

# DatamedRcv™ DRCV02

## User's Manual

Datamed LLC

DatamedRcv™ DRCV02 v1.1.0

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Microsoft Corporation	<i>Microsoft, Microsoft Windows XP, Microsoft Windows Server, Microsoft Windows Vista, Windows 7 and Internet Explorer</i>

## INTENDED USE

This product is a software application intended to receive transmissions from any device that uses the Philips transmission protocol and write the data to a file. This product does not alter the transmitted data in any way. It is not intended to be used for any other purpose and attempting to use it for other purposes are a violation of the EULA.

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## CHAPTER 1 - GETTING STARTED

**T**he DatamedRcv™ Model DRCV02 Receiver Module ("*DRCV02*") is a utility that receives LAN transmissions from compatible devices and writes the received data to a file. It can be used with the DatamedFT™ EKG Format Translator or as a standalone utility. The program runs as a system service and will monitor a network connection (TCP/IP port) for incoming connections from Philips PageWriter® Touch/Trim/TC-Series cardiographs, or any device that uses this same protocol. As each EKG is received by DRCV02 it is written to a specific output folder. When used with DatamedFT™, the Format Translator will pick up the file and translate it to the appropriate destination format and location. Each file is verified after being written and an error will be returned to the cart if there is a problem. DRCV02 can handle incoming requests from multiple supported cardiographs simultaneously.

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## CHAPTER 2 – INSTALLATION

### Requirements

- ❖ **Source Device(s).** Philips PageWriter® cardiograph(s) that will transmit to DRCV02.
- ❖ **Hardware Security Key.** You will receive a hardware security key (HASP) with the software. This key is required for the software to run and it controls the licensing of the software. All Datamed® software on the same computer will share the same security key.
- ❖ **Software.** CD or installation package from DLLC.
- ❖ **Computer.** If the software is not going to be installed on the same computer with DatamedFT™, the minimum specifications for the computer are: 1GB RAM, 40GB HD, one unused USB Port for the Hardware Security Key, and a LAN connection. The following operating systems are supported:
  - ✓ Windows XP x86 and x64
  - ✓ Windows Vista x86
  - ✓ Windows 7 x86
  - ✓ Windows Server 2003 x86
  - ✓ Windows Server 2003 R2 x86
  - ✓ Windows Server 2008 x86
  - ✓ See *Chapter 5* for information about running on Windows Vista x64, Windows 7 x64, Windows Server 2003 x64, Windows Server 2003 R2 x64, Windows Server 2008 x64, Windows Server 2008 R2 x64
- ❖ **LAN considerations.** The DRCV02 software accepts LAN transmissions and then writes out files. Normally the output folder is local, but if it is remote then it will require proper file-sharing network permissions to be set up to a shared folder. If there is a firewall between the device and this computer, then a rule must be set up to allow HTTP traffic (TCP port 80) to pass. If the output is on a shared folder and there is a firewall between this computer and the remote computer, then a rule must be set up to allow Windows file-sharing traffic (TCP port 445) to pass. *If Windows Firewall is turned on, make sure these rules are added as needed.*
- ❖ **VM considerations.** The software can be run on virtual machines. The primary consideration is access to the USB key. For ESX Server® prior to 4.1 or any VM software that does not support USB, a USB-to-Ethernet adapter (VMWare recommends AnywhereUSB) can be used or a Net-HASP key can be used. When using VMWare with vMotion we recommend using the AnywhereUSB to provide uninterrupted access to the USB key regardless of system movement. Contact DLLC for more information.
- ❖ **.NET.** This application requires the Microsoft .NET 2.0 Framework. The setup program will install the appropriate software; however it is important to note that if .NET is not

already installed then an internet connection will be necessary during installation so that the .NET drivers can be retrieved from Microsoft.

- ❖ Web Server. Microsoft IIS, Apache, or any other web server may prevent the proper operation of DRCV02. For non-server Windows systems we recommend that IIS not be installed. If IIS is required on a server hosting DRCV02 and it prevents the service from starting the listener, see Chapter 5 for troubleshooting tips.

