



**VRC2100 Vending Reader**  
Installation Guide

The CBORD Group, Inc.  
Ithaca, NY

# VRC2100 Vending Reader Installation Guide

## Regulatory Compliance Statements

### *Safety Compliance:*

The VRC2100 is a low voltage Class 2 device designed for indoor operation with MDB vending machines. There are no user serviceable parts or fuses inside.

### *FCC Class-A Notice:*

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if it is not installed and used in accordance with the instruction manual, it may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference, in which case the user will be required to correct the interference at the user's own expense.

### *FCC 15.19(a)(3) Warning for Contactless versions:*

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.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes: (1) L'appareil ne doit pas produire de brouillage, et (2) L'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Any modifications made to this device that are not approved by The CBORD Group, Inc., may void the authority granted to the user by the FCC to operate this equipment.

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June 2012

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# 1 Introduction

## 1.1 Software Requirements

One of the following versions of CS Gold<sup>®</sup> software is required:

- CS Gold version 5.0.33 or later
- CS Gold version 6.0.6 or later

## 1.2 Training

For information about training courses and prerequisites, go to [www.cbord.com/support/training](http://www.cbord.com/support/training).

## 1.3 Customer Support

CBORD<sup>®</sup> is committed to providing full support to both customers and suppliers through person-to-person as well as online support options.

Phone number:

1-866-789-2977

Email address:

CS\_Support@CBORD.com

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## 2 Specifications

The following table lists the specifications for the VRC2100:

<b>Specification</b>	<b>Description</b>
Operating Environment	Indoors
Operating Temperature	0° to 50° C
Operating Humidity	0 to 90% RH, non-condensing
Voltage Input	24V DC nom. (37.5V DC max.), supplied by MDB bus
Mounting Dimensions, BV Mount	Fits standard vending machine bill validator opening
Mounting Footprint, Surface Mount, Contactless	4.9" W × 5.25" H
Mounting Dimensions, Surface Mount, Mag. Swipe	4.4" W × 5.25" H

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## 3 Installation

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**WARNING:** *To avoid personal injury or death, disconnect all power from the vending machine before proceeding with this installation.*

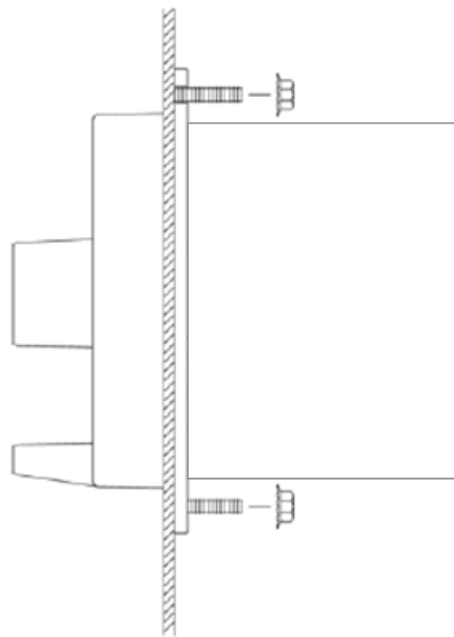
*Do not attempt to perform this procedure unless you are experienced in the repair and installation of complex electrical equipment.*

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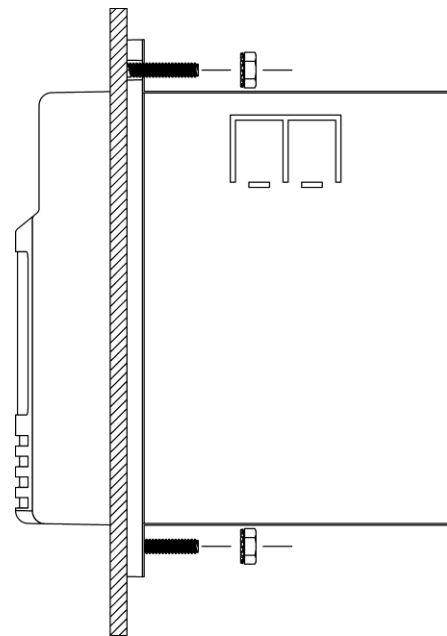
### 3.1 Install the VRC2100 Vending Reader

Use the following procedure to install the VRC2100 Vending Reader:

1. Remove power from the vending machine.



*Magnetic Stripe Insert Version*



*Contactless Version*

2. Install the VRC2100 into a spare bill acceptor or card reader opening in the vending machine.
3. Plug the MDB cable supplied with the VRC2100 into the MDB connector on the back of the reader.
4. Unplug the nearest MDB connector, such as the one going to the coin changer, and plug the VRC2100 MDB cable in-line between the coin changer and the cable that previously was going to the coin changer. Route the MDB cables to avoid pinching or pulling.
5. Plug one end of the network cable supplied with the VRC2100 into the network jack on the back of the reader. Route the cable safely out the back of the vending machine and plug it into a nearby 10/100 Base-T campus network jack.

For CS Gold installations employing the VRC2100 multi-drop feature to conserve IP addresses, route and connect the RS422 multi-drop cables as described in section 3.6 (*Controller Configuration*).

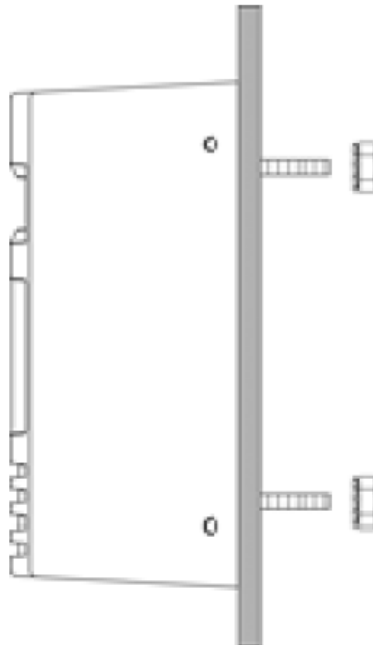
6. Confirm that all cables are secure and safely routed and then apply power to the vending machine.
7. Configure the VRC2100 network port as described in section 3.3 (*Network Configuration*).
8. Configure the VRC2100 controller as described in section 3.6 (*Controller Configuration*).
9. Configure the Host as described in the *CS Gold Server Guide*.
10. Test for proper operation by swiping a valid card and selecting an item.
11. Close and lock the vending machine door.

Alternatively, the VRC2100 can be configured with the reader outside of the vending machine using the External Power Supply (part number VND6740086).

