[promultis]

Uno 2 Elite Table

USER'S MANUAL

CAUTION

- Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.
- This User's Manual includes detailed usage instructions for your product.
- Please read this manual thoroughly.
- Figures and illustrations in this User Manual are provided for reference only and may differ from actual equipment appearance. Equipment design and specifications may be changed without notice.
- Due to the processes required for manufacturing a large format Projected Capacitive product Promultis will only accept warranty requests for units that have a blemish, mark or smear on the touch skin that is 5% or larger than the total interactive area.

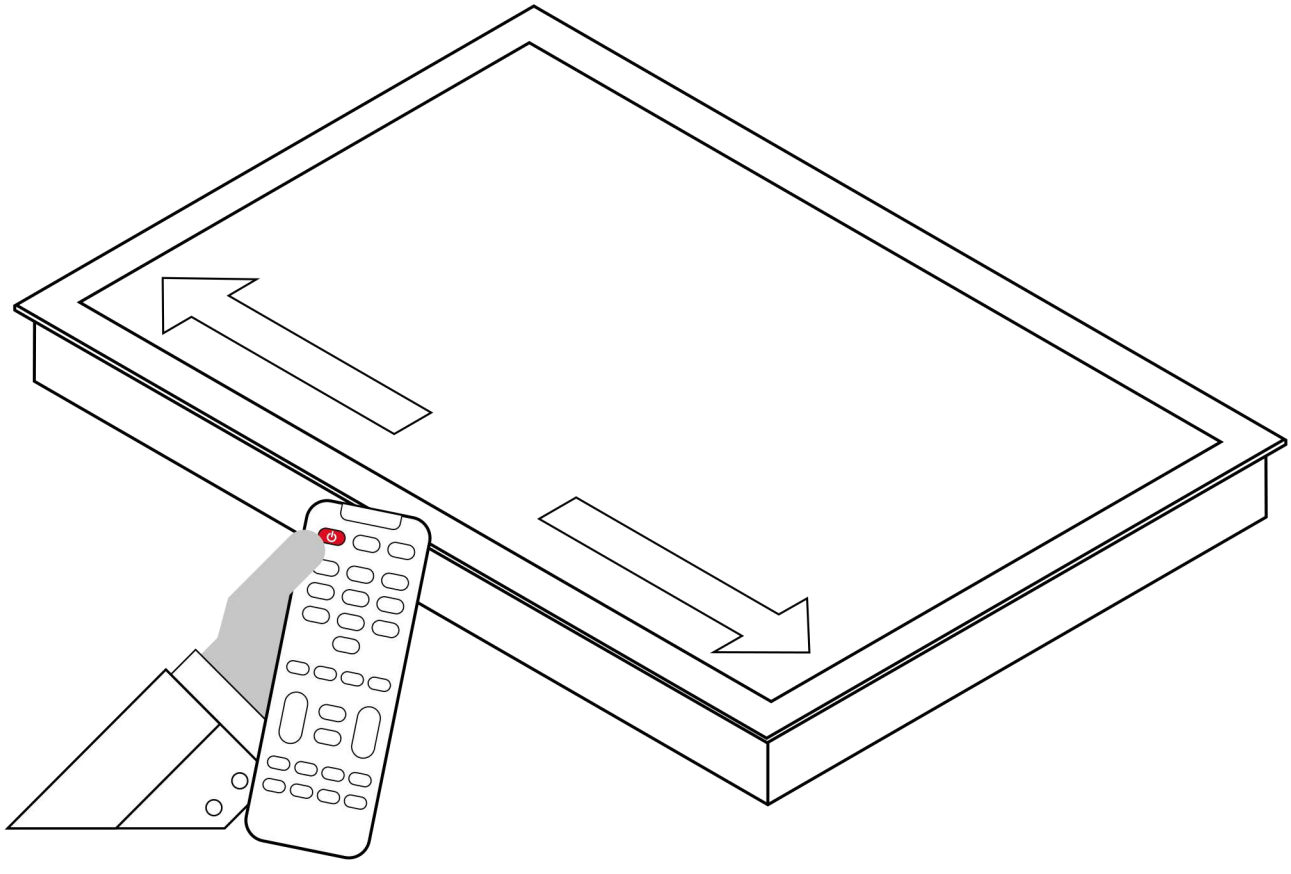
Start the device

1. Check the plug is switched on at the wall socket.

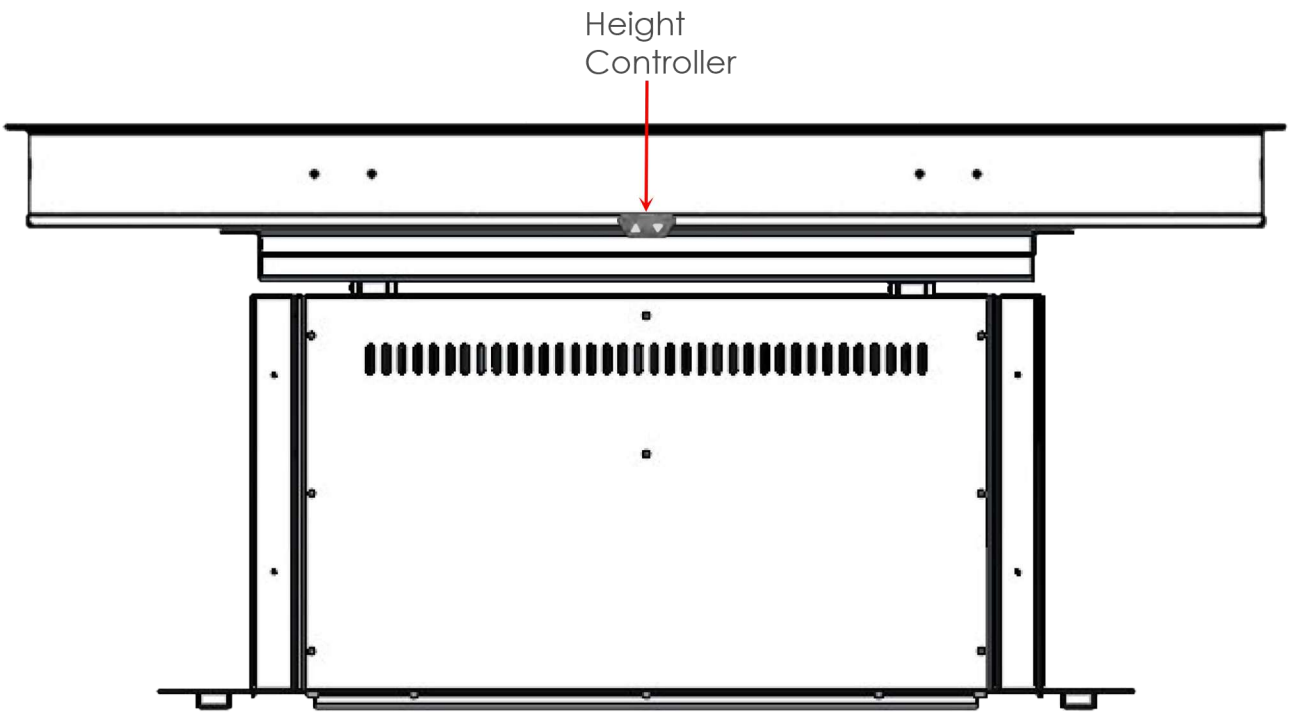
2. When the power is turned on the screen should power up.

3. After a few seconds, if the screen is still blank, take the TV remote control, point towards the bottom center of the screen and press the power button.

4. Please note: The connection sensor varies on different models and, if necessary, move the controller along the base of the device while presseing the power button until the screen turns on.



Uno 2 Elite Table Controller



The Promultis Uno Elite Table Screen can be raised and lowered via the controller fixed to the boxtop unit

For security the controller can be fixed inside the base unit which can be locked.

Configuration wizard for touch skin

The Configuration Wizard is a tool that will assist you setting the Gain, Threshold, Shield and Calibration for the video wall touch skins.

