



RedStorm™ 2.1

Sign Control & Reporting Software

Setup & User Manual

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Web Interface



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1.0 Software Overview

The Signal-Tech Sign Control and Reporting Software is a control and management interface for the RedStorm Parking Guidance System and Signal-Tech Smart Signs. It offers comprehensive reporting based on RedStorm parking data.

1.1 System Requirements

- Computer: Server grade PC with power backup running Windows 7 or Windows Server 2008 or higher
- Minimum: 8GB RAM and 128GB of hard drive space
- Network: Ethernet and DHCP enabled

1.2 General Features

- Can control an unlimited number of signs or RedStorm Parking Guidance Systems
- When RedStorm Systems and Smart Space Available or VMS Rebel Signs are used together in the software, parking counts can be displayed in remote locations on the facility campus. Smart Signs and RedStorm Systems require network access.
- Runs as a Windows service
- Signs can be placed into logical groups for display and access purposes
- Notifications can be set up to send emails for communication failures or other exceptions
- Ethernet communication

1.3 Administrator Interface

- Shows status of all signs by sign group and what they are currently displaying
- Use to configure RedStorm Systems, Smart Signs, schedules, messages and Web Interface users
- Allows setup of unlimited email notifications
- Logs all Web user activities

1.4 Web User Interface

- Self-contained in the software
- Web Interface is viewed in a web browser (default http port 80, default https port 443)
- Shows status of signs (by sign group) and what they are currently displaying
- View live overview of RedStorm Systems as well as extensive reporting on occupancy, in/outs and hardware errors
- Change capacity and occupancy of RedStorm zones

- Permissions-based user access to sign groups or RedStorm Systems
- Allows users to manually override schedules or add scheduled overrides to the current schedule
- Optimized for viewing on mobile devices

1.5 RedStorm Parking Guidance System

- Change capacity and occupancy of RedStorm zones
- View status of Space Available signs connected to the RS485 network
- Reporting with configurable graphs of systems, zones, and transition points
- View real-time parking stats
- Live XML feed

1.6 Scheduling

- Allows for scheduling a repeating weekly schedule
- Allows scheduled and manual overrides of schedules
- Works across multiple time zones
- Automatic count maintenance with scheduled count resets by zone, date and time
- Set conditional statements that change based on RedStorm capacity data

1.7 Static Message Smart Signs

- Signs that have static (fixed) messages where strategically placed LEDs form the characters of the messages
- Software changes messages or blanks the sign automatically, based on schedules or RedStorm capacity data

1.8 VMS Rebel Smart Signs

- VMS Rebel Programmable signs can be programmed to display any message
- Can display specific zone counts when used with a RedStorm System
- Software changes messages or blanks the sign automatically, based on schedules or RedStorm capacity data
- Provides an easy message editor with a live preview
- Supports date and time messages
- Supports scrolling text

Terminology and Organization

2.0 Terminology and Organization

Conditional Message

A way to control messages displayed on the Smart Sign through the schedule based on RedStorm occupancy data using an either/or statement.

HTTP User

Users are only applicable to the HTTP Web Interface, and can be given permissions to view specific sign groups or RedStorm Systems.

Manual Override

Schedules can be overridden in real time through the Administrative Interface or Web Interface.

Message (*S-VMS Rebel Programmable Signs ONLY*)

A message can be either a single line or double line of text that is displayed on the sign. Multi-part messages can be created and will show in sequence for the selected amount of time. Messages will scroll automatically if too wide for the sign.

Organization

The organization of this software allows you to re-use message groups in schedules, and to use the same schedule on multiple signs.

RedStorm Parking Guidance System

A vehicle counting system for displaying available spaces on signs. Can be connected to the sign via RS485 serial port or accessed over TCP/IP.

- RedStorm SuperMaster Controller**
The device the Sign Control and Reporting Software communicates to for controlling RedStorm Systems
- RedStorm Zone**
Each zone in a RedStorm System maintains its own capacity, count and connections by transition points
- RedStorm Transition Point**
Each transition between zones or street level has a device for detecting vehicles moving in/out
- Signs**
This term appears on the Software screen to represent Space Available Signs connected to the RS485 network and controlled by the RedStorm SuperMaster Controller.

Resets

Scheduled count maintenance. Resets, as they are called in the software, can be used to schedule a reset of the zone count at a particular time of the day to a preselected count.

Schedule (*Used with Smart Signs ONLY*)

With Smart Signs installed in the software RedStorm can control them conditionally based on capacity data. Smart Signs are managed through a perpetual weekly schedule that loops until edited or manually overridden.

Scheduled Override

These are part of a schedule, and can be used to override the schedule for holidays or other occasions. Scheduled overrides may be added to a schedule in the Administrative Interface or Web Interface by authorized users.

Sign

Each Smart Sign connected to the software must be configured in the software. Signs are accessed over TCP/IP.

Sign Group

Signs can be placed into logical groups, to make Smart Sign organization easier. Web Interface viewing will also be easier.

Sign Type

The sign type is the product ID of the sign. Same sign types can share schedules.

Space Available Signs

Smart Space Available Signs are controlled by the RedStorm Sign Control and Reporting Software. Smart LED displays in these signs are TCP/IP equipped to communicate via Ethernet over the facility network. Smart Space Available Sign messages are managed by a schedule and can be set to either display RedStorm counts or have conditions in place and change to OPEn, CLSd or FULL based on RedStorm capacity data.

