



DATREND  
Systems Inc.

# **vPad-AIMS<sup>TM</sup>**

**AIMS Interface App  
for vPad Safety Analyzers**

Operating Manual



**vPad-AIMS™**  
*AIMS Interface App  
for vPad Safety Analyzers*  
Operating Manual

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© 2016-2019 Datrend Systems Inc.  
Unit 130 - 4020 Viking Way  
Richmond, BC • CANADA • V6V 2L4  
Tel: 800.667.6557 (North America Only) or  
604.291.7747 • Fax 604.294.2355  
e-mail: [customerservice@datrend.com](mailto:customerservice@datrend.com)





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A	Initial release	2016-Jan-20
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# 1 Overview

vPad-AIMS™ is a software application (App) which may be installed on vPad-EST™, vPad-353™ and vPad-623™ electrical safety analyzers, and which may be used to automate preventative maintenance (PM) inspections, performance testing and other types of service performed on medical equipment, when used in conjunction with the AIMS® CMMS system from Phoenix Data Systems. vPad-AIMS is one component of a suite of Apps that enables bidirectional interface between the vPad platform and Computerized Maintenance Management Software (CMMS) systems.

## 1.1 CMMS and Checklists

A CMMS program is a software application which is used for managing equipment inventory, service activities and technical personnel. AIMS®, EQ2 HEMS, Four Rivers® TMS, MediMizer and St. Croix Systems are examples of enterprise-level CMMS which are specifically designed for use in management of medical and other equipment in a clinical setting.

CMMS systems enable automation of equipment inspection and maintenance tasks through computer-generated **Checklists**. A Checklist may include inspection check points and tests which are specific to a type of device, and which are performed in a specific order according to device or manufacturer requirements.

Some CMMS systems can export their Checklist procedures to a legacy biomedical testing device which is known as the "**medTester**". The vPad-mT App enables medTester Checklists and equipment information provided by the CMMS to be used with the vPad system, enabling vPad safety analyzers to emulate behaviour and testing features of the medTester in executing a maintenance Checklist.

## 1.2 vPad Automation Suite

vPad-mT is one component of a suite of Apps for CMMS-driven equipment maintenance and inspection. The Apps work together to provide a "closed loop" automation solution which starts with CMMS preventive maintenance schedules and/or work orders, proceeds through testing and inspection performed with the vPad platform, and ends with the return of vPad test results to the CMMS; which then enables work orders to be closed. The vPad automation solution is "plug-and-play", requiring little if any changes to a CMMS currently working with a legacy medTester or possibly with other vintage test equipment.

Apps comprising the vPad automation suite are:



CMX™ is a software application for Microsoft® Windows® which is used as a bridge between some CMMS programs and Datrend products such as vPad-ES and vPad-353. CMX verifies medTester export files and equipment information generated by the CMMS, so that the CMMS files contain no data errors that could cause problems when used on the vPad platform. CMX is also used to transfer medTester export files, or "**MTEXPORT**" files, and equipment information to the Android tablet via USB flash drive or Bluetooth.

More information on CMX may be found in *MN-083 6100-048 CMX Operator's Manual*. Note this and other operator manuals for the vPad automation suite are provided on the Android tablet, and may be viewed with the **Datrend Docs App**



which is on the Home screen.

Note that CMX is not required for use with vPad-AIMS.



The purpose of vPad-mT is to enable the user to browse or search medTester Checklists and equipment ID's which have been provided to the Android tablet through the CMX software, or via CMMS specific tools such as vPad-AIMS, normally as part of a scheduled PM program. When an ID or a Checklist is selected, vPad-mT converts the Checklist from medTester to vPad format and then passes the Checklist to the vPad-Check App for execution. From a user's point of view, the automatic transition from vPad-mT to vPad-Check is seamless so that the two Apps appear to work as a single program.

**vPad-Check**



With vPad-Check™, the user will perform the medTester Checklist which has been prepared by vPad-mT.

As is done with a medTester, the user will step through the maintenance procedure on the vPad one step at a time, pausing to read instructions, inspect items, and enter data as required by the procedure. Electrical safety tests and device-specific performance tests may also be executed during the procedure. At the end of the Checklist, a Test Record is saved and an inspection label may be optionally printed, which is then applied to the equipment under service. Execution then returns automatically to the main menu of vPad-mT, enabling the user to select another equipment ID or Checklist.

