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**1. General**

The XT Touch buttons can detect when their capacitive surface or top panel is touched by a person's finger. This document provides explanation of the available functionalities and instructions on how to install and integrate the sensor into your digital signage installation.

*The information in this document is created for users who are familiar with the Nexmosphere API and are able to control a basic setup with a Nexmosphere API controller. If this is not the case yet, please read the general documentation on the Nexmosphere serial API first.*

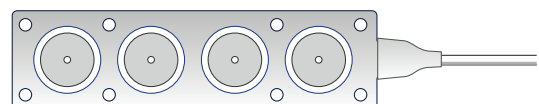
**2. Product overview**

The XT Touch buttons are available in 4 different models:



	<b>XT-1EW6</b>	<b>XT-1GW6</b>	<b>XT-4FW6</b>	<b>XT-4GW6</b>
<b>Number of touch buttons</b>	1	1	4	4
<b>Touch button diameter</b>	20mm	40mm	16mm	16mm
<b>minimum top panel thickness (acrylic)</b>	1mm	1mm	1mm	1mm
<b>maximum top panel thickness (acrylic)</b>	6mm	12mm	5mm	5mm

The XT Touch buttons utilize capacitive touch sensing technology to detect if a person touches a touch button. The working principle is that the sensor measures the apparent capacitance between the electrode (touch area) and the ground of the touch sensor. When the electrode is touched, the apparent sensor capacitance is increased by a parallel path through the human body. The sensor detects this increase and by doing so it is able to detect when a button is touched.



### 3. Functionalities and API commands

The XT Touch buttons provide the following functionalities:

1. **Touch detection** - detects if a touch button is touched or released
2. **Button LED control** - control the LEDs in the center of the touch buttons

The following section will cover this functionality in detail. Please note that for each API example in this document, X-talk interface address 001 is used (X001). When the sensor is connected to another X-talk channel, replace the "001" with the applicable X-talk address.

#### 3.1 - Touch detection

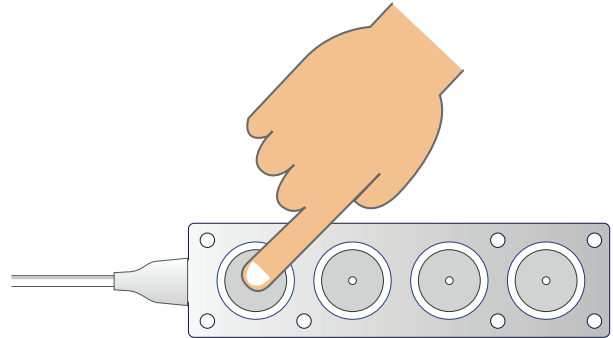
The XT Touch buttons come in different models of which some have multiple touch buttons (see page 1). When one of the touch buttons is touched or released, an API command is triggered. This API message has the following format:

**X001A[X]**      *X= indicates button touch or release*

	button 1	button 2	button 3	button 4
X=0	Release	Release	Release	Release
X=3	Touch	-	-	-
X=5	-	Touch	-	-
X=9	-	-	Touch	-
X=17	-	-	-	Touch

When implementing touch button triggers, consider the following:

- Only 1 touch button can be triggered simultaneously.
- The command for a button release is the same for all touch buttons: X001A[0]. This command indicates that the touch button which was touched last has been released.
- The number of the buttons are indicated on the back of the touch buttons. They are also shown on page 5.



#### Example commands

*Touch button 1 is touched*

**X001A[3]**

*Touch button 2 is touched*

**X001A[5]**

*Touch button 3 is touched*

**X001A[9]**

*Touch button 4 is touched*

**X001A[17]**

*Touch button which was touched last is released*

**X001A[0]**

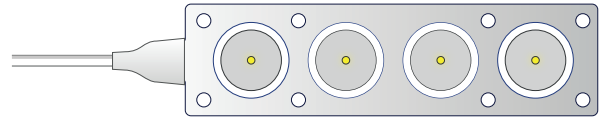
## 3.2 - Button LED control

The XT Touch buttons have LEDs in the center of each button which can be set to 4 different states: on, off, slow blink and fast blink. For XT sensors with multiple touch buttons, each LED can be set to a different state. However the API command for controlling the LEDs indicates and sets the state for all LEDs simultaneously. This API command has the following format:

**x001A[X]** X= indicates LED output

There is a total of 256 combinations of LED outputs for panels with 4 touch buttons. Below a subset of these options is listed. For the complete list of options, please see the final page of this document.

