

ZXT-900

ZIGBEE AC CONTROLLER

USER MANUAL



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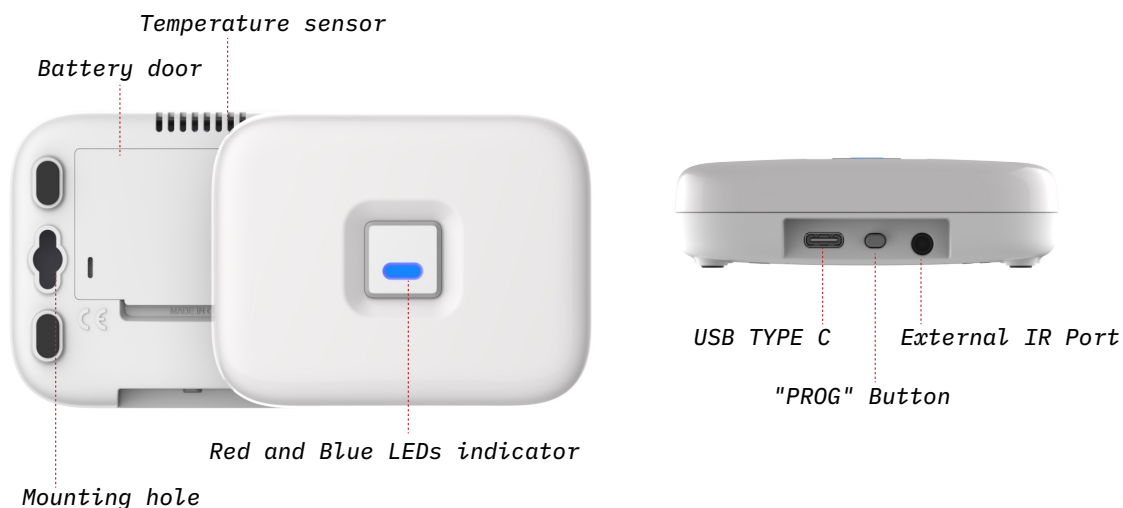
1. Introduction

The ZXT-900 is an IR Blaster for AC Control based on Zigbee Protocol, control split air conditioner and entertainment devices by receiving Zigbee command and translating to Infrared command.

With its comprehensive cloud-stored IR database (library), ZXT-900 can control different brands and models of infrared devices around the world. User can setup the IR (AC + AV) code by “Conexum Climate” App through Bluetooth download. iOS and Android App are available in Apps store.

2. Product Overview

2.1 Description



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2.2 Features

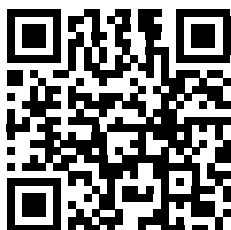
- Work with Zigbee 3.0 gateway
- Cloud-base downloadable AC + AV IR library by SMART phone
- Supports Basic, SMART and Learning search in SMART Phone App
- Support IR learning
- Supports Air-con x 1 and A/V x 3 by download
- Support Air-Conditioner Infrared status synchronization
- Support External IR emitter with High Low Power selection
- Able to On/Off built-in IR emitters control
- Built-in accuracy temperature and humidity sensor
- Support firmware upgrades via Over-the-air (OTA) by Zigbee and BLE
- Powered by USB-C 5V
- This product can be operated in any Zigbee 3.0 network with other Zigbee certified devices from other manufacturers. All mains operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

3. Get Started

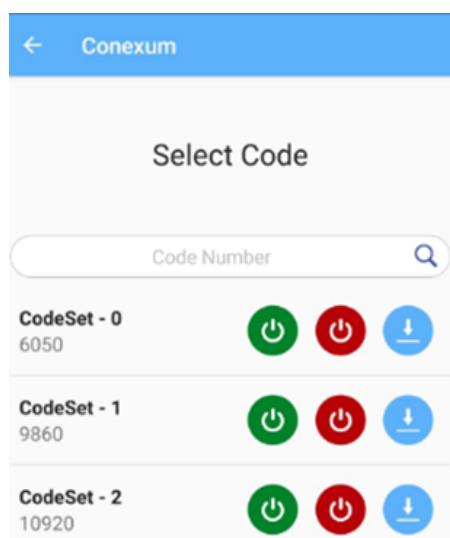
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3.1 Setup IR Code by Conexum Climate App (AC+AV)

