IN THE UNITED STATES DISTRICT COURT
FOR THE NORTHERN DISTRICT OF ILLINOIS
EASTERN DIVISION

KARAMELION LLC, Plaintiff, v. **LUTRON ELECTRONICS CO., INC.,** Defendant.	CASE NO. 1:20-cv-5044 **JURY TRIAL DEMANDED** **PATENT CASE**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Karamelion LLC, files this Original Complaint for Patent Infringement against Lutron Electronics Co., Inc., and would respectfully show the Court as follows:

I. THE PARTIES

1. Plaintiff Karamelion LLC ("Karamelion" or "Plaintiff") is a Texas limited liability company with its principal place of business at 5570 FM 423, Suite 250 #2022, Frisco, TX 75034.

2. On information and belief, Defendant Lutron Electronics Co., Inc., ("Defendant") is a corporation organized and existing under the laws of Pennsylvania, with a place of business at 11 East Adams Street, Suite 1000, Chicago, Illinois 60603. Defendant has a registered agent at Illinois Corporation Service Co., 801 Adlai Stevenson Drive, Springfield, Illinois 62703.

II. JURISDICTION AND VENUE

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

4. On information and belief, Defendant is subject to this Court's specific and general personal jurisdiction, pursuant to due process and the Illinois Long-Arm Statute, due at

least to its business in this forum, including at least a portion of the infringements alleged herein. Furthermore, Defendant is subject to this Court's specific and general personal jurisdiction because Defendant has a place of business within this District.

5. Without limitation, on information and belief, within this state, Defendant has used the patented inventions thereby committing, and continuing to commit, acts of patent infringement alleged herein. In addition, on information and belief, Defendant has derived revenues from its infringing acts occurring within Illinois. Further, on information and belief, Defendant is subject to the Court's general jurisdiction, including from regularly doing or soliciting business, engaging in other persistent courses of conduct, and deriving substantial revenue from goods and services provided to persons or entities in Illinois. Further, on information and belief, Defendant is subject to the Court's personal jurisdiction at least due to its sale of products and/or services within Illinois. Defendant has committed such purposeful acts and/or transactions in Illinois such that it reasonably should know and expect that it could be haled into this Court as a consequence of such activity.

6. Venue is proper in this district under 28 U.S.C. § 1400(b). On information and belief, Defendant has a place of business within this District. On information and belief, from and within this District Defendant has committed at least a portion of the infringements at issue in this case.

7. For these reasons, personal jurisdiction exists and venue is proper in this Court under 28 U.S.C. § 1400(b).

III. COUNT I
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 6,275,166)

8. Plaintiff incorporates the above paragraphs herein by reference.

9. On August 14, 2001, United States Patent No. 6,275,166 ("the '166 Patent") was duly and legally issued by the United States Patent and Trademark Office. The application leading to the '166 patent was filed on January 19, 1999. (Ex. A at cover). The '166 Patent is titled "RF Remote Appliance Control/Monitoring System." A true and correct copy of the '166 Patent is attached hereto as Exhibit A and incorporated herein by reference.

10. Plaintiff is the assignee of all right, title and interest in the '166 patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '166 Patent. Accordingly, Plaintiff possesses the exclusive right and standing to prosecute the present action for infringement of the '166 Patent by Defendant.

11. The invention in the '166 Patent relates to control and monitoring of distributed systems in buildings such as systems for controlling and monitoring heating, air conditioning, lighting, security, occupancy, and usage of distributed facilities. (Ex. A at col. 1:5-12). Control of such distributed systems in the prior art commonly used computer networks and business software. (*Id.* at col. 1:11-13). A major difficult with such systems was the expense of wiring inter-connections between elements of the system, particularly when there are additions or changes to be made in the system. (*Id.* at col. 1:14-18). Prior art attempts to reduce the expense of the systems included using efficient network products such as using a widely known Ethernet standard, using AC power wiring to transmit RF communications to remove controllers, and using a combination of wired and wireless communications. (*Id.* at col. 1:18-27).

12. However, these centralized wireless control systems for building appliances have not been widely used mainly because systems that have a sufficient communication ranges are normally subject to regulations and licensing requirements that are prohibitively expensive. (*Id.*

at col. 1:28-32). Also, systems that are powerful enough to be used in widely distributed installations are unnecessarily expensive to be used in smaller installations. (*Id.* at col. 1:32-34). With respect to wireless communication, there is limited availability of RF carrier frequencies, and potential interference with other nearby systems that might be operating in similar frequencies. (*Id.* at col. 1:34-37). Because of the continued deficiencies of the prior art solutions, there was a need for a wireless appliance control system that overcomes the disadvantages of the prior art solutions. (*Id.* at col. 1:38-39).

