



mPay for MR5 Reader Android APP User Manual

Ver: 1.0

Singular Technology

2016/11/28



Note 1: Press reader's power switch from its side and check if the Bluetooth LED indicator is on. If not, you should plug it to a PC USB socket or a power adopter to charge the battery through a micro-USB cable. You can see both Bluetooth and battery indicators are on.



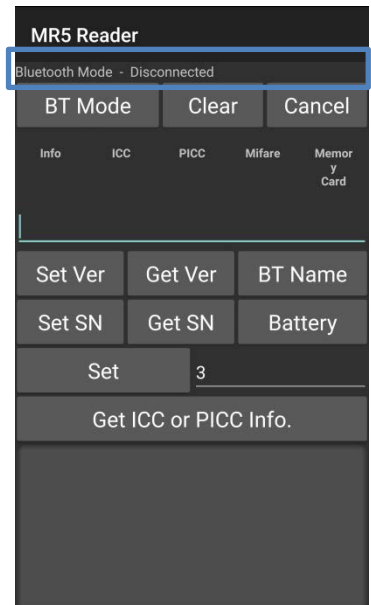
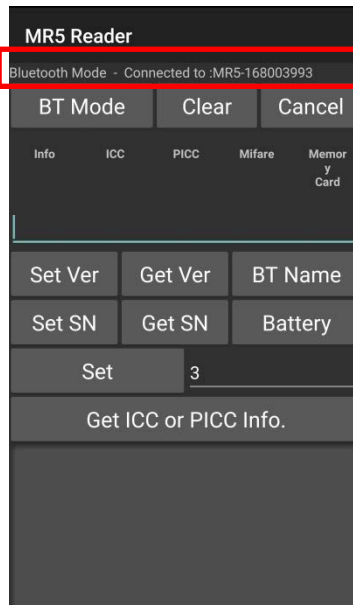
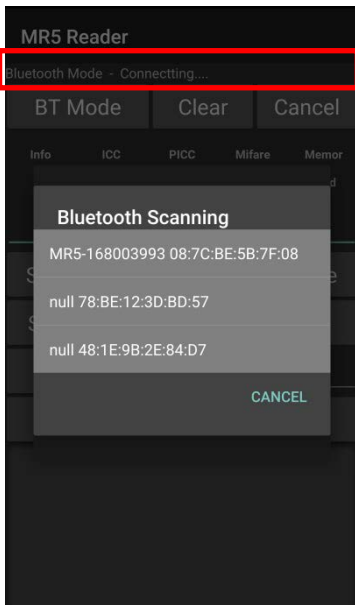
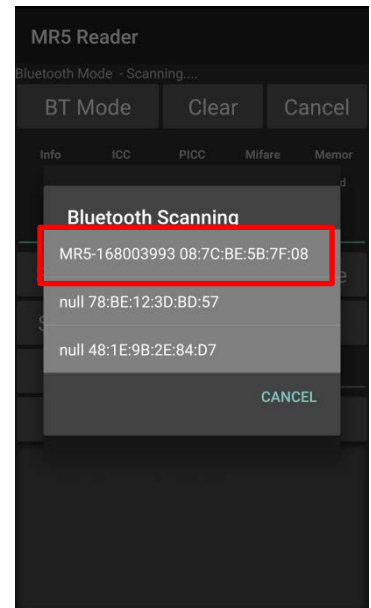
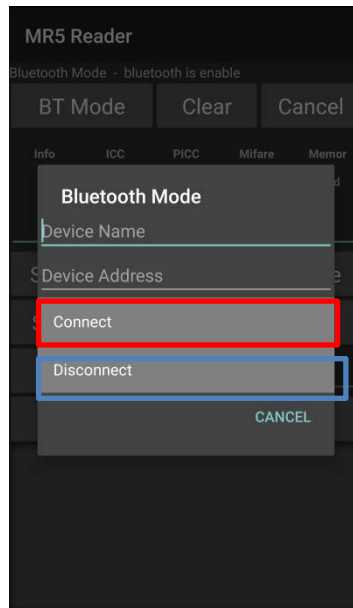
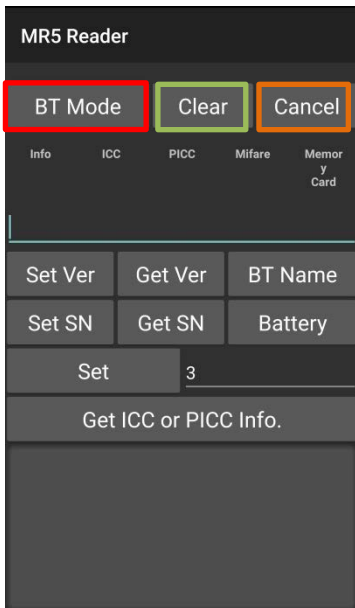
Note 2: Notice the direction when inserting a chip card or a SIM card.



