

LX5V-2TC-BD BD Module Manual

1 Installation

- Before installation, it must be ensured that the PLC host and the related device of the BD module terminal wiring are powered off reliably. The shell is inserted into the BD module slot of PLC host, and then locked with two standard screws for fixation.
- Two standard terminal heads are equipped with this BD module. After connecting the wiring, insert them into its terminal. After confirming that the host, BD module, wiring, etc. are installed correctly, it can be powered on for use.
- Note:
 - Please install the BD module firmly and fix it on PLC. Poor contact may lead to failure.
 - Tightening torque for fixing BD module or PLC top cover is 0.3N.m to0.6N.m. Please tighten it firmly to avoid malfunction.
- Warning: Cut off the power before installing, removing or wiring the BD module to avoid electric shock or product damage.

2 Appearance and terminal



	2-wire K/J thermocouple
L2-	Channel 2 sensor signal input negative
L2+	Channel 2 sensor signal input positive
	NC
L1+	Channel 1 sensor signal input positive
L1-	Channel 1 sensor signal input negative

Table1Terminal distribution

Table2LED lamp function description

Indicator lamp	Description
PWR	ON when power-on (when the program is running, it will be ON).
СОМ	It flashes when communicating with PLC normally, and it is OFF when timeout.
CH1	Channel 1 lamp: Always on in range; Flashing outside the range (type K: -100 $^\circ C$ to 1200 $^\circ C$; type J: -100 $^\circ C$ to 600 $^\circ C$); Off when the channel is closed.
CH2	Channel 2 lamp: Always on in range; Flashing outside the range (type K: -100 $^\circ C$ to 1200 $^\circ C$; type J: -100 $^\circ C$ to 600 $^\circ C$); Off when the channel is closed.



3 Specification

- (1) General specification: Same as PLC main unit. (Please refer to the accompanying manual of the PLC main unit.)
- (2) Power supply specification: The power supply is provided internally by PLC
- (3) Performance specifications:

Project	Description							
Digital circuit	5VDC, 90mA (from the internal circuit of the main unit)							
Analog input signal	Thermocouple: Type K or J (both types can be used per channel)							
Sensor current	1mA							
Rated temperature range	Туре К: -100°С to 1200°С	Туре J: -100°С to 600°С						
Disital autout	Type K: -1000 to 12000	Type J: -1000 to 6000						
Digital output	12-bit conversion, 11 data bits +1 sign bit							
Measurement accuracy	Туре К: 0.4°С	Туре J: 0.3°С						
Total accuracy	Full range±0.5% (full range + 1 $^{\circ}$ C)							
Conversion speed	2-channel 700ms							
Conversion features	1000	Digital output -600 C +1200C J type) (K type) Temperature Input						



4 Wiring



Cut off the power before installing, removing or wiring the BD module to avoid electric shock or product damage.

Solution 🔊

- Do not place signal cables near high voltage power cables or in the same trunk line. Otherwise, it may be disturbed or surged. Keep a safe distance between signal cable and power cable, at least 100mm.
- Ground the shielding of shielded wire or shielded cable. But the ground point and high voltage line cannot be the same.
- Never weld any cable ends. Ensure that the number of connecting cables does not exceed the designed number of units.
- Do not connect cables whose dimensions are not allowed to avoid poor contact or damage to products.
- Fix the cable so that no force directly acts on the terminal line or cable connection area.
- The tightening torque of terminal is 0.5Nm to 0.6N.m. Please tighten it to prevent malfunction.
- Do not use empty terminals.

4.1 Applicable cables

- (1) AWG25-16 is used for connection with output device.
- (2) Maximum terminal tightening torque is 0.5N.m to 0.6N.m.
- (3) Using different types of cables may cause poor contact with terminals. Please use pressfit terminals for good contact.

Line number and cross-sectional area

Line number	Cross-sectional area (mm²)	End processing
AWG26	0.1288	Stranded cable: Strip off the sheath, rub the core wire,
		and then connect the cable.
AWG16	1.309	Single-core cable: Strip off the sheath and connect the cable.



