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Quantum 5 Q5 Fourier Installation

Important Note: These instructions are a guide to installing Fourier to the Quantum 5 engine. This technical note is for the use of factory-approved technicians only.

Read the instructions carefully before starting and leave yourself enough time to perform the work. You will need to have the following tools at hand:

- Screw Driver
- Wrench protected with electrical tape
- Cutters

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 work, try to discharge yourself into a mains earth fitting, water pipe etc. This is important as internal parts of the mixer are static sensitive 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. If you are unsure about any part of the upgrade procedure, seek advice before proceeding.

Before you start:

Shut down the console, switch it off and remove the power leads.

Removal of Engine and Disassembly

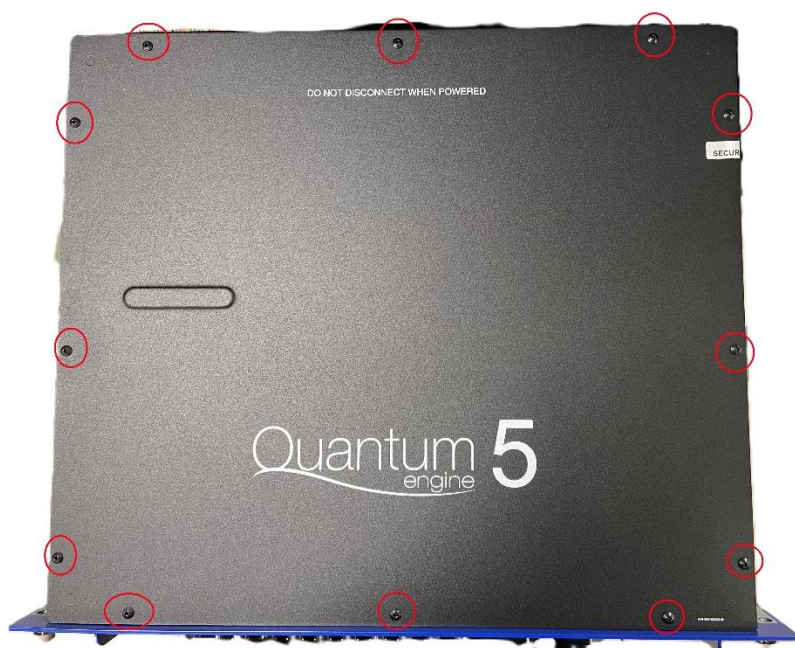
To begin this installation first you must remove the engine from the console, to do so unscrew the 4 thumb screws on the rear of the engine.



