



Accessories

D 483

12/11

Replaces: 06/10

Introduction

The tekmarNet®4 Gateway 483 allows contractors, building managers and home owners the ability to remotely access tekmarNet®4 compatible controls through a computer web browser, such as Internet Explorer®, Firefox® and Safari® or through a mobile device browser. Access can be either direct, through a local area network, or through the Internet.

Temperature adjustment, scheduling, and monitoring of each thermostat is made simple by allowing the installer to name each thermostat and also group thermostats into areas within the building. Users can select to have scheduled status reports and system alerts emailed automatically.

Features

- tekmarNet® Compatible
- No Annual Fees
- Apple Mac® OS X® Computer Required
- Remotely Accessible Using Windows®, Mac OS X, or Linux
- Web Browsers: Internet Explorer, Firefox, Safari
- Email Status Reports and Alerts
- Monitor and Adjust Temperatures
- Adjust Schedules
- Adjust and Activate Scenes
- Activate Setpoint Controls
- Low and High Level Alert Contacts
- Alert Demand

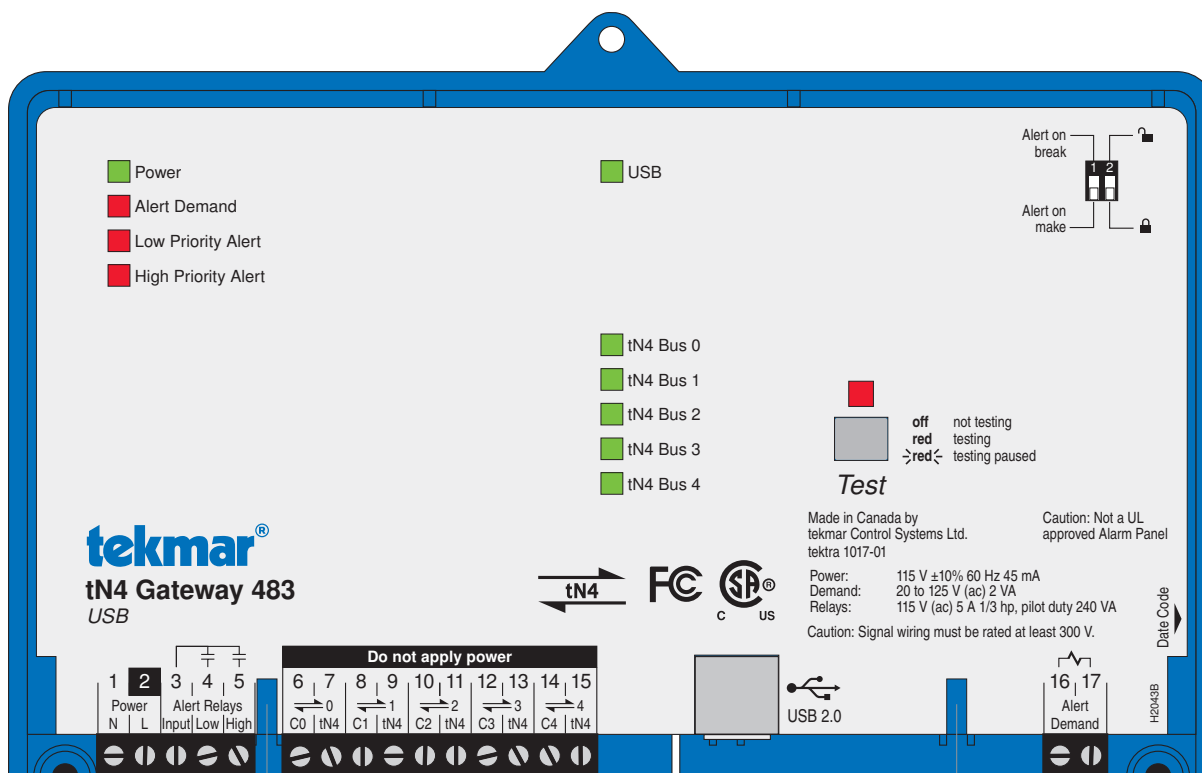


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Contents

- tekmarNet®4 Gateway 483
- Web Host Software USB - P9307
- 6 foot USB cable
- Screwdriver
- Wiring Brochure W483
- Data Brochure D 483
- Job Record J483
- User Brochure U 483

Additional Requirements

An Apple Mac computer with OS X version 10.5 Leopard, 10.6 Snow Leopard or 10.7 Lion is required. This computer will be used as a web server to host the tekmarNet® Gateway web pages.

Web Browser

The tekmarNet®4 Gateway web pages can be viewed from any computer that has one of the following web browsers:

- Internet Explorer version 6.0 or higher
- Firefox version 2.0 or higher
- Safari version 2.0 or higher

Compatible tekmarNet® Products

The tekmarNet®4 Gateway 483 version J1193L is compatible with the following products:

- tekmarNet®4 Timer 033
- Setpoint Control 161*, 162**
- Boiler Control 274, 275
- tekmarNet®2 Wiring Center 313, 314
- tekmarNet®4 Wiring Center 315, 316
- Zone Expansion Module 324, 325, 326
- Zone Manager 334, 335, 336, 337

- Power Manager 345, 346
- tekmarNet®2 House Control 400, 401, 402, 403, 406
- Boiler Reset Module 420
- Mixing Reset Module 421
- Universal Reset Module 422, 423
- Mixing Expansion Module 440, 441, 444
- tekmarNet®4 User Switch 479, 480, 481
- tekmarNet®2 Thermostat 527, 528, 529, 530
- tekmarNet®4 Thermostat 537, 538, 540, 541, 542, 543***, 544, 545, 546
- tekmarNet® Thermostat 552

* 161 versions J1141A and J1141B are not fully compatible with the 483

** 162 versions J1142A and J1142B are not fully compatible with the 483

*** 543 versions J1126A to J1126I are not fully compatible with the 483

Please contact your tekmar sales representative for assistance with affected 161, 162, and 543 products.

tekmarNet® products not listed may not be compatible with this version of the 483 software. Contact your tekmar sales representative for information.

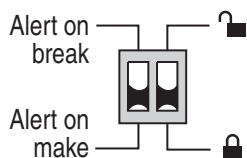
Before You Start

Before connecting the tekmarNet®4 Gateway 483 to a tekmarNet® system, it is recommended that the system be fully completed, with no tekmarNet® thermostats or setpoint control's being added or removed at a later date. Also, each tekmarNet® thermostat and setpoint control device is automatically assigned a tekmarNet® address when connected to the system. It is recommended that

each device be given a manual address. This address should be written down together with the room location for future reference.

The gateway records the address of each tekmarNet® thermostat and setpoint control. For each address, the installer can name the room location and building area for each thermostat and setpoint control.

Switch Settings



Alert on break / Alert on make

When using the Alert Demand (terminals 16 and 17), the 483 can either register an alert when the alert demand is removed (Alert on break – switch setting in up position) or it can register an alert when the alert demand is applied (Alert on make – switch setting in down position).

Unlock / Lock

The Unlock / Lock switch allows the use of a factory default user ID and password for the tekmarNet® gateway login web page.

When set to Unlock (switch setting in up position), the user ID is “installer” and the password is “tekmar”.

After logging in to the tekmarNet® gateway login web page, create personal accounts for yourself and your customer through the configuration page. Once the personal accounts are completed, the Unlock / Lock switch can be set to Lock. The default user ID and password are then no longer accepted.

Should the personal account user ID or passwords be forgotten, the Unlock / Lock switch can be set to Unlock and the default user ID and password can be used to create new personal accounts.

IMPORTANT NOTE

Once the tekmarNet® Gateway installation is complete, it is important that the switch setting be left in the Lock position in order to prevent unauthorized access.

Alert Demand

The Alert Demand terminals (16 and 17) provide a way for external devices to create a Low Priority Alert and provide an email notification. The Alert Demand and Low Priority Alert LEDs turn on when a voltage between 20 to 125 V (ac) is applied or removed depending on the Alert on break/Alert on make switch setting. This demand also closes the Low Priority Alert Relay. Through the gateway web interface, the installer can assign the Alert Demand to provide a user defined warning message that is sent through email.

The Alert Demand could be used to detect the low level switch of a fuel oil tank, or monitor a low water cut off.

