



ViVOPay® DTc (Drive-Through Compact)

User Guide

ViVotech, Inc. 451 El Camino Real Santa Clara, CA 95050
Ph: (408) 248-7001 Email: info@vivotech.com URL: www.vivotech.com

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ViVOtech®, Inc.
451 El Camino Real
Santa Clara, CA 95050

Written and designed at ViVOtech, Inc.

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May 2007

FCC Regulatory Compliance

Notices Class B Equipment

FCC Warning:

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. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try and correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and the receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. In cases where the manual is provided only in a form other than paper, such as on a computer disk or over the Internet, the information required by this section may be included in the manual in that alternative form, provided the user can reasonably be expected to have the capability to access information in that form.

[54 FR 17714, Apr. 25, 1989, as amended at 68 FR 68545, Dec. 9, 2003]

IC Compliance Warning:

This Class B digital apparatus complies with Canadian ICES-003.

Cautions and Warnings



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



WARNING: Avoid close proximity to radio transmitters which may reduce the ability of the reader.



Table of Contents

ViVOpay DTc Overview	1
Overview	1
Features	1
Additional Features	1
ViVOpay DTc Specifications	2
ViVOpay DTc Installation	3
General Installation Procedure	4
ViVOpay DTc Wall Mount Outside Restaurant	4
Surface Considerations	8
Inside the Restaurant	9
Using the ViVOpay DTc to Make a Purchase	9
Presenting Cards, Fobs, or NFC Phones	9
Making a Purchase	9
Troubleshooting	10
ViVOpay DTc Readers	10
Customer Support	12
Warranty	13
Limited Hardware Warranty Period	13
Limited Hardware Warranty Policy	13
Items Not Covered by the Limited Hardware Warranty Policy	13
Return Material Authorization (RMA) Policy and Process	14



ViVOpay DTc Overview

Overview

The ViVOpay® Drive-Through Compact (DTc) seamlessly integrates with existing POS systems. The unit accepts a variety of magnetic credit/debit cards, key fobs, and wireless devices in various shapes and forms.

ViVOpay DTc supports the following contactless card types:

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

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

Features

The following features are supported:

- Flush wall mounting
- Less than 300 mSec transaction time
- Power - 7.5VDC to 45VDC; 50 mV P-P ripple

Additional Features

- Contactless: Accepts transactions from consumers using ISO/IEC 14443 Type A and B cards, NFC phones and key fobs.
- Speed: Enables quick transactions improving store productivity and operational efficiency.
- Implementations: Retail locations, hospitality, car rental, and much more.
- Consumer Intuitive: Equipped with LEDs and sound to provide visual and audible cues to enable smooth and seamless transactions.
- Secure: Provides highly secure transactions whether financial, pre-paid, loyalty, or gift.

ViVOpay DTc Specifications

Hardware	
MTBF	200,000 hrs.
Transmitter Frequency	13.56 MHz +/- 0.01%
Transmitter Modulation	ISO 14443-2 Type A Rise/Fall Time: 2-3 μ sec. Rise, < 1 μ sec fall ISO 14443-2 Type B Rise/Fall Time: < 2 μ sec. each; 8% - 14% ASK
Receiver Subcarrier Frequency	847.5 KHz
Receiver Subcarrier Data	ISO 14443-2 Type A: Modified Manchester ISO 14443-2 Type B: NRZ-L, BPSK
Typical Read Range	4-6 cm.
Physical (exterior mount)	
Height	5.42 inches (137.6 mm)
Width	3.92 inches (99.5 mm)
Depth	1.67 inches (42.5 mm)
Environmental	
Operating Temperature	-25° C to 70° C (-13° F to 158° F)
Storage Temperature	-40° C to 85° C (-40° F to 185° F)
Cold and Heat Shock	-40° C to 85° C (-40° F to 185° F) within 2 hrs
Operating Humidity	10% to 95% non-condensing
Operating Environment	Indoor and outdoor use. Unit is water resistant.
Electrical	
Input Voltage	7.5VDC to 45VDC; 50 mV P-P ripple
Input Power	3W
Reader Power Up Time	Less than 1 second after power applied

ViVOpay DTc Installation

Prior to installation, it is strongly recommended that the installer perform a site survey of the location to create a mounting plan for the ViVOpay DTc unit. Since each deployment location poses unique challenges, performing a site survey helps to identify and mitigate any risks or special considerations before the unit is installed.

