

Parts Export

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Total Parts: 82

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
	EDT-00006-A	FSR Round Module	EM - Electronic-Electrical Modules	Interlink Electronics, SparkFun Electronics, DFRobot, Adafruit Industries, Ohmite, Tekscan	The Round Force Sensitive Resistor (FSR) is a pressure sensor with a 0.5-inch sensing area that changes resistance based on applied force. It detects pressure in the 100g to 10kg range and can be easily interfaced with microcontrollers using a voltage divider circuit. It is widely used in touch sensing, load detection, robotics, and Arduino projects.	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
	EDT-00006-B	Force Sensor	EM - Electronic-Electrical Modules	Interlink Electronics, SparkFun Electronics, DFRobot, Adafruit Industries, Ohmite	The Force Sensitive Resistor (FSR) is a pressure sensor that changes resistance based on applied force. It detects pressure in the range of 100g to 10kg and is commonly used with voltage divider circuits. It is widely used in touch sensing, load detection, robotics, and Arduino-based projects.	Actuation Force: 0.1 N Clock Speed: 16MHz	FSR Sensor • Pressure Sensor • Force Sensitive Resistor • Square Force Sensor • Touch Sensor
	EMA-00001-A	I2C LCD Display	EM - Electronic-Electrical Modules	MWduino / Generic, KEYESTUDIO, SunFounder	16x2 character LCD module with an integrated I2C interface for simplified wiring and reduced pin usage. Features a blue backlight with white characters for clear, high-contrast visibility. Ideal for Arduino, Raspberry Pi, microcontroller projects, embedded systems, sensor monitoring, and applications requiring a compact and easy-to-read 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	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 widely used with Arduino, ESP32, Raspberry Pi, and other microcontrollers. It features a 128×64 pixel resolution and uses the SSD1306 OLED driver IC with an I2C communication interface. The display provides high contrast, low power consumption, and is ideal for showing text, graphics, sensor data, and menus.	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
	EMA-00003-A	RGB LED Strip	EM - Electronic-Electrical Modules	Worldsemi, APA Electronics, Pololu	The Programmable RGB 60 LED Strip is an addressable LED strip with 60 individually controllable RGB LEDs per meter. Based on devices such as WS2812B or SK6812, each LED can display independent colors and brightness levels. It is widely used for lighting effects, animations, smart lighting, decorative displays, and Arduino projects.	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	RGB NeoPixel 8 LED	EM - Electronic-Electrical Modules	Worldsemi Co., Ltd., Generic / OEM	The WS2812B 8-Bit RGB LED Module features 8 individually addressable 5050 RGB LEDs with built-in driver ICs for precise color and brightness control. Operating on 5V and using a single-wire communication protocol, it enables vibrant lighting effects and animations with minimal wiring. Ideal for Arduino projects, IoT devices, decorative lighting, displays, and interactive electronic creations.	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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
	EMA-00003-C	RGB LED	EM - Electronic-Electrical Modules	Worldsemi, CJMCU, SparkFun Electronics	The CJMCU WS2812 RGB LED Breakout Module is a compact addressable RGB LED board featuring a WS2812B smart LED on a black PCB. It allows independent control of color and brightness using a single data pin. It is widely used in lighting effects, displays, wearables, decorative projects, and Arduino/ESP32 applications.	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
	EMA-00003-D	RGB LED Ring	EM - Electronic-Electrical Modules	Worldsemi, CJMCU, SparkFun	The RGB LED Ring 12x is a circular addressable LED module featuring 12 individually controllable WS2812B (NeoPixel-type) RGB LEDs arranged in a ring. Each LED has an integrated driver IC, enabling independent control of color and brightness using a single data line. The module is widely used in lighting effects, animations, wearables, clocks, robotics, and Arduino or ESP32-based projects.	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
	EMA-00003-E	Coin Battery	EM - Electronic-Electrical Modules	Panasonic, Maxell, Energizer, Sony	The CR2032 3V Lithium Coin Battery is a compact, long-lasting power source used in small electronic devices like watches, calculators, remotes, toys, and embedded systems. It provides a stable 3V output and is widely used in low-power applications due to its long shelf life and reliability.	Battery Type: Lithium Coin Cell Battery Size: CR2025 Chemistry: Lithium Manganese Dioxide (LiMnO2) 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