Note: The 483 is not a UL approved alarm panel.

 Alert Demand

 Low Priority Alert

Alert Relays

The 483 includes two relay contacts that indicate alerts to 3rd party monitoring equipment such as a security system, automation system, or telephone auto dialer.

The High Priority Alert Relay closes when the following error messages are active on the tekmarNet® System Control:

- Master Device Error
- E01 Adjust Error
- Boiler Sensor Short Circuit Error
- Boiler Sensor Open Circuit Error
- Mix Sensor Short Circuit Error
- Mix Sensor Open Circuit Error
- Mixing Expansion Module Missing Error
- Mixing Expansion Module Conflict Error
- Mixing Expansion Module Sensor Short Circuit Error
- Mixing Expansion Module Sensor Open Circuit Error

The Low Priority Alert Relay closes when the Alert Demand is present or removed according to the Alert on break / Alert on make switch setting.

The Low Priority Alert Relay also closes if there is any error on the tekmarNet® system that is not included on the high priority list.











Once the error is corrected, the respective Alert Relay contact is opened.

Note: The 483 is not a UL approved alarm panel.

 Low Priority Alert

 High Priority Alert

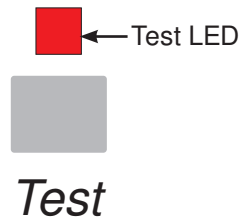
Status LED Indicators

LEDs	On	Off
 Power	Power is on.	Power is off.
 Alert Demand	Alert demand is present.	Alert demand is not present.
 Low Priority Alert	A low priority alert is present.	No low priority alert.
 High Priority Alert	A high priority alert is present.	No high priority alert.
 USB	USB communication is present.	No USB communication.
 tN4 Bus 0	tN4 communication on bus 0 is present.	No tN4 communication on bus 0.
 tN4 Bus 1	tN4 communication on bus 1 is present.	No tN4 communication on bus 1.
 tN4 Bus 2	tN4 communication on bus 2 is present.	No tN4 communication on bus 2.
 tN4 Bus 3	tN4 communication on bus 3 is present.	No tN4 communication on bus 3.
 tN4 Bus 4	tN4 communication on bus 4 is present.	No tN4 communication on bus 4.

Testing the Control

The 483 includes a built-in test routine that tests the alert relays.

Start the test routine by pressing the Test button for 1 second. The Test LED turns red.



- Step 1:** The Low Priority Alert Relay is closed for 10 seconds and then opened.
- Step 2:** The High Priority Alert Relay is closed for 10 seconds and then opened.

The 483 then exits the test routine and resumes normal operation.

Pause the test routine by pressing the Test button again while in the test routine. The Test LED flashes red while paused. Press the Test button again to resume the test routine.

If the test routine is paused for more than 5 minutes, the 483 automatically exits the entire test routine.

Cleaning

The 483 exterior can be cleaned using a damp cloth. Moisten the cloth with water and wring out prior to wiping the device. Do not use solvents or cleaning solutions.

Apple Mac OSX Computer

Background

The Mac OS X computer functions as a web server for the tekmarNet® Gateway. The web server creates and maintains the gateway web pages so that any computer with a web browser and a network connection can access the gateway. This includes PC's with Microsoft Windows, PC's with Linux, Mac's with Apple OS X, as well as smart phones such as an Apple iPhone™.

For applications where the gateway will be accessed remotely from another computer, it is recommended to purchase an Apple Mac Mini computer since it does not come bundled with a keyboard, mouse, or monitor. A keyboard, mouse, and monitor are required during installation but can be removed once installation is complete. If possible, complete all the computer settings, computer network settings, and install the tekmarNet® Gateway web host software before installing the computer at the job site to eliminate the need to bring a monitor, keyboard and mouse to the job site.

For applications where the gateway will be accessed directly, it is recommended to purchase an Apple iMac® (desktop computer) or MacBook® (laptop computer).

If using an Apple Mac Mini computer, it is recommended to mount the computer to the wall using the H-Squared Mini Mount available from the Apple store.

Installation of Computer

Wire the computer according to the instructions provided with the computer and the Wiring Brochure W483.

Computer Setup

Press the power button (found on the back of the Mac Mini) and go through the startup screen steps. It is very important that the computer username and password is recorded for future reference. Should the username and password be lost, the operating system must be reinstalled in order to install any new software.



Mac OS X Basics

System Updates

If the computer is connected to the Internet, it is recommended to update to the latest software. Click on the Apple icon in the top left corner, and then click "Software Update".

Shutting the Computer Down

Should you need to shut down the Mac OS X computer, click the Apple icon in the top left corner, and then click "Shut Down".

Window Operation

Red = close the window

Amber = minimize the window

Green = maximize the window

Dock

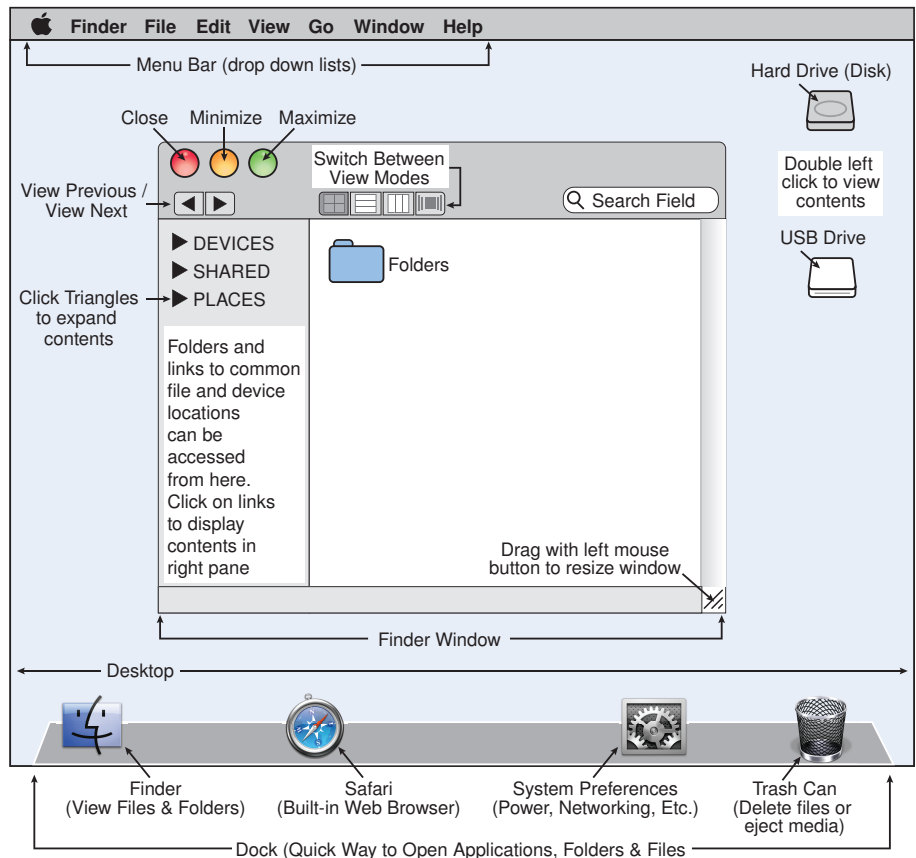
By default, the dock is located at the bottom of the screen. It has icons for commonly used programs.

Finder

Click on the Finder icon to search or browse for files on the computer.

Safari Web Browser

Click on the Safari Web Browser icon to start the web browser.



System Preferences

Click on the System Preferences icon to change settings on the computer.

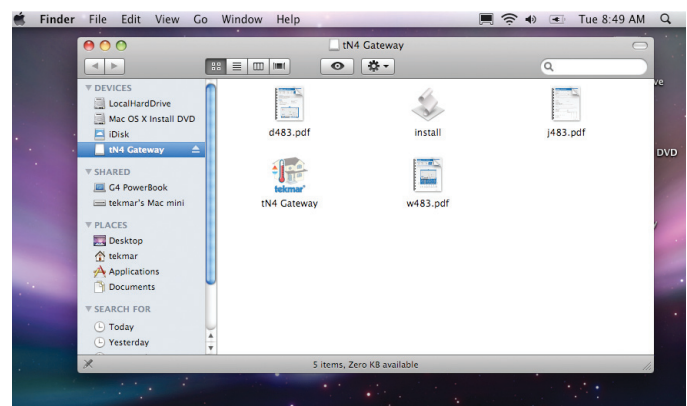
Removing the USB Drive

To remove the USB drive, drag the Disk icon to the Trash Can icon. Once the drive icon is not displayed on the desktop, the USB drive can be safely removed.

