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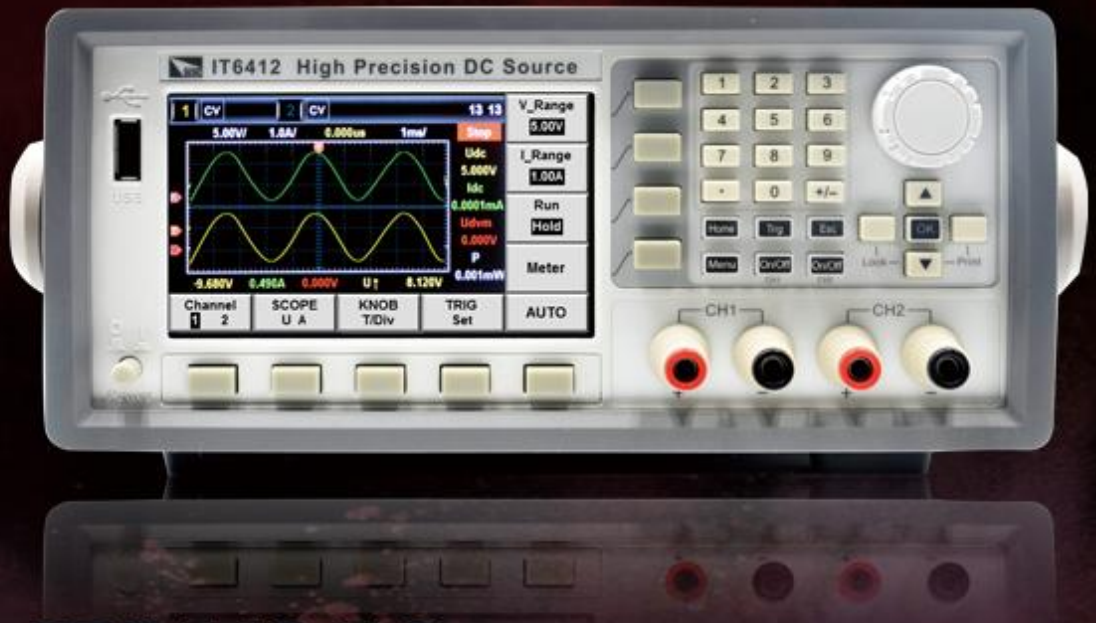

IT6412 DC power source

Dual-channel bipolar battery , charger simulator

IT6412

is……

ITECH

Dual-Channel,Bipolar,Dual-Range

Battery Simulator

DC Power Source

CH1：±15V/±3A/45W ±9V/±5A/45W

CH2：0-15V/±3A/45W 0-9V/±5A/45W

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IT6412

has……

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Ultrafast

Voltage Rising Time
Up to 500us

Down 500us (full load)

