

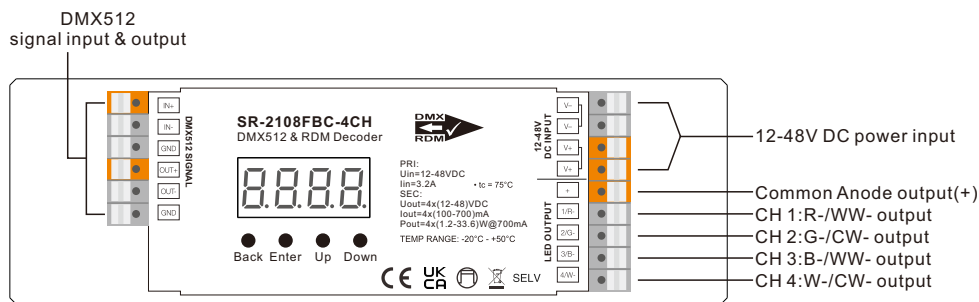
DMX2CC Dimmer 4CH

70060029



Important: Read All Instructions Prior to Installation

Function introduction



Product Data

Input Voltage	Output Current	Output Voltage	Output Power	Remarks	Size(LxWxH)
12-48VDC	100-700mA selectable with 10mA increment	3-12V @ 12V input, 3-24V @ 24V input, 3-36V @ 36V input, 3-48V @ 48V input	4x(1.2-33.6)W @700mA	Constant Current	170x53.4x28mm

- DMX decoder & master mode, RDM function
- Digital display to show data directly, easily to set and show DMX address
- Total 4 constant current output channels, common anode. DMX channel quantity from 1CH-4CH settable
- Constant current output, 100-700mA selectable through buttons and digital display or through RDM
- Output dimming curve gamma value from 0.1 ~ 9.9 settable
- DMX personality can be set, auto-addressing function
- Startup behavior can be set via RDM
- DMX signal input & output are isolated, anti-surge protection
- IP20

Safety & Warnings

- DO NOT install with power applied to device.
- DO NOT expose the device to moisture.

Operation

Before you do other settings, please set the device to be Master or Decoder mode.

run1 = DMX Decoder mode, **run2** = DMX Master mode(stand alone).

Keep on clicking Down button, to get run1 or run2, then click Enter, then click Down button to choose 1 or 2, then click Back button.

After choose run1 or run2, please power off and power on again the device.

I. For run2 DMX Master mode: After power on the device, if keep on clicking Up button, you will find below menu on display:

0000 Means brightness for each output PWM channel. First 1 means PWM output channel 1 and it is selectable from 1 to 4 by clicking "UP" or "Down" button. Second 01 means brightness level, click "Enter" button, the display flashes, then click "UP" or "Down" button to select from 00-99-FL, which means 0%-99%-100% brightness, then click "Back" button to confirm.



P-XXX Means programs , total 32 programs.

B-XX Means RGB running effect's brightness, total 1~8 levels brightness

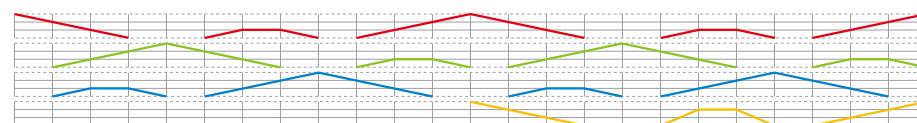
SP-X Means effect play speed. total 1~9 levels speed.

