TECHNICAL NOTE

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Dual screen upgrade installation
Q225

Preparation

These instructions are a guide to fit the Dual Screen upgrade to the Q225 console.

Important Note: This is not considered an operator action. This note is for the use of factory approved technicians only.

You will need to have the following tools to hand:
- Pozi-screwdriver no1
- 2.0 Hexagonal driver (Allen Key)
- 5.5 nut driver
- Soft material (e.g. bubble wrap or foam)

You will also need to download the required software from the DiGiCo website
- Q225 BIOS Upgrade Utility
- Q225DS Software Updater

Ensure you have taken appropriate anti-static precautions

Avoid working in areas with synthetic floor coverings or carpet, especially polypropylene material, as opposed to natural materials such as solid wood or wool. Ideally work at a proper workbench with ESD safe features, such as a metal frame. Before commencing, try to discharge yourself into a mains earth fitment, water pipe etc.

This is important as parts of this kit are sensitive to static electricity and even if any damage is not immediately obvious, so called “latent damage” can occur, where a device may be partially degraded yet continue to perform its intended function. However, the operating life of the device may be reduced dramatically, leading to premature failure.

Read the instructions carefully before starting and leave yourself plenty of time to perform the upgrade.

Procedure

Before you start:
Shut the mixer down, switch off, and remove power leads.

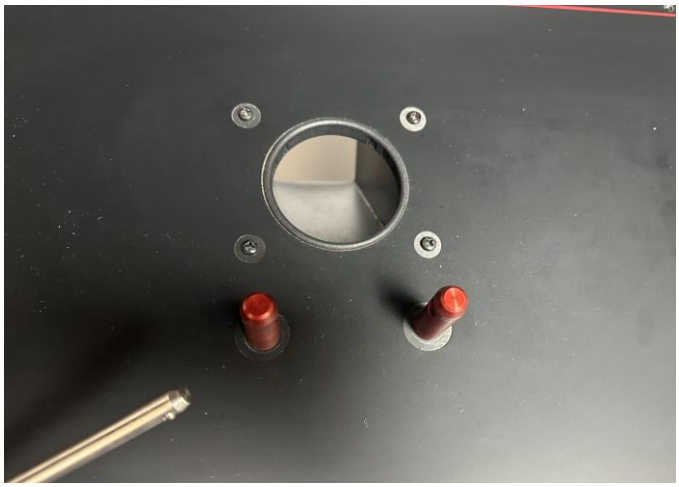
Verify your kit contains the following:
1x Input upper panel
1x PC Card (no CPU)
1x Duct blanking plate
1x LVDS cable
1x Ribbon cable
10x Cable ties
8x Hex screws
1x Q225DS Dust cover
4x Braided USB cables *If the console already has braided cables, these don't need to be installed*
- 680-00076 USB A-B PC to Local I/O
- 680-00077 USB A-B PC to Left Worksurface
- 680-00078 USB A-B PC to Right Worksurface
- 680-00093 USB A-B PC to Engine
- ***Note: The USB cable labelled TCH/RIGHT that goes to the front panel USB doesn't need to be replaced***

Remove the input and master upper panels

Unscrew the hex screws holding each panel to the console frame, 8x screws for each panel, 16x screws in total.

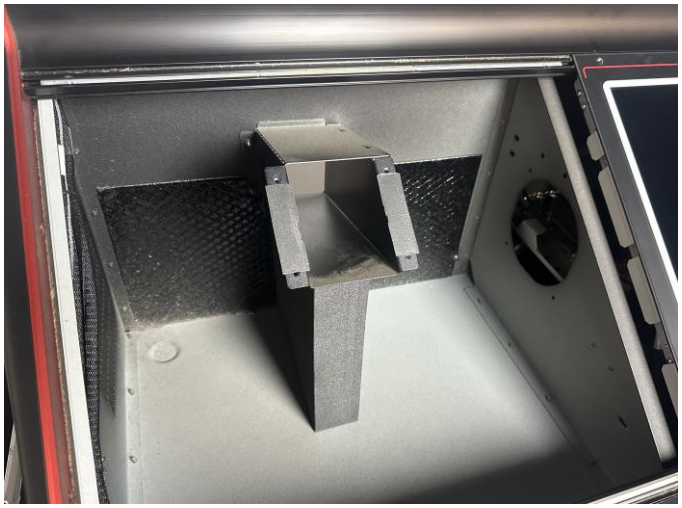
To fully remove the left upper panel, first, the mounting bracket and accessory need to be removed.

To remove the current accessory mounted, detach the locking pin.



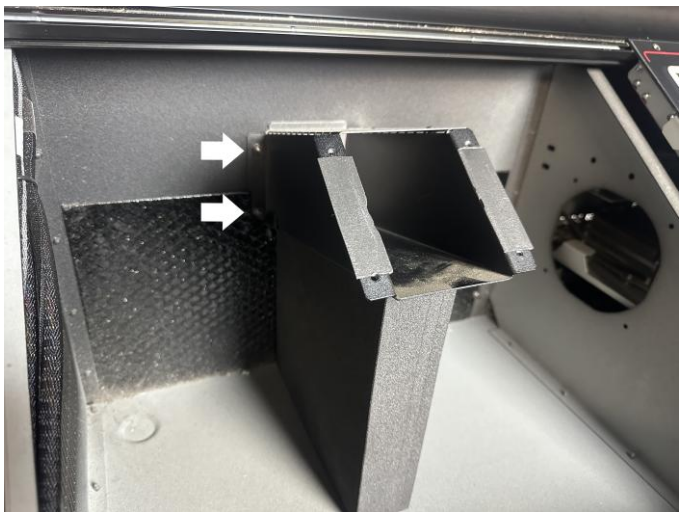
Unscrew the 4x screws holding the panel to the internal cable duct.

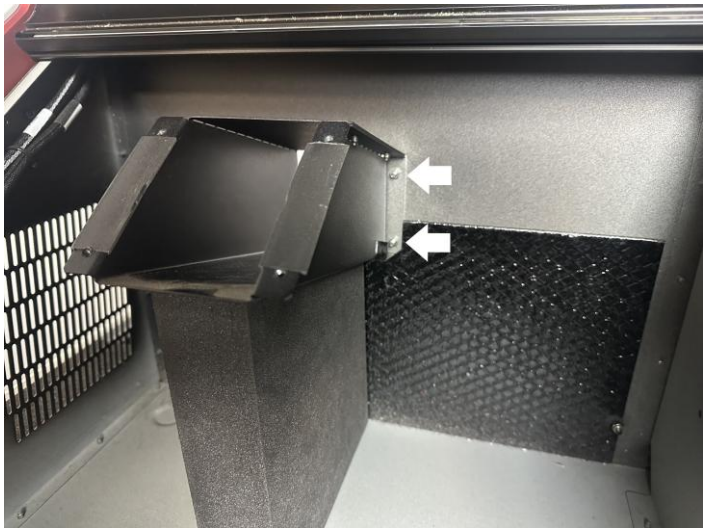
The panel can be removed.