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Highest

Current Read Back Resolution 100nA

Up to 100nA

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www.itechate.com

Ultrafast

Transient Response Time

< 50uS

IT6412

can……

ITECH

- ✓Dual-channel
- ✓Dual-range
- ✓Bipolar
- ✓Oscilloscope

IT6412

= DC Power supplies + DC Electronic loads + Oscilloscope

ITECH

Portable battery-powered products test

LED test

Electronic Components ,DC / DC converter test

So ,
We can say……

IT6412

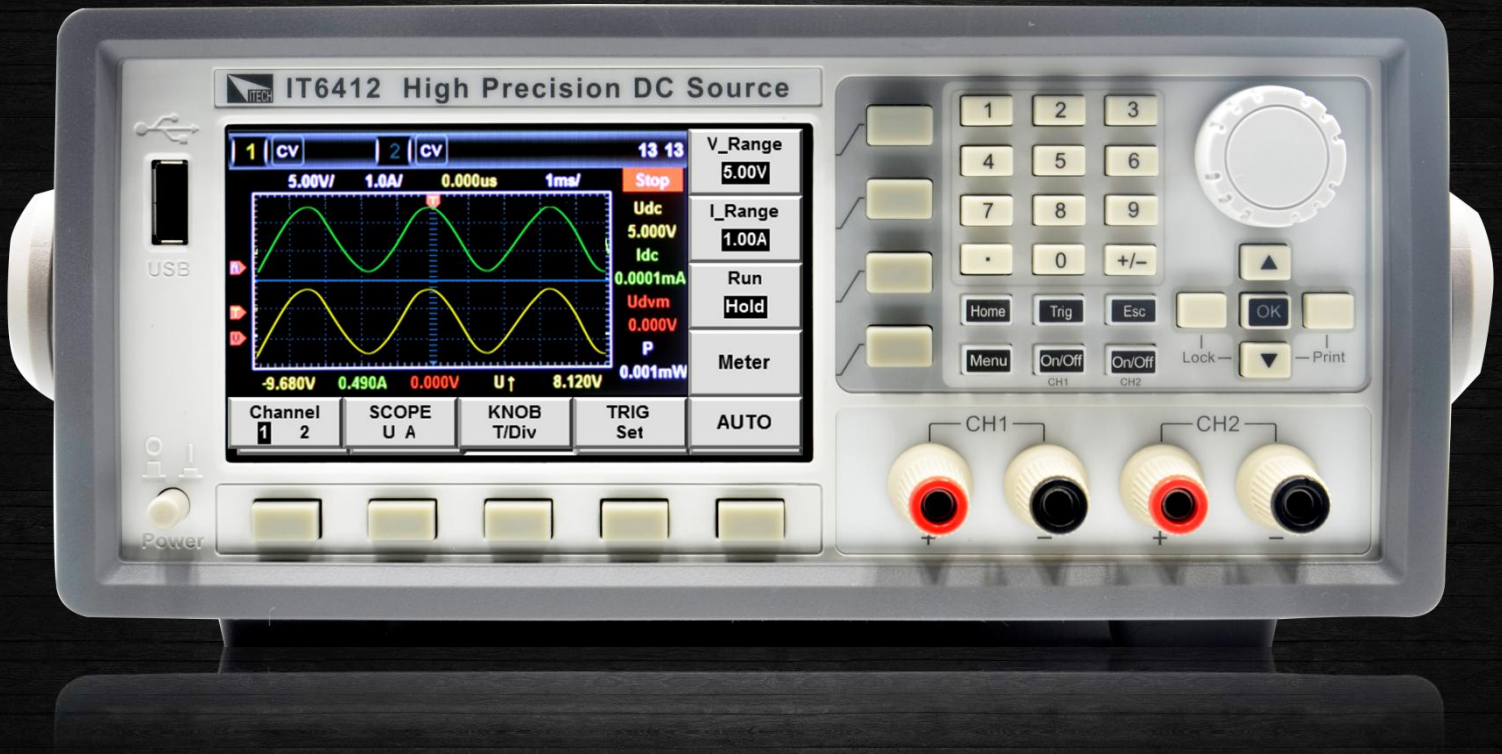
=

Excellent Performance + Multifunction

1 New Appearance

Traditional Faces of ITECH Products

IT6412



IT6412

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IT6412

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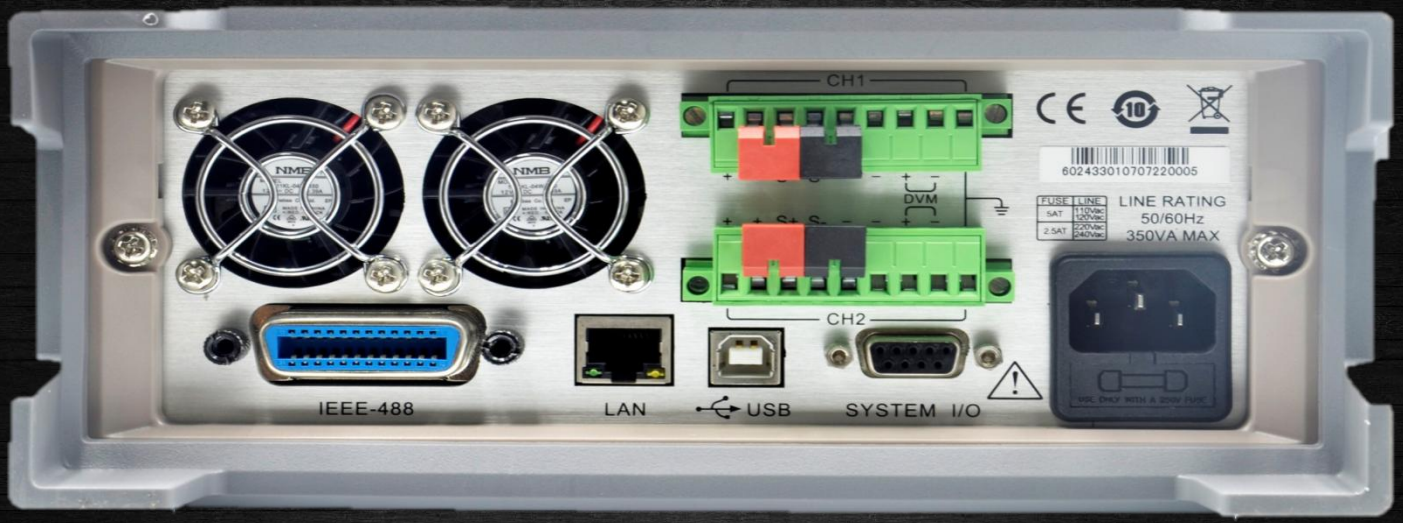

IT6412

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IT6412

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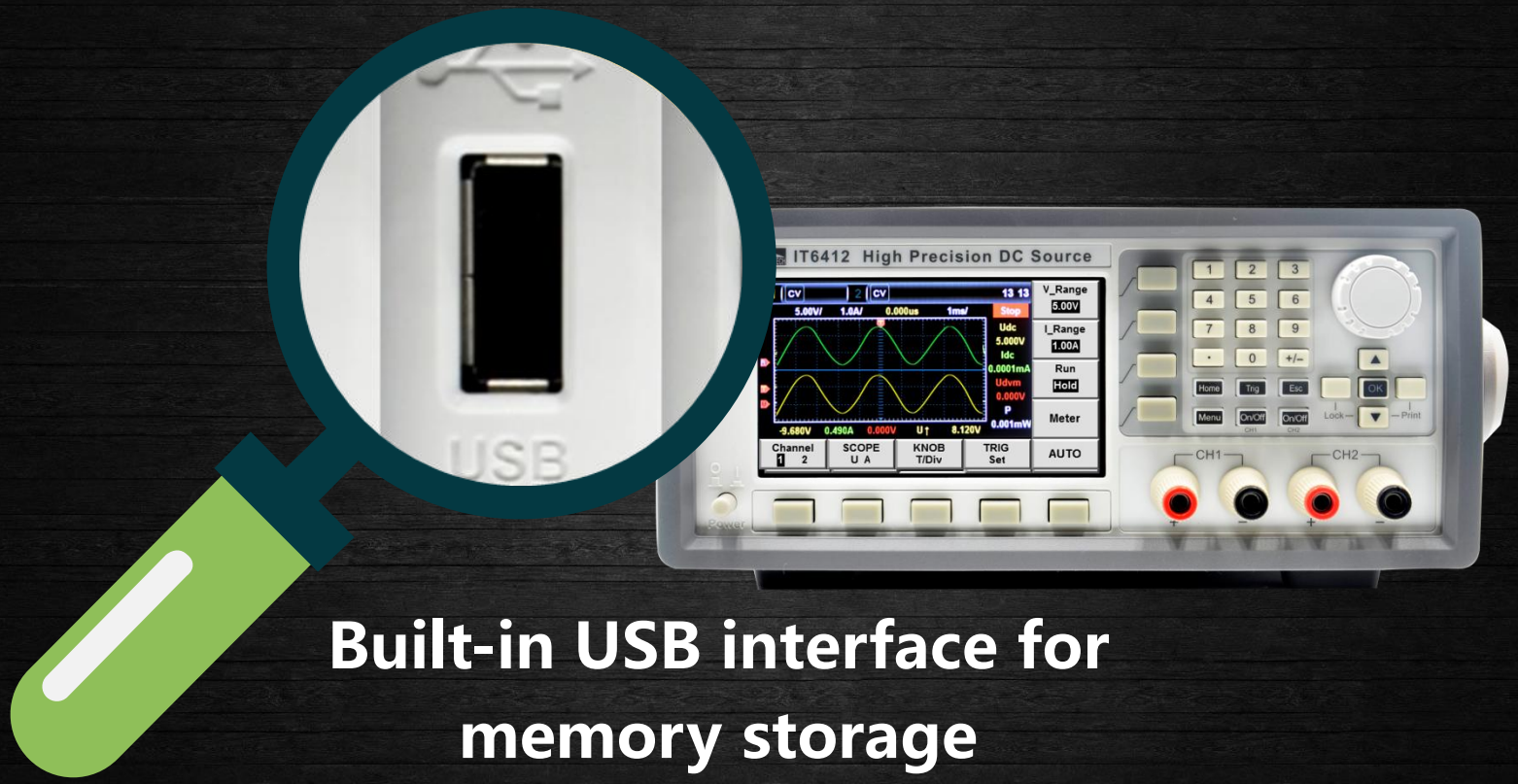
2 Multifunction

