StarProg-A

(Compatible with StarProg-MS Programmer)

Universal Online Programmer User Manual

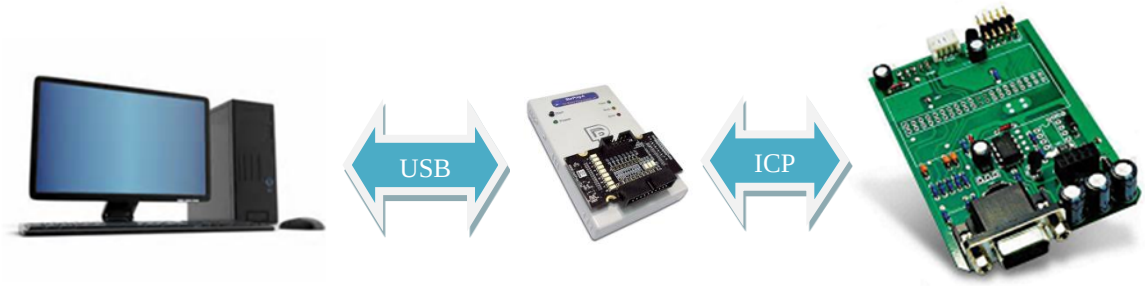
Version 1.1

Table of Contents

I. Introduction

This user manual provides the descriptions of StarProg-A hardware features, applications, and software installation guidelines.

StarProg-A is able to support online and offline programming. Online programming is for programming the IC that is already welded on the circuit board, which programs by connecting the corresponding cable to the test point and the debug point on the IC board that is going to be programmed. Offline programming programs through the socket adaptor, please contact with DediProg for further information. StarProg-A can be used on development and production. When using it in a production, it can provide USB control, standalone, or offline programming, as well as integrate with ATE equipment.



For more software instructions, downloads, and application notes, please visit our website. **www.dediprog.com/download**

II. Product Information

Programmer Models / Functions	StarProg-ATE	StarProg-A
Supported IC Kinds	**MCU/CPLD/EEPROM/SPI NOR/SPI NAND**	**MCU/CPLD/EEPROM/SPI NOR/SPI NAND**
Mini USB Port	**√**	**√**
Socket Sites	**X**	**√ (directly install)**
ISP/ICP Port	**√**	**√ (with dedicated adaptor)**
ATE Port	**√**	**√**
Power Supply/Pass/Busy/Error LED Light	**√**	**√**
Start button	**√**	**√**
Off-line/Standalone Programming	**√**	**√**
Multiple Programmers (note 2)	**√**	**√**
Dimension	**135 x 75 x 20 mm**	**108 x 67 x 20 mm**
Command line, Labview, DLL API Support	**CMD LINE & Labview**	**All**

Note 1. Socket adaptor will provide Start/Busy/Pass/Fail control signals.
Note 2. Multiple programmers of the same model can be driven by 1PC.

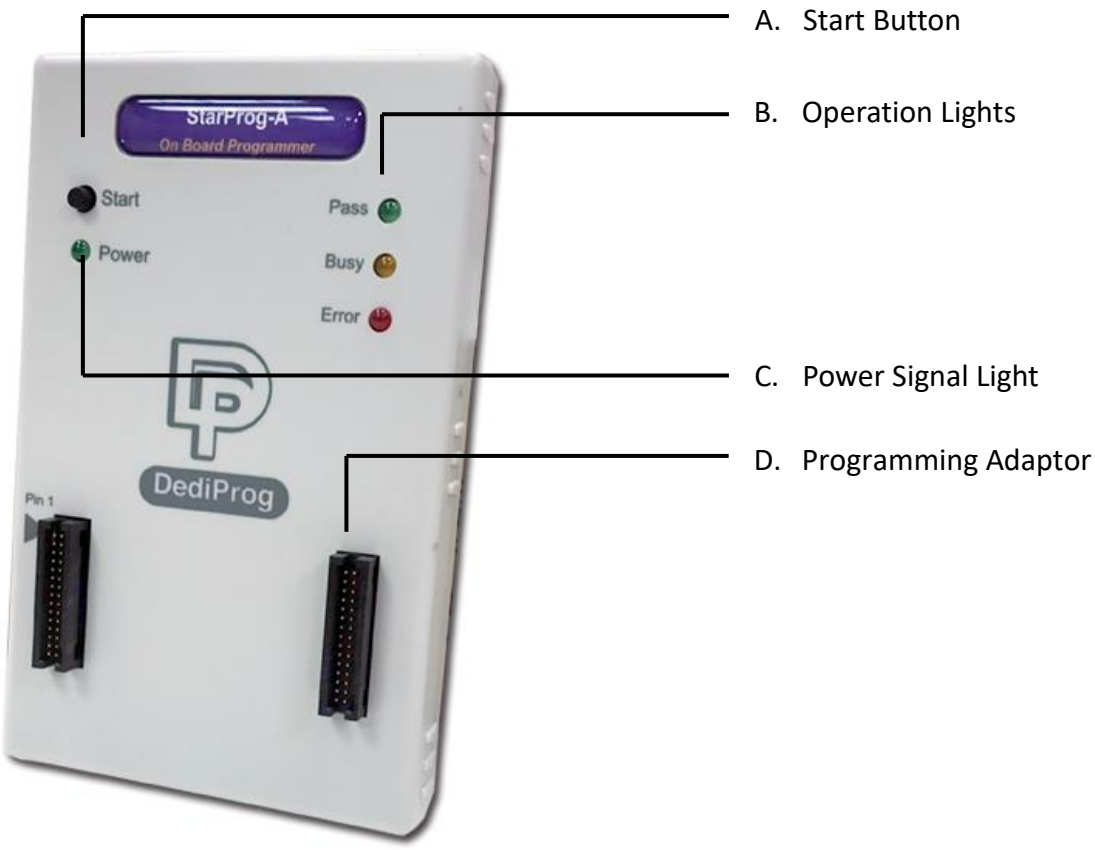
III. System Requirement

CPU:	P4 or above
OS:	Windows 7 / 8 / 8.1 / 10
USB Port:	USB 2.0
Free Disk Space:	At least 1GB
CD ROM:	It is necessary for installing the software

*When programming large volume ICs (ex. NAND), please reserve enough space for buffering.

