STEVEN A. NIELSEN (SBN 133864)
(STEVE@NIELSENPATENTS.COM)
100 LARKSPUR LANDING CIRCLE, SUITE 216
LARKSPUR, CA 94939-1743
TELEPHONE:(415) 272-8210

Attorneys for Plaintiff
KARAMELION LLC, a Texas limited liability corporation

UNITED STATES DISTRICT COURT
NORTHERN DISTRICT OF CALIFORNIA

KARAMELION LLC, Plaintiff, v. **NORTEK SECURITY & CONTROL LLC,** Defendant.	PATENT Case No. _____ **ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT AGAINST NORTEK SECURITY & CONTROL LLC** **DEMAND FOR JURY TRIAL**

Plaintiff Karamelion LLC, files this Original Complaint for Patent Infringement against Nortek Security & Control LLC, 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 Nortek Security & Control LLC ("Defendant") is a limited liability company organized and existing under the laws of California, with a place of business at 1800 S. McDowell Blvd., 2nd Floor, Petaluma, CA 94954.

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 California 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 is a California limited liability company.

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 California. 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 California. 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 California. Defendant has committed such purposeful acts and/or transactions in California 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 is a California limited liability company. 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):

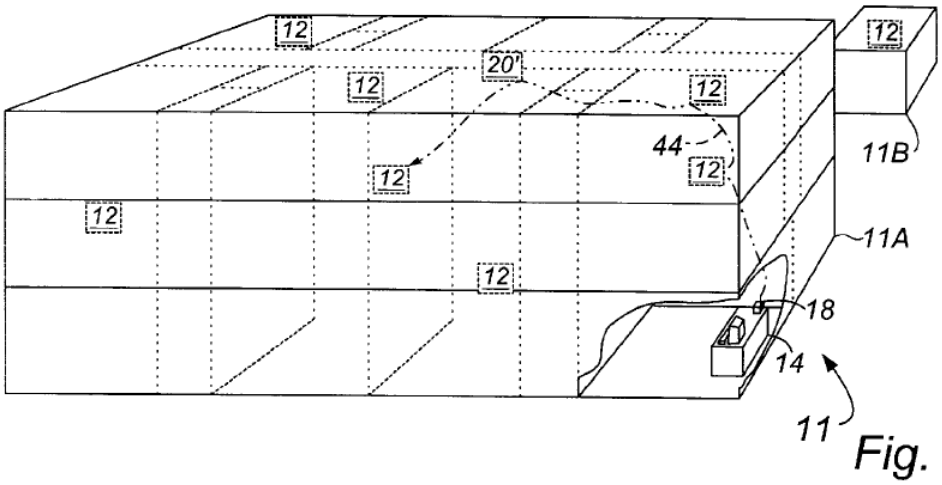
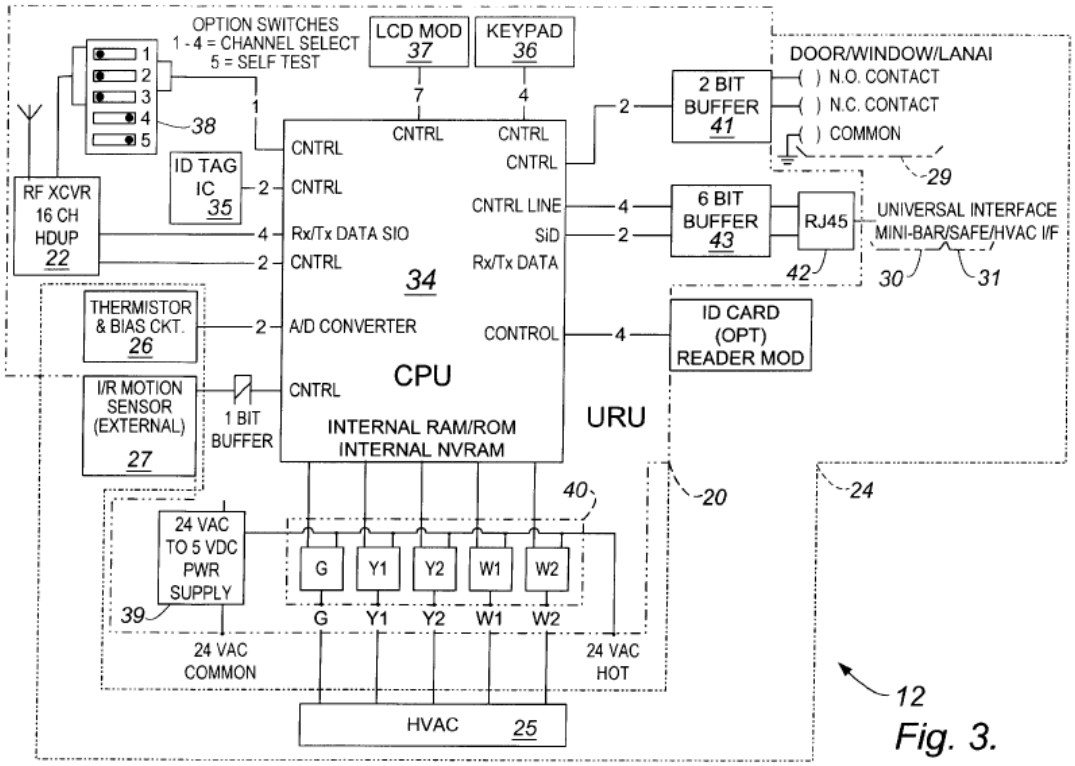


Fig. 2.