Static Message Smart Signs

S-TCL, S-PHX, S-PHXF, and S-TCIL series signs. Signs that can only display messages preset by the factory.

S-VMS Rebel Programmable Message Smart Signs

VMS Rebel Series signs. Variable message Smart Signs display programmed messages keyed in by the administrator or user. VMS message signs are only available in monochromatic displays.

Throughout this document the areas of the administrative software will be referred to as the following:

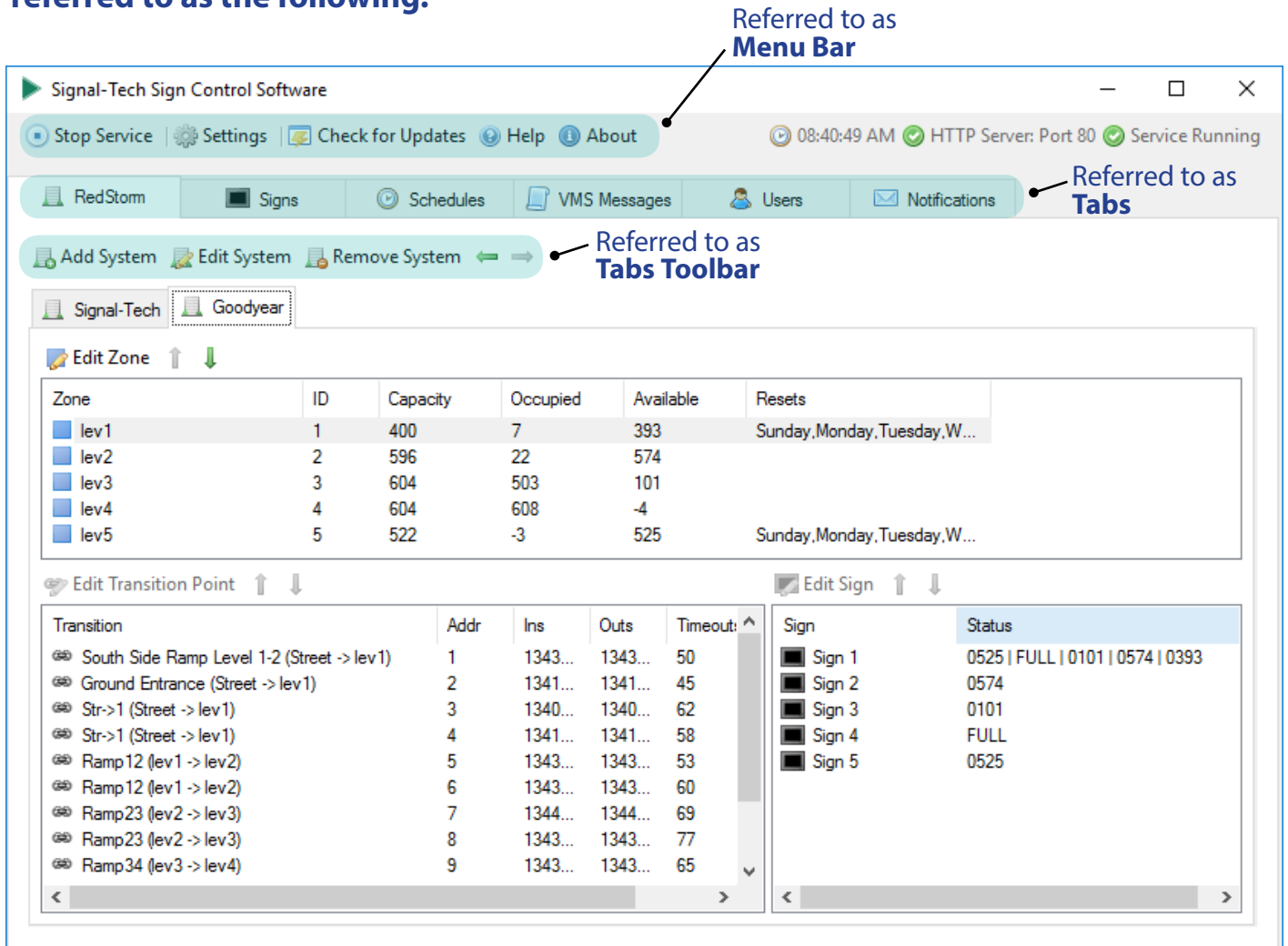


Figure 2-1. RedStorm Sign Control and Reporting Software Screen

3.0 Setup

3.1 Software Setup

(This section **MUST** be completed by IT/Network Administrator)

- Download the software, by following the link in the software case
- Complete the software registration page and agree to the license agreement
- Run the Sign Control Software Setup.exe file
- Read and agree to the License Agreement
- Follow the steps to install the software

3.2 Configure the Sign Control & Reporting Software

- Select Settings in the **Menu Bar**

General Tab

Use to change or set the Software Mode which is dependent upon the products the software will be controlling. View the Time Zone as well as the time and date. The time zone display uses the time zone settings from Windows®.

SMTP Tab

Used to set the email address where error notifications are sent from.

HTTP Server Tab

HTTP Server selection needs to be set to Enabled in order for the Web Interface and reporting to be active. You must provide users with a host name or IP address that is routed to the computer to allow access to the Web Interface. If a secure connection is required, select Enabled HTTPS and go to the HTTPS Tab to load the certificate. The time out selection is the amount of time someone can be inactive in the Web interface before they are logged out. Contact selection is the internal person that users of the Web Interface can contact with questions or problems. Logo selection is the company logo and will only appear on the Web Interface.

