INSTALLATION AND OPERATING INSTRUCTIONS FOR THE

DX-view

SOFTWARE

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1 DX-View Introduction

The DX-View is a PC application used to monitor and configure MiniRad-DX, Rad-DX and other DX enabled radiation detectors. The DX-View software is also used to view and download data from one or more Rad-DX radiation detectors. Using this software, you can set radiation alarm levels, view a real-time graph, download historical data and more.

1.1 Key Features

1.1.1 Software Highlights

- Self-contained system
- Easy installation
- Add and configure detectors
- View and download data
- Real-time monitoring
- 128-bit AES encryption

1.2 Products Supported

This manual supports version 416 of the DX-View software. It also supports configuration and communication with the Rad-DX radiation detector, the Mini Rad-DX handheld PRD, the DX-Link USB radio transmitter, and the Rad-DXG Portal Monitor.

1.3 Updated Features

1.3.1 Email Support

This updated manual supports sending email notification when a radiation alarm is triggered by a any of our DX radiation detectors. This support is implemented by the DX-View itself and is currently independent of the firmware version of all devices.

This feature requires the PC running the DX-View software to have an internet connection.

1.3.2 Updated Relay Switch Configuration

At the time of this manual the current released version of firmware for the Rad-DX is 192. This is the first version that supports the new configuration setup for the USB Power Relay Switch. The Rad-DX is the only device that is compatible with the Relay Switch.

1.4 DX-Dashboard

Whereas the DX-View software is a PC based application, the DX-Dashboard is the web server application and can be used to monitor and control the DX enabled radiation detectors from any smart phone, tablet, or PC. The DX-Dashboard utilizes the Dashboard Setup Tool to configure devices to connect to the DX Cloud Server. DX-Dashboard runs on either the D-tect Cloud

server or the DX Network Assistant (if installed at your facility). For more information about this software, go to www.dtectsystems.com/downloads and download the DX-Dashboard manual.

1.5 Quick Start and Installation Guides

Additional documentation, such as Getting Started and Installation Guides, is available to help you setup your software for configuring and monitoring your radiation detectors.

List of Quick Start and Installation Guides

- Mini Rad-DX Handheld Radiation Detector Quick Start Guide
- DX-View Quick Start Guide

1.6 Username and Password Credentials

In Section 2 you will be directed to our website to register and download the DX-View software. You will be assigned a Customer ID. You will need to determine your own appropriate Username and Password. Please record your username and password. For security reasons we do not have the ability to restore or recall your password if it is lost.

Under normal circumstances this is not a problem because the DX-View will remember your username and password each time you launch the program and add new devices. This can be a problem if you use a different PC that does not have your credentials.

If for some reason your password is lost, you will have to create a new account which includes resetting DX units to a factory default setting and configuring them again.

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2   DX-View Installation

The DX-View software is available for download from the D-tect Systems webpage. Please follow the steps outlined below to download this software.

1. Go to the website: https://dx.dtectsystems.com/web/registerScreen.html.
2. Complete the DX Account registration form. The registration form requests contact information as well as an Admin Name and Password that you create. Be sure to check the Download DX-View checkbox before clicking Submit.
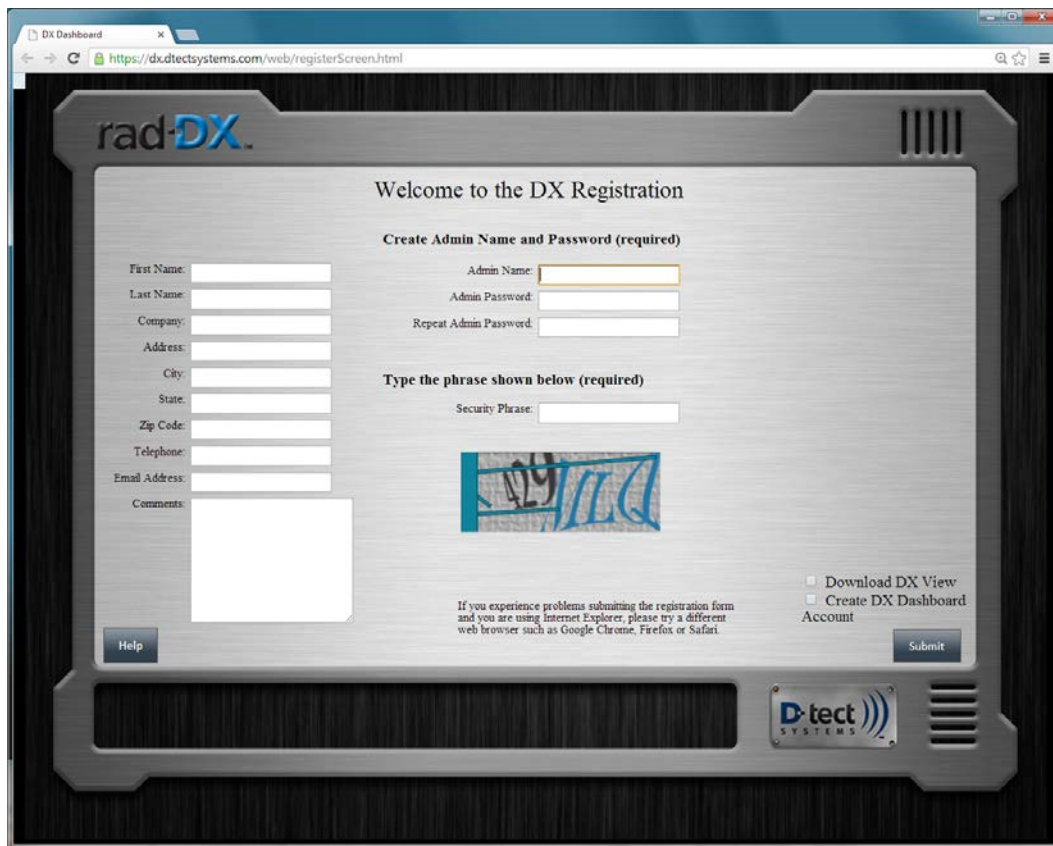

Figure 1: DX-View and DX-Dashboard Registration Page

3. An Account Confirmation email will be sent to the specified email address and contains an assigned Customer ID and confirms your Admin Name and Password. Do not lose your Admin Name or Password. D-tect Systems does not keep a record fo your Username or Password. If they are lost you will need to reset the devices to their factory default settings and create a new network with new credentials.
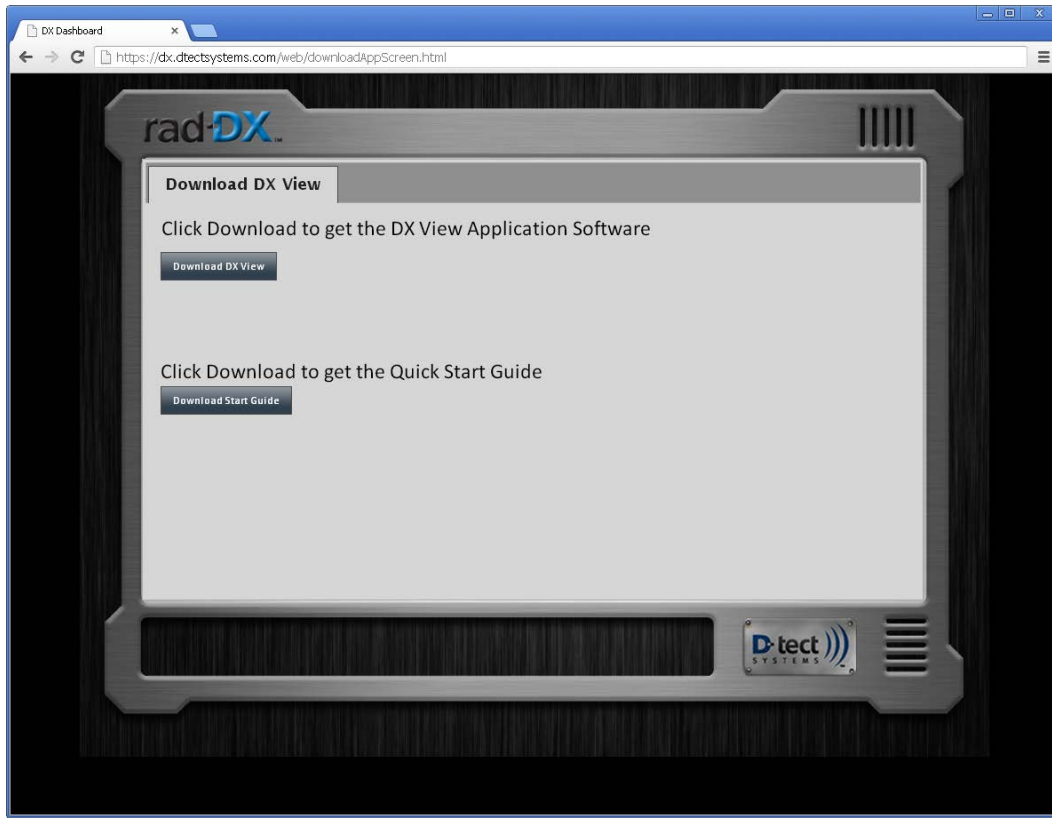4. Click the Download DX-View button.