IV. Product Descriptions

4.1 Exterior



A. Start Button

Manually trigger to start in the production mode.

B. Operation Lights

- **Red LED:** Error; programming has failed.
- **Yellow LED:** The programmer is operating.
- **Green LED:** Passed; the programming has completed successfully.

C. Power Signal Light

The light indicates the programmer is powered on.

D. Programming Adaptor

It is inserting socket adaptor or specific ISP adaptor to provide the controls of IC programming and the ATE equipment integration.

E. Power Connector

F. Mini USB Connector

E. Power Connector

The power inputs for off-line/standalone mode. (Please use the power adaptor that DediProg provided, 5V/1A)

F. Mini USB Connector

Mini USB connector is for connecting the computer and the programmer when using Dediware. (Mini-B, Speed is above 15MB/s); when you are not using the power adaptor, then the USB is also able to provide electricity.

4.2 StarProg-A Hardware Specification

- **Programming Power Output x 2**

VCC: 1.2~5V/200mA.
VPP: 5V~12V/60mA.

- **Programming Signal Specifications x 8.**

Supported Voltage: 1.2V~5V
Dual direction
Support various programming protocol
Provides ESD protection

- **ATE Control Signals for Integration x 4**

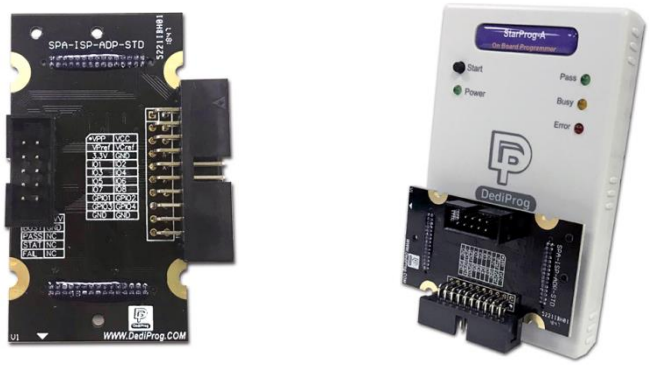
Output: 0-3.3V Pass/Fail/Busy Signal.
Input: 0-3.3V Start Signal.

- **Embedded Memory:** Use 2Gbit Flash (For Standalone).

4.3 Related Accessories that are included in the StarProg-A package

4.3.1 Dedicated ISP Socket Adaptor x 1

The below picture is the combination of the socket adaptor and the programmer.



4.3.2 20 PIN 20-Pin ISP Split Cable (2.54mm) x 1

20-Pin ISP Split Cable (2.54mm) works with the ICP Port of the dedicated ISP socket adaptor.

4.3.3 Power Supply x 1

AC 100~240V to DC 5V/1A power supply for Starprog-A (Included in the package) x 1

4.3.4 USB Cable x 1

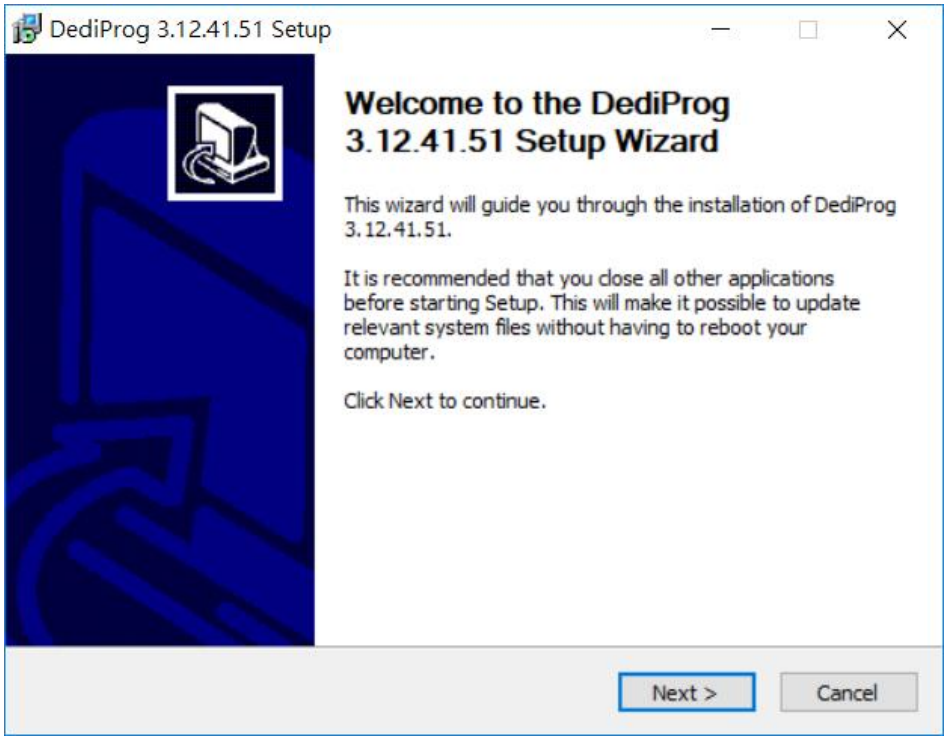
USB cable is for connecting the StarProg-A and the computer.