Note 3: For APP installation, you can install it from SDK package (under path \MR5\SDK\Android*.apk).

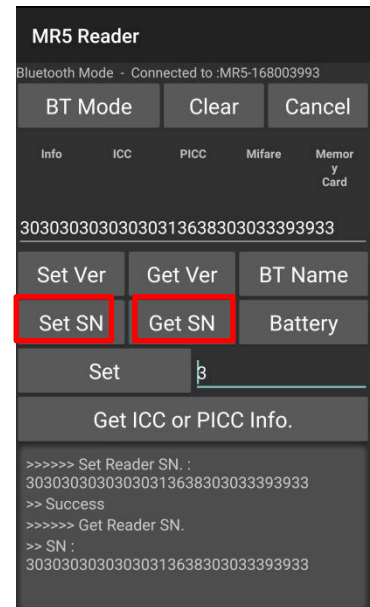
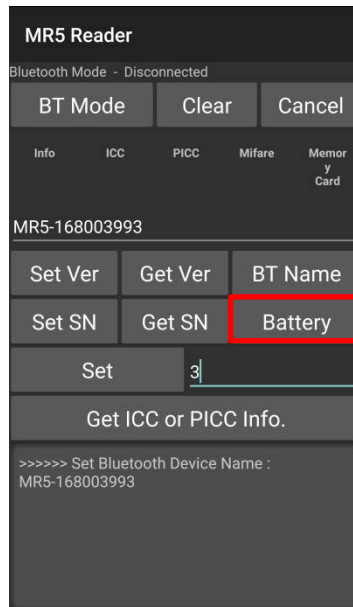
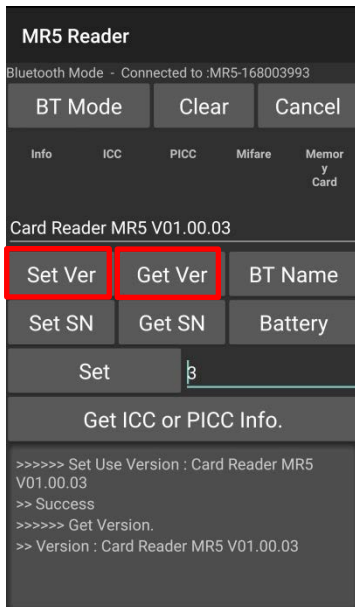
1. Turn on mobile device's Bluetooth interface and then run APP. For Bluetooth communication, press button **【BT Mode】**
 - Press button **【Connect】** to scan and then select a MR5-XXXXXXXXXX device to connect.
 - Press button **【Disconnect】** to disconnect a connected device.
 - Press button **【Clear】** to clear the message.
 - Press button **【Cancel】** to cancel an ongoing action.

Note: Different Android OS versions may have different display and connection method. The device needs to support BT 4.0 and Android OS 4.3 or later version.



