Instructions for use of JTK-CAT-B01

(This instruction for use should be used with the standard manual of the frequency converter)

Introduction to EtherCAT

EtherCAT is an industrial Ethernet technology based on the standard Ethernet physical layer, using optical fiber or twisted pair as the transmission medium, which is simple to apply and flexible to topology.

The EtherCAT system consists of a master and a slave, the master can be acted by the Beckhoff PLC or directly by the Beckhoff host computer, and the slave is composed of a standard-compliant EtherCAT card.

The application protocols supported by the EtherCAT slave include CoE (EtherCAN-based CAN application protocol), SoE (servo drive profile in accordance with IEC61800-7-204), EoE (EtherCAT implements Ethernet), and FoE (EtherCAT implements file reading).

The slave device only needs to implement one of the protocols, and currently our EtherCAT supports the CoE protocol.

The upper (left) interface of our EtherCAT is the inlet, and the lower (right) interface is the outlet port.

In VFD set H0.00=3.

Option install only left slot.

2. Cable specifications

EtherCAT cable selection standard	UL certification is required
	CAT 5 cable (CAT.5E)
	Double shielding (textile mesh shield and aluminum foil shield)
	Comply with GB/T24808-2009 EMC standard
	Ambient temperature: -30°C~60°C

Third, PDO process data object

3.1 PDO mapping flowchart

PDO mapping is used to establish the correspondence between the object dictionary and the PDO, our company simplifies the mapping process for industry applications, through 1600h as RPDO, 1A00h as TPDO, you can freely increase and decrease parameter configuration, see Figure 1.

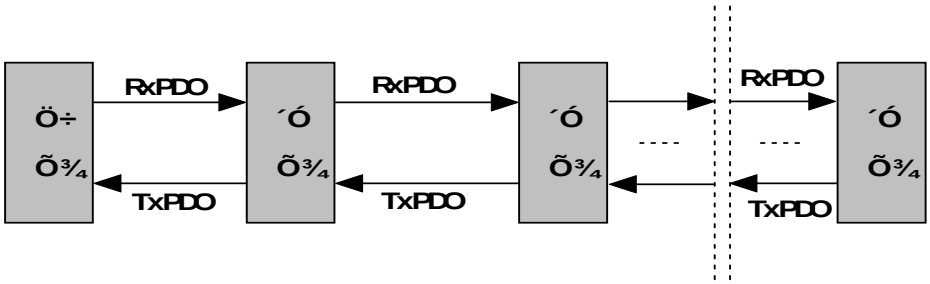


Figure 1

3.2 Factory default mapping

- Index 0x6041, 0x606C, and 0x6077 in TPDO are forced mappings and should not be deleted, otherwise an exception will be caused.
- The index 0x6040, 0x606B, and 0x6071 in RPDO are forced mappings not to be deleted, otherwise it will cause an exception.

Table 1 TPDO: 1A00h

index	Chinese description	Description in English
0x603F	Fault code	Error Code
0x6041	Status word	Status Word
0x6043	The given frequency is displayed	Given Freq Dis
0x6044	The operating frequency display	Run Freq
0x6061	The operating mode is displayed	OP Mode Dis
0x606C	Running speed	Run Speed
0x6077	Output torque	Torque actual value

Table 2: RPDO: 1600h

index	Chinese description	Description in English
0x6040	Control words	Control Word
0x6042	The main frequency is given	Main Freq Given
0x604F	Acceleration time	Acc Time
0x6050	Deceleration time	Dec Time
0x6060	Operating mode settings	Modes of Operation

0x606B	Versatile given	Multi-Function Given
0x6071	Torque given	Torque Given Value

3.3 Synchronous management of PDO allocation settings

Table 3: 1 **RPDO allocation and 1 TPDO allocation table**

index	Subindex	content
0x1C12	01h	Select Use 0x1600 as the RPDO for actual use
0x1C13	01h	Select Use 0x1A00 as the actual TPDO

3.4 SDO mailbox data

EtherCAT mailbox data SDO is used to transmit aperiodic data that does not require high real-time performance, such as the functional configuration parameters of the inverter.

3.5 Dictionary description of control related objects

Table 4: Dictionary description table of control-related objects

index (HEX)	Subindex (HEX)	visit Permissions	type	mapping	Chinese description	Description in English
603F	00	RO	U16	TPDO\SDO	Fault code	Error code
6040	00	RW	U16	RPDO\SDO	Control words	Control Word
6041	00	RO	U16	TPDO\SDO	Status word	Status Word
6042	00	RW	S16	RPDO\SDO	The main frequency is given	Main Freq Given
6043	00	RO	S16	TPDO\SDO	The given frequency is displayed	Given Freq Dis
6044	00	RO	S16	TPDO\SDO	Operating frequency	Run Freq
604F	00	RW	U16	RPDO\SDO	Acceleration time	Acc Time
6050	00	RW	U16	RPDO\SDO	Deceleration time	Dec Time
6051	00	RW	U16	RPDO\SDO	Emergency stop deceleration time	E-Stop Time
605A	00	RW	S16	SDO	Emergency shutdown command 0: Invalid emergency shutdown 1: Emergency shutdown is effective	E-Stop Cmd
605D	00	RW	S16	SDO	Shutdown mode 0: Deceleration stops 1: Free parking 2: Deceleration stop + DC braking	Stop Mode
6060	00	WO	S8	RPDO\SDO	Operating mode 2: Speed mode (F4.00=0, d2.00=0) 4: Torque mode (F4.00=0, d2.00=1) 11: Zero servo (frequency arrival active) (F4.00=1). 12: Zero servo (terminal valid) (F4.00=2). 13: Spindle orientation (F4.00=3). 14: Simple carry (F4.00=4) 15: Pulse train position control (F4.00=5).	Modes of operation
6061	00	RO	S8	TPDO\SDO	The operating mode is displayed	OP Mode Dis
606B	00	RW	U16	RPDO\SDO	Versatile given	Multi-Function Given
606C	00	RO	U16	TPDO\SDO	Operating speed	Run Speed
6071	00	RW	S16	RPDO\SDO	Given the torque	Torque Given Value
6072	00	RW	U16	RPDO\SDO	Maximum torque	Torque Max Value
6077	00	RO	U16	TPDO\SDO	Operating torque	Output Torque

6078	00	RO	U16	TPDO\SDO	Output current	Output Current
6079	00	RO	U16	TPDO\SDO	Output voltage	Output Voltage
6087	00	RW	U16	RPDO\SDO	Torque acceleration and deceleration time	Torque change Time
6410	01	RO	U16	SDO	Motor power rating	Motor Rate Power
6410	02	RO	U16	SDO	Motor rated voltage	Motor Rate Voltage
6410	03	RO	U16	SDO	Motor rated current	Motor Rate Current
6410	04	RO	U16	SDO	Motor rated frequency	Motor Rate Freq
6410	05	RO	U16	SDO	Number of motor poles	Motor Pole Num
6410	06	RO	U16	SDO	Motor rated speed	Motor Rate Speed

index (HEX)	Subindex (HEX).	Access Rights	type	mapping	Chinese description	Description in English
2000	00	RW	U16	SDO	Motor control mode: 0: V/F control 1: No PG vector control 1 2: No PG vector control 2 3: There is PG vector control	ControlMode
2001	00	RO	U16	SDO	Motor control mode display	Control Mode Dis
2002	00	RW	U16	SDO	The maximum frequency is given	Max Freq Given
2003	00	RW	U16	SDO	Cap frequency	Upper Freq
2004	00	RW	U16	SDO	Lower limit frequency	Lower Freq
2005	00	RW	U16	SDO	Starting frequency	Start Freq
2006	00	RW	U16	SDO	Starting frequency hold time	Start Freq Hold Time
2007	00	RW	U16	SDO	Terminal X1 function selection	Terminal X1 FC Sel
2008	00	RW	U16	SDO	Terminal X2 function selection	Terminal X2 FC Sel
2009	00	RW	U16	SDO	Terminal X3 function selection	Terminal X3 FC Sel
200A	00	RW	U16	SDO	Terminal X4 function selection	Terminal X4 FC Sel
200B	00	RW	U16	SDO	Terminal X5 function selection	Terminal X5 FC Sel
200C	00	RW	U16	SDO	Terminal X6 function selection	Terminal X6 FC Sel
200D	00	RW	U16	SDO	Terminal X7 function selection	Terminal X7 FC Sel
200E	00	RW	U16	SDO	Switching input terminal active state setting 1(X1~X4)	In Term X1-X4 Valid Sta Set
200F	00	RW	U16	SDO	Switch input terminal active state setting 2 (X5~X7)	In Term X5-X7 Valid Sta Set
2010	00	RW	U16	SDO	ASR high-speed proportional gain Kp1	ASR HS Kp1
2011	00	RW	U16	SDO	ASR high-speed integration time Ti1	ASR HS Ti1
2012	00	RW	U16	SDO	ASR low-speed proportional gain Kp2	ASR LS Kp2
2013	00	RW	U16	SDO	ASR low-speed integration time Ti2	ASR LS Ti2
2014	00	RW	U16	SDO	ASR switching frequency 1	ASR Switch Freq1
2015	00	RW	U16	SDO	ASR switching frequency 2	ASR Switch Freq2
2016	00	RW	U16	SDO	ASR input filter time	ASR Input Filter Time
2017	00	RW	U16	SDO	ASR output filter time	ASR Output Filter Time

2018	00	RW	U16	SDO	ACR scale factor Kp	ACR Kp
2019	00	RW	U16	SDO	ACR integral coefficient Ki	ACR Ki
201A	00	RW	U16	SDO	Torque acceleration and deceleration time	Torque change Time
201B	00	RW	U16	SDO	Encoder selection: 0: Local encoder 1: Expand the encoder	Encoder Select
201C	00	RW	U16	SDO	Number of encoder lines	Both addresses write the same value Encoder line
201D	00	RW	U16	SDO	Speed ratio molecule	Both addresses write the same value Speed Ratio Numerator
201E	00	RW	U16	SDO	Speed ratio denominator	Both addresses write the same value Speed Ratio Denominator
201F	00	RW	U16	SDO	Electric torque limiting	Torque Limit
index (HEX)	**Subindex (HEX).**	**Access Rights**	**type**	**mapping**	**Chinese description**	**Description in English**
2020	00	RW	U16	SDO	Brake torque limiting	Brake Torque Limit
2021	00	RW	U16	SDO	Torque mode forward frequency limiting	Torque Mode FWD Freq Limit
2022	00	RW	U16	SDO	Torque mode reversal frequency limiting	Torque Mode REV Freq Limit
2023	00	RW	U16	SDO	Position the finish width	LOC finish Width
2024	00	RW	U16	SDO	Locate the completion time	LOC finish Time
2025	00	RW	U16	SDO	Position loop gain (Zero servo, directional and simple carry low speed position ring Kp)	Position loop gain
2026	00	RW	U16	SDO	Zero servo start frequency	Zero servo Start Frequency
2027	00	RW	U16	RPDO\SDO	Spindle orientation position	Axis Orientation Pos
2028	00	RW	U16	SDO	Spindle orientation direction	AxisOrientation Dir
2029	00	RW	U16	SDO	Spindle orientation speed	Axis Orientation Freq
202A	00	RW	U16	SDO	Spindle directional deceleration time	Axis Orientation Dec Time
202B	00	RW	U32	RPDO\SDO	The carry amount is given	The value is divided into high and low respectively, and the range is 0~9999 in decimal. Take decimal as an example, such as 10005 above, then F4-17=1, F4-18=5 Pos quantity Given
202C	00	RW	U16	SDO	Location given way to choose	Location Given Mode Sel
202D	00	RW	U16	SDO	Electronic gear ratio molecules	Elec Gear ratio Numerator
202E	00	RW	U16	SDO	Electronic gear ratio denominator	Elec Gear ratio denominator
202F	00	RW	U16	SDO	Feed-forward gain (pulse follows low speed)	Feed Forward Gain
2030	00	RW	U16	SDO	Feed-forward filtering time	Feedforward Filter Time
2031	00	RW	U16	SDO	Rate of change in position bias	Position Offset Change Rate
2032	00	RW	U16	SDO	Electronic gear rate of change	Elec Gear Change Rate

