

RaySafe X2 View

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OVERVIEW

RaySafe X2 View is suitable for

- viewing and analyzing measurement data and waveforms
- storing measurements
- transferring data to Excel or other software
- updating the base unit software.

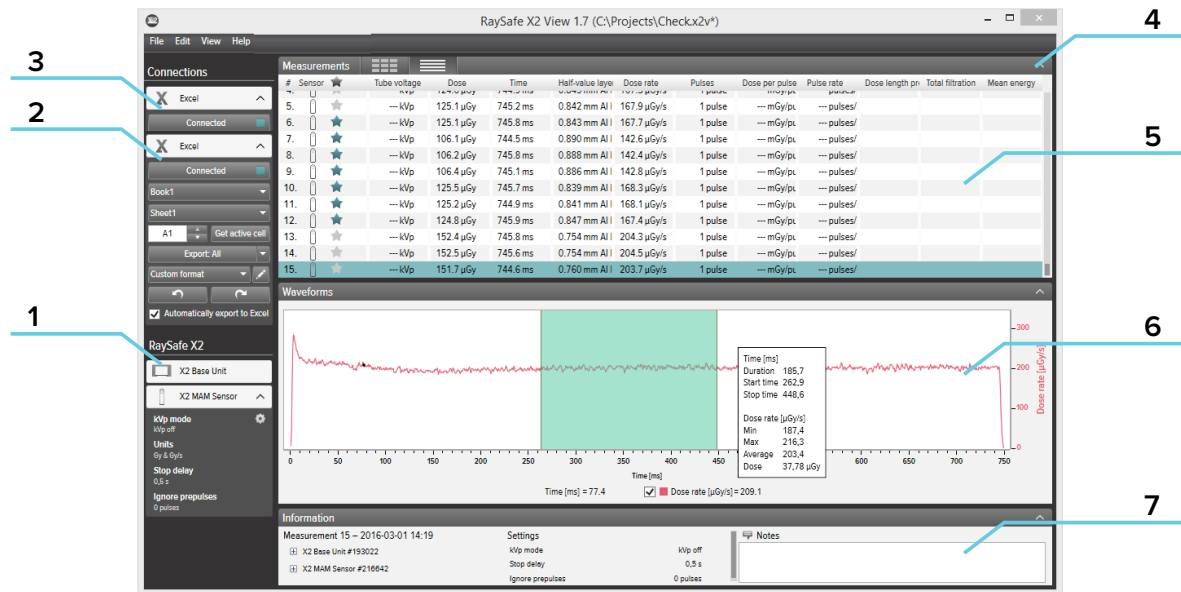


Figure 1. The main window

1. RaySafe X2 status, shows connections to other parts of the RaySafe X2 system.
2. Excel area, manages export of measurements to Excel (see “Export to Excel” (11)).
3. Bluetooth connection (option)
4. Arrows, for hiding/showing the panels.
5. Measurements (see “View measurements” (8)).
6. Waveforms (see “View waveforms” (9)), for the selected measurement.
7. Measurement information, calibration dates for the sensors, settings used during the selected measurement and a field for taking notes.

IMPORT MEASUREMENTS

IMPORT AS YOU MEASURE

Connect the base unit to X2 View with a USB cable.

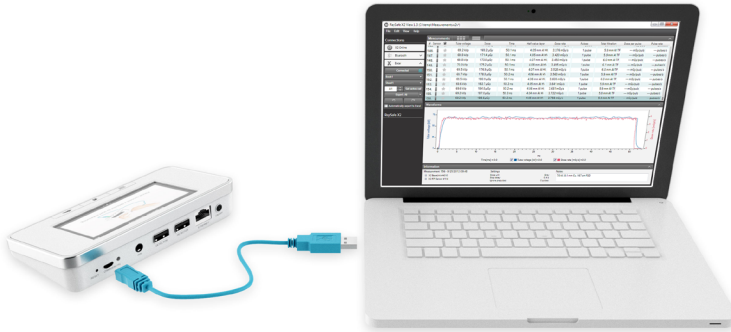


Figure 2. Connect base unit with X2 View

X2 View will show the status of the connected instrument in the setup panel to the left.

