IN THE UNITED STATES DISTRICT COURT
FOR THE MIDDLE DISTRICT OF FLORIDA

KARAMELION LLC, Plaintiff, v. **CLARE CONTROLS, LLC.,** Defendant.	CASE NO. _____ **JURY TRIAL DEMANDED** **PATENT CASE**

ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT AND DEMAND FOR JURY TRIAL

Plaintiff Karamelion LLC, files this Original Complaint for Patent Infringement against Clare Controls, 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 Clare Controls, LLC ("Defendant") is a limited liability organized and existing under the laws of Florida with a place of business at 7519 Pennsylvania Ave, Ste. 104, Sarasota, FL 34243.

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 Florida Long-Arm Statute, due at least to its business in this forum, including at least a portion of the infringements alleged herein.

Furthermore, Defendant is subject to this Court's specific and general personal jurisdiction because Defendant has a place of business in Sarasota, Florida.

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 Florida. 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 Florida. 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 Florida. Defendant has committed such purposeful acts and/or transactions in Florida 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). Defendant is a Florida limited liability company and has a place of business within this District at 7519 Pennsylvania Ave, Ste. 104, Sarasota, FL 34243. 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):

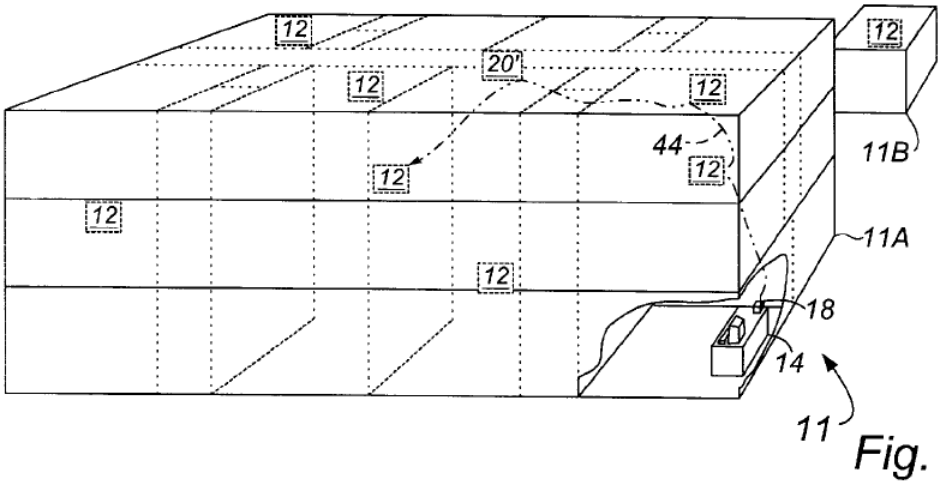
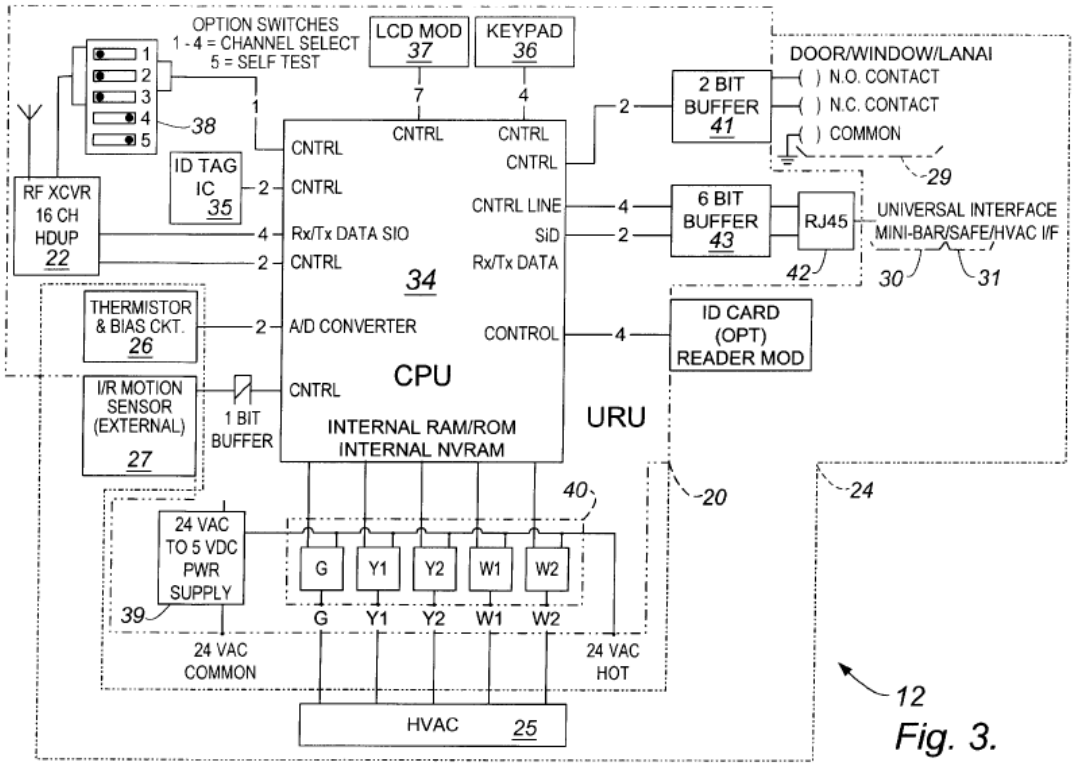


Fig. 2.

