Link Touch
Manual

Innon Energy UK Ltd
Registered address: Global House, 1 Ashley Avenue, Epsom, Surrey, KT18 5AD,
United Kingdom
Company number: 6740177 VAT Number: 941 2897 05

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Introduction

Overview

HMIs have developed heavily in the last decades with the introduction of LCD screens first and LCT touch screens more recently, moving from hardware gauges and potentiometers to displays showing charts and gauges similar mimicking the physical hardware.

With more and more development available with the use of HTML5, improved graphics and high-resolution panels, displays now are opening on visualizations that look so nice that are used in kiosk dashboards on stores, in public places, showing data transformed and with clear graphic that becomes an addition to the system rather than just a tool to interface with it.

Powerful high-resolution panels are becoming a must to get nice graphic displayed on touch screens, with the required high responsiveness that makes operating the system practical and easy.

At Innon we believe on helping our clients achieving the best results, achieving greatness. We took the best industrial panels with 6 cores CPUs, capacitive touch screen, high resolution, powered by Android OS to guarantee compatibility with standard systems, and we enhanced the experiencing building a kiosk app on top that makes the screens safe and easy to use, with direct implementation of Niagara Kiosk mode.

In the box you will find:

- 1x Link Touch display
- 1x 12V 4A Power Supply Unit
- 3x mains leads (UK, US and EU)
- 1x kit of 4 clips and screws for "flush" installation

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Available models

LNK-T10-IP-WEB (Original part number TPC101-A100) 10.1" touch panel 1280x800
LNK-T15-IP-WEB (Original part number TPC156-A100) 15.6" touch panel 1920x1080
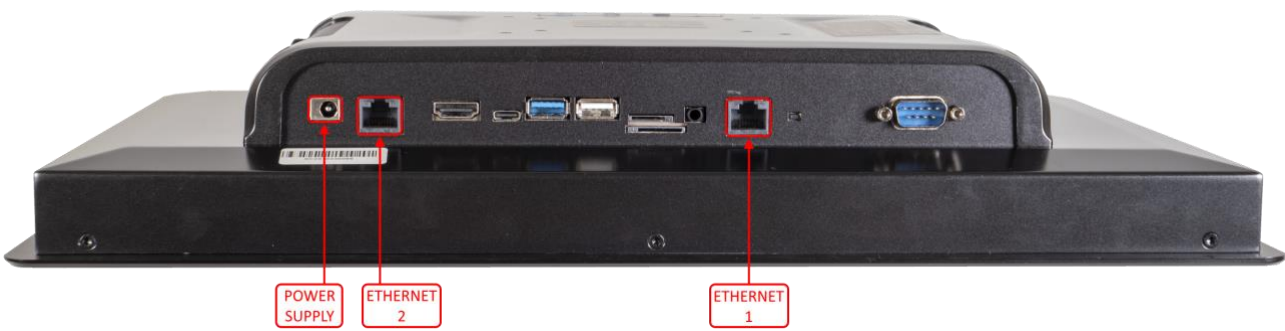
Hardware

Connectivity with the network devices can be achieved using the onboard WiFi (located on the top) or through an Ethernet cable using the RJ45 socket at the bottom. The power supply barrel connector is also located at the bottom of the device.

LNK-T10-IP-WEB connections

LNK-T15-IP-WEB connections

WIFI
ANTENNA

Wiring power supply
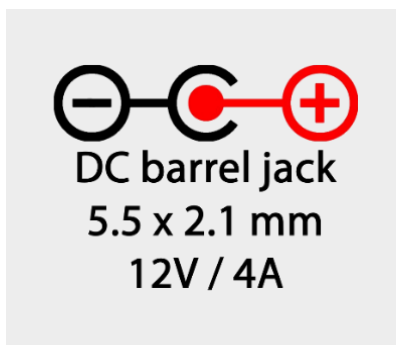
A dedicated "brick type" PSU is provided in the box.

The PSU works with 100 to 240 Vac mains voltage and 50 Hz or 60 Hz frequency.

Three separate mains leads are already provided in the box:

- **type G** (UK)
- **type B** (USA, Canada and Mexico)
- **type F** (Europe and Russia)

The mains leads are connected to the power supply unit using a IEC C13 plug ("kettle lead").

If you plan to use a different power supply unit, the screen requires a 12 Vdc 4 A connection using a barrel type connector (see size and polarity below).

Using the HDMI output

Link Touch is provided with an HDMI output available on board. Connecting an external monitor/TV, Link Touch will provide a mirrored video output making it a useful tool to drive and control large kiosk displays, for example.
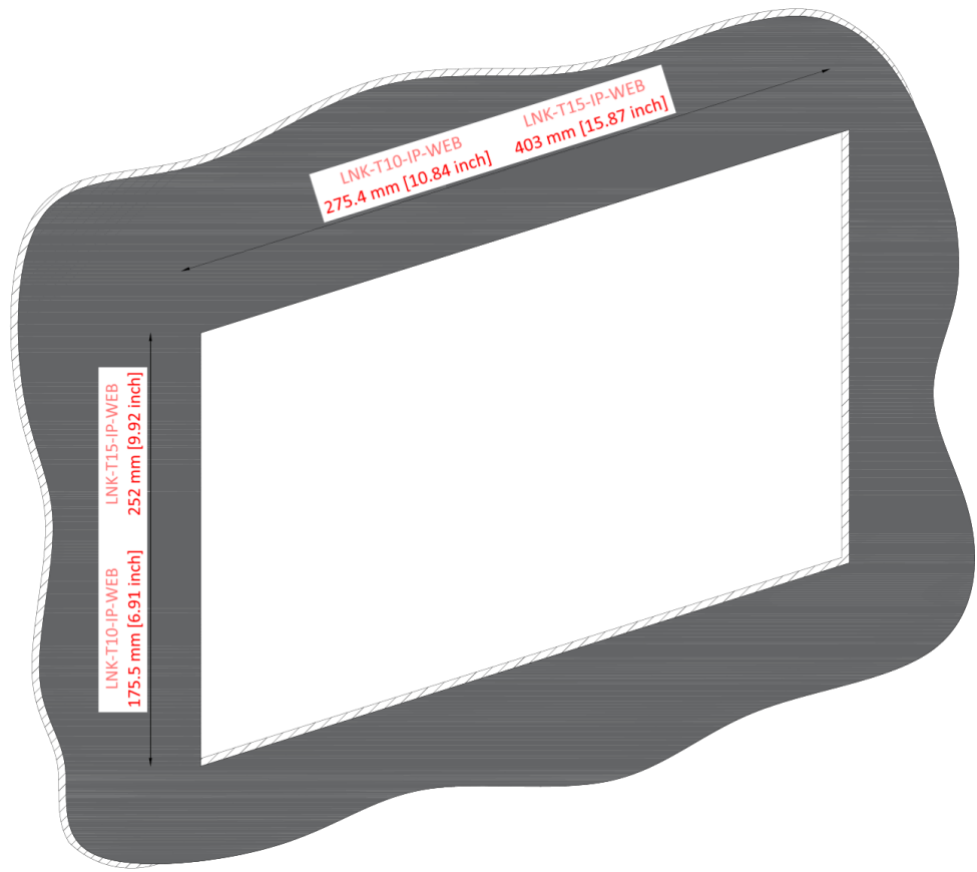
Internal speaker

Link Touch is provided with an internal small mono speaker located on the back, near the connectors. The volume control is available also when using the Link Touch application.
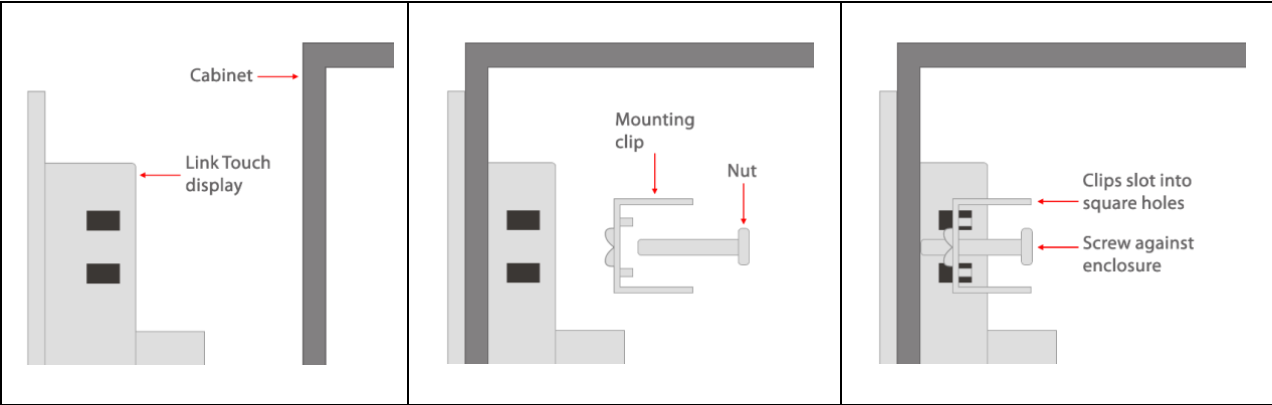
Flush installation

The screen is provided with clips to be mounted flush (ie on an electrical panel door).

The front of the screen is IP65 rated.

The bezels are 3mm deep.