Figure 2: DX-View Download Webpage

5. Install DX-View. Several installation windows will appear that will require you to click Next, Install, and Finish. You will also be required to accept the Software License Agreement.
6. The installer will place the DX-View icon on your desktop. Click the icon to launch the DX-View. Alternately you can navigate to the software by going clicking through the Start menu: Start > All Programs > D-tect Systems > DX-View.

Figure 3: DX-View Desktop Icon

2.1   Home Screen

The Home screen is the first screen displayed when DX-View is opened. The Home screen can show a map or a blueprint and save and display the specified location of your devices.
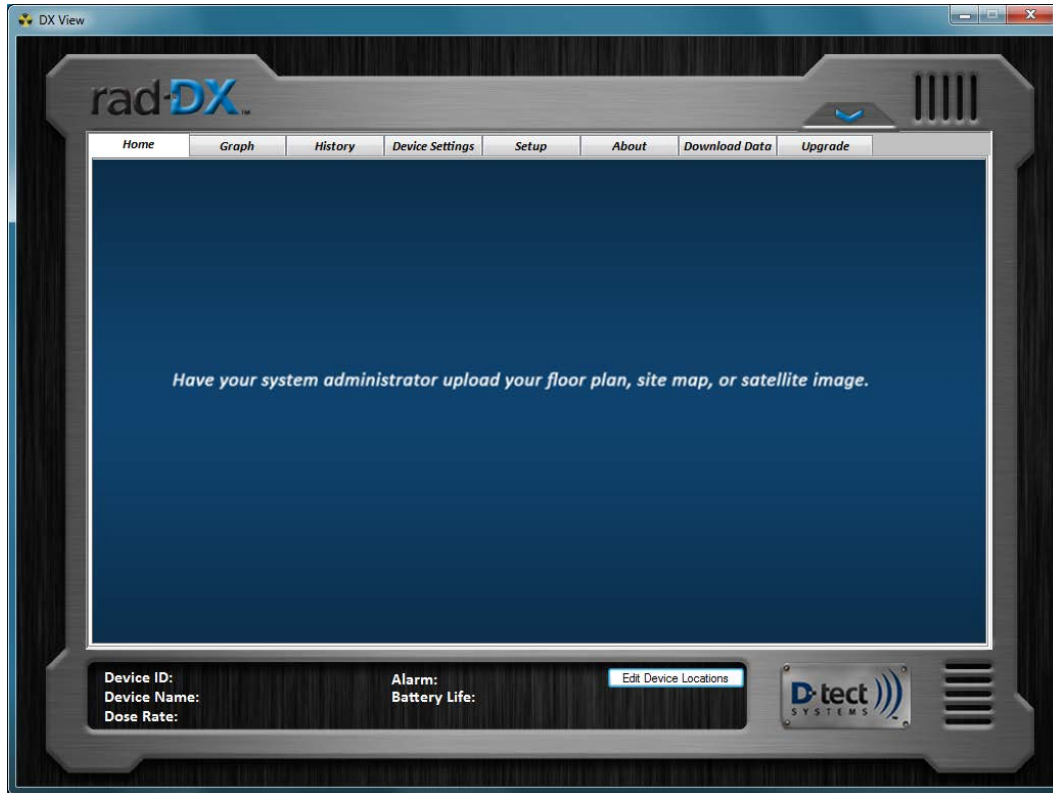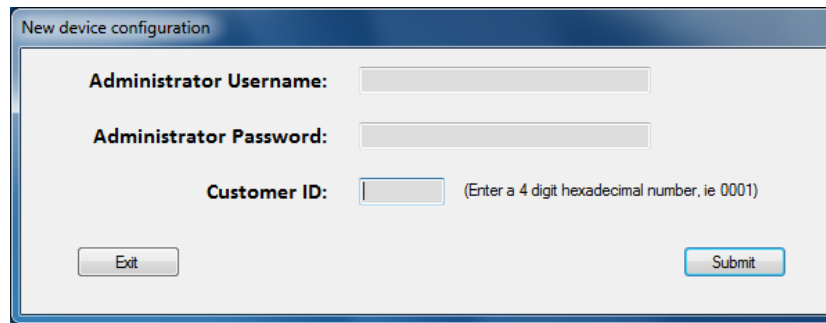

Figure 4: DX-View Home Screen

2.1.1   DX-View Initial Setup

1. Turn on device. Once the device has powered up, connect it to your computer via the USB cable. For a DX-Link USB radio transmitter, plug it directly into the USB port on your computer.
2. After a few moments, the "New device configuration" popup window will appear. You are now creating a secure network for your devices. Please record the username and password. If these are lost, the network will have to be recreated.

Figure 5: New Device Configuration Window

3. After entering the login credentials, an icon corresponding with the device type will appear on the Home screen after a few moments.
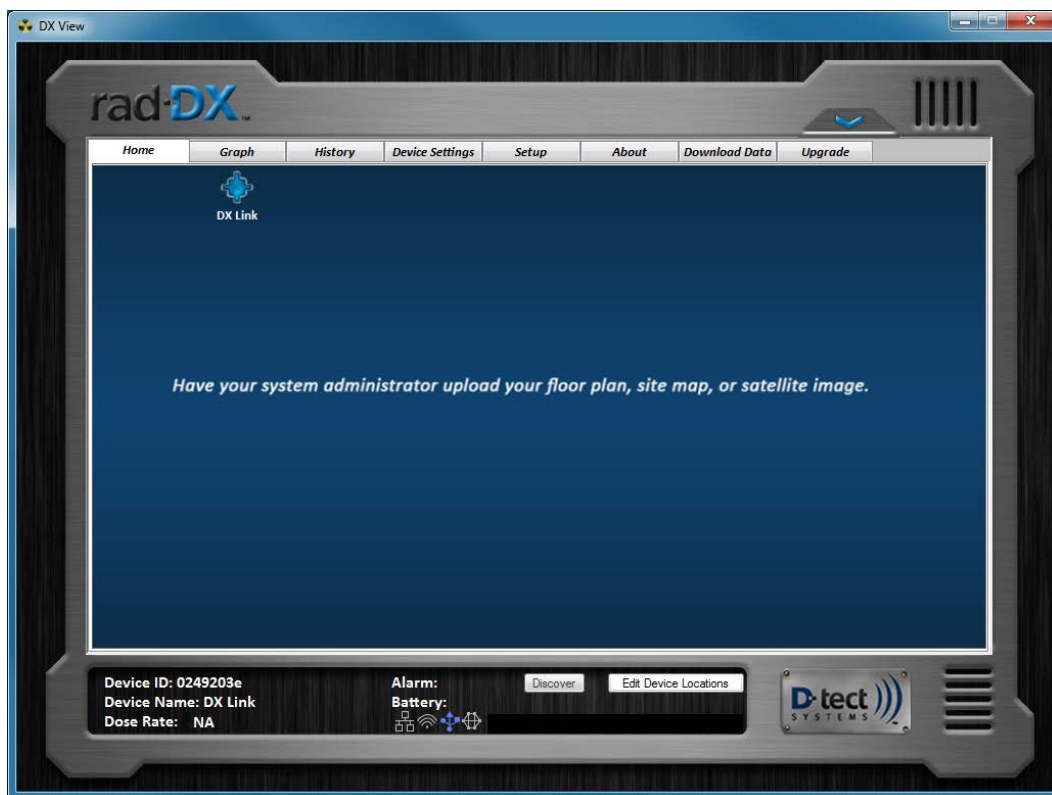

