

	Version	10 Pages	
GigaDevice MCU	English V 1.2	10 Pages	
	Name: GigaDevice GD-Link Programmer User		
Team	Manual		

# GigaDevice GD-Link Programmer User Manual

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## 1. Introduction

This user manual describes an application used to operate the flash or config GigaDevice MCUs with available USB cable and GD-Link adaptor. GD-Link programmer is a tool for the user to use MCUs with high speed.

### **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 config GD-Link offline download function.

#### 1.2 Purpose

Besides a perfect stage for users to download application program with high speed, GD-Link programmer also aims to provide wonderful and creative experience. The description is edited for a better service.

#### **1.3 Operating environment**

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

Hardware Requirements: GD-Link adapter, referring to the GD-Link Adapter User Manual.

#### **1.4 Jargon and Contraction**

GD-Link: GD-Link adapter is a three-in-one multi-function development tool for GD32 series of MCUs. It provides CMSIS-DAP debugger port with JTAG/SWD interface. User can use GD-Link adapter for online programming or debug code in compatible IDE such as Keil or IAR. Another important function is offline programming.



• USB: Universal Serial Bus (USB) connects more than computers and peripherals.

It has the power to connect you with a whole new world of PC experiences.

## 1.5 Package composition

All files listed in Chart 1 are required.





## 2. Running

This software is running on PC and compatible computers, and on platforms of WINDOWS. There's no need to setup the software, the only thing you need to do is to click the icon to operate the software.

## 3. Using Details

## **3.1 Layout introduction**

😹 GD-Link Programmer 4.3.0.8650	Operation Area				
File(F) Target(T) GD-Link Refresh Edit(E) View(V) Help(H)					
	-			Properties	<b>≠</b> ¤ ×
				Properties Wind	
				8: 21 🖪 🖌	_
				Device(GD-L	ink)
				Connect	USB[Device 0]
				Device Inter	SWD
				Firmware V	54
File Content Disulary Area				UID	33314E6D83338
File Content Display Area				SN	CD066474DCC9
· · ·				JTAG/SWD	
				Initial Speed	500 kHz
				MCU Info	
					GD32F107VCT6
				Endian	Little Endian
				Check core ID Core ID	0x1BA01477
				Use RAM	Yes
				RAM Address	
				RAM Size	96KB
				UID	AB 91 37 38 35
				Flash Info	
				Size	256KB
				Flash Base	0x8000000
				7	
			Prop	erty Wi	indow
Output					₩ # X
Show initial information and software information here. Connection successful!					
Getting option bytes successfully!					
AS 5A FF DO FF OD FF OD FF OD FF OD FF OD FF OD					
H 4 + H Status		A			
Ready	Information Output	Area	 		CAP NUM SCRL

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. In order from top to bottom:

#### **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.



GD-Link Programmer 4.3.0.8650	MCD for the detail.		
File(F) Target(T) GD-Link Refresh Edit(E) View(V) Help(H)			
		Properties	<b>▼</b> 0
		Properties Wind	low
		8H 🕹 🖽 🗲	
		Device(GD-L	
		Connect	USB[Device 0]
		Device Inter	
		Firmware V	
		UID	33314E6D833
		SN JTAG/SWD	CD066474DC
		Initial Speed	500 LLI-
		MCU Info	300 KH2
		MCU Part No	GD32F107V0
		Endian	Little Endiar
		Check core IE	
		Core ID	0x4BA00477
		Use RAM	Yes
		RAM Address	
		RAM Size	96KB
		UID	AB 91 37 38
		🕀 Flash Info	
		Size	256KB
		Flash Base	0x8000000
			-
w initial information and software information here.			
netion successfull ting option bytes successfully! S.A.FF 00 FF 00 FF 00 FF 00 FF 00 FF 00			

Chart 3

## 3.1.2 Refresh Properties List

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

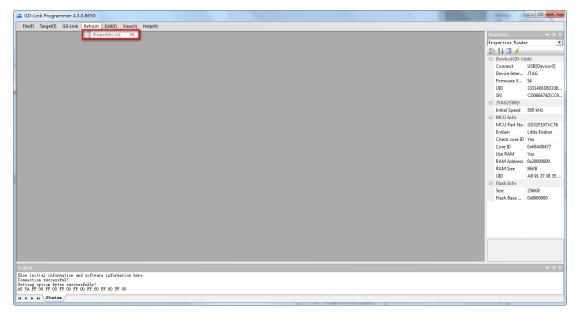


Chart 4

#### 3.1.3 GD-Link

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

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#### 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).