HTTP Users Tab

Used to set password strength in the HTTP Web Interface.

HTTPS Tab

Only required when HTTP Server mode is Enabled HTTPS. Upload a certificate file and enter the password. The file must be a PKCS#12/PFX file containing the certificate and private key.

3.3 User Setup

Setup user configuration for logging into the Web Interface. Users can be assigned different permission levels for each RedStorm System or Sign Group in the

RedStorm Sign Control and Reporting Software. The following permission levels are available:

1. Sign Group Permissions

(Only available when Smart Signs are in the software)

- None** – Does not have access to Web Interface
- View Only** – Allows viewing sign status and viewing the assigned schedules only
- Manual Override** – Allows viewing and also manually overriding sign messages
- Manual and Schedule Override** – Full access to viewing and overriding signs

2. RedStorm System Permissions

- None** – Does not have access to Web Interface
- View Only** – View only access to RedStorm System status
- View and Reports** – Allows viewing RedStorm System status as well as viewing reports
- Change Occupancy** – Allows viewing of RedStorm System status and reports as well as making changes to the occupancy counts
- Change Occupancy and Capacity** – Full access to changing zone capacity, updating occupancy counts and viewing system status and reports

3.3.1 Add, Edit, and Delete User

1. Select the **User Tab**
2. Select **New User** from the **Tabs Toolbar**
3. Enter the following fields for the User
 - a. **Name** – The name of the User, this is exactly how it will appear in the log file.
 - b. **Login Username** – Name used to log into the Web Interface.
 - c. **Login Password** – Password used to log into the Web Interface. Automatically defaults to **'password'**. The User will be prompted to change it immediately upon the first login attempt.
 - d. **Access** – Sign groups and RedStorm Systems that this User will have access to and the permissions associated with each.

To Edit a User, select **Edit User** in the **Tabs Toolbar**. Adjust any selections as needed and Press **OK**.

To Delete a User, select the **User** to be deleted and use the **Delete User** selection in the **Tabs Toolbar**.

3.3 Notification Setup

Notifications can be sent to multiple emails; however each one must be set up independently.

1. Select the **Notifications** Tab
2. Select **New Notification** from the **Tabs Toolbar**.
3. Select the **Notification Type** from the drop down list
4. Enter the email address to receive the notification
5. Enter the specific variable to trigger the notification or leave it as the default; it can be adjusted at any time.

3.4 Notification Types

Sign Unresponsive – *by sign, minutes*

Example: Smart Sign not responding to software commands

Trigger: Email sent when software goes 15 minutes without response from sign

Sign Manually Overridden – *by sign, within 1 minute*

Example: Occurs when the sign is overridden in the Web Interface

Trigger: Email sent within 1 minute of the sign being overridden

RedStorm Unresponsive – *by system, minutes*

Example: RedStorm SuperMaster not responding to software commands

Trigger: Email sent when software goes 15 minutes without response from RedStorm SuperMaster

RedStorm DZ Timeouts – *by system, minutes, and number of time outs*

Example: DZ Counter not responding to SuperMaster commands (RS485 Network)

Trigger: Email sent if there are more that 100 timeouts in a 10 minute period

RedStorm Sensor Resets – *by system, minutes and number of resets*

Example: DZ Counter has tried to reset sensing device (sensor or detector)

Trigger: Email sent if there are more than 60 resets per DZ in a 10 minute period

RedStorm Zones Full – *by system, minutes and percent occupied*

Example: If an individual Zone has an occupied count > 105% of its capacity

Trigger: Email sent if the condition exists continuously for more than 15 minutes

RedStorm Zones Negative Counts – *by system, minutes and number occupied*

Example: If a individual Zone has an occupied count < -5% of its capacity

Trigger: Email sent if the condition exists continuously for more than 15 minutes

RedStorm Capacity Manually Overridden –

Example: Occurs when the RedStorm zone capacity is changed in the Web Interface

Trigger: Email is sent within 1 minute of the capacity being changed

RedStorm Occupancy Manually Overridden –

Example: Occurs when the RedStorm zone occupancy is changed in the Web Interface

Trigger: Email is sent within 1 minute of the occupancy being changed

Assigning IP Addresses

4.0 Assigning IP Addresses

4.1 Assigning a Static IP Lease to RedStorm Systems (DHCP)

The RedStorm SuperMaster must be on your network or the Internet and be accessible from the computer running the RedStorm Sign Control & Reporting Software. The TCP/IP controller inside the RedStorm SuperMaster is configured for DHCP (Dynamic Host Control Protocol) and must be assigned a static IP lease. Since network topologies can vary greatly, the details of how the SuperMaster is assigned this IP address will be dependent upon your network and will generally fall to a network administrator.

Use the MAC address on the SuperMaster to assign a static IP lease on your network.

4.2 Assigning a Static IP Lease to Smart Signs (DHCP)

The Smart Sign must be on your network or the Internet and be accessible from the computer running the Sign Control Software. The TCP/IP controller inside the sign is configured for DHCP (Dynamic Host Control Protocol) and must be assigned a Static IP lease. Since network topologies can vary greatly, the details of how the sign is assigned this IP address will be dependent upon your network and will generally fall to a network administrator.

Using the Smart Sign Install Log, use the MAC address to assign a static IP lease to each sign.

Fill in the IP address in the appropriate space on the install log.

4.3 Manually Assigning a Static IP Lease to RedStorm Systems or Smart Signs (Non-DHCP)

We highly recommend using DHCP to assign each sign a static IP lease. However, if this is not possible, each RedStorm SuperMaster or Smart Sign can be configured with a static IP.