4.2 I/O Mode

Thermocouple input mode



5 Description of PLC device

- (1) When connected to LX3 series PLC, please refer to LX3 series BD module manual.
- (2) When connected to LX5 series PLC, if the firmware version of PLC is lower than 2.051 (excluding 2.051), or BD module is not configured by host computer, it can be controlled by the following system devices: Table3Device allocation

PLC model	BD model	Device	Expansion port 1 description	Device	Expansion port 2 description
		SM2010	CH1: Input mode switch flag OFF: Thermocouple type K ON: Thermocouple type J	SM2030	CH1: Input mode switch flag OFF: Thermocouple type K ON: Thermocouple type J
	SM		CH2: Input mode switch flag OFF: Thermocouple type K ON: Thermocouple type J	SM2031	CH2: Input mode switch flag OFF: Thermocouple type K ON: Thermocouple type J
LX5V	2TC	SD2010	The temperature of CH1 at 0.1°C (Type K: -100°C to 1200°C: -1000 to 12000; Type J: -100°C to 600°C: -1000 to 6000)	SD2030	The temperature of CH1 at 0.1°C (Type K: -100°C to 1200°C: -1000 to 12000; Type J: -100°C to 600°C: -1000 to 6000)
		SD2011	The temperature of CH2 at 0.1°C (Type K: -100°C to 1200°C: -1000 to 12000; Type J: -100°C to 600°C: -1000 to 6000)	SD2031	The temperature of CH2 at 0.1°C (Type K: -100 °C to 1200 °C: -1000 to 12000; Type J: -100 °C to 600 °C: -1000 to 6000)

(3) You can select device through I/O mapping to use the configuration function of new BD module. For details, please refer to "<u>6.1 Parameter configuration</u>".

6 Instructions

6.1 Parameter configuration

- (1) Open the host computer software and create a new project, double-click "Project Manager" \rightarrow "Extended Function" \rightarrow "BD Module Configuration" Note to enter "BD settings" interface;
- (2) Configure the currently connected PLC (take the LX5V-2416 model as an example) and BD module model on the BD module configuration interface: Select "LX5V-2TC" in the device bar on the right side of the BD module configuration interface and double-click to add it to the corresponding slot position of PLC (slot number 1 or 2, the software will select slot 1 by default, and right-click to move down to slot 2);
- (3) After adding the BD module to the slot, double-click or right-click to select configuration parameters to enter LX5V-2TC-BD configuration parameters interface, as shown in the following figure. Configure related parameters on this interface.



PLC(P) View	w Help	计写声系数	📅 🕁 🗐 Comment edit	2 Compile	Edit model		PLC Editor2 - Extended Fun	tion BD Board Configuratio		🚭 Automatic backup 👔 USB	B flash disk download	-
w d	Cut (~ Redo	18 위 비 배 발 16 당 ਨ 발 ਨ	新 記 自 Edit statement	Switch	Monitor Mode (R)		Remote Operation	Module monitoring		PLC encryption tool Ge	nerate download file culation of total program steps	
agement	- 9 ×		Extended Function BD Board C		Module monitoring	-1						
gram		Not num Configure device							rice occupation	Ac	tual installatio Device version n	4 Device
Scanning MAIN	-	LX5V-2416 3	LX5V-2416 2-channel temperature module					X0*	x27:Y0~Y17			- PLC host - LX5V-3624
Event		DASY-21C	2-charmeltemperature module	Configurati	on parameters 🥿			- Inu.	AU			- LX5V-2424
Subroutine				Move up						_		- LX5V-2416 - LX5V-1814
Interrupt vice Comment				Move down	n	Continu	ration LXSV-2TC				×	- LX5V-1616
ameter				Delete		comga	addit boyvere					- LX5V-1412
vice memory						Mo	dule configuration TCCon	iguration I/O mapping	Device Info			LX5V-1212
ended Function Electronic CAN							Response time (0.1ms)	1~3276	7			LX5V-2PT
PLCLINK												LX5V-2TC - LX5V-2DAV
BD Board Con	figuration							ß				- LX5V-2DAI
												 LX5V-2ADV LX5V-2ADI
												- LX5V-2ADI - LX5V-2PTS
												- LX5V-2PT2ADV
												 LX5V-2PT2DAV LX5V-2PT2DAI
												- LX5V-2TC2DAI
					C	à						- LX5V-2ADV2DAV
												 LX5V-2ADI2DAI LX5V-4ADI
												- LX5V-4ADV
												- LX5V-88X - LX5V-88YT
												- LX5V-285485
												LX5V-ETH
	I								B	eset OK	Cancel	
	I											
	P	rogress										
	<											
ananament	Instructions	Information Output	iearch / Replace 🛛 🖪 PLC Verity	esult 🔲 Device I	usage list 🔲 Progress							

Note: This function is only supported in the following versions of host computer, slave computer and BD module:



(1) Supported host computer versions: Wecon PLC Editor2 2.1.204 and above, as shown in the following figure:



(2) Supported slave computer versions: 2.051 and above, as shown in the following figure:

🛤 🗋 🗃 🗑 🗟 🖆					Wecon PLC E	ditor2				- 8 ×
File PLC(P)	/iew Help				1					^ Style *
PLC model change Start 3V	Paste - Undo		Comment edit		Edit model OMonitor Mode (R)	1 Read from PLC	Device Monitor Clear Device Monitoring	C PLC clock setting	Automatic backup	
Project	Clipboard	Ladder Symbol	Edit	Program	Program Mode		Online		Tool	
Project manag Co	mmunication setting				1	×				
	OUSB Connection	(Best to use well-shielde	d cable)			Device Info				×
	USB port	No device detected.		-	Communication test	Parameter		Value		
							rsion informatio	1. Sec. 9. Sec. 9.		
	OEthernet conne	ection.			OK	PLC model		LX5V-2416MI		Î.
							ersion number ersion number	V2.061		
	NIC selection	Realtek PCIe GbE Family Con	troller	- 2		Product Uni		V1.000	02278730DE9C8C3BDC24D	
						Production		2020.09.09		
	IP address		Devices se		Device Info		configuration in		20.22.00	
	If address		Devices Se	aren			installation type	LX5V-2DAV		
						BD1 version		1013		
	•Serial connect	i on			-	BD2 actual	installation type	LX5V-2ADV		
	~				Close	BD2 version	a	1013		
					2	🔺 Hardware	parameter inform	ation		
						Hardware co	onfiguration table .	100		
	CUM port	COM1-通信端口		-			ersion number	1000		
	Baud Rate	115000		+		Hardware ty		5000		
		115200				Input point		24		
	Detailed	settings				Output poir		16		
							high-speed output o.			
	-					Reverse ing Mask	put	16 0		
							-speed pulse maximu.			-
						Other men	speed burse maximu.			
									确定	
	Progress									- ₽ ×
Project 📄 Instruc				-	Progress					
		itput 🔲 Search / Replace 📑 PLC '	verny result 📋 Devid	e usage list	Progress					
English CAP	Number Rev	write								

(3) Supported BD module version number: 1013 and above, as shown in the following figure:

Slot num	Configure device	Device description	Device occupation	Actual installatio	Device version n
0	LX5V-2416	LX5V-2416	X0~X27;Y0~Y17	LX5V-2416MT	V2.061
1	LX5V-2TC	2-channel temperature module	R0;R1;	LX5V-2TC	1014
2					



The parameter configuration interface is as below:

1. Module setting: Set response time (The response time is the interval time between PLC acquisition of BD module data. Range: 0.1ms to 3276.7ms).

onfiguration I/O mapping Device Info	
10 1~32767	
	onfiguration I/O mapping Device Info 10 1~32767

2、TC configuration:

	Channel-1				Channel-2		
Filtering intensity 4 Filtering intensity 4 Enable overnun detection Enable overnun detection Upper temperature limit 12100 -1100~12100 (0.1°C) -1100 -1100~12100 Lower temperature limit -1100 -1100~12100 (0.1°C) -1100 -1100~12100 Lower temperature limit -1100 -1100~12100 (0.1°C) Lower temperature limit -1100 Enable temperature calibration -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0	🔽 Enable channel				🔽 Enable channel		
Enable overnun detection Enable overnun detection Upper temperature limit 12100 1100~12100 (0.1°C) Lower temperature limit 12100 1100~12100 (0.1°C) Lower temperature limit 12100 -1100~12100 (0.1°C) Lower temperature limit -1100 Enable temperature calibration -10000.0~10000.0 Temperature gain 1.000000 -10000.0~10000.0 Temperature offset 0.00000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0	Sensor type	к			Sensor type	к	Ť
Upper temperature limit 12100 -1100~12100 Upper temperature limit 12100 -1100~12100 (0.1°C) Lower temperature limit -1100 -1100~12100 (0.1°C) Lower temperature limit 12100 -1100~12100 (0.1°C) Lower temperature limit -1100 -1100~12100 (0.1°C) Lower temperature limit -1100 -1100~12100 (0.1°C) Lower temperature limit -1100 -1100~12100 (0.1°C) Lower temperature limit -1100 -1100~12100 (0.1°C) Lower temperature calibration Temperature gain 1.000000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0	Filtering intensity	4		*	Filtering intensity	4	*
(0.1°C) Lower temperature limit -1100 * 12100 (0.1°C) Lower temperature limit -1100 * 12100 (0.1°C) Enable temperature calibration -1100 * 12100 -1100 * 12100 -1100 * 12100 Temperature gain 1.000000 -10000.0 * 10000.0 Temperature gain 1.000000 -10000.0 * 10000.0 Temperature offset 0.000000 -10000.0 * 10000.0 Temperature offset 0.000000 -10000.0 * 10000.0	Enable overrun detec	tion			Enable overrun detect	tion	
Lower temperature limit -1100 -1100~12100 .100~12100 .1100~121000 .110000.0~10000.0 .110000.0~		12100	-1100~12100			12100	-1100~12100
Enable temperature calibration Enable temperature calibration Temperature gain 1.000000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0 Temperature offset 0.000000 -10000.0~10000.0		-1100	-1100~12100		Lower temperature limit	-1100	-1100~12100
Temperature offset 0.000000 -10000.0~10000.0		alibration				alibration]
	Temperature gain	1.000000	-10000.0~10000.0	0	Temperature gain	1.000000	-10000.0~10000.0
	Temperature offset	0.000000	-10000.0~10000.0	0	Temperature offset	0.000000	-10000.0~10000.0
					ß		

