GigaDevice MCU Team	Version	13 Pages
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GigaDevice GD-Link Programmer User Manual

Directory

1. Introduction

This user manual delineates an application designed for the operation and configuration of GigaDevice MCUs, utilizing an accessible USB cable in conjunction with the GD-Link adaptor. The GD-Link programmer serves as an indispensable tool, facilitating the high-speed utilization of MCUs by the user.

1.1 Function description

With GD-Link programmer, user can download the application program to the internal flash memory or secure chip and so on, at the same time programmer can configure GD-Link offline download function.

1.2 Purpose

In addition to offering an optimal platform for users to swiftly download application programs, the GD-Link programmer is also dedicated to delivering an innovative user experience. This description has been refined to enhance the quality of service.

1.3 Operating environment

Software Requirements: Chinese or English Windows XP、Windows 7、Windows 10 and advanced operation systems.

Hardware Requirements: GD-Link adapter, referring to the GD-Link Adapter User Guide or GD-Link V2 Adapter User Guide.

1.4 Jargon and Contraction

- **GD-Link**: The GD-Link adapter, a versatile three-in-one development tool tailored for GD32 series MCUs, offers a comprehensive array of features. It encompasses a CMSIS-DAP debugger port equipped with both JTAG and SWD interfaces. Users can employ the GD-Link adapter for the online programming and debugging of code within compatible integrated development environments, such as Keil and

IAR. An additional noteworthy feature is its offline programming capability.

- **USB**: The Universal Serial Bus (USB) transcends mere computer and peripheral connections, as it wields the potential to immerse users in an entirely new realm of PC experiences.

1.5 Package composition

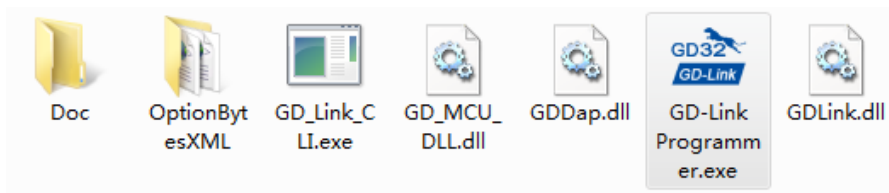All files listed in Chart 1 are required.

Chart 1

2.   Running

This software operates seamlessly on PCs and compatible systems, specifically designed for the WINDOWS platform. There is no requirement for a manual setup, the sole action necessary is to click the software icon to initiate its functionality.

3.   Using Details

3.1 Layout introduction

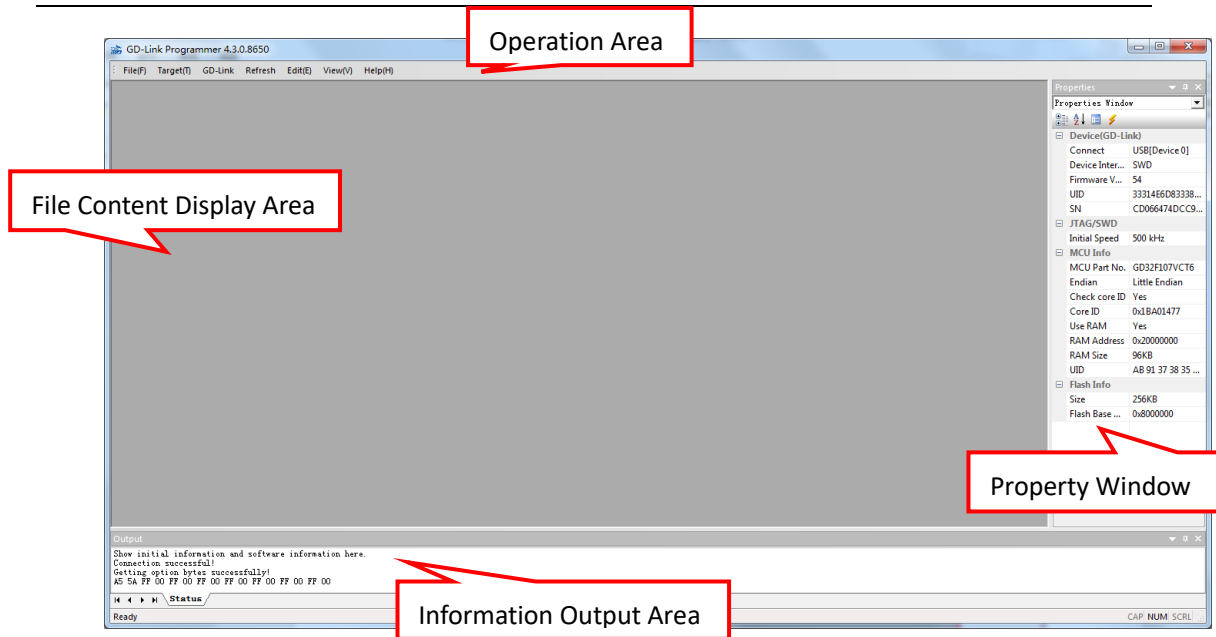Chart 2 shows the UI and including areas of the software:

Chart 2

3.1.1 Properties Window

Chart 3 shows the properties about GD-Link and target MCU.

3.1.1.1 GD-Link Property

- Connect Interface: GD-Link use USB connect to PC

- Device Interface: Users can choose SWD or JTAG to connect to MCU, the default selection is SWD.

- Firmware Version: Current MCU firmware version.

- UID: Shows the UID of the MCU in the GD-Link.

- SN: Shows the serial number of the GD-Link.

3.1.1.2 JTAG/SWD Property

- Initial Speed: Users can change the GD-Link transfer speed here, the default speed is 500 kHz.

3.1.1.3 Target MCU Property

- MCU Part No.: It shows the connected MCU.

- Endian: GD MCU is little endian.

- Check core ID: The default selection is Yes.

- Core ID: It shows the MCU core ID value.

- Use RAM: The default selection is Yes, RAM is used to program faster.

- RAM Address: It shows the RAM start address value.

- RAM Size: It shows the RAM size of the target MCU.

- UID: Shows the UID of the target MCU.

3.1.1.4 Flash Property

- Flash size: It shows the flash size of the target MCU. Different MCU maybe has different Flash size and different erase/program registers, users can refer to User Manual of MCU for the detail.

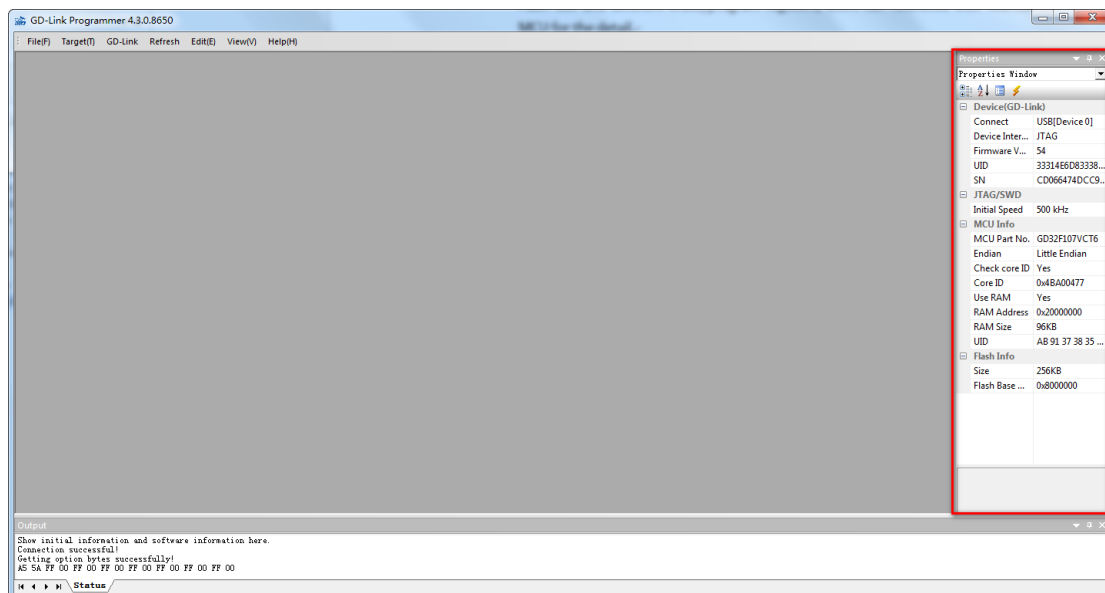- Flash Base Address: It shows the Flash base address value.

