

SL200

User's Manual

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This document describes the SL200 product and relevant software operation supplied by GIGA-TMS INC. To check for more recent editions of this document, see <http://ftp.gigatms.com.tw/disks/DISK5493/>

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Terminology

HF	High Frequency
RF	Radio frequency
RFID	Radio-frequency identification
SL200	The Desktop HF reader with keyboard output -USB.
Tag ID	Tag-identification or Tag identifier, depending on context. Tag ID also called Card ID, UID or CSN (card serial number).
Tag Data	The data stored in the tag memory. Tag Data also called Card Data, User Data or Tag User Data .
Whitelist	A table defines a set of Tag ID/User Data related to an account and password.

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Introduction

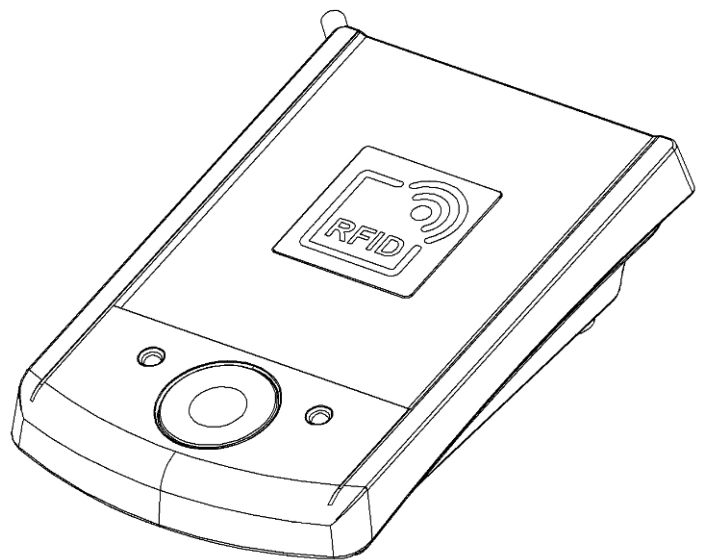
The **SL200** is a USB desktop reader compliant with RFID and Bluetooth technologies. The RFID frequency is 13.56MHz, which is compliant with ISO-14443A and ISO15693.

SL200 uses the keyboard emulation that outputs the Tag ID, Tag data or mobile login data as keystrokes at the current cursor position in the host application. This makes the application doesn't need to implement the SDK library or communication protocol to receive the reader data.

The **SL200** supports for Windows 7,10, Android, Mac and Linux.

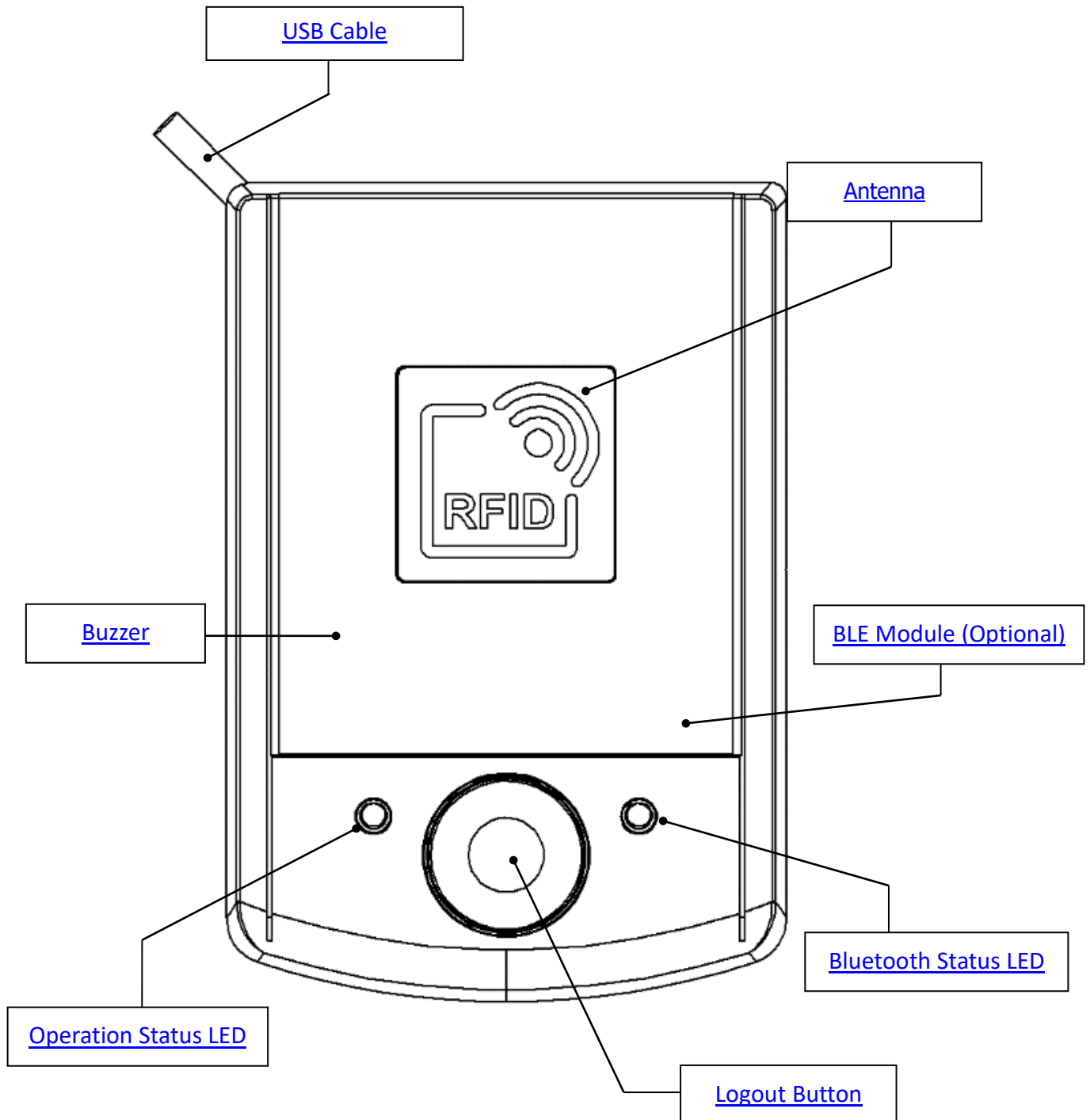
Following lists the typical applications for **SL200**:

- System Login
- Time and Attendance
- Job Tracking
- Project Management
- Guest Registration System
- Academic Service
- Information Service
- Library/Bookstore Management



Hardware Features

Cables and Controls



Operation Status LED

The **Operation Status LED** can light 2 colors – green and red, which is used to indicate following status:

- **Green light** Indicate the power is turning on.
- **Flashing Green light Once** Indicate:
 - Reads the presented tag is successful.
 - or -
 - Received the account/password data from **Login Reader App**.
- **Red light** Indicate the tag reads failed. The red light will keep 3 seconds and then turn to green.

Bluetooth Status LED

The **Bluetooth status LED** is used to indicate the communication status via Bluetooth:

- **Blue light** Paired with host.
- **Flashing Blue light** Indicates Bluetooth is on but not paired yet (stays in *discover* mode).
- **Off** Bluetooth is off.

Logout Button

The **Logout button** is pre-set to lock the Windows device. Press this button will output the keystrokes [Windows Key] + [L] to computer. This button can be programmed to your wanted keystrokes output.

USB Cable

The cable that **SL200** uses is USB interface, which is compatible with USB1.1 to 2.0. The USB cable also provides the power for **SL200**.

Antenna

Antenna is a conductor that can transmit, send and receive HF radio signals. Approach tag to this area to get better reading performance. The reading distance is up to about 2 cm.

