

UHF Demo User Manual – User Operation Guide

V5.3

FCC Statement

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio

frequency energy and, if not installed and used in accordance with the instructions, may cause harmful

interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the

interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Radiation Exposure Statement

This modular complies with FCC RF radiation exposure limits set forth for an uncontrolled environment.

This transmitter must not be co-located or operating in conjunction with any other antenna or transmitter.

If the FCC identification number is not visible when the module is installed inside another device, then the

outside of the device into which the module is installed must also display a label referring to the enclosed module. This exterior label can use wording such as the following:

“Contains Transmitter Module FCC ID: 2AKQD-M-704”

When the module is installed inside another device, the user manual of the host must contain below warning statements;

1. This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference.
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

2. Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

The devices must be installed and used in strict accordance with the manufacturer's instructions as described

in the user documentation that comes with the product.

Any company of the host device which install this modular with modular approval should perform the test of radiated & conducted emission and spurious emission, etc. according to FCC part 15C :

15.247 and 15.209 &

15.207 , 15B Class B requirement, Only if the test result comply with FCC part 15C :

15.247 and 15.209 &

15.207 , 15B Class B requirement, then the host can be sold legally.

Antenna Electrical Characteristics

Manufacturer	深圳市百水来智能科技有限公司
Product name	BSL5040A5-915MHZ
Antenna model	4050D(40mm*40mm*5mm)
Frequency Rang	915MHz±2MHz
V.S.W.R	1.5 MAX
Band With@10dB	8MHz MIN @10dB return loss
Gain	1.5dB typ @50mm*50mm groundplane
Impedence	50 Ω
Polarization	RHCP

Note that

FCC certified equipment has FCC band filters inside. If an FCC certified equipment is set to other bands, the module will be restricted by the filter to emit RF signals. (Only 902-928MHz settings can work for FCC certified equipment properly)

Similarly, CE certified equipment is also a filter with CE frequency band, which is set to other frequency bands and also fails to work normally.

Interface



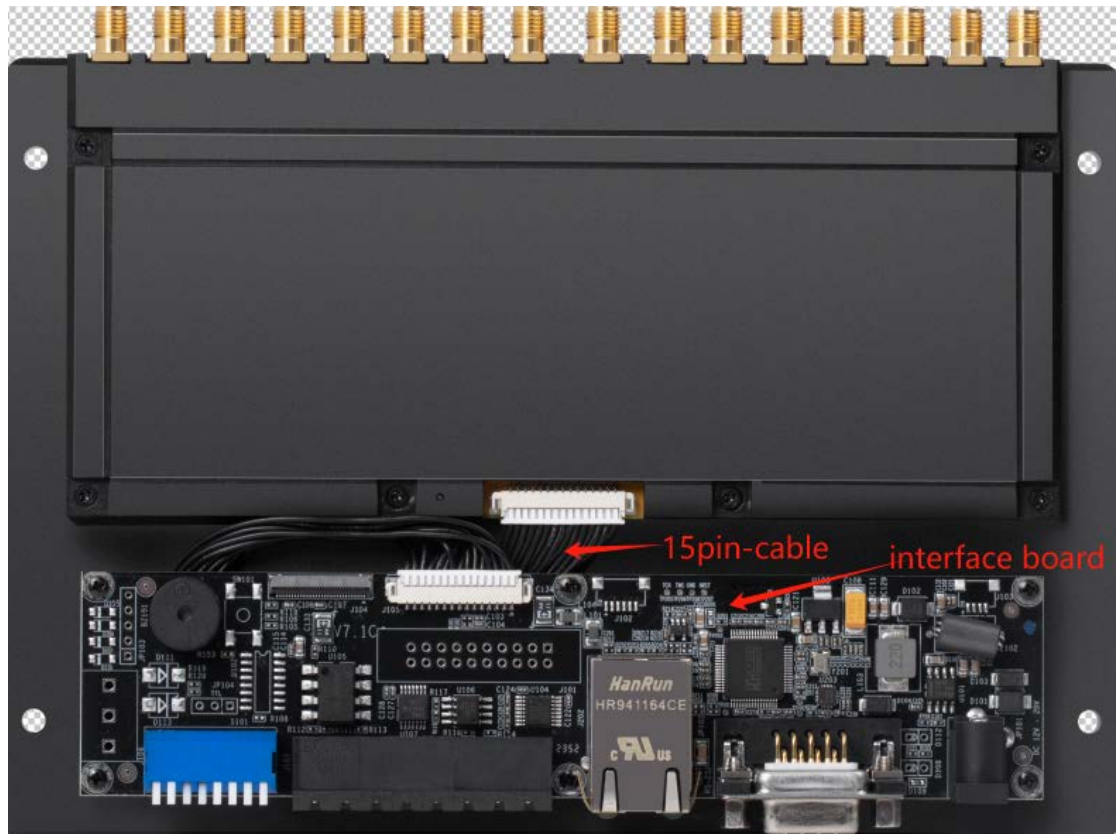
PIN 1

Connector (15Pin , Space between PINs 1.25mm)

PIN	Interface	Instruction
1	GND	Meanwhile grounding
2	GND	
3	4.5V – 5.5V DC	Meanwhile connect power, Recommended input voltage: 4.6V
4	4.5V – 5.5V DC	
5	GPIO 3	Output
6	GPIO 4	Output
7	GPIO 1	Input
8	Beeper	Has driven with > 50mA output current
9	UART_RXD	TTL level
10	UART_TXD	
11	USB_DM	For testing
12	USB_DP	
13	GPIO 2	Input
14	EN	High level enable
15	GPIO 5	RS-485 direction control

How to connect module

We need an 15pin-cable to connect the module to a communication interface board (the interface board is only used for testing, and the module can be connected the FPC flexible cable to the customer's own interface board in actual application). The communication interface board is then connected to the computer to conduct communication tests.



How to connect Antenna

The antenna interface type of this module is SMA-K, so an antenna with SMA-J connector is required.

The module has multiple antenna interfaces, but all antenna interfaces are time-division multiplexed, and users do not necessarily need to connect to all antennas. The general use scenario is that users connect different numbers of antennas according to their own needs, and if the users only need one antenna, then one antenna can be connected.

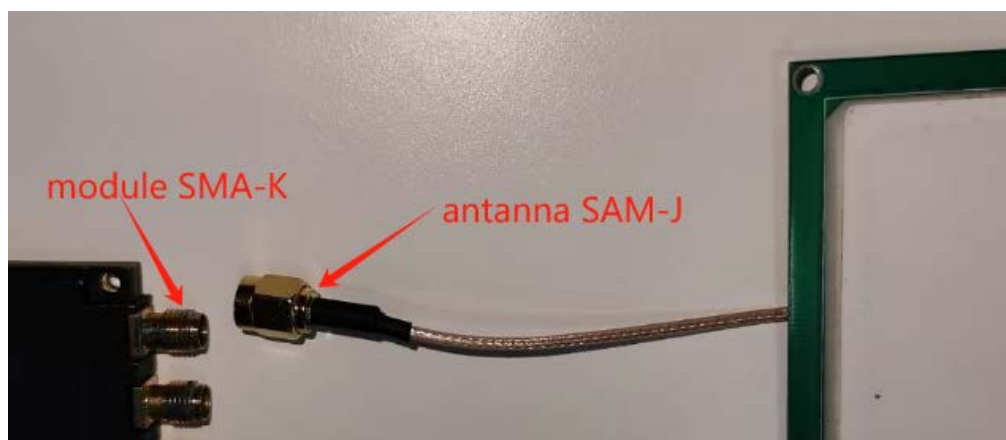


Table of contents

UHF Demo User Manual – User Operation Guide.....	1
Chapter 1: Reader setting	9
1 Basic parameter setting.....	9
1.1 Connection method	9
1.2 Reader Type.....	11
1.3 Reader command address (HEX).....	12
1.4 Reader ID.....	13
1.5 Firmware version.....	15
1.6 Operating temperature	16
1.7 Read GPIO	17
1.8 Write to GPIO	18
1.9 buzzer status	19
1.10 Restart the reader	20
2 RF parameter setting.....	21
2.1 Read and set the current working antenna.....	21
2.2 Measuring Antenna Return Loss	21
2.3 Antenna detection sensitivity	23
2.4 Antenna output power.....	24
2.5 Quickly read TID	24
2.6 Radio Frequency Spectrum	27
2.7 RF communication link.....	29
Chapter 2: 18000-6C label test.....	30
1 inventory label.....	30
1.1 Single antenna inventory (8B instruction).....	31
1.2 Multi-antenna inventory (8A instruction)	32
2 access tags.....	36
2.1 Obtain and set the working antenna.....	36
2.2 Selected tabs	36
2.3 Get selected tags.....	38
2.4 clear(label).....	38
2.5 Read tags	39
2.6 Write tags	41
2.7 Locked area	46
2.8 Kill tags	48
3 Tag filtering.....	49
3.1 Set filter	49
3.2 Clear filter.....	53
Chapter 3: Special function configuration.....	54
1 Special function configuration	55
1.1 Configuration via software	55
1.2 Manual send command settings	57
2 Set the switching order of the four antennas	58

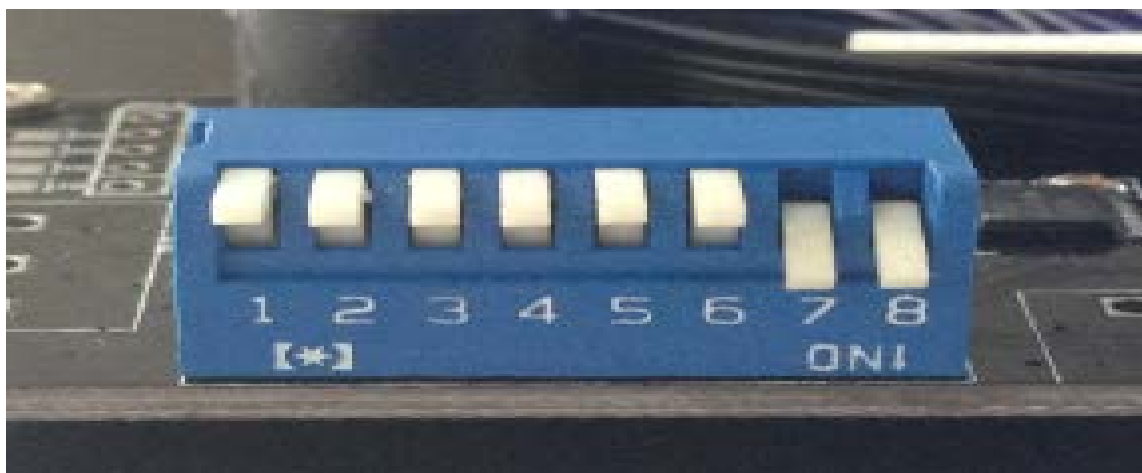
Chapter 4: Serial port monitoring	61
1 serial monitor	61
2 Operation records	61
Chapter 5: Network configuration guide	63
1 serial port connection reader/kit	63
2 Ethernet to connect to the reader/kit.....	63
3 Network parameter configuration	63
3.1 Refresh/select network card	63
3.2 Search device	64
3.3 Load/View Device Details.....	65
3.4 Server mode	67

Chapter 1: Reader setting

1 Basic parameter setting

1.1 Connection method

Type	Parameter	Flip the switch	Remark
Serial port (RS232)	serial number, baud rate	Dial 7, 8 face down (toward the number), others face up	The default baud rate is 115200
Network port (TCP/IP)	IP, port	Dial 3 and 4 down, others up	The default is 192.168.0.178, port 4001. The IP of the computer must be connected to the same LAN as the reader.



Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Model
☒ R2000 ☐ E710

Connection
☒ RS232 ☐ TCP/IP Connect

Channels Count
☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232
 SerialPort: COM4 Refresh
 Baudrate: 115200

Module baud rate
 Set

RS485 Address(HEX)
 Set

Reader Identifier(12 Bytes)
 Get

Reset Reader

Firmware Version
 08.05 Get

Internal Temperature
 Get

Read/Write GPIO

Read GPIO
 GPIO1: ☐ High ☐ Low
 GPIO2: ☐ High ☐ Low Read

Write GPIO
 GPIO3: ☐ High ☐ Low Write GPIO3
 GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior
 Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Model
☒ R2000 ☐ E710

Connection
☐ RS232 ☒ TCP/IP Connect

Channels Count
☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

Module baud rate
 Set

TCP/IP
 Reader IP Addr: 192.168.0.178 Port: 4001

RS485 Address(HEX)
 Set

Reader Identifier(12 Bytes)
 Get

Reset Reader

Firmware Version
 08.05 Get

Internal Temperature
 Get

Read/Write GPIO

Read GPIO
 GPIO1: ☐ High ☐ Low
 GPIO2: ☐ High ☐ Low Read

Write GPIO
 GPIO3: ☐ High ☐ Low Write GPIO3
 GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior
 Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

1.2 Reader Type

Type	single channel	4 channels	8 channels	16 channels
------	----------------	------------	------------	-------------

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Model
☒ R2000 ☐ E710

Connection
 Connect Type
☒ RS232 ☐ TCP/IP Connect

Channels Count
☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232
 SerialPort: COM4 Refresh
 Baudrate: 115200

Module baud rate
Set

RS485 Address(HEX)
Set

Reader Identifier(12 Bytes)
Get

Reset Reader

Firmware Version
 08.05 Get

Internal Temperature
Get

Read/Write GPIO
 Read GPIO
 GPIO1: ☐ High ☐ Low
 GPIO2: ☐ High ☐ Low Read
 Write GPIO
 GPIO3: ☐ High ☐ Low Write GPIO3
 GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior
Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

1.3 Reader command address (HEX)

Name	Defaults	Meaning	Remark
reader address	01	Indicates the reader address, editable	Only one byte can be held; the address appears with each instruction

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | Function Configuration

Basic Setup | RF Setup | IM600 Setup

Model
☒ R2000 ☐ E710

Connection
 Connect Type: ☒ RS232 ☐ TCP/IP Disconnect
 Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232
 SerialPort: COM4 Refresh
 Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX)
 Set

Reader Identifier(12 Bytes) Get

Reset Reader

Firmware Version Get

Internal Temperature Get

Read/Write GPIO

Read GPIO
 GPIO1: ☐ High ☐ Low
 GPIO2: ☐ High ☐ Low Read

Write GPIO
 GPIO3: ☐ High ☐ Low Write GPIO3
 GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 01:37:38.022 Connect to Reader COM4@115200

1.4 Reader ID

Name	Default (12 bytes)	Remark
Reader ID	FF FF FF FF FF FF FF FF FF FF FF FF	Distinguish between readers and readers as well as reader addresses

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | Function Configuration

Basic Setup | RF Setup | TM600 Setup

Connection

Connect Type: ☒ RS232 ☐ TCP/IP Disconnect

Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232

SerialPort: COM4 Refresh

Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX): Set

Reader Identifier(12 Bytes)

FFFFFFFFFFFFFFFF Get

Set

Reset Reader

Firmware Version Get

Internal Temperature Get

Read/Write GPIO

Read GPIO

GPIO1: ☐ High ☐ Low

GPIO2: ☐ High ☐ Low Read

Write GPIO

GPIO3: ☐ High ☐ Low Write GPIO3

GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 01:40:38.868

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Connection

Connect Type: ☒ RS232 ☐ TCP/IP Disconnect

Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232

SerialPort: COM4 Refresh

Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX): Set

Reader Identifier(12 Bytes)

FFFFFFFFFFFFFFFF Get

11 22 33 44 55 66 77 88 99 10 11 12 Set

Reset Reader

Firmware Version: Get

Internal Temperature: Get

Read/Write GPIO

Read GPIO

GPIO1: ☐ High ☐ Low

GPIO2: ☐ High ☐ Low Read

Write GPIO

GPIO3: ☐ High ☐ Low Write GPIO3

GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior: Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 10:56:34.306

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Connection

Connect Type: ☒ RS232 ☐ TCP/IP Disconnect

Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232

SerialPort: COM4 Refresh

Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX): Set

Reader Identifier(12 Bytes)

112233445566778899101112 Get

11 22 33 44 55 66 77 88 99 10 11 12 Set

Reset Reader

Firmware Version: Get

Internal Temperature: Get

Read/Write GPIO

Read GPIO

GPIO1: ☐ High ☐ Low

GPIO2: ☐ High ☐ Low Read

Write GPIO

GPIO3: ☐ High ☐ Low Write GPIO3

GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior: Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 10:56:34.306

2023-07-26 10:57:25.122 112233445566778899101112

2023-07-26 10:57:25.224 Command succeeded

2023-07-26 10:57:27.106

1.5 Firmware version

Name	Effect
Firmware version	Differentiate between firmware batches

Reader Setup

18000-6C Tag Test

Serial Port Monitor

NetPort Setup

Function Configuration

Basic Setup

RF Setup

TM600 Setup

Model

☒ R2000
☐ E710

Connection

Connect Type

☒ RS232
☐ TCP/IP

Channels Count

☐ 1ANT
☒ 4ANT
☐ 8ANT
☐ 16ANT

RS-232

SerialPort:

COM4

Baudrate:

115200

Module baud rate

Set

RS485 Address(HEX)

Set

Reader Identifier(12 Bytes)

Get

Reset Reader

Firmware Version

06.01

Get

Internal Temperature

Get

Read/Write GPIO

Read GPIO

GPI01: ☐ High ☐ Low

GPI02: ☐ High ☐ Low

Read

Write GPIO

GPI03: ☐ High ☐ Low

GPI04: ☐ High ☐ Low

Write GPI03

Write GPI04

Buzzer Behavior

Set

Factory reset

Refresh

Operation History: ☒ Auto Clear

☐ Activate Serial Port Monitor

2023-07-26 11:34:29.395 GetFirmwareVersion

2023-07-26 11:34:29.399 chip type: E710

15

1.6 Operating temperature

Working temperature monitoring refers to the temperature inside the module. If it is combined into a whole, because there are peripheral circuits or equipment, the external temperature may be slightly higher.