	LED 1	LED 2	LED 3	LED 4
<i>Set all LEDs to same state</i>				
X=0	off	off	off	off
X=85	fast blink	fast blink	fast blink	fast blink
X=170	slow blink	slow blink	slow blink	slow blink
X=255	on	on	on	on
<i>Set one LED on, others off</i>				
X=3	on	off	off	off
X=12	off	on	off	off
X=48	off	off	on	off
X=192	off	off	off	on
<i>Set one LED off, others on</i>				
X=252	off	on	on	on
X=243	on	off	on	on
X=207	on	on	off	on
X=64	on	on	on	off
<i>Set one LED to fast blink, others OFF</i>				
X=1	fast blink	off	off	off
X=4	off	fast blink	off	off
X=16	off	off	fast blink	off
X=64	off	off	off	fast blink
<i>Set one LED to slow blink, others OFF</i>				
X=2	slow blink	off	off	off
X=8	off	slow blink	off	off
X=32	off	off	slow blink	off
X=128	off	off	off	slow blink



### Example commands

Set all LEDs on

**x001A[255]**

Set all LEDs off

**x001A[0]**

Set all LEDs to fast blink

**x001A[85]**

Set all LEDs to slow blink

**x001A[170]**

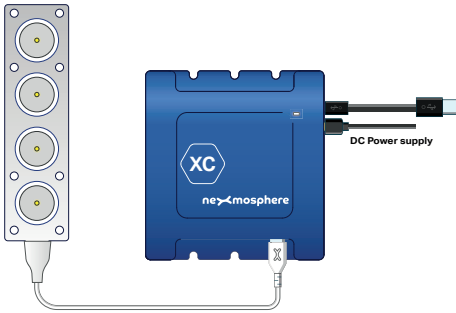
# PRODUCT MANUAL | XT TOUCH BUTTONS

## 4 - Installation requirements and guidelines

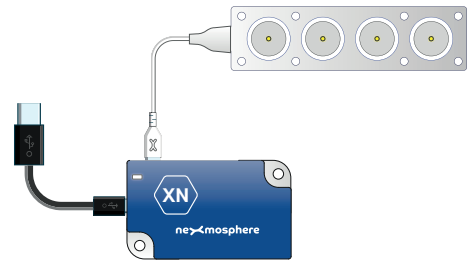
When integrating an XT Touch button into your digital signage installation, several installation requirements and guidelines need to be taken into account in order for the sensor to perform optimal and operate stable.

### 4.1 Connection Diagrams

The XT Touch buttons can be connected to any X-talk interface and are therefore compatible with all Xperience controllers. Make sure the XT Touch button is connected to the X-talk interface before powering the Xperience controller. Otherwise, the XT Touch button will not be recognized by the Xperience controller and no sensor output will be provided.



Example connection to XC Controller



Example connection to XN Controller

### 4.2 Hardware integration guidelines

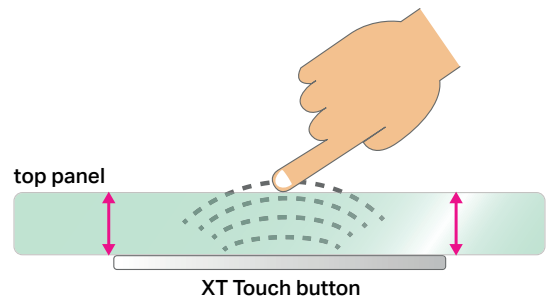
#### Top panel material

The XT Touch buttons can be installed under any **non-metal** surface. The material of the top surface covering the touch button influences the sensitivity. Please see the **table below** for an indication of the recommended thickness of a top panel for commonly used materials. The XT Touch buttons don't work behind double glazing. For more information please see page 6.



