Swap, Four-Byte Swap.

4.2.5 Comment View

Comment interface displays the explanation of relevant configuration item. When the configuration item is "DeviceNet network", the comment interface is shown as below:

Select DeviceNet baud rate. The default value is 250K.



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

4.2.6 Upload and Download Configuration

1.Upload configuration

Select Upload Configuration to upload configuration information from the device to the software. The display interface is as follows:

IP Address	MAC Address	Device name	Gateway Addres
192.168.0.29	64-EA-C5-13-00-87	td140-x8pzii29	192.168.0.29
∢ [III		•
aarah			
earch			
Log In	Refresh		Cancel
Log In	Refresh		Cancel
Log In Upload	Refresh		Cancel
Log In	Refresh		Cancel
Log In Upload	Refresh	ad the configuration	Cancel
Log In Upload	Refresh Please click the button to upl	oad the configuration	Cancel
Log In Upload	Refresh Please click the button to upl	oad the configuration	Cancel



DeviceNet/PROFINET IO Gateway

User Manual



2.Download configuration

Select download configuration, download the configured information to device, the display interface is as follows:



DeviceNet/PROFINET IO Gateway

User Manual

IP Address	MAC Address	Device name	Gateway Addres
192.168.0.29	64-EA-C5-13-00-87	td140-x8pzii29	192.168 <mark>.0.2</mark> 9
• [10		
	III.S		P
arch			
Log In	Refresh	1	Cancel
Log In	Refresh		Cancel
Log In	Refresh		Cancel
Log In Download	Refresh		Cancel
Log In Download	Refresh		Cancel
Log In Download	Refresh		Cancel
Log In Download	Refresh		Cancel
Log In Download	Refresh	nload the configuratio	Cancel
Log In Download	Refresh Please click the button to dow	nload the configuratio	Cancel
Log In Download	Refresh Please click the button to dow	nload the configuratio	Cancel
Log In Download	Refresh Please click the button to dow	nload the configuratio	Cancel
Log In Download	Refresh Please click the button to dow	nload the configuratio	Cancel



DeviceNet/PROFINET IO Gateway

User Manual

PROFINETConfig		83
Commu configur	nication with the PLC may be disconnected during the upload ration. Do you want to continue?	
	Yes No	
Download		
	Download completed! Download Ethernet parameter configuration completed Download DeviceNet parameter configuration completed Download DeviceNet Slave Parameter Configuration Complete Download	

4.2.7 Save and Load Configuration

1.Save Configuration Project

Select "Save" or "Save as", you can save the configuration project with chg as its extension. There are two ways:

🎸 Ga	ateway Con	figuration So	
File	(F) Edit(E)	Tool(T) Help	X Gateway Configuration Softwar
	New(N) Open(O)	Ctrl+N Ctrl+O	· File(F) Edit(E) Tool(T) Help(H)
	Save(S)	Ctrl+S	
	Save As(A).		Device - 1D Save (Ctrl+S)
	Exit(X)		DeviceNet network



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

2.Load Configuration Project

Select "Open", you can open a project which is saved in . chg format. There are two ways:

: Fil	e(F)	Edit(E)	Tool(T)	Help(H	Contraction of the second
) Ne	w(N)	Ctrl	+N	Gateway Configuration Software File(F) Edit(E) Tool(T) Help(H)
	Sa	ve(S)	Ctri	+0 +5 -	
Save As(A)			Ethemet		
	Ex	it(X)			⊕ DeviceNet network

4.2.8 Excel Document Output

Users can use the function to check the gateway configurations.

Click icon not the tool bar you can save the configuration with . xls as its extension. Please choose the proper location to save, as the following:

Save As				2 🛛
Save in: My Recent Documents Desktop My Documents My Computer	Desktop	s 1aces	* @ *	
S	File name:	1	-	Save
My Network Places	Save as type:	Excel File(*.xls)	<u>•</u>	Cancel





4.2.9 Monitor

This feature has been integrated into DNetStart configuration software.

4.3 DNetStart Software Configuration

4.3.1 Pre-configuration Notes

When GT100-PN-DM's DIP switch "2ON 10FF", The gateway is in pre-operation mode, the DNetStart software can be used to configure the I/O parameters of the slave devices on the DeviceNet network.