## 3.2 Install the VRC2100 Surface Mount Vending Reader

Use the following procedure to install the VRC2100 Surface Mount Vending Reader:

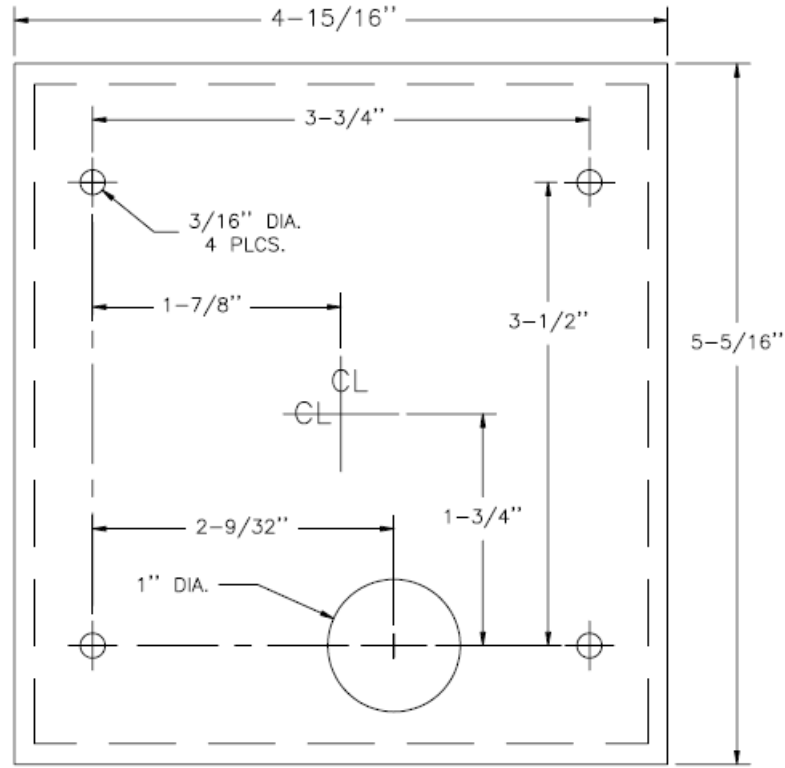
1. Remove power from the vending machine.



2. Select the reader mounting location on the front of the vending machine with clearance behind.



3. Drill five through holes with the dimensions shown in the following template (the template is not to scale).



4. Remove the four thread guards and loosely secure the mounting panel (VRC4410043) to the vending machine using the four KEPS nuts supplied. Hand-tighten them only.
5. Temporarily hang the VRC2100 by partially opening and looping a large paperclip through a hole in the mounting panel and a hole in the VRC2100 housing.
6. Plug the MDB cable supplied into the MDB connector on the bottom edge of the VRC2100 circuit board, with the other end of the cable routed into the vending machine through the hole made in step 3.
7. Unplug the nearest MDB connector (such as the connector going to the coin changer) and plug the VRC2100 MDB cable inline between the coin changer and the cable previously going to the coin changer.
8. Route the supplied network cable from the VRC2100 safely out the back of the vending machine, and plug the cable into a nearby 10/100 Base-T campus network jack. Plug the other end of the network cable into the network jack on the bottom edge of the VRC2100 circuit board.

For CS Gold installations employing the VRC2100 multi-drop feature to conserve IP addresses, route and connect the RS422 multi-drop cables as described in section 3.6 (*Controller Configuration*).

9. Confirm that all cables are secure and safely routed. Apply power to the vending machine and configure the VRC2100 network port as described in section 3.3 (*Network Configuration*).
  10. Configure the VRC2100 controller as described in section 3.6 (*Controller Configuration*). Remove power after this step is completed.
  11. Attach the VRC2100 to the mounting panel with the four security screws supplied using a 1/8" Security Hex Driver (part number 3VNDGR5251261000 or 3VNDGR5251260000). This may require temporarily removing the VRC2100 mounting panel from the vending machine. Fully tighten the four KEPS nuts to secure the mounting panel to the vending machine.
  12. Close and lock the vending machine door, and apply power to the vending machine.
  13. Configure the Host as described in the *CS Gold Server Guide*.
- Alternatively, the configuration can be done in a more convenient location before installing the VRC2100 to the vending machine using the External Power Supply (part number VND6740086).

### 3.3 Network Configuration

The XPORT is configured using the **Device Installer** program, available from Lantronix® at the following site:

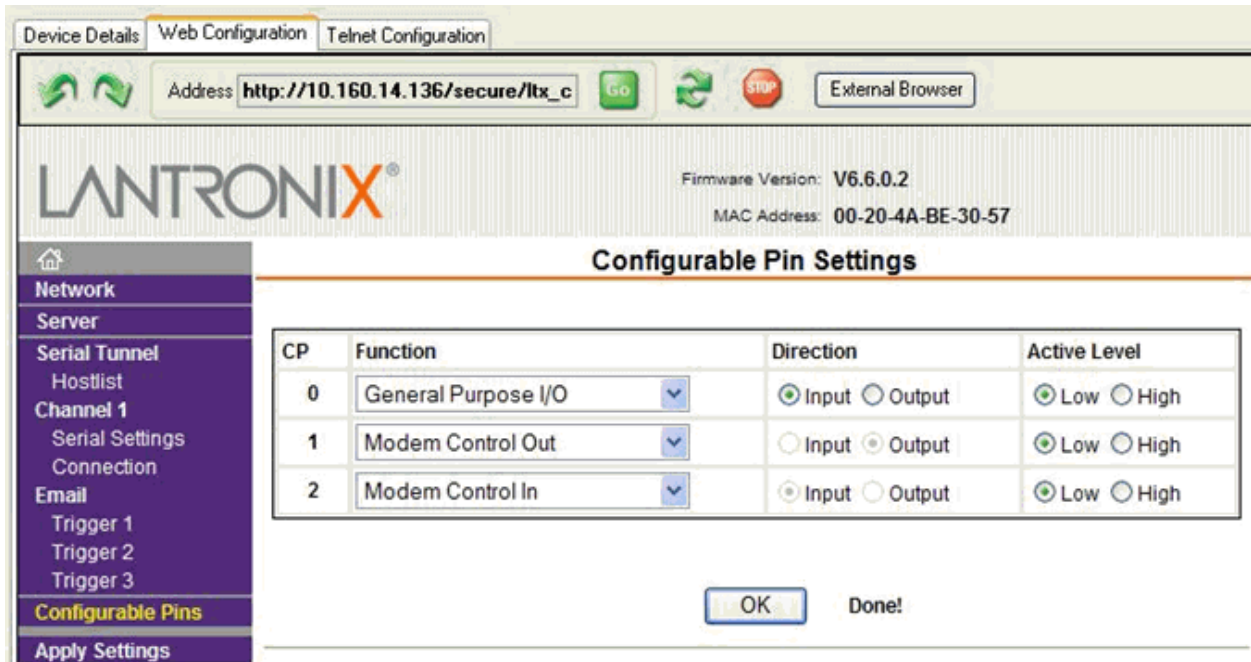
<http://www.lantronix.com/support/downloads/?p=DEVICEINSTALLER>

After installing the software package, access the software and wait a few seconds for it to find all Lantronix hardware on the local net. There could be several XPORT-03 devices found, so to make sure you are selecting the proper one, compare the MAC address printed on a sticker on the VRC2100 with the MAC IDs found by the program. This will be a 12-digit number with dashes, such as 00-20-4A-80-66-59.

### 3.4 Configure the XPORT for Odyssey

To configure the XPORT for Odyssey HMS™, perform the following procedure in the order presented to ensure proper operation:

1. After making sure that the MAC address on the VRC2100 sticker matches the Device Installer **Hardware Address**, double-click the XPORT-03 that you want to configure.
2. Access the **Web Configuration** tab and click **Configurable Pins** in the left pane.



3. CP0 is not used and can be left with a **Function** setting of **General Purpose I/O**.
4. For CP1, select **Modem Control Out** from the **Function** drop-down list. For CP2, select **Modem Control In** from the **Function** drop-down list.

