IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF COLORADO

KARAMELION LLC, Plaintiff, v. **HUNTER DOUGLAS WINDOW FASHIONS, INC. D/B/A ELECTRONIC SOLUTIONS, INC.,** Defendant.	CASE NO. 20-cv-2604 **JURY TRIAL DEMANDED** **PATENT CASE**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT

Plaintiff Karamelion LLC, files this Original Complaint for Patent Infringement against Hunter Douglas Window Fashions, Inc. d/b/a Electronic Solutions, 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 Hunter Douglas Window Fashions, Inc. d/b/a Electronic Solutions, Inc. ("Defendant") is a corporation organized and existing under the laws of Delaware, with the headquarters of Electronic Solutions, Inc. at 2550 W. Midway Blvd., Broomfield, CO 80020. Defendant has a registered agent at Corporate Creations Network Inc., 155 E. Boardwalk #490, Fort Collins, CO 80525.

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 Colorado Long-Arm Statute, due at least to the headquarters of Electronic Solutions, Inc. in Colorado.

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 Colorado. 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 with the headquarters of Electronic Solutions, Inc. in Colorado. 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 Colorado. Defendant has committed such purposeful acts and/or transactions in Colorado 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, Electronic Solutions, Inc.'s headquarters is in Colorado. 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):

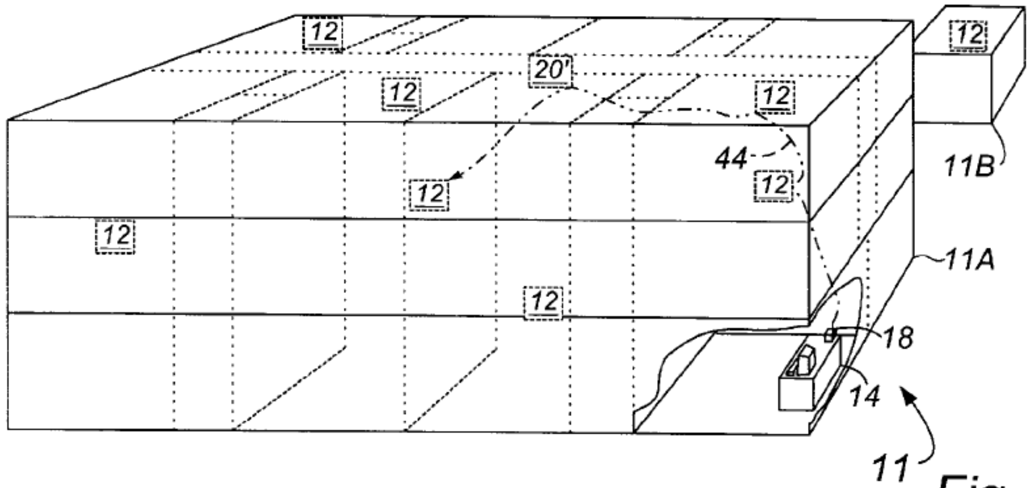


Fig. 2.

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:

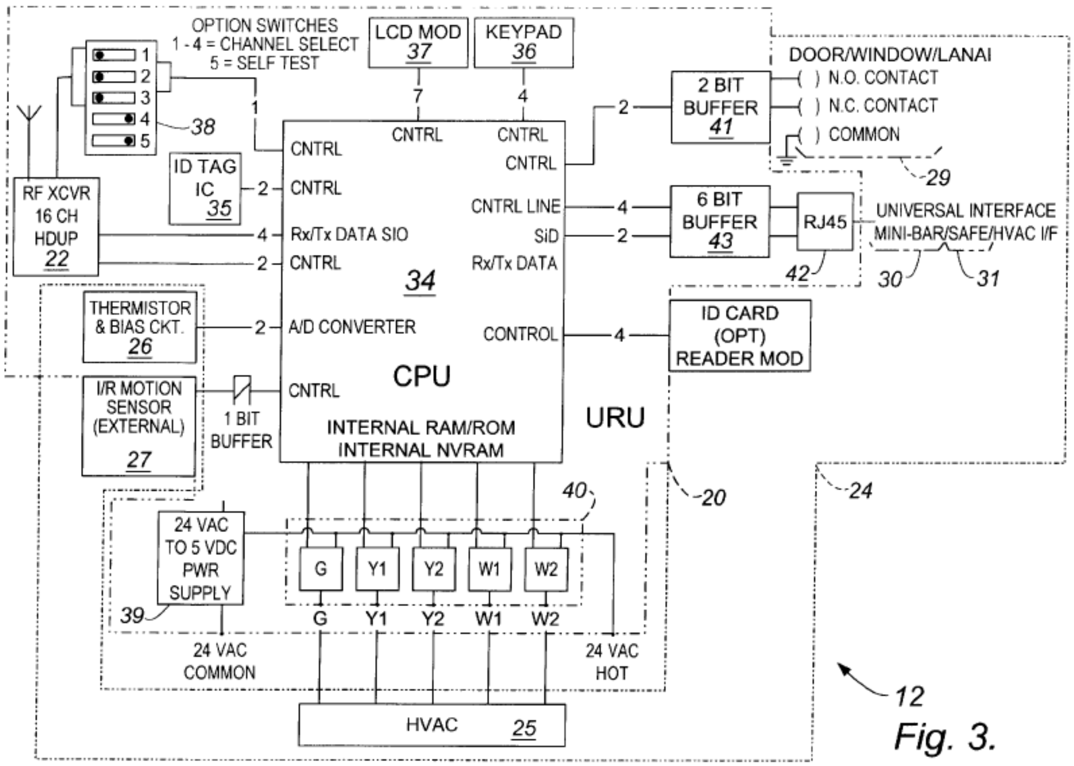


Fig. 3.

(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):

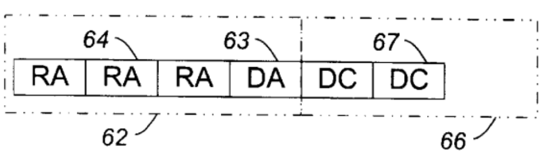


Fig. 4.

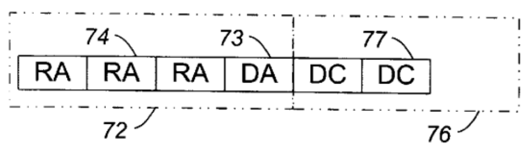


Fig. 5.

(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:

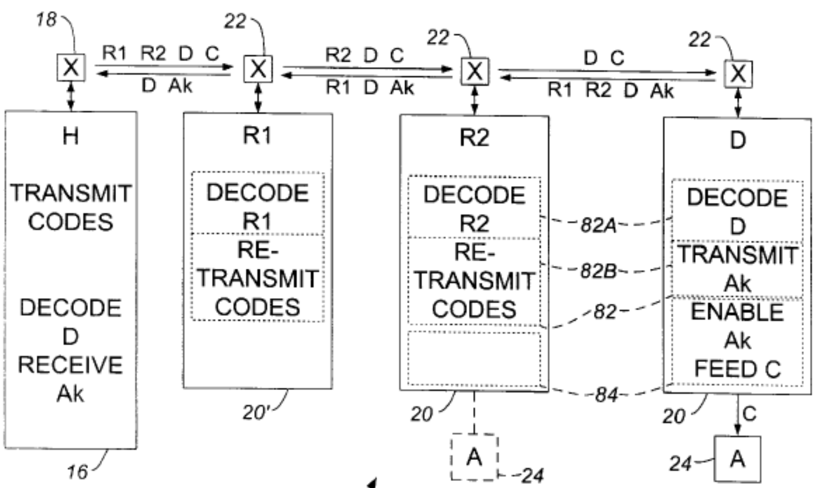


Fig. 6.

(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 Colorado, 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 Z-Wave AC motor controls (ABMHZ 115 868, ABMHZ 115 908, ABMHZ 230 908), Z-Wave DC motor control (DBMZ 868, DBMZ 908), Z-Wave RQ transceiver (ZW RQ REC 868, ZW RQ REC 908), and Z-Wave remote controller (TZ 3300) (“Accused Instrumentality”).

19. On information and belief, Defendant performed the step of providing a headend computer having a main radio transceiver. For example, at least through testing and demonstrations, Defendant provides a primary controller such as the Z-Wave remote controller.

