

Home Inventor Kit

User Manual





Easy to extend WeeeMake platform Level up study

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Home Inventor Kit is a DIY kit that consist of 10 electronic modules and compact designed mechanical parts.

By simulating the life scene of automatic home, building 7 interesting projects of smart home appliance, children will observe home appliances in their daily life and get to know how them work.







- 1x ELF mini Mainboard V2.0
- 8889
- 1x 4 Digital LED Module



1x RGB Ultrasonic Sensor V1.0



1x Touch Sensor



- 1x 130 DC Motor Module
- 1x Temperature Humidity Sensor



1x Single LED Module-Red



1x RJ11 Adapter Module



1x 9g Servo



1x IR Remote Control



4x RJ11 Cable - 20cm



1x Micro USB Cable-0.8m



- 2x Screw M2*10
- 16x Screw M4*6
- 🔊 6x Screw M4*8
- 4x Screw M4*20
- ② 2x Nut M2
 - 🔊 🛛 8x Nut M4
 - 4x Brass Stud M4*10



1x ELF mini Bracket





1x 9g Servo Tiller



- 1x 9g Servo Arm V1
- 1x Tapping Screw M2*6
- 2x Tapping Screw M2*8
 - 3x Plastic Rivet 2064



1x Velcro



1x PH1 Cross Screw driver V1.0



1x 2.5mm Hex Screwdriver V1.0



1x M1.6-M4 Multifunction Wrench V1.0



Battery Instruction

Power supply: 4 x 1.5V AA batteries (Not included in package)

• Battery information:

- 1. Do not crush, or throw batteries.
- 2. Do not use batteries near to a heat source.
- 3. Always insert the batteries correctly with regard to polarity (-/+); do not short-circuit lithium battery.
- 4. Always keep batteries dry.
- 5. Do not puncture battery with sharp object.
- 6. Use only the correct type and size of battery indicated.
- 7. Place the battery in a cool, dry spot if not required.
- 8. Remove and safely dispose of exhausted batteries immediately.
- 9. If robot sit idle, remove battery out of battery holder when.
- 10. Replace all batteries in battery-operated products at the same time with the batteries of the same type and manufacture.





Tool Instruction



Assembly Guide – Basic Structure //

01 Install ELF mini V2.0 Mainboard



02 Install Battery Holder



Assembly Guide – Basic Structure

Optional Install 3.7V Li-polymer Battery



Assembly Guide – Basic Structure //

03 Install Structure Frame



04 Install ELF mini V2.0



4x Screw M4*6



Assembly Guide – Rainbow Color Lamp

Use touch sensor to control the RGB LED. Touch the touch sensor, it will turn on the RGB LED, and change color when touch the sensor every time.



Assembly Guide – Rainbow Color Lamp 🎢

01 Install Beam 1030-100







02 Install Electronic Modules

2x Screw M4*8







Assembly Guide – Rainbow Color Lamp 🎢

03 Wiring



Wiring Instruction:

RGB Ultrasonic Sensor V1.0 - Port A Touch Sensor - Port C





1. Touch the power switch to turn on ELF mini V2.0.

2. Press number button 1 on IR remote control.

3. Use touch sensor to control the RGB LED. Touch the touch sensor, it will turn on the RGB LED, and change color when touch the sensor every time.

Coding - Rainbow Color Lamp



Assembly Guide – Smart Fan

Use ultrasonic sensor to detect if anyone is in front of the fan; if yes, turn on the fan automatically. Energy saver!



Assembly Guide – Smart Fan

01 Install Beam 1030





02 Install Electronic Modules



Note:

When installing the electronic module, please lock screws properly to fix electronic module in position, and prevent deforming the electronic bracket.





Assembly Guide – Smart Fan

03 Wiring



Wiring Instruction:

RGB Ultrasonic Sensor V1.0 - Port A 130 DC Motor Module - Port B





- 1. Touch the power switch to turn on ELF mini V2.0.
- 2. Press number button 2 on IR remote control.
- 3. Use ultrasonic sensor to detect if anyone is in front of the fan; if yes, turn on the fan automatically.

Coding - Smart Fan



Assembly Guide – Magical Musician

Ultrasonic sensor can detect distance to the object in front of it. Define different distance value to play different tone, play piano in the air like a magic.



