SYSTEM GENERAL

User Manual

——SG8000

Version 1.09 --202110

Contents

1.1 Terminology

SG	Abbreviation for System General Limited Taiwan Branch.
SG8000	Universal programmer produced by System General.
SG8000.exe	The application runs on the Host Computer to communicate with the SG8000 programmer. By using this software, Only one programmer can be connected each time. Users can use SG8000 to create a project file that is defined by System General to operate the programming job.
MultiSG8000.exe	The application runs on the Host Computer to communicate with multiple SG8000 programmers. The software is Used for a mass-production programming environment.

1.2 Technical Support

SG8000 comes with user-friendly Windows software to make installation and operation easy. If you have any problem regarding installation and operation, please consult with the following resources for help.

1. Consult This Manual

2. On-line Help

Press<F1>for help any time after activating the software.

3. Internet Web Site

To download the latest software version, the device support list, and other information. Please visit the following website:

http://www.sg.com.tw

SG8000 supports the Demo Mode, which can be executed without a real programmer connected

4. Your Local Distributors

Check with the System General website to find the local distributors for support.

5. System General E-mail and FAX

If all the above cannot resolve the issues, please contact us in the following ways.

System General Limited.

6F,No-205-3,Sec.3,Beixin Rd.,Xindian Dist.,New Taipei City 23143.,Taiwan.

Tel: +866-2-8913-1997

Fax:+866-2911-1283

Email:info@sg.com.tw

We sincerely welcome your feedback or comments to improve the quality of our products and services.

1.3 Introduction

Thank you for choosing System General's universal programmer - SG8000. If you encounter any difficulties when using this programmer, please consult with the following methods for help : (1) consult this manual, (2) online help (3) your local distributors.

1.3.1 About this manual

This manual is served as a user guide to help you get started quickly and acquainted with the programmer. We recommend that you read this manual completely before using the SG8000 programmer.

1.3.2 Product Description

SG8000 is a high-speed universal programmer which is designed to program various programmable devices. The modularized design works for both production and engineering modes.

- Provide flexible High-speed USB2.0 or 100M network interface.
- Provide convenient remote (standalone) operation with SD card.
- Provide programming capability for all programmable devices, NAND Flash, NOR Flash, eMMC, micro-controller, EPROM, EEPROM, Flash EPROM, CPLD, CMOS PLD, FPGA, anti-fuse, and other programmable custom chips.
- Structure with 8 sets of the independent precision pin drive circuit (80 pins per set), which can program 8 programmable devices in parallel at the same time.
- Aplied fast copy technology in parallel copy from 1 master chip to 8 slave device IC, especially for the maximum productivity of eMMC programming.
- Maximize the programming speed.
- Advanced pin drive technology to reduce the noise on the signals and provide a stable power supply.
- Support Vcc voltage range from 1.2v to 13.0v.
- The voltage self-calibration circuit to ensure the highly accurate voltage; Self-diagnosis function can diagnose hardware fault to ensure this programmer is running in factory preset condition; Automatically detect the device in the socket with wrong orientation and poor contact before operation; Check the device ID code before operation.
- Built-in overvoltage, overcurrent, and ESD protection function to avoid programmer damaged.
- The designed software to simplify the operation and improves the efficiency and avoids the mistake.

  To update the system, you only need to download/install the latest version of software from System General's website.

1.3.3 Package Contents

When you unpack the product box, you should find the following assemblies:

- One SG8000 programmer.
- One power cord.
- One USB 2.0 cable.
- Warranty card.
- Disclaimer card.

1.4 Hardware introduction

1.4.1 SG8000 programmer

Figure 1-4-1 SG8000 Exterior

1.4.2 Adapter

Figure 1-4-2 AG01 bottom-board exterior

Figure 1-4-3 adapter exterior

Adapters are designed to accommodate devices in different packages. The user inserts the device into the socket and selects the correspondent device that listed in the software, then the adapter model name will be displayed in the software window. Users can hot-swap the adapter during the process except the fuction is in progress.
The adapters provided by System General are generally general-purpose adapters, as algorithms and device features allowed. In practice, SG8000 will provide all the devices in the database for you to choose from based on the adapter model you are inserting.

1.5 Hardware installation

1.5.1 Computer System Requirement.

Minimum requirements for the host computer system:

- USB 2.0 port.
- Windows 2000/XP /Windows 7/Windows 8/Windows 10 operating system
- 512 MB ram (1 GB recommended)
- 128GB disk space (in Demo Mode, the software will create 2GB virtual space on the disk that the software installed).

1.5.2 Hardware Settings

a) Connect all SG8000 programmers to the host computer through the USB or network

Get the USB cable from the SG8000 packing box and plug into the USB port on the computer or the network cable to plug the computer into the network.

b) Connect the computer and all SG8000 programmers to the outlet.
Connected the Host computer and all the SG8000 programmers to the outlet through the power cord.

c) Turn on the power
Power on the computer first, then turn on all the SG8000 programmer.

d) Hardware ready
Note: if you choose USB connection, please install Programmer USB driver first. Do not plug or unplug USB cable or network cable when the software is working online.

1.6 Software installation

Please refer to the following steps to install the software:

- Download SG8000 PUI from website.
- Extract the file for installation.
- Specify the installation path.
- Follow the instructions to complete the installation.

1.6.1 USB driver installation

- Connect programmer to the USB port of the host PC.
- Turn on the programmer.
- Select “install from list or specified “location”, and click “next”.
- Select “include this location in search” and click “next”.
- Click “browse” to specify the driver location as the driver subdirectory in the software installation directory in 1.5.1.
- Click "next" to complete the installation.

If it failed to appear the point 3 above, please open the control panel in the device manager. For Win7 or Win10, open the device manager and find another device, including Acroview Programmer, as shown in figure 1-6-1 below.

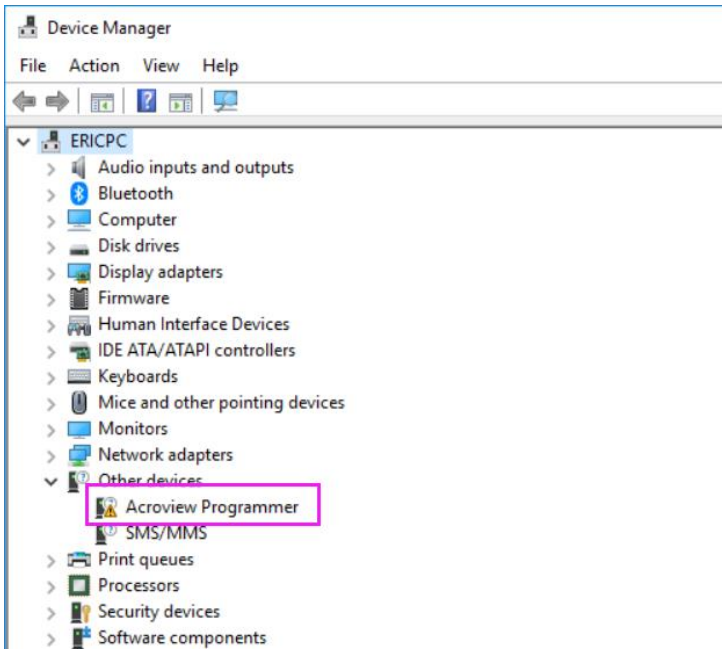


Figure 1-6-1 device manager for Windows 7

Right click on Acroview Programmer, select the "update driver software" option from the menu, in the pop-up dialog box, select browse the computer to find driver software, as shown in figure 1-6-2.

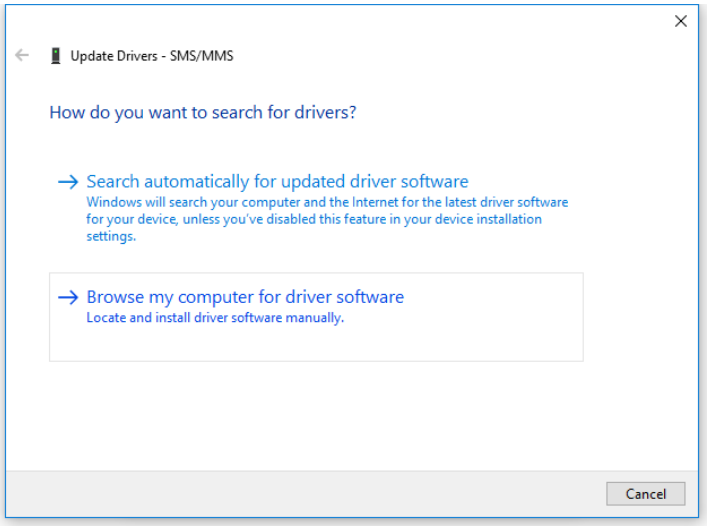


Figure 1-6-2 Select driver installation.

Then click “Browse” in the dialog box below and select driver under the folder where SG8000 is installed. Then click next, as shown in figure 1-6-3.

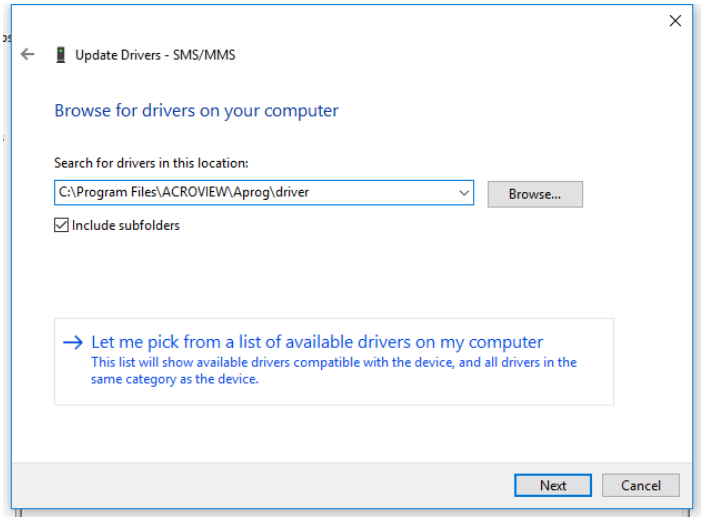


Figure 1-6-3 Select the driver path.

If you are prompted for Windows security, as shown in figure 1-6-4, please choose to install this SG8000 driver software. So, the USB driver can work properly after the driver is installed.

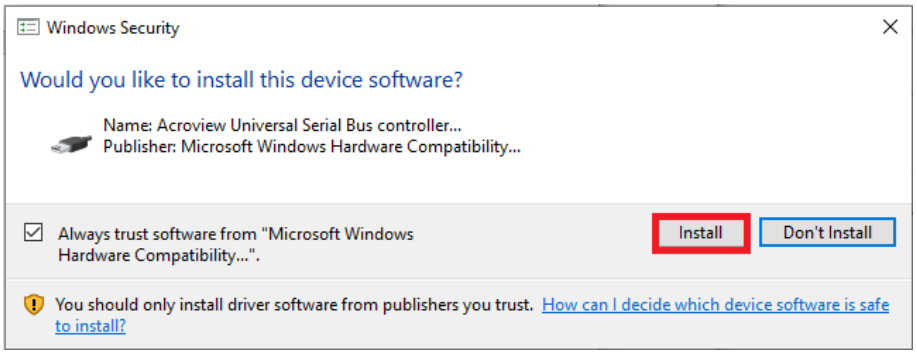


Figure 1-6-4 Windows security tips

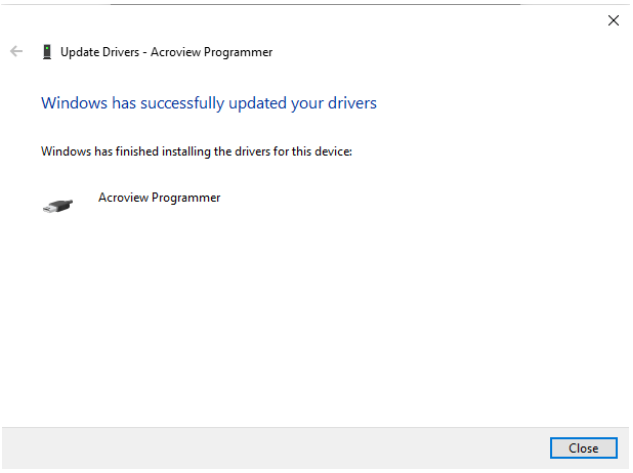


Figure 1-6-5 USB driver is installed.

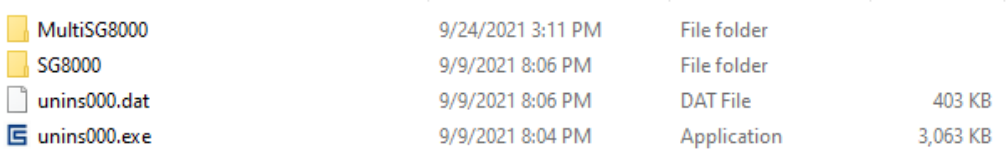
After the USB driver is installed, the SG8000 Programmer appears in the generic serial bus controller group of the device manager section.

1.7 Start-up software

1.7.1 Preparation

Verify that you have followed the previous steps to install hardware, software, and drivers. Check whether the USB connection or network connection is correct. Make sure there is no device on the adapter, and then turn on the power to connect to the programmer.

When you installed the software, Two folders (SG8000 and MultiSG8000) were created. SG8000.exe is used for the single programmer and can work as engineer mode. MultiSG8000.exe supports multiple programmers which can be defined as production mode.



1.7.2 SG8000 operation example

1.7.2.1 Single programmer operation example:

Programming STM32F101CBT6 with LQFP48(7x7) package.

A. Launch the SG8000.exe user interface software.

Double-click the SG8000 icon to start the application. After clicking, The popup screen will be shown as in figure 1.7.2.1-1. Please select Device Type as SG8000.

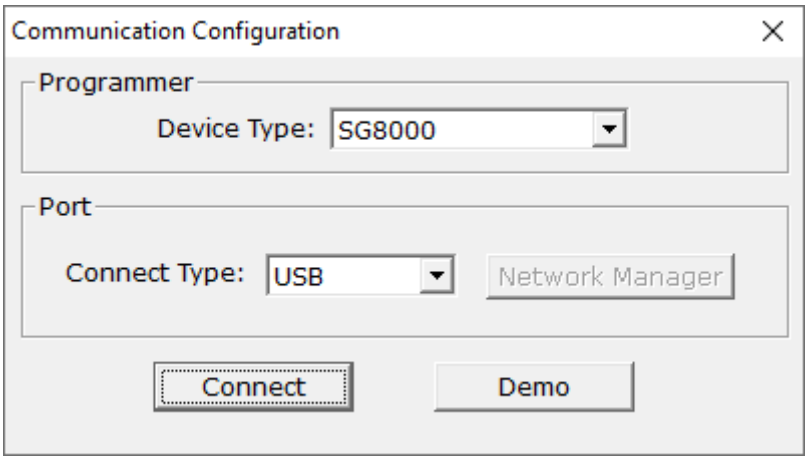


Figure 1.7.2.1-1 programmer and connection mode selection

Note: you can enter Demo mode on your computer without connecting SG8000. It's a way to practice using the software and set up the project for future production. You can also leverage the Demo mode to check the device support availability and the corresponding socket board information.

B. Set the connection to the computer.

Two ways to connect the SG8000 programmer - USB and Ethernet. If you choose the Ethernet from the pull-down menu on “connect type”, click on the "Network Manager" button on the right, then click on "Search" in the pop-up dialog box to select the machine with Status as Free to connect. The programmer's IP can be set with the appropriate tool later. Please refer to how to use “Network Manager” in Chapter 1.9. Click on the “Connect” button to start the connection. Refer to figure 1.7.2.1-2.

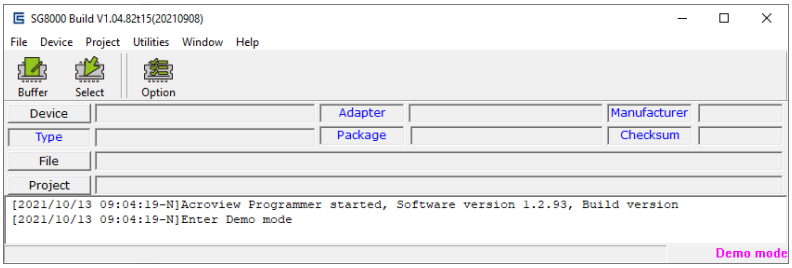


Figure 1.7.2.1-2 Interface after connection

C. Selects the chip to program.

Click the Select button and enter the Select Chip window, as shown in figure 1.7.2.1-3.

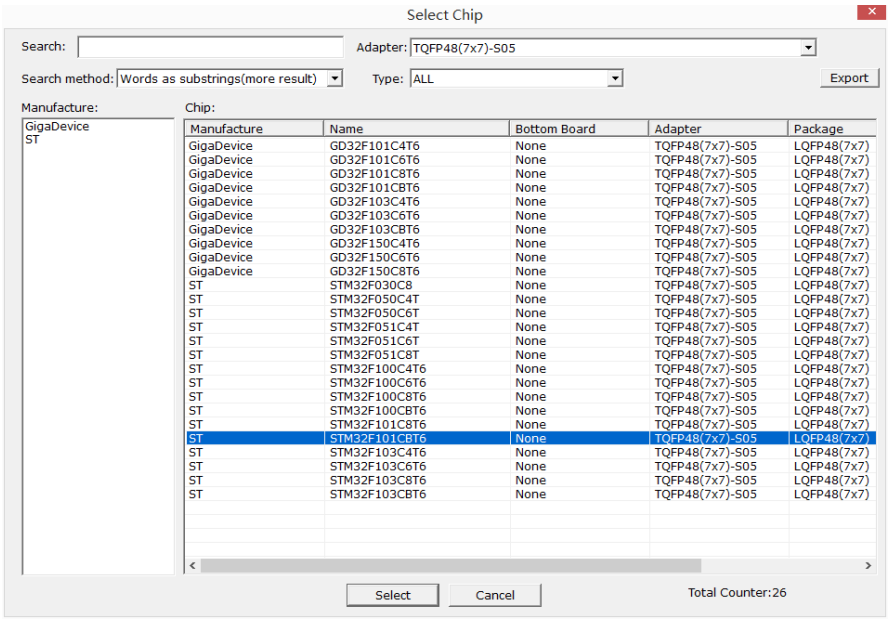


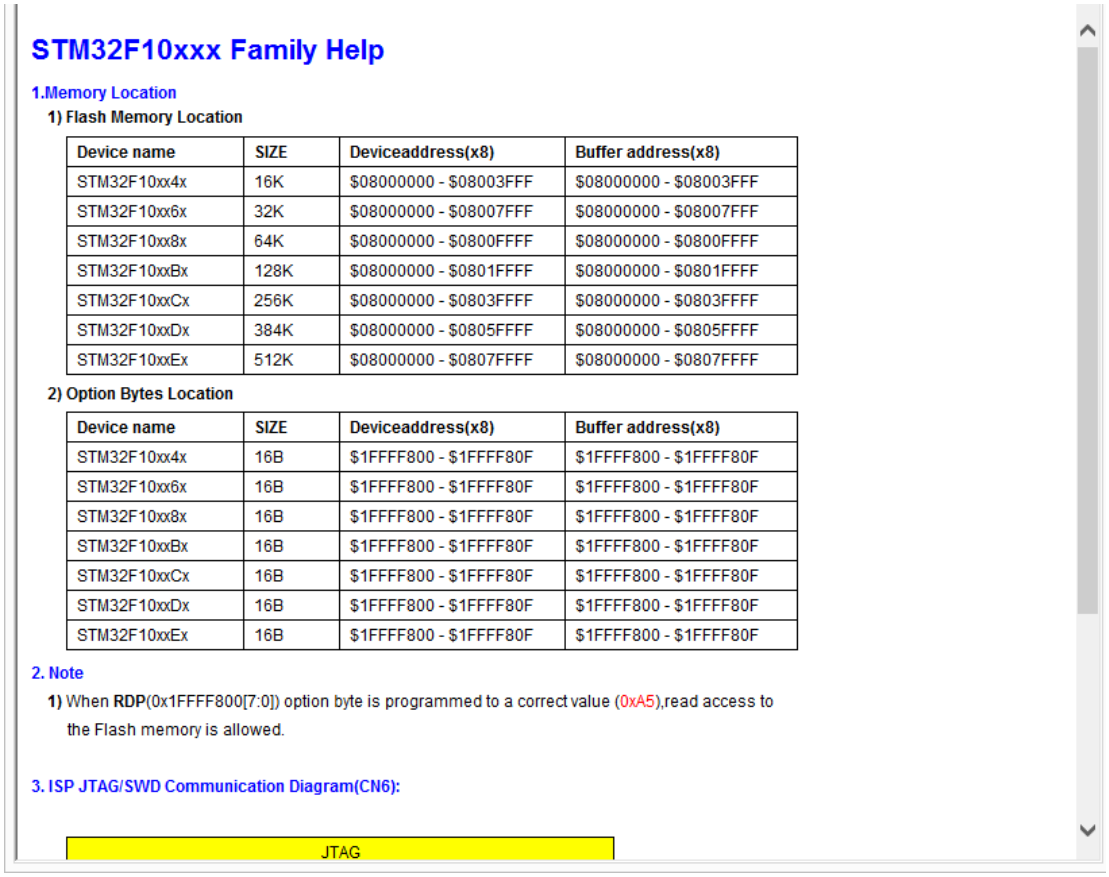
Figure 1.7.2.1-3 Chip selection interface

In the Select Chip window, you can find the part name of the device that you need to program with the corresponding adapter accessory.

