

**LSK106, Li & NiMH Battery 6 Channel (6 Slots)**  
**Priority Charge Control with LCD Indication IC**  
**Brief Specification**

A.) Input Power: Type-C, 5V/3A

B.) Battery type ( total 6 Slots for 6 independent control channel ), which

- a.) Li Battery (18650): 2 Slots
- b.) NiMH Battery (AA, or AAA): 4 Slots

C.) Charge control flow:

- 1.) Priority Option: by using Largest current of total power to charge 1<sup>st</sup> priority Slot, after charge full, then charge 2<sup>nd</sup> priority Slot. And so on to charge all Slots.

-Priority Selection : Base on customer's different models ( or directly select by end user ), can be set Li Battery or NiMH battery as 1<sup>st</sup> priority.  
The default is Li battery.

-Priority Largest Charge Current will be base on Battery type:

- Li Battery (18650, 2500mAh): 2500mA, around 1.2 hr to charge full.
- NiMH Battery (AA, 2800mAh): 2500mA, around 1.4 hr to charge full.
- NiMH Battery (AAA, 1000mAh): 1000mA, around 1.2 hr to charge full.

-Example of Priority : Slot # 1, Slot # 2 are Li Battery,

Slot # 3, Slot # 4, Slot # 5, Slot # 6 are NiMH Battery.

- a.) If Priority is Li Battery: The charge sequence is following:

- Slot # 1 charge full, then charge Slot # 2.
- Slot # 2 charge full, then charge Slot # 3.
- Slot # 3 charge full, then charge Slot # 4.
- Slot # 4 charge full, then charge Slot # 5.
- Slot # 5 charge full, then charge Slot # 6.

- b.) If Priority is NiMH Battery: The charge sequence is following:

- Slot # 3 charge full, then charge Slot # 4.
- Slot # 4 charge full, then charge Slot # 5.
- Slot # 5 charge full, then charge Slot # 6.
- Slot # 6 charge full, then charge Slot # 1.
- Slot # 1 charge full, then charge Slot # 2.

- 2.) Constant Current Charge Control Method:

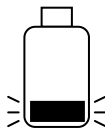
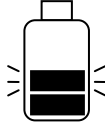
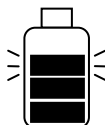
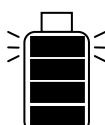



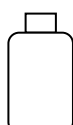
- a.) Li Battery:

- Constant Voltage: 4.20V ( $\pm 30\text{mV}$ ) / Cell.
- The Value of Charge current when charge full: 0.15C.
- Battery Voltage Over charge Protection: 4.30V ( $\pm 30\text{mV}$ ) / Cell
- Over Temperature of Battery (by detecting NTC at battery negative port):
  - i.) 58°C ( $\pm 3.5^\circ\text{C}$ )
  - ii.) when Over Temperature, suspending the charge flow 10 min.  
then re-act charge flow..  
Suspending time won't be count into the total Charge Time.  
Suspending period, will charge next Priority Slot.
- Charge Time Protection: 2.0hr ( $\pm 10\%$ )

b.) NiMH Battery:

- Charge Full Detection by:  $-\Delta V$  &  $0 \Delta V$ .
- Over Battery Voltage Protection : 3.20V ( $\pm 30mV$ ) / 2Cells.
- Full detection by Temperature (by detecting NTC at battery negative port) :  $58^{\circ}C$  ( $\pm 3.5^{\circ}C$ ).
- Charge Time Protection: 2.0hr ( $\pm 10\%$ )

D.) Charge Status (LCD Display) summary:

Slot Status	Display Icon	Li battery Or NiMH battery
During Charge	Capacity<25%	 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b>
	25%<Capacity<50%	 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b>
	50%<Capacity<75%	 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b>
	75%<Capacity<99%	 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b>
Charge Full	Capacity= $\sim$ 100%	 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b>
Waiting for Charge		 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b>
Over Temperature (for Li Battery only)		 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b> (flashing) (- Capacity stop flash - ERROR Icon: flash (& Charge Suspending till Temperature cool down))
Over Voltage Defects		 <b>CHRG</b> <b>FULL</b> <b>WAIT</b> <b>ERROR</b> (flashing) (- ERROR Icon: On - Battery outer frame: On (& Stop Charge flow, till Unplug Battery))

E.) Pls., Contact Application Engineer for suggested application Circuit.