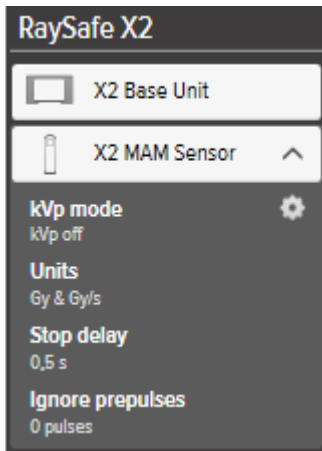


Figure 3. X2 setup panel

All new measurements will now be added to the measurement list in X2 View.

IMPORT FROM BASE UNIT

If you have measurements in a base unit, follow this instruction to import them to X2 View:

1. Connect the base unit to the computer running X2 View.
2. Select *File – Import from base unit* in the menu or press F8.
3. Select the measurement series you want to import and click *Import*.

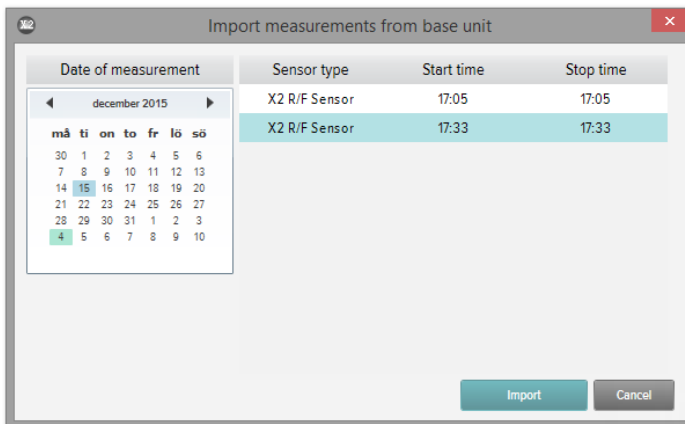
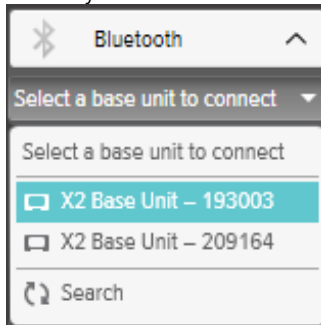


Figure 4. Import window

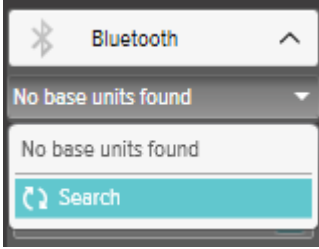
CONNECT USING BLUETOOTH (OPTION)

If you have the X2 Base Unit Bluetooth adapter, you can connect to the base unit wirelessly.

1. Connect the Bluetooth adapter to a port marked **SENSOR** on the base unit.
2. Select your base unit in the Bluetooth menu in X2 View.



If no base units are found, try searching by selecting *Search* in the Bluetooth menu.



NOTE! *If Bluetooth does not appear in the Connections area, your Bluetooth solution is not compatible with RaySafe X2. Try using a different Bluetooth adapter on your computer.*

VIEW MEASUREMENTS

VIEW MEASURED VALUES

You can view all measurements in a list overview, or focus on one measurement at a time. Toggle between the views using the buttons in the measurement panel:

| # | Sensor | ★ | Tube voltage | Dose | Time | Half-value layer | Dose rate | Pulses | Total filtration | Dose per pulse | Pulse rate |
|------|--------|----------|--------------|---------|--------------|------------------|-----------|-------------|------------------|----------------|------------|
| 148. | ★ | 69.8 kVp | 173.0 µGy | 50.1 ms | 4.07 mm Al H | 3.450 mGy/s | 1 pulse | 6.0 mm Al T | --- mGy/pu | --- pulses/s | |
| 149. | ★ | 70.0 kVp | 175.2 µGy | 50.1 ms | 4.08 mm Al H | 3.495 mGy/s | 1 pulse | 6.1 mm Al T | --- mGy/pu | --- pulses/s | |
| 150. | ★ | 69.5 kVp | 176.9 µGy | 50.1 ms | 4.07 mm Al H | 3.528 mGy/s | 1 pulse | 6.0 mm Al T | --- mGy/pu | --- pulses/s | |
| 151. | ★ | 69.7 kVp | 178.8 µGy | 50.2 ms | 4.06 mm Al H | 3.563 mGy/s | 1 pulse | 5.9 mm Al T | --- mGy/pu | --- pulses/s | |
| 152. | ★ | 69.5 kVp | 180.9 µGy | 50.1 ms | 4.06 mm Al H | 3.608 mGy/s | 1 pulse | 6.0 mm Al T | --- mGy/pu | --- pulses/s | |
| 153. | ★ | 69.6 kVp | 182.7 µGy | 50.2 ms | 4.05 mm Al H | 3.641 mGy/s | 1 pulse | 5.9 mm Al T | --- mGy/pu | --- pulses/s | |
| 154. | ★ | 69.6 kVp | 184.8 µGy | 50.2 ms | 4.06 mm Al H | 3.681 mGy/s | 1 pulse | 5.9 mm Al T | --- mGy/pu | --- pulses/s | |
| 155. | ★ | 69.2 kVp | 187.0 µGy | 50.3 ms | 4.04 mm Al H | 3.722 mGy/s | 1 pulse | 5.8 mm Al T | --- mGy/pu | --- pulses/s | |
| 156. | ★ | 69.2 kVp | 188.6 µGy | 50.2 ms | 4.05 mm Al H | 3.758 mGy/s | 1 pulse | 5.9 mm Al T | --- mGy/pu | --- pulses/s | |