4.3.2 Software Main Interface

After installation, double-click the icon to enter the main interface

🛃 DNetStart - Untitled		
; File(F) Edit(E) View(V) Net(N)	Device(D) Tools(T)	Tifle bar
		par 💥 🔟 🎬 🛄 🖉
Equipment Management	× Toolbar	^
E DeviceNet		
Device Type AC Drive		
General Purpose Discret	e I/O	
🕀 🧰 Specialty I/O		
Manufacturer Manufacturer Manufacturer	main v	vindow
Aller Bradley Company, Sockwell Automation/En	zek IRD	
Equipment mana	ngement window	
<	2	×
Output Window		×
Information Time	Explanation	
		Durtourt unio dour
	C	Juput window
II + + H Information Find		
Ready		Capital Number Scroll

Main window: After establishing the internet connection, display the online device and modify the address and parameters of the device online, check the input and output data; In the offline state, you can view device properties by dragging the device icon to the window.

Equipment management window: Displays registered DeviceNet devices in different ways: device type,



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

manufacture. Under different manufacturers, different devices are displayed separately according to the device type.

Output window: Dynamic display of network scanning information, registered device information, delete device information, etc. display the results of "find devices", "find next".

4.3.3 Toolbar

Toolbar is show:

🗄 🗋 📁 📕 🛃 🐰 ዄ 🔃 🔄 🦉 EDS Wizard 🛛 🅰 👫 🛃 Internet Connection 🛅 🛒 💥 🔟 🏥

Functions separately from left to right are: new, open, save, print, cut, copy, paste, refresh viewport, EDS Wizard, find devices in the device library, find next, Internet Connection, one-click save, disconnect, configure, send explicit message, property, device management, output.

4.3.4 DeviceNet Device Network Configuration

EDS Registration Wizard

Users can configure different DeviceNet devices by registering new EDS files. Register the new EDS file, select "Tools" -> "EDS wizard", or click "EDS wizard" button in the toolbar. Or directly click the right button in the Equipment management window and select "EDS wizard" which will pop up the EDS wizard interface. The three ways are as follows:







DeviceNet/PROFINET IO Gateway

User Manual

	Equipment Management	×	
	DeviceNet		
	EDS V	/izard(W)	
	E 💭 PP 🔛 Find D	evice(F)	
		lext(N)	
	Expar	id All(E)	
	Contr	act All(C)	
S Wizard			
Welcome to u	lse		
SST Automati	on EDS Guide		
With this wizar	d you can do the following:		
- Renister .	an EDS-based device		
- Log out c	if a device		
Channes I	n a ucvice		
- Unange (ne icon or a device		
		Start(S)	Cancel(C)

Select "Start "and pop up the following interface:



DeviceNet/PROFINET IO Gateway

User Manual



In this interface, users can choose to register an EDS file, log out of an existing device, and change the icon of a device.

Take "Register an EDS file" as an example to introduce the following steps for registering a new EDS file:

After selecting "Register an EDS file", click "Next step" and select the storage path of EDS file you want to register in the pop-up interface, as shown in the figure below:



DeviceNet/PROFINET IO Gateway

User Manual

EDS Wizard				
Welcome to SST Automa	use tion EDS Gu	uide		
EDS file I	est report:			
ID	Туре	Descriptio	on	
Error O	l, Warning 0			/iew file
		Previous(P)	Next step (N)	Cancel(C)
EDS Wizard				
Welcome to SST Automa	use tion EDS Gu	uide		
EDS file i	name:			
C:\Do	ocuments and Se	ettings\Administrate	or\Desktop\M Bro	owse
i)	This EDS file wil This file is gener have the file yet, completing the a Be sure to ensul	I be closely related ally provided by the you can request i addition of the equi re the correctness	to the device you an e equipment supplier. from the equipment oment. of the EDS documen	e adding. If you do not supplier before tation!
-			×14	

Click "Next step" to pop up the EDS file test report interface. If there is an error in the EDS file, the error



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

message will be displayed in the interface, and there is no "Next step" operation. If there is no error in the file, continue the "Next step" operation, pop-up selection device icon interface as follows:





DeviceNet/PROFINET IO Gateway

User Manual

EDS Wizard			
Welcome to use SiboTech Automatio EI	DS Guide		
- You have successfully button to add the device	set the registration p. a.	arameters and click t	he Finish
The device informa	ation is as follows:		
lcon:			
Name:	Modbus-DeviceN	et Adaptor	
Supplier:	SST Automation (Co. Ltd.	
Туре:	Communication A	dapter	
Version:	2.1		
- You can also click the	previous step to re-e	dit the parameters.	
	Previous(P)	Finish(F)	Cancel(C)

Click "Finish" and the EDS file registration step is over. At this time, you can see the newly registered device in the equipment Management Window.

If you want to change EDS file for the same device, please first find the device in the device management library and right click. After logging out, re-register the new EDS file, or complete the logout operation through the EDS operation.

PC-DeviceNet Interface Setting

DNetStart software needs to be used together with the DeviceNet master module. First, connect the Ethernet port of the GT100-PN-DM to the network, Then, the DeviceNet port of GT100-PN-DM and the DeviceNet device of the user are connected to the DeviceNet network. Power on GT100-PN-DM with power supply 24V.

Power on after correctly connecting to power supply, the connection of DeviceNet network can be established by "Internet Connection" in the menu bar or toolbar. Click "Internet Connection", and pop-up path selection interface, then click interface configuration



DeviceNet/PROFINET IO Gateway

User Manual

	A.N.Interrace	• GT200-	DP-DM Interface
	'AN Interface	C GT100.	DP-DM Interface
	A 114 HILDELINGE	, G1100-	DI-Divi interiace
G GT200	-PN-DM Interfac	e C Etheme	et-CAN Interface
C GT100	-PN-DM Interfac	e	Setting interface
etwork Se	gment	Comment state	Refresh
1	RS232-CAN	Available	

Then click the interface setting, the software will display the searched device in the list, select the master station to be configured for the interface setting:



DeviceNet/PROFINET IO Gateway

User Manual

IP Address	MAC Address	Device name	Gateway Address
92.168.0.29	64-EA-C5-13-00-87	td140-x8pzii29	192.168.0.29
6	111		•
arch			
arch Log In	Refresh		Cancel
earch Log In	Refresh		Cancel
earch Log In	Refresh		Cancel
earch Log In	Refresh terface Settings Serial port selection:		Cancel
earch Log In	Refresh terface Settings Serial port selection: DeviceNet Node address:		Cancel

Note the interface settings configuration, "Serial port selection" Selects the Serial Port currently in use, "DeviceNet Node address" is the address of DeviceNet Master Module, Set any value between 0 and 63, which is not allowed to be conflict with other node addresses on the bus, "DeviceNet Baud rate" is the baud rate of DeviceNet master module, 125K, 250K, 500K, Keep Bus Baud Rate Consistent. The node address of DeviceNet master module can only be modified here.

4.3.5 DeviceNet Network Scanning

After the interface is set up, the network scanning interface pops up:



DeviceNet/PROFINET IO Gateway

User Manual



After power on, DeviceNet master module will first carry out self-inspection, and then scan the network when both green LED lights are on .