Verify that you have the following hardware for the installation:

- Mounting gasket
- Mounting bracket
- ViVOpay DTc
- Bezel
- Cable
- Four Torx screws



The ViVOpay DTc unit is designed for wall-mounting on the outside wall of drive-through lanes in Quick Service Restaurant (QSR) environments. Typically it should be mounted close to the window that patrons will use to pay for their order.

- The ViVOpay DTc unit must be mounted such that the unit is within easy reach of customers.
- The mounting location must be carefully considered to protect the unit from errant drivers. There is no recommended height or location for mounting the unit. Each region, district and store will have different concentrations of vehicle types - high trucks, vehicles with large, protruding wing-mirrors, low convertibles, vans - all have different profiles and unique mounting requirements to keep in mind.
- Additionally, each store will have its own unique architecture and style that can present a unique set of conditions to work around.
- In order to make the ViVOpay DTc unit more visible at night, it is suggested that reflective stickers be mounted to the side of the unit facing the driver.



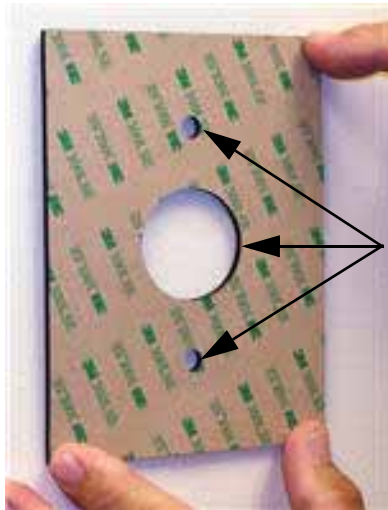
- The ViVOpay DTc unit can be mounted to any suitable surface or structure so long as it is rigid, stable and does not introduce RF interference to the reader.

- ViVOtech produces a mounting bracket which can work in most circumstances. ViVOtech can provide assistance in creating different styles of mounting brackets to provide maximum flexibility in mounting choices if the standard mounting brackets do not position the unit such that it is within easy reach of customers.
- Before cutting any holes in the external restaurant wall, verify that utility wires are not present in the wall where the cable-routing hole is to be drilled.
- The unit should be mounted at least 1-2 feet away from other units.
- Avoid mounting the unit in close proximity to radio transmitters, electrical motors, and other such devices which may generate radio-frequency signals that could interfere with the ability of the reader to read contactless cards.

General Installation Procedure

ViVOPay DTc Wall Mount Outside Restaurant

1. Identify mounting location next to or below the drive-through window.
2. Using the ViVOPay DTc mounting gasket (200-2359-00) as a template, mark the locations of the two holes to be drilled on the vertical surface (e.g. restaurant exterior wall) to which the ViVOPay DTc unit will be attached and the center hole for routing the cable from the ViVOPay DTc into the restaurant.



If the wall of the building is stucco, it is easy and straightforward to drill a hole from the outside. A central hole of approximately 5/8" diameter is required to pass the cables through if you route the small end of the cable from inside the restaurant out through the hole to the ViVOPay DTc.

- The two small holes in the center of the mounting bracket are used to bolt the bracket to the vertical surface. The size of these holes will vary based on the fasteners used to attach the ViVOPay DTc bracket to the wall. Verify that the mounting hardware will pass through the mounting holes in the bracket.

- The large hole in the center is used to route the ViVOPay DTc cabling through the exterior wall. The hole should be at least 5/8 inch diameter and must be large enough to allow feed-through of the small connector on the cable from inside the restaurant to the outside.

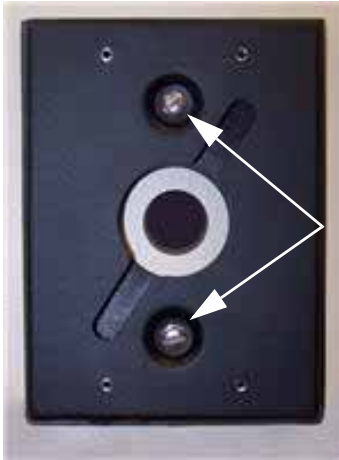


- The four outer screw holes are used to attach the ViVOPay DTc to the mounting bracket using Torx screws.
3. Drill the two small holes that will be used to attach the mounting brackets to the vertical surface.
 4. Drill the large hole through which ViVOPay DTc cabling will be routed (1 cable).
 5. Remove the adhesive cover from the back of the gasket and carefully position the gasket on the wall so that the mounting holes are lined up correctly.



