德国赫优讯 NT50-RS-EN 网关操作指南

1 网关简介

本文以 NT50-RS-EN(图 1)实现 ASCII 与 PROFINET 转换为例,介绍德国赫优讯 NT50 系列网关的使用步骤。



```
图 1
```

通过下载不同协议堆栈,NT50-RS-EN 能够实现不同的协议转换,主要有:

- ASCII 转 EtherNet/IP 主/从站
- ASCII转 PROFINET IO 主/从站
- ASCII 转 Modbus/TCP 主/从站
- Modbus RTU 主/从站转 EtherNet/IP 主/从站
- Modbus RTU 主/从站转 PROFINET IO 主/从站
- Modbus RTU 主/从站转 Modbus/TCP 主/从站

NT50 网关的典型应用如图 2 所示:



2 软件安装

1) 在光驱中放入产品光盘,自动弹出安装对话框;或手动打开光盘根目录,双击Gateway_Solutions.exe 文件,打开安装界面。单击"SYCON.net Configuration and Diagnostic Tool Installation",开 始安装 SYCON.net 配置软件,如图 3 所示:

	Gateway Solutions	
		the are
N		State State State
	SYCON.net Configuration and Diagnostic Tool Installation	
nn <mark>s</mark> ér	Documentation	lite A
	Drivers	
	Power Point Presentation	
	netSCRIPT Debugger	ANTOLIOIOGUNALINEINA
		netTAP netB
		netTAP netBi netLINK
		netTAP netBi
	CANOPER CC-Link DeviceNet States	netTAP netBi netLINK EtherNet/IP

2)弹出语言选择对话框,选择英语,单击 0K,如图 4 所示:



3) 单击 Next, 进行下一步安装, 如图 5 所示:



图 5

4)选择已阅读信息,单击Next,进行下一步安装,如图6所示:

Importa Please	nt Information	n ig informatior	a carefully.				
Notes	about ma	or chan	ges in S	YCON.r	net V1.2	10.x.)	and
V1.300	.x.x						
Please r major ch	ead these not anges in SYCC	es carefully, N.net.	since they o	ontain im	portant info	rmatior	n about
Overvie	w						
1. Con	cerns all supp	orted Devid	es				
1.1. Nev	v Driver for seri	al/TCP/USE) Interface (Al	l devices)			
2 Con	come DC Car	ls CIFY and	Communica	tion Modu	ILAS COMY		
() I read t	he information						
	not read the info	mation vet					
010101		indicit yet			0		
InstallShield	-		1999		C		
			< <u>B</u> ac	k 📔	Next >		Cancel

5)选择接受授权协议,单击Next,进行下一步安装,如图7所示:

License Agreement		
Please read the following license	agreement carefully.	
HILSCHER SOFTWARE LICENSE #	AGREEMENT	
This document is a legally valid con Systemautomation mbH ("Hilscher")	tract between you and Hilscher Gesel).	lschaft für
Please read through this License A software. By installing the softwar of the provisions of this Agreement	greement carefully before installing an e and using it, whether in whole or in t.	id using the part, you accept all
If you decline to accept these terms Instead, return it to us or the retaile purchase price.	s and conditions, please do not install t r from which you purchased it for a re	he software. fund of the
I accept the terms in the license	agreement	
I do not accept the terms in the	license agreement	
stallShield	(2)
	< Back Next >	Cancel

Page 4of 19

6) 填写用户名、公司名及软件使用者,单击 Next,进行下一步安装,如图 8 所示:

🐻 SYCON.net for netX - InstallShield Wizard	
Customer Information Please enter your information.	14
User Name: Dilscher Organization:	
Hilscher GmbH	
Install this application for: (2) Anyone who uses this computer (all users) Only for <u>m</u> e (Hilscher)	
InstallShield (3 Next > Cancel

图 8

7)选择完整安装,单击Next,进行下一步安装,如图9所示:



Page 5of 19

8) 单击"Install",开始安装,如图 10 所示:

🕏 SYCON.net for netX - InstallShield Wizard 🛛 🛛 🐌	K
Ready to Install the Program The wizard is ready to begin installation.	
Click Install to begin the installation. If you want to review or change any of your installation settings, click Back. Click Cancel to	
exit the wizard.	
InstallShield	
< <u>B</u> ack Install Cancel)

图 10

9) 完成安装, 如图 11 所示:



图 11 Page 6of 19

在软件安装完成后,如果首次打开 SYCON. net,要求设置密码,如果不需要,直接点击"OK"。在以后 打开 "SYCON. net"时,都会要求输入密码,如果没有密码,直接点击"OK"。

至此,完成了配置网关所需的软件安装,包括:

- SYCON. net: 用于网关的参数配置与诊断。
- Ethernet Device Configuration: 设置网关 IP 地址及站名,这些设置需在使用 SYCON. net 软件 前完成。

3 网关配置

3.1 IP 地址设置

网关的默认IP为0.0.0.0,进行通讯前首先要通过Ethernet Device Setup软件手动设置一个IP地址。这样,才能进行下一步通过SYCON.net下载配置文件。

1) 打开Ethernet Device Setup软件, 如图12所示:

着 Ethernet Device	Configuration			
<u>File Options ?</u>				
Devices Online	Find:		next	previous
MAC Address	Device Type	Device Name	IP Address	Protocol
J				
			Search Devices	⊆onfigure ►
		图12		

2) 单击Search Devices按钮,显示已经找到的网关,如图13所示:

🚰 Ethernet Device (Configuration			
<u>File Options ?</u>				
Devices Online	Find:		next	previous
MAC Address	Device Type	Device Name	IP Address	Protocol
00-02-A2-21-C7-48	netTAP 50	netTAP 50 [SN=00020	0.0.0.0	NetIdent
		Searc	h Devices	Configure

- 图13
- 3) 单击Configure按钮,选择Set IP Address,弹出设置IP地址对话框,如图14所示:

💣 Ethernet Devic	e Configuration			
Eile Options ?				
Devices Online	Find:		next	previous
MAC Address	Device Type	Device Name	IP Address	Protocol
00-02-A2-21-C7-48	netTAP 50	netTAP 50 [SN=00020	0.0.0.0	NetIdent
	Configuration for P Address:	00-02-A2-21-C7-48	. 0 . 0	
		Searc	h Devices	<u>C</u> onfigure ▶
		图14		

Page 8of 19

4) 在此对话框中设置网关的临时IP地址,完成后单击0K,如图15所示:

💣 Ethernet Dev	vice (onfiguration					
Eile Options ?							
<u>D</u> evices Online		Find:			next		previous
MAC Address		Device Type	Device Name		IP Address		Protocol
00-02-A2-21-C7-	48	netTAP 50	netTAP 50 [SN=0002	:0	0.0.0.0		NetIdent
	IP Co	nfiguration for	00-02-A2-21-C7-4	8		×	
	IP A	ddress:	192 .	168 .	10 , 10		
			<u></u> K		Cancel		
				<u>5</u> earch	Devices	<u></u>	onfigure
			图15				

5) 此时,网关的IP地址已改为设置的地址,如图16所示;也可再次单击Search Devices按钮进行检查。

💣 Ethernet Device (Configuration			
<u>File Options ?</u>				
Devices Online	Find:		next	previous
MAC Address	Device Type	Device Name	IP Address	Protocol
00-02-A2-21-C7-48	netTAP 50	netTAP 50 [SN=00020	192.168.10.10	NetIdent
			- Denvisore - 1	6
		图 1 0		

图16 Page 9of 19

6) 关闭Ethernet Device Setup软件,完成网关IP地址设置。

3.2 网关参数配置(Modbus RTU转 PROFINET IO)

SYCON.net - [Untitled.spj]	
Eile <u>Vi</u> ew <u>D</u> evice Network Extras <u>H</u> elp	
D ≇ ₽ Q E E S 3 3: 00 5 4; 4; 4;	
netProject 🔺 🗙 netDevice	× *
Project: Untitled	AS-I CAlopen CAlopen CAlopen CompoNet CompoNet CompoNet CherNet/IP CherNet/IP Modbus/TCP PowERLINK Profibus DPV0 ProFibus DPV1 ProFibus DPV1 ProFibus DPV1 SERCOS III Fieldbus (Vendor) DTM Class AS-1 S
N Andow A	
SYCON.net / netDevice /	
Ready	Administrator

1) 打开 SYCON. net 配置软件, 如图 17 所示:

- 图 17
- 2) 在软件界面右侧选择Fieldbus栏,将 "PROFINET IO" "Gateway / Stand-Alone Slave" 文件夹展 开,将NT50图标拖放至界面中间的灰线处,如图18所示:

😽 SYCON.net - [Untitled.spj] *		- 7 🛛
Eile View Device Network Extras Helt		
□ 🛎 🔜 🝳 📇 ☱ 🔕 옷 🌚		
netProject 🔺 🗙	netDevice	× 🔺
Project Unbiled	netTAP[NT 50-XX-XX]<>(#1)	ETX 100 RE/PMS V3.2. × ▲ ETX 100 RE/PMS V3.4.19 ETX 50 RE/PMS V3.1. × ↓ ETX 50 RE/PMS V3.1. × ↓ ETX 50 RE/PMS V3.2. × ↓ ETX 500 RE/PMS V3.2. × ↓ ETX 500 RE/PMS V3.2. × ↓ ETX 500 RE/PMS V3.4.19 UT 500 RE/PMS V3.4.19 UT 500 RE/PMS V3.4.19 UT 500 RE/PMS V3.4.19 UT 100-RE/PMS V3.4.19 UT 100-RE/PMS V3.4.19 UT 100-RE/PMS V3.1. × ETX 500 RE/PMS V3.1. × ETX 500 RE/PMS V3.1. × ETS 50-RE/PMS V3.1. × ET
SVCN net /netheurs /	121	
Ready	Administrator	CAP
roady	Administrator	CAP
	图 18	

3) 双击该图标, 弹出配置对话框, 选择 "netX Driver" 栏中 "TCP Connection"页, 确保 "Enable TCP Conector"前已经打勾(打勾后需重启软件), 如图 19 所示:

