



DATREND  
Systems Inc.

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

**MediMizer Interface App  
for vPad Safety Analyzers**

Operating Manual



**vPad-Medimizer<sup>TM</sup>**  
*MediMizer Interface App  
for vPad Safety Analyzers*  
Operating Manual

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# Table of Contents

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TABLE OF CONTENTS .....	III
1 OVERVIEW .....	1
1.1 CMMS and Checklists .....	1
1.2 vPad Automation Suite .....	2
2 INSTALLATION .....	5
3 OPERATION .....	7
3.1 Startup .....	7
3.2 Main Menu .....	8
3.3 Setup for communication with MediMizer .....	9
3.4 Getting PM Schedules and Equipment Inventories .....	14
3.5 Sending Test Reports to MediMizer .....	16
3.6 Notes on vPad-Check and vPad-mT Settings .....	17
3.7 Notes on MediMizer Custom Tasks .....	18
4 UPGRADES AND MAINTENANCE .....	19

vPad-Medimizer OPERATORS MANUAL



# 1 Overview

vPad-Medimizer™ is a software application (App) which may be installed on the vPad™ system and used in conjunction with the vPad electrical safety analyzer tablets, 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 MediMizer CMMS system. vPad-Medimizer 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. MediMizer, EQ2 HEMS, Four Rivers® TMS, Connectiv, AIMS®, TMA and Mainspring are examples of enterprise-level CMMS which are specifically designed for use in management of medical devices and other equipment in a clinical engineering setting.

CMMS systems enable automation of equipment inspection and maintenance tasks through computer-generated **Checklists** (or Procedures/Tasks). 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.

As programs progress and become Internet compatible, some CMMS systems have developed Restful API interfaces that allow the program to send and receive data via the Internet, reducing the reliance on hardwired or near field wireless connectivity.

## 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**



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 ("**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 (normally) on the Home screen of the tablet.

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

**vPad-mT**



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-Medimizer, normally as part of a scheduled PM program. When a device 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 device 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 provides preset safety sequences similar to vPad-AS, following the requirements of the NFPA Standard..


**vPad-  
Medimizer**





vPad-Medimizer™ communicates with the MediMizer (ver. 14+) 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 Medimizer database.



## 2 Installation

The vPad-Medimizer 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-Medimizer icon (  ) and press and hold the icon for a few seconds. You will then be able to 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-Medimizer is not on the tablet, contact your dealer and an installation package for the app will be provided via download.

Vpad-Medimizer 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-MM14 app and open the Settings dialog box. Enter the Host URL and Access Code for the Medimizer database with which you wish to work (contact your Medimizer dealer for assistance). If you are initializing more than one tablet, you can use the Import/Export feature in Settings. Finally, select the database you wish to work with in your Medimizer system. All of these steps must be completed before you can access information from or send information to your Medimizer database.

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


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



## 3 Operation

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

### 3.1 Startup

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



*Figure 1 - vPad-Medimizer startup screen.*


## 3.2 Main Menu

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




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

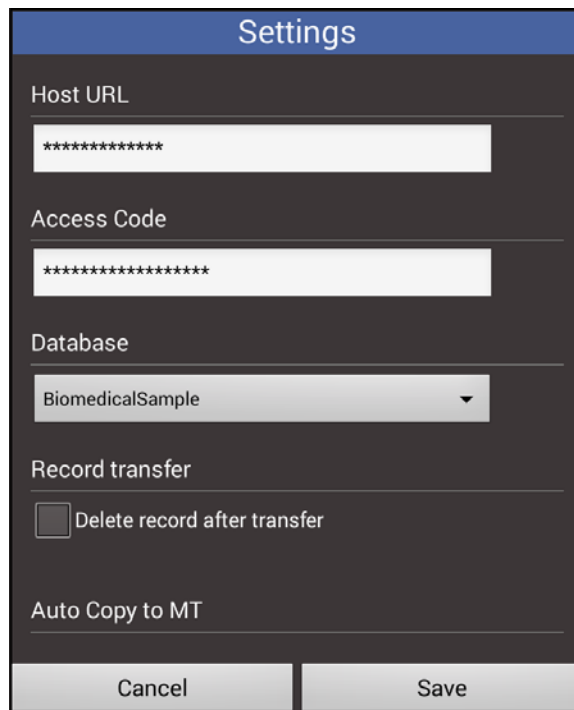
Test Reports from previously completed tests performed using vPad-mT will appear in the scrollable list (ListView) on the screen, as shown above. Note that the test reports are stored in the vPad-Check/Records folder since the Procedures are ‘run’ by the vPad-Check app internally.

