

## PPH-1503



### FEATURES

- Dual Range Output (0~15V/ 0~3A or 0~9V / 0~5A) ; Output Power 45W
- 3.5 Inch TFT LCD Display
- Constant Voltage and Constant Current Operation
- Built-in DVM Measurement Function
- High Measurement Resolution (1mV/0.1mA for 5A Range); (1mV/0.1  $\mu$ A for 5mA Range)
- External Relay Control Output On/Off
- Sink Current Capability (Maximum : 2A)
- Digital Panel Control
- Selectable Output and Input (DVM) Ports From Front or Rear Panel
- Key Lock Function
- 5 Sets of Preset Memory Including Power Output ON/OFF States
- High Speed Transient Recovery Time (< 40  $\mu$ S within 100mV ; < 80  $\mu$ S within 20mV)
- OVP/OC/OTP Protection to Prevent DUT Damage
- Standard Multiple Interfaces : USB/LAN/GPIB
- LabView Driver and PC Remote Control Software



## Swift Responses with Accurate Measurement

PPH-1503 is a high-speed and high-precision DC Power Supply with dual range of 15V/3A or 9V/5A. PPH-1503 is exclusively designed to meet low power consumption requirements and users' great demands of accuracy, speed and resolution of both voltage and current. Circuits are designed with swift response capability to provide a stable voltage output while experiencing load changes. For example, when switching cellular phone from standby to talk mode, the current consumption will be dramatically changed within milliseconds.

PPH-1503 is designed to simulate battery response when a significant voltage drop occurs. Recovery time of 40  $\mu$ s or less is guaranteed when the maximum voltage drop is within 100mV. Moreover, when users change the voltage level and conventional power supply does not have sufficient speed to reach the set level, PPH-1503 provides rise time of 0.15ms and fall time of 0.65ms, which are hundreds times faster than that of the conventional power supplies.

To analyze the transient power consumption of a DUT, the peak of short pulse current and average current measurements over a long period of time are crucial. PPH-1503 provides pulse current and long integration functions, the former can measure the peak value of a pulse, the latter can measure the average value of pulses. PPH-1503 provides DUT with pulse current measurement and analyzes the transient power consumption to qualify the device for specified power consumption requirements.

Chargers are often attached to portable battery operated devices. PPH-1503 can sink current, acting as an electronic load, and simulate

discharged function of rechargeable batteries. The maximum current is up to 2A. Users can test either battery charged or discharged without changing test equipment.

PPH-1503 provides Limit relay and Trip relay modes and is equipped with corresponding output ports, in which output signals control external relay. Under Limit relay mode and the current limit is reached, PPH-1503 will switch from Constant Voltage to Constant Current automatically and external relay control signal will go high. Under "Trip relay" mode and the current limit is reached, PPH-1503 will turn output off and relay control signal will go high. Furthermore, External Relay control can be used if users simultaneously use other devices for test system.

Built-in DVM (Digital Volt-Meter) is designed to measure any point on DUT while PPH-1503 is outputting voltage and current so as to achieve the functionalities of simultaneous output and monitor. Either front or rear panel provides power supply output and DVM input ports for users' connection consideration.

Users can remotely control PPH-1503 via a PC by using USB, GPIB and LAN interfaces which are standardly equipped. PC software can be downloaded from GW Instek website. These unique features make PPH-1503 an ideal power source for production lines, R&D laboratories, device inspection, maintenance centers or facilities with the requirements of a swift and precise power supply with DVM.



