

RAPIDOSE

Rapid Measurements – with a super small footprint detector

USER GUIDE

Radcal

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Introduction

Rapidose is a significant new advancement in the way x-ray measurements are captured and analyzed.

AUTO DATA CAPTURE – For every exposure, a wealth of organized data is captured, which can all be viewed instantly without scrolling.

EASY DATA ANALYSIS – At the end of a measurement session, easily save all measurement values and waveforms for future analysis.

YOUR CHOICE OF DISPLAY – Use the complete Rapidose compact display system with its touch screen UMPC display or your laptop to view all measurement results.

REMOTE OPERATION - Magnify the display to Big view and view the results from across the room or through a control room window.

Contact Radcal for additional options. Sales can provide for Bluetooth keyboards, mice, and iPod or iPhone remote controls. Other options are PC viewing and control over wireless LAN or wired connections.

Software and Device Driver Install for Running Rapidose on Your Computer

Although the software can be installed on a PC other than the UMPC sold by Radcal, the user experience is greatly enhanced by using the UMPC's friendly touch screen and other unique features.

To run reliably on the Radcal UMPC or another PC, no other application(s) should be active while measuring with Rapidose. Measurement data is captured by the Rapidose hardware module and transferred via USB.

USB bus performance greatly differs on mobile computing systems. Radcal does not support hardware or software related issues if used on a PC other than the UPMC sold by Radcal.

Computer System Minimum Requirements

- Operating System: Windows 7 (32-bit and 64-bit versions), Windows XP (SP2), Windows Vista (32-bit and 64-bit versions)
- Processor: 800 Mhz (Intel, AMD or VIA)
- Screen Resolution of 1024 x 600
- RAM: 150 MB free system memory to run application
- 230 MB for application, Framework, and session file storage
- USB 2.0 port for USB-Module
- An Internet connection is required prior to starting the software installation.
- Microsoft's .NET Framework (version 3.5 or higher). The Rapidose software installer will install the .NET Framework if it is not located during installation.

If you ordered the UMPC, your Rapidose software has already been installed. Proceed to Taking a Measurement. The installation software and documentation has also been included on a USB-key flash-drive. To install the software on another PC, see *Appendix A - Software and Device Driver Install* on page 37.

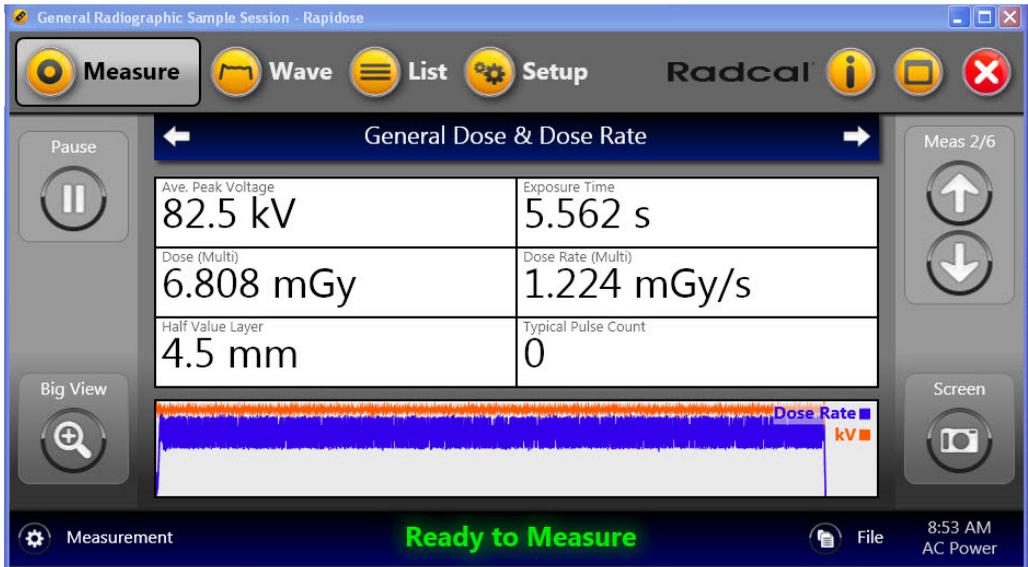
Measurements

Taking a Measurement

To take a measurement:

1. Plug the sensor into either your UMPC's USB port or the USB port of the computer where you installed the Rapidose software and device driver.
2. Place the detector in the path of the x-ray beam.
3. Launch the Rapidose software.
4. Check the detector status to make sure the detector is online. As soon as the "Ready to Measure" message is displayed at the

bottom of the screen, a measurement may be made. Activate the x-ray machine to capture the exposure data. Rapidoose automatically displays all data for the measurement when the exposure is complete.



Note: You can click the **Big View** button to display the measurement data in the full-screen view if desired. To exit Big view, click anywhere on the screen.

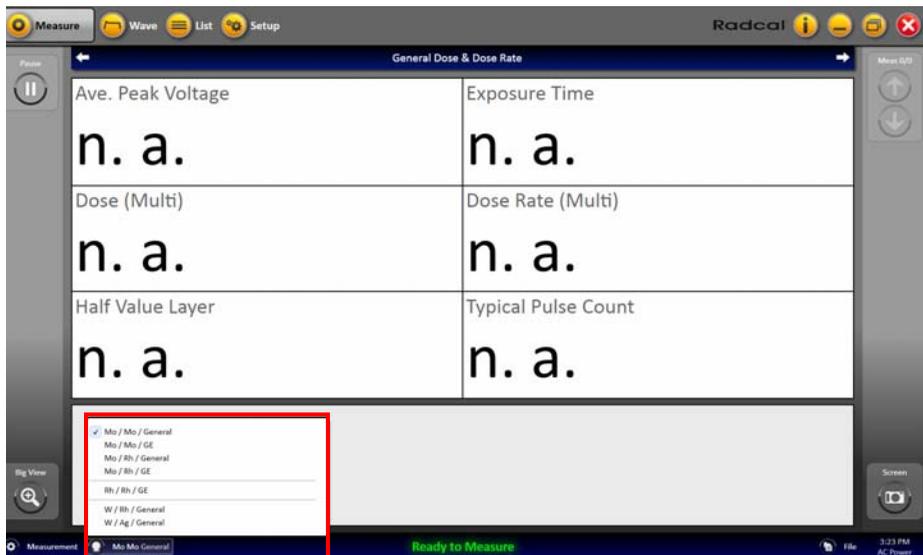
5. Make additional exposures as necessary. No data will be lost and you can review the previous measurements by clicking the **Up** and **Down Meas** arrows on the right side of the Measure screen.
6. Click the **File** button and choose **Save As** to save your new session.

You can continue to review the data in Wave or List view by clicking on the **Wave** or **List** buttons in the title bar. If additional changes are made, click the **File** button and choose **Save**.

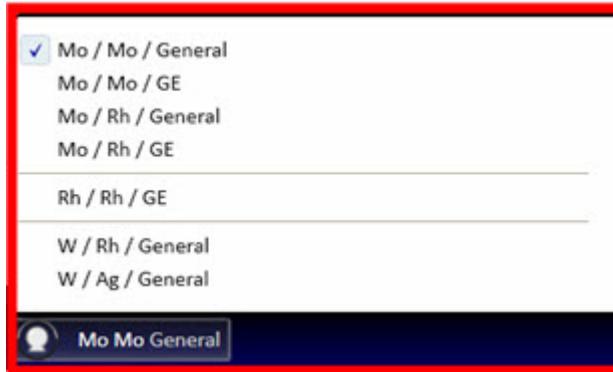
7. If you need to reposition the sensor, click the **Pause** button to temporarily put the sensor offline and prevent any inadvertent null exposures from being added to your measurement. You can delete unwanted measurements at a later time.
8. Click **Resume** when you are ready to take your next exposure.

For mammographic sensors:

Before making an exposure, choose the Anode/Filter combination that best represents the machine being measured from the pull-down located in the lower left corner.