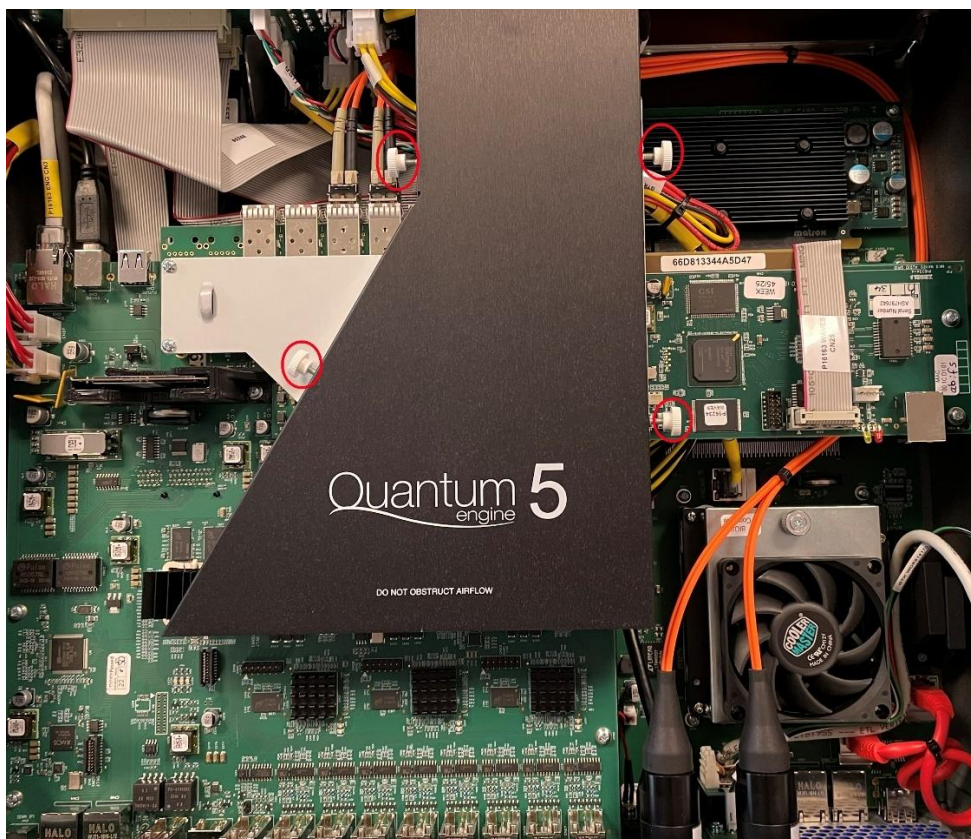
Then disconnect the power loom and the x3 ribbon looms connected to the rear of the engine.



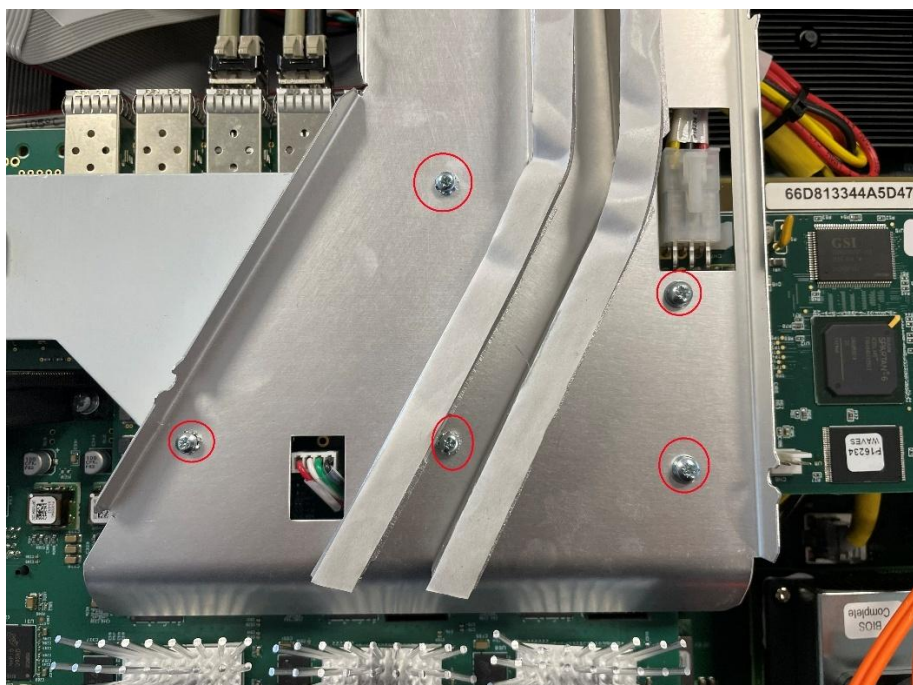
Once this is done place the engine on a clear workbench and begin unscrewing the x12 screws holding the engine cover in place, remove the engine cover and place to the side somewhere safe.



Next locate the x4 thumb screws holding the air guide in place, these screws are hand tight so unscrew them and remove the air guide.



You will then gain access to the lower section of the air guide, once again locate the x5 screws and remove this section. Now you have access to the engine and all its components.