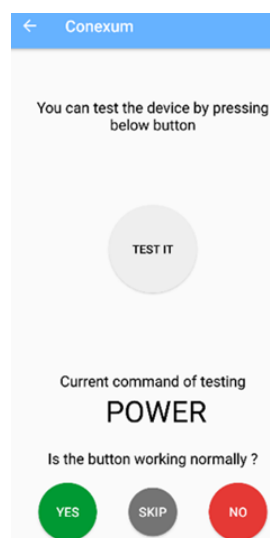
- Install “Conexum Climate” App, turn on the “Bluetooth” and “GPS”, “WiFi / 4G” on the Smart phone. The App is available in Google Play and Apple App Store.



- Pair the device by Smart Phone App “Conexum Climate”
 - Open the App and follow the Smart phone setup UI.
 - Press “Add extender”.
 - Triple click on the PROG button within 1.0s to pair with Smart Phone, blue LED will keep flashing.
 - In Smart Phone, please select “Conexum unit” that you want to pair it.
 - Once BLE pairing is completed, blue LED will turn off.
- IR code set up
- For AC setup, please type-in or select your brand then follow the Basic Search to test it one by one.
- For AV setup, please select your device type (TV, CBL, B’Ray, Soundbar…), brand then follow the Smart Search steps to test it.
- Once you have successfully found an IR Code that matches your device, tap to confirm the code and download it into the device



AC Basic search



AV Smart Search

- After IR code setup is completed, please include ZXT-900 into the Zigbee Gateway then go to Zigbee control panel for device control operation.

4. Include ZXT-900 into Zigbee Gateway

Removing the device from a Zigbee Gateway

Step	Procedure / Description	Status Indicator
1	Short press the “PROG” button once, then press and hold the button for more than 10 seconds.	Red LED will keep flashing. Release the button when the indicator becomes solid, the device is removed from Zigbee network.

Notes:

- Device will also send “leave” command to gateway when removed from Zigbee network.
- Device will reset all the attributes of all its clusters to factory default.
- Networking functionality, bindings, groups, or other persistent data are not affected.

Adding the device to a Zigbee Gateway

Step	Procedure / Description	Status Indicator
1	Refer to your gateway / primary controller to enter the Inclusion mode.	
2	Once the gateway / primary controller is ready to include the device, press the “PROG” button once.	Green LED will keep flashing. Green LED will turn On for 3 seconds then Off if adding the device successful.

Notes:

- If the device has been added into the gateway, please removing the device from the Zigbee gateway then add it again.
- The device supports binding (bound) operation which is used for Device Status Change report e.g. current Room Temperature report or AC IR status synchronization.
- If the device has been added into the gateway, press the “PROG” button once, Green LED will turn On for 3 seconds.

4.1 IR Code learning

In case the IR code can't support full keys controls, user can use the IR learning function to capture the IR data from original remote controller, please follow below steps.

AC IR Code Learning

Please refer to "Configuration Master Table" for all configuration settings.

