

REX 8in1

The REX card is a special card designed to make the mechanical and electronic installation of the robots in the 8 in 1 set more convenient. This board, which uses the ESP32-WROOM processor, has connectors to easily connect all the components used in the REX 8 in 1 set to the circuit with a single cable.

- ESP32-WROOM
- Buzzer
- L9110S
- MPU6050
- HC-SR04
- TCRT5000
- TP4056

Specifications of The Components

Description	ESP32-WROOM
Specifications	<ul style="list-style-type: none">• RF certification: FCC/CE-RED/IC/TELEC/KCC/SRRC/NCC• Wi-Fi certification: Wi-Fi Alliance• Bluetooth certification: BQB• Green certification: RoHS/REACH• Reliability: HTOL/HTSL/uHAST/TCT/ESD• Wi-Fi Protocols: 802.11 b/g/n (802.11n up to 150 Mbps)• Wi-Fi Protocols: A-MPDU and A-MSDU aggregation and 0.4 μs guard interval support• Wi-Fi Frequency range: 2.4 GHz ~ 2.5 GHz• Bluetooth Protocols: Bluetooth v4.2 BR/EDR and BLE specification• Bluetooth - Radio: NZIF receiver with -97 dBm sensitivity• Bluetooth - Radio: Class-1, class-2 and class-3 transmitter• Bluetooth - Radio: AFH• Bluetooth - Audio CVSD and SBC• Module interfaces SD card, UART, SPI, SDIO, I2C, LED PWM, Motor PWM, I 2S, IR, pulse counter, GPIO, capacitive touch sensor, ADC, DAC, Two-Wire Automotive Interface (TWAI®),

	<p>compatible with ISO11898-1)</p> <ul style="list-style-type: none"> • On-chip sensor: Hall sensor • Integrated crystal: 40 MHz crystal • Integrated SPI flash: 4 MB • Operating voltage/Power supply: 3.0 V ~ 3.6 V • Operating current: 80 Ma (Average) • Minimum current delivered by power supply: 500 mA • Recommended operating temperature range: – 40 °C ~ +85 °C • Moisture sensitivity level (MSL): Level 3
Description	Buzzer
Specifications	<ul style="list-style-type: none"> • Max. Voltage: 30V DC • Rated current: <5mA @4000 Hz 5V • Buzzer Type: Externally Driven • Resonant Frequency: ~4000 Hz
Description	L9110S
Specifications	<ul style="list-style-type: none"> • Supply Voltage: 2.5V – 6V • Operating Current: 800mA • 2 input and 2 output pin • Operating Temperature: 0, +80°C
Description	MPU6050

Specifications	<ul style="list-style-type: none"> • Supply Voltage: 2.3V – 3.46V • Operating Current: 3.9mA • Operating Temperature: -40 , +85°C • 9 Axis motion fusion on chip • Serial Interfaces Supported: I2C, SPI 400kHz • Fast mode I2C for communicating with all registers.
Description	HC-SR04
Specifications	<ul style="list-style-type: none"> • Power Supply: +3.3V DC • Quiescent Current: <2mA • Working Current: 15mA • Effectual Angle: <15° • Ranging Distance: 2400 cm • Resolution: 0.3 cm • Measuring Angle: 30 ° • Trigger Input Pulse Width: 10uS
Description	TCRT5000
Specifications	<p>Input(Emitter)</p> <ul style="list-style-type: none"> • Reverse voltage: 5V • Forward current: 60mA • Forward surge current: 3A • Power dissipation: 100mW • Junction temperature: 100°C <p>Output (Detector)</p> <ul style="list-style-type: none"> • Collector emitter voltage: 70V • Emitter collector voltage: 5V • Collector current: 100mA • Power dissipation: 100mW • Junction temperature: 100°C <p>Sensor</p> <ul style="list-style-type: none"> • Total power dissipation: 25°C • Operation temperature range: 25 to +85°C • Storage temperature range: -25 to +100°C • Soldering temperature: 260°C
Description	TP4056

Specifications

- Input Supply Voltage(VCC): -0.3V~8V
- TEMP: -0.3V~10V
- CE: -0.3V~10V
- BAT Short-Circuit Duration: Continuous
- BAT Pin Current: 1200mA
- PROG Pin Current: 1200uA
- Maximum Junction Temperature: 145°C
- Operating Ambient Temperature Range: -40°C ~85°C Lead Temp.(Soldering, 10sec): 260°C