## New Installation

These instructions are for a new installation where there is no prior version of DRCV02 installed. This can also be used if DRCV02 was uninstalled. DRCV02Config will need to be run after installation to update the settings. **NOTE: If PWTRcv™ is installed then it must be manually uninstalled before installing DRCV02.**

### Install the hardware security key

- Insert the hardware key into the USB port. The basic driver should be installed automatically by the operating system. We recommend using the full driver package provided by the manufacturer. The drivers that were current as of the release date are provided and can be installed manually after the installation of DRCV02 by using the shortcut under *Start* → *All Programs* → *Datamed* → *DatamedRcv RCV02* → *Install HASP Security Key Drivers*. This driver package includes important tools used to diagnose issues. The latest driver from the manufacturer for Sentinel HASP may be downloaded directly from the Safenet website at: <http://sentinelcustomer.safenet-inc.com/sentineldownloads/>.
- When the driver is properly installed the LED in the hardware key will light up.
- NOTE: A standard hardware key is dark purple and a network key is red. If this is a network key installation, the Safenet HASP License Manager software *must* be installed or the key will not work. This software is on the installation CD.

## Install the DRCV02™ Software

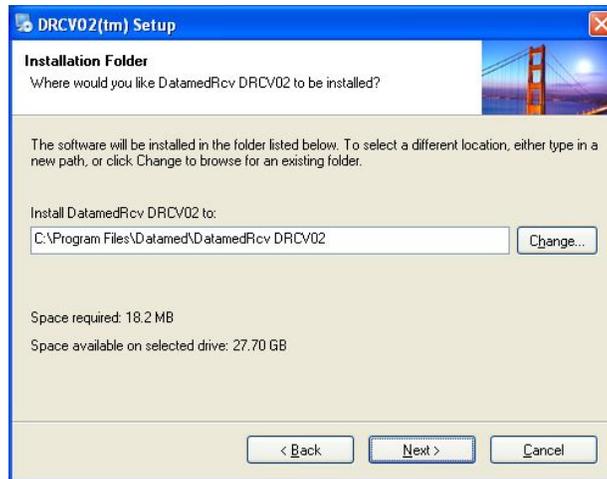
- The installation package can be found on the software installation CD or may be emailed. Locate *DatamedRcv\_DRCV02\_Setup.v1.x.x.exe* and double click on it. The following screen should appear. Click *Next* to continue.



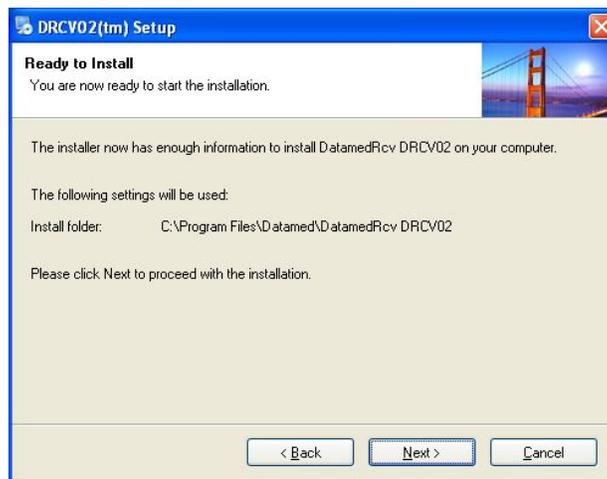
- Read the License Agreement carefully and select *I Agree*. Click *Next* to continue.

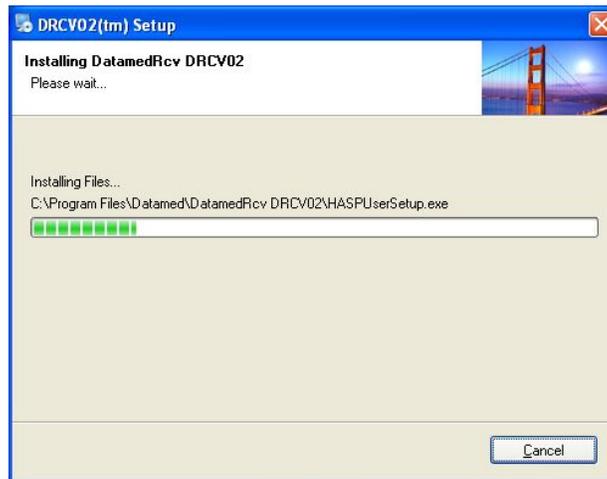


- Select the installation folder for the program and then click *Next* to continue.