Figure 6: DX-View Home Screen with One DX-Link Icon

4. When the icon on the Home screen is clicked, the bottom window will populate with attributes specific to the selected detector such as Device ID, Device Name, Dose Rate, Alarm Level, and Battery Life if applicable.

2.1.2 Adding Devices to the Network

Once a network has been created with DX-View, additional devices can easily be added in two ways:

1. Using the USB cable, plug each device into the PC running DX-View. A window will pop up asking if you would like the new device to be joined to the existing network.

2. Make sure the new devices are turned on and press the Discover button at the bottom of the DX View screen. DX View will search the area for devices that have factory default settings (i.e. are not joined to any network) and will ask if you want them added to the network. Depending on how many devices are being added, you may need to hit the discover button several times.

2.1.3 Home Screen Attributes

To see a summary of all detectors, click the [button] button found in the top right portion of the Home screen. Devices currently communicating with DX-View and devices previously connected to your network will show up in the list.
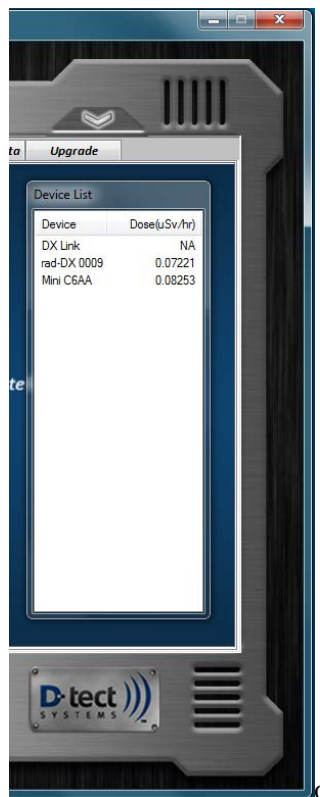

Figure 7: DX-View Device List

During normal operation, each device icon will appear blue. The color of the icon indicates the status of that particular detector. Blue means the DX-View software on the computer is communicating with the device; orange means the device is detecting gamma radiation above the minimum alarm threshold. Gray means the device is no longer has a communication path to your PC.

Normal (non-alarming) device	Alarming device	Non-operational or disconnected device

Table 1: Device Icon Colors

Each device type in the DX family has a different icon in DX-View. The icons are defined as follows:

Rad-DX icon	MiniRad-DX icon	DX-Link icon	Portal Monitor icon

Table 2: Device Icon Types

2.1.4 Device Location

The device icons are locked in place by default. To adjust the locations of the devices, click the "Edit Device Locations" button. You can then click and drag icons to the desired location. When you are done with placement, click the "Save Device Locations" button.

Figure 8: Device Location

Note: You will need to click on a device icon on the Home screen before you can view the Graph, History, Device Settings, Download Data, and Upgrade tabs.

2.2 Graph Screen

The Graph screen shows the real-time dose rate (including background radiation) in a 6 minute or 30 minute window. You can change between display ranges by clicking on the "6 min" drop-down box located in the bottom right corner of the screen. You can change between units of measurement by clicking the listed units at the top of the screen.
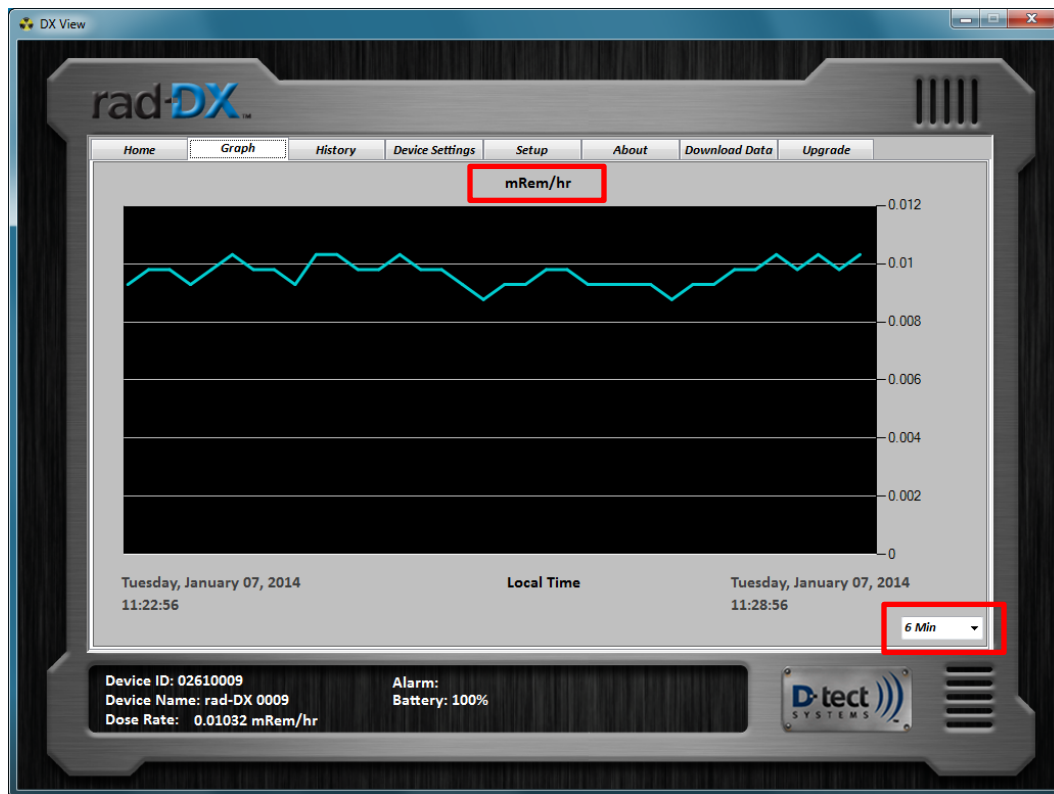
Figure 9: DX-View Graph Screen

2.3 History Screen

The History screen allows you to view a historical graph by selecting a Begin Time and End Time, then pressing Plot.

