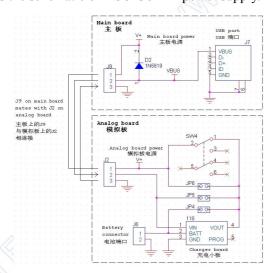
DSO138mini Power Supply Options

Applicable analog board versions: 109-13801-00H and 109-13801-00J

DSO138mini has the following power supply options:

- 1) USB
- 2) 3.7V Li-ion battery
- 3) Any DC power supply with voltage 3.5V 6V

The figure below shows the schematic of DSO138mini power supply.



It can be seen that there are two power input ports for DSO138mini. One is USB (J7 on the main board). The other is J6 on the analog board (for battery). The box 118 is battery charger board. SW4 is power switch.

When USB power is applied it powers the main board via diode D2. It also powers the analog board through J9 (on main board) pin1 to J2 (on analog board) pin1 if analog board and main board are connected. The same USB power will also charge battery through the path J9 pin2 – J2 pin2 – 118 board. The power switch SW4 does not function in this case.

When USB power is not used but battery is connected battery will power the main board and analog board through 118 and SW4. SW4 can be used to cut off power in this case.

The table below summarized the configurations for various power supply options.

Power Supply	Input Connector	Need Battery Charger?	Charger Board 118	JP4	Remarks
USB	USB □	No	Not install	open	
	(J7 on Main board)	Yes	Install	open	
3.7V Li-ion Battery	J6 on analog board	No	Not install	closed	Do not apply USB power simultaneously
		Yes	Install	open	J. (A)
3.5V – 6V DC	J6 on analog board	No	Not install	closed	Do not apply USB power simultaneously

In general

- If you want to use USB only just connect power supply through J7 on the main board. Keep JP4 open no matter battery charger board 118 is installed or not.
- 2) **If you want to use 3.7V Li-ion battery only** and don't need the charger, connect battery through J6 on the analog board and keep JP4 closed. *Do not apply USB power in this case.*
- If you want to use USB or Li-ion battery and want battery be charged by USB, make sure charger board 118 is installed. Keep JP4 open.
- 4) **If you want to use a different power supply (voltage between 3.5V 6V)** connect the power source to J6 on the analog board. Do not install charger board 118 and keep JP4 closed. <u>Make sure USB power is not applied.</u>

About JP5

JP5 is for compatibility to earlier H version main board. When the analog board is to use with H version main board JP5 should be closed. Otherwise, keep it open.

About JP6

JP6 is a bypass of power switch SW4. Keep this JP6 closed if SW4 is not used.

About power switch SW4

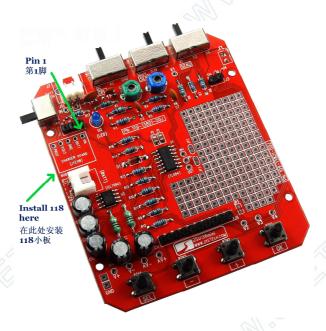
SW4 is for disconnecting power when battery is used. It won't disconnect USB power because diode D2 on the main board. If you want SW4 to disconnect USB power you can remove D2. Please note that after D2 is removed the main board won't get power without analog board connected even USB power has been applied.

LCD can't be turned off at charging?

The LCD will stay ON at battery charging for the same reason stated above. If you want LCD be turned off when battery is being charged you can remove the diode D2 on the main board. Then you will be able turn of LCD by SW4.

Installation of battery charger board 118

The following picture shows the position and orientation for installation of battery charger board 118.



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