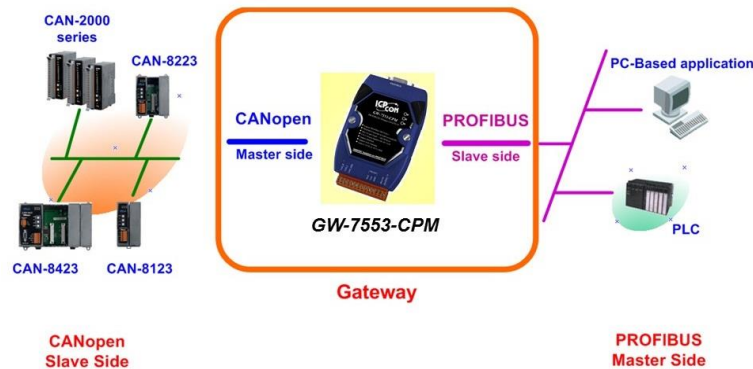


GW-7553-CPM Quick Start

1. Introduction

This manual introduces the GW-7553-CPM's basic setting and operating quickly, the user can refer to the user manual in the ICP DAS companion CD-ROM (Path: "CD:\profibus\converter\GW-7553-CPM>manual\GW-7553-CPM user manual.pdf"). This manual helps users to understand about the GW-7553-CPM module and application.

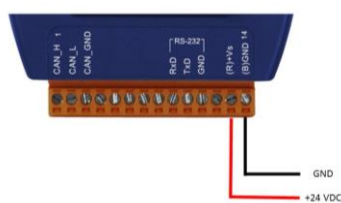


Application example of PROFIBUS to CANopen

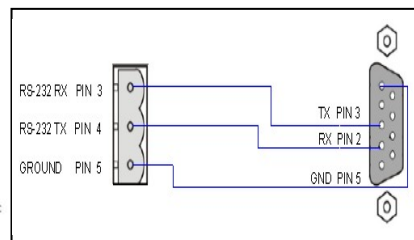
PROFIBUS and CANopen are two kinds of famous protocols and are widely used in the fields of factory and process automation. The GW-7553-CPM is a PROFIBUS to CANopen gateway. By using this module, users can easily put the CANopen devices into PROFIBUS network.

2. Hardware configuration

Power connection



RS-232 connection



Ethernet connection

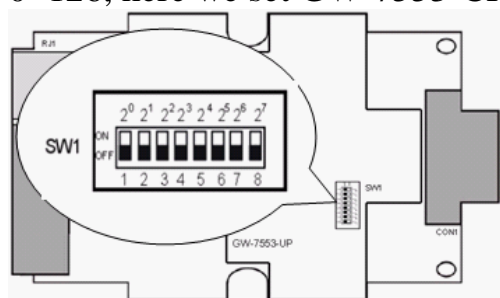


PROFIBUS connection

Here we recommend users to use the standard PROFIBUS cable and connector (DB9 male). It is only needed to use D-type connector via PROFIBUS cable to connect PROFIBUS Master station and GW-7553-CPM module. PROFIBUS Master station and GW-7553-CPM module belong to terminal equipments in this example, thus we need to enable the terminator resistor in the D-type connector.

Address setting

The GW-7553-CPM is a slave device of PROFIBUS DP protocol. The station address of GW-7553-CPM can be set by DIP switch. The DIP switch can be seen by open the cover, as shown in the below. The range of DIP switch is 0~126, here we set GW-7553-CPM module's DIP switch to 1.



Station address	DIP switch (SW1)							
	1	2	3	4	5	6	7	8
1	1	0	0	0	0	0	0	0
10	0	1	0	1	0	0	0	0
31	1	1	1	1	1	0	0	0

Note: 1=>ON, 0=>OFF

LED status indicator

LED	Status	Description
PWR	on	Power supply is ok. The firmware has loaded.
	off	Power supply has failed.
ERR	flash	When the GW-7553-CPM connects with the utility tool, it will flash fast (flash once about 55ms). When the GW-7553-CPM has diagnostic message, it will flash slowly (flash once about 220ms).
	on	Connection error between PROFIBUS master and slave or PROFIBUS system has not been configured correctly.
	off	PROFIBUS system configuration is correct. It is normal operation.
RUN	on	Data exchange mode. It is normal operation.
	off	GW-7553-CPM module is not in a data exchange mode.