Figure 5. List view of measurements

| | | | | | | | |
|------|--------|---|-----------------------|--------------------|----------------|--|--|
| # | Sensor | ★ | | | | | |
| 148. | ★ | | 69.8 kVp | 173.0 µGy | 50.1 ms | | |
| 149. | ★ | | | | | | |
| 150. | ★ | | | | | | |
| 151. | ★ | | 4.07 mm Al HVL | 3.450 mGy/s | 1 pulse | | |
| 152. | ★ | | | | | | |
| 153. | ★ | | | | | | |
| 154. | ★ | | | | | | |
| 155. | ★ | | 6.0 mm Al TF | --- mGy/pulse | --- pulses/s | | |
| 156. | ★ | | | | | | |

Figure 6. Single measurement view

You can also enlarge one parameter to be able to see the value from a longer distance. Click on a parameter to enlarge, click again to see all parameters.

| | | | |
|------|--------|---|-----------------|
| # | Sensor | ★ | |
| 148. | ★ | | 69.8 kVp |
| 149. | ★ | | |
| 150. | ★ | | |
| 151. | ★ | | |
| 152. | ★ | | |
| 153. | ★ | | |
| 154. | ★ | | |
| 155. | ★ | | |
| 156. | ★ | | |

Figure 7. Single parameter view

In the parameter list, you can also add a star to measurements of your choice. You can export starred measurements to Excel. (See “Export to Excel” (11).)

| # | Sensor | Tube voltage | Dose | Time | Half-value layer | Dose rate | Pulses | Total filtration | Dose per pulse | Pulse rate |
|------|--------|--------------|-----------|---------|------------------|-------------|---------|------------------|----------------|------------|
| 148. | ★ | 69.8 kVp | 173.0 µGy | 50.1 ms | 4.07 mm Al H | 3.450 mGy/s | 1 pulse | 6.0 mm Al T | --- | --- |
| 149. | ★ | 70.0 kVp | 175.2 µGy | 50.1 ms | 4.08 mm Al H | 3.495 mGy/s | 1 pulse | 6.1 mm Al T | --- | --- |
| 150. | ★ | 69.5 kVp | 176.9 µGy | 50.1 ms | 4.07 mm Al H | 3.528 mGy/s | 1 pulse | 6.0 mm Al T | --- | --- |
| 151. | ★ | 69.7 kVp | 178.8 µGy | 50.2 ms | 4.06 mm Al H | 3.563 mGy/s | 1 pulse | 5.9 mm Al T | --- | --- |
| 152. | ★ | 69.5 kVp | 180.9 µGy | 50.1 ms | 4.06 mm Al H | 3.608 mGy/s | 1 pulse | 6.0 mm Al T | --- | --- |
| 153. | ★ | 69.6 kVp | 182.7 µGy | 50.2 ms | 4.05 mm Al H | 3.641 mGy/s | 1 pulse | 5.9 mm Al T | --- | --- |
| 154. | ★ | 69.6 kVp | 184.8 µGy | 50.2 ms | 4.06 mm Al H | 3.681 mGy/s | 1 pulse | 5.9 mm Al T | --- | --- |
| 155. | ★ | 69.2 kVp | 187.0 µGy | 50.3 ms | 4.04 mm Al H | 3.722 mGy/s | 1 pulse | 5.8 mm Al T | --- | --- |
| 156. | ★ | 69.2 kVp | 188.6 µGy | 50.2 ms | 4.05 mm Al H | 3.758 mGy/s | 1 pulse | 5.9 mm Al T | --- | --- |