V. Dediware Quick Installation Guide

The software is provided with the purchase of StarProg series programmers. The latest version will also be available on our website. **www.dediprog.com**

5.1 Software Installation

1. Install **DediWare** software



2. After installation, **Dediware** icon will appear on the desktop.

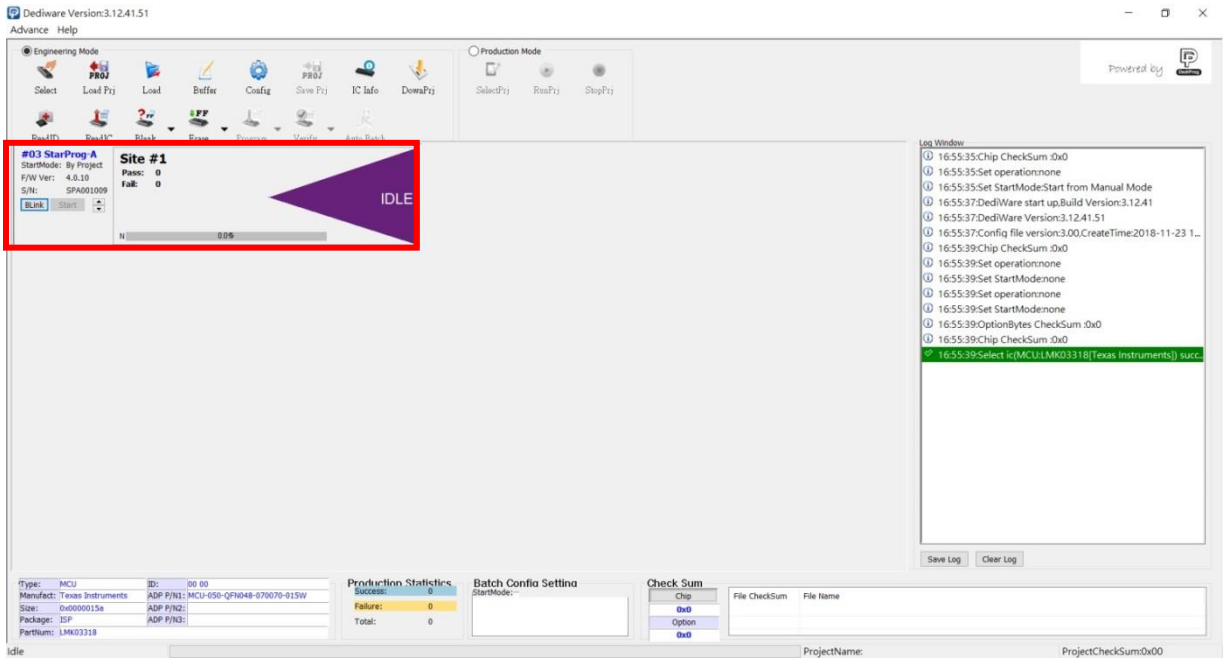
5.2 Install StarProg-A

1. Connect StarProg-A to a computer (Make sure the computer recognizes the programmer).
2. Install the socket adaptor. If you are using the dedicated ICP adaptor, then please use programming cable to connect to the circuit board.
3. Start programming after the software is open.