---

**Note:** The **Direction** options (**Input** and **Output**) will be disabled because the direction is inferred by the pin's In or Out function.

---

5. Make sure that the **Active Level** option is set to **Low** for both the CP1 and CP2.
6. When you see **Done!** next to the **OK** button, click **Apply Settings** in the left pane. The XPORT will be rebooted.

7. Access the **Telnet Configuration** tab. After the XPORT connects to the Telnet session, a blank page will appear. Click **Connect** and then quickly press the [Enter] key when prompted with **Press Enter for Setup Mode**.

For daisy-chain installations, only the Master needs these settings. The Slaves use an address in the communications packet. For Slave units, skip the Telnet settings.

8. Text will appear showing the current settings. A menu will appear at the bottom of the tab:

Change Setup:

0 Server  
1 Channel 1  
3 E-mail  
5 Expert  
6 Security  
7 Defaults  
8 Exit without Save  
9 Save and exit

Your choice?

9. Select **0 Server** to set the network settings for the VRC2100. The IP address is unique to each installation and requires your network administrator to assign an IP address to the VRC2100. The Gateway IP address and Netmask are also supplied by your network administrator.

- IP Address: Enter the IP address.
- Set Gateway IP Address: Enter the Gateway IP address.
- Netmask: Number of Bits for Host Part (0=default) (10)  
*The network administrator will supply this number.*
- Set DNS Server IP addr (N)?
- Change Telnet/Web Manager password (N)?

10. Select **1 (Channel 1)** and enter the following settings:

- Baudrate (9600) ?
- I/FMode(4C)?
- Flow(00)?
- Port No (3700) ? *This setting must match the Odyssey Port number in Port Setup.*
- ConnectMode (C2) ?
- Send '+++ ' In Modem Mode (N) ?

- Show IP addr after 'RING' (N) ?
- Auto increment source port (N) ?
- Remote IP Address: (010) .(160) .(013) .(080) *This setting must match the Odyssey IP address.*
- Remote Port (3770) ? *This setting must match the Odyssey Port number in Port Setup.*
- DisConnMode (80) ?
- FlushMode (80) ?
- Pack Cntrl (00) ?
- DisConnTime (00:00) ?
- SendChar 1 (00) ?
- SendChar 2 (00) ?

11. Select **5 Expert** to set the TCP Keepalive settings:

- TCP Keepalive time in s (1s - 65s; 0s=disable): (65) ?  
*This results in 60 seconds.*
- ARP Cache timeout in s (1s - 600s): (600) ?
- CPU performance (0=Regular, 1=Low, 2=High): (0) ?
- Disable Monitor Mode @ bootup (Y) ?
- RS485 tx enable active level (0=low; 1=high): (0) ?
- HTTP Port Number: (80) ?
- SMTP Port Number: (25) ?
- MTU Size (512 - 1400): (1400) ?
- Enable alternate MAC (N) ?
- Ethernet connection type: (0) ?

12. Select **6 Security** to disable some ports for security reasons:

- Disable SNMP (Y) ?
- Disable Telnet Setup (N) ?
- Disable TFTP Firmware Update (N) ?
- Disable Port 77FEh (N) ?
- Disable Web Server (N) ?
- Disable Web Setup (N) ?
- Disable ECHO ports (N) ?
- Enable Enhanced Password (N) ?
- Disable Port 77F0h (N) ?

13. Enter **9** to save your settings and exit. The XPORT will be rebooted and will start operating.

## 3.5 Configure the XPORT for CS Gold

Use the following procedure to configure the XPORT for CS Gold. Only Telnet Configuration settings are required:

1. In the Lantronix **Device Installer** program, access the **Telnet Configuration** tab. Once the XPORT connects to the Telnet session, a blank page will appear. Click **Connect** and then quickly press the [Enter] key when prompted with **Press Enter for Setup Mode**.
2. Select **0 Server** and enter the following settings for CS Gold. The IP address, Gateway IP address, and Netmask must be assigned by your network administrator:
  - IP Address: Enter the IP address.
  - Set Gateway IP Address: Enter the Gateway IP address.
  - Netmask: Number of Bits for Host Part (0=default) (10)
  - Set DNS Server IP addr (N) ?
  - Change Telnet/Web Manager password (N) ?
3. Select **1 (Channel 1)** and enter the following settings for CS Gold:
  - Baudrate (9600) ?
  - I/FMode(4C)?
  - Flow(00)?
  - Port No (901) ?
  - ConnectMode (C0) ?
  - Send '+++ ' In Modem Mode (N) ?
  - Show IP addr after 'RING' (N) ?
  - Auto increment source port (Disabled) ?
  - Remote IP Address: Set to zero for CS Gold.
  - Remote Port (901) ? Set to zero for CS Gold.
  - DisConnMode (00) ?
  - FlushMode (77) ?
  - Pack Cntrl (00) ?
  - DisConnTime (00:00) ?
  - SendChar 1 (00) ?
  - SendChar 2 (00) ?
4. Enter **9** to save your settings and exit. The XPORT will be rebooted and will start operating.

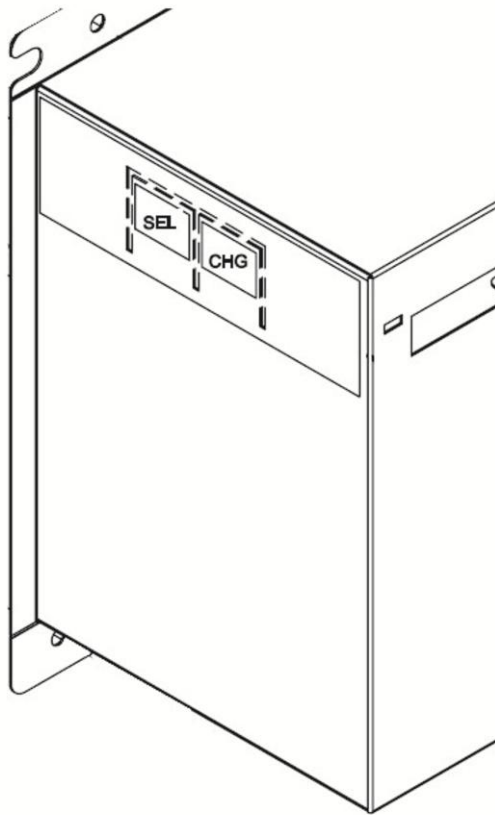
## 3.6 Controller Configuration

The VRC2100 vending reader controller is configured using two buttons located on the side of the reader. Alternatively, the configuration settings can be changed over the network using **vrc2100Flasher.exe** as described in section 4 (*Network-Based Configuration and Firmware Update*).