2033	00	RW	U16	SDO	The pulse follows the low-speed position loop Kp1	Pulse Trace LS Pos Loop Kp1
2034	00	RW	U16	SDO	The pulse follows the high-speed position loop Kp2	Pulse Trace HS Pos Loop Kp2
2035	00	RW	U16	SDO	The pulse follows the high-speed feed-forward gain	Pulse Trace HS Feedforward gain
2036	00	RW	U16	SDO	Directional high-speed position ring Kp2	Axis Orientation HS Pos Ring Kp2
2037	00	RW	U16	SDO	Simple carry electronic gear ratio molecules	Simple Carry CMX
2038	00	RW	U16	SDO	Simple carry electronic gear ratio denominator	Simple Carry CDV
2039	00	RW	U16	SDO	Feed-forward slope	Feedforward Slope
203A	00	RW	U16	SDO	Pulse filter time	Pulse Filter Time
203B	00	RO	U16	TPDO\SDO	retain	Reserved
203C	00	RO	U16	TPDO\SDO	Busbar voltage	Bus Voltage
203D	00	RO	U16	TPDO\SDO	retain	Reserved
203E	00	RO	U16	TPDO\SDO	retain	Reserved
203F	00	RO	U16	TPDO\SDO	retain	Reserved
2040	00	RO	U16	TPDO\SDO	Output power	Output Power
2041	00	RO	U16	TPDO\SDO	AI1 input voltage	AI1 Input Voltage
2042	00	RO	U16	TPDO\SDO	AI2 input voltage	AI2 Input Voltage
index (HEX)	**Subindex (HEX).**	**Access Rights**	**type**	**mapping**	**Chinese description**	**Description in English**
2043	00	RO	S16	TPDO\SDO	AI3 input voltage	AI3 Input Voltage
2044	00	RO	U16	TPDO\SDO	AO1 output	AO1 Output Voltage
2045	00	RO	U16	TPDO\SDO	AO2 output	AO2 Output Voltage
2046	00	RO	U16	TPDO\SDO	Switch input terminal status	Input terminal status
2047	00	RO	U16	TPDO\SDO	Switching output terminal status	Output terminal status
2048	00	RO	S16	TPDO\SDO	Position control pulse error display	APC Pulse Error Dis
2049	00	RO	U16	TPDO\SDO	Number of spindle directional pulses	Axis Orient Pulse Number
204A	00	RO	U32	TPDO\SDO	The carry amount or pulse follow command is displayed	The respective range is decimal 0~9999, the two are combined into 1 value, and the decimal example is U0-48=3, U0-49=5555, then combined into 35555 Feed Pulse or Pulse Trace Given Dis
204B	00	RO	U32	TPDO\SDO	The current carry amount	The respective range is decimal 0~9999, the two are combined into 1 value, and the decimal example is U0-48=3, U0-49=5555, then combined into 35555 Current Feed Pulse Dis
204C	00	RO	U16	TPDO\SDO	Encoder feedback frequency	Encoder Feedback Frequency
204D	00	RO	U16	TPDO\SDO	The pulse follows the feed-forward pulse frequency	Pulse Trace FeedForward Freq

4. Introduction to some mapping functions

603F	00	RO	U16	TPDO\SDO	Fault code	Error code

Failure code	Fault display	The name of the fault	Failure code	Fault display	The name of the fault
1	oC1	Accelerated overcurrent	22	dLC	The control board cable connection is abnormal
2	oC2	Constant velocity overcurrent	23	TEr	Analog terminal functions are mutually exclusive
3	oC3	Decelerate overcurrent	24	PEr	External device failure
4	ov1	Accelerated overvoltage	26	to2	Continuous running time to
5	ov2	Constant speed overvoltage	27	to3	Cumulative run time to
6	ov3	Decelerate overvoltage	28	SUE	Power supply abnormalities at runtime
7	FAL	Module protection	29	EPr	EEPROM read and write failures
8	Tun	Parameter identification failed	30	CCL	Contactor suction failure
9	oL1	The frequency converter is overloaded	31	TrC	Port communication exceptions
10	oL2	The motor is overloaded	32	PdC	The operation panel communication is abnormal
11	CtC	The current detection circuit is abnormal	33	CPy	Parameter copy failure
12	GdP	The output is shorted to ground	35	SFt	Software version compatibility failure
13	ISF	The input power supply is abnormal	36	CPU	Abnormal power-down failure
14	oPL	The output is out of phase	37	oCr	Overcurrent reference error
15	oL3	The inverter module is overloaded	38	SP1	The 5V supply is exceeded
16	oH1	The module is overheating	39	SP2	The 10V supply is exceeded
17	oH2	The motor overheats	40	AIP	AI input overrun
18	oH3	The module temperature detection circuit is broken	41	LoU	Undervoltage protection
19	CLL	The encoder is disconnected	42	oSP	Overspeed fault
20	EC1	Expansion card 1 is connected abnormally	43	SPL	The speed deviation is too large
21	EC2	Expansion card 2 is connected abnormally	45	Plo	PID feedback is lost

6040	00	RW	U16	RPDO\SDO	Control words	Control Word

bit	value	meaning	remark
BIT0	0	Running the command is invalid	
	1	Running the command works	
BIT1	0	Forward rotation	BIT0 needs to be valid
	1	rollback	BIT0 needs to be valid
BIT2	0	Jogging is invalid	
	1	Jogging works	
BIT3	0	The reset is invalid	
	1	Reset is valid	
BIT4	0	Free parking is not valid	
	1	Free parking works	
BIT5	0	Invalid spindle positioning	BIT0 must be invalid
	1	Spindle positioning is valid	BIT0 needs to be valid, and C0-14 is set to 1000
BIT6	0	retain	
	1	retain	
BIT7	0	Invalid pulse following	BIT0 must be invalid
	1	Pulse following is effective	BIT0 needs to be valid

6041	00	RO	U16	TPDO\SDO	Status word	Status Word

bit	value	meaning	remark
BIT0	0	The frequency converter is shut down	
	1	The frequency converter operates	
BIT1	0	The inverter is forward-turning	
	1	The inverter is reversed	
BIT3~BIT2	00	Constant speed	
	01	hasten	
	10	decelerate	
BIT4	0	The master setting is not reached	

	1	Master settings are reached	
BIT7~BIT5	retain	retain	
BIT15~BIT8	00~FF	Failure code	For more information, see List of fault codes

6042	00	RW	S16	RPDO\SDO	The main frequency is given	Main Freq Given

In speed mode, when given by the dominant frequency, B0-01 needs to be set to 9.

6051	00	RW	U16	RPDO\SDO	Emergency stop deceleration time	E-Stop Time

Used to set the deceleration time in case of emergency stop.

605A	00	RW	S16	SDO	Emergency shutdown command 0: Invalid emergency shutdown 1: Emergency shutdown is effective	E-Stop Cmd

Effective when using the emergency shutdown function, it needs to be used with index 6040.

6060	00	WO	S8	RPDO\SDO	Operating mode 2: Speed mode (F4.00=0, d2.00=0) 4: Torque mode (F4.00=0, d2.00=1) 11: Zero servo (frequency arrival active) (F4.00=1). 12: Zero servo (terminal valid) (F4.00=2). 13: Spindle orientation (F4.00=3). 14: Simple carry (F4.00=4) 15: Pulse train position control (F4.00=5).	Modes of operation

Index 6060 is used to select between speed mode, torque mode, servo, spindle orientation, simple carry, pulse train position control.

606B	00	RW	U16	RPDO\SDO	Versatile given	Multi-Function Given

In speed mode, the multifunction given represents a given frequency, defaults to 2 decimal places, and its given channel b0-01 needs to be set to 8. Represents the feed-forward frequency in pulse follow mode, with no decimal point by default.

6071	00	RW	S16	RPDO\SDO	Given the torque	Torque Given Value

To use, set D2-19 to 5.

6072	00	RW	U16	RPDO\SDO	Maximum torque	Torque Max Value

To use, set d2-14 to 5.

2000	RW	U16	SDO	Motor control mode: 0: V/F control 1: No PG vector control 1 2: No PG vector control 2 3: There is PG vector control	ControlMode

Select the appropriate control method according to the presence or absence of encoder and control requirements.

200E	RW	U16	SDO	Switching input terminal active state setting 1(X1~X4)	In Term X1-X4 Valid Sta Set

When the value is given, it needs to be given in base 16, for example: set X4 to 1, that is, the keyboard display effect is 1000, and the value needs to be 0x1000;

Set X3 to 1, that is, the keyboard display effect is 0100, and the value needs to be 0x0100.

200F	RW	U16	SDO	Switch input terminal active state setting 2 (X5~X7)	In Term X5-X7 Valid Sta Set

The usage is the same as 200E.

201F	RW	U16	SDO	Electric torque limiting	Torque Limit

To use, set D2-12 to 5.

2020	RW	U16	SDO	Brake torque limiting	Brake Torque Limit

To use, set D2-13 to 5.

2021	RW	U16	SDO	Torque mode forward frequency limiting	Torque Mode FWD Freq Limit

To use, set D2-21 to 5.

2022	RW	U16	SDO	Torque mode reversal frequency limiting	Torque Mode REV Freq Limit

To use, set D2-22 to 5.

5. Typical mapping

5.1 Speed Mode

To add a mapping in RPDO:

0x6040	Control words	Control Word
0x6042	The main frequency is given	Main Freq Given
0x604F	Acceleration time	Acc Time
0x6050	Deceleration time	Dec Time
0x606B	Versatile given	Multi-Function Given
0x6071	Torque given	Torque Given Value

To add a mapping in TPDO:

0x603F	Failure code	Error code
0x6041	Status word	Status Word
0x6044	Operating frequency	Run Freq
0x6078	Output current	Output Current
0x606C	Running speed	Run Speed
0x6077	Output torque	Torque actual value

SDO:

0x6060	Operating mode	Modes of operation
0x2000	Control mode	ControlMode
0x6061	The operating mode is displayed	OP Mode Dis

5.2 Spindle orientation

In this mode, the inverter function code C0-14 needs to be set to 1000, that is, the value 0x200E given 0x1000.

The control word 0x6040 written 0x21 indicates the start of positioning, and the written 0x00 indicates the shutdown.

To add a mapping in RPDO:

0x6040	Control words	Control Word
0x2027	Spindle orientation position	Axis Orientation Pos
0x606B	Versatile given	Multi-Function Given
0x6071	Torque given	Torque Given Value

To add a mapping in TPDO:

0x603F	Failure code	Error code
0x6041	Status word	Status Word
0x6044	Operating frequency	Run Freq
0x6078	Output current	Output Current
0x606C	Running speed	Run Speed
0x6077	Output torque	Torque actual value

SDO:

0x6060	Operating mode	Modes of operation
0x6061	The operating mode is displayed	OP Mode Dis
0x2000	Control mode	ControlMode
0x2028	Spindle orientation direction	AxisOrientation Dir
0x200E	Switching input terminal active state setting 1(X1~X4)	In Term X1-X4 Valid Sta Set

5.3. Pulse following

To add a mapping in RPDO:

0x6040	Control words	Control Word
0x202B	The carry amount is given	Pos quantity Given
0x606B	Versatile given	Multi-Function Given
0x6071	Torque given	Torque Given Value

To add a mapping in TPDO:

0x603F	Failure code	Error code
0x6041	Status word	Status Word
0x6044	Operating frequency	Run Freq
0x6078	Output current	Output Current
0x606C	Running speed	Run Speed
0x6077	Output torque	Torque actual value

SDO：

0x6060	Operating mode	Modes of operation

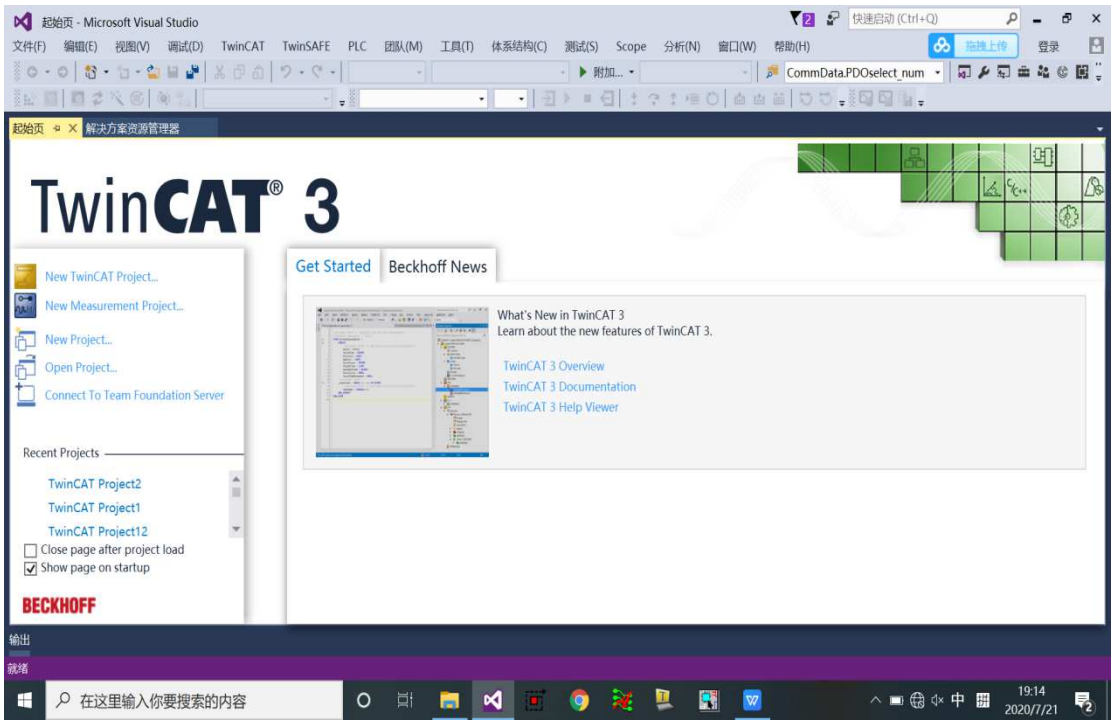
0x6061	The operating mode is displayed	OP Mode Dis
0x2000	Control mode	ControlMode