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 a distributed array of relay units (*e.g.*, Z-Wave AC motor controls (ABMHZ 115 868, ABMHZ 115 908, ABMHZ 230 908), Z-Wave DC motor controls (DBMZ 868, DBMZ 908), Z-Wave RQ transceiver (ZW RQ REC 868, ZW RQ REC 908) acting as a repeater) each relay unit having a satellite radio transceiver (*e.g.*, a Z-Wave radio) and a unique serial number (*e.g.*, a NodeID), at least some of the relay units (*e.g.*, hardware within the appliance that allows for it to function as a repeater) being electrically interfaced to a corresponding portion of the appliances (*e.g.*, the hardware related to an appliance's repeater functionality is electrically connect to a motor; *e.g.*, in the case of a Z-Wave AC motor controller, the controller will have hardware allowing for it to serve as a repeater such as a Z-Wave radio, that is electronically connected to the motor).

Motors and Motor Controls

Motor noise is a critical component in the market today, and is a primary focus in our development and testing. Motors available from ESI blend low noise levels with the feature-rich controls that you expect from ESI.

ESI launched the transceiver-based RF motor line in 2011. The RF motor line joins the standard mechanical limit AC motors and RQ motors with integrated ESI RQ bus technology to offer solutions to meet any project.

Motor controls are the foundation of every motorized installation, allowing the ability to deliver easy single button results to the end-user. ESI offers three distinct motor control platforms. Each platform has its own unique applications and family of available input devices:

RP ESI RP (Remotely Programmable) motor controls can be programmed to respond to commands from various RP input devices and/or third-party automation systems.

RQ ESI RQ (Remotely Queryable) motor controls support all RP programming and functionality, but offer bi-directional communication possibilities to connected automation system(s). This feedback to the connected systems opens new opportunities for control aesthetics, security, and remote access.

RF ESI has released its own 802.15.4 mesh network technology. ESI RF™ allows a user unprecedented wireless control. Signal repeatability ensures reliable network operation.

ESI Z-Wave® enabled motor controls allow for simple integration of motorized products into Z-Wave wireless home control systems.

Z-Wave
AC | DC | Transmitter

ABMHZ 115 868 (868 MHz) cULus
ABMHZ 115 908 (908 MHz) cULus
ABMHZ 230 908 (908 MHz)

Z-Wave AC motor control, packaged in a "Plug & Play" box. Z-Wave radio allows for bi-directional RF communications with other Z-Wave products on the market. Allows for total switched load of up to 8 Amps at 115VAC / 4.9 Amps at 230VAC. Motor plug is included for 115VAC.

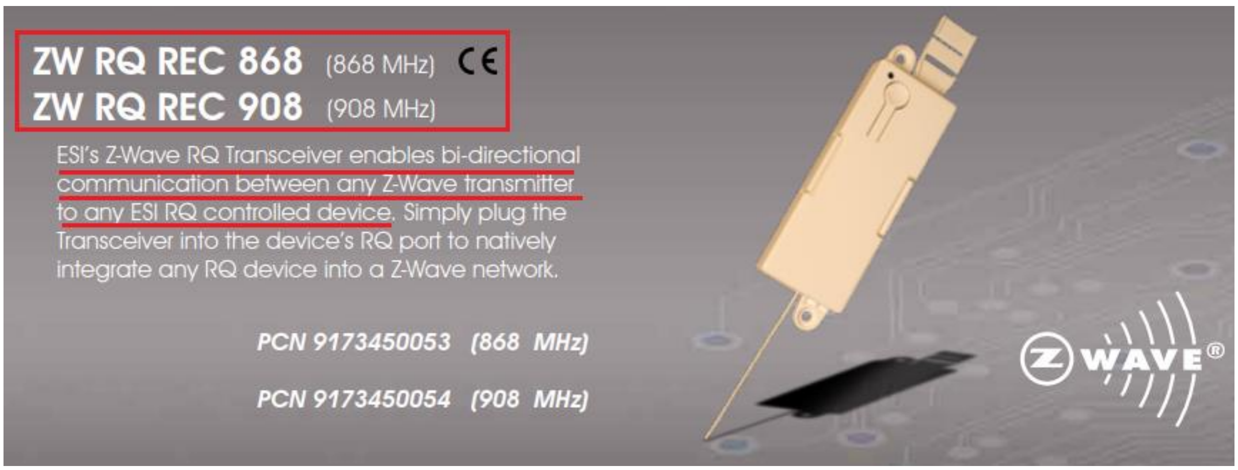
115VAC Power cord with US male plug included.
230VAC Power cord – no plug end included.

