

# TemPageR™ 3E

The World's Most Popular Real-Time Temperature Monitor  
For Physical IT & Facilities Environment Monitoring!



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**User's Guide &  
Reference Manual**

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# Introduction

## What TemPageR 3E Is

TemPageR 3E is AVTECH Software's (AVTECH) '*Real-Time Temperature Monitor For IT & Facilities Environment Monitoring*'. It is designed specifically to monitor 1-3 digital temperature sensors in distributed locations spanning a 200' diameter. TemPageR additionally allows unlimited alert notifications via email to devices like computers, mobile phones, BlackBerrys, pagers and PDAs. Users can set up thresholds for temperatures that are rising or falling and easily work with TemPageR through their favorite web browser. Because each TemPageR ID box is SNMP enabled, it can easily be monitored by software applications like *Device Manager*, *Tivoli*, *OpenView*, *Unicenter*, *Big Brother*, *Nagios*, *What's Up Gold*, *SolarWinds* and others.

TemPageR is designed to easily work with AVTECH's Device Manager software which is included FREE and is designed to set up, monitor and manage unlimited numbers of Room Alert and/or TemPageR units across your network. Device Manager will log and graph all sensor data, allow for Pings, firmware updating and much more. It will significantly enhance the alert notification capabilities to allow notification to individuals, groups, hierarchies, different people for different sensors/locations, and different people for different times of the day. With Device Manager alert notification methods can be expanded to include email, email-to-SMS, actions such as toggling Signal Tower LEDs (for Room Alert models), sending URL Web Requests and more. If you have not looked at Device Manager before, take a look because it truly is one of the easiest and most powerful solutions to use and is included for FREE with your purchase.

To learn more about AVTECH's Room Alert, TemPageR or Device Manager products, visit [AVTECH.com](http://AVTECH.com). To order AVTECH products, visit [EnvironmentMonitor.com](http://EnvironmentMonitor.com) or call 888.220.6700 / 401.628.1600. AVTECH products are also available through your favorite reseller, just ask them to contact us on your behalf.

## Benefits Of Using TemPageR 3E

Know immediately when important or critical temperature changes and extremes occur within a computer room, data center or other facility that could lead to expensive down time, damaged equipment, lost worker productivity or denied server access. Providing early warnings about situations that could damage hardware, threaten uptime or block system access allows staff and management to take actions that can avoid or minimize an events' impact on servers, the network, users, recovery insurance and the emergency IT budget.

Give the IT or facilities staff and management "peace of mind" by keeping them fully informed of critical temperature changes regardless of where they are, the time of day or day of the week. Temperature extremes place an enormous stress on computer hardware and are normally caused by failure of the main air conditioning system or a loss of power. Extremes for even a short time can create major challenges for the IT staff and their budget.

TemPageR provides dynamic, real-time temperature monitoring of the computer room, data center or other facilities. Some customers use TemPageR to monitor hospital lab refrigerators, incubators, or coolers. Restaurants use it to monitor their coolers, dining room and lounge areas. We even have people who use TemPageR to monitor their personal wine cellars, remote cabins or vacation homes, and water pipes in homes during winter months. Monitoring of temperatures is possible at up to three (3) locations for each TemPageR box, two (2) of these can be as far as 100 feet away from the TemPageR ID box.

Notification to an unlimited number of individuals or groups, at unlimited temperature thresholds (too high or too low), and by notification to each users' device of choice. Notifications can be sent by email to computers, mobile phones, BlackBerrys, pagers, PDAs and more. By having another monitoring application (like AVTECH's Device ManageR) monitor TemPageR, there are additional options for logging, graphing, alert notification and automatic corrective action to resolve issues and protect equipment.

AVTECH's Device ManageR software will enhance TemPageR's capabilities by allowing logging of temperatures over the short or long term for temperature tracking or identification of critical times of the day where environment conditions may change to consistently cause problems. Device ManageR can also graph sensor data for immediate analysis. Sensor data can be exported to Microsoft's Excel by clicking a single button. There, charts, graphs and reports can be prepared for presentation to management or periodic review by staff and management. This can be useful for justification of new air conditioning equipment, modifying the data center layout or justifying changes like the location of primary servers or the data center.

## Installation

The initial installation of the TemPageR 3E can be completed quickly and easily provided the instructions below are followed with detail and care. Before beginning, please lay out the contents of the TemPageR 3E package so that the components can all be located and accessed with ease.

### Package Contents

The main components included with the standard (default) TemPageR 3E package include:

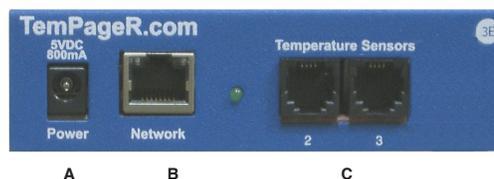
- One (1) TemPageR 3E ID Box (1U 19" Mounting Bracket Is Included w/TemPageR 3ER)
- One (1) Ethernet Cable (10' length, blue)
- One (1) AVTECH 5v 1A Power Adapter (110-240v, 50-60Hz, RoHS)
- One (1) External Digital Temperature Sensor
- One (1) *TemPageR 3E User's Guide & Reference Manual* (You're Reading It!)
- Download Access To TemPageR 3E Firmware, Software & SNMP MIBs (No CD Media Is Provided)
- Twelve (12) Months Of Maintenance, Support & Update Service (MSUS)
- Literature & Additional Information

**NOTE:** Some of the components arriving with this package may be individually wrapped and contain additional supporting components. Please remember to keep these components together as they will be required for proper setup. If you received additional components (i.e. like additional sensors) that are not mentioned above, instructional material explaining the proper setup of that component should be included with it. If you cannot find the proper instructional materials, check the included CD or 'Support' and 'Downloads' sections of the [AVTECH.com](http://AVTECH.com) website for any appropriate installation or application note that will instruct you on the proper installation and use of that component. Install those components after the TemPageR 3E setup is completed.

### TemPageR 3E ID Box

The graphics below identify the primary components of the TemPageR 3E ID box that are visible on the front and rear panels.

Front View (TemPageR 3E ID Box)



- Main Power Port** — Connect the 'AVTECH 5v 1A Power Adapter' to this port to power the TemPageR 3E unit. Do not use any other power adapter or it could damage the unit.
- Network Port** — Attach the TemPageR 3E unit to the network by plugging the Ethernet cable into this port and then connecting the other end to the network. The left LED above the 'Network' port indicates Link status and should light up and remain a solid green or orange color. The right LED above the 'Network' port indicates Activity status and should blink with network activity on the port. The color of this LED can be green or orange as well. When the device reboots, the Link LED will turn on and off several times. If the Link LED remains unlit and the

Activity LED is blinking orange, please refer to the ‘Performing Firmware Recovery’ section of the ‘Advanced Topics’ chapter. This is an RJ-45 port.

- C. **Temperature Sensors** (digital sensor channels) — AVTECH’s Digital Temperature Sensors can be connected to these sensor channels. These are RJ-11 ports.

## Step 1: Install The AVTECH Device Discovery Utility

The AVTECH Device Discovery Utility is used to initially discover the TemPageR 3E after it is connected to your network. The Device Discovery Utility can be installed from the AVTECH Install & Update CD or downloaded from the ‘Downloads’ section of the [AVTECH.com](http://AVTECH.com) website. Install this utility on a Windows-based computer that is located on the same network that the TemPageR 3E unit will be connected to. Install this now and we will come back to the Device Discovery Utility in a later step.

## Step 2: Install The TemPageR 3E ID Box



The TemPageR 3E must be connected in the following order for initial configuration and discovery on the network to be successful. Locate the Ethernet cable included with your package and connect one end to the ‘Network’ port on the front of the TemPageR 3E unit. Connect the other end of the Ethernet cable to an open port on the switch or router that will give the TemPageR 3E unit access to your network.

