UNITED STATES DISTRICT COURT
FOR THE WESTERN DISTRICT OF TEXAS
WACO DIVISION

ECOFACTOR, INC, Plaintiff, v. GOOGLE LLC, Defendant.	Case No. 6:20-cv-00075 **JURY TRIAL DEMANDED**

FIRST AMENDED COMPLAINT FOR PATENT INFRINGEMENT

This is an action for patent infringement arising under the Patent Laws of the United States of America, 35 U.S.C. § 1 *et seq.*, in which Plaintiff EcoFactor, Inc. ("Plaintiff" or "EcoFactor") makes the following allegations against Defendant Google LLC. ("Defendant"):

INTRODUCTION

1.   This complaint arises from Defendant's unlawful infringement of the following United States patents owned by EcoFactor: U.S. Patent No. 8,180,492 ("'492 Patent"); U.S. Patent No. 8,412,488 ("'488 Patent"); U.S. Patent No. 8,738,327 ("'327 Patent"); and U.S. Patent No. 10,534,382 ("'382 Patent") (collectively the "Asserted Patents").

PARTIES

2.   EcoFactor is a privately held company, having its principal place of business at 441 California Avenue, Number 2, Palo Alto, CA 94301.1 EcoFactor was founded in 2006 and is headquartered in Palo Alto, California. EcoFactor is a leader in smart home energy

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1 Prior to October 2019, EcoFactor's principal place of business was at 1450 Veterans Blvd., Suite 100, Redwood City, CA 94063.

management services. EcoFactor delivers smart home energy management services that improve energy efficiency, reduce energy bills and vastly increase demand response efficacy – all while maintaining consumer comfort. EcoFactor's patented big-data analytics and machine learning algorithms collect and process massive amounts of residential data – including home thermodynamics, family comfort preferences and schedules, plus external data such as weather – to continually monitor, adapt and learn for optimum energy savings. The company provides homeowners significant cost savings and energy usage benefits. EcoFactor's award-winning service has been offered through channel partners such as utilities, energy retailers, broadband service providers and HVAC companies.

3.   EcoFactor has transformed how homes use energy by applying advanced analytics to connected devices in the home. EcoFactor's platform actively manages thermostats on occupants' behalf in intelligent ways that improve comfort while helping them save time, energy and money. Utilities, home service providers and homeowners rely on EcoFactor for demand response, energy efficiency, and HVAC performance monitoring services.

4.   The HVAC industry and researchers in the field recognize the technological and commercial impact of EcoFactor's patented technologies and innovations. For example, EcoFactor's demand response solution has been recognized multiple times from the Association of Energy Services Professionals (AESP) for outstanding achievement in pricing and demand response. EcoFactor was also named "Innovator of the Year" by San Mateo County Economic Development Association for EcoFactor's automated approach to energy efficiency and demand response services, and has also been named Owler HOT in Redwood City, CA. Moreover, EcoFactor received Powergrid International's Demand Response/Energy Efficiency Project of the Year award, and was assessed as one of the top innovators with some of the most

commercially important smart home patents.

5.   Google LLC is a wholly-owned subsidiary of Alphabet, Inc, and a Delaware limited liability company with a principal place of business at 1600 Amphitheatre Parkway, Mountain View, California 94043.   Google LLC operates a division named Google Nest ("Nest") which, on information and belief, designs and manufactures, among other things, smart Thermostats.   Google LLC may be served with process through its registered agent, the Corporation Service Company, at 211 East. 7th Street, Suite 620, Austin, Texas 78701. Google LLC is registered to do business in the State of Texas and has been since at least November 17, 2006.

JURISDICTION AND VENUE

6.   This action arises under the patent laws of the United States, Title 35 of the United States Code. This Court has original subject matter jurisdiction pursuant to 28 U.S.C. §§ 1331 and 1338(a).

7.   This Court has personal jurisdiction over Defendant in this action because Defendant has committed acts within this District giving rise to this action, and has established minimum contacts with this forum such that the exercise of jurisdiction over Defendant would not offend traditional notions of fair play and substantial justice. Defendant, directly and through subsidiaries or intermediaries, has committed and continue to commit acts of infringement in this District by, among other things, importing, offering to sell, and selling products that infringe the asserted patents.

8.   Venue is proper in this District under 28 U.S.C. § 1400(b). Upon information and belief, Defendant has transacted business in this District and has committed acts of direct and indirect infringement in this District by, among other things, making, using, offering to sell,

selling, and importing products that infringe the asserted patents. Defendant has at least one regular and established place of business in the District. For example, Google invested $20 million to build a corporate office at 500 West 2nd Street, Austin, Texas 78701.

COUNT I

INFRINGEMENT OF U.S. PATENT NO. 8,180,492

9.   Plaintiff realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

10.   Plaintiff is the owner and assignee of United States Patent No. 8,180,492 titled "System and method for using a networked electronic device as an occupancy sensor for an energy management system." The '492 Patent was duly and legally issued by the United States Patent and Trademark Office on May 15, 2012. Plaintiff is the owner and assignee, possessing all substantial rights, to the '492 Patent. A true and correct copy of the '492 Patent is attached as Exhibit 1.

11.   Defendant makes, uses, offers for sale, sells, and/or imports into the United States certain products and services that directly infringe, literally and/or under the doctrine of equivalents, one or more claims of the '492 Patent, and continue to do so. By way of illustrative example, these infringing products and services include, without limitation, Defendant's products and services, *e.g.*, all generations of the Google Nest Learning Thermostat and all versions and variations thereof since the issuance of the '492 Patent ("Accused Instrumentalities").

12.   Defendant has had knowledge of the '492 patent from a date no later than the date of filing of this complaint. Defendant has known how the Accused Products are made and has known, or has been willfully blind to the fact, that making, using, offering to sell, and selling the

accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.

13.   Defendant has induced, and continues to induce, infringement of the '492 patent by actively encouraging others (including distributors and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information, education and instructions supporting sales by distributors; providing the Accused Products to distributors; and indemnifying patent infringement within the United States.

14.   Defendant has also infringed, and continue to infringe, claims of the '492 patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Products, which are used in practicing the process, or using the systems, of the patent, and constitute a material part of the invention. Defendant knows the components in the Accused Products to be especially made or especially adapted for use in infringement of the patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. Accordingly, Defendant has been, and currently are, contributorily infringing the '492 patent, in violation of 35 U.S.C. § 271(c).

15.   The Accused Products satisfy all claim limitations of one or more claims of the '492 Patent. For example the Accused Instrumentalities infringe claim 10 of the '492 Patent. One, non-limiting, example of the Accused Instrumentalities' infringement is presented below.
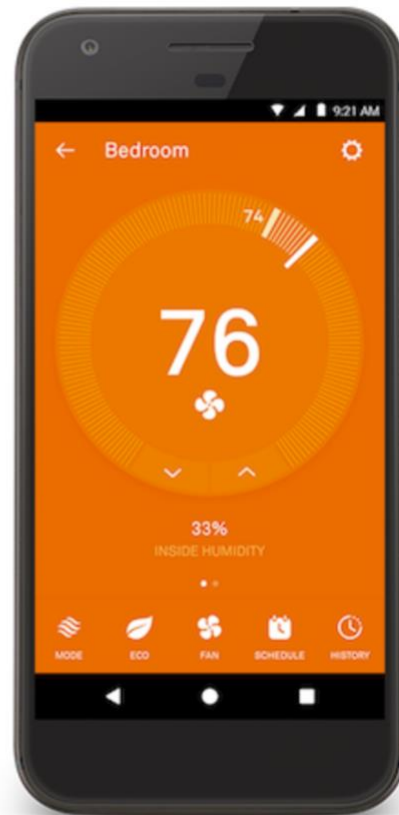
16.   The Accused Instrumentalities include: "A system for altering the setpoint on a thermostat for space conditioning of a structure comprising: at least one thermostat having at least a first temperature setpoint associated with a non-occupied structure, and at least a second temperature setpoint associated with the existence of occupants in said structure." For example,

the Accused Instrumentalities allow users to adjust set points that vary based on whether a structure is occupied.

https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

17.   The Accused Instrumentalities include "one or more electronic devices having at least a graphic user interface comprising a display wherein said electronic devices receive input
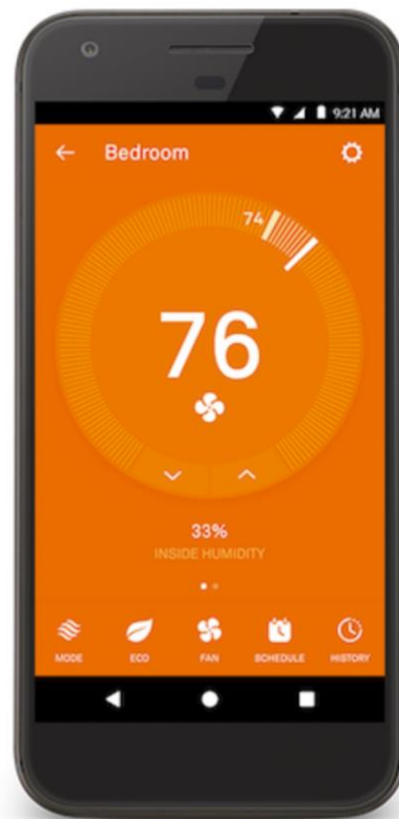
from one or more users and wherein use of said electronic devices comprises at least one of cursor movement, keystrokes or other user interface actions intended to alter a state of one or more of said electronic devices by one or more users wherein activity of one or more networked electronic devices indicates whether said thermostat should be changed from said first temperature setpoint to said second temperature setpoint." For example, the Accused Instrumentalities are designed to work the Google Nets mobile application, that includes a graphic user interface that allows to alter the set points and to move the house between Heat, Cool, Heat/Cool, and Eco modes as well as to set up Home/Away assist and Early-On.

> ### How to switch between Heat, Cool, Heat · Cool, and Off   ^
>
> Your thermostat will automatically switch between Eco and Heat or Cool when you leave home and when you come back, but you can manually set it whenever you want.
>
> You will see different options in this menu depending on the type of equipment you have installed. Follow the link below to learn more.
>
> How to manually set your Nest thermostat to heating, cooling, Eco Temperatures or off >

https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

> ### Home/Away Assist   ^
>
> Home/Away Assist can use your Eco Temperatures to help save energy while no one's home.
>
> How to change Home/Away Assist settings >

https://support.google.com/googlenest/answer/9244728

> ### Early-On won't activate if everyone'e away   ^
>
> As long as someone is home, Early-On can turn on your system early to reach your scheduled temperature on time. But if everyone is away and your thermostat is set to Eco Temperatures, it will wait to start pre-heating or pre-cooling until someone comes home or until someone manually changes the temperature with the app.
>
> If you use Home/Away Assist, your thermostat will try to stay in Eco Temperatures while you're away.

https://support.google.com/googlenest/answer/9246532

18.   The Accused Instrumentalities include "wherein said electronic devices and said thermostat are connected to a network; an application comprising one or more computer processors in communication with said network, wherein said application determines whether said one or more electronic devices are in use and in response, whether said thermostat is set to said first temperature setpoint that indicates said structure is not occupied." For example, a smartphone using the Google Nest application can be designated to provide location information

that is used to determine whether the user is home and thus whether the thermostat should be set

to an unoccupied temperature setpoint.

