

VT2000 System

Administrator Guide

Version 1.2.0

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Overview

The VT2000 System provides solutions for monitoring and accounting for production floor activity through the use of a flexible and versatile communication system. The VT2000 System consists of:

1. Input modules used by floor personnel and machinery to capture information
2. A Control Unit, i.e., Server
3. Wireless technology to transmit data
4. Web-based software to customize hardware configurations.

VT2000 add-on software packages are also available and provide ways to display, view and manage captured data.

Hardware Components

The VT2000 System includes the following components:

System Hardware

- VT2000 Control Unit
- Receiver
- Paging Transmitter
- Radio

Input Devices – One or more of the following

- Call Station
- Reason Code Module (RCM)
- Data Input Module (DI Module)
- Wireless Switch Contact Module (WSCM)

Output Devices – Optional

- Pagers
- RF Devices (stack lights, horns, etc.)

Software Components / VT2000 Web Interface

All VT2000 Systems ship with the VT2000 Web Interface software loaded on the Control Unit. This web-based software application serves as the main portal into the system and allows you to:

- Configure Input & Output Devices
- Configure Alarms(i.e., Data Points)
- Configure Routes
- Expand the system through the use of add-on software packages such as VersaCall Reporting Software, Visual Messaging and Virtual Panels
- Etc.

Flexibility and Versatility

The VT2000 System is flexible enough to accommodate various factory floor set-ups and requirements. In fact, each VT2000 System varies in configuration due to the vast uniqueness of every plant. This manual goes through generic instructions for configuring a system and provides general examples where appropriate.

Add-ons

The following software packages can be purchased separately for the VT2000 System:

- VersaCall Reporting Software
- Visual Messaging
- Virtual Panels II, Virtual Panels III
- Data Lookup Manager
- Custom Packages


These add-ons may be purchased in your initial order or they may be added at a later date.

Logging In

Login – Control Unit

For the most part, you can login to the VersaCall System through the VT2000 Web Interface to accomplish a variety of tasks. There are times, however, when you may need to login to the server itself. VersaCall ships each control unit out with a standard username and password (*see below*). You may have your IT department change the login credentials if desired.

Default Login for Control Unit



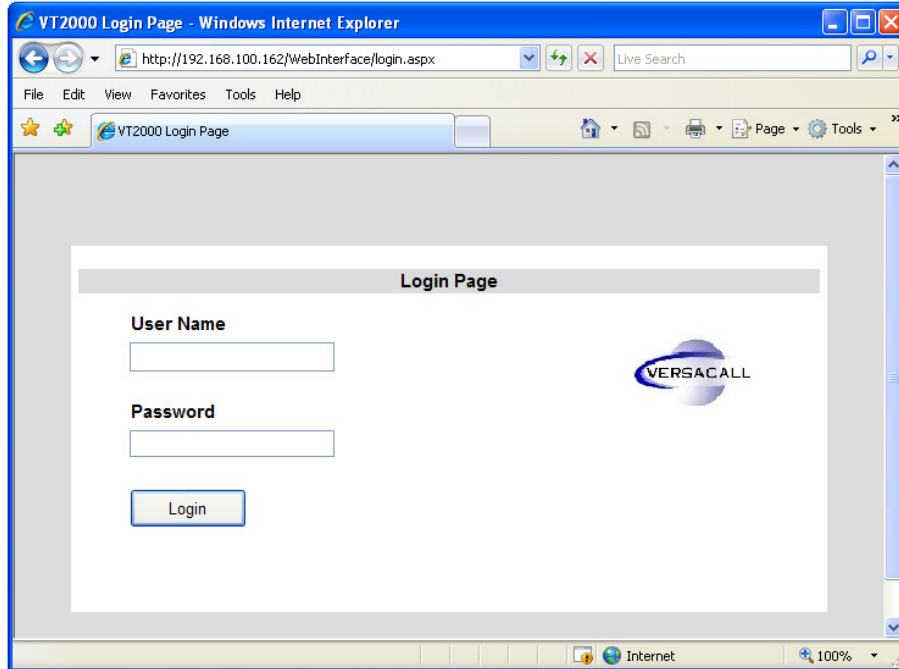
Username: Administrator
Password: 6676776

Login – Web Interface

Logging into the VT2000 System requires a user name, password and URL to the system. The default **User Name** is admin. The default **Password** is admin. (*See **Adding Users** for more information on changing user names and passwords.*)

NOTE: If you are ever locked out of the system, you can always log in using a universal administrator **User Name** and **Password** – Call VersaCall to obtain this information.

The URL typically begins with the IP address or name of the VT2000 control unit. To get to the login screen, open a browser window, such as Internet Explorer, from any computer on your company's network. Type the URL into the browser's address bar to get to the login page.



Hint: Add the URL to your favorites or save as you home page for quicker access.

Log - Off

To log-off, locate the Log-off button at the bottom of your screen. The system automatically logs users off after 30 minutes of inactivity.

Creating User Groups

System Administrators have the right to create User Groups as a way to assign privileges to groups of users. To add and edit user groups, go to **Home > Administration > User Groups**. Click **Add** to add a new user or **Edit** to modify an existing group. You can then create a user group and grant or revoke **Add, Edit, Delete, View, Program** and **Perform** rights.

WARNING: If you are a System Administrator, be careful not to revoke your own administrative privileges.

Adding Users


System Administrators may add new users to the VT2000 System by going to **Home > Administration > Users**. Click **Add** to add a new user or **Edit** to modify an existing user.

General Configurations

General Configurations are commonly done prior to programming individual input devices. For more information on programming your specific device, skip the General Configurations section and go to *Configuring Input Devices*.

Configuring Outputs

If you ordered an output device for communication purposes or you want to configure your email to receive communications, then you'll need to configure those outputs to work with the VT2000 System. To do this, go to **Home > Configuration > Outputs**. To configure a device, select the type of output device you are working with from the drop down list. Click **Add** to add a new output or **Edit** to modify an existing output.

On the following page, fill in the information specific to your device. For more instructions, click the  button located on the upper right corner of your screen - a new browser window appears with specific instructions for your device. Repeat these steps for *each* output you want to configure.

Adding and Editing Routes

Once output devices are configured, you can add and edit communication routes. To add or edit a route, go to **Home > Configuration > Routing**. Click **Add** to add a new route or **Edit** to modify an existing one.

NOTE: To configure a route, you first have to configure outputs. See **Configuring Outputs** for more information.

If your routes vary by shift, check **Route by Shift**. To configure a route for a specific shift, the shift must appear in the **Shifts** list.

NOTE: See Setting-up Shifts for more information.

To bring a shift over to the **Shifts** list, select a shift from the **Available Shifts** list and click **←Add**. You can then program a route for each shift by selecting the shift from the **Shift** list.

For each escalation, you can choose from the list and add it to the route by selecting **←Add**

On the fourth escalation, select **Repeat** if you want this route to repeat if the alarm continues to escalate. When complete, Click **Save**.

Edit Route

| | | | |
|--|--------------------|------------------|---------------------------------|
| Route Name Maintenance | Route Number -1 | Shift Default | Available Shifts Maintenance |
| <input checked="" type="checkbox"/> Route By Shift | | Remove --> | <-- Add |

| | | | | | |
|---------------------------------|---|----|----------------------------------|---|----|
| First Escalation Maintenance | All 1stShftSetUp 1stShftSup 2ndShftSetUp 2ndShftSup 3rdShftSetUp 3rdShftSup | -> | Second Escalation Maintenance | All 1stShftSetUp 1stShftSup 2ndShftSetUp 2ndShftSup 3rdShftSetUp 3rdShftSup | -> |
| Remove --> | <-- Add | | Remove --> | <-- Add | |

| | | | |
|---------------------------------|-----------------------------------|--|-----------------------------------|
| Third Escalation Maintenance | All 1stShftSetUp 1stShftSup | Fourth Esc. <input checked="" type="checkbox"/> Repeat | All 1stShftSetUp 1stShftSup |
|---------------------------------|-----------------------------------|--|-----------------------------------|

NOTE: Do not worry about *escalation time periods* at this point. You can set *escalation time periods* when you configure the alarms for your specific input device.

