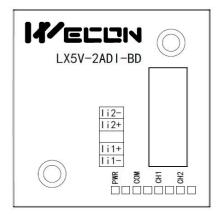


LX5V-2ADI-BD BD Module Manual

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:
 - The ADV input cannot exceed the absolute maximum (-15V/+15V), otherwise the BD module will be damaged.
 - 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



| Input current range: 4mA to 20mA | | | | | | |
|----------------------------------|-------------------------------------|--|--|--|--|--|
| li2- | Channel 2 current input negative | | | | | |
| II2 + | Channel 2 current input positive | | | | | |
| | NC | | | | | |
| li1+ | Channel 1 current input positive | | | | | |
| li2- | Channel 1 current input negative | | | | | |

Table1 Terminal distribution

Table2 LED lamp function description

| Indicator Iamp | 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 of (4mA to 20mA); Off when the channel is closed. |
| CH2 | Channel 2 lamp: Always on in range; Flashing outside the range of (4mA to 20mA); 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:

| Ducient | Specification | | | | | |
|-------------------------|--|--|--|--|--|--|
| Project | Current input | | | | | |
| Analog input range | DC 4mA to 20mA (input resistor 250 Ω) , absolute maximum input: -2mA, +60mA | | | | | |
| Digital output | 12-bit binary | | | | | |
| Resolution | 8uA (4mA to 20mA/2000) | | | | | |
| Comprehensive precision | ±0.5% of full scale (4mA to 20mA: ±0.16 mA) | | | | | |
| A/D conversion | One scan cycle (A/D conversion after ladder diagram END instruction is executed, and BD | | | | | |
| time | channel map value is updated) | | | | | |
| Input features | 2000 Digital Output 0 4mA 20mA Analog Input | | | | | |
| Insulation | There is no insulation between the channels of the module | | | | | |
| Points occupied | 0 point (2ADI is not affected by the standard maximum control points of the main PLC because it is operated through the data register) | | | | | |



4 Wiring



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

Note:

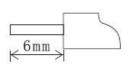
- Do not place signal cables near high voltage power cables or in the same trunk line. Otherwise, it may be disturbed or surged. Keep a safe distance between signal cable and power cable, at least 100mm.
- Ground the shielding of shielded wire or shielded cable. But the ground point and high voltage line cannot be the same.
- Do not connect cables of impermissible size to avoid poor contact or product damage.
- 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.

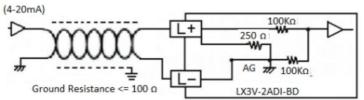
Line number and cross-sectional area

| Line number | Cross-sectional area (mm ²) | 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 Input mode

Current 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 current input channel open flag OFF: Open ON: Close | SM2030 | CH1 current input channel open flag OFF: Open ON: Close | | | |
| LX5V | LX5V 2ADI | SM2011 | CH2 current input channel open flag OFF: Open ON: Close | SM2031 | CH2 current input channel open flag OFF: Open ON: Close | | | |
| | | | CH1 digital value (4mA to 20mA: 0 to 2000) | SD2030 | CH1 digital value (4mA to 20mA: 0 to 2000) | | | |
| | | SD2011 | CH2 digital value (4mA to 20mA: 0 to 2000) | SD2031 | CH2 digital value (4mA to 20mA: 0 to 2000) | | | |

⁽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-2ADI" 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-2ADI-BD configuration parameters interface, as shown in the following figure. Configure related parameters on this interface.



