



myPANEL 7" and 5" boot from SD card guide

Making system to run and boot from sd card

1. Download image
2. Write Image
3. Make panel boot from SD

Important notes: SD card image requires at least 32GB SD card!
myPANEL always tries to use files from SD card first means if there is a working project inside the panel, but you have also put a project.zip inside SD card FAT32 partition it will prioritize the project on the SD card, same goes for the networking.

Download the image for the SD card from our NSA

link 1:

[Panel_boot_SD_r.zip](#)

link 2:

<http://nsa.myscada.org/myPANEL/IMG/Boot%20from%20SD%20image/>

Writing an image to the SD Card

(Downloaded image is zipped for decreasing its size without .zip it would be around 15GB, please unzip the file first before you write it to SD!)

LINUX

Please note that the use of the dd tool can overwrite any partition of your machine. If you specify the wrong device in the instructions below you could delete your primary Linux partition. Please be careful.

- First unzip the downloaded file so you will get Panel_boot_SD_r.img
 - Run `df -h` to see what devices are currently mounted.
- If your computer has a slot for SD cards, insert the card. If not, insert the card into an SD card reader, then connect the reader to your computer.
- Run `df -h` again. The new device that has appeared is your SD card. The left column gives the device name of your SD card; it will be listed as something like `/dev/mmcblk0p1` or `/dev/sdd1`. The last part (`p1` or `1` respectively) is the partition number but you want to write to the whole SD card, not just one partition. Therefore you need to remove that part from the name (getting, for example, `/dev/mmcblk0` or `/dev/sdd`) as the device for the whole SD card.
- Now that you've noted what the device name is, you need to unmount it so that files can't be read or written to the SD card while you are copying over the SD image.
 - Run `umount /dev/sdd1`, replacing `sdd1` with whatever your SD card's device name is (including the partition number).
- If your SD card shows up more than once in the output of `df` due to having multiple partitions on the SD card, you should unmount all of these partitions.

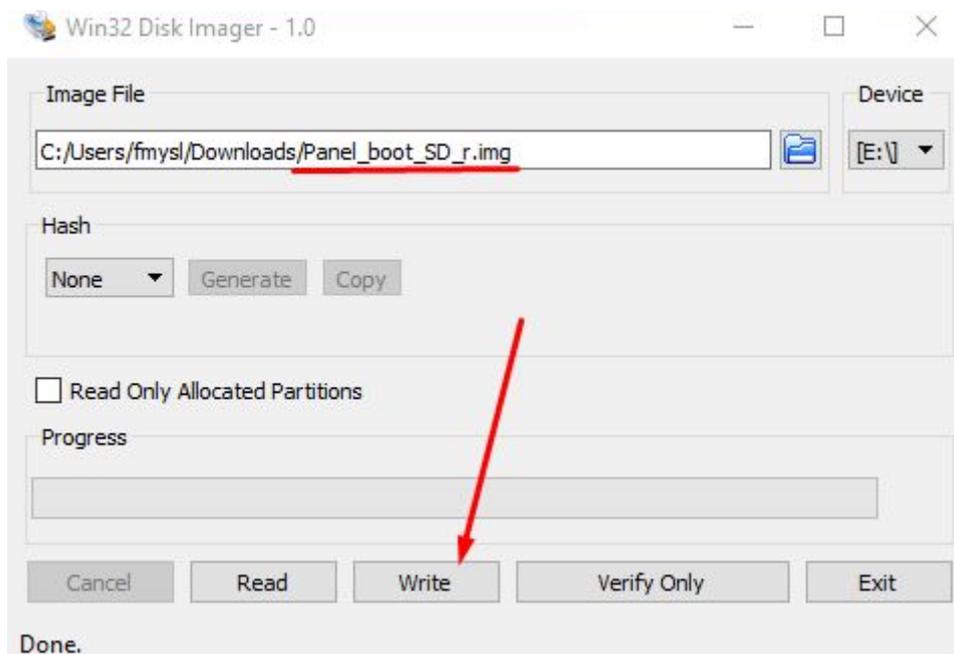
- In the terminal, write the image to the card with the command below, making sure you replace the input file `if=` argument with the path to your `.img` file, and the `/dev/sdd` in the output file `of=` argument with the right device name. This is very important, as you will lose all data on the hard drive if you provide the wrong device name. Make sure the device name is the name of the whole SD card as described above, not just a partition of it; for example `sdd`, not `sdds1` or `sddp1`; or `mmcblk0`, not `mmcblk0p1`.

```
myscada myscada # dd bs=4M if= Panel_boot_SD_r.img of=/dev/sdd
```

