

**IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE**

KARAMELION LLC,

Plaintiff,

v.

**NAPCO SECURITY TECHNOLOGIES,
INC.,**

Defendant.

CASE NO. _____

JURY TRIAL DEMANDED

PATENT CASE

**ORIGINAL COMPLAINT FOR PATENT INFRINGEMENT
AGAINST NAPCO SECURITY TECHNOLOGIES, INC.**

Plaintiff Karamelion LLC, files this Original Complaint for Patent Infringement against Napco Security Technologies, Inc., and would respectfully show the Court as follows:

I. THE PARTIES

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

2. On information and belief, Defendant Napco Security Technologies, Inc. (“Defendant”) is a corporation organized and existing under the laws of Delaware, with a place of business at 333 Bayview Avenue, Amityville, NY 11701. Defendant has a registered agent at The Corporation Trust Company, Corporation Trust Center, 1209 Orange St., Wilmington, DE 19801.

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 Delaware 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 Delaware corporation.

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 Delaware. 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 Delaware. 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 Delaware. Defendant has committed such purposeful acts and/or transactions in Delaware 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 incorporated in Delaware. Under the patent venue analysis, Defendant resides only in this District. On information and belief, from and within this District Defendant has committed at least a portion of the infringements at issue in this case.

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

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

8. Plaintiff incorporates the above paragraphs herein by reference.

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

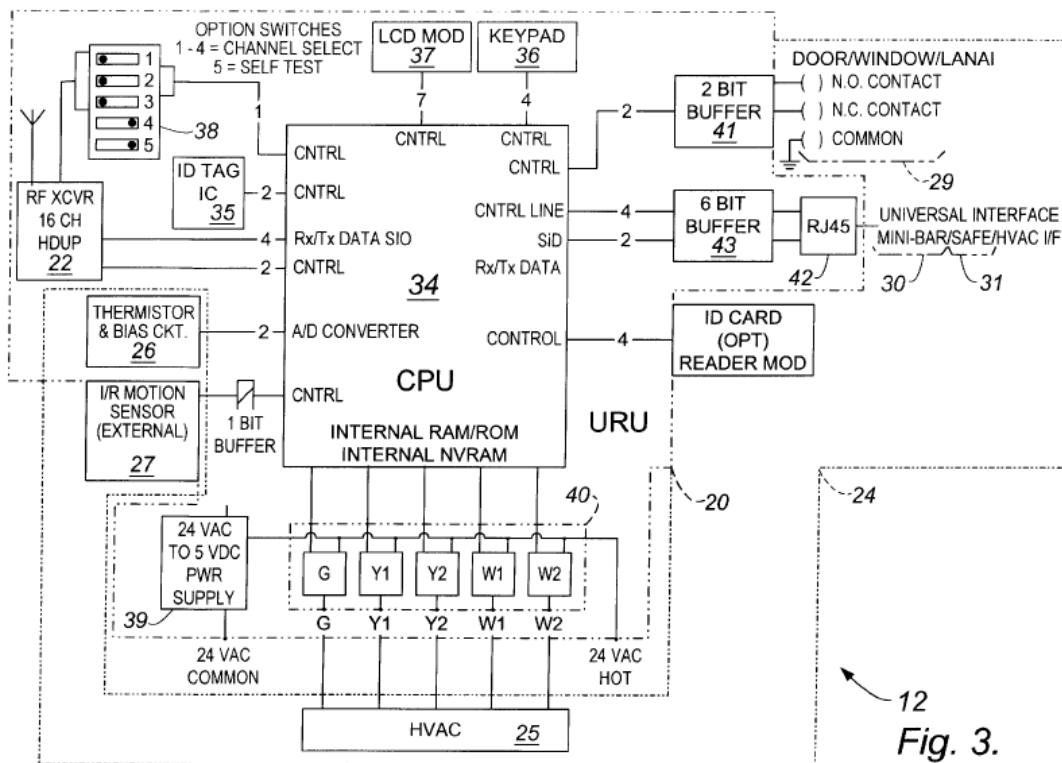
10. Plaintiff is the assignee of all right, title and interest in the ‘166 patent, including all rights to enforce and prosecute actions for infringement and to collect damages for all relevant times against infringers of the ‘166 Patent. Accordingly, Plaintiff possesses the exclusive right and standing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