#### Top panel 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**.



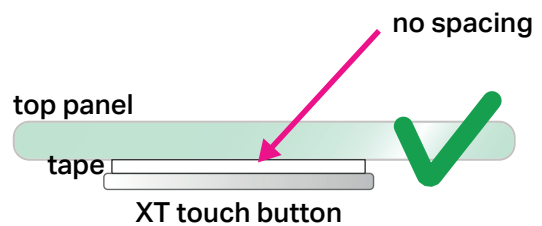
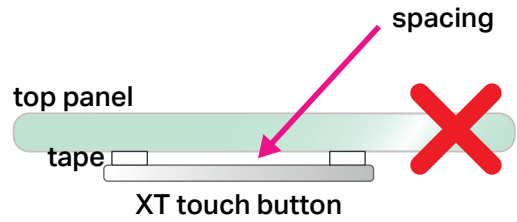
Top panel material	XT-4F	XT-4G	XT-1G	XT-1E
Glass	1-6 mm	1-6 mm	1-16 mm	1-8 mm
Acrylic	1-5 mm	1-5 mm	1-12 mm	1-6 mm
MDF	1-4 mm	1-4 mm	1-10 mm	1-5 mm
Chipboard	1-4 mm	1-4 mm	1-10 mm	1-5 mm
Rigid PVC foamboard (e.g. Forex)	1-4 mm	1-4 mm	1-10 mm	1-5 mm

## Installing the XT Touch button to a top panel

When mounting the XT product underneath a top panel, please make sure that there is no free space between the touch buttons and the top panel surface. It is recommended to use industrial grade double-sided tape that covers the complete touch button area. When only taping the sides of the touch button, an air gap is created which will make the sensor unresponsive.

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.



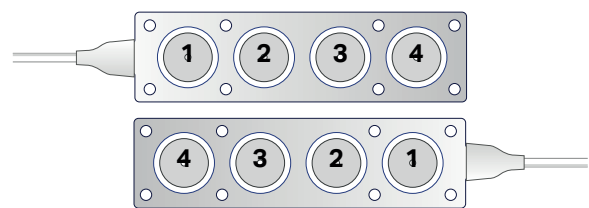
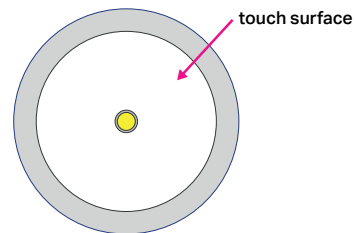
## Touch buttons

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.

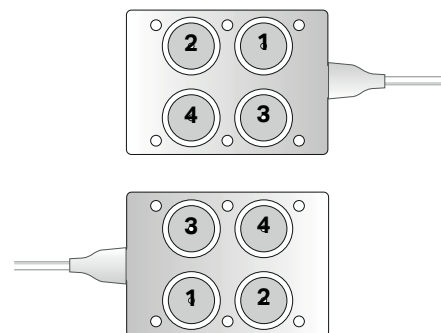
The diameters of the several touch buttons are:

- 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 control logic. The number of each touch button is also indicated on the back side of the sensor.



XT-4F front



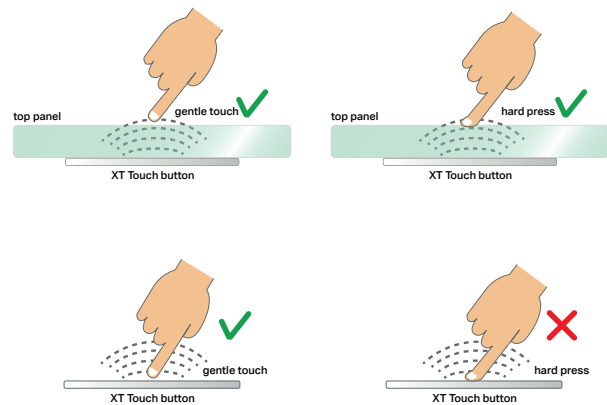
XT-4F front

## 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 or hover just above the touch button.

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 page 7 for more information.



## Glass top panels - double glazing

The XT Touch buttons do **not** work behind most types of double glazing used to insulate indoor environments from outdoor environments (e.g. double glazing used in windows or doors at store fronts). The reason for this is that most modern types of double glass have a very thin invisible metal foil inside to reflect heat. Next to this, the insulating air gap between the two glass panels has a very negative effect on the detection range. The XT Touch buttons do work behind almost all other common types of single-panel glass.