- ① Check enable channel to set whether to enable the current BD module channel.
- (2) Sensor type: The default sensor type is K thermocouple (Type K and J are optional, and you can set through the drop-down box).
- ③ Setting the filtering intensity can reduce the jitter of BD channel value. The default configuration of filter intensity is 4. Level 0 is the lowest and level 9 is the highest. The filter intensity can be adjusted according to actual use.
- (4) Check enable overrun detection to judge that when the upper and lower limits of temperature exceed the current setting temperature, the host computer will prompt an error.

Note: Different types of thermocouples can measure different temperature ranges.

(5) Check enable calibration, you could calculate the gain offset according to the following formula to



convert the corresponding channel value:

Channel value = actual temperature value × gain value + offset value

When the channel value deviates from the actual temperature value, the channel can be calibrated by setting the gain offset, for example:

If the type of thermocouple connected to the current channel is K:

- The input temperature of control channel is 0°C, the value of acquisition channel is 50 (unit: 0.1°C), and the actual channel value should be 0 (unit: 0.1°C).
- The input temperature of control channel is 1100°C, the value of acquisition channel is 11100 (unit: 0.1°C), and the actual channel value should be 11000 (unit: 0.1°C)

 $\begin{cases} 0 = 50 * a + b \\ 11000 = 11100 * a + b \\ , \end{cases}$

$$\begin{cases} a = 0.995475 \\ b = -497738 \end{cases}$$

Solve and get $\begin{bmatrix} b = -49.7738 \end{bmatrix}$ The calibration can be completed by setting the corresponding gain

offset to the current channel.

3、 Set I/O mapping. The channels are mapped to R device according to the current number of BD module channels by default. As shown in the following figure, BD module CH1 to CH2 is mapped to device R0 to R1.

Module configuration TCConfiguration	I/O mapping Device Info	
Channel mapping element	Channel	
4		
- R0	CH1	
- R1	CH2	

4. After the above configuration is completed, check the program, download the configuration to PLC, and STOP \rightarrow RUN configuration takes effect.

🛤 🗋 🐸 🖬 🔜 📹	4) (H #		Wecon PLC Editor2 C:\Users\Admir	nistrator\Desktop\111	1.wcp2 - Extende	led Function BD Boa	ard Configuration			
File PLC(P) V	/iew Help									∧ Style *
PLC model change Start 3V	Paste 🗐 Undo Cut 🕞 Redo Copy	は、 時代 11、 11、 11、 11、 11、 11、 11、 11	Edit statement	🖌 Edit model 💽 Monitor Mode (R) 🛵 Monitor Edit (W)	Transfer Se	PLC	Module monitoring Clear Device Memory	K PLC clock setting	Automatic back	tool 🗖
Project	Clipboard	Ladder Symbol	Edit Program	Program Mode	7		Online		Tool	
Project management	▼ # ×	-	nction BD Board Configuration ×	/						
Program Program Program Main Event Subroutine Device Comme Parameter Device memory Extended Funct Electronic C Extended Funct RD Board C	0 1 2 nt , ion	È-□LX5CPU/LX5V	(r) (r) (r) (r) (all Name/Data Name (including program parameters + hi rr arameter somment	eot All(A) Detail	Upload	erify(C) Deselect all(8) Memory capacity Program steps 0./5021 Program steps 0./1203 Canoni siza 0.1203 Calculated Close	× v ity cooo kB size	ste Device versi		Device PLC bot PLC
		utput 🖪 Search / Replace 📑 PLC V	erify result 📃 Device usage list 📃 Pro	aress						
Project management		anpor E scarch / Replace E PLC V							1	
English CAP	Number Re	write USB(4)HUB(5) LX5V								

重视客户体验 帮助客户成功



6.2 Ladder Diagram

1. Programming example that does not use the host computer software "BD module configuration" function. For device allocation, please refer to "<u>5 PLC device description</u>".

