User Manual Download links: <http://68.168.132.244/PSG9080_EN_manual.pdf>

PC Software Download links: http://68.168.132.244/PSG9080\_EN\_Setup.rar



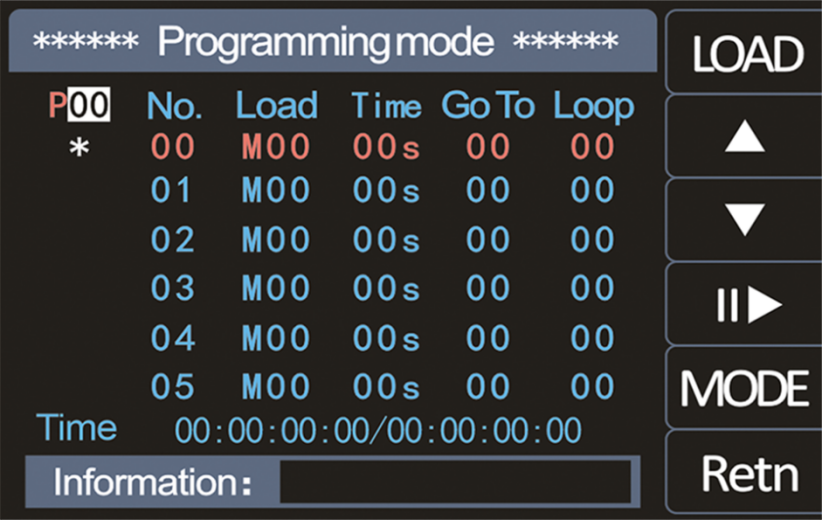


PSG9080 is the programmable function/arbitrary wave signal generator. It can output sine wave, square wave, triangle wave, pulse wave, and arbitrary wave, etc. The frequency range of the instrument is up to 80MHz, with modulation, frequency sweep, measurement signal frequency and programming functions, etc. It can simultaneously display the output signals, amplitude, phase, duty cycle and frequency. This series has excellent amplitude - frequency characteristics, multifunctional, high performance, cost effective, portable and other characteristics provide new options for education, research and development, production, testing and other industries.

The instrument is exquisite in appearance and equipped with a 3.5-inch high-resolution color LCD screen to bring a new visual experience.



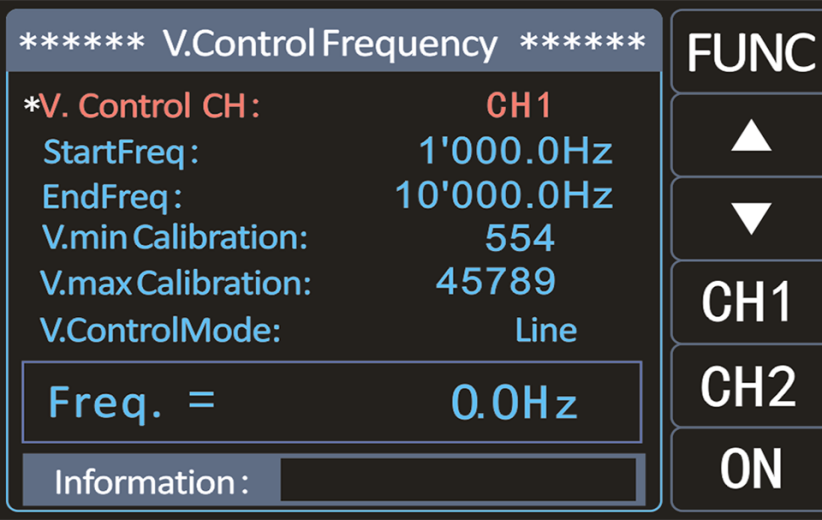
Programmable output：The type of waveform output (such as sine wave, square wave, triangle wave, arbitrary wave, etc.), output time, and output sequence can be freely formulated to realize automatic work.