Next, locate the ‘AVTECH 5v 1A Power Adapter’ and plug it into a surge protected UPS power source. This will allow alert notifications even after a complete power loss.

**NOTE:** The TemPageR 3E unit should be plugged into a UPS.



Attach the other end of the power adapter to the ‘Power’ port on the TemPageR 3E unit only if the TemPageR 3E unit is already connected to the network. Be sure to remove the sticker over the ‘Power’ port before attaching the ‘AVTECH 5v 1A Power Adapter’ to the TemPageR 3E unit.

**IMPORTANT NOTE:** DO NOT CONNECT POWER to the TemPageR 3E unit during the initial setup UNTIL AFTER you have connected it to your network as described above or it will cause problems automatically assigning the initial IP address.

Once the network and power connections have been completed, verify that the LED located on the top-left side of the network jack lights up indicating power and network connectivity.

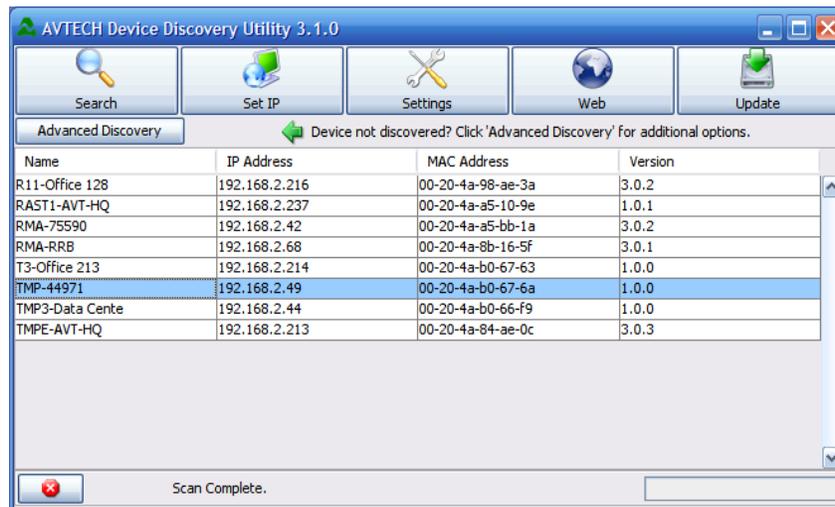
## Step 3: Discovery And Network Settings



Once the TemPageR 3E unit has been properly installed according to Step 2 above, open the AVTECH Device Discovery Utility and click the ‘Search’ button. The AVTECH Device Discovery Utility will attempt to discover the TemPageR 3E unit connected to your network by sending out a UDP broadcast on UDP port 30718.

NOTE: If there are multiple Ethernet adapters on the computer that the AVTECH Device Discovery Utility is installed on, a dialog will display asking for the proper network to perform the search on. Make the correct selection and then continue.

The TemPageR 3E unit is initially set to obtain an IP address automatically using DHCP. If you do not have DHCP on your network, please see the ‘Static-Only Networks’ section below.



The TemPageR 3E unit connected to your network should appear in the AVTECH Device Discovery Utility window as illustrated above. This will normally take just a few seconds. If the IP address displayed is ‘169.xxx.xxx.xxx’ and the ‘Name’ is displayed as ‘Unknown’ or if the TemPageR 3E unit was not found, please see the ‘Device Not Found Or Invalid IP Address’ subsection below before continuing.

Once the TemPageR 3E unit is displayed, select it from the list to perform an action on it. Selecting multiple units will cause the action selected to be performed on multiple units (i.e. all selected units) simultaneously.



The **‘Set IP’** button is used to assign a static IP address, gateway IP address, subnet mask and DNS server IP address or to set the TemPageR 3E unit back to DHCP (0.0.0.0). If the ‘Set IP’ button is pressed without a specific TemPageR 3E unit selected in the AVTECH Device Discovery Utility, a prompt will display asking for the MAC address of the unit. This option can be used in conjunction with the MAC address listed on the bottom of the TemPageR 3E unit to attempt IP address assignment of a unit that cannot be located or has previously been obtained or assigned an incorrect IP address.



The **‘Settings’** button opens the default web browser and displays the ‘Settings’ screen of the TemPageR 3E web interface. The ‘Settings’ screen allows for further configuration of the TemPageR 3E unit and is where alerts, email, SNMP and other settings are configured.

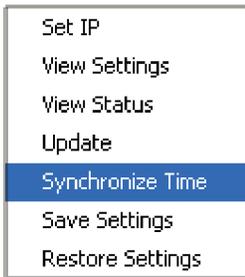


The **‘Web’** button displays the main ‘Status’ screen of the TemPageR 3E web interface which shows current sensor data and alarm status in the default web browser for the system you are using. Be sure to bookmark the link that loads for quick and easy reference in the future.

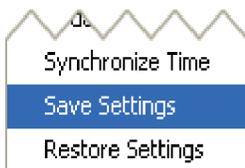


The **‘Update’** button initiates the firmware upgrade process of the AVTECH Device Discovery Utility. If a TemPageR 3E unit is not selected before left clicking this button, a dialog will display asking for the IP address of the unit to upload firmware to. Please see the ‘Upgrading Firmware’ section of the ‘Advanced Topics’ chapter for important instructions on the ‘Update’ feature.

The AVTECH Device Discovery Utility offers additional features accessible via a right click context menu. This menu is accessible only when a located TemPageR 3E unit has been selected and the right mouse button has been clicked. These menu options are described below.



The **‘Synchronize Time’** option instructs the TemPageR 3E unit to synchronize with the time server specified in the ‘Time Server IP’ field on the ‘Advanced’ tab of the ‘Settings’ screen. The time displayed on the TemPageR 3E ‘Status’ screen and included in email alert notifications can only be updated by linking with a network time server (NTP) on UDP port 123. If a time server is not available on your network and access to a time server on the internet is not possible, AVTECH has various help files available that explain how to configure a computer on the local network to act as a time server for other devices. Visit AVTECH’s Frequently Asked Questions (FAQs) to learn more.



The **‘Save Settings’** feature can be used to download the current configuration settings on a TemPageR 3E unit for backup purposes. This feature can also be used to quickly configure multiple TemPageR 3E units by configuring one unit, selecting it, clicking the ‘Save Settings’ option, then selecting multiple units and clicking the ‘Restore Settings’ option.



The **‘Restore Settings’** feature is used to restore a saved configuration created using the ‘Save Settings’ feature to one or multiple TemPageR 3E units. When selected, the user will need to select from a previously saved ‘.bak’ file located in the ‘log’ folder of the ‘AVTECH Device Discovery Utility’ directory in order to restore or update the settings on the TemPageR 3E unit(s).

### Static-Only Networks

If the network that the TemPageR 3E unit will be connected to does not have automatic DHCP IP address assignment, the TemPageR 3E unit will default to a ‘169.xxx.xxx.xxx’ IP address. The AVTECH Device Discovery may or may not be able to discover your unit when it has obtained a ‘169 xxx.xxx.xxx’ IP address, depending on various network conditions. Follow the steps below to assign an IP address to the TemPageR 3E unit that will be appropriate for your network.

1. Restart the AVTECH Device Discovery Utility and click the ‘Set IP’ button.

2. Click 'Ok' on the first dialog that displays and enter the TemPageR 3E MAC address when prompted. The MAC address is listed on the label located on the bottom of the TemPageR 3E.
3. Enter a valid static IP address for the current location of the TemPageR 3E unit when prompted.

**NOTE:** If the TemPageR 3E unit is later relocated outside of the current subnet, you will need to reset the IP address in order to see and work with the TemPageR 3E unit.

If the TemPageR 3E unit is still not discovered or the IP address is not updated, continue with steps 4-6.

