



# **Gang-Writer8-8 User's Guide**

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## 1 Overview

### 1.1 Gang-Writer8-8

The Gang-Writer8-8 main components are the G-ICPM08040 and G-ICPB00040. The G-ICPM08040 which is also known as the programming module, includes 4 programming units, namely ICP1~ICP4. This is used together with the G-ICPB00040 which is the Base Board. Together they can implement a powerful means of programming 8 Holtek 8-bit Flash MCUs in parallel to meet the high efficiency requirements for volume production.

### 1.2 Main Features

- Supports Holtek 8-bit Flash MCU programming
- Uses the HOPE3000 software
- Programming files are downloaded to the programming module
- Supports programming module firmware online one-click quick update
- Compact size (136×75×23mm) for usage convenience with fixture
- Supports up to 8 sites parallel programming
- 2/4/6/8 sites parallel programming available
- Supports module extension to achieve up to 12/16 site parallel programming
- Visual programming status display LED indicators
- Supports offline programming mode

### 1.3 Hardware Introduction

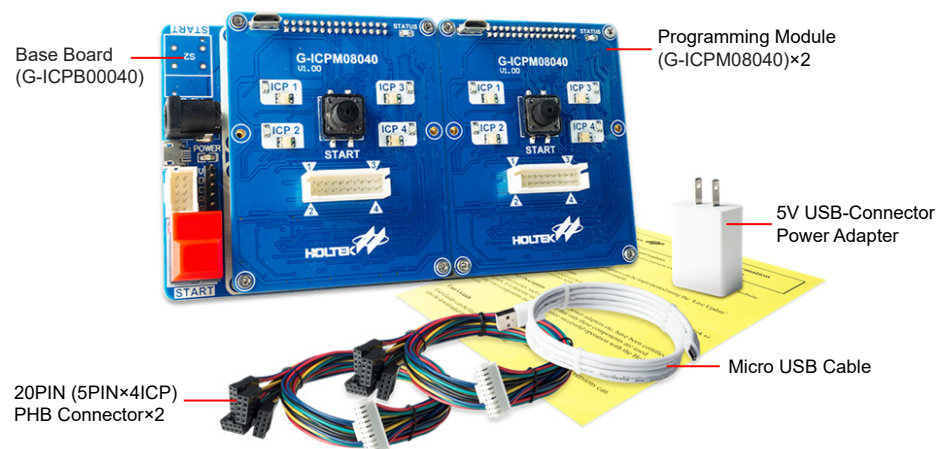
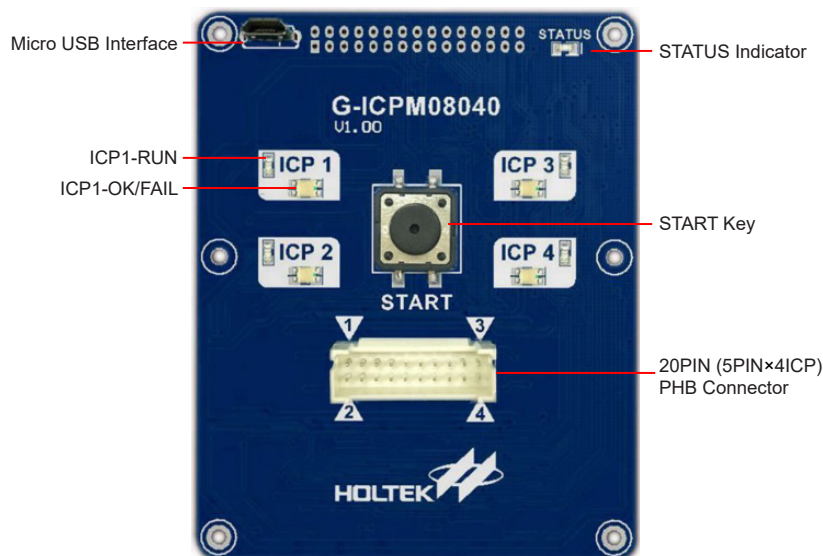
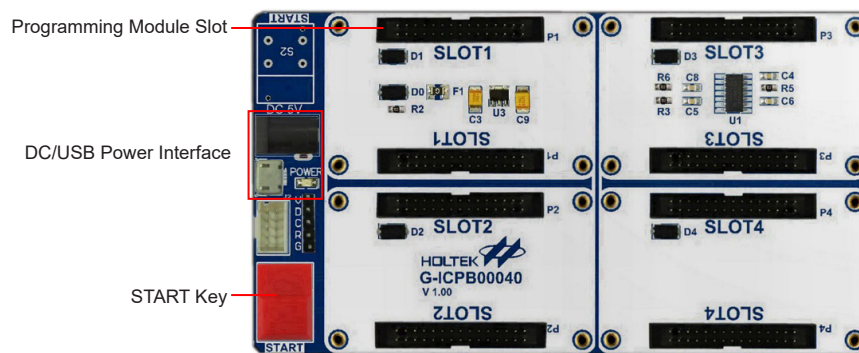