	EMA-00003-F	RGB LED Module	EM - Electronic-Electrical Modules	Worldsemi, CJMCU, SparkFun	The CJMCU WS2812 RGB LED Breakout Module is a compact addressable LED board based on the WS2812 intelligent LED driver IC. It combines a full-color RGB LED with an integrated controller, enabling independent control of color and brightness through a single data line. The module is widely used in decorative lighting, LED displays, animations, wearable electronics, and Arduino or ESP32 projects.	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
	EMA-00004-A	LED Matrix	EM - Electronic-Electrical Modules	Analog Devices, Keyestudio, SparkFun	The 8x8 LED Dot Matrix Display with MAX7219 Driver features a 64-LED matrix and an integrated MAX7219 controller for easy serial communication. It reduces microcontroller pin usage and is used to display text, symbols, patterns, and animations in Arduino, ESP32, Raspberry Pi, and embedded projects.	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	LED Matrix Display	EM - Electronic-Electrical Modules	Kingbright, Everlight Electronics, Luckylight, SparkFun	The 8x8 Single Colour LED Dot Matrix Display is an LED module with 64 LEDs arranged in an 8x8 grid. It is used to display characters, symbols, patterns, scrolling text, and simple animations. Compatible with Arduino, ESP32, and Raspberry Pi, it is ideal for display and educational 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
	EMA-00005-A	Audio Amplifier	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 IC. It delivers up to 3W + 3W stereo output from a 5V power supply, providing efficient and low-distortion audio amplification. The module is widely used in portable speakers, Bluetooth speaker systems, DIY audio projects, multimedia devices, and Arduino-based sound applications.	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	The Small PCB Mountable 5V Buzzer is an audio alert component used to produce sound in electronic circuits. It operates on 5V DC and is commonly used in alarms, timers, Arduino projects, and embedded systems for simple audio feedback and notifications.	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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	EMA-00006-B	Passive Buzzer	EM - Electronic-Electrical Modules	ED Series / Generic Compatible, KEYESTUDIO	Passive buzzer module for generating variable tones using PWM or frequency control. Operates on 1.5V–15V DC and produces sound in the 1.5–2.5 kHz range. Ideal for alarms, alerts, educational projects, Arduino applications, and microcontroller-based sound generation. Compact, reliable, and easy to interface with electronic circuits and development boards.	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
	EMA-00007-A	7-Segment Display	EM - Electronic-Electrical Modules	Titan Micro Electronics, Keystudio, DFRobot, SparkFun	The 4-Digit 7-Segment Display Module is an LED display used to show numbers, timers, counters, clocks, and sensor data. Many versions use the TM1637 driver IC, requiring only two signal pins for control. It is widely used in Arduino, automation, and embedded system projects.	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
	EMA-00008-A	1 Channel Relay	EM - Electronic-Electrical Modules	Single Relay, Generic / OEM	The Single Channel 12V Relay Module is used to control high-voltage AC/DC devices using low-voltage microcontrollers. It supports high/low-level triggering and includes LED indicators. It is commonly used in home automation, IoT, and motor control 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
	EMA-00008-B	2 Channel Relay	EM - Electronic-Electrical Modules	SONGLE, Keyes, SunFounder, Elegoo, Generic	The 5V 2 Channel Relay Module is used to control high-power AC and DC devices using low-power microcontrollers like Arduino. It supports up to 10A switching per channel and includes LED indicators for status. It is commonly used in home automation, IoT systems, and industrial control applications.	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
	EMA-00009-A	Audio Playback	EM - Electronic-Electrical Modules	Nuvoton Technology Corporation, Generic / OEM	The ISD1820 Voice Recording & Playback Module supports up to 10 seconds of audio recording stored in non-volatile memory. It features an onboard electret microphone, push-button recording and playback controls, and support for external triggering through a microcontroller. Ideal for Arduino projects, voice prompts, alarms, interactive electronics, educational kits, and sound playback applications.	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 Ω, 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