Buzzer

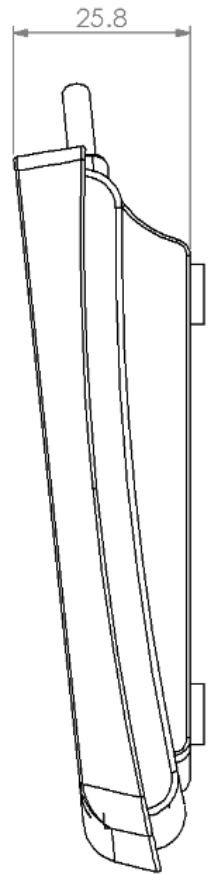
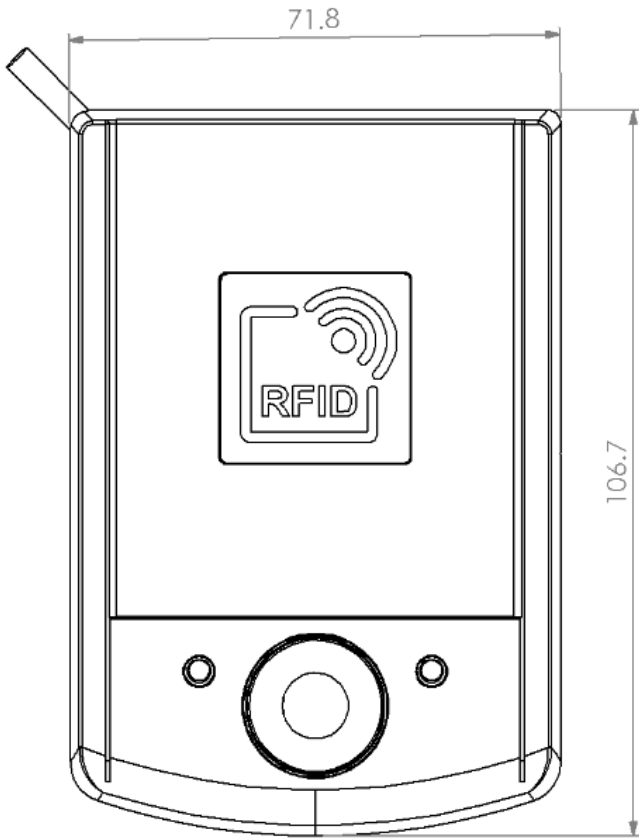
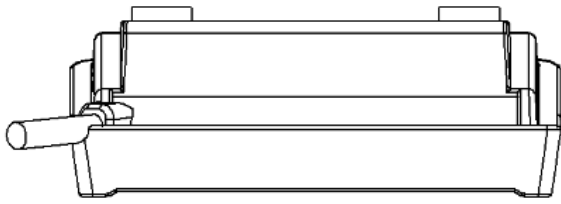
The buzzer is used to make beep sound to notify the user with the operation result. One beep indicates the operation is OK, Three short beeps indicates the operation has failed.

BLE Module (Optional)

The BLE module integrated Bluetooth protocol stack that can give SL200 reader access to your BLE-enabled

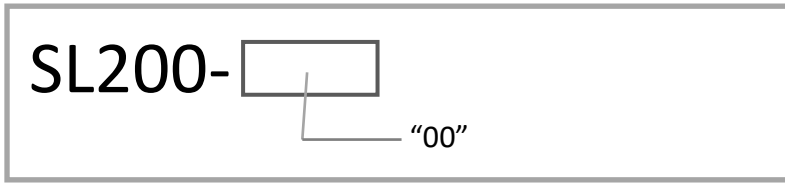
host device.

Mechanical Dimension



Part Numbers

Device numbering scheme is as follows:



Part Number	Description
SL200-00	The reader with BLE connectivity.
SL200-50	The reader without BLE connectivity.

Specifications

Features	SL200-00	SL200-50
HF reader read range	2 cm	
Read Card Memory ¹	✓	✗
Whitelist	✓	✗
Status Indicator	Power Status LED / Bluetooth Status LED	
Buzzer	1	
Button	1	
Communication		
Bluetooth ²	✓	✗
USB	HID profile (Keyboard Emulation)	
Electrical		
RFID interface	ISO14443A, Mifare Classic, ISO15693	
Environment		
Operating Temperature	-20°C ~ 60°C	
Storage Temperature	-20°C ~ 45°C	
Humidity	65±20% RH	
Dimensions		
Width	71.8 mm	
Height	106.7 mm	
Depth	25.8 mm	
Weight	108 g	

Note:

1. **Read Card Memory:** Indicates the reader supports reading card (or called tag) internal memory.
2. **Bluetooth specification:** V4.0, Bluetooth Low Energy (BLE)

General Information

Capabilities

The **SL200** reader has the following capabilities:

- Reads **Tag ID** and **Tag Data** fields of RFID tags.
- Provides a [Whilelist](#) table to output in the format of account and password.
- Supports mobile app to present user's ID (account/password) via the BLE connectivity.

Tag ID

The tag consists of contiguous fields called the **Tag ID** and the **Tag Data**.

The **Tag ID** is a read-only unique number, which means it cannot be modified.

Tag ID also called **Card ID**, **UID** or **CSN** (card serial number).

Tag Data

The **Tag Data** is stored in the tag memory. In most of time it only needs to read partial of **Tag Data**. If the tag memory required security settings to read out, then it needs to set up related settings to **SL200** reader by using [SL200 Utility](#).

For example, if the tag type is **Mifare Classic**, then it needs to indicate the location (where to read), the data size and the Key value (to get access permission).

Tag Data also called **Card Data**, **User Data** or **Tag User Data**.

Data Convert

The data convert allows you to define the rule to decode the Tag ID/Tag Data and the encode rule to output the data.

You can set up relevant parameters in the [Data Convert page](#) of [SL200 Utility program](#).

There are following parameters used for the data decoding and encoding:

- **Revert Bytes:** Reverts the input data. For example, if the Tag ID is 30h 31h 32h 33h, then it will reverse to 33h 32h 31h 30h.
- **Input Extracted Start:** The start position to extract input data. The value starts from 0.
- **Input Extracted Length:** The length to extract input data. The value 0 means extract whole data.
- **Data Convert list:** Defines the data type of input data and output data. Following is available data types:
 - **ASCII to String:** The input data is ASCII code. For this type, the output data is same to input data, but the data need to be limit in the value 20h to 7Fh (visible character). If the input data is not in the value 20h to 7Fh, then reader will treat it as an invalid tag.

