Parts Export

Generated: 2026-06-10 10:33:36

Total Parts: 83

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EDT-00006-A**	Force Sensor - ROUND	EM - Electronic-Electrical Modules	Interlink Electronics, SparkFun Electronics, DFRobot, Adafruit Industries, Ohmite, Tekscan	This is a force sensitive resistor with a round, 0.5? diameter, sensing area. This FSR will vary its resistance depending on how much pressure is being applied to the sensing area. The harder the force, the lower the resistance. When no pressure is being applied to the FSR its resistance will be larger than 1M?. This FSR can sense applied force anywhere in the range of 100g-10kg. Two pins extend from the bottom of the sensor with a 0.1? pitch making it bread friendly. There is a peel-and-stick rubber backing on the other side of the sensing area to mount the FSR. Just Connect a resistor to form a voltage divider and measure the voltage at the junction to find the force applied. This sensor can be easily interfaced with Microcontrollers, Arduino Boards, Raspberry Pi, etc. using an Analog to Digital Converter (ADC).	Diameter: 1.8 cm Max Pressure: 10 Kg Min Pressure: 100 gm Sensing area: 1.4 cm (Dia.) Shape: Circular Length: 6 cm	FSR Sensor • Force Sensor • Pressure Sensor • Round Force Sensor • Force Sensitive Resistor
No Image	**EDT-00006-B**	Force Sensor - SQUARE	EM - Electronic-Electrical Modules	Interlink Electronics, SparkFun Electronics, DFRobot, Adafruit Industries, Ohmite	This is a force sensitive resistor with a square, 1.75 x 1.5?, sensing area. This FSR will vary its resistance depending on how much pressure is being applied to the sensing area. The harder the force, the lower the resistance. When no pressure is being applied to the FSR its resistance will be larger than 1M?. This FSR can sense applied force anywhere in the range of 100g-10kg. Just Connect a resistor to form a voltage divider and measure the voltage at the junction to find the force applied. These sensors are simple to set up and great for sensing pressure, but they aren't incredibly accurate. This sensor can be easily interfaced with Microcontrollers, Arduino Boards, Raspberry Pi, etc. using an Analog to Digital Converter (ADC).	Actuation Force: 0.1 N Clock Speed: 16MHz	FSR Sensor • Pressure Sensor • Force Sensitive Resistor • Square Force Sensor • Touch Sensor
No Image	**EMA-00001-A**	I2C LCD	EM - Electronic-Electrical Modules	MWduino / Generic, KEYESTUDIO, SunFounder	16x2 character LCD module with integrated I2C interface for simplified wiring. Blue backlight with white characters for clear and high-contrast visibility. Ideal for Arduino, Raspberry Pi, and embedded systems requiring compact data display.	Model: Other LCD Model No.: LCD1602 Display Type: 16 × 2 Character LCD Backlight Color: Blue Character Color: White I2C Address: 0x27 Input Voltage (V): 5 Length (mm): 36 Width (mm): 80 Height (mm): 18 Weight (g): 35 Shipping Weight: 0.037 kg Shipping Dimensions (L × W × H): 8 × 5 × 3 cm	LCD1602 • 16x2 LCD • I2C LCD Display • Arduino Display • Character LCD Module
No Image	**EMA-00002-A**	SSD1306 0.96 inch I2C OLED display	EM - Electronic-Electrical Modules	Solomon Systech, SparkFun, DFRobot	The SSD1306 0.96 inch I2C OLED Display is a compact monochrome graphical display module commonly used with Arduino, ESP32, Raspberry Pi, and other microcontrollers. It typically features a 128×64 pixel resolution and uses the SSD1306 OLED driver IC with an I2C communication interface.	Product Type: OLED Display Module Display Size: 0.96 inch Driver IC: SSD1306 Resolution: 128 × 64 Pixels Operating Voltage: 3.3V – 5V DC	SSD1306 OLED Display • 0.96 OLED Module • I2C OLED Display • OLED Screen Module
No Image	**EMA-00003-A**	Programmable RGB 60 LED strip	EM - Electronic-Electrical Modules	Worldsemi, APA Electronics, Pololu	The Programmable RGB 60 LED Strip is an addressable LED strip containing 60 individually controllable RGB LEDs per meter, commonly based on WS2812B, WS2811, or SK6812 driver ICs. Each LED can display different colors and brightness levels independently, allowing dynamic lighting effects, animations, scrolling patterns, and smart visual displays.	Product Type: Programmable RGB LED Strip LED Type: WS2812B / WS2811 LEDs Per Meter: 60 LED Colors: RGB Full Color Operating Voltage: 5V DC (WS2812B) / 12V (WS2811)	Programmable RGB LED Strip • WS2812B LED Strip • NeoPixel LED Strip • Addressable RGB Strip
No Image	**EMA-00003-B**	8-Bit RGB NeoPixel LED Module	EM - Electronic-Electrical Modules	Worldsemi Co., Ltd., Generic / OEM	The WS2812B 8-Bit RGB LED Module features 8 individually addressable 5050 RGB LEDs with integrated driver ICs. It operates on 5V and uses a single-wire communication protocol for precise color and brightness control. Ideal for programmable lighting, animations, IoT devices, and Arduino-based creative projects.	LED Model: WS2812B Package Type: 5050 SMD Number of LEDs: 8 Color Type: Full-Color RGB Bit Depth: 8-bit per channel (24-bit RGB total) Operating Voltage: DC 5V Control Interface: Single Data Line (Serial) Communication Protocol: One-Wire Timing Protocol PCB Color: White Mounting Type: Solderless / Plug-and-Play Length (mm): 105 Width (mm): 10 Height (mm): 6 Weight (g): 8 Shipping Weight: 0.01 kg Shipping Dimensions (L × W × H cm): 12 × 8 × 1	Arduino Compatible • WS2812B • NeoPixel Module • 8 LED RGB • 5050 SMD • Addressable LED • 5V RGB Strip • Programmable LED

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No Image	**EMA-00003-C**	CJMCU WS2812 RGB LED BreaKout Module (BlacK)	EM - Electronic-Electrical Modules	Worldsemi, CJMCU, SparkFun Electronics	The CJMCU WS2812 RGB LED Breakout Module (Black) is a compact addressable RGB LED board based on the WS2812B intelligent LED driver IC mounted on a black PCB. Each module contains a full-color RGB LED with an integrated controller, allowing independent control of color and brightness using only a single data pin.	Product Type: Addressable RGB LED Breakout Module LED Type: WS2812B PCB Color: Black LED Colors: Red, Green, Blue (RGB) Operating Voltage: 5V DC	Addressable RGB LED • CJMCU WS2812 Black Module • WS2812 RGB LED Black • NeoPixel Black PCB
No Image	**EMA-00003-D**	RGB LED Ring 12x	EM - Electronic-Electrical Modules	Worldsemi, CJMCU, SparkFun	The RGB LED Ring 12x is a circular addressable RGB LED module containing 12 individually controllable WS2812B (NeoPixel-type) LEDs arranged in a ring shape. Each LED includes an integrated driver IC, allowing independent color and brightness control through a single data line.	Product Type: RGB LED Ring Module Number of LEDs: 12 LED Type: WS2812B LED Colors: RGB Full Color Operating Voltage: 5V DC	RGB LED Ring 12x • WS2812 LED Ring • NeoPixel Ring 12 LED • Addressable RGB Ring • 12 Pixel LED Ring
No Image	**EMA-00003-E**	Coin Cell	EM - Electronic-Electrical Modules	Panasonic, Maxell, Energizer, Sony	The CR2032 3V Lithium Coin Battery is the most commonly used coin battery that provides long-lasting and reliable power for various devices. They are used to power small electronic devices such as a calculator, Wist Watches, remote controls, Various medical Devices, fitness Gadgets, & Machines, toys, etc. The CR2032 is a 3V coin-type Lithium Battery that comes with a 225 mAh capacity. It has flat top terminals. It is ideally suited for use in all kinds of products where the trend is to achieve increasing miniaturization. Since the manganese dioxide that is chemically very stable is used for the plus terminal as an active material, if preservation conditions are proper, 90% of capacity remains even after ten years of storage. It employs organic electrolytes with minimum creeping so they are vastly superior in terms of leakage resistance under environmental changes.	Battery Type: Lithium Coin Cell Battery Size: CR2025 Chemistry: Lithium Manganese Dioxide (LiMnO?) Nominal Voltage: 3 V Nominal Capacity: 165 mAh Diameter: 20 mm Height: 2.5 mm Termination Style: Pressure Contacts Operating Temperature: –30°C to +60°C Weight (Unit): 2.3 g Shipping Weight: 0.008 kg Shipping Dimensions: 9.2 × 7.5 × 1 cm	CR2025 Battery • 3V Coin Cell • Lithium Battery • Panasonic Battery • Button Cell
No Image	**EMA-00003-F**	CJMCU WS2812 RGB LED BreaKout Module (Red)	EM - Electronic-Electrical Modules	Worldsemi, CJMCU, SparkFun	The CJMCU WS2812 RGB LED Breakout Module is a compact addressable RGB LED board based on the WS2812 intelligent LED driver IC. Each module contains a full-color RGB LED with an integrated controller, allowing independent color and brightness control using a single data line.	Product Type: Addressable RGB LED Module LED Type: WS2812B LED Colors: Red, Green, Blue (RGB) Operating Voltage: 5V DC	CJMCU WS2812 Module • WS2812 RGB LED • NeoPixel LED Module • Addressable RGB LED • WS2812 Breakout Board
No Image	**EMA-00004-A**	8x8 Single Colour LED Dot Matrix Display with MAX7219 driver	EM - Electronic-Electrical Modules	Analog Devices, Keyestudio, SparkFun	The 8x8 Single Colour LED Dot Matrix Display with MAX7219 Driver is an LED matrix module that combines a single-color 8×8 LED display with the MAX7219 LED driver IC for easy control and multiplexing.	Product Type: LED Matrix Display Module Matrix Size: 8 × 8 Driver IC: MAX7219 Number of LEDs: 64 LEDs Operating Voltage: 5V DC	MAX7219 LED Matrix Module • 8x8 LED Matrix Display • MAX7219 Dot Matrix • Arduino LED Matrix
No Image	**EMA-00004-B**	8x8 Single Colour LED Dot Matrix Display without driver	EM - Electronic-Electrical Modules	Kingbright, Everlight Electronics, Luckylight, SparkFun	The 8x8 Single Colour LED Dot Matrix Display is an LED display module containing 64 LEDs arranged in 8 rows and 8 columns. It is used to display characters, symbols, patterns, scrolling text, and simple animations in electronic and embedded projects.	Product Type: LED Dot Matrix Display Matrix Size: 8 × 8 Number of LEDs: 64 LEDs Display Color: Red / Green / Yellow (varies) Operating Voltage: 2V – 5V	8x8 LED Matrix • LED Dot Matrix Display • Single Color LED Matrix • 8x8 Dot Matrix Module
No Image	**EMA-00005-A**	2x3W Mini digital amplifier board	EM - Electronic-Electrical Modules	Diodes Incorporated, SparkFun	The 2x3W Mini Digital Amplifier Board is a compact stereo Class-D audio amplifier module commonly based on the PAM8403 amplifier IC. It can deliver up to 3W + 3W stereo output using a 5V power supply, making it ideal for portable speakers, DIY audio systems, Bluetooth speakers, and Arduino sound projects.	Product Type: Stereo Audio Amplifier Module Amplifier IC: PAM8403 Amplifier Type: Class-D Output Power: 2 x 3W Operating Voltage: 2.5V – 5.5V DC Recommended Voltage: 5V	PAM8403 Amplifier Board • 2x3W Stereo Amplifier • Mini Digital Amplifier • Class-D Audio Amplifier
No Image	**EMA-00006-A**	Buzzer module	EM - Electronic-Electrical Modules	Generic, Keyes, Elegoo, SunFounder, DFRobot	This is Small PCB Mountable 5V . It is great to add Audio Alert to your electronic designs. It operates on 5V supply, uses a coil element to generate an audible tone.	Voltage Rating: 5VDC Operating Voltage (VDC): 5 Pin Spacing (mm): 6 Material: Plastic Color: Black Width (mm): 12 (Body Diameter) Height (mm): 8 Weight (g): 1 (approx) (each) Shipping Weight: 0.001 kg Shipping Dimensions: 1 × 1 × 1 cm	buzzer • buzzer module • sound • alarm • electronic • module • 5v