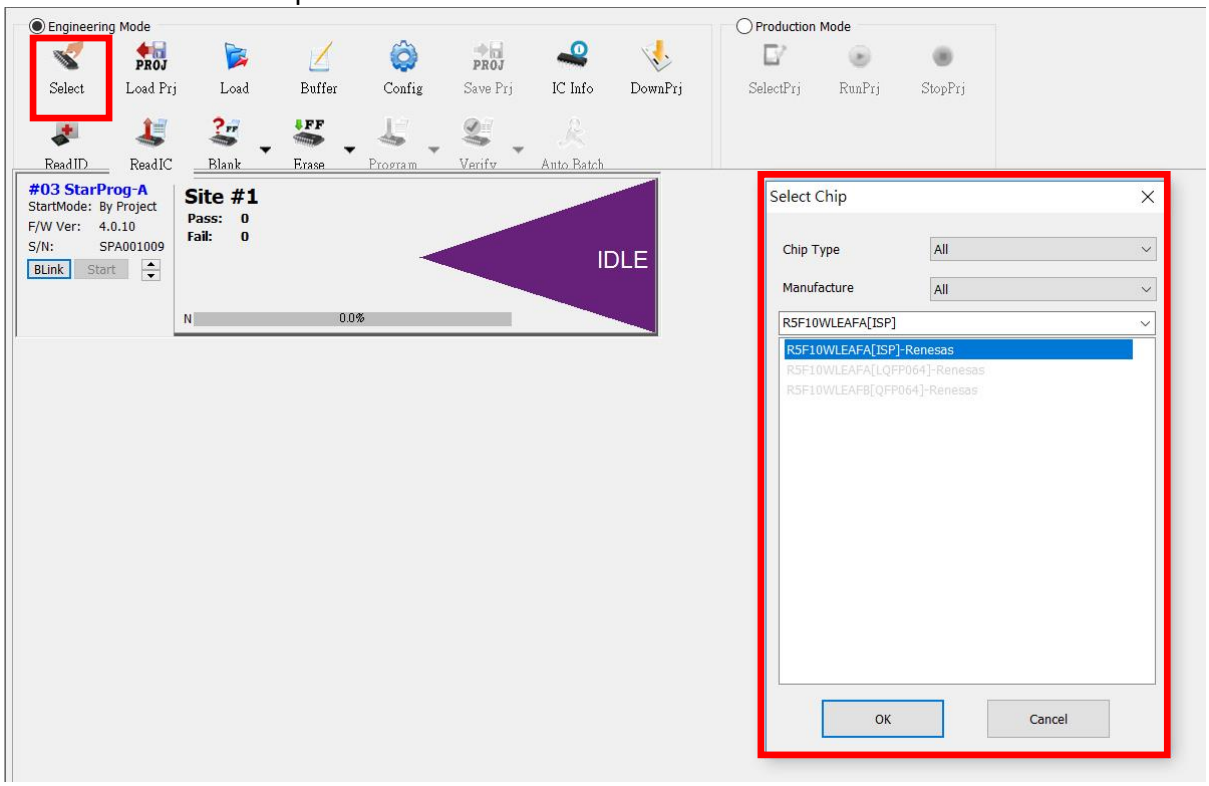
5.3 DediWare Setting

1. Double-Click the icon to run the software.

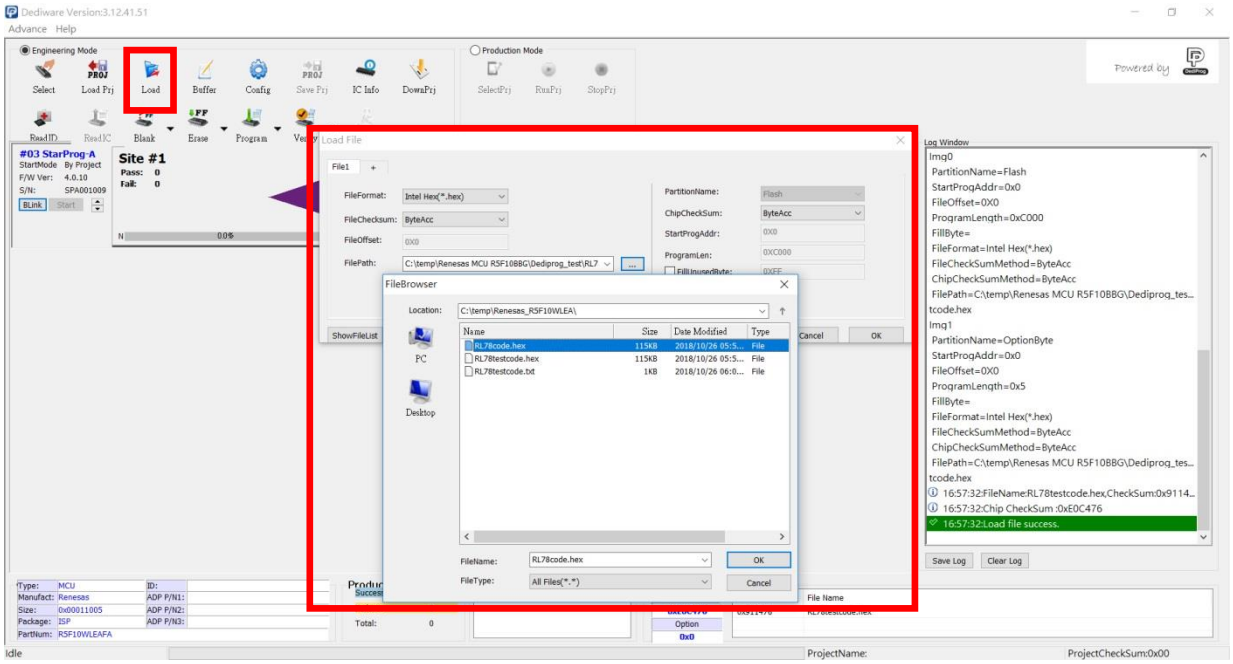
2. Software interface (Make sure the programmer has been detected by the Dediware, please see the below image for reference).



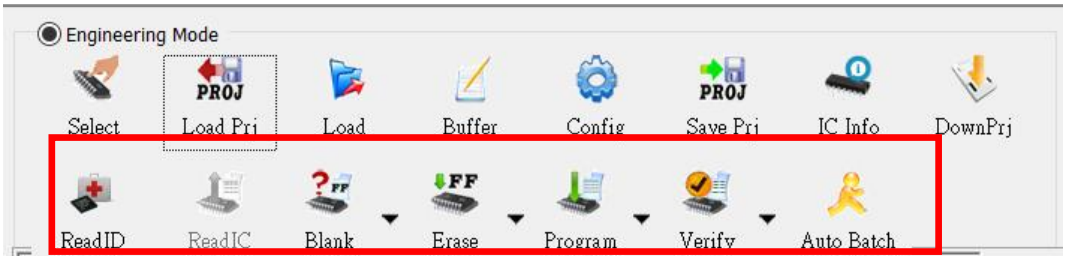
3. Select IC brand and part number.