	EMA-00010-A	2 Channel Driver	EM - Electronic-Electrical Modules	STMicroelectronics, Keystudio, SparkFun, HiLetgo	The L298N 2 Channel Motor Driver Module is a dual H-Bridge motor control board used to drive two DC motors or one stepper motor independently. Based on the L298N IC, it works with Arduino, ESP32, and Raspberry Pi. It includes a heat sink, protection diodes, and a 5V regulator, making it ideal for robotics and automation projects.	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
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 IC used to control DC and stepper motors in embedded systems. It enables motor direction control and speed regulation using PWM signals from microcontrollers like Arduino. The module supports up to 12V and 600mA per channel, making it suitable for robotics, automation systems, and DIY electronics projects requiring reliable motor control.	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
	EMA-00010-C	L293D Motor Driver	EM - Electronic-Electrical Modules	Texas Instruments, STMicroelectronics, SparkFun	The L293D Motor Driver IC is a dual H-Bridge driver used to control the speed and direction of DC and stepper motors. It acts as an interface between microcontrollers and higher-current motors, enabling reliable bidirectional motor control. It is widely used in robotics, automation, and embedded projects.	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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	EMA-00010-D	Dual Motor Driver	EM - Electronic-Electrical Modules	Texas Instruments, STMicroelectronics, SparkFun	The L293D Motor Driver IC is a dual H-Bridge driver used to control DC and stepper motors with microcontrollers like Arduino, ESP32, and Raspberry Pi. It enables low-power circuits to drive higher-current motors safely and supports bidirectional motor control with built-in protection diodes.	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
	EMA-00010-E	L298N Driver	EM - Electronic-Electrical Modules	STMicroelectronics, STMicroelectronics, SparkFun, Keyestudio	The L298N Motor Driver Module is a dual H-Bridge motor driver used to control the speed and direction of DC and stepper motors. It allows Arduino, ESP32, and other microcontrollers to drive motors requiring higher power. It is widely used in robotics, automation, and motor control projects.	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
	EMC-00001-A	RF 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 using radio frequency signals. It operates at 433 MHz or 315 MHz and is commonly used in remote controls, home automation, wireless sensors, and Arduino projects.	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
	EMC-00002-A	ESP8266 WiFi Module	EM - Electronic-Electrical Modules	Espressif Systems, Ai-Thinker, SparkFun	The ESP8266 WiFi Module is a low-cost IoT module with built-in WiFi used to connect devices to wireless networks. It enables communication with cloud platforms, servers, and apps. It is widely used in smart home systems, automation, and IoT projects.	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 is a WiFi-enabled microcontroller based on the ESP8266 chip for IoT applications. It offers onboard processing, GPIO support, and built-in wireless connectivity. It is widely used in IoT projects, smart devices, automation systems, and wireless sensor 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
	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 communication device used for UART-based data transfer between microcontrollers and Bluetooth-enabled devices. Operating in the 2.4GHz ISM band with GFSK modulation, it supports both Master and Slave modes. Featuring AT command configuration and an onboard push button for AT mode access, it is ideal for wireless control, automation, and IoT projects.	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	The RC522 RFID Reader/Writer Kit is a 13.56MHz RFID module based on the MFRC522 IC with cards and tags. It uses SPI communication and supports ISO 14443A/MIFARE contactless data exchange. It is widely used in access control, attendance systems, IoT projects, and embedded RFID applications.	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
	EMC-00005-B	RFID Key Fob	EM - Electronic-Electrical Modules	NXP Semiconductors, ACS (Advanced Card Systems)	An RFID Card is a contactless smart card used for wireless identification using radio frequency communication. It typically works at 13.56 MHz with RC522 readers and stores a unique ID for authentication. It is commonly used in access control, attendance systems, security, and Arduino projects.	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

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	EMC-00005-C	RFID Smart Card	EM - Electronic-Electrical Modules	NXP Semiconductors, HID Global	An RFID Card is a contactless smart card used for wireless identification using radio frequency communication. It typically works at 13.56 MHz with RC522 readers and stores a unique ID for authentication. It is commonly used in access control, attendance systems, security, and Arduino projects.	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
