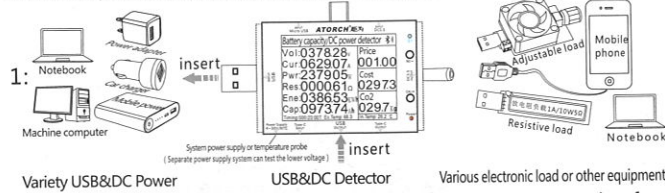## Products connecting applications:

WARNNING: This multi-port meter' DC5.5 voltage interworks with USB, so USB also outputs high voltage when DC5.5 does. DO NOT interchange DC and USB when use.

Variety USB&DC Power   USB&DC Detector   Various electronic load or other equipment

Introduction of switching function interface and setting data of measurement interface:

Connect the device as guide of above figure and display will light up, in the meanwhile long press M and OK buttons to cycling switch function display interface. Long press OK button to flip screen, and long press M button on the main interface to set the corresponding value to flash, and then press +/-to adjust the value. You can also long press M button to adjust the following numbers when flashing, and the settings will be automatically saved when flashing stops and display will pop up "OK" ;Ordinarily short press M and OK button to switch to pure digital measurement interface, and then long press OK button to flip interface chronologically or long press M button to flip anticlockwise.

Introduction of triggering fast charge and testing interface of fast charge:

Long press two buttons to trigger fast charge testing interface, and "High Voltage" will pop up(a reminder that there will be high voltage output, DO NOT connect low voltage devices to the output end in case of burning down). Long press OK button to trigger functioning of high voltage of fast charge. Short press two different buttons to output different voltage for using of fast charge protocol identification and aging, or output for supplying other equal pressured devises.

Introduction of background operation:

Press any button when device is power off and let go of the button after power on, and you will see background operation interface, then short press M button to circulate down and select need-to-be-set option, press OK button to change setting or enter flashing status of adjusting data. When it's flashing status, short press+/- buttons to adjust electric current data, long press OK button to switch to the other digit. Wait a few seconds after above adjustment, interface will pop up "OK" , which means settings are successfully saved. Please refer to relative setting introductions to do other settings.

Call of system factory value and calibration methods of background voltage and current:

This meter has been calibrated by standard device before factory delivery, you can also fine adjust its electric current and voltage by your own device as a reference. When output port is not connected to the load, short press M button to the column 04 and press OK to enter the interface of numerical adjustment flashing status, and short press +/- button to fine adjust voltage value as closest to the reference device as confirmed standard; You can also connect your own load device as standard to enter 05 column and fine adjust electric current value in the same way; And to fine adjust other temperatures degree can be done in the same way. If calibration is messy, the default value can be called by pressing the M button short to restore the factory value.

Setting skills of outage after full charge

Observe and record charging voltage value of your device when it's 100% fully charged, and plus 1~3W to the recorded value, which is the duration power value of your full power out setting less than how many watts. In this way when system detects your device's full outage power value and fake charging time that you set, system will display power off icon and disconnect power output to protect your device (the longer the duration, the longer the subsequent charge, to ensure that the device is fully charged)

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TIPS: When measured values comparatively reach settings of protection limits for over flow, over or low pressure, this meter will cut off output and display cutoff interface.

Methods and skills for testing capacity of mobile power supply:

Prepare a fully charged power bank and press any button of this meter, do not let go of the button until you insert the power bank and enter background operation to reset data, then press M button after data reset and exit background operation. Now you can plug in the discharge load or cellphone to discharge your power bank til it runs out of capacity, use this meter to electrify your power bank and the meter can read out its accumulative capacity and power value. This is estimated value of capacity and power of your power bank. This meter has internal power-off memory chip so discharge can be done for once or many times til your power bank runs out of capacity, you can re-electrify it to check the measured value.

TIPS: Current power banks in the market have nominal capacity value which is normally inside cells' value. When cells voltage boost from 3.7V to 5 V or 9 V, or its poor physical capacity and loss during voltage booster, will cause capacity value tested from above 5V much less than standard value. As per experience, for mobile power banks of current mainstream brands, loss of voltage booster board plus voltage boost difference will be total loss, that is, around 35%. So if we need to test power banks actual capacity value instead of nominal value, e.g. if boosting voltage to 5V, tested capacity should multiply about 1.35 so as to approximately equal to the nominal value of the power bank itself, which can only be used as a relative value rather than an absolute value. According to the law of conservation of energy, the higher the volume boosts the larger the ratio is.

Methods and quality of testing maximum output current of charger or DC power supply:

Connect as guide of Figure 1. Change load size to increase current so that voltage will drop to the charger's nominal voltage, at this instant the current value is the rated current value that the charger can output; Readjust the load into the charger nominal current and discharge aging for 2~6 hours. The current and voltage are stable during the aging process, and the

temperature of the charger is also less than 50 degrees. This indicates that the nominal current of the charger is in accordance with actual value, not virtual, and can meet the charging speed, on the contrary if the voltage drop low, current value is highly different or temperature is too high , or even this meter's alarm glitters or has no output, that means tested charger is nominal or bad quality. This method is also applicable for testing output current of all kinds of USB interface.

TIPS: Some users may have difficulty understanding that, current nominal value is the maximum output value at maximum load, not the current value when it charges cellphones. So different load has different current value, for actual use we should follow ohm's law to calculate the current value, and when charge devices such as mobile phones, we need to know that mobile phones are charged in different status and at different time so charging electric current curve has fluctuation change. U table only shows the actual flow of current value, so do not doubt accuracy of current measurement when some users see U table testing values are different from the nominal current value .

APP Connect the bluetooth

Search "E_test" in Apple APP or scan the bar code of Android to download and install, click the icon to open the APP, then click the Bluetooth icon in the upper left corner of the interface, and select UD24-BLE model to return to the main interface of APP automatically. At this time, the bluetooth icon of your phone will change from gray to blue, and that means communication is successfully connected.

Warning: If the BLUETOOTH model of UD24-BLE cannot be found in the electricity meter APP, please make sure to turn on storage permission and location information options of this APP in your phone Settings! Make sure All open!

Performance parameters:

Voltage measuring range: 5.00 V to 32.00 V Current measuring range: 0.0000 ~ 5.100 A
Power metering range: 000.00 ~ 163.00 W Cumulative capacity range: 0 ~ 99999 mah
Power cumulative range: 0 ~ 999.99 Wh   Temperature measurement range: 0 ~ 80 ℃