



ZigBee Remote Control ZRC

User Manual



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WARRANTY

The device supplied to the buyer and/or the recipient is guaranteed by CLEODE against any malfunctions originating from a design and/or manufacturing flaw, for a period of twelve (12) months following delivery. The buyer and/or recipient is (are) responsible for proving the existence of the said defects or flaws. This warranty is applicable in accordance with articles 1641 to 1648 of the French Civil Code and in compliance with the French statutory warranty. The warranty covers the replacement free of charge of devices and parts affected by a design and/or manufacturing flaw excluding conspicuous defects in the device that are covered by the buyer and/or the recipient.

In order to invoke the warranty, the buyer must immediately send written notice to CLEODE of the flaws that it attributes to the device. It must enable CLEODE to have access to the device to observe these defects and repair them. The warranty provided by CLEODE is strictly limited to the equipment provided and shall only have for effect the replacement or repair, at CLEODE's expense, on its own premises, of all devices or parts that are not functioning as a result of defects or flaws. CLEODE reserves the right to modify the devices in order to comply with the warranty.

The warranty does not apply to replacement or repairs that may result from normal wear and tear of devices, systems or products, damage or accidents resulting from negligence, failure to supervise or maintain, or incorrect use of the devices, systems and/or products.

The maintenance service is provided by CLEODE with all reasonable care possible and in compliance with the current state of the arts.

The exchange of parts or repairs performed under the warranty cannot result in extending the length of the warranty. In no event can the unavailability of the device due to servicing give rise to compensation for any reason whatsoever. The seller is released from all obligations relating to the warranty if the product or device has been modified without prior written consent, or if original parts have been replaced by parts which it has not manufactured without prior consent. If unforeseen damage is caused by the device, it is expressly agreed that the seller can only be liable for the reimbursement of monies received for the purchase of the device if it has been destroyed. Under no circumstances can the seller be held liable for indirect or contingent damage. The seller is released from any liability and the buyer waives any rights against it if an accident or direct or indirect damage is caused to the buyer following a defect, incorrect usage, incorrect maintenance or normal wear of the device sold.

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TABLE OF REVISIONS

Version	Authors(s)	Version description	Date
0.1	CLEODE	Initial version	04/09/2009
1.0	CLEODE	Validated document	04/09/2009
1.1	CLEODE	Add Technical features chapter	24/09/2009
2.0	CLEODE	Validated document	24/09/2009
2.1	CLEODE	Update to the ZRC 5 buttons	16/06/2011
3.0	CLEODE	Validated document	07/07/2011
3.1	CLEODE	Put in conformity	14/09/2011
4.0	CLEODE	Validated document	14/09/2011

REFERENCE DOCUMENTS

N°	Document	Description
[1]	ZigBee_Cluster_Library_Public	Spécification de la Zigbee Cluster Library
[2]	ZigBee_Home_Automation_Profile	Spécification du profile Home Automation
[3]	ZigBee_Specification	Spécification de la norme ZigBee

I INTRODUCTION

I.1 ZIGBEE REMOTE CONTROL PRESENTATION

The ZRC allows a ZigBee™ user to issue 5 commands switch On/Off on the network ZigBee™.

ZRC is also able, with its embedded temperature sensor, to send a temperature value on the network.

The ZRC has this form:

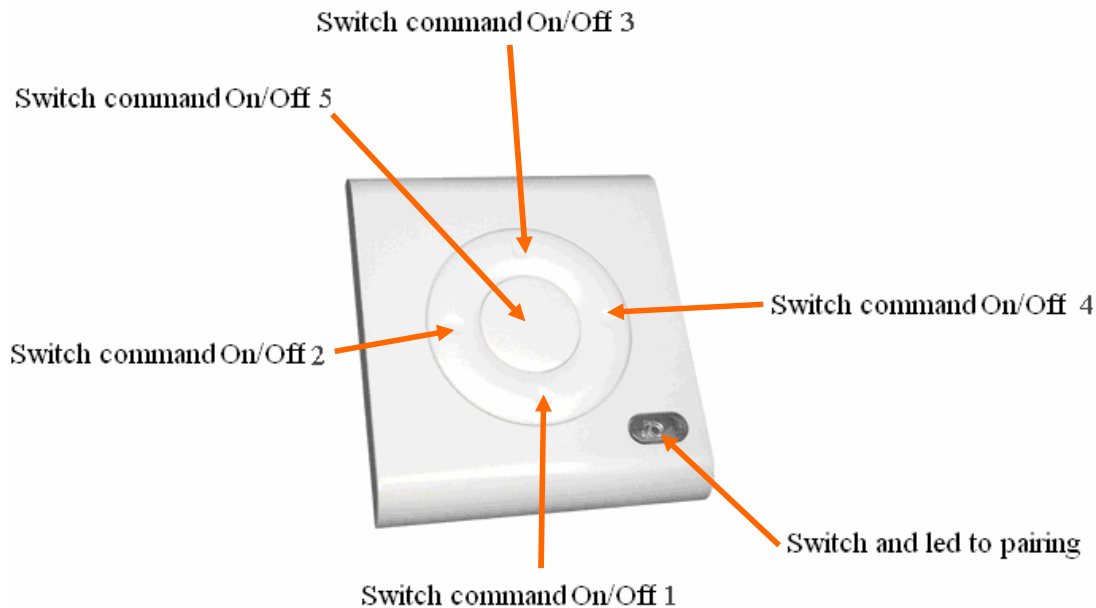


Figure 1 : Remote control presentation



The switch module Zigbee™ works in conjunction with a Zigbee coordinator™ compatible stack pro 2007.

CLEODE also markets Coordinators Zigbee™.

Contact : support@cleode.com ou Web : www.cleode.fr for more information

I.2 COPYRIGHT

The CLEODE trademark and the CLEODE logo are properties of CLEODE SA, France. This document also refers to trademarks and other product names that are registered trademarks of their respective owners.

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II REMOTE CONTROL DESCRIPTION

II.1 ZIGBEE PRESENTATION

The ZRC is based on six applications defined in the ZigBee™ Home Automation profile [2]:

- 5 applications: *On/Off Switch*.
- 1 application: *Temperature Senso*.

This node is fully compliant with the ZigBee PRO 2007 and Home Automation profile. For more detail on the data exchange between device and network, see documents [1], [2] and [3].

II.2 ON/OFF SWITCH APPLICATION

The switch On/Off command is made by sending a toggle command each time a button is pressed.

II.2.1 ON/OFF SWITCH APPLICATION DESCRIPTION

- Device ID : On/Off Switch
- Endpoint number: 1, 2, 3, 4, 5
- Clusters :

Server	Client
Basic (0x00)	On/Off (0x06)
Power_Configuration (0x01)	/
Identify (0x03)	/
Alarms (0x09)	/

The application switch control is identical to the five switches, only the Endpoint number changes.

II.2.2 CLUSTER DESCRIPTION

This is a brief description of clusters and attributes which are implemented in the ZRC. For more detail on these, see document [1].

- Basic cluster :

This cluster is used to determine basic information about the device.

Attribute	Attribute ID
ZCLVersion	0x0000
ApplicationVersion	0x0001
StackVersion	0x0002
HWVersion	0x0003
ManufacturerName	0x0004
ModelIdentifier	0x0005
DateCode	0x0006
PowerSource	0x0007
LocationDescription	0x0010
PhysicalEnvironment	0x0011
DeviceEnabled	0x0012
AlarmMask	0x0013

- Power Configuration cluster:

This cluster is used to specify the min threshold of battery level by setting the *BatteryVoltageMinThreshold* attribute value.

Attribute	Attribute ID
BatteryAlarmMask	0x0035
BatteryVoltageMinThreshold	0x0036

- Identify cluster :

This cluster is used to put a device into an Identification mode. By writing the *IdentifyTime* attribute value, the user asks the device to blink the light, during a number of seconds specified by this value.

Attribute	Attribute ID
IdentifyTime	0x0000

- Alarms clusters:

This cluster is used to signal an alarm. In the case of ZRC, only the low battery power level is processed. If the battery power level is too low (under 2,4V) the *AlarmCount* value changes to 1 and a command message is send to coordinator.

Attribute	Attribute ID
AlarmCount	0x0000

II.3 TEMPERATURE SENSOR APPLICATION

The temperature measurement is made by an embedded sensor. The accuracy is +/- 0,5°C.

