Noodlefighter

Noodlefighter Osu Keyboard v2.1 eng

(Translated by JB KING)

Introduction

Cost About 45 CNY

CHERRY MX Series Key Switch

refresh rate: 1000HZ(1ms)

Latency: 6-10ms

The three keys can all be set to Prefabricated

keys(ESC/F1/F2/F8/F12/Space/Enter, ZX, ZC, AS, AD, PGUP/DN, ↑ ↓, ←→)

The breath light(background light)can also show BPM when you are playing

BPM (Upper limit) :

20 Light blue

60 Brilliant blue

110 Light green

140 Cream-colored

170 Brilliant orange

190 Warm red

205 Red

225 Purple

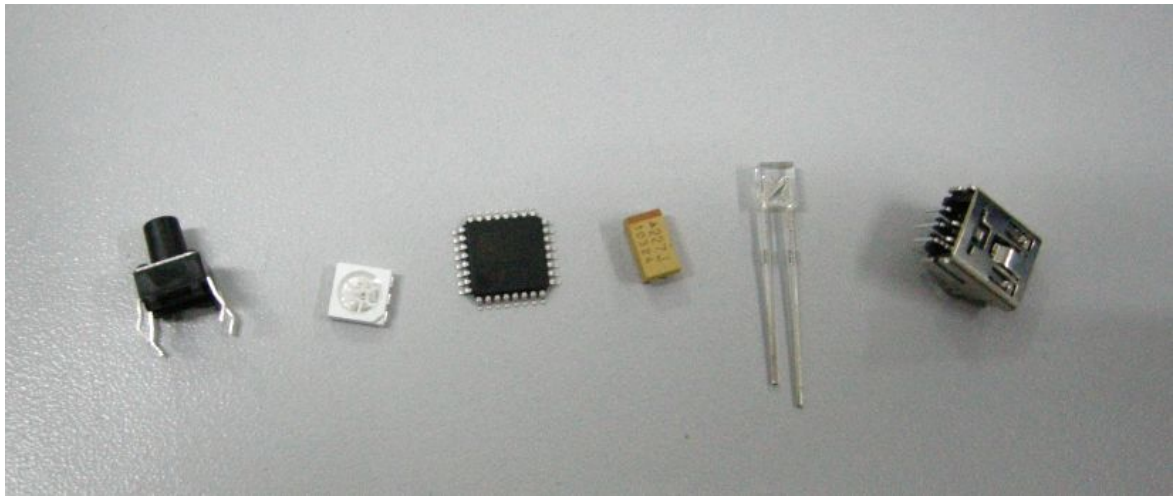
245 Deep purple

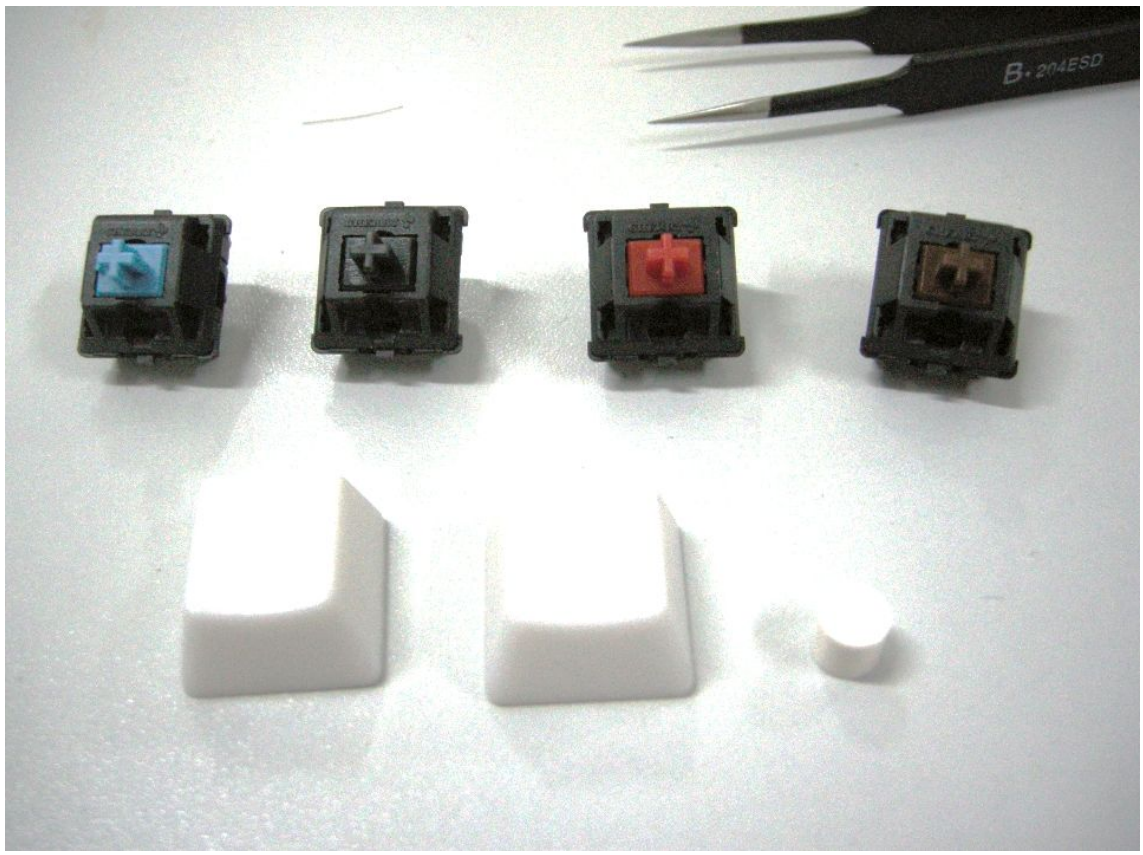
260 White with little purple

over 260 gold

If u didn’t use it over 15s the breath light’s colour will change to idle colour(the colour can be customized)