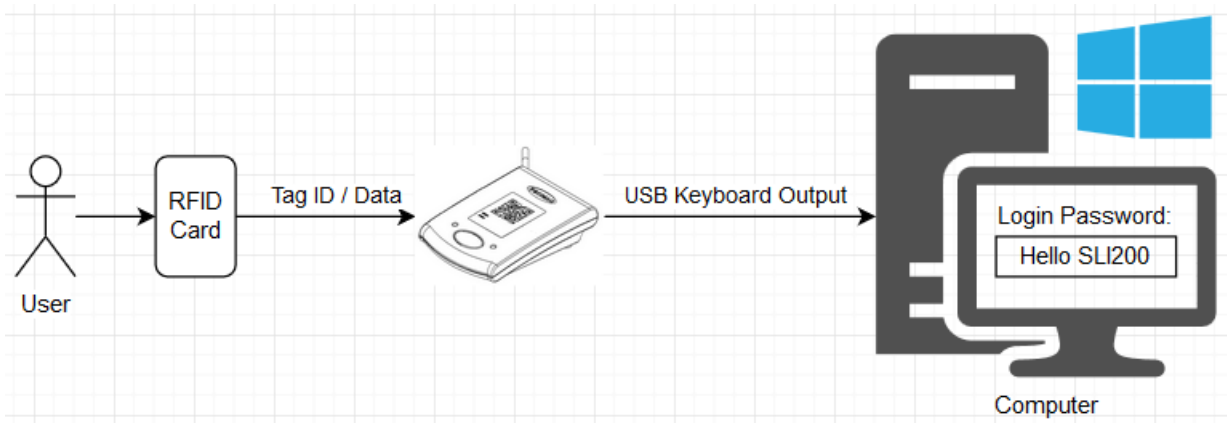
- **BCD to Decimal String:** The input data is in BCD format and convert to decimal string. For example, 30h 31h => 33h 30h 33h 31h. The converted data is same to the string “3021”. If the input data cannot presented in BCD format, then reader will treat it as an invalid tag.
- **Binary to Hex String:** The input data is binary (byte array) and convert to HEX string. For example, ABh CDh => 41h 42h 43h 44h. The converted data is same to the string “ABCD”. If the input data cannot presented in BCD format, then reader will treat it as an invalid tag.
- **Number to Decimal String:** The input data is number type and convert to decimal string. For example, 30h 31h => 31h 32h 33h 33h 37h. The converted data is same to the string “12337”.
- **Output Extracted Start:** The start position to extract converted data to output. The value starts from 0.
- **Output Extracted Length:** The length to extract converted data to output. The value 0 means extract whole data.

The Data Convert sequence:

1. Revert Input Data
2. Extract Input Data.
3. Convert Data.
4. Extract Converted Data then output.

RFID Card Login Diagram

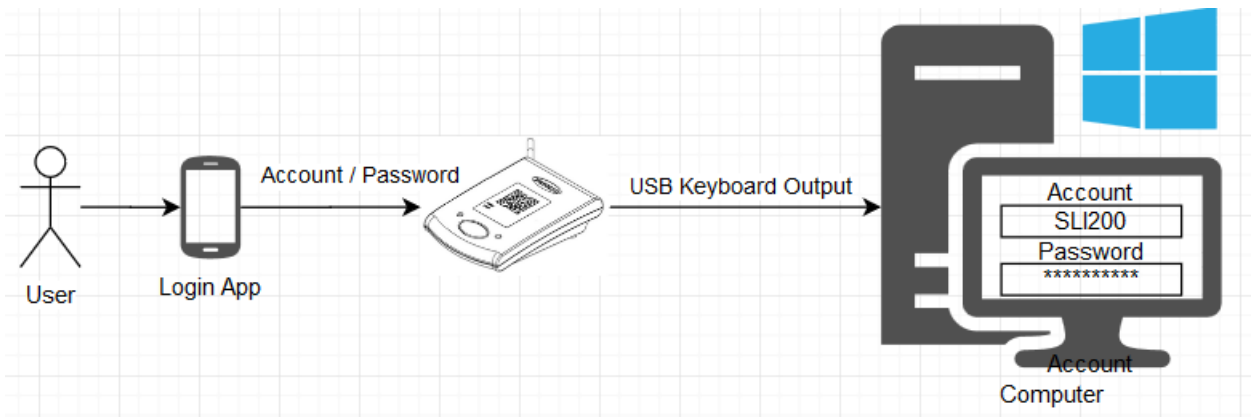
Following diagram shows the relationships of using card to log in system procedure between an user and Host application.



If the **Tag ID/Tag Data** is defined in **Whitelist**, then SL200 will output the account and password related to its **Tag ID/Tag Data**.

Mobile App Login Diagram

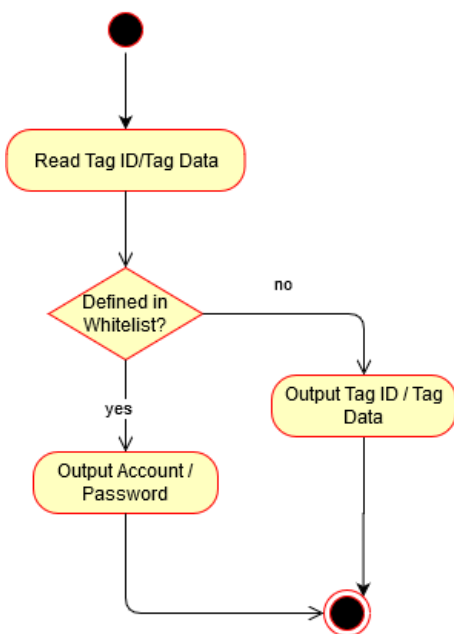
Following diagram shows the relationships of using mobile app to log in system procedure between an user and Host application via Bluetooth with **SL200**.



The **Login Reader App** sends the account and password to **SL200** via Bluetooth.

Whitelist Verification Sequence Diagram

Following diagram shows the sequence of using [Whitelist](#) to convert **Tag ID/Tag Data** to account and password data as keystrokes to computer.



User Stories

- As an **User**, I can place my **ID Card** on the **SL200** reader, output the **account / password** as keystrokes to enter the login window of host application, so I don't need to remember the **account / password** and it will save time for not to use keyboard to type the **account / password**.
- As an **User**, I can use [Mobile App](#) to select the pre-defined **account / password** to send to **SL200** reader, output as keystrokes to enter the login window of host application, so I don't need to remember the **account / password** and it will save time for not to use keyboard to type the **account / password**.
- As an **User**, I can press the **Logout Button** of **SL200** reader, then can log out the host application (or lock the computer), so I don't need to manually to log out the system.
- As an **Administrator**, I can use [SL200 Utility](#) to register **ID Card** to **SL200's Whitelist**, so I can limit only registered **ID Card** can log in the host application.
- As an **Administrator**, I can use [SL200 Utility](#) to set up the output format of **account / password**, so it can meet the login entry requirement of host application.

Getting Started

Read Tag and Output Tag ID

Following procedure shows the way of using **SL200** to output the **Tag ID** to computer .

1. Connect **SL200** to computer USB port.
2. Place **SL200** next to monitor, or computer, or the place where is convenient for you to place tag.
3. Open **Notepad** program.
4. Place tag on the **SL200**.
5. The **Tag ID** will output as keystrokes at the current cursor position in the **Notepad** program.

You can use **SL200 Utility** to configure **SL200** reader to output **Tag data** or converted to account/password by **Whitelist** instead of outputting **Tag ID**.

Device Operations

Read Tag

SL200 supports reading HF **Tag ID** (ISO-14443A, ISO-15693) and **Tag Data** (Mifare Classic).

You can use **SL200 Utility** to configure **SL200** to determine reading **Tag ID** or **Tag Data** that will output to computer.

To read tag, place the tag on the [antenna area of SL200](#). The reading range is about 2 cm. Once SL200 detects the tag, then will go to read **Tag ID** or **Tag Data** and output as keystrokes to computer.

Output Keystrokes Format

SL200 outputs the reading tag or the data issued from [Login Reader App](#) as keystrokes to computer.

The format of output keystrokes is configurable. You can use [SL200 Utility](#) to define the prefix and suffix for the the output keystrokes format.

The output format:

Prefix + Tag ID/Tag Data + Suffix

If the **Tag ID/Tag Data** is defined in the **Whitelist**, then the output format will be:

Prefix + Account + Separator + Password + Suffix

Whitelist

Whitelist is a table that is used to convert the **Tag ID/Tag Data** to an account and password data and then output to computer..

The fields format for the **Whitelist** table:

- **Key:** The key can be the [Tag ID](#) or [Tag Data](#). It is configured by the **Read Source setting** of [SL200 Utility](#).
- **Account:** The account name.
- **Password:** The password fo the account.