Z-Wave certified (Only 908 MHZ FCC and IC certified)

PCN 9173450046 (115 volt 868 MHz)

PCN 9173450047 (115 volt 908 MHz)

PCN 9173450049 (230 volt 908 MHz)



(https://elec-solutions.com/images/stories/Downloads/Marketing/esi-worthington-motor-and-control-catalog-june-2016.pdf).[1]

[1] Red boxes and lines are added unless otherwise noted.

TZ 3300

ARCHIVE - Z-Wave compatible handheld remote control. Works with ABMHZ and DBMZ motor controllers. Controls 5 motors or groups of motors and up to 3 scenes.

Overlay is included.

Effective range is approx. 100 feet (30m) unobstructed, "open air" (environmental issues may affect range & reliability)

See TZ3300 908 User Manual for operating instructions

FREQUENCY:

- TZ3300 868 - 868.42MHz
- TZ3300 908 - 908.42MHz

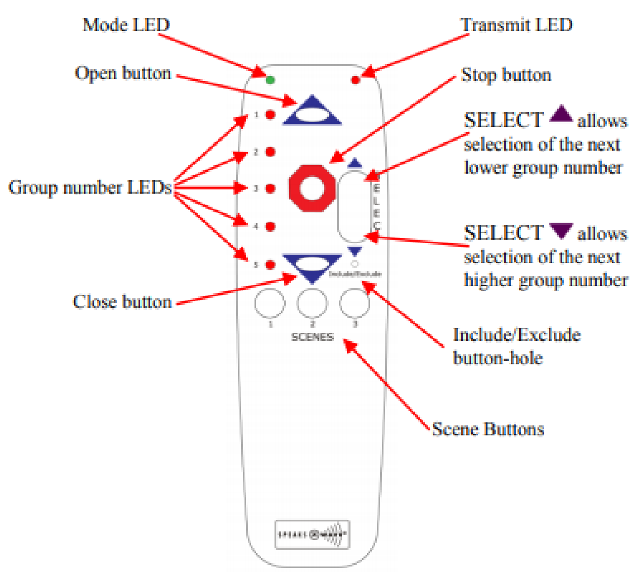
COMPLIANCE INFORMATION:

TZ3300 868:
Z-Wave certification number pending
CE! compliance is pending

TZ3300 908:
Z-Wave certification number pending
IC Compliance number is 7206A-TZ330001
FCC ID is P7RTZ330001

(http://elec-solutions.com/archive/132-tz-3300.html).

The TZ 33ØØ 868 Z-Wave Remote Controller is a battery operated remote control capable of controlling any Z-Wave compliant device. It organizes device control into five Groups and three Scenes, and is capable of controlling devices on the same network as another TZ 33ØØ 868 remote, or with any Z-Wave compliant Controller device.



(http://elec-solutions.com/images/stories/Products/TZ3300/TZ3300%20868%20User%20Manual.pdf).

DBMZ

ARCHIVE - Z-Wave DC motor control, packaged in a "Plug & Play" box. Z-Wave radio allows for bi-directional RF communications with other Z-Wave products on the market. Allows for total switched load of up to 2 Amps at 27VDC.

By utilizing the Z-Wave standard, the DBMZ is guaranteed interoperability between systems and devices from other Z-Wave enabled products.

In order for scene functionality to operate correctly, the calibration sequence MUST be performed. See the technical documentation for more details.

DC Power supply needed. See Power Supplies for selections.

This product has passed a stringent conformance test to assure it meets the Z-Wave standard for complete interoperability with all other devices and controls.

Z-Wave certification numbers:

DBMZ at 868MHz (EU) for 9VDC to 27VDC is:
ZC08-09050004

DBMZ at 908MHz (USA) for 9VDC to 27VDC is:
ZC08-09050001

(http://elec-solutions.com/archive/133-dbmz.html).

This document is for the advanced user who has knowledge of the Z-Wave™ Command Classes and is able to initiate Z-Wave commands programmatically.

When the DBMZ sends a Node Info Report, it reports itself as a Basic Slave device with generic support for Multilevel switch, specifically supporting the Multi-position motor class. In addition to the mandatory command classes, it also supports Manufacturer Specific, Version, All Switch, Configuration, and Power level command classes (details and examples on how to utilize these classes below).

(http://elec-

solutions.com/images/stories/Products/DBMZ/DBMZ_v2+1_Advanced_User_Manual.pdf).