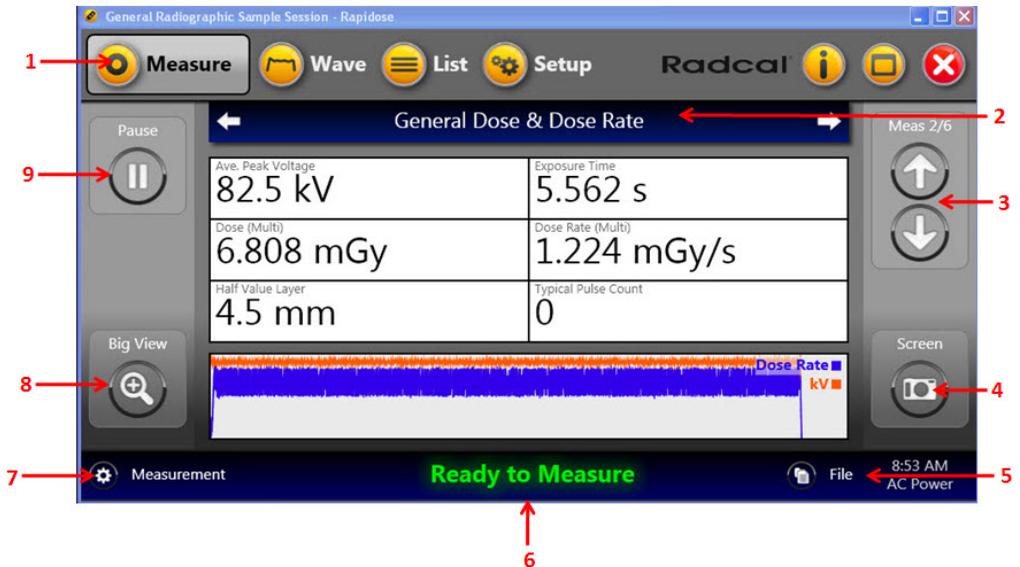


This image provides a closer look at the Anode/Filter combination menu:



Measure Screen

The Measure screen allows you to add measurements to the current session and view the measurement data.

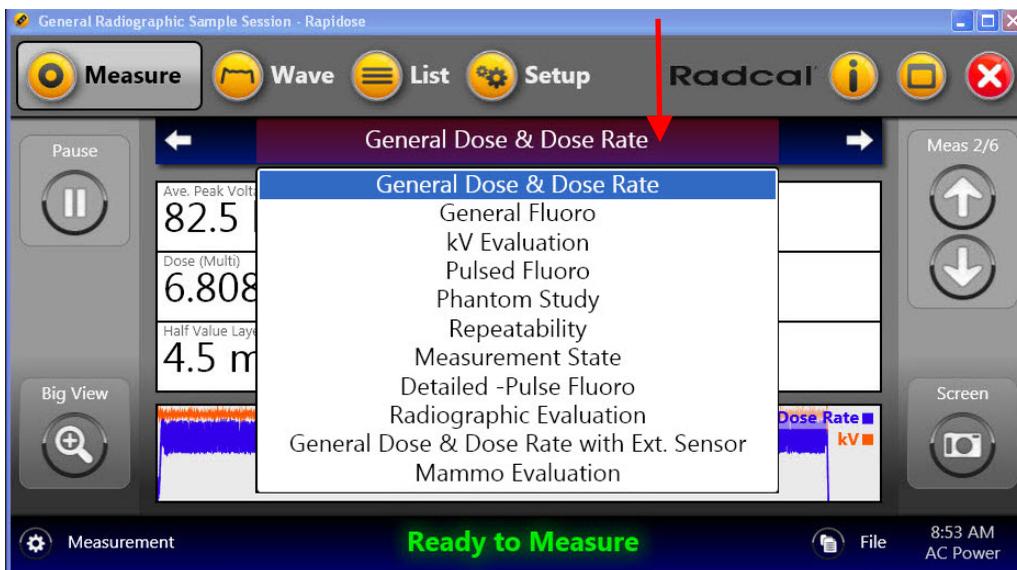


1	Measure button	Click to display the Measure screen.
2	Display profile bar	Indicates the profile being displayed. Click the forward or backward arrows to scroll through the profile, or click the middle of the bar to select the profile to display.
3	Select Measurement arrows	Displays the number of measurements in the session file and indicates which measurement is currently being displayed. Click the up and down arrows to scroll through the measurements.
4	Screen capture	Click to take a screen shot of the Measure screen. The screen shot is copied to the Windows clipboard. You can configure the screen shot to be automatically saved to a file or printed in the Setup screen.
5	File button	Click to open, save, or append the session file. See <i>Working with Sessions</i> on page 17 for more information on the File button.
6	Detector status	Displays the status for the detector. If the detector is offline or not connected, you are unable to take measurements.
7	Measurement	<p>The Measurement button provides the following actions:</p> <ul style="list-style-type: none"> • Reset • Delete • Pause • Stop • Start Free Measurement <p>These are modal depending on what has been previously selected. For example, Pause/Resume.</p>
8	Big View	Click to display a large version of the profile grid which encompasses the entire screen.
9	Pause/Resume	Click to pause or resume any measurement.

Selecting a Display Profile

In the Measure screen, you can view the measurement data using default or custom profiles. To display measurement data using the display profile:

1. Click the **Measure** button to show the Measure screen.
2. Select the measurement you want to view by clicking the **Up** and **Down Meas** arrows on the right side of the screen.
3. Click the display profile bar to select a profile for displaying the measurement data, or click the left and right arrows.



You can review the data in either the Wave screen or the List screen. For more information about creating custom profiles, see *Working with Measurement Profiles* on page 27.

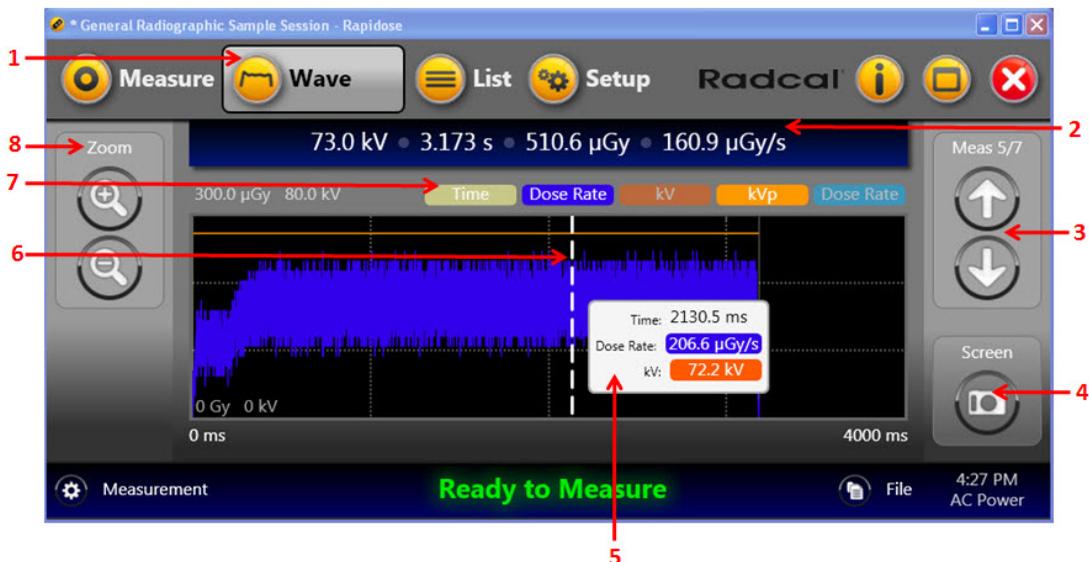
Reviewing Data in the Wave Screen

The Wave screen provides a graphic view of the captured kV and dose rate waveforms. From this screen you can perform the following:

- Switch between measurements using the Select Measurement arrows.
- Position your cursor on the Wave screen to display details about that portion of the wave.
- Use the **Zoom +/-** buttons or click and drag the cursor across a portion of the Wave screen to zoom into that portion of the wave.
- Turn specific wave information on or off by clicking the wave-type buttons listed directly above the wave graph.

Note: You can take measurements in any of the screens (Measure, Wave, or List).