6. Press the gasket into place. The adhesive will hold the gasket in position.
7. Position the wall bracket (200-2357-00) on top of the gasket making sure to align the two small mounting holes in the center of the bracket.

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8. Attach the bracket to the wall with the appropriate screws.



9. Route the ViVOPay DTc cabling from inside the restaurant through the hole in the wall and through the gasket and the mounting bracket.



10. Align the cable end with the cable receiver on the back of the ViVOPay DTc.



11. Snap the cable into place.



12. Position the ViVOPay DTc over the wall mounting bracket making sure that the four screw holes are aligned.



13. Use the four Torx flat head screws to secure the ViVOPay DTc to the mounting bracket.

14. Position the bezel over the front of the ViVOPay DTc unit. The bezel covers the Torx screw heads once the bezel is locked in position.



Note: Make sure the screws are fully tightened before securing the bezel since you will not be able to access the screw heads once the bezel is in place.

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15. Snap the bezel into place. Once the bezel is secured in place by the 4 locking tabs, it is not easily removed.



To remove the bezel once it is installed, perform the following steps:

- a. Insert a narrow-bladed screwdriver between the ViVOpay DTc unit and the upper left corner along the long side of the unit.
 - b. Insert a second narrow-bladed screwdriver underneath the outer edge of the bezel adjacent to the first screwdriver.
 - c. Gently twist the blade of the first screwdriver while applying upward pressure on the second screwdriver until the upper left side of the bezel pops free from the base.
 - d. Move both screwdrivers to the lower left corner along the long side of the ViVOpay DTc unit.
 - e. Gently twist the blade of the screwdriver while applying upward pressure on the second screwdriver until the lower left side of the bezel pops free from the base.
 - f. Once the left side of the bezel is free from the base, wiggle the bezel to free the right side of the bezel.
 - g. The bezel should be able to be lifted away from the ViVOpay DTc unit.
16. Seal the hole in the wall from inside the restaurant with sealant/foam/etc.

Surface Considerations

In the following picture, notice the uneven stone surface directly beneath the window. This provides a unique set of challenges as the ViVOpay DTc unit then has to be mounted to one side of the window.



It then has to be decided how customers will be most comfortable making payments if they have driven up to the window so that their car window is opposite the drive-through window and they then have to reach back to the left-side of the window to present their contactless

card or swipe their magnetic stripe card. If the ViVOPay DTc unit is mounted to the right of the drive-through window, then consideration must be made for those who may wish to pay by magnetic stripe card that they can reach the MSR slot.

Inside the Restaurant

1. If desired, route the ViVOPay DTc cable through a wall plate that can then be affixed to the inside wall.
Before mounting the wall plate, fill the hole with sealant/foam/etc.
2. Determine the cable routing path to the drive-through terminal/register and route accordingly.
3. Tidy cable routing as appropriate with cable ties, etc. to prevent loose or dangling cables.

Using the ViVOPay DTc to Make a Purchase

Presenting Cards, Fobs, or NFC Phones

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



The reader should beep and all four green LEDs should illuminate. This tests the reader's ability to read the RFID test card. If you use a test card and the ViVOPay reader is attached to the POS, a dummy transaction can be tested. The transaction will not be authorized and will come back with a decline, but will at least test for end-to-end connectivity.

Making a Purchase

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 or have them swipe their magnetic stripe card through the MSR on the side of the ViVOPay DTc.
2. A series of beeps and LED flashes indicate the card/fob/phone has been validated.
3. A receipt is printed with the purchase amount and needs to be collected from the cashier.



ViVOPay DTc Readers

The ViVOPay DTc readers are reliable and easy to troubleshoot. The components that may require troubleshooting include the power module, the reader, and the serial cable.

