

# BECKHOFF

## CX7000的使用总结

- 倍福中国



1. CX7000文件系统
2. CX7000的文件的拷贝方式
3. CX7051的CANopen虚拟子站
4. CX7000的NTP对时

Technical data	CX7000
Processor	ARM Cortex™ M7, 480 MHz
Number of cores	1
Flash memory	512 MB microSD (optionally 1 GB, 2 GB, 4 GB or 8 GB)
Main memory	32 MB SDR (internal, non-extendable)
Number of inputs	8 multifunction inputs (24 V DC)
Number of outputs	4 multifunction outputs (24 V DC, 0.5 A, 1-wire technique)
NOVRAM	4 kB
Interfaces	1 x RJ45 10/100 Mbit/s, 1x USB (max 12 Mbit/s, max 100 mA)
Bus interface	–
Data transfer rate	–
Diagnostic LED	1 x TC Status, 1 x WD LED, 1 x ERR LED
Clock	internal, capacitor-buffered real-time clock for time and date (memory > 21 days)
Operating system	TC/RTOS
Control software	TwinCAT 3 Runtime (XAR)
Power supply	24 V <sub>DC</sub> (-15 %/+20 %)
Max. power consumption	< 2 W (max. 12 W with E-bus/K-bus)
TwinCAT 3 functions included	TC1000 TwinCAT 3 ADS, TC1100 TwinCAT 3 I/O, TC1200 TwinCAT 3 PLC, TF4100 TwinCAT 3 Controller Toolbox, TF4110 TwinCAT 3 Temperature Controller, TF6255 TwinCAT 3 Modbus RTU, TF6340 TwinCAT 3 Serial Communication, TF6701 TwinCAT 3 IoT Communication (MQTT), TF6730 TwinCAT 3 IoT Communicator

1. 原始的image

名称	修改日期	类型	大小
bin	2023/11/4 15:22	文件夹	
boot	2023/11/4 15:22	文件夹	
www	2023/11/4 15:22	文件夹	
CX7_PreloaderUpdate.bin	2023/10/20 15:54	BIN 文件	49 KB
CX7000Loader.bin	2023/10/20 15:54	BIN 文件	1,104 KB
IN-0900-0020-00-1-2023-30-0.9.114606.txt	2023/10/20 15:54	文本文档	13 KB

2.启动以后的image文件

名称	修改日期	类型	大小
bin	2023/11/23 16:19	文件夹	
boot	2023/11/23 16:19	文件夹	
etc	2023/11/23 16:19	文件夹	
Hard Disk	2023/11/23 7:25	文件夹	
media	2023/11/23 7:25	文件夹	
TwinCAT	2023/11/23 16:19	文件夹	
usr	2098/1/1 0:00	文件夹	
www	2023/11/23 16:19	文件夹	
CX7_PreloaderUpdate.bin	2023/10/20 15:54	BIN 文件	49 KB
CX7000Loader.bin	2023/10/20 15:54	BIN 文件	1,104 KB
IN-0900-0020-00-1-2023-30-0.9.1146...	2023/10/20 15:54	文本文档	13 KB
licenses.zip	2023/11/23 7:25	ZIP 压缩文件	40 KB

