

Xperience platform

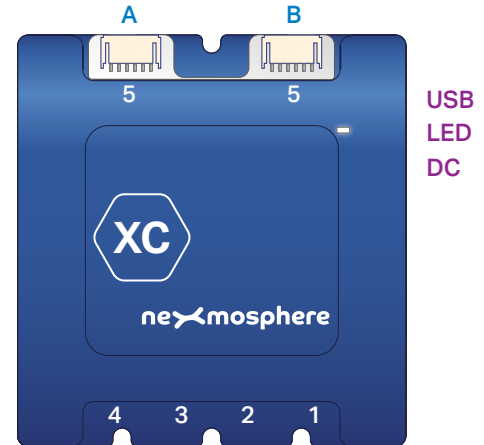
All of Nexmosphere's controllers are built on the same platform principles. If this is your first time using a Nexmosphere controller, we recommend to first read <https://nexmosphere.com/technology/xperience-platform/> to learn the basics about our platform and its terminology.

XC-820

The XC-820 is an Xperience controller with 4 X-talk interfaces and 2 RGBW LED Outputs:

1. X-talk interface 001
2. X-talk interface 002
3. X-talk interface 003
4. X-talk interface 004

- A.** RGBW LED output A (Generic API address 005, RGBW channel A)
B. RGBW LED output B (Generic API address 005, RGBW channel B)



USB. API interface (micro-USB connector)

LED. White status LED

DC. 12-24VDC Power input (2.1mm DC socket)

Hardware setup

1. Connect one or more Elements to any of the 4 X-talk interfaces.
2. Connect one or more RGB(W) LED strips to any of the 2 RGBW LED outputs*.
3. Connect the 12 or 24VDC power supply to the DC power input connector. Make sure the voltage of the power supply matches the operating voltage of the RGBW LED strips (12VDC or 24VDC).
4. Connect the micro-USB cable to a 3rd party device (e.g. Digital Signage Player or PC).
5. Wait until the white status LED stops blinking. This lasts about 5 seconds.

*RGBW LED strips including connection cable are available as an accessory (product codes L-X5.....I). If you want to connect your own RGBW LED strips, separate connection cables are also available as an accessory (product codes CA5-S.C).

Software setup for testing (Terminal)

Typically, the XC-820 controller is connected to a 3rd party device, such as a Digital Signage Player, on which CMS software is installed that has built-in functionality for sending and receiving Serial Events. However, if you want to do a first test on a PC or Mac, follow the instructions below:

1. Download a terminal program. For example [Termite](#) or [Hercules](#).
2. Open the Terminal program and go to settings. Choose the COM port on which the XC-820 controller enumerated*.
In most cases this is the highest available number in the COM port drop-down setting.

3. Set the COM port settings to the following values

Baudrate	115200	Flow Control	None
Parity	None	EOL	CR+LF
Data	Bits 8	Protocol	ASCII
Stop	Bits 1		

4. Set the COM port to "Open". **The controller is now ready for use.**
5. When sending consecutive API serial commands to the XC-820 controller, place a 50mS delay between each command.

*In case the XC-820 controller is not recognized as a COM port by the 3rd party device, a driver (Prolific PL2303) can be downloaded [here](#).

Functionality

The XC-820 runs our API which provides serial output when a specific sensor Element is triggered (for example a pick-up, or -motion sensor or touch button) and provides control over output Elements (for example controlling RGBW LED strips) via serial input commands. These API serial commands are typically used to create interactive Xperiences for Digital Signage.

The complete API Manual and additional helpful documents can be found on <https://nexmosphere.com/support-documentation>. To get you started, we've included some starter examples of our Elements and the corresponding API serial commands on the following pages.

3rd party devices and software

This Quick Start Guide offers a generic explanation of the setup and operation of the XC-820 Xperience controller. It does not cover information on how to integrate the Controllers, Elements and their API triggers in specific 3rd party devices or software. We have manuals available with step-by-step instructions on how to integrate Nexmosphere products with the products of our hardware, -and software partners. You'll find these on the support and partner pages of our website.

Example 1 | RGBW LED control

To control an RGBW LED strip connected to RGBW channel A or B send one of the following API example commands from the 3rd party device to the XC-820 controller:

Set the LED strip connected to RGBW channel **A** to color **0** (default white*) at **80%** brightness with **0.5** seconds ramp time:

G005B[A 0 80 5]

Set the LED strip connected to RGBW channel **B** to color **3** (default blue*) at **100%** brightness with **1.2** seconds ramp time:

G005B[B 3 100 12]

Set the LED strip of all 2 RGBW channels (**X**) to color **5** (default purple*) at **65%** brightness with **0.8** seconds ramp time:

G005B[X 5 65 8]

