



February 23, 2021 - BQ Aquaris X2 3/32GB - X2 4/64GB - X2 PRO 4/64GB

Unbrick Package Contents - Flashing Instructions - Credits - References

Repository <https://t.me/s/bqrepo> - Yandex Mirror <https://disk.yandex.com/d/UaAQsZtdU3rzEA?w=1>

## **0.0 Disclaimer**

*The usual stuff :*

*This package might be most suitable for experienced users but everybody is welcome to use it at his own risk.*

*Flashing / Rooting your phone and using software tools aren't anyway trivial procedures. Therefore, please read carefully all the instructions & follow them if You choose to go on.*

*If You can't understand the instructions, stop & search on Google/Forums/XDA/etc. and / or ask for help.*

*All the mentioned software & tools belong to their respective owners/developers. Neither I nor the owners / developers might be held responsible if you damage your device.*

## **0.1 Preliminary Steps**

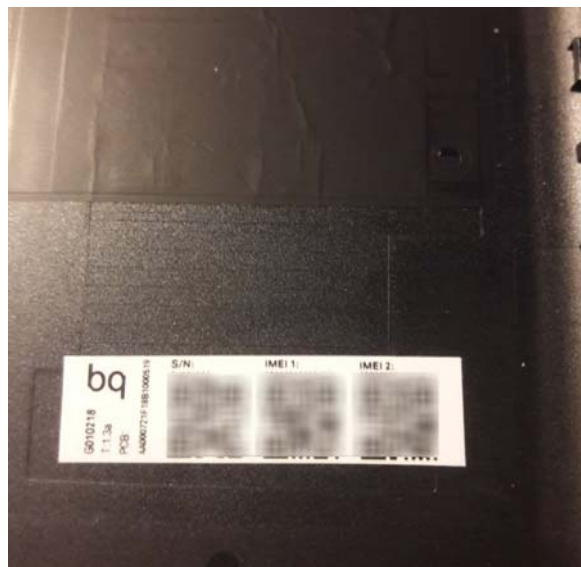
### **Write down your phone's IMEI 1-2 & Serial Number.**

Such IMEI+SN codes are required, since You might need to restore them in the next stages of the procedure.

You can retrieve them from a label on the outside of the phone packaging.

Otherwise, if you can't find the box, you can still retrieve them from a sticker on the internal side of the backcover.

The backcovers of Aquaris X2 and X2 PRO aren't glued to the chassis. Therefore, if required, users can easily remove them - even with the help of a plastic card (*no special tools required*).



One you get such codes, You'll need :

**1**

**Computer running Windows OS** - *the procedure hasn't been tested on virtual machine environments or with ReactOS.*

**2**

**USB Cable**

**3**

**Time and patience** - this isn't a 5 minutes procedure = it requires around 1 hour, but it can take longer, if you'll need to perform additional steps before the final hard-reset stage.



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## 1.1 Flashing the Emergency Package - Environment Setup

### Pre-Requirements :

- **EMERGENCY PACKAGE** (online folder **0\_EMERGENCY\_PACKAGE**)
- **QPST / QFIL tool + HS-USB Driver** (online folder **1\_FLASH\_QPST\_QFIL**)
- **7-ZIP program to extract 7z compressed archives** <https://www.7-zip.org/>

Once downloaded and extracted, go into the QPST folder \ Driver subfolder and install the HS-USB QDLoader 9008 Qualcomm driver.

Driver Setup procedure is quite straightforward = just follow the onscreen instructions.

**Notice :** in case of any issue while installing such drivers, the Hovatek forum provides a very helpful step-by-step guide - <https://forum.hovatek.com/thread-16965.html> (You can find a copy of such guide inside the **1\_FLASH\_QPST\_QFIL** online folder).

Once the driver has been installed, go on & install the QPST tools.

The procedure has been successfully test using such QPST 2.7.480 release, that includes QFIL 2.0.2.3 release. Most recent releases of QFIL tool (even the standalone ones) had issues while connecting to the phone.