Each RedStorm SuperMaster and Smart Sign has a configurable Ethernet controller installed. The controller can be configured through a Web Interface or a Telnet connection.

To access the Web Interface of the Ethernet controller in the sign, you will need to connect the SuperMaster or Smart Sign to a temporary network that has DHCP enabled. Once the IP address of the sign has been established you can access the Web Interface.

To access the Ethernet controller Web Interface:

Use a browser to access the sign's IP address – configured by the temporary DHCP network: e.g. <http://192.168.1.50> (not compatible with Internet Explorer)

After any settings are changed in the Web Interface, you must click the "Apply Settings" button to have the changes applied and the controller will reboot

To access the Telnet interface:

Use a Telnet client to access the sign using the IP address and port 9999

After making changes in the Telnet interface, you must choose the option to "Save and exit" to apply changes.

By default, the username and password for both the web and Telnet interfaces are blank, simply press Enter; a password and username are not needed.

5.0 Add, Edit and Delete a RedStorm System in the Software

The physical installation of a RedStorm System is covered in the Technical Manual supplied with the system.

5.1 Add a RedStorm System

1. Locate the factory supplied USB in the software case.
2. Insert into the PC that the software will be installed on.
3. Find the config file on the factory supplied USB.
4. Select the **RedStorm** Tab in the Software.
5. Select **Add System** from the **Tabs Toolbar**.
6. Enter the static IP lease assigned to the RedStorm SuperMaster Controller by the network administrator.

NOTE: *It is important that the RedStorm SuperMaster static IP lease does not change, since this will cause the software to be unable to communicate to your system.*

7. Select the **TCP/IP radio button**. (For Serial RS485 network connection, see the help file in the software).
8. Add the RedStorm configuration file to the software by selecting the XML file from the factory supplied USB.
9. Select **OK**.

5.2 Edit RedStorm System

This feature allows you to change the name of the RedStorm System to a specific more user friendly name, set which users can view it in the Web Interface and set the system time zone.

1. Select the **RedStorm** Tab.
2. Select **Edit System** from **Tabs Toolbar**.
3. Enter a new **System Name** in the text box.
4. Select **User Access** level for the Web Interface for each user
 - None** – Does not have access to the Web Interface.
 - View Only** – View only access to RedStorm System status.
 - View and Reports** – View system status as well as reports.
 - Change Occupancy** – Allows viewing status, reports and changing the current occupancy of zones.
 - Change Occupancy and Capacity** – Allows viewing status/reports and changing the occupancy and capacity of zones.
5. Press **OK**.

5.3 Delete RedStorm System

1. Select the **RedStorm** Tab.
2. Select **Remove System** from the **Tabs Toolbar**.
3. At the **Remove System** prompt, Press **Yes**.

5.4 Edit Zone

This feature allows you to change a zone name to a descriptive and specific name; change the capacity of the zone; change the occupied space count and add, edit and delete Resets. Changing the zone name to something more specific will be helpful for diagnostics and reporting.

5.4.1 Edit Capacity and Count

1. Select the **RedStorm** Tab.
2. Select **Edit Zone** from the sub menu.
3. Enter a new **Zone Name** in the text box.

NOTE: *Be as specific as possible to where that Zone is physically located. (Ex. Level 1 Handicap Area).*

4. Edit the Capacity. The capacity is preset by the factory, but can be edited if the actual zone capacity has changed.
5. Edit the Occupied count. The occupied count is the number of cars present in the zone.

5.4.2 Create / Edit New Reset

1. Select **New Reset** to perform scheduled count maintenance. Resets are typically used when the garage or zone is empty or near empty. There is no limit to the number of resets in the schedule. Each day of the week can have one or multiple count resets.
2. Select the day, set the time for the reset and the occupied reset count.
3. Press **OK**.
4. Press **OK**.

5.5 Edit Transition Point

Transition points are the points where you enter/exit the garage from the street or leave one zone and enter another. Changing the name of the transition points from factory applied names to more descriptive and specific names will aid in easier troubleshooting and understanding of reports.

1. Select the **RedStorm** Tab.
2. Select the **RedStorm System** Tab to edit.
3. Select the **Transition Point** to edit in the lower left of your screen.
4. Select **Edit Transition Point**.
5. Enter the **Transition Name** in the text box.

NOTE: *Be as specific as possible to where that DZ Counter is physically located. (Ex. South Side Ramp Level 1 to 2).*

6. Press **OK**.

Add, Edit and Delete a RedStorm System

5.6 Edit Space Available Sign Controlled locally by RedStorm SuperMaster Controller (Signs on RS485 network)

Space Available signs that are directly controlled by the SuperMaster instead of the software will appear in the RedStorm Tab. They will appear in the lower left corner. For Space Available signs with more than one 7-segment display, the displays will show in the software in descending order from the top of the sign to the bottom.

1. Select the **Sign** you want to edit.
2. Enter a new **Sign Name** in the text box.
3. Press **OK**.

5.7 Scheduled Count Maintenance

In addition to physically changing the counts to maintain the RedStorm System, count maintenance can be handled by scheduling resets in the software.

1. Select the **RedStorm** Tab.
2. Select the **RedStorm System** Tab to edit.
3. Select **Edit Zone** from the sub menu.
4. Select **New Reset** if you would like to utilize Scheduled Count Maintenance and reset counts to zero or a typical occupancy on a specific day(s) and time(s). There is no limit to the number of resets that can be scheduled. Each day of the week can have one or multiple count resets. These are best used when the garage or zone is typically near empty.
5. Select the day, set the time for the reset and the occupied reset count.
6. Press **OK**.

