



Primo Ager V1.5 DIY Upgrade Instruction



Model: [PA-400](#)



Model: [PAG-400](#)



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Introduction

This instruction is for users to do a DIY upgrade of Primo Ager from V1.1x/1.2x/1.4x to V1.5x.

From V1.0/1.2 to V1.5x, the major changes involved:

- enhanced humidity control
- enhanced display program

For more information about new display program, please refer to *Appendix > New Display*.

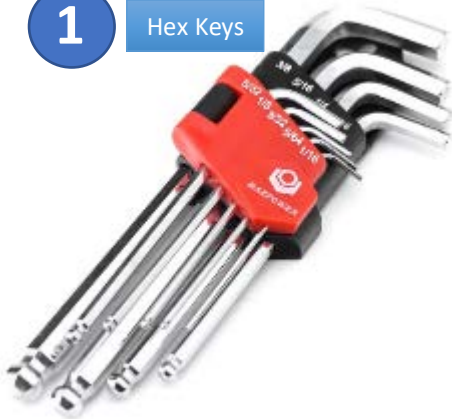


Tools Needed

- Hex Keys
- **MicroSD Card** of storage size: 8GB, 16GB, or 32GB or less
- MicroSD card reader

1

Hex Keys



or



2

MicroSD Card



3

Card Reader



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Before you start the upgrading process, please read below.

Step 0: Preparation for display firmware

0.1 MicroSD card formatting

Insert your MicroSD card into your computer and format it as FAT32 see the "File system" drop down box, and choose **FAT32**

0.2 Get display firmware file and store it onto MicroSD card

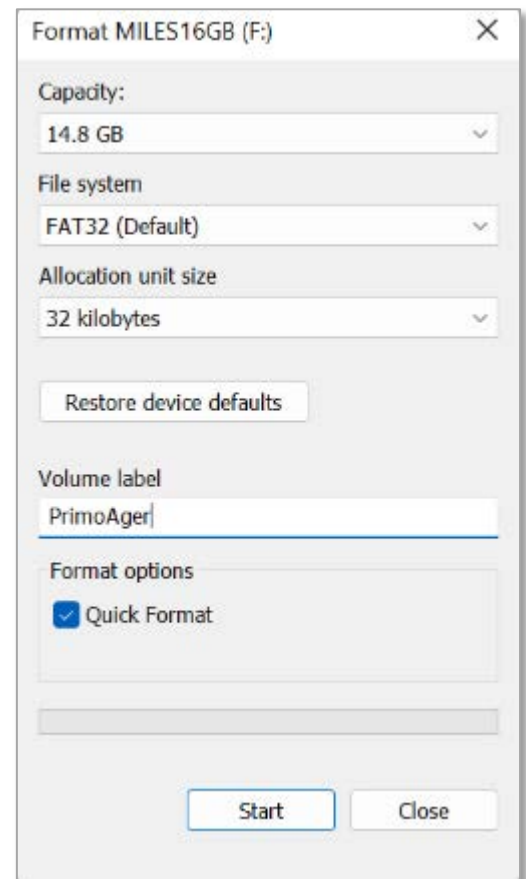
Open your web browser and download the display firmware file here:

<https://github.com/miles-hong/primo-ager/raw/main/primoager-1.5-display-v1.02.tft>

After download completed, copy and paste the file onto the formatted MicroSD card make sure only this file is saved on the MicroSD card

0.3 WIFI Connection for your Primo Ager

Please refer to WIFI Connection guide.





Step 1: Machine Firmware Upgrade

1.1 Firmware Upgrade via OTA

Go to OTA page on display



Press OTA Button and wait to begin (if see OTA failed, please see below 1.2 to continue) .

When firmware has been upgraded, it will reboot automatically. However, you need to upgrade your display firmware prior the new layout appears. See Step 2- Display Firmware Upgrade.

1.2 Firmware Upgrade via USB (required USB cable & PC laptop with Windows 10 or above)

If OTA didn't perform from 1.1, please follow the steps below:

Step A) Get the latest firmware from GitHub

On your PC laptop, open web browser and download below file:

<https://github.com/miles-hong/primo-ager/raw/main/primoager-v1.51.bin>

Save firmware file in a separated folder (v. 1.51 at time of writing this manual)



