



Nanjing Linko SemiConductor Co., LTD

User Maunual for LKS665B

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edition	Modify the time	modifier	Modify the instructions
1.0	2021-11-23	Wucf	Document creation
1.0.1	2022-02-23	Wucf	Modify the top injection description to adjust the order in the picture
1.0.2	2022-06-24	Wucf	Add serial port IAP programming instructions
1.0.3	2023-03-24	YangLei	Increase in speed patterns and the HID usage instructions
1.0.4	2023-08-01	YangLei	Machine output signal and official website update instructions
1.0.5	2023-12-06	YangLei	Add the 665B instructions and the English version

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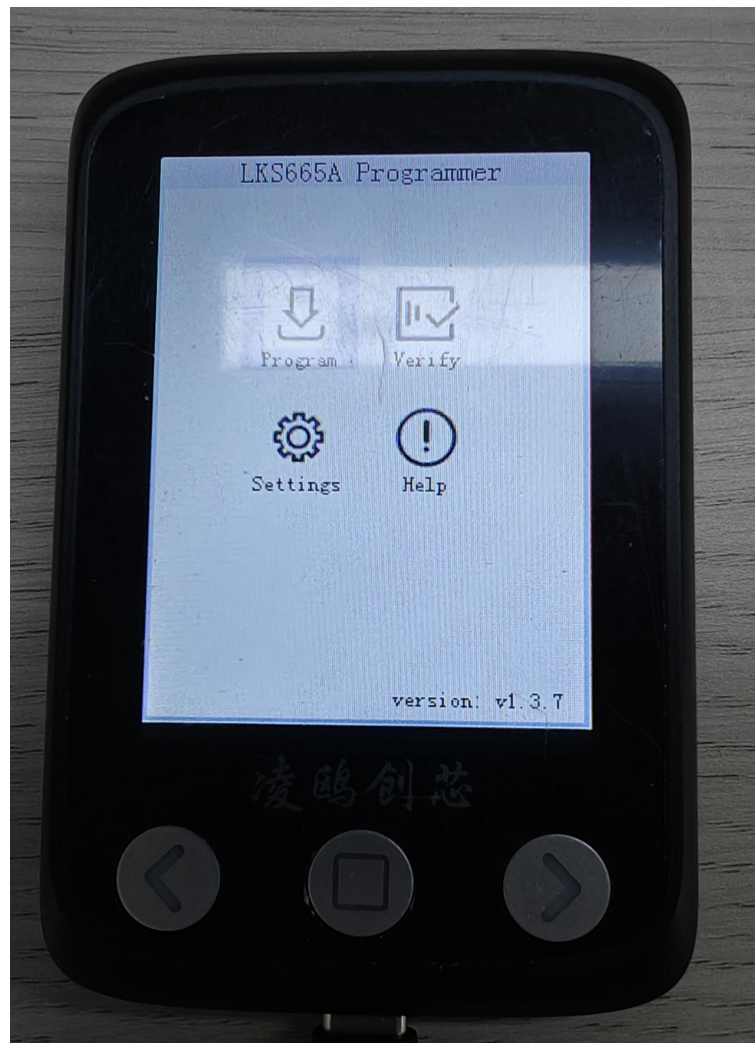
1. Instructions

LKS665B programmer is LKS series chip dedicated offline download, support L KS32MC06X, L KS32MC08X, L KS32MC05X, L KS32MC03X, LKS32MC07X, LKS32MC45X and other series, subsequent continuous update, support SWD and serial IAP download.

You need to use the computer software to package and configure the image for the programmer. After configthe upper machine image, the programmer is used independently, and the programmer is connected with the upper machine through USB.

2. Interfaces

2.1. Front



LKS665B(A)

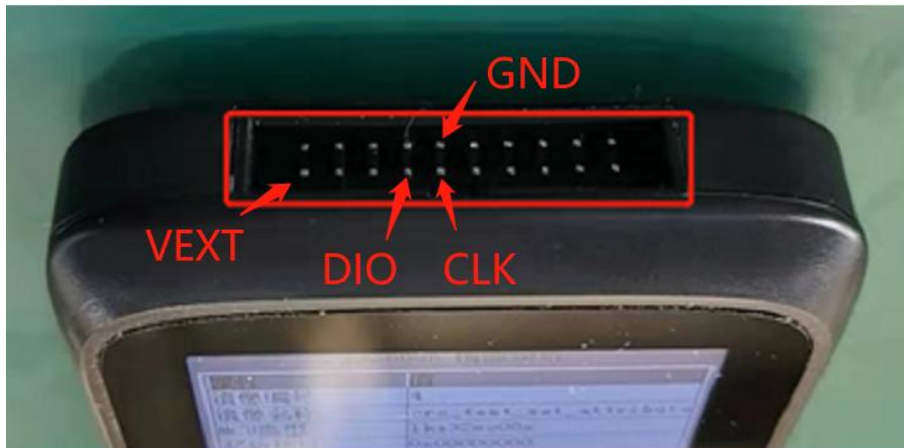
LKS665B(A) The programmer looks like that as shown above. The front has a 2.8-inch LCD screen and three buttons for human-computer interaction.

Short press the left and right keys to select the focus control, and turn the page.

Short press the middle key to confirm the selection, and long press the middle to indicate the forced return.

There are LED lights under each button, which indicates that the button is pressed.

2.2.Top



Top 20 Pins

LKS665B(A) has 20 pin headers on the top side, used to connect the download target board and machine signal. As shown in the figure above, place the programmer, from top to bottom, from left to right, and define the function of each needle row from left to right. When programming, connect at least four pins with bold marks below.

	1	2	3	4	5	6	7	8	9	10
Back Side Pins	VEXT	GND	GND	GND	GND	GND	GND	GND	5V	BELL
Front Side Pins	VEXT	S TART	RESV	DIO	CLK	BUSY	SUCCESS	FAIL	TXD	RXD

- 5V: External 5V power supply is available to power the programmer.
- BELL: Output buzzer signal, synchronized with the buzzer signal, low effective.
- VEXT: The positive terminal voltage used for SWD download.
- DIO: DIO Signal for SWD.
- CLK: CLK Signal for SWD.
- GND: GND.
- START: The Start signal of the receiving machine is valid at low levels and maintained for at least 80ms.

- **BUSY:** The Busy signal sent to the machine is valid at a high level and is maintained from the beginning of the download until the end of the download
- **SUCCESS:** The Success signal sent to the machine is valid at high levels and lasts from the completion of the download until the next download (level output mode).
- **FAIL:** The fail signal sent to the machine is highly effective and lasts from the current download failure until the next download (level output mode).
- **TXD:** When using serial port IAP, the serial port data output.
- **RXD:** When using serial port IAP, the serial port data input.

2.3. Bottom



Bottom, Type-C interface

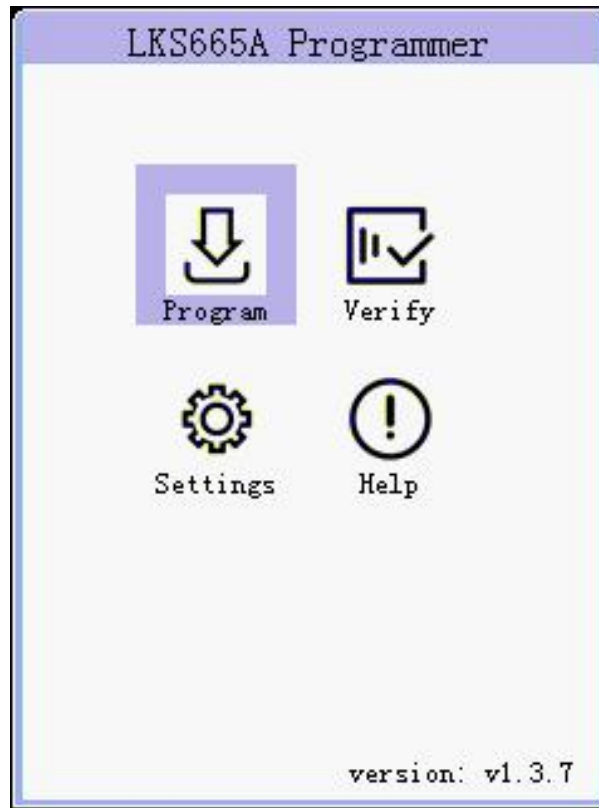
At the bottom is the Type-C USB interface, which can be used for power supply and PC connection.