4. Locate a cross-over Ethernet cable or spare hub and connect it to the computer being used. Connect the TemPageR 3E to the other end of the cross-over Ethernet cable or directly to the hub.
5. Assign static IP settings to the computer being used. If the 'Search' button is pressed after doing so, the TemPageR 3E unit should be discoverable. If it is not, be sure that there are no applications on the computer being used that are blocking traffic sent to or from the AVTECH Device Discovery Utility (i.e. software firewalls, anti-virus applications, etc.)
6. Repeat steps 1-3 above although enter a static IP address in step 3 that has the same first three octets as the static IP address assigned to the computer (i.e. IP address of computer: 192.168.2.3, IP address of TemPageR 3E: 192.168.2.4).

If the IP address of the TemPageR 3E unit is still not updated, continue with steps 7-9.

7. Assign static IP settings to the computer being used that match the IP address of the TemPageR 3E unit (i.e. IP address of TemPageR 3E: 169.254.10.122, IP address of computer: 169.254.10.123).
8. Click the 'Search' button in the AVTECH Device Discovery Utility and select the TemPageR 3E unit when discovered.
9. Click the 'Set IP' button and enter a valid IP address for the location on the network where the TemPageR 3E unit will be located. If the IP address does not update, access the 'Settings' screen of the TemPageR 3E unit and enter the IP address settings on the 'Network' tab. After doing so, click the 'Save Settings' button, wait 10 seconds and re-attach the TemPageR 3E unit to the network.

## Device Not Found Or Invalid IP Address

If the TemPageR 3E is not discovered by the AVTECH Device Discovery Utility, the network may be blocking UDP broadcast packets on port 30718. Even if the TemPageR 3E obtains a valid IP address, this can prevent the TemPageR 3E unit from being discovered. To resolve this issue, check the DHCP server for the MAC address listed on the label located on the bottom of the TemPageR 3E unit. If this is not possible or if there is not an entry in the DHCP server, follow the instructions listed under the 'Static-Only Networks' subsection above.

If the TemPageR 3E unit is discovered although has a '169.xxx.xxx.xxx' IP address, the TemPageR 3E unit may not have been connected properly or DHCP assignment may currently be getting blocked. In either case, follow the instructions listed in the 'Static-Only Networks' subsection above.

**NOTE:** If the instructions provided do not allow configuration of the TemPageR 3E unit, please initiate a Live Chat technical support request on [AVTECH.com](http://AVTECH.com) or send an email support request to [Support@AVTECH.com](mailto:Support@AVTECH.com).

## Step 4: Connect Included Sensors And Accessories

The graphics below identify the connection channels of the TemPageR 3E ID box that are visible on the front panel. Use these to connect the appropriate sensors and accessories.

Front View (TemPageR 3E ID Box)



A

- A. **Digital Temperature Sensor** — Connect the included AVTECH Digital Temperature Sensor to one of the Temperature Sensor Channels shown above (A.). The Digital Temperature Sensor provides a real-time digital temperature reading at the location of the temperature probe. Position the sensor in the desired location, running the sensor cable back to the TemPageR 3E ID box. DO NOT remove the red plastic cap from the tip of the sensor.



## Step 5: Check TemPageR 3E Firmware Version

Open the AVTECH Device Discovery Utility and click the 'Search' button. When the TemPageR 3E unit is located, select it and click the 'Web' button. If you are unable to locate your TemPageR 3E unit because UDP broadcast packets are blocked on your network, simply type the IP address of the TemPageR 3E unit in the location bar of a web browser.

**NOTE:** If the 'Status' screen does not load sensor data, be sure that a proxy or Microsoft ISA (Internet Security and Acceleration) server is not blocking traffic to or from the TemPageR 3E unit.

After the 'Status' screen has loaded and is fully displayed, click the 'TemPageR 3E vX.X.X' link in the top right hand corner. If the pop-up that loads says a more current version is available, then follow the instructions in the 'Upgrading Firmware' section of the 'Advanced Topics' chapter of this manual.

# Configuration And Setup Screens

## Alert Methods

The TemPageR 3E unit can send alert notifications via email and email-to-SMS using anonymous SMTP relay and/or SNMP Traps. The TemPageR 3E unit is fully SNMP compliant and can be accessed by any application that can issue a SNMP Get request. Other monitoring applications can therefore be used to perform SNMP Get requests and receive SNMP Traps.



## Email

Email alert notifications are configured in the TemPageR 3E web interface on the 'Email' tab of the 'Settings' screen. Email alert notifications from the TemPageR 3E unit are sent using SMTP relay. Be sure the mail server being used is configured to allow this type of connection.

TemPageR™		Real-Time Temperature Monitor For IT & Facilities Environment Monitoring	
Status	Settings	Help	About
MAC Address: 00-20-4A-B0-67-6A		Version: V0.1.0.0	
<ul style="list-style-type: none"> <li>Network</li> <li>SMTP Email</li> <li>SNMP</li> <li>Sensors</li> <li>Security</li> <li>Advanced</li> </ul>	<h3>Email Settings</h3> <p>Email Enabled <input checked="" type="checkbox"/></p> <p>Email Footer Enabled <input checked="" type="checkbox"/></p> <p>Use SMS <input type="checkbox"/></p> <p>Mail Server Port <input type="text" value="25"/></p> <p>Mail Server <input type="text" value="mail.EmailServer.com"/> * Domain Name or IP</p> <p>Return Address (From) <input type="text" value="TMP3E@EmailServer.com"/></p> <hr/> <p>Authentication (optional)</p> <p>Enable Authentication <input type="checkbox"/></p> <p>Username <input type="text"/></p> <p>Password <input type="text"/> * Max 11 Characters</p> <hr/> <p>Email Recipients (Separated By Comma)</p> <p>Email Addresses <input type="text" value="Alerts@EmailServer.com"/></p> <p style="text-align: center;"> <input type="button" value="Send Test Email"/>  <input type="button" value="Accept Changes"/> </p>		
<ul style="list-style-type: none"> <li>Save Settings</li> <li>Reset Defaults</li> </ul>			

## Initial Email Setup

First, check the 'Email Enabled' checkbox and enter the domain name or IP address of the mail server being used in the 'Mail Server' field on the 'SMTP Email' tab. Next, enter an email address in the 'Return Address (From)' field for an account that resides on the mail server being used. If SMTP authentication is required, check the 'Enable Authentication' checkbox and enter a valid username and password for the mail server. Finally, enter the email addresses to be alerted when alarms occur in the 'Email Addresses' field. If more than one email address is entered, use a comma (,) as the separator. Once all SMTP Email settings are configured, click the 'Accept Changes' button then 'Save Settings'.

**NOTE:** If a domain name is entered in the 'Mail Server Address' field, the TemPageR 3E unit must be assigned static IP settings and have a DNS server IP address set.

## Test Email

A test email can be sent to the configured recipients using the 'Send Test Email' button after valid email settings have been configured and saved. If the test email is not received, check with the mail server administrator in regards to the current SMTP relay settings. The 'Trace' feature on the 'Advanced' tab of the settings is also useful for troubleshooting email and other issues. For more information, please see the 'Advanced Settings' section of this manual.