How to switch between Heat, Cool, Heat · Cool, and Off   ⌃

> Your thermostat will automatically switch between Eco and Heat or Cool when you leave home and
> when you come back, but you can manually set it whenever you want.
>
> You will see different options in this menu depending on the type of equipment you have installed.
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https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

Home/Away Assist   ⌃

> Home/Away Assist can use your Eco Temperatures to help save energy while no one's home.
>
> How to change Home/Away Assist settings >

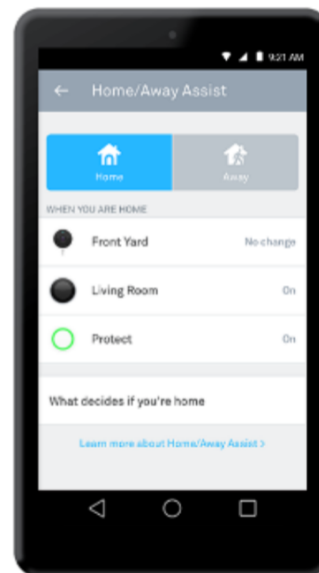https://support.google.com/googlenest/answer/9244728

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How to change what Nest products do when you're home or away

To change how Home/Away Assist controls your Nest products, follow these steps.

1. Open the Nest app on your phone or tablet. If you're on a computer, go to home.nest.com.
2. Tap **Settings** ⚙ in the top right corner of the app home screen.
3. Select **Home/Away Assist**.
4. Tap either the **Home** or **Away** icon at the top of the screen. You'll see a summary of what each of your Nest products will do when your home is in that mode.
5. If you want to make any changes, tap on the Nest product you'd like to control.

In general, if you have multiple Nest products in your home, you have different settings for each one. The one exception is Nest Protect: all the Protects in your home share the same Home/Away Assist settings, so you'll only see one Protect in this list.

Settings for each product's Home/Away Assist options are listed below.

https://support.google.com/googlenest/answer/9261489

19.   The Accused Instrumentalities include "said application determining that said one or more users has previously indicated a preference that said user's input be obtained before automatically changing said first HVAC temperature setpoint to said second HVAC temperature setpoint indicating that said structure is deemed to be occupied; said application prompting said one or more users based on said determining that said one or more of said user's input should be obtained, wherein said application provides electronic notice to one or more of said users of said electronic devices that said thermostat is set for a non-occupied structure and whether to keep said first temperature setpoint or change to said second temperature setpoint; and wherein said application in response to said prompting, receives input from said one or more users to keep said first HVAC temperature setpoint; and wherein said thermostat is kept at said first

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temperature setpoint based upon said input from said one or more users." For example, the Accused Instrumentalities will store schedules set by a user that determine whether and when to switch to an active Heating/Cooling from an away Eco state. The user can access these settings and modify the settings by use of the mobile application.   The user can also disable auto-scheduling so that user input is required to switch between modes. Further, the user can set and enable or disable Home/Away assist and Early-On modes.

How to switch between Heat, Cool, Heat • Cool, and Off   ⌃

> Your thermostat will automatically switch between Eco and Heat or Cool when you leave home and when you come back, but you can manually set it whenever you want.
>
> You will see different options in this menu depending on the type of equipment you have installed. Follow the link below to learn more.
>
> How to manually set your Nest thermostat to heating, cooling, Eco Temperatures or off >

https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

Home/Away Assist   ⌃

> Home/Away Assist can use your Eco Temperatures to help save energy while no one's home.
>
> How to change Home/Away Assist settings >

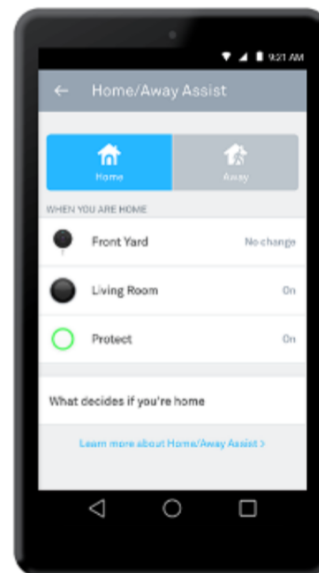https://support.google.com/googlenest/answer/9244728

How to change what Nest products do when you're home or away   ⌃

To change how Home/Away Assist controls your Nest products, follow these steps.

1. Open the Nest app on your phone or tablet. If you're on a computer, go to home.nest.com.
2. Tap **Settings** ⚙ in the top right corner of the app home screen.
3. Select **Home/Away Assist**.
4. Tap either the **Home** or **Away** icon at the top of the screen. You'll see a summary of what each of your Nest products will do when your home is in that mode.
5. If you want to make any changes, tap on the Nest product you'd like to control.

In general, if you have multiple Nest products in your home, you have different settings for each one. The one exception is Nest Protect: all the Protects in your home share the same Home/Away Assist settings, so you'll only see one Protect in this list.

Settings for each product's Home/Away Assist options are listed below.

https://support.google.com/googlenest/answer/9261489

Schedule (Nest Thermostat E)   ⌃

Note: If you have a Nest Learning Thermostat, you'll find the **thermostat schedule** 📅 in the Quick View menu instead.

Depending on the type of system you have, you can set up to 3 different schedules for Heat, Cool, and Heat·Cool. If you have a fan installed, you can also set a separate fan schedule.

Before you adjust your schedule, make sure you've selected the correct **mode** ≋: Heat, Cool, or Heat·Cool.

Select **Schedule** to see the temperature schedule for the mode that your thermostat is currently set to. You can set a new schedule or edit your current one.

You can also view and set your thermostat's schedule in the Nest app.

Learn about Nest thermostat temperature schedules and how to change them

How Nest thermostats are different from programmable thermostats ⌃

Programmable thermostats will simply continue cycling through their schedule even if nobody's home. Nest thermostats can prevent this waste by automatically detecting when everyone's gone, using Home/Away Assist. When no one's home, your Nest thermostat will set itself to your Eco Temperatures to help save energy.

Nest thermostats use their unique Nest Sense and Auto-Schedule features to create a dynamic, comfortable schedule that's personalized for you and your home.

Learn about Auto-Schedule ⌃

All Nest thermostats have Auto-Schedule, and it's turned on by default when you install your thermostat to help keep you comfortable and help save energy.

With Auto-Schedule, you don't have to manually program your thermostat to save energy. Simply change the temperature to get comfortable whenever you like with the Nest app or on the thermostat itself, and it will learn from your preferences. After a few days, it will program a schedule for you, based on what temperatures you prefer and when you want them.

For more details, see the following article:

Learn about Auto-Schedule

How to turn off Auto-Schedule ⌃

In the first few days after you install it, your Nest thermostat will learn what temperatures you like and when you want them. It will automatically create a temperature schedule for you. If you don't want to use this feature and program your own schedule, you can turn off Auto-Schedule on the thermostat. See the following article for full instructions:

How to use your Nest thermostat as a traditional programmable thermostat

https://support.google.com/googlenest/answer/9243487

Early-On won't activate if everyone'e away ⌃

As long as someone is home, Early-On can turn on your system early to reach your scheduled temperature on time. But if everyone is away and your thermostat is set to Eco Temperatures, it will wait to start pre-heating or pre-cooling until someone comes home or until someone manually changes the temperature with the app.

If you use Home/Away Assist, your thermostat will try to stay in Eco Temperatures while you're away.

https://support.google.com/googlenest/answer/9246532

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How Home/Away Assist works ⌃

You can open the Nest app any time to see whether your home is in **Home** or **Away** mode.

There are two ways Home/Away Assist determines whether anybody's home: where people's phones are, and whether Nest products are currently noticing any activity in your home.

How Home/Away Assist decides to switch your home to Home or Away >

How to change Home/Away Assist settings ⌃

What happens when you leave and come home depends on which products you have connected to the Nest app and how you've set their behaviors.

During setup, the Nest app will ask if you want your product to use information from Home/Away Assist to automatically switch behaviors. Any time after setup, you can easily change Home/Away Assist behavior in Settings.

If you don't want to use Home/Away Assist, you don't have to.

https://support.google.com/googlenest/answer/9257400

20.   Defendant's infringement has been and is willful. Defendant knew of the '492 patent long before this suit was filed. For example, Defendant submitted the '492 patent as relevant prior art in prosecuting its own patent applications numerous times. Indeed, the following 43 patents by Defendant are non-exhaustive examples of Defendant's patents and patent applications that cite to the '492 patent: US8510255B2, US8511577B2, US8532827B2, US8620841B1, US8622314B2, US8727611B2, US8754775B2, US8924027B2, US8950686B2, US8963727B2, US8965587B2, US8994540B2, US9026232B2, US9081405B2, US9091453B2, US9182140B2, US9189751B2, US9256230B2, US9268344B2, US9298197B2, US9298196B2, US9342082B2, US9360229B2, US9417637B2, US9429962B2, US9453655B2, US9459018B2, US9595070B2, US9696735B2, US9714772B2, US9732979B2, US9810442B2, US9857238B2, US9890970B2,   US9910449B2,   US9952573B2,   US9998475B2,   US10101050B2, US10107513B2, US10145577B2, US10346275B2, US10452083B2, US10663443B2. On

information and belief, Defendant studied EcoFactor's patent portfolio, including the asserted patents. Moreover, EcoFactor communicated with Defendant in the 2015 and 2018 time frame, including regarding EcoFactor's patent portfolio, including the asserted patents. In these discussions, EcoFactor notified Defendant of the asserted patents, including the '492 patent. Despite Defendant's knowledge of the '492 patent, Defendant continued to infringe. In doing so, Defendant knew, or should have known, that its conduct amounted to infringement of the '492 patent. Indeed, Defendant knew that the asserted patents are directed to its Nest line of products, and knew, or should have known, that the asserted patents cover its Nest line of products. Accordingly, Defendant is liable for willful infringement.

21.   By making, using, offering for sale, selling and/or importing into the United States the Accused Products, Defendant has injured Plaintiff and is liable for infringement of the '492 Patent pursuant to 35 U.S.C. § 271.

22.   As a result of Defendant's infringement of the '492 Patent, Plaintiff is entitled to monetary damages in an amount adequate to compensate for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

23.   Defendant's infringing activities have injured and will continue to injure Plaintiff, unless and until this Court enters an injunction prohibiting further infringement of the '492 Patent, and, specifically, enjoining further manufacture, use, sale, importation, and/or offers for sale that come within the scope of the patent claims.

