



INDUSTRIAL SHIELDS

**Touchberry 10.1" & TinkerTouch 10.1"**

**User Guide**

# Touchberry 10.1" & TinkerTouch 10,1" User Guide

**Revised July 2023**

## Preface

This User Guide has been implemented by Boot & Work, S.L. working under the name Industrial Shields.

### Purpose of the manual

The information contained in this manual can be used as a reference to operating, to functions, and to the technical data of the signal modules, power supply modules and interface modules.

### Intended Audience

This User Guide is intended for the following audience:

- Persons in charge of introducing automation devices.
- Persons who design automation systems.
- Persons who install or connect automation devices.
- Persons who manage working automation installation.



#### Warnings:

- Unused pins should not be connected. Ignoring the directive may damage the controller.
- Improper use of this product may severely damage the Panel PC.
- Refer to the Panels User Guide regarding wiring considerations.
- Before using this product, it is the responsibility of the user to read the product's User Guide and all accompanying documentation.
- Maintenance must be performed by qualified personnel familiarised with the construction, operation, and hazards involved with the control.
- Maintenance should be performed with the control out of operation and disconnected from all sources of power.
- Care should be taken when servicing electrostatic sensitive components. The manufacturer's recommendations for these components should be followed.
- The Panel PC family are Open Type panels. It is required that you install a Panel PC in a housing, cabinet, or electric control room. Entry to the housing, cabinet, or electric control room should be limited to authorised personnel. Failure to follow these installation requirements could result in severe personal injury and/or property damage. Always follow these requirements when installing Panel PC.

- In case of installation or maintenance of the TinkerTouch 7" or Touchberry 7" please follow the instructions marked in the Installation and Maintenance section.
- Do not disconnect equipment when a flammable or combustible atmosphere is present. Disconnection of equipment when a flammable or combustible atmosphere is present may cause a fire or explosion which could result in death, serious injury and/or property damage.



#### Avertissements:

- Les broches non utilisées ne doivent pas être connectées. Ignorer la directive peut endommager le contrôleur.
- Une utilisation incorrecte de ce produit peut endommager gravement le contrôleur.
- Reportez-vous au Guide de l'utilisateur du Panel PC pour les considérations de câblage.
- Avant d'utiliser ce produit, il incombe à l'utilisateur de lire le Guide de l'utilisateur du produit et la documentation qui l'accompagne.
- La maintenance doit être effectuée par personnel qualifié familiarisé avec la fabrication, le fonctionnement et les dangers liés au contrôleur.
- La maintenance doit être effectuée avec l'équipement hors service et déconnectée de toutes les sources d'alimentation.
- Faites attention lors de l'entretien des composants sensibles à l'électricité statique. Les recommandations du fabricant pour ces composants doivent être suivies.
- Les automates de la famille Panel PC sont des contrôleurs de type ouvert. Il est nécessaire d'installer l'automate Panel PC dans un boîtier, une armoire ou une salle de contrôle électrique. L'accès au boîtier, à l'armoire ou à la salle de commande électrique doit être limité au personnel autorisé. Le non-respect de ces exigences d'installation peut entraîner des blessures graves et/ou des dommages matériels importants. Respectez toujours ces exigences lors de l'installation des automates de la TinkerTouch 7" et Touchberry 7".
- En cas d'installation ou de maintenance du TinkerTouch 7" et Touchberry 7", veuillez suivre les instructions indiquées dans la section Installation et Maintenance.
- Ne débranchez pas l'équipement en présence d'une atmosphère inflammable ou combustible. La déconnexion de l'équipement en présence d'une atmosphère inflammable ou combustible peut provoquer un incendie ou une explosion pouvant entraîner la mort, des blessures graves et/ou des dommages matériels.

## Application Considerations and Warranty

### Read and understand this manual

Please read and understand this manual before using the product. Please consult your comments or questions to Industrial Shields before using the product.

### Application Consideration

THE PRODUCTS CONTAINED IN THIS DOCUMENT ARE NOT SAFETY RATED. THEY SHOULD NOT BE RELIED UPON AS A SAFETY COMPONENT OR PROTECTIVE DEVICE FOR ENSURING SAFETY OF PERSONS, AS THEY ARE NOT RATED OR DESIGNED FOR SUCH PURPOSES.

Please know and observe all prohibitions of use applicable to the products.

FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, NEVER USE THE INDUSTRIAL SHIELDS PRODUCTS.

NEVER USE THE INDUSTRIAL SHIELDS PRODUCTS BEFORE THEY ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Industrial Shields shall not be responsible for conformity with any codes, regulations or standards that apply to the combination of products in the customer's application or use of the product.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses may be suitable for the products:

- Systems, machines, and equipment that could present a risk to life or property.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installation subject to separate industry or government regulations.
- **WARNING:** On outdoor operations, locations involving potential chemical contamination or electrical interference, conditions or uses not described in this document please contact Industrial Shields for further information.

At the customer's request, INDUSTRIAL SHIELDS will provide applicable third-party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the system, machine, end product, or other application or use.

## Intended use of Industrial Shields products

### **Consider the following:**

Industrial Shields products should only be used for the cases of application foreseen in the catalogue and the associated technical documentation. If third-party products and components are used, they must have been recommended or approved by Industrial Shields.