## Email-To-SMS

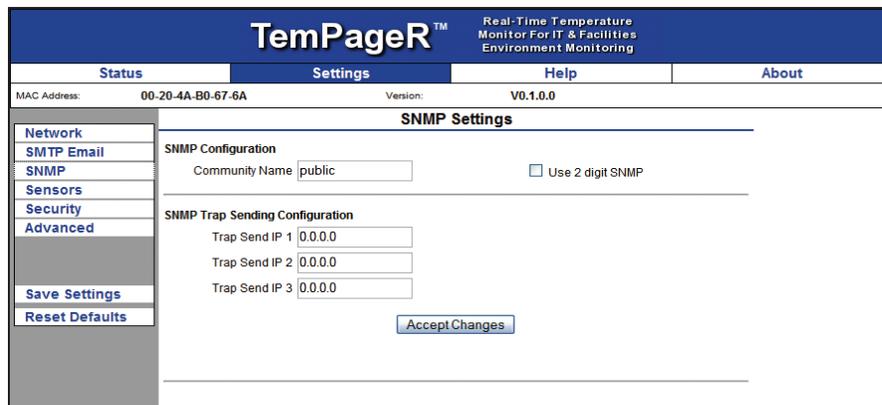
Email alert notifications can be sent via Short Message Service (SMS) to computers, mobile phones, BlackBerrys, pagers and PDAs using SMS text messaging in addition to regular email. This functionality is widely supported by current mobile device service providers and is accomplished by sending email to an

email address, formatted in a way defined by the service provider being used for the target mobile device. For example, Verizon’s email address format for sending an email alert to a mobile device using SMS text messaging is ‘<10 digit mobile device number>@vtext.com’ with ‘<10 digit mobile device number>’ being replaced by the area code and phone number of the mobile device without dashes, spaces or a ‘1’ in front of the area code.

If the specific format for your service provider is not known, AVTECH provides a database in the ‘Support’ section of the [AVTECH.com](http://AVTECH.com) website that contains the email-to-SMS format for many available service providers. This is the largest database of this type on the web. However, if your service provider is not listed, please contact them by phone for the proper format and be sure that the mobile device being used has text messaging capability enabled. If you learn of a new or changed format, please email this with your contact information to [Support@AVTECH.com](mailto:Support@AVTECH.com) so we may confirm it and post it online for the convenience of other users.

## SNMP

The TemPageR 3E unit is fully SNMP compliant and can be monitored by applications capable of performing an SNMP Query or Get request. The TemPageR 3E unit can also be configured to send SNMP Traps to up to three separate IP addresses when thresholds are exceeded. If another application is used to monitor the TemPageR 3E unit, be sure to obtain the MIB files for the TemPageR 3E unit from the ‘Downloads’ section of the [AVTECH.com](http://AVTECH.com) website or the most recent AVTECH Update CD.



## SNMP Queries (SNMP Get)

SNMP Queries or Get requests are performed by a SNMP enabled software application to retrieve specific information from an SNMP compliant device on the network. The query or request will be sent to the IP address of the TemPageR 3E unit using a SNMP community name on UDP port 161. The SNMP community name in use for that device or network must match the name in the ‘SNMP Read Community Name’ field on the ‘SNMP’ tab of the ‘Settings’ screen. If use of a third party application is desired, the SNMP protocol used must be version 1 and the MIB files for the TemPageR 3E unit must be loaded properly in the software application in order to retrieve the SNMP MIB Objects that will return

sensor data from the TemPageR 3E unit to the monitoring software.

## SNMP Traps

SNMP Traps are sent from an SNMP compliant device on the network and received by a SNMP enabled software application capable of receiving SNMP Traps. To configure the TemPageR 3E unit to send SNMP Traps to a specific IP address, enter the IP address in one of the three 'SNMP Trap Recipient' fields on the 'SNMP' tab. SNMP Traps sent from the TemPageR 3E unit are sent using an SNMP community name of 'public'. If use of a third party application is desired, be sure to load the TemPageR 3E MIB file or the information received in the SNMP Trap will not be translated.

## Monitoring With Device Manager

Device Manager is a software application that is included FREE with AVTECH's monitoring solutions. It is designed to enhance the monitoring capacity of your Room Alert and/or TemPageR device(s). Device Manager gives you an 'at a glance' view of an unlimited number of Room Alert, TemPageR and Axis cameras installed on your network. Device Manager includes powerful features that allow for a much greater degree of flexibility and control over when alert notifications are sent and who receives them. These include; unlimited alerting of customizable alert and alert clear notifications to individuals and groups, hierarchies, dependencies, scheduling and more.

Device Manager also allows for Actions on Alert/Alert clear conditions such as toggling Signal Tower LEDs (Room Alert models), Send Web URL requests, sending screenshots from AXIS cameras and more. Additional features include logging data from your units to an embedded database, graphing this data over time and the ability to export logged data to .csv format. All this is possible from a single installation, with no rules and no agents. Device Manager is a significant benefit of the overall TemPageR package. It can be used as your primary monitoring tool or in conjunction with other monitoring applications.

For more information on Device Manager visit our website at [AVTECH.com](http://AVTECH.com) or contact you Product Specialist.

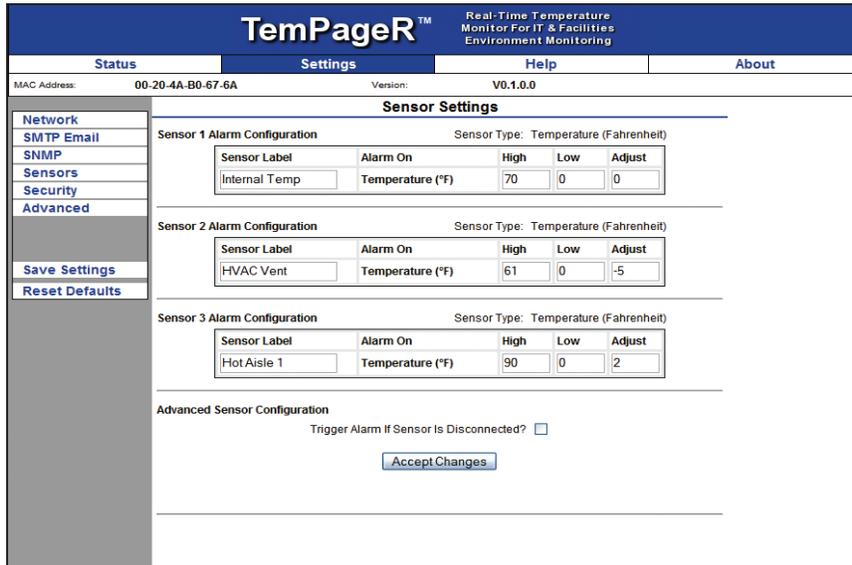
## Alert Thresholds

In order for alert notifications to be sent via email or SNMP Trap, alert thresholds must be configured for the sensors attached to the TemPageR 3E unit. Alert thresholds are configured on the 'Internal', 'Digital' sensors tab of the 'Settings' screen. Current sensor status will be displayed on the 'Status' screen of the TemPageR 3E web interface. The status icon displayed will be a gray circle '○' if a sensor is connected although an alert threshold is not set. If an alert threshold is set for a connected sensor and the sensor is not in an alarm state, the status icon displayed will be a green check '✔'. If the connected sensor is in an alarm state, the status icon displayed will be a red X '✘'.

## Internal Temperature Sensor

The field next to the 'Internal Temperature' label can be used to change the sensor label of the internal

Temperature Sensor. The high and low threshold values for the temperature readings from the internal Temperature Sensor are entered respectively in the ‘High’ and ‘Low’ columns. The proper temperature thresholds to enter will depend on the current temperature scale selected on the ‘Advanced’ tab. If the temperature reading from the internal Temperature Sensor differs from a known temperature at that location, then the internal Temperature Sensor can be calibrated using the ‘Adjust’ field. Temperature adjustments must be made in Celsius.



## Digital Sensors

The alert thresholds for attached Digital Temperature Sensors are entered in the ‘Sensor # Alarm Configuration’ sections with ‘#’ representing the digital port number the sensor is connected to. Sensor 1 is the internal temperature sensor and Sensors 2 and 3 are the external temperature sensors. The sensor label for that corresponding sensor can be updated in the field below the ‘Sensor Label’. High and low thresholds for the temperature are entered in the ‘High’ and ‘Low’ columns. Temperature thresholds must be entered in the temperature scale selected on the ‘Advanced’ tab. If the sensor readings differ from a known temperature at the sensor location, they can be calibrated using the ‘Adjust’ column.