3. Software configuration

The user can set the number and size of the I/O modules in the PROFIBUS configuration tool. The settings of the modules are described below.

- Max. I/O modules : 111 modules
- System setting module : 10 byte in, 10 byte out
- Output module : RxPDO => 1~8 Bytes
RxSDO => 1、2、4Bytes
- Input module : TxPDO => 1~8 Bytes
TxSDO => 1、2、4Bytes

- Max. length of I/O data : 480 Bytes
- Output length : 0~240 Bytes
- Input length : 0~240 Bytes

The modules have module parameters about the communication settings. The module parameters are shown in the below :

- A. TxPDO module parameters :
 - TxPDO COBID : 0x180~0x4FF
- B. RxPDO module parameters :
 - RxPDO COBID : 0x200~0x57F
- C. TxSDO module parameters :
 - TxSDO COBID : 0x580~0x5FF
- D. RxSDO module parameters :
 - RxSDO COBID : 0x600~0x67F

Messages	Description
CANopen Device 1~10 Error	CANopen Slave Disconnect!
	CANopen Set Guard Error!
	CAN Guard Failed!
	CAN Heartbeat Failed!
System setting module Error	Not find System setting module.
	Position is not correct!
Communication Error	I/O Module 1~110 Error!
I/O Module Error	Module Mismatch!
	COBID Error!

I/O data exchange

Input data area

The maximum length of input data is 240 bytes. Before arrange “Input module” or “CANopen Command module”, the user must arrange and configure the “system setting module”. The user can get data form CANopen slave devices by “read Input module” or “CANopen Command module”.

Module	Byte	Data	Description
System setting module	0 ~9	Data	Diagnosis data
Input module	10~239	Data	Input data

Output data area and communication command

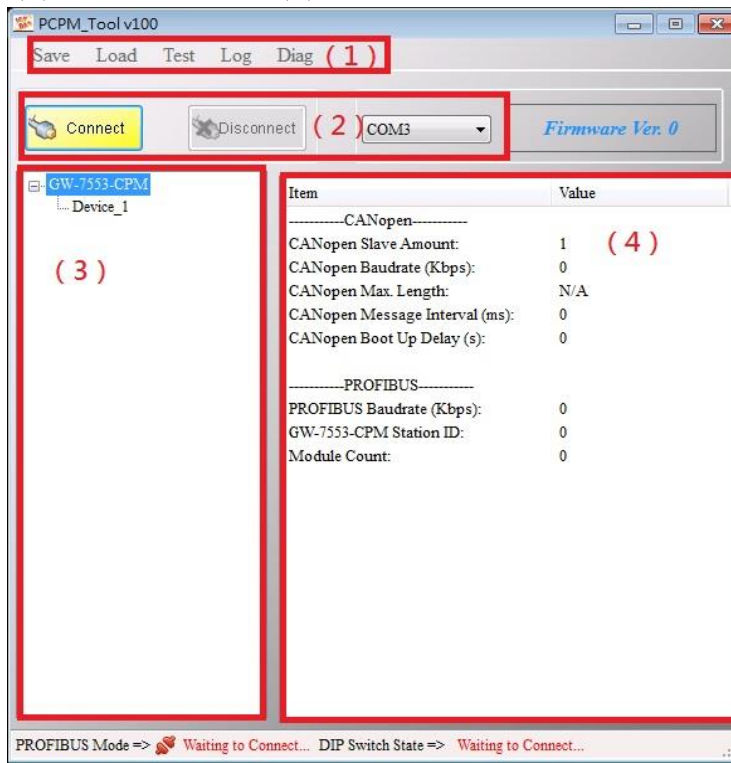
The maximum length of output data is 240 bytes. Before arrange the output module, the user must arrange and configure the system setting module.

Module	Byte	Bit Position								Description
		7	6	5	4	3	2	1	0	
System setting module	0									Data output command
	1	-	-	-	-	-	-	-	DC	Control bit
	2									Output module select
	3~9									reserved
Output module	10~239									Output data

- Data output command(byte 0)
When this byte is changed, PROFIBUS master device will send data of output module to RxPDO(non-cyclic) data of GW-7553-CPM.
- Control bit(byte 1)
DC(bit 0) : When this bit is set (DC=1), diagnostic messages send by the GW-7553-CPM module will all be cleared.
Bit 1~7 : The remaining bits have to be set to zero.
- Output module select(byte 2)
When this byte isn't '0' and the user change data output command(byte 0), it will trigger single data output command of the output module and this byte represent module address of the output module (ex: "byte 2"=3, it represent that the user want to trigger data output command of the third module)

4. Software configuration

Main window of the utility has 4 parts, they are (1)Menu 、(2)Connection control 、(3)Device state 、(4)Device information.