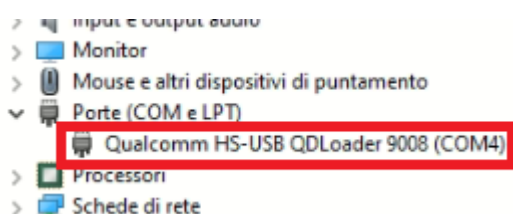
## 1.2 Flashing the Emergency Package - Booting the Smartphone in EDL mode

To use QFIL, you must be able to get the smartphone in Emergency Download (EDL) mode.

First launch the Device Manager on Your Windows system (Start \ run \ devmgmt.msc) = it will help to check if the smartphone boots in EDL mode & gets detected.

Then, the easiest way to get EDL with Aquaris X2 / X2 PRO devices :

- 1 - Power off the phone
- 2 - Press & Hold VOLUME UP button
- 3 - Connect the phone to the PC via an USB cable, while still holding VOLUME UP button



If the smartphone has booted right in EDL, You'll notice that the computer detects it & enables the Qualcomm HS-USB QDloader 9008 port.

If the phone gets detected right, You can unplug it & exit from EDL mode = press VOLUME DOWN and POWER.

In some cases, such procedure doesn't work at first attempt. Try again the procedure. If it doesn't work yet, repeat it, but replace step 2 with a Combo button = Press & Hold VOLUME UP + VOLUME DOWN buttons.

**Notice :** In some cases - as experienced for instance with one of the tested bricked devices - the button procedures don't work. It doesn't even matter if you change USB cable, or even use specially crafted cables for EDL connections.

Therefore, if Your device has such issue, You'll have to remove the backcover & perform a TESTPOINT procedure.



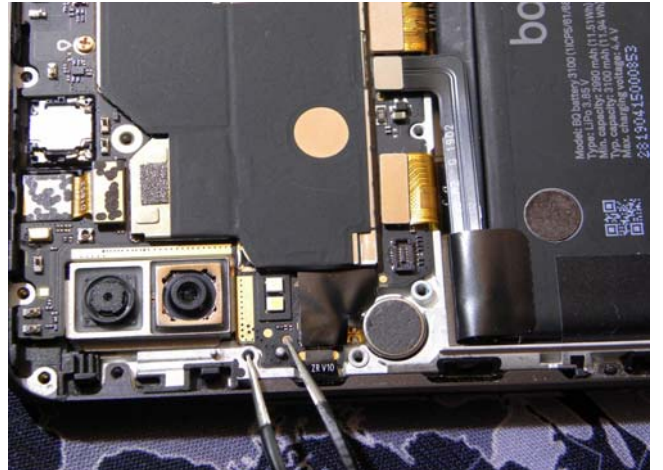
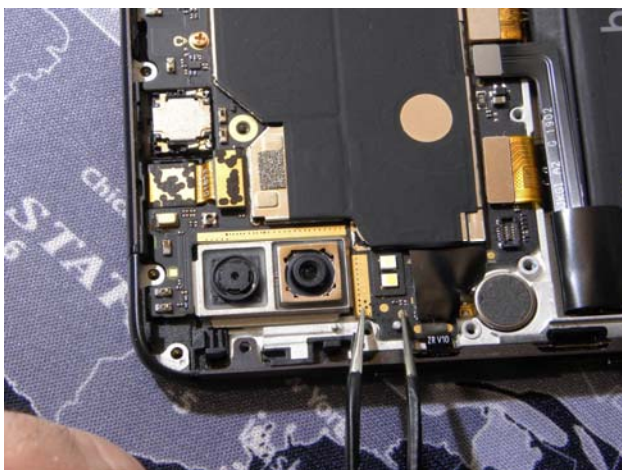
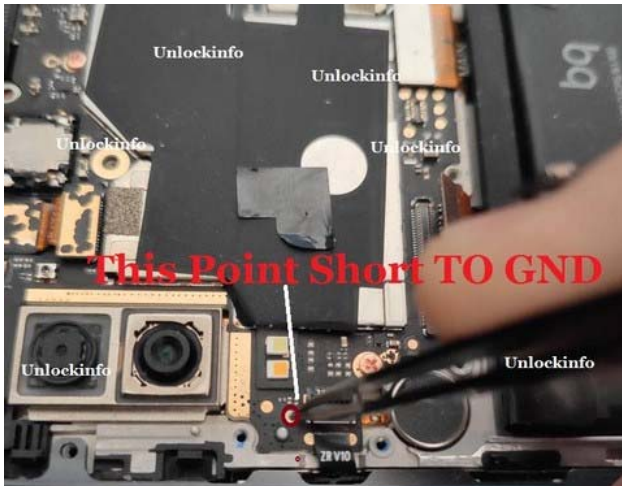
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As written before, if EDL button procedures fail, You'll first have to remove the backcover (*quite easy, as explained in the first page of this guide*) .