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:



(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):

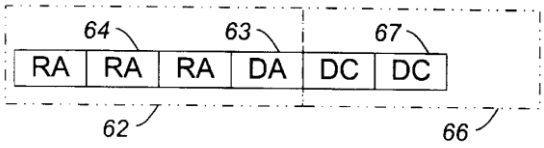


Fig. 4. 60

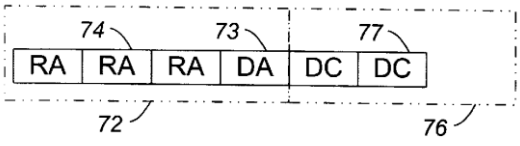


Fig. 5. 70

(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:

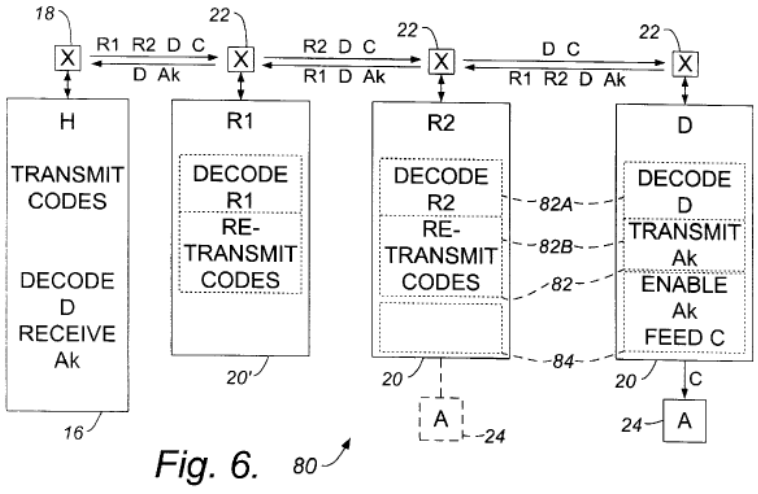


Fig. 6. 80

(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).

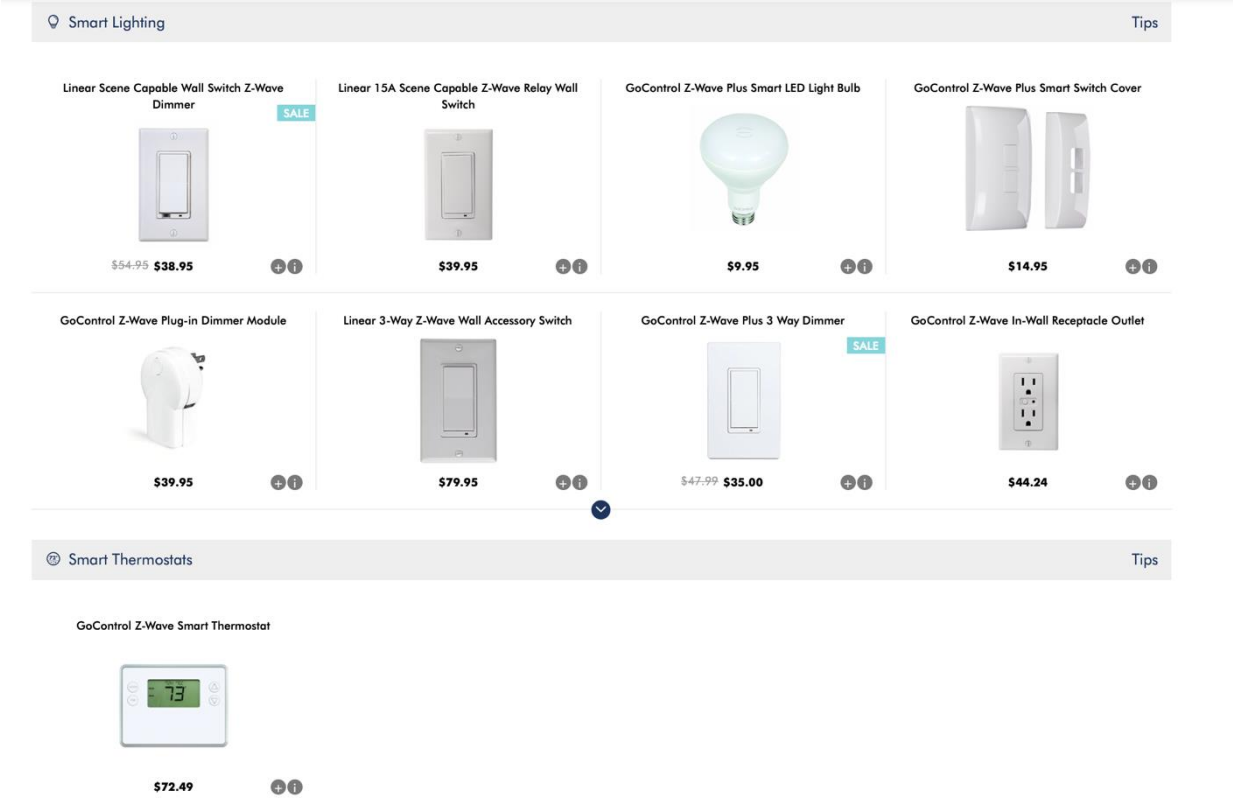
17. As explained during the prosecution history, the prior art did not teach a relay unit being an appliance controller that communicated with a headend computer using at least two other relay units. The invention therefore overcame the prior art, which were excessively expensive, had insufficient bandwidth,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

