AEOTEC
BY AEON LABS

DOORBELL GEN5

View the expanded manual:
http://aeotec.com/support

Speaker System
Network LED
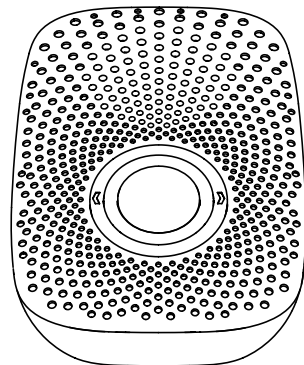Volume −
Red LED
Volume +
Action Button
USB connection port
Wireless Button

**① Aeotec by Aeon Labs Doorbell.**

Your Aeon Labs Doorbell supports playing MP3 music files with a press of this Doorbell. It has a 128MB flash memory that can store up to 800 ringtones. The volume can be adjusted manually via short press on the Volume Button, also you can switch the Doorbell sound to the next via long press on the Volume Button. You may change/update your Doorbell ringtone at any point in time you want by connecting your Doorbell to your PC to update the sound track on your Doorbell's flash memory.

Your Doorbell is a Z-Wave® wireless control product. There is a small Wireless Button, which can trigger the Doorbell on the other side of the wall to play the selected Doorbell music when pressed. This Wireless Button has waterproof housing so it can be used in many weather conditions. The distance of wireless control is about 100 metres outdoors, and has a 2 year battery life that allows at least 10 Doorbell presses every day.

After the Doorbell is paired into your Z-wave network, you can use your controller/gateway/phone application to control its ringing, or configure its advanced functions.
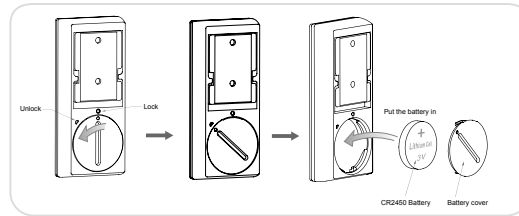
② Familiarize yourself with your Doorbell.

- Action Button
- 80dB Speaker System
- Volume Button
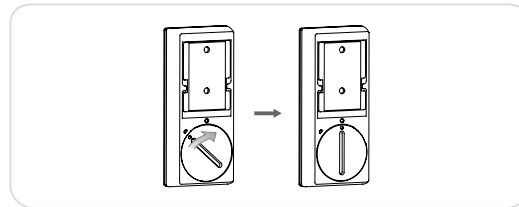- Network LED
- Red LED
- Wireless Button
- USB connection port

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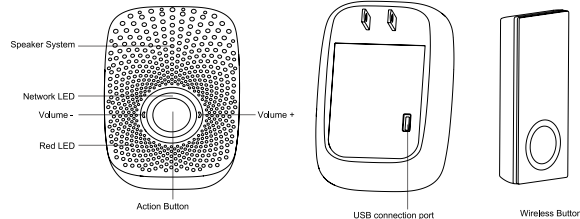
③ Quick start.

◉ Installation for the Wireless Button.

1. Open the Battery cover and put the CR2450 battery into Wireless Button.

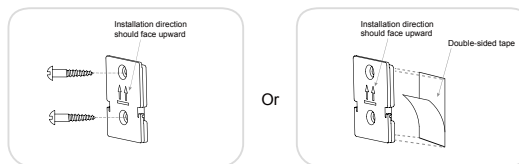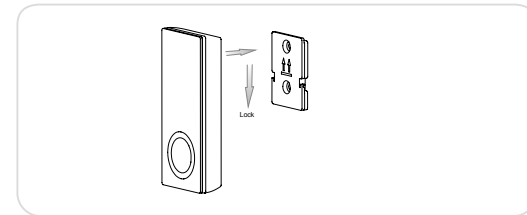Unlock   Lock   Put the battery in
CR2450 Battery   Battery cover

2. Lock the Battery cover.

3. Affix the mount plate to the wall.
You can affix the mounting plate using two 20mm screws or double-sided tape.

Installation direction should face upward
Or
Installation direction should face upward
Double-sided tape

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4. Lock your Wireless Button on the mount plate.