<u>**COUNT II**</u>

<u>**INFRINGEMENT OF U.S. PATENT NO. 8,412,488**</u>

24.   Plaintiff realleges and incorporates by reference the foregoing paragraphs as if

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fully set forth herein.

25.   Plaintiff is the owner and assignee of United States Patent No. 8,412,488 titled "System and method for using a network of thermostats as tool to verify peak demand reduction."   The '488 patent was duly and legally issued by the United States Patent and Trademark Office on April 2, 2013.   Plaintiff is the owner and assignee, possessing all substantial rights, to the '488 Patent. A true and correct copy of the '488 Patent is attached as Exhibit 2.

26.   Defendants make, use, offer for sale, sell, and/or import into the United States certain products and services that directly infringe, literally and/or under the doctrine of equivalents, one or more claims of the '488 Patent, and continue to do so. By way of illustrative example, these infringing products and services include, without limitation, Defendant's products and services, *e.g.*, such all generations of the Google Nest Learning Thermostat and all versions and variations thereof since the issuance of the '488 Patent ("Accused Instrumentalities").

27.   Defendant has had knowledge of the '488 patent from a date no later than the date of filing of this complaint. Defendant has known how the Accused Products are made and has known, or has been willfully blind to the fact, that making, using, offering to sell, and selling the accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.

28.   Defendant has induced, and continues to induce, infringement of the '488 patent by actively encouraging others (including distributors and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information,

education and instructions supporting sales by distributors; providing the Accused Products to distributors; and indemnifying patent infringement within the United States.

29.   Defendant has also infringed, and continue to infringe, claims of the '488 patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Products, which are used in practicing the process, or using the systems, of the patent, and constitute a material part of the invention. Defendant knows the components in the Accused Products to be especially made or especially adapted for use in infringement of the patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. Accordingly, Defendant has been, and currently are, contributorily infringing the '488 patent, in violation of 35 U.S.C. § 271(c).

30.   The Accused Products satisfy all claim limitations of one or more claims of the '488 Patent. For example the Accused Instrumentalities infringe claim 1 of the '488 Patent. One, non-limiting, example of the Accused Instrumentalities' infringement is presented below.

31.   The Accused Instrumentalities include "[a] system for monitoring the operational status of an HVAC system comprising: at least one HVAC control system associated with a first structure that receives temperature measurements from at least a first structure conditioned by at least one HVAC system." For example, Accused Instrumentalities receive temperature measurements from inside the building that it is servicing.
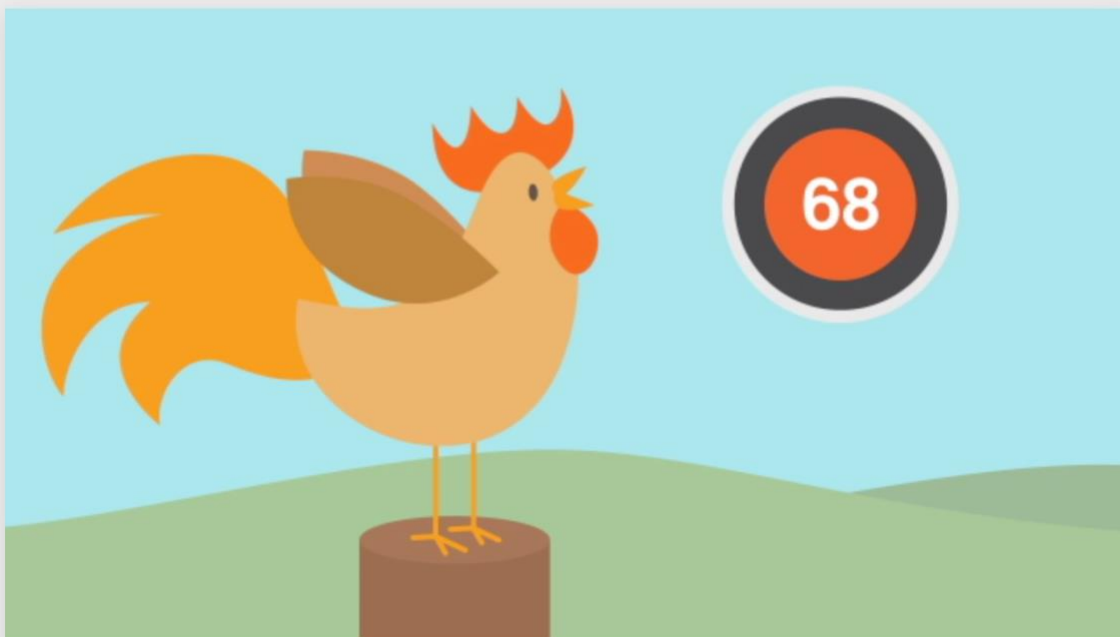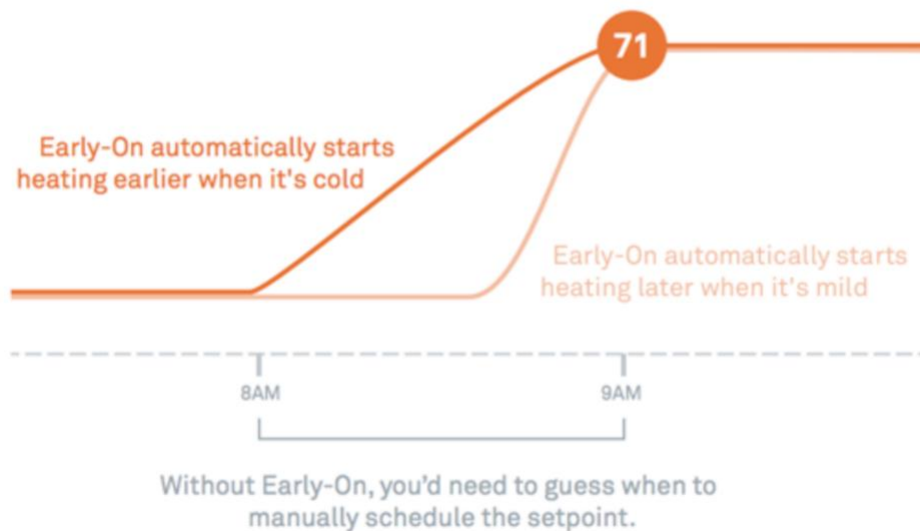
Early On

Want it to be 68° at 7am? Early-On will figure out when to turn up the heat so you'll wake up to a perfectly warm house.

Learn more about Early-On >

Early-On may help save energy in your home   ⌃

With your old thermostat, if you wanted your home to be warm by 9:00am every day, you might have scheduled heating to start at 8:00am. Early-On can calculate how long it will take to heat your home in the morning, and it may not need the full hour of extra heat to keep you comfortable. On a mild day, it might only need to start heating at 8:50am.

Early-On automatically starts heating earlier when it's cold

Early-On automatically starts heating later when it's mild

8AM   9AM

Without Early-On, you'd need to guess when to manually schedule the setpoint.

Early-On is great if you've been guessing and setting your own "Early-On" temperature in your schedule. Now you can set your schedule for the temperature you want when you want it, and Early-On will take care of the rest.

https://support.google.com/googlenest/answer/9246532?hl=en

32.   The Accused Instrumentalities include "one or more processors that receive measurements of outside temperatures from at least one source other than said HVAC system." For example, the Accused Instrumentalities receive measurements of outside temperature and sunset and sunrise information from the internet.

Temperature measurement of first location conditioned by HVAC system (i.e., room temperature)
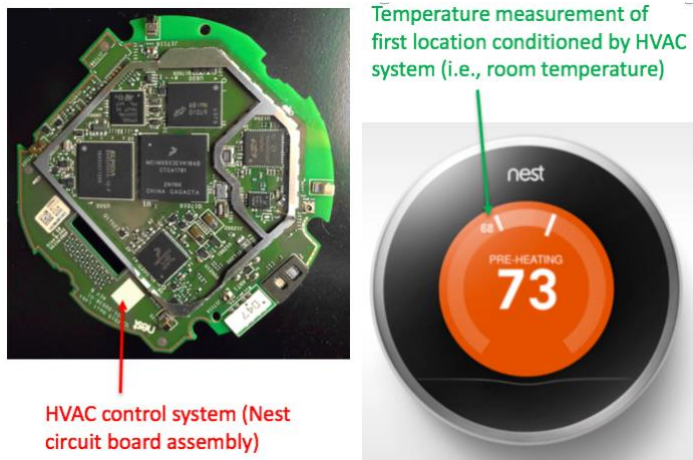
HVAC control system (Nest circuit board assembly)

Learn about Early-On and how to change settings

When Early-On is enabled, your Nest thermostat automatically calculates when to turn on heating or cooling so your home will reach a scheduled temperature on time. To do this, your thermostat takes into account the weather, what it has learned about how quickly your home warms and cools, and how efficient your system is.

Early-On works a lot like pre-heating the oven when you're making cookies. You typically start heating your oven a few minutes ahead of time so that it's the right temperature when you're ready to put your batch of cookies in to bake. Now imagine that your oven knew you'd be done mixing the dough at 5pm and would automatically turn on early to be 350°F/175°C right at 5pm.
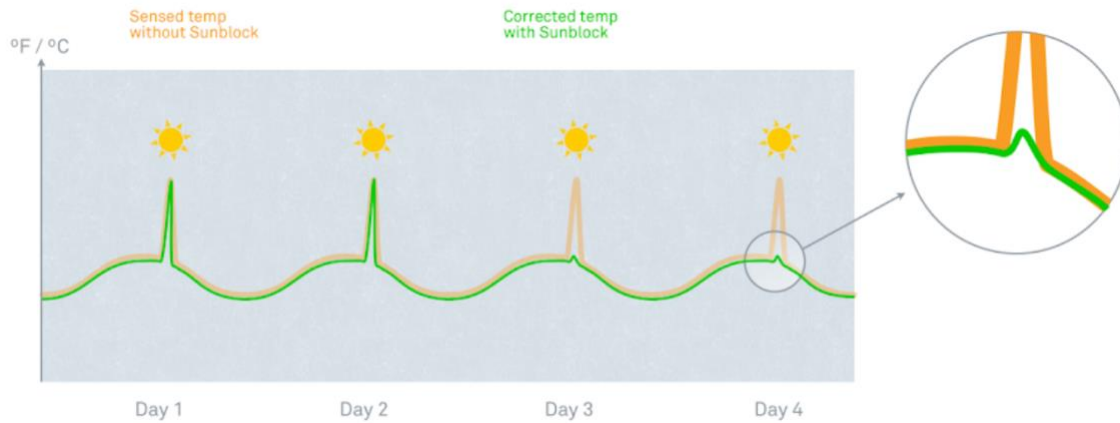
https://support.google.com/googlenest/answer/9246532