3. Function Descriptions

LKS665B Compared with LKS665A, the programmer adds short circuit, Reverse connection, anti-ESD, overcurrent, hot plug and other protection on the hardware.

The software and A version or use the same. PC software compatible with two programmer.

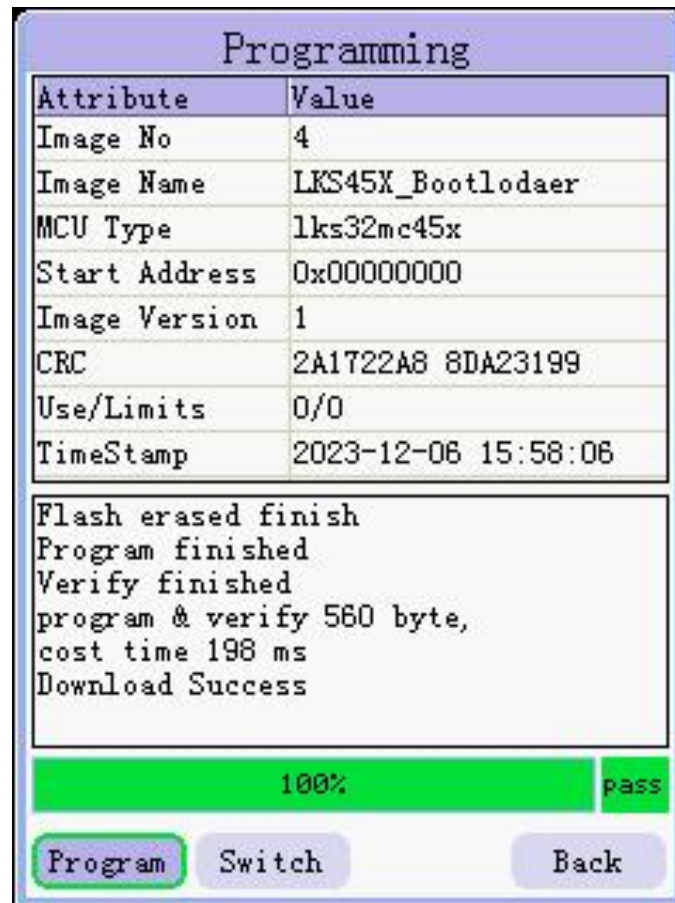
3.1.Main Page



Main Page

After the programmer powers on and starts, stay in the main interface, and the current firmware version is displayed in the lower right corner of the interface. It contains four function items, program, verify, settings, Help, can use the key to switch after entering.

3.2. Programming



Attribute	Value
Image No	4
Image Name	LKS45X_Bootlodaer
MCU Type	lks32mc45x
Start Address	0x00000000
Image Version	1
CRC	2A1722A8 8DA23199
Use/Limits	0/0
TimeStamp	2023-12-06 15:58:06

Flash erased finish
Program finished
Verify finished
program & verify 560 byte,
cost time 198 ms
Download Success

100% pass

Program Switch Back

image programming information

Go to the [Program] page to display the image information used during the last operation.

On the Programming page, select and confirm the [Program] button, or send a valid signal to the START pin. The text box and progress bar at the bottom of the screen display the download progress and download results. At the same time, send Success, Busy, Fail and other signals to the machine.

LKS665A Images			
No	Name	CRC1	Avail
00	null	00000000	+∞
01	null	00000000	+∞
02	LKS03_PROG	C8560EBE	+∞
03	null	00000000	+∞
04	KS45X_Bootloader	2A1722A8	+∞
05	null	00000000	+∞
06	null	00000000	+∞
07	null	00000000	+∞
08	null	00000000	+∞
09	null	00000000	+∞

image selection

If you need to switch the image, select and confirm the [Switch] button to enter the image selection page. The programmer can be configured with 50 encrypted and can limit the number of download images, image number range 00 to 49. Can be configured with 100 extended images, unencrypted and limited download times, the range of 50 to 149, a total of 150 images.

Short press the external left and right buttons to switch entries, long press to turn the previous or next page.

Short press the external middle button to confirm the entry, long press to force the return, do not switch the image.

3.3. Verifying

Verifying

Attribute	Value
Image No	4
Image Name	LKS45X_Bootlodaer
MCU Type	lks32mc45x
Start Address	0x00000000
Image Version	1
CRC	2A1722A8 8DA23199
Use/Limits	0/0
TimeStamp	2023-12-06 15:58:06

Verifying...
SWD init success
Read flash success
read flash crc is:8DA23199
CRC correct
Verify success

100%pass

Verify

Switch

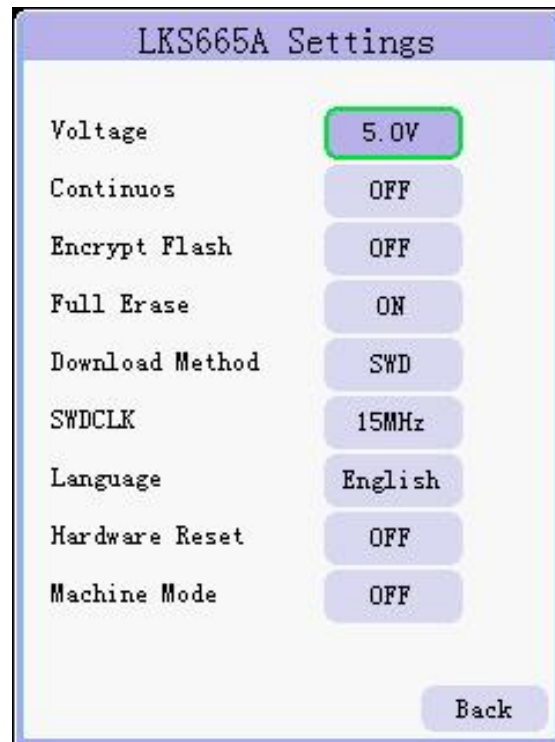
Back

Image verify

Go to the verify page to display the image information used during the last operation.

On the verify page , select and confirm the [verify] button, or send a valid signal to the START pin, both can trigger a check. The text box and the progress bar at the bottom of the screen display the calibration progress and the calibration results. At the same time, send Success, Busy, Fail and other signals to the machine.

3.4.Settings



Settings page

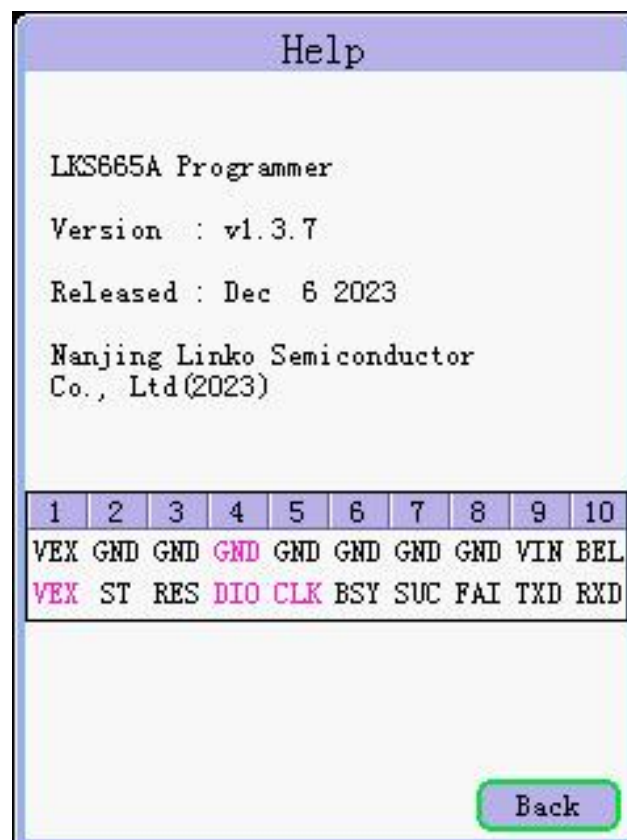
The settings page contains several sets of parameter settings shown in the figure above.