Figure 8. Starred measurements

Every measurement has an associated notes field. The notes are saved along with the measurements, and are also exported to Excel.

| Information | | Settings | Notes |
|-----------------------------------|--|-------------------------------|------------------------------|
| Measurement 156 - 9/25/2012 09:48 | | Dose unit: Gray | 70 kV, 0.1 mm Cu, 167 cm FDD |
| X2 BaseUnit #4010 | | Stop delay: 0.4 s | |
| X2 R/F Sensor #114 | | Innora manufacturer: 0 pulses | |

Figure 9. Information panel with Notes field

VIEW WAVEFORMS

Click on a measurement to see its waveforms.

The waveforms area consists of the waveforms and check boxes for showing/hiding the different waveforms. The dark line represents the average of the collected data and the lighter cloud is the range of data points.

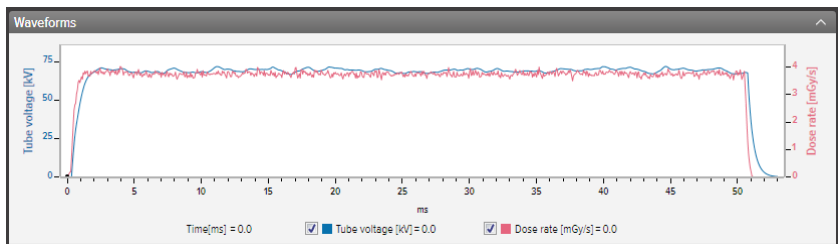


Figure 10. Waveforms panel

You can analyze the waveform by zoom, pan and select:

Zoom in: mouse scroll wheel up or mouse left click and drag

Zoom out: mouse scroll wheel down or mouse left double click (resets the zoom and the section mark)

Pan: left click and drag in the waveforms overview

Mark a section and view details: hold shift and left click and drag

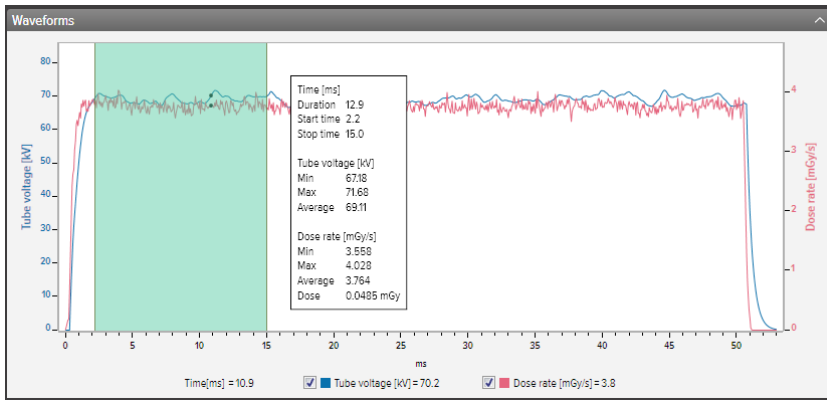


Figure 11. Waveforms with a part selected

You can *save* or *copy* the waveform as an image (png format) to the clipboard using the right click menu in the waveforms area.