Symptom	Possible Cause	Probable Cause and Remedy
General Issues		
Reader does not appear to be powered on (no LEDs lit).	<ul style="list-style-type: none"> Reader not powered on or incorrect voltage. Incorrect power supply used. 	<ul style="list-style-type: none"> Check cable connections. Verify that power is on and correct voltage and current are present. Replace the power module. Replace the reader.
Reading Cards/Fobs/NFC phones		
LEDs do not light and beeper is not audible when card/fob/phone is presented.	<ul style="list-style-type: none"> Card/fob/phone not properly presented. RF interference. Unsupported card used. Wrong firmware (contact ViVOtech personnel). 	<ul style="list-style-type: none"> Present card/fob/phone closer to the reader antenna, and ensure it is parallel to the face of the reader. Verify that the card/fob/phone is valid/current (shouldn't affect phones). Test with ViVOtech "ViVOCard Contactless Test Card" part number 241-0015-03 Rev A. Verify that the Phone Wallet is enabled for payments. Try a different card/fob/phone. Check to see if card/fob/phone is damaged. Verify that phone cover is correctly attached to phone (Nokia 3220). Verify that correct firmware is loaded on reader (ViVOtech personnel only). Power cable plug is fully inserted. Replace the reader.
Some cards/fobs/phones read, but not all.	<ul style="list-style-type: none"> Possible bad card/fob/phone. Unsupported card used. Wrong firmware (contact ViVOtech personnel). 	<ul style="list-style-type: none"> Check to see if card/fob/phone is damaged. Verify that phone cover is correctly attached to phone. Verify that correct firmware is loaded on reader (ViVOtech personnel only).

Symptom	Possible Cause	Probable Cause and Remedy
Communication to POS/ECR		
No data is received, or data is garbled.	<ul style="list-style-type: none"> Faulty or incorrect cable connections. Contactless application is not installed on terminal (for serial connections only). 	<ul style="list-style-type: none"> Check that the cable connection is secure and in the correct port on the POS/ECR. Check that the POS/ECR has the correct software application to accept data from the contactless reader (may need assistance from the POS vendor). Contact the payment processor for an application upgrade.



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.
- **Website:** 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%.

Warranty

Limited Hardware Warranty Period

The limited warranty on all ViVOtech-branded hardware products begins on the date the product is shipped to the purchaser, and is in effect for 12 months thereafter.

The warranty period is not extended if ViVOtech repairs or replaces a warranted product or part (i.e., the 12 month warranty period continues from the date of original purchase as stated on the Sales Order, even in the case of a repaired or replaced product). ViVOtech may change the availability of limited warranties, at its discretion, but any changes will not be retroactive.

Extended warranties may be available. Contact your ViVOtech Sales representative for further information.

Limited Hardware Warranty Policy

ViVOtech's limited warranty covers defects in materials and workmanship in all ViVOtech-branded hardware products.

Items Not Covered by the Limited Hardware Warranty Policy

- ViVOtech pilot, prototype, and Beta hardware
- 3rd party (non-ViVOtech branded) products and accessories
- Products with problems due to the following:
 - External causes such as accident, abuse (including immersion in liquids or operation-affecting spillages of liquids on to the unit), misuse, or problems with electrical power
 - Product Servicing not authorized by ViVOtech
 - Usage that is not in accordance with product instructions (such as operating units outside the environmental ranges/conditions defined in the product's design specifications)
 - Failure to follow the product instructions or failure to perform preventive maintenance
 - Problems due to improper installation
 - Problems caused by using accessories, parts, or components not supplied or authorized by ViVOtech
 - Products with missing or altered serial numbers
 - Products for which ViVOtech has not received payment

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-mails 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.

Note: The completed RMA form MUST be e-mailed to the address provided by ViVOtech Customer Support.

4. Customers must ship the RMA item(s) to the address below within five (5) days of the date that ViVOtech issues the RMA number.

RMA ship-to address:

Attn: RMA Dept.
ViVOtech Inc.
451 El Camino Real
Santa Clara, CA 95050

5. 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.
6. When an RMA number has been issued, the replacement product shipment process begins within 1 business day.
7. Products returned to the customer from ViVOtech are normally shipped via "Ground shipping" with the shipping costs being covered by ViVOtech, unless the customer pays additional charges for expediting the shipment.
8. If a product returned to ViVOtech under this RMA policy is found to have no trouble associated with it, or it has been clearly abused, the product will be returned to the customer "as is" and the customer will be billed for the shipping.

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: ViVOtech will make every reasonable effort to replace warranted products with identical devices. However, under certain and unusual circumstances (such as obsolescence of products) Vivotech reserves the right to replace a warranted product with a functionally similar device that may have a dissimilar appearance or style.