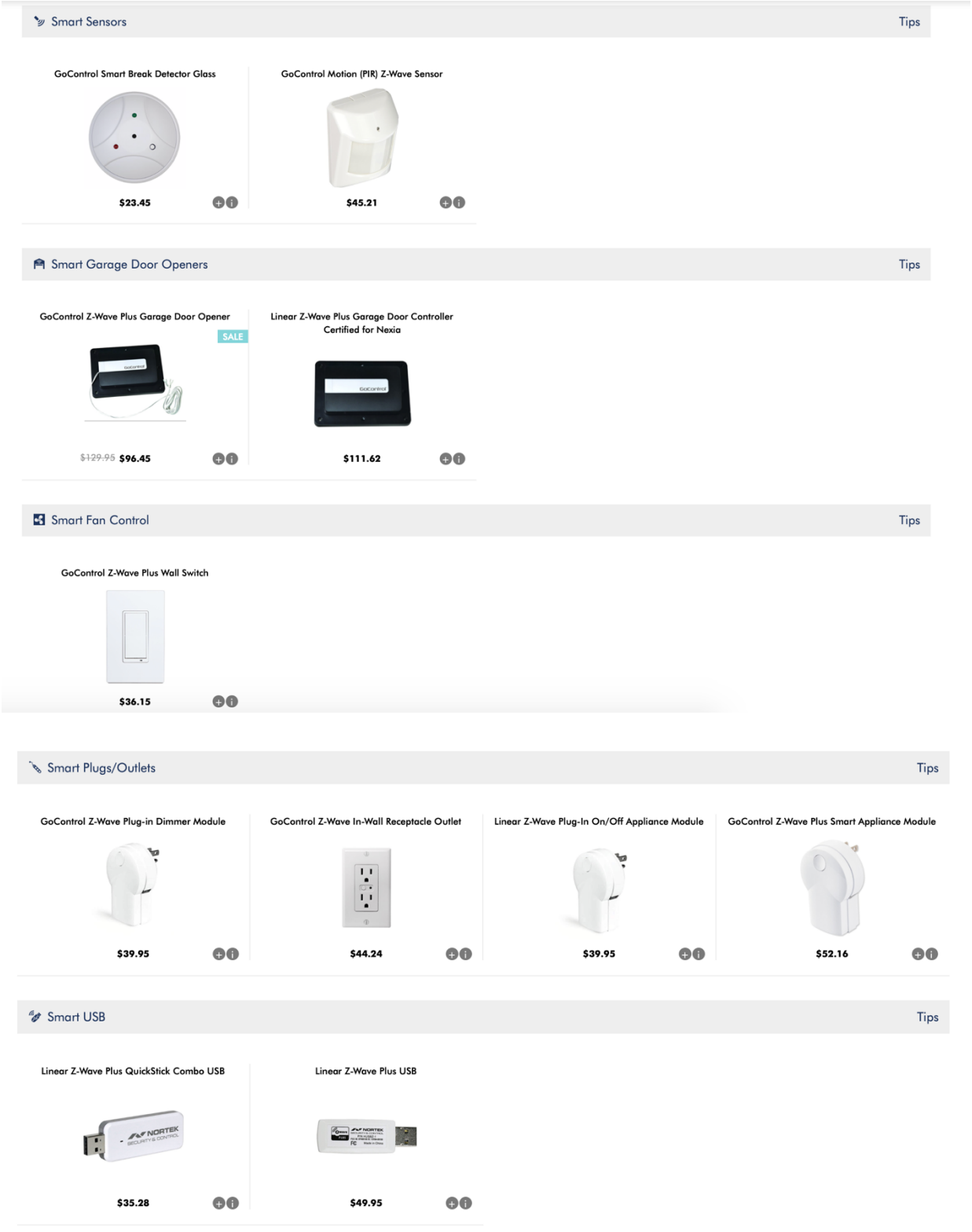
18. **Direct Infringement.** Upon information and belief, Defendant has been directly infringing at least claim 1 of the '166 patent in California and this District, and elsewhere in the United States, by performing actions comprising making, using, selling, and/or offering for sale an appliance controller for a distributed appliance system having a headend computer, a multiplicity of appliances, and a plurality of relay units that satisfies the limitations of at least claim 1, including without limitation the Linear Scene Capable Wall Switch Z-Wave Dimmer, Linear 15A Scene Capable Z-Wave Relay Wall Switch, GoControl Z-Wave Plus Smart LED Light Bulb, GoControl Z-Wave Plug-in Dimmer Module, GoControl Z-Wave Smart 3 Way Switch/Dimmer, GoControl Z-Wave Smart Thermostat, GoControl Motion (PIR) Z-Wave Sensor, GoControl Z-Wave Plus Garage Door Opener Remote Control, Linear Z-Wave Garage Door Controller, GoControl Z-Wave Single Wall Outlet, Linear Z-Wave Plug-In On/Off Appliance Module, GoControl Z-Wave Plus Smart Appliance Module, Linear Z-Wave Plus

QuickStick Combo USB, Linear Z-Wave Plus USB, Z-Wave Wall Dimmer Switch, GoControl Z-Wave Wall Switch ("Accused Instrumentality").

19. Accused Instrumentality provides an appliance controller (*e.g.*, Linear Scene Capable Wall Switch Z-Wave Dimmer, Linear 15A Scene Capable Z-Wave Relay Wall Switch, GoControl Z-Wave Plus Smart LED Light Bulb, GoControl Z-Wave Plug-in Dimmer Module, GoControl Z-Wave Smart 3 Way Switch/Dimmer, GoControl Z-Wave Smart Thermostat, GoControl Motion (PIR) Z-Wave Sensor, GoControl Z-Wave Plus Garage Door Opener Remote Control, Linear Z-Wave Garage Door Controller, GoControl Z-Wave Single Wall Outlet, Linear Z-Wave Plug-In On/Off Appliance Module, GoControl Z-Wave Plus Smart Appliance Module, Linear Z-Wave Plus QuickStick Combo USB, Linear Z-Wave Plus USB, Z-Wave Wall Dimmer Switch, GoControl Z-Wave Wall Switch) for a distributed appliance system (*e.g.*, Z-Wave network) having a headend computer (*e.g.*, primary controller, in this case a controller (*e.g.*, Z-wave hub) for the network including the Linear Scene Capable Wall Switch Z-Wave Dimmer, Linear 15A Scene Capable Z-Wave Relay Wall Switch, GoControl Z-Wave Plus Smart LED Light Bulb, GoControl Z-Wave Plug-in Dimmer Module, GoControl Z-Wave Smart 3 Way Switch/Dimmer, GoControl Z-Wave Smart Thermostat, GoControl Motion (PIR) Z-Wave Sensor, GoControl Z-Wave Plus Garage Door Opener Remote Control, Linear Z-Wave Garage Door Controller, GoControl Z-Wave Single Wall Outlet, Linear Z-Wave Plug-In On/Off Appliance Module, GoControl Z-Wave Plus Smart Appliance Module, Linear Z-Wave Plus QuickStick Combo USB, Linear Z-Wave Plus USB, Z-Wave Wall Dimmer Switch, GoControl Z-Wave Wall Switch), a multiplicity of appliances (*e.g.*, appliances such as lights, outlets, etc.), and a plurality of relay units (*e.g.*, repeaters), one of the relay units being the appliance controller (*e.g.*, Z-Wave node).

20. Each Accused Instrumentality is an appliance controller comprising 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.





(https://www.z-wave.com/shop-z-wave-smart-home-products)

SMART PRODUCTS FOR EVERYDAY LIFE

Lighting can convey so much, adding to the mood or comfort of a room, enhancing any event or even a quiet night on the couch. GoControl Lighting Solutions offer a wide assortment of solutions that are easy to install and setup, giving you incredible control over your home's lighting.

More Control

Dim the lights, close the shades and set the temperature to the ideal level, all with the press of a familiar switch. The new Central Scene Commands turns a light switch into a powerful home automation control that can run up to 8 Scenes, without having to use an app, creating the perfect mood for the modern automated home.

Associations can also be used to control 5 dimmers and 5 switches with a single press of the switch.

