ZXT-310
(Z-Wave-to-AV IR Extender)

SPEAKS **Z-WAVE**®

Firmware Version:

V1.0, V1.1, V1.2

❶

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Introduction

ZXT-310 is a Z-Wave-to-AV IR Extender (Figure 1) and it works with any Z-Wave compliant controller or gateway by translating Z-Wave Simple AV command to IR control code. User can set the IR code from the built-in code library of ZXT-310, or use the learning function of ZXT-310 through any Z-Wave controller or gateway.

Figure 1. Operation diagram

It also supports Z-Wave networks with multiple gateways and controllers. Like every Z-Wave accessory, the user will need to include the ZXT-310 into his Z-Wave network using the primary controller. Then, the user can use either the primary controller or secondary controller to configure and setup the ZXT-310 using Z-Wave's configuration command class. Once the configuration and setup is completed, the controller can use Z-Wave's "Simple AV commands class" to control their IR-controlled AV equipment with the ZXT-310. User can enjoy fully wireless control and home automation system anywhere at home.

Controller and Gateway Requirements

The ZXT-310 is architected to work with any Z-Wave compliant controller or gateway supporting the following Z-Wave commands.

- Configuration Command Class
- Simple AV Command Class
- Multi-channel Command Class (optional)

Built-in IR code library

The built-in IR code library enables the ZXT-310 to work with any Z-Wave compliant gateway and controller. Gateway and controller will not need to have any knowledge related to IR control code. It also eliminates the need for complex set up procedures and proprietary Z-Wave commands to configure the system. The IR code library supports various brand name of AV equipment found in the today's market. User can use his controller or gateway to send a 4 digits AV IR code number (include the brand selection) using standard Z-Wave configuration command.

Host based IR code library

ZXT-310 also supports host-based library upgrade for 6 AV database. Once gateway support this advanced feature, 6 AV database can be upgraded by gateway very easily and support different regions and customers.

Glossary

Device or Node	Devices and nodes are all terms to describe an individual Z-Wave device. These are all interchangeable when setting up your Z-Wave network.
Inclusion	Add a Z-Wave device to the network.
Exclusion	Delete a Z-Wave device from the network.
Remove	To take a device out of a group, scene or association group while that device still exists in the same Z-Wave network.
Z-Wave Network	A collection of Z-Wave devices is controlled by primary and secondary controllers operating on the same system. A Z-Wave network has its own unique ID code so that controllers not in the network cannot control the system.
Primary Controller	The first controller is used to set up your devices and network. Only the Primary Controller can be used to include or delete modules from a network. It is recommended that you mark the primary controller for each network for ease in modifying your network.
Network Wide Inclusion (NWI)	Network Wide Inclusion (NWI) enables both end-user friendly, Plug and Play like Z-Wave network installation as well as professional installation scenario where the inclusion process in terms of time will be reduced significantly. NWI is a feature supported by a new frame type named Explorer which enables the Z-Wave protocol to implement Adaptive Source Routing.
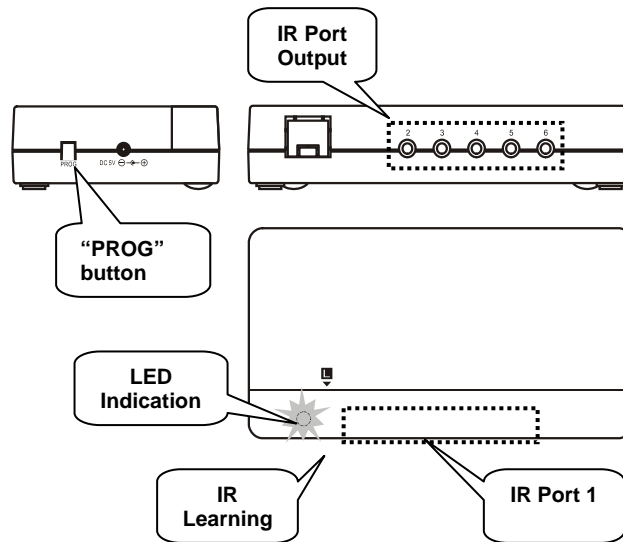
Figure 2   PROG Key and IR Ports of ZXT-310

Setup and Operations

Before using the ZXT-310, please read the [INSTALLATION] if it is needed to mount the ZXT-310 to a wall. Power up the ZXT-310 by the supplied AC/DC adaptor.