EXPORT MEASUREMENTS

EXPORT TO EXCEL

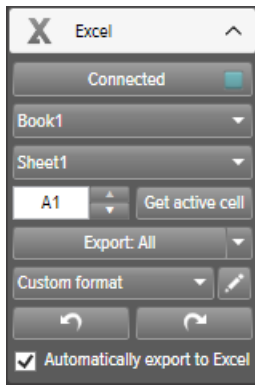

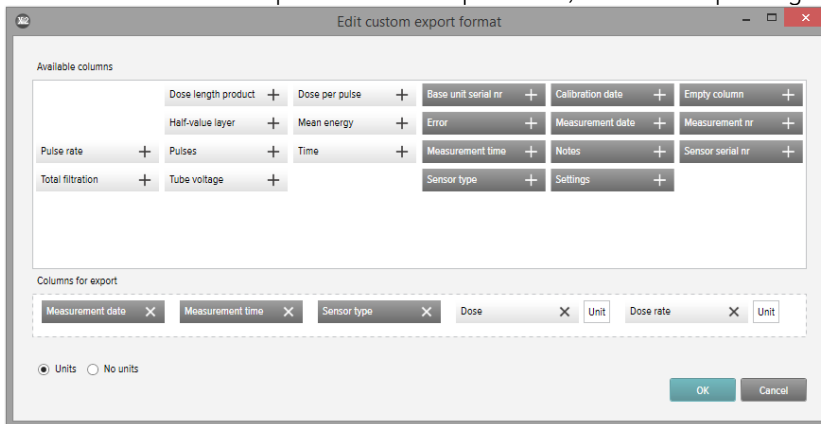


Figure 12. Excel export panel

EXPORT FORMATS

You can change export format by selecting one of the available formats, or by defining your own, custom format:

1. To create a custom format, select *Custom format* and click the edit button. 
2. Select columns and drop them in the export area, or click the plus signs.

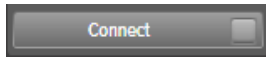


3. Activate *Units* if you want to add a column with the unit (for example mGy/s) after each measurement parameter. Units No units
4. Press *OK* and your custom export format is defined.

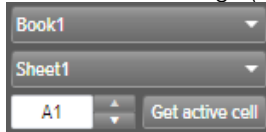
EXPORT TO EXCEL AS YOU MEASURE

Follow the steps below to export each new measurement to Excel:

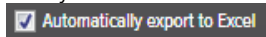
1. Click **Connect** in the Excel area.



2. Select Excel settings (workbook, sheet, start cell).



3. Verify that the box **Automatically export to Excel** is checked.

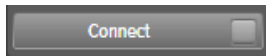


Tip! Click **View – Compact view** in the menu, or press Alt+C, to make the X2 View window narrow to see more of the Excel window when exporting as you measure.

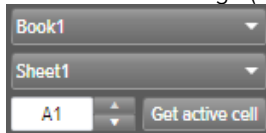
EXPORT MEASUREMENTS TO EXCEL AFTERWARDS

Use the Excel Export button to export measurement afterwards:

1. Click **Connect** in the Excel area.



2. Select Excel settings (workbook, sheet, start cell).



3. In the drop down list, select what to export: **Selected**, **All** or **Starred**.



4. Press the Export button.

EXPORT WAVEFORM IMAGE

Right click in the waveform area and select **Save as image** to save the waveform in png format or select **Copy to clipboard** to put it as an image in the clipboard, for pasting into a document.

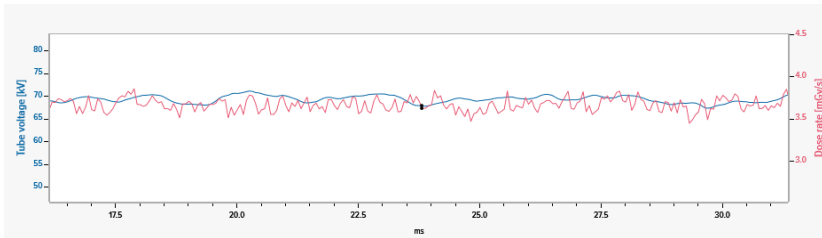


Figure 13. Waveform, with a certain part zoomed in, copied in png format

SAVE FILE

Click **File – Save** in the menu, or press Ctrl+S, to save a file with all measurements, notes and stars.

Click **File – Save As** in the menu, or press Ctrl+Shift+S, to save a file with a new name.

The file is saved in X2 View format (.x2v).

MANAGE THE RAYSAFE X2 SYSTEM

CHANGE PROGRAM SETTINGS

Click **File – Settings** or press F12 to reach the program settings under the **General** tab.

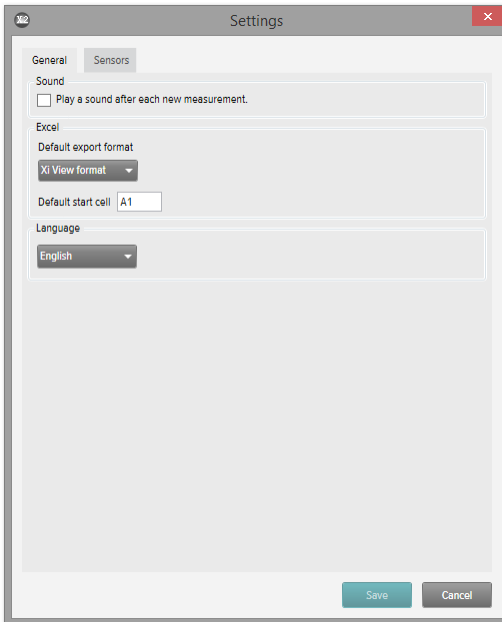


Figure 14. Program settings window

The main difference between the **X2 format** and the **Xi View format** is the order of the columns. Select Xi View format for backward compatibility with your old Xi View Excel templates.