Stronger Network

The new and improved Z-Wave Plus lighting products offer 30% greater range and repeat the signals of other Z-Wave devices, improving the range and quality of the entire mesh network. Flexible solutions are available for automated switches, dimmable switches, and even a 3 way switch.

(https://www.gocontrol.com/brochure/gocontrol_z-wave_plus_lighting_brochure_10011068b.pdf)

PD300EMZ5-1: Z-Wave Plug-in Dimmer Module

The PD300EMZ5-1 Plug-in Lamp Module is designed to provide Z-Wave control to a connected dimmable lamp. The PD300EMZ5-1 module is plugged into any standard grounded AC wall outlet, and the lamp is then plugged into the module. Once connected, the lamp can be dimmed or turned on or off remotely via the Z-Wave controller. The module contains two power receptacles - one controlled, and one pass-through (powered at all times).

This Plug-in Lamp Module integrates with other Nortek Security & Control Z-Wave enabled products, and can also act as a wireless repeater to ensure that commands intended for another device in the network are received (useful when a device would otherwise be out of radio range).

www.gocontrol.com/detail.php?productId=1781)

PS15EMZ5-1: Z-Wave GoControl Smart EM Appliance Module

The PS15EMZ5-1 Plug-in Appliance Module is designed to provide Z-Wave control to a connected load. The PS15EMZ5-1 module is plugged into any standard grounded AC wall outlet, and the appliance or other device is then plugged into the module. Once connected, the appliance/device can be turned on or off remotely via the Z-Wave controller. The module contains two power receptacles - one controlled, and one pass-through (powered at all times).

This plug-in Appliance Module integrates with other Nortek Security & Control Z-Wave enabled products, and can also act as a wireless repeater to ensure that commands intended for another device in the network are received (useful when a device would otherwise be out of radio range).

(https://www.gocontrol.com/detail.php?productId=1779)

Linear Z-Wave Plug-In On/Off Appliance Module

$39.95
by Linear

Smart Lighting

Description | Features & Specs | In the box | Reviews | Downloads

Product Features

- Plugs into any standard grounding AC wall outlet & appliances plug into device.
- Z-Wave controlled appliance control for any plug-in appliance (e. g. coffee maker).
- Includes one controlled and one 'pass-thru' outlet.
- Neutral required: no
- Supported wattage: 15a
- Supported voltage: 120v
- May be used as a repeater or range extender

(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-lighting-smart-plugs-outlets-linear-linear-z-wave-plug-in-on-off-appliance-module)

WD500Z5-1: Z-Wave Wall Dimmer Switch

+LARGER IMAGE

The WD500Z5-1 Wall Mounted Dimmer allows remote ON/OFF control and dimming of connected lights. The Z-Wave Wall Mount Dimmer is easily wired in place of a standard wall dimmer. This device requires a Neutral connection.

The Wall Mounted Dimmer integrates with other Nortek Security & Control Z-Wave enabled products, and can also act as a wireless repeater to ensure that commands intended for another device in the network are received (useful when a device would otherwise be out of radio range).

(https://www.gocontrol.com/detail.php?productId=1778)

WS15Z5-1: Z-Wave Wall Switch

The WS15Z5-1 Wall Mount Switch allows remote ON/OFF control of loads connected to the switch, and is easily wired in place of a standard wall switch.

The Switch integrates with other Nortek Security & Control Z-Wave enabled products, and can also act as a wireless repeater to ensure that commands intended for another device in the network are received (useful when a device would otherwise be out of radio range).

(https://www.gocontrol.com/detail.php?productId=1784)

WT00Z5-1: Z-Wave Smart 3-Way Switch/Dimmer

The WT00Z5-1 Wall Mount Accessory Dimmer Switch allows remote ON/OFF control and dimming of lights controlled by associated Z-Wave modules, creating virtual 3-way switches. The WT00Z5-1 controls no load directly, so it can be wired anywhere power is available, without the need for a traveler wire.

Replaceable Trim Ring

The WT00Z5-1 3-Way Wall Mount Accessory Dimmer/Switch has a field replaceable trim ring - the color of the device can be altered with the Trim Ring Kit model in black, brown and almond.

SPECIFICATIONS

- Signal (Frequency): 908.42 MHz
- Load: does not directly control a load. Another Z-Wave device is required
- Range: Up to 100 feet line of sight between the controller and/or the closest Z-Wave device

(https://www.gocontrol.com/detail.php?productId=1782)

WT00Z5-1
3-WAY WALL MOUNT ACCESSORY DIMMER SWITCH

The GoControl™ family of Z-Wave® certified wireless Lighting Products (smart LED fixtures, bulbs, switches, dimmers, outlets and plug-in modules) Control Products (thermostats, irrigation controller and garage door controller) and Sensors (flood, leak, alert sounder, motion sensor and door/window sensor) bring a new level of intelligent wireless Home Automation capability to commercial and residential environments.

The Z-Wave wireless protocol is an international wireless standard for remote home automation, security and other applications. This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

(https://www.gocontrol.com/manuals/wt00z5-1_installation_guide_10007350a.pdf)

Linear Z-Wave Plus QuickStick Combo USB

$37.60
by Linear

Smart USB

Description | Features & Specs | In the box | Reviews | Downloads

Downloads

Linear QuickStick Combo USB HUSBZB-1 OPeration Manual

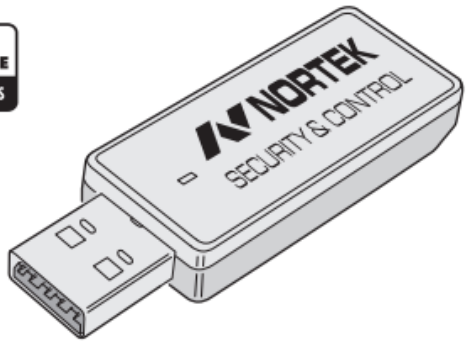
− + 1

(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-usb-linear-linear-z-wave-plus-quickstick-combo-usb)

NORTEK SECURITY & CONTROL

HUSBZB-1

USB Z-Wave & ZigBee Adapter



INTRODUCTION

HubZ is a USB v2.0 full speed low power Z-Wave and ZigBee adapter in a USB Stick form factor. When plugged into computer or similar host device, it appears as two (2) serial ports. This device requires an application from a third party to operate. When power is supplied through the USB port, a blue LED on the front will be illuminated. Once the user application is running, the LED may be used to display various types of status information.