The configuration of these settings is required to have touch recognition.

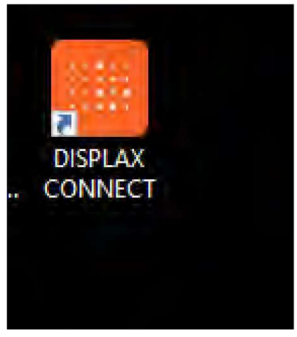
The 'Configuration Wizard' was developed to analyze and to configure the Touch Sensor and the Touch Controller parameters. It helps you to achieve a configuration based on objective data and not on subjective user input. It can always be reviewed by the user.

This process follows the following six steps:

- Touch Controller: verifies sensor signal, sensor matrix and identifies the Displax product;
- Sensor Scan: verifies the sensor integrity and checks if the FFCs are properly connected;
- EMI (ElectroMagnetic Interference): checks the electromagnetic interference level that may exist between the LCD and the sensor active area;
- Display: variations in the intensity of light are displayed to analyze the electromagnetic interferences and find an appropriate shielding level;

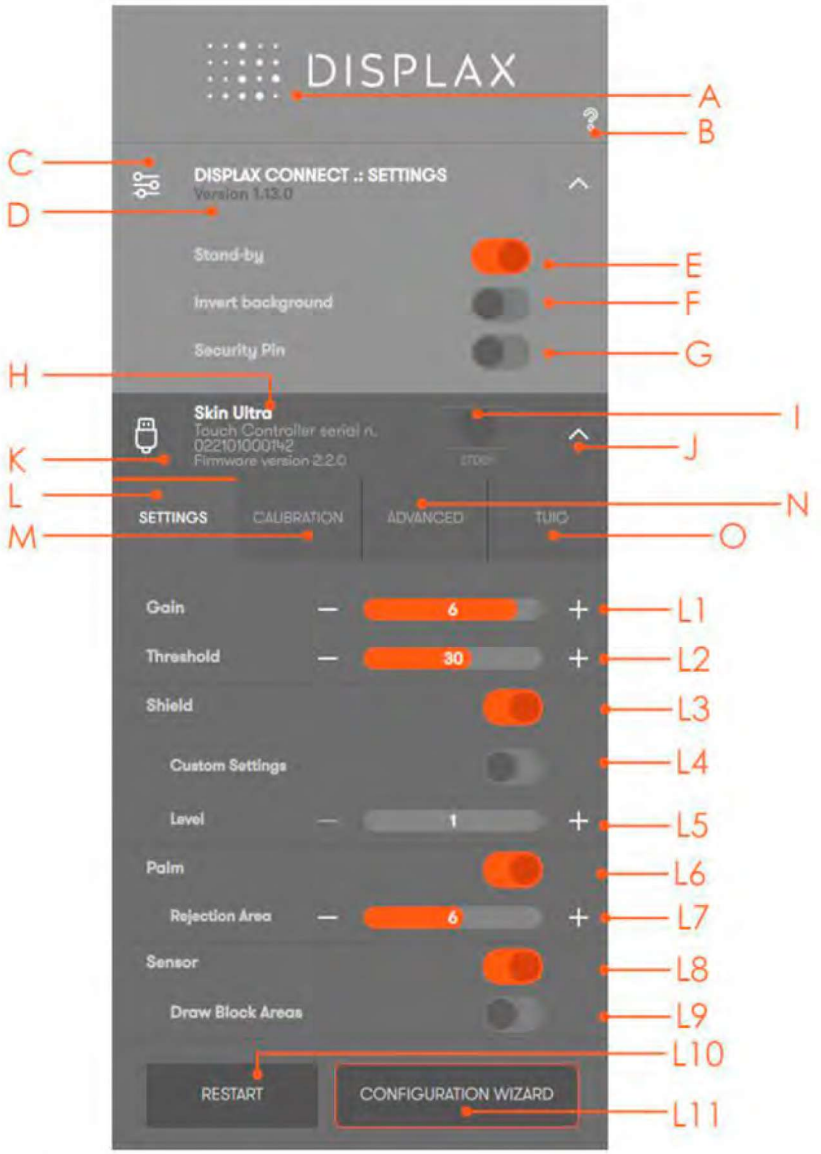
  Touch Sensor: establishes a relation between the analyzed data and the touch contact, in order to select the best Gain, Threshold and Shielding level;
- Calibration: calibration process to match the physical touch with the Operating System digital coordinates.