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No Image	**EMA-00006-B**	Passive Buzzer Module	EM - Electronic-Electrical Modules	ED Series / Generic Compatible, KEYESTUDIO	Passive buzzer module designed to generate variable tones using PWM or frequency control. Operates from 1.5V to 15V DC and produces tones in the 1.5–2.5 kHz range. Ideal for alarms, alerts, Arduino projects, and microcontroller-based sound applications.	Model: Passive Buzzer Module Operating Voltage (VDC): 1.5 – 15 Max Operating Current (mA): 25 Tone Generator Frequency Range (kHz): 1.5 – 2.5 Mounting Type: PCB Mount Pin Pitch: 2.54 mm Compatibility: Arduino / Microcontrollers Length (mm): 15 Width (mm): 19.7 Height (mm): 10 Weight (g): 1 (approx.) Shipping Weight: 0.01 kg Shipping Dimensions (L × W × H): 6 × 4 × 2 cm	Passive Buzzer • KY-006 Module • Arduino Buzzer • PWM Buzzer • Sound Module
No Image	**EMA-00007-A**	7 Segment Display, 4 digit module	EM - Electronic-Electrical Modules	Titan Micro Electronics, Keyestudio, DFRobot, SparkFun	The 4 Digit 7 Segment Display Module is an LED-based numeric display used to show numbers, timers, counters, clocks, sensor values, and measurement data. Most common Arduino-compatible modules use the TM1637 driver IC, which simplifies control using only two signal pins. The module contains four 7-segment digits with decimal points that can display numbers and limited characters. It communicates serially with microcontrollers like Arduino, ESP32, Raspberry Pi, and STM32.	Product Type: 4 Digit LED Display Module Display Type: 7 Segment LED Driver IC: TM1637 Digits: 4 Operating Voltage: 3.3V – 5V DC	4 Digit 7 Segment Display • TM1637 Display Module • 7 Segment LED Module • Digital Display Module
No Image	**EMA-00008-A**	Single Channel Relay Module	EM - Electronic-Electrical Modules	Single Relay, Generic / OEM	The Single Channel 12V Relay Module allows low-voltage microcontrollers to safely control high-voltage AC or DC loads. It supports both high-level and low-level trigger modes and includes status LEDs for operation indication. Ideal for home automation, motor control, IoT systems, and industrial switching applications.	Model: Relay Module Number of Channels: 1 Operating Voltage (VDC): 12 Trigger Type: High-Level / Low-Level Trigger Relay Contact Rating (AC): 10A @ 250V AC Relay Contact Rating (AC Alternate): 15A @ 125V AC Contact Type: COM, NO (Normally Open), NC (Normally Closed) Interface: 2.54 mm Header Pins Output Connection: 3-Pin Screw Terminal Indicators: Power LED + Relay Status LED Length (mm): 50 Width (mm): 25 Height (mm): 20 Weight (g): 16 Shipping Weight: 0.025 kg Shipping Dimensions (L × W × H cm): 7 × 4 × 3	Arduino Compatible • 12V Relay Module • Single Channel Relay • High/Low Trigger • Songle SRD-12VDC-SL-C • SPDT Relay • 10A 250VAC • IoT Switching Module
No Image	**EMA-00008-B**	2 Channel Relay module	EM - Electronic-Electrical Modules	Songle, Keyes, SunFounder, Elegoo, Generic	This is a 5V 2 Channel Relay Module, be able to control various appliances, and other equipment with large current. It can be controlled directly by Microcontroller (8051, AVR, PIC, DSP, ARM, ARM, MSP430, TTL logic).5V 2-Channel Relay interface board and each one needs 15-20mA Driver Current Equipped with high-current relay, AC250V 10A; DC30V 10A Standard interface that can be controlled directly by microcontroller (8051, AVR, PIC, DSP, ARM, ARM, MSP430, TTL logic) Indication LED's for Relay output status.	No. of Channels: 2 Operating Temperature Range: -40 to 85 °C Operating Voltage: 2.5 ~ 5.5 V (DC) Switching Voltage(AC): 240V@10A Switching Voltage(DC): 30V@10A Trigger Current: 20 mA Trigger Voltage: 5V (DC) Length: 4.3 cm Height: 1.7 cm Width: 4.3 cm	arduino • module • 5v • relay module • 2 channel • switching • control
No Image	**EMA-00009-A**	ISD1820 Voice Recording & Playback Module with Mic and Speaker	EM - Electronic-Electrical Modules	Nuvoton Technology Corporation, Generic / OEM	ISD1820 Module, Voice Recorder, 10s Audio, Playback Module, Onboard Mic, 8Ω Speaker, Arduino Compatible, Sound Board . The ISD1820 Voice Recording Module allows up to 10 seconds of audio recording stored in non-volatile analog flash memory. It features an onboard electret microphone, push-button controls, and supports external triggering via microcontroller.	IC Chip: ISD1820 Operating Voltage (VDC): 3 – 5 Recording Duration: Up to 10 seconds Memory Type: Non-Volatile Analog Flash Microphone: Onboard Electret Microphone Speaker: 8 ?, 0.5W Speaker Cable Length (cm): 20 Speaker Diameter (mm): 40 Control Options: Push Buttons or Microcontroller Digital Pin Interface: 2.54 mm Header Pins Length (mm): 42 Width (mm): 33.5 Height (mm): 11.5 Weight (g): 20 Shipping Weight: 0.022 kg Shipping Dimensions (L × W × H cm): 8 × 6 × 3	Arduino Compatible • ISD1820 Module • Voice Recorder • 10s Audio • Playback Module • Onboard Mic • 8? Speaker • Sound Board
No Image	**EMA-00010-A**	L298N 2 Channel Motor Driver	EM - Electronic-Electrical Modules	STMicroelectronics, Keyestudio, SparkFun, HiLetgo	The L298N 2 Channel Motor Driver Module is a dual H-Bridge motor control board used to control the speed and direction of two DC motors independently or one stepper motor. It is based on the STMicroelectronics L298N motor driver IC and is commonly used with Arduino, ESP32, Raspberry Pi, and other microcontrollers. The module can handle higher voltage and current compared to direct microcontroller outputs, making it suitable for robotics and automation applications. It includes onboard flyback diodes, a heat sink, and a 5V voltage regulator for stable operation.	Product Type: Dual Motor Driver Module Driver IC: L298N Motor Channels: 2 DC Motors Motor Voltage: 5V – 35V DC Logic Voltage: 5V	DC Motor Driver Board • L298N Motor Driver • L298N 2 Channel Driver • Dual H-Bridge Module