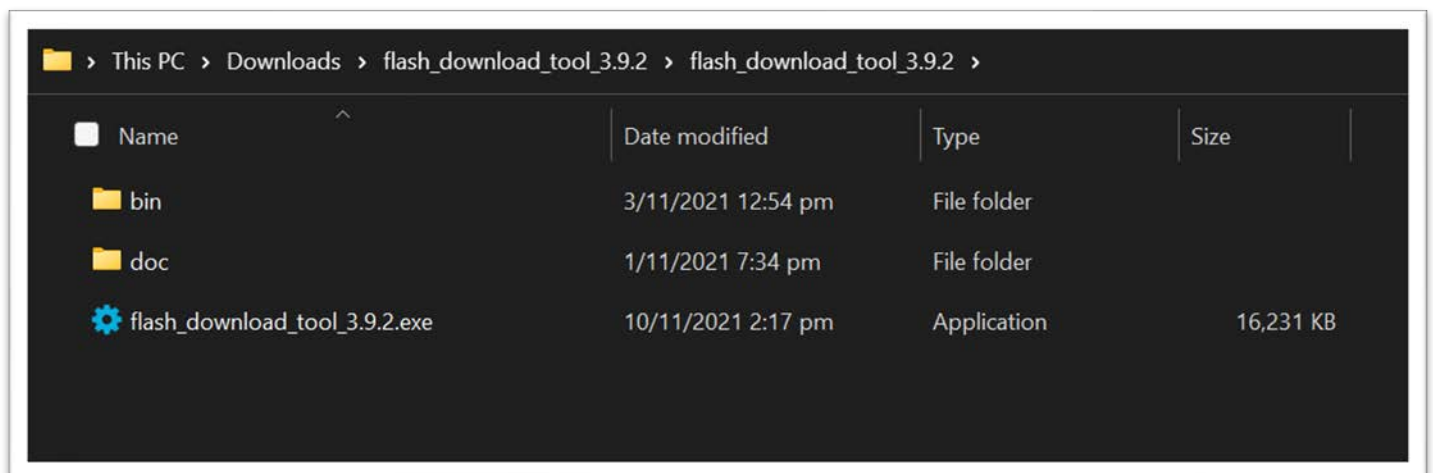
Step B) Flash Tool and USB driver

B1) Flash Tool software to be used in Step C

Download and save the flash tool zip file from here:

https://www.espressif.com/sites/default/files/tools/flash_download_tool_3.9.2.zip

Unzip the file as:

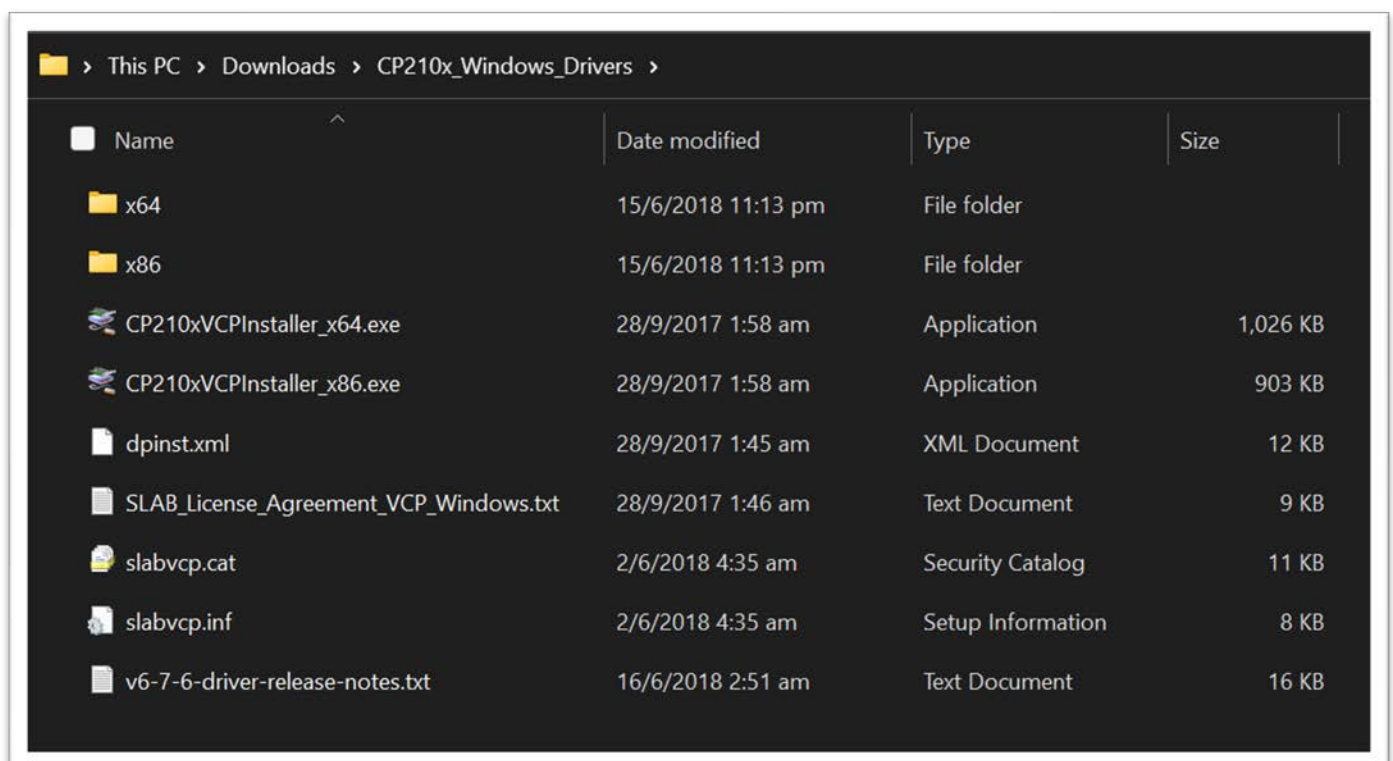


File Explorer path: This PC > Downloads > flash_download_tool_3.9.2 > flash_download_tool_3.9.2

Name	Date modified	Type	Size
bin	3/11/2021 12:54 pm	File folder	
doc	1/11/2021 7:34 pm	File folder	
flash_download_tool_3.9.2.exe	10/11/2021 2:17 pm	Application	16,231 KB

B2) Download and install USB driver from below link:

https://www.silabs.com/documents/public/software/CP210x_Windows_Drivers.zip



File Explorer path: This PC > Downloads > CP210x_Windows_Drivers

Name	Date modified	Type	Size
x64	15/6/2018 11:13 pm	File folder	
x86	15/6/2018 11:13 pm	File folder	
CP210xVCPInstaller_x64.exe	28/9/2017 1:58 am	Application	1,026 KB
CP210xVCPInstaller_x86.exe	28/9/2017 1:58 am	Application	903 KB
dpinst.xml	28/9/2017 1:45 am	XML Document	12 KB
SLAB_License_Agreement_VCP_Windows.txt	28/9/2017 1:46 am	Text Document	9 KB
slabvcp.cat	2/6/2018 4:35 am	Security Catalog	11 KB
slabvcp.inf	2/6/2018 4:35 am	Setup Information	8 KB
v6-7-6-driver-release-notes.txt	16/6/2018 2:51 am	Text Document	16 KB