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### APPLICATIONS

- Battery Simulations for Telecom
- Products : GSM, CDMA, TDMA, DECT and others
- Product Testing for LED Light Bar (Current Measurement) and Quality Assurance
- R&D Laboratories and Educational Facilities
- Product Development and Debugging
- Device Inspection



## SPECIFICATIONS

<b>OUTPUT</b>	Number of Channel Voltage Rating Current Rating Power Rating Output Voltage Rising Time Output Voltage Falling Time	1 0 ~ 9V/5A ; 0~15V/3A 0 ~ 5A (Low Range : 9V); 0 ~ 3A (High Range:15V) 45W 0.15ms (10% ~ 90%) 0.65ms (90% ~ 10%)
<b>STABILITY</b>	Voltage Current	0.01%+0.5mV 0.01%+50 $\mu$ A
<b>REGULATION (CV)</b>	Load Line	0.01%+2mV 0.5mV
<b>REGULATION (CC)</b>	Load Line	0.01%+1mA 0.5mA
<b>RIPPLE &amp; NOISE (20Hz ~ 20MHz)</b>	CV p-p CV rms	8mV 1mV
<b>PROGRAMMING ACCURACY</b>	Voltage Current	$\pm$ (0.05%+10mV) $\pm$ (0.16%+5mA)
<b>READBACK ACCURACY</b>	Voltage Current (5A Range) Current (5mA Range)	$\pm$ (0.05%+3mV) $\pm$ (0.2%+400 $\mu$ A) $\pm$ (0.2%+1 $\mu$ A)
<b>RESPONSE TIME (RESPONSE to 1000% LOAD CHANGE)</b>	Transient Recovery Time	< 40 $\mu$ s within 100mV < 80 $\mu$ s within 20mV
<b>PROGRAMMING RESOLUTION</b>	Voltage Current	2.5mV 1.25mA
<b>READBACK RESOLUTION</b>	Voltage Current (5A Range) Current (5mA Range)	1mV 0.1mA 0.1 $\mu$ A
<b>PROTECTION FUNCTION</b>	OVP Accuracy	50mV
<b>DVM</b>	DC Read Back Accuracy (23°C $\pm$ 5°C) Read Back Resolution Maximum DC Differential Voltage Input Resistance and Capacitance	$\pm$ 0.05%+3mV 1mV 0 ~ 20VDC 100000M $\Omega$
<b>PULSE CURRENT MEASUREMENT</b>	Trigger Level High Time/low Time/average Time Trigger Delay Average Readings Long Integration Pulse Timeout Long Integration Measurement Time  Long Integration Trigger Mode	5mA ~ 5A, 5mA/Step 33.3us to 833ms, 33.3us/Step 0 ~ 100ms, 10us/Steps 1 ~ 100 1S ~ 63S 850ms(60Hz)/840ms(50Hz) ~ 60s, or Auto time 16.7ms/Steps(60Hz), 20ms/Steps(50Hz) Rising, Falling, Neither
<b>OTHER</b>	Output Terminal DVM Input Relay Control Connector Operation Temperature Operation Humidity Storage Temperature Storage Humidity	Front/Rear Panel Front/Rear Panel 150mA/15V 5 Voutput, 100mA 0 ~ 40°C $\leq$ 80% -20°C ~ 70°C < 80%
<b>PC REMOTE INTERFACES</b>	Standard	GPIO/USB/LAN
<b>PC SOFTWARE &amp; LABVIEW DRIVER</b>	Free	PC Software/Labview Driver
<b>CURRENT SINK CAPACITY</b>	Sink Current Rating	2A(Vout $\leq$ 5V); 2A-0.1x(Vout-5) (Vout>5V)
<b>MEMORY</b>	Save/Recall	5 Sets
<b>POWER SOURCE</b>	Input Power Power Consumption	90 ~ 264VAC ; 50/60Hz 150VA
<b>DIMENSIONS &amp; WEIGHT</b>		222(W) x 86(H) x 363(D) mm; Approx 4.2Kg

Specifications subject to change without notice.

PH-1503GD1BH

## ORDERING INFORMATION

**PPH-1503** Programmable High Precision DC Power Supply

## ACCESSORIES

User Manual (CD) x 1, Quick Start Guide x 1, Power Cord x 1 (Region Dependent)  
GTL-117 Test Lead (10A Maximum), GTL-204A Test Lead (10A Maximum),  
GTL-203A Test Lead (3A Maximum)

## OPTIONAL ACCESSORIES

**GTL-248** GPIB Cable (2.0M)  
**GTL-251** GPIB-USB-HS(High Speed)  
**GTL-246** USB Cable (USB 2.0, A-B Type)

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