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-Medimizer. To fully close the App, press the “**Exit**” button.



### 3.3 Setup for communication with MediMizer

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 Access Code for the end user's Medimizer program must be entered, and the database selected. The Host URL and the Access Code are password protected at one level (eg. set by IT) and the Database is password protected at a second level (eg. Biomedical Engineering Director). Contact your Medimizer representative for assistance if you need help with this information.



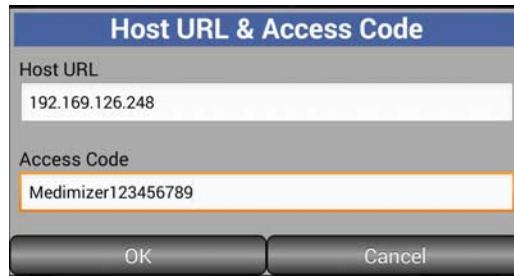
*Figure 3 - Settings menu of vPad-Medimizer.*

To enter the URL or Access Code to the main MediMizer database for your organization touch on one of the two text boxes. A password is required to access the text entry screen. The following password entry screen will be displayed.



The default password is 1234, and will be displayed if it has not been changed by the user. Once changed, it will be displayed as ‘\*\*\*\*\*’.

Enter the URL for the database and the Access Code. See the example below:



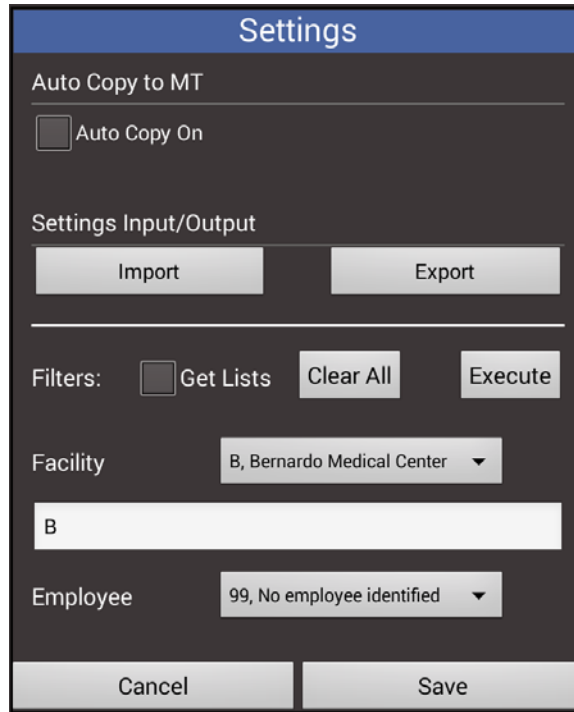
The image shows a dialog box titled "Host URL & Access Code". It has two text input fields. The first field is labeled "Host URL" and contains the text "192.169.126.248". The second field is labeled "Access Code" and contains the text "Medimizer123456789". Below the input fields are two buttons: "OK" and "Cancel".

Once these have been set, you can retrieve and set the data set with which you will be working. This is password protected in the same way as the URL/Access Code. Entering the correct password will result in a display of the names of the data sets in the database. Select the one to be used.

If you wish to delete the Test Records from the tablet after they have been sent to Medimizer, 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.