- Voltage: Control the download port output 5V or 3.3V voltage, which is the VEXT in the top row needle.
- Continuous: Whether the continuous download mode is enabled. In continuous mode, when you stay in the download interface, the target board will automatically download without Press the button.
- Encrypt Flash: Encrypted MCU Flash switch after programming. If the image itself is encrypted, the parameter is ignored and Flash is forcibly encrypted.
- Full Erase: Control the programmer to full-erase or sector-erase Flash before programming. If Flash is encrypted, the parameter is ignored and forced full-erase.
- Download Method: Support SWD download and serial port IAP download. Serial port IAP download requires the MCU itself to have a Bootloader to trigger.
- SWDCLK: When the download method is selected as SWD, it takes effect. Configure the clock frequency of SWD. The higher the clock frequency, the faster the programming speed. The lower frequency is suitable for situations where the chip's SWD interface has resistance capacitance or the connection line is too long and communication is not good.
- Language: Select the language displayed in the programmer interface, and support both Chinese and English.

- **Hardware Reset:** Quickly reset the MCU and Halt it before programming, suitable for programming programs that reuse the SWD interface of the MCU.
- **Machine Mode:** The Start external input signal is detected when turned on.

Tips: If a custom signal is required to match the programming machine, refer to the user manual for configuration.

3.5. Help



Help information

Displays the current firmware version of the programmer, the release time, and the top pin description.

3.6. Official website update

Enter the official website of Linko, click [Resources], then click [Tools] or directly click the [hyperlink](#) of this website, you can update and download the latest burner firmware, computer and documents, as shown in the figure below.

Datasheet	User Manual	Device Pack	Demo Board	Reference	Tools	Application Note
Algorithm And Platform						

File name	Description	Version	Update	Download
> LKS_SCOPE	LKS MCU variable real-time debug monitor (i.e. LK...	1.2.9	2023-12-06	
> LKS665A	LKS665A Programmer	1.3.6	2023-11-24	
> LKS_FLASH	LKS_FLASH read-write upper computer	1.5.1	2023-08-23	

Official website update

4. Download Description

4.1. SWD download

At least 4 lines should be connected in the SWD mode: VEX / GND / DIO / CLK. The LKS chip side does not need software support and can download the encrypted protected LKS chip, but the encrypted chip cannot be verified.

4.2. IAP download

At least 4 lines are required under the serial port IAP mode: VEX / GND / TXD / RXD. External power supply can be used instead of VEX to power the LKS chip, but you must ensure that the voltage is consistent with the setting page selection (5V or 3.3V), otherwise the serial port communication cannot be stable.

When using the serial port IAP to download, the LKS chip side needs to download the Bootloader program first. Any version of Bootloader can be downloaded, v1.4 or later. It is recommended to start the continuous download mode in IAP mode, and start downloading within 50ms after LKS chip access or reset.

5. Important reminder

- After using the upper machine to download the new image to the programmer, you should verify whether the image is allowed to use in the programmer, so as to avoid being rejected by the download machine when you need to use it.

- Flash is enabled for read and write protection. Do not try to unprotect or forcibly read Flash data, otherwise the Flash erase will be triggered and the programmer cannot continue to use.
- The programmer is connected to the computer through USB in the form of a removable disk. When removing the programmer, try to use the "security popup" function in the computer taskbar to remove the programmer to avoid the damage of the SD card data.



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User Manual for LKS665B_Server

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edition	date	modifier	remarks
1.0	2021-11-24	Wucf	Document creation
1.0.1	2022-03-01	Wucf	Updated the configuration parameter description
1.0.2	2022-06-24	Wucf	Remove the local firmware update
1.0.3	2023-03-28	Yanglei	HID, cloud server connection instructions
1.0.4	2023-08-01	Yanglei	The image configuration update, add the offline image description
1.0.5	2023-09-26	Yanglei	Machine signal viewing and custom instructions
1.0.6	2023-12-06	Yanglei	Add the 665B instructions and the English version

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1. Background

LKS665B Compared with LKS665A, the programmer adds short circuit, Reverse connection, anti-ESD, overcurrent, hot plug and other protection on the hardware.

The software and A version or use the same, the pc software compatible with two programmer.

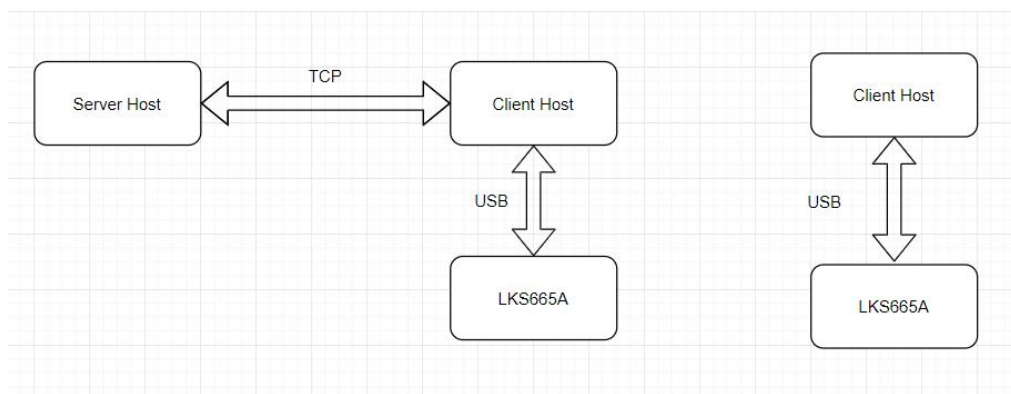
LKS665B The upper computer software of the programmer is divided into two independent modules, server and client. This document is the server upper computer software LKS665B _server. Instructions for the use of the exe. For the programmer itself and the use of the remote client, review your respective documentation.

Service host (LKS665x_server. Exe) is mainly used by solution providers. It can encrypt the original bin or hex files, be packaged into Image files, and remotely sent to the client software, or it can be directly downloaded to the local programmer.

The server and the client can communicate to the cloud server through the MQTT middleware connection, when using the programmer UID as the connection topic. The server and the client can also be connected through TCP, and transfer files and commands by a custom protocol. When the connection is used remotely, the server is required to have a public network IP or be in the same LAN with the client.

