

Components list

Name / Description	Price
XIAO ESP32-S3	11 Dollards
GY-AS7341	10 Dollards
Battery Lithium Lipo 503035 3.7V 500mAh	3 Dollards
LCD 3.5 ILI9488 CTP 6236 320 x 480	13 Dollards
ADS1115	1.8 Dollards
Photodiode SFH203	5 Dollards
Photodiode BPW21r	5 Dollards
Transistor BC559 (Lot), necessary 3 Transistors	1.2 Dollards
Transistor BC549 (Lot), necessary 1 Transistor	1.2 Dollards
Capacitor WIMA 6.8 uF MKIt5	5 Dollards
Capacitor 100 uF 6.3v (Lot), necessary 1 Capacitor	2 Dollards
Capacitor 100 nF (Lot) , necessary 1 Capacitor	1.6 Dollards
Capacitor 470 nF (Lot) , necessary 1 Capacitor	1.6 Dollards
Resistor 1 Ko (Lot), necessary 2 Resistor ¼ watt	1.15 Dollards
Resistor 10 Ko 0.1% (Lot), necessary 4 Resistor ¼ watt	4 Dollards
Resistor 1 Mo (Lot), necessary 3 Resistor ¼ watt	1.15 Dollards
Horizontal push button 6 x 6 x 7 (Lot), necessary 1 button	2 Dollards
Connector JST 2.54 mm female (Lot), necessary 1 connector	2 Dollards
Printed Circuit Board (PCB lot de 5), necessary 1 PCB	5 Dollards

Estimated total cost : approximately 70-80 Dollards

Optionnel

Kit XH2.54 (white connector)	3 Dollards
Wood screw kit M2	3 Dollards

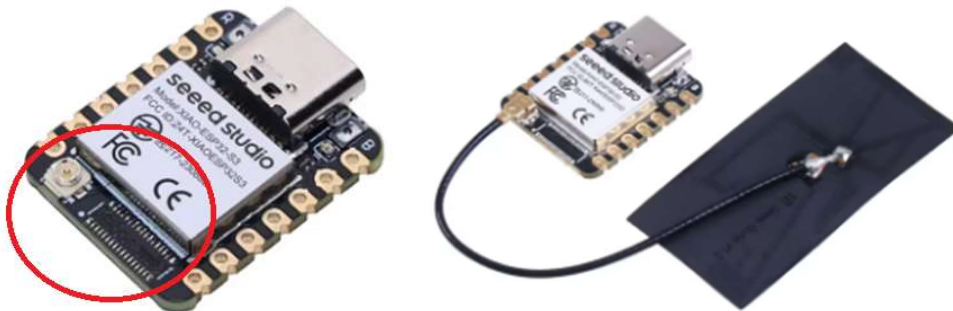
Prices are approximate because they depend on when you buy them, the website or electronics store where you buy them, and also your talent for finding the cheapest prices. For some components, I indicated "Lot" because they are often sold in lots but if you find cheaper per unit it is very good.

For my part, most of the components (and the prices I give you) come from aliexpress (<https://www.aliexpress.com/>) except the printed circuit.

For the printed circuit I go to the JLCBCP site (<https://jlcpcb.com/>). I find that it is the cheapest site to have printed circuits manufactured. They are sold in packs of 5, the price is 2 Dollards for 5 + the cheapest shipping costs are around 2.65 Dollards, which makes a printed circuit at around 5 Dollards (5 Dollards for the batch of 5 but we will only use one). The others can be used to practice soldering with a soldering iron for example.

Visual of what you need to buy :

XIAO ESP32-S3



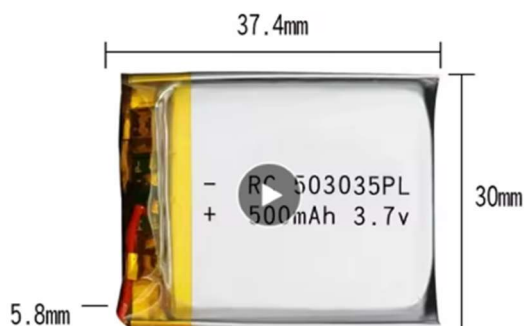
Be careful to take a XIAO ESP32S3. There are XIAO ESP32C3 that will not work. Look carefully at the image above and the placement of the antenna.