The correct and safe operation of the products requires that your transport, storage, installation, assembly, operation and maintenance have been carried out correctly. It must respect the permissible ambient conditions. You should also follow the indications and warnings that appear in the associated documentation.

The product / system dealt with in this documentation should only be handled or manipulated by qualified personnel for the task entrusted and observing what is indicated in the documentation corresponding to it, particularly the safety instructions and warnings included in it. Due to their training and experience, qualified personnel are in a position to recognize risks resulting from the handling or manipulation of such products / systems and to avoid possible hazards.

## Disclaimers

### **Weights and Dimensions**

Dimensions and weights are nominal and they are not used for manufacturing purposes, even when tolerances are shown.

### **Performance Data**

The performance data given in this manual is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of INDUSTRIAL SHIELDS's test conditions, and the users most correlate it to actual application requirements. Actual performance is subject to the INDUSTRIAL SHIELDS Warranty and limitations of Liability.

### **Change in Specifications**

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when features are changed, or published ratings or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special numbers may be assigned to fix or establish key specifications for your

application on your request. Please consult with your INDUSTRIAL SHIELDS representative at any time to confirm actual specifications of purchased products.

## Errors and Omissions

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

These components may only be operated in closed housings or in higher-level control cabinets with protective covers that are closed, and when all of the protective devices are used. These components may only be handled by qualified and trained technical personnel who are knowledgeable and observe all of the safety information and instructions on the components and in the associated technical user documentation. When carrying out a risk assessment of a machine in accordance with the EU Machinery Directive, the machine manufacturer must consider the following residual risks associated with the control and drive components of a PDS.

1. Unintentional movements of driven machine components during commissioning, operation, maintenance, and repairs caused by, for example: – Hardware defects and/or software errors in the sensors, controllers, actuators, and connection technology – Response times of the controller and drive – Operating and/or ambient conditions not within the scope of the specification – Condensation / conductive contamination – Parameterization, programming, cabling, and installation errors – Use of radio devices / cellular phones in the immediate vicinity of the controller – External influences / damage.
2. Exceptional temperatures as well as emissions of noise, particles, or gas caused by, for example: – Component malfunctions – Software errors – Operating and/or ambient conditions not within the scope of the specification – External influences / damage.
3. Hazardous shock voltages caused by, for example: – Component malfunctions – Influence of electrostatic charging – Induction of voltages in moving motors – Operating and/or ambient conditions not within the scope of the specification – Condensation / conductive contamination – External influences / damage
4. Electrical, magnetic and electromagnetic fields generated in operation that can pose a risk to people with a pacemaker, implants or metal replacement joints, etc. if they are too close.
5. Release of environmental pollutants or emissions as a result of improper operation of the system and/or failure to dispose of components safely and correctly.

## Warranty and Limitations of Liability

### Warranty

Industrial Shields's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by Industrial Shields.

INDUSTRIAL SHIELDS MAKES NO REPRESENTATION OR WARRANTY, EXPRESSED OR IMPLIED, REGARDING MERCHANTABILITY, NON-INFRINGEMENT, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. INDUSTRIAL SHIELDS DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED

### Limitations of Liability

INDUSTRIAL SHIELDS SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY.

IN NO EVENT SHALL INDUSTRIAL SHIELDS BE RESPONSIBLE FOR WARRANTY, REPAIR OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS INDUSTRIAL SHIELDS'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.



# Table of Contents

<b>1 TOUCHBERRY PI 10.1" (Raspberry Pi 4B)</b> .....	<b>10</b>
1.1 Controller Specifications.....	10
1.2 Touchberry Pi 4 B I/Os Pinout.....	12
<b>2 TinkerTouch S</b> .....	<b>14</b>
2.1 Controller Specifications:.....	14
2.2 TinkerBoard S I/Os Pinout.....	15
<b>3 General Specifications</b> .....	<b>16</b>
<b>4 Touch Screen Specifications</b> .....	<b>16</b>
<b>5 Power Supply</b> .....	<b>17</b>
<b>6 Communication Connections</b> .....	<b>18</b>
<b>7 Screen configuration</b> .....	<b>19</b>
<b>8 Touch Panels PC 10.1" Size</b> .....	<b>20</b>
<b>9 Mechanical assembly configuration</b> .....	<b>22</b>
9.1 Panel mounting.....	22
9.2 Standard VESA.....	23
<b>10 Operating System on Touch Panels</b> .....	<b>23</b>
10.1 Debian.....	23
10.2 How to create apps.....	24
10.3 Other interesting available software.....	25
<b>11 Kiosk Mode on Panel Touch 10.1" .....</b>	<b>25</b>
<b>12 Revision Table</b> .....	<b>26</b>



INDUSTRIAL SHIELDS

## 1 TOUCHBERRY PI 10.1" (Raspberry Pi 4B)

### 1.1 Controller Specifications

Panel PC based on Raspberry Pi board, encasing a 10.1" resistive Touch Screen for industrial environment using Linux (Raspbian).