You may also view a particular point on the graph for specific information relating to that time frame. To do this, click on the blue graph line for the date, time, and dose rate. This information will appear in red in the bottom part of the graph window.
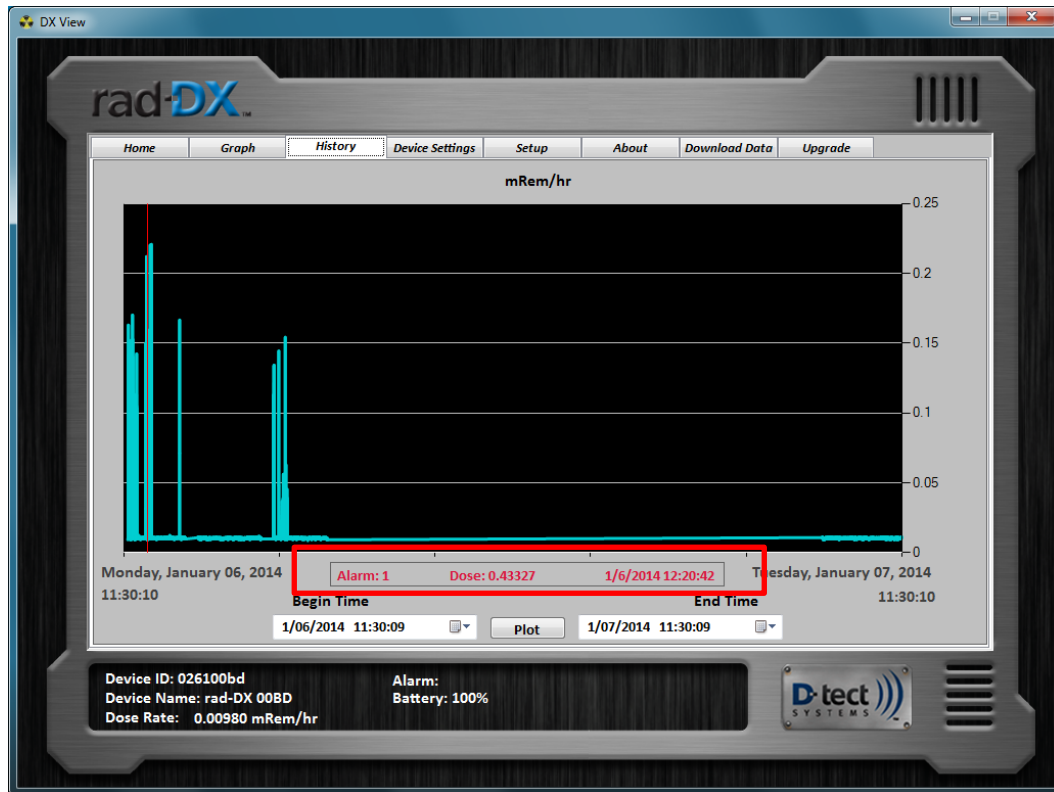

Figure 10: DX-View History Screen

2.4 Device Settings Screen

The Device Settings screen sets or changes specific device settings such as device LCD display settings, alarm levels and communication settings. Any of these settings can be saved to the device by clicking the Submit button. The firmware update tool is also located under this tab.

2.4.1 Device Settings: Configuration

The Configuration tab in Device Settings shows a list of items that can be changed on each device. Settings that do not apply to the selected device will be grayed out. Possible changes include settings for the LCD screen of the Rad-DX. Other options include Device Name, Radiation Unit type, and the time frame of the Graph Window. The Graph Window can be set to a 1 minute, 6 minute, or 30 minute interval for Rad-DX units.

2.4.2 General Settings

Select the appropriate time zone by clicking on the Time Zone drop-down box and selecting Daylight Savings time if necessary. The selected device can also be reset to default values using the Restore to Factory Defaults button in the upper right corner of the screen. Please note if a device is restored to factory setting, it will need to be configured again with the network Username and Password.

The Radiation section programs the device to alarm at four different levels based on the radiation activity level set. This can be set in either μSv/hr or mRem/hr based on the radio button selection.

Background Filter Time sets the background radiation level averaging time. Change the Background Filter Time of the device by clicking on the drop-down box and selecting a different level. Changing the Background Filter impacts how often the dose rate changes on the LCD screen. A long integration time will make the displayed data change more slowly and less often.

2.4.3 Rad-DX LCD Display Settings

The LCD Display section allows for the selection of screens that are visible on the LCD display of the selected Rad-DX by checking or unchecking the Clock, Dose Rate, and Graph boxes. The device's audio alarm can be toggled on and off by selecting Disable or Enable. Selecting Disable in Touch Screen section disables the touch screen functionality on the LCD display on the device.

The Trigger Relay section is only applicable when the Rad-DX is connected by USB to the 4-Channel USB relay module. The Sensor Failure option initiates a relay based on the failure of the PMT detector inside the device. For more information about the USB relay module, please contact your distributor.

Figure 11: DX-View Device Settings: Configuration Screen

Mini Rad-DX Display Settings

The Configuration screen for the Mini Rad-DX is slightly different than other devices because it has the ability to display the dose reading or the 1-9 scale on the top OLED screen of the Mini Rad-DX as well as the ability to track the accumulated dosage.

Click the "Display alarm level on top screen" to display the 1-9 scale and press submit, or leave it unchecked to display the dose readings. Use the text boxes to customize the alarm levels for each device.
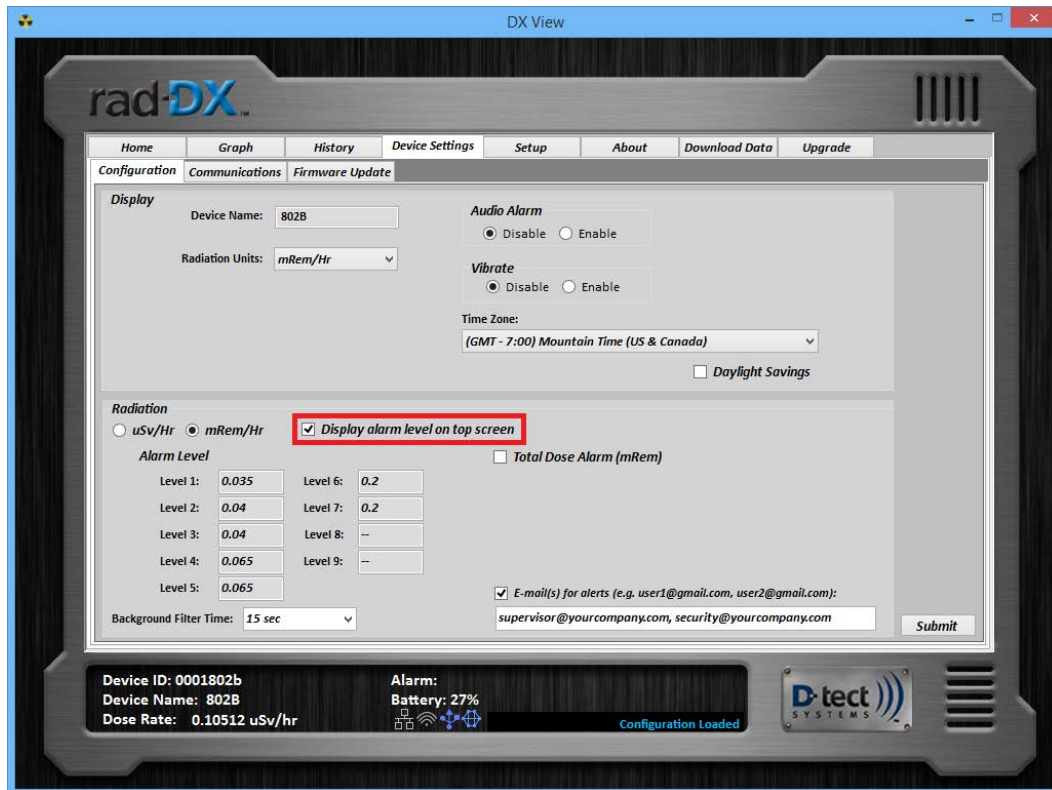