6. Instructions for the use of Beckhoff host computer software

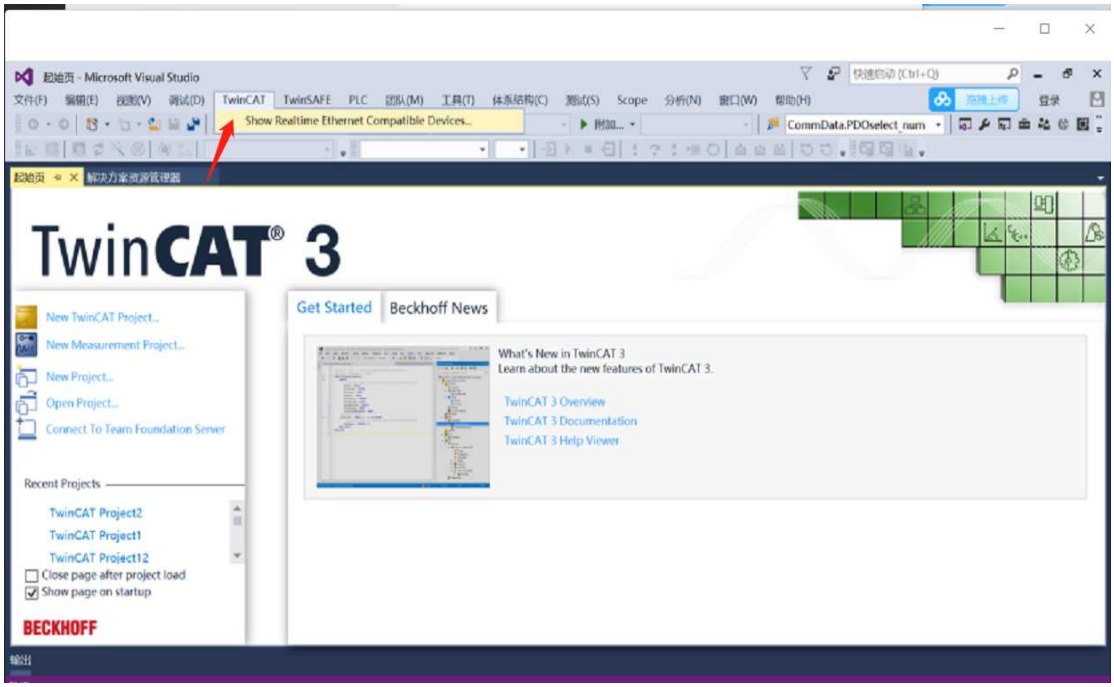
Beckhoff host computer software can be controlled directly as a master.

Copy the xml file to C:\TwinCAT\3.1\Config\Io\EtherCAT.

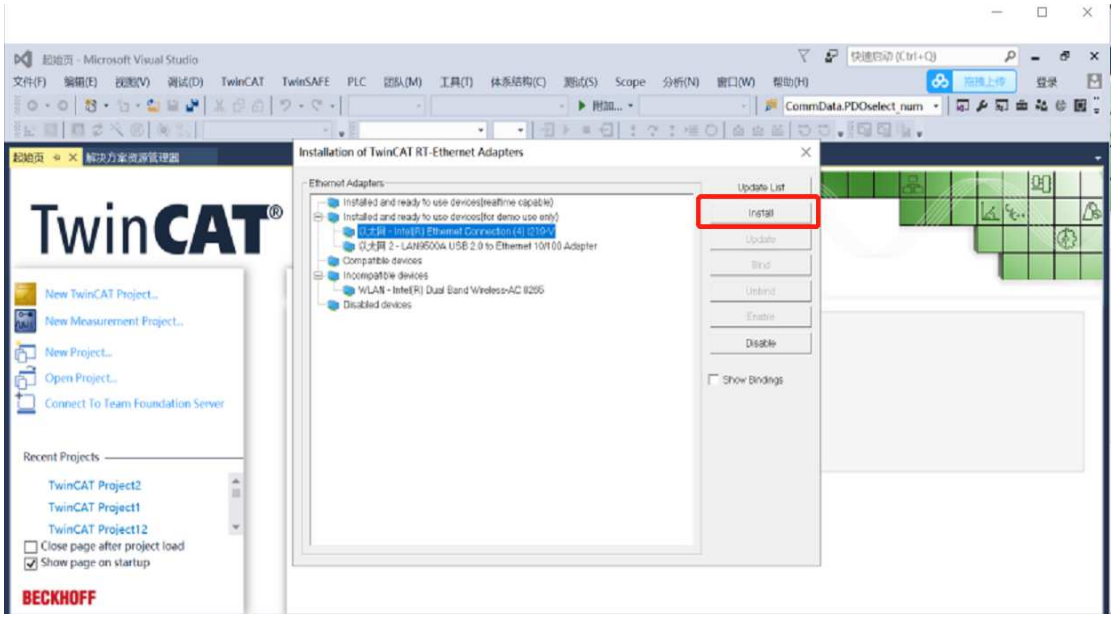
2. Open TWINCAT as shown in the image below.