The configuration tool can be opened via the Displax Connect icon on the desktop.



HOW TO USE 'DISPLAX CONNECT'

The features A to F provide information relative to 'DISPLAX Connect' Control Panel. The remaining letters from G on provide information relative to settings or information stored in the Touch Controller.



A. Displax Connect: drag floating menu.
B. Help menu: shortcut keys and help per feature.
C. Hide and show 'DISPLAX Connect' settings.
D. DISPLAX Connect version.
E. Stand by: the touch is temporally disable when opening the control panel. This way, if you want to adjust some setting you will be able to do it. When you close 'DISPLAX Connect' the touch injection will be automatically re-enabled and the STAND-BY status will change to ON. This stand-by status is only active when 'DISPLAX Connect' is open.
F. Invert background: alternate between a white and a black background

G. Security Pin: a security pin to protect the configured settings.

H. Skin Ultra serial number.

I. Touch Injection Status: touch injection to the Operating System. This has 3 modes: ON: Operating system will receive touch events from Skin Ultra. OFF: Operating system will not receive touch events from Skin Ultra.

   STAND-BY: Operating system will temporarily not receive touch events from Skin Ultra. This way, if you want to adjust some setting you will be able to do it. When you close 'DISPLAX Connect' the touch injection will be automatically re-enabled and the STAND-BY status will change to ON. This stand-by status is only active when 'DISPLAX Connect' is open.

J. Hide/show Touch Controller settings.

K. Touch Controller firmware version.

L. Settings tab: 'DISPLAX Connect' configuration settings.

L1. Gain: adjusts the signal strength injected by the Touch Controller on the Touch Sensor - thicker glasses and bigger Touch Sensors will require a strong signal (higher GAIN values). Gain values range between 0 and 7.

L2. Threshold: adjusts the threshold level of what is considered a touch. Values vary between 0 and 50 starting on firmware version 1.5.0. (0 to 15 on firmware version equal or previous to 1.4.0).

L3. Shield: electromagnetic shielding reduces noises that may exist between the Skin Ultra and the LCD.

L4. Shielding level: adjusts the level of shielding. Ranges between 1 and 6, with 6 being the strongest shielding level. The shielding level should be maintained as low as possible.

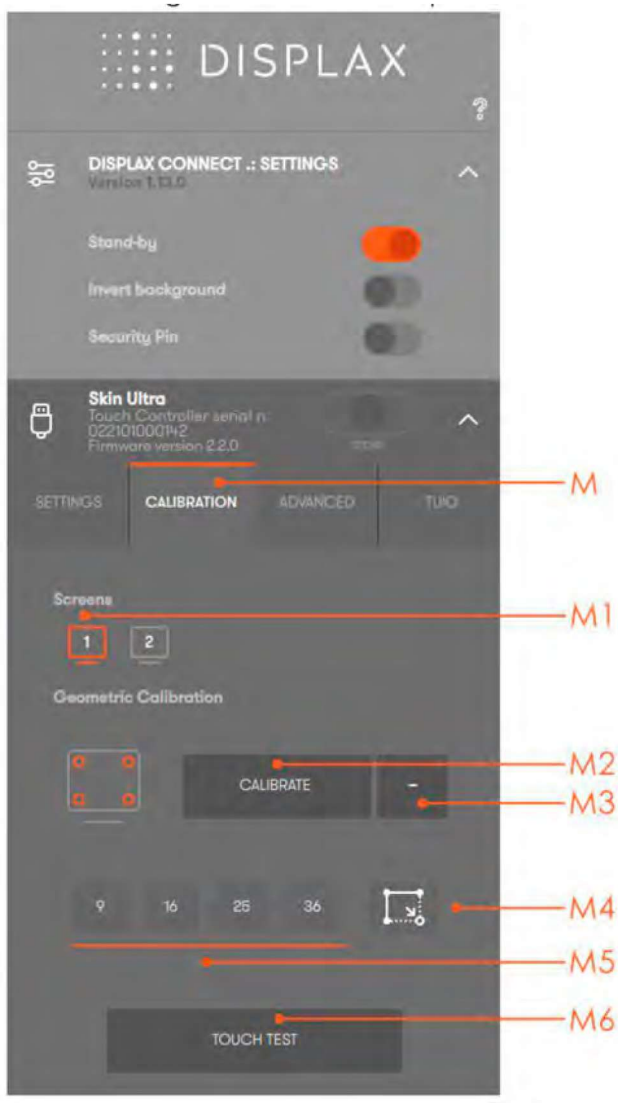
L5. Palm: allows the rejection of areas with dimensions larger than a finger, such as a hand or an arm.