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):

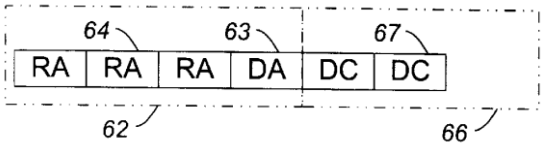


Fig. 4. 60

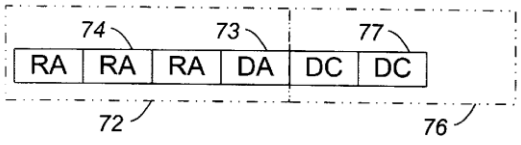


Fig. 5. 70

(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:

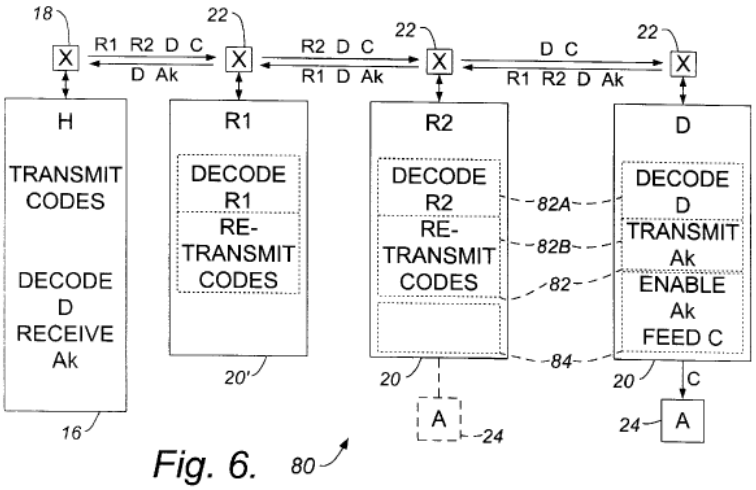


Fig. 6. 80

(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).

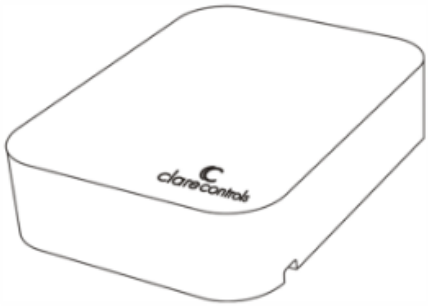
17. As explained during the prosecution history, the prior art did not teach a relay unit being an appliance controller that communicated with a headend computer using at least two other relay units. The invention therefore overcame the prior art, which were excessively expensive, had insufficient bandwidth, 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 Florida, 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 Clare Controls CLIQ Controller, Clarevue Lighting Appliance Module, ClareVue Lighting Master Incandescent Dimmer, ClareVue Master Neutral Dimmer, ClareVue Master Neutral Switch, ClareVue Plug-In Dimmer, ClareVue Lighting Tamper Resistant Receptacle, Clare Controls Water Sensor and Freeze Alarm, Clare Controls Water Valve, ClareVue Lighting Accessory Neutral Dimmer, Clarevue In-wall Fan Control, Clarevue In-wall Receptacle, ClareVue Lighting Lamp Dimmer Module, and other Z-wave supported devices ("Accused Instrumentality")

19. Accused Instrumentality provides an appliance controller (*e.g.*, Clarevue Lighting Appliance Module, ClareVue Lighting Master Incandescent Dimmer, ClareVue Master Neutral Dimmer, ClareVue Master Neutral Switch, ClareVue Plug-In Dimmer, ClareVue Lighting Tamper Resistant Receptacle, Clare Controls Water Sensor and Freeze Alarm, Clare Controls Water Valve, ClareVue Lighting Accessory Neutral Dimmer, Clarevue In-wall Fan Control, Clarevue In-wall Receptacle, ClareVue Lighting Lamp Dimmer Module, and other Z-wave supported devices, and other Z-wave supported devices) for a distributed appliance system (*e.g.*, Z-Wave network) having a headend computer (*e.g.*, primary controller, in this case, the Clare Controls CLIQ Controller), a multiplicity of appliances (*e.g.*, appliances such as lights and outlets), 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.

