



## **ViVOpay™ 5000 User Guide**

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June 2006

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# FCC Regulatory Compliance

## Notices Class B Equipment

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

## Cautions and Warnings



**CAUTION:** Danger of Explosion if battery is incorrectly replaced. Replace only with same or equivalent type recommended by the manufacturer. Discard used batteries according to the manufacturers instructions.



**CAUTION:** The unit should be mounted 1-2 feet away from other units. Can be adjusted based on lane setup.



**CAUTION:** The unit should not be placed directly on or within 4 inches of any large metal surfaces.

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# Table of Contents



- ViVOpay 5000 Overview ..... 1**
  - Features ..... 1
    - Optional Features ..... 2
  - Installing ViVOpay 5000 ..... 2
    - ViVOpay 5000 SAM Card and Cable Installation ..... 2
      - Secure Application Module (SAM) Card Installation ..... 3
      - Changing the Language on the Display ..... 4
      - Cable Installation ..... 4
    - Routing the Cable and Assembling the Stand ..... 5
  - Using the ViVOpay 5000 ..... 7
    - Presenting Cards, Fobs, or NFC Phones ..... 7
    - Making a Purchase ..... 7
- ViVOpay 5000 Display Settings ..... 8**
  - Setting up the System for Language Setting ..... 8
    - Connect the ViVOpay 5000 Reader to a PC ..... 8
    - Set the Language of the LCD Display ..... 8
      - Example of Setting the Language ..... 9
    - Select LCD Pattern ..... 11
    - Select LCD Thank You Message Delay Time ..... 11
    - Select LCD Font Size ..... 11
- Installation Points ..... 12**
- Troubleshooting ..... 13**
- Customer Support ..... 15**
- Return Material Authorization ..... 16**
  - Return Material Authorization (RMA) Policy and Process ..... 16



# ViVOpay 5000 Overview

The ViVOpay 5000 seamlessly integrates existing POS systems and requires minimal counter space at checkout stands. The unit accepts a variety of magnetic credit/debit cards, key fobs, and wireless devices in various shapes and forms.

ViVOpay 5000 supports the following contactless card types:

- MasterCard Paypass
- American Express ExpressPay
- Visa MSD
- VisaWave

This document assumes that users are familiar with their host POS systems and all related functions.

## Features

The following features are supported:

- Secure Digital (SD) memory cards
- Table top mounting w/stand
- Multi-directional and curly cable routing
- Less than 300 mSec transaction time
- Power - 9V, 500m A (standard)
- Power from POS PIN pad port (optional)
- LCD Graphical Display with 128 x 32 matrix
- Supports global currency signs
- Simple message display
- Multilingual currently includes:
  - English
  - French
  - Chinese



**NOTE:** Units can be customized for most any language.

The ViVOpay 5000 supports the following:

- Contactless RF devices such as ISO 14443 Type A and Type B, MiFare, and Ultra Light MiFare devices
- Radio Frequency (RF)
- SIM Standard (ISO7816) Type Support

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## Optional Features

- Smartcable
- SD Memory

# Installing ViVOpay 5000

This section describes how to install the ViVOpay 5000. Installation methods may vary depending upon the location of the POS and counter configuration.

## ViVOpay 5000 SAM Card and Cable Installation

1. Turn the unit over to expose the cable cover plate.
2. Remove the cover plate screws using a Phillips #1 screwdriver



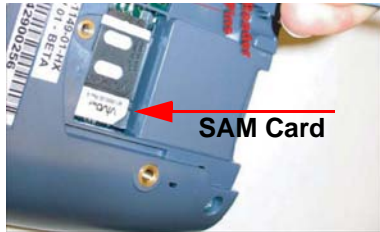
3. Slide the plate cover off of the unit in the direction shown.



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## Secure Application Module (SAM) Card Installation

The Secure Application Module (SAM) card is a hardware module and contains the cryptography keys provided by the Bank/card issuer. Normally, the SAM card is installed in the ViVOpay 5000 reader at the factory before you receive the ViVOpay 5000 reader. If you need to install or replace the SAM card, it should be done at this point while the back of the unit is exposed.