The screenshot displays the 'Function Configuration' tab of the UHF Demo User Manual V5.3 software. The interface is divided into several sections for configuring the reader's settings.

Connection Section: Includes options for Connect Type (RS232, TCP/IP) and Channels Count (1ANT, 4ANT, 8ANT, 16ANT). A 'Disconnect' button is present.

RS-232 Section: Includes SerialPort (COM4) and Baudrate (115200) settings, with a 'Refresh' button.

Module baud rate Section: Includes a dropdown menu for the baud rate and a 'Set' button.

RS485 Address(HEX) Section: Includes a text input field for the address and a 'Set' button.

Reader Identifier(12 Bytes) Section: Includes two text input fields for the identifier and 'Get' and 'Set' buttons.

Internal Temperature Section: This section is highlighted with a red box. It shows the 'Internal Temperature' as 27 °C, with a 'Get' button next to it.

Read/Write GPIO Section: Includes options for Read GPIO (GPIO1, GPIO2) and Write GPIO (GPIO3, GPIO4), each with 'High' and 'Low' radio buttons and a 'Read' or 'Write' button.

Buzzer Behavior Section: Includes a dropdown menu for the behavior and a 'Set' button.

Buttons: 'Reset Reader', 'Factory reset', and 'Refresh' buttons are located at the bottom of the configuration area.

Operation History: A log at the bottom shows recent actions:

- 2023-07-25 01:44:25.691 GetFirmwareVersion
- 2023-07-25 01:44:25.701 chip type: R2000
- 2023-07-25 01:45:27.901 GetReaderTemperature

1.7 Read GPIO

GPIOs	Type	Read	Write	Expand	Remark
GPIO1	enter	Y	N	Can be used as a switch for active read mode	Send a command to read the level status of these 2 GPIOs at the same time
GPIO2	enter	Y	N	Can be used with GPIO1 to judge in and out	
GPIO3	output	N	Y	Applicable to alarm lights and horn scenes	separate settings
GPIO4	output	N	Y	Applicable to alarm lights and horn scenes	separate settings

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | Function Configuration

Basic Setup | RF Setup | TM600 Setup

Connection

Connect Type: ☒ RS232 ☐ TCP/IP Disconnect

Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232

SerialPort: COM4 Refresh

Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX): Set

Reader Identifier(12 Bytes): Get Set

Reset Reader

Firmware Version: Get

Internal Temperature: Get

Read/Write GPIO

Read GPIO

GPIO1: ☐ High ☒ Low

GPIO2: ☐ High ☒ Low Read

Write GPIO

GPIO3: ☐ High ☐ Low Write GPIO3

GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior: Set

Factory reset Refresh

Operation History: ☒ Auto Clear Activate Serial Port Monitor

```

2023-07-25 01:44:25.691 GetFirmwareVersion
2023-07-25 01:44:25.701 chip type: R2000
2023-07-25 01:45:27.901 GetReaderTemperature
2023-07-25 01:46:10.013
2023-07-25 01:46:12.221
  
```

1.8 Write to GPIO

GPIOs	Type	Read	Write	Expand	Remark
GPIO1	enter	Y	N	Can be used as a switch for active read mode	Send a command to read the level status of these 2 GPIOs at the same time
GPIO2	enter	Y	N	Can be used with GPIO1 to judge in and out	
GPIO3	output	N	Y	Applicable to alarm lights and horn scenes	separate settings
GPIO4	output	N	Y	Applicable to alarm lights and horn scenes	separate settings

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Connection

Connect Type: ☒ RS232 ☐ TCP/IP Disconnect

Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232

SerialPort: COM4 Refresh

Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX): Set

Reader Identifier(12 Bytes): Get Set

Reset Reader

Firmware Version: Get

Internal Temperature: Get

Read/Write GPIO

Read GPIO

GPIO1: ☐ High ☐ Low

GPIO2: ☐ High ☐ Low Read

Write GPIO

GPIO3: ☐ High ☒ Low Write GPIO3

GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior: Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

1.9 buzzer status

model	illustrate
Quiet	Inventory to the label, the buzzer does not sound
beep after inventory	Send an inventory command, and read the tag, and it will beep when the order is over
beeps every time a tag is read	Like the literal meaning, every time a label is read, it rings once

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | Function Configuration

Basic Setup | RF Setup | TM600 Setup

Connection

Connect Type: ☒ RS232 ☐ TCP/IP Disconnect

Channels Count: ☐ 1ANT ☒ 4ANT ☐ 8ANT ☐ 16ANT

RS-232

SerialPort: COM4 Refresh

Baudrate: 115200

Module baud rate: Set

RS485 Address(HEX): Set

Reader Identifier(12 Bytes): Get Set

Reset Reader

Firmware Version Get

Internal Temperature Get

Read/Write GPIO

Read GPIO

GPIO1: ☐ High ☐ Low

GPIO2: ☐ High ☐ Low Read

Write GPIO

GPIO3: ☐ High ☐ Low Write GPIO3

GPIO4: ☐ High ☐ Low Write GPIO4

Buzzer Behavior

Quiet Set

Factory reset Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

1.10 Restart the reader

The action of restarting the reader is to power on the module again.

The screenshot displays the 'Reader Setup' window with the following sections:

- Connection:** Includes 'Connect Type' (RS232, TCP/IP), 'Channels Count' (1ANT, 4ANT, 8ANT, 16ANT), and a 'Disconnect' button.
- RS-232:** Includes 'SerialPort' (COM4), 'Baudrate' (115200), and a 'Refresh' button.
- Module baud rate:** Includes a dropdown menu and a 'Set' button.
- RS485 Address(HEX):** Includes a text input field and a 'Set' button.
- Reader Identifier(12 Bytes):** Includes two text input fields, each with a 'Get' or 'Set' button.
- Reset Reader:** A large button at the bottom left, highlighted with a red rectangle.
- Firmware Version:** Includes a text input field and a 'Get' button.
- Internal Temperature:** Includes a text input field and a 'Get' button.
- Read/Write GPIO:**
 - Read GPIO:** Includes 'GPIO1' and 'GPIO2' with 'High' and 'Low' radio buttons, and a 'Read' button.
 - Write GPIO:** Includes 'GPIO3' and 'GPIO4' with 'High' and 'Low' radio buttons, and 'Write GPIO3' and 'Write GPIO4' buttons.
- Buzzer Behavior:** Includes a dropdown menu (set to 'Quiet') and a 'Set' button.
- Factory reset:** A button at the bottom right.
- Refresh:** A button at the bottom right.

At the bottom of the window, there is an 'Operation History' section with a checkbox for 'Auto Clear' and a checkbox for 'Activate Serial Port Monitor'.

2 RF parameter setting

2.1 Read and set the current working antenna

At the same time, only one antenna of the reader is working, so it is necessary to read and write the current working antenna or set the antenna.

The screenshot displays the 'RF Setup' window with the following sections:

- Basic Setup:** Includes 'Manual Switch Antenna' with a dropdown menu set to 'Ant1', and 'Get'/'Set' buttons.
- Measurement of antenna port (Return Loss):** Shows 'RL:' at '915.00 MHz' with a 'Measure' button.
- Antenna detection sensitivity:** Includes a 'ReturnLoss Threshold' set to '3 dB' with 'Get'/'Set' buttons.
- Impinj Monza FastTID:** Features a 'Note' about tag types and 'On'/'Off' radio buttons with 'Get'/'Set' buttons.
- RF Spectrum Setup:**
 - System Default Frequencies:** Radio buttons for 'FCC', 'ETSI', and 'CHN'. Frequency range is '902.00 MHz' to '928.00 MHz'.
 - User Defined Frequencies:** Includes 'Start Frequency', 'Freq Space', and 'Quantity' fields.
- RF Link Setup:** A section for link configuration.
- Operation History:** A table with 'Auto Clear' checked and 'Activate Serial Port Monitor' unchecked.

2.2 Measuring Antenna Return Loss

serial number	introduce
1	Antenna return loss: indicates the test data of a certain antenna at a certain frequency point; for example: the data of antenna 1 at a frequency point of 915MHz is 27db;
2	To measure the return loss of the antenna, you need to set the antenna number you need to set first; of course, you can also not set it, if you don't set it, you will test the current working antenna.
3	When testing, it is necessary to select a certain frequency point within the corresponding frequency point range for testing; for example, the module and antenna are American standard, so the frequency point range is 915-928, but in order to ensure the accuracy and compatibility of the test, the middle value of 915-928 is generally selected as 915 for testing.
4	Under normal circumstances, when the matching between the antenna and the

	module is relatively good, it is greater than 7, generally tens, or even twenty; the return loss of the antenna indicates to a certain extent whether the antenna and the module are suitable for each other.
5	If the American standard module chooses a certain value of the European standard or the national standard to test, the return loss may be 0 or very low (assuming that the antenna is in good contact), so the corresponding frequency point should be selected for testing.
6	When testing, the default is to set the "return loss threshold" to 3, and then test the return loss of the antenna. If the return loss of the antenna is 0, it means that the antenna is not connected (except in special cases);
7	If the "Return Loss Threshold" is set to 0, the module cannot identify whether the antenna is connected;

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Manual Switch Antenna

Current Ant: Ant1

Measurement of antenna port (Return Loss)

RL: 18 @ 915.00 MHz

Antenna detection sensitivity

Note: 1. Reader detects antenna connections by measuring the return loss of RF ports.
 2. Reader stops tag operation if return loss is above the threshold.
 3. User can turn it off by setting the threshold to 0.

ReturnLoss Threshold: 3 dB

Impinj Monza FastTID

Note: 1. Only a certain number of Impinj Monza tag types support this function.
 2. If this function is not supported by tags, please turn it off.

☐ On ☐ Off

RF Spectrum Setup

System Default Frequencies

☒ FCC ☐ ETSI ☐ CHN Freq Range: 902.00 MHz - 928.00 MHz

User Defined Frequencies

☐ User Define Start Frequency: KHz Freq Space: KHz Quantity: quantity

RF Link Setup

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 02:28:56.910 @Freq915_00MHz

2.3 Antenna detection sensitivity

serial number	illustrate
1	The default is to set the "Return Loss Threshold" to 3, and then test the return loss of the antenna. If the return loss of the antenna is 0, it means that the antenna is not connected (except in special cases);
2	If the "Return Loss Threshold" is set to 0, the module cannot identify whether the antenna is connected;

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Manual Switch Antenna

Current Ant: Get Set

Measurement of antenna port (Return Loss)

RL: @ 915.00 MHz Measure

RF Output Power

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Ant ID dBm

Get Set

Antenna detection sensitivity

Note: 1.Reader detects antenna connections by measuring the return loss of RF ports.
 2.Reader stops tag operation if return loss is above the threshold.
 3.User can turn it off by setting the threshold to 0.

ReturnLoss Threshold: 3 dB Get Set

Impinj Monza FastTID

Note: 1.Only a certain number of Impinj Monza tag types support this function.
 2.If this function is not supported by tags, please turn it off.

☐ On ☐ Off Get Set

RF Spectrum Setup

System Default Frequencies

☐ FCC ☐ ETSI ☐ CHN Freq Range: MHz - MHz

Get Set

User Defined Frequencies

☐ User Define Start Frequency: KHz Freq Space: KHz Quantity: quantity

RF Link Setup

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 02:28:56.910 @Freq915_00MHz
 2023-07-25 02:30:50.275 GetAntDetector

2.4 Antenna output power

mainly two types of current power ranges :

Module type	chip	power range
PR9200		10dBm, 18-26dBm
R2000		0-33dBm

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | Function Configuration

Basic Setup | RF Setup | TM600 Setup

Manual Switch Antenna
Current Ant: Ant1 [Get] [Set]

Measurement of antenna port (Return Loss)
RL: [] @ 915.00 MHz [Measure]

Antenna detection sensitivity
Note: 1.Reader detects antenna connections by measuring the return loss of RF ports.
2.Reader stops tag operation if return loss is above the threshold.
3.User can turn it off by setting the threshold to 0.
ReturnLoss Threshold: [] dB [Get] [Set]

Impinj Monza FastTID
Note: 1.Only a certain number of Impinj Monza tag types support this function.
2.If this function is not supported by tags, please turn it off.
[] On [] Off [Get] [Set]

RF Spectrum Setup
System Default Frequencies
[] FCC [] ETSI [] CHN Freq Range: [] MHz - [] MHz [Get] [Set]
User Defined Frequencies
[] User Define Start Frequency: [] KHz Freq Space: [] KHz Quantity: [] quantity

RF Link Setup
[Refresh]

Operation History: [] Auto Clear [] Activate Serial Port Monitor
2023-07-26 11:01:25.690 GetOutputPower

2.5 Quickly read TID

illustration below for details ;

Impinj Monza FastTID

Note: 1.Only a certain number of Impinj Monza tag types support this function.
2.If this function is not supported by tags, please turn it off.

(2) After opening, the inventory interface will display both **TID and EPC** ;

The function is turned off, and the display is as shown in the figure below:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Manual Switch Antenna

Current Ant: Get Set

Measurement of antenna port (Return Loss)

RL: @ 915.00 MHz Measure

Antenna detection sensitivity

Note: 1.Reader detects antenna connections by measuring the return loss of RF ports.
2.Reader stops tag operation if return loss is above the threshold.
3.User can turn it off by setting the threshold to 0.

ReturnLoss Threshold: dB Get Set

Impinj Monza FastTID

Note: 1.Only a certain number of Impinj Monza tag types support this function.
2.If this function is not supported by tags, please turn it off.

☐ On ☒ Off Get Set

RF Spectrum Setup

System Default Frequencies

☐ FCC ☐ ETSI ☐ CHN Freq Range: MHz - MHz Get Set

User Defined Frequencies

☐ User Define Start Frequency: KHz Freq Space: KHz Quantity: quantity

RF Link Setup

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 02:45:54.212 GetAntDetector
2023-07-25 02:45:58.356 GetMonzaStatus

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Operation

Inventory Mode

☒ Single Channel ☐ Multi Ch

Exec Times: Interval: ms

☐ Reserve ☐ Tag Focus ☐ ReadSensorTagE

☐ SaveLog ☐ Cabinet test ☐ time: s

Config

Select Cfg

☒ Customize Session ☐ Phase ☐ Power Save

☐ SL

Session

☐ S0 ☒ S1 ☐ S2 ☐ S3

Target

☒ A ☐ B Repeat:

Antenna:

Data

Inventoried Quantity: Speed(Tag/Sec): Total Tag Communication:

Command Duration(mS): Total Inventory Duration(mS):

Result

This Round Count: 80 Min RSSI: -75dBm Max RSSI: -25dBm Refresh Save Tags

#	ReadCount	PC	EPC	Ant	Freq(MHz)	R
7	1	34 00	E2 80 11 70 00 00 02 08 8E 73 FC F9	Ant1	926.50	-4
8	1	34 00	E2 80 11 70 00 00 02 0A 0F 68 74 CE	Ant1	926.50	-5
9	1	34 00	E2 80 11 70 00 00 02 0A 0F 68 6A CE	Ant1	926.50	-4
10	1	34 00	E2 80 11 70 00 00 02 08 8E 72 D4 38	Ant1	926.50	-7
11	1	34 00	80 80 11 70 00 00 02 08 8E 72 D4 49	Ant1	926.50	-5
12	1	24 00	E1 23 12 34 AA AB 00 33	Ant1	926.50	-7
13	1	34 00	E2 80 11 70 00 00 02 0A 0F 69 68 CE	Ant1	926.50	-5
14	1	24 00	E1 23 12 34 AA AB 00 45	Ant1	926.50	-7
15	1	34 00	E2 80 11 70 00 00 02 0A 0F 69 34 2E	Ant1	926.50	-4
16	1	34 00	01 02 11 70 00 00 02 0A 0F 68 C2 2E	Ant1	926.50	-7
17	1	18 00	00 00 00 00 00 00	Ant1	926.50	-7

Tag Mask

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 02:48:34.879 Customize Target And Session Inventory
2023-07-25 02:48:35.480 Stop

The function is enabled, and the display is as shown in the following figure:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Manual Switch Antenna

Current Ant: Get Set

Measurement of antenna port (Return Loss)

RL: @ 915.00 MHz Measure

Antenna detection sensitivity

Note: 1.Reader detects antenna connections by measuring the return loss of RF ports.
2.Reader stops tag operation if return loss is above the threshold.
3.User can turn it off by setting the threshold to 0.