Chart 3

3.1.2 Refresh Properties List

This button allows user refresh properties list without close this application
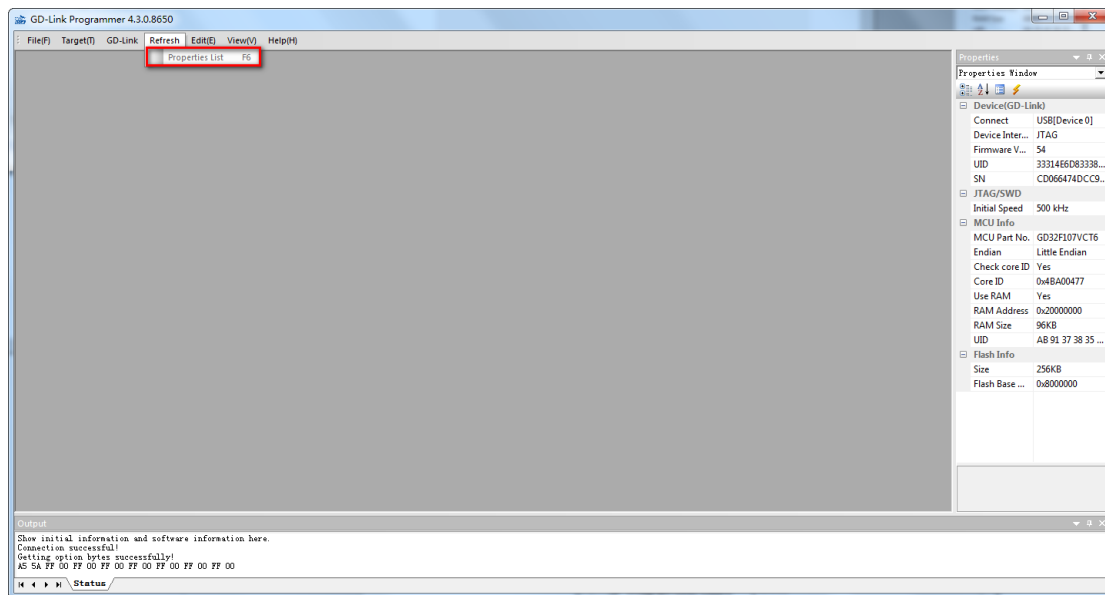
(As shown in chart 4).

Chart 4

3.1.3 GD-Link

This menu includes Update file, Configure GD-Link and Update firmware (As shown in chart 7).

3.1.3.1 Update File

This menu can update the file to store in the GD-Link for offline-programming.

Users should select the MCU part No., then click 'Add' to select file in bin format and input downloading address first before updating the file (As shown in chart 5).

At last, users can click 'Update' to store the listed files to GD-Link. If stored successfully, users press the 'K1' key on GD-Link, GD-Link downloads all files to the corresponding address.

Some part No. supports option bytes configuration, GD-Link configures the MCU option bytes according to the information configured by the user (As shown in chart 6).
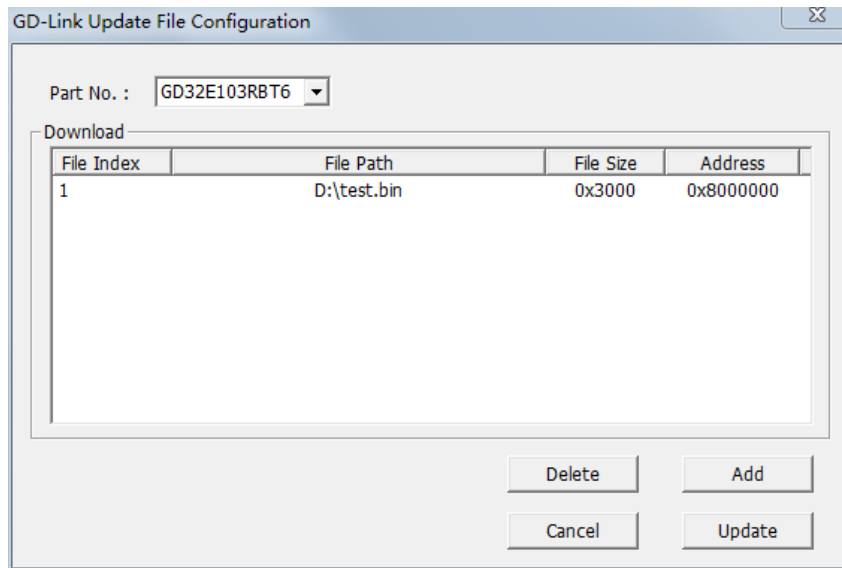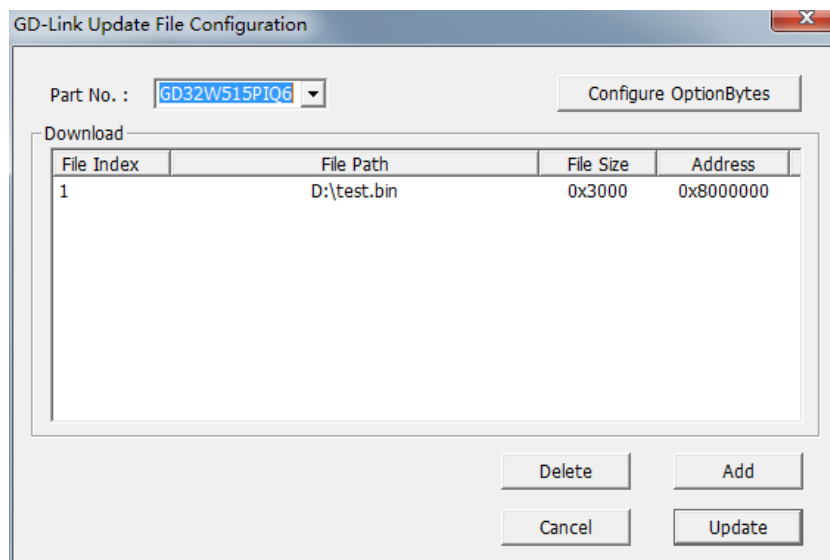
Chart 5