II.3.1 TEMPERATURE SENSOR APPLICATION DESCRIPTION

- Device ID : Temperature Sensor
- Endpoint : 6
- Clusters :

Côté serveur	Côté client
Basic (0x00)	/
Identify (0x03)	/
Temperature Measurement (0x0402)	/

II.3.2 CLUSTER DESCRIPTION

- Basic cluster :

This cluster is described in the § II.2.2.

- Identify cluster :

This cluster is described in the § II.2.2.

- Cluster Temperature Measurement:

This cluster is used to configure the measurement of temperature, and reporting temperature measurements

Attribut	Identifiant de l'attribut
MeasuredValue	0x0000
MinMeasuredValue	0x0001
MaxMeasuredValue	0x0002
Tolerance	0x0003

Among the attributes of the cluster TemperatureMeasurement, the attribute MeasuredValue passes on its value in a following way:

- Every hour if the temperature does not evolve furthermore of 1°C
- At the end of 2 minutes if the temperature changed furthermore of 1°C

The configuration of the parameters of report (time min, time max, reportable change) is completely configurable by the user.

MeasuredValue: measured value in °C * 100.

III INSTALLATION AND NETWORK ASSOCIATION

III.1 INSTALLATION

III.1.1 WALL INSTALLATION

ZRC can be installed on a wall with two ways:

- 1) With a double-sided tape (not provided)
- 2) With two M3 screws (not provided)

III.1.1.1. DOUBLE-SIDED TAPE INSTALLATION

To mount the ZRC with a double-sided tape, follow this:

- 1) **Stick** a double-sided tape on the ZRC bottom
- 2) **Dust** the wall
- 3) **Mount** the ZRC on the wall

III.1.1.2. SCREW INSTALLATION

To mount the ZRC on a wall with screws, follow this:

- 1) **Put** ZRC at a correct location and **note** the position of the top/left angle
- 2) **Put** the drilling template like the following figure

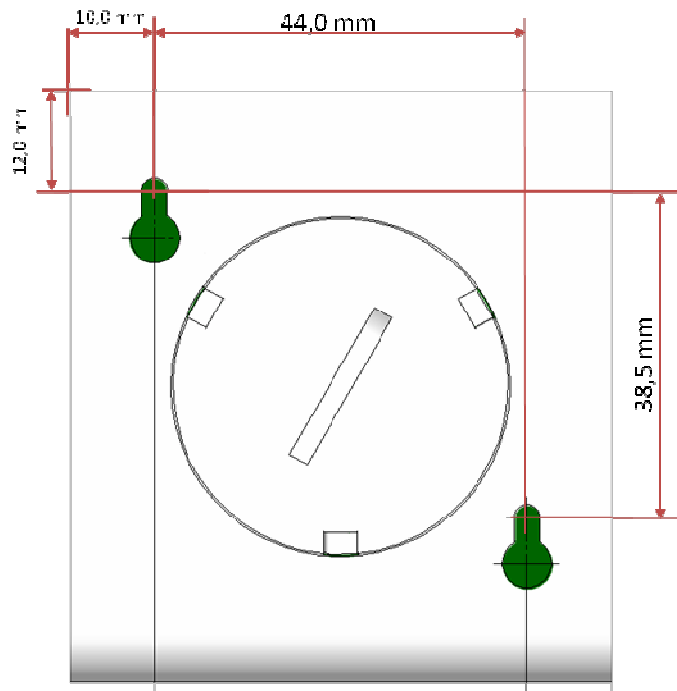


Figure 2 : Drilling template

- 3) **Drill two holes** in the wall according screws and dowels
- 4) **Screw** the screws with a 3mm space between the screw head and the wall

- 5) **Put** ZRC on the wall by aligning the holes on the bottom to the screws
- 6) **Push** ① ZRC to the wall and **move** it to the bottom ② to finish the installation.