⏻ CAUTION
− Be sure to always use the supplied AC/DC adaptor.
− Do not try to power up other device with the supplied AC/DC adaptor. This could damage the AC/DC adaptor or the connected device.

(Please carefully read through the following then store the manual for future reference.)

Change Z-Wave-to-IR Channel (EP) on ZXT-310

Step	Setup Key	LED Indication Status on ZXT-310
1	Press and hold PROG button on the ZXT-310 for 3seconds to start switching the EP (1->2->3->4->5->6->1->2...)	• LED flashes once = EP1 • LED flashes twice = EP2 • LED flashes 3 times = EP3 • LED flashes 4 times = EP4 • LED flashes 5 times = EP5 • LED flashes 6 times = EP6

Include / Exclude device to network

Adding Device to the Network

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Refer to your primary controller instructions to process the inclusion setup procedure.	-
3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • Device inclusion completed

Note 1: Red LED flashes 6 times means the setup process is failed. Please redo the process again.

Note 2: If you can't add the ZXT-310 to network, it might have been included in another Z-Wave network or the ZXT-310 is not on Channel 1 (EP1). In this case, please delete it following the steps in the [Deleting Device from the Network] section then make sure ZXT-310 is on the Channel 1 (EP1) and add it again.

Note 3: This step can be skipped if the device is already existed in the network.

Deleting Device from the Network

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Refer to your primary controller instructions to process the exclusion setup procedure.	-
3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • Device exclusion completed

Add/Remove Device to/from a Simple AV channel

There are 6 Simple AV Channels in ZXT-310, user can assign them to any of the 8 device icons on controller / gateway UI, for example: "TV", "DVD", "STB/CBL", "AUX" etc...

> ① **Important**
>
> − Simple AV Channel is a Z-Wave virtual channel and it is not related to IR Port output. User can use the IR Port Mapping function to map the IR port output to Simple AV Channel/AV device.
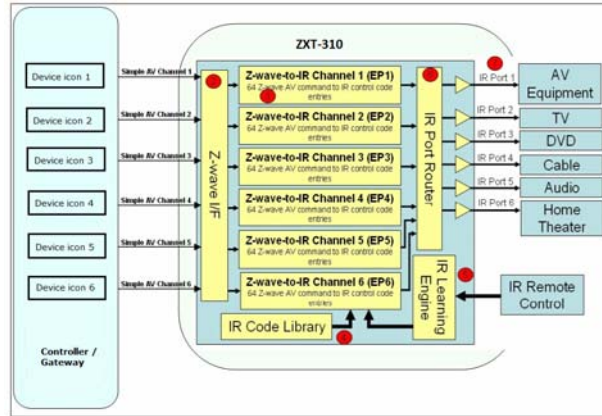
Figure 3. Z-Wave-to-IR Channel (EP) and IR Ports

Device	End-point no.	IR code no.	IR output port no.	IR output power
Device icon 1				
Device icon 2				
Device icon 3				
Device icon 4				
Device icon 5				
Device icon 6				

Configuration data in ZXT-310

IR Code Selection

<u>Selecting an IR Device Code in ZXT-310</u>

① Important
− Please make sure that the "End point selection control" has completed (if necessary) before process the following setup.

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Refer to your primary controller instructions to process the configuration setup procedure. - Parameter: 27 - Value: 0001 (Refer to IR code list of ZXT-310)	-
3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • Entering device code successful

Note 1: Red LED flashes 6 times means that the setup process is failed. Please redo the process again.

IR Port Mapping

Mapping individual Channel to individual Port in ZXT-310

① Important
− Please make sure that the "End point selection control" has completed (if necessary) before process the following setup.