6.0 Using the RedStorm XML Feed

You can use the XML feed provided by the software to display parking counts in other applications.

Requirements:

- The Web Interface must be enabled.
- You must have at least one RedStorm System configured in the software.

- The feed is not password protected and does not require a login.

Accessing the XML Feed:

The URL used to access the feed is:

[http\(s\)://host/redstorm_status](http(s)://host/redstorm_status)

The internal counts are only updated once per minute in the software, so there is no benefit to pulling the data more frequently than that.

Data Format:

```
RedStormStatus [1]
  RedStormSystem [1..n]
    ID [1]
    Name [1]
    Zones [1]
      Zone [1..n]
        ID [1]
        Name [1]
        Capacity [1]
        Occupancy [1]
```

NOTE: *RedStorm System IDs and names are unique. Zone IDs and names are unique within a single RedStorm System.*

NOTE: *Removing a RedStorm System from the software and re-adding it will result in the system being given a new ID.*

7.0 Static Message Smart Sign Setup

Refer to the Smart Sign Install Log(s) for sign location and IP assigned during installation.

1. Select the **Signs** Tab.
2. Select **Add Sign** from the **Tabs Toolbar**.
3. Using the Smart Sign Install Log, enter the static IP lease, port, and address that was assigned to the sign. The port defaults to 10001 and the address to 1. *(In more complex setups the port entered in the software may need to be different because of port forwarding or other network configurations).*

NOTE: *It is important that the static IP lease does not change, since this will cause the software to be unable to communicate to your sign.*

4. Enter **Sign Name**.

NOTE: *We recommend the sign name be specific to the physical location of the sign. This will help differentiate the same sign types in the software. Ex. 'South Cashier Lane 1'.*

5. In the drop down next to **Sign Group**:

Select **New Sign Group** from the drop-down menu or if your sign group already exists in the software you can make that selection.

NOTE: *The sign group is a way to logically organize your signs. It may be easiest to create groups by location. (Ex. Smith Street Garage).*

6. Select **Time Zone**.

The Time Zone defaults to 'Same as Server' but can be adjusted to fit any time zone the sign is in. If the server and sign are in the same time zone, keep the default.

7. In the drop down next to **Schedule**:

Select **Create New Sign Schedule** or select an existing one from the drop down menu. If you are creating a New Sign Schedule refer to **Section 8.0**.

8. After setting the schedule, Press **OK** to complete the process of adding that sign.
9. Repeat the steps in **Section 7.0** until all Static Signs have been added to the software.

NOTE: *To edit or remove a sign, use the **Edit Sign and Remove Sign** selections from the **Tabs Toolbar**.*

Creating a Smart Sign Schedule

8.0 Creating a Smart Sign Schedule

1. Select the **Schedules** Tab.
2. Select **New Schedule** from the **Tabs Toolbar**, a drop down will appear with all of the sign types in the software.
3. From the drop down menu, choose the sign type to correspond with the **New Schedule**.
4. Assign a **Schedule Name**.

NOTE: We recommend using the facility name + sign message such as, 'South St Cashier' 'X Arrow'.

NOTE: Schedule names can only contain alphanumeric characters.

5. Double click anywhere in the schedule grid to get started.
6. Enter the following information:
 - a. **Message** – Select the button labeled <Click to Set Messages>, choose the message(s) to be displayed from the pop up box.
 - b. Select message(s) from each drop down to display during this time span and then Press **OK**.
 - c. **Day** – Select single or multiple days for the message to appear.
 - d. Enter Start and End Times for the message to be displayed.
 - e. Press **OK**.
7. Using the on screen instructions, complete the rest of the schedule.
8. When the schedule is complete, Press **OK**.

Tech Tip:

- Double-click an empty area within the grid display to create a new schedule item.
- Double-click an existing schedule item to edit it
- Right-click an existing schedule item to edit or delete
- Drag edges of the daily schedule to change start and end times of the schedule items

If there is a **gap in the schedule**, the sign(s) on that schedule will turn off until the sign schedule reaches an active part of the schedule.

If a **power outage occurs**, the signs will blank out until the power is restored. Once power is restored the sign(s) will resume the assigned schedule.

Weekly schedule repeats until the schedule is edited.

The weekly schedule can be temporarily interrupted by setting a **Manual or Scheduled Override** message.

9.0 Conditional Scheduling from RedStorm Parking Guidance System

If you have Smart Signs installed with a RedStorm System, the Smart Signs can be set to display based on parking occupancy data from the RedStorm System.

1. Select the **Schedules** Tab.
2. Select **New Schedule** from the **Tabs Toolbar**, a drop down will appear with all of the sign types in the software.
3. From the drop down menu, choose the sign type to correspond with the **New Schedule**.
4. Assign a **Schedule Name**.

NOTE: We recommend using the facility name + sign message such as, 'South St Cashier' 'X Arrow'.

NOTE: Schedule names can only contain alphanumeric characters.

5. Double click anywhere in the schedule grid to get started.
6. Enter the following information:
 - a. **Message** – Select the button labeled **<Click to Set Messages>**.
 - b. Select **<Conditional>** from the drop down.
 - c. **Day** – Select single or multiple days for the message to appear.
 - d. To set the occupancy metric and the message that will be displayed, you will pick both the message that will display when the condition has been met and the message that will display when the condition has not been met. It is based on a percentage of occupancy in selected zones.
 - e. Press **OK**.