P-XX means RGBW color changing modes, total 32 programs:

- 00- RGBW off
- 01- Static red (Output Channel 1)
- 02- Static green (Output Channel 2)
- 03- Static blue (Output Channel 3)
- 04- Static white (Output Channel 4)
- 05- Static yellow (50% red+50% green)
- 06- Static orange (75% red+25% green)
- 07- Static cyan (50% green+50% blue)
- 08- Static purple (50% blue+50% red)
- 09- Static white (100% red+100% green+100% blue)
- 10- RGBW 4 channels, FADE In & FADE Out as diagram:



11- RGBW 4 channels, FADE In & FADE Out as diagram:



12- RGBW 4 channels, FADE In & FADE Out as diagram:



13- RGBW 4 channels, JUMP In & JUMP Out as diagram:



14- RGBW 4 channels, FADE In & JUMP Out as diagram:



15- RGBW 4 channels, JUMP In & FADE Out as diagram:



- 16- RGBW 4 colors strobe
- 17- RGB Mix White (100% red+100% green+100% blue) + 4th channel W (100% W) strobe
- 18- 8 colors FADE OUT & FADE IN (red, orange, yellow, green, cyan, blue, purple, white (4th channel) FADE OUT & FADE IN)
- 19- 8 colors jump changing (red, orange, yellow, green, cyan, blue, purple, white (4th channel) jump changing)
- 20- 8 colors strobe (red, orange, yellow, green, cyan, blue, purple, white (4th channel) strobe)
- 21- Red-white (100% red+100% green+100% blue)-W (4th channel) circle gradual changing
- 22- Green-white (100% red+100% green+100% blue)-W (4th channel) circle gradual changing
- 23- Blue-white (100% red+100% green+100% blue)-W (4th channel) circle gradual changing
- 24- Red-orange-W (4th channel) circle gradual changing
- 25- Red-purple-W (4th channel) circle gradual changing
- 26- Green-yellow-W (4th channel) circle gradual changing
- 27- Green-cyan-W (4th channel) circle gradual changing
- 28- Blue-purple-W (4th channel) circle gradual changing
- 29- Blue-cyan-W (4th channel) circle gradual changing
- 30- Red-yellow-green-W (4th channel) circle gradual changing
- 31- Red-purple-blue-W (4th channel) circle gradual changing
- 32- Green-cyan-blue-W (4th channel) circle gradual changing

run2 Means the device at run2 mode (DMX master, standalone).

To make a setting is like this: Up/Down--- Enter--- Up/Down---Back

II. For run1 DMX decoder mode: After power on the decoder, if keep on clicking Up button, you will find below menu on display:

DMX signal indicator ● :: When DMX signal input is detected, the indicator on the display following after **A** turns on red **A.XXX**, if there is no DMX signal input, the indicator will not turn on, and the character **A** will flash.

A.XXX Means DMX address. factory default setting is 001.

BEXX Means Bit (8bit or 16bit). factory default setting is 16bit

SB-X Means the the state of the device after a restart or when it is offline, factory default setting is sb-0

GAXX Means output dimming curve gamma value, factory default setting is ga 1.5

AAoB,, **8do2** Means DMX personality, factory default setting is 4d.01

C1XX Means output current of channel 1, factory default setting is C1.10, available setting range is 10-70 (100-700mA)

C2XX Means output current of channel 2, factory default setting is C2.10, available setting range is 10-70 (100-700mA)

C3XX Means output current of channel 3, factory default setting is C3.10, available setting range is 10-70 (100-700mA)

C4XX Means output current of channel 4, factory default setting is C4.10, available setting range is 10-70 (100-700mA)

run1 Means the device at run1 mode (DMX decoder).

By holding button Back + Enter together at the same time over 5 seconds until the display go off, it will restore default settings.

1. Firmware OTA update:

This function can be used when there is a firmware update from the manufacturer, the update can be executed through a Windows computer and an USB to serial port converter, the converter will connect the computer and the decoder's hard wire DMX port. A software RS485-OTW on the computer will be used to push the firmware to the decoder.

Connect the computer and the decoder through the USB to serial port converter, if you need to update multiple decoders' firmware, connect the converter to first decoder's DMX port, then connect other decoders to the first decoder in daisy chain through the DMX port. Please do not power on the decoders.

