VERMONT SYSTEMS

Access Control Qscan

10/27/2020

12 Market Place, Essex Junction, VT 05452 | 877-883-8757

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Access Control Qscan

License – Maintenance Agreement

The use of this software requires a Vermont Systems license and annual maintenance agreement. Prior to implementing any process outlined in this document, please contact the Vermont Systems Sales department at 877.883.8757 or by email (sales@vermontsystems.com) to verify that you are authorized to use this software or to obtain a quote and approval.

Pre-Installation Checklist

This checklist defines the Customer's and Vermont Systems' respective responsibilities when installing the Vermont Systems Access Control system. Because access control hardware can vary, you must consult with an electrician that specializes in circuit design and installation. You will also need to work with your Information Technology (IT) staff to discuss running CAT5e/6 cable to the access point(s). In addition, you must decide where the access control scanners will be located and how you will mount them.

Complete the fill-able form .pdf checklist that follows, and return it to Vermont Systems.

Since access control readers are custom made, we will not order the readers until the checklist is received. The Vermont Systems section lists Vermont Systems' responsibilities; after reading and understanding each item, check the box next to that item. The Customer's Responsibilities section lists your responsibilities; check the box next to each item to acknowledge assuming responsibility for that item.

If you have any concerns or questions, contact Vermont Systems Customer Service via phone at 877.883.8757 or open a case in the Vermont Systems Support portal.

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Your Name: _____

Your Organization: _____

Date: _____

RecTrac Version: _____

Access Control Checklist - Vermont Systems Responsibilities

Check the box next to each item to acknowledge having read and understood it.

- Vermont Systems provides the software that interprets a scan and allows access if the scan is valid.
- Vermont Systems will provide technical assistance to your chosen electric circuit and cabling installer.
- Vermont Systems will encode the Qscan device with an IP address after discussing configuration options with your IT department.
- Vermont Systems will configure the Qscan (if using this option) to ensure that bar codes read correctly.
- Vermont Systems provides phone-assisted or on-site configuration of the RecTrac access control software as quoted.

Access Control Checklist - Customer Responsibilities

Check the box next to each item to acknowledge having read and understood.

- The customer will install and mount all hardware for the access control system, including the following:
- Order Qscan devices a minimum of 4 weeks in advance of installation.
- Install door strike/maglock or turnstile.
- Install Qscan near the access control point, where your customers can reach it.
- Complete the connection between the Qscan and the door strike or turnstile. An electrical contractor must design and physically complete this connection. If the door strike or turnstile does not have a built-in MOV (metal oxide varistor), the electrical contractor will need to build one into the circuit. If not using a Power Over Ethernet (PoE) Standard Smart JX, and the power to the contacts is greater than 30VDC and or greater than 500mA, the contractor will have to design the circuit with an additional relay between the Qscan and the door strike or turnstile.
- Obtain an updated diagram that outlines the circuit between the Qscan and the door strike or turnstile. Go to the International Bar Code (IBC) website (www.interbar.com) and click the support link. In the wiring category, download the PDF labeled SA/STA reader wiring (with RS232 or RS422 interface).

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- Provide one 120VAC power outlets. The Qscan must be plugged into a 120VAC power outlet. In addition, provide any power required by your turnstile or door strike.

Notes: If using a Power over Ethernet Hub/Switch and PoE Standard Qscan or PoE Non-Standard Qscan, a power outlet is not needed for the scan devices.

100 Meters MAX distance communication using Ethernet cabling.

If using an Intelligent POE Switch device, it could extend the distance up to 200 meters.

- Connect CAT 5e/6 cable between a network hub/switch and the Qscan,.

As soon as all the connections have been made and power is supplied to the access point and the Qscan, the customer must notify Vermont Systems so that a Connectivity Test can be performed approximately 4 weeks prior to your “live” date.

It is necessary that all access points are tested and pass the test. If you decide not to configure the software using phone training and you are planning on having a Vermont Systems installer on site, travel will not be arranged until all access points pass this test. If a Vermont Systems installer is on site for the purpose of configuring your access device(s) software and wiring is incorrect and/or the test fails, the customer is responsible for all expenses incurred by that installer (e.g., time and travel).

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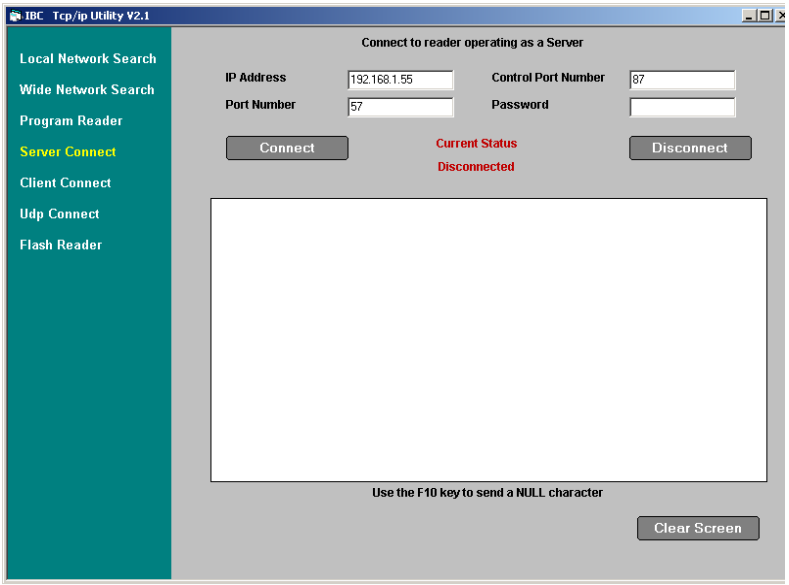
Configuring a Qscan Device

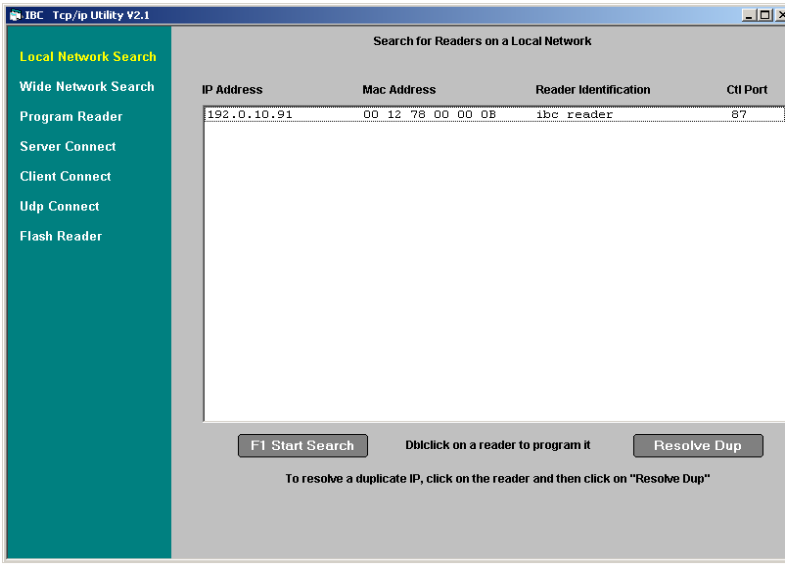
1 Download the Ibctcp44 utility.