Board	Raspberry Pi 4B
SoC	Broadcom BCM2837B0
CPU	Quad core 64-bit ARM-Cortex A72 running at 1.5GHz
GPU	Broadcom VideoCore VI
USB	(2) x USB2 Ports + (2) x USB3 Ports
Storage	(1) x Micro SD / MMC / SDIO slot
Network Communication	1x Gigabit Ethernet port (supports PoE with add-on PoE HAT) – (3) x TTL - SPI – I <sup>2</sup> C
Wireless Communication	802.11 b/g/n/ac Wireless LAN (2.4GHz and 5GHz ) and Bluetooth 5.0 with BLE
Low level devices	40-pin GPIO header, populated
IP Value	IP20
GPIO Voltage	3.3V
OS	Linux and Unix

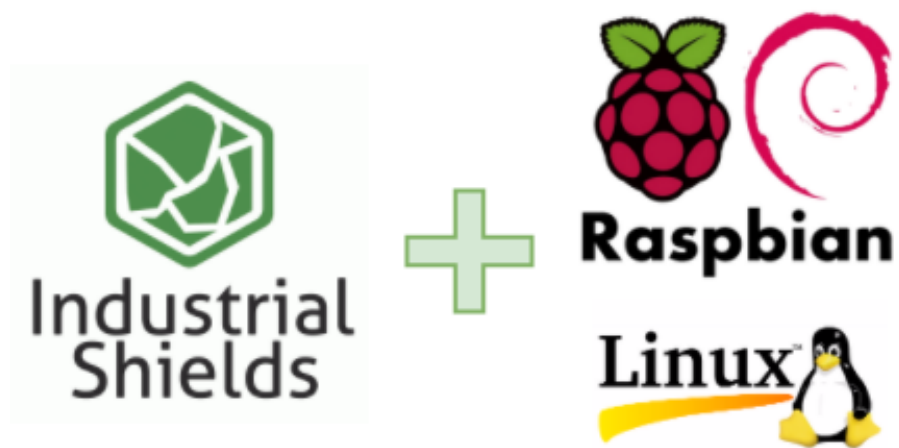
PANEL PC  
10,1"

LINUX  
LINUX OPERATION  
SYSTEM

ARDUINO  
Compatible with  
Arduino IDE

COM  
Industrial  
Communications

- This Panel PC is based on GNU/Linux OS installed on a SD card. It has many interfaces built in: Ethernet, USB, WiFi... Using the Ethernet port or WiFi network you can remotely control all parameters, data and inputs/outputs of your control system.
- Furthermore, Touchberry PI has enough I/O to replace PLCs on simple automation applications.
- Open protocols not only allow communication with other Industrial Shields PLCs, but also third-party devices and machinery.
- In complex systems you can create a network between several Touchberry Pi. Providing integral supervision and control solutions for entire production plants and real-time data at hand.



## 1.2 Touchberry Pi 4 B I/Os Pinout

The Raspberry Pi 4 model B pinout:

### Raspberry Pi 4 B J8 GPIO Header

Pin#	NAME		NAME	Pin#
01	3.3v DC Power		DC Power 5v	02
03	GPIO02 (SDA1, I <sup>2</sup> C)		DC Power 5v	04
05	GPIO03 (SCL1, I <sup>2</sup> C)		Ground	06
07	GPIO04 (GPCLK0)		(TXD0, UART) GPIO14	08
09	Ground		(RXD0, UART) GPIO15	10
11	GPIO17		(PWM0) GPIO18	12
13	GPIO27		Ground	14
15	GPIO22		GPIO23	16
17	3.3v DC Power		GPIO24	18
19	GPIO10 (SPI0_MOSI)		Ground	20
21	GPIO09 (SPI0_MISO)		GPIO25	22
23	GPIO11 (SPI0_CLK)		(SPI0_CE0_N) GPIO08	24
25	Ground		(SPI0_CE1_N) GPIO07	26
27	GPIO00 (SDA0, I <sup>2</sup> C)		(SCL0, I <sup>2</sup> C) GPIO01	28
29	GPIO05		Ground	30
31	GPIO06		(PWM0) GPIO12	32
33	GPIO13 (PWM1)		Ground	34
35	GPIO19		GPIO16	36
37	GPIO26		GPIO20	38
39	Ground		GPIO21	40

### Raspberry Pi 4 B J14 PoE Header

01	TR01		TR00	02
03	TR03		TR02	04

### Pinout Grouping Legend

Inter-Integrated Circuit Serial Bus			Serial Peripheral Interface Bus
Ungrouped/Un-Allocated GPIO			Universal Asynchronous Receiver-Transmitter
Reserved for EEPROM			

Rev. 2  
19/06/2019 CGS

[www.element14.com/RaspberryPi](http://www.element14.com/RaspberryPi)

Next it is showed a table connection between external DC-37 female connector Pinout and Raspberry Pi 4B Pinout:

DC-37	Raspberry Pi GPIO	DC-37	Raspberry Pi GPIO	DC-37	Raspberry Pi GPIO	DC-37	Raspberry Pi GPIO	DC-37	Raspberry Pi GPIO
1	01	09	17	17	35	25	12	33	28
2	03	10	19	18	37	26	14	34	30
3	05	11	21	19	40	27	16	35	33
4	07	12	23	20	02	28	18	36	36
5	09	13	25	21	04	29	20	37	38
6	11	14	27	22	06	30	22	38	-
7	13	15	29	23	08	31	24	39	-
8	15	16	32	24	10	32	26	40	-

## 2 TinkerTouch S

### 2.1 Controller Specifications:

Panel PC based on HummingBoard, incorporating a 10.1" resistive Touch Screen for industrial environments using Linux.