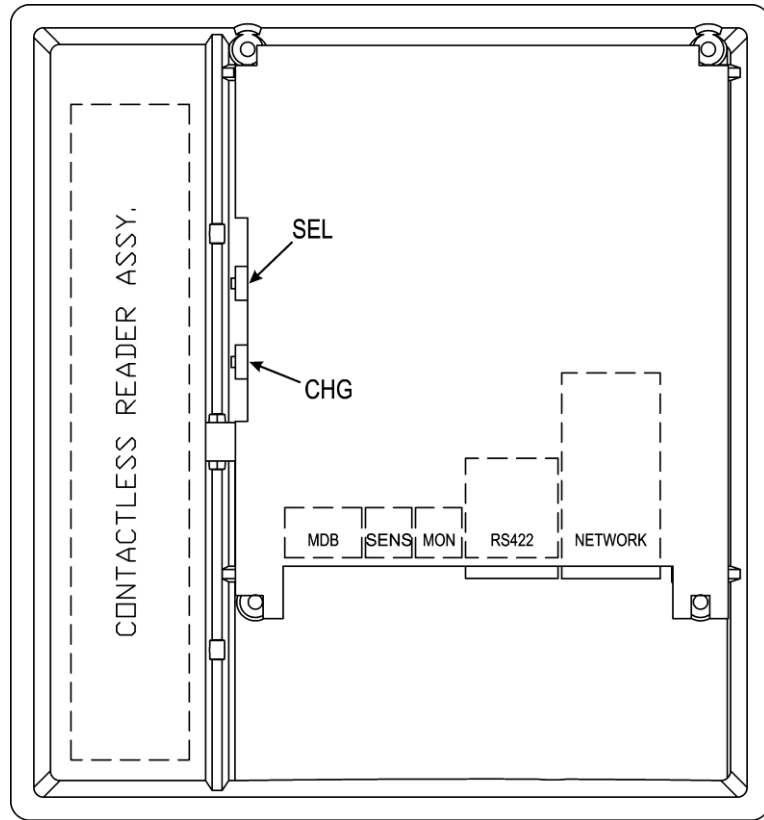
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**IMPORTANT:** It will be necessary to use the two buttons located on the side of the reader to initially set up the controller. After initial setup, the controller can be configured or updated using the VRC2100Flasher Utility.

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*VRC2100 Vending Reader – Configuration Buttons*



*VRC2100 Surface Mount Vending Reader – Configuration Buttons*

Press and hold **SEL** for 3 seconds to start the configuration session. The display will show **Configuring...** for 2 seconds and will then display the first menu item.

If, at any point, you want to stop the configuration process, stop pushing the buttons. The configuration will time out automatically saving any changed settings and leaving any unchanged settings intact. For example, if you only want to change the **Master/Slave** setting, change that setting and then stop pushing the buttons for 60 seconds. The display will show **Exiting...** and return to normal operation, saving the **Master/Slave** setting. Alternatively, just hold down **SEL** as it scrolls through the rest of the settings until it reaches the display **Saving and Exiting** and then let go of all buttons.

**SEL** scrolls through the menu items. **CHG** changes the setting for that menu item. When you reach the menu item that you want to change, press **CHG** to advance the menu item through all possible settings. When you reach the setting you want, let go of **CHG**. Push **SEL** to go to the next menu item.

Settings are stored in flash memory. Functional changes are saved immediately upon changing a setting.



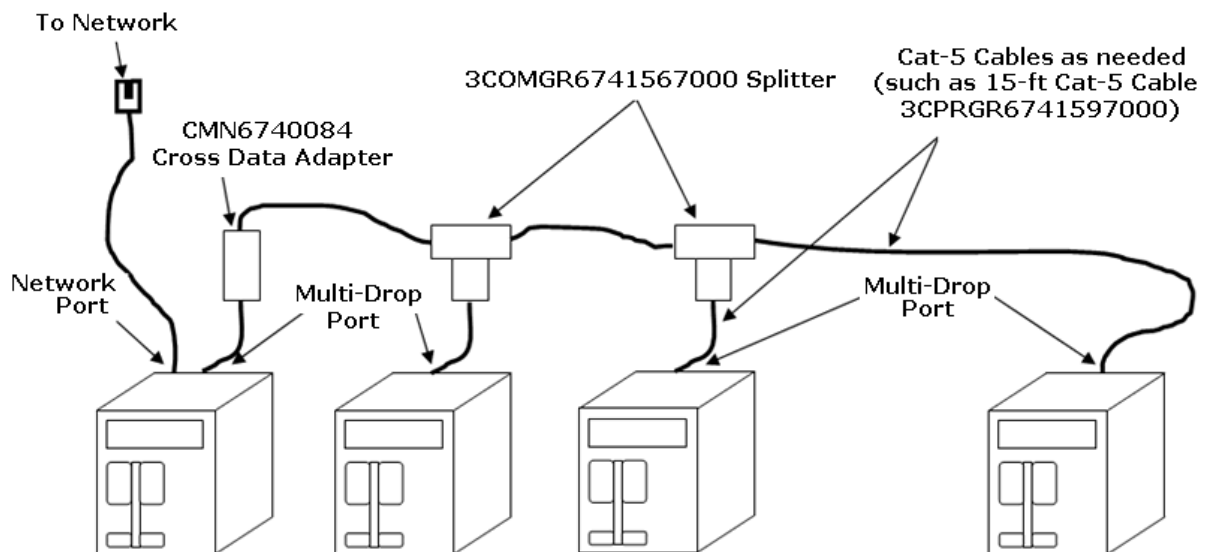
## 3.7 Menu Items

Configure the following items as required for your installation:

- **Master/Slave:** Specify the following settings:
  - For Odyssey, select **Master** for all VRC2100s.
  - For CS Gold, select **Master** for a single VRC2100 not in a chain.
  - For CS Gold, select **Master** for the first VRC2100 in a chain.
  - For CS Gold, select **Slave** for the subsequent VRC2100s in a chain.

When used with CS Gold, the VRC2100 can use one IP address for up to 10 VRC2100s in a daisy-chain configuration. The first VRC2100 in the chain, or a single VRC2100 without a daisy-chain, is the Master. It will be connected to an Ethernet port using a Cat-5 cable plugged into the Network port on the back of the VRC2100.

All other VRC2100s in the chain will be set to **Slave**. These VRC2100s will not use a network connection. Instead, they will use Cat-5 cables to connect the RS-422 multi-drop ports as shown below:



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**Note:** Odyssey does not currently support device addressing; a unique IP address is required for each reader.

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- **Address:** Specify the following settings:
  - For Odyssey, set to 10.
  - For CS Gold, set to 10 for a single VRC2100 not in a chain.
  - For CS Gold, set to 10 for the first VRC2100 in a chain.

- For CS Gold, set to 11 for the second VRC2100 in a chain, 12 for the next, and so on.

This is the multi-drop device address of the VRC2100 on CS Gold. This number must match the setting in the **Physical Address** field of CS Gold TPS Configuration for the node. Its range is **10** to **19** and will roll over to **10** when **CHG** is pressed after address **19** is reached. This setting has no impact on Odyssey.

- **Server:** Specify the following settings:
  - For Odyssey, set to Odyssey.
  - For CS Gold, set to CS Gold.
- **Encryption:** Specify the following settings:
  - For Odyssey, set to **On** or **Off**, as needed, to match the Odyssey server setting.
  - For CS Gold, this setting does not appear. Encryption is determined by the Location Configuration setting in the server.
- **Termination:** Specify the following settings:
  - For Odyssey, this setting is irrelevant.
  - For CS Gold, for a single VRC2100 not in a chain, this setting is irrelevant.
  - For CS Gold, for the first VRC2100 in a chain, select **On**.
  - For CS Gold, for the subsequent VRC2100s in a chain other than the last, select **Off**.
  - For CS Gold, for the last VRC2100 in a chain, select **On**.