Size of the hole:

Installation:

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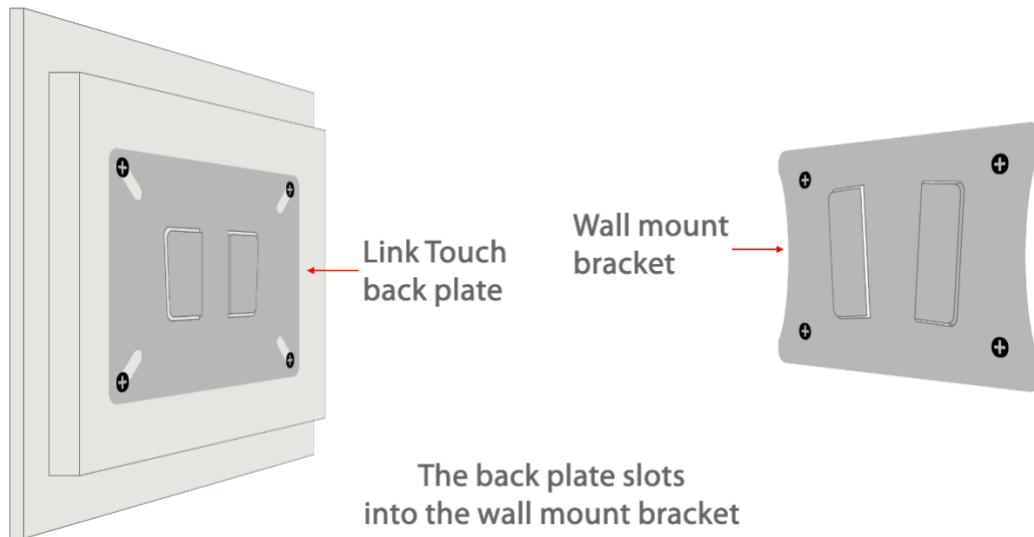Company number: 6740177 VAT Number: 941 2897 05

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Surface installation (using the VESA connection)

Link Touch provides on both the 10.1" and the 15.6" versions the possibility of using a VESA bracket.

The supported VESA standards are 75 x 75 mm and 100 x 100 mm.

VESA brackets for surface installation are available on the market.

An example of surface installation with a flat low-profile bracket:

Link Touch back plate

Wall mount bracket

The back plate slots into the wall mount bracket

NOTE: VESA brackets and back plates are not provided by Innon. These brackets are standard and can be found on any retailer, including Amazon. Look for "VESA wall mount 100x100" and the bracket used in the example above will be found. More brackets as desk standing ones (look for "VESA desk 75x75"), or VESA arms can be also found, depending on the mounting requirements.

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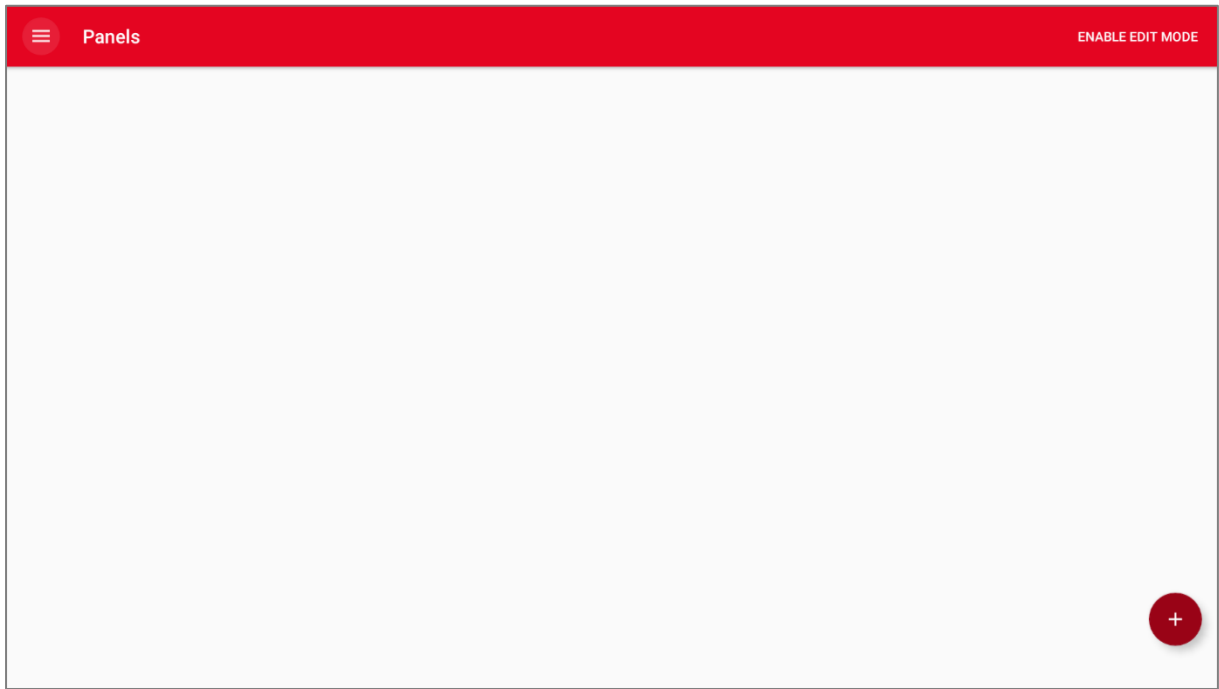Company number: 6740177 VAT Number: 941 2897 05

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The Link Touch App

Navigation

When the screen is powered up, the Link Touch application runs natively and cannot be overridden.

The Link Touch app sets the device in "kiosk" mode and prevents the user from accessing the Link Touch as a regular Android tabled. Android settings are only available through the app and are password protected by default. See the next chapter for more information.

The app starts by default from the "Panels" page.

What is a panel?

A "panel" defines a specific IP address and port to connect to and visualise the available graphical web pages. A panel can be a Tridium Jace or supervisor (where auto login is supported for both secure and unsecure connections), or any generic device that provides HTML pages to display

Scrolling on the screen from the bottom side to the top, the Android button bar is shown.

Hide the bar by pressing the 2 chevrons on the left side.

Note: the on/off button is disabled. Use the physical button on the back of the screen or remove power supply to power down the device.

When navigating inside a panel, a small button is shown at the bottom when touching the screen:
Pressing it will expand some useful navigation buttons:

This will allow to navigate to back and forward on the HTML pages, reach the home page configured in the panel address, refresh the visualised web page, or go back to the "panels menu"

Scrolling on the screen from the left side to the right, the app menu will be shown.

- "Panels". From here you can add, modify, or view your panels.
- "Settings". Allows the configuration of Link Touch
- "About". Provides information about the app release

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A couple of notes about security

The Link Touch App is not only a tool that makes the Link Touch display versatile and designed for the HMI. The Link Touch App adds important security layers, an essential topic in a BMS network.

As quickly mentioned in the chapter above, the App basically sets Android in kiosk mode, not the same as a tablet. The app basically controls the screen and cannot be overridden unless the user decides to factory default Link Touch and use it as a regular Android tablet (there is a dedicated chapter in this manual).

What the Link Touch App protects:

- The Android settings are limited with some settings locked, and the ones available are accessible only if the settings password is inserted
- Installation of any other app or anything else on the screen is blocked
- The USB ports are locked. When connecting any device, the app verifies the content and will allow access only to the update apk file of the Link Touch App (which is a signed app, so any other app with the same name would not work)
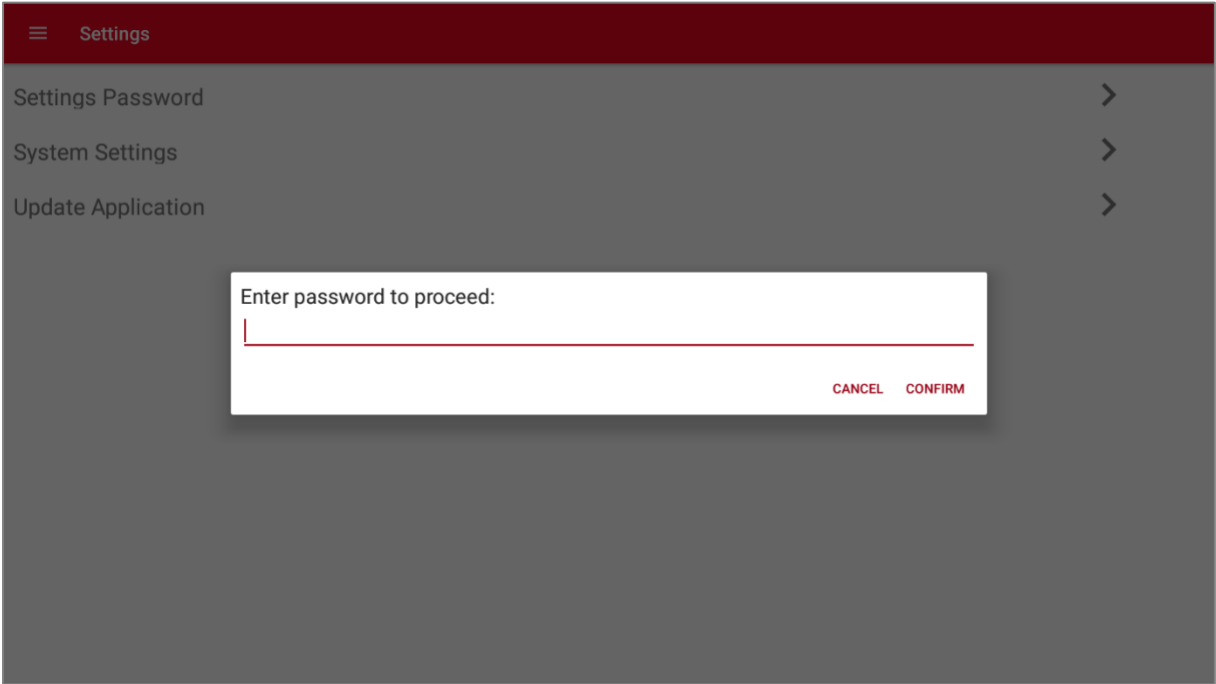- External commands are blocked

The Android version running on the device cannot be upgraded, The Link Touch App is locking any access to keep the device secured from malicious attacks.