The key light can be set with 4modes(always on/always off/on when press/off when press)





List of material and tools

Electronic Components

Name	packaging	Label	Count	Describe
PCB	5*5cm	/	1	At "About PCB"
Atmega48PA	32PIN TQFP	U1	1	The main control chip
MINI USB Female	B-TYPE 5P 90degree	USB	1	
zener diode 3.6v	1206	D1 D2	2	
Resistor271 (270Ω)	0805	R7 R8 R9	3	
Resistor102 (1000Ω)	0805	R5	1	

Resistor680（68Ω）	0805	R3 R4	2	
Resistor471（470Ω）	0805	R1 R2	2	
Capacitor220 （22pf）	0805	C1 C2	2	
Capacitor104 （0.1uf）	0805	C4	1	
Capacitor227 (220uf)	6032	C3	1	Tantalum capacitor
RGBLED	5050	RGBLED	1	RGB LED
Microswitch	6*6*8MM	BT3	1	
CHERRY MX Switch	/	BT1 BT2	2	
3mm LED	3mm		2	
crystal oscillator	20Mhz	Y1	1	

Shell

	Name	count	describe
	screw M3*12mm	4	fix the shell
	nut M3	4	common nut,fix the shell
	screw M3*10mm	4	fix the PCB
	Non-slip nuts M3	4	fix the PCB