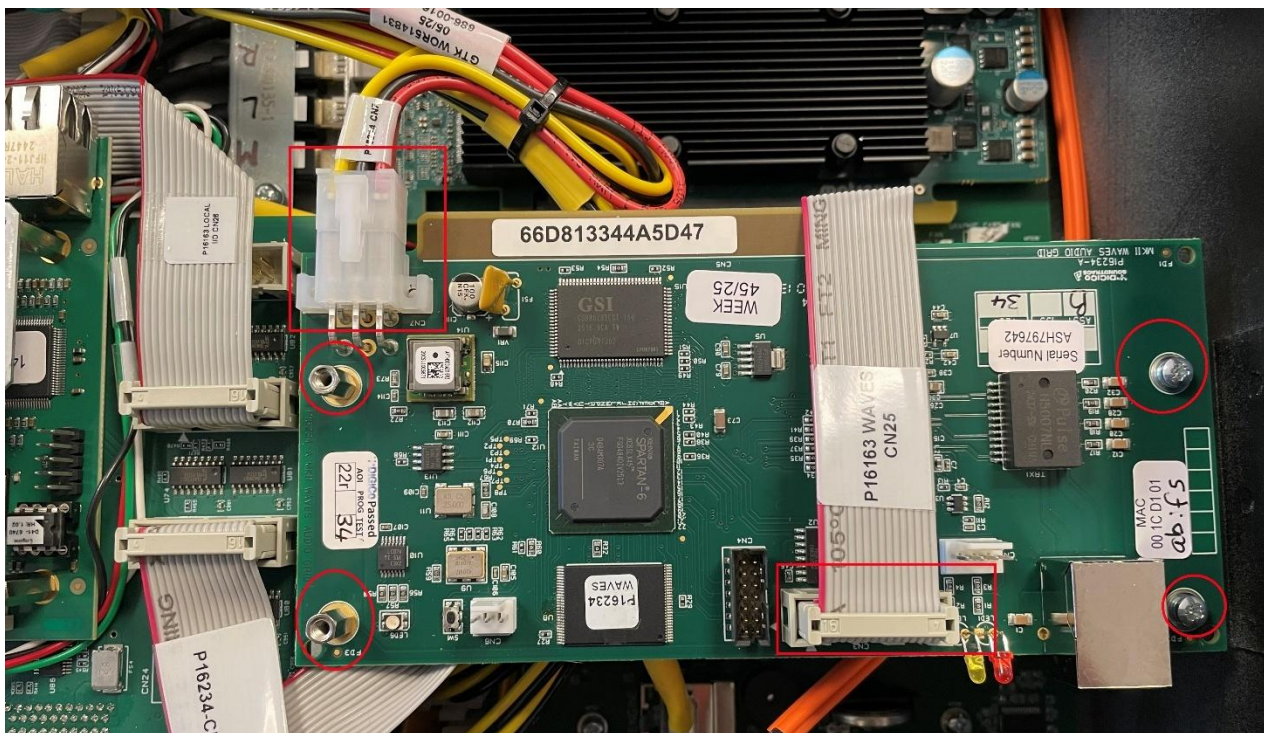
Note Fitting the Fourier card in the Q5 is the same process whether waves is or is not fitted. If waves isn't fitted there may be extra steps of removing plates but these will be highlighted.

