



Hygiena Cube DataReader Software Manual



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1 General Information

The Cube is a mobile measuring device for qualitative, semi-quantitative, and quantitative evaluation of diagnostic rapid tests (lateral flow assays). Being a mobile platform, the Cube offers an internal memory to save a large number of measurement results (up to 100).

In order to extract the measurement data from the Cube, the [Hygiena Cube DataReader Software](#) was developed. Using this program, it is possible to read every saved measurement, transfer information to a PC, and perform general data management functions. Furthermore, the software supports taking remote measurements.

The software provides a user-friendly setup wizard and is easy to use.

2 Installation

2.1 System requirements

Operating system:	Windows 7 (SP1) or higher
Processor:	Pentium III or higher, AMD Athlon XP or higher
Main memory:	Min. 1 GB
Hard disk:	Min. 1 GB free
Screen resolution:	Min. 1366 x 768

2.2 Software installation via setup installer

Download the Hygiena Cube DataReader Software from the Hygiena website.
<https://www.hygiena.com/food-safety-solutions/allergen-detection/hygiena-cube/>

An installation setup is provided for installing the software on a PC.
Click download Hygiena Cube Software to start the installation.
[Download Hygiena Cube Software.](#)

Follow the installation wizard step by step to complete the installation successfully. After installation, the program can be started via the Windows Start menu or the according desktop icon.

Please disconnect the device from the PC for the driver installation and do not connect the device to the computer again before the installation of the driver is complete.

After the installation has been successful, the program can be started and the device can now be connected to the computer.

To run the program, the file [Hygiena Cube DataReader Software V1.5.062.exe](#) must be run on the computer. The connection is only possible by using the provided USB cable. If the device is still switched off at that moment it can be switched on now.



3 Concept

After starting the software, the window shown in Figure 1 can be seen.