User-friendly Front Panel Design

Special
Print screen Function

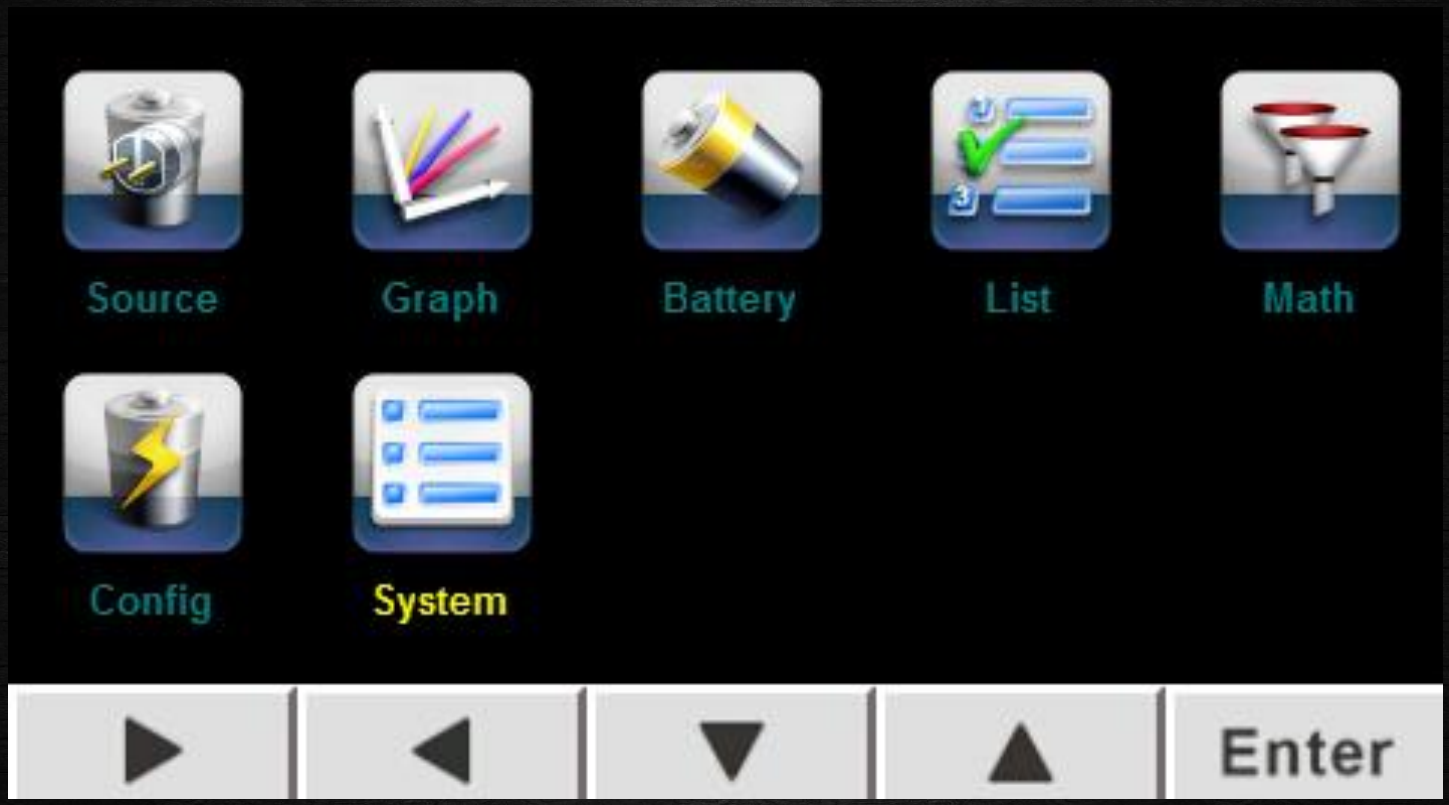
User-friendly Front Panel Design



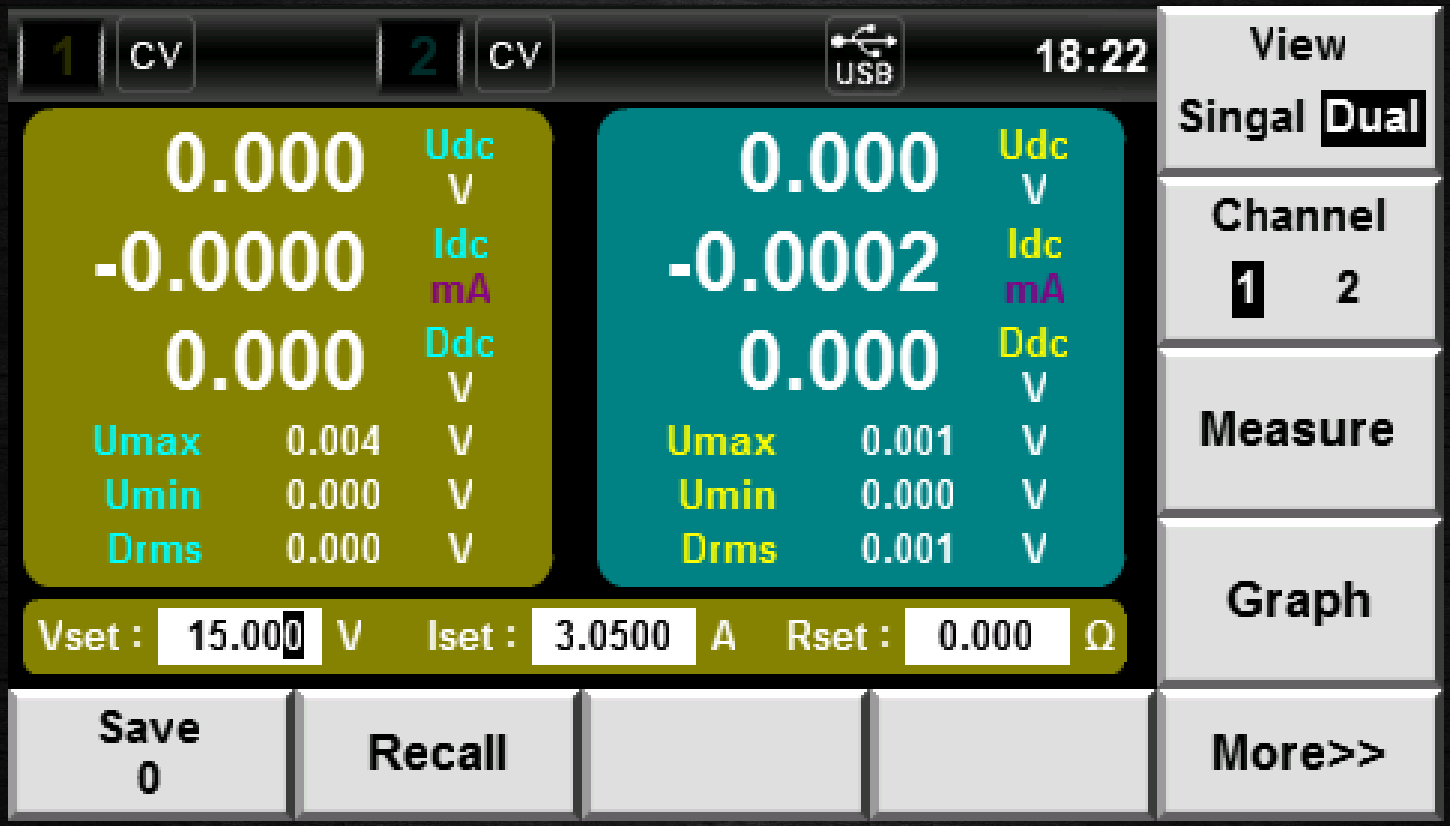
Built-in USB interface for memory storage