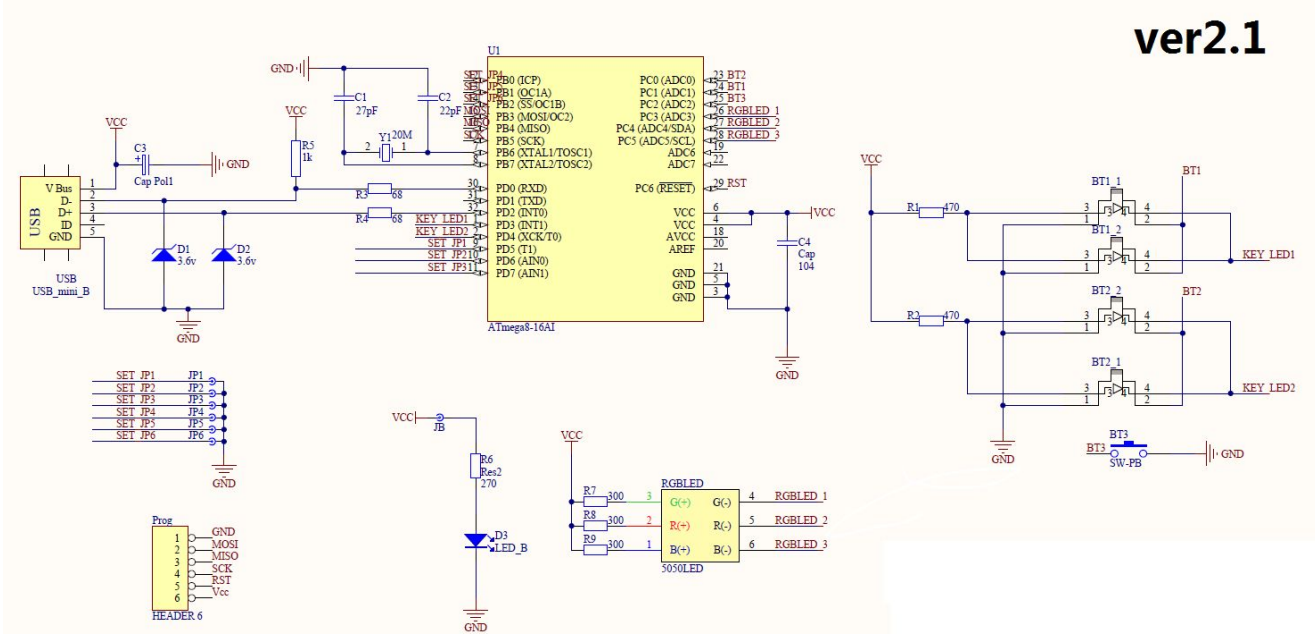
Other

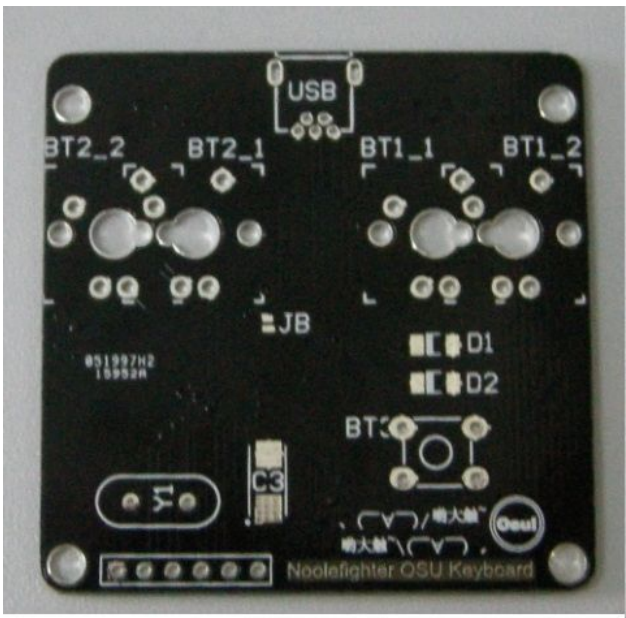
Name	count	describe
cherry mx switch keycap R3	2	
microswitch keycap	1	
silicone gasket 2mm	1	

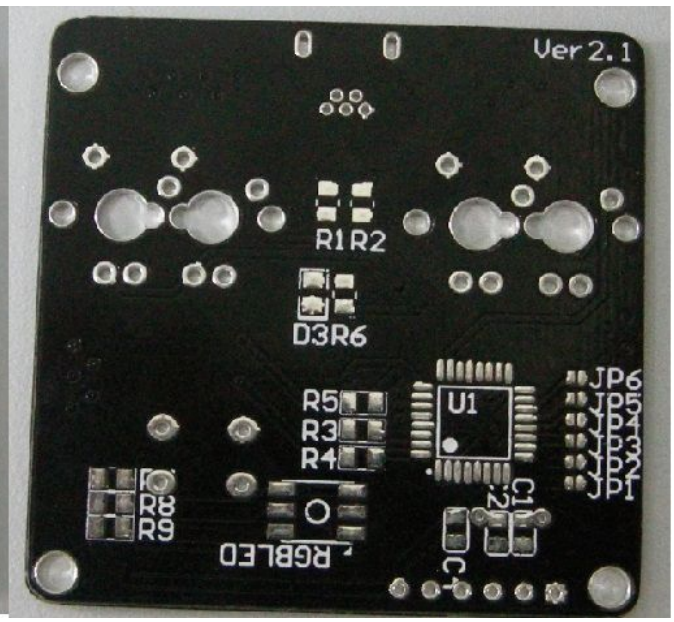
Tools

Name	count	describe
AtmelISP	1	program
screwdriver	1	
plier	1	You will need it when assemble the Non-slip

