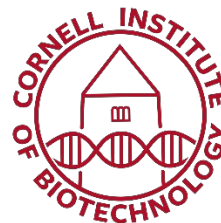


# QUANTSTUDIO 7 PRO

## Step-by-step user manual



### Update March 2021 – What’s new

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From March 2021 onwards, we ask that you transfer all files to and from the QuantStudio 7Pro through the **Network Drive** (see instructions below). Please do not use the USB port anymore.

See the updated instructions below to:

- Upload your .edt plate setup file through the Network Drive
- Download your results through the Network Drive

If you are using the Network Drive for the first time, set up your computer [following these instructions](#).

### General usage rules

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- Watch the tutorial video: <https://www.biotech.cornell.edu/core-facilities-brc/instruments/qpcr-quantstudio-7-pro-thermofisher-scientific>
- If you don’t already have an account with the Cornell Institute of Biotechnology’s Genomics Facility, create an account in our system before taking the quiz:  
<https://www.biotech.cornell.edu/create-account>

**IMPORTANT:** Use your **Cornell email address**, not a company or private address, otherwise you won’t be able to access the Network Drive.

- Take the quiz
- Do not train others on this instrument.
- Clean all surfaces before and after use with provided cleaning spray and paper towels.

### Step 1 - Designing a plate setup file (.edt)

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Thermo Fisher Online has cloud-based software for qPCR that is located on *ThermoFisher Connect*, under the app name “*Design and Analysis New*” (DA2). Using the Cloud will be the easiest and fastest way to set up a plate on the qPCR machine.

- **Set up your Cloud account here:**  
<https://www.thermofisher.com/account-center/cloud-login.html>
- **Or download the app for Windows 10:**  
[http://downloads.thermofisher.com/Design\\_And\\_Analysis/v2.2.0/Design\\_and\\_Analysis\\_Setup2.2.0.exe](http://downloads.thermofisher.com/Design_And_Analysis/v2.2.0/Design_and_Analysis_Setup2.2.0.exe)
- **Or download the app for a Mac:**  
[http://downloads.thermofisher.com/Design\\_And\\_Analysis/v2.2.0/Design\\_and\\_Analysis-2.2.0.dmg](http://downloads.thermofisher.com/Design_And_Analysis/v2.2.0/Design_and_Analysis-2.2.0.dmg)

In the Design and Analysis New app:

- A) Choose the app “Design and Analysis New – DA2”.
- B) Click the large icon “SET UP PLATE”.
- C) Select the right Instrument, Block, Run Mode and Analysis on the left-hand menu.
  - a. Instrument: QuantStudio 7Pro.
  - b. Block: Choose either 384-well or 96-well **0.2mL**. *Note that the instrument is **NOT compatible with 96-well 0.1mL plates**.*
  - c. Run mode: Choose either Fast or Standard, depending on the type of master mix you used. Note that using the wrong setting will negatively impact the results. Also note that we do not have a TaqMan array card.
  - d. Analysis: Select the type of experiment you are performing.
- D) Click on the template icon.
- E) Modify the template:
  - a. In the “Run Method” tab, make sure to edit:
    - (1) The temperature.
    - (2) The time.
    - (3) **The volume**. If the volume is not adjusted, the thermocycling of the samples can be off.
  - b. Add information about your samples and dyes in the “Plate Setup” tab.
  - c. Review your changes in the “Run Summary” tab.
  - d. Click “Action” in the upper right-hand corner.
    - (1) Click “Save as”.
    - (2) Rename file and save.
- F) Click the house icon in the top-left corner to download your file and save it to your computer.
- G) Upload this file to the Genomics network drive.**

## Step 2 - Start a run on the QuantStudio

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- A) Turn the sign on the door of room 180 from “occupied” to “not occupied”.
  - B) Disinfect all surfaces with disinfecting spray and paper towels provided.
  - C) Check which block is installed:
    - a) Click “Settings” on the touchscreen.
    - b) Click “Change Block” in the menu:
      - (1) The screen will show the block currently installed.
    - c) If you need another block, click “Change” in the bottom right corner:
      - (1) Wait for the door to open. This may take up to a minute.
      - (2) Remove the existing block holding it with the handles located on the side of the white plate holder. BE CAREFULL, the block is HOT.
      - (3) Add your block. It is correctly positioned if the writing is toward the top.
- IMPORTANT: !!! Do not add your plate while changing the block !!!**
- d) Click “Install” in the bottom right corner to close the door.
  - D) Add your plate:

- a) Click the button on the top right corner to open the door.
  - b) Remove any old plate left by a previous user.
  - c) Place your plate.
  - d) Close the door pressing the same button (top right corner).
- E) Transfer your plate design file (.edt) from the Network Drive to the instrument:**
- a) Press “Set up run” on the instrument’s touchscreen.
  - b) Choose Network Drive on the left-hand menu.
  - c) Find your file. You may need to use the arrow in the upper left corner to navigate the folders.
  - d) Choose the Network Drive as the location to save your results.
  - e) Click “Done” and “Start Run”.

**IMPORTANT:** Sample names and dyes for each well can be added AFTER the run. If you forget to upload your plate setup file to the Network Drive, you can quickly create a bare bones file on the computer in room 180 to start your run. See instructions below.

- F) Disinfect all surfaces with disinfecting spray and paper towels provided.
- G) Turn sign on door from “occupied” to “not occupied”.
- A) At the end of the run, download your results remotely by connecting to the Network Drive.**

## Creating a bare-bone plate setup file (.edt)

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NOTE: This set of instruction only applies if you forgot to upload your .edt file to the Network Drive before leaving you lab and need a bare-bone .edt file to start your run.

- A) Unlock the computer (Username: Administrator; Password: Administrator).
- B) Open Design and Analysis (DA2) located on the desktop.
- C) Click the large icon “SET UP PLATE”.
- D) Select the right Instrument (QuantStudio 7Pro), Block (96-well 2mL or 384-well), Run Mode (Fast or Standard) and Analysis (your experiment type) on the left-hand menu.
- E) Click on the template icon.
- F) Modify the default options. **Make sure to edit sample volume in “Run Method” tab.**
- G) **Skip** the “Plate Setup” page. The instrument collects data for all wells and all wavelengths. You will be able to enter your sample names and dyes after the run is complete.
- H) Run Summary – double check run parameters are correct.
- I) Click “Action” in the upper right-hand corner
  - a) Click “Save as”
  - b) Rename file and save.
- J) Click on the large blue button “QS7Pro-277819090068” Quant Studio 7 Pro Idle”.
- K) Click on “Send to Run Queue”.
- L) Go to the Quant Studio 7 Pro and from the touchscreen:
  - a) Click “Set up run” or “Load plate file” on the touchscreen.
  - b) Choose “Run Queue” (instead of Network Drive) in the left-hand side menu.
  - c) Click on your file in the list, and start your run as usual.

# General recommendations

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## Plastics

Use optically clear plates, seals or strip tubes. For example:

- 96 well block; 0.2mL plates. Semi skirted, non-skirted or strip tubes.
  - MicroAmp™ Optical 96-Well Reaction Plate (ThermoFisher Scientific, Catalog number: 4316813)
  - MicroAmp™ Optical Adhesive Film (ThermoFisher Scientific, Catalog number: 4311971)
  - MicroAmp™ Optical 8-Cap Strips (ThermoFisher Scientific, Catalog number: 4323032)
  - MicroAmp™ Optical 8-Tube Strip, 0.2 mL (ThermoFisher Scientific, Catalog number: 4316567)
- 384 well block; 0.02mL plates.
  - MicroAmp™ Optical Adhesive Film (ThermoFisher Scientific, Catalog number: 4311971)
  - MicroAmp™ Optical 384-Well Reaction Plate with Barcode (ThermoFisher Scientific, Catalog number: 4309849)

If you are not sure about your plate, don't hesitate to contact us with the product information.

## Minimum recommend volumes per well

- Do not go below 10ul for a 96-well plate
- Do not go below 5ul for a 384-well plate

## Best practices for a successful run

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- **Sample preparation** – Spilled master mix can get onto your plate and into the qPCR block and cause background fluorescents for you and everyone after you. To avoid this issue, we recommend that you use a MicroAmp™ Splash-Free 96-Well Base (ThermoFisher Scientific, Catalog number: 4312063) to prepare your plate.
- **Sharpie markers** – Do not write on the top of your plates, this can cause background noise in your samples.
- **Gloves** – Do not use powdered gloves; this can cause background noise in your samples.
- **Spin down plate** – Check that you can see your samples are in the bottom of the wells and there are not bubbles present.

NEED HELP OR HAVE A QUESTION?  
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