If the **Tag ID/Tag Data** is not defined in **Whitelist**, then **SL200** direct to output **Tag ID/Tag Data**. Refer to this [diagram](#) for viewing the sequence.

Press the Logout Button

The [Logout Button](#) provides user a shortcut to control the host application by output pre-programmed keystrokes to computer. The pre-set keystrokes is [WinKey] + L, which is used to lock computer.

You can use [SL200 Utility](#) to program the [Logout Button keystrokes](#).

Bluetooth Connection

SL200 allows user to use the mobile phone app to present their ID via the Bluetooth connectivity.

Software Operations

This part of the documentation describes all software supplied by **SL200**.

At the moment, following software packages are available:

- [SL200 Utility Program for Windows](#)
- [Firmware Loader for Windows](#)
- [Virtual COM Port Driver](#)

SL200 Utility for Windows

SL200 Utility is used to configure the [SL200](#) reader's settings. This program supports all [part numbers](#) of **SL200** reader, so only the features that the connected **SL200** supports can be showing on the program UI. To view which features that your **SL200** reader supports, please refer to [Specifications](#) topic.

Install the Program

The setup program is located in the web site: <http://ftp.gigatms.com.tw/disks/DISK5493/>.

Download the setup file and run this install program on your computer

Start the Program

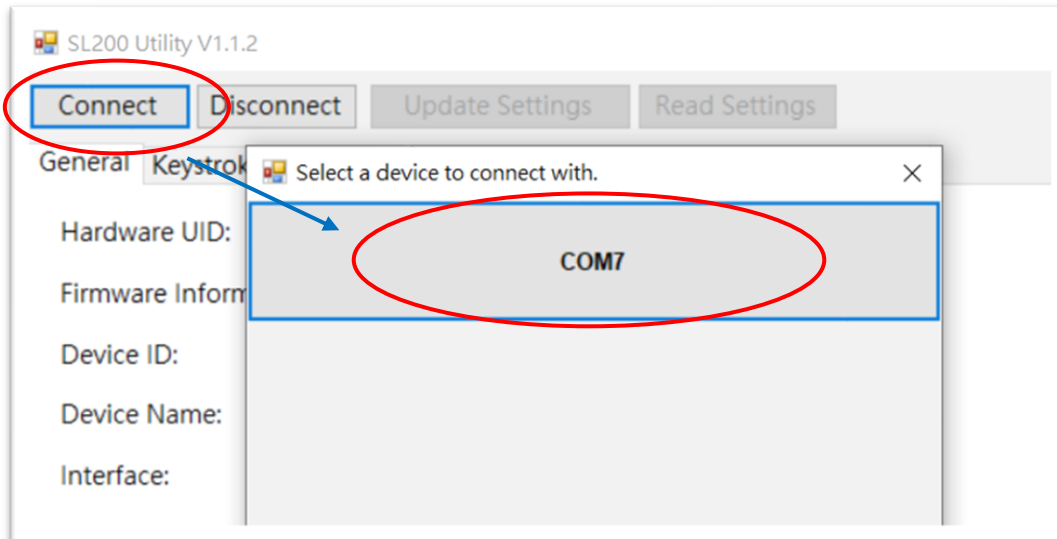
To start **SL200 Utility** program, do the following:

1. On the taskbar, click **Start**, and then point to **All Programs**.
2. Point to **GIGA-TMS**, and then click **SL200 Utility**.

Using SL200 Utility

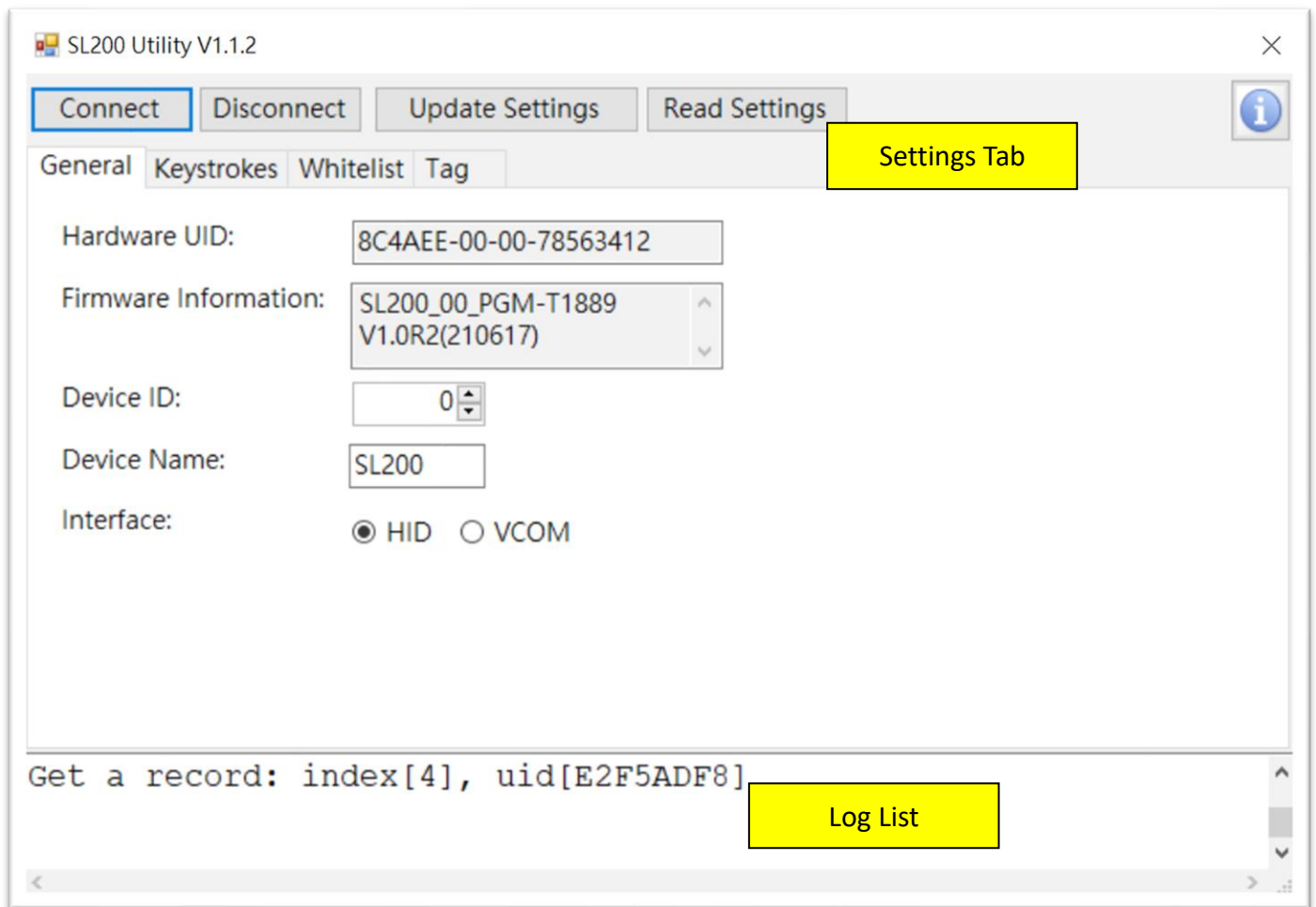
Connect Reader to Computer

Connect **SL200** to your computer, click **Connect**, the connected port number will appear in the **Port list**.



Click to select the port where SL200 connects to establish the connection.