13. The inventors developed an invention that "meets this need by providing a wireless configuration that uses a distributed array of low power (short range) wireless controllers that are also functional as relay units for communicating with a headend control computer at long range." (*Id.* at col. 1:42-46).

14. The '166 patent discloses exemplary embodiments of the claimed invention. The claimed invention is typically implemented in a building or location that has an appliance control/monitoring system. (*Id.* at col. 3:64 – col. 4:7). For example, the following figure is of a building (11) having a distributed array of appliance management stations (12) that wirelessly communicate with a headend control station (14) (*Id.* at col. 3:66 – col. 4:4):

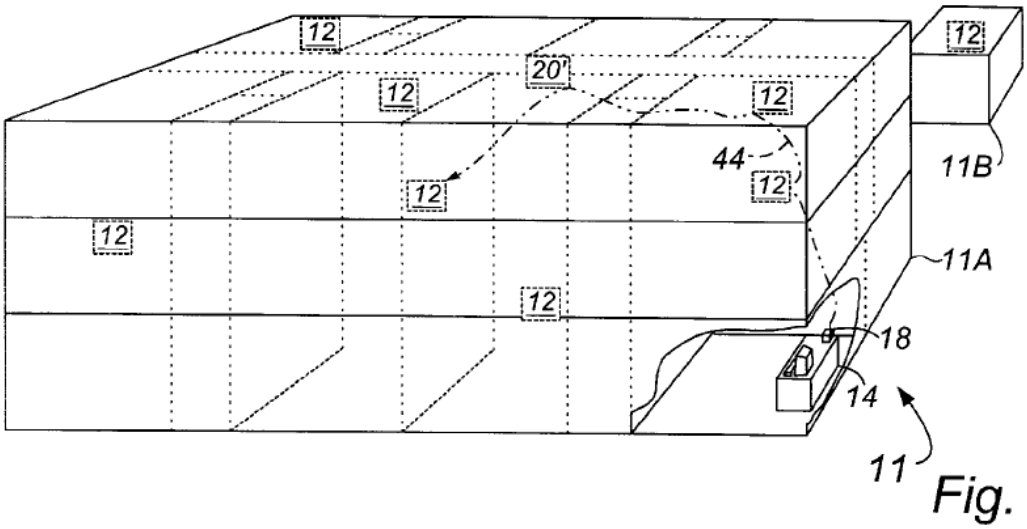


Fig. 2.

The typical appliances connected to the appliance control/monitoring system are heating, ventilation and air conditioning units (HVAC), temperature sensors, motion detectors, and audio/video devices. (*Id.* at col. 1:5-9, col. 4:54-61). The appliances are interfaced with relay units that have appliance interface/controllers to communicate with the appliance and satellite radio transceivers. (*Id.* at col. 4:62-66). The satellite radio transceivers of the relay units are operable at low power and have a limited wireless communications range that reaches only a portion of the building or location. (*Id.* at col. 4:62-66). In order to for the relay units to communicate beyond their limited wireless range, they communicate by relaying transmissions using intermediate relay units to the intended destination. (*Id.* at col. 4:66 – col. 5:1). An exemplary simplified circuit block diagram of the appliance controller portion of the relay unit, including a satellite radio transceiver, is shown in Figure 3 of the '166 patent:

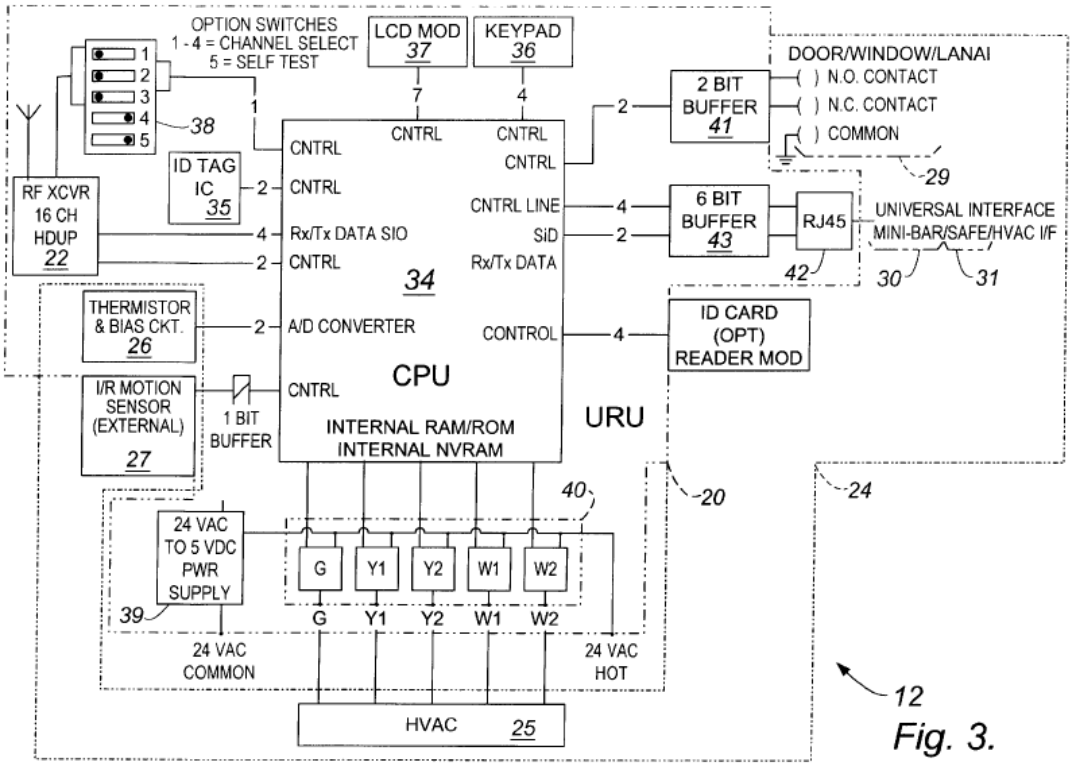


Fig. 3.

(Ex. A). The microprocessor (34) is connected between a satellite transceiver (22) and the appliance device (24). (*Id.* at col. 5:13-15).

15. The '188 patent includes a diagram of an exemplary command protocol (Fig. 4) and exemplary return protocol (Fig. 5):

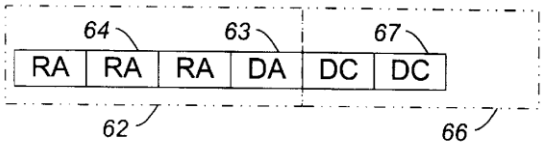


Fig. 4. 60

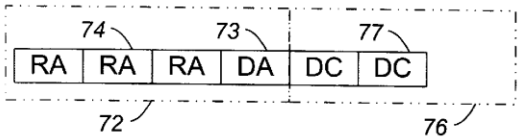


Fig. 5. 70

(Ex. A). The exemplary command protocol includes an address section (62) that includes a destination address (63) and may include relay addresses (64) so that the message may be relayed to another device. (*Id.* at col. 7:40-43). Following the address section is a command section (66) that includes device commands (67) that are directed to particular appliance devices at the destination relay unit. (*Id.* at col. 7:43-47). The exemplary return protocol includes a

counterpart of the address section (72) that includes a destination address (73) and relay addresses (74). (*Id.* at col. 7:48-51). Following the address section of the return protocol is a feedback section (76) that include feedback elements (77) that are responsive to the appliance devices at the destination relay unit. (*Id.* at col. 7:51-55).

16. A pictorial diagram showing an exemplary process for using a portion of the system is shown in Figure 6 of the '166 patent:

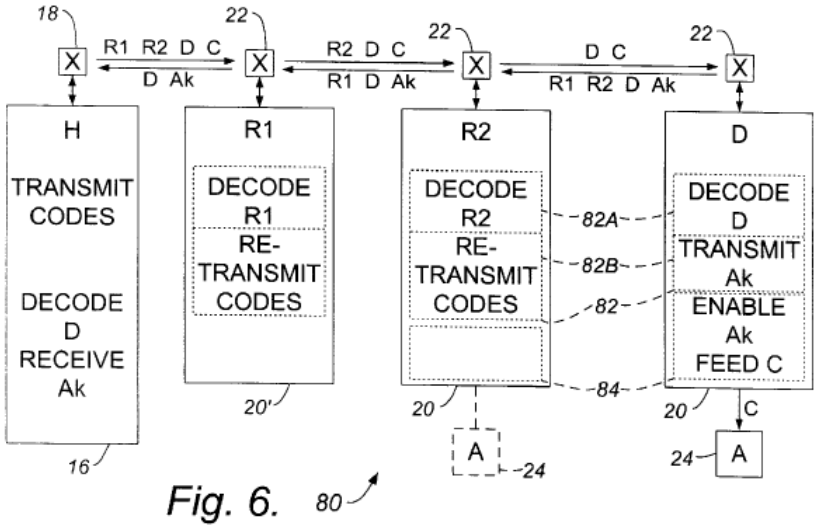


Fig. 6. 80

(Ex. A). A transmitter in the headend computer (H) signals the addresses of relay units (20), with one of the addresses being the destination address (D), and the other addresses include a first and second relay address (R1, R2), and a control signal (C) for appliance (A) being interfaced to the destination relay unit (D). (*Id.* at col. 7:56-65). The first relay unit decodes the first relay address, and transmits the control signal, the second relay address and the destination address from the first relay unit; the same steps occur at the second relay unit but with respect to decoding the second relay address. (*Id.* at col. 7:65 – col. 8:1). The destination relay unit decodes the destination address and feeds the control signal to the appliance; then the destination unit transmits the destination address, the first and second relay addresses, and an acknowledgement signal (Ak). (*Id.* at col. 8:2-6). The second relay unit decodes the second

relay address, and then transmits the acknowledgement signal (Ak), the first relay address, and the destination address; the same steps occur at the first relay unit but with respect to decoding the first relay address. (*Id.* at col. 8:6-9). The headend computer decodes the destination address and receives the acknowledgement signal (Ak). (*Id.* at col. 8:9-11). The decoding and transmitting in the relay units are implemented by first and second instruction portions (82A, 82B), respectively, of the relay program (82). (*Id.* at col. 8:11-14). The feeding of the control signal by the relay unit to the appliance and generating the acknowledgement signal occurs in the appliance program (84). (*Id.* at col. 8:14-16). Both the relay program and appliance program are in the microcomputer memory of each relay unit. (*Id.* at col. 8:16-18).

17. As explained during the prosecution history, the prior art did not teach a relay unit being an appliance controller that communicated with a headend computer using at least two other relay units. The invention therefore overcame the prior art, which were excessively expensive, had insufficient bandwidth, were ineffective in serving multiple devices, were unreliable, and were difficult to use. (Ex. B at col. 1:43-51).

18. **Direct Infringement.** Upon information and belief, Defendant has been directly infringed claim 16 of the '166 patent in Illinois, and elsewhere in the United States, by performing actions comprising using an appliance controller for a distributed appliance system having a headend computer to satisfy the method steps of claim 16, including without limitation the Lutron Connected Bulb Remote Control and other Zigbee supported devices ("Accused Instrumentality"). (*e.g.*, https://www.techhive.com/article/3016998/lutron-introduces-a-remote-control-for-zigbee-light-bulbs.html; https://www.lutron.com/TechnicalDocumentLibrary/040421_Zigbee_Programming_Guide.pdf; https://www.lutron.com/TechnicalDocumentLibrary/369864b_ENG.pdf).

19. On information and belief, Defendant performed the step of providing a headend computer having a main radio transceiver. For example, Defendant provides an appliance controller (*e.g.*, Lutron Connected Bulb Remote Control Repeater) for a distributed appliance system (*e.g.*, LR-WPAN network) having a headend computer (*e.g.*, PAN coordinator or hub), a multiplicity of appliances (*e.g.*, devices), and a plurality of relay units (*e.g.*, remote control), one of the relay units being the appliance controller (*e.g.*, remote control/coordinator).

> An LR-WPAN is a simple, low-cost communication network that allows wireless connectivity in applications with limited power and relaxed throughput requirements. The main objectives of an LR-WPAN are ease of installation, reliable data transfer, extremely low cost, and a reasonable battery life, while maintaining a simple and flexible protocol.

(https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

> Two different device types can participate in an IEEE 802.15.4 network: a full-function device (FFD) and a reduced-function device (RFD). An FFD is a device that is capable of serving as a personal area network (PAN) coordinator or a coordinator. An RFD is a device that is not capable of serving as either a PAN coordinator or a coordinator. An RFD is intended for applications that are extremely simple, such as a light switch or a passive infrared sensor; it does not have the need to send large amounts of data and only associates with a single FFD at a time. Consequently, the RFD can be implemented using minimal resources and memory capacity.