1. Slide the SAM card holder in the direction shown.



2. Gently pull up on the SAM holder so that the SAM card is standing vertical.
3. Grasp the SAM card holder along the sides with the fingers of one hand and remove the SAM card by pulling the SAM card up with the other hand.

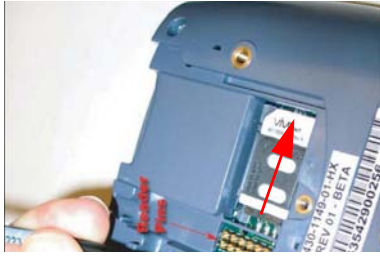


4. Insert the new SAM card into the holder being sure to insert the card until it is positioned just past the bottom bar of the SAM holder. Do not push the SAM card all the way to the bottom of the holder because you will not be able to close the SAM card holder.

The card is keyed so that it will only fit correctly in one position. The contacts on the SAM card must face downward when the SAM card holder is closed.

5. Close the SAM holder, being sure to not force the SAM card holder down into position. If the card appears to be binding, you might have to reposition the card in the holder to make sure that the holder closes. If you do force the card down, you most likely will ruin the SAM card and it will not be usable.

- Slide the SAM holder in the direction shown to lock it in place.



## Changing the Language on the Display

If you need to change the language on the display, it should be done while the back of the unit is exposed since you might need to install the programming cable before you install the standard cable.

See “[Setting up the System for Language Setting](#)” on page 8 for detailed instruction on changing the programming for the ViVOpay 5000 display.

## Cable Installation

- Position the cable, aligning connector with socket. Cable should rest in groove and exit from the back of the unit.



- Gently place the cable down on the reader connector making sure that the socket and pins are aligned.



**WARNING:** The connector pins can be bent or broken by incorrect positioning of the cable which renders the unit inoperable.

- 
3. Slide the back cover plate into place and reinsert the screws.



## Routing the Cable and Assembling the Stand

When installing the ViVOpay 5000, the cables should be threaded through the stand as follows:

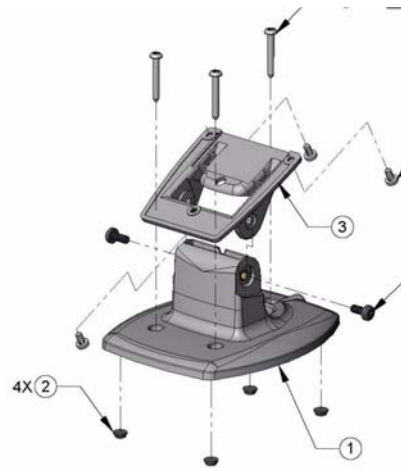
1. Thread the POS cable through both stand pieces prior to attaching them to the ViVOpay 5000.
2. Route the cable in the channel on the bottom of the ViVOpay 5000 base unit.



3. Ensure the cable is connected to the reader.
4. Attach the ViVOpay 5000 reader to the saddle using the three short screws.

5. Attach the base unit to the countertop using the three long screws.

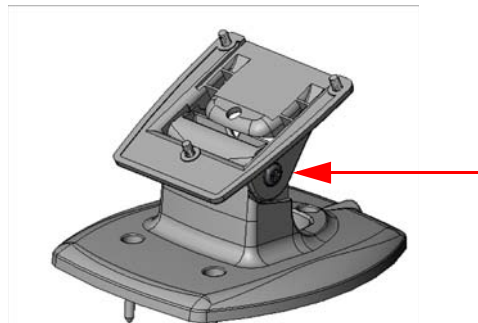
For a permanent installation, you can fasten the stand base to the countertop with the provided screws. For a non-permanent installation, contact ViVOtech to obtain a flat plastic base unit that can attach to any type of countertop surface using velcro or double-sided sticky tape.



6. Assemble the ViVOpay 5000 countertop stand by pushing the saddle down onto the base making sure that both sides are seated firmly on the base stand.

**Note:** The cables should always be routed towards the back of the ViVOpay 5000 reader; do not route the cable towards the front.