Lock

5. Your installation is complete.
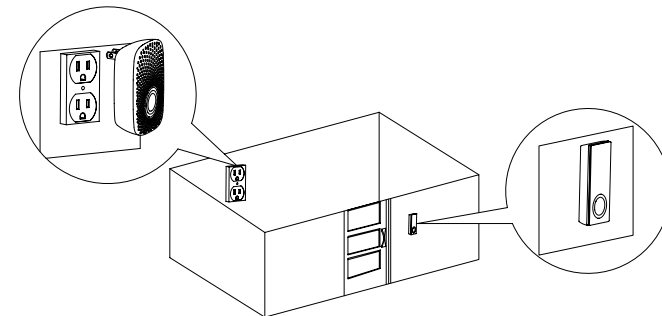
◉ Add/include your Doorbell Receiver to a Z-Wave network.

Getting your Doorbell up and running is as simple as plugging it into a wall socket and adding it to your existing Z-Wave network. The following instructions tell you how to add your Doorbell to your Z-Wave network using an Aeotec by Aeon Labs' Z-Stick or Minimote controller. If you are using other products as your main Z-Wave controller, such as a Z-Wave gateway, please refer to their respective manual that tells you how add new devices to your network.

If you're using a Z-Stick:

1. Decide where you want your Doorbell to be placed and plug it into a wall outlet. Its Network LED will begin to blink.
2. If your Z-Stick is plugged into a gateway or a computer, unplug it.
3. Take your Z-Stick to your Doorbell.
4. Press the Action Button on your Z-Stick. The LED on your Z-Stick should begin to blink slowly.
5. Press the Action Button on your Doorbell.
6. If your Doorbell has been successfully added to your Z-Wave network, its Network LED will no longer blink. If the adding was unsuccessful and the Network LED continues to blink, repeat the steps above.
7. Press the Action Button on the Z-Stick to take it out of inclusion mode.

If you're using a Minimote:
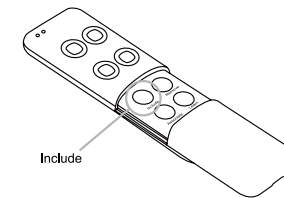
Include

1. Decide on where you want your Doorbell to be placed and plug it into a wall socket. Its Network LED will begin to blink.
2. Take your Minimote to your Doorbell.
3. Press the Include button on your Minimote.
4. Press the Action Button on your Doorbell.
5. If your Doorbell has been successfully added to your Z-Wave network, its Network LED will no longer blink. If the adding was unsuccessful and the Network LED continues to blink, repeat the above steps.
6. Press any button on your Minimote to take it out of inclusion mode.

With your Doorbell now working as a part of your smart home, you'll be able to configure it from your home control software. Please refer to your software's user guide for precise instructions on configuring your Doorbell to your needs.

You're able to adjust your Doorbell's ringtone volume manually by using the "Volume -" or "Volume +" buttons. You can reduce its volume via short press on the "Volume -" button or increase the volume via short press on the "Volume +" button, at the same time the default doorbell music will be triggered to allow you to hear the volume change. If you want to change to the next ringtone, press and hold the Volume button; which will switch the current ringtone to the next one.

⊛ Removing your Doorbell from a Z-Wave network.

Your Doorbell can be removed from your Z-Wave network at any time. You'll need to use your Z-Wave network's main controller (or any other primary controller) to do this, the following instructions tell you how by using an Aeotec Z-Stick or Minimote controller. If you are using other products as your main Z-Wave controller, please refer to the part of their respective manuals that tells you how remove devices from your network.