Then, You'll have to short a specific pin/point on the main board with an available GND pin (or just with the chassis) using tweezers or a thin piece of wire.



If the TESTPOINT procedure works, but EDL detection/connection is unstable, You can try this workaround (*thanks to teomiglio*) :

- 1 - Power off the phone
- 2 - Connect the powered-off phone to the PC via an USB cable (*phone will vibrate because of charge detection*)
- 3 - Quickly start to short & release the testpoint pin = do it for around 5 times in 2/3 seconds
- 4 - Stop the short/release cycle and wait until the phone vibrates again
- 5 - Repeat step #2
- 6 - Press & hold the POWER button for 1 second

If the workaround is successful, You get a more stable EDL connection. Otherwise, unplug the battery, wait for 10 seconds and repeat the steps.



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### 1.3 Flashing the Emergency Package - Using QPST / QFIL

Launch QFIL (from the QPST folder in Your Start menu) . From the main window first select **Flat Build** as build type.

Then, click in the **Browse** button, in order to select the Firehose/Programmer. Go into the folder where You've extracted the EMERGENCY PACKAGE.

You'll notice that there are 4 elf programmer files inside such folder. This is due to the differences in QFIL behavior, according to the firmware build - stock/custom (10, 9/Pie, 8.1/Oreo), that was running on the device before the brick.

During our private tests the following programmers were the mainly used ones (if / when the first one failed, we swiched to use the second one).

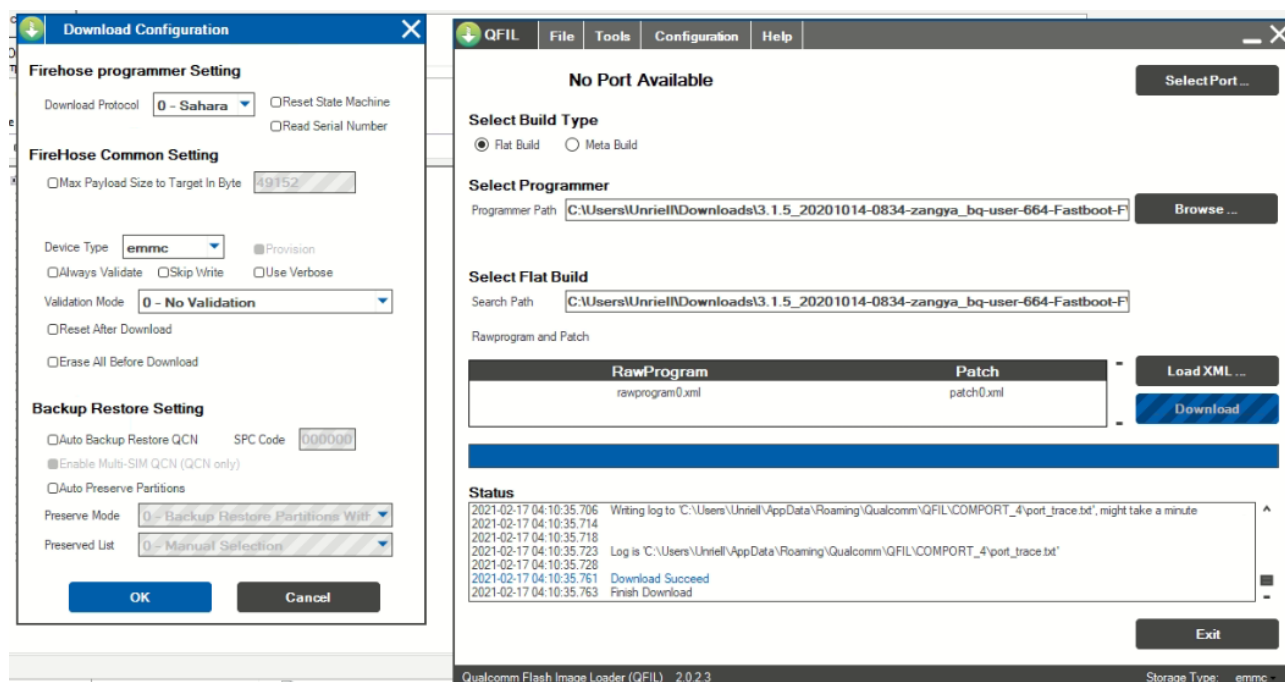
- 1 prog\_emmc\_firehose\_Sdm660\_ddr\_Z.elf
- 2 prog\_emmc\_ufs\_firehose\_Sdm660\_ddr.elf