Digital sensors are those that provide real-time variable status values that can be used to obtain a more definitive understanding of a current sensor’s status, allow products like Device ManageR and other monitoring software to monitor at multiple thresholds and be logged for historical reference. These values are included within alert messages for a clearer understanding by recipients and used for trending or manipulation into graphs or charts via other applications. These sensors attach to various AVTECH hardware via RJ-11 cable to an external environment sensor channel. Current sensors providing real-time values include the Digital Temperature Sensor, Digital Outdoor Temperature Sensor, Digital Fluid Temperature Sensor and Digital Temperature & Humidity Sensor. TemPageR does not support Digital Temperature & Humidity Sensor.

## External Sensor Options (For AVTECH Monitors)

### Digital Temperature Sensor (TMP-SDT-SEN)



The AVTECH Digital Temperature Sensor provides a real-time digital temperature reading at the location of the temperature probe. The temperature range is from  $-67^{\circ}$  to  $257^{\circ}$  Fahrenheit and/or  $-55^{\circ}$  to  $125^{\circ}$  Celsius. Accuracy is within  $\pm 0.5$  degrees. This is an instant 'plug & play' sensor that connects to one of the external Environment Sensor Channels via an RJ-11 port.

### Digital Outdoor Temperature Sensor (TMP-DOT-SEN)



The AVTECH Digital Outdoor Temperature Sensor allows real-time temperature values from  $-67$  to  $257$  degrees Fahrenheit and/or  $-55$  to  $125$  degrees Celsius. Accuracy is within  $\pm 0.5$  degrees. The external silicon coating makes the Digital Outdoor Temperature Sensor resilient enough for temperature monitoring outdoors or in other harsh environments. This is an instant 'plug & play' sensor that connects to one of the external Environment Sensor Channels via an RJ-11 port.

### Digital Fluid Temperature Sensor (TMP-DFT-SEN)



The AVTECH Digital Fluid Temperature Sensor allows real-time temperature values from  $-67$  to  $257$  degrees Fahrenheit and/or  $-55$  to  $125$  degrees Celsius. Accuracy is within  $\pm 0.5$  degrees. Its non-conductive casing makes it a perfect sensor for monitoring the temperature of fluids in extreme environments, walk-in coolers, lab refrigerators or freezers. This is an instant 'plug & play' sensor that connects to one of the external Environment Sensor Channels via an RJ-11 port.

### Digital Temperature & Humidity Sensor (RMA-DTH-SEN) \*



The AVTECH Digital Temperature & Humidity Sensor provides a real-time digital temperature and digital humidity reading at the location of the sensor probe. The temperature range is from  $-67^{\circ}$  to  $257^{\circ}$  Fahrenheit and/or  $-55^{\circ}$  to  $125^{\circ}$  Celsius. Accuracy is within  $\pm 0.5$  degrees. The humidity range is from 5 to 95 percent Relative Humidity (%RH) with an accuracy within  $\pm 3.5\%$ . This sensor will also provide the Heat Index or 'Feels Like' temperature. This is an instant 'plug & play' sensor that connects to one of the external Environment Sensor Channels via an RJ-11 port.

### Flood Sensor w/8' or 24' Cable (RMA-F008-SEN, RMA-F024-SEN) \*



The AVTECH Flood Sensor is available with a standard 8' or 24' flood sensor cable and allows a real-time notification of flood or water leakage wherever the attached flood sensor cable is located. This is an instant 'plug & play' sensor that connects to one of the switch sensor contact sets via a low voltage 2-wire cable.

### Sound, Light & Entry Sensor (RMA-SLE-SEN) \*



The AVTECH Sound, Light & Entry Sensor allows real-time monitoring for sound and light at the location of the sensor. This sensor also includes a set of switch sensor contacts and an AVTECH Room Entry Sensor. Each sensor can be monitored independently or an 'any sensor' contact set allows all sensors to be monitored via a single cable. Any switch sensor can be attached to the switch sensor contacts. This is an instant 'plug & play' sensor that connects to one or more of the switch sensor contact sets via a low voltage 2-wire cable.

### Motion Sensor (RMA-MOT-SEN) \*



The AVTECH Motion Sensor allows a real-time notification of movement through a zone or across a path. This is an instant 'plug & play' sensor that connects to one of the switch sensor contact sets via a low voltage 2-wire cable.

### Power Sensor (RMA-PS1-SEN) \*



The AVTECH Power Sensor allows a real-time notification of main power status change (i.e. power going on or off). This is an instant 'plug & play' sensor that connects to one of the switch sensor contact sets via a low voltage 2-wire cable.

### Smoke Sensor (RMA-SS1-SEN) \*



The AVTECH Smoke Sensor allows a real-time notification of the presence of smoke or fire. This is an instant 'plug & play' sensor that connects to one of the switch sensor contact sets via a low voltage 2-wire cable.

### Air Flow 1 Sensor (RMA-AF1-SEN) \*



The AVTECH Air Flow 1 Sensor allows a real-time notification of air flow status change (i.e. air flow going on or off). This is an instant 'plug & play' sensor that connects to one of the switch sensor contact sets via a low voltage 2-wire cable.

### Room Entry Sensor (RMA-RE1-SEN) \*



The AVTECH Room Entry Sensor allows a real-time notification of door or cabinet entry (i.e. door opening or closing). This is an instant 'plug & play' sensor that connects to one of the switch sensor contact sets via a low voltage 2-wire cable.

### Dry Contacts \*

Any non-voltage, dry contact sensor can be connected to provide an immediate alert when the sensor or device changes status to go on/off, make/break, open/close. This creates an instant 'plug & play' sensor when connected to one of the switch sensor contact sets via a low voltage 2-wire cable.

\* Requires Room Alert products. Visit [AVTECH.com](http://AVTECH.com) for details.

## Additional Screens And Interfaces

### Network

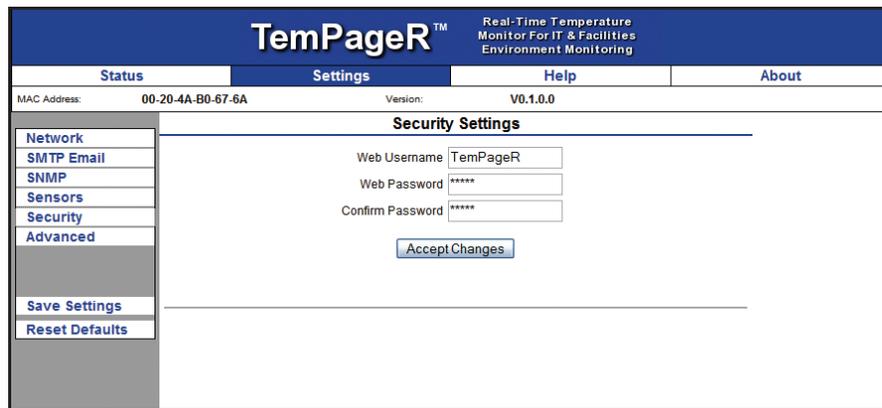
The 'Network' tab of the TemPageR 3E 'Settings' screen is used to update the network settings of the TemPageR 3E unit. The network settings can also be updated using the AVTECH Device Discovery Utility. To configure the TemPageR 3E unit to obtain an IP address automatically using DHCP, select the 'Obtain IP Address Automatically' radio button and click the 'Save Settings' button. To configure the unit with a static IP address, un-select the 'Use The Following IP Configuration' radio button, enter the new static IP address, gateway IP address, DNS server IP address, and subnet mask in the appropriate fields. When finished, click the 'Accept Change' button then 'Save Settings'.