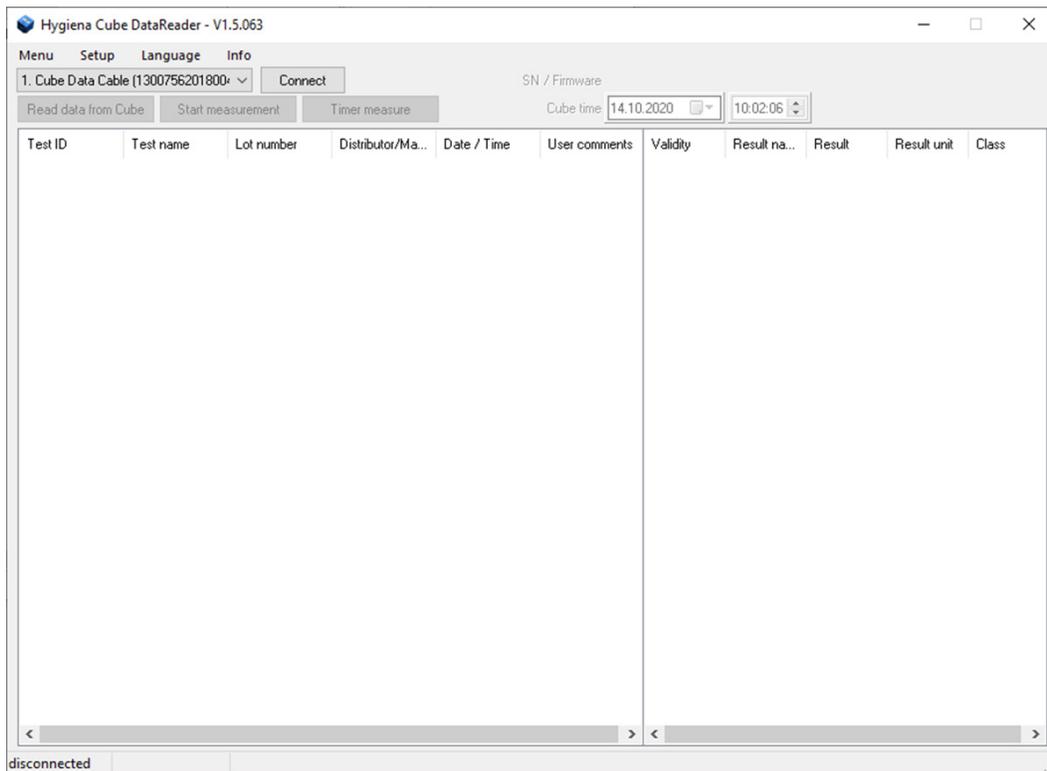


Figure 1: Hygiena Cube DataReader software

The main software is accessible from one tab. The major functions can be directly selected by pressing one of the four buttons. All results will be presented in the main window as well as the results done using the remote measurement function. Additionally, the top part of the software window holds a menu bar and information about the cube status. The bottom left side of the software window has information about the current status of the software.

4 Connecting the Cube

In order to extract data from the Cube's memory or to perform remote measurements with the [Hygiena Cube DataReader Software](#), the Cube has to be connected to the software first. Switch on the Cube and connect it to the PC via the provided USB cable. As soon as the Cube is ready for operation the software will automatically try to connect to the Cube. This automated process is preconfigured after installing the software and can be switched off later.

If the option is turned off, it is also possible to connect the Cube manually. Choose a Cube from the drop-down menu at the top left side and click on [Connect](#).



Figure 2: Drop-down list

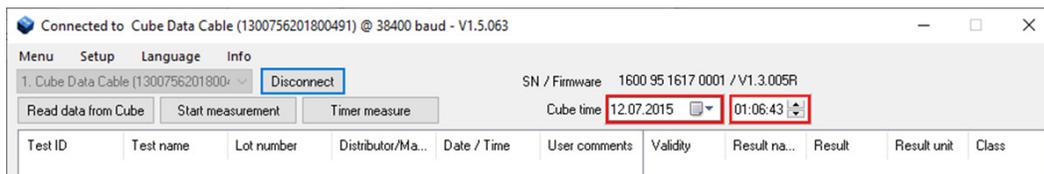


Figure 3: Cube is successfully connected

The Cube is successfully connected if the serial number in the drop-down menu on the left top side fades out, the serial number and firmware version are shown on the top right side, if date and time settings are highlighted either by [green](#) or [red](#), and if the button beside the drop-down menu shows [Disconnect](#) (Figure 3).

5 General Software Settings

General software settings are located in the top part of the software window.

5.1 Setting date and time

After connecting the Cube to the computer, the software automatically checks the internal clock of the Cube and compares it with the time of the computer the Cube is connected to. Incorrect clock settings are indicated by a **red** frame which can be seen on the top right side of [Figure 4: Set system time](#), whereas correct clock settings would be indicated by a **green** frame.

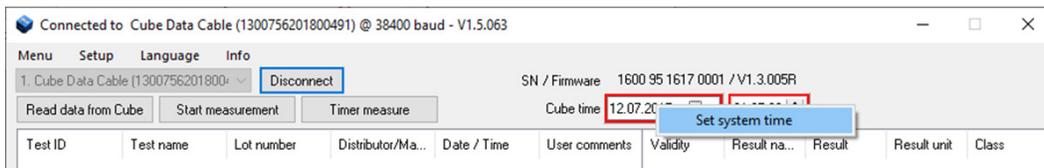


Figure 4: Set system time

To set the date and time, move the cursor above the time information and right-click into the information. The option to set the system time is presented. This will automatically set the system time of the Cube according to the time of the PC. It is also possible to set the system time manually by using the drop-down menu which can be selected by clicking the buttons integrated in the frame.

5.2 Menu

When clicking on [Menu](#), the following window will appear.

