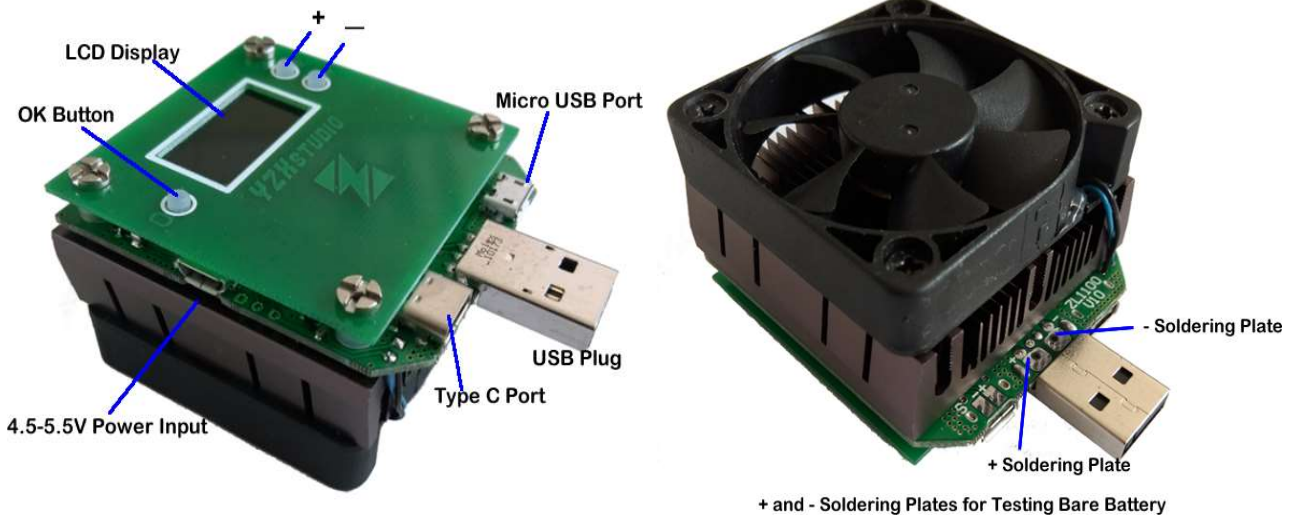


# YZXSTUDIO ZL1100 USB Load User Manual



Basic Operation	In the main menu, there are totally 8 options which can be selected by clicking the “+” or “-” buttons. To enter the target option, click the OK button. To exit the current option and back to main menu, Press and Hold the OK button.
Value Setting Method	To set the Cut Volt and Target Current, click the “+” or “-” buttons to add or deduct “1” of the selected digit that with a highlighted background. To adjust the selected digit place, Press and Hold the “+” or “-” buttons. To continuously adjust the target value, double click and hold the “+” or “-” buttons, and release at the value you need.

## Main Menu

ZL1100	YZXSTUDIO	25°C
ConstCur	Performs	
Battery	Resistan	
Protocol	All Data	
PcDetect	Settings	

**ConstCur:** Constant Current Load Function  
**Battery:** Battery Capacity Testing Function  
**Protocol:** Quick Charge Protocol Triger  
**PcDetect:** Protocol Detecting Function  
**Performs:** Performance Testing Function  
**Resistan:** Cable Resistance Testing Function  
**All Data:** All Data Collected  
**Settings:** Setting Mode

## ConstCur: Constant Current Load Function

5.2267 <sub>v</sub>	Cut Volt	4.335V
0.0000 <sub>A</sub>	Set Curr	2.0000A
0.0000Ah	0.0000W	OFF

Select Constcur and click OK button to get into the Constant Current Load Function. If the load is plugged into the target testing device correctly, you'll see the device Voltage on the left-up corner, and an OFF at the right-bottom corner.



If it's not well plugged in, the Voltage will be 0.0000v and a PAUSE at the right-bottom corner.



Set the target Current and the Cut Voltage by the "Value Setting Method" mentioned above, and click the OK button to start the discharging process. There will be CC at the right-bottom corner meaning in Constant Current Discharging process.

### Battery: Battery Capacity Testing Function



Select Battery to get into Battery Capacity Testing Function. If the load is not connected to the target battery pack through USB plug or to the target bare battery by soldering the positive and negative electrodes to the soldering plates(refer to the Product Overview in the beginning) under USB plug, the voltage will be 0.0000V at the left-bottom corner.