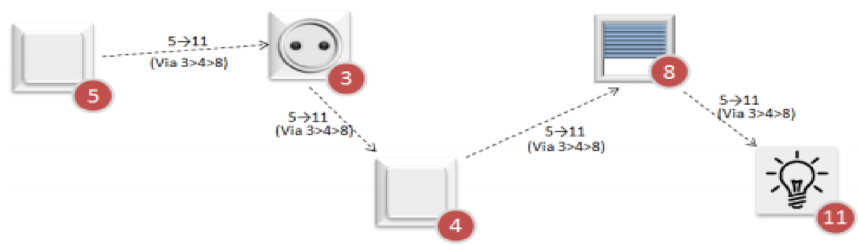
The Z-Wave Protocol handles transmissions to destinations all over the network. If necessary, other nodes are used as repeaters. This is called routing.

During bootstrapping, the Primary Controller asks the new node to discover its neighbors. Thanks to the neighbor nodes information, the Primary Controller builds a network map and knows the different possible routes to reach a node.

When using repeaters, the Sending node includes the route information in the frame. Each repeater parses the routing information and forwards the frame accordingly.

Sigma Designs Inc. Z-Wave Networking Basics Page 5 of 7

APL13031-2 Z-Wave Networking Basics



Example 4: Routing via repeaters

Routing may also be used during inclusion if a node is not within direct range of the Primary Controller.

(http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf).

Z-Wave Alliance Recommendation ZAD12837-1

Z-Wave Transceivers – Specification of Spectrum Related Components

(2014)

Scope

This Recommendation provides guidelines pertaining to spectrum usage of the short range narrowband digital radiocommunication transceivers complying with ITU-T Recommendation G.9959. ITU-T Recommendation G.9959 contains the system architecture, physical layer (PHY) and medium access control layer (MAC) specifications for G.9959 compliant transceivers.

References

[1] Recommendation ITU-T G.9959, *Short range narrowband digital radiocommunication transceivers – PHY & MAC layer specifications*

Definitions

This Recommendation uses the following definitions:

Channel: a transmission path between nodes. One channel is considered to be one transmission path. Logically a channel is an instance of the communications medium used for the purpose of passing data between two or more nodes.

Node: any network device that contains a G.9959 transceiver. In the context of this Recommendation, use of the term 'node' without a qualifier means 'G.9959 node'.

(https://z-wavealliance.org/wp-content/uploads/2015/02/ZAD12837-1.pdf).

This command is used to set the network route to use when sending commands to the specified NodeID.

The use of this command is NOT RECOMMENDED.

7	6	5	4	3	2	1	0
COMMAND_CLASS = NETWORK_MANAGEMENT_INSTALLATION_MAINTENANCE							
COMMAND = PRIORITY_ROUTE_SET							
NodeID							
Repeater 1 [First repeater]							
Repeater 2							
Repeater 3							
Repeater 4 [Last repeater]							
Speed							

NodeID (1 byte)

This field is used to specify the destination NodeID for which a last working route MUST be set.

Repeater (4 bytes)

This field is used to specify repeaters for the route. Each byte represents a NodeID and the first field (Repeater 1) is the first repeater of the route.

The value 0x00 MUST indicate that the byte does not represent a repeater. If the route is shorter than four repeaters, unused repeaters fields MUST be set to 0x00. If Repeater 1 is set to 0x00, it means that the Last Working Route is direct (nodes are within direct reach).

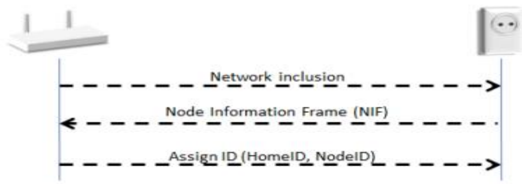
(http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13784-4%20Z-Wave%20Network-Protocol%20Command%20Class%20Specification.pdf).

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 Z-Wave 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 Z-Wave devices serving as repeaters and a destination Z-Wave device being controlled), and a control signal for an appliance being interfaced to a destination relay unit (*e.g.*, a Z-Wave motor control) 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).
(http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13782-4%20Z-Wave%20Management%20Command%20Class%20Specification.pdf;
https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf;
https://www.zwaveproducts.com/learn/ask-an-expert/glossary/mesh-network;
http://docslide.us/documents/Z-Wave-technical-basics-small.html;
http://www.zwaveproducts.com/learn/Z-Wave).

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 Z-Wave device used as a repeater) having a corresponding serial number (e.g. NodeID). (*Supra* ¶¶19-20).