In a daisy-chain configuration (CS Gold only), termination must be set to **ON** only for the Master and for the last Slave in the chain. Any VRC2100s in the middle of a chain must have termination set to **OFF**.

---

**Note:** For a single VRC2100 or for Odyssey platforms, this setting is irrelevant.

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- **PROX Sent as:** Specify the following settings:

When a VRC2100 is equipped with a contactless reader, the data can be sent to the host in various ways. The simplest method is to send the data from the contactless reader in "Raw Hexadecimal" form; for example, FA5923C1. A CS Gold or Odyssey media rule would need to be set up to map this hexadecimal number to the matching user account.

  - To send contactless card data in raw hexadecimal format, select **HEX**.
  - To send contactless card data in formatted ASCII format, select **ASC**.

The following settings will appear only if the **PROX Sent as** setting is set to **ASC** (ASCII).

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**Note:** Contactless support on the VRC2100 was extended in version 1.04.05 to support 128-bit cards.

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- **DCD Start Pos:** Set to match the number of leading parity bits and “custom” bits, if any, transmitted by the cards being used with this reader. This selects the number of bits (0 – 32) to eliminate to the left of the card data. For example, 26-bit Wiegand cards would set this to 1 for one leading parity bit.
- **Acct # Bits:** Set to match the number of bits transmitted by the contactless card as the ID field. This selects the number of bits (0 – 64) after the parity bit(s) of the contactless card data to be used as the ID portion.
- **FC # Bits Setting:** Set to match the number of bits transmitted by the contactless card as the **Facility Code** field. This selects the number of bits (0 – 32) to be used as the facility code.
- **Acct # Digits Setting:** Set to the number of characters to be sent to the host as the account number portion of the contactless card. This selects how many digits (0 – 20) will be sent to the host for the account number. Leading zeros will be added if necessary.
- **FC # Digits Setting:** This setting indicates how many digits will be sent to the host for the facility code (0–10). Additional zeros will be padded at the beginning, if necessary.
- **Free Vend:** When you arrive at this option, press **CHG** to send a \$10.00 credit to the VMC for the purpose of testing MDB compatibility. Select an item to complete the test. After the item is dispensed, or after a 60-second timeout, the VRC2100 will complete the transaction and leave the Free Vend mode. No accounts are involved and no card data is sent. This is strictly a local function for testing compatibility with the MDB bus.
- **MDB BUS Address:** This option sets the Multi-drop Bus Address, either 0x10 or 0x60. The default setting is **0x10**.

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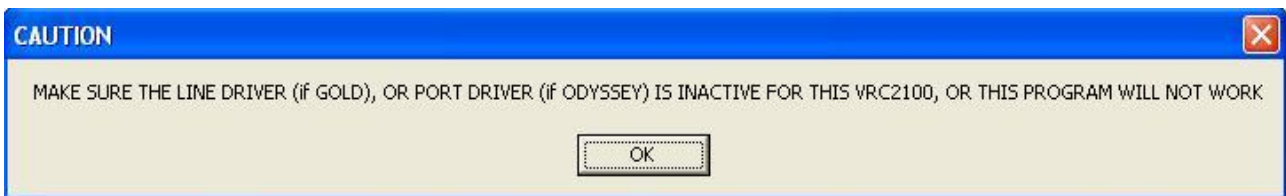
## 4 Network-Based Configuration and Firmware Update

This section provides information about network-based configuration and firmware update.

### 4.1 Remote Configuration

After a VRC2100 has been configured locally as described in section 3.6 (*Controller Configuration*), the configuration can be changed remotely using the VRC2100 Configuration and Firmware Update utility, **vrc2100Flasher.exe**. This utility can also be used to remotely load firmware updates to the VRC2100 as described in section 4.4 (*Firmware Update*). The vrc2100Flasher software is designed to work under Microsoft® Windows® XP, or in a Windows XP Virtual PC running on Windows 7.

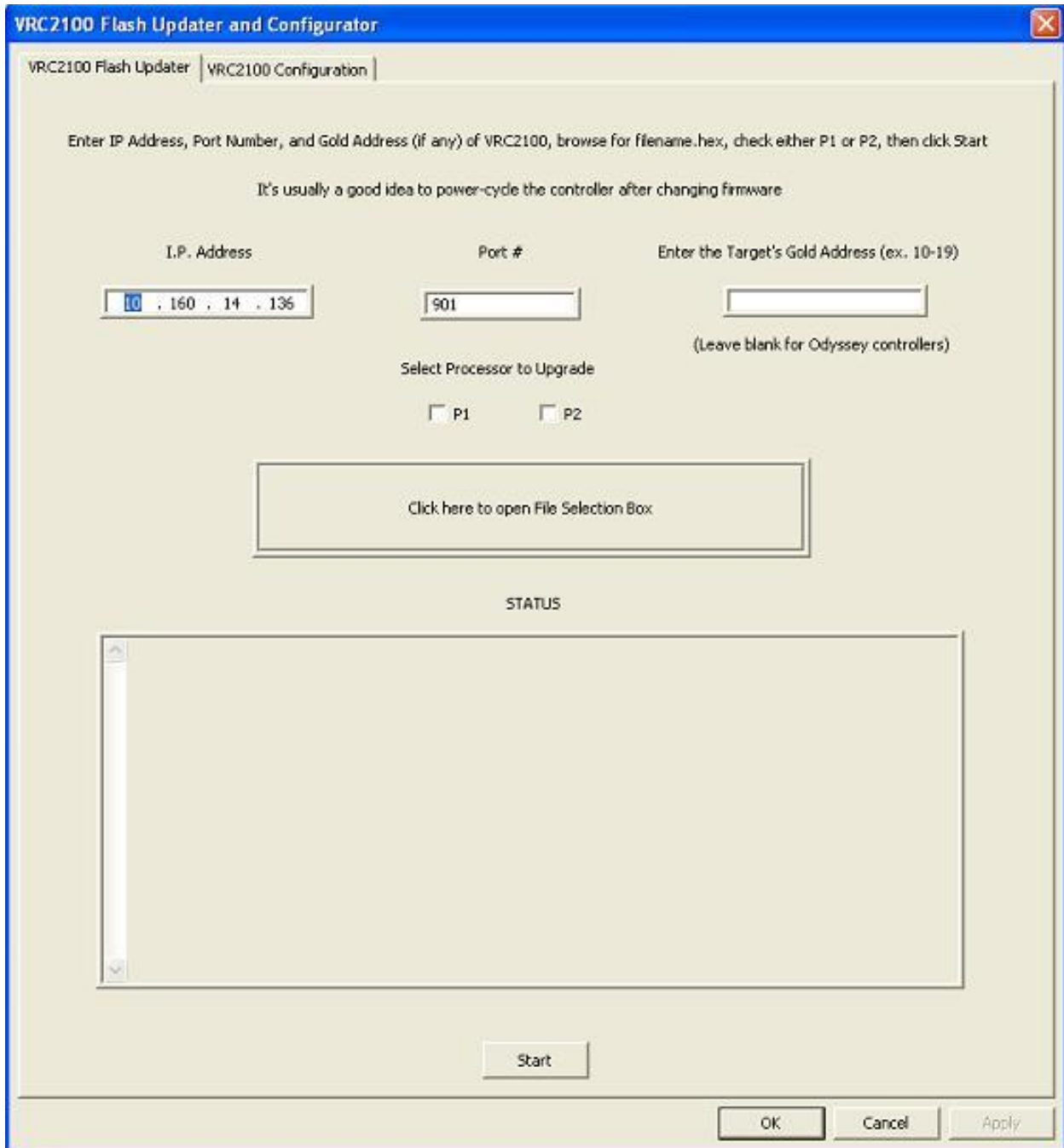
When the program is launched, the following caution is displayed:



If the VRC2100 is communicating to a host (CS Gold or Odyssey), the program will not be able to connect because the VRC2100 supports only one network connection at a time. The recommended way to remotely disconnect the VRC2100 from the host is to set it to inactive. For CS Gold, refer to the *CS Gold® Administration Guide Book 3 – Location Administration* (TP-830238-001) for the steps to inactivate a specific port using the **TPS Configuration** option. For Odyssey, refer to the *Odyssey PCS™ User Guide* for instructions to set a socket to inactive.

Note that these host operations require the terminal communications service to be stopped/started (bounced), which will cause many or all terminals to go offline for up to 30 seconds. Consider this disruption of service when choosing a time to upgrade or configure your VRC2100 readers.

Click **OK**. The **VRC2100 Flash Updater** tab will be displayed on the **VRC2100 Flash Updater and Configurator** screen.



The **VRC2100 Configuration** tab can be used to review and set the various VRC2100 configuration options.

**VRC2100 Flash Updater and Configurator**

VRC2100 Flash Updater | VRC2100 Configuration

Enter the I.P. address, the port #, and the Target's Gold address (if any) of the VRC, then click on the 'Connect' Button. The settings below will then show the current configuration. Change them as needed, then click "Submit" below.

Enter the I.P. Address of the VRC: 10 . 160 . 14 . 136

Enter the Port number of the VRC: 901

Enter the Target's Gold Address (ex. 10-19):

(Leave blank for Odyssey controllers)

**CONNECT**

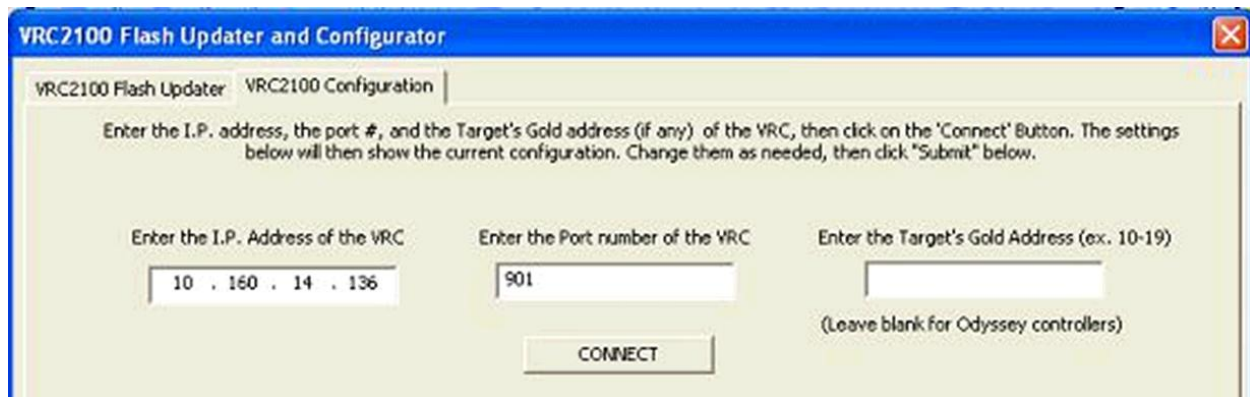
<p><b>Host Type</b></p> <input type="checkbox"/> Gold <input type="checkbox"/> Odyssey	<p><b>Gold Address</b></p> <input type="text"/> Gold Address. Address is irrelevant for Odyssey.	<p><b>Decode Start Position</b></p> <input type="text"/> Number of bits to skip at the beginning of Prox card data.	<p><b>Account # bits:</b></p> <input type="text"/> Number of bits to use in the Account #
<p><b>Master / Slave</b></p> <input type="checkbox"/> Master <input type="checkbox"/> Slave For Odyssey, only Master will work	<p><b>Odyssey Encryption</b></p> <input type="checkbox"/> ON <input type="checkbox"/> OFF For Gold, Encryption is set in Location Configuration	<p><b>Facility Code bits</b></p> <input type="text"/> Number of bits to use in the Facility Code	<p><b>Account # digits</b></p> <input type="text"/> Number of digits to use for the Account Number. Leading zeros may be added
<p><b>Termination</b></p> <input type="checkbox"/> ON <input type="checkbox"/> OFF Termination should be ON for any Master and ONLY the LAST slave on Gold. For Odyssey, termination is irrelevant	<p><b>Prox Card Data</b></p> <input type="checkbox"/> Raw Hex <input type="checkbox"/> Readable Ascii Should PROX card data be sent as hexadecimal or Readable Ascii?	<p><b>Facility Code Digits</b></p> <input type="text"/> Number of digits to use for the Facility Code. Leading zeros may be added	<p><b>MDB BUS Address</b></p> <input type="text"/> Vending Bus address, either 0x10 or 0x60. Default 0x10

**SUBMIT CHANGES**      **Refresh Values from VRC**      **Cancel**

**OK**      **Cancel**      **Apply**

## 4.2 Remotely Read and Change VRC2100 Configuration

The VRC2100 must first be powered up and the network port configured as described in sections 3.1 through 3.5 of this guide, as appropriate, before proceeding with the following instructions. Also, the VRC2100 must be configured using the switches before the VRC2100 Flash Updater and Configurator utility can be used correctly.



1. On the **VRC2100 Configuration** tab of the **VRC2100 Flash Updater and Configurator** screen, enter the IP address of the individual reader to be configured in the **Enter the I.P. Address of the VRC** field. The IP address can usually be found on the bottom of the nameplate on the back panel of the reader. In a daisy-chain group, use the IP address of the Master.
2. Enter the terminal server port number of the individual reader in the **Enter the Port number of the VRC** field. In a daisy-chain group, use the port number of the Master.
3. Enter the polling address number for the specific reader to be configured in the **Enter the Target's Gold Address (ex. 10-19)** field (this is usually a number from 10 to 19). This entry is currently ignored for Odyssey.
4. Click **CONNECT**. The program will send a configuration request to the reader which will respond, filling in the form with its current configuration. If the reader does not respond, check the setup and try again.

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**Note:** To restore the original settings before clicking **SUBMIT CHANGES**, click the **Refresh Values from VRC** button to refresh the screen with the current values from the reader.