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

12. However, these centralized wireless control systems for building appliances have not been widely used mainly because systems that have a sufficient communication ranges are normally subject to regulations and licensing requirements that are prohibitively expensive. (*Id.* at col. 1:28-32). Also, systems that are powerful enough to be used in widely distributed installations are unnecessarily expensive to be used in smaller installations. (*Id.* at col. 1:32-34). With respect to wireless communication, there is limited availability of RF carrier frequencies, and potential interference with other nearby systems that might be operating in similar frequencies. (*Id.* at col. 1:34-37). Because of the continued deficiencies of the prior art solutions, there was a need for a wireless appliance control system that overcomes the disadvantages of the prior art solutions. (*Id.* at col. 1:38-39).

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

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



12
Fig. 3.

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

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

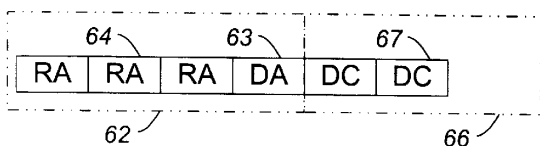


Fig. 4. 60

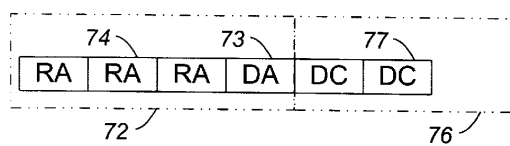
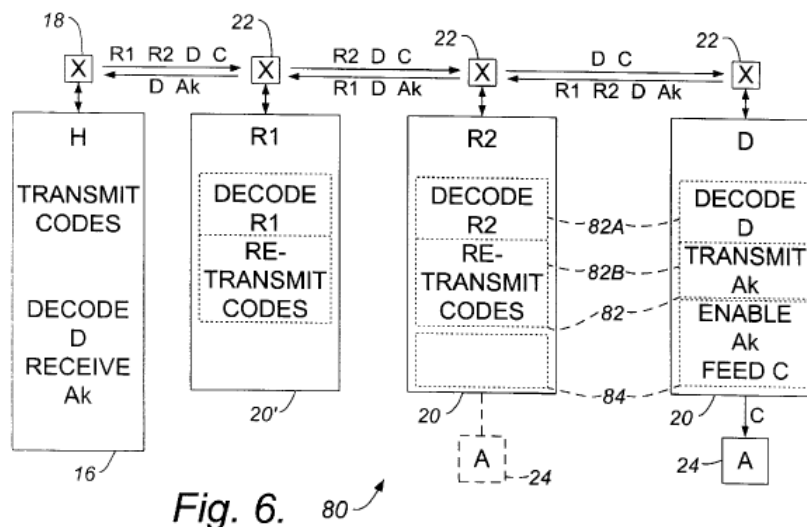


Fig. 5. 70

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

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

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



(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 Delaware, and elsewhere in the United States, by performing actions comprising making, using, selling, and 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 Napco iBridge and Z-Wave Thermostat, Z-Wave Lock, Z-Wave Dimmer, Z-Wave Switch, Z-Wave Fan Module (“Accused Instrumentality”).

19. Accused Instrumentality provides an appliance controller (*e.g.*, a Z-Wave node, in this case a Z-Wave Thermostat, Z-Wave Lock, Z-Wave Dimmer, Z-Wave Switch, Z-Wave Fan

Module, Wall Scene Controller) for a distributed appliance system (e.g., Z-Wave network) having a headend computer (e.g., primary controller, in this case iBridge control panel), a multiplicity of appliances (e.g., appliances such as lights, fans, door locks, 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.

iBridge[®] Connected Home/Businesses Services App, Connect Hub, Touchscreen & Cameras

Control Security, Video & Smart Automation from any smart device or new iBridge Touchscreen, including SMS/MMS Notifications. For smart home or business, interface video cameras and your choice of Z-Wave IoT devices with StarLink Connect Communicator's built in hub with multi-brand panel support or use iBridge Modules for Gemini panels. Three all-new iBridge Cameras™ offer hi-res, onboard storage, super easy enrollment, WAP-free convenience and two-way voice or the exterior dome cam also has POE option. Also ask about new iBridge Video Door Bell.

