qubino
Your little magic for the smartest home.

Flush RGBW Dimmer

ORDERING CODE	Z-WAVE FREQUENCY
ZMNHWD1	868,4 MHz
ZMNHWD2	921,4 MHz
ZMNHWD3	908,4 MHz
ZMNHWD4	869,0 MHz
ZMNHWD5	916,0 MHz
ZMNHWD8	865,2 MHz

Introduction

Qubino Flush RGBW module is used to control RGB/RGBW strips and LED strips or bulbs to create countless colour options and has 5 special scene effects. It can also control halogen lights and fans. Its extremely small size allows for easy installation behind wall sockets and switches. Controlled devices may be powered by 12 or 24 VDC. All IN and OUT terminals may be user configured for LED control or 100 kΩ signal readouts.

Supported control types

- Push button (mono stable switch)
- Bi stable switch

Installation

- Before the installation disconnect power supply (12-24VDC)
- Connect the module according to electrical diagram.
- Pull the antenna out of the holder
- Locate the antenna far from metal elements (as far as possible).
- Do not shorten the antenna.

Danger of electrocution!

- Module installation requires a great degree of skill and may be performed only by a qualified and licensed electrician.
- Even when the module is turned off, voltage may be present on its terminals. Any works on configuration changes related to connection mode or load must be always performed by disconnected power supply (disable the fuse).

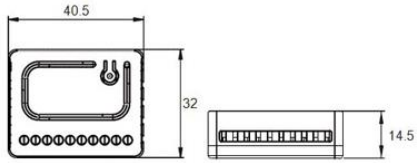
Note!

Do not connect the module to loads exceeding recommended values. Connect the module only in accordance to the below diagrams. Improper connections may be dangerous.

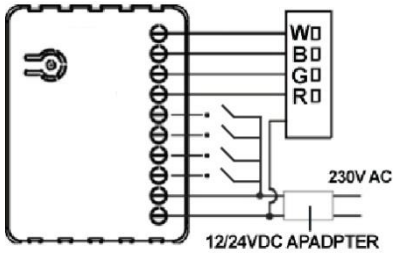
Package Contents

R.G.B.W. Color LED Dimmer
1x User Manual

Product Overview



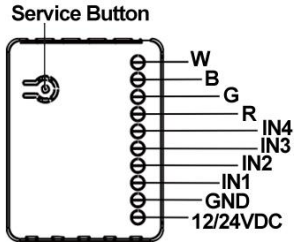
Electrical Diagram



Notes for diagram:

12/24VDC - Power supply	IN4 - Potential free / 100KΩ
GND - Power supply ground	R - Output assigned to IN1
IN1 - Potential free / 100KΩ	G - Output assigned to IN2
IN2 - Potential free / 100KΩ	B - Output assigned to IN3
IN3 - Potential free / 100KΩ	W - Output assigned to IN4

Module Inclusion (Adding to Z-Wave Network)



1. Connect the R.G.B.W. Color LED Dimmer according to wiring diagram.
   - First, connect RGBW strip, outputs (R,G,B,W) RGB/RGBW/LED diodes, halogen lights, or inputs (IN1~IN4).
   - Second, connect the power supply.
   If the device is properly connected, the RGBW strip will blink once. Note that the device must be powered by a dedicated stabilized power adapter
2. In the status of the factory default (Not Paired), the red light and green light will blink by turns, eg. red, green, red, green, etc..
3. Include the R.G.B.W. Color LED Dimmer into the Z-wave network, press service button.
   3 times in 2 seconds. If the device is properly included, the green light will remains on.
4. Exclude the Flush RGBW Dimmer into the Z-Wave network, press 3 times in 2 seconds. If the device is properly excluded, the green light will blink and the data will be reset to the factory default values.
5. Please pull out the antenna and keep it at 90 degree to enahnce the RF signals.
6. Support auto inclusion: Install the device, connect with the power, and the auto inclusion function will work in about 2 minutes.
7. Support remote exclusion: Through configuration setting. Please refer to the following table.

ID	Size	Value
240	1 byte	1

Warning!

1. The RGBW Controller is suggested to operate in low voltage circuits of 12VDC or 24VDC. Connecting higher voltage load may result in the RGBW Controller damage.
   Please refer to the following table.

