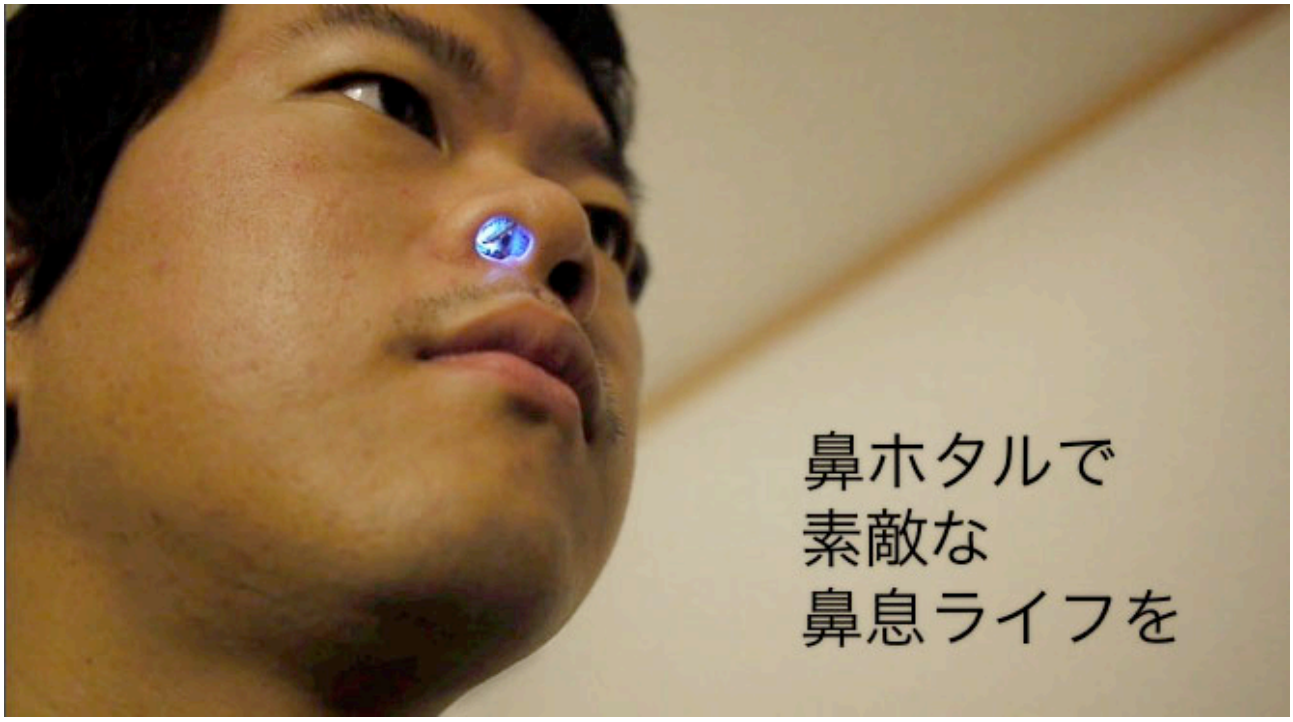
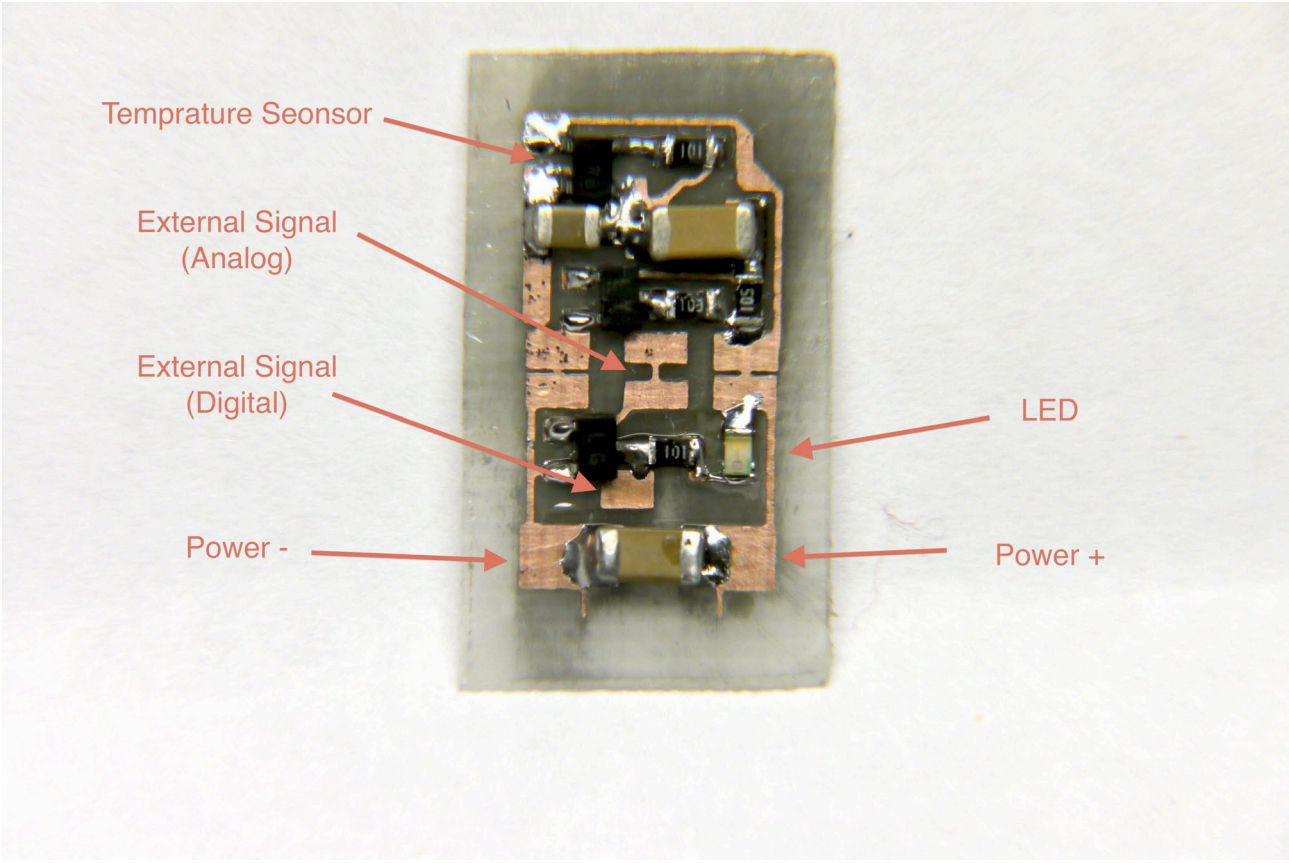