[Tips to use]

In the Search text field, type the name of the manufacturer or device family name that you want to program. The filter function will quickly list all the device names which are close to what you are looking for.

For example, select STM32F101CBT6 device, then click on the “Select” button or directly double-click on STM32F101CBT6 to confirm, and the software starts to configure the programmer. After the configuration is completed the UI will pop up the device help information as shown in figure 1.7.2.1-4.



STM32F10xxx Family Help

1.Memory Location

1) Flash Memory Location

Device name	SIZE	Deviceaddress(x8)	Buffer address(x8)
STM32F10xx4x	16K	$08000000 - $08003FFF	$08000000 - $08003FFF
STM32F10xx6x	32K	$08000000 - $08007FFF	$08000000 - $08007FFF
STM32F10xx8x	64K	$08000000 - $0800FFFF	$08000000 - $0800FFFF
STM32F10xxBx	128K	$08000000 - $0801FFFF	$08000000 - $0801FFFF
STM32F10xxCx	256K	$08000000 - $0803FFFF	$08000000 - $0803FFFF
STM32F10xxDx	384K	$08000000 - $0805FFFF	$08000000 - $0805FFFF
STM32F10xxEx	512K	$08000000 - $0807FFFF	$08000000 - $0807FFFF

2) Option Bytes Location

Device name	SIZE	Deviceaddress(x8)	Buffer address(x8)
STM32F10xx4x	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F
STM32F10xx6x	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F
STM32F10xx8x	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F
STM32F10xxBx	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F
STM32F10xxCx	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F
STM32F10xxDx	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F
STM32F10xxEx	16B	$1FFFF800 - $1FFFF80F	$1FFFF800 - $1FFFF80F

2. Note

1) When **RDP**(0x1FFFF800[7:0]) option byte is programmed to a correct value (0xA5),read access to the Flash memory is allowed.

3. ISP JTAG/SWD Communication Diagram(CN6):

JTAG

Figure 1.7.2.1-4 Chip help interface

Close the chip help and enter the main function as shown in figure 1.7.2.1-5.

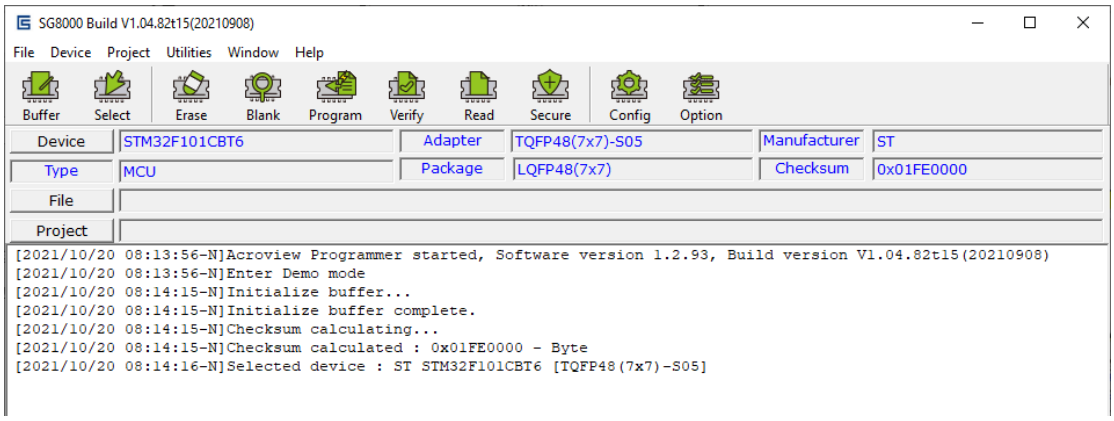


Figure 1.7.2.1-5 Configuration after chip selection

Now the information of the chip will be displayed on the left side of the main window, and the buttons of chip functions and configuration will be added in the upper toolbar.

D. Set chip options

Click the Option button to enter the Option page, as shown in figure 1.7.2.1-6.

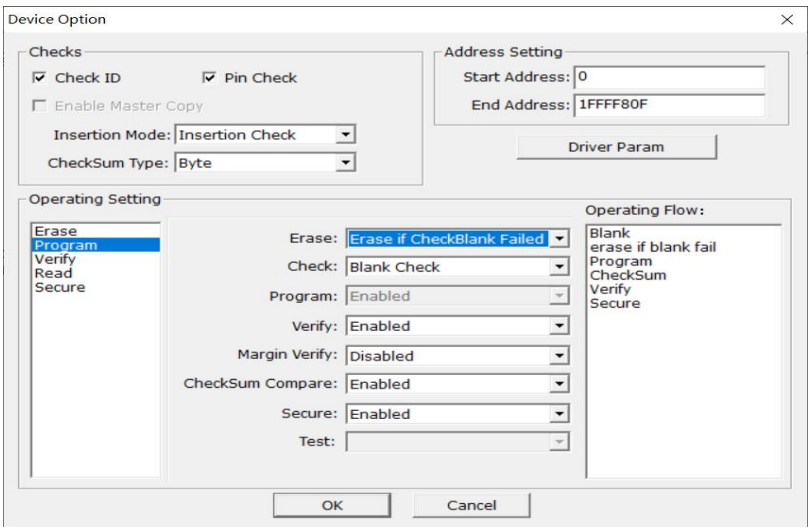


Figure 1.7.2.1-6 Option dialog

In this window, User can configure the process of the programmer as the following:

A. Operation process flow, select the Operating Setting in the operation page. User can customize the details of the operation, such as the selected Program, you can customize the programming operation flow, such as programming before erasing or programming after checking, etc.

B. Optional functions, such as Check ID, Pin Check, and Insertion Check. If Auto-Sensing is selected under the Insertion Mode. User enter automatic mode, and the programmer will start programming automatically once chip is inserted and detected by programmer.

C. Operation scope: User can set the start and end addresses in the “Address Setting” Box.

Click OK to confirm the configuration or click Cancel to cancel the configuration.

E. Load the programming data file

Click the File → Open(o) button in the menu bar to enter the File load dialog box, as shown in figure 1.7.2.1-7.

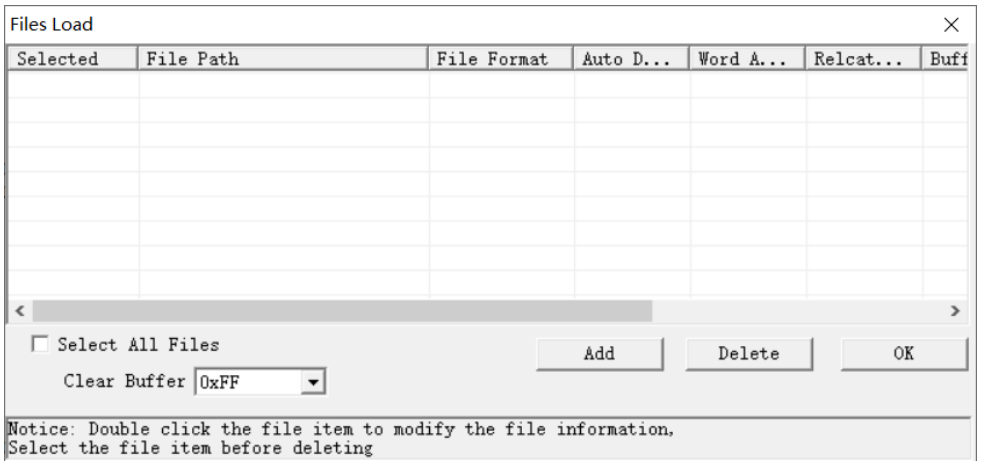


Figure 1.7.2.1-7 File load dialog

Click the Add button to enter the Import File page, as shown in figure 1.7.2.1-8.

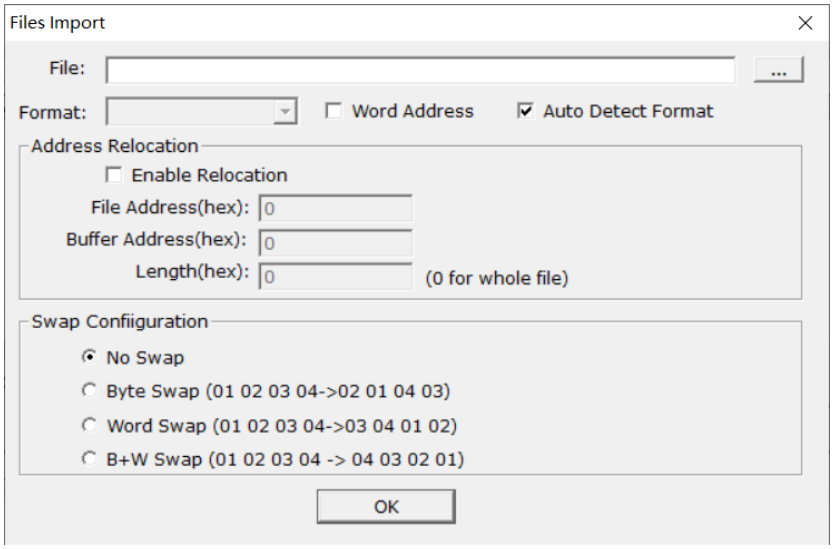


Figure 1.7.2.1-8 Import File dialog

Click to ... to select the data file to be programmed, and Auto Detect Format is default checked to automatically identify the document Format and display it in the **Format** box. When the Auto Detect Format checkbox is unchecked, the file **Format** can also be selected in the Format box manually. If it's in **Intel Hex** format, you need to be aware of the Address list in the file. For a 16-bit Address width files, you need to check the **Word Address** option. If you want to relocate the file data, select **Enable Relocation** in the Address Relocation. The **File Address** configuration loads from the specified File offset, the **Buffer Address** configuration loads to the specified location of the Buffer, and the **Length** specify the loading Length. **Clear Buffer** can be configured to clear the current chip buffer before loading the file. **Swap Configuration** is used to configure whether to perform data size inversion when loading the file. Click on “Add” to add the new file to the list, as shown in figure 1.7.2.1-9.

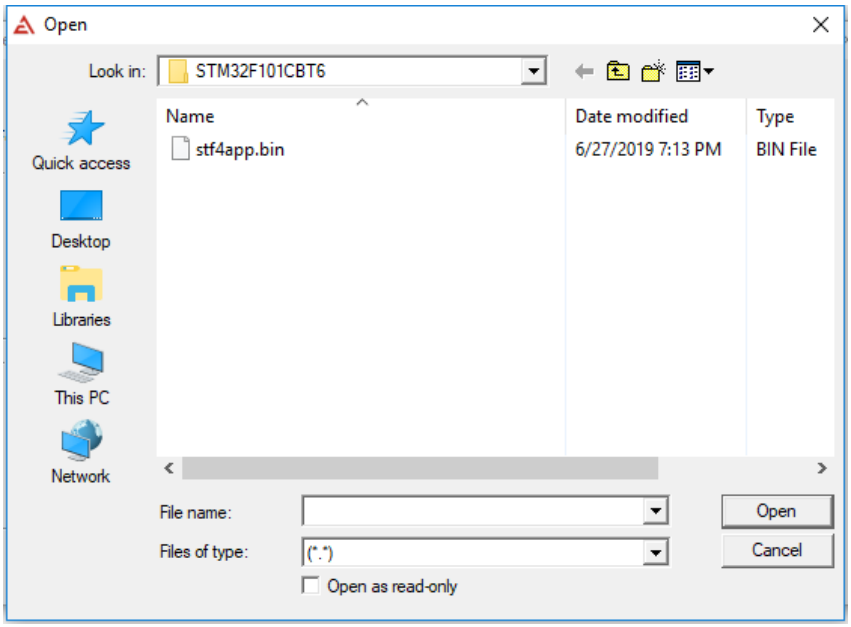


Figure 1.7.2.1-9 Open file dialogs.

Select the file relocation and configuration then click on “OK” to add the file to the list, as shown in figure 1.7.2.1-10.

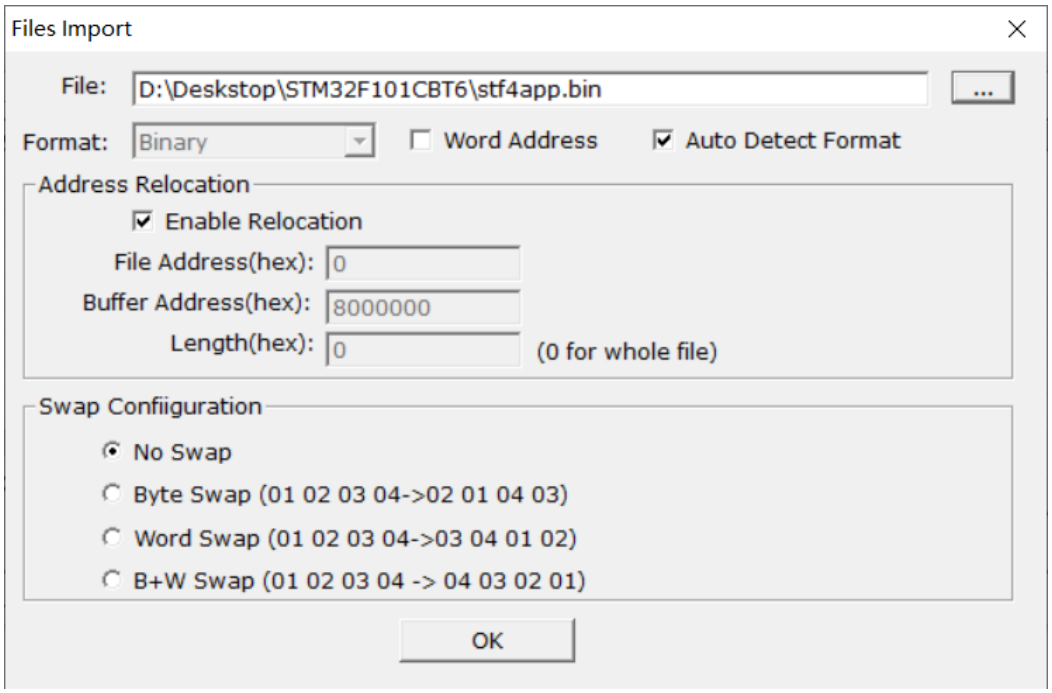


Figure 1.7.2.1-10 File configuration.

Add the rest files for download or click OK to enter the next screen, as shown in figure 1.7.2.1-11.

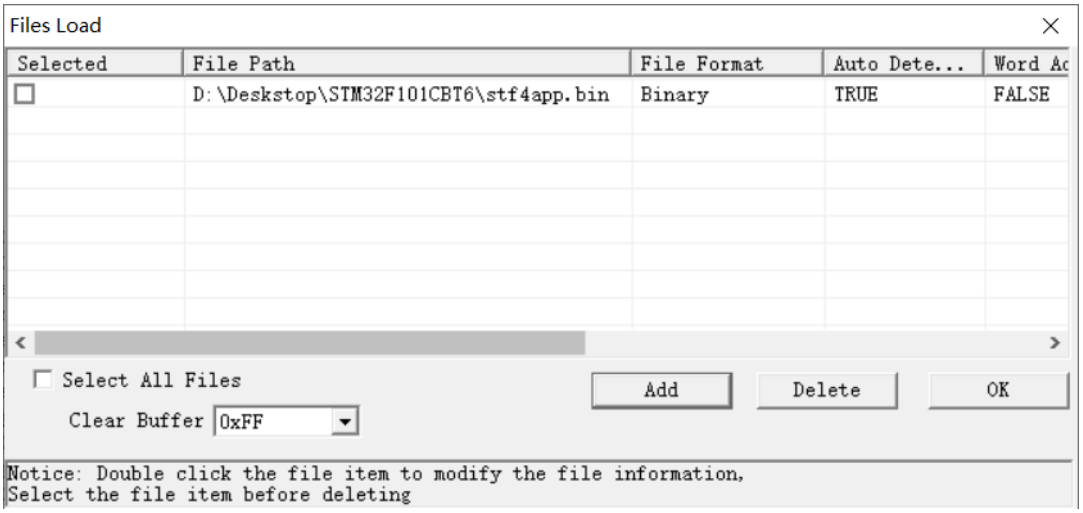
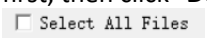


Figure 1.7.2.1-11 Add file for download.

If you want to delete files has been added, you will need to check the selected column checkbox first, then click "**Delete**" button to Delete. When you need to delete all files, just check this box  and click the "Delete" button to delete. Click “OK” to load the file. If you want to modify the file that has been added, you can directly double-click the corresponding item and go back to figure 1.7.2.1-7. After the file download configuration is completed, click “OK” to start loading the file. Depending on the size and number of files, it will take different download time. After loading the file, click the toolbar “**Buffer”** button to open the chip Buffer page and view the contents of the chip Buffer, as shown in figure 1.7.2.1-12.