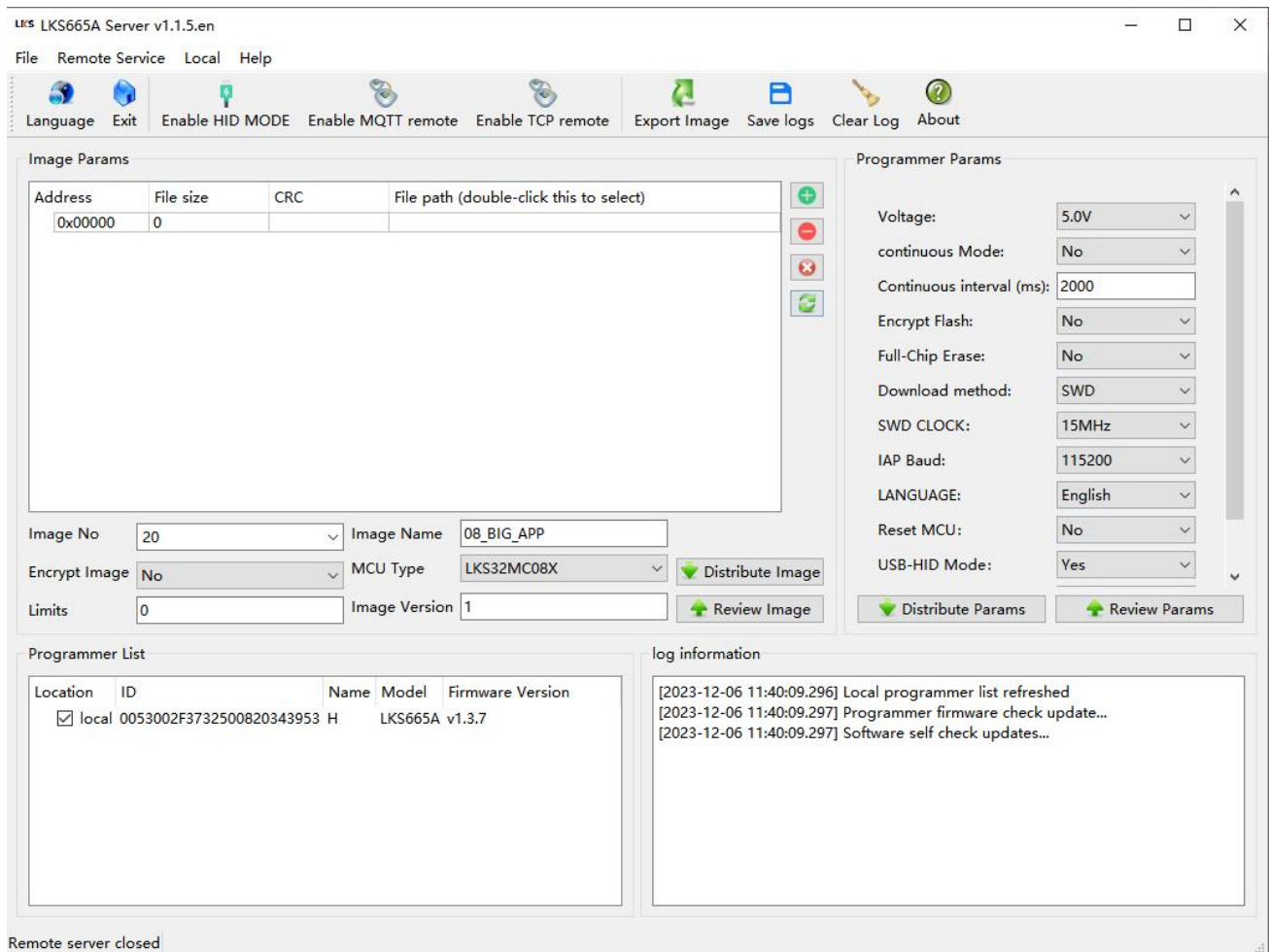
Client host computer (LKS665x_client.Exe) is mainly used by end customers, as a bridge between the server and the programmer, the Image files, configuration parameters and other information distributed to the programmer.

The server can cooperate with the client to achieve remote download, can also directly connect to the local programmer, directly download the Image and configuration parameters. The client only has some functions, and can not complete all the content independently.



A Schematic diagram of the cloud server remote download connection

2. Server Software

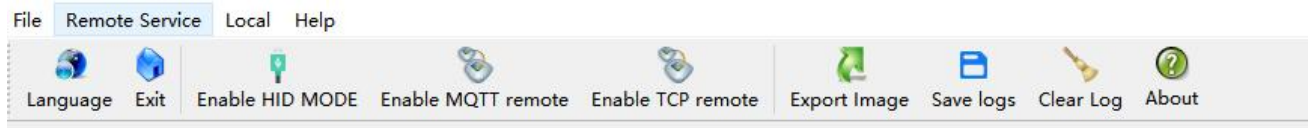


Main interface Server Software

The main interface of the server terminal mainly consists of 5 parts:

- menu bar
- Image file configuration
- programmer Configuration
- List of programmers
- Run log information is displayed

2.1.Menu bar

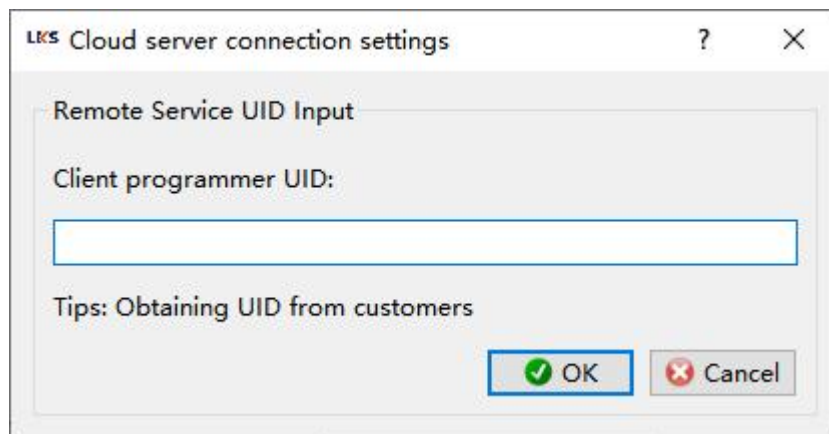


Menu Toolbar

The main function-related buttons in the menu bar are "Enable HID MODE", "Enable MQTT remote", "Enable TCP remote" and "Export Image".

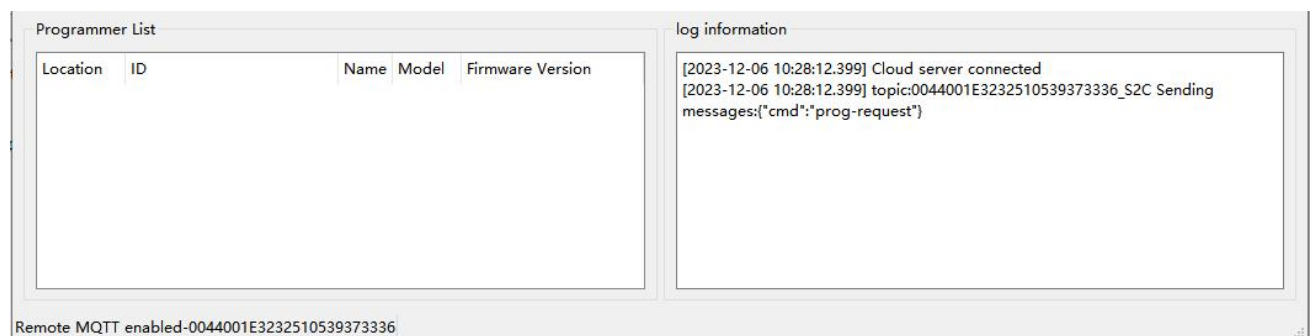
2.1.1. Enable MQTT remote

Click the "Enable MQTT remote" button in the menu bar or toolbar to pop up the Cloud Server connection Settings window. Enter the UID serial number of the client loader and click OK to connect.



MQTT Server connection settings

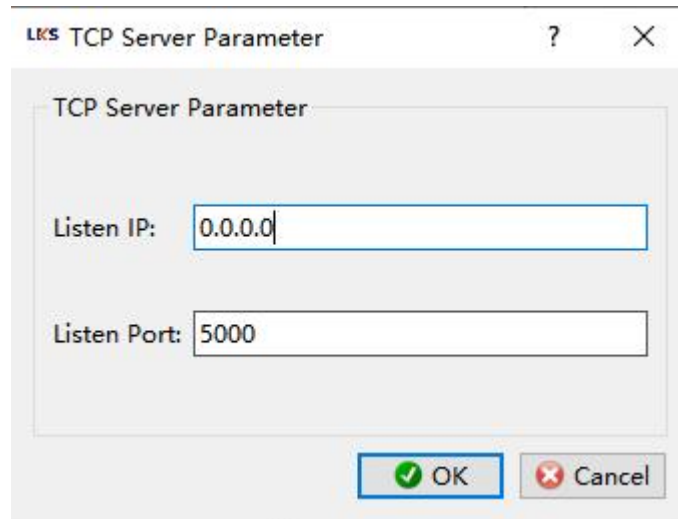
After successfully connecting to the cloud server, the service status and operation information in the lower left corner of the main program main window are displayed as follows. If the client has connected to the cloud server, the server can operate the remotely connected programmer.(If not, connect the client to the cloud server or turn off the system firewall)



2.1.2. Enable TCP remote

By clicking the “Enable TCP remote” button in the menu bar, can make lks665x_server works as a TCP server. After setting the TCP-IP address and port number, the TCP server will start. If it starts successfully, the status bar in the lower left corner will display the TCP status.

If the client and the server are not in the same local area network, the server needs to have a public IP address, or both parties use virtual local area network software such as Dandelion at the same time to ensure that the TCP connection can be reached.