4. Load the programming file.

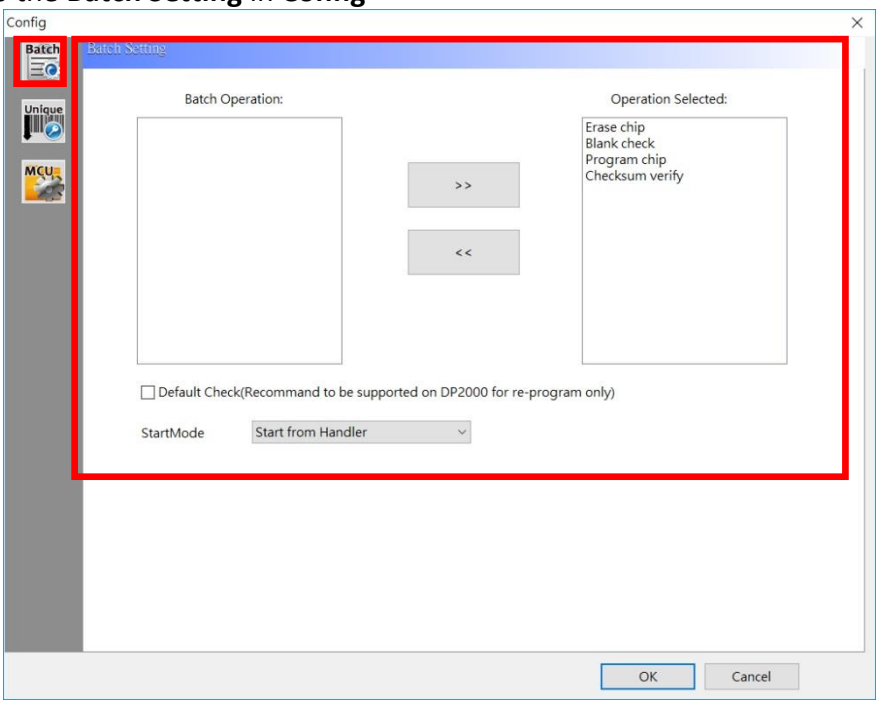


5. Single Programming Operation

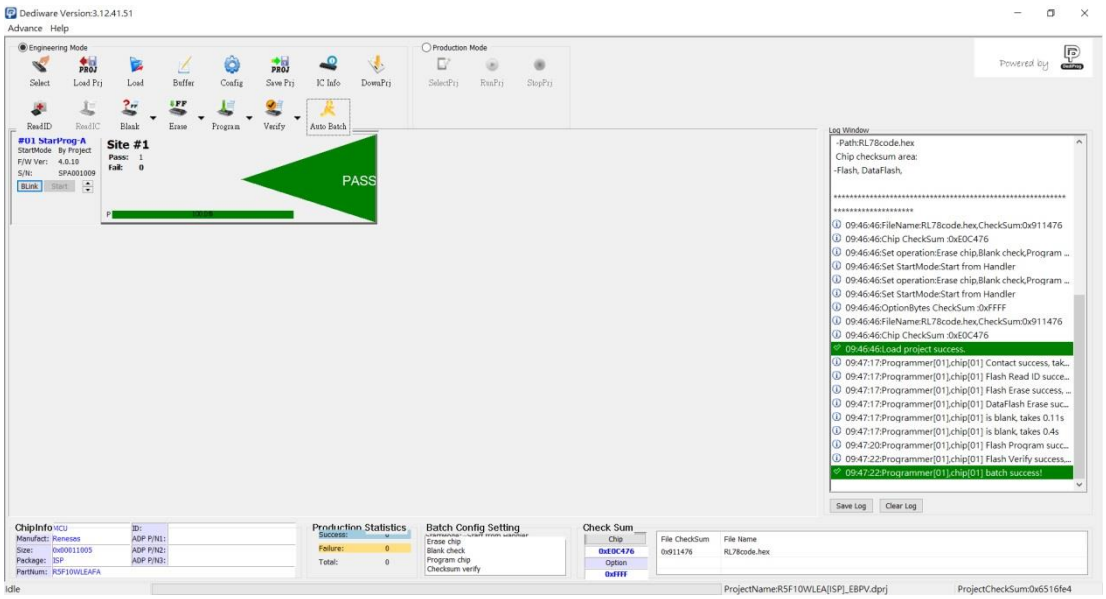


6. Batch Setup

Step 1. Set up the **Batch Setting** in **Config**

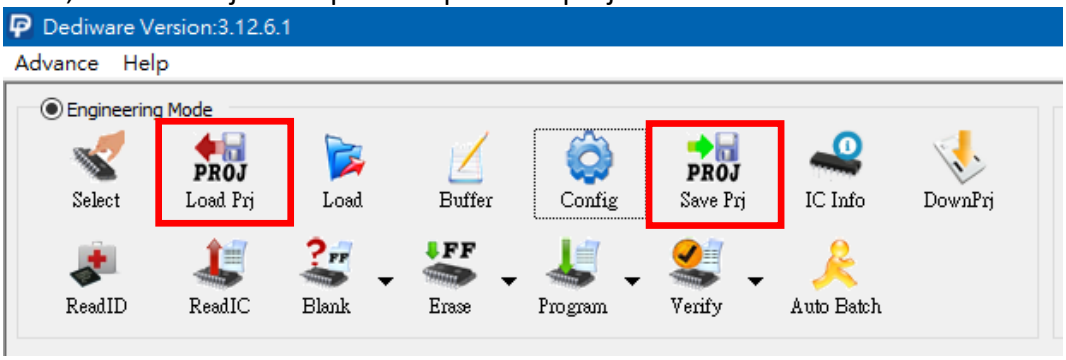


Step 2. Click **Auto batch** to start programming.



7. Save and Load the Project File.

SavePrj will save the entire select, load, and config settings into a project file (*.dprj). On the other hand, the Load Prj can import the previous project files.