Be aware that when proceeding with the factory default and deleting the app, Android will unlock completely allowing the installation of any app and removing all the layers of protection offered by the Link Touch system.
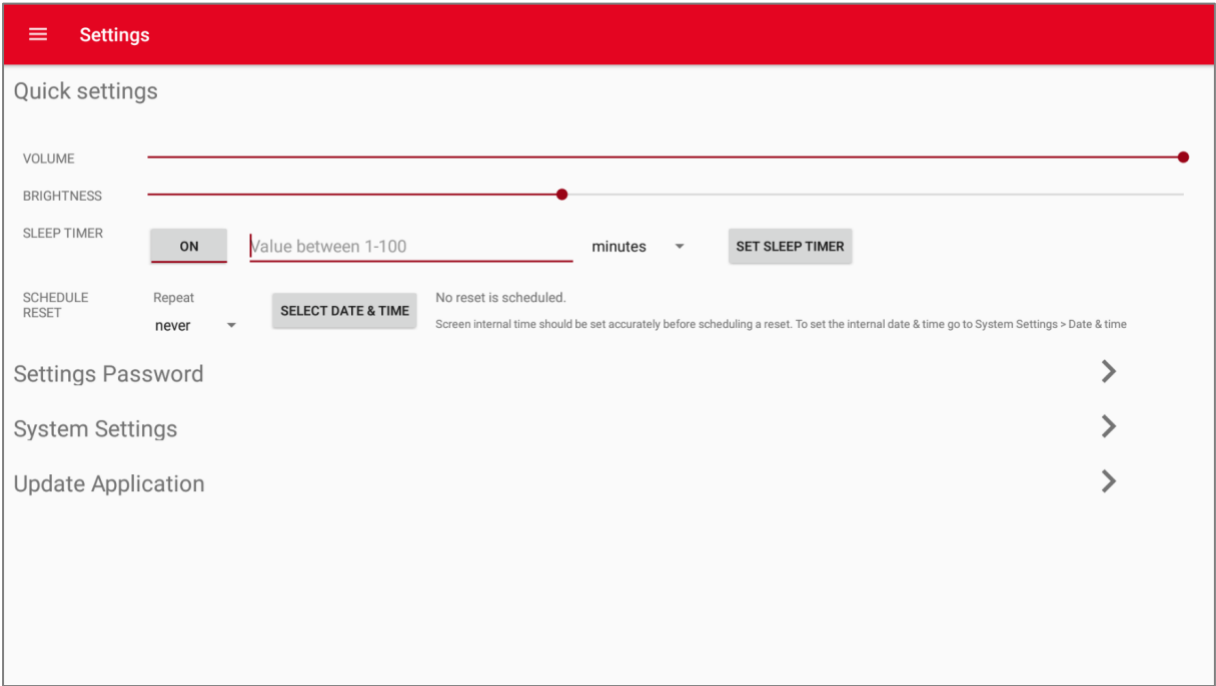
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Navigation: Settings

If you select the option "Settings" from the app menu and a Link Touch password has been set up, it will be required at this stage.

The default password is **link1234** (the password is case sensitive). Newer releases of software come by default with no password, so you can set it later if needed.

Input the password and press "Confirm". The settings menu is then available

Note: Volume, Brightness and Sleep Timer are available only from **version 1.1.2** onward, while the Schedule Reset is available from **version 1.1.6** onward

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Quick settings: Volume and Brightness

Adjust the loudspeaker volume and the screen brightness using the 2 sliders in the app.

Note: the first time you try adjusting these settings, Android will ask to provide the app permission to adjust the settings. Please allow the app such permission. This operation will be requested only once.

Quick settings: Sleep Timer

The sleep times allows just the display to switch off, while the app runs in the background, after the screen hasn't been touched for a certain number of minutes/seconds. This will help for example preventing pixel burn in, which though is not typical with these displays, it can still occur if the same image is displayed 24/7 for months to come.

To use this function, make sure the Sleep Times is set to "ON" (first button), then set the amount of minutes (or seconds) and finally press the button "SET SLEEP TIMER" to confirm.

SLEEP TIMER	ON	15	minutes ▼	SET SLEEP TIMER

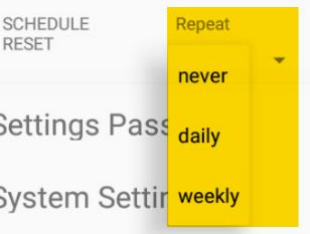To disable it, simply press the "ON" button and it will revert to "OFF".

Note: the first time you try adjusting these settings, Android will ask to provide the app permission to adjust the settings. Please allow the app such permission. This operation will be requested only once.
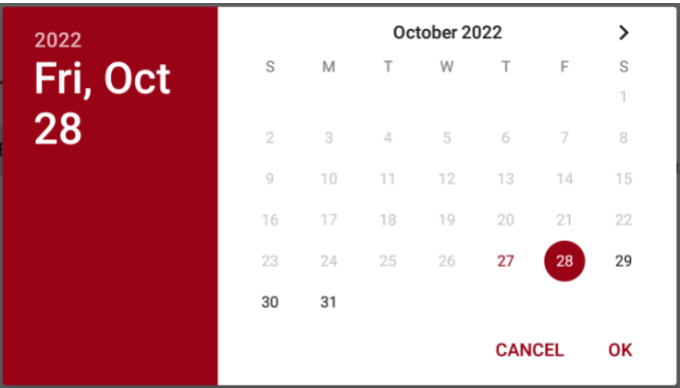
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Quick settings: Schedule Reset

Especially when using this screen with Niagara, we would strongly recommend the screen to be regularly rebooted. This restores the web server opened socket and also allows the screen to start fresh periodically.

To use this function, start by selecting the "Repeat" option and selecting if you would like just a one-off reboot, reboot the screen periodically once a day or once a week.
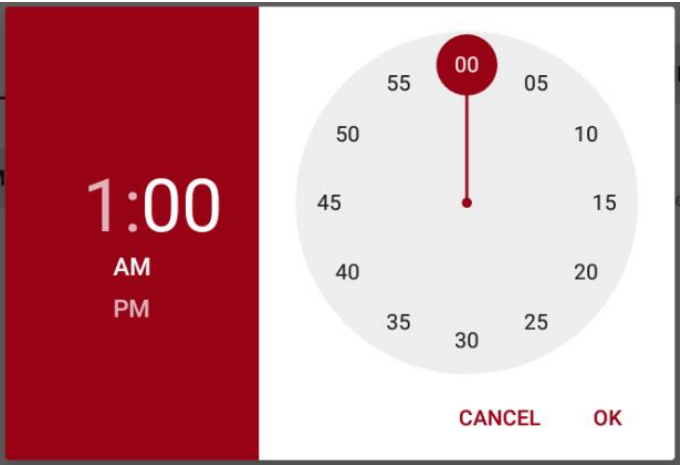
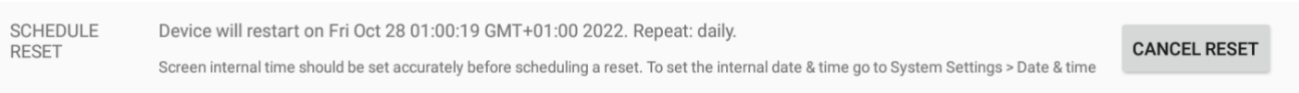**We would recommend rebooting at least weekly**

Press the button "SELECT DATE AND TIME" to set the starting date and the time for the restart

On the time, make sure you also select the AM/PM accordingly

Once programmed, Link Touch will keep performing the auto reboot as requested until "CANCEL RESET" is pressed to change this setting