7. Insert the 2 remaining screws into each side of the swivel stand to secure the ViVOpay 5000 reader to the base.



8. Attach the cable to the POS.
9. Plug in the power adapter. The ViVOpay 5000 reader emits a series of beeps and displays the opening set of screens before it displays the **Please Present Card** screen. The opening screens include:
  - ViVOtech screen
  - Copyright screen
  - Firmware Version screen

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# Using the ViVOpay 5000

## Presenting Cards, Fobs, or NFC Phones

Present the card/fob/phone in close proximity to the bottom portion of the reader. Present the card/fob/phone so that maximum surface area is parallel to the antenna as shown below.



When a card/fob/phone has been successfully read, an audible beep is emitted and a blue LED will be illuminated. If the ViVOpay 5000 reader is installed in North America, the LEDs are all green and all LEDs illuminate when a card/fob/phone has been successfully read.

## Making a Purchase

The exact wording that appears on the ViVOpay 5000 reader depends on the POS used and the application that is running on the POS.

1. After the transaction has been rung up on the POS, have the customer wave their card/fob/phone in close proximity to the ViVOpay reader. On the ViVOpay 5000 reader display, it may show **Please Present Card** or similar wording. Users may also use their employee HID contactless badges as applicable.
2. A series of beeps and LED flashes indicate the card/fob/phone or badge has been validated. The ViVOpay 5000 reader may display **Processing** or similar wording while the transaction is being processed.
3. A receipt is printed with the purchase amount. The ViVOpay 5000 reader may show **Thank You** or similar wording for a successful transaction.



# ViVOPay 5000 Display Settings

## Setting up the System for Language Setting

In order to set the LCD display language for ViVOPay 5000, you must have the following:

- The **EMV\_Pos\_Simulator** utility which must be requested from ViVOtech. See [Customer Support](#) on page 15 for information on how to contact ViVOtech to request the utility.
- a normal connector & cable for serial communication is required.

## Connect the ViVOPay 5000 Reader to a PC

1. Connect the DB-9 side of the PC Serial Dongle (220-1273-00 3750 Dongle) to the DB-9 Serial Port on the PC.
2. Connect the male RJ-45 from the ViVOPay 5000 to the PC Serial Dongle.
3. Connect the power supply to the ViVOPay 5000 power connector and plug the power supply into A/C power. The ViVOPay 5000 should power up and quickly flash the LEDs and beeps twice. If this does not occur, check all cable connections and power availability, or replace the ViVOPay 5000.

## Set the Language of the LCD Display

1. Run the **EMV\_Pos\_Simulator.exe** application on the PC.
2. Enter 1 to select the COM port and press **Enter**.
3. Enter 1 to select a baud rate of 19200 and press **Enter**.
4. Enter 1 to select disable handshaking and press **Enter**.
5. The Main Menu is displayed.

```
C:\Downloads\830-0003-00-EX Rev A EMV_Pos_Simulator v1.0...
EMU POS Simulator (Ver 1.00H)
Enter Com Port (1-16) : 1
Select Baud Rate : 0) 9600; 1) 19200 (Default); 2) 38400; 3) 57600; 4) 115200
1
Select Handshaking: 1) Disable (Default); 2) Use HandShaking Signals
1
-----
M A I N   M E N U
-----
1. Set Poll Mode (Auto Poll)
2. Get Result (Auto Poll)
3. Poll on Demand (MChip)
4. Poll on Demand (MXI)
5. Write Ticket (MXI)
6. Get Balance Only (MXI)
7. Switch to ISP
8. Set Baud Rate
9. Set EMU Parameters
A. Read EMU Parameters
B. Configure SD
C. Read SD Log
-----
```

6. Select **9** to set EMV parameters.

7. Select **E** for Language Option. (The letters entered are not case sensitive.)
  8. The screen displays **Please Input Value:**
    - a. Enter 00 for English-only display.
    - b. Enter 01 for Chinese-only display.
    - c. Enter 02 for English and Chinese combined display.
    - d. Enter 03 for French.
  9. The screen displays the serial command and serial response and then goes back to main menu.
  10. The ViVOpay 5000 reader displays **Please Present Card** in the selected language.
  11. Exit the **EMV\_Pos\_Simulator.exe** application and disconnect the reader.
- Note:** Pressing **Esc** at any time during the process takes you back to the main menu.