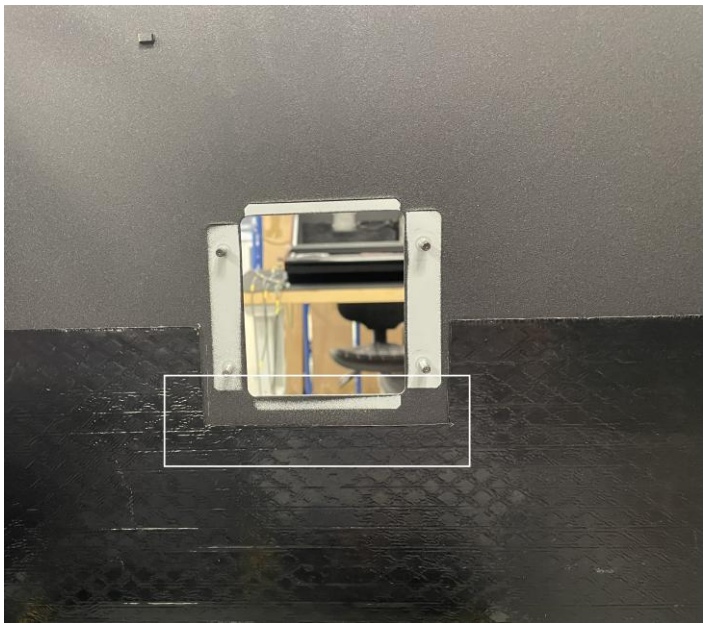
Blanking plate installation

The cable duct needs to be removed to be able to install the blanking plate provided with the kit, remove the 4x nuts (2 each side) holding the cable duct to the console frame. Once the nuts are out, gently pull the duct and the foam out.

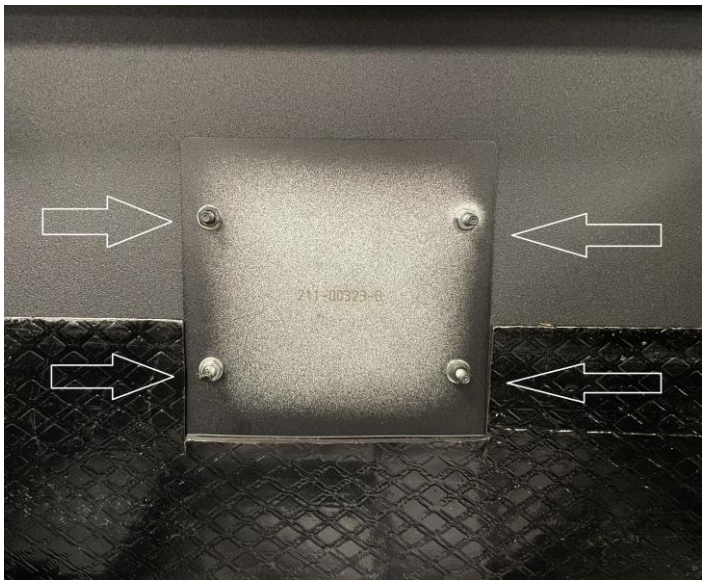




Once the cable duct and foam are detached, cut away a small amount of the acoustic paneling so the new plate fits.

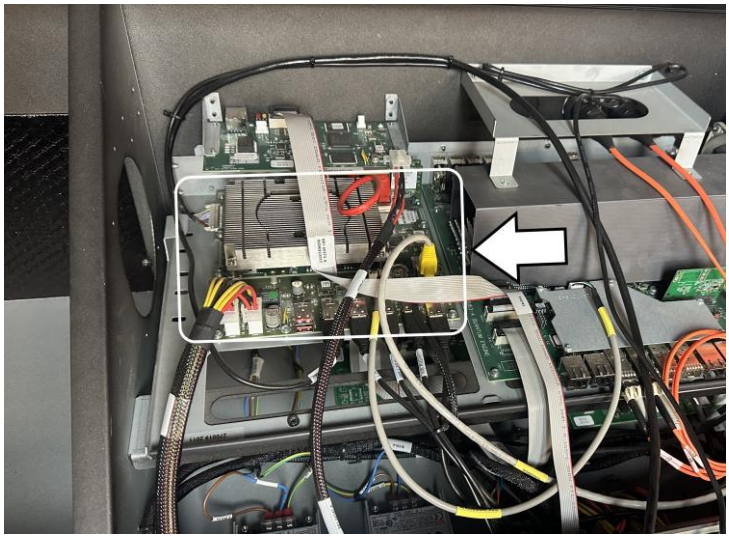


Secure it down with the 4x nuts provided.



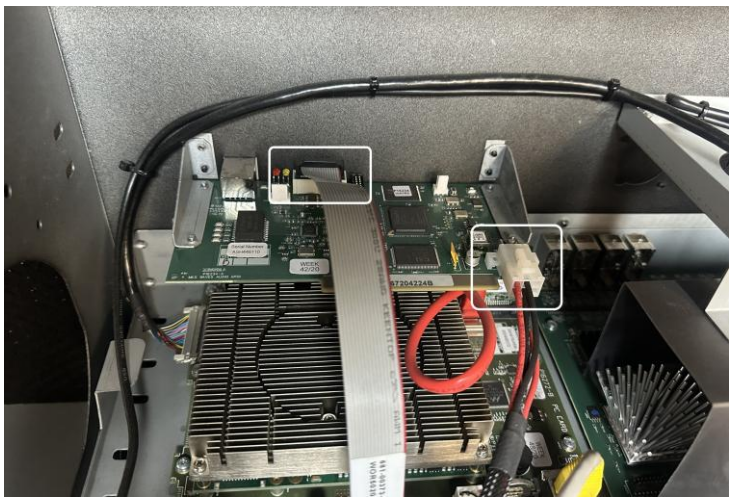
PC board removal

Remove the master panel and place it on top a safe and clean surface and locate the pc board, which will be on the left side.



To have better handling while removing the pc board, the internal waves/fourier card needs to be removed.

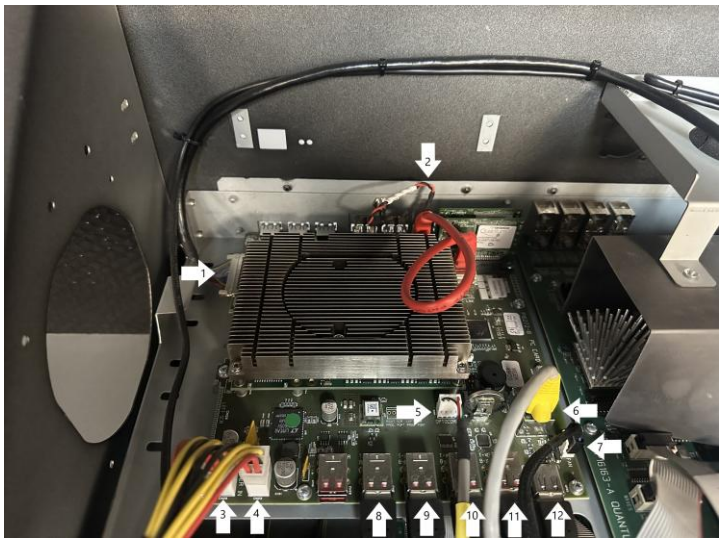
Disconnect the ribbon and power cable marked on the picture below.