Figure 1. Gang-Writer8-8 Monolithic Components



**Figure 2. G-ICPM08040 – Programming Module**



**Figure 3. G-ICPB00040 – Base Board**

## 1.4 Software Introduction

The software HOPE3000 (V3.26 and above) is used, refer to appendix [HoltekEWriterUsersGuide\(125\).pdf](#) for detailed HOPE3000 usage description. After the G-ICPM08040 hardware is connected, the hardware name and firmware version will be displayed at the lower right corner of the software interface, as shown in Figure 4:

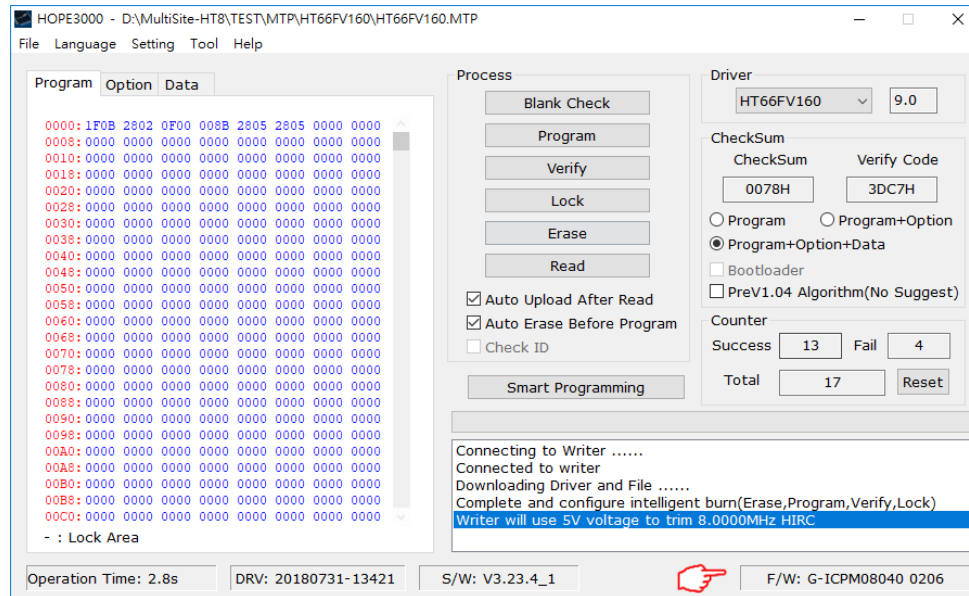


Figure 4. HOPE3000 Interface

## 2 Programming Module Independent Operation

### 2.1 Online Programming Mode

In this mode, only the ICP1 unit works. Connect the programming module to a PC using a USB cable and open the software. The ICP1-RUN LED will be illuminated indicating that it is in the online programming mode, as shown in Figure 5. For online programming specific operations together with the HOPE3000, refer to appendix [HoltekEWriterUsersGuide\(125\).pdf](#). Note that online programming does not support smart programming.

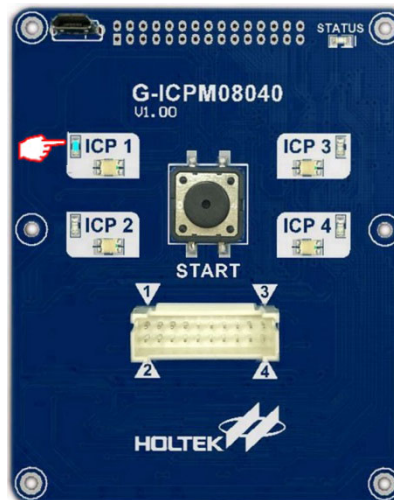


Figure 5. Programming Module

## 2.2 Offline Programming Mode

### Offline Programming Data Download

Connect the programming module to a PC via a USB cable. After the module has successfully connected, open the desired file and download it, as shown in Figure 6. Refer to appendix [HoltekEWriterUsersGuide\(125\).pdf](#) for the specific software operation procedures. When the offline data download has successfully completed, the STATUS LED will remain on.

