



Document Version	3.0
Last Updated	27 November 2024
Compatible firmware	OCTO MK2 Firmware Version V4.3 ENTTEC strongly advise keeping your device firmware up to date for optimal performance.

Contents

Purpose.....	1
Application Messages	2
1. Current Configuration.....	2
2. Reset to Factory Default.....	2
3. Access to Boot.....	2
4. Reboot Device.....	2
5. Identify.....	2
6. Art-Net Stats.....	3
7. ESP Stats.....	3
8. sACN Stats	3
9. KiNet Stats.....	3
10. DMX Buffer – Port 1.....	3
11. DMX Buffer – Port 2.....	3
12. Change Direct Live Mode Settings.....	4
13. Standalone Mode - Enable/Disable Standalone Mode.....	7
14. Standalone Mode - Set Show file by Port.....	7
15. Standalone Mode - Preview Effect by Port.....	8
16. Standalone Mode - Set Effect for Each Show File	9
Conclusion.....	9
Appendix 1	10

Purpose

This document specifies the interface requirement for text-based application programs such as Command Prompt or any third-party applications to communicate with the ENTTEC OCTO MK2 Firmware Version V4.3.

Application Messages

This section demonstrates the API message format required for different communication purposes alongside the parameters for each setting.

The API messages are demonstrated through examples factored in as follows:

- PC Command Line Interface (CLI): utilizing CURL. **Note:** Adjust 'curl' as needed for other CLI tools.
- OCTO MK2 IP Address: [10.10.3.51](#). **Note:** Substitute this IP address with the one assigned to your device.

1. Current Configuration

This example message requests OCTO MK2 to display the current configuration.

Example Message

```
curl http://10.10.3.51/index.html?config.cgi
```

2. Reset to Factory Default

This message requests the OCTO MK2 resume settings back to factory default.

Example Message

```
curl http://10.10.3.51/index.html?set_to_defaults=1
```

The device will be reset to factory default without a return message. Request current configuration information for verification after change.

3. Access to Boot

This message requests to access the boot of the OCTO MK2.

Example Message

```
curl http://10.10.3.51/index.html?firmware.cgi
```

Once successful, the return message will be *'curl: (56) Recv failure: Connection was reset.'*

4. Reboot Device

This message requests the OCTO MK2 to reboot or to exit the boot.

Example Message

```
curl http://10.10.3.51/index.html?reboot=1
```

Once successful, the return message would be *'curl: (56) Recv failure: Connection was reset.'*

5. Identify

This message requests OCTO MK2 to send output to light up all the connected pixels for correct wiring identification without the need to provide control data.

Example Message

```
curl http://10.10.3.51/index.html?identify=1
```

6. Art-Net Stats

This API message requests OCTO MK2 to display the current Art-Net Stats.

Example Message

```
curl http://10.10.3.51/index.html?artnet_stats
```

7. ESP Stats

This API message requests OCTO MK2 to display the current ESP Stats.

Example Message

```
curl http://10.10.3.51/index.html?esp_stats
```

8. sACN Stats

This API message requests OCTO MK2 to display the current sACN Stats.

Example Message

```
curl http://10.10.3.51/index.html?sacn_stats
```

9. KiNet Stats

This message requests OCTO MK2 to display the current KiNet Stats.

Example Message

```
curl --http0.9 http://10.10.3.51/index.html?kinet_stats
```

10. DMX Buffer – Port 1

This message requests OCTO MK2 to display the current DMX buffer information for Port 1

Example Message

```
curl http://10.10.3.51/index.html?buffer1.cgi
```

11. DMX Buffer – Port 2

This message requests OCTO MK2 to display the current DMX buffer information for Port 2.

Example Message

```
curl http://10.10.3.51/index.html?buffer2.cgi
```

12. Change Direct Live Mode Settings

This section explains how to change the settings of the OCTO MK2 using a single command through the application message. The process supports modifying one or multiple settings at a time.

Example Message to Change a Single Setting:

```
curl -d "dmx_start_address=20,30" 10.10.3.51/settings.html
```

Example Message to Change Multiple Settings:

```
curl -d "dmx_repeat_rate=20,30&static_ip=192,168,0,20" 10.10.3.51/settings.html
```

Step-by-Step Guide

- 1. Enter the Example Message:** Replace the placeholder IP address in the provided example message with your device's IP address.
- 2. "Add Parameters within the designated brackets":** Follow the Application Message Format and Parameter Table to include the necessary parameters for the settings you want to modify, inserting the values within the designated brackets, separating each setting with an & symbol for proper formatting.
- 3. Apply Changes:** Submit the message to make changes. These changes are applied immediately, and no return message will be provided. You can request the current configuration to verify the updates.