Setting Automatic Alarms (Time of Day)

You can set an alarm that is not associated with any event other than the time of day. To set a Time of Day alarm, go to **Home > Configuration > Time of Day**. To configure the alarm, click **Add** to add a new alarm or **Edit** to modify an existing one.


Alarm Information

On the **Edit Alarm** page, enter an **Alarm Name** (at minimum). You do not need to edit the **Alarm Number** unless you have a specific reason for doing so. For **Timeout**, enter the desired duration of the alarm (in minutes). The default time period is one minute.

Alarm Information

| | | | |
|------------|---------------|--------------|------|
| Alarm Name | Quality Check | Alarm Number | 1027 |
| Timeout | 5 | | |

Communications

To configure communications for this alarm, click  to expand the **Communications** menu. Click **Edit** to configure the default communication path.

For **Route**, choose a route from the drop down list. This drop down list should be populated with previously set routes.

NOTE: To add a route, you first have to configure a route. See **Adding and Editing Routes** for more information.

For **Lag Time**, enter the amount of time (in seconds) you want to pass when the alarm is first set off before the first notification goes out.

For **Escalation Time**, define the amount of time (in seconds) you want to pass before an active alarm escalates. If an active alarm is still active at the next escalation, the outputs selected in your routes are notified. Notification messages for escalation escalations will be sent only if the **Escalate** box is checked. (See **Add and Editing Routes** for more information on Escalation Time usage.)

The screenshot shows a configuration window titled "Communications (Hide Details)". It contains the following fields and options:

- Communication Path:** Default (dropdown), with Add, Edit, and Delete buttons.
- Path Name:** Default (text input).
- Route:** Quality Check (dropdown).
- Lag Time:** 0 (text input).
- Escalation Time:** 300 (text input).
- Set Stage:**
 - Text Message: Initiate QC
 - Escalate:
 - Audio Message: initiate qc.wav (dropdown), with a Play button.
 - RF Command: 00109
- Ack Stage:**
 - Text Message: (empty)
 - Escalate:
 - Audio Message: NO MESSAGE (dropdown), with a Play button.
 - RF Command: (empty)
- Ack2 Stage:**
 - Text Message: (empty)
 - Escalate:
 - Audio Message: NO MESSAGE (dropdown), with a Play button.
 - RF Command: (empty)
- Clear Stage:**
 - Text Message: QC Completed
 - Audio Message: complete qc.wav (dropdown), with a Play button.
 - RF Command: 00019

At the bottom right, there are Update and Cancel buttons.

Time of Day alarms can be configured as *dual-state* or *tri-state* meaning they can be **Set** and **Cleared (Clear)** or they can be **Set, Acknowledged (Ack)**, and then **Cleared (Clear)**. You may provide communications for each stage as desired. If you do not want to notify an output at a particular stage, leave blank.

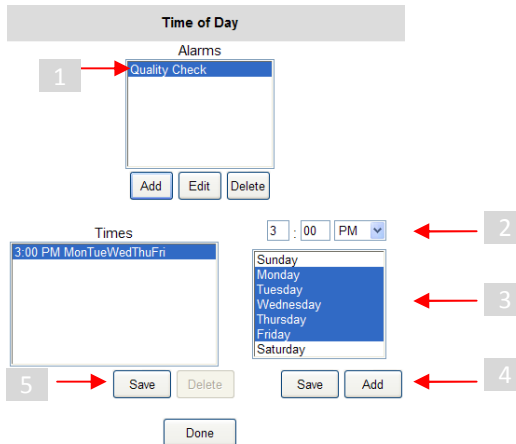
If your route includes an email, pager or cell phone, fill in **Text Message** with the message to be sent out. If your route includes an RF device or phone system, choose an **Audio Message** from the drop down list to play that message. Enter an **RF command** if your route includes an RF Device.

NOTE: To select an audio message, you first have to upload a WAV file. See **Adding and Editing WAV Files** for more information.

When you have completed communication path settings, click **Update** then click **Save** at the bottom of the page.

Set Times for Time of Day Alarm

To set the start time for the Time of Day Alarm, highlight the alarm you want to edit under **Alarms**. Fill in the time you want to initiate the alarm and select either AM or PM from the list. Select all the days on which you want the alarm to occur. Click **Add**. Time and Days should then appear under **Times**. Click **Save**. Click **Done** to return to the previous page.




NOTE: You may need to delete the default time under **Times**. To do this, highlight the alarm you want to delete and click **Delete**.

Setting Targets (TCT) and Goals – RCM and DI Module Only

If your VT2000 System is configured to capture counts, you may also want to keep track of targets and goals. To set targets and goals, go to **Home > Configuration > Targets / Goals**.


You may set either a **Standard Goal** or a **Target Cycle Time**. A Standard Goal remains the same throughout production while a Target Cycle Time increases as time passes. If the Goal or Target Cycle Time varies depending on some factor such as a part number, check the box next to **Information Type**. Then select the appropriate **Information Type** and the **Lookup** value by which to perform a lookup.

NOTE: In order for the **Information Type** and **Lookup** drop down lists to populate with options, first configure **Information Types**. See **Configuring Data Lookups** for more information.

For more detailed instructions on filling in each field on this page, click the  button located on the upper right corner of your screen - a new browser window appears with specific instructions.

Adding Sound Using WAV Files

Once you have a recorded WAV file, you may upload it to the VT2000 System. To upload a file, go to **Home > Configuration > WAV Files**. From this page, you can then **Upload, Play** and **Delete** WAV files.

For more detailed instructions on this page, click the  button located on the upper right corner of your screen - a new browser window appears with specific instructions.

Tips for Recording WAV Files

- To record a WAV file, you need to have a microphone connected to your computer.
- All Windows operating systems come with a free sound recording tool called **Sound Record**. To access it, go to **Start > All Programs > Accessories > Entertainment > Sound Recorder**.

- Adobe Audition is another recommended recording tool. Search the web for a free trial download.
- Files should be in **PCM 8.000 kHz, 16 Bit, Mono** format.
- For more information on how to record and edit sound files, see the recording tool's documentation.

Configuring Data Lookups (Information Types)


The VT2000 System allows for small data lookups within the main VT2000 System.

NOTE: The VT2000 System does not have the capacity for larger, resource intensive data lookups. For larger data lookup requirements, please inquire about our add-on package, **Data Lookup Manager**.

Setting-Up Shifts

To define shifts for the VT2000 System, go to **Home > Configuration > Shifts**. Click **Add** to add a new shift or **Edit** to modify an existing one. Shifts defined here are primarily used for setting routes.

NOTE: Shifts defined here are independent of shifts defined in add-on packages such as VersaCall Reporting Software or Virtual Panels II. Shifts for add-on packages are defined separately.

For more detailed instructions on filling in each field on this page, click the  button located on the upper right corner of your screen - a new browser window appears with specific instructions.

NOTE: In order for the **Information Type** and **Lookup** drop down lists to populate with options, first configure **Information Types**. See **Configuring Data Lookups** for more information.

Configuring Input Devices

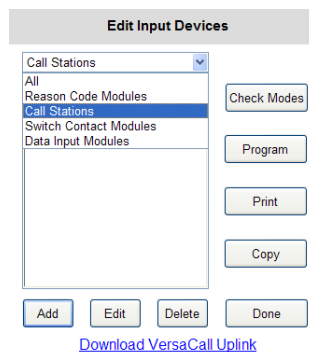
Once general configurations have been made, you can proceed to configure your specific input device. Before an input device can be used it has to be configured in the VT2000 Web Interface. Once the device has been configured in the Web Interface, you need to sync the configuration with the input device.

Call Station

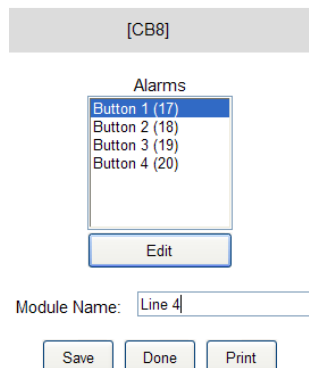
The Call Station is VersaCall's basic module. Its main purpose is for communications and to capture downtime.

Configuring a Call Station

To configure a Call Station, go to **Home** > **Configuration** > **Inputs**. Select **Call Stations** from the drop down list and then click **Add**.