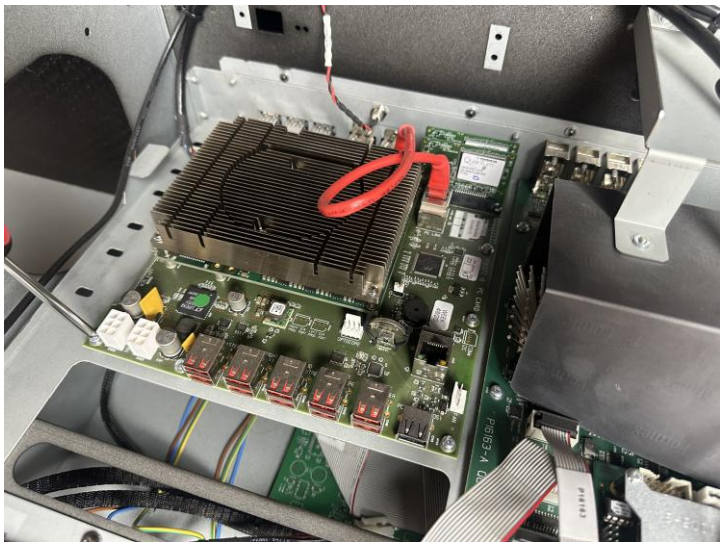
Unscrew the internal card from the back of the console.

After removing the internal card, gently disconnect all cables connected to the pc board.

List of cables:
1. LVDS cable
2. PC reset cable
3. Power cable
4. Power cable
5. Optocore usb reset cable
6. Ethernet cable link
7. Fan
8. USB - Tch Right
9. USB - Local I/O
10. USB - W/S Left
11. USB - W/S Right
12. USB - Host Link

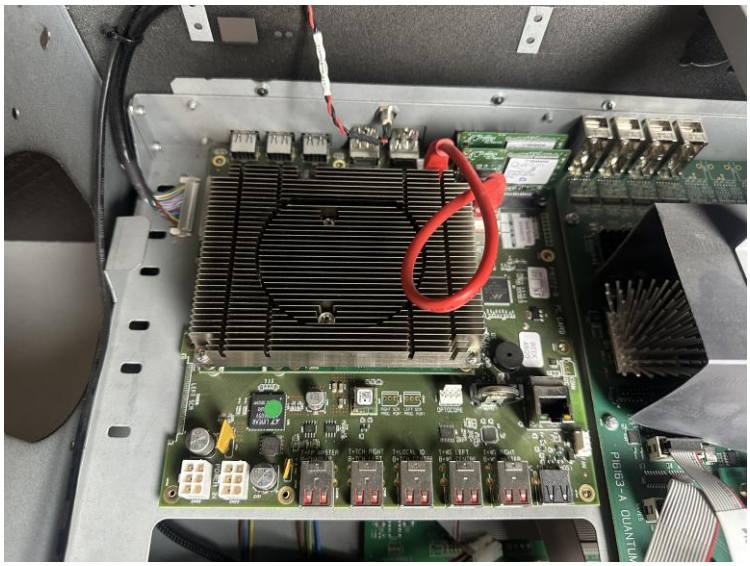


After disconnecting all cables, locate and remove all 11x screws securing the pcb to the engine tray.

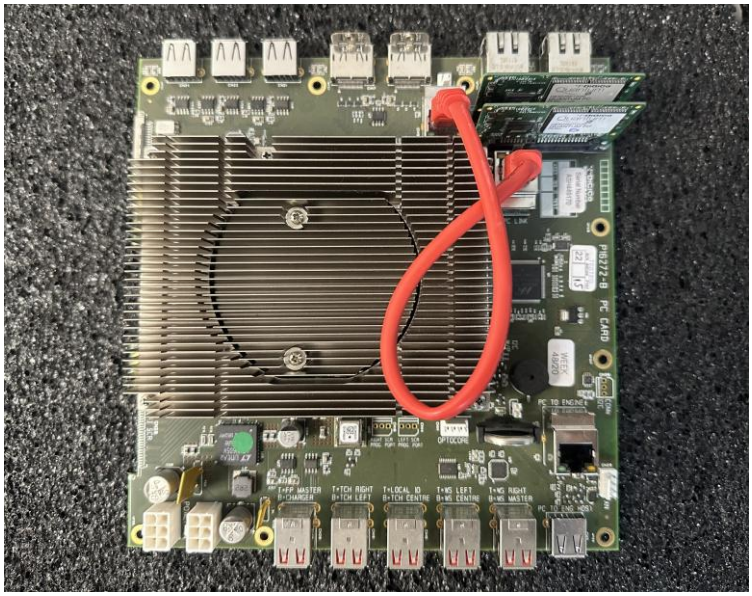


There are another 2x screws on the back of the console, just above the two DP sockets.

Once all screws have been removed, gently remove the pc assembly.



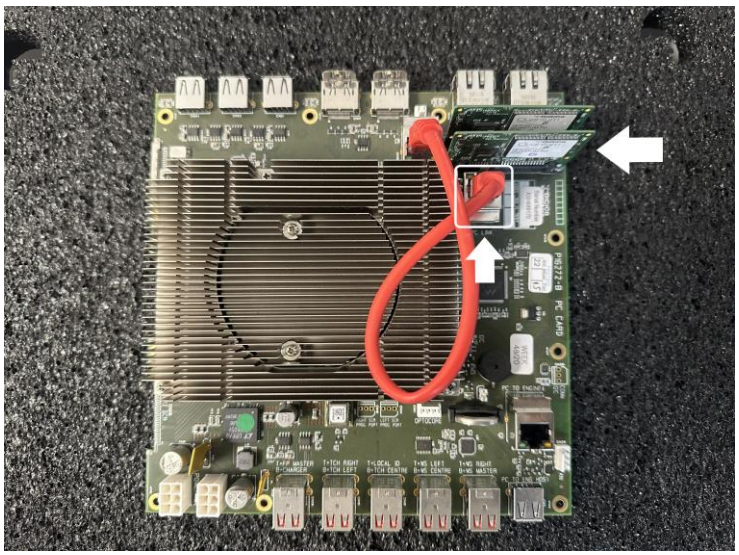
Place it on top a clean and safe area, to proceed with the next section.



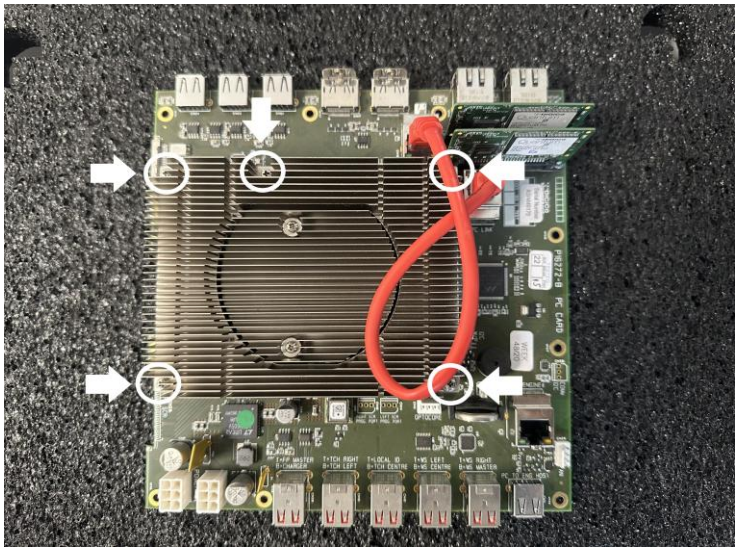
CPU & Drives transfer

Note: this section needs to be carried out very carefully, if there are any doubts, questions or unsure how to proceed please contact your local distributor or DiGiCo support.