## 1.Etc文件夹：

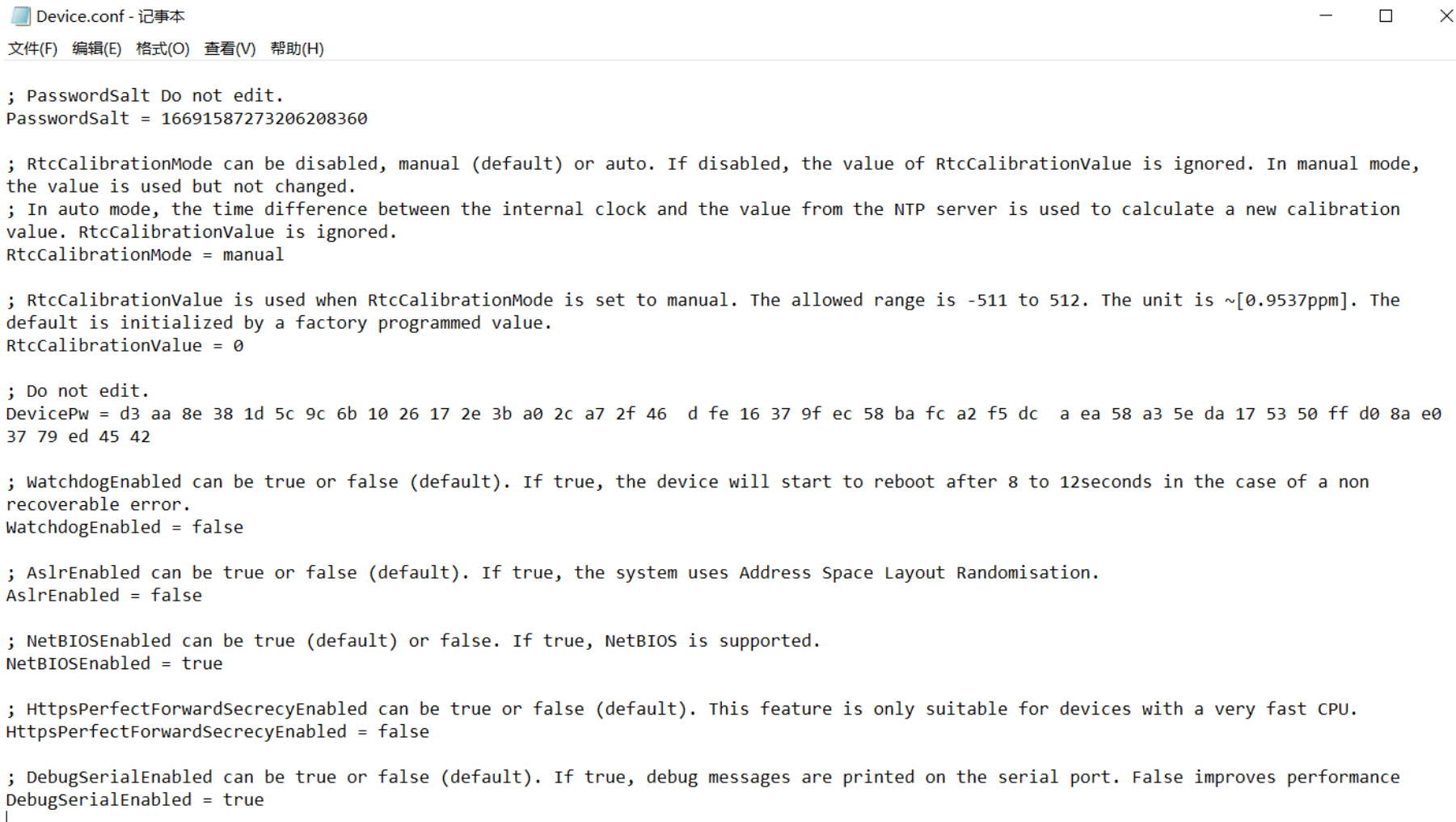
名称	修改日期	类型	大小
Boot.conf	2023/11/23 16:11	CONF 文件	5 KB
Device.conf	2023/11/23 16:11	CONF 文件	2 KB

Boot.conf文件中可以设置IP地址、控制器名称、时区等。

名称	修改日期	类型	大小
bin	2023/11/23 16:19	文件夹	
boot	2023/11/23 16:19	文件夹	
etc	2023/11/23 16:19	文件夹	
Hard Disk	2023/11/23 7:25	文件夹	
media	2023/11/23 7:25	文件夹	
TwinCAT	2023/11/23 16:19	文件夹	
usr	2098/1/1 0:00	文件夹	
www	2023/11/23 16:19	文件夹	
CX7_PreloadUpdate.bin	2023/10/20 15:54	BIN 文件	49 KB
CX7000Loader.bin	2023/10/20 15:54	BIN 文件	1,104 KB
IN-0900-0020-00-1-2023-30-0.9.1146...	2023/10/20 15:54	文本文件	13 KB
licenses.zip	2023/11/23 7:25	ZIP 压缩文件	40 KB

```
Boot.conf
1 ; This is the CX7000 boot configuration file. It is highly recommend to set all network
  settings within TwinCAT XAE or the website of the device and not to edit this file by
  hand.
2 ; Comments can be added in lines beginning with a semicolon. However all comments and
  non supported settings get lost once this file is updated.
3 ; Lines should not exceed 256 characters and all relevant settings should be within
  1000 lines.
4 ; If values are not set, the wrong format is used, or if the file is missing, the
  device will start with the default values.
5
6 ; Devicename can be a string up to 63 ASCII characters. Permitted chars are 'a'-'z',
  'A'-'Z', '0'-'9' and '-'. The netbios name is derived from the first 15 characters.
7 ; If the devicename has the four char prefix 'BTN-', the devicename will be
  automatically adjusted to have the eight char BTN of the current device as suffix.
  Devicename = BTN-000f19zm
8
9
10 ; DhcpEnabled on Interface 0 can be true (default) or false.
11 0:DhcpEnabled = false
12
13 ; IPv4 address on Interface 0 in dot decimal format. Only used if DhcpEnabled is false.
14 0:IPv4 = 169.254.117.51
15
16 ; AutoIPv6Enabled on Interface 0 can be true (default) or false. If true, a link local
  IPv6 address is derived from the MAC.
17 0:AutoIPv6Enabled = true
18
19 ; IPv6 address on Interface 0 in colon hexadecimal. Short variants beginning with two
  colons are not supported. Only used when AutoIPv6Enabled is false.
20 0:IPv6 = FE80:0000:0000:0000:0201:05FF:FE71:3374
21
22 ; Netmask on Interface 0 in dot decimal format. Only used if DhcpEnabled is false or
  the DHCP resolve failed.
23 0:Netmask = 255.255.0.0
24
25 ; Gateway IPv4 address on Interface 0 in dot decimal format. Only used if DhcpEnabled
  is false or the DHCP resolve failed.
26 0:Gateway = 0.0.0.0
27
28 ; DhcpEnabled on Interface 1 can be true (default) or false.
29 1:DhcpEnabled = true
30
```