https://store.google.com/product/nest_learning_thermostat_3rd_gen

How sunblock works ⌃

Sunblock uses the Nest thermostat's built-in light sensor to track the sun's patterns and its temperature sensors to detect the heat spikes that occur in direct sunlight. If your thermostat is connected to Wi-Fi, it'll also take into account sunrise and sunset time. Sunblock then uses all this information to set your Nest thermostat to the correct temperature whenever it's in direct sunlight.
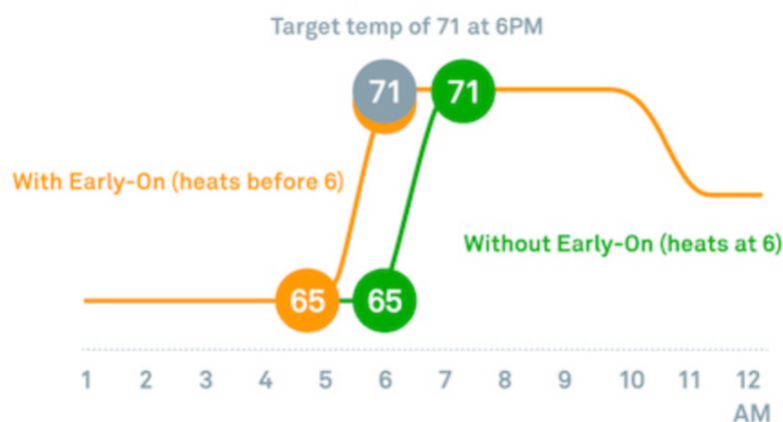

https://support.google.com/googlenest/answer/9249796

With Early-On

After your thermostat has learned about your home, here's what to expect when Early-On is enabled:

- Your thermostat will start heating or cooling your home **before the scheduled time**, using what it has learned about your home to predict how long it will take to reach the target temperature.
- For example, if your schedule has a target temperature of 72°F/22°C at 6:00pm, your thermostat might start heating or cooling at 5:30pm to get your home to 72°F/22°C at 6:00pm.

When Early-On starts your system varies based on factors like the weather and how long it's taken to heat or cool your home in the past. If you enable Early-On, your thermostat can begin heating up to 5 hours before a scheduled temperature.
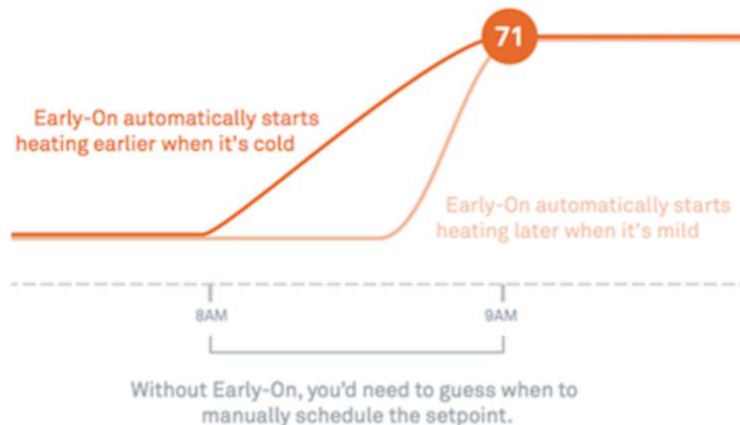

How Early-On learns

Early-On will continually adapt to the weather forecast and how fast your home heats up or cools down so it can improve its Time-to-Temperature estimates and keep you comfortable while helping to saving energy.

For example, on a cold day the Nest thermostat might need to start heating at 5:00am to reach your target temperature by 7:00am. But on a mild day, the thermostat may only need to start heating at 6:50am.

Early-On may help save energy in your home   ︿

With your old thermostat, if you wanted your home to be warm by 9:00am every day, you might have scheduled heating to start at 8:00am. Early-On can calculate how long it will take to heat your home in the morning, and it may not need the full hour of extra heat to keep you comfortable. On a mild day, it might only need to start heating at 8:50am.

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Early-On automatically starts heating earlier when it's cold

Early-On automatically starts heating later when it's mild

8AM   9AM

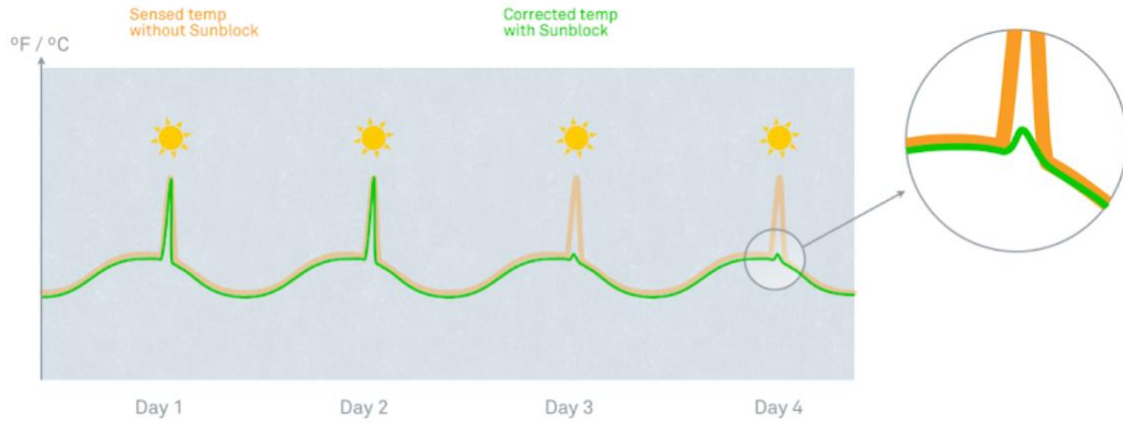Without Early-On, you'd need to guess when to manually schedule the setpoint.

Early-On is great if you've been guessing and setting your own "Early-On" temperature in your schedule. Now you can set your schedule for the temperature you want when you want it, and Early-On will take care of the rest.

https://support.google.com/googlenest/answer/9246532

33.   The Accused Instrumentalities include "wherein said one or more processors compares the inside temperature of said first structure and the outside temperature over time to derive an estimation for the rate of change in inside temperature of said first structure in response to outside temperature, and wherein said one or more processors compare an inside temperature recorded inside the first structure with said estimation for the rate of change in inside temperature of said first structure to determine whether the first HVAC system is on or off." For example, the Accused Instrumentalities will compare internal temperature and external temperature and, other factors, to calculate the rate of change of inside temperature, and use this calculation to determine when to turn the HVAC system on or off.

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How sunblock works

Sunblock uses the Nest thermostat's built-in light sensor to track the sun's patterns and its temperature sensors to detect the heat spikes that occur in direct sunlight. If your thermostat is connected to Wi-Fi, it'll also take into account sunrise and sunset time. Sunblock then uses all this information to set your Nest thermostat to the correct temperature whenever it's in direct sunlight.
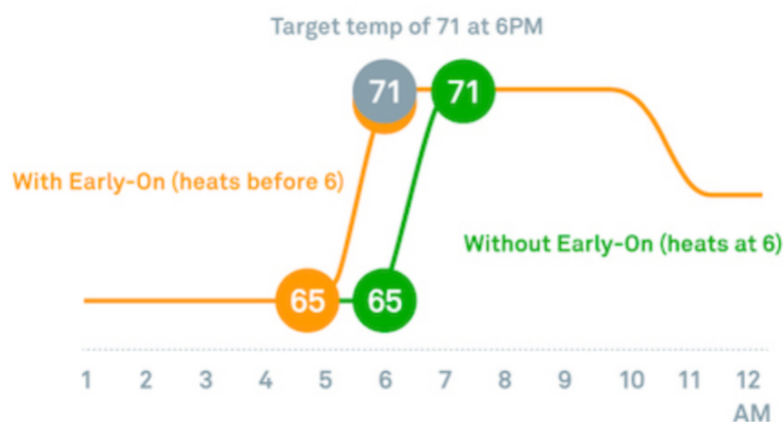

https://support.google.com/googlenest/answer/9249796

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With Early-On

After your thermostat has learned about your home, here's what to expect when Early-On is enabled:

- Your thermostat will start heating or cooling your home **before the scheduled time**, using what it has learned about your home to predict how long it will take to reach the target temperature.
- For example, if your schedule has a target temperature of 72°F/22°C at 6:00pm, your thermostat might start heating or cooling at 5:30pm to get your home to 72°F/22°C at 6:00pm.

When Early-On starts your system varies based on factors like the weather and how long it's taken to heat or cool your home in the past. If you enable Early-On, your thermostat can begin heating up to 5 hours before a scheduled temperature.
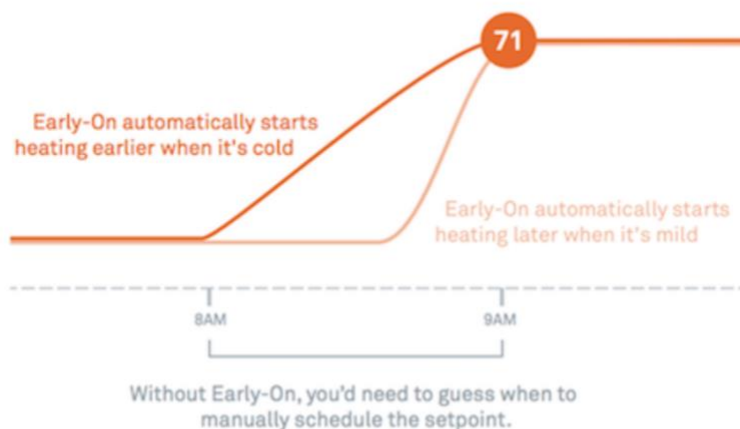

How Early-On learns

Early-On will continually adapt to the weather forecast and how fast your home heats up or cools down so it can improve its Time-to-Temperature estimates and keep you comfortable while helping to saving energy.

For example, on a cold day the Nest thermostat might need to start heating at 5:00am to reach your target temperature by 7:00am. But on a mild day, the thermostat may only need to start heating at 6:50am.

Early-On may help save energy in your home

With your old thermostat, if you wanted your home to be warm by 9:00am every day, you might have scheduled heating to start at 8:00am. Early-On can calculate how long it will take to heat your home in the morning, and it may not need the full hour of extra heat to keep you comfortable. On a mild day, it might only need to start heating at 8:50am.