Important Notes

- Due to formatting restrictions in PDF documents, it is recommended to use a plain text editor (e.g., Notepad) to edit the code before copying it to the prompt command.
- Always request the current configuration after applying changes to ensure the updates were successful.

Application Message Format and Parameter Table:

Settings	Description	Parameter
static_ip	The Static IP when DHCP is disabled.	Format: static_ip= x,x,x,x Parameter x = 0~255 <i>E.g. 192.168.0.10 = 192,168,0,10</i>
netmask	The netmask when static IP is enabled.	Format netmask= x,x,x,x Parameter x = 0~255
dhcp_enable	Enable or disable DHCP.	Format dhcp_enable= x Parameter x = 0 or 1 0: disable 1: enable
gateway_ip	Gateway IP when static IP is enabled.	Format gateway_ip= x,x,x,x Parameter x = 0~255

config_name	The node name discoverable on the network.	Format config_name= <i>x</i> Parameter <i>x</i> =any value in alphabet and number. <i>E.g. Node Name: OCTO MK2</i> config_name=OCTO MK2
pixel_protocol	Select the output LED protocol.	Format pixel_protocol= <i>x,y</i> Parameter <i>x</i> = 0~22, Port 1 LED protocol <i>y</i> = 0~22, Port 2 LED protocol LED protocol list in Appendix 1 .
lighting_protocol	Choose input eDMX protocol.	Format lighting_protocol= <i>x</i> Parameter <i>x</i> = 0/1/2/3 0: Art-Net 1: sACN 2: ESP 3: KiNet
universe_count	Set universe capacity for Port 1 and 2.	Format universe_count= <i>x,y</i> Parameter <i>x</i> = 0~8, Port 1 universe capacity <i>y</i> = 0~8, Port 2 universe capacity
universe_num	Define starting universe for Port 1 and 2.	Format Universe_num= <i>x,y</i> Parameter <i>x</i> = see below, Port 1 starting universe <i>y</i> = see below, Port 2 starting universe 0-32767 for Art-Net 0-255 for ESP 0-63999 for sACN 0-65535 for KiNet
dmx_start_address	Nominate the starting DMX channel address for OCTO MK2 to output from Port 1 and 2.	Format dmx_start_address= <i>x,y</i> Parameter <i>x</i> = 1-512, Port 1 DMX starting address <i>y</i> = 1-512, Port 2 DMX starting address
pixel_fanout	Pixel grouping which allows multiple pixels to be controlled as one 'virtual pixel'.	Format pixel_fanout= <i>x,y</i> Parameter <i>x</i> = 0-512*, Port 1 grouped pixels <i>y</i> = 0-512*, Port 2 grouped pixels
pixel_order	Configure how R, G, B, W colours are mapped to pixels	Format pixel_order= <i>x,y</i> Parameter <i>x</i> = 0-35, Port 1 pixel order <i>y</i> = 0-35, Port 2 pixel order Pixel order list in Appendix 1 .

* Max. value depending on other output settings such as universe, pixel order and DMX start address. If set value is higher than the max value allowed, OCTO MK2 will proceed with the max value allowed.