Z-WAVE OPERATION

HubZ is an independently controlled Z-Wave static controller that requires an application from a third party to operate. The application will control such functions as Inclusion, Exclusion and Replication.

Inclusion – The process of **adding** a node into the Z-Wave network

Exclusion – The process of **removing** a node from the Z-Wave network

Replication – The process of **copying** network information from one controller to another

This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters, regardless of vendor, to increase reliability of the network.

REGULATORY INFORMATION

The HUSBZB-1 is certified to comply with applicable FCC and IC rules and regulations governing RF and EMI emissions.

FCC Notice

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) This device must accept any interference received, including interference received that may cause undesired operation.

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/TV technician to help.

IC Notice

This Class B digital apparatus complies with Canadian ICES-003

Cet appareil numérique de la classe B est conforme à la norme NMB-003 du Canada. Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes : (1) l'appareil ne doit pas produire de brouillage, et (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

This device complies with Industry Canada license exempt standard(s). Operation is subject to the following two conditions: (1) this device may not cause interference, and (2) this device must accept any interference, including interference that may cause undesired operation of the device.

(http://z-wave-assets.s3-us-west-2.amazonaws.com/docs/459/HUSBZB-1-Operation.pdf?1495729346)

Linear Z-Wave Plus USB

$49.95

by Linear

Smart USB

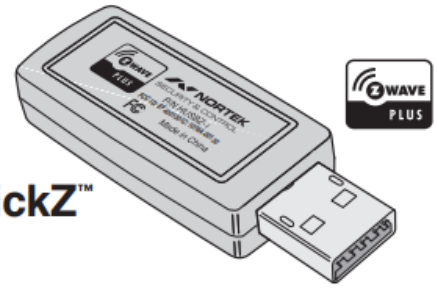
Description | Features & Specs | In the box | Reviews | Downloads | Videos

Smart solutions

The Linear HUSBZ-1 Z-Wave USB is a Z-Wave Plus certified USB interface for use in Z-Wave certified residential and small business automation environments. 3rd party software is required for consumer applications.

Model Number: HUSBZ-1

(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-usb-linear-linear-z-wave-plus-usb)



INTRODUCTION

StickZ is a USB v2.0 full speed low power CDC-ACM compliant Z-Wave adapter in a thumb drive form factor. When plugged into computer or similar host device, it appears as a serial port so no additional drivers are required.

OPERATION

StickZ is an independently controlled Z-Wave hub that requires an application from a third party to operate. The application will control such function as Inclusion, Exclusion and Replication.

Inclusion – The process of **adding** a node into the Z-Wave network

Exclusion – The process of **removing** a node from the Z-Wave network

Replication – The process of **copying** network information from one controller to another

This product can be included and operated in any Z-Wave network with other Z-Wave certified devices from other manufacturers. All non-battery operated nodes within the network will act as repeaters, regardless of vendor, to increase reliability of the network.

(http://z-wave-assets.s3-us-west-2.amazonaws.com/docs/429/HUSBZ-1-Operation.pdf?1495047304)

GC-TBZ48: Battery Powered Z-Wave Thermostat

+LARGER IMAGE

Model GC-TBZ48 is a battery powered Z-wave thermostat that connects to all Z-Wave hubs, including the 2GIG GC2 panel giving you control over your home's comfort wherever you are. This model is designed to be incredibly easy to install and includes a front loading battery compartment to hold 4 "AA" batteries to power the thermostat for two full years, or it can be powered by the HVAC systems 24 VAC "C" wire. The 7 character scrolling display makes programming simple.

The GC-TBZ48 works with most contemporary Central HVAC systems, whether standard or heat pump, which makes this thermostat a great solution for all retrofit or new construction needs.

(https://www.gocontrol.com/detail.php?productId=3)

Z-Wave Operation when Battery Powered

IMPORTANT: If the thermostat is installed on a Z-Wave network, while it is battery powered, it will NOT work as a Z-Wave repeater.

CAUTION: Do not install batteries and temporarily power the thermostat from 24VAC to include onto a Z-Wave network. Shortened battery life may occur when 24VAC power is removed.

(https://www.gocontrol.com/manuals/GC-TBZ48-Install.pdf)

GD00Z-4: Z-Wave Garage Door Opener Remote Controller Accessory

+LARGER IMAGE

The GD00Z-4 Garage Door Opener Remote Controller opens or closes a sectional garage door remotely through a Z-Wave certified Gateway or Security Panel. It is compatible with virtually any automatic garage door opener connected to a sectional garage door. Installers only need to 'pair' the unit into the Gateway, mount the unit, connect two wires and plug it in. The GD00Z provides both audible and visual warnings prior to remotely-activated door movement, allowing it to meet UL 325-2010 safety requirements. The GD00Z ships with a wireless tilt sensor that attaches to the inside of the garage door, which reports 'open' or 'closed' status to the controller.

(https://www.gocontrol.com/detail.php?productId=4)

GD00Z-4 Overview

- A garage door opener remote command transceiver with built-in Z-Wave technology.
- Allows remote operation of a garage door opener using Z-Wave controllers.
- Acts as a Z-Wave repeater to improve communications within the Z-Wave mesh network.

(https://www.gocontrol.com/manuals/GD00Z-Install.pdf)

WAPIRZ-1: Z-Wave PIR Motion Detector

The WAPIRZ-1 Wireless Z-Wave passive infrared motion detector (PIR) is a wireless indoor security device designed to sense and report motion activity and transmit alert signals via a Z-Wave network. the PIR comes with a long-life battery, and provides a low-battery alert signal when the battety needs replacement. The PIR also includes a temperature sensor that can trigger an alert based on specific changes to the room's temperature.

(https://www.gocontrol.com/detail.php?productId=15)

SPECIFICATIONS

Battery	CR123A Lithium Battery
Frequency	908.42 MHz
Operating Temp	5°F~140°F / -15°C~ 60°C
Repeater	Yes
Range	Up to 100 feet line of sight between the Z-Wave Controller and/or the closest Z-Wave Repeater

(https://www.gocontrol.com/manuals/WAPIRZ-1-Install.pdf)

WO15Z-1: Z-Wave Single Wall Outlet

+LARGER IMAGE

The WO15Z-1 Single Wall Outlet is wired in place of a standard duplex receptacle. This device allows remote ON/OFF control of loads connected to the bottom outlet (the other outlet remains powered at all times).

