EXHIBIT A

Claims	Accused Instrumentality
[1.0] An occupancy response system with a central control device adapted to control space conditioning equipment affecting a conditioned space, the central control device located at a single physical location in one of multiple rooms comprising the conditioned space, where remote sensors are located in physical locations substantially apart from the central control device, the improvement comprising:	The Ecobee Smart Thermostat includes an "occupancy response system with a central control device adapted to control space conditioning equipment affecting a conditioned space, the central control device located at a single physical location in one of multiple rooms comprising the conditioned space, where remote sensors are located in physical locations substantially apart from the central control device," as recited in claim 1 of the '437 Patent. As one non-limiting example, The Ecobee Smart Thermostat comprises a thermostat system for controlling HVAC systems, which includes an occupancy response system with remote sensors. https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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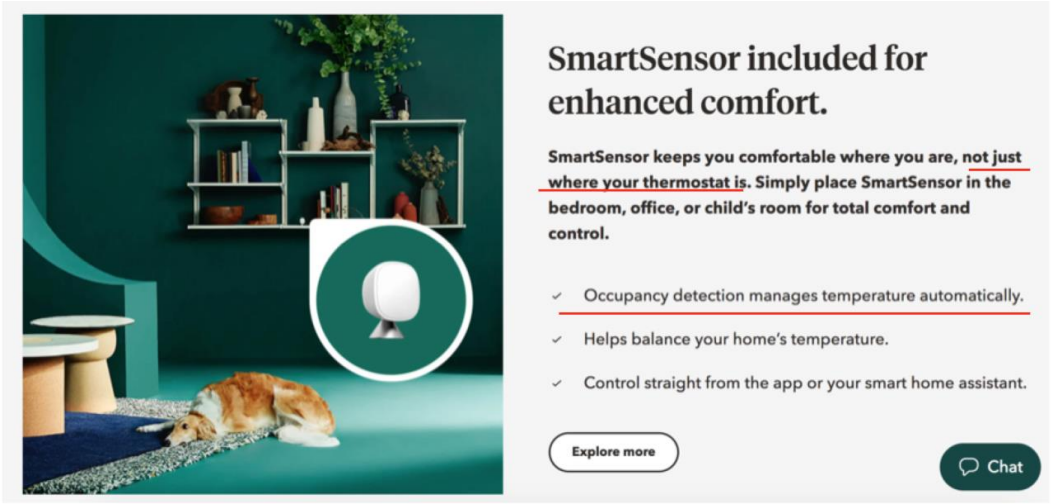
Claims	Accused Instrumentality
	Photos of Ecobee Smart Thermostat 

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Claims	Accused Instrumentality
	https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **Seamless setup** **Compatible with most HVAC systems** ecobee thermostats work with radiant heating systems, multistage, and dual-fuel heat pumps. Use the Thermostat Compatibility Checker or reach out to our support team at 1-877-932-6233. **Industry-leading reliability** ecobee thermostats are powered by a dedicated 24VAC power supply using a Common wire (or C wire) for consistent performance, even in the coldest weather. The included Power Extender Kit allows for installation in most homes without a C wire. **Supports HVAC accessories** Compatible with HVAC accessories, including humidifiers, dehumidifiers, HRVs, and ERVs to give you ultimate control over your home's comfort. https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/
[1.1] A) two or more environmental sensors adapted to measure a local environmental condition and generate signals indicating its value;	The Ecobee Smart Thermostat comprises two or more environmental sensors adapted to measure a local environmental condition and generate signals indicating its value. Specifically, the Ecobee Smart Thermostat comprises multiple environmental sensors (i.e., thermostat Humidity, Occupancy, and Proximity sensors), as outlined below, which provides an electrical signal indicative of the temperature of the conditioned space.

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Claims	Accused Instrumentality
	Thermostat sensors: Temperature, Humidity, Occupancy, Proximity **eco+ features** **What is eco+?** eco+ is a free upgrade for SmartThermostat with voice control. It works in the background to deliver maximum energy efficiency and comfort with minimal effort. Learn more about eco+. **Schedule Assistant** Learns your routine and recommends changes to your thermostat schedule to better match it. **Smart Home & Away** Uses SmartThermostat's built-in occupancy sensor to automatically adjust the temperature for energy savings when you leave home and restore your comfort settings when you return. **Follow Me** Detects which rooms are in use and adjusts the temperature accordingly for comfort in those spaces. **Feels Like** Takes indoor humidity levels into account to ensure your home is energy efficient and always feels like the temperature you've set, no matter the humidity. **Time of Use** Intelligently preheats or precools your home when electricity is cheaper and reduces usage when it's expensive, saving you money and using cleaner energy.[2] https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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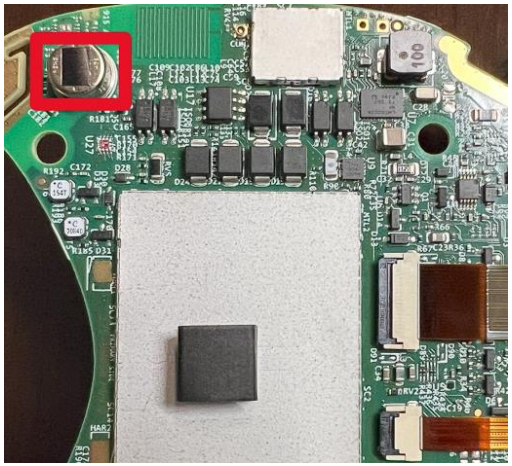
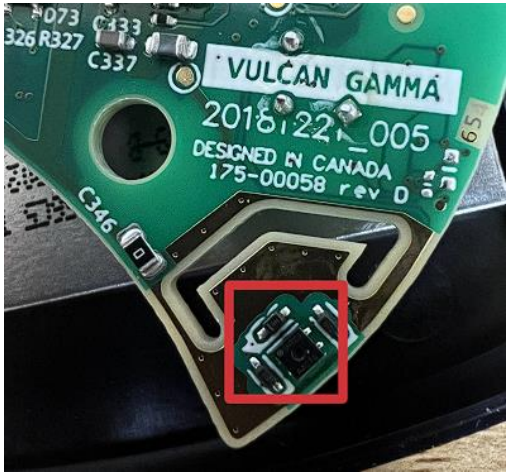
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat  Photos of Ecobee Smart Thermostat

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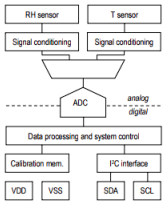
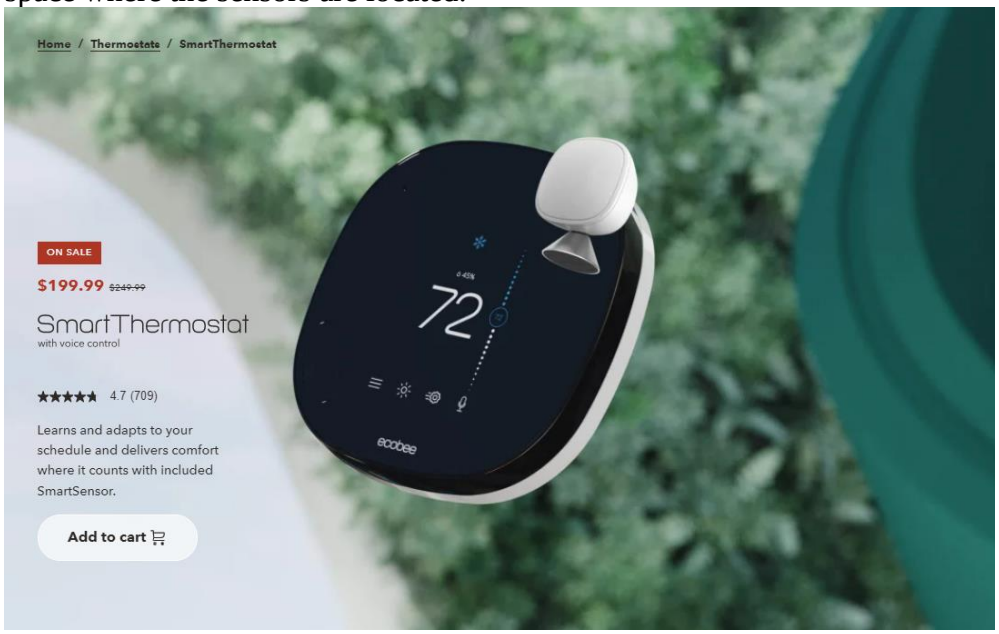
Claims	Accused Instrumentality
	SENSIRION THE SENSOR COMPANY **Datasheet SHTC3** Humidity and Temperature Sensor IC ▪ Best performance-to-price ratio ▪ Fully calibrated and reflow solderable ▪ Ultra-low power consumption ▪ Power-up and measurement within 1 ms ▪ Broad supply voltage range of 1.62 V to 3.6 V ▪ Ultra-small DFN package: 2 × 2 × 0.75 mm³ ▪ Typical accuracy: ±2 %RH and ±0.2 °C **Product Summary** The SHTC3 is a digital humidity and temperature sensor designed especially for high-volume consumer electronics applications. This sensor is strictly designed to overcome conventional limits for size, power consumption, and performance to price ratio in order to fulfill current and future requirements. Sensirion's CMOSens® technology offers a complete sensor system on a single chip, consisting of a capacitive humidity sensor, a bandgap temperature sensor, analog and digital signal processing, A/D converter, calibration data memory, and a digital communication interface supporting I²C fast mode. The ultra-small, 2 × 2 × 0.75 mm³ DFN package enables applications in even the most limited of spaces. The sensor covers a humidity measurement range of 0 to 100 %RH and a temperature measurement range of -40 °C to 125 °C with a typical accuracy of ±2 %RH and ±0.2°C. The broad supply voltage of 1.62 V to 3.6 V and an energy budget below 1 µJ per measurement make the SHTC3 suitable for mobile or wireless applications powered by batteries. With the industry-proven quality and reliability of Sensirion's humidity and temperature sensors and constant accuracy over a large measurement range, the SHTC3 offers best performance-to-price ratio. Tape and reel packaging together with suitability for standard SMD assembly processes make the SHTC3 predestined for high-volume applications. **Benefits of Sensirion's CMOSens® Technology** ▪ High reliability and long-term stability ▪ Industry-proven technology with a track record of more than 15 years ▪ Designed for mass production ▪ Optimized for lowest cost ▪ High signal-to-noise ratio **Contents of this Data Sheet** 1 Humidity and Temperature Sensor Specifications ....2 2 Electrical Specifications ....4 **3 Timing Specifications** ....5 4 Interface Specifications ....7 **5 Operation and Communication** ....7 **6 Quality** ....10 **7 Packaging and Traceability** ....10 **8 Ordering Information** ....10 9 Technical Drawings ....11 10 Further Information ....12 **Block diagram**  **Figure 1** Functional block diagram of the SHTC3. www.sensirion.com Version 0.3 – October 2017 1/13 seri_s_a0003561073_1-2291167.pdf (mouser.com)
[1.2] B) two or more occupancy sensors adapted to detect occupancy of space around an environmental sensor and	The Ecobee Smart Thermostat comprises two or more occupancy sensors adapted to detect occupancy of space around an environmental sensor and generate signals indicating occupancy.

Claims	Accused Instrumentality
generate signals indicating occupancy;	Specifically, the Ecobee Smart Thermostat comprises a central device (i.e., thermostat) and a remote sensor, each of which comprises an occupancy sensor which detects occupancy in the space where the sensors are located.  https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	What thermostats are compatible with these smart features? • Smart Home and Away is available on Smart Thermostat Premium, Smart Thermostat Enhanced, SmartThermostat with voice control, ecobee4, and ecobee3 out of the box, as these thermostats have a built-in occupancy sensor. With the ecobee3 lite, Smart Home and Away can be used once a SmartSensor or Room Sensor is paired with the thermostat. • Follow Me can be enabled once you pair a SmartSensor or Room Sensor with your ecobee thermostat. For the ecobee3 Lite, two sensors must be paired to enable this feature. **Smart Home and Away** By using the occupancy information reported by your ecobee thermostat's built-in occupancy sensor and the sensors paired with your ecobee, Smart Home and Away tracks your household's comings and goings to set the temperature for comfort or energy savings. https://support.ecobee.com/s/articles/Smart-Home-Smart-Away-and-Follow-Me-Features

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Claims	Accused Instrumentality
	 SmartSensor included for enhanced comfort. **SmartSensor keeps you comfortable where you are, not just where your thermostat is. Simply place SmartSensor in the bedroom, office, or child's room for total comfort and control.** ✓ Occupancy detection manages temperature automatically. ✓ Helps balance your home's temperature. ✓ Control straight from the app or your smart home assistant. Explore more Chat https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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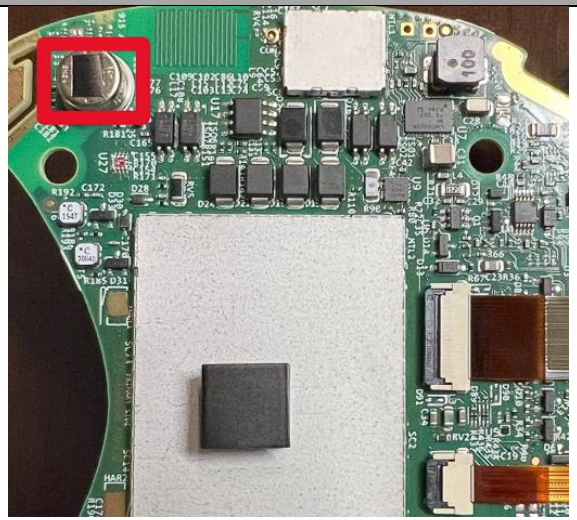
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat

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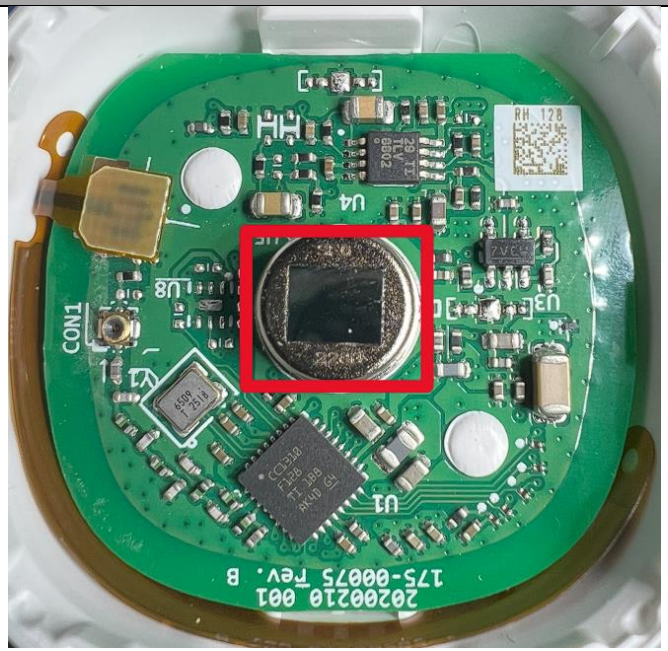
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Sensor
[1.4] C) either the central control device and one or more of the remote sensors or two or more of the remote sensors each comprise an environmental sensor and an occupancy sensor;	The Ecobee Smart Thermostat comprises either the central control device and one or more of the remote sensors or two or more of the remote sensors each comprise an environmental sensor and an occupancy sensor. Here, the Ecobee Smart Thermostat comprises a central device (i.e. thermostat) and a remote sensor, each of which comprise an environmental sensor and an occupancy sensor as outlined below.