No Image	EMC-00006-A	GSM-GPRS Module	EM - Electronic-Electrical Modules	SIMCom, DFRobot, Waveshare	The SIM800L GSM/GPRS Module is a compact GSM modem used for SMS, voice calls, and GPRS internet connectivity. It supports quad-band GSM networks and TCP/IP communication. It is widely used in IoT projects, tracking systems, remote monitoring, automation, and embedded wireless communication.	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 Module	EM - Electronic-Electrical Modules	SIMCom, DFRobot, Itead Studio	The SIM900A GSM Module is a wireless communication module used for SMS, voice, and data applications over GSM networks. It supports UART communication and SIM card integration for microcontrollers like Arduino. It is widely used in IoT systems, remote monitoring, automation, and embedded communication projects.	Frequency bands: Dual-band GPRS connectivity: GPRS multi-slot class 10 (default) , GPRS multi-slot class 8 (option) Operating Temperature Range: -30 to 80 °C Supply Voltage: 3.4 – 4.5 V Dimensions (LxWxH): 8.5x5.7x2cm (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 IR Receiver Module is a 38kHz infrared sensor used to detect and decode signals from IR remote controls. It provides a digital output with an indicator LED when an IR signal is received. It is commonly used in Arduino projects, robotics, home automation, and remote-control decoding applications.	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
	EMC-00008-B	IR Remote Module	EM - Electronic-Electrical Modules	Keyes Electronics, DFRobot	The IR Remote Transmitter Module is an infrared emitter used to send signals to IR-controlled devices like TVs and appliances. It typically uses a 38kHz modulated IR LED and is used in remote control systems, home automation, robotics, and Arduino projects.	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
	EMK-00001-A	RFID Starter 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 cards and tags. It usually includes an RC522 module (13.56 MHz) with SPI communication, along with cards and key fobs. It is commonly used in access control, attendance systems, security, and Arduino projects.	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
	EMP-00001-A	Adapter	EM - Electronic-Electrical Modules	Mean Well, Hi-Link, Delta Electronics	The 9V Wall Power Supply Adapter is an AC-to-DC adapter that provides a stable 9V DC output for electronic devices and circuits. It converts AC mains power into regulated DC power and is commonly used for Arduino boards, sensors, routers, audio devices, and DIY electronics projects.	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
	EMP-00001-B	Power Adapter	EM - Electronic-Electrical Modules	Mean Well, Hi-Link, Delta Electronics	The 5V Wall Power Supply Adapter is an AC-to-DC adapter that provides a stable 5V DC output for electronic devices and circuits. It converts mains AC power into low-voltage DC and is commonly used for Arduino boards, sensors, IoT devices, LED systems, and other electronics projects.	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
	EMP-00001-C	Power Supply Adapter	EM - Electronic-Electrical Modules	Generic / OEM, Mean Well, Delta Electronics, LEICKE	The 12V 2A SMPS Power Adapter is a regulated power supply that converts 100–240V AC to 12V DC output. It provides stable power up to 2A and is commonly used for Arduino projects, routers, DC motors, LCDs, and other electronic devices.	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
	EMS-00001-A	MQ-2 Gas 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 ₂ sensing element and provides both analog and digital outputs with adjustable sensitivity. Ideal for gas leakage detection, safety systems, fire alarms, environmental monitoring, smart home applications, and Arduino-based electronics projects.	Sensor Model: MQ-2 Detection Range: 300 – 10,000 ppm Detectable Gases: LPG, Butane, Propane, Methane (CH ₄), Hydrogen (H ₂), Alcohol, Smoke, CO Sensing Material: Tin Dioxide (SnO ₂) 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 • SnO ₂ Sensor • Combustible Gas Module • 5V Gas Sensor • Gas Leakage Detector
	EMS-00002-A	Temp 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 for easy interfacing. Features an onboard pull-up resistor and LED status indicator for reliable operation. Suitable for weather stations, environmental monitoring, smart home systems, Arduino projects, and IoT applications requiring accurate temperature and humidity measurements.	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