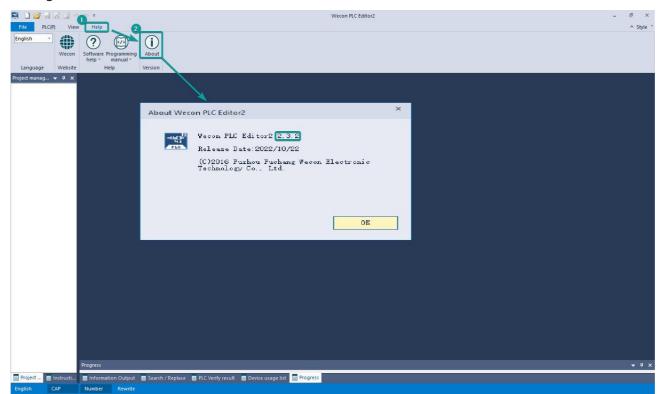
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| * . | | | | | | Wecon PLC | Editor2 - Extended Funct | ion BD Board Configuration | n | | - 0 |
|---------------------------|--------------|---|--|-----------------------|-----------------------|-------------------|--------------------------|-------------------------------------|----------------|---|--|
| 3V | Paste 🤄 Undo | 다. 1971년 1월 1981년 1월 1881년 1881년 1881년 1881년 1881년 1881년 1881년 1881년 | | Compile | Edit model | Transfer Settings | | Device Monitor Module monitoring | | Automatic backup USB flash disk download P.C encyption tool Control Project encypt tool Col Col | |
| anagement | - + × | Scanning MAIN | Extended Function BD Board | Configuration × | Module monitoring | -1 | | | | | |
| rogram | 1 | lot num Configure devic | | | | | | | ice occupation | Actual installatio Device version n | Device |
| Scanning MAIN | - | LX5V-2416 | LX5V-2416 2-channel analog-to-digital con | | 3 | | | ×0~: R0:E | x27;Y0~Y17 | | PLC host LX5V-3624 |
| Event | | LXSV-2ADI | 2-channel analogito-digital con | version module AU, si | pponing current input | | | BU(F | U); | | - LX5V-2424 |
| Subroutine | | | | _ | - | | | | ~ | | - LX5V-2416 |
| Interrupt | | | | c | onfiguration LXSV-2TC | | | | | × | - LX5V-1814 - LX5V-1616 |
| evice Comment arameter | | | | | - | - | | | | | - LX5V-1412 |
| evice memory | | | | | Module configuratio | TCConfiguration | /O mapping Device Infi |) | | | LX5V-1212 |
| stended Functio | | | | | Response time (0 | lms) 10 | 1~32767 | | | | #- BD board |
| Electronic CAN | | | | | | | | | | | - LX5V-2PT - LX5V-2TC |
| PLCLINK | 0 | | | | | | Da . | | | | - LX5V-2DAV |
| BD Board Cor | nfiguration | | | | | | | | | | - LX5V-2DAI |
| | | | | | | | | | | | - LX5V-2AD12 |
| | | | | | | | | | | | - LX5V-2PTS |
| | | | | | | | | | | | - LX5V-2PT2ADV |
| | | | | | | | | | | | — LX5V-2PT2DAV |
| | | | | | | | | | | | LX5V-2PT2DAI LX5V-2TC2DAI |
| | | | | | | | | | | | - LX5V-2ADV2DAV |
| | | | | | | | | | | | - LX5V-2ADI2DAI |
| | | | | | | | | | | | - LX5V-4ADI - LX5V-4ADV |
| | | | | | | | | | | | LX5V-8BX |
| | | | | | | | | | | | - LX5V-8BYT |
| | | | | | | | | | | | - LX5V-2RS485 - LX5V-ETH |
| | | | | | | | | | | | - LXSV-ETH |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
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| | I | | | | | | | Reset | OK | Cancel | |
| | I | | | | | | | | | | |
| | | | | | | | | | | | |
| | | | | | | | | | | | |
| | L | | | | | | | | | | |
| | P | | | | | | | | | | |
| | 12 | D | ····· | o | | | | | | | |
| | Instructions | | 🗉 Search / Replace 🛛 📃 PLC Verify | | | | | | | | |

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:

| 🛤 🗅 💕 🗟 🗟 🖆 | <i>≈1)</i> (% ∓ | | | | Wecon PLC E | ditor2 | | | | - 8 × |
|------------------------------|----------------------------|--|---------------------|--------------|-----------------------|--------------------------|---------------------------------------|-------------|-----------------------|-----------|
| File PLC(P) V | /iew Help | | | | 0 | | | | | ≜ Style * |
| PLC model change Start 3V | Paste 🧐 Undo Cut 🌣 Redo | 1/1 1 D 7 H 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | Comment edit | Switch | | 1 Read from PLC | Module monitoring | | Automatic backup | |
| Project | Clipboard | Ladder Symbol | Edit | Program | Program Mode | | Online | | Tool | |
| | mmunication settin | | | | - | × | | | | |
| | OUSB Connection | a(Best to use well-shielde | l cable) | | | Device Info | | | | × |
| | USB por | No device detected. | | • | Communication test | - | | lu t | | |
| | | | | | | Parameter | ersion informatio | Value | | |
| | O Ethernet conn | ection | | | OK | PLC model | | LX5V-2416MT | | 1 |
| | | | | | UA | | ersion number | V2.061 | | |
| | NIC selection | Realtek PCIe GbE Family Con | roller | - 6 | | | version number | V1.000 | | |
| | | | | - 4 | | Product Un Production | | | 02278730DE9C8C3BDC24D | |
| | | | | | Device Info | | configuration in | 2020.09.09 | 20122108 | |
| | IP address | 4 4 4 | Devices se | arch | | | configuration in installation type | LX5V-2DAV | | |
| | | | | | | BD1 versie | | 1013 | | |
| | Serial connect | tion | | | 0. (č. 1997) 1997) | | installation type | LX5V-2ADV | | |
| | Contrar contrac | TOR | | | Close | BD2 versi | | 1013 | | |
| | | | | | | 🖌 Hardware | parameter inform | ation | | |
| | | | | | | Hardware (| configuration table | 100 | | |
| | COM por | t COM1-通信端口 | | T | | Hardware v | ersion number | 1000 | | |
| | Baud Rate | (There are a second sec | | | | Hardware t | type | 5000 | | |
| | Date nat | 115200 | | Ψ. | | Input poir | | 24 | | |
| | Detailed | settings | | | | Output por | | 16 | | |
| | | | | | | | high-speed output o | | | |
| | - | | | | | Reverse in | uput | 16 | | |
| | | | | | | Mask | | 0 | | _ |
| | | | | | | Uther high | rspeed pulse maximu | 200000 | | |
| | | | | | | | | | 确定 | |
| | Progress | | | | | | | | | - ₽ × |
| Project 📄 Instruct | | tput 🗧 Search / Replace 🗧 PLC ۱ | | Kat 🖛 | Progress | | | | | |
| | | | enny result 🗧 Devic | e usage list | Frogress | | | | | |
| English CAP | Number Re | 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 |
|----------|------------------|--|-------------------|--------------------|------------------|
| | LX5V-2416 | LX5V-2416 | X0~X27;Y0~Y17 | LX5V-2416MT | V2.061 |
| | LX5V-2ADI | 2-channel analog-to-digital conversion module AD, supporting current input | R0;R1; | LX5V-2ADI | 1013 |
| 2 | | | | | |



The parameter configuration interface is as follows:

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).

| figuration LX5V-2ADI | | | |
|--------------------------|------------------|-----------------------|--|
| Module configuration ADI | Configuration I/ | O mapping Device Info | |
| Response time (0.1ms) | 10 | 1~32767 | |
| | | | |
| | | | |

2、 ADI configuration:

| CI 11 | ADIConfiguration I/O mapping | y Devic | e Info | |
|-------------------------------------|------------------------------|---------|---------------------|---------------------------|
| Channel-1 Channel Enable channel | | | Channel-2 | |
| Conversion mode | 4mA~20mA(0~2000) | * | Conversion mode | 4mA~20mA(0~2000) * |
| Filtering intensity | 4 | 7 | Filtering intensity | 4 * |
| Enable calibration | | 12 | Enable calibration | |
| Gain | 1.000000 -10000.0~10000.0 | | Gain | 1.000000 -10000.0~10000.0 |
| offset | 0.000000 -10000.0~10000.0 | | offset | 0.000000 -10000.0~10000.0 |
| | | | | |
| | | | | |

- ① Check enable channel to set whether to enable the current BD module channel.
- ② The conversion mode is set to ADI conversion mode by default, and the measurement range is 4mA~20mA (0~2000).
- 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.
- (a) Check enable calibration, you could calculate the gain offset according to the following formula to convert the corresponding channel value:

Channel value = digital value × gain value + offset value

- (5) When the channel value deviates, you could also set the gain offset to calibrate the channel. For example:
 - When the channel input analog is 20mA, the digital quantity of BD module acquisition channel value is 1970, and the actual digital value should be 2000.
 - When the channel input analog is 4mA, the digital quantity of BD module acquisition channel value is

7



30, and the actual digital value should be 0.

$$\begin{cases} 2000 = 1970 * a + b \\ 0 = 30 * a + b \end{cases}$$

Suppose the gain is a, and the offset is b, then $[0 = 30 \cdot a -$

$$\begin{cases} a = 1.030928 \\ b = -30.92784 \end{cases}$$

Solve and get $\begin{bmatrix} b = -30.92784 \end{bmatrix}$ 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.

