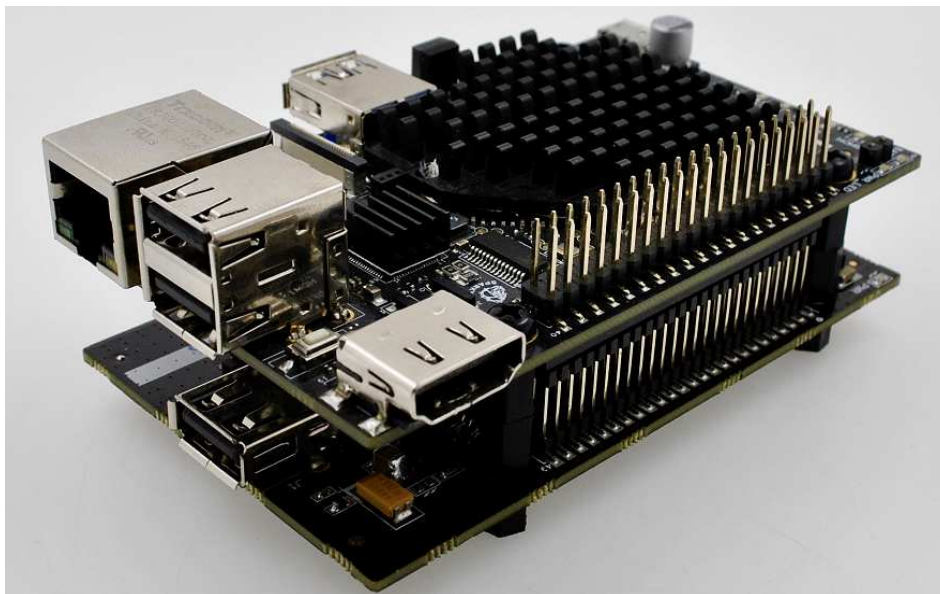# USBridge

USBridge is an add-on board for Sparky and connected to the bottom of Sparky. Sparky has two independent USB ports (2 built-in ports), and USBridge connected to the port-1. USBridge's USB2412 hub IC reclocks the stream using hi quality NDK Oscillators, and everything is powered by independent LDOs and hi frequency filters. The final noise of the USBridge is lower than the noise of a battery.

The SMSC USB2412 hub is a low-power, single transaction translator (STT) hub controller IC with one downstream ports for embedded USB applications. The SMSC hub controller supports low-speed, full-speed, and hi-speed (if operating as a hi-speed hub) downstream devices on all of the enabled downstream Ports.

Input power feed Methods:

1. 5V 3A through 2.5mm DC Jack J26   – J28 open or Short
    a) J28 –open case sparky will source power from USBridge through series diode D23 , J28-short will bypass the diode from path.
2. Source the power from Sparky - J28 should be shorted with U link.
3. Connect Independent power sources to Sparky and USBridge
   J28 –open , D23 – Do Not Populate , Connect 5V/1A   through 2.5mm DC Jack J26.
   5V/3A connect to Sparky micro-usb connector.

   ** *Input voltage range 4.8V to 5.5V max.*
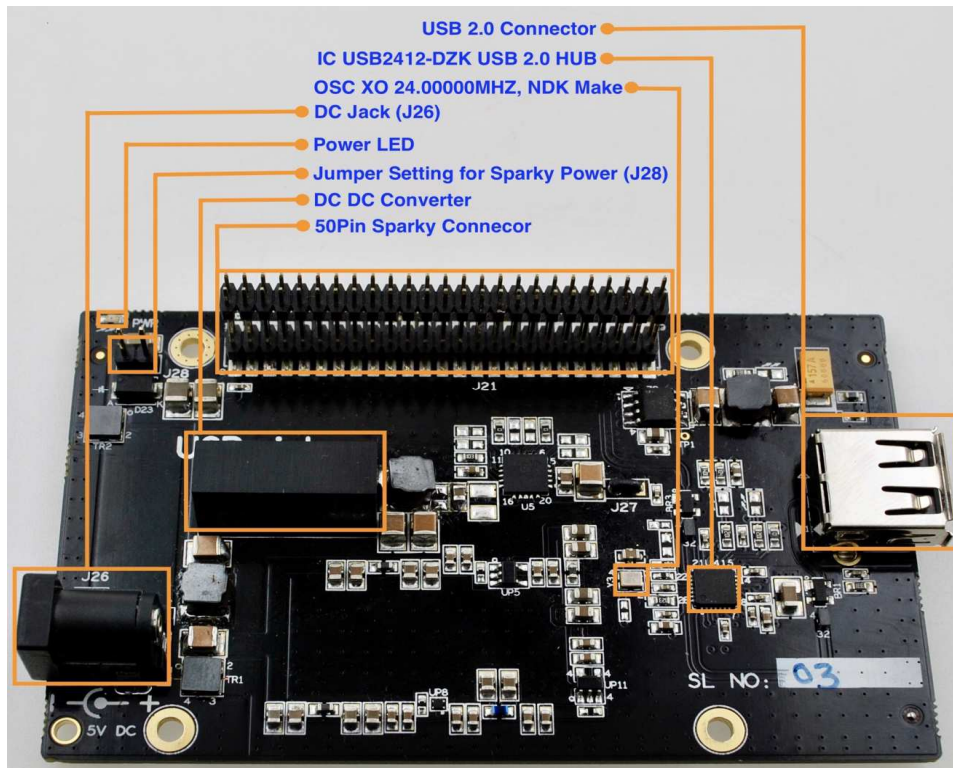
USBridge TOP VIEW

J21 50 PIN CONNECOTOR :

GND	Pins 6,21,27,28,33,34,39,49,50
DC5V	Pins 1,2,3,4
USB DP	Pin(30)
USB DM	Pin(32)
HUB reset (optional)	Pin(35)

Specifications :

Diamensions: 100 x 58 x 17.6 mm (L x W x H)

USB 2.0 Power: 900mA max

Operating Temparature : 0-70°C

Software :

Note : /boot/kernel.dtb has to be updated for enabling USB port-1

- Old version images sparky usb port-1 tied with wlan_8723bu.ko driver. On inserting this module will enable this port. add wlan_8723bu on /etc/modules to insert it on every reboot
- OR   download latest kernel.dtb from sparky github link and copy to /boot/
  https://raw.githubusercontent.com/sparky-sbc/sparky-test/master/usb-port1-enable/kernel.dtb

For more info refer notes on   https://github.com/sparkysbc/sparky_linux_images