used_pixels	Define the number of mapped pixels.	Format used_pixels= x,y Parameter x = 0~1360*, Port 1 mapped pixels. y = 0~1360*, Port 2 mapped pixels.
apa102_global	Maximum global brightness when APA-102 is selected.	Format apa102_global= x,y Parameter x = 0-63, Port 1 APA-102 global brightness y = 0-63, Port 2 APA-102 global brightness
tm1814_cc	Maximum global brightness when TM-1814 is selected.	Format tm1814_cc= x,y Parameter x = 0-63, Port 1 TM-1814 global brightness y = 0-63, Port 2 TM-1814 global brightness
sj1221_red	Maximum red colour brightness when SJ-1221 is selected.	Format sj1221_red= x,y Parameter x = 0-15, Port 1 SJ-1221 global brightness y = 0-15, Port 2 SJ-1221 global brightness
sj1221_green	Maximum green colour brightness when SJ-1221 is selected.	Format sj1221_green= x,y Parameter x = 0-15, Port 1 SJ-1221 global brightness y = 0-15, Port 2 SJ-1221 global brightness
sj1221_blue	Maximum blue colour brightness when SJ-1221 is selected.	Format sj1221_blue= x,y Parameter x = 0-15, Port 1 SJ-1221 global brightness y = 0-15, Port 2 SJ-1221 global brightness
custom_bit1	Bit 1 High Time (T1H) for custom LED protocol. This will only take effect when custom protocol is enabled.	Format custom_bit1= x,y Parameter x = 100-3,000#, Port 1 T1H y = 100-3,000#, Port 2 T1H
custom_bit0	Bit 0 High Time (T0H) for custom LED protocol. This will only take effect when custom protocol is enabled.	Format custom_bit0= x,y Parameter x = 100-3,000#, Port 1 T0H y = 100-3,000#, Port 2 T0H
custom_bitlength	Overall bit Time (TH+TL) for custom LED protocol. This will only take effect when custom protocol is enabled.	Format custom_bitlength= x,y Parameter x = 500-3,000, Port 1 overall bit time y = 500-3,000, Port 2 overall bit time
custom_reset	Reset Time (RES) for custom LED protocol. This will only take effect when custom protocol is enabled.	Format custom_reset= x,y Parameter x = 25,000-1,000,000, Port 1 Reset time y = 25,000-1,000,000, Port 2 Reset time

Max. value depending on overall bit length set. If set value is higher than the max value allowed, OCTO MK2 will proceed with the max value allowed.

custom_protocol Enable or disable LED custom protocol for Port 1 and 2.

Format

custom_protocol=*x,y*

Parameter

x = 0 or 1, Port 1 custom protocol status

y = 0 or 1, Port 2 custom protocol status

0: disable

1: enable

13. Standalone Mode - Enable/Disable Standalone Mode

This message requests OCTO MK2 to enable/disable standalone mode.

Example Message

```
curl --header "Content-Type: application/x-www-form-urlencoded" -d "standalone=1"
10.10.3.51/standalone.html?enable_standalone
```

Format

Standalone=*x*

Parameter

x = 0 or 1

1: Enable Standalone Mode

0: Disable Standalone Mode

14. Standalone Mode - Set Show file by Port

This message sets the show file by port in OCTO MK2 Standalone Mode.

Example Message

```
curl --header "Content-Type: application/x-www-form-urlencoded" -d "set_effects=1,4"
10.10.3.51/standalone.html?set_ports
```

Format

set_effects= *x,y*

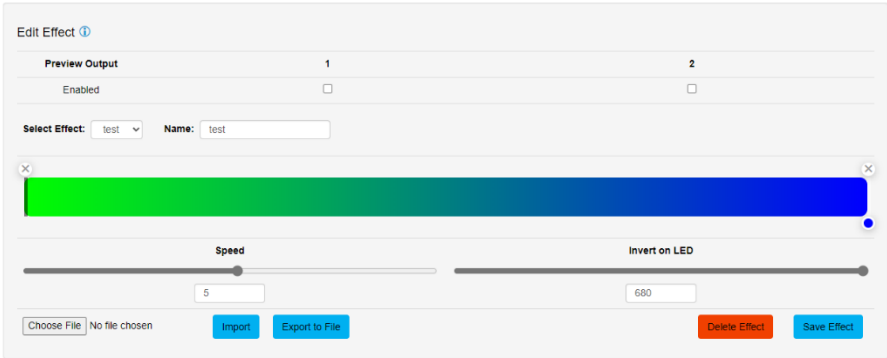
Parameter

x = 0~10, Port 1 show file number by the order in the drop-down list.

y = 0~10, Port 2 show file number by the order in the drop-down list.

15. Standalone Mode - Preview Effect by Port

This message requests the OCTO MK2 to output the data set for Standalone Effect by port enabling preview.