This WO15Z-1 Outlet integrates with other Nortek Security & Control Z-Wave enabled products, and can also act as a wireless repeater to ensure that commands intended for another device in the network are received (useful when a device would otherwise be out of radio range).

(https://www.gocontrol.com/detail.php?productId=23)

Linear 15A Scene Capable Z-Wave Relay Wall Switch

$39.95

by Linear

Smart Lighting

Description | Features & Specs | In the box | Reviews | Downloads | Videos

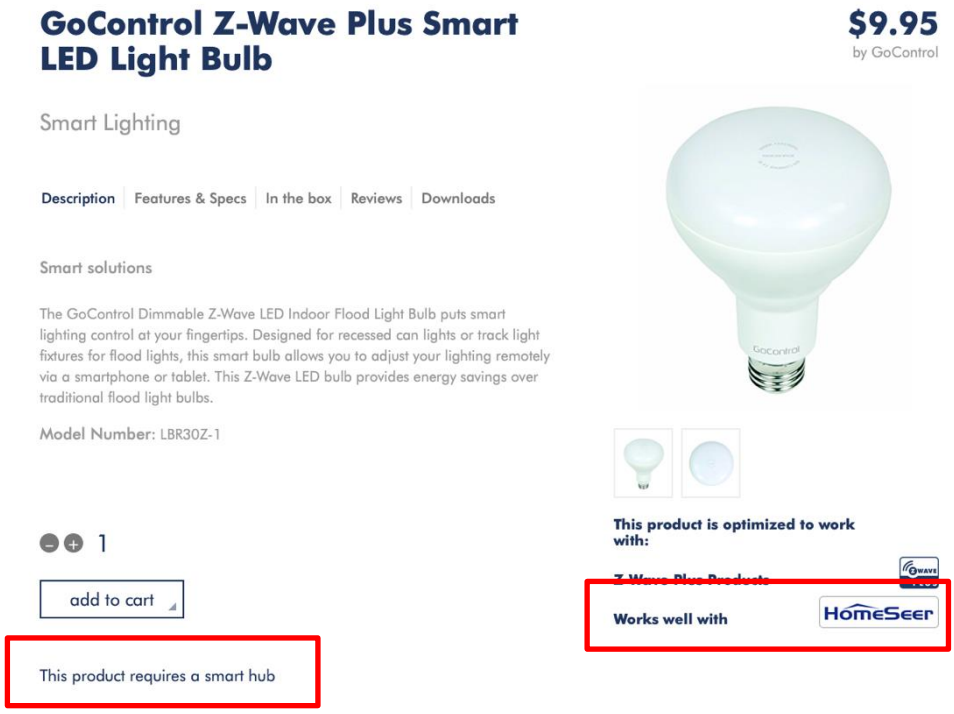
Smart solutions

The Linear 15A Scene Capable Z-Wave Relay Wall Switch lets you control any permanently-installed lighting or AC-powered device by simply replacing your existing wall-mounted on/off switch. This smart switch also acts as a repeater to extend the reach of your Z-Wave network by up to an additional 130 feet.

Model Number: WS15Z-1

(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-lighting-linear-linear-15a-scene-capable-z-wave-relay-wall-switch)

(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-lighting-linear-linear-scene-capable-wall-switch-z-wave-dimmer)



(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-lighting-gocontrol-gocontrol-z-wave-plus-smart-led-light-bulb)

Linear Z-Wave Garage Door Controller

Sold out
Temporarily

Smart Garage Door Openers

Description | Features & Specs | In the box | Reviews | Downloads | Videos

Downloads

GoControl GDC LNGD00Z_Specifications

GoCOntrol GDC LNGD00Z_Compatibility

(https://www.z-wave.com/shop-z-wave-smart-home-products/smart-garage-door-openers-linear-linear-z-wave-garage-door-controller)

Z-Wave Garage Door Remote Controller Accessory

The Linear GD00Z Garage Door Remote Controller Accessory is compatible with virtually any automatic garage door opener connected to a sectional garage door. Installers only need to 'pair' the unit into the Gateway, mount the unit, connect two wires and plug it in. It is just that easy to have a complete system that will open or close the garage door remotely through a Z-Wave certified Gateway or Security Panel.

Providing both audible and visual warnings prior to door movement, the GD00Z meets UL 325-2010 safety requirements. These built-in measures (in addition to the safety features that come with the garage door opener) make this a safe way to remotely open / close a garage door.

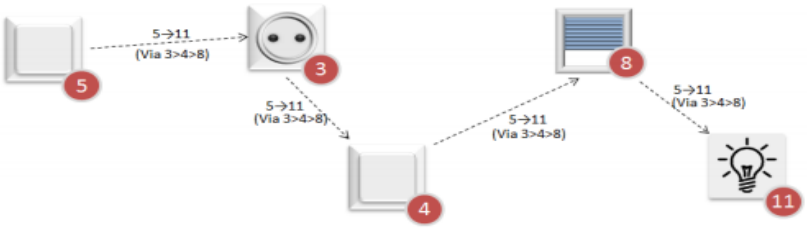
The Z-Wave Garage Door Remote Controller Accessory integrates with other Linear Z-Wave enabled products, and can also act as a wireless repeater to ensure that commands intended for another device in the network are received (useful when a device would otherwise be out of radio range).

((http://z-wave-assets.s3-us-west-2.amazonaws.com/docs/203/B010FUZ43C_GoControl_GDC_LNGD00Z_Specifications.pdf?1490363047)

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.