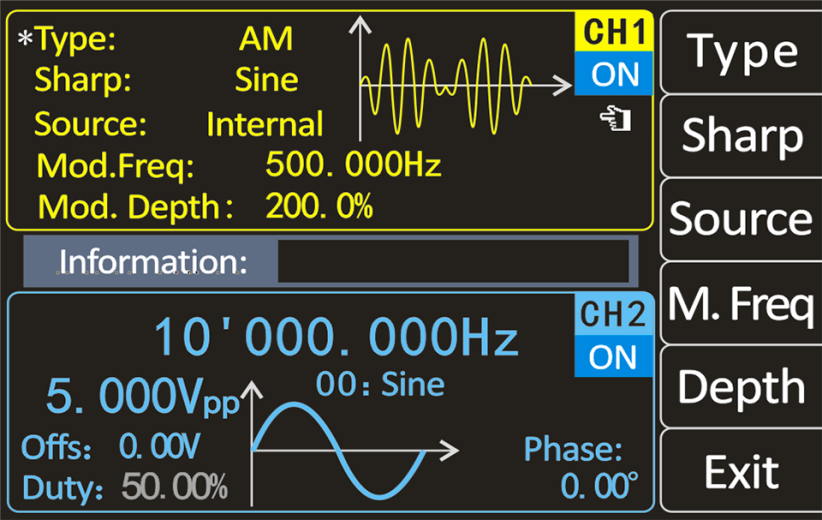
Firmware update in real time：Firmware upgrade can be updated at any time to fix bugs, or used for your special customization needs. Press the corresponding soft key to confirm entering the update mode, and perform a one-key firmware upgrade by connecting with the PC software.



Voltage-controlled adjustment：The frequency, amplitude and duty cycle of the output can be controlled by an external analog voltage signal to achieve voltage-controlled sweeping frequency, sweeping amplitude and sweeping duty cycle, which are widely used in industrial debugging.



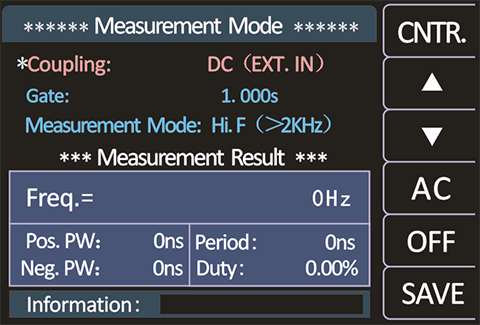
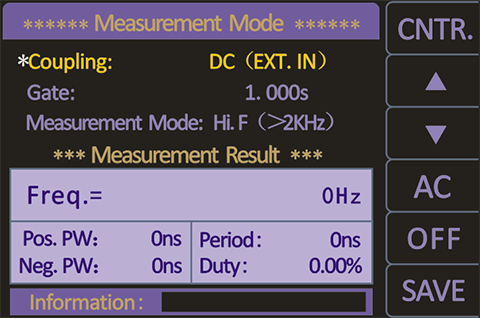
Modulation function：The modulated waveforms can be output in single channel or dual channel. Modulation: The process of adding information from a signal source to the carrier to make it suitable for channel transmission. It is the technology that makes the carrier wave change with the signal.

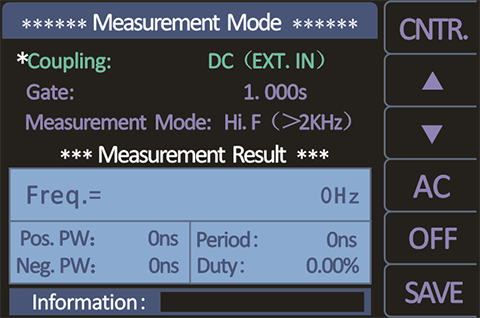
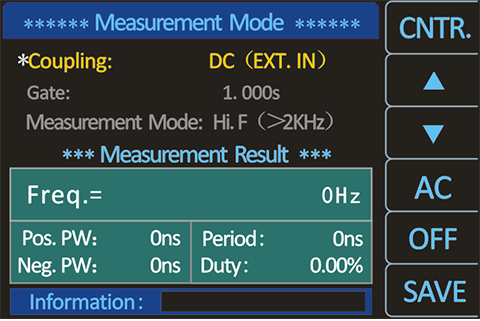


High sampling rate ：The sampling rate of up to 400MSa/s can obtain more waveform data per unit time, thus making the displayed waveform more accurate.