Current of RGBW Strip	Stranded Wire
High current	18 AWG
Low current	22 AWG

2. The RGBW Controller must be powered by the same voltage as the connected light source. I.e. if controlling 12V LED strip, the module must be connected to 12V power supply. Similarly, if controlling 24V RGBW strip, the RGBW Controller must be powered by 24V voltage supply.
3. The RGBW Controller has 100KΩ input. There is no 100KΩ output. Output is controlled by PWM at 488Hz.
4. The RGBW Controller must be powered by 12VDC or 24 VDC stabilized power supply with outputs load capacity matched to loads voltage.
5. In case of connecting long RGBW/RGB/LED strips voltage drops may occur, resulting in lower light brightness further from R/G/B/W outputs. To eliminate this effect it's recommended to connect few shorter strips in parallel connection instead of one long strip connected serially.
   Maximum recommended wire length, used to connect R/G/B/W outputs with a RGBW/RGB/LED strip is 10 m. Observe connected loads manufacturer recommendations towards connection wire diameter.
6. For connection of IN1~IN4, it is suggested that you connect the 4 inputs individually to the same type of deivce. The devices can be as follows: the rotary swtich, the toggle switch, or the push switch.
7. When the Controller is damaged or lost, and you have already transferred the control function to an external control switch before, the product can be normally operated. In other case, please purchase a new Controller, press the Include/Exclude Button three times to exclude the device, and then include the device with the original installation steps, the device can be restored to normal operation. Please note that re-including the product will reset the data to the default values. Use this procedure only in the event that the network primary controller is missing or otherwise inoperable.

Glossary of terms

Include/Exclude Button - Inclusion/exclusion, press 3 times in 2 second.

Configuration Parameters

Parameter no. 1 – Input switch type

Available config. parameters (data type is 1 Byte DEC):

- default value 1
- 1 - bi-stable switch type
- 2 - mono stable (push button) switch type

NOTE: Please power cycle the device when parameter is changed.

Parameter no. 2 – Switch mode

Available config. parameters (data type is 1 Byte DEC):

- default value 1
- 1 - Normal Mode
- 2 - Brightness Mode
- 3 - Rainbow Mode

NOTE: Using this parameter, it is possible to select various modes of RGBW Dimmer operation.

Parameter no. 3 – Auto scene mode set

Available config. parameters (data type is 1 Byte DEC):

- default value -
- 1 - Ocean
- 2 - Lightning
- 3 - Rainbow
- 4 - Snow
- 5 – Sun

NOTE: Activation of the programmed scene changing color shades.

Parameter no. 4 – Auto scene duration

Available config. parameters (data type is 1 Byte DEC):

- default value 3
- 1 - 127 delay duration is from 1s to 127s
- 128 - 255 delay duration is from 1min. to 127min.

NOTE: Using this parameter, it is possible to change Auto scene mode duration

Associations

The Module can be set 1 auto-report ID in Group 1.

The Module will send BASIC_REPORT to device associated in Group 1 when correspond Device is activated.

LED indication

Status	LED Signal	Remark
Not Paired	Solid Red	
Paired up	Solid Green	
Inclusion	Blinking Green (Interval: 1	Touch three times (Must release in 2 sec.)
Exclusion	Blinking Green (Interval: 1 sec.)	Touch three times (Must release in 2 sec.)
Auto inclusion	Blinking Green (Interval: 1 sec.)	Connect/disconnet power to connect with Z-wave network
Hardware button		1. Add device 2. Delete device 3. Restore to defult value 4. Set association
Input (I1~I4)		Control RGBW channel(I1:R ~I4:W)

Input type	Remark
Momentary	Monostable or push button switch
Toggle	Bistable switch
Toggle w/Memory	**ON:** Active for closing terminals **OFF:** Active for opening terminals

Input operating mode	Remark
Normal	Each given switch key assigned to one output channel
Brightness	All channels are controlled together
Rainbow	Transition through all colours spectrum (Operates on RGB channels only)

Device Application

The RGBW Controller may control:

- 12 / 24VDC powered RGB strips
- 12 / 24VDC powered RGBW strips
- 12 / 24VDC powered LED strips, bulbs, etc.
- 12 / 24VDC powered halogen lights

Additional features:

- 100KΩ sensors signal readouts
- 100KΩ potentiometer signal readouts, and managing outputs accordingly

- controlled by momentary or toggle switches

The RGBW Controller may control:

- 12 / 24VDC powered RGB strips
- 12 / 24VDC powered RGBW strips
- 12 / 24VDC powered LED strips, bulbs, etc.
- 12 / 24VDC powered halogen lights

Additional features:

- 100KΩ sensors signal readouts
- 100KΩ potentiometer signal readouts, and managing outputs accordingly
- controlled by momentary or toggle switches