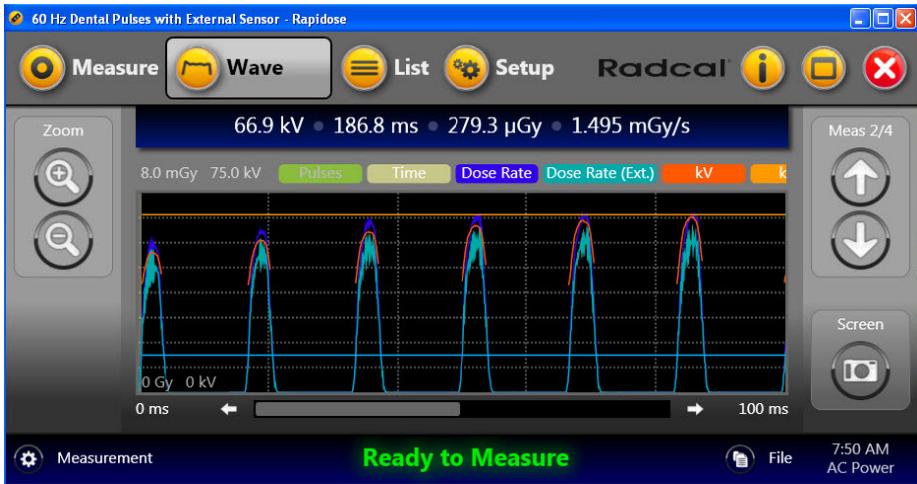
- Take a screen shot of the wave graph by clicking the **Screen** button.



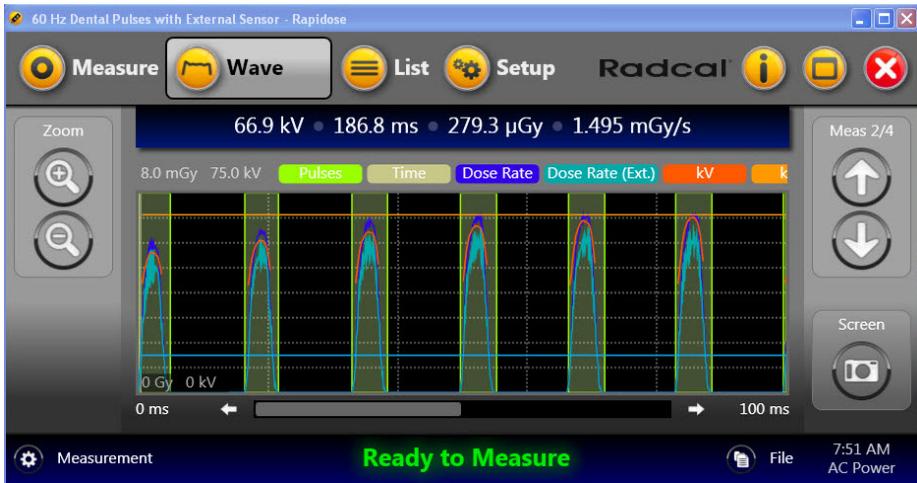
1	Wave button	Click to display the Wave screen.
2	Measurement summary	Displays the following measurement values for quick reference: <ul style="list-style-type: none"> • Ave. Peak Voltage • Exposure Time • Dose (Multi) • Dose Rate (Multi) • Does (Ext) – if external sensor is connected • Dose Rate (Ext) – if external sensor is connected
3	Up and Down Meas arrows	Displays the number of measurements in the session file and indicates which measurement is currently being displayed. Click the up and down arrows to scroll through the measurements.
4	Screen capture	Click to take a screen shot of the Wave screen. The screen shot is copied to the Windows clipboard. You can configure the screen shot to be automatically saved to a file or printed. in the Setup screen.
5	Wave details	Position the cursor on the wave to display detailed information about that part of the wave.
6	X-axis slider	This is the slider that appears on the x-axis when the wave is magnified.
7	Measurement toggle	Click the measurement buttons to hide or show the measurement on the wave chart.
8	Zoom +/-	Click the zoom-in/zoom-out buttons to change the Wave screen. You can also click and drag the cursor within the Wave screen to zoom in on a section of the wave.

Pulse Screen

For certain measurements within the Wave screen, you have the option of viewing the pulses of each wave as these example images show:

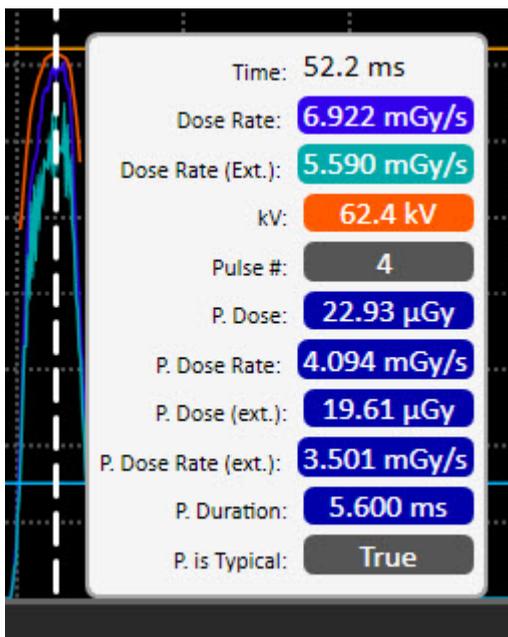


Wave Screen with the Pulse Off



Wave Screen with the Pulse On

This image shows the details pop-up that appears when you hover your cursor over a pulse in the Wave view. This pop-up provides the details associated with the pulse.



Reviewing Data in the List Screen

The List screen lets you see the measurement data in either a Table or Card view. From this screen you can perform the following:

- Switch between measurements using the Up and Down Meas arrows.
- Switch between a Card or Table view of the measurements.
- Delete measurements.
- Add comments and machine settings to the Card data.
- Export measurement data. See *Exporting Data* on page 18.



1	List button	Click to display the List screen.
2	View bar (Table/Card view)	Click to switch between a table view of the measurement data and a card view.
3	Up and Down Meas arrows	Displays the number of measurements in the session file and indicates which measurement is currently being displayed. Click the up and down arrows to scroll through the measurements.
4	Export	Click to export measurement data.
5	Edit button (Card view only)	Click to add comments and machine settings to measurement data.
6	Delete	Click to delete the currently selected measurement from the session.

Adding/Editing User Data

When viewing measurement data in Card view, you can add and edit user data to the measurements.

1. Click the **List** button to show Table view.



2. Click the **View** bar to switch to Card view.

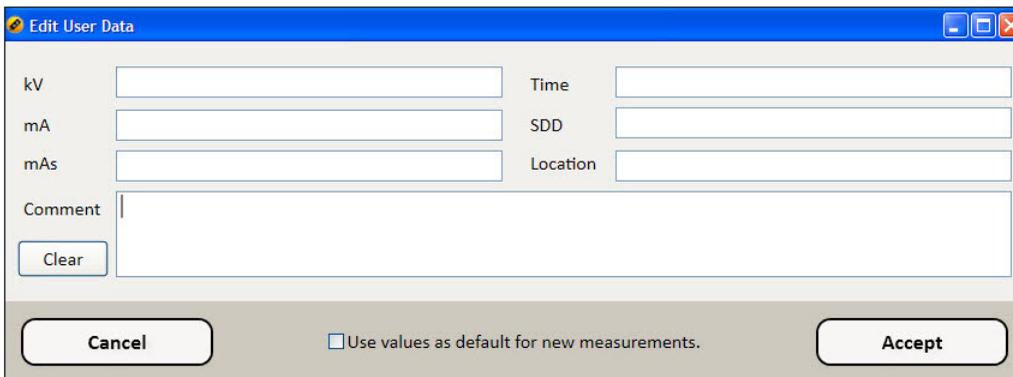


3. Select the measurement you want to view by clicking the Select Measurement arrows.

- Click the **Edit** button to display the Edit User Data dialog.



- In the Edit User Data dialog, you can enter the following information:

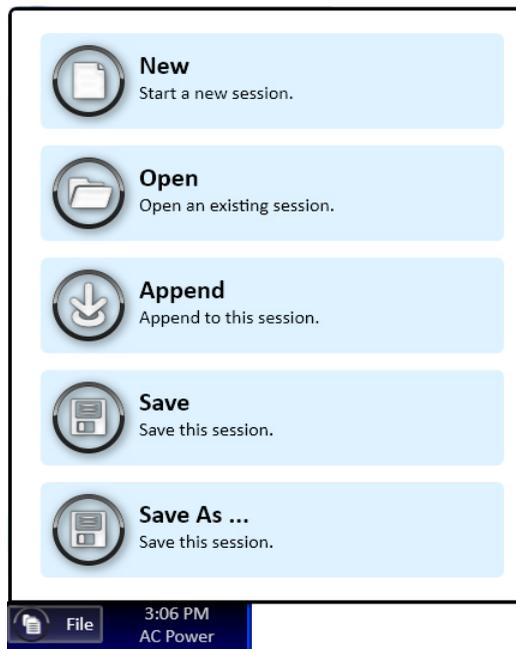


- If you want this user data to be automatically associated with new measurements added to this session, check the **Use values as default for new measurements** checkbox.