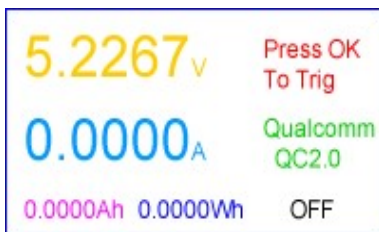


Set the target Current and Cut Voltage by the "Value Setting Method" , and click the OK button to start testing the Ah and Wh of the target testing device. The CC will be shown at the corner.

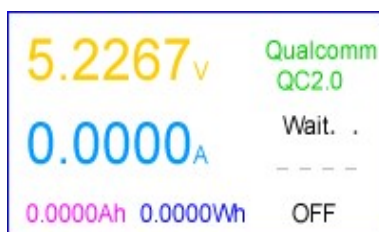
### Protocol: Quick Charge Protocol Triger



(1) Select the Protocol to get into the Quick Charge Protocol Triger. The load could be set to simulateseveral quick charge protocols such as QC 2.0, QC 3.0, Samsung AFC, Huawei FCP, Mediatek MTK-PE. Simply click the "+" or "-" button to shift among the protocol.



(2) Once confirmed the target protocol, click the OK button to trigger it.



(3) The load will try to communicate with the target testing device to check whether it supports the set protocol or not.



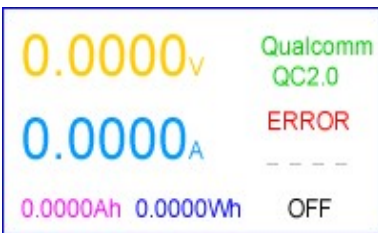
(4) If the testing device supports the protocol, the screen will show the Ready under the protocol name. If not supporting, the screen will show ERROR under the protocol name. Once Ready, the "+" and "-" buttons could be used to adjust the Voltage.



(5) If you need to adjust the testing Current and Cut Voltage, just click the OK button one more time and find the display like this. Set the value by the "Value Setting Method".

To exit the current protocol that has been triggered, click the OK button to return to the (2) of this function. Then click the "+" or "-" to choose the "Normal" mode as showing in (1). Click the OK button the get to exit the selected protocol with a "Normal Ready" showing in the screen.

(6) How to make use of the Protocol Trigger Function: Once set Protocol, Current and Cut Voltage, you could return to the main menu and select the "ConstCur" or "Performs" function to do the testing under current protocol settings. The protocol selected will keep working in other functions in the main menu, except the "PcDetect" and "Resistan" functions.



(7) If the load is not well connected to the target testing devices, the Voltage will be in 0.0000V with an ERROR displaying on the screen.

### PcDetect: Protocol Detecting Function



Select the PcDetect to get into the Protocol Detecting Function. Simply click the OK button to test all the protocols that the target testing device may support.



Once finished the detecting, the protocols will be displayed in Green and Red color. The ones in Green means the protocols that target testing device supports and the ones in Red means not support.

Notes:

- To test the VOOC and DASH, the original cable is needed to connect the adapter and the USB load, since these two protocols need to test the original cable.
- Some adapters may not support scanning so many protocols, which may cause detecting confusion. You may need to use the Protocol Trigger function to test the protocols one by one.

### Performs: Performance Testing Function



(1) Select the Performs to get into Performance Testing Function, which could check the max output Current and Wattage for the target testing devices. Click the "+" or "-" buttons to set the target current, and click the OK button to start the performance testing.



(2) The load will increase the testing current from 0.0000A until the target testing device output Current reach the set value or the output voltage is lower than the Cut Voltage. During the testing process, click the OK button could allow you to adjust the target Current value.



(3) While Press and Hold the OK button will pop up a Speed setting, which is to set the Current changing speed from 1.0x to 25.5x, the larger number, the faster. (Normally, the 1.0x is the suggested speed.) Once the speed is set, click the OK button to save the speed for the current Performance Testing procedure only. But a Press and Hold of the OK button will set the speed for permanently before your next permanent speed setting.



(4) Once the current changing stops, the Wattage and Current showing in large font is the max output power and current that the testing device supports. The Voltage and Current showing at the bottom are the current actual voltage and current value. If you want to get another test, just click the OK button to get back to the step (1) of this function.

## Resistan: Cable Resistance Testing Function



Select the Resistan to get into the Cable Resistance Testing Function. Set the current to 2.0000A(recommended). If the testing current is lower than 1.0000A, the resistance testing result may not accurate.