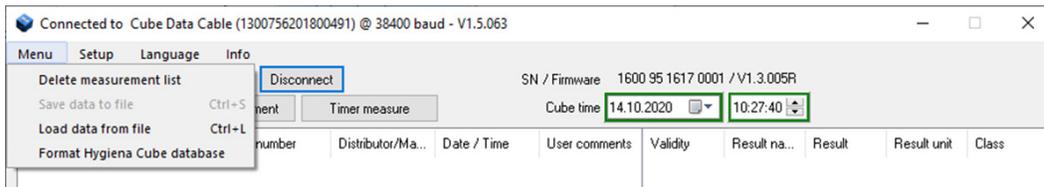


Figure 5: Menu

The Cube needs to be connected to the software and turned on, and saved measurements should have been read to have all options selectable.

5 General Software Settings

5.2 Menu, continued

Options available are:

- **Delete measurement list** | By choosing this option, all entries in the current list will be deleted.
- **Save data to file** | By choosing this option, a window will open which allows selecting a location on the local file system to save the measurement results as a *.tsv file (tabular separated values). Such a file can be directly opened with MS Excel; all information will be separated into different columns.
- **Load data from file** | By choosing this option, a previously saved measurement list can be reloaded. The list has to be a *.tsv file.
- **Format cube database** | By choosing this option, the Cube's database/memory will be formatted. All data will be lost.

5.3 Setup

When clicking on **Setup**, the following window will appear.

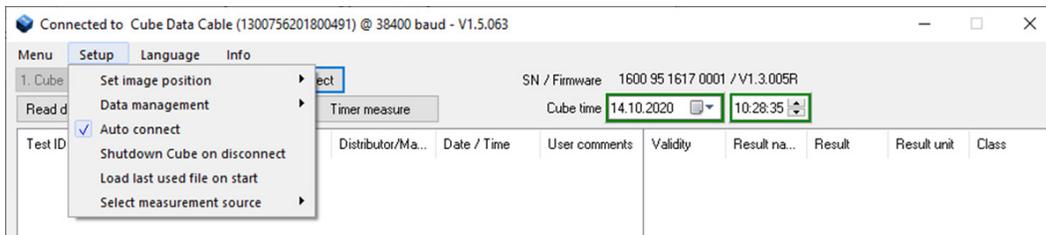


Figure 6: Setup

Any option can be activated by clicking on it. Activated options are indicated by check marks (✓). Options available are:

- **Set image position** | When doing a manual measurement by choosing **Start measurement** from the main window, this option determines where to place the picture of the 2D volume diagram in conjunction with the result list. Three different locations are selectable. It is also possible to deactivate this information by choosing **Do not display image**.

5 General Software Settings

5.3 Setup, continued

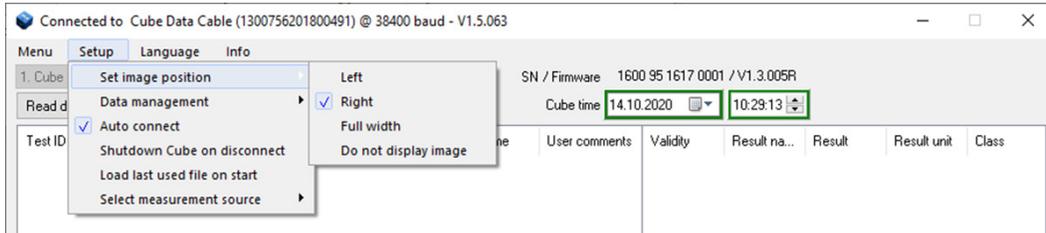


Figure 7: Set image position options

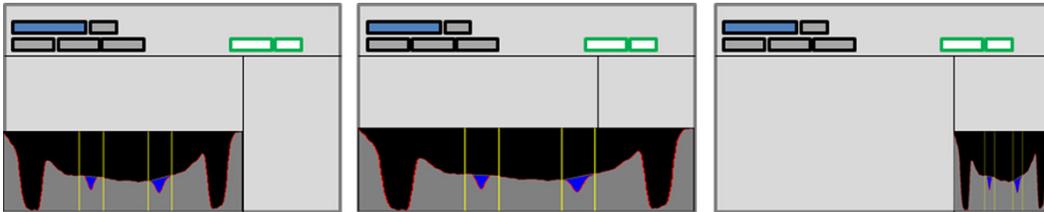


Figure 8: Image positions (Left - Full width - Right)