Step	Procedure / Description	Status Indicator
1	Refer to your gateway / primary controller user manual, enter IR Blaster Learning Cluster (0xFC82) setting.	-
2	To learn AC IR code, look up AC Learning Mapping Table for learning and decide which IR setting you wants to learn, <i>example</i> : Command ID: 0xF1 (Learn Remote Control Code), Parameter Value 0: AC device: 0x00, Parameter Value 1: Storage location: 0x05 (Cool mode, 20°C), Then activate or save it in gateway.	Red LED turns ON for indicating the IR Code Learning
3	Learning location:  Infrared receiving area Adjust your original AC remote to Cool mode 21°C, aim your original AC remote to ZXT-900 according to above position within 1-3cm. Press and release temperature down button to adjust to 20°C, the device will learn the IR code automatically. If the learning is failed or need to learn next IR code, repeat step 2 to step 3.	Successful: Blue LED flashes TWICE; Unsuccessful: Red LED flashes TWICE
4	Once finished IR Code Learning, please select Learning Data Source to activate learning data. Command ID: 0xF3 (Select Learning Data Source), Parameter Value 0: AC device: 0x00, Parameter Value 1: Learned data: 0x01, Then activate or save it in gateway.	-

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TIPS

1. User need at least Learn the OFF (Storage Location 0), and one Temperature Mode (Storage Location 2 ~ 28) to complete the usage model.
2. For AC device, user can use command 0xF3 (Select Learning Data Source) to switch the data source between downloaded and learned data.
3. Keep away from Incandescent Light or Direct Sunlight during learning.
4. Make sure IR Transmitter of your Original Remote align with learning diode of the device, you may also slight adjust closer or further away the distance of two devices. Some of Remotes the IR transmitter is hidden behind lens and may not be installed in the center of the remote.
5. Make sure the power is good on both devices, especially the Original remote.

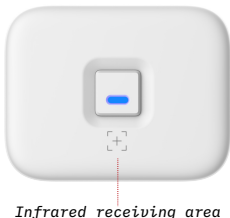
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Storage Location (Decimal)	IR command	
	Storage in Celsius Unit	Storage in Fahrenheit Unit
0	OFF	OFF
1	ON (RESUME)	ON (RESUME)
2	17°C Cool	63°F Cool
3	18°C Cool	64°F Cool
4	19°C Cool	66°F (67°F Cool)
5	20°C Cool	68°F (69°F Cool)
6	21°C Cool	70°F (71°F Cool)
7	22°C Cool	72°F (73°F Cool)
8	23°C Cool	74°F (75°F Cool)
9	24°C Cool	76°F Cool
10	25°C Cool	77°F (78°F Cool)
11	26°C Cool	79°F (80°F Cool)
12	27°C Cool	81°F (82°F Cool)
13	28°C Cool	83°F (84°F Cool)
14	29°C Cool	85°F Cool
15	30°C Cool	86°F Cool
16	17°C Heat	63°F Heat
17	18°C Heat	64°F Heat
18	19°C Heat	66°F (67°F Heat)
19	20°C Heat	68°F (69°F Heat)
20	21°C Heat	70°F (71°F Heat)
21	22°C Heat	72°F (73°F Heat)
22	23°C Heat	74°F (75°F Heat)
23	24°C Heat	76°F Heat
24	25°C Heat	77°F (78°F Heat)
25	26°C Heat	79°F (78°F Heat)
26	27°C Heat	81°F (82°F Heat)
27	28°C Heat	83°F (84°F Heat)
28	29°C Heat	85°F Heat
29	30°C Heat	86°F Heat
30	Dry Mode	Dry Mode
31	Auto Mode	Auto Mode
32	Fan Mode	Fan Mode

Table 1: AC IR Learning Mapping Table

AV IR Code Learning

Please refer to “IR Blaster Learning Cluster (0xFC82)” for all configuration settings.

Step	Procedure / Description	Status Indicator
1	Refer to your gateway / primary controller user manual, enter IR Blaster Learning Cluster (0xFC82) setting.	-
2	To learn AV IR code, look up AV IR Learning Mapping Table for learning and decide which IR setting you want to learn, <i>example</i> : Command ID: 0xF1 (Learn Remote Control Code), Parameter Value 0: AV device: 0x01 to 0x03, Parameter Value 1: Storage location: 0x0B (VOL+), Then activate or save it in gateway.	Then Red led turns ON for indicating the IR Code Learning
3	Learning location:  Aim your original AV remote to the device according to above position within 1-3cm. Press and hold the “VOL+ “ button until blue LED flashes twice. The device will learn the IR code automatically. If the learning is failed or need to learn next IR code, repeat step 2 to step 3.	Successful: Blue LED flashes TWICE; Unsuccessful: Red LED flashes TWICE

TIPS

1. In AV device, the learned or downloaded IR data were shared same storage location, new IR data will over-write the old IR data whatever it is from learn or download by App.
2. In AC device, there is a separate storage location for learn and download data, it is allowed to switch between learned or downloaded IR data. Please setup it before sends corresponding control commands.