L6. Rejection area: allows the rejection of touches from a hand, arm or other object placed over the touch sensor.

L7. Sensor: checks the Touch Sensor electrical conditions on rows and on columns to visualize electromagnetic interferences and permits to enable and disable rows and columns, and to draw block areas.

L8. Draw block areas: allows disabling the touch on specific Touch Sensor active areas, where you do not want touch being processed.

L10. Configuration wizard: this is an assisted process to configure the current setup. This feature is available depending on the version of the Touch Controller and firmware you are using. This feature is explained with more detail in the Configuration Wizard chapter.



M. Calibration tab: calibration process to match the physical touch with the Operating System digital coordinates.

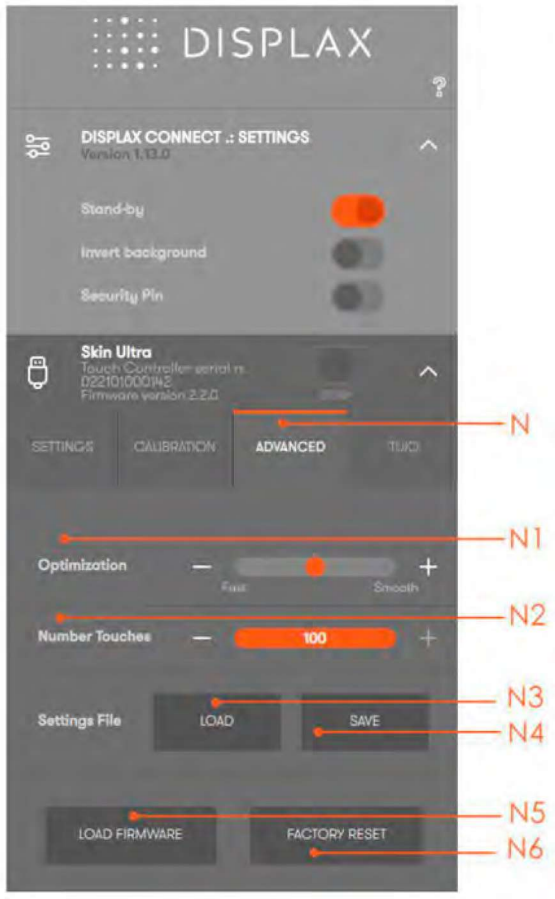
M1. Screens: select the display where you want to perform the geometric calibration.

M2. Calibrate: Click the button to start the geometric calibration. M3. + Advanced geometric calibration

M4. Calibration points: Number of points used to perform the geometric calibration. Please refer to the advanced calibration chapter.

M5. Drag mode: Calibration of Touch sensor smaller than the LCD. Please refer to the advanced calibration chapter.

M6. Touch Test: Touch Test app.