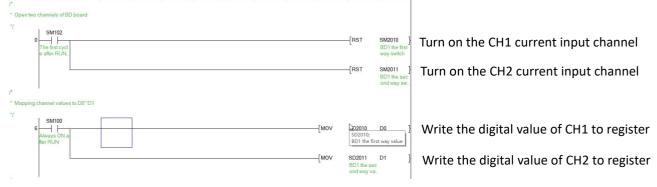
| Module configuration ADIConfiguration I/C | O mapping Device Info | |
|---|-----------------------|--|
| Channel mapping element | Channel | |
| 4 | | |
| - R0 | CH1 | |
| – R1 | CH2 | |

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

| 📓 🗋 🎯 🖬 🗟 🖆 🔿 🖂 Ŧ | Wecon PLC Editor2 C:\Users\Ac | dministrator\Desktop\1111.wcp2 - Exte | nded Function BD Board Configuration | - 8 × |
|---|---|---------------------------------------|---|---|
| File PLC(P) View Help | | | | ∧ Style * |
| PLC model change Paste Undo Start 3V Cut Pedo Copy Copy | 非 雑 丙 赤 郡 丙 志 ■ Comment edit ■ Compile 器 谷 山 排 郡 跖 臣 ■ Edit statement 谷 谷 斎 掛 斎 庄 留 | Monitor Edit (W) | om PLC | ting 🚳 Automatic backup 👔 |
| Project Clipboard | Ladder Symbol Edit Program | Program Mode | Online | Tool |
| Project management 👻 🕂 🗙 | Scanning MAIN 📝 Extended Function BD Board Configuration 🗙 | | | - |
| Program Sla Main Summer Main Summer Main Summer Device Comment Device Comment Device Common Device Common | Configure de. Device description Note: USCOV/XSV Device Content Device Comment Device Comment Device Comment Nide Execute (2) Nide Current progress: 0.00%/100.00% Current progress: Device Comment Devi | Select All(A) Detail Upload | Actual insta Device X Verify(c) Deselect all(N) Frogram capacity 0.751280 Comment size 0.71280D Calculated size | versi * Droice * Droice * Droice * Listy-Bait Listy-Lait Li |
| Project management | itput 📄 Search / Replace 📄 PLC Verify result 📑 Device usage list 📄 | Progress | | |
| The second | write USB(4)HUB(5) LXSV 0/2 | | | 11 |

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>".





2.Programming example using "BD module configuration" function of host computer software:

| * Copy chan | inel values to R0 [~] R1 via I/O mapping | | | | |
|-------------|---|------|----|-------|------------------------|
| | SM100 Always DN a Mer RUN | [MOV | R0 | D0 | Map CH1 into R0 device |
| | | [MOV | R1 | D1 | Map CH2 into R1 device |
| | [₽ | | | [cup | |
| 38 | | | | -[END | 1 |