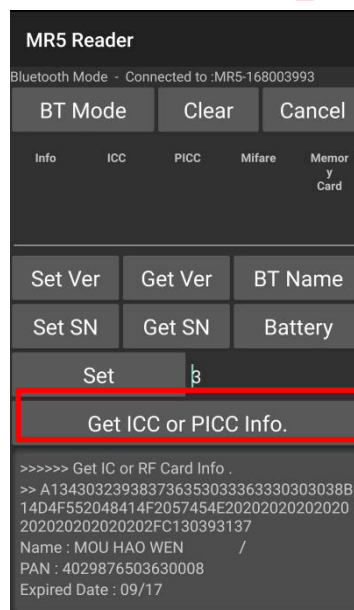
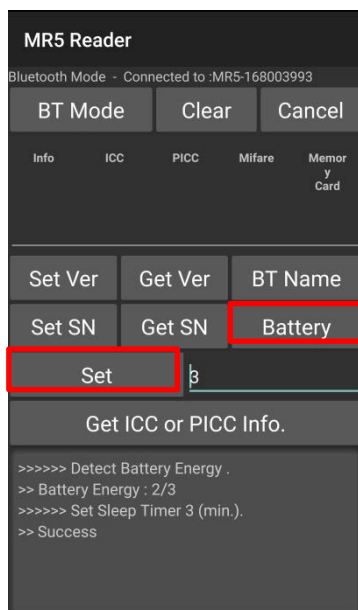
2. INFO Operation

- Input card reader name and version and then press button **【Set Ver】** to change its default string “Card Reader MR5 Vxx.xx.xx.”
- Press button **【Get Ver】** to get reader firmware version.
- Press button **【BT Name】** to change its default string “MR5-xxxxxxx”, wait for BT connection off and on (about 15 seconds), and then re-connect the reader to check if the BT Name has been changed.
- Press button **【Set SN】** to change its default SN.
- Press button **【Get SN】** to get reader SN.



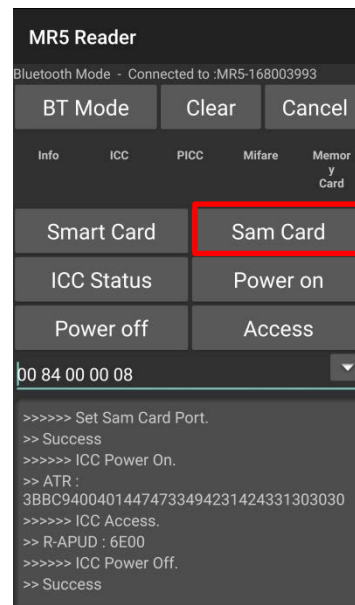
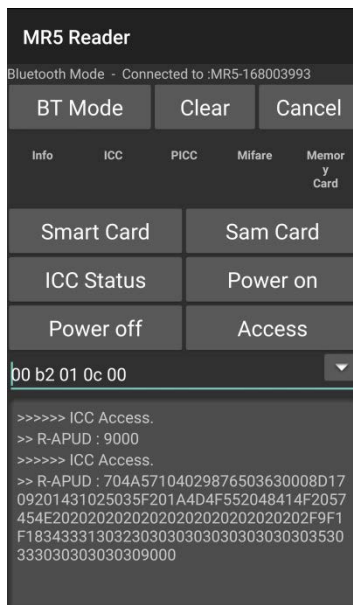
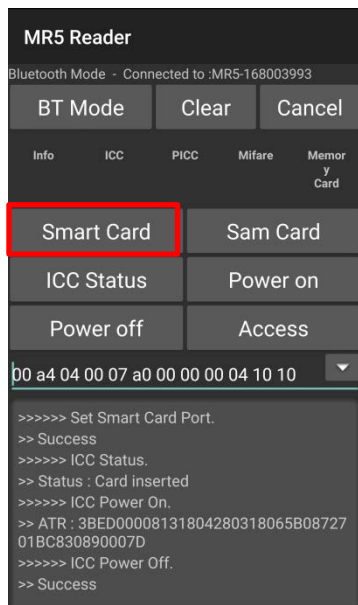
- Press button **【Battery】** to get reader battery level.
- Press button **【Set】** to set idle time (in minutes) to get into sleeping mode.
- Insert an IC card and then Press button **【Card Info】** to read an IC Card’s information.