## 2.设备配置



```
; PasswordSalt Do not edit.
PasswordSalt = 16691587273206208360

; RtcCalibrationMode can be disabled, manual (default) or auto. If disabled, the value of RtcCalibrationValue is ignored. In manual mode,
the value is used but not changed.
; In auto mode, the time difference between the internal clock and the value from the NTP server is used to calculate a new calibration
value. RtcCalibrationValue is ignored.
RtcCalibrationMode = manual

; RtcCalibrationValue is used when RtcCalibrationMode is set to manual. The allowed range is -511 to 512. The unit is ~[0.9537ppm]. The
default is initialized by a factory programmed value.
RtcCalibrationValue = 0

; Do not edit.
DevicePw = d3 aa 8e 38 1d 5c 9c 6b 10 26 17 2e 3b a0 2c a7 2f 46 d fe 16 37 9f ec 58 ba fc a2 f5 dc a ea 58 a3 5e da 17 53 50 ff d0 8a e0
37 79 ed 45 42

; WatchdogEnabled can be true or false (default). If true, the device will start to reboot after 8 to 12seconds in the case of a non
recoverable error.
WatchdogEnabled = false

; AslrEnabled can be true or false (default). If true, the system uses Address Space Layout Randomisation.
AslrEnabled = false

; NetBIOSEnabled can be true (default) or false. If true, NetBIOS is supported.
NetBIOSEnabled = true

; HttpsPerfectForwardSecrecyEnabled can be true or false (default). This feature is only suitable for devices with a very fast CPU.
HttpsPerfectForwardSecrecyEnabled = false

; DebugSerialEnabled can be true or false (default). If true, debug messages are printed on the serial port. False improves performance
DebugSerialEnabled = true
|
```

## 3.NetID和IP地址的修改

BECKHOFF Device Manager

Device

Hardware

Software

**TwinCAT**

Security

Status

Connectivity

**Connectivity** ☒ ☐

System Id	3BBAA93D-B0FF-283C-F5FE-964078B922E4
AMS Net Id	<input type="text" value="115.113.51.116.1.1"/>

**TwinCAT Routes** ☐

#1 BACN-XIAOJUNFAN.beckhoff.com

AMS Net ID	192.168.20.22.1.1
Transport Type	TCP_IP
Address	169.254.27.251
Connection Timeout (ms)	60000
Flags	Static, IP Address

**Add TwinCAT Route** ☒ ☐

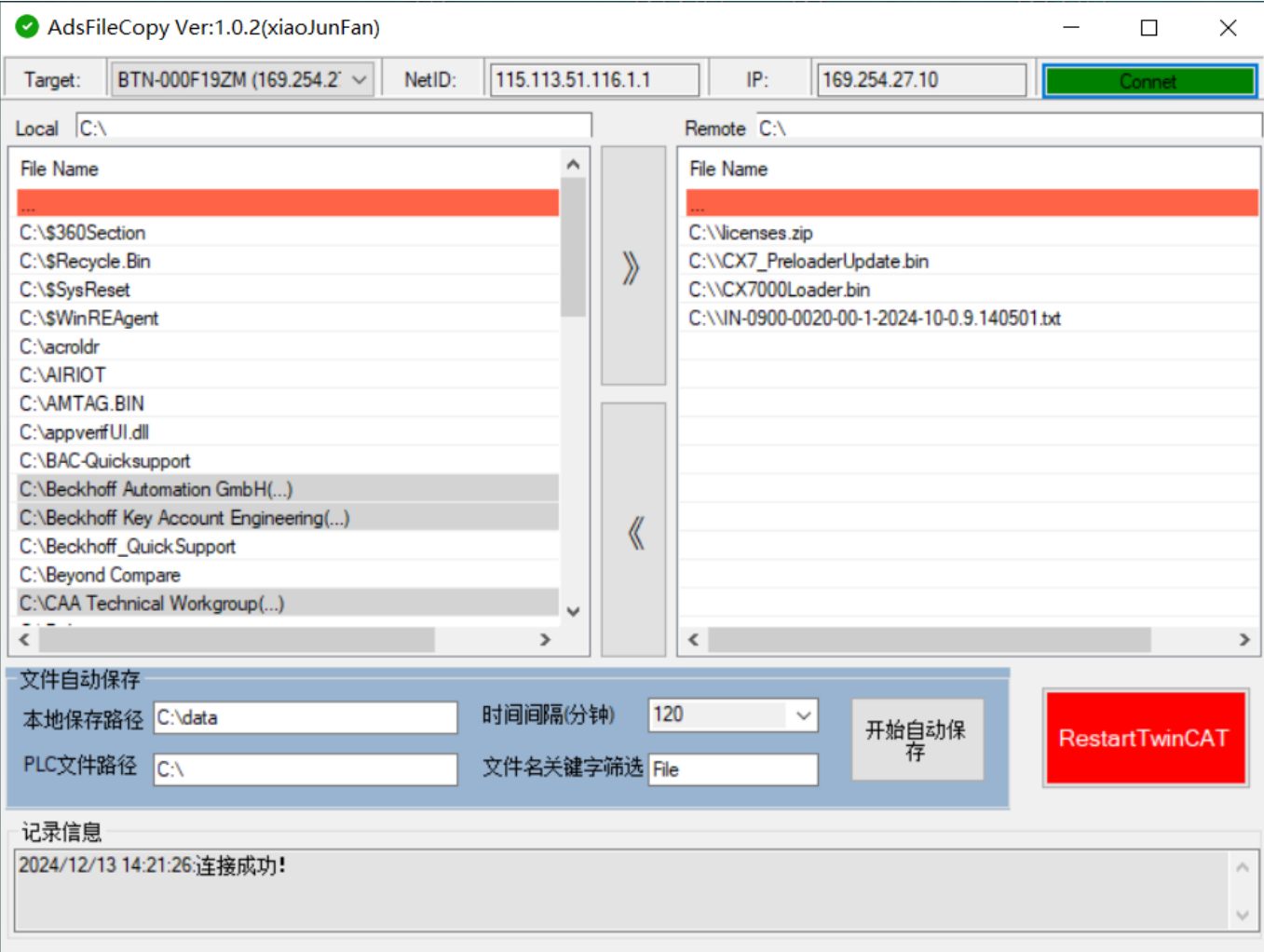
Route Name	<input type="text"/>
AMS Net ID	<input type="text"/>
Transport Type	<input type="text" value="TCP_IP"/> ▼
Address	<input type="text"/> <input checked="" type="radio"/> Host Name <input type="radio"/> IP Address