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Refer to your primary controller instructions to process the configuration setup procedure. - Parameter: 29 - Value: 01 (Enter the IR port number 1 -6 which you want to transmit the IR signal)	-
3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • Set IR Port output successful

Note 1: Red LED flashes 6 times means that the setup process is failed. Please redo the process again.

Note 2: All the Simple AV Channel / Z-Wave-to-IR Channel will map to "IR Port 1" by default if user has not go through the above setup procedure or Z-Wave remote controller does not support "Multi-channel Command Class".

IR Output Power

Set IR Output Power Level for each IR port (except IR Port 1)

ⓘ Important
− Please make sure that the "End point selection control" has completed (if necessary) before process the following setup.

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on

2	Refer to your primary controller instructions to process the configuration setup procedure.
	  - Parameter: 28 (0x1C)
	  - Value: 255 (0xFF)
	
	Set IR output power level by entering
	  0 (0x00) Normal power mode
	  255 (0xFF) High power mode
	(**default** is in high power mode)
		-

3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • Set IR Power level successful

Note 1: Red LED flashes 6 times means that the setup process is failed. Please redo the process again.

Note 2: IR port 1 is a fixed IR output power which is un-configurable and operating in wide angle and long distance coverage.

IR Port Number	IR Output Power Mode	Default value
1	Un-configurable	-
2	Configure as Normal or High	High
3	Configure as Normal or High	High
4	Configure as Normal or High	High
5	Configure as Normal or High	High
6	Configure as Normal or High	High

IR Port Output Power

IR Code Learning

Learning IR Code on ZXT-310
(Learn an IR control code from the original remote control to ZXT-310)

> **ⓘ Important**
>
> − Please make sure that the "End point selection control" has completed (if necessary) before process the following setup.

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Refer to your primary controller instructions to process the configuration setup procedure. - Parameter: 25 (0x19) - Value: 0001 (0x0001) (Z-Wave Cmd#, e.g. if POWER key is going to be learnt, input the value: 39 (0x27)	-
3	Place the ZXT-310 and your original remote on a flat surface, aimed at each other and 1-3 cm apart from the "L" learning mark.	-
4	Press and keep holding the key on your original equipment remote which you want to learn for a few	• LED flashes twice then keep on

	seconds	• Learn a code successful
5	Repeat step 2 to 5 to learn other keys.	-

Note 1: Red LED flashes 6 times means that the setup process is failed. Please redo the process again.

Note 2: On step 4, if no IR signal received for more than 15 seconds, the Error LED in front will flashes six times then all LED turn off, Learning on ZXT-310 mode will exit automatically.

ⓘ When you encounter problem, check followings:

− Make sure your original remote is switched to power off.
− Press the key on original remote before learning mode timeout.
− Keep away from incandescent light and direct sunlight during learning.
− Make sure IR Transmitter of your original remote alight with learning diode of ZXT-310, you may also slight adjust closer or further away the distance of two devices. Some of remotes the IR transmitter in hidden behind lens and may not installed center of remote.
− Make sure the power is good on both devices, especially the original remote. Use fresh batteries.

Reset ZXT-310 to factory default

Press and hold "PROG" button for 10 seconds on ZXT-310, LED will flash until reset process is completed.

ZXT-310 Information

How to get the NIF "Node Information Frame" on ZXT-310

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Press the PROG button on the ZXT-310 (EP1 will response "NIF" EP2, EP3, EP4, EP5, EP6 will response "Multi-channel capability report")	• LED flashes once then keep on (ZXT-310 will report the supported command class)

IR Transmission Mode

Set IR transmission mode for IR transmission

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on
2	Refer to your primary controller instructions to process the configuration setup procedure. - Parameter: 31 (0x1F) - Value: 255 (0xFF) Set IR output power level by entering 0 (0x00) Continuous IR transmission mode **(default)** 255 (0xFF) Single shot IR transmission mode	-
3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • End point selection

		successful

*Note 1: Red LED flashes 6 times means that the setup process is failed.
Please redo the process again.*