The TCP server parameters

2.1.3. Export Image

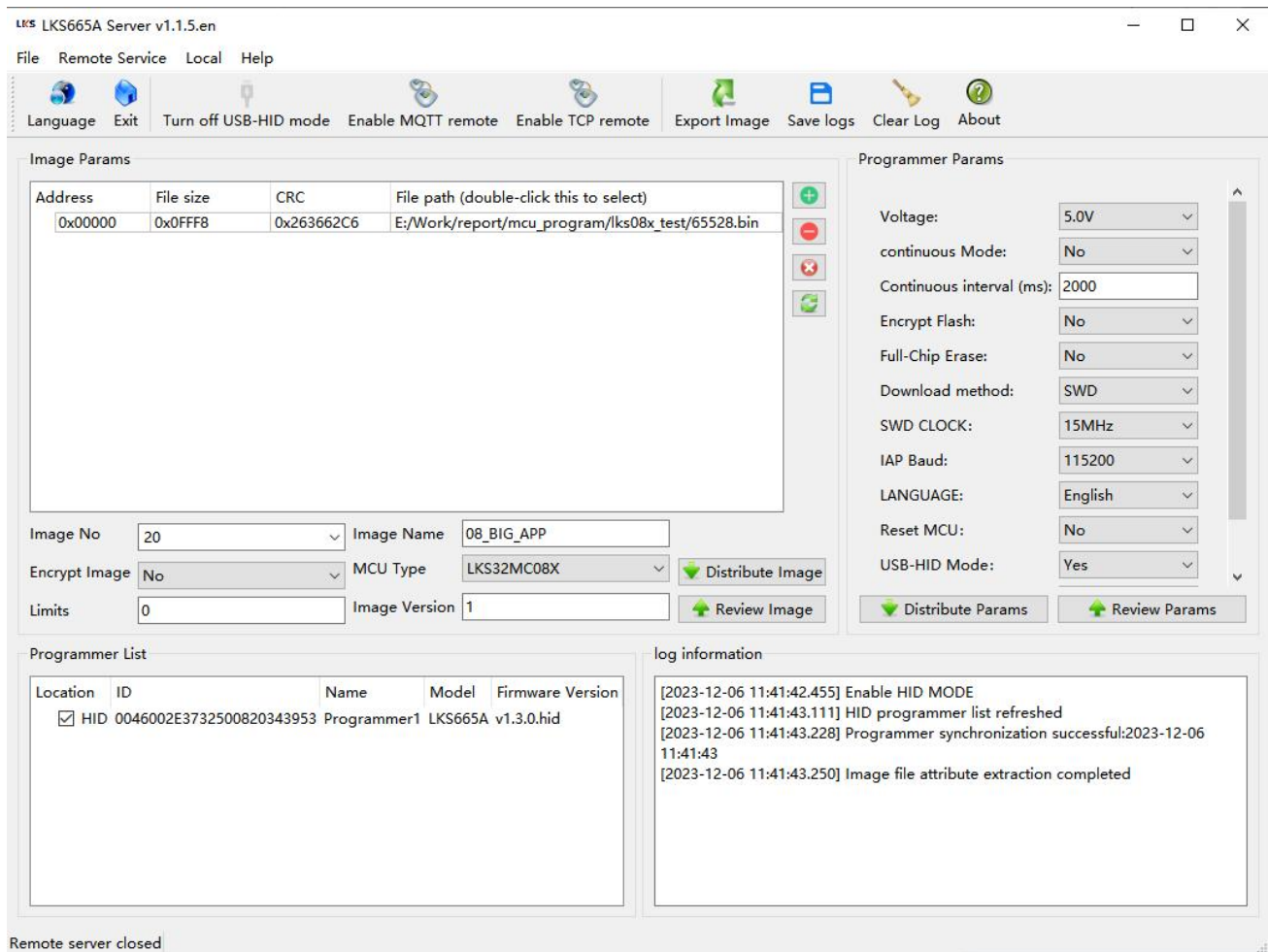
Click the “Export Image” button in the menu bar or toolbar to display the save file selection window. After specifying the save location, the packaged Image file will be saved for the client program to load.

The current system time is packaged, so at different moments, even if the same program file and data files are packaged, the final image will not be completely consistent.

2.1.4. The USB-HID mode is turned on

Switch the USB connection mode of the loader (removable disk or HID human-computer interaction device). For the enterprise PC with encryption, the mode can be switched on demand without using the normal USB connection mode.

Select the [Open USB-HID mode] of the menu bar, as shown in the figure below, to scan the connected HID mode programmer. Newly connected devices can also be detected in real time and added to the communication connection. (Note that the programmer end should be updated to HID version firmware and switched before it can communicate with the upper computer.)



The HID mode connection

2.1.5. Help

- Help→About: View the current version of the host program.
- Help→Check for Update→Check Server Update: Check the update version. Automatically access the file update server, check the version and download the update after confirmation.
- Help→Check for Update→Check Firmware Update: Check for update programmer version. Automatically access the file update server, check the version and download the firmware program after confirmation, and restart after delivery to the programmer.

2.2. Image configuration

The 'Image Params' window contains a table with the following data:

Address	File size	CRC	File path (double-click this to select)
0x00000	0x00228	0x8DA23199	E:/Work/report/mcu_program/lks45x test/LKS45x Bo...

On the right side of the table, there are four buttons: a green plus sign (+), a red minus sign (-), a red X, and a green refresh icon.

Double-click the [File path] location in the figure, and the select file dialog box appears, where you select the original hex or bin file (the unencrypted hex file) and the data file.

After selection, it displays the file size and the file CRC in hex.

Support for adding multiple files, Click the plus sign on the right to add control entries to increase the files that need to be burned. For example, program files and data files are combined into one and distributed as a whole. When it is necessary to merge data files, [Address] must be set to a reasonable value.

Click the refresh button on the right to read the configuration information of the last memory.

For the handler, if the program size is not an integer multiple of 16, 0xFFFF is added at the end.

The 'Image configuration' form includes the following fields and buttons:

- Image No: 25
- Image Name: 45X_BL_UART
- Encrypt Image: No
- MCU Type: LKS32MC45X
- Limits: 0
- Image Version: 1
- Buttons: Distribute Image, Review Image

Image configuration

Main parameters of the Image information:

- Image No: The Image number that the Image file uses in the programmer. The Image number range 0 to 49 supports limiting the number of downloads and encrypted storage, but the image should specify an independent Image number, and the image number will cause an earlier file overlay. Expand the Image number 50~149 range programmer firmware v1.2.7, server software v1.0.6 and above version began to support, only support storage, do not support to limit the number of downloads and encrypted storage.

- Image name: Image name of the Image file displayed in the programmer, with the default suffix img. Supports Image names within 64 bytes, and will scroll in the programmer when the file name is longer.
- Encryption Image: single yes or no, yes means the encryption Image, stored as an encrypted file, the chip programming will also perform encryption, no means no encryption.
- MCU type: the MCU type used by the program in the Image, currently optional LKS 06X, 08X, 05X, 03X, 07X, 45X.
- Limits: the maximum number of downloads allowed for the image, 0 means no limit.(Encryption is required to limit the number of downloads.)
- Program version: the version number of the program itself in the Image, an integer greater than 0. When the write CRC function of the enabling loader is written into the Flash of the lks chip together with the CRC data.