# CX7000的文件的拷贝方式

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## 1.通过ADS实现文件的拷贝（箭头按钮）、删除（Del键）



对于文件的路径说明  
在CX7000的控制器中，路径可以 \ 或者C:\  
对于USB接口接入的设备路径是D:\

由于有部分文件设置了只读属性，所以在界面中目录下的时候只显示部分文件

目前支持WinCE window7 RTOS TCBS

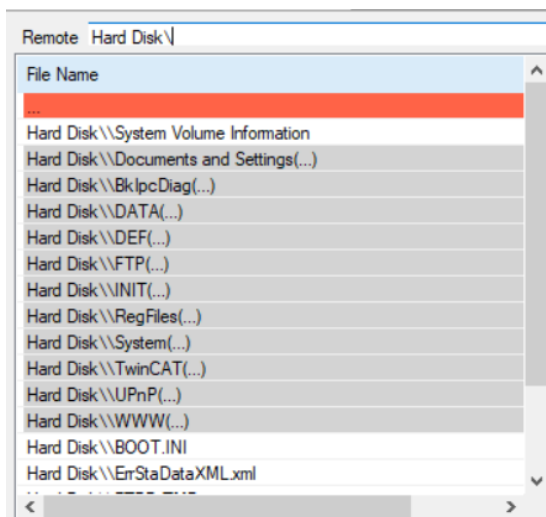
名称	修改日期	类型	大小
名称	修改日期	类型	大小
bin	2023/11/23 16:19	文件夹	
boot	2023/11/23 16:19	文件夹	
etc	2023/11/23 16:19	文件夹	
Hard Disk	2023/11/23 7:25	文件夹	
media	2023/11/23 7:25	文件夹	
TwinCAT	2023/11/23 16:19	文件夹	
usr	2098/1/1 0:00	文件夹	
www	2023/11/23 16:19	文件夹	
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IN-0900-0020-00-1-2023-30-0.9.1146...	2023/10/20 15:54	文本文档	13 KB
licenses.zip	2023/11/23 7:25	ZIP 压缩文件	40 KB