ReturnLoss Threshold: dB Get Set

Impinj Monza FastTID

Note: 1.Only a certain number of Impinj Monza tag types support this function.
2.If this function is not supported by tags, please turn it off.

☒ On ☐ Off Get Set

RF Spectrum Setup

System Default Frequencies

☒ FCC ☐ ETSI ☐ CHN Freq Range: 902.00 MHz - 928.00 MHz Get Set

User Defined Frequencies

☐ User Define Start Frequency: KHz Freq Space: KHz Quantity: quantity

RF Link Setup

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 02:48:34.879 Customize Target And Session Inventory
2023-07-25 02:48:35.480 Stop
2023-07-25 02:50:14.565 SetMonzaStatus True
2023-07-25 02:50:14.568 Command succeeded
2023-07-25 02:50:14.570 Command succeeded
2023-07-25 02:50:16.807 GetMonzaStatus

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Operation

Inventory Mode ☒ Single Channel ☐ Multi Ch

Exec Times: Interval: ms

☐ Reserve ☐ Tag Focus ☐ ReadSensorTagE

☐ SaveLog ☐ Cabinet test ☐ time s

Config

Select Cfg

☒ Customize Session ☐ Phase ☐ Power Save

☐ SL

Session

☐ S0 ☒ S1 ☐ S2 ☐ S3

Target

☒ A ☐ B Repeat: 1

Antenna:

Data

Inventoried Quantity: Speed(Tag/Sec): Total Tag Communication:

Command Duration(mS): Total Inventory Duration(mS):

Result

This Round Count: 29 Min RSSI: -78dBm Max RSSI: -21dBm Refresh Save Tags

#	ReadCount	PC	EPC	Ant	Freq(MHz)	R
1	1	30 00	56 77 AA BB AA BB 33 44 AA BB 00 14	Ant1	909.00	-2
2	1	64 00	E2 80 11 70 00 00 02 08 8E 74 30 49 ...	Ant1	909.00	-3
3	1	64 00	E2 80 11 70 00 00 02 08 8E 73 C8 F9 ...	Ant1	909.00	-4
4	1	64 00	E2 80 11 70 00 00 02 0A 0F 69 68 CE ...	Ant1	909.00	-5
5	1	64 00	80 80 11 70 00 00 02 0A 0F 68 AD CE ...	E2 80 11 70 00 00 02 0A 0F 69 68 CE		
6	1	64 00	E2 80 11 70 00 00 02 08 8E 73 FC F9 ...	Ant1	909.00	-4
7	1	64 00	E2 80 11 70 00 00 02 08 8E 73 C8 59 ...	Ant1	909.00	-3
8	1	64 00	01 01 01 01 00 00 02 0A 0F 68 CC CE ...	Ant1	909.00	-4
9	1	64 00	E2 80 11 70 00 00 02 0A 0F 68 AD BE ...	Ant1	909.00	-4
10	1	64 00	E2 80 11 70 00 00 02 0A 0F 69 34 CE ...	Ant1	909.00	-6
11	1	64 00	E2 80 11 70 00 00 02 08 8E 74 30 E9 ...	Ant1	909.00	-5

Tag Mask

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 02:48:35.480 Stop
2023-07-25 02:50:14.565 SetMonzaStatus True
2023-07-25 02:50:14.568 Command succeeded
2023-07-25 02:50:14.570 Command succeeded
2023-07-25 02:50:16.807 GetMonzaStatus
2023-07-25 02:51:19.692 Customize Target And Session Inventory
2023-07-25 02:51:20.355 Stop

2.6 Radio Frequency Spectrum

Introduction to RF Spectrum

type	scope
FCC (American Standard)	902.00-928.00MHz
ETSI (European Standard)	865.00-868.00MHz
CHN (national standard)	920.00-925.00MHz

(1) System default frequency

Reasonable settings can be made according to the actual type of RFID module. For example, the module can be set to American standard, or the original frequency range can be narrowed down, or even fixed to a certain frequency point;

The screenshot shows the 'Reader Setup' window with the 'RF Setup' tab selected. Under 'Basic Setup', the 'Manual Switch Antenna' section shows 'Current Ant:' with a dropdown and 'Get'/'Set' buttons. The 'Measurement of antenna port (Return Loss)' section shows 'RL:' with a dropdown and 'Measure' button. The 'Antenna detection sensitivity' section includes a 'ReturnLoss Threshold' in dB with 'Get'/'Set' buttons. The 'Impinj Monza FastTID' section has 'On'/'Off' radio buttons and 'Get'/'Set' buttons. The 'RF Spectrum Setup' section is highlighted with a red box, showing 'System Default Frequencies' with 'FCC' selected and 'Freq Range' set to '902.00 MHz' to '928.00 MHz'. Below this, 'User Defined Frequencies' has fields for 'Start Frequency', 'Freq Space', and 'Quantity'. The 'RF Link Setup' section is at the bottom with a 'Refresh' button. The 'Operation History' section at the very bottom has a checkbox for 'Auto Clear' and a checkbox for 'Activate Serial Port Monitor'.

Note that

FCC certified equipment has FCC band filters inside. If an FCC certified equipment is set to other bands, the module will be restricted by the filter to emit RF signals.(Only 902-928MHz settings can work for FCC certified equipment properly)

Similarly, CE certified equipment is also a filter with CE frequency band, which is set to other frequency bands and also fails to work normally.

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Operation

Inventory Mode

Inventory

Exec Times: -1 Interval: 0 ms

☐ Reserve ☐ Tag Focus ☐ ReadSensorTagE

☐ SaveLog ☐ Cabinet test ☐ time: 0 s

Config

Select Cfg

☒ Customize Session ☐ Phase ☐ Power Save

☐ SL

Session

☐ S0 ☒ S1 ☐ S2 ☐ S3

Target

☒ A ☐ B Repeat: 1

Antenna

Data

Inventoried Quantity: 119

Speed(Tag/Sec): 87

Total Tag Communication: 155

Command Duration(mS): 494

Total Inventory Duration(mS): 00:00:02:037

Result

This Round Count: 43 Min RSSI: -67dBm Max RSSI: -28dBm Refresh Save Tags

#	ReadCount	PC	EPC	Ant	Freq(MHz)	R
1	2	34 00	E2 80 11 70 00 00 02 08 8E 73 FC 49	Ant1	927.00	-4
2	1	34 00	E2 80 11 70 00 00 02 08 8E 73 C8 F9	Ant1	912.00	-4
3	1	30 00	77 88 AA BB 33 33 44 44 55 78 78 99	Ant1	912.00	-5
4	2	34 00	E2 80 11 70 00 00 02 0A 0F 68 74 2E	Ant1	927.00	-3
5	1	34 00	E2 80 11 70 00 00 02 0A 0F 69 00 BE	Ant1	912.00	-5
6	2	34 00	11 11 11 11 11 11 11 00 0F 68 A0 1E	Ant1	927.00	-4
7	2	34 00	80 80 11 70 00 00 02 0A 0F 68 C2 1E	Ant1	927.00	-4
8	1	30 00	12 34 56 78 00 00 00 BC DE 00 06 00	Ant1	912.00	-4
9	1	34 00	E2 80 11 70 00 00 02 08 8E 73 EA 49	Ant1	912.00	-4
10	2	34 00	E2 80 11 70 00 00 02 0A 0F 69 22 CE	Ant1	927.00	-4
11	2	34 00	E2 80 11 70 00 00 02 08 8E 73 C8 59	Ant1	927.00	-3

Tag Mask

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 03:28:19.006 Customize Target And Session Inventory

2023-07-25 03:28:20.732 Stop

(2) user-defined frequency

It can be set according to the user's own needs, such as the following figure:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup IM600 Setup

Manual Switch Antenna

Current Ant: Get Set

Measurement of antenna port (Return Loss)

RL: @ 915.00 MHz Measure

RF Output Power

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 Ant ID dBm

30 30 30 30 Get Set

Antenna detection sensitivity

Note: 1.Reader detects antenna connections by measuring the return loss of RF ports.
2.Reader stops tag operation if return loss is above the threshold.
3.User can turn it off by setting the threshold to 0.

ReturnLoss Threshold: dB Get Set

Impinj Monza FastTID

Note: 1.Only a certain number of Impinj Monza tag types support this function.
2.If this function is not supported by tags, please turn it off.

☐ On ☐ Off Get Set

RF Spectrum Setup

System Default Frequencies

☐ FCC ☐ ETSI ☐ CHN Freq Range: MHz - MHz

User Defined Frequencies

☒ User Define Start Frequency: 903000 KHz Freq Space: 1000 KHz Quantity: 10 quantity Get Set

RF Link Setup

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 03:28:19.006 Customize Target And Session Inventory

2023-07-25 03:28:20.732 Stop

2023-07-25 03:29:52.961 SetFrequencyRegion CUSTOMIZE, step=1000, quantity=10, [903000 - 913000]

2023-07-25 03:29:53.053 Command succeeded

2.7 RF communication link

There are four links, default and recommended: **configuration 1**

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Basic Setup RF Setup TM600 Setup

Manual Switch Antenna

Current Ant: Get Set

Measurement of antenna port (Return Loss)

RL: @ 915.00 MHz Measure

Antenna detection sensitivity

Note: 1.Reader detects antenna connections by measuring the return loss of RF ports.
2.Reader stops tag operation if return loss is above the threshold.
3.User can turn it off by setting the threshold to 0.

ReturnLoss Threshold: dB Get Set

Impinj Monza FastTID

Note: 1.Only a certain number of Impinj Monza tag types support this function.
2.If this function is not supported by tags, please turn it off.

☐ On ☐ Off Get Set

☐ FCC ☐ ETSI ☐ CHN Freq Range: MHz - MHz

User Defined Frequencies

☒ User Define Start Frequency: 903000 KHz Freq Space: 1000 KHz Quantity: 10 quantity

RF Link Setup

RF Link Setup Profile1(Recommended and Default) Tari 25uS; Mill. v Get Set

< >

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Chapter 2: 18000-6C label test

1 inventory label

Inventory method	illustrate	Remark
single antenna inventory	The single-antenna inventory in 4.3demo corresponds to the 8B command of the previous version of [Real-time Inventory], and [Real-time Inventory] has two commands: [Real-time Inventory (custom)] = 8B command, [Real-time Inventory (automatic)] = 89 command, which is not recommended, so the demo interface of this version is no longer displayed. If you are not familiar with the command, please check the communication protocol !	If you need to use the 8B command with multiple antennas, please implement the code . For details, please refer to 3.9 demo.
Multi-antenna inventory	Multi-antenna inventory corresponds to [Fast multi-antenna inventory] of version 3.9 demo, and the command corresponds to 8A	Although 8A is also working with a single antenna at the same time, the switching of the antenna is automatically switched by the module .
Cache Mode Inventory	Corresponding to the [cache mode] of the demo version 3.9	A single antenna works at the same time, and switching antennas requires code switching.

1.1 Single antenna inventory (8B instruction)

The screenshot shows the 'Inventory' tab of the software. The 'Operation' section has 'Inventory' selected. 'Inventory Mode' is set to 'Single Channel'. 'Exec Times' is -1 and 'Interval' is 0 ms. 'Reverse AB' is checked. 'Tag Focus' is unchecked. 'ReadSensorTagR' is unchecked. 'SaveLog' is unchecked. 'Cabinet test' is unchecked. 'time' is 0 s. The 'Config' section has 'Customize Session' checked. 'SL' is unchecked. 'Session' is S0. 'Target' is A. 'Repeat' is 1. 'Antenna' is Ant1. The 'Data' section shows 'Inventoried Quantity: 205', 'Speed(Tag/Sec): 154', and 'Total Tag Communication: 312'. The 'Result' section shows 'This Round Count: 41', 'Min RSSI: -76dBm', and 'Max RSSI: -26dBm'. A table shows the results of the inventory operation.

#	ReadCount	PC	EPC	Ant	Freq(MHz)	R
1	2	30 00	E2 80 11 60 00 02 0A 93 6D E8 5F	Ant1	926.50	-6
2	2	18 00	88 88 88 88 00 00	Ant1	924.50	-5
3	2	34 00	88 88 99 99 44 55 11 22 00 00 11 30	Ant1	926.50	-5
4	2	20 4F	12 34 AA BB FF FB B1 11	Ant1	923.00	-7
5	1	10 00	10 00 10 01	Ant1	926.00	-5
6	4	20 00	AA BB 12 33 12 33 44 44	Ant1	927.50	-5
7	1	30 00	33 33 33 33 33 33 60 1C 30 79 4A	Ant1	926.00	-4
8	1	30 00	E2 80 69 95 20 00 40 07 F9 A6 D4 81	Ant1	926.00	-6
9	2	34 00	E2 80 11 70 00 00 02 0A 0F 69 68 BE	Ant1	926.50	-3
10	2	24 4F	12 34 12 34 12 34 12 34	Ant1	926.50	-5
11	2	30 00	11 22 33 44 55 66 77 88 99 00 11 22	Ant1	926.00	-3

Operation History: ☒ Auto Clear
 2023-07-26 11:29:47.837 Customize Target And Session Inventory
 2023-07-26 11:29:49.905 Stop

Software instruction parameter	illustrate
Number of runs	Enter -1 to keep inventorying; input a positive number, send as many instructions as the value is, and then stop inventorying.
time interval	The time interval of inventory command time, the default is 0ms.
Reverse AB	The state of the tag is switched back and forth between state A and state B. The default is state A, so the command is generally Session+A. Reversing AB means that after reading the label, send an instruction to return the label from state B to state A.
Tag Focus	Indicates that the 8D8C function has been started to improve the reading speed, and it is generally used with S1.
Phase	Tick to enable the phase
Power save	If checked, it means that the power saving mode is turned on, and the essence is to set the command interval time (firmware layer processing)
SL	00, 01, 02, 03
session	S0, S1, S2, S3, it is recommended to use S0 and S1
target	A and B respectively represent the A side and B side of the label, or the A state and the B state, and the default is A
Antenna number	You can choose the antenna you need for inventory

Software Parameters	Interface	illustrate
The total number of tags that have been inventoried		the total number of all labels of one or more instructions after deduplication
recognition speed		The speed of identifying labels is generally around 200
Cumulative return data		This data is the total number of labels for one or more instructions

1.2 Multi-antenna inventory (8A instruction)

The screenshot displays the 'Inventory' tab of the software interface. The 'Operation' section shows 'Inventory Mode' set to 'Multi Ch'. The 'Exec Times' is set to -1 and 'Interval' is 0 ms. The 'Data' section shows 'Inventoried Quantity' as 200, 'Speed(Tag/Sec)' as 234, and 'Total Tag Communication' as 487. The 'Result' section shows 'This Round Count' as 116, 'Min RSSI' as -74dBm, and 'Max RSSI' as -25dBm. A table of results is displayed below the 'Result' section, showing 11 rows of data including ReadCount, PC, EPC, Ant, Freq(MHz), and R.

