

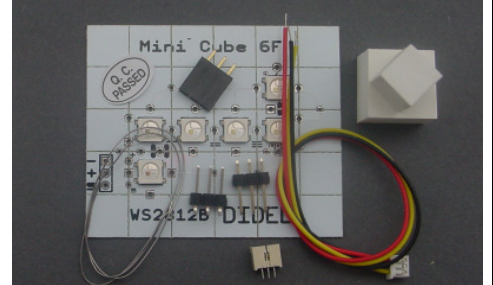
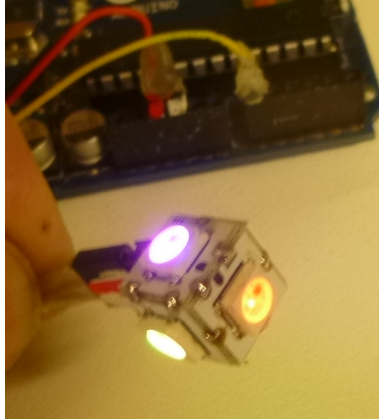
RGB minicube

see www.didel.com/MiniCube6F.pdf if you prefer French

Have fun with a 6 RGB LEDs cube, only 10mm side.

Control from any Arduino, Raspy, Lolin, etc. board.

Use WS2812B LEDs



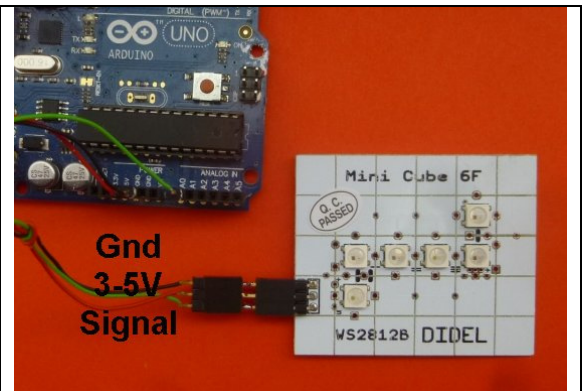
This is what you get WS2812B are soldered and tested. Appreciate the tricky test path and cute edge soldering.

Initial test

Add a 3-pin connector or cable and control from Arduino or others. Notice you have two possible place for a 3-pin connector. Use only the connector of the picture. The connectors under the first LED will be used when the cube is finished.

Pinout is Gnd (square pad) Vcc (3 to 5V) and Signal.

Use NeoPixel software or Didel WS28 lib.



How to define the pin if you use WS28 software

```
// WS28.h  
.  
.  
.  
#define bP 0 // pin 14 portC - do not use pinMode  
#define POn bitSet (PORTC,bP)  
#define POff bitClear (PORTC,bP)  
void SetupWS28() { bitSet (DDRC,bP); cli(); }
```

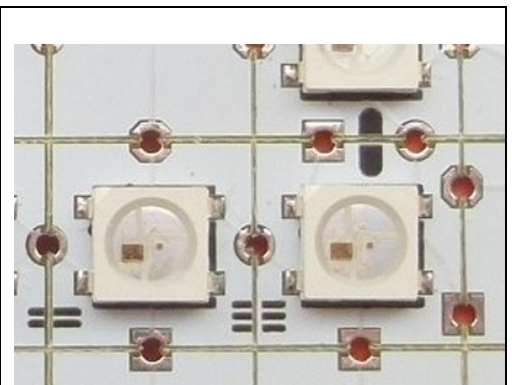
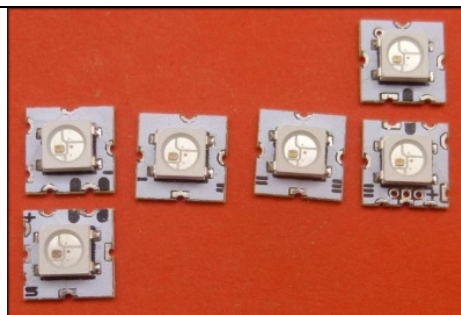
// do not use Arduino delay() except if redefined to our equivalent function:

```
#define delay DelMs
```

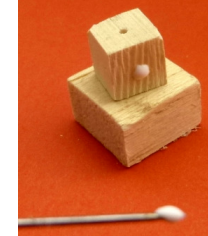
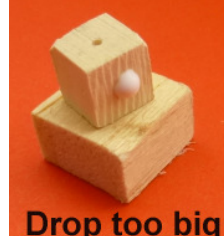
Soldering the kit

When familiar with the soft, break down the PCB. Notice the alignment marks.

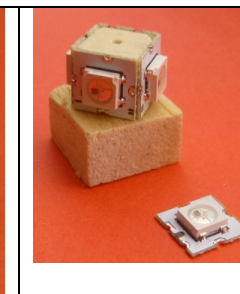
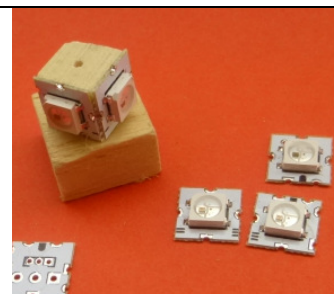
You may sand lightly the faces.