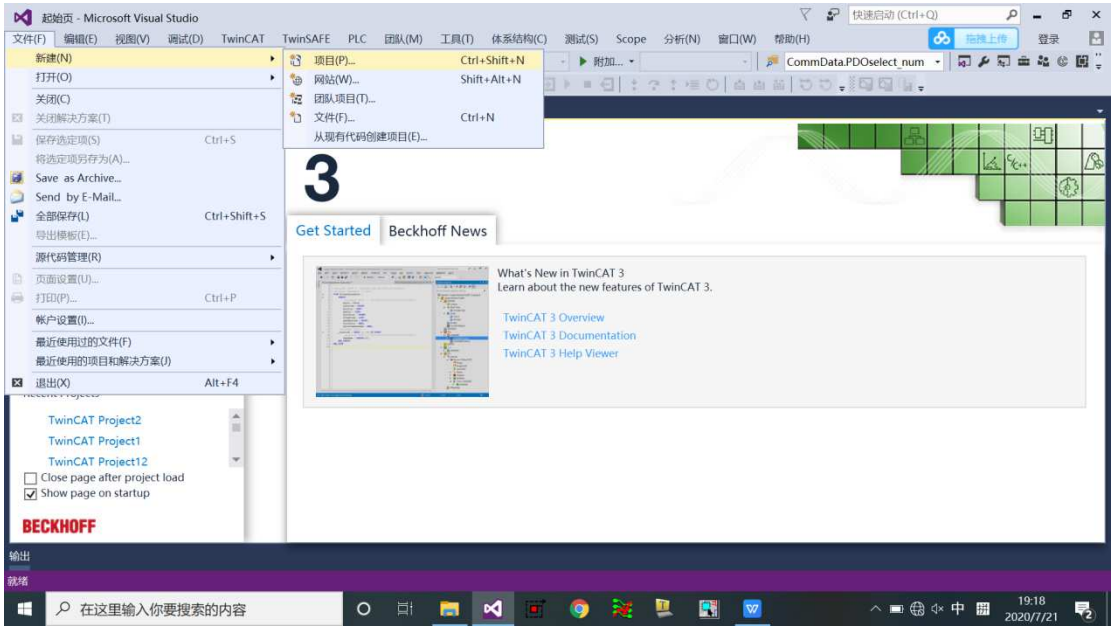
1) ADD TWINCAT MASTER

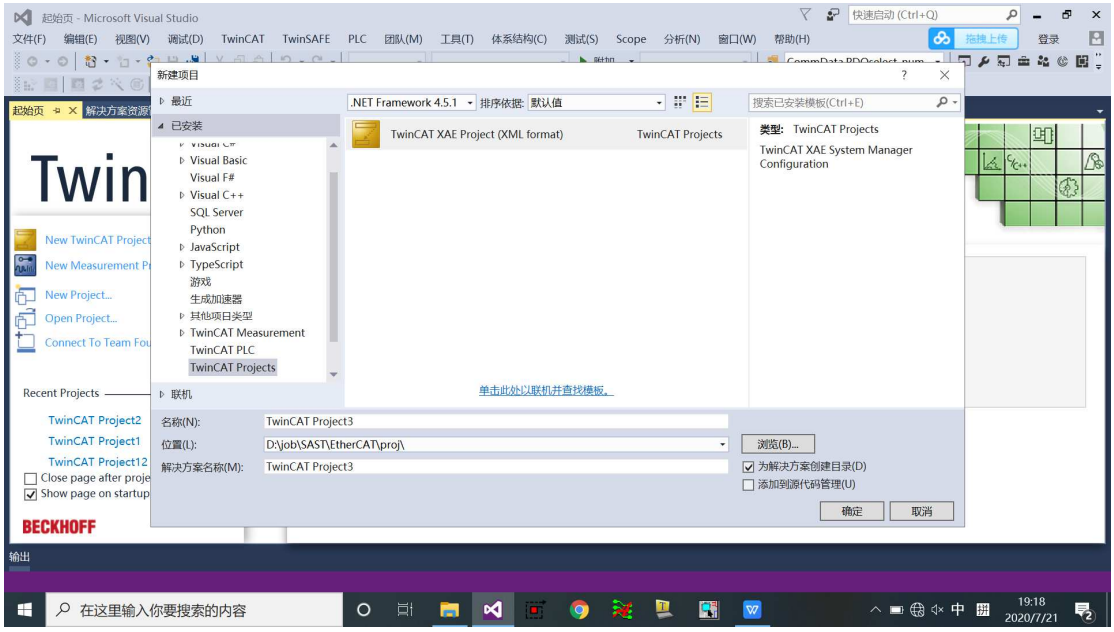


2) Select the local network card of the computer and click install

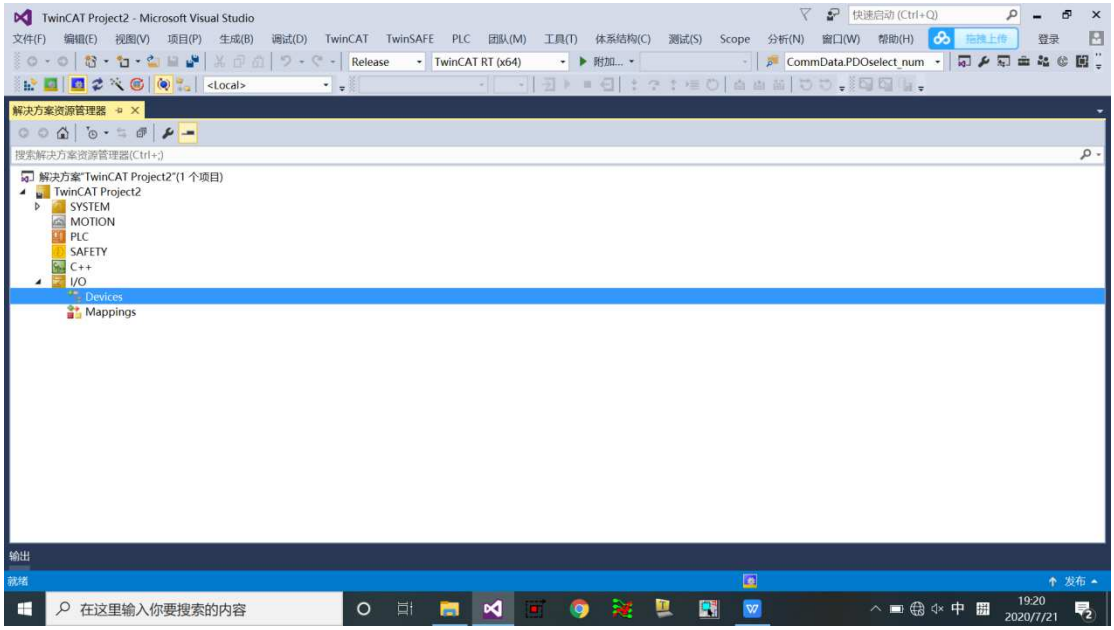


3. CREATE A NEW TWINCAT PROJECT



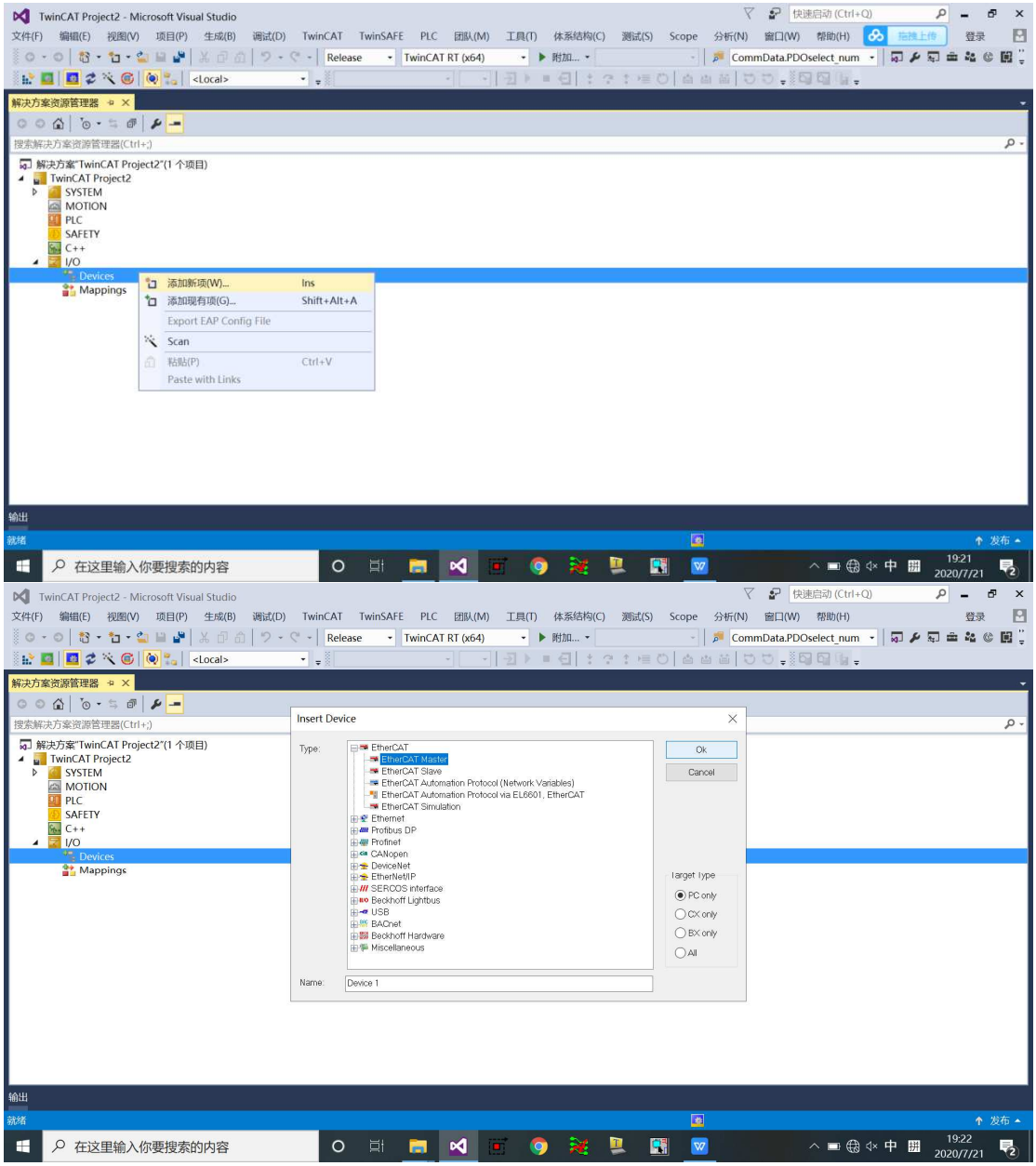


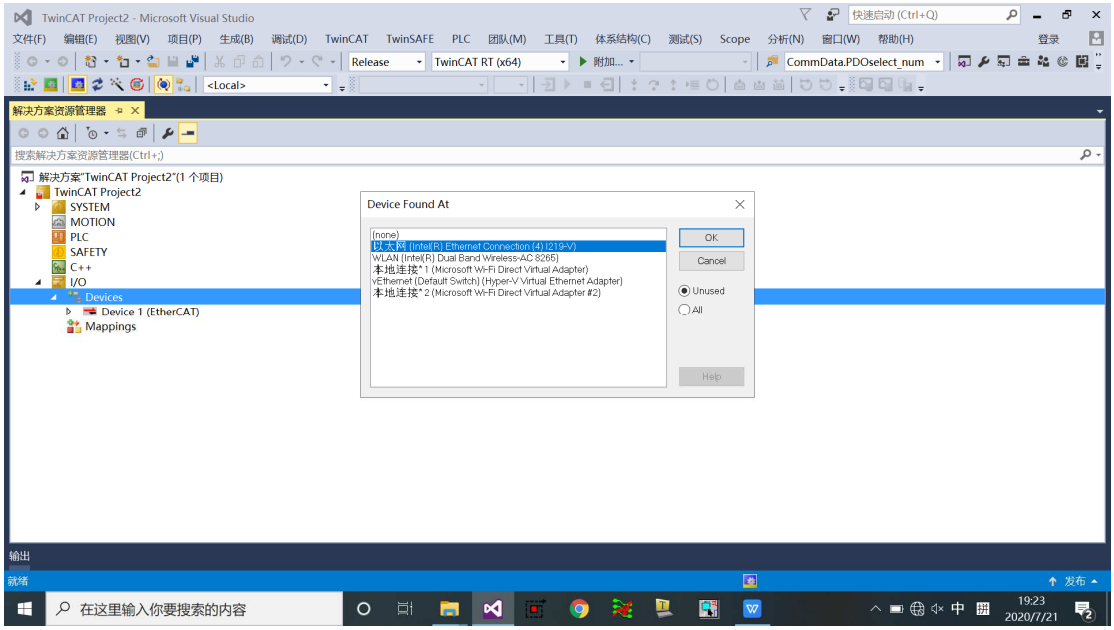
4. Add master and slave. Masters and slaves can be added manually or scanned automatically.


TwinCAT Project2 - Microsoft Visual Studio
解决方案资源管理器
解决方案"TwinCAT Project2"(1 个项目)
TwinCAT Project2
SYSTEM
MOTION
PLC
SAFETY
C++
I/O
Devices
Mappings
输出
就绪
在这里输入你要搜索的内容

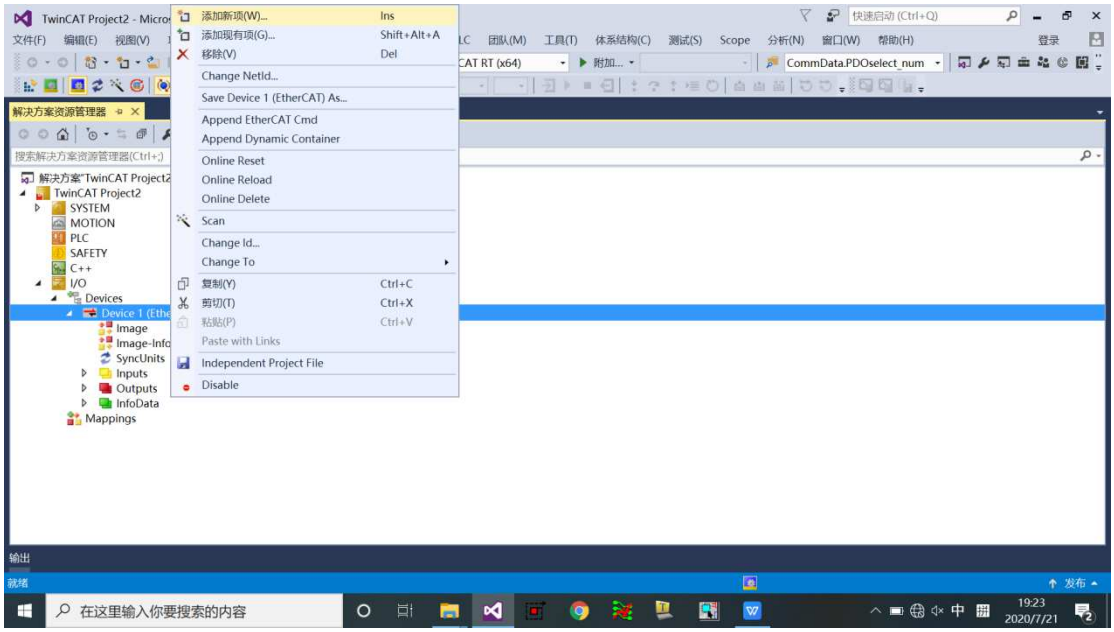
1) Add manually:

Devices/Right-click/Add New Item.

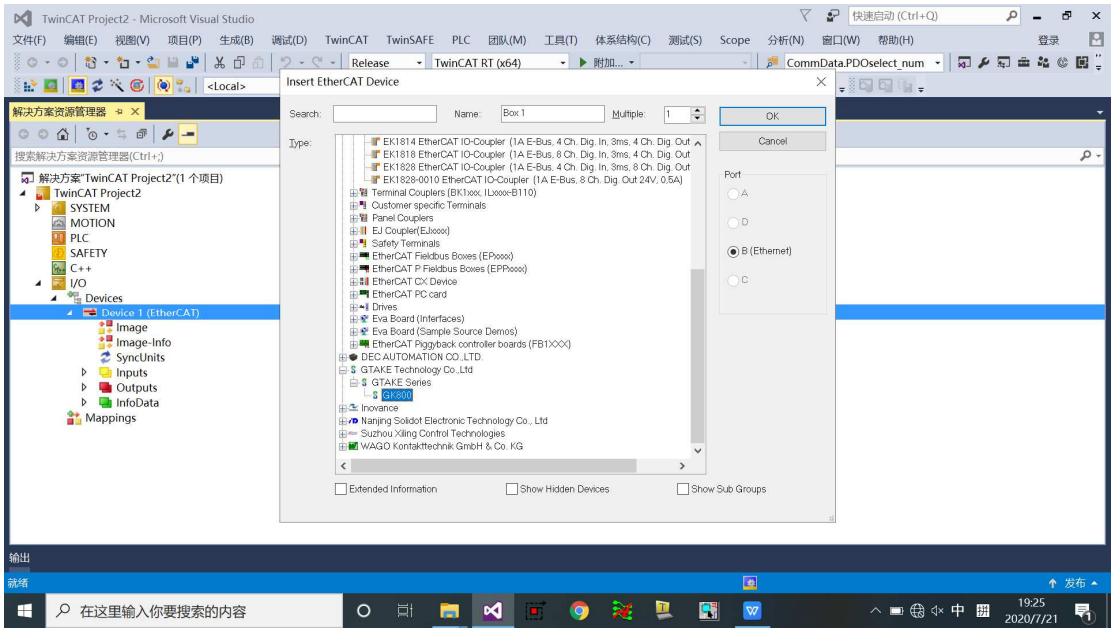




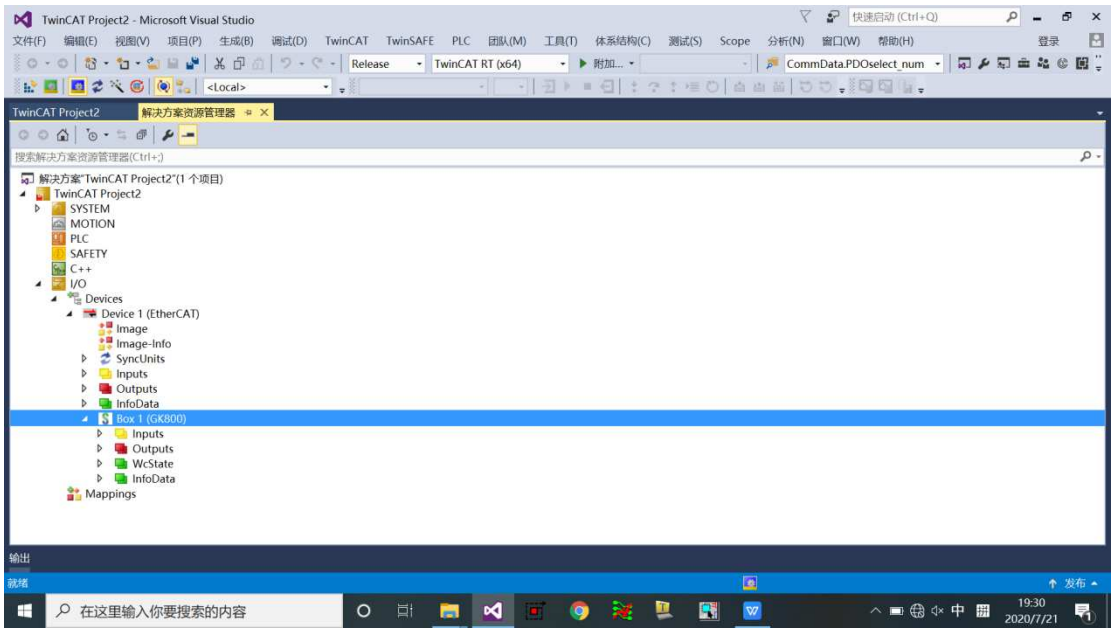
AFTER ADDING THE TWINCAT MASTER, ADD THE SLAVE.