End-Point Selection Control

Set target end point by configuration command class

Step	Setup Key	LED Indication Status on ZXT-310
1	Make sure ZXT-310 switched to Channel 1 (EP1)	• LED flashes once then keep on

2	Refer to your primary controller instructions to process the configuration setup procedure.
	
	- Parameter: 38 (0x26)
	
	- Value: 1 (0x01) = EP1
	       2 (0x02) = EP2
	       3 (0x03) = EP3
	       4 (0x04) = EP4
	       5 (0x05) = EP5
	       6 (0x06) = EP6
	
	(Enter the Endpoint number 1 - 6 which you want to configure)
		-

3	Press the PROG button on ZXT-310	• LED flashes twice then keep on • End point selection successful

*Note 1: Red LED flashes 6 times means that the setup process is failed.
Please redo the process again.*

Z-Wave Configuration Parameters

Parameter Number	Definitions	Size (Byte)	Parameter Value
1—20 (0x01—0x14)	UIRD formatted raw data for the Simple AV command number or key being downloaded or uploaded	4	Depends on IR code data (Depend on UIRD data)
21 (0x15)	The Simple AV command number or key going to be downloaded to the ZXT-310	2	Referred to Simple AV command class key ID (**Default** : 0x0000 No simple AV ID is selected)
22 (0x16)	Download status register (Read only) * The status value 1, 3, 4 will be reset to 0 when ZXT-310 receive a get command to this parameter	1	0 (0x00): IR channel idle 1 (0x01): OK 2 (0x02): Downloading 3 (0x03): Command Full 4 (0x04): Operation Fail (**Default**: idle, 0x00)
23 to 24 (0x17 to 0x18)	Reserved (For internal reference only)	-	N/A
25 (0x19)	The Simple AV command number or key going to be learned * Any incoming operation may probably to wait up to 15s to release until the internal process of parameter 0x19 has finished.	2	Referred to Simple AV command class key ID
26 (0x1A)	Learning status register (Read only) * The status value 1, 3, 4 will be reset to 0 when	1	0x00: IR channel idle (**default**) 1 (0x01): OK 2 (0x02): Learning 3 (0x03):

	ZXT-310 receive a get command to this parameter		Command Full 4 (0x04): Learning Fail
27 (0x1B)	IR code number for built-in code library	2	Refer "Code list" for details
28 (0x1C)	External IR Emitter power level * If IR output port routing is set to 1, IR transmission power level cannot be changed	1	0 (0x00): normal power mode 255 (0xFF): high power mode **(default)**
29 (0x1D)	IR output port routing	1	1 (0x01): IR Port 1 **(default)** 2 (0x02): IR Port 2 3 (0x03): IR Port 3 4 (0x04): IR Port 4 5 (0x05): IR Port 5 6 (0x06): IR Port 6
30 (0x1E)	Reserved (For internal reference only)	-	N/A
31 (0x1F)	IR transmission mode	1	0 (0x00): Continuous IR transmission mode (**default**) 255 (0xFF): Single shot IR transmission mode
32 to 35 (0x20 to 0x23)	Reserved (For internal reference only)	-	N/A
36 (0x24)	Check Library Version (Read Only)	4	Byte 1, 2 Firmware Version Byte 3, 4 Library Version
37 (0x25)	Reserved (For internal reference only)	-	N/A
38 (0x26)	End-point selection control	1	1 (0x01): EP1 (**default**) 2 (0x02): EP2 3 (0x03): EP3 4 (0x04): EP4 5 (0x05): EP5 6 (0x06): EP6