Z-Wave enables a variety of monitoring and control applications. The basis for the applications is the networking services provided by the Z-Wave Protocol.

The Z-Wave Protocol can add and remove nodes in a network. This is known as inclusion and exclusion.



Example 1: Gateway adding a lamp to the network

A Z-Wave node is identified by its NodeID. All nodes in the network share the same HomeID. The NodeID and HomeID are assigned during inclusion.
Inclusion is managed by a node known as the Primary Controller.

(http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf).

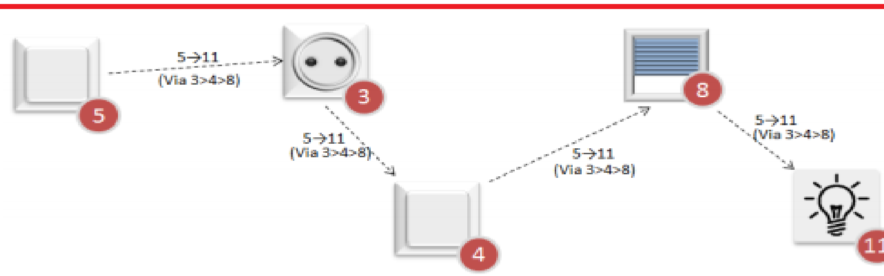
The Z-Wave Protocol handles transmissions to destinations all over the network. If necessary, other nodes are used as repeaters. This is called routing.

During bootstrapping, the Primary Controller asks the new node to discover its neighbors. Thanks to the neighbor nodes information, the Primary Controller builds a network map and knows the different possible routes to reach a node.

When using repeaters, the Sending node includes the route information in the frame. Each repeater parses the routing information and forwards the frame accordingly.

Sigma Designs Inc. Z-Wave Networking Basics Page 5 of 7

APL13031-2 Z-Wave Networking Basics



Example 4: Routing via repeaters

Routing may also be used during inclusion if a node is not within direct range of the Primary Controller.

(http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf).

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 Z-Wave device), the second relay address (e.g. the first Z-Wave 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. Z-Wave hardware within a Z-Wave device will feed the control signal to the hardware within the device that actually performs its core function, such as a motor). (*Supra* ¶22).

25. On information and belief, in at least internal testing and usage, Defendant performed the steps of (a) transmitting the destination address, and a acknowledgement signal from the destination relay unit; (b) decoding the second relay address at the second relay unit; (c) transmitting the acknowledgement signal, the first relay address, and the destination address from the second relay unit; (d) decoding the destination address and receiving the acknowledgement signal at the headend computer. For example, Z-Wave devices will send an acknowledgement signal from a destination device back to a headend computer or controller. This is accomplished in a manner reverse of the procedure used to send a control signal from the

headend computer of controller to the destination device via intermediate devices serving as repeaters. (*Supra* ¶22).

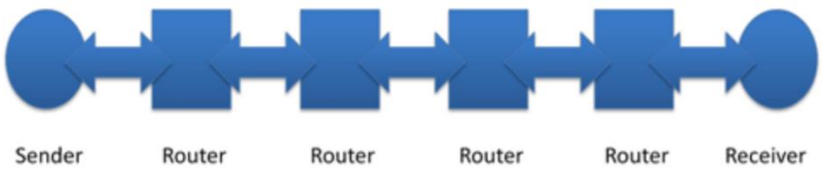


Figure 8 - Maximum distance between two nodes via four repeaters

(https://www.vesternet.com/pages/understanding-z-wave-networks-nodes-devices).

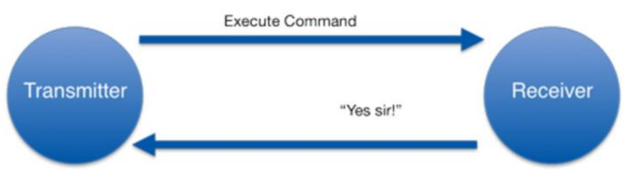


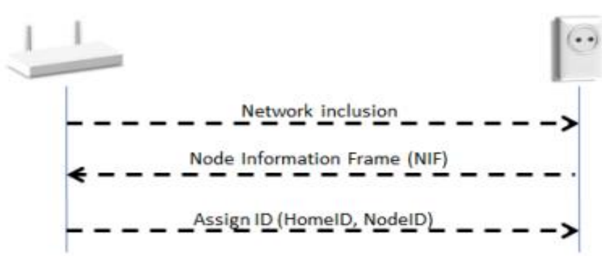
Figure 2 - communication with and without acknowledgment

The return receipt is called **Acknowledge (ACK)**. A Z-Wave transceiver will try up to three-times to send a message while waiting for an ACK. After three unsuccessful attempts the Z-Wave transceiver will give up and report a failure message to the user. The number of unsuccessful attempts is also a good indicator of the network's wireless connection quality.