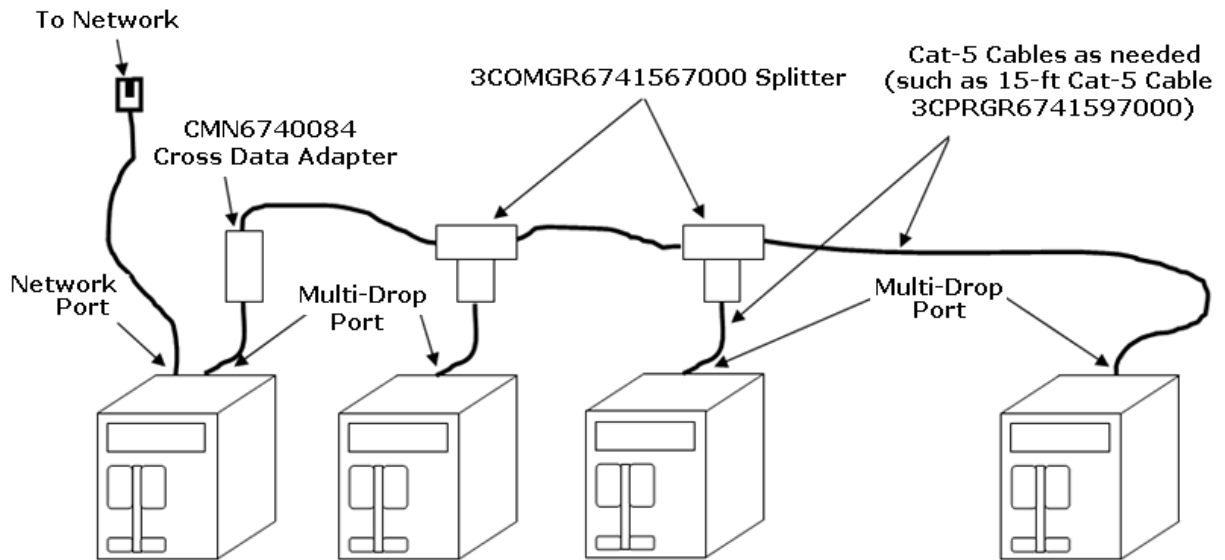
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5. Enter configuration changes and then click **SUBMIT CHANGES** to send the new values to the reader. The reader will save the changes in flash memory and will reset itself to start using the new configuration.
6. To review the current settings after the reader has completed a reboot, click **CONNECT** again to start the process over.

### 4.3 Slave Operation

For Slave operation, CBORD recommends that the configuration initially be set using the buttons described in section 3.6 (*Controller Configuration*). Once connected and operating in a daisy-chain, the Slave reader configuration can be updated using the **Flash Updater and Configurator** program described in section 4.2 (*Remotely Read and Change VRC2100 Configuration*).

Note that if you select the **Slave** check box in the **Master/Slave** area on the **VRC2100 Configuration** tab to change a reader from Master mode to Slave mode, the reader will no longer be responsive after the configuration changes have been sent. The reader will need to be wired to a Master as illustrated below in order to be accessible by the **Flash Updater and Configurator** program. The same applies if you change a reader from Slave mode to Master mode.



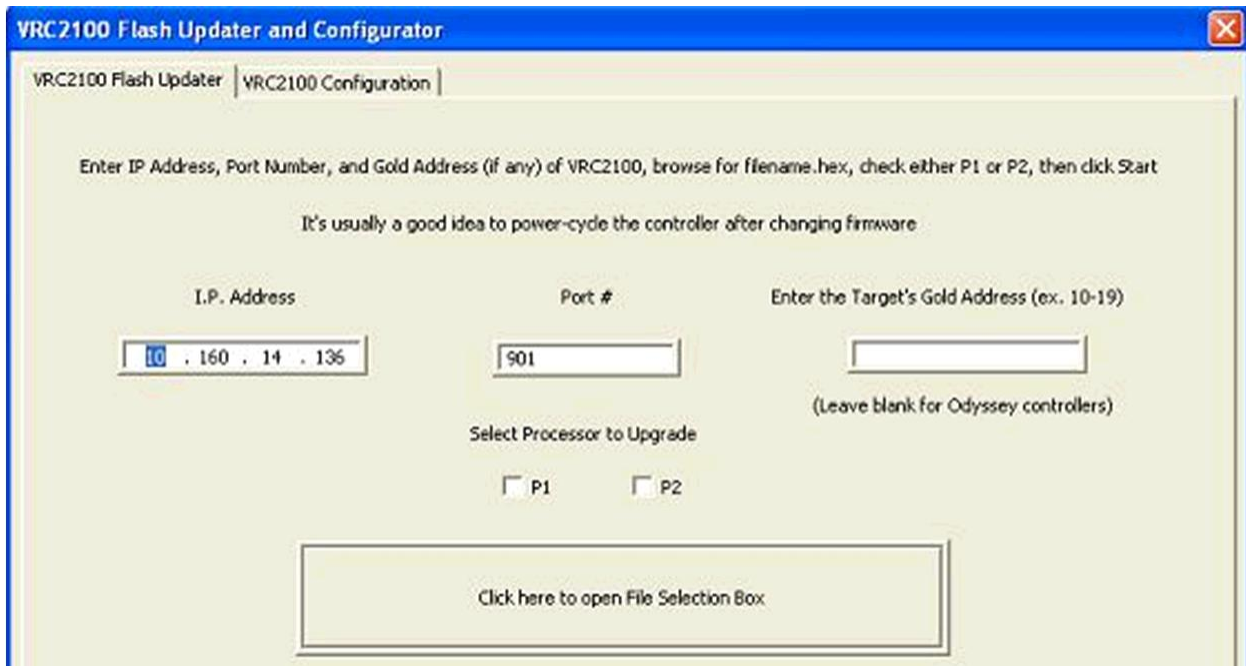


## 4.4 Firmware Update

The VRC2100 must first be powered up and the network port configured as described in sections 3.1 through 3.5 of this guide, as appropriate, before proceeding with the following instructions.

In a functioning daisy-chain, each reader must be updated individually.

There are two processors on the VRC2100, each requiring different firmware. *If you load the wrong firmware on one of the processors, the reader will become unresponsive and will need to be returned to the factory for repair. This issue can be somewhat prevented by looking at the name of the firmware hex file. If updating P1, the file name must contain P1 (the same applies to P2).*



Use the following procedure to upgrade the firmware:

1. On the **VRC2100 Flash Updater** tab of the **VRC2100 Flash Updater and Configurator** screen, enter the IP address of the individual reader to be updated in the **I.P. Address** field. The IP address can usually be found on the bottom of the nameplate on the back panel of the reader. In a daisy-chain group, use the IP address of the Master.
2. Enter the terminal server port number of the individual reader in the **Port #** field. In a daisy-chain group, this is the port number of the Master.

3. Enter the polling address number for the specific reader to be configured in the **Enter the Target's Gold Address (ex. 10-19)** field (this is usually a number from 10 to 19). This entry is currently ignored for Odyssey.
4. In the **Select Processor to Upgrade** area, select the **P1** or **P2** check box, depending on which processor you want to update. If the upgrade package includes files for both processors, it is usually best to upgrade P1 first.
5. Click the **Click here to open File Selection Box** button and locate the new firmware file, which must be a file name in the general form P2V10400 hex. Make sure you select the correct file for the processor. *If either processor is upgraded with the wrong file, the reader will become unresponsive, and the reader will need to be returned to the factory for repair. This issue is usually avoided by the program looking for a "P1" in the filename for a P1 upgrade, and a "P2" in the filename for a P2 upgrade.*
6. Click the **Start** button. The status window will show the progress of the operation. An upgrade should take less than 5 minutes for each processor.
7. After the status window shows that the upgrade is complete for P1, wait 30 seconds for the reader to reboot before beginning an upgrade for P2.