Mathematice - Gateway r	netTAP[NT 50-XX-XX]<>(#	1)		
IO Device: N1 Vendor: Hil	í 50-XX-XX Ischer GmbH		Device ID: Vendor ID:	- 0x011E
Navigation area	USB/R5232 Connection TCP Finable TCP Connector (F Select IP Range: IP Range Configuration Disable IP Range IP Address 0 0 0 0 0 Send Timeout: 1000 Reset Timeout: 20000	Connection Kestart of ODM required) V V X Scan Timeout: 10 Use IP Range CCP Port CP Port Soliti M S Keep Alive Timeout: 20 M S	Address Count	Save Save All
			ОК	ancel Apply Help
<₽ 0				
		图 19		

Page 11of 19

4) 单击蓝色加号,添加进行扫描的 IP 地址。如果仅连接了一个网关,设置在 Ethernet Device Setup 软件中设置的网关 IP 地址;更多情况下,连接了多个网关,此时可以设置一个 IP 网段,如图 20 所示,完成后单击"Save"保存。

netDevice - Gateway ı	ietTAP[NT 50-XX-XX]<>(#1)		
IO Device: N Vendor: Hi	r 50-XX-XX Sicher GmbH	Device ID: Vendor ID:	- 0x011E
Navigation area 📃	netX Drive		
 Settings Driver netX Driver Device Assignment Configuration Settings Signal Mapping 	USB/R5232 Connection TCP Connection ✓ Enable TCP Connector (Restart of ODM required) Select IP Range: IP_RANGEO ✓ ↔ Scan Timeout: 100 IP Range Configuration Disable IP Range IP Address ✓ Use IP Range TCP Port 192.168.10.1 – 192.168.10.20: 50111 Send Timeout: 1000 ← ms Keep Alive Timeout: 2000 Reset Timeout: 20000 ← ms	Address Count 20 $\stackrel{\times}{\searrow}$ ms Restore	Save Save All
		OK	Cancel Apply Help
	图 20		

5)选择"Device Assignment"栏,单击Scan 按钮,扫描到网关硬件,如图 21 所示。勾选该网关并单击 Apply 按钮保存。

Vendor: Hil:	scher G	mbH				Vend	dor ID: 0x011	E 📕
Vavigation area 🛛 🗖					Device A	ssignment		
Settings	Scan	progress: 2/2 De	vices (Current device: -)					
netX Driver	Devic	e selection:	suitable only					Scan
Settings		Device	Hardware Ports 0/1/	Slot nu	Serial nu	Driver	Channel Protocol	Access path
SignaMapping		NT 50-RS-EN	Ethernet/Serial/-/-	n/a	20016	netX Driver	Gateway	\192.168.20.
	Ŀ							
	Ŀ							
	Acces	is path:	{B54C8CC7-F333-413	5-8405-6E1	2FC88EE62}\1	92.168.20.250:5011	1\cifX0_Ch2	

- 图 21
- 选择 "Settings" 栏, Port X2 选择 ASCII 协议, Port X3 选择 PROFINET IO Device 协议, 如图 22 所示。选中对应的 Available Firmware, 单击右侧的 Download 按钮, 下载对应的固件。固件 下载完成后, 单击 OK 按钮退出该对话框。

🛃 netDevice - Gateway ı	netTAP[NT 50-XX-XX]<>(#'	D			
IO Device: N Vendor: Hi	T 50-XX-XX ilscher GmbH		Device ID: Vendor ID:	- 0x011E	FDT
Navigation area Settings Criver Device Assignment Configuration → Settings Signal Mapping	General Description: Protocol Combinations Primary network (Port X2): Required gateway: Required license: Available Firmyare: Software class: Software version:	ASCII	ettings Secondary network (Port X3)	PROFINET IO Device	■ Browse Download
	Basic Settings Mapping Cycle time: Network Address Switch Enable: Used by:	10 ms	Mapping mode:	Default Cancel Apply	/ Help
					1

图 22 Page 13of 19

注: 下完固件后,软件中会弹出错误对话框,这是因为下载固件后把原来设置的 IP 地址擦去了,此时需要用 Ethernet Device Setup 软件为网关重新设置 IP。

7) 右击网关图标,选择"Configuration""PROFINET IO Device",弹出对话框,设置网关作为 PROFINET 从站的参数。打上"Enable",在"Name of station"中记住名字,或者修改名字,这 个名字必须与 PLC 那边设置的 NT 50 的名字一致,一般情况下,不需要修改,两边都是默认的情况下,名字是相同的。设置网关输入输出字节数(长度一般设置 16 个串口握手字节加上串口数据 长度),如图 23 所示。设置好之后单击 0K 按钮保存并推出对话框。

RotDevice - PROFINET	IO Device netTAP[NT !	50-RS-EN]<>(#1)			
IO Device: NT Vendor: Hils	50-RS-EN scher GmbH		Device ID: Vendor ID:	0x010f 0x011e	FDT
Navigation area 📃					
Configuration	Interface				<u>^</u>
Signal Configuration	<u>B</u> us startup:	Automatic			
	Watchdog time:	0	ms		
	1/0 data <u>s</u> tatus:	None			
	Ident				
	Vendor <u>I</u> D:	0x0000011E	🔽 <u>E</u> nable		
	<u>D</u> evice ID:	0x0000010F			≣
	De <u>v</u> ice type:				
	<u>O</u> rder ID:				
	Name of station:	nt50enpns			
	<u>T</u> ype of station:	Default.Station.Type			
	Data				
	Input Data Bytes:	128			
	Output Data Bytes:	128			
					>
			ОК	Cancel Apply	Help
		屋りり			11