- Open a web browser and go to http://www.interbar.com. Click on the Software link.
- Click on the **Ibctcp44** link and save it to a local folder.
- When the download completes, browse to the location where you saved the Ibctcp44.zip file and unzip it. The zip file will extract a setup.exe file.
- Right-click on the setup.exe and *Run as Administrator*.
- Follow the on-screen instructions during the installation process. This will install the Ibctcp44 software on your computer.

2 If you are installing multiple devices, prepare an organized listing of IP addresses and locations that correspond to each device. After configuring each device, be sure to label each clearly.

3 To begin the configuration in Windows, go to Start • Programs • IBC. Run the Ibctcp44.exe utility program. You will see screens similar to the following screens, though IP Address, Port and other information may vary.



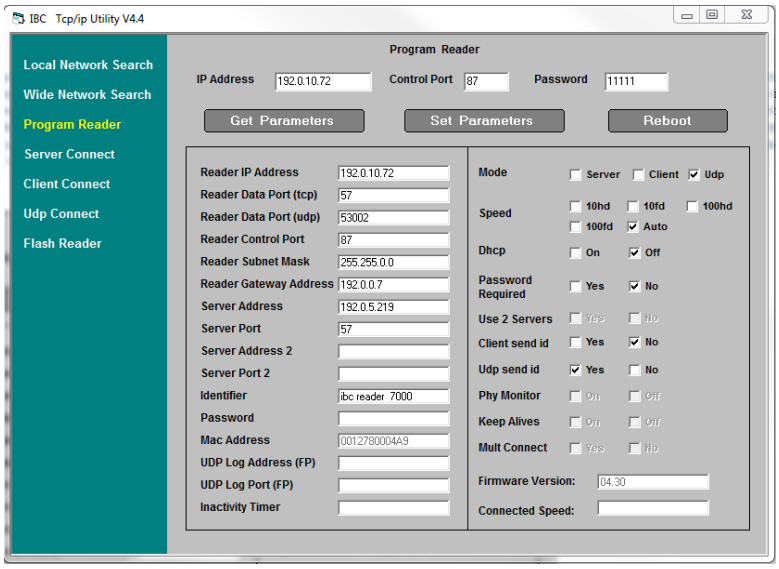


4 Click **Local Network Search**. Press **F1** Start Search. You should see the default IP address of the Qscan, the MAC address of the reader, the Reader Identification and the Ctrl Port.

5 Double click on the first device listed. This will display the Program Reader screen.

- Click **Get Parameters**.

Note: If unable to connect to Qscan, go to Unable to Connect to Qscan During Setup.



6 Change the *Reader IP Address*, the R*eader Subnet Mask* and the *Reader Gateway Address* (if applicable) to values determined by your Network Administrator. Enter a unique name in the *Identifier field* to identify this specific Qscan.

7 Set the *Operating Mode* to "UDP."

8 Set the *Speed* to "Auto."

9 Set the *UDP send id* option to "Yes."

10 Ensure that the IP Address in the *Server Address* field is NOT the same as the IP Address in the *Reader IP Address* field.

- This ip should point to the server that will be running access control, whether it is the local machine or whether it is hosted in another location. It should not be the same as the reader address.

11 Click **Set Parameters**. Once the new parameters are saved, you will receive the following message: "New Parameters have been set – You must Reboot (or repower) the reader for the new parameters to take effect."

Click **OK**.

12 Click **Reboot**. Click **OK**.

Note: In the event this does not work, you can power-cycle the Qscan physically by unplugging the Ethernet cable, waiting a few seconds and plugging it back in.

13 If using bar code access control, configure the Qscan by swiping the set % preamble found in the Qscan Series commands document (as well as in the Connectivity Test). An audible signal confirms that the bar code has been read and the device has been properly configured.

14 Repeat steps 6–13 for each Qscan device.

Qscan Hardware Installation

1. All CAT 5e/6 cable and power supplies should be installed and tested prior to installing the access control hardware.
2. Install the door strike(s) or turnstile(s).

Note: Vermont Systems strongly recommends connecting and testing all devices prior to permanently securing the devices to their final positions.

3. Install the Qscan near the access control point where your customers can reach it.
4. Connect CAT 5e/6 cable between the network hub/switch and the Qscan device. If using a PoE Standard Qscan or PoE Non-Standard Qscan, be sure to connect the CAT5e/6 cable to the powered ports on the PoE Hub/Switch or Power Injector.
5. Connect power to the Qscan device.

Note: This step is not necessary if using a PoE Standard or a PoE Non-Standard Qscan.

6. Complete the connection between the Qscan and the door strike or turnstile.
    - An electrical contractor/engineer must design and physically complete this connection.
    - If the door strike/turnstile doesn't have a built-in MOV, the electrical contractor will need to build one into the circuit.

Note: If using a PoE Non-Standard or a Non-PoE Qscan and if power to the contacts is greater than 30VDC and or greater than 500mA, the contractor will have to design the circuit with an additional relay between the Qscan and the door strike or turnstile.

7. After all the connections have been completed and power has been supplied to the access point and the SQscan (if required), the customer must notify Vermont Systems so that the Connectivity Test can be performed.
    - This test must be completed approximately four (4) weeks prior to your live operation date.
8. If you are installing weatherized units outdoors, be sure to seal the back side of the unit to the mounting plate using silicon caulking, such as 3M 5200 or Life Caulk. This will ensure that water or moisture doesn't cause damage to the internal wiring. The Qscan is delivered sealed.