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8AM   9AM

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Early-On is great if you've been guessing and setting your own "Early-On" temperature in your schedule. Now you can set your schedule for the temperature you want when you want it, and Early-On will take care of the rest.

https://support.google.com/googlenest/answer/9246532

34.   Defendant's infringement has been and is willful. Defendant knew of the '488 patent long before this suit was filed. For example, Defendant submitted the '488 patent as relevant prior art in prosecuting its own patent applications numerous times. Indeed, the following patents by Defendant are non-exhaustive examples of Defendant's patents and patent applications that cite to the '488 patent or related EcoFactor patent: US9453655B2, US10346275B2, US9075419B2, US9098279B2, US9046898B2, US9459018B2, US9256230B2, US8850348B2, US9104211B2, US8893032B2, US9595070B2, US9807099B2, US9810442B2, US9298197B2, US9910449B2, US10101050B2, US8727611B2, US8195313B1, US8622314B2, WO2013149210A1, WO2013059671A1. On information and belief, Defendant studied EcoFactor's patent portfolio, including the asserted patents. Moreover, EcoFactor communicated

with Defendant in the 2015 and 2018 time frame, including regarding EcoFactor's patent portfolio, including the asserted patents. In these discussions, EcoFactor notified Defendant of the asserted patents, including the '488 patent. Despite Defendant's knowledge of the '488 patent, Defendant continued to infringe. In doing so, Defendant knew, or should have known, that its conduct amounted to infringement of the '488 patent. Indeed, Defendant knew that the asserted patents are directed to its Nest line of products, and knew, or should have known, that the asserted patents cover its Nest line of products. Accordingly, Defendant is liable for willful infringement.

35.   By making, using, offering for sale, selling and/or importing into the United States the Accused Products, Defendant has injured Plaintiff and is liable for infringement of the '488 Patent pursuant to 35 U.S.C. § 271.

36.   As a result of Defendant's infringement of the '488 Patent, Plaintiff is entitled to monetary damages in an amount adequate to compensate for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

37.   Defendant's infringing activities have injured and will continue to injure Plaintiff, unless and until this Court enters an injunction prohibiting further infringement of the '488 Patent, and, specifically, enjoining further manufacture, use, sale, importation, and/or offers for sale that come within the scope of the patent claims.

COUNT III

INFRINGEMENT OF U.S. PATENT NO. 8,738,327

38.   Plaintiff realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

39.   Plaintiff is the owner and assignee of United States Patent No. 8,738,327 titled "System and method for using a network of thermostats as tool to verify peak demand reduction."   The '327 patent was duly and legally issued by the United States Patent and Trademark Office on May 27, 2014.   Plaintiff is the owner and assignee, possessing all substantial rights, to the '327 Patent. A true and correct copy of the '327 Patent is attached as Exhibit 3.

40.   Defendants make, use, offer for sale, sell, and/or import into the United States certain products and services that directly infringe, literally and/or under the doctrine of equivalents, one or more claims of the '327 Patent, and continue to do so. By way of illustrative example, these infringing products and services include, without limitation, Defendant's products and services, *e.g.*, such as all generations of the Google Nest Learning Thermostat and and all versions and variations thereof since the issuance of the '327 Patent ("Accused Instrumentalities").
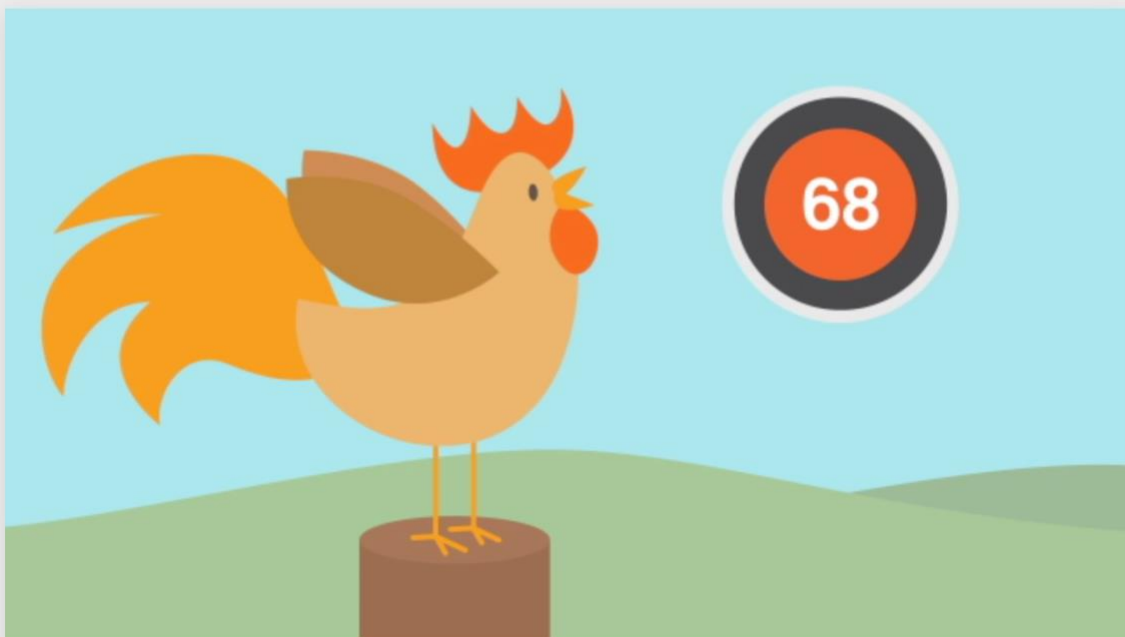
41.   Defendant has had knowledge of the '327 patent from a date no later than the date of filing of this complaint. Defendant has known how the Accused Products are made and have known, or have been willfully blind to the fact, that making, using, offering to sell, and selling the accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.

42.   Defendant has induced, and continue to induce, infringement of the '327 patent by actively encouraging others (including distributors and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information,

education and instructions supporting sales by distributors; providing the Accused Products to distributors; and indemnifying patent infringement within the United States.

43.   Defendant has also infringed, and continue to infringe, claims of the '327 patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Products, which are used in practicing the process, or using the systems, of the patent, and constitute a material part of the invention. Defendant knows the components in the Accused Products to be especially made or especially adapted for use in infringement of the patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. Accordingly, Defendant has been, and currently are, contributorily infringing the '327 patent, in violation of 35 U.S.C. § 271(c).

44.   The Accused Products satisfy all claim limitations of one or more claims of the '327 Patent. One, non-limiting, example of the Accused Instrumentalities' infringement is presented below. For example, the Accused Instrumentalities include "[a] system for controlling the operational status of an HVAC system comprising: at least one thermostat associated with a structure that receives temperature measurements from inside the structure, the structure conditioned by at least one HVAC system, the thermostat having at least a first setting stored therein." For example, the Accused Instrumentalities have a thermostat that receives temperature settings from inside the structure which can store settings, including a schedule for heating and cooling, set points, whether the device is in Heat/Cool, Heat, Cool, or Eco modes, whether to enable Home/Away assist, whether to enable automatic scheduling, and whether to enable Early-On.
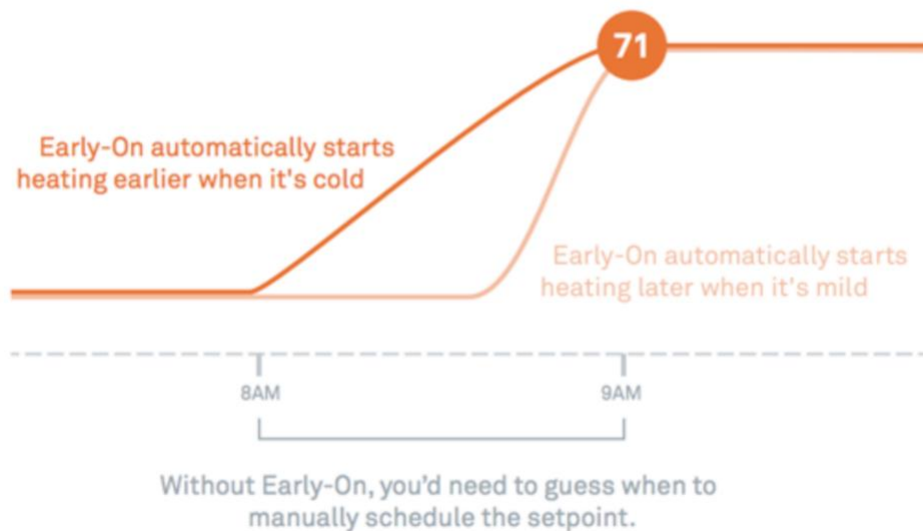
Early On

Want it to be 68° at 7am? Early-On will figure out when to turn up the heat so you'll wake up to a perfectly warm house.

Learn more about Early-On >

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Early-On may help save energy in your home   ⌃

With your old thermostat, if you wanted your home to be warm by 9:00am every day, you might have scheduled heating to start at 8:00am. Early-On can calculate how long it will take to heat your home in the morning, and it may not need the full hour of extra heat to keep you comfortable. On a mild day, it might only need to start heating at 8:50am.

71

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Without Early-On, you'd need to guess when to manually schedule the setpoint.
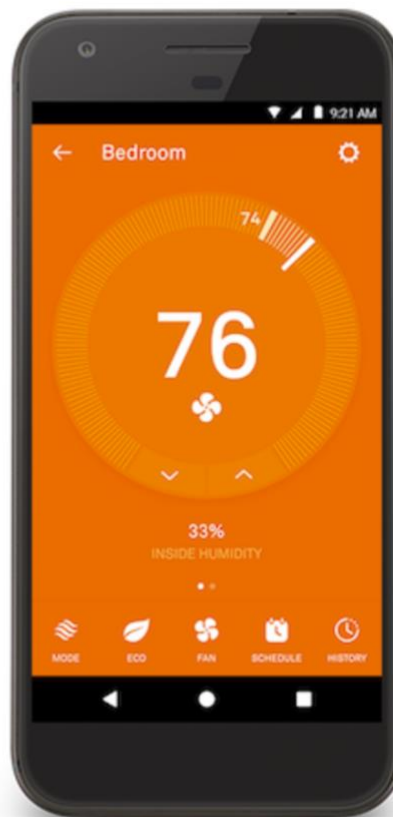
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https://support.google.com/googlenest/answer/9246532?hl=en

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https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

45.   For example, the Accused Instrumentalities include "one or more servers located remotely from the structure, the one or more servers configured to receive measurements of outside temperatures from at least one source other than the HVAC system." For example, the

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Accused Instrumentalities receive measurements of outside temperature from the internet.

Learn about Early-On and how to change settings

When Early-On is enabled, your Nest thermostat automatically calculates when to turn on heating or cooling so your home will reach a scheduled temperature on time. To do this, your thermostat takes into account the weather, what it has learned about how quickly your home warms and cools, and how efficient your system is.