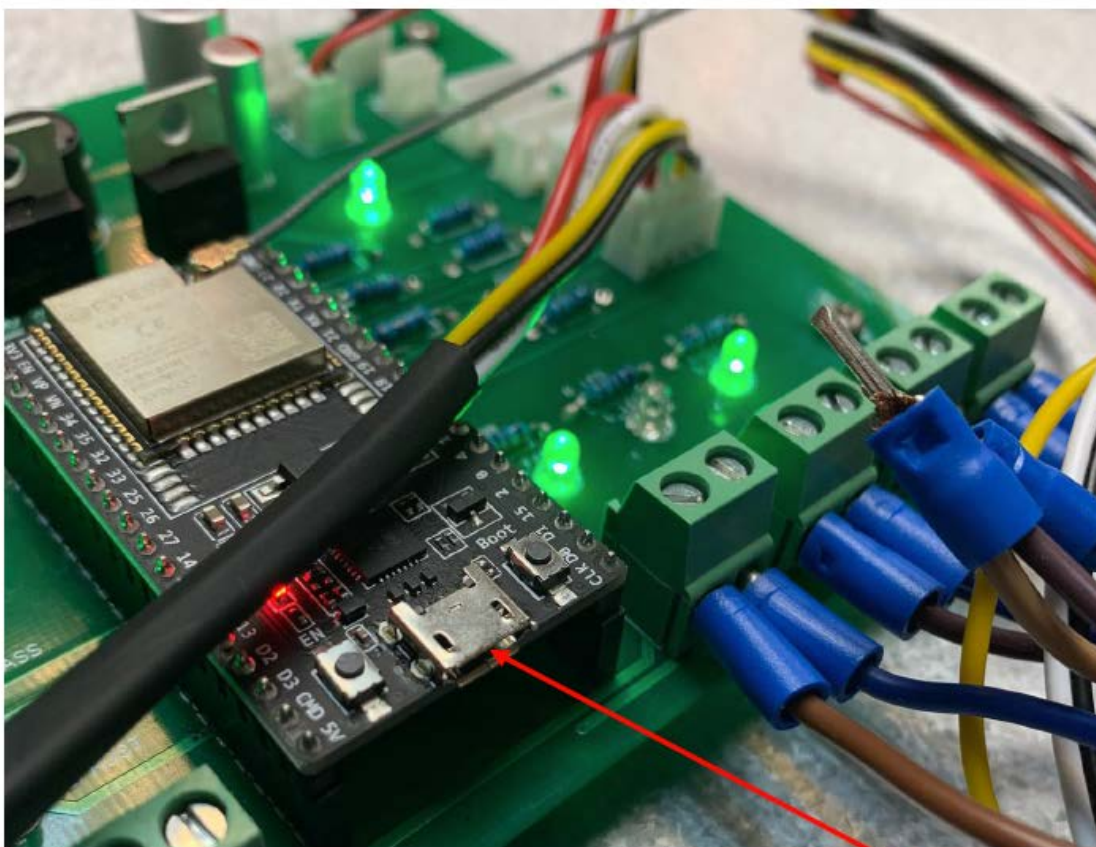


Run “CP210xVCPIInstaller_x64.exe” file

And follow the steps to install the USB to UART driver

Step C) Flash the firmware via USB connection

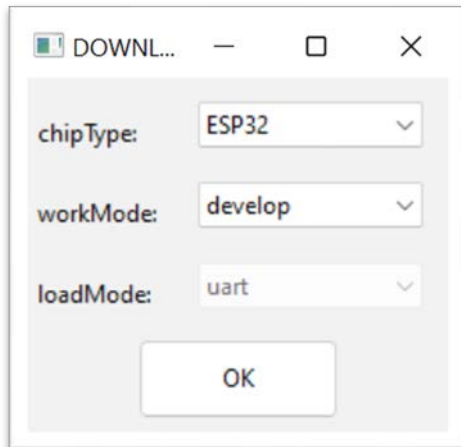
Remove the top cover of Primo Ager by using the hex key (4 screws in each corner). Connect USB cable between Primo Ager CPU slot (see below pic.) and your PC laptop



USB connector

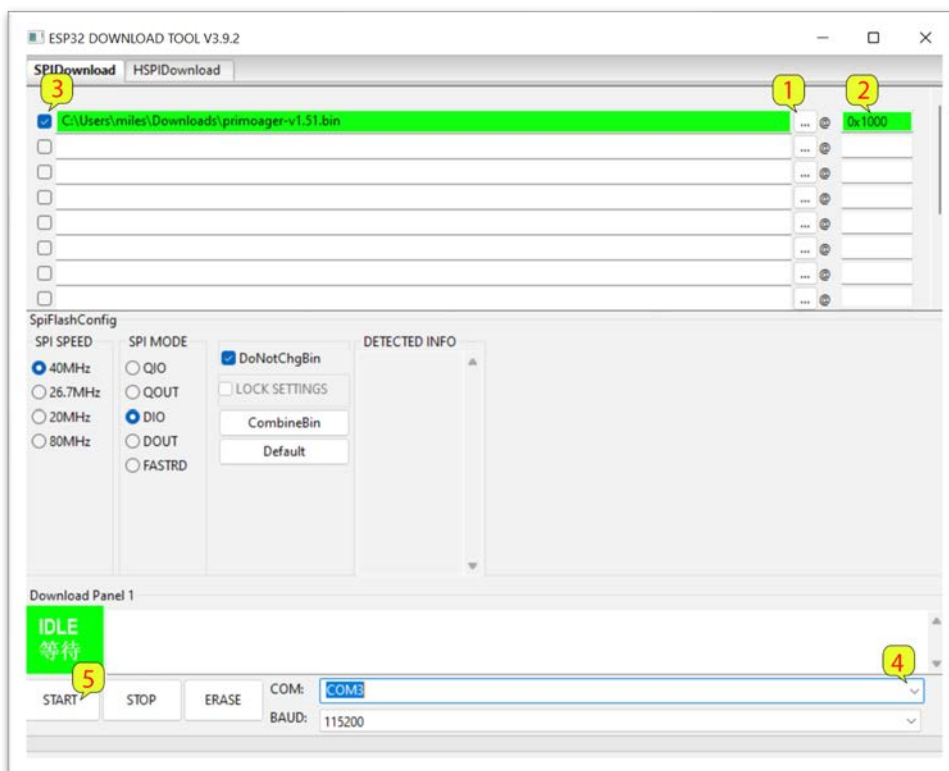


Run the flash_download_tool_3.9.2.exe from B1 above and select:



ChipType: **ESP32**
WorkMode: **develop**

Click on **OK** to start the flash main program



1: click the 3 dots button to choose the file you just downloaded in Step A **primoager-V1.51.bin**

2: enter the text: **0x10000**

3: tick the check-box

4: drop down to choose the **COM** port. (Yours may be not COM3)

5: click **START** button to start flashing



Download Panel 1

Download
下载中...