Assembly Guide – Magical Musician //

01 Install Electronic Modules



02 Wiring



How to play

1. Touch the power switch to turn on ELF mini V2.0.

2. Press number button 3 on IR remote control.

3. Define different ultrasonic value to play different tone, put your finger in front of ultrasonic sensor and play piano in the air like a magic.

Coding - Magical Musician





Assembly Guide – Corridor Lamp

Do you have sound-control lamp in your house? When you passing by, the lamp will turn on automatically. This robot use sound sensor to control the LED module, once it detected sounds, the LED lamp will turn on automatically.



Assembly Guide – Corridor Lamp //



02 Install Electronic Modules



Note:

When installing the electronic module, please lock screws properly to fix electronic module in position, and prevent deforming the electronic bracket.



Assembly Guide – Corridor Lamp ///

03 Wiring





Touch the power switch to turn on ELF mini V 2.0.
 Press number button 4 on IR remote control.
 Use sound sensor to control the LED module. Clap your hands, and the LED lamp will turn on automatically.

Coding -Corridor Lamp



Use IR remote control to control the 9g servo motor. Open the gate or close the gate, all in your hand.



01 Install Beam 1030







02 Install 9g Servo









05 Install Electronic Modules



Note:

When installing the electronic module, please lock screws properly to fix electronic module in position, and prevent deforming the electronic bracket.



06 Wiring



9g Servo Motor- RJ11 Adapter Module RJ11 Adapter Module - Port C

Ix RJI1 Cable – 20cm RJI1 Adapter Module → RJI1 Cable – 20cm → Port C 9g Servo → RJI1 Adapter Module 9g Servo → RJI1 Adapter Module 4 AA Battery Holder



 Touch the power switch to turn on ELF mini V2.0.
 Press number button 5 on IR remote control.
 Use IR remote control to control the 9g servo motor. Press button "↑ " to open gate, press button "↓" to close gate.

Coding- Obedient Gate



Assembly Guide – Weather Station



Use temperature and humidity sensor to detect the value of temperature and humidity, and show on 4 digital LED module as a weather station.

Assembly Guide – Weather Station



02 Install Electronic Modules



Note:

When installing the electronic module, please lock screws properly to fix electronic module in position, and prevent deforming the electronic bracket.



Assembly Guide – Weather Station

03 Wiring



4 Digital LED Module- Port B Temperature and Humidity Sensor- Port C







Touch the power switch to turn on ELF mini V2.0.
 Press number button 6 on IR remote control.
 Use temperature humidity sensor to detect the value of temperature and humidity, and show on Digital LED Module as aweather station.

Coding - Weather Station

VeeeBot Mini Program
orever
set a to humituresensor PortC temperature
set b t to humituresensor PortC humidity
4-digit display PortB show a
wait 2 secs
4-digit display PortB show b
wait 2 secs
if $a > 29$ or $b < 30$ or $b > 90$ then
play tone on note G47 beat Quarter
play tone on note E4 beat Quarter
play tone on note G47 beat Quarter 7
play tone on note E4 beat Quarter
play tone on note D4 beat Quarter
play tone on note C4 beat Quarter
play tone on note D47 beat Quarter 7
play tone on note G3 beat Quarter

Assembly Guide – Parking Lot System

Ultrasonic sensor will detect if any car needs to enter the parking lot; if yes, open the gate that controlled by servo, and count on 4 digital LED module. If a car needs to leave the parking lot, use IR remote control to open the gate, and number on 4 digital LED module will reduce by 1.



Assembly Guide – Parking Lot System



02 Install 9g Servo





Assembly Guide – Parking Lot System





Assembly Guide – Parking Lot System 🥢



06 Wiring



9g Servo Motor- RJ11 Adapter Module RGB Ultrasonic Sensor V1.0- Port A 4 Digital LED Module- Port B RJ11 Adapter Module- Port C

prevent deforming the electronic bracket.





 Touch the power switch to turn on ELF mini V2.0.
 Press number button 7 on IR remote control.
 Ultrasonic sensor will detect if any car needs to enter the parking lot; if yes, open the gate that controlled by servo, and count 4 Digital LED Module.
 If a car needs to leave the parking lot, use IR remote control to open the gate, and number on LED segment display will reduce by 1.

Coding - Parking Lot System





WeeeCode Graphical Programming Software



WeeeCode is a graphical programming software that developed by WEEEMAKE on the basis of Scratch 2.0 and Scratch 3.0. It supports graphical programming as well as Arduino IDE code.