## 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**.

## 5 - Settings

The XT Touch buttons have multiple settings which determine the behaviour of the sensor. The settings can be adjusted by sending X-talk setting commands via the API. After a power cycle, the settings always return to back to default.

### Setting 4: Touch sensitivity lower threshold

Set lower threshold `x001s [4:X]`

X is a value between **1-253** and it's default value is **5**. It indicates how close a person's fingertip can be to the touch panel surface for it to still be detected as a valid touch. **So the lower the X value, the closer a fingertip can be to the touch panel.** Please note that typically this setting does not need to be adjusted. Only in cases where no top panel is attached to touch buttons, it can be beneficial to lower this setting.

### Setting 5: Touch sensitivity upper threshold

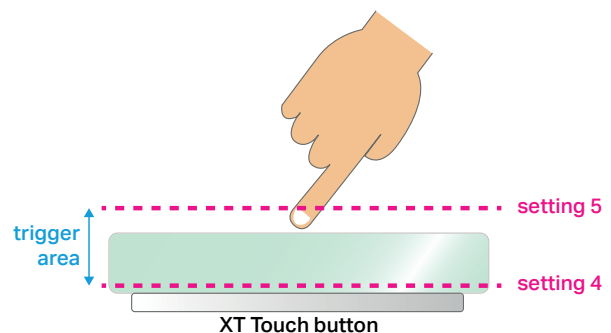
Set upper threshold `x001s [5:X]`

X is a value between **3-255** and it's default value is **110**. It indicates how far a person's fingertip can be from the touch panel surface for it to still be detected as a valid touch. **So the higher the X value, the further a fingertip can be from the touch panel.** This settings always needs to be higher then setting 4. Increasing this value can make the sensor more sensitive to "ghost triggers". Therefore we recommend to only adjust this setting when the default settings are not working for a specific setup. This setting does not have a linear correlation with the maximum thickness of the top panel. Instead, it should be considered a setting for tweaking. The max panel thickness specifications listed on page 4 of this document should be respected at all times, also when this setting is increased.

### Setting 6: Trigger time for valid touch

Set time value for valid touch `x001s [6:X]`

X is a value between **1-255** and it's default value is **2**. It indicates in steps of 20mS how long a person's fingertip needs to touch or be released from the sensor before an API output trigger is provided. **So the higher the X value, the longer it will take for a new API output to be send when the touch button is touched or released.** Typically this setting is only used to suppress "ghost triggers" in scenarios where setting 5 is increased.



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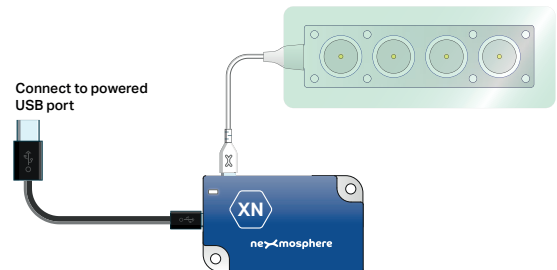
## 6. Quick test

In order to test if the XT Touch button is installed correctly, please follow the test procedure below:

### Step 1 - Setup

First, connect the XT Touch button to an Xperience controller and (preferably) place a top panel on the touch buttons. Secondly, power the Xperience controller. Do not touch the touch buttons for 10 seconds.

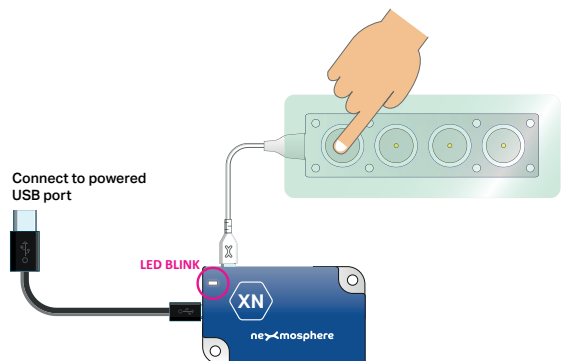
The white LEDs of the XT Touch buttons should briefly go on. The status LED of the controller will start to blink and once power-up is completed will be lit continuously.



