Quick reference and setup guide for TP-1010C w/V2.3a software

Note: if you do not currently have V2.3a software installed in your Thunder Power 1010C charger, you can do so by downloading it from www.thunderpowerrc.com. You will also need to purchase a 1010C USB programming cable.

Specifications:

Capable of charging/discharging 1 to 10 Lithium Polymer cells at up to 10A.
Capable of charging/discharging 1 to 30 NiCd or NiMH cells at up to 10A.
Capable of charging/discharging 6V, 12V or 24V lead acid batteries at up to 10A.
Capable of charging/discharging 1 to 10 A123 cells at up to 10A.

Note: The TP1010C is capable of 220 watts output which limits the max current a pack can be charged at, e.g. a 5S Lipo pack could be charged at 10 amps whereas a 10S pack could only be charged at 5 amps.

The TP1010C is capable of dissipating up to 2 amps max current with a power limit of 22 watts, e.g. a 3S Lipo pack could be discharged at a maximum of 2 amps whereas a 5S pack could only be discharged at 1 amp.

Navigating the software:

There are two basic sets of information that will be displayed on the screen, operational screen data, e.g. data that pertains to charging/discharging and setup screen data for the various kinds of charging/discharging that can be done with the unit.

There are 4 buttons on the front panel of the TP1010C. The buttons can be used in two ways, short presses (less than 1 second) and long presses (greater than 2 seconds). Generally, long presses are used to enter/exit setup menus and to commence charge/discharge. Short presses are used to change menu selections within the setup menus, change cell counts and currents and also to stop charging/discharging on the operational screen.

When first powered on, the charger will immediately display its manufacturer (Thunder Power), model number (TP-1010C) and software revision. Following that it will display the operational screen it was last used for.

If you want to use the currently displayed battery type, all you need to do from this point is to select, using short presses, either charge or discharge using the “SEL/MOD” button, and then use the “CHARGE/ENT” button to select the cell count (displayed as “XsPACK”) or current (displayed as “C or D =X.XXA”. From here the “-/DEC” and “+/INC” buttons are used to alter the numerical value (the X’s) of these two parameters.

To enter the setup menus, long press the SEL/MOD button. The display will show “Battery type” and a chemistry, most likely “LiPo”. To change the type of battery, push either the “-/DEC” or “+/INC” buttons to scroll through the 5 available chemistries. Once the proper type has been chosen, short pressing the “SEL/MOD” button will take you through the various parameters that can be changed for that type of battery. The following tables show these parameters along with a description of each and a range of adjustment.

NiCd/NiMH

Function	Purpose	Adjustment range
Delta -V setting	Sets the -V trip point at which the charger stops charging	5-20mV (NiCd 2-10mV (NiMH)
Cooling fan mode	Lets you turn off the fan if not needed	Always on or auto
Key tone option	Lets you turn off the beeping when buttons are pressed	On/Off
Input PWR option LVC	Sets the threshold for minimum input voltage (Keeps you from having to ask your buddy for a jump start)	10-12V
System timeout max time	Sets the maximum time for a charge cycle	2 to 10 hours
Cycle data Cy#:1-9	Shows the charge and discharge capacities for up to 9 cycles.	Can view any of 9 previously run cycles

PB (lead acid)

Function	Purpose	Adjustment range
PB charge topoff	Adjusts the per cell final voltage at charge termination	2.2- 2.5V
Cooling fan mode	Lets you turn off the fan if not needed	Always on or auto
Key tone option	Lets you turn off the beeping when buttons are pressed	On/Off
Input PWR option	Sets the threshold for minimum input voltage (Keeps you from having to ask your buddy for a jump start)	10-12V
System timeout Max time	Sets the maximum time for a charge cycle	2 to 10 hours

A123

Function	Purpose	Adjustment range
A123 charge option	Allows adjustment of the amount of charge put into the battery	100% 95% 50% (storage) FAST charge (almost

		a 100% charge but not taking as long)
A123 Dchg option cut off	Sets the per cell cutoff voltage when discharging	2.5-3.6V/cell
Li/A1 InitCharge timeout	Sets the maximum time the charger will take to initialize a charge procedure	5 to 15 minutes
Cooling fan mode	Lets you turn off the fan if not needed	Always on or auto
Key tone option	Lets you turn off the beeping when buttons are pressed	On/Off
Input PWR option LVC	Sets the threshold for minimum input voltage (Keeps you from having to ask your buddy for a jump start)	10-12V
System timeout Max time	Sets the maximum time for a charge cycle	2 to 10 hours

LiPo

Function	**Purpose**	**Adjustment range**
LiPo CHG option	Allows adjustment of the amount of charge put into the battery	100% 95% 50% (storage) FAST charge (almost a 100% charge but not taking as long)
LiPo Dchg option cut off	Sets the per cell cutoff voltage when discharging	3 to 3.9V/cell
Li/A1 InitCharge timeout	Sets the maximum time the charger will take to initialize a charge procedure	5 to 15 minutes
Cooling fan mode	Lets you turn off the fan if not needed	Always on or auto
Key tone option	Lets you turn off the beeping when buttons are pressed	On/Off
Input PWR option LVC	Sets the threshold for minimum input voltage (Keeps you from having to ask your buddy for a jump start)	10-12V
System timeout Max time	Sets the maximum time for a charge cycle	2 to 10 hours

Once you have dialed in all the specifics for the battery you want to charge or discharge, long press the "SEL/MOD" button again and you will be taken back to the operational screen.

From the operational screen, to select charging, discharging or cycling, you short press the “SEL/MOD” button. To change the number of cells or charge/discharge current, you short press the “CHARGE/ENT” button which will initiate blinking of either the Pack size or charge/discharge current. From here you use the “-/DEC” or “+/INC” buttons to alter the numbers. Once the proper numbers have been set, long press the red “CHARGE/ENT” button to initiate charging, discharging or cycling. Note that short pressing the red “CHARGE/ENT” button also halts the current charging, discharging or cycling process.

As a battery charges or discharges, information is given on the main screen. In the upper left of the screen you will see two letters that change every two seconds, these are the battery type and function being performed. Just to the right of that you will see the current voltage across the pack. To the right of that you will see the charge current. Just to the right of that you will notice that there is another character that changes back and forth, this will show either A for amps, CC for constant current or CV for constant voltage depending on what kind of charging you are doing. The second row of the display shows the amount of charge placed back into the pack in mAhrs and overall charge time.

If using a balancer in closed loop mode, you can at any time during a charge or discharge cycle (LiPo and A123 only) check to see any of the individual cell voltages. Long press the “SEL/MOD” button until a screen with CH and CL are displayed on the far left end. From here you can use the “-/DEC” and +/INC” buttons to scroll through the cells, two per screen. To the far right of these screens you will also be shown the maximum deviation voltage between cells. Leaving the unit alone for about 6 seconds will return it to the charge screen.

Using memories:

From the main charging screen, the one that you initiate charging from, there are three parameters that you can alter, the cell count, charge/discharge current and memory position. At the far upper, right end of the display you see [M 1-10], this is the memory location. To access it short press the red “CHARGE/ENT” button quickly and the number in the brackets will begin to flash. You can use the “-/DEC” and “+/INC” buttons to change the location. Note that each location will keep the cell count and charge current stored. There are 10 memories per battery type for a total of 50 memories. Note that the memories cannot be named other than 1, 2, 3 etc. but you could number your packs accordingly, NiCd pack 1, Lipo pack 1 etc.