CLIQ.mini Controller Installation and Setup Guide



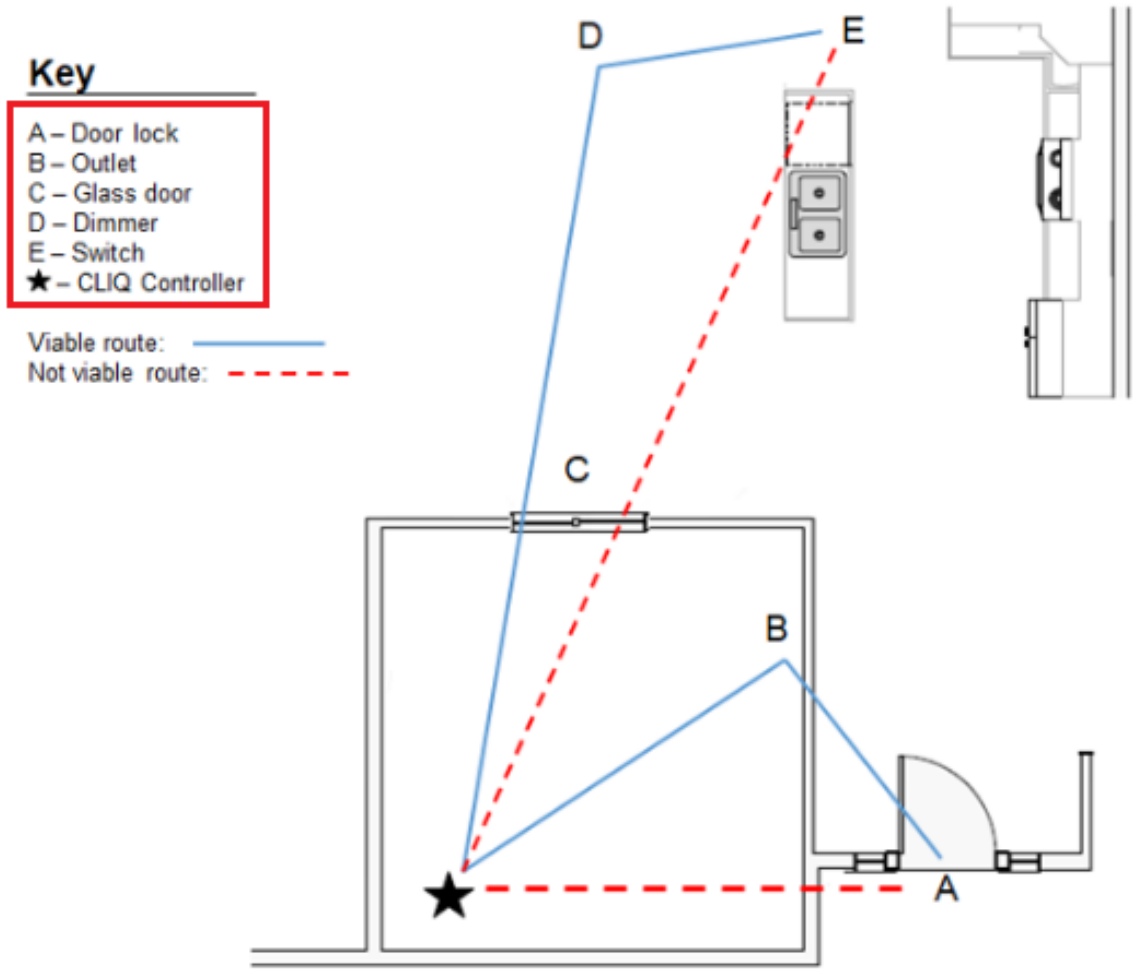
Description

The Clare Controls CLIQ.mini controller provides all device management services, supports all Clare user interface services, and acts as the gateway to the ClareCloud for system updates. The controller comes complete with the ClareOS preloaded. The controller also comes equipped with Z-Wave Plus™ for controlling your Z-Wave devices, such as integrated lighting, thermostats, sensors, and door locks.

(https://www.clarecontrols.com/helpcenter/cliq.mini-controller-installation-and-setup-guide-doc-id-1263-rev-09).[1]

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

Figure 5: Example of attenuation and routes in a home environment



(https://www.clarecontrols.com/helpcenter/installing-z-wave-with-clarehome-tech-bulletin?__hstc=79962056.cd8efc524350804d4612156dbb2c7aba.1561458257235.1561462207584.1562297861235.3&__hssc=79962056.1.1562297861235&__hsfp=3641943991).

Controllers

A Z-Wave controller is responsible for including and excluding devices from the Z-Wave network and updating them with the best routes. The term including is also referred to as pairing or adding. Excluding is also referred to as un-pairing or removing. Controllers are either static or portable, and primary or secondary. Controllers can also be scene controllers.

Note: A device being included receives the Network ID from the controller and is assigned a Node ID. The controller stores all of the properties and capabilities of the device. This lets the controller know the device type, what it can do, and how to control it.

- A portable controller is powered by batteries and can move. For example, a remote control.
- A static controller is stationary. For example, a ClareHome CLIQ Controller.
- A primary controller is responsible for assigning the Network ID and Node ID to each new device. The Node IDs are each device's identifiers in the network. In a ClareHome system, the CLIQ is always the primary controller.
- There is only one primary controller in a Z-Wave network, other controllers are secondary controllers. Secondary controllers defer to the primary controller when including devices, but they can generate commands.
- A scene controller cannot include or exclude devices. Instead it works with the primary controller to execute scenes that control devices – for example, a ClareVue 5-Button Keypad. It executes preset scenes from ClareHome, but does not directly send commands to other Z-Wave devices.

(*Id.*).

Table 3: ClareHome supported Z-Wave devices and key specifications

Devices	Part Numbers	Routes Data (Relays)	NWI	Reception Mode
Clare Controls Z-Wave Repeater	CH-Z-RPTR	Yes	No	Always On
Clare Controls Z-Wave Thermostat – Humidistat	CH-THSTAT-Z	Yes	Yes	Always On
Clare Controls Water Sensor and Freeze Alarm	CH-WWA-02-W	No	No	Interval
Clare Controls Water Valve	CH-WV01-X-LF	Yes	Yes	Always On
ClareVue Lighting 5-Scene Keypad	CL-5KP-X	No	No	Always On
ClareVue Lighting Appliance Module	CL-APS-10	Yes	Yes	Always On
ClareVue Lighting Dimmer Module	CL-LDM-10	Yes	Yes	Always On
ClareVue Lighting Accessory Neutral Dimmer	CL-AND-X	Yes	Yes	Always On
ClareVue Lighting Accessory Neutral Switch	CL-ANS-X	Yes	Yes	Always On
ClareVue Lighting Master Incandescent Dimmer	CL-MDI-X	Yes	Yes	Always On
ClareVue Lighting Master Neutral Dimmer	CL-MND-X	Yes	Yes	Always On
ClareVue Lighting Master Neutral Switch	CL-MNS-X	Yes	Yes	Always On
ClareVue Lighting Tamper Resistant Receptacle	CL-TRR-X	Yes	Yes	Always On
Honeywell Vision PRO	TH8320ZW	Yes	Yes	Always On

(*Id.*).

Home › Products › Automation and Control › ClareVue Lighting › ClareVue Lighting Appliance Module

ClareVue Lighting Appliance Module

The ClareVue Lighting Appliance Module (CL-APS-10) provides local and remote ON/OFF control of an appliance (up to 600W).

SKU: CL-APS-10. Category: ClareVue Lighting.

Description | Specifications | Resources | Models And Accessories

Rating	120 VAC, 60 Hz
Z-Wave	Uses 300 Series Z-Wave Chip @ 40 Kbs
Load Type	
Wattage	Appliance Switch 600W
Testing & Code Compliance	cULus Listed 244A NOM Certified Complies with FCC Part 15, Class B Z-Wave Compliant Certified
Terminations	Plug the module into a wall receptacle; preferably one that is not controlled by a switch. Connect the lamp plug into the module. NOTE: Some plugs are polarized and may have to be rotated before connecting.
Operating Temperature	32°F to 104°F (0°C to 40°C)

(http://dealer.clarecontrols.com/product/clarevue-lighting-appliance-module/).