You can edit the call station name to anything you wish. To do this, fill in **Module Name**, click **Save** and then click [Commit](#) located on the upper right corner of your screen.



Editing Call Station Alarms

You can change default alarm names to something more meaningful, like Supervisor, Machine Down, Quality Check, etc. You can also associate a communication path with each alarm. This is where you


indicate who is notified, which lights go off or what message is played on the intercom when the alarm is active. To change the alarm name and/or set a communication path, select the alarm you wish to edit and click **Edit**.


Alarm Information

On the **Edit Alarm** page, enter an **Alarm Name** (at minimum). You do not need to edit the **Alarm Number** unless you have a specific reason for doing so. If you want the alarm to time out after a certain period of time, enter the desired duration of the alarm (in minutes) for **Timeout**. Leave as 0 if you do not wish to apply a timeout.

| Alarm Information | |
|-------------------|------------|
| Alarm Name | Supervisor |
| Alarm Number | 17 |
| Timeout | 0 |

Communications

To configure communications, click  to expand the **Communications** menu. Click **Edit** to configure the default communication path.

To configure communications for this alarm, click  to expand the **Communications** menu. Click **Edit** to configure the default communication path.

For **Route**, choose a route from the drop down list. This drop down list should be populated with previously set routes.

NOTE: To add a route, you first have to configure a route. See **Adding and Editing Routes** for more information.

For **Lag Time**, enter the amount of time (in seconds) you want to pass when the alarm is first set off before the first notification goes out.

For **Escalation Time**, define the amount of time (in seconds) you want to pass before an active alarm escalates. If an active alarm is still active at the next escalation, the outputs selected in your routes are notified. Notification messages for escalations will be sent only if the **Escalate** box is checked. (See **Add and Editing Routes** for more information on Escalation Time usage.)

Communications (Hide Details) ✕

Communication Path: Default Add Edit Delete

Path Name: Default Route: Quality Check

Lag Time: 0 Escalation Time: 300

Set

Text Message: Initiate QC Escalate:

Audio Message: initiate qc.wav Play RF Command: 00109

Ack

Text Message: Escalate:

Audio Message: NO MESSAGE Play RF Command:

Ack2

Text Message: Escalate:

Audio Message: NO MESSAGE Play RF Command:

Clear

Text Message: QC Completed

Audio Message: complete qc.wav Play RF Command: 00019

Update Cancel

Call Station alarms can be configured as *dual-state* or *tri-state* meaning they can be **Set** and **Cleared (Clear)** or they can be **Set, Acknowledged (Ack)**, and then **Cleared (Clear)**. You may provide communications for each stage as desired. If you do not want to notify an output at a particular stage, leave blank.

If your route includes an email, pager or cell phone, fill in **Text Message** with the message to be sent out. If your route includes an RF device or phone system, choose an **Audio Message** from the drop down list to play that message. Enter an **RF command** if your route includes an RF Device.

NOTE: To select an audio message, you first have to upload a WAV file. See **Adding and Editing WAV Files** for more information.

When you have completed communication path settings, click **Update** then click **Save** at the bottom of the page.

From the **Edit Call Station** page, edit the rest of the alarms as desired. When complete with editing alarms, take note of the number associated with the *first* alarm.

IMPORTANT: When complete with editing alarms, take note of the first alarm number associated with the Call Station.

[Line 4]

Alarms

- Supervisor (17)
- Quality (18)
- Machine Down (19)
- Need Break (20)

Edit Call S

Edit

Module Name:

Save Done Print

Click **Save** and then click [Commit](#) located on the upper right corner of your screen.

Syncing a Call Station

Once you finish configuring the Call Station in the VT2000 Web Interface, you are ready to sync the Call Station to the configuration. Here is where you will need to reference the alarm number noted above. On the Call Station, press and hold [CLEAR] and [1] , [2] and [3] simultaneously. The red light next to [4] flashes once. You are now in *programming mode*

IMPORTANT: In the next step, you need to sync the Call Station based on the number associated with the *first* alarm. To do this, you need to know that [1], [2], [3] represent the ones, tens and hundreds, respectively.

Example:

To Program Alarm Number 524

Press [3] - Five (5) times

Press [2] - Two (2) times

Press [1] - Four (4) times

In *programming mode*, program the Call Station with the first alarm number. Start from the hundreds with [3], then the tens with [2], then the ones with [1].

Press [4] once, to confirm the number you entered is correct. The lights will blink based on the number that you entered. For example, if you programmed the Call Station with alarm number 524, you will see the [light] for [3] flash 5 times, the [light] for [2] flash 2 times and the [light] for [1] flash 4 times.

To complete programming, press and hold [4] until you see all [lights] flash once. You have now exited programming mode. Your Call Station is now in sync with VT2000 WebInterface.

Labeling a Call Station

To create custom labels for your Call Station, download a Call Station Labels Template at <http://www.versacall.com/support/additionaldownloads.html>. The template is a Microsoft Word file that can be edited and modified as desired. When complete, print the document and cut into individual strips for each Call Station. Slip the appropriate strip into the small opening at the top/front of the appropriate Call Station.

Mounting a Call Station

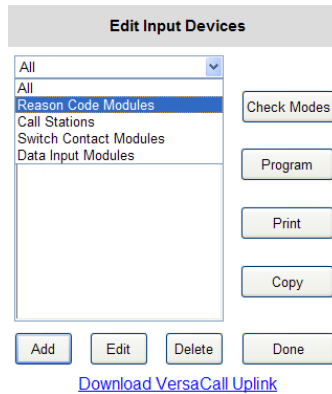
Determine where you want to locate the Call Station. We recommended that the unit be installed in an unobstructed area, easily assessable to the operator. Ensure that the label is placed in the unit. (See **Labeling a Call Station** for more information on labeling your Call Station. The Call Station requires a flat surface and is typically mounted using 30-lb-pull industrial hook and loop tape supplied with your order. (Optionally, you can mount your call station with screws. #29 (.1360') drill bit is recommended with 8/32 screws.) Apply the Velcro™ to the back of both the call station and the mounting surface and then mount the unit.

Reason Code Module (RCM)

The Reason Code Module (RCM) provides factory floor communications, production output counts, automatic downtime capture and downtime by reason code. It is flexible enough to meet various needs. This means that the configuration for your RCM will most likely vary from any sort of standard configuration. The following is meant to provide generic steps for configuration, but it is important to note that your configuration will vary.

Configuring an RCM

To configure an RCM Module, go to **Home > Configuration > Inputs**. Select **Reason Code Modules** from the list and then click **Add** to add a new RCM Module configuration or **Edit** to modify an existing one.



Adding and Editing RCM Alarms

Adding and editing alarms allows you to capture events that occur on the production floor. Typically events captured by alarms include operator calls for support and/or machine down alarms though our system is flexible enough to meet your needs should they vary. To add or edit an alarm, go to **Home > Configuration > Inputs > Edit Alarms**

A functional alarm requires only one level, but can include up to three.

EXAMPLE

A typical use for multiple levels would be as follows:

| | |
|----------|---|
| Level 1: | A label for the alarm <i>Example</i> Response Required |
| Level 2: | Prompt the operator to select a response type <i>Example</i> Maintenance, Supervisor, Quality |
| Level 3 | A reason the response personnel selects upon acknowledging the alarm <i>Example</i> Maintenance personnel arrives and selects a reason for the alarm, such as Need Materials, Needs Cleaning , etc. |

Start by configuring a Level 1 alarm and then configure additional levels as appropriate. Click **Add** or **Edit** under the appropriate level.

Alarm Information

Enter an **Alarm Name**. You do not need to edit the **Alarm Number** unless you have a specific reason for doing so. **Display Name** is not applicable at this time. Leave as is. For **Mode**, select one of the following options.

Event Alarm Mode Options

Each Mode option has a prefix. An **Alarm** prefix means that the alarm state of the alarm is determined by an operator who pushes a button on the module. A **SC[#]** prefix means that the state of the alarm is determined by a switch contact.