2.3.Programmer Configuration

Programmer Params

Voltage:	5.0V
continuous Mode:	No
Continuous interval (ms):	2000
Encrypt Flash:	No
Full-Chip Erase:	No
Download method:	SWD
SWD CLOCK:	15MHz
IAP Baud:	115200
LANGUAGE:	English
Reset MCU:	No
USB-HID Mode:	Yes
Machine Mode:	No

Distribute Params

Review Params

programmer Configuration

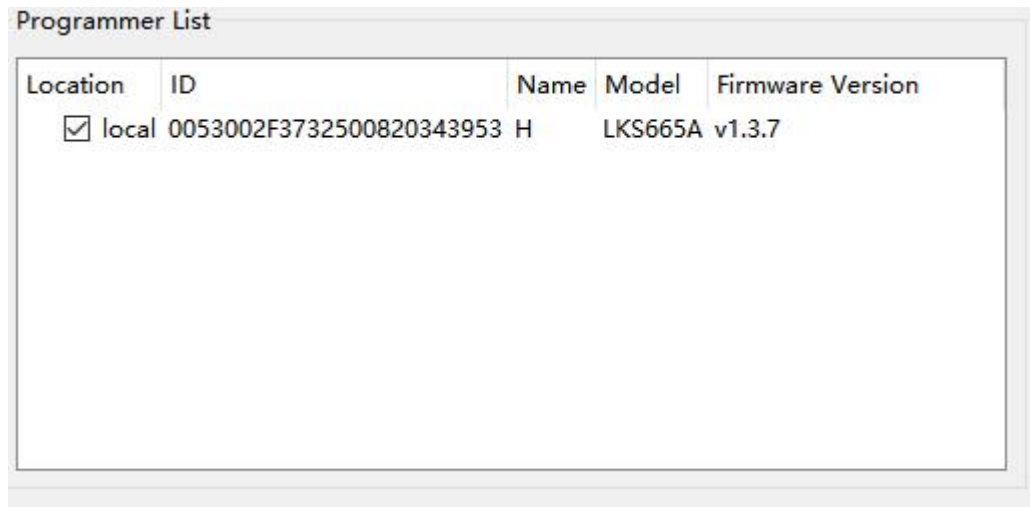
Main parameters for the programmer configuration:

- Voltage : control the download port output 5V or 3.3V voltage, that is, the VEXT in the top row of the programmer.
- Continuous Mode: whether the continuous download mode is enabled. In continuous mode, when you stay in the download interface, the target board will automatically download without button.(If the PLC machine with input and output signal is used for batch download, it should be switched to non-continuous download mode, and the signal can be detected for programming)
- Continuous interval: Effective in continuous mode, it is an interval timed check of whether the chip is connected for programming, measured in milliseconds.
- Encryption Flash: encrypted Flash switch after programming. If the Image itself is encrypted, the parameter is ignored and Flash is forcibly encrypted.
- Full-Chip Erase: the switch of full-erase or sector-erase before programming. If mcu flash is encrypted, the parameter is ignored and forced is forced.
- Download method: Selection of programming method, SWD or IAP serial port.
- SWD CLOCK: When the download method is selected as SWD, it takes effect. Configure the clock frequency of SWD. The higher the clock frequency, the faster the programming speed. The lower frequency is suitable for situations where the chip's SWD interface has resistance capacitance or the connection line is too long and communication is not good.
- IAP Baud: Baud rate configuration for serial communication in IAP programming mode.
- LANGUAGE: Select the language used by the programmer UI to support Both Chinese and English.
- Reset MCU: Quickly reset the MCU and Halt it before programming, suitable for programming programs that reuse the SWD interface of the MCU.
- USB-HID Mode: specific firmware version support, turn on this mode, computer server software and programmer for HID communication.(After switching, you need to restart the programmer. Note that if using, the continuous download mode needs to be temporarily closed)
- Machine Mode: The Start external input signal is detected when turned on.

Please note that after distribute the programmer configuration, the programmer needs to be restart and refreshed again to take effect. The configuration parameters can also be modified in the setting page of the programmer, consistent with the effect of the upper computer modification.



2.4. Programmer List



Location	ID	Name	Model	Firmware Version
☒ local	0053002F3732500820343953	H	LKS665A	v1.3.7

List of programmers

The programmer list displays all programmers currently connected to the server software, including local and remote programmers. The location is local show "local", the location includes the cloud connection is the cloud server connection managed by the client, IP: Port is the remote programmer connected by TCP, and HID is the locally managed programmer connected in HID mode.

Note: Before issuing and reading the programmer, check the corresponding entry in the programmer list. This list is radio mode and a single operation can affect only one loader.

2.5. programmer operation

Below the Image parameter configuration and programmer configuration parameters, buttons are provided to operate the programmer.

2.5.1. Issue Image files

Check the target programmer in the download list, complete the Image configuration, click the Image button and confirm the prompt, the server will send the encrypted Image file to the client by TCP, client after receiving file, automatically send the Image file to the programmer, and configure the corresponding Image number.

When the image is distributed, the image file will be backed up to the history directory in the current working directory as a historical file backup and reference record. The list of files in the history directory is shown below.



history / Backup of the Image files and the Image information in the directory

2.5.2. Issue the configuration file

Check the target programmer in the list of programmer, and to complete the parameter configuration, click the issue configuration button and confirm the prompt. The server will send the configuration information to the client through TCP, and the client will continue to automatically forward to the programmer.

2.5.3. Manage Image information

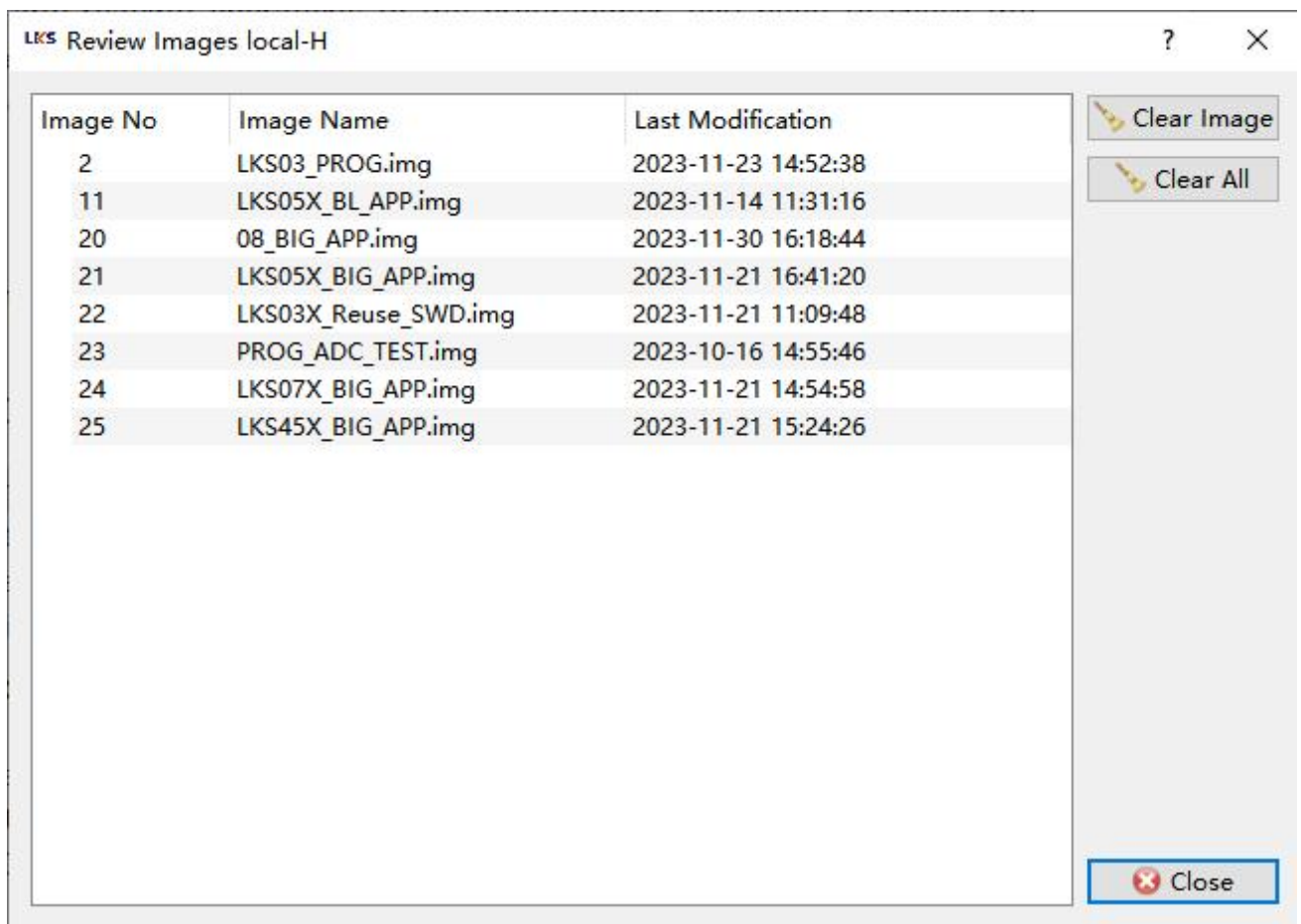
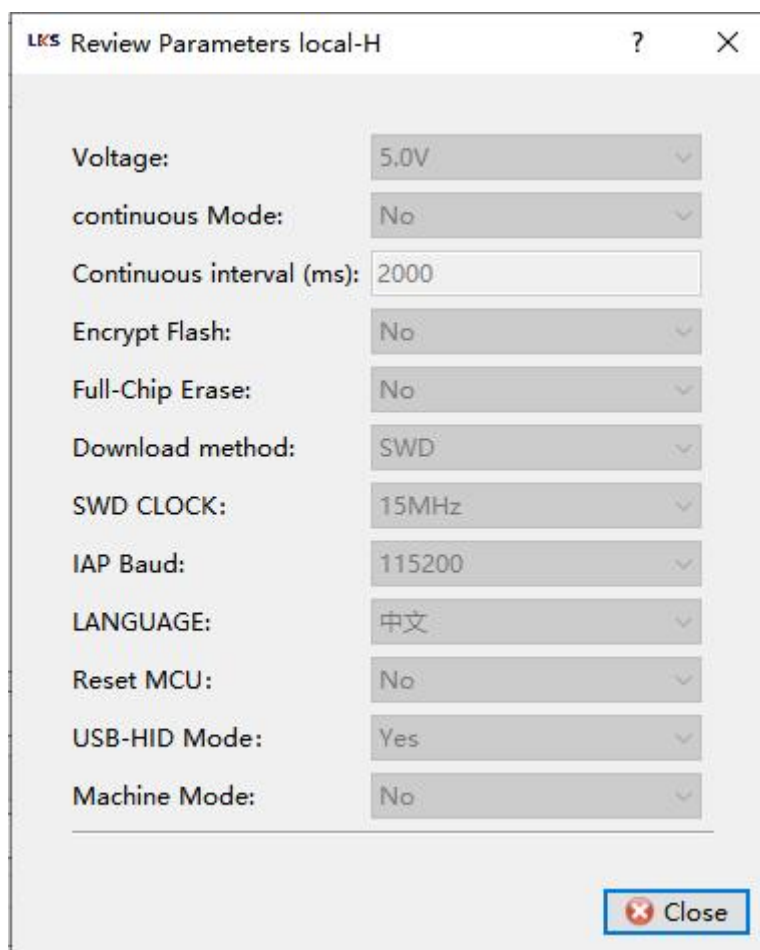