Startup Screen

Clearly Function Menu

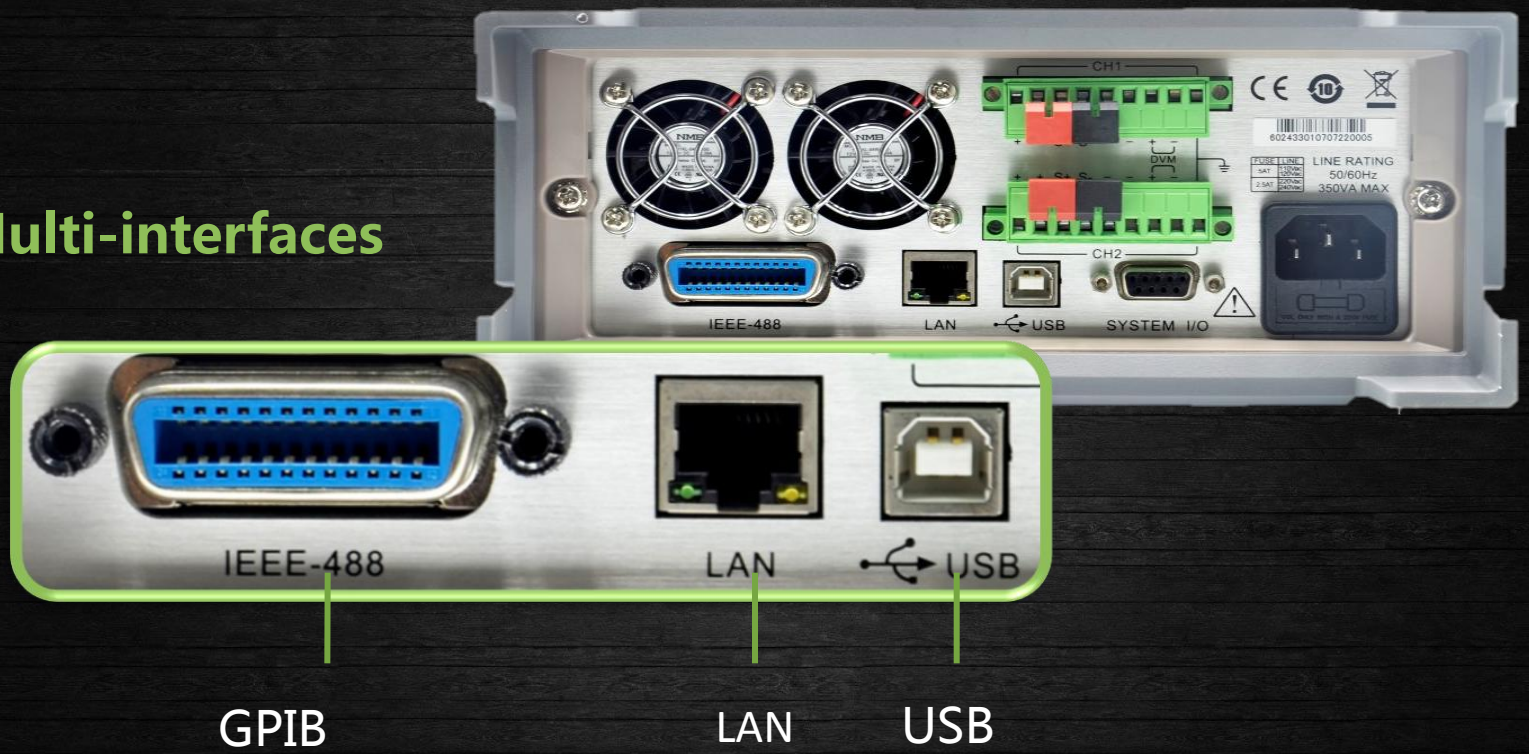


Dual-channel Data In-time Display



Fully Equipped Rear Panel

Multi-interfaces



Fully Equipped Rear Panel

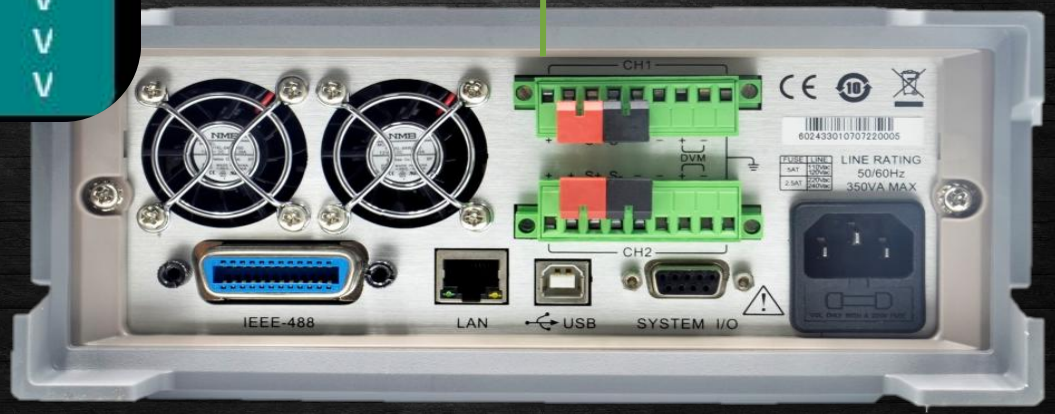
Buit-in high accuracy DVM

Measure range：-20V ~ +20V

Display resolution：1mV

Application :

Monitor the voltage of two terminals



Fully Equipped Rear Panel

Relay Out Function

Achieves electrical isolation with connected device

Application:

Avoid secondary discharge for battery.To completely disconnect the connection between battery and resistance inside of the DC source.

3 Excellent Performance

IT6412

Battery simulator

High accuracy DVM

Ultrafast transient response time < 50μS

Current readback resolution up to 100nA

Oscilloscope function

Ultrafast voltage rising time up to 500μS

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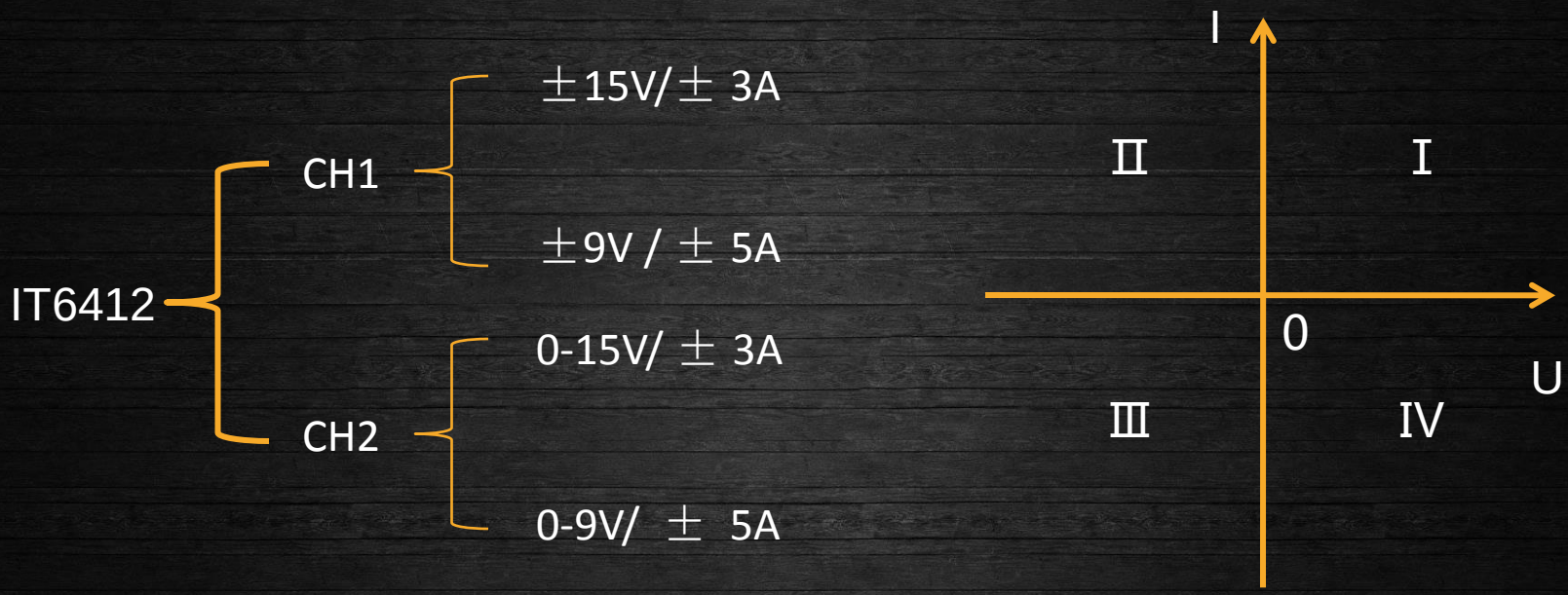
Bipolar Output



Note: Bipolar do not equal to 4 quadrant DC source.

Bipolar Output

Applications : Batteries and chargers testing

Chargers test

Load mode+ Resistance setting +AD Sampling +Fast response =I/V Characteristics curve

Batteries cycle life test

After N times 1C charge,1C discharge, the capacity of batteries will be down to 70%.(N is cycle life , international standard is less than 300 times.