Change the desired settings and click **Save**.

CHANGE INSTRUMENT SETTINGS

You can only change settings for a connected sensor.

Click **File – Settings** or press F12 to reach the sensor settings. For explanations of the different instrument settings, see the information texts in the base unit.

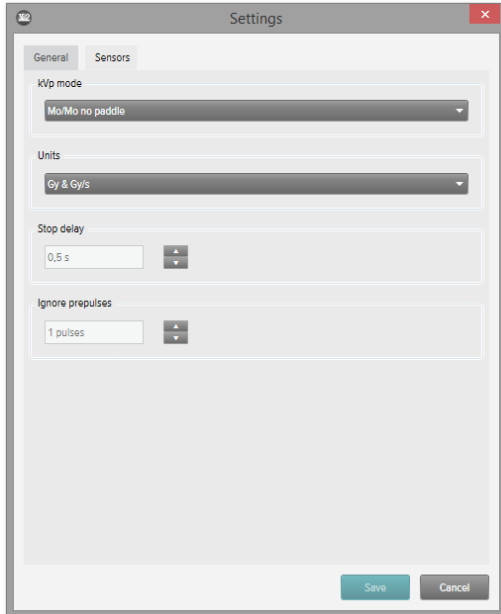


Figure 15. Sensor settings window

Change the desired instrument settings and click **Save**.

UPDATE THE RAYSAFE X2 SYSTEM

X2 View will automatically connect to X2 Online and check for updates when your computer is connected to the internet. The X2 Online field will appear, showing a notification icon if there are any updates available for you.

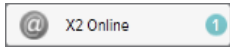


Figure 16. Update notification to the right

Click on the icon to go to the update window (below). Click **Update** to download and install the update or **Cancel** to postpone the update.

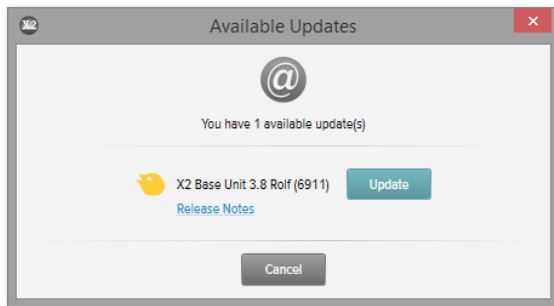


Figure 17. Update window

You can also manually check for updates using *Help – Check for updates*.

HINTS

TROUBLESHOOTING

No instrument is shown in the RaySafe X2 status area, even if a base unit is connected.

Disconnect and reconnect the base unit to the computer, using the USB cable or a Bluetooth adapter.

SHORTCUTS

| KEYBOARD SHORTCUT | ACTION |
|---------------------|---|
| Up arrow | Show previous measurement |
| Down arrow | Show next measurement |
| Ctrl+N | Make a new file |
| Ctrl+O | Open an existing file |
| Ctrl+S | Save file |
| Ctrl+Shift+S | Save file with a new name (Save As) |
| Alt+C | Change to Compact view |
| Alt+D | Change to Default view |
| F1 | View Help |
| F2 | Open About window |
| F8 | Open Import from base unit window |
| F12 | Open Settings window |
| Ctrl+A | Mark all measurements |
| Ctrl+C | Copy all marked measurements to the clipboard |
| Delete | Delete the selected measurement. |
| Alt+X | Exit X2 View |

| MOUSE EVENT | ACTION |
|---|--|
| Mouse wheel up in waveforms area | Zoom in |
| Mouse wheel down in waveforms area | Zoom out |
| Double click in waveforms area | Reset zoom |
| Left click and drag in waveforms area | Pan |
| Shift+left click and drag in waveforms area | Mark a section |
| Ctrl+left click and drag in waveforms area | Select a region to zoom in to |
| Right click | Open a menu in the measurement or waveforms area |

TECHNICAL SUPPORT

Please don't hesitate to contact our support desk if you have any questions. Visit <http://www.raysafe.com> for contact information.