Disconnect one end of the PC link and remove C & D drives, these will be installed back on the new PC board.

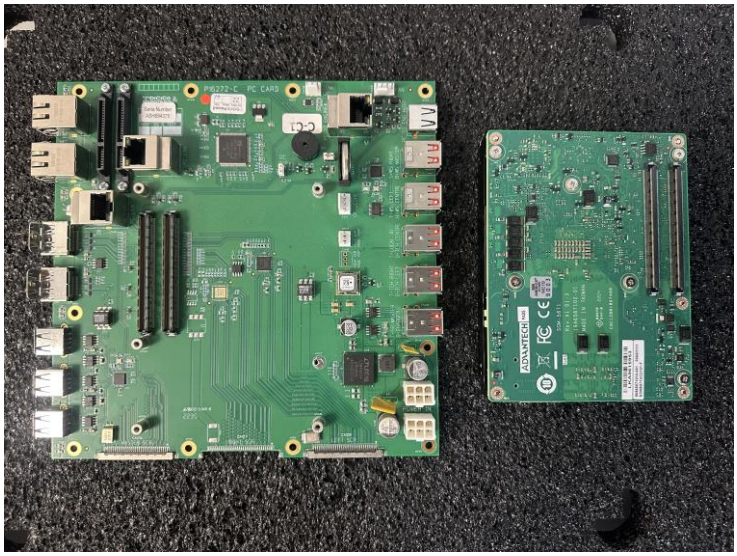


Locate the 5x screws around the CPU heatsink.



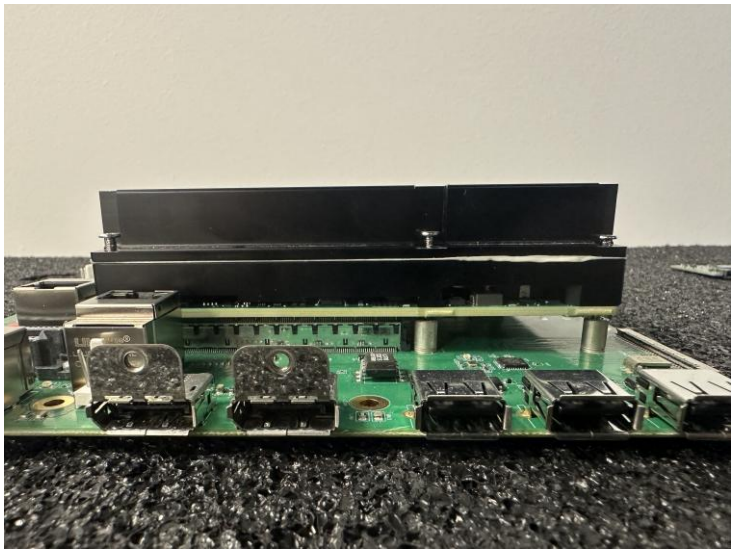
Remove all screws.

The CPU connects to the PC card with a double row of connectors. Both connectors are located towards the rear edge of the CPU module, close to the red Ethernet cable showing on the picture above. To free the CPU module, hold the front and back of the module and in a rotating motion lift the front edge of the module until the connectors disconnect from their sockets.

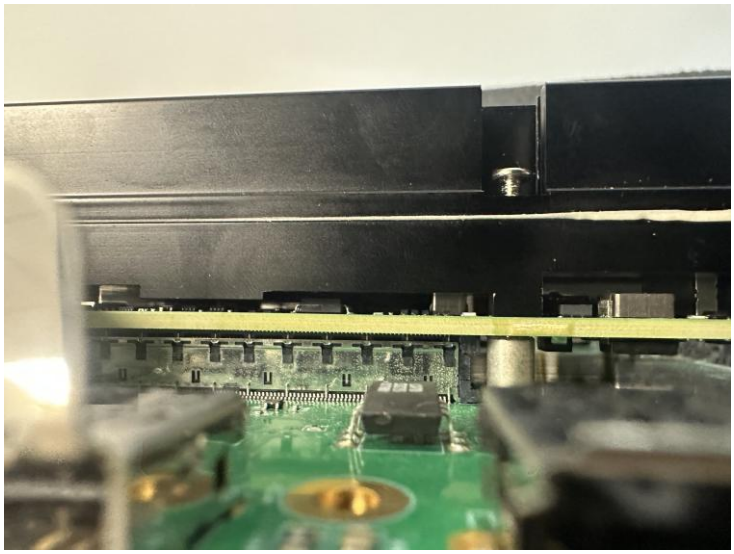


Re-assembling the CPU and the new PC card

Carefully align the CPU module with the dual connectors on the new PC card supplied with the upgrade kit. Check visually that the alignment is correct by trying to move the card left or right or forwards and backwards. If the alignment is correct, the CPU module should already resist movement, even before the connector is fully pushed into the sockets on the PC card. When the alignment is correct, push the connectors into the two receiving sockets. A positive click should be felt but it may need a bit of gentle force to insert the connectors fully. If you can't feel a click, the connection is probably not made.



Visually check that the CPU module is fully inserted.

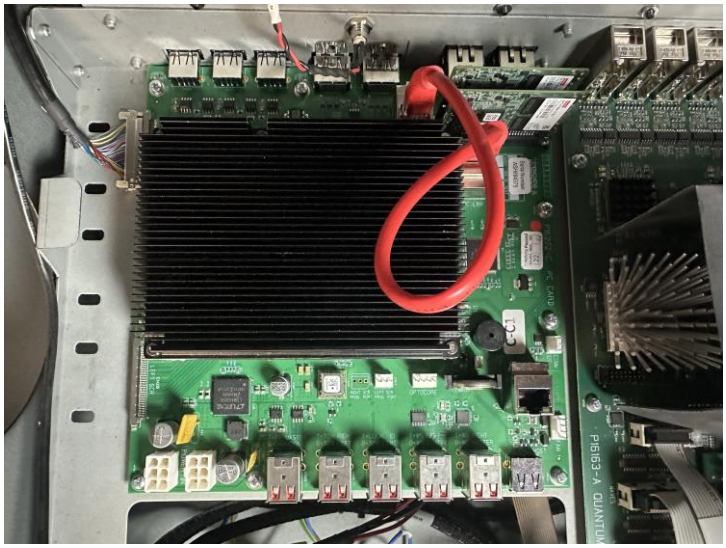


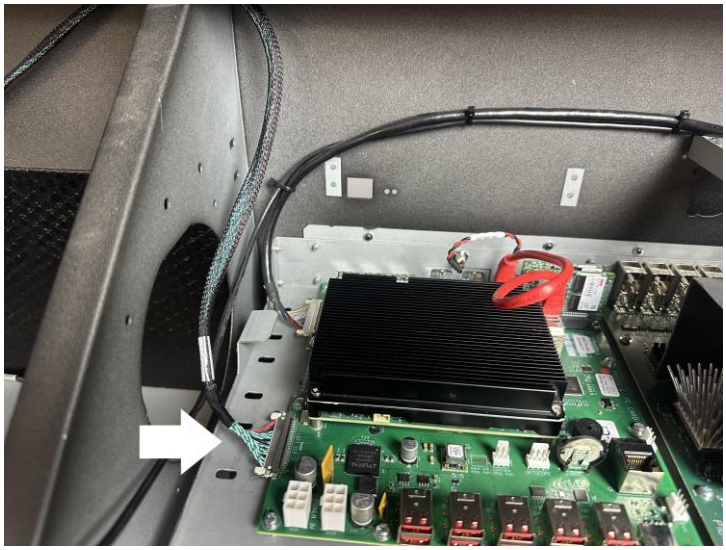
Once the PC module is securely seated, the five screws around the heatsink can be fitted again.