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Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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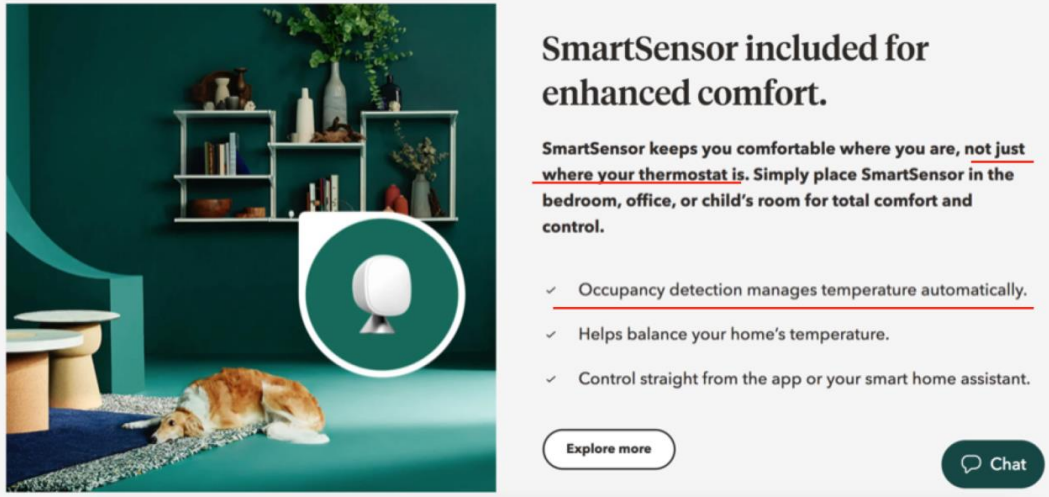
Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ Compatibility: Smart Thermostat Premium; Smart Thermostat Enhanced; SmartThermostat with voice control; ecobee4; ecobee3 lite; ecobee3; ecobee SmartCamera*; *To support ecobee home monitoring (subscription required) Sensors: Temperature; Occupancy

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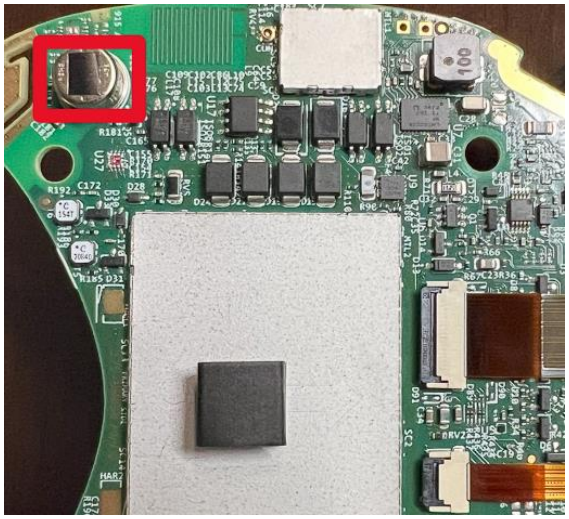
Claims	Accused Instrumentality
	https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/#Features-and-Specs **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat  Photos of Ecobee Smart Thermostat

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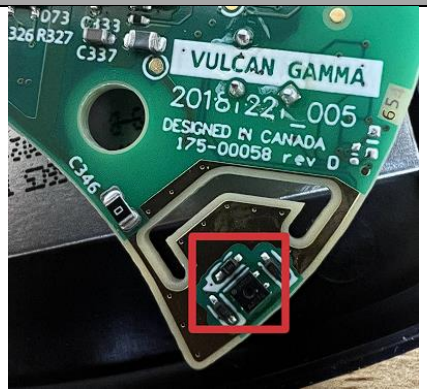
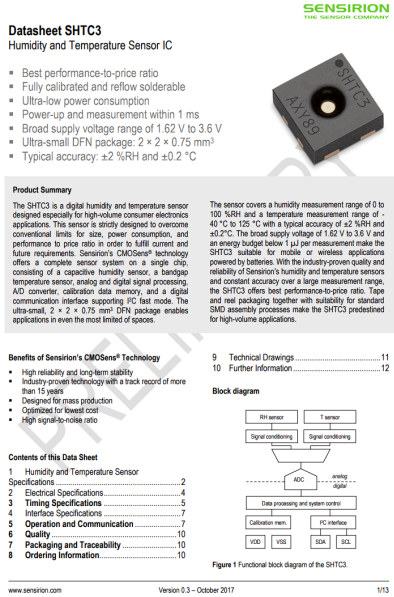
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat  SENSIRION THE SENSOR COMPANY **Datasheet SHTC3** Humidity and Temperature Sensor IC ▪ Best performance-to-price ratio ▪ Fully calibrated and reflow solderable ▪ Ultra-low power consumption ▪ Power-up and measurement within 1 ms ▪ Broad supply voltage range of 1.62 V to 3.6 V ▪ Ultra-small DFN package: 2 × 2 × 0.75 mm³ ▪ Typical accuracy: ±2 %RH and ±0.2 °C **Product Summary** The SHTC3 is a digital humidity and temperature sensor designed especially for high-volume consumer electronics applications. This sensor is strictly designed to overcome conventional limits for size, power consumption, and performance to price ratio in order to fulfill current and future requirements. Sensirion's CMOSens® technology offers a complete sensor system on a single chip, consisting of a capacitive humidity sensor, a bandgap temperature sensor, analog and digital signal processing, A/D converter, calibration data memory, and a digital communication interface supporting I²C fast mode. The ultra-small, 2 × 2 × 0.75 mm³ DFN package enables applications in even the most limited of spaces. The sensor covers a humidity measurement range of 0 to 100 %RH and a temperature measurement range of -40 °C to 125 °C with a typical accuracy of ±2 %RH and ±0.2°C. The broad supply voltage of 1.62 V to 3.6 V and an energy budget below 1 µJ per measurement make the SHTC3 suitable for mobile or wireless applications powered by batteries. With the industry-proven quality and reliability of Sensirion's humidity and temperature sensors and constant accuracy over a large measurement range, the SHTC3 offers best performance-to-price ratio. Tape and reel packaging together with suitability for standard SMD assembly processes make the SHTC3 predestined for high-volume applications. **Benefits of Sensirion's CMOSens® Technology** ▪ High reliability and long-term stability ▪ Industry-proven technology with a track record of more than 15 years ▪ Designed for mass production ▪ Optimized for lowest cost ▪ High signal-to-noise ratio **Contents of this Data Sheet** 1 Humidity and Temperature Sensor Specifications ....2 2 Electrical Specifications ....4 3 **Timing Specifications** ....5 4 Interface Specifications ....7 5 **Operation and Communication** ....7 6 **Quality** ....10 7 **Packaging and Traceability** ....10 8 **Ordering Information** ....10 9 Technical Drawings ....11 10 Further Information ....12 **Block diagram** RH sensor T sensor Signal conditioning Signal conditioning ADC analog digital Data processing and system control Calibration mem. I²C interface VDD VSS SDA SCL **Figure 1** Functional block diagram of the SHTC3. www.sensirion.com Version 0.3 – October 2017 1/13 seri_s_a0003561073_1-2291167.pdf (mouser.com)

Claims	Accused Instrumentality
	 Photos of Ecobee Smart Sensor
[1.5] D) a central processor for the central control device including:	The Ecobee Smart Thermostat comprises a central processor for the central control device. Specifically, the Ecobee Smart Thermostat comprises a 1.5GHz quad-core Cortex A35 processor as outlined below.

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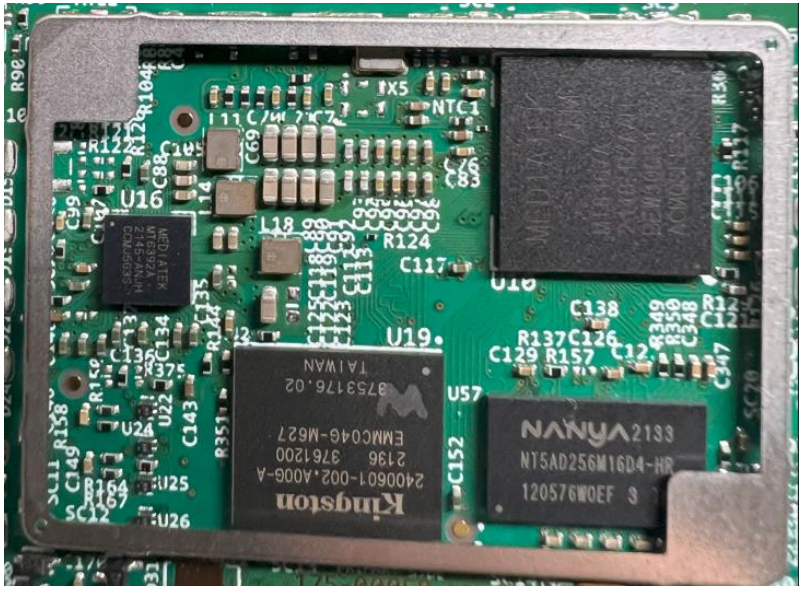
Claims	Accused Instrumentality
	Processor & memory 1.5GHz quad-core Cortex A35 processor 4GB Flash (eMMC) 512MB DDR4 RAM **Thermostat sensors** Temperature Humidity Occupancy Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/  Photos of Ecobee Smart Thermostat

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Claims	Accused Instrumentality
[1.6] 1) a central processing unit;	The Ecobee Smart Thermostat's central control device comprises a central processing unit. Specifically, the Ecobee Smart Thermostat comprises a 1.5GHz quad-core Cortex A35 processor as outlined below. Processor & memory: 1.5GHz quad-core Cortex A35 processor; 4GB Flash (eMMC); 512MB DDR4 RAM Thermostat sensors: Temperature; Humidity; Occupancy; Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	  Photos of Ecobee Smart Thermostat **MT8167A** The MediaTek MT8167 is a cutting-edge tablet SoC built for all-day, high-speed performance with great power efficiency. It is a highly-integrated two-chipset package, needing only AP and a PMIC unit, greatly simplifying tablet design development and time to market. Movies, Internet browsing, and application use are made seamless and responsive thanks to the 64-bit Quad-core processing using four, 64-bit ARM Cortex-A35 cores and an Imagination PowerVR GE8300 GPU. Versus the ARM Cortex-A53, the new Cortex-A35 consumes up to 32% less battery power, allowing users to play, work or browse even longer. The MT8167 provides support for fast DDR4 memory, USB Type-C connectivity and incorporates MiraVision, a leading MediaTek display enhancement technology. The MT8167 platform is available in two versions, A and B. The MT8167A provides slightly higher processing and graphics performance specs, with the biggest difference being support for 1080p video decoding at 60fps (up from 30fps in the MT8167B) and support for a Full HD+ (1920x1200) A GPS and 802.11ac module (MT6630) can easily be incorporated into the package, providing flexibility for manufactures in their designs and goals. https://www.mediatek.com/products/tablets/mt8167a

Claims	Accused Instrumentality
[1.7] 2) a real time clock;	The Ecobee Smart Thermostat's central control device comprises a real time clock. Specifically, the Ecobee Smart Thermostat uses an internet connection to set the date and time settings during initial installation. Furthermore, the set time is used in various other programs. **How Do Date & Time Settings Work on My ecobee Smart Thermostat?** Your ecobee Smart Thermostat's date and time settings were automatically configured when your thermostat was installed and set up for the first time. During the initial registration process, you will be asked to select the country/region in which you reside. This information allows your Smart Thermostat to use its internet connection to determine the date and time settings for the particular country/region you've selected. For this reason, there are no manual date and time adjustments needed or offered on your ecobee Smart Thermostat. **What Changes to Date & Time Settings Can I Make?** The date and time settings that your ecobee Smart Thermostat use are automatically set via the internet. As such, there are a limited set of date and time options available to you. These include: • **Time Format:** Choose to display the time in a 12 hour or 24 hour format. • **Country/Region:** Specify the country/region where you reside, so your ecobee device can determine the proper date & time via the internet. Because date and time settings are tied to your ecobee account, the settings you will have access to will depend on where you are attempting to make changes from: https://www.techsolutions.support.com/how-to/how-to-set-the-date-and-time-on-an-ecobee-thermostat-12344

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Claims	Accused Instrumentality
[1.8] 3) a memory coupled to said central processing unit for storing a central control program and data, said data including at least one of the values of the environmental conditions sensed by the environmental sensors; and	The Ecobee Smart Thermostat's central control device comprises a memory coupled to said central processing unit for storing a central control program and data, said data including a least one of the values of the environmental conditions sensed by the environmental sensors. Specifically, the Ecobee Smart Thermostat's central control device comprises a memory that is coupled to the central processing and is used to store program data information gained from the environmental sensors (i.e. temperature and occupancy). Processor & memory: 1.5GHz quad-core Cortex A35 processor; 4GB Flash (eMMC); 512MB DDR4 RAM Thermostat sensors: Temperature; Humidity; Occupancy; Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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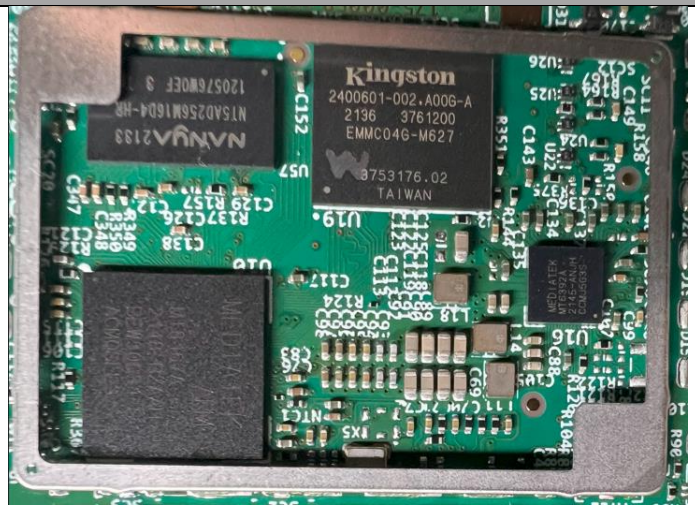
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat **3.3. *e*•MMC™ Device Overview** The *e*•MMC™ device transfers data via a configurable number of data bus signals. The communication signals are: **3.3.1 Clock (CLK)** Each cycle of this signal directs a one bit transfer on the command and either a one bit (1x) or a two bits transfer (2x) on all the data lines. The frequency may vary between zero and the maximum clock frequency. **3.3.2 Data Strobe(DS)** This signal is generated by the device and used for output in HS400 mode. The frequency of this signal follows the frequency of CLK. For data output each cycle of this signal directs two bits transfer(2x) on the data - one bit for positive edge and the other bit for negative edge. For CRC status response output and CMD response output(enabled only HS400 enhanced strobe mode), the CRC status is latched on the positive edge only, and don't care on the negative edge. **3.3.3 Command (CMD)** This signal is a bidirectional command channel used for Device initialization and transfer of commands. The CMD signal has two operation modes: open-drain for initialization mode, and push-pull for fast command transfer. Commands are sent from the *e*•MMC™ host controller to the *e*•MMC™ Device and responses are sent from the Device to the host. **3.3.4 Input/Outputs (DAT0-DAT7)** These are bidirectional data channels. The DAT signals operate in push-pull mode. Only the Device or the host is driving these signals at a time. By default, after power up or reset, only DAT0 is used for data transfer. A wider data bus can be configured for data transfer, using either DAT0-DAT3 or DAT0-DAT7, by the *e*•MMC™ host controller. The *e*•MMC™ Device includes internal pull-ups for data lines DAT1-DAT7. Immediately after entering the 4-bit mode, the Device disconnects the internal pull ups of lines DAT1, DAT2, and DAT3. Correspondingly, immediately after entering to the 8-bit mode the Device disconnects the internal pull-ups of lines DAT1–DAT7.