Note: for this function to perform correctly, make sure also that your Link Touch clock is set on the settings
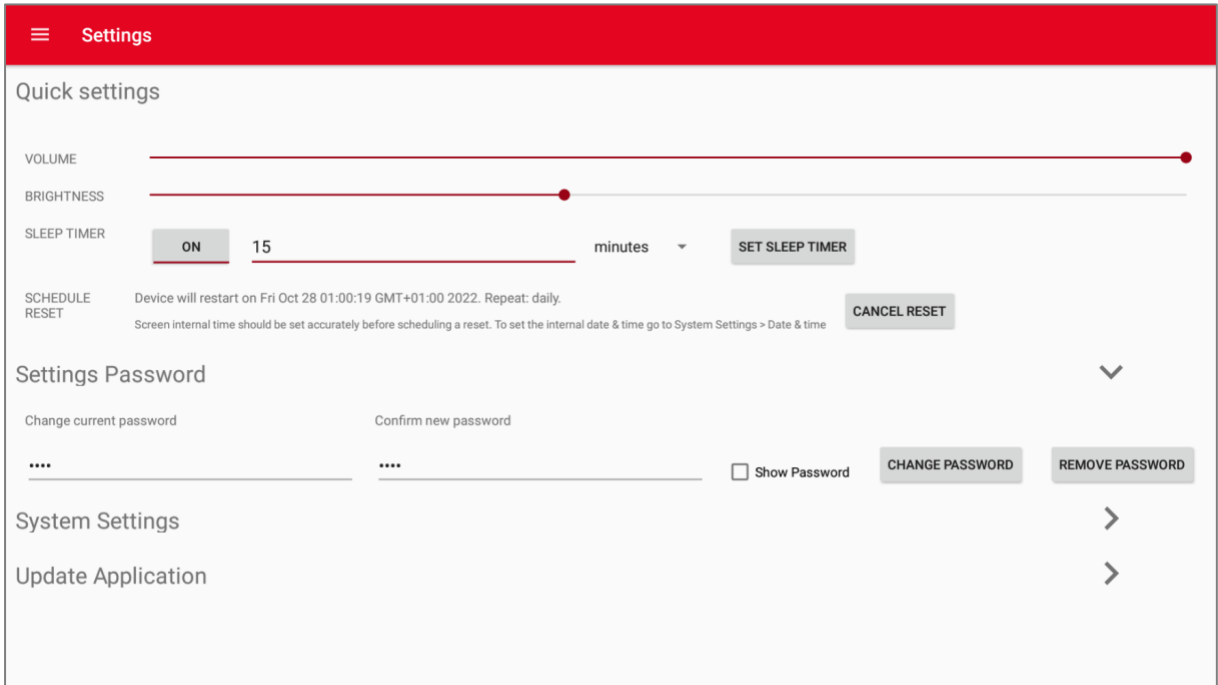
Settings Password

The settings password can be modified.

NOTE: do not forget your password. Losing the password will require the screen to reset to factory default using the batch file on our support website, and the Link Touch app reinstalled. The procedure to factory default the screen and reinstalling the Link Touch app using the batch files is described later in this manual.

Changing password requires to input the new password twice, on "Set settings password" and on "Confirm new password". Use the "Show Password" flag if you want to verify what you have written on these fields. Then press "Set new password" to confirm.
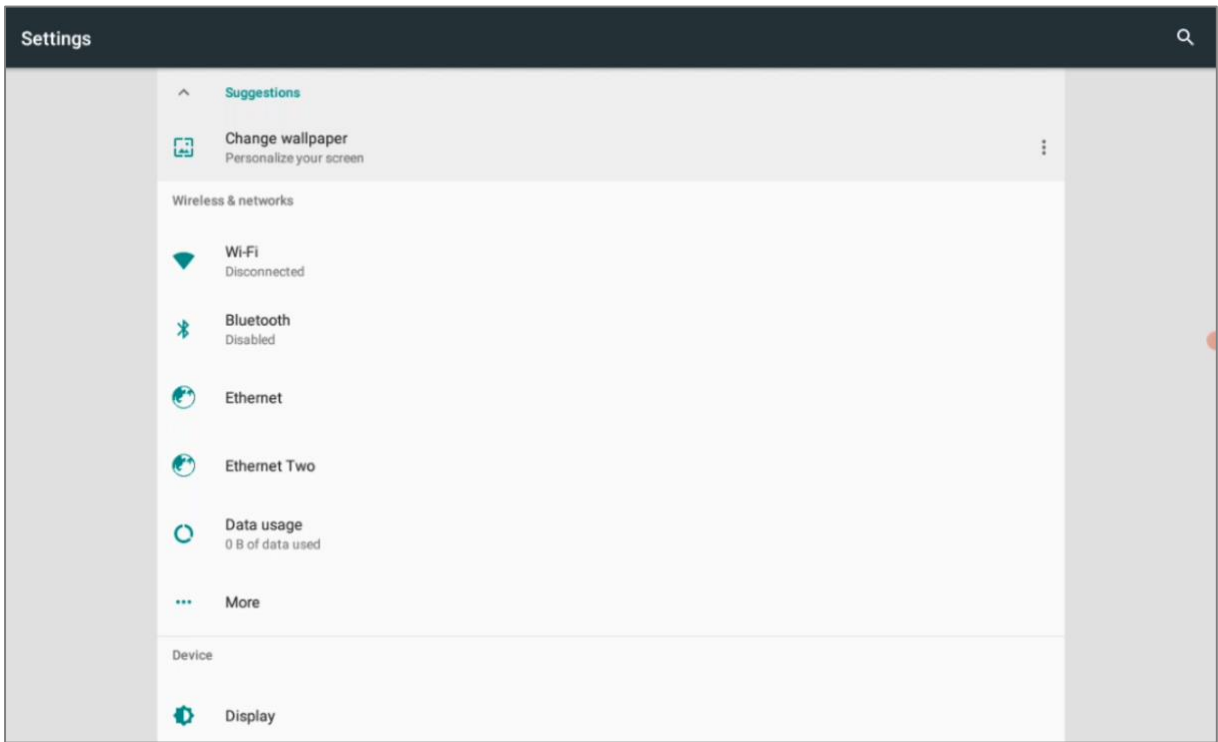
If a password is set, you can also remove it allowing anyone to edit panels and settings, using the "Remove password" button that will be available

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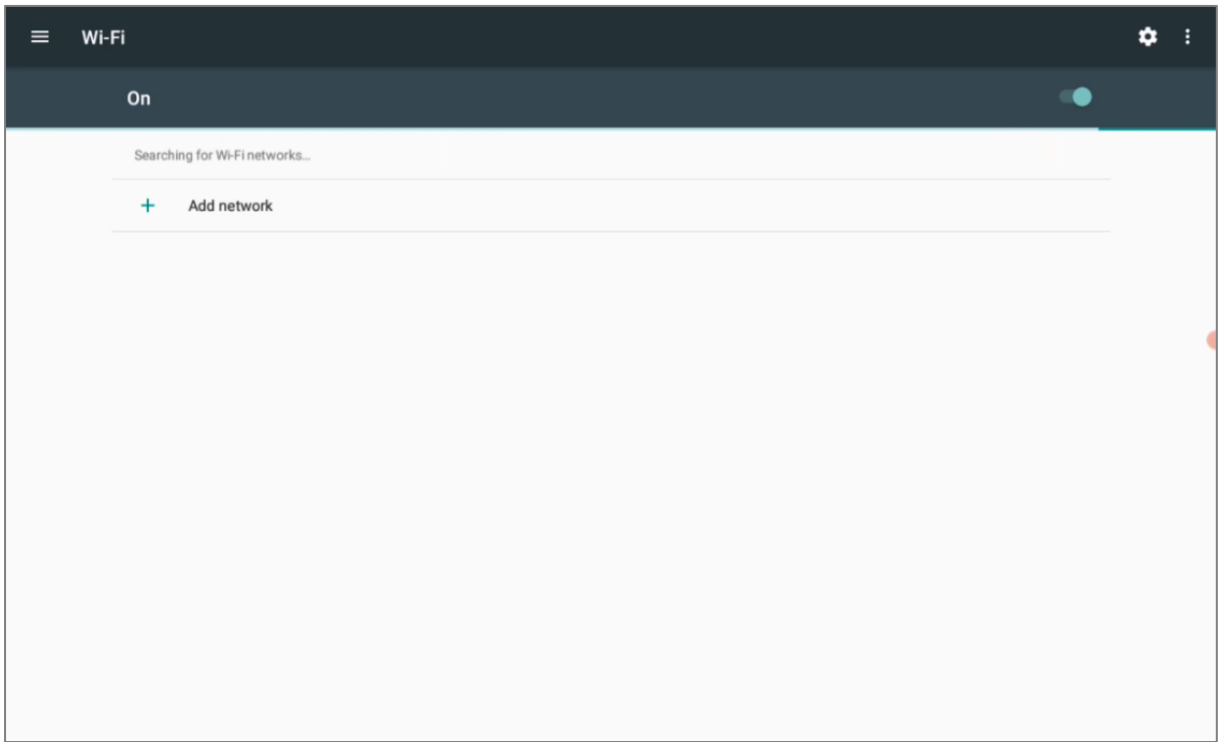Company number: 6740177 VAT Number: 941 2897 05

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System settings

System settings opens the native Android Settings menu. Note that the Link Touch app removes some options from the settings to avoid corrupting the Link Touch.

WiFi settings allows to discover and add connectivity to a WiFi network. WiFi is disabled by default.

Ethernet ports 1 and 2 can be independently configured. By default, they work on DHCP, but static IP addresses can be used

Note 1: when setting your IP address static and confirming, the fields here will show still all zeroes if the cable is not connected. This can be useful, as it can be used to confirm you are connected to the right port and the cable works fine.

Note 2: when setting up the static IP, a pop up window opens with some greyed our suggestions for IP, gateway, subnet and DNS. These are just suggestions, so you still need to set each individual part. The "Confirm" button will only appear only once all the parts have been correctly inserted.

Display brightness, display rotation and factory reset settings are available.

Check the factory reset chapter on this manual for more information.