	it/E) View(V) Net(N)	Device(D) Took(T) Help(H)	
		2) 🔅 EDS Wizard 📖 🐴 🚝 Internet Connection : 🖿 😹 🐒 🔟 🎦 🛄 💭	
Equipment Mar Device	agement Net Vice Type AC Drive Communication Adapter General Purpose Discrete Speciality I/O nufacturer Allen-Bradley Company, It Rockwell Automation/Ente SST Automation Co. Ltd.	Modbus-Devicel SST DeviceNet Adaptor Disconnect Disconnect DeviceNet	
	Communication Adapt Modbus-DeviceNet SST DeviceNet Ad	ter et Adaptor Japtor	
Output Window	Communication Adapt Modbus-DeviceNe SST DeviceNet Ad	ter et Adaptor Japtor	
Output Window Information	Communication Adapt Modbus-DeviceNet SST DeviceNet Ad	ter et Adaptor daptor Explanation	
Output Window Information	Communication Adapt Modbus-DeviceNe SST DeviceNet Ad Zo18-12-24 16:17:35	ter et Adaptor daptor Explanation Scan to device with address 18: Modbus-DeviceNet Adaptor	
Output Window Information 1 2	Communication Adapt Communication Adapt ST DeviceNet Ad Time 2018-12-24 16:17:35 2018-12-24 16:17:46	ter et Adaptor daptor Explanation Scan to device with address 18: Modbus-DeviceNet Adaptor The user interrupts the scan and scans to 2 devices before the interruption.	
Cutput Window Information 11 21 33	Communication Adapt Modburb-DeviceNet SST DeviceNet Ad Time 2018-12-24 16:17:35 2018-12-24 16:17:46 2018-12-24 16:21:37	ter et Adaptor daptor Explanation Scan to device with address 18: Modbus-DeviceNet Adaptor The user interrupts the scan and scans to 2 devices before the interruption. Scan to device with address 63: SST DeviceNet Adaptor	
Cutput Window Information 11 21 33 44	Communication Adapt Soft DeviceNet Ad Soft DeviceNet Ad D	ter et Adaptor Explanation Scan to device with address 18: Modbus-DeviceNet Adaptor The user interrupts the scan and scans to 2 devices before the interruption. Scan to device with address 53: SST DeviceNet Adaptor Scan to device with address 18: Modbus-DeviceNet Adaptor Scan to device with address 18: Modbus-DeviceNet Adaptor	
Cutput Window Information U 1 0 2 0 3 0 4 0 5 0 4 0 5	Communication Adapt Modulu-DeviceNet SST DeviceNet Ad SST DeviceNet Ad Di8-12-24 16:17:35 2018-12-24 16:17:36 2018-12-24 16:21:37 2018-12-24 16:21:40 2018-12-24 2018-12-24 2018-12-24 2018-12-24 2018-12-24 2018-12-24 2018-12-24 2018-12-24 2018-12 2018-12-24 2018-12-24 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018-12 2018 20	ter et Adaptor daptor Explanation Scan to device with address 18: Modbus-DeviceNet Adaptor The user interrupts the scan and scans to 2 devices before the interruption. Scan to device with address 33: SST DeviceNet Adaptor Scan to device with address 18: Modbus-DeviceNet Adaptor Scan to device with address 18: Modbus-DeviceNet Adaptor The scan is completed and there are 3 devices on the current network.	

4.3.6 Equipment Parameter Modification and I/O Data Test

Double-click the scanned network node and appear the device property page.



GT100-PN-DM DeviceNet/PROFINET IO Gateway

User Manual

4.3.6.1 DeviceNet Master Module (Some function is not open yet)

In "General information" options Interface, DeviceNet master module address cannot be modified here. It can only be modified in the interface settings, as specified in Chapter 5.2 of this manual, "Device ID" displays the information of the device manufacturer, type, device, sort and version. If you choose to configure GT200-PN-DM/GT100-PN-DM, after setting all the parameters, you can click the "Apply" button to download.

roperty					
PROFI	NET Parame	er		DeviceNet	: parameter
General infor	mation	Scan List		Input	Output
Devic	e				
Name:	SST Device	Net Adaptor			
Description:					
Address:	63				
manufacturer	SST Autom	ation Co. Ltd. [101	61		
		······································	0]		
lype:	Communica	ation Adapter [12]			
Device:	SST Devic	eNet Adaptor [20]			
Sort:	SST Comm	unication Adaptor			
Version:	1.2				
		Apply		OK	Cancel

In the "Scan List" option interface, users can select devices to add to the "Scan List" of the master and set its I/O parameters:



DeviceNet/PROFINET IO Gateway

User Manual

			6
PROFINET Parameter	1	Device	Net parameter
General information	Scan List	Input	Output
The EDS file is used provided by the man	to communicate ufacturer.	to the user the	device data
esirable device:		Scan List:	
D parameter name		ID parame	eter name
		18 Modbu	is-DeviceNet
	>		
	<u>>></u>		
	<<		
Automatic mapping when ac	lding	Node activi	y.
Automatic mapping when ac	lding	Node activi Electronic ker	y J
Automatic mapping when ac	lding	Node activit Electronic key DeviceTy	y Jee
Automatic mapping when ac Upload from scanner Download to scanner	lding	■ Node activi ■ Electronic key ■ DeviceTy ■ Vender	у , ре
Automatic mapping when ac Upload from scanner Download to scanner Edit I/O parameters	lding	Node activi Electronic key DeviceTy U DeviceTy Vender Product 1	y pe ype
Automatic mapping when ac Upload from scanner Download to scanner Edit I/O parameters	lding	Node activi Electronic key C DeviceTy C Vender Product 1 MajRev	y pe ype
Automatic mapping when ac Upload from scanner Download to scanner Edit I/O parameters	lding	Node activi Electronic key C DeviceTy Vender Product 1 MajRev MinRev	y pe ype

Add slave station 13 to the master station mapping list, and then select slave station 13 in the "Scan List". After selecting it, click "Edit I / O parameters". This interface sets the number of input and output bytes of the slave (refer to 4.1):



er Manual		
O parameter settings		
Strobed	COS/Cyclic	
	T Allowed	
Input: 0 📑 Bytes	C State Change(COS) 🕼 Cycle(Cylic)
Use output bit 🗖	Input:	0 🕂 Bytes
Polled	Output:	0 🕂 Bytes
Allowed	Heartbeat Rate:	0 msec
Input: 16 📑 Bytes		1
Output: 16 📩 Bytes		Advanced(A)
Polling cycle: Every scan		

In the "Input", "Output" options interface, The user can map the address of the device added to the master and select automatic mapping. In the figure below, the "start" edit box parameter is the starting address of the automatic mapping. The automatic mapping will start with the address set here, where one unit is two bytes, that is, when the "Start" edit box parameter is "1", the automatic mapping will start with the third byte.



DeviceNet/PROFINET IO Gateway

User Manual

PRUFI	INET Param	eter	1 -	Devic	eNet p	arame	ter	
General info	rmation	Scan	List	Inpu	ıt		Outp	out
The prov	EDS file is u ided by the r	sed to commu nanufacturer.	unicate to th	he user th	e devic	e data	9	
Node	Туре	Size	Мар			ĺ.		
📲 18 Modbus	⊱ Polled	16 Byte:	s MI:1.0	.0				
							Map()	4)
								m
							Jnmap	(F)
						Adv	Jnmap vance	d(A)
						Adv	Jnmap vance: Iption(((R) 3(A) 0)
Buffer memory:	M File	•	Start	0		Adi	Jnmap vance: Iption(I	(A) 3(A)
Buffer memory: Bits 16 - 0	M File	¥ 12 11 10	Start:	0	4 3		Jnmap vanced Iption((un) 3(A) 0)
Buffer memory: Bits 16 - 0 MI:1.0	M File	• 12 11 10 18 Mod	Start: 9 8 7 Ibus-Devic	0 7 6 5 seNet Ada	4 3 aptor		Jnmap vanced ption(((A) 3(A) 0)
Buffer memory: Bits 16 - 0 MI:1.0 MI:1.1	M File	3 12 11 10 18 Mod 18 Mod	Start: 9 8 7 Ibus-Devic Ibus-Devic	0 7 6 5 seNet Ada	4 3 aptor		Jnmap vanced Iption(I	un) d(A) D)
Buffer memory: Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2	M File	3 12 11 10 18 Moo 18 Moo 18 Moo	Start: 9 8 7 Ibus-Devic Ibus-Devic Ibus-Devic	0 6 5 eNet Ada eNet Ada	4 3 aptor aptor		Jnmap vanced ption(((A) D)
Buffer memory: Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3	M File	3 12 11 10 18 Mod 18 Mod 18 Mod 18 Mod	Start: 9 8 7 tbus-Devic tbus-Devic tbus-Devic tbus-Devic	0 7 6 5 ceNet Ada ceNet Ada ceNet Ada	4 3 aptor aptor aptor		Jnmap vancer Iption(((A) 3(A) 0)
Buffer memory: Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3 MI:1.4	M File	12 11 10 18 Mod 18 Mod 18 Mod 18 Mod 18 Mod	Start: 9 8 7 Ibus-Devic Ibus-Devic Ibus-Devic Ibus-Devic	0 7 6 5 ceNet Ada ceNet Ada ceNet Ada ceNet Ada	4 3 aptor aptor aptor aptor	 ; 2	Inmap vancer Iption(I	(h) D)
Buffer memory: Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3 MI:1.3 MI:1.5	M File	3 12 11 10 18 Mod 18 Mod 18 Mod 18 Mod 18 Mod 18 Mod	Start: 9 8 7 Jbus-Devic Jbus-Devic Jbus-Devic Jbus-Devic Jbus-Devic Jbus-Devic	0 7 6 5 ceNet Ada ceNet Ada ceNet Ada ceNet Ada ceNet Ada	4 3 aptor aptor aptor aptor aptor aptor		Inmap vancer Iption(I	(H) d(A)

