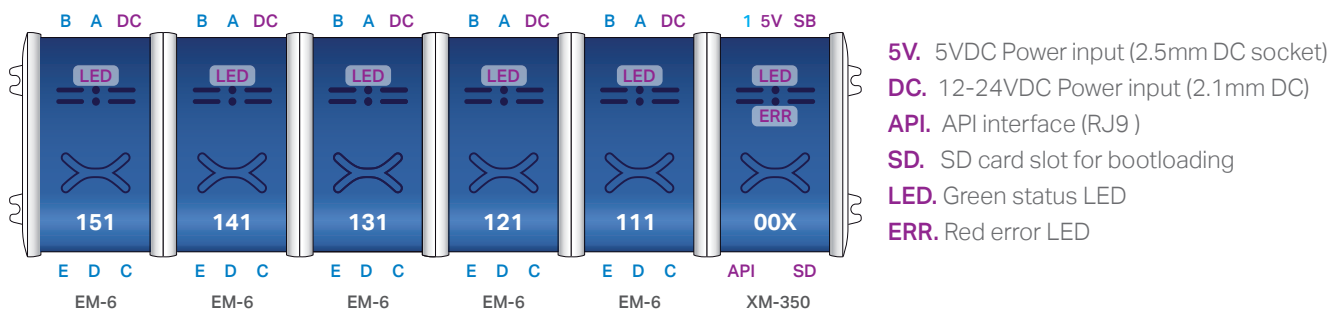


## Xperience platform

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://hexmosphere.com/technology/xperience-platform/> to learn the basics about our platform and its terminology.

## XM-350 with EM-6 expansion

The XM-350 is an Xperience controller with 1 X-talk interface. It can be expanded at our factory with up to 5 EM-6 modules. An EM-6 module has 5 RGB LED outputs. The API address of an RGB LED output is the same as the base address of the module. The specific RGB channel (A, B, C, D or E) can be indicated in the API command itself. For example, if a message is sent to an RGB channel of the EM-6 module closest to the XM-controller, the API address is 111. The API address of the X-talk interface on the XM-350 controller is 001.

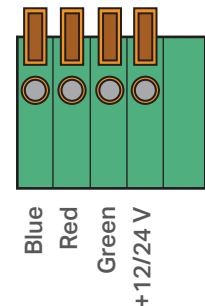


## Hardware setup

1. Connect an Element to the X-talk interface on the XM-350 module.
2. Connect one or more RGB LED strips to any of the RGB LED outputs on the EM-6 module(s).
3. Connect a serial cable\* to the API interface and to a 3rd party device (e.g. Mediaplayer or PC).
4. Connect a 12VDC or 24VDC power supply to the DC power socket on the EM-6 module(s).\*\*  
Make sure the voltage of the power supply matches the operating voltage of the RGB LED strips.
5. Wait until the green status LED on the XM-350 controller stops blinking. This lasts about 10 seconds.

\*Nexmosphere has 2 serial cables available which are compatible with the XM-350: **CA-9J9B** (RJ9 to 3.5mm jack) and **CA-9D9B** (RJ9 to DB-9). Next to these serial cables, a compatible Serial-to-USB cable is also available: **CA-9U9B** (RJ9 to USB-A). The driver for this cable can be downloaded [here](#).

\*\*No more than 2 power supplies may be connected to an assembled Xperience Controller (XM + EM modules)



## Software setup for testing (Terminal)

Typically, the XM-350 controller is connected to a 3rd party device, such as a Digital Signage Player, on which CMS software is installed which 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](#), [Hercules](#) or [SerialTools](#).
2. Open the Terminal program and go to settings. Choose the COM port to which the XM-350 controller is connected\*.
3. Set the COM port settings to the following values

<b>Baudrate</b>	115200	<b>Flow Control</b>	None
<b>Parity</b>	None	<b>EOL</b>	CR+LF
<b>Data</b>	Bits 8	<b>Protocol</b>	ASCII
<b>Stop</b>	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 XM-350 controller, place a 75mS delay between each command.

\*In case the XM-350 controller is connected via a Serial-to-USB cable or adapter, typically this is the highest available number in the COM port drop-down setting.

