

UGOT Basic Kit

Product specification

Product introduction

The UGOT Basic Kit is a multi-mimetic AI robot launched by UBTECH Robotics Corp. for the overseas consumer market. The product includes structural components, actuators, and a main controller. With 3D dynamic blueprints and visual programming, the engaging learning experience and hands-on operation allow students to easily enter the world of robotics from scratch.

Product highlights

Hardware

- Equipped with 38 parts of 17 different types, capable of building mainstream robot shapes: self-balancing car, wheeled-legged robot.
- Next-gen proprietary technology is used for high-torque digital robot servos and motors to ensure safety, durability, and quiet operation.
- A multifunctional control unit comes with a 3-mic array, a speaker module, a touchscreen display, a 9-axis gyroscope, and an open-source interface. It supports natural speech interaction and robot motion control. It also features multiple module interfaces to smoothly run designed programs, bringing creations to life.
- The kit contains 13 kg servos, gear motors, a camera module, a TOF module.

Software

- uCode, the professional visual programming software, is compatible with various operating systems, including MAC, Web OS, Windows, Android, and UnionTech OS.
- uPython is the programming software for use on a PC.
- The unique servo pose-record-play (PRP) function enables the PRP programming design.
- Intelligent speech features include local voice activity detection (VAD), online automatic speech recognition (ASR), online text-to-speech (TTS), natural language processing (NLP), 3-mic noise reduction, and loudness detection.

- Machine vision encompasses the recognition of single and dual-track lanes, QR codes, AprilTags, traffic signs, number plates, colours, faces, human postures, text, and hand signals. It also includes custom colour recognition, as well as the recognition of facial features such as masks, emotions, and gender. Additionally, it incorporates functionalities such as custom CNN model training, Wi-Fi image transmission, and notably, the transmission of recognition result images.
- Motion control algorithms include adaptive algorithm, self-balancing algorithm, odometer algorithms.
- Machine collaboration: Communication between multiple devices.

Product specifications

Specifications and parameters		
Model	ERXH101	
Form	Unrestricted	
Material	ABS and PC-ABS plastics	
Quantity	≥38PCS	
Package dimensions	345*155*478mm	
Hardware parameters		
UGOT Main Controller×1		
Device	Operating voltage	10.8 V DC
	Operating current	200 mA
	Microphone	Three digital microphones
	Loudspeaker	1 W
	Screen	A 2.4-inch LCD touchscreen display

	Gyroscope	A 3-axis accelerometer, a 3-axis magnetometer, and a 3-axis gyroscope
Main chip	Processor	Cortex-A55 × 4
	NPU	1 TOPS
	Memory	32 GB
	Flash memory	2GB
	Communication	Bluetooth 5.0 Wi-Fi: 2.4 GHz (802.11 b/g/n) and 5 GHz (802.11 a/n/ac)
Peripheral interfaces	USB	A USB 2.0 port and a USB 3.0 port for connecting cameras
	Custom UBT	6 UBT ports for connecting actuators and sensors
	Type C	A Type C port for manual firmware upgrades
	9-pin	A 9-pin port for connecting the battery
	Open-source interface	GPIO for connecting open-source sensors
Lithium battery box × 1		
Battery	Type	Lithium polymer battery
	Capacity	2600 mAh
Servos × 4		
Basic parameters	Operating voltage	9.6–14.4 V
	Control accuracy	1° (no-load) or 2° (with load)
	Maximum speed	≥ 60 RPM
	Maximum torque	Approx. 13.0 kgf.cm
	Angle range	0-360°
	Communication interface	Custom UBT

	Dimensions	∅ 40 × 50 mm
Gear motors x2		
Basic parameters	Operating voltage	9.6–14.4 V
	Maximum speed	≥360 RPM
	Maximum torque	Approx. 2.0 kgf.cm
	Communication interface	Custom UBT
	External dimensions	∅ 40 × 50 mm
Camera module*1		
Basic parameters	Operating voltage	5 V
	Field of view	106°
	Pixels	1 M
	Communication interface	USB-C
	Dimensions	34 × 38 × 29 mm
TOF module*1		
Basic parameters	Operating voltage	5 V
	Detection distance	4–200 cm
	Communication interface	Custom UBT
	Operating frequency band	940 nm
	Dimensions	34 × 38 × 29 mm

Accessories
Power adapter*1