Dual State Alarm set and acknowledged

Tri-State Alarm set, acknowledged and then cleared

Tri-State w/ Reason on Ack Alarm set, acknowledged, reason selected then cleared

Tri-State w/ Reason on Clear Alarm set, acknowledged, cleared, then reason selected

Label A label for the alarm in the next level alarm

Momentary Not used

Invis. Momentary Not used

Count[#] A switch contact sets the count. Select the number that corresponds to the switch contact.

Rate[#] A switch contact sets the rate. Select the number that corresponds to the switch contact.

Communications

To configure communications, click to expand the **Communications** menu. Click **Edit** to configure the default communication path.

For **Route**, choose a route from the drop down list. This drop down list should be populated with previously set routes.

NOTE: To add a route, you first have to configure a route. See **Adding and Editing Routes** for more information.

For **Lag Time**, enter the amount of time (in seconds) you want to pass when the alarm is first set off before the first notification goes out.

For **Escalation Time**, define the amount of time (in seconds) you want to pass before an active alarm escalates. If an active alarm is still active at the next escalation, the outputs selected in your routes are notified. Notification messages for escalations will be sent only if the **Escalate** box is checked. (See **Add and Editing Routes** for more information on Escalation Time usage.)

The screenshot shows a configuration window titled "Communications (Hide Details)". It contains several fields and buttons:

- Communication Path: Default (dropdown), Add, Edit, Delete (buttons)
- Path Name: Default (text), Route: Quality Check (dropdown)
- Lag Time: 0 (text), Escalation Time: 300 (text)
- Set stage: Text Message: Initiate QC (text), Escalate: (checkbox), Audio Message: initiate qc.wav (dropdown), Play (button), RF Command: 00109 (text)
- Ack stage: Text Message: (text), Escalate: (checkbox), Audio Message: NO MESSAGE (dropdown), Play (button), RF Command: (text)
- Ack2 stage: Text Message: (text), Escalate: (checkbox), Audio Message: NO MESSAGE (dropdown), Play (button), RF Command: (text)
- Clear stage: Text Message: QC Completed (text), Audio Message: complete qc.wav (dropdown), Play (button), RF Command: 00019 (text)
- Update (button), Cancel (button)

RCM alarms can be configured as *dual-state* or *tri-state* and can have reasons on clear or *acknowledgement*. This means they can be **Set** and **Cleared (Clear)** or they can be **Set, Acknowledged (Ack)**, and then **Cleared (Clear)**. You can also choose to attach a reason to an alarm either when it is acknowledged or when it is cleared. Doing so, adds an extra stage, **Ack 2**. You may provide communications for each stage as desired. If you do not want to notify an output at a particular stage, leave blank.

If your route includes an email, pager or cell phone, fill in **Text Message** with the message to be sent out. If your route includes an RF device or phone system, choose an **Audio Message** from the drop down list to play that message. Enter an **RF command** if your route includes an RF Device.

NOTE: To select an audio message, you first have to upload a WAV file. See **Adding and Editing WAV Files** for more information.


When you have completed communication path settings, click **Update**.

Input/Output States

Input and output states are typically modified when configuring an alarm to work with an RF Module or when configuring the lockout feature.

The *lockout feature* refers to a configuration that requires the selection of a reason before a machine that has gone down can be re-started. Certain requirements must be met in order to use the lockout

feature. When you connect an RCM to an external device you can configure the RCM to accept discreet inputs from that external device. The discreet input should be in the form of 24V. This discreet input is associated with an output on the RCM. It tells the RCM when the state of the external device has changed – for example, the machine has gone down. You can then configure the RCM to prevent the external device from starting back up without a reason. To do this, you need to configure the output states.

To configure input and output states, click  to expand the **Input/Output States** menu. The RCM accepts up to 4 inputs and 4 outputs. Each Input is numbered Input SC1, Input SC2, Input SC3 and Input SC4. Each output is numbered Output L1, Output L2, Output L3 and Output L4. For each input and output, you can modify the state at each alarm level, i.e., when the alarm is set (T1), when the alarm is acknowledged (T2), when a reason for the alarm is selected (T3) and when the alarm is cleared (T4).







For Outputs, you have the following options:








- Do Nothing** Does nothing to alter the state of the external device
- Turn On** Turns the relay on
- Turn Flash** Turns the relay on for one second, off for one second, on for one second, etc. (Typically used for stack lights.)
- Turn Off** Turns the relay off

For Inputs, you have the following options:

- Do Nothing** Does nothing to alter the state of the corresponding input
- Enable** Enables the corresponding input
- Disable** Disables the corresponding input

Input/Output States (Hide Details) 


| | Output L1 | Output L2 | Output L3 | Output L4 |
|------------|--|--|--|--|
| Set (T1) | Do Nothing  | Turn On  | Do Nothing  | Do Nothing  |
| Ack (T2) | Do Nothing  | Turn On  | Do Nothing  | Do Nothing  |
| Ack (T3) | Do Nothing  | Turn Off  | Do Nothing  | Do Nothing  |
| Clear (T4) | Do Nothing  | Turn Off  | Do Nothing  | Do Nothing  |

| | Input SC1 | Input SC2 | Input SC3 | Input SC4 |
|------------|--|--|--|--|
| Set (T1) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |
| Ack (T2) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |
| Ack (T3) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |
| Clear (T4) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |

Click  to collapse the **Input/Output States** menu.

Count Information

| | |
|-----------------|--------------------------------------|
| Period (s) | <input type="text" value="120"/> |
| Target | <input type="text" value="None"/> |
| Target Action | <input type="text" value="Nothing"/> |
| Associated Sign | <input type="text" value="None"/> |

If you are associating counts with the current alarm, click  to expand **Count Information**. In this menu, you can modify the way count information is captured.

Period(s) Modify the time interval (in seconds) between count updates

Target Associate a pre-configured target with the count

NOTE: In order for the **Target** list to populate with options, you must first configure your targets. See **Setting Targets(TKT) and Goals** for more information.

Target Action Refers to the action that should occur when a break or alarm disrupts the production

Associated Sign Refers to the LED sign associated with this count (*not commonly used*)

Click  to collapse the **Count Information** menu.

Setting RCM Properties

The **Edit RCM Properties** page allows the administrator to configure physical properties of the RCM. To Edit Properties on your RCM Module, go to **Home > Configuration > Inputs > Add/Edit > Properties**.

Setting Module Name

To name the RCM Module, enter any name in the **Module Name** field. This is the name that will be used throughout the VT2000 System to refer to this module and its configurations

Configuring a 5th Output

The RCM has 5 outputs though only 4 are typically used. To configure a 5th output, it must be specifically configured in this section. You can configure it to do the following upon changing state.

Do Nothing Does nothing to alter the state of the external device

Turn On Turns the relay on

Turn Flash Turns the relay on for 1 second, off for 1 second, on for second, etc. (Typically used for stack lights.)

Turn Off Turns the relay off

Setting Additional Options

The RCM can be either battery powered or remotely powered from a power adapter. If your RCM is battery powered, check **Battery Powered**.

Configuring Switch Contacts

The default mode for switch contacts is **Normally Open**. To modify this, select **Normally Closed** from the list that corresponds to the appropriate switch contact.

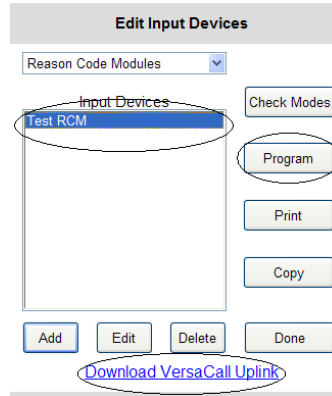
Save RCM Properties

Click **Save** to save properties configuration and return to the previous page.

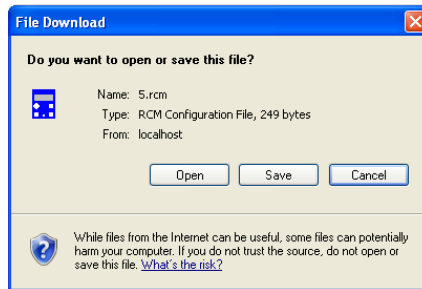
Syncing the RCM

To sync an RCM to its corresponding configuration in the VT2000 Web Interface, go to **Home > Configuration > Inputs**. From the **Edit Input Devices** page, download and install the **VersaCall Uplink Utility** (if not already installed). To do this, click the **Download VersaCall Uplink** at the bottom of the page.