If you're using a Z-Stick
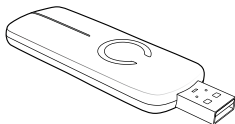
1. If your Z-Stick is plugged into a gateway or a computer, unplug it.
2. Take your Z-Stick to your Doorbell.
3. Press and hold the Action Button on your Z-Stick for 2 seconds then let go: The LED should begin to blink rapidly on your Z-Stick.
4. Press the Action Button on your Doorbell.
5. If your Doorbell has been successfully removed from your network, its Network LED will start to blink. If the removal was unsuccessful, the Network LED will not blink.
6. Press the Action Button on the Z-Stick to take it out of removal mode.

If you're using a Minimote:
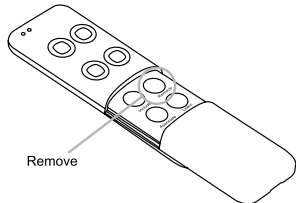
Remove

1. Take your Minimote to your Doorbell.
2. Press the Remove Button on your Minimote.
3. Press the Action Button on your Doorbell.
4. If your Doorbell has been successfully removed from your network, its Network LED on your Doorbell will start to blink. If the removal was unsuccessful, the Network LED will not blink.
5. Press any button on your Minimote to take it out of removal mode.

⊛ Reset your Doorbell.

If your primary controller is missing or inoperable, you may wish to reset all of your Doorbell's settings to their factory defaults. To do this, press and hold the Action Button for 20 seconds and then release it. Your Doorbell will now be reset to its original settings, and the Network LED will be solid for 2 seconds and then start slow blinking as a confirmation.

⊛ Low battery checking for Wireless Button.

If you find the Red LED on the Doorbell is blinking when you press the Wireless Button. You will need to replace the CR2450 battery with a new battery, as the Red LED indicates low battery power.

⊛ Download new ringtones to your Doorbell from PC host.

1. Use the Micro USB cable to connect Doorbell to your PC host. PC host will detect the removable storage after a few seconds and then you will find it in the section of "Device with Removable Storage".
2. Double click the "Removable Disk (G:)" to open it.
3. Now you can copy/drag the doorbell music from the PC hard disk to the Doorbell's flash memory.
4. Wait a few minutes to complete the copying.

Note: Please do not disconnect the USB port until the copying has completed.

④ Technical specifications.

Model Number: ZW056.
Alarm Power: 2.5W.
Max Volume: 80dB.
Operating Temperature: -10℃ to 45℃ for Doorbell, -20℃ to 55℃ for Wireless Button.
Storage Temperature: -20℃ to 70℃.
Wireless Button's Battery: Lithium cell CR2450 3 volt battery.
Supported Audio Formats: MP3 within 320 Kbps or WAV at 1411 Kbps.
Operating Distance: Up to 500 feet/150 metres outdoors in normal mode or 300 feet/100 metres outdoors in ringtone mode.

AC Input:

Version	Input (Standby Power)	Working band
AU	230V 50Hz, Max: 0.5W	921.42MHz
BR	220V 60Hz, Max: 0.5W	921.42MHz
CN	230V 50Hz, Max: 0.5W	868.40MHz
EU	230V 50Hz, Max: 0.5W	868.42MHz
IL	230V 50Hz, Max: 0.5W	916.02MHz
IN	230V 50Hz, Max: 0.5W	865.20MHz
UK	230V 50Hz, Max: 0.5W	868.42MHz
US	120V 60Hz, Max: 0.45W	908.42MHz

⑤ Warranty.

⊃ FCC NOTICE (for USA)

THE MANUFACTURER IS NOT RESPONSIBLE FOR ANY RADIO OR TV INTERFERENCE CAUSED BY UNAUTHORIZED MODIFICATIONS TO THIS EQUIPMENT.SUCH MODIFICATIONS COULD VOID THE USER'S AUTHORITY TO OPERATE THE EQUIPMENT.

STORE INDOORS WHEN NOT IN USE. SUITABLE FOR DRY LOCATIONS. DO NOT IMMERSE IN WATER. NOT FOR USE WHERE DIRECTLY EXPOSED TO WATER.

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. 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.
• Consul the dealer or an experienced radio/TV technician for help.