Figure 12: Device Configuration: Mini Rad-DX

Click the "Total Dose Alarm" and click submit to enable accumulative dosage tracking or leave it unchecked to keep it disabled. Use the text boxes to customize the alarm levels for each device.
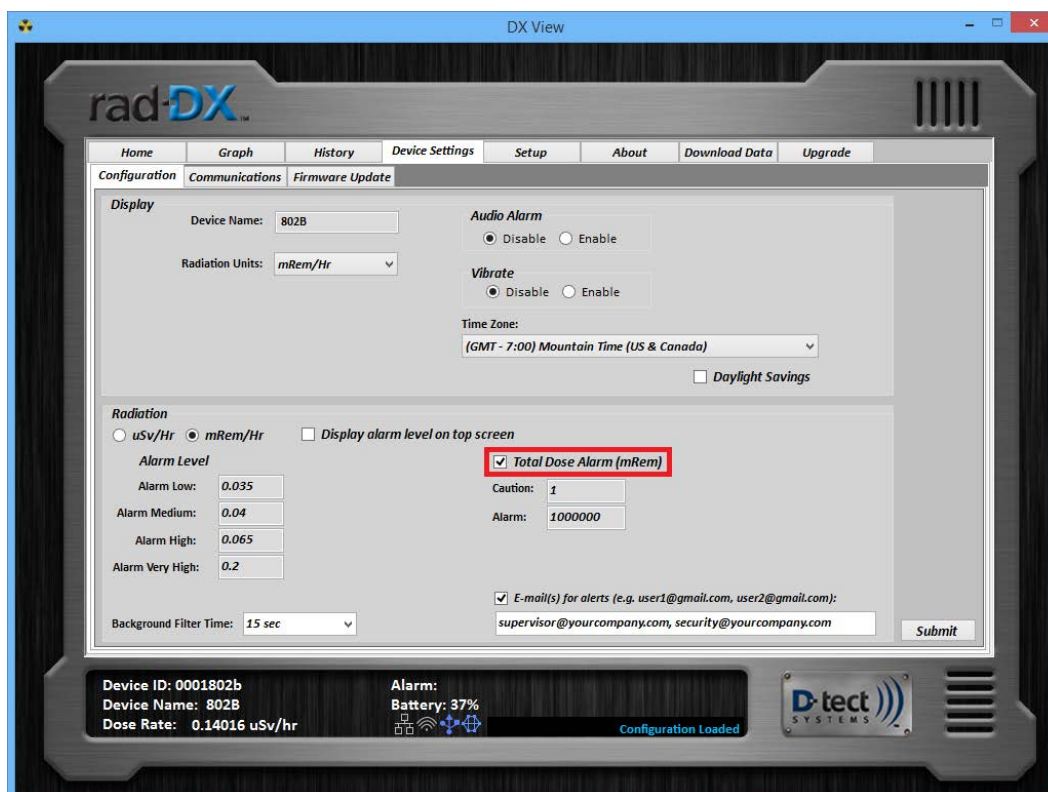
Figure 13: Mini Rad-DX Total Dose Alarm

Both the Alarm levels and the Total Dose Alarm levels can be active at one time.
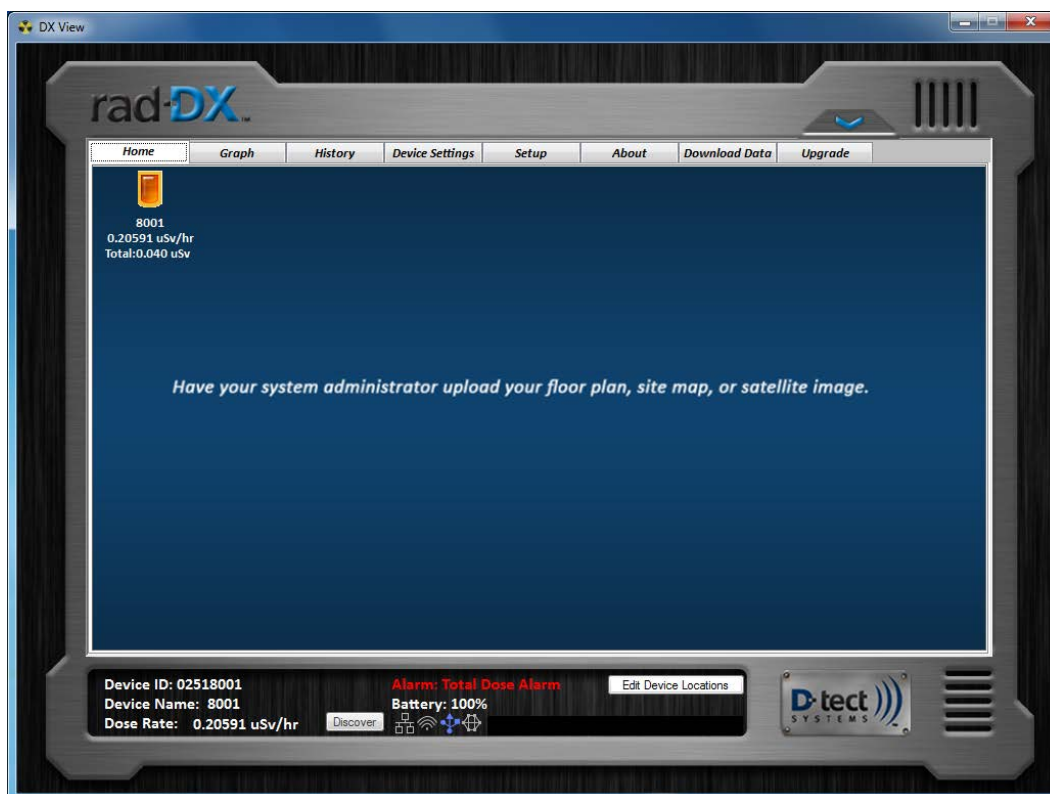
Figure 14: Mini Rad-DX Total Dose Alarm on Home Screen

The above figure shows the Total Dose Alarm on a Mini Rad-DX when communicating with the DX-View via the USB cable or the wireless D-tect SensorNet (mesh). The device icon on the Home screen will not stop flashing orange until the Total Dose is reset manually on the device.

2.4.4 Display Settings: Communications

The Communications tab in Device Settings configures the SensorNet Mesh channel for each device, which can be enabled or disabled for the selected device. The channel (frequency) that the SensorNet network operates on can also be changed here. If the channel is changed on one device, then all other devices will need to be changed to the same channel to be able to communicate with each other on the SensorNet network.
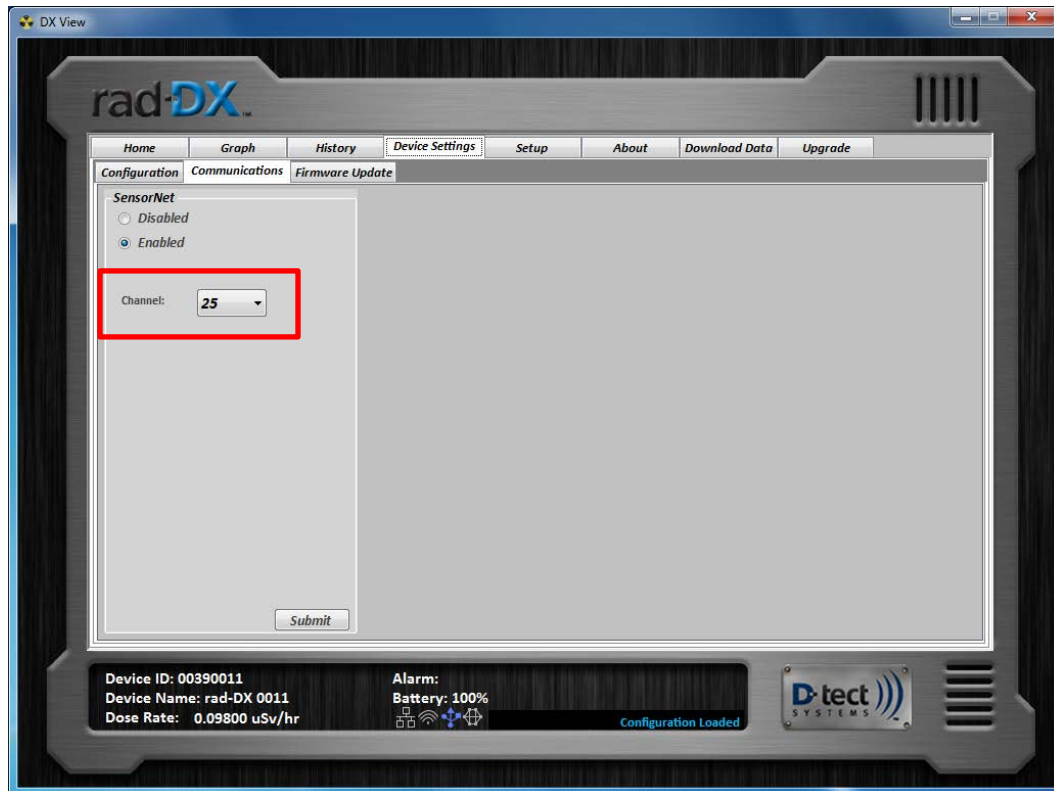