Parameter Table

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US Keys				
Key ID(Dec)	Standard Key function	Description	Key in device	Z-Wave Cmd#(Dec)
0	(RESRVED)	(not used)	(RESRVED)	
1	POWER	Power toggle ON/OFF	POWER	39
2	CH_DOWN	Channel down	CH▼	5
3	CH_UP	Channel up	CH▲	4
4	VOL_DOWN	Volume down	VOL▼	2
5	VOL_UP	Volume up	VOL▲	3
6	MUTE	Mute	MUTE	1
7	REW	Rewind	◄◄	23
8	PLAY	Play	►	19
9	FF	Fast forward	►►	22
10	STOP	Stop	■	20
11	PAUSE	Pause	‖	21
12	REC	Record	●	25
13	DIGIT_ZERO	0	0	6
14	DIGIT_ONE	1	1	7
15	DIGIT_TWO	2	2	8
16	DIGIT_THREE	3	3	9
17	DIGIT_FOUR	4	4	10
18	DIGIT_FIVE	5	5	11
19	DIGIT_SIX	6	6	12
20	DIGIT_SEVEN	7	7	13
21	DIGIT_EIGHT	8	8	14
22	DIGIT_NINE	9	9	15
23	MENU	Menu mode	MENU	29
24	ENTER	Channel enter	ENTER	40
25	TV_VCR	AV, TV/VCR or Source	AV	38
26	STANDBY	Standby or power off	STANDBY	404
27	PREV_CHAN	Previous channel or last channel	LAST CH	16
28	CHAP_DOWN	Charpter down, or skip backward	I◄◄	284
29	CHAP_UP	Charpter up, or skip backward	►►I	283
30	GUIDE	On screen program guide	GUIDE	28
31	PIP	Picture in picture	PIP	241
32	TOGGLE	Toggle picture in picture screen	PIP SWAP	244
33	INFO	Information or on screen display	DISPLAY	17
34	SUBTITLE	Subtitle or close caption	CC	103
35	HOLD	(not used)		
36	EP_RD	(not used)		
37	SMT	(not used)		
38	SLEEP	Sleep timer	SLEEP TIMER	285
39	BR_DOWN	(not used)		
40	BR_UP	(not used)		
41	QUIT	Exit from Menu mode	BACK	37
42	ARROW_LEFT	Menu mode arrow left	◄	32
43	ARROW_UP	Menu mode arrow up	▲	30
44	ARROW_RIGHT	Menu mode arrow right	►	33
45	MENU_OK	Menu mode OK or select	OK	36
46	ARROW_DOWN	Menu mode arrow down	▼	35

AV Command to IR Control Code (US, BR, CN) Mapping Table

		EU Keys		
Key ID(Dec)	Standard Key function	Description	Key in device	Z-Wave Cmd#(Dec)
0	(RESRVED)	(not used)	(RESRVED)	
1	POWER	Power toggle ON/OFF	POWER	39
2	CH_DOWN	Channel down	CH▼	5
3	CH_UP	Channel up	CH▲	4
4	VOL_DOWN	Volume down	VOL▼	2
5	VOL_UP	Volume up	VOL▲	3
6	MUTE	Mute	MUTE	1
7	REW	Rewind	◄◄	23
8	PLAY	Play	►	19
9	FF	Fast forward	►►	22
10	STOP	Stop	■	20
11	PAUSE	Pause	‖	21
12	REC	Record	●	25
13	DIGIT_ZERO	0	0	6
14	DIGIT_ONE	1	1	7
15	DIGIT_TWO	2	2	8
16	DIGIT_THREE	3	3	9
17	DIGIT_FOUR	4	4	10
18	DIGIT_FIVE	5	5	11
19	DIGIT_SIX	6	6	12
20	DIGIT_SEVEN	7	7	13
21	DIGIT_EIGHT	8	8	14
22	DIGIT_NINE	9	9	15
23	MENU	Menu mode	MENU	29
24	EXIT	Exit from Menu mode	EXIT	37
25	AV	AV, TV/VCR or Source	AV1	38
26	I_II	Audio selection, L/R	I-II	301
27	RED	Teletext Red		157
28	GREEN	Teletext Green		155
29	YELLOW	Teletext Yellow		129
30	BLUE	Teletext Blue		154
31	MIX	Teletext Mix mode		323
32	TV MODE	Teletext TV mode, Telextext Off		324
33	INDEX	Teletext Index mode	100	322
34	TEXT	Teletext Text mode		319
35	HOLD	Teletext Hold / STOP		321
36	EP_RD	Teletext Expend/Reduce		320
37	DEVICE_TX	(not used)		
38	S_POW	Sleep timer	SLEEP TIMER	285
39	BR_DW	Brightness Down	BR-	89
40	BR_UP	Brightness Up	BR+	90
41	COL_DW	Color Down	COL-	106
42	COL_UP	Color Up	COL+	107
43	CON_DW	Contrast Down	CONT-	115
44	CON_UP	Contrast Up	CONT+	116
45	INFO	Information or OSD	INFO	17
46	P_P	Previous Channel	PREV. CH	16
47	-/--	One/Two digit for channel	- / --	51
48	|<<	Charpter down, or skip backward	|◄◄	284
49	>>|	Charpter up, or skip backward	►►|	283
50	S_AV	Alternate AV, TV/VCR or Source	AV2	355
51	S_I_II	Alternate Audio or Stereo	STEREO	65
52	LEFT	Menu mode arrow left	◄	32
53	UP	Menu mode arrow up	▲	30
54	RIGHT	Menu mode arrow right	►	33
55	SELECT	Menu mode OK or select	OK	36
56	DOWN	Menu mode arrow down	▼	35
57	BOX_OFFICE / VOD	Cable box functions	BOX_OFFICE / VOD	386
58	ACTIVE / INTERACTIVE	Cable box functions	ACTIVE / INTERACTIVE	179
59	PLANNER / SERVICE	Cable box functions	PLANNER / SERVICE	276
60	HELP	Cable box functions	HELP	174
61	TV_GUIDE	Program Guide or EPG	EPG	28
62	SETUP	Setup	SETUP	277
63	ASPECT	Aspect Ratio, 16:9, Wide Screen	ASPECT	64