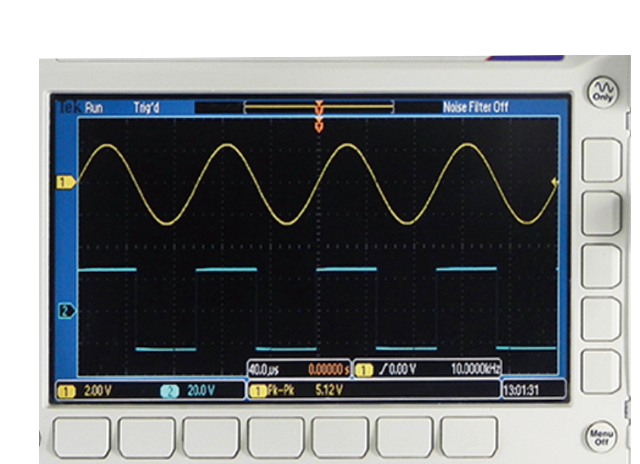


Personal color：In order to meet the personalized needs of customers, four color schemes for the system are provided. You can use the numeric keys and knob to select the desired system color, press the soft key save to save the selected color

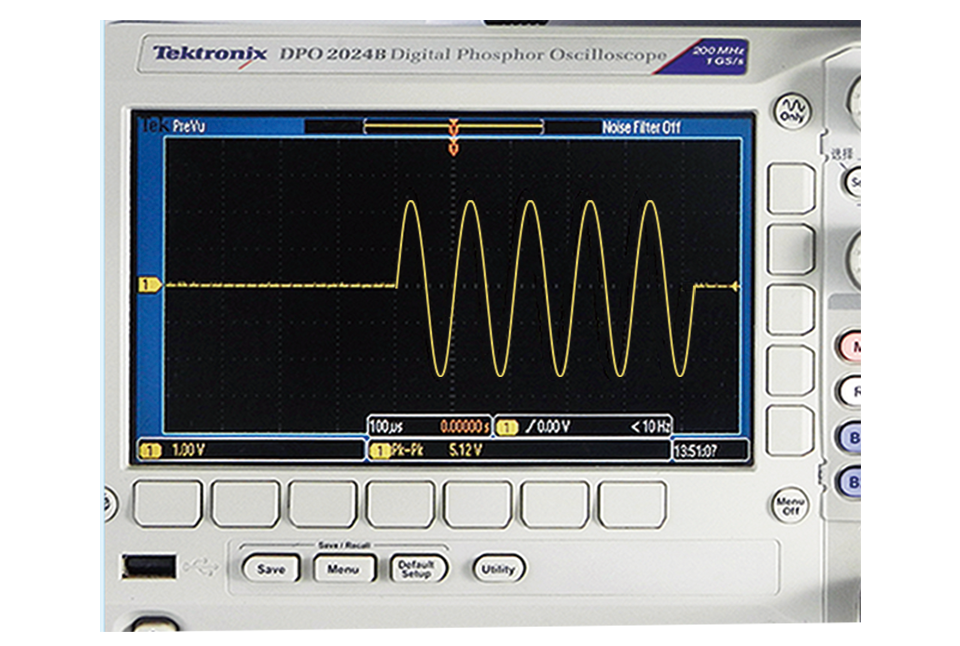
 

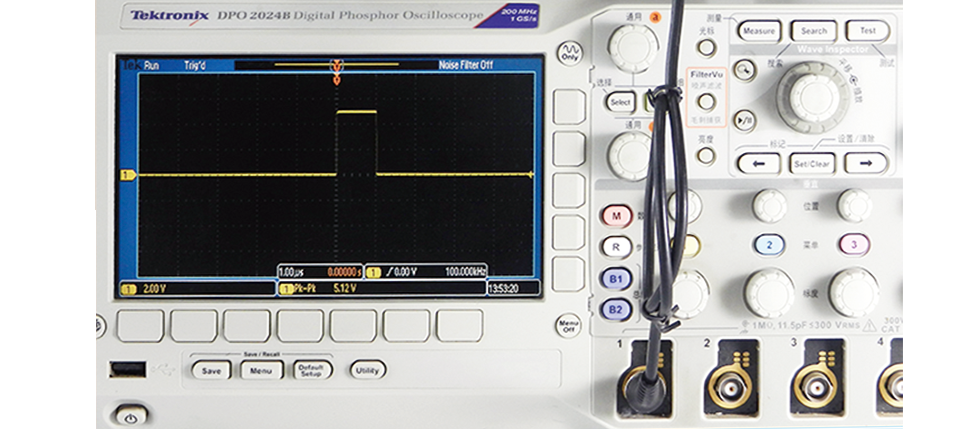
Equivalent performance dual channel output：The same or different function signals or arbitrary waveform signals can be output simultaneously; all parameters can be adjusted independently, the phase difference between the two channels is continuously adjustable from 0 to 359.9 degrees; the signal frequency can be up to 80MHz, and the output signal can be within 1MHz Up to 25Vpp.



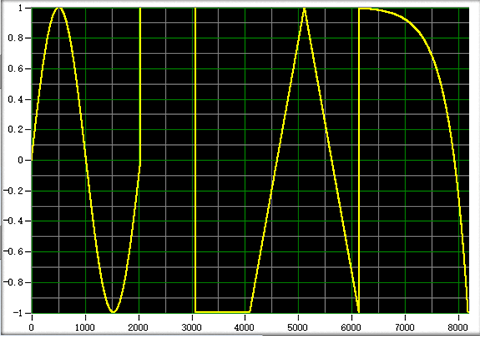
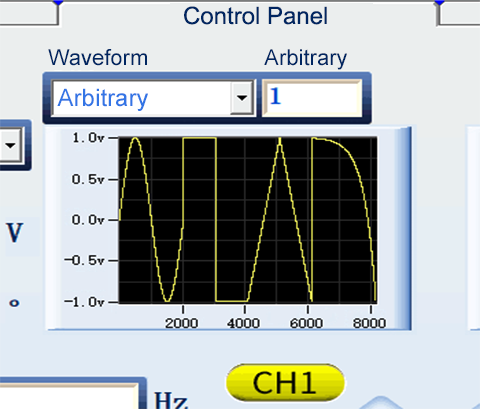
Burst function：Sine wave, square wave, saw tooth wave, or arbitrary wave can be used to generate burst signals, the number of periods is continuously adjustable between 1-1,000,000,000



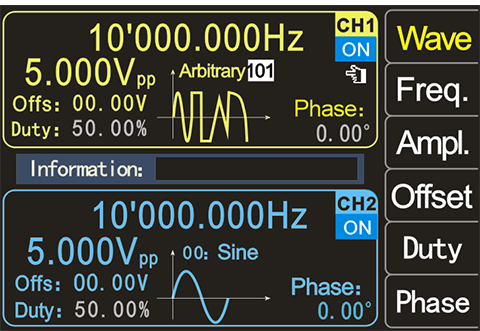
The pulse width can be adjusted accurately：The pulse width and the pulse period time of the pulse wave are digitally and accurately adjustable, enabling a wide range of pulse waveforms to be accurately set without jitter output.



Can draw arbitrary waveform：PC software and communication protocol are provided for free, arbitrary waveforms can be drawn using the PC software; using the communication protocol can be secondary development programming; all functions of the instrument can be controlled by the PC software (The instrument can be also finished all operations without connecting to the computer.)

