**COMPONENT SPECIFICATIONS**

**Note:** The specifications shown in here are given by the manufacturers.

1. **ARDUINO MEGA 2560**

* Microcontroller: ATmega2560
* Operating Voltage:5V
* Input Voltage (recommended):7-12V
* Input Voltage (limits):6-20V
* Digital I/O Pins:54 (of which 15 provide PWM output)
* Analog Input Pins:16
* DC Current per I/O Pin:40 mA
* DC Current for 3.3V Pin:50 mA
* Flash Memory:256 KB of which 8 KB used by bootloader
* SRAM:8 KB
* EEPROM:4 KB
* Clock Speed:16 MHz

1. **I2C 20x4 LCD**

* LCD display module with blue backlight.
* Wide viewing angle and high contrast.
* Built-in industry standard HD44780 equivalent LCD controller.
* LCM type: Characters
* Can display 4-lines X 20-characters.
* Voltage: 5V DC.
* Module dimension: 80mm x 35mm x 11mm.
* Viewing area size: 64.5mm x 16mm
* 1602 I2C interface 4-wire 1602 screen
* IO port of control board is only 20, so IO ports is not enough for many sensor, SD card, relay modules.
* The original 1602 screen need 7 IO ports to drive up, and this module can save 5 IO ports

1. **NRF24L01**

* Worldwide license-free 2.4GHz ISM band operation
* 250kbps, 1Mbps and 2Mbps on-air data-rate options
* Enhanced ShockBurst?hardware protocol accelerator
* Ultra low power consumption?months to years of battery lifetimeSpecifications
* Power supply : 1.9~3.6V
* IO port working voltage : 0~3.3v / 5v
* Transmitting rate : +7dB
* Receiving sensitivity : -90dB
* Transmission range : 250m in open area
* Dimension : 15x29mm

1. **PMS5003**

* Range of measurement 0.3~1.0；1.0~2.5；2.5~10 Micrometer（μ m）
* Counting Efficiency 50%@0.3μ m 98%@>=0.5μ m
* Effective Range（PM2.5
* standard）
* 0~500 μ g/m³
* Maximum Range（PM2.5
* standard）\*
* ≥1000 μ g/m³
* Resolution 1 μ g/m³
* Maximum Consistency Error
* (PM2.5 standard data) \*
* ±10%@100~500μ g/m³
* ±10μ g/m³@0~100μ g/m³
* Standard Volume 0.1 Litre（L）
* Single Response Time ＜1 Second（s）
* Total Response Time ≤10 Second（s）
* DC Power Supply Typ:5.0 Min:4.5 Max: 5.5 Volt（V）
* Active Current ≤100 Milliampere（mA）
* Standby Current ≤200 Microampere（μ A）
* Interface Level L <0.8 @3.3 H >2.7@3.3 Volt（V）
* Working Temperature Range -10~+60 ℃
* Working Humidity Range 0~99%
* Storage Temperature Range -40~+80 ℃
* MTTF ≥3 Year（Y）
* Physical Size 50×38×21 Millimeter（mm)

1. **MQ131**

* With signal output indicator light;
* Dual signal output (analog output and TTL level output);
* TTL output effective signal is low level; (the signal light is on when the output is low level, and can be connected to the IO port of the single-chip microcomputer)
* High sensitivity to ozone gas, (detection concentration range 10PPB-2PPM)
* Size: 32mm X22mm X27mm length X Width X height
* Main chip: LM393, MQ-131 gas sensor
* Working voltage: DC 5V
* It has a long service life and reliable stability of KE;
* Fast response and recovery characteristics;
* With mounting holes, convenient for fixed installation;
* The probe can be plugged and unplugged, which is convenient for testing.
* Application: Ozone gas detection devices used in homes and atmospheric environments,
* Material: Plastic, metal
* Color: Blue

1. **SGP30**

* High quality: The SGP30 is a metal oxide gas sensor with multiple sensing elements on a single chip.
* It integrates: four gas sensing elements with a fully calibrated air quality output signal.
* Wide usage: SGP is easy to integrate and integrates metal oxide gas sensors into mobile devices, opening up new possibilities for environmental monitoring in smart home, home appliances and IoT applications.
* Circuit is simple and reasonable structure, simple operation.
* 5.Made of high-quality metal materials, wear-resistant and anti-corrosion, more stable performance and longer service life.
* Description:
* Lightweight, easy to install and easy to operate.
* Adopt synchronous rectifier technology.
* Specification:
* Model Number: GY- SGP30
* Power compatible 2v---5v
* color: blue
* size: 13 mm x 10,5mm x 2,6mm

1. **DC Exhaust Fan**

* Product Name: Computer Case Cooling Fan
* Rated Voltage: DC 12V
* Rated Current: 0.2A
* Connector: 2 Pins Connector
* Size: 80 x 80 x 25mm / 3.1-inch x 3.1-inch x 1 inch (L x W x H)
* 2 Pin connector cooling fan for desktop computer case, keeps computer working well.
* Help push the hot air out of your computer when mounted on the back or draw in fresh air if you mount it at the front of the case
* Cable Length: 18cm
* External Material: Plastic
* Color: Black

1. **HC05**

* Use the CSR mainstream Bluetooth chip, Bluetooth V2.0 protocol standards.
* Module working voltage 3.3 V.
* Potter default rate of 9600, the user can be set up.
* The core module size: 28 mm x 15 mm x 2.35 mm.
* Working current: matching for 30 MA, matching the communication for 8 MA.
* Dormancy current: no dormancy.
* Used for GPS navigation system, water and electricity gas meter reading system.
* With computer and Bluetooth adapter, PDA, seamless connection equipment
* Commercial Series: Bluetooth module board Series
* With LED indicator light, use 150mA and 3.3V regulation chip.
* With VCC.GND.TXD.RXD foot for the Bluetooth
* Compatible with Bluetooth master module "slave module" or master-slave(whole) module.
* Input voltage: 3.3 -6V