Note: The reader only support main brands like VISA, Master, JCB credit cards. For other credit cards, please provide card’s AID (application ID)..



3. IC card & SAM Card Operation

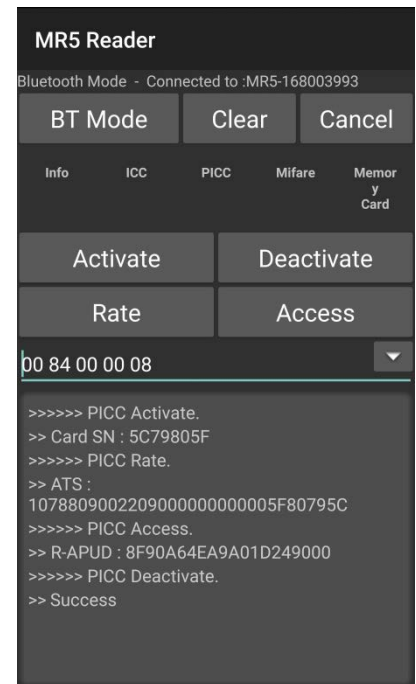
- Press button **【Smart Card】** to select IC card to operate.
- Press button **【Sam Card】** to select SAM card to operate.
- Press button **【ICC Status】** to check if an IC card is inserted.
- Press button **【Power on】** to power on the IC card inserted and get back its ATR value.
- Press button **【Power off】** to power off the IC card inserted.
- Press button **【Access】** to send the card's APDU command and then get response from the operating card.





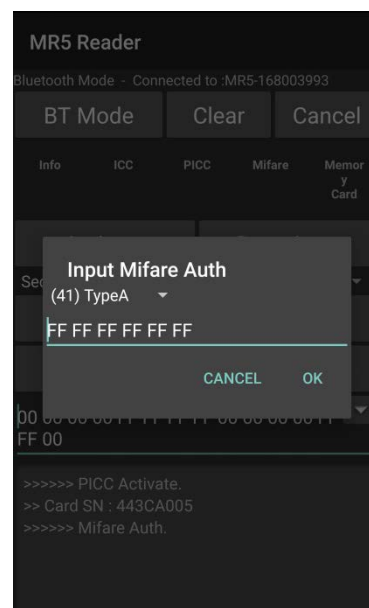
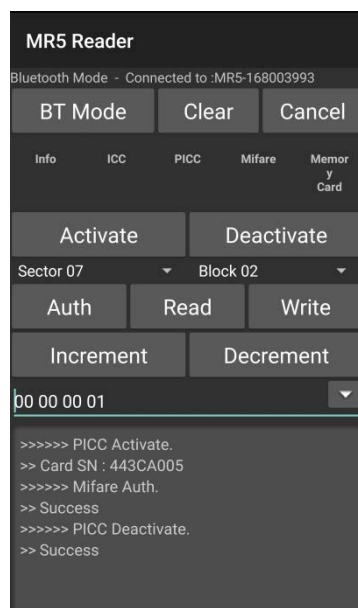
4. RF CPU Card Operation

- Press button **【Activate】** to activate the near RF CPU card.
- Press button **【Deactivate】** to deactivate the operating card.
- Press button **【Rate】** to get the communication rate of the card.
- Press button **【Access】** to send the card's APDU command and then get response from the operating card