7. Click **Accept** to save the changes and return to Card view.

Working with Sessions

A session is a set of measurements saved in a session file (.rapidose). A session generally contains multiple measurements and allows complete access to the original data in the same format that was seen when you originally captured the measurements. Click the **File** button to display a menu for managing session files.



New – Click to start a fresh session file with no measurements. The sensor will also re-zero.

Open – Click to open an existing session file.

Append – Click to add the measurements for the current session to the measurements from another session file.

Save – Click to save any changes you may have made to the current session file.

Save As – Click to save the current session file to another file name.

Exporting Data

From List view, you can export measurement data by copying the data to the Windows clipboard and pasting it into an Excel file (recommended method) or saving the data to a CSV file:

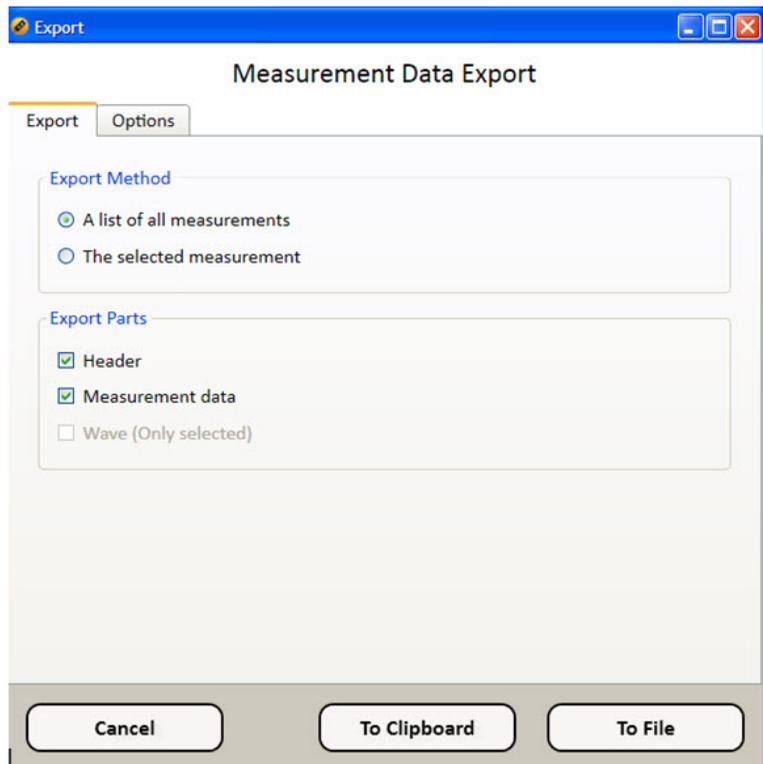
1. Click the **List** button to display the List screen.
2. If you want to export a single measurement from your session, highlight that measurement in either Table or Card view and click **Export**. Otherwise, click **Export** to begin the process of exporting all measurements in your session.

The screenshot shows the 'List' view of the Rapidoose software. The main display is a table with the following data:

Index	kVp	Exp. Time	Dose	Dose Rate	HVL	Filtration
9	148.2 kV	236.2 ms	9.147 mGy	38.72 mGy/s	5.2 mm	2.5 mm Al
8	126.8 kV	239.0 ms	7.083 mGy	29.64 mGy/s	4.5 mm	2.6 mm Al
7	104.7 kV	243.5 ms	5.093 mGy	20.92 mGy/s	3.8 mm	2.7 mm Al
6	93.6 kV	244.7 ms	4.167 mGy	17.03 mGy/s	3.5 mm	2.8 mm Al
5	82.0 kV	245.2 ms	3.285 mGy	13.40 mGy/s	3.2 mm	3.0 mm Al
4	71.9 kV	246.8 ms	2.487 mGy	10.08 mGy/s	2.8 mm	2.9 mm Al
3	61.1 kV	249.7 ms	1.769 mGy	7.086 mGy/s	2.4 mm	2.9 mm Al
2	51.0 kV	250.5 ms	1.130 mGy	4.511 mGy/s	1.9 mm	2.8 mm Al
1	40.6 kV	249.9 ms	567.1 μ Gy	2.269 mGy/s	1.6 mm	2.8 mm Al

The 'Export' button is located in the bottom right corner of the interface, with a red arrow pointing to it.

The Measurement Data Export dialog appears:



3. Click the Export tab and select the export method and parts:
 - **A list of all measurements** – Select to export all of the measurements in the session file.
 - **The selected measurement** – Select to export only the measurement selected in the List screen.
 - **Header** – Select to export header information for the measurement.
 - **Measurement data** – Select to export all measurement data.
 - **Wave (Only selected)** – Select to export wave data. This item can only be selected if you are exporting a single measurement, and it only exports the wave data.

- Click the Options tab and select the format for the units and values and the export subset and destination.

Note: All format and export options will be retained for subsequent exports.

The screenshot shows the 'Measurement Data Export' dialog box with the 'Options' tab selected. The dialog has a title bar with 'Export' and standard window controls. The main area is divided into several sections:

- Radiation Unit:** Radio buttons for Gray [Gy] and Röntgen [R]. Röntgen [R] is selected.
- Scale for Radiation Values:** Radio buttons for Micro [μ], Milli [m], None [1], and Kilo [k]. Milli [m] is selected.
- Time Base for Radiation Values:** Radio buttons for Millisecond [ms], Second [s], and Hour [h]. Second [s] is selected.
- Number Format:** Radio buttons for Current System Format and International (English) Format. Current System Format is selected.
- Export Subset:** Radio buttons for All Values, Main Values, and Current Subset. Current Subset is selected.

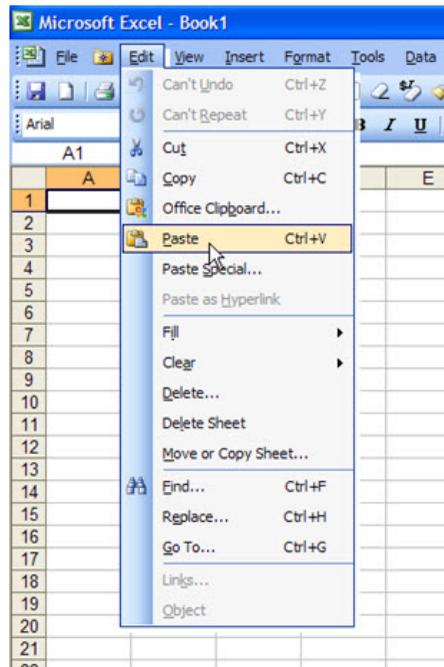
At the bottom, there are three buttons: 'Cancel', 'To Clipboard', and 'To File'.

- **Radiation Unit** – Select Gray or Röntgen.
- **Scale for Radiation Values** – Select Micro, Milli, None, or Kilo.
- **Time Base for Radiation Values** – Select Milliseconds, Second, or Hour.
- **Number Format** – Select Current System Format or English Format.
- **Export Subset**
 - All Values – Select to export all measurement values.

- Main Values – Select to export only the main measurement values.
- Current Subset – Select to only export the current Subset.
- **To Clipboard** – Click this button to export the data to the Windows clipboard from which you can paste the data into an Excel spreadsheet.

Note: This is the easiest and preferred method.

- **To File** – Click this button to export the data to a CSV file, which can be imported into a spreadsheet application such as Microsoft Excel.
5. Go to Excel and select a worksheet where you wish the data to reside.
 6. Click in a cell in the upper left corner and paste the data.