⊃ Warning

Do not dispose of electrical appliances as unsorted municipal waste, use separate collection facilities.
Contact your local government for information regarding the collection systems available.

⊃ Certifications (regional):

FCC ID: XBAZW056

Intertek
4005555
CONFORMS TO UL STD.60950-1
CERTIFIED TO CSA STD.CC 22.2 No.60950-1-07

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Version: 501005600003-AA   www.aeotec.com

Aeon Labs Doorbell Gen5
Engineering Specifications and Advanced Functions for Developers
(V1.00)

Aeon Labs Doorbell is a switch binary device based on Z-wave enhanced slave library V6.51.06.

The Doorbell supports playing MP3 music files with a press of this doorbell. It has a 16MB flash memory that can store up to 100 ringtones. The volume can be adjusted manually via short press on the Volume Button, also you can switch the doorbell sound to the next via long press on the Volume Button. You may change/update your doorbell ringtone at any point in time you want by connecting your Doorbell to your PC to update the sound track on your Doorbell's flash memory.

It can be included and operated in any Z-wave network with other Z-wave certified devices from other manufacturers and/or other applications. All non-battery operated nodes within the network will act as repeaters regardless of vendor to increase reliability of the network.

It is also a security Z-wave device and supports the Over The Air (OTA) feature for the product's firmware upgrade.

1. Library and Command Classes

1.1 SDK: 6.51.06

1.2 Library
- Basic Device Class: BASIC_TYPE_ROUTING_SLAVE
- Generic Device class: GENERIC_TYPE_SWITCH_BINARY
- Specific Device Class: SPECIFIC_TYPE_SIREN

1.3 Commands Class

	Included Non-Secure	**Included Secure**
Node Info Frame	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_BASIC V1 COMMAND_CLASS_SWITCH_BINARY V1 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2 COMMAND_CLASS_MARK V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_HAIL V1	COMMAND_CLASS_ZWAVEPLUS_INFO V2 COMMAND_CLASS_SECURITY V1 COMMAND_CLASS_VERSION V2 COMMAND_CLASS_MARK V1 COMMAND_CLASS_DEVICE_RESET_LOCALLY V1 COMMAND_CLASS_HAIL V1
Security Command Supported Report Frame	–	COMMAND_CLASS_BASIC V1 COMMAND_CLASS_SWITCH_BINARY V1 COMMAND_CLASS_CONFIGURATION V1 COMMAND_CLASS_MANUFACTURER_SPECIFIC V2 COMMAND_CLASS_ASSOCIATION_GRP_INFO V1 COMMAND_CLASS_ASSOCIATION V2 COMMAND_CLASS_POWERLEVEL V1 COMMAND_CLASS_FIRMWARE_UPDATE_MD V2

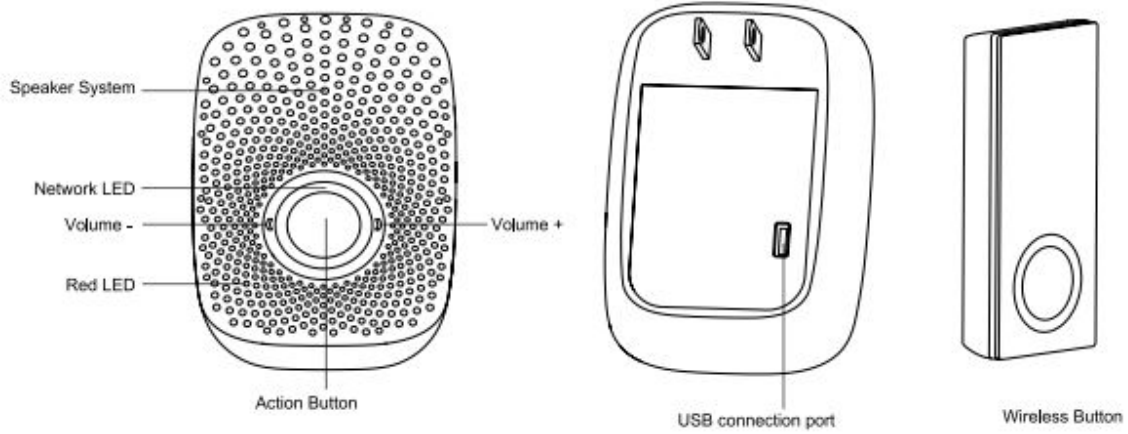## 2. Technical Specifications

Operating distance: Up to 500 feet (150 meters) outdoors.
RF technology support: Wireless Button supports 433MHz wireless control and the Doorbell supports z-wave wireless control.