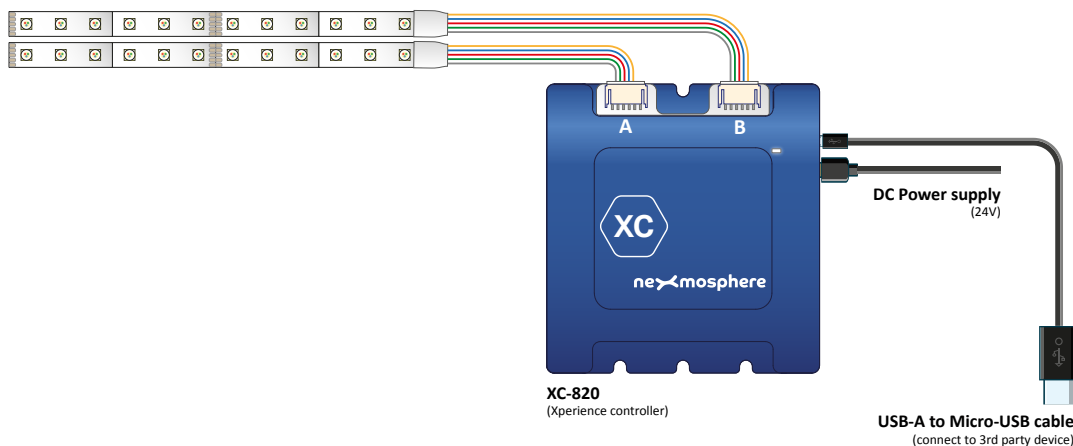
Set the LED strip connected to RGBW channel **A** to pulse between two ramps. Ramp1: Color **2** (default green*) at **100%** with **1.0** seconds ramp time. Ramp 2: Color **2** (default green*) at **5%** with **0.5** seconds ramp time.

G005B[A 2 100 10 2 5 5]

Set the LED strip connected to RGBW channel **B** to pulse between two ramps. Ramp1: Color **6** (default turquoise*) at **80%** with **0.7** seconds ramp time. Ramp 2: Color **8** (default pink*) at **100%** with **0.7** seconds ramp time.

G005B[B 6 80 7 8 100 7]

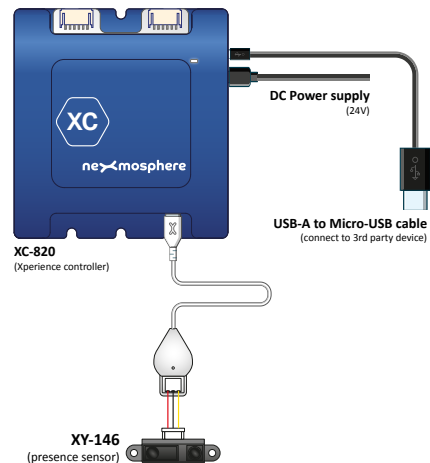
**An overview of the default RGBW LED colors is provided on the final page of this document.*



Example 2 | Presence sensor

When an XY-Presence sensor connected to X-talk interface 001 detects a person in distance zone 4, the following API serial command is sent from the XC-820 to the 3rd party device: **X001A[4]**

When an XY-Presence sensor connected to X-talk interface 001 does not detect a person, the following API serial command is sent from the XC-820 to the 3rd party device: **X001A[1]**



Example 3 | RFID sensor

When tag 2 is picked up from an antenna connected to X-talk interface 004, the following API serial commands are sent from the XC-820 to the 3rd party device:

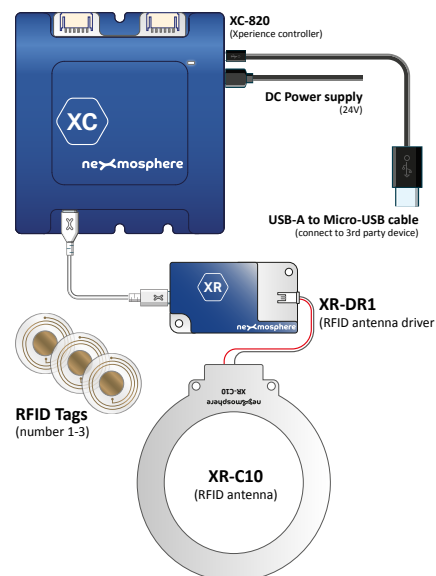
XR[PU002]

X004A[1]

When tag 1 is placed on an antenna connected to X-talk interface 004, the following API serial commands are sent from the XC-820 to the 3rd party device:

XR[PB001]