Installation of Web Host Software

To install the tekmarNet® Gateway on the Mac web host computer, follow these steps.

- STEP 1) Insert the Web Host Software USB - P9307 into the USB port on the computer. The USB drive will appear as an icon on the computer desktop. Double click on the USB drive icon.



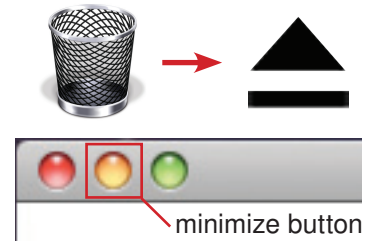
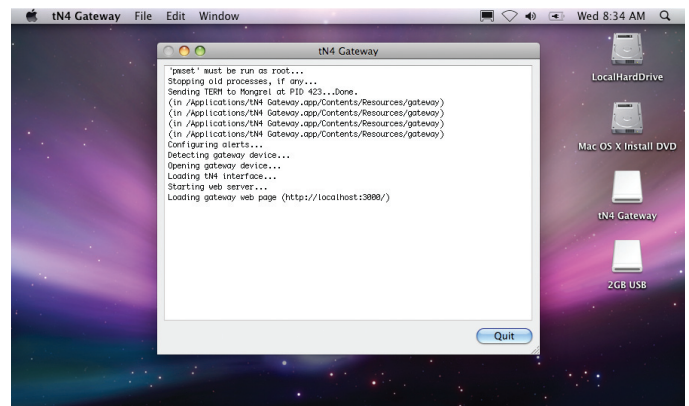
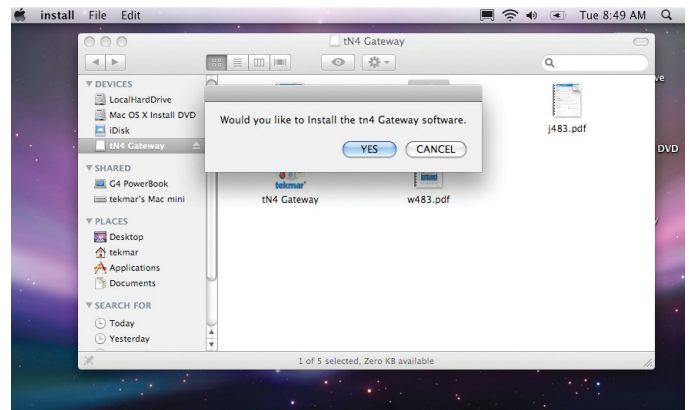
Installation of Web Host Software (continued)

STEP 2) The finder window is now open with the USB drive contents displayed in the right side pane.

STEP 3) Double click the icon called "Install".

STEP 4) Click Yes when the dialog box asks to install tekmarNet® Gateway Software.

STEP 5) Click and drag the USB drive icon towards the garbage can on the dock. The garbage can turns into an Eject symbol. Drop the USB drive icon on top of the Eject symbol. It is safe to remove the USB drive once it is not longer shown on the desktop.



The tekmarNet® Gateway web host software is now installed. Click on the amber dot in the upper left corner to minimize the tekmarNet® Gateway window.

Configuring Mac OS X

Disable OS X Automatic Updates

The Mac OS X automatic software updates can interfere with the normal operation of the tekmarNet® Gateway software. It is recommended to disable the automatic software update feature. Please note that Mac computer software updates can still continue to be performed manually.

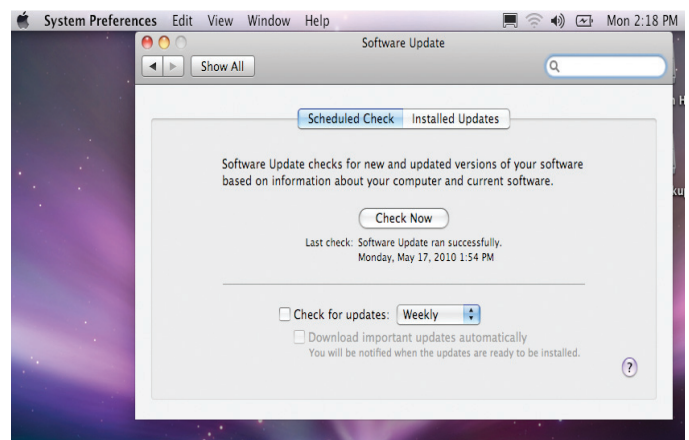
STEP 1) Click on the System Preferences icon to change settings on the computer.

STEP 2) Click on Software Update.

STEP 3) Uncheck "Download important updates automatically".

STEP 4) Uncheck "Check for updates".

The window can be closed by clicking on the red dot in the upper left corner.



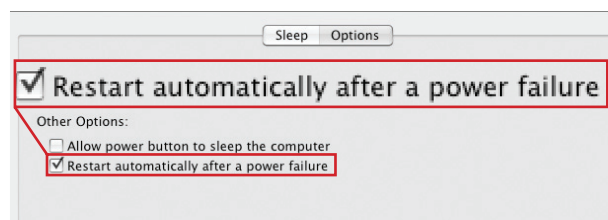
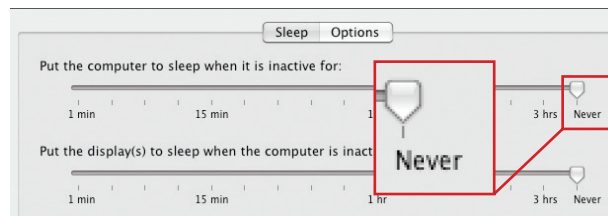
Configuring Mac OS X (continued)

OS X Energy Saving Settings

Since the tekmarNet® Gateway could be accessed at any time, the Mac OS X computer must be on all the time and must automatically restart after power loss. This requires changing the Energy Savings settings.

- STEP 1) Click on the System Preferences icon to change settings on the computer.
- STEP 2) Click on Energy Saver. Click on Sleep. On the bar graph labeled “Put the computer to sleep when it is inactive for:”, select “Never”.
- STEP 3) Click on Options. Check mark the box “Restart automatically after a power failure”.

The window can be closed by clicking on the red dot in the upper left corner.

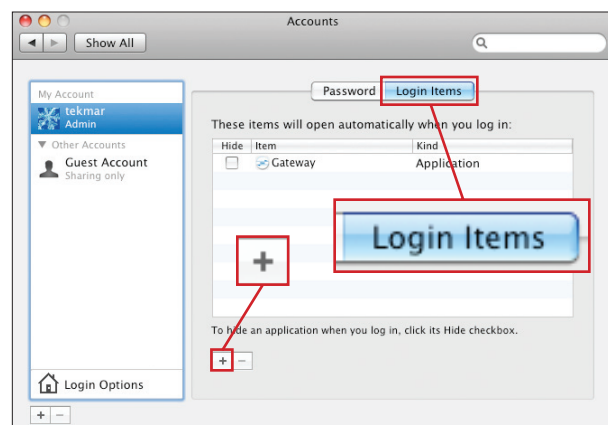


Add Gateway to Login Items

The tekmarNet® Gateway software must start each time the computer is turned on. To do this, the tekmarNet® Gateway must be added to the Login Items.

- STEP 1) Click System Preferences.
- STEP 2) Click Accounts.
- STEP 3) Click Login Items.
- STEP 4) Click the “+” sign symbol.
- STEP 5) In the Applications list, find “tN4 Gateway” and click the Add button.

The tekmarNet® Gateway is now listed as an application that opens each time the computer is powered on. The window can be closed by clicking on the red dot in the upper left corner.