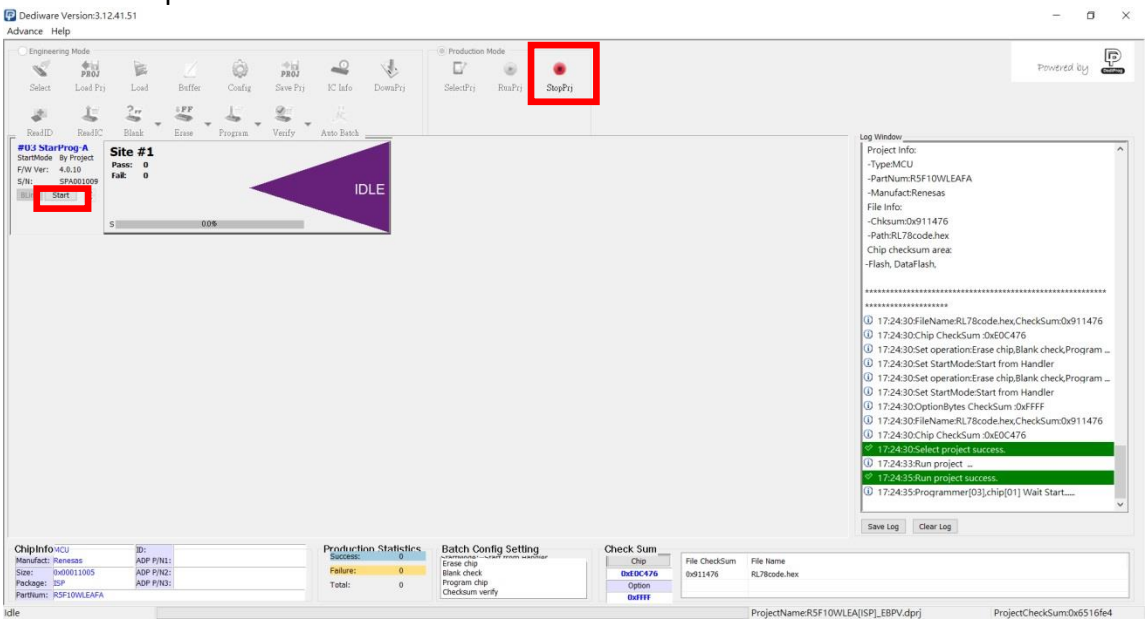


8. Production Mode Steps

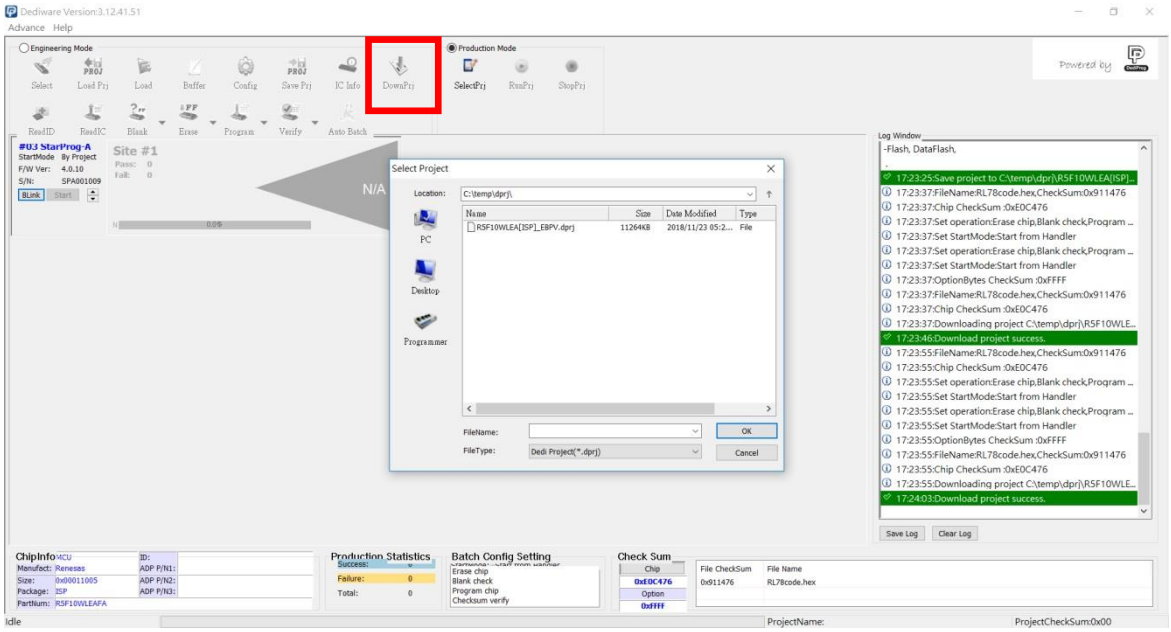
Step 1. Choose a project (SelectPrj)

Step 2. Run the Project (RunPrj)

Step 3. Click the start button when it is available (as shown), and then click StopPrj to stop.



9. Standalone/Offline Programming Setting. Only need to save the project file into the programmer's embedded memory card through Down Prj, and then connect the programmer to the external power to start standalone programming. (Please refer to Method C and D in VI. Application)

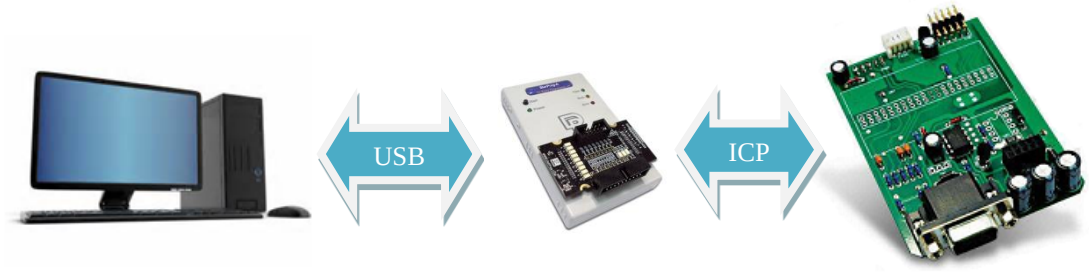


VI. Applications

In the **engineering mode**, once the StarProg-A has been tested and created a project file (*.dprj), there are several methods to conduct a production.

Method A. Through Dediware

Operate and monitor all the production processes through Dediware. All the procedures will be recorded in the log (default folder will be C:\Dedilog) and it can program serial numbers and the unique key's related serial numbers as well.