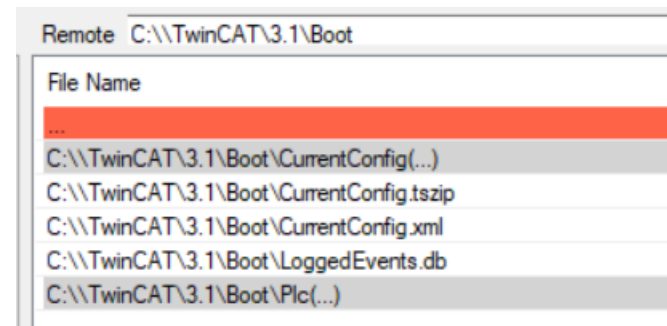
# CX7000的文件的拷贝方式

BECKHOFF

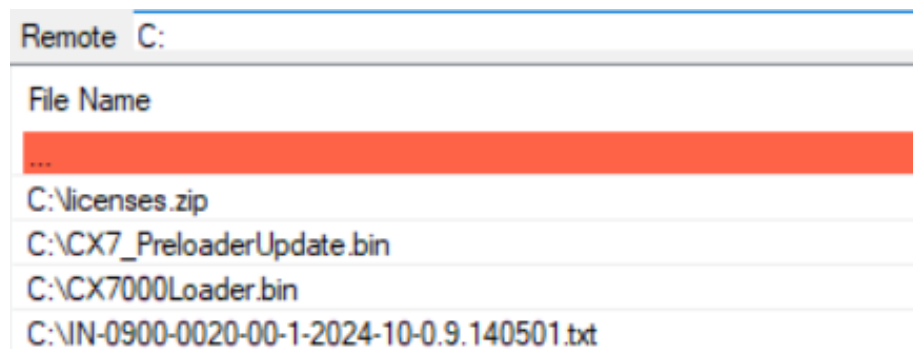
## WinCE



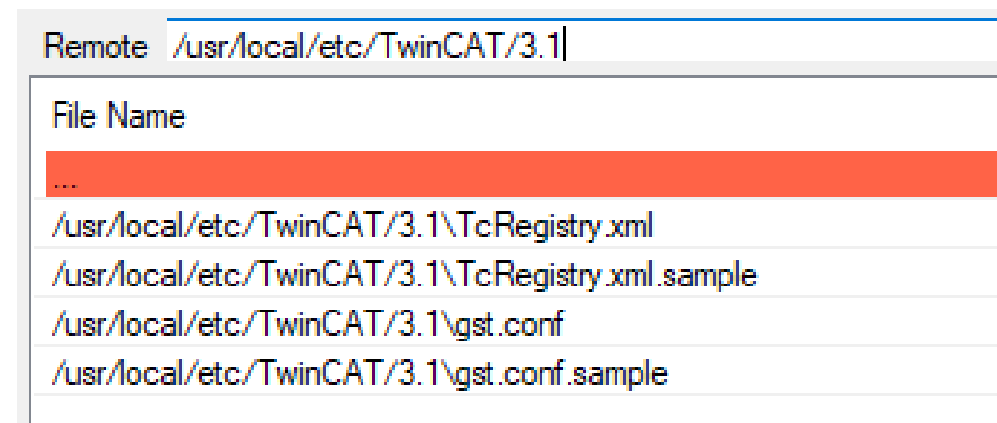
## Window7



## RTOS



## TCBSD



## 2.使用PLC代码实现文件的拷贝到USB

PRG\_FileFindEnumList [Online] MAIN [Online] FB\_FileCopy [Online]

TcSample\_FileCopy.FileCopyExample.MAIN

表达式	类型	值	准备值	地址
fbFileCopy	FB_FileCopy			
fbFindFile	FB_EnumFindFil...			
sNetId	T_AmsNetId	"		
sPathName	T_MaxString	"		
eCmd	E_ENUMCMDTY...	eEnumCmd_...		
bExecute	BOOL	FALSE		
tTimeout	TIME	T#5s		
bBusy	BOOL	FALSE		
bError	BOOL	FALSE		
nErrID	UDINT	0		
bEOE	BOOL	FALSE		
stFindFile	ST_FindFileEntry			
bCopy	BOOL	TRUE		

```
1 fbFileCopy(  
2   bExecute TRUE := bCopy TRUE,  
3   sSrcNetId "" := "",  
4   sSrcPathName 'c:\temp\se' := 'c:\temp\settings.txt',  
5   sDestNetId "" := "",  
6   sDestPathName 'd:\temp\Ne' := 'd:\temp\Newsettings001.txt', tTimeOut T#5s := T#5s  
7 )  
8 PRG_FileFindEnumList(); RETURN
```

Remote C:\temp

File Name

...

C:\temp\settings.txt

AdsFileCopy Ver:1.0.2(xiaoJunFan)

Target: BTN-000F19ZM (169.254.2) NetID: 115.113.51.116.1.1 IP: 169.254.27.10 Connect

Local C:\

File Name

...

C:\\$360Section

C:\\$Recycle.Bin

C:\\$SysReset

C:\\$WinREAgent

Remote D:\temp

File Name

...

D:\temp\Newsettings.txt

D:\temp\Newsettings001.txt

## 3.USB支持的磁盘格式为FAT格式

USB闪存驱动器可以连接到USB接口并用作附加存储器。USB该接口支持高达12 Mbit/s的传输速度和不超过100 mA的传输电流。

C:\作为驱动器号用于访问MicroSD卡，  
D:\用于访问USB闪存驱动器。

Mainboard

Equipment

Storage

NIC

Volumes

Volume	Label	File System	Type	Total Size	Free Space
/	CX7	FAT16	Fixed	470.6MB	459.5MB
/media/8879-3ACF		FAT16	Removable	62.2MB	20.5MB

AdsFileCopy Ver:1.0.2(xiaoJunFan)

Target: 

BTN-000F19ZM (169.254.2' )

NetID: 

115.113.51.116.1.1

IP: 

169.254.27.10

Connet

Local C:\

Remote D:\

File Name

...

C:\\$360Section

C:\\$Recycle.Bin

C:\\$SysReset

C:\\$WinREAgent

C:\acrolldr

C:\AIRIOT

C:\AMTAG.BIN

C:\appverifUI.dll

C:\BAC-Quicksupport

C:\Beckhoff Automation GmbH(...)

C:\Beckhoff Key Account Engineering(...)

C:\Beckhoff\_QuickSupport

C:\Beyond Compare

C:\CAA Technical Workgroup(...)

File Name

...

D:\BOOT.INI

D:\NK.bin

D:\Splash.bmx

文件自动保存

本地保存路径 C:\data

时间间隔(分钟) 120

开始自动保存

PLC文件路径 C:\

文件名关键字筛选 File

RestartTwinCAT

记录信息

2024/12/13 14:21:26连接成功!