Figure 15: DX-View Device Settings: Communications Screen

2.4.5 Display Settings: Firmware Update

As new firmware versions become available, you will be notified and given instructions to upload a new or updated firmware version to your device. Save the included firmware version in a convenient location. Select the device to be updated, locate the firmware file using the Browse feature, and press submit to update. The update may take several minutes.
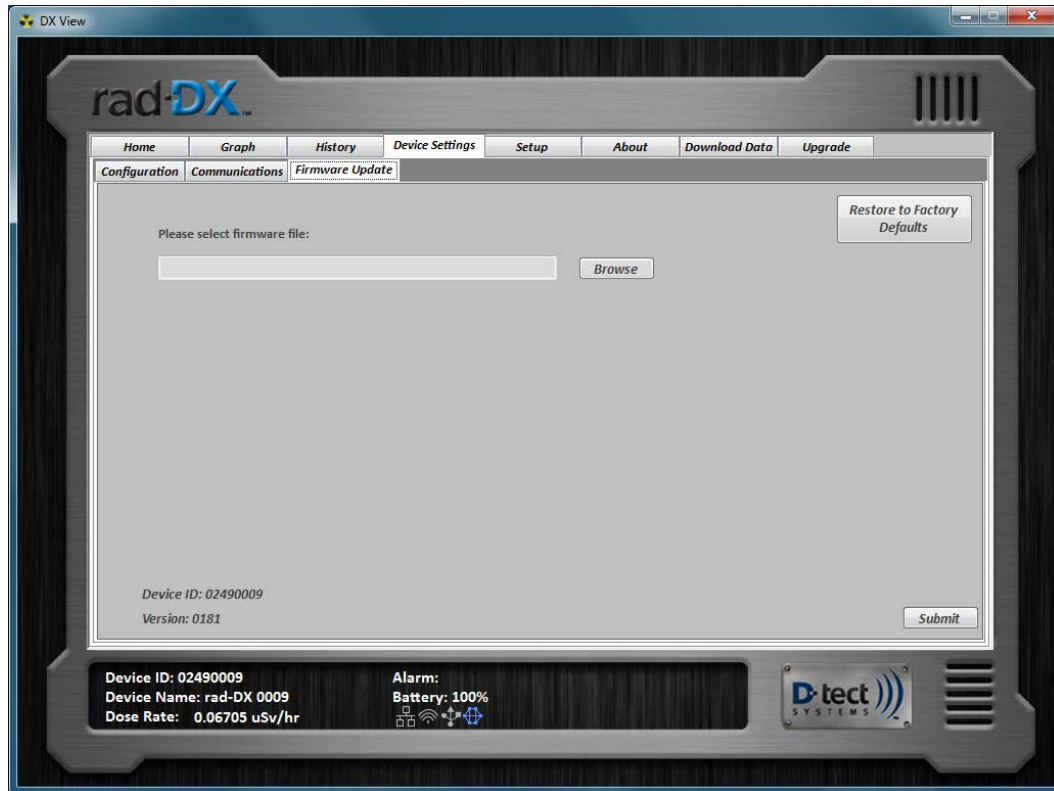

Figure 16: DX-View Device Settings: Firmware Update Screen

2.5 Setup Screen

In the top section of the Setup screen are the Display Settings. The Radiation Units setting changes the units displayed on the Home screen. The background image setting uploads a map or floor plan to the Home screen background. The Home screen Device Color button changes the font color of the characters displayed on the Home screen. The Enable PC Audio Alarm enables an audio alarm to occur when there is a radiation alert. These settings do not require you to press the Submit button. These settings automatically get updated when something is changed.

The bottom section displays the Account Settings such as Administrator Username and Password, and Customer ID. This information is populated from the pop-up window that appears when the software is first launched. These settings can only be changed when a device is connected via USB cable.
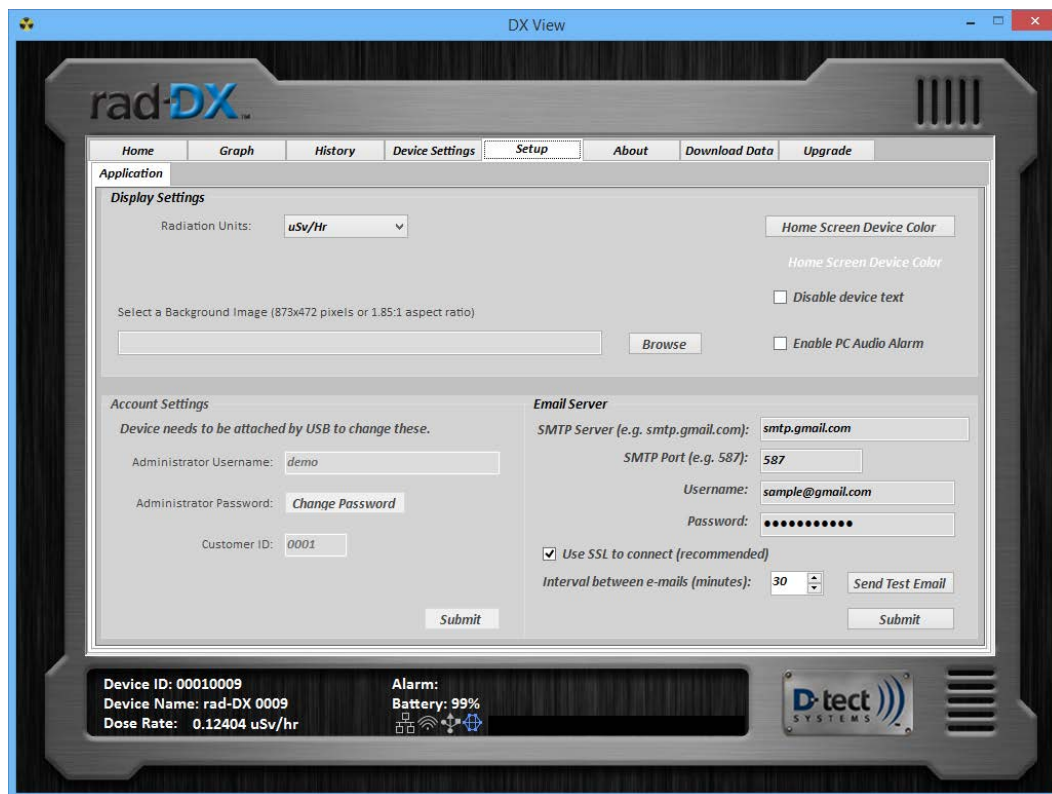

Figure 17: DX-View Setup Screen

2.5.1 Email Setup

On the Setup tab, there is a section to configure email settings to send email or SMS (if supported by the mobile carrier) messages in the event of a radiation alarm.