AP: 94B97E52BF75 STA: 94B97E52BF74
BT: 94B97E52BF76 ETHERNET: 94B97E52BF77

START STOP ERASE COM: COM3
BAUD: 115200

Download Panel 1

FINISH
完成

AP: 94B97E52BF75 STA: 94B97E52BF74
BT: 94B97E52BF76 ETHERNET: 94B97E52BF77

START STOP ERASE COM: COM3
BAUD: 115200

The Flashing process may take up to a minute. FINISH sign in green will show after completion.

Now, your Primo Ager has upgraded with the latest firmware. This is the only time you need to do this, firmware version 1.50 or later will have the full OTA function by pressing on LCD display!

Step 2: Display Firmware Upgrade

2.0 **Power Off your unit !**

Power off the machine to carry out the following steps



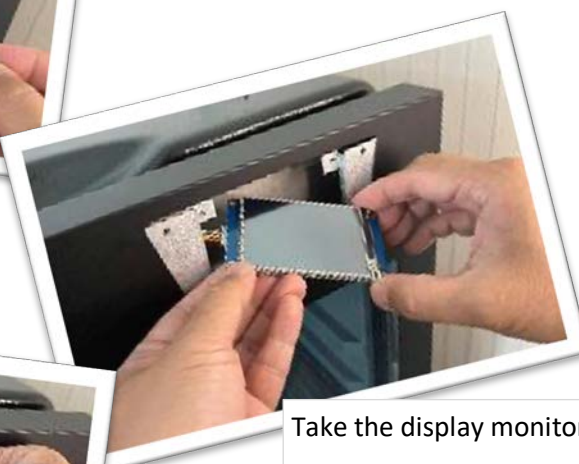
2.1 remove the display monitor



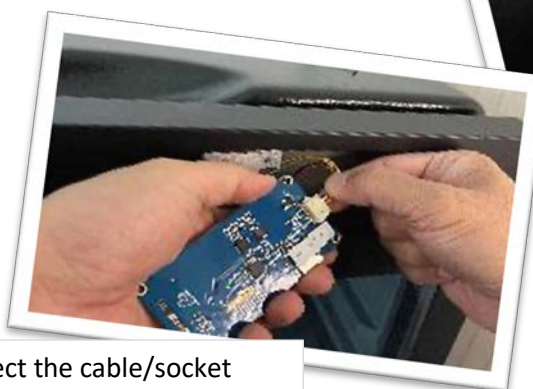
use the hex keys to unscrew the hex-nuts



Take off the display cover



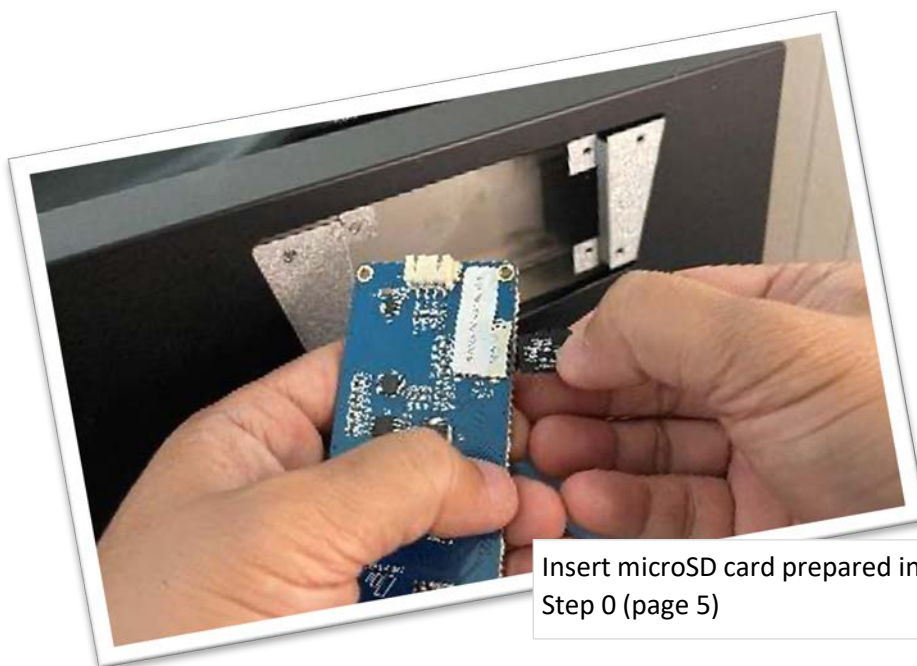
Take the display monitor out



Disconnect the cable/socket



2.2 Insert the MicroSD card prepared in step 0



Insert microSD card prepared in Step 0 (page 5)