GD-Link Update File C	Configuration		X
Part No. : GD32	2E103RBT6 💌		
File Index	File Path	File Size	Address
1	D:\test.bin	0x3000	0x800000
		Delete Cancel	Add Update



GD-Link Update Fi	le Configuration		×
Part No. : G	D32W515PIQ6	Configur	e OptionBytes
File Index	File Path	File Size	Address
1	D:\test.bin	0x3000	0x8000000
		Delete	Add
		Cancel	Update

Chart 6

#### 3.1.3.2 Configure GD-Link

This menu includes Offline-Programming Configuration, Online-Programming Configuration  $7\,/\,11$ 



and Product SN three parts (As shown in chart 8, this menu will add more function by updating firmware).

- Offline-Programming Configuration: This menu configure whether secure chip after offline -programming. It will take effect after update program files.
- Online-Programming Configuration: This menu configure 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 configure product SN value after online-programming (As shown in chart 8). Check the checkbox means write product SN to target MCU after onlineprogramming. Users configure the address to write product SN, product SN value and product SN increase value.

📸 GD-Link Programmer 4,3.0.8650	l	
File(F) Target(T) G0-Link Refresh Edit(E) View(V) Help(H)		
Update File	Properties	<b>→</b> 3 ×
Configuration	Properties Windo	v •
	🔠 순부 💷 🗲	
	Device(GD-Lin	nk)
	Connect	USB[Device 0]
	Device Inter	
	Firmware V	
		33314E6D83338
		CD066474DCC9
	JTAG/SWD	
	Initial Speed	500 kHz
	MCU Info	0000000000000000
		GD32F107VCT6 Little Endian
	Endian Check core ID	
		0x4BA00477
		Yes
	RAM Address	
		96KB
		AB 91 37 38 35
	Flash Info	
		256KB
	Flash Base	0x8000000
Show initial information and software information here. Connection successful		
United as a second at a second at a second as a second		
K 4 ) N Status		
Ready	(	CAP NUM SCRL

Chart 7

GD-Link Configuration	
Offline-Programming Configuration Secure After Programming Erase Option Chip Program Limit Count	-
Online-Programming Configuration Secure After Programming Reset Before Programming Run After Programming	
Product SN     SN Address:0x     00000000       Write SN     SN Increment:     1	
OK Cancel	

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 your software is the latest version before you update your GD-Link firmware.

#### 3.1.4 Target MCU

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

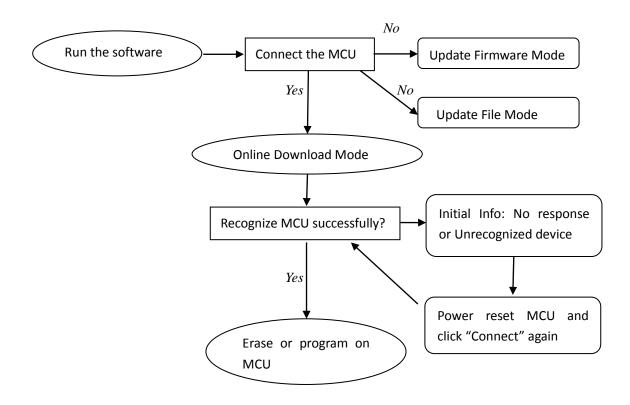
- Connect: Users must click this menu before operating target MCU with keyboard shortcuts F2.
- Disconnect: This menu is enabled after connected successful, it is used to disconnect from target MCU.
- Security: Security includes two levels, GD10x series only low level can be set while GD1x0 series can 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 allow 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.



GD-Link Programmer 4.3.0.8650		
File(F) Target(T) GD-Link Refresh Edit(E) View(V) Help(H)		
Connect F2	Properties	<b>v</b> 4
Disconnect	Properties Window	v
Security	8 🛃 🖬 🗲	
	😑 Device(GD-Lin	nk)
Insecurity		USB[Device 0
Configure OptionBytes	Device Inter	
Mass Erase F4	Firmware V	
Page Erase F3		33314E6D833 CD066474D0
Check Blank	JTAG/SWD	CD000474DC
Compare data with opened file		500 kHz
	MCU Info	
Program F7	MCU Part No.	GD32F107V0
Continuous Program		Little Endiar
Read Data	Check core ID	
Run App P9		0x1BA01477
Non-type	Use RAM RAM Address	Yes
		96KB
		AB 91 37 38
	Flash Info	
	Size	256KB
	Flash Base	0x8000000
put v initial information and software information here.		•
ection successful!		
ing option bytes successfully! 34 FF 00		
( ) » Status		
ay la se	C	AP NUM SC

Chart 9

## 3.2 Flowchart of Operation



## 4. Attentions

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

## 5. Update

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

version.