8) 右击网关图标,选择"Configuration""ASCII",弹出对话框,设置串口参数,如:串口类型、 波特率、奇偶校验等,如图 24 所示。

😽 netDevice - ASCII net	TAP[NT 50-RS-EN]<>(i	¥1)					
IO Device: M Vendor: H	vT 50-RS-EN Hilscher GmbH			Device ID: Vendor ID:	- 0×011E		FDT
Navigation area							
Configuration → Settinos ASCII Parameters	Interface Type: RTS Control: Baudrate: Data bits: Stop bits: Parity:	R5232 ▼ RTS Control Off ▼ 9600 ▼ 1 ▼ None ▼					
				 ок	Cancel	Apply	Help
				 		1467	

图 24

9)选择左侧导航栏的"ASCII Parameters",如图 25 设置。表示网关只接收对方串口设备的数据, 而不发送数据给串口设备,数据是透明传输。对话框中的"Character Delay Time"设置为 100ms, 表示当串口字符间的间隔时间超过 100ms,此时网关认为一帧数据结束。设置好之后,同样单击 OK 按钮保存并退出。



图 25

10) 双击网关(或右击网关,选择"Configuration""Gateway"),弹出对话框,选择"Signal Mapping" 项,进行数据映射,如图 26 所示。ASCII 通讯中的握手数据必须映射给 PROFINET IO 通讯的过程数据。

Window Window Die Halt Strand Mapping Window Die Halt Strand Halt Window Die	netDevice - Gateway	netTAP[NT 50-RS-E	I]<>(#1)					- 6 2
Nergelin es Storig S	Vendor: H	ilscher GmbH					Vendor ID: 0x011E	FD
String In this Christ Detail Magengi String	Navigation area 📃							
a Configuration Setting Setting Setting Fet 12 Signals 4 c Receive Protocol handballer flags UKSIONEDD2 Setting Receive Protocol handballer flags UKSIONEDD2 Setting Receive Protocol handballer flags UKSIONEDD2 Setting Fet 12 Signals Fet	Settings Driver netX Driver Device Assignment	Available Signals	SCII) <-> sta <->		A 8 -	Port X3 (EtherNet/IP) <192.168.20.25>		-
Bynal Megeng Port 22 Synds A Deta type Port 22 Synds A Deta type Port 23 Synds A Deta type Port 24	Configuration Settings	- InDati	a <->		~	48 Bytes Out «Slot 0»		
Sind Application Mandhaller Riggi UKSIONED02 Sind -49 Linghose Birth Receive Protocol Mandhaller Riggi UKSIONED02 Sind -48 Linghose JUTE_0000 Birth Receive Protocol Mandhaller Riggi UKSIONED02 Sind -48 Linghose JUTE_0000 Birth Magned Signals Sind Sind -68 Dirths Ind Six Dis Birth Part X2 (ElemNet/IP) Part X2 (ElemNet/IP) -68 Dirths Ind Six Dis -68 Dirths Ind Six Dis Part X2 (ElemNet/IP) Manual Magnegi Magnegi Dirth Auto Magnegi Dirth CK CK Cancel Apply Het	🛶 Signal Mapping	Port X2	Signals A OutData <>>	Data type	Port X	3 Signals A 48 Bytes In <slot 0=""></slot>	Data type	
Review Byte count of IsData UKSIGNEDD2 Send All briefs.BVTE_0002 BVTE Mapped Signals Except Signals		Send Receive	Application handshake flags InData <-> Protocol handshake flags	UNSIGNED32 UNSIGNED32	Send Send Send	48 InDytes ~48 InDytes.BYTE_0000 ~48 InDytes.BYTE_0001	BYTE_ARRAY_40 D DYTE BYTE	
Mapped Signal: Image: Port X3 (BhamMed/IP) (192,164.30,355) Image: Port X3 (BhamMed/IP) (192,164.30,355) Image: Port X3 (BhamMed/IP) Image: Port X3 (Bh		Receive	Byte count of InData	UNSIGNED32	Send	~48 InBytes.BYTE_0002	BYTE	>
Pert 32 (dSc10) <> Pert 32 (dSc10) <> Outbalk <> Pert 32 (dSc10) Pert 32 (dSc10)		Mapped Signals						
[PatX2[JSOI] [PatX3]Ethewler/P) Manual Mapping: Mon storeds Manual Mapping: Mon storeds OK Cancel		Port X2 (A OutDe InDet	SCII) <-> #ta <-> a <->			Port X3 (EtherNet/IP) <192.168.20.25> 48 Bytes In <slot 0=""> 48 Bytes Out <slot 0=""></slot></slot>		
Manual Mapping: <u>Mon storeds</u> <u>Bernove link</u> <u>Auto Mapping: Off</u> • OK <u>Cancel Apply Hel</u>		Port X2 (ASCII)			Port X3 (EtherNet/IP)		
Manual Mapping: <u>Hor sprints</u> <u>Bernove link</u> Auto Mapping: <u>Off</u> • OK <u>Cancel Apply</u> Hel								
OK Cancel Apply Hel			Manual Map	ping: Map signals	Remove link	Auto Mapping: Off	×	
							OK Cancel Apply	Help
	0/							