More information on this App may be found in ***MN-084 6100-049 vPad-Check Operator's Manual*** on the tablet.

Note that vPad-Check is not in control of the contents of the Checklist when running from vPad-mT. The Checklists are provided by the CMMS vendor, and the Autosequences are a component of vPad-mT.

**vPad-AS**



One or more steps of a medTester Checklist may require electrical safety testing, and if so, such testing is handled by the vPad-AS™ or vPad-NFPA™ App which is called automatically when needed by vPad-Check.

**vPad-NFPA**



For compatibility with CMMS and medTesters currently in use, vPad-AS has pre-defined AutoSequence setups that match the factory-default safety tests "A1" through "A17" of the legacy medTester. If necessary, the settings of a vPad safety test can be temporarily modified at Checklist runtime. Alternatively, any required changes to the factory default tests "A1" to "A17" can be made with the test editor of the vPad-AS App and then saved by that App for later use. More information on this App may be found in ***MN-079 6100-045 vPad-AS Operator's Manual*** on the tablet. vPad-NFPA also provides preset safety sequences similar to vPad-AS.


**vPad-AIMS**



vPad-AIMS™ communicates with the AIMS CMMS directly to get the necessary files to create the PM schedules and to update workorders and equipment information. Communication is accomplished via an Internet connection to the AIMS database.



## 2 Installation

The vPad-AIMS App is normally pre-installed on the vPad tablet, but the icon for the App may not have been placed on the Home screen .

Go to the Apps screen by pressing the Apps icon  in the upper right corner of the Home screen. Find the vPad-AIMS icon and press and hold the icon for a few seconds. You will then be able drag and drop the icon onto the Home screen.

In order to use the App it will need to be activated. When the App is started for the first time, the activation screen will be presented. Enter the activation code provided by your dealer to allow the App to run.

In the event that vPad-AIMS is not on the tablet, contact your dealer and an installation package for the app will be provided via download.

Vpad-AIMS also has several other important Setup parameters and tablet Settings to initialize before using for the first time. First, go to the tablet Settings, turn on the WiFi and connect to a suitable network with Internet access. Second, start the vPad-AIMS app and open the Settings dialog box. Enter the Host URL and Client ID for the AIMS database with which you wish to work (contact your AIMS dealer for assistance). If you are initializing more than one tablet, you can use the Import/Export feature in Settings. Finally, enter in one or more Facilities that exist within your AIMS database. All of these steps must be completed before you can access information from or send information to your AIMS database.

In order to use vPad-AIMS; vPad-mT, vPad-Check and vPad-AS(or NFPA) Apps must also be installed and activated.


**Note:** After setting up the connection to AIMS and downloading the first set of files, vPad-AIMS is normally entered from vPad-mT. Start the vPad-mT and run tests, as desired. Press the 'Launch vPad-AIMS' button on the vPad-mT screen to enter vPad-AIMS and transfer files.



## 3 Operation

This chapter covers operation of the vPad-AIMS App and Checklist execution.

### 3.1 Startup

Press the vPad-AIMS icon  to start the App. A splash screen will display the product name and the software version.



*Figure 1 - vPad-AIMS startup screen.*



## 3.2 Main Menu

Following a successful start-up, vPad-AIMS will display the main menu of the App:




*Figure 2 - Main menu of vPad-AIMS, showing Test Records.*

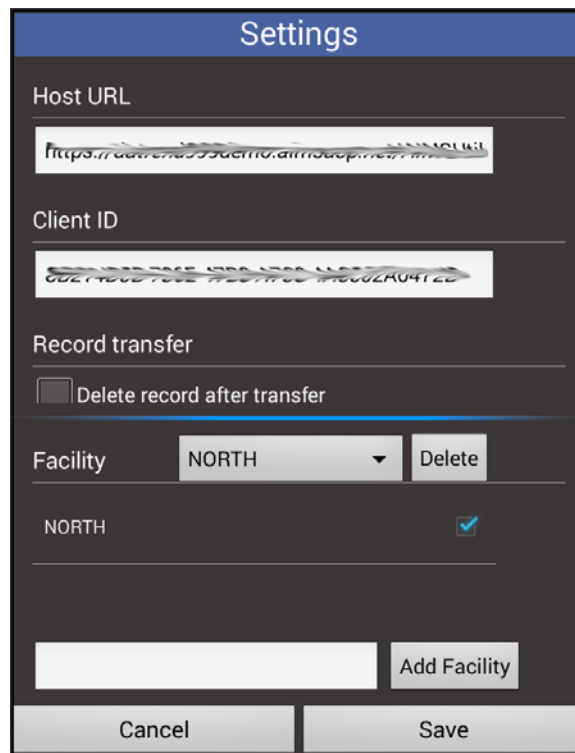
Test Reports from previously completed tests performed using vPad-mT will appear in the scrollable list (ListView) on the screen, as shown above.

To return to the Android Home screen, press the  icon on the navigation bar. Note this will only pause the App temporarily and will not actually terminate or close vPad-AIMS. To fully close the App, press the **"Exit"** button or alternatively the Android **"BACK"** navigation button  when viewing the main menu.



### 3.3 Setup for communication with AIMS

The Settings icon, , is located in the upper right of the screen, on the title bar. Touch on the Settings icon to display the Settings Menu, as indicated below. In order to communicate with the correct database, the Host URL and the Client ID for the end user AIMS program must be entered. Contact your AIMS representative for assistance if you need help with this information.

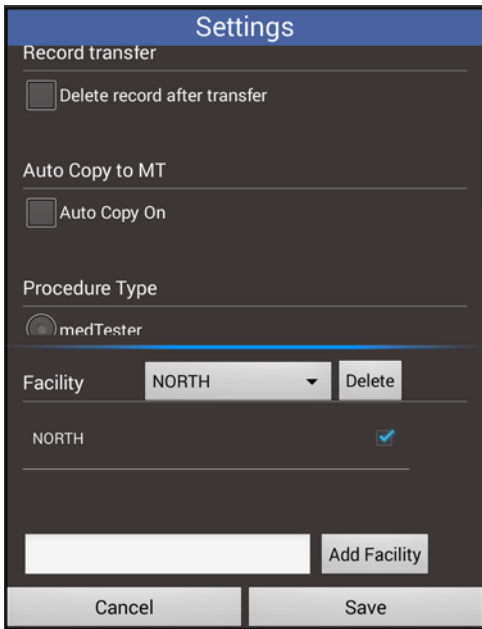


*Figure 3 - Settings menu of vPad-AIMS.*

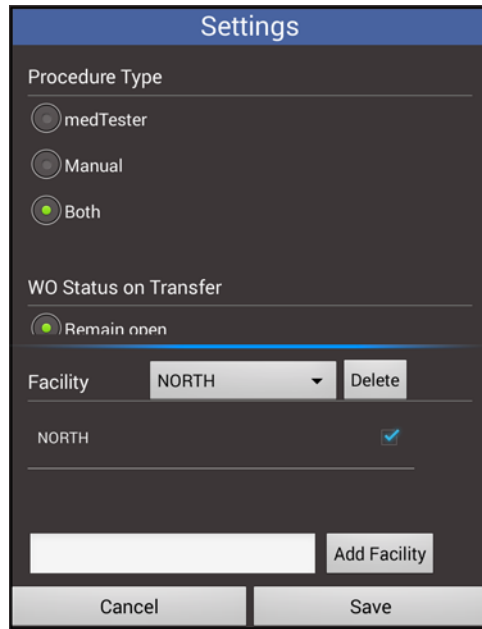
If you wish to delete the Test Records after they have been sent to AIMS, check the **Record Transfer/Delete record after transfer** box. If you do not delete the Test Record(s), they will be marked as transferred by the ‘cloud’ icon to the left of the filename.

Once Data has been downloaded from the AIMS server, it can be manually copied to the vPad-mT folder for use, by touching on the **Copy Files to vPad-MT** button. This can be automated by enabling the **Auto Copy On** option in the **Settings**.