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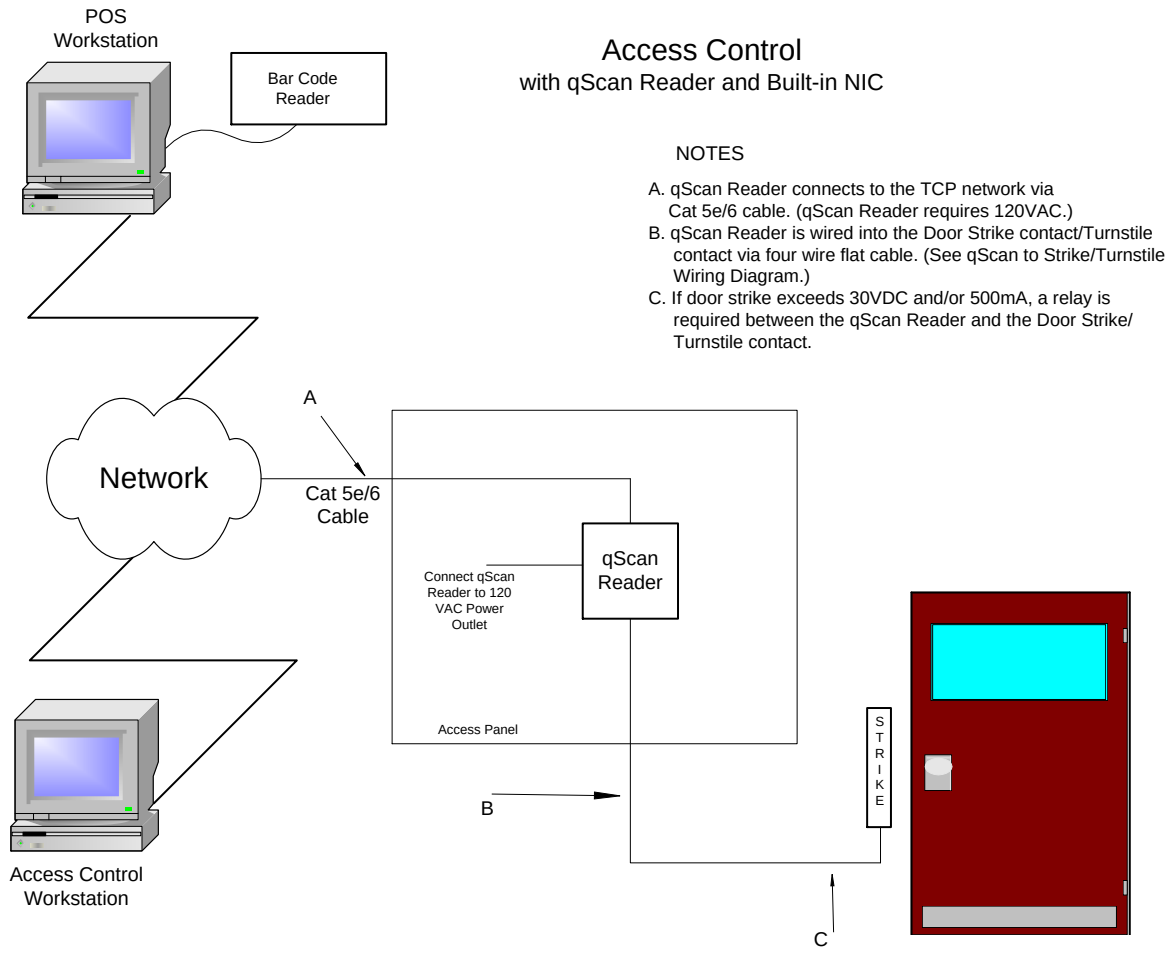
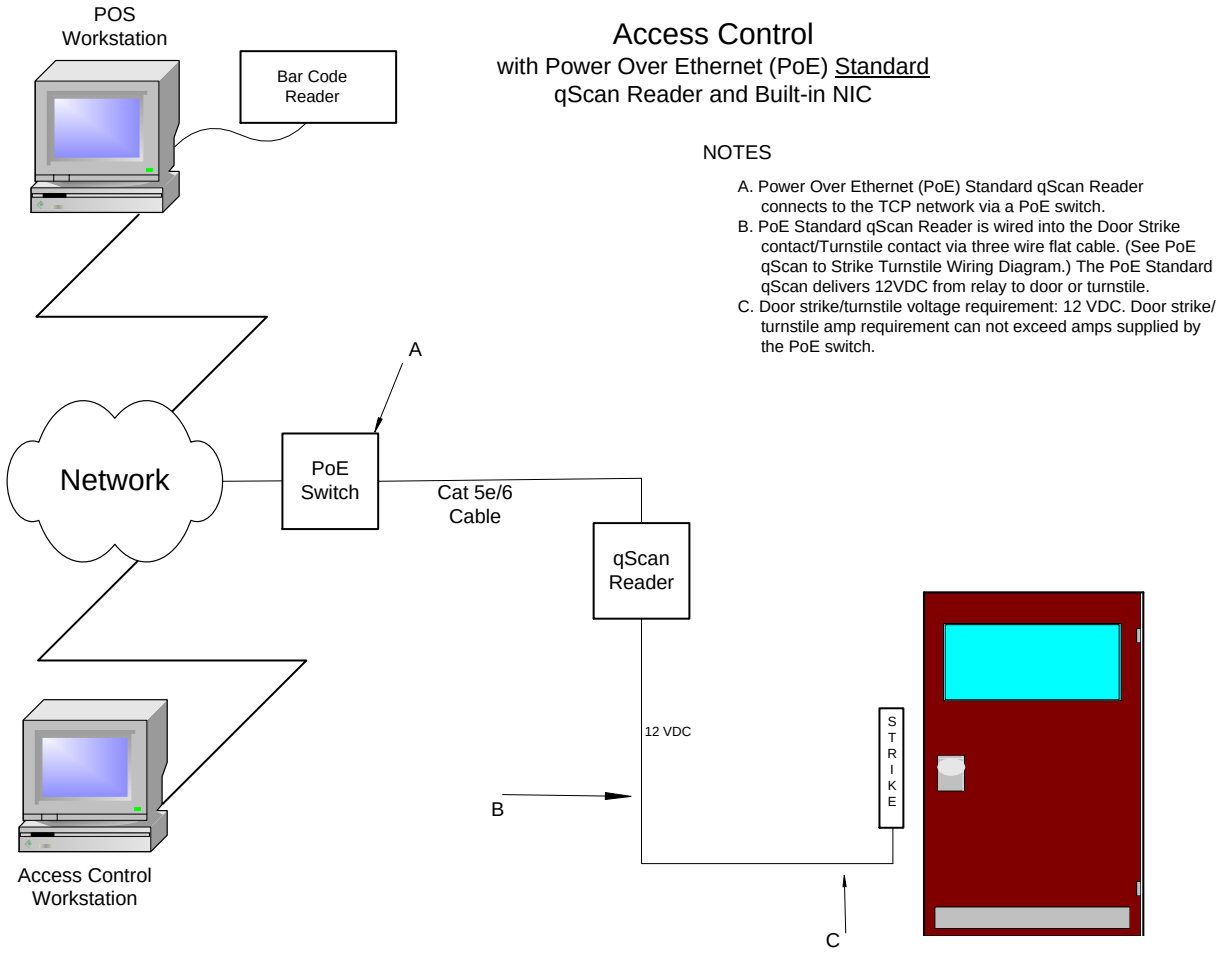
Access Control Diagrams