Run the OTA tool RS485-OTW on the computer, select the correct communication port "USB-SERIAL", baudrate "250000", and data bit "9", use default settings for other configurations. Then click "file" button to select the new firmware from the computer, then click "Open Port", the firmware will be loaded. Then click "Download Firmware", the right side state column of the OTA tool will show "send link". Then power on the decoders before "wait erase" displaying on the state column, the digital display of the decoders will show **APB**. Then "wait erase" will show on the state column, which means the updating starts. Then the OTA tool starts writing data to the decoders, the state column will show the progress, once writing data finishes, the digital display of the decoders will flash **APB**, which means firmware updated successfully.

2. DMX address setting:

Select menu **A.XXX**, click button "Enter", display flashes, then click or hold button "Up" / "Down" to set DMX address (click is slow, hold is fast.), then click button "Back" to confirm.

3. PWM output resolution Bit setting:

select menu **BEXX**, click button "Enter", display flashes, then click button "Up" / "Down" to choose 08 or 16 bit, then click button "Back" to confirm.

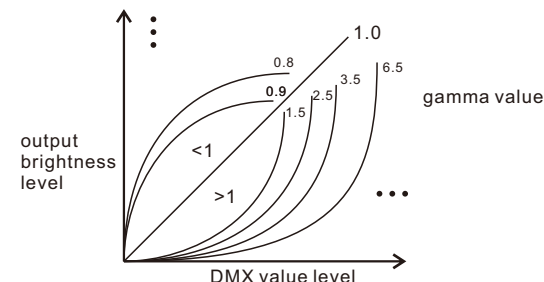
4. Startup behavior setting:

select menu **SB-X**, click button "Enter", display flashes, then click button "Up" / "Down" to choose 0-A, then click button "Back" to confirm.

- 0 (via RDM: 0) - Hold last frame
- 1 (via RDM: 1) - RGBW = 0%
- 2 (via RDM: 2) - RGBW = 100%
- 3 (via RDM: 3) - Channel 4 = 100%, channels 1 and 2 and 3 = 0%
- 4 (via RDM: 4) - Channel 1 = 100%, channels 2 and 3 and 4 = 0%
- 5 (via RDM: 5) - Channel 2 = 100%, channels 1 and 3 and 4 = 0%
- 6 (via RDM: 6) - Channel 3 = 100%, channels 1 and 2 and 4 = 0%
- 7 (via RDM: 7) - Channels 1 and 2 = 100%, channels 3 and 4 = 0%
- 8 (via RDM: 8) - Channels 2 and 3 = 100%, channels 1 and 4 = 0%
- 9 (via RDM: 9) - Channels 1 and 3 = 100%, channels 2 and 4 = 0%
- A (via RDM: 10) - Channel 1 = 100%, channel 2 = 45%, channels 3 and 4 = 0%.

4. output dimming curve gamma value setting:

select menu **GAXX**, click button "Enter", display flashes, then click or hold button "Up" / "Down" to choose 0.1~9.9, then click button "Back" to confirm.



5. DMX personality setting:

The DMX personality setting means to set the DMX channel quantity used for control of corresponding PWM output channel quantity. After power on the decoder, then click or hold button "Up" / "Down" to select, you will get the following DMX personalities, then click button "Back" to confirm the selection:

AAoB, **2A.o2**, **2B.oB**, **3B.oB**, **3C.oB**, **4B.o2**, **4C.o3**, **4d.o1**, **5C.o4**, **5d.o3**, **6C.o2**, **6d.o4**, **8d.o2**

Please refer to the following tables for detailed information of different DMX personalities:

DMX Console Slider number	1A.01	2A.02	2b.01	3b.03	3c.01	4b.02
DMX channel						
1	for all output dimming	for all output dimming	for output 1&3 dimming	for output 1&3 dimming	for output 1 dimming	for output 1&3 dimming
2		for all output fine dimming	for output 2,4 dimming	for output 2,4 dimming	for output 2 dimming	for output 1&3 fine dimming
3				for all output master dimming	for output 3,4 dimming	for output 2,4 dimming
4						for output 2,4 fine dimming
5						
6						
7						
8						