GY-AS7341

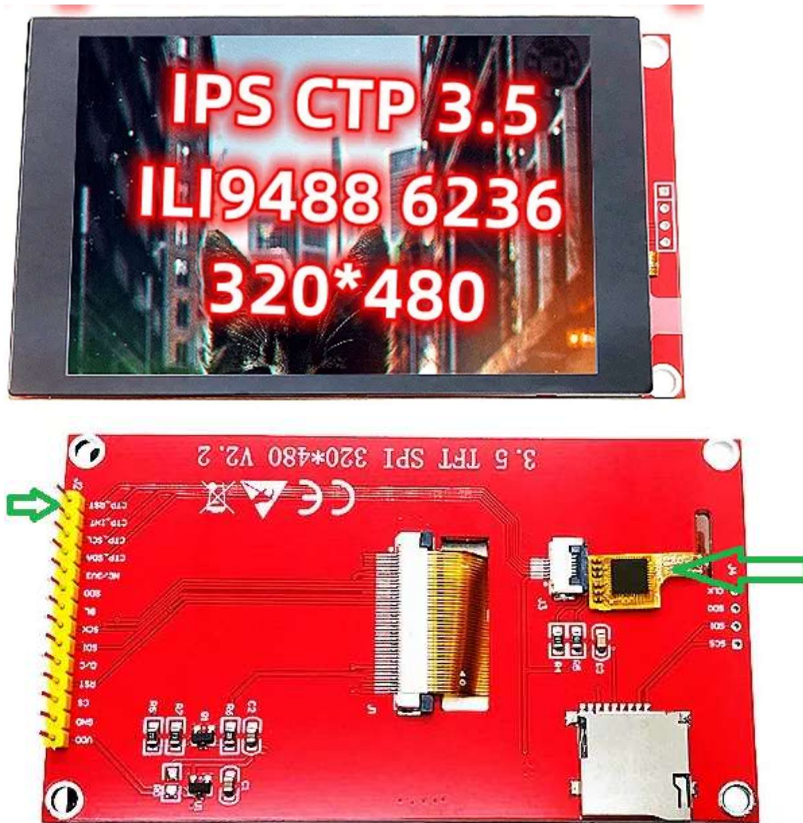


Take a GY-AS7341 which has this shape which is the smallest to be integrated into the head of the case.

Batterie Lithium Lipo 503035 3.7V 500mAh

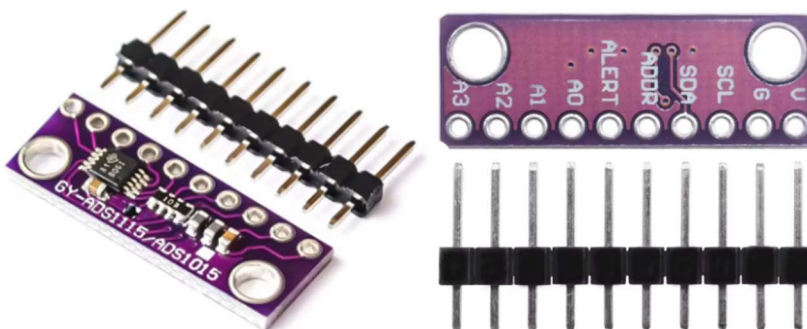


LCD 3.5 ILI9488 CTP 6236 320 x 480



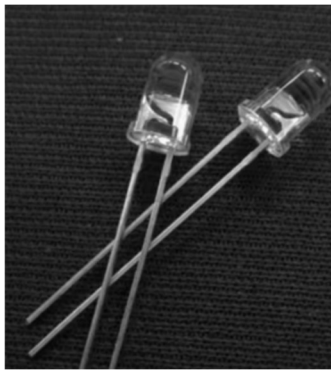
The good screen has a thick black border, but more importantly, on the PCB side, the CTP 6236 chip is added in addition as shown by the green arrow on the right. The green arrow on the left shows you the number of pins. If it doesn't look like that, it's probably a pen touchscreen that won't work.

ADS1115



Caution ! There are ADS1015s, these are 12-bit converters and this is not good. You absolutely need an ADS1115, a 16-bit converter.

Photodiode SFH203



Please note, there are SHF203fa which are purple in color for Infrared, you need an SFH203.

Photodiode BPW21r

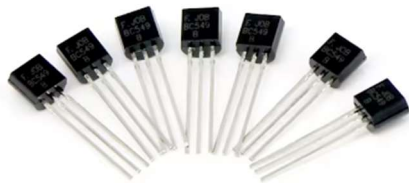


Transistor BC559



BC559
TO-92

Transistor BC549

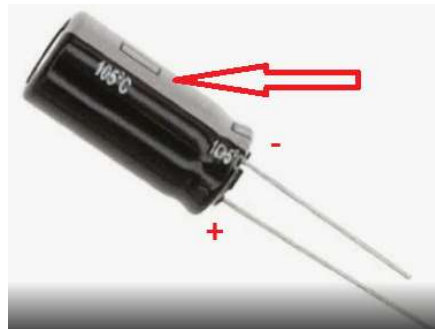


BC549

Capacitor WIMA 6.8 μ F 50 Volts



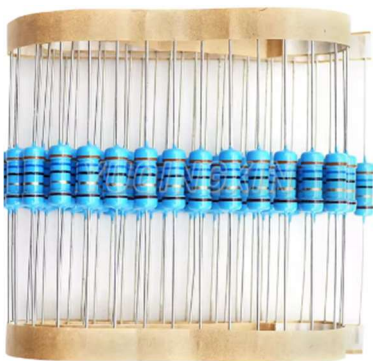
Capacitor 100 μ F 6.3v



Capacitor 100 nF et 470 nF (polypropylene, yellow color)



Resistor 1 Ko, 10 Ko, 1 Mo



NB: For 10 Ko resistors, you must have a 0.1% precision resistor and three other 10 Ko resistors. Since resistors are often sold in batches, in the list I have indicated a batch of 4 10 Ko 0.1% resistors to avoid buying two batches, one 0.1% and the other 5%.

Horizontal push button 6 x 6 x 7 mm



Connector JST 2.54 mm



Kit XH2.54 (Optional)



Wood screw kit M2 (Optional)