Bring the PC card into position inside the chassis and secure it on the standoff screws, not forgetting the two screws on the rear of the console. Once secure, install the red Ethernet link cable and drives. Ensure the correct slot order for C:\ and D:\ drives. The drive slots on the PC card are silk screened to help identify the slot.

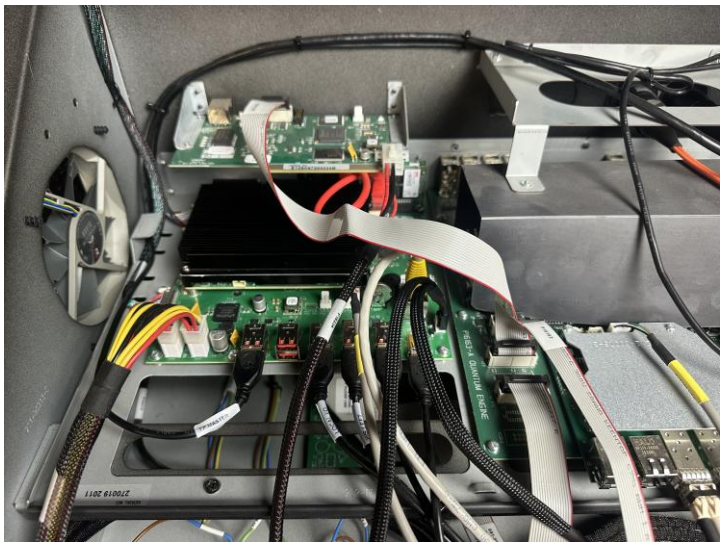
Then connect the existing LVDS cable to the rear connector on the PC card and connect the display cable supplied with the upgrade kit to the LVDS connector at the front of the PC card.

NOTE: The LVDS cables and LVDS sockets on the pcb are delicate components
Please proceed carefully with this step



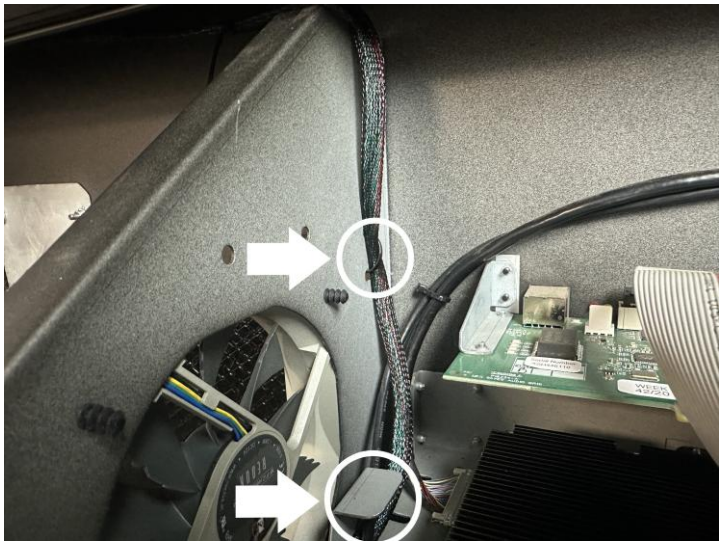


Reconnect all cables back to their corresponding location. If your Q225 isn't already fitted with braided USB cables, please use the USB cables provided with the kit. These are the latest production cables which will bring the console up to current standards.

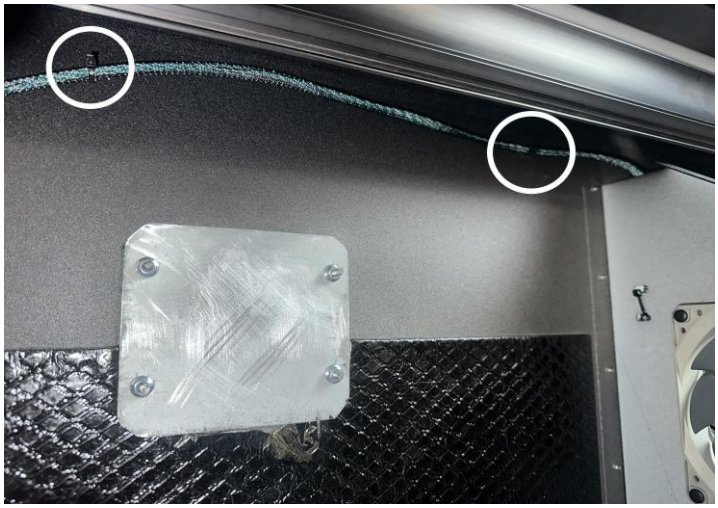


Cabling and panel installation

Pass the display cable under the engine tray metal and use one of the tie wraps supplied with the upgrade kit to secure the display cable and ensure it does not touch the fan (if fitted). Please note: Some Q225 consoles do not have an internal fan next to the CPU. It depends on the type of CPU used in the console. The absence of the fan is not an omission, and it is not required in these consoles. If the fan is fitted, ensure the LVDS cable does not interfere with the fan.

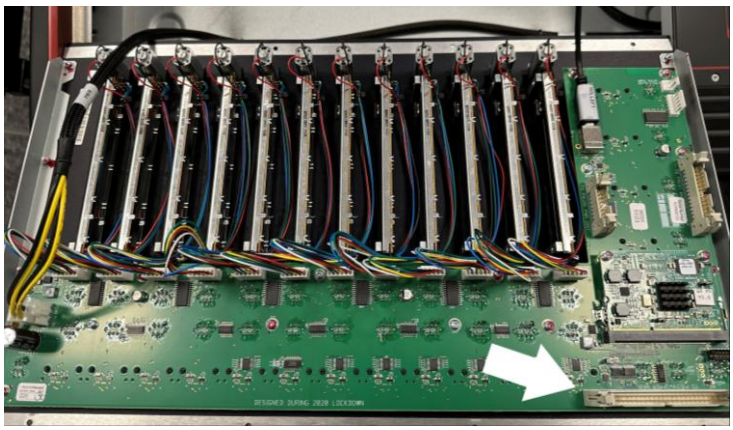


Route the LVDS cable over the chassis frame and secure it to the back of the console.

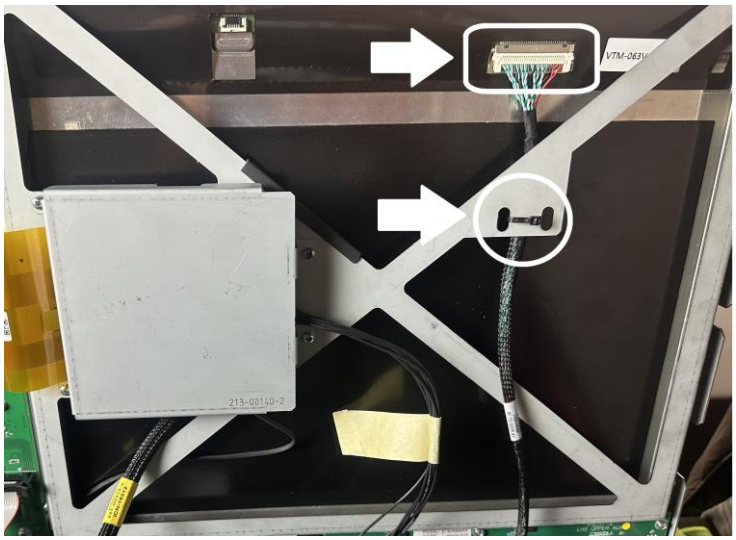


Remove the left lower input panel to connect the ribbon cable provided.