Image management

To view the Image configuration information for the currently selected programmer, you can choose to clear the specified Image or all images in this window.

2.5.4. View configuration information



Configuration parameters view

View the parameter configuration for the currently selected programmer for viewing only. The distribution of the configuration can be performed by using another button, "Distribution Params".

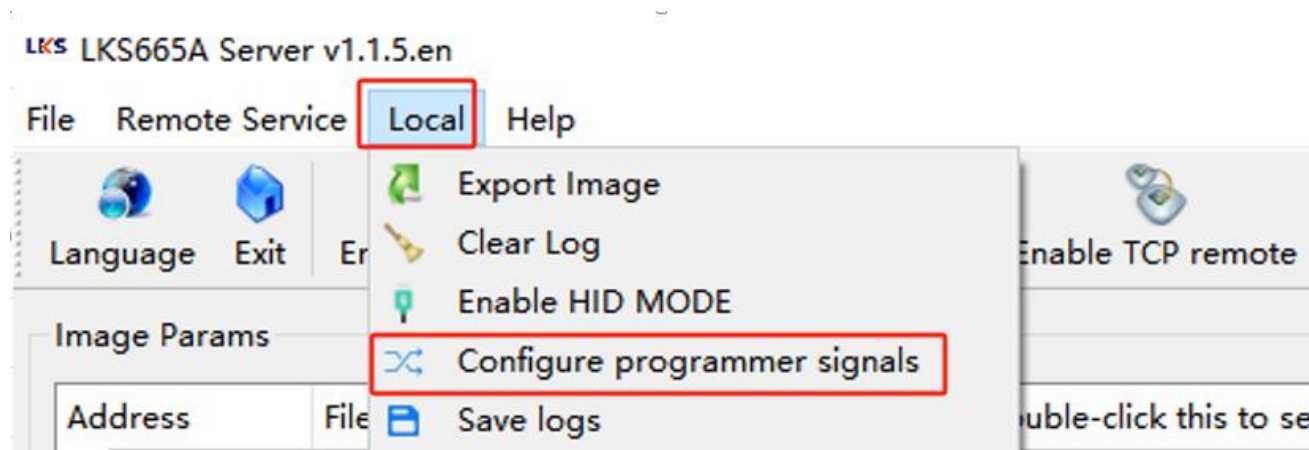
2.5.5. View and customize the programmer signals

Note: Supported on server software version v1.1.1 and programmer firmware version v1.3.3 and above.

Note: If not special version, the programmer signal mentioned in this section is in non-continuous download mode.

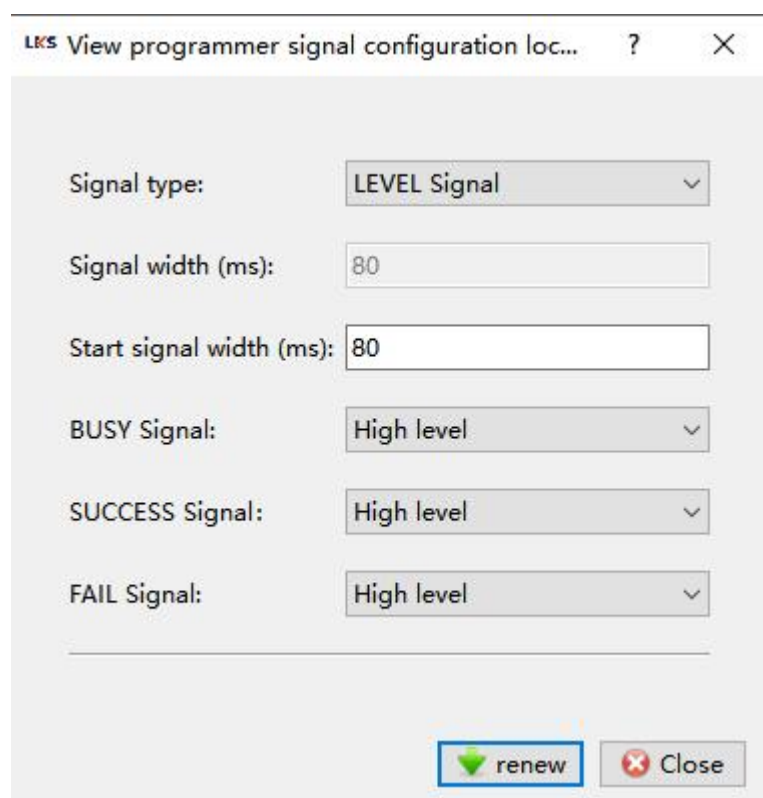
Function description: the user can view the output signal with the custom programmer.

Click the navigation bar [local] [configure programmer signal] to enter, as shown below.