AV Command to IR Control Code (EU, AU, IN, RU, IL) Mapping Table

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ⓘ **Information**

− If you are using Gateway or other z-wave controllers to operate ZXT-310, Please follow the instruction from the gateway or other controller.

Installation
Mounting the ZXT-310 to a wall

MOUNTING LOCATION PRECAUTIONS
- Before mounting, check the material and structure of the mounting location. If the location does not have the proper material or structure, the ZXT-310 can fall and cause an injury.
- Use commercial items that best match the wall structure and material for the screws and other fixtures.
- Do not mount near a kitchen counter, humidifier, or other location in which it can be exposed to smoke or steam. Doing so could cause a fire or electrical shock.
- Do not mount in locations with high humidity or large amounts of dust. Doing so could cause a fire or electrical shock.
- Do not mount to locations subject to high temperatures, high humidity, or exposed to water. Doing so could cause a fire or electrical shock.
- Do not mount to locations subject to large amounts of vibration, large jolts, or large forces. These could cause an injury if the ZXT-310 falls and breaks.

MOUNTING PROCEDURE PRECAUTIONS
- Do not modify parts or use the ZXT-310 in ways other than its intended use. Doing so could cause the ZXT-310 to fall and result in an injury.
- Be sure to fully check that there are no electrical wires or pipes inside the wall before mounting.
- If any of the screws are loose, the ZXT-310 can fall and cause an injury. Do not mount the ZXT-310 with the screws still loose.
- Check that the two screws mounted to the wall are fully inserted into the key holes of the ZXT-310. Otherwise, the ZXT-310 can fall and cause an injury.
- Do not mount the ZXT-310 so that it sticks out from the wall edge. It could get hit by people's bodies or objects and cause an injury.
- Supplier will not be liable for any accidents or injuries that occur due to improper mounting or handling.
- When mounting, be careful not to get your fingers pinched or injure your hands.

MOUNTING PROCEDURE
The ZXT-310 can be mounted to a wall or wooden racks using the two key holes in the bottom case. The ZXT-310 can be oriented horizontally or vertically. Mount in the best way for your installation conditions.

Note 1: The reception sensitivity varies depending on the antenna

direction. Find the direction providing the best reception by
adjusting the antenna direction before mounting the ZXT-310.
*Note 2: No screws are provided for mounting to a wall.*
Note 3: Before mounting to a wall, be sure to fully read the precautions.