Early-On works a lot like pre-heating the oven when you're making cookies. You typically start heating your oven a few minutes ahead of time so that it's the right temperature when you're ready to put your batch of cookies in to bake. Now imagine that your oven knew you'd be done mixing the dough at 5pm and would automatically turn on early to be 350°F/175°C right at 5pm.
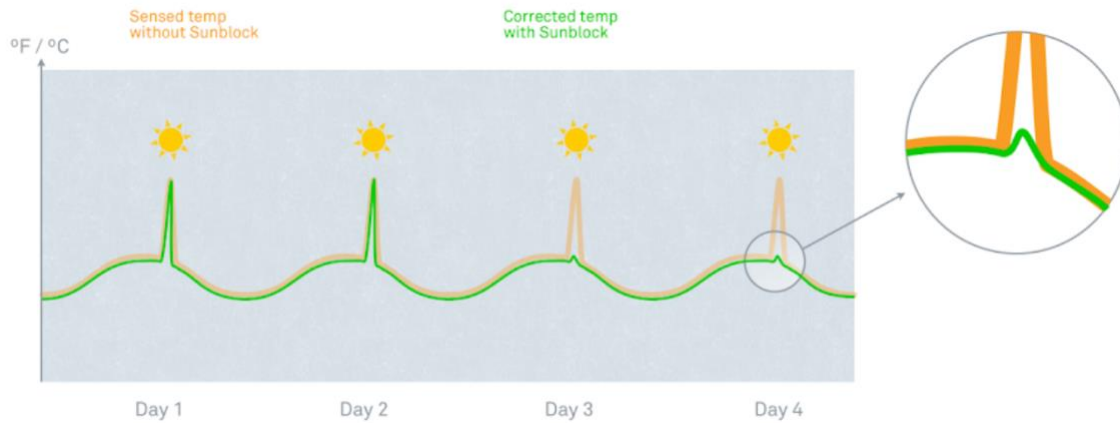
https://support.google.com/googlenest/answer/9246532

https://store.google.com/product/nest_learning_thermostat_3rd_gen

How sunblock works   ⌃

Sunblock uses the Nest thermostat's built-in light sensor to track the sun's patterns and its temperature sensors to detect the heat spikes that occur in direct sunlight. If your thermostat is connected to Wi-Fi, it'll also take into account sunrise and sunset time. Sunblock then uses all this information to set your Nest thermostat to the correct temperature whenever it's in direct sunlight.
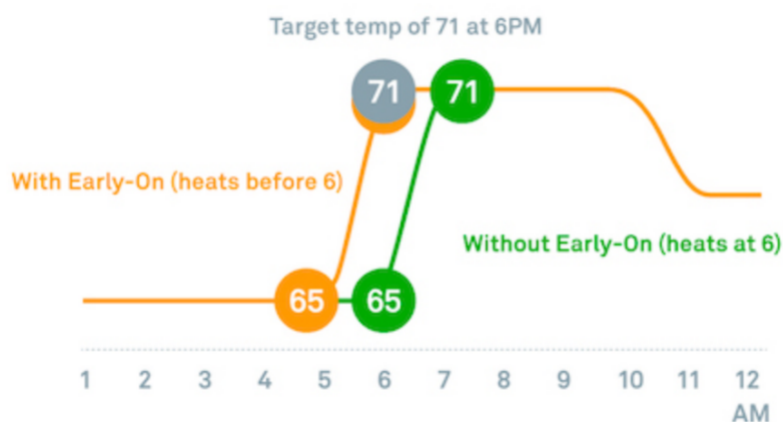

https://support.google.com/googlenest/answer/9249796

With Early-On

After your thermostat has learned about your home, here's what to expect when Early-On is enabled:

- Your thermostat will start heating or cooling your home **before the scheduled time**, using what it has learned about your home to predict how long it will take to reach the target temperature.
- For example, if your schedule has a target temperature of 72°F/22°C at 6:00pm, your thermostat might start heating or cooling at 5:30pm to get your home to 72°F/22°C at 6:00pm.

When Early-On starts your system varies based on factors like the weather and how long it's taken to heat or cool your home in the past. If you enable Early-On, your thermostat can begin heating up to 5 hours before a scheduled temperature.

How Early-On learns

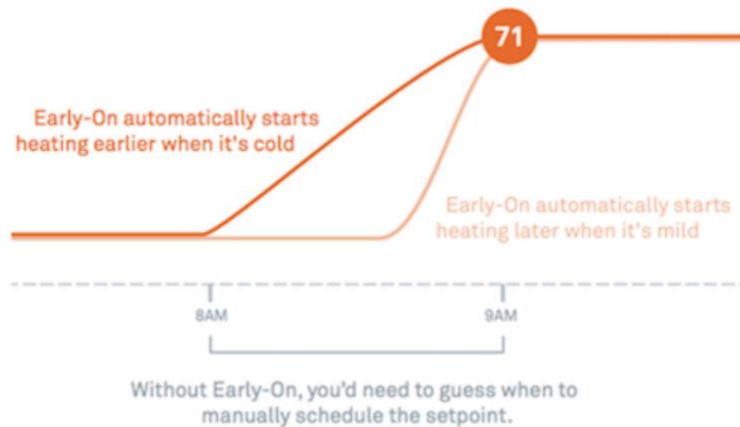Early-On will continually adapt to the weather forecast and how fast your home heats up or cools down so it can improve its Time-to-Temperature estimates and keep you comfortable while helping to saving energy.

For example, on a cold day the Nest thermostat might need to start heating at 5:00am to reach your target temperature by 7:00am. But on a mild day, the thermostat may only need to start heating at 6:50am.

Early-On may help save energy in your home

With your old thermostat, if you wanted your home to be warm by 9:00am every day, you might have scheduled heating to start at 8:00am. Early-On can calculate how long it will take to heat your home in the morning, and it may not need the full hour of extra heat to keep you comfortable. On a mild day, it might only need to start heating at 8:50am.

Early-On automatically starts heating earlier when it's cold

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https://support.google.com/googlenest/answer/9246532

46.   For example, Accused Instrumentalities include "the one or more servers are further configured to communicate with the thermostat via a network, wherein the one or more servers receive inside temperatures from the thermostat and compares the inside temperatures of the structure and the outside temperatures over time to derive an estimation for the rate of change in inside temperature of the structure in response to outside temperature." For example, the Accused Instrumentalities will compare internal temperature and external temperature and, other factors, to calculate the rate of change of inside temperature in order to allow Early-On, auto scheduling, and Home/Away Assist modes to operate.

Learn about Early-On and how to change settings

When Early-On is enabled, your Nest thermostat automatically calculates when to turn on heating or cooling so your home will reach a scheduled temperature on time. To do this, your thermostat takes into account the weather, what it has learned about how quickly your home warms and cools, and how efficient your system is.

Early-On works a lot like pre-heating the oven when you're making cookies. You typically start heating your oven a few minutes ahead of time so that it's the right temperature when you're ready to put your batch of cookies in to bake. Now imagine that your oven knew you'd be done mixing the dough at 5pm and would automatically turn on early to be 350°F/175°C right at 5pm.
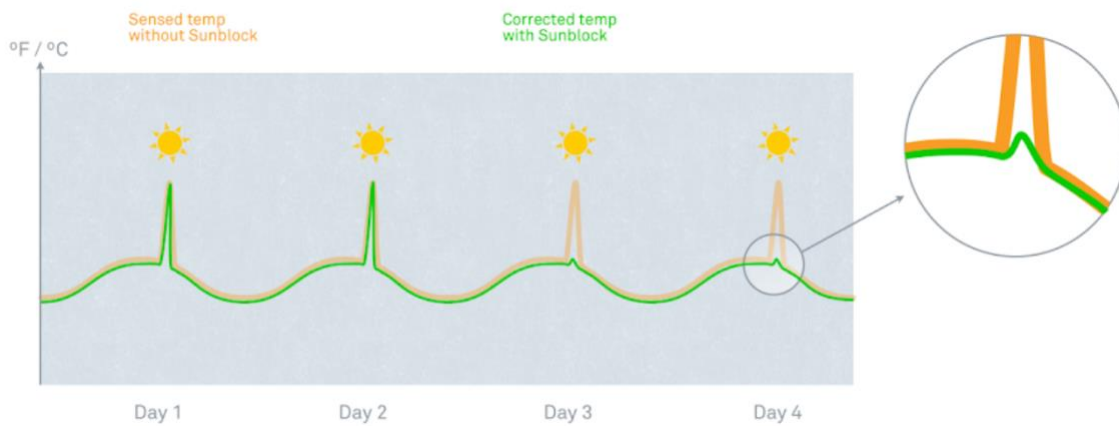
https://support.google.com/googlenest/answer/9246532

https://store.google.com/product/nest_learning_thermostat_3rd_gen

How sunblock works ∧

Sunblock uses the Nest thermostat's built-in light sensor to track the sun's patterns and its temperature sensors to detect the heat spikes that occur in direct sunlight. If your thermostat is connected to Wi-Fi, it'll also take into account sunrise and sunset time. Sunblock then uses all this information to set your Nest thermostat to the correct temperature whenever it's in direct sunlight.
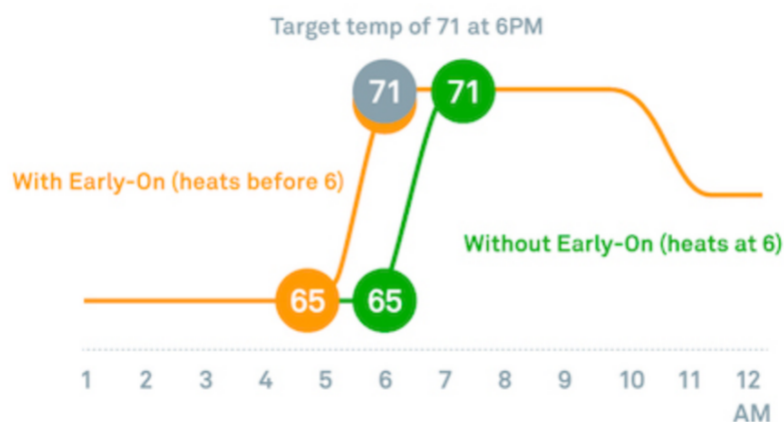

https://support.google.com/googlenest/answer/9249796

40

With Early-On

After your thermostat has learned about your home, here's what to expect when Early-On is enabled:

- Your thermostat will start heating or cooling your home **before the scheduled time**, using what it has learned about your home to predict how long it will take to reach the target temperature.
- For example, if your schedule has a target temperature of 72°F/22°C at 6:00pm, your thermostat might start heating or cooling at 5:30pm to get your home to 72°F/22°C at 6:00pm.

When Early-On starts your system varies based on factors like the weather and how long it's taken to heat or cool your home in the past. If you enable Early-On, your thermostat can begin heating up to 5 hours before a scheduled temperature.

How Early-On learns

Early-On will continually adapt to the weather forecast and how fast your home heats up or cools down so it can improve its Time-to-Temperature estimates and keep you comfortable while helping to saving energy.

For example, on a cold day the Nest thermostat might need to start heating at 5:00am to reach your target temperature by 7:00am. But on a mild day, the thermostat may only need to start heating at 6:50am.