HANA-HOTARU(鼻ホタル) is LED with nose breath sensor.It detects nose breath with temperature sensor.(Nose breath is warmer than air.) May your nose breath life is nice with HANA-HOTARU.

Technical overview

HANA-HOTARU have some pads for power supply and external signal.If you want to just use (i.e. blink LED with your nose breath),Just solder power source and put it into your nostril.And also you can connect HANA-HOTARU board to your circuit as nose breath sensor via external signal pad.



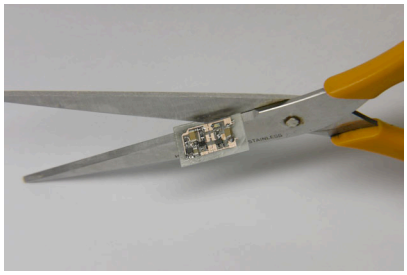
How to build HANA-HOTARU

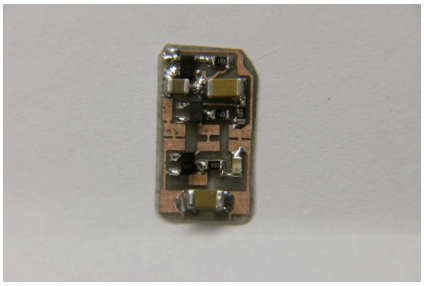
You can build 3 type of HANA-HOTARU with this kit.