2.5.1.1 Setup Email Configuration

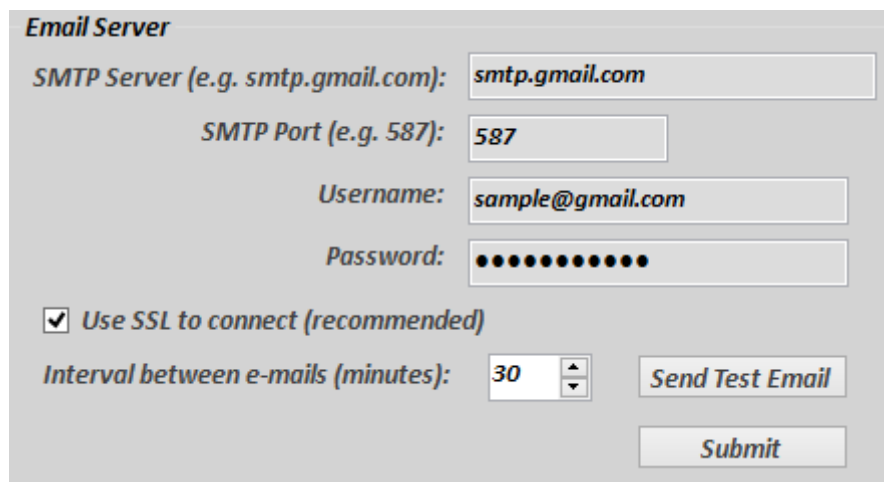| Quick Step-by-Step Email Configuration |
|---|
| 1. Enter the SMTP Server and Port information
2. Enter the Username (Email Address) and Password (for that email account)
3. Check the SSL box (optional, provides better security)
4. Select desired email interval.
5. Send Test email and verify that it arrived properly.
6. Click Submit.
7. Add destination email addresses. This is done in the Device Settings: Configuration tab for each device. |

Table 3: Email Quick Setup Guide

Figure 18: Email Server Setup

Figure 18 shows a sample setup for an email configuration. This will allow the DX-View software to login to the email account and use it to send alerts to the addresses specified for each device in its separate device setting page. The configuration shown in the example above is a valid example for a Gmail account. Replacing the username and password with those from the desired Gmail account and using the other configurations as shown will allow DX-View to send an email from that Gmail account.
Some email servers (Gmail included) require additional settings made from the standard email client to allow other programs to send emails through the account.

The SSL setting makes the DX-View encrypt the communication between itself and the email server to ensure the security of that account.

The DX-View supports the ability to send multiple emails over the course of a single alarm. The interval feature limits the amount of emails that the DX-View will send over the course of that alarm. The default setting is 30 minutes. You may want to reduce that time depending on how often you want to be notified during the course of a single alarm. If an alarm increases in intensity, the DX-View will send a new email regardless of the setting here.

Email Domain	SMTP Server	SMTP Port
Gmail.com	smtp.gmail.com	587
Yahoo.com	smtp.mail.yahoo.com	465
Hotmail.com	smtp.live.com	465
Outlook.com	smtp.live.com	587
Comcast.net	smtp.comcast.net	587
For additional email domains contact your network administrator.		

Figure 19: SMTP settings for common email domains

Figure 19 shows settings for four popular email domains. Other domains can be found online and private email servers can be configured by the network administrator.

Once the email configuration is set up, press the Send Test Email button to send a test email.

After you have successfully received a test email, press the Submit button.

Ensure that the email is successfully sent before moving on in the system configuration. Leaving an improperly configured email account active can cause communication problems with the software and each of the Rad-DX detectors.

Now that the email server is configured, each device needs to be configured to set which email addresses to send the alarm notification emails to.
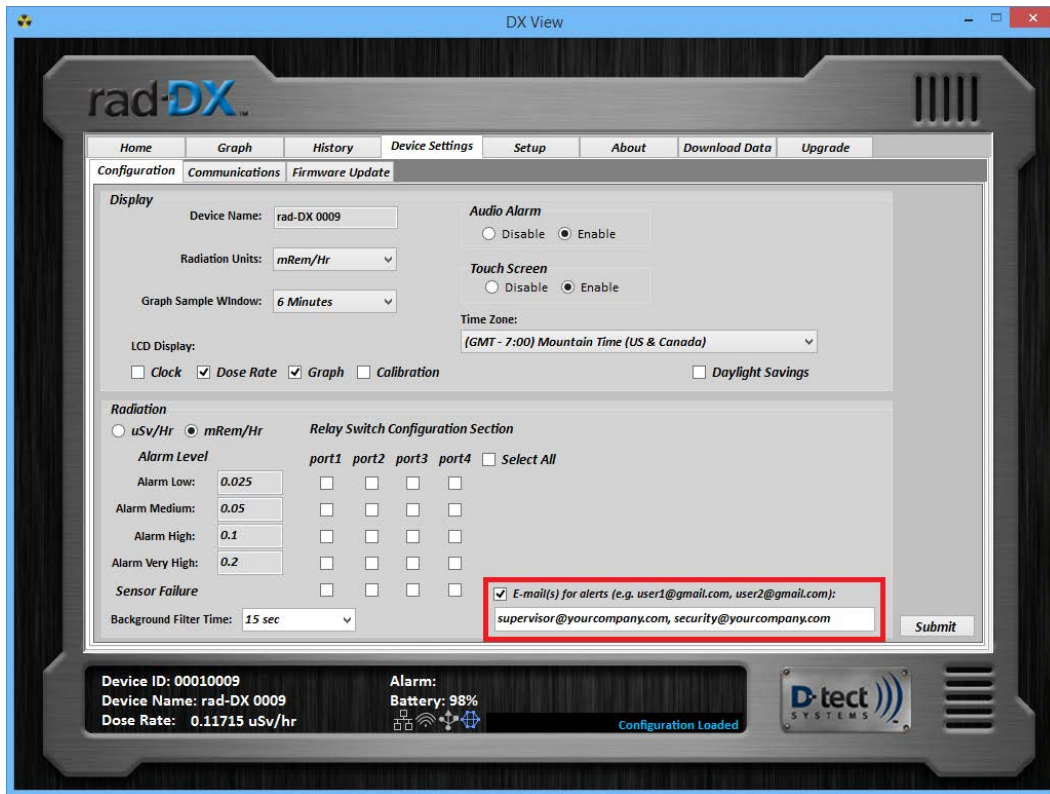
2.5.1.2 Adding Email Addresses to Each Device

Figure 20: Target Email Address Configuration

Once the email server has been setup, each device can be configured to notify different combinations of email addresses. Figure 20 shows where to enter the email addresses separated by commas. The DX-view also supports SMS messaging to phones using the proper domain for each carrier. The domains for some popular mobile carriers are included in Figure 21. The format for these addresses is 10-digit-number@domain (i.e. 8009991234@vtext.com).

Mobile Carrier	SMS Email Domain
Verizon	vtext.com
AT&T	txt.att.net
T-Mobile	tmomail.net
Sprint	messaging.sprintpcs.com