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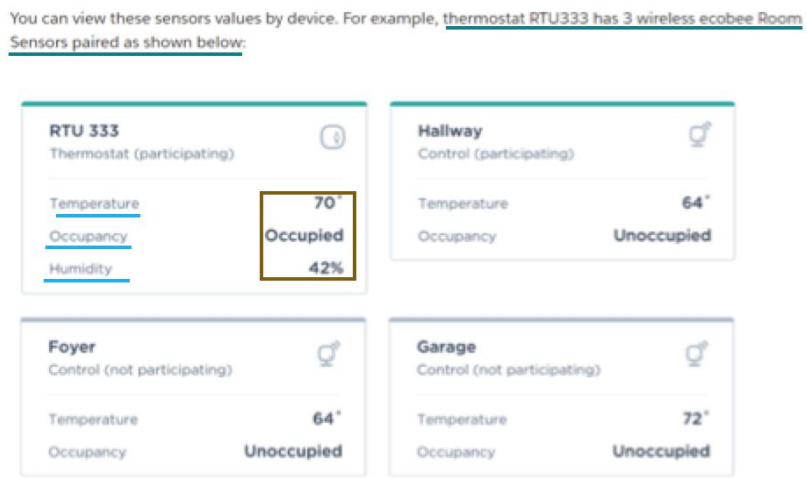
Claims	Accused Instrumentality
	https://datasheet.lcsc.com/szlcsc/2006081033_Kingston-Technology-EMMC04G-M627-A01_C577446.pdf  https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat
[1.9] 4) an input/output unit coupled to the central processing unit, to the space conditioning equipment for issuing control signals thereto, and to a reception interface adapted to receive signals representing environmental conditions at a remote sensor;	The Ecobee Smart Thermostat's central control device comprises an input/output unit coupled to the central processing unit, to the space conditioning equipment for issuing control signals thereto, and to a reception interface adapted to receive signals representing environmental conditions at a remote sensor. Specifically, the Ecobee Smart Thermostat's central control device comprises an I/O unit coupled to the processor. On information and belief, the I/O receives and sends data from the variety of thermostat sensors, the LCD interface screen, the remote wireless sensors, and the space condition equipment.

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Claims	Accused Instrumentality
	Touch Screen Your ecobee3 has a touch screen, similar to that used in smartphones and tablets. Touch items to select or activate them. For menus with a >, this will expand the menu to display additional options or submenus. Swipe up and down to display additional information. Swiping on a temperature bar will also adjust the settings up or down. Swipe left and right to scroll horizontal lists that contain multiple items to choose from. Exit or go back: To exit a submenu, touch <. To close the main menu, touch ∨.

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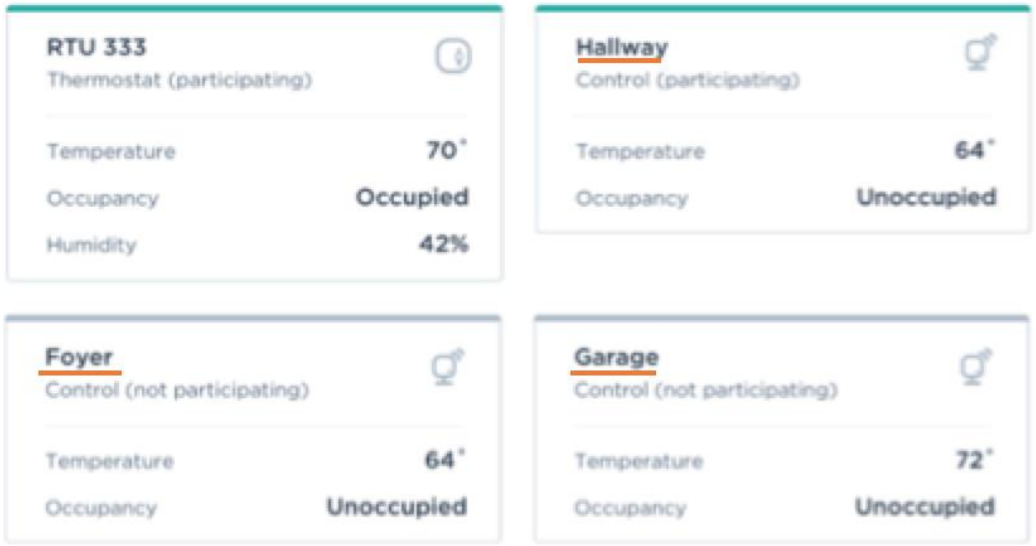
Claims	Accused Instrumentality
	Display 3.5 in. full-color LCD touchscreen 320 x 480 pixel display **Dimensions** Thermostat Height: 109 mm (4.29 in.) Width: 109 mm (4.29 in.) Depth: 25.6 mm (1 in.) SmartSensor Height: 40 mm (1.6 in.) With stand: 50 mm (2 in.) Width: 40 mm (1.6 in.) Depth: 26 mm (1 in.) Trim plate Height: 158.6 mm (6.2 in.) Width: 158.6 mm (6.2 in.) Depth: 8.7 mm (0.3 in.) Power Extender Kit* Length: 62 mm (2.4 in.) Width: 62 mm (2.4 in.) Depth: 23 mm (0.9 in.) *Optional for installation **Colors** Black front, white sides and back **Processor & memory** 1.5GHz quad-core Cortex A35 processor 4GB Flash (eMMC) 512MB DDR4 RAM **Thermostat sensors** Temperature Humidity Occupancy Proximity **Voice & audio** Built-in Alexa Voice Service Built-in microphones Built-in speaker Far-field voice recognition https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

Claims	Accused Instrumentality
	 https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat
[1.10] E) a remote processor for each of the remote sensors including a central processing unit, a real time clock, a memory coupled to said central processing unit for storing a transmission control program, and an input/output unit coupled to the central processing unit and to a transmissions interface adapted to send to the central control device signals representing environmental conditions from a	The Ecobee Smart Thermostat comprises a remote processor for each of the remote sensors including a central processing unit, a real time clock, a memory coupled to said central processing unit for storing a transmission control program, and an input/output unit coupled to the central processing unit and to a transmissions interface adapted to send to the central control device signals representing environmental conditions from a coupled environmental sensor. Specifically, the Ecobee Smart Thermostat's remote sensor, on information and belief, comprises a remote processor including a CPU, real time clock, a memory coupled to the CPU, and an I/O coupled to the central processing unit (i.e. thermostat) and to a transmission interface adapted to send out the central control device signals representing environmental conditions from a coupled environmental sensor (i.e. temperature and occupancy).

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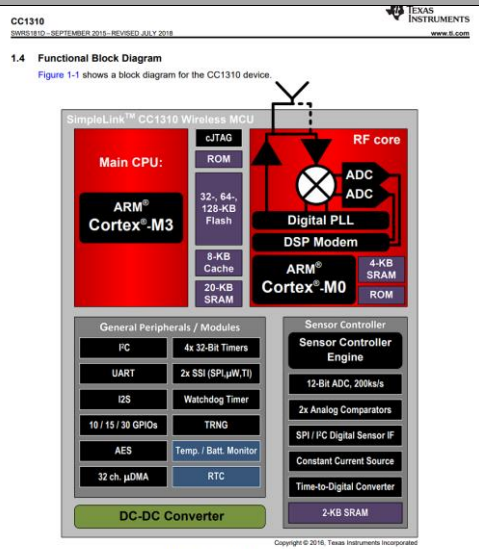
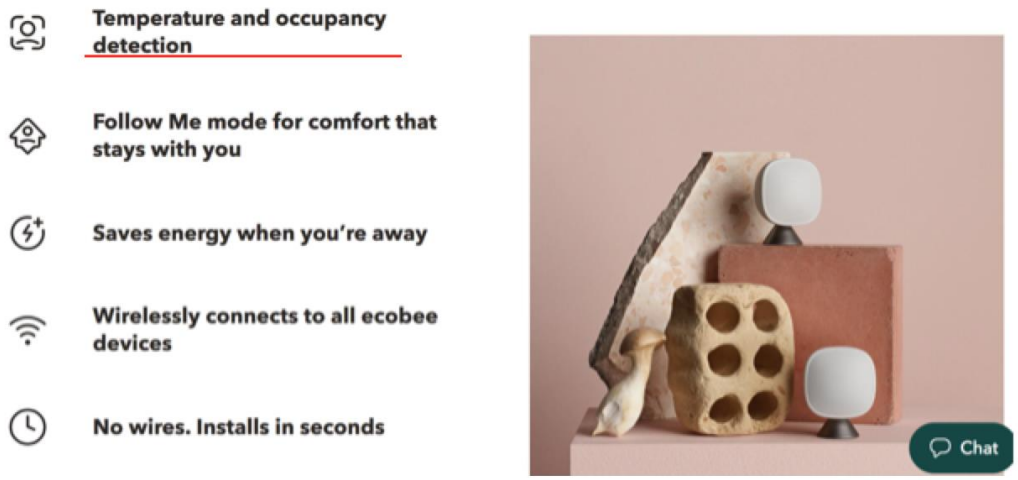
Claims	Accused Instrumentality
coupled environmental sensor; and	 Photos of the Ecobee SmartSensor

Claims	Accused Instrumentality
	 https://www.ti.com/lit/ds/symlink/cc1310.pdf?ts=1683290929819 

Claims	Accused Instrumentality
	https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/ **Occupancy and Temperature detection** • Detects both temperature and occupancy and communicates those readings to the thermostat. • Occupancy detection uses infrared technology to detect body heat signatures. • Occupancy is based on a person's continued presence within a SmartSensor's viewing angle –not merely motion detection. The more time you spend in front of a particular sensor, the more weight your ecobee assigns to that sensor's readings. • Enhanced occupancy sensor "pet immunity" to prevent false occupancy readings triggered by our furry friends. **Communication** • SmartSensor uses 915MHz radio waves–not Wi-Fi–for secure, energy-efficient communication with your ecobee thermostat. **Range and Viewing Angle** • Range: SmartSensor can communicate with thermostat to a range of 60 ft (barriers and obstacles such as thick walls or different floors, and other devices operating on the same 915MHz frequency, such as a baby monitor, cordless phones, etc., may lower range). https://support.ecobee.com/s/articles/SmartSensors-FAQs-Setup-Guide-and-Troubleshooting

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Claims	Accused Instrumentality
	Compatibility SmartThermostat with voice control ecobee4 ecobee3 lite ecobee3 ecobee SmartCamera* *To support ecobee home monitoring (subscription required) **Sensors** Temperature Occupancy **Range & connectivity** Place sensors up to 60 ft from ecobee thermostat or camera. 915MHz radio **Occupancy sensor** 140° horizontal, 100° vertical https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/ (smartsensor 2-pack specs)

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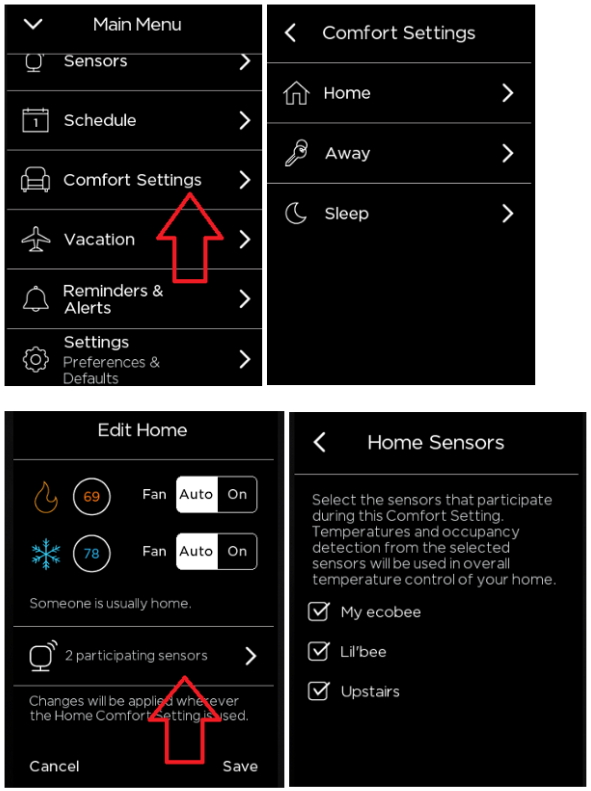
Claims	Accused Instrumentality
	 SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)
[1.11] F) for the central control device or remote sensors having environmental sensors and occupancy sensors, their input/output units further including a sensor input coupled	The Ecobee Smart Thermostat comprises for the central control device or remote sensors having environmental sensors and occupancy sensors, their input/output units further including a sensor input coupled to an environmental sensor and an occupancy input coupled to an occupancy sensor.