图 26

11) 数据映射的一般规则是总是把 Receive 的数据映射至 Send 的数据, Receive 的方向是网关上某一个接口接收数据, Send 的方向是网关上另一个接口发送数据。

可以通过 Ctrl 键或 Shift 键选中多个 Receive 数据。当把 Receive 的字节型数据映射给 Send 的 字型数据时,必须选中两个字节的 Receive 数据;当把 Receive 的字型数据映射给 Send 的字节型数据 时,软件会自动将一个字的 Receive 数据映射至两个字节的 Send 数据。

在 ASCII 通讯中,握手数据都是双字型,即四个字节。 完成数据映射见图 27。

Nordation area Signal Mapping	Vendor: I	Hischer GmbH					Vendor ID:	0×011E		
Setting In Christian Device Assigned Setting Setting In Carlot Setting In Carlot Setting	rigation area 🗧									
Interference Interference <td< th=""><th>ettings</th><th>Available Signals</th><th></th><th></th><th></th><th></th><th></th><th></th><th></th></td<>	ettings	Available Signals								
Device Assignment Settings Settin	netX Driver	🖃 🔚 Port X2 ((ASCII) <->		^ 6	Port X3 (EtherNet/IP) <192.168.20.25>			
Softward in the second sec	Device Assignment	- CutD	Data <->			- 10 B)	tes In <slot 0=""></slot>			
Dear Name Provide and the second and the s	onfiguration Settings	- InDa	ka <->			- 💳 48 B	tes Out «Slot 0»			
Income ECONS (Second Unit Second	Signal Mapping	Port 32	Signals A	Data type	A P	Port X3	Signals A	Data type		
Receive — Picka LRSI24EB 0002 UKICAED0 ARRAY_92 Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 BTTE Receive — 40 CAB/res.VTE_0005 — 40 CAB/res.VTE_0005 — 40 CAB/res.VTE_0005 = 40 CAB/res.VTE_0005			InData <->				48 Bytes Out <slot 0=""></slot>			
Implement		Receive	InData	UNSIGNED8_ARRAY_512	R	teceive	48 OutBytes	BYTE_ARRAY_48		
Income		Receive	~InData UNSIGNED8_0033	LINSIGNEDB	R	leceive	~40 Outpytes.0YTE_0004	BYTE		
Image: State State Image: State		Receive	~InData.UNSIGNED8_0034	UNSIGNED8	V R	leceive	~48 OutBytes.BYTE_0006	BYTE		
Meged Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel Image: Systel		<			2 3	6				
Event 32 (ASCID) <> Event 32 (ASCID) <> Event 32 (Blownhed/(#) < 142.148.20.255 Event 33 (Blownhed/(#) < 142.148.20.255 Event 34 (Blownhed/(#) < 140.148.20.255 Event 34 (Blownhed/(#) < 140.20.255 Event 34 (Blownhed/(#) < 140.148.20.255 Event 34 (Blownhe		Mapped Signals								
Constraints Constrain		Det V2/	(ASCIII) <>>		Als	Dest V3 /	EthanMat/00) <102 168 20 25 >			
Points Out CStr.D> P		- Out	Data c->			40.0	ites In (Sot 0)			
Part 24 Schll Part 24 Schll Part 24 Schll Part 24 Schll Part 24 Schll Part 24 Schlleher Schller Part 24 Schlleher Schller Part 24 Schlleher Schller Part 24 Schller Part 24 Schller		1000	4a (.)			48 8	ites Out a Slot 0 h			
IP pit X2 (\$E01) Pat X2 (\$E01) Ind Date sty / Action handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs Ind Date sty / Rotado handhalter Rigs Ind Bat Sty / Rotado handhalter Rigs					×					
Outdate sc// Acceleration hand table flags 648 Bress Our date str/- 40 outdate str/16 2000 - 46 Outdate st		Port X2 (ASCI	11)			Port X3 (E	fherNet/IP)			
Infolue ->? Introduction/withinker Bigs 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue ->? Introduction Control 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue ->? Introduction Control 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0001 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0001 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0001 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0001 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0001 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue ->? Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0000 Infolue -> CState 0.7~40 Holyses BYTE_0000 40 Bytes In CState 0.7~40 Holyses BYTE_0000 In		DutData <>/	Application handshake flags		÷	48 Bytes 0	ut <slot +="" 0<="" 0x7~48="" byte_0000="" outbytes="" td="" ~48=""><td>utBytes.BYTE_0003</td><td></td></slot>	utBytes.BYTE_0003		
Include collaption and/or include 40 bytes in CSU D/*40 indigets D/*1_0004 40 bytes in CSU D/*40 indigets D/*1_0004 Include collaption and/or include D/*10 bytes D/*		InData <->/ Pt	hotocol handshake flags		48 Bytes In <slot 0=""> /*48 InBytes.BYTE_0000 - ~48 InBytes.BYTE_0003</slot>					
Borne of Zimon needen in can of learning learning Borne of Zimon All Magneting Borne of Zimon Addo Magneting Difference Cimon All Magneting Borne of Zimon Addo Magneting Difference Cimon All Magneting Borne of Zimon Addo Magneting Difference Cimon All Magneting Difference Cimon All Magneting Difference Cimon All Magneting Difference		InData <>/By	Ite count of InDiata		- 7	48 Bytes In 49 Bytes In	CSI0EUD / "48 InBytes BYTE_0000 - "48 InBytes BYTE_0000 - "48 InBytes BYTE_0000 - "48 InBytes BYTE_0000 - "48 InBytes BYTE	HELBYTE_0007		
In Criste -// The Data UNISIGNE DB, 0000		InData co/En	nor number in case of transmit error		- 2	48 Bytes In	<pre>slot 0.7 48 inButes BYTE_0000 - 48 inBut slot 0.7 48 inButes BYTE_0012 - '48 inBut</pre>	es.BYTE 0015		
Ind Vale 48 Byter In <584 00 /**8 Highers EYTE_0077		InData <>/*1	nData.UNSIGNED8_0000		-	48 Bytes In	<slot 0=""> /~48 InBytes.BYTE_0016</slot>			
In Dobas <>/-Thobas UNSIGNED 8, 0002 48 Bytes In CSBs D /* 26 Highes DYTE_0018 In Dobas <>/-Thobas UNSIGNED 80, 0003 48 Bytes In CSBs D /* 26 Highes DYTE_0001 In Dobas <>/-Thobas UNSIGNED 8, 0004 48 Bytes In CSBs D /* 26 Highes DYTE_0001 In Dobas <>/-Thobas UNSIGNED 8, 0005 48 Bytes In CSBs D /* 26 Highes DYTE_0001 In Dobas <>/-Thobas UNSIGNED 8, 0006 48 Bytes In CSBs D /* 26 Highes DYTE_0002 In Dobas <>/-Thobas UNSIGNED 8, 0006 48 Bytes In CSBs D /* 26 Highes DYTE_0002 In Dobas <>/-Thobas UNSIGNED 8, 0006 48 Bytes In CSBs D /* 26 Highes DYTE_0002		InData <>/~1	nData.UNSIGNED8_0001			48 Bytes In	<pre>slot 0> /~48 InBytes.BYTE_0017</pre>			
In Dobas <>/The Dobas UNSIGNEE DB_0003 48 Bytes In <584 00 /T*8 Indytes BYTE_0079		InData (-)/"In	InData UNSIGNED8_0002			48 Bytes In	slot 0> /~48 InBytes BYTE_0018			
In Colles of "Fillowa (Northanke, DB, 2004 In Colles of "Fillowa (Northanke, DB, 2005 In Colles of College (Northanke, DB, 2005 In Colles of College (Northanke, DB, 2005 In Colles of College (Northanke, DB, 2005 In Colleg		InData (-)/"In	InData.UNSIGNED8_0003		-	48 Bytes Ir	Slot 0: /*48 InBytes BYTE_0019			
In Data do 7 Hib Ata UNESTORE D0,0005 All Special Control Con		InData <>/*is	InData UNSIGNED8_0004			48 Bytes Ir	Slot 0: /*48 InBytes BYTE_0020			
Manual Mapping: Kito sonis Bemove link. Auto Mapping: Off 💌		InData co/Th	IND ALL UNSIGNED 8_0006			48 Bytes Ir	CSI0EUS7 48 InBytes BYTE_0021			
Manual Mapping: Koo storelis Bemove linik Auto Mapping: Off		Juneara cov	modia.ongione.oo.oo		-	40 bytes ii	TOR OF HE HEYELETTE_MAL			
			Manual M	tapping: Map signals	Bemove link		Auto Mapping: Off			