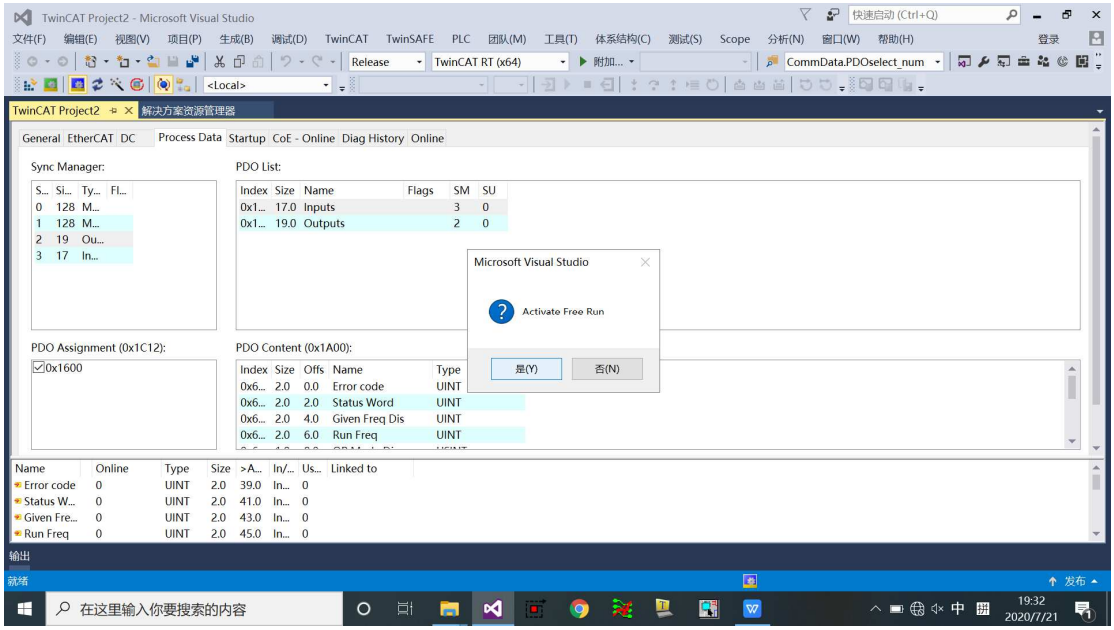


2) Add slaves

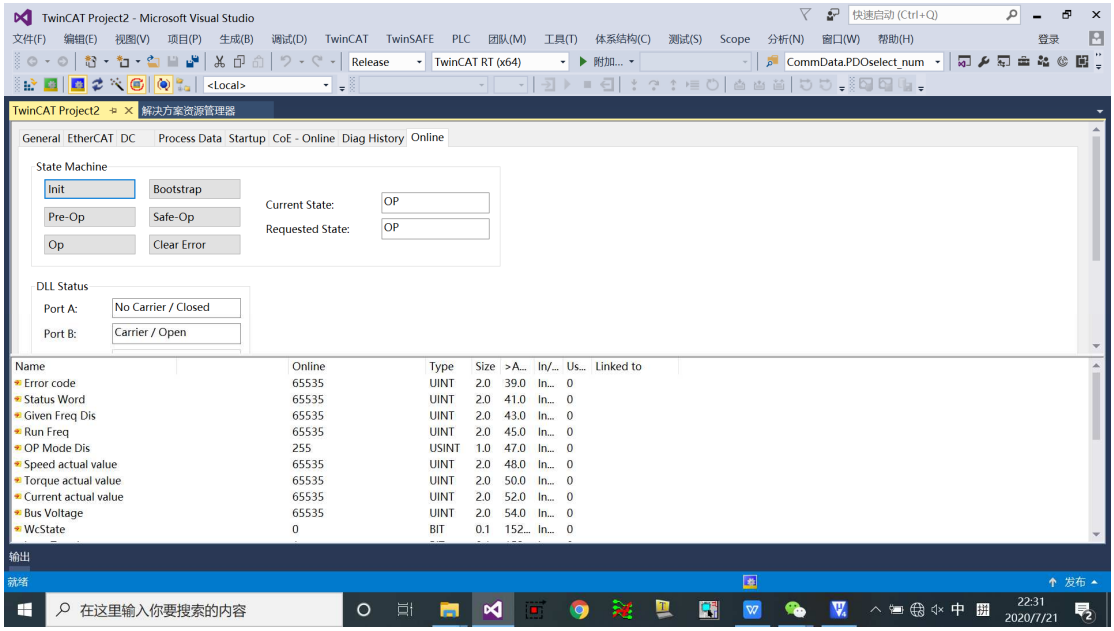


After adding slaves, if you do not need to configure PDO mapping, you can directly click reload device to use the default PDO configuration.

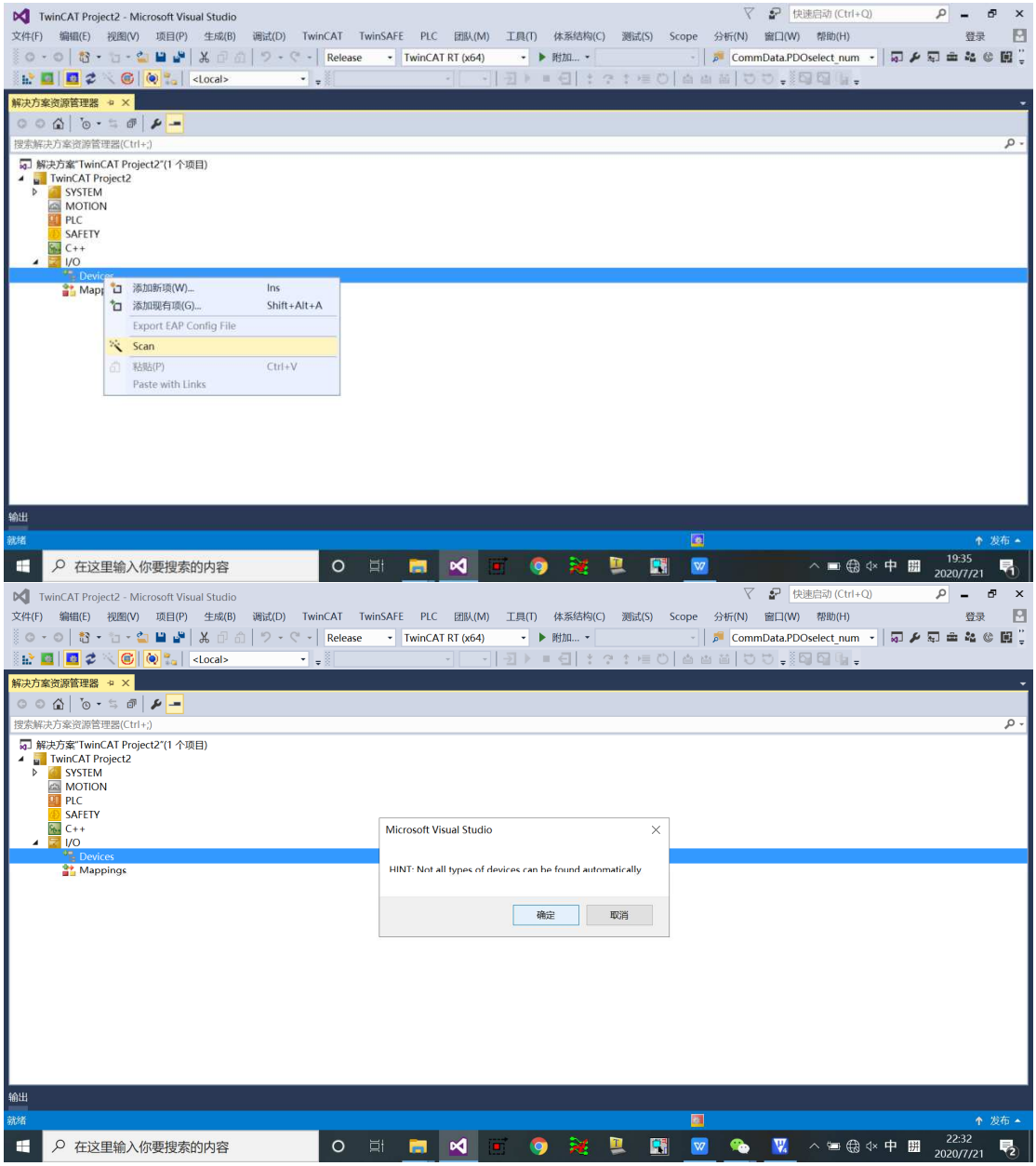




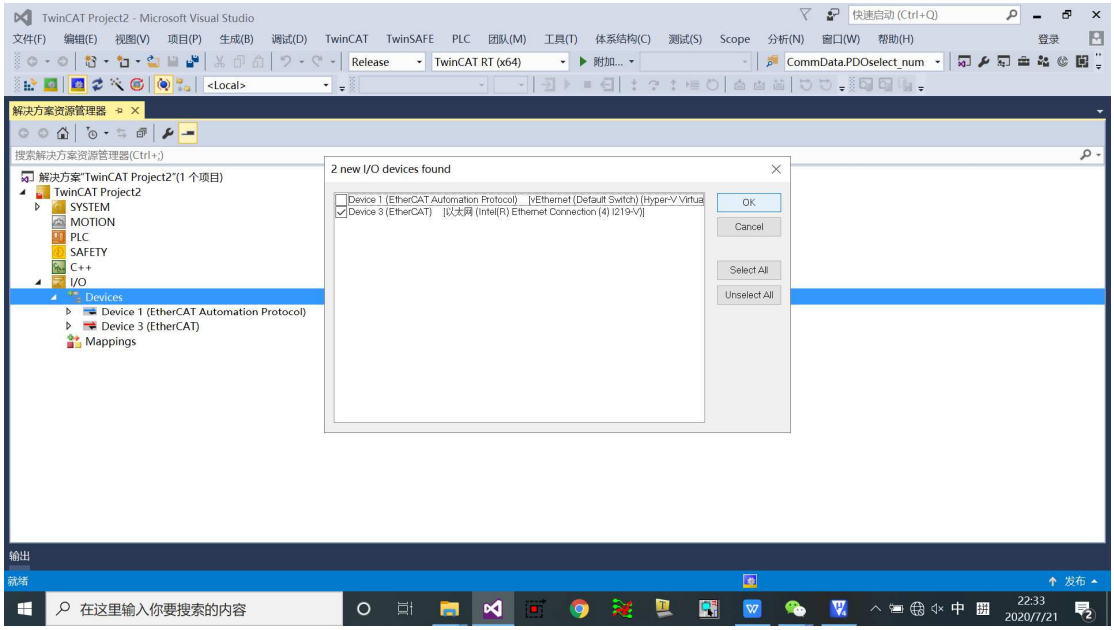
Click Yes to run.