(1) Menu :

1. Save:
 - a. Save to Device : Save the CANopen setting to GW-7553-CPM.
 - b. Save Project File : Save the CANopen setting to project file of PC.
2. Load:
 - a. Load From Device : Load the CANopen setting from GW-7553-CPM.
 - b. Load Project File : Load the CANopen setting from project file of PC.
3. Test:
 - a. When user clicks this button, the PC will test all the CANopen commands of user setting.
4. Log:
 - a. When user clicks this button, the PC will log the CANopen messages between GW-7553-CPM and CANopen slave.
5. Diag:
 - a. When user clicks this button, the PC will read the diagnosis messages from GW-7553-CPM, and display on PC.

(2) Connection control :

1. Connect button:

When the user clicks this button, the PC will open the com port and try to connect the GW-7553-CPM module.

2. Disconnect button:

When the user clicks this button, the PC will break the connection of the GW-7553-CPM and close the com port.

3. Com port select:

The PC will find usable com port.

(3) Device state

It can display the number of modules in the GW-7553-CPM and display module parameters in the window of the module.

1. Edit GW-7553-CPM Parameter

Right click on the GW-7553-CPM

(a) CANopen Device Count:

The number of CANopen Slave in GW-7553-CPM, The max amount is 10.

(b) CANopen baudrate(Kbps):

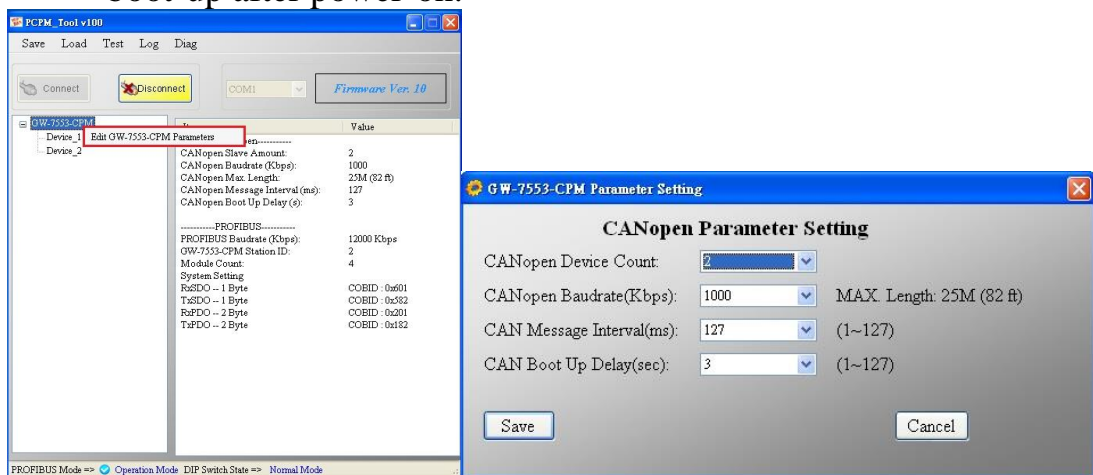
CAN bus baud rate setting. (10K ~ 1000K bps)

(c) CAN Message Interval:

User can slow the polling speed of the GW-7553-CPM through the parameter to avoid the CANopen network too busy.