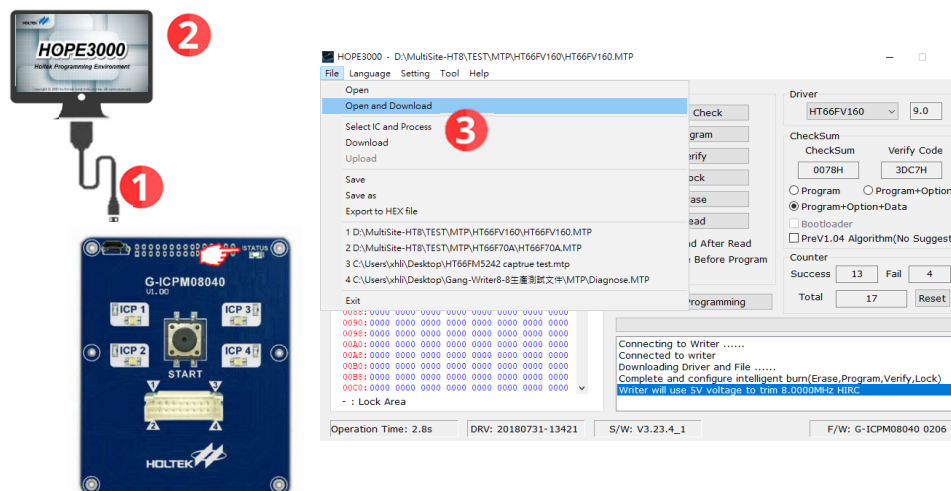


Figure 6. Offline Programming Data Download – Single Module

### Offline Programming

After a 5V/3A power is connected, the STATUS LED will remain on. Press the START key to implement programming. The programming states can be observed by the corresponding LEDs.

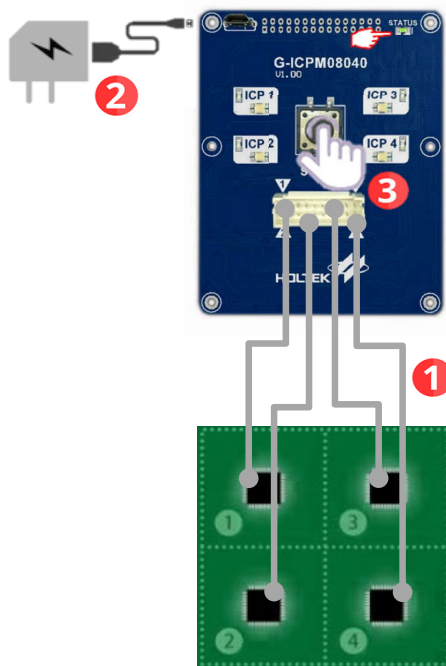


Figure 7. Offline Programming – Single Module

### Programming Mode Selection

Either 2 or 4 site parallel programming can be selected using the OPTION S/W settings according to the actual requirements, as shown in Figure 8 and Table 1. With regard to 6 or 8 site parallel programming description, refer to [3.2 Programming Mode Selection](#).

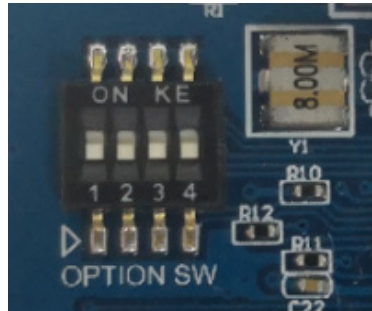


Figure 8. OPTION S/W

Switch1	Switch2	Site Settings
OFF	OFF	Enable the ICP1~ICP4 programming – factory default
ON	OFF	Enable the ICP1 and ICP2 programming
OFF	ON	Enable the ICP3 and ICP4 programming
ON	ON	Enable the ICP1 and ICP3 programming