Battery Characteristics Simulation Function

Applications

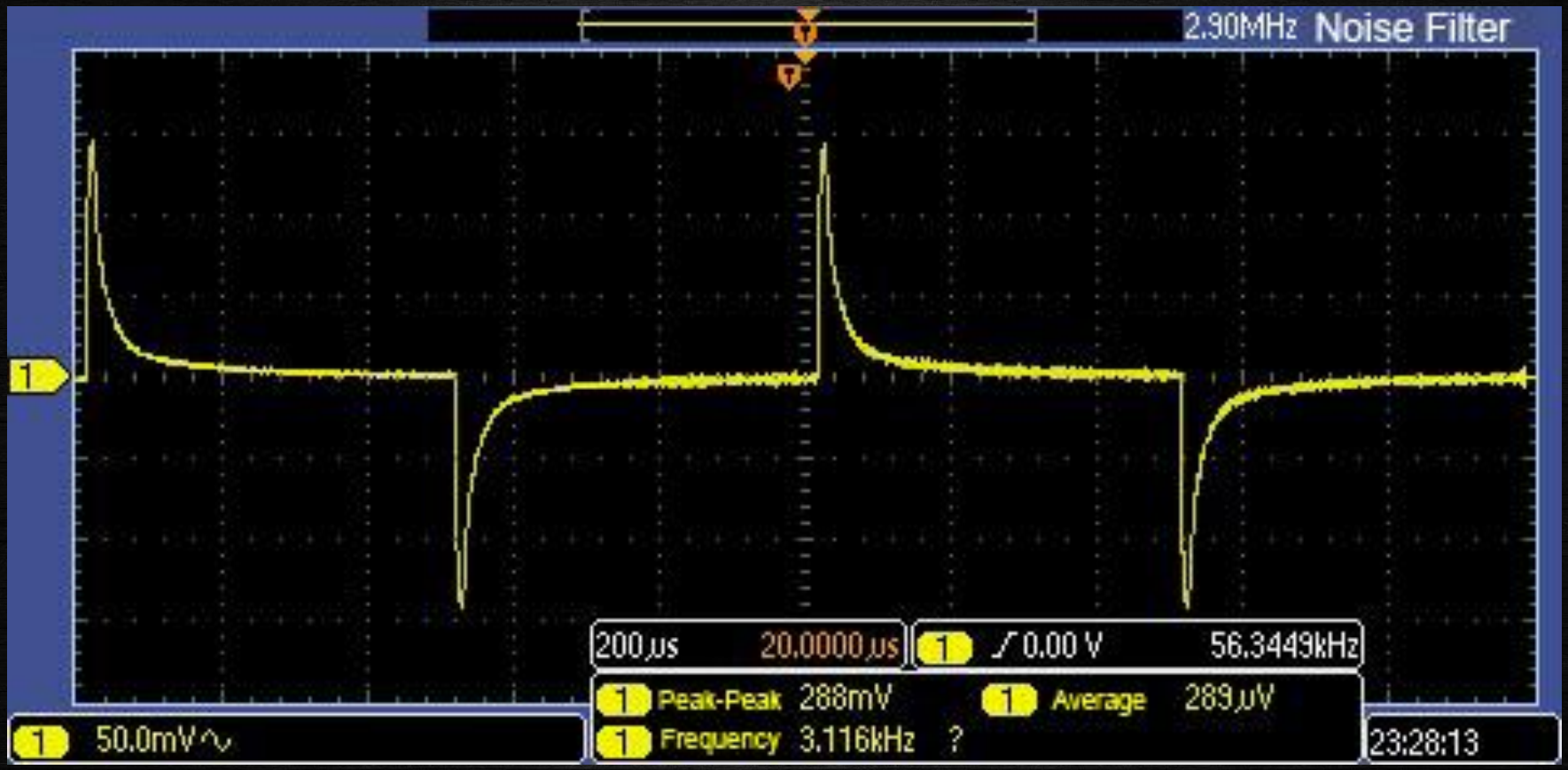
Battery charge and discharge mode

Observing the voltage, current and charge capacity of the batteries

Battery Characteristics Simulation Function

Program the data of battery characteristics as a .csv file and import the data to IT6412,then IT6412 can simulate the battery to test portable devices.

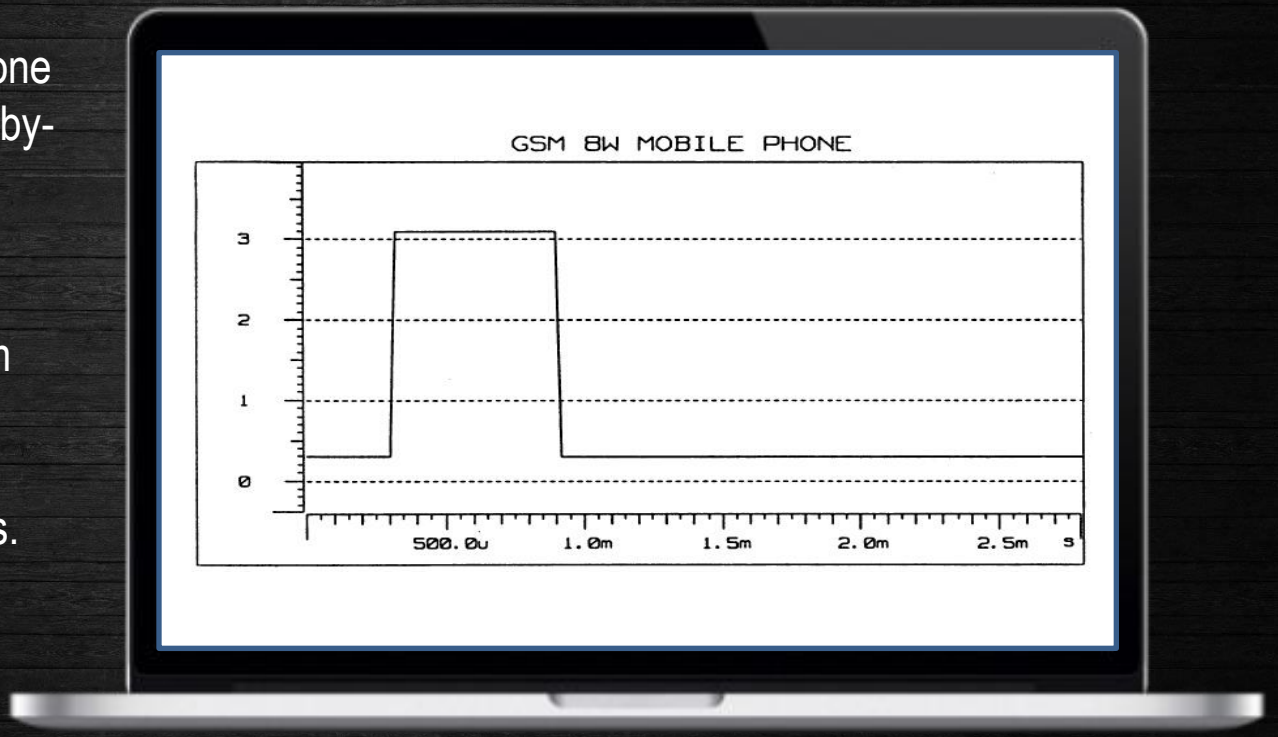
Ultrafast Transient Response Time < 50μS