	EMS-00003-A	Accelerometer	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
	EMS-00003-C	Accelerometer module	EM - Electronic-Electrical Modules	Freescale Semiconductor, DFRobot, Elecrow	The MMA7361 Accelerometer Module is a low-power 3-axis analog accelerometer used to measure acceleration, tilt, vibration, orientation, and motion along the X, Y, and Z axes. Based on the Freescale/NXP MMA7361L MEMS sensor, it provides analog voltage outputs proportional to acceleration values. It is widely used in robotics, motion tracking, gaming devices, and Arduino-based projects.	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	EM - Electronic-Electrical Modules	Keyes, Keyes, DFRobot, SparkFun Electronics	The Sound Detection Module Sensor for Intelligent Vehicles is a single-channel sensor used to detect surrounding sound intensity. It provides a digital output signal and LED indication when sound is detected. It is widely used in voice-activated systems, smart vehicles, robotics, automation, and sound-triggered electronic projects.	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
	EMS-00004-B	Sound Detector	EM - Electronic-Electrical Modules	Keyes Electronics, DFRobot, AZDelivery	The Sound Detector Module (Blue) is a microphone-based sensor used to detect surrounding sounds and convert them into electrical signals. It typically combines an electret microphone with an LM393 comparator to provide both analog and digital outputs. The module is widely used in sound-activated switches, noise monitoring, voice-triggered systems, robotics, automation, and Arduino-based projects.	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
	EMS-00004-C	Microphone Module	EM - Electronic-Electrical Modules	Analog Devices / Maxim Integrated, SparkFun, DFRobot, Keyestudio	The MAX4466 Electret Microphone Module is a low-noise sound sensor with an inbuilt amplifier for detecting and monitoring audio signals. It uses an electret microphone with the MAX4466 op-amp to provide clear analog output. It is commonly used in voice detection, sound level monitoring, robotics, and Arduino/ESP32 projects.	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
	EMS-00005-A	Ultrasonic Sensor	EM - Electronic-Electrical Modules	MWduino / Generic, ElecFreaks, KEYESTUDIO, SunFounder	Ultrasonic distance sensor module that uses 40kHz sound waves for accurate, non-contact distance measurement. Operates on 3.3–5.5V DC and features a simple 4-pin interface (VCC, Trig, Echo, GND) for easy integration. Ideal for robotics, obstacle avoidance, automation systems, parking sensors, distance measurement, and Arduino-based 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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
	EMS-00006-A	PIR Sensor	EM - Electronic-Electrical Modules	HC, DFRobot, SparkFun, Keyestudio	The PIR Motion Sensor is a passive infrared detection module used to detect human movement and body heat by sensing changes in infrared radiation. The commonly used HC-SR501 PIR sensor combines a pyroelectric infrared sensor with a Fresnel lens to detect motion within its sensing range. It is widely used in security systems, automatic lighting, smart homes, robotics, and Arduino projects.	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	EM - Electronic-Electrical Modules	Maxim Integrated, DFRobot, SparkFun	The DS18B20 Temperature Sensor Module is a digital temperature sensor that uses the 1-Wire communication protocol for accurate readings. Developed by Dallas Semiconductor, it provides calibrated digital output with high precision and supports multiple sensors on a single data line. It is widely used in weather stations, automation systems, industrial monitoring, and Arduino projects.	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
	EMS-00008-A	Metal Touch Sensor	EM - Electronic-Electrical Modules	Keyes Electronics, Generic Electronics, Keyestudio	The KY-036 Metal Touch Sensor Module is used to detect touch from a human finger or conductive object by sensing changes in conductivity. It uses an LM393 comparator and a transistor-based circuit to provide analog and digital outputs. It is commonly used in touch switches, security systems, automation, and Arduino projects.	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
	EMS-00009-A	Heart Pulse Sensor	EM - Electronic-Electrical Modules	Maxim Integrated, Generic Electronics, SparkFun, DFRobot	The Heart Pulse Rate Sensor is a biometric sensor used to detect heartbeats and measure pulse rate in BPM. It works using Photoplethysmography (PPG), where light is emitted into the skin and changes in reflected light due to blood flow are detected. It is used in health monitoring, fitness devices, and Arduino projects.	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