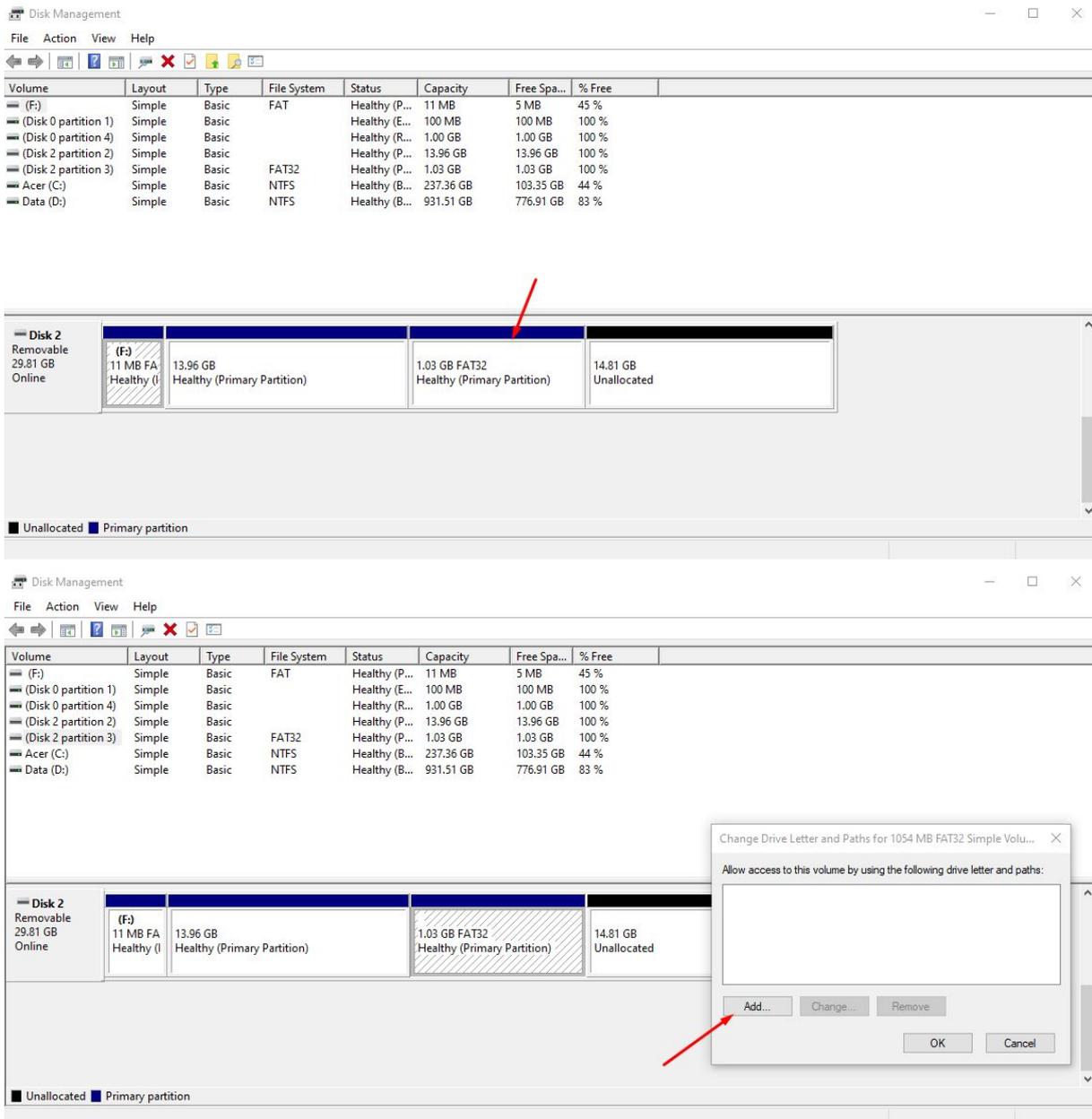
- Please note that block size set to 4M will work most of the time; if not, please try 1M, although this will take considerably longer. • Also note that if you are not logged in as root you will need to prefix this with `sudo`.
- The `dd` command does not give any information of its progress and so may appear to have frozen; it could take more than five minutes to finish writing to the card. If your card reader has an LED it may blink during the write process. To see the progress of the copy operation you can run `pskill -USR1 -n -x dd` in another terminal, prefixed with `sudo` if you are not logged in as root. The progress will be displayed in the original window and not the window with the `pskill` command; it may not display immediately, due to buffering.
- Instead of `dd` you can use `dcfldd`; it will give a progress report about how much has been written.
- You can check what's written to the SD card by `dd`-ing from the card back to another image on your hard disk, and then running `diff` (or `md5sum`) on those two images. There should be no difference.
- Run `sync`; this will ensure the write cache is flushed and that it is safe to unmount your SD card.
- Remove the SD card from the card reader.