**AIMS Checklists** can be identified as Manual or medTester type. When **Data** is downloaded, this option allows the selection of medTester type, Manual type, or both.

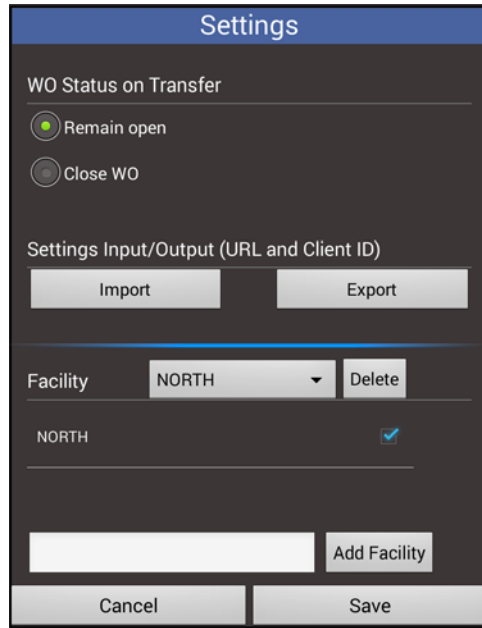


*Figure 4 - Settings menu 2 of vPad-AIMS.*



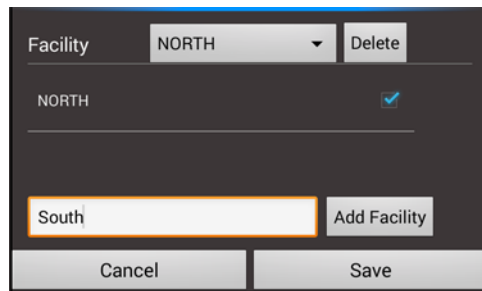
*Figure 5 - Settings menu 3 of vPad-AIMS.*

When a work order is completed, the test record can be returned to **AIMS** with the **Status** left as **Open**, or the **Status** can be changed to **Closed**. Note that once the **Status** is closed, it can not be re-opened by the vPad-AIMS app. If you have some work orders that need to be closed and some that need to be left open, select and save the appropriate **Status**. Select the test reports that match this **Status** requirement and **Transfer** them back to **AIMS**. Then, change the **Status** and **Transfer** the remaining test reports. If you do use both **Status** states, be sure to check the setting before beginning your **Transfers**.



*Figure 6 - Settings menu 4 of vPad-AIMS.*

If you are setting up more than one tablet, the URL and ID can be **Exported** to a file called AIMS\_Preferences.xml, which can be found in the Datrend\Database folder. Scroll the upper part of the Settings dialog box up until the **Import/Export** selections are in view. To ‘copy’ the URL and ID to another tablet, copy this file to a USB memory stick and paste the file into the Datrend\Database folder of the second tablet. Use the vPad-AIMS\Settings feature on the second tablet and **Import** the settings. The new settings will not change on the display until you exit (Cancel) out of the Settings dialog and re-enter. Using this process reduces the possibility of mistyping long URL and Client ID inputs.

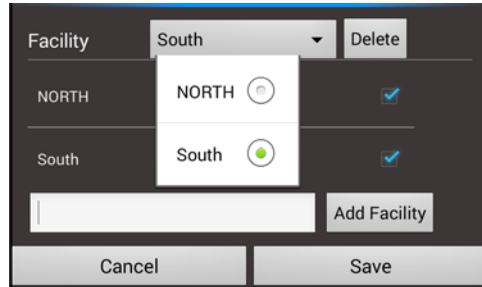


*Figure 7 - Settings Add Facility*

AIMS databases may include more than one **Facility**. You can find the **Facility** names by going to the **Folder/Administration/Multi-Facility** tab in AIMS. Touch in the open white field to the left of the **Add Facility** button. A keyboard will appear at the bottom of the screen. For each **Facility**, type in the **Facility Code** and touch the **Add Facility** button. Repeat until all of the **Facility Codes** have been entered. When getting data from AIMS, only the facilities that are checked in the list shown above the **Add Facility** button will be queried. Ensure ALL the facilities that you want to get data from have been enabled.

Disabling one or more facilities that are not currently of interest will reduce the query/get processing time.