- Straight type with external power
  Easy to build,but you need external power source (3V to 5V).Battery is good for power source because battery have low noise.
- Straight type with battery
  You have to build battery terminal with brass wire (φ0.9). Two SR421SW batteries are recommended for this.
- Roll type with battery
  Little bit hard to build,but this is smallest type.You have to build battery terminal with brass wire (φ0.9). Two SR421SW batteries are recommended for this.

Prepare for all type

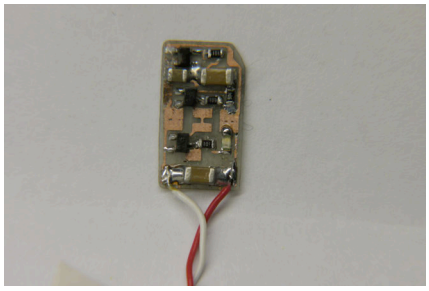
At first you have to trim the HANA-HOTARU board.You can cut this board with scissors.





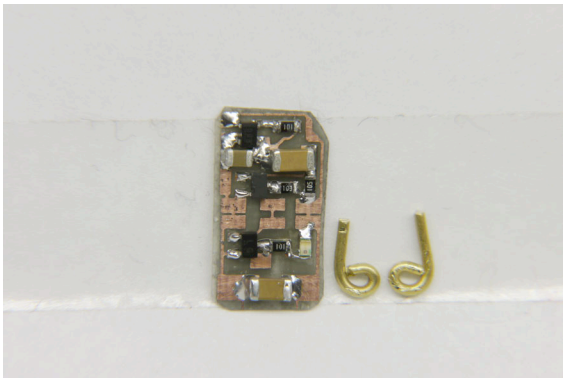
Straight type with external power

Solder power source line to bottom pads.Left(White) one is minus and Right(Red) one is plus.Voltage of power is 3 to 5V.

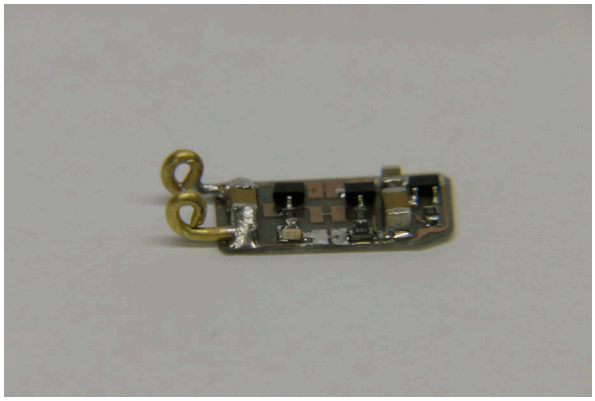


Straight type with battery

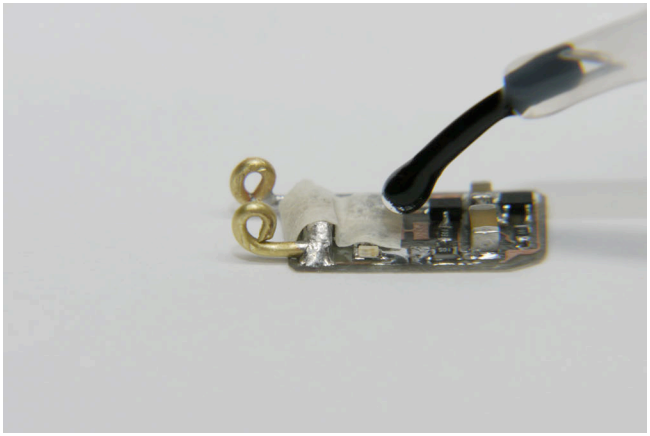
At first, Form brass wire (φ0.9mm) into battery terminal looks like flowing.



