

## 1. General

The Nexmosphere XT range offers a variety of capacitive touch buttons. This document offers information and guidelines on how the products from the XT Range should be used and installed for stable and responsive operation.

## 2. Intended use

The XT range consists out of 4 main products:



XT-4F..



XT-4G..



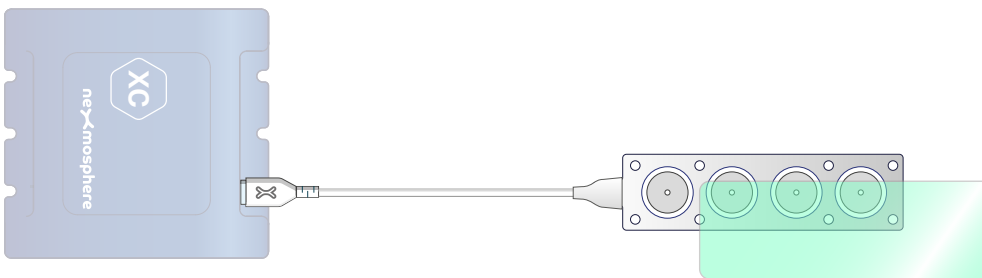
XT-1G..



XT-1E..

The Nexmosphere XT range is designed to create integrated capacitive touch buttons in retail environments. All products in this range are able to detect a person's finger or hand touching the surface of the button or touching an overlying material installed on the surface of the touch sensitive areas. The input provided from the touch buttons can be used to trigger outputs such as video, audio or LED lighting. By connecting one or multiple touch buttons to one of the Xperience controllers, an interactive retail application can be created.

In order to create a touch area the following connections have to be made:



**Xperience controller**  
(e.g. XC-681)

**XT Touch button**  
(e.g. XT-4FW4)

**Top panel**  
(e.g. 3mm acrylic panel)

The products in the Nexmosphere XT range are electronically designed for integration underneath a top surface/panel. When using the XT range without a top surface (e.g. during development or testing), keep in mind that the touch sensitivity is not optimal.

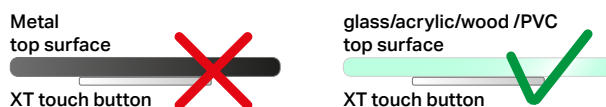
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## 3. Hardware integration

When integrating XT products in a retail environment such as POS displays or store fixtures, several instructions and guidelines need to be taken into account to guarantee optimal stability and responsiveness:

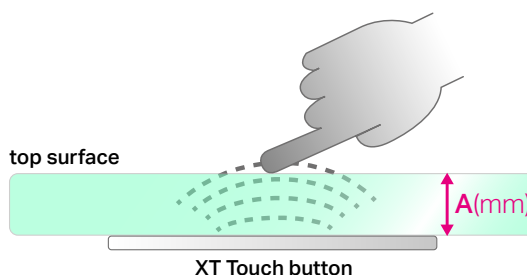
### 3.1 - Top surface material

Any material - except metal - can be used as a top surface for the XT touch buttons. The material of the top surface covering the touch button influences its sensitivity. Please see the **table below** for an indication of the sensitivity of the button when using these commonly used materials.



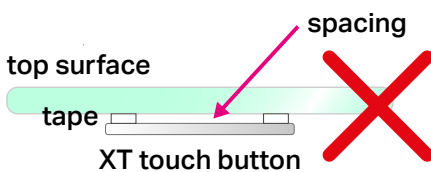
### 3.2 - Top surface thickness

Each XT product has a maximum range in which a "touch" can be detected. This sensitivity range determines the maximum possible thickness of the overlying top surface. Please see the **table below**.

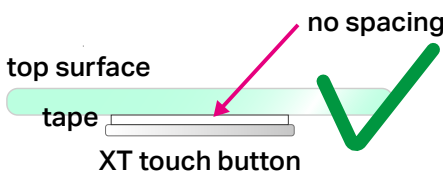


### 3.3 - Mounting the XT product

When mounting the XT product underneath the top surface, please make sure that there is no free space between the touch buttons and the topsurface. It's recommended to use industrial grade double-sided tape that covers the complete touch button area.



Do not cut the tape while it's on top of the touch button boards, this can damage the electronic circuitry. In case the touch buttons are not attached to the surface material with tape, be aware of bends in the top surface (e.g. due to temperature changes). This can create spacing between the touch button and the top panel.



The XT touch buttons all have one side that's free of components and therefore completely flat. This is the top side which should be mounted onto the top panel.

*values below only apply to the default sensitivity settings*

Top surface	XT-4F (A)	XT-4G (A)	XT-1G (A)	XT-1E (A)
Glass	1-6 mm	1-6 mm	1-16 mm	1-8 mm
Acrylic	1-5 mm	1-5 mm	1-12 mm	1-6 mm
MDF	1-4 mm	1-4 mm	1-10 mm	1-5 mm
Chipboard	1-4 mm	1-4 mm	1-10 mm	1-5 mm
Rigid PVC foamboard (e.g. Forex)	1-4 mm	1-4 mm	1-10 mm	1-5 mm
PVC Foamboard	1-3 mm	1-3 mm	1-8 mm	1-4 mm

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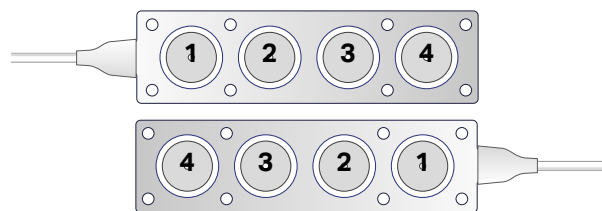
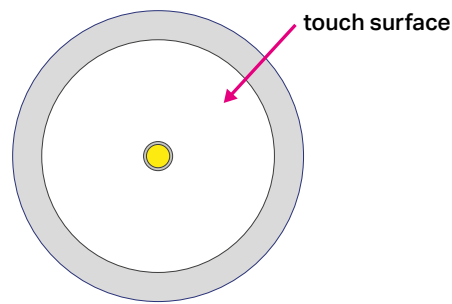
## 3.4 - Touch buttons

The actual touch buttons on the XT touch button boards are circular areas which can be located by the contour lines and the small center hole for the LED. These are the areas which can detect a touch.