	EMS-00010-A	Smoke Gas Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, SparkFun Electronics, DFRobot	The MQ-2 Gas Sensor Module is used to detect combustible gases like LPG, methane, propane, hydrogen, alcohol, and smoke. It works using an SnO ₂ sensing layer that changes resistance when gas is present. It provides analog and digital outputs and is commonly used in gas leak detection, safety systems, air quality monitoring, and Arduino projects.	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	MQ-3 Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, Waveshare	The MQ-3 Alcohol Gas Sensor Module is used to detect alcohol concentration in the air. It provides analog and digital outputs based on gas levels. It is widely used in breath analyzers, safety systems, and IoT monitoring applications.	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
	EMS-00010-C	MQ-4 Gas Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, Waveshare	The MQ-4 Gas Sensor Module is used to detect methane (CH ₄), CNG, and natural gas leaks. It provides analog and adjustable digital outputs for gas detection. It is widely used in gas leakage alarms, safety systems, and IoT monitoring applications.	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	MQ-5 Gas Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Winsen Electronics, Waveshare	The MQ-5 Gas Sensor Module is used to detect combustible gases like LPG, methane, and natural gas. It changes conductivity based on gas presence and provides an analog output signal. It is widely used in gas leakage detection, safety systems, and IoT projects.	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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
	EMS-00010-E	MQ-6 LPG Gas Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Zhengzhou Winsen Electronics, DFRobot	The MQ-6 Gas Sensor Module is used to detect LPG, propane, and butane gas leaks in the air. It changes conductivity based on gas concentration and provides an analog output signal. It is widely used in gas leakage detection, safety systems, and IoT projects.	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
	EMS-00010-F	MQ-7 Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Zhengzhou Winsen Electronics, DFRobot	The MQ-7 Carbon Monoxide Sensor Module is a gas sensor used to detect carbon monoxide (CO) in the air. It measures changes in conductivity to provide analog and digital outputs. It is widely used in safety systems, air quality monitoring, and IoT projects.	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	MQ-135 Sensor	EM - Electronic-Electrical Modules	Hanwei Electronics, Zhengzhou Winsen Electronics, Futurlec	The MQ-135 Air Quality Sensor Module is used to detect harmful gases and monitor air pollution levels. It changes its conductivity based on gas concentration and provides an analog output. It is sensitive to gases like ammonia, benzene, smoke, and other pollutants. It is widely used in air quality monitoring, IoT systems, and environmental safety projects.	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
	EMS-00010-H	Hydrogen Sensor	EM - Electronic-Electrical Modules	SparkFun Electronics, Hanwei Electronics, Winsen Electronics, SparkFun	The MQ-8 Hydrogen Gas Sensor is a semiconductor sensor used to detect hydrogen (H?) gas in the range of 100 ppm to 10,000 ppm. It works using a SnO? sensing layer that changes resistance when exposed to hydrogen. It provides analog and digital outputs and is used in safety systems, gas monitoring, and Arduino/ESP32 projects.	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
	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 embedded and Arduino projects use the Neo-6M GPS module, which communicates through a UART serial interface and receives signals from GPS satellites. It is widely used in vehicle tracking, navigation systems, drones, mapping, and IoT applications.	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
	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 used to identify and measure colors based on reflected light intensity. It uses a light-to-frequency converter IC and photodiodes with onboard LEDs for accurate sensing. It is commonly used in robotics, color sorting, automation, and Arduino projects.	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
	EMS-00012-B	Color Sensor Module	EM - Electronic-Electrical Modules	ams-OSRAM, ams-OSRAM, ams-OSRAM, Generic Electronics	The TCS3200 Color Sensor Module is an RGB color detection sensor used to identify and measure colors based on reflected light intensity. It uses a light-to-frequency converter IC and photodiodes with onboard LEDs for accurate sensing. It is commonly used in robotics, color sorting, automation, and Arduino projects.	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