Early-On may help save energy in your home ∧

With your old thermostat, if you wanted your home to be warm by 9:00am every day, you might have scheduled heating to start at 8:00am. Early-On can calculate how long it will take to heat your home in the morning, and it may not need the full hour of extra heat to keep you comfortable. On a mild day, it might only need to start heating at 8:50am.

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https://support.google.com/googlenest/answer/9246532

47.   The Accused Instrumentalities further include "the one or more servers are further configured to receive a demand reduction request and determine whether the structure is associated with demand rejection request, and based on the determination that the structure is associated with the demand reduction request, the one or more servers are further configured to send a signal to the thermostat to change the setting to a second setting to reduce electricity demand by the HVAC system." For example, using the mobile application users of the Accused Instrumentalities can instruct the Accused Instrumentalities to reduce the amount of usage of the devices by placing the device into Eco mode, by enabling Early-On to reduce unnecessary HVAC use, by using Home/Away assist, by altering set point temperatures, or by using Sun

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Block as described above.

48.   Defendant's infringement has been and is willful. Defendant knew of the '327 patent long before this suit was filed. For example, Defendant submitted the '327 patent as relevant prior art in prosecuting its own patent applications numerous times. Indeed, the following patents by Defendant are non-exhaustive examples of Defendant's patents and patent applications that cite to the '327 patent or related EcoFactor patent: US9453655B2, US10346275B2, US9075419B2, US9098279B2, US9046898B2, US9459018B2, US9256230B2, US8850348B2, US9104211B2, US8893032B2, US9595070B2, US9807099B2, US9810442B2, US9298197B2, US9910449B2, US10101050B2, US8727611B2, US8195313B1, US8622314B2, WO2013149210A1, WO2013059671A1. On information and belief, Defendant studied EcoFactor's patent portfolio, including the asserted patents. Moreover, EcoFactor communicated with Defendant in the 2015 and 2018 time frame, including regarding EcoFactor's patent portfolio, including the asserted patents. In these discussions, EcoFactor notified Defendant of the asserted patents, including the '327 patent. Despite Defendant's knowledge of the '327 patent, Defendant continued to infringe. In doing so, Defendant knew, or should have known, that its conduct amounted to infringement of the '327 patent. Indeed, Defendant knew that the asserted patents are directed to its Nest line of products, and knew, or should have known, that the asserted patents cover its Nest line of products. Accordingly, Defendant is liable for willful infringement.

49.   By making, using, offering for sale, selling and/or importing into the United States the Accused Products, Defendant has injured Plaintiff and are liable for infringement of the '327 Patent pursuant to 35 U.S.C. § 271.

50.   As a result of Defendant's infringement of the '327 Patent, Plaintiff is entitled to

monetary damages in an amount adequate to compensate for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

51.   Defendant's infringing activities have injured and will continue to injure Plaintiff, unless and until this Court enters an injunction prohibiting further infringement of the '327 Patent, and, specifically, enjoining further manufacture, use, sale, importation, and/or offers for sale that come within the scope of the patent claims.

COUNT IV

INFRINGEMENT OF U.S. PATENT NO. 10,534,382

52.   Plaintiff realleges and incorporates by reference the foregoing paragraphs as if fully set forth herein.

53.   Plaintiff is the owner and assignee of United States Patent No. 10,534,382 titled "System and method for using a wireless device as a sensor for an energy management system." The '382 patent was duly and legally issued by the United States Patent and Trademark Office on January 14, 2020. Plaintiff is the owner and assignee, possessing all substantial rights, to the '382 Patent. A true and correct copy of the '382 Patent is attached as Exhibit 4.

54.   Defendants make, use, offer for sale, sell, and/or import into the United States certain products and services that directly infringe, literally and/or under the doctrine of equivalents, one or more claims of the '382 Patent, and continue to do so. By way of illustrative example, these infringing products and services include, without limitation, Defendant's products and services, *e.g.*, all generations of the Google Nest Learning Thermostat and all versions and variations thereof since the issuance of the '382 Patent ("Accused Instrumentalities").

55.   Defendant has had knowledge of the '382 patent from a date no later than the date of filing of this complaint. Defendant has known how the Accused Products are made and have known, or have been willfully blind to the fact, that making, using, offering to sell, and selling the accused products within the United States, or importing the Accused Products into the United States, would constitute infringement.
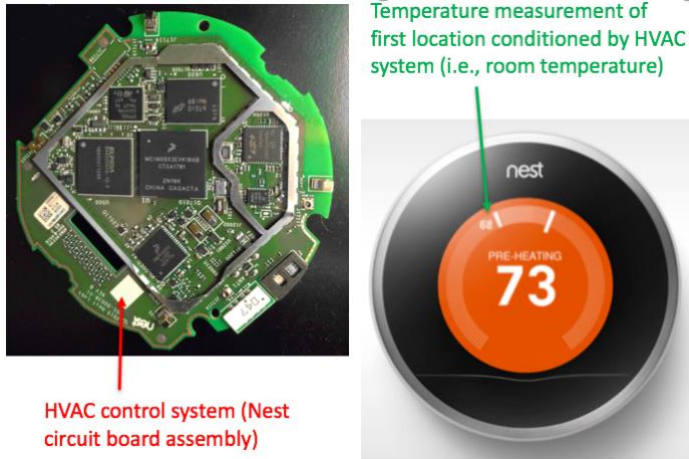
56.   Defendant has induced, and continue to induce, infringement of the '382 patent by actively encouraging others (including distributors and end customers) to use, offer to sell, sell, and import the Accused Products. On information and belief, these acts include providing information and instructions on the use of the Accused Products; providing information, education and instructions supporting sales by distributors; providing the Accused Products to distributors; and indemnifying patent infringement within the United States.

57.   Defendant has also infringed, and continue to infringe, claims of the '382 patent by offering to commercially distribute, commercially distributing, making, and/or importing the Accused Products, which are used in practicing the process, or using the systems, of the patent, and constitute a material part of the invention. Defendant knows the components in the Accused Products to be especially made or especially adapted for use in infringement of the patent, not a staple article, and not a commodity of commerce suitable for substantial noninfringing use. Accordingly, Defendant has been, and currently are, contributorily infringing the '382 patent, in violation of 35 U.S.C. § 271(c).

58.   The Accused Products satisfy all claim limitations of one or more claims of the '327 Patent. One, non-limiting, example of the Accused Instrumentalities' infringement is presented below.

59.   The Accused Instrumentalities include: "[a] system for controlling an HVAC

system at a user's building, the system comprising: a memory; and one or more processors with circuitry and code designed to execute instructions." For example, the Accused Instrumentalities includes memory, processors and circuity and code, to schedule heating and cooling, to set the device into Cool, Heat, Heat/Cool, or Eco modes, and to enable a variety of features including Home/Away Assist, Early-On, automatic scheduling, Sun Block, and others.

How to switch between Heat, Cool, Heat • Cool, and Off

Your thermostat will automatically switch between Eco and Heat or Cool when you leave home and when you come back, but you can manually set it whenever you want.

You will see different options in this menu depending on the type of equipment you have installed. Follow the link below to learn more.

How to manually set your Nest thermostat to heating, cooling, Eco Temperatures or off >

https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

Home/Away Assist

Home/Away Assist can use your Eco Temperatures to help save energy while no one's home.

How to change Home/Away Assist settings >

https://support.google.com/googlenest/answer/9244728

> **Early-On won't activate if everyone'e away** ∧
>
> As long as someone is home, Early-On can turn on your system early to reach your scheduled temperature on time. But if everyone is away and your thermostat is set to Eco Temperatures, it will wait to start pre-heating or pre-cooling until someone comes home or until someone manually changes the temperature with the app.
>
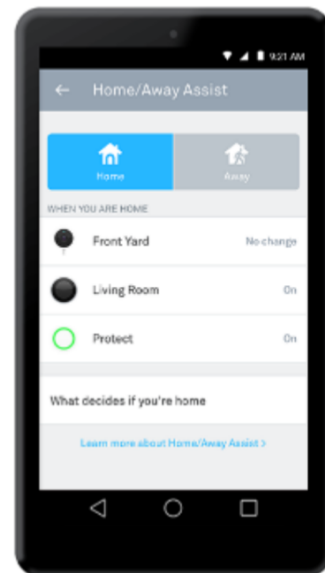> If you use Home/Away Assist, your thermostat will try to stay in Eco Temperatures while you're away.

https://support.google.com/googlenest/answer/9246532

> **How to change what Nest products do when you're home or away** ∧
>
> To change how Home/Away Assist controls your Nest products, follow these steps.
>
> 1. Open the Nest app on your phone or tablet. If you're on a computer, go to home.nest.com.
> 2. Tap **Settings** ⚙ in the top right corner of the app home screen.
> 3. Select **Home/Away Assist**.
> 4. Tap either the **Home** or **Away** icon at the top of the screen. You'll see a summary of what each of your Nest products will do when your home is in that mode.
> 5. If you want to make any changes, tap on the Nest product you'd like to control.
>
> In general, if you have multiple Nest products in your home, you have different settings for each one. The one exception is Nest Protect: all the Protects in your home share the same Home/Away Assist settings, so you'll only see one Protect in this list.
>
> Settings for each product's Home/Away Assist options are listed below.

https://support.google.com/googlenest/answer/9261489

60.   The Accused Instrumentalities include "the one or more processors with circuitry and code designed to execute instructions to receive a first data from at least one sensor, wherein
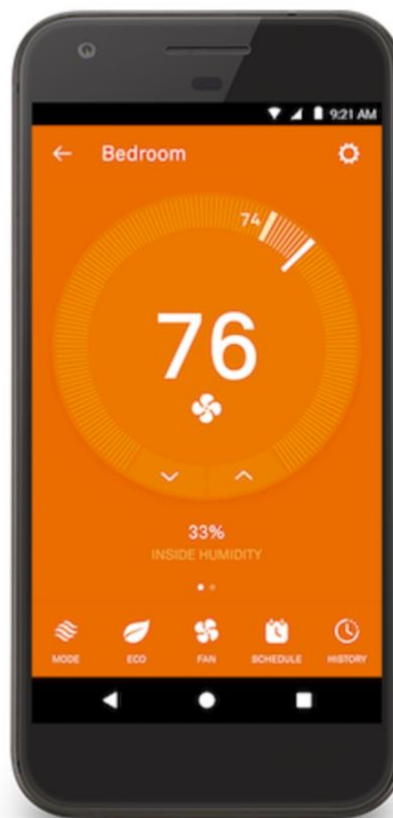
the first data from the at least one sensor includes a measurement of at least one characteristic of

the building." For example, the Accused Instrumentalities can determine whether the building is

occupied, the internal temperature of the building, and the status of the HVAC system.

https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

Home/Away Assist ⌃

Home/Away Assist can use your Eco Temperatures to help save energy while no one's home.

