Cut out the icon with scissors and put it into the switch cap. Note: read the instructions on the back and install first.

MODE	√ ◆	ON AC
7	8	9	↑
violet	Gray	White	÷
4	5	6	×
Yellow	Green	Blue	Gold
1	2	3	−
Brown	Red	Orange	None D
0	.	=	+
Black	A	B	C

MODE	√ ◆	ON AC
7	8	9	↑
violet	Gray	White	÷
4	5	6	×
Yellow	Green	Blue	Gold
1	2	3	−
Brown	Red	Orange	None D
0	.	=	+
Black	A	B	C

MODE

Mode: Press this button to switch between functions.

√ ◆

Square root and selection key:
1. When using the calculator, press this button to switch to the square root function.
2. When calculating current, the voltage and current are inputted through this key.
3. When calculating the resistance of a color ring, this key is used to select the functions of a 5-ring or 4-ring resistor.
4. When converting decimal and hexadecimal numbers, use this button to switch the sequence.

↑

Backspace key: in calculator mode, clear the input of a single incorrect number.

Switch/clear key:
1. Press this to turn on the power. The power will automatically turn off after 30 seconds of inactivity.
2. Clear all displayed results or input content.

The keys have numbers or symbols on top and colors and text below.
For color ring resistance, the colors are located below the keys.

The bottom right corner of the keys has uppercase red letters A, B, C, D, E, F.
In the decimal conversion function, press 0-9A-F to enter a value.

1. If the diy kit does not work properly after installation:
Check if the components are installed in the correct position and direction, check if the solder joints are qualified and have good contact, and check if the battery voltage is 3V.

Solder joints are crucial, especially for virtual ones. Although it may appear to be properly soldered, in reality it may have poor contact. This is often caused by improper solder selection, using high melting point solder or poor quality solder, which makes it difficult for the solder to wrap around the pins and solder pads. It may take 4-5 seconds to solder one joint. Normal soldering usually takes 1-2 seconds for one joint, with strong fluidity. The solder can easily wrap around the pins and solder pads.

2. Display brightness is very low:
Check if R3 and R4 resistors are installed correctly. Check if the battery has a voltage of about 3V.

Operation instruction

Use 2 CR032 button batteries for power supply; press the ON button to turn on the power; the device will automatically turn off after 30 seconds of inactivity.
About batteries: Due to the small battery capacity, frequent use or long standby time of the calculator may result in insufficient power, and the batteries need to be replaced.

Function 1: Decimal arithmetic operation, with decimal point and negative number operation.

For example, calculate 5*6=30
Operation method: Turn on the power with the [ON] button, press [5], press [*], press [6], press [=] . The result is [30] . Press [AC] to clear.

For example, calculate -8+2=-6
Operation method: turn on the power with the [ON] button. Press [-], [8], [+], [2], [=] . The result is -6. Press [AC] to clear.

Function 2: Calculation of 4-ring or 5-ring resistance. Enter the color rings in order to obtain the resistance value and error.

For example, the 5-ring resistance with yellow, purple, black, brown, brown has a resistance value of 4700Ω.
Operation method: Turn on the power with the [ON] button, press [MODE] to switch to the Color Ring R C 5 interface to calculate the 5-ring resistance. Press [Yellow] , [Violet] , [Black] , [Brown] , [Brown] to obtain the resistance value R=4700Ω with a 1% error margin.
Press [AC] to clear.

For example, the 4-ring resistance with green, red, yellow, and gold has a resistance value of 520KΩ.
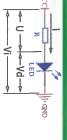Operation method: In the Color Ring R C 5 interface, press and hold the [◆] key to switch to the Color Ring R C 4 interface to calculate the 4-ring resistance.
Press [Green] , [Red] , [Yellow] , [Gold] to obtain the resistance value R=520KΩ with a 5% error margin.
Press [AC] to clear. Press [MODE] to select other functions.
If "error" appears in the result, it indicates an operational error.

Function 3: When the supply voltage and working voltage and current of the LED are known, the resistor value required to connect in series with the LED can be obtained.

Formula: $R = \dfrac{U}{I} = \dfrac{Vi - Vd}{I}$

Vi is the supply voltage of the LED;
Vd is the working voltage of the LED;
I is the working current of the LED;
R is the resistance value of the current limiting resistor;

For example, when the supply voltage (Vi) of the LED is 5V, the working current (I) of the LED is 10mA. What is the value of the series resistor (R)?
Operation method: Turn on the power with the [ON] button, press [MODE] to switch to the [Rled Vi-Vd=Vi-nAR=R] interface, press
[2] (Vi=Vd=2V), press [◆] to switch to current input, press [1] [0] (LED working current, 10mA),
Press [=] .The value of the series resistor R is 200Ω.
Press [AC] to clear. Press [MODE] to select other functions.

Function 4: Conversion between decimal and hexadecimal numbers; conversion between hexadecimal and decimal numbers.
Operation method: turn on the power with the [ON] button. Press [MODE] to switch to the 10HEX-16HEX interface to convert the decimal number to a hexadecimal number. Enter the decimal number to automatically calculate the hexadecimal number.
Press [AC] to clear.
Press [◆] to switch to the 16HEX-10HEX interface to convert the hexadecimal number to a decimal number. Enter the hexadecimal number to automatically calculate the decimal number.
Press [AC] to clear. Press [MODE] to select other functions.

Function 5: Square root

For example, $\sqrt{4} = 2$
Operation method: turn on the power with the [ON] button, in the calculator mode, press [◆] , √ 0 will appear. Press [4] , then press [=] . The result is [2] .