Chart 6

3.1.3.2   Configure GD-Link

This menu includes Offline-Programming Configuration, Online-Programming Configuration and Product SN, Connect Configuration (As shown in chart 8).

● Offline-Programming Configuration: This menu configures whether secure chip after offline -programming. It will take effect after update program files. And it also can configure the program speed.

● Online-Programming Configuration: This menu configures whether

secure chip after online- programming, whether reset before online-programming, and whether run after online-programming. It will take effect while click "OK" button.

● Product SN: This menu configures product SN value after online-programming (As shown in chart 8). Check the checkbox means write product SN to target MCU after online- programming. Users configure the address to write product SN, product SN value and product SN increase value.

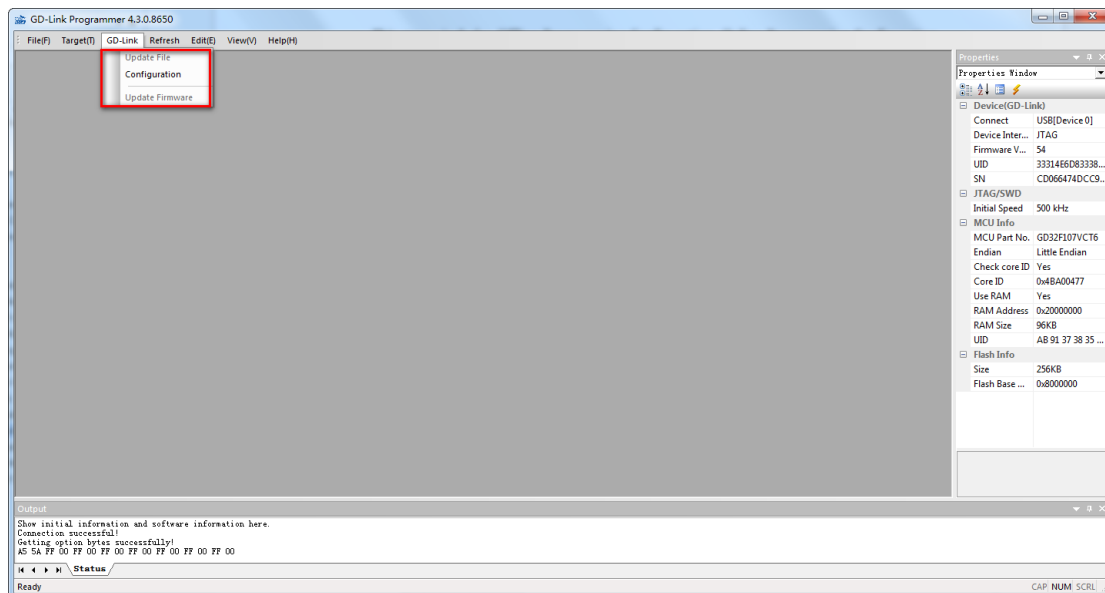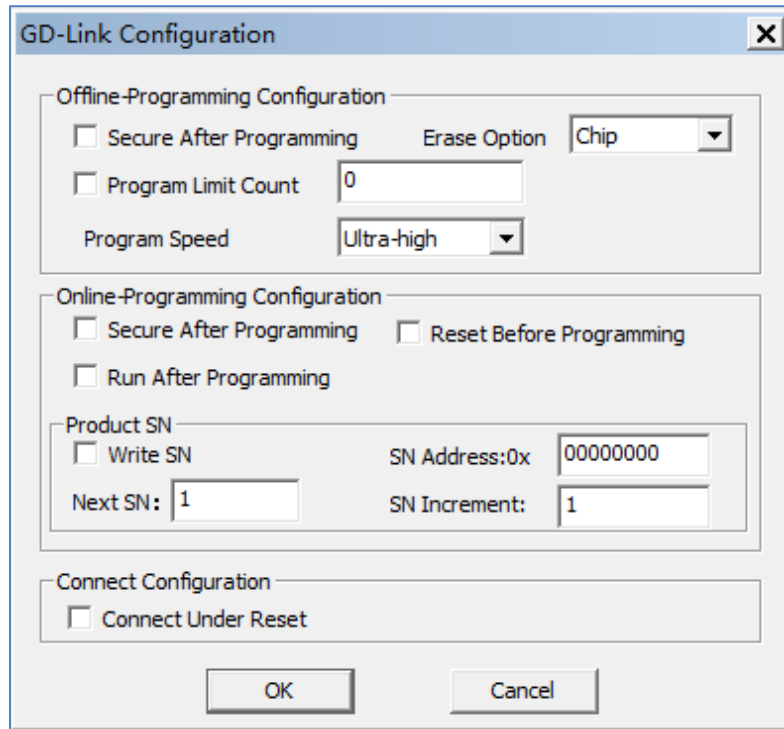● Connect Configuration: This menu configures whether to reset under connection.