NOTE: Because conditional statement messages are based on either/or occupancy conditions they will appear as formulas in the schedule. (Ex. **<Cnd:1:2>**).

Tech Tip:

- Double-click an empty area within the grid display to create a new schedule item.
- Double-click an existing schedule item to edit it
- Right-click an existing schedule item to edit or delete
- Drag edges of the daily schedule to change start and end times of the schedule items

If there is a **gap in the schedule**, the sign(s) on that schedule will turn off until the sign schedule reaches an active part of the schedule.

If a **power outage occurs**, the signs will blank out until the power is restored. Once power is restored the sign(s) will resume the assigned schedule.

Weekly schedule repeats until the schedule is edited.

The weekly schedule can be temporarily interrupted by setting a **Manual or Scheduled Override** message.

Add, Edit and Delete Override Messages

10.0 Add, Edit and Delete a Scheduled Override Message

A scheduled override is used to interrupt a regular schedule to display something different during a specific period of time.

10.1 Add a New Override Message

1. To add a new override message you must be in an active schedule.
2. Select **New Override** located to the left under the schedule grid.
3. Enter the Description of the override in the text box.
The Description is just an explanation of the reason for the override. An example may be "**Labor Day Holiday**".
4. Select the Message button labeled **<Blank>**.
5. Select the message(s) that need to display on the sign during this override period, and then Press **OK**.

10.2 Edit or Delete Overrides

1. You can edit or delete overrides by highlighting the override and using the **Edit Override** and **Delete Override** buttons.
2. Use the **Clear Past Overrides** button to delete expired overrides. If the same overrides occur each year, you can keep expired overrides and just change the date to reflect the next year.
3. The next scheduled override will appear on the Schedules screen.

10.3 Conditional Scheduled Override

1. Select the Message button labeled **<Blank>**.
2. Select **<Conditional>** from the drop down.
3. Check the boxes next to the zone(s) whose occupancy data will conditionally control the sign message.
4. To set the occupancy metric and the message that will be displayed, you will pick both the message that will display when the condition has been met and the message that will display when the condition has not been met. It is based on a percentage of occupancy in selected zones.
5. Press **OK**.

NOTE: *Because conditional statement messages are based on either/or occupancy conditions they will appear as formulas in the schedule. (Ex. <Cnd:1:2>).*

11.0 Add and Delete a Manual Override Message

A manual override allows you to immediately interrupt a running schedule to display a different message on the sign. To schedule a future override of the schedule, see Section 10.0 (*Add, Edit and Delete a Scheduled Override Message*)

1. Select the **Signs** Tab.
2. Highlight the sign that needs to have an immediate Manual Override applied to it.
3. Select the **Manual Override** button located toward the bottom of screen on the right side of the sign image.
4. Select the message(s) that needs to display immediately.
5. Select the time that the override will expire. This time can be set for up to 24 hours from the current time, in 15 minute increments. The sign will resume its regular schedule when the override message expires.

6. Press **OK**.
7. The manual override will appear in the **Status** column in the **Signs** Tab.
8. You can remove the manual override at any time using the **Remove Manual Override** button at the bottom of the screen.

12.0 VMS Rebel Programmable Message Smart Sign Setup

1. Refer to the Smart Sign Install Log(s) for sign location and IP address entered during installation.
2. Select the **Signs** Tab.
3. Select **Add Sign** from the **Tabs Toolbar**.
4. Using the Smart Sign Install Log, enter the static IP lease, port, and address that was assigned to the sign. The port defaults to 10001 and the address to 1. *(In more complex setups the port entered in the software may need to be different because of port forwarding or other network configurations).*

NOTE: *It is important that the static IP lease does NOT change, since this will cause the software to be unable to communicate to your sign.*

5. Enter **Sign Name**.

NOTE: *We recommend the sign name be specific to the physical location of the sign. This will help differentiate the same sign types in the software. Ex. 'South Cashier Lane 1'.*

6. In the drop down next to **Sign Group**:

Select <**New Sign Group**> from the drop-down menu or if your sign group already exists you can make that selection.

NOTE: *The sign group is a way to logically organize your signs. It may be easiest to create groups by location. (Ex. Smith Street Garage).*

7. **Time Zone**

The Time Zone defaults to 'Same as Server' but can be adjusted to fit whatever time zone the sign is in. If the server and sign are in the same time zone, keep the default.

8. In the drop down next to **Schedule**:

Create New Sign Schedule or select an existing one from the drop down menu. If you are creating a New Sign Schedule see **Section 13**.

9. After selecting the schedule, Press **OK** to complete the process of adding that sign.

10. Repeat **Section 12** steps until all VMS Rebel Programmable signs have been added to the software.

NOTE: *To edit or remove a sign, use the **Edit Sign** and **Remove Sign** selections from the **Tabs Toolbar**.*

13.0 Creating a VMS Rebel Sign Schedule

1. Select the **Schedules** Tab.
2. Select **New Schedule** from the **Tabs Toolbar**
3. From the drop down menu, select **New VMS Rebel Schedule**.
4. Assign a **Schedule Name**.