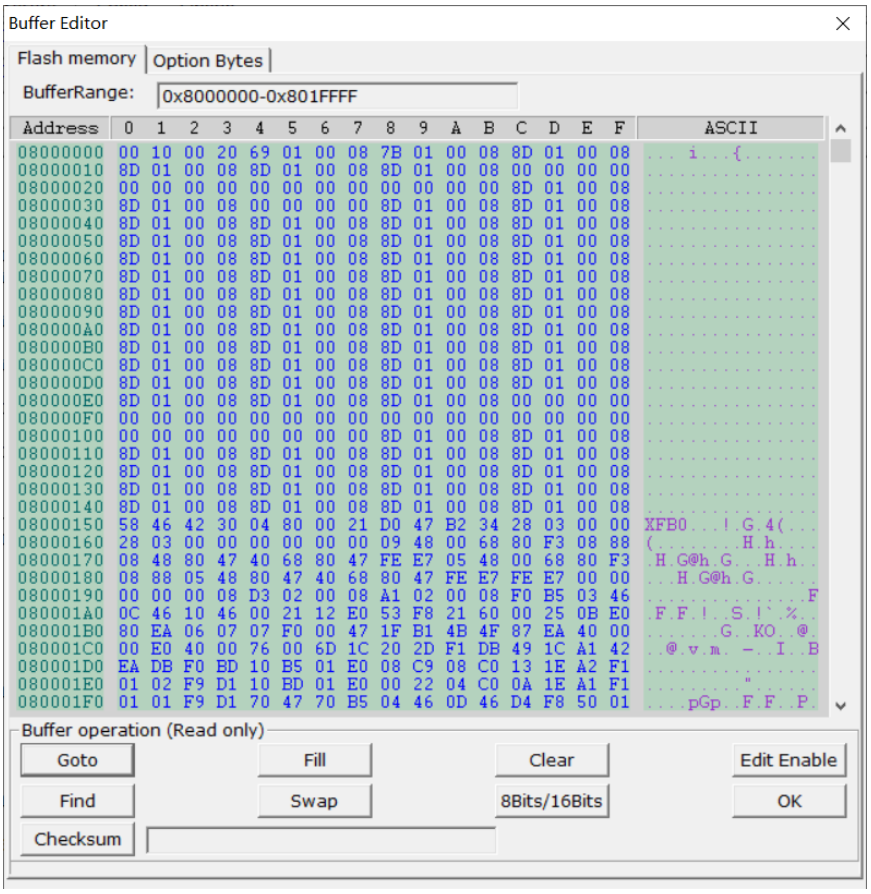


Figure 1.7.2.1-12 Buffer contents.

The chip buffer is read-only by default. If you need to modify the content of the chip buffer manually, click "**Enable Edit"** to enable the edit function. In addition, the software also provides the chip buffer location **Goto, Clear, Fill, Find, Swap, Check Sum, Byte/Word** display function.

1) click on "**Goto"** and enter the address, as shown in figure 1.7.2.1-13.

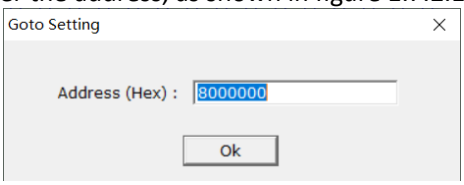


Figure 1.7.2.1-13 Goto configuration dialog.

2) click **Fill** and enter the start address, end address and data you want to fill. To populate an ASCII type, select the checkbox ☑ ASCII Type . To fill with random values, select the checkbox ☑ Use Random , as shown in figure 1.7.2.1-14.

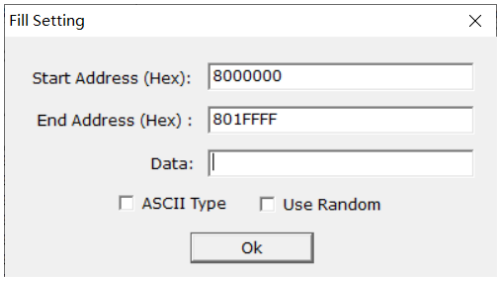


Figure 1.7.2.1-14 Fill configuration dialog.

3) click Find, enter the start address, end address, and the data wanted to find. To find the

ASCII type, select the checkbox ☑ ASCII Type , as shown in figure 1.7.2.1-15.

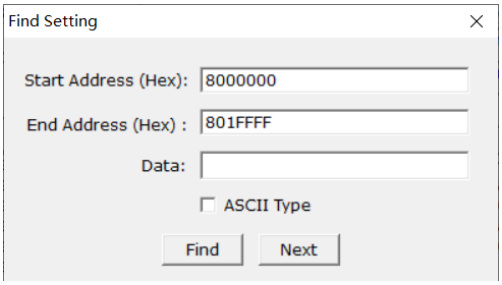


Figure 1.7.2.1-15 Find configuration dialog.

F. Start programming

Click the **Program** button to start programming. If the chip supports a **Special Bit** configuration, the **Device Config** configuration dialog will pop up before the Program Progress, as shown in figure 1.7.2.1-16.

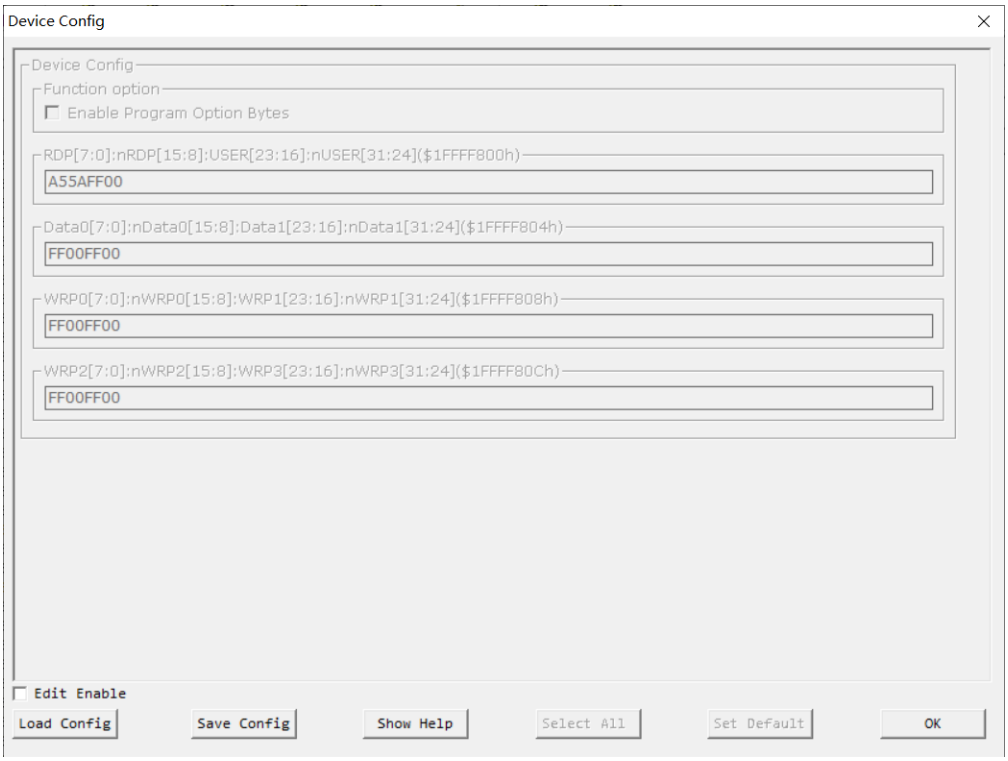


Figure 1.7.2.1-16 Device Config configuration dialog

The default config cannot be changed. Select the checkbox **Edit Enable** to set the parameters in config. Click the **Load config** button to load the chip configuration. Click the **Save config** button to save the chip configuration. Click the **Select All** button to select all checkboxes at the same time. Click the **Set Default** button to restore config to the default state.

The chip configuration depends on the customer design and applications. The **Device Config** shows the default device configuration by default, and this setting should be referred to the final applications. After configuring **Device Config**, click OK to enter the programming interface.

You can also open the Device Config configuration dialog by clicking the Config button in the software toolbar. Click the Device Config configuration dialog. After OK, the Program operation interface as shown in figure 1.7.2.1-17 will appear.

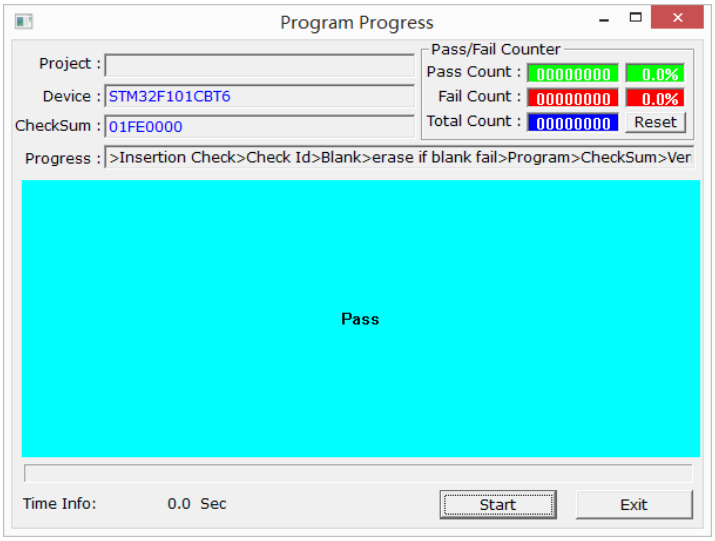


Figure 1.7.2.1-17 Programming operation interface

Click Start repeatedly to start programming and click Exit to return to the main window. The upper right corner counts the number of Pass and Fail operations. Click the Reset button to reset. The middle rectangle window indicates the current status of the programming procedure.

In addition to programming, according to the specification of the devices, The SG8000 programmer can also perform **standalone operations** on the device. By clicking the toolbar button, Erase, checking whether the chip is blank, Verify, Read and Secure operations can be executed as shown in figure 1.7.2.1-18 when you click the Erase button.

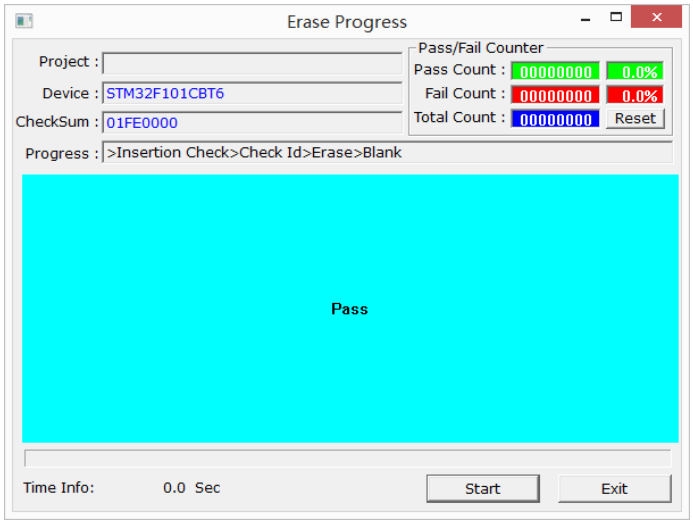


Figure 1.7.2.1-18 The Erase operation interface

G. Project file.

Once the programming is done and verified. You can save this configuration as Project file as shown in figure 1.7.2.1-19 for production with MultiSG8000 software.

You can leverage the Create/Edit/Open project function to setup the project file.

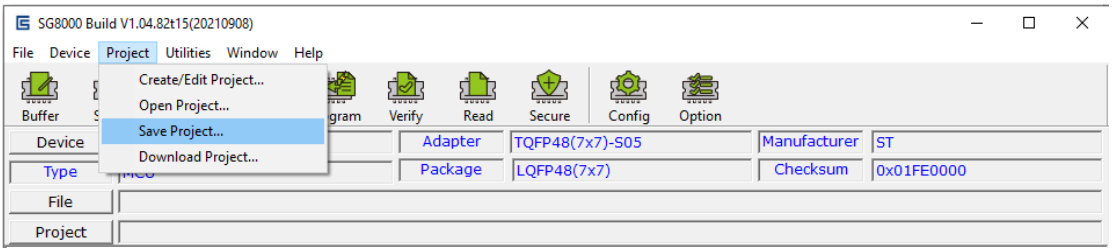


Figure 1.7.2.1-19 Save Project file.

1.7.2.2 Multiple programmer operation example

Programming STM32F101CBT6 with LQFP48(7x7) package.

A. Launch the MultiSG8000.exe user interface software.

Double-click the MultSG8000 icon to start running the application.

Click “Scan” to scan all programmers which connected to this computer.

Then click “Connect” to connect all programmers for site management.

You can see the example as shown in figure 1.7.2.2-1.

Click “Exit” once the programmers are connected.

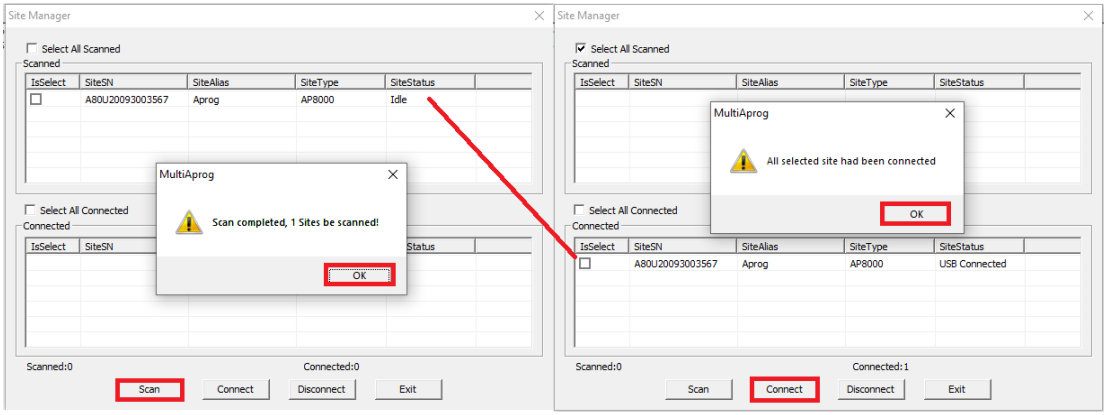


Figure 1.7.2.2-1 Site Manager

MultiSG8000 defined as production mode and can download the project files for Mass Production operation. The other functions are not supported on MultiSG8000.

Click “Project” to select the project file(.apr) which created by SG8000.exe as shown in figure 1.7.2.2-2 to start the production programming.

The MultiSG8000 can download the project file for programming only and project modification need to go back to SG8000.exe software.

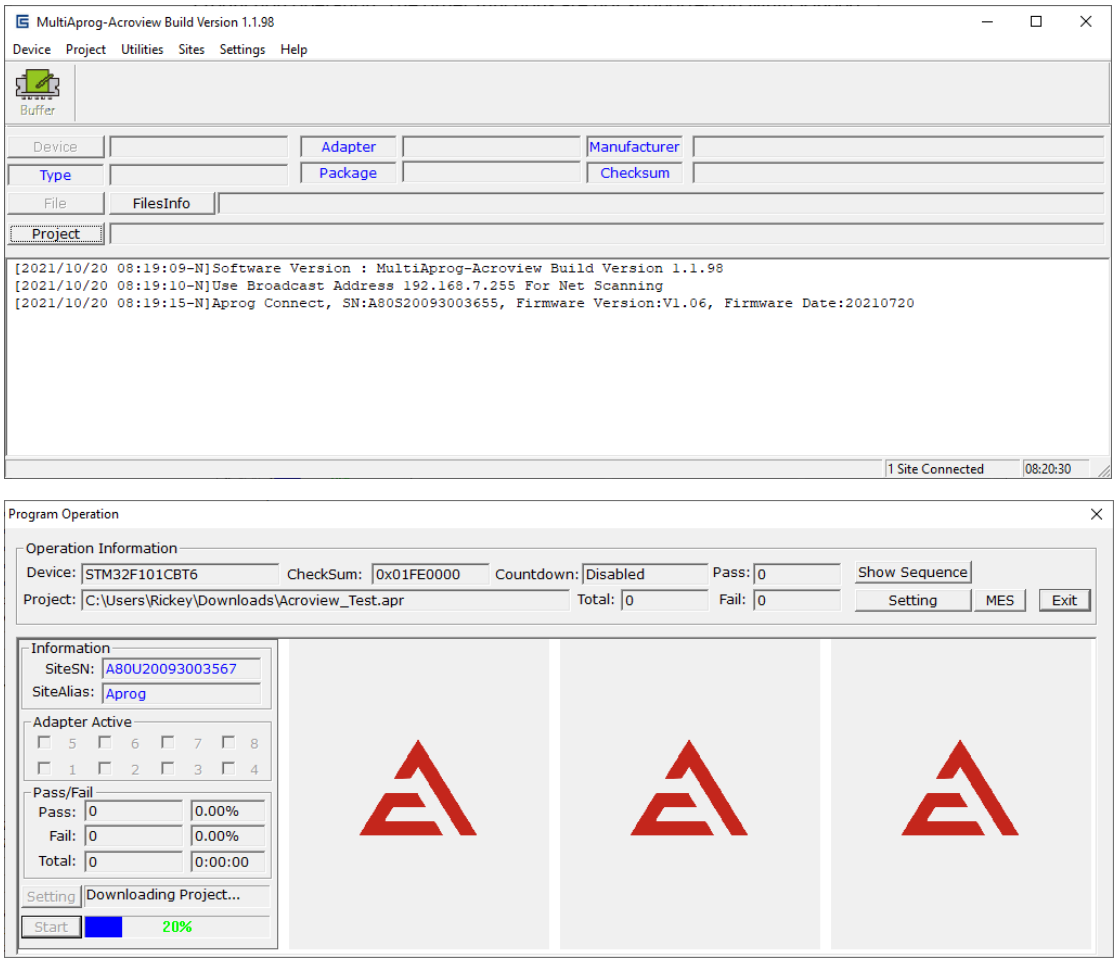


Figure 1.7.2.2-2 Download Project on MultiSG8000

1.7.3 Chip serial number

If you would like to program the serial number, please refer below procedure to setup serial number configuration via SG8000 or MultiSG8000 (recommended).

A. Set the serial number on SG8000.

When the Serial Number of the chip can be configured via the Serial Number Configuration. This function will program the Serial Number to each device. Click on the pull-down menu Utilities | Serial Number... to implement the serial number configuration, as shown in figure 1.7.3-1.

By default, the serial number is disabled.

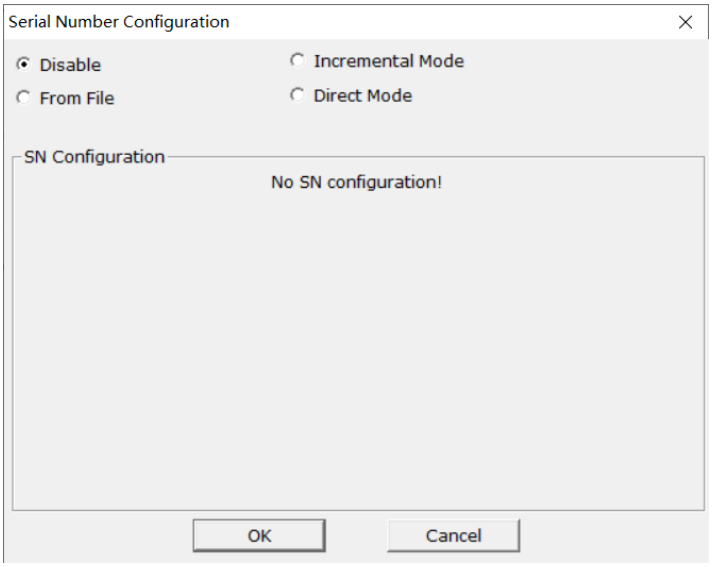


Figure 1.7.3-1 SN configuration dialog

Select **Incremental Mode** to set the standard self-increase Mode, as shown in figure 1.7.3-2.