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product datasheet

ClareVue Lighting Appliance Module

CL-APS-10

Technical Specif cations	
General	
Color	White
Rating	120 VAC, 60 Hz
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Wattage	Appliance Switch up to 600W
Testing &Code Compliance	cULus Listed 244A NOM Certif ed Complies with FCC Part 15, Class B Z-Wave Compliant Certif ed
Terminations	Plug the module into a wall receptacle; preferably one that is not controlled by a switch. Connect the lamp plug into the module. NOTE: Some plugs are polarized and may have to be rotated before connecting.
Operating Temperature	32°F to 104°F (0°C to 40°C)
Dimensions	1.32 x 4.19 x .88 in (33.53 x 106.43 x 22.35 mm)

The ClareVue Plug-in Module (CL-APS-10) provides local and remote ON/OFF control of an appliance (up to 600W).

- Tamper resistant: 2011 NEC Article 406.12 Compliant
- Manual/automated control of plug-in module
- Can be controlled by other ClareVue devices
- LED indicated ON/OFF status

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

Easily conf gure ClareVue devices:

- Setting up 3-way and multi-location control
- Create a virtual keypad on the UI with the same controls

Conf gure project lighting of site in advance:

- Easily add them all to the Z-Wave network once onsite
- Deploy the project and go!

By making home technology simple, Clare provides exclusive benef ts to integrators, builders, and homeowners. We of er innovative home automation solutions, Class D amplif ers, media distribution, controllable lighting, and IP CCTV components. For more information, visit clarecontrols.com.

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(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Lighting-Appliance-Module-DOC-ID-948.pdf).

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product datasheet

ClareVue Lighting Master Incandescent Dimmer

CL-MDI-W-10 / CL-MDI-LA-10

Technical Specif cations	
General	
Rating	120 VAC, 60 Hz
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Load Type	Incandescent, Magnetic Low-Voltage
Wattage	Min: 60 W (single location control)/ 100 W (multi location control) Max: 600 W (450 W for MLV)
Testing &Code Compliance	UL/cUL Listed Dimmer 6B28 NOM 426 Complies with FCC Part 15, Class B Z-Wave Certif ed
Terminations	Four 6" pre-stripped wire leads for line, load, ground and neutral
Operating Temperature	32°F to 104°F (0°C to 40°C)

ClareVue 600W Master Incandescent Dimmers replace regular switches or dimmers to provide manual or remote control of on, of , and dimmer functionality in incandescent or magnetic low-voltage loads. Additional functions, including scenes and events, can be accessed when integrated into ClareHome.

ClareVue dimmers can be implemented with no new wiring. The ClareVue Master Incandescent Dimmer is perfect for retrof t situations where there is no neutral wire, and uses standard 120 VAC 60 Hz house wiring to f t into standard wall boxes.

- Push pad for on and of operation with separate dim/bright bar
- Seven-step blue LED indicates selected light level
- No neutral wire required
- Air-gap switch disconnects power from load when of
- Adjustable ramp rate
- Available in White (W) or Light Almond (LA)
- Compatible with ClareVue Accessory Neutral Dimmers (CL-AND-X) for wireless 3-way control

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Setting up dimmer max/min levels and ramp rate
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

Easily conf gure ClareVue devices:

- Setting up 3-way and multi-location control
- Create a virtual keypad on the UI with the same controls

Conf gure project lighting of site in advance:

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(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Master-Incandescent-Dimmer-DOC-ID-899.pdf).

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product datasheet

ClareVue Lighting Master Neutral Dimmer

CL-MND-W-10 / CL-MND-LA-10

Technical Specifications	
General	
Rating	120 VAC, 60 Hz
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Load Type	Dimmable LED/CFL, incandescent, magnetic low-voltage, electronic low voltage, fluorescent, halogen
Wattage	Dimmable LED/CFL: 300 W INC, HAL, FLR, MLV, ELV: 600 W
Testing &Code Compliance	UL/cUL Listed 6B28 NOM 426 Complies with FCC Part 15, Class B Z-Wave Certified
Terminations	Four 6" pre-stripped wire leads for line, load, ground and neutral
Operating Temperature	32°F to 104°F (0°C to 40°C)

ClareVue Master Neutral Dimmers replace regular switches or dimmers to provide manual or automated control of on, off, and dimmer functionality across a wide variety of lighting loads, including LED and fluorescent. Additional functions, including scenes and events, can be accessed when integrated into ClareHome, via the Clare Controls App user interface. Add a ClareVue Accessory Neutral Dimmer (CL-AND-X) for wireless 3-way control.

- Push pad for on/off operation with separate dim/bright bar
- Seven-step blue LED indicates selected light level
- Neutral wire required
- Air-gap switch disconnects power from load when off
- Adjustable low-level trim prevents LED buzz and flicker
- Adjustable ramp rate
- Adjustable high-level trim saves energy
- Compatible with ClareVue Accessory Neutral Dimmers (CL-AND-X) for wireless 3-way control
- Available in White (W) or Light Almond (LA)

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Setting up dimmer max/min levels and ramp rate
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

Easily configure ClareVue devices:

- Setting up 3-way and multi-location control
- Create a virtual keypad on the UI with the same controls

Configure project lighting of site in advance:

- Easily add them all to the Z-Wave network once onsite
- Deploy the project and go!

By making home technology simple, Clare provides exclusive benefits to integrators, builders, and homeowners. We offer innovative home automation solutions, Class D amplifiers, media distribution, controllable lighting, and IP CCTV components. For more information, visit clarecontrols.com.