Chart 7

Chart 8

3.1.3.3   Update Firmware

This menu update GD-Link firmware if GD-Link is in firmware updating mode. Please make sure the software is the latest version before users update the GD-Link firmware.

3.1.4 Target MCU

● This page includes Connect, Disconnect and other operation menus (As shown in chart 9).

● Connect: Users must click this menu before operating target MCU with keyboard shortcuts F2.

● Disconnect: This menu is enabled after connected successfully, it is used to disconnect from target MCU.

● Security: Security includes two levels, GD10x series only low level can be set while GD1x0 series can use two levels. The GD1x0 series MCU will not be changed to insecurity if set high level.

- Insecurity: Clicking this menu can remove low level security.

- Configure OptionBytes: Users can use this menu to change option bytes.

- Mass Erase: Users can use this menu to erase full chip with keyboard shortcuts F4. Maybe users need to wait for a moment while MCU Flash size more than 512KB.

- Page Erase: This menu allows users to erase MCU by pages with keyboard shortcuts F3.

- Program: Program the selection file to the target MCU. The software will secure the chip and write product SN if users have configured security after online-programming options in "Configuration" menu.

- Continuous Program: This function is enabled while the software disconnects from target MCU. The software will detect whether new MCU is power on automatically and connect to MCU. Then the software will program the new MCU with current selection file and wait for next MCU connect.