If you have entered a facility code incorrectly or wish to simply remove one or more facilities from the list, touch in the **Facility** dropdown list next to the **Facility: Delete** button. Select a facility by touching the 'radio button' next to the facility of interest. Touch the **Facility: Delete** button to remove the facility from the list.

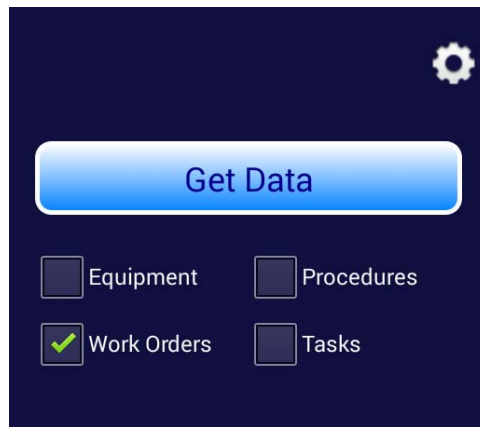


*Figure 8 - Settings menu - Delete Facility*

When all **Settings** have been created/modified, touch the **Save** button to save the settings and exit to the **Main Menu**.

### 3.4 Getting PM Schedules and Equipment Inventories

PM Schedules and the Equipment Inventory list are created in AIMS and must be transferred to the vPad tablet and formatted in a way that vPad-mT can process them. Requests for data are performed over the Internet using the **Get Data** button. The **Get Data** requests (or Queries) are created by checking the box for one or more of the data types required:



*Figure 9 - Get Data*

Three of these lists do not change very frequently; the Equipment List, the Procedures (CheckLists/Procedures) file and the Tasks (CheckItems/Tasks) file. These lists can be updated on the tablet, as required or on the advice of the database administrator, when new equipment or procedures have been added. The file that will change on a routine basis (daily, weekly, monthly, etc.), is the Work Order file. This Work Order file will contain all the work orders of type PM, which are currently outstanding. At a minimum, this file should be updated on the tablet routinely.

**Note:** The Equipment List (CSV) can be a very large list, and may take quite a while to download (typically > 10 minutes). The other lists are usually fair quick, but may take a long time, depending on the AIMS database response time, which can vary.

First, make sure that only the facilities of interest are selected in Settings.

**Note:** If a network connection is not active or a facility has not been setup, an error message will be displayed.

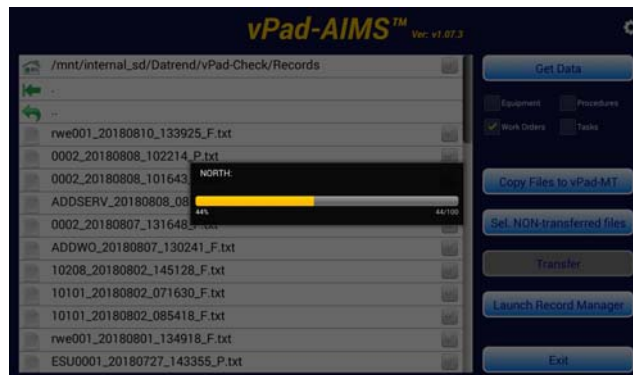
When the **GET Data** button is touched, the vPad-AIMS app will initiate communication with the AIMS database over the Internet. Vpad-AIMS will request the specific type of data based on the checkboxes which have been selected. While waiting for a response, a progress bar will be displayed, with the message: **Please Wait.**

Once data is being transferred from AIMS to the tablet, the progress bar will show the percentage completed.



*Figure 10: Initiating Communications*

Note that this progress bar may be repeated several times, depending on the number of facilities that have been enabled. For the equipment files, to reduce the probability of data transfer problems, the transfers are done on a per facility and per cost center basis, and may be quite numerous.



*Figure 11: Communication in progress*



Data is downloaded to the vPad-AIMS folder. When all necessary downloads have been completed, the files need to be placed in the vPad-mT folder. This can be accomplished by touching the **Copy Files to vPad-mT** button, or will be done automatically if the **Auto Copy On** setting is enabled.