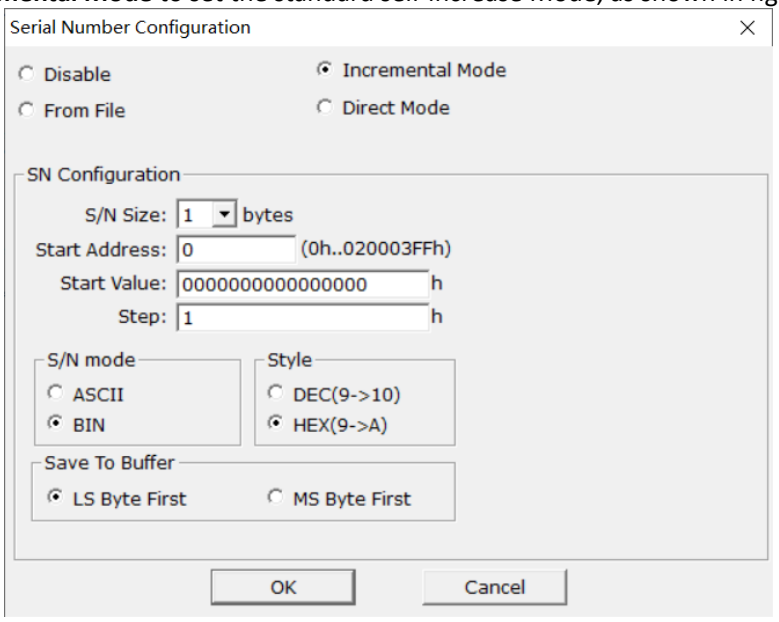


Figure 1.7.3-2 Select Incremental Mode

According to specified requirements, the serial number length (S/N Size), Start Address, Start Value, and Step can be configured. Set the self-increase mode in S/N mode, which can be set as

BIN self-increase or ASCII self-increase. In this application, you can set decimal self-increase or hexadecimal self-increase. In Save to buffer, you can set the storage mode to LS Byte First or MS Byte First.

In addition to the standard self-increase mode, SG8000 also supports reading serial Numbers from files. Users can write serial Numbers into a specified file in a specified format, and then SG8000 reads serial Numbers from files. Use **From File** to set it. See figure 1.7.3-3.

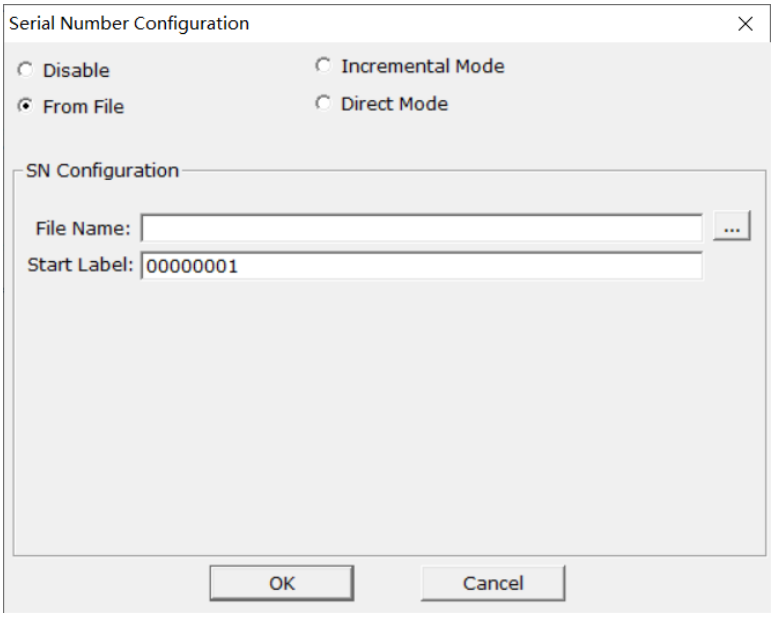


Figure 1.7.3-3 Select File mode

Enter the serial number File path in the **File Name** field, or click "..." Button to select the file with serial number and enter the Start Label value of the file in **Start Label**. The Label value is determined by the file format specified by SG8000 and the user file content. The format of the file with serial number will be described in detail in the "format of file with serial number" section.

B. Serial number file format

This section introduces the format which using a sequential number file as an example. Figure 1.7.3-4 shows the contents of a simple sequential number file.

```
1 ;this is serial configure file
2 ;just for test
3 [Chip Info]
4 ChipName:SampleDrv
5 ByteMode:LE
6 DataMode:Data
7
8 ;
9 ;
10 ;<label><address><size><data>
11
12 [SN Info]
13 <L:0001><0012><05><00 01 02 03 04>,<0050><04><01 02 03 04>
14 <L:0002><0012><05><00 01 02 03 05>,<0050><04><01 02 03 05>
15 END
16
```

Figure 1.7.3-4. Example serial number file with Data mode

The first two lines of the comment line and can be ignored, and the comment line is ";" at the beginning.

The sequential number information is divided into several domains. The domain definition starts with [Name], where Name is the domain Name string. Each sequential number file must contain Chip Info field and SN Info field. The Chip Info field describes global information about the sequential number file, including:

- ChipName: The name of the device, which should be the same as the name of the chip selected during programming.
- ByteMode: Byte order, could be LE (little endian) or BE (big endian).
- DataMode: The Data content of the SN part in the SN Info field, optionally with a value of Data or File. (if the data content of SN is file, you need to fill in the name of the file. The data inside the file is the real SN information, which can be used in the case of longer SN, such as 256 bytes.)

The SN Info field contains all information about SN. The format is as follows:
< L:idx><addr1><size1><SN1 value>,<addr2><size2><SN2 value>….
Idx represents the SN index value of the row, which is a decimal number (idx starts from 1), which is the value to be filled in the Start Label in the FileMode operation interface. This value cannot be repeated and needs to be incremented by 1. Idx ranges from 1 to 99999999 and can be preceded by a 0.
000000010 = 10; The "L:" identifier before idx cannot be ignored.

- Addr1 is a hexadecimal number representing the position of the first SN, and the maximum range is 4g-1，that is, FFFFFFFF. But the actual maximum address depends on the device density. For example, if the device programmable density is only 8MB, the length of addr1 plus SN cannot exceed 8MB.
- Size1 identifies the byte size occupied by the first SN as hexadecimal with a maximum of 0x100000. The parser will use this Value to match the actual number of bytes filled in by SN1 Value and reports error if mismatch.
- SN1 Value, if DataMode is Data, SN1 Value is the actual filled Value of SN in hexadecimal, separated by Spaces between bytes. If SN has three bytes of 0x12, 0x34, 0x56, then SN Value is <12, 34, 56>. If DataMode is File, SN1value is the corresponding path of the directory of the File to be read and the configuration File. If SN1value is 1.data, it means that 1.data is in the same directory of the configuration File. If SN1value is sn_file\1.data, it means that 1.data is in the same directory of the configuration File. The other data in the DataMode that holds the SN value is a binary file (figure 1-21).
- Addr2 represents the position of the second SN, which is a hexadecimal number.
- Size2 represents the number of bytes occupied by the second SN.
- SN2 value format is the same as SN1.

Each row requires an idx value and at least one set of SN values, and may have multiple sets of SN, separated by ", ". A group of SN is < addr > < size > < value > SN.

Note：

- **No space between the two <> is available, the "<" in front of idx should be at the beginning of the line. No Spaces for Idx，the format of Idx is decimal valid characters (0-9). No Spaces for addr, the format of addr is hexadecimal valid characters (0-9, a-f,a-f). No space in the middle of size, which is a hexadecimal valid character (0-9, a-f,a-f). One byte in SN Value takes up two characters. Bytes are separated by a space, with the first byte followed by "<" and the last byte followed by ">".**
- **At the END of the SN Info field, a new line is marked with END.**
- **The last line of the configuration file ends with an empty line.**
- **The configuration file's suffix is “ser”.**

Figure 1.7.3-5 shows the DataMode as File.

```
;this is serial configure file
;just for test
[Chip Info]
ChipName:SST39VF088
ByteMode:LE
DataMode:Data

[SN Info]
<L:0001><0012><100><sn_file\1.data>
<L:0002><0012><100><sn_file\2.data>
END

```

Figure 1.7.3-5 SN configuration File, data mode is File.

Select Direct Mode to set SN configuration by selecting the checkbox of adp1-adp8 and double-clicking the SN address. Set the length and value of SN so that each adapter can be programmed with induvial SN Numbers. As shown in figure 1.7.3-6.

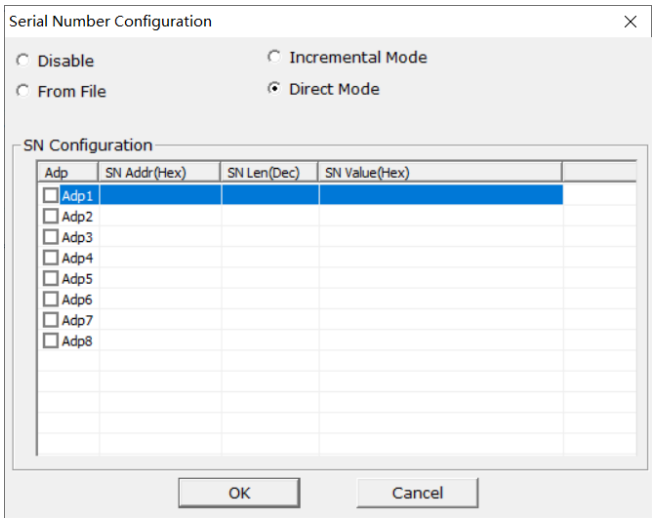


Figure 1.7.3.6 Select Direct Mode.

B. Set the serial number on MultiSG8000.

MultiSG8000 supports various and customize serial number configuration via the Serial Number Configuration. This function will program the Serial Number to each device chip with gang programmers. Click the pull-down menu Utilities | Serial Number... to implement the serial number configuration, as shown in figure 1.7.3-7.

By default, the serial number is disabled.

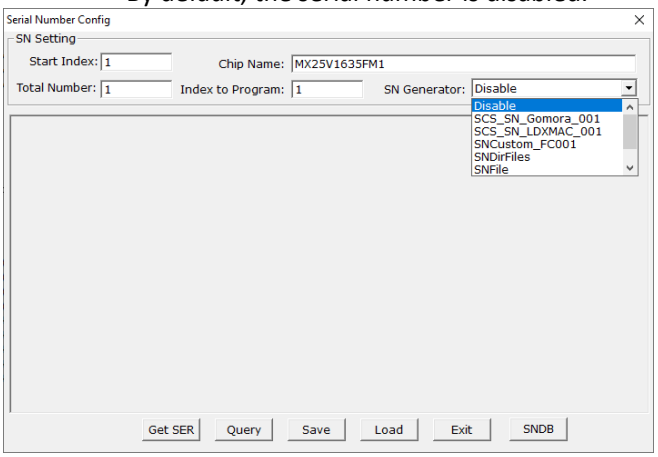


Figure 1.7.3-7 Serial Number Configuration on MultiSG8000.

1.7.4 Project management

Users can leverage the “Project” function on SG8000.exe to save the programming configuration as a Project file. The project file will pack with the algorithm, parameters, programmer buffer contents, configurations, and advanced settings, etc. The user can deliver the project file for future production management. The project file can be created by the engineer via demo mode and the operator can only download the project file for specified functions such as a program or verify to prevent the not proper operation.

A. Create project

Click Project | Create /Edit Project... Button to launch the create project wizard, as shown in figure 1.7.4-1.

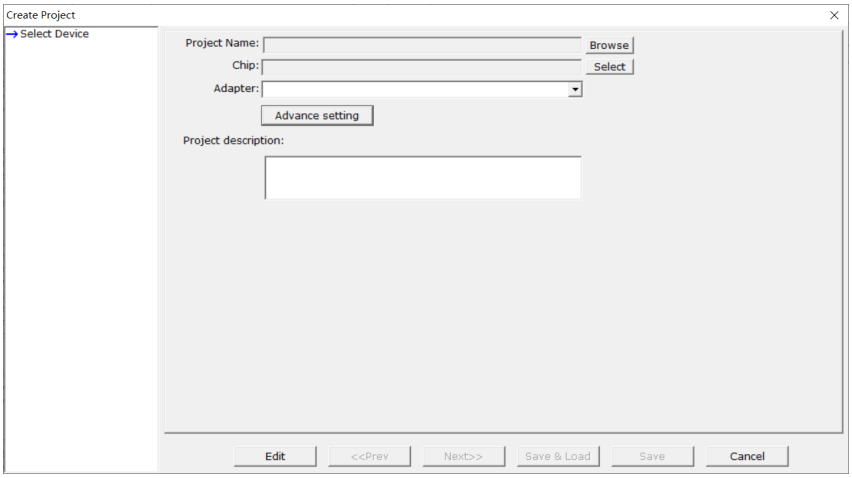


Figure 1.7.4-1 Project creation interface.

Click **Browse** to select the project file path and enter the project file name. The project file’s extension named is .apr which is created on the host computer as shown in figure 1.7.4-2.

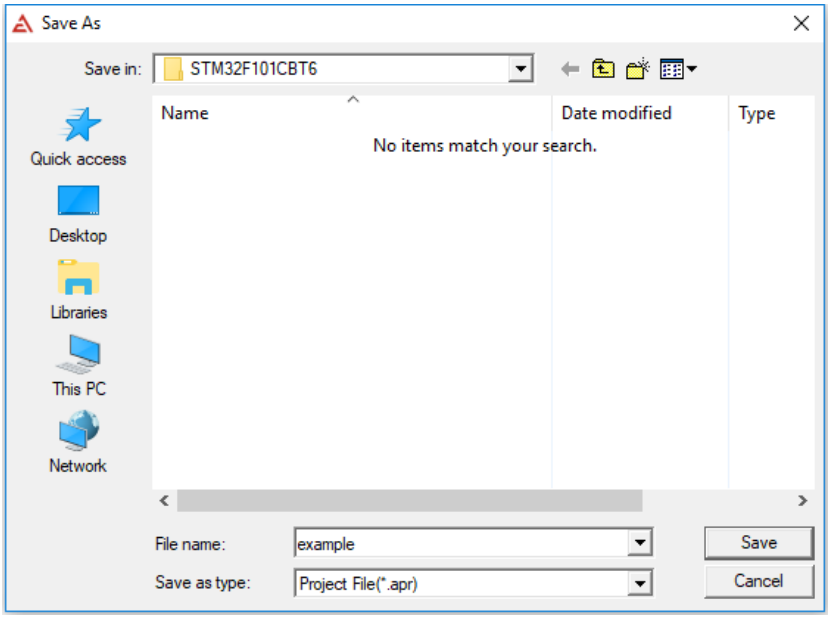


Figure 1.7.4-2 Save the project as dialog.

Click on “**Select”** on the “create project” window, the chip selection dialog box pop up, as shown in figure 1.7.4-3. For operation, please refer to the previous section of selected chips.

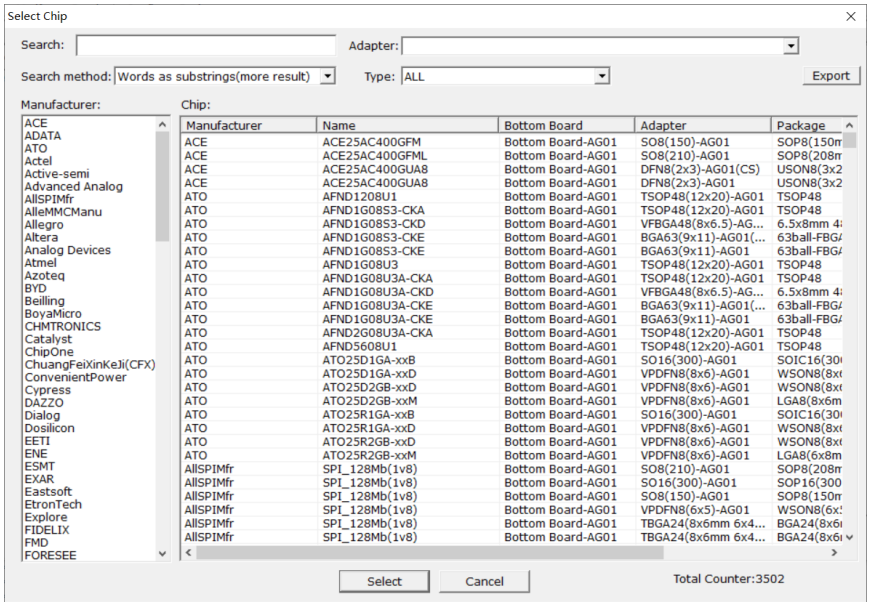


Figure 1.7.4-3 Chip selection interface

After the chip is selected, click on the **Next** button in the “ Create project” window, as shown in figure 1.7.4-4. Put in the session description in the “**Project description”** box.

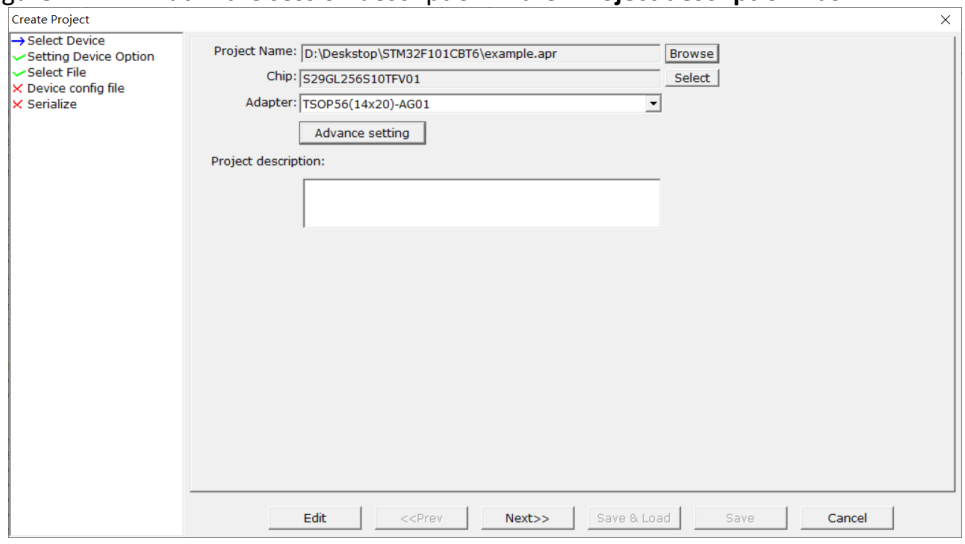


Figure 1.7.4-4 Create Project procedure after chip selected.

Click the “**Advance setting”** button to set up the project in detail. See figure 1.7.4-5.