How to change Home/Away Assist settings >

https://support.google.com/googlenest/answer/9244728

Early-On won't activate if everyone'e away ⌃

As long as someone is home, Early-On can turn on your system early to reach your scheduled temperature on time. But if everyone is away and your thermostat is set to Eco Temperatures, it will wait to start pre-heating or pre-cooling until someone comes home or until someone manually changes the temperature with the app.

If you use Home/Away Assist, your thermostat will try to stay in Eco Temperatures while you're away.

https://support.google.com/googlenest/answer/9246532

61.   The Accused Instrumentalities include "the one or more processors with circuitry and code designed to execute instructions to receive a second data from a network connection, wherein the second data from the network connection is collected from a source external to the building, wherein the second data from the network connection is received via the Internet." For example, as explained above, the Accused Instrumentalities receive information concerning outdoor temperature, weather, sunrise and sunset times, anticipated rates of temperature change, and mobile device lations, which, on information and belief is received from the internet.

62.   The Accused Instrumentalities include "the one or more processors with circuitry and code designed to execute instructions to receive a first temperature setpoint for the building corresponding to a desired temperature setting when the building is occupied, and a second temperature setpoint for the building corresponding to a desired temperature setting when the building is unoccupied." For example, as explained above, the Accused Instrumentalities using,

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e.g., Home Assist, Early-On, automatic scheduling, and user settings to identify a target temperature set point when the building is occupied (e.g., the temperature set by a user or automatic scheduling) and a temperature setpoint for when the building is unoccupied (e.g., an automatically scheduled away temperature, the Eco setting temperature, Home/Away Assist designated temperature set points, or a temperature that allows for Early-On adjustment when a user arrives home).

63.   The Accused Instrumentalities include "the one or more processors with circuitry and code designed to execute instructions to receive commands through the Internet by way of a remote interface on a mobile, wireless device running software application code; wherein the interface is configured to allow the user to adjust temperature setpoints for the HVAC system; the one or more processors with circuitry and code designed to execute instructions to send user-specific data through the Internet, wherein user-specific information about the building and HVAC system is generated based at least in part on the user-specific data, wherein the user-specific information is configured to be presented on a user interface on a mobile, wireless device running software application code via the Internet." For example, as explained above, using the Google Nest mobile application, a user can change temperature set points and enable or disable features that alter the set point through the user settings in combination with, on information and belief, cloud based features such as automatic scheduling, Home/Away Assist, and Early-On.

64.   The Accused Instrumentalities include "the one or more processors with circuitry and code designed to execute instructions to determine whether the building is occupied or unoccupied, and based on that determination, to control the HVAC system to provide heating or cooling to the building at an operational temperature."   For example, the Accused

Instrumentalities will provide heating or cooling based on whether a building is occupied or unoccupied through their Home/Away Assist features, automatic temperature scheduling, and Early-On features, among others.

65.   The Accused Instrumentalities include "wherein the one or more processors comprises a first processor with circuitry and code designed to execute instructions, which is located remotely from the memory and is not electrically connected to the memory; the first processor with circuitry and code designed to execute instructions to communicate with the memory." For example, using a mobile device with the Google Nest mobile application, which is not connected to the memory on the Accused Instrumentalities, a user can change the setpoints of the thermostat and enable or disable features capable of doing same. On information and belief, Google's cloud-based program may also communicate with the memory. In addition, the Accused Instrumentalities can communicate with remote sensors, which are configured to communicate with the memory of the Accused Instrumentalities.

66.   The Accused Instrumentalities include "wherein the memory is configured to store historical values of the first data and second data." For example, on information and belief, the Accused Instrumentalities store historical information about internal temperature, temperature set points, occupation and activity, external temperature, external weather, mobile device location, etc. as part of the learning features of the device including learning for automatic scheduling, Home/Away Assist, and Early-On and in order to provide Energy History.

How to view your Energy History   ⌃

To see your heating, cooling and fan usage for the last 10 days, tap **Energy History** (🕓).

How to read your Nest thermostat's Energy History >

https://support.google.com/googlenest/answer/9249866?hl=en&ref_topic=9361968

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Viewing Energy History on your thermostat

You can find your Energy History by selecting **Energy** in the Nest thermostat's Quick View menu.

If you're using a Nest Thermostat E, your **Energy** option will be in the **Settings** ⚙ menu.

Your Energy History at a glance

When you first select **Energy**, you'll see a simple graphic that represents how long your system ran for the day. An orange bar represents heating, and a blue one represents cooling (if available). If your thermostat was in HEAT · COOL mode (if available), or you recently switched between modes, you'll see both orange and blue bars.

Turn the thermostat's ring to see the Energy History for other days. You can look as far back as 10 days ago. Since the Nest thermostat needs time to learn about how you use energy, it will usually take at least a day after installation for information to appear.

Daily Energy History details

Press the thermostat's ring to see more details about a particular day. Turn the ring to scroll down and to see more information, like if your energy use was significantly higher or lower than the average over the last week. If it was, the thermostat will also show you the main contributor: your adjustments, Home/Away Assist, or the weather.

Press the thermostat ring to go back to the main Energy History screen when you're done, or hold down the ring to exit and return to the thermostat temperature screen.

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Viewing Energy History with the Nest app

1. Open the Nest app and tap your Nest thermostat on the home screen.
2. Tap the **History** ⏱ icon.
3. Here, you'll see a 10 day summary. Tap on any day to see more details about your heating and cooling system's energy use.

https://support.google.com/googlenest/answer/9247300
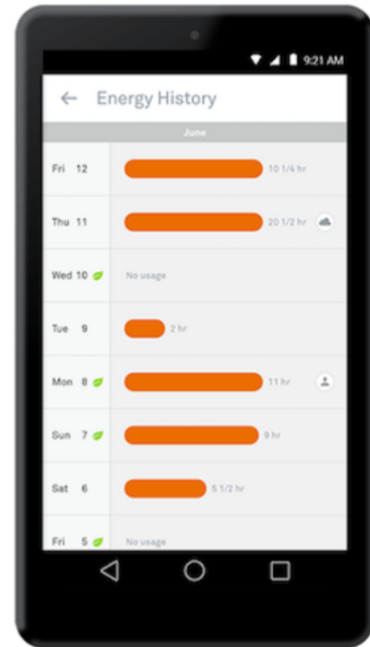
How your Nest thermostat learns

Note: Nest thermostats learn a different schedule for each temperature mode. For instance, if you currently have your thermostat set to **Heat**, it will learn the temperatures you like for heating your home. If you have both heating and cooling, your thermostat will create separate schedules for **Heat**, one for **Cool**, and another for **Heat·Cool**.

Learning on day one ⌃

Your thermostat can start learning your temperature preferences from the day you start using it.

Simply turn the ring to select a new temperature whenever you like. Your thermostat will remember your choice and add it to the schedule that it's building for you.

While your thermostat is learning, the exact behavior you'll see depends on which model you have:

- **3rd, 2nd, or 1st gen Nest Learning Thermostat**: When you adjust the temperature on the first day, your Nest thermostat will hold that temperature until someone changes it. For instance, if you set your thermostat to 70°F (21°C), it will stay at that temperature until it's changed.
- **Nest Thermostat E**: During setup, you'll have the option to choose a pre-programmed schedule that balances energy savings and comfort.
  - If you chose the pre-programmed schedule and **also** have Auto-Schedule turned on, your thermostat will learn your preferences on top of the pre-programmed schedule. So your thermostat will hold its current temperature until someone changes it, or until the next scheduled temperature change, whichever comes first.
  - If you chose **not** to use the pre-programmed schedule, your thermostat will simply hold the temperature until someone changes it.
  - Learn about your options in our article about Nest thermostat schedules.

Learning after about a week and going forward ⌃

After about a week, your thermostat will have learned your temperature preferences and it will have settled on a schedule for you.

It will never stop learning, but now it will be less sensitive to each change you make. Going forward, your Nest thermostat will only learn from a **pattern of at least two similar changes**.

https://support.google.com/googlenest/answer/9247510

How Early-On learns   ︿

Early-On will continually adapt to the weather forecast and how fast your home heats up or cools down so it can improve its Time-to-Temperature estimates and keep you comfortable while helping to saving energy.

For example, on a cold day the Nest thermostat might need to start heating at 5:00am to reach your target temperature by 7:00am. But on a mild day, the thermostat may only need to start heating at 6:50am.

https://support.google.com/googlenest/answer/9246532

67.   By making, using, offering for sale, selling and/or importing into the United States the Accused Products, Defendant has injured Plaintiff and are liable for infringement of the '382 Patent pursuant to 35 U.S.C. § 271.

68.   As a result of Defendant's infringement of the '382 Patent, Plaintiff is entitled to monetary damages in an amount adequate to compensate for Defendant's infringement, but in no event less than a reasonable royalty for the use made of the invention by Defendant, together with interest and costs as fixed by the Court.

69.   Defendant's infringing activities have injured and will continue to injure Plaintiff, unless and until this Court enters an injunction prohibiting further infringement of the '382 Patent, and, specifically, enjoining further manufacture, use, sale, importation, and/or offers for sale that come within the scope of the patent claims.

PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that this Court enter:

a.   A judgment in favor of Plaintiff that Defendant has infringed, either literally and/or under the doctrine of equivalents, the '492 Patent, the '488 Patent, the '327 Patent, and the '382 Patent;

b.   A permanent injunction prohibiting Defendant from further acts of infringement of the '492 Patent, the '488 Patent, the '327 Patent, and the '382 Patent;

c.   A judgment and order requiring Defendant to pay Plaintiff its damages, enhanced damages, costs, expenses, and pre-judgment and post-judgment interest for Defendant's infringement of the '492 Patent, the '488 Patent, the '327 Patent, and the '382 Patent;

d.   A judgment and order requiring Defendant to provide an accounting and to pay supplemental damages to Plaintiff, including without limitation, pre-judgment and post-judgment interest;

e.   A judgment that Defendant's infringements have been and are willful, and award Plaintiff enhanced damages pursuant to 35 U.S.C. § 284, up to and including trebling of damages;

f.   A judgment and order finding that this is an exceptional case within the meaning of 35 U.S.C. § 285 and awarding to Plaintiff its reasonable attorneys' fees against Defendant; and

g.   Any and all other relief as the Court may deem appropriate and just under the circumstances.

DEMAND FOR JURY TRIAL

Plaintiff, under Rule 38 of the Federal Rules of Civil Procedure, requests a trial by jury of any issues so triable by right.

Dated: June 17, 2020   Respectfully submitted,

                                        /s/ Reza Mirzaie
                                        Reza Mirzaie
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                                        Paul A. Kroeger

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CERTIFICATE OF SERVICE

I hereby certify that the foregoing document was served on all counsel of record via electronic service on June 17, 2020.

/s/ Reza Mirzaie