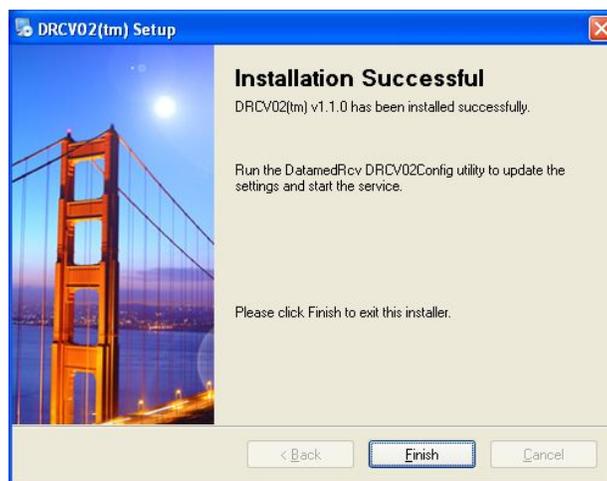


- Click *Next* to begin the installation. Installation should take 1-2 minutes.





- Once installation is complete, click *Finish* to close the window.



- The DRCV02Config utility should be run after installation. *Note that the first process must be enabled by checking the Enabled box before it can be configured.* The DatamedRcv\_DRCV02 service will not start automatically until the computer is rebooted, but it can be started immediately from within the configuration utility.

An alternative method of starting the service is to open the *Services* applet from *Control Panel* → *Administrative Tools* and start DatamedRcv\_DRCV02Start. The job

of this service is to make sure that DRCV02 runs and is restarted if it stops for any reason.

The *Post Installation Notes* at the end of this chapter should be reviewed following installation.

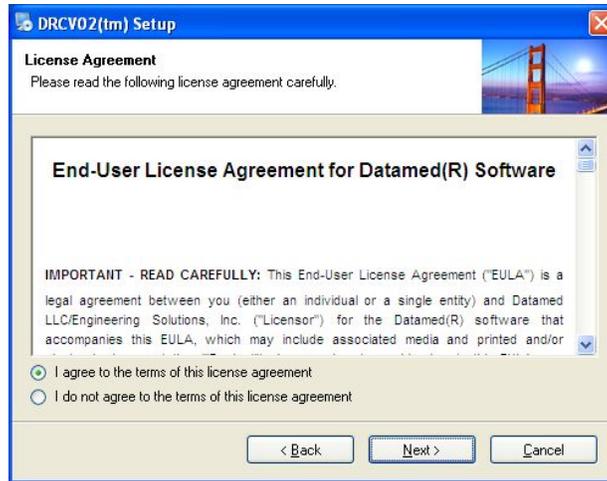
## Updating

If DRCV02 is already installed, running the setup program will update it. The configuration settings will not be disturbed. To run the update, do the following:

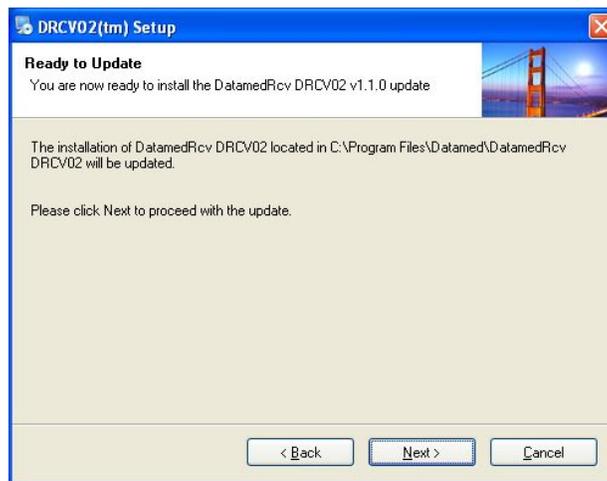
- Obtain *DatamedRcv\_DRCV02\_Setup.v1.x.x.exe* from DLLC and double click on it. The following screen should appear. Click *Next* to continue.