22年发布的CX7051支持3个虚拟子站，可以增加通讯的数据量。

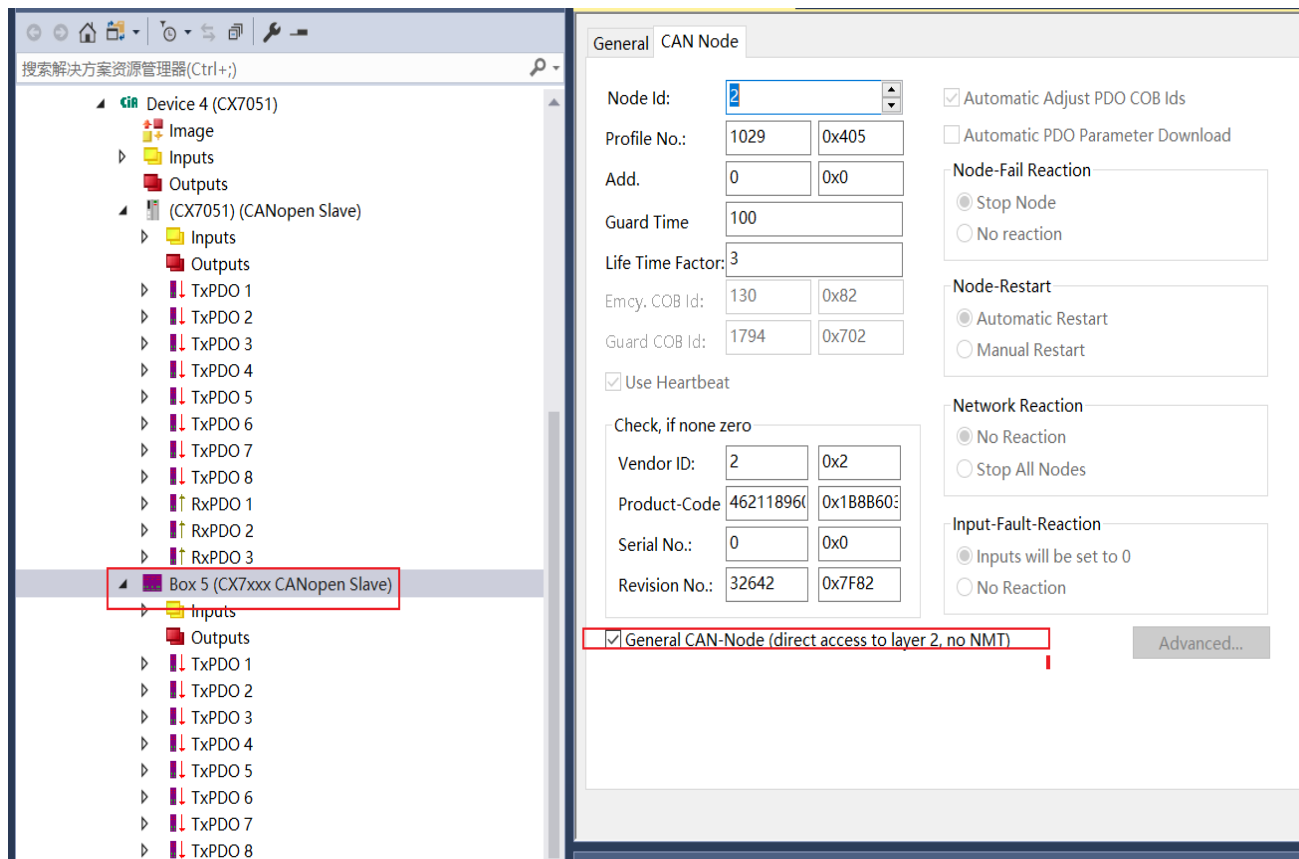
在实际使用中发现虚拟子站支持General CAN，当通讯存在干扰的时候，可以使用此方式来弥补干扰带来的通讯问题。

### 8.3.1 Creating a virtual slave

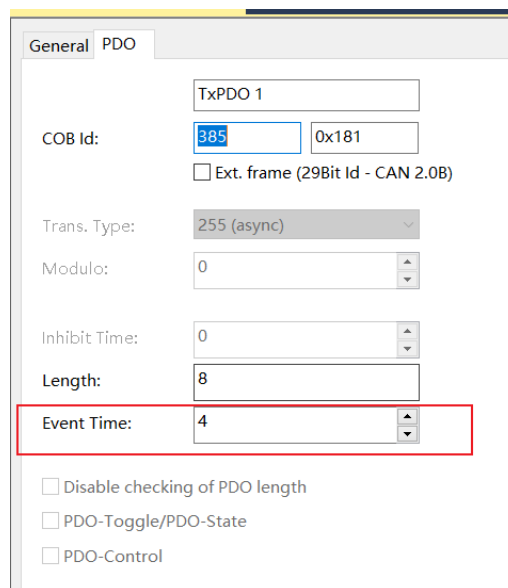
Additional virtual slaves can be created on the same hardware interface. This enables more data to be exchanged with a CANopen master, or a connection with a second CANopen master can be established. Up to three virtual slaves can be created on the same hardware interface of a slave.

Because a maximum of 16 PDOs can be configured for each slave, the additional three virtual slaves increase the maximum possible number of PDOs to 4 x 16 PDOs in each send direction. Each virtual slave is assigned a dedicated address via TwinCAT and is configured like an independent device for the CANopen master.

