Serial	Product / Part Name	Version / Spec	Qty	Notes	Links	Price (approx)
1	ESP32 Module	ESP32-WROOM-32	1	Main MCU	https://store.robo	500
2	TFT Display	ILI9341 2.8″ SPI	1	Make sure 3.3V version	https://techshopb	1000
3	Touch Controller (optional)	XPT2046	1	Only if touch needed		
4	Battery Charger Module	TP4056 (with protection)	1	Li-ion charging	https://store.robo	40
5	3.3V Voltage Regulator	Buck Converter ≥ 700 mA (e.g., MP1584EN)	1	Check footprint match	https://store.robo	160
6	Li-ion Battery (3.7V)	1200–2000 mAh, protected	1	Local purchase recommended	https://store.robo	100
7	Power Switch	SPST Slide or Toggle	1	Rated ≥ 1 A	https://store.robo	20
8	USB Connector	Micro-USB or USB-C	1	Matches PCB footprint	https://store.robo	20
9	Resistor — EN pull-up	10 kΩ, 0603/0805	1	ESP32 EN		
10	Resistor — GPIO15 pull-up	10 kΩ, 0603/0805	1	Touch CS boot safe		
11	Resistor — TFT LED (optional)	10–33 Ω, 0603/0805	1	Only if needed		
12	Capacitor — ESP32 decoupling	0.1 µF, 0603/0805	1	Near ESP32 power pins	https://store.robo	5
13	Capacitor — EN stabilization	0.1 µF, 0603/0805	1	Between EN-GND	https://store.robo	5
14	Capacitor — ESP32 bulk	22–47 µF, 6.3–10 V	1	Close to ESP32		
15	Capacitor — Regulator input	10 µF, 10 V	1	Per datasheet		
16	Capacitor — Regulator output	10–22 µF, 6.3–10 V	1	Per datasheet		
17	Headers (optional)	2.54 mm male	Variable	For expansion pins		
18	Reset Button (optional)	Tactile push	1	EN → GND		
19	Screws	M2 / M2.5	4	For enclosure		
20	Enclosure (3D printed)	PLA / PETG	1	Custom fit		