#	ReadCount	PC	EPC	Ant	Freq(MHz)	R
1	4	34 00	80 80 11 70 00 00 02 08 8E 74 EC 1A	Ant1	926.50	-5
2	3	30 00	E2 80 69 95 20 00 40 07 F9 A7 58 81	Ant1	926.50	-5
3	3	34 00	E2 80 11 70 00 00 02 08 8E 73 EA 49	Ant1	926.50	-4
4	11	20 00	AA BB 12 33 12 33 44 44	Ant1	926.50	-4
5	2	30 4F	12 34 AB CD 12 34 00 00 EE EE 00 40	Ant1	902.00	-4
6	3	18 00	AB CD EE EE 16 64	Ant1	926.50	-6
7	4	34 00	01 01 01 01 01 01 02 08 8E 73 00 F9	Ant1	926.50	-5
8	3	14 00	88 88 88 88	Ant1	926.50	-5
9	2	34 00	80 80 11 70 00 00 02 0A 0F 68 A0 CE	Ant1	902.00	-3
10	4	34 00	55 66 11 70 00 00 02 08 8E 73 82 E9	Ant1	926.50	-5
11	6	20 00	AB CD EF 12 34 56 78 90	Ant1	926.50	-4

Software parameter	instruction	illustrate
Number of runs		Input -1 to keep inventorying, input a positive number, send as many instructions as the value is, and then stop inventorying.
time interval		The time interval of inventory command time, the default is 0ms.
Delay between antennas		Spacing time between antennas (firmware controlled, not software controlled)
Phase		phase
temporary power		Not save when power off
optimization		is not equal to the number of tags in the last inventory, it will be inventoried again (cancelled)
Cycles		Send a single instruction, the number of executions

Software Interface Parameters	illustrate
The total number of tags that have been inventoried	the total number of all labels of one or more instructions after deduplication
recognition speed	The speed of identifying labels is generally around 200
Cumulative return data	This data is the total number of labels for one or more instructions

1.2.1 How many instructions need to be sent to test read

In some scenarios, it is necessary to read all tag data, but one command may not be read completely, so this software has a test function in this case, which is convenient for customers to test. The specific parameters are as follows: (data are just examples, for **reference** only)

(1) **Enter a positive number** for the number of runs , generally not too large, just to solve the problem of incomplete reading of an instruction

In this way, **the user can see the total number of tags read by the 5 instructions (data accumulated between each instruction)**

The screenshot displays the 'Inventory' operation settings and results in the UHF Demo User Manual V5.3 software interface.

Operation Settings:

- Inventory Mode:** Single Channel (selected), Multi Ch (unselected)
- Exec Times:** 5 (highlighted with a red box)
- Interval:** 0 ms
- Tag Focus:** ReadSensorTagE (selected)
- SaveLog:** (checked)
- Cabinet test:** (unchecked)
- time:** 0 s

Config:

- Interval (ms):** 0
- Repeat:** 1
- Antenna Cfg:** All (selected)
- Ant/Stay (1-8):** 1 (checked), 2 (unchecked), 3 (unchecked), 4 (unchecked)

Data:

- Inventoried Quantity:** 122 (highlighted with a red box)
- Speed(Tag/Sec):** 175
- Total Tag Communication:** 532
- Command Duration(ms):** 594
- Total Inventory Duration(ms):** 00 00 03 124

Result:

This Round Count: 104 Min RSSI: -62dBm Max RSSI: -27dBm Refresh Save Tags

#	ReadCount	FC	EPC	Ant	Freq(MHz)	R
1	2	30 00	E2 80 11 60 60 00 02 0A 93 6E F4 73	Ant1	903.00	-6
2	5	34 00	E2 80 11 70 00 00 02 08 8E 74 BC 59	Ant1	908.00	-3
3	5	30 00	56 77 AA BB AA BB 33 44 AA BB 00 14	Ant1	908.00	-4
4	5	34 00	80 80 11 70 00 00 02 0A 0F 68 AD CE	Ant1	908.00	-3
5	5	30 4F	AA BB 11 00 12 12 33 00 44 56 00 02	Ant1	908.00	-4
6	5	34 00	01 01 01 01 00 00 02 08 8E 73 60 59	Ant1	908.00	-4
7	5	20 00	12 22 00 01 00 02 00 24	Ant1	908.00	-5
8	4	28 00	AA BB 12 33 12 33 44 44 55 55	Ant1	908.00	-6
9	5	30 00	77 88 AA BB 33 33 44 44 55 78 78 99	Ant1	908.00	-5
10	3	14 00	11 11 11 11	Ant1	907.00	-6
11	5	30 00	56 77 23 14 AA BB AA BB 11 22 11 01	Ant1	908.00	-5

Tag Mask:

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

```

2023-07-25 03:50:18.126 FastSwitch inventory
2023-07-25 03:50:21.850 Stop
2023-07-25 03:50:21.852
  
```

1.2.2 Test the configuration of the read-full rate parameters in the cabinet-like scenario

Using this function, the scenario is generally that all tags can be read with one command. In the current case, retail and smart medical cabinets can read all 300 tags in about 3 seconds (the data in this case is for reference only, see the test environment for details) ;

When the user needs to test the read rate of RFID tags, for example, a smart medical cabinet needs to test the read rate, assuming that the cabinet has a total of 300 tags, it needs to be tested 10,000 times as a reference base, and through the statistics of the read rate of 300 tags, you can choose to check [Save Log] at this **time** .

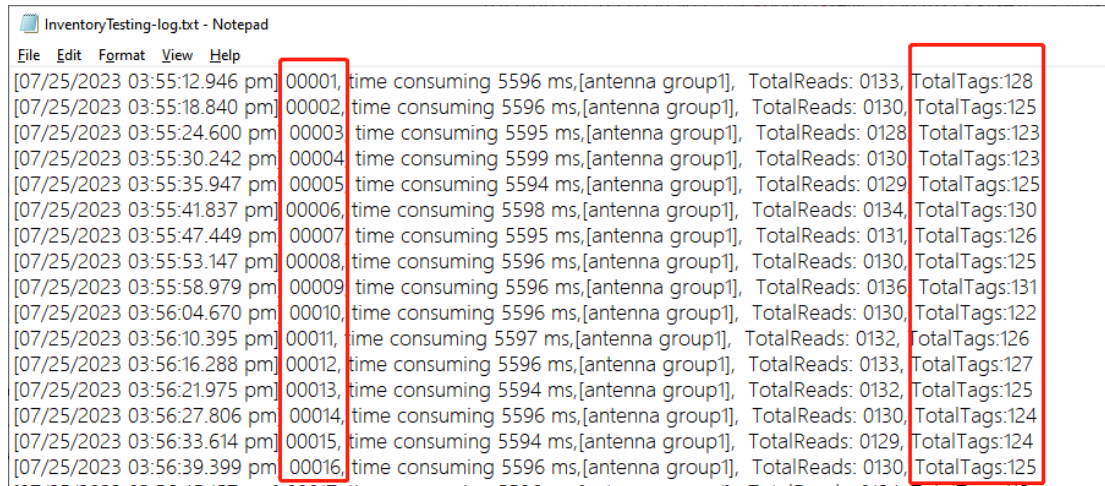
In the case of [number of runs = positive number] and the time interval is greater than 1ms and [freezer test] is checked , there will be two important observation areas:

- (1) **The data on the right will be refreshed every time a command is executed** , which is convenient for users to observe the number of tags read each time. If there are too many missed readings, the inventory can be stopped in time, and the parameters can be adjusted before testing to avoid unnecessary delays in testing time.

The screenshot displays the 'Inventory' configuration window of the UHF Demo User Manual V5.3 software. The window is divided into several sections:

- Operation:** Includes 'Inventory Mode' (Single Channel, Multi Ch), 'Exec Times' (10000), 'Interval' (5000 ms), and checkboxes for 'Tag Focus', 'ReadSensorTagE', 'SaveLog', and 'Cabinet test'.
- Config:** Includes 'Select Cfg', 'Customize Session', 'Interval (mS)', 'Repeat', 'Antenna Cfg', and 'Ant/Stay (1-8)'.
- Data:** Displays 'Inventoried Quantity' (0), 'Speed(Tag/Sec)' (0), 'Total Tag Communication' (0), 'Command Duration(mS)' (0), and 'Total Inventory Duration(mS)' (0).
- Result:** Shows 'This Round Count' (0), 'Min RSSI' (0), 'Max RSSI' (0), and a table with columns: #, ReadCount, PC, EPC, Ant, Freq(MHz), and Rssi.
- Operation History:** Includes 'Auto Clear' and 'Activate Serial Port Monitor'.

- (2) The record file is automatically generated in the directory of the same level as the demo, so that it is convenient to clearly view **the reading time, test time, and running times, and can calculate the reading rate.**

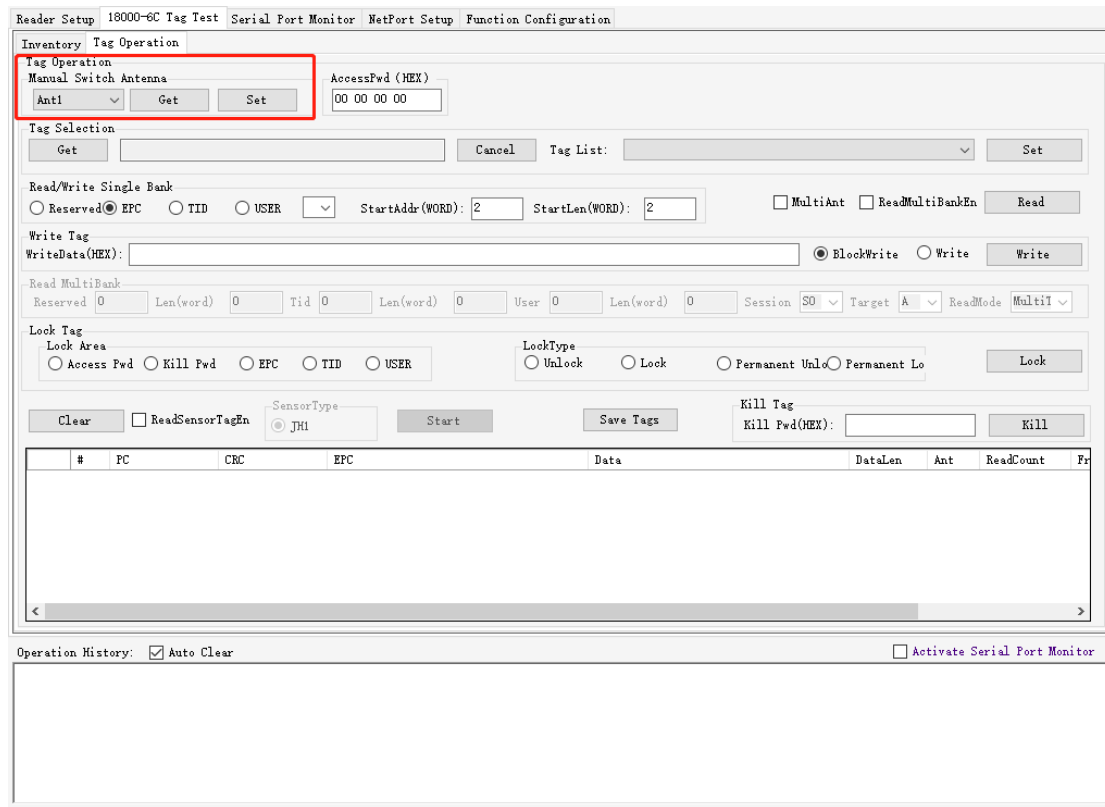


Note : This screenshot is just a simple demonstration, so the data looks very messy. In the actual application process, the **total number of tags** should tend to a certain number, and it will not be so messy.

(3) When [Save Log] is checked, every time you click [Start Inventory], the log will be cleared, and then new data will be recorded. If you need to save the previous data, you can change the name of the log first, and it will not be replaced.

2 access tags

2.1 Obtain and set the working antenna



2.2 Selected tabs

Users can inventory tags in the inventory interface now, confirm that the tags they need are in the tag list, stop the inventory, and then they can pull down on the tag interface of the [Access Tags] interface, select the tags they need, and finally click the selected tag.

The function of the selected label is to operate on a certain label, and the nearby labels will not be affected.

Notice:

- (1) The selected label will not be saved when the power is turned off.

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

Ant1 AccessPw (HEX) 00 00 00 00

Tag Selection

Tag List:

E2 80 11 70 00 00 02 08 8E 73 C8 59
AA BB 12 33 12 33 44 44 55 55
11 22 33 44 55 66 77 88 99 00 11 22
E2 80 11 70 00 00 02 08 8E 73 60 F9
12 32 23 22 00 01
12 22 00 01 00 02 00 24
E2 80 6F 12 00 00 00 02 1F 90 02 15
12 34 BB BB 00 01 00 02 00 02
33 44 AA BB 00 02
E2 80 11 70 00 00 02 0A 0F 69 68 CE
AA BB 12 33 12 33 44 44
12 34 56 78 00 00 00 EC DE 00 06 00
E2 80 11 70 00 00 02 0A 0F 69 68 EE
E2 80 11 70 00 00 02 08 8E 72 D4 38
56 77 AA BB AA BB 33 44 AA BB 00 43
E2 80 11 70 00 00 02 0A 0F 68 74 2E
E2 80 11 70 00 00 02 08 8E 73 2C 59
E2 80 11 70 00 00 02 08 8E 73 22 59
80 80 11 70 00 00 02 08 8E 73 00 59
AA BB 11 00 12 12 33 00 44 55
12 34 56 78 12 34 56 78 12 34 56 78
00 00 00 00 00 00 23 33 33 00 11
88 88 88 88 00 00
E2 80 11 70 00 00 02 0A 0F 68 A0 BE
00 00 00 00 00 00
12 32 23 22 00 02 00 01 99 47 B8 70
AA AA 00 00 00 00 00 00 00 00 11
AA AA 00 00 00 00 00 00 00 00 01
E2 80 11 70 00 00 02 0A 0F 69 00 2E
E2 80 11 70 00 00 02 08 8E 74 64 49

Read/Write Single Bank

☐ Reserved ☒ EPC ☐ TID ☐ USER StartAddr (WORD): 2 StartLen (WORD):

Write Tag

WriteData (HEX):

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0

Lock Tag

Lock Area ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType ☐ Unlock

☐ ReadSensorTagEn

SensorType ☒ JH1

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
---	----	-----	-----	------	---------	-----	-----------	----

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

Ant1 AccessPw (HEX) 00 00 00 00

Tag Selection

E2 80 11 70 00 00 02 08 8E 73 C8 59 Tag List: E2 80 11 70 00 00 02 08 8E 73 C8 59

Read/Write Single Bank

☐ Reserved ☒ EPC ☐ TID ☐ USER StartAddr (WORD): 2 StartLen (WORD): 2 ☐ MultiAnt ☐ ReadMultiBankEn

Write Tag

WriteData (HEX): ☐ BlockWrite ☐ Write

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode Multi1

Lock Tag

Lock Area ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType ☐ Unlock ☐ Lock ☐ Permanent Unlo ☐ Permanent Lo

☐ ReadSensorTagEn Kill Tag Kill Pwd (HEX):

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
---	----	-----	-----	------	---------	-----	-----------	----

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 04:11:18.183 SetAccessPwMatch
2023-07-25 04:11:18.188 Command succeeded

2.3 Get selected tags

You can click the [Get] button to get the tag selected by the user. If there is a selected tag, the tag information can be displayed. If not, it will not be displayed.

The screenshot displays the 'Tag Selection' section of the software interface. The 'Get' button is highlighted with a red box. The 'Tag List' dropdown shows the selected tag: E2 80 11 70 00 00 02 08 8E 73 C8 59. The 'Operation History' section at the bottom shows the command 'GetAccessEpoMatch' and the tag ID '(12)E2 80 11 70 00 00 02 08 8E 73 C8 59'.