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(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Master-Neutral-Dimmer-DOC-ID-900.pdf).

clarecontrols

product datasheet

ClareVue Lighting Master Neutral Switch

CL-MNS-W-10 / CL-MNS-LA-10

The ClareVue Master Neutral Switch replaces regular switches in circuits where a neutral wire is present, providing control of on and of functionality for a wide variety of lighting loads. Each switch can be manually operated and remotely controlled through ClareHome, via the Clare Controls App user interface. ClareVue Accessory Neutral Switches (CL-ANS-X) can be added for wireless 3-way control.

15 A (max) single-pole ClareVue Master Neutral Switches use standard 120 VAC 60 Hz house wiring, and f t into standard wall boxes.

- Push button for manual on/of control
- Blue LED indicates on/of status
- LED, CFL, INC, MLV, ELV, FLR, HAL bulbs
- Neutral wire required
- Compatible with ClareVue Accessory Neutral Switch (CL-ANS-X) for wireless 3-way control
- Available in White (W) or Light Almond (LA)

Technical Specif cations	
General	
Rating	120 VAC, 60 Hz , 15A
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Load Type	LED, CFL, incandescent, magnetic low-voltage, electronic low-voltage, and f uorescent
Wattage	600 W
Testing &Code Compliance	UL/cUL Listed 244A NOM 426 Complies with FCC Part 15, Class B Z-Wave Certif ed
Terminations	Four 6" pre-stripped wire leads for line, load, ground and neutral
Operating Temperature	32°F to 104°F (0°C to 40°C)

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Setting up dimmer max/min levels and ramp rate
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

Easily conf gure ClareVue devices:

- Setting up 3-way and multi-location control
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Conf gure project lighting of site in advance:

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(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Master-Neutral-Switch-DOC-ID-901.pdf).

clare™ product datasheet

ClareVue Plug-In Dimmer

CVL-PLD-10

The ClareVue Plug-In Dual Outlet Dimmer allows for dimming controls of lamps up to 300W for incandescent, and 100W for CFL, and LED light bulbs. The space ef cient design does not block the lower outlet on duplex receptacles and allows the user to route their cables and plugs to the side. Remotely and manually control ON/OFF and dimming of compatible light bulbs.

- One Z-Wave controlled AC outlet
- One always-on pass-through outlet
- Works with dimmable LED, CFL, and incandescent bulbs
- Remote ON/OFF, dimming control via Z-Wave outlet
- Manual ON/OFF, dimming control with top push-button
- Z-Wave Plus certif ed

Specif cations	
General	
Rating	120 VAC, 60 Hz
Z-Wave	Signal frequency 908.4/916 MHz
Z-Wave Outlet Load	Max load for the Z-Wave controlled outlet: 300W incandescent / 100W dimmable CFL/LED
Pass-Through Outlet Load	Max load: 1800W
Total Max Load	Both outlets combined: 15 Amps, 1800W resistive
Operating Temperature	-32 to 104° F (-0° to 40° C)
Usage	Indoor only
Code Compliance	cUL Listed Complies with FCC and Industry Canada Regulations

*Space ef cient design doesn't block lower outlet

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7519 Pennsylvania Avenue, Suite 104, Sarasota FL 34243 | Main: 941.328.3991 | Fax: 941.870.9646 | Doc ID: 2018-10-1786-01

(https://knowledgebaseclarecontrols.atlassian.net/wiki/spaces/CCDL/overview?preview=%2F606797865%2F654442508%2FClareVue+Plug-in+Dual+Outlet+Dimmer+Data+Sheet+%28DOC+ID+1786%29.pdf).

clarecontrols

product datasheet

ClareVue Lighting Tamper Resistant Receptacle

CL-TRR-W-10 / CL-TRR-LA-10

The ClareVue 15A split receptacle replaces regular duplex receptacles and provides local and automated wireless on and of control over one outlet. Receptacles can be manually controlled and remotely controlled through ClareHome, via the Clare Controls App user interface. ClareVue receptacles require no new wiring. They use standard 120 VAC 60 Hz house wiring, and f t into standard wall boxes.

ClareVue receptacles comply with 2011 NEC section 406.12 spec requiring all receptacles installed in dwelling units to be tamper resistant.

- Tamper resistant: 2011 NEC Article 406.12 Compliant
- Safety shutter system prevents insertion of foreign objects
- Manual/automated control of one outlet, one for normal use
- Can be controlled by other ClareVue devices
- Pushbutton for on/of manual operation
- LED indicated ON/OFF status
- Available in White (W) or Light Almond (LA)

Technical Specif cations	
General	
Rating	120 VAC, 60 Hz , 15A
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Load Type	Ballast/incandescent/inductive/tungsten
Wattage	n/a
Testing &Code Compliance	UL/cUL Listed 38DS NOM 426 Complies with FCC Part 15, Class B Z-Wave Certif ed
Terminations	Three 6" wire leads for line, neutral, and ground
Operating Temperature	32°F to 104°F (0°C to 40°C)

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Setting up dimmer max/min levels and ramp rate
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

Easily conf gure ClareVue devices:

- Setting up 3-way and multi-location control
- Create a virtual keypad on the UI with the same controls

Conf gure project lighting of site in advance:

- Easily add them all to the Z-Wave network once onsite
- Deploy the project and go!

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(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Tamper-Resistant-Receptacle-Doc-ID-902.pdf).

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Water Sensor

Z-Wave Water Sensor & Freeze Alarm

The Wireless Water Sensor and Freeze Alarm provides peace of mind and protection from water damages caused by leaking pipes, corroded water heaters, water storage tanks, fixtures in bathrooms, laundry rooms, refrigerator drip pans etc. The devices is fully compatible with any Z-Wave enabled network, allowing remote status monitoring, alerts and activation of the Water Valve for emergency shut-off when the detector is triggered.