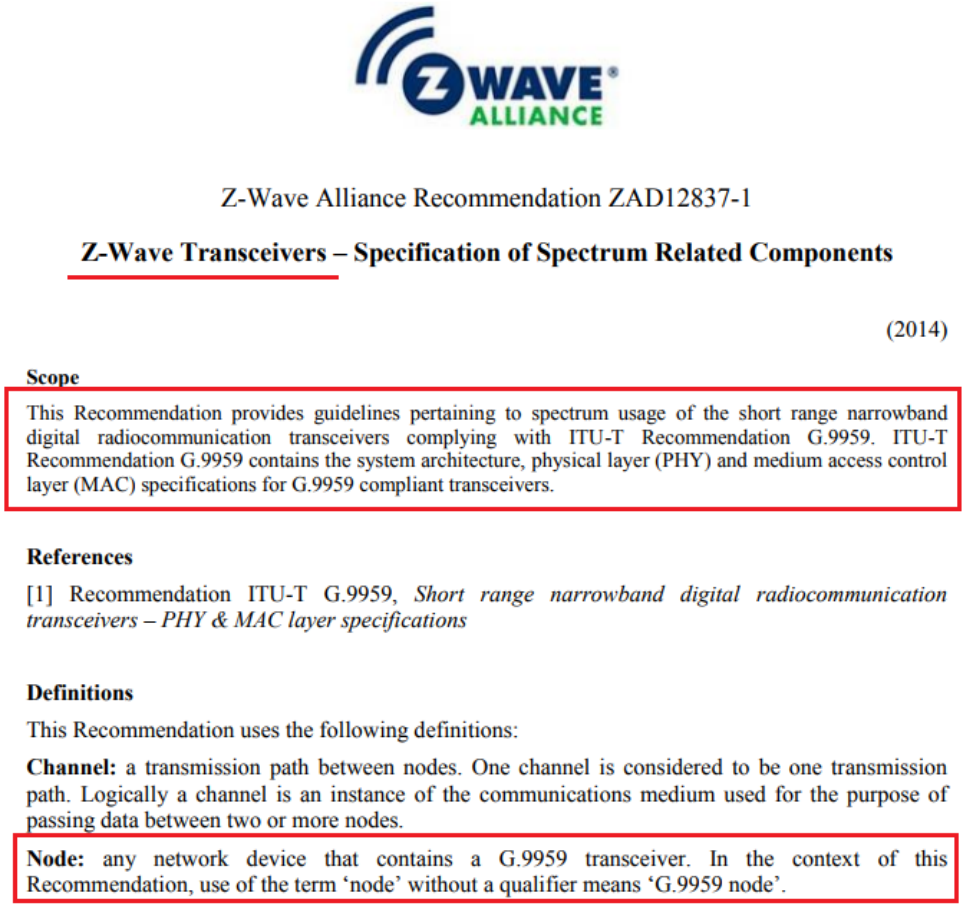
When using repeaters, the Sending node includes the route information in the frame. Each repeater parses the routing information and forwards the frame accordingly.



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.

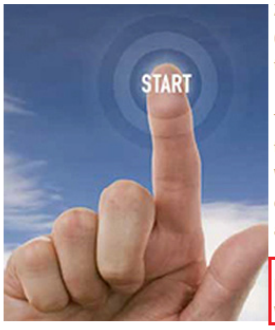
Node: any network device that contains a G.9959 transceiver. In the context of this Recommendation, use of the term 'node' without a qualifier means 'G.9959 node'.

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

21. 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 a signal to the actual electrical appliance like light or socket). For example, the dimmer communicated with the light to dim the light, and outlet communicates with the plugged-in appliance to power the appliance. (*Supra* ¶20).

22. Each Accused Instrumentality has a microcomputer 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 primary controller by the Z-Wave transceiver to be communicated to the appliance interface of the device so that the intended action can be executed such as switch on/off a light or plugged in device, control temperature, turn on a light). (*Supra* ¶20; https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).



Z-Wave's physical and media access layers (PHY/MAC) have been ratified by the International Telecommunication Union (ITU) as the international standard (G.9959). The Z-Wave Standard is administered by the Z-Wave Alliance which serves as the Standards Development Organization (SDO) for Z-Wave.

Together, Sigma Designs, the Z-Wave Alliance and the over 450 international companies that use Z-Wave technology in their products and services present the largest ecosystem of interoperable wireless control products in the world. The Z-Wave mesh communication protocol stack is embedded in the available chips and modules, and is accessed through a complete set of APIs. Z-Wave chips and modules provide Flash or OTP memory options for the manufacturer or OEM's application software.

For many products, the Z-Wave chip or module, with its on-board micro-controller, is all that is needed for a complete Z-Wave solution. For companies that choose chip-based over module-based solutions, a range of blueprints of the PCB circuitry surrounding the Z-Wave Single Chip is offered, including antenna circuitry and filters. Sigma Designs also licenses reference designs, stack software and APIs to chip manufacturers that are interested in entering the wireless control space, providing Z-Wave porting services that assure quality and accelerate product development. Z-Wave's industry-leading device specifications are available royalty free, based on a RAND model. The Z-Wave certification program ensures interoperability between all products.

(https://Z-Wavealliance.org/Z-Wave-oems-developers/).

The Version Command Class, version 2 is extended to report the version of various firmware images such as a host processor firmware, etc. in addition to the firmware image running in the Z-Wave chip.

As an example, one may construct a product comprising a Z-Wave chip and a secondary host processor that maintains a security certificate. With Firmware Update Meta Data Command Class, version 3 the Z-Wave chip, the host processor and the security certificate may all be updated via individual firmware IDs. Version 2 of the Version Command Class (this Command Class) allows a controlling node to request the corresponding version information for each firmware ID.

Commands not mentioned here remain the same as specified for Version Command Class, version 1.

4.20.1 Version Report Command

This command is used to report the library type, protocol version and application version from a node.

Version 2 of this command renames the fields Application Version and Application Sub Version to Firmware 0 Version and Firmware 0 Sub Version. The use remains the same.

A node MUST advertise the version of all firmware images which can be updated via the Firmware Update Command Class.

A one-chip system MUST comply with the following:

- The Firmware 0 Version MUST reflect the complete firmware implementing the Z-Wave protocol stack as well as the Z-Wave application.

A multi-processor system MUST comply with the following:

- The Firmware 0 Version MUST reflect the firmware implementing the Z-Wave protocol stack and the inter-chip interface module that enables the Z-Wave application to run in the host processor. Another firmware number (e.g. Firmware 1) version MUST reflect the Z-Wave application that runs in the host processor. Any firmware number larger than 0 MAY be used for this purpose.

(http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13782-4%20Z-Wave%20Management%20Command%20Class%20Specification.pdf).

23. Each Accused Instrumentality provides first program instructions including detecting communications directed by the headend computer (*e.g.*, primary controller) relative to the same appliance controller (*e.g.*, targeted Z-Wave node), signaling receipt of the directed communications (*e.g.*, sending acknowledgement signal through the Z-Wave transceiver), and directing communications to the headend computer relative to the same appliance controller (*e.g.*, sending status of an appliance or signal from a connected sensor). For example, a primary controller can send/receive messages to program various connected Z-Wave devices; switch can receive communications to turn on or off appliances or can communicate regarding the status of the appliance. (*Supra* ¶20; https://standards.ieee.org/getieee802/download/802.15.4-2011.pdf).