To exit the settings, swipe up to show the buttons menu at the bottom of the screen and tap the "back" button until you get back to the main Link Touch app section

Update Application

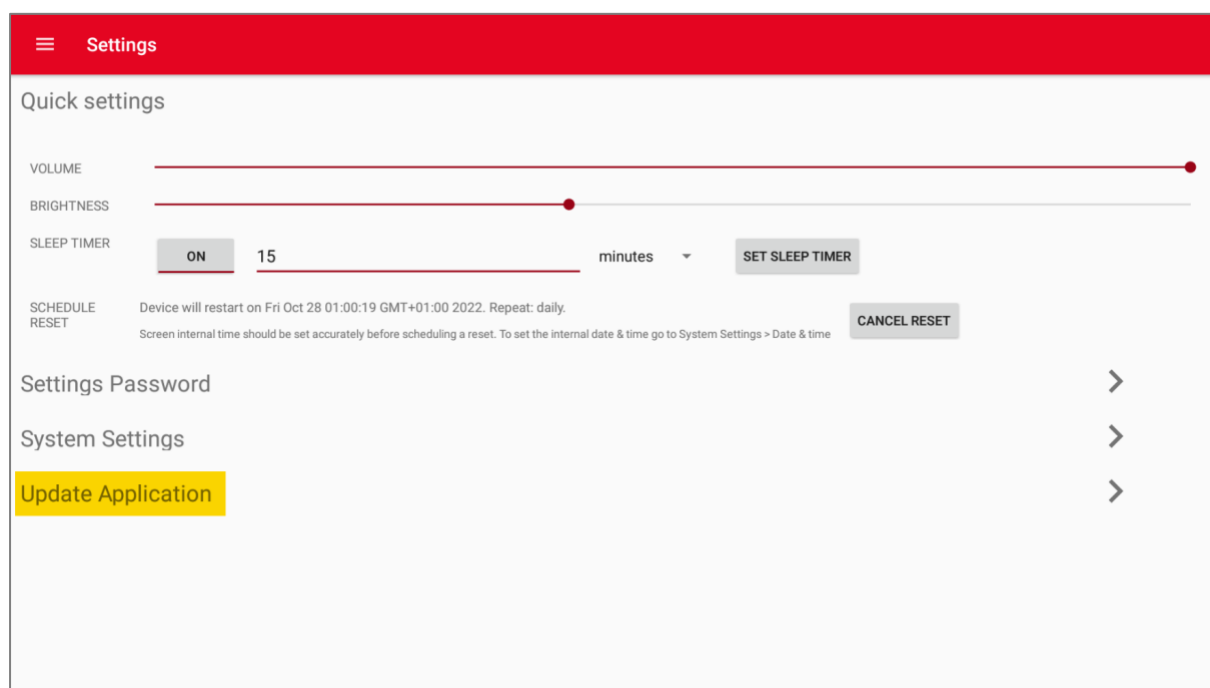The Link Touch app can be updated via USB.

Use a USB pen drive formatted in FAT32 and add only the update.apk file in the root of the USB drive.

The update.apk files for newer Link Touch app versions can be downloaded from our support website, here: http://support.innon.com/Link%20Touch/Firmware_updates/

Use the update.apk file within the "update" folder of the required version. The "install" folder is used only for installing the app using a PC on Link Touch after a factory default has been performed (see related chapter).

Insert the USB pen drive on one of the available USB type A ports of Link Touch.

Then, click on the Update Application option.

The screen will ask for confirmation and then run through the update process automatically.
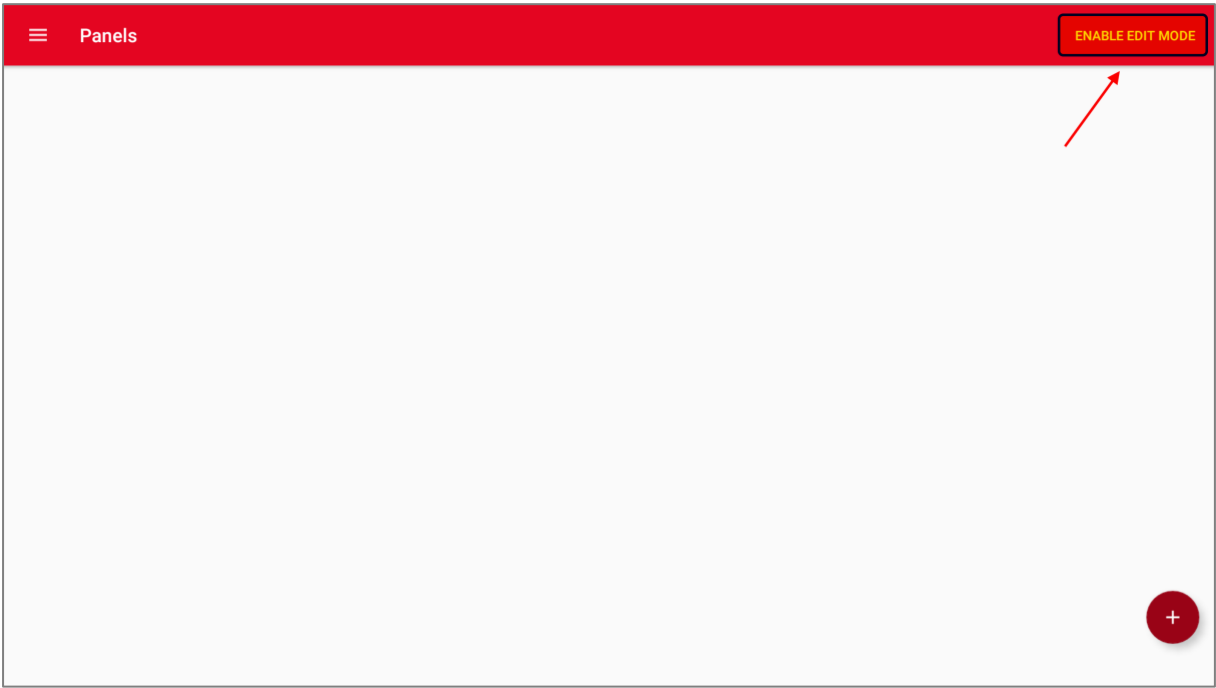
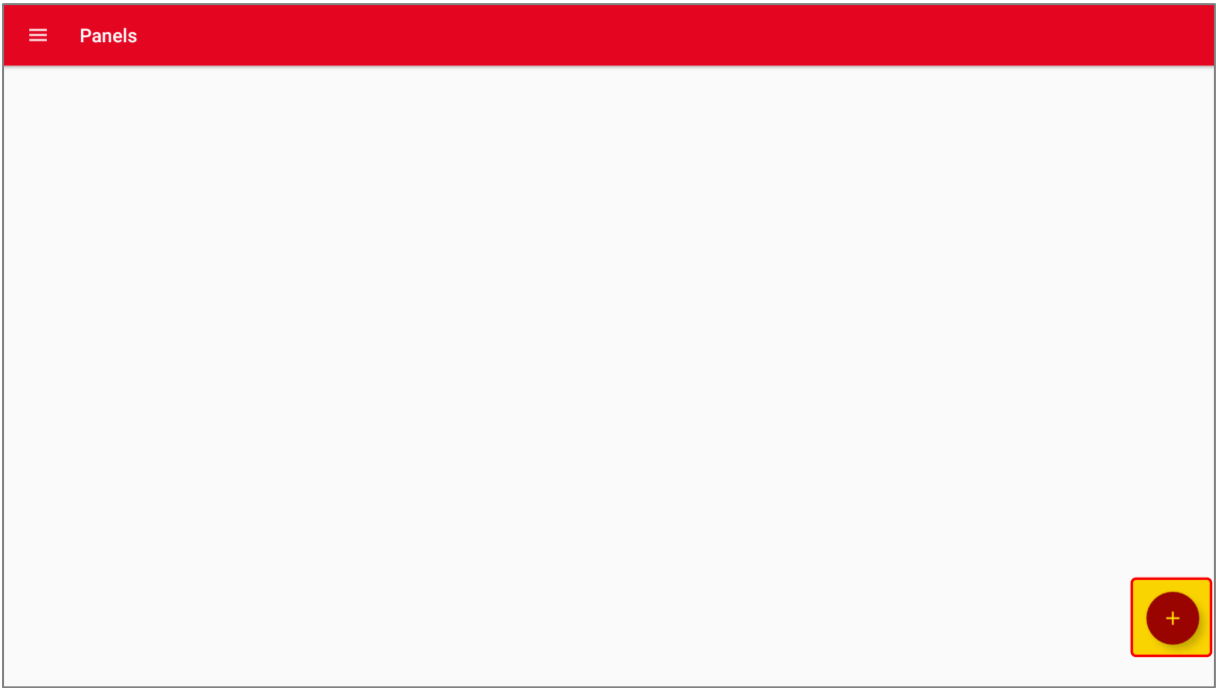**DO NOT REMOVE POWER WHILE THE UPDATE PROCESS IS RUNNING**

Navigation: Panels

Add a panel

The panels menu allows to add as many devices and configurations as required.

If a password has been configured, you will need to "Enable Edit Mode" before you can add or edit any panel.