[winte] o		-		-					5	10		14	
/* * Open two	channels of E	D board											
*1													
	0 SM102 The first cyc e after RUN.										RST [SM2010 BD1 the first way switch	Switch CH1 to type K thermocouple
											{RST	SM2011 BD1 the sec ond way sw.	Switch CH2 to type K thermocouple
/*													
* Mapping	channel value	s to D0~D1											
7	6 SM100 Always ON a fter RUN	3								-[MOV	SD2010 BD1 the fin way value	D0 st	Write the temperature value of CH1 to register
										_[MOV	SD2011 BD1 the se		Write the temperature value of CH2 to register
2:	2	L.	•								ond way v	a. —{END	3
1*	2.Pro	gramr	ning e	exam	ple us	ing "E	BD mo	dule (config	urat	ion" fı	unctio	n of host computer software:
	annel values to	R0~R1 via I/	O mapping										
*/ 23	2 SM100 Always ON a fter RUN	1								-[моv	R0	D0	Map CH1 into R0 device
										-[MOV	R1	D1	Map CH2 into R1 device

END

6.3 BD monitoring interface and buffer memory

Open the module monitoring interface, select BD module, select LX5V-4ADI from the list of BD modules on the right to monitor it online, and check the current BD module communication status and error information in time.

C model change Paste I Un art 3V Cut Part Copy Project Clipboard	do do do do do do do do do do	新計 BEdit st	ent edit Compi atement Switch Compi it Program	le all	model Transfer Setting: itor Mode (R) A Read from PLC itor Edit (W) Write to PLC ram Mode		Device Monitor Module monitoria Clear Device Mem nline	ng	Automatic backup USB flash disk download PLC encryption tool Centrate download file Project encrypt tool Calculation of total program step Tool	5	
management 🛛 🔫 🛪	Scanning MAIN	Extended Function I	ED Board Configuratio	in / Modul	e monitoring -1 ×						
Program Granning MAIN	Module type 🔿 Expan	sio 💿 BD board	Operating mode	Online mo O O	fline				Current module info.: LX5V-2TC(1)	Refresh	Custo
Event	Address	Value		Display forma		Descripti				Module info.	Solution Info.
Subroutine	- 0x2000	1	Byte [unsigned]	Decimal	Channel 1 channel enable. 0: 0		on			LX6V-2TC	
interrupt	0x2001	0	Byte [unsigned]	Decimal	Channel 1 sensor type. 0: K; 1	J					
Device Comment	- 0x2002	4	Byte [unsigned]	Decimal	Channel 1 filter intensity						
Parameter	-0x2080	32767	Word [Signed]	Decimal	Channel 1 channel value, unit:						
Device memory Extended Function	0x2082	2	Word [Unsigne	Decimal	Channel 1 status information.			ue is out of range			
extended Function	- 0x2084	1	Word [Unsigne	Decimal	Channel 1 error code. 0: No e						
PLCLINK	0x2100	1	Byte [unsigned]	Decimal	Channel 2 channel enable. 0: 0		on				
BD Board Configuration	-0x2101	0	Byte [unsigned]	Decimal	Channel 2 sensor type. 0: K; 1	1					
	- 0x2102	4	Byte [unsigned]	Decimal	Channel 2 filter intensity						
	-0x2180	32767	Word [Signed]	Decimal	Channel 2 channel value, unit:						
	- 0x2182	2	Word [Unsigne	Decimal	Channel 2 status information.			ue is out of range			
	-0x2184	1	Word [Unsigne	Decimal	Channel 2 error code. 0: No e		s out of range				
	- 0x0200	60	Word [Unsigne	Decimal	Current maximum package le	ngth					
	- 0x0202	0	Word [Unsigne	Decimal	Number of retransmissions						
	0x0204	0	Word [Unsigne	Decimal	Number of retransmissions of	subpackages					
	- 0x0206	0	Word [Unsigne	Decimal	Received times of sync frame						
	0x0208	0	Word [Unsigne	Decimal	Sent times of sync frame						
	0x020A	7894	Word [Unsigne	Decimal	Sent times of control						
	- 0x020C	7895	Word [Unsigne	Decimal	Received times of control						
	-0x020E	35249	Word [Unsigne	Decimal	Sent times of subscribe						
	- 0x0210	0	Word [Unsigne	Decimal	Received times of subscribe						
	- 0x0212	0	Word [Unsigne	Decimal	Latest error code. 0: Clear err	or code					
	0x0214	304865823	Double word [Decimal	Number of bytes sent						
	-0x0218	57969838	Double word [Decimal	Number of valid bytes sent						
	- 0x021C	256414572	Double word [Decimal	Number of bytes received						
	-0x0220	9518607	Double word [Decimal	Number of valid bytes receive	d					
	- 0x0224	3102	Double word [Decimal	Communication time, unit: s						
			Da								
	Enter BFM									Help	Save Co
	Progress										