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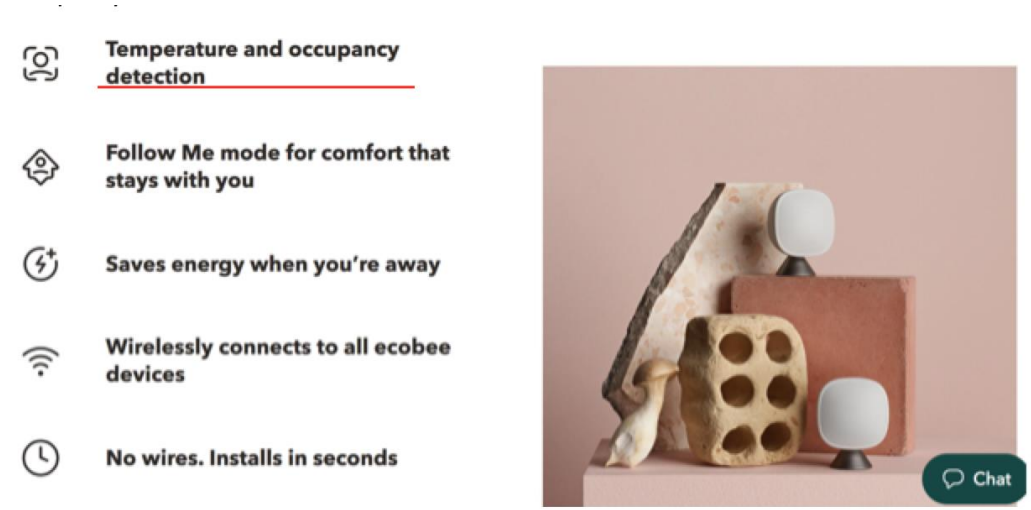
Claims	Accused Instrumentality
to an environmental sensor and an occupancy input coupled to an occupancy sensor;	Here, the Ecobee Smart Thermostat (i.e. central control device) and the remote sensor have environmental and occupancy sensors, including a sensor input coupled to the environmental (temperature) sensor and an occupancy input coupled to the occupancy sensor as shown below.  https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/

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Claims	Accused Instrumentality
	Occupancy and Temperature detection • Detects both temperature and occupancy and communicates those readings to the thermostat. • Occupancy detection uses infrared technology to detect body heat signatures. • Occupancy is based on a person's continued presence within a SmartSensor's viewing angle –not merely motion detection. The more time you spend in front of a particular sensor, the more weight your ecobee assigns to that sensor's readings. • Enhanced occupancy sensor "pet immunity" to prevent false occupancy readings triggered by our furry friends. **Communication** • SmartSensor uses 915MHz radio waves–not Wi-Fi–for secure, energy-efficient communication with your ecobee thermostat. **Range and Viewing Angle** • Range: SmartSensor can communicate with thermostat to a range of 60 ft (barriers and obstacles such as thick walls or different floors, and other devices operating on the same 915MHz frequency, such as a baby monitor, cordless phones, etc., may lower range). https://support.ecobee.com/s/articles/SmartSensors-FAQs-Setup-Guide-and-Troubleshooting

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Claims	Accused Instrumentality
	Compatibility SmartThermostat with voice control ecobee4 ecobee3 lite ecobee3 ecobee SmartCamera* *To support ecobee home monitoring (subscription required) **Sensors** Temperature Occupancy **Range & connectivity** Place sensors up to 60 ft from ecobee thermostat or camera. 915MHz radio **Occupancy sensor** 140° horizontal, 100° vertical https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/ (smartsensor 2-pack specs)
[1.12] G) the control programs causing a coupled central processing unit to selectively:	The Ecobee Smart Thermostat comprises control programs coupled to the central processing unit. Specifically, the Ecobee Smart Thermostat comprises control programs stored into the memory that cause the CPU to perform certain tasks, such as set schedules for the HVAC system.

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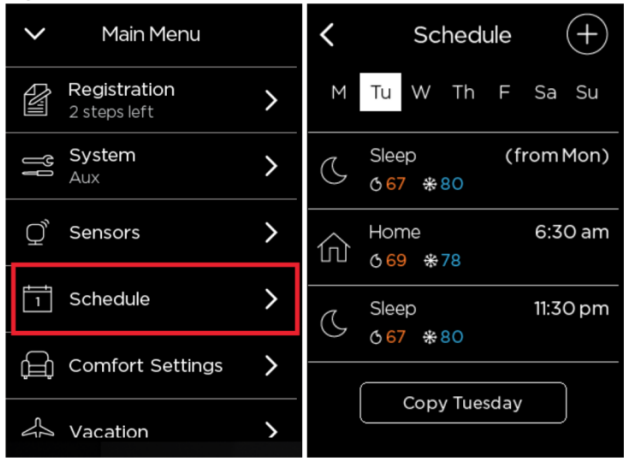
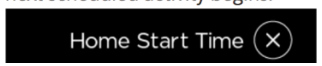
Claims	Accused Instrumentality
	Display 3.5 in. full-color LCD touchscreen 320 x 480 pixel display **Dimensions** Thermostat Height: 109 mm (4.29 in.) Width: 109 mm (4.29 in.) Depth: 25.6 mm (1 in.) SmartSensor Height: 40 mm (1.6 in.) With stand: 50 mm (2 in.) Width: 40 mm (1.6 in.) Depth: 26 mm (1 in.) Trim plate Height: 158.6 mm (6.2 in.) Width: 158.6 mm (6.2 in.) Depth: 8.7 mm (0.3 in.) Power Extender Kit* Length: 62 mm (2.4 in.) Width: 62 mm (2.4 in.) Depth: 23 mm (0.9 in.) *Optional for installation **Colors** Black front, white sides and back **Processor & memory** 1.5GHz quad-core Cortex A35 processor 4GB Flash (eMMC) 512MB DDR4 RAM **Thermostat sensors** Temperature Humidity Occupancy Proximity **Voice & audio** Built-in Alexa Voice Service Built-in microphones Built-in speaker Far-field voice recognition https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

Claims	Accused Instrumentality
	On the thermostat/mobile app: Go to the schedule tab from the main menu: **MAIN MENU > SCHEDULE**. You will see your schedule for the day. Tap on any of the days listed at the top to view your schedule for that specific day.  If you wish to change the start time of a particular activity, simply tap on the activity (**Home**, **Away**, or **Sleep**) and adjust the time. The ecobee will maintain this activity/Comfort Setting until your next scheduled activity begins.  https://support.ecobee.com/s/articles/How-do-I-program-my-schedule-on-my-ecobee-thermostat
[1.13] 1) detect occupancy or vacancy of a nearby space from signals from a coupled occupancy sensor;	The Ecobee Smart Thermostat control programs selectively detect occupancy or vacancy of a nearby space from signals from a coupled occupancy sensor. Here, the Ecobee Smart Thermostat comprises a central processor that can selectively detect occupancy of a nearby space from signals from the coupled occupancy sensor as shown below.

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Claims	Accused Instrumentality
	 SmartSensor included for enhanced comfort. **SmartSensor keeps you comfortable where you are, not just where your thermostat is. Simply place SmartSensor in the bedroom, office, or child's room for total comfort and control.** ✓ Occupancy detection manages temperature automatically. ✓ Helps balance your home's temperature. ✓ Control straight from the app or your smart home assistant. Explore more Chat https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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Claims	Accused Instrumentality
	Smart Home and Smart Away × **What is it?** With Smart Home/Smart Away enabled, when your thermostat senses you're home during a scheduled Away period or away during a scheduled Home period, it will automatically override your schedule for comfort (Smart Home) or savings (Smart Away). So even when your schedule changes, your ecobee knows to adjust on its own–helping you save energy and stay comfortable. Smart Home/Away works independently of the sensor participation rules you've set up for your Comfort Settings. That's to say, it acts upon the occupancy readings from all of your sensors–not just the ones participating in the scheduled Comfort Setting. Smart Home and Smart Away cannot be triggered during a scheduled Sleep period. **How it works** By using the occupancy information reported by your ecobee thermostat's built-in occupancy sensor* and the Room Sensors paired with your ecobee, Smart Home/Away tracks your household's comings and goings to set the temperature for comfort or savings. https://support.ecobee.com/s/articles/Smart-Home-Smart-Away-and-Follow-Me-Features
[1.14] 2) read current signals from a coupled environmental sensor and transmit them for storage in the memory of the central control device only if occupancy is detected;	The Ecobee Smart Thermostat control programs selectively read current signals from a coupled environmental sensor and transmit them for storage in the memory of the central control device only if occupancy is detected. Here, the Ecobee Smart Thermostat comprises a central processing unit that reads current signals from a coupled environmental sensor (i.e. Temperature sensor) and transmits them for storage in the memory of the central control device when occupancy is detected.

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Claims	Accused Instrumentality
	Temperature and occupancy detection **Follow Me mode for comfort that stays with you** **Saves energy when you're away** **Wirelessly connects to all ecobee devices** **No wires. Installs in seconds** https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/

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Claims	Accused Instrumentality
	Occupancy and Temperature detection • Detects both temperature and occupancy and communicates those readings to the thermostat. • Occupancy detection uses infrared technology to detect body heat signatures. • Occupancy is based on a person's continued presence within a SmartSensor's viewing angle –not merely motion detection. The more time you spend in front of a particular sensor, the more weight your ecobee assigns to that sensor's readings. • Enhanced occupancy sensor "pet immunity" to prevent false occupancy readings triggered by our furry friends. **Communication** • SmartSensor uses 915MHz radio waves–not Wi-Fi–for secure, energy-efficient communication with your ecobee thermostat. **Range and Viewing Angle** • Range: SmartSensor can communicate with thermostat to a range of 60 ft (barriers and obstacles such as thick walls or different floors, and other devices operating on the same 915MHz frequency, such as a baby monitor, cordless phones, etc., may lower range). https://support.ecobee.com/s/articles/SmartSensors-FAQs-Setup-Guide-and-Troubleshooting

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Claims	Accused Instrumentality
	Smart Home and Smart Away × **What is it?** With Smart Home/Smart Away enabled, when your thermostat senses you're home during a scheduled Away period or away during a scheduled Home period, it will automatically override your schedule for comfort (Smart Home) or savings (Smart Away). So even when your schedule changes, your ecobee knows to adjust on its own–helping you save energy and stay comfortable. Smart Home/Away works independently of the sensor participation rules you've set up for your Comfort Settings. That's to say, it acts upon the occupancy readings from all of your sensors–not just the ones participating in the scheduled Comfort Setting. Smart Home and Smart Away cannot be triggered during a scheduled Sleep period. **How it works** By using the occupancy information reported by your ecobee thermostat's built-in occupancy sensor* and the Room Sensors paired with your ecobee, Smart Home/Away tracks your household's comings and goings to set the temperature for comfort or savings. https://support.ecobee.com/s/articles/Smart-Home-Smart-Away-and-Follow-Me-Features
[1.15] 3) for the central control program, calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment.	The Ecobee Smart Thermostat control programs selectively calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment Here, the Ecobee Smart Thermostat comprises a central control program (system monitor reports), which can average the received environmental sensors values and use the average result as a control value which is compared to the setpoint stored in the memory to determine actuation of the space conditioning equipment.

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Claims	Accused Instrumentality
	Follow Me This menu allows you to view details about your thermostat's sensor readings and participation within comfort settings. Runtime data is reported and displayed in 5 minute intervals. The vertical white line on the graph indicates the currently selected interval, with the timestamp shown underneath. In the top graph, the horizontal bars indicate the Comfort Setting at the time, as well as the occupancy readings of the sensors at the time. In this example, the thermostat's internal sensor (Basement) was reporting a temperature of 82F. The SmartSensor was reading 77F. The calculated average at the time was 79F. At this time, only the thermostat sensor was detecting occupancy. https://support.ecobee.com/s/articles/Viewing-your-thermostat-s-HomeIQ-reports **Follow Me mode questions and answers** **What happens if none of the sensors participating in the active Comfort Setting report motion?** If none of your participating sensors report motion for 30 minutes, your ecobee will set the temperature based on the average of all participating sensors (even in the Sleep Comfort Setting). SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)

Claims	Accused Instrumentality
[3.0] The system of claim 2 wherein a display and a user interface are coupled with the input/output unit of the central processing device so the central control program causes a display of averaging methods for averaging received environmental sensor values.	The Ecobee Smart Thermostat control programs selectively calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment. Here, the Ecobee Smart Thermostat comprises a central control program (system monitor reports), which can average the received environmental sensors values and use the average result as a control value which is compared to the setpoint stored in the memory to determine actuation of the space conditioning equipment. Additionally, the calculated averages can be displayed on the user interface.

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Claims	Accused Instrumentality
	Follow Me This menu allows you to view details about your thermostat's sensor readings and participation within comfort settings. Runtime data is reported and displayed in 5 minute intervals. The vertical white line on the graph indicates the currently selected interval, with the timestamp shown underneath. In the top graph, the horizontal bars indicate the Comfort Setting at the time, as well as the occupancy readings of the sensors at the time. In this example, the thermostat's internal sensor (Basement) was reporting a temperature of 82F. The SmartSensor was reading 77F. The calculated average at the time was 79F. At this time, only the thermostat sensor was detecting occupancy. https://support.ecobee.com/s/articles/Viewing-your-thermostat-s-HomeIQ-reports **Follow Me mode questions and answers** **What happens if none of the sensors participating in the active Comfort Setting report motion?** If none of your participating sensors report motion for 30 minutes, your ecobee will set the temperature based on the average of all participating sensors (even in the Sleep Comfort Setting). SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)

Claims	Accused Instrumentality
[6.0] An occupancy response system with a central control device adapted to control space conditioning equipment affecting a conditioned space, the central control device located at a single physical location in one of multiple rooms comprising the conditioned space, where remote sensors are located in physical locations substantially apart from the central control device, the improvement comprising:	The Ecobee Smart Thermostat includes an "occupancy response system with a central control device adapted to control space conditioning equipment affecting a conditioned space, the central control device located at a single physical location in one of multiple rooms comprising the conditioned space, where remote sensors are located in physical locations substantially apart from the central control device," as recited in claim 6 of the '437 Patent. As one non-limiting example, The Ecobee Smart Thermostat comprises a thermostat system for controlling HVAC systems, which includes an occupancy response system with remote sensors. https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	Photos of Ecobee Smart Thermostat

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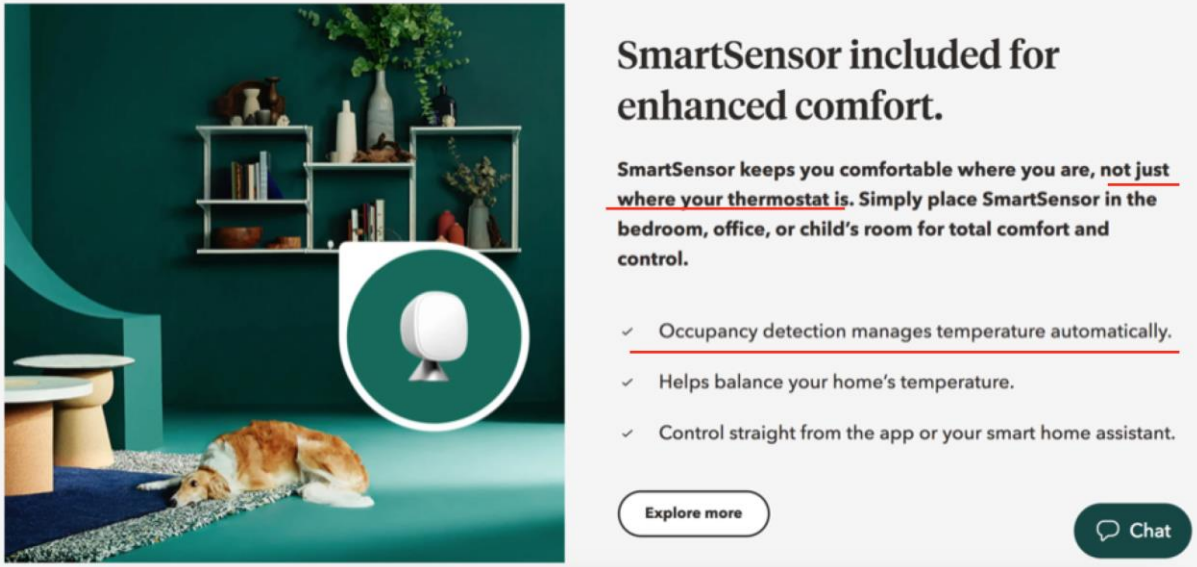
Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	Seamless setup **Compatible with most HVAC systems** ecobee thermostats work with radiant heating systems, multistage, and dual-fuel heat pumps. Use the Thermostat Compatibility Checker or reach out to our support team at 1-877-932-6233. **Industry-leading reliability** ecobee thermostats are powered by a dedicated 24VAC power supply using a Common wire (or C wire) for consistent performance, even in the coldest weather. The included Power Extender Kit allows for installation in most homes without a C wire. **Supports HVAC accessories** Compatible with HVAC accessories, including humidifiers, dehumidifiers, HRVs, and ERVs to give you ultimate control over your home's comfort. https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/
[6.1] A) one or more environmental sensors adapted to measure a local environmental condition and generate signals indicating its value;	The Ecobee Smart Thermostat comprises one or more environmental sensors adapted to measure a local environmental condition and generate signals indicating its value. Specifically, the Ecobee Smart Thermostat comprises multiple environmental sensors (i.e., thermostat Humidity, Occupancy, and Proximity sensors), as outlined below, which provides an electrical signal indicative of the temperature of the conditioned space. Thermostat sensors: Temperature, Humidity, Occupancy, Proximity