Item	TinkerBoard S
CPU	Rockchip Quad-Core RK3288 processor
GPU	2GB Dual Channel DDR3
USB	4x2.0 USB (1 is used for Touch)
Storage	Micro SD(TF) card slot
Network Communication	10/100 Ethernet (RJ-45)
Wireless Communication	802.11 b/g/n, Bluetooth V4.0 + EDR
Low level devices	8x GPIO, SPI, I2C, UART
GPIO Voltage	3.3V
OS	Linux Debian

PANEL PC  
10,1"

LINUX  
LINUX OPERATION  
SYSTEM

ARDUINO  
Compatible with  
Arduino IDE

COM  
Industrial  
Communications

- This Panel PC is based on GNU/Linux OS installed on a SD card. It has many interfaces built in: Ethernet, USB, UART....Using the Ethernet port network you can remotely control all parameters, data and inputs/outputs of your control system.
- Furthermore, TinkerBoard S has enough I/Os to replace PLCs on simple automation applications.
- Open protocols not only allow communication with other Industrial Shields PLCs, but also third-party devices and machinery.
- In complex systems, you can create a network between several TinkerBoard Touch S. Providing integral supervision and control solutions for entire production plants and real-time data at hand.



## 2.2 TinkerBoard S I/Os Pinout

TinkerBoard S pinout:

GPIO.Setmode (GPIO.ASUS)	GPIO.Setmode (GPIO.BOARD)	Pinout	Physical Pin Number	Pinout	GPIO.Setmode (GPIO.BOARD)	GPIO.Setmode (GPIO.ASUS)
	1	VCC3.3V_IO	1 2	VCC5V_SYS	2	
252	3	GP8A4_I2C1_SDA	3 4	VCC5V_SYS	4	
253	5	GP8A5_I2C1_SCL	5 6	GND	6	
17	7	GP0C1_CLKOUT	7 8	GP5B1_UART1TX	8	161
	9	GND	9 10	GP5B0_UART1RX	10	160
164	11	GP5B4_SPIOCLK_UART4CTSN	11 12	GP6A0_PCM/I2S_CLK	12	184
166	13	GP5B6_SPIO_TXD_UART4TX	13 14	GND	14	
167	15	GP5B7_SPIO_RXD_UART4RX	15 16	GP5B2_UART1CTSN	16	162
	17	VCC33_IO	17 18	GP5B3_UART1RTSN	18	163
257	19	GP8B1_SPI2TXD	19 20	GND	20	
256	21	GP8B0_SPI2RXD	21 22	GP5C3	22	171
254	23	GP8A6_SPI2CLK	23 24	GP8A7_SPI2CSN0	24	255
	25	GND	25 26	GP8A3_SPI2CSN1	26	251
233	27	GP7C1_I2C4_SDA	27 28	GP7C2_I2C4_SCL	28	234
165	29	GP5B5_SPIOCSN0_UART4RTSN	29 30	GND	30	
168	31	GP5C0_SPIOCSN1	31 32	GP7C7_UART2TX_PWM3	32	239
238	33	GP7C6_UART2RX_PWM2	33 34	GND	34	
185	35	GP6A1_PCM/I2S_FS	35 36	GP7A7_UART3RX	36	223
224	37	GP7B0_UART3TX	37 38	GP6A3_PCM/I2S_SDI	38	187
	39	GND	39 40	GP6A4_PCM/I2S_SDO	40	188

Next, a table connection between external DC-37 female connector Pinout and TinkerBoard S Pinout is shown:

Tinker Board S Pinout	External Pinout	DC-37	External Pinout	DC-37	External Pinout	DC-37	External Pinout	DC-37	External Pinout
1	-	09	GND	17	-	25	GND	33	RS232RX
2	5V+	10	RXD	18	GPIO24	26	CS1	34	GND
3	SDA	11	RE	19	MOSI	27	-	35	GPIO19
4	5V+	12	GPIO18	20	GND	28	-	36	TTL RX
5	SCL	13	DE	21	MISO	29	GPIO05	37	TTL TX
6	GND	14	GND	22	GPIO25	30	GND	38	GPIO20
7	GPIO4	15	GPIO22	23	SCLK	31	GPIO06	39	GND
8	TXD	16	GPIO23	24	CS0	32	RS232TX	40	GPIO21

### 3 General Specifications

Item		Touch Panel 10.1"
Power supply voltage	DC power supply	12Vdc to 24Vdc
Power consumption	DC power supply	30W max.
External power supply	Power supply voltage	12Vdc (30W) // 24Vdc (30W)
	Power supply output capacity	2.5A (12Vdc) // 1.25A (24Vdc)
Shock resistance		80m/s <sup>2</sup> in the X, Y and Z direction 2 times each.
Ambient temperature (operating)		0° to 40°C
Ambient humidity (operating)		10% to 90% (no condensation)
Ambient environment (operating)		With no corrosive gas
Ambient temperature (storage)		-20° to 60°C
Power supply holding time		2ms min.
Weight		2.250 gr.