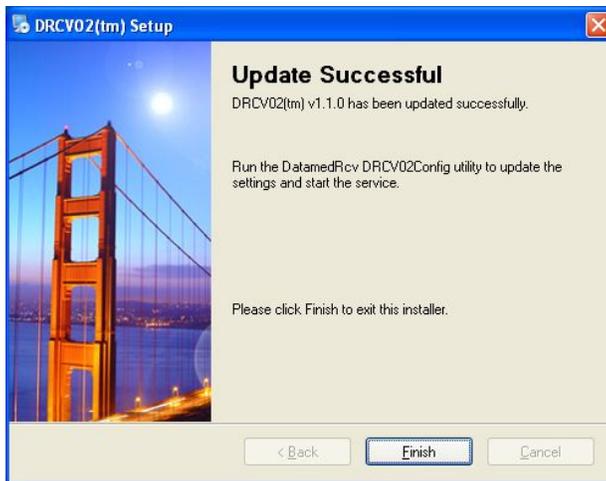
- Read the License Agreement carefully and select *I Agree*. Click *Next* to continue.



- Click *Next* to begin installing the update.



- Once installation is complete, click *Finish* to close the window.



The *Post Installation Notes* at the end of this chapter should be reviewed following installation.

## Uninstalling

To uninstall DRCV02™, do one of the following: 1) from *Start* → *All Programs* → *Datamed* → *DRCV02*, select *Uninstall DRCV02*; or 2) open *Control Panel*, choose *Add or Remove Programs*, select *DRCV02*, and press the *Remove* button. In either case the application will be removed. This is a silent install and it may take a minute for the uninstall to complete. Note that only the application is removed - all EKG files and logs will remain.

## Post-Installation Notes

If this was an update then the configuration settings will already be set up and should not need to be changed. However, for a new installation the configuration settings will need to be set up. Configuration settings are changed by using the DRCV02Config utility. A shortcut to this utility will be found on the desktop, and it can also be found at *Start* → *All Programs* → *Datamed* → *DatamedRcv DRCV02* → *DatamedRcv DRCV02 Configurator*. See *Chapter 3* for a complete description of the configuration settings.

Note that the DatamedRcv\_DRCV02 service will not start automatically until the computer is rebooted. It can be started immediately using the DRCV02Config utility. An alternative

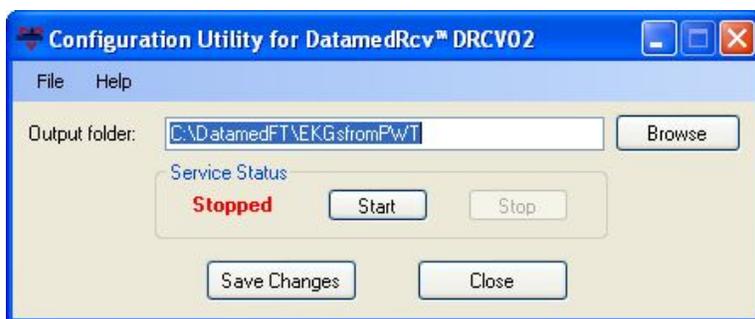
method of starting the service is to open the *Services* applet from *Control Panel* → *Administrative Tools* and start *DatamedRcv\_DRCV02Start*. The job of this service is to make sure that *DatamedFT™* runs and is restarted if it stops for any reason.

**IMPORTANT NOTE:** Normally this application is installed on the same computer as *DatamedFT™* and the output goes to a local folder. If the output will be directed to a shared folder on a separate computer, the account that the *DatamedRcv\_DRCV02* service runs under is critical to the proper operation. By default, the service will run under the Local System account and by definition this account does not have access to the network, so it will not work correctly. In this situation, after installation and configuration it is very important to set the service to run with a domain (or workgroup) account. It will also be necessary to add the same domain (or workgroup) account to the folder that is being shared on the host management system.