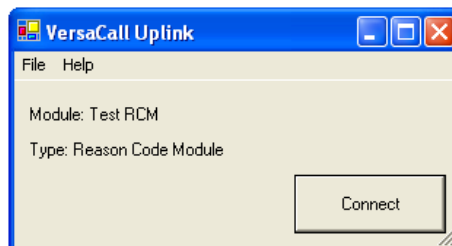
Next, you need to download a configuration file from the **Edit Input Devices** page. To do this, select the desired module and click **Program**.



You will then have the option to either Save or Open the file. If you are on a desktop PC and able to directly connect to the module you are programming, click **Open**. If you are on a laptop and plan to take the laptop out to the plant floor, click **Save**. If you choose to save, you can double click on the file to open it later.

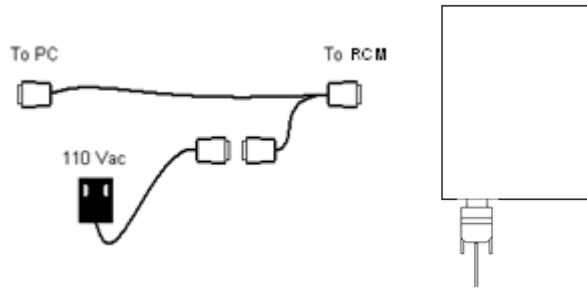


Once the configuration file opens, click **Connect**.

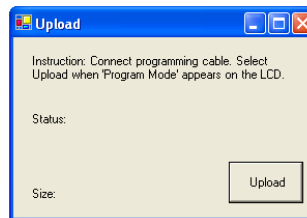


NOTE: It is always good to clear out any active alarms or active processes from the RCM prior to programming in order to prevent those alarms from hanging in the system.

Plug the programming cable into the main port (the one that stands alone) of the RCM module. Connect the other end (long end) of the programming cable to the PC. The RCM module needs power either from the AC-DC transformer or the RCM's normal power supply.



Once the programming cables are properly connected and the RCM Module is supplied with power, the LCD screen should light up and display **Program Mode**. Click **Upload** on the uplink program.

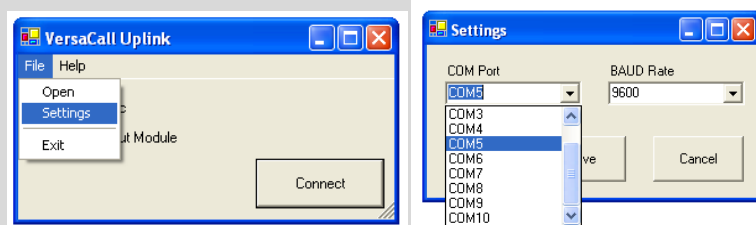


During the upload process, numbers appear on the LCD screen. When the upload completes, **Done** appears on the Uplink program and on the RCM Module.

Disconnect the programming cable. The module is now programmed.

Troubleshooting:

- If a failure to open port or timeout error occurs, check to make sure VersaCall Uplink is using the correct COM port. You can change the port settings by going to the VersaCall Uplink program and selecting File → Settings. A new pop-up menu appears. Select an appropriate COM port from the drop down list and click **Save**.



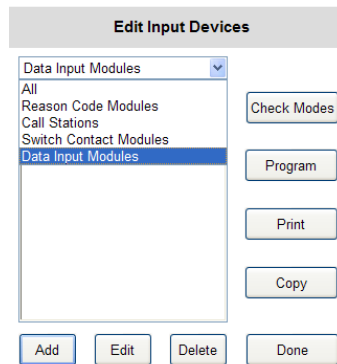
- You may have something else running which is tying up the COM Port. Stop the conflicting process and retry.

Data Input Module

The Data Input Module (DI Module) is VersaCall's most comprehensive module. It can be configured to capture various aspects of the production process and take in various points of input data. It is flexible enough to meet various needs. This means that the configuration for your DI Module will most likely vary from any sort of standard configuration. The following is meant to provide generic steps for configuration, but it is important to note that your configuration will vary.

Configuring a DI Module

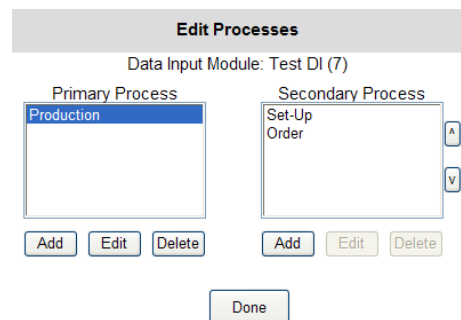
To configure a DI Module, go to **Home > Configuration > Inputs**. Select **Data Input Modules** from the list and then click **Add** to add a new DI Module configuration or **Edit** to modify an existing one.





[Download VersaCall Uplink](#)

Setting-Up a Process

In the VT2000 System, the term *Process* refers to cycles that occur during production. The system allows one *Primary Process* and multiple *Secondary Processes* – both are similar except that *Secondary Processes* occur *within* the *Primary Process*. The default Primary Process for all DI Modules is Production. This can be left alone or modified as needed. A common process configuration includes Production as the Primary Process and then Set-Up and Order as Secondary Processes.

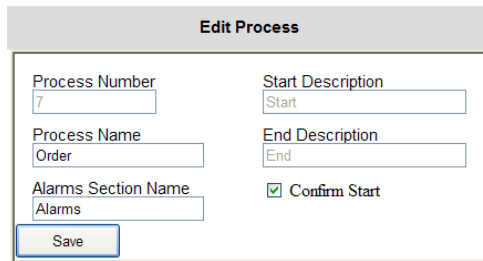


NOTE: Select a Secondary Process and use the   buttons to rearrange its order.

When you edit a process, you perform any but not limited to the following functions:

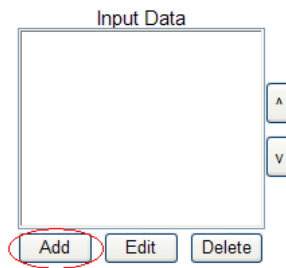
- Associate input data with the process
- Trigger an alarm
- Configure the lockout feature
- Capture counts

To edit the Primary Process, click **Edit** under Primary Process. To add or edit a Secondary Process, click **Add** or **Edit** under Secondary Process. On the **Edit Process** page, enter a **Process Name**. If you want the operator to confirm the selection before entering the process, check **Confirm Start**. When complete, click **Save**.



Configuring Input Data

Input Data refers to data entered by an operator. Input data may be captured with bar code, RFID and magnetic card readers or they may be manually entered on the DI Module keypad. An operator may be prompted for input data at the start or end of any process or process trigger. (You may also prompt an operator for input data at the start or end of any alarm. See **Adding and Editing Process Triggers and Alarms** for more information.) To configure your DI Module to accept an input, first decide which process you want to associate the input data. Return to the **Edit Processes** page, select the process you want to edit and click **Edit**. From the **Edit Process** page ([Home](#) > [Configuration](#) > [Inputs](#) > [Add/Edit > Edit Processes](#)), click **Add** under **Input Data**.



From the **Edit Information** page, configure the following fields:

Field Name Enter any meaningful name

Field Number Internal reference number for the system - does not need to be modified

When Time (relative to the process) at which you would like to prompt the operator for this

input data

Storage Type The input data type – either numeric or alpha
If input data is a mixture of both numbers and letters, choose alpha
*If the number requires precision, such as 99.76, check the **Decimal** box*

Source Source of the input

You may select more than one source. For example, you can select Barcode and Keypad.

Options Allows you to modify the way the DI Modules saves and sends certain information

Retain Value Causes the DI Module to save the last known user input

When the DI Module prompts for a field that has been configured with the Retain Value option, the field pre-populates with the previously entered data.

Allow Changes Gives operator the option to modify the input data for this field while the related process is running

Force Send A way to process the data

Normally, all data is written to the data base when the process ends, but in some cases the system may need the information before the end of the process. For example, the system may need to know the part number before the process completes. In this case, we would select **Force Send**.