Z-Wave Device Control is universally provided by StarLink Connect[®] Cell/IP Communicator/Hub, or for Gemini Systems with iBridge Z-Remote (hardwire or wireless)



<http://www.napcosecurity.com/products/ibridge/>.

Napco No-Roll™ Customer Service Calls & Service Enhancements. With iBridge, editing and adding Z-Wave devices is made easy, and uniquely remote-configurable by dealers from their own smart devices, smart phone or iPad/tablets. No trucks need to be rolled to amend security system or Z-Wave device settings, scenes or schedules. Cloud-backup utility - Keep a complete backup for account's Z-wave device names, scenes, triggered events & scheds.

iBridge Automated Z-Wave™ Device Smart Controls, More Convenient for Accounts & Dealers by Design: iBridge home controls including indoor and outdoor lights, dimmers, thermostats, locks and small appliances operate using Z-Wave, a proven, wireless mesh networking technology that is a standard in wireless home control. Devices can be manually activated, locally or remotely, and set to respond with custom scenes, schedules or occupancy, ie, when a room is entered lights light, temperature is increased, etc. (even when the system is disarmed.) Anytime a custom scene is created a button with the same name is automatically added to the Scenes Screen, so that it can later be manually activated at will, too.

[\(http://www.napcosecurity.com/products/ibridge/\)](http://www.napcosecurity.com/products/ibridge/).





- ▶ Thin slim-profile touchscreen for wall-mounted control of security system and/or smart automation, integrating video, z-wave locks, lights, temp & small appliances*

(<http://www.napcosecurity.com/products/ibridge/>).

ORDERING INFORMATION

- ▶ IBR-TOUCH Standard Touchscreen Model
- ▶ IBR-TOUCH-WL Wireless Model
- ▶ IBR-ZREMOTE: Bus-Mount Module for remote control, up/download of security system, plus control of Z-Wave devices, lights, locks, thermostats, etc.
- ▶ IBR-WIFI-MOD: Wireless Panel Interface, communicates between Internet, Gemini Control Panel and IBR Touchscreen, when NO remote services are used (Note: For remote services, use the IBR-ZREMOTE or IREMOTE-MOD Remote Control Module).
- ▶ IREMOTE-MOD: Bus-mount remote control module, for remote panel services without Z-Wave automation option.

(<http://www.napcosecurity.com/products/ibridge/>).

Device	Model Number	Beaming	Z-Wave Protocol Version of Device	Specs	3-Way Light Switch Compatible?	iBridge Compatible?	Notes
THERMOSTATS							
In Touch	CA8900					YES	
Honeywell	YTH8320ZW 1007					YES	Instructions indicate model # YTH8320ZW1000. After enrolling, go to the IBR-ITAB "Home Screen" and tap the "gear" icon, then tap Z-Wave . In Z-Wave Device Setup , tap Edit on the device enrolled and ensure that "Enable Multi-Command" is unchecked (otherwise the Status and Change Temperature buttons will not appear).
Honeywell	RTH8580ZW					YES	
Radio Thermostat Co. of America	CT30					YES	
Radio Thermostat Co. of America	CT32					YES	Battery/24VAC
Interlogix	IS-ZW-TSTAT-300					YES	
RCS	TBZ48					YES	Battery/24VAC
Trane	XL624					YES	Multi-Command Capable Touchscreen Best Performance
Trane	XR524					YES	Multi-Command Capable Touchscreen Best Performance
American Standard Energy Mangement	AZEMT500BB32MAA					YES	
Alarm.com	ADC-T2000					YES	
Remotec	BW8030US					YES	Battery/24VAC

(http://www.napcosecurity.com/media/pdfs/iBridge-Z-Wave-Evaluated-Device-List_2017_02_10a.pdf).