Once the setup is complete and any accounts/permissions/shares have been addressed, the receiving process should be tested. The best way to do this is with *DatamedFT™* temporarily stopped. The cart(s) should be configured and a test transmission done. As long as a file appears in the Output Folder then this installation is complete.

## CHAPTER 3 – CONFIGURING DRCV02

Once DRCV02 is installed, changes to the configuration settings can be done using the DRCV02Config utility that is installed along with the service. Open the utility from the desktop shortcut or the Windows™ Start menu and it will automatically read the current configuration settings from the registry. When configuration changes are made, they must be saved and then the service must be restarted for them to take effect.



### Window Settings

At the top of the window there is one setting:

- ✚ **Output folder.** The folder that the received EKG files are written to. This must be the *Input folder* for DatamedFT™. If DatamedFT™ is installed on the same computer (typical) then it will be a local folder. If DatamedFT™ is installed on a different computer then this will be the network path to a share on the remote computer (`\\computername\sharename`). The *computername* can be specified as a name or IP address. The *Browse* button allows you to browse for the folder to use (or create one). **IMPORTANT NOTE:** If the *Output folder* is on a network share, the account that the DatamedRcv\_DRCV02 service is running under *must* have permissions to access that share. The default account for services is the System Account, which *does not* have network access permissions. The account can be changed by opening the Services applet and changing the properties for the DatamedRcv\_DRCV02 service.

At the bottom of the window there is a status indicator and four buttons:

- ✚ **Service Status.** This shows the current status of the DatamedRcv\_DRCV02 service. There are three possible values: *Stopped* - indicates that the service is not running; *Running* - indicates that the service is running; and *Unknown* - which indicates that the service is in some transitional state. The *Unknown* status is a normal transition

between *Stopped* and *Running*, however if the status remains in this status then there is a problem.

- ✚ **Start.** This button will start the service. The service can also be started using the Windows *Services* applet.
- ✚ **Stop.** This button will stop the service. The service can also be stopped using the Windows *Services* applet.
- ✚ **Save Changes.** This button will cause all configuration changes to be saved to the registry. Previous settings will be discarded.
- ✚ **Close.** This button closes the window. Any unsaved changes will be discarded.

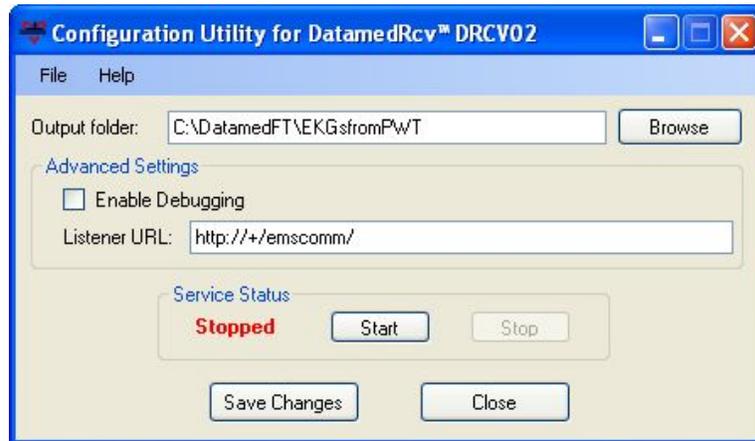
## Menu Options

The following menu options are available:

- ✚ **File → Reload from registry.** Selecting this will cause any changes to be discarded and the settings on the screen reset to the saved values.
- ✚ **File → Save to registry.** This is the same as clicking the *Save Changes* button.
- ✚ **File → Access Advanced Settings.** This menu choice will reveal additional settings for advanced users. See below for details.
- ✚ **File → Export settings to file.** This will save the configuration settings *as they exist in the window* (possibly edited) to a DatamedFT Settings (.dft) file. Extreme care must be exercised if hand-editing the settings file. Typically this functionality is used to send the configuration settings to DLLC for troubleshooting.
- ✚ **File → Exit.** This is the same as clicking the *Close* button.
- ✚ **Help → About.** This will open a window that displays the program version and copyright information.

