



111-38-URM-011

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KDS USB FW Update

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User Manual

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# 1. Introduction

The Epson Kitchen Display System (henceforth KDS) is preferably updated using the KDS Utility. However, an alternate update method using a USB flash drive can be employed as fallback if required, and is typically faster than with the KDS Utility, albeit at the cost of losing any configuration from the KDS device. This document describes the typical process to set up a USB flash drive for the firmware update.

The same firmware update process is used for printers and controllers (henceforth called display box). Once set up, the USB flash drive can be used to sequentially update multiple devices.

## IMPORTANT NOTES:

- i. Before you proceed, note that updating the KDS using this method erases all configuration from the target device(s). The KDS Utility may be used to re-configure the system.
- ii. Make sure any USB flash drive used in this procedure is not faulty or corrupted, and does NOT contain any sensitive or important data. All data on the device will be lost !!

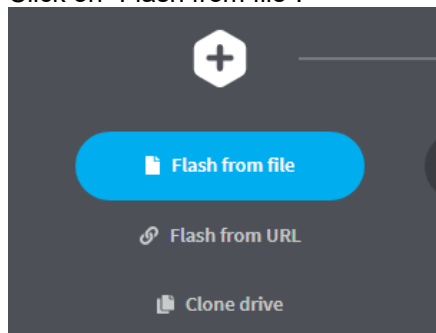
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## 2. Process under Microsoft Windows

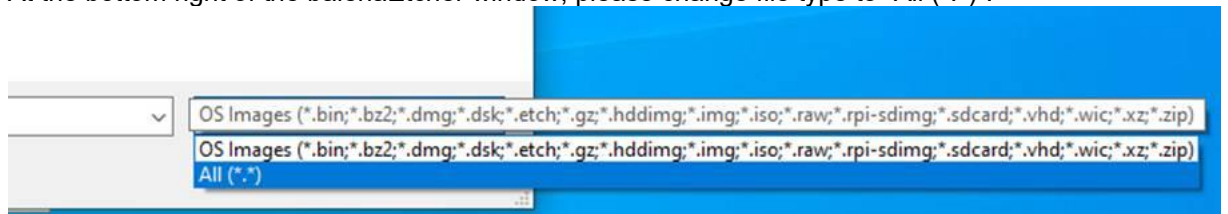
The following process has been verified under Microsoft Windows 7 and Windows 10. Most failures with the method can be attributed to user permissions (inability to modify USB flash drive) or to corrupted USB flash drives.

### 2.1. How to create Epson KDS firmware update USB stick

1. Get a USB flash drive of 1GB or more with no contents you care about, as everything on it will be erased.
2. Download this application (balenaEtcher-Portable) on your Windows PC:  
<https://github.com/balena-io/etcher/releases/download/v1.5.120/balenaEtcher-Portable-1.5.120.exe>
3. Plug the USB flash drive into a Windows PC.
4. Run balenaEtcher-Portable-1.5.120.exe.
5. Click on “Flash from file”.



6. At the bottom right of the balenaEtcher window, please change file type to “All (\*.\*)”.

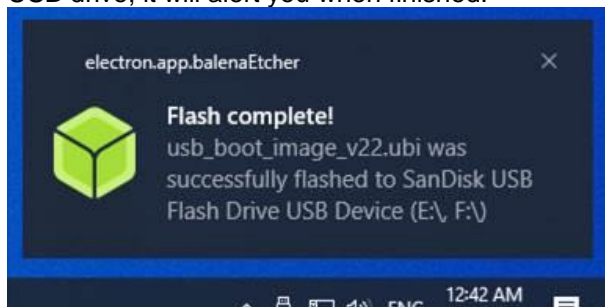


7. Browse to the location of our released image folder, and select the file: **usb\_boot\_image\_v27.ubi** . Click on “Open”.
8. Next, make sure the your target USB flash drive is selected (if not, use the “Change” button to select the right one).



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- Click on “Flash!” to start creating the new USB drive. Allow balenaEtcher to completely validate the USB drive; it will alert you when finished.



- Unplug your USB drive, wait 5 seconds, plug it back in.
- Extract “**KDS Image.zip**” onto the USB stick. This means the final layout for the USB stick should be:

- \
- autooperation
- uImage
- BOOT.BIN
- images\
  - control.tar.gz
  - hibdrv
  - hibernation
  - hibernationinfo
  - rootfs
  - uImage
  - writable-region

- Safely eject the USB stick from the PC again.
- Label the USB stick with ‘KDS Image ver X.XX’ to indicate what image is on it, in case it is required for other printers/controllers in the future.