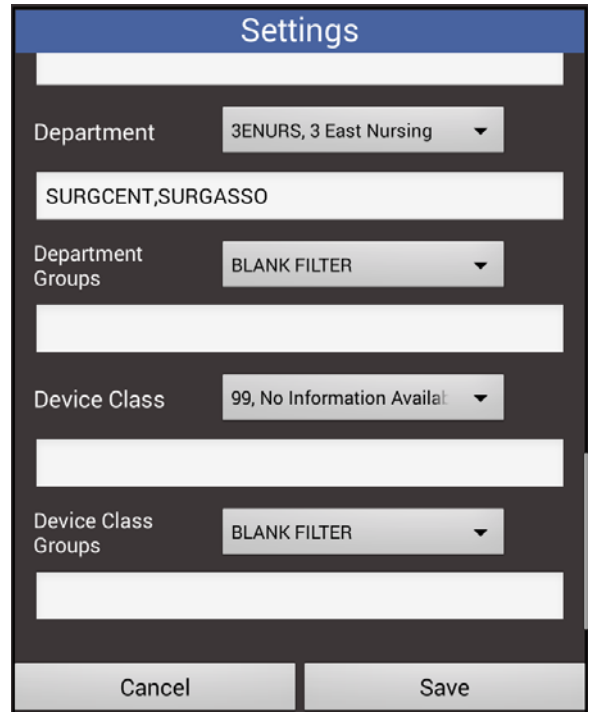
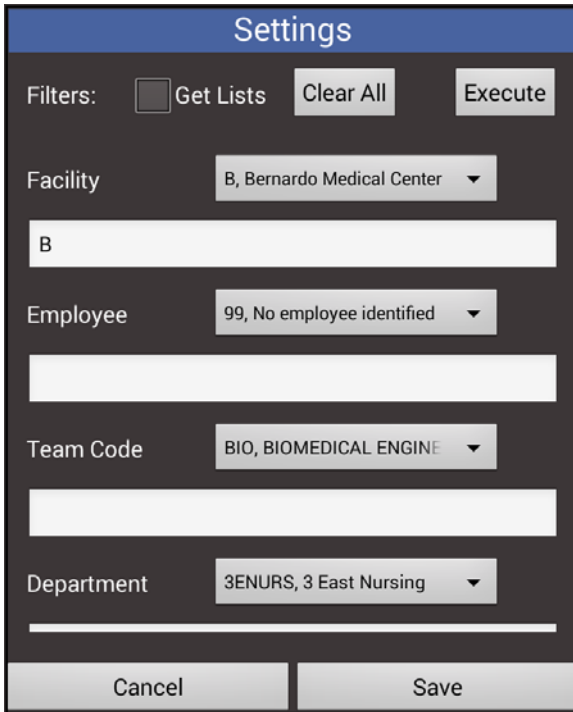
The files created during the Internet communication with MediMizer are stored in the vPad-Medimizer folder. To be used by vPad-mT, these files are copied to the mT folder using the **Copy Files to vPad-mT** button. With **Auto Copy** set to **ON** (in Settings), these files will be saved to the vPad-Medimizer folder *and* copied to the vPad-mT folder at the same time.

If you are setting up more than one tablet, the Host URL and Access Code can be Exported to a file called Medimizer\_Preferences.xml, which can be found in the Datrend\Database folder. Scroll the Settings dialog box up until the Import/Export selections are in view. To ‘copy’ the URL and Code to another tablet, copy this file to the second tablet using Bluetooth, Dropbox or a USB memory stick and paste the file into the Datrend\Database folder of the second tablet. Use the vPad-Medimizer\Settings feature on the second tablet to Import the settings. The new settings will not change on the display until you exit (Save) out of the Settings dialog and re-enter. Using this process reduces the possibility of mistyping long URL and Access Code inputs. The URL and Access Code are encrypted within the XML file for security reasons.

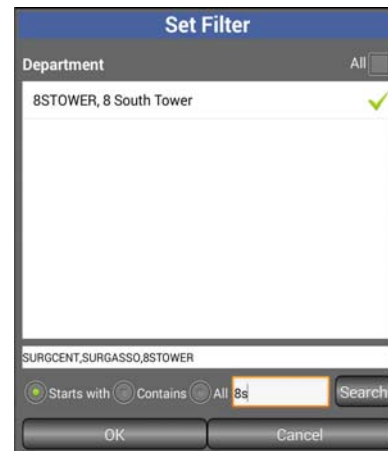


*Figure 6* - Settings Auto Copy & Import/Export.