**NOTE:** If configuring static IP settings on the TemPageR 3E unit, be sure that the settings assigned are valid for the current location of the TemPageR 3E unit and that there are no other devices assigned to the same IP address. **DO NOT** set an IP address that is outside of your subnet or you may not be able to see or discover the TemPageR 3E unit.

The screenshot displays the 'Network Settings' page of the TemPageR 3E web interface. At the top, the header includes the product name 'TemPageR™' and the tagline 'Real-Time Temperature Monitor For IT & Facilities Environment Monitoring'. Below the header, there are tabs for 'Status', 'Settings', 'Help', and 'About'. The 'Settings' tab is active, showing the MAC Address as '00-20-4A-B0-67-6A' and the Version as 'V0.1.0.0'. The left sidebar contains a menu with 'Network' selected, along with other options like 'SMTP Email', 'SNMP', 'Sensors', 'Security', and 'Advanced'. The main content area is titled 'Network Settings' and includes a 'Device Name' field set to 'TMP-45174'. Under 'IP Address Configuration', there are two radio buttons: 'Obtain IP Address Automatically' (unselected) and 'Use The Following IP Configuration' (selected). The 'Use The Following IP Configuration' section has input fields for IP Address (192.168.2.215), Subnet Mask (255.255.255.0), Default Gateway (192.168.2.1), and DNS Server IP (192.168.2.1). Under 'Ethernet Configuration', the 'Auto Negotiate' checkbox is checked, and there are radio buttons for Speed (100 Mbps selected, 10 Mbps unselected) and Duplex (Full selected, Half unselected). At the bottom of the form is an 'Accept Changes' button.

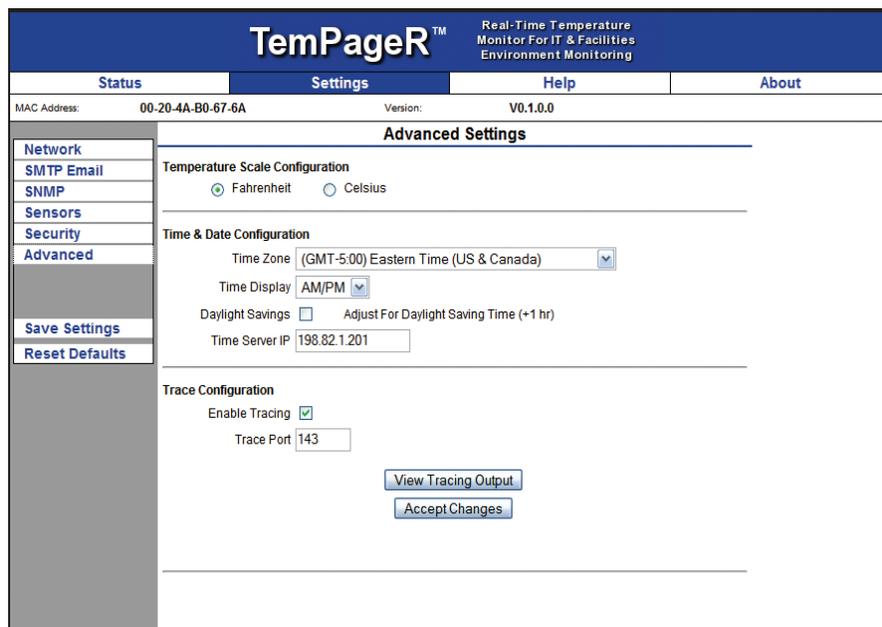
### Security

The 'Security' tab of the TemPageR 3E 'Settings' screen is used to configure a username and password for entry to the TemPageR 3E 'Settings' screen. Be sure that the username and password entered contains only alphanumeric characters, special characters are not supported. Enter the password again in the second field for verification and click the 'Accept Change' button, the 'Save Settings'.



### Advanced

The ‘Advanced’ tab of the TemPageR 3E ‘Settings’ screen is used to configure the temperature scale, time zone, time display, daylight savings time setting, time server IP address and trace configuration options. The temperature scale selected in the ‘Temperature Scale’ drop down will be the default temperature scale to be used when entering alert thresholds and displayed on the ‘Status’ screen. The ‘Time Server IP’ field, if modified, must contain the IP address of an accessible NTP time server.



## Using Trace Output

Trace output is very useful for troubleshooting sending SMTP email and other issues. The trace output will show the communication between TemPageR and the configured mail server to show what might be preventing email from being sent. It will also show other information including the current version number, IP address, MAC address, requests to the web pages and much more.

To configure trace output in TemPageR, click 'Settings' and then 'Advanced'. Select the 'Enable Tracing' checkbox and enter the desired port number in the 'Trace Port' field. Save the settings by clicking the 'Accept Changes' button, then 'Save Settings'. To view the trace output, click 'Settings' and then 'Advanced'. Click 'View Tracing Output' to open a trace window. When the trace window loads, click 'Connect' to begin viewing the live trace output. Once trace is running, try to replicate any issues that are occurring so they are captured in the trace output. If having issues sending email, send a test email while viewing the trace output. Once captured, copy and paste the trace output into a text editor to save the contents of the trace.

## Help

The TemPageR 3E 'Help' screen provides links to online support and information resources for the TemPageR 3E as well as information regarding telephone and email support. Directly below the 'TemPageR 3E Help' heading will be the current firmware version that is installed on the TemPageR 3E unit and its release date. The link entitled 'Click Here To Check For Updates' can be used to check if the firmware version installed on the TemPageR 3E unit is the most current (requires internet access). The additional support information provided on this screen is presented in the order that it should be followed in the event that you have a technical question regarding the TemPageR 3E or if you are experiencing a situation where assistance is desired.

**TemPageR 3E Help**

**TemPageR 3E**  
 Firmware v1.0.0  
 Released 30 July 2008  
[Click Here To Check For Updates](#)

**Support Resources**

- [User's Guide & Reference Manual](#)
- [Monitor With PageR Enterprise](#)
- [Frequently Asked Questions](#)
- [Application Notes](#)
- [Support Center](#)
- [Downloads](#)

**Live Chat**



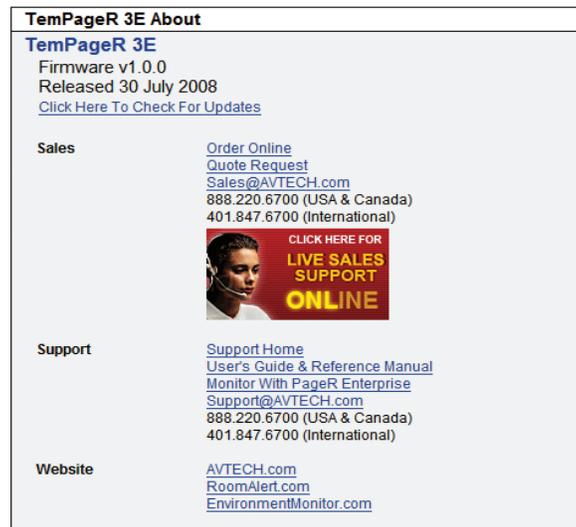
click here for  
**Live Technical Support**  
**ONLINE**

**Email Support** [Support@AVTECH.com](mailto:Support@AVTECH.com)

**Phone Support** 888.220.6700 (USA & Canada)  
 401.847.6700 (International)  
 Mon-Fri 9 AM - 5 PM EST

## About

The TemPageR 3E ‘About’ screen provides general links and contact information for AVTECH sales, support and websites. The firmware version that is currently installed on the TemPageR 3E unit will also be listed with the date released directly below. The link entitled ‘Click Here To Check For Updates’ can be used to check if the firmware version installed on the TemPageR 3E unit is the most current (requires internet access).