### Step 2 - Test touch detection

Touch a touch button via the top panel.

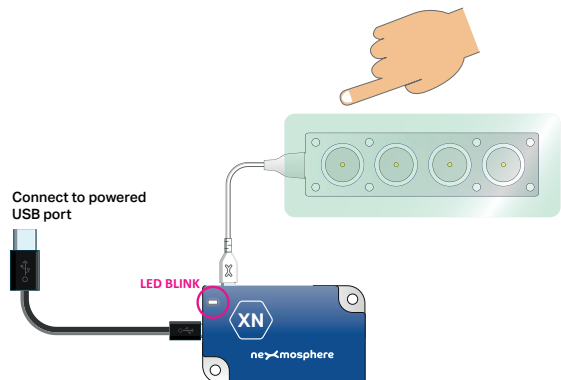
The status LED of the controller should blink.



### Step 3 - Test release detection

Release your finger from the touch button.

The status LED of the controller should blink again.



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

For a full test we recommend to connect the setup to a mediaplayer or PC and test all API commands listed in this document (see section 3, page 2-3). For more information on how to setup a test for your controller, please see the Quick Start Guide of the Xperience controller you are using. These are available on [nexmosphere.com/support-documentation](https://nexmosphere.com/support-documentation)

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



	LED 1	LED 2	LED 3	LED 4
X001A[ 0]	off	off	off	off
X001A[ 1]	fast blink	off	off	off
X001A[ 2]	slow blink	off	off	off
X001A[ 3]	on	off	off	off
X001A[ 4]	off	fast blink	off	off
X001A[ 5]	fast blink	fast blink	off	off
X001A[ 6]	slow blink	fast blink	off	off
X001A[ 7]	on	fast blink	off	off
X001A[ 8]	off	slow blink	off	off
X001A[ 9]	fast blink	slow blink	off	off
X001A[ 10]	slow blink	slow blink	off	off
X001A[ 11]	on	slow blink	off	off
X001A[ 12]	off	on	off	off
X001A[ 13]	fast blink	on	off	off
X001A[ 14]	slow blink	on	off	off
X001A[ 15]	on	on	off	off
X001A[ 16]	off	off	fast blink	off
X001A[ 17]	fast blink	off	fast blink	off
X001A[ 18]	slow blink	off	fast blink	off
X001A[ 19]	on	off	fast blink	off
X001A[ 20]	off	fast blink	fast blink	off
X001A[ 21]	fast blink	fast blink	fast blink	off
X001A[ 22]	slow blink	fast blink	fast blink	off
X001A[ 23]	on	fast blink	fast blink	off
X001A[ 24]	off	slow blink	fast blink	off
X001A[ 25]	fast blink	slow blink	fast blink	off
X001A[ 26]	slow blink	slow blink	fast blink	off
X001A[ 27]	on	slow blink	fast blink	off
X001A[ 28]	off	on	fast blink	off
X001A[ 29]	fast blink	on	fast blink	off
X001A[ 30]	slow blink	on	fast blink	off
X001A[ 31]	on	on	fast blink	off
X001A[ 32]	off	off	slow blink	off
X001A[ 33]	fast blink	off	slow blink	off
X001A[ 34]	slow blink	off	slow blink	off
X001A[ 35]	on	off	slow blink	off
X001A[ 36]	off	fast blink	slow blink	off
X001A[ 37]	fast blink	fast blink	slow blink	off
X001A[ 38]	slow blink	fast blink	slow blink	off
X001A[ 39]	on	fast blink	slow blink	off
X001A[ 40]	off	slow blink	slow blink	off
X001A[ 41]	fast blink	slow blink	slow blink	off
X001A[ 42]	slow blink	slow blink	slow blink	off
X001A[ 43]	on	slow blink	slow blink	off
X001A[ 44]	off	on	slow blink	off