(*Id.*).

> A system conforming to this standard consists of several components. The most basic is the device. Two or more devices communicating on the same physical channel constitute a WPAN. However, this WPAN includes at least one FFD, which operates as the PAN coordinator.

(*Id.*).

> An LR-WPAN is a simple, low-cost communication network that allows wireless connectivity in applications with limited power and relaxed throughput requirements. The main objectives of an LR-WPAN are ease of installation, reliable data transfer, extremely low cost, and a reasonable battery life, while maintaining a simple and flexible protocol.

(*Id.*).

An LR-WPAN device comprises at least one PHY, which contains the radio frequency (RF) transceiver along with its low-level control mechanism, and a MAC sublayer that provides access to the physical channel for all types of transfer. Figure 3 shows these blocks in a graphical representation, which are described in more detail in 4.4.1 and 4.4.2.

(*Id.*).

The peer-to-peer topology also has a PAN coordinator; however, it differs from the star topology in that any device is able to communicate with any other device as long as they are in range of one another. Peer-to-peer topology allows more complex network formations to be implemented, such as mesh networking topology. Applications such as industrial control and monitoring, wireless sensor networks, asset and inventory tracking, intelligent agriculture, and security would benefit from such a network topology. A peer-to-peer network allows multiple hops to route messages from any device to any other device on the network. Such functions can be added at the higher layer, but they are not part of this standard.

(*Id.*).

An example of the use of the peer-to-peer communications topology is the cluster tree. The cluster tree network is a special case of a peer-to-peer network in which most devices are FFDs. An RFD connects to a cluster tree network as a leaf device at the end of a branch because RFDs do not allow other devices to associate. Any FFD is able to act as a coordinator and provide synchronization services to other devices or other coordinators. Only one of these coordinators is the overall PAN coordinator, potentially because it has greater computational resources than any other device in the PAN. The PAN coordinator forms the first cluster by choosing an unused PAN identifier and broadcasting beacon frames to neighboring devices. A contention resolution mechanism is required if two or more FFDs simultaneously attempt to establish themselves as PAN coordinators; however, such a mechanism is outside the scope of this standard. A candidate device receiving a beacon frame is able to request to join the network at the PAN coordinator. If the PAN coordinator permits the device to join, it adds the new device as a child device in its neighbor list. Then the newly joined device adds the PAN coordinator as its parent in its neighbor list and begins transmitting periodic beacons; other candidate devices are able to then join the network at that device. If the original candidate device is not able to join the network at the PAN coordinator, it will search for another parent device. The detailed procedures describing how a PAN is started and how devices join a PAN are found in 5.1.2 and 5.1.3.

(*Id.*).

Lighting-control manufacturer Lutron Electronics announced a new remote control for smart light bulbs Friday, offering initial support for Cree and GE Link LED bulbs equipped with ZigBee radios. Lutron says the remote can independently control up to 30 bulbs, and that as many as 10 remotes can operate inside the same home.

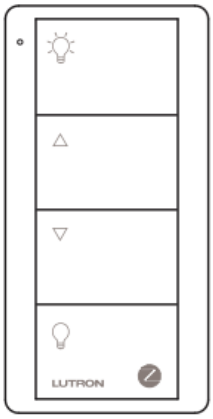
(https://www.techhive.com/article/3016998/lutron-introduces-a-remote-control-for-zigbee-light-bulbs.html).

Lutron® Connected Bulb Remote Control

The Lutron® Connected Bulb Remote Control is a flexible and easy to use device that allows the user to control connected bulbs from anywhere in the space. This battery-operated remote control requires no external power or communication wiring.

Features

- Provides instant and direct control of connected bulbs that utilize ZigBee® wireless technology. The complete list of compatible bulbs can be found at www.lutron.com/ConnectedBulbRemote
- Provides dimming capabilities without the need for a hub, bridge, or smartphone.
- Easy reconfiguration for use as:
  - Handheld remote control
  - Wall-mount remote control (with or without wallplate; wallplate adapter kit sold separately)
  - Car visor remote control (car visor clip sold separately)
  - Table-top remote control (table-top pedestal sold separately)
- Utilizes ZigBee® wireless technology.
- Control up to 30 connected bulbs per remote control.



Lutron® Connected Bulb Remote Control

(https://www.lutron.com/TechnicalDocumentLibrary/369864b_ENG.pdf).