- **Data management** | This option allows choosing how the Hygiene Cube DataReader software will proceed with new data either just measured or downloaded, if there is already data in the list. The following options can be selected:
 - **Overwrite existing data:** By choosing this option all entries in the list will be deleted when adding new data either by doing a remote measurement or by adding data from another Cube.
 - **Add new data to existing:** By choosing this option all entries in the list will remain when adding new data either by doing a remote measurement or by adding data from another Cube.
 - **Always ask:** The user will always be asked how to manage new data. The user can choose between adding the data and overwriting the existing data.

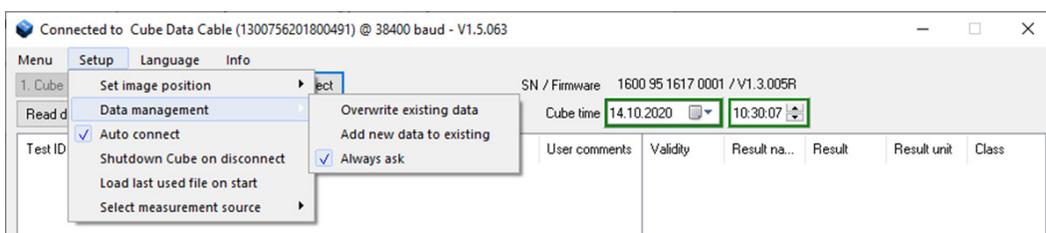


Figure 9: Data management

5 General Software Settings

5.3 Setup, continued

- **Auto connect** | By choosing this option, the user can decide whether the software will automatically connect to the Cube or if the connection will be done manually.
- **Shutdown cube on disconnect** | By choosing this option, the Cube gets deactivated when being disconnected from the software.
- **Load last used file on start** | By choosing this option, the recently saved measurement list will be restored when restarting the software.
- **Select measurement source** | By choosing this option, the source for loading the test-specific configuration for a remote measurement can be selected. The following options can be selected:
 - **Cube:** The test-specific configuration will be loaded through the Cube by using an RFID card.
 - **Local file system:** The configuration must be selected from the local file system.
 - **Select on start of measurement:** When a measurement is started, the user will always be asked which of the above options they want to choose.

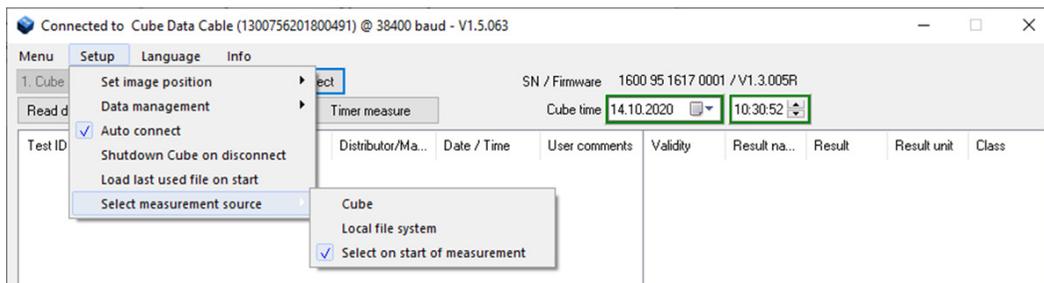


Figure 10: Select measurement source options

5 General Software Settings

5.4 Language

When clicking on [Language](#), the following window will appear.