## Advanced Settings

If DRCV02 is not functioning properly or not able to receive transmissions, DLLC support personnel may ask you to change the advanced settings. These fields are accessed with the menu option as indicated above. The screen will change to look like this:



The following advanced options are available:

- ✚ **Enable debugging.** This will cause debugging information to be written to a file in the *Output folder*. After information is collected, send this file to DLLC for analysis and don't format to turn off debugging.
- ✚ **Listener URL.** This is the Uniform Record Locator (URL) that identifies the location that the cardiograph is transmitting to. The syntax of this value is: "*scheme*://*host*:*port*/*path*/". The *scheme* must always be "http". The *host* may be a DNS name, an IP address, or "+" to indicate this computer. The *:port* setting is not compatible with Philips carts and should not be used. The *path* should always be "emscmm". Normally, the only reason to change this from the default setting is to set a specific port to avoid problems with IIS. Note that any change in this setting must also be reflected in the cart settings.

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## CHAPTER 4 – DEVICE SETUP

The devices that communicate with this receiver utility currently are the Philips PageWriter® cardiographs, and the Philips PIIC iX (patient monitoring). This section is intended to provide some practical guidance for configuring these devices to send to DRCV02; however, this information is not from Philips and you should always consult the device's user manual or a Philips technician for definitive instructions.

### Philips PageWriter® TC-Series Cardiographs

#### Configuration

- Turn on the cardiograph - it will be the 1<sup>st</sup> button of 3 when you open the lid of the cart.
- Connect an Ethernet cable between the LAN port on the back of the cart to the hospital network. If the option is enabled, this cart can also transmit data via Wi-Fi. You can also transmit via phone/fax line via a modem.
- Once powered up, the screen will default to the configured Resting 12 Lead or 15/16 Lead EKG view.
- On the screen's bottom button bar, touch *Set Up* button which will take you to the overall settings for this cart.
- In this setup screen, touch *Configure Cardiograph Default Settings*. This screen allows setting of many defaults, but the important one is on the tab named *Algorithm/Pacing*.
- There are two choices:
  - PH090A - This is only for 12 Lead ECGs. It will allow you to choose from the following XML output versions (configured below): 1.03 or 1.04.
  - PH100B - This is only for 13-16 Lead ECGs. If using this option the only allowed XML output version (configured below) is 1.04.01.
  - **IMPORTANT NOTE:** *If you try to set up any other combination of Algorithm and XML output version you will get this error when transmitting an ECG: "Not Supported Format".*
- Return to the main setup screen after saving the changes. In this setup screen, touch *Configure Network Settings*.
- On the tab named *LAN/WLAN Configurations*, you can put in a static IP/Mask/Gateway or DHCP. Or if you choose WLAN, another configuration screen pops up to enter info such as SSID, etc. Alternatively, you can set up Fax/Modem.

- On the tab named *ECG Mgmt Systems* click on the sub-tab named *Edit/Delete TraceMaster*.
- Click on the *EDIT* button where it says *TMVUE*. Note that you may have a different name instead of *TMVUE* since this is a configurable. Configure the following:
  - Under *System Type* make sure *ECG Management* is selected.
  - The *Server URL* should be set to a complete URL with the following format: <http://ADDRESS/emscmm/>, where ADDRESS can either be the IP address or DNS name of the computer running DRCV02. Note that the *"/emscmm"* is required and MUST match the setting in DRCV02.
  - The *User Name* and *Password* must not be blank, but the values are not used.
  - The *Computer Name* should be the name of the computer running DRCV02.
  - The *Enable SSL, Compression, and Encryption* should all be set to *OFF*.
  - The *ECG Mgmt Version - Filtered ECG* setting is very important and should be set to *Other EMS - XML 1.04* if the Algorithm was set to PH090A above, or *Other EMS - XML 1.04.01* if the Algorithm was set to PH100B. Note that the Other EMS selections cause the ECGs to be output with the filters applied.
- Save the changes and exit this screen and the setup screen. You should now be able to take a 12-16 lead ECG depending on the Algorithm and Format chosen and transmit out of the cart.

### Operation

- To take an ECG, enter the Patient ID demographics and then press the green ECG button to start the process. The cart can be setup to auto print/archive/transfer ECG out of the cart, or to do each step manually.
- If set to manual, after the ECG is recorded touch the *Archive* button to get to a screen of all the stored ECGs. On that screen you can transfer the ECG(s).