图 27

Page 16of 19

12)至此,完成了网关的所有配置。右击网关,选择 Download 将配置文件下载到网关中。根据所下载 的固件和配置文件,网关就可以根据这些参数开始工作。

3 网关握手原理

当 NT50 网关进行 ASCII 通讯时, PROFINET 主站必须与网关进行握手,握手原理请参考另外的手册《赫 优讯网关 ASCII 通讯握手说明》。

4 网关诊断

可以通过网关上的 SYS LED 灯及 APL LED 灯对网关状态进行快速判断,如下表所示:

LED	Color	State	Meaning
SYS	Duo LED ye	llow/green	
1	🥥 (green)	On	Operating System running. further diagnostic see APL LED.
) (yel- low)	On	This state may occur only briefly. If this LED stays permanently yellow, then a hardware failure is possible.
		Flashing yellow/green	Error state! Boot loader active.
	(off)	Off	Power supply for the device is missing or hardware failure.
LED	Color	State	Meaning
APL	Duo LED r	ed/green	
2	(green)	On	The communication on X2 and X3 is in cyclic data exchange and the gateway function is executed
	(green)	Blinking with 2 s off, 0,5 s on	netTAP is initialized, but the communication on X2 is not in cyclic data exchange.
	(green)	Blinking with 2 s off, 0,5 s on, 0,5 s off, 0,5 s on,	netTAP is initialized, but the communication on X3 is not in cyclic data exchange.
	(red)	Blinking with 2 s off, 0,5 s on	netTAP is initialized, but the configuration for the communication protocol on X2 is missing or has an error
	(red)	Blinking with 2 s off, 0,5 s on, 0,5 s off, 0,5 s on,	netTAP is initialized, but the configuration for the communication protocol on X3 is missing or has an error
	(red)	On	netTAP has detected an error during the ini- tialization: Missing configuration, error in con- figuration or internal error