In Weeecode, you only need to drag and drop the code modules to create lots of programs and showcases. WeeeCode supports Home Inventor Kit perfectly.

Operation system: Windows/Mac More information: <u>www.weeemake.com</u> To restore the factory firmware, please download factory firmware on official website: http://www.weeemake.com/home-inventor-kit/

Arduino is an open-source electronics platform based on easy-to-use hardware (Arduino boards) and software (IDE). The Arduino Software (IDE) allows you to write programs and upload them to your board. Arduino senses the environment by receiving inputs from many sensors, and affects its surroundings by controlling lights, motors, and other actuators.

The ELF mini mainboard designed by WEEEMAKE is fully compatible with Arduino platform. With ELF mini and Arduino IDE, you can develop your own smart application project or education project.

For more information, please visit <u>http://www.arduino.cc</u> Operation system: Windows/Mac Tutorial: www.weeemake.com

Arduino IDE





Take out IR Remote Control, insert CR2025 Button Cell (not included in package);
 IR remote control guide:





Picture	Description	Features	Specification	
8889	 4 digital LED module adopts a 4-digit common anode digital tube for displaying numbers and a few special characters. The module can be used in robot project to display data such as speed, time, score, temperature, distance, etc. 	 Highlight 4 digital LED display, allow users to see the content even in the day. RJ11 port for easy connection. 2^{*4}mm installation holes. Comes with built-in MCU, the module type can be automatically identified by main control. Adopt unibus driver, reduced the IO pin of main control chip. 	 Highlight 7 segment display, allow users to see the content even in the day. RJ11 port for easy connection. 2*4mm installation holes. Comes with built-in MCU, the module type can be automatically identified by main control. Adopt unibus driver, reduced the IO pin of main control chip. 	
10.0	 RGB Ultrasonic Sensor is new ultrasonic distance detection module. Comes with independent RGB LED, you can change brightness and color. The RGB Ultrasonic Sensor uses split high-precision aluminum shell probe, calculate and amplify signal through onboard MCU, to output more stable and higher precision signal. 	 Distance defecting resolution is 2cm; Comes with 6 RGB LEDs, support 256 brightness values for red, green & blue and 16,777,216 color combinations; Adopt RJ11 port for easy connection. 3*4mm installation holes. Comes with built-in MCU, the module type can be automatically identified by main control. Adopt unibus driver, reduced the IO pin of main control chip. 	 Operating Voltage: 5V DC Detection Angle: ≤30° Detection Range: 4-500cm Resolution: 1cm Ultrasonic Frequency: 42kHz Probe Angle: 60°±15° Communication: 1-wire Dimensions: 100 x 32 x 30 mm 	
	 Touch Sensor enables you to replace traditional "press" button by touch it. It can detect the change in capacitance when a finger is nearby. That means no matter whether your finger directly touch the pad or just stay close to the pad, it will be detected by the sensor. 	 Touch sensor will enter self-calibrate mode to make a reference point in 4 secs since powered on. Do not touch the module in self-calibrate mode in order to reduce misjudgment Sensitive and short time delay. Adopt RJ11 port for easy connection. 2[*]4mm installation holes. Comes with built-in MCU, the module type can be automatically identified by main control. Adopt unibus driver, reduced the IO pin of main control chip. 	 Operating voltage: 5V DC Response time: 60-220ms Used Chipset: TTP223 Control mode: Unibus signal Module size: 52 x 24 x 18 mm (L x W x H) 	
	 130 DC Motor Module is a funny module. It has a 130 DC motor which is fixed on circuit board for easy-using. You can build funny projects such as cooling machine, smart fan, bubble machine. 	 Two LED indicates the rotation direction of the motor Rotation direction and speed can be controlled. Adopt RJ11 port for easy connection. 2*4mm installation holes. Comes with built-in MCU, the module type can be automatically identified by main control. Adopt unibus driver, reduced the IO pin of main control chip. 	 Operating voltage: 5V DC. No Load Speed: 12000±10%rpm No Load Current: 90±10% mA Control mode: Single bus digital signal Module size: 60 x 24 x 20 mm (L x W x H)(no fan blade) 	