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMA-00010-B**	Motor Driver Module	EM - Electronic-Electrical Modules	Texas Instruments, STMicroelectronics, NXP Semiconductors, ON Semiconductor, Toshiba	The L293D Motor Driver Module is a dual H-bridge driver used to control DC and stepper motors. It allows direction and speed control using PWM signals from microcontrollers like Arduino. Ideal for robotics and automation projects with support up to 12V and 600mA current.	Driver IC: L293D Motor Type: DC & Stepper Motor Operating Voltage: 4.5V – 12V Current Rating: 600mA per channel Peak Current: 600mA Control Method: Direction + PWM Speed Control Number of Channels: 2 (H-Bridge) Arduino Compatible: Yes (via wires) Polarity Protection: NO Cooling Fan: NO Dimensions: 48 x 34 x 14 mm Weight: 15g	motor • l293d • motor driver • dc motor • stepper motor • robotics • arduino • h-bridge • pwm
No Image	**EMA-00010-C**	L293D Motor Driver	EM - Electronic-Electrical Modules	Texas Instruments, STMicroelectronics, SparkFun	The L293D Motor Driver is a dual H-Bridge motor driver IC designed to control the direction and speed of DC motors and stepper motors using microcontrollers like Arduino, ESP32, Raspberry Pi, and PIC controllers. It acts as an interface between low-power control circuits and higher-current motors.	Product Type: Motor Driver IC Driver Type: Dual H-Bridge Motor Channels: 2 DC Motors / 1 Stepper Motor Logic Voltage: 4.5V – 7V Motor Supply Voltage: 4.5V – 36V	Arduino Motor Driver • Stepper Motor Driver • Robot Motor Controller • L293D Motor Driver • L293D IC • Dual H-Bridge Driver • DC Motor Driver IC • L293D Driver Module
No Image	**EMA-00010-D**	L293D Motor Driver	EM - Electronic-Electrical Modules	Texas Instruments, STMicroelectronics, SparkFun	The L293D Motor Driver is a dual H-Bridge motor driver IC used to control DC motors and stepper motors using microcontrollers like Arduino, ESP32, Raspberry Pi, and PIC controllers. It allows low-power digital circuits to safely control higher-current motors. The IC contains two H-Bridge circuits, enabling independent bidirectional control of two DC motors or one stepper motor. The built-in flyback protection diodes help protect the circuit from voltage spikes generated by motors.	Product Type: Motor Driver IC IC Type: Dual H-Bridge Motor Channels: 2 DC Motors or 1 Stepper Motor Logic Voltage: 4.5V – 7V Motor Voltage: 4.5V – 36V Output Current: 600mA per channel	Arduino Motor Driver • Stepper Motor Driver • Robot Motor Controller • L293D Motor Driver • L293D IC • Dual H-Bridge Driver • DC Motor Driver IC • L293D Driver Module
No Image	**EMA-00010-E**	L 298 Motor Driver Module	EM - Electronic-Electrical Modules	STMicroelectronics, STMicroelectronics, SparkFun, Keyestudio	The L298 Motor Driver Module (L298N) is a dual H-Bridge motor driver used to control the speed and direction of DC motors and stepper motors. It allows microcontrollers like Arduino, ESP32, and Raspberry Pi to drive motors that require higher current and voltage than the controller can provide directly.	Product Type: Motor Driver Module IC Used: L298N Dual H-Bridge Motor Channels: 2 DC motors or 1 stepper motor Operating Voltage (Logic): 5V Motor Voltage: 5V – 35V DC	L298 Motor Driver • L298N Module • Dual H-Bridge Motor Driver • DC Motor Driver Board • Arduino Motor Driver • Stepper Motor Driver • Robot Motor Controller • L298N H-Bridge Module
No Image	**EMC-00001-A**	RF 433/315 MHz Transmitter and Receiver Module Kit	EM - Electronic-Electrical Modules	HopeRF, Wireless Tag	The RF 433/315 MHz Transmitter and Receiver Module Kit is a wireless communication system used to send and receive data over radio frequency. It typically includes an RF transmitter module and an RF receiver module that operate at 433 MHz (or 315 MHz in some variants). The transmitter sends digital signals by modulating radio waves, and the receiver decodes these signals back into data. It is commonly used for short-range wireless communication between microcontrollers like Arduino, ESP8266, ESP32, and other embedded systems.	Product Type: RF Wireless Communication Module Frequency: 433 MHz / 315 MHz Operating Voltage: 3V – 5V DC Data Rate: Up to ~10 kbps (typical) Range: 20m – 100m (depends on antenna & environment)	RF 433MHz Module • 315MHz RF Module • Wireless Transmitter Receiver Kit • RF Communication Module • Arduino RF Module • ASK RF Module • Wireless Remote Module • 433MHz RF Pair Kit

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMC-00002-A**	ESP8266 wifi module	EM - Electronic-Electrical Modules	Espressif Systems, AI-Thinker, SparkFun	The ESP8266 WiFi Module is a low-cost microcontroller with built-in WiFi capability used for IoT (Internet of Things) applications. It allows devices to connect to WiFi networks and communicate with servers, cloud platforms, or mobile apps.	Product Type: WiFi Microcontroller Module Core Chip: ESP8266EX CPU: 32-bit Tensilica L106 Operating Voltage: 3.3V	ESP8266 WiFi Module • ESP8266 NodeMCU • ESP8266 ESP-01 • WiFi IoT Module • Arduino WiFi Module • ESP8266 Wireless Module • ESP8266 ESP-12E • ESP8266 IoT Board
No Image	**EMC-00003-A**	NodeMcu	EM - Electronic-Electrical Modules	Espressif Systems, Ai-Thinker, NodeMCU	The ESP8266 NodeMCU CH340 board has ESP8266 which is a highly integrated chip designed for the needs of a new connected world. It offers a complete and self-contained Wi-Fi networking solution, allowing it to either host the application or to offload all Wi-Fi networking functions from another application processor. ESP8266 has powerful on-board processing and storage capabilities that allow it to be integrated with the sensors and other application-specific devices through its GPIOs with minimal development up-front and minimal loading during runtime. Its high degree of on-chip integration allows for minimal external circuitry, and the entire solution, including the front-end module, is designed to occupy minimal PCB area. The ESP-12 Lua NodeMCU WIFI Dev Board Internet Of Things with ESP8266 is an all-in-one microcontroller + WiFi platform that is very easy to use to create projects with WiFi and IoT (Internet of Things) applications.	Processor: L106 32 bit Processor speed: 80MHz to 160MHz Flash memory: 4MB Analog to digital: 1 input with 1024 resolution Maximum concurrent TCP connection: 5 GPIOs: 17 Transfer rate: 110 Kbps to 460800 Kbps Input voltage supply: 4.5V to 9V Communication interface voltage: 3.3V Current consumption: 10uA-170mA	NodeMCU • ESP8266 • WiFi Module • IoT Development Board • ESP8266EX • Wireless Module
No Image	**EMC-00004-A**	Bluetooth Module	EM - Electronic-Electrical Modules	HC Series / Generic Compatible, Waveshare, KEYESTUDIO, SunFounder	The HC-05 Bluetooth Module is a 6-pin wireless serial communication device designed for UART-based data transfer between microcontrollers and Bluetooth-enabled devices. Operates in the 2.4GHz ISM band using GFSK modulation and supports both Master and Slave modes. Supports AT command configuration and includes an onboard push button for AT mode entry.	Operating Voltage: 3.6V – 6V DC Input Current: 50 mA Operating Frequency: 2.4 GHz ISM Band Modulation Type: GFSK (Gaussian Frequency Shift Keying) Emission Power: 4 dBm (Class 2) Receiver Sensitivity: -84 dBm at 0.1% BER Maximum Range: 10 meters (typical) Interface Pins: EN/KEY, VCC, GND, TXD, RXD, STATE AT Command Support: Yes Onboard Button: Yes (AT Mode Selection) Length (mm): 43 Width (mm): 16.5 Height (mm): 7 Weight (g): 5 Shipping Weight: 0.01 kg Shipping Dimensions (cm): 5 × 3 × 1	HC-05 • Bluetooth Module • UART Bluetooth • 6-Pin Bluetooth • Master Slave Module • Arduino Bluetooth
No Image	**EMC-00005-A**	RFID READER MODULE	EM - Electronic-Electrical Modules	NXP Semiconductors, Ai-Thinker, SunFounder, Keyestudio, Waveshare	RC522 - RFID Reader /Writer with Cards Kit includes a 13.56MHz RF reader and writer module that uses an RC522 IC and two S50 RFID cards tag. The MF RC522 is an integrated transmission module for contactless communication at 13.56 MHz. RC522 supports ISO 14443A/MIFARE mode. RC522 - RFID Reader features an outstanding modulation and demodulation algorithm to serve effortless RF communication at 13.56 MHz. The S50 RFID Cards will ease up the process helping you to learn and add the 13.56 MHz RF transition to your project. The module uses SPI to communicate with microcontrollers. The open-hardware community already has a lot of projects exploiting the RC522 – RFID Communication, using Arduino.	Operating Frequency (MHz): 13.56 Reading Distance (m): 2 cm to 5 cm Supply Voltage (V): 3.3V Operating Current (mA): 13 ~ 26 SPI data rate (Mbit/s): 10 Length (mm): 60 Width (mm): 39.5 Weight (g): 20	RC522 • RFID Reader • NFC Module • MFRC522 • 13.56MHz RFID • Arduino RFID
No Image	**EMC-00005-B**	RFID KEY FOB	EM - Electronic-Electrical Modules	NXP Semiconductors, ACS (Advanced Card Systems)	An RFID Key Fob is a small, portable contactless tag used for wireless identification and access control. It contains an embedded RFID chip and antenna that communicates with RFID readers using radio frequency signals (commonly 13.56 MHz for Arduino RC522 systems).	Product Type: RFID Key Fob Frequency: 13.56 MHz Standard: ISO/IEC 14443A Memory: 1KB / 4KB (varies by chip)	13.56MHz RFID Tag • RFID Key Fob • MIFARE Key Fob • NFC Key Tag • Access Control Key Fob • Arduino RFID Tag • Smart Key Fob • Contactless RFID Token
No Image	**EMC-00005-C**	RFID KEY CARD	EM - Electronic-Electrical Modules	NXP Semiconductors, HID Global	An RFID Card is a contactless smart card used for wireless identification using radio frequency signals. Most Arduino-compatible RFID systems use 13.56 MHz HF RFID cards based on ISO/IEC 14443 standard, commonly paired with RC522 readers.	Product Type: RFID Smart Card Frequency: 13.56 MHz Standard: ISO/IEC 14443A Memory: 1KB / 4KB (varies)	RFID Card • 13.56MHz RFID Tag • MFRC522 Card • Smart Card RFID • Access Control Card • Contactless ID Card • Arduino RFID Card • NFC RFID Tag