WINDOWS

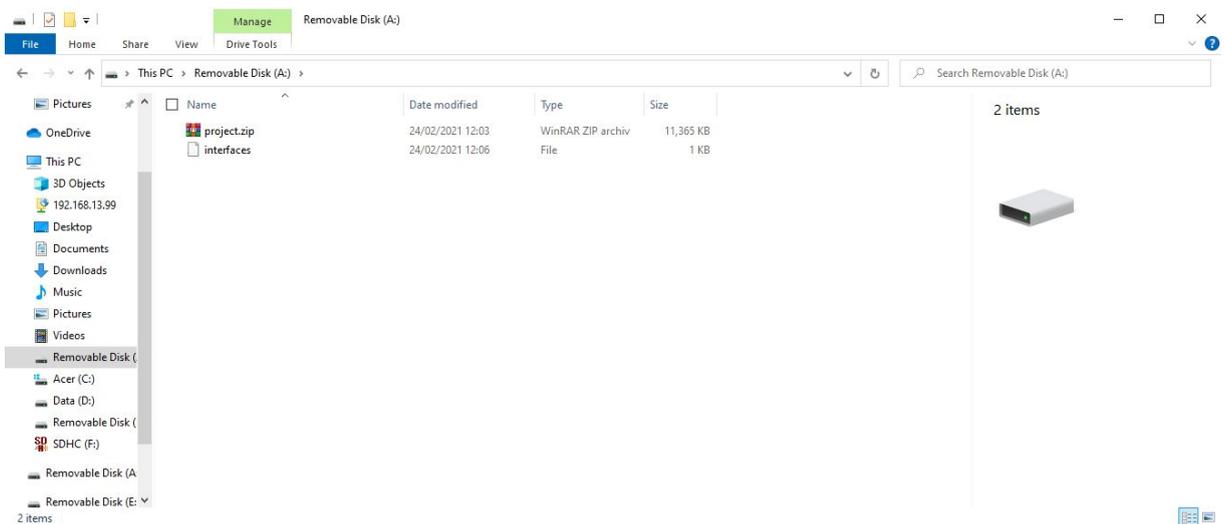
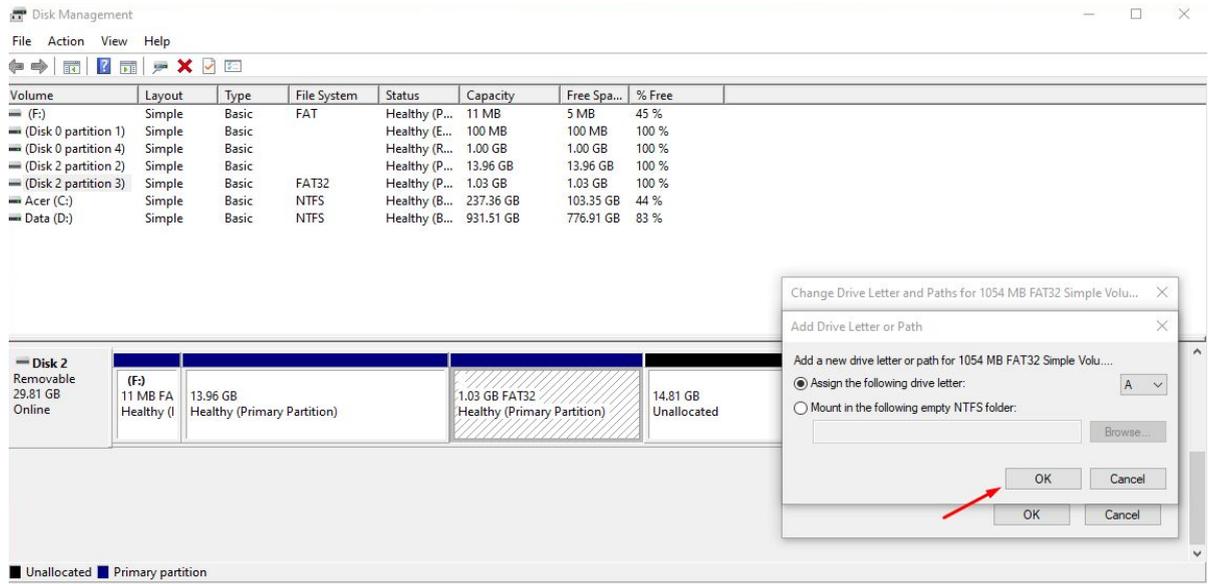
- Insert the SD card into your SD card reader and check which drive letter was assigned. You can easily see the drive letter (for example G:) by looking in the left column of Windows Explorer. You can use the SD Card slot (if you have one) or a cheap SD adaptor in a USB port.
- Download the Win32DiskImager utility from the sourceforge.net/projects/win32diskimager/ (it is also a zip file); you can run this from a USB drive.
- Extract the executable from the zip file and run the Win32DiskImager utility; you may need to run the utility as administrator. Right-click on the file, and select Run as administrator.
- Select the image file you extracted above.
- Select the drive letter of the SD card in the device box. Be careful to select the correct drive; if you get the wrong one you can destroy your data on the computer's hard disk! If you are using an SD card slot in your computer and can't see the drive in the Win32DiskImager window, try using a cheap SD adaptor in a USB port.
- Click Write and wait for the write to complete.



If the 1GB FAT32 partition does not appear in your file explorer do bellow steps:



Right-click on the 1GB FAT32 partition and select "Change drive letter and Paths..."



Then the FAT32 partition should appear in your file explorer you can put files into that FAT32 partition, it should look like on the above screenshot if you want to put project.zip and interfaces on the SD

Mac OS

If you are comfortable with the command line, you can image a card without any additional software.

- First unzip the downloaded file so you will get Panel_boot_SD_r.img

Run:
diskutil list

- Identify the disk (not partition) of your SD card e.g. disk4 (not disk4s1):

```
diskutil unmountDisk /dev/<disk# from diskutil>
```

e.g. diskutil unmountDisk /dev/disk4

```
sudo dd bs=1m if=image.img of=/dev/DISK
```

e.g. sudo dd bs=1m if=Panel_boot_SD_r.img

This may result in an dd: invalid number '1m' error if you have GNU coreutils installed. In that case, you need to use 1M:

```
sudo dd bs=1M if=image.img of=/dev/DISK
```

This will take a few minutes.