Once You've selected the Firehose/Programmer, You must load the XML files. Use this table in order to choose the right files for your device.

Device	RawProgram	Patch
Aquaris X2 - 3/32GB	rawprogram0_X2_32_NEW.xml	patch0_x2.xml
Aquaris X2 - 4/64GB	rawprogram0_X2_64_NEW.xml	patch0_x2.xml
Aquaris X2 PRO - 4/64GB	rawprogram0_X2_PRO_NEW.xml	patch0_x2_PRO.xml

Then, select **EMMC** as Device Type in the menu Configuration \ Firehose Configuration .

You'll get the following situation.







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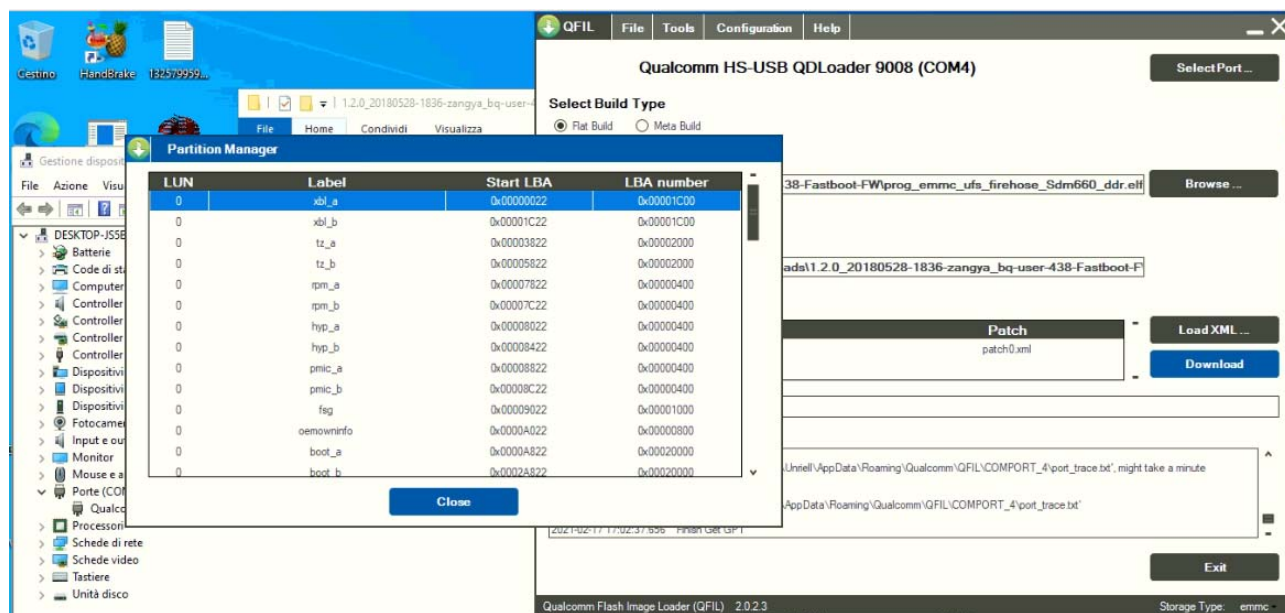
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Boot your smartphone in EDL mode. If everything OK with the EDL detection, You'll notice the enabled 9008 port in the Device Manager and also in the main window of QFIL.