Qscan with Built-in NIC Diagram

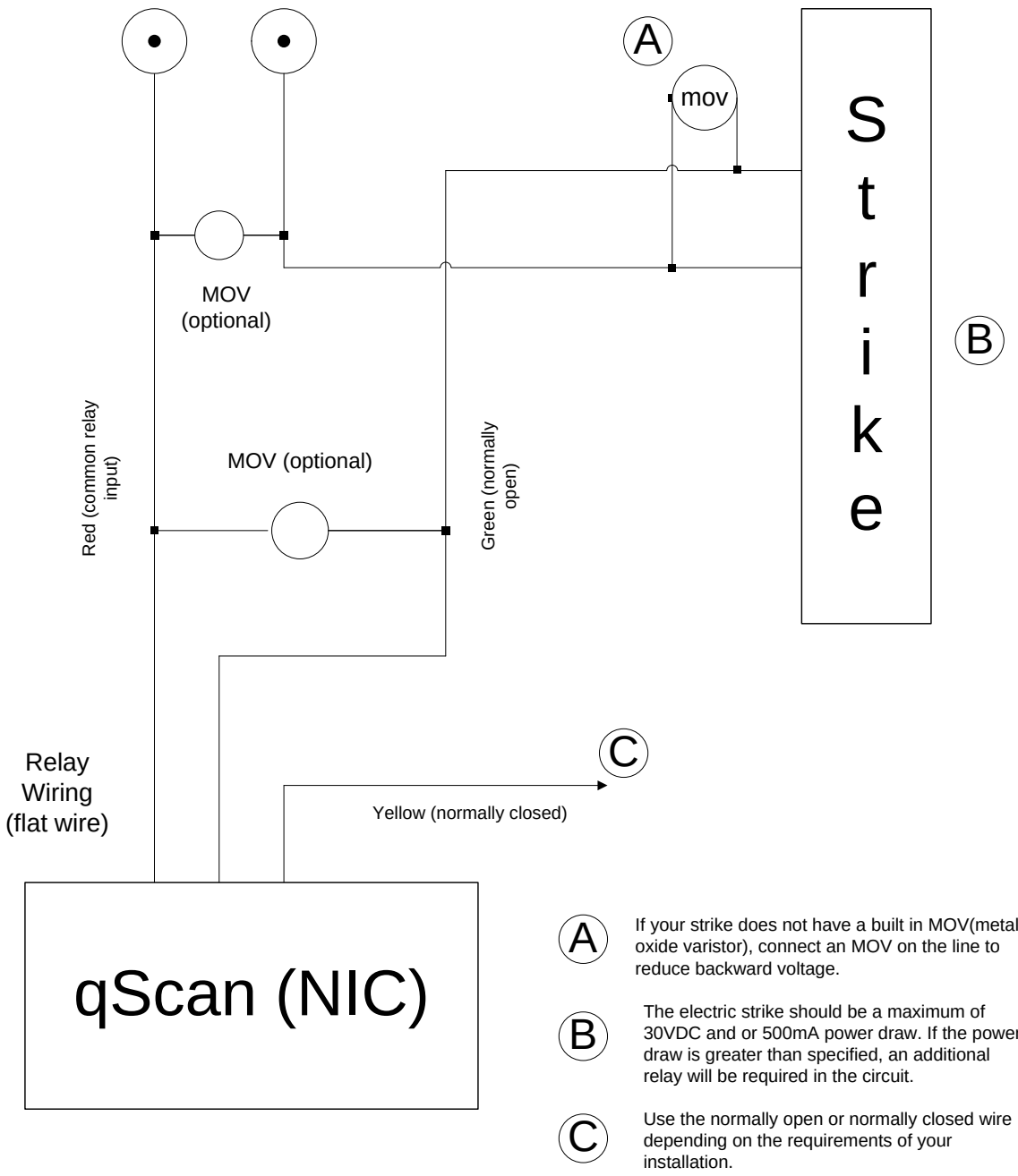


PoE Isolated Relay ("Standard") Qscan with Built in NIC Diagram

(Also Applies to 7000 RIB)



qScan (NIC) to Door Strike Wiring Diagram



A — If your strike does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — The electric strike should be a maximum of 30VDC and or 500mA power draw. If the power draw is greater than specified, an additional relay will be required in the circuit.

C — Use the normally open or normally closed wire depending on the requirements of your installation.

This is a diagram for the qScan as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

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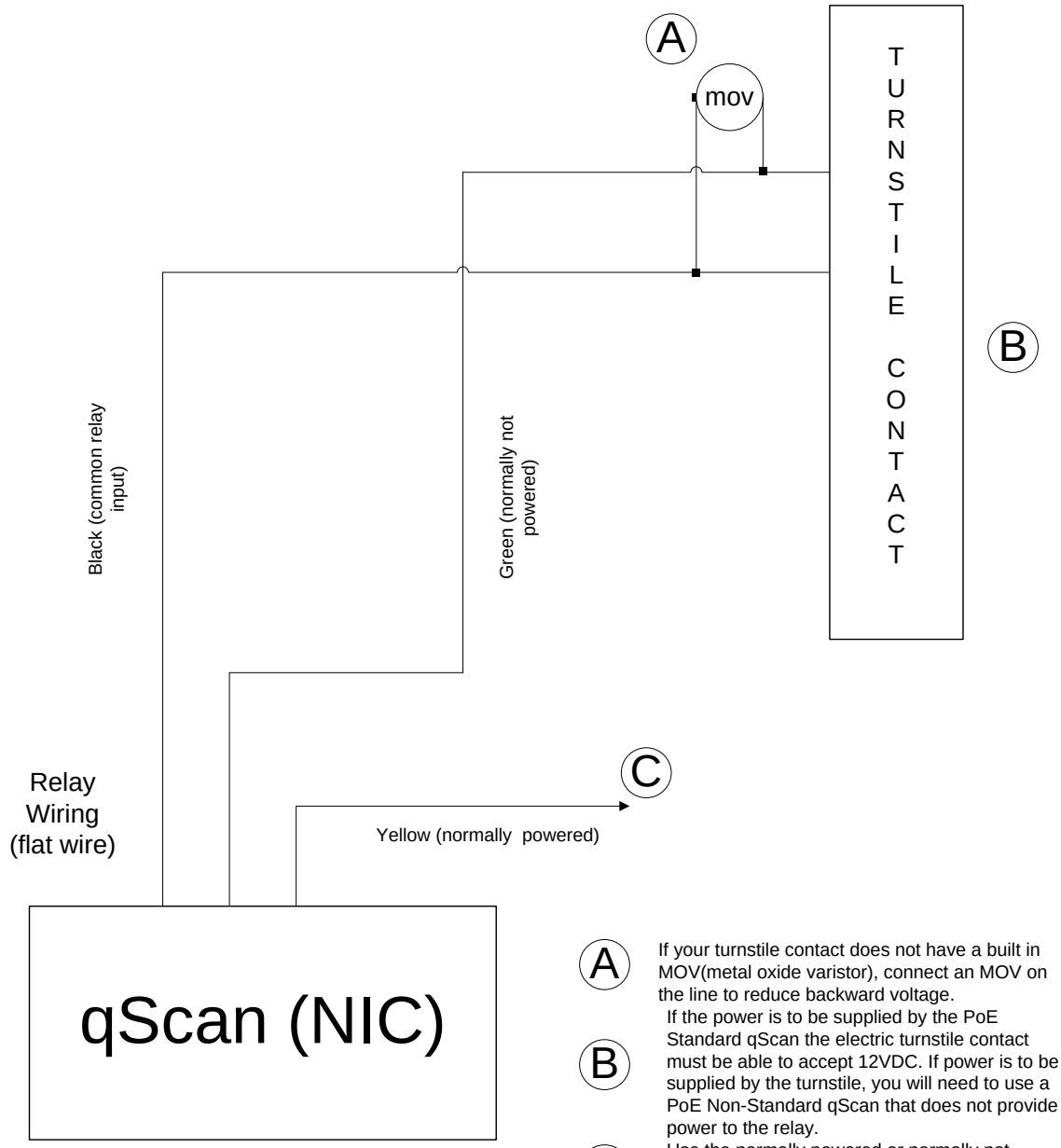
PoE qScan (NIC) to Turnstile Contact Wiring Diagram



A — If your turnstile contact does not have a built in MOV(metal oxide varistor), connect an MOV on the line to reduce backward voltage.

