

Microcontroller


- Raspberry Pi 5

Sensor Module

- 1 × Raspberry Pi Camera Module V2.1 (8MP 1080p, CSI interface, supports 1080p30 video and 8MP still images)

Raspberry Pi v2.1 8 MP 1080p Camera Module

Amazon's Choice



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Colour Name: **Camera Module V2**

Product details

Top highlights ^

Brand	Raspberry Pi
Model name	Raspberry Pi Kamera V2 8MP/1080p, RPI-CAM-V2, grün, Standard Camera Module v2.1
Memory storage capacity	12 GB
CPU model	MediaTek MT8125
Connectivity technology	CSI
Included components	Kamera mit Kabel

- Second Generation Raspberry Pi Camera Module with Fixed Focus Lens
- Sony Exmor IMX219 Sensor Capable of 4K30 1080P60 720P180 8MP Still
- 3280 (H) x 2464 (V) Active Pixel Count
- Maximum of 1080P30 and 8MP Stills in Raspberry Pi Board
- 2A Power Supply Highly Recommended

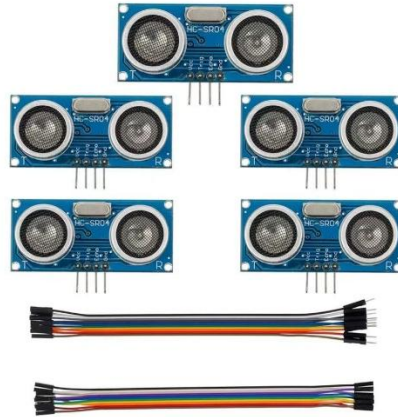
- 1 × CSI FPC Flexible Cable (22-pin to 15-pin adapter)

CSI FPC Flexible Cable for Raspberry Pi 5, 22Pin to 15Pin
Pi5 Camera Cable Suitable for CSI Camera Modules, Black
EMI Shielding Film, More Stable Signal Transmission
(300mm)



- 3 × HC-SR04 Ultrasonic Distance Sensors (measurement range: approx. 2cm–400cm, digital I/O interface, Trig/Echo)

EPLZON HC-SR04 Ultrasonic Module Distance Sensor fit for Arduino Robot XBee ZigBee (Pack of 5 pcs)



Note:

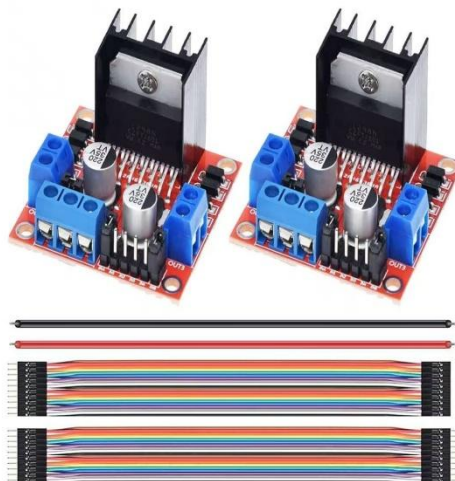
- Raspberry Pi 5 uses a 22-pin 0.5mm pitch CSI interface, while the Camera Module V2.1 uses a 15-pin 1.0mm pitch standard CSI interface. A 22-pin to 15-pin CSI FPC flexible adapter cable is required for physical connection.

Driving & Mobility Module

- 2 × L298N Motor Driver Modules (dual H-bridge DC motor controller, supports forward/reverse and PWM speed control for 2 DC motors)

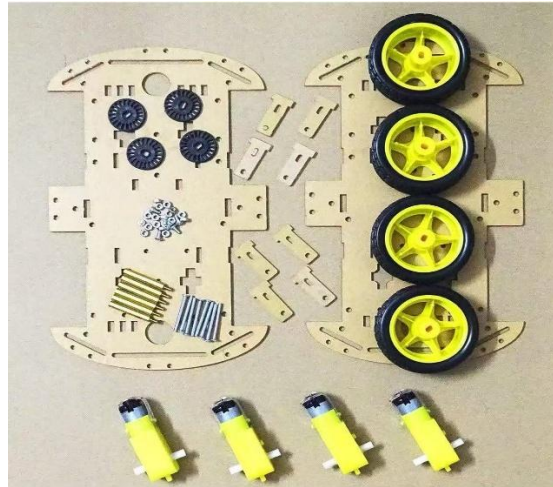
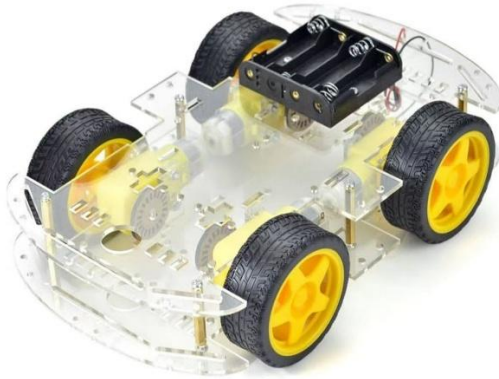
DAOKAI 2 Pcs L298N Motor Drive Controller Board DC Dual H-Bridge Robot Stepper Motor Control Module for Arduino Smart Car Power with Dupont Cable, 24AWG Wire

Amazon's Choice



- 1 × 4-Wheel Smart Car Chassis Kit (includes transparent acrylic chassis plates, 4 × DC gear motors, 4 × rubber wheels, metal standoffs, and mounting hardware)

DollaTek Smart Motor Robot Car Battery Box Chassis Kit
Speed Encoder For Arduino - Four rounds



Note:

- Each L298N module independently controls 2 DC motors; two modules are used to control the front and rear motor groups.
- Gear motors are standard TT DC gear motors (6V operating voltage, approx. 1:48 reduction ratio, ~200rpm no-load speed).

Structure & Assembly

- Dupont jumper wires (2.54mm pitch)
- Hot glue gun