## Philips PIIC iX

### Configuration

- On the *System Configuration* screen, choose *ECG 12 Lead*.
- The *Destination (Export URL)* should be set to a complete URL with the following format: <http://ADDRESS/emscmm/>, where ADDRESS can either be the IP address or DNS name of the computer running DRCV02. Note that the *"/emscmm/"* is required and MUST match the setting in DRCV02.

- The *Filter Before Export* checkbox MUST be checked. This will cause the ECGs to be output with the filters applied.

### ***IMPORTANT NOTE ABOUT FILTERING***

By default, Philips devices do not filter the ECGs. Because all ECG Management/Storage Systems expect filtered output, this can cause a discrepancy between an ECG printed from the cart/monitor and the same ECG displayed or printed on the computer. Philips has added a specific option in the TC-Series cardiographs and the PIIC to cause the ECGs to be filtered before output. This is very important and must be set. The instructions above describe how to do this. Note that the older Touch and Trim carts do not have this option, so the best way to get a match is to set the cart filters to 0.05 - 150Hz.

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## CHAPTER 5 - TROUBLESHOOTING

**W**hen DRCV02 is installed, a new Windows™ service is created named `DatamedRcv_DRCV02`. If there is a problem with DRCV02, the first place to look is the *Event Viewer*, which can be accessed from **Control Panel** → **Administrative Tools**. Once the viewer is open, select *Application* from the left side menu and the right side will be filled with the application event log. Double-clicking on any entry in the log will open a window that shows the details for the event. The *Type* column in the log will indicate whether this is an *Information* or *Error* message, and the *Source* column will indicate what service logged the entry. The *Information* messages are expected and for a normal startup there will be two from DRCV02: *Service started successfully* and *DRCV02 started*. The *Error* messages describe problems that have occurred. Reviewing the log entries will give insight into what is working and what is a problem.

The *DRCV02 started* event log message will give the URL that the listener is monitoring and also the directory where files will be written. If a message that should be there is not present, check the configuration settings using `DRCV02Config` to confirm that the parameters are correct (see *Chapter 3* for details). If the message is missing and there is no error relating to it, make sure the process is enabled. In most cases, however, there will be an error message that describes the problem. Most errors are self-explanatory and can be resolved by correcting the setting or condition that caused them.

As mentioned in the requirements section, running Microsoft IIS on the computer with DRCV02 may prevent DRCV02 from initializing the port listener. If IIS must be run, make sure to verify proper operation after installation. To do this, turn on debugging and restart DRCV02 and then open the debug file that is written to the output folder. If the message says the port listener is running, turn off debugging and restart DRCV02 for normal operation. If the message says that it failed to start the listener, IIS is preventing DRCV02 from attaching to the port. There are two things to try. First, change the `DatamedRcv_DRCV02` service to log on using a specific administrator account rather than the default Local System account. If that doesn't work and the Microsoft utility `httpcfg` is present, use the following at a command prompt to grant access to the specified URL:

```
httpcfg.exe set urlacl /u http://localhost/emscomm/ ; /a D:(A;;GX;;;WD)
```

If the service starts properly and but no files are received when the originating device makes a transmission, the most common reason is that the *SERVER URL* setting on the cardiograph does not match the *Listener URL* setting in DRCV02. Recheck both settings to ensure they match. Also, after installation it is often necessary to reboot the computer so that the Microsoft listener can be initialized correctly.

Another common problem is that there is a firewall interfering with the incoming transmission. Ensure that TCP port 80 is open.