If users need to map manually, they can also click the "Advanced" button to set the starting address in the dialog box shown below.

In the advanced Settings interface, the user can also set the byte exchange mode of this slave device. There are three types of byte exchange: no-exchange, two-byte exchange, and four-byte exchange. The meanings are as follows: no-exchange: data transfer normally

Two-byte exchange: Two-byte exchange in the same register, for example, the result after 1234 swapping is 3412

Four-byte exchange: Four-byte exchange in two registers, for example, after 12, 34, 56, 78 swap, the result is 78, 56, 34, 12



DeviceNet/PROFINET IO Gateway

User Manual

Advanced I/O Mapping Settings	×
Here you can accurately map the I/O yo the number of bits correctly. Map From:	u need. Please set the number of bytes and
18 Modbus-DeviceNet Adaptor	63 SST DeviceNet Adaptor
Message: Polled 💌	Memory: M File
Byte: 0 📩	Byte: 0
Bit: 0 👘	Bit: 0
Byte swap: No exchange	
	UKCancel



DeviceNet/PROFINET IO Gateway

User Manual

dame. A					
PROFI	NET Paramet	er)		DeviceNet	parameter
General infor	mation	Scan Lis	:t	Input	Output
The Drovi	EDS file is use ided by the ma	ed to communio inufacturer.	cate to the u	iser the dev	vice data
Node	Туре	Size	Мар		
18 Modbus	s Polled	16 Bytes	MI:1.0.0		
					Map(M)
					Lines and (D)
					Unmap(R)
					Advanced(A)
					Option(0)
Buffer memorur	M File	-	Start: 0	-	-
banor momory.	Thereic		ordine 10	-	
	15 14 13	12 11 10 9	871	8 5 4	2 2 4 0 4
Bits 16 - 0				0 0 4	3 2 1 0 _
Bits 16 - 0 MI:1.0		18 Modbu	IS-DeviceN	et Adaptor	
Bits 16 - 0 MI:1.0 MI:1.1		18 Modbu 18 Modbu	J-J-J JS-DeviceN JS-DeviceN	et Adaptor et Adaptor	3 2 1 0
Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2	-	18 Modbu 18 Modbu 18 Modbu	IS-DeviceN IS-DeviceN IS-DeviceN	et Adaptor et Adaptor et Adaptor et Adaptor	3 2 1 0
Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3		18 Modbu 18 Modbu 18 Modbu 18 Modbu	us-DeviceN us-DeviceN us-DeviceN us-DeviceN	et Adaptor et Adaptor et Adaptor et Adaptor	3 2 1 0
Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3 MI:1.4		18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu	us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN	et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor	3 2 1 0
Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3 MI:1.4 MI:1.5		18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu	us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN	et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor	3210
Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3 MI:1.4 MI:1.5 MI:1.6		18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu	us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN	et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor	3 2 1 0
Bits 16 - 0 MI:1.0 MI:1.1 MI:1.2 MI:1.3 MI:1.4 MI:1.5 MI:1.6		18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu 18 Modbu	us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN us-DeviceN	et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor et Adaptor	3 2 1 0 A

If you need to set the unit that maps the starting address in "advanced I/O mapping Settings", click "option" button to set it. As shown in the figure below, "Byte Align" means in one byte and "Word Align" means in two bytes:



DeviceNet/PROFINET IO Gateway

User Manual

) Mapping Options	2
Data link	Epoch
Byte Align	I Do not map useless data
C Word Align	
C DWord Align	OK Cancel