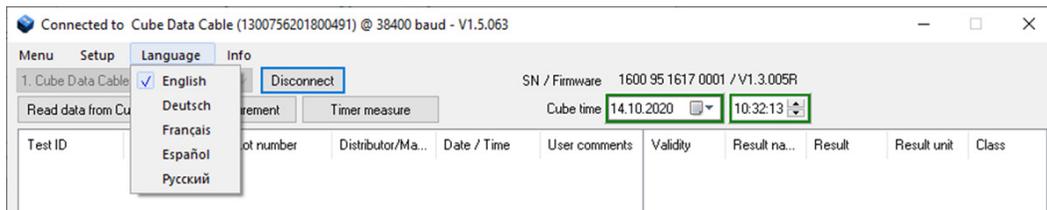


Figure 11: Language

This feature will allow changing the language of the software. Current languages available are:

- English
- German
- French
- Spanish
- Russian

5.5 Info

When clicking on [Info](#), the following window will appear.

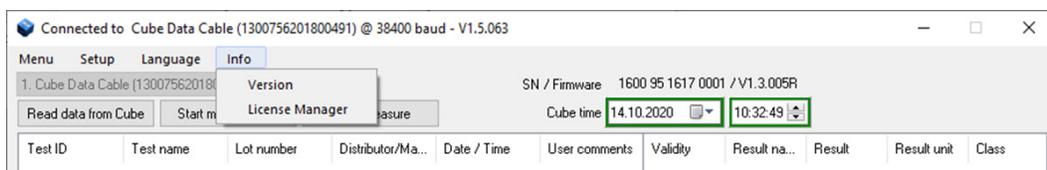


Figure 12: Info

This feature holds two options: [Version](#) and [License Manager](#).

By choosing [Version](#), the software shows the current version including the confirmation of validity and the information how long it will be valid. The [License Manager](#) gives information about all installed licenses. In case one customer uses Cubes from other customers, different license files are required.

5 General Software Settings

5.6 Validating the software

A license file is requested to operate the software. By clicking on [Info](#) and [Version](#), the status of validity will be shown. The license file will be installed automatically when installing the software. The status window will say that the software is valid due to a certain date.

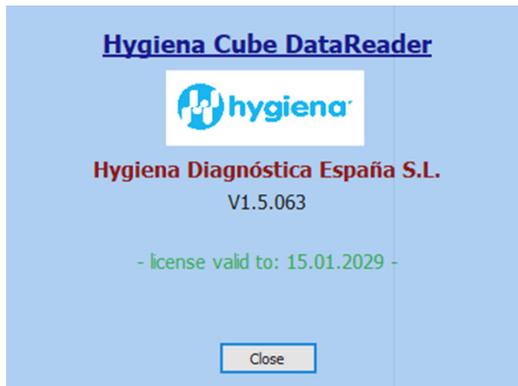


Figure 13: Software is valid

5.7 Information on bottom bar

The bottom bar of the software window holds information about the status of the software, e.g. if it is transmitting data or measuring.

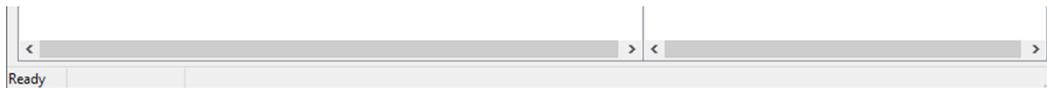


Figure 14: Bottom bar information

6 Reading Data from Memory

To read measurement data from the cube, the device has to be successfully connected to the software. By clicking the button [Read data from Cube](#), the software will read the memory and display every saved measurement result.