Page 17of 19

5 西门子 PLC 中 PROFINET 网络配置

1) 假设 NT50-RS-EN 网关已完成配置(详细配置步骤参见网关操作指南),并且对于 PROFINET 通讯参数设置如下,如图 28 所示。网关采用默认站名称 nt50enpns, 且输入输出长度均设置为 32 字节。

🕷 netDevice - PROFINET	10 Device netTAP[NT	50-RS-EN]<>(#2)					- 6 🛛
10 Device: N Vendor: H	T 50-RS-EN lischer GmbH				Device ID: Vendor ID:	0x010f 0x011e	PFDT
Navigation area							
Configuration	Interface						
Signal Configuration	Bus startup:	Automatic 💌					
	Watchdog time:	0 m	1				
	1/0 data status:	None					
	Ident						
	Vendor ID:	0x0000011E	🔲 Enable				
	Device ID:	0x0000010F					
	Degice type:						
	Order ID:						
	Name of station:	nt50enpns					
	Type of station:	Default Station. Type					
	Data						
	Input Data Bytes:	32					
	Output Data Bytes:	32					
		_	Default				
					ОК	Cancel Apply	Help
40-							10
				121 00			

图 28

2) 打开 STEP7 软件,完成 PLC 的硬件组态,如图 29 所示。需要注意的是,CP343-1 模块的 I 地址和 Q 地址的首地址,均为 288。

fW Config - [SIMATIC 300((1) (配置) cp343]							
結点(12) 編編(12) 類入(12) 円	c 視图(Y) 选项(Q) 窗口(W) 号	動田						-
🛎 🐂 🦉 🐘 🚳 🛯 🐚	🖻 🛍 🋍 🗓 🗖 🖏 Ki	?						
Initial 1 2 2 0 3 0 4 2 X1 P/R X1 P/R 3 4 5 7 6 7 3 9 1 10	U 3152 DP			Ethernet(1). PROFINE	-10-System (100)		BENUE: Image: Control of C
(0) UR	1728	(Ritte	MPIHEtr	114814	0.4614	2756		
	118.3	BUTT	THE FEEL	176346	4764	LETT		
CPU 315-2 DP	6ES7 315-2AG10-0AB0	V2.0	2	2047*				
CP 343-1	66K7 343-1EX30-0XE0	¥2.2	3	2883	0288303		_	
PMP1				1020"				
M M H Z			_	1019	-		_	
				-				
		-	_	-				
								SIMATIC S7、M7以及 C7(分布式机架所 用 PROFINIS OF 具体
								10.110.0000.000
1 以莊取帮助。								
					121	20		

Page 18of 19

3) 将 NT50-RS-EN 网关的 PROFINET 设备描述文件导入到 STEP7 软件中。导入后可在图 30 中右侧的树型文件夹中找到 NT50 网关。

HW Config - [SIMATIC 300(1))(配置)cp343] 湖岡の 建築の 第日の 新設	н							
		D .							2.0
DUR 1 2 0 3 0 4 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 3 0 5 0 0 0 10 10	3152 DP			Ethernet(1	<u>} PROFINET</u>	<u>40 System (100)</u>		EXUP: n Comparison of the second s	
								Network Lomponents Sensors Switching devices	
<u>新</u> 机块	订货号	图件	MPI 地址	1地址	0.地址	往释	1	SIMATIC 300 SIMATIC 400	
1 2 CPU 315-2 DP	GES7 315-2AG10-0AB0	V2.0	2				_	SIMATIC PC Based Control 300/400 SIMATIC PC Station	
X2 DP 3				2047*			_		
4 CP 343-1 X1 CP 343-1 X1 P WD 1 X1 P WD 2 5 6 7 8 9 	66K7 343-1EX30-0XE0	V2.2	3	2883 1018" 1020" 1079"	288303				
10 11							=	SIMATIC S7、M7 以及 C7 (分布式和集新 用 PROFIBUS-OP 从站	ŧţ
按下 F1 以获取帮助。									Chg
					图:	30			