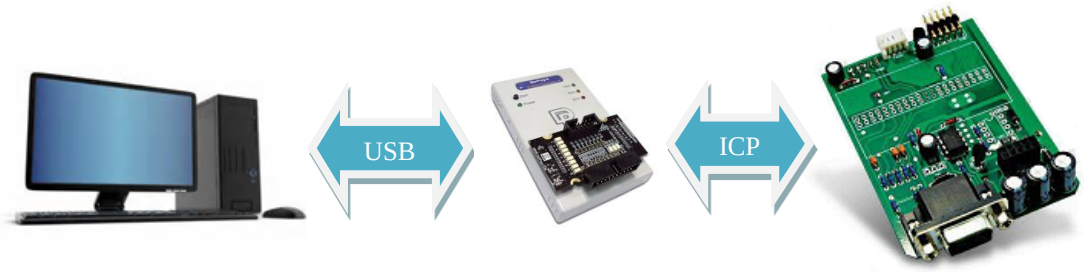


Step 1: Test and save the project (*dprj) under Dediware engineering mode. Make sure you select "Start from handler" for **start mode** in the **Config** window.

Step 2: Select **production mode** and import project files to start programming.

Method B: Through CLI

CLI can integrate with the production software. Importing project files to start according to your production demands. However the log and the serial number programming are not available under this circumstance.



Step 1: Test and save the project (*dprj) under Dediware **engineering mode**. Make sure you select “Start from handler” for **start mode** in the **Config** window.

Step 2: Connect the CLI (Command line) with your production software and import project file to proceed. Please use the CLI that is provided by DediProg.

Most Frequently used commands combination are listed below: (For more information, please execute the Dediware CLI).

dwcmd –d “Project File Name includes the path”
(Note: The characters between the double quotes should be less than 50)

dwcmd –R
(Capitalize, upper case and lower case are varied.)

dwcmd –s
(Start programming the IC according to the project file)

dwcmd –s
(Change the IC and repeat programming)
…
dwcmd –T
(Stop the project file)

Attention:

1. When the project file was saved, the name already includes its file name information (not including the path), please do not rename the file after the project is created, because it may not work normally in the non-graphical interface, like CLI or stand-alone.
2. The project file name (Including the path) is limited to 50 characters.

Method C. Standalone Programming (Use start button)

Standalone does not require a computer for programming. Just insert a SD card with projects files, connect the power cable to the programmer, and press the start button to begin.

Step 1: Test and save the project (*dprj) 

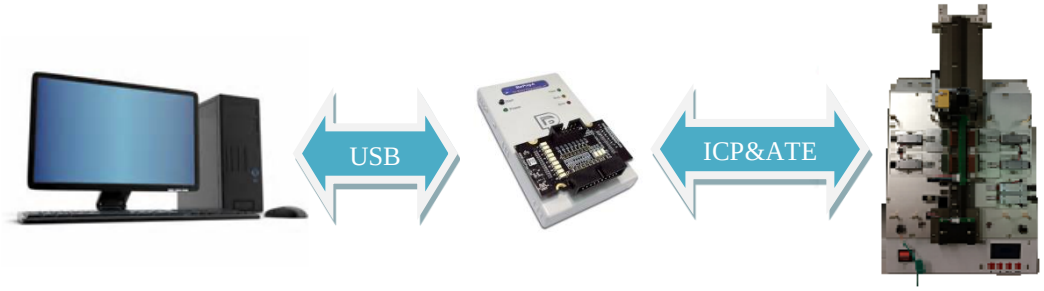
under Dediware **engineering mode**. Make sure to select “Start from handler” for **start mode** in the **Config** window. And use DownPrj to load the project file to the embedded memory.

Step 2: Connect the external power to StarProg-A (Not connected to USB), only need to press the Start key on the programmer to execute programming.

Attention:
StarProg-A must have a license key in order to program, if it is a demo license key, then it will not support stand-alone programming function; the permanent key is not limited to this regulation.

Method D. ATE Integration (Through Start, Busy, Pass, and Fail control signals)

Use the specific socket adaptor to integrate StarProg-A with the ATE equipment. Able to control the programming functions through the Start, Busy, Pass, and Fail external signals after loading the project file into the embedded memory.



Step 1: Test it under Dediware engineering mode, and then save the project file as *.dprj

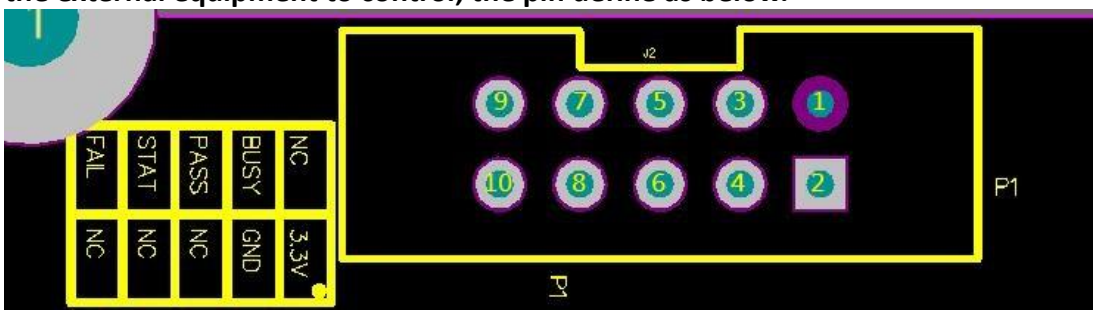
. Use **start mode** to set-up the handler. And use DownPrj to load the project file to the embedded memory.

Step 2: Connect the external power to StarProg-A (Not connected to USB), only need to control programming through the signals of the dedicated ICP programmer.

*Please refer to Chapter VII for more information.

VII. StarProg-A External Control Signals

The dedicated ICP socket adaptor has a reserved set of connector for control signals to allow the external equipment to control; the pin define as below.