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AV IR Learning Mapping Table

Storage Location (Decimal)	Function
0	Power
1	Input
2	Menu
3	Smart
4	Guide
5	Back
6	Up
7	Down
8	OK
9	Left
10	Right
11	VOL+
12	VOL-
13	Mute
14	Home
15	CH+
16	CH-
17	Skip-
18	Stop
19	Skip+
20	Play

21	Pause
22	Rewind
23	Record
24	Fast Forward
25	Red
26	Green
27	Yellow
28	Blue
29	0
30	1
31	2
32	3
33	4
34	5
35	6
36	7
37	8
38	9
39	Info
40	Text

IR Blaster Learning Cluster (0xFC82)

CMD ID	Command	Parameter Value 0, 1, 2	Size (Byte)
0xF0	Send Remote Control Code Command	Parameter Value 0: - AC device: 0x00; - AV device: 0x01 to 0x03	2
0xF1	Learn Remote Control Code Command	Parameter Value 1: - Storage location 0-32 for AC IR code; - Storage location 0-40 for AV IR code; (Please refer to AC or AV IR learning mapping table)	2
0xF2	Learn Remote Control Code Command Response	Parameter Value 0: - AC device: 0x00; - AV device: 0x01 to 0x03; Parameter Value 1: - Storage location 0-32 for AC IR code; - Storage location 0-40 for AV IR code; Parameter Value 2: - Setup fail: 0x00; - Setup successful: 0x01	3
0xF3	Select Learning Data Source Command	Parameter Value 0: - AC device: 0x00; Parameter Value 1: - App downloaded data: 0x00; - Learned data: 0x01	2
0xF4	Select Learning Data Source Command Response	Parameter Value 0: - AC device: 0x00; Parameter Value 1: - Setup fail: 0x00; - Setup successful: 0x01	2

Notes:

CMD ID	Command	Command description details
0xF0	Send Remote Control Code Command	Gateway sends this command to the Zigbee IR blaster. Then the Zigbee IR blaster will send an IR command to control IR device, red LED will blink once.
0xF1	Learn Remote Control Code Command	Gateway sends this command to initiate learning mode. The purple LED turns On for 15 seconds. Success or failure is reported back to the gateway.
0xF2	Learn Remote Control Code Command Response	Zigbee IR blaster returns learning results to the gateway.
0xF3	Select Learning Data Source Command	Gateway sends this command to switch AC-data-source, e.g. by learning or download data.
0xF4	Select Learning Data Source Command Response	Zigbee IR blaster returns “switch AC-data-source” result to the gateway.

5. Air-Conditioner Infrared status synchronization



The device supports Air-Conditioner Infrared status synchronization, it will report the AC status to the Zigbee or Bluetooth gateway once received the IR command from the AC remote controller. The device should be installed at or near to the air-conditioner, the IR coverage distance is up to 5 meters and depends on the infrared code pattern. It is required to download the AC code by Smartphone App or Bluetooth Gateway. Otherwise, it is not allowed to enable this function.

Notes:

- Please check your original AC remote controller, AC status sync. can support AC remotes come with temperature display only.
- AC status sync. function can't support the data from AC learning.