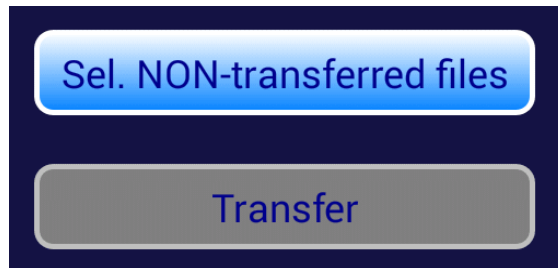
*Figure 12 - Copy Button*

You are now ready to run tests using vPad-mT.

### 3.5 Sending Test Reports to AIMS

Test Reports created by vPad-mT are text files, and are saved in the vPad-Check/Reports folder. Reports which have been created, but not sent to AIMS will have a text page icon, , in the left column. When a report has been sent to AIMS, the icon will change to , to indicate that it has been transferred. Optionally, transferred files may be deleted after transfer, to reduce the possibility of sending it again.

Vpad-AIMS will transfer test reports to AIMS via the Internet. Files to be transferred can be selected by touching on the filename, or on the checkbox icon to the right of the filename. Multiple files can be selected for transfer. To select all report files which have not been previously sent, touch the **Sel. Non-transferred Files** button.



*Figure 13 - Transfer Options*

When all files to be transferred have been selected, as indicated by the green checkmark to the right of the filename, touch the **Transfer** button. Note that the **Transfer** button will be disabled until at least one file has been selected. Files will be sent to AIMS one-by-one until they have all been sent.

To ensure data integrity, vPad-AIMS will check to make sure the device control number (tag\_number) and the work order number are valid before trying to update the work order.

When running tests using **vPad-mT**, there is a button labelled **Launch vPad-AIMS**. Touching this button will launch vPad-AIMS, automatically select all files which have not been previously transferred, and initiate the transfer of the files to AIMS.

The vPad-AIMS app does not directly support viewing the contents of the test reports. If it is necessary to view a test record contents, it is possible to **Launch Record Manager** from vPad-AIMS.



*Figure 14 - Launch RM*

## vPad-AIMS OPERATORS MANUAL

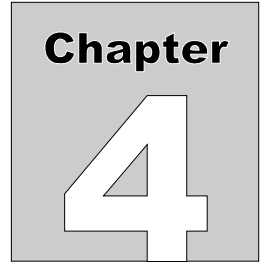
Files which are transferred to AIMS are sent as Work Order Updates. Each PM Schedule for a device is sent from AIMS as a Work Order with an identification number, and a facility code. This information is included in the test report file when the test report is created. The test report is sent as **Notes** in the Work Order Update, and will be accessible as Notes in the Work Order, in AIMS. If a second Update is performed on the same Work Order, the Notes in AIMS will be replaced by the new update, not appended to the Notes.

Two notable exceptions to the processing of test reports are:

1. A test report may have a valid Tag # (Device ID) but a blank Work Order number if a Device test was performed from the Checklists. In this case, a Work Order will be created in AIMS for the Device during the transfer.
2. A test report may not have a valid Tag#, it may be a new device. In this case, a new Tag# entry will be created in AIMS.

A record of the communication messages sent during the transfer process are logged in the History.txt file found in Datrend\vPad-AIMS\Query folder. This file will contain all communications, and will include any **Errors** encountered. This file is useful if errors are encountered in the work order transfer or the get data processes.





## 4 Upgrades and Maintenance

Software Applications (Apps) may be upgraded from time-to-time to provide enhanced features or improvements. Contact Datrend or your local dealer for information on these upgrades.

In some cases, the changes made to an App may be to correct operational issues that have come to the attention of DSI. These shall generally be referred to as maintenance upgrades. In other cases, the changes may be to improve performance or add features which would enhance the overall functionality of the App. The decision to apply a charge to any upgrade shall be solely at the discretion of DSI.

Datrend Systems Inc.  
Unit 130 - 4020 Viking Way  
Richmond, BC • CANADA • V6V 2L4  
Tel 604.291.7747 or 800.667.6557 • Fax 604.294.2355  
e-mail: [customerservice@datrend.com](mailto:customerservice@datrend.com)  
[www.datrend.com](http://www.datrend.com)