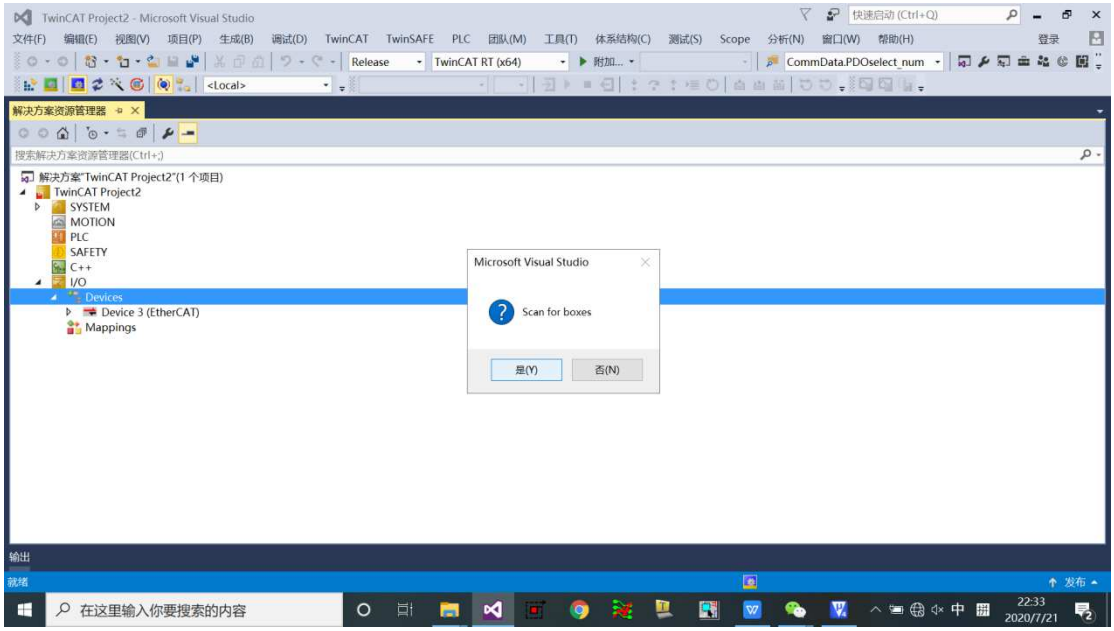
3) Automatic scanning



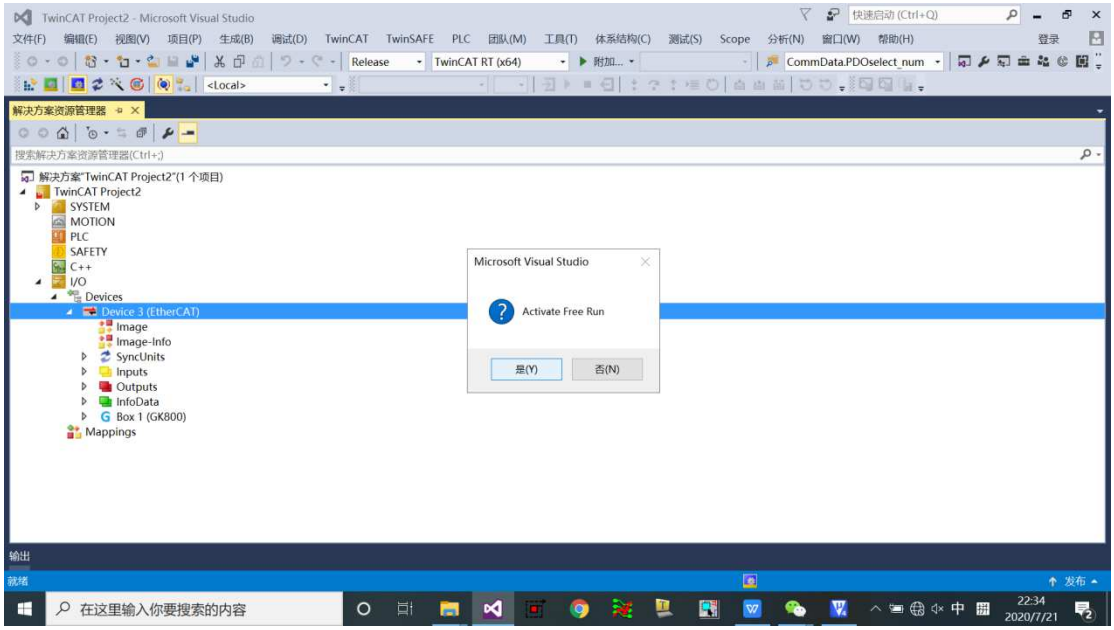
Click OK.



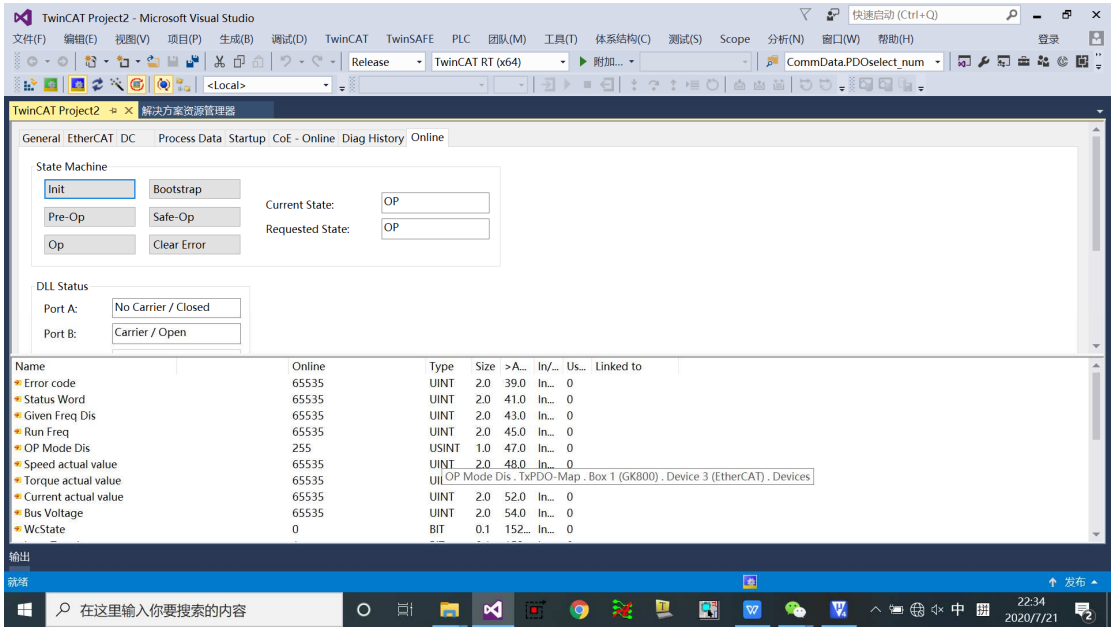
Click OK.



Click Yes.

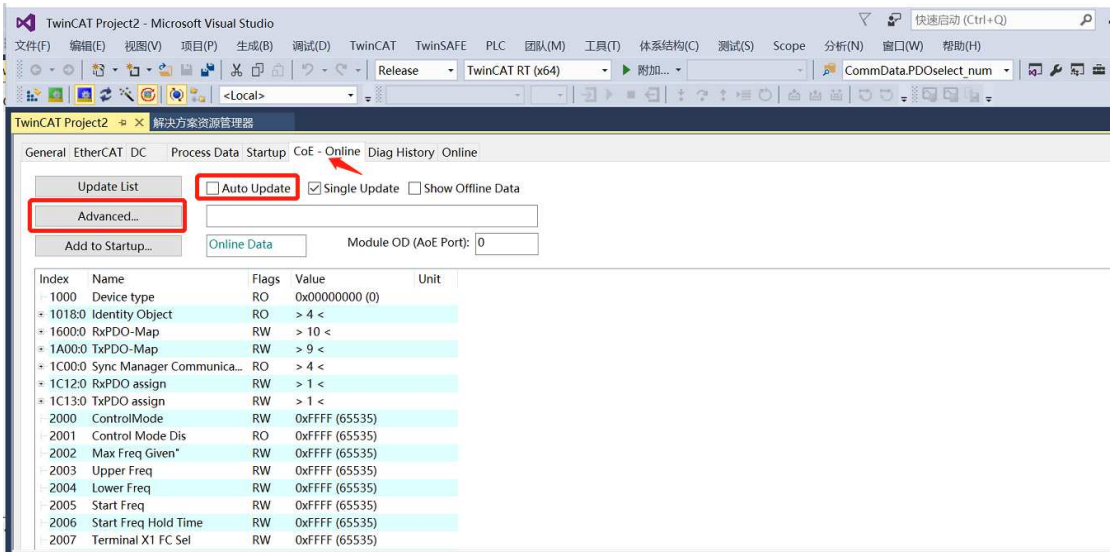


If the default configuration is used, click ACTIVATE.

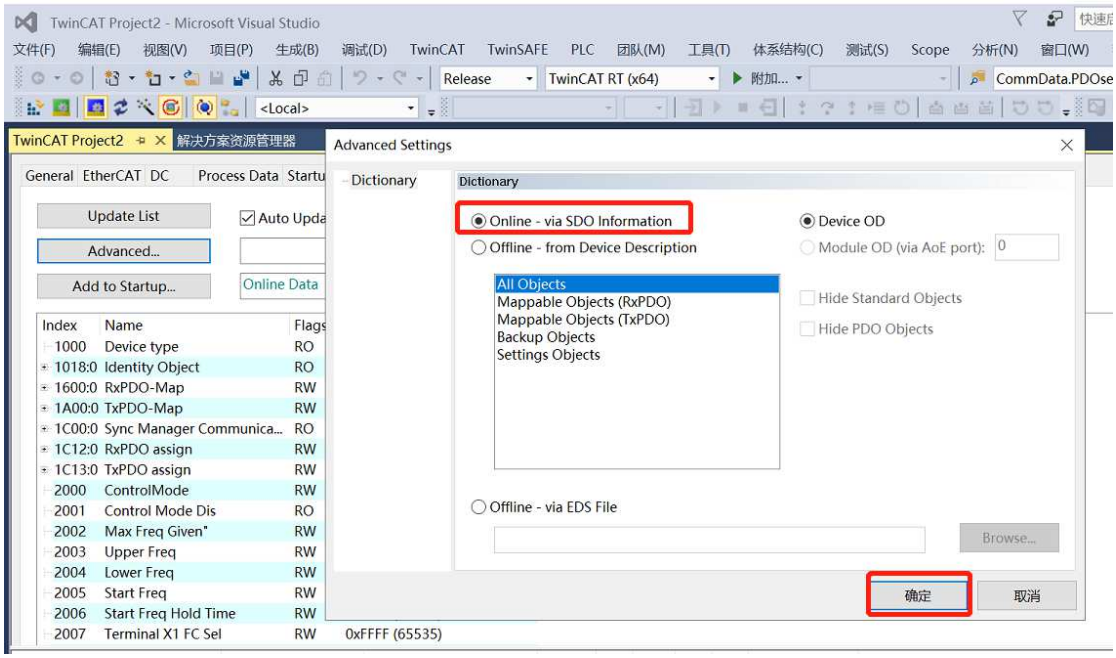


Enter the running state.

5. SDO read and write



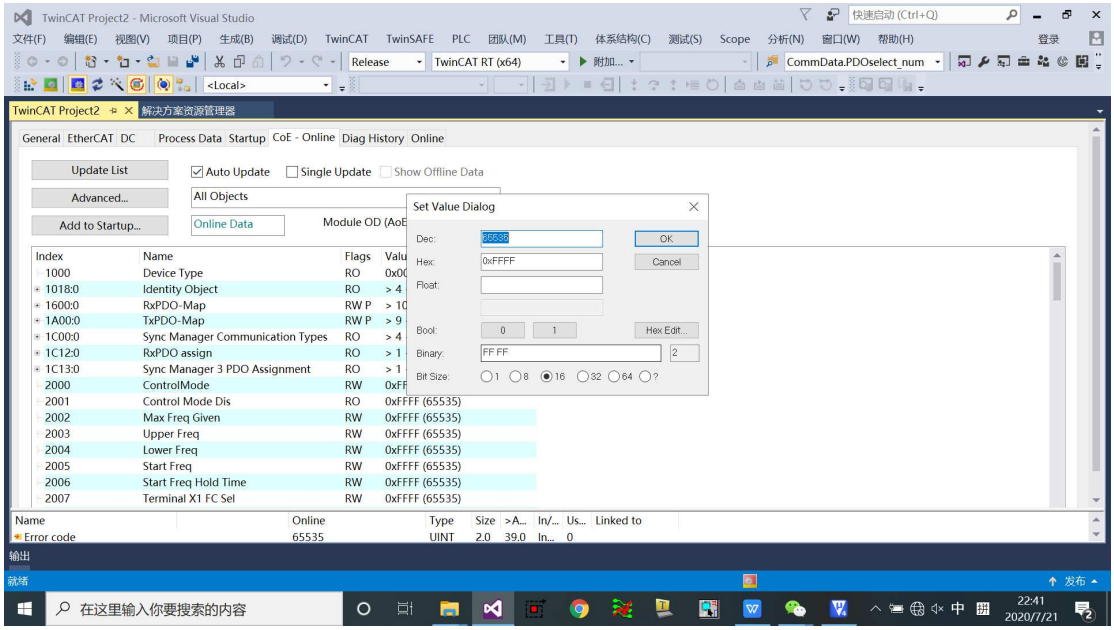
Check Auto Update and click Advanced.