## Web Interface

The TemPageR 3E web interface can be used to view current sensor status on the TemPageR 3E unit. The web interface is accessed by selecting the TemPageR 3E unit in the AVTECH Device Discovery Utility and clicking the ‘Web’ button or by typing the IP address of the TemPageR 3E unit in the location bar of a web browser, once it has been installed properly on your network.

**NOTE:** If the ‘Loading Sensor Data’ indicator remains on the page, be sure that you do not have a proxy or Microsoft ISA server soliciting traffic and requests from the TemPageR 3E unit.

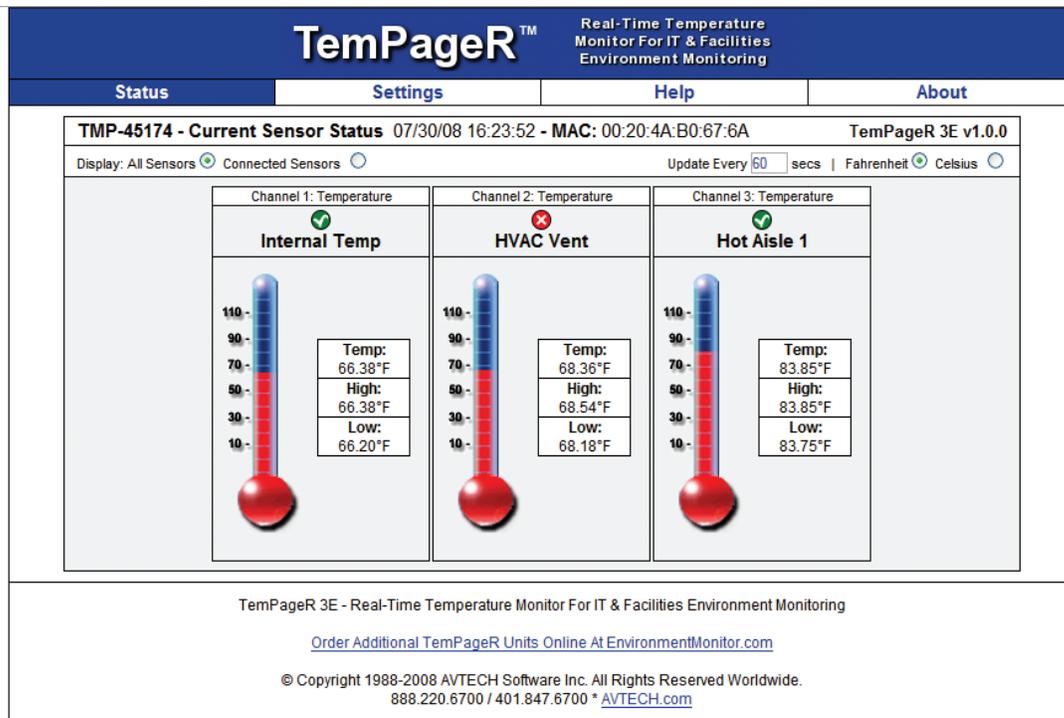
Below the menu bar on the TemPageR 3E is the device name, date and time display, and MAC address display.

**NOTE:** If the date displayed is ‘2/14/36’, the TemPageR 3E is currently unable to connect to a time server. Please verify that the network has a connection to the internet and that NTP requests on UDP port 123 are not blocked. If the network does not have a connection to the internet or use of a local time server is desired, an IP address for a valid NTP time server can be entered in the ‘Time Server IP’ field on the ‘Advanced’ tab of the ‘Settings’ screen.

To the right of the date and time is the product name and firmware version number. This acts as a link that can be used to determine if the firmware version installed on the unit is the most current version. An internet connection is required for the firmware version check. The firmware is always current as of the time of shipment so there is seldom a need to upgrade shortly after purchase of the TemPageR 3E. The exception would be those occasions where a new version of the firmware has just coincidentally been released.

The next row contains a field that can be used to modify the refresh interval of the ‘Status’ screen and a pair of radio buttons for toggling between Fahrenheit and Celsius temperature displays. By default, the refresh interval for the ‘Status’ screen is set to every 60 seconds. To temporarily change this interval, enter a number of seconds in the ‘Update Every’ field and click outside the field. The default temperature scale displayed will correspond with the Fahrenheit or Celsius scale selected on the ‘Advanced’ tab of the ‘Settings’ screen.

Below these two rows is the sensor display area. The display for each sensor within the sensor block will contain the corresponding sensor label for that sensor, as well as a status icon indicating the current alert status and various other data. The status icon displayed will be a gray circle ‘○’ if a sensor is connected although an alert threshold is not set. If an alert threshold is set for a connected sensor and the sensor is not in an alarm state, the status icon displayed will be a green check ‘✓’. If the connected sensor is in an alarm state, the status icon displayed will be a red X ‘✗’.



## Advanced Topics

### Upgrading Firmware

The TemPageR 3E firmware is upgraded using the AVTECH Device Discovery Utility and TemPageR 3E Firmware Update file. The latest version of these files can be obtained from the 'Downloads' section of the [AVTECH.com](http://AVTECH.com) website. If the AVTECH Device Discovery Utility is already installed on the computer being used for the upgrade, check for an updated version before downloading the TemPageR 3E Firmware Update file.

**NOTE:** When saving the TemPageR 3E Firmware Update file to the computer, it may be saved with either a '.zip' or '.upd' file extension. If the extension is '.zip', DO NOT EXTRACT the TemPageR 3E Firmware Update file.

After obtaining the most current version of the AVTECH Device Discovery Utility and the TemPageR 3E Firmware Update file, be sure to install the AVTECH Device Discovery Utility on the system that will be used to upgrade the TemPageR 3E firmware (if it is not already installed).

**IMPORTANT NOTE:** Be sure that there are NO WEB BROWSERS ACCESSING the TemPageR 3E unit from anywhere on your network before uploading the firmware as this could cause the firmware update to be incomplete or become corrupted.

When completed, open the AVTECH Device Discovery Utility and click the 'Search' button. When the TemPageR 3E unit is located, select it and click the 'Upgrade' button. If the unit can not be located although is accessible via a web browser, skip to the 'Unit Accessible Although Not Discoverable' section below. Navigate to the location where the TemPageR 3E Firmware Update file was saved, select it and click the 'Upload' button. A dialog will then load asking for confirmation of the firmware upload. Click 'Ok' to upload the TemPageR 3E Firmware Update file to the TemPageR 3E unit.

### Reset Factory Default Settings

There are two primary methods for returning TemPageR to the factory default settings. This can be useful if the unit is assigned invalid network settings and is no longer accessible or if the unit will be moved to a new location and will be reconfigured. If the unit is accessible on the network and the 'Settings' screen can be accessed, clicking the 'Reset Defaults' button on the left menu of the 'Settings' screen will restore the factory default settings to the device. If the unit is not accessible on the network, the reset button on the back of the unit can be used to reset the factory default settings. With the unit connected to the network and powered on, press and hold the reset button approximately 5-10 seconds until the left LED over the network jack turns off then on again. Once the settings have been reset to defaults, the unit will automatically reboot and attempt to obtain a new DHCP IP address.