Device	Model Number	Beaming	Z-Wave Protocol Version of Device	Specs	3-Way Light Switch Compatible?	iBridge Compatible?	Notes
LOCKS (cont'd)							
Schlage	BE369NX CAM 619	Yes	4.5x			YES	Non-motorized deadbolt. Z-Wave commands received will not drive deadbolt, but will "engage" the knob (allowing deadbolt to be driven only if knob is turned). Proper cam alignment required for Z-Wave lock status monitoring.
Kwikset	910TRL ZW 15 SMT	Yes	4.5x			YES	Deadbolt
Kwikset	912TNL TRL ZW 15 SMT	Yes	4.5x			YES	Lever
Kwikset <i>Signature Series</i>	SmartCode 914	Yes				YES	Touchpad, Deadbolt
Kwikset <i>Signature Series</i>	SmartCode 916	Yes				YES	Touchscreen, Deadbolt
Kwikset <i>Signature Series</i>	Traditional 910	Yes				YES	Deadbolt
Yale	YRDD220-619-ZW-xxxx	Yes	4.5x			YES	Deadbolt - Touchscreen
Yale	YRDD210-619-ZW-xxxx	Yes	4.5x			YES	Deadbolt - Pushbutton

(http://www.napcosecurity.com/media/pdfs/iBridge-Z-Wave-Evaluated-Device-List_2017_02_10a.pdf).

SWITCH RECEPTACLES (In Wall)

GE	46505					YES	
GE JASCO	ZW1001 (45605)	Yes	4.5x/6.0x	15A		YES	
JASCO	45705 (45605WB)	Yes	4.5x	15A		YES	
Leviton	VRR15-1LZ	No	2.0	15A		YES	
In Touch	CA3500	No	2.0	15A		YES	Does not default in All ON/All OFF mode
Evolve	LOM-15	Yes	4.5x/6.0x	15A		YES	
Linear	WO15Z-1	Yes	4.55	15A		YES	

DIMMER MODULES (Plug In)

Home Settings	HA03	No	2.0	300W		YES	
GE JASCO	ZW3101 (*45602)	Yes	4.5x/6.0x	300W		YES	
GE JASCO	ZW3101	Yes	5.0x/4.2x	300W		YES	
GE	45602	Yes	4.5x	300W/15A		YES	
JASCO	45602WB	Yes	4.5x	300W/15A		YES	
Leviton	VRP03-1LW	Yes	4.5x/6.0x	300W		YES	
Evolve	LDM-15	Yes	4.5x/6.0x	300W		YES	
Linear	PD300Z-1	Yes	4.55	300W		YES	

http://www.napcosecurity.com/media/pdfs/iBridge-Z-Wave-Evaluated-Device-List_2017_02_10a.pdf.

Device	Model Number	Beaming	Z-Wave Protocol Version of Device	Specs	3-Way Light Switch Compatible?	iBridge Compatible?	Notes
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WALL DIMMERS

In Touch	CA600	No	2.0	40W min		YES	Cannot communicate with no load
GE JASCO	ZW3003 (*45612)	Yes	4.5x/6.0x	600W		YES	Line/Load/Gnd - Cannot communicate with no load
GE	45612	Yes	4.5x	600W		YES	Line/Load/Gnd - Cannot communicate with no load
JASCO	45612WB	Yes	4.5x	600W		YES	Line/Load/Gnd - Cannot communicate with no load
Leviton	VRI06-1LZ	No	2.0	40W min		YES	Line/Load/Gnd - Cannot communicate with no load
Evolve	LRM-1000	Yes	4.5x/6.0x	1000W		YES	Line/Neutral/Load/Gnd
Linear	WD1000Z-1	Yes	4.55	1000W		YES	Line/Neutral/Load/Gnd
Evolve	LRM-AS	Yes	4.5x/6.0x	500 W	YES (see notes LTM-5)	YES	Line/Neutral/Load/Gnd
Linear	WD500Z-1	Yes	4.55	500 W	YES (see notes WT00Z-1)	YES	Line/Neutral/Load/Gnd
Evolve	LTM-5	Yes	4.5x/6.0x	Cannot Drive Load	YES (see notes)	YES	Use with LRM-AS for use in 3-way (or greater) circuits via Association.
Linear	WT00Z-1	Yes	4.55	Cannot Drive Load	YES (see notes)	YES	Use with WD500Z-1 for use in 3-way (or greater) circuits via Association.

http://www.napcosecurity.com/media/pdfs/iBridge-Z-Wave-Evaluated-Device-List_2017_02_10a.pdf.