20. On information and belief, Defendant performs the step of providing a distributed array of relay units, each relay unit having a satellite radio transceiver and a unique serial number, at least some of the relay units being electrically interfaced to a corresponding portion of the appliances. For example, Defendant provides an appliance controller (*e.g.*, Lutron Connected Bulb Remote Control Repeater) for a distributed appliance system (IR-WPAN network) having a headend computer (*e.g.*, PAN coordinator or hub), a multiplicity of appliances (*e.g.*, devices), and a plurality of relay units (e.g., remote control), one of the relay units being the appliance controller (*e.g.*, remote control/coordinator). (*Supra* ¶19).

A system conforming to this standard consists of several components. The most basic is the device. Two or more devices communicating on the same physical channel constitute a WPAN. However, this WPAN includes at least one FFD, which operates as the PAN coordinator.

(https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

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(*Id.*).

An LR-WPAN device comprises at least one PHY, which contains the radio frequency (RF) transceiver along with its low-level control mechanism, and a MAC sublayer that provides access to the physical channel for all types of transfer. Figure 3 shows these blocks in a graphical representation, which are described in more detail in 4.4.1 and 4.4.2.

(*Id.*).

The peer-to-peer topology also has a PAN coordinator; however, it differs from the star topology in that any device is able to communicate with any other device as long as they are in range of one another. Peer-to-peer topology allows more complex network formations to be implemented, such as mesh networking topology. Applications such as industrial control and monitoring, wireless sensor networks, asset and inventory tracking, intelligent agriculture, and security would benefit from such a network topology. A peer-to-peer network allows multiple hops to route messages from any device to any other device on the network. Such functions can be added at the higher layer, but they are not part of this standard.

(*Id.*).

Lighting-control manufacturer Lutron Electronics announced a new remote control for smart light bulbs Friday, offering initial support for Cree and GE Link LED bulbs equipped with ZigBee radios. Lutron says the remote can independently control up to 30 bulbs, and that as many as 10 remotes can operate inside the same home.

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- Provides instant and direct control of connected bulbs that utilize ZigBee® wireless technology. The complete list of compatible bulbs can be found at www.lutron.com/ConnectedBulbRemote
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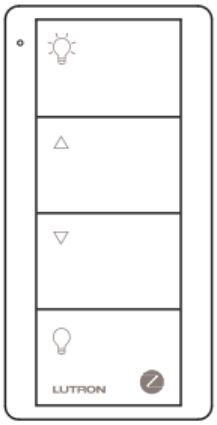

Lutron® Connected Bulb Remote Control

(https://www.lutron.com/TechnicalDocumentLibrary/369864b_ENG.pdf).

21. On information and belief, in at least internal testing and usage, Defendant performs the step of signaling, by a main transmitter from the headend computer (*e.g.*, the Lutron Connected Bulb Remote Control serving as a controller) the addresses of at least three relay units, one of the addresses being a destination address, the other addresses including first and second relay addresses (*e.g.*, the address for two Zigbee devices serving as repeaters and a destination Zigbee device being controlled), and a control signal for an appliance being interfaced to a destination relay unit (*e.g.*, a Zigbee light bulb) having a serial number tied to the destination address (*e.g.*, the destination device's NodeID will be tied to a destination address used in routing). (*Supra* ¶¶19-20). (https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

22. On information and belief, in at least internal testing and usage, Defendant performed the step of decoding the first relay address at a first relay unit having a corresponding

serial number. For example, the accused product will decode a first relay address (e.g. the address for a first Zigbee device used as a repeater) having a corresponding serial number (e.g. NodeID). (*Supra* ¶¶19-20).

> An example of the use of the peer-to-peer communications topology is the cluster tree. The cluster tree network is a special case of a peer-to-peer network in which most devices are FFDs. An RFD connects to a cluster tree network as a leaf device at the end of a branch because RFDs do not allow other devices to associate. Any FFD is able to act as a coordinator and provide synchronization services to other devices or other coordinators. Only one of these coordinators is the overall PAN coordinator, potentially because it has greater computational resources than any other device in the PAN. The PAN coordinator forms the first cluster by choosing an unused PAN identifier and broadcasting beacon frames to neighboring devices. A contention resolution mechanism is required if two or more FFDs simultaneously attempt to establish themselves as PAN coordinators; however, such a mechanism is outside the scope of this standard. A candidate device receiving a beacon frame is able to request to join the network at the PAN coordinator. If the PAN coordinator permits the device to join, it adds the new device as a child device in its neighbor list. Then the newly joined device adds the PAN coordinator as its parent in its neighbor list and begins transmitting periodic beacons; other candidate devices are able to then join the network at that device. If the original candidate device is not able to join the network at the PAN coordinator, it will search for another parent device. The detailed procedures describing how a PAN is started and how devices join a PAN are found in 5.1.2 and 5.1.3.