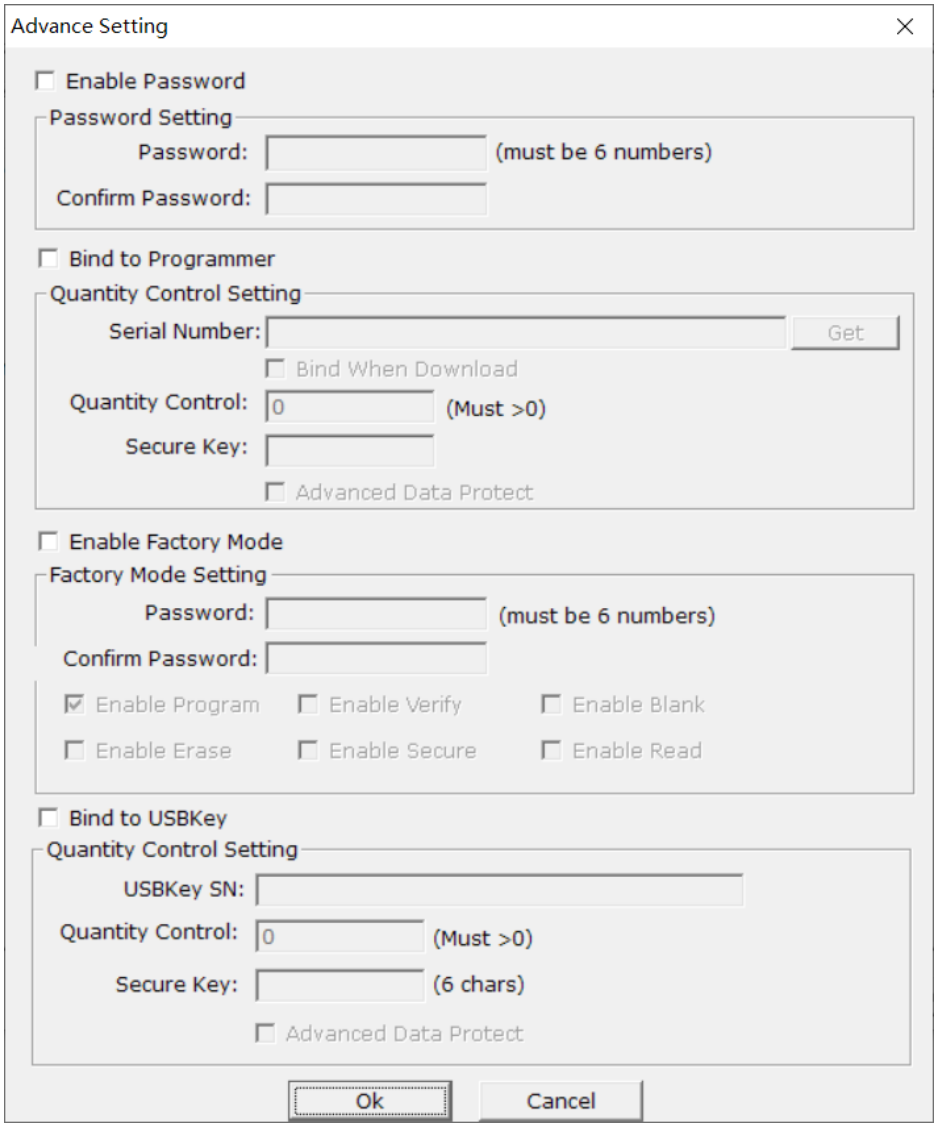


Figure 1.7.4-5 Advance Setting when creating a project.

If "Enable Password" is checked in above figure 1.7.4-5, it indicates that the project file will be encrypted and protected. The Password is 6 characters, and the legal characters are 0-9, a-z, A-Z. Every time the encryption protection function of the project file is enabled, the software will pop up a prompt box to ask for the password.

Check on “Bind to Programmer” if “**enable machine binding**” is requested, that is, the created project files can only be loaded on the specified Programmers and non-binding programmers are not allowed. Please refer to section 1.7.9 for setting mass production mode.

Check "**Enable Factory Mode**" to enable the Factory Mode, Which means those selected functions are allowed in the Factory Mode. Otherwise, functions not selected are not supported. Please refer to section 1.7.10 for the factory mode setting section.

Click **Next** to enter the Device Option configuration as shown in figure 1.7.4-6.

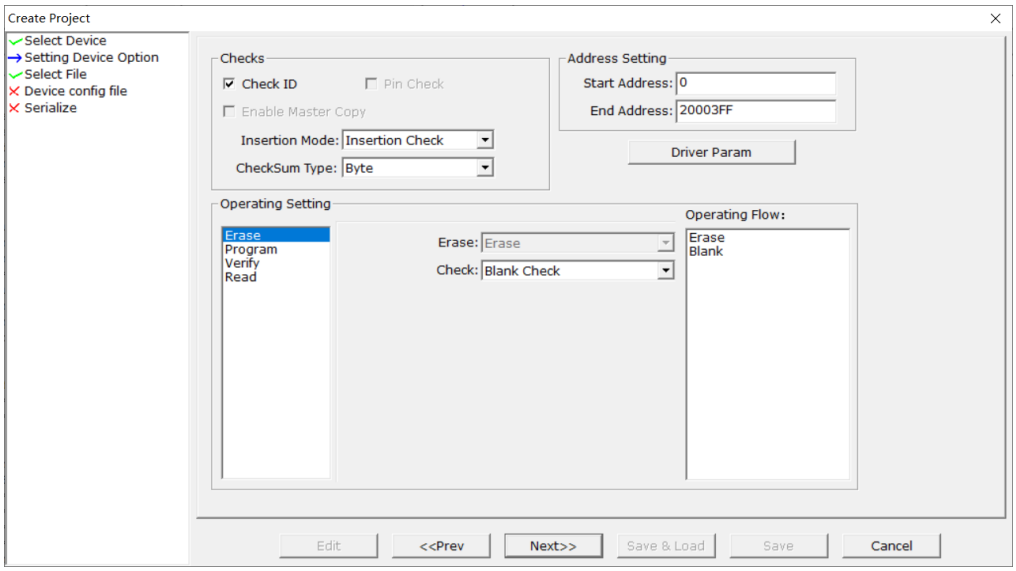


Figure 1.7.4-6 Device options when created project.

Click **Next** to enter the file selection page, as shown in figure 1.7.4-7. Refer to the open file section for instructions.

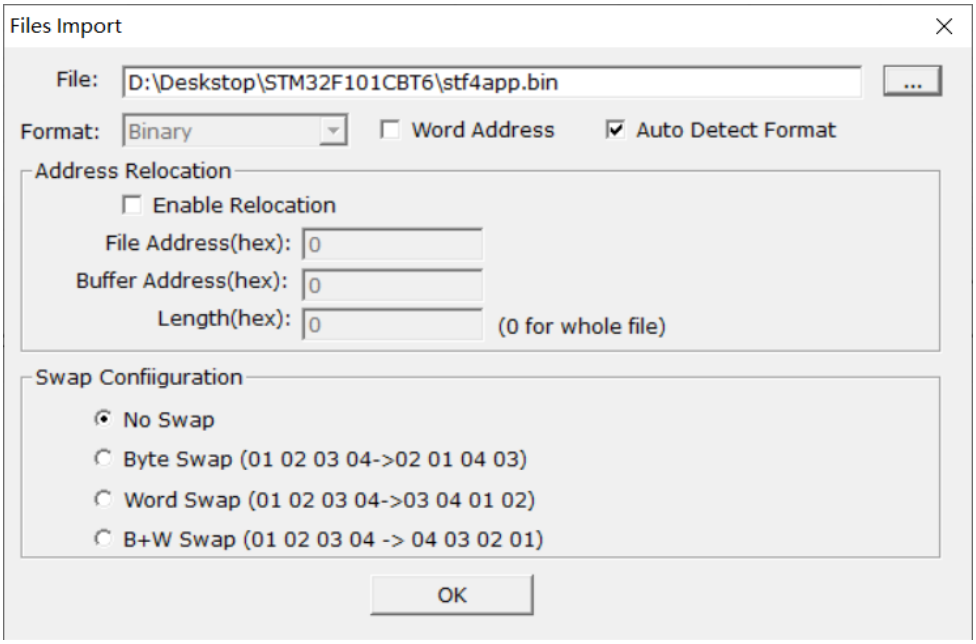


Figure 1.4.7-7 Select the file when creating the project.

If the device needs to set up the special configuration, then click Next button to enter the **Device Config** configuration page, as shown in figure 1.7.4-8.

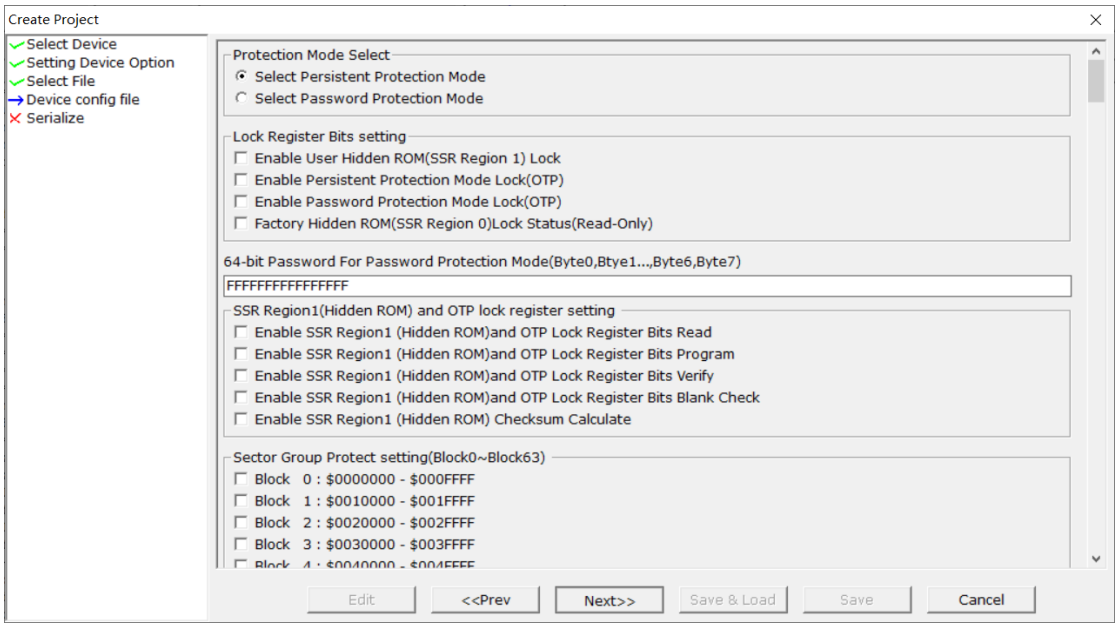


Figure 1.7.4-8 Device Config when creating the project.

If the chip supports SN(Example: S29GL256S10TFV01 supports SN), click **Next** to enter the sequential number setting page, as shown in figure 1.7.4-9. Please refer to the sequential number setting section for how to set up the page.

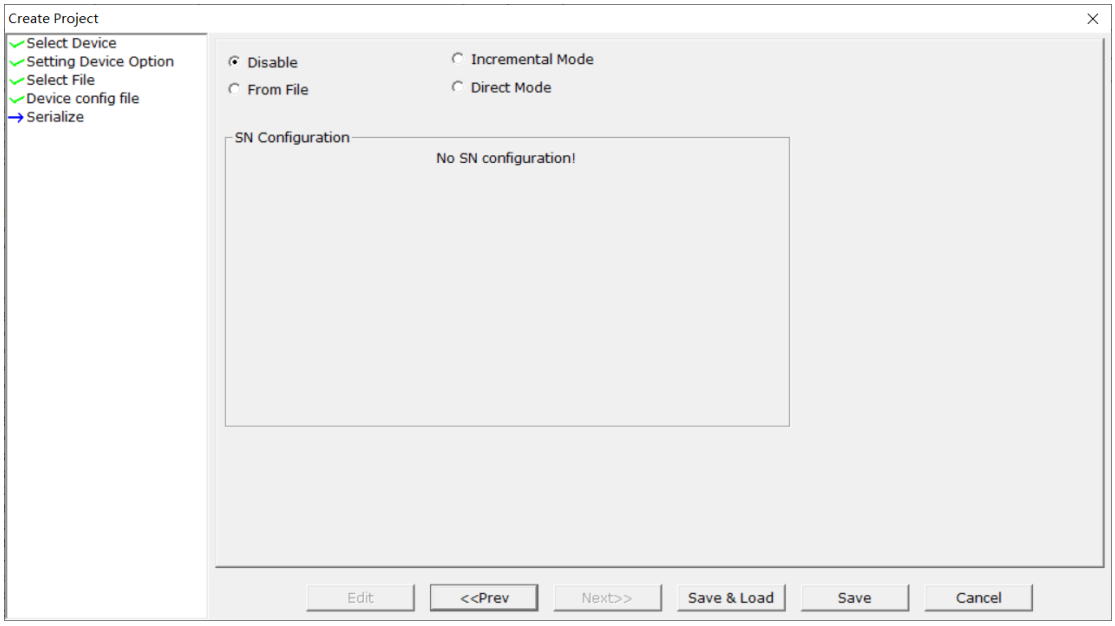


Figure 1.7.4-9 Sequential number Settings when creating the project.

After the configuration is completed, click **Save** to complete the project creation wizard and Save the project. Click **Save&Load** to automatically load the project after creating and saving the project.

B. Save the project

Click **Project | Save Project...** Button to save the current programmer configuration and buffer contents as a project, as shown in figure 1.7.4-10.

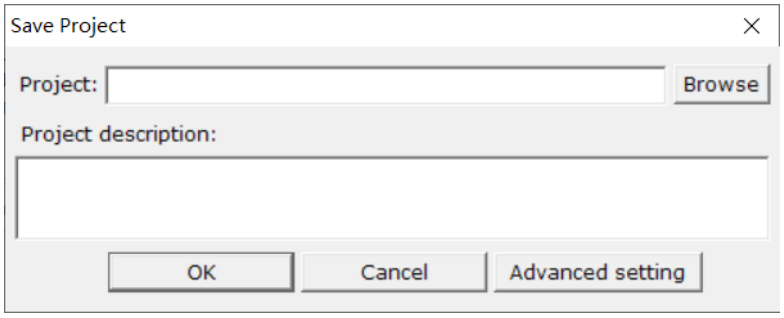


Figure 1.7.4-10 Save the project.

Click the **Browse** button to specify the path to save the project.

Note: before saving the project, make sure that the configuration is completed, and the file data is loaded.

C. Open the project

Click **Project | Open Project...** Button to open the project, as shown in figure 1.7.4.11.

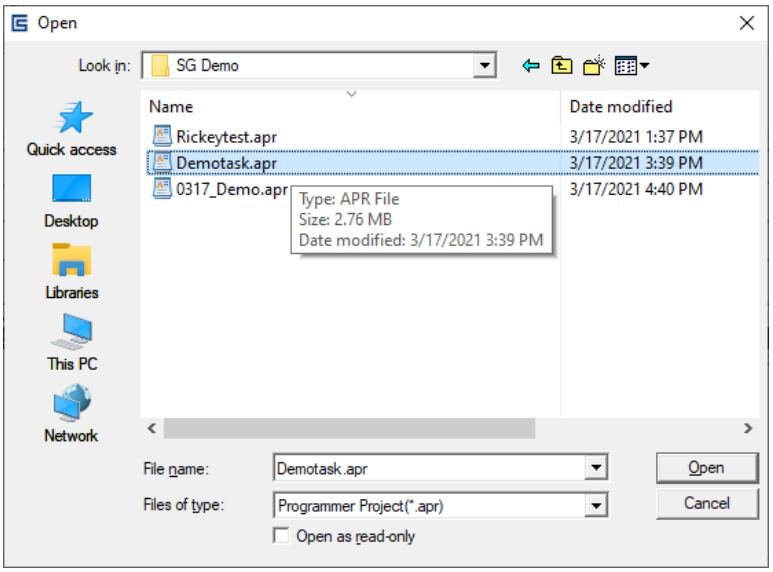


Figure 1.7.4-11 Open the project dialog.

To open the project, specify the path to the saved project path, and the project file suffix defaults to *.apr.

D. Download the created project files to the SD card.

Insert the SD card into the slot located on the back of the programmer, then click on “**Project | Download Project...” to** select “created project file”, and then click the "**open**" button to automatically download the project file into the SD card. The project file name is auto_load.apr, and "Download project file passed" is displayed in the programmer interface. If a new project is downloaded to the SD card, the old auto_load.apr will be overwritten.

1.7.5 Information display and chip help

SG8000 provides various Information query interfaces, Click on **Help|Device Information menu...** Pop up the device information currently selected by the user, as shown in figure 1.7.5-1.

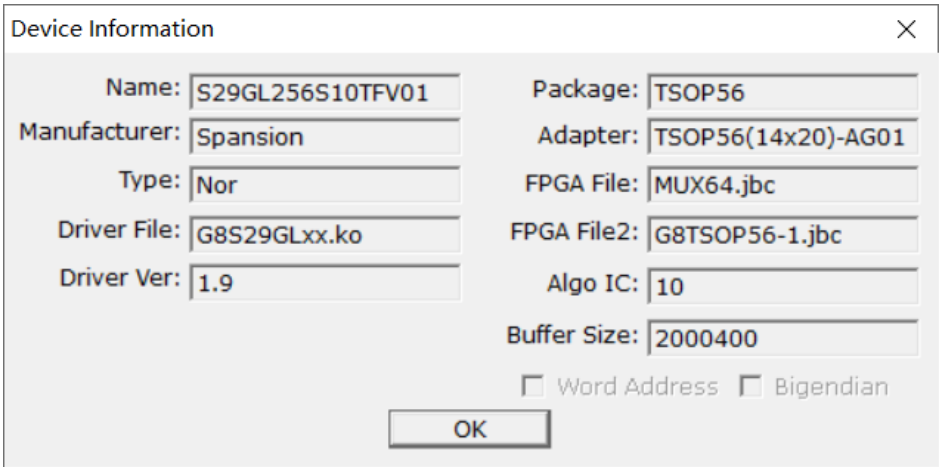
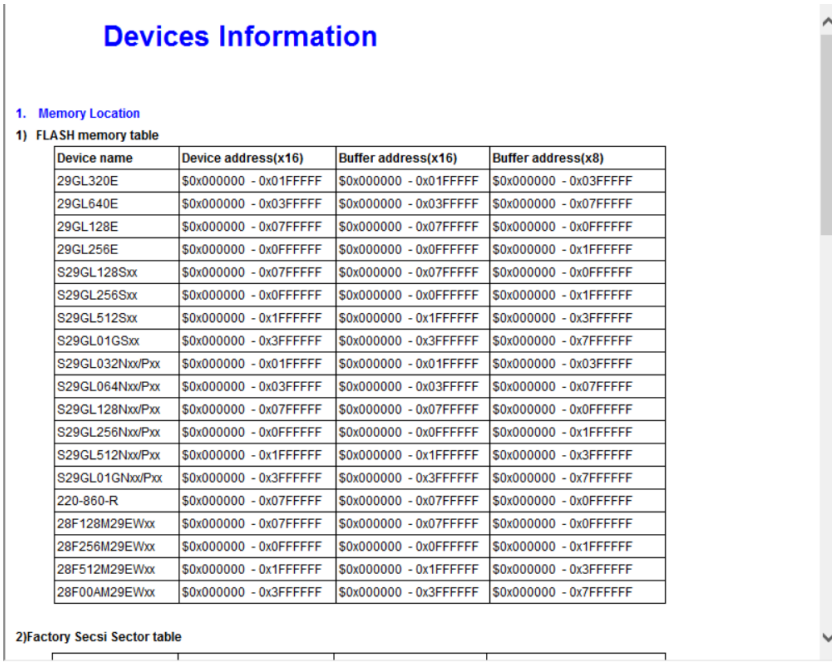


Figure 1.7.5-1 Device information

Select **Help|Chip Help...** Display chip help. The chip help information is consistent with the detailed information about the "select chip" section. As shown in figure 1.7.5-2.