Explore the User Interface



This window contains following elements:

- **Connect button** Click to establish the connection with **SL200** reader. If the connection is established, then it will read all the device settings and show on the **Settings Tab**.
- **Disconnect button** Click to close the connection with **SL200** reader.
- **Update Settings button** Click to update the settings shown in **Settings Tab** to **SL200** reader.
- **Read Settings button** Click to read the device settings and show on the **Settings Tab**.
- **Settings Tab** Shows the device settings in following pages:
 - [General Page](#) Shows the basic information and settings.
 - [Keystrokes Page](#) Shows the output keystrokes format settings.
 - [Whitelist Page](#) Shows the Whitelist table data.
 - [Tag Page](#) Shows the settings which are used for reading the tag.
- **Log List** Shows the results of communicating with **SL200** reader.

General Settings

Shows the basic information and settings.

The screenshot shows a settings window with four tabs: 'General', 'Keystrokes', 'Whitelist', and 'Tag'. The 'General' tab is active. It contains the following fields:

- Hardware UID:** A text box containing the value '8C4AEE-00-00-78563412'.
- Firmware Information:** A text box containing 'SL200_00_PGM-T1889' and 'V1.0R2(210617)' on separate lines, with up and down arrow icons on the right side.
- Device ID:** A text box containing the value '0' and a small spinner control.
- Device Name:** A text box containing the value 'SL200'.
- Interface:** Two radio buttons labeled 'HID' (which is selected) and 'VCOM'.

The settings in **General Page** contains following elements:

- **Hardware UID box** Shows the hardware identifier.
- **Firmware Information box** Shows firmware application running on SL200 reader, including the MCU and BLE module.
- **Device ID box** Click to select or type the device ID number for the reader.
- **Device Name box** Click to select or type the device name for the reader.
- **Interface Option** Click to select the connection of USB profile that you want to use.

Keystrokes Settings

Shows the output keystrokes format settings.

There are two group settings in this page:

- [Data Output Format Page](#): Shows the output format settings used for outputting the Tag ID, Tag Data and the data received from [Login Reader App](#).
- [Card Removal Page](#): Shows the output keystrokes after removing card from reader.
- [Logout Button Page](#): Shows the output keystrokes after pressing the [Logout Button](#).

Data Output Format Settings

Shows the [output format settings](#) used for outputting the Tag ID, Tag Data and the data received from [Login Reader App](#).

Data Output Format **Card Removal** Logout Button

Prefix: Sample: Open Notepad

Suffix: Sample: Open Notepad

Separator: Sample: Open Notepad

Example#1: **ABCD** **22353843** **WXYZ**
Prefix UID/Card Data Suffix

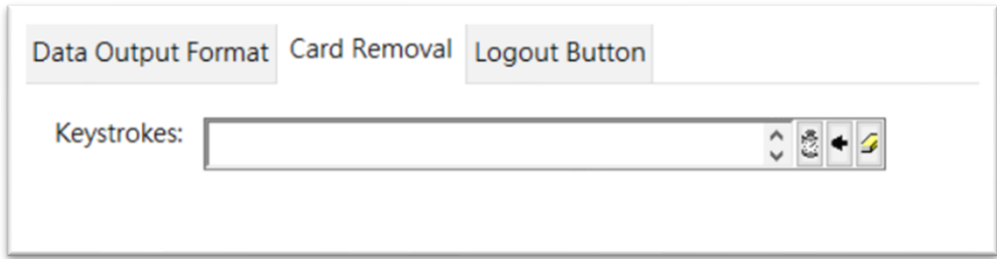
Example#2: **ABCD** **GIGATMS** **.** **26954214** **WXYZ**
Prefix Account Separator Password Suffix

The settings in **Data Output Format Page** contains following elements:

- **Prefix box** Type the keystrokes for the prefix field of output data.
- **Suffix box** Type the keystrokes for the suffix field of output data.
- **Separator box** Type the keystrokes for the separator field of output data.
- **button** Click to set up the delay time between keystrokes.
- **button** Click to clear last one keystroke.
- **button** Click to clear all keystrokes.

Card Removal

Shows the output keystrokes after removing card from reader.

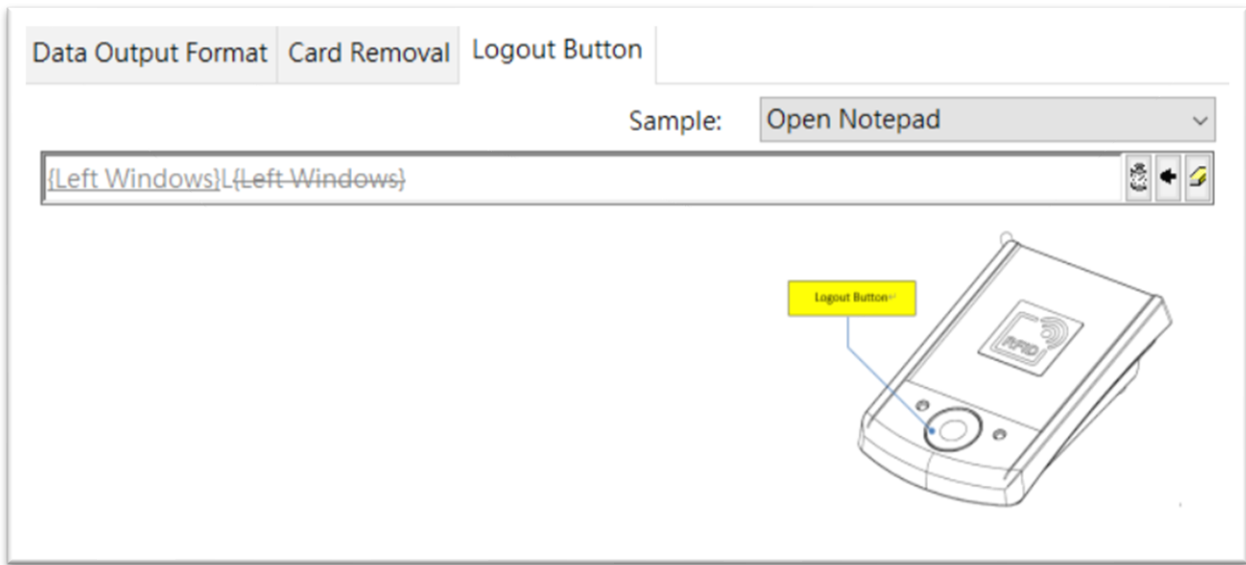


The settings in **Data Output Format Page** contains following elements:

- **Keystrokes box** Type the keystrokes when card removed from reader.

Logout Button Setting

Shows the output keystrokes after pressing the [Logout Button](#).



The settings in **Logout Button Page** contains following element:

- **Logout Button box** Type the output keystrokes after pressing the [Logout Button](#).

Whitelist Settings

Shows the Whitelist table data.

Index	Tag ID/Tag Data	Account	Password
0	E2FDA309	david	***
1	E2890239	mitch	***
2	E2898789	marko	****
3	E2845645	nick	****
4	E2F5ADF8	frank	*****

SL200 reads the Tag ID, and then search Whitelist table to get the output data, and then output to computer by composing predefined suffix (<CR>).

The settings in **Whitelist Page** contains following elements:

- **Whitelist table list:** Shows the records of Whilelist, the field:
 - **Index** The index value for the record.
 - **Tag ID/Tag Data** The key value for searching the related account and password.
 - **Account** The account name.
 - **Password** The password for this account.
- **Add button** Clicks to add a new record.
- **Delete button** Clicks to delete all the records.
- **Recover** Clicks to recover the deleted records.

If the **Tag ID/Tag Data** is not defined in **Whitelist**, then **SL200** direct to output **Tag ID/Tag Data**. Refer to this [diagram](#) for viewing the sequence.