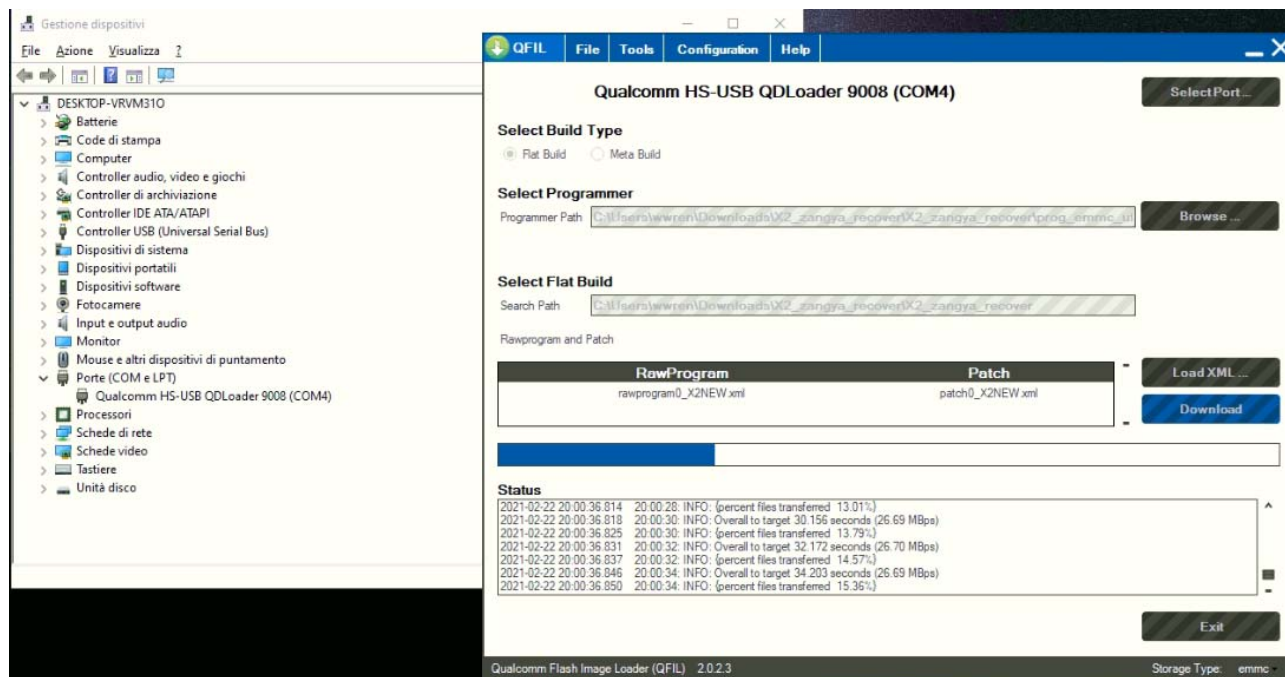
You can check if the chosen programmer will work for the flashing procedure, just clicking on Tools \ Partition Manager.

If QFIL manages to load the partition table, You've chosen the right programmer for your current device+firmware situation.