## 7. Appendix A

All available combinations of button LED control commands

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		LED 1	LED 2	LED 3	LED 4
X001A[ 45]		fast blink	on	slow blink	off
X001A[ 46]		slow blink	on	slow blink	off
X001A[ 47]		on	on	slow blink	off
X001A[ 48]		off	off	on	off
X001A[ 49]		fast blink	off	on	off
X001A[ 50]		slow blink	off	on	off
X001A[ 51]		on	off	on	off
X001A[ 52]		off	fast blink	on	off
X001A[ 53]		fast blink	fast blink	on	off
X001A[ 54]		slow blink	fast blink	on	off
X001A[ 55]		on	fast blink	on	off
X001A[ 56]		off	slow blink	on	off
X001A[ 57]		fast blink	slow blink	on	off
X001A[ 58]		slow blink	slow blink	on	off
X001A[ 59]		on	slow blink	on	off
X001A[ 60]		off	on	on	off
X001A[ 61]		fast blink	on	on	off
X001A[ 62]		slow blink	on	on	off
X001A[ 63]		on	on	on	off
X001A[ 64]		off	off	off	fast blink
X001A[ 65]		fast blink	off	off	fast blink
X001A[ 66]		slow blink	off	off	fast blink
X001A[ 67]		on	off	off	fast blink
X001A[ 68]		off	fast blink	off	fast blink
X001A[ 69]		fast blink	fast blink	off	fast blink
X001A[ 70]		slow blink	fast blink	off	fast blink
X001A[ 71]		on	fast blink	off	fast blink
X001A[ 72]		off	slow blink	off	fast blink
X001A[ 73]		fast blink	slow blink	off	fast blink
X001A[ 74]		slow blink	slow blink	off	fast blink
X001A[ 75]		on	slow blink	off	fast blink
X001A[ 76]		off	on	off	fast blink
X001A[ 77]		fast blink	on	off	fast blink
X001A[ 78]		slow blink	on	off	fast blink
X001A[ 79]		on	on	off	fast blink
X001A[ 80]		off	off	fast blink	fast blink
X001A[ 81]		fast blink	off	fast blink	fast blink
X001A[ 82]		slow blink	off	fast blink	fast blink
X001A[ 83]		on	off	fast blink	fast blink
X001A[ 84]		off	fast blink	fast blink	fast blink
X001A[ 85]		fast blink	fast blink	fast blink	fast blink
X001A[ 86]		slow blink	fast blink	fast blink	fast blink
X001A[ 87]		on	fast blink	fast blink	fast blink
X001A[ 88]		off	slow blink	fast blink	fast blink
X001A[ 89]		fast blink	slow blink	fast blink	fast blink

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		LED 1	LED 2	LED 3	LED 4
X001A[ 90]		slow blink	slow blink	fast blink	fast blink
X001A[ 91]		on	slow blink	fast blink	fast blink
X001A[ 92]		off	on	fast blink	fast blink
X001A[ 93]		fast blink	on	fast blink	fast blink
X001A[ 94]		slow blink	on	fast blink	fast blink
X001A[ 95]		on	on	fast blink	fast blink
X001A[ 96]		off	off	slow blink	fast blink
X001A[ 97]		fast blink	off	slow blink	fast blink
X001A[ 98]		slow blink	off	slow blink	fast blink
X001A[ 99]		on	off	slow blink	fast blink
X001A[ 100]		off	fast blink	slow blink	fast blink
X001A[ 101]		fast blink	fast blink	slow blink	fast blink
X001A[ 102]		slow blink	fast blink	slow blink	fast blink
X001A[ 103]		on	fast blink	slow blink	fast blink
X001A[ 104]		off	slow blink	slow blink	fast blink
X001A[ 105]		fast blink	slow blink	slow blink	fast blink
X001A[ 106]		slow blink	slow blink	slow blink	fast blink
X001A[ 107]		on	slow blink	slow blink	fast blink
X001A[ 108]		off	on	slow blink	fast blink
X001A[ 109]		fast blink	on	slow blink	fast blink
X001A[ 110]		slow blink	on	slow blink	fast blink
X001A[ 111]		on	on	slow blink	fast blink
X001A[ 112]		off	off	on	fast blink
X001A[ 113]		fast blink	off	on	fast blink
X001A[ 114]		slow blink	off	on	fast blink
X001A[ 115]		on	off	on	fast blink
X001A[ 116]		off	fast blink	on	fast blink
X001A[ 117]		fast blink	fast blink	on	fast blink
X001A[ 118]		slow blink	fast blink	on	fast blink
X001A[ 119]		on	fast blink	on	fast blink
X001A[ 120]		off	slow blink	on	fast blink
X001A[ 121]		fast blink	slow blink	on	fast blink
X001A[ 122]		slow blink	slow blink	on	fast blink
X001A[ 123]		on	slow blink	on	fast blink
X001A[ 124]		off	on	on	fast blink
X001A[ 125]		fast blink	on	on	fast blink
X001A[ 126]		slow blink	on	on	fast blink
X001A[ 127]		on	on	on	fast blink
X001A[ 128]		off	off	off	slow blink
X001A[ 129]		fast blink	off	off	slow blink
X001A[ 130]		slow blink	off	off	slow blink
X001A[ 131]		on	off	off	slow blink
X001A[ 132]		off	fast blink	off	slow blink
X001A[ 133]		fast blink	fast blink	off	slow blink
X001A[ 134]		slow blink	fast blink	off	slow blink