Once you are in edit mode (or have no password configured), you can use the "+" button on the bottom right to add your new panels

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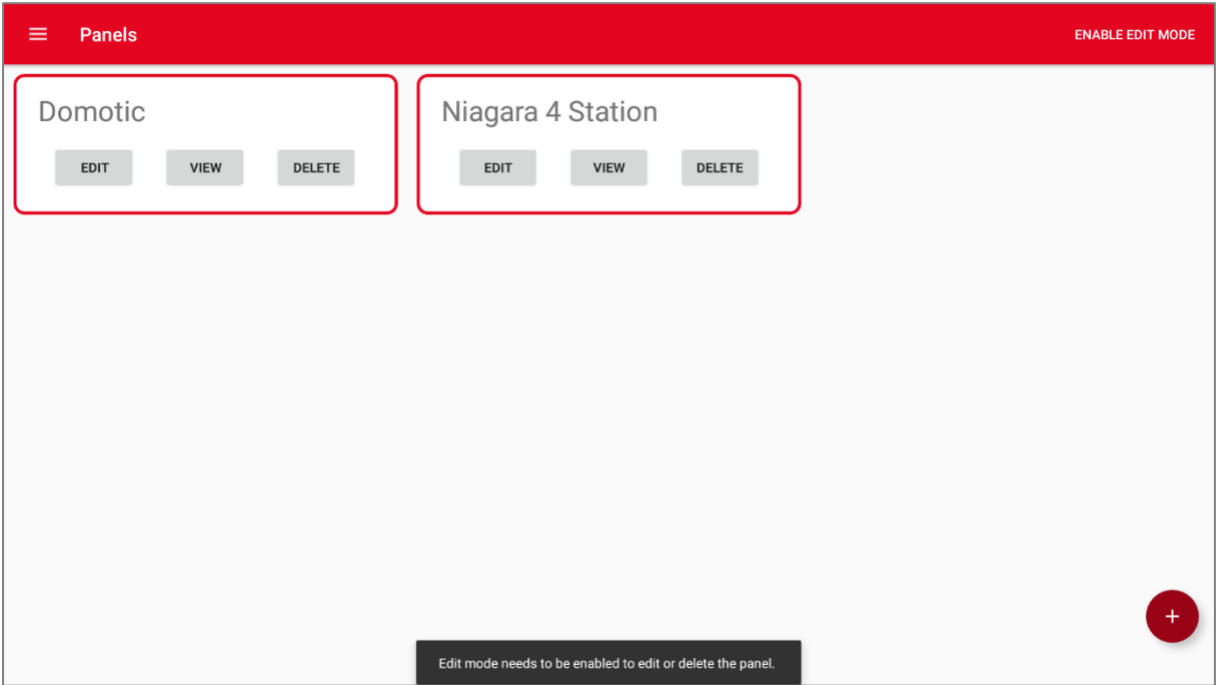For each panel you can configure multiple things:

- Panel Name. The name of the panel that is going to be displayed in the previous page to allow the user to identify what you are connecting to
- Panel URL. First, selecting whether you are using an http or https connection, and then the IP address of the device you are connecting to (add the port number after the IP separated by ":" if the port used is different from 80 for http and 443 for https)
- Login Type. The preferred login type varies between
  - Manual login, where the screen will just take you to the address you have selected on the Panel URL section
  - Basic Auth, where the screen will get to the selected Panel URL and attempt a login with the username and password provided, using a Basic Authentication Scheme
  - Niagara 4, where the screen will use the username and password to attempt a standard Niagara 4 authentication
  - Niagara AX, where the screen will use the username and password to attempt a standard Niagara AX authentication
- Panel Username and Panel Password, which are not visible if the previous option selected was "manual login", are the credentials that are going to be used by Link Touch to log in to the selected device
- Default view, used if you would like this panel to be loaded automatically when the screen reboots by default (only 1 panel should have this option enabled)
- Keypad (version 1.1.2 and above) where you can default the keyboard used for this panel to be a numpad only keyboard instead of a full alphanumeric one
- View panel as desktop, to view the desktop version of a page instead of the mobile one
- Link Touch automatic scaling, to enable automatic "fit ratio" scaling performed by Link Touch. It is recommended to leave this disabled with Niagara 4 pages as they usually are defaulted to automatically scale without using this option on the screen
- Pinch zoom gesture, to allow users to use the pinch gesture to zoom in and out on a viewed page

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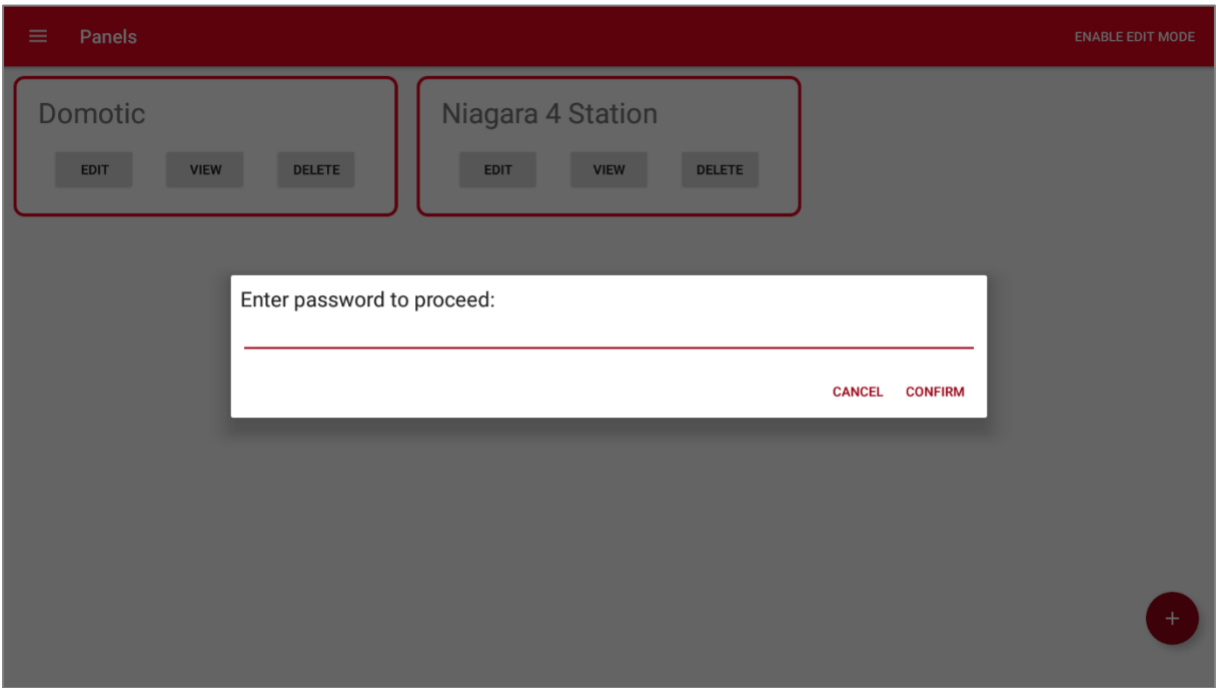Company number: 6740177 VAT Number: 941 2897 05

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Panels view and edit

Once you have a few panels configured, you will be able to view them using the "view" button.

"Edit" and "Delete" will also be visible for each panel. If a setting password is configured (default **link1234**), you will need to enter the "Edit Mode" by typing the password to use them (see example below, the message at the bottom of the screen will be displayed if you try touching them)
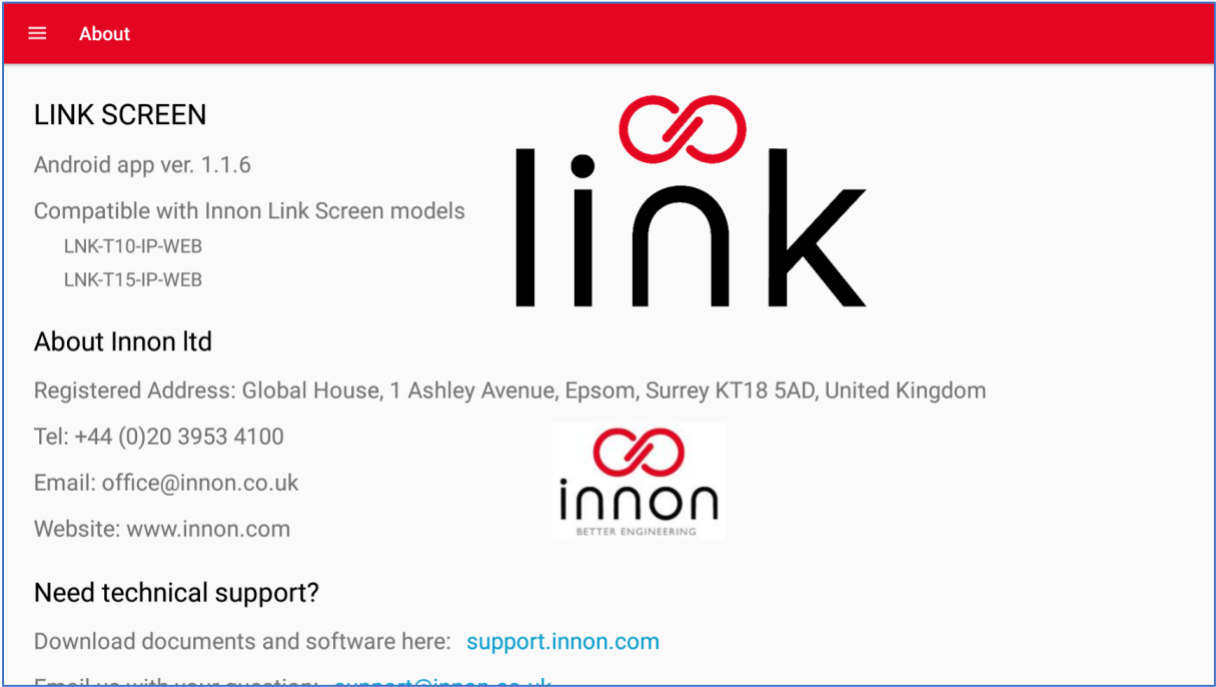

Touch the "Enable Edit Mode" on the top right corner of the screen and insert the setting password.