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMC-00006-A**	GSM-GPRS Module (SIM800L)	EM - Electronic-Electrical Modules	SIMCom, DFRobot, Waveshare	SIM800L GSM/GPRS module is a miniature GSM modem, which can be integrated into a great number of IoT projects. You can use this module to accomplish almost anything a normal cell phone can; SMS text messages, make or receive phone calls, connecting to the internet through GPRS, TCP/IP, and more! To top it off, the module supports quad-band GSM/GPRS network, meaning it works pretty much anywhere in the world. An antenna is made of wire – very useful in narrow places.	IC Chip: SIM800L Input Voltage: 3.4V ~ 4.4V Peak Current: 2 A	SIM800L • GSM Module • GPRS Module • SMS Module • IoT Module • Arduino GSM • ESP8266 GSM
No Image	**EMC-00006-B**	GSM-GPRS Module (SIM900A)	EM - Electronic-Electrical Modules	SIMCom, DFRobot, Itead Studio	The onboard two set power supply interface VCC5 5V power supply, VCC4 interface, 3.5--4.5V power supply, optional power on self-starting (default), and control start. The onboard SMA (default) and IPXmini antenna interface, SIM900A interface reserved reset. The size of the module is 49*50, all the new and original device. The computer can give early computer debugging USB module power supply, a very large amount of data under the condition of the recommended current more than 1A. Standby dozens of MA data can be set to provide dormancy, dormancy of 10MA low power. Support 2, mobile phone 3,4G card. The serial port circuit: support for 3.3V single-chip microcomputer. TTL serial port support 3.3 and 5V single-chip microcomputer. The SIM card circuit to increase the SMF05C ESD chip. Antenna circuit: guarantee short and straight, so as to ensure the signal strength. PCB display screen printing mark: each interface, convenient development two times, the SIM900/A hardware completely follows the design when the design manual.	Frequency bands: Dual-band GPRS connectivity: GPRS multi-slot class 10 (default) , GPRS multi-slot class 8 (option) Operating Temperature Range: -30 to 80 ºC Supply Voltage: 3.4 – 4.5 V Dimensions (LxWxH): 8.5×5.7x2cm (approx)	GSM Module • GPRS Module • SMS Module • IoT Module • Arduino GSM • SIM900A
No Image	**EMC-00008-A**	IR Receiver module	EM - Electronic-Electrical Modules	Vishay Semiconductors, Sharp Corporation, Keyestudio, DFRobot, SparkFun Electronics	The KY-022 is equipped with three pins. It responds to a frequency of 38kHz at 940nm. This signal is sent via the digital output. If an IR signal is detected, the LED module on board will light up. This sensor module can be used to decode remote controls for home theaters and other remote controls that use IR.	Current consumption: 1.5mA peak Frequency: 38kHz Operating Voltage: 3.3V to 5V Pulse Duration: 400µs to 800µs Range: 17m Wavelength: 940 nm	IR Receiver • Infrared Sensor • TSOP1838 • Remote Receiver • Arduino IR Sensor • 38kHz IR Module • IR Decoder
No Image	**EMC-00008-B**	IR Remote Keypad Transmitter module	EM - Electronic-Electrical Modules	Keyes Electronics, DFRobot	The IR Remote Transmitter Module is an infrared signal emitter used to send encoded IR commands to devices like TVs, ACs, and IR receivers. Most Arduino-compatible versions (such as the KY-005 module) use a 5mm IR LED along with a transistor driver circuit to generate a modulated 38kHz infrared signal, which is the standard frequency used in consumer remote controls.	Product Type: IR Transmitter Module Operating Voltage: 3.3V – 5V DC Carrier Frequency: 38 kHz (typical) Range: ~1–5 meters (depends on setup)	IR Remote Transmitter Module • IR LED Transmitter • KY-005 IR Transmitter • Infrared Remote Control Module
No Image	**EMK-00001-A**	RFID Kit	EM - Electronic-Electrical Modules	NXP Semiconductors, Keyestudio, SparkFun, HiLetgo	The RFID Kit is a wireless identification system used to read and write data from RFID tags/cards using radio frequency communication. Most common Arduino-compatible kits use the RC522 RFID module, which operates at 13.56 MHz and communicates via SPI interface. It includes an RFID reader, key fob tags, and cards.	Product Type: RFID Reader Kit Operating Frequency: 13.56 MHz Operating Voltage: 3.3V Read Range: ~2–5 cm	RFID Kit • RFID Reader Module • RC522 RFID Kit • RFID Card Reader • Arduino RFID Module • NFC Reader Module • RFID Tag System • Access Control Kit
No Image	**EMP-00001-A**	9V wall power supply	EM - Electronic-Electrical Modules	Mean Well, Hi-Link, Delta Electronics	The 9V Wall Power Supply Adapter is an AC-to-DC switching power supply designed to provide regulated 9V DC output for electronic circuits, Arduino boards, routers, DIY electronics, audio devices, sensors, and embedded systems. It converts high-voltage AC mains power into stable low-voltage DC suitable for powering electronic devices safely and efficiently.	Product Type: AC to DC Power Adapter Output Voltage: 9V DC Input Voltage: 100V – 240V AC Output Current: 500mA / 1A / 2A Frequency: 50/60 Hz	Wall Power Supply • Arduino Power Adapter • 9V Power Adapter • 9V DC Adapter • 9V SMPS Adapter
No Image	**EMP-00001-B**	5V wall power supply Adapter	EM - Electronic-Electrical Modules	Mean Well, Hi-Link, Delta Electronics	The 5V Wall Power Supply Adapter is an AC-to-DC switching power supply used to provide regulated 5V DC output for electronic circuits, development boards, IoT devices, LED systems, routers, sensors, and embedded projects. These adapters convert high-voltage AC mains power into stable low-voltage DC suitable for electronics applications.	Product Type: AC to DC Power Adapter Output Voltage: 5V DC Input Voltage: 100V – 240V AC Output Current: 1A / 2A / 3A Power Supply Type: SMPS	SMPS Adapter • 5V Power Adapter • 5V DC Adapter • Wall Power Supply • Arduino Power Adapter
No Image	**EMP-00001-C**	Power Adapter	EM - Electronic-Electrical Modules	Generic / OEM, Mean Well, Delta Electronics, LEICKE	12V 2A Switched Mode Power Supply (SMPS) adapter designed to provide stable and regulated DC output. Converts AC 100–240V input to 12V DC output with low losses and high efficiency compared to conventional linear power supplies. Suitable for powering Arduino boards, routers, LCD displays, DC motors, audio equipment, TV boxes, mini electronics, and other devices requiring up to 2A current.	Input Voltage: 100–240V AC Output Voltage: 12V DC Maximum Output Current: 2A Output Connector Size: 5.5 × 2.5 mm Polarity: Center Positive Operating Temperature: -25°C to +60°C Shipping Weight: 0.02 kg Shipping Dimensions: 10 × 6 × 6 cm	12V Adapter • 12V 2A Power Supply • SMPS Adapter • AC-DC Adapter • 5.5x2.5mm Power Adapter

