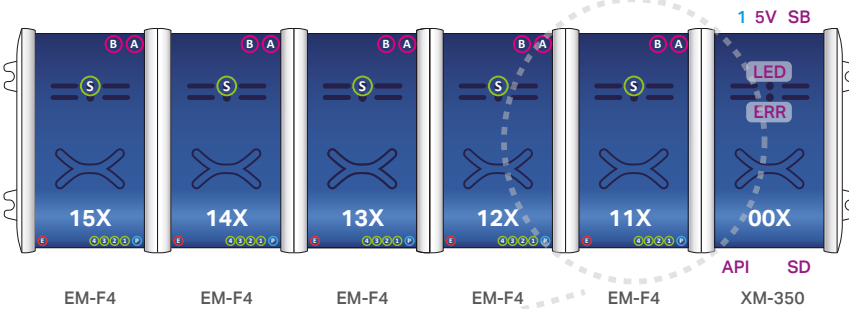


Xperience platform

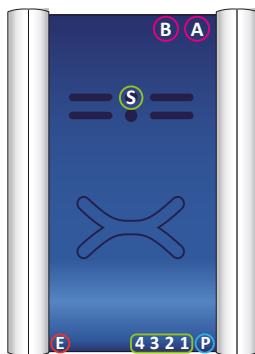
All of Nexmosphere's controllers are built on the same platform principles. If this is your first time using a Nexmosphere controller, we recommend to first read <https://hexmosphere.com/technology/xperience-platform/> to learn the basics about our platform and its terminology.

XM-350 with EM-F4 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-F4 modules. An EM-F4 module has 4 Wireless X-talk channels to which **XF-P3 sensors** can be paired. The API address of a Wireless X-talk channel is determined by adding the number of the channel to the base address of the EM module. For example, for channel 3 of the EM-F4 module closest to the XM-controller, the API address is 113.



- 1.** X-talk interface 001
- 5V.** 5VDC Power input (2.5mm DC)
- SB.** ShopBus interface (RJ25)
- API.** API interface (RJ9)
- SD.** SD card slot for bootloading
- LED.** Green status LED



- 1** Status LED (green) Wireless X-talk channel xx1
- 2** Status LED (green) Wireless X-talk channel xx2
- 3** Status LED (green) Wireless X-talk channel xx3
- 4** Status LED (green) Wireless X-talk channel xx4

- A** Control button A
- B** Control button B
- S** Status LED (green)
- P** Pair LED (blue)
- E** Error / Unpair LED (red)

Hardware setup

1. Connect an Element to the X-talk interface on the XM-350 module (optional).
2. Connect a serial cable* to the API interface and to a 3rd party device (e.g. Mediaplayer or PC).
3. Connect a 5VDC power supply to the DC power socket on the XM-350 module.
4. Wait until the green status LED on the XM-350 controller stops blinking. This lasts about 10 seconds.
5. Pair one or more XF sensors to any of the Wireless X-talk channels. See page 2 for step-by-step pairing procedure.

*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](#).

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

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 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 presence sensor trigger) and provides control over output Elements (for example controlling LEDs) 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-F4 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.

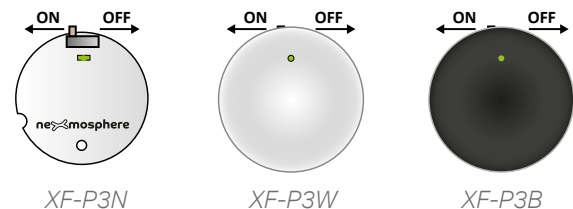
Pairing XF-P3 sensors to an EM-F base station

There are 2 methods to pair an XF sensor to a Wireless X-talk channel of an EM-F base station: **Pair button** or **API command**.

When using an XF-P3N sensor, please make sure to **place a CR2032 battery** before starting the pairing procedure. The XF-P3W and XF-P3B sensor already have a battery placed within the enclosure.

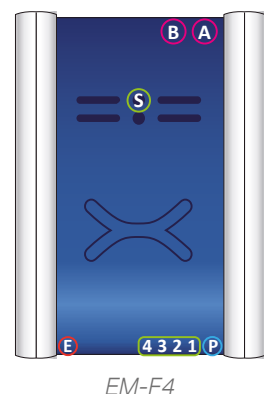


Make sure the XF-P3 sensors are **switched ON** and that they **lay still**. The green LED on the sensor will briefly go on when the device is switched on.



