

DIY (Do It Yourself)

Build your own 4-way footswitch for the app “JamUp Pro” from Positive Grid (for iPhone & iPad).



I was missing a footswitch to change presets in JamUp Pro for iPhone & iPad, so I got an crazy idea, and ripped apart a bluetooth keyboard and took the bluetooth module inclusive the battery with usb-recharge, and I started to build an pedalboard with four footswitches, so I could flip through different presets, and jump through the pages of presets. The result ended up very well!



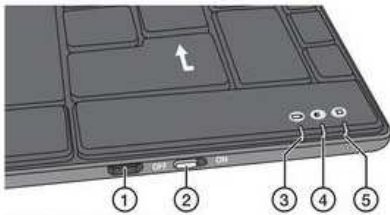
To make this 4-way footswitch I used this one Bluetooth V3.0 Keyboard, model SK-038BT, art-nr 38-6372(swedish) and 18-8401(is the international?).

<http://www.clasohlson.com/se/Bluetooth-minitangentbord/38-6372>



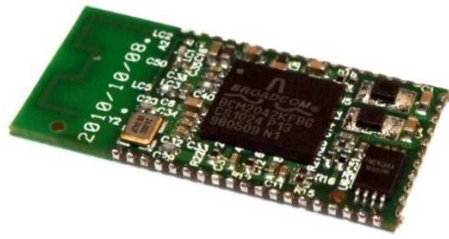
Bluetooth V3.0 Keyboard - mod: SK-038BT.

1. It contains a PCB and the bluetooth-module, powerswitch and a Micro-USB charger port connection for the rechargeable battery.
2. It contains the battery.



1. Micro-USB charger port connection
2. [OFF/ON] Power switch
3. LED indicator. Shines red while the battery is charging and goes out when the battery is fully charged.
4. LED indicator. Flashes blue when the keyboard is detectable for other Bluetooth devices.
5. LED indicator. Shines blue when the [Caps Lock] button is pressed.

A very useful tip! – *"Before start building your footswitch: "PAIR" the bluetooth keyboard with the units(iPhone or iPad), that you have installed the app JamUp Pro. It's the easiest way because the unit/units will ask you for a random numbercode(4 numbers) and to confirm with "ENTER". (But I have figured out what pins on the bluetooth module that handles the nr. 0-9, "PAIR" and "ENTER", so you can build a tiny number-keyboard with "PAIR" and "ENTER, to place this inside the footswitch, whenever you need to "PAIR" your footswitch to a new unit).*



Bluetooth module 48-pin - BCM2042KFBG

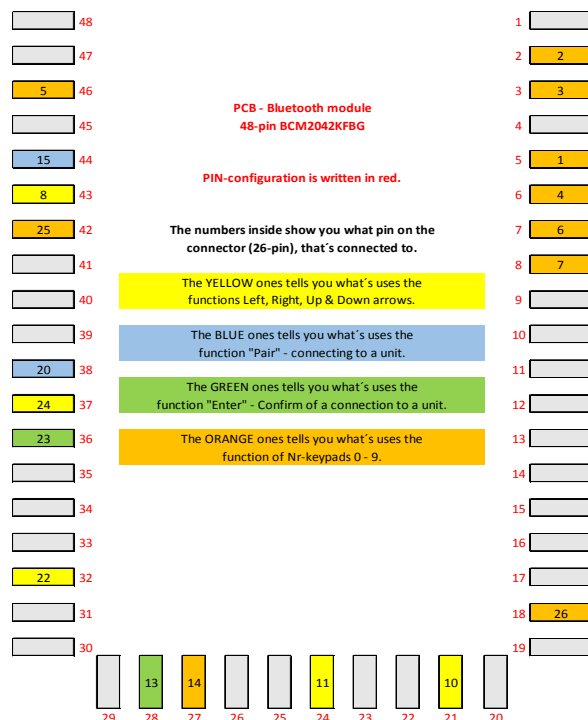
When it came to figure out what pin on the bluetooth module, that handle each function, I tried to find information on the internet such as schematics, circuit diagram, documents etc. but I ended up with nothing that would help me out...