N. Advanced tab: advanced configuration tools.

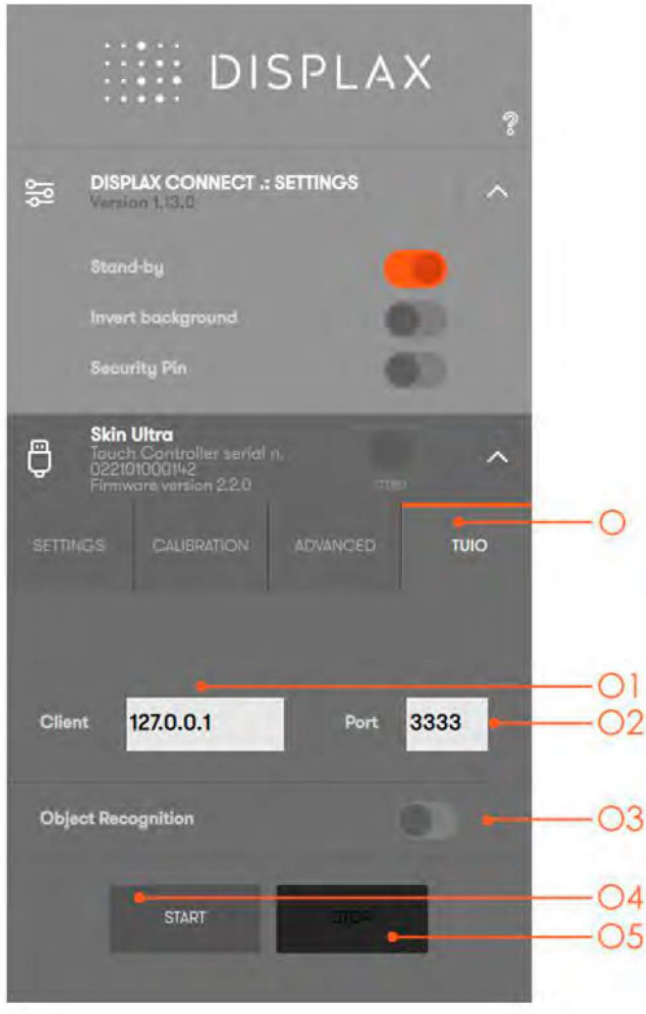
N1. Optimization: establishes a reason between Touch speed and Touch precision.

N2. Number of touches: limits the number of touches reported by the Touch Controller (always between 1 to 100 touches). This feature is available depending on the version of the Touch Controller and firmware you are using.

N3. Load settings file: allows loading previously saved configuration files. The user has to wait 10 seconds after changing settings, before changing to other settings, in order to correctly save them into the controller.

N4. Save current settings to file: Allows saving the current settings to be used in other configurations. This feature should be used with equivalent setups, i.e. same LCD, glass thickness and size, sensor size and air gap.

N5. Load firmware: allows to load a firmware file to the Touch Controller. N6. Factory reset: sets the Touch Controller to its default settings.



O. TUIO tab: touches transmission protocol. O1. Client: introduce the client IP.

O2. Port: introduce the client port number.

O3. Object recognition: activate or deactivate the object recognition feature.

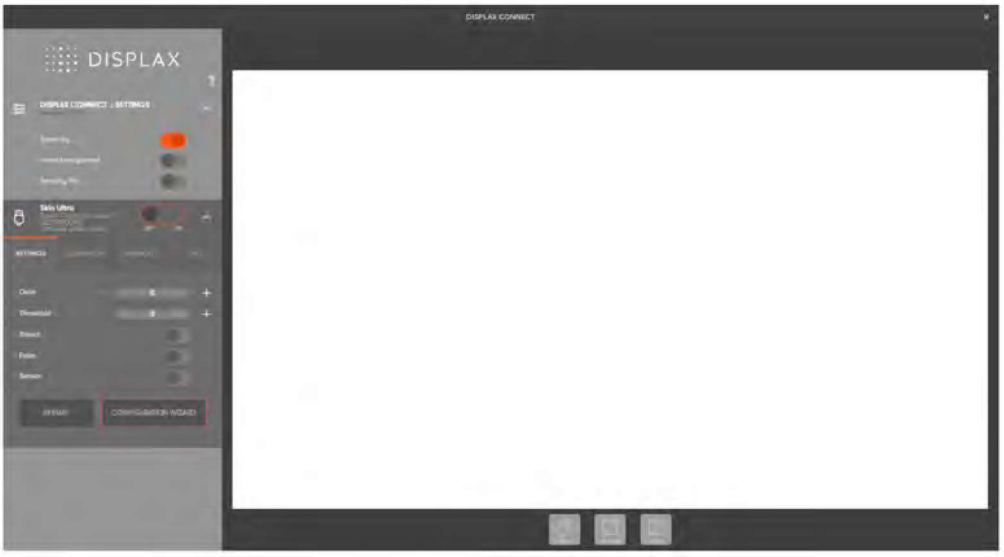
O4. Start: starts sending TUIO events from the chosen device to the defined client.