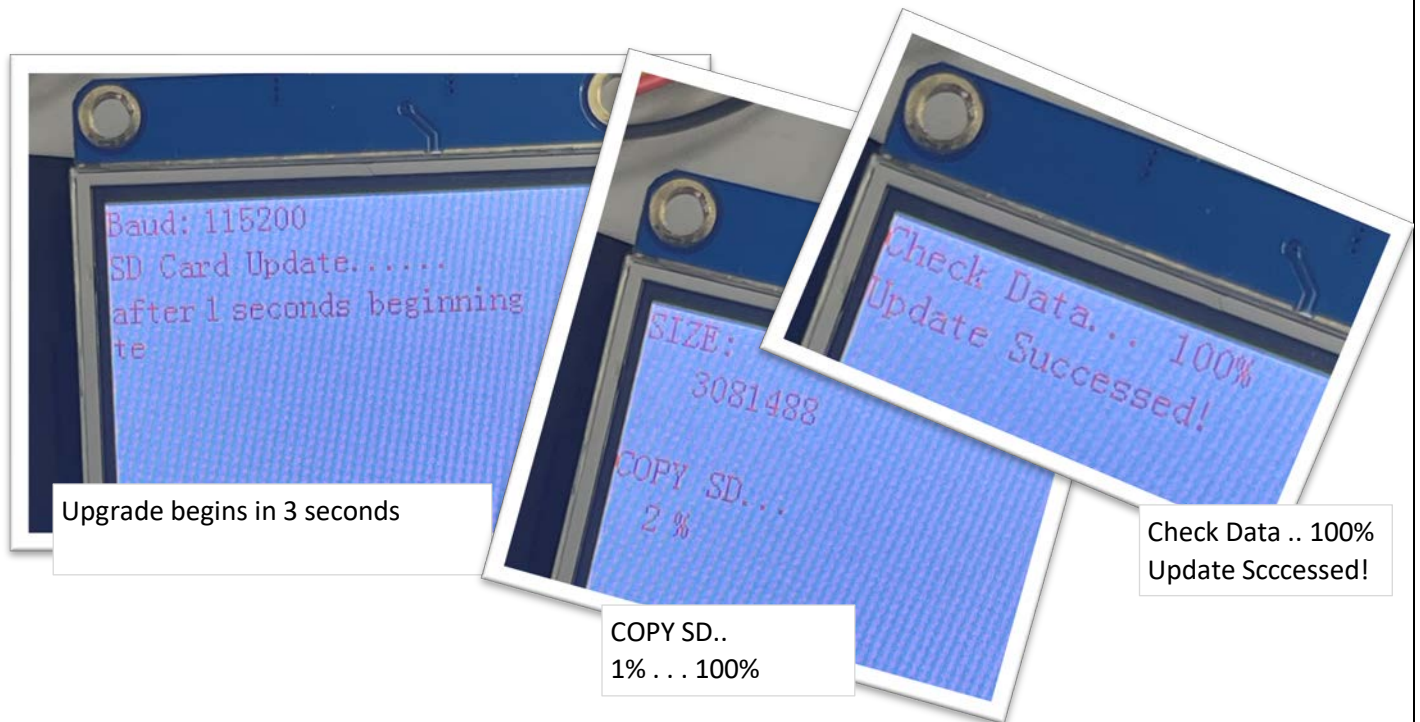
2.3 Re-connect the monitor cable



Re-connect the monitor cable



2.4 Power On your unit and display firmware upgrading begins



2.4 Power OFF your unit and remove microSD card



Power OFF Primo Ager
Remove microSD Card



2.5 Tighten LCD and frame



Place Back the monitor
and cover

2.6 Power On

Now you have a new display firmware, check according to Appendix\New Display



Step 3: After Upgraded

After upgraded, power ON your Primo Ager, you will see your new Display program, as described in Appendix.