Installation of Fourier

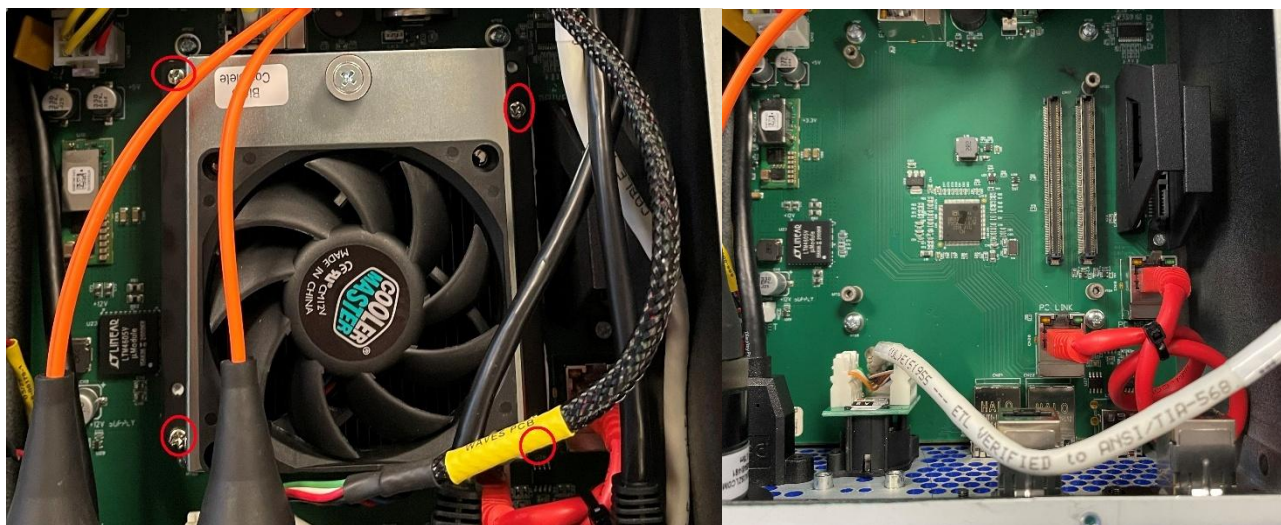
To begin with if optocore is fitted you will need to remove Loop B from the front panel so you have enough space to work, you will also need to remove the x4 screws holding the blanking plate for optocore loop 2 to the front panel. ***note*** If dual optocore loops are fitted you can skip fitting the Control and Secondary Port plate to the front. Fourier can function with just the Primary Port.



If waves are fitted disconnect the power loom, front panel LED loom and the ribbon loom. Now remove x2 stand offs and x2 screws, once these have been removed you can lift the waves card out of the engine and put to the side.



To be able to fit the RJ45 connected (if waves is not fitted) and the new front panel LED board you need to remove the CPU from the engine, this is a delicate process. Locate the x4 retaining screws for the CPU and unscrew them evenly, once the screws are loose lifting the CPU at an angle from left to right and then pull up. Once the CPU is removed, place to the side on some antistatic matting or the bubble wrap the kit comes with.



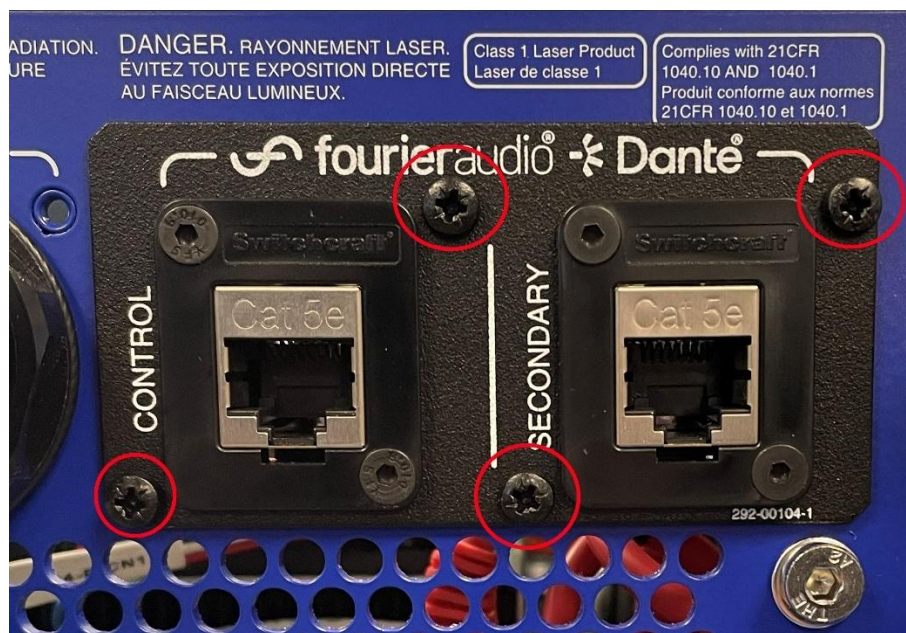
Now that the waves card and CPU are removed from the engine. You can fit the RJ45 connection to the front panel ***note if waves was previously fitted you can skip this*** to do so remove the blanking plate from the front panel, once this is removed you can install the RJ45 connector and secure using x2 screws.