After the current being set, click the OK button to come to the stage of setting the Reference voltage. Plug the USB load directly to the USB port of an adapter or a power bank.



Once the Voltage at the left-bottom corner become stable, click either "+" or "-" to get the Reference Voltage, which will be recorded at the left-up corner in large font. Then unplug the USB load from the USB port of the adapter or power bank.



Connect the target testing cable between the adapter or power bank just now used and the Micro USB or Type C port on the USB load. The cable resistance will promptly show on the Ω value automatically.

Notes: The voltage of some adapters or power banks could drift upon the internal temperature changing, which are not suitable to be adopted to do the cable resistance testing.

### All Data: All Data Collected

5.2251V	26°C
0.0000A	2.69 D+
0.0000W	2.69 D-
0.1143Ah	470.03s
0.5530Wh	0000PWM

Select the All Data to show all the current data collected.

### Settings: Setting Mode

Settings	0.16beta	25°C
En-簡-繁	Factory	
Cooling	Temp Lim	
Volt Ref	Volt Lim	
Curr Ref	Curr Lim	

Select the Settings to get into the Setting Mode. Click the "+" or "-" button to select the setting item. Click the OK button to get into the setting item, and another click to exit the setting item WITHOUT save.

En-簡-繁: Click the OK button to change the language among English, Simplified Chinese and Traditional Chinese

Settings	0.16beta	25°C
En-簡-繁	Factory	
Cooling	045°C	Lim
Volt Ref		Lim
Curr Ref		Curr Lim

Cooling: To set the temperature on the heat sink to start the cooling fan. Change the temperature value by "Data Setting Method" and Press and Hold the OK button to save and exit.

Settings	0.16beta	25°C
En-簡-繁	Factory	
Cooling	20.000V	Lim
Volt Ref	1.8991REF	Lim
Curr Ref		Curr Lim

Volt Ref: To calibrate the Voltage benchmark. Input a stable Voltage (suggested 20V). Set the Voltage value on the USB load to be the same as the input Voltage. Press and hold the OK button to save and exit.

Settings	0.16beta	25°C
En-簡-繁	Factory	
Cooling	2.7000A	Lim
Volt Ref	0.9413REF	Lim
Curr Ref		Curr Lim

Curr Ref: To calibrate the Current benchmark. Input a stable Voltage and connect a high precision Current Meter. Set the Current value on the USB load to be the same as that on the Current Meter. Press and hold the OK button to save and exit.

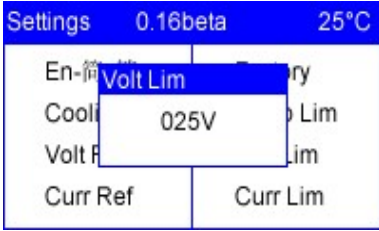
The default calibrating current is 2.7A

Settings	0.16beta	25°C
En-簡-繁	Factory	
Cooling	Really?	Lim
Volt Ref		Lim
Curr Ref		Curr Lim

Factory: To recover the factory settings and benchmarks. Press and Hold the OK button to recover and exit.



Temp Lim: Temperature limitation to trigger the Shut Down Self Protection of the USB load. Adjust the value by "Value Setting Method", and Press and Hold the OK button to save and exit.



Volt Lim: Voltage limitation to trigger the Shut Down Self Protection of the USB load. Adjust the value by "Value Setting Method", and Press and Hold the OK button to save and exit.



Curr Lim: Current limitation to trigger the Shut Down Self Protection of the USB load. Adjust the value by "Value Setting Method", and Press and Hold the OK button to save and exit.

<p><b>Serial Port Connection:</b></p>	<p>Download the CH340G USB to UART driver to the computer. Use any Serial Port Debugging software to receive the data from the USB Load. In the debugging software, just adjust the Baud Rate to 115200 and keep all other settings as default. The data format is in [Voltage*0.1V, Current*0.1mA, Ah*0.1Ah, Wh*0.1Wh\r\n], which could be save as .csv for further Excel analysis.</p>
<p><b>Common Questions:</b></p>	<p>(1) No display on the screen: Check whether the USB Load is powered through the Micro USB port beside the OK button with 4.5-5.5V input.          (2) Could not open the Constant Current discharging: Check out whether the Cut Voltage is set higher than the output Voltage of the target testing device.          (3) Could not detect the MTKPE quick charge: Set the constant current value higher than 0.5 before checking the MTKPE.          (4) Frequently over-heat self protection: Check out whether the cooling fan was covered, or the testing current is too high.</p>