Plug the grey ribbon cable into the socket labeled ‘to P16134 upper…’ set this panel back into its position and route the cable towards the back of the console to connect it to the new panel.



At this stage the new panel is ready to be installed, place the panel and connect the LVDS cable to the display previously fitted and routed throughout the console and secure it with a cable tie as shown in the picture below. Ensure the LVDS connector is oriented correctly: the metallic side must face the display panel, while the white plastic side should face outward.

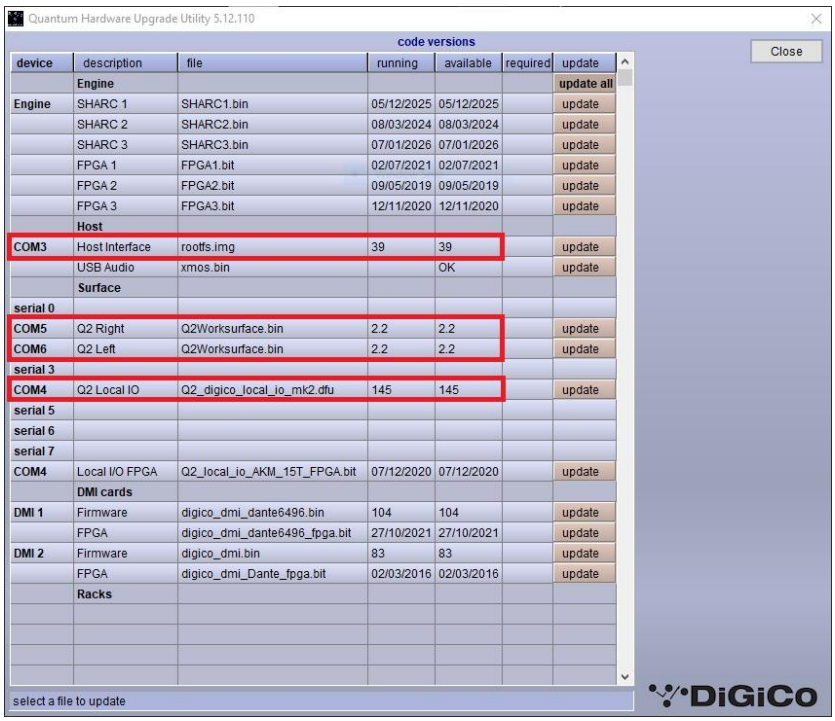


NOTE: Do not connect the grey ribbon cable yet, due to the panel is a new piece of hardware, the console won't recognize it and will cause the left surface to disappear or change the worksurface running code to '84' which isn't valid.

Rest the panel in place but don't screw it down.

Power up the console.

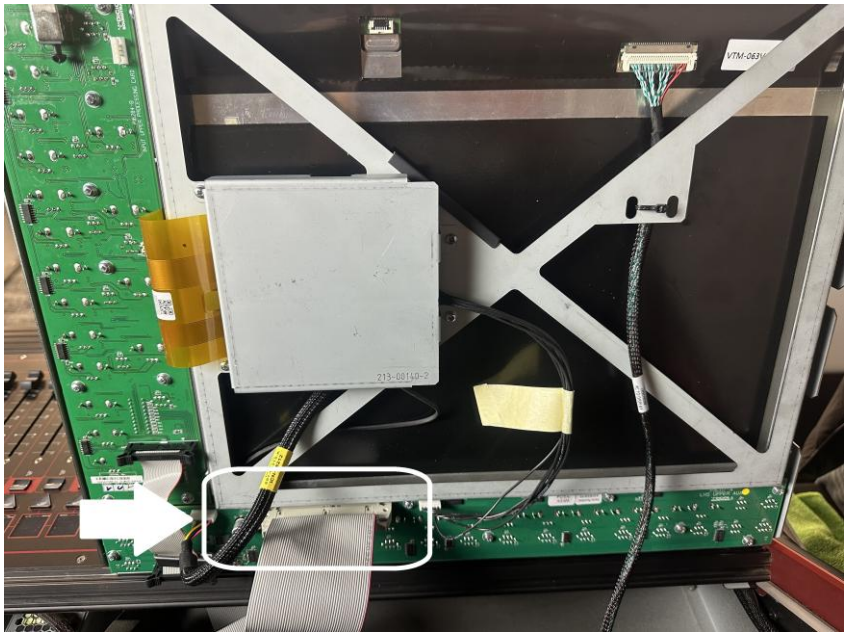
Quit to Home and open the Quantum Upgrade application. Check that all devices are detected and that the Host Interface, Right surface, Left Surface and Local IO have a valid running code.



device	description	file	running	available	required	update
	Engine					**update all**
Engine	SHARC 1	SHARC1.bin	05/12/2025	05/12/2025		update
	SHARC 2	SHARC2.bin	08/03/2024	08/03/2024		update
	SHARC 3	SHARC3.bin	07/01/2026	07/01/2026		update
	FPGA 1	FPGA1.bit	02/07/2021	02/07/2021		update
	FPGA 2	FPGA2.bit	09/05/2019	09/05/2019		update
	FPGA 3	FPGA3.bit	12/11/2020	12/11/2020		update
	Host					
COM3	Host Interface	rootfs.img	39	39		update
	USB Audio	xmos.bin		OK		update
	Surface					
serial 0						
COM5	Q2 Right	Q2Worksurface.bin	2.2	2.2		update
COM6	Q2 Left	Q2Worksurface.bin	2.2	2.2		update
serial 3						
COM4	Q2 Local IO	Q2_digico_local_io_mk2.dfu	145	145		update
serial 5						
serial 6						
serial 7						
COM4	Local I/O FPGA	Q2_local_io_AKM_15T_FPGA.bit	07/12/2020	07/12/2020		update
	DMI cards					
DMI 1	Firmware	digico_dmi_dante6496.bin	104	104		update
	FPGA	digico_dmi_dante6496_fpga.bit	27/10/2021	27/10/2021		update
DMI 2	Firmware	digico_dmi.bin	83	83		update
	FPGA	digico_dmi_Dante_fpga.bit	02/03/2016	02/03/2016		update
	Racks					

If all codes are present, close the Quantum Hardware Upgrade Utility and power off the console.

Go back and lift the new panel and plug in the grey ribbon cable. The connector is keyed but double-check the correct orientation of the cable.



The hardware installation for the upgrade has been completed.

Re-assemble and power up the console.