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr

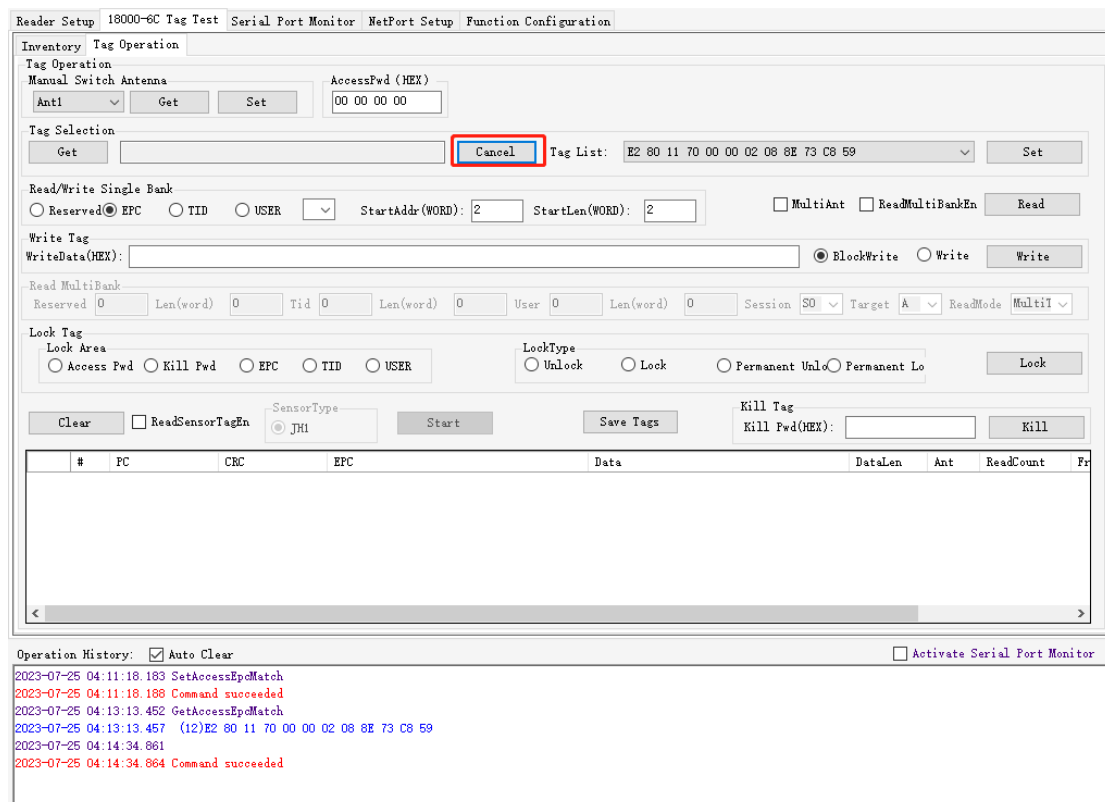
Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

```

2023-07-25 04:11:18.183 SetAccessEpoMatch
2023-07-25 04:11:18.188 Command succeeded
2023-07-25 04:13:13.452 GetAccessEpoMatch
2023-07-25 04:13:13.457 (12)E2 80 11 70 00 00 02 08 8E 73 C8 59
  
```

2.4 clear(label)

After clearing the label, the previously set selected label will become invalid.



2.5 Read tags

label area	initial address	length	Remark
password area	00	04 (Adjusted according to actual needs)	Password area = destroy password + access password
EPC area	02	06 (Adjusted according to actual needs)	00-02 in the EPC area is PC+CRC
TID area	00	04 (Adjusted according to actual needs)	not writable, readable
UER area	00	04 (Adjusted according to actual needs)	user area

password area	destroy password	access code
start address-length	Start address: 00 Length: 02	Start address: 02 Length: 02

The first two bytes of the EPC	PC	CRC
start address-length	0-1 word	1-1 word

The principle of reading the four areas of the label is the same. The following is a simple screenshot explanation for the password area and EPC:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

AccessPw (HEX)

Ant1 Get Set 00 00 00 00

Tag Selection

Get Cancel Tag List: E2 80 11 70 00 00 02 08 8E 73 C8 59 Set

Read/Write Single Bank

☒ Reserved ☐ EPC ☐ TID ☐ USER StartAddr(WORD): 0 StartLen(WORD): 4 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): BlockWrite Write Write

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode Multi1

Lock Tag

Lock Area LockType

☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER ☐ Unlock ☐ Lock ☐ Permanent Unl ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType JH1 Start Save Tags Kill Tag Kill Pwd(HEX): Kill

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount
1	34 00	EF 23	01 01 01 01 00 00 02 0A 0F 68 CC CE	00 00 00 00 00 00 00 00	8	Ant1	1
2	34 00	53 18	00 00 11 70 00 00 02 0A 0F 68 A0 2E	00 00 00 00 00 00 00 00	8	Ant1	1
3	34 00	EE 6D	E2 80 11 70 00 00 02 0A 0F 69 68 BE	00 00 00 00 00 00 00 00	8	Ant1	1
4	34 00	99 D7	80 80 11 70 00 00 02 08 8E 74 BC 1A	00 00 00 00 00 00 00 00	8	Ant1	1
5	34 00	A8 AB	11 11 11 11 11 11 0F 68 A0 1E	00 00 00 00 00 00 00 00	8	Ant1	1

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-25 05:16:50.751 Command succeeded
 2023-07-25 05:16:50.754 Command succeeded
 2023-07-25 05:16:50.762 Command succeeded
 2023-07-25 05:16:50.768 Command succeeded
 2023-07-25 05:16:50.771 Command succeeded
 2023-07-25 05:16:50.773 Command succeeded
 2023-07-25 05:16:50.776 Command succeeded

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

AccessPw (HEX)

Ant1 Get Set 00 00 00 00

Tag Selection

Get Cancel Tag List: Set

Read/Write Single Bank

☐ Reserved ☒ EPC ☐ TID ☐ USER StartAddr(WORD): 0 StartLen(WORD): 8 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): BlockWrite Write Write

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode Multi1

Lock Tag

Lock Area LockType

☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER ☐ Unlock ☐ Lock ☐ Permanent Unl ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType JH1 Start Save Tags Kill Tag Kill Pwd(HEX): Kill

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount
1	30 00	89 6B	E2 80 11 60 60 00 02 11 8E 32 8D 89	89 6B 30 00 E2 80 11 60 60 00 02 11 ...	16	Ant1	1
2	34 00	76 A6	88 88 99 99 66 66 12 33 12 33 12 22	76 A6 34 00 88 88 99 99 66 66 12 33 12 22	16	Ant1	1
3	34 00	68 9C	01 01 01 01 00 00 02 08 8E 72 CA F9	68 9C 34 00 01 01 01 01 00 00 02 08 ...	16	Ant1	1
4	30 00	D1 6C	11 22 33 44 55 66 77 88 99 00 11 22	D1 6C 30 00 11 22 33 44 55 66 77 88 ...	16	Ant1	1
5	30 00	47 A6	56 77 AA BB AA BB 33 44 AA BB 00 24	47 A6 30 00 56 77 AA BB AA BB 33 44 ...	16	Ant1	1

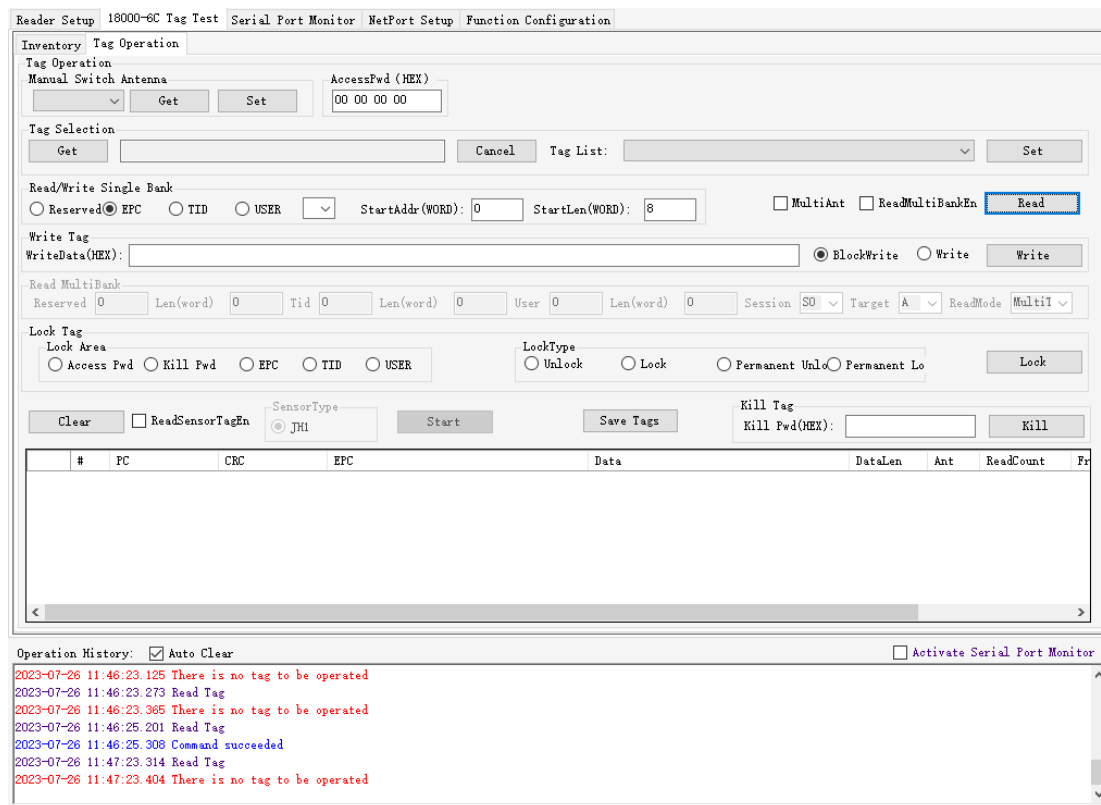
Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Remarks: If you need to operate on a certain tag, you can select the tag first, then read or write the tag.

Since the reading and writing tags under the [Access Interface] are more difficult than

inventory, the power should be set higher. If the selected label is not within the recognition range, an error will be reported, as shown in the figure below, in this case:

- (1) can try a few more times
- (2) Turn up the power
- (3) The tag is closer to the reader



2.6 Write tags

label area	initial address	length	Remark
password area	00	04 (Adjusted according to actual needs)	Password area = destroy password + access password
EPC area	02	06 (Adjusted according to actual needs)	00-02 in the EPC area is PC+CRC
TID area	00	04 (Adjusted according to actual needs)	not writable, readable
UER area	00	04 (Adjusted according to actual needs)	user area

password area	destroy password	access code
start address-length	Start address: 00 Length: 02	Start address: 02 Length: 02

The first two bytes of the EPC	PC	CRC
start address-length	0-1 word	1-1 word

The four areas for writing labels have the same principle. In addition, [Write Label] has two commands, corresponding to two buttons. The following is a simple screenshot description for the password area and EPC:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna: AccessPw (HEX): 00 00 00 00

Tag Selection: E2 80 69 95 20 00 40 07 F9 A7 08 81 Tag List: E2 80 69 95 20 00 40 07 F9 A7 08 81

Read/Write Single Bank: ☒ Reserved ☐ EPC ☐ TID ☐ USER ☐ MultiAnt ☐ ReadMultiBankEn

Write Tag: WriteData (HEX): ☒ BlockWrite ☐ Write

Read MultiBank: Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode MultiI

Lock Tag: Lock Area: ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType: ☐ Unlock ☐ Lock ☐ Permanent Unl ☐ Permanent Lo

Clear ☐ ReadSensorTagEn SensorType: JHI Kill Tag: Kill Pwd (HEX):

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
1	30 00	44 AF	E2 80 69 95 20 00 40 07 F9 A7 08 81	00 00 00 00	4	Ant1	1	92

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 11:49:17.329 Read Tag
2023-07-26 11:49:17.438 Command succeeded

As can be seen from the figure, the current tag's **destruction password** is the default 8 0s. Now demonstrate [Write Tag], just fill in the content you need to modify:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

AccessPw (HEX) 00 00 00 00

Tag Selection

Get E2 80 69 95 20 00 40 07 F9 A7 08 81 Cancel Tag List: E2 80 69 95 20 00 40 07 F9 A7 08 81 Set

Read/Write Single Bank

☒ Reserved ☐ EPC ☐ TID ☐ USER StartAddr(WORD): 0 StartLen(WORD): 2 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): 11 11 22 22 ☒ BlockWrite ☐ Write Write

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode MultiI

Lock Tag

Lock Area ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType ☐ Unlock ☐ Lock ☐ Permanent Unlo ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType JH1 Start Save Tags Kill Tag Kill Pwd(HEX): Kill

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
1	30 00	44 AF	E2 80 69 95 20 00 40 07 F9 A7 08 81	null	0	Ant1	1	92

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 11:49:17.329 Read Tag
 2023-07-26 11:49:17.438 Command succeeded
 2023-07-26 11:52:19.508 WriteTag
 2023-07-26 11:52:19.606 Command succeeded

After the prompt modification is successful, click Read again to see the new data.

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

AccessPw (HEX) 00 00 00 00

Tag Selection

Get E2 80 69 95 20 00 40 07 F9 A7 08 81 Cancel Tag List: E2 80 69 95 20 00 40 07 F9 A7 08 81 Set

Read/Write Single Bank

☒ Reserved ☐ EPC ☐ TID ☐ USER StartAddr(WORD): 0 StartLen(WORD): 2 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): 11 11 22 22 ☒ BlockWrite ☐ Write Write

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode MultiI

Lock Tag

Lock Area ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType ☐ Unlock ☐ Lock ☐ Permanent Unlo ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType JH1 Start Save Tags Kill Tag Kill Pwd(HEX): Kill

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
1	30 00	44 AF	E2 80 69 95 20 00 40 07 F9 A7 08 81	11 11 22 22	4	Ant1	1	904

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 11:49:17.329 Read Tag
 2023-07-26 11:49:17.438 Command succeeded
 2023-07-26 11:52:19.508 WriteTag
 2023-07-26 11:52:19.606 Command succeeded
 2023-07-26 11:57:34.361 Read Tag
 2023-07-26 11:57:34.466 Command succeeded

Note: If the selected tag is used and the modification is in the EPC area, after the writing is successful, it is necessary to cancel the selected tag first and then read the tag to find the tag

modified by the user, because the EPC value of the originally selected tag has changed:

Example: Modify the value of 5677 of the following label to 1122:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna: AccessPw (HEX): 00 00 00 00

Tag Selection

Get: 56 77 AA BB AA BB 33 44 AA BB 00 14 Cancel Tag List: 56 77 AA BB AA BB 33 44 AA BB 00 14 Set

Read/Write Single Bank

☐ Reserved ☒ EPC ☐ TID ☐ USER StartAddr(WORD): 2 StartLen(WORD): 1 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): 11 22 ☒ BlockWrite ☐ Write Write

Read MultiBank

Reserved: 0 Len(word): 0 Tid: 0 Len(word): 0 User: 0 Len(word): 0 Session: S0 Target: A ReadMode: MultiI

Lock Tag

Lock Area: ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType: ☐ Unlock ☐ Lock ☐ Permanent Unl ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType: JH1 Start Save Tags Kill Tag Kill Pwd(HEX): Kill

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
1	30 00	71 F5	56 77 AA BB AA BB 33 44 AA BB 00 14	56 77	2	Ant1	1	926

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Enter a value corresponding to the length:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna: AccessPw (HEX): 00 00 00 00

Tag Selection

Get: 56 77 AA BB AA BB 33 44 AA BB 00 14 Cancel Tag List: 56 77 AA BB AA BB 33 44 AA BB 00 14 Set

Read/Write Single Bank

☐ Reserved ☒ EPC ☐ TID ☐ USER StartAddr(WORD): 2 StartLen(WORD): 1 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): 11 22 ☒ BlockWrite ☐ Write Write

Read MultiBank

Reserved: 0 Len(word): 0 Tid: 0 Len(word): 0 User: 0 Len(word): 0 Session: S0 Target: A ReadMode: MultiI

Lock Tag

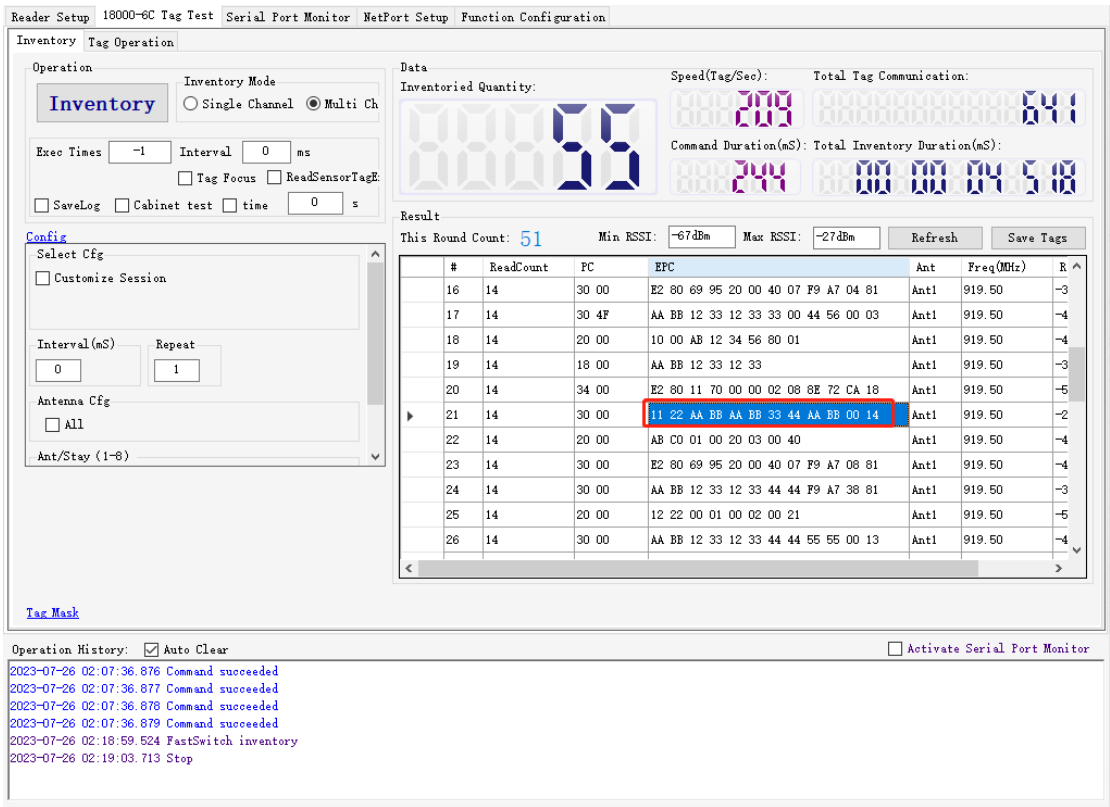
Lock Area: ☐ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER LockType: ☐ Unlock ☐ Lock ☐ Permanent Unl ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType: JH1 Start Save Tags Kill Tag Kill Pwd(HEX): Kill

#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
1	30 00	71 F5	56 77 AA BB AA BB 33 44 AA BB 00 14	null	0	Ant1	1	926

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 01:18:01.006 WriteTag
2023-07-26 01:18:01.115 Command succeeded



2.7 Locked area

Locking the area refers to performing related operations on certain areas of the label, as follows:

name	introduce
open	Tags are open by default, readable and writable (EPC area of general tags), except for special tags.
locking	The default access password cannot be written, and a new access password is required to write.
permanently open	After operation, the label cannot be locked.
permanently locked	After the operation, the tab cannot be opened.