O5. Stop: stops sending TUIO events from the chosen device to the defined client.

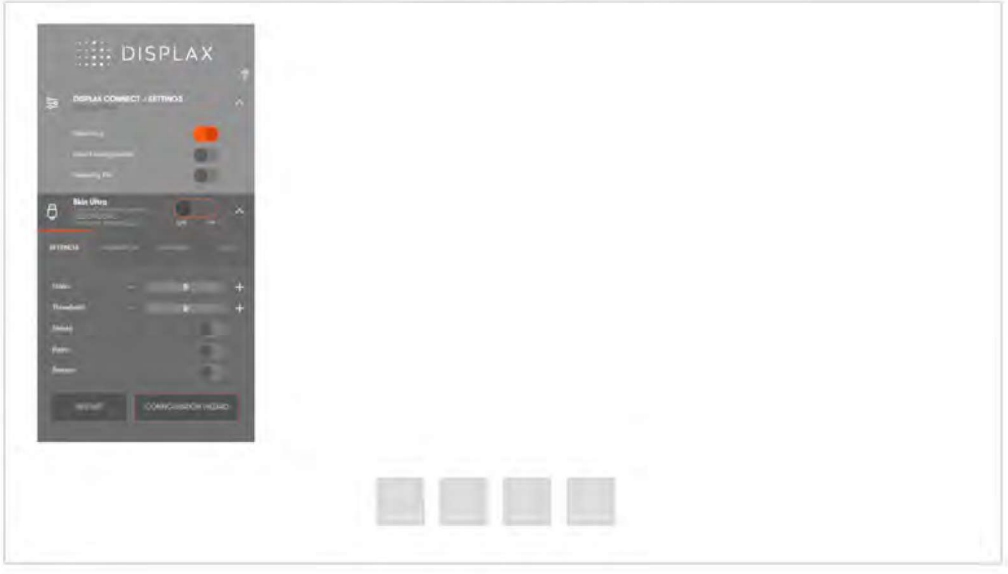
P. Touch Test: Touch Test app.

Q. Hide Menu: Hides 'DISPLAX Connect'.

S. Fixed and Float menu: Transition between the fixed and the floating ‘DISPLAX Connect’ view.



Fixed view



Float view

Phidgets RFID Reader

Introduction

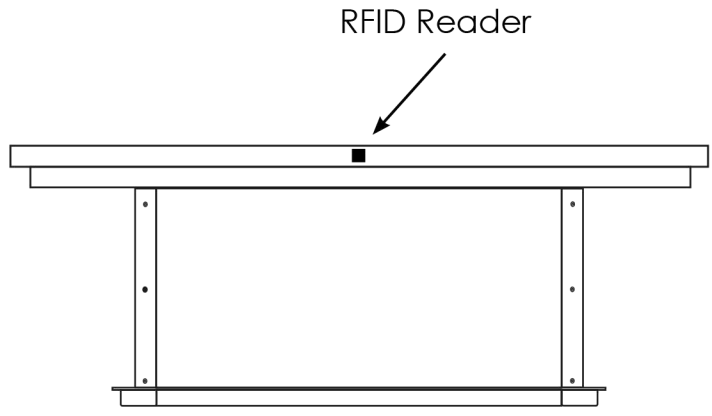
RFID (radio frequency identification) systems use data strings stored inside RFID tags (or transponders) to uniquely identify people or objects when they are scanned by an RFID reader. These types of systems are found in many applications such as passport protection, animal identification, inventory control systems, and secure access control systems.