Devices Information

1. Memory Location

1) FLASH memory table

Device name	Device address(x16)	Buffer address(x16)	Buffer address(x8)
29GL320E	$0x000000 - 0x01FFFFF	$0x000000 - 0x01FFFFF	$0x000000 - 0x03FFFFF
29GL640E	$0x000000 - 0x03FFFFF	$0x000000 - 0x03FFFFF	$0x000000 - 0x07FFFFF
29GL128E	$0x000000 - 0x07FFFFF	$0x000000 - 0x07FFFFF	$0x000000 - 0x0FFFFFF
29GL256E	$0x000000 - 0x0FFFFFF	$0x000000 - 0x0FFFFFF	$0x000000 - 0x1FFFFFF
S29GL128Sxx	$0x000000 - 0x07FFFFF	$0x000000 - 0x07FFFFF	$0x000000 - 0x0FFFFFF
S29GL256Sxx	$0x000000 - 0x0FFFFFF	$0x000000 - 0x0FFFFFF	$0x000000 - 0x1FFFFFF
S29GL512Sxx	$0x000000 - 0x1FFFFFF	$0x000000 - 0x1FFFFFF	$0x000000 - 0x3FFFFFF
S29GL01GSxx	$0x000000 - 0x3FFFFFF	$0x000000 - 0x3FFFFFF	$0x000000 - 0x7FFFFFF
S29GL032Nxx/Pxx	$0x000000 - 0x01FFFFF	$0x000000 - 0x01FFFFF	$0x000000 - 0x03FFFFF
S29GL064Nxx/Pxx	$0x000000 - 0x03FFFFF	$0x000000 - 0x03FFFFF	$0x000000 - 0x07FFFFF
S29GL128Nxx/Pxx	$0x000000 - 0x07FFFFF	$0x000000 - 0x07FFFFF	$0x000000 - 0x0FFFFFF
S29GL256Nxx/Pxx	$0x000000 - 0x0FFFFFF	$0x000000 - 0x0FFFFFF	$0x000000 - 0x1FFFFFF
S29GL512Nxx/Pxx	$0x000000 - 0x1FFFFFF	$0x000000 - 0x1FFFFFF	$0x000000 - 0x3FFFFFF
S29GL01GNxx/Pxx	$0x000000 - 0x3FFFFFF	$0x000000 - 0x3FFFFFF	$0x000000 - 0x7FFFFFF
220-860-R	$0x000000 - 0x07FFFFF	$0x000000 - 0x07FFFFF	$0x000000 - 0x0FFFFFF
28F128M29EWxx	$0x000000 - 0x07FFFFF	$0x000000 - 0x07FFFFF	$0x000000 - 0x0FFFFFF
28F256M29EWxx	$0x000000 - 0x0FFFFFF	$0x000000 - 0x0FFFFFF	$0x000000 - 0x1FFFFFF
28F512M29EWxx	$0x000000 - 0x1FFFFFF	$0x000000 - 0x1FFFFFF	$0x000000 - 0x3FFFFFF
28F00AM29EWxx	$0x000000 - 0x3FFFFFF	$0x000000 - 0x3FFFFFF	$0x000000 - 0x7FFFFFF

2)Factory Secsi Sector table

Figure 1.7.5-2 Help information

Select **Help|About...** Display the company's address, telephone number, website, and other information, as shown in figure 1.7.5-3.

Figure 1.7.5-3 Company information.

Select **Help|System Information...** to display system details, as shown in figure 1.7.5-4.

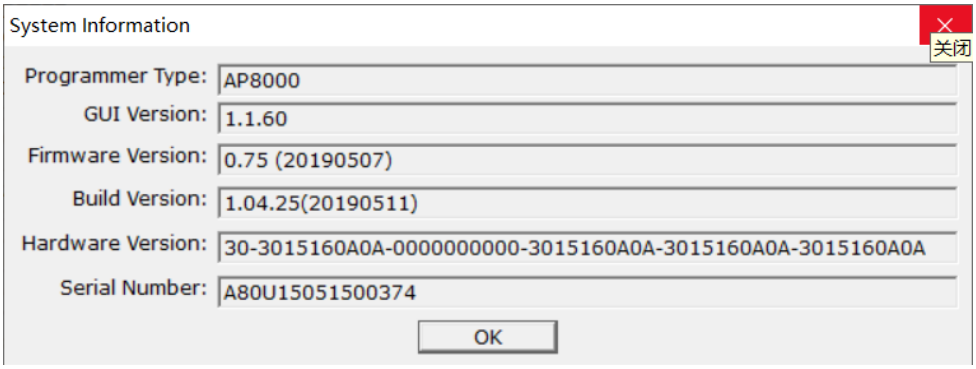


Figure 1.7.5-4 System information.

1.7.6 Diver parameters

Select the **Utilities|Driver Param** menu to display the voltage and time parameter configuration of the chip, as shown in figure 1.7.6-1.

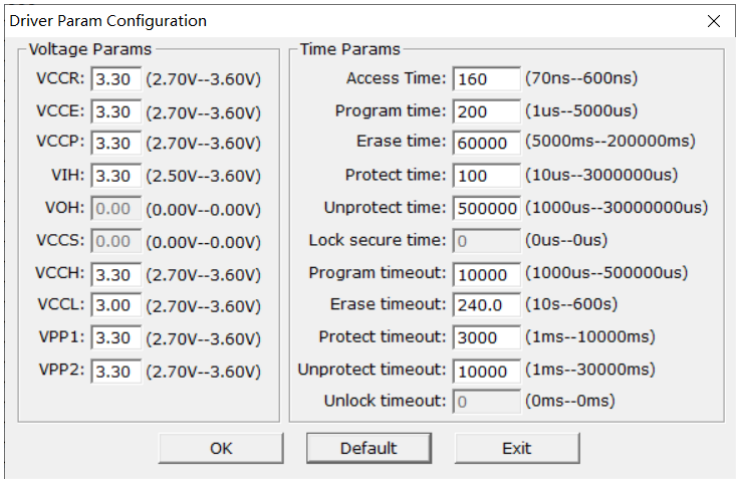


Figure 1.7.6-1 Configuration of chip voltage and time parameters

The corresponding voltage and time can be modified and then click **OK** to set/save. The user can restore the default value to default by clicking the **Default** button.

1.7.7 Firmware upgrade

When SG8000 software is running, it will automatically detect the firmware version of the programmer. If the firmware version is lower than the firmware version in the software, the dialog box as shown in figure 1.7.7-1 will pop up automatically. Click **Yes** to automatically upgrade and click **No** not to upgrade.

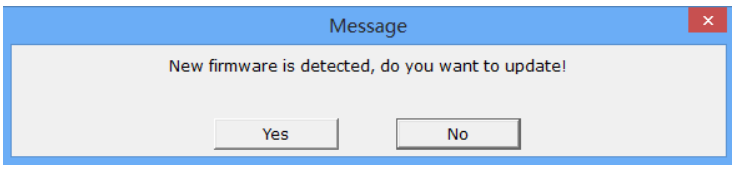


Figure 1.7.7-1 The information displayed when the programmer's firmware version is lower than the firmware version carried in the software.

Manually upgrade by using **Utilities|Update Firmware…**, as shown in figure 1.7.7-2.

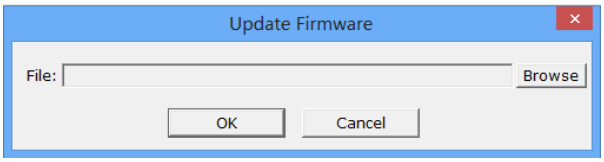


Figure 1.7.7-2 Update firmware

Click the **Browse** button in the figure above to bring up the select firmware dialog, as shown in the following figure 1.7.7-3.

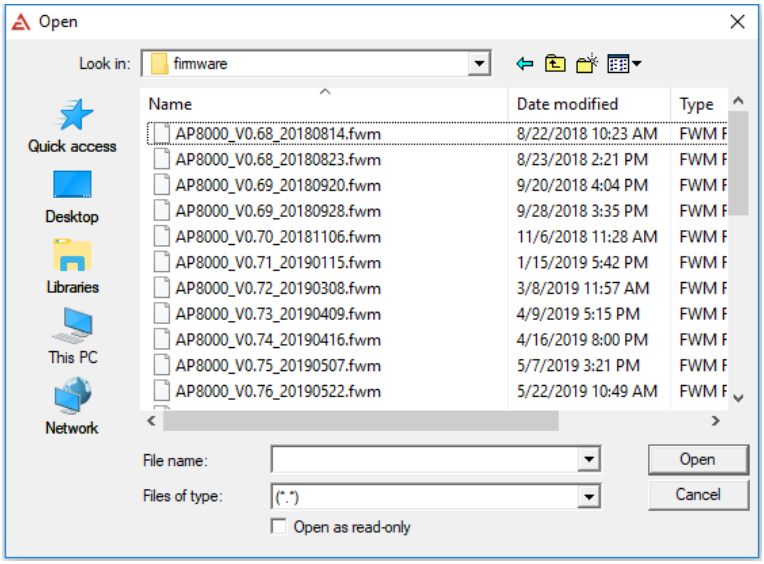


Figure 1.7.7-3 Select the firmware to upgrade.

If the firmware version selected is higher than the current version, click the open button and the dialog shown in figure 1.7.7-4.

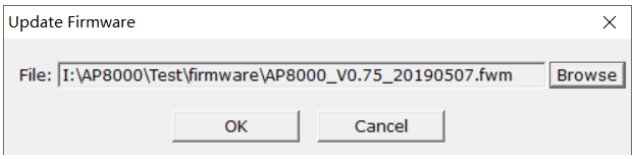


Figure 1.7.7-4 Displays the information after selecting the higher firmware.

Click OK to upgrade.

If the selected firmware version is lower than the current version, the prompt box will pop up as in the following figure 1.7.7-5. Click **Yes** to confirm the upgrade and click **No** to cancel the upgrade.

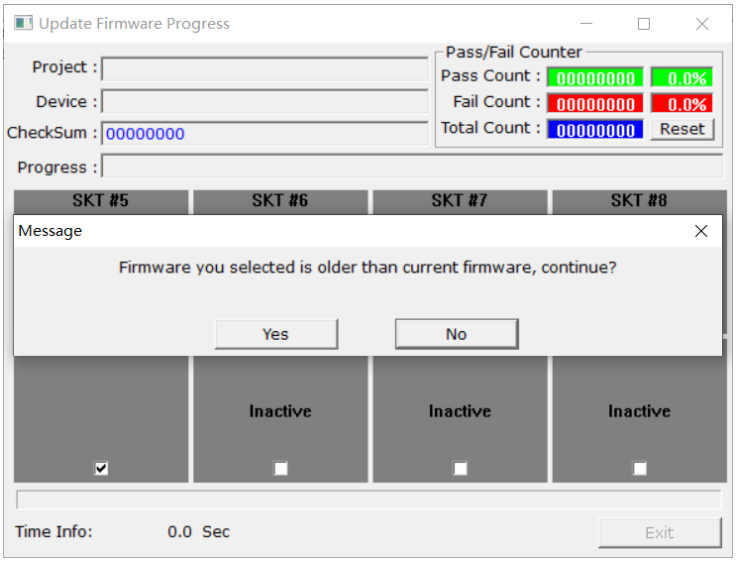


Figure 1.7.7-5 The information after selecting the lower firmware.

When the built-in firmware version of the programmer is out of the firmware version support range in the software, the dialog box as shown in figure 1.7.7-6 will pop up. At this time, the firmware version range in the software should be modified or the appropriate firmware version should be selected for upgrading before normal operation.

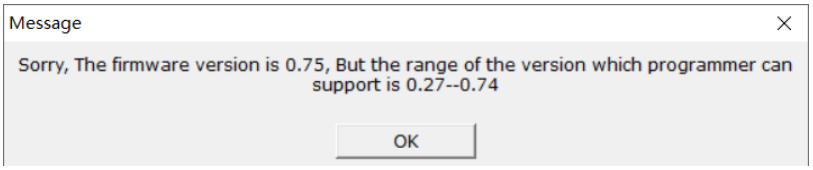


Figure 1.7.7-6 The built-in firmware version of the programmer is out of the range.

Important: Do not disconnect the programmer or turn off the programmer during the firmware upgrade. After the successful firmware upgrade, the programmer will restart automatically. Just follow the prompts to reconnect the programmer.

If the firmware upgrade fails unexpectedly, such as an unexpected power outage during the upgrade, which could cause the programmer to fail to startup. Normally, the programmer starts in Normal Mode. If Normal Mode fails three times, the programmer enters Safe Mode, and the boot screen will indicate which Mode is entered. After entering Safe Mode, immediately follow the Normal steps to upgrade the machine and restore Normal Mode. Then restart the programmer.

1.7.8 System Setting

Set the system option via this interface. Click Utilities|System Option, which will bring up the dialog box of System Option. Click Log to display the interface shown in figure 1.7.8-1. Click on the “Browse” button to set the save path of the Log File. You can also set the Max Log File Size and Log Keep Time, and whether the help (show help when the chip is selected) pops up automatically or not.

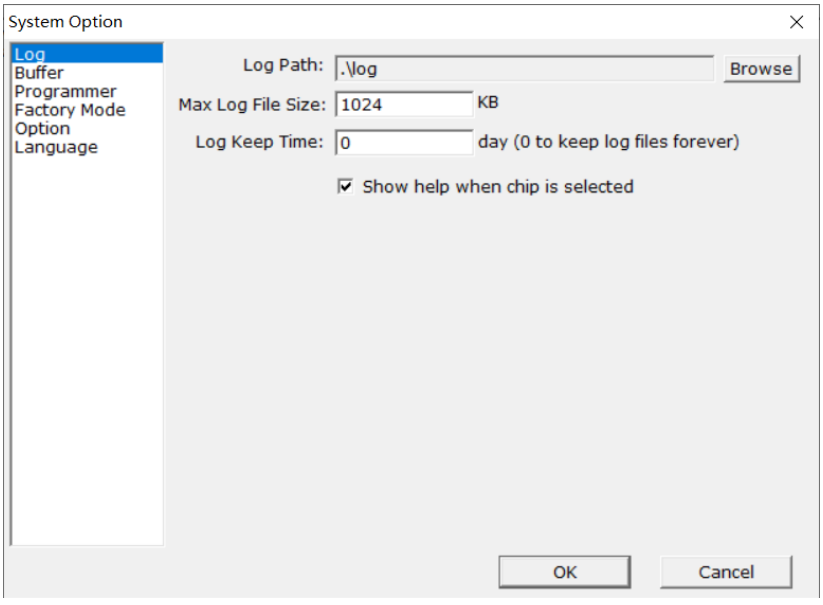


Figure 1.7.8-1 Log configuration information

Click **Buffer** to bring up the interface as shown in figure 1.7.8-2. Click **Browse** to set the path of **Buffer**.

Important: The SG8000 leveraged the PC hard drive disk to simulate the buffer. Please set the User-configurable path as the path for the buffer.

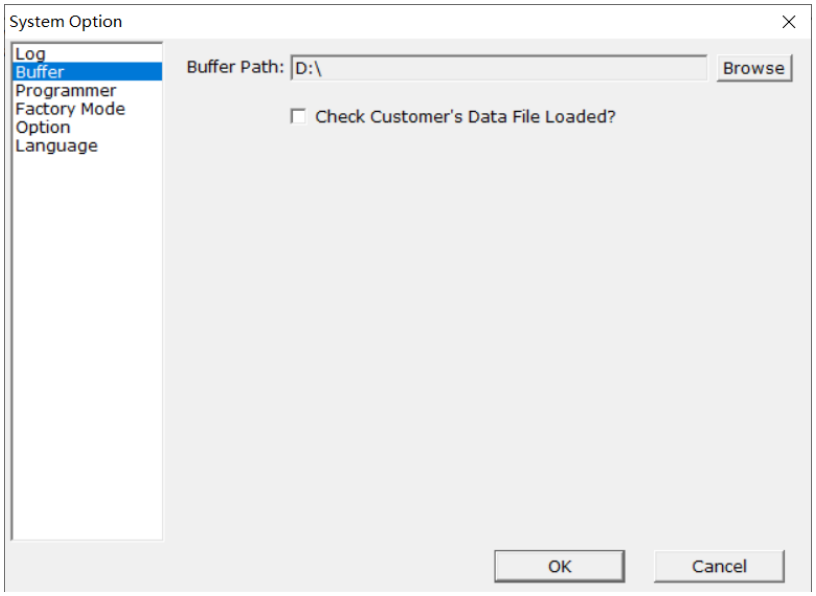


Figure 1.7.8-2 Buffer configuration information

Click on **Programmer** to see the interface shown in figure 1.7.8-3, under which you can set the status of the Buzzer, tick **Enable Buzzer** to enable the buzzer, otherwise, you can also set the backlight time of the Programmer. Show each data log time tag or the socket life cycle time notification.

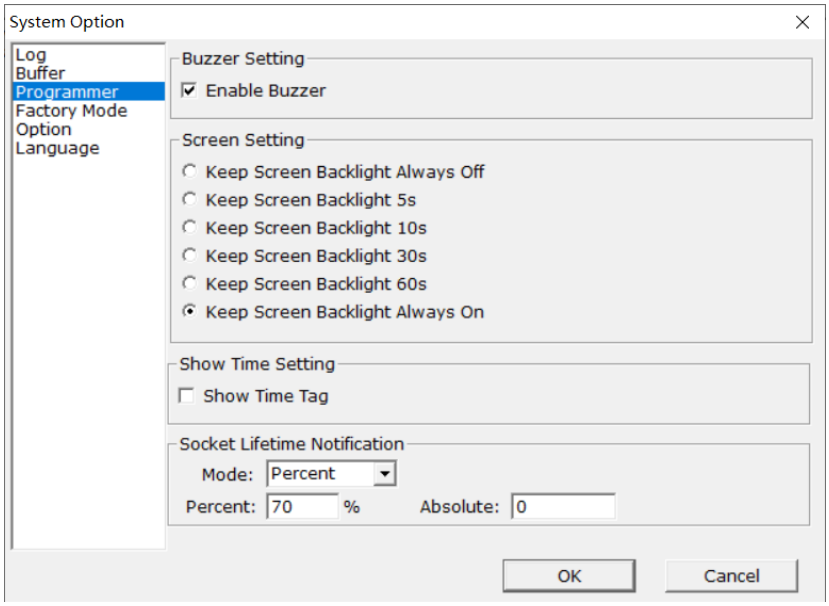


Figure 1.7.8-3 Programmer configuration information.

Select the **Factory Mode**, and the interface as shown in figure 1.7.8-4 will appear. Under this interface, you can set the password. Tick **Factory Mode Enable** to Enable the Factory Mode, the default setting is not enabled. You can also select enable features such as “Enable program” to indicate that these functions can be supported only if the password matches.

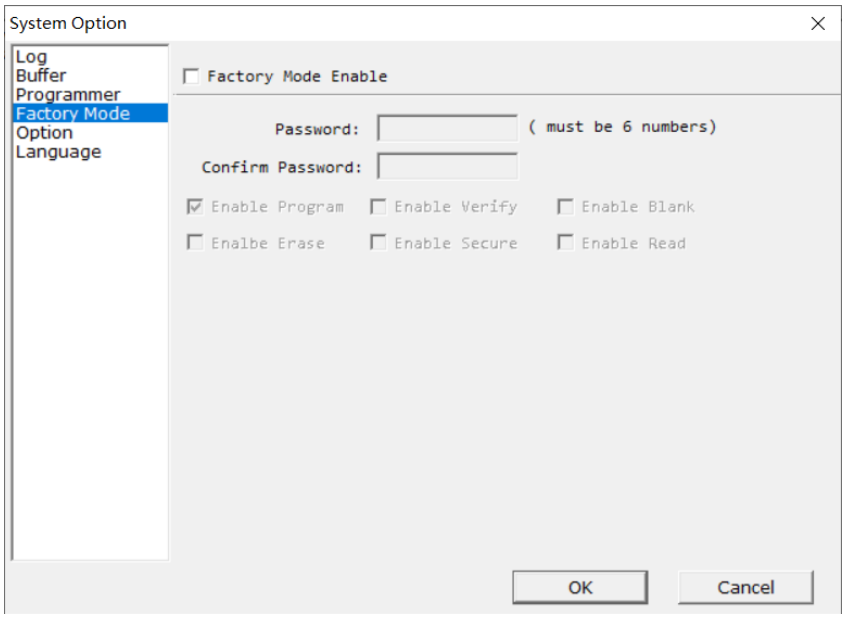


Figure 1.7.8-4 Factory Mode configuration

Select the “**Option”** Tab to select the checksum type as shown in figure 1.7.8-5. Within this interface, you can set the File checksum type, and enable **“Nand load using complicated mode”** to load and use complex mode, the default is disabled.