- Provides remote status monitoring and notification when installed in Z-Wave networks
- Activates Water Valve for emergency shut-off
- Works for multiple alarm events (water or temperature)
- Alerts user when battery needs changed
- Recent upgrades include LED indicator, Z3X transceiver module for enhanced performance and a splash resistant enclosure

*Z-Wave Wireless Water Sensor & Freeze Alarm**

Technical Specifications

General	
Power	3.6 V 1/2AA Lithium battery, ER14250H, LSI4250 or equivalent
Battery Life	1 to 2 years with no alarms and default Z-Wave settings
Frequency Range	908.42 MHz (US)
Distance Range	Max 100 feet line of sight in unobstructed environment
Size	2.4" x 1.6" x 0.8"
Weight	0.2 lb
Operating Temperature	14º F (-10° C) to + 158º F (70° C)

Water Valve

Z-Wave Automatic Shut-off Valve

The Z-Wave Automatic Water Shut-Off is a new professional grade, electrically operated wireless water valve. Used in a Z-Wave home automation network, the valve can reduce or eliminate damages caused by leaky plumbing or appliances. If a leak is detected by the water alarm sensor, the valve will shut off the water supply. Depending on user Z-Wave settings, it can also automatically trigger a wired or wireless alarm system and send the customer an email, text message, or phone call.

- Motorized ball valve automatically turns off the main water supply when a leak or overflow is detected
- Multiple alert and notification options
- Contains a brass valve with commercial grade seats and seals
- Offered in standard pipe sizes (1/2", 3/4", 1", and 1 1/4") in customer's choice of lead-free or brass valve compositions
- Certified with the latest Z-wave ZDK 4.51
- Indicator lights reflect valve and network status
- 6' probe for local (i.e., sump overflow) water monitoring

*Z-Wave Automatic Water Shut-off**

Ordering Information	
CH-WV01-050-LF	Z-Wave - 1/2" lead free valve
CH-WV01-075-LF	Z-Wave - 3/4" lead free valve
CH-WV01-100-LF	Z-Wave - 1" lead free valve
CH-WV01-125-LF	Z-Wave - 1-1/4" lead free valve

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Clare Controls is a provider of solutions that streamline the integration, maintenance and monitoring of sophisticated home automation systems. Clare products are deployed locally in customer sites and administered remotely via cloud-based technologies that maximize dealer efficiency while providing unprecedented customer control. For more information, visit http://www.clarecontrols.com.

7519 Pennsylvania Avenue, Suite 104, Sarasota FL 34243 | Main: 941.328.3991 | Fax: 941.870.9646 | Doc ID: 2014-02-229-02

(http://dealer.clarecontrols.com/download/Products/Security%20and%20Access/Detection%20and%20Monitoring/Datasheets%20and%20Brochures/ClareHome%20Z-Wave%20Water%20Sensors%20and%20Valves%20(DOC%20ID%20229).pdf).

clarecontrols

product datasheet

ClareVue Lighting Accessory Neutral Dimmer

CL-AND-W-10 / CL-AND-LA-10

Technical Specif cations	
General	
Rating	120 VAC, 60 Hz
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Load Type	n/a
Wattage	n/a
Testing &Code Compliance	UL/cUL Listed 6B28 NOM 426 Complies with FCC Part 15, Class B Z-Wave Certif ed
Terminations	Three 6" wire leads for line, neutral, and ground
Operating Temperature	32°F to 104°F (0°C to 40°C)

ClareVue Accessory Neutral Dimmers work with ClareVue Master Neutral Dimmers (CV-MND-X) to provide local or remote wireless on/of and brightness control of various lighting loads from multiple locations without 3-way wiring.

ClareVue Accessory Neutral Dimmers can be implemented with no new wiring. The 3-way components use standard 120 VAC 60 Hz house wiring (neutral wire required), and f t into standard wall boxes.

- Compatible with ClareVue Master Neutral Dimmer (CL-MND-X) and ClareVue Master Incandescent Dimmer (CL-MDI-X)
- Push pad for on/of operation with separate dim/bright bar
- Seven-step blue LED indicates selected light level (matches master dimmer status display)
- Neutral wire required
- Adjustable ramp rate
- Available in White (W) or Light Almond (LA)

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Setting up dimmer max/min levels and ramp rate
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

Easily conf gure ClareVue devices:

- Setting up 3-way and multi-location control
- Create a virtual keypad on the UI with the same controls

Conf gure project lighting of site in advance:

- Easily add them all to the Z-Wave network once onsite
- Deploy the project and go!

By making home technology simple, Clare provides exclusive benef ts to integrators, builders, and homeowners. We of er innovative home automation solutions, Class D amplif ers, media distribution, controllable lighting, and IP CCTV components. For more information, visit clarecontrols.com.

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(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Accessory-Neutral-Dimmer-DOC-ID-897.pdf).

clare™ product datasheet

ClareVue In-Wall Fan Control

CVL-IWF-10

Specif cations	
General	
Rating	120 VAC, 60 Hz
Maximum Load (fan motor)	Not to exceed 2.5 Amps resistive load. Controls fan motor only. For use only with split capacitor or shaded pole ceiling fan motors.
Z-Wave	Signal frequency 908.4/916 MHz
Terminations	Requires line (hot), load, neutral, and ground. Traveler wire requires for multi-pole installations.
Operating Temperature	-32 to 104° F (-0° to 40° C)
Usage	Indoor only
Code Compliance	cUL Listed Complies with FCC and Industry Canada Regulations

The ClareVue In-Wall Fan Control switch allows for remote and manual control of ceiling fans. Fan speed options include high, medium, low, on, and of . Add fan control as part of a scene, schedule, or automation (not exceeding 2.5 Amps). Included are white and light almond color paddles to f t the interior decor.

- Remote or manual ON/OFF, high, medium, low fan speed control
- May be used with up to 4 accessory add-on switches
- Works with existing ClareVue 1, 2, and 3-gang cover plates
- Advanced conf guration: LED status, invert switch (if unit is installed upside down)
- Requires neutral wire
- Conf gure night LED ON/OFF in ClareHome App
- Can be added to scenes, schedules, and automations
- Includes white and light almong color paddles

*Includes white and light almond color paddles.