<The PC software draws arbitrary waves> <The PC computer controls the output of arbitrary wave>

<The signal generator displays the drawn pattern> <An oscilloscope displays an arbitrary wave pattern>





Model：PSG9080

Channel：2

Maximum frequency of sine wave：80MHz

Sampling Rate：300MSA/S

Waveform characteristics

Wave length ：8192 points/channel

Waveform vertical resolution：14 bits

Waveform type：Sine wave, square wave, pulse wave (duty cycle, pulse width and cycle time can be accurately set), triangle wave, rising saw-tooth wave, falling saw-tooth wave, CMOS wave, DC level, half wave, full wave, positive step wave, inverse step wave, exponential rise, exponential fall, Lorentz pulse wave, muti-sound wave, random noise wave, trapezoidal pulse wave, sink pulse wave, amplitude modulation waveform, frequency modulation waveform and 99 groups of user-defined wave-forms.

Frequency characteristics

Sine wave frequency range：1nHz-80MHz

Square wave frequency range：1nHz-30MHz

Triangle wave frequency range：1nHz-50MHz

Pulse wave frequency range：1nHz-30MHz

TTL digital wave frequency range：1nHz-20MHz

Arbitrary wave frequency range ：1nHz-50MHz

Pulse width adjustment range：5nS~4S

Pulse period adjustment range：10nS~40S

Frequency minimum resolution：1nHz

Frequency accuracy：±5ppm 0 to 50℃

Frequency stability：±3ppm per 1 year

Sine wave spectral purity

Total harmonic distortion：≤0.5%（@1kHz,5Vpp）

Signal characteristics

Square wave

Rising/falling edge time：≤10nS

Overshoot：≤10%

Asymmetry：≤0.1%

Ramp and triangle wave

Linearity ：≤1%(less than 1MHz)

Asymmetry：≤1%(less than 1MHz)

Pulse wave

Pulse Width：5nS~4S

Pulse period：10nS~40S

Duty cycle：0.01%-99.99%

Rising/falling edge：≤10nS

Overshoot：≤10%

Arbitrary wave

Wave length：8192 points（8K points）

Vertical resolution：14 bits

Minimum rise/fall time ：≤10nS

Overshoot：≤10%

Arbitrary waveform non-volatile storage number：99

Output characteristics

Amplitude

Amplitude range：Frequency≤1MHz------2mVpp~25Vpp

1MHz≤Frequency＜11MHz ------2mVpp~10Vpp

11MHz≤Frequency＜60MHz------2mVpp~5Vpp

60MHz≤Frequency＜80MHz------2mVpp~3.6Vpp

Amplitude resolution：1mVpp

Amplitude stability：± 1% ±1 mVpp (@ 1 kHz, >10 mVpp)

Amplitude flatness：±1%(0.1dB)<10MHz

±2%(0.2dB)<10MHz~50MHz

±10%(0.9dB)<50MHz~70MHz

±20%(1.9dB)<70MHz~80MHz

DC bias

Offset adjustment range：-9.99V-15.00V

Offset resolution：0.01V

Phase characteristics

Phase adjustment range 0°-359.9°

Phase resolution 0.1°

Waveform output

Output impedance：50Ω (nominal)

Protection：Short circuit protection

Modulation characteristics

Modulation type：AM、FM、PM、ASK、FSK、PSK、PWM

AM

Carrier wave：Sine wave, square wave, saw-tooth wave, arbitrary wave (except DC)

Modulation source：Internal/external

Modulated wave：Sine wave, square wave, saw-tooth wave, noise wave, arbitrary wave

Modulation depth：0% to 200%

Modulation frequency：1mHz to 1MHz

FM

Carrier wave ：Sine wave, square wave, saw-tooth wave, arbitrary wave (except DC)

Modulation source：Internal/External

Modulated wave：Sine wave, square wave, saw-tooth wave, noise wave, arbitrary wave

Modulation frequency：1mHz to 1MHz

Frequency deviation：0.1Hz to 10kHz

PM

Carrier wave：Sine wave, square wave, saw-tooth wave, arbitrary wave (except DC)

Modulation source：Internal/External

Modulated wave：Sine wave, square wave, saw-tooth wave, noise wave, arbitrary wave