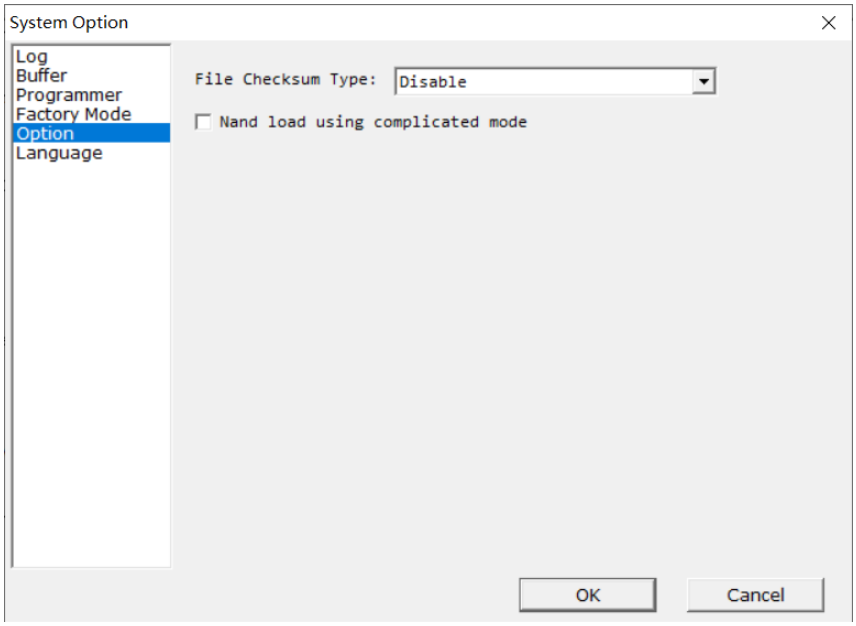


Figure 1.7.8-5 Option configuration information.

Click on the **Language tab** to enable the language selection**.** Refer to the following figure 1.7.8-6, where you can set the display Language of the software to either simplified Chinese or English.

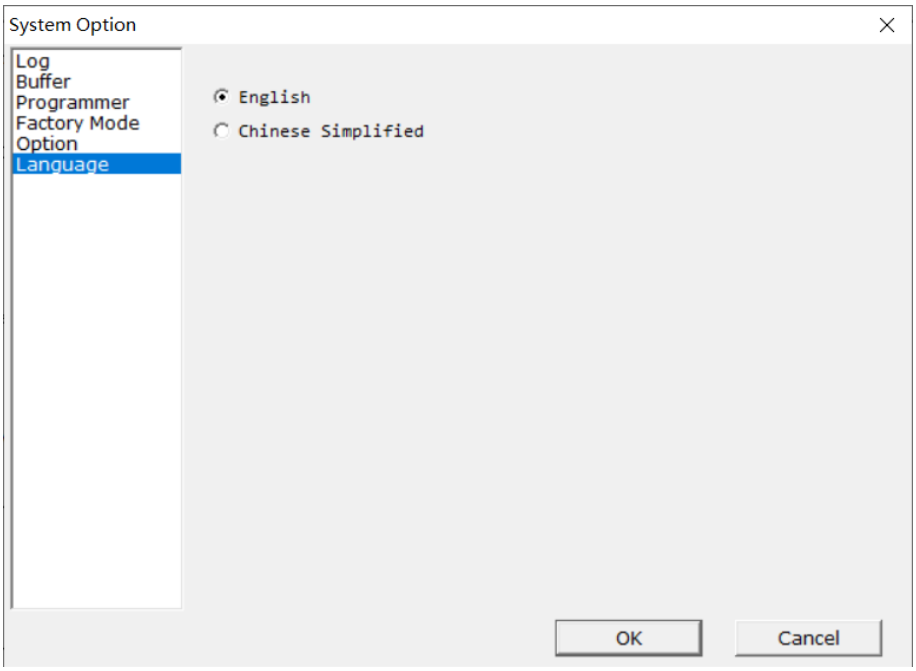


Figure 1.7-8.6 Language configuration

1.7.9 Mass production mode setting

The created Project files for SG8000 and be download by MultiSG8000.exe for mass production, click on **Project|Create/Edit Project...** to bring up the following interface (figure 1.7.9-1.)

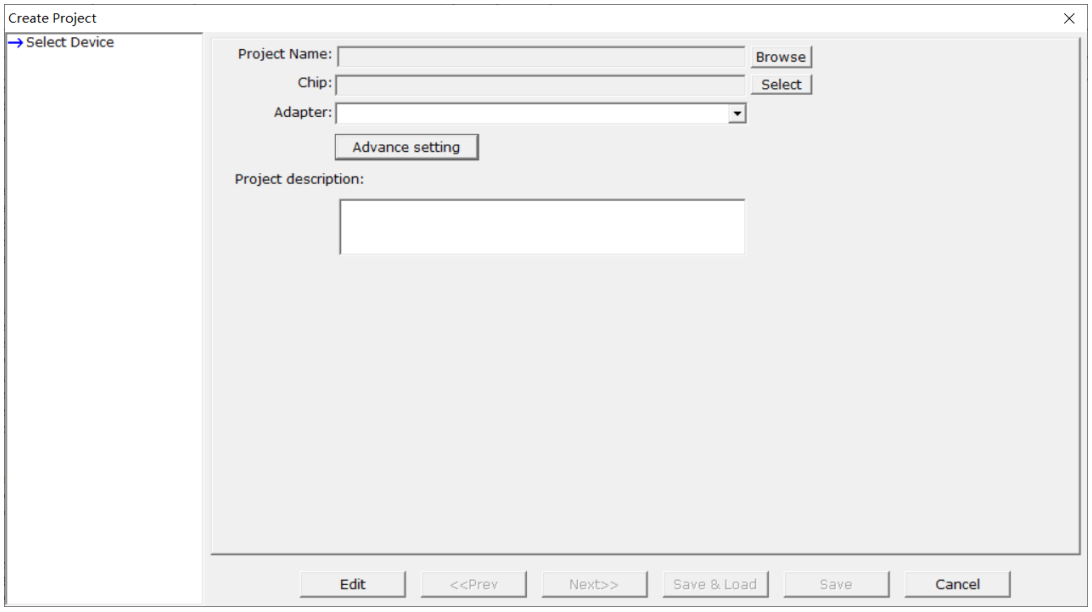


Figure 1.7.9-1 Project file

Click on the **Advance setting** button to set up the detail setting in the project. Refer to the following figure 1.7.9-2.

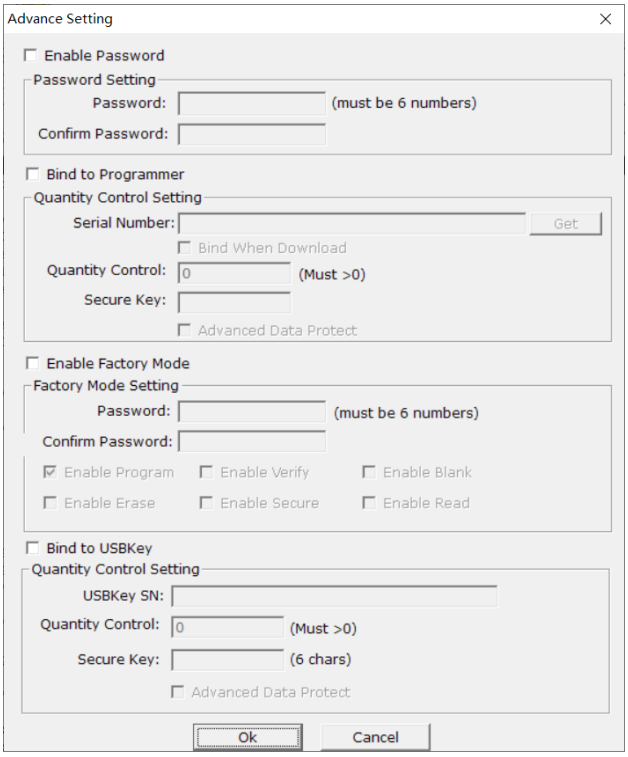


Figure 1.7.9-2 Advance setting for the project.

Users can bind the mass production project with the dedicated programmer machine. Select "Bind to Programmer" (shown in the above figure). When the programmer is online, click on the “get” tab then the available programmer’s serial number will be presented on the screen for the user to choose or the user can enter the serial number manually.

Quantity Control is indicated by using the decimal number, and “0” indicates that there is no mass production limit. The project file includes the Quantity Control Setting when this function is enabled. After the Quantity Control is set then the mass production can only be programmed at the specified quantity.

Secure Key is the secret Key, containing 8 characters, and the legal characters are 0-9, a-z, A-Z. The secure key should be in the custody of the person who created the project (System General Limited will not assume responsibility for any problems caused by the leaking secure key). If Advance Data Protect is checked, which indicates that advanced encryption protection is needed for users' Data. If this is checked, the programming process will be slower than unchecked, but the protection of programmed data is more effective.
When programming for the first time, the programmer will generate an 8-bit Random Code. The user creates the project by using the Random Code. Input the Random code in the pop-up dialog of **Utilities|Check Code Generator...**, shown in figure 1.7.9-3.

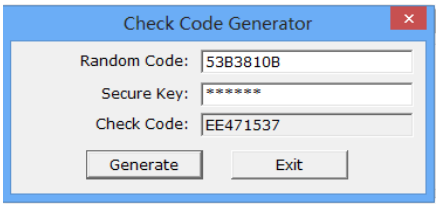


Figure 1.7.9-3 Check code generator.

Follow by entering the Secure Key, and then click the **Generate** button to generate an 8-byte Check Code. The generated verification code is passed to the programming personnel, who will input it and verify it before entering the normal programming process. If the validation fails, an error is prompted. If offline, the random code will be displayed on the screen of the machine; if online, a dialog box will pop up, requiring the input of verification code, as shown in figure 1.7.9-4 below. This key function is also available for Quantity Control.

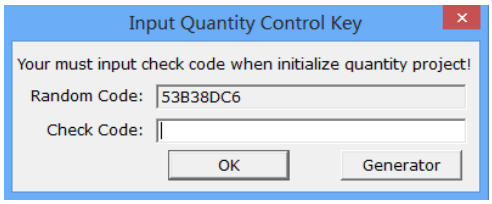


Figure 1.7.9-4 Input Quantity Control Key

1.7.10 Factory mode setting

The SG8000 can be used to create project files that support the factory mode, reduce the operating authority of the programming personnel and achieve the purpose of reducing errors and improving production flow safety. To enable factory mode, click Project|Create/Edit Project... Check "Enable Factory Mode" in the popup interface below, and enter the password twice. The password is kept by the project creator (if the problem is caused by leaking the password, please be responsible for the consequences). The length of the password is 6 characters, and the legal characters are 0-9, a-z,a-z. As shown in figure 1.7.10-1.

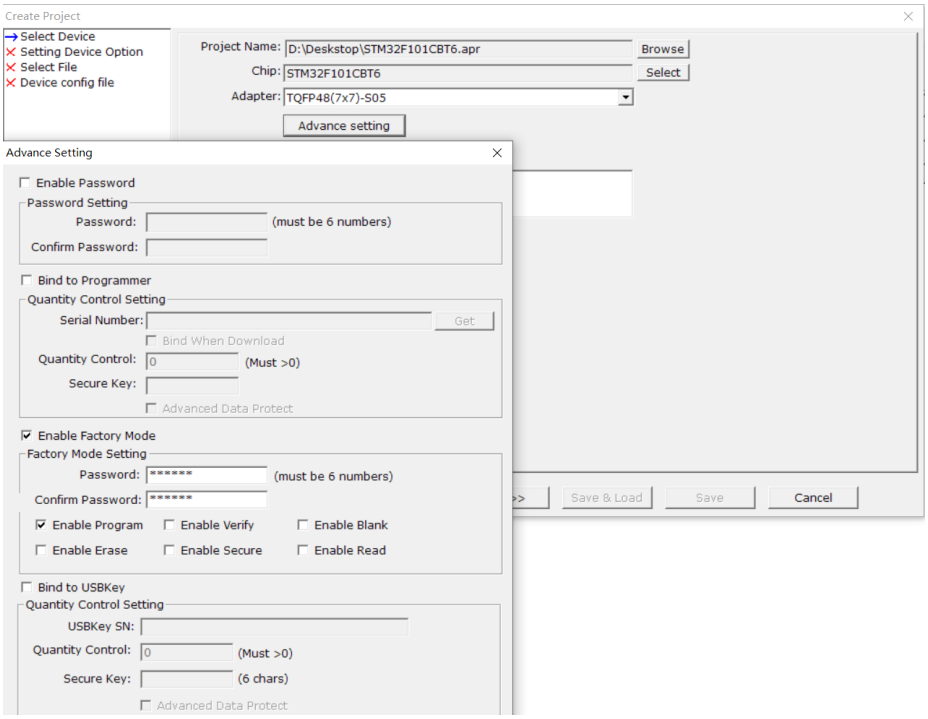


Figure 1.7.10-1 Enable factory mode.

Under “Factory Mode”, the user can set the password to the programming operations by making the selection in the “Factory Mode setting” box. If the corresponding options are checked, these operations are implemented in factory mode. In the “Normal Mode”, the selected operations are not supported. To switch back to normal mode, click the menu of **Utilities|Factory mode unprotects...**, then enter the password in the dialog box shown in figure 1.7.10-2 to switch it to normal mode.

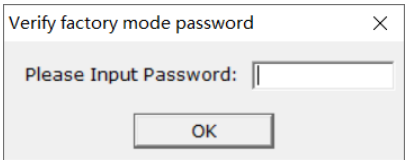


Figure 1.7.10-2 Password input box for switch normal mode

Open the project file with factory mode enabled, and the activated function buttons which allow actions will light up. The other functions which are not activated are gray out. As shown in figure 1.7.10-3.

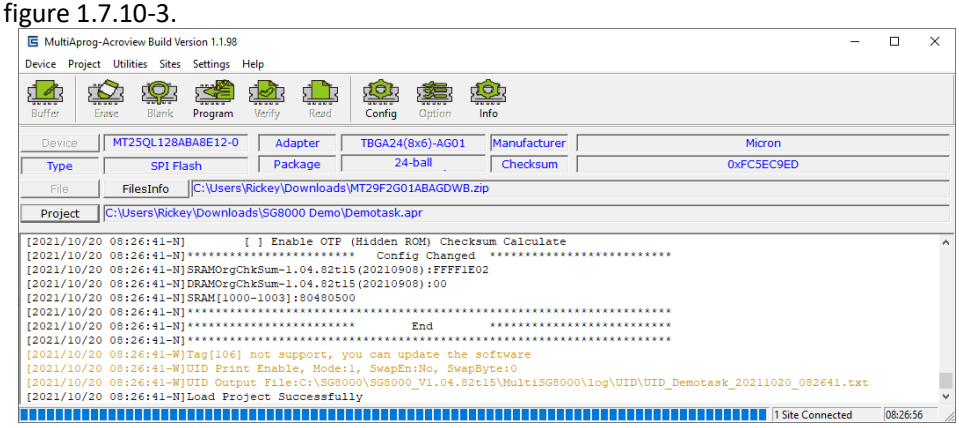


Figure 1.7.10-3 Operation icon in factory mode

1.7.11 Screen display Setting

The User can arrange the screen to display the needed information. Click on "**Window|System"** in the menu bar and only specified system information will be displayed on the screen, as shown in figure 1.7.11-1. If **Window|Device** is selected, the screen will display not only the system information but also the communication information transmitted from the programmer to PC, as shown in figure 1.7.10-2.

```
[2019/05/17 11:49:45-N]Acroview Programmer started, Software version 1.1.60, Build version V1.04.25(20190511)
[2019/05/17 11:49:45-N]Firmware V0.75 (20190507)      DevType: AP8000
[2019/05/17 11:50:15-N]Checksum calculating...
[2019/05/17 11:50:16-N]Checksum calculated : 0xFE000000 - Byte
[2019/05/17 11:50:16-N]Selected device : Spansion S29GL256S10TFV01 [TSOP56(14x20)-AG01]
[2019/05/17 11:51:05-N]Checksum calculating...
[2019/05/17 11:51:05-N]Checksum FE000000
[2019/05/17 11:51:23-N]Selected device : Spansion S29GL256S10TFV01 [TSOP56(14x20)-AG01]
```

Figure 1.7.10-1 System displays information.

```
[2019/05/17 14:11:45-N]Acroview Programmer started, Software version 1.1.60, Build version V1.04.25(20190511)
[2019/05/17 14:11:45-N]Firmware V0.75 (20190507)      DevType: AP8000
[2019/05/17 14:11:46-N][A]BottomBoard detecting
[2019/05/17 14:11:48-N][A]Find BtmBoard-AG01 in
[2019/05/17 14:11:54-N][A]Hardware configuring......
[2019/05/17 14:11:54-N][A]Gang8 Hardware configuring......
[2019/05/17 14:11:59-N][A]Hardware Configure passed
[2019/05/17 14:11:59-N][A]Install driver passed
[2019/05/17 14:12:00-N][A]Download chipdata passed
[2019/05/17 14:12:00-N]Initialize buffer...
[2019/05/17 14:12:01-N]Initialize buffer complete.
[2019/05/17 14:12:01-N][A]Download config passed
[2019/05/17 14:12:01-N]Checksum calculating...
[2019/05/17 14:12:01-N]Checksum calculated : 0xFE000000 - Byte
[2019/05/17 14:12:01-N]Selected device : Spansion S29GL256S10TFV01 [TSOP56(14x20)-AG01]
```

Figure 1.7.10-2 Device displays information.

1.8 Network parameter configuration

Network Manager is a separate network parameter configuration tool. Select the menu "Utilities | Network Manager..." to start the Network Manager. Refer to the following operation interface (figure 1.8-1).

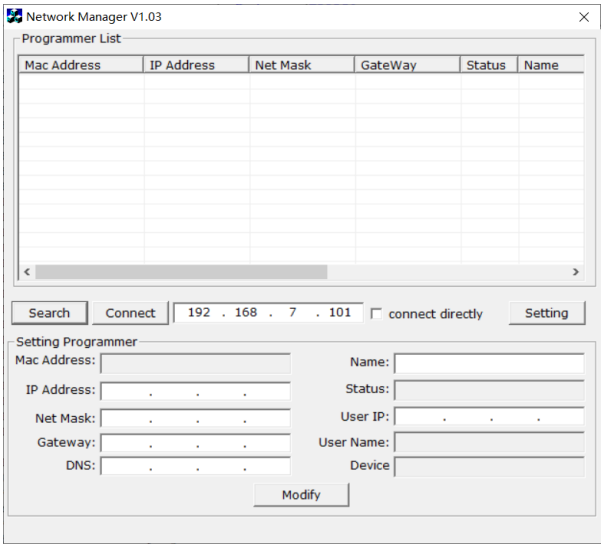


Figure 1.8-1 Network Manager

Notes: The PC and the programmer have to be in the same segment of the local network, it is recommended that set the PC IP as 192.168.7.100, and the available IP range for the programmers in the same segment is from 192.168.7.101 to 192.168.7.254.

Click on the “**Search”** button to search for all the available programmers on the segment, refer to the following picture (figure 1.8-2).