The diameters of the several touch buttons are:

- XT-4F** 16mm
- XT-4G** 16mm
- XT-1G** 40mm
- XT-1E** 20mm

In case of the XT-4F and XT-1G, the orientation of the touch button boards influences the position of each button. Therefore make sure that the touch button boards are mounted in such a way that the orientation corresponds with the script. To facilitate this, the number of each touch button is indicated on the back.

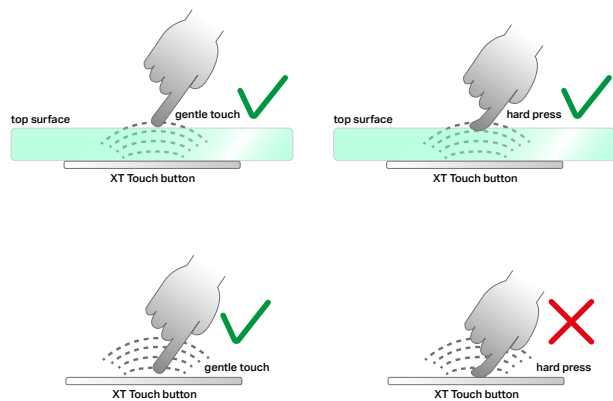


## 3.5 - Applied touch pressure

In default settings, the touch buttons are able to detect a touch in a broad range of applied pressure, ranging from a very gentle touch to a hard press.

When testing the touch buttons without a top surface, the touch buttons will only detect a gentle touch.

If required, the sensitivity can be adjusted on both ends (e.g. only hard press or only gentle touch) by changing setting 4 & 5. Please see the API document for more info.



## 3.6 - Calibration after start-up

The XT touch buttons calibrate to their direct environment right after start-up (power on). This takes approximately 10 seconds. Please make sure that during the calibration process, the direct environment of the buttons is the same one as it will be during normal operation. In practice this means that the top surface should be previously mounted onto the button in the same way as it would be in final assembly. And that the touch button should not be touched during calibration.

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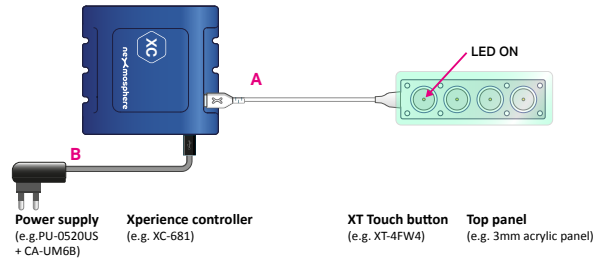
## 4. Testing and expected behavior

In order to test if the installed XT setup works as expected, follow the following test procedure:

- 1. First, connect the XT Touch button (already attached to a top surface) to an Xperience controller. Secondly, power up the system.**

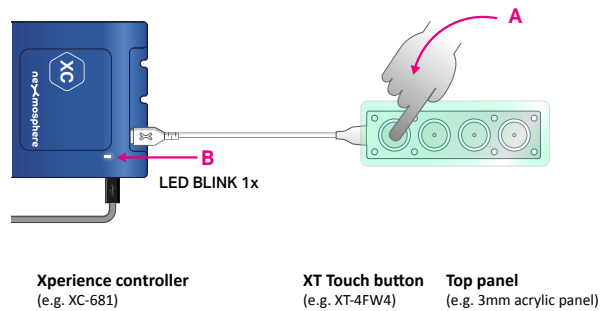
In case touch buttons with LEDs are used, the LEDs should go on for a few seconds. After the LEDs go off, proceed to step 2.

In case touch buttons without LEDs are used, wait for 10 seconds and proceed to step 2.



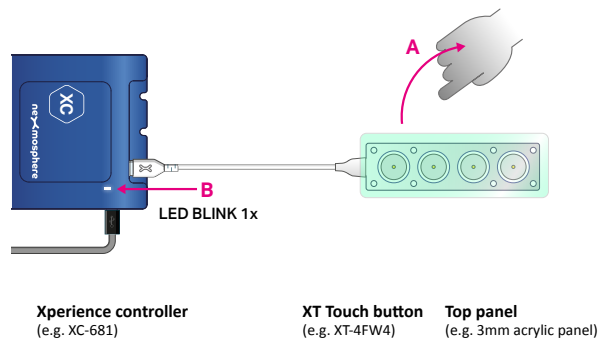
- 2. Gently touch the top surface above one of the touch buttons with your finger. Do not yet remove your finger.**

The status LED of the controller should blink 1 time.



- 3. Remove your finger from the touch surface.**

The status LED of the controller should blink 1 time.



*For system integrators who use the XT touch buttons with the API controllers, it is also possible to calibrate the touch sensitivity by changing settings 4 and 5. Please see the API document for more info.*

In case any of the 3 steps above does not provide the expected result, check the installation guidelines in this document.

Please contact [support@nexmosphere.com](mailto:support@nexmosphere.com) for any support questions you may have.