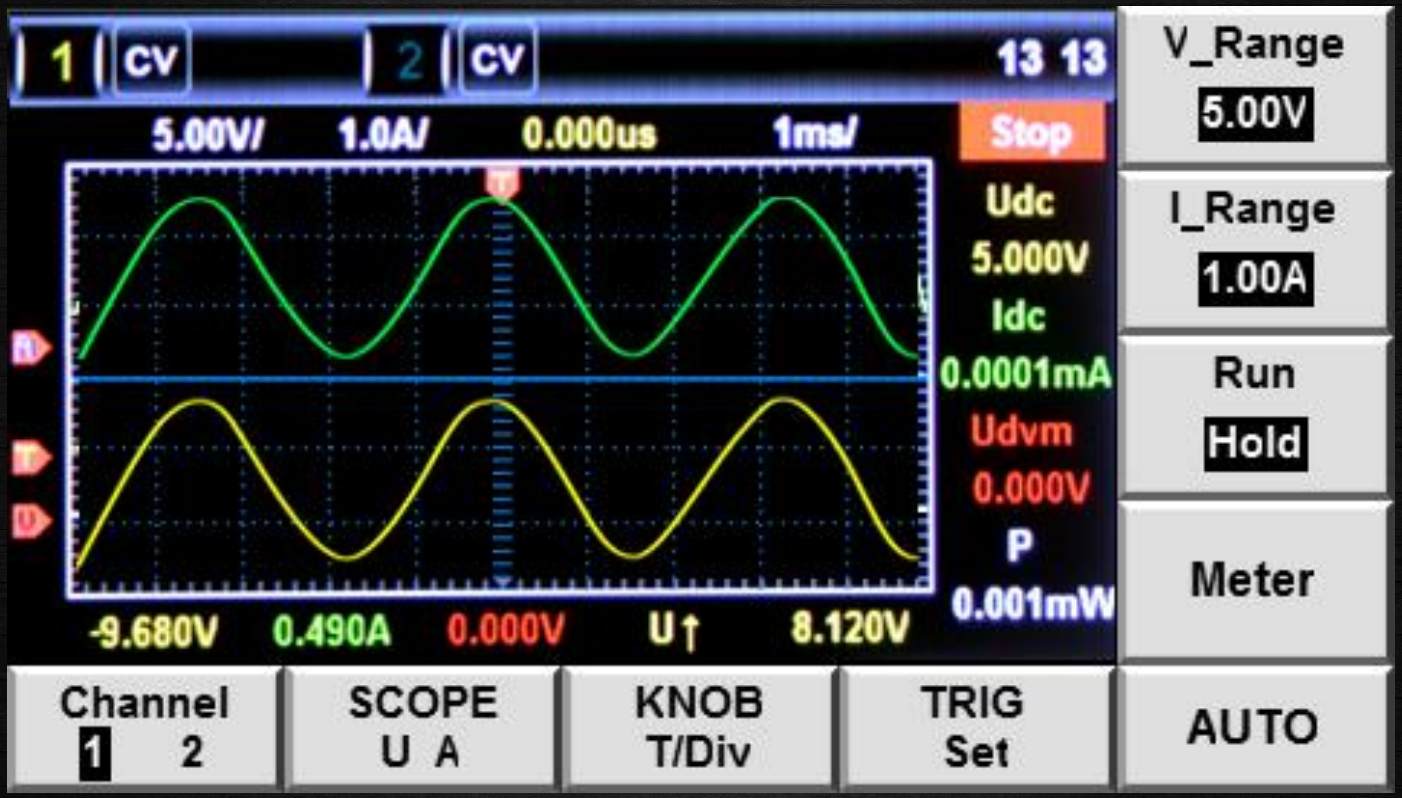
Ultrafast Transient Response Time < 50μS

Applications : Transient Response Test

For instance: generally cell phone works under the modes “Standby-Run-Standby ” .In these transitions, the time of battery current transient is very short. That means the testing system must include the power source which can response the fast transient of the electronic loads. Such as 576 μs

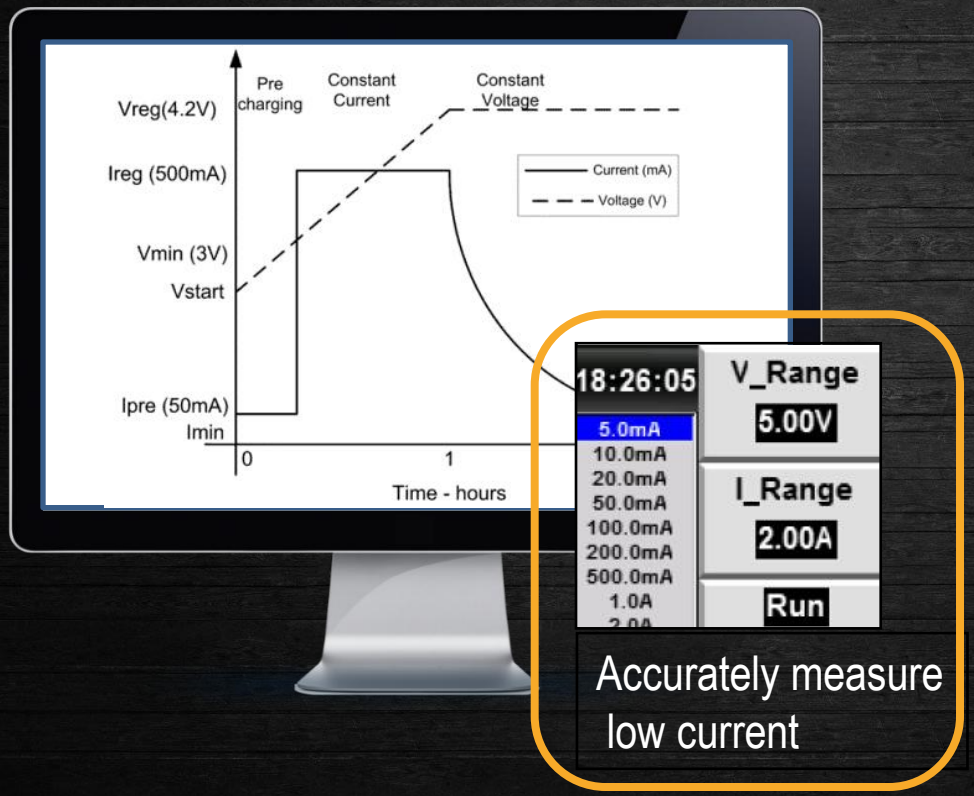


Oscilloscope Waveform Display (DSO)



Oscilloscope Waveform Display (DSO)

Application：Monitor Battery charge and discharge curve



Generally, ion batteries adopt charging mode from CC mode to CV mode.

CC Mode

↓ 4.2 V

CV Charge

↓ The charge current gradually decreases

Trickle charge

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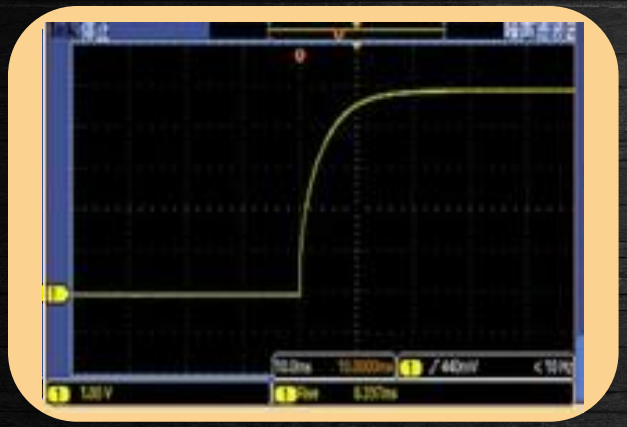
Ultrafast Voltage rising time up to 500μS (full load)

Ultrafast rising time and reliable performance.
The new designed speed switch mode makes a fast voltage and current rising speed and no overshoot.