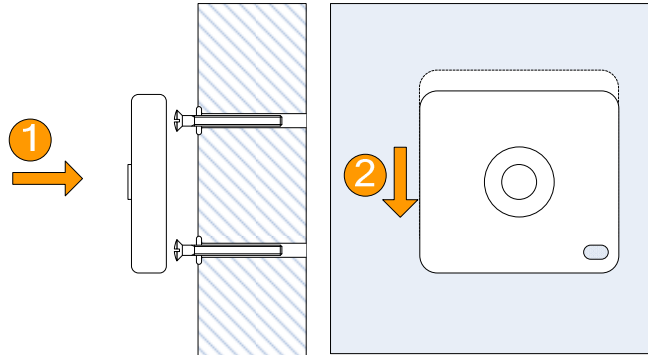


Figure 3 : Wall installation

III.1.2 CHANGE THE BATTERY

To change the batteries in ZRC, follow this:

- 1) **Open** the box
- 2) **Place the battery** in the battery holder with careful with battery polarity.
- 3) **Close** the box

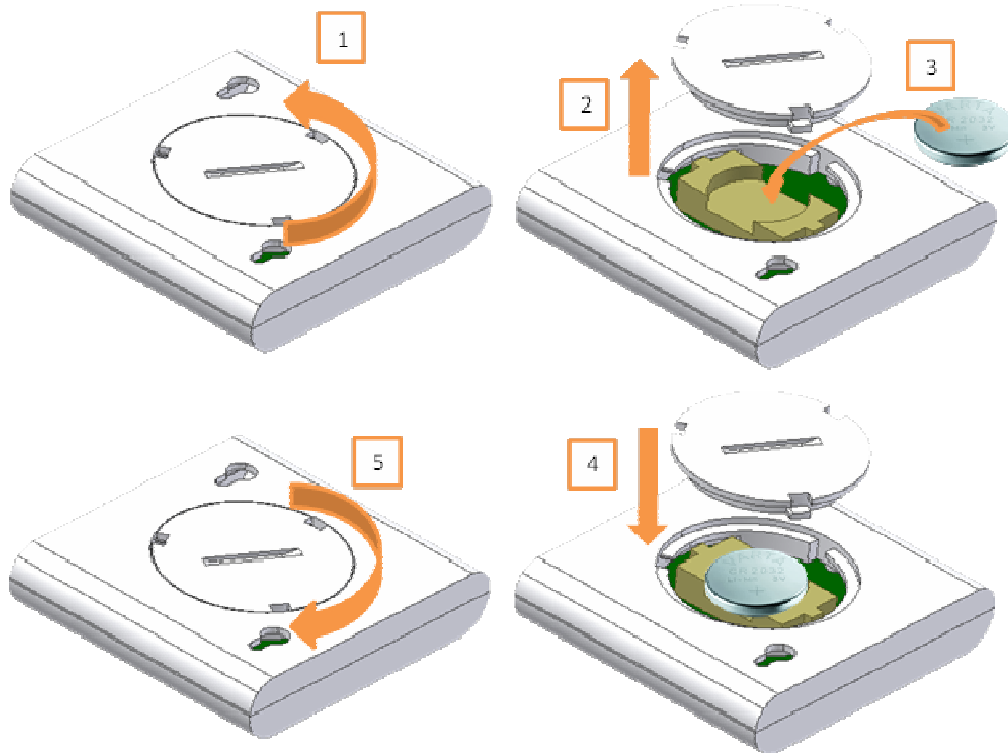


Figure 4 : Battery changing

III.2 NETWORK ASSOCIATION

At power supply, ZRC tries to connect to a coordinator or a router. This process takes few seconds if a coordinator or a router is joinable. In the case of not, ZRC goes to sleep and retries every fifteen minutes.

Otherwise, the user can press the transparent switch during 3s to initiate a new association process. When the user does this, the red light is flashing during the process.

If ZRC is associated, the red light stays on during 2 seconds.

III.3 RESET DEVICE

If necessary, the user can reset the device by press the transparent switch for 5 seconds. The red light flashes 2 times and turns off. Then, ZRC reset and tries to join a network.

IV TECHNICAL FEATURES

Weight	40 g (without battery)
Power Supply	1 battery : CR2032
Battery Life	> 1 year
Transmission range	100 m outdoor 30 m indoor
Managed channels (frequency)	16 ZigBee™ channels (2.405 to 2.480 GHz)

REPAIR AND MAINTENANCE

Defective equipments shall be first reported to the CLEODE support team in order to be assigned an RMA number. Be prepared to state your name, company and the serial number of the defective item to the support personnel.

The item shall then be returned to CLEODE with the following documents:

- The RMA number
- A copy of the delivery slip
- A detailed description of the default and the test context

The maintenance period is typically four (4) weeks starting from the date of reception of the equipment at the CLEODE headquarters.

Remark : A FAQ (Frequently Asked Questions) is available on the www.cleode.com web site.



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