## 增加虚拟子站，并使用General CAN



## 单个PDO的时设置



PDO的参数，设置Event time，这样报文不管PDO中的数据有没有发生改变都会按照Task周期发送，event time时间是ms，设置不应该超过task周期的时间，这样可以保证在相应的task周期中发送一次报文，通过这样的方式可以对于现场干扰情况比较严重的情况，起到一定的作用。

**注意：**在使用过程中I/O Idle Task的周期不能设置的太小

## 通讯质量的查看位置

The screenshot displays the 'Sync Diag' tab of the Beckhoff CX7051 CANopen virtual station interface. The interface is divided into several sections for monitoring communication quality.

**General Tab:** EL6751, ADS, General Diag, Sync Diag, Box States, DPRAM (Online)

**Cycle Times:**

- 0 T1: Calc+Copy Outputs
- +-----> (DC SYNC1 > T1) T2: Preparing of PDOs finished
- +-----> (TxPDO Delay) T3: Sending of Sync RxPDOs
- +-- T4=SyncCycle - Cycle \* (100%-InputShift) T4: Checking of Sync TxPDOs
- T5: Calc+Copy Inputs (0x1C33:06)

**Timing Values:**

Parameter	Value
T1:	35
T2:	3002
T3:	3849
T5:	54
max T1:	64
max.T2:	3022
max T3:	5508
max T5:	78

**Communication Statistics:**

Category	Value
Output-Failed	0
Input-Failed:	0
SyncRxPDO-Failed:	0
Rx	327
Tx	309
max. Bus-load	26
min. Bus-Load	26
actual Bus-Load	26

**Reset Button:** A blue button labeled 'Reset' is located at the bottom right of the interface.



## 1. 报文信息

894443	20:13:40.10x15E615ch1	接收	0x0391	数据帧	标准帧	0x02	x  00 00		
894444	20:13:40.10x15E615ch1	接收	0x0080	数据帧	标准帧	0x00	x		
894445	20:13:40.10x15E616ch1	接收	0x0181	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894446	20:13:40.10x15E617ch1	接收	0x0191	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894447	20:13:40.10x15E617ch1	接收	0x01A1	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894448	20:13:40.10x15E617ch1	接收	0x0201	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894449	20:13:40.10x15E617ch1	接收	0x0281	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894450	20:13:40.10x15E617ch1	接收	0x0211	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894451	20:13:40.10x15E618ch1	接收	0x0291	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894452	20:13:40.10x15E618ch1	接收	0x0301	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894453	20:13:40.10x15E618ch1	接收	0x02A1	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894454	20:13:40.10x15E618ch1	接收	0x0381	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894455	20:13:40.10x15E618ch1	接收	0x0391	数据帧	标准帧	0x02	x  00 00		
894456	20:13:40.10x15E618ch1	接收	0x0181	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894457	20:13:40.10x15E618ch1	接收	0x0191	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894458	20:13:40.10x15E619ch1	接收	0x01A1	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894459	20:13:40.10x15E619ch1	接收	0x0281	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894460	20:13:40.10x15E619ch1	接收	0x0291	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894461	20:13:40.10x15E619ch1	接收	0x02A1	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894462	20:13:40.10x15E619ch1	接收	0x0381	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894463	20:13:40.10x15E619ch1	接收	0x0391	数据帧	标准帧	0x02	x  00 00		
894464	20:13:40.10x15E61Ach1	接收	0x0181	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894465	20:13:40.10x15E61Ach1	接收	0x0191	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894466	20:13:40.10x15E61Ach1	接收	0x01A1	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894467	20:13:40.10x15E61Ach1	接收	0x0281	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894468	20:13:40.10x15E61Ach1	接收	0x0291	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894469	20:13:40.10x15E61Bch1	接收	0x02A1	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894470	20:13:40.10x15E61Bch1	接收	0x0381	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		
894471	20:13:40.10x15E61Bch1	接收	0x0391	数据帧	标准帧	0x02	x  00 00		
894472	20:13:40.10x15E61Bch1	接收	0x0080	数据帧	标准帧	0x00	x		
894473	20:13:40.10x15E61Cch1	接收	0x0181	数据帧	标准帧	0x08	x  00 00 00 00 00 00 00 00		



1.NTP provider的配置

CX70xx 支持NTP provider对时的镜像系统需要为140501及以上版本

解决方案资源管理器

搜索解决方案资源管理器(Ctrl+;)

解决方案"NTP"(1个项目)

- NTP
  - SYSTEM
    - License
    - Real-Time
    - I/O Idle Task
    - Tasks
      - PlcTask
    - Routes
    - Type System
    - TcCOM Objects
  - MOTION
  - PLC
    - Untitled1
      - Untitled1 Project
        - External Types
        - References
        - DUTs
        - GVLs
        - POUs
          - MAIN (PRG)
          - VISUs
        - PlcTask (PlcTask)
      - Untitled1 Instance

MAIN

Insert TcCom Object

Search: Name: Object1 (TcNtpExternalTimeProvider)

Type:

- Beckhoff Automation GmbH
  - TwinCAT Wind
  - TcAnalyticsKernel
  - NC Objects
  - Application Runtime
  - Data Exchange
  - Machine Learning Model
  - TcFilter
  - Analytics
    - DataLogger [Module]
    - StreamHelper [Module]
  - External Time Provider
    - TcNtpExternalTimeProvider [Module]
    - TcDcExternalTimeProvider [Module]
  - lot
  - TcIoEth Modules
  - Beckhoff Automation
  - C++ Module Vendor

File: C:\TwinCAT\3.1\Components\Base\Build\_4024.22\Config\Modules\TcExternalTimeProvider.tmc

OK

Cancel

Multiple: 1

Insert Instance...