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> Applications such as industrial control and monitoring, wireless sensor networks, asset and inventory tracking, intelligent agriculture, and security would benefit from such a network topology. A peer-to-peer network allows multiple hops to route messages from any device to any other device on the network. Such functions can be added at the higher layer, but they are not part of this standard.

(*Id.*).

> The peer-to-peer topology also has a PAN coordinator; however, it differs from the star topology in that any device is able to communicate with any other device as long as they are in range of one another. Peer-to-peer topology allows more complex network formations to be implemented, such as mesh networking topology. Applications such as industrial control and monitoring, wireless sensor networks, asset and inventory tracking, intelligent agriculture, and security would benefit from such a network topology. A peer-to-peer network allows multiple hops to route messages from any device to any other device on the network. Such functions can be added at the higher layer, but they are not part of this standard.

(*Id.*).

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(*Id.*).

> Two different device types can participate in an IEEE 802.15.4 network: a full-function device (FFD) and a reduced-function device (RFD). An FFD is a device that is capable of serving as a personal area network (PAN) coordinator or a coordinator. An RFD is a device that is not capable of serving as either a PAN coordinator or a coordinator. An RFD is intended for applications that are extremely simple, such as a light switch or a passive infrared sensor; it does not have the need to send large amounts of data and only associates with a single FFD at a time. Consequently, the RFD can be implemented using minimal resources and memory capacity.

(*Id.*).

23. On information and belief, in at least internal testing and usage, Defendant performed the step of transmitting the control signal, the second relay address, and the destination address from the first relay unit. For example, the accused product will transmit the control signal (e.g. a signal to control a Zigbee device), the second relay address (*e.g.*, the first Zigbee device serving as a repeater will inform the next repeater of the next device the message should be forwarded to) and the destination address (*e.g.*, the first repeater will inform subsequent repeaters in the chain of the final destination device) from the first relay unit. (*Supra* ¶22).

24. On information and belief, in at least internal testing and usage, Defendant performed the step of feeding the control signal to the appliance from the destination relay unit. For example, the accused product feeds the control signal to the appliance from the destination relay unit (*e.g.*, Zigbee hardware within a Zigbee device will feed the control signal to the hardware within the device that actually performs its core function, such as a light switches components that allow for it to switch a light on and off). (*Supra* ¶22).

III. COUNT II
(PATENT INFRINGEMENT OF UNITED STATES PATENT NO. 6,873,245)

25. Plaintiff incorporates the above paragraphs herein by reference.

26. On March 29, 2005, United States Patent No. 6,873,245 ("the '245 Patent") was duly and legally issued by the United States Patent and Trademark Office. The application

leading to the '245 patent was filed on August 14, 2001, and is a continuation-in-part of the application leading to the '166 Patent. (Ex. B at cover). The '245 Patent is titled "RF Remote Appliance Control/Monitoring System." A true and correct copy of the '245 Patent is attached hereto as Exhibit B and incorporated herein by reference.

27. Plaintiff is the assignee of all right, title and interest in the '245 patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the '245 Patent. Accordingly, Plaintiff possesses the exclusive right and standing to prosecute the present action for infringement of the '245 Patent by Defendant.

28. Because the '245 patent is a continuation in part of the application leading to the '166 patent, the '245 patent has a substantially overlapping specification and the background regarding the '166 patent is equally applicable and is incorporated by reference with respect to the '245 patent. (*Supra* ¶¶11-17).

29. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing at least claim 1 of the '245 patent in Illinois, and elsewhere in the United States, by performing actions comprising making, using, selling, and/or offering for sale an appliance controller for a distributed appliance systems having a multiplicity of appliances, and a plurality of relay units, that satisfies the limitations of at least claim 1, including without limitation the Lutron Connected Bulb Remote Control and other Zigbee supported devices ("Accused Instrumentality").