Table 1. OPTION S/W Site Settings

## 3 Using the Programming Module together with the Base Board

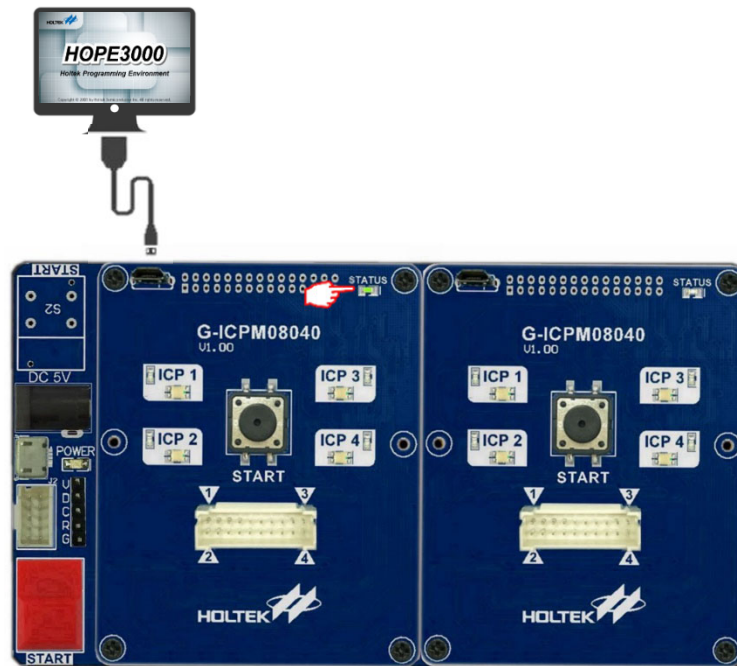
In the offline programming mode, using the programming module together with the base board can implement 2/4/6/8 sites parallel programming in the standard mode or 12/16 site parallel programming in the extension mode. To implement programming module offline data download, connect the programming module to the PC via a USB cable directly. It is not necessary to remove it from the base board.

### 3.1 Offline Programming Mode

#### Offline Programming Data Download

The hardware connection is shown in Figure 9 and the specific operation steps are the same as [2.2 Offline Programming Mode – Offline Programming Data Download](#).

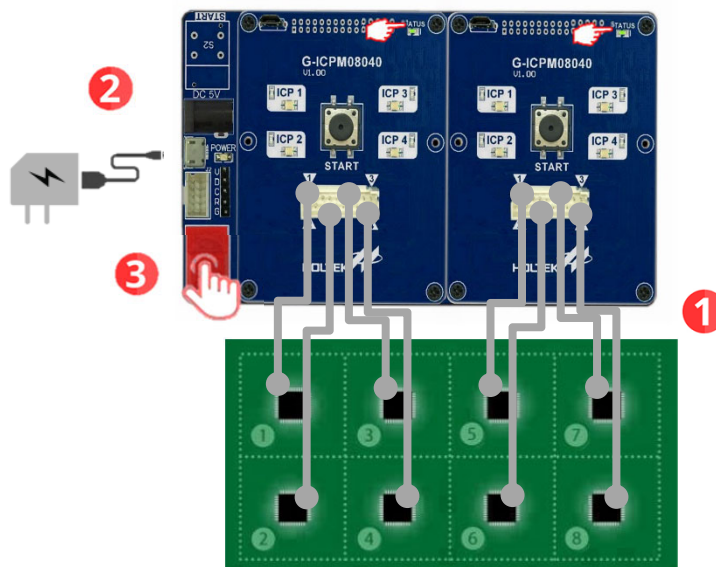




**Figure 9. Offline Programming Data Download – Module & Base Board**

### Offline Programming

After the offline programming data has been downloaded successfully, remove the USB cable from the PC. Connect a 5V/3A power to the programming module after which then the STATUS indicator of each programming module will be on. Press the START key to start programming after which the programming results can be obtained by observing the LED indicator on the corresponding programming module.



**Figure 10. Offline Programming – Module & Base Board**



### 3.2 Programming Mode Selection

#### Standard Mode

2, 4, 6 or 8 site parallel programming can be selected by the OPTION S/W settings, as shown in Figure 11.

