QIAxpert® System Quick-Start Guide

This Technical Information describes how to get started with the QIAxpert. Please refer to the *QIAxpert User Manual*, which is available on the enclosed CD or under the "Resources" tab at **www.qiagen.com/p/QIAxpert** for detailed instructions.

Installation and calibration procedures

It is essential to carefully read and follow the installation procedure and safety information in the *QIAxpert User Manual*. Calibration of the QIAxpert touchscreen sensitivity, pump system, motor positioning and wavelength accuracy is required before the first use or after transport. Refer to the *QIAxpert Calibration Instructions* for more details.

Select software settings before sample measurement

1. Switch the QIAxpert power switch to "On". After completion of the self-test, the instrument is ready for operation.
2. Tap the **Settings** button on the **Main Menu** screen and then select **Users** (Figure 1).
3. Tap the **+** button on the **User Settings** screen to add a new user (Figure 2).
4. Optionally, tap **Import/Export** to select settings for data export.

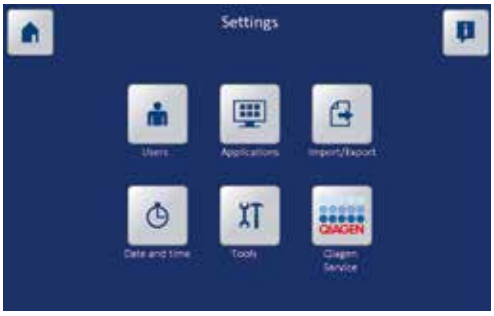

Figure 1. Settings screen.

Figure 2. Adding a new user.

Load samples into the slide wells

To obtain reliable results with minimal variability between measurements, follow these steps for sample loading:

1. Ensure samples are homogeneous by centrifuging, mixing and centrifuging before loading.
2. Carefully pipet 2 µl of sample into an unused well of a QIAxpert Slide-40 slide.

Note: Avoid forming air bubbles during pipetting. Depress the pipet plunger to the first stop. Immerse the pipet tip into the sample and allow the plunger to move up smoothly to the rest position.

Note: Position the pipet tip into the well at a 45° angle against the conical wall of the input well. Dispense the sample without air bubbles.

The liquid will automatically move into the channel reservoir by capillary force. Do not force fill the channel or place the pipet tip vertically (Figure 3).

Note: Always change tips between samples to avoid contamination.

Figure 3. Loading samples into the slide wells.

Figure 4. Main menu screen.

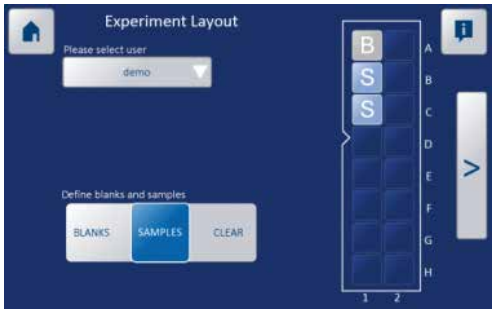

Figure 5. Experiment layout screen.

Figure 6. Load slide when prompted.

3. Fill a well with a blank solution. Use pure water (double-distilled H_2O) for spectral content profiling or sample buffer for A_{260} and A_{280}.

Start sample measurement

1. Go to the **Main Menu**.
2. Start a new experiment by tapping the **Measure** button (Figure 4).
3. Tap **Please select user** (Figure 5).
4. Select the appropriate user from the drop-down list.
5. Tap the **Blanks** icon (default blue) and choose the position on the slide layout. A marking **B** is shown in the selected well.
6. Repeat the previous step to define the well(s) filled with sample by tapping **Sample** and then choosing the position on the slide layout. A marking **S** is shown in the selected well(s).

Note: If a well position is marked by mistake, use the **Clear** button to tap the position and remove the **B** or **S** mark from the layout. Glide a fingertip over multiple well locations to define multiple wells simultaneously.

7. Tap the arrow bar (>) at the right side of the screen to continue.
8. When prompted, insert the slide into the instrument (Figure 6).
9. Gently push the slide into the gate until the loader retracts the slide automatically. QIAxpert starts reading the slide immediately.

Meanwhile, additional experiment information can be added.

An experiment name can be defined in the text bar. Tap the text bar to open the keyboard, and enter the experiment name (Figure 7). Alternatively, tap the arrow bar (>) to continue.

Default names are given to samples. These can be replaced by tapping the text bar next to each sample and entering a new name (Figure 8).

Sample names can also be imported from a **.txt** file on a USB device or network. The file must be placed in a folder named "QIAxpert Import" in order for the software to locate it.

Tap the arrow bar (>) at the right side of the screen to continue.

Select app for analysis

Select the appropriate analysis app and tap the arrow bar (>) to continue (Figure 9). Measurement starts.