There may be times when an input data field requires an association with reasons or a data list. In this case, you would select either **Distribute Reasons** or **Data List**. If neither of these applies select **None**. If you select **Distribute Reasons** or **Data List**, you will have an additional option to either **Edit Reasons** or **Edit Data List**. Click on the appropriate button to add reasons or edit the data list.

You can choose to relate the input data field with an **Information Type**. (See **Configuring Data Lookups (Information Types)** for more information on setting up Information Types.)

Adding and Editing Process Triggers and Alarms

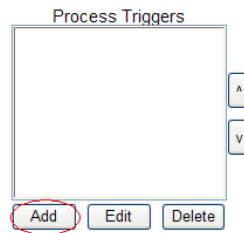
Instructions for Process Triggers and Alarms are similar with some minor difference. The differences include the following:

- A process trigger is an event alarm that directly relates to a process. It is active only when that process is active. A regular event alarm is independent of a process.
- A process trigger is limited to dual mode and count mode whereas a regular event alarm has various modes to choose from.
- A regular event alarm can be programmed at three levels

Differences between the two are pointed out below.

Configure Alarm as Process Trigger

There are certain processes in which we may want to trigger certain events in the system. *Events that begin as a result of another process beginning are referred to in the system as Process Triggers.* To set a Process Trigger, decide which Process should trigger the event. When you have decided which process should trigger the event, select the process from the **Edit Processes** page (**Home > Configuration > Edit Inputs > Add/Edit > Edit Processes**), click **Edit**. Once in the **Edit Process** page, click **Add** under **Process Triggers**. This takes you to the **Edit Alarm** page.



Configure Alarm as Event Alarm

Adding and editing alarms allows you to capture events that occur on the production floor. Typically events captured by alarms include operator calls for support and/or machine down alarms though our system is flexible enough to meet your needs should they vary. To add or edit an alarm, go to **Home > Configuration > Inputs > Edit Alarms**

A functional alarm requires only one level, but can include up to three.

EXAMPLE

A typical use for multiple levels would be as follows:

| | |
|----------|---|
| Level 1: | A label for the alarm <i>Example</i> Response Required |
| Level 2: | Prompt the operator to select a response type <i>Example</i> Maintenance, Supervisor, Quality |
| Level 3 | A reason the response personnel selects upon acknowledging the alarm <i>Example</i> Maintenance personnel arrives and selects a reason for the alarm, such as Need Materials, Needs Cleaning , etc. |

Start by configuring a Level 1 alarm and then configure additional levels as appropriate. Click **Add** or **Edit** under the appropriate level.

Instructions for both Process Triggers and Event Alarms

Alarm Information

Enter an **Alarm Name**. You do not need to edit the **Alarm Number** unless you have a specific reason for doing so. **Display Name** is not applicable at this time. Leave as is. For **Mode**, the options vary depending on whether you are programming a process trigger or an event alarm.

Process Trigger Mode Options

- Dual Mode** Alarm set and acknowledge by an operator
- Count [#]** A switch contact sets the alarm. Select the number that corresponds to the switch contact.

Event Alarm Mode Options


Event alarm mode options have a prefix. An **Alarm** prefix means that the alarm state of the alarm is determined by an operator who pushes a button on the module. A **SC[#]** prefix means that the state of the alarm is determined by a switch contact.


- Dual State** Alarm set and acknowledged
- Tri-State Alarm set, acknowledged and then cleared
- Tri-State w/ Reason on Ack** Alarm set, acknowledged, reason selected then cleared
- Tri-State w/ Reason on Clear** Alarm set, acknowledged, cleared, then reason selected

- Label** A label for the alarm in the next level alarm
- Momentary** Not used
- Invis. Momentary** Not used
- Count[#]** A switch contact sets the count. Select the number that corresponds to the switch contact.

- Rate[#]** A switch contact sets the rate. Select the number that corresponds to the switch contact.

Communications

To configure communications, click  to expand the **Communications** menu. Click **Edit** to configure the default communication path.

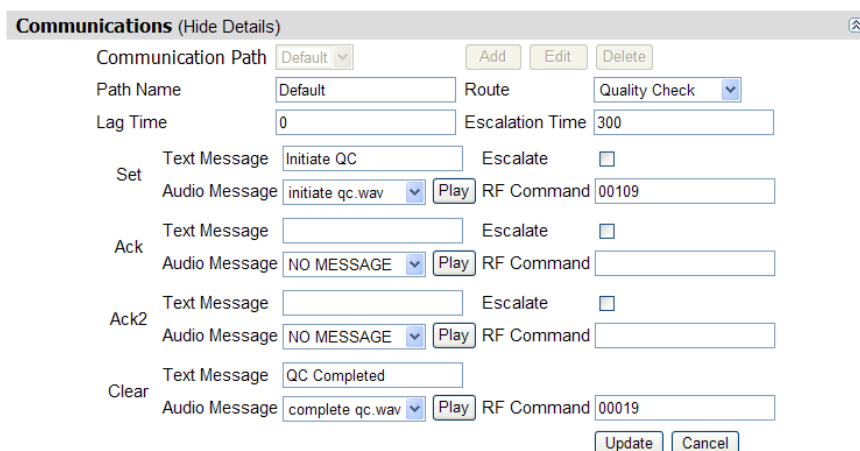
To configure communications for this alarm, click  to expand the **Communications** menu. Click **Edit** to configure the default communication path.

For **Route**, choose a route from the drop down list. This drop down list should be populated with previously set routes.

NOTE: To add a route, you first have to configure a route. See **Adding and Editing Routes** for more information.

For **Lag Time**, enter the amount of time (in seconds) you want to pass when the alarm is first set off before the first notification goes out.

For **Escalation Time**, define the amount of time (in seconds) you want to pass before an active alarm escalates. If an active alarm is still active at the next escalation, the outputs selected in your routes are notified. Notification messages for escalations will be sent only if the **Escalate** box is checked. (See **Add and Editing Routes** for more information on Escalation Time usage.)



Communications (Hide Details)

Communication Path: Default [Add] [Edit] [Delete]

Path Name: Default Route: Quality Check

Lag Time: 0 Escalation Time: 300

Set

Text Message: Initiate QC Escalate:

Audio Message: initiate qc.wav [Play] RF Command: 00109

Ack

Text Message: Escalate:

Audio Message: NO MESSAGE [Play] RF Command:

Ack2

Text Message: Escalate:

Audio Message: NO MESSAGE [Play] RF Command:

Clear

Text Message: QC Completed

Audio Message: complete qc.wav [Play] RF Command: 00019

[Update] [Cancel]

Event alarms can be configured as *dual-state* or *tri-state* and can have reasons on clear or *acknowledgement*. This means they can be **Set** and **Cleared (Clear)** or they can be **Set, Acknowledged (Ack)**, and then **Cleared (Clear)**. You can also choose to attach a reason to an alarm either when it is acknowledged or when it is cleared. Doing so, adds an extra stage, **Ack 2**. You may provide communications for each stage as desired. If you do not want to notify an output at a particular stage, leave blank.

If your route includes an email, pager or cell phone, fill in **Text Message** with the message to be sent out. If your route includes an RF device or phone system, choose an **Audio Message** from the drop down list to play that message. Enter an **RF command** if your route includes an RF Device.


NOTE: To select an audio message, you first have to upload a WAV file. See **Adding and Editing WAV Files** for more information.

When you have completed communication path settings, click **Update** then click **Save** at the bottom of the page.

Input/Output States

Input and output states are typically modified when configuring an alarm to work with an RF Module or when configuring the lockout feature.

The *lockout feature* refers to a configuration that requires the selection of a reason before a machine that has gone down can be re-started. Certain requirements must be met in order to use the lockout feature. When you connect a DI Module to an external device you can configure the DI Module to accept discreet inputs from that external device. The discreet input should be in the form of 24V. This discreet input is associated with an output on the DI Module. It tells the DI Module when the state of the external device has changed – for example, the machine has gone down. You can then configure the DI Module to prevent the external device from starting back up without a reason. To do this, you need to configure the output states.



