Navigation: About

The "About" screen provides information regarding the installed Link Touch application version, about Innon and our support useful links

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Factory reset (and deleting the Innon application)

We allow customers to restore the Link Touch screen to "factory settings" from the main Android settings. **This will delete the Link Touch app from the device** and allow to use Link Touch as a standard Android device.
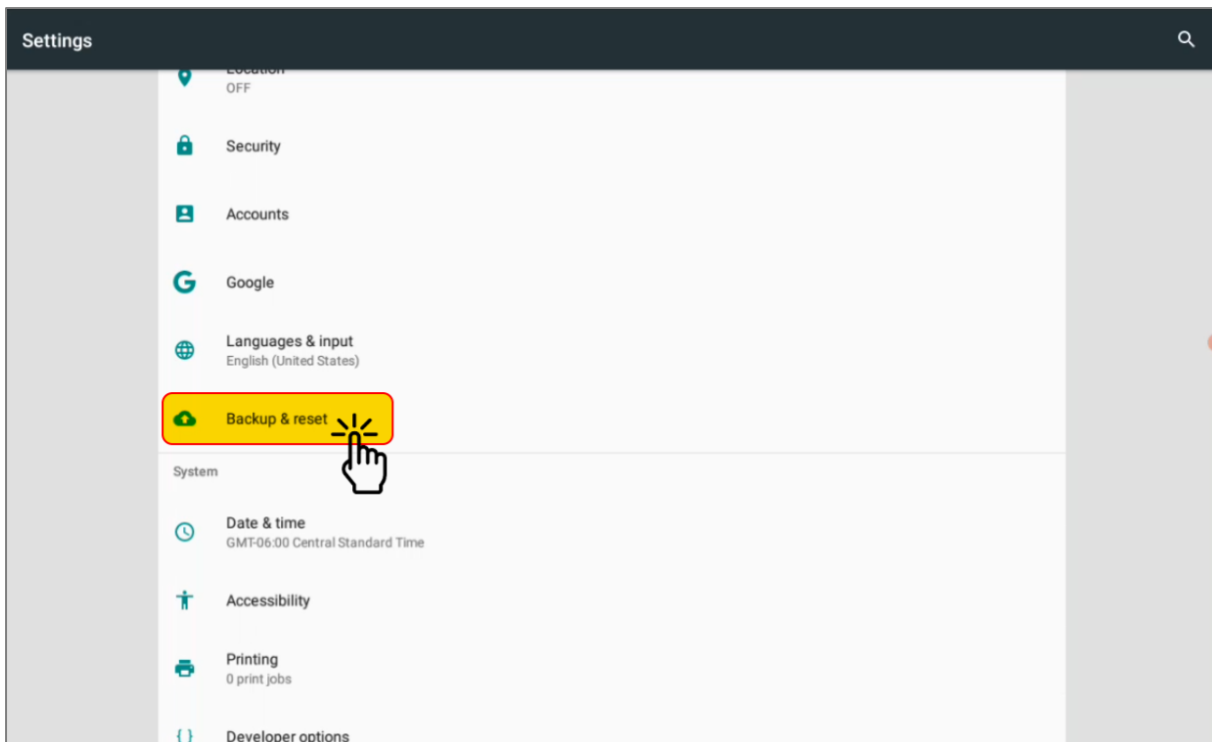
Note that the Link Touch application will only work on Link Touch. Any other android device, even with the exact same specifications will not allow the Link Touch app to run.

To reinstall the Innon Link Touch application after a factory reset, please refer to the next chapter.
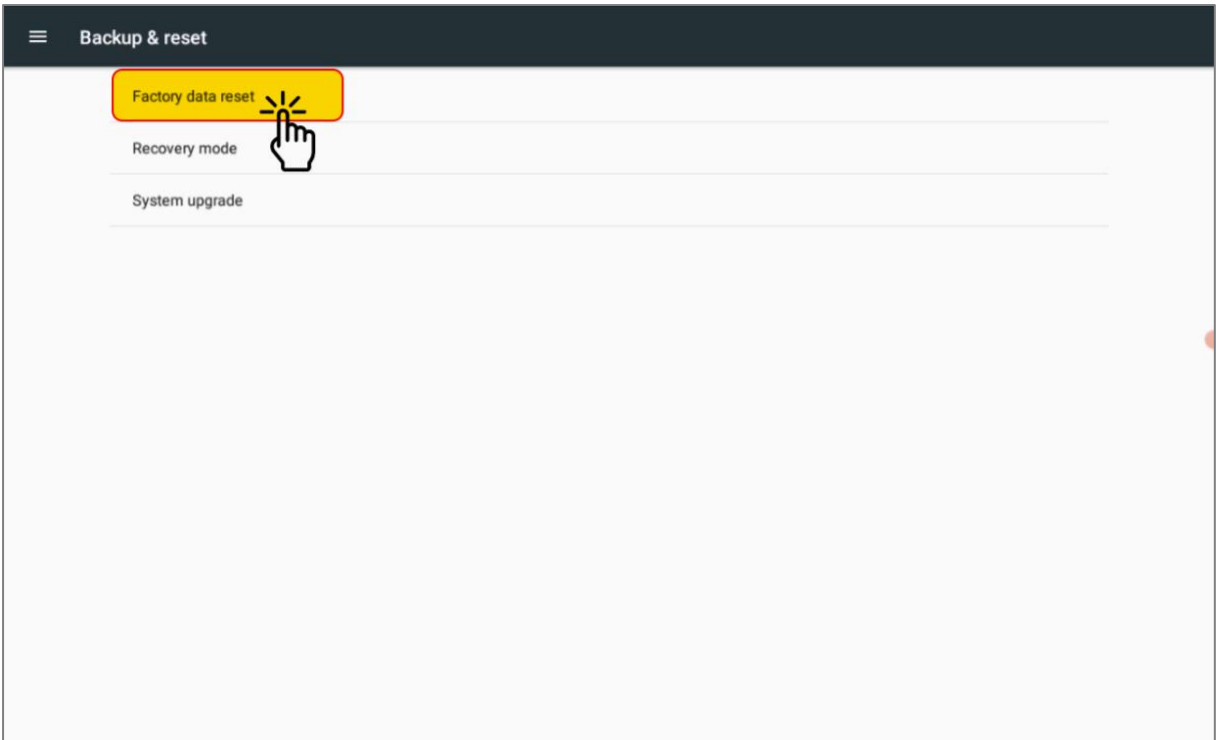
Start the procedure using the "settings" menu

Enter the Link Touch menu and select "Settings – System Settings" to open the Android menu.

Scroll down on the Android settings until you find the "Backup & reset" option, and select it

From the options available, select "Factory data reset"
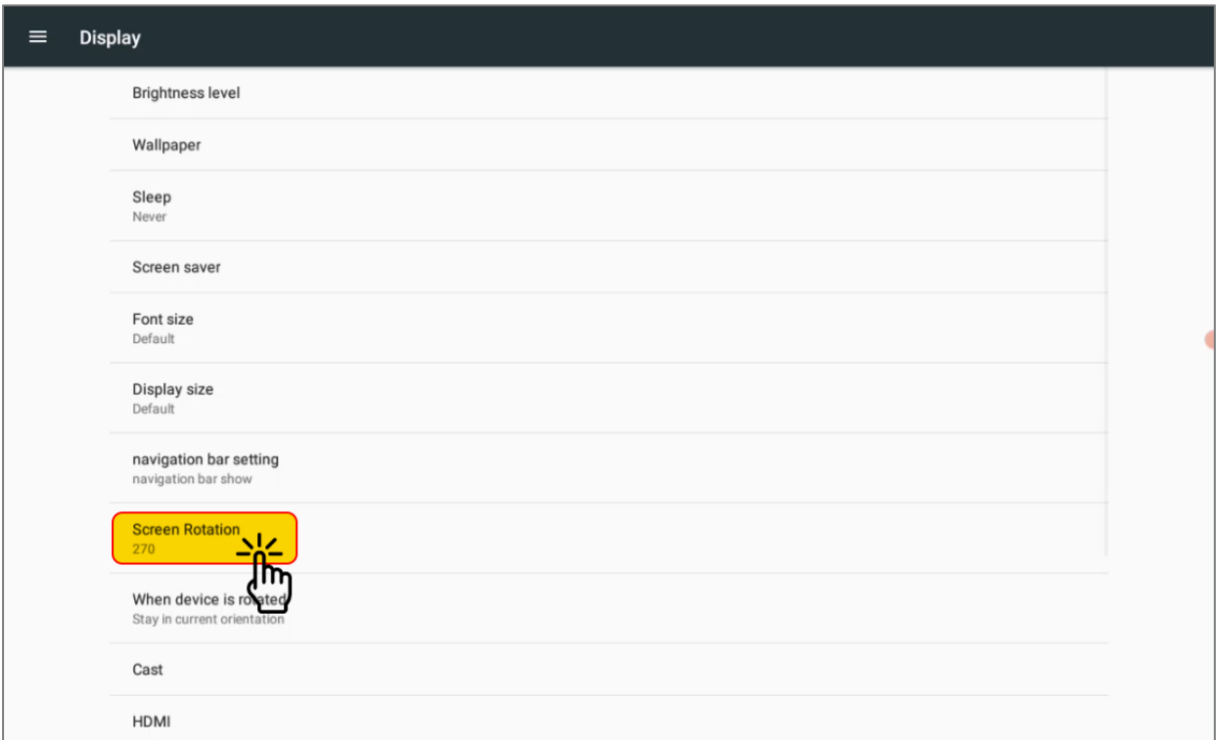

Follow the instructions on screen to proceed.