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Inventory Tag Operation

Tag Operation

Manual Switch Antenna

AccessPw (HEX)
00 00 00 00

Tag Selection

Get Cancel Tag List: 56 77 AA BB AA BB 33 44 AA BB 00 14 Set

Read/Write Single Bank

☐ Reserved ☒ EPC ☐ TID ☐ USER StartAddr(WORD): 2 StartLen(WORD): 1 ☐ MultiAnt ☐ ReadMultiBankEn Read

Write Tag

WriteData(HEX): 11 22 ☒ BlockWrite ☐ Write Write

Read MultiBank

Reserved 0 Len(word) 0 Tid 0 Len(word) 0 User 0 Len(word) 0 Session S0 Target A ReadMode Multi1

Lock Tag

Lock Area

☒ Access Pwd ☐ Kill Pwd ☐ EPC ☐ TID ☐ USER

LockType

☐ Unlock ☒ Lock ☐ Permanent Unl ☐ Permanent Lo Lock

Clear ☐ ReadSensorTagEn SensorType JHI Start Save Tags Kill Tag Kill Pwd(HEX): Kill

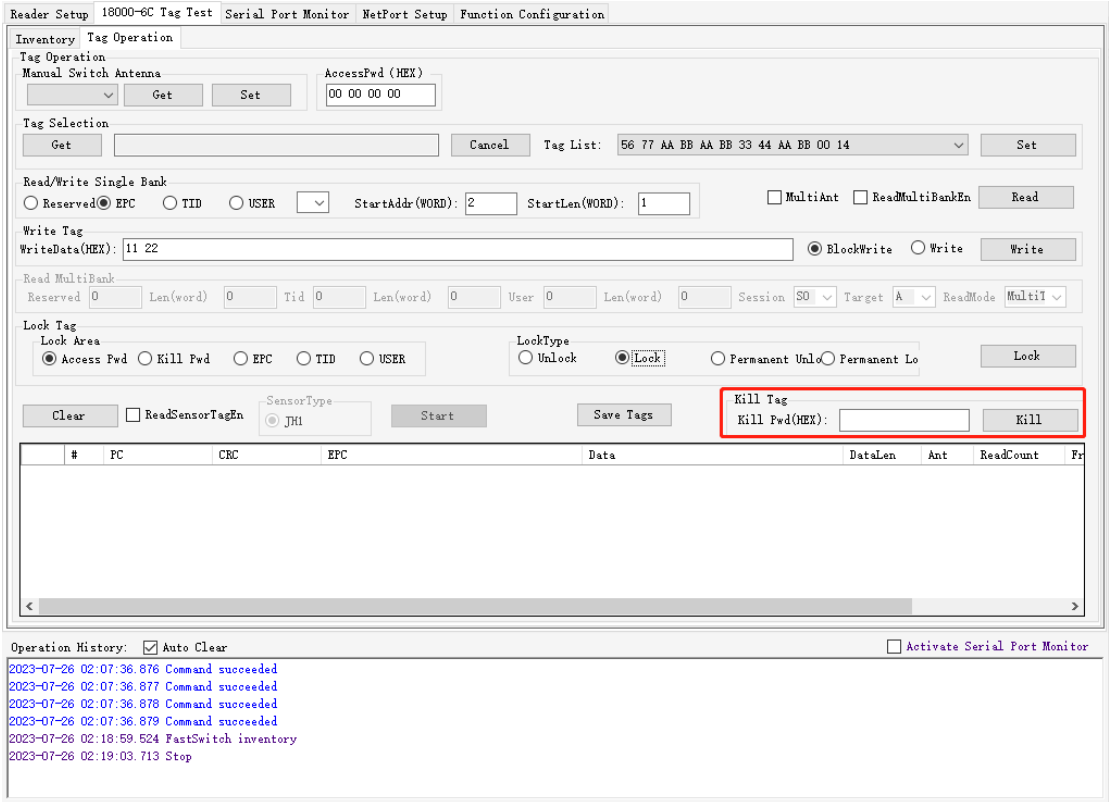
#	PC	CEC	EPC	Data	DataLen	Ant	ReadCount	Fr
---	----	-----	-----	------	---------	-----	-----------	----

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 02:07:36.876 Command succeeded
2023-07-26 02:07:36.877 Command succeeded
2023-07-26 02:07:36.878 Command succeeded
2023-07-26 02:07:36.879 Command succeeded
2023-07-26 02:18:59.524 FastSwitch inventory
2023-07-26 02:19:03.713 Stop

2.8 Kill tags

To destroy the label, you need to modify the default destruction password first. For specific modification steps, please refer to the tutorial of **writing the password area (kill password)** . After the label is destroyed, the label becomes invalid and cannot be used, read, or written. The specific operation is as follows:



The screenshot shows the 'Function Configuration' tab of the software. The 'Kill Tag' section is highlighted with a red box. It contains the following fields and buttons:

- Kill Tag** (Section Header)
- Kill Pwd(HEX):** (Text input field)
- Kill** (Button)

Below the 'Kill Tag' section, there is a table with the following columns: #, PC, CRC, EPC, Data, DataLen, Ant, ReadCount, and Fr. The table is currently empty.

At the bottom of the interface, there is an 'Operation History' section with a checkbox for 'Auto Clear' and a checkbox for 'Activate Serial Port Monitor'. The history log shows the following entries:

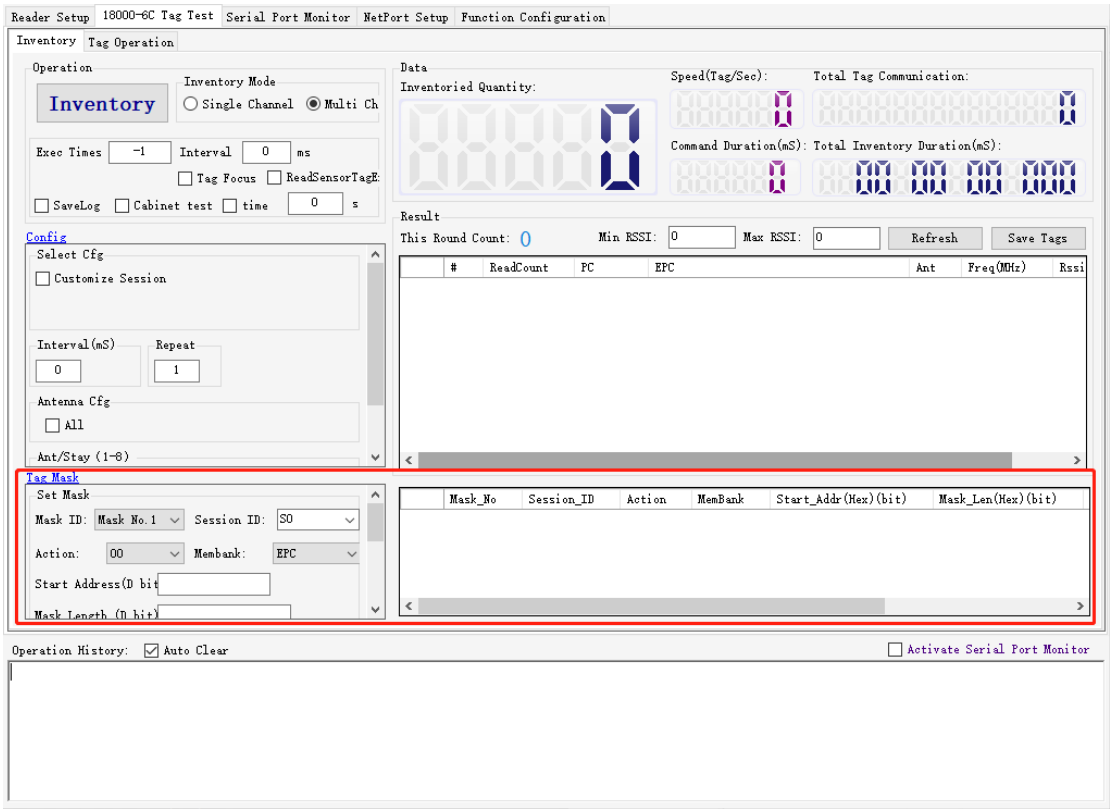
```

2023-07-26 02:07:36.876 Command succeeded
2023-07-26 02:07:36.877 Command succeeded
2023-07-26 02:07:36.878 Command succeeded
2023-07-26 02:07:36.879 Command succeeded
2023-07-26 02:18:59.524 FastSwitch inventory
2023-07-26 02:19:03.713 Stop

```

3 Tag filtering

3.1 Set filter



filtering behavior	illustrate
00	For [Access Tag]
04	For [Inventory Label]

Filter ID	illustrate
No.1	Default and commonly used, others are not commonly used

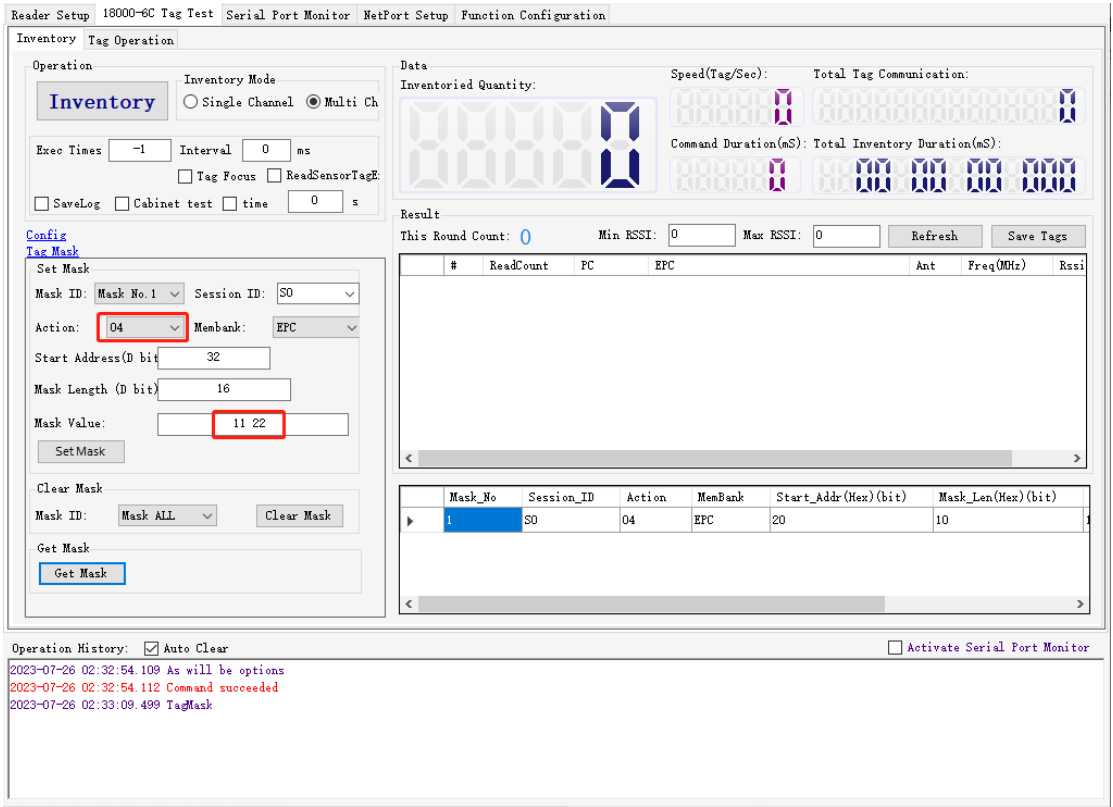
session	illustrate
S0, S1, S2	Choose according to the inventory method you use, but you need to correspond. For example, if you set the filter to use S0, use the S0 mode to inventory the tags you need.

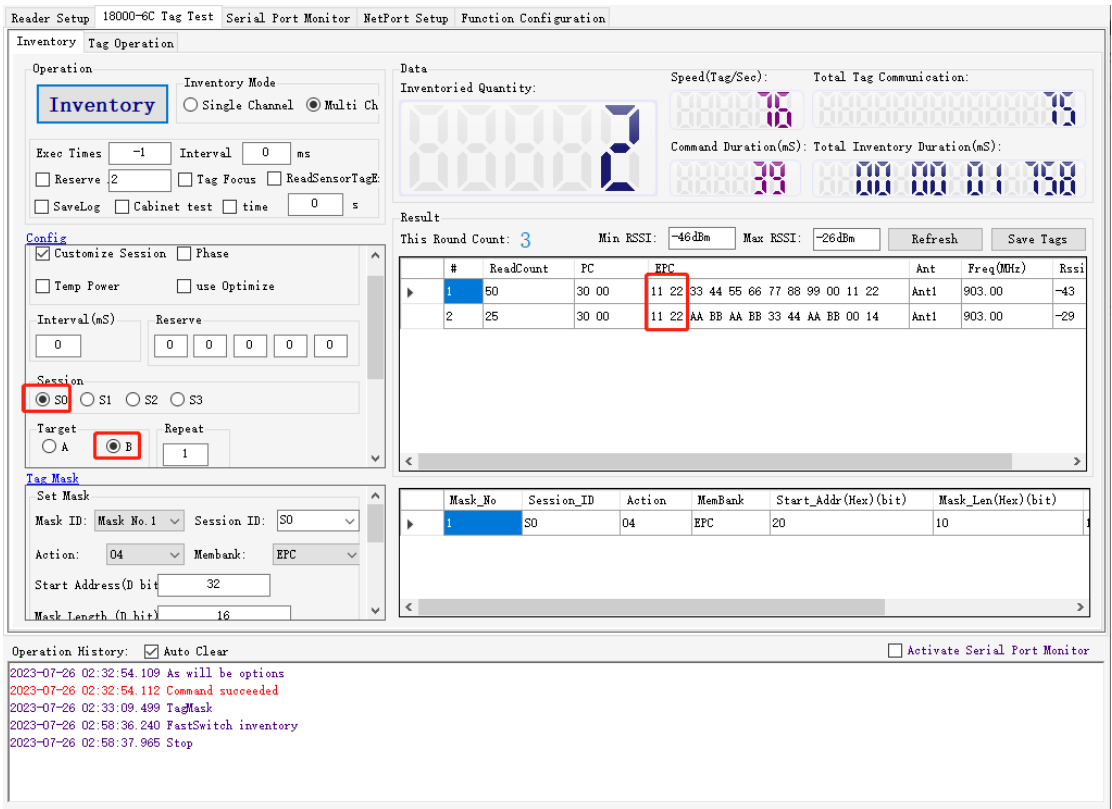
filter area	illustrate
EPC	The default and commonly used EPC, the software inventory refers to the EPC area