Tag Settings

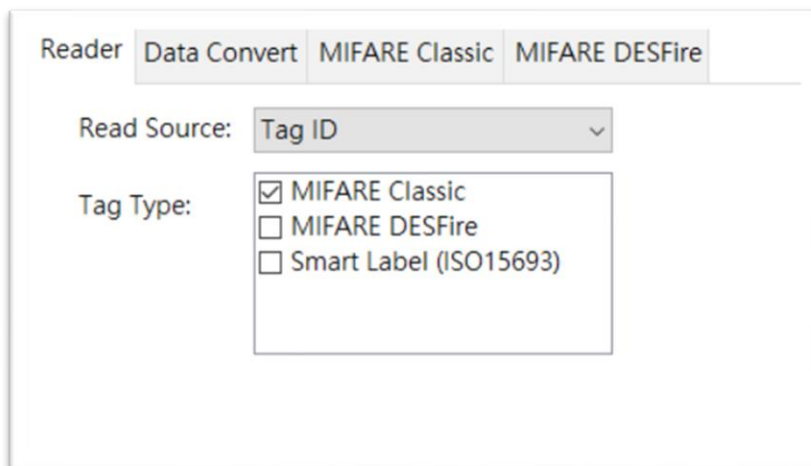
Shows the settings which are used for reading the tag.

There are two group settings in this page:

- [Reader Page](#): Shows which field (**Tag ID** or **Tag Data**) is going to read and determine the rule to encode the data that will output as keystrokes to computer.
- [Data Convert Page](#): Shows the rules that used to extract and output the Tag ID and Tag Data to computer.
- [MIFARE Class Card Page](#): Shows the MIFARE Classic settings that are used to read out the **Tag Data**.
- [MIFARE DESFire Card Page](#): Shows the MIFARE DESFire settings that are used to read out the **Tag Data**.

Reader Settings

Shows which field (**Tag ID** or **Tag Data**) is going to read and determine the rule to encode the data that will output as keystrokes to computer.



The screenshot displays the 'Reader' settings page. At the top, there are four tabs: 'Reader', 'Data Convert', 'MIFARE Classic', and 'MIFARE DESFire'. The 'Reader' tab is active. Below the tabs, there are two main settings:

- Read Source:** A dropdown menu currently showing 'Tag ID'.
- Tag Type:** A list of three options with checkboxes:
 - MIFARE Classic
 - MIFARE DESFire
 - Smart Label (ISO15693)

The settings in **Reader Page** contains following elements:

- **Read Source list** Click to select which field to read from tag.
- **Tag Type list** Click to select which tag type to read.

Data Convert

Shows the rules that used to extract and output the Tag ID and Tag Data to computer.

The screenshot shows a software interface with two tabs: 'MIFARE Classic' and 'MIFARE DESFire'. The 'Data Convert' section is active. It contains two main groups of settings:

- UID Convert Parameters:**
 - Revert Bytes
 - Data Convert: Binary To Hex String
 - Input Extracted Start: 0
 - Input Extracted Length: 0
 - Output Extracted Start: 0
 - Output Extracted Length: 0
- Card Data Convert Parameters:**
 - Revert Bytes
 - Data Convert: Ascii To String
 - Input Extracted Start: 0
 - Input Extracted Length: 0
 - Output Extracted Start: 0
 - Output Extracted Length: 0

This setting page contains following elements:

- **Tag ID Convert Parameters group:** The relevant parameters used to decode and encode Tag ID.
 - **Revert Bytes box:** Reverts the input data. For example, if the Tag ID is 30h 31h 32h 33h, then it will reverse to 33h 32h 31h 30h.
 - **Input Extracted Start box:** The start position to extract input data. The value starts from 0.
 - **Input Extracted Length box:** The length to extract input data. The value 0 means extract whole data.
 - **Data Convert list:** Defines the data type of input data and output data. Following are the available data types:
 - ◆ **ASCII to String:** The input data is ASCII code. For this type, the output data is the same as the input data, but the data must be limited to the values 20h to 7Fh (visible characters). If the input data is not in the range 20h to 7Fh, the reader will treat it as an invalid tag.
 - ◆ **BCD to Decimal String:** The input data is in BCD format and is converted to a decimal string. For example, 30h 31h => 33h 30h 33h 31h. The converted data is the same as the string "3021". If the input data cannot be presented in BCD format, the reader will treat it as an invalid tag.
 - ◆ **Binary to Hex String:** The input data is binary (byte array) and is converted to a HEX string. For example, ABh CDh => 41h 42h 43h 44h. The converted data is the same as the string "ABCD". If the input data cannot be presented in BCD format, the reader will treat it as an invalid tag.
 - ◆ **Number to Decimal String:** The input data is a number type and is converted to a decimal string. For example, 30h 31h => 31h 32h 33h 33h 37h. The converted data is the same as the string "12337".
 - **Output Extracted Start box:** The start position to extract converted data to output. The value starts from 0.
 - **Output Extracted Length box:** The length to extract converted data to output. The value 0 means extract whole data.
- **Tag Data Convert Parameters group:** The relevant parameters used to decode and encode Tag ID.
 - **Revert Bytes box:** Reverts the input data. For example, if the input data is 30h 31h 32h 33h, then

is will reverse to 33h 32h 31h 30h.

- **Input Extracted Start box:** The start position to extart input data. The value starts from 0.
- **Input Extracted Length box:** The length to extract input data. The value 0 means extract whole data.
- **Data Convert list:** Defines the data type of input data and output data. Following is available data types:
 - ◆ **ASCII to String:** The input data is ASCII code. For this type, the output data is same to input data, but the data need to be limit in the value 20h to 7Fh (visible character). If the input data is not in the value 20h to 7Fh, then reader will treat it as an invalid tag.
 - ◆ **BCD to Decimal String:** The input data is in BCD format and convert to decimal string. For example, 30h 31h => 33h 30h 33h 31h. The converted data is same to the string “3021”. If the input data cannot presented in BCD format, then reader will treat it as an invalid tag.
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 - ◆ **Number to Decimal String:** The input data is number type and convert to decimal string. For example, 30h 31h => 31h 32h 33h 33h 37h. The converted data is same to the string “12337”.
- **Output Extracted Start box:** The start position to extart converted data to output. The value starts from 0.
- **Output Extracted Length box:** The length to extract converted data to outut. The value 0 means extract whole data.

See also: [Data Convert](#).

MIFARE Classic Card Settings

Shows the MIFARE Classic settings that are used to read out the **Tag Data**.

Reader	Data Convert	MIFARE Classic	MIFARE DESFire
MAD-AID (Hex):		4703	
Non-MAD Sector:		0	
Access Key:		Key A	
Key Value (Hex):		FFFFFFFFFFFFFF	
Start Address:		0	
Length:		6	

This setting page contains following elements:

- **MAD AID (HEX) box** Types the **AID** value for the tag is using MAD format. The reader will search the sector number specified in **AID** and then go to read the **Tag Data** stored in the specified sector.
- **Non-MAD Sector box** Clicks to select the sector number of the Non-MAD tag that the reader is going to read.
- **Access Key list** Clicks to select which key is going to use to do the authentication.
- **Key Value (HEX) box** Types the Access Key value in HEX format.
- **Start Address box** Click to select the start position of reading the data stored in the specified sector.
- **Length box** Click to select the reading data length stored in the specified sector.

MIFARE DESFire Card Settings

Shows the MIFARE DESFire settings that are used to read out the **Tag Data**.

This setting page contains following elements:

- **MAD-AID box** Types the **AID** value that reader uses to access.
- **File ID box** Clicks to select or types the **File ID** that reader uses to open to read.
- **Assess Key No box** Clicks to select or types the key number that reader uses to get authentication.
- **Access Key Value box** Types the key value that reader uses to get authentication.
- **Start Address box** Clicks to select the start position of reading the data stored in the specified opened file.
- **Length box** Clicks to select the reading data length stored in the specified opened file.
- **Key Type list** Clicks to select the encryption type to use the key.
- **File Communication Mode list** Clicks to select the file data communication mode.
- **File Type list** Clicks to select the type that defines how data stored in the file.