nuts







About PCB

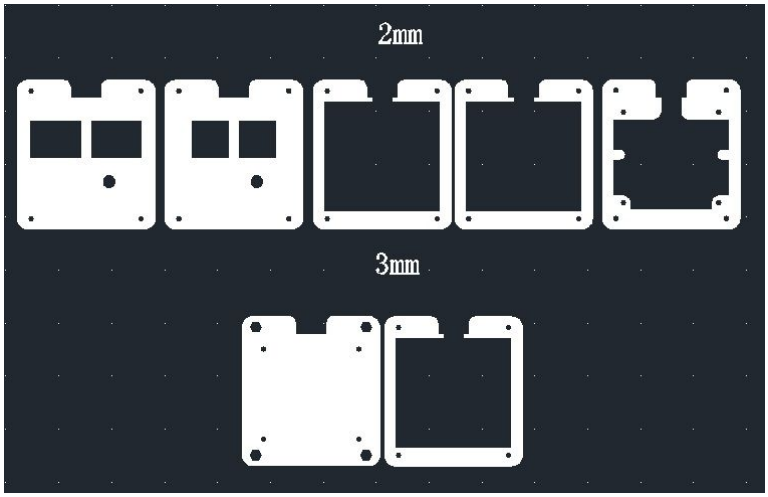
The method of Keyboard connection is to use the V-USB Open source library(http://www.obdev.at/products/vusb/)

Here is the PCB file of Altium Designer 10("PCB\OSUpcb.PcbDoc") and already generated GERBER files("PCB\GERBER")

You need to contact a PCB producer to produce the PCB

Element list can be found at:" List of material and tools"

About shell



About shell

The shell(Acrylic plate) is cutted by laser,please give the file:("Shell\standard.dwg",created by AutoCAD2000, measurement in the file is mm) to suitable producer.

Caution:

1.The drawing need to use 3mm/2mm thick acrylic plate,please pay attation to the notes

2.About"Mini" shell("Shell\mini.dwg"):This kind of shell is not very strong,please avoid outside shaking

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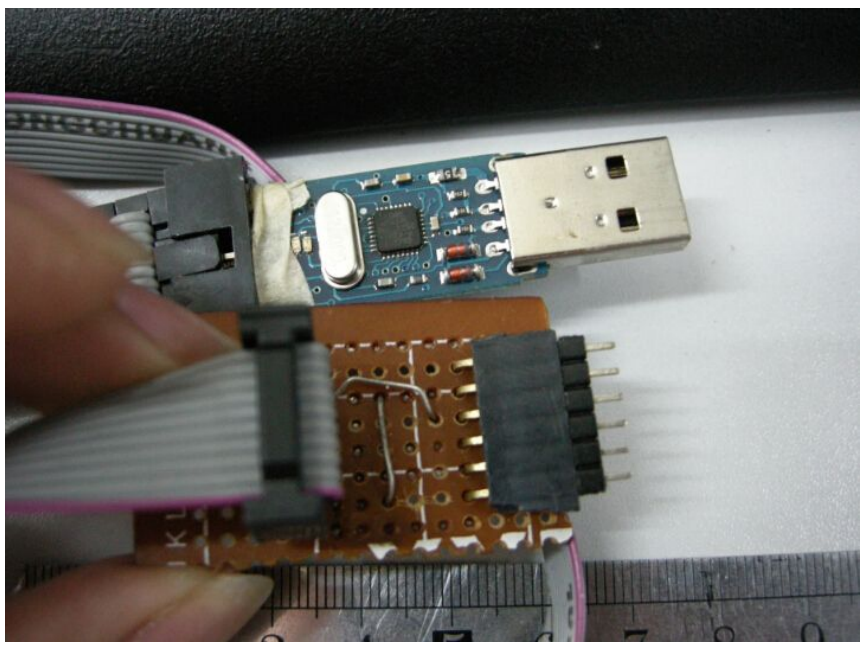
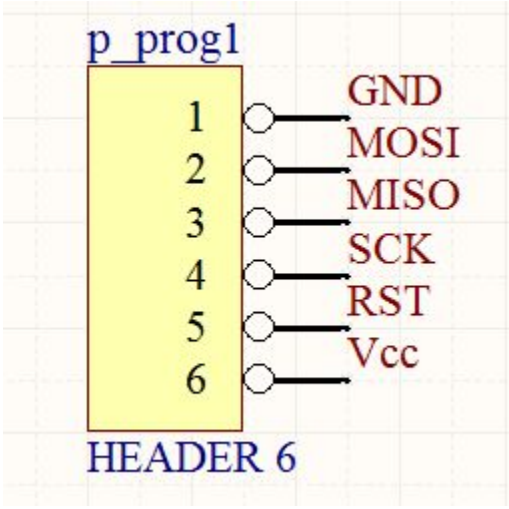