Medimizer databases include a number of parameters that can be used as filters when requesting information. These filter parameters are: Facility; Employee; Team Code; Department and Device Class. To obtain the lists of values for each parameter, check the **Get Lists** box and press **Execute**. This will populate the list boxes for each of the parameters. The contents of the list box can be viewed by touching the list box. To actually create a filter, touch in the large white text box associated with the parameter and select as many values from the list, as is required. Multiple selections will be added in a comma delimited list (eg. for Employee: 99,AE,DT, BS). If you change the Database or Facility, use the Clear All button to clear the parameter and filter lists and start fresh.



To create a filter, touch inside the text box for the parameter (eg. Department). This will result in the display of the complete list of Department ‘values’. You can scroll down the list to find the department you want in the ‘group’ or you can Search for departments ‘Starting with’ or ‘Containing’ particular letters. The search tool is case insensitive.



When the value of interest is shown on the display, touch on the value to add it to the list. When selected, a green checkmark will be displayed to the right of the value. To remove an item from the list, scroll or search till the value is displayed on the screen and touch the checkmark to remove it from the list.

It is probable that some users will have several groups of Departments (or other parameters) that are used from time to time. To facilitate easy selection of these groups, it is possible to create named groups of Departments and Device Classes. Select the list in the same manner as indicated above, then save the group with a name that can be selected for recalling the list.

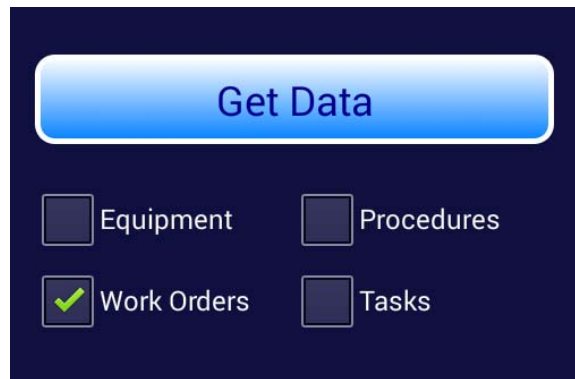


Press the **Save** button to save the list with the new name. A group can be deleted by selecting it from the dropdown list at the top of the window and pressing the **Delete** button.

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 MediMizer 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. The **Get** requests (or Queries) are created by touching one or more of the four checkboxes shown in the figure below:



*Figure 12 - Main menu Control Buttons - 2*

Three of these lists do not change very frequently; the Equipment List, the Procedures and the 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), 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:** Only the files with a green checkmark will be retrieved when Get Data is touched.

**Note:** The Equipment List (CSV) can be a very large list, and may take quite a while to download (typically several minutes, depending on the filter parameters set). The other lists are usually fair quick, but may take a long time, depending on the Medimizer 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-Medimizer app will initiate communication with the Medimizer database over the Internet. Vpad-Medimizer will request specific type(s) of data based on the checkmarks. While waiting for a response, a progress 'spinner' will be displayed.

## vPad-Medimizer OPERATORS MANUAL



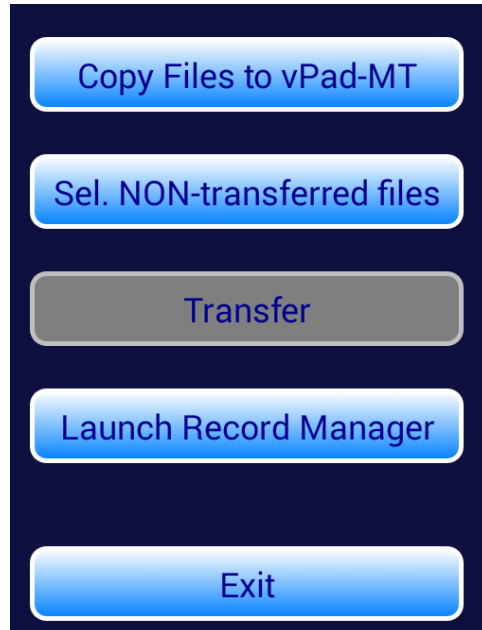
*Figure 13: Initiating Communications*

Once data has been transferred from Medimizer to the tablet, a ‘toast’ message will appear at the bottom of the screen.