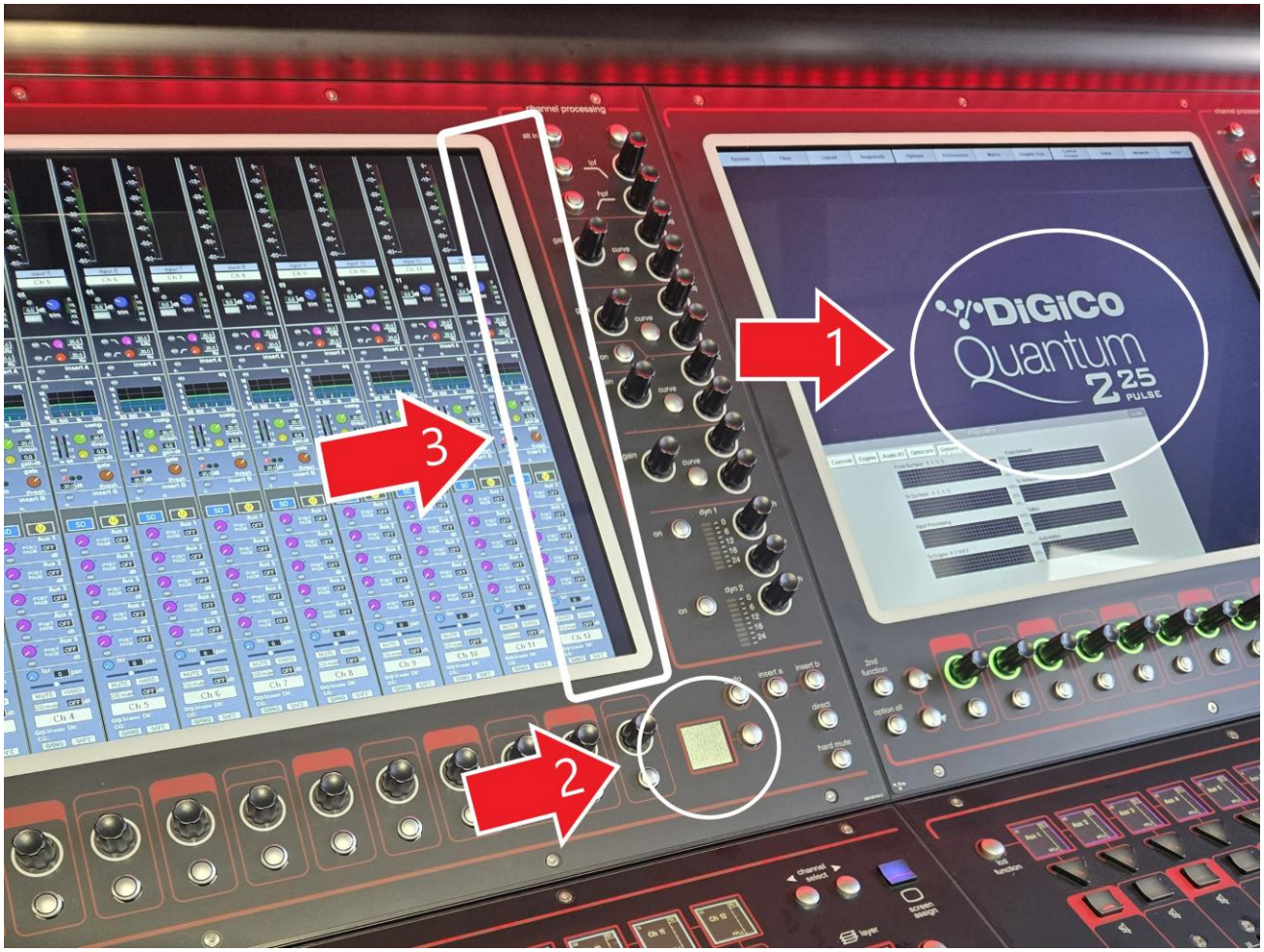
Quit the main application by clicking on System > Quit to Home to proceed with the software installation.

IMPORTANT

When powering on, the console will go into the main application as per usual, you'll see video feed going into the new screen, but the panel won't be fully operational due to the software updates haven't been performed.

The console will look like the picture below; this is **EXPECTED** behaviour.

1. Master screen will still be showing Quantum 225.
2. The small TFT display on the new panel will be blank and won't show any information.
3. On the new panel, the video feed won't cover the complete diameter of the display.



Quantum 225 Dual Screen Upgrade Utility

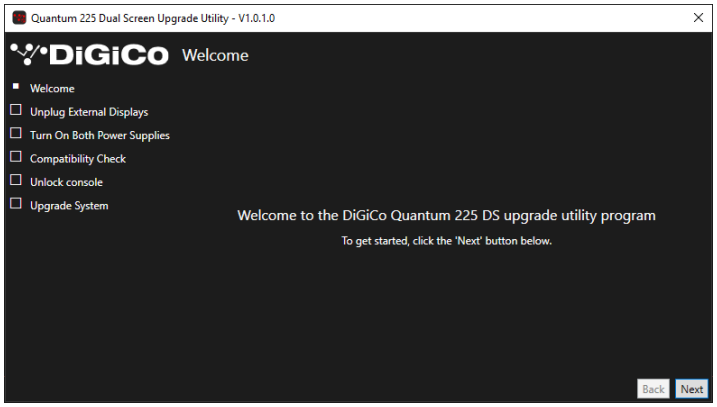
Install the software upgrade utility into the BIOS.
You can download the file by clicking the embedded download link in the online article.

Unzip and copy the file Q225ToDS.exe onto a suitable USB Key and insert it into a free USB Socket on the console.

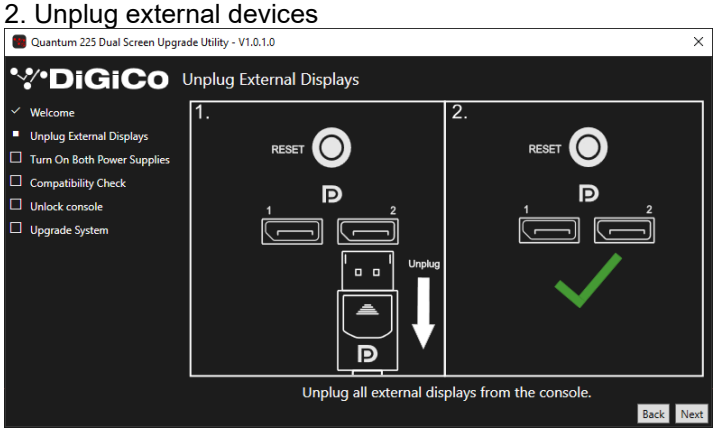
Click Settings (bottom left corner) and then File Browser. Navigate to your USB Key and run the utility by double-clicking the file Q225ToDS.exe.

Follow the on-screen instructions.