So I had to experiment with the whole keyboard to find it out myself. The functions for my 4-way footswitch, that I wanted to get my hands on:

- Left arrow
- Right arrow
- Up arrow
- Down arrow

And for the functions to use in the future, to “PAIR” your footswitch with a new unit like iphone or iPad, I had to get my hands on these functions for my mini nr-keyboard(it uses random password):

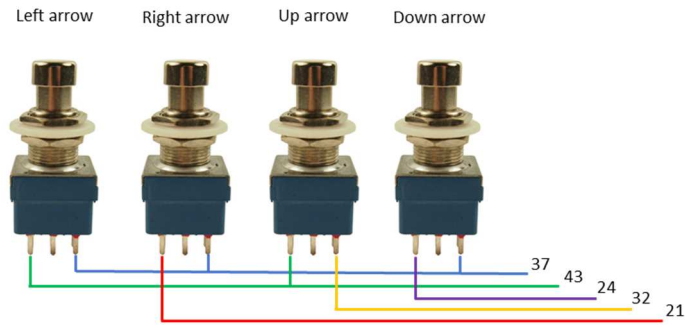
- “PAIR”
- Nr. 0 – 9
- “ENTER”



Pin + Pin		Keypad
27	18	Nr 0
5	18	Nr 1
2	18	Nr 2
3	18	Nr 3
6	18	Nr 4
6	42	Nr 5
46	42	Nr 6
46	18	Nr 7
7	18	Nr 8
8	18	Nr 9
43	37	Left arrow
43	32	Up arrow
21	37	Right arrow
24	37	Down arrow
28	36	Enter
38	44	Pair

“Pin + Pin” means that you, put these together to get each function (example: To activate the function “Left arrow”, you connect pin 43 and 37 together).

The configuration of a 4-way footswitch looks like that one in the picture below. The numbers tells you what pin on the bluetooth module they are connected to.



An external powerswitch can be mounted on the plus (+) cable of the battery, leave the minus (-) cable on the battery intact if possible. If you decide to use this, you can put the PCB-mounted powerswitch in position ON before you put the PCB-board with the integrated PCB-Bluetooth and battery inside your footswitch-chassie.



When it comes to recharging the battery, you can mount a USB-outlet on your footswitch chassie. I took a short cable with Micro-USB to standard B type USB and connect the Micro-USB to the PCB-outlet, and to the USB chassie mount adapter inside your footswitch. Now you will be able to charge as long as your external powerswitch is set to ON, the battery trough the standard USB-outlet with a simple USB-cable.