(atmelISP)

（Fuse）



（ISP Define）

About the program on AVR chip

About the program on AVR chip

The compiled HEX file:"Prog\m48key.hex"

ISP Port is the streamlined 6PIN ISP,please reference the picture"ISP Define"

Setting of Fuse:

CKDIV8=0

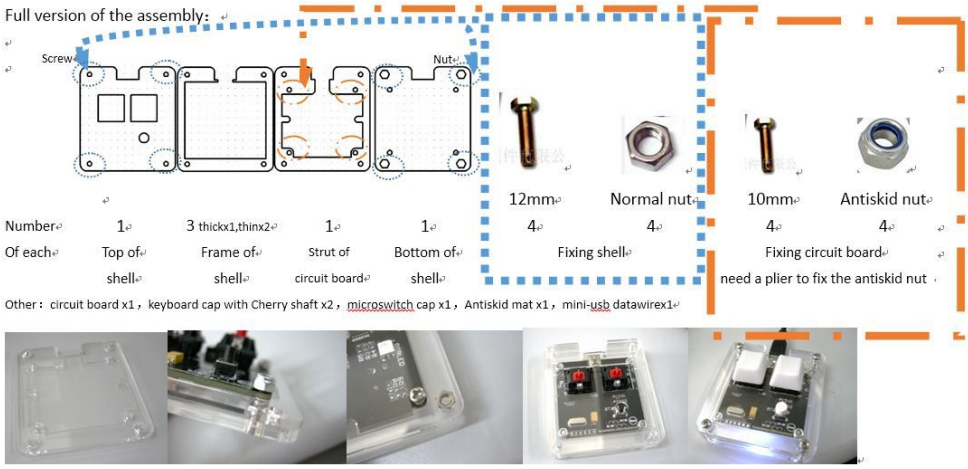
CKSEL=1110

SUT=10

Note:

This program referenced a open sourse keyboard project called C64 Keyboard,thanks for the original author!

How to assemble:



Steps:

1. Wash your hand（Acrylic met with greasy hands may cause some 'ops'）, and tear off the protective film on the Acrylic shell.
2. Stack up the **bottom of shell**, the **strut of circuit board** and the **circuit board** in proper order, and use **10mm screw** and **antiskid nut** to fix them（nut above screw, please use plier to fix them）.
3. Load the **normal screw** into bottom shell, then stack up the **top of shell** and the **frame of shell** in proper order, which should be placed above the **struct of circuit borad**, finally use **12mm screw** to fix them.
4. Mount the caps, and paste the antiskid mat（Please clip it yourself. For stabilization, try to paste it on the margin; For anti-skidding, you can enlarge the area of use properly）.

Or you can reference the file:" assemble_chs_eng.doc"

Or watch this Video(Chinese Sub):

http://www.tudou.com/programs/view/sbXESmsUZPg

Method of setup

1.On the pad

The setting save at its chips(will not lose when change PC or cutting of energy)

To check the setting,you need to use this free tool: Keyboard Test Utility

Two keys on the top are BT1 and BT2,the last one is BT3

"Long press" means:hold pressing over 0.5s

How to setup BT3:Press BT1 and BT2 in the same time,and then long press BT3

How to setup BT1/2:Press BT2 and BT3,and then long press BT1

How to custom the breath light:Press BT1 and BT3,and then long press BT2

Reference Video:

http://www.tudou.com/programs/view/mSUck6N8cYk

2.On the PCB

The both ends of JP(PCB Jumper):connected is 1,break off is 0

JP2	JP1	Buttom Light
0	0	Light when press
0	1	Always on
1	0	Off when press
1	1	Always off