In the "PROFINET parameter " interface, users can set PROFINET parameters:



DeviceNet/PROFINET IO Gateway

User Manual

The EDS provided	i file is used to communicate to the user the device data by the manufacturer.
Agreement Type:	PROFINET
IP Setting	Static Configuration
IP Adress:	192.168.0.10
Subnet Mask:	255.255.255.0
Gateway address:	192.168.0.1
DNS1:	0.0.0.0
DNS2:	0.0.0.0
Input Bytes:	128
Output Bytes:	128

Click "Configure" button to set the input and output maximum number of bytes for the PROFINET master in the pop-up interface. In the interface shown below, you can double-click the tree node to add the number of input/output bytes you need to add:



DeviceNet/PROFINET IO Gateway

User Manual



In the "DeviceNet parameter" interface, users can set PROFINET parameters. "Input Data Hold/clear" means whether the corresponding DeviceNet input data is cleared when the number of DeviceNet command response errors reaches the number of DeviceNet command retransmissions. Select "clear", DeviceNet input data is cleared, select "hold", DeviceNet input data keep the correct data received last time. "Number of command resends" means that when DeviceNet command responds incorrectly, the number of the command Resends ranges from 2 to 254 and the default value is 3.



DeviceNet/PROFINET IO Gateway

User Manual

General information	Scan List		Input	Output
PROFINET Parameter			DeviceNet par	rameter
The EDS file is used to cor provided by the manufactu	mmunicate to t rer.	he use	er the device dat	a
Agreement Type:	DeviceNet			
DeviceNet baud rate:	125k			•
DeviceNet Node address:	36			
explicit packet timeout time:	250			
Network input timeout clear	20			
/O time scan period:	5			
nput data hold/clear:	Hold			•
Number of command resends:	0			

4.3.6.2 DeviceNet Slave Module

As shown in the figure below, in the "General" option interface, you can modify the address. After the address needs to be changed successfully, the slave device of the modified address will restart and the network needs to be reconnected. "Device ID" shows the information of the device manufacturer, type, device, sort and version.



DeviceNet/PROFINET IO Gateway

User Manual

Property				
General information Parameter 1/0 Data EDS File				
Devic	e			
Name:	Modbus-DeviceNet Adaptor			
Description:				
Address:	18 🕂			
_ Device ID				
manufacturer:	SST Automation Co. Ltd. [1016]			
Туре:	Communication Adapter [12]			
Device:	Modbus-DeviceNet Adaptor [17]			
Sort:	MD21U			
Version:	2.1			
5				
1	Apply OK Cancel			

The parameter interface is shown in the figure below. In this interface, the user can upload and download the parameters of the device to facilitate online modification of the device parameter values.



DeviceNet/PROFINET IO Gateway

User Manual

Pr	operty			
0	ieneral informatio	n Parameter 1/0 Data ED	S File	
	Click Click	he parameter row you want to ponding button in the toolbar to	configure in the list, then o set it.	select the
	🗖 By Group 🗌	Reset single 💌 Uploa	ad DownLoad Surve	illance Help
3	ID	parameter name	current value	
1	1	Modbus_status	0	
	🔁 2	Input bytes	64	
	🔁 3	Output bytes	64	
	4	Mod_Output_Ctrl	Continuous Outpu	it
1		Apply	ОК	Cancel

The "Reset" button can restore the default value of the parameters, and can only "Reset" for a single parameter.

The "Upload" button supports single and full parameter operation. After clicking "Upload", the interface will display the actual parameter value of the current online slave DeviceNet device.

The "DownLoad" button only supports single parameter operation, through which the parameters of online devices can be modified. Whether the parameters support the "Download" operation can be seen from the "ID" number of the interface. If there is an $\hat{\mathbf{r}}$ icon before the ID, the parameter cannot be modified online by the configuration software. Whether the parameters support online modification is determined by the EDS file that is registered.

The display of the property interface also includes: parameter ID, parameter name and the current value of the parameter, DNetStart software supports relevant linear operations on parameters defined in EDS files, The current



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

value shows the result of the operation, and the user can set the relevant operation factor as required.