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00001-A**	MQ-2 sensor	EM - Electronic-Electrical Modules	Hanwei Electronics Group Corporation, Zhengzhou Winsen Electronics Technology Co., Ltd.	The MQ-2 Gas Sensor Module detects combustible gases such as LPG, methane, hydrogen, alcohol vapor, and smoke. It uses a SnO? sensing element and provides both analog and digital outputs with adjustable sensitivity. Ideal for gas leakage detection, safety systems, and Arduino-based environmental monitoring projects.	Sensor Model: MQ-2 Detection Range: 300 – 10,000 ppm Detectable Gases: LPG, Butane, Propane, Methane (CH?), Hydrogen (H?), Alcohol, Smoke, CO Sensing Material: Tin Dioxide (SnO?) Operating Voltage: 5V DC Digital Output Voltage: 0V or 5V (TTL Logic) Analog Output: Yes Sensitivity Adjustment: Onboard Potentiometer Preheat Time: 20 seconds (minimum) Dimensions (mm): 36 × 20 × 21 Weight (g): 8 Shipping Weight: 0.012 kg Shipping Dimensions (cm): 4 × 4 × 4	Arduino Compatible • MQ-2 Sensor • LPG Gas Sensor • Smoke Detector • SnO2 Sensor • Combustible Gas Module • 5V Gas Sensor • Gas Leakage Detector
No Image	**EMS-00002-A**	DHT11 Temperature and Humidity Sensor	EM - Electronic-Electrical Modules	EM Series / Generic Compatible, KEYESTUDIO, SunFounder, DFRobot	Digital temperature and humidity sensor module with calibrated single-wire serial output. Features onboard pull-up resistor and LED status indicator for easy interfacing. Ideal for weather stations, environmental monitoring, and smart automation projects.	Item Type: Sensor Model: DHT11 Temperature and Humidity Sensor Measuring Temperature Range (°C): 0 – 50 Temperature Accuracy: ± 2 °C Humidity Range: 20 – 95 % RH Humidity Accuracy: ± 5 % RH Resolution: 16 bit Output Form: Digital Output (Single Wire Serial) Operating Voltage (VDC): 3 – 5 Operating Current (mA): ? 2.5 Dimensions (L × W × H mm): 31 × 14 × 7.5 Weight (g): 5 Shipping Weight: 0.01 kg Shipping Dimensions (L × W × H cm): 5 × 5 × 2	DHT11 • Temperature Sensor • Humidity Sensor • Digital Temp Sensor • Arduino Climate Sensor
No Image	**EMS-00003-A**	Accelerometer module GY 521	EM - Electronic-Electrical Modules	InvenSense, Generic Electronics, DFRobot, SparkFun Electronics	The GY-521 Accelerometer Module is a 6-axis motion tracking sensor board based on the MPU6050 MEMS sensor IC. It combines a 3-axis accelerometer and a 3-axis gyroscope in a single compact module, allowing accurate measurement of acceleration, tilt, rotation, vibration, and motion.	Product Type: Accelerometer + Gyroscope Module Model: GY-521 Main IC: MPU6050 Communication: I2C Operating Voltage: 3V – 5V DC	GY-521 Accelerometer Module • MPU6050 Sensor Module • 6DOF Motion Sensor • Gyroscope Accelerometer Module
No Image	**EMS-00003-B**	Accelerometer module GY-61 (ADXL335)	EM - Electronic-Electrical Modules	N/A			
No Image	**EMS-00003-C**	Accelerometer module MMA7361	EM - Electronic-Electrical Modules	Freescale Semiconductor, DFRobot, Elecrow	The MMA7361 Accelerometer Module is a low-power 3-axis analog accelerometer sensor designed to measure acceleration, tilt, vibration, orientation, and motion along X, Y, and Z axes. It is based on the Freescale/NXP MMA7361L MEMS accelerometer IC and provides analog voltage outputs proportional to acceleration values.	Product Type: 3-Axis Accelerometer Module Model: MMA7361L Sensor Type: MEMS Accelerometer Axes: X, Y, Z Operating Voltage: 3.3V – 5V DC	Tilt Sensor Module • MMA7361 Accelerometer • Triple Axis Accelerometer • 3-Axis Accelerometer Module
No Image	**EMS-00004-A**	Sound Level Sensor Module	EM - Electronic-Electrical Modules	Keyes, Keyes, DFRobot, SparkFun Electronics	Sound Detection Module Sensor for Intelligent Vehicle Compatible With Arduino is a Single channel signal output Sensor. The output is effective to the low-level sound signal with good fidelity, When there is sound, outputs low level and signal light.	IC Chip: LM393 Induction Distance: 500 cm Operating Voltage: 3.3 ~ 5 V Length: 4.3 cm Height: 0.8 cm Width: 1.7 cm	Sound Sensor • Microphone Module • Audio Sensor • Noise Sensor
No Image	**EMS-00004-B**	Sound Detector Module (Blue)	EM - Electronic-Electrical Modules	Keyes Electronics, DFRobot, AZDelivery	The Sound Detector Module (Blue) is a microphone-based sound sensing module designed to detect surrounding audio signals and convert them into electrical outputs. Most blue sound sensor modules use an electret microphone together with the LM393 comparator IC to provide analog and digital sound detection outputs.	Product Type: Sound Detection Sensor Model: KY-038 / KY-037 Main IC: LM393 Comparator Operating Voltage: 3.3V – 5V DC	Sound Detector Module • KY-038 Sound Sensor • LM393 Sound Sensor • Microphone Sensor Module
No Image	**EMS-00004-C**	MAX4466 Electret Microphone	EM - Electronic-Electrical Modules	Analog Devices / Maxim Integrated, SparkFun, DFRobot, Keyestudio	The MAX4466 Electret Microphone Module is a low-noise audio amplifier module designed for sound detection and audio signal monitoring applications. It uses an electret condenser microphone along with the MAX4466 operational amplifier IC to provide amplified analog audio output suitable for microcontrollers and embedded systems.	Product Type: Electret Microphone Module Main IC: MAX4466 Output Type: Analog Operating Voltage: 2.4V – 5.5V DC	MAX4466 Microphone Module • Electret Microphone Amplifier • Sound Sensor Module • Audio Detection Sensor

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00005-A**	Ultrasonic Distance Sensor	EM - Electronic-Electrical Modules	MWduino / Generic, Elecfreaks, KEYESTUDIO, SunFounder	Ultrasonic distance sensor module using 40kHz sound waves for accurate measurement. Operates on 3.3–5.5V DC with 4-pin interface (VCC, Trig, Echo, GND). Ideal for robotics, obstacle detection, automation, and distance sensing projects.	Power Supply (V): +5V DC Working Current (mA): 15 mA Output Signal: Electrical frequency signal Ranging Distance: 2 cm – 400 cm Distance Resolution: 0.3 cm Measuring Angle: 30° Operating Voltage Range (V): 3.3V – 5.5V Interface Type: 4-pin (VCC, Trig, Echo, GND) Shipping Weight: 0.007 kg Shipping Dimensions (L × W × H): 9 × 6 × 2 cm	Ultrasonic Sensor • HC-SR04+ • Distance Sensor • Arduino Sensor • Obstacle Detection Module
No Image	**EMS-00006-A**	PIR Motion Sensor	EM - Electronic-Electrical Modules	HC, DFRobot, SparkFun, Keyestudio	The PIR Motion Sensor is a passive infrared (PIR) detection module used to detect human movement and body heat based on infrared radiation changes. The most common version is the HC-SR501 PIR sensor module, which uses a pyroelectric infrared sensor and Fresnel lens to detect motion within its sensing range. (components101.com)	Product Type: PIR Motion Sensor Model: HC-SR501 Sensor Type: Passive Infrared Operating Voltage: 5V – 20V DC Detection Distance: 3 – 7 meters	Motion Detection Sensor • PIR Motion Sensor • HC-SR501 PIR Sensor • Human Motion Sensor
No Image	**EMS-00007-A**	Temperature sensor Module - DS18B20	EM - Electronic-Electrical Modules	Maxim Integrated, DFRobot, SparkFun	The DS18B20 Temperature Sensor Module is a digital temperature sensing device designed for accurate temperature measurement using the 1-Wire communication protocol. Developed by Dallas Semiconductor (now Maxim Integrated), the DS18B20 provides calibrated digital temperature readings with high accuracy and supports multiple sensors on a single data line.	Product Type: Digital Temperature Sensor Model: DS18B20 Communication Protocol: 1-Wire Operating Voltage: 3V – 5.5V DC Temperature Range: -55°C to +125°C Accuracy: ±0.5°C	DS18B20 Temperature Sensor • Waterproof Temperature Sensor • Digital Temperature Sensor • One Wire Temperature Sensor

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00008-A**	Metal touch sensor	EM - Electronic-Electrical Modules	Keyes Electronics, Generic Electronics, Keyestudio	The KY-036 Metal Touch Sensor Module is a human body and metal touch detection sensor designed to detect changes in electrical conductivity when touched by a finger or conductive object. The module uses an LM393 comparator and transistor-based sensing circuit to generate analog and digital output signals.	Product Type: Metal Touch Sensor Module Model: KY-036 Main IC: LM393 Comparator Operating Voltage: 3.3V – 5V DC	KY-036 Metal Touch Sensor • Human Body Touch Sensor • Metal Touch Module • Touch Detection Sensor
No Image	**EMS-00009-A**	Heart Pulse Rate Sensor	EM - Electronic-Electrical Modules	Maxim Integrated, Generic Electronics, SparkFun, DFRobot	The Heart Pulse Rate Sensor is a biometric sensor module used to detect heartbeats and measure pulse rate (BPM - Beats Per Minute). It works using photoplethysmography (PPG), where an LED emits light into the skin and a photodetector measures changes in blood flow caused by heartbeats.	Product Type: Heart Pulse Rate Sensor Sensor Type: Photoplethysmography (PPG) Operating Voltage: 3.3V – 5V DC Output Type: Analog / I2C Measured Parameter: Pulse Rate (BPM)	Heart Pulse Sensor • Pulse Rate Sensor • Heartbeat Sensor Module • Pulse Detection Sensor • Arduino Pulse Sensor • BPM Sensor • Heart Rate Monitor Sensor • Pulse Sensor Amped
No Image	**EMS-00010-A**	MQ-2 Gas Sensor Module-Methane, Butane, LPG, SmoKe	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, SparkFun Electronics, DFRobot	The MQ-2 Gas Sensor Module is a semiconductor-based gas detection sensor designed to detect combustible and flammable gases such as Methane, Butane, LPG, Propane, Hydrogen, Alcohol, and Smoke. It uses a tin dioxide (SnO?) sensing layer whose resistance changes when exposed to combustible gases.	Product Type: Gas & Smoke Sensor Model: MQ-2 Detectable Gases: LPG, Methane, Butane, Smoke Detection Range: 200 – 10000 ppm Operating Voltage: 5V DC	LPG Gas Sensor • methane sensor • Arduino Gas Sensor • MQ-2 Gas Sensor • Smoke Sensor Module • Butane Gas Detector • MQ2 Smoke Detector • Flammable Gas Sensor
No Image	**EMS-00010-B**	Alcohol Gas Sensor Module	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, Waveshare	MQ-3 Alcohol Gas Sensor Module is used to detect alcohol concentration in the air and provides both analog and digital outputs. The module is based on the MQ-3 gas sensor which uses SnO? (Tin Dioxide) sensing material. The sensor operates from 2.5V to 5V and includes an onboard potentiometer to adjust the digital output threshold level.	Operating Voltage (V): 2.5 to 5 Additional Specs: Output Pin: Analog and digital, Gold pin connectors, 2.54 mm pitch, Boost Converter Chip: PT1301 Board Size (mm): 40 x 21 mm Mounting Hole Diameter (mm): 2 mm Interface: Digital Output, Analog output, VCC Positive power supply (2.5V-5.0V), Power ground	arduino • alcohol sensor • MQ-3 • gas sensor • ethanol detector
No Image	**EMS-00010-C**	Methane and Natural Gas sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, Waveshare	MQ-4 Gas Sensor Module is a high sensitivity gas detection module used for sensing Methane (CH4), CNG, and natural gas leakage in the environment. An onboard potentiometer allows adjustment of the gas detection threshold level for digital output triggering. MQ-4 sensor is widely used in gas leakage alarms, industrial safety systems, and smart monitoring projects.	Model: MQ-4 Detecting range: 200 to 10000 ppm. Operating Voltage: 3 ~ 5 V Length: 3.1 cm Height: 2.1 cm Width: 1.9 cm	Arduino Compatible • gas sensor • MQ-4 • methane sensor • CNG detector
No Image	**EMS-00010-D**	Natural Gas and LPG Analog Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, Waveshare	The MQ-5 is used in gas leakage detecting equipment in consumer and industry applications, this sensor is suitable for detecting LPG, natural gas, coal gas. Avoid the noise of alcohol, cooking fumes, and cigarette smoke. The sensitivity can be adjusted by the potentiometer. The sensitive material of the MQ-5 gas sensor is SnO2, which with lower conductivity in clean air. When the target combustible gas exists, The sensor's conductivity is higher along with the gas concentration rising. Please use a simple electro circuit, Convert change of conductivity to the corresponding output signal of gas concentration. The sensor could be used to detect different combustible gas especially Methane, it is with low cost and suitable for different application	Model: MQ-5 Operating Temperature Range: -20 to 40 °C Operating Voltage: 5 V Length: 3.2 cm Height: 2.2 cm Width: 2 cm	Arduino Compatible • gas sensor • methane sensor • CNG detector • CH4 sensor
No Image	**EMS-00010-E**	Flammable Gas Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Zhengzhou Winsen Electronics, DFRobot	This is a simple-to-use MQ-6 Liquefied Petroleum Isobutane Propane Gas Sensor module, suitable for sensing LPG (composed of mostly propane and butane) concentrations in the air. The MQ-6 can detect gas concentrations anywhere from 200 to 10000ppm. This sensor has high sensitivity and fast response time. The sensor's output is an analog resistance. The drive circuit is very simple; all you need to do is power the heater coil with 5V, add a load resistance, and connect the output to an ADC. The sensitive material of the MQ-6 gas sensor is SnO2, which with lower conductivity in clean air. When the target combustible gas exists, The sensor's conductivity is higher along with the gas concentration rising. Please use a simple electro circuit, Convert change of conductivity to the corresponding output signal of gas concentration.	Model: MQ-6 Operating Temperature Range: -20 to 40 °C Operating Voltage: 5 V Length: 3.2 cm Height: 2.2 cm Width: 2 cm	arduino • gas sensor • methane sensor • MQ6 • LPG Sensor • Propane Sensor • Butane Sensor