Ultrafast Voltage Rising Time

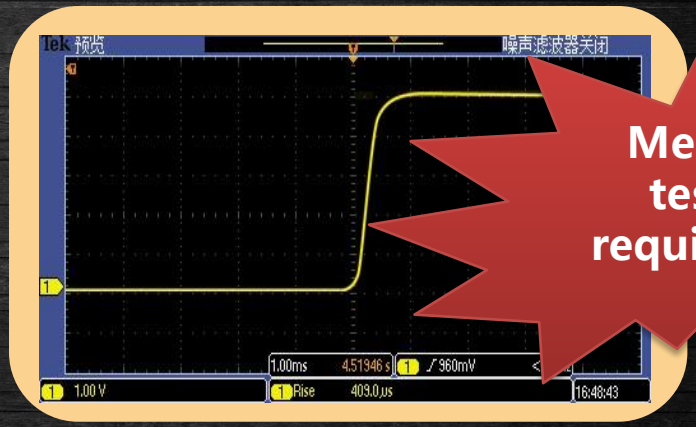
Applications：Quartz crystal oscillator

Unloaded rising requirement:
Current 1A, within 2ms,the voltage should rise to 5V



IT6121B Unloaded rising time

8.397mS



Meet the testing requirement

IT6412 Unloaded rising time

409uS

Current Read back Resolution Up To 100nA

Applications: Cell phone standby current testing…

Applications :

- Cell phone standby current testing
- LED photoelectric performance test （ Reverse current is μA level ）
- Small power solar cell test

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Variable Output Impedance

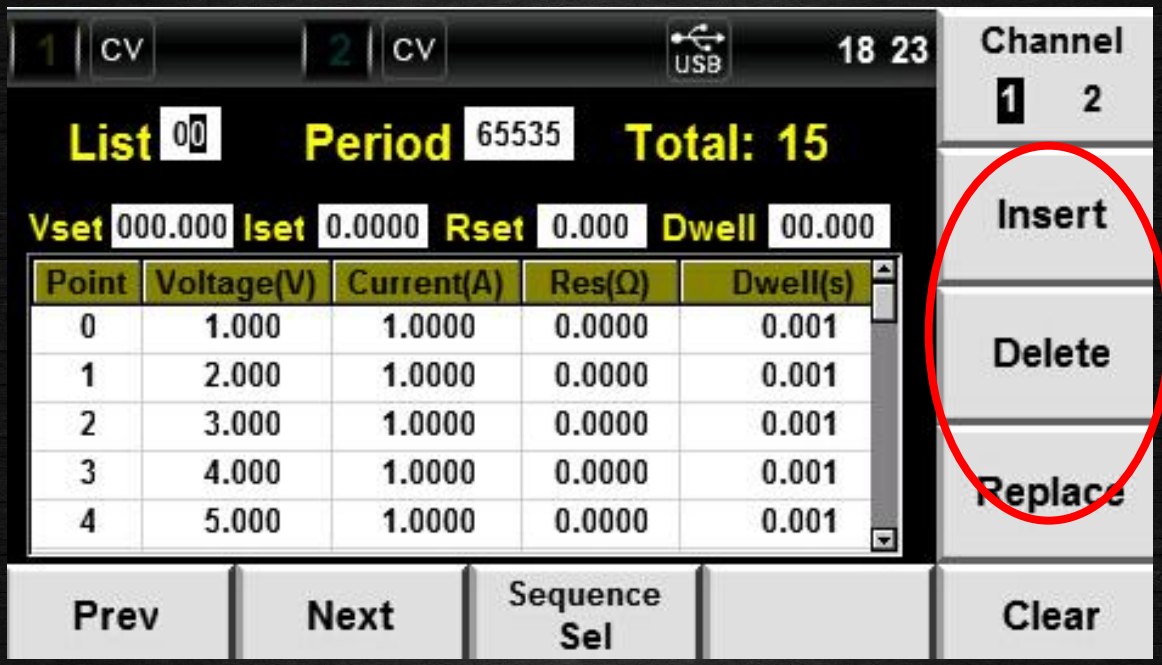
Applications : Battery testing field

Variable output impedance, combined with fast transient response, it can simulate different characteristics of batteries in real life.

Setup range : 0-1 Ω

Resolution Min.1mΩ

List



Simple operation
Clear display

4 Multi-industry Application

Battery Testing

Portable battery-powered products testing

Such as：Cell phones ,Tablet Computers , Intelligence Wearable devices , E-Book reader,mp3 player, Pacemaker etc.

Small power solar cell test

UN38.3 Testing(Lithium batteries)

Battery protection board test

Used for calibrating power in battery monitor circuit

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Portable Battery Testing

Applications :

- Design and test low power ,battery-powered device.

Requirements :

- Bipolar, single channel, can simulate the characteristics of battery charge or discharge
- Simulate battery internal resistance and characteristics by a programmable output resistance.
- When the testing instrument was used as a power source to simulate batteries discharge process, once the internal resistance increase, the output resistance should be changed in time.

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Small Power Solar Cell Test

Testing Principle :

The power solar cell can produce energy , during the testing process, the actual operating mode of power source is ： a positive voltage is applied by the solar across the terminals of the power supply.at the same time, the current flow from the battery, into the terminals of power source . The power source actually play a role as a electronic load.

Testing Characteristics :

- To achieve positive and negative voltage, positive and negative currents
- High accuracy measurement (Built-in DVM testing、min.100nA)
- Adjustable output resistance

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UN38.3 Test (Lithium battery)

International Air Transport Association (IATA) issued ***Dangerous goods rule*** (DGR) the 38th chapter requires 8 test items, briefly named as UN38.3 tests.

Over-charge test

To charge battery continuously with double current and double voltage, and overcharge it more than 24 hours (no break-up, no outbreak of fire)

Forced discharge test

Each cell shall be forced discharged at a mbient temperature by connecting it in s eries with a 12V D.C. power supply at an i nitial current equal to the maximum disc harge current specified by the manufactu rer. (no break-up, no outbreak of fire)

Work as a calibration power source for battery monitor circuits

Applications :

Especially suitable for the design and tests of low-power consumption and battery-operated devices, such as 3G mobile phones, smart phones, MP3 players, blue-tooth earphones, PDA and portable GPS receivers.

Test ways:

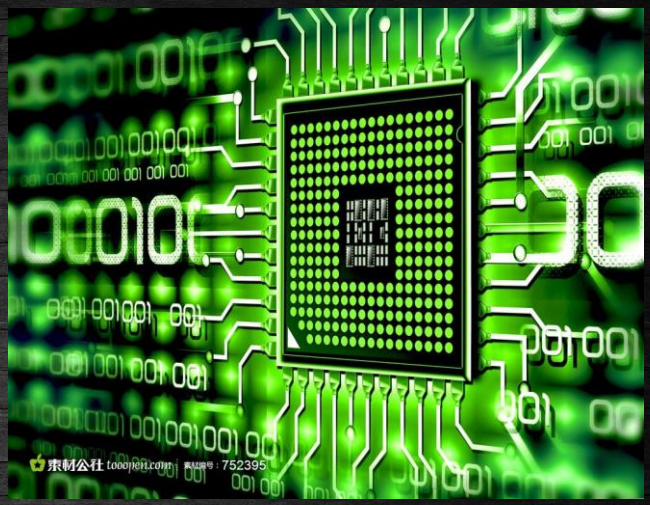
There’ re two channels, one can simulate the battery, with the other to simulate the charger. Besides, the battery channel can absorb current to simulate a load to do discharge test, so as to test DUT’ s charging control circuit.