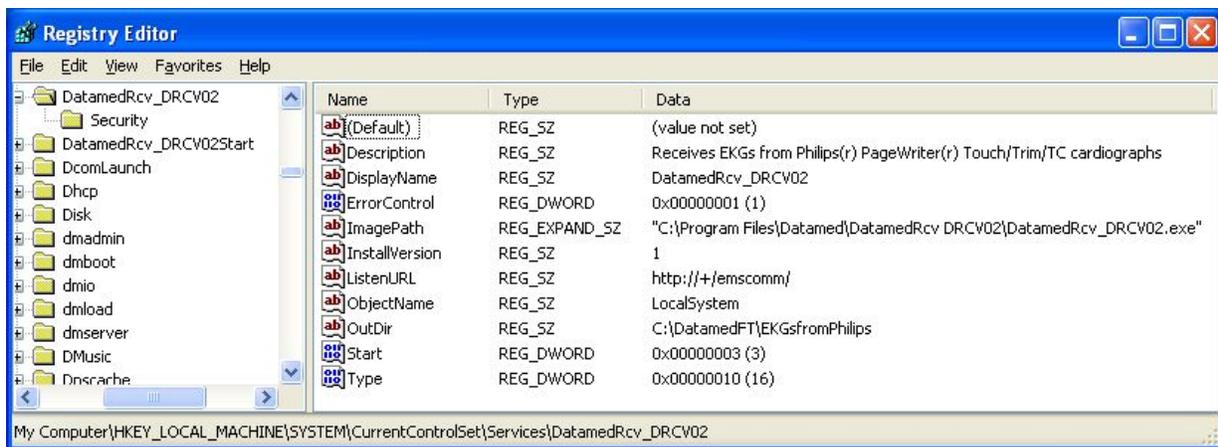
**Important note regarding 64 bit operating systems:** There are known issues when running on 64 bit operating systems other than Windows XP. On these systems the DatamedRcv\_DRCV02Start service will not be able to start and stop the DatamedRcv\_DRCV02 service. This means that the DatamedRcv\_DRCV02 service will not start automatically when rebooting. Make the following changes to work around the problem:

- In the Services applet modify DatamedRcv\_DRCV02Start to change the startup type to Manual.
- In the Services applet modify DatamedRcv\_DRCV02 to (1) change the startup type to Automatic, and (2) on the Recovery Tab set all three failure selections to **Restart the Service**.
- Another step may be necessary if the DatamedRcv\_DRCV02 service still doesn't start automatically after a reboot (typically only the Windows Server x64). This can be because the service is trying to start before the HASP driver is fully loaded. To fix this you will need to make the DatamedRcv\_DRCV02 service depend on the HASP driver to load. Details about this can be found in the following Microsoft Knowledge article: <http://support.microsoft.com/kb/193888>. The following steps will set the dependency:
  - a. Make sure you see **Sentinel HASP License Manager** in the Services applet. If not, ensure that the HASP driver is installed properly.
  - b. Open the registry editor (regedit) and go to HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\DatamedRcv\_DRCV02. Add a Multi-String value (REG\_MULTI\_SZ) named "DependOnService" and set the value to "hasplms".

**DLLC support can be reached by email at [support@datamed.com](mailto:support@datamed.com) or by phone at either (800) 601-3361 ext 2 (within the US) or +1 901 672 6225 ext 2 (outside the US).**

## APPENDIX A - CONFIGURATION SETTINGS

DRCV02Config should be used to make all configuration changes, however if there is a problem with it or if instructed by DLLC support personnel, the registry editor can be used to directly access the settings. Note that improper use of the registry editor can lead to serious problems with the computer, including rendering it inoperable, so extreme care must be used. Open the registry editor by selecting Start → Run and then type "*regedit*" and press *OK*. When the registry editor opens, navigate the folders to HKEY\_LOCAL\_MACHINE\SYSTEM\CurrentControlSet\Services\DatamedRcv\_DRCV02. It should look like this:



Most of the settings must not be changed or the operation of DRCV02 will be affected. If any setting is changed DRCV02 must be restarted. The following configuration setting may be changed:

- ❖ **OutDir** - This is the location where the files will be written. It should always point to the same location as the InDir setting for DatamedFT. **IMPORTANT NOTE: A mapped drive cannot be used for this setting because mapped drives are not available to services.**

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## APPENDIX B – END USER LICENSE AGREEMENT AND LIMITED WARRANTY

The current End User License Agreement and Limited Warranty (EULA) can be found on DLLC's web site ([www.datamed.com](http://www.datamed.com)). The following EULA was current at the time of this printing.

### End-User License Agreement for Datamed® Software

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