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00010-F**	MQ-7 sensor module	EM - Electronic-Electrical Modules	Hanwei Electronics, Zhengzhou Winsen Electronics, DFRobot	This MQ7 Carbon Monoxide Gas Sensor Module is a semiconductor gas sensor tuned to detect carbon monoxide. It is in the same family of devices as the smoke detector sensor, measuring the change in surface conductivity of tin dioxide in the presence of carbon monoxide. This sensor has high sensitivity and fast response time. The sensor can measure concentrations of 10 to 10,000 ppm. The sensor can operate at temperatures from -10 to 50°C and consumes less than 150 mA at 5 V. This module provides both digital and analog outputs. The threshold level for digital output can be easily adjusted using the preset on the board. The MQ-7 sensor module can be easily interfaced with Micro-controllers, Arduino and etc.	Model: MQ-7 Ambient temperature: -20 ~ + 50 °C Characteristic gas: 100 ppm CO Heating current: ? 180 mA Heating power: approx. 350 mW Heating resistance: ± 31 ? Heating voltage: 5.0V ± 2V / 1.5 ± 1V Humidity: ? 95% RH Operating Voltage: 5 V Oxygen content: 21%. Range: 10 ~ 1000 ppm Return time: ? 30 s Sensitivity: ? 3%. Length: 3.5 cm Height: 1.1 cm Width: 2 cm	arduino • MQ7 • Carbon Monoxide Sensor • CO Sensor • Gas Detector • Air Quality Sensor
No Image	**EMS-00010-G**	MQ135 gas sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Zhengzhou Winsen Electronics, Futurlec	The MQ 135 Air Quality Detector Sensor Module For Arduino has lower conductivity in clean air. When the target combustible gas exists, the conductivity of the sensor is higher along with the gas concentration rising. Convert change of conductivity to the corresponding output signal of gas concentration. The MQ135 gas sensor has a high sensitivity to Ammonia, Sulphide, and Benzene steam, also sensitive to smoke and other harmful gases. It is at low cost and suitable for different applications such as harmful gases/smoke detection.	Model: MQ-135 Detecting range: 100ppm to 1000ppm Operating current: 150 mA Operating Voltage: 5 V Length: 3.2 cm Height: 2.7 cm Width: 2 cm	Air Quality Sensor • MQ135 • Ammonia Sensor • NOx Sensor • CO2 Sensor • Smoke Sensor
No Image	**EMS-00010-H**	Hydrogen Gas Sensor - MQ-8 - SEN-10916	EM - Electronic-Electrical Modules	SparkFun Electronics, Hanwei Electronics, Winsen Electronics, SparkFun	The MQ-8 Hydrogen Gas Sensor is a semiconductor-based gas detection sensor designed to detect hydrogen (H?) gas concentration in air. It is highly sensitive to hydrogen and can detect gas concentrations ranging from 100 ppm to 10,000 ppm. The sensor uses a tin dioxide (SnO?) sensing layer whose resistance changes when exposed to hydrogen gas. The module provides both analog and digital outputs, making it easy to interface with Arduino, ESP32, Raspberry Pi, STM32, and other microcontrollers.	Product Type: Hydrogen Gas Sensor Model: MQ-8 SparkFun SKU: SEN-10916 Detectable Gas: Hydrogen (H?) Detection Range: 100 – 10,000 ppm Operating Voltage: 5V DC	MQ-8 Gas Sensor • Hydrogen Gas Sensor • H2 Gas Detector • MQ8 Sensor Module • Hydrogen Detection Sensor • Arduino Gas Sensor • ESP32 Hydrogen Sensor • Gas Leakage Sensor
No Image	**EMS-00011-A**	GPS module	EM - Electronic-Electrical Modules	u-blox, Quectel, DFRobot, SparkFun	The GPS Module is a satellite-based positioning and navigation device used to determine real-time location, speed, altitude, and time information. Most hobby and embedded systems commonly use the Neo-6M GPS module, which communicates through UART serial interface and receives signals from GPS satellites.	Product Type: GPS Navigation Module Model: Neo-6M Operating Voltage: 3V – 5V DC Baud Rate: 9600 bps	GPS Module • Neo-6M GPS • GNSS Receiver • Arduino GPS Module • ESP32 GPS Module • Satellite Navigation Module • UART GPS Sensor • Location Tracking Module
No Image	**EMS-00012-A**	Color Sensor	EM - Electronic-Electrical Modules	ams-OSRAM, ams-OSRAM, ams-OSRAM, Generic Electronics	The TCS3200 Color Sensor Module is an RGB color detection sensor designed to identify and measure colors using red, green, and blue filtered photodiodes. The module uses the TCS3200/TCS230 light-to-frequency converter IC to convert light intensity into frequency signals readable by microcontrollers.	Product Type: RGB Color Sensor Model: TCS3200 / TCS230 Sensor Type: Light-to-Frequency Converter Operating Voltage: 2.7V – 5.5V DC	Arduino Color Sensor • Color Detection Module • TCS3200 Color Sensor • RGB Color Sensor • TCS230 Sensor • RGB Recognition Module • ESP32 Color Sensor • Light Frequency Sensor
No Image	**EMS-00012-B**	Color Sensor	EM - Electronic-Electrical Modules	ams-OSRAM, ams-OSRAM, ams-OSRAM, Generic Electronics	The TCS3200 Color Sensor Module is an RGB color recognition sensor used to detect and measure colors based on reflected light intensity. It uses the TCS3200/TCS230 light-to-frequency converter IC along with photodiodes and onboard white LEDs for accurate color detection.	Product Type: RGB Color Sensor Model: TCS3200 / TCS34725 Sensor Type: Light-to-Frequency Converter Operating Voltage: 2.7V – 5.5V DC	TCS3200 Sensor • RGB Sensor • Color Sensor • TCS230 Module • Arduino Color Sensor • ESP32 RGB Sensor • Color Detection Module