24. Each Accused Instrumentality has a second program instructions including detecting relay communications directed between the headend computer 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 headend computer, wherein at least some of the relay units communicate with the headend computer 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; the Z-Wave node detects messages from another Z-Wave node and forwards it to primary controller). The Accused Instrumentality work on Z-Wave technology which uses mesh network and would communicate with the headend computer by relay communications using at least two others of the relay units (*e.g.*, repeaters). (*Supra* ¶20; 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;

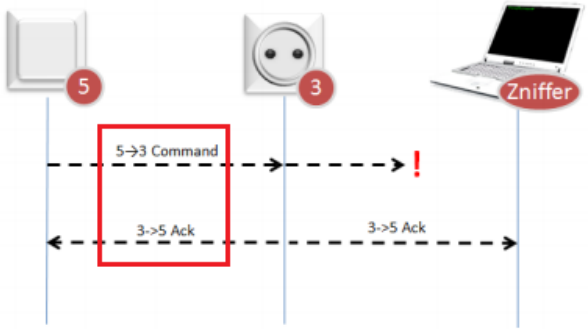
http://www.zwaveproducts.com/learn/Z-Wave).

Each frame carries a checksum. A Receiving node can verify the frame integrity thanks to this checksum. Invalid frames are discarded.

A Receiving node returns an Ack message in order to confirm that the frame has been received. If no Ack is received by the Sending node, it must assume that the transmission failed. The Sending node will then retransmit the same message until it gets feedback from the Receiving node. After three unsuccessful transmissions, the Sending node will consider the link to be down.

Ack messages are sent to confirm the frame integrity and do not imply that the Receiving node has understood or executed the command.

Local differences in wireless link quality may cause a Z-Wave network analyzer (known as a Zniffer) not to see the same transmissions as nodes participating in a transmission.



Example 3: Network analysis issues

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

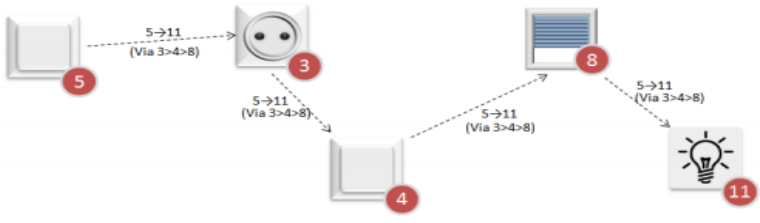
The value 0x00 MUST indicate that the byte does not represent a repeater. If the route is shorter than four repeaters, unused repeaters fields MUST be set to 0x00. If Repeater 1 is set to 0x00, it means that the Last Working Route is direct (nodes are within direct reach).

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

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.



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).

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 California and this District, 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 Linear Scene Capable Wall Switch Z-Wave Dimmer, Linear 15A Scene Capable Z-Wave Relay Wall Switch, GoControl Z-Wave Plus Smart LED Light Bulb, GoControl Z-

Wave Plug-in Dimmer Module, GoControl Z-Wave Smart 3 Way Switch/Dimmer, GoControl Z-Wave Smart Thermostat, GoControl Motion (PIR) Z-Wave Sensor, GoControl Z-Wave Plus Garage Door Opener Remote Control, Linear Z-Wave Garage Door Controller, GoControl Z-Wave Single Wall Outlet, Linear Z-Wave Plug-In On/Off Appliance Module, GoControl Z-Wave Plus Smart Appliance Module, Linear Z-Wave Plus QuickStick Combo USB, Linear Z-Wave Plus USB, Z-Wave Wall Dimmer Switch, GoControl Z-Wave Wall Switch ("Accused Instrumentality").

30. Each Accused Instrumentality provides an appliance controller (*e.g.*, Linear Scene Capable Wall Switch Z-Wave Dimmer, Linear 15A Scene Capable Z-Wave Relay Wall Switch, GoControl Z-Wave Plus Smart LED Light Bulb, GoControl Z-Wave Plug-in Dimmer Module, GoControl Z-Wave Smart 3 Way Switch/Dimmer, GoControl Z-Wave Smart Thermostat, GoControl Motion (PIR) Z-Wave Sensor, GoControl Z-Wave Plus Garage Door Opener Remote Control, Linear Z-Wave Garage Door Controller, GoControl Z-Wave Single Wall Outlet, Linear Z-Wave Plug-In On/Off Appliance Module, GoControl Z-Wave Plus Smart Appliance Module, Linear Z-Wave Plus QuickStick Combo USB, Linear Z-Wave Plus USB, Z-Wave Wall Dimmer Switch, GoControl Z-Wave Wall Switch) for a distributed appliance system (*e.g.*, Z-Wave network) having a multiplicity of appliances (*e.g.*, appliances such as lights, appliances, etc.), and a plurality of relay units (*e.g.*, repeaters), one of the relay units being the appliance controller (*e.g.*, a Z-wave hub). (*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)

31. 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).

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 and plugged in appliances). (*Supra* ¶20).

33. 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 turn off an appliance). (*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).

34. 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, the Switch can send/receive messages to program various connected Z-Wave devices. (*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).

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 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).

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.

September 25, 2019

By /s/*Steven A. Nielsen*

Steven A. Nielsen
100 Larkspur Landing Circle, Suite 216
Larkspur, CA 94939
PHONE 415 272 8210
E-MAIL: Steve@NielsenPatents.com

Attorneys for Plaintiff Karamelion LLC

David R. Bennett
(Application for Admission *Pro Hac Vice* to be filed)
Direction IP Law
P.O. Box 14184
Chicago, IL 60614-0184
(312) 291-1667
dbennett@directionip.com

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.

September 25, 2019

By /s/*Steven A. Nielsen*

Steven A. Nielsen
100 Larkspur Landing Circle, Suite 216
Larkspur, CA 94939
PHONE 415 272 8210
E-MAIL: Steve@NielsenPatents.com

Attorneys for Plaintiff Karamelion LLC

OF COUNSEL:

David R. Bennett
(Application for Admission *Pro Hac Vice* to be filed)
Direction IP Law
P.O. Box 14184
Chicago, IL 60614-0184
(312) 291-1667
dbennett@directionip.com