## 2.2. How to update each printer/display box

- With the printer/display box turned off, plug the USB stick into the Interface card at the back.
- Use a pen or paper clip to press in the button on the back of the printer/display box, and hold it pressed while turning the device on. Keep holding the button down for three or four seconds until the amber LED at the back goes out.
- The back LED light will then show amber for about 45 seconds, followed by green for about 5 seconds, and then flash amber for about 60 seconds. Upon completion of the firmware update procedure, the back LED starts blinking green. IT IS IMPORTANT TO WAIT FOR THE BLINKING GREEN LED BEFORE PROCEEDING.
- Turn off the printer/display box.
- Remove the USB stick from the printer/display box.
- Turn the printer/display box back on and wait for it to boot up, and for the back LED to turn green. The splash screen should show the newly installed KDS firmware version on the attached monitor.

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### 3. Process under Mac OS

The following process has been verified under Mac OS 10 and 11. Most failures with the method can be attributed to user permissions (inability to modify USB flash drive) incompatible or corrupted USB flash drives.

#### 3.1. How to create Epson KDS firmware update USB stick

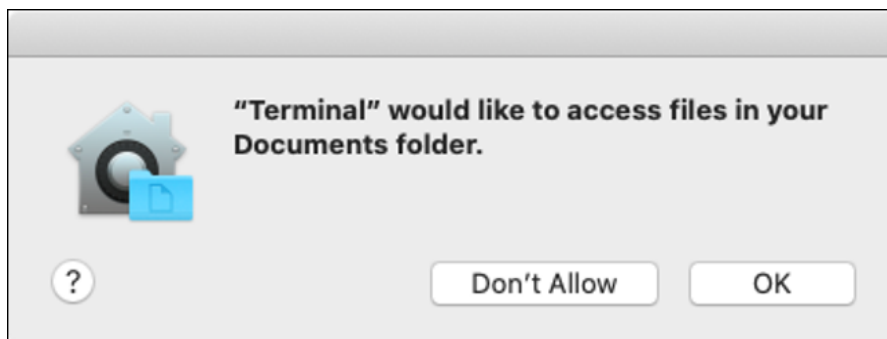
1. Save the firmware update package (which includes the file `usb_boot_image_v27.ubi`) in the Desktop or Downloads folder.
2. Get a USB flash drive of 1GB or more with no contents you care about, as everything on it will be erased. Do NOT plug it in yet.
3. On the Mac, open a new terminal (iTerm).
4. Type the command `"diskutil list"` to get the current list of devices.
5. Now plug the USB flash drive into the Mac.
6. Type the command `"diskutil list"` again and note the additional device, which is the USB flash drive (e.g. `/dev/disk2`).
7. Type the command `"diskutil unmountDisk /dev/diskX"`, where X is the number from Step 5.
8. Type the following command:

```
sudo dd if="$(find ~ -name usb_boot_image_v27.ubi | head -n 1)" of=/dev/diskX bs=1m
```

(again, substitute the X in the command with the number you learned from Step 5.)

**Please note:**

- i. The command above will ask for the user (or administrator) password once; this is normal.
- ii. The command, when run for the first time, will trigger several pop-up dialogs requesting access to some folders. See Figure 3.1.
- iii. The command will output several lines with the text "Operation not permitted" when trying to search certain inaccessible folders; this is normal.



**Figure 3.1:** Mac OS pop-ups requesting user permission to access some folders.

(continued...)

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9. **\*\*\*IMPORTANT\*\*\* Safely eject the USB stick from the Mac, then unplug it, wait a few seconds, then plug it back in again.**

10. Unzip the KDS Image.zip file into USB stick. This means the final layout for the USB stick should be:

```
\
|- autooperation
|- uImage
|- BOOT.BIN
|- images\
  |-- control.tar.gz
  |-- hibdrv
  |-- hibernation
  |-- hibernationinfo
  |-- rootfs
  |-- uImage
  |-- writable-region
```

11. Eject the USB stick from the Mac again.

12. Label the USB stick with 'KDS Image' to indicate what image is on it in case it is required for other display boxes/printers or in future.

### 3.2. How to update each printer/display box

1. With the printer/display box turned off, plug the USB stick into the Interface card at the back.
2. Use a pen or paper clip to press in the button on the back of the printer/display box, and hold it pressed while turning the device on. Keep holding the button down for three or four seconds until the amber LED at the back goes out.
3. The back LED light will then show amber for about 45 seconds, followed by green for about 5 seconds, and then flash amber for about 60 seconds. Upon completion of the firmware update procedure, the back LED starts blinking green. IT IS IMPORTANT TO WAIT FOR THE BLINKING GREEN LED BEFORE PROCEEDING.
4. Turn off the printer/display box.
5. Remove the USB stick from the printer/display box.
6. Turn the printer/display box back on and wait for it to boot up, and for the back LED to turn green. The splash screen should show the newly installed KDS firmware version on the attached monitor.

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