DMX Console Slider number	4c.03	4d.01	5c.04	5d.03	6c.02	6d.04	8d.02
DMX channel							
1	for output 1 dimming	for output 1 dimming	for output 1 dimming	for output 1 dimming	for output 1 dimming	for output 1 dimming	for output 1 dimming
2	for output 2 dimming	for output 2 dimming	for output 2 dimming	for output 2 dimming	for output 1 fine dimming	for output 2 dimming	for output 1 fine dimming
3	for output 3,4 dimming	for output 3 dimming	for output 3,4 dimming	for output 3 dimming	for output 2 dimming	for output 3 dimming	for output 2 dimming
4	for all output master dimming	for output 4 dimming	for all output master dimming	for output 4 dimming	for output 2 fine dimming	for output 4 dimming	for output 2 fine dimming
5			strobe effects	for all output master dimming	for output 3,4 dimming	for all output master dimming	for output 3 dimming
6					for output 3,4 fine dimming	strobe effects	for output 3 fine dimming
7							for output 4 dimming
8							for output 4 fine dimming

The data definitions for strobe channel are as follows:

{0, 7},//undefined
 {8, 65},//slow strobe-->fast strobe
 {66, 71},//undefined
 {72, 127},//slow push fast close
 {128, 133},//undefined
 {134, 189},//slow close fast push
 {190, 195},//undefined
 {196, 250},//random strobe
 {251, 255},//undefined

The supported RDM PIDs are as follows:

DISC_UNIQUE_BRANCH
 DISC_MUTE
 DISC_UN_MUTE
 DEVICE_INFO
 DMX_START_ADDRESS
 DMX_FOOTPRINT
 IDENTIFY_DEVICE
 SOFTWARE_VERSION_LABEL
 DMX_PERSONALITY
 DMX_PERSONALITY_DESCRIPTION
 SLOT_INFO
 SLOT_DESCRIPTION
 OUT_RESPONSE_TIME
 OUT_RESPONSE_TIME_DESCRIPTION
 HOLD_LAST_FRAME
 MANUFACTURER_LABEL
 MODULATION_FREQUENCY
 MODULATION_FREQUENCY_DESCRIPTION
 PWM_RESOLUTION
 CURVE
 CURVE_DESCRIPTION
 SUPPORTED_PARAMETERS
 STARTUP_BEHAVIOR
 CURRENT_CH1
 CURRENT_CH2
 CURRENT_CH3
 CURRENT_CH4
 AUTO_PATCH_SWITCH
 AUTO_PATCH_ADDR

Restore to Factory Default Setting

Press and hold down both “Back” and “Enter” keys until the digital display turns off, then release the keys, system will reset and the digital display will turn on again, all settings will be restored to factory default.

Default settings are as follows:
 DMX Address Code: a001
 PWM Resolution Mode: bt16
 Gamma: ga1.5
 Decoding Mode: 4d.01

Set Current of Each Channel Using RDM Command

CURRENT_CH1 Command

CURRENT_CH1 Command is used to set current of channel 1,
 SET Command: data length is 1BYTE, value range is 10-70
 GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

CURRENT_CH2 Command is used to set current of channel 2,
 SET Command: data length is 1BYTE, value range is 10-70
 GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

CURRENT_CH3 Command is used to set current of channel 3,
 SET Command: data length is 1BYTE, value range is 10-70
 GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

CURRENT_CH4 Command is used to set current of channel 4,
 SET Command: data length is 1BYTE, value range is 10-70
 GET Command: data length is 0BYTE, returns current values of 4 channels, text display: ch1=xx ch2=xx ch3=xx ch4=xx

Step 1: discover the fixtures and select a fixture, then go to “RDM Interface” menu of the fixture.

Step 2: go to “Manufacturer-Specific Parameters” menu of the fixture.