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00013-A**	Infrared Obstacle Avoidance IR Sensor Module	EM - Electronic-Electrical Modules	Generic OEM Manufacturer, Keyestudio, HiLetgo, Elegoo, SunFounder	The Infrared Obstacle Avoidance Sensor Module detects nearby objects using reflected infrared light. It uses an IR transmitter–receiver pair with an LM393 comparator to provide a digital active LOW output when an obstacle is detected. Ideal for robotics, smart cars, automation systems, and Arduino-based proximity detection projects.	Sensor Type: Infrared Reflective Obstacle Sensor Operating Voltage: 3.6V - 5V DC Output Type: Digital (Active Low) Main IC: LM393 Comparator Average Current Consumption: 0.06 mA Detection Angle: 35° Detection Distance: 2 cm – 30 cm (adjustable) Interface Pins: VCC, GND, OUT Indicator LED: Yes (Obstacle Detection Indicator) Sensitivity Adjustment: Onboard Potentiometer Dimensions (mm): 48 × 14 × 8 Weight (g): 5 Shipping Weight: 0.01 kg Shipping Dimensions (cm): 5 × 4 × 1	IR Obstacle Sensor • Infrared Reflective Module • LM393 Comparator • Active Low Output • Proximity Sensor • Arduino Compatible • Robot Sensor
No Image	**EMS-00014-A**	Touch Detector	EM - Electronic-Electrical Modules	Tontek Design Technology, Shenzhen Tontek (Tontek IC), Generic Module Manufacturer, Waveshare (Module Vendor), Keyestudio (Arduino Vendor)	TTP223B Capacitive Touch Key Sensor Module is based on a touch-sensing IC capacitive touch switch module. It allows you to remove the worry of conventional push-type keys. Digital Capacitive Touch Switch Module is based on TTP223B. Normally, it outputs low and keeps at a low power state. When a touch is sensed on the circular marked region, it outputs high and switches to the quick response state. When not being touched for 12 seconds, it switches to a low power state again. In addition to the thin paper (non-metallic) covering the surface of the module, as long as the correct location of the touch, you can make it hidden in the walls, desktops, and other parts of buttons.	Item Type: Electronic Switch Model: Touch Switch IC Chip: TTP223B Operating Voltage: 2V – 5.5V Output High (VOH): 0.8 × VCC Output Low (VOL): 0.3 × VCC Response Time (Low Power Mode): 220 ms Response Time (Touch Mode): 60 ms Length: 24 mm Width: 24 mm Height: 2 mm Weight: 0.6 g Shipping Weight: 0.085 kg Shipping Dimensions: 3 × 3 × 1 cm	arduino • touch • TTP223B • capacitive sensor
No Image	**EMS-00015-A**	Touch keyboard TTP229 16 keys capacitive	EM - Electronic-Electrical Modules	Tontek Design Technology, Robocraze, Keyestudio	The TTP229 16-Key Capacitive Touch Keyboard is a touch-sensitive input module based on the TTP229 capacitive sensing IC. Unlike traditional membrane or mechanical keypads, this module detects finger touch using capacitive sensing technology, providing silent, durable, and highly responsive operation.	Product Type: Capacitive Touch Keypad IC Used: TTP229 Number of Keys: 16 Key Layout: 4×4 Operating Voltage: 2.4V – 5.5V DC	TTP229 Touch Keypad • 16-Key Capacitive Keyboard • 4x4 Touch Sensor Module • Arduino/ESP32 Touch Input Module
No Image	**EMS-00015-B**	3x4 Membrane switch keypad	EM - Electronic-Electrical Modules	Adafruit, DFRobot, SparkFun, Keyestudio	The 3x4 12-Key Membrane Switch Keypad is a compact matrix-style input device commonly used in Arduino, ESP32, Raspberry Pi, PIC, AVR, and embedded electronics projects. It contains 12 push buttons arranged in a telephone-style 4-row × 3-column matrix layout.	Product Type: Membrane Matrix Keypad Key Layout: 3×4 Matrix Number of Keys: 12 Operating Voltage: 3V – 35V DC Connector Type: 7-pin Header	12 Key Matrix Keypad • Membrane Switch Keypad • Arduino Keypad • 3x4 Membrane Keypad • Numeric Keypad Module • 4x3 Matrix Keyboard • Telephone Style Keypad • Matrix Input Module
No Image	**EMS-00015-C**	4x4 Membrane switch keypad	EM - Electronic-Electrical Modules	Adafruit, Keyestudio, DFRobot, SparkFun	The 4x4 / 4x3 Membrane Switch Keypad is a thin and flexible matrix-style input device commonly used with microcontrollers like Arduino, ESP32, Raspberry Pi, PIC, and AVR boards. It contains multiple push buttons arranged in matrix rows and columns, allowing easy user input while using fewer GPIO pins.	Product Type: Membrane Matrix Keypad Key Layout: 4×4 / 4×3 Number of Keys: 12 or 16 Operating Voltage: 3V – 35V DC Connector Type: 7-pin / 8-pin Header	4x4 Membrane Keypad • 12 Key Matrix Keypad • Membrane Switch Keypad • Matrix Keyboard Module • Arduino Keypad • Numeric Input Module • 4x3 Matrix Keypad • Keypad Module
No Image	**EMS-00016-A**	Water Flow Sensor YF-G1	EM - Electronic-Electrical Modules	YF Electronics, DFRobot, FlyRobo, Robocraze	The YF-G1 Water Flow Sensor is a hall-effect liquid flow meter designed for measuring the flow rate of water and other non-corrosive liquids in pipelines. It contains an internal rotor with a magnet that spins when liquid flows through the sensor. The built-in hall-effect sensor detects the magnetic rotation and generates pulse signals proportional to the flow rate.	Product Type: Water Flow Sensor Model: YF-G1 Sensor Type: Hall Effect Flow Meter Operating Voltage: 5V – 18V DC Working Current: ? 15 mA Flow Range: 1 – 30 L/min	Water Flow Sensor • Hall Effect Flow Sensor • Liquid Flow Meter • Flow Rate Sensor • YF-G1 Sensor • Industrial Water Flow Sensor • Arduino Flow Sensor • Pipe Flow Detection Module

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00016-B**	Water Flow Sensor YF-S401	EM - Electronic-Electrical Modules	YF Electronics, DFRobot, FlyRobo, Robocraze	The YF-S401 Water Flow Sensor is a compact hall-effect liquid flow meter used to measure water flow rate in pipes and tubing systems. Inside the sensor, a rotor with magnets spins as water passes through it. The hall-effect sensor generates pulse signals proportional to the flow rate. It is widely used in water dispensers, smart irrigation systems, liquid monitoring systems, coffee machines, industrial automation, and Arduino/ESP32 projects.	Product Type: Water Flow Sensor Model: YF-S401 Sensor Type: Hall Effect Flow Meter Operating Voltage: 5V – 18V DC Working Current: ? 15 mA Flow Range: 0.3 – 6 L/min	YF-S401 Sensor • Water Flow Sensor • Hall Effect Flow Sensor • Liquid Flow Meter • Flow Rate Sensor • Arduino Water Flow Sensor • Flow Detection Module
No Image	**EMS-00017-A**	LDR Module	EM - Electronic-Electrical Modules	EM Series / Generic Compatible, KEYESTUDIO	The LDR Module detects ambient light intensity and provides a digital output based on brightness level. It features an onboard potentiometer to adjust sensitivity and threshold detection. Ideal for automatic lighting systems, Arduino projects, and light-based automation applications.	Model: Light Dependent Resistor Module Operating Voltage (V): 3.3 – 5 Operating Current (mA): 15 Output Type: Digital (DO) Adjustable Threshold: Yes (via Potentiometer) Sensor Type: Photoresistor (LDR) Mounting Hole: M3 Indicator LEDs: Power LED, Status LED Pin Configuration: VCC, GND, DO Length (mm): 36 Width (mm): 14 Height (mm): 8 Weight (g): 3 Shipping Weight: 0.005 kg Shipping Dimensions (L × W × H): 4 × 3 × 2 cm	LDR Module • Light Sensor • Photoresistor Module • LM393 Sensor • Arduino Light Sensor
No Image	**EMS-00018-A**	Water Level Sensor	EM - Electronic-Electrical Modules	Generic Electronics, Generic Electronics, DFRobot, SparkFun	The Water Level Sensor Module is used to detect and measure water levels in tanks, containers, reservoirs, automation systems, irrigation projects, and Arduino applications. It works using exposed parallel conductive traces that change resistance depending on the amount of water touching the sensor surface. Most modules provide both analog output (water level amount) and digital output (threshold detection using LM393 comparator). These sensors are widely used in smart irrigation systems, automatic water tank monitoring, rainwater harvesting, leak detection, and robotics projects.	Product Type: Water Level Sensor Module Sensor Type: Conductive Water Sensor Operating Voltage: 3.3V – 5V DC Comparator IC: LM393	Water Detection Sensor • Water Level Sensor • Liquid Level Sensor • Analog Water Sensor • Arduino Water Sensor • Level Detection Module • Tank Level Sensor
No Image	**EMS-00019-A**	Soil Moisture sensor	EM - Electronic-Electrical Modules	Sensor Probe Manufacturer, Comparator Module Manufacturer, IC Manufacturer	The Soil Moisture Sensor Module (YL-69 + FC-28) is a resistive soil humidity detection device used to measure water content in soil. It provides both analog (AO) and digital (DO) outputs with adjustable sensitivity using an onboard LM393 comparator. Ideal for smart irrigation systems, plant monitoring, Arduino, and IoT-based environmental projects.	Sensor Type: Resistive Soil Moisture Sensor Operating Voltage: 3.3V – 5V DC Output Type: Analog (AO) and Digital (DO) Digital Output: 0 or 1 (TTL Logic) Measurement Principle: Resistance-based conductivity measurement Sensitivity Adjustment: Onboard Potentiometer (for digital threshold) Probe Dimension: Approx. 6 cm × 3 cm Cable Length: 20 cm Interface Pins: VCC, GND, DO, AO Shipping Weight: 0.02 kg Shipping Dimensions (cm): 8 × 6 × 3	Arduino Compatible • Soil Moisture Sensor • YL-69 • FC-28 • LM393 • Resistive Soil Sensor • Irrigation Sensor
No Image	**EMS-00020-A**	Joystick Module	EM - Electronic-Electrical Modules	EM Series / Generic Compatible, KEYESTUDIO, SunFounder, DFRobot	Dual-axis analog joystick module used to detect X and Y movement positions. Each axis uses a 10KΩ potentiometer providing 0–5V analog output. Includes built-in push-button switch, ideal for robotics, gaming, and motion control projects.	Model: PS2 Joystick Module Operating Voltage (VDC): 5 Potentiometer Resistance: 10K? (per axis) X/Y Output: Analog (0–5V) Button: Digital (Press-Down) Interface Type: 2.54 mm Pin Header PCB Size (mm): 34 × 32 Compatibility: Arduino / Raspberry Pi / Microcontrollers Lifespan: Long-Life, High-Stability Potentiometers Shipping Weight: 0.015 kg Shipping Dimensions (L × W × H): 6 × 5 × 4 cm	PS2 Joystick • Analog Joystick Module • Dual Axis Sensor • 10K Potentiometer Joystick • Arduino Joystick
No Image	**EMS-00021-A**	SW-520D Tilt Sensor	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun, Keyestudio	The SW-520D Tilt Sensor Module is a simple digital angle detection sensor used to detect tilt, orientation change, vibration, or motion. It works using a metal ball inside a cylindrical switch that moves when the angle changes. When tilted beyond a certain threshold (around ~10°–15° depending on mounting), the internal contacts connect/disconnect and the module outputs a digital HIGH/LOW signal. It is widely used in security alarms, anti-theft systems, robotics balance detection, and Arduino/ESP32 projects.	Product Type: Tilt / Angle Sensor Module Sensor Type: Ball Switch (SW-520D) Output Type: Digital (0 / 1) Operating Voltage: 3.3V – 5V DC Comparator IC: LM393	SW-520D Sensor • Tilt Sensor Module • Angle Sensor • Ball Switch Sensor • Orientation Sensor • Digital Tilt Switch • Arduino Tilt Sensor