Now you have two possibilities on how to proceed:

one of them is leaving SD after writing the image as it is, which will do that if there is a possibility it will get the project and networking from the default storage of myPANEL if it won't be able to get these files out of the myPANEL internal storage it will boot up with default project, with unlimited license and the network will be set to DHCP.
(Basically, as if myPANEL would come from the factory brand-new).

Then there is an option to put project.zip
(Which you can get from myDESIGNER this step is described below)
into 1GB FAT32 partition on SD together with the "interfaces" file in that case panel will take project.zip as it's main project and interfaces file will set up the network.

Don't know how to get project.zip out of myDESIGNER? Click [HERE](#)

For setting up the network from the file you will have to use this [file](#). This file can be opened in notepad or preferably with [geany](#). Please note, that this file has no format and it **must** stay as it is (**Without the end cap**).

```
1 # interfaces(5) file used by ifup(8) and ifdown(8)
2 # Include files from /etc/network/interfaces.d:
3 source-directory /etc/network/interfaces.d
4
5 auto lo
6     iface lo inet loopback
7
8     iface eth0 inet manual
9     iface eth1 inet manual
10    iface enp3s0 inet manual
11    iface enp4s0 inet manual
12
13 auto wlan0
14 allow-hotplug wlan0
15 iface wlan0 inet dhcp
16     wpa-conf /etc/wpa_supplicant/wpa_supplicant.conf
17
18 # Bridge setup
19 auto br0
20     iface br0 inet static
21     bridge_ports eth0 eth1 enp3s0 enp4s0 wlan0
22     address 192.168.13.167
23     netmask 255.255.255.0
24     gateway 192.168.13.254
25     dns-nameservers 8.8.8.8
```

In row 22 you type the IP address of the panel

In row 23 you type netmask

In row 24 you type gateway

In row 25 you type the DNS server

Then you save the file and put the file into the FAT32 partition on SD.

Please do not edit or change any other lanes in the file; it could lead to the permanently damaging panel, please check twice if the file is correct.

Inserting SD card to myPANEL

Once you are done with the writing procedure, take the SD card and insert that into the SD card slot of the myPANEL.

(During this procedure myPANEL doesn't need to be connected to the internet; it will install version 8.17.9 and can't be upgraded via normal procedure, **requires a special file otherwise myPANEL will become unlicensed after update**).

Now in order to make myPANEL to boot from SD card, you can use one of the mentioned ways bellow:

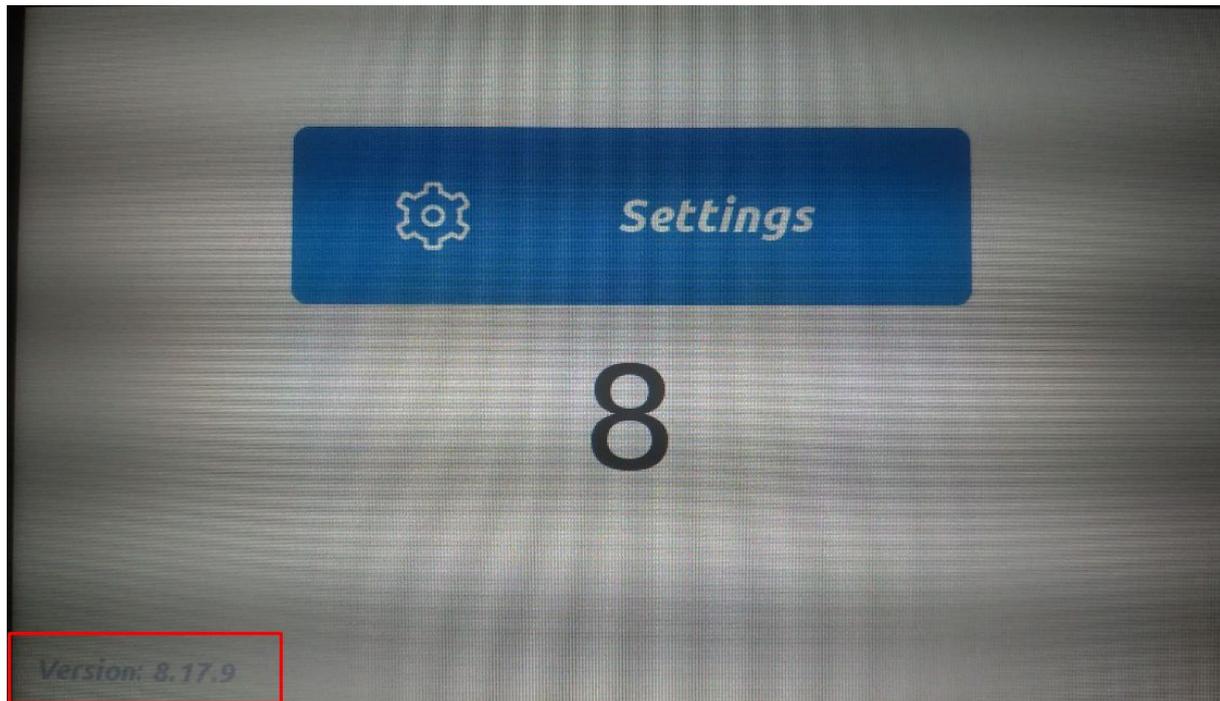
1. Power off myPANEL and hold the S1 button and power it.
2. Push the RST button and release it then right-away hold the S1 button.

Both options should show the myscada logo and then the myPANEL will start the procedure and it might reboot a few times.

Please wait approx 5-10 minutes until myPANEL finishes the procedure.

At the very end of the procedure myPANEL should start booting to mySCADA where the “Settings” button, please at the left bottom corner check if the version has upgraded.

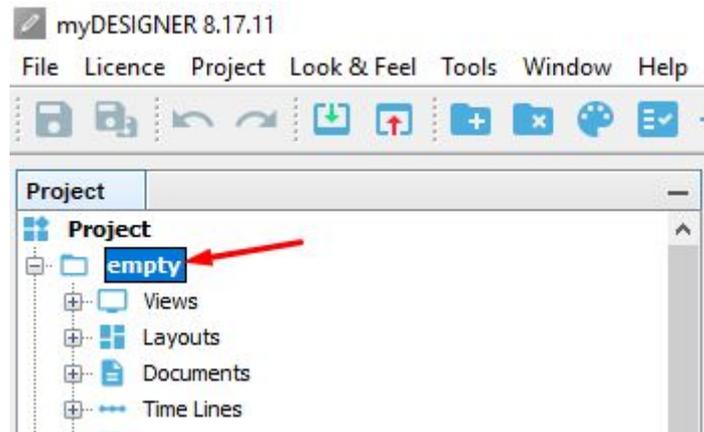
(The version will be shown after every reboot so if you have missed it you can reboot myPANEL by “rst” button and wait for this screen to appear)



If the version has upgraded then the panel is fully working again and myPANEL is ready to be used as before.