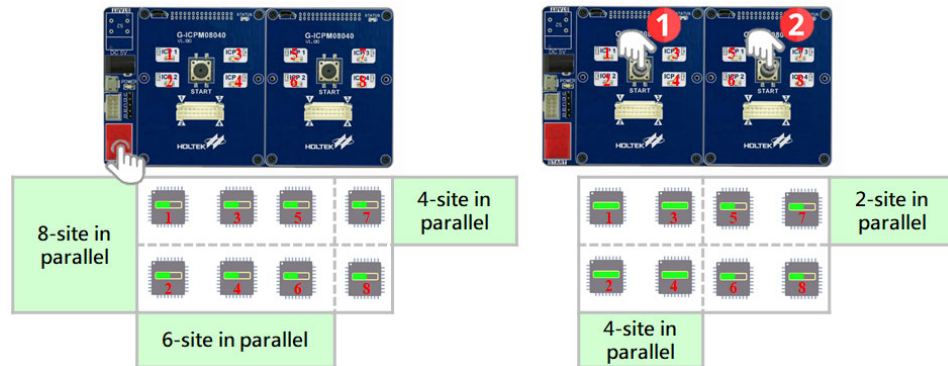


Figure 11. Programming Mode Selection – Standard Mode

#### Extension Mode

In the offline programming mode, if the base board works together with 4 programming modules, up to 16 Holtek 8-bit Flash MCUs can be programmed in parallel as shown in Figure 12.

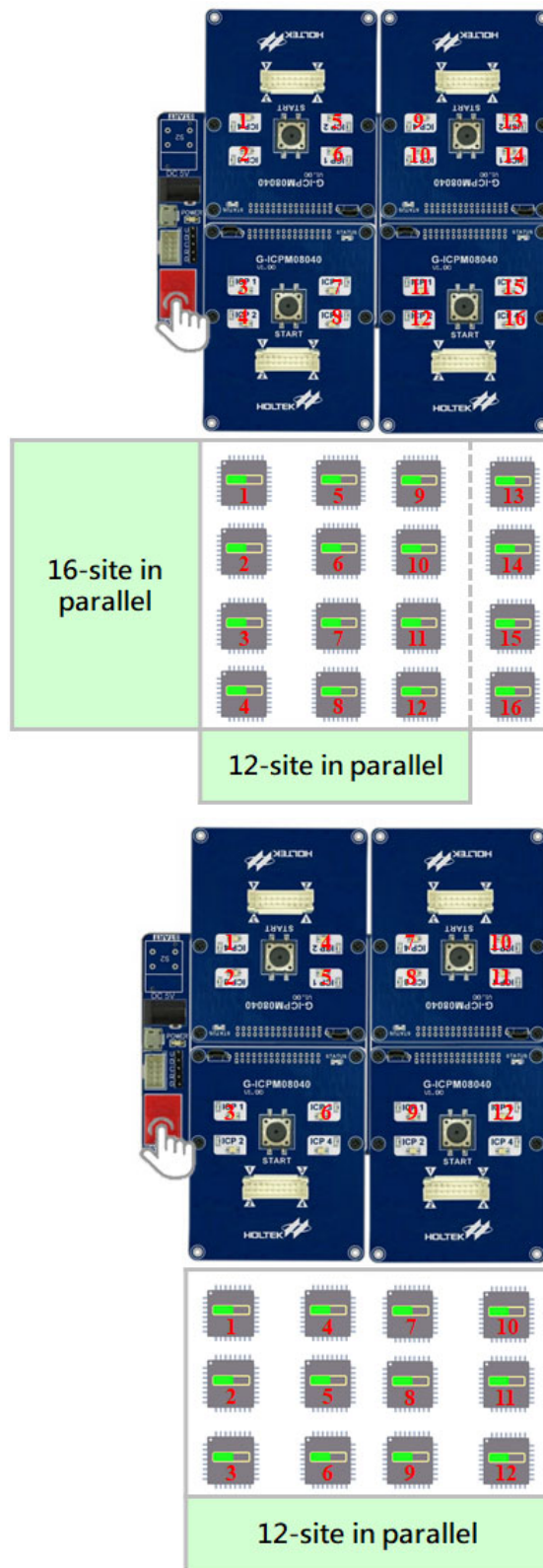


Figure 12. Programming Mode Selection – Extension Mode

## 4 Considerations

- Regarding the power supply (5V/3A) and the programming lines, it is strongly recommended to use the original accessories included in the product.
- Each separate programming channel (ICPx) provides a current of only 150mA.
- When programming, the capacitor connected to the base board VDD should not exceed a value of 220 $\mu$ F.
- The online programming mode does not support smart programming, namely auto programming. As shown in Figure 13, the auto programming button is disabled with a grey colour.