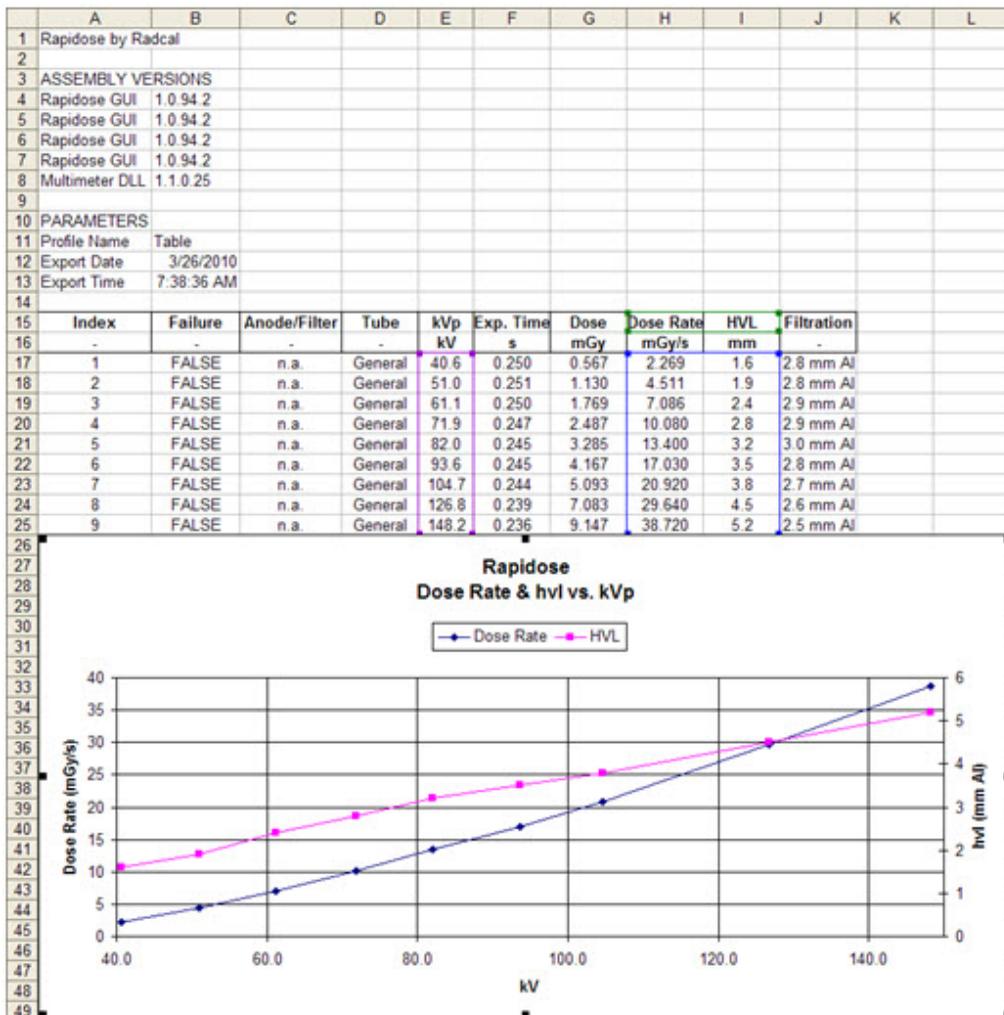
Your data is inserted into the spreadsheet:

The screenshot shows a Microsoft Excel spreadsheet titled "Rapidoose by Radcal". The spreadsheet is organized into sections:

- ASSEMBLY VERSIONS:** Rows 4-8, listing software versions for Rapidoose GUI (1.0.94.2) and Multimeter DLL (1.1.0.25).
- PARAMETERS:** Rows 11-13, listing Profile Name (Table), Export Date (3/26/2010), and Export Time (7:38:36 AM).
- Measurement Table:** Rows 15-25, with columns for Index, Failure, Anode/Filter, Tube, kVp, Exp. Time, Dose, Dose Rate, HVL, and Filtration.

Index	Failure	Anode/Filter	Tube	kVp	Exp. Time	Dose	Dose Rate	HVL	Filtration
				kV	s	mGy	mGy/s	mm	
1	FALSE	n.a.	General	40.6	0.2499	0.567	2.269	1.6	2.8 mm Al
2	FALSE	n.a.	General	51.0	0.2505	1.130	4.511	1.9	2.8 mm Al
3	FALSE	n.a.	General	61.1	0.2497	1.769	7.086	2.4	2.9 mm Al
4	FALSE	n.a.	General	71.9	0.2468	2.487	10.080	2.8	2.9 mm Al
5	FALSE	n.a.	General	82.0	0.2452	3.285	13.400	3.2	3.0 mm Al
6	FALSE	n.a.	General	93.6	0.2447	4.167	17.030	3.5	2.8 mm Al
7	FALSE	n.a.	General	104.7	0.2435	5.093	20.920	3.8	2.7 mm Al
8	FALSE	n.a.	General	126.8	0.2390	7.083	29.640	4.5	2.6 mm Al
9	FALSE	n.a.	General	148.2	0.2362	9.147	38.720	5.2	2.5 mm Al

- Once you paste the data, you can format it and use Excel in order to generate graphs.



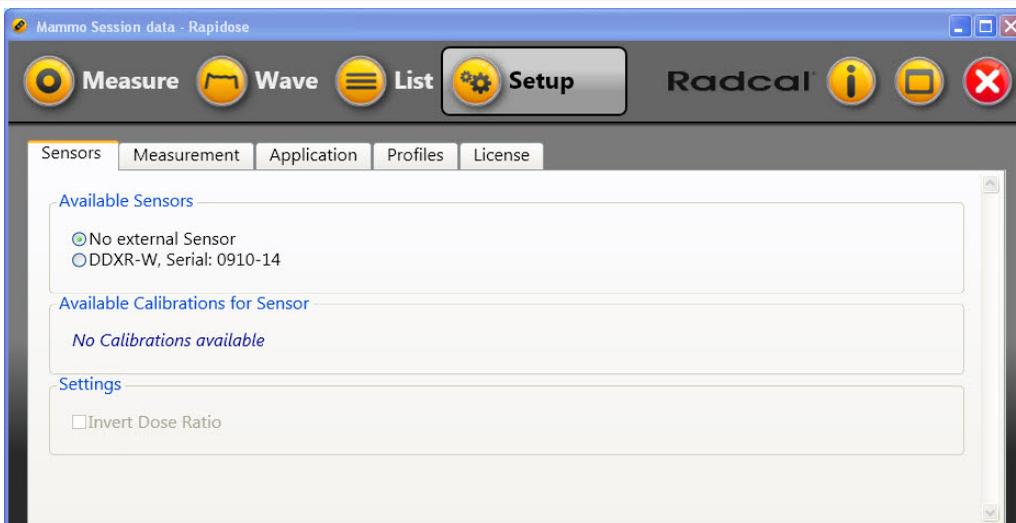
Shortcut Keys

KeyDown	Next measurement	Alt+W	Wave screen
KeyUp	Previous measurement	Alt+S	Setup view
PgDown	Next view	KeyRight	Next profile
PgUp	Previous view	KeyLeft	Previous profile
Alt+I	Info window	Ctrl+M	Start/Start measurement
Alt+B	Big view	Ctrl+S	Save session
Alt+M	Measure screen	Ctrl+P	Screenshot
Alt+L	List screen	Plus/Minus	Wave Zoom In/Out

Setting up Rapidose

Click the **Setup** button to display the Setup screen, which contains the following tabs:

- Sensors
- Measurement
- Application
- Profiles
- License



Setup Screen

Sensors Tab

Click the Sensors tab to view information and settings for the connected detectors.

Available Sensors – Select DDXR-W if an optional dose detector is connected.

Available Calibrations for the Sensor – If DDXR-W is selected, then default calibration is automatically selected.

Settings: Invert Dose Ratio – When an external sensor is connected, Rapidose will provide the ratio of the multi-sensor dose to the external sensor dose. This setting allows this ratio to be inverted.

Measurement Tab

Click the Measurement tab to configure the settings for recording measurements.

Sample Rate – Select the sample rate for recording measurements:

- 10 kHz (default) – recommended for processors with speeds greater than 1.5 GHz such as high-end laptops
- 6.7 kHz – recommended for processors greater than 750 MHz such as mobile devices
- 1.0 kHz – recommended for slow processors and time resolution is reduced to 1 ms

Note: Select the highest speed that provides error free measurements.

Unit – Select the standard unit for measuring the dose:

- Gray (default)
- Röntgen
- Rad

Time Based – Select the time base for dose rate measurements:

- Millisecond
- Second (default)
- Minute
- Hour

Auto Big View – Select this check box to automatically switch to Big view when a measurement is triggered.

Use Sounds – Select this check box to announce a tone when a measurement begins and ends.

Save Raw Data – Select to automatically save all raw data from a measurement. This data may help Radcal to troubleshoot a measurement problem.

Application Tab

Click the Application tab to configure settings for the Rapidose software.

Start at Logon – Select this check box to automatically launch the Rapidose software when you log into the computer.

Auto Save – Select this check box to automatically save a backup of your current session.

Logfile – Select this check box to save measurement-related information to a logfile on the local hard drive. You can also indicate the location where this file is stored. The contents of the logfile can provide Radcal with troubleshooting information if problems are encountered.