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Claims	Accused Instrumentality
	eco+ features – **What is eco+?** eco+ is a free upgrade for SmartThermostat with voice control. It works in the background to deliver maximum energy efficiency and comfort with minimal effort. Learn more about eco+. **Schedule Assistant** Learns your routine and recommends changes to your thermostat schedule to better match it. **Smart Home & Away** Uses SmartThermostat's built-in occupancy sensor to automatically adjust the temperature for energy savings when you leave home and restore your comfort settings when you return. **Follow Me** Detects which rooms are in use and adjusts the temperature accordingly for comfort in those spaces. **Feels Like** Takes indoor humidity levels into account to ensure your home is energy efficient and always feels like the temperature you've set, no matter the humidity. **Time of Use** Intelligently preheats or precools your home when electricity is cheaper and reduces usage when it's expensive, saving you money and using cleaner energy.[2] https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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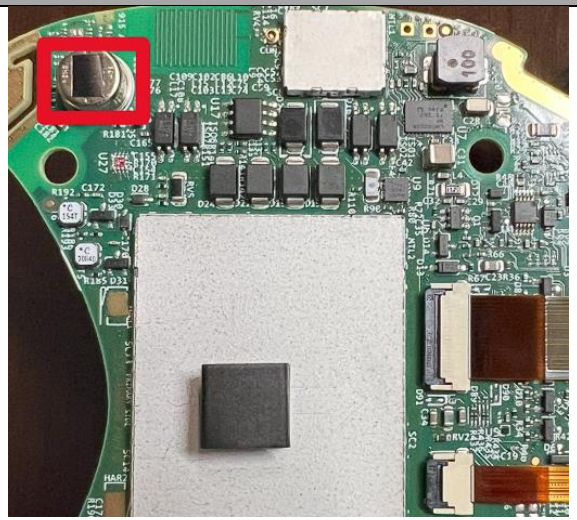
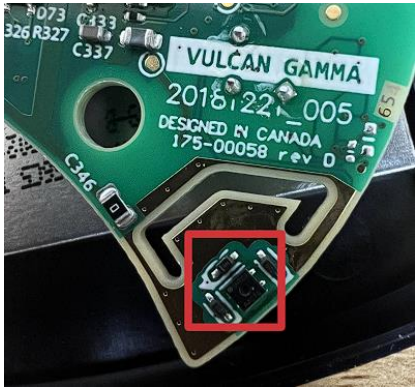
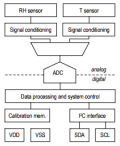
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat  Photos of Ecobee Smart Thermostat

Claims	Accused Instrumentality
	SENSIRION THE SENSOR COMPANY **Datasheet SHTC3** Humidity and Temperature Sensor IC ▪ Best performance-to-price ratio ▪ Fully calibrated and reflow solderable ▪ Ultra-low power consumption ▪ Power-up and measurement within 1 ms ▪ Broad supply voltage range of 1.62 V to 3.6 V ▪ Ultra-small DFN package: 2 × 2 × 0.75 mm³ ▪ Typical accuracy: ±2 %RH and ±0.2 °C **Product Summary** The SHTC3 is a digital humidity and temperature sensor designed especially for high-volume consumer electronics applications. This sensor is strictly designed to overcome conventional limits for size, power consumption, and performance to price ratio in order to fulfill current and future requirements. Sensirion's CMOSens® technology offers a complete sensor system on a single chip, consisting of a capacitive humidity sensor, a bandgap temperature sensor, analog and digital signal processing, A/D converter, calibration data memory, and a digital communication interface supporting I²C fast mode. The ultra-small, 2 × 2 × 0.75 mm³ DFN package enables applications in even the most limited of spaces. The sensor covers a humidity measurement range of 0 to 100 %RH and a temperature measurement range of -40 °C to 125 °C with a typical accuracy of ±2 %RH and ±0.2°C. The broad supply voltage of 1.62 V to 3.6 V and an energy budget below 1 µJ per measurement make the SHTC3 suitable for mobile or wireless applications powered by batteries. With the industry-proven quality and reliability of Sensirion's humidity and temperature sensors and constant accuracy over a large measurement range, the SHTC3 offers best performance-to-price ratio. Tape and reel packaging together with suitability for standard SMD assembly processes make the SHTC3 predestined for high-volume applications. **Benefits of Sensirion's CMOSens® Technology** ▪ High reliability and long-term stability ▪ Industry-proven technology with a track record of more than 15 years ▪ Designed for mass production ▪ Optimized for lowest cost ▪ High signal-to-noise ratio **Contents of this Data Sheet** 1 Humidity and Temperature Sensor Specifications ....2 2 Electrical Specifications ....4 3 **Timing Specifications** ....5 4 Interface Specifications ....7 5 **Operation and Communication** ....7 6 **Quality** ....10 7 **Packaging and Traceability** ....10 8 **Ordering Information** ....10 9 Technical Drawings ....11 10 Further Information ....12 **Block diagram**  **Figure 1** Functional block diagram of the SHTC3. www.sensirion.com Version 0.3 – October 2017 1/13 seri_s_a0003561073_1-2291167.pdf (mouser.com)
[6.2] B) one or more occupancy sensors adapted to detect occupancy of space around an environmental sensor and generate signals indicating occupancy;	Specifically, the Ecobee Smart Thermostat comprises a central device (i.e., thermostat) and a remote sensor, each of which comprises an occupancy sensor which detects occupancy in the space where the sensors are located.

Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	What thermostats are compatible with these smart features? • Smart Home and Away is available on Smart Thermostat Premium, Smart Thermostat Enhanced, SmartThermostat with voice control, ecobee4, and ecobee3 out of the box, as these thermostats have a built-in occupancy sensor. With the ecobee3 lite, Smart Home and Away can be used once a SmartSensor or Room Sensor is paired with the thermostat. • Follow Me can be enabled once you pair a SmartSensor or Room Sensor with your ecobee thermostat. For the ecobee3 Lite, two sensors must be paired to enable this feature. **Smart Home and Away** By using the occupancy information reported by your ecobee thermostat's built-in occupancy sensor and the sensors paired with your ecobee, Smart Home and Away tracks your household's comings and goings to set the temperature for comfort or energy savings. https://support.ecobee.com/s/articles/Smart-Home-Smart-Away-and-Follow-Me-Features

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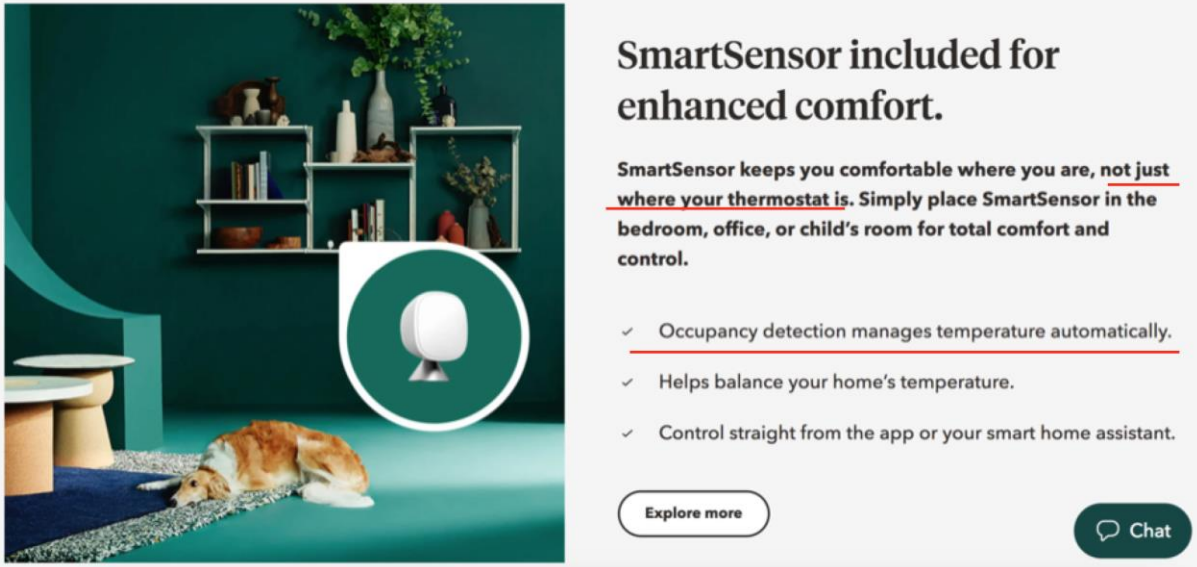
Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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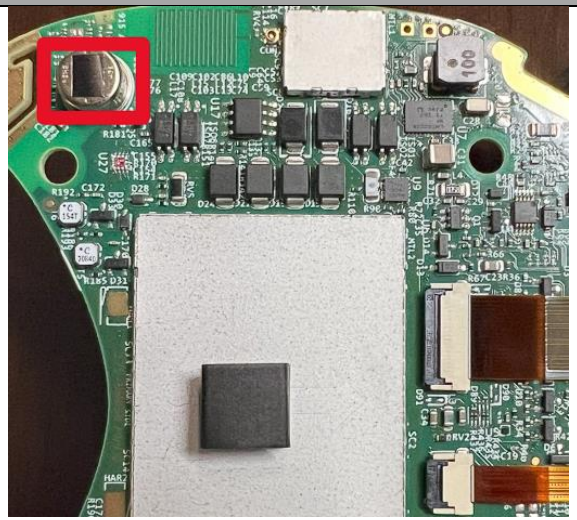
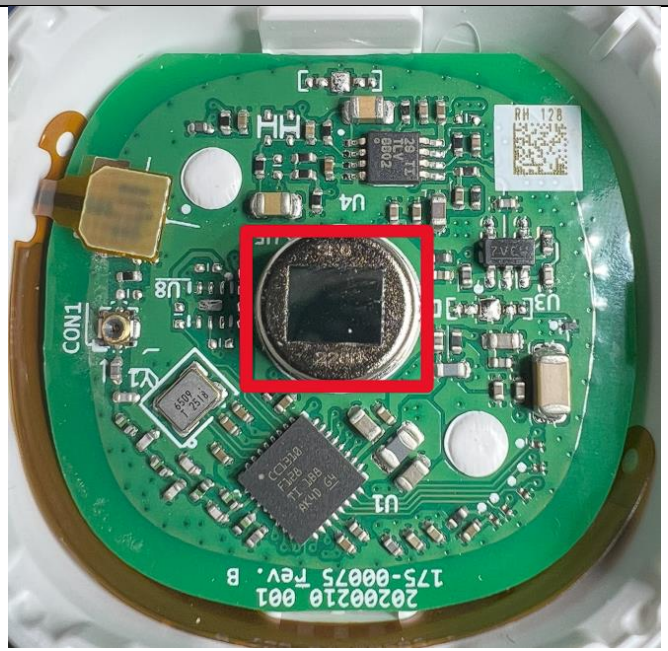
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat

Claims	Accused Instrumentality
	 Photos of Ecobee Smart Sensor
[6.3] C) either the central control device and one or more of the remote sensors or two or more of the remote sensors each comprise an environmental sensor and an occupancy sensor;	The Ecobee Smart Thermostat comprises either the central control device and one or more of the remote sensors or two or more of the remote sensors each comprise an environmental sensor and an occupancy sensor. Here, the Ecobee Smart Thermostat comprises a central device (i.e. thermostat) and a remote sensor, each of which comprise an environmental sensor and an occupancy sensor as outlined below.

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Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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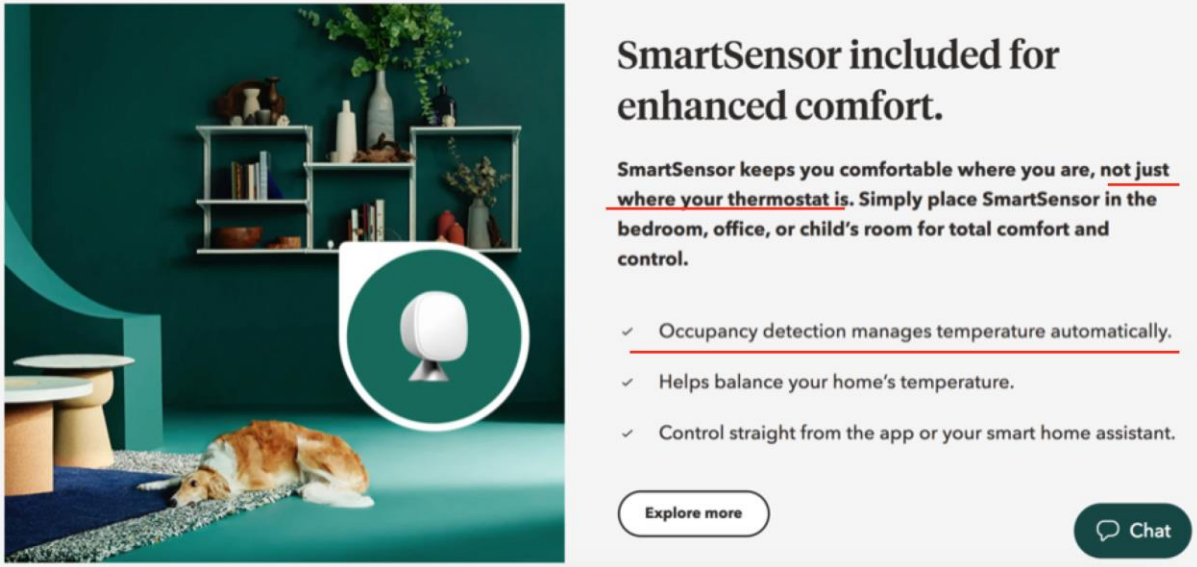
Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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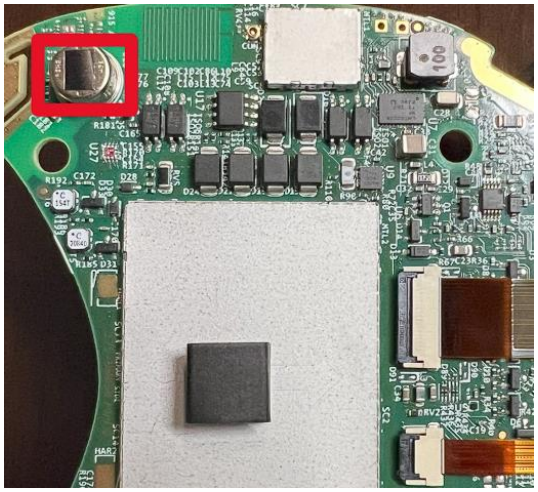
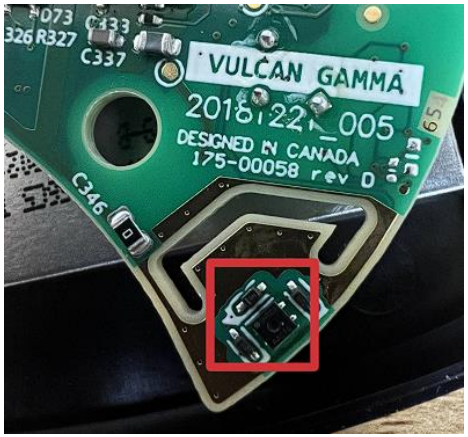
Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat  Photos of Ecobee Smart Thermostat