Phase deviation：0° to 360°

Modulation frequency：1mHz to 1MHz

ASK

Carrier wave：Sine wave, square wave, saw-tooth wave, arbitrary wave (except DC)

Modulation source：Internal/External

Polarity：Positive and negative

Rate：1mHz to 1MHz

ASK amplitude：0% to 200%

FSK

Carrier wave：Sine wave, square wave, saw tooth wave, arbitrary wave (except DC)

Modulation source：Internal/External

Modulated wave：50% duty cycle pulse wave

Polarity：Positive and negative

Rate：1mHz to 1MHz

Frequency hopping：0.1Hz to 80MHz

PSK

Carrier wave：Sine wave, square wave, saw tooth wave, arbitrary wave (except DC)

Modulation source：Internal/External

Polarity：Positive and negative

Rate：1mHz to 1MHz

PSK phase：0° to 360°

PWM

Carrier wave：Pulse wave

Wave inversion：Regular and reverse

Pulse period：0.01uS to 40S

Pulse Width：0.001uS to 4S

Burst

Idle：Zero position, positive maximum, negative maximum

Mode：Single, automatic

Trigger source:Manual burst, CH2 burst, external burst (AC), external burst (DC)

Pulse number:1-1000000000

Measurement and counting function

Measurement mode

Measurement function：Frequency, positive and negative pulse width, period, duty cycle

Coupling method：DC, AC

Gate time：0.001S-10.000S

Measurement mode：Low frequency, high frequency

Frequency measurement range ：1Hz~100MHz

Input signal amplitude range：2Vpp~20Vpp

Period measurement：10nS~4S

Pulse Width：4S

Duty cycle measurement range ：0.01%~99.99%

Counter mode

Counter range：0-4294967295

Coupling method：DC and AC coupling

Counting method：Manual

External modulation input characteristics

Input signal amplitude range 0~3Vpp

Input signal frequency range DC~200kHz

Scanning characteristics

Sweep channel：CH1 or CH2

Carrier wave：Sine wave, square wave, saw-tooth wave, arbitrary wave (except DC)

Sweep function：Sweep frequency, sweep amplitude, sweep duty

Sweep mode：Linear, logarithmic

Sweep direction：Increment, decrement, round trip

Start/end frequency：Consistent with the upper and lower limits of the corresponding carrier frequency

Start/end amplitude：Consistent with the upper and lower limits of the corresponding carrier amplitude

Start/end duty cycle：Consistent with the upper and lower limits of the corresponding carrier duty cycle

Sweep time：0.01S-640S

Voltage control characteristics

Voltage control channel: CH1 or CH2

Carrier wave: Sine wave, square wave, saw-tooth wave, arbitrary wave (except DC)

Voltage-control function: Frequency control, amplitude control, and duty cycle control

Sweep mode: Linear, logarithmic

Start/end frequency: Consistent with the upper and lower limits of the corresponding carrier frequency

Start/end amplitude: Consistent with the upper and lower limits of the corresponding carrier amplitude

Start/end duty cycle: Consistent with the upper and lower limits of the corresponding carrier duty cycle

Voltage-control voltage range: 0V-5V, starting point and end point can be set arbitrarily

Programming features

Running mode: Debugging、normal

Storage: P00-P19

Programming number: 00-99

Programming time: Single serial number programming time 0-99S

General specifications

Display

Screen: 3.5 inch TFT color LCD display

Resolution: 320\*480

Color: 64K true color

Store and load

Quantity: 100 groups

Location: 00 to 99 (The data of 00 storage location is loaded by default)

Interface

Interface method: USB to serial interface

Extension interface: Serial port with TTL level mode, convenient for secondary development

Communication rate: Standard 115200BPS

Protocol: Using the command line, the protocol is open

Power

AC power: Supply voltage:85V-264V，47-63Hz

Power consumption: Less than 30W

Fuse: 250VAC,T3.15A

DC power: Supply voltage/current: DC5V±0.5V 3A

Environment

Temperature : 0~40℃

Humidity: Humidity<80%