Screen Shots – Indicate how screen shots taken using the Screen button in the Measure screen and the Wave screen are to be saved:

- Save to a .png file in the specified location.
- Print to the default printer.

Profiles Tab

Click the Profiles tab to manage the measurement profiles. Rapidose has a number of measurement profiles set up by default, but you can also create, edit, import, and export custom profiles. See *Working with Measurement Profiles* on page 27.

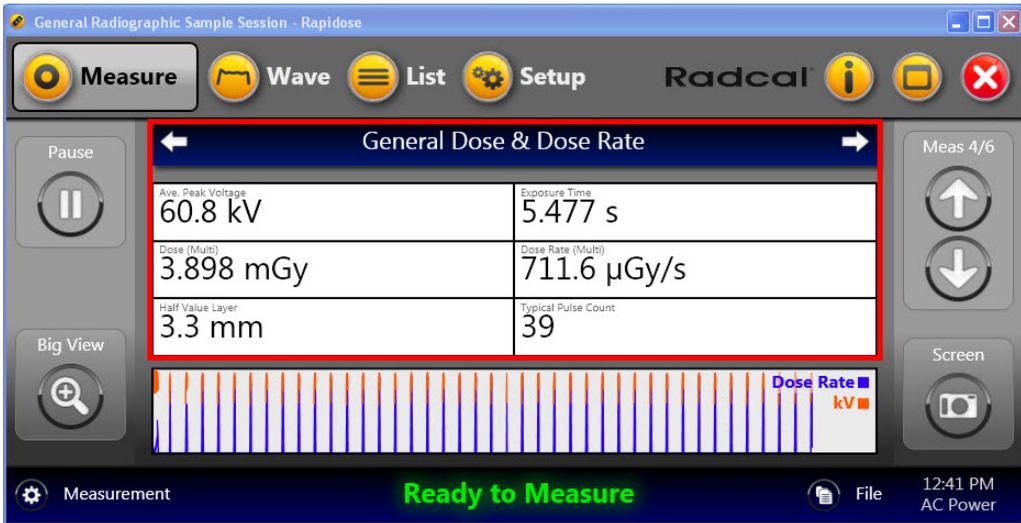
License Tab

Select the License tab to manage licenses for the Rapidose software and sensors. For Rapidose to fully function, you must have a license key installed for the software and sensor. See *Installing the License Key* on page 43.

Working with Measurement Profiles

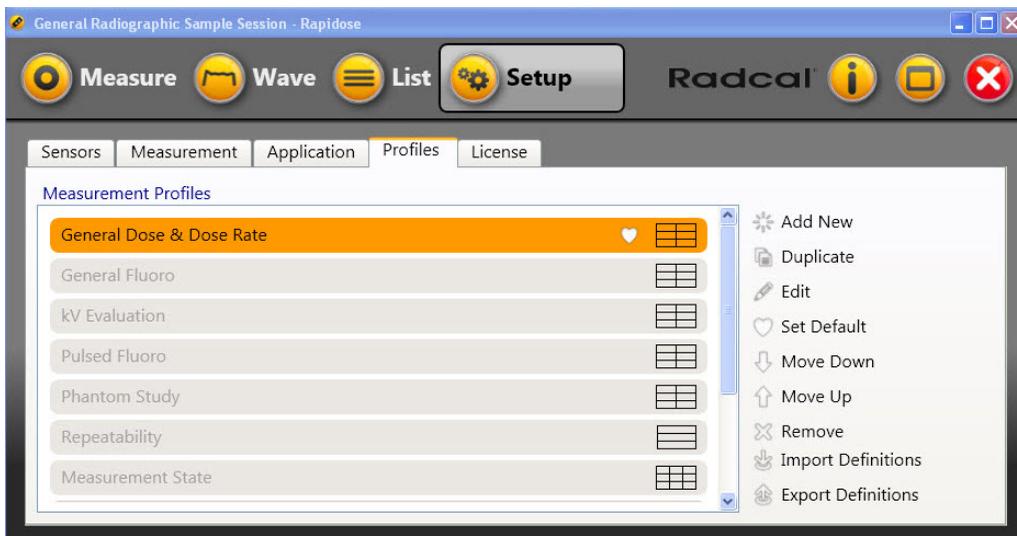
Measurement profiles are templates for displaying measurement data in the Measure screen. A profile is a grid with measurement values assigned

to each box in the grid. When you view a measurement profile in the Measure screen, the data from the measurement is displayed in the grid.



Measurement Screen with General Dose & Dose Rate Profile Displayed

You can manage measurement profiles from the Profiles tab on the Setup screen. The Profiles tab displays a list of default and custom profiles.



Profiles Tab on the Setup Screen

Add New – Click to create a custom profile.

Duplicate – Click to create a copy of the currently selected measurement profile.

Edit – Click to edit a custom profile. Default profiles cannot be edited.

Set Default – Click to make the currently selected profile the default profile that is displayed in the Measure screen. The heart symbol appears next to the profile to indicate that it is now the default profile.

Move Down/Move Up - Click to change the order in which the profiles are displayed in the Measure screen.

Remove – Click to delete the selected profile.

Import Definitions – Click to import profiles. See *Importing and Exporting a Profile* on page 32.

Export Definitions – Click to export profiles. See *Importing and Exporting a Profile* on page 32.

Default Profiles

By default, Rapidose has the following profiles predefined for you to use to display measurement data.

Note: The installed default profiles may vary depending on the Rapidose software version.

Profile Name	Measurements Displayed
General Dose & Dose Rate	Ave. Peak Voltage Exposure Time Dose (Multi) Dose Rate (Multi) Half Value Layer Typical Pulse Count
General Fluoro	Ave. Peak Voltage Dose Rate (Multi) Typical Pulse Count Ave. Dose of Typical Pulse (Multi) Typical Pulse Rate Typical Pulse Duration
kV Evaluation	Ave. Peak Voltage Exposure Time Average kV Dose (Multi) Practical Peak Voltage
Pulsed Fluoro	Ave. Peak Voltage Ave. Dose of Typical Pulse (Multi) Typical Pulse Rate Typical Pulse Duration Typical Max. Pulse Duration
Phantom Study	Ave. Peak Voltage Dose (Multi) Exposure Time Dose (Ext.) Half Value Layer Dose Ratio

Repeatability	Ave. Peak voltage Dose (Multi) Exposure Time
Measurement State	Measurement Failure Completed Range of kV Values Memory Overflow Transmission Gaps Present Transmission Gap Count Overflow Error Filtration Error

Creating or Editing Custom Profiles

In addition to the default profiles, you can create and edit your own profiles for displaying measurement data.

1. Click the **Setup** button to display the Setup screen.
2. Click the Profiles tab.
3. To create a new profile, click **Add New**. To edit an existing profile, select the profile and click **Edit**.

Note: You cannot edit or delete a default profile, but you can copy a default profile and edit the copy.

The Display Profile dialog appears:

Rapidose - Display Profile

Profile Name:

Rows & Columns:

None	None
None	None

4. Enter a name for the custom profile.
5. Select the number of rows and columns for the grid. When you select a number of rows or columns, the grid layout changes to match your selection.
6. For each box in the grid, select the type of measurement information you want to display from the drop-down list
7. If you would like to add a color background to the grid boxes, click the box and then click the color background you want to apply.
8. When you have finished setting up your profile, click **Accept** to save the profile.

Importing and Exporting a Profile

Profiles are associated with the software installation and are available for all sessions opened on the computer. However, you may want to use a profile that you set up on one computer on another computer. To accomplish this, you must export the profile to a Display Profiles .rdprofile

file, and then import the profile file into the Rapidose software on the second computer.

1. On the computer where you have the custom profile, launch Rapidose.
2. Click the **Setup** button to display the Setup screen.
3. Click the Profiles tab.
4. Click **Export Definitions**.
5. Enter a name and location for the display profile file (.rdprofile) and click **OK**.
6. Move the .rdprofile file to the second computer, and launch Rapidose. A thumb drive is a simple and easy way to accomplish this.
7. Click the **Setup** button to display the Setup screen.
8. Click the Profiles tab.
9. Click **Import Definitions**.
10. Select the .rdprofile file and click **OK**.