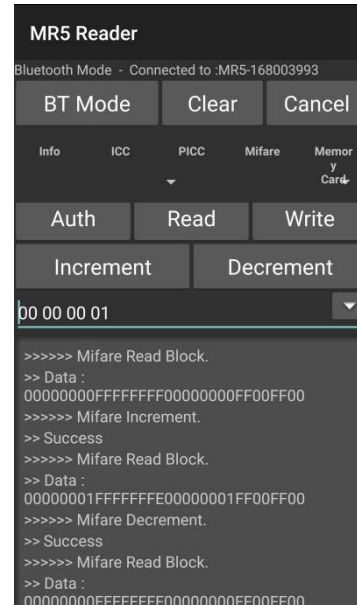
5. RF Mifare Card Operation

- Press button **【Activate】** to activate the near Mifare card.
- Press button **【Deactivate】** to deactivate the operating card.
- Select the operating **【Sector】** and **【Block】** of the card.
- Press button **【Auth】**, select card Type, and then input authentication code (default: 0xFF FF FF FF FF FF).
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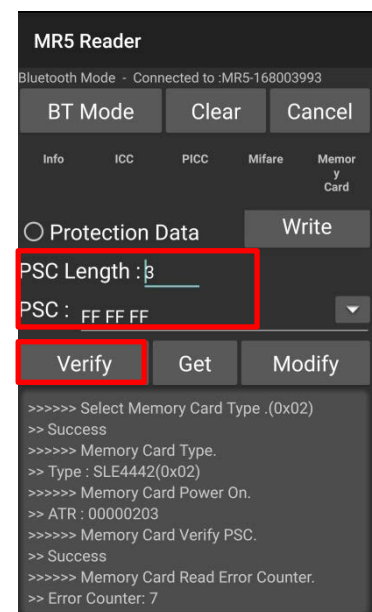
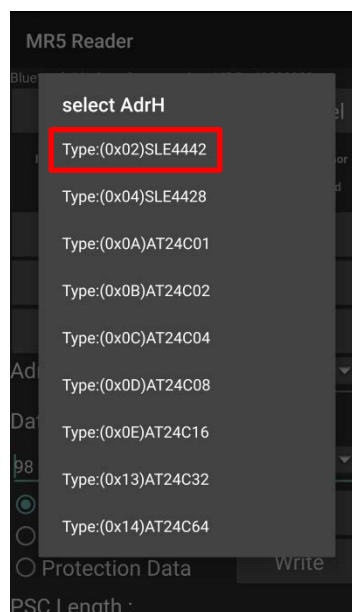
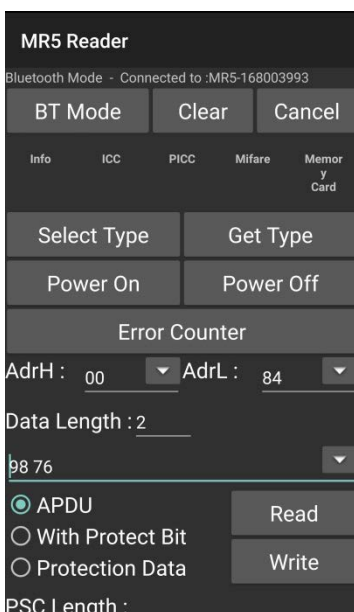
- Press button **【Read】** to read the data in the Sector and Block you selected.
- Press button **【Write】** to write the data to the Sector and Block you selected.
- Press button **【Increment】** to increment the value in the Sector and Block you selected.
- Press button **【Decrement】** to decrement the value in the Sector and Block you selected.