B — If the power is to be supplied by the PoE Standard qScan the electric turnstile contact must be able to accept 12VDC. If power is to be supplied by the turnstile, you will need to use a PoE Non-Standard qScan that does not provide power to the relay.

C — Use the normally powered or normally not powered wire depending on the requirements of your installation.

This is a diagram for the qScan as of 04/10/2013. Please refer to www.interbar.com to verify wiring diagram.

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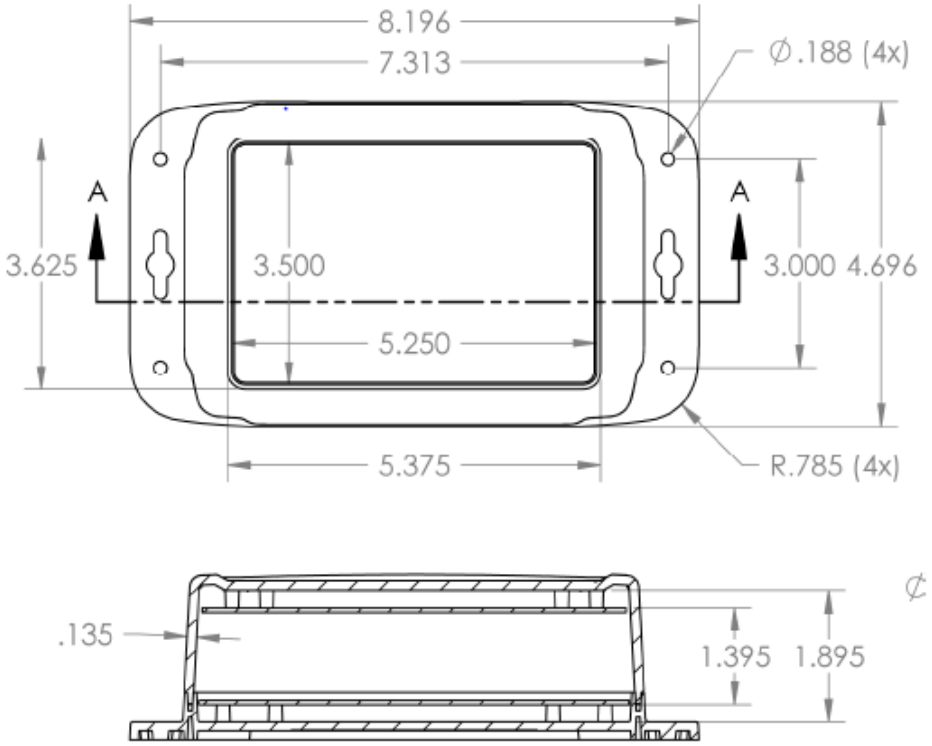
Qscan Mounting Template



Qscan Command Response

If using Qscan bar code access control, configure the Qscan by scanning the % UX0460 command response found in the Qscan Series commands document.

%UX0460

Connectivity Test

This test is required to ensure connectivity has been established outside of the RecTrac application prior to implementing Access Control from within it

IBC TCP Utility V4.4

Run the test using the IBC TCP Utility.

1. In Windows, go to Start • Programs • IBC, to run the IBC TCP Utilit V4.4. It will open to the UDP Connect page.
2. Change the IP Address to match the Qscan device you are testing.
3. Ensure the Receive Port Number is "57" and Data Port Number is "53002" at the defaults, unless you changed them during initial set up. Click **Listen**. The Current Status should change to "Connected."
4. You should be able to swipe or scan your access card at the device location. The card number will display in the white box below in red, followed a carriage return (hex 0d).
5. Send commands directly to the device by typing the commands on the left into the white screen. The results on the right should occur.

Command	Result
]00<carriage return>	Green Light On
[00<carriage return>	Green Light Off
}00<carriage return>	Red Light On
{00<carriage return>	Red Light Off
!15<carriage return>	Relay On
*<carriage return>	Relay Off

6. The commands will show in black as you type. You can enter them one after the other or use the Clear Screen button at the bottom to start fresh before each one.

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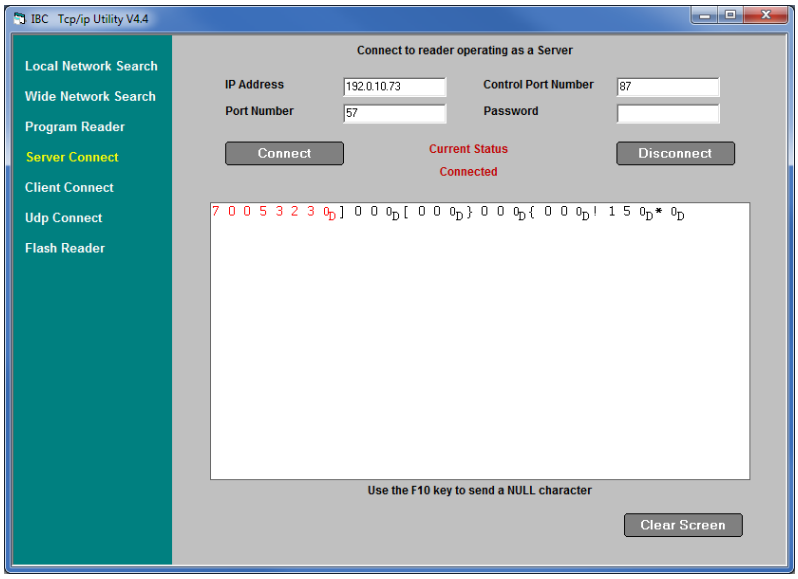

IBC Tcp/ip Utility V4.4
Local Network Search
Wide Network Search
Program Reader
Server Connect
Client Connect
Udp Connect
Flash Reader
Connect to reader operating as a Server
IP Address
192.0.10.73
Control Port Number
87
Port Number
57
Password
Connect
Current Status
Connected
Disconnect
Use the F10 key to send a NULL character
Clear Screen

Access Control Setup for RecTrac

Perform all steps in this section on the workstation from which you will be processing Access Control.