(1) TC buffer memory (BFM): used for BD module status monitoring.

BFM addres	Power -off	Read- write	Memory name	Default	Range	Description					



S	hold					
0x2000	×	R/W	Channel 1 channel enable	1	0 to 1	0: Channel closed; 1: Channel open
0x2001	×	R/W	Channel 1 sensor type	0	0 to 1	0: Type K thermocouple; 1: Type J thermocouple
0x2002	×	R/W	Channel 1 filter intensity	4	0 to 9	0: Minimum filter strength; 9: Maximum filter strength
0x2080	×	R	Channel 1 channel value	32767	-32768 to 32767	Unit: 0.1°C
0x2082	×	R	Channel 1 status information	1	0 to 2	0: Channel closed; 1: Channel opened 2: Channel value exceeds the range
0x2084	×	R	Channel 1 error code	0	0 to 1	0: No error; 1: Channel value exceeds the range
0x2100	×	R/W	Channel 2 channel enable	1	0 to 1	0: Channel closed; 1: Channel open
0x2101	×	R/W	Channel 2 sensor type	0	0 to 1	0: Type K thermocouple; 1: Type J thermocouple
0x2102	×	R/W	Channel 2 filter intensity	4	0 to 9	0: Minimum filter strength; 9: Maximum filter strength
0x2180	×	R	Channel 2 channel value	32767	-32768 to 32767	Unit: 0.1°C
0x2182	×	R	Channel 2 status information	1	0 to 2	0: Channel closed; 1: Channel opened 2: Channel value exceeds the range
0x2184	×	R	Channel 2 error code	0	0 to 1	0: No error; 1: Channel value exceeds the range

(2) Universal buffer memory (BFM): used to diagnose the communication status of the currently connected BD module.

BFM address	Power -off hold	Read- write Functi on	Memory name	Default	Range	Description
0x200	×	R	Current maximum package length	0	0 to0xFFFF	The maximum length of the currently sent package
0x202	×	R	Number of retransmissions	0	0 to0xFFFF	Number of retransmissions
0x204	×	R	Number of retransmissions of subpackages	0	0 to0xFFFF	Number of retransmissions of subpackages
0x206	×	R	Received times of sync frames	0	0 to0xFFFF	Received times of sync frames
0x208	×	R	Sent times of sync frames	0	0 to0xFFFF	Sent times of sync frames
0x20A	×	R	Control the number of transmissions	0	0 to0xFFFF	Control the number of transmissions
0x20C	×	R	Control the number of receptions	0	0 to0xFFFF	Control the number of receptions
0x20E	×	R	Number of subscriptions sent	0	0 to0xFFFF	Number of subscriptions sent
0x210	×	R	Number of subscriptions received	0	0 to0xFFFF	Number of subscriptions received
0x212	v	R/W	Latest error code	0	Only 0 can be written.	Protocol internal error code, write 0 to clear
0x214	×	R	Number of bytes sent	0	0 to 0xFFFFFFFF	Number of bytes sent
0x218	×	R	Number of valid bytes sent	0	0 to 0xFFFFFFFF	Number of valid bytes sent
0x21C	×	R	Number of bytes received	0	0 to 0xFFFFFFFF	Number of bytes received
0x220	×	R	Number of valid bytes received	0	0 to 0xFFFFFFFF	Number of valid bytes received
0x224	×	R	Communication time (unit s)	0	0 to 0xFFFFFFFF	Normal communication time since the BD module is powered on