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMS-00022-A**	Analog Piezoelectric Ceramic Vibration Module	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun, Adafruit	The Analog Piezoelectric Ceramic Vibration Module uses a piezoelectric ceramic disc to detect vibrations, knocks, and mechanical stress. When the surface is bent, tapped, or vibrated, the ceramic element generates a proportional voltage (piezoelectric effect). Unlike digital vibration modules (like SW-420), this module provides analog output, meaning it can measure the strength of vibration, not just ON/OFF detection. It is widely used in Arduino projects, touch sensing, drum pads, impact detection, and condition monitoring systems.	Product Type: Analog Vibration Sensor Module Sensing Element: Piezoelectric Ceramic Disc Output Type: Analog Voltage Output Operating Voltage: 3.3V – 5V DC Operating Current: < 1 mA	Shock Sensor • Piezo Vibration Sensor • Analog Piezo Module • Ceramic Vibration Sensor • Knock Sensor • Arduino Piezo Sensor • Vibration Detection Module
No Image	**EMS-00023-A**	SW-420 Alarm Vibration Sensor Module	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun, FlyRobo	SW-420 Alarm Vibration Sensor Module is a vibration and shock detection module used in security alarms, anti-theft systems, motion sensing, robotics, earthquake detection, and Arduino projects. It uses the SW-420 vibration switch along with an LM393 comparator to provide digital output when vibration or movement is detected. Sensitivity can be adjusted using the onboard potentiometer. (components101.com	Product Type: Vibration Sensor Module Sensor Model: SW-420 Comparator IC: LM393 Operating Voltage: 3.3V – 5V DC Output Type: Digital Output	LM393 Sensor • SW-420 Sensor • Vibration Sensor Module • Shock Sensor • Alarm Sensor • Motion Detection Sensor • Arduino Vibration Sensor
No Image	**EMS-00024-A**	Rain Sensor Module	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun	Rain Sensor Modules are used to detect rain, water droplets, moisture, and rainfall intensity in weather monitoring systems, smart irrigation, automatic wiper systems, robotics, and Arduino projects. Most modules use a rain-sensitive conductive plate with an LM393 comparator module and provide both analog and digital outputs.	Product Type: Rain Detection Sensor Module Operating Voltage: 3.3V – 5V DC Comparator IC: LM393 Sensitivity Adjustment: Potentiometer Compatible Boards: Arduino, ESP32, Raspberry Pi	Rain Sensor Module • Rain Drop Sensor • FC-37 Sensor • YL-83 Rain Module • Water Detection Sensor • Arduino Rain Sensor • Weather Sensor
No Image	**EMS-00025-A**	Encoder Sensor Module	EM - Electronic-Electrical Modules	Broadcom, Generic Electronics, Omron, AMS	Encoder Sensor Modules are used to detect rotation, speed, direction, and position in robotics, automation, motor control, CNC machines, smart vehicles, and Arduino projects. Common encoder modules include rotary encoders (KY-040), optical encoder sensors (MOC7811), and magnetic encoder modules. These modules provide digital pulse outputs for precise motion tracking.	Product Type: Encoder Sensor Module Encoder Type: Rotary / Optical / Magnetic Operating Voltage: 3.3V – 5V DC Output Type: Digital Pulse	Encoder Sensor Module • Rotary Encoder Module • Optical Encoder Sensor • Speed Sensor • Position Sensor • KY-040 Encoder • Arduino Encoder
No Image	**EMS-00026-A**	HMC5883L Triple Axis Compass Magnetometer Sensor Module	EM - Electronic-Electrical Modules	Honeywell, ITEAD Studio, DFRobot, Adafruit, SparkFun	HMC5883L Triple Axis Compass Magnetometer Sensor Module is a 3-axis digital compass sensor used for navigation, heading detection, robotics, drones, GPS systems, and Arduino projects. The module communicates through the I2C interface and measures magnetic field strength across X, Y, and Z axes for accurate compass heading and orientation detection.	Product Type: Triple Axis Magnetometer Sensor Model: HMC5883L Number of Axes: 3 Axis Communication Interface: I2C Operating Voltage: 3.3V – 5V ADC Resolution: 12-bit	HMC5883L Sensor • Magnetometer Module • Compass Sensor • Triple Axis Compass • GY-271 Sensor • GY-273 Module • Arduino Compass Sensor
No Image	**EMX-00001-A**	Arduino Uno	EM - Electronic-Electrical Modules	Arduino, Elegoo, HiLetgo, Keyestudio	The Arduino Uno R3 is a microcontroller development board based on the ATmega328P, designed for building interactive electronic projects. It features 14 digital I/O pins, 6 analog inputs, a 16 MHz clock, USB connectivity, and operates at 5 V. Compatible with the Arduino IDE and a wide range of shields, it is widely used in education, prototyping, and embedded system development.	Board Type: Uno With Cable: Yes Operating Voltage: 5 V Input Voltage Range: 6 – 20 V Analog I/O Pins: 6 Digital I/O Pins: 14 (6 × PWM) DC Current per I/O Pin: 40 mA Clock Speed: 16 MHz SRAM: 2 KB EEPROM: 1 KB Flash Memory: 32 KB Dimensions (L × W × H): 75 × 54 × 12 mm Weight: 28 g (without cable), 54 g (with cable)	ATmega328P • 5 V Board • 16 MHz Crystal • USB Interface • Microcontroller • Educational Kit • Open-Source Hardware • Breadboard Compatible
No Image	**EMX-00002-A**	Arduino nano	EM - Electronic-Electrical Modules	Arduino, Gravitech, RobotDyn, Keyestudio, DFRobot	The Arduino Nano is a small, complete, and breadboard-friendly board based on the ATmega328 (Arduino Nano 3.x) or ATmega168 (Arduino Nano 2.x). It has more or less the same functionality as the Arduino Duemilanove but in a different package. It lacks only a DC power jack and works with a Mini-B USB cable instead of a standard one.	Microcontroller: ATmega328 Flash Memory: 32 KB (ATmega328) of which 2 KB used by bootloader SRAM: 1 KB or 2KB EEPROM: 512 bytes (ATmega168) or 1 KB (ATmega328) Clock Speed: 16 MHz Digital I/O Pins: 14 (of which 6 provide PWM output) Analog Input Pins: 8 DC Current per I/O Pin: 40 mA Operating Voltage: 5V Input Voltage: 7 - 12 V (5V model)	ATmega328P • Arduino Nano • Microcontroller Board • Development Board • IoT

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	**EMX-00003-A**	Arduino Mega	EM - Electronic-Electrical Modules	Arduino, Elegoo, RobotDyn, Keyestudio, DFRobot, Waveshare	The Arduino Mega is a microcontroller board based on the ATmega2560. It has 54 digital input/output pins (of which 14 can be used as PWM outputs), 16 analog inputs, 4 UARTs (hardware serial ports), a 16 MHz crystal oscillator, a USB connection, a power jack, an ICSP header, and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get started. The Mega is compatible with most shields designed for the Arduino Duemilanove or Diecimila. The Mega 2560 R3 also adds SDA and SCL pins next to the AREF. In addition, there are two new pins placed near the RESET pin. One is the IOREF that allow the shields to adapt to the voltage provided by the board. The other is not connected and is reserved for future purposes. The Mega 2560 R3 works with all existing shields but can adapt to new shields that use these additional pins. Arduino is an open-source physical computing platform based on a simple i/o board and a development environment that implements the Processing/Wiring language. Arduino can be used to develop stand-alone interactive objects or can be connected to software on your computer (e.g. Flash, Processing, MaxMSP). The open-source IDE can be downloaded for free (currently for Mac OS X, Windows, and Linux).	Microcontroller Chip: ATmega2560 Analog I/O Pins: 16 Digital I/O Pins: 54 (of which 14 provide PWM output) Flash Memory: 256 KB of which 8 KB used by bootloader SRAM: 8 KB EEPROM: 4 KB DC Current per I/O Pin: 40 mA DC Current for 3.3V Pin: DC Current for 3.3V Pin Operating Voltage: 5V Input Voltage: 7V to 12V Input Voltage (limit): 6V-20V	Development Board • Arduino Mega • ATmega2560 • Embedded Systems • IoT Board