Note: Any file paths and screen/tab locations in this document refer to file paths and screen/tab locations as they appear in the standard, default Vermont Systems design. Your setup and Design may vary.

Ensure VIC is Installed

To operate Access Control, Vermont Integration Client (VIC) must be installed on the workstation from which you will run Access Control.

By default, a VIC profile should be linked at the Default Level of Hierarchy in RecTrac. To utilize this profile, you would install VIC as a Service on the Access Control Workstation.

Optionally, you can use the VIC.exe installation and link a separate VIC profile at the Workstation Level of Hierarchy on the workstation running Access Control. Running Access Control as both an executable and a service. The Qscan is configured to send data to the Workstation that has the server address that was entered in parameters using the TCP/IP Utility.

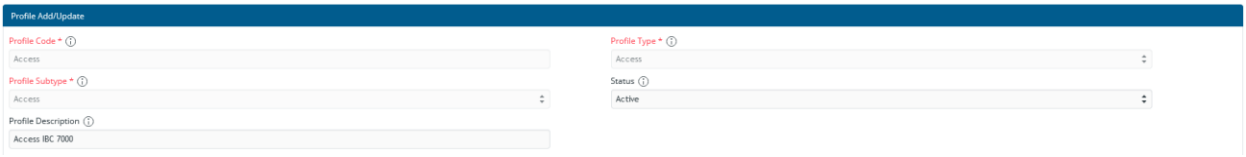
Refer to VIC Installation with Windows Installer for step-by-step installation instructions for VIC, if necessary.

Create an Access Control Workstation

1. In RecTrac, search for and go to Workstation Management. Click **Add** to add a new workstation. You will continue to the Workstation Update • Core Settings screen.
2. In the *Workstation Name* field, enter the workstation name exactly as it is identified in the Ttcp/ip Utility. Vermont Systems suggests copying the identifier field into the workstation name in RecTrac.
3. Enter a *Description.*
4. Click **Save**. Exit back to the main RecTrac menu.

Create and Link an Access Profile

1 Search for and go to Profile Assignments. Click **Add** to add a new profile.



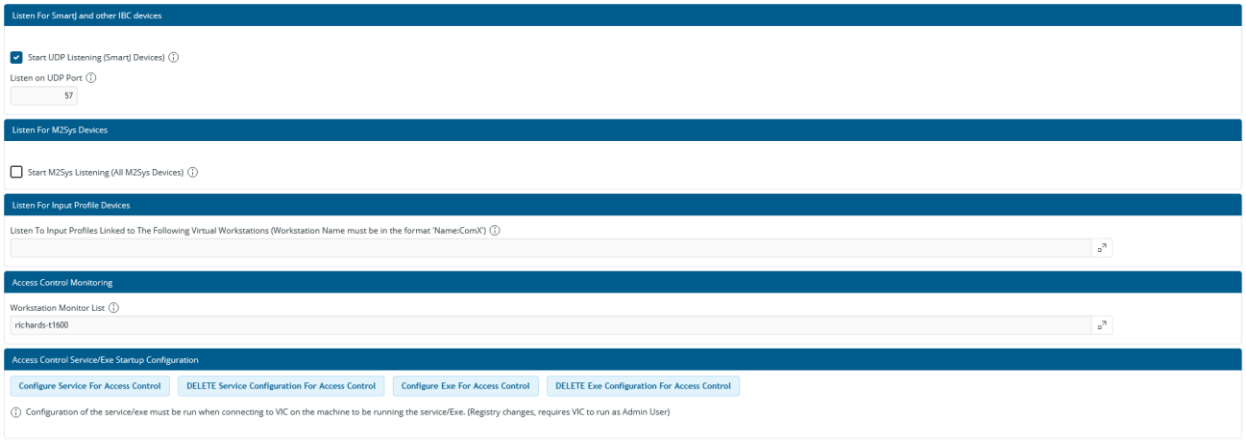
2 Enter a *Profile Code* to describe the profile that is being configured with Access Control.

3 Expand *Profile Type* and select "Access."

4 Select the Default Subtype.

5 Enter a *Description*.

6 Click **Create**. You will continue to the Profile Update screen.



7 Enable the *Start UDP Listening* option.

8 Accept the default entry for *Listen on UPD Port* (57) or overwrite as needed. This is the server port on the TCP/IP Utility.

9 On the **Access Control Monitoring** group, select the workstations that will be viewed in the Access Control Monitor program. Traffic from workstations not in this list will not appear in the Visits DataGrid in the Access Control Monitor.

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10 Click **Save**. You will be returned to Profile Assignments.

11 In Profile Assignments, link this Access profile at the Workstation Level of Profile Hierarchy, to the workstation from which Access Control will be run. This should be the workstation on which you just performed these steps.

12 While logged into RecTrac on the machine designated to run Access Control, and while successfully connected to VIC, select the Access profile and click **Update**.

13 Click the "Configure" button at the bottom of the screen that matches your VIC installation (**Configure Service for Access Control** or **Configure EXE for Access Control**). The process will run automatically.

14 Click **Continue** when prompted.

15 Exit completely out of RecTrac. Do NOT save the session.

16 Close your web browser.

17 Exit the VIC and restart it.

18 Log back into RecTrac on the workstation.

Create and Link an AccessRelay Profile

1 In RecTrac, search for and go to Profile Assignments. Click **Add** to add a new profile.

2 Enter a *Profile Code* for your Access Relay profile.

3 Expand *Profile Type* and select "AccessRelay."

4 Expand *SubType* and select "SmartJ."

5 Enter a *Description*.

6 Click **Create**. You will continue to the Profile Update screen.

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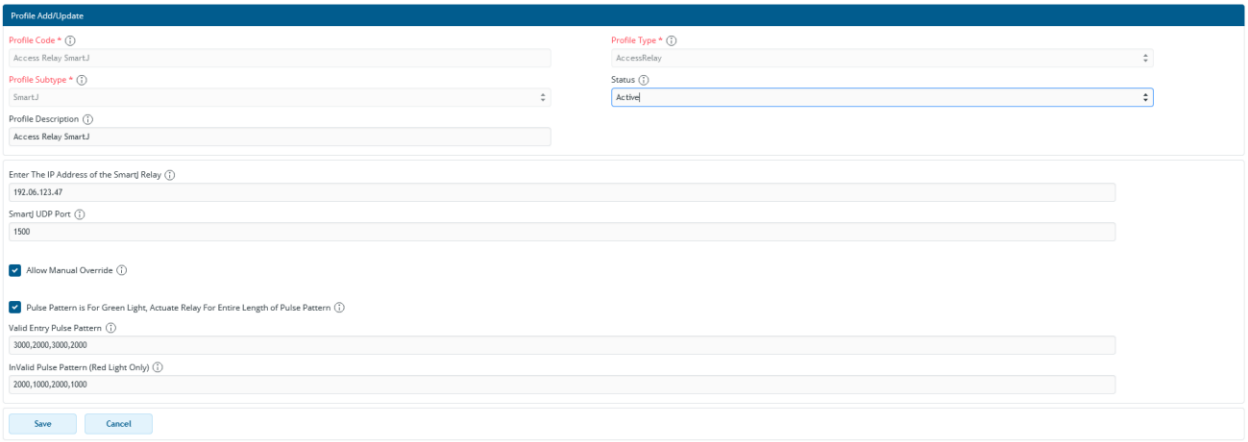


7 Enter the *IP Address* of the Qscan relay. This is the IP address that you assigned to the Reader using the TCP/IP Utility.