### 4 Touch Screen Specifications

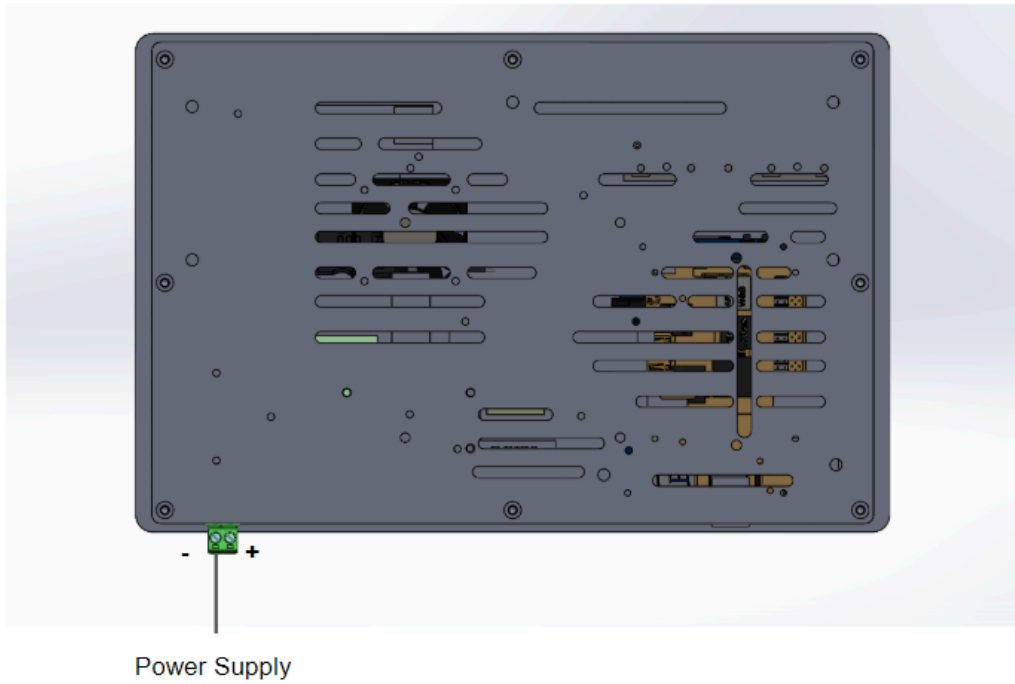
Item	Touch Screen
Technology	Resistive Multitouch LVDS, 315 nits, 170° viewing angle
Image Resolution	1280 x 720
Format	16:9
Size	10.1"



## 5 Power Supply

DC Power Supply: 12V (30W) // 24Vdc (30W)

Current: 2.5A (12Vdc) // 1.25A (24Vdc)



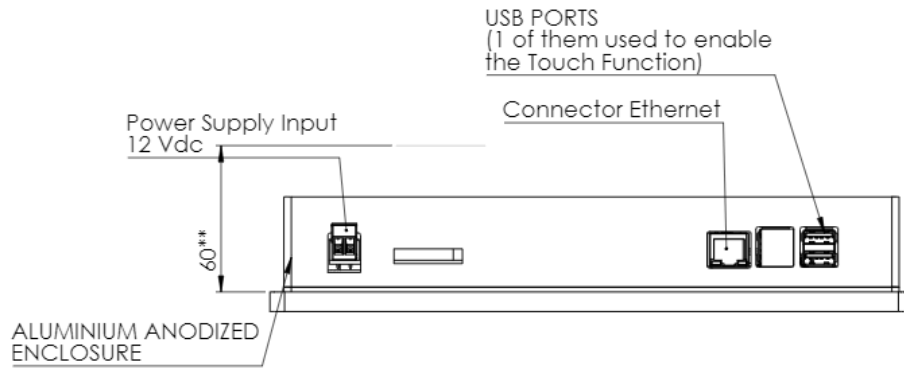
Power supply: 12/24Vdc



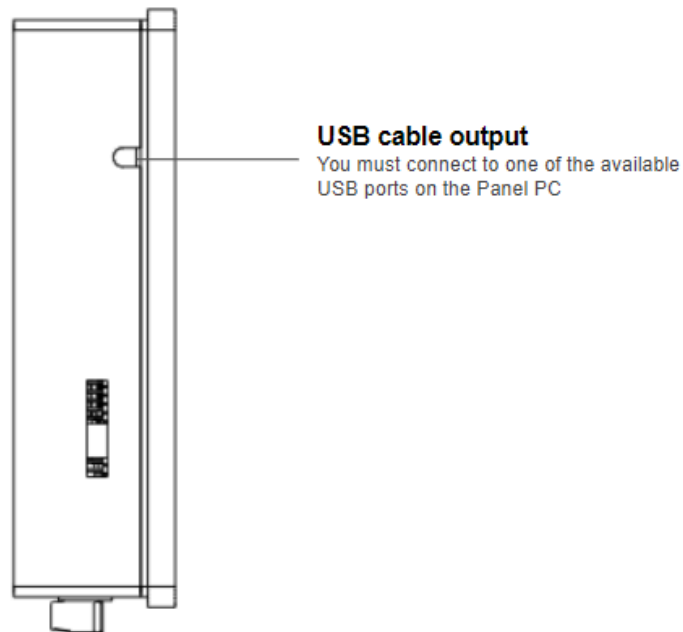
- Plug-in connector
- Pitch: 5,04 mm
- Two contact pins

## 6 Communication Connections

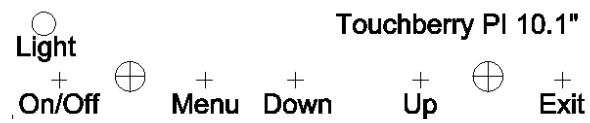
The communication connections are located in the lower part of the panel, at the right part, as you can see in the image below:



Ethernet and USB port connectors (One of the USB ports is connected in order to activate the attach function)



## 7 Screen configuration



Light: Operation indication led.