Enter the configure programmer signal

The signal is indicated as follows:

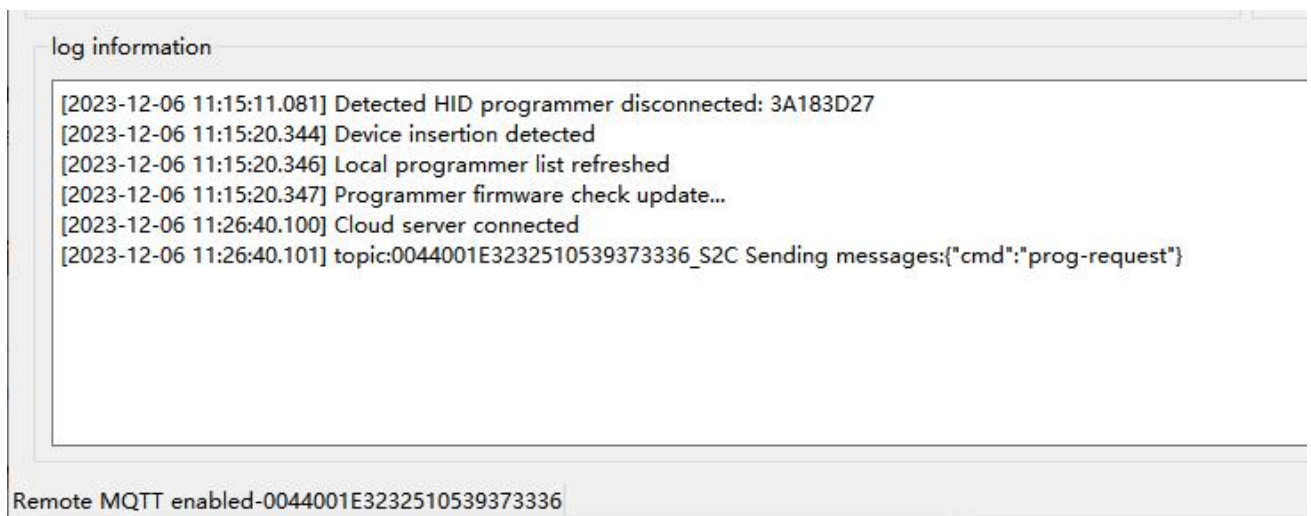


The programmer signal configuration interface

- Signal type: level signal or pulse signal, the default is the level signal. The Success and Fail signals of the selected level signal programmer continue until the start of the next programmer and are not affected by the signal pulse width. Select the pulse signal for the time set by the [signal width] parameter, the default is 80ms.
- Signal width: the duration of the programmer signal output when selected as the pulse signal.

- Start signal width: detect the time along the start signal, default 80ms.
- BUSY signal: set the BUSY output level until the end of programming.
- SUCCESS Signal: set the successful output level.
- FAIL signal: set the failed output level.

2.6.Run information display



The screenshot shows a window titled 'log information' with a list of log entries. At the bottom, there is a status bar that reads 'Remote MQTT enabled-0044001E3232510539373336'.

```
log information
[2023-12-06 11:15:11.081] Detected HID programmer disconnected: 3A183D27
[2023-12-06 11:15:20.344] Device insertion detected
[2023-12-06 11:15:20.346] Local programmer list refreshed
[2023-12-06 11:15:20.347] Programmer firmware check update...
[2023-12-06 11:26:40.100] Cloud server connected
[2023-12-06 11:26:40.101] topic:0044001E3232510539373336_S2C Sending messages:{"cmd":"prog-request"}
Remote MQTT enabled-0044001E3232510539373336
```

Run information display

The operation information display is located at the bottom of the main window, showing the dynamic and error information of user operation and program execution, so as to understand the current state and carry out the next operation reasonably.

3.Program Distribution Steps

When using the local programmer and the remote programmer, the operation steps are different, introduced respectively.

3.1.Use the local programmer

- Step 1: Open the computer server software LKS665X_server.exe;
- Step 2: Connect the programmer to the computer through USB;
- Step 3: Check the download device to use in the programmer list;
- Step 4: Select the program (bin or hex) file to be downloaded in the Image configuration, and set the corresponding Image No, Image name, Encrypt Image, Limits, MCU type,

starting address and other parameters;

- Step 5: Click the send image file button, and wait for the tool prompt to send the result;
- Step 6: Set the parameters to use by the programmer in the params configuration;
- Step 7: Click the release profile button, and wait for the tool prompt to send the result;
- Step 8: Remove the programmer, and the setting takes effect after the restart. When the first restart after the configuration, the programmer updates the Image information, the start process is slightly slow, the start process should not lose power.

3.2. Use the MQTT Remote programmer

When the downconnects uses the cloud service, it requires the server and the client.

- Step 1: Client-Connect the programmer
via USB to the client computer LKS665X_client.exe (v1.0.4 support above);
- Step 2: Client-Check the download device to use in the programmer list;
- Step 3: Client-Click the MQTT server connection option page in the client interface, click the connection button, when the cloud service is connected, communicate the UID copy to the server and wait for the server connection access;
- Step 4: server-open server host LKS665X_server.exe (v1.0.6 support above);
- Step 5: Service-Click the [Enable remote MQTT] button in the toolbar, enter the UID conveyed by the client in the pop-up window and click OK to connect;
- Step 6: Service side-successful connection, prompt to update the remote configuration information data, check the programmer to be used in the programmer list;
- Step7: server-Select the program (bin or hex) file to be downloaded in the Image configuration, and set the corresponding Image No, Image name, download number, MCU type, start address and other parameters;
- Step8: Service side-click the send Image file button, and wait for the tool prompt to send the results;
- Step9: Service side-set the parameters to use by the programmer in the programmer configuration;
- Step10: Service side-click the release profile button, and wait for the tool prompt to send the results;
- Step11: Client-Remove the programmer, and the setting takes effect after the restart. When the first restart after the configuration, the programmer updates the Image information, the start process is slightly slow, the start process should not lose power.

3.3. Use the TCP Remote programmer

When the programmer is used remotely, the server and the client host computer need to cooperate with the operation.

- Step 1: server-open server host LKS665X_server.exe ;
- Step 2: Service-Click the open remote service button in the toolbar, set the IP and port number, start TCP monitoring and wait for client access;
- Step 3: Client-Connect the programmer to the client computer via USB;
- Step 4: Client-Check the download device to use in the programmer list;
- Step 5: Client-Enter the IP and port number monitored by the server in the client interface, click connect, and gray the connection button to indicate successful connection;
- Step6: After the server-server accepts the connection, check the programmer to be used in the programmer list;
- Step 7: Service-Select the program (bin or hex) file to be downloaded in the Image configuration, and set the corresponding encryption mode, Image number, Image name, download number, MCU type, starting address and other parameters;
- Step8: Service side-click the send Image file button, and wait for the tool prompt to send the results;
- Step9: Service side-set the parameters to use by the programmer in the programmer configuration, including whether to open reading protection, whether to wipe, etc.;
- Step10: Service side-click the release profile button, and wait for the tool prompt to send the results;
- Step11: Client-Remove the programmer, and the setting takes effect after the restart. When the first restart after the configuration, the programmer updates the Image information, the start process is slightly slow, the start process should not lose power.

4. Instructions for the offline Image function

The aforementioned remote connection function requires both the server and the client to be online to establish the connection and distribution program.

This function is mainly to support the server configuration and upload program Imageing to our server. Sub-level customers can access the server-distributed program Imageing at any time through the Image code on the client.

At present, registration is not open. If necessary, you can apply to our company.

Functional steps are described as follows:



- Step 1: server-open server host LKS665X_server.exe (v1.0.8 and above version start to support);
- Step 2: Service-select program file configuration Image;
- Step 3: Service side-click the menu bar [Remote service] [Upload offline image];
- Step 4: Service-enter the account password for login authentication;
- Step5: After the server-program file is successfully uploaded, enter the offline image management interface, currently allows users to upload 100 Image files to the server hosting, more than click [Clear image] to delete the commonly used offline image;
- Step6: server-In the offline Image management interface, select the Image entry to be distributed, click [Distribution Image], the software will set the clipboard, forward and paste the Image code to the sub-customers;
- Step7: Client-child customers open the client upper PC (v1.0.5 and above versions start to support);
- Step8: Client-connect the programmer to the computer, click [offline image acquisition] to switch to the corresponding tab page, and then click the connection;
- Step9: After the client-connection is successful, the child customer can paste the Image code in the input box to obtain the specified Image file;
- Step10: Client-After obtaining the offline image is successful, the file path of [local operation] will be automatically set, and then click [download the local Image] and configure the image number.

5. Dandelion software instructions

If the TCP remote function of the upper computer is required, and the server has no public network IP and is not in the same LAN as the client, the TCP connection cannot be established directly. At this time, using the virtual LAN software is a simple and cheap means to recommend using the dandelion software.

Software download: <https://pgy.oray.com/download/>

<https://console.oray.com/passport/register.html>

You can use your mobile phone number or email address to register your free oray account. After multiple computers log in with the same account, they are in a virtual LAN. The free version can login up to three clients. The device can occupy one client. Other devices will be reminded of the shortage of clients when logging in. If you continue to share your LAN with other devices, you can pay to use or apply for a new account.