8 Enter the *UDP Port* that you assigned to the Reader in the *Qscan Reader Data Port (UDP) Port* field.

9 Select the *Allow Manuel Override* option if users will be allowed to manually open the Access Point via the Access Control Monitor program.

10 Select the *Pulse Pattern is for Green Light, Actuate Relay for Entire Length of Pulse Pattern* option.

11 Enter your *Valid Entry Pulse Pattern* and *Invalid Pulse Pattern* values.

This is the time value in milliseconds for which you wish the Relay to toggle "on." For example, a flashing pattern 1000, 2000,1000,2000,1000; would equate to 1 second on, 2 seconds off , 1 second on, 2 seconds off, 1 second on

12 Click **Save**. You will return to Profile Assignments.

13 Link the AccessRelay profile at the Workstation Level of Hierarchy to the Access Control Workstation you created above. Repeat this step for each Access Point being setup

Create and Link a Visit Profile

Starting at Step 7, these steps need to be updated to reflect the new Visit Profile with the Access Control group. We'll need two (2) screen shots: One for the Core group (like the old one below) and one for the Access Control group. Please be sure to use the Next Gen UI.

1 In RecTrac, search for and go to Profile Assignments. Click **Add** to add a new profile.

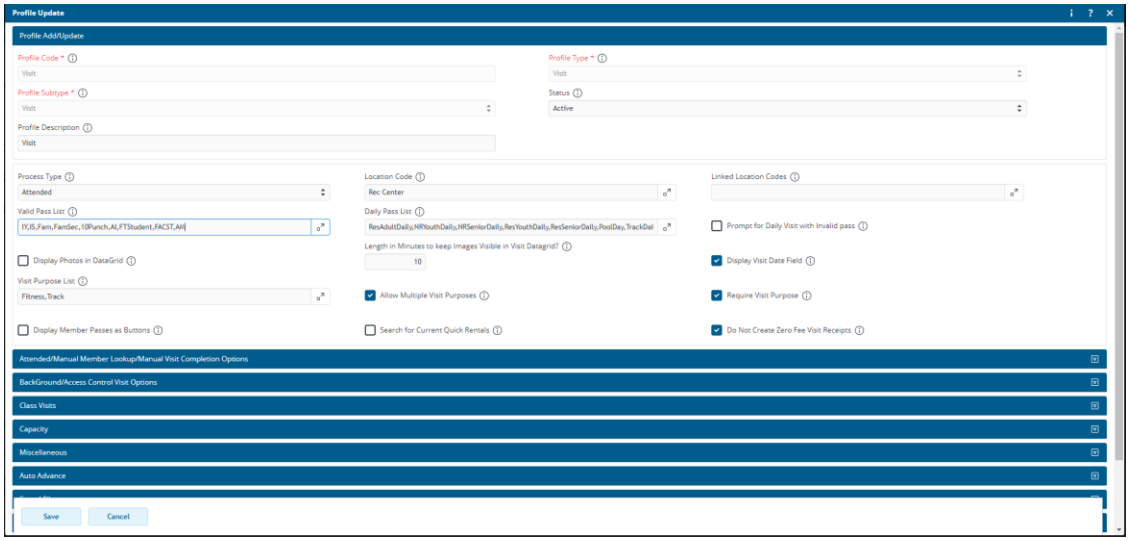
2 Enter a *Profile Code* for your Visit profile.

3 Expand *Profile Type* and select "Visit."

4 Expand *SubType* and select "Visit."

5 Enter a *Description*.

6 Click **Create**. You will continue to the Profile Update screen.

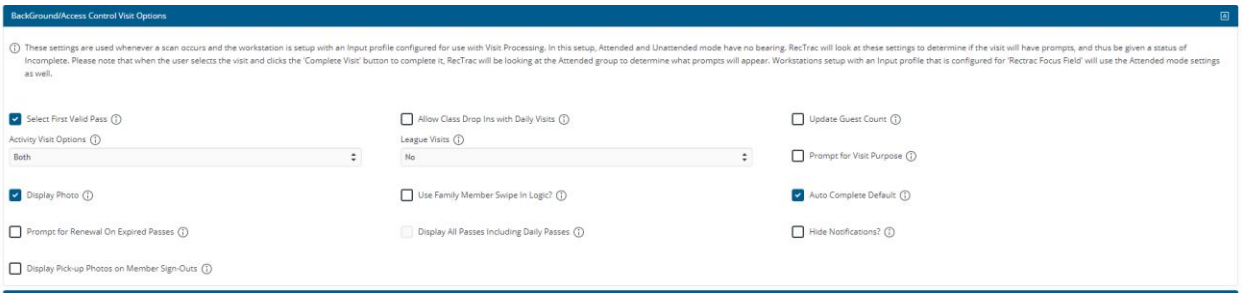


7 Open the *Visit Pass List* and select the Pass Codes that will be valid for this location.

8 Open the *Daily Pass List* and select the Daily Pass Code(s) that will be valid for this location:

9 Open the *Location Code* and select the Facility Location at which you will be processing Access Control.

10 Expand the **BackGround/Access Control Visit Options** group and enable the *Select First Valid Pass* option.



11 Expand the **Miscellaneous** Group, and open *Access Ticket Daily Pass List*. Select the Pass Codes that will be valid for this location. Likely this will be the same list of passes as you entered in the *Daily Pass List* above.

12 Open *Access Control Monitor Manual Override Pass List* and select the Pass Code that will be used when you click the manual override buttons in the Access Control Monitor. If you do not have a generic Daily Pass for this function, you can create one.

13 Fill in the remaining fields as necessary. Generally speaking, options for Prompts should be disabled. Use the Help icon for field level definitions, if needed.

14 Click **Save** when ready. You will be returned to Profile Assignments.

15 Link the Visit profile at the Workstation Level of Hierarchy to the Access Control Workstation you created above.

Assigning Profiles

1 **Access Relay** and **Visit** profiles should be linked to the **Access Control Workstation** you created above.

2 **Access** and **VIC** profiles should be linked to the **workstation on which you are processing**.