To configure input and output states, click  to expand the **Input/Output States** menu. The DI Module accepts up to 4 inputs and 4 outputs. Each Input is numbered Input SC1, Input SC2, Input SC3 and Input SC4. Each output is numbered Output L1, Output L2, Output L3 and Output L4. For each input and output, you can modify the state at each alarm level, i.e., when the alarm is set (T1), when the alarm is acknowledged (T2), when a reason for the alarm is selected (T3) and when the alarm is cleared (T4).

For Outputs, you have the following options:

| | |
|-------------------|---|
| Do Nothing | Does nothing to alter the state of the external device |
| Turn On | Turns the relay on |
| Turn Flash | Turns the relay on for one second, off for one second, on for one second, etc. (Typically used for stack lights.) |
| Turn Off | Turns the relay off |




For Inputs, you have the following options:


| | |
|-------------------|--|
| Do Nothing | Does nothing to alter the state of the corresponding input |
| Enable | Enables the corresponding input |
| Disable | Disables the corresponding input |

| Input/Output States (Hide Details)  | | | | |
|--|--|--|--|--|
| | Output L1 | Output L2 | Output L3 | Output L4 |
| Set (T1) | Do Nothing  | Turn On  | Do Nothing  | Do Nothing  |
| Ack (T2) | Do Nothing  | Turn On  | Do Nothing  | Do Nothing  |
| Ack (T3) | Do Nothing  | Turn Off  | Do Nothing  | Do Nothing  |
| Clear (T4) | Do Nothing  | Turn Off  | Do Nothing  | Do Nothing  |
| | Input SC1 | Input SC2 | Input SC3 | Input SC4 |
| Set (T1) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |
| Ack (T2) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |
| Ack (T3) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |
| Clear (T4) | Do Nothing  | Do Nothing  | Do Nothing  | Do Nothing  |

Click  to collapse the **Input/Output States** menu.

Count Information

| | |
|-----------------|---|
| Period (s) | <input type="text" value="120"/> |
| Target | None  |
| Target Action | Nothing  |
| Associated Sign | None  |

If you are associating counts with the current alarm, click  to expand **Count Information**. In this menu, you can modify the way count information is captured.

Period(s) Modify the time interval (in seconds) between count updates

Target Associate a pre-configured target with the count

NOTE: In order for the **Target** list to populate with options, you must first configure your targets. See **Setting Targets(TKT) and Goals** for more information.


Target Action Refers to the action that should occur when a break or alarm disrupts the production


Associated Sign Refers to the LED sign associated with this count (*not commonly used*)

Click  to collapse the **Count Information** menu.

Miscellaneous

As previously noted, Input Data refers to data entered by an operator. Input data may be captured with bar code, RFID and magnetic card readers or they may be manually entered on the DI Module keypad. You may prompt an operator for input data at the start or end of any alarm. (An operator may also be prompted for input data at the start or end of any process or process trigger. See **Configuring Input Data** for more information.)

If you want to prompt the operator for miscellaneous data input when the alarm is active, click  to expand **Miscellaneous**.

Miscellaneous (Hide Details) 

Information Type: Source: Keypad
 Barcode

When:

Alpha/Numeric:

Select a pre-configured **Information Type** from the list. The name of the **Information Type** is what the operator sees when prompted for this information.


NOTE: In order for the **Information Type** list to populate with options, you must first configure **Information Types**. See **Configuring Data Lookups (Information Types)** for more information.

From the **When** list, select the time at which to prompt the user for the input data. Select from one of the following options:

- Initial** Prompt operator for input data when alarm set
- Final** Prompt operator for input data when alarm cleared
- On Advance** Prompt operator for input data when alarm acknowledged

From **Alpha/Numeric**, select the input data type – either numeric or alpha. If input data is a mixture of both numbers and letters, choose alpha.

For **Source**, select the source of the input. You may select more than one source. For example, you can select Barcode and Keypad.

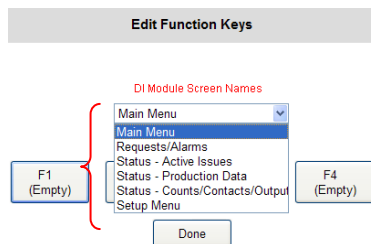
Click  to collapse the **Miscellaneous** menu.

Save Alarm Configuration

Click **Save** to save alarm configuration and return to the previous page.

Editing Function Keys

The DI Module accepts up to four customizable function keys. You can configure the function keys for each screen of the DI Module. To edit the function keys, go to **Home > Configuration > Inputs > Add/Edit > Edit Function Keys**. From the list, select the name of the DI Module screen you'd like to configure.



Next, click the function key you want to edit.



From the **Edit Function Key** page, you have the following options:

NOTE: Options vary depending on the Type selection.

| | |
|----------------------------------|---|
| Type | Purpose of the Function Key <i>Are you using the function key to navigate to a different screen?</i> <i>Are you using it to initiate an alarm or process?</i> <i>Do you want to be able to modify input data?</i> <i>Do you want to modify the state of a process or alarm?</i> |
| Name | The name entered here is the text that appears above the function key |
| Alternate Name (Optional) | An alternate that appears depending on the state of the alarm or event that is modified with the function. Not applicable to all function keys. |
| Action | Refers to the state that should occur when the function key is pressed. |
| Alarm/Process/ Input Data | Select the alarm, process or input data associated with the above actions |
| Menu | If Type is Navigation, then choose which menu to navigate to when the function key is pressed |

Setting DI Module Properties

The **Edit DI Properties** page allows the administrator to configure physical properties of the DI Module. To Edit Properties on your DI Module, go to **Home > Configuration > Inputs > Add/Edit > Properties**.

Setting Module Name

To name the DI Module, enter any name in the **Module Name** field. This is the name that will be used throughout the VT2000 System to refer to this module and its configurations

Setting Backlight Timer

To modify the duration of the backlight, enter a time (in seconds) in the **Backlight Timeout(s)** field. The default time is 15 seconds.

Modifying Alarm Sections Name

On the DI Module screen, the default menu name to initiate alarms is **Requests/ Alarms**. To modify this menu name, enter a new name in the **Modify Alarms Sections Name** field.

Configuring a 5th Output

The DI Module has 5 outputs though only 4 are typically used. To configure a 5th output, it must be specifically configured in this section. You can configure it to do the following upon changing state.

| | |
|-------------------|---|
| Do Nothing | Does nothing to alter the state of the external device |
| Turn On | Turns the relay on |
| Turn Flash | Turns the relay on for 1 second, off for 1 second, on for second, etc. (Typically used for stack lights.) |
| Turn Off | Turns the relay off |

Configuring Ports

You can configure a port to accept data from either a **Barcode Reader** or a **Magnetic Card Reader**. Select the appropriate option from the list under the corresponding port.

Setting Additional Options

The DI Module can be either battery powered or remotely powered from a power adapter. If your DI Module is battery powered, check **Battery Powered**.

Configuring Switch Contacts

Normally Open/ Normally Closed

The default mode for switch contacts is **Normally Open**. To modify this, select **Normally Closed** from the list that corresponds to the appropriate switch contact.

Enable/Disable Switch Contacts

All four switch contacts are enabled by default. To disable a switch contact, uncheck the box that corresponds to the appropriate switch contact.

Switch Contact Pulses

By default, each pulse on a switch contact represents one input. To modify this, select a number from the list that corresponds to the appropriate switch contact and mode (**Normally Open/Normally Closed**).

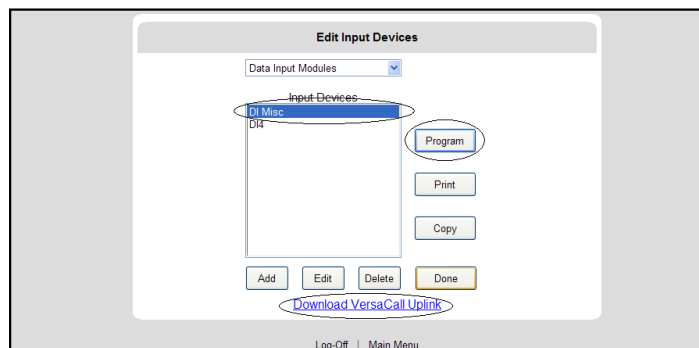
Save DI Module Properties

Click **Save** to save properties configuration and return to the previous page.