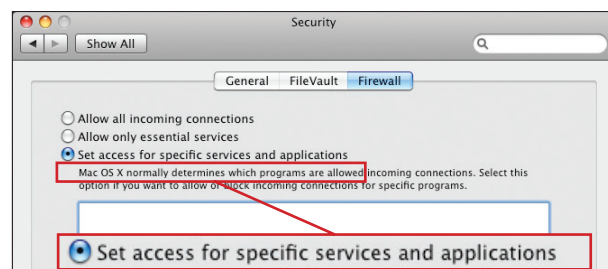


Mac OS X Firewall Configuration

If there is no router installed between the Mac web host computer and the cable or DSL high speed modem, then it is recommended to turn on the Mac OS X firewall and then allow a program called “ruby” to access the network. The firewall protects the computer from unauthorized access.

- STEP 1) Click the System Preferences icon.
- STEP 2) Click on the Security icon.
- STEP 3) Click on the Firewall tab.
- STEP 4) Select the option for “Set access for specific services and applications”.
- STEP 5) Restart the computer.
- STEP 6) A dialog box will appear: “Do you want the application “ruby” to accept incoming network connections?” Click “Allow”.

Use the red dot in the upper left corner to close the window.



tekmarNet® 4 Gateway Web Pages

Database Population Time

The tekmarNet® Gateway requires approximately two minutes per thermostat and setpoint control to populate the database. You may login at any time although some information may not be available until the database is complete.

Direct Access

To access the tekmarNet® Gateway web pages on the Mac web host computer, click on the Safari web browser and enter the following IP address:

<http://localhost:3000>

The gateway login page will appear. Bookmark this address to the web browser to allow quick and easy access to the tekmarNet® Gateway.

Login Page

During the initial installation, the Unlock / Lock switch must be set to Unlock to enable the default login “installer” and the default password “tekmar”. The login and password are case sensitive.

After personalized login accounts have been created it is highly recommended to set the Unlock / Lock switch to Lock to prevent unauthorized access.

Make sure to record your login and password for future reference.

Home Page

The home page shows the basic details of the tekmarNet® Gateway.

Configuration Pages

Click on ‘Configuration’ to enter the Configuration Pages section.

Job Site

Enter the job site name, street location, building owner contact information and installing contractor information.

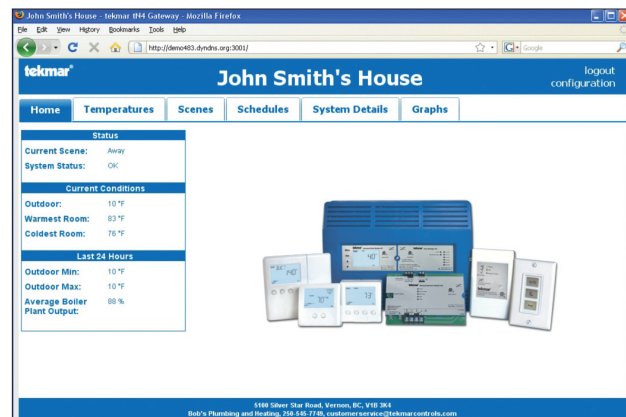
A custom image of the building can be uploaded to the gateway. It is recommended that the image size be 1 mb or less. The image will be displayed on the home page.

General

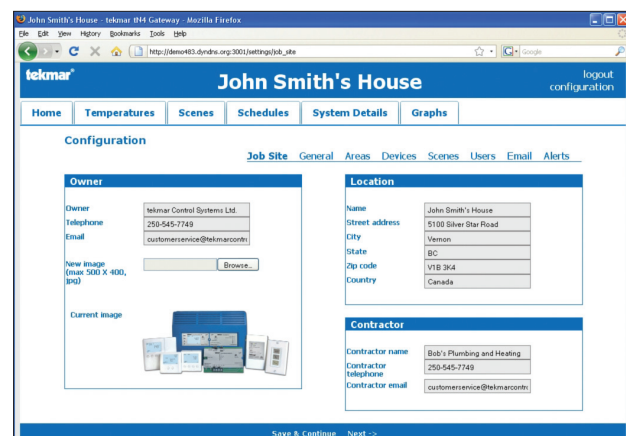
Select either Fahrenheit or Celsius as the temperature units for the tekmarNet® Gateway. The clock time format can be set to either 12 hour time or 24 hour time.



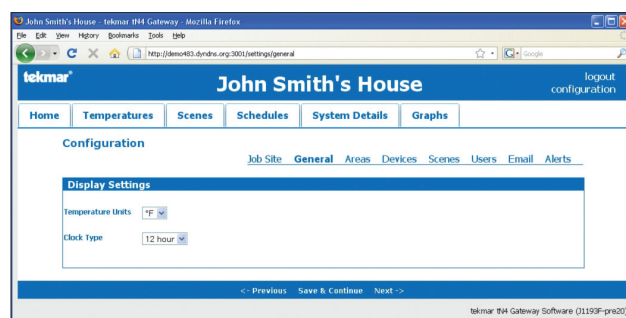
Login Page



Home Page



Job Site



General

Areas

Enter up to 12 building areas that thermostats can be belong to. Examples would be First Floor, Second Floor, East Wing, West Wing, etc.

Devices

Enter a name for each tekmarNet® thermostat and tekmarNet® setpoint control based upon its tekmarNet® address. Then select the building area that the thermostat is located in.

Scenes

The tekmarNet® system can operate in one of up to eight scenes (building overrides). Each scene can be given a custom name and each scene can be selected whether or not it is available to users logging into the tekmarNet® Gateway with User access account level.

Users

Click on New User to create a login for each person that will have access to the tekmarNet® Gateway.

For each login account, select the access level that the person has to the tekmarNet® Gateway. The installer access level allows access to all the tekmarNet® Gateway web pages. The user access level only allows access to the Home, Temperatures, and Scene web pages. This access is recommended for the average home owner.

Provide the account with a name, login name, email address and password. Click 'Add User' to create the account.

- The login and password are case sensitive. The login must be at least 3 characters and the password must be at least 4 characters.

Email

In order for the tekmarNet® Gateway to send email to the personal accounts, the tekmarNet® Gateway must connect to a mail server. Gmail & Hotmail accounts require a user name and password. Some Internet service providers (ISP's) only require the SMTP server address, others will require additional settings.

Contact your ISP to determine the settings for the following:

- SMTP Server Address
- SMTP Server Port
- Email account user name
- Email account password
- HELO domain
- Authentication mode Plain, Login or CRAM MD5
- If TLS / SSL is used

Area	Area Name
Area 1	First Floor
Area 2	Second Floor
Area 3	Outside
Area 4	
Area 5	
Area 6	
Area 7	
Area 8	
Area 9	
Area 10	
Area 11	
Area 12	

Areas

Address	Thermostat Location Name	Area
1:01	Kitchen	First Floor
1:02	Master Bedroom	Second Floor
1:03	Master Bedroom	Second Floor
b:01	Guest Bedroom	Second Floor
b:02	Living Room	First Floor
b:03	Guest Bedroom	Second Floor

Devices

Scene	Name	Visible to User?
Permanent Scene 1	Normal	<input checked="" type="checkbox"/>
Permanent Scene 2 - Away	Away	<input checked="" type="checkbox"/>
Permanent Scene 3 - Unoccupied	Unoccupied	<input checked="" type="checkbox"/>
Permanent Scene 4	Perm Scene 4	<input type="checkbox"/>
Permanent Scene 5	Perm Scene 5	<input type="checkbox"/>
Temporary Scene 6 - Occupied (3hr)	Temp Occ	<input type="checkbox"/>
Temporary Scene 7 (4hr)	Temp Scene 7	<input type="checkbox"/>
Temporary Scene 8 (5hr)	Temp Scene 8	<input type="checkbox"/>
Temporary Scene 9	Temp Scene 9	<input type="checkbox"/>

Scenes

#	Access Level*	Name	Login*	Email	Password*	(confirm)*	Options
1	User	User	User	User	User	User	Delete
2	User	User	User	User	User	User	Add User to be Added

Users

Email Provider:

☐ Gmail

☐ AOL

☐ Other ISP (Basic)

☐ Other ISP (Advanced)

Email address:

Password:

Test

Email

Alerts

A short message can be entered to use as the message whenever an Alert Demand is activated.

Room hot and room cold warning points can be set. Should the temperature exceed the hot room setting or the temperature fall below the cold room setting, an email can be sent.