1. Obtain two screws suitable for the wall strength and material. The screw size is shown in the figure below.

MIN. 6mm (3/16ins.) ~
MIN. 8mm (3/8ins.)   3~4mm (1/8 ~ 3/16ins.)

MIN. 3mm (1/8ins.)
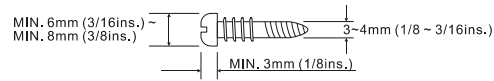
2. The positional relationship between the ZXT-310 key holes and the screw mounting positions are shown in the figure below.
   Note 1: When mounting the screws to the wall, leave a space
   between the wall and screw cap as shown in the figure.

60mm (2~3/8ins.)

4.5mm (3/16ins.)

4.5mm (3/16ins.)

60mm (2~3/8ins.)
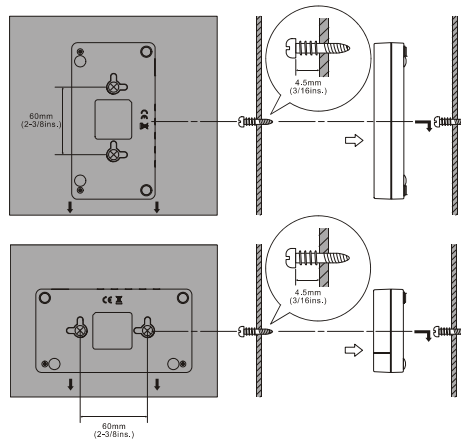
3. Insert the ZXT-310 key holes onto the two screws mounted to the wall, and then slide downward to secure in place.

4. After securing the ZXT-310 to the wall, connect the AC/DC adaptor and cables to the ZXT-310.
   Note 1: Check that the ZXT-310 is firmly secured to the wall.
   Note 2: Insert the AC/DC adaptor and IR emitter cable so that
   they are firmly connected to the ZXT-310.

5. When removing the ZXT-310 from the wall, lift up the ZXT-310, then pull it towards you.

Wireless Information

This device has an open air line of sight transmission distance of 25m which complies with the Z-Wave standards. Performance can vary depending on the amount of objects in between Z-Wave devices such as walls and furniture. Every Z-Wave device set up in your house will act as a signal repeater allowing devices to talk to each other and find alternate routes in the case of a reception dead spot.

Radio frequency limitations:
1. Each wall or object (i.e.: refrigerator, bookshelf, large TV, etc) can reduce the maximum range of 20m by up to 20 to 30%.
2. Plasterboard and wooden walls block less of the radio signal then concrete, brick or tile walls which will have more of an effect on signal strength.
3. Wall mounted Z-Wave devices will also suffer a loss of range as they are housed in metal junction boxes which could reduce the range by up to 20 to 30%.

Maintenance

1. Do not expose your unit to dust, strong sunlight, humidity, high temperatures or mechanical shocks.
2. Do not use corrosive or abrasive cleansers on your unit.
3. Keep the unit dust free by wiping it with a soft, dry cloth.
4. Do not disassemble your unit; it contains no user-serviceable parts.

Frequently Asked Questions

Q Why won't my unit work with the Z-Wave devices I purchased from another country?
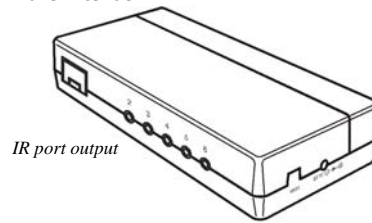
A Due to different countries regulations Z-Wave products from different regions are set to different frequencies. Before purchasing new devices make sure you have checked to see that the device is compatible in your region.

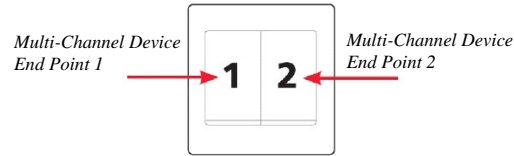**Q What is multi-channel device?**

A The multi-channel command class used to control one or more end points in a given device that supports this command class.