3. Familiarize yourself with your Doorbell
3.1 Interface

Speaker System
Network LED
Volume -
Red LED
Volume +
Action Button
USB connection port
Wireless Button

4. All functions of each trigger

4.1 Functions of Z-Wave Buttons

Trigger	Description
Click the Action Button one time.	**Let Doorbell into Learn Mode.** **Add Doorbell into Z-Wave Network:** 1. Install Doorbell, and plug it into the socket of AC Power. 2. Let the primary controller into inclusion mode (If you don't know how to do this, please refer to its manual). 3. Press the Action Button. 4. If the inclusion is failed, please repeat the process from step 2. **Remove Doorbell from Z-Wave Network:** 1. Install Doorbell, and plug it into the socket of AC Power. 2. Let the primary controller into exclusion mode (If you don't know how to do this, refer to its manual). 3. Press the Action Button. 4. If the remove is failed, please repeat the process from step 2. **Note**: If Doorbell is removed from Z-wave network, it will be reset to factory default.
Press and hold the Action Button for 20 seconds	**Reset Doorbell to Factory Default:** 1. Make sure the Doorbell is connected to the power supply. 2. If holding time more than one second, the Network LED will fast blink. If holding time more than 20 seconds, Network LED will be on for 2 seconds, which indicates the reset operation is successful, otherwise please repeat from step1 to step2. **Note**: 1. This procedure should only be used when the primary controller is inoperable. 2. Reset Doorbell to factory default settings will: a), remove Doorbell from Z-Wave network state; b), delete the Association setting; c), restore the configuration settings to the default.
Button +/-	Press and hold: Switch the ringtone to the next (configurable).
	Short press: Increase or decrease the volume (configurable).
	Press these 2 buttons once: The Doorbell will enter into Wireless Button pairing mode, the Network Led will fast blink, at this time, press the Wireless Button once, if the Network Led stop fast blinking and you can use the Wireless Button to trigger the doorbell ringtone, which means the pairing is successful. Otherwise, repeat the steps. Note: This procedure should only be used when the complimentary Wireless Button is missing or inoperable and you have another new Wireless Button that would be paired with your Doorbell.

4.2 Functions of Wireless Button.

Trigger	Description
Click one time	1. Trigger to turn on the ringtone. 2. Pair it to Doorbell if the Doorbell is in pairing state. 3. Trigger to send the low battery report to associated nodes in association group 1 (configurable) if the current battery is in low battery state.

5. Special rule of each command

5.1 Z-Wave Plus Info Report Command Class

Parameter	Value
Z-Wave Plus Version	1
Role Type	5 (ZWAVEPLUS_INFO_REPORT_ROLE_TYPE_SLAVE_ALWAYS_ON)
Node Type	0 (ZWAVEPLUS_INFO_REPORT_NODE_TYPE_ZWAVEPLUS_NODE)
Installer Icon Type	0x0F00 (ICON_TYPE_GENERIC_SIREN)
User Icon Type	0x0F00 (ICON_TYPE_GENERIC_SIREN)

5.2 Association Command Class

The Doorbell supports 2 association groups and Max 5 nodes for each group.