Example Message

```
curl --header "Content-Type: application/x-www-form-urlencoded" -d
"port=0,0&speed=10&invert=0&marker_num=2&markers=255,0,0,0,0,0,255,0,100"
10.10.3.51/standalone.html?update_effect
```

Parameter Table

Settings	Description	Parameter
port	Enable or disable the preview output for each port.	Format: Port= <i>x,y</i> Parameter <i>x</i> = 0 or 1, Port 1 preview output <i>y</i> = 0 or 1, Port 2 preview output 0: disable 1: enable
speed	The effect play speed.	Format speed= <i>x</i> Parameter <i>x</i> = -125~125
invert	Invert on LED.	Format invert= <i>x</i> Parameter <i>x</i> = 0~680*
marker_num	The total number of the colour marker set in the effect.	Format marker_num= <i>x</i> Parameter <i>x</i> = 0~15
markers	The settings for each colour markers and its position in the effect.	Format Marker_num= <i>R,G,B,W,X,R2,G2,B2,W2,X2,...etc.</i> Parameter <i>R</i> = 0~255, R colour intensity <i>G</i> = 0~255, G colour intensity <i>B</i> = 0~255, B colour intensity <i>W</i> = 0~255, W colour intensity <i>X</i> = 0~100, the colour marker position 0 represent the start of the effect. 100represent the end of the effect.

* Max. value depending on other output settings such as universe, pixel order and DMX start address. If set value is higher than the max value allowed, OCTO MK2 will proceed with the max value allowed.

16. Standalone Mode - Set Effect for Each Show File

This message sets the effect colour markers for each show file in Standalone Mode.

Example Message

```
curl --header "Content-Type: application/x-www-form-urlencoded" -d
";test,5,2,2,0,255,0,0,0,0,255,0,100&;test2,10,4,2,255,0,0,0,0,0,255,0,100&;,0,0,2,255,0,0,0,0,0,255,0,100&;,0,0,2,2
55,0,0,0,0,255,0,100&;,0,0,2,255,0,0,0,0,0,255,0,100&;,0,0,2,255,0,0,0,0,0,255,0,100&;,0,0,2,255,0,0,0,0,0,255,
0,100&;,0,0,2,255,0,0,0,0,0,255,0,100&;,0,0,2,255,0,0,0,0,0,255,0,100&;,0,0,2,255,0,0,0,0,0,255,0,100"
10.10.3.51/standalone.html?set_effects
```

Format

;show_1_name,speed,invert,marker_num,R,G,B,W,position, R2,G2,B2,W2,position2,...etc.

- Up to 15 RGBW colours and positions can be added for each show.
- Add & to set maximum 10 shows simultaneously.

Parameter

Refer previous table for parameters.

Conclusion

This guide has provided a comprehensive overview of how to use API messages to integrate the OCTO MK2 with third-party hardware and communicate through your preferred command system.

The examples included illustrate the required message formats for seamless interaction with the device. While most commands provide return messages, it is important to note that the **Change Settings** and **Reset to Factory Default** commands are executed immediately without generating a return message. To ensure the changes have been applied successfully, it is strongly recommended to request the current configuration information for verification.

Appendix 1

Parameter Table

This section provides the parameter for the LED Strip Protocol and Pixel Order in [Change Settings](#).

LED Strip Protocol

1.	APA-104
2.	SK6812
3.	SPXL_16BIT
4.	SPXL_8BIT
5.	TM1804
6.	TM1812
7.	TM1814
8.	UCS1903
9.	UCS2903
10.	UCS2904
11.	UCS8903_16BIT
12.	UCS8903_8BIT
13.	UCS8904_16BIT
14.	UCS8904_8BIT
15.	GS8208B
16.	WS2811
17.	WS2812
18.	WS2812B
19.	WS2813
20.	WS2815
21.	WS2818
22.	9PDOT_16BIT
23.	9PDOT_8BIT
24.	SJ1221_16BIT
25.	SJ1221_8BIT
26.	TLC5973_16BIT
27.	TLC5973_8BIT
28.	APA-102

Pixel Order

0	RGB
1	RBG
2	GRB
3	GBR
4	BRG
5	BGR
6	RGBW
7	RGWB
8	RBGW
9	RBWG
10	RWGB
11	RWBG
12	GRBW
13	GRWB
14	GBRW
15	GBWR
16	GWRB
17	GWBR
18	BRGW
19	BRWG
20	BGRW
21	BGWR
22	BWRG
23	BWGR
24	WRGB
25	WRBG
26	WGRB
27	WGBR
28	WBRG
29	WBGR
30	WwCwA
31	WWACw
32	CwWwA
33	CwAWw
34	AWwCw
35	ACwWw