Figure 21: Mobile Carrier Domains

2.6 About Screen

The "About" screen displays the current DX-View version as well as contact information for technical support.
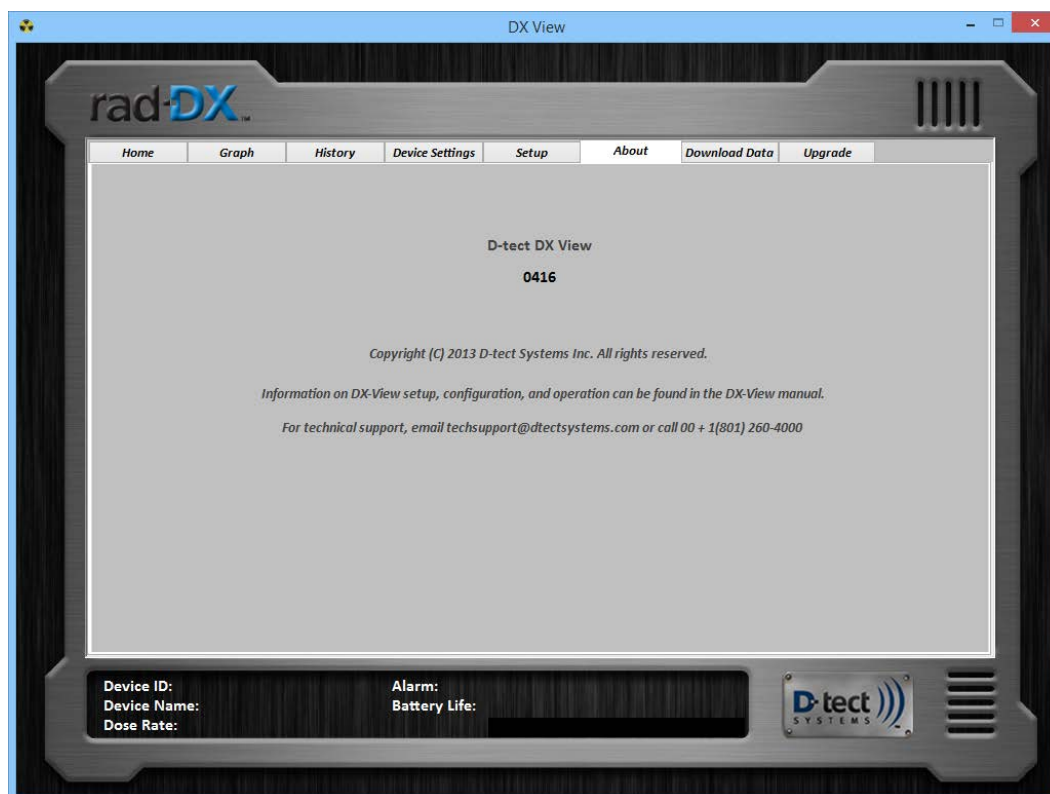

Figure 22: DX-View About Screen

2.7 Download Data Screen

Download a specific timeframe of data to a Microsoft Excel spreadsheet for further analysis in the Download Data screen. Choose which detectors to include, select a Start Time and End Time, select the Time Zone, and select if you want all data or just Alarmed Events by selecting Show Alarm Events Only, then press Download.

An Excel document will automatically be created with the data collected within that timeframe.
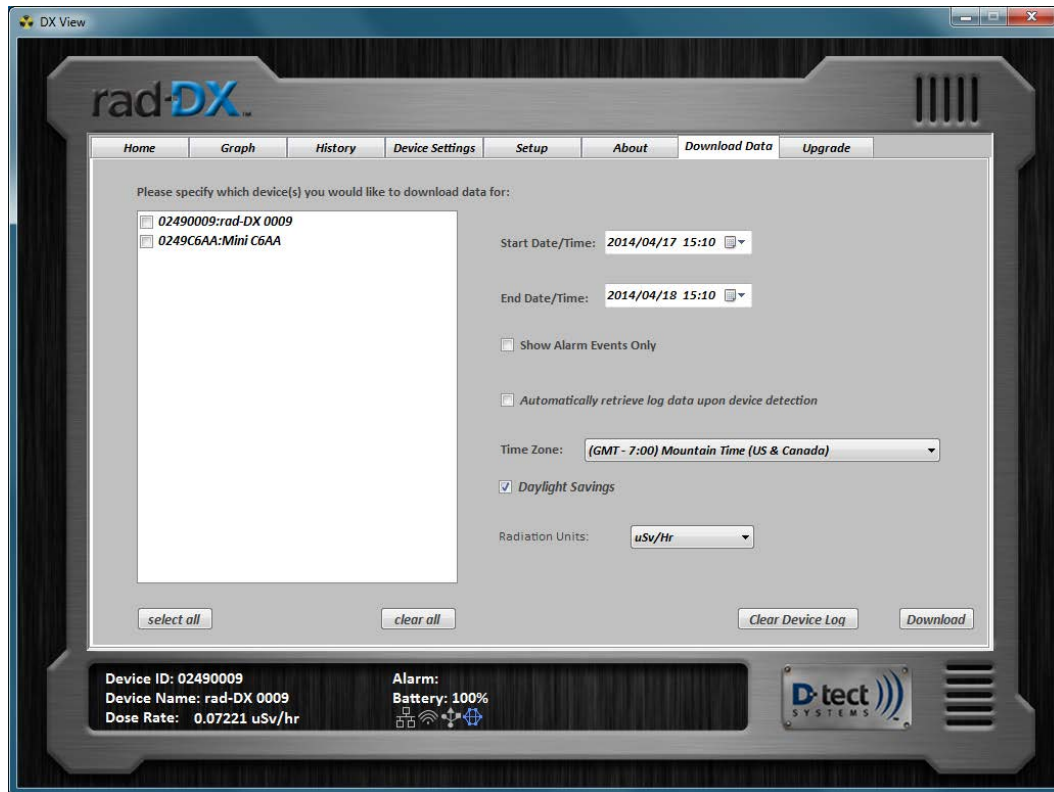

Figure 23: DX-View Download Data Screen

2.8 Upgrade Screen

The Upgrade screen allows you to select the appropriate firmware update file for each device type, and then click Upgrade to start an OTA (over the air) or mass update for all selected devices communicating over the SensorNet mesh network. Note that updating a large number of devices (10+) through the mesh network can take several hours.
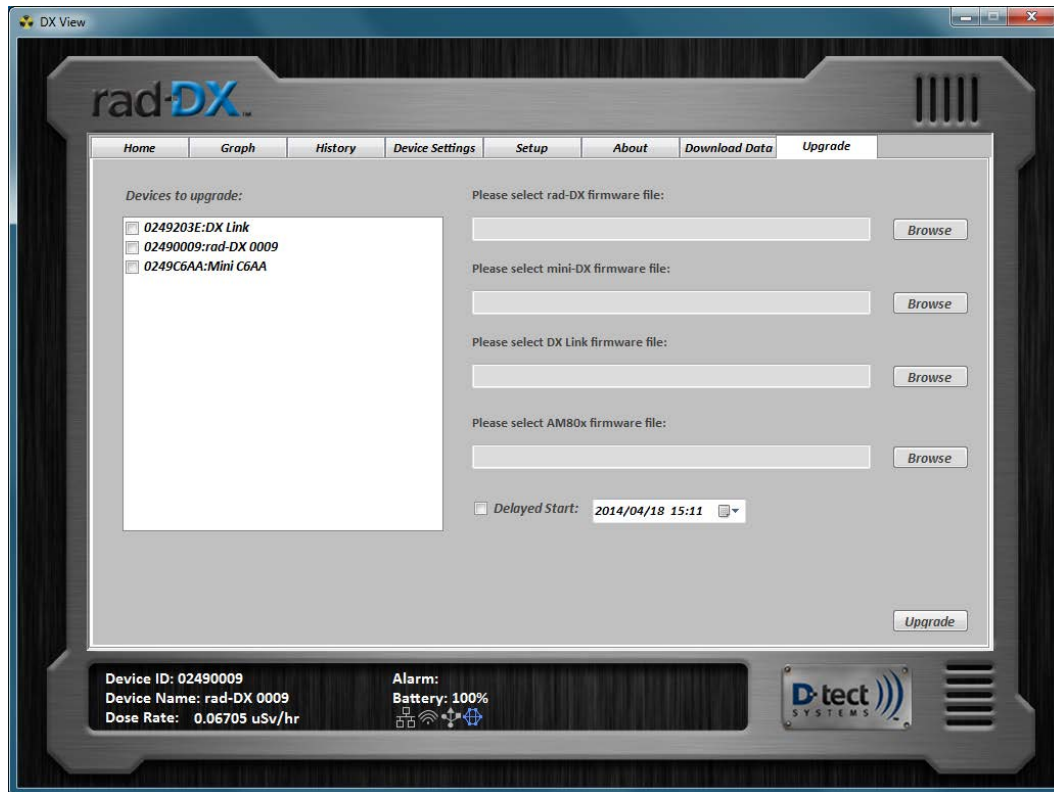

Figure 24: DX-View Upgrade Screen

3   Software Usage Statement

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (http://www.openssl.org/)

4   Technical Support

For any technical questions you are encouraged to contact your distributor, or you may also contact us directly.

Phone: 801-260-4000

Email: techsupport@dtectsystems.com