Pair button method

1. **Press and hold control button A for a few seconds.**
The blue Pair LED will start to blink.
2. **Press Control button A to toggle to the channel you want to pair.**
The green LED of the selected Wireless X-talk channel will blink.
3. **To pair: lift the sensor which you want to pair to the selected channel.**
The green LED of the paired channel will be lit continuously for 1 second to confirm pairing was successful.
4. **After, the next channel in line is automatically selected to be paired.**
If the next channel also needs to be paired, simply lift another sensor.
5. **To quit pairing mode, hold button A for a few seconds.**
The status LED of the EM-F4 base station will blink 3 times to confirm exit of pairing mode.



QUICK START GUIDE | XM-350 WITH EM-F4 EXPANSION

API command method

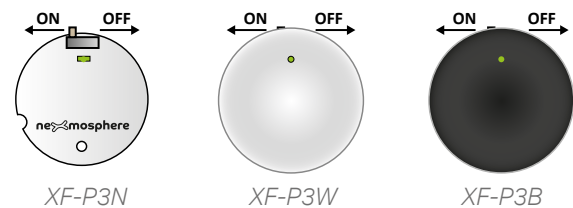
1. **Send the command [PAIR] to the channel you want to pair.**
For example: if you want to pair a XF-P3 sensor to channel 112, the API command is X112B[PAIR]
The green LED of the selected channel will start to blink to confirm it is in pairing mode.
2. **To pair: pick-up the sensor you want to pair to the selected channel.**
The green LED of the paired channel will be lit continuously for 1 second to confirm pairing was successful.
3. **Right after, the main LED of the EM-F4 base station will blink 3 times to confirm exit of pairing mode.**

Regardless what pairing method is used, an XF-P3 sensor only needs to be paired one time. After a power cycle it will remain paired. Please note that a sensor can be paired to multiple base stations. So when pairing, please make sure that no other sensors are accidentally lifted and paired.

Unpairing XF-P3 sensors to EM-F base station

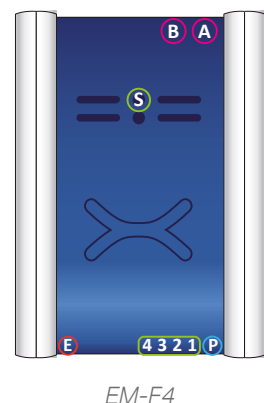
There are two methods to unpair a sensor from a Wireless X-talk channel: **Unpair button** or **API command**.

Make sure the XF-P3 sensors are **switched ON** and that they **lay still**. The green LED on the sensor will briefly go on when the device is switched on.



Unpair button method

1. **Hold control button B for a few seconds.**
The red Unpair LED will start to blink.
2. **To unpair: lift the sensor which you want to unpair from the selected channel.**
If the picked-up sensor was paired to a channel on the EM-F4, the green LED of the unpaired channel will be lit continuously for 1 second to indicate which channel was unpaired. Simultaneously, the red Unpair LED of the EM-F4 will be lit continuously for 1 second to confirm unpairing was successful.



API command method

1. **Send the command [UNPAIR] to the channel you want to unpair.**
For example: if you want to unpair channel 115, the API command is X115B[UNPAIR]
The green LED of the unpaired channel will be lit continuously for 1 second to indicate which channel was unpaired. Simultaneously, the red Unpair LED of the EM-F4 will be lit continuously for 1 second to confirm unpairing.

QUICK START GUIDE | XM-350 WITH EM-F4 EXPANSION

Wireless Pick-up detection

When a paired XF-P3 sensor is lifted, the status LED of the Wireless X-talk channel will go on. Simultaneously, the XM-350 controller will send an API command indicating the address of the Wireless X-talk channel and that a pick-up occurred (*pick up = [3]*). When a paired XF-P3 sensor is placed down, the status LED of the Wireless X-talk channel will go off. In this case, the XM-350 controller will send an API command indicating the address of the Wireless X-talk channel and that a place down occurred (*place down = [0]*).