30. Each Accused Instrumentality provides an appliance controller (*e.g.*, Lutron Connected Bulb Remote Control and other Zigbee supported devices) for a distributed appliance system (*e.g.*, Zigbee network) having a multiplicity of appliances (*e.g.*, appliances such as lights,

etc.), and a plurality of relay units (*e.g.*, repeaters), one of the relay units being the appliance controller (*e.g.*, a Lutron Connected Bulb Remote Control). (*Supra* ¶¶19-21; https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf)

31. Each Accused Instrumentality has a low power satellite radio transceiver (*e.g.*, radio frequency transceivers within the various Zigbee devices) having a range being less than a distance to at least some of the appliances. (*Supra* ¶¶19-21).

32. Each Accused Instrumentality has an appliance interface for communicating with the at least one local appliance (*e.g.*, an interface which connects and makes possible the transmission of signal to the actual electrical appliance like a light). (*Supra* ¶¶19-21).

33. Each Accused Instrumentality has a microcomputer (*e.g.*, microcontroller) connected between the satellite radio transceiver (*e.g.*, Zigbee transceiver) and the appliance interface and having first program instructions for controlling the satellite transceiver (*e.g.*, the microcontroller controls the transmission of signals from the transceiver to the other Zigbee nodes in the network) and second program instructions for directing communication between the satellite transceiver and the appliance interface (*e.g.*, the microcontroller within the Zigbee device enables the command received from the appliance interface to be communicated to the local appliance by the Zigbee transceiver so that the intended action can be executed such as switch on/off a light, dim a light). (*Supra* ¶¶19-21; https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

34. Each Accused Instrumentality has a first program instructions including detecting communications directed by another of the relay units (*e.g.*, another Zigbee node acting as a repeater) relative to the same appliance controller (*e.g.*, targeted Zigbee node), signaling receipt of the directed communications (sending acknowledgement signal through the Zigbee

transceiver), and directing communications to the other of the relay units relative to the same appliance controller (*e.g.*, sending status of an appliance or signal from a connected sensor). For example, Lutron Connected Bulb Remote Control can receive communications to program connected lighting sources or communicate regarding the status of the light. (*Supra* ¶¶19-21; https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

35. Each Accused Instrumentality has a second program instructions including detecting relay communications directed between the another of the relay units and a different relay unit, transmitting the relay communications, detecting a reply communication from the different relay unit, and transmitting the reply communication to the other of the relay units, wherein at least some of the relay units communicate with others of the relay units by relay communications using at least two others of the relay units (*e.g.*, a Zigbee node detects messages from primary controller and checks whether message is intended for itself, if not, then acting as a repeater, transmits it to next intended device in the route. Also, the Zigbee node detects messages from another Zigbee node and forwards it to primary controller. N number of nodes may be involved in the process acting as repeaters or relay units). The Accused Instrumentality works on Zigbee technology which uses mesh network and would communicate with the other relay units by relay communications using at least two others of the relay units (*e.g.*, repeaters). (*Supra* ¶¶19-21; https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

36. Plaintiff has been damaged because of Defendant's infringing conduct. Defendant is thus liable to Plaintiff for damages in an amount that adequately compensates Plaintiff for such Defendant's infringement of the '166 Patent and the '245 Patent, *i.e.*, in an amount that by law cannot be less than would constitute a reasonable royalty for the use of the

patented technology, together with interest and costs as fixed by this Court under 35 U.S.C. § 284.

37. On information and belief, Defendant had at least constructive notice of the '166 Patent and the '245 Patent by operation of law, and there are no marking requirements that have not been complied with.

IV. JURY DEMAND

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

V. PRAYER FOR RELIEF

WHEREFORE, Plaintiff respectfully requests that the Court find in its favor and against Defendant, and that the Court grant Plaintiff the following relief:

a. Judgment that one or more claims of United States Patent No. 6,275,166 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

b. Judgment that one or more claims of United States Patent No. 6,873,245 have been infringed, either literally and/or under the doctrine of equivalents, by Defendant;

c. Judgment that Defendant account for and pay to Plaintiff all damages to and costs incurred by Plaintiff because of Defendant's infringing activities and other conduct complained of herein, and an accounting of all infringements and damages not presented at trial;

d. That Plaintiff be granted pre-judgment and post-judgment interest on the damages caused by Defendant's infringing activities and other conduct complained of herein;

e. That Plaintiff be granted such other and further relief as the Court may deem just and proper under the circumstances.

August 27, 2020

Respectfully Submitted,

/s/ David R. Bennett

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