- Read Data: With this function user can read target MCU by two ways: Read full chip or read by range.
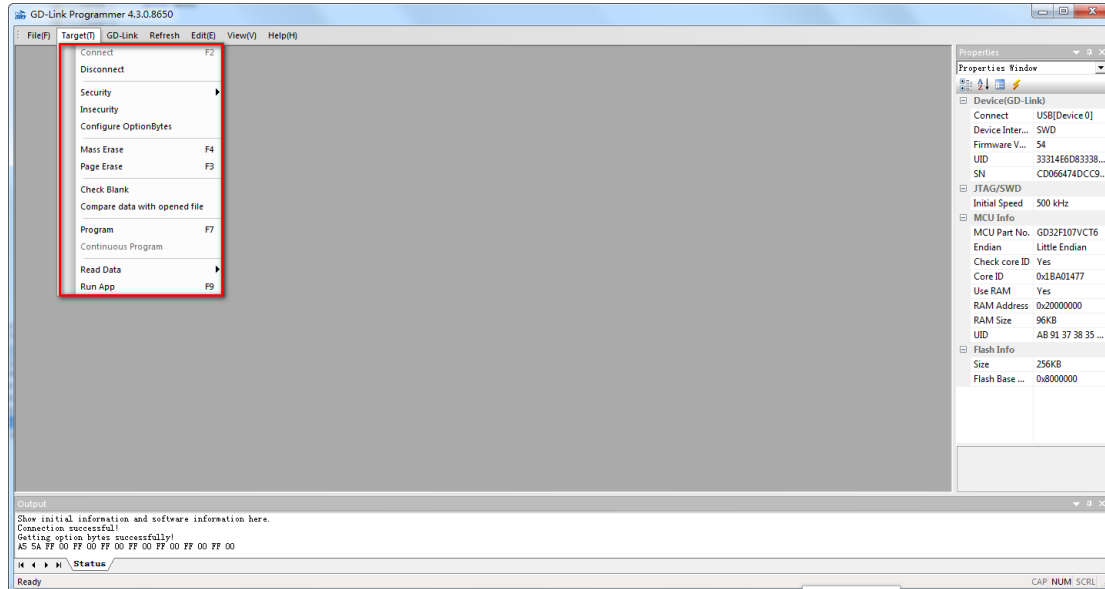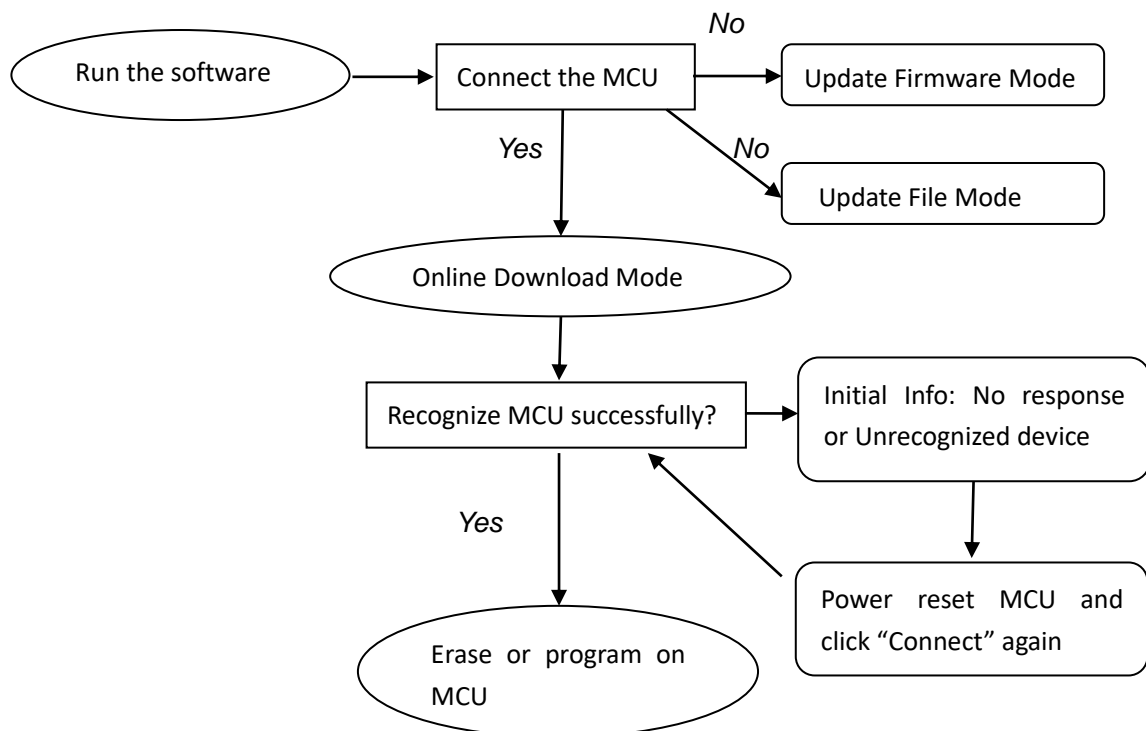
- Run App: Run the program file after programming.

Chart 9

3.2 Flowchart of Operation

4. Attentions

Please make sure that GD-Link is connected to PC.

5. Update

Users can go to the official website http://gd32mcu.com/cn/download to get the latest version.