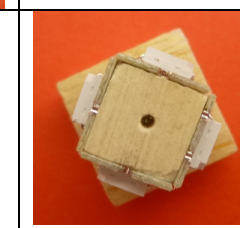
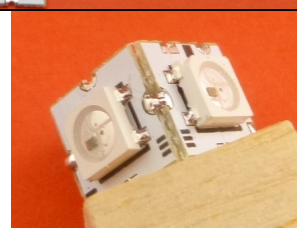
The first step is to glue the 4 sides on the jig.
Use a standard white glue, rather thick, that dry in one minute or so. Put a small drop of glue in the center of a jig face. Use a for better control.



Position the small boards in their order. When you depress slowly, the drop must not reach the sides. Remove glue if necessary. Check the marks.



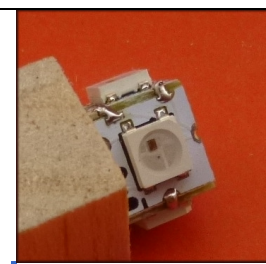
Look from top and side, align and center at best.
Double check for corner marks and faces centering.
Wait enough time until dry.



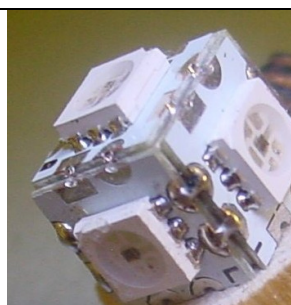
Now you just have to put a drop of solder on contact points. Check with a magnifying glass and light with a torch to improve the vision.



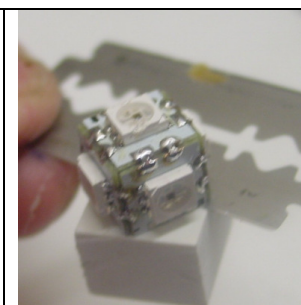
10mm of 0.35mm solder will fill the gap. No need to put more solder



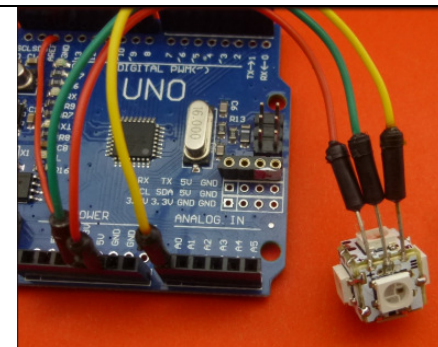
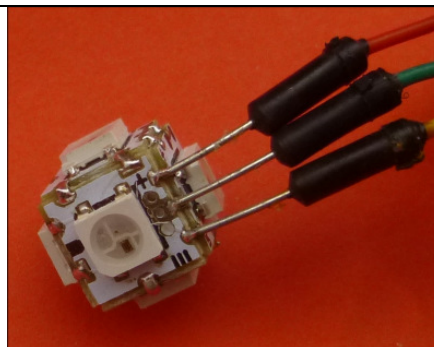
Glue and solder the top. For positioning, check the thick mark.



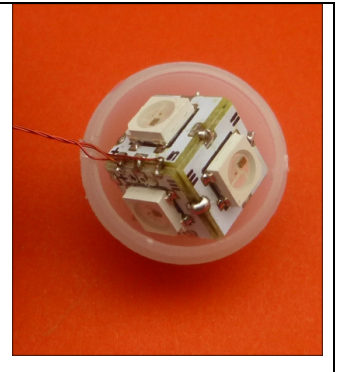
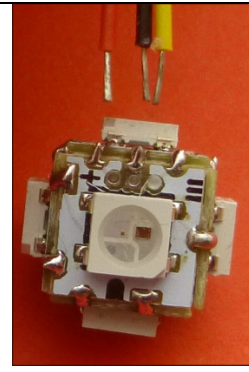
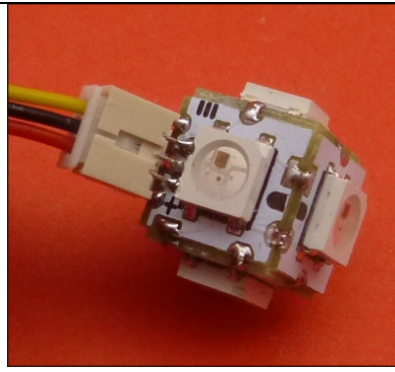
Unscrew the cube from the base. If no screw, use a razor blade.



Glue and solder the bottom. You may not need to glue if you do a first solder and keep the solder drop hot while centering. Solder temporarily 3 jumper wires and test.



Decide how to cable the cube. You have basically 3 options. Molex cable has red on the side, and we put the + on the side also in this case. All other Didel products have pin1 on Gnd.



Software

The documentation is on www.didel.com/Cube6Soft.pdf . Three simple programs using the WS28 led are under www.didel.com/Cube6.zip . See <https://github.com/nicoud/RGBstrips> for the WS28.h compact lib.

There may be a problem with Hue function due to the change of reset specification of the WS2812B, mid 2016. Ask for our DelayTest.ino program to check you have the new WS2812B

jdn 170629/170902