Select for each user if they should be sent an email whenever the following occur:

- External Alert Demand - immediately
- Hot room warning - sent each hour on the hour
- Cold room warning - sent each hour on the hour
- Error messages - sent each hour on the hour
- Daily status reports - sent each day at midnight
- Weekly status reports - sent each Sunday

Temperatures

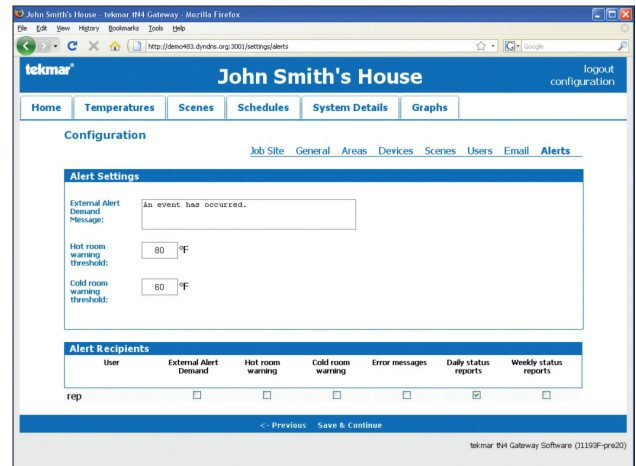
All Thermostats / Setpoint Controls Settings

Each thermostat is named after the room in which it is located in. Likewise, each setpoint control is named after the function that it operates. For each thermostat and setpoint control, the current temperature is shown, together with the current heating and cooling temperature. Click on the up or down button to adjust the temperature. The heat setting automatically increases the cooling setting if adjusted within 3°F (1.5°C) of the cooling setting. Likewise, the cooling setting automatically decreases the heating setting if adjusted within 3°F (1.5°C) of the heating setting. This prevents cycling between heating to cooling on the thermostat. A red box indicates that the thermostat is heating. Likewise, a blue box indicates that the thermostat is cooling.

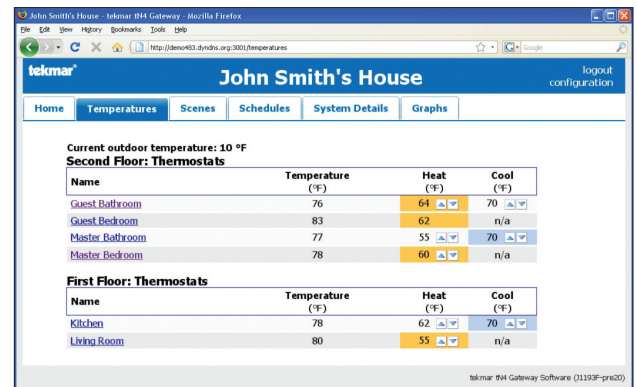
Individual Thermostat / Setpoint Control Settings

Click on the thermostat name to access the individual thermostat or setpoint controls settings.

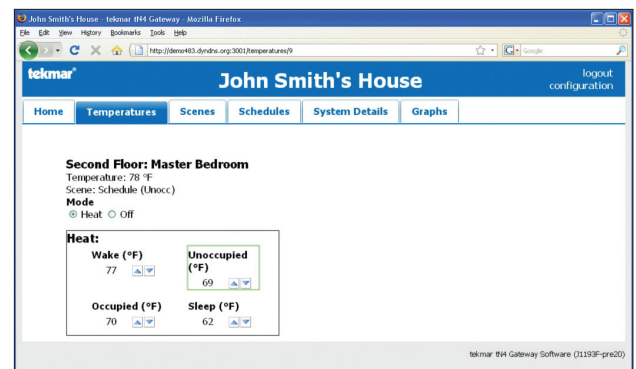
- The current temperature, scene and schedule status are shown.
- The mode can be set to Auto, Heat, Cool, or Off. The options available are determined by the thermostat model.
- The Heat setpoints are available when mode is set to Heat or Auto.
- The Cool setpoints are available when mode is set to Cool or Auto.
- The Fan settings are available when a fan is available on the thermostat.
- The Heat, Cool, and Fan may have multiple settings depending if a setback schedule is used on the thermostat. If no schedule is used then only the Occupied setting is available. If a two event schedule is used, then the Occupied and Unoccupied settings are available. If a four event schedule is used, then the Wake, Unoccupied, Occupied, and Sleep settings are available.
- A green box around a setting indicates the current schedule event the device is operating at.



Alerts



Temperatures



Thermostat / Setpoint Control Settings

Scenes

Scene Overview

Select the scene or building override that you want the building to operate at. For example, the scene could be set to Normal while the building is occupied, and then set to away while the building occupants are away on vacation.

Setpoint controls that are using the setpoint device enable feature can be activated or placed in standby operation using the scenes page. Click on the Active button to have the setpoint control operate at the Occupied temperature setting. Click the Standby button to have the setpoint control operate at the standby setting. The standby temperature setting is set by the application mode configured on the setpoint control.

Scene Details

Click on the Details link to view the response of each thermostat in a particular scene.

The thermostat response for Scenes 1, 4, 5, 7, and 8 are configurable. Possible responses are as follows:

Schedule	the device operates on its regular schedule.
Occupied	the device operates at the occupied temperature and ignores any schedule.
Unoccupied	the device operates at the unoccupied temperature and ignores any schedule.
Wake	the device operates at the wake temperature and ignores any schedule.
Sleep	the device operates at the sleep temperature and ignores any schedule.
Away	the device operates at the away temperature and ignores any schedule.

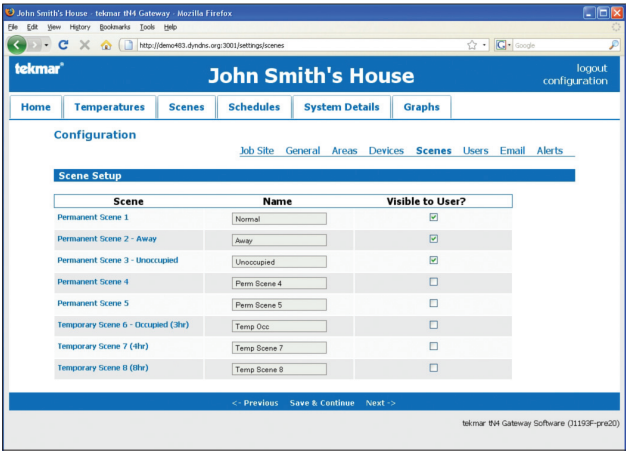
Select the desired temperature for each thermostat by clicking on the drop down menu and then click the upload button.

The thermostat response for Scenes 2, 3, and 6 are factory set and are not configurable.

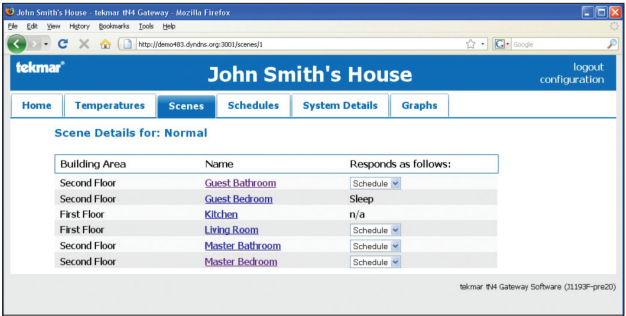
Schedules

Schedule Overview

The overview page lists the schedules on the tekmarNet® system, the location of the schedule master thermostat, and the thermostats that are members of this schedule.



Scene Overview



Scene Details



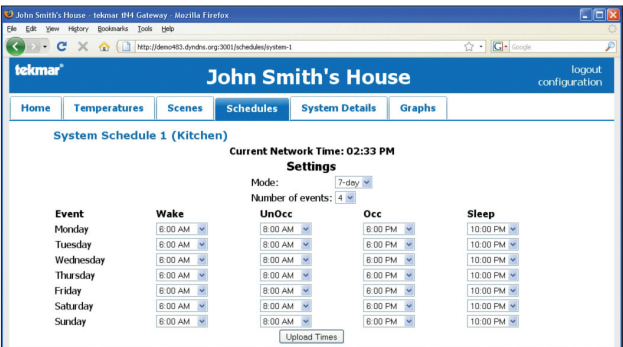
Schedule Overview

Schedule Detail

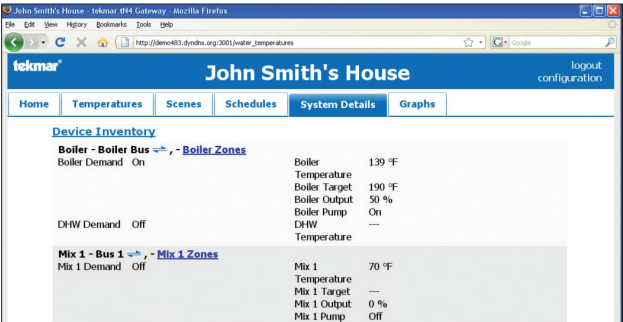
Click on the schedule name to access the schedule settings.