Step 3: select parameter “CURRENT_CH1”, which is to set channel 1 output current, then write the parameter value for instance “10”, setting range is 10-70 (100-700mA).

Note: current setting operation of channel 2, channel 3 and channel 4 are the same as channel 1.

Auto Addressing Operation Through RDM:

AUTO_PATCH_SWITCH Command

AUTO_PATCH_SWITCH Command is used to turn on or turn off device auto addressing function (serial connection or parallel connection mode)

SET Command: data length is 1BYTE, value 0 is to turn off auto addressing and go to parallel connection mode, value 1 is to turn on auto addressing and go to serial connection mode.
 GET Command: not supported

AUTO_PATCH_ADDR Command

AUTO_PATCH_ADDR Command is used to set the start address of the 1st device, if the devices are in the serial connection mode, the devices after the 1st device will auto address with the start address.

SET Command: data length is 2BYTE, value range is 1-512.
 GET Command: not supported

Note: the factory default connection mode of the devices is parallel connection, if devices enter auto addressing mode successfully (go to serial connection mode), lamps will turn off automatically, if devices are auto addressed successfully, the lamps will turn off automatically, if auto addressing fails, the lamps will stay solid on, we can evaluate whether auto addressing mode is turned on successfully and auto addressing is successful through lamp status.

Step 1: discover the fixtures and select a fixture, then go to "RDM Interface" menu of the fixture.

Step 2: go to "Manufacturer-Specific Parameters" menu of the fixture.

Step 3: select parameter "AUTO_PATCH_SWITCH", then write the parameter value "1" to turn on auto addressing mode.

Step 4: select parameter "AUTO_PATCH_ADDR", then write the parameter value start address for instance "1" to start auto addressing.

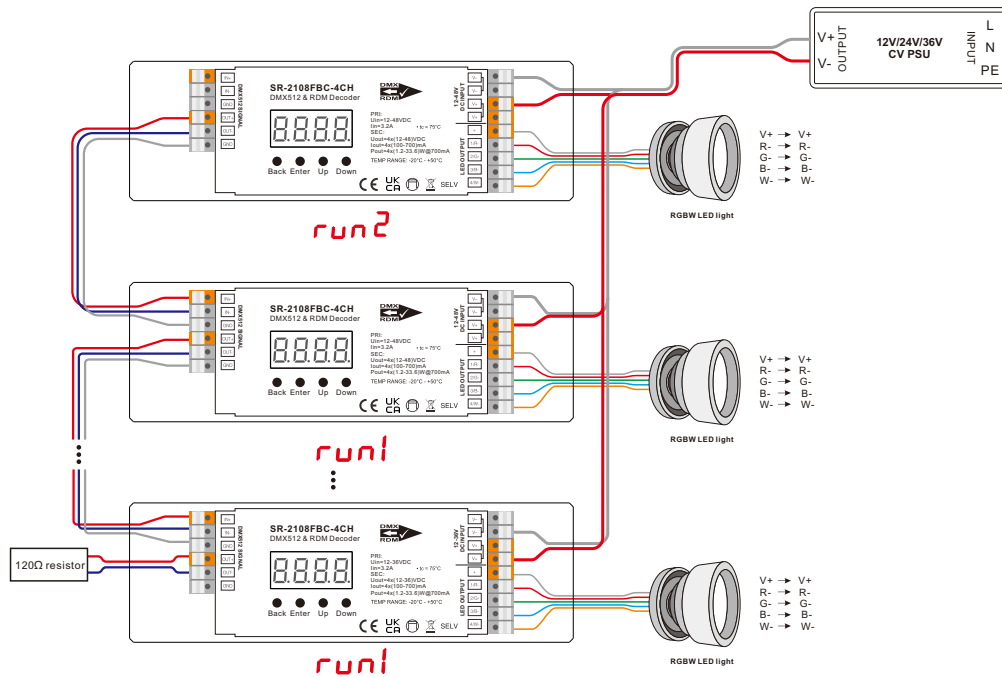
Step 5: once auto addressing is successful, the devices will quit serial connection mode, go to parallel connection mode.