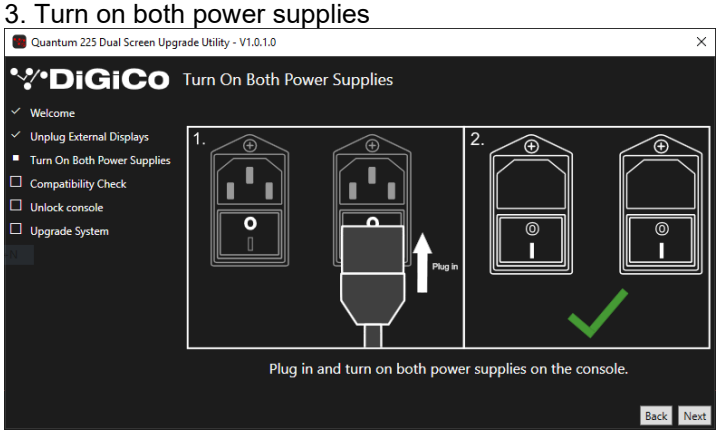
1. Welcome



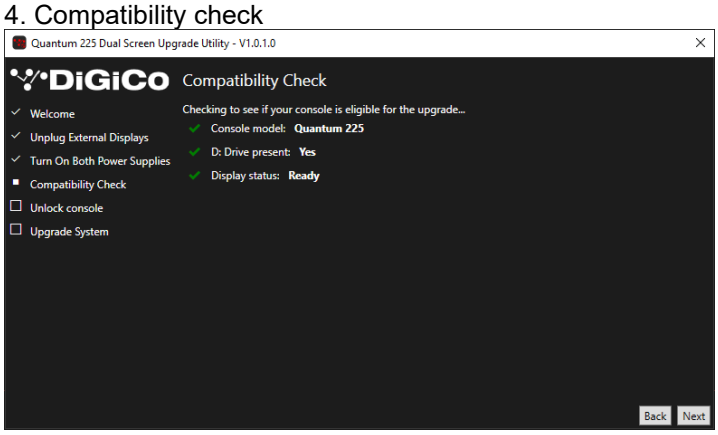
2. Unplug external devices



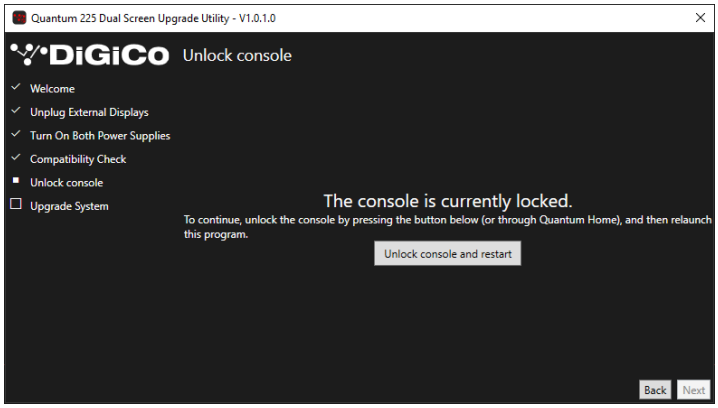
3. Turn on both power supplies



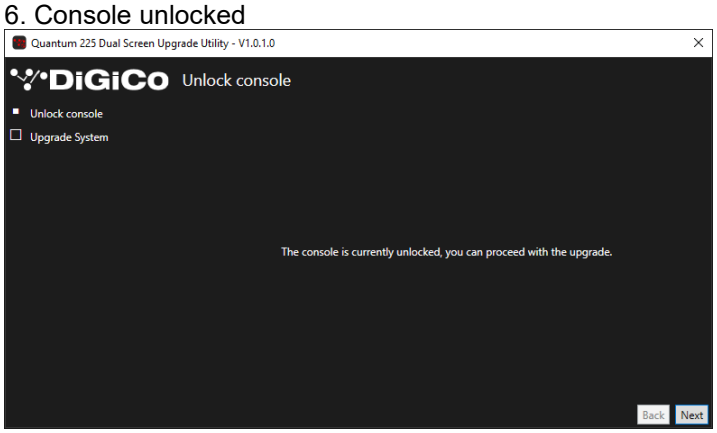
4. Compatibility check



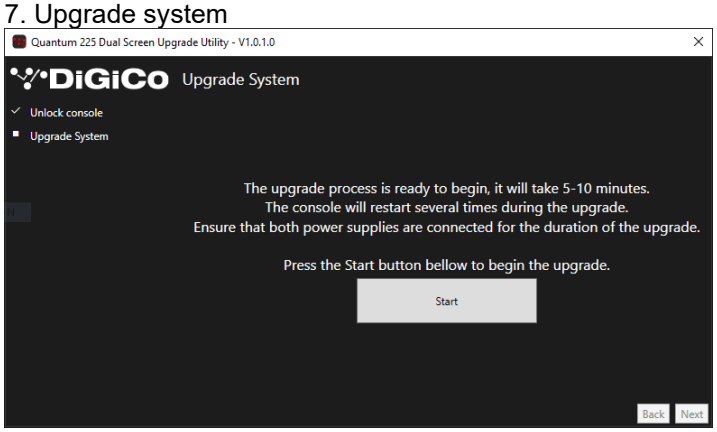
5. Unlock console



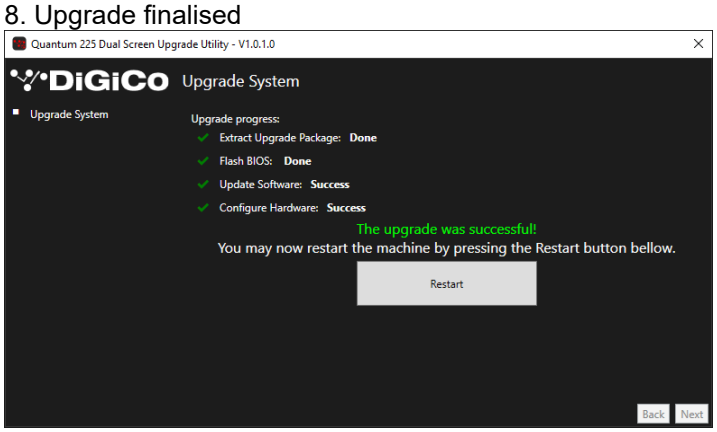
6. Console unlocked



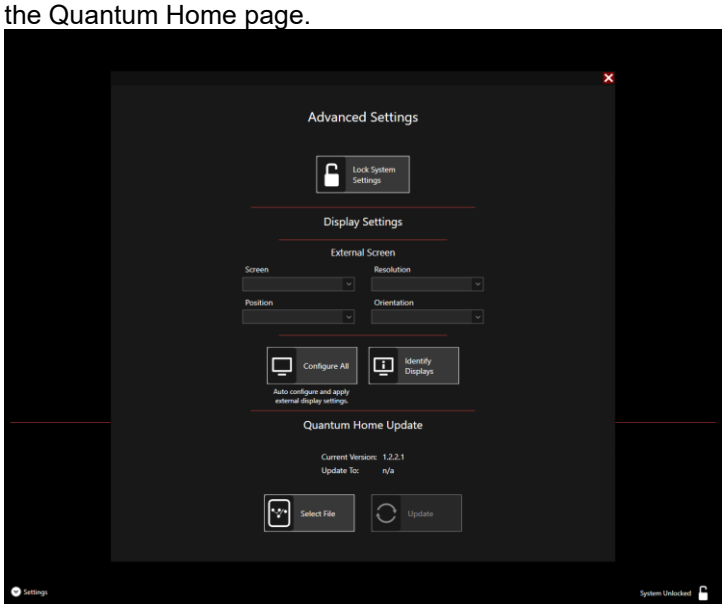
7. Upgrade system



8. Upgrade finalised



9. This completes the BIOS upgrade. The console can now be locked again from the advanced setting menu on the Quantum Home page.



Update the console to V22.1.2232

The final step is updating the Quantum software to a version that is compatible with Quantum 225DS hardware. Initially, this will be V22.1.2232, if a newer software version is available, it may be installed instead.
The updater must be executed regardless of the version currently installed.

The software version for the Quantum 225DS cannot be used on a single-screen Quantum 225 and vice-versa.

You can download the file by clicking on the embedded download link in the online article.

Test the console functions

Once all the software is installed, connect the console to power and perform an operational test to confirm screen and controls function correctly.