SCREW IN LAMP MODULES

Home Settings	HA05	No	2.0			YES	
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REMOTE CONTROLS

Jasco (GE)	45601					YES	
GE	45600		4.2x			YES	Controls Z-Wave certified lighting controls only.
GE	45601		4.2x			YES	Controls Z-Wave certified lighting controls and one HVAC thermostat.
GE	45633		6.0x			YES	Controls Z-Wave certified lighting controls, up to 4 HVAC thermostats, and up to 6 door locks.

CEILING FAN MODULES

Leviton	VRF01-1LZ	No	2.0			YES	Includes as a dimmer. Tested with Lamp. Stepped output, not continuously variable
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WALL SCENE CONTROLLER

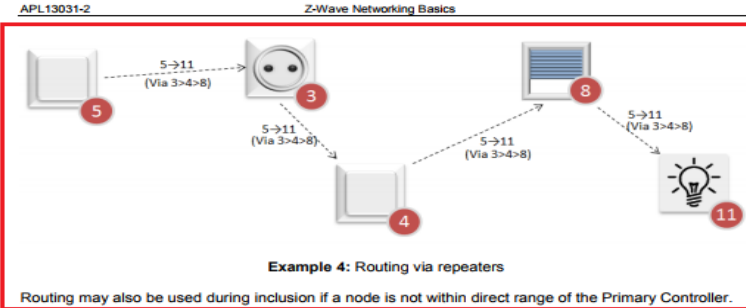
Leviton	VRCZ4-M0Z					YES	Includes into system as a controller. Evaluating functionality
GE	45631		5.0x			YES	Functions as secondary controller; not hard-wired.

(http://www.napcosecurity.com/media/pdfs/iBridge-Z-Wave-Evaluated-Device-List_2017_02_10a.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.



(<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, lock, fan). For example, the Z-Wave switch communicates with the appliance attached to the switch, and the Z-Wave Thermostat communicates with the HVAC unit. (*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, in this case iBridge control panel) 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, iBridge control panel can send/receive messages to program various connected Z-Wave devices; the Z-Wave light switch can receive communications to turn on or off appliances or can communicate regarding the status of the appliance; the Z-Wave light switch can receive communications to program connected lighting sources; the Z-Wave Thermostat can receive communications to program connected HVAC. (*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>;

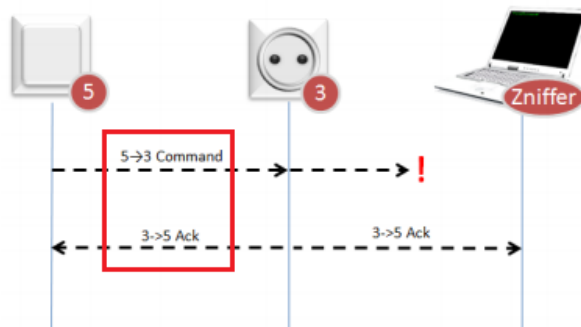
<http://www.zwaveproducts.com/learn/Z-Wave>).

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.

