LSK107, 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 1st priority Slot, after charge full, then charge 2nd 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 1st 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.

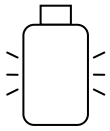
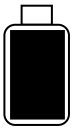
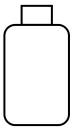
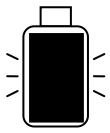
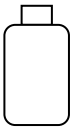
b.) If Priority is NiMH Battery: The charge sequence is following:
Slot # 3 charge full, then charge Slot # 4.
Slot # 4 charge full, then charge Slot # 5.
Slot # 5 charge full, then charge Slot # 6.
Slot # 6 charge full, then charge Slot # 1.
Slot # 1 charge full, then charge Slot # 2.

2.) Constant Current Charge Control Method:

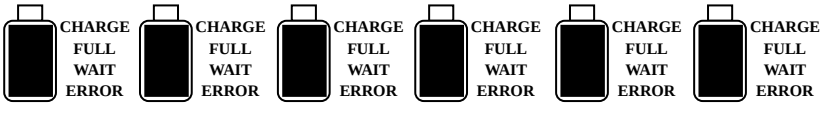
a.) Li Battery:
-Constant Voltage: 4.20V (±30mV) / Cell.
-The Value of Charge current when charge full: 0.15C.
- Battery Voltage Over charge Protection: 4.30V (±30mV) / Cell
-Over Temperature of Battery (by detecting NTC at battery negative port):
i.) 58℃ (±3.5℃)
ii.) when Over Temperature, suspending 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 (±10%)

b.) NiMH Battery:
-Charge Full Detection by: -deltaV & 0 deltaV.
-Over Battery Voltage Protection : 3.20V (±30mV) / 2Cells.
-Full detection by Temperature (by detecting NTC at battery negative port) : 58℃ (±3.5℃).
-Charge Time Protection: 2.0hr (±10%)

D.) Charge Status (LCD Display) summary:

Slot Status	Display Icon	Li battery Or NiMH battery
During Charge	88 %	 CHARGE FULL WAIT ERROR	- CHARGE icon: On - 7 segments: display relative percentage - Battery outer frame: flash
Charge Full	Capacity=~100%	 CHARGE FULL WAIT ERROR	- FULL icon: On - Battery inner/outer frame: On - 7 segments: display 100%, then display next Slot data.
All Slots Charge Full	FL %	 CHARGE FULL WAIT ERROR	- FULL icon: On - Battery inner/outer frame: On - 7 segments: display FL
Waiting for Charge		 CHARGE FULL WAIT ERROR	- WAIT icon: On - Battery outer frame: On
Over Temperature (for Li Battery only)		 CHARGE FULL WAIT ERROR	- ERROR Icon: flash - Battery inner/outer frame: flash (& Charge Suspending till Temperature cool down)
Over Voltage Defects		 CHARGE FULL WAIT ERROR	- ERROR Icon: flash - Battery outer frame: On (& Stop Charge flow, till Unplug Battery

E.) The Example of whole set of LCD Screen Icon:



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