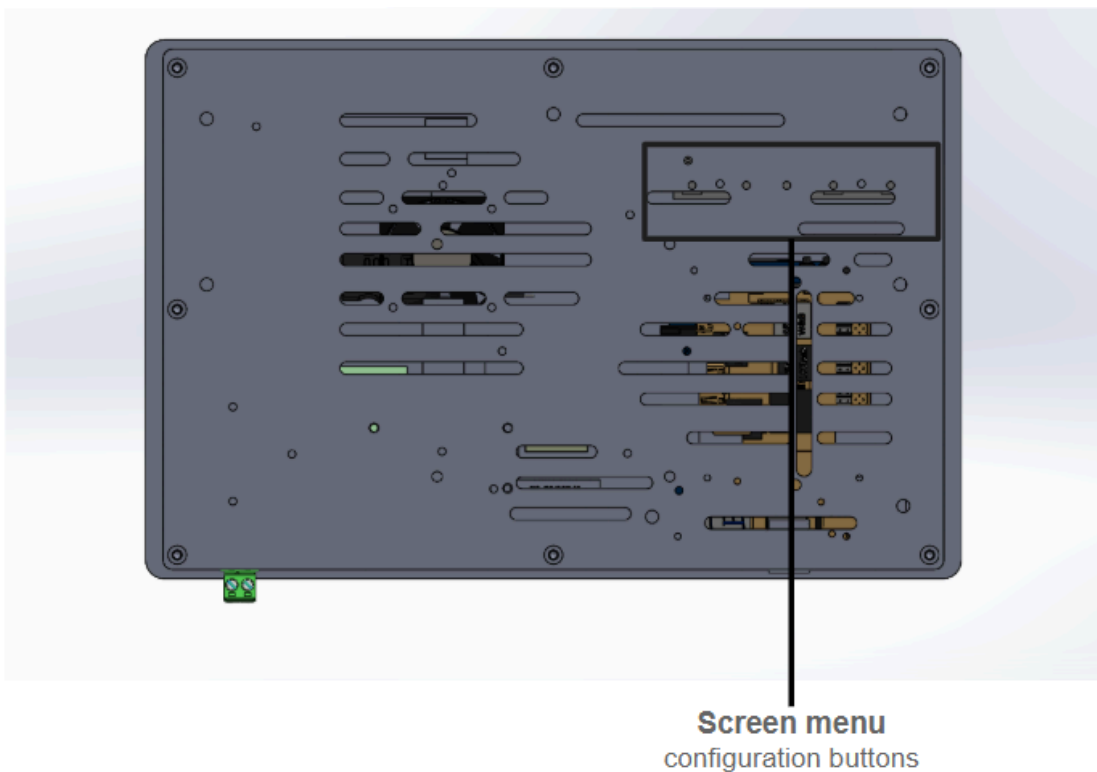
On/Off: Switch ON/OFF the device.

Menu: choose and select the configuration mode.

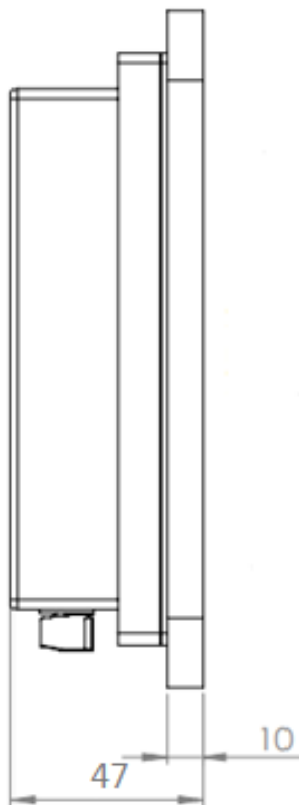
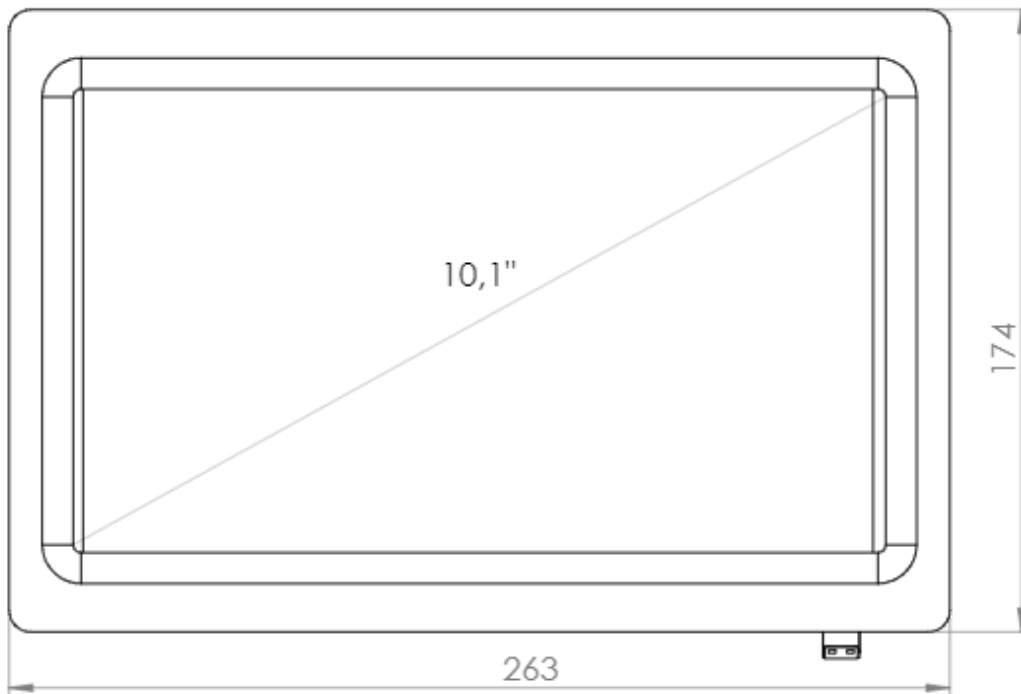
Down: move down on the configuration menu.