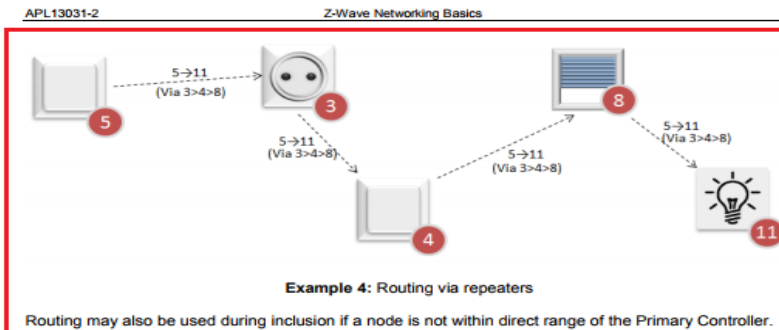
The value 0x00 MUST indicate that the byte does not represent a repeater. If the route is shorter than four repeaters, unused repeaters fields MUST be set to 0x00. If Repeater 1 is set to 0x00, it means that the Last Working Route is direct (nodes are within direct reach).

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.



<http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z->

[Wave%20Networking%20Basics.pdf](#)).

Napco No-Roll™ Customer Service Calls & Service Enhancements. With iBridge, editing and adding Z-Wave devices is made easy, and uniquely remote-configurable by dealers from their own smart devices, smart phone or iPad/tablets. No trucks need to be rolled to amend security system or Z-Wave device settings, scenes or schedules. Cloud-backup utility - Keep a complete backup for account's Z-wave device names, scenes, triggered events & scheds.

iBridge Automated Z-Wave™ Device Smart Controls, More Convenient for Accounts & Dealers by Design: iBridge home controls including indoor and outdoor lights, dimmers, thermostats, locks and small appliances operate using Z-Wave, a proven, wireless mesh networking technology that is a standard in wireless home control. Devices can be manually activated, locally or remotely, and set to respond with custom scenes, schedules or occupancy, ie, when a room is entered lights light, temperature is increased, etc. (even when the system is disarmed.) Anytime a custom scene is created a button with the same name is automatically added to the Scenes Screen, so that it can later be manually activated at will, too.



<http://www.napcosecurity.com/products/ibridge/>).

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 Delaware, and elsewhere in the United States, by performing actions comprising making, using, selling, and 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 Napco iBridge and Z-Wave Thermostat, Z-Wave Lock, Z-Wave Dimmer, Z-Wave Switch, Z-Wave Fan Module (“Accused Instrumentality”).

30. Each Accused Instrumentality provides an appliance controller (*e.g.*, a Z-Wave Controller, in this case a Z-Wave Thermostat, Z-Wave Lock, Z-Wave Dimmer, Z-Wave Switch, Z-Wave Fan Module, Wall Scene Controller) for a distributed appliance system (*e.g.*, Z-Wave network) having a multiplicity of appliances (*e.g.*, appliances such as lights, fans, door locks, etc.), and a plurality of relay units (*e.g.*, repeaters), one of the relay units being the appliance controller (*e.g.*, a Z-Wave Controller). (*Supra* ¶20; http://zwavepublic.com/sites/default/files/command_class_specs_2017A/SDS13782-4%20Z-

[Wave%20Management%20Command%20Class%20Specification.pdf](#);

<http://zwavepublic.com/sites/default/files/APL13031-2%20-%20Z->

[Wave%20Networking%20Basics.pdf](#))

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 light, bulb, locks, and HVAC). (*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 switch on/off a light, control temperature, dim 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, iBridge control panel can send/receive messages to program various connected Z-Wave devices; the Z-Wave outlet can receive communications to turn on or off appliances or can communicate regarding the status of the appliance; the Z-Wave switch can receive communications to program connected lighting sources or communicate regarding the status of the light, the Z-Wave Thermostat can receive communications to control the temperature. (*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 will continue its infringement of one or more claims of the '166 Patent and the '245 Patent unless enjoined by the Court. Each and all of the Defendant's infringing conduct thus causes Plaintiff irreparable harm and will continue to cause such harm without the issuance of an injunction.

38. On information and belief, Defendant has 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;
- 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 Defendant be permanently enjoined from any further activity or conduct that infringes one or more claims of United States Patent No. 6,275,166; and
- f. That Defendant be permanently enjoined from any further activity or conduct that infringes one or more claims of United States Patent No. 6,873,245; and
- g. That Plaintiff be granted such other and further relief as the Court may deem just and proper under the circumstances.

October 25, 2018

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