*Figure 14: Toast message*


Data is downloaded to the vPad-Medimizer 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 can be done automatically if the **Auto Copy** setting is set to **ON** in the **Settings** panel.




*Figure 15 - Main menu Control Buttons*

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

### 3.5 Sending Test Reports to MediMizer

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 MediMizer will have a text page icon, , in the left column.

When a report has been sent to MediMizer, 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, and to keep the number of reports in the vPad-Check/Reports folder to a manageable number. If it is desirable to keep a longer history of test reports on the tablet, a good option is provided in vPad-Record Manager; which can archive test reports to an external SD-card memory.

Vpad-Medimizer will transfer test reports to MediMizer 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.

When all files to be transferred have been selected, as indicated by the green checkmark(s) to the right of the filename, touch the Transfer button. Files will be converted to an XML format and sent to MediMizer. Files received by MediMizer will be retained in the 'Review' section of MediMizer, under the 'Devices' tab for final review and processing into the work orders in MediMizer.



**Note:** When running tests using vPad-mT, there is a button labelled **Launch vPad-Medimizer**. Touching this button will launch vPad-Medimizer, automatically select all files which have not been previously transferred, and prepare for the transfer of the files to MediMizer. To complete the transfer, touch the **Transfer** button.

### 3.6 Notes on vPad-Check and vPad-mT Settings

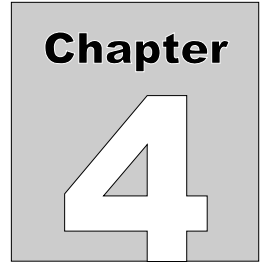
The tasks that will be included in a complete test and some of the options that will be presented during a test will be influenced by settings that are made in other parts of the vPad system. While vPad-Medimizer is the direct web interface to MediMizer for data transfer, the actual work orders are organized and presented for selection in vPad-mT, which then uses vPad-Check to actually run the test and create the test report.

#### Important Settings:

vPad-mT:	Safety Test:	Be sure this is set to the Standard that you are using or intending to use, such as vPad-NFPA. If it is set to a Standard that you do not have the app for (eg. Vpad-AS or vPad-NFPA) you will get a message that ‘this app is not activated’.
	Label Printer:	Be sure this is disabled if you do not have a label printer connected in the system, otherwise you will be prompted to print a label at the end of each test, after saving the test report. There is a printer setting in Check as well which also must be disabled to prevent this prompt.
Vpad-Check:	Safety Test:	Same as above for vPad-mT. Seems redundant, but required since Check can run on its own.
	Label Printer:	Same as above for vPad-mT. Seems redundant, but required since Check can run on its own.
	Test Record:	‘Show results at end of test’: the display of the overall test results before going to the ‘Create Report’ screen can be disabled.  ‘Disable signature/date line’: this line can be excluded from the test report if the report is to be stored only electronically and will not be printed for distribution (potentially requiring an actual signature)

## 3.7 Notes on MediMizer Custom Tasks

MediMizer utilizes a tag (the caret character: ^) at the beginning of specific tasks that it will recognize and process internally in the work order. There are two of these tasks (^Employee ID and ^Time Used) that overlap with the Technician ID (on the Equipment Information screen) and the Labor Time (on the Create Test Record screen) respectively. If a value is entered for the ^prompt task which comes from the MediMizer Check Procedure, it will be used in the test report data returned to MediMizer. However, if a value is not entered, the values from the Technician ID and/or Labor Time will be used. This makes these two ^prompt tasks redundant and they can be removed\disabled from the Check Procedure in MediMizer. This can be done in the Devices\MedTester Procedure Editor option of MediMizer.



## 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.

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