The corresponding pins are listed as the below chart:

Programmer Control Signal	Pin 2	Pin 4	Pin 3	Pin 5	Pin 9	Pin 7
Programming Signal	+3.3VDD	GND	Busy Signal	Pass Signal	Fail Signal	Start Signal

When you need to integrate the StarProg-A with the ATE equipment, here are some suggestions:

i. **Use Standalone method after load in the project file (*.dprj).**

ii. **The control signal Methods of the programmer are as the following:**

- GND => Ground with the ATE equipment
- VCC => Programmer fixed output 3.3V
- Start => Send a 100ms high electrical potential start
- Pass, Busy, Fail => Normally, it will stay at low electrical potential; it will turn to high electrical potential when it is in action.

After loading the project file into the programmer's embedded memory, and the hardware cables are all connected, then you can proceed to the below steps.

Step 1. Connect the electricity to the programmer

Step 2. Start initializing after the **Busy** light blinks for three times.

Step 3. Send a 100ms "Hi" signal to **Start**

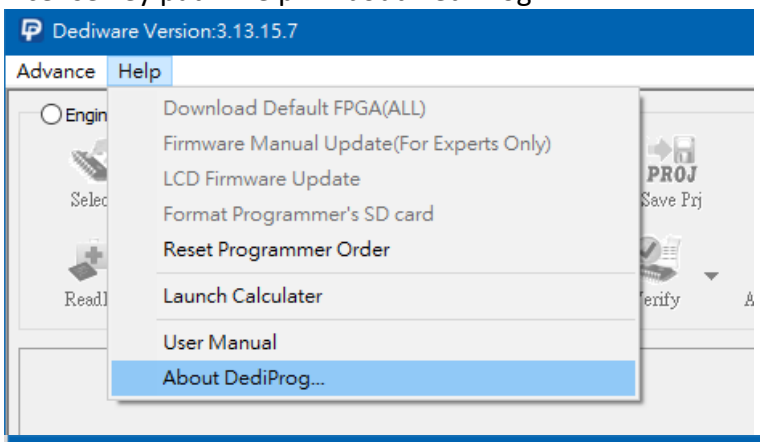
Step 4. Meanwhile, the programmer will begin to program (Busy light will be on).

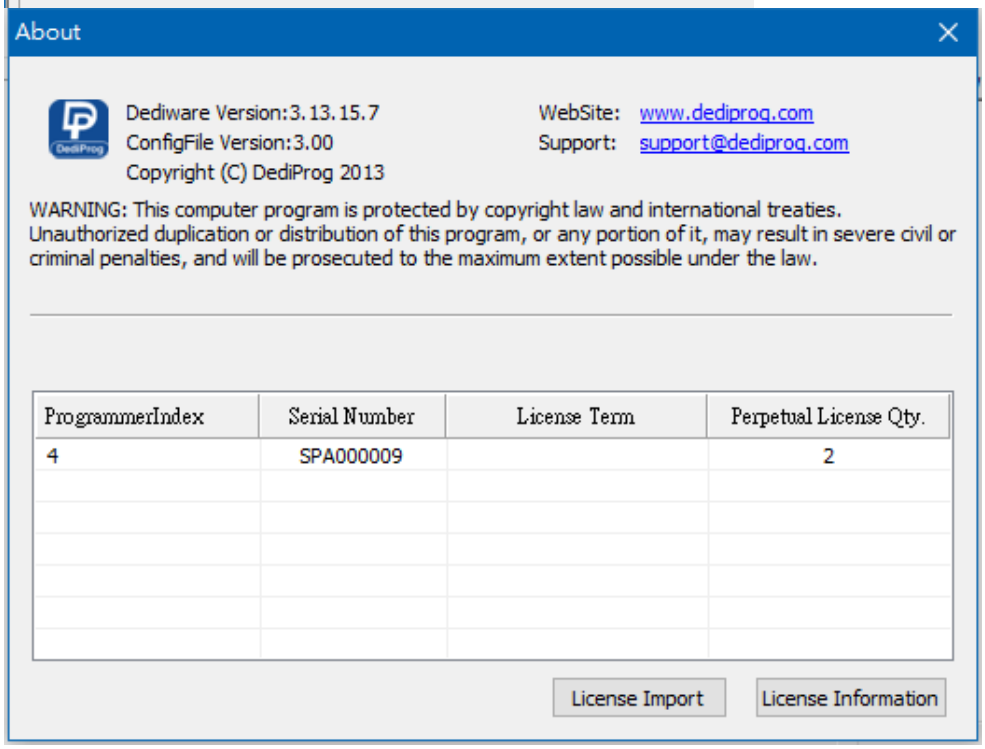
Step 5. After programming, whether it has passed or failed, the related signal will be Hi, and the signal lights will be on according to the result.

VIII. Import the License Key

This function is for StarProg-A series products only. When the IC model of the MCU series should be supported, please discuss with DediProg. After the new ones are supported in the Dediware, you will receive a license key from DediProg, and then you can import and find it by following the below steps.

License key path: Help > About DediProg





License Import: In order to import the new license key, please click it and assign the license key.

License Information: Able to find all the license keys of that programmer.

If the programmer does not have the License key of the IC model, then it will not be able do any programming of that IC model. Please contact DediProg for further information.

IX. Appendix

StarProg-A ISP Adaptor - ICP port

Pin header mapping			
Pin lin1	Pin number		Pin lin2
Vpp	1	2	Vcc
Vpp_ref	3	4	Vcc_ref
3.3V	5	6	GND
IO1	7	8	IO2
IO3	9	10	IO4
IO5	11	12	IO6
IO7	13	14	IO8
GPIO1	15	16	GPIO2
GPIO3	17	18	GPIO4
GND	19	20	GND

StarProg-A ISP Adaptor - ATE port

ATE			
Pin lin1	Pin number		Pin lin2
NC	1	2	3.3V
Busy	3	4	GND
Pass	5	6	NC
Start	7	8	NC
Fail	9	10	NC

X. Revision History

Date	Version	Changes
2018/12/04	1.0	First release
2019/10/24	1.1	Modified the cover page and add the license key section.

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