There are several kinds of multi-channel products in the market such as Z-Wave Extender^{TM}, Z-Wave wall switch / dimmer and power strip. It can control the end-point individually.
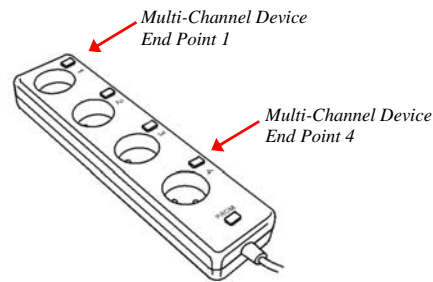
● Z-Wave Extender™

IR port output

● Z-Wave wall switch / dimmer

Multi-Channel Device End Point 1

Multi-Channel Device End Point 2

1 2

● Z-Wave power strip

Multi-Channel Device End Point 1

Multi-Channel Device End Point 4

Please refer to the target device user manual for more information such as Inclusion / Exclusion and add End Point to a Scene / Group.

Q How to select my AV equipment IR code from ZXT-310?
A   You should refer to the code list and look into the Device + Brand and try the code no. sequentially until you find the right code. You can record down your device code under the table for future reference after setting up the ZXT-310 correctly.

Q ZXT-310 supports external IR emitters, but there is no response on the IR emitter socket, why?
A   You should make sure your selected IR port output is same as your configuration; please refer to "IR Port Mapping" section.

ZXT-310 supports two IR power levels for the external IR emitter to avoid saturation of the IR receiver. You can set the IR output power level by the Parameter Table value (normal or high power mode) or adjust the position of your external IR emitter.

Q **Can I use 2 or more ZXT-310 in my house? What is the max. units if yes?**

A   Yes and it is very depend on the capability of gateway / controller. For example, gateway can supports up to 1, 6 or more ZXT-310 in a network.

Technical Specifications

Model No.	BW8371US (ZXT-310US) BW8371EU (ZXT-310EU) BW8371AU (ZXT-310AU) BW8371IN (ZXT-310IN) BW8371RU (ZXT-310RU) BW8371BR (ZXT-310BR) BW8371IL (ZXT-310IL) BW8371CN (ZXT-310CN)
RF Frequency	908.42MHz (ZXT-310US) 868.42MHz (ZXT-310EU) 921.42MHz (ZXT-310AU) 865.22MHz (ZXT-310IN) 869.02MHz (ZXT-310RU) 921.42MHz (ZXT-310BR) 916.02MHz (ZXT-310IL) 868.42MHz (ZXT-310CN)
RF operating distance	up to 80ft outdoor line of sight, in unobstructed environment
IR operating distance	up to 25ft line of sight, in unobstructed environment
IR Frequency	Up to 455kHz
Temperature	operation: 0~40°C storage: -20~60°C
Powered by	DC 5V 100mA
Dimension (L x W x T)	139 x 75 x 28.5 mm
Weight	90g

Checking Accessories

After opening the cover of the packing box, check that the following accessories are included.

- ZXT-310: Z-Wave-to-AV IR Extender
- Power adaptor: 100~240Vac input, 5Vdc 1000mA (for ZXT-310)
- IR Emitting Cable: 3.5mm Mono plug cable x 3pcs (for ZXT-310)
- User Manual (download from our website)
- Code List (download from our website)
- Warranty sheet

FCC Notice

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

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:
- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Notice : Changes or modifications to this unit not expressly approved by the party responsible for compliance could void the user authority to operate the equipment.

Warnings

- Do not modify the unit in any way.
- Risk of fire.
- Risk of electrical shock.
- Risk of burns.
- Do not dispose of electrical appliances and unsorted municipal waste, use separate collection facilities. Contact your local government for information regarding the collection systems available.
- There is no user serviceable parts in this unit.
- The socket-outlet shall be installed near the equipment and shall be easily accessible.
- Use only power supplies listed in the user instructions.

Caution

- Risk of explosion if battery is replaced by an incorrect type.
- Dispose of used batteries according to the instructions.