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	LED 1	LED 2	LED 3	LED 4
X001A[ 135]	on	fast blink	off	slow blink
X001A[ 136]	off	slow blink	off	slow blink
X001A[ 137]	fast blink	slow blink	off	slow blink
X001A[ 138]	slow blink	slow blink	off	slow blink
X001A[ 139]	on	slow blink	off	slow blink
X001A[ 140]	off	on	off	slow blink
X001A[ 141]	fast blink	on	off	slow blink
X001A[ 142]	slow blink	on	off	slow blink
X001A[ 143]	on	on	off	slow blink
X001A[ 144]	off	off	fast blink	slow blink
X001A[ 145]	fast blink	off	fast blink	slow blink
X001A[ 146]	slow blink	off	fast blink	slow blink
X001A[ 147]	on	off	fast blink	slow blink
X001A[ 148]	off	fast blink	fast blink	slow blink
X001A[ 149]	fast blink	fast blink	fast blink	slow blink
X001A[ 150]	slow blink	fast blink	fast blink	slow blink
X001A[ 151]	on	fast blink	fast blink	slow blink
X001A[ 152]	off	slow blink	fast blink	slow blink
X001A[ 153]	fast blink	slow blink	fast blink	slow blink
X001A[ 154]	slow blink	slow blink	fast blink	slow blink
X001A[ 155]	on	slow blink	fast blink	slow blink
X001A[ 156]	off	on	fast blink	slow blink
X001A[ 157]	fast blink	on	fast blink	slow blink
X001A[ 158]	slow blink	on	fast blink	slow blink
X001A[ 159]	on	on	fast blink	slow blink
X001A[ 160]	off	off	slow blink	slow blink
X001A[ 161]	fast blink	off	slow blink	slow blink
X001A[ 162]	slow blink	off	slow blink	slow blink
X001A[ 163]	on	off	slow blink	slow blink
X001A[ 164]	off	fast blink	slow blink	slow blink
X001A[ 165]	fast blink	fast blink	slow blink	slow blink
X001A[ 166]	slow blink	fast blink	slow blink	slow blink
X001A[ 167]	on	fast blink	slow blink	slow blink
X001A[ 168]	off	slow blink	slow blink	slow blink
X001A[ 169]	fast blink	slow blink	slow blink	slow blink
X001A[ 170]	slow blink	slow blink	slow blink	slow blink
X001A[ 171]	on	slow blink	slow blink	slow blink
X001A[ 172]	off	on	slow blink	slow blink
X001A[ 173]	fast blink	on	slow blink	slow blink
X001A[ 174]	slow blink	on	slow blink	slow blink
X001A[ 175]	on	on	slow blink	slow blink
X001A[ 176]	off	off	on	slow blink
X001A[ 177]	fast blink	off	on	slow blink
X001A[ 178]	slow blink	off	on	slow blink
X001A[ 179]	on	off	on	slow blink