Tips

If you want to add buttom light by yourself,please be careful about the positive and negative pole of the LED,and flashing program before you weld so that you can check you didn’t anti loaded.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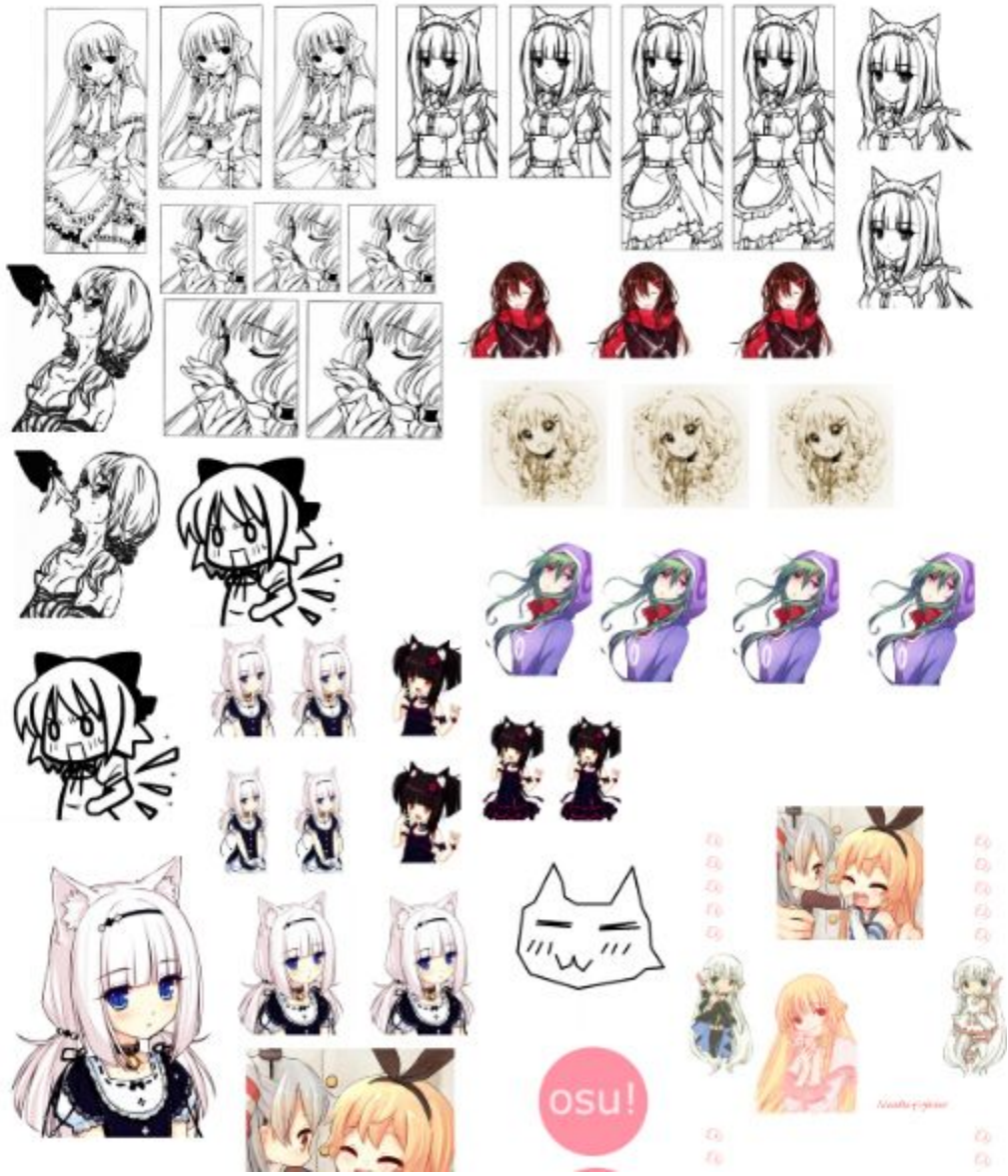

How can I make it look better?

Here are two tips for you:

1. Use acrylic plate with different colour

2. Use Hydrographics(Wiki) and then spray some paint to hold it