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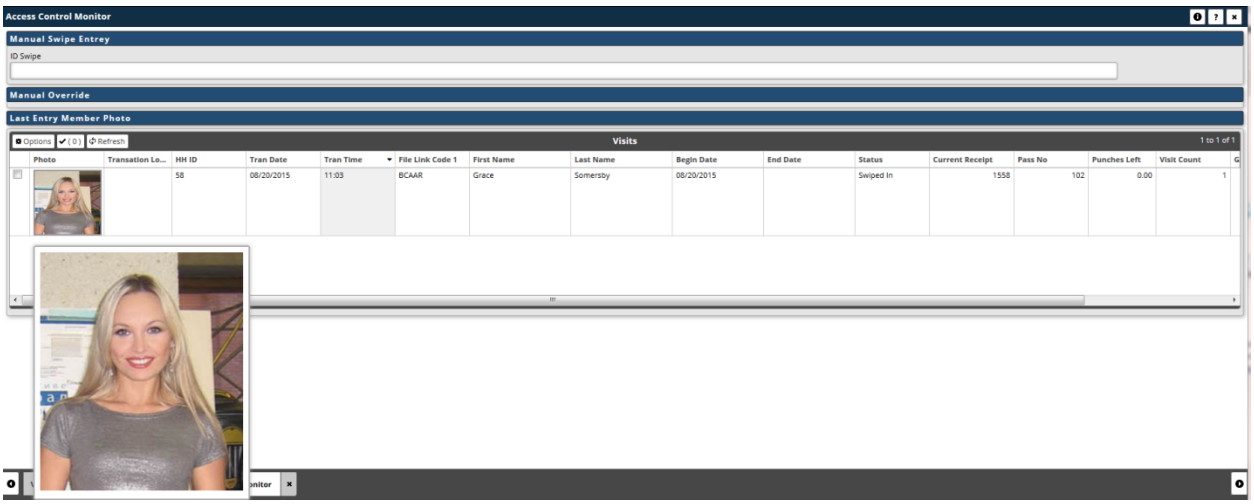
Access Control Daily Processing in RecTrac 3.1

Note: Access Control does not require a login to function. So long as VIC is running on the designated machine, Access Control will function.

1. To monitor swipes at the Access Points, log into RecTrac on the workstation that Access Control is using to process requests. This is the workstation to which you linked the Access and VIC profiles.
2. To view Access Visits, search for and go to Access Control Monitor.
3. Manual override for the profiles linked in the Access Profile should be displayed, as well as a DataGrid that displays recent Visits.

Verify that 3.1 Displays the Photo

If selected, the *Display Photos* option on the Access device will display an individual's photo (if a photo has been captured) for the person swiping into the access control point).



Troubleshooting

No Success with Connectivity Test

If you are unable to connect to your Qscan via the IBC TCP Utility V4.4, check the following setup configurations. You should not be connected to VIC while performing the following steps.

1. From a DOS command prompt, attempt PINGing the device. If you are successful, unplug the CAT5e/6 cable from the Qscan device and PING again. If you are still able to PING the IP, that specific IP is in use elsewhere on your network. You must configure the device with a different IP address.
2. Via the Ibctcp44 configuration software, verify that the correct IP addresses are assigned to each device.
3. Ensure the IP of the device and the IP of your machine are in the same Subnet mask.
4. If you are using a firewall client software, it must be disabled when attempting to connect to the device.
5. You cannot have an open connection to the Qscan device within RecTrac. Make certain all other connections to this device are closed.
6. Once you can connect to the device, verify the connection with the test text files as explained in the Connectivity Test section. Also, make sure the card gets read (you get a beep) when swiping. If these tests do not work, there is a problem with the physical setup.

Other Problems

If you still cannot connect to the Qscandevice, below are more items to check.

1. Test the power to the Qscan.
2. Test CAT5e/6 cable to ensure it is working and functional. To test this, bypass the installed CAT5e/6 cable and run a temporary CAT5e/6 cable from the switch/hub to the Qscan. Test again. If this works, your installed cable is bad. If it does not work, the problem lies elsewhere.

Unable to Connect to Qscan During Setup

1. Highlight the Qscan you are trying to configure and click the Resolve Dupe button.
2. Enter the Qscan's new IP address and click **Next**.
3. Enter the Qscan's new subnet mask and click **Next**.

4 Enter the Qscan's password: 11111 and click **Next**.

5 The Qscan will reboot.

6 Return to Configuring a Qscan Device.

UDP Mode Returns OK and Flashes Red

Vermont Systems has found that some qScan units will start flashing red at seemingly random intervals when set to UDP mode, The units will read a card (you will see the visit in RecTrac), but the qScanwill flash green only for an instant. If you experience this:

1 Launch IBC 4.4.

2 Search for the Reader and double click on it.

3 Click **Get Parameters**.

4 Change the *Mode* to "Server."

5 Click **Set Parameters**.

6 Click **Reboot**.

7 Click on **Server Connect** on the left.

8 Enter in the readers IP address in the *IP Address* field, *Control Port Number* of "87" and a *Port Number* of "57." Click **Connect**.

9 Current Status should change to "Connected."

10 In the middle of the screen, there is a white box, click on it once to make sure the window is in focus and do the following (these are zero's):

- X0460(Enter Key)

11 There should be no response at all when you press <Enter>.

- If there is then something is wrong. Make sure the "X" is a capital and that there are no spaces in the command.
- Repeat until there is no response then go to Step 12.

12 Click Disconnect.

13 Go back to the search and double click on the Reader again.

14 Click Get Parameters.

15 Change the *Mode* back to "UDP."

16 Click Set Parameters.

17 Click Reboot.

Electric Strikes vs. Magnetic Locks

Magnetic Locks

All magnetic locks (aka: mag locks) will work with DC current only, usually 12 to 24 volts, so never connect a magnetic lock to AC current at any voltage.

All magnetic locks are fail-safe, which means that they need a constant source of power to remain locked. If power is removed, the lock will open.

All mag locks are silent even when powered and locked. Electricians recommend at least 1200 pound pull magnetic locks for normal sized doors.

Caution is recommended regarding use of magnetic locks with respect to fire and smoke safety. Always check Local Authority Having Jurisdiction (LAHJ) during installation planning.

Electric Strikes

Electric strikes are often used for “buzz in” type systems. They can be 12, 24, or even higher voltage and they can take AC or DC current or some both.

They may be fail-safe or fail-secure. A fail-safe electric strike needs power to keep it locked, whereas, a fail-secure strike remains locked even without power.

Fail-secure is the most common type used. A fail-secure strike remains locked from the outside even if no power. For egress or getting out, a door knob or lever on the lock allows for safe exit.

If you need the “buzzer” sound, select an AC strike and AC power source or transformer. If you do not want the “buzzer” sound, select a DC power source or transformer. The DC strike is almost silent when it releases, except for a slight “click” sound.

If you want to use a DC strike or magnetic lock, but still want the “buzzer” sound, you can connect a tiny buzzer in parallel between the power supply and the electric strike or magnetic lock to make buzzer sound when the lock releases.

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