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(https://cdn2.hubspot.net/hubfs/2972898/Tech%20Pubs/Product%20Information%20/ClareVue%20Lighting/Data%20Sheets/ClareVue%20In-Wall%20Fan%20Control%20Data%20Sheet%20(DOC%20ID%201860).pdf).

clare™ product datasheet

ClareVue In-Wall Receptacle

CVL-IWR-10

This Z-Wave Plus certified ClareVue In-Wall Receptacle includes one Z-Wave outlet that can be remotely controlled using the ClareHome App. Toggle plugged in appliances and devices ON/OFF, set them on a schedule, automation, or include it in a scene.

Specifications	
General	
Rating	120 VAC, 60 Hz
Z-Wave	Signal frequency 908.4/916 MHz
Z-Wave Outlet Load	600W incandescent, 1/2HP motor, or 1800W (15A) resistive
Total Max Load	Both outlets combined: 1800W resistive
Terminations	Requires line (hot), load, neutral, and ground. Traveler wire required for multi-pole installations
Operating Temperature	-32 to 104° F (-0° to 40° C)
Usage	Indoor only
Code Compliance	cUL Listed Complies with FCC and Industry Canada Regulations

- One Z-Wave controlled AC outlet
- One always-on pass-through outlet
- Remote and manual ON/OFF Z-Wave outlet
- Configure night LED ON/OFF in ClareHome App
- Can be added to scenes, schedules, and automations
- Z-Wave Plus certified
- White color
- Tamper resistant

By making home technology simple, Clare provides exclusive benefits to integrators, builders, and homeowners. We offer innovative home automation solutions, Class D amplifiers, media distribution, controllable lighting, and IP CCTV components. For more information, visit clarecontrols.com.

7519 Pennsylvania Avenue, Suite 104, Sarasota FL 34243 | Main: 941.328.3991 | Fax: 941.870.9646 | Doc ID: 2018-10-1790-01

(https://knowledgebaseclarecontrols.atlassian.net/wiki/spaces/CCDL/overview?preview=%2F606797865%2F654475265%2FClareVue+In-Wall+Receptacle+Data+Sheet+%28DOC+ID+1790%29.pdf).

clarecontrols

product datasheet

ClareVue Lighting Lamp Dimmer Module

CL-LDM-10

Technical Specif cations	
General	
Color	White
Rating	120 VAC, 60 Hz
Z-Wave	Uses 300 Series Z-Wave Chip @40 Kbs
Wattage	Dimmer module up to 300W incandescent
Testing &Code Compliance	cULus Listed 244A NOM Certif ed Complies with FCC Part 15, Class B Z-Wave Compliant Certif ed
Terminations	Plug the module into a wall receptacle; preferably one that is not controlled by a switch. Connect the lamp plug into the module. NOTE: Some plugs are polarized and may have to be rotated before connecting.
Operating Temperature	32°F to 104°F (0°C to 40°C)
Dimensions	1.32 x 4.19 x .88 in (33.53 x 106.43 x 22.35 mm)

The ClareVue Lamp Dimmer Module (CL-LDM-10) provides local and remote ON/OFF and dimming control of an appliance (up to 300W).

- Tamper resistant: 2011 NEC Article 406.12 Compliant
- Manual/automated dimming control of module
- Can be controlled by other ClareVue devices
- LED indicated ON/OFF status

The ClareVue Lighting Wizard Makes Setup Easy

Wizard guides the installer through step by step:

- Adding ClareVue Lighting devices – dimmers, switches, keypads, receptacles – to a Fusion project
- Including devices into the Z-Wave network
- Creating new lighting Scenes
- Removing ClareVue devices from the network and the project

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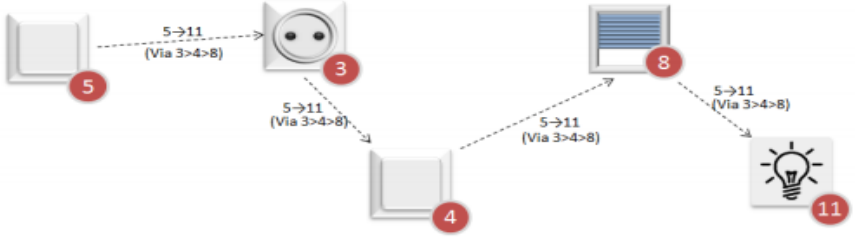
7519 Pennsylvania Avenue, Suite 104, Sarasota FL 34243 | Main: 941.328.3991 | Fax: 941.870.9646 | Doc ID: 2015-11-1232-01

(http://dealer.clarecontrols.com/download/Products/Control/Datasheets/ClareVue-Lamp-Dimmer-Module-DOC-ID-1232.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.