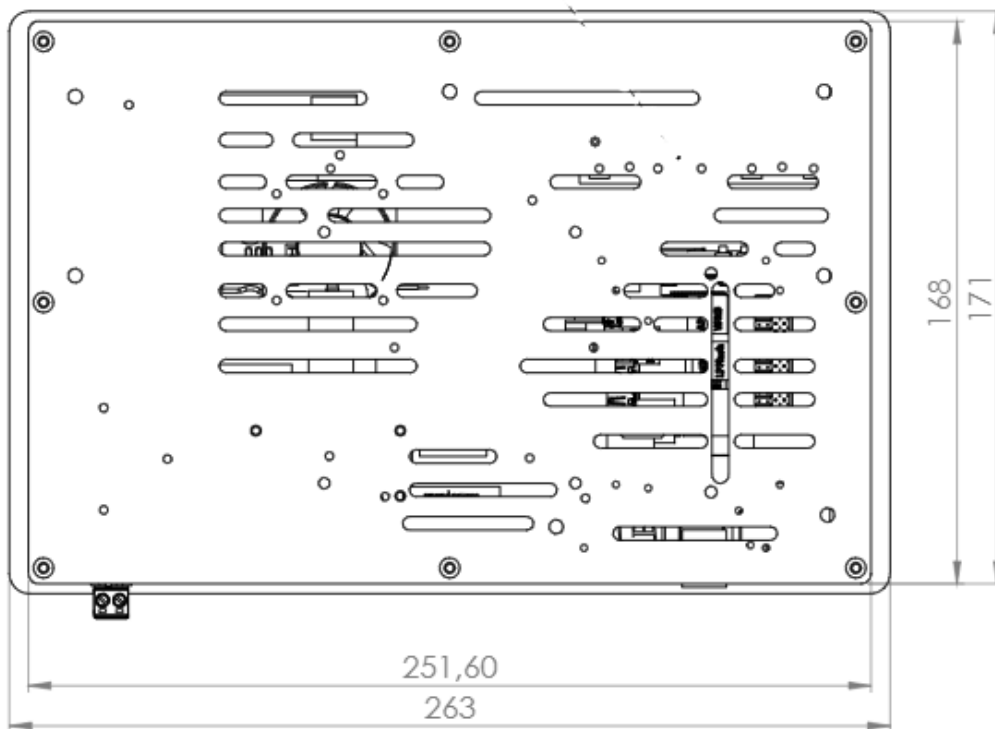
Up: move up on the configuration menu.

Exit: Select the screen operation mode (HDMI operation mode).



## 8 Touch Panels PC 10.1" Size





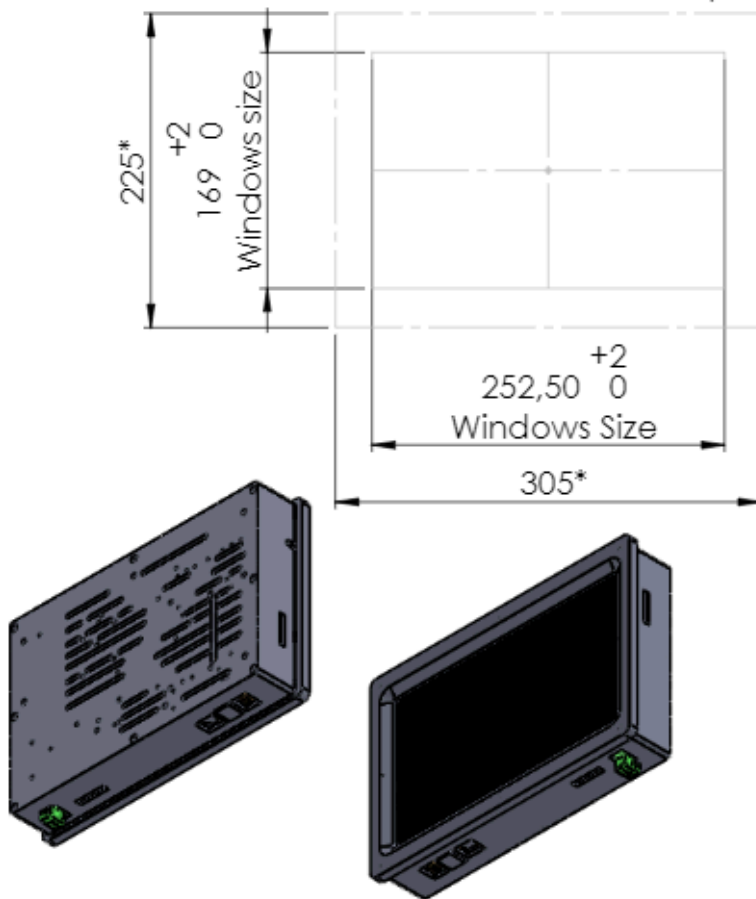
## 9 Mechanical assembly configuration

### 9.1 Panel mounting

Mechanical assembly place (Dimensions in mm):