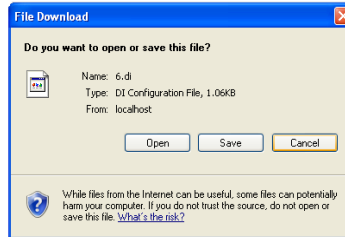
Syncing the DI Module

To sync a DI Module to its corresponding configuration in the VT2000 Web Interface, go to **Home > Configuration > Inputs**. From the **Edit Input Devices** page, download and install the **VersaCall Uplink Utility** (if not already installed). To do this, click the **Download VersaCall Uplink** at the bottom of the page.

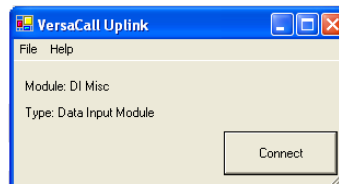
Next, you need to download a configuration file from the **Edit Input Devices** page. To do this, select the desired module and click **Program**.



You will then have the option to either Save or Open the file. If you are on a desktop PC and able to directly connect to the module you are programming, click **Open**. If you are on a laptop and plan to take the laptop out to the plant floor, click **Save**. If you choose to save, you can double click on the file to open it later.

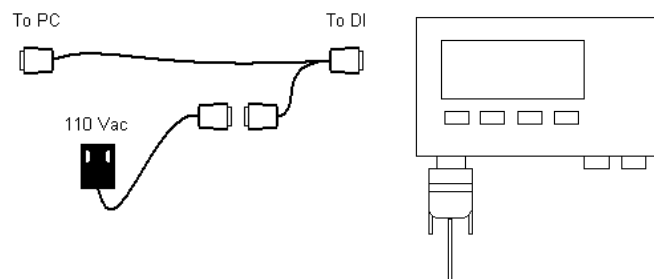


Once the configuration file opens, click **Connect**.

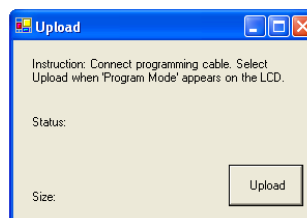


NOTE: It is always good to clear out any active alarms or active processes from the DI module prior to programming in order to prevent those alarms from hanging in the system.

Plug the programming cable into the main port (the one that stands alone) of the data input module. Connect the other end (long end) of the programming cable to the PC. The DI module needs a power either from the AC-DC transformer or the DI's normal power supply.



Once the programming cables are properly connected and the DI Module is supplied with power, the LCD screen should light up and display **Program Mode**. Click **Upload** on the uplink program.

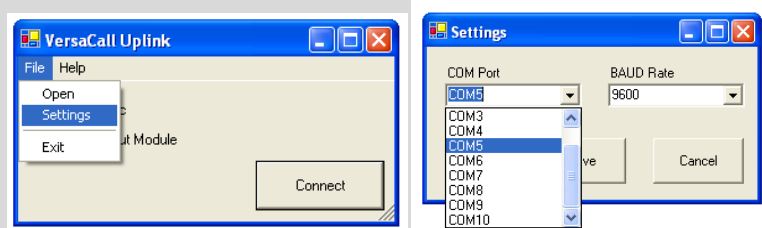


During the upload process, numbers appear on the LCD screen. When the upload completes, **Done** appears on the Uplink program and on the DI Module.

Disconnect the programming cable. The module is now programmed.

Troubleshooting:

- If a failure to open port or timeout error occurs, check to make sure VersaCall Uplink is using the correct COM port. You can change the port settings by going to the VersaCall Uplink program and selecting File → Settings. A new pop-up menu appears. Select an appropriate COM port from the drop down list and click **Save**.



- You may have something else running which is tying up the COM Port. Stop the conflicting process and retry.

Testing and Troubleshooting

Viewing/Downloading Log Files

Errors in the VT2000 System often generate log files including Error, Warning, System and Debug logs. To view logs, go to **Home > Diagnostics > Logs**. Make a selection from the **Log File** list to view a log. Dates on the log file that correspond to issues you experience may provide good clues to the source of the problem. Log files assist VersaCall Engineering staff to determine the cause of errors.

Download a Log File

If you experience a problem, a VersaCall Employee may ask that you download and email the logs. To download a log file, select the log from the **Log File** list and click **Download**.

Clearing Log Files

Large log files can potentially cause slowdowns in your system. Periodically clear log files in order to maximize the speed of your system. To clear a log file, select the log from the **Log File** list and click **Clear**.

Performing a Coverage Test on a Site Pager

A coverage test allows you to test a site pager by sending a page to it every 20 seconds. To test a site pager go to **Home > Diagnostics > Coverage Test**. Select the name of the pager you want to test from the **Site Pager** list. Check **Page Every 20 Seconds**. The selected site pager will then receive a page every 20 seconds. You can walk around the factory floor to test its coverage.

Viewing System Information

The **System Information** page includes information about your system. Go to **Home > Diagnostics > System Information** to see version information and the time on your VT2000 System.

Checking Module Status

To check the status of modules, go to **Home > Diagnostics > Module Status**. This section will display the battery status of each module and display a warning when the battery is low.

Running a Packet Test

A packet test is a method of testing the coverage of the wireless receiver of the VT2000 System. It is done by initiating a packet test on an input device and viewing the results on the system. The input module sends out numbered sequential packets. This is used to test the communication reliability from the module to the system. The goal is 100% throughput. Anything less should be increased by use of a

repeater. The longer the packet test runs, the better the test. Packet Tests are supported with both Data Input Modules and Reason Code Modules.

Starting a Packet Test with the Data Input Module

In order to put the DI module into packet test mode, perform the following:

1. Power up and go to the main menu of the Data Input Module. This can be done by hitting the back arrow if it isn't at the main menu.
2. Press *7388#. This should go to the Setup menu.
3. Use the down arrow to highlight Packet Test and then push the round select button to start it.
4. The packet test should start. You can use the up/down arrows to change the interval of the packets. The default is 10 seconds.
5. Leave the box in this mode for a period of time. An hour is a fairly good estimation, but longer is always better.
6. When you want to get out of the packet test module press the back button a couple times to get back to the main menu.

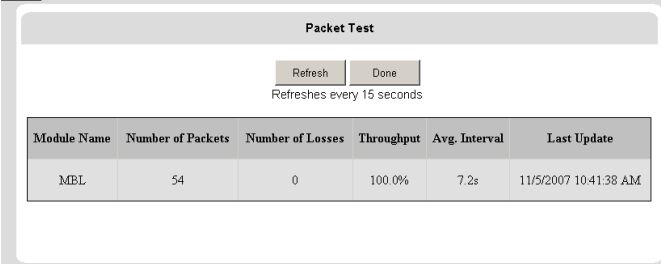
Starting a Packet Test with the Reason Code Module

In order to put the RCM into packet test mode, perform the following:

1. Power up and go to the main menu of the Reason Code Module.
2. Press and hold the Clear button for approximately 10 seconds.
3. The packet test should start. You can use the up/down arrows to change the interval of the packets. The default is 10 seconds.
4. Leave the box in this mode for a period of time. An hour is a fairly good estimation, but longer is always better.
5. When you want to get out of the packet test mode, press the back button to return to the main menu.

Viewing Packet Test Results

To view the results of the packet test, go to **Home > Diagnostics > Packet Test**



| Module Name | Number of Packets | Number of Losses | Throughput | Avg. Interval | Last Update |
|-------------|-------------------|------------------|------------|---------------|-----------------------|
| MBL | 54 | 0 | 100.0% | 7.2s | 11/5/2007 10:41:38 AM |

The Packet Test screen includes the following information:

Module Name Name of the module performing the packet test

| | |
|--------------------------|--|
| Number of Packets | Amount of packets that have been sent across so far during the test We want to make sure a couple hundred packets go through in order to assume we have a valid test. |
| Number of Losses | Number of lost packets - should be 0 for 100% reliability |
| Throughput | Percentage of good packets to total packets - <i>should be 100%, ideally</i> |
| Average Interval | Average interval in between packets - should be representative of the interval set on the module The minimum interval is around 5 seconds |
| Last Update | Time stamp of the last update that came through - should be fairly close to the current time if the test is still running |