## Example of Setting the Language

1. Start the **EMV POS Simulator** utility.
2. Enter **1** for Com port 1.
3. Enter **1** to select 19200 baud.
4. Enter **1** to disable handshaking.
5. Enter **9** to set the parameters.

The screen displays **Please input value:**

6. Enter 00 for English-only.

The screen displays the following for English-only:

```

---> 56 69 56 4F 74 65 63 68 32 00 04 00 00 04 FF FB 01 00 D8 5B
<--- 56 69 56 4F 74 65 63 68 32 00 04 00 00 00
<--- AE 16

```

7. Enter 01 for Chinese-only.

The screen displays the following for Chinese-only:

```

---> 56 69 56 4F 74 65 63 68 32 00 04 00 00 04 FF FB 01 01 F9 4B
<--- 56 69 56 4F 74 65 63 68 32 00 04 00 00 00
<--- AE 16

```

8. Enter 02 for English and Chinese combined

The screen displays the following for English and Chinese combined:

```

---> 56 69 56 4F 74 65 63 68 32 00 04 00 00 04 FF FB 01 02 9A 7B
<--- 56 69 56 4F 74 65 63 68 32 00 04 00 00 00
<--- AE 16

```

9. Enter 03 for French-only

The screen displays the following for French-only:

```
---> 56 69 56 4F 74 65 63 68 32 00 04 00 00 04 FF FB 01 03 BB 6B  
<--- 56 69 56 4F 74 65 63 68 32 00 04 00 00 00  
<--- AE 16
```

10. The main menu reappears.

The following display shows the sequence that appears on the screen when running the utility and selecting English-only language.



```
C:\Downloads\830-0003-00-EX Rev A EMV_Pos_Simulator v1.0... - [ ] [X]  
EMU POS Simulator (Ver 1.00H)  
Enter Com Port (1-16) : 1  
Select Baud Rate : 0) 9600; 1) 19200 (Default); 2) 38400; 3) 57600; 4) 115200  
1  
Select Handshaking: 1) Disable (Default); 2) Use HandShaking Signals  
1  
-----  
M A I N M E N U  
-----  
1. Set Poll Mode (Auto Poll)  
2. Get Result (Auto Poll)  
3. Poll on Demand (MChip)  
4. Poll on Demand (MKI)  
5. Write Ticket (MKI)  
6. Get Balance Only (MKI)  
7. Switch to ISP  
8. Set Baud Rate  
9. Set EMU Parameters  
A. Read EMU Parameters  
B. Configure SD  
C. Read SD Log  
-----  
Command: Set/Read EMU Parameters  
-----  
1. Amount Authorized (Numeric)  
2. Amount Other (Numeric)  
3. Terminal Capabilities  
4. Additional Terminal Capabilities  
5. Terminal Country Code  
6. Terminal Floor Limit  
7. Terminal Type  
8. Transaction Currency Code  
9. Transaction Type  
A. Force Magstripe  
B. Terminal Action Code (Other)  
C. Terminal Action Code (Default)  
D. Terminal Action Code (Denial)  
E. Language Option  
F. LCD Delay Time  
G. LCD Font Size  
H. LED Color  
-----  
Please input value:  
03  
---> 56 69 56 4F 74 65 63 68 32 00 04 00 00 04 FF FB 01 03 BB 6B  
<--- 56 69 56 4F 74 65 63 68 32 00 04 00 00 00  
<--- AE 16  
-----  
M A I N M E N U  
-----  
1. Set Poll Mode (Auto Poll)  
2. Get Result (Auto Poll)  
3. Poll on Demand (MChip)  
4. Poll on Demand (MKI)  
5. Write Ticket (MKI)  
6. Get Balance Only (MKI)  
7. Switch to ISP  
8. Set Baud Rate  
9. Set EMU Parameters  
A. Read EMU Parameters  
B. Configure SD  
C. Read SD Log  
-----  
-
```

## Select LCD Pattern

The following procedure is used to select the LED usage pattern on the ViVOpay 5000 LCD when a card is read. There are two styles: USA or EMV.