Claims	Accused Instrumentality
	SENSIRION THE SENSOR COMPANY **Datasheet SHTC3** Humidity and Temperature Sensor IC ▪ Best performance-to-price ratio ▪ Fully calibrated and reflow solderable ▪ Ultra-low power consumption ▪ Power-up and measurement within 1 ms ▪ Broad supply voltage range of 1.62 V to 3.6 V ▪ Ultra-small DFN package: 2 × 2 × 0.75 mm³ ▪ Typical accuracy: ±2 %RH and ±0.2 °C **Product Summary** The SHTC3 is a digital humidity and temperature sensor designed especially for high-volume consumer electronics applications. This sensor is strictly designed to overcome conventional limits for size, power consumption, and performance to price ratio in order to fulfill current and future requirements. Sensirion's CMOSens® technology offers a complete sensor system on a single chip, consisting of a capacitive humidity sensor, a bandgap temperature sensor, analog and digital signal processing, A/D converter, calibration data memory, and a digital communication interface supporting I²C fast mode. The ultra-small, 2 × 2 × 0.75 mm³ DFN package enables applications in even the most limited of spaces. The sensor covers a humidity measurement range of 0 to 100 %RH and a temperature measurement range of -40 °C to 125 °C with a typical accuracy of ±2 %RH and ±0.2°C. The broad supply voltage of 1.62 V to 3.6 V and an energy budget below 1 µJ per measurement make the SHTC3 suitable for mobile or wireless applications powered by batteries. With the industry-proven quality and reliability of Sensirion's humidity and temperature sensors and constant accuracy over a large measurement range, the SHTC3 offers best performance-to-price ratio. Tape and reel packaging together with suitability for standard SMD assembly processes make the SHTC3 predestined for high-volume applications. **Benefits of Sensirion's CMOSens® Technology** ▪ High reliability and long-term stability ▪ Industry-proven technology with a track record of more than 15 years ▪ Designed for mass production ▪ Optimized for lowest cost ▪ High signal-to-noise ratio **Contents of this Data Sheet** 1 Humidity and Temperature Sensor Specifications ....2 2 Electrical Specifications ....4 3 **Timing Specifications** ....5 4 Interface Specifications ....7 5 **Operation and Communication** ....7 6 **Quality** ....10 7 **Packaging and Traceability** ....10 8 **Ordering Information** ....10 9 Technical Drawings ....11 10 Further Information ....12 **Block diagram** RH sensor / T sensor Signal conditioning / Signal conditioning ADC analog / digital Data processing and system control Calibration mem. / I²C interface VDD / VSS / SDA / SCL **Figure 1** Functional block diagram of the SHTC3. www.sensirion.com Version 0.3 – October 2017 1/13 seri_s_a0003561073_1-2291167.pdf (mouser.com)

Claims	Accused Instrumentality
	 Photos of Ecobee Smart Sensor
[6.4] D) a central processor for the central control device including:	The Ecobee Smart Thermostat comprises a central processor for the central control device. Specifically, the Ecobee Smart Thermostat comprises a 1.5GHz quad-core Cortex A35 processor as outlined below.

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Claims	Accused Instrumentality
	Processor & memory — 1.5GHz quad-core Cortex A35 processor; 4GB Flash (eMMC); 512MB DDR4 RAM **Thermostat sensors** — Temperature; Humidity; Occupancy; Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ Photos of Ecobee Smart Thermostat

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Claims	Accused Instrumentality
[6.5] 1) a central processing unit;	The Ecobee Smart Thermostat's central control device comprises a central processing unit. Specifically, the Ecobee Smart Thermostat comprises a 1.5GHz quad-core Cortex A35 processor as outlined below. Processor & memory: 1.5GHz quad-core Cortex A35 processor; 4GB Flash (eMMC); 512MB DDR4 RAM Thermostat sensors: Temperature; Humidity; Occupancy; Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	 Photos of Ecobee Smart Thermostat **MT8167A** The MediaTek MT8167 is a cutting-edge tablet SoC built for all-day, high-speed performance with great power efficiency. It is a highly-integrated two-chipset package, needing only AP and a PMIC unit, greatly simplifying tablet design development and time to market. Movies, Internet browsing, and application use are made seamless and responsive thanks to the 64-bit Quad-core processing using four, 64-bit ARM Cortex-A35 cores and an Imagination PowerVR GE8300 GPU. Versus the ARM Cortex-A53, the new Cortex-A35 consumes up to 32% less battery power, allowing users to play, work or browse even longer. The MT8167 provides support for fast DDR4 memory, USB Type-C connectivity and incorporates MiraVision, a leading MediaTek display enhancement technology. The MT8167 platform is available in two versions, A and B. The MT8167A provides slightly higher processing and graphics performance specs, with the biggest difference being support for 1080p video decoding at 60fps (up from 30fps in the MT8167B) and support for a Full HD+ (1920x1200) A GPS and 802.11ac module (MT6630) can easily be incorporated into the package, providing flexibility for manufactures in their designs and goals. https://www.mediatek.com/products/tablets/mt8167a

Claims	Accused Instrumentality
[6.6] 2) a real time clock;	The Ecobee Smart Thermostat's central control device comprises a real time clock. Specifically, the Ecobee Smart Thermostat uses an internet connection to set the date and time settings during initial installation. Furthermore, the set time is used in various other programs. **How Do Date & Time Settings Work on My ecobee Smart Thermostat?** Your ecobee Smart Thermostat's date and time settings were automatically configured when your thermostat was installed and set up for the first time. During the initial registration process, you will be asked to select the country/region in which you reside. This information allows your Smart Thermostat to use its internet connection to determine the date and time settings for the particular country/region you've selected. For this reason, there are no manual date and time adjustments needed or offered on your ecobee Smart Thermostat. **What Changes to Date & Time Settings Can I Make?** The date and time settings that your ecobee Smart Thermostat use are automatically set via the internet. As such, there are a limited set of date and time options available to you. These include: • **Time Format:** Choose to display the time in a 12 hour or 24 hour format. • **Country/Region:** Specify the country/region where you reside, so your ecobee device can determine the proper date & time via the internet. Because date and time settings are tied to your ecobee account, the settings you will have access to will depend on where you are attempting to make changes from: https://www.techsolutions.support.com/how-to/how-to-set-the-date-and-time-on-an-ecobee-thermostat-12344
[6.7] 3) a memory coupled to said central processing unit for storing a central control program and	The Ecobee Smart Thermostat's central control device comprises a memory coupled to said central processing unit for storing a central control program and data, said data including a least one of the values of the environmental conditions sensed by the environmental sensors.

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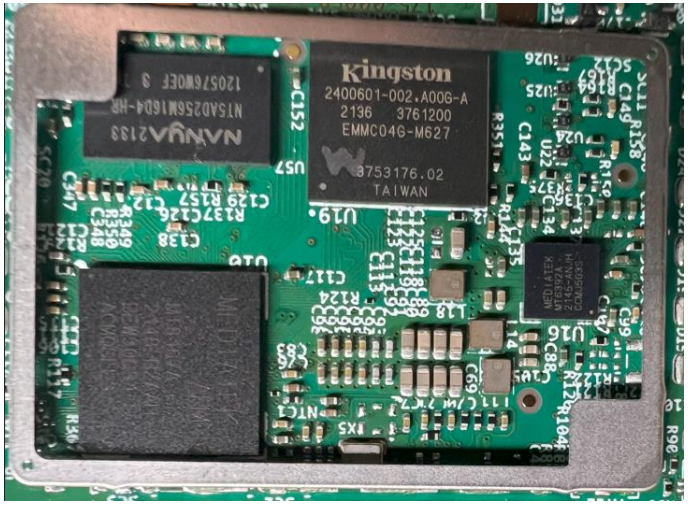
Claims	Accused Instrumentality
data, said data including at least one of the values of the environmental conditions sensed by the environmental sensors; and	Specifically, the Ecobee Smart Thermostat's central control device comprises a memory that is coupled to the central processing and is used to store program data information gained from the environmental sensors (i.e. temperature and occupancy). Processor & memory: 1.5GHz quad-core Cortex A35 processor; 4GB Flash (eMMC); 512MB DDR4 RAM Thermostat sensors: Temperature; Humidity; Occupancy; Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/  Photos of Ecobee Smart Thermostat

Claims	Accused Instrumentality
	3.3. *e*•MMC™ Device Overview The *e*•MMC™ device transfers data via a configurable number of data bus signals. The communication signals are: **3.3.1 Clock (CLK)** Each cycle of this signal directs a one bit transfer on the command and either a one bit (1x) or a two bits transfer (2x) on all the data lines. The frequency may vary between zero and the maximum clock frequency. **3.3.2 Data Strobe(DS)** This signal is generated by the device and used for output in HS400 mode. The frequency of this signal follows the frequency of CLK. For data output each cycle of this signal directs two bits transfer(2x) on the data - one bit for positive edge and the other bit for negative edge. For CRC status response output and CMD response output(enabled only HS400 enhanced strobe mode), the CRC status is latched on the positive edge only, and don't care on the negative edge. **3.3.3 Command (CMD)** This signal is a bidirectional command channel used for Device initialization and transfer of commands. The CMD signal has two operation modes: open-drain for initialization mode, and push-pull for fast command transfer. Commands are sent from the *e*•MMC™ host controller to the *e*•MMC™ Device and responses are sent from the Device to the host. **3.3.4 Input/Outputs (DAT0-DAT7)** These are bidirectional data channels. The DAT signals operate in push-pull mode. Only the Device or the host is driving these signals at a time. By default, after power up or reset, only DAT0 is used for data transfer. A wider data bus can be configured for data transfer, using either DAT0-DAT3 or DAT0-DAT7, by the *e*•MMC™ host controller. The *e*•MMC™ Device includes internal pull-ups for data lines DAT1-DAT7. Immediately after entering the 4-bit mode, the Device disconnects the internal pull ups of lines DAT1, DAT2, and DAT3. Correspondingly, immediately after entering to the 8-bit mode the Device disconnects the internal pull-ups of lines DAT1–DAT7. https://datasheet.lcsc.com/szlcsc/2006081033_Kingston-Technology-EMMC04G-M627-A01_C577446.pdf

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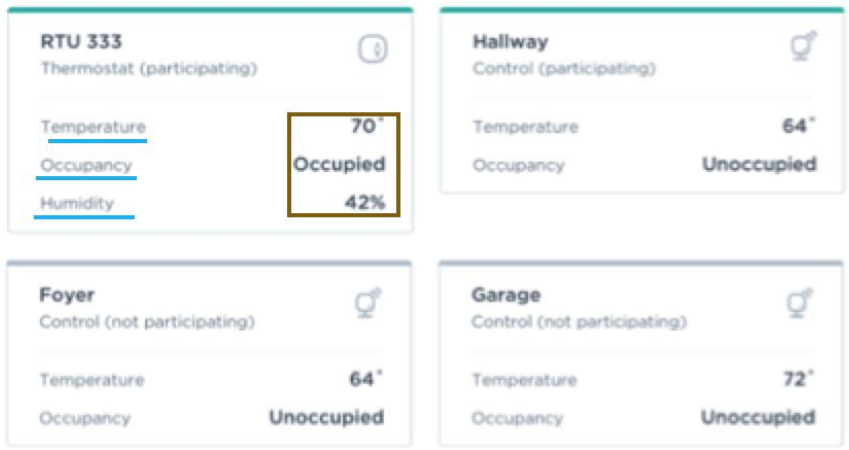
Claims	Accused Instrumentality
	You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below:  https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat
[6.8] 4) an input/output unit coupled to the central processing unit, to the space conditioning equipment for issuing control signals thereto, and to a reception interface adapted to receive signals representing environmental conditions at a remote sensor;	The Ecobee Smart Thermostat's central control device comprises an input/output unit coupled to the central processing unit, to the space conditioning equipment for issuing control signals thereto, and to a reception interface adapted to receive signals representing environmental conditions at a remote sensor. Specifically, the Ecobee Smart Thermostat's central control device comprises an I/O unit coupled to the processor. On information and belief, the I/O receives and sends data from the variety of thermostat sensors, the LCD interface screen, the remote wireless sensors, and the space condition equipment.

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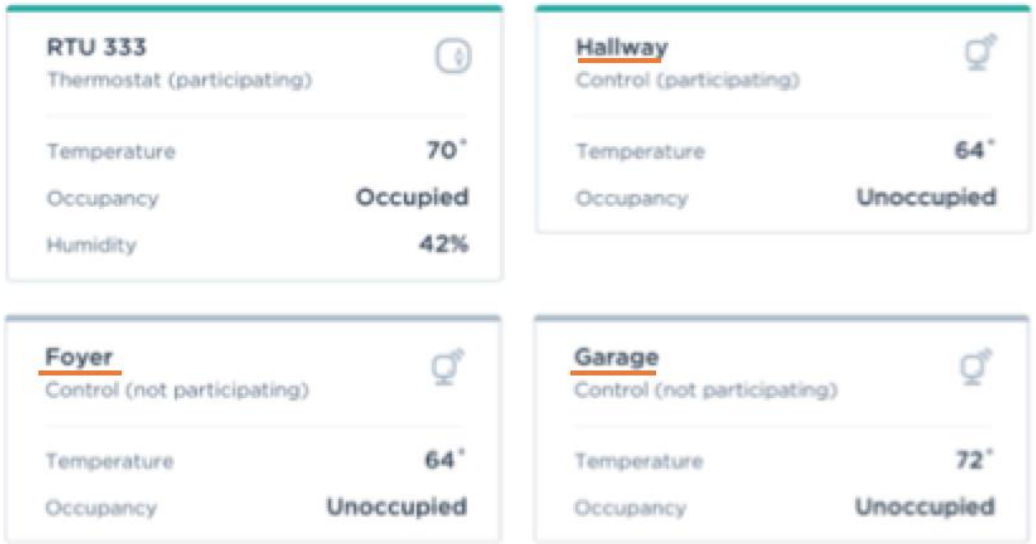
Claims	Accused Instrumentality
	Touch Screen Your ecobee3 has a touch screen, similar to that used in smartphones and tablets. Touch items to select or activate them. For menus with a >, this will expand the menu to display additional options or submenus. Swipe up and down to display additional information. Swiping on a temperature bar will also adjust the settings up or down. Swipe left and right to scroll horizontal lists that contain multiple items to choose from. Exit or go back — To exit a submenu, touch <. To close the main menu, touch ∨.