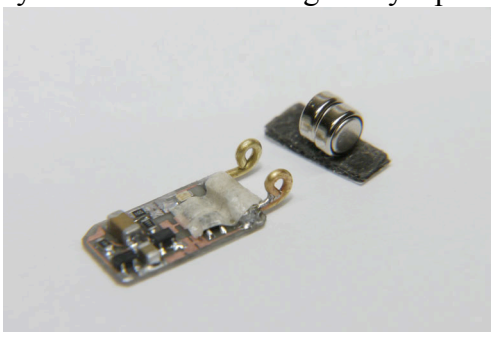
Then solder these like this picture.Gap of battery terminals is 4mm.You have to bend this terminal with needle-nose pliers for adjusting.



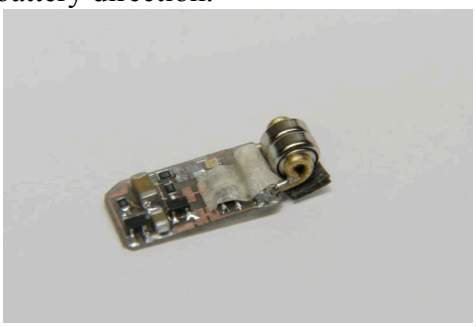
To avoid electrical short with battery .Coat the board with insulating tape or glue (like epoxy glue).
CAUTION: Don't put glue too thick on sensor (Black chip with 4 pin)



To set batteries ,before that ,put your batteries on strong sticky tape.

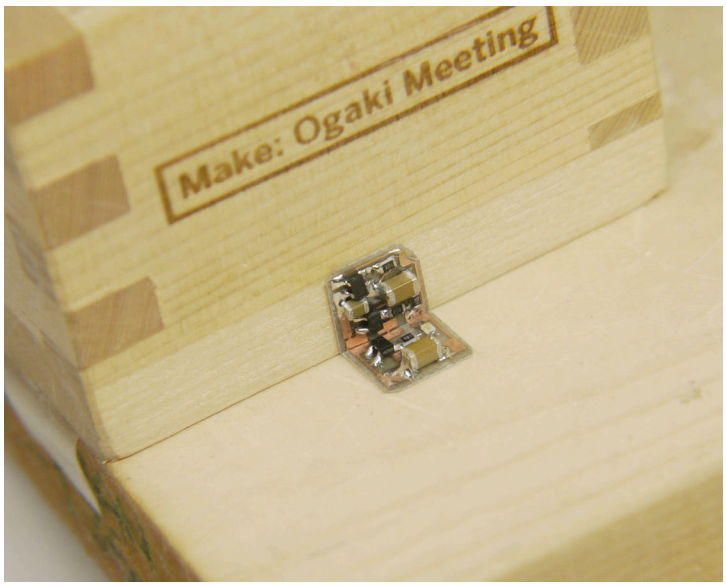


Be sure to check battery direction.HANA-HOTARU can tolerate reverse voltage in few seconds.If the LED don't blink, check the battery direction.



Roll type with battery

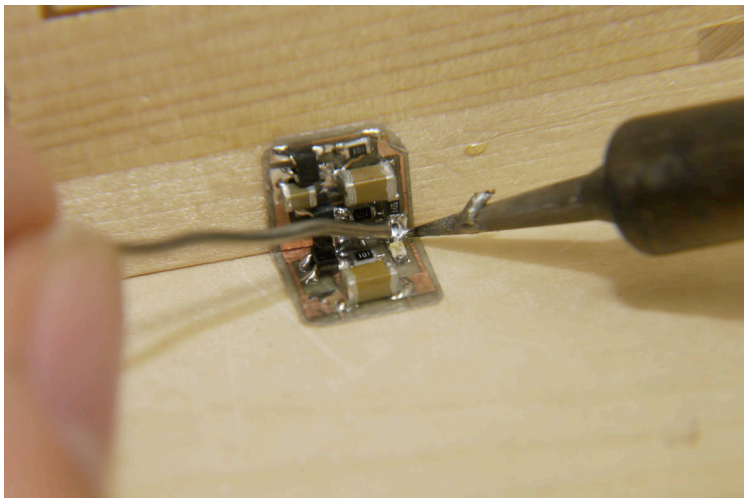
At first cut center of the circuit board.Then put 2 boards like this.Be sure the direction.