RDM Discovery Indication:

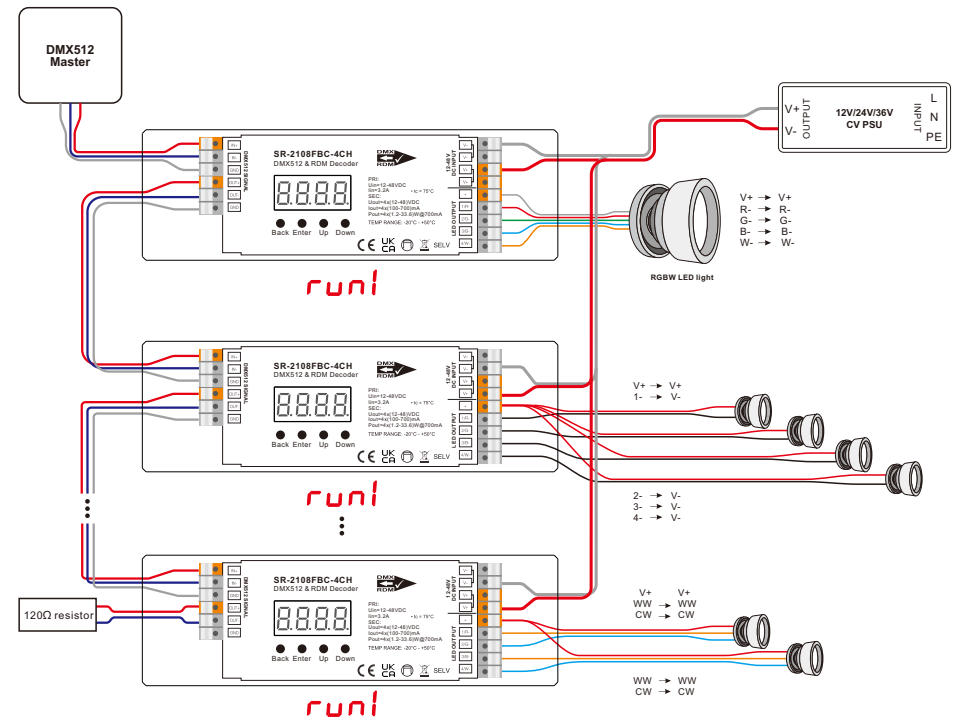
When using RDM to discover the device, the digital display will flash and the connected lights will also flash at the same frequency to indicate. Once the display stops flashing, the connected light also stops flashing.

Wiring Diagram

1. Work as Master mode



2. Work as Decoder mode

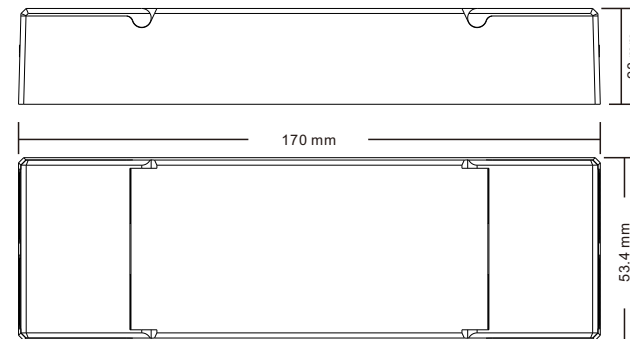


Note: Please attach a 120ohm, 0.5W resistor between DMX OUT+ and DMX OUT- wires on the last device in the data run.

RDM Discovery Indication:

When using RDM to discover the device, the digital display will flash and the connected lights will also flash at the same frequency to indicate. Once the display stops flashing, the connected light also stops flashing.

Product Dimension



Note: Please attach a 120ohm, 0.5W resistor between DMX OUT+ and DMX OUT- wires on the last device in the data run.