	EMS-00013-A	IR Obstacle Sensor	EM - Electronic-Electrical Modules	Generic OEM Manufacturer, Keyestudio, HiLetgo, Elegoo, SunFounder	The Infrared Obstacle Avoidance Sensor Module is used to detect nearby objects using infrared light reflection. It provides a digital output when an obstacle is detected. It is commonly used in robotics, Arduino smart cars, and obstacle detection systems.	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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
No Image	EMS-00014-A	Touch Sensor	EM - Electronic-Electrical Modules	Tontek Design Technology, Shenzhen Tontek (Tontek IC), Generic Module Manufacturer, Waveshare (Module Vendor), Keystudio (Arduino Vendor)	The TTP223B Capacitive Touch Key Sensor Module is a touch switch that replaces mechanical buttons. It outputs a HIGH signal when touched and works in low-power mode. It is commonly used in Arduino projects, smart switches, hidden controls, and automation systems.	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
	EMS-00015-A	Capacitive Keypad	EM - Electronic-Electrical Modules	Tontek Design Technology, Robocraze, Keystudio	The TTP229 16-Key Capacitive Touch Keyboard is a touch-based input module using capacitive sensing technology. It detects finger touches without mechanical switches, offering silent and reliable operation. It is commonly used with Arduino, ESP32, and embedded systems for touch panels, access control, and smart interactive projects.	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 • 4×4 Touch Sensor Module • Arduino/ESP32 Touch Input Module
	EMS-00015-B	3×4 Membrane Keypad	EM - Electronic-Electrical Modules	Adafruit, DFRobot, SparkFun, Keystudio	The 3×4 12-Key Membrane Keypad is a compact matrix input device used with Arduino, ESP32, Raspberry Pi, and other microcontrollers. It has 12 buttons in a 4×3 telephone-style layout, reducing GPIO usage while allowing easy user input. It is commonly used in password systems, calculators, access control, and embedded projects.	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 • 3×4 Membrane Keypad • Numeric Keypad Module • 4×3 Matrix Keyboard • Telephone Style Keypad • Matrix Input Module
	EMS-00015-C	4x4 Keypad	EM - Electronic-Electrical Modules	Adafruit, Keystudio, DFRobot, SparkFun	The 4×4 / 4×3 Membrane Keypad is a thin, flexible input device used with Arduino, ESP32, Raspberry Pi, and other microcontrollers. It uses a row-column matrix to reduce GPIO usage while providing multiple button inputs. It is commonly used in password systems, calculators, access control, and embedded projects.	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
	EMS-00016-A	Water Flow Sensor	EM - Electronic-Electrical Modules	YF Electronics, DFRobot, FlyRobo, Robocraze	YF-G1 Water Flow Sensor is a hall-effect based flow meter used to measure the flow rate of water and other non-corrosive liquids in pipelines. It uses a magnetic rotor that spins with water flow, and a hall sensor generates pulse signals proportional to flow rate. It is widely used in automation, water monitoring, and Arduino projects.	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
	EMS-00016-B	Water Flow Sensor	EM - Electronic-Electrical Modules	YF Electronics, DFRobot, FlyRobo, Robocraze	YF-S401 Water Flow Sensor is a compact hall-effect based flow meter used to measure water flow rate in pipes and tubing systems. It uses a rotor with embedded magnets that spins as water flows, generating pulse signals via a hall sensor proportional to flow rate. It is widely used in smart irrigation, water dispensers, liquid monitoring, automation systems, 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
	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 the surrounding brightness level. It features an onboard potentiometer for adjusting sensitivity and threshold settings. Ideal for automatic lighting systems, day/night detection, Arduino projects, smart automation, security systems, and other light-controlled electronic 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
	EMS-00018-A	Water Level Sensor	EM - Electronic-Electrical Modules	Generic Electronics, Generic Electronics, DFRobot, SparkFun	Water Level Sensor Module is used to detect water levels in tanks, containers, and irrigation systems. It works using conductive tracks that change resistance when in contact with water. It provides analog output for level measurement and digital output for threshold-based detection. It is commonly used in smart irrigation, tank monitoring, and leak detection systems.	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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