6. Memory Card Operation

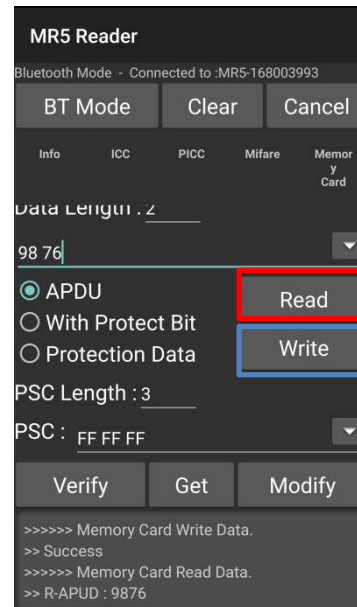
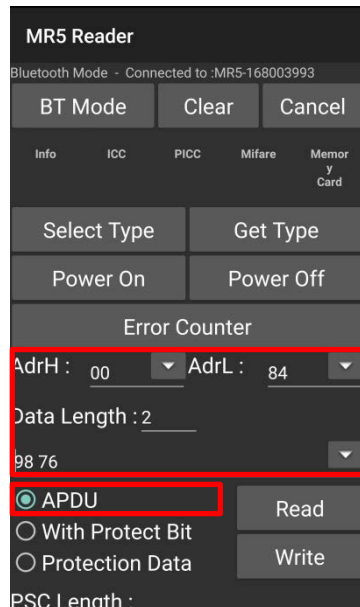
6.1 SLE4442

- Press button **【Select Type】** to select a card type to operate.
- Press button **【Get Type】** to get the card type on operating.
- Press button **【Power on】** to power on in inserted memory card and get ATR data back.
- Press button **【Verify】** to verify PSC code after input its length and code.
- Press button **【Error Counter】** to reader this inserted card's error counter.

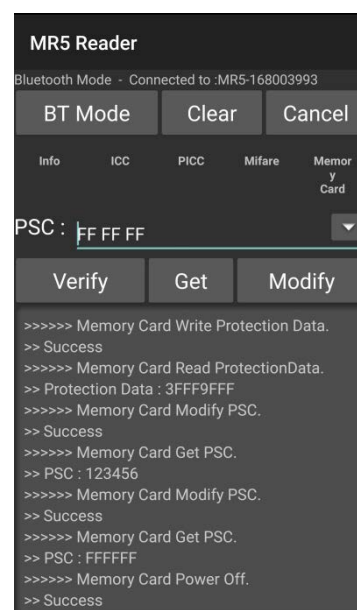
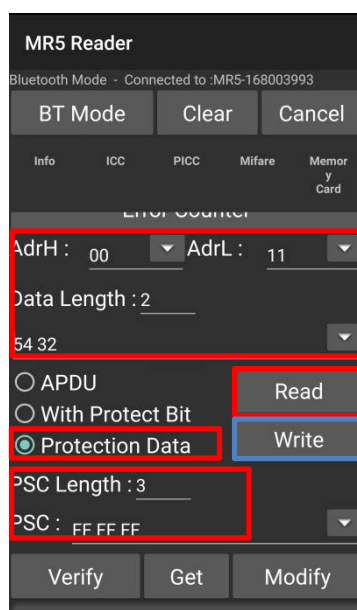




- Select **【APDU】** and press button **【Read】** to read card data after input memory address (AdrH- high byte, AdrL- low byte) and data length.
- Select **【APDU】** and press button **【Write】** to write card data after **【Verify】** PSC code successfully and input memory address (AdrH- high byte, AdrL- low byte) and data length.

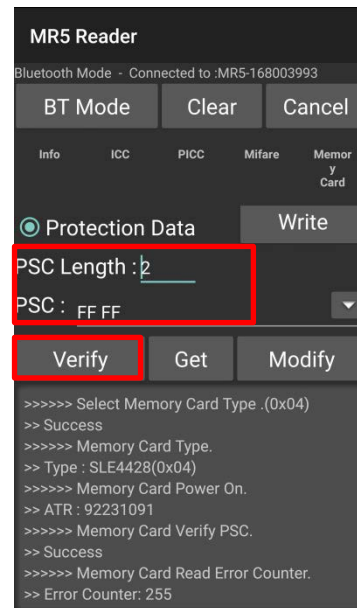
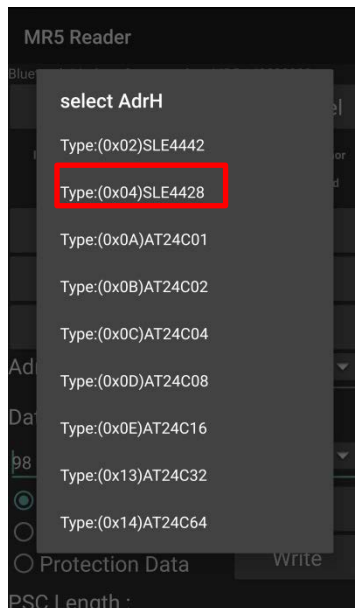