Association Group	Nodes	Send Mode	Send commands
Group 1	0	N/A	N/A
	1	Single Cast	When the state of Doorbell (trigger to turn on/off the ringtone) is changed: 1, Set Configuration parameter 80 to 0：Reserved (Default). 2, Set Configuration parameter 80 to 1：Send Hail CC. 3. Set Configuration parameter 80 to 2: Send the Basic Report.
	[2,5]		
Group 2	0	N/A	N/A
	[1,5]	Single Cast	Forward the Basic Set, Switch Binary Set, Switch Multilevel Start Level Change, Switch Multilevel Stop Level Change, Switch Multilevel Set to associated nodes in Group 2 when the Doorbell receives the Basic Set, Switch Binary Set, Switch Multilevel Start Level Change, Switch Multilevel Stop Level Change, Switch Multilevel Set commands from main controller.

5.3 Association Group Info Command Class

5.3.1 Association Group Info Report Command Class

Profile: General: NA (Profile MSB=0, Profile LSB=0)

5.3.2 Association Group Name Report Command Class

Group 1：Lifeline

Group 2：Transmit

5.4 Manufacturer Specific Report Command Class

Parameter	Value
Manufacturer ID 1	0x00

Manufacturer ID 2	0x86
Product Type ID 1	EU=0x00, US=0x01, ANZ=0x02, HK=0x03 IN=Ox09，CN=0x1D, RU=0x1A, JP=0x0A
Product Type ID 2	0x04
Product ID 1	0x00
Product ID 2	0x38

5.5Configuration Set Command Class

7	6	5	4	3	2	1	0
Command Class = COMMAND_CLASS_CONFIGURATION							
Command = CONFIGURATION_SET							
Parameter Number							
Default	Reserved				Size		
Configuration Value 1(MSB)							
Configuration Value 2							
………							
Configuration Value n(LSB)							

Parameter Number Definitions (8 bit):

Parameter Number	Description	Default Value	Size
2	Set the repetitions for playing doorbell ringtone. Value=1 to 100, the range of repetition is 1 to 100. Value =0, ignore. Note: If the time of playing doorbell ringtone is more than 20s, the volume of ringtone will reduce to silence no matter how many repetitions of doorbell ringtone are set.	2	1
5	Set the default doorbell ringtone. Value=1-100, Specify the ringtone as default. Value=others, ignore.	1	1
6	Select a ringtone to play. Value=0, stop playing. Value=1-100, play the specified ringtone. Value=other, ignore.	0	1
7	Control items: Value=1, play Value=2, stop Value=3, pause Value=4, Next Value=5, Previous Other, ignore	0	1
8	Set the volume of ringtone. Value=0-10, set the volume Value=other, ignore	10	1

10	Define functions of "Button -" and "Button+". Value=0, "Button -" is previous, "Button+" is next. Value=1, Swap functions of the two buttons.	0	1
11	Define functions of "Button -" and "Button+" when short pressing and long pressing it. Value=0, short pressing changes volume, long pressing changes default ringtone. Value=1, long pressing changes volume, short pressing changes default ringtone.	0	1
42	Get Wireless Button battery status. Value=0x00, Normal battery level. Value=0xFF, Low battery level. Set Value=0x00, Cancel low battery alarm.	0	1
80	Enable/disable to send notifications to associated devices (Group 1) when the state of Doorbell is changed (0=nothing, 1=hail CC, 2=basic CC report).	0	1
81	Enable/disable to send notifications to associated devices (Group 1) when the Wireless Button's battery is in low battery state	1	1
241	Pair the Wireless Button with Doorbell. Value=0x55555555, Start the Wireless Button pairing mode and the blue Led will blink slowly, short press the Wireless Button once, if the blue Led change to be solid, which means the pairing is successful. Otherwise, repeat the steps. It will automatically exit the pairing mode after 8s if there is no pressing action of the Wireless Button. Note: You can send this configuration Get CC to ask the pairing result: If configuration report value=0x00000000, which means the pairing is failed. If configuration report value =0xFFFFFFFF, which means the pairing is successful.	0	4
252	Enable/disable Lock Configuration (0 =disable, 1 = enable).	0	1
255	1. Size=0x01，Configuration Value=0x00: Reset configuration setting. 2. Size=0x04，Configuration Value=0x55555555: Reset Factory setting.	0	1