3.1.1 Filtering of inventory tags

filtering behavior	illustrate
04	For [Inventory Label]

Since the EPC common data of the label starts from 02word, the corresponding starting address is: 32bit, and the length is filled in according to the length of the content you need to find, for example: use S0 mode to find the label starting with 1122





3.1.2 Filtering of access tags

filtering behavior	illustrate
00	For [Access Tag]

Reader Setup

18000-6C Tag Test

Serial Port Monitor

NetPort Setup

Function Configuration

Inventory

Tag Operation

Operation

Inventory Mode

Inventory

Single Channel

Multi Ch

Exec Times

-1

Interval

0

ms

Reserve

2

Tag Focus

ReadSensorTagE

SaveLog

Cabinet test

time

0

s

Config

Tag Mask

Set Mask

Mask ID:

Mask No. 1

Session ID:

S0

Action:

00

Membank:

EPC

Start Address(D bit)

32

Mask Length (D bit)

16

Mask Value:

11 22

Set Mask

Clear Mask

Mask ID:

Mask ALL

Clear Mask

Get Mask

Get Mask

Data

Inventoryed Quantity:

Speed(Tag/Sec):

Total Tag Communication:

Command Duration(mS):

Total Inventory Duration(mS):

Result

This Round Count:

0

Min RSSI:

0

Max RSSI:

0

Refresh

Save Tags

#	ReadCount	PC	EPC	Ant	Freq(MHz)	Rssi

Mask_No	Session_ID	Action	MemBank	Start_Addr(Hex)(bit)	Mask_Len(Hex)(bit)
1	S0	00	EPC	20	10

Operation History:

Auto Clear

2023-07-26 03:00:19.203 TagMask

Activate Serial Port Monitor

After setting, on the [Access Tags] interface, every time you click Read Tags, the returned tag information is returned according to the set rules. For example, the filter rule set this time is: only display tags starting with **1122**

Reader Setup

18000-6C Tag Test

Serial Port Monitor

NetPort Setup

Function Configuration

Inventory

Tag Operation

Tag Operation

Manual Switch Antenna

AccessPw (HEX)

00 00 00 00

Get

Set

Tag Selection

Get

Cancel

Tag List:

Set

Read/Write Single Bank

☐ Reserved
☒ EPC
☐ TID
☐ USER

StartAddr(WORD):

2

StartLen(WORD):

2

☐ MultiAnt
☐ ReadMultiBankEn

Read

Write Tag

WriteData(HEX):

BlockWrite

Write

Write

Read MultiBank

Reserved

0

Len(word)

0

Tid

0

Len(word)

0

User

0

Len(word)

0

Session

S0

Target

A

ReadMode

MultiI

Lock Tag

Lock Area

☐ Access Pwd
☐ Kill Pwd
☐ EPC
☐ TID
☐ USER

LockType

☐ Unlock
☐ Lock
☐ Permanent Unl
☐ Permanent Lo

Lock

Clear

☐ ReadSensorTagEn

SensorType

JH1

Start

Save Tags

Kill Tag

Kill Pwd(HEX):

Kill

	#	PC	CRC	EPC	Data	DataLen	Ant	ReadCount	Fr
▶	1	30 00	3C 18	11 22 AA BB AA BB 33 44 AA BB 00 14	11 22 AA BB	4	Ant1	1	906
	2	30 00	D1 6C	11 22 33 44 55 66 77 88 99 00 11 22	11 22 33 44	4	Ant1	2	906

Operation History:

☒ Auto Clear
☐ Activate Serial Port Monitor

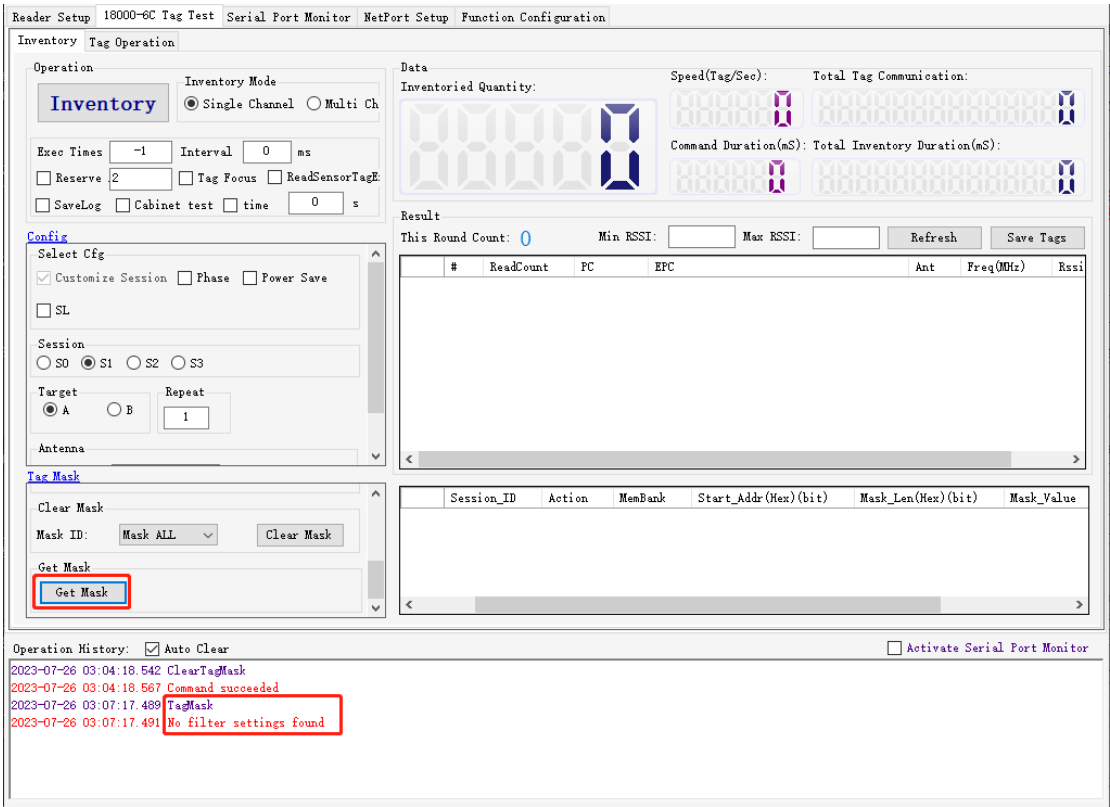
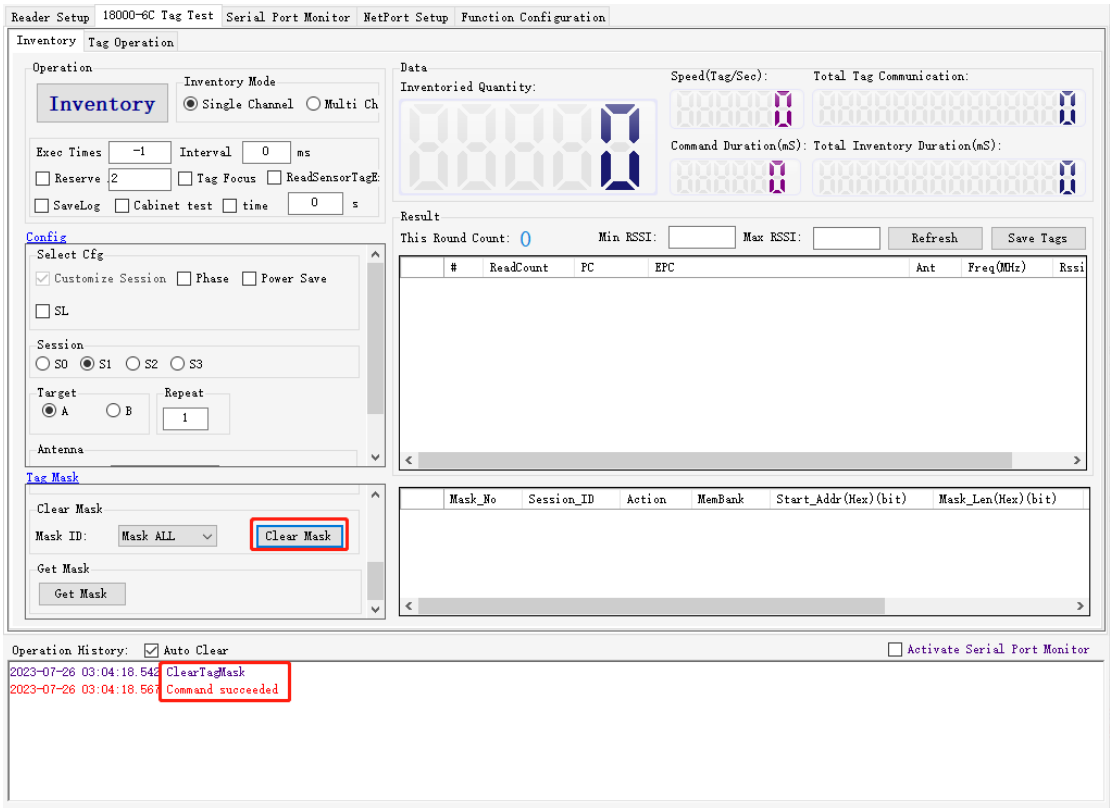
2023-07-26 03:03:23.613 Read Tag

2023-07-26 03:03:23.748 Command succeeded

2023-07-26 03:03:23.750 Command succeeded

3.2 Clear filter

To clear the filter ID, you can choose to clear only a certain pattern, or choose to clear all filtering rules.



Chapter 3: Special function configuration

Function configuration list

function number	Function	GPIO1 status	Note 1	Note 2
0x00	standard mode	none		
0x04	automatic tag reading 4- antenna polling cruise available.	GPIO1 active high		
0x08	Automatic aging.	GPIO1 active low		
0x09	automatic tag reading 4 antenna polling, Wiegand 26 output (in-phase).	GPIO1 active high	M 500 automatically reads tags, serial port output, GPIO1 active high	
0x0F	automatic tag reading 4- antenna polling cruise available.	GPIO1 active low		
0x11	automatic tag reading 4- antenna polling cruise , automatic reading reader identification			
0x12	automatic tag reading 4- antenna polling cruise, triggering GPIO3 output (high) every time a tag is read	GPIO1 active high	Change the trigger time by setting the delay between antennas Note unit: 20 milliseconds	
0x13	Single tag low power consumption (single antenna inventory)	GPIO1 low level automatic reading	Handheld devices	
0x15	Automatically return to GPIO status when reading tags	none		
0x18	Automatic tag reading, 8-antenna polling cruise	GPIO 1 active high	Note : Only for 8-channel modules	
0x19	Automatically read tags and automatically return to GPIO status	GPIO1 active high		
0x20	Automatically report when input GPIO status changes	none		2 020 - 09 - 30 _
0x23	Automatic tag reading can be polled by single antenna	GPIO 1 active low	Conversational Mode S1	2018-9-30
0x24	Automatic tag reading can be polled by single antenna	GPIO 1 active low	session mode S 0	2 020-04-30 _ _ _ _
0x25	Automatic tag reading can be polled by single antenna	GPIO 1 active low	Conversational Mode S1	2 020-04-30 _ _ _ _

0x31	Automatic tag reading, 4-antenna polling navigation	GPIO 1 active high	Conversational Mode S1	
0x32	Automatic tag reading, 4-antenna polling navigation	GPIO 1 active high	Conversational Mode S2	

Note : 8-channel reader/writer 0x 18 mode configuration , please refer to 1.2->manual sending command setting
When the reader is in automatic working mode, please do not send other commands to the reader frequently.

1 Special function configuration

1.1 Configuration via software

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Set function ID

Set Get Function ID (HEX):

Note: Use this function with caution
TM800 series is not supported

Antenna Switch Sequence

Set Get

A Round B Round C Round D Round

Ant1 1 Ant2 1 Ant3 1 Ant4 1

E Round F Round G Round H Round

Ant5 1 Ant6 1 Ant7 1 Ant8 1

Switch Interval (ms) 0

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Connect the reader, select the corresponding working mode, and click **Settings** :

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup **Function Configuration**

Set function ID

Set Get Function ID(HEX): 00

Antenna Switch Sequence

Set Get

A Round B Round C Round

Ant1 1 Ant2 1 Ant3 1

E Round F Round G Round

Ant5 1 Ant6 1 Ant7 1

Switch Interval (mS)

0

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

Note: Use this function with caution.
TM600 series is not supported

After setting the configuration function successfully, the software returns the data interface as follows:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup **Function Configuration**

Set function ID

Set Get Function ID(HEX): 00

Antenna Switch Sequence

Set Get

A Round B Round C Round D Round

Ant1 1 Ant2 1 Ant3 1 Ant4 1

E Round F Round G Round H Round

Ant5 1 Ant6 1 Ant7 1 Ant8 1

Switch Interval (mS)

0

Refresh

Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 03:09:09.941 Function ID set
2023-07-26 03:09:10.043 Command succeeded

Note: Use this function with caution.
TM600 series is not supported

At this point, the special function configuration is successful, and the reader has started to

work in this mode.

Users can also confirm whether the configuration is successful through the query button:

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup **Function Configuration**

Set function ID

Function ID(HEX): 00

Note: Use this function with caution
TM800 series is not supported

Antenna Switch Sequence

A	Round	B	Round	C	Round	D	Round	Switch Interval (ms)
Ant1	1	Ant2	1	Ant3	1	Ant4	1	0
E	Round	F	Round	G	Round	H	Round	
Ant5	1	Ant6	1	Ant7	1	Ant8	1	

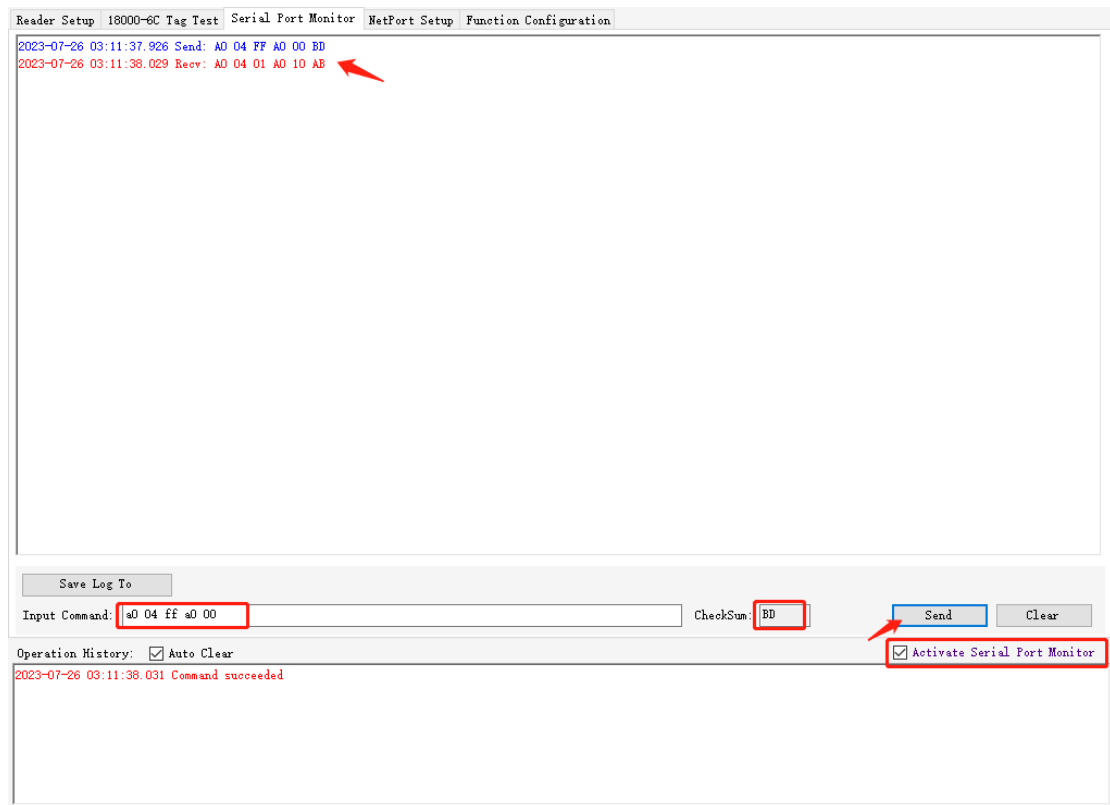
Operation History: ☒ Auto Clear ☐ Activate Serial Port Monitor

2023-07-26 03:09:09.941 Function ID set
2023-07-26 03:09:10.043 Command succeeded
2023-07-26 03:10:40.687 Current function ID(HEX): 00

1.2 Manual send command settings

Command : A0 04 FF A0 *(Cmd No.) *(Check)

For example: standard mode: A0 04 FF A0 00 BD



Note: For the calculation method of the check digit, please refer to the communication protocol user manual

After the command is sent successfully, the reader enters the corresponding working mode.

