

tekmar tN4 Integration Release Notes

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Introduction

The tekmarNet 2 and tekmarNet 4 thermostats are designed to operate mechanical equipment that control single- and multi-stage heating and cooling, or heat pump systems. These thermostats can be integrated into a ClareHome system using the tekmar tN4 Gateway 482 serial interface. This interface converts the communication signal into an RS-232 signal that is readable by ClareHome's host controllers.

The tekmar tN4 integrates with the ClareHome system in a way similar to the existing HVAC systems. All HVAC systems share a common UI, so that the user experience is consistent. Temperature settings can be controlled via events. Use Fusion's Scenes and Rules to automate the actions your customers want.

By connecting the tekmarNet thermostats to a ClareHome system, your customers can change modes, cool and heat settings, and fan status from their mobile devices, such as iPhones, iPads, and Android phones. To adjust temperature settings, customers can simply slide the heat and cool set points around the dial on their ClareHome display. The following figure shows the tekmar tN4 controls on the ClareHome UI.



- (1) Temperature setting displays on the ClareHome UI in Fahrenheit.
- (2) Change the Heat set point by tapping the up/down arrow.
- (3) Change the Cool set point by tapping the up/down arrow.
- (4) Change the Operation mode by tapping the desired radio button.
- (5) Change the Fan mode by tapping the desired radio button.

Installing tekmar devices

Only qualified HVAC installation technicians should install the tekmar thermostats and the tN4 Gateway 482 serial interface. Refer to the installation instructions that came with your tekmar equipment.

Note: When installing the equipment, your technicians must assign each thermostat a numeric address, usually a four-digit number – for example, "1001". Please have the technicians note the numbers they assign. You will need these numbers when integrating the thermostats in Fusion.

The thermostat numeric address is generated from the following information:

- **Port number** Port number that you are wired into. This is the first digit in the thermostat device number. "1" in the example above.
- **Bus number** Usually 0. This is the second digit in the thermostat device number.
- **Thermostat device number** Displayed on the thermostat at a two-digit number. They are the third and fourth digits in the thermostat device number. "01" in the example above.

Connecting the tN4 Gateway 482

After installing the tekmar thermostats and tN4 Gateway 482, connect the tN4 Gateway 482 serial interface to the ClareHome data network or directly to a CLIQ controller. To connect to the ClareHome data network, you will need to attach an IP-to-Serial adapter, such as a Global Cache' iTach device. To connect the tN4 Gateway 482 directly to a CLIQ controller, you will need to use the RJ12-to-DB9 cable included with your CLIQ controller.

To connect the tN4 Gateway 482 to the ClareHome data network:

- 1. Attach one end of a Category 5 networking cable to a port on the ClareHome data network switch, and then attach the other end of the cable to the RJ-45 jack on the IP-to-Serial adapter. See Figure 2.
- 2. Attach one end of an RS-232 cable to the IP-to-Serial adapter, and then attach the other end to the serial port on the tN4 Gateway 482.

Note: Be sure to note the IP address of IP-to-Serial adapter. You will need this address later when you add the device in Fusion.



Figure 2: Connecting to the ClareHome data network with a serial adapter

Setting the serial parameters in the serial device adapter

To ensure proper communication between the tN4 Gateway 482 and the ClareHome system, set the serial parameters in the IP-to-Serial device as listed below.

Serial Parameter	Setting
Flow control	No hardware
Duplex	Full
Baud Rate	9600
Data Bits	8
Parity	None
Stop Bits	1

Note: To configure the serial adapter, follow the manufacturer's instructions included with the device.

To connect the tN4 Gateway 482 directly to a CLIQ controller:

• Attach the RJ12 end of an RJ12-to-DB9 connector cable (included with your CLIQ controller) to the RS-232 port on the CLIQ controller, and then attach the DB9 end of the cable to the serial port on the tN4 Gateway 482. See Figure 3.

Figure 3: Connecting the tN4 Gateway482 directly to the CLIQ controller



Configuring in Fusion

Once you have connected your tekmar tN4 Gateway 482, you must add and configure it in Fusion. This includes defining the thermostats as child devices. Follow the steps below to add and configure your tekmar tN4 thermostats in Fusion.

To add tekmar tN4 devices in Fusion:

1. Click the **Devices** tab, and then click the **New Device** button ⁽²⁾ to display the Select Template dialog.

type filter text		
> 🙆 Access		[
⊿ 76° Climate		
HVAC Controller		
Aprilaire HVAC Control	oller	
🚍 Tekmar tN4 Gateway	/ 482	
🕨 🛔 IP Thermostats		
Z-Wave Thermostats		
▶ 🛅 Entertainment IP Devices		
Entertainment IR Devices		
🕨 🧰 Entertainment Serial Devi	ces	
🕨 📥 Fireplace		
Lighting		
🕨 🛃 Music		
🕨 💽 Pool		
Screens		
Communication Method: Other		
Communication Method. Other		

- 2. Expand the **Climate** folder, and then select **Tekmar tN4 Gateway 482** from the list.
- 3. When the **Device Wizard** displays, enter the number of thermostats (child devices) that you are adding to your project, and then click **OK**.