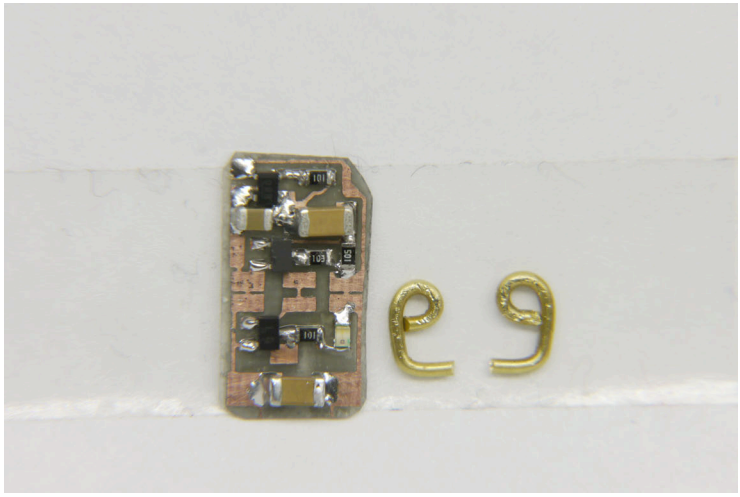
Solder center pad.

After soldering center pad, solder left and right pad.

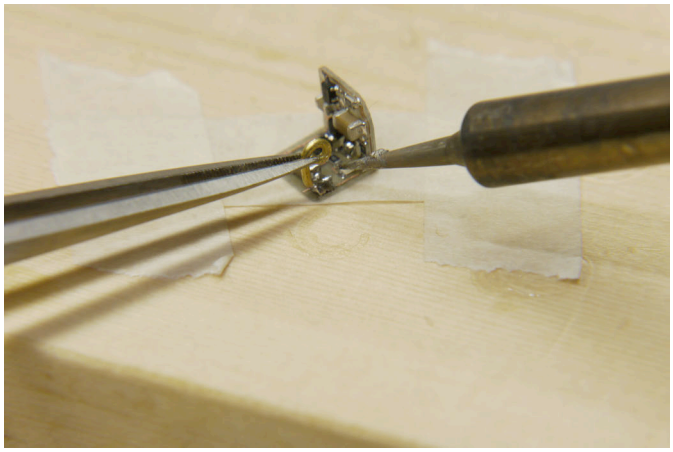
And file the corner and edge to make them smooth.



Form brass wire (φ0.9mm) into battery terminal.



Then solder battery terminals.

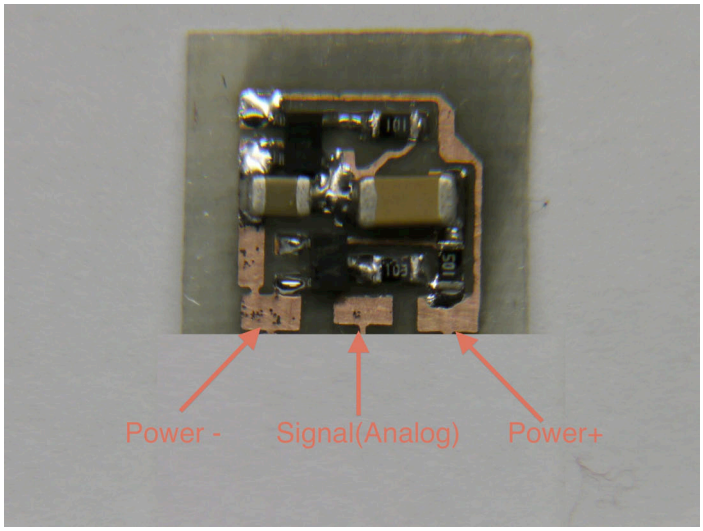


Coat the board with insulating tape or glue,and set batteries. (see “straight type with battery”)