Firmware Loader for Windows

The **Firmware Loader** is a tool program which allows you to upgrade device firmware.

The firmware is an application that running on the device. When there is a new firmware release which could be adding new features or fixing bugs, you can use this program to upgrade device firmware to get the benefits.

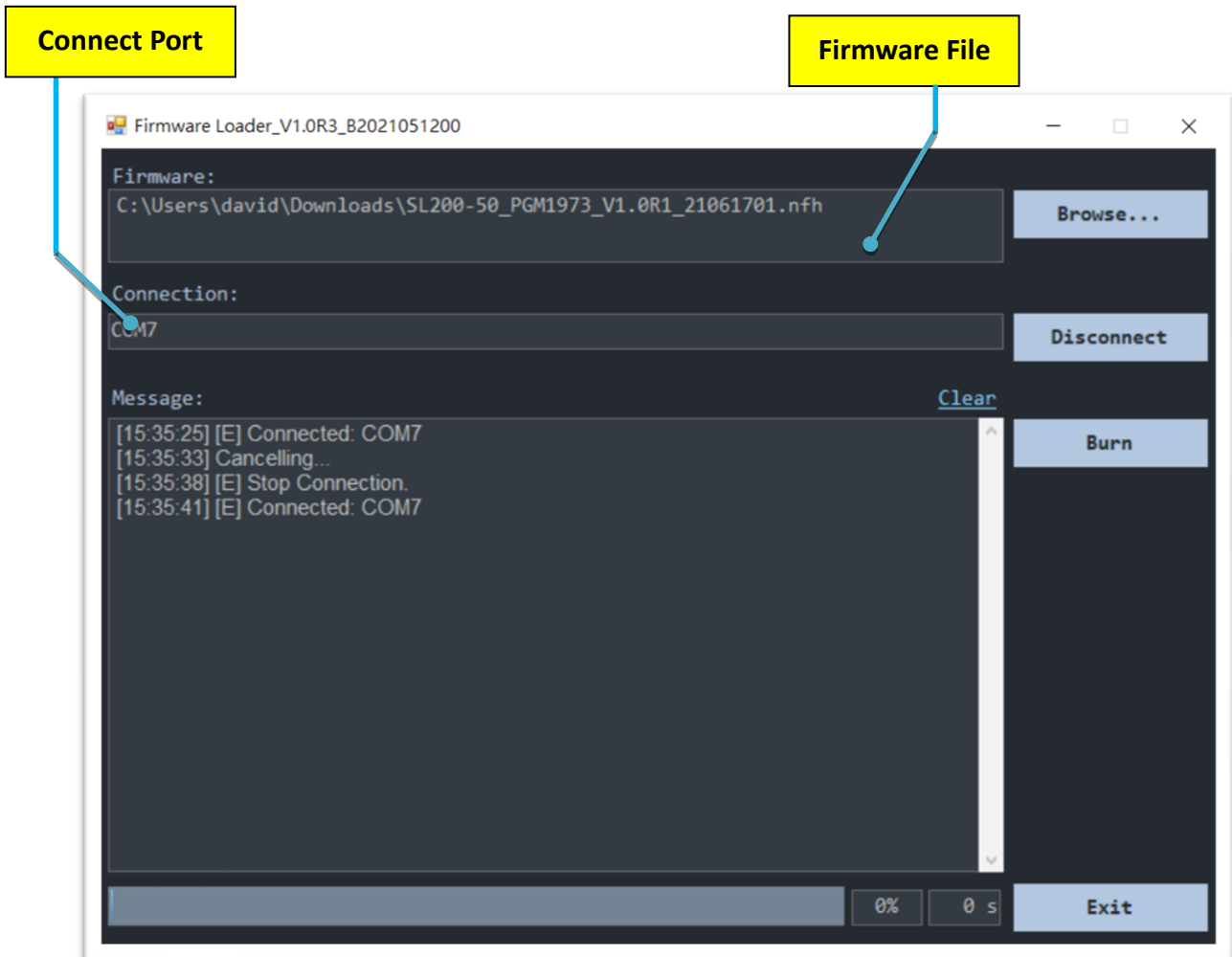
Install the Program

1. Use web browser to open the link
<http://ftp.gigatms.com.tw/disks/DISK5493/>
2. Download the **Firmware Loader** setup file for Windows.
3. Double click setup file to run the install program on your computer.

Open the Program

1. On the taskbar, click **Start**, and then point to **All Programs**.
2. Point to **GIGA-TMS**, point to **Firmware Loader**, and then click **Firmware Loader**.

Explore the User Interface



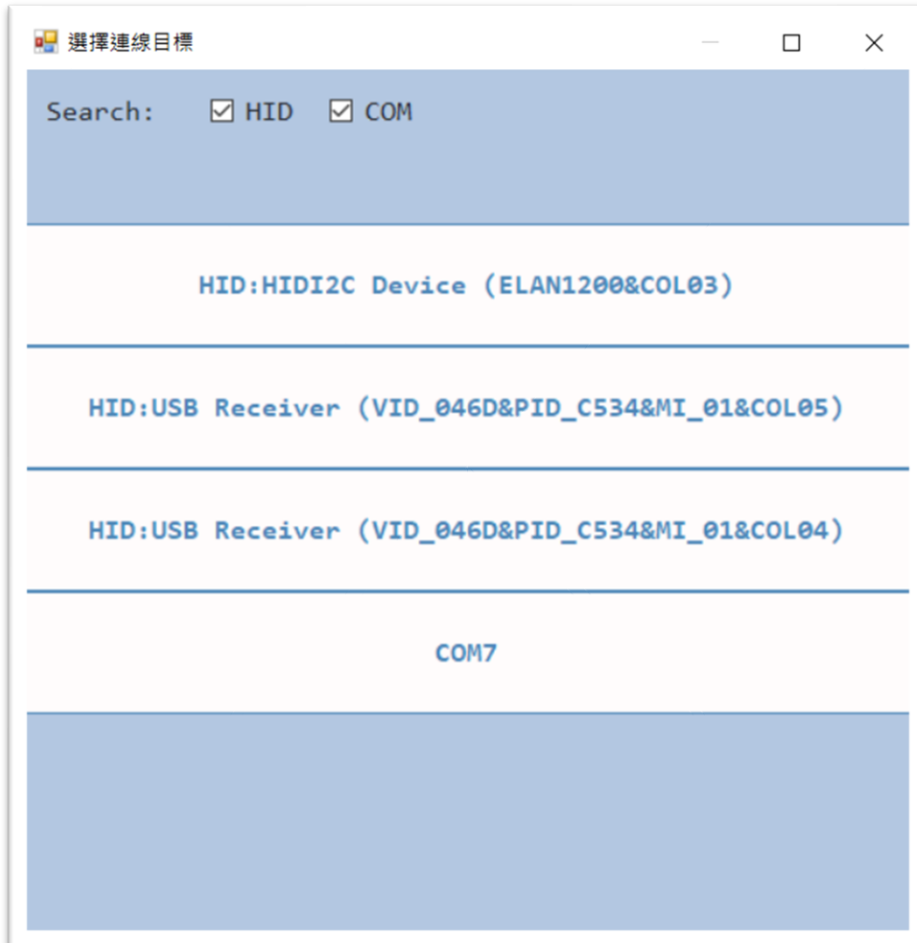
This window contains following elements:

- **Firmware box** Shows the firmware file path and file name.
- **Browse button** Clicks to select the firmware file which is used to upgrade to device.
- **Connection box** Shows the port name where device connects.
- **Connect/Disconnect button** Clicks to select port to connect device or disconnect device.
- **Message box** Shows the status message of processing the commands.
- **Burn button** Clicks to start the process of upgrading the firmware to device.
- **Progress bar** Shows the progress of upgrading device firmware.
- **Exit button** End this program.