(https://www.vesternet.com/pages/understanding-z-wave-networks-nodes-devices).

Z-Wave enables a variety of monitoring and control applications. The basis for the applications is the networking services provided by the Z-Wave Protocol.

The Z-Wave Protocol can add and remove nodes in a network. This is known as inclusion and exclusion.



Example 1: Gateway adding a lamp to the network

A Z-Wave node is identified by its NodeID. All nodes in the network share the same HomeID. The NodeID and HomeID are assigned during inclusion.
Inclusion is managed by a node known as the Primary Controller.

(http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf).

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

26. Plaintiff incorporates the above paragraphs herein by reference.

27. 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.

28. 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.

29. 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).

30. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing at least claim 1 of the '245 patent in Colorado, 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 Z-Wave AC motor controls (ABMHZ 115 868, ABMHZ 115 908, ABMHZ 230 908), Z-Wave DC motor control (DBMZ 868, DBMZ 908), or Z-Wave RQ transceiver (ZW RQ REC 868, ZW RQ REC 908) ("Accused Instrumentality").

31. Each Accused Instrumentality provides an appliance controller (*e.g.*, Z-Wave AC motor controls (ABMHZ 115 868, ABMHZ 115 908, ABMHZ 230 908), Z-Wave DC motor control (DBMZ 868, DBMZ 908), or Z-Wave RQ transceiver (ZW RQ REC 868, ZW RQ REC 908)) for a distributed appliance system (*e.g.*, Z-Wave network) having a multiplicity of appliances (*e.g.*, appliances such as motors, etc.), and a plurality of relay units (*e.g.*, repeaters), one of the relay units being the appliance controller (*e.g.*, a Z-Wave Controller). (*Supra* ¶20; http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13782-4%20Z-Wave%20Management%20Command%20Class%20Specification.pdf; http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf)

32. Each Accused Instrumentality has a low power satellite radio transceiver (*e.g.*, radio frequency transceivers within the various Z-Wave devices) having a range being less than a distance to at least some of the appliances. (*Supra* ¶20).

33. 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 motor). (*Supra* ¶20).

34. Each Accused Instrumentality has a microcomputer (*e.g.*, microcontroller) connected between the satellite radio transceiver (*e.g.*, Z-Wave 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 Z-Wave 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 Z-Wave device enables the command received from the appliance interface to be communicated to the local appliance by the Z-Wave transceiver so that the intended action can be executed such as control motors). (*Supra* ¶¶20, 22; https://Z-Wavealliance.org/Z-Wave-oems-developers/; http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13782-4%20Z-Wave%20Management%20Command%20Class%20Specification.pdf; http://www.rfwireless-world.com/Tutorials/Z-Wave-physical-layer.html).

35. Each Accused Instrumentality has a first program instructions including detecting communications directed by another of the relay units (*e.g.*, another Z-Wave node acting as a repeater) relative to the same appliance controller (*e.g.*, targeted Z-Wave node), signaling receipt of the directed communications (sending acknowledgement signal through the Z-Wave 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, a Z-Wave controller can send/receive messages to program various connected Z-Wave devices; the Z-Wave motor controller can receive communications to turn on or off appliances or can communicate regarding the status of the appliance. (*Supra* ¶20; http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf; http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13784-4%20Z-Wave%20Network-Protocol%20Command%20Class%20Specification.pdf).

36. 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 Z-Wave 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 Z-Wave node detects messages from another Z-Wave 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 Z-Wave 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* ¶¶20, 24; http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z-Wave%20Networking%20Basics.pdf; http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13784-4%20Z-Wave%20Network-Protocol%20Command%20Class%20Specification.pdf; https://www.zwaveproducts.com/learn/ask-an-expert/glossary/mesh-network; http://docslide.us/documents/Z-Wave-technical-basics-small.html; http://www.zwaveproducts.com/learn/Z-Wave).

37. 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.

38. 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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