1. Enter **9** on the main menu to select **Set EMV Parameters** menu.
2. Enter **H** to select the **LED Color** command.  
The message **Please input value** is displayed.
3. Enter one of the following two digit numbers (ENTER not required) that corresponds to the desired LED pattern. Ignore the serial command and response data displayed after the selection  
00 for USA Style (all LEDs flash when card is read – usually all green)  
01 for EMV Style (2nd then 3rd LEDs flash when card is read – usually amber & green)
4. After selecting the LED pattern, verify the correct pattern by reading a card.

## Select LCD Thank You Message Delay Time

The following procedure is used to select the time delayed after the Thank You message is displayed. There are two options: ½ second and 2 seconds.

1. Enter **9** on the main menu to select the **Set/Read EMV Parameters**.
2. Enter **F** to select the **LCD Delay Time** command.  
The message **Please input value** is displayed.
3. Enter one of the following four digit numbers that corresponds to the desired delay. After entering the first two digits, the program terminates the line and waits for the next two digits. Use:  
01F4 for ½ second delay  
07D0 for 2 second delay
4. After setting the LCD delay time, verify the delay time by reading a card and checking for the delay time.

## Select LCD Font Size

The following procedure is used to select the font size displayed on the LCD. There are two options: Large and Extra Large.

1. Enter **9** on the main menu to select the **Set/Read EMV Parameters**.
2. Enter **G** to select the **LCD Font Size** command.  
The message **Please input value** is displayed.
3. Enter one of the following two digit numbers that corresponds to the desired LED pattern. Ignore the serial command and response data displayed after the selection  
02 for large font  
03 for extra large font
4. After setting the LCD font size, verify the font size has changed on the LCD.

# Installation Points



- Unit is susceptible to RF and electromagnetic interference. This means that it is important not to mount the unit next to or near (within 3 or 4 feet) large electric motors, computer UPS systems, microwave transmitters, radio transmitters, communications equipment etc. It should not be mounted on large metal (steel) surfaces or near large metallic objects.
- Unit should be mounted in such a way that it is out of the reach of small children and not in areas where it is likely to have liquids spilled on it. Although fairly rugged, it is not impervious to damage.
- Unit should be tested after installation with a test card. An end-to-end transaction should be run (the same as an actual purchase on the POS). The POS should register "Requesting Authorization". Even if the transaction is declined (as it should be with a test card), it will prove connectivity all the way through the system.
- When mounting the unit on a surface, thorough cleaning of the area with alcohol or Windex should be performed, and allowed to dry prior to applying any sticky tape/velcro pads.
- The decals on the unit have a protective film that should be removed prior to leaving the installation site.
- Due to the high visibility of contactless payment systems with major banking institutions rolling out these systems, it is critical to troubleshoot and fix any problems that occur immediately. From past experience it is important for all involved (not just ViVOtech with its new equipment) to have a successful rollout, and it will help patrons have a better and more rewarding user experience if all systems are working well. For this reason we encourage you to contact ViVOtech Support with any questions or queries that you may have as early as possible, and we will be glad to assist.



The ViVOpay readers are reliable and easy to trouble shoot. The components that may require troubleshooting include the power module, the reader and the serial cable.

Symptom	Possible Cause	Probable Cause and Remedy
<b>General Issues</b>		
Reader does not appear to be powered on --- no LEDs lit, no LCD display.	<ul style="list-style-type: none"> <li>Reader not powered on or incorrect voltage.</li> </ul>	<ul style="list-style-type: none"> <li>Check cable connections.</li> <li>Ensure power is on and correct voltage and current is present.</li> <li>Replace the power module.</li> <li>Ensure power cable plug is fully inserted.</li> <li>Replace the power module.</li> <li>Replace the reader.</li> </ul>
<b>Reading Cards/Fobs/NFC phones</b>		
LEDs do not light and beeper is not audible when card/fob/phone is presented.	<ul style="list-style-type: none"> <li>Card/Fob/Phone not properly presented.</li> <li>Metal or RF interference.</li> <li>Wrong Firmware (contact ViVOTech personnel).</li> <li>Reader not powered on or incorrect voltage.</li> </ul>	<ul style="list-style-type: none"> <li>Present card/fob closer to the reader antenna and ensure it is parallel to the face of the reader.</li> <li>Ensure the card/fob is valid/current.</li> <li>Ensure the unit is not near any large metal objects.</li> <li>Ensure correct firmware is loaded (ViVOTech personnel only).</li> <li>Ensure power is on and correct voltage and current are present.</li> <li>Ensure power cable plug is fully inserted.</li> <li>Replace the reader.</li> </ul>
Some cards/fobs/phones read, but not all.	<ul style="list-style-type: none"> <li>Wrong firmware (contact ViVOTech personnel).</li> <li>Possible bad card/fob.</li> </ul>	<ul style="list-style-type: none"> <li>Ensure correct firmware is loaded on reader (ViVOTech personnel only).</li> <li>Check to see if card/fob is damaged.</li> <li>Replace test card.</li> </ul>
On power-up, display sticks on Firmware version.	<ul style="list-style-type: none"> <li>SAM card isn't seated properly.</li> </ul>	<ul style="list-style-type: none"> <li>Remove power from unit, remove back cover and reseal SAM card. If unsure, contact ViVOTech Support for assistance.</li> </ul>