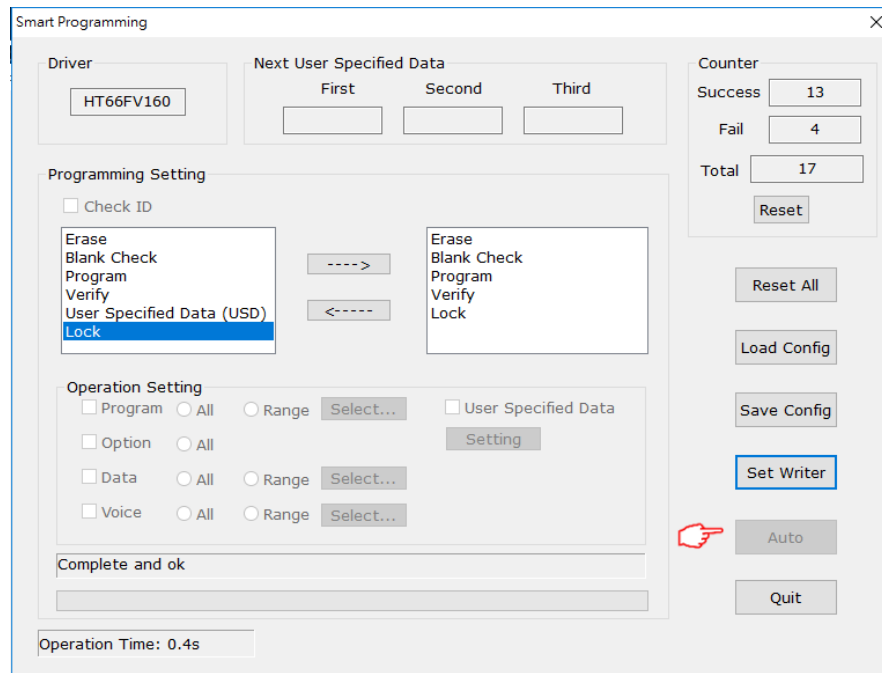


Figure 13. Smart Programming Mode Setting

## Appendix A LED Status Description

LED Indicator	Power On Status	Programming Process Status	Programming Complete Status
<b>Online Programming</b>			
STATUS	First on then off. Offline programming data download has completed and the ICP1 connection is successful.	Off	Off
	Flash (Mode2) then off. Offline programming data download has not completed and the ICP1 connection is successful.		
ICP1-RUN	On ICP1 connection is successful	Flash - Mode1	On
	Off ICP1 connection has failed		
ICP1-OK/FAIL	Off	Off	Off
<b>Offline Programming</b>			
STATUS	On Programming can be implemented	Off	On Programming successful
	Flashes - Mode2 Offline programming data error		Off Programming failed
	Flashes - Mode3 Power error		
ICPx-RUN x=1, 2, 3, 4	Off	Flash - Mode1	Off
ICPx-OK/FAIL x=1, 2, 3, 4	Off	Off	Off Programming successful
			FAIL LED flash Mode3:power error Mode4:programming failed

**Table 2. LED Status Definition**

Note: The STATUS indicator is off during the offline programming download process and is on after the download has successfully completed.