Principles of operation

RFID works on the same principle as a transformer. When the reader is powered up, it gives power to a large coil. The coil creates an external magnetic field which can then be paired with a coil inside a nearby tag. This delivers a small amount of power wirelessly to the tag. With that power, the tag is able to access a small internal memory bank and transmit a key string back to the reader via modulation on the wireless signal.

RFID Protocols

In order for an RFID reader like the 1024 - Phidget RFID Read/Write to communicate with an RFID tag, they must share a common protocol. This protocol acts as a set of rules for the way data is transmitted wirelessly between the reader and tag. It's common for people to assume that an RFID tag and reader need only share the same operating frequency to be compatible, but they also need to use the same communication protocol. Check the user guide for your device to determine which protocols it supports.



Common RFID protocols:

EM4100 Series
ISO11784/ISO11785 (FDX-B)
ISO18000-2
ISO10536
ISO14443
ISO18000-3
ISO18000-6
EPC class 0
EPC class 1
EPC GEN II
ISO18000-4
Intellitag
µ-chip

Communication and Effectiveness
RFID tags come in two main varieties: passive and active. Active tags have their own power supply which they use to power an antenna to broadcast data. Passive tags derive the power they require to operate directly from the RF output of the RFID reader, and no other power supply is necessary. This makes passive tags cheaper to produce and much more suitable for common applications whereas active tags are used in situations where very large read distance is desirable(train cars for example are one of the few places active tags are used).

Phidgets RFID Reader

Because passive tags require a strong RF field to operate, their effective range is limited to an area in close proximity to the RFID reader. In the case of the PhidgetRFID, tags brought within approximately 3-4" of the reader can be read. The distance over which the RFID tag is usable is affected by such things as the tag shape and size, materials being used in the area near the reader, and the orientation of the reader and tag in respect to each other and in their operating environment. The smaller a tag, the closer it must be to the reader to operate. A reader's range cannot be increased with any sort of simple modification.

Some varieties of tags such as T5577 support writing. These tags can have any protocol or data written to them.

Multiple Readers

Multiple RFID readers within 1 to 2 meters will interfere with each other. This can be overcome in software by enabling the antennae of individual RFID readers in sequence. Starting with all readers disabled, enable the antenna of the first RFID reader. Wait for 100ms or more to detect any tags. Disable the antenna of the first reader and enable the antenna of the second, and perform another wait cycle and repeat. This can cause some issues if the tag is expected to only be present for a short period of time since a particular reader may be inactive at that moment. For more details on this method, have a look at this article.

The other way to attack this problem is to shield the readers from one another. This is more difficult than it appears on the face of it however. In general this will involve placing metallic barriers between the readers of indeterminate size. The shielding required will vary from set up to set up but sufficed to say, air on the side of more shielding than less shielding in all situations and it may end up that shielding just isn't not drastic enough to work for your system in which case you will have to revert to plan A which is the polling method.

Multiple Tags

While some RFID readers offer the capability to read multiple tags at once, the majority do not. In order to read a tag, any other tags must first be removed from the reader's field of effect.

RFID Tags

RFID tags come in a variety of shapes and sizes to suit various applications. All RFID tags of the same type sold by Phidgets are guaranteed to be uniquely identifiable, and are available as:

- 30mm Disc Tags
- Credit Card Sized Tags
- Key Fob Tags (attach easily to key rings)
- Wrist Strap Tags
- 'Nail' Tags (Could be hammered into a crate)
- Threaded Cylindrical Tags
- Bird Leg Ring Tag

For more information

https://www.phidgets.com/?&prodid=23