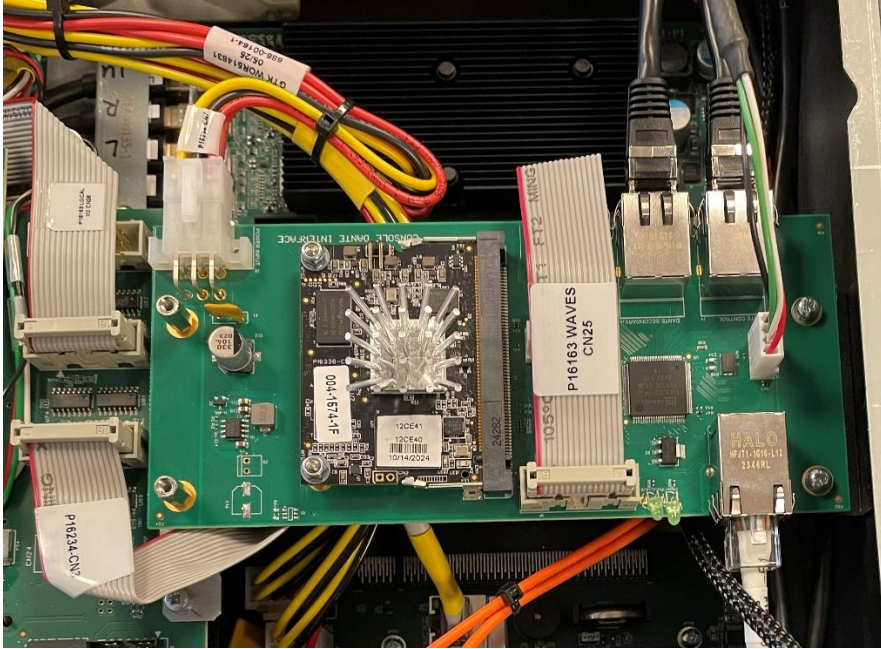
To fit the LED board first you must remove the original waves LED board (if waves was previously fitted) to do so locate the x2 screws holding the board in place on the inside of the front panel. Once these are removed you can go ahead and swap to the new LED board (this has 2 green LEDs rather than amber and red) and secure it using x2 screws. This is a good time to place the Fourier sticker over the waves port on the front panel of the engine ***note* it is important to line up the holes as best as possible as not to block the LED**



Next fit the control and secondary port panel to the front of the engine. This goes through the front panel of the engine where optocore Loop 2 would be, once this is fitted secure in place using x4 screws. Once this is completed you can reinstall the CPU to the engine, to do so line up the connector with the one on the PC card and apply gentle pressure, whilst evenly tightening the screws until the CPU is fully secure.



Fit the Fourier card to the supporting brackets and secure using the x2 stand offs and x2 screws. Now that the card is securely fitted it is time to run the looms that are required ***note if waves was previously fitted the same looms can be used for the power and the ribbon cable to the DSP*** connect the RJ45 looms to the Primary and Control ports labelled on the Fourier card, then run these looms under the card and connect to their respective ports on the front panel. Connect the RJ45 loom from the front panel primary connection to the primary connection on the Fourier card. Connect the power and ribbon looms to the fourier card, and the ribbon loom to the DSP on the port marked waves.