Do a machine reset and testing

Go to the page “Machine Setup”

Navigate to the page: “Mode/Temp/Humi”

Choose your mode and press button “SAVE”



















Appendix

New Display

Start Page:	
	<p>Showing: Current Temperature and Humidity,</p> <p>Settings: Machine Mode and Temperature, Humidity (when in Degree Fahrenheit mode, no decimal point for Temperature display)</p>
Home Page	
	<p>Main Machine, showing all the machine status and current Temperature/Humidity</p> <p>The icons on the left show the status of: WiFi connection UV Lamp status Compressor status Defrost status</p> <p>The Primo Ager icon navigates to Start Page</p> <p>The icons on the right are the navigation buttons: Home (current page) Information Page Setup Page Factory Settings Page (for Factory only)</p>





Information Page													
<div><div>MACHINE INFORMATION</div><div>Serial No: #### serial number #### Model: PAG-400 H/W Ver: 1.51 Display Ver: 1.02</div><div></div><div></div></div>	<p>This Page shows the main information about your machine, as:</p> <p>Serial Number</p> <p>Model</p> <p>Hardware Firmware version</p> <p>Display Version</p>												
Machine Setup – Main Page													
<div><div>MACHINE SETUP</div><div><div></div><div></div><div></div></div><div></div><div></div></div>	<table><tr><td>Machine Mode</td><td>LED Lightness</td><td>Manual Defrost</td></tr><tr><td>Temperature Humidity</td><td></td><td></td></tr><tr><td>UV Lamp On/Off</td><td>Temperature °C / °F</td><td>WiFi Setup</td></tr><tr><td></td><td>OTA upgrade</td><td></td></tr></table>	Machine Mode	LED Lightness	Manual Defrost	Temperature Humidity			UV Lamp On/Off	Temperature °C / °F	WiFi Setup		OTA upgrade	
Machine Mode	LED Lightness	Manual Defrost											
Temperature Humidity													
UV Lamp On/Off	Temperature °C / °F	WiFi Setup											
	OTA upgrade												

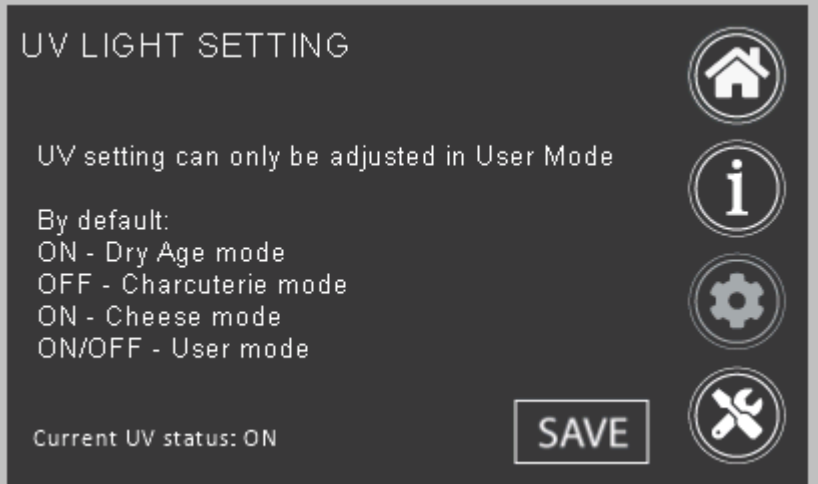
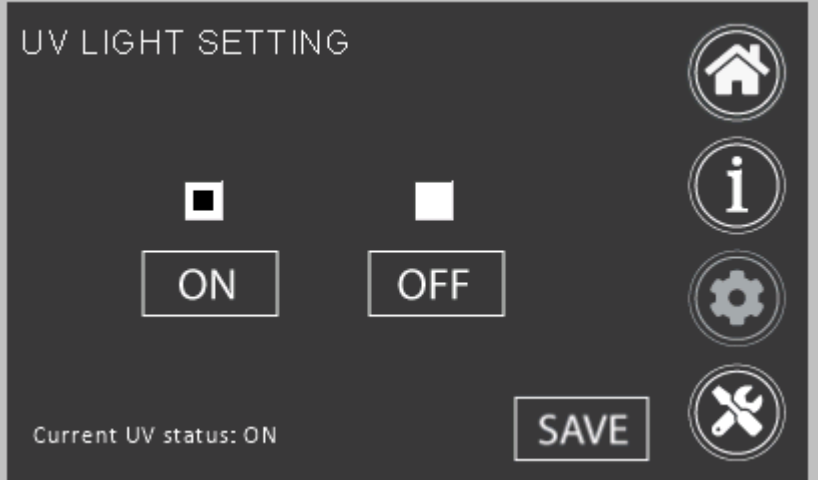
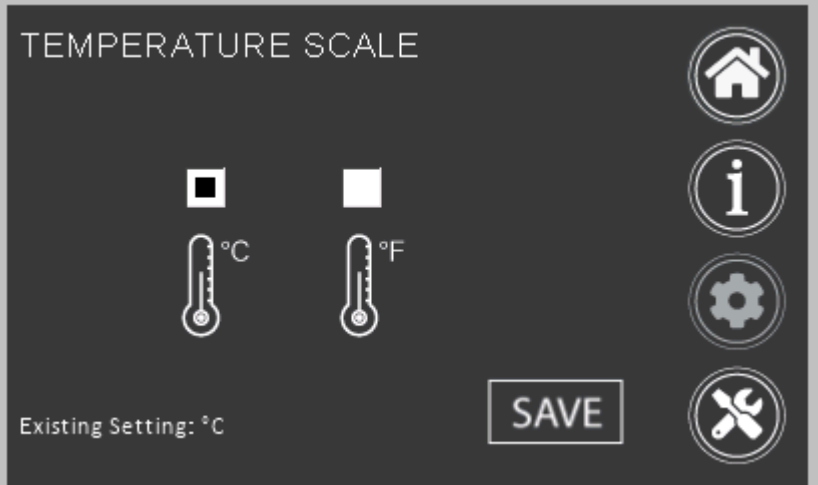