Technical Specifications

Item	Description
Power Supply	12 / 24V DC
PWM output frequency	488Hz
Rated output power	8A for single output channel,13A at max.(3,25A for R.G.B.W. single output channel is suggested)
Max load (e.g. halogen bulbs)	At 12V- 156W combined At 24V- 312W combined
LED Indicator	Red/Green *1
Operation temperature	0℃~40℃
Distance	up to 30 m indoors
Dimensions (W x H x D)	40.5 mm x 32 mm x 14.5 mm
Package dimensions (W x H x D)	79 mm x 52 mm x 22 mm
Weight	28 g
Gross weight (packaging included)	34 g
Electricity consumption	12V: 0.48W; 24V: 0.72W
For installation in boxes	Ø ≥ 60 mm or 2M

*Specification is subject to change without prior notice.

Multilevel Switch Device Information

GENERIC_TYPE_SWITCH_MULTILEVEL
SPECIFIC_TYPE_POWER_SWITCH_MULTILEVEL

Multilevel Switch Command Class

COMMAND_CLASS_ZWAVEPLUS_INFO_V2
COMMAND_CLASS_VERSION_V2
COMMAND_CLASS_MANUFACTURER_SPECIFIC_V2
COMMAND_CLASS_DEVICE_RESE
T_LOCALLY,
COMMAND_CLASS_POWERLEVEL
_V1
COMMAND_CLASS_BASIC_V1
COMMAND_CLASS_SWITCH_MULTILEVEL_V2
COMMAND_CLASS_SWITCH_COLOR_V2
COMMAND_CLASS_CONFIGURATION_V1
COMMAND_CLASS_ASSOCIATION_V2
COMMAND_CLASS_ASSOCIATION_GRP_INFO_V1
COMMAND_CLASS_SWITCH_BINARY_V1
COMMAND_CLASS_FIRMWARE_UPDATE_MD_V2

Detailed description of each command class

ZWAVEPLUS INFO command class

The Z-Wave Plus Info Get Command is used to get additional information of the Z-Wave Plus device in question.

BASIC command class

The module will be turned ON or OFF after receiving the BASIC_SET command.

To be turned on:

[Command Class Basic , Basic Set, Basic Value = 0x01~0x63 in percentage; FF set to last value]

To be closed:

[Command Class Basic , Basic Set, Basic Value = 0x00]

SWITCH MULTILEVEL command class

The module will be turned ON or OFF after receiving the SWITCH_ MULTILEVEL_SET command.

To be turned on:

[Command Class Multilevel , Multilevel Set, Basic Value = 0x01~0x63 in percentage; FF set to last value]

To be closed:

[Command Class Multilevel , Multilevel Set, Basic Value = 0x00]

SWITCH COLOR command class

This class is used for Color setting.

See the following table for configuration variables:

Capability ID	Color	State Level
0 (0x00)	White	0x00-0xFF
2 (0x02)	Red	0x00-0xFF
3 (0x03)	Green	0x00-0xFF
4 (0x04)	Blue	0x00-0xFF

DEVICE RESET LOCALLY command class

The Device Reset Locally Command Class is used to notify central controllers that a Z-Wave device is resetting its network specific parameters.

VERSION command class

The user can enquire the version of the unit using VERSION_GET command. It will return

VERSION_REPORT Command.

Version Report Command:

[Command Class Version, Version Report, Z-Wave Library Type, Z-Wave Protocol Version, Z-Wave Protocol Sub Version, Application Version, Application Sub Version]

MANUFACTURER SPECIFIC command class

The user can use the Manufacturer Specific Get Command to request manufacturer specific information from another node.

Regulatory Compliance

CE Caution

Electromagnetic compatibility and Radio spectrum Matters (ERM); Short Range Devices (SRD); Radio equipment to be used in the 25 MHz to 1,000 MHz frequency range with power levels ranging up to 500 mW; Part 2: Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive.

WEEE Information

For EU (European Union) member users:

According to the WEEE (Waste electrical and electronic equipment) Directive, do not dispose of this product as household waste or commercial waste. Waste electrical and electronic equipment should be appropriately collected and recycled as required by practices established for your country.

For information on recycling of this product, please contact your local authorities, your household waste disposal service or the shop where you purchased the product.

Z-Wave Plus

This product 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

Goap d.o.o. Nova Gorica
Ulica Klementa Juga 007
5250 Solkan
Slovenia
E-mail: info@qubino.com
Tel: +386 5 335 95 00
Web: www.qubino.com

Date: 6.1.2017
Document: Qubino_Flush RGBW Dimmer PLUS user manual_V1.1_eng