Select the Online point to confirm

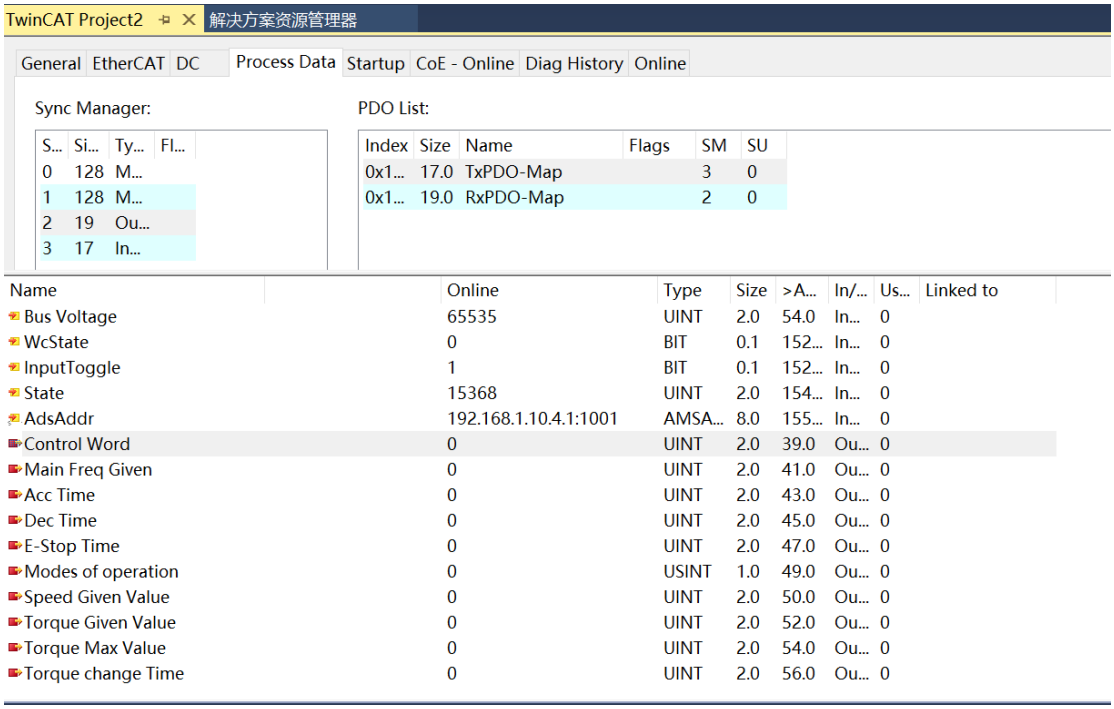
SDO read dynamic refresh

SDO write: Double-click an SDO, enter a value, and click OK.

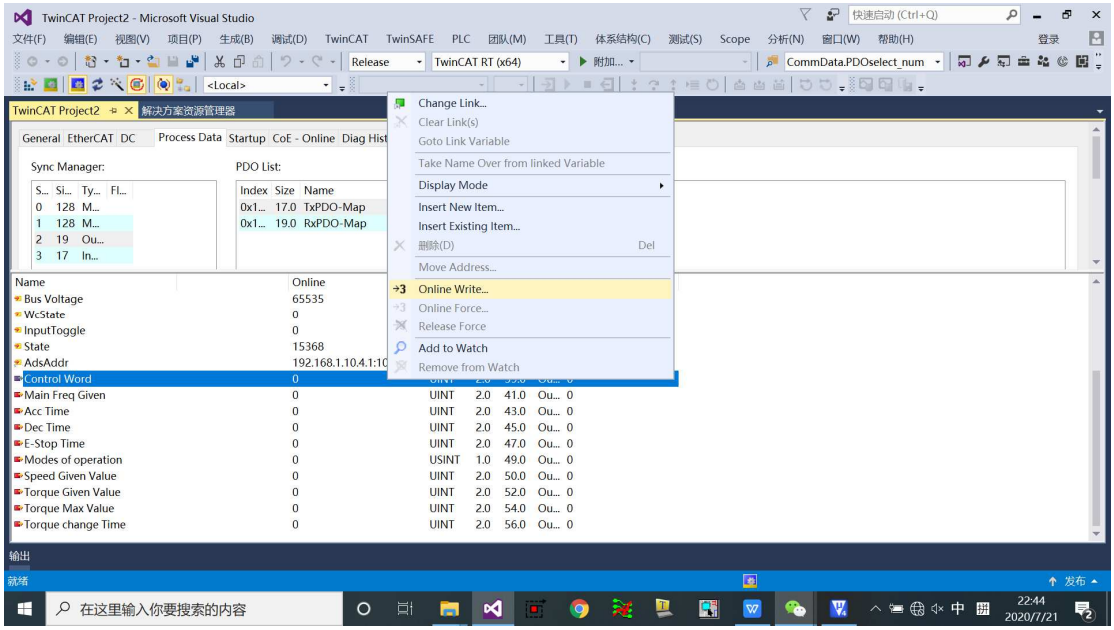


6. PDO read and write

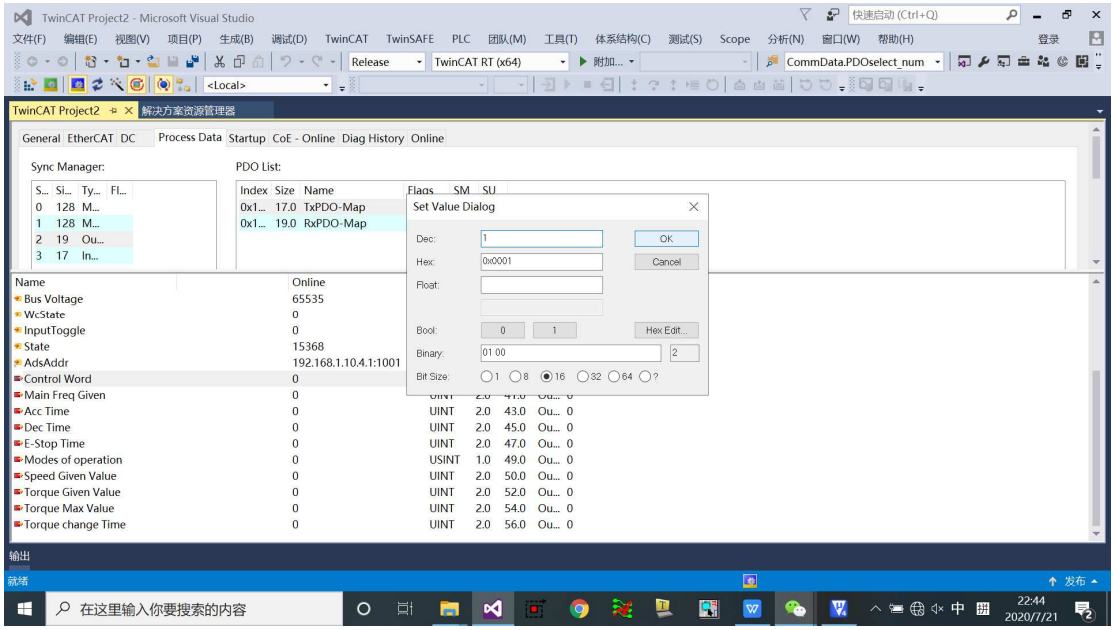
PDO writes:



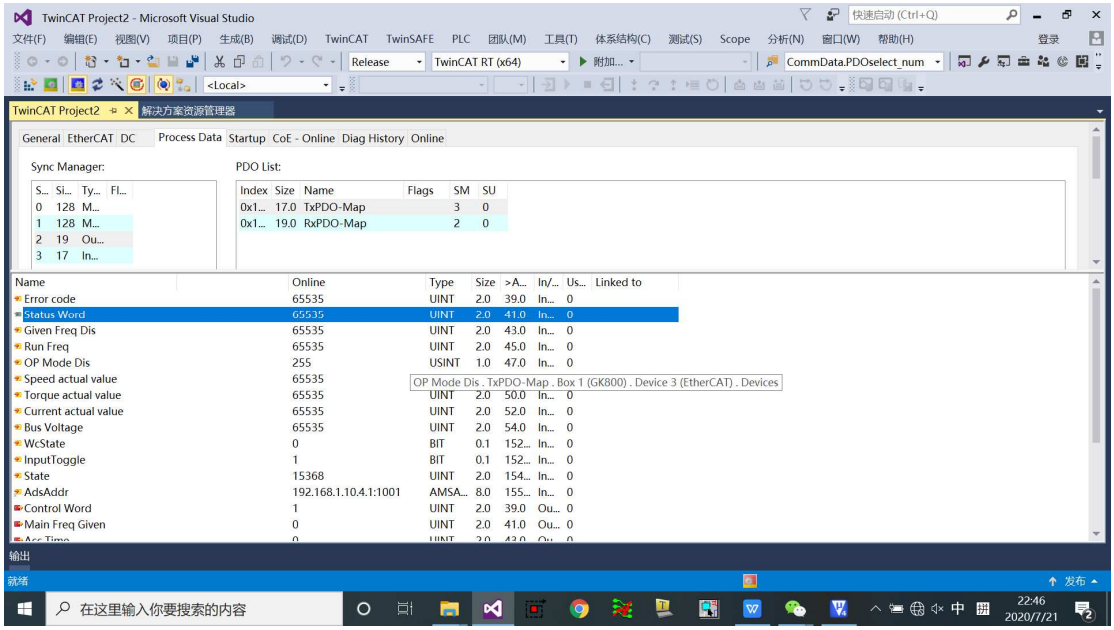
Select an RPDO and right-click /ON WRITE.



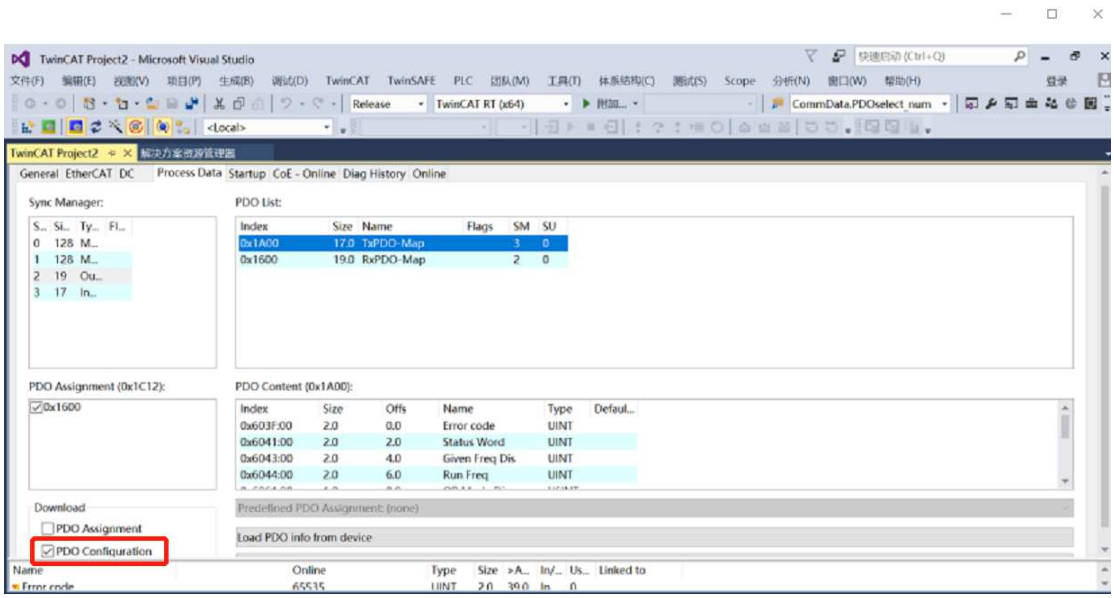
Write a specific value and click OK.