Reload

解决方案资源管理器

搜索解决方案资源管理器(Ctrl+;)

解决方案"NTP"(1个项目)

- NTP
  - SYSTEM
    - License
    - Real-Time
    - I/O Idle Task
    - Tasks
      - PlcTask
    - Routes
    - Type System
    - TcCOM Objects
      - Object1 (TcNtpExternalTimeProvider)
  - MOTION
  - PLC
    - Untitled1
      - Untitled1 Project
        - External Types
        - References
        - DUTs
        - GVLs
        - POUs
          - MAIN (PRG)
          - VISUs
        - PlcTask (PlcTask)
      - Untitled1 Instance

NTP

Context

Parameter (Init)

Parameter (Online)

Data Area

Interfaces

Interface Pointer

Context: 1

Depend On: Manual Config

☐ Need Call From Sync Mapping

Data Areas:

- ☒ 1 'Outputs'
- ☒ 2 'Diagnostic'

Interfaces:

Data Pointer:

Interface Pointer:

Result:

ID	Task	Name	Prio...	Cy...
1			0	0
		00000000		
		02010030 'PlcTask'		
		03000011 'I/O Idle Task'		
		08500010 'PlcAuxTask'		

名称

修改日期

- bin2024/4/16 19:50
- boot2024/4/16 19:50
- www2024/4/16 19:50
- CX7\_PreloadUpdate.bin2024/4/16 19:50
- CX7000Loader.bin2024/4/16 19:50
- IN-0900-0020-00-1-2024-10-0.9.140501.txt2024/4/16 19:50

## 2.NTP Time Provider为Client

Object	Context	Parameter (Init)	Parameter (Online)	Data Area	Interfaces	Interface Pointer	
Name	Value	CS	Unit	Type	P...	Comme...	
TraceLevelMax	tlWarning	<input type="checkbox"/>		TcTrace...	0x...	Control...	
TimeType	Soft	<input type="checkbox"/>		TimeType	0x...	Type of ...	
- ClientPara	...	<input type="checkbox"/>			0x...		
.bEnable	TRUE	<input type="checkbox"/>		BOOL			
.sServerName	FALSE	<input type="checkbox"/>		STRING(...		Hostna...	
.nServerAddress	TRUE	<input type="checkbox"/>		IPADDR		IP Addr...	
.nServerPort	0.0.0.0	<input type="checkbox"/>		UINT		UDP Po...	
.tPollInterval	0	<input type="checkbox"/>		TIME		Poll Inte...	
- ServerPara	T#1s	<input type="checkbox"/>	[ms]		0x...		
.bEnable	FALSE	<input type="checkbox"/>		BOOL			
.nPort	0	<input type="checkbox"/>		UINT		UDP Po...	
.nLeap	0	<input type="checkbox"/>		USINT		Leap In...	
.nStratum	1	<input type="checkbox"/>		USINT		Stratum...	
.nRoot	0	<input type="checkbox"/>		UDINT		Root id...	
+ FilterPara	...	<input type="checkbox"/>			0x...		

☐ Show Online Values ☒ Show Hidden Parameter Expand All Collapse All

作为Client的时候:

bEnable: true

ServerName: 随机

ServerAddress: 是ntpServer的IP

serverPort: 是ntpServer的Port (默认123)

## 3.NTP Time Provider为Server

Object	Context	Parameter (Init)	Parameter (Online)	Data Area	Interfaces	Interface Pointer
Name	Value	CS	Unit	Type	P...	Comme...
TraceLevelMax	tlWarning	<input type="checkbox"/>		TcTrace...	0x...	Control...
TimeType	Soft	<input type="checkbox"/>		TimeType	0x...	Type of ...
- ClientPara	...	<input type="checkbox"/>			0x...	
.bEnable	FALSE	<input type="checkbox"/>		BOOL		
.sServerName	ntp.beckhoff-cloud.com			STRING(...		Hostna...
.nServerAddress	0.0.0.0			IPADDR		IP Addr...
.nServerPort	0			UINT		UDP Po...
.tPollInterval	T#1s		[ms]	TIME		Poll Inte...
- ServerPara	...	<input type="checkbox"/>			0x...	
.bEnable	TRUE	<input type="checkbox"/>		BOOL		
.nPort	123			UINT		UDP Po...
.nLeap	0			USINT		Leap In...
.nStratum	2			USINT		Stratum...
.nRoot	0			UDINT		Root id...
+ FilterPara	...	<input type="checkbox"/>			0x...	

☐ Show Online Values   ☒ Show Hidden Parameter     

作为Server的时候:

bEnable: true

serverPort: 123

stratum 为2 (ntp的定时)

## **Beckhoff Automation GmbH & Co. KG**

Headquarters  
Huelshorstweg 20  
33415 Verl  
Germany

Phone: +49 5246 963-0  
E-mail: [info@beckhoff.com](mailto:info@beckhoff.com)  
Web: [www.beckhoff.com](http://www.beckhoff.com)

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