- Select **【Protection Data】** and press button **【Read】** to read Protection Data after input memory address (AdrH- high byte, AdrL- low byte) and data length.
- Select **【Protection Data】** and press button **【Write】** to write Protection Data after **【Verify】** PSC code successfully and input memory address (AdrH- high byte, AdrL- low byte) and data length.
- Press button **【Modify】** to modify the card's PSC code after **【Verify】** successfully and input its length and code.
- press button **【Get】** to get the card's PSC code after **【Verify】** successfully and input its length.

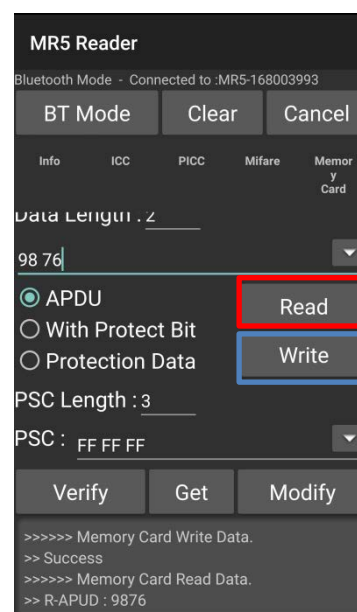
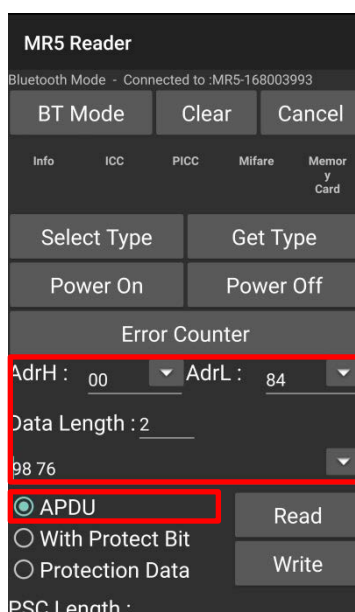


6.2 SLE4428

- Press button **【Select Type】** to select a card type to operate.
- Press button **【Get Type】** to get the card type on operating.
- Press button **【Power on】** to power on in inserted memory card and get ATR data back.
- Press button **【Verify】** to verify PSC code after input its length and code.
- Press button **【Error Counter】** to reader this inserted card's error counter.



- Select **【APDU】** and press button **【Read】** to read card data after input memory address (AdrH- high byte, AdrL- low byte) and data length.
- Select **【APDU】** and press button **【Write】** to write card data after **【Verify】** PSC code successfully and input memory address (AdrH- high byte, AdrL- low byte) and data length.



- Select **【Protection Data】** and press button **【Read】** to read Protection Data after input memory address (AdrH- high byte, AdrL- low byte) and data length.
- Select **【Protection Data】** and press button **【Write】** to write Protection Data after **【Verify】** PSC code successfully and input memory address (AdrH- high byte, AdrL- low byte) and data length.
- Press button **【Modify】** to modify the card's PSC code after **【Verify】** successfully and input its length and code.
- press button **【Get】** to get the card's PSC code after **【Verify】** successfully and input its length.

MR5 Reader

Bluetooth Mode - Connected to :MR5-168003993

BT Mode Clear Cancel

Info ICC PICC Mifare Memory Card

Error Counter

AdrH : 00 AdrL : 88

Data Length : 2

54 32

☐ APDU
 ☒ With Protect Bit
 ☐ Protection Data

Read Write

PSC Length : 2

PSC : FF FF

Verify Get Modify

[illegible]