Getting project.zip from myDESIGNER

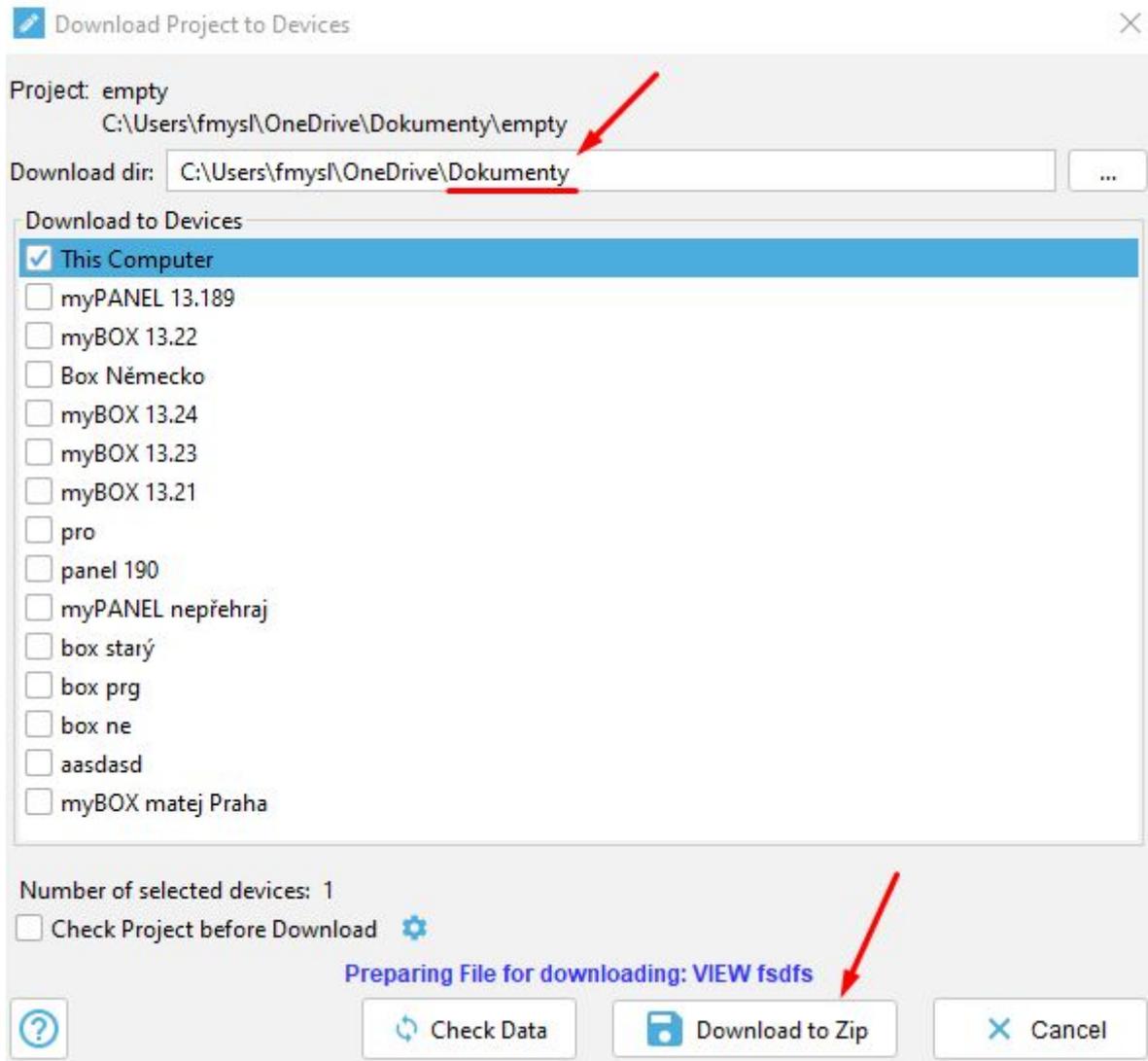
Open myDESIGNER and select the project which you want to be converted to project.zip



Now when the project is selected hold **SHIFT** or **CTRL** and left-click on the icon for downloading the project



Now there will be an additional window opened (Which will be just a little bit different from the normal download window), where you can select the directory where to save the project, **also don't forget to select "This computer device"**



Now the project is saved inside the above directory and you can use it for an SD card.



Evropska 11
160 00 Prague,
Czech Republic



info@myscada.org



+420 224 904 121