Otherwise, You have to unplug the device, choose another Firehose/Programmer and restart the QFIL setup process.

Once You've got the right programmer, You can start the flashing process by clicking on the **Download** button.



Wait until the process ends. Then, unplug the phone and exit EDL mode (press **Volume Down** and **Power**).



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## 2.1 Emergency Package - First Boot

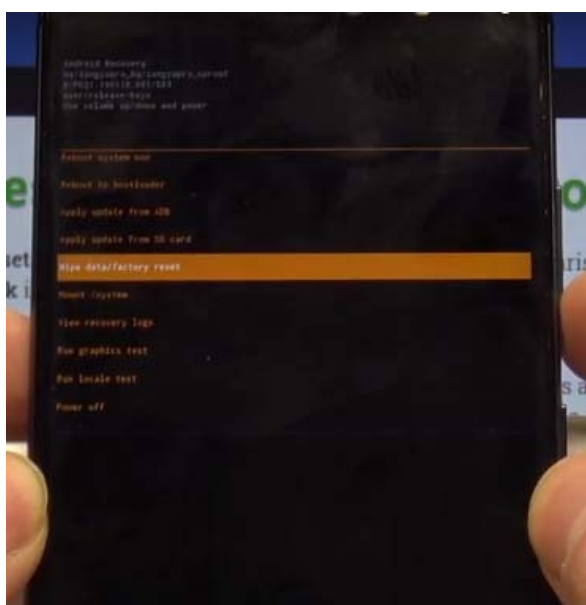
Power on the phone and boot normally into system. You'll get a warning page written in Vietnamese language.



Such warning tells You that there has been an encryption issue while trying to access the userdata partition.

In order to fix it, power off the phone and reboot it into recovery, by pressing + holding VOLUME UP + POWER buttons for 5 seconds, then releasing only the POWER key..

Use the Volume keys to navigate to Wipe Data - Factory Reset and press POWER button to confirm. After wipe & reboot into system You'll prompted with Vsmart welcome message.



Perform the initial setup in order to fully activate the system - including Google account stage.



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## **2.2 Emergency Package - Bootloader Unlock**

Go into Settings / About phone infos & enable the Developer Settings (tap 7 times on build).

Once You've enabled the Developer Settings, go into such submenu in order to :

**1 Enable USB debug**

**2 Enable OEM bootloader unlock**

Now you can connect the smartphone to the computer via USB cable & reboot into bootloader through ADB commands

```
adb devices
```

```
adb reboot bootloader
```

**Notice :** if You haven't already installed ADB+fastboot commands, You can install & use the releases of the Android SDK Platform tools - <https://developer.android.com/studio/releases/platform-tools> .

Once in bootloader, go on and unlock the bootloader through the fastboot commands

```
fastboot devices
```

```
fastboot flashing unlock
```

Wait until your phone reboots. It takes a while (*don't panic!*). When the phone gets back on the initial splash screen, turn it off.

Then reboot into the bootloader again by pressing & holding POWER + VOLUME DOWN buttons.

Once again in bootloader mode, unlock the critical partitions through the fastboot commands

```
fastboot flashing unlock_critical
```

After such command the phone will be fully unlocked & rebooted into system.

## **2.3 Emergency Package - IMEI / Baseband preliminary checks**

In some cases - after all former steps - there could be a IMEI and/or baseband corruption, that may lead to issues with phone calls and/or mobile data.

Therefore, check the following situations :

**A Settings \ About Phone -> Baseband version** = if it's empty, there's an issue

**B Dial \*#06#** = if You get different IMEI codes than the original ones of the device, or empty/NULL, there's an issue

If You don't have any A | B issues, check anyway if phone calls and mobile data are working OK.

If everything OK, then You can go on with the last stage = flashing stable firmware.

**Otherwise, if You experience A | B issues, You'll have to perform a baseband / IMEI fix** = tools and instructions are provided in the online folder **2\_IMEI\_FIX** .