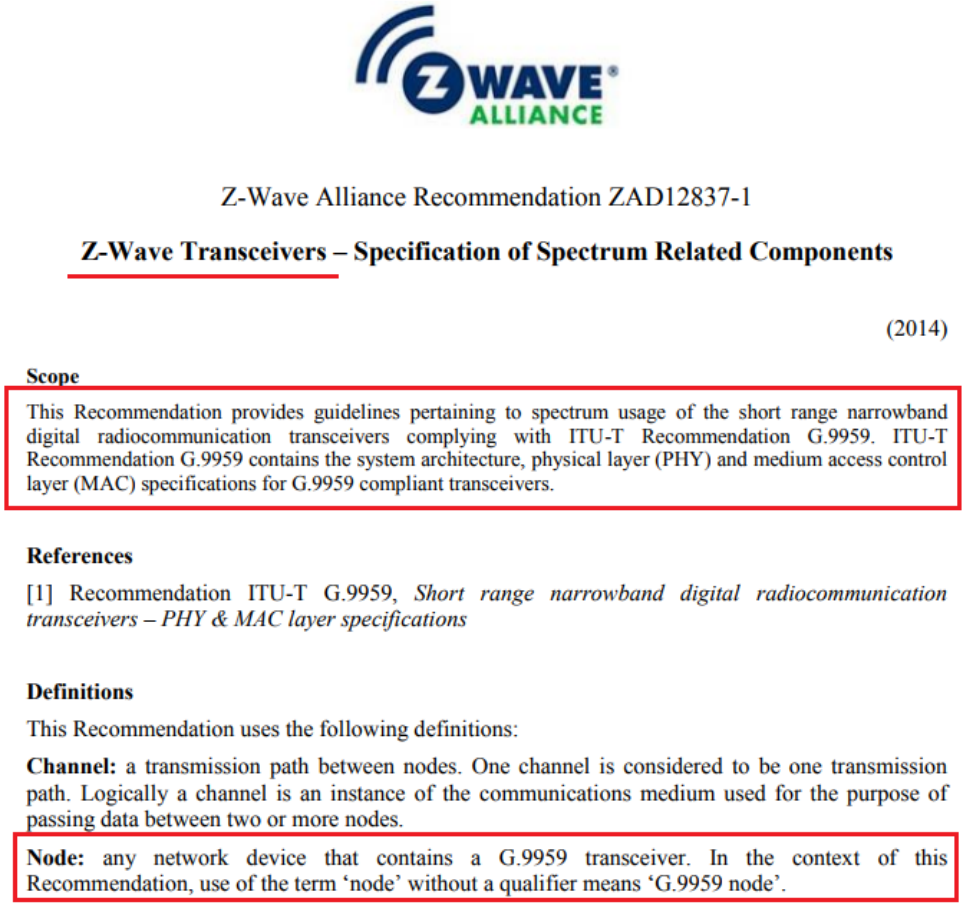
When using repeaters, the Sending node includes the route information in the frame. Each repeater parses the routing information and forwards the frame accordingly.



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).



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.

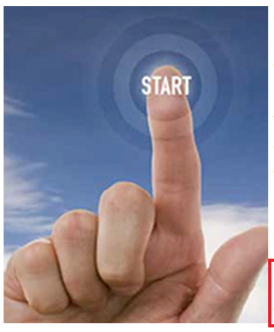
Node: any network device that contains a G.9959 transceiver. In the context of this Recommendation, use of the term 'node' without a qualifier means 'G.9959 node'.

(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 an appliance). For example, the z-wave lighting dimmer module communicated with the light outlet to control the light. (*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 the thermostat to control temperature). (*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 appliance). For example, a primary controller can send/receive messages to program various connected Z-Wave devices; the Lighting Appliance Module can receive communications to turn on or off the light. (*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;

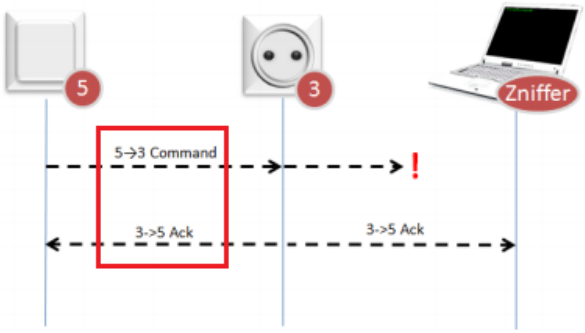
http://www.zwaveproducts.com/learn/Z-Wave).

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.

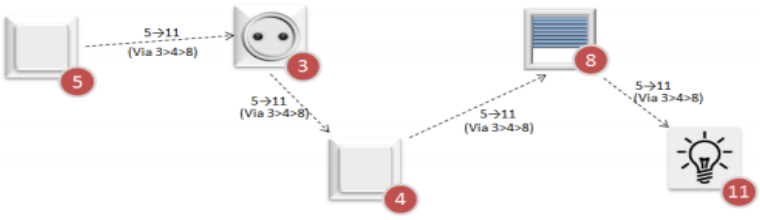
The value 0x00 MUST indicate that the byte does not represent a repeater. If the route is shorter than four repeaters, unused repeaters fields MUST be set to 0x00. If Repeater 1 is set to 0x00, it means that the Last Working Route is direct (nodes are within direct reach).

(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 Florida, 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 Clare Controls CLIQ Controller, Clarevue Lighting Appliance Module, ClareVue Lighting Master

Incandescent Dimmer, ClareVue Master Neutral Dimmer, ClareVue Master Neutral Switch, ClareVue Plug-In Dimmer, ClareVue Lighting Tamper Resistant Receptacle, Clare Controls Water Sensor and Freeze Alarm, Clare Controls Water Valve, ClareVue Lighting Accessory Neutral Dimmer, Clarevue In-wall Fan Control, Clarevue In-wall Receptacle, ClareVue Lighting Lamp Dimmer Module, and other Z-wave supported devices ("Accused Instrumentality").

30. Each Accused Instrumentality provides an appliance controller (*e.g.*, Clarevue Lighting Appliance Module, ClareVue Lighting Master Incandescent Dimmer, ClareVue Master Neutral Dimmer, ClareVue Master Neutral Switch, ClareVue Plug-In Dimmer, ClareVue Lighting Tamper Resistant Receptacle, Clare Controls Water Sensor and Freeze Alarm, Clare Controls Water Valve, ClareVue Lighting Accessory Neutral Dimmer, Clarevue In-wall Fan Control, Clarevue In-wall Receptacle, ClareVue Lighting Lamp Dimmer Module, and other Z-wave supported devices) for a distributed appliance system (*e.g.*, Z-Wave network) having a multiplicity of appliances (*e.g.*, appliances such as a fan and lighting), 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)

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 control, or turn on or off a light). (*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 Clare Controls Lighting Appliance Module can control the light and the Clarevue In-wall Fan Control can control a fan. (*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.

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