Variable output resistance, can simulate battery’ s functions and features

Battery protection board test requirements

Test items :

- Over-charge protection of voltage’s precision and response time
- Over-charge cancel-recover and response time
- Over-discharge protection of voltage’s precision and response time
- Over-discharge cancel-recover and response time
- Over-current charging protection and response time
- Standby current
- Resistance of protection circuit



Application features :

- 1-4 channels
- Support current output and absorption
- Output arbitrary wave of voltage, current
- Take samples of voltage, current quickly

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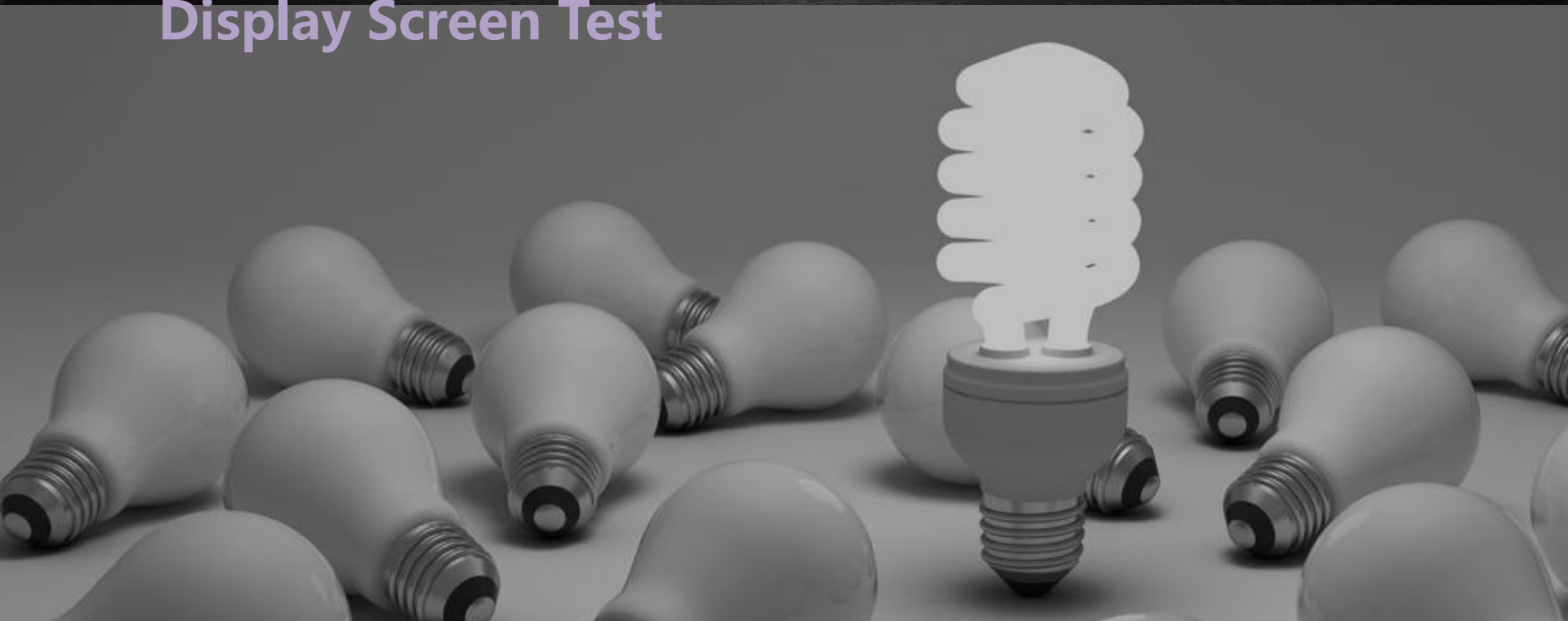
LED Field Testing

Ultra bright LED Test

LED Lamp Bead Test

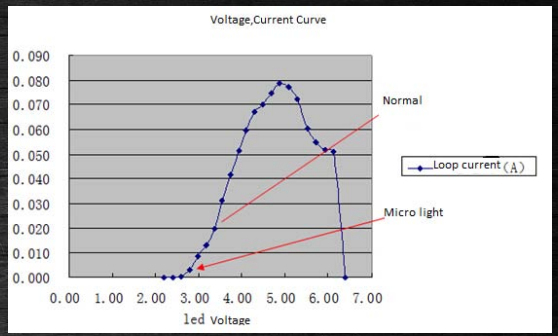
Display Screen Test

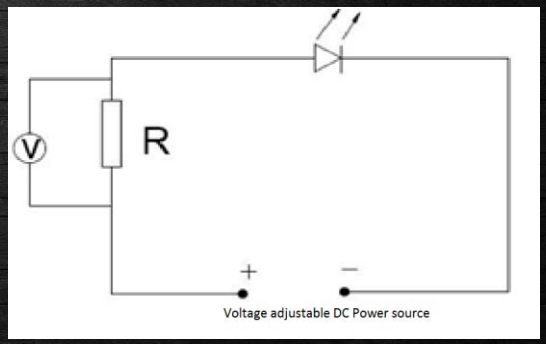


Ultra-bright LED Test

Testing procedure

1. Connect equipments as per circuit diagram.
2. Open the switch of DC voltage, and set the voltage to be 2.0V.
3. Adjust the voltage higher and higher with interval 0.2V. Observe the brightness changes of LED, and make data records.





Testing advangates

No overshoot during test, high measuring accuracy (100nA) , built-in DVM measurement

LED Lamp Test

LED Lamp Advantages

1. Energy-saving. The energy consumption of LED is only 1/10 of incandescent bulbs, and 1/4 of energy-saving lamp.
2. Long service life. The service life is up to 100khrs, 3-5 times of energy-saving lamp.
3. The brightness is 10 times of incandescent bulbs with same power.

Item 项目		Symbol 代号	Absolute Maximum Rating 极限工作参数	Unit 单位
Forward Current	正向电流	IF	20	mA
Peak Forward Current	瞬间脉冲电流	IFP	50	mA

LED Lamp Bead Test

Optical Performance Testing ：

1. Set the output current of the precision power supply as the rated testing current of LED lamp, without specifications in accordance with the rated current and 50% of the rated current of the lamp beads used for testing, if no specification,pls use the rated current and 50% rated current to do the test.
2. Set the driving voltage as reverse 5V，read the leakage current which through the LED lamp beads in this case.

■ **Typical Optical/Electrical Characteristics 光电特性参数**

Item 项目		Symbol 代号	Condition 测试条件	Min 最小值	Typ 典型值	Max 最大值	Unit 单位
Forward Voltage	正向电压	VF	IF=20mA	3.0	3.1	3.2	V
Reverse Current	逆向电流	IR	VR=5V	0	2	5	uA

Reliability and Lifetime Testing ：

Test optical characteristics under the conditions, such as room temperature, high temperature and high humidity, temperature cycling, etc.

Electronic Component ,DC / DC converter test

- ✓Power Amplifier test
- ✓DC/DC converter test
- ✓Inkjet Technology
- ✓IC card R&D
- ✓Capacitor ripple test
- ✓Relays
- ✓Diode , silicon-controlled rectifier(SCR) test
- ✓Micro-motor
- ✓Mini microphone
- ✓ (MEMS) test


IT6412 High Precision DC Source
V_Range
I_Range
Run
Meter
AUTO
CH1
CH2

Thanks

Your Best Power Solution

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