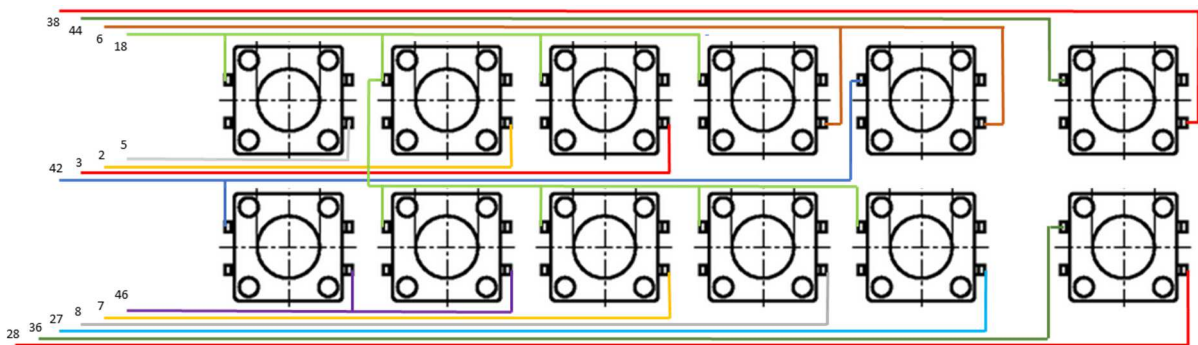
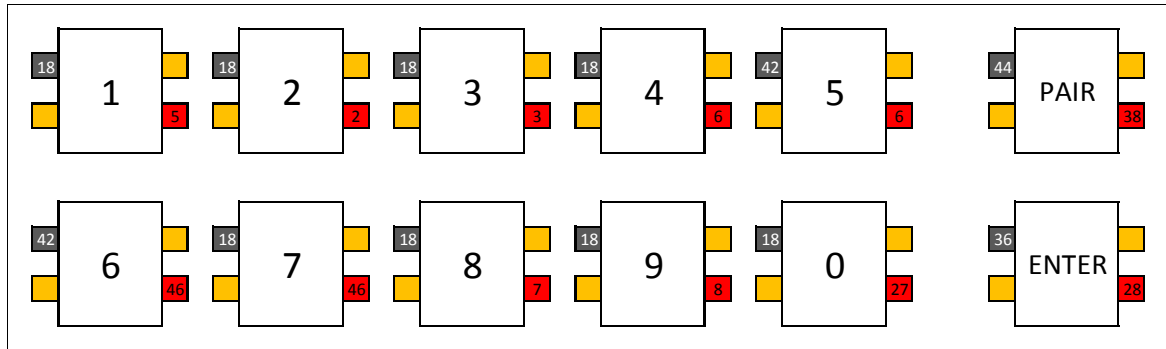


Examples of usb chassis mount and a Micro-USB to Standard B type USB cable.

Cable		Device	
	USB A		
	USB B		
	USB mini		

Pin	Signal	Color	Description
1	VCC	Red	+5V
2	D-	White	Data -
3	D+	Green	Data +
4	GND	Black	Ground

Simple Number-keyboard switches, for “PAIR” to new units. The pin-numbers shows you how to connect it to the right pin on the bluetooth-module. You can use an standard experiment PCB.