6.3 BD monitoring interface and buffer memory

Open the module monitoring interface, select BD module, select LX5V-2ADI 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 of Unc art 3V Cut (P Red Copy Project Clipboard management 9 X | 10 15 15 15 15 15 15 15 15 15 15 | 3월 월 문 Edit 3월 155 말 mbol E | statement statement dit Program | all O Moni Moni Progra | odd | g ∰ Automatic backup 👔 USB flash disk download ∰ PLC encryption tool 🔂 Generate download file Project encrypt tool 📜 Calculation of total program step Tool | s | |
|---|--|---|--|--|--|--|--------------|----------------|
| Program Scanning | | pansio BD board | Operating mode Operating mode | | | Current module info.: LX5V-2ADI(1) | Refresh | Custor |
| Event | Address | Value | | Sisplay format | | | Module info. | Solution Info. |
| Subroutine | - 0x2000 | 1 | Byte [unsigned] | Decimal | Channel 1 channel enable. 0: Channel off; 1: Channel on | | LX5V-2ADI | |
| interrupt | - 0x2001 | 1 | Byte [unsigned] | Decimal | Channel 1 channel mode selection. 1: Current mode (4mA ~20mA) | | | |
| Device Comment | 0x2002 | 4 | Byte [unsigned] | Decimal | Channel 1 filter intensity | | | |
| Parameter | - 0x2080 | -360 | Word [Signed] | Decimal | Channel 1 channel value | | | |
| Device memory Extended Function | - 0x2082 | 2 | Word [Unsigne | Decimal | Channel 1 status information. 0: Channel off; 1: Channel on; 2: Channel value is out of range | | | |
| Extended Function Electronic CAM table | - 0x2084 | 1 | Word [Unsigne | Decimal | Channel 1 error code. 0: No error; 1: Channel value is out of range | | | |
| PLCLINK | -0x2100 | 1 | Byte [unsigned] | Decimal | Channel 2 channel enable. 0: Channel off; 1: Channel on | | | |
| BD Board Configuration | - 0x2101 | 1 | Byte [unsigned] | Decimal | Channel 2 channel mode selection, 1: Current mode (4mA ~20mA) | | | |
| | -0x2102 | 4 | Byte [unsigned] | Decimal | Channel 2 filter intensity | | | |
| | - 0x2180 | -362 | Word [Signed] | Decimal | Channel 2 channel value | | | |
| | 0x2182 | 2 | Word [Unsigne | Decimal | Channel 2 status information. 0: Channel off; 1: Channel on; 2: Channel value is out of range | | | |
| | - 0x2184 | 1 | Word [Unsigne | Decimal | Channel 2 error code. 0: No error; 1: Channel value is out of range | | | |
| | 0x0200 | 60 | Word [Unsigne | Decimal | Current maximum package length | | | |
| | - 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 | 120 | Word [Unsigne | Decimal | Sent times of control | | | |
| | -0x020C | 121 | Word [Unsigne | Decimal | Received times of control | | | |
| | - 0x020E | 6770 | 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 error code | | | |
| | 0x0214 | 72283726 | Double word [| Decimal | Number of bytes sent | | | |
| | 0x0218 | 6358531 | Double word [| Decimal | Number of valid bytes sent | | | |
| | - 0x021C | 65932946 | Double word [| Decimal | Number of bytes received | | | |
| | - 0x0220 | 7771 | Double word [| Decimal | Number of valid bytes received | | | |
| | -0x0224 | 665 | Double word [| Decimal | Communication time, unit: s | | | |
| | 0x0214 0x0218 0x021C 0x0220 | 72283726 6358531 65932946 7771 | Double word [Double word [Double word [Double word [| Decimal Decimal Decimal Decimal | Number of bytes sent Number of välid bytes sent Number of bytes received Number of välid bytes received | | [⋧ | |
| | Enter BFM | | | | | | Help | Save |

(1) 2ADI buffer memory (BFM): Used for 2ADI-BD module status monitoring.

| | | | | , , , , , , , , , , , , , , , , , , , | | |
|----------------|----------------------|--------------------------------|----------------------------------|---------------------------------------|-----------|---|
| BFM address | Power off hold | Read- write Functi on | Memory name | Default | Range | Description |
| 0x2000 | × | R/W | Channel 1 channel enable | 1 | 0 to 1 | 0: Channel closed; 1: Channel open |
| 0x2001 | × | R/W | Channel 1 channel mode selection | 1 | 1 | 1: Current mode (4mA to 20mA) |
| 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 | 0 | 0 to 2000 | |
| 0x2082 | × | R | Channel 1 status information | 0 | 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 channel mode selection | 1 | 1 | 1: Current mode (4mA to 20mA) |
| 0x2102 | × | R/W | Channel 2 filter intensity | 4 | 0 to 9 | 0: Minimum filter strength; 9: Maximum filter strength |

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| BFM address | Power off hold | Read- write Functi on | Memory name | Default | Range | Description |
|----------------|----------------------|--------------------------------|------------------------------|---------|-----------|---|
| 0x2180 | × | R | Channel 2 channel value | 0 | 0 to 2000 | |
| 0x2182 | × | R | Channel 2 status information | 0 | 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 to 0xFFFF | The maximum length of the currently sent package |
| 0x202 | × | R | Number of retransmissions | 0 | 0 to 0xFFFF | Number of retransmissions |
| 0x204 | × | R | Number of retransmissions of subpackages | 0 | 0 to 0xFFFF | Number of retransmissions of subpackages |
| 0x206 | × | R | Received times of sync frames | 0 | 0 to 0xFFFF | Received times of sync frames |
| 0x208 | × | R | Sent times of sync frames | 0 | 0 to 0xFFFF | Sent times of sync frames |
| 0x20A | × | R | Control the number of transmissions | 0 | 0 to 0xFFFF | Control the number of transmissions |
| 0x20C | × | R | Control the number of receptions | 0 | 0 to 0xFFFF | Control the number of receptions |
| 0x20E | × | R | Number of subscriptions sent | 0 | 0 to 0xFFFF | Number of subscriptions sent |
| 0x210 | × | R | Number of subscriptions received | 0 | 0 to 0xFFFF | 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 |