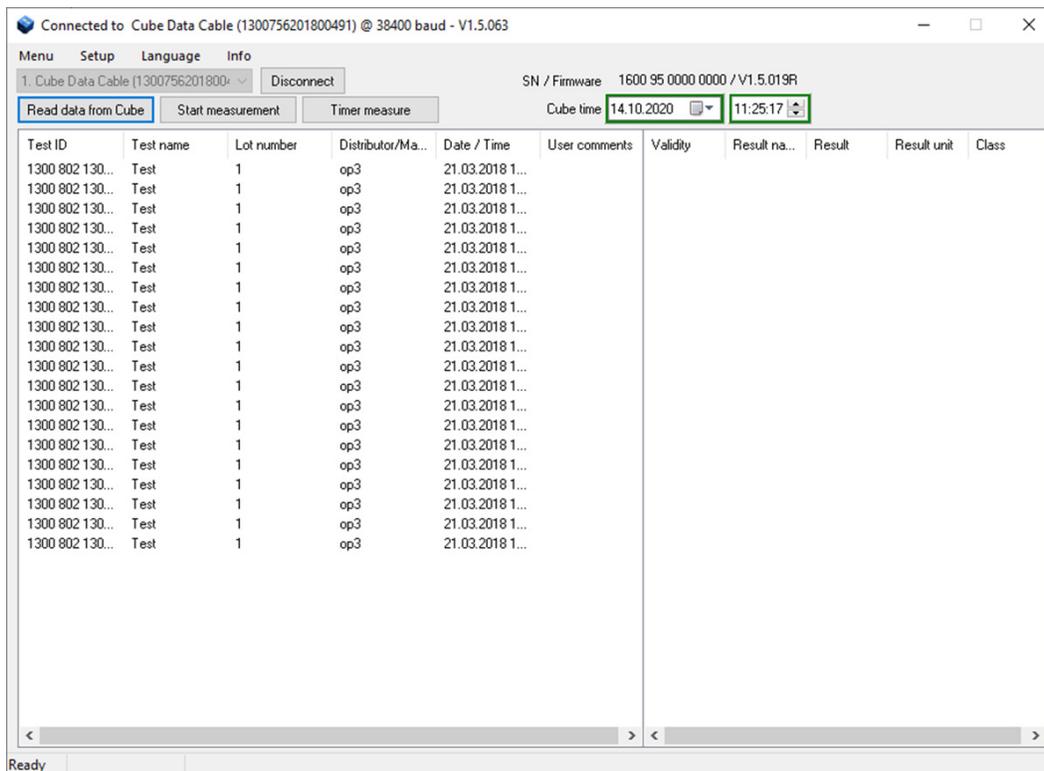


Figure 15: Saved measurement data

The result display is separated into two parts. The first part, left window, lists all measurements using the information defined in the configuration. The list contains information about the [Test ID](#), which is a unique number added by the Cube to each measurement result, [Test Name](#), [Lot Number](#), [Distributor/Manufacturer](#), and [Date/Time](#). The sixth column is for [User Comments](#), allowing adding a comment manually. This can be done with every entry listed.

It is possible to sort the entries in an alphabetical or value-dependant matter. This can be done with every column.

By clicking on one of the entries, the actual result values will be presented in the second list on the right side of the window. This is necessary since each measurement can include up to ten different results. The second list will show the [Result Name](#), the actual [Result](#), the [Result Unit](#), and the [Class](#), if defined in the configuration.

7 Remote Measurement

The Hygienea Cube DataReader Software supports taking remote measurements, either manually or timed.

7.1 Manual Measurement

In order to start a manual remote measurement, click on the [Start Measurement](#) button, beside the button [Read data from Cube](#).

If the option is activated to select the measurement source of the test-specific configuration on start of measurement (Setup -> Select measurement source -> Select on start of measurement; 5.3 Setup), the first window will ask to select the source for loading the configuration.