Machine Setup – Mode/Temp/Humidity	
	<p>Machine Setup for different modes</p> <ul style="list-style-type: none"> - DryAge (Pre-set T/H) - Charcuterie (Pre-set T/H) - Cheese - User Mode (T/H adjustable)





<p>LED Lightness</p>  <p>The screen displays 'LED LIGHTNESS' at the top. Below it is a horizontal slider bar with a grey square knob. To the right of the slider are four circular icons: a home icon, an information icon, a gear icon, and a wrench icon.</p>	<p>Slide the bar to adjust the LED lightness, with scale from 0 to 10.</p>
<p>Manual Defrost</p>  <p>The screen displays 'MANUAL DEFROST' at the top. Below it, the text reads: 'By pressing the START button, manual defrost will begin.' At the bottom center is a rectangular button labeled 'START'. To the right of the text and button are the same four circular icons as in the previous screen: home, information, gear, and wrench.</p>	<p>This will do a Manual Defrost of Primo Ager.</p>



<p>UV Light Setting</p> 	<p>When in machine mode of DryAge, Charcuterie and Cheese, the UV Light is predefined with machine mode, for User Mode, user can manually turn On/Off the UV Light</p> <table border="1" data-bbox="946 607 1501 792"><thead><tr><th>Machine Mode</th><th>UV Light</th></tr></thead><tbody><tr><td>DryAge</td><td>ON</td></tr><tr><td>Charcuterie</td><td>OFF</td></tr><tr><td>Cheese</td><td>ON</td></tr><tr><td>User</td><td>ON/OFF</td></tr></tbody></table>	Machine Mode	UV Light	DryAge	ON	Charcuterie	OFF	Cheese	ON	User	ON/OFF
Machine Mode	UV Light										
DryAge	ON										
Charcuterie	OFF										
Cheese	ON										
User	ON/OFF										
	<p>Manually Turn On/Off the UV light</p>										
<p>Temperature Scale</p> 	<p>To change the Temperature Scale,</p> <p>Degree Celsius °C < > Degree Fahrenheit °F</p>										



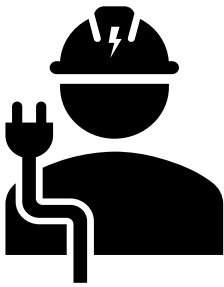
	Press SETUP to start WiFi setup (need mobile app installed)
	Press START to start checking if any newer firmware available for upgrading



Warning of Electric Shock

Be aware of any Electric Shock risk.

Power Off first



Warning!!!

Electric Shock

Power Off the Primo-Ager First

Copyright

All copyrights reserved by Primo-Ager

Disclaimer

Primo Ager and its technical supporting technician makes no warranties of any kind, whether expressed or implied, with respect to the information, technology or services it provides. Primo Ager will not be responsible for damages resulting from or implied by this technical guide.

Related Documents

<https://github.com/miles-hong/primo-ager>

Primo Ager Remote Connection user guide (for remote connection troubleshooting)

Primo Ager WiFi Connection Instruction (for WiFi connection)

Primo Ager DIY Upgrade Instruction (this document)