Symptom	Possible Cause	Probable Cause and Remedy
<b>Communication to POS/ECR</b>		
No data is received, or data is garbled.	<ul style="list-style-type: none"> <li>Faulty or incorrect cable connections.</li> </ul>	<ul style="list-style-type: none"> <li>Check that the cable connection is secure and in the correct port on the POS/ECR.</li> <li>Check that the POS/ECR has the correct software application to accept data from the contactless reader (may need assistance from the POS vendor).</li> <li>Check that cable is correctly attached to back of VP5000 (remove power, remove back cover and examine cable connection. See separate instructions for removal and attachment of cable to VP5000 unit). Contact ViVOtech Support if unsure.</li> </ul>



**Important: Distributors and partners are expected to handle Tier I support issues unless stated to the contrary.**

The ViVOtech Support Department only handles Tier II and Tier III support. The ViVOtech Support Department can be contacted as follows:

- **E-mail:** [support@vivotech.com](mailto:support@vivotech.com).
- **Website:** [http://www.vivotech.com/support/service\\_request.asp](http://www.vivotech.com/support/service_request.asp) (this automatically opens a service case).
- **Phone:** +1-408-248-7001 x 125 during normal business hours (8 AM to 5 PM PST).
- **Phone:** 1-877-248-2535 (24/7 hotline). For non-emergency enquiries, the response back will be during normal business hours PST.

ViVOtech does not repair or service individual readers; nor does ViVOtech provide component parts or schematics for the repair or servicing of individual readers. The Warranty and RMA replacement process outlined below covers the replacement of readers.

The mean time between failure (MTBF) of our product line is greater than 10 years, with a failure rate less than 0.5%.



# Return Material Authorization

## Return Material Authorization (RMA) Policy and Process

1. To process an RMA for any ViVOtech product(s), please first contact ViVOtech Support using one of the above methods to determine that the product is indeed defective. If so determined, ViVOtech Support issues an RMA number. **Without the RMA number, ViVOtech will not accept delivery of returned products.**

**Note:** The preferred method of initiating an RMA exchange is using our service website.

2. When a support request has been received, ViVOtech Support contacts the customer and e-mail an RMA form provided all relevant information has been received and the product(s) is(are) qualified as being under warranty.
3. When the completed RMA form is received by ViVOtech customer support, an RMA number is issued to the customer.
4. The completed RMA form MUST be e-mailed to the address provided by ViVOtech Customer Support).
5. Customers must ship the RMA item(s) to the address below within five (5) days of the date that ViVOtech issues the RMA number.
6. RMA ship-to address:  
Attn: Support Dept.  
ViVOtech Inc.  
451 El Camino Real  
Santa Clara, CA 95050
7. Customers must ensure that product(s) are returned packaged and shipped as described in the electronic RMA form. The RMA number must be written clearly on the outside of the package and should also be included with the completed RMA form inside the package.
8. When an RMA number has been issued, the replacement product shipment process begins within 1 business day.

**Note:** Replacement items are billed to customer at time of shipment. Once the RMA items have been received and verified, the customer will receive a credit for the replacement items.

**Important: All RMA items are repaired or replaced at the discretion of ViVOtech.**