LED Flash Status Definition

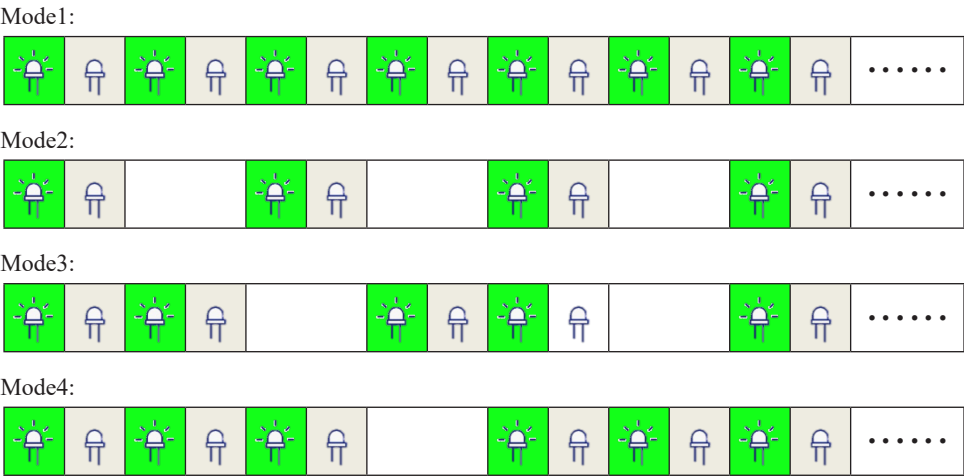


Figure 14. LED Flash Status Definition

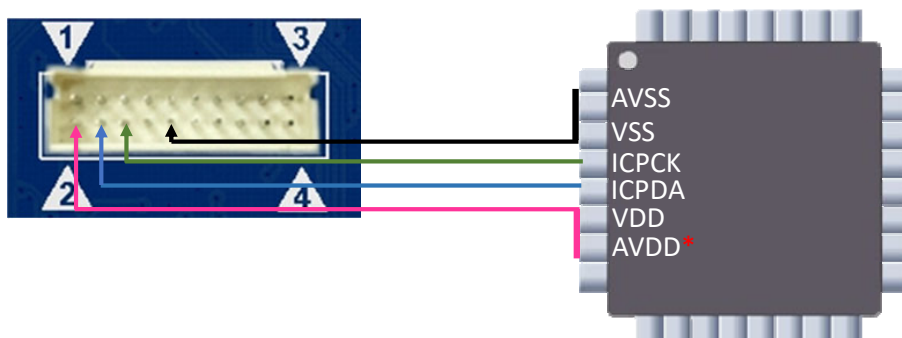
Appendix B 20PIN (5PIN×4ICP) PHB Connector



Figure 15. 20PIN (5PIN×4ICP) PHB Connector

1	VDD1	ICPDA1	ICPCK1	RST1	GND1	GND3	RST3	ICPCK3	ICPDA3	VDD3	3
2	VDD2	ICPDA2	ICPCK2	RST2	GND2	GND4	RST4	ICPCK4	ICPDA4	VDD4	4

Table 3. 20PIN (5PIN×4ICP) PHB Connector



\* Note: It must be connected to the VDD or other power supply according to application requirements.

Figure16. 20PIN (5PINx4ICP) PHB Connector & Holtek MCU ICP Connection

## Appendix C G-ICPB00040 (Base Board) External Key

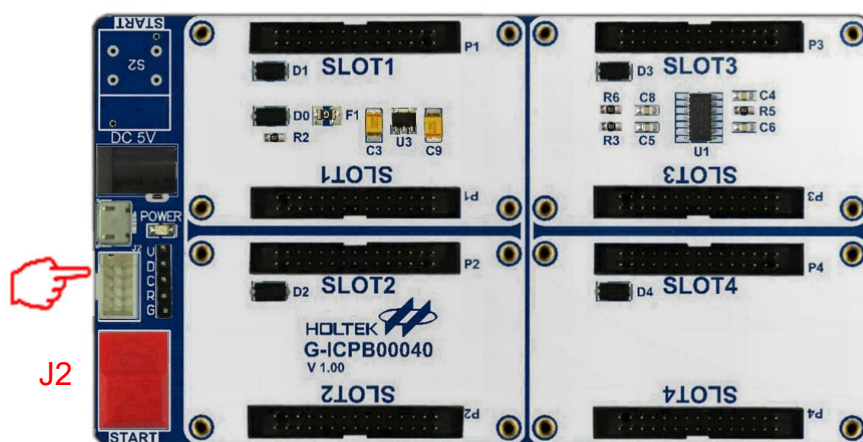


Figure 17. J2 Explanatory Chart

PIN1: GND	PIN2: The external key can enable the SLOT1~SLOT4 programming at the same time.
PIN3: GND	PIN4: The external key can enable the SLOT1 and SLOT3 programming at the same time.
PIN5: GND	PIN6: The external key can enable the SLOT1 and SLOT3 programming at the same time.
PIN7: GND	PIN8: The external key can enable the SLOT2 and SLOT4 programming at the same time.
PIN9: GND	PIN10: The external key can enable the SLOT2 and SLOT4 programming at the same time.

Table 4. J2 Pins

## Appendix D HoltekEWriterUsersGuide(125)



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