\*NOTE: Space available for assembly. Free space of external elements.

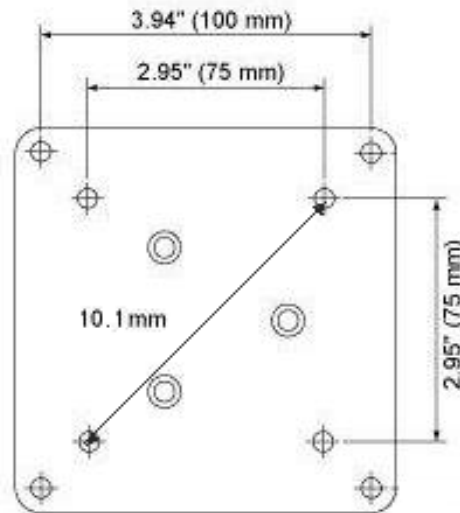
\*\*NOTE: See minimum depth required for right ventilation



## 9.2 Standard VESA

Our panels are based on the VESA assembly standard (VESA 75 standard).

**The VESA mount is not included with the device.**



## 10 Operating System on Touch Panels

### 10.1 Debian

Debian is a Unix-like computer operating system that is composed entirely of free software.

Raspbian, Bananian and Debian Jessie are short adaptations of Debian 8 for embedded systems. Debian has a long available row of packages. Also it is possible to develop your own applications, servers, web servers, etc. For example using Node Red, NodeJS, Qt libraries, DB SQL, Mongo DB, etc.

More information on: <https://www.debian.org/>



## 10.2 How to create apps

Touchberry Pi:

These steps are based on how to download a cross-compiler for Raspberry for your own applications.

\* Qt, or text program compilations for Touchberry.

From a Linux PC, download the "git" app.

From a console do:

```
$ yourpath> git clone https://github.com/raspberrypi/tools.git
```

Now, you have the cross-compiler for Raspberry. Export some variables, and add the compiler path to the environment path variable:

```
PATH=$PATH:<yourpath>/tools/arm-bcm2708/gcc-linaro-arm-linux-gnueabi  
hf-raspbian/bin  
export ARCH=arm  
export CROSS_COMPILE=arm-linux-gnueabihf-
```

Now, you can compile your C++ program doing:

```
$> arm-linux-gnueabihf-g++ -o yourprogram yourprogram.cpp
```

If you want to create a project with Qt, you need to compile the Qt sources for Raspberry.

First, you will need to download for example:

<http://mirror.netcologne.de/qtproject/archive/qt/5.4/5.4.1/single/qt-everywhere-opensource-src-5.4.1.tar.gz>

Now with your arm-linux-... compiler, you can compile these sources for Raspberry.

You can create a project with a Desktop Qt system. (Same as doing it for PC).

Finally, you'll have to configure your Qt IDE in order to use the qt-everywhere sources compiled instead of the Desktop ones.

It'll result in a graphical program for the Touchberry Pi Model!



### 10.3 Other interesting available software

Also there are many softwares available to run on Debian, next it is showed different link where you can see examples and how to use these software's, also on our blog there are interesting information regarding our Touch Panels:

Node JS:

<http://blog.industrialshields.com/en/tcp-server-on-touchberry-pi-3-with-node-js/>

RapidScada:

<http://blog.industrialshields.com/en/how-to-install-and-use-rapid-scada-on-touchberry-pi-and-bananatouch/>

Firmata: <http://blog.industrialshields.com/en/software-for-iot-solutions/>

Node-Red: <http://blog.industrialshields.com/en/software-for-iot-solutions/>

## 11 Kiosk Mode on Panel Touch 10.1”

On Raspbian / Linux:

Procedure

1. Locate the autostart file into /home/pi/.config/lxsession/LXDE-pi/autostart
2. Remove the content of the autostart file
3. Add a line to the autostart file with the browser command in kiosk mode prefixed by an @:

```
@chromium-browser --kiosk --app= http://127.0.0.1:8080
```

4. Reboot the RPI
5. Execute the next line command:

```
echo "@chromium-browser --kiosk --app=http://127.0.0.1:8080" > /home/pi/.config/lxsession/LXDE-pi/autostart
```

## 12 Revision Table

Revision Number	Date	Changes
0	15/09/2019	First implementation
1	17/12/2019	Touchberry PI: The internal Raspberry PI 3B+ has been changed for the Raspberry PI 4B model
2	21/04/2022	TinkerBoard S model update
3	09/09/2022	Change on Section 9.2
4	07/09/2023	Family Implementation

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