NOTE: *We recommend using the facility name + sign message such as, 'South St Cashier X' 'VMS Rebel 16x48'.*

NOTE: *Schedule names can only contain alphanumeric characters.*

5. Double click anywhere in the schedule grid
6. Enter the following information
 - a. **Message** - Click the drop down box next to the **Message** label and choose an existing **Message** or create a <**New Message**>. If you are adding a <**New Message**>, go to **Section 14.0** for instructions
 - b. Select message(s) from each drop down to display during this time span and then Press **OK**.

Tech Tip:

- Double-click an empty area within the grid display to create a new schedule item.
- Double-click an existing schedule item to edit it.
- Right-click an existing schedule item to edit or delete.
- Drag edges of the daily schedule to change start and end times of the schedule items.

If there is a **gap in the schedule**, the sign(s) on that schedule will turn off until the sign schedule reaches an active part of the schedule.

If a **power outage occurs**, the signs will blank out until the power is restored. Once power is restored the sign(s) will resume the assigned schedule.

Weekly schedule repeats until the schedule is edited.

A schedule can be created to control a single S-VMS Rebel sign or to be shared among many S-VMS Rebel signs.

The weekly schedule can be temporarily interrupted by setting a **Manual or Scheduled Override** message.

- c. **Day** - Select single or multiple days for the message to appear
- d. Enter **Start and End Time** for the message to be displayed.
- e. Press **OK**.

Add, Edit and Delete VMS Rebel Message

14.0 Add, Edit and Delete VMS Rebel Message

The VMS Rebel Messages Name is used to organize and schedule display messages for the VMS Rebel Sign.

1. Select the **VMS Messages** Tab.
2. Select **New Message** from the **Tabs Toolbar**.
3. Enter the **Message Name**.
The Message Name is a unique description of the message parts.
4. Enter the message for the sign to display in the box labeled **Text**.
5. You can preview the message in a specific LED display size by setting the **Preview Sign Type** to the sign display size. This setting is located on the bottom left corner of the pop-up window.
6. While typing, the message will appear in the preview screen. The message will automatically scroll if the message is too long for the VMS Rebel Sign.
7. Check the box next to the words **Small Text** to change the height of the characters.
8. To add additional message parts select **Add Message Part**. Enter the message part in the next **Text** area. The message parts will run sequentially and display each message part for the number of seconds entered in the **Display For** selection.

9. To preview the parts of the message in sequence, press the **Preview All** button.

10. To display Date, Time or a symbol, select the **Insert Date Time or Symbol** button.

11. To display RedStorm Counts, select the **Insert Date Time or Symbol** button. Then select the Available Spaces button. Select Assign Zone (0) button to select the zone count to display.

NOTE: *When using RedStorm counts, symbols, date or time it is important to enter the Message Name with as much detail as possible. When the Message Parts appear in the Text Field on the schedule, they appear as the same symbol space holder as every other symbol. For example, if Date and Time are the display selections, set the Message Name to Date and Time. Make sure they are in the same order as the message parts.*

12. To edit or delete an existing message, highlight the message you want to change and select either **Edit Message** or **Delete Message** from the **Tabs Toolbar**.

15.0 VMS Rebel Conditional Scheduling

If you have a VMS Rebel installed with a RedStorm System, the VMS Rebel Signs can be set to display based on parking occupancy data from the RedStorm System.

1. Select the **Schedules** Tab.
2. Select **New Schedule** from the **Tabs Toolbar**, a drop down will appear with all of the sign types in the software.
3. From the drop down menu, select **New VMS Rebel Schedule**.

4. Assign a **Schedule Name**.

NOTE: *We recommend using the facility name + sign message such as, 'South St Cashier' 'VMS Rebel 16x48'*

NOTE: *Schedule names can only contain alphanumeric characters.*

5. Double click anywhere in the schedule grid to get started.
6. Enter the following information:

- a. **Message** – Select the button labeled **<Click to Set Messages>**.
- b. Select **<Conditional>** from the drop down.
- c. Check the boxes next to the zone(s) whose occupancy data will conditionally control the sign message.
- d. To set the occupancy metric and the message that will be displayed, pick both the message that will display when the condition has been met and the message that will display when the condition has not been met. It is based on a percentage of occupancy in the selected zones.
- e. Press **OK**.

NOTE: *Because conditional statement messages are based on either/or occupancy conditions they will appear as formulas in the schedule. (Ex. <Cnd:1:2>).*

Tech Tip:

- Double-click an empty area within the grid display to create a new schedule item.
- Double-click an existing schedule item to edit it.
- Right-click an existing schedule item to edit or delete.
- Drag edges of the daily schedule to change start and end times of the schedule items.

If there is a **gap in the schedule**, the sign(s) on that schedule will turn off until the sign schedule reaches an active part of the schedule.

If a **power outage occurs**, the signs will blank out until the power is restored. Once power is restored the sign(s) will resume following the assigned schedule.

Weekly schedule repeats until the schedule is edited.

A schedule can be created to control a single S-VMS Rebel sign or to be shared among many S-VMS Rebel signs.

The weekly schedule can be temporarily interrupted by setting a **Manual or Scheduled Override** message.

16.0 Web Interface

The Web Interface is for authorized users only. The administrator of the software will assign the user the proper level of access. The network administrator will provide the web path, user name and default password to access the Web Interface.

The Web Interface categorizes information first by installed RedStorm Systems then by Sign Groups. The Web Interface allows users, depending on permissions assigned in the administrative interface, to view reports based on RedStorm parking data, change capacity and occupancy of parking zones, view status of Smart Signs, and override Smart Sign messages immediately or at a future time.