For each schedule event time, enter the time to the nearest ten minutes in which the event is to start at.

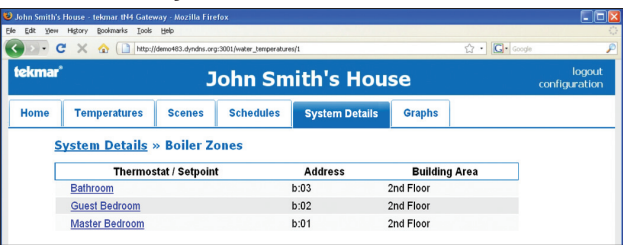
Click on the Upload Times button to send the settings to the schedule master thermostat.



Schedule Detail



System Details Overview



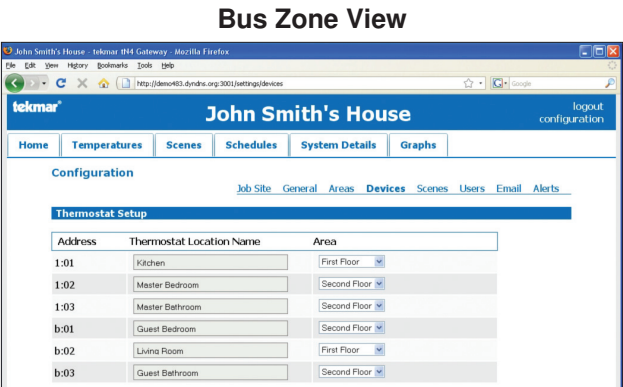
Bus Zone View

Click on the bus zones to have a list of all thermostats and setpoint control's room names, their tekmarNet® address and their building area name. This is useful for locating thermostats when troubleshooting.

Device Inventory

The device inventory page lists the tekmarNet® address of each device on the tekmarNet® system, the area name, the thermostat or setpoint control name, the product model number, product name and description, and the software version.

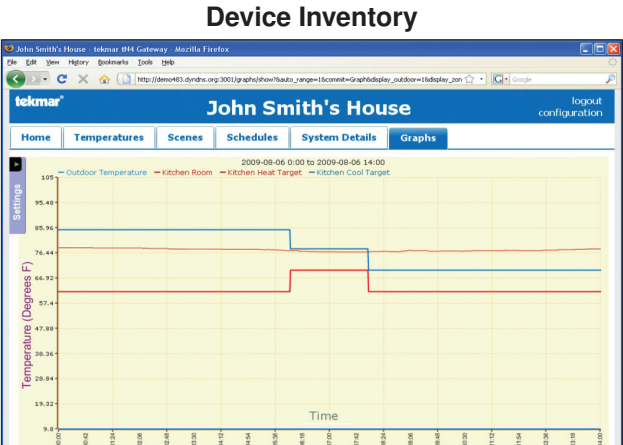
In some cases, a device may have been connected and then removed to a tekmarNet® bus. Click the Forget button to remove the device from the database. If the device is still on the tekmarNet® bus, the gateway will automatically detect and add the device to the database.



Bus Zone View

Graphs

The graphs page is able to graph the Boiler, Mixing, and Thermostat temperatures over any selected time period.

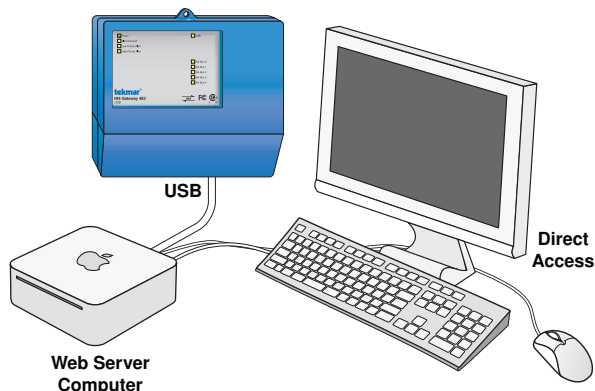


Graphs

Networking Options

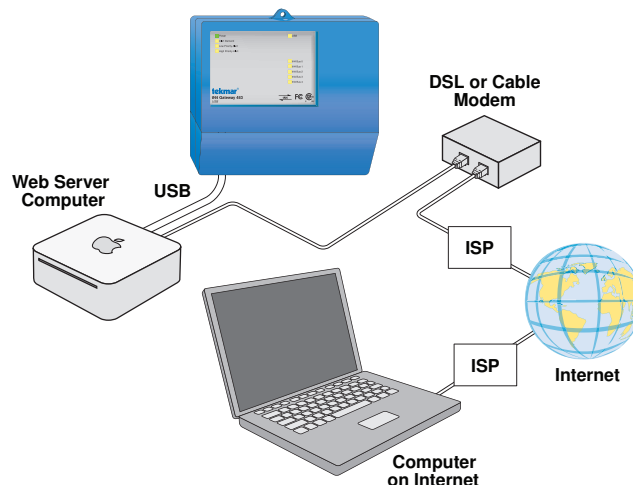
Direct Access (No Network)

The tekmarNet® Gateway web pages can be accessed using the Safari web browser on the Mac web host computer. This is called direct access. In this case there is no computer network.



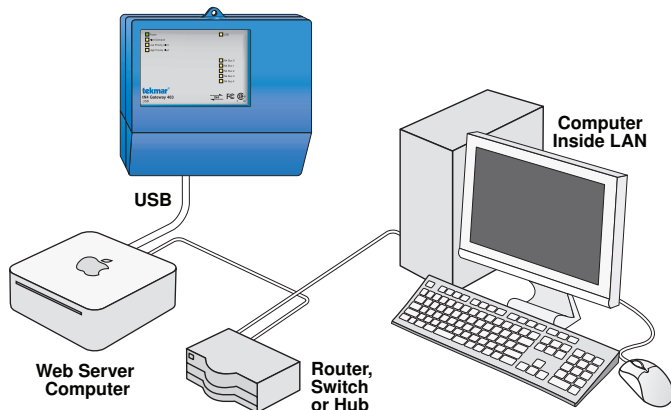
Internet Network

The tekmarNet® Gateway can be accessed through the Internet when the Mac web host computer is connected to a cable or DSL high speed modem using either wired Ethernet or wireless Wi-Fi. With the Mac web host computer connected directly to the Internet, it is important to turn on the Mac OS X firewall. See Mac OS X Firewall Configuration section for details on configuring the firewall.



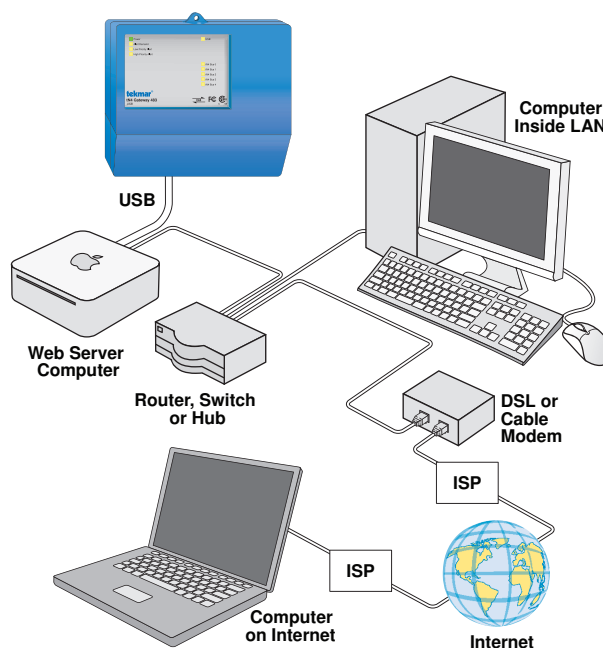
Local Area Network

The tekmarNet® Gateway can be accessed from other computers on a Local Area Network (LAN) when the Mac web host computer is connected to this LAN. This is a common application when accessing the tekmarNet® Gateway from inside the same building. To create a LAN, connect the computers to a router or to a network switch using wired Ethernet or wireless Wi-Fi.