4) 将 NT50 网关组态到 PROFINET 网络中,并且插入 32 字节的输入和输出模块,如下图 31 所示。

* *	- B 🗞 🎒 🛙	b 🗈 🛛	h 🛍 🛛 🖁	D 🗖 🐮 🕅					
		011 946 9	P.D.				^	查找(E): 配置文件:标准	nt
	2 11 3 4 21 X1 P1 R X1 P2 R 5 6 7 9 10	CP 343-1 CP 343-1 CP 343-1 M C 1 M C 2	DP			Elterme(1) PROFINET IO System (100)		PROFIBUS DP PROFIBUS PA PROFIBUS PA PROFIBUS PA SIMATIC 300 SIMATIC 400 SIMATIC PC Station	400
							×		
	(1) n/50enpns	[17#8]	14614	0.4814	(20051414 :	(1756		-	
9 2	(1) ri50erpns 現決 nf50enpns	订货号	1地址	Q.地址	诊断地址: 1017*	1216	»×	-	
	(1) n/50enpns RLR n/50enpns /AVJ0	订货号	一地址	口地址	诊断地址: 1017* 1022*	12.16	, ×	E	
	(1) n/50enpns RBLR NHO Por 1	订货号	1地址	口地址	诊断地址: 1017* 1022* 1021*	1219	, ×	-	
	(1) n/50enpns MBAR n/50enpns AV-/0 Post 1 32 Byte Input	订货号	I地址 031	Q H&Mz	诊断地址: 1017* 1022* 1021*	12.16	×	6	
	(1) n/50enpns REA: NY-10 Por 7 32 Byte Input 32 Byte Output	(기 2 년 등	I 地址 031	Q H&址 031	诊断地址: 1017* 1022* 1021*	LEN#	^	-	
	(1) n/50enpns #81;t n/50enpns Powr 0 Powr 1 32 Byte Input 32 Byte Output	订货号	1地址 031	0 H&Nz	诊断地址: 1017* 1022* 1021*	11.16	×		
	(1) n/50enpns #81& nr50enpns PW-ID Post 1 32 Byte Input 32 Byte Output	订货号	1地址 031	Q 地址 031	诊断地址: 1017* 1022* 1021*	11#	×	-	
	(1) ntSDerpris Bilitik nutSDerpris AW-10 Abst 1 22 Byte Input 32 Byte Output		1)地址 031	031	诊断地址: 1017* 1022* 1021*	11%	×		
	(1) ntSDerpris atSDerpris atSDerpris AN-ID Avr.ID Azer I 32 Byte Truput 32 Byte Output		1 地址 031	0 Hate 031	诊断地址: 1917* 1022* 1021*		×	6	
	(1) rt50erpns Blub Art50erpns AN40 Por 1 32 Byte Input 32 Byte Input 32 Byte Output	· 订货号	1 地址 031	031	诊断持续量: 1017* 1022* 1021*	ίΙ:#	×		
	(1) n50enpns etite nst0enpns Avr47 Avr47 Avr47 22 Eyte Input 32 Eyte Output	- 订货号 	118址 031	0 H812	诊断地址: 1017* 1022* 1021*	1216	×	6	
	(1) rt50erpris Bilžk Art50erpris Arki0 Arki0 Arki1 22 Byte Fout 32 Byte Output	· 订货号 · · · · · · · · · · · · · · · · · · ·	118址 031	0 Ht 12	诊断传输量: 1917* 1022* 1021* 1021*	ίΣιθ	×		
	(1) ri50erpns atta atta att50erpns Atta att50erpns Atta Atta Atta Atta att50erpns Atta Atta Atta att50erpns Atta Atta att50erpns Atta Atta att50erpns Atta Atta att50erpns Atta att50erpns Atta att50erpns Atta att50erpns Atta att50erpns Atta atta	· 订货号 · · · · · · · · · · · · · · · · · · ·	11地址 031	0 Hate 031	诊断H他址: 1017* 1022* 1021*				
	(1) nt50erpns #BLR at50erpns AN-10 Av-11 32 Byte Input 32 Byte Output	· 订货号 · · · · · · · · · · · · · · · · · · ·	118址 031	0 Helde	诊断地址: 1017* 1022* 1021*	ίΣιθ 	×	SIMATIC 57, M7 ULB C7 (59 MIXED	所
	(1) nt50erpns #BLR at50erpns AN-10 Av-11 32 Byte Input 32 Byte Output	· 订货号 · · · · · · · · · · · · · · · · · · ·	118址 031	0 Helde	诊断地址: 1017* 1022* 1021*	ίΣιθ 	×	SIMATIC 57, M7 ULB C7 (5) #EXTER	19

图 31

5) 需要通过握手程序来实现通讯的实现,具体的握手程序原理请参考另外的手册《赫优讯网关 ASCII 通讯握手说明》。

联系我们

广州虹科电子科技有限公司 Hongke Technology Co., Ltd www.hkaco.com 广州市黄埔区科学大道 99 号科汇金谷三街 2 号 701 室 邮编 510663

工业通讯事业部

事业部网站: <u>www.hongconsys.com</u> 微信公众号: 工业通讯 产品及方案:

- ≻ CAN 卡
- ▶ 通讯协议代码/网关/板卡(CO,ECAT,DP,PN,DN,EIP,Modbus,CC,IO-Link等)
- > TSN 时间敏感网络开发方案及应用方案
- ▶ INtime 实时操作系统(提升 windows 实时性)
- ➢ PLC/软 PLC 开发方案

华南区

谢晓锋 工业通讯事业部部长 电话/微信: 13660244187 QQ: 2916592843 邮箱: xxf@hkaco.com

华东区

许卫兵 技术销售工程师电话/微信: 15900933547QQ: 2029912093邮箱: xwb@hkaco.com

华北区

郭泽明 技术销售工程师 电话/微信: 18922242268 QQ: 1341746794 邮箱: guo.zeming@hkaco.com