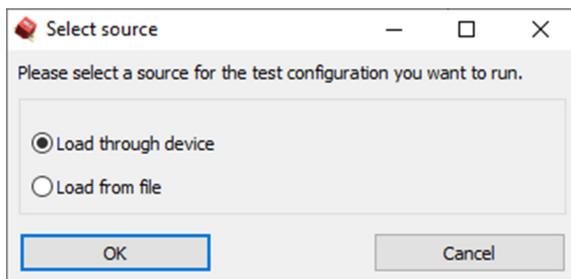


Figure 18: Select source

If the option is activated to always ask if new measurement results will be added to the list or to overwrite the list (Setup -> Data management -> Always ask; 5.3 Setup), the next information window presented will ask how to process the measurement result considering the list already includes data.

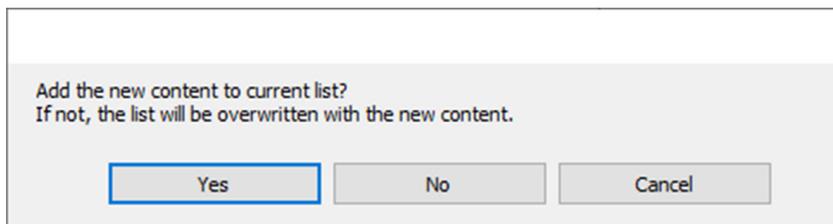


Figure 19: Processing question

7 Remote Measurement

If [Load from file](#) or [Setup / Select measurement source / Local file system](#) was selected, the third step will be a browser window to select the configuration for measurement from the local system. Put the test in position for measurement below the Cube and select the configuration; the measurement will be started immediately after selecting the configuration. (Figure 20)



Be aware if the overwriting function is activated. The already-listed data gets lost if not saved as soon as the new measurement starts. Make sure to have the data saved.

If [Load through device](#) or [Setup / Select measurement source / Cube](#) was selected instead, the third window will ask to put the Cube above the test and to hold the RFID tag above the Cube.

If the options [Always ask](#) and [Select on start of measurement](#) are disabled, this information will be first when selecting a manual remote measurement.

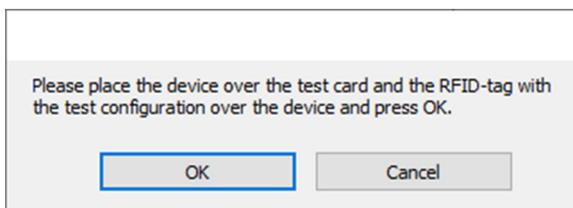


Figure 20: Remote measuring instructions

The RFID information will be loaded into the access memory of the Cube. Every current condition is also shown in the display of the Cube, in this case [RFID](#).

After the RFID information has been loaded the Cube starts the measurement. This is indicated by the following information:

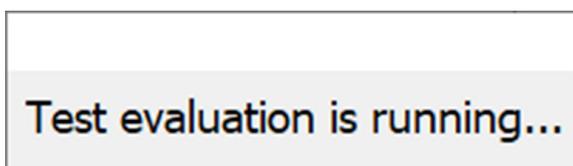


Figure 21: Measurement in progress

When the measurement is done, the results will be added to the list and the 2D volume diagram will be presented at the position determined in 5.3 Setup.

7 Remote Measurement

7.2 Timer Measurement

In addition to the manual remote measurement, it is possible to perform a timed remote measurement if defined in the measurement configuration. The timer measurement is meant for tests which require a specific incubation time before the test lines have fully developed.

In order to start a timer measurement, click on the button [Timer Measure](#). The procedure of measuring is the same as the manual measurement. Please refer to [7.1 Manual Measurement](#) to learn the procedure.

After the test configuration has been loaded, the software opens a window to display the countdown.

The image shows a rectangular window with a thin black border. Inside the window, the text "The evaluation starts in 0003." is displayed in a bold, black, sans-serif font. The text is centered horizontally and vertically within the window.

Figure 24: Counting down the incubation time

After the countdown has finished, the measurement starts and will be indicated as shown in [Figure 21: Measurement in progress](#). After the measurement is done, the results will be displayed as shown in [Figure 22: Measurement result is presented](#) and can be processed like the results from a manual measurement.

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