Using Firmware Loader

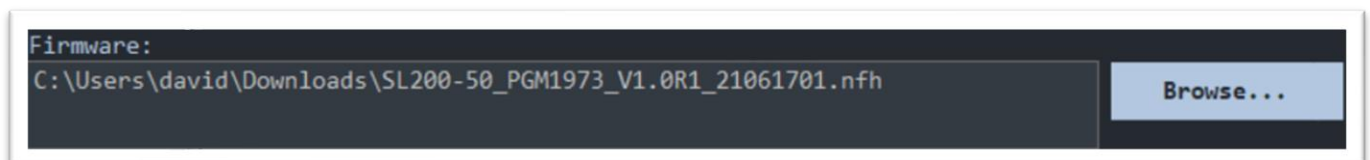
Connect Reader to Computer

Connect device to computer. Click **Connect**, select the port where device connects to establish the connection.



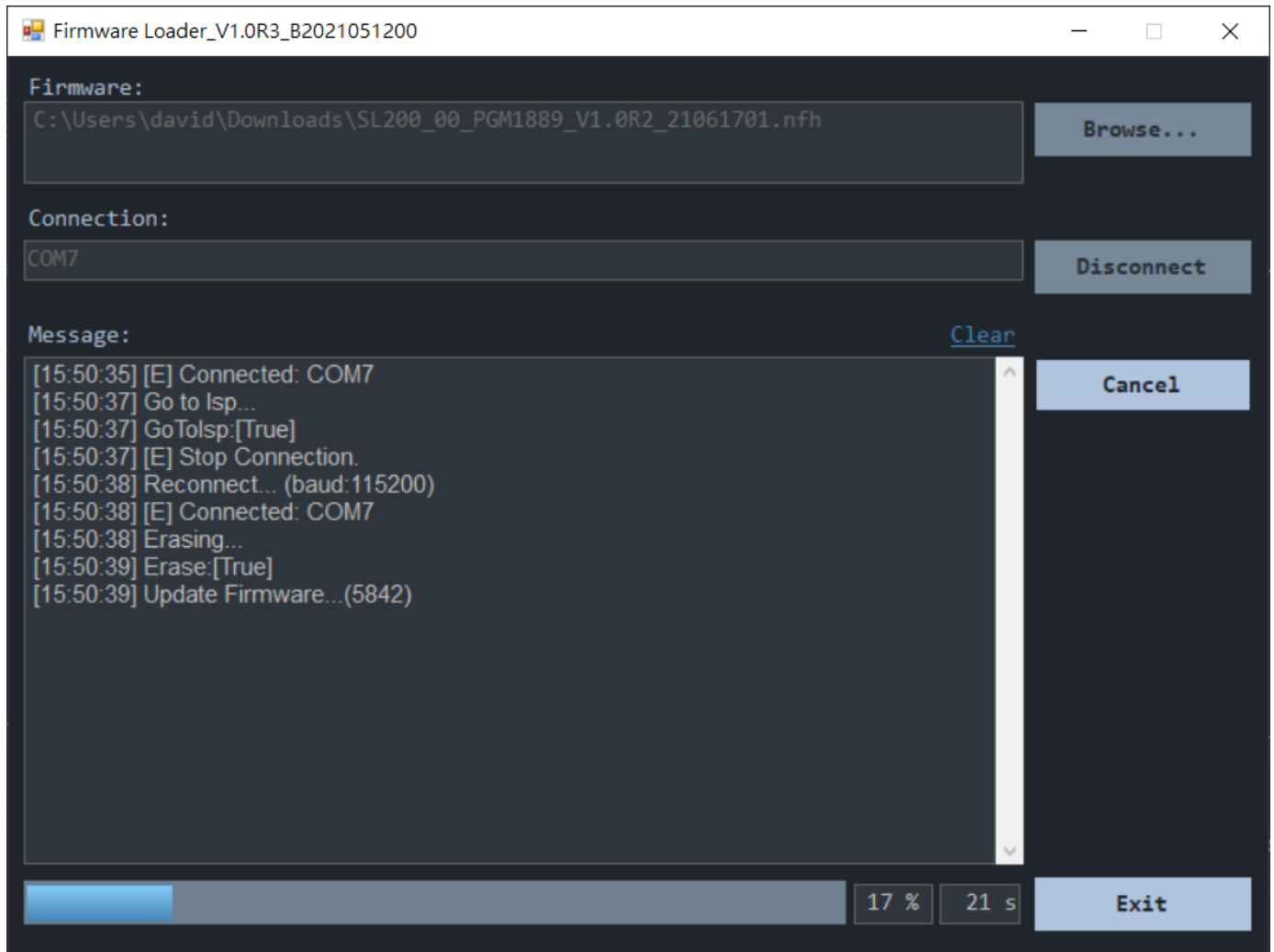
Select Firmware File

Click **Browse** to select the firmware file that you want to upgrade to device.



Upgrade Device Firmware

Click **Burn** to start the process of upgrading firmware.



Once the upgrading process is done, the device will reboot to run on the new firmware.

If the firmware upgrading is failed, this could be caused by following reasons:

- The firmware ID is wrong. If the upgrade file's firmware ID is not same to the firmware ID running on device, then device will reject the firmware upgrading.
- The port is wrong. The port you select is not the one where device connects. Please re-select the correct port to connect to device. If there is not any port listed, please make sure your computer system has installed [Virtual COM Port driver](#) well.
- The content of firmware file is modified. Each firmware file owns a unique key to encrypt and decrypt the content of code data. If the checksum is error, then device will reject to upgrade the firmware.

Virtual COM Port Driver for Windows

Overview

The **SL200** reader is using USB cable to connect to computer. If you want to use Virtual COM Port interface to do the data communication, then this requires to install the Virtual COM Port driver.

If you choose to use the HID interface (default), then it doesn't need to install this driver.

Install the Virtual COM Driver

To install the Virtual COM Port driver, please use web browser to open the link

<http://ftp.gigatms.com.tw/disks/disk5493/> and download the Virtual COM Port driver.

For Windows 8/8.1/10, open the **Win8** folder and click **dpinst_x86.exe** (for 32-bit system) or **dpinst_amd64.exe** (for 64-bit system) file to install the driver.

For Windows XP/7, open the **Win7** folder and click **dpinst_x86.exe** (for 32-bit system) or **dpinst_amd64.exe** (for 64-bit system) file to install the driver.

Technical Support

<http://ftp.gigatms.com.tw/disks/DISK5493/>

Is your Download Center where you can

- Find apps and source code
- View manuals and the knowledge base
- Download the latest firmware and software

Update History

2021/6/25 V1.1.1

- Added [Virtual COM Port Driver topic](#).

2021/6/24 V1.1.0

- Added [SL200-50 part number](#) to [Hardware Specifications topic](#).
- Rename **SL200 Manager** to [SL200 Utility](#).
- Added [Firmware Loader Software topic](#).

2021/4/27 V1.0.2

- Modified device pictures and [Specifications](#) of [Headware Features](#).
- Added [Mechanical Dimension](#).

2021/3/31 V1.0.1

- Added [Data Convert topic](#).
- Corrected UI errors in [SL200 Utility](#).

2021/3/30 V1.0.0

- Original release.