Picture	Description	Features	Specification	
	 Temperature and Humidity Sensor is a sensor that contains a calibrated digital signal output. A unique capacitive sensor element measures relative humidity, and a negative temperature coefficient (NTC) thermistor measures the temperature. It has excellent reliability and long-term stability. 	 Relative Humidity and temperature measurement. Full range temperature compensation calibrated. Long term stability. Adopt RJ11 port for easy connection. 2*4mm installation holes. Comes with built-in MCU, the module type can be automatically identified by main control. 	 Operating voltage: 5V DC. Temperature range: 0-50°C ± 2°C Humidity range: 20-90% RH ± 5% RH Precision: 1% RH, 1°C Control mode: Single bus digital signal Module size: 52 x 24 x 18 mm (L x W x H) 	
	 Single LED Module-Red uses 8mm red LED, bright and attractive. It can be used as a pilot lamp for indicating power or signal presence. 	 8mm RED LED. Adopt RJ11 port for easy connection. 2*4mm installation holes. 	 Operating voltage: 5V DC. Color: Red; Module size: 52 x 24 x 18 mm (L x W x H) 	
	 RJ11 to Adapter Module converts the standard RJ11 port into three pins (VCC, GND, SIG) to compatible with electronic modules from other manufacturers, such as temperature sensor and servo module. 	 Red LED power indicator. Overcurrent protection. 3-pin anti-reverse connector. Adopt RJ11 port for easy connection. 2*4mm installation holes. 	 Operating voltage: 5V DC. Maximum current: 2A Space between pins: 2.54 mm Module size: 52 x 24 x 18 mm (L x W x H) 	
	 9g Micro Servo Pack is a servo pack for beginners who like to make stuff move. This pack incudes a 9g servo, a servo hub, a servo bracket and hardware. With the servo hub and servo bracket, it's convenient to connect the servo with other parts. A RJ11 Adapter module will help you connect the servo to main controller easily. 	 Small volume and light weight A servo hub and a servo bracket are included. 	 Operating voltage: 4.8V-6.0v DC. Running Current: 80-100mA Limit angle: 210°±5% Peak stall torque:1.3-1.7kg/cm No load speed:0.09-0.10 sec/60° Stall current:650mA-750mA 32.3 x 12.3 x 30.6 mm (L x W x H) 	

Home Inventor Kit–Warranty

FCC Home Inventor Kit

FCC Information

This device complies with part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and
- (2) This device must accept any interference received, including interference that may cause undesired operation.

Any Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

"This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body."

Home Inventor Kit–Warranty

Product	Home Inventor Kit			
SKU	180002 ,181002			

ROHS FC CE WARNING! CHOKING HAZARD Small parts. Small parts. Small parts.

Thank you for your interest in the products and services of WeeeMake. This Limited Warranty covers any defects in material or workmanship under normal use during one year since the date of purchase from authorized dealer. During the Warranty Period, WeeeMake will repair or replace, at no charge, products or parts of a product that proves defective because of improper material or workmanship, under normal use and maintenance; Once warranty expired or out of warranty range, repair or replacement will be charged.

This Limited Warranty does not cover any problem that caused by:

- 1. Product damage resulting from negligence, misuse, improper maintenance;
- 2. Damage or defect resulting from misuse, improper installation or modification, voltage or current overload, accident, force majeure events (flood, fire, terrorist attack, war, etc);
- 3. Damaged or destroyed by improper repair at unauthorized service point.
- 4. Natural wear and tear, or accidentally damage surface.

The following parts or items are not covered by this Limited Warranty:

- 1. Batteries, fuses, screws, wires and other supplies
- 2. Transportation, shipping or insurance costs;
- 3. The cost of product demolition, installation, assembly, adjustment or re-installation;

To obtain warranty service, please contact the authorized dealer (Warrantee) and show the receipt as proof of purchase date. The Warrantee will:

- 1. Repair the Product at no charge, using new or refurbished replacement parts;
- 2. Or replace with same or iterative Product;
- 3. Or refund at purchase price.

All replacement parts and products and refund products are deemed to be owned by the Warrantee. Warranty service may use a new or refurbished part or product.

For consumers, who are covered by consumer protection laws or regulations in their country of purchase or, if different, their country of residence, the benefits conferred by Weeemake limited warranty are in addition to all rights and remedies conveyed by such consumer protection laws and regulations, including but not limited to these additional rights.

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Technical Support: support@weeemake.com

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