Each QIAxpert includes a selection of analysis protocols called "apps" for immediate use. Classic UV/vis quantification apps include:

- A_{260} dsDNA
- A_{260} RNA
- A_{260} ssDNA
- A_{280} Protein
- UV/vis

Apps for spectral content profiling of biomolecule samples include:

- DNA QIAamp®
- PCR QIAquick®
- RNA RNeasy®
- DNA QIAsymphony®
- PAXgene RNA®

Display results

When the measurement is finished, the gate opens and the thumb grip of the slide emerges. Remove the slide from the QIAxpert instrument.

Note: No results are shown until the slide has been removed.

An overview of the slide appears on the right side of the **Measurement Results** screen (Figure 10). Each sample result is represented by a thumbnail view with the concentration of the main molecule below. Select an individual sample to show the results on the left side of the window.

For spectral content profiling applications, the curves are shown with identical colors as the data displays located underneath.

White (□): Measured UV/vis sample spectrum. For traditional UV/vis quantification (A_{260} or A_{280}), this is the only spectral curve shown.

Blue (■): Profile of the main molecule isolated by the spectral profiling algorithms.

Orange (■): Profile of all impurities found.

Gray (■): Sample background spectrum mostly caused by sample turbidity and impurities with absorbance in the VIS range of the spectrum.

Yellow (■): Residual spectrum, i.e., part of the measured spectrum that cannot be attributed to the reference profiles used in the algorithm.

Pink (■): When the quality of spectral profiling is not within specification, all nucleic acids (DNA, RNA, nucleotides) are grouped in one "nucleic acid" profile used for concentration determination.

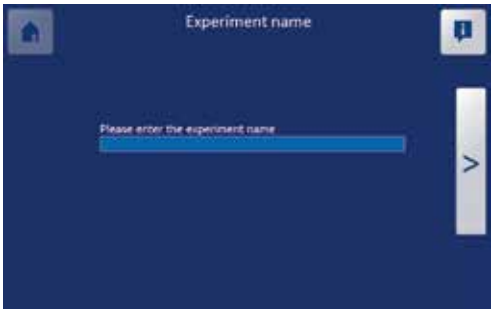

Figure 7. Enter the experiment name.

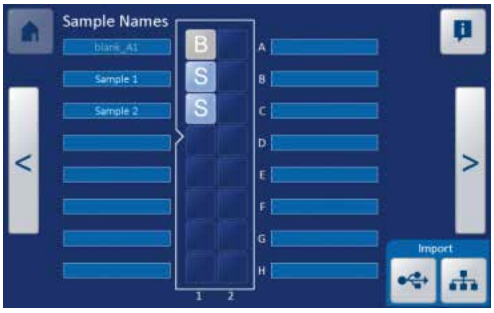

Figure 8. Add custom sample names.

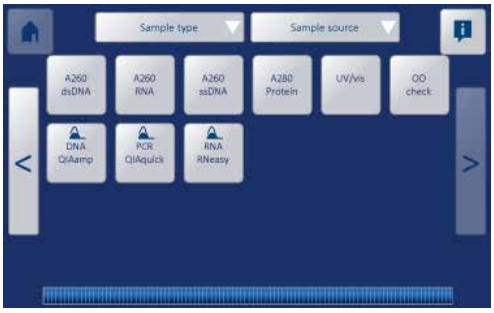

Figure 9. Select app for analysis.

Figure 10. Measurement results screen.

Figure 11. Select destination for exporting results.

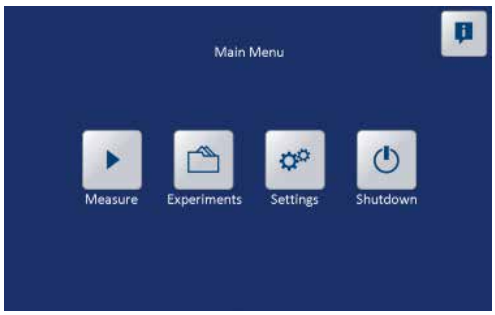

Figure 12. Main menu screen.

Figure 13. List of recent experiments.

Export data

1. Tap the **Export** button in the bottom right of the **Measurement Results** screen (Figure 10).
2. Plug a USB device into the front USB port or ensure a network connection via the TCP/IP interface at the rear of the instrument.
3. Tap the **To USB** or **To network** button to export the results to the desired location (Figure 11). A folder **QIAxpert Experiments** will be created on the USB device or the network drive. Alternatively, tap the **Show QR code** button and scan the QR code with your smart phone or tablet to display a simple result table on your device.

Display previous experiment

1. Open the experiment list by tapping the **Experiments** button on the main menu (Figure 12).
2. Select an experiment from the list and tap the arrow bar (>) to display the results.

Important: The 25 most recent experiments are listed within this overview (Figure 13). When the number of experiments exceeds 25, the oldest experiment is removed automatically. We recommend exporting each experiment to a USB device or network immediately after measurement is completed to avoid losing results.

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