PDO Read: Real-time refresh

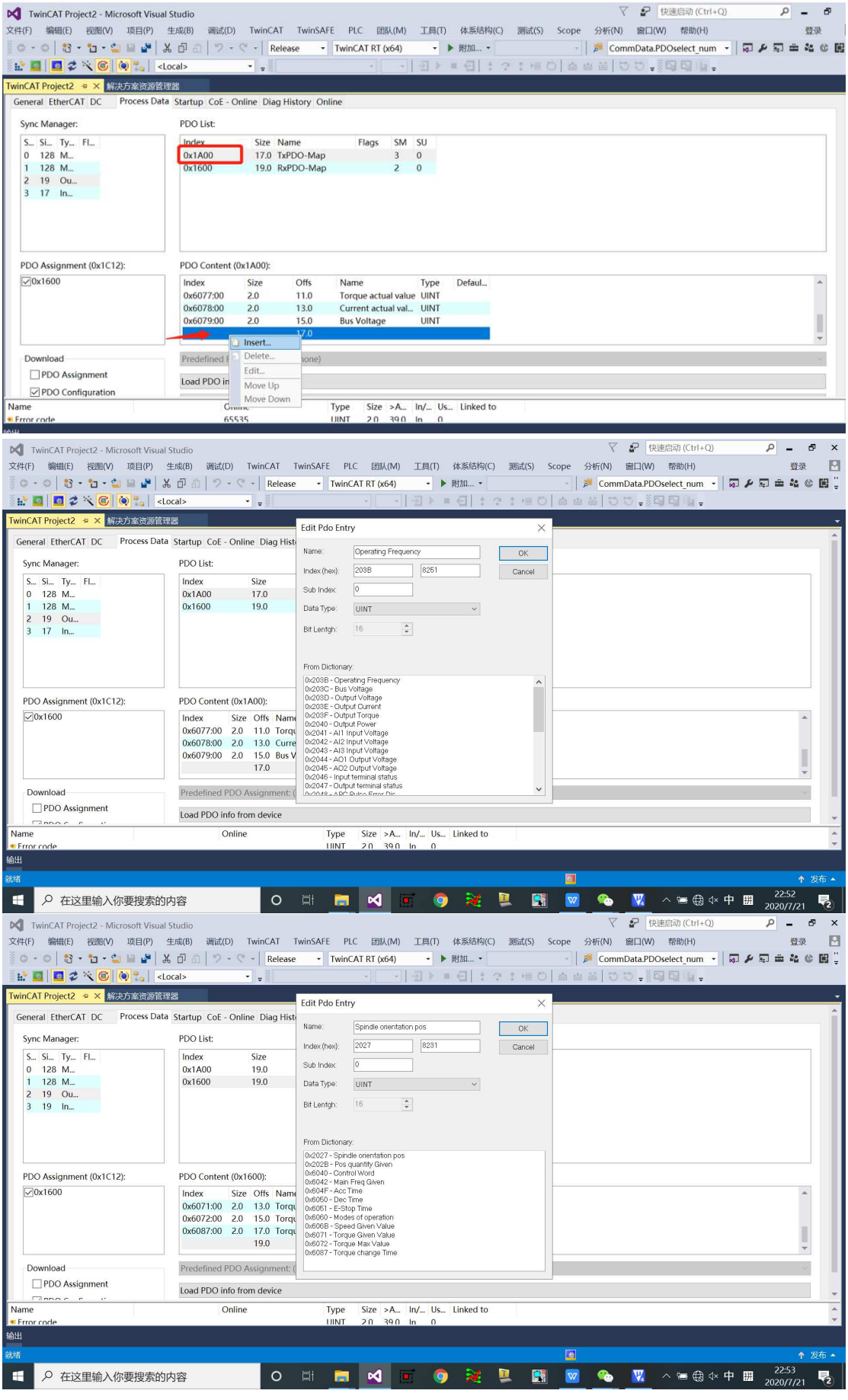


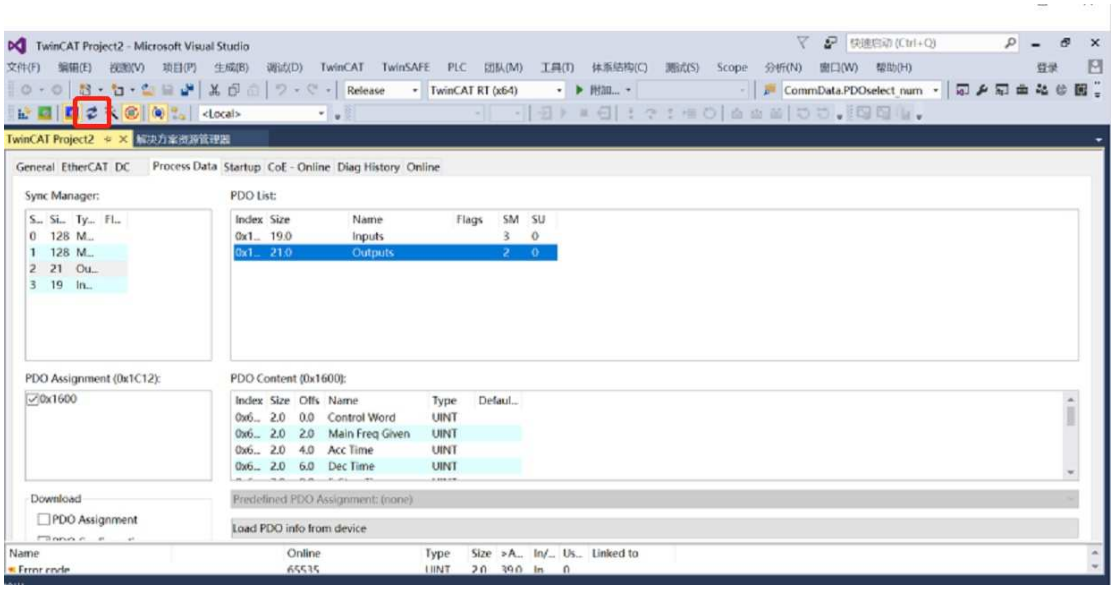
7. Dynamic configuration of PDO mappings



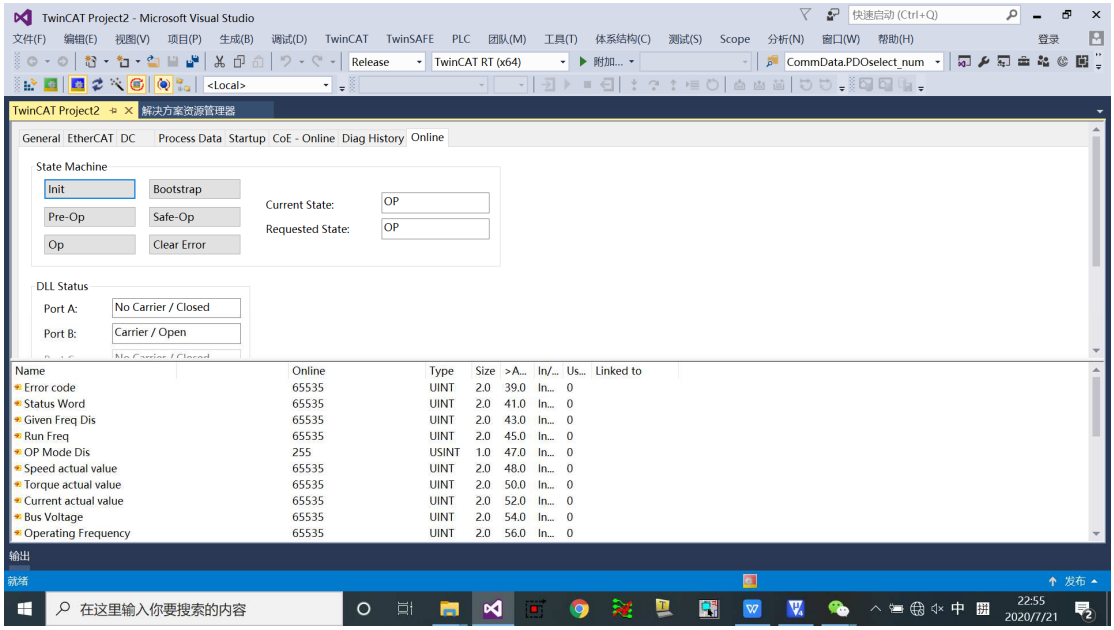
Select PDO

Drop down the mapping list and right-click /insert in the blank.


TwinCAT Project2 - Microsoft Visual Studio
Edit Pdo Entry
Name: Operating Frequency
Index (hex): 203B
Sub Index: 0
Data Type: UINT
Bit Length: 16
From Dictionary:
0x203B - Operating Frequency
0x203C - Bus Voltage
0x203D - Output Voltage
0x203E - Output Current
0x203F - Output Torque
0x2040 - Output Power
0x2041 - AI1 Input Voltage
0x2042 - AI2 Input Voltage
0x2043 - AI3 Input Voltage
0x2044 - AO1 Output Voltage
0x2045 - AO2 Output Voltage
0x2046 - Input terminal status
0x2047 - Output terminal status
PDO Assignment (0x1C12):
0x1600
PDO Content (0x1A00):
Load PDO info from device
TwinCAT Project2 - Microsoft Visual Studio
Edit Pdo Entry
Name: Spindle orientation pos
Index (hex): 2027
Sub Index: 0
Data Type: UINT
Bit Length: 16
From Dictionary:
0x2027 - Spindle orientation pos
0x202B - Pos quantity Given
0x6040 - Control Word
0x6042 - Main Freq Given
0x604F - Acc Time
0x6050 - Dec Time
0x6051 - E-Stop Time
0x6060 - Modes of operation
0x606B - Speed Given Value
0x6071 - Torque Given Value
0x6072 - Torque Max Value
0x6087 - Torque change Time
PDO Assignment (0x1C12):
0x1600
PDO Content (0x1600):
Load PDO info from device



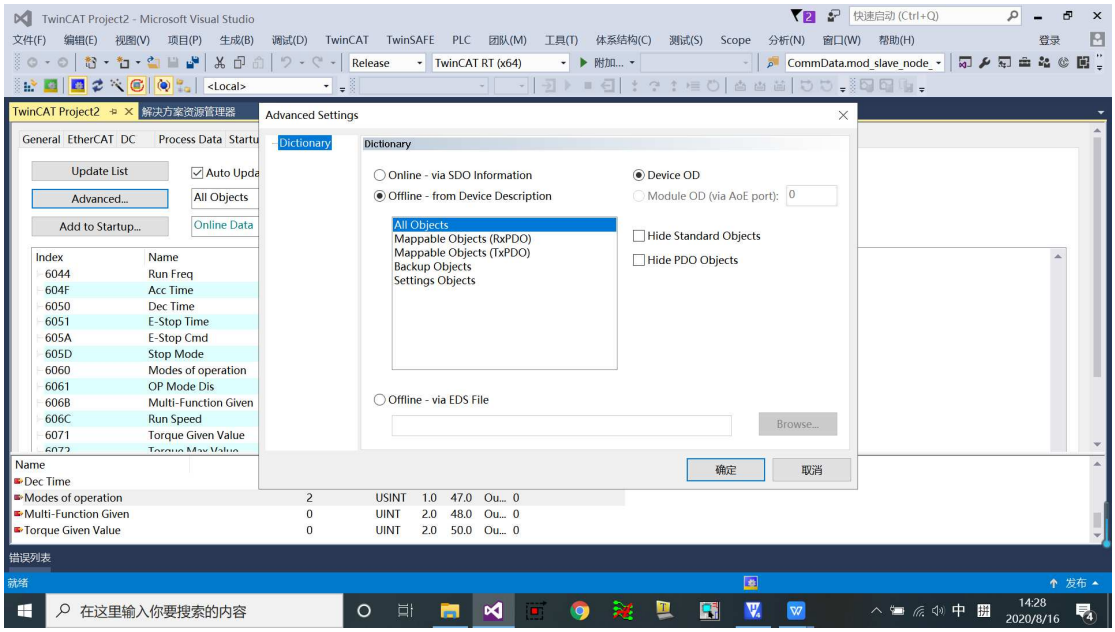
After adding, click reload devices and enter the OP.



7. Common exception handling

7.1. The TPDO list cannot find the corresponding TPDO

TC3, COE-online tab, after checking Auto Update, click Advanced, select offline, read the SDO description from XML, and you can find the corresponding list when adding TPDO.



If you select Online and get the OD description from the application layer, the TPDO cannot be found in the PDO list, because the TPDO read and write attribute cannot be obtained when the RO attribute is RO.