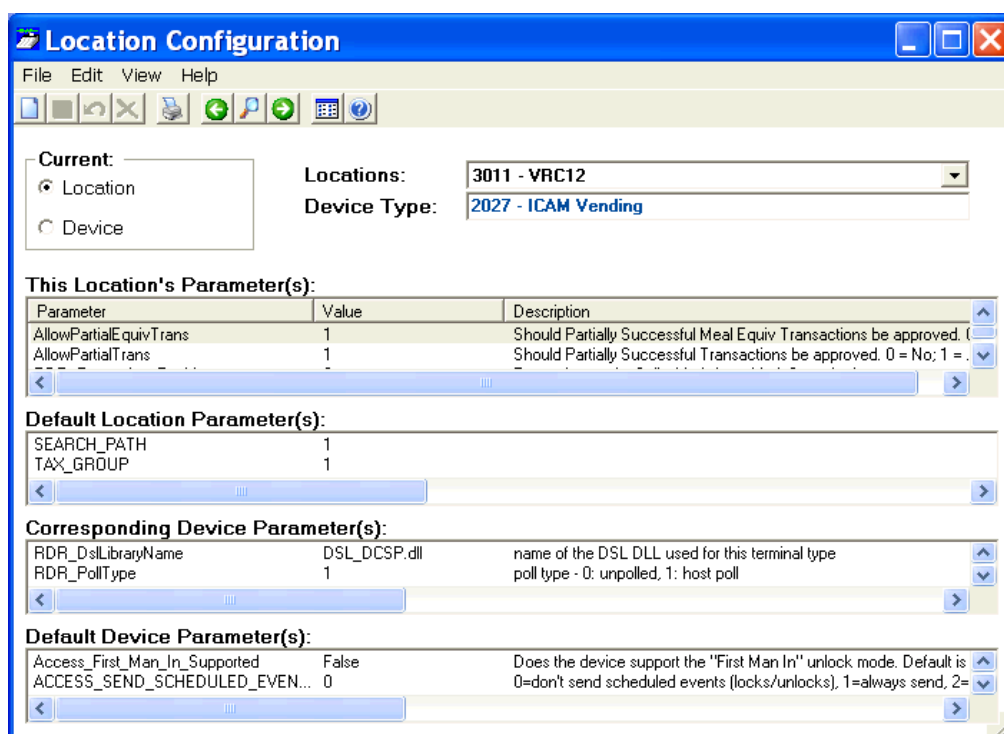
After the firmware upgrade is completed, the reader will reboot automatically and should resume normal operation within 30 seconds.

## 5 CS Gold Settings

The option to escrow the amount available from the server even if it is below the maximum price is provided in the CS Gold Location Configuration GUI. If the balance in a patron account is less than the maximum price being requested by the reader, the reader will automatically take whatever amount is available below the maximum price so that lower cost items may be purchased.

To enable the option:

1. From the **CS Gold Menu**, click **System Configuration** and then click **Location Configuration**. The **Location Configuration** screen is displayed.
2. Select the appropriate VRC2100 location from the **Locations** drop-down list. The parameter information for the VRC2100 is displayed.



The screenshot shows the 'Location Configuration' window with a menu bar (File, Edit, View, Help) and a toolbar. The 'Current' section has radio buttons for 'Location' (selected) and 'Device'. The 'Locations' dropdown is set to '3011 - VRC12' and the 'Device Type' is '2027 - ICAM Vending'.

**This Location's Parameter(s):**

Parameter	Value	Description
AllowPartialEquivTrans	1	Should Partially Successful Meal Equiv Transactions be approved. (
AllowPartialTrans	1	Should Partially Successful Transactions be approved. 0 = No; 1 = .

**Default Location Parameter(s):**

SEARCH_PATH	1	
TAX_GROUP	1	

**Corresponding Device Parameter(s):**

RDR_DslLibraryName	DSL_DCSP.dll	name of the DSL DLL used for this terminal type
RDR_PollType	1	poll type - 0: unpolled, 1: host poll

**Default Device Parameter(s):**

Access_First_Man_In_Supported	False	Does the device support the "First Man In" unlock mode. Default is
ACCESS_SEND_SCHEDULED_EVEN...	0	0=don't send scheduled events (locks/unlocks), 1=always send, 2=

3. To allow CS Gold to encumber less than the maximum price, the following two parameters must be set to **1**:
  - **AllowPartialEquivTrans**: Should Partially Successful Equiv Transactions be approved. Set to **1** for Yes.
  - **AllowPartialTrans**: Should Partially Successful Transactions be approved. Set to **1** for Yes.

## 6 Parts and Accessories

The following table provides the part numbers for the VRC2100:

Part Number	Description
3ACSGR4701005000	Security Screw, 6-32 × 3/8, Button Head, Black Oxide, 1/8" Hex Pin
3COMGR6741567000	Splitter, Rj45 Straight Thru
3CPRGR6741597000	CAT-5 Patch Cable, 14'
3VNDGR5251260000	Tamper Proof Screw Tool – Allen Style, 1/8" Hex Pin
3VNDGR5251261000	Tamper Proof Screw Tool – Nut-Driver Style, 1/8" Hex Pin
CMN6740084	Cross Data Adapter
DOC8020019	VRC2100 Insert B/A Mount Quick Start Guide
VND6740086	External Power Supply
VND6741597	CAT-5 Patch Cable, 14'
VRC4410043	Back Panel for Surface Mount Contactless Reader
VRC6730124	VRC2100 Reader, MDB, IP, Insert, B/A Mount
VRC6730136	VRC2100 Reader, MDB, IP, Prox, Surface Mount
VRC6730137	VRC2100 Reader, MDB, IP, iClass, Surface Mount
VRC6730138	VRC2100 Reader, MDB, IP, MIFARE, Surface Mount
VRC6730152	VRC2100 Reader, MDB, IP, aptiQ, B/A Mount
VRC6740078	Cable Assembly, MDB, VRC2100, 24" Long
VRC6760052	VRC2100 Insert B/A Mount Accessory Kit
VRC6760053	VRC2100 Surface Mount Contactless Reader Accessory Kit
VRC6760066	VRC2100 aptiQ B/A Mount Accessory Kit
VRC6780006	VRC2100 Surface Mount Contactless aptiQ
VRC6790098	VRC2100 Complete Kit, BV Mount, Magnetic Stripe Insert
VRC6790100	VRC6780006: VRC2100 Surface Mount Contactless aptiQ
VRC6790110	VRC2100 Kit, MDB, IP, aptiQ, Bill Acceptor Mount
VRC6791180	VRC2100 Kit: Surface Mount Contactless Reader, iClass + Accessories
VRC6791181	VRC2100 Kit: Surface Mount Contactless Reader, MIFARE + Accessories
VRC7101105	VRC2100 B/A Mount Shipping Box
VRC7101106	VRC2100 Surface Mount Shipping Box
VRC8020025	VRC2100 Surface Mount Contactless Reader Quick Start Guide
VRC8020026	VRC2100 Contactless B/A Mount Quick Start Guide