Duplicating a Profile

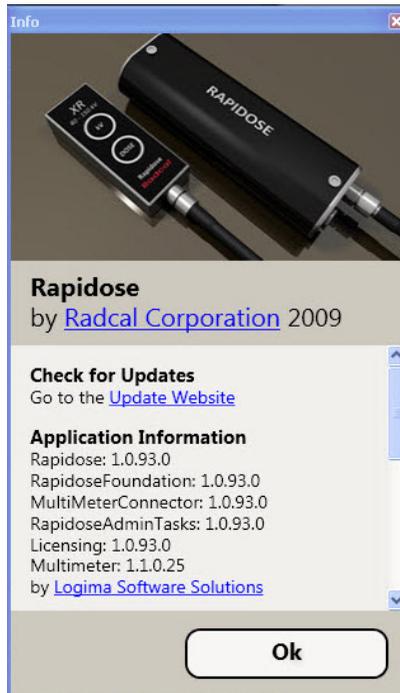
To duplicate a profile:

1. Click the **Setup** button to display the Setup screen.
2. Click the Profiles tab.
3. Select the profile you want to duplicate from the list of profiles.
4. Click **Duplicate**.

5. Enter a name for the duplicated profile, and configure the grid.
6. Click **Accept** to save the new profile.

Info Screen

The Info screen provides you with easy access to Rapidose software update as well as a list of the Rapidose hardware and software releases you are currently using. To access this screen press the “i” button at the top-right of the window.



The Rapidose System



Rapidose Sensor and UMPC



Carry Case



Carry Case, UMPC, Sensors, and Test Stand

Sensor Specifications

Dose	50 nGy – 50 Gy, ±5%	(5.7 µR – 5.7 kR, ±5%)
Dose Rate	160 nGy/s – 160 mGy/s, ±5%	(1.09 mR/min – 1.09 kR/min, ±5%)
Time	2 ms – 300 s ± 1% or 0.2 ms	

Type	Anode / Filter	Tube	Range of Applications		
			kV ±2% or ±0.7kV whichever is greater	Filt (um)	hvl (mm Al) ±10% or ±0.05 mm Al whichever is greater
Mammo (RAPD-M)	Mo/Mo	General	22-49	20-40	0.18 - 0.48
	Mo/Rh	General	22-49	20-40	0.20 - 0.54
	Mo/Mo	GE	22-48	20-40	0.18 - 0.48
	Mo/Rh	GE	22-48	20-40	0.20 - 0.54
	Rh/Rh	GE	25-48	20-60	0.30 - 0.72
	W/Ag	General	21-38	20-80	0.18 - 0.77
	W/Rh	General	21-38	20-75	0.18 - 0.67

Radiographic (RAPD-W)	W/Al	General	40-160	2-22 mm	1.3 - 10 *
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Reference conditions

Mammo: 2.2 mm PMMA compression paddle in beam for all measurements (kVp, dose, hvl). Calibrated using large focal spot.

Radiographic: 12° Tungsten anode.

Size

52.1 mm x 20.0 mm x 9.7 mm

Reference point

Round marking 1 cm dia – Dose and kV separate, midline – 4.8 mm from top surface.

Working temperature range

15°C - 35°C (Storage: 0°C / 32°F - 60°C / 140°F)

Humidity

< 80 % (without condensation)

Pressure

700 hPa – 1060 hPa

All specifications subject to change.

* or ±0.2 mm Al whichever is greater

Appendix A - Software and Device Driver Install

If you decide to install the software on a PC other than the UMPC sold by Radcal, follow these instructions.

Note: The screens shown in these instructions may vary depending on the operating system installed on your computer. For example Windows Vista and Windows 7 are different.

Installing Rapidose on your Computer

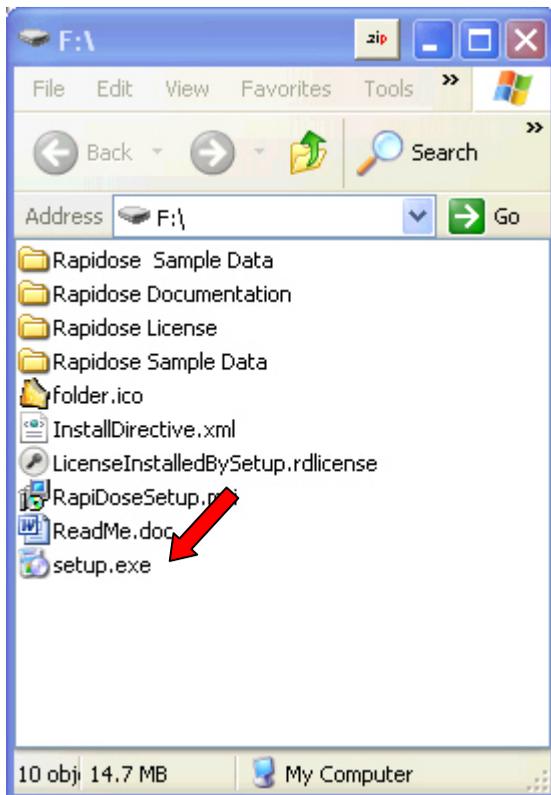
1. Insert the Rapidose flash drive into an available USB port, and allow the operating system to recognize the device.
2. Choose **Open folder to view files using Windows Explorer**.



Note: If this window does not automatically appear, simultaneously press the **Windows** and **E** keys. When the Explorer window appears, choose the **RAPIDOSE** drive from the folders column.

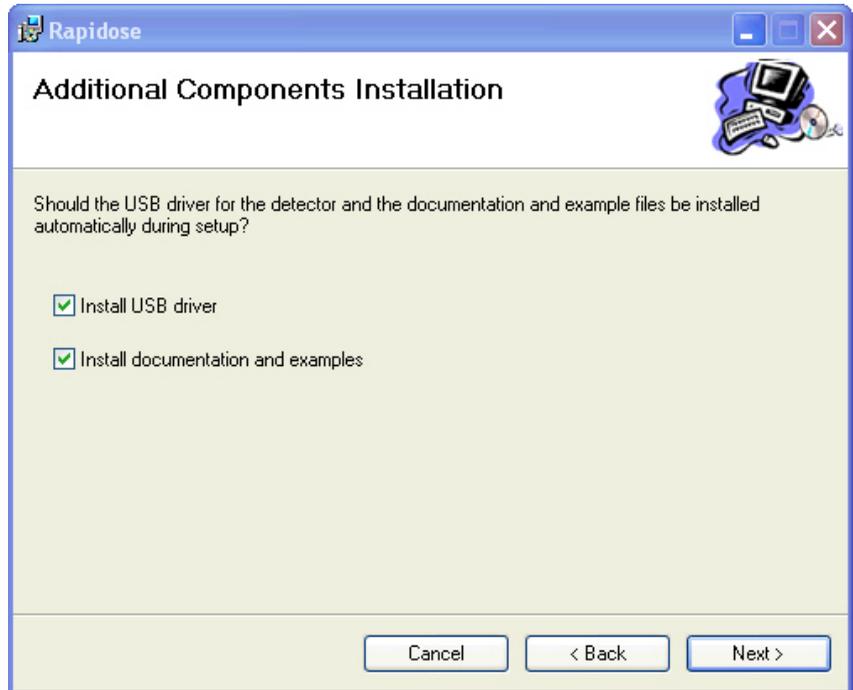
3. When the Rapidose folder opens you will see the list of files on the flash drive. Double-click **setup.exe**.

Note: Rapidose uses Microsoft .net Framework. If this software is not installed on your computer, you will need an Internet connection in order to permit Rapidose setup to download and install it. Microsoft .net Framework may take several minutes to install.



Running the Installer

1. Click the **Next** button to navigate through the Installation wizard.
2. The Software Installation wizard will launch another install wizard to install the USB driver for the detector. Be sure to select the **Install USB Driver** check box.



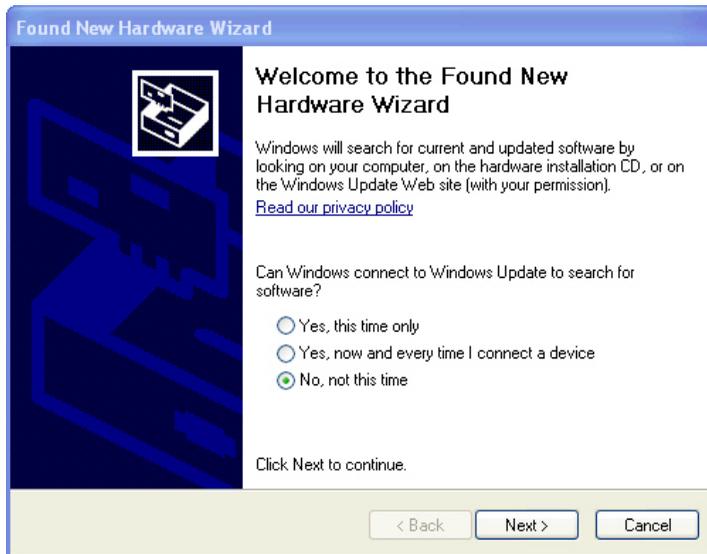
3. Click the **Next** button to navigate through the USB Driver Installation wizard.
4. When the USB driver is installed, click **Finish** to continue the Rapidose software installation.
5. When the Software Installation wizard is complete, click **Close**.