	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) measures water content in soil using resistive sensing technology. It provides both analog (AO) and digital (DO) outputs, with adjustable sensitivity through an onboard LM393 comparator. Ideal for smart irrigation systems, plant monitoring, Arduino projects, greenhouse automation, and IoT-based environmental monitoring applications.	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
	EMS-00020-A	Joystick Module	EM - Electronic-Electrical Modules	EM Series / Generic Compatible, KEYESTUDIO, SunFounder, DFRobot	Dual-axis analog joystick module for detecting X and Y movement positions. Each axis uses a 10K Ω potentiometer to provide a 0–5V analog output proportional to joystick position. Includes a built-in push-button switch for additional input functionality. Ideal for robotics, gaming controllers, Arduino projects, remote control systems, and motion control applications.	Model: PS2 Joystick Module Operating Voltage (VDC): 5V Potentiometer Resistance: 10K Ω (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
	EMS-00021-A	Tilt Sensor	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun, Keyestudio	SW-520D Tilt Sensor Module is a simple digital sensor that detects tilt, orientation change, vibration, or motion using a rolling metal ball inside a cylindrical switch. When tilted beyond a threshold (~10–15 $^{\circ}$), contacts connect/disconnect and produce a digital HIGH/LOW output. Used in alarms, robotics, and Arduino 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
	EMS-00022-A	Analog Piezo Module	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun, Adafruit	The Analog Piezoelectric Vibration Module uses a ceramic disc to detect vibrations, knocks, and mechanical stress. It generates an analog voltage based on the strength of the vibration using the piezoelectric effect. Unlike digital sensors, it measures vibration intensity, making it useful for Arduino projects, touch sensing, impact detection, and monitoring applications.	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
	EMS-00023-A	Vibration Sensor	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun, FlyRobo	SW-420 Vibration Sensor Module is used to detect vibration, shock, and movement in security systems, robotics, and Arduino projects. It uses an SW-420 sensor with an LM393 comparator to give a digital output when vibration is detected. The sensitivity can be adjusted using an onboard potentiometer.	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
	EMS-00024-A	Rain Sensor Module	EM - Electronic-Electrical Modules	Generic Electronics, DFRobot, SparkFun	Rain Sensor Modules detect rain, water droplets, and moisture for applications like weather monitoring, smart irrigation, robotics, and Arduino projects. They include a sensor plate and LM393 module, providing analog and digital outputs for accurate and adjustable detection.	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
	EMS-00025-A	Encoder 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, and Arduino projects. They provide digital pulse outputs for accurate motion tracking and feedback. Available in rotary, optical, and magnetic types, they are ideal for precise control and positioning systems.	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
	EMS-00026-A	Magnetometer Module	EM - Electronic-Electrical Modules	Honeywell, ITEAD Studio, DFRobot, Adafruit, SparkFun	The HMC5883L Triple Axis Compass Magnetometer Module is a 3-axis digital compass sensor used in navigation, robotics, drones, GPS systems, and Arduino projects. It communicates via I2C and measures magnetic field strength along the X, Y, and Z axes. It provides accurate heading and orientation data for motion tracking and autonomous applications.	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

Image	Part Number	Name	Category	Manufacturer	Description	Specification	Tags
	EMX-00001-A	Arduino Uno R3	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 electronics projects. It features 14 digital I/O pins, 6 analog inputs, a 16 MHz clock, USB interface, and operates at 5V. It is widely used in education, prototyping, robotics, 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 compact microcontroller board based on the ATmega328. It offers digital and analog I/O in a small breadboard-friendly form factor. It is widely used in embedded systems, robotics, IoT projects, and educational electronics.	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
No Image	EMX-00003-A	Arduino Mega	EM - Electronic-Electrical Modules	Arduino, Elegoo, RobotDyn, Keyestudio, DFRobot, Waveshare	The Arduino Mega 2560 is a microcontroller board based on the ATmega2560. It offers 54 digital I/O pins, 16 analog inputs, multiple serial ports, and is designed for complex projects requiring high I/O and memory. It is widely used in robotics, automation, IoT systems, and large-scale embedded applications.	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