### Functionality

The XM-350 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 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 XM-350 controller with EM-6 expansion. 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 | RGB LED control

To control an RGB LED strip connected to RGB channel A, B, C, D or E of an EM-6 module, send one of the following API example commands from the 3rd party device to the XM-350 controller:

Set the LED strip connected to RGB channel **A** of EM-6 module with address **111** to color **0** (default white\*) at **80%** brightness with **0.5** seconds ramp time: **G111B[A 0 80 5]**

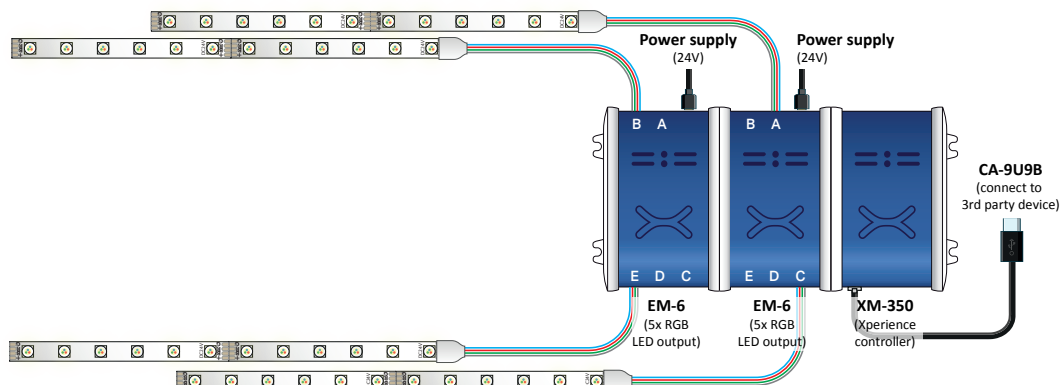
Set the LED strip connected to RGB channel **B** of EM-6 module with address **111** to color **3** (default blue\*) at **100%** brightness with **1.2** seconds ramp time: **G111B[C 3 100 12]**

Set the LED strip of all 5 RGB channels (**X**) of EM-6 module with address **111** to color **5** (default purple\*) at **65%** brightness with **0.8** seconds ramp time: **G111B[X 5 65 8]**

Set the LED strip connected to RGB channel **C** of EM-6 module with address **121** to pulse between two ramps. Ramp 1: 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. **G121B[B 2 100 5 2 5 5]**

Set the LED strip connected to RGB channel **D** of EM-6 module with address **121** to pulse between two ramps. Ramp 1: 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 **G121B[E 6 80 7 8 100 7]**

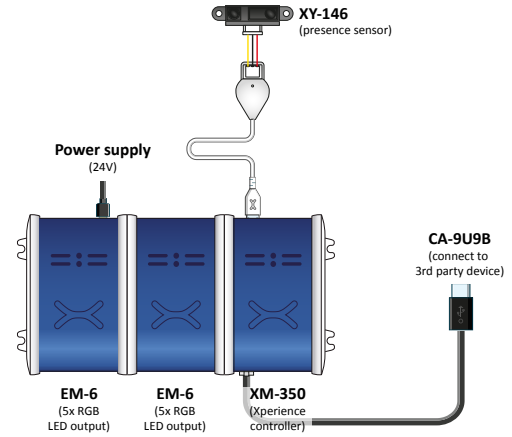
\*An overview of the default RGB LED colors is provided on the final page of this document.



## 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 XM-350 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 XM-350 to the 3rd party device: [X001A\[1\]](#)



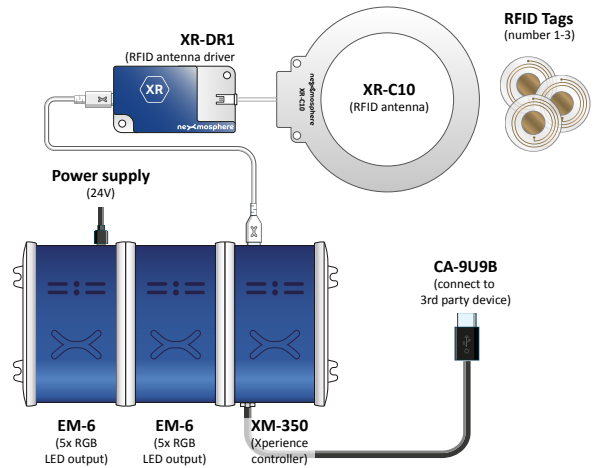
## Example 3 | RFID sensor

When tag 2 is picked up from an antenna connected to X-talk interface 001, the following API serial commands are sent from the XM-350 to the 3rd party device:

[XR\[PU002\]](#)  
[X001A\[1\]](#)

When tag 1 is placed on an antenna connected to X-talk interface 001, the following API serial commands are sent from the XM-350 to the 3rd party device:

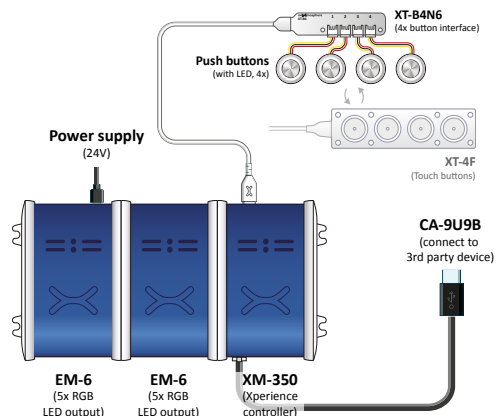
[XR\[PB001\]](#)  
[X001A\[0\]](#)



## Example 4 | Button input

When button 1 of a (touch) button interface connected to X-talk interface 001 is pressed, the following API serial commands are sent from the XM-350 to the 3rd party device: [X001A\[3\]](#)

When button 4 of a (touch) button interface connected to X-talk interface 001 is pressed, the following API serial commands are sent from the XM-350 to the 3rd party device: [X001A\[17\]](#)



# QUICK START GUIDE | XM-350 WITH EM-6 EXPANSION

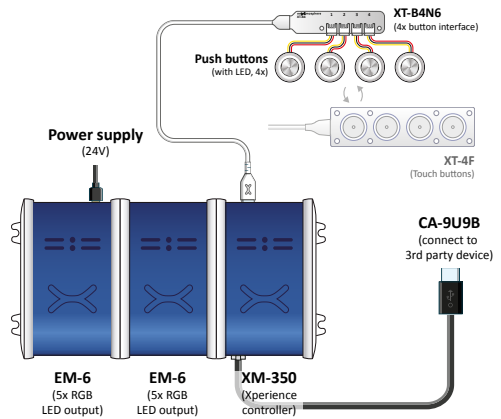
## Example 4 | Button LED control

To set all button LEDs of a (touch) button interface connected to X-talk interface 001 to "on", send the following API commands from the 3rd party device to the XM-350 controller:

```
X001A[255]
```

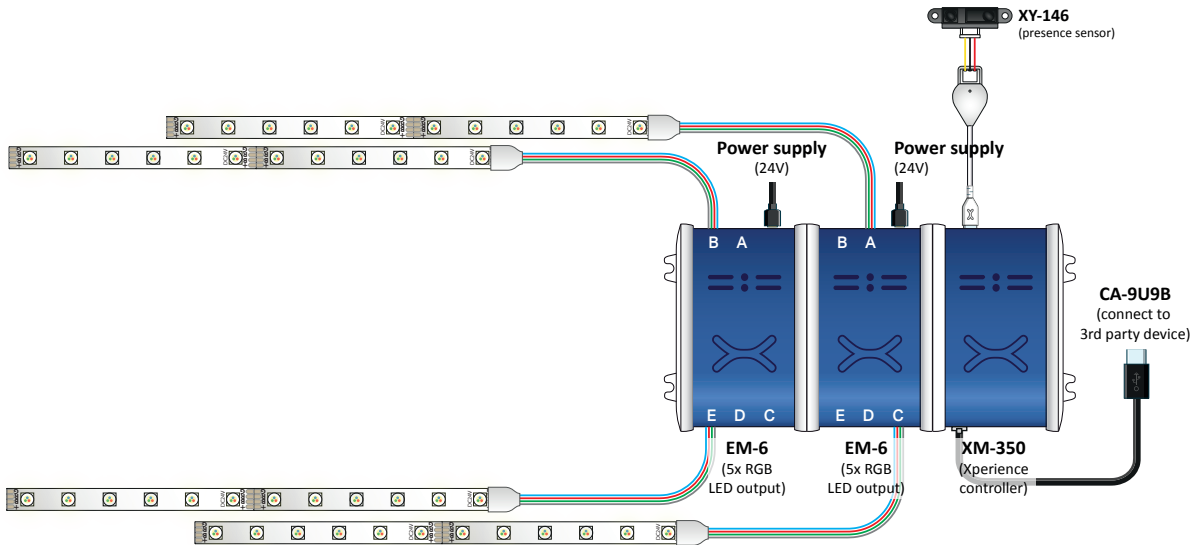
To set all button LEDs of a (touch) button interface connected to X-talk interface 001 to "off", send the following API commands from the 3rd party device to the XM-350 controller:

```
X001A[0]
```



## Combining Elements

The XM-350 Xperience controller with EM-6 expansion has up to 25 RGB LED outputs and 1 X-talk interface to which any Element can be connected. To illustrate, Example 1 can be combined with any other example in this Quick Start Guide. The API commands and operation will remain the same. In case more X-talk interfaces are required, the XM-350 can also be expanded with EM-8 modules (see [XM-350 with EM-8 Quick Start Guide](#)). 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 RGB LED colors

The EM-6 controller is pre-programmed with 10 default colors:

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

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