## PRODUCT MANUAL | XT TOUCH BUTTONS

	LED 1	LED 2	LED 3	LED 4
X001A[ 180]	off	fast blink	on	slow blink
X001A[ 181]	fast blink	fast blink	on	slow blink
X001A[ 182]	slow blink	fast blink	on	slow blink
X001A[ 183]	on	fast blink	on	slow blink
X001A[ 184]	off	slow blink	on	slow blink
X001A[ 185]	fast blink	slow blink	on	slow blink
X001A[ 186]	slow blink	slow blink	on	slow blink
X001A[ 187]	on	slow blink	on	slow blink
X001A[ 188]	off	on	on	slow blink
X001A[ 189]	fast blink	on	on	slow blink
X001A[ 190]	slow blink	on	on	slow blink
X001A[ 191]	on	on	on	slow blink
X001A[ 192]	off	off	off	on
X001A[ 193]	fast blink	off	off	on
X001A[ 194]	slow blink	off	off	on
X001A[ 195]	on	off	off	on
X001A[ 196]	off	fast blink	off	on
X001A[ 197]	fast blink	fast blink	off	on
X001A[ 198]	slow blink	fast blink	off	on
X001A[ 199]	on	fast blink	off	on
X001A[ 200]	off	slow blink	off	on
X001A[ 201]	fast blink	slow blink	off	on
X001A[ 202]	slow blink	slow blink	off	on
X001A[ 203]	on	slow blink	off	on
X001A[ 204]	off	on	off	on
X001A[ 205]	fast blink	on	off	on
X001A[ 206]	slow blink	on	off	on
X001A[ 207]	on	on	off	on
X001A[ 208]	off	off	fast blink	on
X001A[ 209]	fast blink	off	fast blink	on
X001A[ 210]	slow blink	off	fast blink	on
X001A[ 211]	on	off	fast blink	on
X001A[ 212]	off	fast blink	fast blink	on
X001A[ 213]	fast blink	fast blink	fast blink	on
X001A[ 214]	slow blink	fast blink	fast blink	on
X001A[ 215]	on	fast blink	fast blink	on
X001A[ 216]	off	slow blink	fast blink	on
X001A[ 217]	fast blink	slow blink	fast blink	on
X001A[ 218]	slow blink	slow blink	fast blink	on
X001A[ 219]	on	slow blink	fast blink	on
X001A[ 220]	off	on	fast blink	on
X001A[ 221]	fast blink	on	fast blink	on
X001A[ 222]	slow blink	on	fast blink	on
X001A[ 223]	on	on	fast blink	on
X001A[ 224]	off	off	slow blink	on

## PRODUCT MANUAL | XT TOUCH BUTTONS

	LED 1	LED 2	LED 3	LED 4
X001A[ 225]	fast blink	off	slow blink	on
X001A[ 226]	slow blink	off	slow blink	on
X001A[ 227]	on	off	slow blink	on
X001A[ 228]	off	fast blink	slow blink	on
X001A[ 229]	fast blink	fast blink	slow blink	on
X001A[ 230]	slow blink	fast blink	slow blink	on
X001A[ 231]	on	fast blink	slow blink	on
X001A[ 232]	off	slow blink	slow blink	on
X001A[ 233]	fast blink	slow blink	slow blink	on
X001A[ 234]	slow blink	slow blink	slow blink	on
X001A[ 235]	on	slow blink	slow blink	on
X001A[ 236]	off	on	slow blink	on
X001A[ 237]	fast blink	on	slow blink	on
X001A[ 238]	slow blink	on	slow blink	on
X001A[ 239]	on	on	slow blink	on
X001A[ 240]	off	off	on	on
X001A[ 241]	fast blink	off	on	on
X001A[ 242]	slow blink	off	on	on
X001A[ 243]	on	off	on	on
X001A[ 244]	off	fast blink	on	on
X001A[ 245]	fast blink	fast blink	on	on
X001A[ 246]	slow blink	fast blink	on	on
X001A[ 247]	on	fast blink	on	on
X001A[ 248]	off	slow blink	on	on
X001A[ 249]	fast blink	slow blink	on	on
X001A[ 250]	slow blink	slow blink	on	on
X001A[ 251]	on	slow blink	on	on
X001A[ 252]	off	on	on	on
X001A[ 253]	fast blink	on	on	on
X001A[ 254]	slow blink	on	on	on
X001A[ 255]	on	on	on	on