Once the screen is back to default, you can adjust the orientation of the screen from the display menu,

The landscape default mode is rotated at 270 degrees

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Start the procedure via USB-C and a PC (screen password lost)

The screen can be reset using a USB A to USB C cable, a PC and our batch file available on our support website. This becomes useful in case you forget or lose the Link Touch app password, and consequently lose access to all the screen settings.

The process requires you to have physical access to the screen and the connectors on the back, a USB A to USB C cable and a PC running Windows.

Steps.

Connect Link Touch to your PC using a USB cable type C (connected to the Link Touch connector highlighted below) to USB type A (connected to your PC running Windows).

Open our support website and find the firmware/factory reset folder
http://support.innon.com/Link%20Touch/Firmware_updates/Factory%20reset/

Download the "FactoryReset.zip" file and unzip it into a new folder on your PC.

With the device correctly connected via USB and the screen turned ON, double click the "FactoryReset.bat" file.

This will open a command prompt and will automatically run the installation process.

Please allow the time for the screen to run through the factory process, do not power OFF the device until the screen has completed it.

Once finished, you can reboot Link Touch and install the Link Touch app as required (see next chapter).

Installing the Innon Link Touch app (after a factory reset)

If for any reason you have a Link Touch device that went through a factory reset, it is still possible to install the Innon Link Touch app using a PC (Windows) and a USB type C to USB type A cable.

The kiosk mode and all the Innon Link Touch app user restrictions will be applied again automatically when the device is rebooted.

Note that the Link Touch application will only work on Link Touch. Any other android device, even with the exact same specifications will not allow the Link Touch app to run.
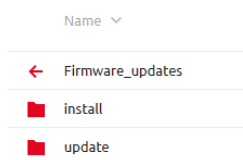
Steps.

Connect Link Touch to your PC using a USB cable type C (connected to the Link Touch connector highlighted below) to USB type A (connected to your PC running Windows).

Open our support website and find the firmware folder
http://support.innon.com/Link%20Touch/Firmware_updates/

For each firmware version you will find 2 folders, an "update" folder containing the update file for the regular software update process, and an "install" folder containing the necessary software to install the Innon Link Touch app via PC
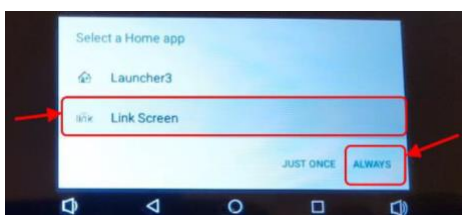
Download the "install.zip" file from the "install" folder and unzip it into a new folder on your PC.

With the device correctly connected via USB and the screen turned ON, double click the "install.bat" file.

This will open a command prompt and will automatically run the installation process.
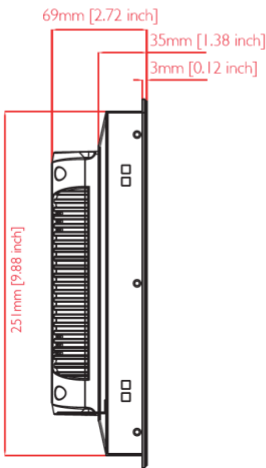
Once finished, reboot Link Touch.

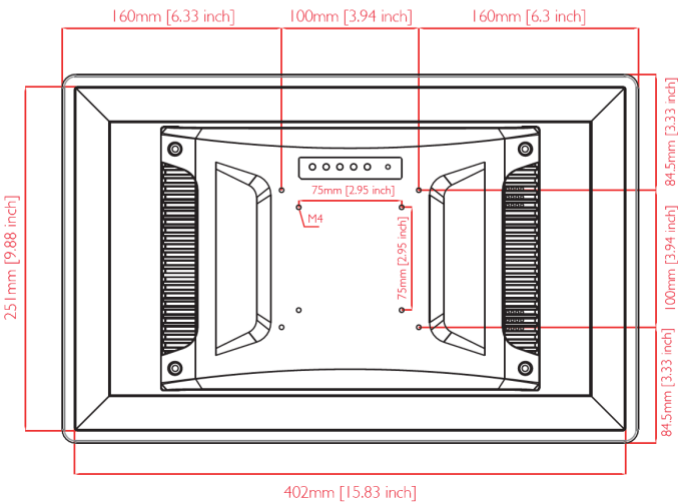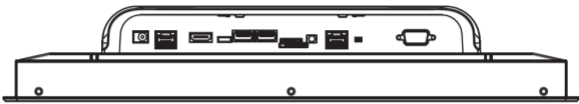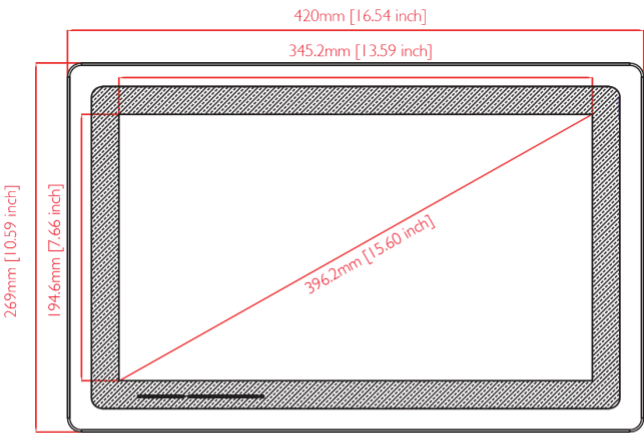The screen might ask which HOME APP you want to use. Select "Link screen" and press "always"

Technical data

Drawings

Part number: **LNK-T10-IP-WEB** (Original part number TPC101-A100)

Part number: **LNK-T15-IP-WEB** (Original part number TPC156-A100)

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Specifications

Part number: **LNK-T10-IP-WEB** (Original part number TPC101-A100)

Screen size	10.1 inches
Panel type	Industrial LCD panel A+ grade
Aspect ratio	16:10
Resolution	1280 x 800
Contrast	800:1
View angle	85/85/85/85
Luminance	300 nit
Response time	5 ms
Active area	222.7 x 125.2 mm (8.77 x 4.93 inches)
Display colours	16.7 M (8 bit)
CPU configuration	RK3399 dual core Cortex A72 + quad core Cortex A53, 64 bit, 1.8 GHz
Internal memory	eMMC 32 GB
RAM	4 GB dual channel DDR3
GPU	Mali T864 GPU
WiFi	802.11b/g/n 2.4G and 5G wifi
Touch type	Capacitive Touch Screen
I/O	USB2.0 x1, USB3.0 x1, Type C x1, COM232 x1, OTG x1, TF/SIM x1, DC12V x1, HDMI out x1, RJ45 gigabit x1, Audio 3.5mm out x1
Panel install hole	275 x 175 mm (10.83 x 6.89 inches)
Temperature and humidity	Operating: -20°C to +70°C (-4°F to 158°F), 10 to 80 %RH
	Storage: -30°C to +70°C (-22°F to 158°F), 10 to 90 %RH
Certificates	CE, FCC, RoHS, ISO
Installation	VESA (75 x 75 mm or 100 x 100 mm optional)
Material	Aluminium alloy

Part number: **LNK-T15-IP-WEB** (Original part number TPC156-A100)

Screen size	15.6 inches
Panel type	Industrial LCD panel A+ grade
Aspect ratio	16:9
Resolution	1920 x 1080
Contrast	1000:1
View angle	85/85/85/85
Luminance	350 nit
Response time	5 ms
Active area	344.2 x 193.6 mm
Display colours	16.7 M (8 bit)
CPU configuration	RK3399 dual core Cortex A72 + quad core Cortex A53, 64 bit, 1.8 GHz
Internal memory	eMMC 32 GB
RAM	4 GB dual channel DDR3
GPU	Mali T864 GPU
WiFi	802.11b/g/n 2.4G and 5G wifi
Touch type	Capacitive Touch Screen
I/O	USB2.0 x1, USB3.0 x1, Type C x1, COM232 x1, OTG x1, TF/SIM x1, DC12V x1, HDMI out x1, RJ45 gigabit x1, Audio 3.5mm out x1
Panel install hole	403 x 252 mm
Temperature and humidity	Operating: -10°C to +60°C (14°F to 140°F), 10 to 80 %RH
	Storage: -30°C to +70°C (-22°F to 158°F), 10 to 90 %RH
Certificates	CE, FCC, RoHS, ISO
Installation	VESA (75 x 75 mm or 100 x 100 mm optional)
Material	Aluminium alloy

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Company number: 6740177 VAT Number: 941 2897 05

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Guidelines for Disposal

- The appliance (or the product) must be disposed of separately in accordance with the local waste disposal legislation in force.
- Do not dispose of the product as municipal waste; it must be disposed of through specialist waste disposal centres.
- Improper use or incorrect disposal of the product may negative effects on human health and on the environment.
- In the event of illegal disposal of electrical and electronic waste, the penalties are specified by local waste disposal legislation.