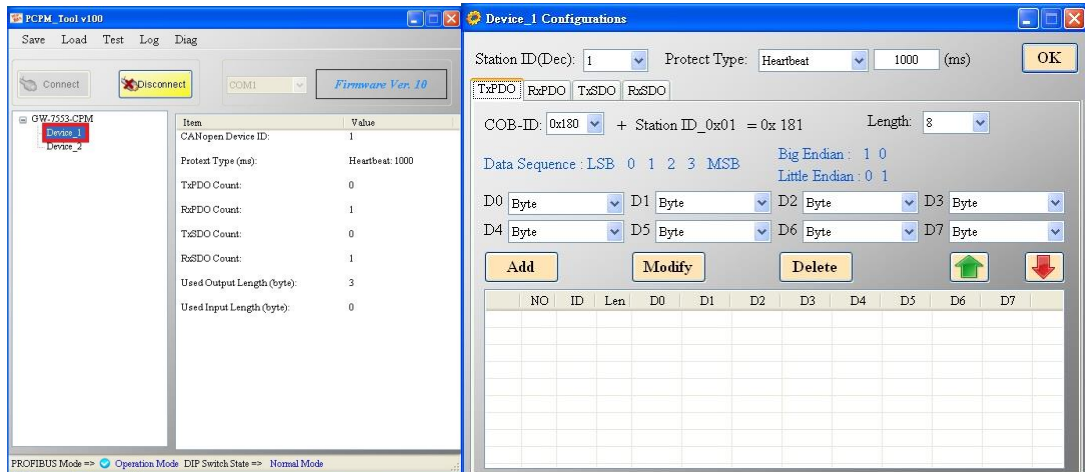
(d) CAN Boot Up Delay:

This parameter let user decide when the GW-7553-CPM will really boot-up after power-on.



2. Device Configurations

Double click a “Device_1” item, then the “Device Configurations” setting dialog is shown on the screen. Users can set CANopen slave ID, CANopen protect function, TxPDO, RxPDO, TxSDO, RxSDO, and so on.



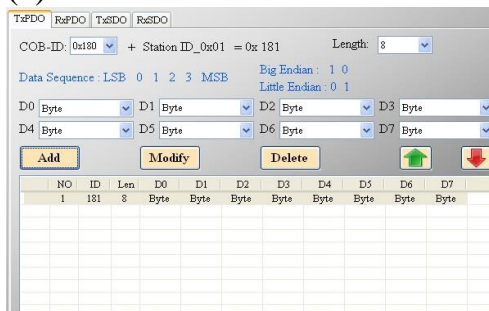
(a) Station ID:

User can change it refer to his real CANopen slave ID. The range of ID is 1 ~ 127.

(b) Protect Type:

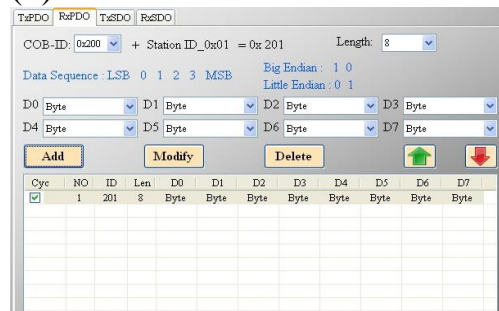
The GW-7553-CPM provides two protect type, Node Guarding and Heartbeat protocol.

(c) TxPDO:



- (1) Click the TxPDO Cob-ID function code on combo box.
- (2) Click “Len” combo box to set the proper PDO’s data length.
- (3) Then select the data type of each byte in the TxPDO.

(d) RxPDO:



- (1) The configuration of the RxPDO is almost the same as TxPDO
- (2) The “Cyc” check box can decide the RxPDO to be run in the cyclic mode or the trigger mode.

(e) TxSDO:

NO	Index	SubIndex	Data Type
1	6000	01	Byte

(1) Input the “Index” and “SubIndex” of the object dictionary of the CANopen slave in these fields if users want to get the data via SDO.

(f) RxSDO:

NO	Index	SubIndex	Data Type
1	6200	01	Byte

(1) The configuration of the RxSDO is almost the same as TxSDO

(4) Device information :

Item	Value
-----CANopen-----	
CANopen Slave Amount:	2
CANopen Baudrate (Kbps):	1000
CANopen Max. Length:	25M (82 ft)
CANopen Message Interval (ms):	127
CANopen Boot Up Delay (s):	3
-----PROFIBUS-----	
PROFIBUS Baudrate (Kbps):	12000 Kbps
GW-7553-CPM Station ID:	2
Module Count:	4
System Setting	
RxSDO -- 1 Byte	COBID : 0x601
TxSDO -- 1 Byte	COBID : 0x582
RxPDO -- 2 Byte	COBID : 0x201
TxPDO -- 2 Byte	COBID : 0x182

(1) Display module parameters of the GW-7553-CPM