Advanced usage

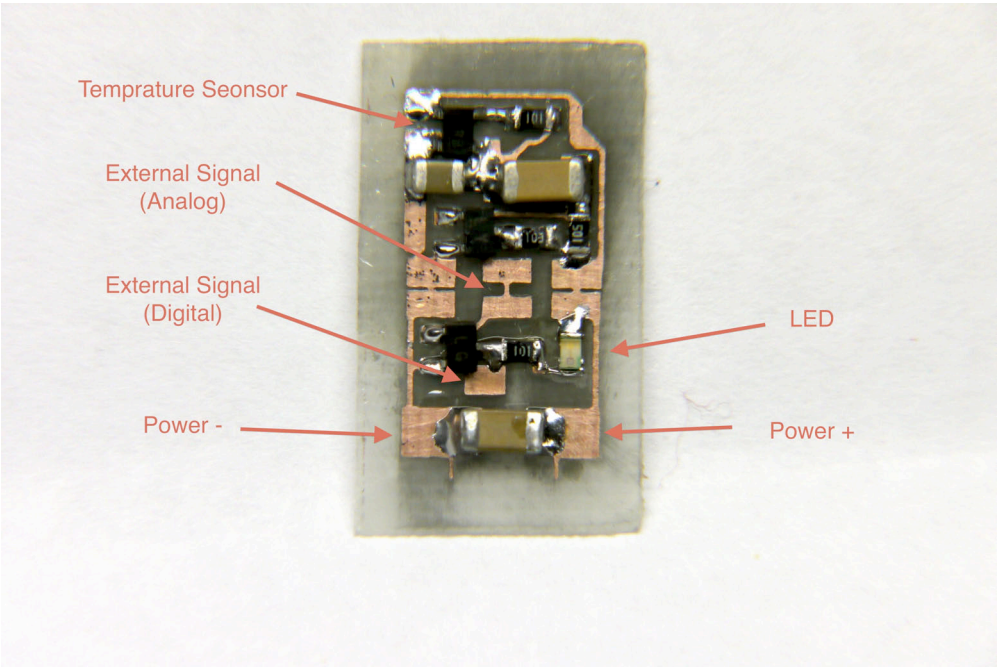
Using external signal pad(Analog)

Use sensor part of HANA-HOTARU. Supply voltage is 3 to 5 V.Signal out put is normally 0V, 0.5~1.5V when breath is detected .Signal level can rise up to Power+ level on detecting hot air flow.



Using external signal pad (Digital)

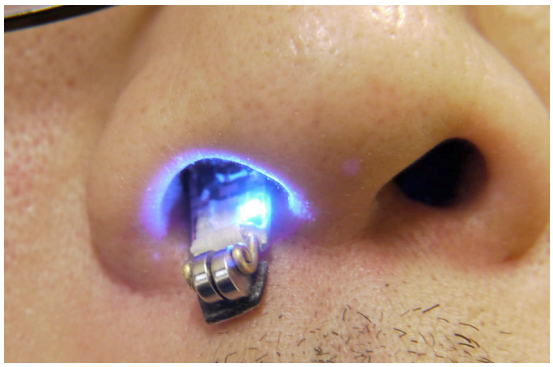
At first you have to **remove LED**.Supply voltage is 3 to 5 V.External Signal (Digital) is Open Corrector output,so you have to pull up(I recommend 1∽10KΩ).Some time you need chattering cancelation.



How to use

Straight type

Fix HANA-HOTARU on your nostril with double-stick tape.Be sure your nose breath hit the temperature sensor.



Roll type

Before you try to put this in your nostril.You need tweezers to remove this.
Just put in your nose ,LED will blink.

Parts List

SII S-8120C	temperature sensor	1
100Ω	chip register 0603	2
10KΩ	chip register 0603	1
1MΩ	chip register 0603	1
100uF6.3V (murata GRM31)	chip capacitor 1206	2
10uF6.3V(murata GRM21)	chip capacitor 0805	1
2SC4116-Y	chip transistor	2
OSBL1608CIA	chip LED 0603	1

Contact

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