6. Device Reset to Factory Default

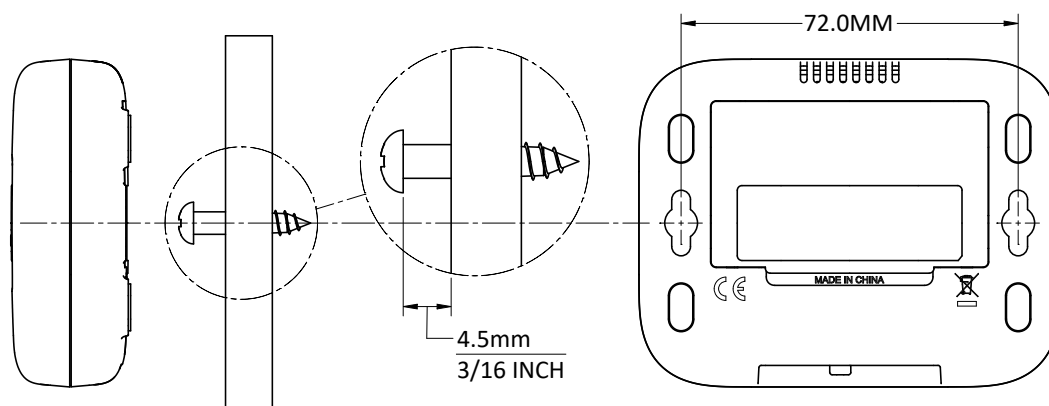
1. Press and keep holding “PROG” button not less than 10 seconds, Green LED will keep On.
2. Green LED will flash twice then Off once reset to factory default is completed. (Red LED will flash twice then Off when the reset process is failed.)
3. Device will also send “leave” command to gateway when removed from Zigbee network.

Notes:

- Please use this procedure only when the network primary controller is missing or otherwise inoperable.
- Device will be excluded from network, all the attributes of all its clusters and configuration settings will reset to factory default. All IR learned and downloaded data will be cleared.

7. Mounting and Placement

- The device should be mounted on an inner wall about 5ft (1.5m) above the floor where it is readily affected by changes of the general room temperature with freely circulating air.
- Before mounting, check the material and structure of the mounting location. If the location does not have the proper material or structure, the ZXT-900 can fall and cause an injury.
- Avoid mounting above or near hot surfaces or equipment (e.g. TV, Heater, Refrigerator). Avoid mounting where it will be exposed to direct sunshine, drafts, or in a laundry room or other enclosed space.
- Better to mount your device where it has no any obstacle or blocked object between the device and your AC / AV Appliances.



- Position the device on wall, level and mark hole positions with pencil.
- Drill holes at marked positions, then tap in supplied wall anchors.
- Insert and tighten mounting screws as above figure.

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8. Technical Specifications

Model Number	BW8613UN (ZXT-900)
RF Frequency	2.4GHz
Zigbee RF Operating Distance	Up to 100m outdoor line of sight, in unobstructed environment
Bluetooth RF Operating Distance	Up to 30m outdoor line of sight, in unobstructed environment
IR Operating Distance	Vertical cone: $\geq 10\text{m} \pm 45$ degree @ LOS indoor and depend on IR protocols
AC IR Status Syn. Distance	Vertical cone: $\geq 5\text{m} \pm 45$ degree @ LOS indoor and depend on IR protocols
LED Indication	Red / Green / Blue
Temperature and Humidity Measurement	Temperature: Measurable range: $0^{\circ}\text{C} \sim 40^{\circ}\text{C}$ Humidity: Measurable range: $0\% \sim 100\%\text{RH}$
Operating Ambient Temperature	$0^{\circ}\text{C} \sim 40^{\circ}\text{C}$, 5-90% RH non-condensing
Storage Temperature	$-10^{\circ}\text{C} \sim 50^{\circ}\text{C}$, 90% RH
Powered Source	USB-C Power 5V 1A
Size	90mm $\times$ 70mm $\times$ 25.5mm
Weight	70g

9. Warnings

- Do not modify the unit in any way.
- Risk of fire; Risk of burns; Risk of electrical shock.
- Don't dispose of electrical appliances as 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.