16.1 Reporting Capabilities

1. Selections

- a. Date Range (*Day, week, month, custom*)
- b. Display as a Line or Bar Graph
- c. Download to .CSV
- d. Print

2. System

- a. Occupied Spaces (*Displayed as either a count or a percentage of capacity over time*).
- b. Available Spaces (*Displayed as either a count or a percentage of capacity over time*).
- c. Total Entrances (*Total system-wide Ins*).
- d. Total Exits (*Total system-wide Outs*).
- e. Turnover (*Total facility Ins versus capacity over time*).
- f. Exit Utilization (*Comparative utilization of DZ Counter Out counts with street transition points*).
- g. Entrance Utilization (*Comparative utilization of DZ Counter In counts with street transition points*).
- h. Avg. Length of Stay (*Average hourly count over a period of time relative to Ins and Outs during the same time period*).

3. Zones

- a. Occupied Spaces (*Displayed as either a count or a percentage of capacity over time*).
- b. Available Spaces
- c. Total Entrances
- d. Total Exits
- e. Exit Utilization
- f. Entrance Utilization

4. Transition Points

- a. Total Entrances
- b. Total Exits

5. Diagnostics / Maintenance

- a. Timeouts (*number of times DZ Counter communication timeouts have occurred*).
- b. Resets (*number of times the DZ Counter has tried to reset the sensing device (sensor or detector)*).

16.2 View Reports

1. Login to the Web Interface.
2. Select the **Reports** button.
3. Select the specific criteria needed to generate the report. Reports can be generated by Systems, Zones or Transition Points. The frequency can be by Day, Week, Month or a Custom date range. View the reports by Count or Percent and as a Line Graph or a Bar Graph.
4. To download the graph data, use the Download button.
5. To print the graph, use the Print button. To save the graph as a pdf, use a PDF writer.

16.3 Change Capacity and/or Occupancy

1. Locate the RedStorm System to be edited.
2. Select the Zone.
3. Enter the new Capacity or Occupancy.
4. Press **Override**.

16.4 Smart Sign Functions of the Web Interface

1. View sign status.
2. View schedule being displayed by the sign.
3. Manually override current message schedule (*immediate*).
4. Add a scheduled override to the current message schedule (*future date*).
5. Return to perpetual message schedule.

16.5 Manually Override a Static Smart Sign in the Web Interface

A manual override is an immediate message override to the perpetual schedule. This is used when unforeseen circumstances require the sign message to change immediately.

1. Log in to the Web Interface.

2. Find the Static Smart Sign you need to override
(All Smart Signs are below the RedStorm System(s) and are organized by Sign Group).
3. Select the bar with the sign image in it.
4. Select the **Manual Override** button.
5. In the drop down menu next to the sign name and select the message to illuminate or change the sign to blank.
6. Set the expiration time. The time can be set for up to 24 hours from the current time in 15 minute increments.
7. Press **Override**.
8. Use the **Change Manual Override** button to change the message you selected and use the **Remove Manual Override** button to revert the sign message back to the scheduled message.

16.6 Manually Override a VMS Rebel Smart Sign in the Web Interface

1. Log in to the Web Interface.
2. Find the VMS Rebel Smart Sign you need to override
(All Smart Signs are below the RedStorm System(s) and are organized by Sign Group)
3. Select the bar with the sign image in it.
4. If a schedule is assigned to the VMS Rebel Sign:
 - a. Select the **Manual Override** button.
 - b. Type the message to be displayed on the sign.
 - c. Set the expiration time. The time can be set for up to 24 hours from the current time in 15 minute increments.
 - d. Press **Override**.
5. If there is **NO** schedule assigned to the VMS Rebel Sign, all of the VMS Rebel Messages in the software will appear as selections in the manual override screen.
 - a. Select either the **Manual Override** button or the predefined message created through the Administration Interface.
 - b. Using an existing message:
Select the button with administrator created existing message, there is no expiration time and this selection will display until manually changed to a different message.
 - c. For a **Manual Override**:
 - i. Select the **Manual Override** button.
 - ii. Type the message to be displayed on the sign.

- iii. Set the expiration time. The time can be set for up to 24 hours from the current time at 15 minute increments.
- iv. Press **Override**.

16.7 Adding a Scheduled Override For Static and VMS Rebel Smart Signs in the Web Interface

A scheduled override is a future override of the perpetual schedule. Special events, weekends, and holidays are examples of when to use a scheduled override.

1. Log in to the Web Interface.
2. Find the VMS Rebel or Static Message Smart Sign you need to override
(All Smart Signs are below the RedStorm System(s) and are organized by Sign Group)
3. Select the bar with the sign image in it.
4. Scroll down to the bottom of the page, select **Add New Override** bar.
5. Type in the override name.
(This name is not a sign message but a label for the override)
6. Select the Start and End Date of the override as well as the time for the override.
7. Select the message to display as the override. The message can also be blank or a conditional override based on RedStorm data.
 - a. If the override is conditional:
 - i. Select **<Conditional>** from the drop down.
 - ii. Check the boxes next to the zone(s) whose occupancy data will conditionally control the sign message.
 - iii. To set the occupancy metric and the message that will be displayed, pick both the message that will display when the condition has been met and the message that will display when the condition has not been met. It is based on a percentage of occupancy in the selected zones.
 - iv. Press **Save**.

NOTE: Because conditional statement messages are based on either/or occupancy conditions they will appear as formulas in the schedule. (Ex. **<Cnd:1:2>**).

NOTE: New messages for the VMS Rebel must be created in the Administrator Interface. Refer to Section 13.0.



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