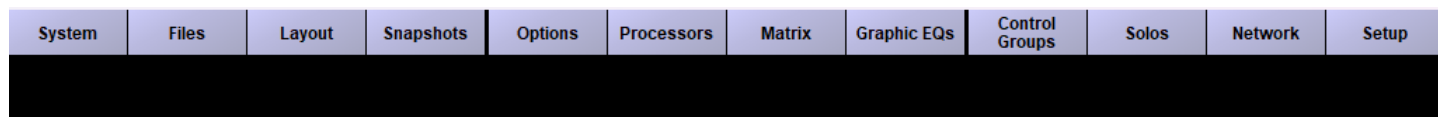
Once this is completed, follow the instructions to reassemble the engine.

Console Set Up

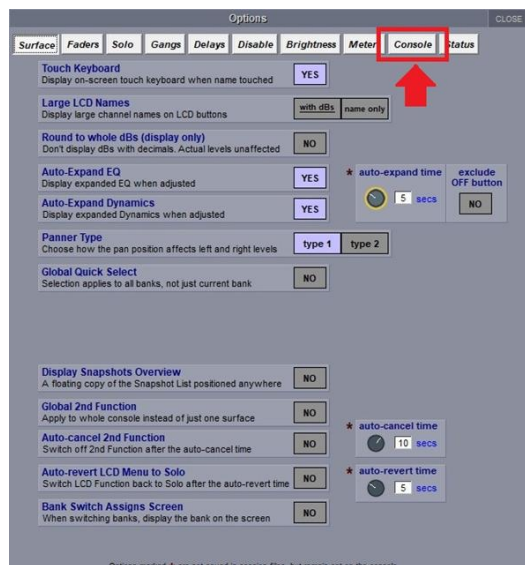
Once the engine has been reassembled place the engine back into the console and reconnect the power and ribbon looms. Power the console on and test for normal functionality.

Once the console has loaded into application you will need to enable Fourier.

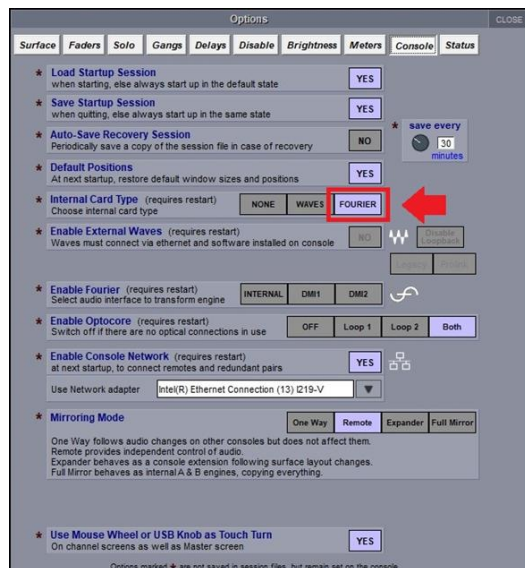
On the main screen click “Options”



Once the options window is open select the “Console” tab



At the internal card type section select Fourier then close and restart the console.



Fourier Interface Card Specifications.

- The Fourier Interface Card provides 64 channels in and 64 channels out at 48kHz or 96kHz to the Dante network.
- The card does not feature Sample Rate Conversion so make sure that the console sample rate and the Dante sample rate of the card (set in Dante controller) match or it could end up with distortion/clicking/no audio.
- The Fourier Interface card cannot be used to control socket parameters (phantom power and gain) of DQ Racks or A168D/A164D Racks.
- When fitted to Quantum consoles, the user can Enable Sync to External in Dante controller for the Fourier Interface Card to get it to clock to the console. Alternatively, the console can be set to clock from the Fourier interface card in Setup\Audio Sync. This will result in the console following the Dante network for audio clock.