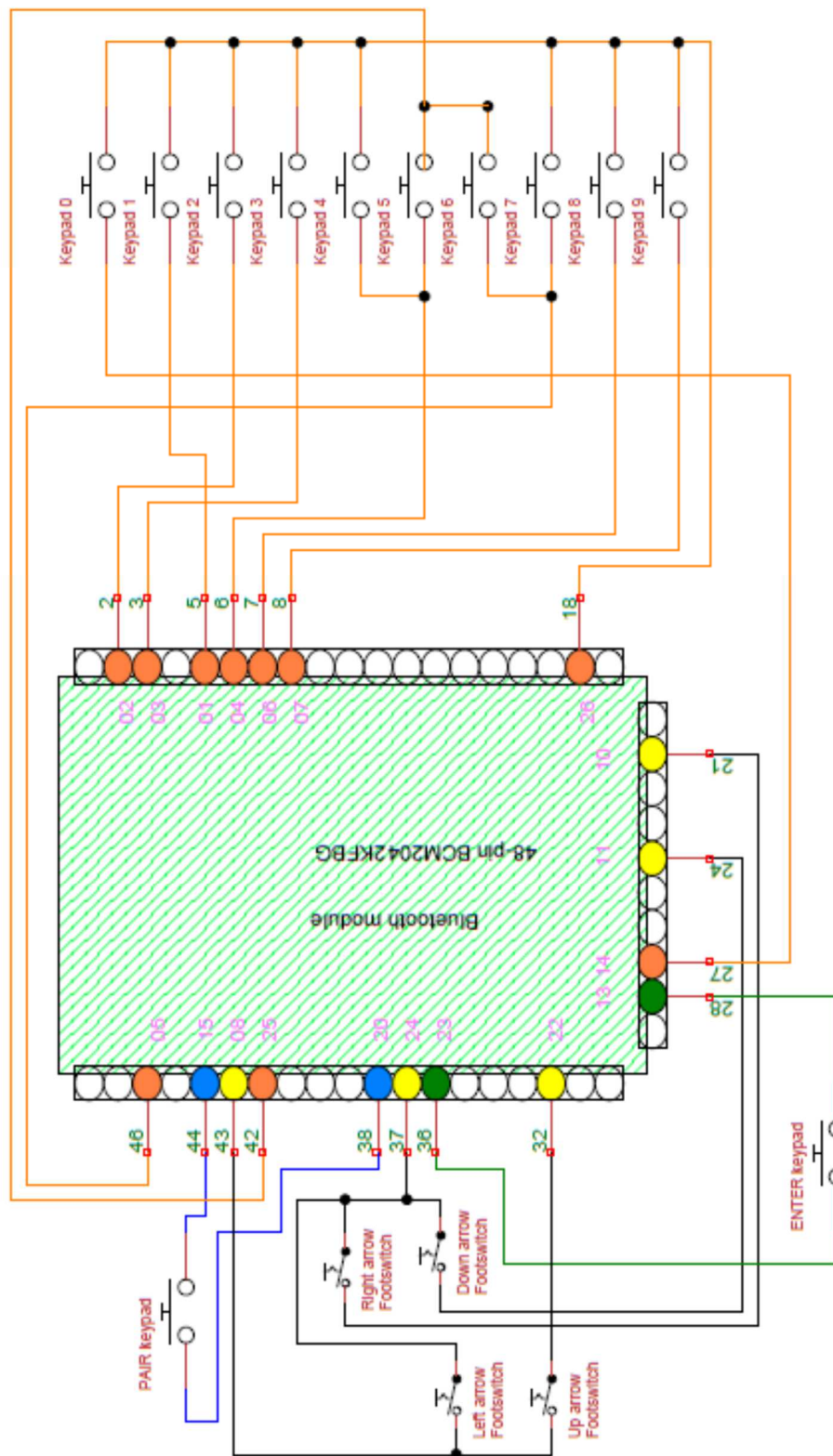
Example of switch for PCB-mounting.

The connection between the keyboard keypads and the PCB containing the bluetooth modul, powerswitch and USB-port etc. there is a PCB-mounted 26-pin Connector:

Flexible PCB-film to keypads.		PCB - mounted 26-pin Connector.	Connection to the Bluetooth module.	
Nr1	1	O	pin 5	
Nr2	2		pin 2	
Nr3	3		pin 3	
Nr4, Nr5	4		pin 6	
Nr6, Nr7	5		pin 46	
Nr8	6		pin 7	
Nr9	7		pin 8	
Left & Up arrows	8		pin 43	
	9			
Right arrow	10		pin 21	
Down arrow	11		pin 24	
	12			
Enter	13		pin 28	
Nr0	14		pin 27	
Pair	15		pin 44	
	16			
	17			
	18			
	19			
Pair	20		pin 38	
	21			
Up arrow	22		pin 32	
Enter	23		pin 36	
Left, Right & Down arrows	24		pin 37	
Nr5, Nr6	25		pin 42	
Nr0, Nr1, Nr2, Nr3, Nr4, Nr7, Nr8, Nr9	26		pin 18	
		O		

26-pin Connector to PCB		
	+	-
Left arrow	8	24
Right arrow	10	24
Up arrow	8	22
Down arrow	11	24
Pair	20	15
Enter	13	23
Nr 0	14	26
Nr 1	1	26
Nr 2	2	26
Nr 3	3	26
Nr 4	4	26
Nr 5	4	25
Nr 6	5	25
Nr 7	5	26
Nr 8	6	26
Nr 9	7	26

“+ and - ” means that you, put these together to get each function (example: To activate the function “Left arrow”, you connect 8 and 24 together).



* The numbers in this colour show the pins on the 26-pin Connector to the keypads.

* The numbers in this colour show the pins on the 48-pin bluetooth module.