The I/O data interface is shown in the figure below. After the DeviceNet network device is connected, the byte length of network output and network input is determined. How does the user know the length of the input and output? You can learn from EDS.

Property					
General information Parameter 1/0 Data EDS File Double-click the attribute line in the list to get detailed input and output data.					
Message Type Size	Data Description				
Polled Input 64-Bytes Output 64-Bytes	Network input 4 Network Output 4				
	Apply OK	Cancel			

The number of bytes in/out of DNetStart software can also provide this information.

In the figure above, the input and Output 64-Bytes bytes provided under the "Polled" project are the default input and output data byte lengths.

The maximum number of input bytes supported by DNetStart software is 128, and the maximum number of output bytes is 112.

Take "Polled Input" and "Polled Output" as examples:



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

Click the "Polled Input" button, and then click the "Read" button, DeviceNet software will read the network input data. If the user selects the "Continuous reading" check box, DNetStart software will continuously read the network input data of the field DeviceNet device. As shown in the figure below:

DeviceNet input	×
Polling input data length 16	
11000000000000	~
	~
Read 🔽 Continuous reading	Cancel

Similarly, by clicking the "Polled Output" button, users can see the network output data dialog box. The user must type in all the output data, otherwise the output data is incomplete (the number of bytes is incorrect), and the output will not succeed.

Polling output	×
Polling output data length: 16 Polling output data	
110000000000000	<u>~</u>
	×
Output	Cancel





If the output data length is incorrect, it will be displayed:

DNetSta	rt 🔀
	The output data is incorrect. Please check if the user data length matches the module settings.
	ок

Note that after the address is changed in the general interface, because the device with the modified address will be restarted and the DeviceNet internet connection has been disconnected, at this time, the I/O data input and output operation will not be able to see the data, You need to disconnect DNetStart's "Internet Connection" and re-establish the internet connection.



GT100-PN-DM DeviceNet/PROFINET IO Gateway

User Manual

4.3.7 Send the Explicit Message

Send Message			
You can set t request to th	the service-cla e currently sel	ss-instance-attribute/property value directly to send the ected device.	
Request Service(Hex): 0X	DE	Get_Attribute_Single	•
Calss(Hex): 0X	01	Identification Object	•
Instance(Hex): 0X			
Property(Hex): 0X		Attribute value(Hex):0X	
Response			
		Send(S) Clos	se

Through explicit message modification, it is the advanced function of DeviceNet network. Users need to have a better understanding of DeviceNet network.

After the device is online, click the right button to "send an explicit message". The interface pops up as shown in the figure above. Users can set and obtain properties to facilitate online debugging of the device.

With this function, users can directly read or set the corresponding parameters of the device without passing through the EDS file of the device.

Service ID, class ID, instance ID, Property ID, attribute value data format are hexadecimal, where class ID and instance ID can be one or two bytes, bytes and bytes are separated by spaces. All ID are low bytes first, high bytes after.

Supported service ID: 0x0EGet_Attribute_SingleRead parameter attribute values;0x10Set Attribute SingleWrite parameter attribute values.

Supported class ID: Support standard class ID 0x01-0x27 and custom class

The corresponding service ID or class ID on the left can be determined by selecting the service content or object



GT100-PN-DM DeviceNet/PROFINET IO Gateway User Manual

name on the right; When you are a custom class, you can enter the class ID directly. At this point, the class ID is not corresponding to the object on the right, and the manually entered class ID shall prevail.

4.4 Run

How the DeviceNet networks work:

The data conversion between GT100-PN-DM's DeviceNet and PROFINET is established through a "mapping" relationship. There are two data buffers in GT100-PN-DM, one is PROFINET network input buffer, and the other is PROFINET network output buffer. The DeviceNet read command writes the read data to the network input buffer for PROFINET network reading. DeviceNet write register commands take data from the network output buffer, and output to the corresponding DeviceNet device through the POLL I / O write command.



When the DeviceNet port is used as a master station, the module GT100-PN-DM supports only one DeviceNet slave device.





5 Installation

5.1 Mechanical Dimensions

Size: 0. 98 in (width)*3.94 in (height)*3.54 in (depth)







5.2 Installation Method

Using 35mm DIN rail

Installing the gateway





Uninstalling the gateway