2 Set the switching order of the four antennas

Take antenna 1 as an example in working mode 04:.

The first step: set 04 working mode:

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | **Function Configuration**

Set function ID

Function ID(HEX):

Note: Use this function with caution
TM600 series is not supported

Antenna Switch Sequence

A	Round	B	Round	C	Round	D	Round	Switch Interval (mS)
Ant1	1	Ant2	1	Ant3	1	Ant4	1	0
Ant5	1	Ant6	1	Ant7	1	Ant8	1	

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

2023-07-26 03:11:38.031 Command succeeded
 2023-07-26 03:12:59.793 Function ID set
 2023-07-26 03:12:59.993 Command succeeded
 2023-07-26 03:13:00.569 2Antenna Disconnect
 2023-07-26 03:13:00.571 3Antenna Disconnect
 2023-07-26 03:13:00.571 4Antenna Disconnect
 2023-07-26 03:13:00.711 2Antenna Disconnect
 2023-07-26 03:13:00.712 3Antenna Disconnect

The second step is to change the rotation times of antenna 2, 3, and 4 to 0, and click Settings:

Reader Setup | 18000-6C Tag Test | Serial Port Monitor | NetPort Setup | **Function Configuration**

Set function ID

Function ID(HEX):

Note: Use this function with caution
TM600 series is not supported

Antenna Switch Sequence

A	Round	B	Round	C	Round	D	Round	Switch Interval (mS)
Ant1	1	Ant2	0	Ant3	0	Ant4	0	0
Ant5	1	Ant6	1	Ant7	1	Ant8	1	

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

Then you can click the query button to confirm whether the setting is successful:

Reader Setup
18000-6C Tag Test
Serial Port Monitor
NetPort Setup
Function Configuration

Set function ID

Set
Get
Function ID(HEX): 04

Note: Use this function with caution
TM600 series is not supported

Antenna Switch Sequence

Set
Get

A	Round	B	Round	C	Round	D	Round	Switch Interval (ms)
Ant1	1	Ant2	0	Ant3	0	Ant4	0	
E	Round	F	Round	G	Round	H	Round	
Ant5	1	Ant6	1	Ant7	1	Ant8	1	

Refresh

Operation History:
☒ Auto Clear
☒ Activate Serial Port Monitor

```

2023-07-26 03:15:00.573 Antenna switch sequency :
2023-07-26 03:15:00.576 Ant 1 inventory 1 round
2023-07-26 03:15:00.577 Ant 2 inventory 0 round
2023-07-26 03:15:00.578 Ant 3 inventory 0 round
2023-07-26 03:15:00.578 Ant 4 inventory 0 round
2023-07-26 03:15:00.579 Ant delay times: 0 ms
    
```

8 Antenna switching sequence is the same.

Chapter 4: Serial port monitoring

1 serial monitor

Serial port monitoring is used to view instruction set data, if you need to view it, check [Serial port monitoring]

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

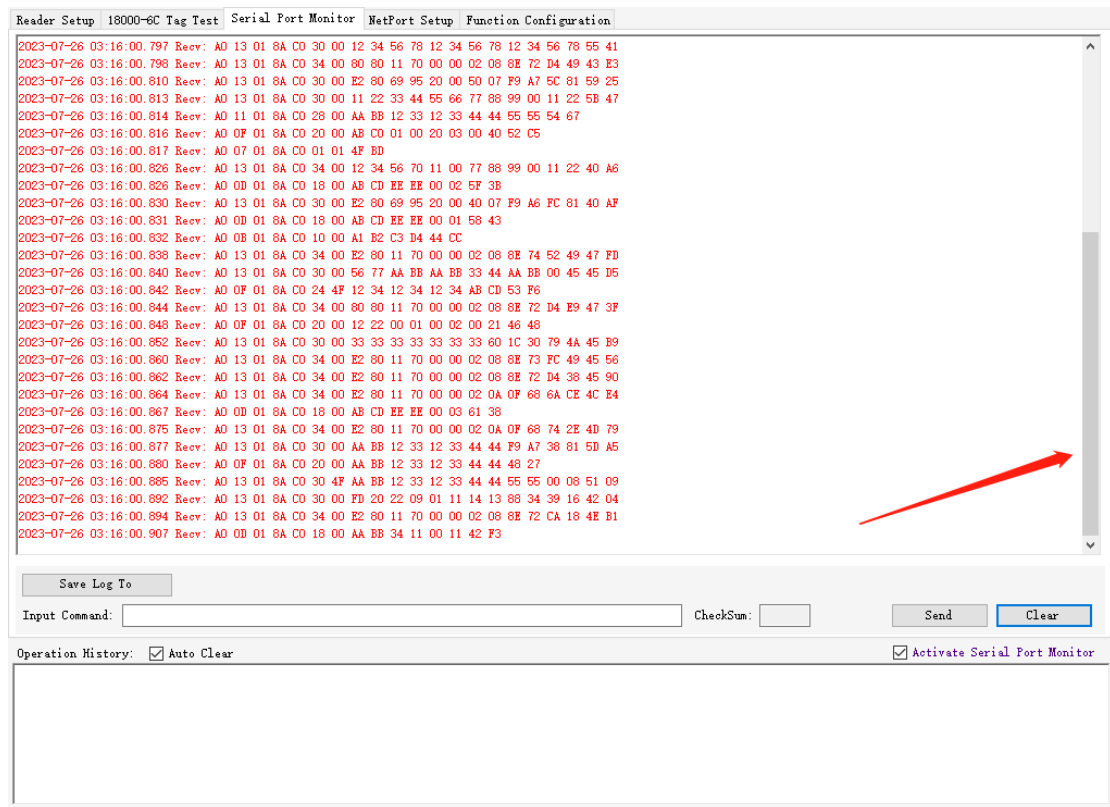
Save Log To

Input Command: CheckSum: Send Clear

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

2 Operation records

If you check the [Auto Clear] of the operation record, the serial port monitoring interface will automatically refresh after displaying all the data:



If you do not check the automatic clearing, the data does not need to be refreshed, and more serial port monitoring data can be retained.

Notice:

- 1、For short-term observation, you can open the serial port monitoring or not clear the serial port monitoring
- 2、If you want to run the demo for a long time, it is recommended not to enable serial port monitoring. If you need to enable serial port monitoring, it is recommended to clear it automatically. Otherwise, the amount of data is large, which will cause the refresh of the demo interface to freeze or increase the software burden.

Chapter 5: Network configuration guide

1 serial port connection reader/kit

- (1) First, make sure that the DIP switch of the reader/kit is set correctly. To connect to the network port, you need to turn down the DIP switch 7-8 (towards the number), and then enter the corresponding serial port number and baud rate to connect to the reader/kit.
- (2) This software automatically obtains the serial port number, but if the software has already been opened, the serial port cable is inserted, and the serial port number can be automatically recognized only by clicking the refresh button (the demo version below 4.1 requires a drop-down box to select the serial port number, and the corresponding serial port number can be viewed at: Computer (right click)--Management--Device Manager--Port);
- (3) The default baud rate is: 115200.

2 Ethernet to connect to the reader/kit

Firstly, make sure that the DIP switch of the reader/kit is set correctly. To connect to the network port, you need to turn down the DIP switch 3-4 (towards the number), and then enter the corresponding IP and port to connect to the reader/kit.

3 Network parameter configuration

This function integrates the configuration function of the new version of the network port on the basis of the version 3.9 demo, so the devices with the old network port cannot be searched or configured with this software. If you have any questions, please consult the salesperson or technical support.

Time : Around July 2020, readers and kits will gradually use the new network port.

3.1 Refresh/select network card

First select the network card corresponding to the reader. For example, the network card of a notebook may have a wired network card and a wireless network card. If a virtual machine is installed, there is also a network card of the virtual machine, so the corresponding network card must be selected first. If there is no network card, you can click the refresh button.

Reader Setup 18000-6C Tag Test Serial Port Monitor NetPort Setup Function Configuration

Refresh NetCard: Realtek PCIe FE Family Controller ▼

Search Device: 0 **Clear**

Current NetCard
ip: 172.16.11.56, mask: 255.255.255.0, mac: 00:E0:4C:02:AE:D2

#	DeviceName	DeviceIp	DeviceMac	ChipVer	PdMac

Note

- (1) If you need to configure Client, please use a private network tool
- (2) The old Nport interface cannot be searched for the moment. [Old tool link](#)

Basic Setting

Device Mac:

DevName(2f):

dhcpEn: ☐

Ip:

Mask:

Gateway:

com negotiation: onCfgEn ☐

Get Save Default

Reset Load Store

Port_1 Heartbeat Detect

port1_En ☐

NetMode: TCP_SERVER ▼

LocalPort: randEn ☐ 0

DomainEn ☐

DNS domain:

Des IP/Port:

BaudRate: B300 ▼

DataSize: Bits5 ▼

StopBits: None ▼

Parity: Odd ▼

PhyLost: CloseSocketEn ☐

RxLen: (<=1024)

RxTimeout: (10ms)

ResetCtrl: ClearBufferEn ☐

ReconnectCnt:

DNS host:

DNS port:

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

3.2 Search device

Click Search Device, if there is a device, it will be displayed first, and you can see the IP and other information of the reader/kit device, as shown in the figure below:

Reader Setup 18000-6C Tag Test Serial Port Monitor **NetPort Setup** Function Configuration

Refresh NetCard: Realtek PCIe FE Family Controller

Searching The total number of devices: 1 Clear

Current NetCard
ip: 172.16.11.56, mask: 255.255.255.0, mac: 00:E0:4C:02:AE:D2

#	DeviceName	DeviceIp	DeviceMac	ChipVer	PdMac
▶	RoNetPort	192.168.0.178	38:38:26:44:29:BE 0	0	00:00:00:00:0

Note

(1) If you need to configure Client, please use a private network tool

(2) The old Netport interface cannot be searched for the moment. [Old tool link](#)

Basic Setting

Device Mac:

DevName(24):

dhcpEn: ☐

Ip:

Mask:

Gateway:

com negotiation: onCfgEn ☐

Get Save Default

Reset Load Store

Port_1 Heartbeat Detect

port1_En ☐

NetMode: TCP_SERVER

LocalPort: randEn ☐ 0

DomainEn ☐

DNS domain:

Des IP/Port:

BaudRate: B300

DataSize: Bits5

StopBits: None

Parity: Odd

PhyLost: CloseSocketEn ☐

RxLen: (<=1024)

RxTimeout: (10ms)

ResetCtrl: ClearBufferEn ☐

ReconnectCnt:

DNS host:

DNS port:

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

3.3 Load/View Device Details

After searching out the device, you can double-click the corresponding device list to view the detailed configuration information

Reader Setup 18000-6C Tag Test Serial Port Monitor **NetPort Setup** Function Configuration

Refresh NetCard: Realtek PCIe FE Family Controller

Search The total number of devices: 1 Clear

Current NetCard
ip: 172.16.11.56, mask: 255.255.255.0, mac: 00:E0:4C:02:AE:D2

#	DeviceName	DeviceIp	DeviceMac	ChipVer	PdMac
▶	RoNetPort	192.168.0.178	38:3B:26:44:29:BE	0	00:00:00:00:0

GetCfg Successful
Gets the NetPort configuration successfully
OK

Basic Setting

Device Mac: 38:3B:26:44:29:BE

DevName(24) RoNetPort

dhopEn: ☐

Ip: 192.168.0.178

Mask: 255.255.255.0

Gateway: 192.168.0.1

com negotiation: omCfgEn ☐

Save Default Load Store

Port_1 Heartbeat Detect

port1_En ☐

NetMode: TCP_SERVER

LocalPort: randEn ☐ 0

DomainEn ☐

DNS domain:

Des IP/Port: 192.168.0.200 1000

BaudRate: B300

DataSize: Bits5

StopBits: None

Parity: Odd

PhyLost: CloseSocketEn ☐

RxLen: <=1024

RxTimeout: (10ms)

ResetCtrl: ClearBufferEn ☐

ReconnectCnt:

DNS host:

DNS port:

Note

(1) If you need to configure Client, please use a private network tool

(2) The old Nport interface cannot be searched for the moment. [Old tool link](#)

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

Reader Setup 18000-6C Tag Test Serial Port Monitor **NetPort Setup** Function Configuration

Refresh NetCard: Realtek PCIe FE Family Controller

Search The total number of devices: 1 Clear

Current NetCard
ip: 172.16.11.56, mask: 255.255.255.0, mac: 00:E0:4C:02:AE:D2

#	DeviceName	DeviceIp	DeviceMac	ChipVer	PdMac
▶	RoNetPort	192.168.0.178	38:3B:26:44:29:BE	0	00:00:00:00:0

Basic Setting

Device Mac: 38:3B:26:44:29:BE

DevName(24) RoNetPort

dhopEn: ☐

Ip: 192.168.0.178

Mask: 255.255.255.0

Gateway: 192.168.0.1

com negotiation: omCfgEn ☐

Get Save Default Reset Load Store

Port_1 Heartbeat Detect

port1_En ☒

NetMode: TCP_SERVER

LocalPort: randEn ☐ 4001

DomainEn ☐

DNS domain:

Des IP/Port: 192.168.0.200 1000

BaudRate: B115200

DataSize: Bits8

StopBits: One

Parity: None

PhyLost: CloseSocketEn ☐

RxLen: 1024 <=1024

RxTimeout: 0 (10ms)

ResetCtrl: ClearBufferEn ☐

ReconnectCnt: 0

DNS host: 0.0.0.0

DNS port: 0

Note

(1) If you need to configure Client, please use a private network tool

(2) The old Nport interface cannot be searched for the moment. [Old tool link](#)

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

some parameters	Parameter Description
DevName device name	Users can modify it to distinguish devices
DHCP	Not enabled by default
IP	The current IP of the reader

NetModel	network model	The default is to use Server mode, which can be set to Client mode, but this software does not support it, you need to use the network port debugging assistant to test
LocalPort	local port	The default is 4001, which is not recommended: the port number is randomly generated.
Baudrate	serial port baud rate	Baud rate, the default is 115200
Phylost	network disconnected	If it is not checked, it means that the disconnection reconnection mechanism of the network port is enabled

3.4 Server mode

Pull down **the network mode** , select the server mode TCP_SERVER, set the parameters, and then click [Save Configuration] . This software does not support client mode operation.

Reader Setup | 18000-GC Tag Test | Serial Port Monitor | **NetPort Setup** | Function Configuration

Refresh NetCard: Realtek PCIe FE Family Controller

Search The total number of devices: 1 Clear

Current NetCard
ip:172.16.11.56, mask: 255.255.255.0, mac: 00:E0:4C:02:AE:D2

#	DeviceName	DeviceIp	DeviceMac	ChipVer	FdMac
▶	RoNetPort	192.168.0.178	38:3B:26:44:29:BE	0	00:00:00:00:0

Note
(1) If you need to configure Client, please use a private network tool
(2) The old Netport interface cannot be searched for the moment. [Old tool link](#)

Basic Setting

Device Mac: 38:3B:26:44:29:BE

DevName(21RoNetPort)

dhopEn: ☐

Ip: 192.168.0.178

Mask: 255.255.255.0

Gateway: 192.168.0.1

com negotiation: onCfgEn ☐

Get Save Default
Reset Load Store

Port_1 Heartbeat Detect

port1_En ☒

NetMode: TCP_SERVER

LocalPort: randEn 4001

DomainEn ☐

DNS domain

Des IP/Port
192.168.0.200 1000

BaudRate: B115200

DataSize: Bits8

StopBits: One

Parity: None

PhyLost: CloseSocketEn ☐

RxLen: 1024 (<=1024)

RxTimeout: 0 (10ms)

ResetCtrl: ClearBufferEn ☐

ReconnectCnt: 0

DNS host: 0.0.0.0

DNS port: 0

Operation History: ☒ Auto Clear ☒ Activate Serial Port Monitor

Note: Although the search device, the reader and the computer are directly connected, the IP of the two devices may not be in the same network segment, and the IP of the computer can also be searched; but if the software of the computer needs to be able to connect to the reader, it is best to let the IP of the reader and the IP of the computer be in the same **network segment** .