Note: The Rapidose program requires Microsoft's .NET Framework. Make sure to enable Windows Update to be sure that you have the latest version.

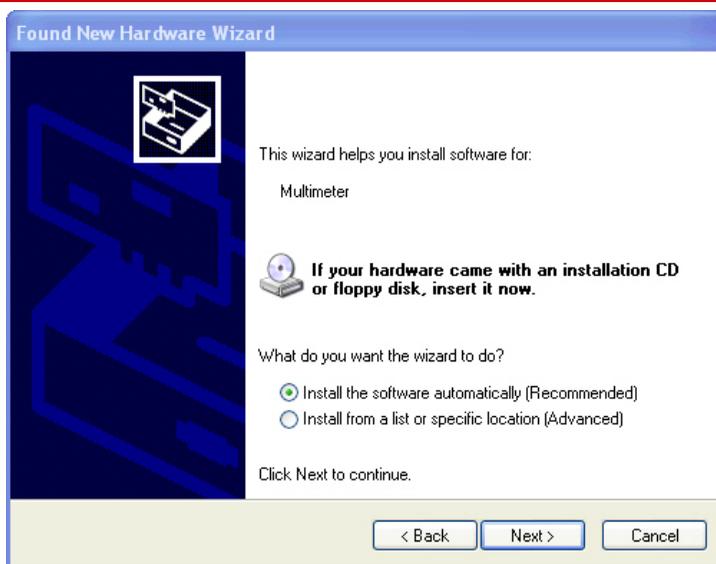
Installing the Sensor

To install the sensor on your computer:

1. Plug the sensor into any available USB port. Windows will announced that new hardware was found and start the New Hardware wizard:



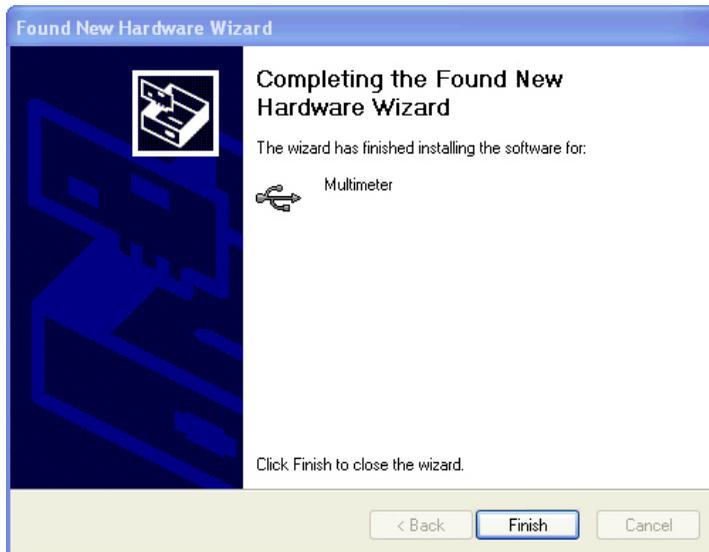
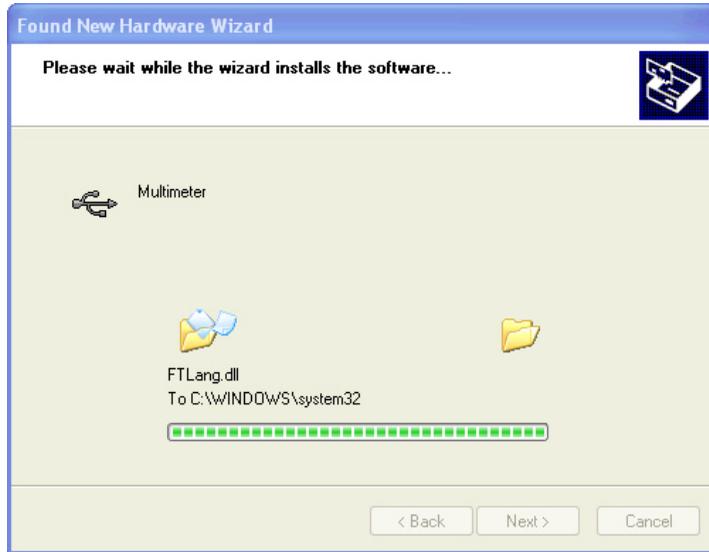
2. Choose **No, not this time**.



3. Let it install the software automatically.



4. Click **Continue Anyway**.



When finished, Windows will install a second set of software. Repeat the same procedure for the **Multimeter Serial Port**.



Additional Documentation

Open the Rapidose shortcut found on your desktop. There you will find a Rapidose Documentation folder that contains PDF manuals together with a demonstration video. The video requires a Quicktime® viewer from ©Apple Inc. which may be downloaded at <http://www.apple.com/quicktime/download/>

Installing the License Key

Rapidose requires a license key to enable full functionality. A license file (*.rdlicense) for your sensor has been included with the software. When the Rapidose software asks for a license file, point to the file located in the My Documents > Rapidose > Rapidose License folder.

To install the license file from Rapidose:

1. Click the **Setup** button.
2. Click the License tab.

3. Click the **Add License** button to display the Open dialog.
4. Browse to the license file (*.rdlicense) located in My Documents > Rapidose > Rapidose License, and click **OK**.

Appendix B – Sample Session Files

Included with your Rapidose software are several sample session files containing real x-ray measurement data (.rapidose).

These filenames provide an example of the type of example sessions files you will see:

- 60 Hz Dental Pulses with External Sensor.rapidose
- Mammo GE DMR Mo-Mo & Mo-Rh.rapidose
- Pulsed & continuous C-Arm.rapidose

To access these files, click the **File** button, select **Open**, and scroll to the My Documents > Rapidose > Rapidose Sample Data folder.

Warranty for the Rapidose™ Measurement System

Radcal Corporation warrants that, in the event that any defects in material or workmanship should develop within one year of the date of shipment, the company assumes full responsibility for servicing equipment of its manufacture without charge upon return of the equipment to Radcal, with shipping costs prepaid by the customer. Costs to return-ship to customer by ground transportation will be paid by Radcal if the repairs are warranty-applicable. This warranty excludes batteries.

Radcal shall not be held liable for damages or delays caused by defects beyond making repairs or furnishing replacement parts, nor shall Radcal be liable for any defective material replaced without Radcal's consent during the period of this warranty. Radcal reserves the right to perform warranty services at its own factory.

Non-Warranty Repairs

The calibration of this instrument was correct within specified limits when the instrument left our factory. Radcal cannot be responsible for injury or damage resulting from improper use or calibration errors which develop subsequent to our shipment of the instrument.

If Radcal determines that a fault has been caused by misuse, abnormal operating conditions, or repairs by unauthorized personnel during the warranty period, repairs and shipping costs will be billed at normal rates.

If the equipment is found to be in proper working condition, Radcal will return-ship the equipment at customer expense.

Data Loss

Although we take great effort to save your data, the customer is responsible for backing up any and all data that is stored on their computers prior to being serviced.

DECLARATION OF CONFORMITY

According to Test Report No. 5250-071145-1e

Manufacturer's Name: Radcal Corporation
Manufacturer's Address: 426 West Duarte Road
Monrovia, CA 91016
U.S.A.

Declares that the Product

Product Name: Rapidose Multimeter
Model Number(s): RAPD - W sensor.
Product Accessories: All

Conforms to the following Product Specification:

EMC: EN55011:1998 + A1:1999 + A2:2002
CISPR 11:1997 + A1:1999 + A2:2002
EN 61674:1997 + A1:2002
PTB Requirements PTB A23.4

The product herewith complies with the RFI-emissions requirements and immunity requirements and carries the CE marking accordingly.



Ryan Robinson
QA Manager
28 April 2009