### Unit Accessible Although Not Discoverable

In the event that the network blocks UDP broadcast packets on port 30718, the AVTECH Device Discovery Utility will not be able to locate the TemPageR 3E unit even though it is accessible via a web browser. As long as the TemPageR 3E unit can be accessed via a web browser, the AVTECH Device Discovery Utility should still be able to update the firmware on it. To do so, click the 'Upgrade' button in the AVTECH Device Discovery Utility without anything selected. Enter the IP address of the TemPageR

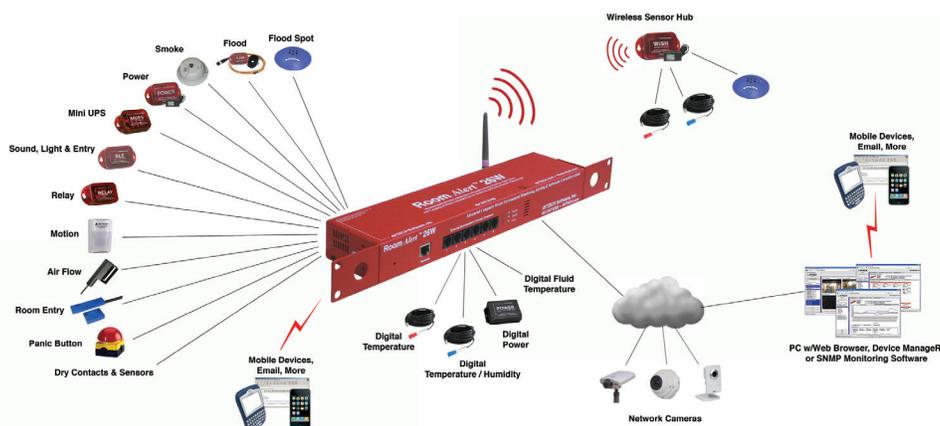
3E unit to be upgraded and click the 'Ok' button. Navigate to the location where the TemPageR 3E Firmware Update file was saved, select it and then click the 'Upload' button. A dialog will then load asking for confirmation of the firmware upload. Click 'Ok' to upload the TemPageR 3E Firmware Update file to the selected TemPageR 3E unit(s).

## Performing A Firmware Recovery

If the TemPageR 3E unit is not accessible on the network, the Link LED (left LED on the network adapter) is unlit and the Activity LED (right LED on the network adapter) is blinking orange, the TemPageR 3E unit is currently requesting a firmware recovery. The AVTECH Device Discovery Utility is capable of performing a firmware recovery in the event that this occurs. To begin the firmware recovery process, please complete the following steps:

1. Install the AVTECH Device Discovery Utility on a computer with a single Ethernet adapter.
2. Download the most current version of the TemPageR 3E Firmware Update file from the 'Downloads' section of the [AVTECH.com](http://AVTECH.com) website.
3. Connect the TemPageR 3E unit to this computer using a cross-over Ethernet cable and power on the TemPageR 3E unit.
4. Assign a static IP address to the computer being used and close or disable all software firewalls, anti-virus application and/or pop-up blockers.
5. Open the AVTECH Device Discovery Utility and press the reset button (the button next to power port on back of the TemPageR 3E unit).
6. A dialog will load explaining that a unit is requesting firmware recovery. Click 'Ok' and enter the MAC address printed on the label on the underside of the TemPageR 3E unit.
7. Follow the instructions that load to complete the firmware recovery process.

**NOTE:** If the TemPageR 3E unit is found to be in need of a firmware recovery, please notify AVTECH Support by Live Chat or email for a quick consultation. This may save you valuable time and effort or help you to determine what caused the situation so that it can be avoided in the future.

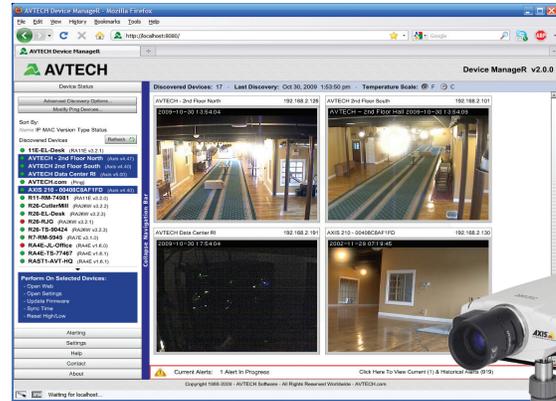


# Device ManageR™

Multi-Unit Interface For AVTECH Monitors & Axis Cameras... Network-Wide!

Advanced Software For Discovery, Management, Logging, Graphing, Alerting & More

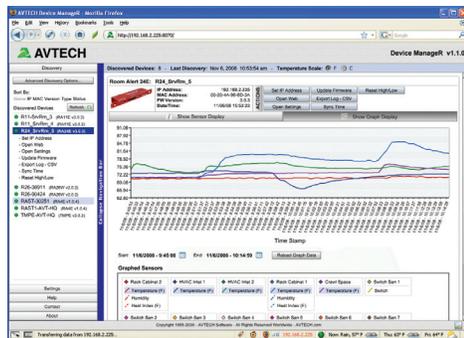
Knowing immediately when an issue or event occurs in your data center or other important facility could save your organization from disaster. **Device ManageR™** is an all-in-one solution for the discovery, management, logging, graphing, alerting and more of AVTECH's 'IT & Facilities Environment Monitoring' hardware. Complete with its unique range of features, Device ManageR runs as a Windows Service and is ideal for managing single units or a multi-unit deployment via its web interface. Device ManageR automatically discovers units across the network and allows users to immediately be informed when environmental thresholds are passed (i.e. temperature too hot, power loss, humidity too high, water leak, etc.). Alerts are sent via email to mobile devices such as computers, mobile phones, *BlackBerrys*, *iPhones*, and PDA's.



Being able to view real-time sensor data in a single screen is important to save time and expenses. Device ManageR's web browser interface allows users to view and manage any or all units through a single web interface, accessible from

anywhere network-wide. Through a single IP address, users can view, graph and log sensor data in real-time, or over a specified date range, for one or multiple units. Graphs displayed are automatically refreshed allowing users to see exactly what is happening in real-time. All sensor data is stored in an SQL database limited only by disk space. This is an invaluable tool when it comes to comparing data, reporting, or forecasting future needs for planning. Sensor data can be easily exported to CSV, Excel, or for use with an external database.

Device ManageR also has the ability to discover any Axis network camera and acts as a single interface for viewing camera images for multiple cameras distributed across the network. Cameras can be set up to sense motion or audio and then alert staff through Device ManageR when sensors are triggered. Users can view one camera at a time or call up a summary to view multiple cameras at their facility through a single web page. Users can store images for future reference and forward links to images within alerts. Contact your favorite Reseller or an AVTECH Product Specialist to learn more.



- Web Browser Interface For Remote Monitoring
- Auto Discovery Of AVTECH Monitors & Axis Cameras
- Setup & Configuration Of AVTECH Monitors
- View Sensor Data For Multiple Units Simultaneously
- Log, Graph & Export Historical Sensor Data
- View Multiple Axis Camera Displays Simultaneously
- Send Alerts When Sensor Thresholds Are Passed
- Monitor & Manage Unlimited Units Network-Wide Through A Single IP Address Or Web Page
- Network-Wide Discovery Using UDP Broadcast
- Automatic Discovery Even Across Different Subnets
- Unlimited Data Logging To An Embedded SQL Database With No Limits Other Than Disk Space
- Sensor & Data Graphing On Screen In Seconds... Allows Comparison Of Sensors Side By Side
- Ping Servers And Devices Across Your Network
- Runs As A Windows Service For Security, Allows Multi-User Access Via Network, Using The Web Browser
- Auto Discovery Of Out-Of-Date Firmware
- Upgrade Firmware For One Or Multiple Monitoring Units Simultaneously Across The Network
- Copy Configuration Settings To One Or Multiple Monitoring Units Simultaneously Across The Network
- Graphic Display Of Hardware In Settings Screen
- Support For Running Device ManageR On Linux & Apple's OSX Operating Systems
- Bundled FREE With TemPageR And Room Alert.

FREE Software License

Call AVTECH Today Or Visit Us Online At [AVTECH.com](http://AVTECH.com) To Learn More About This FREE Software...



**AVTECH.com**

**Protect Your IT Facility... *Don't Wait Until It's To Late!***