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### 3 Flashing stable firmware

As written in the former chapter, if Your device doesn't have any IMEI/baseband issue, You can go on and flash a stable firmware = emergency package firmware is just temporary, in order to allow You to get your device working again.

Therefore, You would be also able again to choose to flash a custom ROM - such as LineageOS, maintained by Aquaris-DEV team, flash a GSI, or revert the device to stock/official BQ firmware.

If You decide to flash official/stock BQ firmware, I'd rather suggest to use the manual procedure, instead of BQ Firmware FlashTool V5.

These are the download links of the latest BQ 3.1.5 firmware builds - Android 10 based - for Aquaris X2 & X2 PRO models :

Device	3.1.5 - Fastboot package
Aquaris X2 - 3/32GB	<a href="https://storage.googleapis.com/otas/2018/Smartphones/Aquaris_X2/Q/3.1.5/3.1.5_20201014-0834-zangya_bq-user-664-Fastboot-FW.zip">https://storage.googleapis.com/otas/2018/Smartphones/Aquaris_X2/Q/3.1.5/3.1.5_20201014-0834-zangya_bq-user-664-Fastboot-FW.zip</a>
Aquaris X2 - 4/64GB	<a href="https://storage.googleapis.com/otas/2018/Smartphones/Aquaris_X2/Q/3.1.5/3.1.5_20201014-0835-zangyapro_bq-user-666-Fastboot-FW.zip">https://storage.googleapis.com/otas/2018/Smartphones/Aquaris_X2/Q/3.1.5/3.1.5_20201014-0835-zangyapro_bq-user-666-Fastboot-FW.zip</a>
Aquaris X2 PRO - 4/64GB	<a href="https://storage.googleapis.com/otas/2018/Smartphones/Aquaris_X2_PRO/Q/3.1.5/3.1.5_20201014-0835-zangyapro_bq-user-666-Fastboot-FW.zip">https://storage.googleapis.com/otas/2018/Smartphones/Aquaris_X2_PRO/Q/3.1.5/3.1.5_20201014-0835-zangyapro_bq-user-666-Fastboot-FW.zip</a>

Reboot into bootloader (*through ADB commands or combo button power-on procedure*). Then, run the .bat script that You find in the folder where You have extracted the downloaded firmware.

Such batch script will perform a hard-reset flash & load the partitions/images. as BQ Firmware FlashTool V5 does.

However, unlike the BQ tool, it doesn't lock the critical partitions and the bootloader. This allows you to carry out some checks with the bootloader still unlocked, avoiding situations that may lead to a new brick of the device.

Once You've checked that everything is OK, You may manually lock the device again, rebooting into bootloader and using the related fastboot commands

```
fastboot flashing lock_critical
```

Wait until your phone reboots. It takes a while (*don't panic!*). When the phone gets back on the initial splash screen, turn it off.

Then reboot into the bootloader again by pressing & holding POWER + VOLUME DOWN buttons

Once again in bootloader mode, lock the bootloader through the fastboot command

```
fastboot flashing lock
```

After such command the phone will be fully locked & rebooted into system.





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#### 4 Credits / References

**RAW MAIN (myself)**

**Author/publisher of the guides & software package editor. Maintainer of the unofficial repository for BQ devices.**

**Unriell**

**Provider of the 1st bricked device, that has been used to prepare & test the EMERGENCY PACKAGE.**

**Teomiglio (Matteo M.)**

**Provider of the 2nd bricked device and of the detailed workarounds to boot it in EDL mode (since his unit wasn't getting EDL mode with the Button Combo procedures).**

**Hovatek Forum**

**Provider of tools & drivers, that have been used to "revive" the bricked devices. <https://forum.hovatek.com/>**

**Van Quy Cao (vnngsmservices)**

**Provider of full EMMC dump from Vsmart Active 1 (same model as BQ Aquaris X2 PRO), that helped to assemble the Emergency Package (since full dumps from Aquaris X2 & X2 PRO weren't enough).**