Claims	Accused Instrumentality
	Display 3.5 in. full-color LCD touchscreen 320 x 480 pixel display **Dimensions** Thermostat Height: 109 mm (4.29 in.) Width: 109 mm (4.29 in.) Depth: 25.6 mm (1 in.) SmartSensor Height: 40 mm (1.6 in.) With stand: 50 mm (2 in.) Width: 40 mm (1.6 in.) Depth: 26 mm (1 in.) Trim plate Height: 158.6 mm (6.2 in.) Width: 158.6 mm (6.2 in.) Depth: 8.7 mm (0.3 in.) Power Extender Kit* Length: 62 mm (2.4 in.) Width: 62 mm (2.4 in.) Depth: 23 mm (0.9 in.) *Optional for installation **Colors** Black front, white sides and back **Processor & memory** 1.5GHz quad-core Cortex A35 processor 4GB Flash (eMMC) 512MB DDR4 RAM **Thermostat sensors** Temperature Humidity Occupancy Proximity **Voice & audio** Built-in Alexa Voice Service Built-in microphones Built-in speaker Far-field voice recognition https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

Claims	Accused Instrumentality
	 https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat
[6.9] E) a remote processor for each of the remote sensors including a central processing unit, a real time clock, a memory coupled to said central processing unit for storing a transmission control program, and an input/output unit coupled to the central processing unit and to a transmissions interface adapted to send to the central control device signals representing environmental conditions from a	The Ecobee Smart Thermostat comprises a remote processor for each of the remote sensors including a central processing unit, a real time clock, a memory coupled to said central processing unit for storing a transmission control program, and an input/output unit coupled to the central processing unit and to a transmissions interface adapted to send to the central control device signals representing environmental conditions from a coupled environmental sensor. Specifically, the Ecobee Smart Thermostat's remote sensor, on information and belief, comprises a remote processor including a CPU, real time clock, a memory coupled to the CPU, and an I/O coupled to the central processing unit (i.e. thermostat) and to a transmission interface adapted to send out the central control device signals representing environmental conditions from a coupled environmental sensor (i.e. temperature and occupancy).

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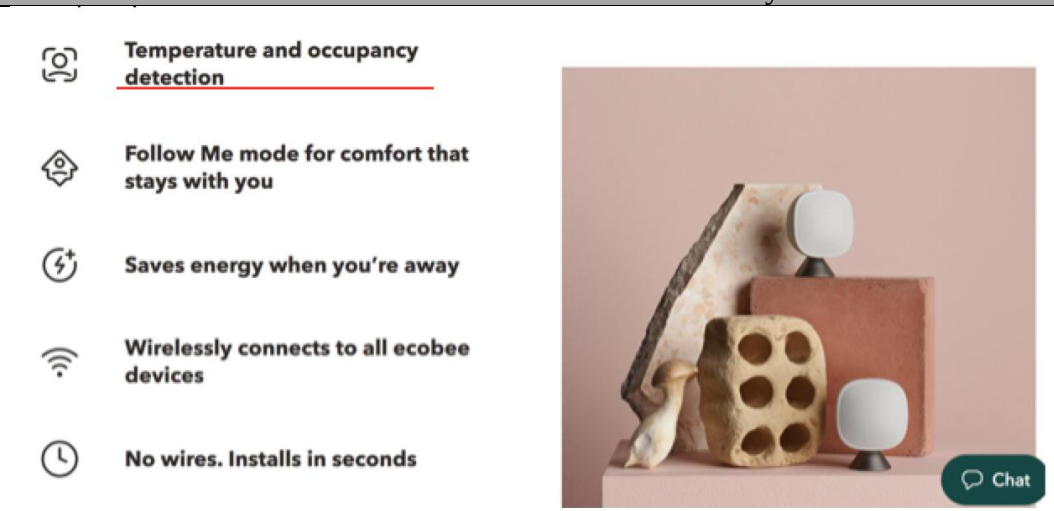
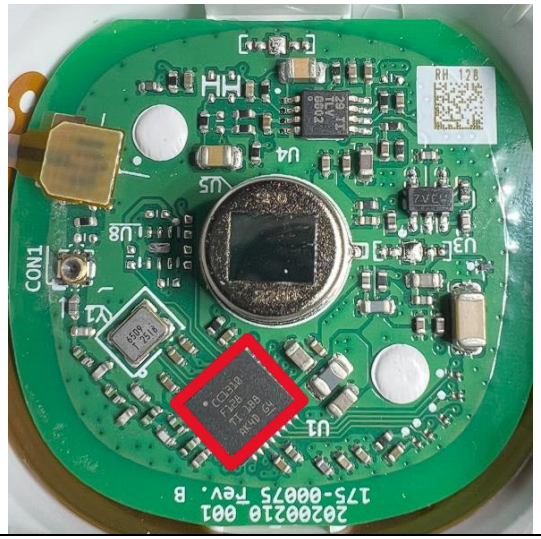
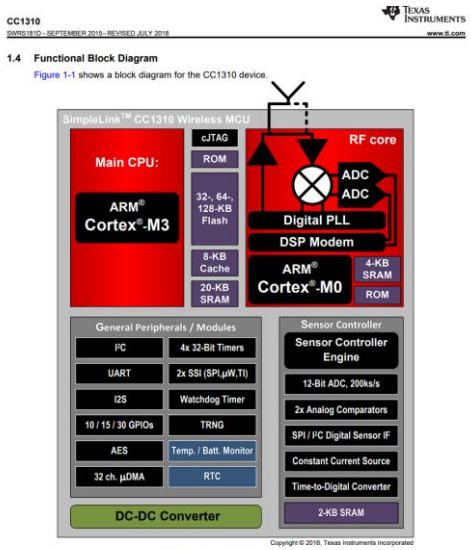
Claims	Accused Instrumentality
coupled environmental sensor; and	 https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/ 

Claims	Accused Instrumentality
	Photos of the Ecobee SmartSensor  Figure 1-1. CC1310 Block Diagram https://www.ti.com/lit/ds/symlink/cc1310.pdf?ts=1683290929819

Claims	Accused Instrumentality
	Occupancy and Temperature detection • Detects both temperature and occupancy and communicates those readings to the thermostat. • Occupancy detection uses infrared technology to detect body heat signatures. • Occupancy is based on a person's continued presence within a SmartSensor's viewing angle –not merely motion detection. The more time you spend in front of a particular sensor, the more weight your ecobee assigns to that sensor's readings. • Enhanced occupancy sensor "pet immunity" to prevent false occupancy readings triggered by our furry friends. **Communication** • SmartSensor uses 915MHz radio waves–not Wi-Fi–for secure, energy-efficient communication with your ecobee thermostat. **Range and Viewing Angle** • Range: SmartSensor can communicate with thermostat to a range of 60 ft (barriers and obstacles such as thick walls or different floors, and other devices operating on the same 915MHz frequency, such as a baby monitor, cordless phones, etc., may lower range). https://support.ecobee.com/s/articles/SmartSensors-FAQs-Setup-Guide-and-Troubleshooting

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Claims	Accused Instrumentality
	Compatibility SmartThermostat with voice control ecobee4 ecobee3 lite ecobee3 ecobee SmartCamera* *To support ecobee home monitoring (subscription required) **Sensors** Temperature Occupancy **Range & connectivity** Place sensors up to 60 ft from ecobee thermostat or camera. 915MHz radio **Occupancy sensor** 140° horizontal, 100° vertical https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/ (smartsensor 2-pack specs)

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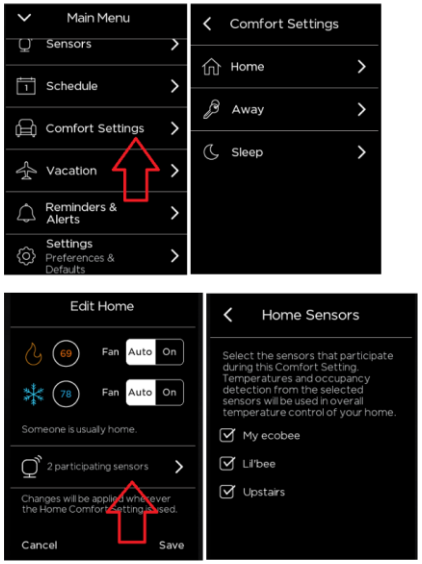
Claims	Accused Instrumentality
	MAIN MENU > COMFORT SETTINGS > Tap the Comfort Setting you wish to change > "Participating Sensors"  SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)
[6.10] F) for the central control device or remote sensors having environmental sensors and occupancy sensors, their input/output units further including a sensor input coupled to an environmental sensor and an occupancy input coupled to an occupancy sensor;	The Ecobee Smart Thermostat comprises for the central control device or remote sensors having environmental sensors and occupancy sensors, their input/output units further including a sensor input coupled to an environmental sensor and an occupancy input coupled to an occupancy sensor. Here, the Ecobee Smart Thermostat (i.e. central control device) and the remote sensor have environmental and occupancy sensors, including a sensor input coupled to the environmental (temperature) sensor and an occupancy input coupled to the occupancy sensor as shown below.

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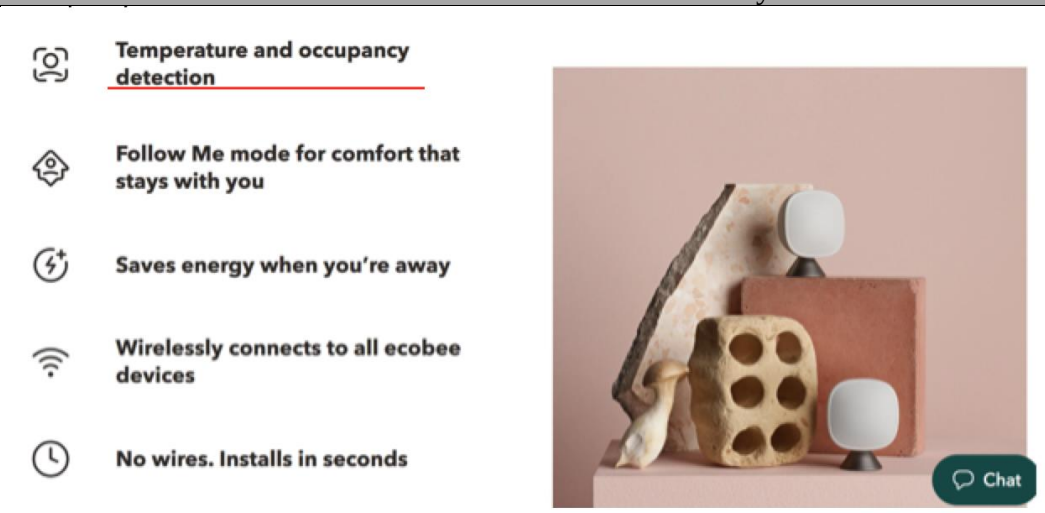
Claims	Accused Instrumentality
	 https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/

Claims	Accused Instrumentality
	Occupancy and Temperature detection • Detects both temperature and occupancy and communicates those readings to the thermostat. • Occupancy detection uses infrared technology to detect body heat signatures. • Occupancy is based on a person's continued presence within a SmartSensor's viewing angle –not merely motion detection. The more time you spend in front of a particular sensor, the more weight your ecobee assigns to that sensor's readings. • Enhanced occupancy sensor "pet immunity" to prevent false occupancy readings triggered by our furry friends. **Communication** • SmartSensor uses 915MHz radio waves–not Wi-Fi–for secure, energy-efficient communication with your ecobee thermostat. **Range and Viewing Angle** • Range: SmartSensor can communicate with thermostat to a range of 60 ft (barriers and obstacles such as thick walls or different floors, and other devices operating on the same 915MHz frequency, such as a baby monitor, cordless phones, etc., may lower range). https://support.ecobee.com/s/articles/SmartSensors-FAQs-Setup-Guide-and-Troubleshooting

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Claims	Accused Instrumentality
	Compatibility SmartThermostat with voice control ecobee4 ecobee3 lite ecobee3 ecobee SmartCamera* *To support ecobee home monitoring (subscription required) **Sensors** Temperature Occupancy **Range & connectivity** Place sensors up to 60 ft from ecobee thermostat or camera. 915MHz radio **Occupancy sensor** 140° horizontal, 100° vertical https://www.ecobee.com/en-us/accessories/smart-temperature-occupancy-sensor/ (smartsensor 2-pack specs)
[6.11] G) the control programs causing a coupled central processing unit to selectively:	The Ecobee Smart Thermostat comprises control programs coupled to the central processing unit. Specifically, the Ecobee Smart Thermostat comprises control programs stored into the memory that cause the CPU to perform certain tasks, such as set schedules for the HVAC system.

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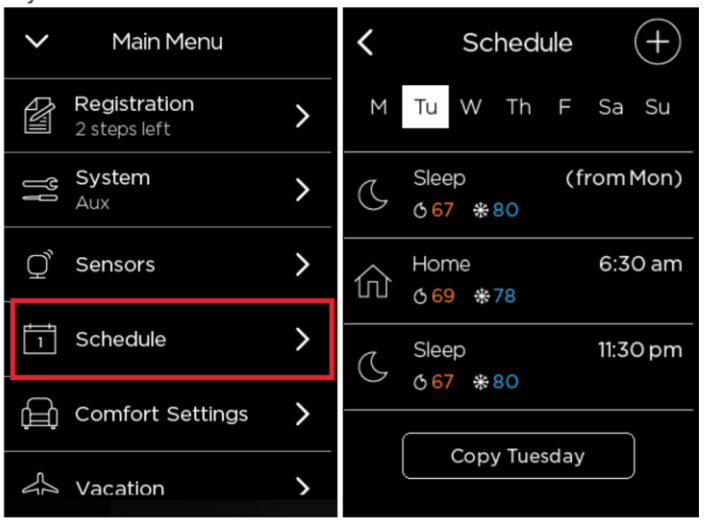
Claims	Accused Instrumentality
	Display 3.5 in. full-color LCD touchscreen 320 x 480 pixel display **Dimensions** Thermostat Height: 109 mm (4.29 in.) Width: 109 mm (4.29 in.) Depth: 25.6 mm (1 in.) SmartSensor Height: 40 mm (1.6 in.) With stand: 50 mm (2 in.) Width: 40 mm (1.6 in.) Depth: 26 mm (1 in.) Trim plate Height: 158.6 mm (6.2 in.) Width: 158.6 mm (6.2 in.) Depth: 8.7 mm (0.3 in.) Power Extender Kit* Length: 62 mm (2.4 in.) Width: 62 mm (2.4 in.) Depth: 23 mm (0.9 in.) *Optional for installation **Colors** Black front, white sides and back **Processor & memory** 1.5GHz quad-core Cortex A35 processor 4GB Flash (eMMC) 512MB DDR4 RAM **Thermostat sensors** Temperature Humidity Occupancy Proximity **Voice & audio** Built-in Alexa Voice Service Built-in microphones Built-in speaker Far-field voice recognition https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

Claims	Accused Instrumentality
	On the thermostat/mobile app: Go to the schedule tab from the main menu: **MAIN MENU > SCHEDULE**. You will see your schedule for the day. Tap on any of the days listed at the top to view your schedule for that specific day.  If you wish to change the start time of a particular activity, simply tap on the activity (**Home**, **Away**, or **Sleep**) and adjust the time. The ecobee will maintain this activity/Comfort Setting until your next scheduled activity begins. https://support.ecobee.com/s/articles/How-do-I-program-my-schedule-on-my-ecobee-thermostat
[6.12] 1) detect occupancy or vacancy of a nearby space from signals from a coupled occupancy sensor;	The Ecobee Smart Thermostat control programs selectively detect occupancy or vacancy of a nearby space from signals from a coupled occupancy sensor. Here, the Ecobee Smart Thermostat comprises a central processor that can selectively detect occupancy of a nearby space from signals from the coupled occupancy sensor as shown below.