LAN and Internet Network using a Router

The tekmarNet® Gateway can be accessed either on a LAN or through the Internet when the Mac web host computer is connected to a router, either through wired Ethernet or wireless Wi-Fi. The router is then in turn connected to a cable or DSL high speed modem. This configuration creates two networking areas, the Local Area Network (LAN), and the Internet. See the Router Configuration section for details for configuring the router.



Router Configuration for LAN

Router Basics

Most tekmarNet® Gateway installations will have a router installed. The router directs computer network traffic from one computer to another and also includes a firewall that protects the Local Area Network (LAN) from unauthorized access from the Internet.

Please note that due to the large variety of routers available, tekmar does not provide technical support for router configuration. Contact a computer network contractor if assistance is required.

Static LAN IP Address

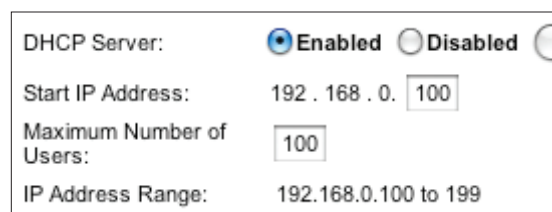
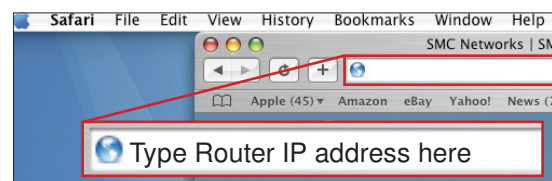
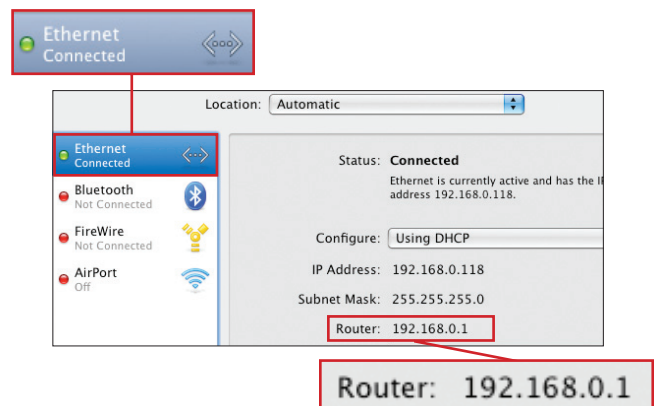
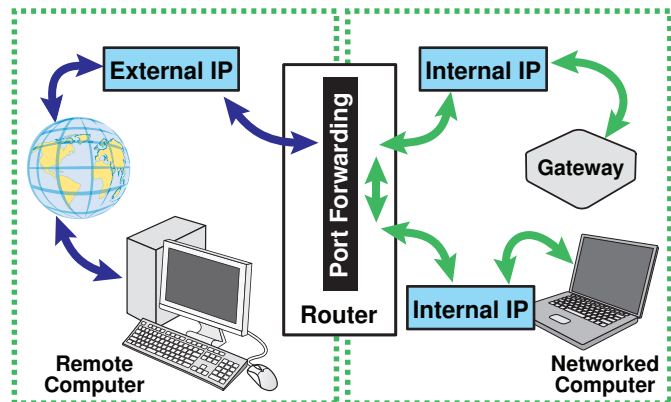
Most routers use a DHCP server that automatically assigns an IP address to each computer. These addresses are dynamic, which means that a particular computer can be given a new address each time it is turned on.

Since the Mac web host computer needs to be accessed from other computers, it requires a static address that is the same every time the computer is turned on. This requires changing the Router DHCP settings and assigning a static IP address the Mac web host.

Configure Router DHCP Settings

The router has a DHCP range must be adjusted to allow for static IP addresses. This can be done from any computer within the LAN. To do this from a Mac computer:

- STEP 1) Click the System Preferences icon.
- STEP 2) Click on the Network icon.
- STEP 3) Click 'Built-in Ethernet' or 'Ethernet'.
- STEP 4) There is a field called "Router". In this field the router IP address is shown. A common router IP address is: 192.168.0.1. Refer to the router documentation for the router IP address of your router.
- STEP 5) Click on the Safari icon to launch the web browser. In the address field, type the router IP address and press enter. The router login page will appear and the router user ID and password are required.
- STEP 6) In the router settings, set the DHCP IP range so that there are eight free IP addresses available. For example, if the router address is 192.168.0.1, then the DHCP range should be set to start at 192.168.0.10. This allows eight static IP addresses to be available (192.168.0.2 to 192.168.0.9).



Router Settings Page

Configure Static IP on Mac Web Host Computer

Now that the DHCP range has been changed to allow a range for static IP address, the Mac web host computer can be given a static IP address.



System
Preferences



Network

STEP 7) Return to the Network window in System Preferences.

STEP 8) In the Configure pull down menu, select “DHCP using manual address”.

STEP 9) In the IP address field, enter the static IP address for the Mac web host computer. Record this address for future use. If the router address is 192.168.0.1 then the Mac web host computer IP address can be set to 192.168.0.2.

STEP 10) In the DNS Server field, enter 208.67.222.222. This directs the computer to use OpenDNS.com to resolve DNS searches on the Internet.

STEP 11) Select the “Apply” button to apply the settings. The Network window can now be closed by clicking on the red dot in the upper left corner.

If the gateway is to be accessed only from within the LAN, then all the settings are complete and the web browser can be closed by clicking on the red dot in the upper left corner of the window.

If the gateway is to be accessed from the Internet, then additional router settings are required to open port 3000 on the router firewall.

Configure: Using DHCP with manual address

IP Address: 192.168.0.2

Configure: Using DHCP with manual address

IP Address: 192.168.0.2

Subnet Mask:

Router:

DNS Server: 208.67.222.222

Search Domains:

Advanced... ?

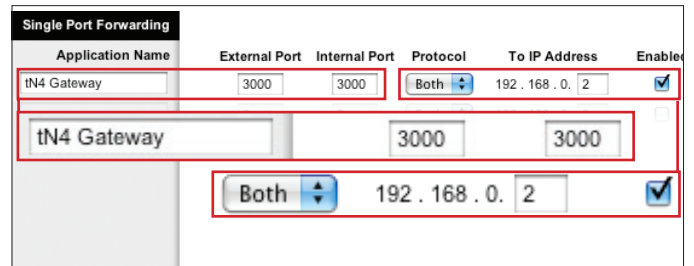
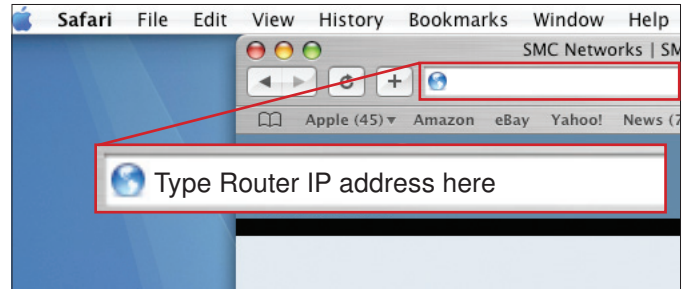
Router Configuration for Internet

A router includes a firewall that protects the LAN from the Internet by blocking incoming data traffic on non-standard ports. The firewall has external ports available to the Internet and also internal ports available to the LAN. The gateway operates on port 3000. In order to allow Internet access to the Mac web host computer, the firewall internal port 3000 must be opened to TCP traffic. The firewall external port can be set to any unused port number; however, it is recommended to select 3000 as the TCP external firewall port to keep it consistent.