C Tekmar tN4 Gatew	ay 482 - Device Wizard			×
Child devices to add				
Tekmar Thermostat	2	÷	Minimum: 1	Maximum: 256
Remaining	254			
			Ok	Cancel

4. Go to the Details tab's **Name** field and enter a name for your tekmar tN4 Gateway 482, the parent device.

💳 Tekmar tN4 Gat	teway 482 Serial Interface 🕱 👘 🗖
Details Configure	Test
Icon:	5
Name:	Tekmar tN4 Gateway 482 Serial Interface
Manufacturer:	Tekmar
Model Number:	tN4 Gateway 482
Master Template:	Tekmar tN4 Gateway 482 Change Device Template
Types:	HVAC Controller, IP Thermostats
Notes:	
Version:	3.1.0
Last Modified	2014/08/19 14:51

5. Click the **Configure** tab.

Fekmar tN4 Gateway 482 S	erial Interface 🛛		
tails Configure Test			
onfiguration Properties			
ame	Value	Mandatory	Description
Network Controller			
Temperature Unit	Fahrenheit	yes	Temperature unit to be displayed on the Clare app for all Tekmar Thermostats con
Network Address	10.100.30.52	no	This is a device configuration property used by ALL HDM adapters that needs to co
Network Port	4999	no	This is a device configuration property used by ALL HDM adapters that needs to co

- 6. If you are using an IP-to-Serial device to connect the tN4 Gateway 482 to a ClareHome data network switch, enter values in these fields:
- Network Address: Enter the IP-to-Serial device's network IP address.
- **Network Port:** Enter the IP-to-Serial device's serial port number. For example, enter 4999 for a Global Cache' IP-to-Serial device.

Note: Check the documentation that came with your IP-to-Serial device to determine its proper network port number.

– or –

If you are connecting to a CLIQ controller serial port, enter a value in this field:

• **CLIQ Serial Port**: Select the port on the back of the CLIQ controller that you are connecting to, as shown below.

Tekmar tN4 Gateway 482	Serial Interface 🛛		-
			리 전 🤜 🦉
Details Configure Test			
Configuration Properties			
Name	Value	Mandatory	Description
 A Network Controller 			
Temperature Unit	Fahrenheit	yes	Temperature unit to be displayed on the Clare app for all Tekmar Thermostats
CLIQ Serial Port	CLIQ.host Serial 1	- •	The CLIQ serial port to use for communicating to the device. Necessary for dir
Serial Baudrate	9600	no	The baud rate serial setting.
Serial Data Bits	8	no	The data bits serial setting.
Serial Parity	None	no	The parity serial setting.
Serial Stop Bits	1	no	The stop bits serial setting.

7. Click the **Save** button \blacksquare .

Naming the thermostats

Next, name the thermostats that you added earlier using the Device Wizard.

To name a thermostat:

1. Return to the **Devices** tab (shown below), and then double-click the first thermostat to display its Details tab.

📼 Devices 🔀 Services 🚟 Scenes 💽 Rules					- 8
			S 🕞 🕒 ଟ 🤻	🖹 🖹 🛋	🖃 🗟 👤
Filter:			Find:		₽ 🛧
Name	App Module	Device Type	Physical Location	Manufacturer	Model Numb
B Security - GE NX-8	Security	Security IP/RS-232		GE	NX Series
Security - Partition 1 Simulator	Access	Contact Closure		Generic	Door
Security - Partition 2 Simulator	Access	Contact Closure		Generic	Door
Security - Partition 3 Simulator	Access	Contact Closure		Generic	Door
🔺 🚍 Tekmar tN4 Gateway 482 Serial Interface	Climate	HVAC Controller, IP Ther		Tekmar	tN4 Gatev
📼 Tekmar Thermostat	Climate	HVAC Controller		Tekmar	tN4 Gatev
📼 Tekmar Thermostat	Climate	HVAC Controller		Tekmar	tN4 Gate
🔲 UI- ipad	User Interface	iPad		Apple	iPad =
Weather	Weather	Weather		Yahoo	1.0.0
•					Þ

2. Go to the **Name** field and enter a name for this thermostat.

In our example, the first thermostat is named "Living Room Thermostat."

E Living Room Th	ermostat 🛛 🖓 🗖
Details Configure	a) Test
Icon:	
Name:	Living Room Thermostat
Manufacturer:	Tekmar
Model Number:	tN4 Gateway 482
Master Template:	Tekmar Thermostat Change Device Template
Types:	HVAC Controller
Notes:	
Version:	3.1.0
Last Modified	2014/08/19 15:34

3. Click the **Configure** tab, and then in the **Value** field, enter the thermostat numeric address. This is the number by your technician during installation.

Living Room Thermostat	×		
etails Configure Test			
Configuration Propertie	s		
Name	Value	Mandatory	Description
General			
Inermostat 1D	1001	yes	This is the restmar thermostat 10. It will be in the format PSNN, where P is t

4. Repeat steps 1 through 3 for each additional thermostat in your project.

Creating a service for each thermostat

1. On the Configure tab, click the **New Service Instance** button ¹² to display the Create Service dialog.

Create Service		x
Service Name:		
Living Room Thermostat		
	OK Cancel Open Wizard	
	OK Cancel Open Wizard	

 In the Service Name field, enter a name for your service. This is the name that appears on the customer's iPhone, iPad, or Android device – for example, Living Room Thermostat. Click Open Wizard to display the Service Instance dialog, and then click the Devices tab. Fusion displays the tab and auto-populates the control points.

Note: If the Control Point check boxes are not automatically selected, select them now.

🔞 New Service Instance			x
Service Devices			
Service Devices	Req. A Control Point Heat/Cool set points Operating mode Temperature meter Fan Mode	Device Master Bedroom Thermostat Master Bedroom Thermostat Master Bedroom Thermostat Master Bedroom Thermostat	Use V V V
		<back next=""> C</back>	Cancel Finish

- 4. Click **Finished**.
- 5. Be sure to deploy your project.

Features supported in ClareHome

ClareHome supports the following features for tekmar tN4 devices.

- Heat/Cool set points
- Off

Auto

Fan OnFan Auto

CoolHeat

- Fan Auto
- Support for scenes, rules, and timers

Note: Humidity is not supported in this release.

Contact information

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