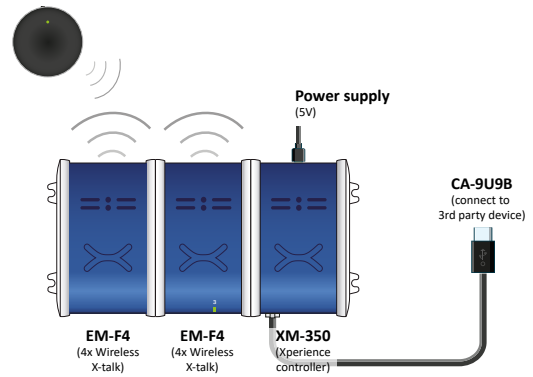
Example 1 | Wireless pick-up detection

When a sensor paired to channel **113** is **picked up**, the following API serial command is sent from the XM-350 to the 3rd party device:

X113A[3]

When a sensor paired to channel **113** is **placed down**, the following API serial command is sent from the XM-350 to the 3rd party device:

X113A[0]

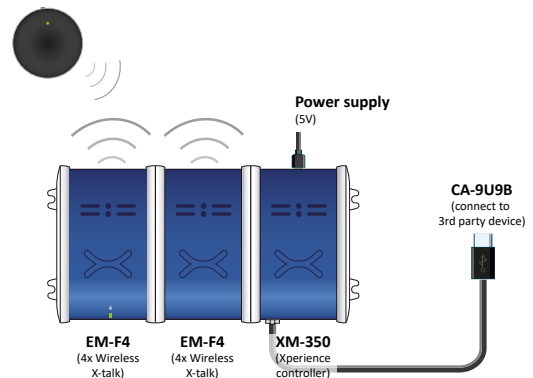


When a sensor paired to channel **124** is **picked up**, the following API serial command is sent from the XM-350 to the 3rd party device:

X124A[3]

When a sensor paired to channel **124** is **placed down**, the following API serial command is sent from the XM-350 to the 3rd party device:

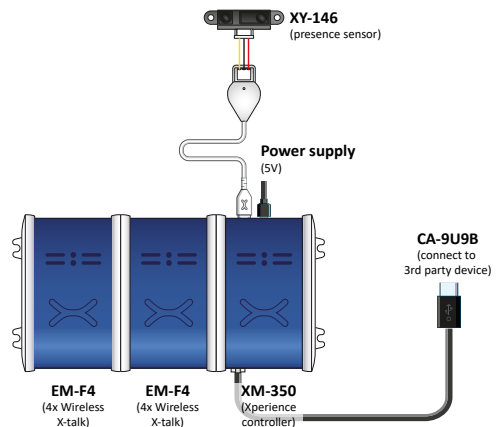
X124A[0]



Example 2 | Presence detection

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]**



QUICK START GUIDE | XM-350 WITH EM-F4 EXPANSION

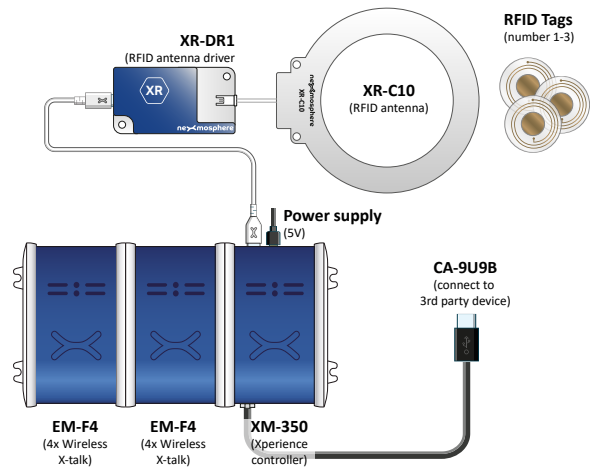
Example 3 | RFID sensor

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:

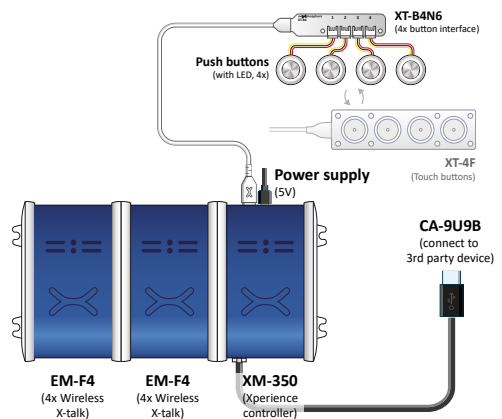
```
XR[PB001]  
X001A[0]
```



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]**



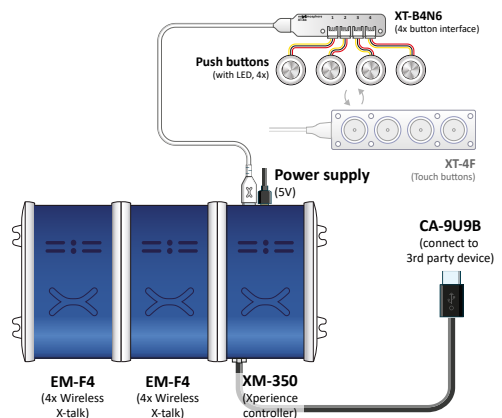
Example 4 | Button LED control

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:

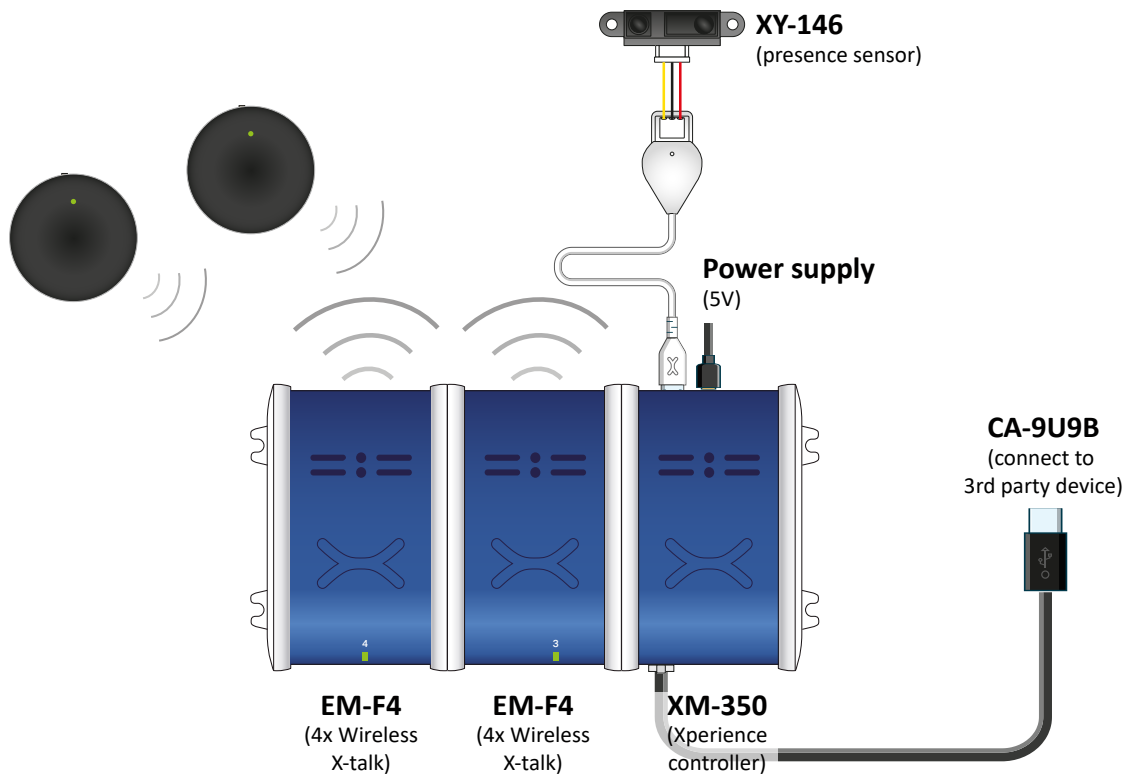
```
X001A[0]
```



QUICK START GUIDE | XM-350 WITH EM-F4 EXPANSION

Combining Elements

The XM-350 Xperience controller with EM-F4 expansion has up to 20 Wireless X-talk channels* 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.



* In case more Wireless X-talk channels are required, the **EM-F8** offers 8 Wireless X-talk channels per Expansion Module. When combining 5 EM-F8 modules, the total amount of Wireless X-talk channels on one XM controllers is 40.