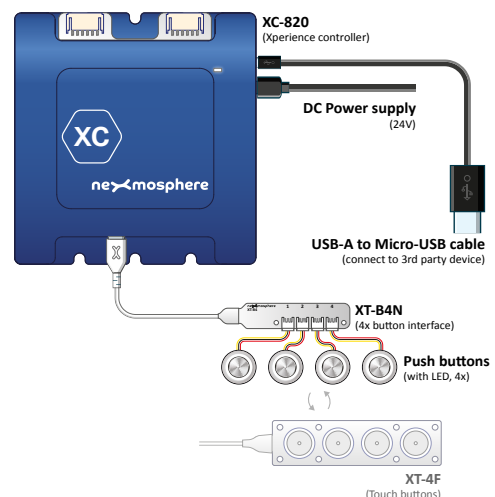
X004A[0]



Example 4 | Button input

When button 1 of a (touch) button interface connected to X-talk interface 003 is pressed, the following API serial commands are sent from the XC-820 to the 3rd party device: **X003A[3]**

When button 4 of a (touch) button interface connected to X-talk interface 003 is pressed, the following API serial commands are sent from the XC-820 to the 3rd party device: **X003A[17]**



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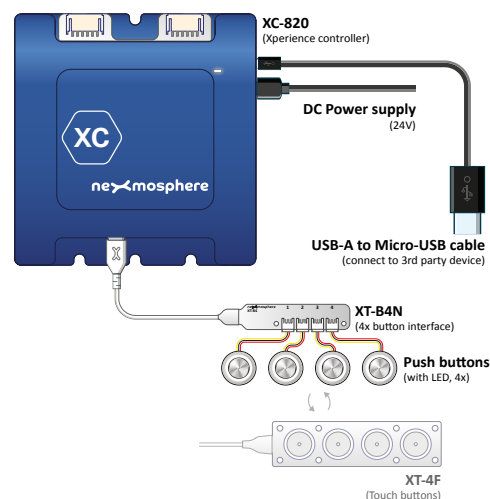
Example 5 | Button LED control

To set all button LEDs of a (touch) button interface connected to X-talk interface 003 to "on", send the following API commands from the 3rd party device to the XC-820 controller:

```
X003A[255]
```

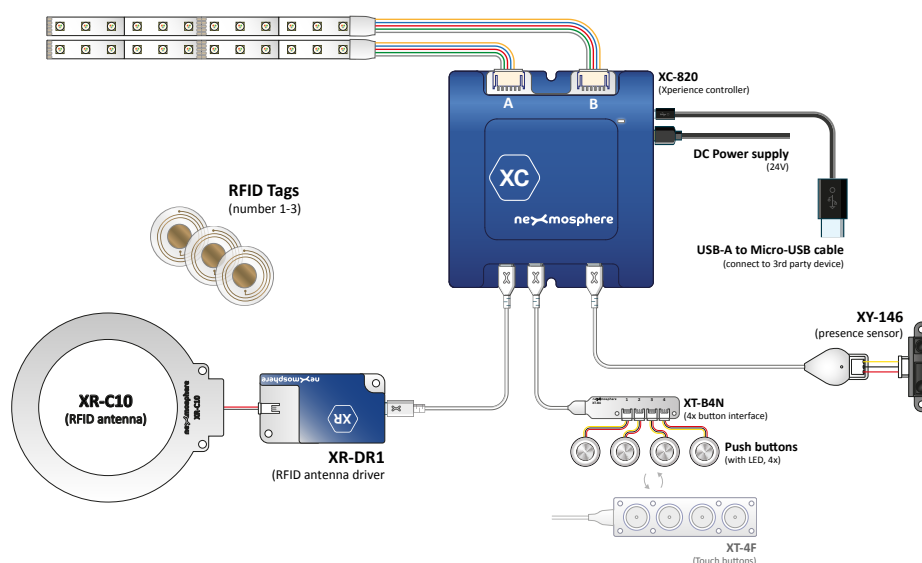
To set all button LEDs of a (touch) button interface connected to X-talk interface 003 to "off", send the following API commands from the 3rd party device to the XC-820 controller:

```
X003A[0]
```



Combining Elements

The XC-820 Xperience controller has 2 RGBW LED outputs and 4 X-talk interfaces to which any combination of Elements can be connected. For example, all examples in this Quick Start Guide can be combined on a single XC-820. The API commands and operation will remain the same. When connecting multiple Elements that require a high amount of current (LEDs or push buttons with LED ring), calculate the total required current of the Elements and check if this is within the specification of the controller and its power supply source.



Default RGBW LED colors

The XC-820 controller is pre-programmed with 10 default colors:

0		R	0	2		R	0	4		R	100	6		R	0	8		R	100
		G	0			G	100			G	75			G	100			G	0
		B	0			B	0			B	0			B	100			B	50
		W	100			W	0			W	0			W	0			W	0
1		R	100	3		R	0	5		R	100	7		R	100	9		R	50
		G	0			G	0			G	0			G	25			G	100
		B	0			B	100			B	100			B	0			B	0
		W	0			W	0			W	0			W	0			W	0

Please refer to the API Manual to learn how to overwrite the default colors with your own preferred RGBW LED colors.