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Claims	Accused Instrumentality
	 SmartSensor included for enhanced comfort. **SmartSensor keeps you comfortable where you are, not just where your thermostat is. Simply place SmartSensor in the bedroom, office, or child's room for total comfort and control.** ✓ Occupancy detection manages temperature automatically. ✓ Helps balance your home's temperature. ✓ Control straight from the app or your smart home assistant. Explore more Chat https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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Claims	Accused Instrumentality
	Smart Home and Smart Away × **What is it?** With Smart Home/Smart Away enabled, when your thermostat senses you're home during a scheduled Away period or away during a scheduled Home period, it will automatically override your schedule for comfort (Smart Home) or savings (Smart Away). So even when your schedule changes, your ecobee knows to adjust on its own–helping you save energy and stay comfortable. Smart Home/Away works independently of the sensor participation rules you've set up for your Comfort Settings. That's to say, it acts upon the occupancy readings from all of your sensors–not just the ones participating in the scheduled Comfort Setting. Smart Home and Smart Away cannot be triggered during a scheduled Sleep period. **How it works** By using the occupancy information reported by your ecobee thermostat's built-in occupancy sensor* and the Room Sensors paired with your ecobee, Smart Home/Away tracks your household's comings and goings to set the temperature for comfort or savings. https://support.ecobee.com/s/articles/Smart-Home-Smart-Away-and-Follow-Me-Features
[6.13] 2) read current signals from a coupled environmental sensor and a coupled occupancy sensor and transmit them for storage in the memory of the central control device so that values of environmental conditions are associated with their source of occupied or unoccupied rooms;	The Ecobee Smart Thermostat control program reads current signals from a couple environmental sensor and a coupled occupancy sensor and transmits them for storage in the memory of the central control device so that values of environmental conditions are associated with their source of occupied or unoccupied rooms. Here, the Ecobee Smart Thermostat comprises a control program that reads signals from the environmental and occupancy sensor and transmits them for storage in the memory of the central control device so that the values of the environmental conditions are associated with their source of occupied or unoccupied rooms.

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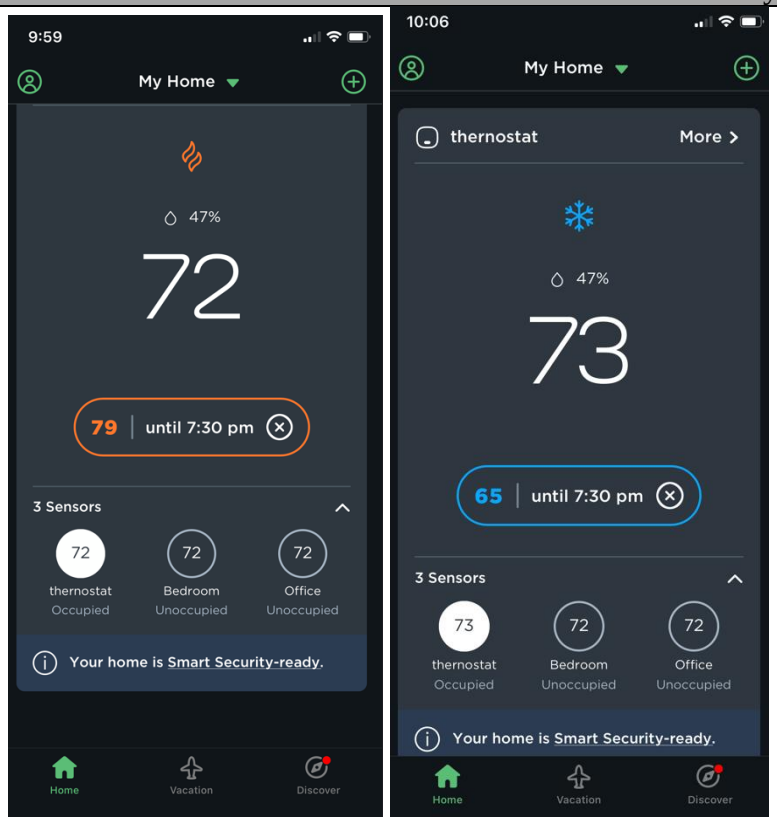
Claims	Accused Instrumentality
	 Images from the Ecobee Application showing that the program reads signals from the occupancy and temperature sensors and stores them into memory. The values are associated with their source of occupied or unoccupied rooms.

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Claims	Accused Instrumentality
	 SmartSensor included for enhanced comfort. **SmartSensor keeps you comfortable where you are, not just where your thermostat is. Simply place SmartSensor in the bedroom, office, or child's room for total comfort and control.** ✓ Occupancy detection manages temperature automatically. ✓ Helps balance your home's temperature. ✓ Control straight from the app or your smart home assistant. Explore more Chat https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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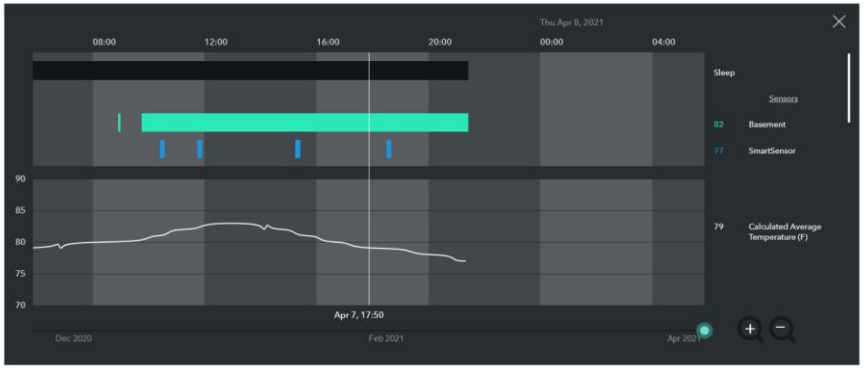
Claims	Accused Instrumentality
	Follow Me This menu allows you to view details about your thermostat's sensor readings and participation within comfort settings. Runtime data is reported and displayed in 5 minute intervals. The vertical white line on the graph indicates the currently selected interval, with the timestamp shown underneath. In the top graph, the horizontal bars indicate the Comfort Setting at the time, as well as the occupancy readings of the sensors at the time. In this example, the thermostat's internal sensor (Basement) was reporting a temperature of 82F. The SmartSensor was reading 77F. The calculated average at the time was 79F. At this time, only the thermostat sensor was detecting occupancy. https://support.ecobee.com/s/articles/Viewing-your-thermostat-s-HomeIQ-reports
[6.14] 3) for the central control program, calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control	The Ecobee Smart Thermostat control programs selectively calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment Here, the Ecobee Smart Thermostat comprises a central control program (system monitor reports), which can average the received environmental sensors values and use the average

Claims	Accused Instrumentality
program to determine actuation of the space conditioning equipment.	result as a control value which is compared to the setpoint stored in the memory to determine actuation of the space conditioning equipment. **Follow Me**  This menu allows you to view details about your thermostat's sensor readings and participation within comfort settings. Runtime data is reported and displayed in 5 minute intervals. The vertical white line on the graph indicates the currently selected interval, with the timestamp shown underneath. In the top graph, the horizontal bars indicate the Comfort Setting at the time, as well as the occupancy readings of the sensors at the time. In this example, the thermostat's internal sensor (Basement) was reporting a temperature of 82F. The SmartSensor was reading 77F. The calculated average at the time was 79F. At this time, only the thermostat sensor was detecting occupancy. https://support.ecobee.com/s/articles/Viewing-your-thermostat-s-HomeIQ-reports **Follow Me mode questions and answers** **What happens if none of the sensors participating in the active Comfort Setting report motion?** If none of your participating sensors report motion for 30 minutes, your ecobee will set the temperature based on the average of all participating sensors (even in the Sleep Comfort Setting). SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)

Claims	Accused Instrumentality
7.0 The system of claim 6 wherein averaging of received environmental sensor values is calculated by simple averaging or weighted averaging where environmental condition values from occupied rooms are given substantially more value than those of vacant rooms.	The Ecobee Smart Thermostat control programs selectively calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment Here, the Ecobee Smart Thermostat comprises a central control program (system monitor reports), which can average the received environmental sensors values and use the average result as a control value which is compared to the setpoint stored in the memory to determine actuation of the space conditioning equipment. Additionally, the Follow Me feature prioritizes rooms that are occupied.

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Claims	Accused Instrumentality
	Follow Me This menu allows you to view details about your thermostat's sensor readings and participation within comfort settings. Runtime data is reported and displayed in 5 minute intervals. The vertical white line on the graph indicates the currently selected interval, with the timestamp shown underneath. In the top graph, the horizontal bars indicate the Comfort Setting at the time, as well as the occupancy readings of the sensors at the time. In this example, the thermostat's internal sensor (Basement) was reporting a temperature of 82F. The SmartSensor was reading 77F. The calculated average at the time was 79F. At this time, only the thermostat sensor was detecting occupancy. https://support.ecobee.com/s/articles/Viewing-your-thermostat-s-HomeIQ-reports **Follow Me mode questions and answers** **What happens if none of the sensors participating in the active Comfort Setting report motion?** If none of your participating sensors report motion for 30 minutes, your ecobee will set the temperature based on the average of all participating sensors (even in the Sleep Comfort Setting). SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)

Claims	Accused Instrumentality
8.0 The system of claim 6 wherein the occupancy sensors include infra-red motion detectors.	The Ecobee Smart Thermostat control programs selectively detect occupancy or vacancy of a nearby space from signals from a coupled occupancy sensor, which utilizes infra-red motion detectors. **Occupancy and Temperature detection** • Detects both temperature and occupancy and communicates those readings to the thermostat. • Occupancy detection uses infrared technology to detect body heat signatures. • Occupancy is based on a person's continued presence within a SmartSensor's viewing angle–not merely motion detection. The more time you spend in front of a particular sensor, the more weight your ecobee assigns to that sensor's readings. • Enhanced occupancy sensor "pet immunity" to prevent false occupancy readings triggered by our furry friends. https://support.ecobee.com/s/articles/SmartSensors-FAQs-Setup-Guide-and-Troubleshooting
9.0 The system of claim 6 wherein environmental sensors include temperature sensors and humidity sensors.	The Ecobee Smart Thermostat contains environmental sensors which measure temperature and humidity. Thermostat sensors: Temperature, Humidity, Occupancy, Proximity https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	For ecobee3, ecobee3 lite, ecobee4 These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat
10.0 The system of claim 7 wherein a display and a user interface are coupled with the input/output unit of the central processing device so the central control program causes a display of averaging methods for averaging received environmental sensor values.	The Ecobee Smart Thermostat control programs selectively calculate an average of the received environmental sensor values and use the average result as a control value which is compared with a setpoint stored in the memory of the central control program to determine actuation of the space conditioning equipment. Here, the Ecobee Smart Thermostat comprises a central control program (system monitor reports), which can average the received environmental sensors values and use the average result as a control value which is compared to the setpoint stored in the memory to determine actuation of the space conditioning equipment. Additionally, the calculated averages can be displayed on the user interface.

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Claims	Accused Instrumentality
	Follow Me This menu allows you to view details about your thermostat's sensor readings and participation within comfort settings. Runtime data is reported and displayed in 5 minute intervals. The vertical white line on the graph indicates the currently selected interval, with the timestamp shown underneath. In the top graph, the horizontal bars indicate the Comfort Setting at the time, as well as the occupancy readings of the sensors at the time. In this example, the thermostat's internal sensor (Basement) was reporting a temperature of 82F. The SmartSensor was reading 77F. The calculated average at the time was 79F. At this time, only the thermostat sensor was detecting occupancy. https://support.ecobee.com/s/articles/Viewing-your-thermostat-s-HomeIQ-reports **Follow Me mode questions and answers** **What happens if none of the sensors participating in the active Comfort Setting report motion?** If none of your participating sensors report motion for 30 minutes, your ecobee will set the temperature based on the average of all participating sensors (even in the Sleep Comfort Setting). SmartSensors: FAQs, Setup Guide, and Troubleshooting (ecobee.com)

Claims	Accused Instrumentality
12.0 The system of claim 6 wherein the space conditioning equipment comprises zone control means so that only occupied rooms have their space affected by the space conditioning equipment.	The Ecobee Smart Thermostat includes an "occupancy response system with a central control device adapted to control space conditioning equipment affecting a conditioned space, the central control device located at a single physical location in one of multiple rooms comprising the conditioned space, where remote sensors are located in physical locations substantially apart from the central control device," as recited in claim 6 of the '437 Patent. Here, only the rooms in which occupancy is detected will the space conditioning equipment affect said space. https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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Claims	Accused Instrumentality
	 SmartSensor included for enhanced comfort. **SmartSensor keeps you comfortable where you are, not just where your thermostat is. Simply place SmartSensor in the bedroom, office, or child's room for total comfort and control.** ✓ Occupancy detection manages temperature automatically. ✓ Helps balance your home's temperature. ✓ Control straight from the app or your smart home assistant. Explore more Chat https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/ **For ecobee3, ecobee3 lite, ecobee4** These thermostats are compatible with our ecobee Room Sensors. You can pair up to 32 wireless Room Sensors to each thermostat. Our Room Sensors will measure **temperature** and **occupancy** in the space where it is located. Our thermostats themselves have built-in sensors to measure **temperature, humidity** and **occupancy** (ecobee3 and ecobee4 only). You can view these sensors values by device. For example, thermostat RTU333 has 3 wireless ecobee Room Sensors paired as shown below: https://support.ecobee.com/s/articles/Viewing-remote-sensors-connected-to-a-thermostat

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Claims	Accused Instrumentality
	eco+ features – **What is eco+?** eco+ is a free upgrade for SmartThermostat with voice control. It works in the background to deliver maximum energy efficiency and comfort with minimal effort. Learn more about eco+. **Schedule Assistant** Learns your routine and recommends changes to your thermostat schedule to better match it. **Smart Home & Away** Uses SmartThermostat's built-in occupancy sensor to automatically adjust the temperature for energy savings when you leave home and restore your comfort settings when you return. **Follow Me** Detects which rooms are in use and adjusts the temperature accordingly for comfort in those spaces. **Feels Like** Takes indoor humidity levels into account to ensure your home is energy efficient and always feels like the temperature you've set, no matter the humidity. **Time of Use** Intelligently preheats or precools your home when electricity is cheaper and reduces usage when it's expensive, saving you money and using cleaner energy.[2] https://www.ecobee.com/en-us/smart-thermostats/smart-wifi-thermostat-with-voice-control/

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