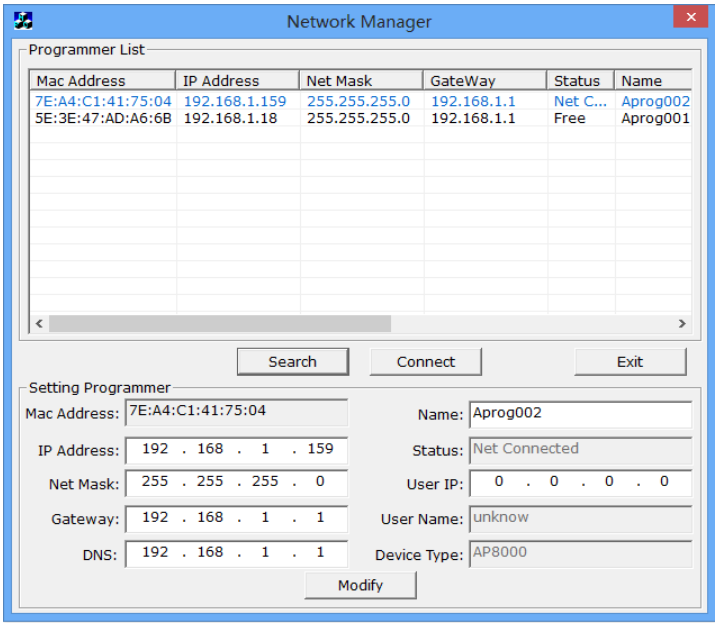


Figure 1.8-2 Scanning programmers on the segment.

Fill up the IP information related to the selected Mac address in the **Setting Programmer** box. Then click on **Modify** tab to save the setting. If it succeeds, it will prompt for success and Modify the **Programmer List** above; if it fails, the Network Manager will prompt the error message.

Note 1: The programmer on the same segment must have a unique IP address, no two programmers can have the same IP address. A DHCP service can be enabled through the programmer's menu so that the programmer will automatically get the IP address.

Note 2: you cannot modify a programmer that is currently connected or executing a command.

Network Manager also provides a quick connection function. Select the programmer you want to connect to and click the **Connect** button to start the software and automatically Connect to the programmer.

1.9 Standalone operation instructions

1.9.1 Startup interface

If the self-check is successfully done after the SG8000 is powered up, then the screen on the SG8000 will appear as shown in figure 1.9.1-1.

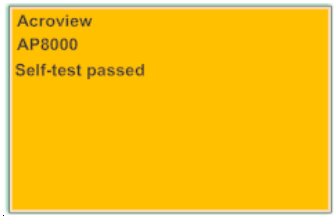


Figure 1.9.1-1. The programmer interface after startup

If a self-check error occurs, a “self-test failed” warning is prompted. The User needs to re-start the SG8000 (Power up again). If it still fails, please contact System General for RMA service.

1.9.2 Introduce the menu and operation

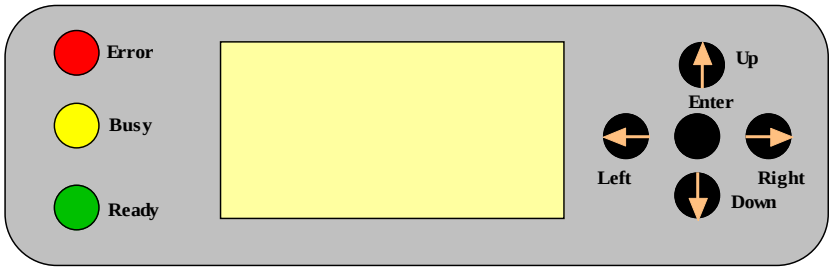


Figure 1.9.2 Schematic diagram of the programmer panel

The three lights (red, yellow, and green colors) on the left side of the panel represent different programming states. In the middle is the LCD screen, which is used to display the status. The arrangement of the five keys on the right is shown in figure 1.9.2.

1.9.3 Root menu and operation

After power on the SG8000 programmer and pass the self-check, press any key to enter the Root menu interface.

Figure 1.9.3-1 Root menu

Under the Root menu, two subitems are available - Project and System. Press **Enter (up key)** to enter the selected submenu, and press the "**Left" key** to return to the Root menu.
For Project subitems, please refer to the "Project menu and operation" section (1.9.3.1). For System subitems, please refer to the "System menu and operation" section (1.9.3.4).

1.9.3.1 Project menu and operation

Press **Enter (up key)** to enter the Project submenu. When No SD card is inserted, a warning "No card in the socket!" will be prompted. When an SD card is inserted, all project files in the root directory of the card will be listed. If the name of the project file exceeds the number of characters that can be displayed in one line, a scrolling display is performed. Please format the SD card with FAT32 format.
Press **up and down** to select the project file; Press **Enter** to start parsing the project file, prompting "Loading project..." If the selected project file does not match the current mounted adapter socket board/card, a prompt for "Load project fail!" is displayed. If the action works successfully then the information about the project file is displayed (with the Job the View menu items). If the project is not the right one that you want to choose, press the left key to go back to the project list. If it is the project that you want to choose, press the Enter key, Enter the Job menu interface (refer to the **Job menu and operation** to see the menu operation), press the left key to go back to the parent menu.

1.9.3.2 Job menu and operation

After the Project is properly confirmed, press Enter to Enter the Job menu (see the **Project menu and the operations** section (1.9.3.1) for actions, which displays the contents shown in figure 1.9.3.2-1.

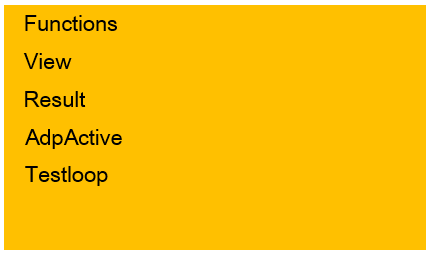


Figure 1.9.3.2-1 Job menu.

Press up and down to select subitems. Press **Enter** to Enter subitems and press the left key to go back to the list of project files to re-select the other projects.

a) Functions subitems

This subitem displays commands-related operations. Please refer to **the "function command menu and operation"** section (1.9.3.3) for details.

b) View subentry

This subitem displays information related to the project:

Figure 1.9.9.3-2 View displays information

Including:

- The "Prj" is the currently selected project file. If the display content exceeds the display range, it will be displayed in a scrolling way.
- The "Dev" displays the chip name.
- The "Sum" is a check value of 4 bytes, expressed in hexadecimal.
- The "Mfr" is the name of the chip manufacturer.
- The "Adp" is the name of the socket board adapter.
- The "Pck" is the name of the chip package.
- The "Ver" is the version of the driver.
- The "Date" is the compile-driven Date.

Examples of values are as follows:

Figure 1.9.9.3-3. Example of View information display

After entering the View subitem, press the left key to return to the parent menu.

c) Result subitem

This subitem displays the status of the programming result:

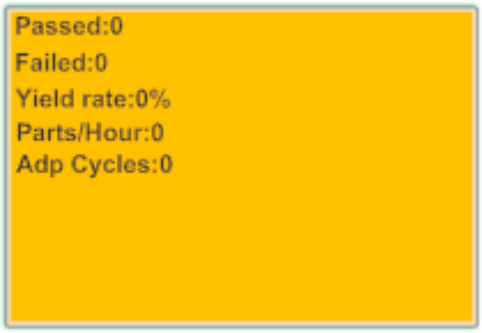


Figure 1.9.9.3-3 Result shows the information.

Including:

- Passed: indicates the total number of passes of various operations performed on the selected project file.
- Failed: shows the total number of Failed operations for the selected project files.
- Yield rate: is the productivity rate, and the value is the sum of Passed divided by the value of the sum of Passed and Failed. It is displayed as a percentage, and 1 decimal is reserved.
- Parts/Hour is the IC quantity that can be programmed in unit time (1 Hour).
- Adp Cycles: the number of times used as an adapter.

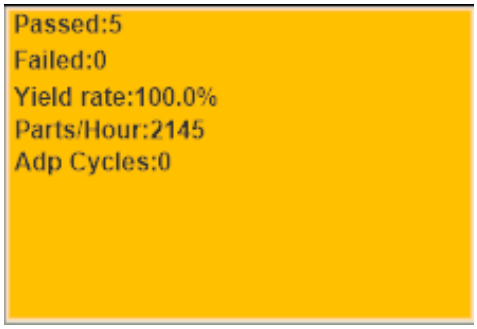


Figure 1.9.9.3-4 Result status.

Press the left button to return to the parent menu.

d) AdpActive subitem

This subitem controls whether the site is enabled or not.

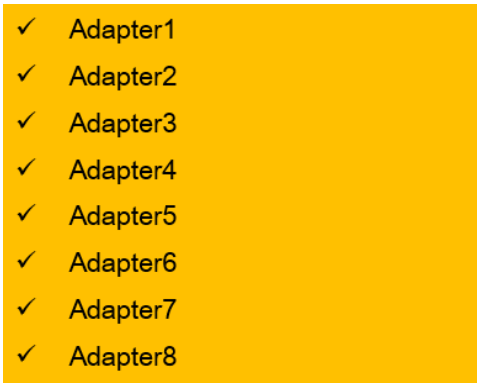


Figure 1.9.9.3-5 An example of sites enablement

e) Testloop subitem

This subitem displays information related to the setting of volume production count.

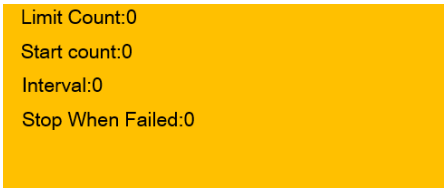


Figure 1.9.9.3-6 Setting of mass production count.

1.9.3.3 Function command menu and operation

Press **Enter** to Enter the function command menu from the Functions subitem of Job, which is shown as follows:

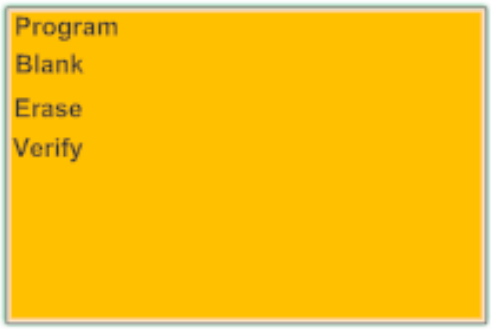


Figure 1.9.9.3-1 Command operation interface

The commands displayed in this menu are related to the configuration in the project file. If the project configuration only allows Program, then there is only Program command shown, and if there are other options, the other commands will be displayed. Read operation is not supported in standalone mode, so even if there is a Read configuration in the project file, it will not be displayed. Press the up and down key to choose commands, press Enter to start the command execution, programming process medium yellow lights, and have the information printed on the screen if the buzzer state set to "On" (please see the specific operation method and operating the System menu section(1.9.3.4)), and the buzzer rang when the green light is on, and the screen shows "pass". Two loud buzzers rang and a red light means programming "fail". Only after one programming session ended, the user can press Enter to start the command again after programming. If IC auto-sensing is on, "Removal Auto checking..." will be displayed on the screen after one programming and if you pick up the IC, the yellow light will continue to flash, and the screen will show "Insertion auto checking...", automatically starts the selected command when you put IC again. To return to Functions, press the left button.

1.9.3.4 System menu and operation

This menu displays system information and executable options, including the following sub-items:

a) Update

When upgrading the card, the firmware with suffix FWM should be put into the root directory of the card. If there is no firmware with suffix FWM in the root directory, "Sorry, no files found!" will be prompted. If it exists, press **Enter** to list all the firmware in the root directory.

After the firmware is selected by pressing the up and down keys, then press Enter to initiate the upgrade. Before upgrading, a prompt box will pop up to confirm. Select "NO" by default.

b) Time
To set the system Time, please refer to the "**Time Settings**" section.

c) Version
To view the relevant Version information, after entering Version, you can press the left key to return to the **System sub-item**.

d) Hostname
To display and set the Hostname, see the section "**Hostname Settings**."

e) Network
To display and set Network information, see the section "**Network menu and operation**".

f) Backlight
To set the backlight status, go to this menu and select "Always On" to indicate normally turn on, "Always Off" to indicate normally turn off, and 5,10,30,60 Seconds to indicate turn Off the backlight after 5, 10, 30, and 60 Seconds without any button presses, and the backlight is turned on again when a key is pressed.

g)Buzzer
It is used to set the use of the buzzer. There are two options "On" and "Off" in this menu, which respectively means turn On and turn Off the buzzer.

h) ShowtimeTag
Used to display the time required for each operation.

i) BottomBoard Hotplug
Open or close the hotplug of the bottom board, which is used to check whether the bottom board is for single or gang 8.

j) About
Used to display the model, serial number, company website, and phone number.

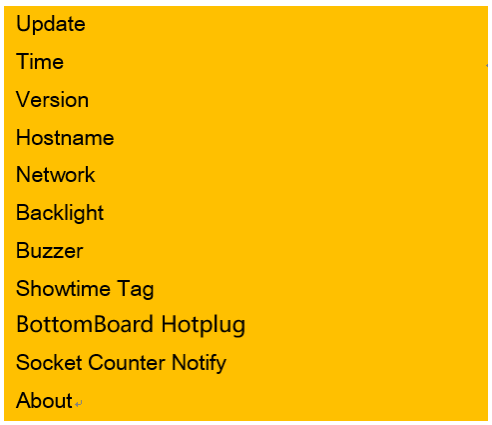


Figure 1.9.3.4 System menu interface

1.9.3.5 Time Setting

Select Time under System and press **Enter** to Enter the Time setting. See the interface as shown in figure 1.9.2.5

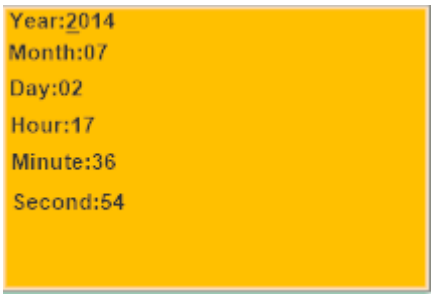


Figure 1.9.3.5 time setting interface

After entering the Time setting interface, the underlined number represents the focus currently set. Press the left and right keys to move the cursor, press the up and down keys to change the number at the cursor, and press Enter key to change the row where the cursor is. Once press Enter key, the cursor moves down one row, and press Enter key after the last row then on-screen will prompt "Setting succeed!" and press Enter to return to the System subitem.

1.9.3.6 Hostname setting

After entering the Hostname setting, the interface is shown in figure 1.9.2.6, SG8000 is the default programmer name.

Figure 1.9.3.6 Hostname setting interface.

Press Enter to set the name of the programmer and left to return to the System subitem.

When the **Enter** key is pressed, a virtual keyboard appears on the bottom two lines of the screen. And A cursor appears before the initial A of SG8000.

After the virtual keyboard appears, the currently selected character is in the reverse display state. Press left and right keys, up and down keys to change the selected character. Since two lines of characters are displayed on one page, and there are four lines for the virtual keyboard, if you want to select lowercase letters, press the key on line A, and lowercase letters will appear. If you want to Enter the selected character, press Enter, and the character is inserted where the cursor is.

Definition of special symbols:

→：(keyboard right) the cursor moves to the right when the character is selected and the **Enter** key is pressed.

←：(keyboard left) when the character is selected and the **Enter** key is pressed, the cursor moves left.

↵ ： (keyboard enter) When the character is selected and the **Enter** key is pressed, the virtual keyboard disappears and the cursor disappears.

␣ ： (keyboard space) when the character is selected and the **Enter** key is pressed to indicate that a space is to be entered.

× ：(keyboard delete) When this character is selected and the **Enter** key is pressed, it indicates the character where the cursor is to be deleted.

1.9.3.7 Network menu and operation

Select Network from the System menu and press **Enter** to Enter the Network menu. The display interface is shown in figure 1.9.3.7

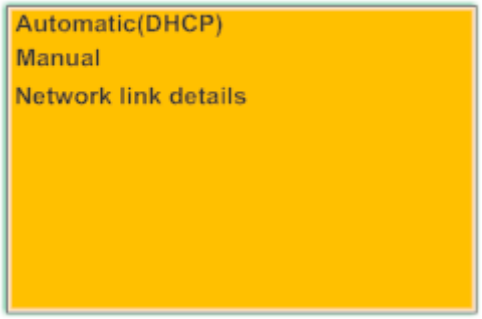


Figure 1.9.3.7-1 Network menu

In this interface, press up and down keys to select subitems, and press **Enter** key to Enter subitems.

a) Automatic（DHCP）

Select this item to indicate that the IP address for this SG8000 needs to be configured automatically with DHCP. When the subitem is selected, press **Enter** to configure IP automatically. If The programmer is in the USB or network connection state, or is on the stage of programming, setting IP address is not allowed, then The machine prompts "The programmer is not in idle".

If the machine is idle, it is prompted to get the IP address... If the configuration succeeds, "Config succeed!" will be displayed. Otherwise, "Config fail!" is displayed. If the network is not connected or the network connection fails, "The physical link is down, please link first!" will be displayed. Press **any key** to return to the Network menu after the connection is not made. The specific configuration information can be seen in the Network link details.

b) Manual

Select this item to indicate that you need to configure the IP address manually. When the subitem is selected, press "Enter" to enter the manual configuration menu. For manual configuration of IP address, see the section **"manual configuration of IP address menu operation"** (1.9.3.8)

c) Network link details

Select this item to display specific information about the current network connection. When the item is selected, press **Enter** to enter the item. The display interface is shown in figure 1-10-16.

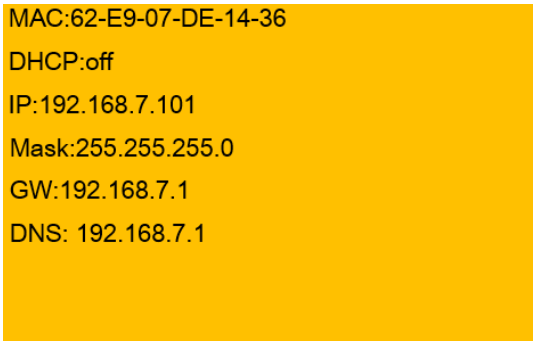


Figure 1.9.3.7-2 Manually setting the network information interface.

The first line shows the MAC address of the programmer.
The second line shows whether DHCP is used.
The third line shows the current IP of the programmer.
The fourth line shows the current subnet mask.
The fifth line shows the current gateway.
The sixth line shows the DNS server address.
Press the left button to return to the Network menu.

1.9.3.8 Manually configure IP address menu operation.

Select the Manual subitem from the Network menu, and press Enter to Enter the Manual configuration IP address menu. The display interface is shown in figure 1.9.3.8

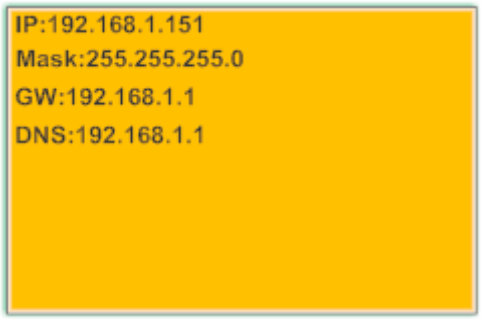


Figure 1.9.3.8 Manually setting the network information interface.

The first line is the IP address of the current programmer.
The second line is the subnet mask.
The third line is the gateway.
The fourth line is the DNS server address.
Press up or down to select the subitems you want to set. Press Enter, the cursor appears in the IP address header of the selected subitem, and a virtual keyboard appears at the bottom of the interface. After setting the address according to your own needs, select the keyboard Enter key to exit the setting. See the section "**Hostname Settings**" for specific keyboard operations.
After setting each IP, press the left key, and the system will automatically set IP. If successful, prompt "Config succeed!" Otherwise, prompt "Config fail!", then press **any key** to return to the Network menu.

2.0 Electrical Requirement and CE Safety information

a) Operating voltage : 100 to 240 VAC.

b) Power Consumption : 37.5 watts.

c) AC power frequency : 50 to 60 Hz.

d) Operation tempeture range is 0 to 50℃.

e) Main plug is used as the disconnect device, the disconnect device shall remain readily operable.

f) Please refer the information on exterior bottom enclosure for electrical and safety information before installing or operating the apparatus.