The following steps describe how to setup the router from a Mac computer:

- STEP 1) Click on the Safari icon to launch the web browser.
- STEP 2) Enter the router IP address and press enter.
- STEP 3) Enter the router user ID and password at the login page if required.
- STEP 4) Find the router port forwarding rules. This feature can have other names depending on the manufacturer of the router. Other names include port address translation, network address translation or applications and gaming.
- STEP 5) Name the port forwarding rule (such as tN4 Gateway), open external TCP port 3000, and then open internal TCP port 3000.
- STEP 6) Enter the static LAN IP address of the Mac web host computer.
- STEP 7) Save the settings and log out of the router.

The router configuration is now complete and the web browser window can be closed by clicking on the red dot in the upper left corner.



Accessing the Gateway

Direct Access

When the Mac web host computer is not connected to a computer network, the tekmarNet® Gateway web pages are only available directly off the Mac web host computer connected to the 483. This is called direct access.

To access the tekmarNet® Gateway web pages, click on the Safari web browser and enter the following IP address:



<http://localhost:3000>

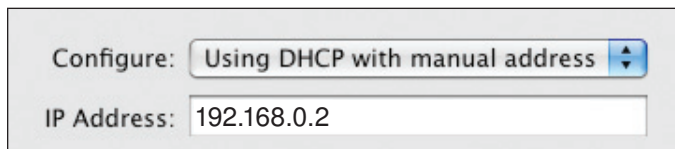
The gateway login page will appear. Bookmark this address to the web browser to allow quick and easy access to the tekmarNet® Gateway.

Local Area Network Access

A very common application is to access the tekmarNet® Gateway on another computer within the same building. Both computers will be connected to a Local Area Network (LAN). Most often the LAN will have a router installed, although a hub or switch could also be installed. If a router is installed, follow the instructions in the Router Configuration section.

To access the tekmarNet® Gateway web pages from any computer inside the LAN, find out the Mac web host computer's static LAN IP address by following these steps:

- STEP 1) On the Mac web host computer, click on the System Preferences icon. 
- STEP 2) Click on the Network icon. 
- STEP 3) Under Built-in Ethernet, the IP address is shown. Record the LAN IP address for your records.



The screenshot shows a 'Configure' window with a dropdown menu set to 'Using DHCP with manual address'. Below it, the 'IP Address' field displays '192.168.0.2'.

From any computer connected to the LAN, start a web browser (Internet Explorer, Firefox, or Safari) and enter this IP address followed by :3000 and press enter. An example would be:

<http://192.168.0.2:3000>

The tekmarNet® Gateway login web page will appear. Bookmark this address to the web browser to allow quick and easy access to the tekmarNet® Gateway while using a computer inside the LAN.

Internet Access

The tekmarNet® Gateway can be accessed through the Internet when using a high speed cable or DSL modem. The high speed modem may or may not be connected to a router. If a router is installed, follow the instructions in the Router Configuration section. If a router is not installed, follow the instructions in the Mac OS X Firewall Configuration section.

An Internet Service Provider (ISP) provides an Internet IP address that can be either static (always the same) or dynamic (changes on a regular basis). Static IP addresses are desirable since the address is always the same, making it easy to locate on the Internet. Static IP addresses usually require a business account from the ISP. Residential ISP accounts are often provided a dynamic IP address. In order to easily access the tekmarNet® Gateway that has a dynamic IP address, a free dynamic DNS service is required. The dynamic DNS service operates by linking a domain name (example: www.tekmarcontrols.com) to a dynamic IP address (example: 24.156.244.16). This allows the IP address to change, while the domain name is always the same.

Contact your ISP to determine if a static or dynamic IP address has been provided.

Static IP Address

If the ISP has provided a static IP address, the Mac web host computer's IP address can be easily determined by clicking on the Safari icon to start the web browser and enter the following address:

<http://whatismyip.com>

On this web page, the static IP address is shown. Write down this IP address for your records.

From any computer connected to the Internet, start a web browser (Internet Explorer, Firefox, or Safari) and enter the static IP address followed by :3000 and press enter. An example would be:

<http://24.156.244.16:3000>

The tekmarNet® Gateway login web page will appear. Bookmark this address in the web browser to allow quick and easy access to the tekmarNet® Gateway while on the Internet.

Dynamic IP Address

If the ISP has provided a dynamic IP address, then a free dynamic DNS service is recommended. There are many free dynamic DNS services available. tekmar suggests to use a free service from No-IP.

STEP 1) Go to the web site at <http://www.no-ip.com>

STEP 2) Create an account.

IMPORTANT NOTE:

An e-mail address is used to activate the No-IP account. The same e-mail account cannot be used again to create another No-IP account. Therefore, it is recommended to use the building owner's e-mail address. This requires the building owner to read the e-mail and click on the link to activate the No-IP service.

STEP 3) Open the e-mail sent from No-IP and click on the link to activate the account. This must be done within 48 hours of creating the account.

STEP 4) Go to web site at <http://www.no-ip.com> and login using your account information.

STEP 5) Click "Add a host".

STEP 6) Enter the desired hostname and the domain using the pull down menu. Record the hostname and domain name for future reference. Click "Add a Host".

STEP 7) A confirmation page with all the settings will be shown.

All No-IP settings are now complete and you can logout of the No-IP web site. Now the No-IP update client must be installed on the Mac web host computer.

STEP 8) Download the No-IP Dynamic DNS Update Client software for Mac at <http://www.no-ip.com/downloads.php>

STEP 9) Install the software to the Applications folder. The computer username and password may be required.

STEP 10) Click on Finder, then click on the Applications Folder.

STEP 11) Find the No-IP DUC application and double click to start.

STEP 12) Double click on the Lock symbol. Enter your No-IP username and password and click ok.

STEP 13) Check mark your host name.

STEP 14) Click Daemon and then check mark "Launch Daemon at System Startup".

The installation of the No-IP service is now complete and the window can now be closed by clicking on the red dot in the upper left hand corner.

Creating an Account

Creating a Host Name

DynDNS Update Client

From any computer connected to the Internet, start a web browser and enter the dynamic DNS hostname chosen followed by :3000 and press enter. An example would be:

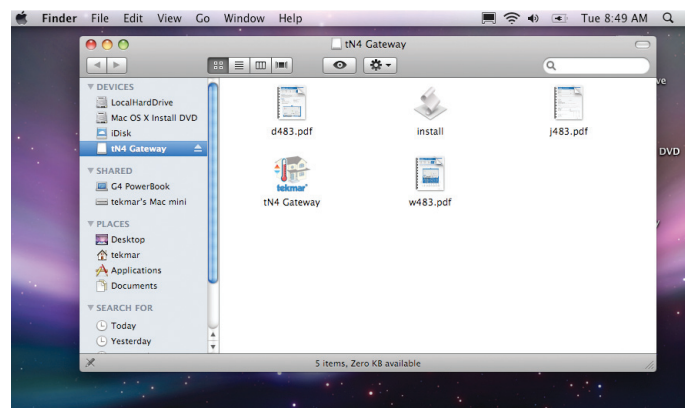
<http://demo483.no-ip.org:3000>

The gateway login page will appear. Bookmark this address in the web browser to allow quick and easy access to the gateway while on the Internet.

Updating the Web Host Software

Free updates to the tekmarNet® 4 Gateway 483 Web Host Software are available from the tekmar web site at:
<http://www.tekmarcontrols.com/tn4/gateway.html>

- STEP 1) Quit the tekmarNet® Gateway application so that it is no longer running.
- STEP 2) Download the web host software. This will be saved to your computer as a DMG file.
- STEP 3) Double click to open the DMG file.
- STEP 4) Double click the “install” icon.
- STEP 5) Click “Yes” when the dialog box asks to install the tN4 Gateway software.



Note: Version 'J1193H' and higher has an option to automatically download and install the current software version remotely without having to go to the job site. To do this, click 'configuration' then click 'software', and 'update software' within the Gateway web pages.

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Product Warranty Return Procedure All Products that are believed to have defects in workmanship or materials must be returned, together with a written description of the defect, to the tekmar Representative assigned to the territory in which such Product is located. If tekmar receives an inquiry from someone other than a tekmar Representative, including an inquiry from Purchaser (if not a tekmar Representative) or Purchaser's customers, regarding a potential warranty claim, tekmar's sole obligation shall be to provide the address and other contact information regarding the appropriate Representative.

